FORM 100-A '65

PLANS SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT-OF-WAY LINE
PRESENT RIGHT-OF-WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY LINE
RIVER OR CREEK (NAME)
DRY RUN
DRAINAGE DITCH (SIZE)
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
(TIMBER)
CATCH BASIN C.B.
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
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
SAND PIT
BORROW PIT
ROCK QUARRY

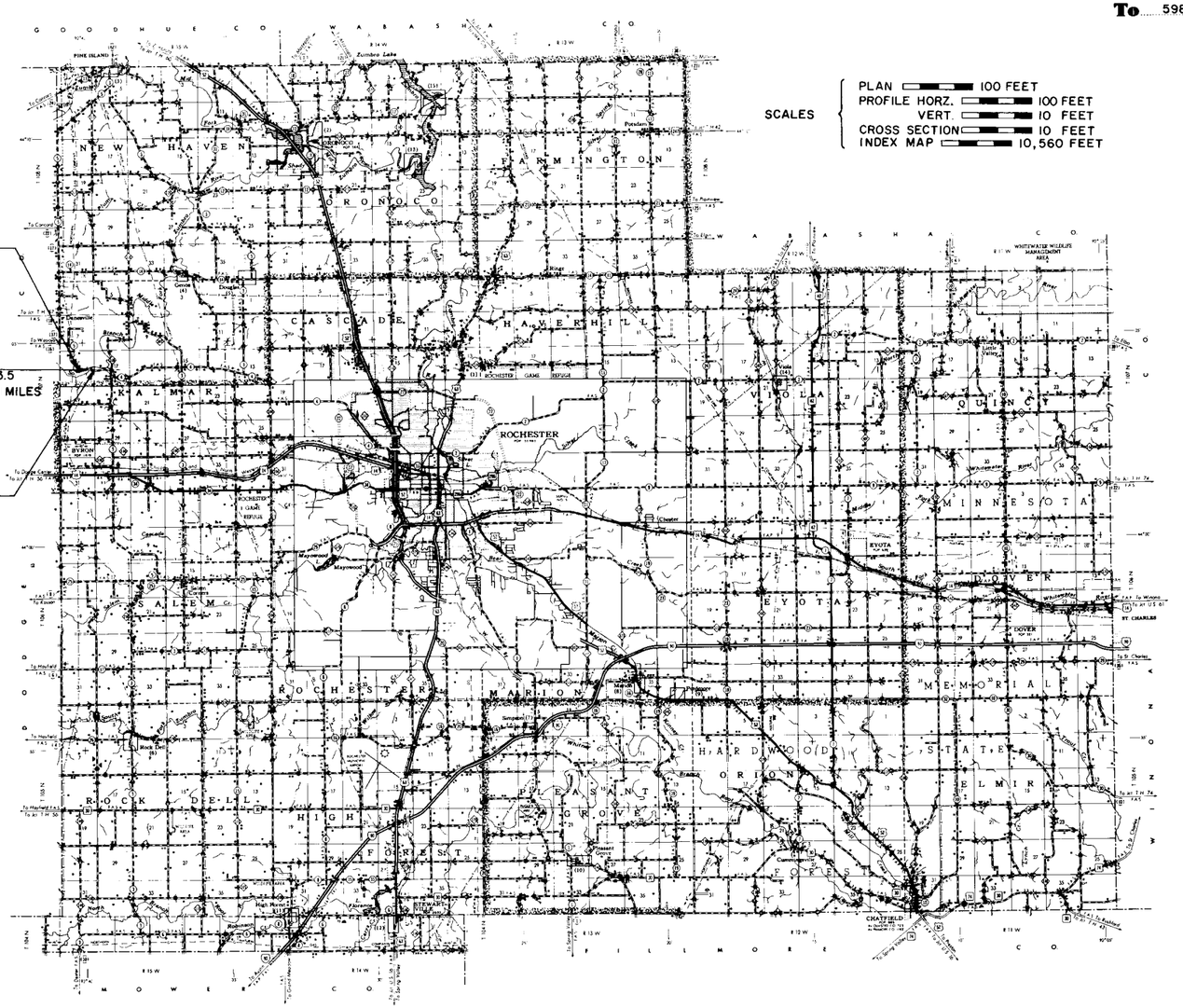
UTILITIES SYMBOLS

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
WATER MAIN
CONDUIT
TELEPHONE CABLE IN CONDUIT
ELECTRIC CABLE IN CONDUIT
TELEPHONE MANHOLE
ELECTRIC MANHOLE
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
AERIAL TELEPHONE CABLE T-AE
SEWER, (SANITARY OR STORM)
SEWER MANHOLE

END : SAP 55-605-04
Sta. 177+00

BRIDGE NO. 55527
Sta. 157+46.5 to Sta. 160+13.5
LENGTH = 267.0'------- 0.051 MILES

BEGIN : SAP 55-605-04
Sta. 148+00



SCALES
PLAN 100 FEET
PROFILE HORZ. 100 FEET
VERT. 10 FEET
CROSS SECTION 10 FEET
INDEX MAP 10,560 FEET

Fed. Proj. No.

STATE OF MINNESOTA

DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR Grading, Agg. Base and Br. No. 55527

COUNTY STATE AID HIGHWAY NO. 5

BETWEEN BYRON **AND** West County Line

From 598.2' South and 127.7' West of E.1/4 Corner Sec.18 T.107N.-R.15W.
(Give proper reference to Sections, Township and Range)

To 598.2' South and 3027.7' N.W. of E.1/4 Corner Sec.18 T.107N.-R.15W.

