

9a

Project Number: L-B(C274)--73-97

SECTION 404 PERMIT AND CONDITIONS

CONSTRUCT THIS PROJECT ACCORDING TO THE REQUIREMENTS OF THE U.S. ARMY CORPS OF ENGINEERS NATIONWIDE PERMIT NO 14 CBAYR-00-P-2020-1049. A COPY OF THIS PERMIT IS AVAILABLE FROM THE IOWA DOT WEBSITE (http://enrpermits.iowadot.gov). THE US ARMY CORPS OF ENGINEERS RESERVES THE RIGHT TO VISIT THE SITE WITHOUT PRIOR NOTICE.

Project Development Division  
PLANS OF PROPOSED IMPROVEMENT ON THE

# SECONDARY ROAD SYSTEM WOODBURY COUNTY BRIDGE REPLACEMENT - C.C.S. PROJECT NO: L-B(C274)--73-97

JEWELL AVE, FROM 110TH ST TO 120TH ST  
S7 T89N R43W

INDEX OF SHEETS	
No.	Description
1	TITLE SHEET
2	LOCATION PLAN
3	ESTIMATE OF QUANTITIES
4	ESTIMATE REFERENCE INFORMATION
5	GENERAL NOTES
6	TABULATIONS
7	PROFILE VIEW
8	PLAN VIEW
9	SITUATION PLAN
10	SOIL BORING LOGS
11	TOP OF SLAB ELEVATIONS
12-19	ROADWAY CROSS SECTIONS

BRIDGE REPLACEMENT CCS

UTILITY CONTACTS

WOODBURY COUNTY REG 712-873-3125 NATE BAUER  
FRONTIER COMMUNICATIONS - 515-269-0783 ELIJAH BULTEN

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, AND SIGNING 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 DEPARTMENT PER 761 OF THE IOWA ADMINISTRATIVE CODE (IAC) CHAPTER 133.

REFER TO THE PROPOSAL FORM FOR LIST OF APPLICABLE SPECIFICATIONS

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

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

ROAD CLOSURES ON THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH ROAD STANDARD 10-252. GUARDRAIL INSTALLATION MUST BE COMPLETE BEFORE THE ROAD IS OPENED TO TRAFFIC.

REFER TO SHEET 2 FOR LOCATION MAP

ROAD STANDARD PLANS					
The following Bridge Standards shall be considered applicable to construction work on this project.					
Identification	Date	Identification	Date	Identification	Date
BA-200	04-18-16	EW-301	10-20-15		
BA-202	10-20-15	SI-173	04-19-16		
BA-221	04-18-17	SI-211	10-18-16		
BA-225	10-17-17	TC-252	04-19-16		
LS-835	10-18-16				

BRIDGE STANDARDS					
The following Standard Plans shall be considered applicable to construction work on this project.					
Identification	Date	Identification	Date	Identification	Date
P10L	07-10	J30-21-05	07-09	J30-43-06	12-08
J30-01-08	06-13	J30-23-06	05-14	J30-44-06	07-16
J30-01A-06	06-13	J30-24-08	07-09	J30-45-06	12-08
J30-08E-06	07-16	J30-34-08	08-13	J30-46-06	09-14
J30-09E-06	07-09	J30-39-06	07-09	J30-47-06	07-16
J30-20-06	06-12	J30-42-08	07-09		

WOODBURY COUNTY  
Letting Date OCTOBER 13, 2020  
PROJECT NO: L-B(C274)-73-97

Approved
Board of Supervisors

	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	Date
	Mark J. Nahra	
	Printed or Typed Name	
	My license renewal date is December 31, 2020	
	Pages or sheets covered by this seal:	
	Pages 1, thru 19	



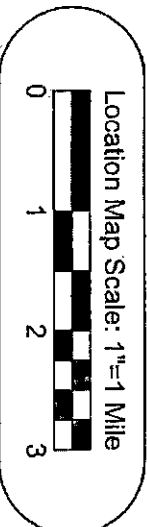
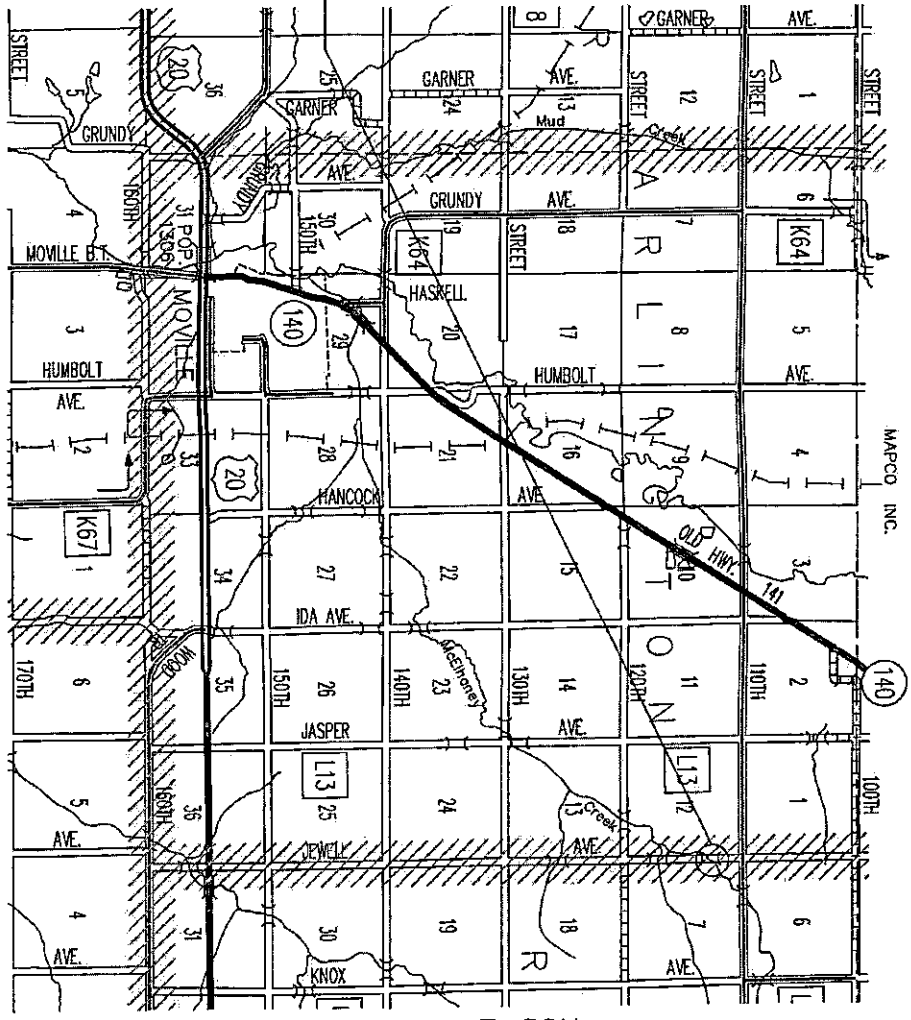
2015 AADT 50 V.P.D.

Woodbury County

Project Number: L-B(C274)-73-97

Sheet 1

L-BIC(274)---73-97  
BRIDGE REPLACEMENT



R-44W  
MAPCO INC.

T-89N

<p>PROJECT NO. L-BIC(274)-73-97 SHEET 2</p>	<p>PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE SEC. 7-T89N-R43W</p> <p>SHEET DESCRIPTION: LOCATION MAP</p>	<p>CDR DRAWN BY: _____ BK DESIGNED BY: _____ M/JN APPROVED BY: _____ DATE: _____ REVISION: _____ DATE: _____</p>	<p>WOODBURY COUNTY ENGINEERS OFFICE</p>
---	--	--	---

**ESTIMATED QUANTITIES**

No.	ITEM CODE	ITEM	UNIT	TOTAL
1.	2101-8850001	CLEARING AND GRUBBING	ACRE	0.50
2.	2102-2625000	EMBANKMENT-IN-PLACE	C.Y.	5282
3.	2102-2710070	EXCAVATION, CLASS 10, ROADWAY AND BORROW	C.Y.	18
4.	2102-2713090	EXCAVATION, CLASS 13, WASTE	C.Y.	5
5.	2104-2710020	EXCAVATION, CLASS 10, CHANNEL	C.Y.	2,350
6.	2312-8260310	GRANULAR SURFACING ON ROAD, CRUSHED CONCRETE	TON	375
7.	2401-8745825	REMOVAL OF EXISTING BRIDGE	LUMP SUM	1
8.	2402-2720000	EXCAVATION, CLASS 20	C.Y.	103
9.	2403-0100010	STRUCTURAL CONCRETE (BRIDGE)	C.Y.	227.6
10.	2404-7775000	REINFORCING STEEL	LB.	102.0
11.	2404-7775005	REINFORCING STEEL, EPOXY COATED	LB.	59,173
12.	2414-6424124	CONCRETE OPEN RAILING, TL-4	LIN. FT.	222.0
13.	2417-1060024	CULVERT, CORRUGATED METAL ROADWAY PIPE, 24 IN. DIA.	LIN. FT.	270
14.	2501-0201042	PILES, STEEL, HP 10x42	LIN. FT.	1,660
15.	2501-5475042	CONCRETE ENCASEMENT OF STEEL H PILES, HP10x42 (P10L TYPE 3)	LIN. FT.	252
16.	2503-3775924	GATE, OUTLET CONTROL, FLAP, 24 IN.	EACH	2
17.	2505-4008420	STEEL BEAM GUARDRAIL BARRIER TRANSITION SECTION, BA-221	EACH	4
18.	2505-4021010	STEEL BEAM GUARDRAIL END ANCHOR, BOLTED	EACH	4
19.	2505-4021722	STEEL BEAM GUARDRAIL TANGENT END TERMINAL, BA-225	EACH	4
20.	2507-3250005	ENGINEERING FABRIC	S.Y.	550
21.	2507-6800061	REVTMENT, CLASS E	TON	670
22.	2518-6910000	SAFETY CLOSURE	EACH	2
23.	2528-8445110	TRAFFIC CONTROL	LUMP SUM	1
24.	2533-4980005	MOBILIZATION	LUMP SUM	1
25.	2601-2634100	MULCHING	ACRE	0.50
26.	2601-2636043	SEEDING AND FERTILIZING (RURAL)	ACRE	0.50
27.	2602-0000020	SILT FENCE	LIN. FT.	800

