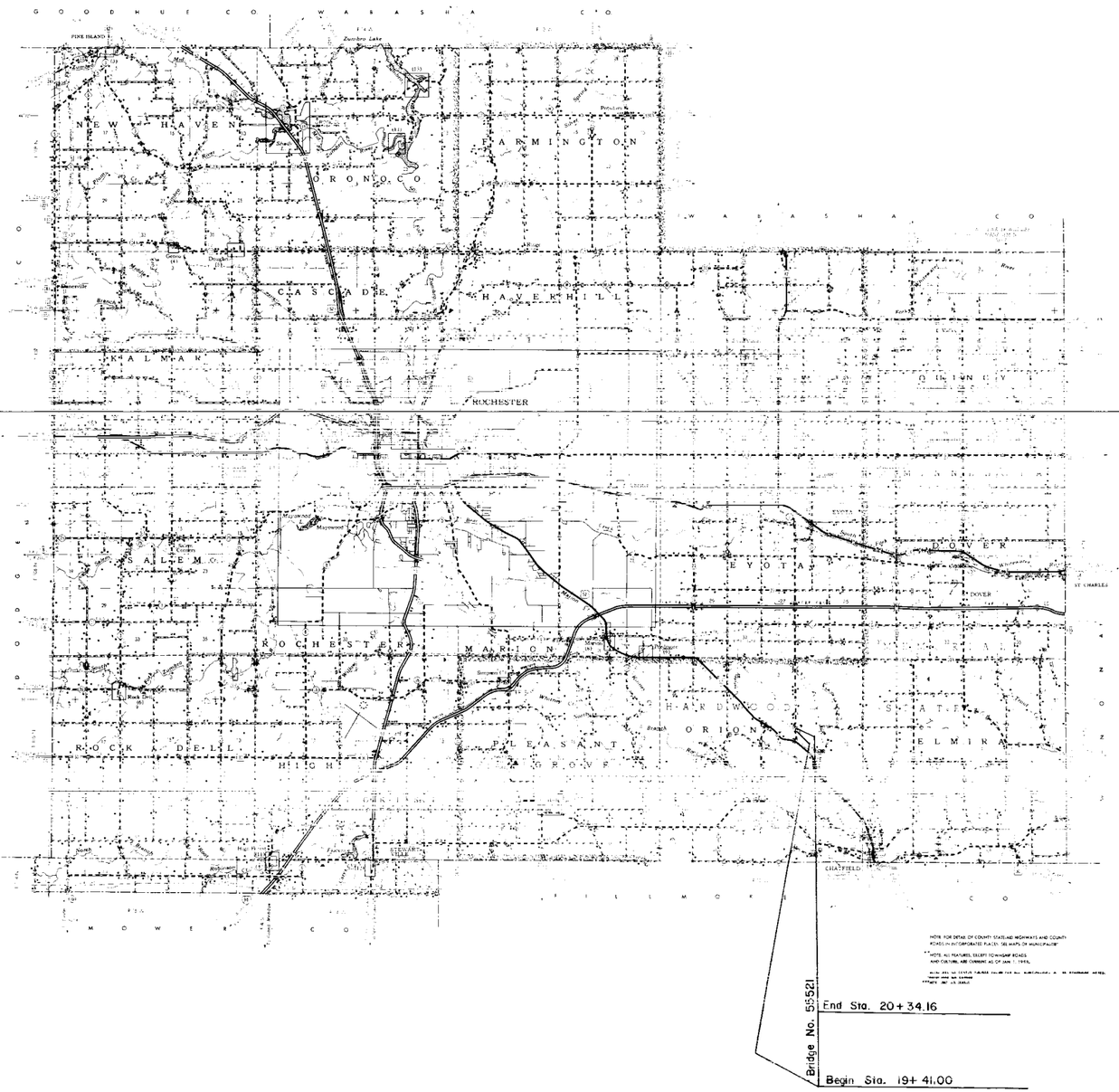
FORM 100-A '65

PLANS SYMBOLS

STATE LINE
TOWNSHIP OR RANGE LINE
PRESENT RIGHT-OF-WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Farm and Lines)
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY LINE
RIVER OR CREEK (NAME)
DRY RUN (SIZE)
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE (W)
CHAIN LINK FENCE (C-L)
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN (RR)
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH (TIMBER)
NURSERY
CATCH BASIN (C.B.)
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BUILDING (One Story Frame)
F-FRAME C-CONCRETE
S-STONE T-TILE
B-BRICK ST-STUCCO
IRON PIPE OR ROD
MONUMENT (STONE, CONCRETE OR METAL)
WOODEN HUB
GRAVEL PIT (G)
SAND PIT (S)
BORROW PIT (B)
ROCK QUARRY (Q)

UTILITIES SYMBOLS

POWER POLE LINE
TELEPHONE OR TELEGRAPH POLE LINE
JOINT TELEPHONE AND POWER ON POWER POLES
ON TELEPHONE POLES
ANCHOR
STEEL TOWER
STREET LIGHT
PEDESTAL (TELEPHONE CABLE TERMINAL)
GAS MAIN (G)
WATER MAIN (W)
ELECTRIC MANHOLE (E)
TELEPHONE MANHOLE (T)
BURIED TELEPHONE CABLE (T-BUR)
BURIED ELECTRIC CABLE (P-BUR)
AERIAL TELEPHONE CABLE (T-AE)
SEWER, (SANITARY OR STORM)
SEWER MANHOLE



Fed. Proj. No.

STATE OF MINNESOTA

DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR BRIDGE 55521

BETWEEN TRUNK HIGHWAY 52 **AND** INTERSTATE 90

From a point 530.9' South & 160.8' East of N.W. cor. Sec. 14-T105N.-R12W.
Give proper reference to Sections, Township and Range

To a point 439.9' South & 140.9' East of N.W. cor. Sec. 14-T105N.-R12W.

GROSS LENGTH		FEET	MILES
BRIDGES-LENGTH	93.16	FEET	0.018 MILES
EXCEPTIONS-LENGTH		FEET	MILES
NET LENGTH		FEET	MILES

DESIGN SPEED 55 M.P.H.

PROJECTED A.D.T. 850

_____ TON DESIGN

SOIL FACTOR _____

ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

Richard J. Hamm DATE May 24, 1971

APPROVED May 24 1971 Cola Schellhammer COUNTY ENGINEER

RECOMMENDED FOR APPROVAL Karl H. Pehrson 5/26 1971 DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL O.D. Lawrence 6-8-71 BRIDGE DESIGN & PLANNING ENGINEER

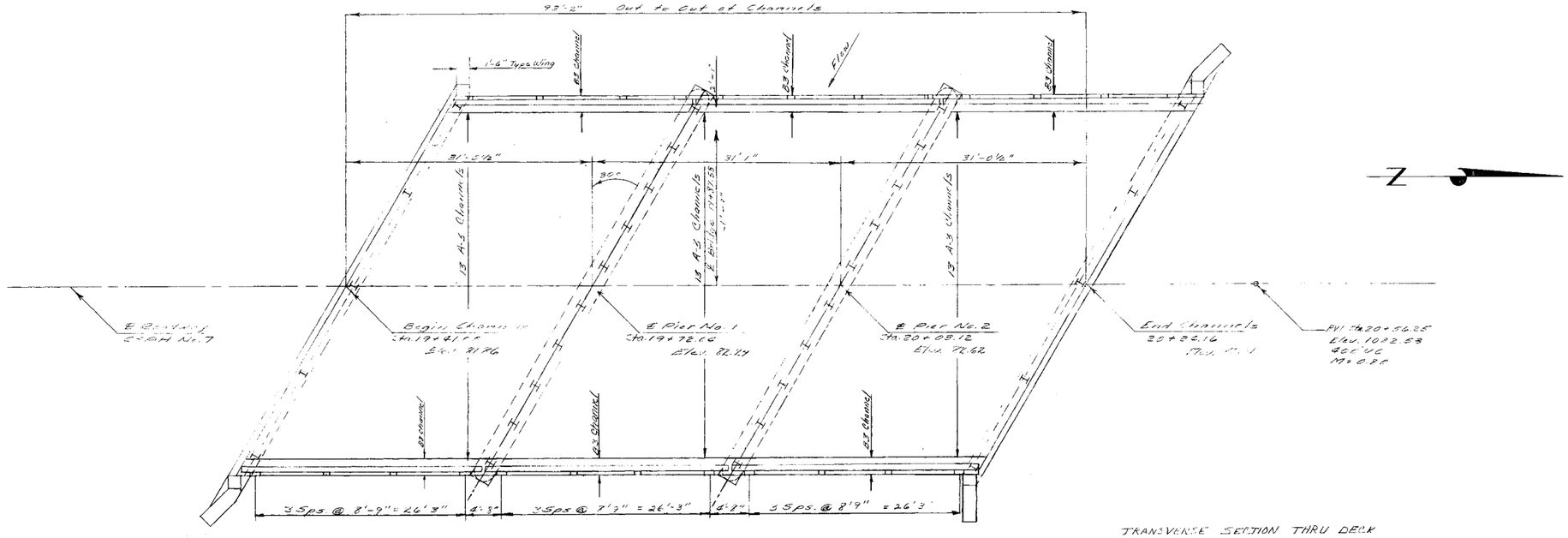
APPROVED 6/8 1971 Gustav M. Burg STATE AID ENGINEER

S.A.P. 55-607-07

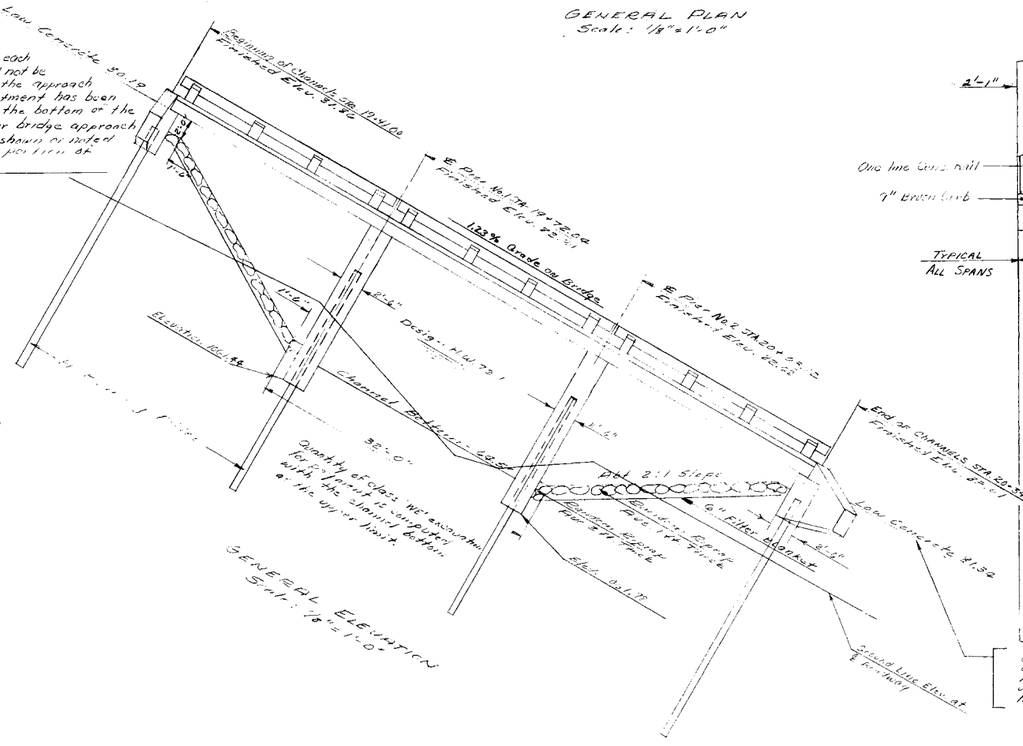
Minn. Project No. _____ State Project No. _____

