

STATE OF IOWA  
STATE HIGHWAY COMMISSION  
BRIDGES  
ON THE  
FARM TO MARKET SYSTEM  
CRAWFORD COUNTY

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IOWA	SN-827(II)--51-24	1970	1	3

PROJECT NO. SN-827(II)--51-24

Design For 100' x 28' Continuous Concrete Slab Bridge  
Design For 125' x 28' Continuous Concrete Slab Bridge (15° Skew)

THE IOWA STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR CONSTRUCTION WORK, SERIES OF 1964, SHALL APPLY TO WORK ON THIS PROJECT, PLUS CURRENT SUPPLEMENTAL SPECIFICATIONS AND SPECIAL PROVISIONS.

INDEX OF SHEETS

SHEET NO.	ITEM
1	Title Sheet and Estimate of Quantities
2	Details (Design 970)
3	Details (Design 1070)

MILEAGE SUMMARY

Sta 234+55.0 = 101'-8" = 0.01926 miles  
Sta. 310+54.0 = 126'-8 3/4" = 0.02400 miles  
Total Net Mileage 0.04326 miles

Project No. SN-827(II)--51-24		Sta. 234+55.0	
Sec. 11-14		Stockholm Township	
Design No. 970		100' x 28' Continuous Concrete Slab Bridge	
Estimate of Quantities			
Item	Abutments	Superstructure	Totals
*Structural Concrete	36.2 C.Y.	166.5 C.Y.	202.7 C.Y.
Reinforcing Steel	2,706 Lbs.	38,214 Lbs.	40,920 Lbs.
Handrail, Aluminum		204.7 L.F.	204.7 L.F.
Crested Piles 20 @ 50'	1,000 L.F.		1,000 L.F.
Steel H Pile		700 L.F.	700 L.F.
Type I Drive 14 of 50'		700 L.F.	700 L.F.
108 P 42 Encase 14 of 25'		350 L.F.	350 L.F.
Excav. Class 10 Channel			768 C.Y.
Excav. Class 20 Removal of Existing Structure	55 C.Y.		55 C.Y.
			Lump Sum

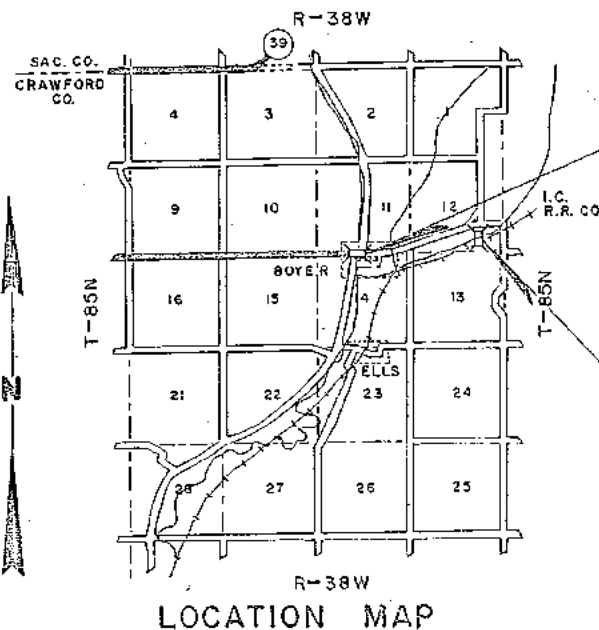
Project No. SN-827(II)--51-24		Sta. 310+54.0	
Sec. 12		Stockholm Township	
Design No. 1070		125' x 28' Continuous Concrete Slab Bridge (15° Skew)	
Estimate of Quantities			
Item	Abutments	Superstructure	Totals
*Structural Concrete	37.8 C.Y.	252.1 C.Y.	289.9 C.Y.
Reinforcing Steel	2,764 Lbs.	57,547 Lbs.	60,311 Lbs.
Handrail, Aluminum		254.7 L.F.	254.7 L.F.
Crested Piles 20 @ 50'	1,000 L.F.		1,000 L.F.
Steel H Pile		800 L.F.	800 L.F.
Type I Drive 16 of 50'		800 L.F.	800 L.F.
108 P 42 Encase 16 of 25'		400 L.F.	400 L.F.
Excav. Class 10 Channel			1,925 C.Y.
Excav. Class 20	90 C.Y.		90 C.Y.

