8a
11/26/24

LETTING DATE
02/18/2025

BRIDGE REPLACEMENT - CCS
PROJ NO. BROS-6021(602)--5F-97

WOODBURY COUNTY

WOODBURY COUNTY - FHWA STRUCTURE NO. 354551

LEGEND

- INTERSTATE HIGHWAY
- PRIMARY HIGHWAY-DIVIDED
- PRIMARY HIGHWAY
- PORTLAND CEMENT CONCRETE ROAD
- ASPHALT ROAD
- BITUMINOUS ROAD
- GRAVEL ROAD
- EARTHEN ROAD
- INTERSTATE HIGHWAY (80)
- UNITED STATES HIGHWAY (65)
- STATE HIGHWAY (175)
- COUNTY HIGHWAY (527)
- RAILROAD
- PIPELINE
- AIRPORT
- HYDROLOGY
- BRIDGE
- STATE BOUNDARY
- COUNTY BOUNDARY
- CORPORATE BOUNDARY
- TOWNSHIP LINE
- SECTION LINE
- ROAD NAMES — ABBEY ROAD
- UNINCORPORATED PLACE — ELWOOD

PLANS OF PROPOSED IMPROVEMENTS ON THE

FARM TO MARKET SYSTEM
WOODBURY COUNTY

PROJECT NO. BROS-6012(602)--5F-97
BRIDGE REPLACEMENT - CCS
L25 OVER STREAM

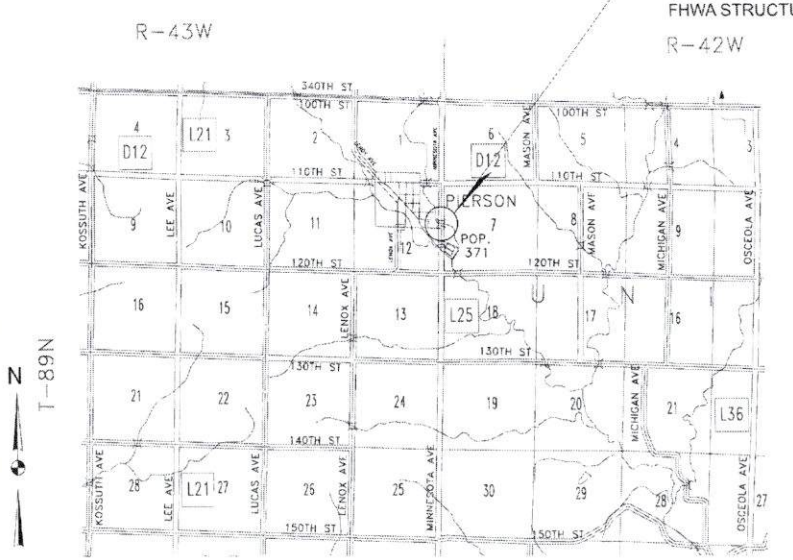
REFER TO THE PROPOSAL FOR LIST OF APPLICABLE SPECIFICATIONS.

281-1
10-18-16

SECTION 404 PERMIT AND CONDITIONS

CONSTRUCT THIS PROJECT ACCORDING TO THE REQUIREMENTS OF U.S. ARMY CORPS OF ENGINEERS NATIONWIDE, PERMIT NO. 14. A COPY OF THIS PERMIT IS AVAILABLE FROM THE IOWA DOT WEBSITE (http://www.envpermits.iowadot.gov/). THE U.S. ARMY CORPS OF ENGINNERS RESERVES THE RIGHT TO VISIT THE SITE WITHOUT PRIOR NOTICE.

PROJECT LOCATION
STA. 0+27.43 TO STA. 6+90.00
FHWA STRUCTURE NO. 354551



LOCATION MAP
(NOT TO SCALE)

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811

DESIGN DATA RURAL

2023	AADT	220	V.P.D.
2048	AADT	360	V.P.D.
2048	DHV		V.P.H.
TRUCKS			%
Total Design ESALs			

STANDARD ROAD PLANS

STANDARD ROAD PLANS ARE LISTED ON SHEET 9

INDEX OF SEALS

SHEET NO.	NAME	TYPE
1	JONATHAN E. PETERSON	HYDRAULIC DESIGN
1	JONATHAN E. PETERSON	STRUCTURAL DESIGN
1	JONATHAN E. PETERSON	CIVIL DESIGN

ENGLISH STANDARD BRIDGE PLANS

STANDARD	ISSUED	REVISED
J30-01-06	11-2006	09-2020
J30-01A-06	11-2006	09-2020
J30-06E-06	11-2006	09-2020
J30-07E-06	11-2006	09-2020
J30-20-06	11-2006	09-2020
J30-21-06	11-2006	09-2020
J30-23-06	11-2006	09-2020
J30-24-06	11-2006	09-2020
J30-35-06	11-2006	09-2020
J30-39-06	11-2006	09-2020
J30-43-06	11-2006	09-2020
J30-44-06	11-2006	09-2020
J30-45-06	11-2006	09-2020
J30-46-06	11-2006	09-2020
J30-48-06	11-2006	09-2020

MATTHEW UNG (CHAIRMAN)
DANIEL BITTINGER II (VICE CHAIRMAN)
MARK NELSON
KEITH RADIG
JEREMY TAYLOR
BOARD OF SUPERVISORS

TOTAL SHEETS 20

PROJECT NUMBER
BROS-6012(602)--5F-97
FHWA STRUCTURE NUMBER
354551

INDEX OF SHEETS

NO.	DESCRIPTION
1	COVER SHEET
2	QUANTITIES
3	ESTIMATE REFERECE INFORMATION
4	GENERAL NOTES
5	SITUATION PLAN
6	PLAN AND PROFILE
7	RIGHT OF WAY LAYOUT
8	TOP OF SLAB ELEVATIONS
9	TYPICALS AND TABULATIONS
10	TABULATIONS
11	DETOUR LAYOUT
12	BORING LOGS
13 - 20	CROSS SECTIONS

REVISIONS

APPROVAL
LAURA SIEVERS, PE (WOODBURY COUNTY ENGINEER) 11/26/24 DATE

ALL WORKING DRAWINGS THAT REQUIRE REVIEW BY THE CONTRACTING AUTHORITY SHALL BE SUBMITTED THROUGH THE PRIME CONTRACTOR AND SHALL BE REVIEWED BY HGM ASSOCIATES, INC.

THE PRIME CONTRACTOR SHALL CONTACT THE INDIVIDUAL LISTED BELOW TO OBTAIN THE WORKING DRAWING SUBMITTAL PROCEDURE:

ADDRESS: JONATHAN E. PETERSON
HGM ASSOCIATES INC.
450 REGENCY PARKWAY, SUITE 120
OMAHA, NEBRASKA 68137-2330
email: jpeterson@hgmonline.com
phone: 402-913-3341

CIVIL, STRUCTURAL AND HYDRAULIC DESIGN

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: 11-19-2024 Date
Jonathan E. Peterson
Printed or Typed Name
My license renewal date is December 31, 2024
Pages or sheets covered by this seal: SHEETS 1 THRU 20

DESIGN TEAM | ENGLISH | SHEET NUMBER 1

XXXXXXXXXXSYSTEMTYPE XXXXXXXXUSERNAME XXXXXXXXXX

ESTIMATED QUANTITIES

ITEM NO.	ITEM CODE	ITEM	UNIT	TOTAL	AS BUILT QUANTITY
1	2101-0850001	CLEARING AND GRUBBING	ACRE	0.60	
2	2102-2825000	EMBANKMENT-IN-PLACE	CY	5028.7	
3	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	CY	391.4	
4	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	CY	1739	
5	2104-2713020	EXCAVATION, CLASS 13, CHANNEL	CY	33	
6	2123-7450020	SHOULDER FINISHING, EARTH	STA	10.1	
7	2312-8260310	GRANULAR SURFACING ON ROAD, CRUSHED CONCRETE	TON	626.6	
8	2401-8745625	REMOVAL OF EXISTING BRIDGE	LS	1	
9	2402-2720000	EXCAVATION, CLASS 20	CY	84.5	
10	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	CY	200.1	
11	2404-7775000	REINFORCING STEEL	LB	1392	
12	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB	52613	
13	2414-6424124	CONCRETE OPEN RAILING, TL-4	LF	202.2	
14	2501-0201042	PILES, STEEL, HP 10x42	LF	1890	
15	2501-5478042	CONCRETE ENCASEMENT OF STEEL H PILES, HP 10x42 (P10L TYPE 3)	LF	256	
16	2505-4006420	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-221	EACH	4	
17	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	4	
18	2505-4021722	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-225	EACH	4	
19	2507-3250005	ENGINEERING FABRIC	SY	482.8	
20	2507-8800061	REVETMENT, CLASS E	TON	458.3	
21	2515-3280000	FENCE, FIELD	LF	453.7	
22	2528-2518000	SAFETY CLOSURE	EACH	2	
23	2528-8445110	TRAFFIC CONTROL	LS	1	
24	2533-4980005	MOBILIZATION	LS	1	
25	2601-2634100	MULCHING	ACRE	0.57	
26	2601-2638043	SEEDING AND FERTILIZING (RURAL)	ACRE	0.67	
27	2602-0000020	SILT FENCE	LF	355	
28	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS	LF	355	
29	2602-0010010	MOBILIZATION, EROSION CONTROL	EACH	3	

SUMMARY OF BRIDGE QUANTITIES

ITEM	UNITS	SUPERSTRUCTURE	S. ABUT. FOOTING	N. ABUT. FOOTING	PIER NO. 1	PIER NO. 2	TOTALS
EXCAVATION, CLASS 20	CY	-	19.5	45	-	-	84.5
STRUCTURAL CONCRETE (BRIDGE)	CY	177.1	11.5	11.5	-	-	200.1
REINFORCING STEEL	LBS	-	-	-	696	696	1392
REINFORCING STEEL, EPOXY COATED	LBS	49455	1579	1579	-	-	52613
CONCRETE OPEN RAILING, TL-4	LF	202.2	-	-	-	-	202.2
PILES, STEEL, HP 10 x 42	LF	-	5 @ 60' = 300'	5 @ 70' = 350'	8 @ 75' = 600'	8 @ 80' = 640'	1890

BRIDGE DECK DIMENSIONS TABLE

NO.	ITEM	UNIT	QUANTITY
1	DECK LENGTH	L.F.	90'-0
2	MINIMUM DECK WIDTH	L.F.	30'-0
3	MAXIMUM DECK WIDTH	L.F.	30'-0
4	DECK AREA	S.F.	2,700

1. DECK LENGTH IS MEASURED FROM FACE-TO-FACE OF PAVING NOTCHES ALONG THE CENTERLINE OF THE ROADWAY.
2. 3. DECK WIDTHS ARE MEASURED FROM OUT-TO-OUT OF DECK PERPENDICULAR TO THE CENTERLINE OF ROADWAY.
4. DECK AREA IS TO BE BASED ON THE FACE-TO-FACE PAVING NOTCH DISTANCE AND OUT-TO-OUT DECK DIMENSIONS.