Olmsted County, Minnesota. County Proj. No. _____ Plan No. _____ Sheet 1 of 10 Sheets

ALBINSON, INC.
MINNEAPOLIS, MINN. 55415

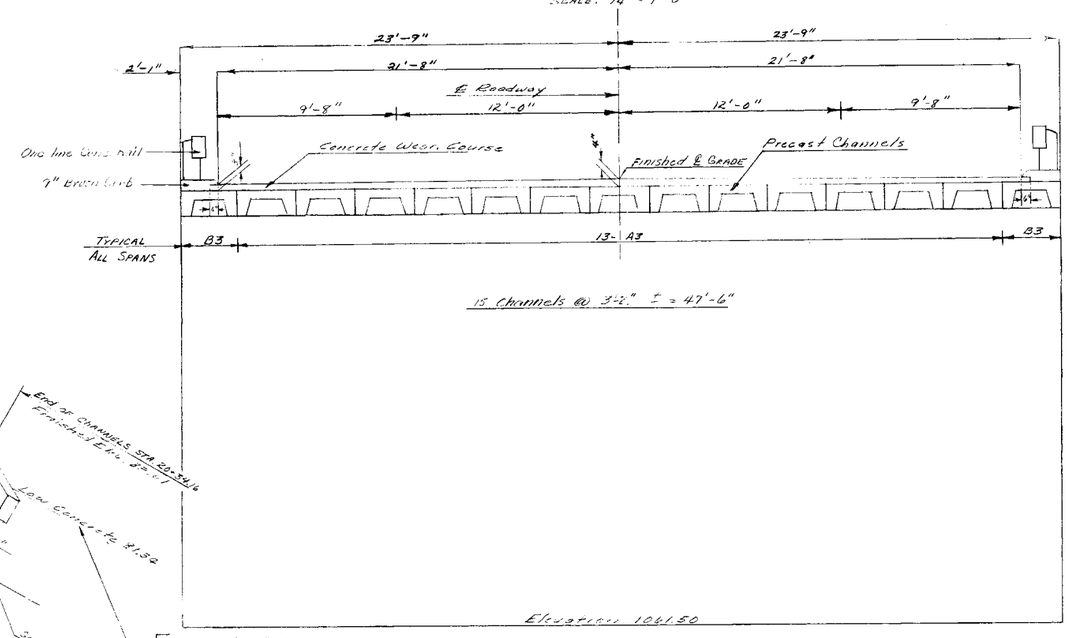


GENERAL PLAN
Scale: 1/8" = 1'-0"



GENERAL ELEVATION
Scale: 1/8" = 1'-0"

TRANSVERSE SECTION THRU DECK
SCALE: 1/4" = 1'-0"



Quantity of class "E" excavation for riprap is computed with the top of subgrade as the upper limit.

Richard J. Haase
May 21, 1971
7995

AASHO DESIGN DATA

1969 DESIGN SPECIFICATIONS

DESIGN LOADING HS20 4 LANES
f'c = 2000 p.s.i. N-6 FOR CHANNELS
f'c = 1600 p.s.i. N=8 FOR POURED CONCRETE

fs = 24000 p.s.i REINFORCEMENT
fs = 20000 p.s.i. STRUCTURAL STEEL MHD 3306

DECK AREA = 4,037 SQUARE FEET

LIST OF SHEETS

NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL PLAN AND ELEVATION
3	ABUTMENT & PIER DETAIL
4	SUPERSTRUCTURE
5	PRECAST CONCRETE CHANNELS
6	CONCRETE RAILING FOR 6" BRUSH CURB
7	DETAILS (PILE SPLICES & TIP REINFORCEMENT)
8	DETAILS (DRAINS & PROTECTION ANGLE)
9	BRIDGE SURVEY
10	BRIDGE SURVEY (PLAN & PROFILE)

CONSTRUCTION NOTES

THE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION", DATED JANUARY 1, 1968, AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS" DATED JULY 1, 1969 SHALL GOVERN.

REINFORCEMENT BARS SHALL BE DEFORMED BILLET STEEL BARS, CONFORMING TO ASTM A615, GRADE 60.

CONCRETE JOINT SEALER OTHER THAN PREFORMED TYPE SHALL COMPLY WITH MHD 3723 OR MHD 3725

THE ENGINEER WILL SET STAKES AT THE ℄ OF THE SUBSTRUCTURE AND WILL RESET THESE POINTS AS HE DEEMS NECESSARY FOR PROPER PERFORMANCE OF THE WORK.

B.M. ELEV 1075.81 (M.S.L. 1929 ADJ.)
X in S.E. Cor. Curb Bridge 4222

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

ITEM NO.	2401.501	2401.501	2401.521	2401.541	2402.521	433.601	2401.521	2404.501	2404.501	2462.510	2452.511	2452.520	2511.504	2511.501		2123.506					
ITEM	CONCRETE MIX NO. 3Y46A	CONCRETE MIX NO. 3Y43	STRUCTURE EXC. CL. "E"	REINFORCEMENT BARS	STRUCTURAL STEEL MHD 3306	CONCRETE WEARING COURSE	STRUCTURE EXC. CL. "WE"	PRECAST CONCRETE CHANNELS TYPE A3	PRECAST CONCRETE CHANNELS TYPE B3	STEEL "H" PILING, DRIVEN	STEEL "H" PILING DELIVERED	STEEL "H" TEST PILES 40 FT. LONG	FILTER BLANKET TYPE I	RANDOM RIP RAP CL. "A"		3/4 YD. DRAGLINE					
UNIT	CU. YD.	CU. YD.	CU. YD.	LBS.	LBS.	SQ. FT.	CU. YD.	CHANNELS	CHANNELS	L. F.	L. F.	PILE	CU. YDS.	CU. YDS.		HRS.					
QUANTITY	14	255	146	17,800	702	4130	73	39	6	884	910	4	33	66		15					

AREA NO. JOB NO.

S.A.P. 55-607-07 (C.S.A.H. NO. 7)

C.S.A.H. NO. 7
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

Bridge No. 55521

6.0 MILES SOUTH OF EYOTA OVER MILL CREEK. 3-31' PRECAST CONC. CHANNEL SPANS, 43'-4" ROADWAY - 30° SKEW.

GENERAL PLAN AND ELEVATION

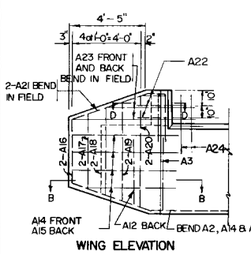
SEC. 14 T. 105 N. R. 12 W.

ORION TOWNSHIP OLMSTED COUNTY

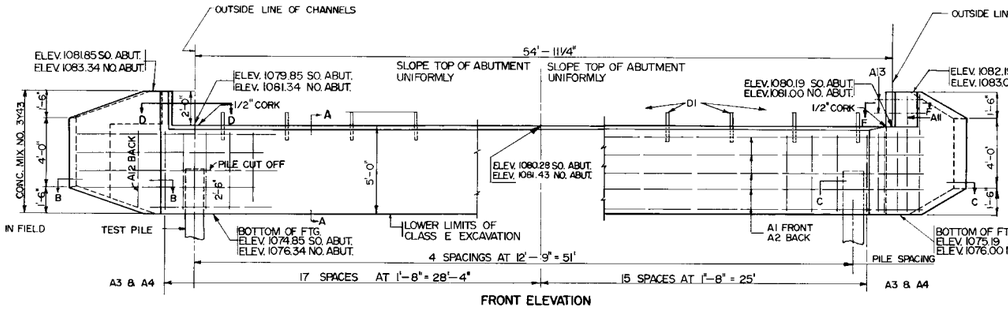
APPROVED 6-8-71
BRIDGE DESIGN AND PLANNING ENGINEER

DES. R. HAASE	DR. V. FANGMAN	55521
CHK.	CHK. R. HAASE	

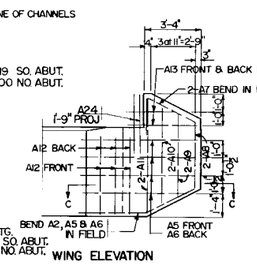
SHEET NO. 2 of 10 SHEETS



WING ELEVATION

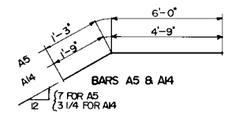


FRONT ELEVATION

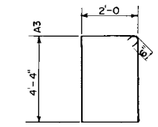


WING ELEVATION

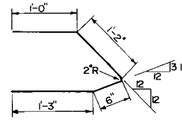
BAR A4



BARS A5 & A14



BAR A3



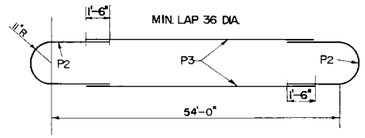
BAR A22

NOTE: ALL BAR DIMENSIONS ARE OUT TO OUT. BARS DETAILED IN ACCORDANCE WITH A.C.I.315 LATEST EDITION UNLESS OTHERWISE NOTED.

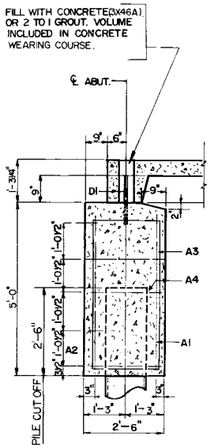
REINFORCEMENT BARS REQ'D FOR TWO ABUTMENTS

	MARK	NO.	SIZE	LENGTH	SHAPE	LOCATION
	A1	10	#6	56'-9"	STR.	CAP FRONT LONGIT.
	A2	20	#6	33'-8"	"	" BACK "
	A3	66	#5	13'-8"	BENT	" STIRRUP VERT.
	A4	66	#5	3'-2"	2-HOOKS*	TIES TRANSV.
+	A5	10	#6	7'-3"	BENT	WING FRONT LONGIT.
+	A6	10	#6	5'-9"	STR.	" BACK "
+	A7	4	#4	6'-9"	"	" TOP "
	A8	4	#4	3'-10"	"	" VERT
	A9	4	#4	4'-10"	"	" "
	A10	4	#4	5'-10"	"	" "
	A11	4	#4	6'-8"	"	" "
	A12	12	#4	4'-8"	"	" "
+	A13	8	#4	3'-0"	"	" TOP "
+	A14	10	#6	6'-6	BENT	" FRONT LONGIT.
+	A15	10	#6	4'-0"	STR.	" BACK "
	A16	4	#4	3'-9"	"	" VERT.
	A17	4	#4	4'-6"	"	" "
	A18	4	#4	5'-2"	"	" "
	A19	4	#4	5'-10"	"	" "
	A20	4	#4	6'-6"	"	" "
+	A21	4	#4	8'-6"	"	" TOP "
	A22	6	#4	3'-10"	BENT	" TOP HORIZONTAL
	A23	8	#4	4'-8"	STR.	" " VERT.
	A24	16	#5	3'-6"	"	BLOCK
	D1	30	#8	1'-6"	STR.	BR. SEAT DOWELS

