

STATE OF IOWA
STATE HIGHWAY COMMISSION
BRIDGE
ON THE
FARM TO MARKET SYSTEM
CRAWFORD COUNTY
PROJECT NO. LSN-218

FED. ROAD DIST. NO.	STATE	PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
5	IOWA		1971	1	2

MILEAGE SUMMARY

179'-4" = 0.0340 MILES

DESIGN FOR 176'-4" X 30' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

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

IOWA STATE HIGHWAY COMMISSION STANDARDS REQUIRED (MAY BE OBTAINED @ STOREROOM)		
STANDARD	DATE ISSUED	LATEST REVISION
H16-70	JUNE 1969	JUNE 1969
H16-1-70	JUNE 1969	JUNE 1969
H16-2-70	JUNE 1969	JUNE 1969
H16-3-70	JUNE 1969	JUNE 1969
H16-9-70	JUNE 1969	JUNE 1969
H16-11-70	JUNE 1969	JUNE 1969
H16-12-70	JUNE 1969	JUNE 1969
P10A	JUNE 1959	JUNE 4, 1969

PROJECT NO. LSN-218 SEC. 1-2		STA. 124+74.00 SOLDIER TOWNSHIP	
176'-4" X 30' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE			
ESTIMATE OF QUANTITIES			
ITEM	ABUTMENTS	PIERS	TOTALS
① STRUCTURAL CONCRETE	25.5 C.Y.	21.0 C.Y.	202.8 C.Y.
REINFORCING STEEL		2,532 LBS.	50,934 LBS.
CONCRETE BEAMS	5 @ 8'-6"		5 @ 63'-4"
ALUMINUM RAILING	10 @ 8'-5"		10 @ 55'-0"
CREOSOTED PILES	900 L.F.		900 L.F.
CONCRETE PILES 18 @ 50'		900 L.F.	900 L.F.
P10A 16" TYPE III			950 C.Y.
EXCAV. CLASS 10 CHANNEL			87 C.Y.
EXCAV. CLASS 20			
EXCAV. CLASS 24			
REMOVAL OF EASTERLY STRUCTURE			LUMP SUM

- ① THE FLOOR, CURBS AND WING POSTS, 202.8 CU. YDS. ARE TO BE CLASS "D" CONCRETE.
THE REMAINING 46.5 CU. YDS. IS TO BE CLASS "C" CONCRETE.