**SUMMARY OF BRIDGE QUANTITIES**

ITEM	UNITS	SUPER STRUCTURE	ABUT. NO. 1 FOOTING	PIER NO. 1	PIER NO. 2	ABUT. NO. 2 FOOTING	TOTALS
EXCAVATION CLASS 20	C.Y.		48			50	98
STRUCTURAL CONCRETE (BRIDGE)	C.Y.	*205.4	11.1			11.1	227.6
REINFORCING STEEL	LBS		51.0			51.0	102.0
REINFORCING STEEL, EPOXY COATED	LBS	56,159	1,507.0			1,507.0	59,173
CONCRETE OPEN RAILING, TL-4	LF	222.0					222.0
HP10x42 STEEL FRICTION PILING	LF		5 AT 70 = 350	9 AT 70 = 630	9 AT 70 = 630	5 AT 70 = 350	1560
CONCRETE ENCASEMENT OF STEEL "H" PILES, HP 10x42 (P10A TYPE 3)	LF			9 AT 14 = 126	9 AT 14 = 126		252

\* NOTE - INCLUDES ABUTMENT WINGS & PAVING BLOCKS

COR:	DATE:
DRAWN BY:	REVISION:
CHK:	DATE:
DESIGNED BY:	REVISION:
MLJN:	DATE:
APPROVED BY:	REVISION:
DATE:	REVISION:

BRIDGE REPLACEMENT ON JEWELL AVE  
SEC. 7-T89N-R43W  
ESTIMATE OF QUANTITIES



**GENERAL NOTES:**

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

THE ENGINEER MAKES NO GUARANTEE THAT THE UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE ENGINEER FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL CONTACT IOWA ONE-CALL AT 1-800-292-8989 FOR UTILITY RELOCATES.

THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES (PUBLIC AND PRIVATE) AT LEAST 20 DAYS IN ADVANCE OF THE ACTUAL STARTING DATE OF CONSTRUCTION. THE CONTRACTOR IS TO DETERMINE ACTUAL LOCATION OF UTILITIES IN THE FIELD. THE CONTRACTOR IS TO USE DUE CAUTION IN WORKING OVER AND AROUND ALL UTILITY LINES. BREAKS IN THE UTILITY LINES DUE TO THE CONTRACTOR ARE TO BE REPAIRED OR REPLACED WITHOUT COST TO THE OWNER OR ENGINEER.

OTHER EXISTING UNDERGROUND INSTALLATIONS AND STRUCTURES ARE INDICATED ON THE DRAWINGS ACCORDING TO THE INFORMATION FURNISHED TO THE ENGINEER BY OTHERS. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF SUCH INFORMATION. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO LOCATE ALL EXISTING UNDERGROUND INSTALLATIONS AND STRUCTURES IN THE VICINITY OF THE WORK TO BE DONE BY PROSPECTING IN ADVANCE OF EXCAVATION.

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

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.

**SCHEDULE OF OPERATION**

THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, PRIOR TO THE PRECONSTRUCTION CONFERENCE, A WRITTEN SCHEDULE FOR PERFORMANCE OF THE WORK ITEMS. 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.

EROSION CONTROL (DISTURBED AREAS)	232-8 10-18-11
ENSURE THE TOP 6 INCHES OF THE DISTURBED AREAS ARE FREE OF ROCK AND DEBRIS AND ARE SUITABLE FOR THE ESTABLISHMENT OF VEGETATION, SUBJECT TO THE ENGINEER'S APPROVAL.	

EROSION CONTROL (RURAL SEEDING)	
FOLLOWING THE COMPLETION OF WORK, PLACE SEED, FERTILIZER, AND MULCH ON THE PORTION OF THE AREA LYING WITHIN THE COUNTY RIGHT OF WAY AS FOLLOWS:	
SEEDING: PERMANENT SEEDING FOR RURAL AREA AS PER THE IDOT CURRENT SPECIFICATIONS.	
FERTILIZER: 17 LBS. OF 13-13-13 (OR EQUIVALENT) COMMERCIAL FERTILIZER PER 1000 SQ. FT.	
MULCH: 70 LBS. OF DRY CEREAL STRAW PER 1000 SQ. FT. CONSOLIDATE ALL MULCH INTO THE SOIL USING A MULCH STABILIZER.	
PREPARED THE SEEDBED AND FURNISHING AND APPLYING SEED, FERTILIZER, AND MULCH IS INCIDENTAL TO MOBILIZATION. NO EXTRA COMPENSATION WILL BE ALLOWED.	

DEMOLITION (BRIDGE REMOVAL)	271-9 05-27-84
A SCRAPE SAMPLE WAS TAKEN FROM TWO AREAS OF THIS BRIDGE TO GET AN INDICATION OF THE EXISTENCE OF THE LEVEL OF TOTAL CHROMIUM AND TOTAL LEAD. ANALYSIS OF TOTAL LEAD ON THIS SAMPLE WERE IN A RANGE OF 3,700 TO 120,000 PARTS PER MILLION (PPM). ANALYSIS OF TOTAL CHROMIUM ON THESE SAMPLES WERE IN A RANGE OF 28 TO 480 PPM. THESE ANALYSIS 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 ENGINEER SHOULD NOT RELY ON THE DEPARTMENT'S TESTING AND ANALYSIS FOR ANY PURPOSE OTHER THAN AS AN INDICATION OF THE EXISTENCE OF THESE TWO TOXIC CONSTITUENTS. AN ASBESTOS INSPECTION WAS CONDUCTED AND THE RESULTS WERE NEGATIVE.	

**DRIVEN PILE NOTES:**

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

**SOUTH ABUTMENT**

THE CONTRACT LENGTH OF 70 FEET FOR THE SOUTH ABUTMENT PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 91 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.78.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR SOUTH ABUTMENT PILES IS 80 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY TO ACHIEVE BEARING, THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 70 TONS AT ONE-DAY OR LATER 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 70 FEET FOR THE SOUTH PIER PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 96 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.78.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR SOUTH PIER PILES IS 63 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY TO ACHIEVE BEARING, THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 74 TONS AT ONE-DAY OR LATER 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 70 FEET FOR THE NORTH PIER PILES IS BASED ON A COHESIVE SOIL CLASSIFICATION, A TOTAL FACTORED AXIAL LOAD PER PILE (PU) OF 96 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.78.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR NORTH PIER PILES IS 83 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY TO ACHIEVE BEARING, THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 74 TONS AT ONE-DAY OR LATER 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 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 91 KIPS, AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.65.

THE NOMINAL AXIAL BEARING RESISTANCE FOR CONSTRUCTION CONTROL WAS DETERMINED FROM A COHESIVE SOIL CLASSIFICATION AND A GEOTECHNICAL RESISTANCE FACTOR (PHI) OF 0.78.

THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE FOR NORTH ABUTMENT PILES IS 80 TONS AT END OF DRIVE. IF RETAPS ARE NECESSARY TO ACHIEVE BEARING, THE REQUIRED NOMINAL AXIAL BEARING RESISTANCE IS 70 TONS AT ONE-DAY OR LATER 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 STRESSES:**

DESIGN STRESSES FOR THE FOLLOWING MATERIALS ARE IN ACCORDANCE WITH AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS 3rd Ed, SERIES OF 2004

REINFORCING STEEL IN ACCORDANCE WITH LRFD AASHTO SECTION 5, GRADE 60. CONCRETE IN ACCORDANCE WITH LRFD AASHTO SECTION 5,  $f_c = 4.0$  KSI.

FOR 30' STANDARD CONTINUOUS CONCRETE SLAB, SEE SHEETS H30SI-21-12, H30SI-23-12, H30SI-25-12, AND H30SI-27-12.

**SPECIFICATIONS:**

DESIGN:  
AASHTO, SERIES OF 2004 WITH INTERIM 2005

CONSTRUCTION:  
IOWA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR HIGHWAY AND BRIDGE CONSTRUCTION, SERIES 2012, PLUS APPLICABLE GENERAL SUPPLEMENTAL SPECIFICATIONS, DEVELOPMENTAL SPECIFICATIONS, SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS SHALL APPLY TO CONSTRUCTION WORK ON THIS PROJECT

WOODBURY COUNTY  
ENGINEERS OFFICE

CDR	DATE
DRAWN BY:	
CHK	REVISION
DESIGNED BY:	
MJN	DATE
APPROVED BY:	

BRIDGE REPLACEMENT ON JEWELL AVE  
SEC. 7-189N-R43W

GENERAL NOTES  
SHEET DESCRIPTION:

PROJECT NO.  
L-8(C274)-73-87

SHEET  
5

108-BA  
10-16-18

STEEL BEAM GUARDRAIL AT CONCRETE BARRIER OR BRIDGE RAIL END SECTION

Possible Standards: BA-200, BA-201, BA-202, BA-205, BA-206, 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.