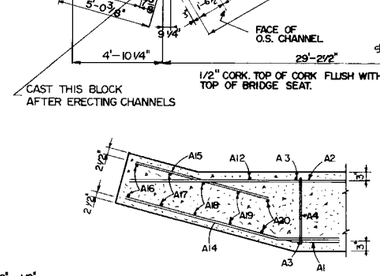
+ BEND IN FIELD



BARS P2 & P3



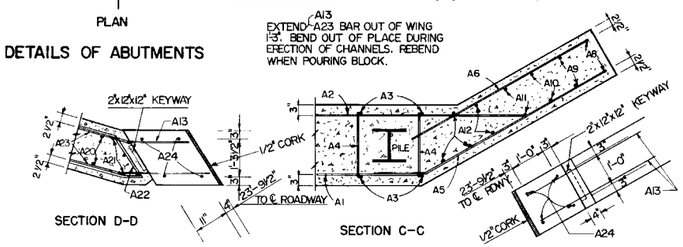
SECTION A-A



PLAN

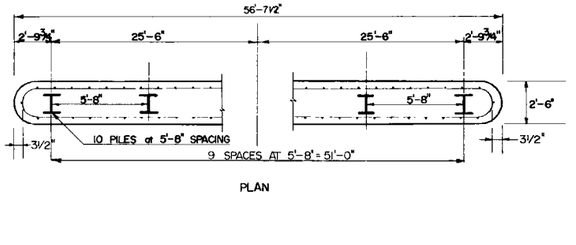
DETAILS OF ABUTMENTS

SECTION B-B



SECTION D-D

SECTION C-C



PLAN

REINFORCEMENT BARS REQUIRED FOR TWO PIERS

MARK	NO.	SIZE	LENGTH	SHAPE	LOCATION
D1	60	#8	1'-6"	STR.	DOWELS
P1	224	#5	18'3"	STR.	PIER STEM, VERTICAL
P2	84	#4	31'-5"	BENT	PIER STEM, HOR.
P3	84	#4	31'-5"	STR.	PIER STEM, HOR.
P4	84	#5	3'-2"	2-HOOKS	PIER TIES-TRANSV.

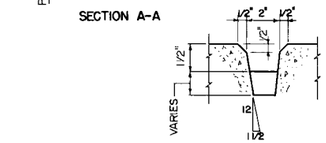
SUMMARY OF QUANTITIES — 2 ABUTMENTS		
CONCRETE MIX NO. 3Y43	60	CUBIC YARDS
REINFORCEMENT BARS	3 694	LBS.
STRUCTURE EXCAVATION CLASS "E"	146	CU. YDS.
2 STEEL "H" TEST PILES	40	L.F. EA.
STEEL "H" PILINGS DELIVERED	280	L.F.

(1) BENCH MARK DISK SEE STD. PLT. 9300

(2) COUNTY WILL FURNISH DISK, PAYMENT FOR PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS SEE STANDARD PLATE 9301 FOR PLACING.

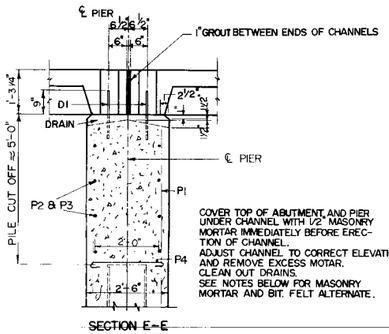
SUMMARY OF QUANTITIES — 2 PIERS		
CONCRETE MIX NO. 3Y43	195	CU. YDS.
REINFORCEMENT BARS	8,308	LBS.
2 STEEL "H" TEST PILES	40	L.F. EA.
STEEL "H" PILINGS DELIVERED	630	L.F.
STRUCTURE EXCAVATION CLASS "WE"	73.0	CU. YDS.

PILE NOTES FOR 2 ABUTMENTS & 2 PIERS
4 STEEL TEST PILES 40' LONG
28 STEEL PILES ESTIMATED LENGTH 35 ft.
30 STEEL PILES REQUIRED FOR ABUTMENT & PIERS
ALL PILES TO BE H PILES 12 x 53
ESTIMATED PENETRATION TO BE 1' LESS THAN LENGTH GIVEN.
PILE SPACING SHOWN IS AT BOTTOM OF FOOTING.
FOR SPLICES AND TIP REINFORCEMENT SEE DETAIL B202



DETAIL OF PIER DRAINS

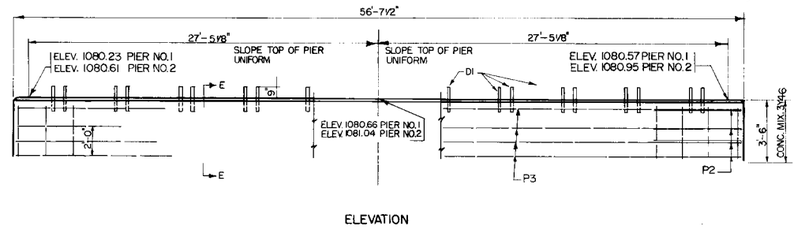
FILL WITH CONCRETE(3X46A)OR 2 TO 1 GROUT. VOLUME INCLUDED IN CONCRETE WEARING COURSE.



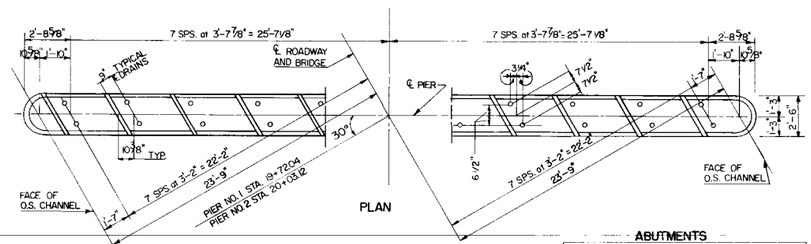
SECTION E-E

COVER TOP OF ABUTMENT, AND PIER UNDER CHANNEL WITH 1/2" MASONRY MORTAR IMMEDIATELY BEFORE ERECTION OF CHANNEL.
ADJUST CHANNEL TO CORRECT ELEVATION AND REMOVE EXCESS MOTAR.
CLEAN OUT DRAINS.
SEE NOTES BELOW FOR MASONRY MORTAR AND BIT. FELT ALTERNATE.

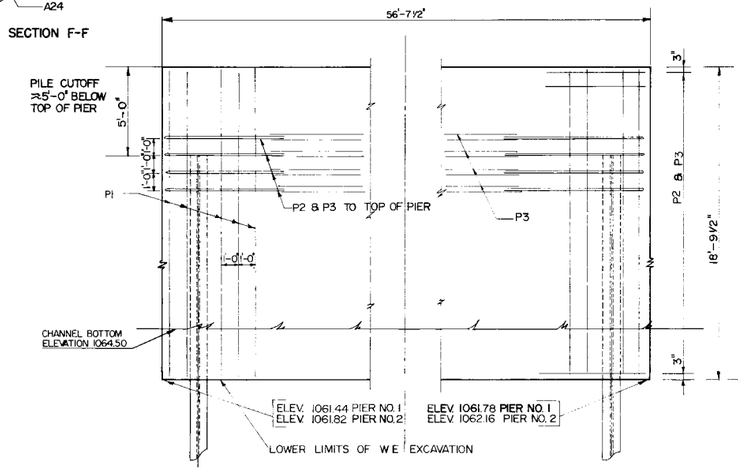
MASONRY MORTAR:
1 PART MASONRY CEMENT AS PER A.S.T.M. C91 TYPE 2.
3 PARTS MORTAR SAND AS PER M.H.D. 3128
SUFFICIENT WATER TO PRODUCE PLASTIC CONSISTENCY.
PAYMENT TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.



ELEVATION



PLAN



DETAILS OF PILE SHELL

ABUTMENTS	
COMPUTED PILE LOADS	TONS/PILE
D.L.+ EARTH PRESS	23.1
LIVE LOAD	14.9
TOTAL	38.0 T/P

PIERS	
COMPUTED PILE LOADS	TONS/PILE
DEAD LOAD	32.9
LIVE LOAD	8.0
TOTAL	40.9 T/P

5 PILES IN ABUTMENTS
10 PILES IN PIERS

AS AN ALTERNATE, BIT. FELT (M.H.D. 3701) MAY BE SUBSTITUTED FOR MASONRY MORTAR UNDER CHANNELS. 1/4" x 1'-11" AT PIERS AND 1/4" x 11" AT ABUTMENTS. NOTCH BIT. FELT AT PIER DRAINS. PAYMENT FOR BIT. FELT TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS.

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 55521

PRECAST CONCRETE SPANS
ABUTMENT & PIER DETAILS
30° SKEW

APPROVED: _____

DES. R.H.	DR. V. F.	55521
CHK.	CHK. R.H.	

STATE AID PROJ. NO.

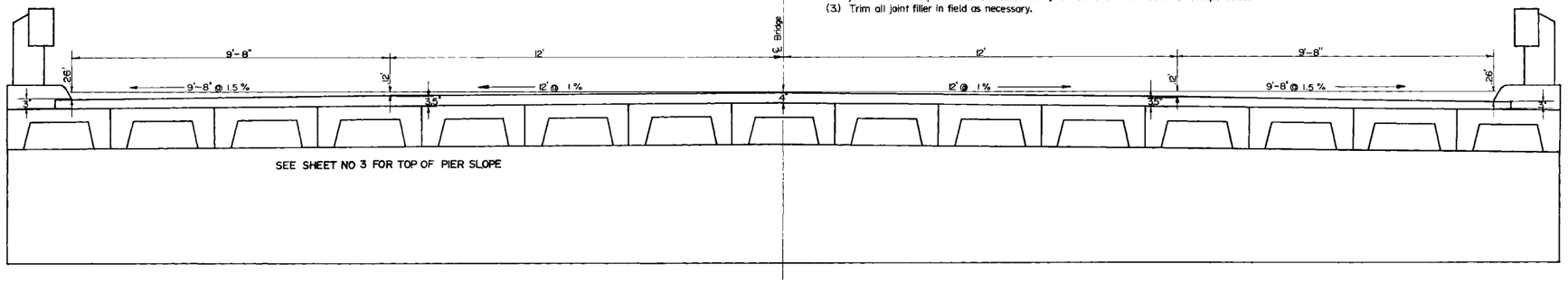
SHEET NO. 3 OF 10 SHEETS

LIST OF PREFORMED CORK PER A.A.S.H.O. M153 (TYPE 1)		
NO.	SIZE	LOCATION
2	18"x24"	BETWEEN FACIA CHANNEL AND WING
2	24"x24"	BETWEEN FACIA CHANNEL AND WING

(1) Payment for preformed cork included in price bid for other items.
(2.) The list of joint filler material is for the contractor's convenience only. Any additional joint material required shall be furnished by the contractor no additional compensation.
(3.) Trim all joint filler in field as necessary.

SUMMARY OF QUANTITIES SUPERSTRUCTURE	
Precast concrete channel type A3	39
Precast concrete channel type B3	6
Concrete wearing course	4130 sq. ft.
Structural steel M.H.D. 3306	622 LBS.
(2)(1) Standard name plate	one

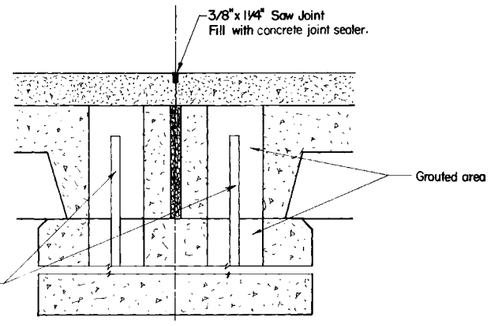
(1) Bridge no. 55521
Dated:
(2) Included in price bid for other items.