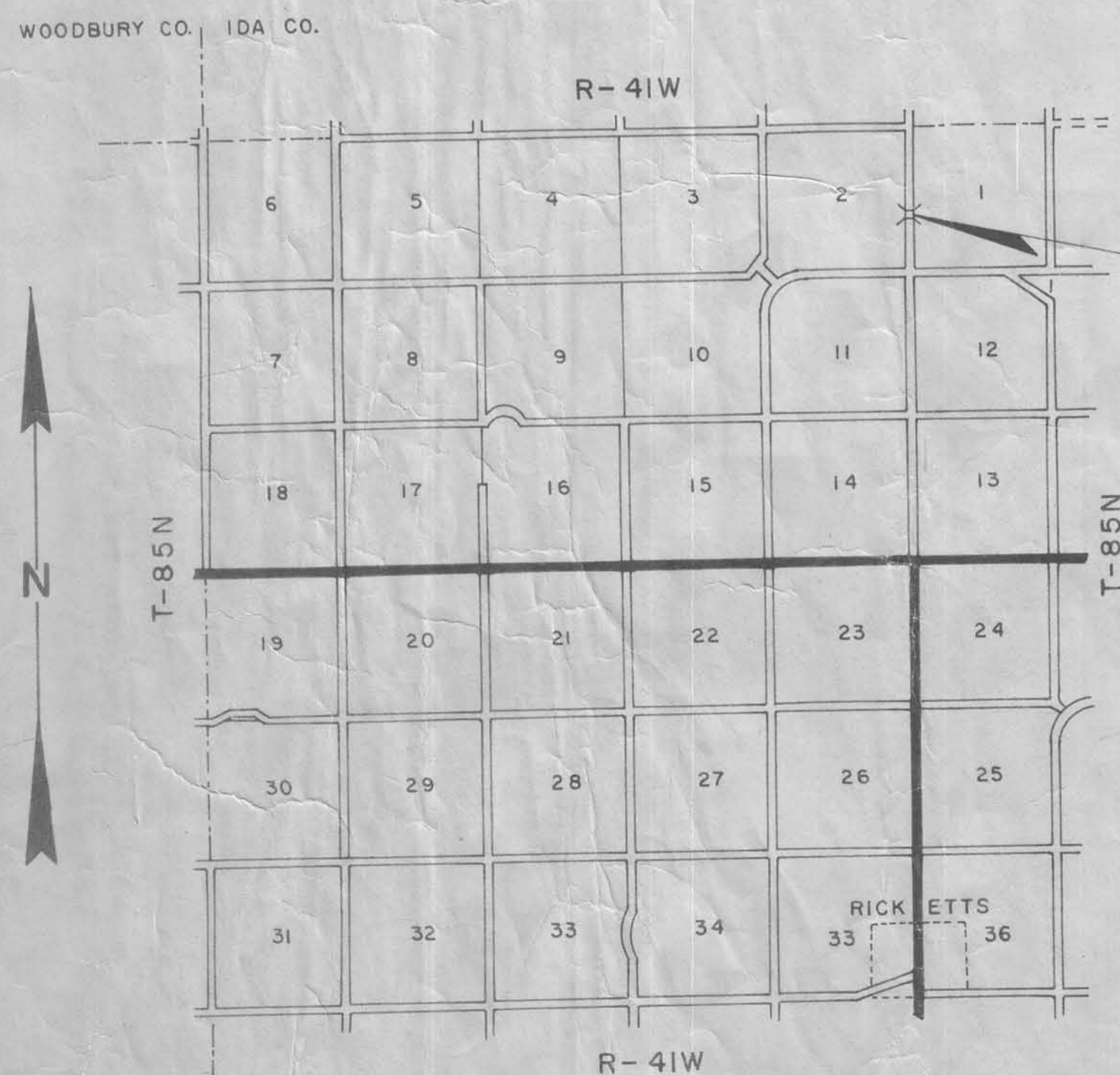
I hereby certify that this Application - Plan is an accurate and correct copy of the Application-Plan made a part of Iowa Natural Resources Council Order No. 71-35 Approved March 1, 1971
Walter A. Montgomery Director
IOWA NATURAL RESOURCES COUNCIL