No.	Direction of Traffic O = Outside M = Median	Side ①	Station	Offset	Layout Lengths						Defineators and Object Markers ②				Bid Items										Remarks	
					BA-250, BA-260, LS-630, OR LS-635						SI-211	Object Marker SI-173			Bolted End Anchor	Post Adapter	Steel Beam Guardrail	BA-250 or LS-630				BA-260 or LS-635				
					VT1		VF	VT2		ET		Type 1	Type 2	Type 3				Barrier Transition Section	End Terminal				Barrier Transition Section	End Terminal		
					White	OM2-2	OM-3L	OM-3R	BA-202	BA-210			BA-200	BA-201					Tangent	Flared	Tangent	Flared				BA-221
Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Lin. Ft.	Station	Type	Type	Each	Each	Each	Each	Type	Each	Each	Lin. Ft.	Each	Each	Each	Each	Each	Each	Each			
1	S	O	6+46	15.62' LT.	25.00	-	-	35.17	-	-	3	-	-	1	-	A	1	-	-	-	-	-	-	-	1	1
2	N	O	6+46	15.62' RT.	25.00	-	-	35.17	-	-	3	-	-	1	-	A	1	-	-	-	-	-	-	-	1	1
1	S	O	7+54	15.62' LT.	25.00	-	-	35.17	-	-	3	-	-	1	-	A	1	-	-	-	-	-	-	-	1	1
2	N	O	7+54	15.62' RT.	25.00	-	-	35.17	-	-	3	-	-	1	-	A	1	-	-	-	-	-	-	-	1	1

CDR	DATE
DRAWN BY:	REVISION
DESIGNED BY:	
CHKD BY:	
APPROVED BY:	

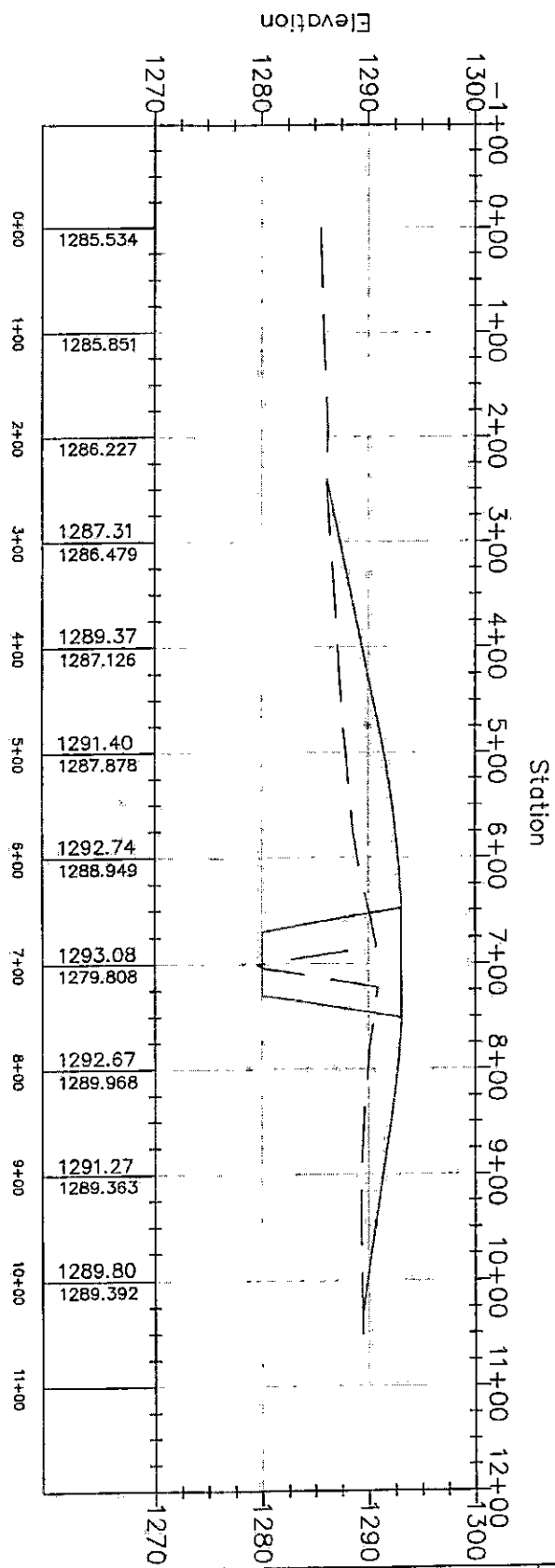
TABULATION OF SILT FENCES  
Refer to EC-201

Location		Side	Length (Ln. Ft.)	Remarks
Station to Station	Station			
4+65	6+50	LT.	200	
4+65	6+50	RT.	200	
7+50	9+35	LT.	200	
7+50	9+35	RT.	200	

TABULATION OF SAFETY CLOSURES  
Refer to Section 2518 of the Standard Specifications

Station	Closure Type		Remarks
	Road Quantity	Hazard Quantity	
2+00	1.0		
10+50	1.0		
Totals	2.0		

BRIDGE REPLACEMENT ON JEWELL AVE  
SEC. 7-T85N-R43W  
PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE  
SHEET DESCRIPTION: TABULATIONS

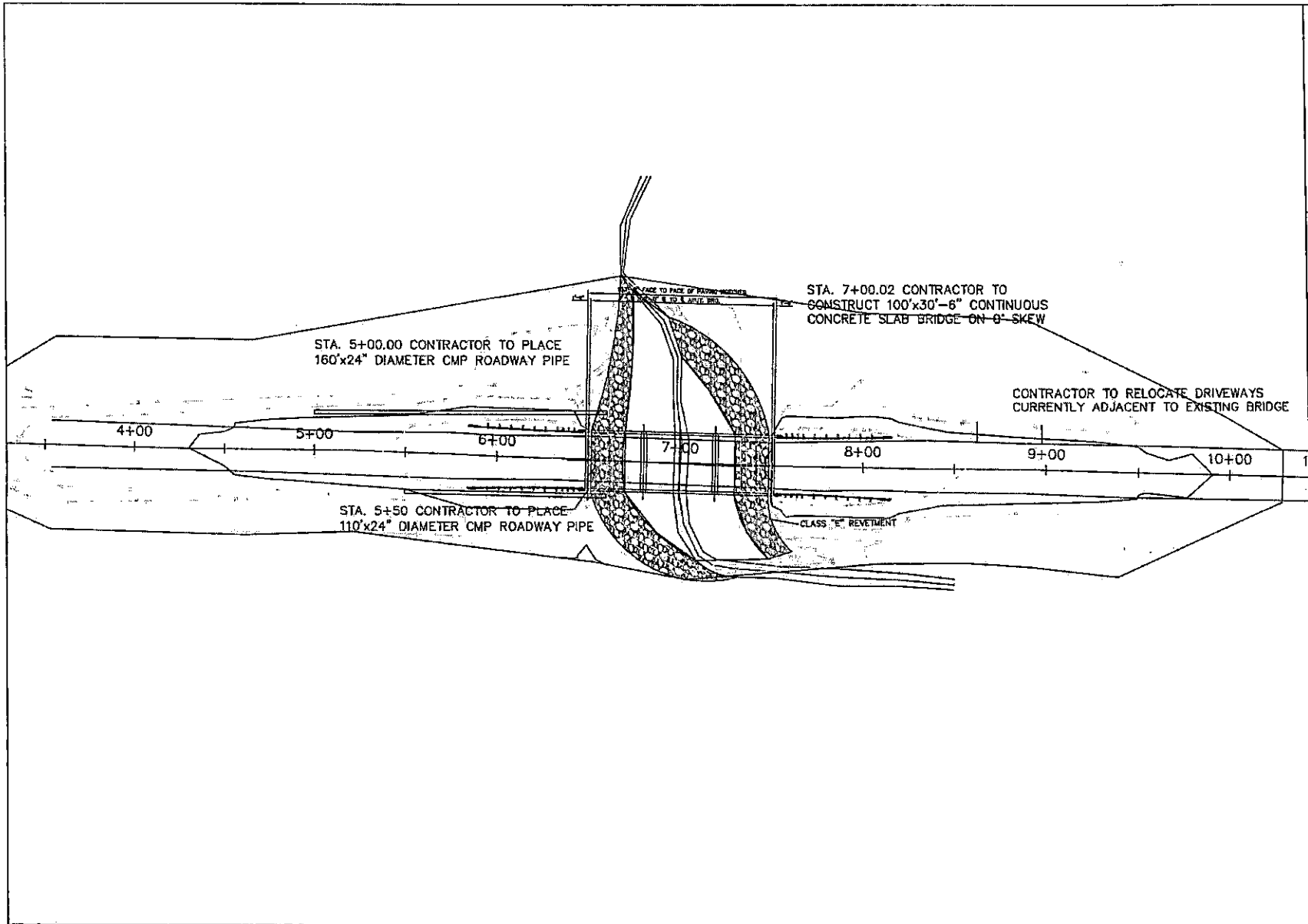


PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE  
 SEC. 7-T89N-R43W  
 SHEET DESCRIPTION: PROFILE VIEW

CDR \_\_\_\_\_  
 DRAWN BY: BK \_\_\_\_\_  
 DESIGNED BY: M.J.N \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_  
 DATE: \_\_\_\_\_ REVISION: \_\_\_\_\_ DATE: \_\_\_\_\_