GROSS LENGTH	2900.00	**FEET**	0.549 **MILES**
BRIDGES-LENGTH	267.00	**FEET**	.051 **MILES**
EXCEPTIONS-LENGTH		**FEET**	**MILES**
NET LENGTH	2900.00	**FEET**	0.549 **MILES**

INDEX OF SHEETS

Sheet No. 1 Title Sheet & Layout Map
" No. 2 Est. Quantities & Typical Sec
" No. 3 To Plan & Profile
" No. 4 To 7 Cross Sections
" No. 1 To 22 A Bridge Plan Br. No. 55527

Total of 29 Sheets in Plan

DESIGN SPEED 55 **M. P. H.**

PROJECTED A. D. T. 648

7 **TON DESIGN**

SOIL FACTOR 130

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.

J K Dolan — COUNTY ENGINEER — DATE 4-11-77

Olmsted — COUNTY — REG. NO. 10219

RECOMMENDED FOR APPROVAL G Wilde 4-18 1977 — DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL Robert D. Hedahl 4-20 1977

APPROVED 4/21 1977 — STATE AID ENGINEER

— SPECIFICATIONS —
MINNESOTA HIGHWAY DEPARTMENT
STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION DATED JANUARY 1, 1972
AS AMENDED BY SUPPLEMENTAL SPECIFICATIONS DATED APRIL 1, 1976 SHALL GOVERN.

S.A.P. 55-605-04
Minn. Project No. _____ State Project No. _____

OLMSTED County, Minnesota. County Proj. No. _____ Plan No. _____ Sheet 1 of 7 Sheets

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT	MUNICIPAL	RURAL	TOTAL ESTIMATED QUANTITIES	
	2101.502	CLEARING	TREE		45	45	
	2101.507	GRUBBING	TREE		42	42	
	2104.501	REMOVE PIPE CULVERTS	LIN. FOOT		88	88	
	2105.501	COMMON EXCAVATION	CU.YD.		6549	6549	(P)
	2105.503	ROCK EXCAVATION	CU.YD.		793	793	
	2105.507	SUBGRADE EXCAVATION	CU.YD.		834	834	
	2105.523	COMMON BORROW (CV)	CU.YD.		47053	47053	
①	2123.501	COMMON LABORERS	HOUR		8	8	
①	2123.503	MOTOR GRADER	HOUR		8	8	
①	2123.508	15 CU.YD. SCRAPER	HOUR		32	32	
①	2123.509	DOZER	HOUR		16	16	
②	2211.501	AGGREGATE BASE, CLASS 2	TON		2915	2915	
③	2442.501	REMOVE OLD BRIDGE	LUMP SUM		1	1	
	2501.511	36" C.S. PIPE CULVERT	LIN. FEET		88	88	
	2501.515	36" G.S. PIPE APRONS	EACH		4	4	

(P) PLAN QUANTITY.

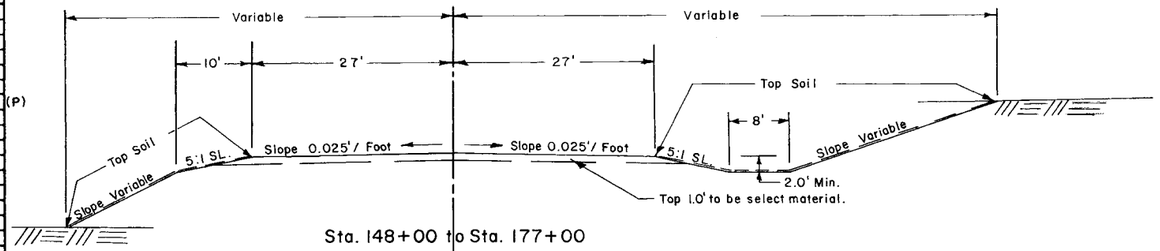
① FOR OBLITERATING OLD ROAD.
② INCLUDES 120 TONS FOR 3 RESIDENTIAL DRIVES AND 300 TONS FOR 2 PUBLIC ROAD APPROACHES.
③ THE OLD BRIDGE SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF IN ACCORDANCE WITH THE PROVISIONS OF 2104.3C.

STANDARD PLATES

THE FOLLOWING STANDARD PLATES APPROVED BY THE DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION SHALL APPLY ON THIS PROJECT.

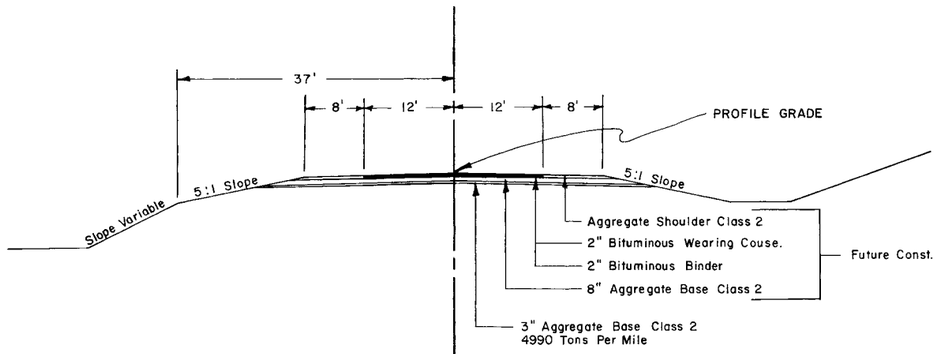
PLATE NO.	DESCRIPTION
0002 A	SPECIFICATION REFERENCE TO STANDARD PLATES
3040 D	CORRUGATED METAL PIPE
3123 G	METAL APRON FOR C.M. PIPE
8000 F	STANDARD BARRICADES
9000 B	APPROACHS AND ENTRANCES