Standard	Date Issued	Latest Revision
J8-1 and 2	July 1960	5-7-68
J8-4	July 1960	5-7-68
J8-6	July 1960	5-7-68
P10A	June 1959	6-4-69

\*The Floor and Curbs (166.5 c.y.) Plus The Wing Posts (0.8 c.y.) Are To Be Class "D" Concrete.  
The Remainder (35.4 c.y.) Is To Be Class "C" Concrete.

\*The Floor and Curbs (252.1 c.y.) Plus The Wing Posts (0.8 c.y.) Are To Be Class "D" Concrete.  
The Remainder (37.0 c.y.) Is To Be Class "C" Concrete.

INRC No. 70-39 (3-10-70)



130140  
STA. 234+55.0 & 100' x 28' CONTINUOUS CONCRETE SLAB BRIDGE  
DESIGN NO. 970

130115  
STA. 310+54.0 & 125' x 28' CONTINUOUS CONCRETE SLAB BRIDGE  
DESIGN NO. 1070

I HEREBY CERTIFY THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

H. Dale Wright

REG. NO. 5798

DATE Feb 9, 1970

APPROVED	DATE
H. Dale Wright	April 23, 1970
County Engineer	
Chairman	
BOARD OF SUPERVISORS	

APPROVED	DATE
Deputy Chief Engineer	
Iowa Highway Commission	
Department of Transportation	
Bureau of Public Roads	
APPROVED	DATE
Division Engineer	

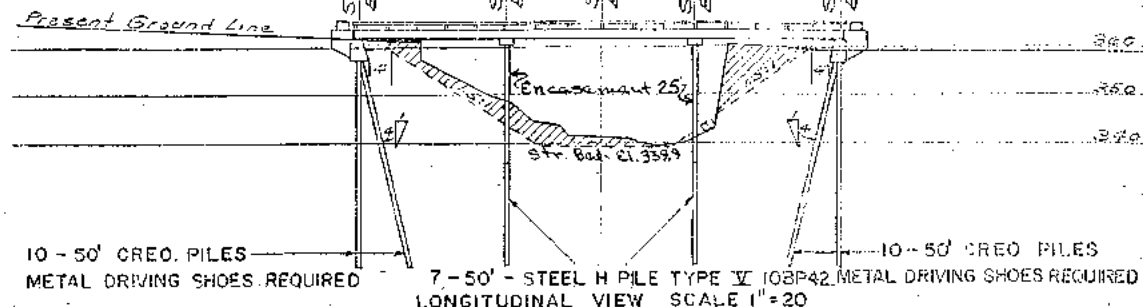
# STOCKHOLM TOWNSHIP T-85N R-38W BET. SEC. 11 AND 14