DESIGN FOR 15° SKEW

90'-0 X 30'-0

CONTINUOUS CONCRETE SLAB BRIDGE

QUANTITIES

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
1	2101-0850001	CLEARING AND GRUBBING SEE SHEETS 6 FOR LIMITS.
2	2102-2625000	EMBANKMENT-IN-PLACE BID PRICE FOR ITEM SHALL BE FULL COMPENSATION FOR FURNISHING, HAULING, PLACING AND SHAPING OF ALL MATERIAL REQUIRED. QUANTITY INCLUDES AN ALLOWANCE OF 40% FOR SHRINKAGE. ITEM INCLUDES 6028.7 CUBIC YARDS OF FILL NEEDED. MATERIAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO PLACEMENT. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED.
3	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW TYPE 'A' COMPACTION IS REQUIRED. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED. QUANTITY INCLUDES AN ALLOWANCE OF 40% FOR SHRINKAGE. BORROW SHALL BE CONTRACTOR FURNISHED. 6028.7 C.Y. (FILL = 40%) 391.4 C.Y. (CUT) 5637.3 C.Y. (BORROW)
4	2104-2710020	EXCAVATION, CLASS 10, CHANNEL INCLUDES COSTS TO CLEAR THE CHANNEL TO THE SHAPE, DEPTH, AND EXTENT SHOWN IN THE PLANS. QUANTITY OF EXCAVATION IS 1739 CU. YDS. (CUT). EXCESS MATERIAL MAY BE USED AS ROADWAY BORROW IF DEEMED SUITABLE BY THE ENGINEER. UNUSED MATERIAL SHALL BE DISPOSED OF OFF THE PROJECT SITE ACCORDING TO APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS. FILL MATERIAL AND ALL LABOR ASSOCIATED WITH PLACEMENT SHALL BE CONSIDERED INCIDENTAL TO THIS BID ITEM.
5	2104-2713020	EXCAVATION, CLASS 13, CHANNEL THIS ITEM IS FOR THE REMOVAL AND DISPOSAL OF THE BROKEN CONCRETE RUBBLE LOCATED WITHIN THE PROJECT LIMITS.
6	2123-7450020	SHOULDER FINISHING, EARTH
7	2312-8260310	GRANULAR SURFACING ON ROAD, CRUSHED CONCRETE
8	2401-6745625	REMOVAL OF EXISTING BRIDGE THIS ITEM IS FOR THE REMOVAL AND DISPOSAL OF THE EXISTING BRIDGE AT STA. 3+69.71 (FHWA STR. NO. 352551). THE STEEL TRUSS BRIDGE IS 63' LONG AND 20' WIDE AND CONSISTS OF FOUR SPANS. ALL REMAINING BRIDGE ITEMS THAT ARE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE DISPOSED OF OFF THE PROJECT SITE ACCORDING TO APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
9	2402-2720000	EXCAVATION, CLASS 20 THIS ITEM INCLUDES EXCAVATION REQUIRED FOR CONSTRUCTION OF THE ABUTMENT FOOTINGS. SEE "SUMMARY OF BRIDGE QUANTITIES" TABLE ON SHEET 2 FOR EXCAVATION QUANTITIY AT EACH ABUTMENT.
10	2403-0100010	STRUCTURAL CONCRETE (BRIDGE) INCLUDES COST OF FURNISHING AND PLACING SUBDRAIN (INCLUDING EXCAVATION), GRANULAR BACKFILL, AND POROUS BACKFILL AT ABUTMENTS AND WING ARMORING. THE CONTRACTOR SHALL PROVIDE CERTIFIED PLANT INSPECTION FOR THE CONCRETE USED IN THE BRIDGE CONSTRUCTION. THE COST OF THIS INSPECTION SHALL BE INCIDENTAL TO THIS ITEM. INCLUDES COST OF FURNISHING AND PLACING CONCRETE SEALER AND ALL PREFORMED EXPANSION JOINT FILLER REQUIRED.
11	2404-7775000	REINFORCING STEEL NON-EPOXY COATED REINFORCING STEEL IS TO BE USED IN THE SPIRALS LOCATED IN THE CONCRETE ENCASEMENT OF STEEL H PILES. SEE "SUMMARY OF BRIDGE QUANTITIES" TABLE ON SHEET 2
12	2404-7775005	REINFORCING STEEL, EPOXY COATED SEE "SUMMARY OF BRIDGE QUANTITIES" TABLE ON SHEET 2.
13	2414-6424124	CONCRETE OPEN RAILING, TL-4 FOR CAST-IN-PLACE, USE CLASS C CONCRETE COMPLYING WITH MATERIAL I.M. 529. SUBSTITUTION OF CLASS D MIX IS NOT ALLOWED. BID PRICE SHALL INCLUDE THE COST OF CAST-IN-PLACE FORMS, IF REQUIRED FOR PLACEMENT OF CONCRETE. CERTIFIED PLANT INSPECTION IS REQUIRED.
14	2501-0201042	PILES, STEEL, HP 10 X 42 SEE ABUTMENT DETAILS ON SHEET 8 AND "SUMMARY OF BRIDGE QUANTITIES" TABLE ON SHEET 2.
15	2501-5476042	CONCRETE ENCASEMENT OF STEEL H PILES, HP 10x42 THE PILING ENCASEMENTS ARE TO EXTEND DOWN TO THE ELEVATIONS SHOWN IN THE PLANS. THE UNIT PRICE BID FOR ENCASEMENT SHALL BE FULL PAYMENT FOR FURNISHING AND PLACING MATERIAL, AND WHERE NECESSARY, EXCAVATION. SEE STANDARD P10L REVISED NOVEMBER 2023 FOR DETAILS. THE CONTRACTOR SHALL PROVIDE CERTIFIED PLANT INSPECTION FOR THE CONCRETE USED IN THE ENCASEMENT. THE COST OF THIS INSPECTION SHALL BE INCIDENTAL TO THIS ITEM.
16	2505-4008420	STEEL BEAM GUARDRAIL TRANSITION SECTION, BA-221 SEE TAB 108-8A ON SHEET 10, AND STANDARD ROAD PLANS.
17	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED SEE TAB 108-8A ON SHEET # AND STANDARD ROAD PLANS.
18	2505-4021722	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-225 SEE TAB 108-8A ON SHEET 10. AND STANDARD ROAD PLANS.
19	2507-3250005	ENGINEERING FABRIC
20	2507-6800061	REVETMENT, CLASS E REFER TO SHEET 5 FOR LOCATION OF REVETMENT AND DETAIL.
21	2519-3280000	FENCE, FIELD ITEM TO BE USED FOR THE REPLACEMENT OF ANY FIELD FENCE THAT IS REMOVED DURING CONSTRUCTION
22	2528-2518000	SAFETY CLOSURE THIS ITEM SHALL INCLUDE PROVIDING, INSTALLING, MAINTAINING, AND REMOVING SAFETY CLOSURES ACCORDING TO IOWA DEPARMENT OF TRANSPORTATION STANDARD SPECIFICATOINS AT THE LOCATIONS INDICATED IN TAB 108-13A ON SHEET 11.
23	2528-8445110	TRAFFIC CONTROL THIS ITEM SHALL INCLUDE FURNISHING, INSTALLING, MAINTAINING, AND REMOVING SIGNING AS PER THE "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 AND STANDARD ROAD PLAN TC-252.

ESTIMATE REFERENCE INFORMATION

ITEM NO.	ITEM CODE	DESCRIPTION
24	2533-4980005	MOBILIZATION --
25	2601-2634100	MULCHING --
26	2602-0010010	MOBILIZATION, EROSION CONTROL --
27	2601-2636043	SEEDING AND FERTILIZING (RURAL) SEEDING SHALL MEET THE REQUIREMENTS SET FORTH IN IDOT STANDARD SPECIFICATIONS AND ANY APPLICABLE SUPPLEMENTAL SPECIFICATIONS. THE CONTRACTOR SHALL VERIFY WITH THE ENGINEER ALL AREAS TO BE SEEDED PRIOR TO COMMENCING ANY WORK ON THIS ITEM.
28	2602-0000020	SILT FENCE REFER TO TAB 100-17 ON SHEET 9. THE TABULATIONS ESTIMATED LOCATIONS FOR PLACEMENT OF "SILT FENCE" TO ADDRESS EROSION TO BE ENCOUNTERED DURING CONSTRUCTION. VERIFY THE SPECIFIC LOCATION WITH THE ENGINEER PRIOR TO BEGINNING PLACEMENT.
29	2602-0000101	MAINTENANCE OF SILT FENCE OR SILT FENCE FOR DITCH CHECKS THIS ITEM IS INCLUDED FOR CLEANOUT AND REPAIR OF SILT FENCE AND SILT FENCE FOR DITCH CHECKS DURING THE PROJECT

DESIGN FOR 15° SKEW
90'-0 X 30'-0
CONTINUOUS CONCRETE SLAB BRIDGE
ESTIMATE REFERENCE INFORMATION

STA. 0+27.43 SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

XXXXXXXXXXSYSTEMTIME XXXXXXUSERNAME XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDGNSPEC

GENERAL NOTES:

THIS DESIGN IS FOR THE REPLACEMENT OF THE EXISTING 63' X 20' 4-SPAN STEEL BEAM BRIDGE WITH CONCRETE DECK, TIMBER ABUTMENTS, AND TIMBER PIERS, WITH A YEAR OF CONSTRUCTION OF 1981. ELECTRONIC PLANS OF THE EXISTING STRUCTURE ARE AVAILABLE TO THE CONTRACTOR AS PART OF THE E-FILES SUPPLIED WITH THE CONTRACT DOCUMENTS.

THE LUMP SUM BID FOR "REMOVAL OF EXISTING BRIDGE" SHALL INCLUDE 63' X 20' 4-SPAN STEEL BEAM BRIDGE.

ALL MATERIAL FROM THE REMOVAL OF EXISTING STRUCTURE SHALL BE DISPOSED OF BY THE CONTRACTOR IN COMPLIANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL REQUIREMENTS.

FAINT LINES ON PLANS INDICATE THE EXISTING STRUCTURE.

THESE BRIDGE PLANS LABEL ALL REINFORCING STEEL WITH ENGLISH NOTATION ("5a1 IS ⅝ INCH DIAMETER BAR"). ENGLISH REINFORCING STEEL RECEIVED IN THE FIELD MAY DISPLAY THE FOLLOWING "BAR DESIGNATION". THE "BAR DESIGNATION" IS THE STAMPED IMPRESSION ON THE REINFORCING BARS, AND IS EQUIVALENT TO THE BAR DIAMETER IN MILLIMETERS.

ENGLISH SIZE	3	4	5	6	7	8	9	10	11
BAR DESIGNATION	10	13	16	19	22	25	29	32	36

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 3,630 PPM. THE ANALYSIS OF TOTAL LEAD IN THE SAMPLE WAS 60,500 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.

KEYWAY DIMENSIONS SHOWN ON THE PLANS ARE BASED ON NOMINAL DIMENSIONS UNLESS STATED OTHERWISE. IN ADDITION, THE BEVEL USED ON THE KEYWAY SHALL BE LIMITED TO A MAXIMUM ON 10 DEGREES FROM VERTICAL.

THIS BRIDGE IS DESIGNED FOR HL-93 LOADING, PLUS 20 LBS PER SQUARE FOOT OF ROADWAY FOR FUTURE WEARING SURFACE.

CONTRACTOR SHALL CONFINE WORK TO THE COUNTY R.O.W. AND TEMPORARY EASEMENT UNLESS PERMISSION FROM RESPECTIVE LANDOWNERS IS PROVIDED TO THE COUNTY IN WRITING.

ALL REINFORCING BARS AND BARS NOTED AS DOWELS SUPPLIED FOR THIS STRUCTURE SHALL BE DEFORMED REINFORCEMENT UNLESS OTHERWISE NOTED OR SHOWN.

MINIMUM CLEAR DISTANCE FROM FACE OF CONCRETE TO NEAR REINFORCING BAR IS TO BE 2" UNLESS OTHERWISE NOTED OR SHOWN.

SOUNDING AND TEST BORING DATA SHOWN ON THE PLANS WERE ACCUMULATED FOR DESIGNING AND ESTIMATING PURPOSES. THEIR APPEARANCE ON THE PLANS DOES NOT CONSTITUTE A GUARANTEE THAT CONDITIONS OTHER THAN THOSE INDICATED WILL NOT BE ENCOUNTERED.

EXPOSED CORNERS OF 90 DEGREES OR SHARPER SHALL BE FILLETED WITH A ¾ INCH DRESSED AND BEVELED STRIP.

CONTRACTOR SHALL PROVIDE THE COUNTY AND 911 OPERATOR WITH TH NAME AND PHONE NUMBER OF THEIR REPRESENTATIVE TO BE CONTRACTED DURING WORKING AND NON-WORKING HOURS AS NECESSARY.

AN ASBESTOS INSPECTION WAS CONDUCTED AND A BULK SAMPLE WAS ANALYZED. SAMPLE ANALYSIS BY HYGENIC LABORATORY USING POLARIZED LIGHT MICROSCOPY TESTED NEGATIVE FOR THE PRESENCE OF ASBESTOS. IN THE EVENT ASBESTOS IS FOUND DURING CONSTRUCTION, CEASE WORK AND NOTIFY THE CONTRACTING AUTHORITY.