TYPICAL GRADING SECTIONS



Sta. 148+00 to Sta. 177+00

TYPICAL BASE AND SURFACE SECTION



Sta. 148+00 to Sta. 177+00

SPECIAL DETAILS

NOTE: MATERIAL FROM THE UPPER 1.0' OF THE NATURAL TOPSOIL SHALL NOT BE USED IN THE UPPER 1.0' OF THE ROADWAY. PART OF THIS MATERIAL SHALL BE UNIFORMLY SPREAD ON SLOPES AND DITCH BOTTOMS TO A DEPTH OF 3". NO PAYMENT IN ADDITION TO THE CONTRACT PRICE FOR "COMMON EXCAVATION" WILL BE MADE FOR SPREADING THE TOPSOIL AS ABOVE PROVIDED, NOR WILL ANY UNDERCUTTING MADE IN EXCAVATION PRIOR TO PLACING THE TOPSOIL BE MEASURED FOR PAYMENT.

NOTE: CORRUGATED STEEL AND REINFORCED CONCRETE PIPE CULVERT EXCAVATION WILL BE CONSIDERED INCIDENTAL, AND WILL BE INCLUDED FOR PAYMENT UNDER UNIT PRICE FOR "PIPE CULVERT."

NOTE: SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW GRADING GRADE FOR COMPACTION, AS SHOWN ON THE PLAN AND PROFILE SHEETS. EXCAVATION HAS BEEN COMPUTED AND IS LISTED AS SUBGRADE EXCAVATION. BACKFILL WITH SELECT MATERIAL FROM R.O.W. TAPERS SHALL BE 50:1 IN ALL CASES.

NOTE: PLACE SECTIONAL CONCRETE PIPE ON CLASS "B" AND "C" BEDDING AS DIRECTED BY THE ENGINEER. ALL BEDDING TO BE CONSIDERED AS INCIDENTAL AND NO DIRECT COMPENSATION SHALL BE MADE THEREFOR.

NOTE: ALL DIMENSIONS AND SLOPES SHOWN ON TYPICAL SECTIONS ARE APPROXIMATE.

AS BUILT PLANS

Minn. Proj. No. _____ S.A.P. 55-605-04 State Project No. AS BUILT

ALBINSON, INC. MINNEAPOLIS

BEGIN : S.A.P. 55-605-04
Sta. 148+00

P.O.T. 145+00
P.O.T. 147+86.86
T.C.M.
47.95
77.83'
48.14'
77.85'
86°46'
5.72'
538.2'
P.C. 149+82.26
66'
90
150
155
160
165
170
OBLITERATE OLD
OBLITERATE OLD ROAD
Twp. Rd.
T.C.M.
P.I. 153+38.20
Δ Rt. 11° 00'
D 1° 33'
T 355.94
L 709.68
E 17.10
Super Elevation .028'/Foot
130' Run Off
SOUTH
BRANCH
ROAD
MIDDLE
FORK
ZUMBRO
RIVER
ISLAND
CONSTR. BR. NO. 55527
P.T. 156+91.94
P.T. 160+50.34
P.C. 165+50.42
(REMOVE) BR. NO. 245
CSAH No. 5
66'
45°
P.I. 169+69.40
Δ Rt. 32° 46' 30"
D 4° 00'
T 418.98
L 819.38
E 60.65
Rate of Super 0.051'/Foot
240' Run Off
END : S.A.P. 55-605-04
Sta. 177+00
Mobil Home
Ho.
Cistern
Cover Outlet
P.T. 173+69.80
P.O.T. 177+45.10
T.C.M.

157+20 Twp. Rd. Lt.
No Culv. Inpl.
Const. TWP Road Approach Lt. 154+50
No Culv. Req'd.

157+20 Twp. Rd. Rt.
No Culv. Inpl.
Obliterate Old Road

169+60 F.E. Rt. (South of old Road)
No Culv. Inpl.
OMITTED
No Culv. Req'd.

172+45 Drive Lt.
No Culv. Inpl.
No Culv. Req'd.

174+53 Farm Ent. Rt.
No Culv. Inpl.
No Culv. Req'd.

Const. Approach Rt. 168+00
36"x56' C.S. Pipe Culv.
2-36" G.S. Pipe Aprons.

168+45 Drive Rt.
No Culv. Inpl.
No Culv. Req'd.

168+54 ℄ Culv.
36" X 48' C.M.P.
Remove
No Culv. Req'd.

174+53 Drive Rt.
Inpl. 24"X 40' CMP
Remove
36"x32' C.S. Pipe Culv.
2-36" G.S. Pipe Apron

CL. 14 — GR. 14
CL. 24 — GR. 20
CL. 7 — GR. 8

B.M. Elev. 1048.56'
Spk. in PP 46' Lt.
Sta. 147+36

B.M. Elev. 1049.29'
Spk. in Tn. Elm 34' Rt.
Sta. 157+75

B.M. Elev. 1051.95'
Spk. in PP 3' Lt.
Sta. 160+41

B.M. Elev. 1086.46
Spk. in PP 70' Rt.
Sta. 174+91

Finished ℄ Elev.

Profile 75' Lt.
Profile 75' Rt.