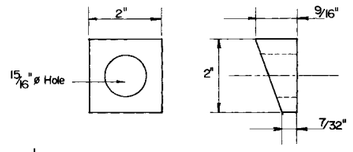
SEE SHEET NO 3 FOR TOP OF PIER SLOPE

TRANSVERSE SECTION

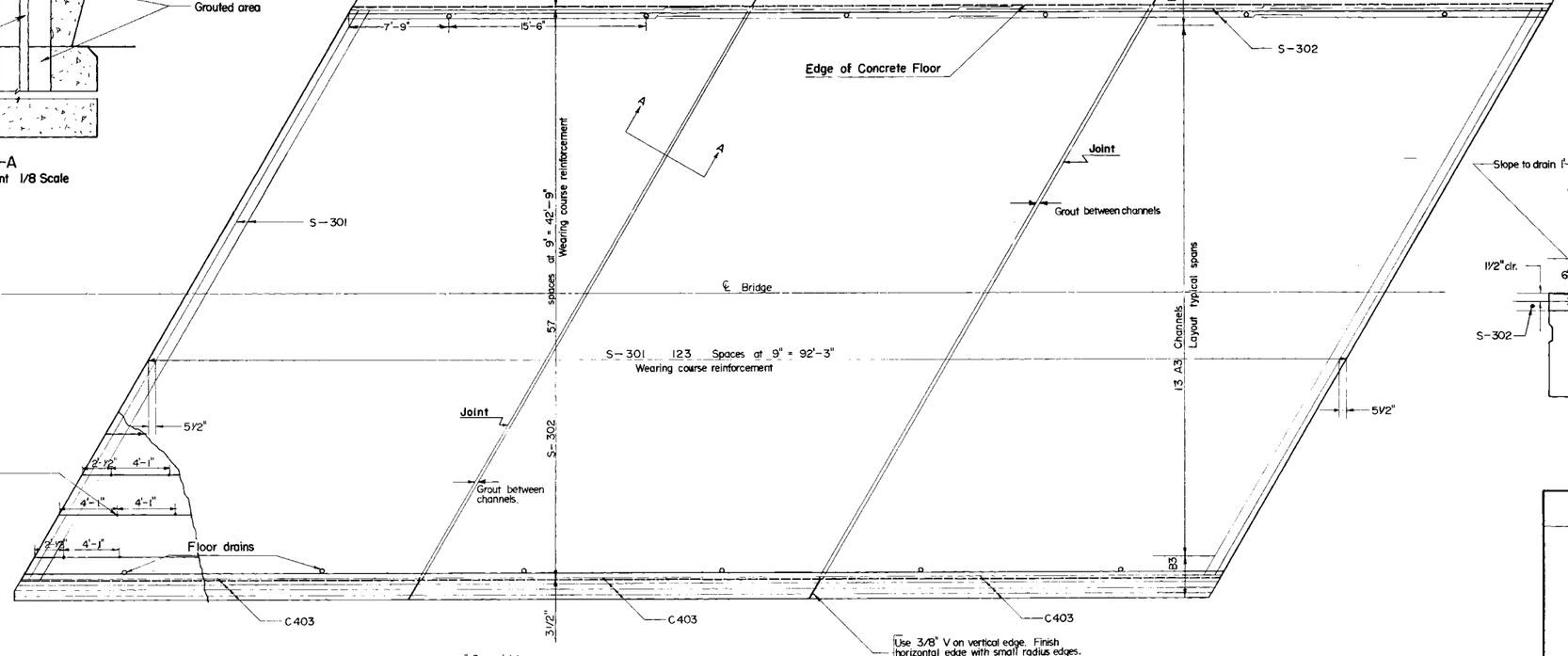
BILL OF REINFORCEMENT FOR WEARING COURSE & CURBS			
MARK	NO.	LENGTH	LOCATION
S.301	123	24'-3"	W.C. Transverse
S.302	57	26'-2"	W.C. Long.
C.403	24	30'-7"	Curb



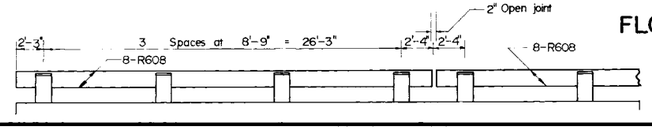
SECTION A-A
Showing Typical Joint 1/8 Scale

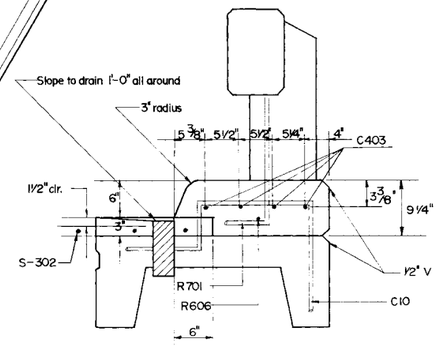


DETAIL OF BEVELED WASHER
Galv. per M.H.D. 3392
(Ridgeway malleable iron bevel washer or approved equal)



FLOOR PLAN





SECTION THRU CURB

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 55521

SUPERSTRUCTURE DETAILS

APPROVED: _____

DES. R.H.	DR. V.F.
CHK.	CHK. R.H.

STATE AID PROJ. NO

SHEET NO. 4 OF 10 SHEETS

DESIGN DATA

1969 A. A. S. H. O. Design Specifications
HS20 Live Loading
Distribution in accordance with Art. 1.3.2
f_c = 2000 P. S. I. n = 6
f_s = 24,000 P. S. I.

GENERAL NOTES

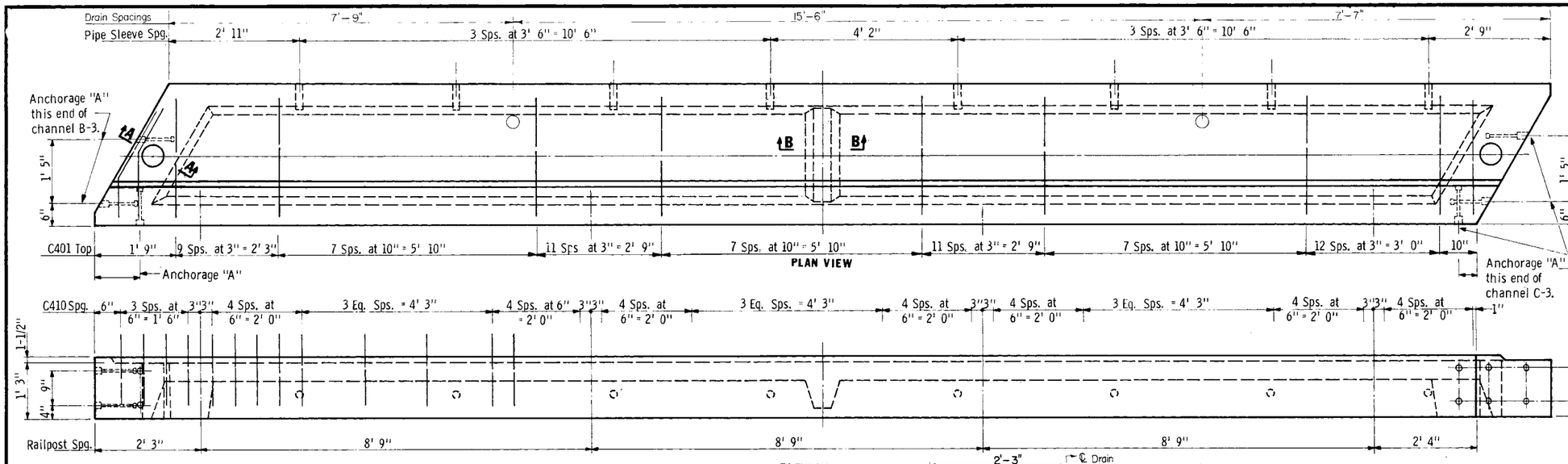
For precast concrete channels, see M. H. D. 2404.

The center channel shall be erected first in each span of the structure. Other channels shall be erected outward from center. Channels to be bolted together with snug fit.

Grout for keyways shall consist of 1 part of Portland Cement, 1/10 part of hydrated lime or approved equivalent, 3 parts of clean sand, all measured by volume, and sufficient water to produce the desired consistency. Payment to be included in price bid for other items.

The facia channels are detailed for use with a one line concrete rail, 6" brush curb, and 3" wearing course.

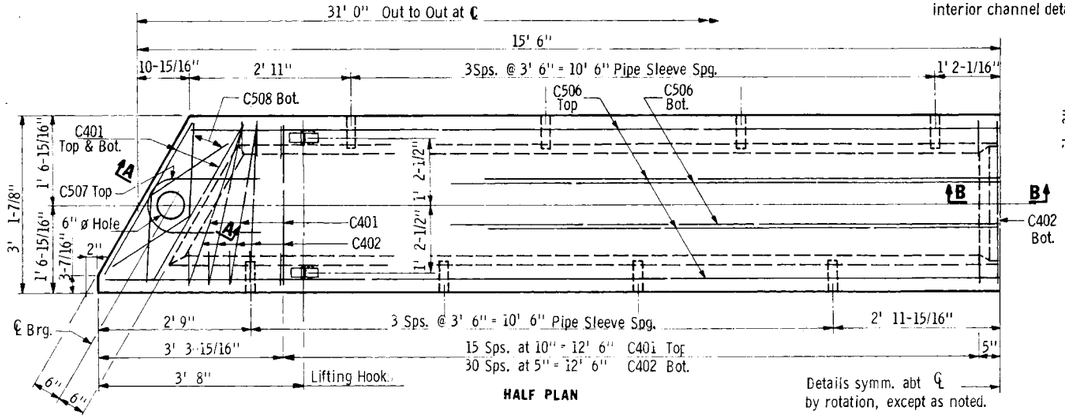
‡To be included in weight of structural steel M. H. D. 3306. All material cast into channels to be included in price bid for precast channels.

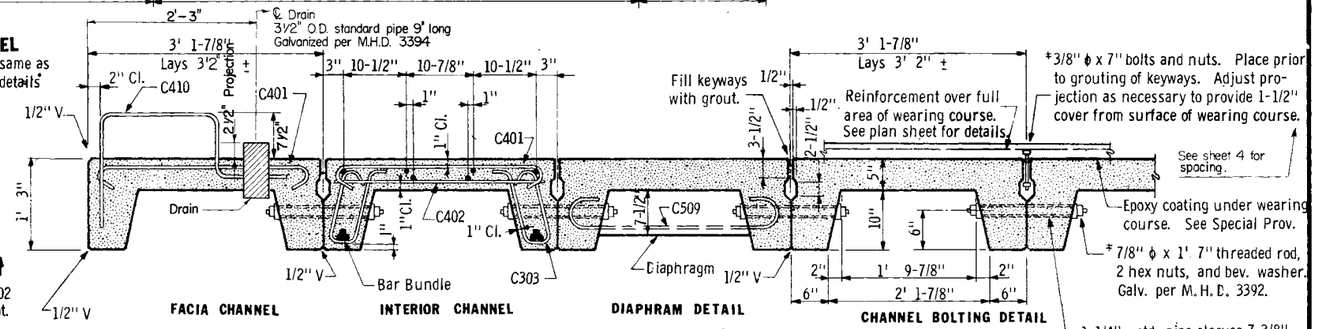


ELEVATION

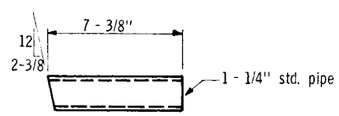
FACIA CHANNEL

Details not shown are same as interior channel details



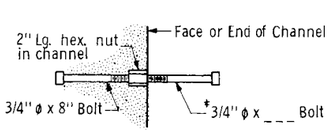


PART CROSS-SECTION THRU CHANNELS

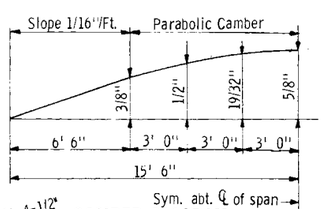


DETAIL OF PIPE SLEEVE

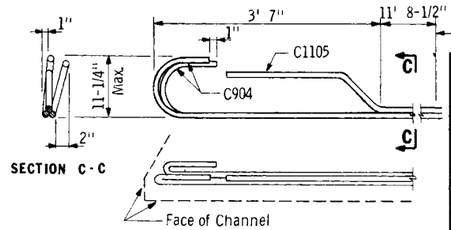
Galv. per M. H. D. 3394 after fabrication.