WOODBURY COUNTY  
 ENGINEERS OFFICE

PROJECT NO. L&R(02)79-73.87  
 SHEET 7



WOODBURY COUNTY  
ENGINEERS OFFICE

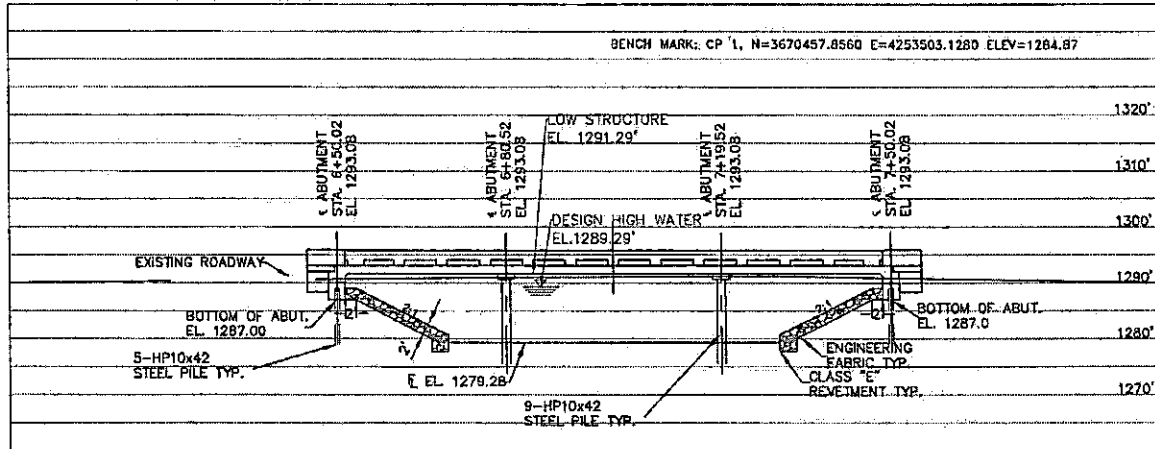
CDR	DATE	REVISION	DATE

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE  
SEC. 7-T88N-R43W

SHEET DESCRIPTION: PLAN VIEW

PROJECT NO.  
L-B(C274)-73-67  
SHEET  
8

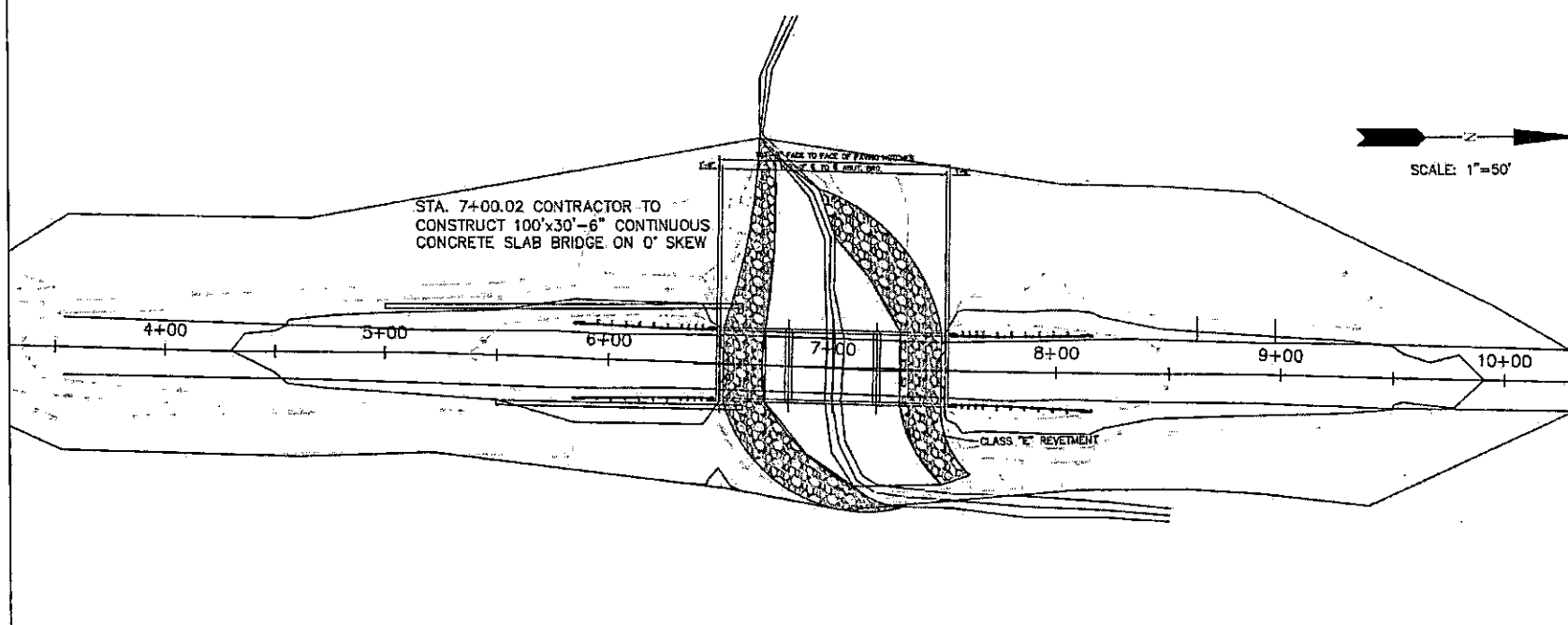
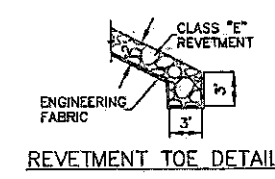




**LOCATION**  
 WOODBURY COUNTY  
 T89N, R43W, SECTION 7  
 RUTLAND TOWNSHIP

**HYDRAULIC DATA**  
 DRAINAGE AREA = 4.42 SQ. MI.  
 STREAM SLOPE = 30.8 FT./MI.

Q10 = 1,260 CFS STAGE = 1289.29'  
 Q25 = 1,890 CFS STAGE = 1289.78'  
 Q50 = 2,410 CFS STAGE = 1290.13'  
 Q100 = 2,960 CFS STAGE = 1290.45'



WOODBURY COUNTY  
ENGINEERS OFFICE

DATE	
REVISION	
DATE	
APPROVED BY:	
DESIGNED BY:	
DRAWN BY:	

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE  
 SEC. 7-T89N-R43W

SHEET DESCRIPTION: SITUATION PLAN

PROJECT NO.  
L-B(0274)-73-97

SHEET  
9



**LOG OF EXPLORATORY BORING**  
Sheet 1 of 1

Job Number: G8128  
Project: Jewell Ave Bridge  
L-B/C274-73-97  
Date Started: 8/14/20  
Date Completed: 8/14/20

Boring No.: S-1  
Boring Location: Woodbury County, IA  
Ditch Type: Hollow Stem  
Ground Elev.: \_\_\_\_\_

Depth Feet	Graphic Log	Soils 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 %	Cone Penetrometer (Blows/1-3/4")
0-5	16-inch Gravel Layer	STIFF SILTY CLAY, Dark Brown, Fill	CL	6-3-3 N=8									
5-10		SILTY SAND, Medium Brown, Fill	SC	2-1-2 N=3									
10-15		STIFF SILTY CLAY, Dark Gray, Aluminum	CL	2-2-3 N=5									
15-20		GRAVELLY SAND, Grayish Yellow Brown, Aluminum	SW	1-2-3 N=5									
20-25		(Rocks)		0-11-13 N=24									
25-30		(Rocks)		15-11- N=24									
30-35		VERY FIRM GLACIAL CLAY, Dark Gray	CL	10-10- N=24									
35-40				6-10-11 N=24									
40-45				7-12-21 N=33									
45-50				5-3-10 N=18									
50-55				6-11-13 N=24									
55-60				4-3-11 N=18									
60-65		GLACIAL MATERIAL, Dark Gray	CL	6-16-19 N=33									
65-70				8-19-22 N=40									
70-75				16-26- N=63									
75-80		(Sand Lense, Medium Gray)		16-34- N=65									
80-85				14-43- N=28									
85-90				14-52- N=28									
90-95				25-12- N=45									
95-100		END OF BORING AT 90 FEET FREE WATER WAS NOT ENCOUNTERED AT TIME OF DRILLING											

PROJECT NO.  
L-B/C274-73-97  
SHEET  
10

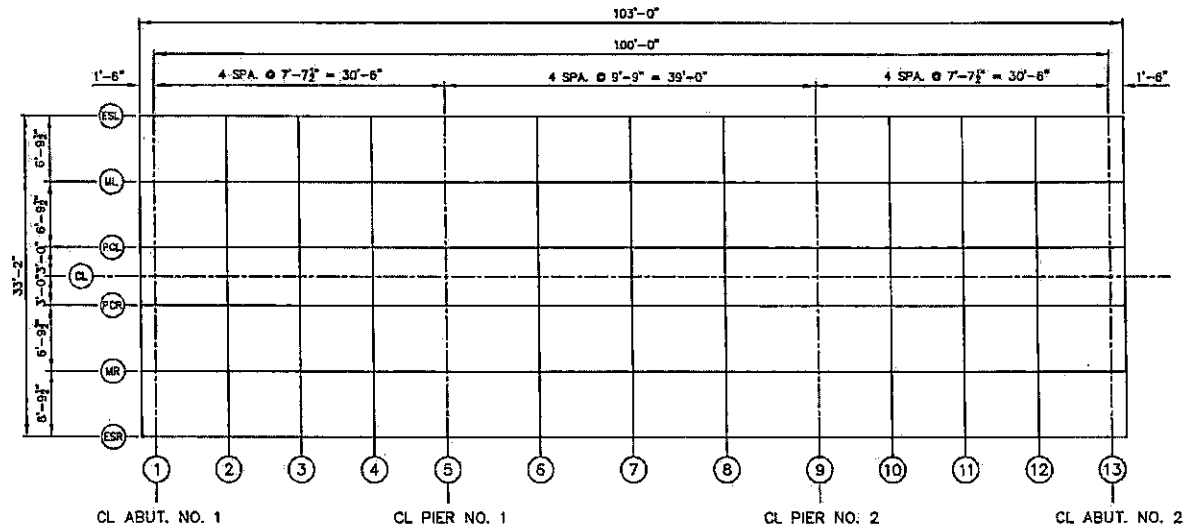
PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE  
SEC. 7-T89N-R43W