P.I. +30.0
Elev. 50.49
400' V.C.
M = 0.25
C = 0.0625

P.V.C. +30.0
Elev. 49.89
P.V.T. +30.0
Elev. 52.09
P.V.C. +16.66667
Elev. 54.38332
P.I. +16.66667
Elev. 55.98332
400' V.C.
M = 0.15
P.V.T. +16.66666
Elev. 56.98333
BRIDGE NO. 55527
Low Steel Elev. 1053.06
Finished ℄ Grade
P.V.C. +04.76190
Elev. 61.92380
P.V.T. +04.76190
Elev. 68.12378
+0.3%
+0.8%
+0.5%
+2.6%
SP. DITCH -0.3%
SPECIAL DITCH LEFT AND RIGHT

P.I. +04.76190'
Elev. 62.92380'
400' V.C
M = 1.05

Subgrade Treatment:
Excavate 1.0' Below Grading Grade From Sta. 148+00 to Sta. 151+00.

COMMON EXC.	1637	CU. YDS.
COMMON BORROW	11732	CU. YDS. (CV)
SUBGRADE EXC.	213	CU. YDS.
EMB.	11551	CU. YDS.

COMMON EXC.	4912	CU. YDS.
ROCK EXC.	793	CU. YDS.
COMMON BORROW	35321	CU. YDS. (CV)
SUBGRADE EXC.	621	CU. YDS.
EMB.	37615	CU. YDS.

Subgrade Treatment:
Excavate 1.0' Below Grading Grade From Sta. 172+00 to Sta. 177+00.

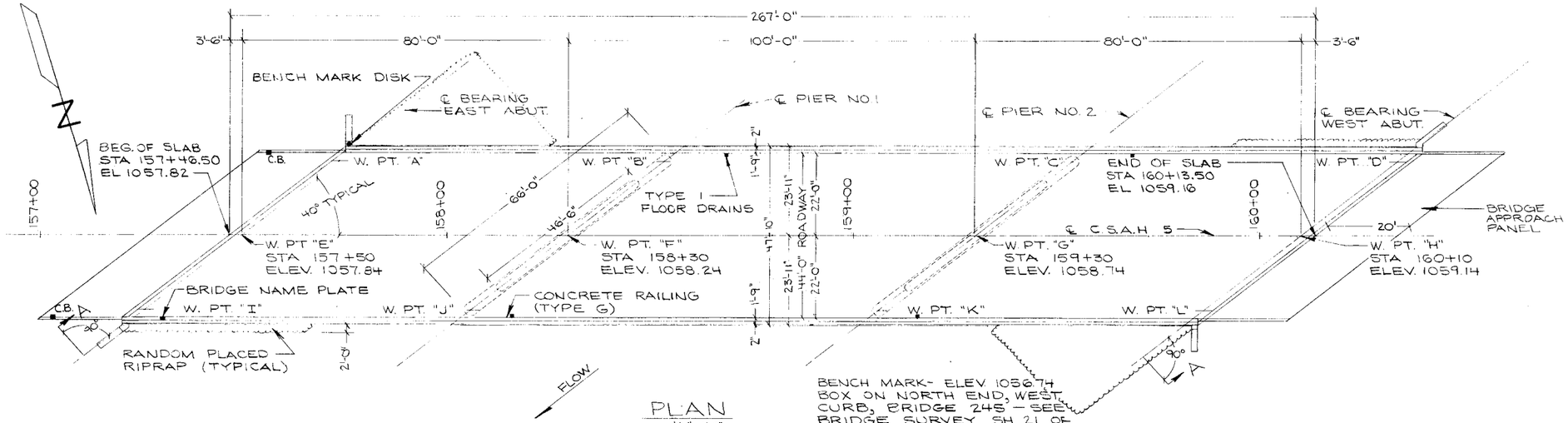
VERTICAL CONTROL
ELEVATIONS SHOWN IN THIS PLAN ARE BASED ON MEAN SEA-LEVEL DATUM, 1929 ADJ. AND TIED TO TO THE U.S. LEVEL NET.
LOCATION NEAR THE RAILWAY STATION AT BYRON MN.
B.M. NO. D24 ELEV. 1261.845

Note: 732 Cu. Yds. of the top 1.0' of top soil to be salvaged from Sta. 150+00 to Sta. 154+00 and placed on slopes and ditches from Sta. 148+00 to Sta. 157+76. Quatity included in "Common Excav." Quantity.

Note: Common Channel Excavation Shall be incorporated into the approach fill.

Note: 971 Cu. Yds. of the top 1.0' of top soil to be salvaged from Sta. 160+50 to Sta. 166+00 and placed on slopes and ditches from Sta. 159+84 to Sta. 177+00. Quantity included in "Common Excavation "quantity.

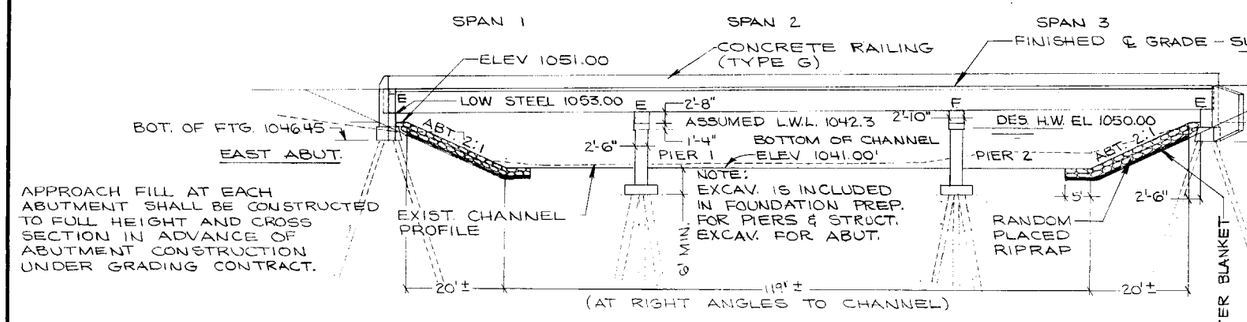
C.S.A.H. 5 AS BUILT PLANS SAP NO. 55-605-04 SHEET NO. 3 OF 7 SHEETS