B.M. #23 SPK In Power Pole 59' Rt. Sta. 236+02 Elev. = 354.62

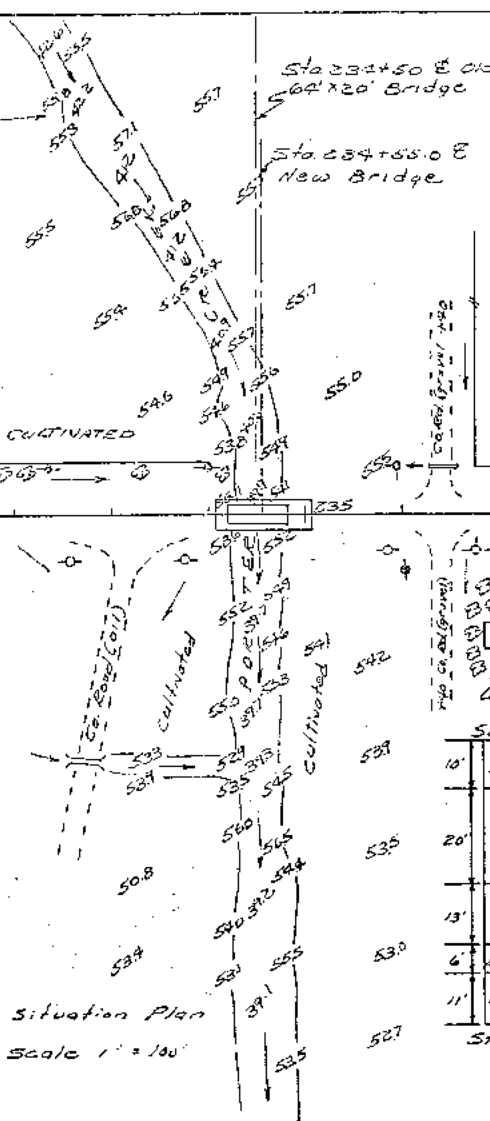
Hydraulic Data  
 $V = \frac{1.486}{0.55} = 2.702$   
 $R^{2/3} = \frac{592}{72} = 8.222^{2/3} = 4.08$   
 $S^{1/2} = .0035^{1/2} = .0591$   
 $V = (2.702)(4.08)(.0591) = 6.515$   
 $Q = VA$   
 $Q = (6.515)(1039) = 6,769 \text{ cfs.}$   
 Design  $Q = 2,880 \text{ cfs.}$

ESTIMATE OF QUANTITIES			
ITEM	ABUTMENTS	SUPERSTRUCTURE	TOTALS
STRUCTURAL CONCRETE	36.2 C.Y.	166.5 C.Y.	202.7 C.Y.
REINFORCING STEEL	2706 LBS.	38,214 LBS.	40,920 LBS.
HANDRAIL, ALUMINUM	—	204.7 L.F.	204.7 L.F.
CREOSOTED PILES 20 @ 50'	1,000 L.F.	—	1,000 L.F.
STEEL H PILE FURNISH 14 @ 50'	—	700 L.F.	700 L.F.
TYPE V DRIVE 14 @ 50'	—	700 L.F.	700 L.F.
108P42 ENCASE 14 @ 25'	—	350 L.F.	350 L.F.
EXCAV. CLASS 10 CHANNEL	—	—	768 C.Y.
EXCAV. CLASS 20	55 C.Y.	—	55 C.Y.
REMOVAL OF EXISTING STRUCTURE	—	—	LUMP SUM

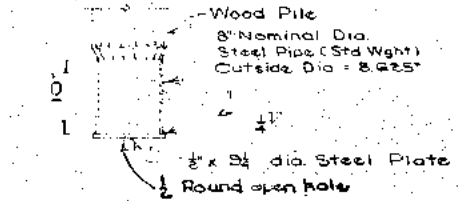
NOTE:  
EXCAVATE CHANNEL AS SHOWN IN SHADED AREA.  
 D.A. = 16.8 SQ. MILES  
 H = 21  
 BEARING REQUIRED  
 WOOD - 16 TON, NOT TO EXCEED 40 TON  
 STEEL H PILE - 32 TON MINIMUM



ITEM	ELEV.	ITEM	ELEV.
BOTTOM DECK	362.47	BOTTOM DECK	361.89
TOP ABUTMENT	362.44	TOP ABUTMENT	361.86
ABUT. PILING CUT OFF	360.44	ABUT. PILING CUT OFF	359.95
BOTTOM ABUTMENT	358.44	BOTTOM ABUTMENT	357.86
WEST PIER PILING CUT OFF	362.10	EAST PIER PILING CUT OFF	361.89
BERM	360.40	BERM	359.80
BOTTOM ENCASEMENT WEST PIER	336.31	BOTTOM ENCASEMENT EAST PIER	336.09