SHEET DESCRIPTION: BORING LOGS

COR  
DRAWN BY: \_\_\_\_\_  
SK  
DESIGNED BY: \_\_\_\_\_  
MUN  
APPROVED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_ REVISION: \_\_\_\_\_ DATE: \_\_\_\_\_

**WOODBURY COUNTY  
ENGINEERS OFFICE**

TOP OF SLAB ELEVATIONS															
LOCATION	☉ SOUTH ABUTMENT BEARING					☉ PIER 1					☉ PIER 2				☉ NORTH 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		
ESR (EDGE OF SLAB LEFT)	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78		
MR (MIDPOINT LEFT)	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91		
PCR (PARABOLIC CROWN LEFT)	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05		
☉ (☉ BRIDGE & ROADWAY)	1293.08	1293.08	1293.08	1293.08	1293.08	1293.08	1293.08	1293.08	1293.08	1293.08	1293.08	1293.08	1293.08		
PCL (PARABOLIC CROWN RIGHT)	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05	1293.05		
ML (MIDPOINT RIGHT)	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91	1292.91		
ESL (EDGE OF SLAB RIGHT)	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78	1292.78		



LOCATIONS FOR TOP OF SLAB ELEVATIONS  
NO SCALE

**NOTE:**  
Slab elevations do not include form camber required for slab replacement. See IDOT Bridge Standard J30-05E-06 for details

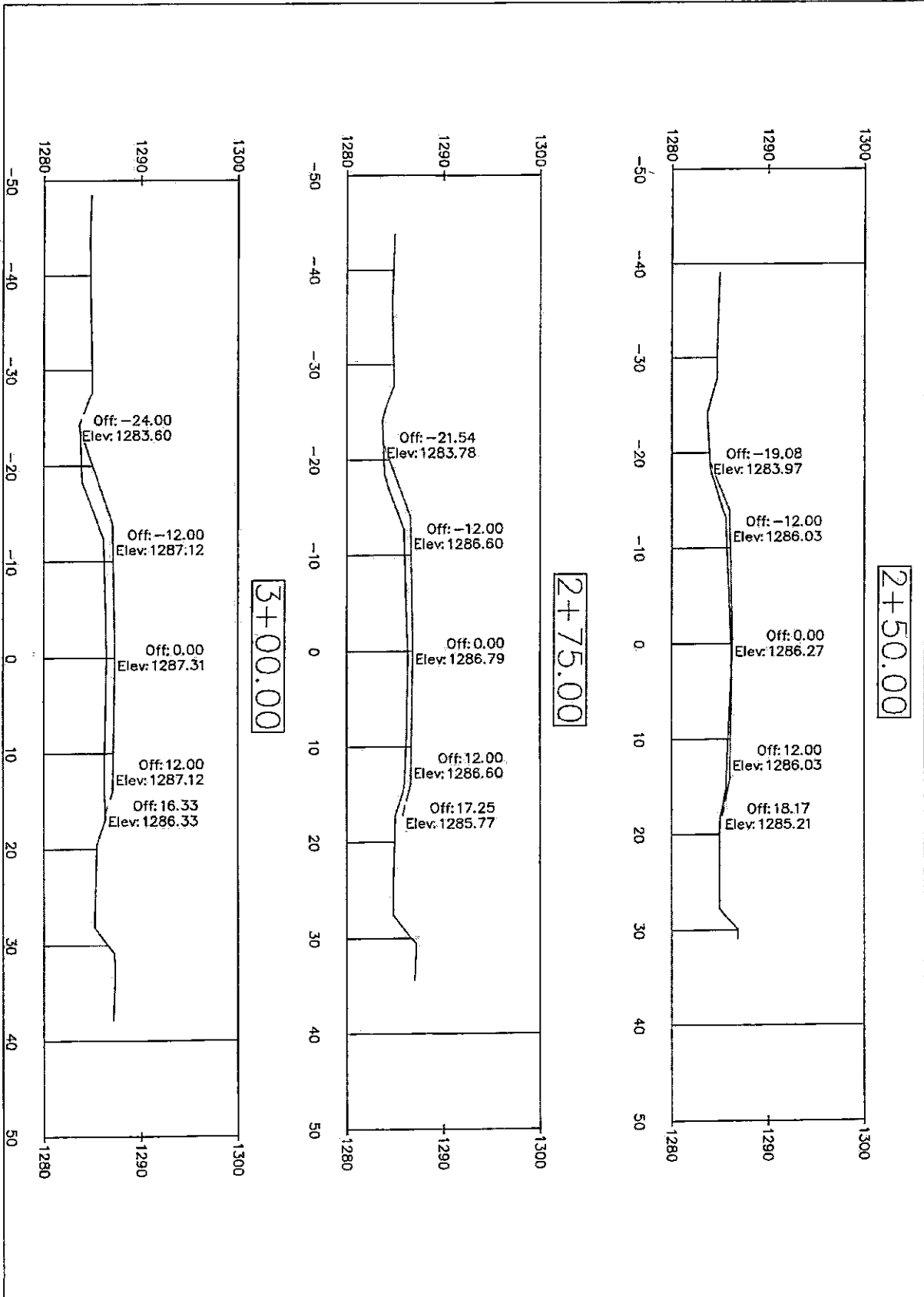
COR	DATE
DRAWN BY:	REVISION
CHK	DATE
DESIGNED BY:	DATE
M.J.N.	DATE
APPROVED BY:	DATE