PLAN

1/16"=1'-0"

BENCH MARK- ELEV 1056.74 BOX ON NORTH END, WEST CURB, BRIDGE 245' — SEE BRIDGE SURVEY SH 21 OF 22

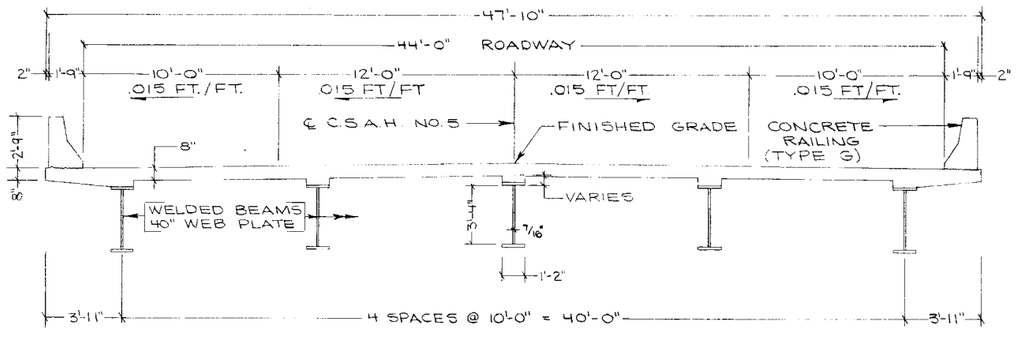


NOTE: ALL PILING TO BE 10 BP 42

E — EXPANSION
F — FIXED

ELEVATION A-A

1/16"=1'-0"



TRANSVERSE SECTION THRU DECK LOOKING WEST

1/4"=1'-0"

DESIGN DATA

1973 AND INTERIM AASHTO DESIGN SPECIFICATIONS

HS 20 LOADING WITH IMPACT — 4 LANES
30 P.S.F. D.L. ALLOWANCE FOR FUTURE WEARING COURSE.
LOAD FACTOR DESIGN METHOD
f_c' = 4000 P.S.I. n = 8
f_y = 60,000 P.S.I. REINFORCEMENT (GRADE 60)
f_y = 36,000 P.S.I. STRUCTURAL STEEL M.H.D. 3306
f_y = 50,000 P.S.I. STRUCTURAL STEEL M.H.D. 3309
DECK AREA = 12,771 SQ. FT.
944 PROJECTED A.D.T. FOR 1996

CONSTRUCTION NOTES

THE MINNESOTA HIGHWAY DEPARTMENT "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED JANUARY 1, 1972 SHALL GOVERN AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS" DATED APRIL 1, 1976.

BRIDGE SEAT REINFORCEMENT SHALL BE CAREFULLY PLACED TO AVOID INTERFERENCE WITH DRILLING HOLES FOR ANCHOR RODS. THE SUPERSTRUCTURE BEAMS SHALL BE ERECTED IN FINAL POSITION PRIOR TO DRILLING HOLES FOR AND PLACING ANCHORS RODS.

THE FIRST DIGIT OR THE FIRST TWO DIGITS OF EACH BAR MARK INDICATE THE BAR SIZE.

CONTRACTOR SHALL DRESS SLOPES AND PLACE RIPRAP IN APPROXIMATE AREAS SHOWN, AS DIRECTED BY THE ENGINEER. RANDOM RIPRAP CLASS B AVERAGE THICKNESS 1'-6"

RDWAY EXCAV. & GRADING WILL BE MADE BY OTHERS IN ADVANCE OF BRIDGE CONSTRUCTION.

QUANTITIES FOR ENTIRE BRIDGE				
ITEM NO.	ITEM		UNIT	QUANTITY
2021.501	MOBILIZATION		LUMP SUM	1
2031.501	FIELD OFFICE, TYPE A		EA.	1
2401.501	CONCRETE MIX NO. 1A43		C.Y.	192 (P)
2401.501	CONCRETE MIX NO. 3X33		C.Y.	339 (P)
2401.501	CONCRETE MIX NO. 3Y43		C.Y.	266 (P)
2401.501	CONCRETE MIX NO. 3X46A		C.Y.	63 (P)
2511.501	RANDOM RIPRAP, CLASS B		CY	328
2511.504	FILTER BLANKET, TYPE I		CY	100
2401.541	REINFORCEMENT BARS		LB.	119,269(P)
2402.521	STRUCTURAL STEEL,	(3306)	LB.	1,012 (P)
2402.521	STRUCTURAL STEEL,	(3309)	LB.	278,437 (P)
2402.546	FLOOR DRAINS, TYPE I		EA.	4
① 2442.501	~~REMOVE OLD BRIDGE~~		~~LUMP SUM~~	~~1~~
2452.510	STEEL H-PILING DRIVEN		L.F.	1800
2452.511	STEEL H-PILING DELIVERED		LF	1800
2452.520	STEEL H-TEST PILES,	50 FT LONG	EA.	2
2452.520	STEEL H-TEST PILES,	40 FT LONG	EA.	2
2405.511	ELASTOMERIC BRG. PAD, TYPE 1		EA.	5
2405.511	ELASTOMERIC BRG. PAD, TYPE 2		EA.	5
2105.511	COMMON CHANNEL EXCAVATION		C.Y.	1202
	SPECIAL PAY ITEMS			
105.614	BRIDGE APPROACH TREATMENT		LUMP SUM	1
301.603	BRIDGE APPROACH PANELS		LUMP SUM	1
401.610	STRUCTURE EXCAVATION		LUMP SUM	1
401.616	FOUNDATION PREPARATION (PIER NO. 1)		LUMP SUM	1
401.616	FOUNDATION PREPARATION (PIER NO. 2)		LUMP SUM	1
402.601	EXPANSION JOINT DEVICE, TYPE I		L.F.	69
402.625	ELASTOMERIC BRG. ASSEMBLIES, TYPE 1		EA.	5
402.601	EXPANSION JT. DEVICE, TYPE 2.5		L.F.	69
402.625	ELASTOMERIC BRG. ASSEMBLIES, TYPE 2		EA.	5