SCHEDULE OF OPERATION:

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, PRIOR TO THE PRECONSTRUCTIONS CONFERENCE, A WRITTEN SCHEDULE FOR PERFOMANCE OF THE WORK ITEM. THE SCHEDULE SHALL BE IN THE FORM OF A BAR GRAPH OR CHART SHOWING STARTING AND COMPLETION DATES FOR THE ITEMS. THE CONTRACTOR SHALL THEN MAKE EVERY EFFORT TO CONFORM TO THE ACCEPTED SCHEDULE.

SPECIFICATIONS:

DESIGN. AASHTO LRFD 5th Ed, SERIES OF 2010, EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

DESIGN STRESSES:

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 5th Ed, SERIES OF 2010. EXCEPT AS NOTED IN THE CURRENT IOWA BRIDGE DESIGN MANUAL.

REINFORCING STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 5, GRADE 60 FOR EPOXY COATED AND NON-COATED, AND GRADE 60 OR 75 FOR STAINLESS.

CONCRETE IN ACCORDANCE WITH AASHTO LRFD SECTION 5, f'c = 4.0 KSI.

STRUCTURAL STEEL IN ACCORDANCE WITH AASHTO LRFD SECTION 6. ASTM A709 GRADE 36, GRADE 50, AND GRADE 50W (AASHTO M270 GRADE 36, GRADE 50, AND GRADE 50W).

TRAFFIC CONTROL PLAN:

THIS ROAD 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. TRAFFIC CONTROL DEVICES, PROCEDURES, LAYOUTS, SIGNING, AND PAVEMENT MARKINGS INSTALLED WITHIN THE LIMITS OF THIS PROJECT SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" AS ADOPTED BY THE DEPARMENT PER 761 OF THE IOWA ADMINISTRATIVE CODE (IAC) CHAPTER 130.

ALL SAFETY CLOSURES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR.

MAINTENANCE SIGNS, BARRICADES, AND SAFETY CLOSURES AS STATED IN ARTICLE 1107.09 SHALL APPLY TO THIS PROJECT.

ROAD CLOSURES ON THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH ROAD STANDARD TC-252. GUARDRAIL INSTALLATION MUST BE COMPLETE BEFORE THE ROAD IS OPENED TO TRAFFIC.

UTILITY CONTACTS:

(MD6G) MIDAMER-GAS
COMPANY NAME: MIDAMER-GAS
DESIGN CONTACT: MYLES JOHNSON
PHONE: 712.233.4866
EMAIL: myles.johnson@midamerican.com

(FCI) FRONTIER COMMUNICATIONS
COMPANY NAME: FRONTIER COMMUNICATIONS
DESIGN CONTACT: URANAN THAO
PHONE: 515.573.1268
EMAIL: frontierlocatemapsla@ftr.com

(MD6E) MIDAMER-ELEC
COMPANY NAME: MIDAMER-ELEC
DESIGN CONTACT: CODY PARMETER
PHONE: 712.233.4621
EMAIL: cody.parmeter@midamerican.com

(PIR) PIERSON, CITY OF
COMPANY NAME: PIERSON, CITY OF
DESIGN CONTACT: JEANETTE BEEKMAN
PHONE: 712.375.5015
EMAIL: cityclerk@frontiernet.net

(WCR) WOODBURY COUNTY RURAL ELECTRIC
COMPANY NAME: WEEDBURY COUNTY RURAL ELECTRIC
DESIGN CONTACT: NATE BAUER
PHONE: 712.873.3125
EMAIL: nbauer@boodburyrec.com

(WIT) WESTERN IOWA TELEPHONE COMPANY
COMPANY NAME: WESTER IOWA TELEPHONE COMPANY
DESIGN CONTACT: ERIN NELSON
PHONE: 712.944.5711
EMAIL: enelson@wiatel.com

PILE NOTES:

NORTH ABUTMENT

THE CONTRACT LENGTH OF 70 FEET FOR THE NORTH ABUTMENT PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 86 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF FOOTING.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR NORTH 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.

NORTH PIER

THE CONTRACT LENGTH OF 80 FEET FOR THE NORTH PIER PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 97 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF ENCASEMENT.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR NORTH PIER PILES IS 75 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.

SOUTH PIER

THE CONTRACT LENGTH OF 75 FEET FOR THE NORTH PIER PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 97 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF ENCASEMENT.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR NORTH PIER PILES IS 75 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.

SOUTH ABUTMENT

THE CONTRACT LENGTH OF 60 FEET FOR THE SOUTH ABUTMENT PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 86 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65 FOR SOIL. PILES ARE ASSUMED TO BE DRIVEN FROM A START ELEVATION AT THE BOTTOM OF FOOTING.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR SOUTH 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.

BENCHMARKS:

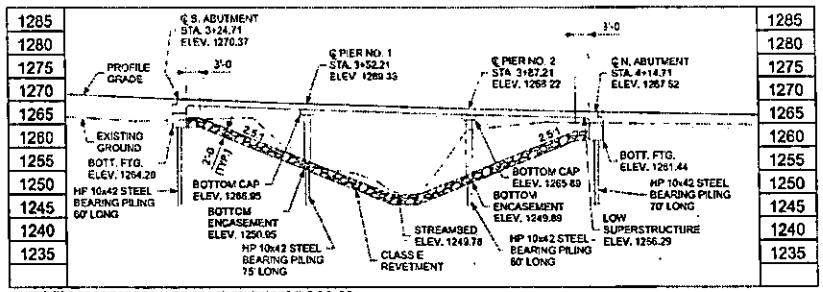
CP #1 -
ELEVATION = 1263.51
N - 3969270.90
E - 4285451.69

CP #2 -
ELEVATION = 1263.18
N - 3968962.83
E - 4285356.18

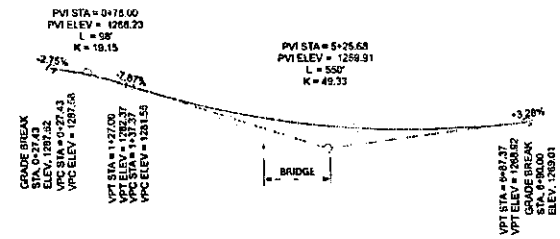
CP #3 -
ELEVATION = 1288.67
N - 3968558.99
E - 4285453.64

CP #4 -
ELEVATION = 1285.72
N - 3968733.64
E - 4285416.78

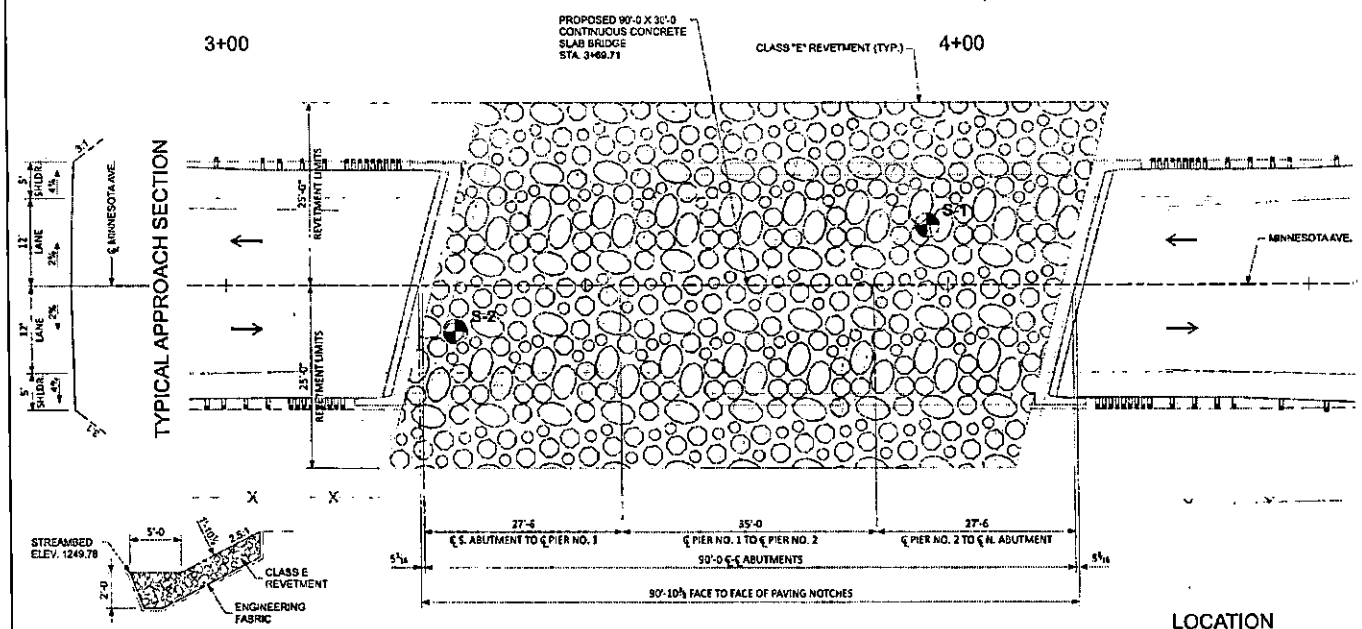
0 ENGLISH 20
SCALE IN FEET



LONGITUDINAL SECTION ALONG ℄ ROADWAY



PROPOSED PROFILE GRADE
MINNESOTA AVE.



STREAMBANK REVETMENT DETAIL
NORMAL TO CHANNEL

SITUATION PLAN

HYDRAULIC DATA:

Drainage Area = 4.5 Sq. MI.
Stream Slope = 30.9 FL/MI.
Avg. Low Water Stage = 1,250.68'

Q_{10} = 1,970 CFS
Stage = 1,258.88'

Q_{50} = 2,430 CFS
Stage = 1,259.73'
Regulatory Low Beam = 1,267.20'
Avg. Bridge Velocity = 6.40 FPS

Q_{100} = 2,600 CFS
Stage = 1,259.73'
Operational Low Beam = 1,265.86'
Backwater = 0.68' Ft.
Avg. Bridge Velocity = 7.20 FPS

Q_{250} = 3,770 CFS
Stage = 1,260.40
Calculated Design Scour = 1,249.78'

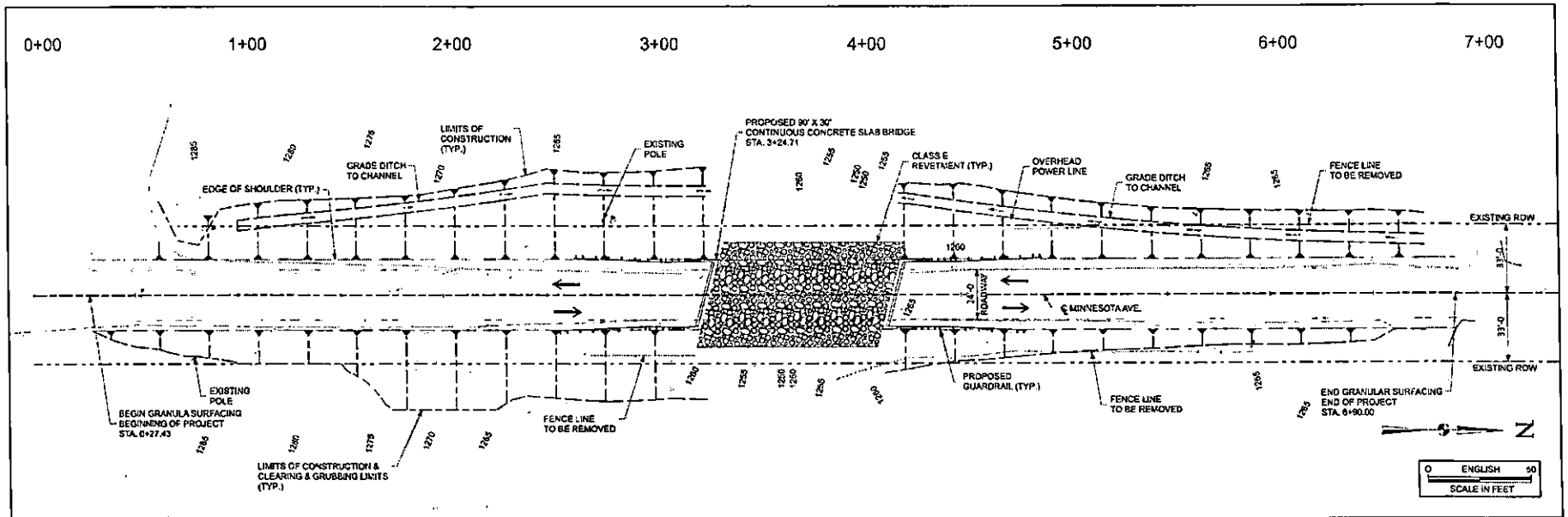
Q_{500} = 4,160 CFS
Stage = 1,260.40
Avg. Bridge Velocity = 9.0 FPS
Calculated Check Scour = 1,249.78