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE  
SEC. 7-T68N-R43W

SHEET DESCRIPTION: TOP OF SLAB ELEVATIONS

PROJECT NO.  
L-B(CZ74)-73-87

SHEET

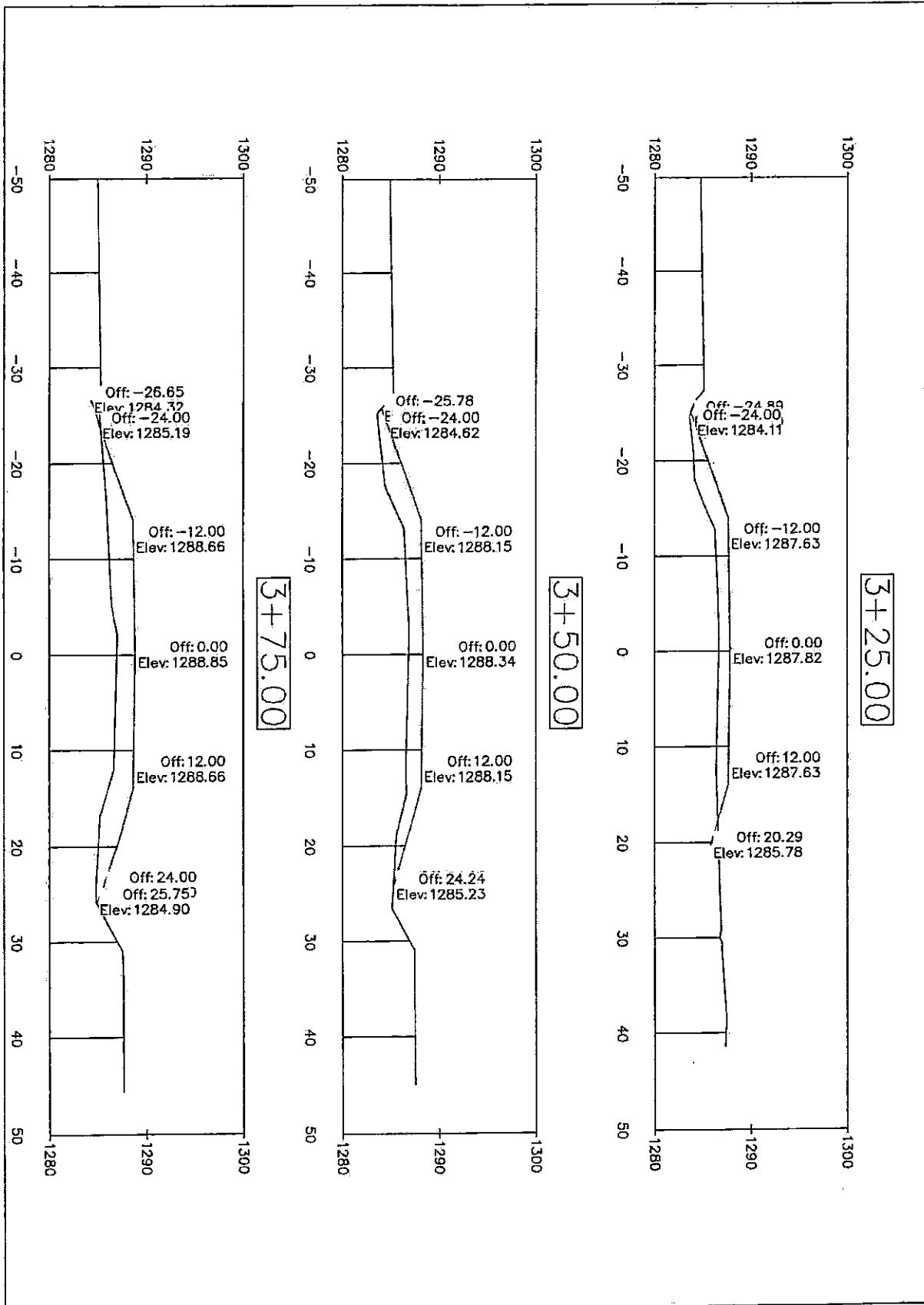


PROJECT NO.  
L-B/C2741-73-97  
SHEET  
12

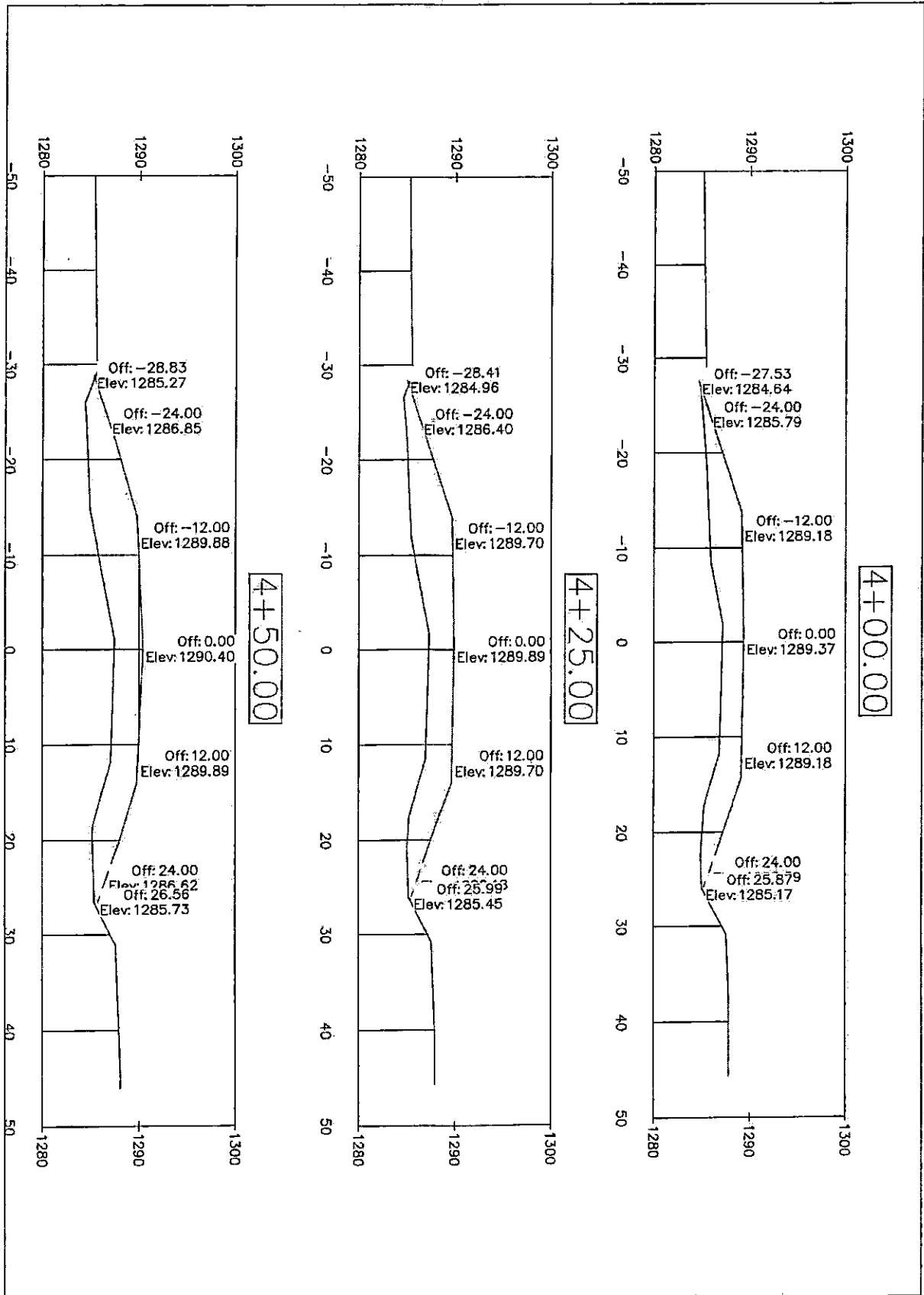
PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE  
SEC. 7-T89N-R43W  
SHEET DESCRIPTION: ROADWAY CROSS-SECTIONS

CDR  
DRAWN BY: \_\_\_\_\_  
BK  
DESIGNED BY: \_\_\_\_\_  
MJM  
APPROVED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_ REVISION: \_\_\_\_\_ DATE: \_\_\_\_\_