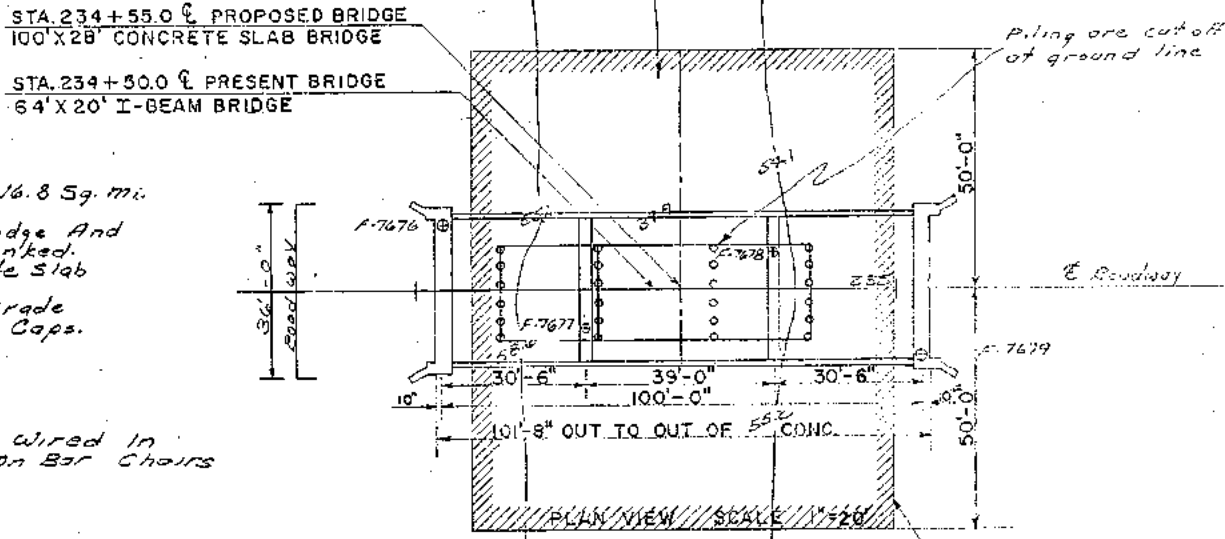


STATION	SURF. EL.	DESCRIPTION	THICKNESS	STATION	SURF. EL.	DESCRIPTION	THICKNESS
10'	362.50	Stiff To Firm Silty Clay Fill	10'	10'	360.02	Stiff To Firm Silty clay Fill	10'
20'	361.60	Stiff To Firm Silty Clay	11'	20'	360.77	Soft Silty Sandy Clay	20'
13'	361.60	Sand with occ. Clay layer	11'	13'	360.77	Sand with occ. Clay layer	11'
6'	361.60	Bouldery Gravel	11'	6'	360.77	Bouldery Gravel	11'
11'	361.60	Very Firm Sandy Glacial Clay occ. Boulder	10'	11'	360.77	Very Firm Glacial Clay occ. Boulder	10'



NOTE: Metal driving shoes are to be provided for wood pile. Unit price bid per lin. foot for the pile to include cost of all labor and material for metal driving shoe.

Sta. 234+50.0 & 64'x20' I-Beam Bridge, D.A. 16.8 Sq. mi. Wood Plank Floor, Wood Piles, Steel Caps. Bridge Contractor To Remove Present Bridge And Pile within 300' of Bridge Site, To Be Junked. Replace with 100'x28' Continuous Concrete Slab Bridge At Sta. 234+55.0. This Bridge Designed 0.7' Higher Than Grade To meet Future Paving. Monolithic Pier Caps.