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. Baker Wright

REG. NO. 5798

DATE Jan 19, 1971



STA. 124+74.00 @ 176'-4" X 30' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

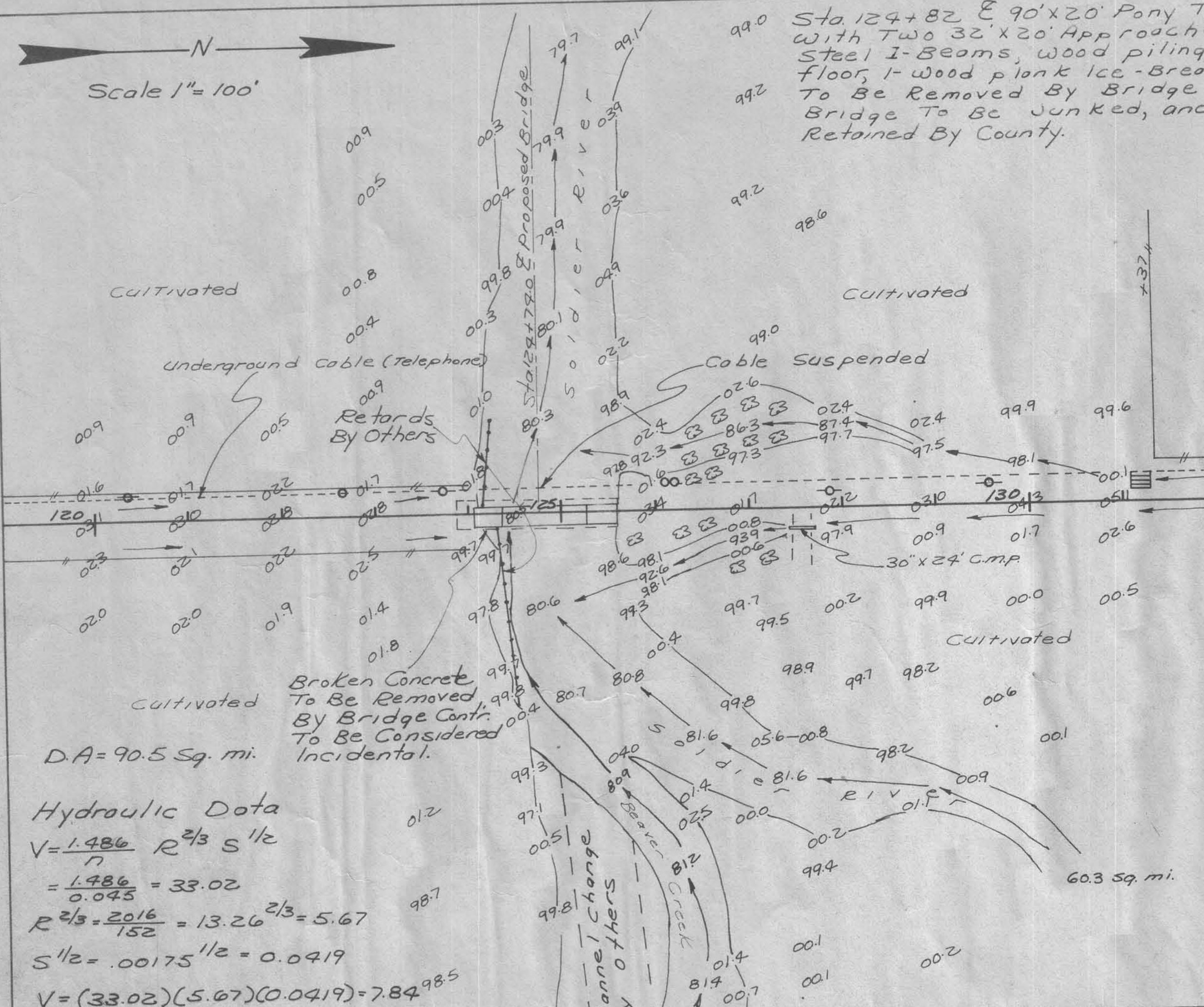
BRIDGE SIGN ASSEMBLY NOTE:

THIS BRIDGE WILL REQUIRE BRIDGE SIGN ASSEMBLIES (FURNISHED AND PLACED BY OTHERS) IN ACCORDANCE WITH SECTION 20-5 OF THE ISHC "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES," DATED JANUARY 1963.

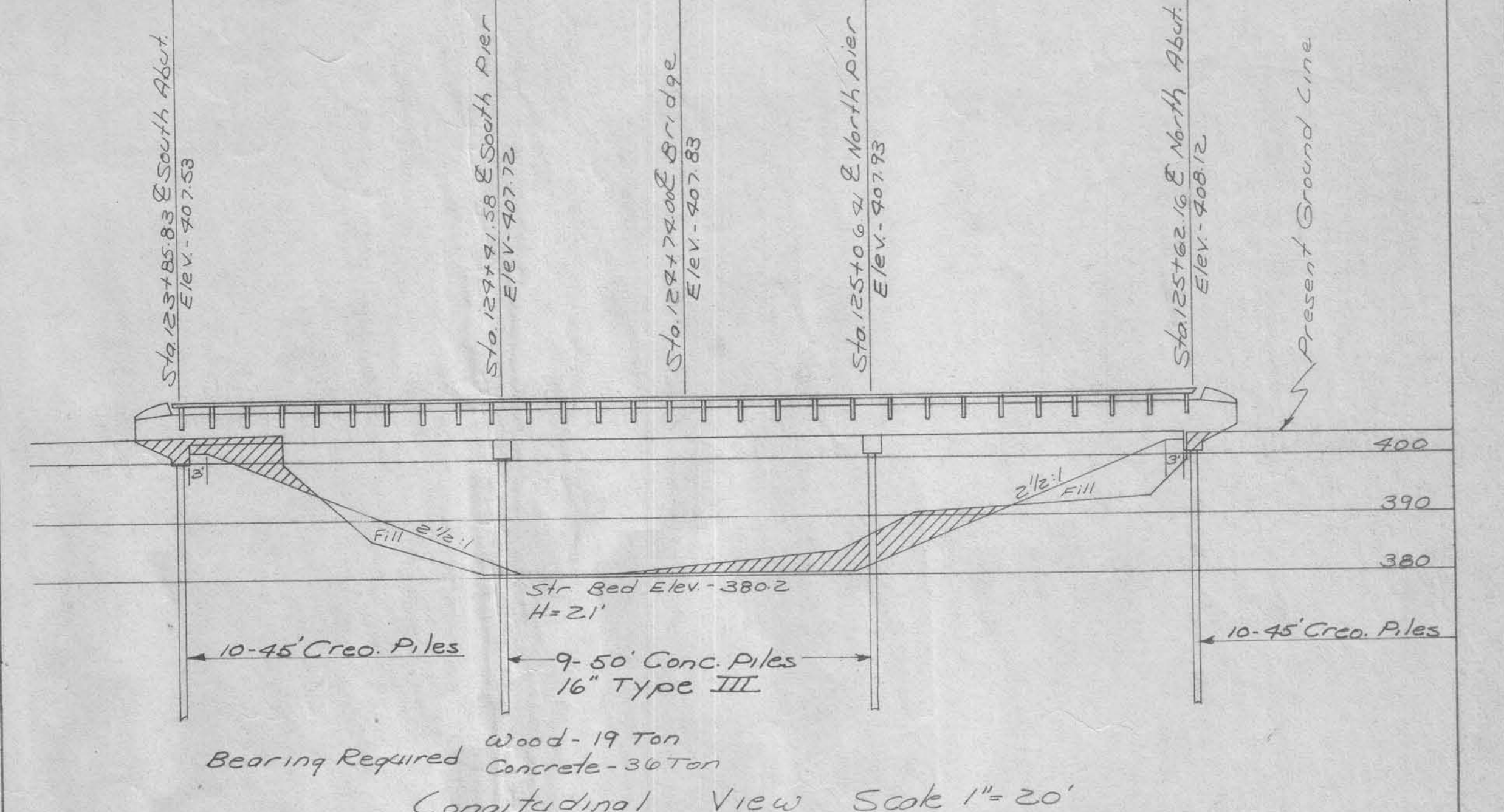
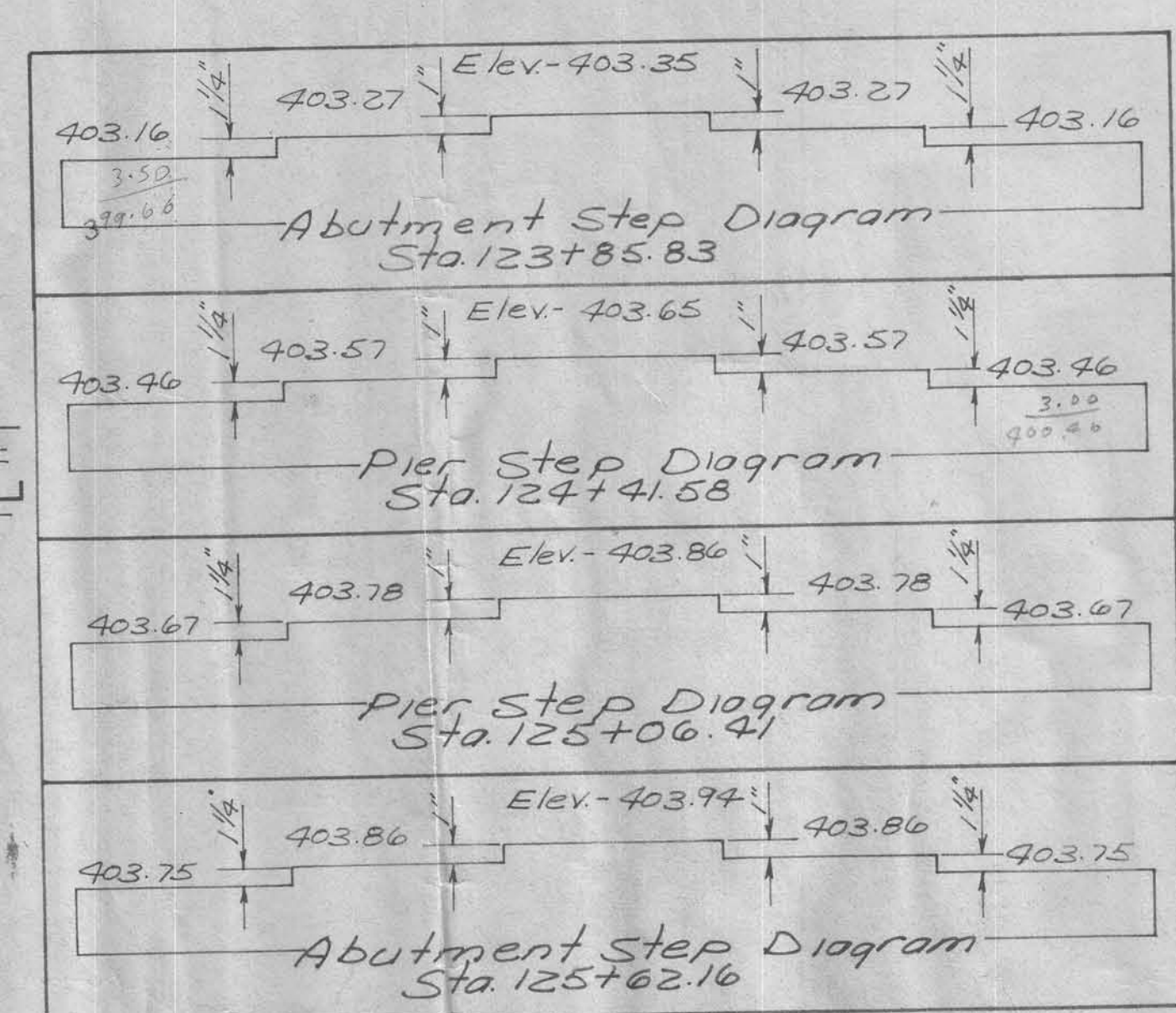
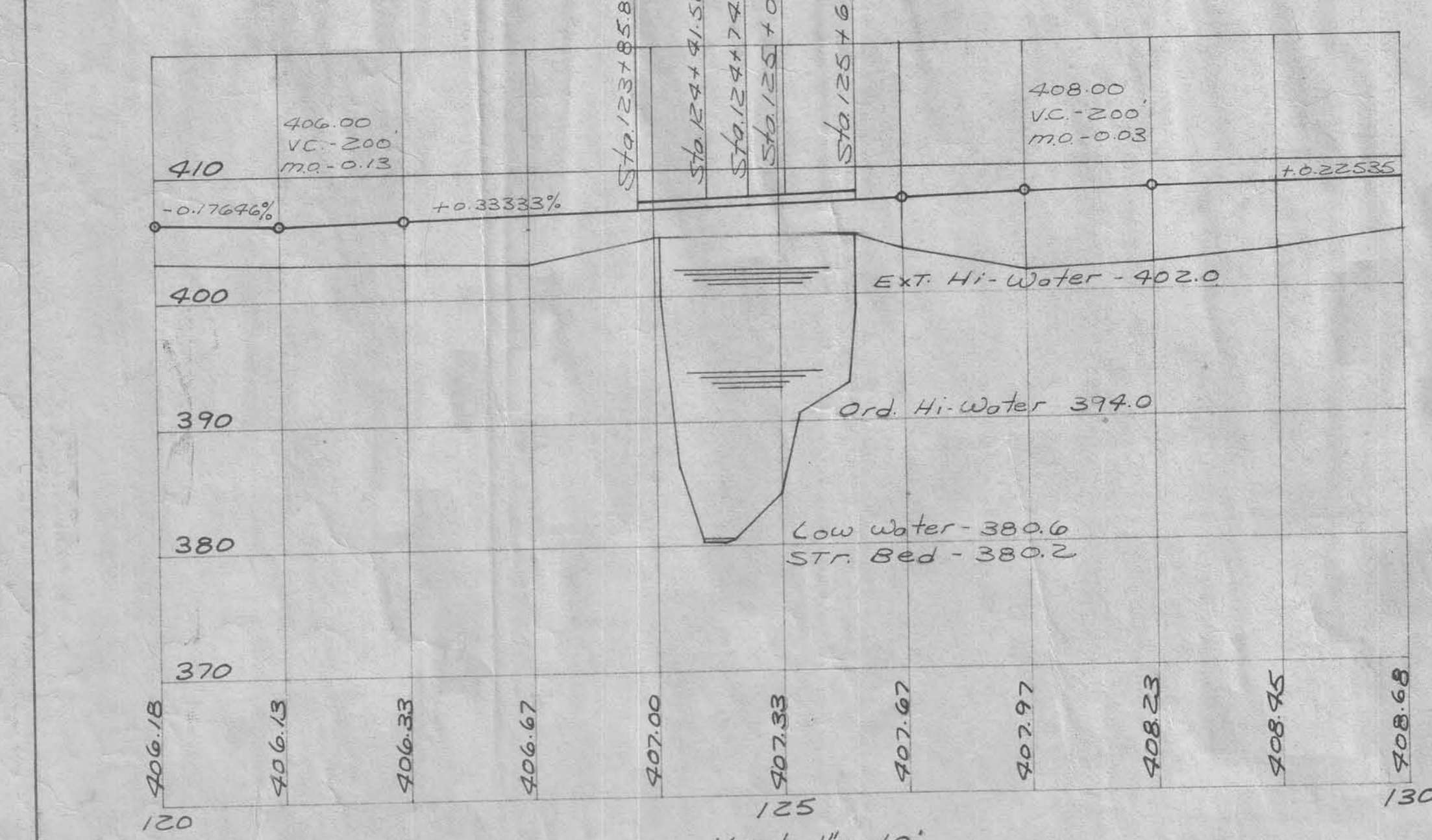
APPROVED	DATE
COUNTY ENGINEER	
CHAIRMAN	
BOARD OF SUPERVISORS	