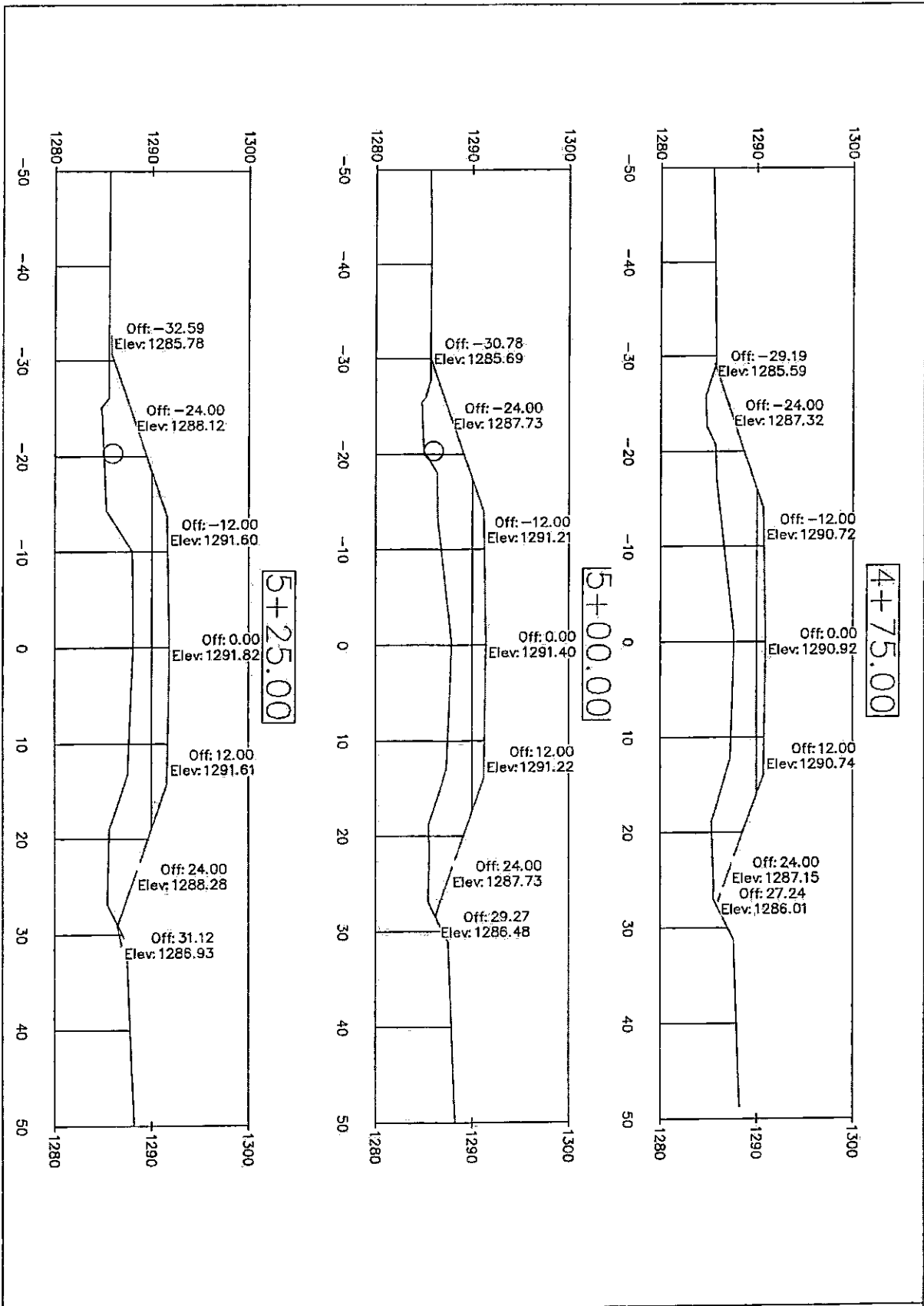
WOODBURY COUNTY  
ENGINEERS OFFICE



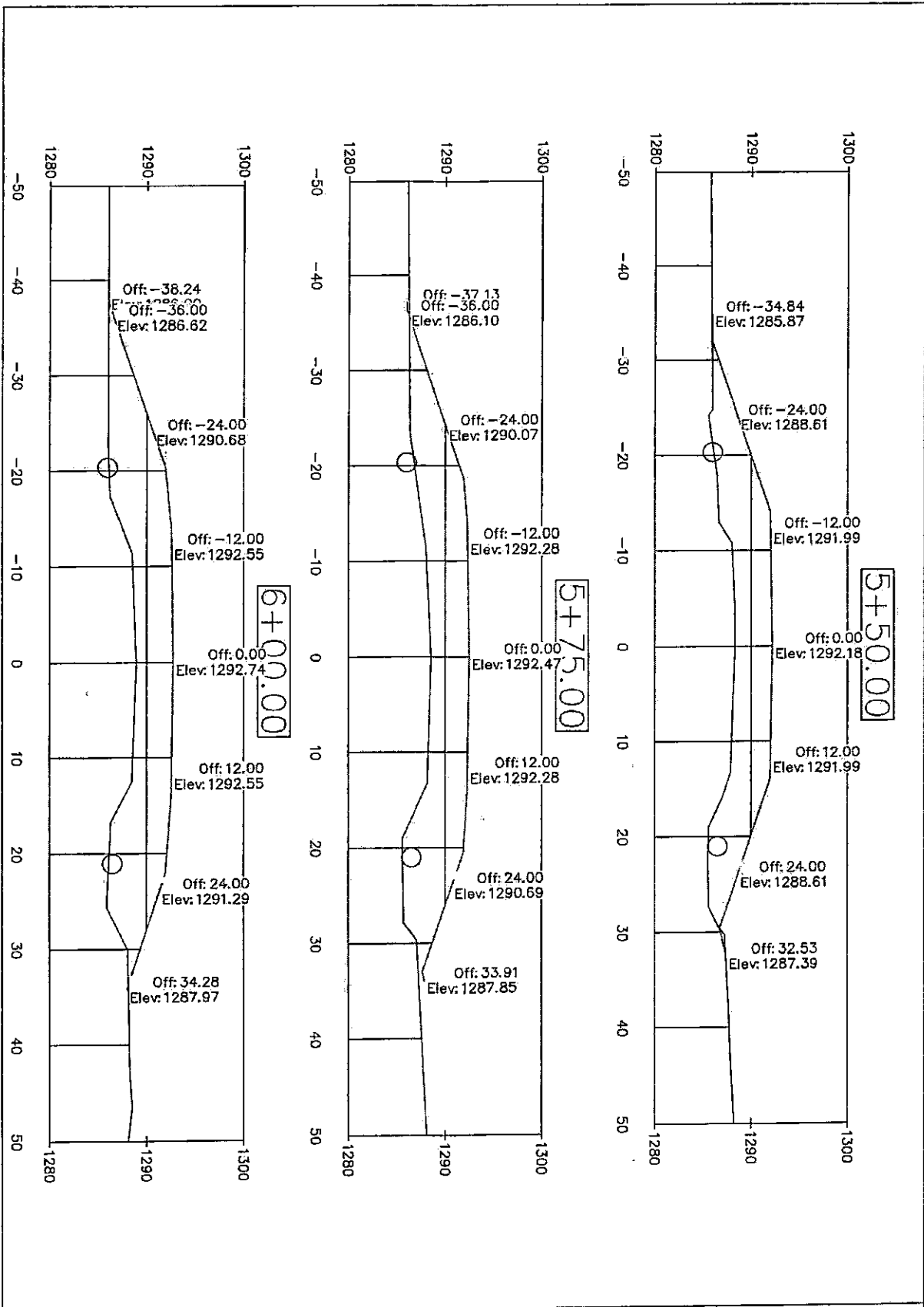
PROJECT NO. L-8(C)274-73-97 SHEET <b>13</b>	PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE SEC. 7-T89N-R43W SHEET DESCRIPTION: ROADWAY CROSS-SECTIONS	CDR _____ DRAWN BY: _____ BIC _____ DESIGNED BY: _____ MJM _____ APPROVED BY: _____ DATE: _____ REVISION DATE: _____	<b>WOODBURY COUNTY</b> ENGINEERS OFFICE
--	--	--	--



PROJECT NO. L-81027-9-73-87 SHEET 14	PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE SEC. 7-T89N-R43W	CDR _____ DRAWN BY: _____ BK _____ DESIGNED BY: _____ M.J.N _____ APPROVED BY: _____ DATE: _____	WOODBURY COUNTY ENGINEERS OFFICE
	SHEET DESCRIPTION: ROADWAY CROSS-SECTIONS	REVISION _____ DATE: _____	

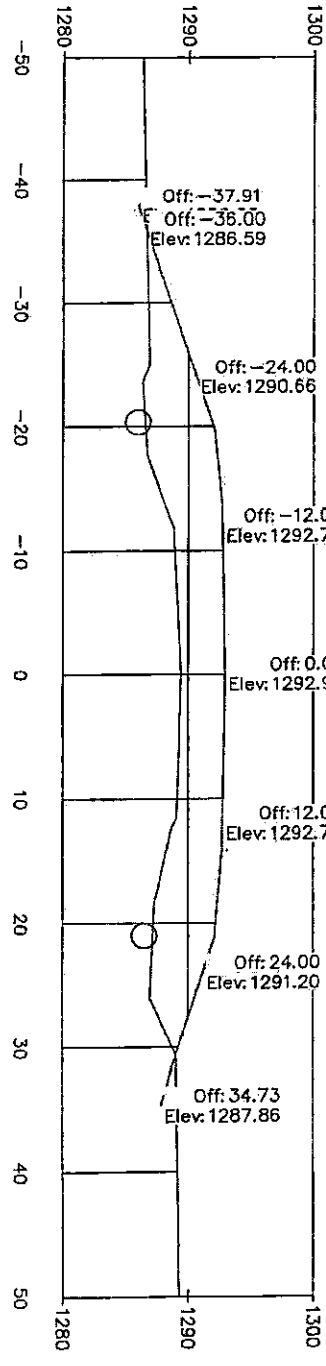
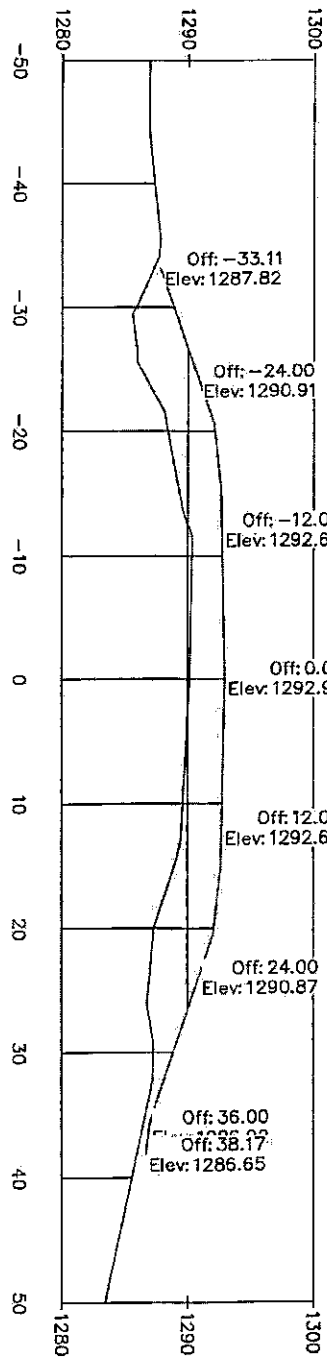
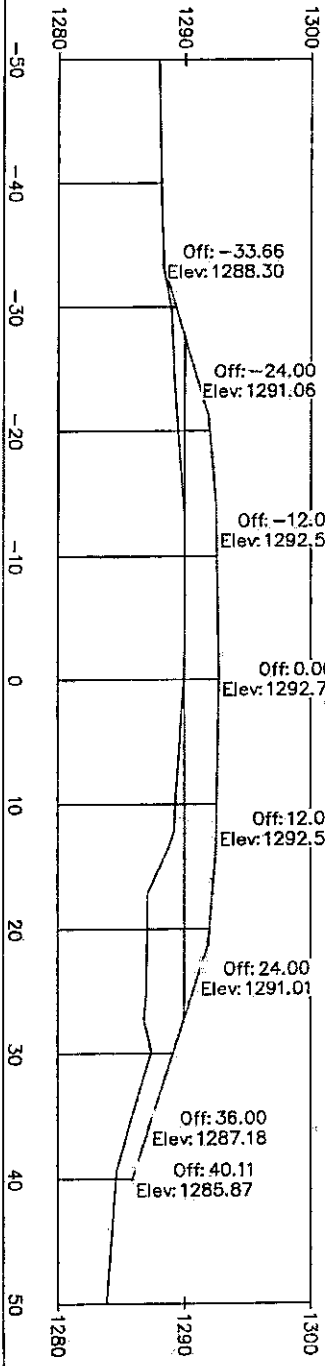


PROJECT NO. L-B/C274-73-97 SHEET 15	PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE SEC. 7-T89N-R43W	CDR _____ DRAWN BY: BK _____ DESIGNED BY: MJN _____ APPROVED BY: _____ DATE: _____ REVISION: _____ DATE: _____	<b>WOODBURY COUNTY</b> <b>ENGINEERS OFFICE</b>
	SHEET DESCRIPTION: ROADWAY CROSS-SECTIONS		



PROJECT NO. L-B/C2741-73.97 SHEET 16	PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE SEC. 7-T89N-R43W	CDR _____ DRAWN BY: _____ BK _____ DESIGNED BY: _____ MJN _____ APPROVED BY: _____ DATE: _____ REVISION _____ DATE: _____	<b>WOODBURY COUNTY ENGINEERS OFFICE</b>
	SHEET DESCRIPTION: ROADWAY CROSS-SECTIONS		