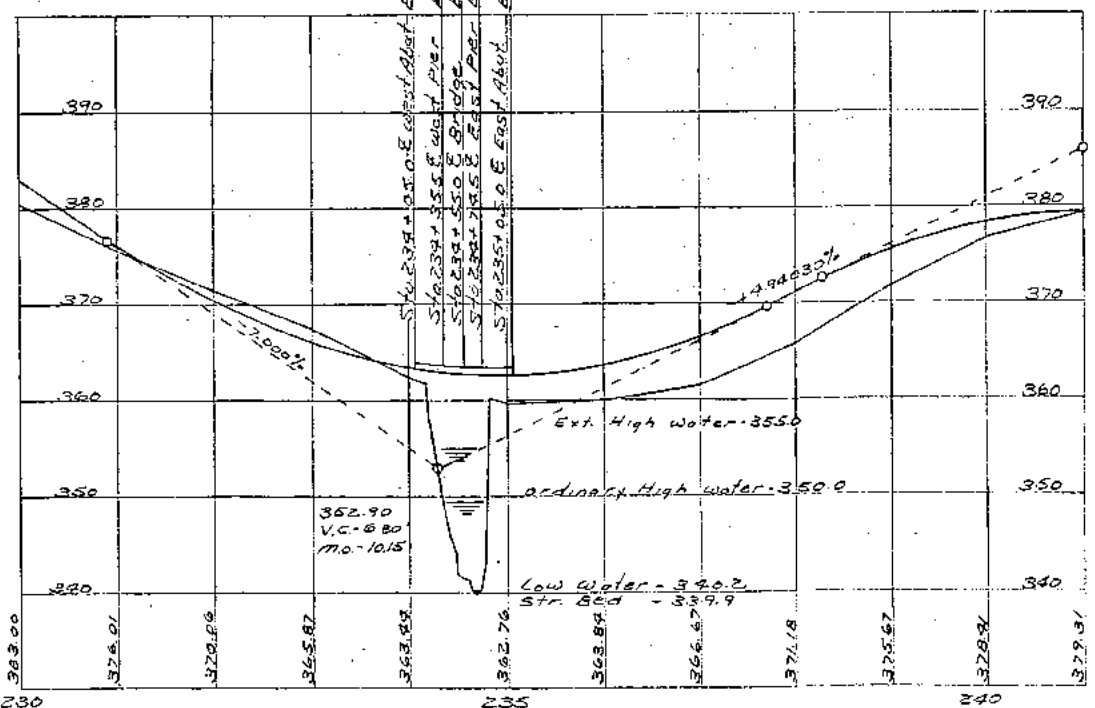
General Notes:  
 All Reinforcing Bars Shall Be Securely Wired In Place And Adequately Supported On Bar Chairs Before Concrete Is Placed.

Iowa Highway Commission Standard Specifications Series of 1964, with Current Special Provisions And Supplemental Specifications Shall Apply.

Iowa Highway Commission Standard Designs JB-12 (Revised 5-7-68), JB-4 (Revised 5-7-68) and JB-6 (Revised 5-7-68), Standard P109 (Revised 6-9-69) Shall Apply To This Bridge.

Bridge Sign Assembly Note:  
 This Bridge Will Require Bridge Sign Assemblies (Furnished And Placed By others) in Accordance With Section 2C-5 of I.S. H.C. Manual on Uniform Traffic Control Devices. Dated January 1963.

LOCATION  
 BETWEEN SEC'S. 11 & 14 STOCKHOLM TWP.  
 OVER PORTER CREEK



Scale Vert. = 1" = 10'  
 Hor. = 1" = 100'

DESIGN FOR  
**130140**  
 100'x28' CONTINUOUS CONCRETE SLAB BRIDGE  
 ALUMINUM HANDRAILS  
 STUB ABUTMENTS & CONCRETE PILE BENTS  
 STA. 234+55.0 PROJ. NO. SN-827(II)--51-24  
 CRAWFORD COUNTY, IOWA