ANCHORAGE "A" DETAIL

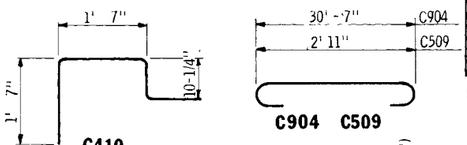


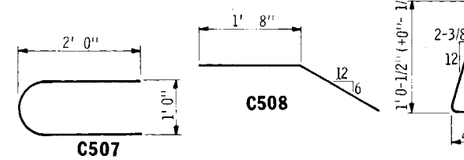
CAMBER DIAGRAM



SECTION C-C

BAR BUNDLE DETAIL

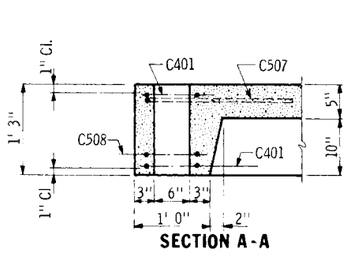




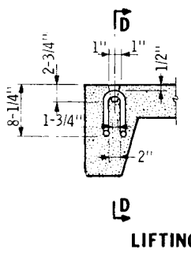
BILL OF REINFORCEMENT — ONE PRECAST CHANNEL

MARK	NO. OF BARS PER CHANNEL A-3	B-3	C-3		LENGTH	SHAPE	LOCATION
C401	44	73	73		3' 7"	Bent	Top Transv.
C402	71	71	71		2' 8"	Str't.	Bot. Transv.
C303	76	76	76		3' 4"	Bent	Leg Stirrup
C904	4	4	4		33' 1"	Bent	Leg Long.
C1105	2	2	2		28' 5"	Bent	Leg Long.
C506	6	6	6		30' 8"	Str't.	Top & Bott. Long.
C507	2	2	2		4' 6"	Bent	End Transv.
C508	4	4	4		3' 4"	Bent	End Tie
C509	2	2	2		4' 1"	Bent	Diaphragm
C410	0	45	45		5' 0"	Bent	Curb Tie

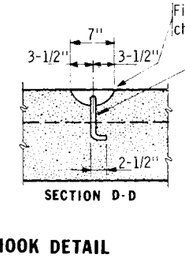
First digit or first and second digit of bar mark indicates size of bar.



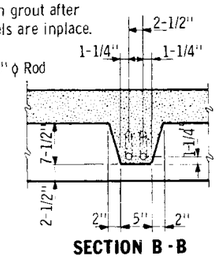
SECTION A-A



LIFTING HOOK DETAIL



SECTION D-D



SECTION B-B

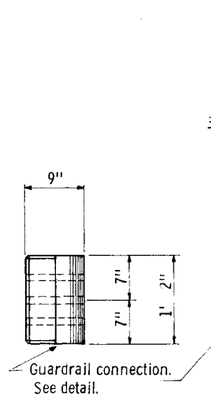
Fig. 5-397.808
Aug 3, 1970

TITLE: 31 FT. PRECAST CONCRETE CHANNEL 30° SKEW RIGHT	DES: R.H	DR: V.F	APPROVED:	Bridge No. 55521
	CHK:	CHK: R.H.		
	Sheet No. 5 of 10 Sheets			

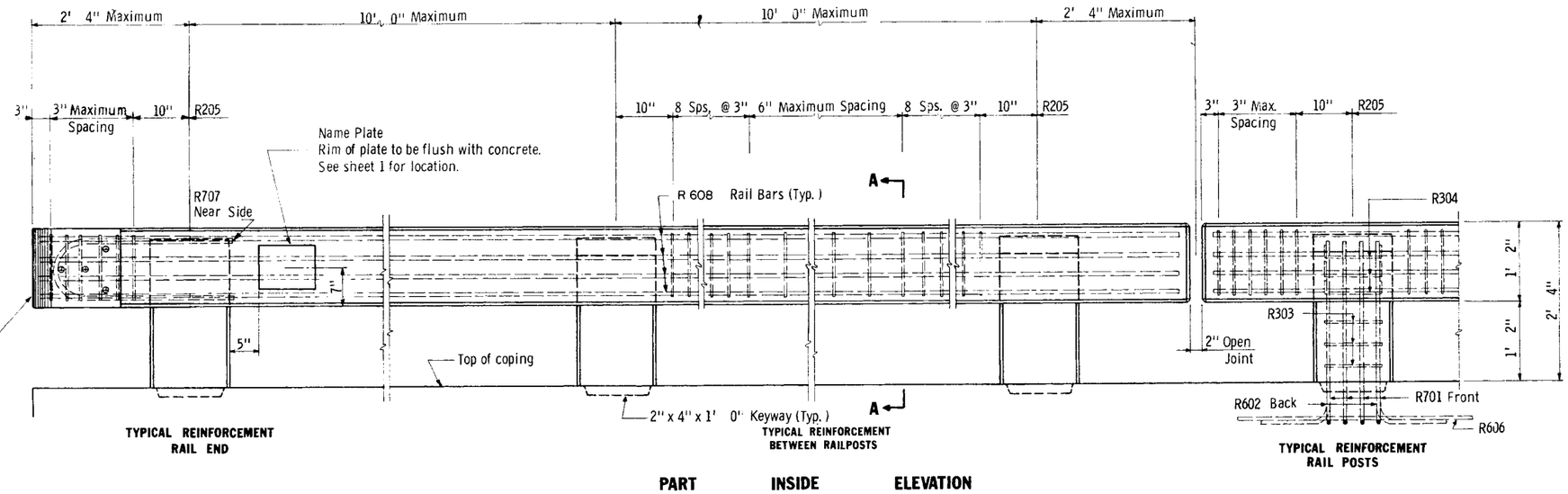
BILL OF REINFORCEMENT FOR RAILING

SIZE	MARK	NO	LENGTH	SHAPE	LOCATION
#7	R701	96	3' 8"	Bent	Railpost
#6	R602	48	3' 4"	"	"
#3	R303	72	3' 9"	"	"
#3	R304	72	3' 4"	"	"
#2	R205	504	3' 6"	"	Railing
#6	R606	24	3' 6"	Str.	Curb
#7	R707	4	6' 0"	Bent	Railing
#6	R608	48	30' 7"	Str.	"

See special provisions for railing ties alternate.



RAIL END VIEW

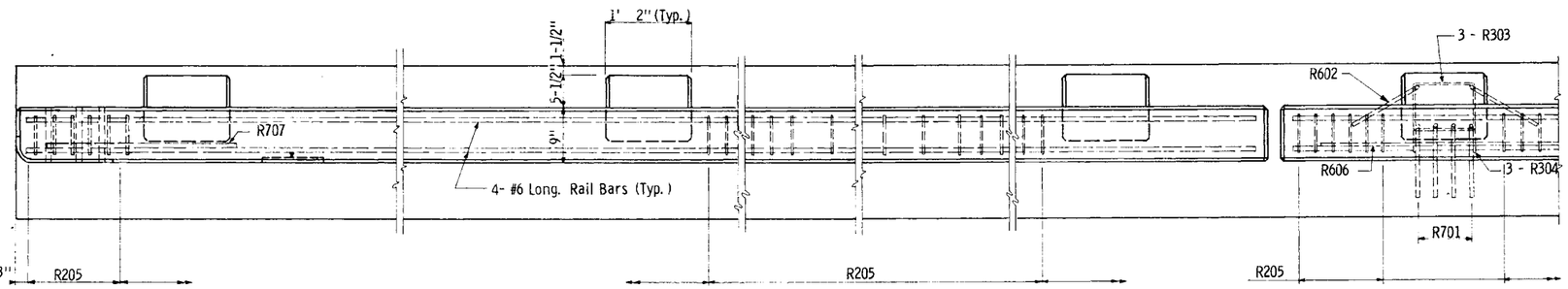


TYPICAL REINFORCEMENT RAIL END

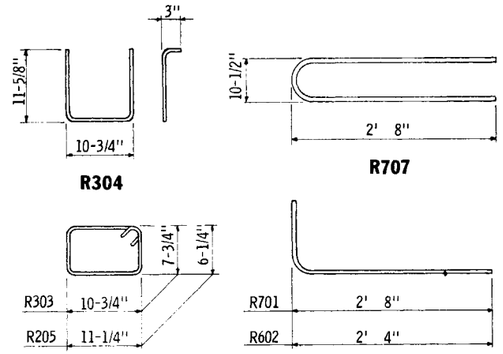
TYPICAL REINFORCEMENT BETWEEN RAILPOSTS

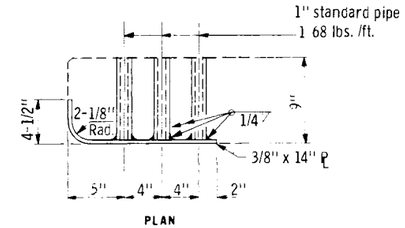
TYPICAL REINFORCEMENT RAIL POSTS

PART INSIDE ELEVATION



PLAN VIEW

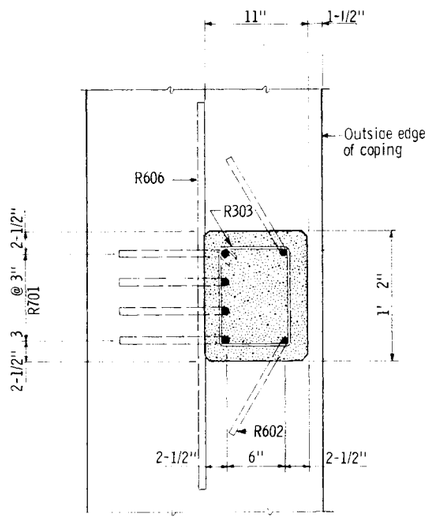




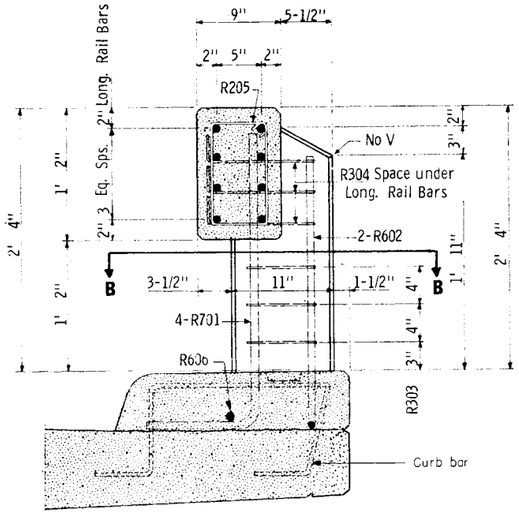
GUARDRAIL CONNECTION DETAIL

GALVANIZE AFTER FABRICATION PER M. H. D. 3394

Est. Wt. 32 lbs.



SECTION B - B



SECTION A - A

GENERAL NOTES:

Railposts and railing to be concrete mix No. 3Y46A.