(P) DENOTES PLAN QUANTITY PAY ITEMS AS PER ITEMS M.H.D. 1901

① ~~LOCATED 500' DOWNSTREAM FROM NEW BRIDGE~~

LIST OF SHEETS

SHT. NO.	DESCRIPTION
1	GENERAL PLAN AND ELEVATION
2	BRIDGE LAYOUT
3-5	ABUTMENT DETAILS AND REINFORCEMENT
6-7	PIER DETAILS AND REINFORCEMENT
8-9	SUPERSTRUCTURE DETAILS
10	RAILING DETAILS
11-13	STRUCTURAL STEEL DETAILS
14	EXPANSION ASSEMBLY
15-16	BRIDGE APPROACH PANEL & TREATMENT
17-20	DETAILS
21	BRIDGE SURVEY
22	BRIDGE SURVEY— PLAN AND PROFILE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF STATE OF MINNESOTA.
NAME Lance A. Nelson
DATE 12-7-76 REG. NO. 9035

C.S.A.H. 5, OLMSTED COUNTY
MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE 55527

3.5 MI. NORTH OF BYRON ON C.S.A.H. 5 OVER THE SOUTH BRANCH OF THE MIDDLE FORK OF THE ZUMBRO RIVER. 80'-100'-80' STEEL CONT. BEAM SPANS, IDEN. NO. 401, 44'-0" RDWY. WITH BARRIER CURB, 50° SKEW

GENERAL PLAN & ELEVATION

SEC. 18, T107N, R15W
KALMAR TOWNSHIP, OLMSTED CNTY.

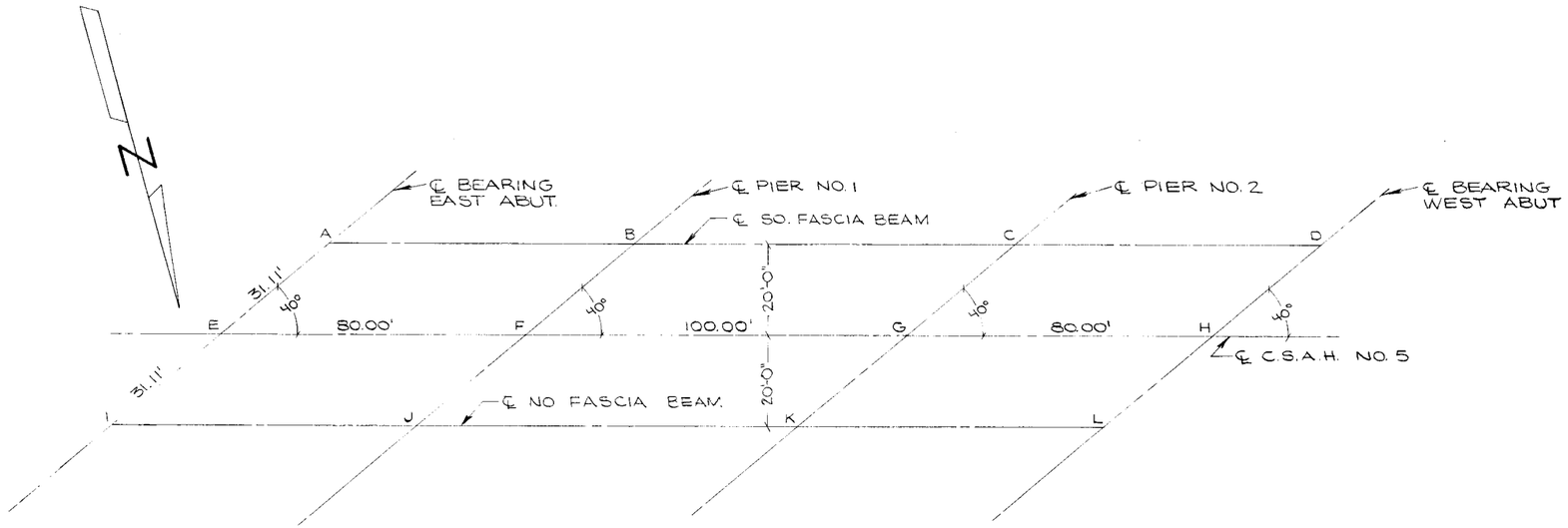
APPROVED:
DATE 12-10-76
COUNTY ENGINEER
OLMSTED COUNTY

APPROVED:
BRIDGE ENGINEER

PLANS PREPARED BY: ZENK ENGINEERING, INC.