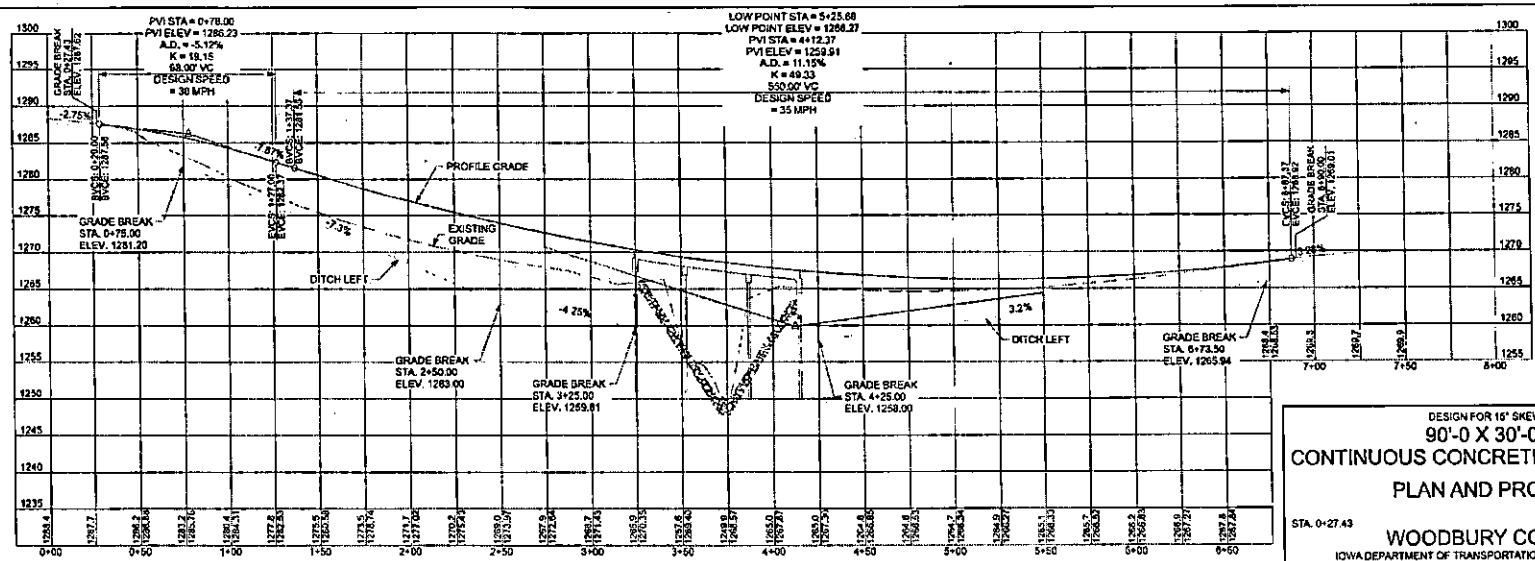
LOCATION

MINNESOTA AVE.
PIERSON TOWNSHIP
WOODBURY COUNTY
FHWA NO. 334551
LATITUDE: 42.5411°
LONGITUDE: -95.0594°

DESIGN FOR 15° SKEW
90'-0 X 30'-0
CONTINUOUS CONCRETE SLAB BRIDGE
SITUATION PLAN
STA. 0+27.43
SEPTEMBER, 2024
WOODBURY COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

NOTES:
TL-4 BRIDGE RAILING PROPOSED.
ALL UNITS ARE IN FEET UNLESS OTHERWISE NOTED.





DESIGN FOR 15° SKEW

90'-0 X 30'-0 CONTINUOUS CONCRETE SLAB BRIDGE

PLAN AND PROFILE

STA. 0+27.43

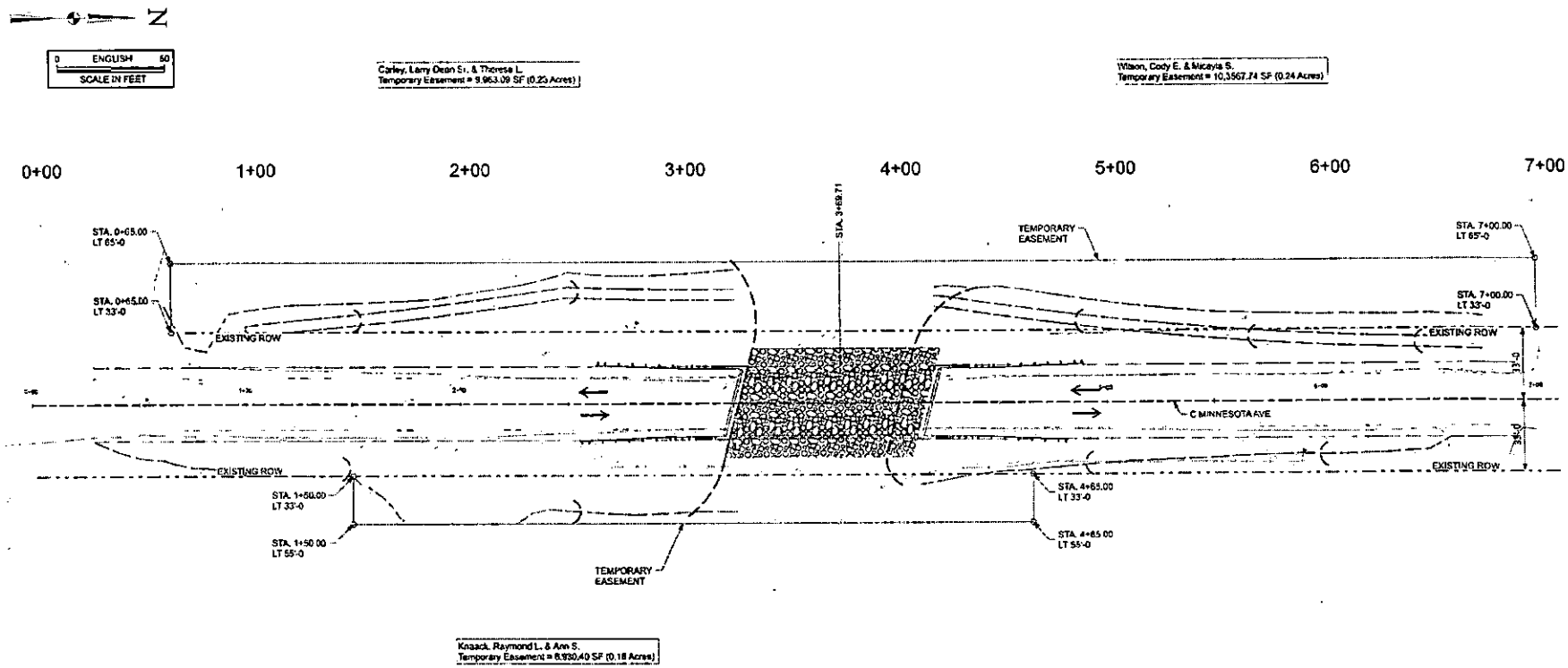
SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION • HIGHWAY DIVISION

DESIGN TEAM hgm | WOODBURY COUNTY | PROJECT NUMBER BROS-6012(502)--5F-97 | SHEET NUMBER 6

SYSTEM TIME USERNAME FILENAME



LEGEND

- EXISTING RIGHT OF WAY
- SILT FENCING
- TEMPORARY EASEMENT
- TEMPORARY EASEMENT

DESIGN FOR 15° SKEW

90'-0 X 30'-0 CONTINUOUS CONCRETE SLAB BRIDGE

RIGHT OF WAY LAYOUT

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

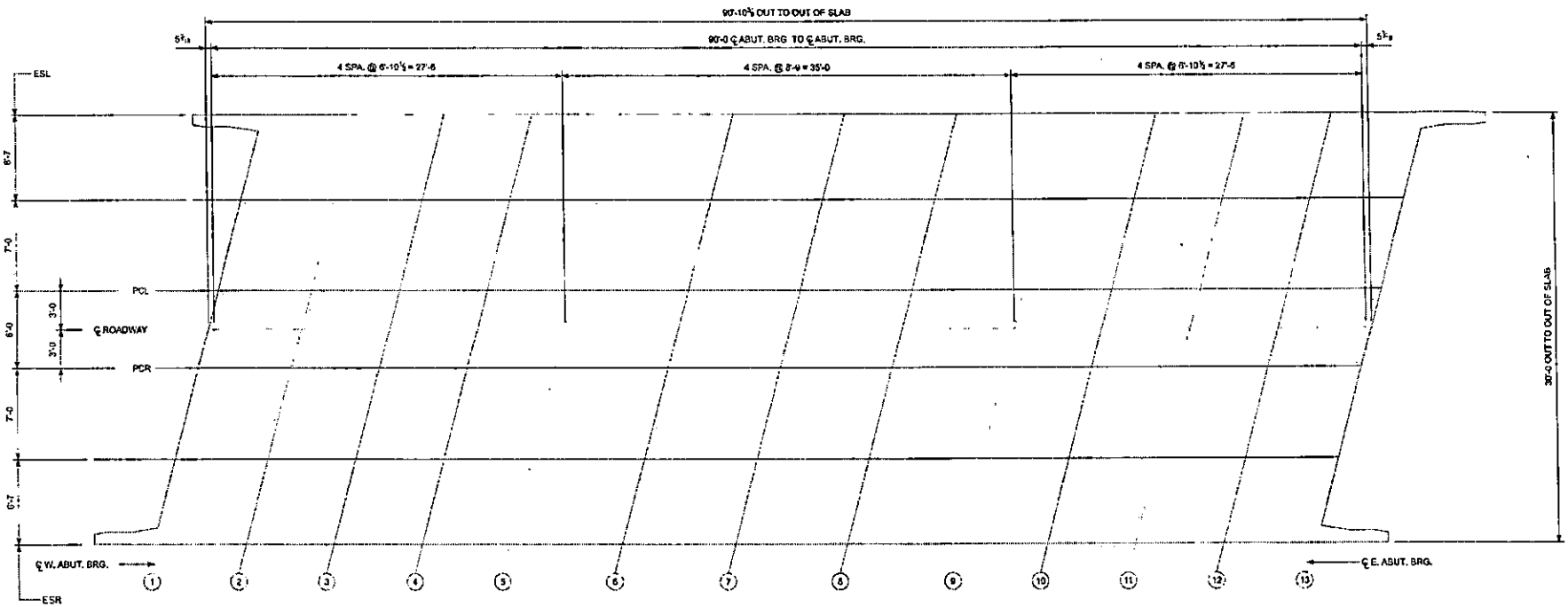
DESIGN TEAM hgm

WOODBURY COUNTY | PROJECT NUMBER BROS-8012(602)--5F-97 | SHEET NUMBER 7

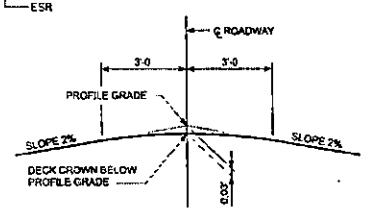
SYSTEM TIME USER NAME MODEL NAME

TOP OF SLAB ELEVATIONS

LOCATION	℄ WEST ABUTMENT BEARING				℄ PIER NO. 1				℄ PIER NO. 2				℄ EAST ABUTMENT BEARING
	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
EDGE OF SLAB LEFT (ESL)	1269.84	1269.58	1269.32	1269.07	1268.83	1268.54	1268.26	1268.00	1267.76	1267.57	1267.40	1267.24	1267.09
INTERMEDIATE LINE A	1270.05	1269.78	1269.51	1269.26	1269.02	1268.73	1268.45	1268.18	1267.93	1267.75	1267.58	1267.41	1267.26
CROWN LINE B	1270.26	1269.99	1269.72	1269.47	1269.22	1268.93	1268.64	1268.38	1268.13	1267.94	1267.76	1267.60	1267.44
℄ APPROACH ROADWAY	1270.32	1270.05	1269.78	1269.53	1269.28	1268.98	1268.70	1268.43	1268.16	1267.90	1267.81	1267.64	1267.49
CROWN LINE C	1270.33	1270.05	1269.79	1269.53	1269.28	1268.98	1268.70	1268.43	1268.17	1267.88	1267.80	1267.63	1267.47
INTERMEDIATE LINE D	1270.26	1269.99	1269.72	1269.46	1269.21	1268.00	1268.62	1268.34	1268.08	1267.89	1267.71	1267.54	1267.38
EDGE OF SLAB RIGHT (ESR)	1270.21	1269.92	1269.65	1269.39	1269.14	1268.83	1268.54	1268.28	1268.00	1267.81	1267.63	1267.45	1267.29