All railposts normal to grade.

Finish all edges of railing and railposts to a 1/2" V except where otherwise noted.

Special care shall be exercised in finishing the surface of the concrete slab in the area of the posts so that the vertical reinforcement for the posts can be properly placed with respect to depth of anchorage.

No. 2 reinforcement bars shall comply with A. S. T. M A306.

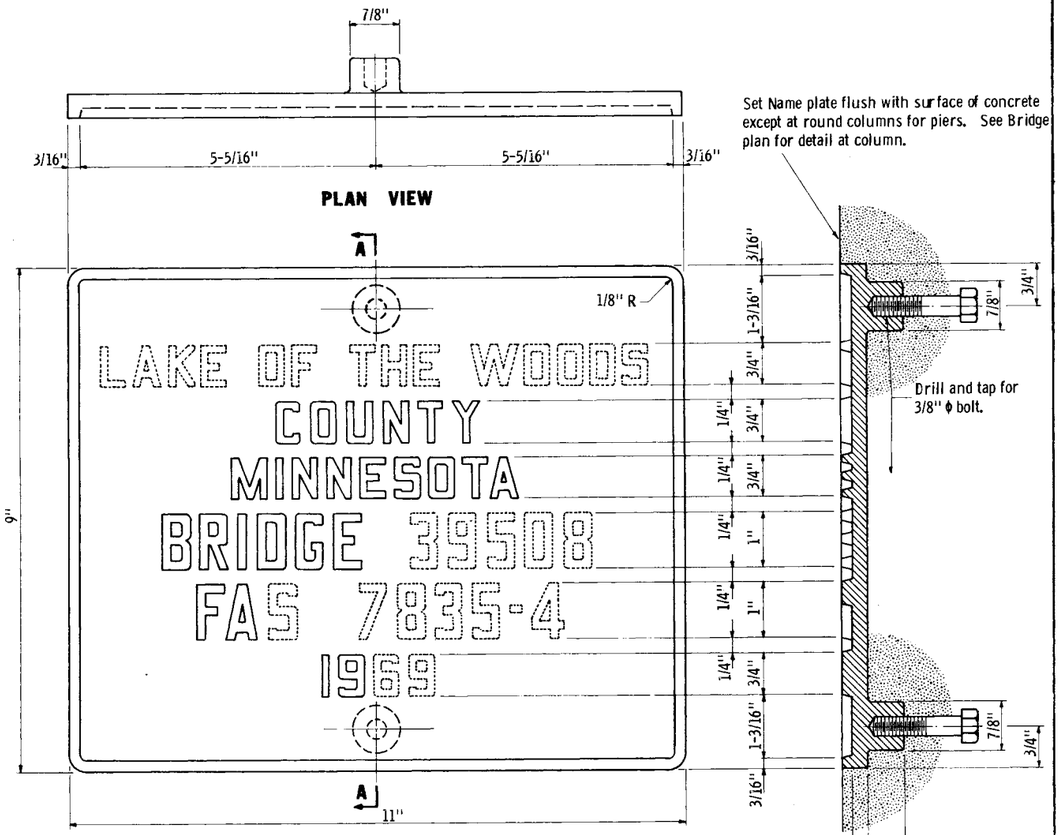
Railing quantities are included in summary of quantities for superstructure.

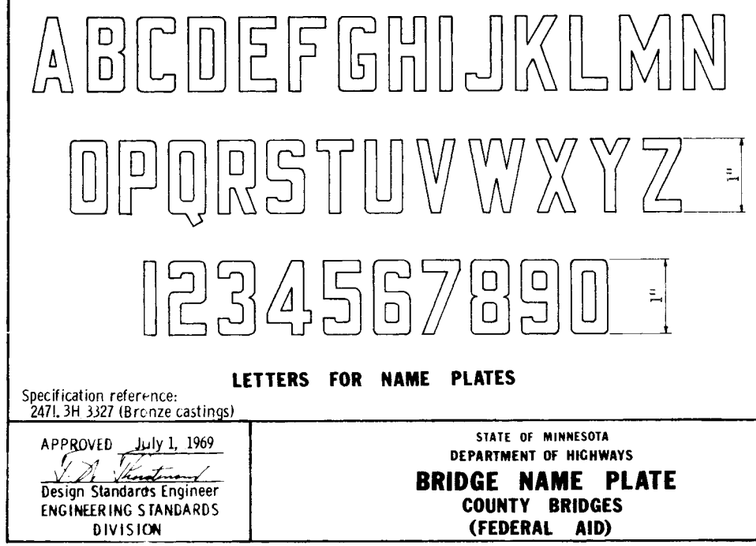
Guardrail connection to be included in weight of structural steel M. H. D. 3306.

Fig. 5-397.101

Feb. 23, 1970

TITLE:	DES: R.H.	DR: V.F	APPROVED:	Bridge No.
CONCRETE RAILING FOR 6" BRUSH CURB (WITHOUT END POST)	CHK:	CHK: R.H.		
	Sheet No. 6 of 10 Sheets			





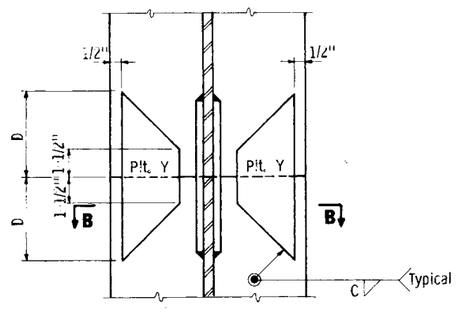
LETTERS FOR NAME PLATES

Specification reference:
2471. 3H 3327 (Bronze castings)

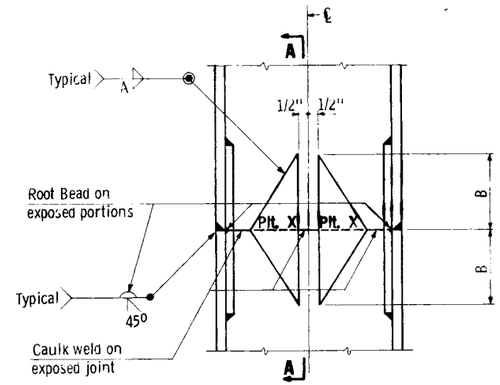
NOTES:

Numbers and letters shall conform to those shown.
Draft on letters shall not be more than 3" in 12"
Horizontal spacing of letters shall produce a balanced layout in proportion to spacing shown.
Top surface of letters and frames shall be burnished.
Background of plate shall have a deep brown oxidized finish.
Furnish 2 steel bolts 3/8" ϕ x 3" long with each plate.
Plates ordered in pairs shall be cast from the same heat.
Numbers and letters shown dotted are to be obtained from Bridge plans.
All dimensions for 3/4" high letters and numbers shall be in direct proportion to those shown for the 1" high letters and numbers.

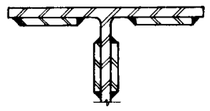
APPROVED July 1, 1969	STATE OF MINNESOTA	REVISION	DETAIL NO.
Design Standards Engineer	DEPARTMENT OF HIGHWAYS		
ENGINEERING STANDARDS DIVISION	**BRIDGE NAME PLATE**		**B102**
	COUNTY BRIDGES (FEDERAL AID)		



SECTION A - A



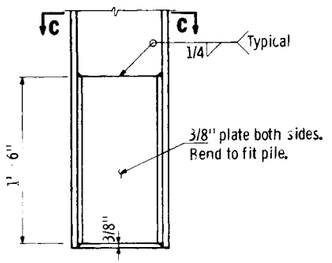
ELEVATION



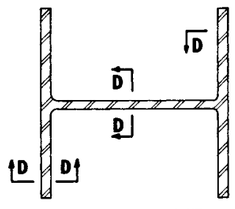
SECTION B - B

PILE SECTION	PLATE X Size	A	B	PLATE Y Size	C	D
10 BP 42	2-1/2 x 3/8	1/4	4	3 x 3/8	5/16	4
10 BP 57	2-1/2 x 1/2	5/16	4	3 x 1/2	5/16	5
Use → 12 BP 53	3-1/2 x 3/8	1/4	5	4 x 3/8	5/16	5
12 BP 74	3-1/2 x 1/2	5/16	6	4 x 1/2	5/16	6
14 BP 73	4-1/2 x 3/8	1/4	7	5 x 3/8	5/16	6
14 BP 89	4-1/2 x 7/16	5/16	7	5 x 1/2	5/16	7
14 BP 102	4-1/2 x 1/2	5/16	7	5 x 9/16	3/8	7
14 BP 117	4-1/2 x 9/16	3/8	7	5 x 5/8	3/8	8

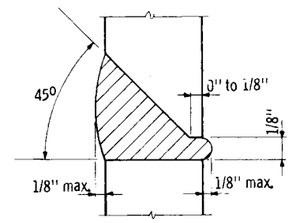
PILE SPLICE



ELEVATION

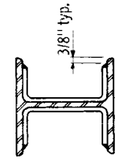


SECTION AT JOINT



SECTION D - D

ALTERNATE 100% BUTT WELDED PILE SPLICE



SECTION C - C

Each pile tip reinforcement will be paid for in amount equal to 5 linear feet of piling delivered.

No pile tips shall be reinforced except by written order of the Engineer.

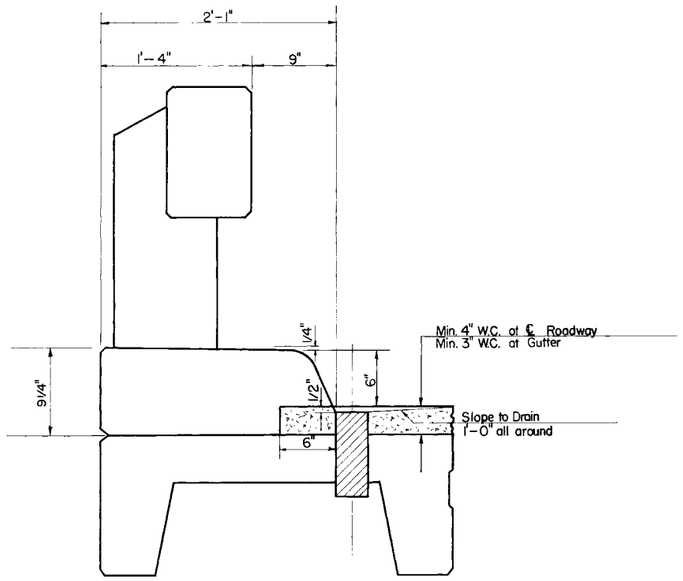
DETAIL OF PILE TIP REINFORCEMENT

NOTES:

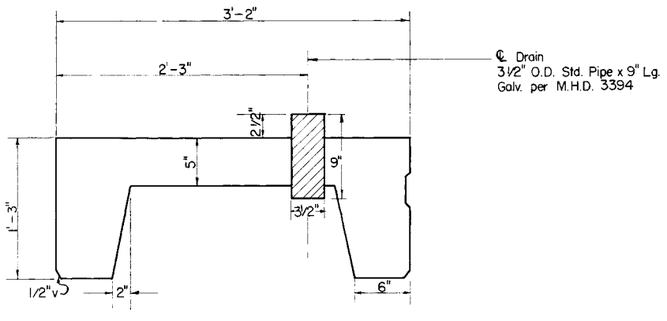
Pile ends at splice to be square.
Welding electrodes per M. H. D. 3339.
With D.C. reverse polarity (electrode positive) only use A. S. T. M. classification E6010.
With D.C. reverse polarity or AC use A. S. T. M. classification E6011.
Where moisture control is properly enforced A. S. T. M. classification E6016 or E7016 may be used.
Recommended moisture content per cent of coating:
E6010 3.0 to 5.0 % D. C. R. only
E6011 2.0 to 4.0 % AC or D. C. R.
E6016 Less than 0.4 % AC or D. C. R.
E7016 Less than 0.4 % AC or D. C. R.
All welding per M. H. D. 2471. 3J.
Steel plates per M. H. D. 3306.