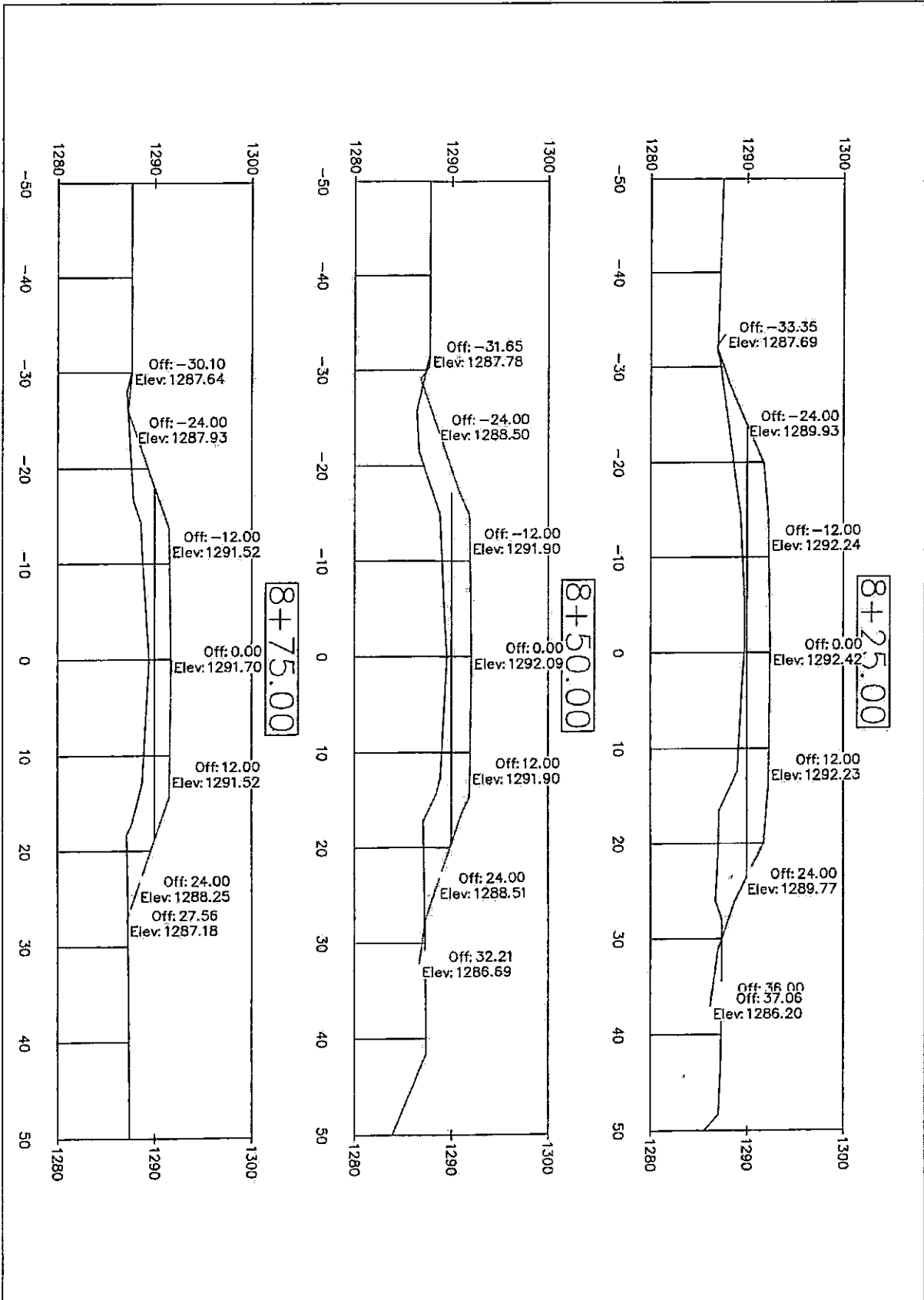


PROJECT NO.  
L-B/C27-4-75-97  
SHEET  
17

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE  
SEC. 7-T89N-R43W  
SHEET DESCRIPTION: ROADWAY CROSS-SECTIONS

CDR  
DRAWN BY: \_\_\_\_\_  
BK  
DESIGNED BY: \_\_\_\_\_  
MJN  
APPROVED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_ REVISION: \_\_\_\_\_ DATE: \_\_\_\_\_

WOODBURY COUNTY  
ENGINEERS OFFICE

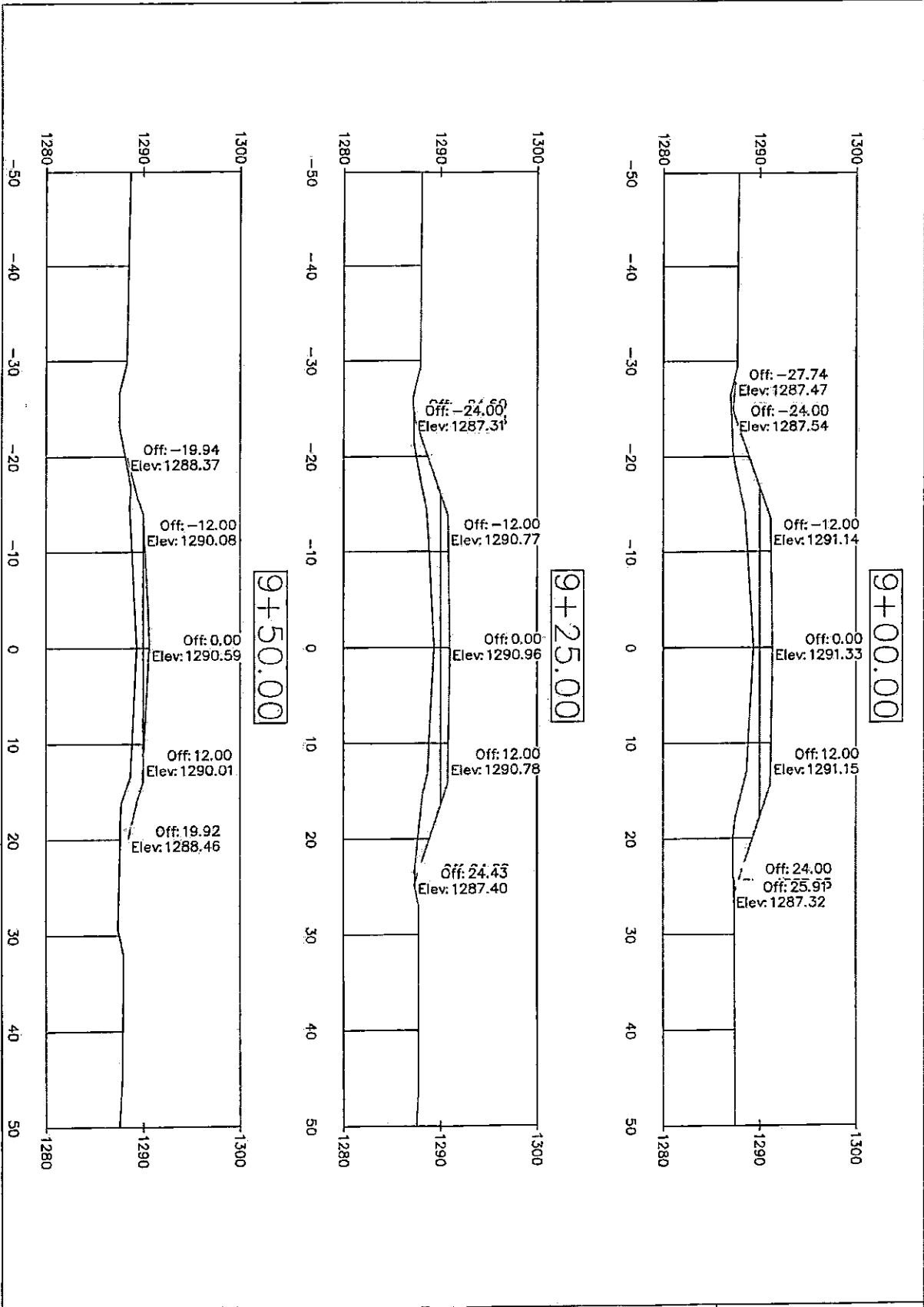


PROJECT NO.  
L-816(274)-73-97  
SHEET  
18

PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE  
SEC. 7-T89N-R43W  
SHEET DESCRIPTION: ROADWAY CROSS-SECTIONS

CDR  
DRAWN BY: \_\_\_\_\_  
BK  
DESIGNED BY: \_\_\_\_\_  
MJN  
APPROVED BY: \_\_\_\_\_  
DATE: \_\_\_\_\_ REVISION: \_\_\_\_\_ DATE: \_\_\_\_\_

WOODBURY COUNTY  
ENGINEERS OFFICE



PROJECT NO. LAB(027)-7-97 SHEET 19	PROJECT DESCRIPTION: BRIDGE REPLACEMENT ON JEWELL AVE SEC. 7-T89N-R43W  SHEET DESCRIPTION: ROADWAY CROSS-SECTIONS	CDR _____ DRAWN BY: _____ BK _____ DESIGNED BY: _____ MJN _____ APPROVED BY: _____ DATE: _____ REVISION _____ DATE: _____	<b>WOODBURY COUNTY</b> <b>ENGINEERS OFFICE</b>
---	--	---	---