SLAB ELEVATION PLAN



CROWN TEMPLATE

NO SCALE

DESIGN FOR 15° SKEW

90'-0 X 30'-0

CONTINUOUS CONCRETE SLAB BRIDGE

TOP OF SLAB ELEVATIONS

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

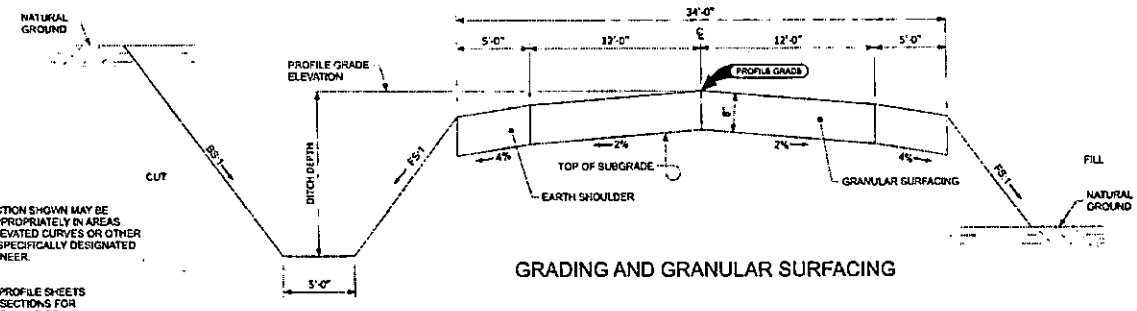
DESIGN TEAM hgm

WOODBURY COUNTY | PROJECT NUMBER BRDS-6012(602)--57-97 | SHEET NUMBER 8

XXXXXXXXXXSYSTEM TIME XXXXXXXXXX

LOCATION			DIMENSIONS			
ROAD IDENTIFICATION	STATION TO STATION		FS	BS		
MINNESOTA AVE.	0+27.43	3+24.71	3	3		
MINNESOTA AVE.	4+14.71	6+90.00				

G_2_Grafe
MODIFIED



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.

GRADING AND GRANULAR SURFACING

STANDARD ROAD PLANS

G_2_Grade
MODIFIED

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

NUMBER	DATE	TITLE
BA-200	04-20-21	STEEL BEAM GUARDRAIL COMPONENTS
BA-202	10-15-24	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 BEAM GUARDRAIL TANGENT END TERMINAL (MASH TL-2)
EC-201	04-20-21	SILT FENCE
EC-204	10-19-21	PERIMETER, SLOPE AND DITCH CHECK SEDIMENT CONTROL DEVICES
EC-502	04-21-15	SEEDING IN RURAL AREAS
EW-101	10-17-17	EMBANKMENT AND REBUILDING EMBANKMENTS
EW-202	04-19-16	BRIDGE BERM GRADING WITHOUT RECOVERABLE SLOPE (NON-BARNROOF SECTION)
EW-301	04-16-24	GUARDRAIL GRADING
EW-501	10-17-23	RURAL ENTRANCE
LS-635	10-18-22	STEEL BEAM GUARDRAIL INSTALLATION AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION
SI-173	04-19-16	OBJECT MARKERS
SI-211	10-18-22	OBJECT MARKER AND DELINEATOR PLACEMENT WITH GUARDRAIL
TC-252	04-21-20	ROUTES CLOSED TO TRAFFIC

DESIGN FOR 15° SKEW

90'-0 X 30'-0
CONTINUOUS CONCRETE SLAB BRIDGE
TYPICALS AND TABULATIONS

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION • HIGHWAY DIVISION

DESIGN TEAM hgm | WOODBURY COUNTY | PROJECT NUMBER BROS-6012(602)--SF-97 | SHEET NUMBER 9

XXXXXXXXXSYSTEMTIME XXXXXXXUSERNAME XXXXXXXXX

ALIGNMENT COORDINATES

101-16
10-20-00

NAME	LOCATION	POINT ON TANGENT STATION	POINT ON TANGENT Y (NORTHING)	POINT ON TANGENT X (EASTING)	BEGIN SPIRAL STATION	BEGIN SPIRAL Y (NORTHING)	BEGIN SPIRAL X (EASTING)	BEGIN CURVE STATION	BEGIN CURVE Y (NORTHING)	BEGIN CURVE X (EASTING)	SIMPLE CURVE PI OR MASTER PI OF SCS STATION	SIMPLE CURVE PI OR MASTER PI OF SCS Y (NORTHING)	SIMPLE CURVE PI OR MASTER PI OF SCS X (EASTING)	END CURVE STATION	END CURVE Y (NORTHING)	END CURVE X (EASTING)	END SPIRAL STATION	END SPIRAL Y (NORTHING)	END SPIRAL X (EASTING)
	MINNESOTA AVE.	0+27.43	3568707.5171	4285418.8294															
	MINNESOTA AVE	6+90.00	3569369.9883	4285430.2710															

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

REFER TO BA-200, BA-201, BA-202, BA-205, BA-206, BA-210, BA-211, BA-225, BA-250, BA-260, LS-625, LS-626, LS-630, LS-635
SI-172, SI-173 AND SI-211.

108-8A
10-16-18

(1) LANE(S) TO WHICH THE OBSTACLE IS ADJACENT.
(2) NOT A BID ITEM. INCIDENTAL TO GUARDRAIL INSTALLATION.

NO.	DIRECTION OF TRAFFIC (1)	SIDE O = OUTSIDE M = MEDIAN	STATION	OFFSET FT	LAYOUT LENGTHS (BA-250, BA-260, LS-630, OR LS-635) (VT1) LF	(VF) LF	(VT2) LF	(ET) LF	LONG-SPAN SYSTEM BA-211 STATION	LONG-SPAN SYSTEM BA-211 TYPE	SI-211 TYPE	DELINEATOR SI-172 TYPE 1 WHITE EA	OBJECT MARKER SI-173 TYPE 2 OM2-2 EA	OBJECT MARKER SI-173 TYPE 3 OM-3L EA	OBJECT MARKER SI-173 TYPE 3 OM-3R EA	BOLTED END ANCHOR BA-202 TYPE	BOLTED END ANCHOR BA-202 EA	POST ADAPTER BA-210 EA	STEEL BEAM GUARDRAIL BA-200 LF	BA-250 OR LS-630 BARRIER TRANSITION SECTION BA-201 EA	END TERMINAL TANGENT BA-205 EA	END TERMINAL FLARED BA-206 EA	END TERMINAL TANGENT LS-626 EA	END TERMINAL FLARED LS-626 EA	BA-260 OR LS-635 BARRIER TRANSITION SECTION BA-221 EA	END TERMINAL TANGENT BA-225 EA	REMARKS
1	NB	O	3+17.14	15.62	21.875			35.17			3				1	A	1								1	1	
2	SB	O	3+25.18	15.62	21.875			35.17			3			1		A	1								1	1	
3	NB	O	4+14.24	15.62	21.875			35.17			3			1		A	1								1	1	
4	SB	O	4+22.28	15.62	21.875			35.17			3				1	A	1								1	1	
	TOTAL				87.5			140.7						2.0	2.0		4.0								4.0	4.0	

TABULATION OF SILT FENCES

REFER TO EC-201

100-17
04-20-10

LOCATION BEGIN STATION	LOCATION END STATION	SIDE	LENGTH (LIN. FT.)	REMARKS
1+45.29		RT	13'	
1+50.69		LT	13'	
2+51.13		LT	13'	
2+51.64		RT	13'	
3+04.86	3+25.59	RT/LT	128'	
4+03.91	4+39.72	RT/LT	110'	
4+89.14		LT	13'	
4+92.67		RT	13'	
5+69.41		LT	13'	
6+01.75		RT	13'	
6+46.82		LT	13'	
		TOTAL	365'	

REMOVAL OF FENCE

REMOVAL OF FIELD FENCE IS INCIDENTAL TO CLEARING AND GRUBBING

100-8
04-17-18

FROM STATION	FROM OFFSET	TO STATION	TO OFFSET	TYPE	LENGTH LF	REMARKS
2+70.52	29.0'	3+24.31	29.0'	RIGHT	53.8'	BARB WIRE FENCE
3+88.99	40.6'	5+91.14	27.9'	RIGHT	203.8'	BARB WIRE FENCE
4+74.19	31.3'	6+70.25	33.7'	LEFT	196.1'	BARB WIRE FENCE
TOTAL BARB WIRE FENCE					453.7'	

GRADING FOR GUARDRAIL INSTALLATIONS

107-23
10-18-11

(1) LANE(S) TO WHICH THE INSTALLATION IS ADJACENT.

NO.	DIRECTION OF TRAFFIC (1)	SUBDRAIN OUTLET STATION	SIDE	FORESLOPE AT GUARDRAIL	(X1)	(Y1)	(X2)	(Y2)	(X3)	(Y3)	(X4)	(Y4)	(2)	EXCAVATION CLASS 10 CY	EMBANKMENT IN PLACE CY	REMARKS
1	NB	3+17.14	RT	3:1	26.8	5.0					68.5	9.0	22.0			
2	SB	3+25.18	LT	3:1	26.8	5.0					68.5	9.0	22.0			
3	NB	4+14.24	RT	3:1	26.8	5.0					68.5	9.0	22.0			
4	SB	4+22.28	LT	3:1	26.8	5.0					68.5	9.0	22.0			