APPROVED July 1, 1969	STATE OF MINNESOTA	REVISION	DETAIL NO.
Design Standards Engineer	DEPARTMENT OF HIGHWAYS		
ENGINEERING STANDARDS DIVISION	**PILE SPLICE and TIP REINFORCEMENT**		**B202**
	STEEL H BEARING PILES 10" TO 14"		

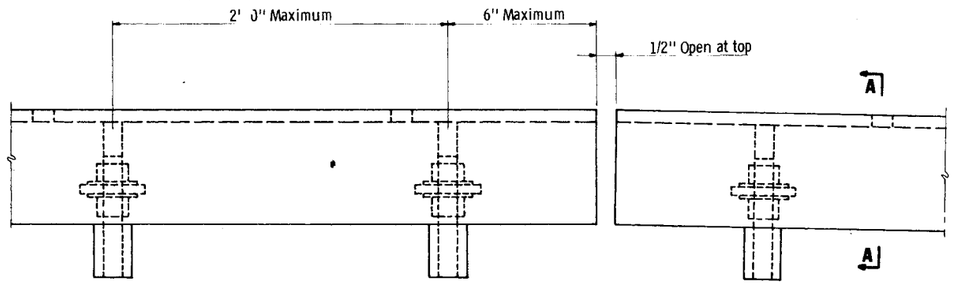
TITLE:	DES: R.H.	DR: V.F.	APPROVED:	Bridge No.
DETAILS	CHK:	CHK: R.H		55521
	Sheet No. 7 of 10 Sheets			



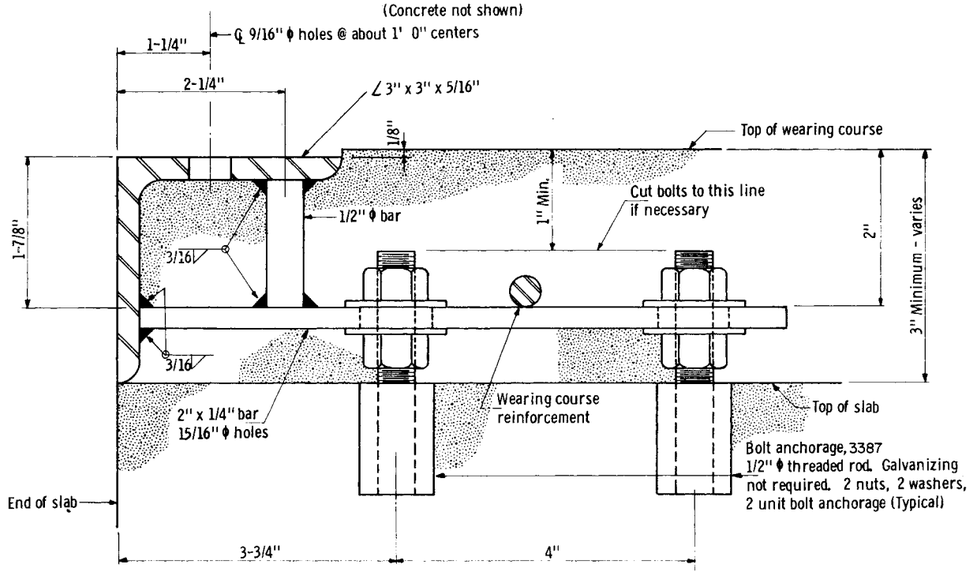
POSITION ON FINISHED GUTTER



POSITION ON FACIA CHANNEL



ELEVATION
(Concrete not shown)



SECTION A - A

NOTES:

Angles shall extend full width of roadway between curbs with a 1/2" open joint at each break in crown profile. Maximum length 22 ft.

Material: Structural steel per M. H. D. 3306. Galvanize after fabrication per M. H. D. 3394. Anchorage per M. H. D. 3387 or approved equal.

Set angle to proper grade and crown.

All material on this sheet will be paid for as Structural steel (3306).

FLOOR DRAIN DETAIL

APPROVED July 1, 1969
Design Standards Engineer
ENGINEERING STANDARDS DIVISION

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS
PROTECTION ANGLE FOR WEARING COURSE

REVISION

DETAIL NO. **B552**

TITLE: DETAILS

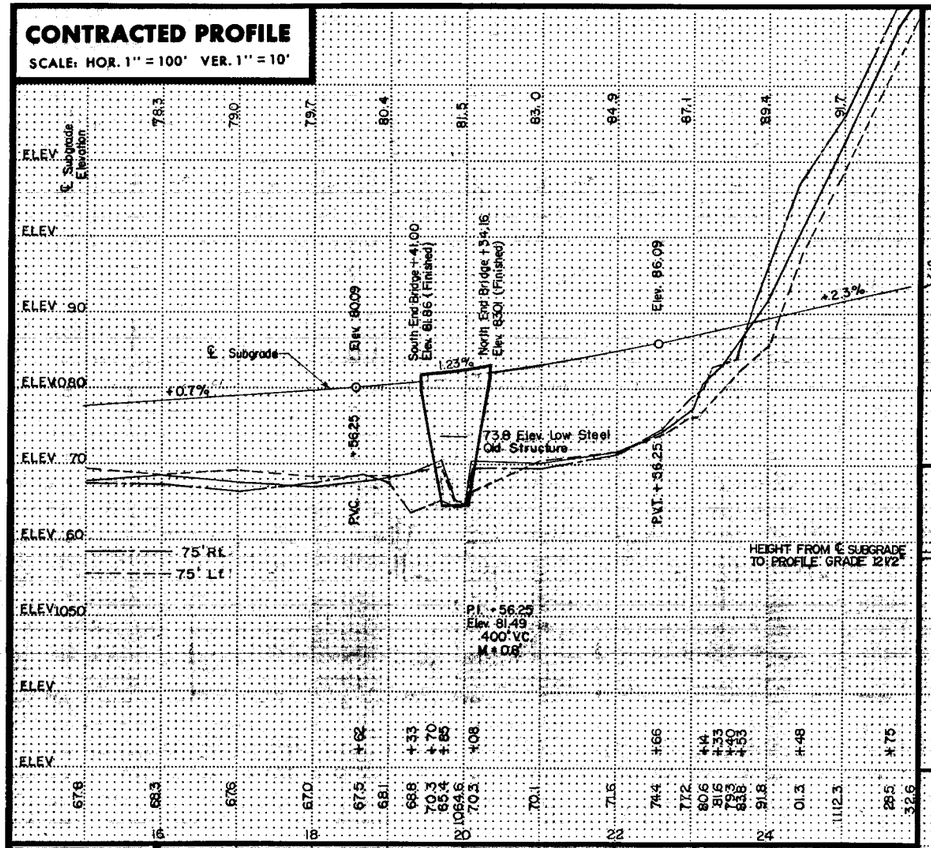
DES: R. H. | DR: V. F. | APPROVED:
CHK: | CHK: R. H.

Sheet No. 8 of 10 Sheets

Bridge No. 55521

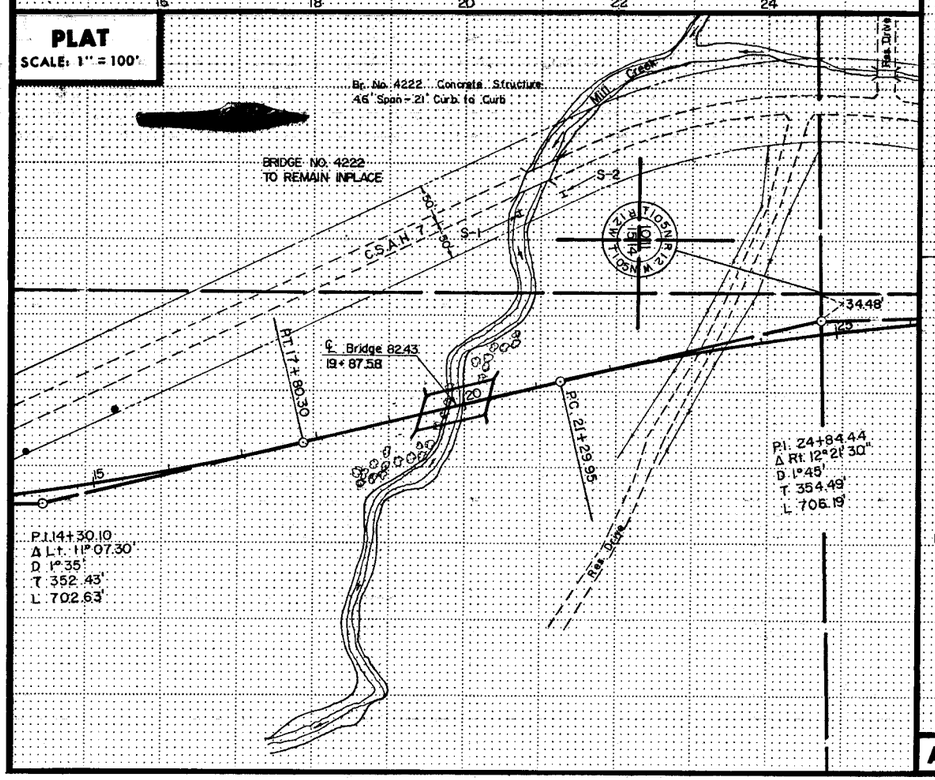
CONTRACTED PROFILE

SCALE: HOR. 1" = 100' VER. 1" = 10'



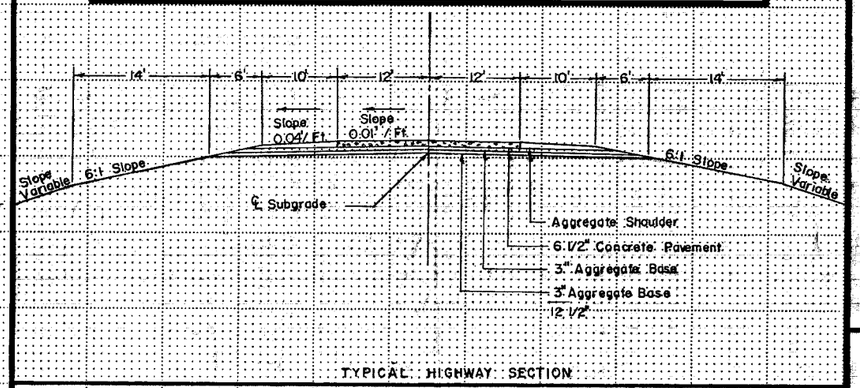
PLAT

SCALE: 1" = 100'