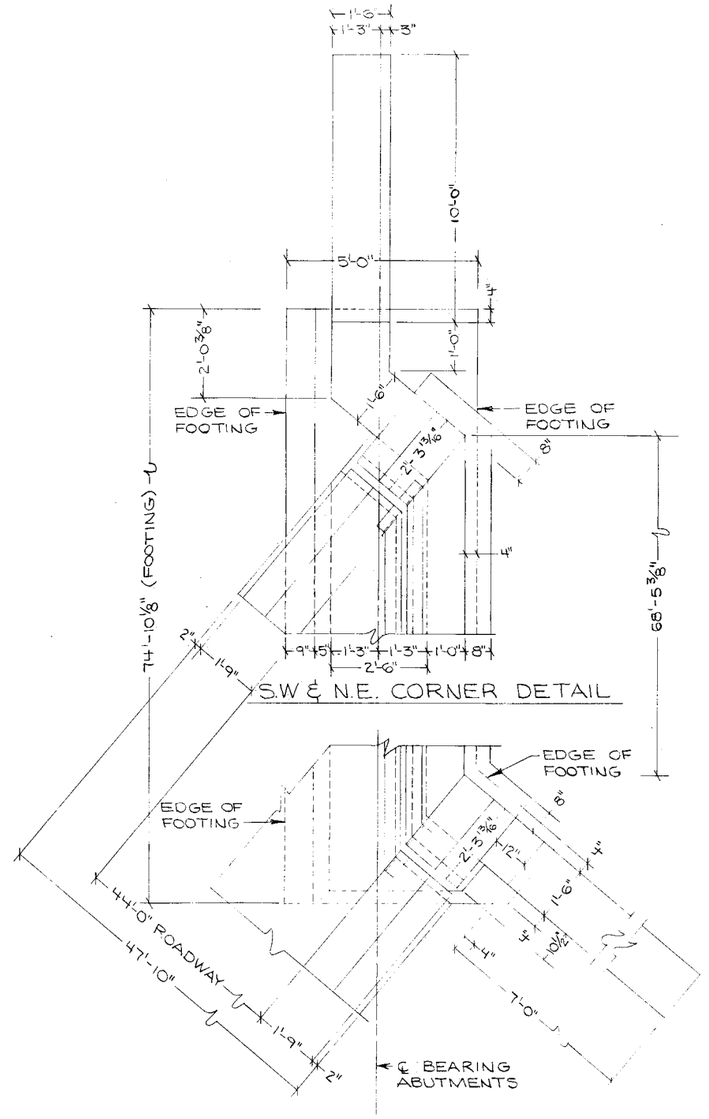
S.A.PROJECT NO. 55-605-04

SHEET 1 OF 22 | 55527 | BAN BEL



LAYOUT SHOWING WORKING POINTS

1" = 20'



N.W. & S.E. CORNER DETAIL

½" = 1'-0"

DIMENSIONS BETWEEN WORKING POINTS

POINT	STATION	A	B	C	D	E	F	G	H	I	J	K	L
A	157+73.83		80.00'			31.11'							
B	158+53.83	80.00'		100.00'			31.11'						
C	159+53.83		100.00'		80.00'			31.11'					
D	160+33.83			80.00'					31.11'				
E	157+50.00	31.11'					80.00'			31.11'			
F	158+30.00	59.62	31.11'			80.00'		100.00'			31.11'		
G	159+30.00		73.75	31.11'			100.00'		80.00'			31.11'	
H	160+10.00			59.62	31.11'			80.00'					31.11'
I	157+26.17					31.11'					80.00'		
J	158+06.17	31.43					31.11'			80.00'		100.00'	
K	159+06.17	135.24	65.87					31.11'			100.00'		80.00'
L	159+86.17		135.24	51.43					31.11'			80.00'	

ELEVATIONS

TOP OF SLAB	SLAB TO BRIDGE SEAT	BRIDGE SEAT	POINT
1057.66	5.22	1052.44	A
1058.06	4.85'	1053.21	B
1058.56	4.64'	1053.92	C
1058.96	4.73'	1054.23	D
1057.84	5.22'	1052.62	E
1058.24	4.85'	1053.39	F
1058.74	4.64'	1054.10	G
1059.14	4.73'	1054.41	H
1057.42	5.22'	1052.20	I
1057.82	4.85'	1052.97	J
1058.32	4.64'	1053.68	K
1058.72	4.73'	1053.99	L

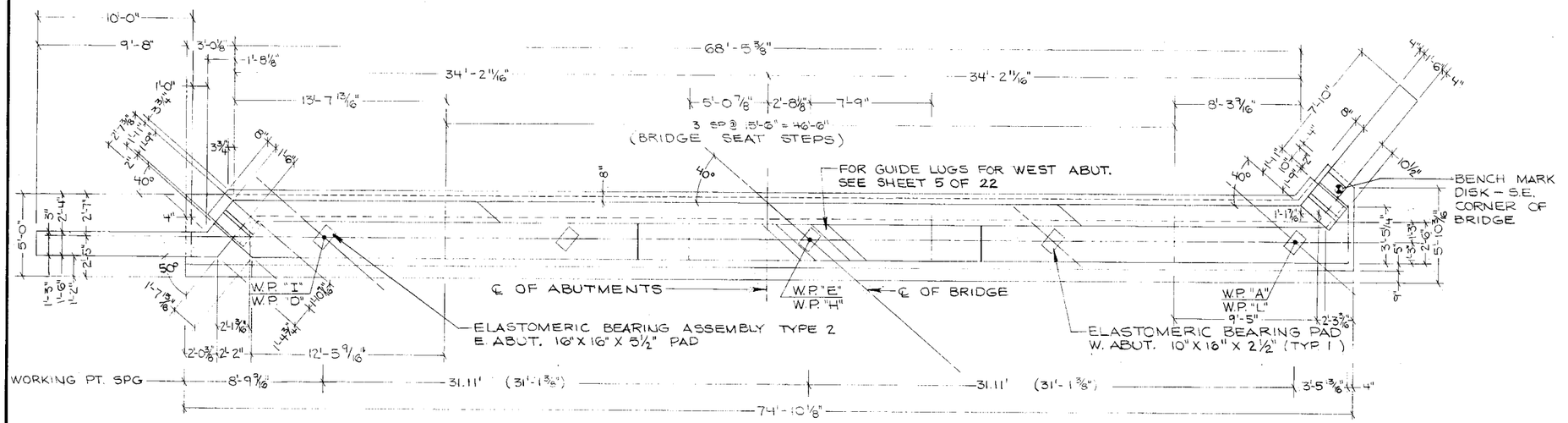
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55527