TABULATION OF SAFETY CLOSURES

108-13A
08-01-08

REFER TO SECTION 2518 OF THE STANDARD SPECIFICTIONS

STATION	CLOSURE TYPE ROAD QTY.	CLOSURE TYPE HAZARD QTY.	REMARKS
0+15.00	1		
7+00.00	1		

DESIGN FOR 15° SKEW
90'-0 X 30'-0
CONTINUOUS CONCRETE SLAB BRIDGE

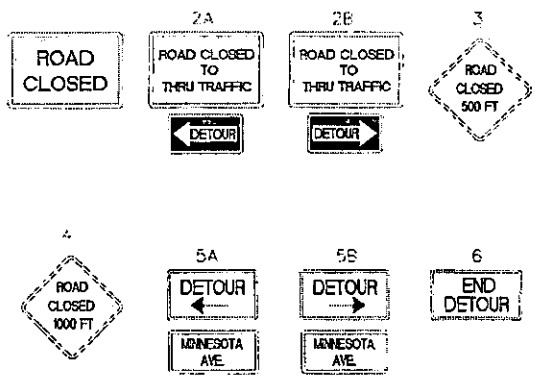
TABULATIONS

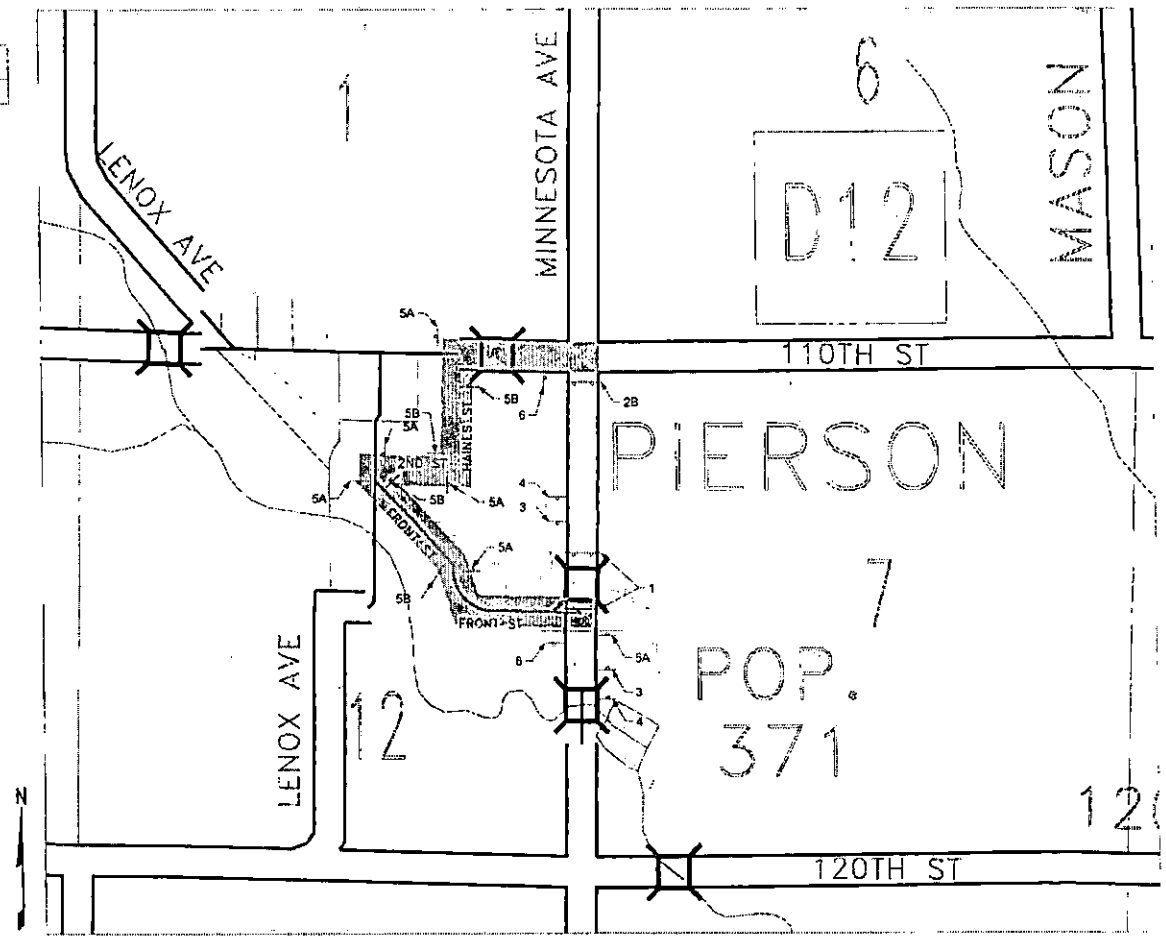
STA. 0+27.43 SEPTEMBER, 2024
WOODBURY COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

XXXXXXXXXSYSTEMTIME XXXXXXUSERNAME XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXDGNSPEC

TRAFFIC CONTROL PLAN

ROADWAY WIDTH, ALL SIGNS AND VARIOUS DETOUR ROUTE AND SIGNING THROUGHOUT THE DURATION OF THE PROJECT





LEGEND

- DETOUR ROUTE
- PROJECT AREA
- ROAD CLOSURE
- TRAFFIC SIGN

DESIGN FOR 15° SKEW

90'-0 X 30'-0

CONTINUOUS CONCRETE SLAB BRIDGE

DETOUR SHEET

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN TEAM hgm	WOODBURY COUNTY	PROJECT NUMBER BRDS-6012(602)--5F-97	SHEET NUMBER 11

XXXXXXXXXXSYS EMT IMF XXXXXXXXXX

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: 07316
Project: Bridge Replacement 602
Date Started: 3/12/24
Date Completed: 3/12/24

Boring No.: S-1
Boring Location: Woodbury Co, IA
Drill Type: Hollow Stem
Ground Elev.: 1263.2

Shelby Tube | Standard Split Spoon | Water Level ATD | Modified California | Grab Sample | Water Level After 7 Days

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts (BPF) (N) Blows/6 inch	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Corrd Penetrometer (Blows/1.3ft)
			12-inch Gravel Layer		6-4-4 N= 8									
5			STIFF SANDY CLAY, Grayish Yellow Brown, Fill (Sand Layer, Dark Brown)		8-3-2 N= 4									
10			SOFT SILTY CLAY, Grayish Yellow Brown	CL	3-1-1 N= 2									
15			(Sand Lense)		2-2-1 N= 3									
20			FIRM GLACIAL CLAY, Dark Gray	CL	3-3-5 N= 8									
25			(Gravel)		3-5-7 N= 12									
30					3-4-5 N= 9									
35					4-4-6 N= 11									
40					3-3-6 N= 9									
45					6-7-8 N= 15									
50					4-5-6 N= 11									
55			FIRM-VERY FIRM GLACIAL CLAY, Dark Gray	CL	5-8-9 N= 17									
60			CLAYEY SAND, Dark Gray	SC	3-2-5 N= 7									
65			VERY FIRM SANDY GLACIAL CLAY, Light Gray (Gravel/Cobbles)	CL	11-15-5 N= 20									
70					12-15-10 N= 25									
75			GLACIAL MATERIAL, Dark Gray	CL	13-21-20 N= 41									
80			FIRM-VERY FIRM GLACIAL CLAY, Dark Gray	CL	10-6-7 N= 13									

END OF BORING AT 80 FEET
FREE WATER WAS ENCOUNTERED AT 15 FEET AT TIME OF DRILLING AND PERCHED WATER WAS ENCOUNTERED AT 8.6 FEET 24-HOURS AFTER DRILLING

LOG OF EXPLORATORY BORING

Sheet 1 of 1

Job Number: 07316
Project: Bridge Replacement 602
Date Started: 3/12/24
Date Completed: 3/12/24

Boring No.: S-2
Boring Location: Woodbury Co, IA
Drill Type: Hollow Stem
Ground Elev.: 1266.3

Shelby Tube | Standard Split Spoon | Water Level ATD | Modified California | Grab Sample | Water Level After 7 Days

Depth in Feet	Graphic Log	Sample Type	SOIL DESCRIPTION	USCS	Blow Counts (BPF) (N) Blows/6 inch	Moisture Content, %	Dry Density (PCF)	% Saturation	Hand Penetrometer (TSF)	Unconfined Comp. Strength (TSF)	Liquid Limit %	Plastic Limit %	Plasticity Index %	Corrd Penetrometer (Blows/1.3ft)
			12-inch Gravel Layer		4-4-4 N= 8									
5			FIRM SILTY CLAY, Dark Brown and Gray Brown, Fill		3-4-5 N= 9									
10					4-4-4 N= 8									
15			(Sand Layers) (Gravel/Cobbles)		4-6-7 N= 13									
20			FIRM GLACIAL CLAY, Light Gray Brown	CL	14-6-5 N= 11									
25					4-5-6 N= 11									
30			VERY FIRM GLACIAL CLAY, Grayish Yellow Brown (Gravel/Cobbles)	CL	3-4-4 N= 8									
35			GLACIAL MATERIAL, Grayish Yellow Brown	CL	9-10-12 N= 22									
40			VERY FIRM GLACIAL CLAY, Light Gray Brown and Grayish Yellow Brown	CL	13-23-20 N= 43									
45			(Dark Gray)		7-10-11 N= 21									
50					5-11-11 N= 22									
55			(Sand Lense, Light Gray)		8-11-11 N= 22									
60			FINE SAND, Light Gray (Gravel/Cobbles)	SP	9-3-10 N= 17									
65			GLACIAL MATERIAL, Dark Gray	CL	10-6-11 N= 19									
70					11-21-23 N= 44									
75					15-21-22 N= 43									
80					15-15-17 N= 32									
					11-18-18 N= 36									

END OF BORING AT 80 FEET
FREE WATER WAS ENCOUNTERED AT 21 FEET AT TIME OF DRILLING AND PERCHED WATER WAS ENCOUNTERED AT 2.6 FEET 24-HOURS AFTER DRILLING

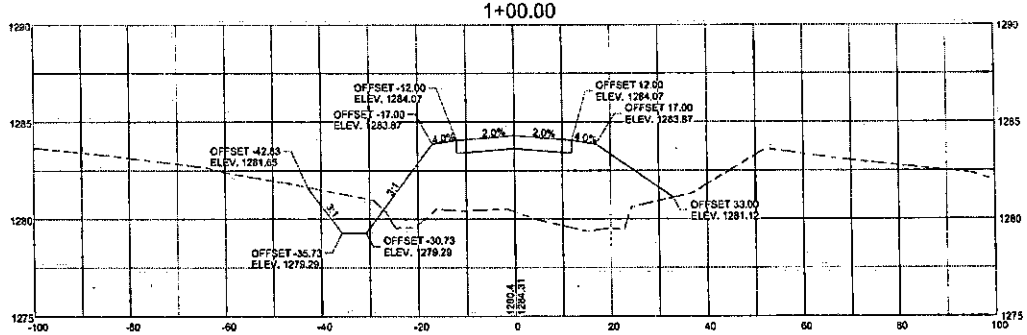
DESIGN FOR 15° SKEW
90'-0 X 30'-0
CONTINUOUS CONCRETE SLAB BRIDGE
BORING LOGS

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

1+00.00



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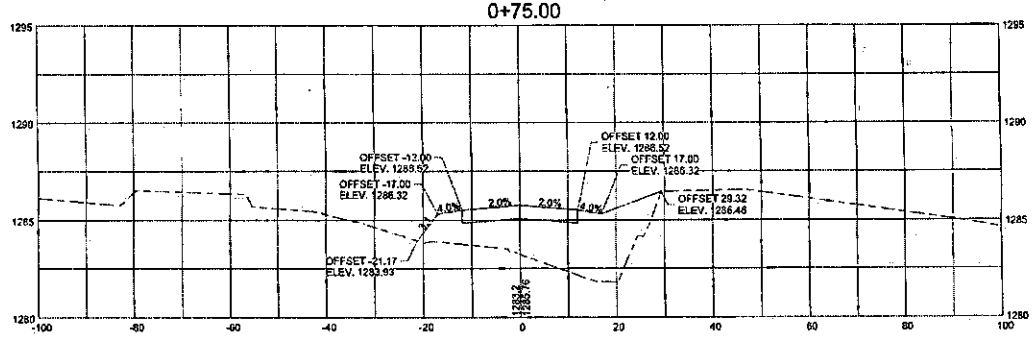

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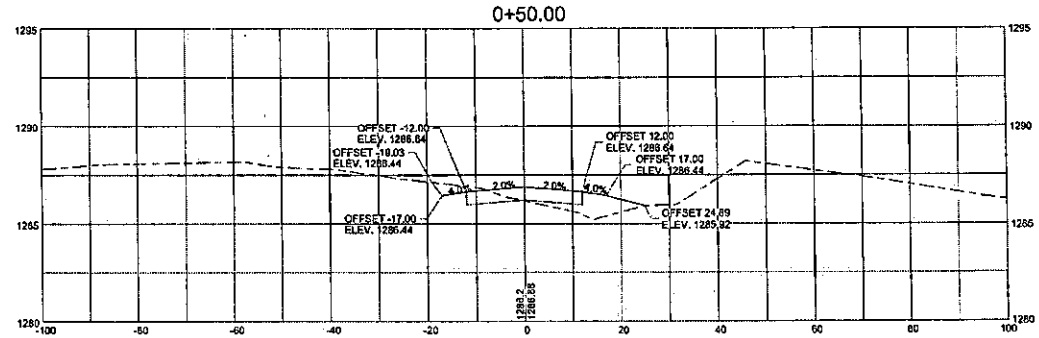

DESIGN FOR 15° SKEW

90'-0 X 30'-0

CONTINUOUS CONCRETE SLAB BRIDGE

CROSS SECTIONS (1 OF 8)

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION • HIGHWAY DIVISION

DESIGN TEAM **hgm**

WOODBURY COUNTY | PROJECT NUMBER BROS-6012(602)--5F-97 | SHEET NUMBER 13

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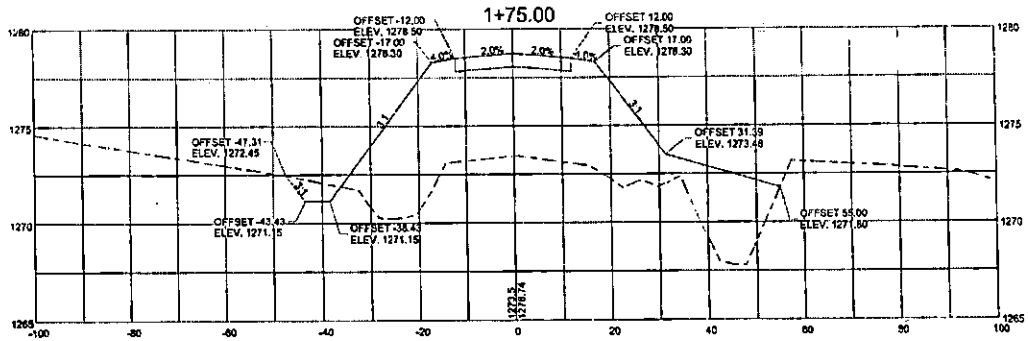