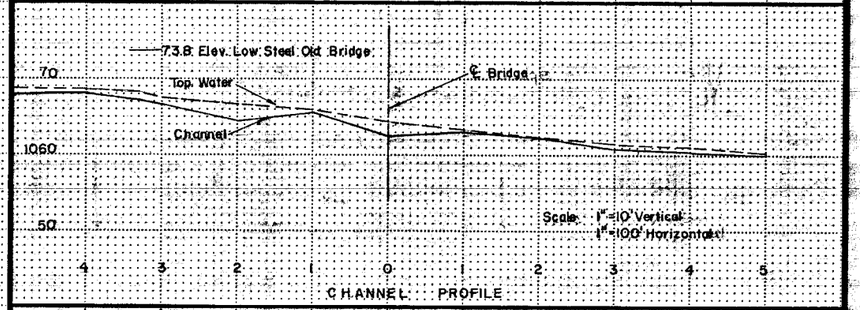


TYPICAL SECTIONS & PERTINENT DATA

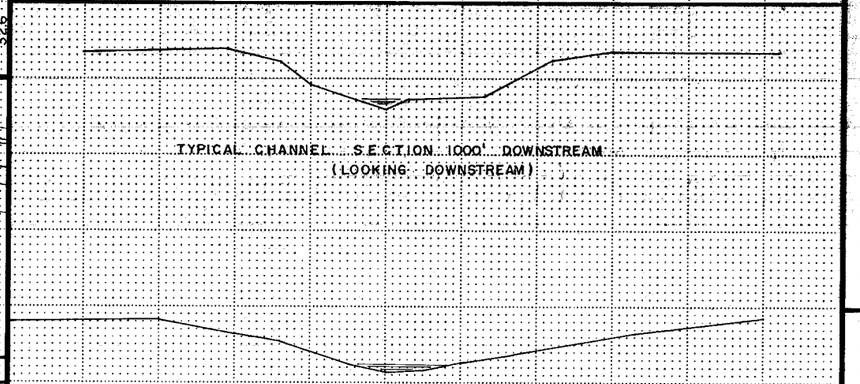
SCALES AS SHOWN



TYPICAL HIGHWAY SECTION



CHANNEL PROFILE



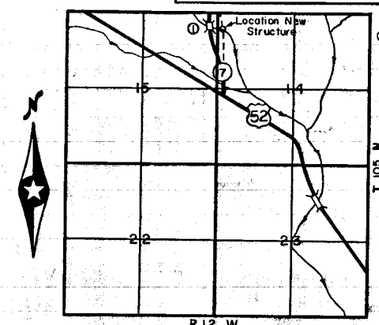
TYPICAL CHANNEL SECTION 1000' DOWNSTREAM
(LOOKING DOWNSTREAM)

TYPICAL CHANNEL SECTION 1000' DOWNSTREAM
(LOOKING UPSTREAM)

B.M. ELEV 1075.81
X in S.E. Cor. Curb Bridge 4222

SEE SHEET 10 OF 10 SHEETS FOR PLAN AND PROFILE

Fed. Proj. No.



R 12 W
INDEX MAP
(FOUR SECTIONS)

FOLLOW SEPARATE "INSTRUCTIONS FOR PREPARATION OF BRIDGE SURVEYS" WHEN MAKING BRIDGE SURVEYS.

DATA

1. Preliminary recommendations of Engineer in charge of Bridge Survey:
   a. Not span length and type of bridge 3-31' Span
   b. Width of roadway on bridge 1 Curb to Curb 43'-4"
   c. Number and width of sidewalks, if any None
   d. Locate center of bridge at station 19+87.58
   e. If a skew bridge is recommended, the angle of skew should be 30° Right
   f. Is piling required? Yes
2. Special features: Waterfalls, dams, exceptional floods, ice, driftwood, sliding banks, logging, etc.
3. Changes: In height or length from that of old bridge, and reasons why Length increased to conform to 2:1 slope from channel bottom to abutments
4. Other bridges in vicinity:
   a. Over same stream (particularly structures which carry high water without overflow of roadway); give location, length, height above water, net cross-sectional area at high water stage and estimated age See index map above.
   b. Over or under same highway or railroad; give location, length, horizontal and vertical clearances and estimated age
   c. Reasons why these bridges are, or are not, fair indications of what length the proposed bridge should be Existing bridge on occasion floods
5. If structure is over a drainage ditch, is ditch gradient liable to be altered?
6. Navigation clearances required, if any None
7. Information and evidence in regard to high water stages was obtained as follows
8. Must contractor provide for traffic during construction of proposed bridge? No
   If so, by what means?

HYDRAULIC ENGINEERS RECOMMENDATION

Drainage area	6.7 sq. mi.	Approximate channel bottom	1064.5 ft.
Design discharge (50-yr. freq.)	1750 cfs	Mean velocity through bridge	9.0 fps
Design higherwater (50-yr freq)	1072.1 ft.	Mean velocity in natural channel	9.0 fps
Low steel at or above	1075.1 ft.	Swellhead	negligible
Waterway area below elev. 1072.1	195 sq. ft.	Skew	20 degrees

HIGH AND LOW WATER ELEVATIONS

Data obtained from Hydraulic Engineers Recommendations.... reflects highest water elevation in the area of this construction to be 1072.1 ft. and the lowest water elevation to be 1064.7 (EST.) The above figures are for informational purposes only. The state neither warrants nor represents that these figures for high water and low water are in any way indicative of the high water or low water to be expected or encountered during this construction.

SHIPPING POINT

Proposed Bridge is 6 miles South of * Eyota which is the nearest Railroad shipping point.

*(Give name of town, station or siding)

Date — Project or County Engineer

Date — District Engineer

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE SURVEY

FOR

PROPOSED BRIDGE LOCATED 6 MILES South OF Eyota (TOWN OR CITY) ON C.S.A.H. 7 (T.H., C.S.A.H. OR C.A.R. NUMBER)

SEC. 14 TWP. 105 N R. 12 W

TOWNSHIP Orion COUNTY Olmsted

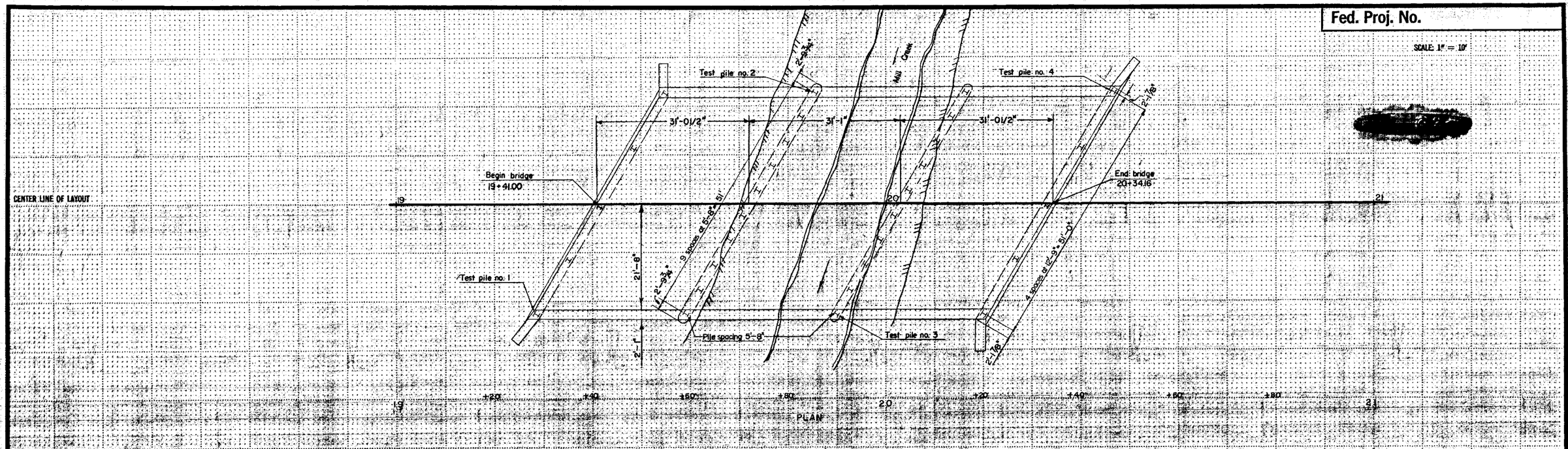
SURVEY MADE DURING MONTH OF March 19 70

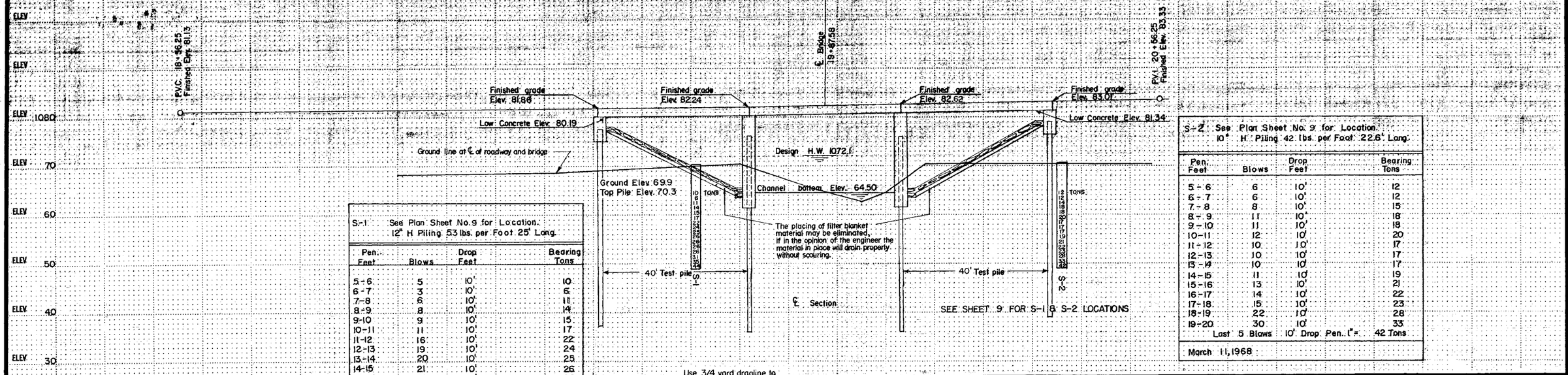
SURVEY MADE BY Jerry Lawler

BRIDGE NO. 55521

Fed. Proj. No.

SCALE: 1" = 10'





S-1 See Plan Sheet No. 9 for Location.
12" H Piling 53 lbs. per Foot 25' Long.

Pen. Feet	Blows	Drop Feet	Bearing Tons
5-6	5	10'	10
6-7	3	10'	6
7-8	6	10'	11
8-9	8	10'	14
9-10	9	10'	15
10-11	11	10'	17
11-12	16	10'	22
12-13	19	10'	24
13-14	20	10'	25
14-15	21	10'	26
15-16	21	10'	26
16-17	22	10'	26
17-18	22	10'	26
18-19	31	10'	31
19-20	43	10'	35
Last 5 Blows		10' Drop Pen. 3/4" = 44	Tons

March 11, 1968

Use 3/4 yard dragline to reshape channel 100' up and down stream to a top width of 40 feet or as directed by the engineer.

S-2 See Plan Sheet No. 9 for Location.
10" H Piling 42 lbs. per Foot 22.6' Long.

Pen. Feet	Blows	Drop Feet	Bearing Tons
5-6	6	10'	12
6-7	6	10'	12
7-8	8	10'	15
8-9	11	10'	18
9-10	11	10'	18
10-11	12	10'	20
11-12	10	10'	17
12-13	10	10'	17
13-14	10	10'	17
14-15	11	10'	19
15-16	13	10'	21
16-17	14	10'	22
17-18	15	10'	23
18-19	22	10'	28
19-20	30	10'	33
Last 5 Blows		10' Drop Pen. 1" =	42 Tons

March 11, 1968

TRUNK HIGHWAY NO.
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 55521

BRIDGE SURVEY
PLAN AND PROFILE

SEE SHEET NO. 9 FOR ADDITIONAL INFORMATION

State Proj. No. S.A.P. 55-607-07

Sheet No. 10 of 10 Sheets

Bridge Survey Sheet (Sheet 2 of 2)