APPROVED	DATE
DEPUTY CHIEF ENGINEER IOWA HIGHWAY COMMISSION	
DEPARTMENT OF TRANSPORTATION BUREAU OF PUBLIC ROADS	
APPROVED	DATE
DIVISION ENGINEER	

130791



Hydraulic Data
 $V = 1.486 R^{2/3} S^{1/2}$
 $= \frac{1.486}{0.045} = 33.02$
 $R^{2/3} = \frac{2016}{152} = 13.26$
 $S^{1/2} = .00175^{1/2} = 0.0419$
 $V = (33.02)(13.26)(0.0419) = 7.84$
 $Q = VA$
 $Q = (7.84)(2,102) = 16,480 \text{ c.f.s.}$
 Design $Q = 8,516 \text{ c.f.s.}$



Bearing Required: Wood - 19 Ton, Concrete - 36 Ton

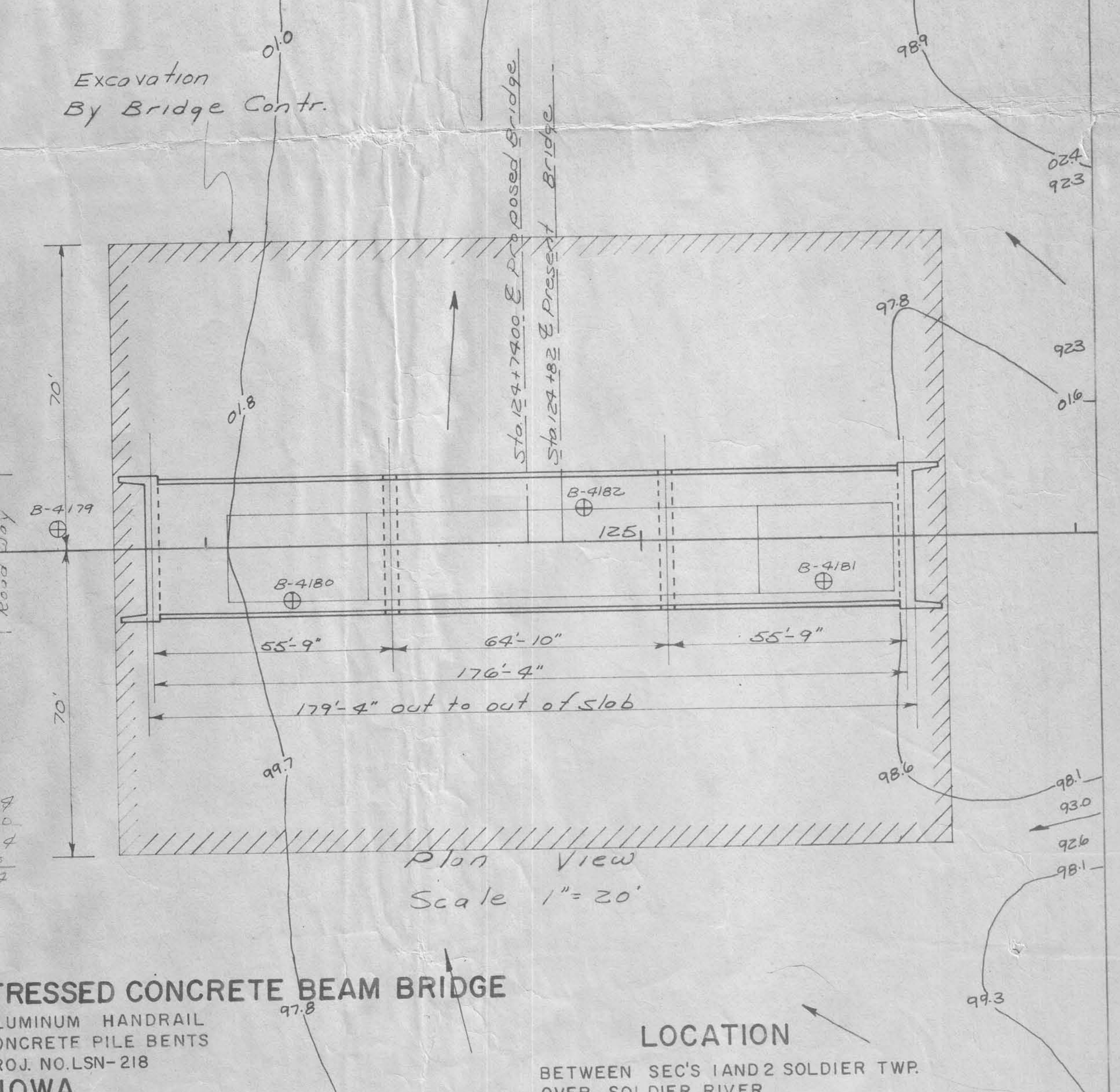
Station Data:

- Sta. 123+85.83 S. Abut: Piling cut off - 402.66, Berm - 402.4, Bottom abut. - 400.66
- Sta. 124+41.58 S. Pier: Piling cut off - 401.96, Bottom Pier - 400.46
- Sta. 125+06.41 N. Pier: Piling cut off - 402.17, Bottom Pier - 400.67
- Sta. 125+62.16 N. Abut: Piling cut off - 403.25, Berm - 403.0, Bottom Abut. - 401.25

22.5	Bridge Floor To Ground
20	Soft Sandy Silty Clay
3.5	Soft Silty Sandy Clay
8.0	Sand and Gravel
5.0	Clayey Sand
6.0	Firm Sandy Clay
2.0	Very Boulderly Sand & Gravel
3.0	Firm to Very Firm Sandy Glacial Clay
Sta. 124+87	

16.0	Bridge Floor To Ground
4.0	Soft silty clay
3.5	Stiff silty clay
5.0	stiff silty sandy clay
4.5	silty sand
3.0	Sand & Gravel Numerous Small Boulders
8.0	clayey sand
5.0	Firm Sandy clay
2.0	Firm to Very Firm Sandy Glacial clay
9.0	Very Firm Sandy Glacial clay
Sta. 124+19	

12.8	Bridge Floor To Ground
6.2	soft silty clay
5.0	stiff silty clay
3.0	Soft Sandy silty clay
5.0	stiff silty sandy clay
3.0	Sand & Gravel - occ. Boulder
4.0	Clayey Sand
7.5	Firm Sandy clay
3.0	Firm Sandy clay - occ. Small Boulder
4.5	Firm to Very Firm Sandy Glacial clay
6.0	Very Firm Sandy Glacial clay
Sta. 125+41	



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.

Bridge Designed 0'-7" Higher Than Grade To Meet Future Paving Plans.

Bridge Sign Assembly Note:
 This Bridge Will Require Bridge Sign Assemblies (furnished and Placed By Others) In Accordance With section 2C-5 of The I.S.H.C. Manual On Uniform Traffic Control Devices, Dated January 1963.

DESIGN FOR 176'-4" X 30' PRETENSIONED PRESTRESSED CONCRETE BEAM BRIDGE

CONCRETE FLOOR
 STUB ABUTMENTS
 STA. 124+74.00

ALUMINUM HANDRAIL
 CONCRETE PILE BENTS
 PROJ. NO. LSN-218

CRAWFORD COUNTY, IOWA

Proj No. LSN-218
 Valley Profiles
 Sta. 124+74.00 @ Proposed
 176'-4" x 36' Pretensioned Prestressed
 Concrete Beam Bridge
 Over Soldier River
 Between Sec's 1 and 2 Soldier Twp.
 T-85N - R-41W
 Crawford County, Iowa
 Scale 1" = 100' Horz.
 1" = 10' Vert.