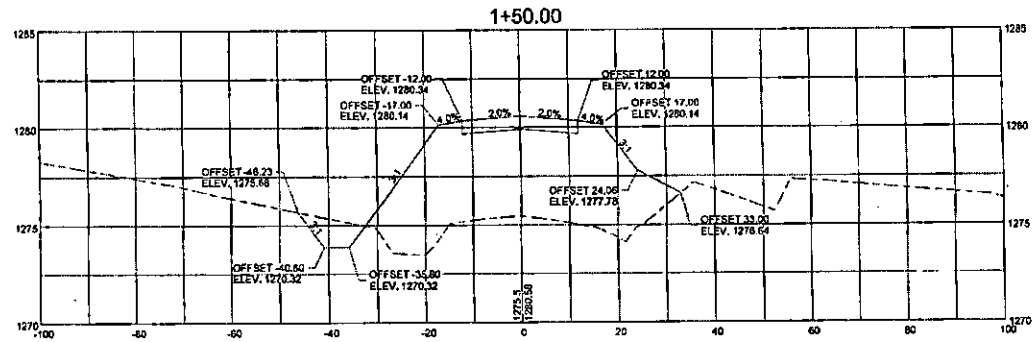

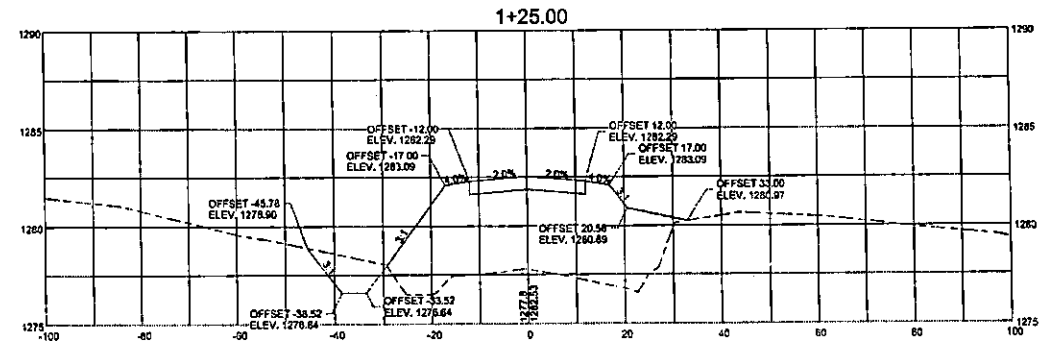

DESIGN FOR 15° SKEW

90'-0 X 30'-0

CONTINUOUS CONCRETE SLAB BRIDGE

CROSS SECTIONS (2 OF 8)

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN TEAM **hgm**

WOODBURY COUNTY | PROJECT NUMBER BRDS-6012(602)--5F-97 | SHEET NUMBER 14

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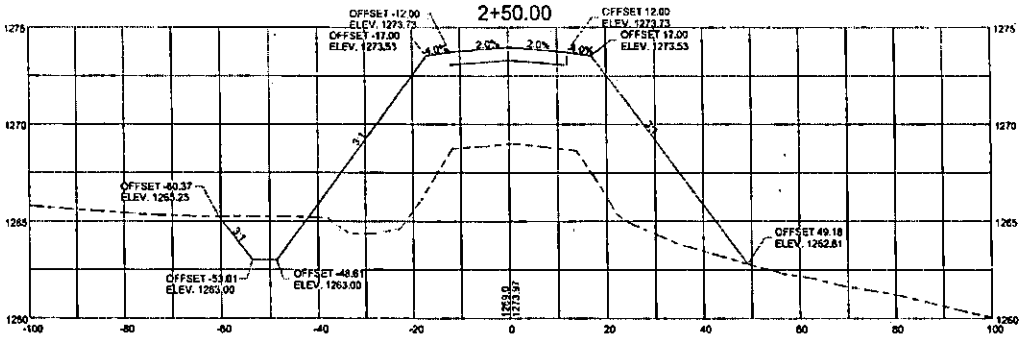

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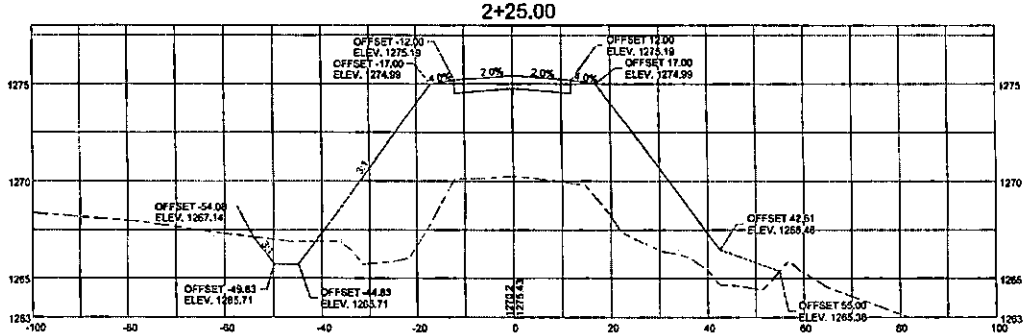

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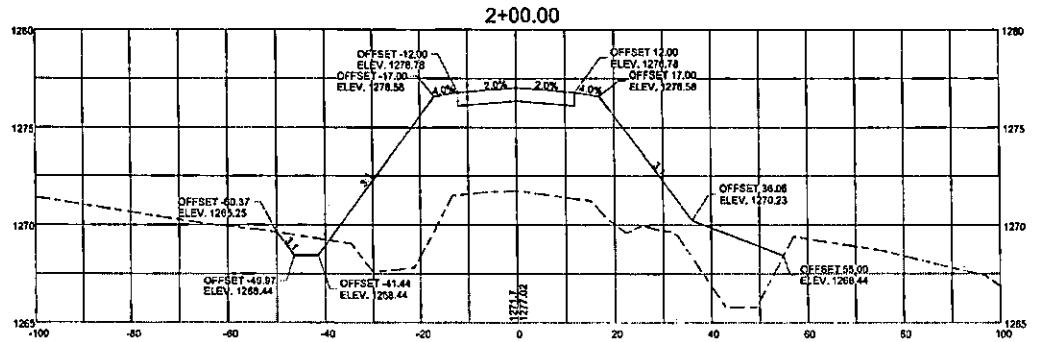

DESIGN FOR 15° SKEW

90'-0 X 30'-0

CONTINUOUS CONCRETE SLAB BRIDGE

CROSS SECTIONS (3 OF 8)

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN TEAM hgm	WOODBURY COUNTY	PROJECT NUMBER BROS-6012(602)--5F-97	SHEET NUMBER 15

XXXXXXXXXSYSTEMTIME XXXXXXXXXUSERNAME XXXXXXXXX

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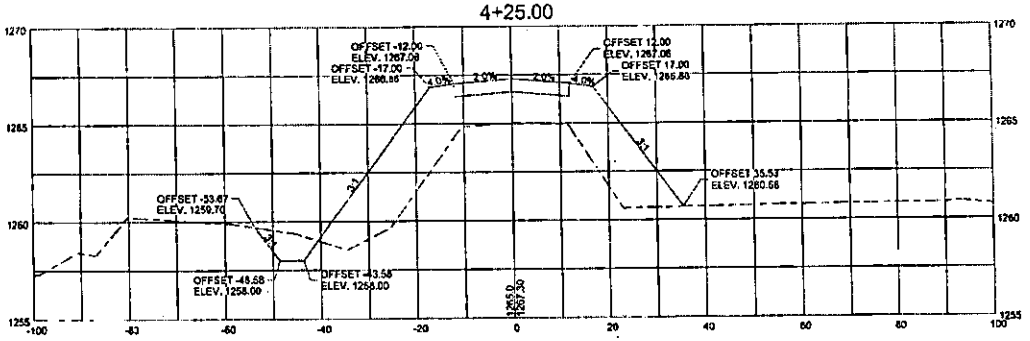

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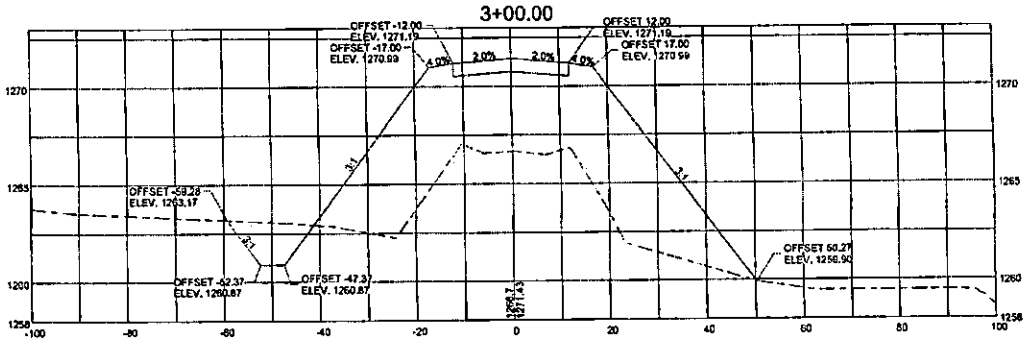

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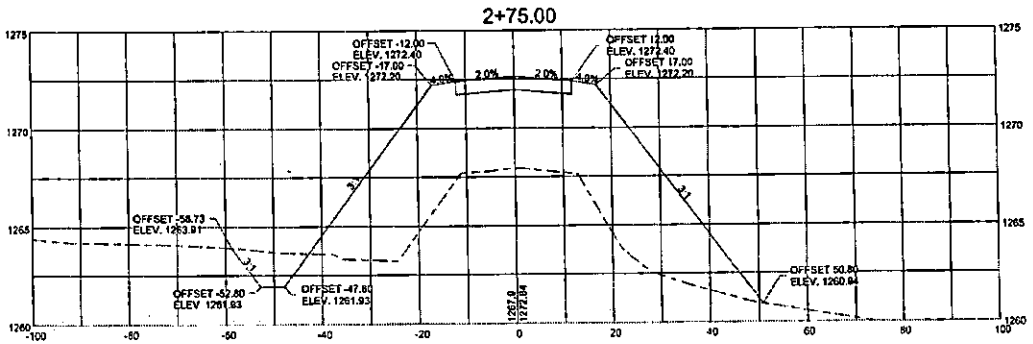


DESIGN FOR 15° SKEW

90'-0 X 30'-0

CONTINUOUS CONCRETE SLAB BRIDGE

CROSS SECTIONS (4 OF 8)

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

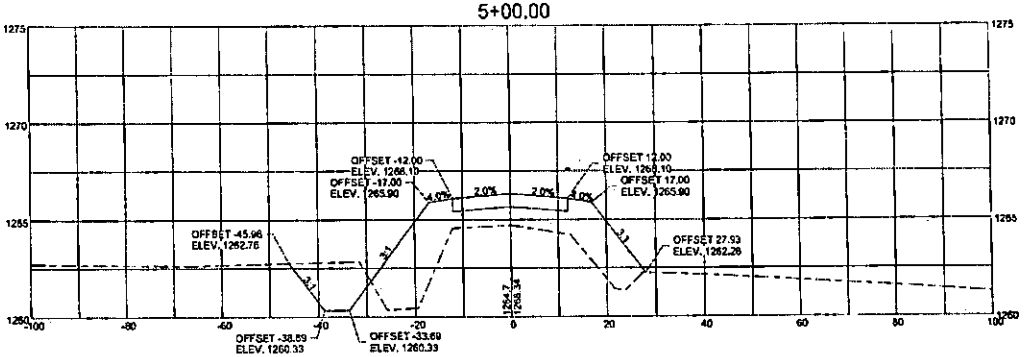
IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN TEAM hgm

WOODBURY COUNTY | PROJECT NUMBER BROS-6012(602)--SF-97 | SHEET NUMBER 16

XXXXXXXXXXXSYSTEMTIME XXXXXXXLSTRNAME XXXXXXXXXXX

5+00.00



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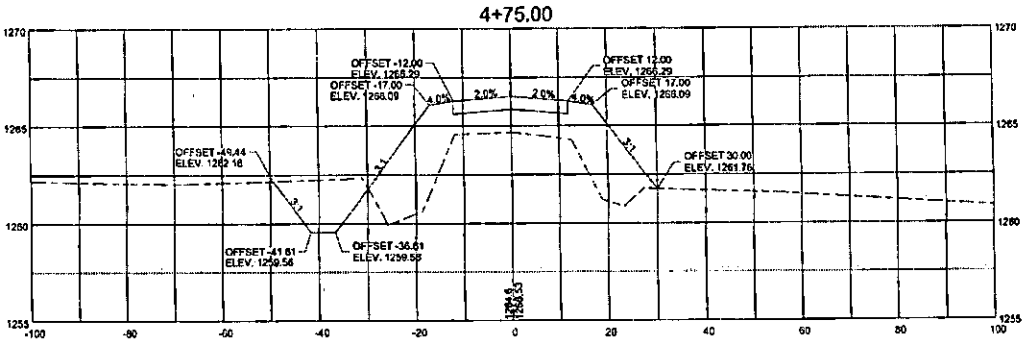

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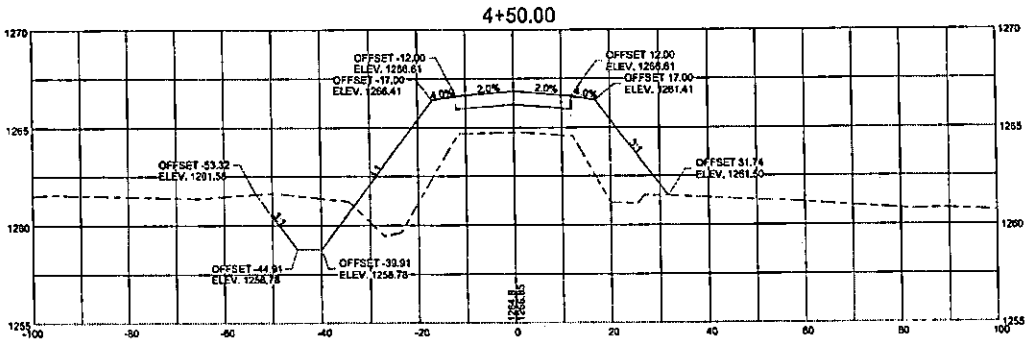

DESIGN FOR 15° SKEW

90'-0 X 30'-0

CONTINUOUS CONCRETE SLAB BRIDGE

CROSS SECTIONS (5 OF 8)

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN TEAM hgm

WOODBURY COUNTY | PROJECT NUMBER BROS-8012(802)--6F-97 | SHEET NUMBER 17

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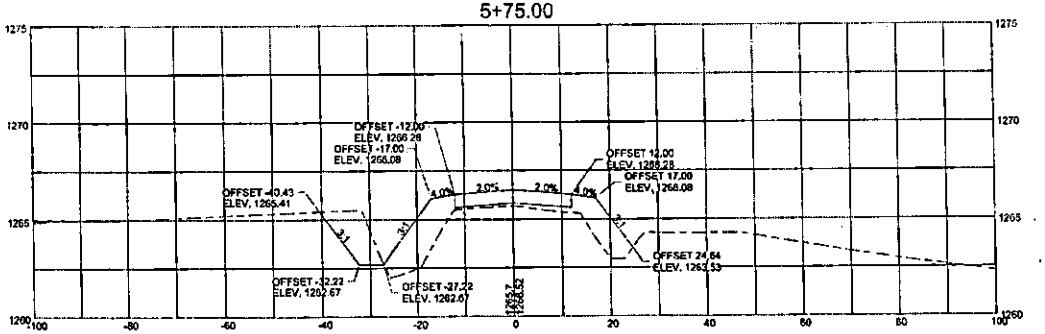

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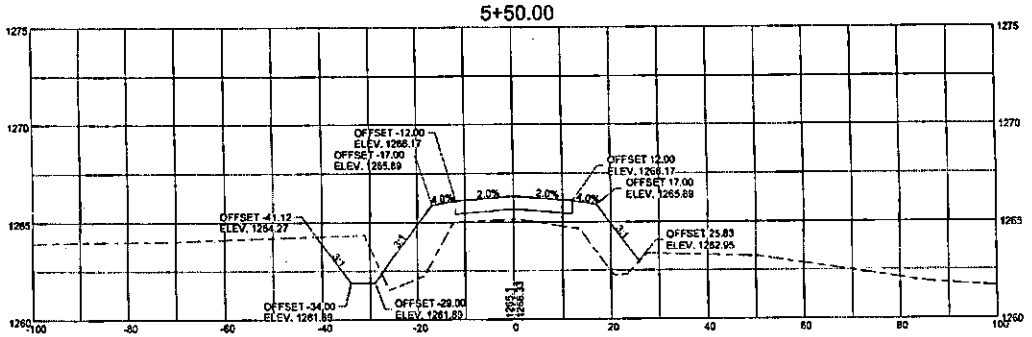

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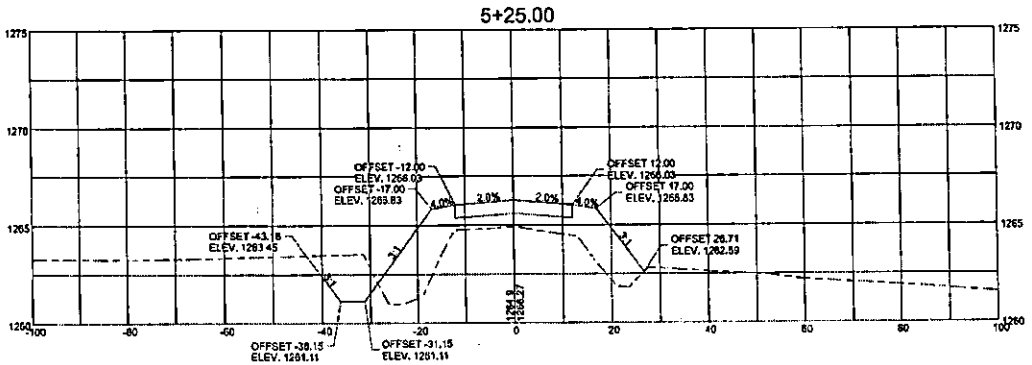

DESIGN FOR 15° SKEW

90'-0 X 30'-0

CONTINUOUS CONCRETE SLAB BRIDGE

CROSS SECTIONS (6 OF 8)

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION • HIGHWAY DIVISION

DESIGN TEAM hgm

WOODBURY COUNTY | PROJECT NUMBER BROS-6012(602)--5F-97 | SHEET NUMBER 18

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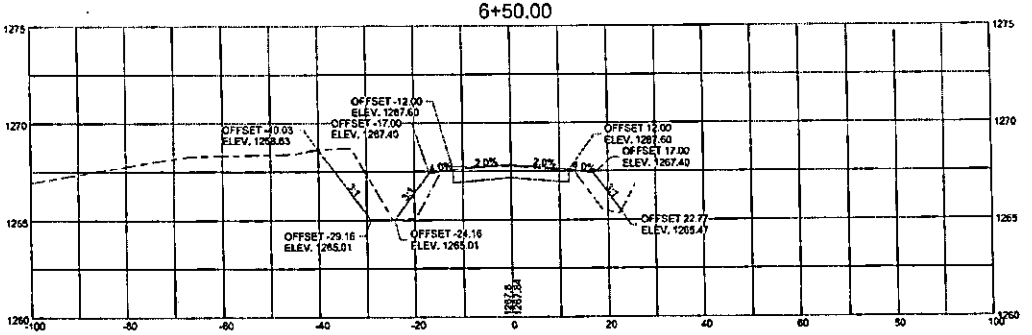

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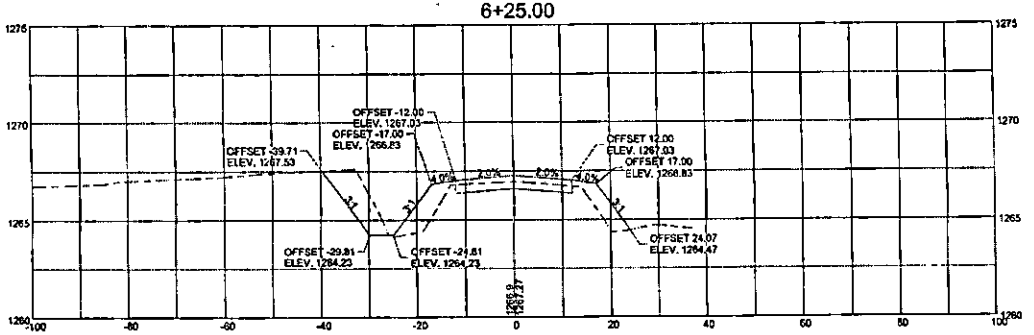

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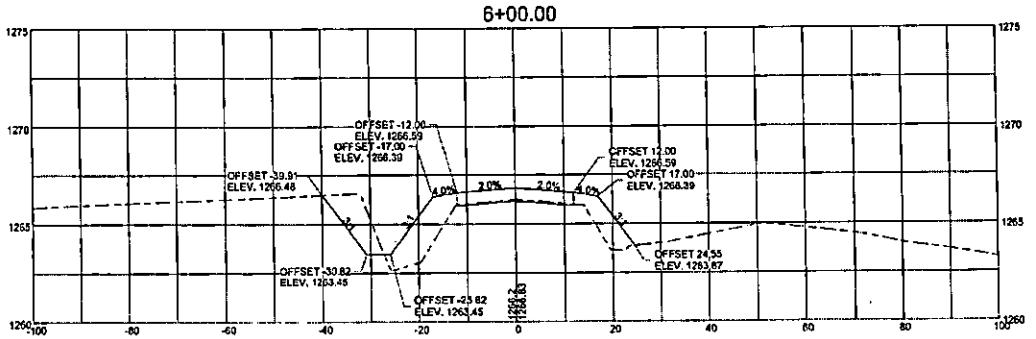

DESIGN FOR 15° SKEW

90'-0 X 30'-0

CONTINUOUS CONCRETE SLAB BRIDGE

CROSS SECTIONS (7 OF 8)

STA. 0+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN TEAM bgm

WOODBURY COUNTY | PROJECT NUMBER BROS-8012(802)--SF-97 | SHEET NUMBER 19

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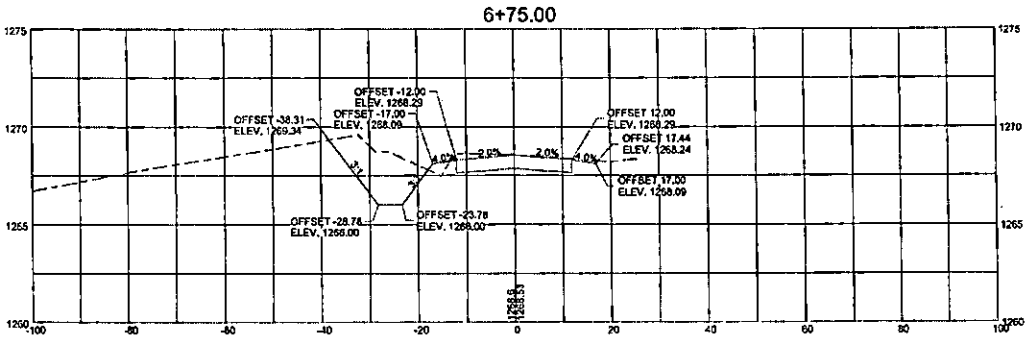

DESIGN FOR 15° SKEW

90'-0 X 30'-0

CONTINUOUS CONCRETE SLAB BRIDGE

CROSS SECTIONS (8 OF 8)

STA. 9+27.43

SEPTEMBER, 2024

WOODBURY COUNTY

IOWA DEPARTMENT OF TRANSPORTATION - HIGHWAY DIVISION

DESIGN TEAM hgm | WOODBURY COUNTY | PROJECT NUMBER BROS-6012(602)--5F-97 | SHEET NUMBER 20

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