BRIDGE LAYOUT

APPROVED: 3-9-77

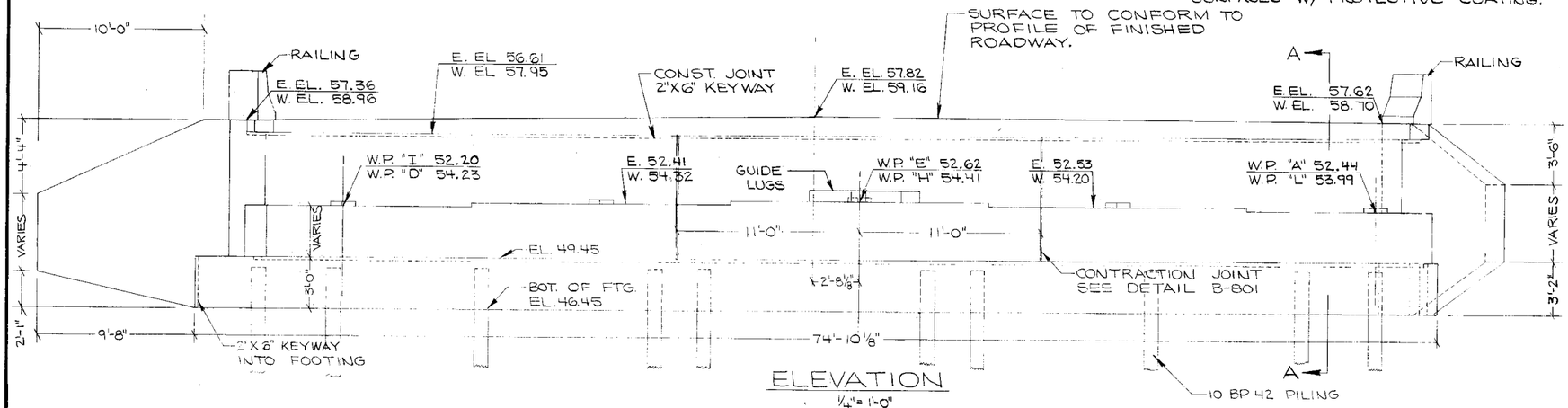
S.A. PROJECT NO. 55-605-04 | SHEET 2 OF 22 | 55527 | BAN BEL



ABUTMENT PLAN

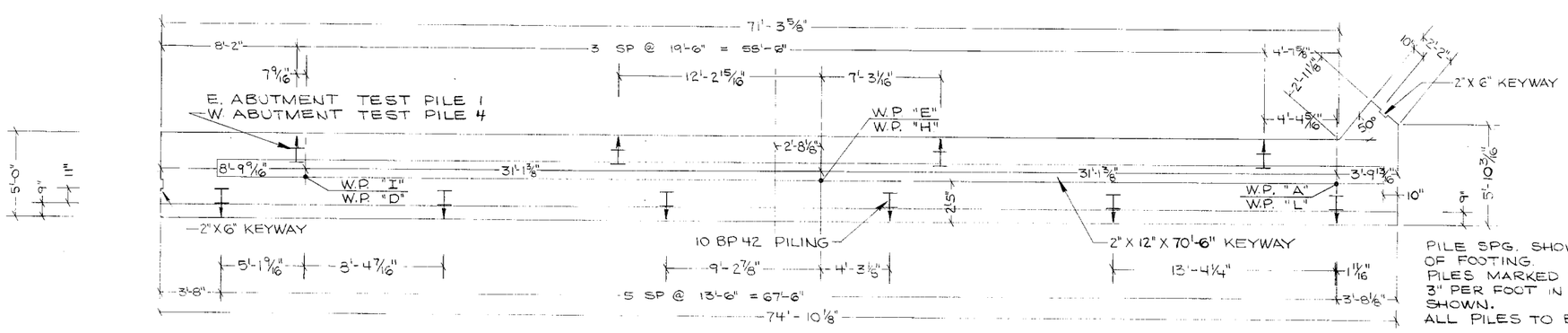
¼"= 1'-0"

***NOTE: PLACE PROTECTIVE EPOXY COATING ON BRIDGE SEAT & UP ON PARAPET WALL. PAINT REMAINDER OF EXPOSED CONC. SURFACES W/ PROTECTIVE COATING.



ELEVATION

¼"= 1'-0"



PLAN OF FOOTING

¼"= 1'-0"

PILE SPG. SHOWN IS AT BOTTOM OF FOOTING.
PILES MARKED ➤ TO BE BATTERED 3" PER FOOT IN THE DIRECTION SHOWN.
ALL PILES TO BE 10 BP 42

S.A. PROJECT NO. 55-605-04

SUMMARY OF QUANTITIES - 2 ABUTMENTS

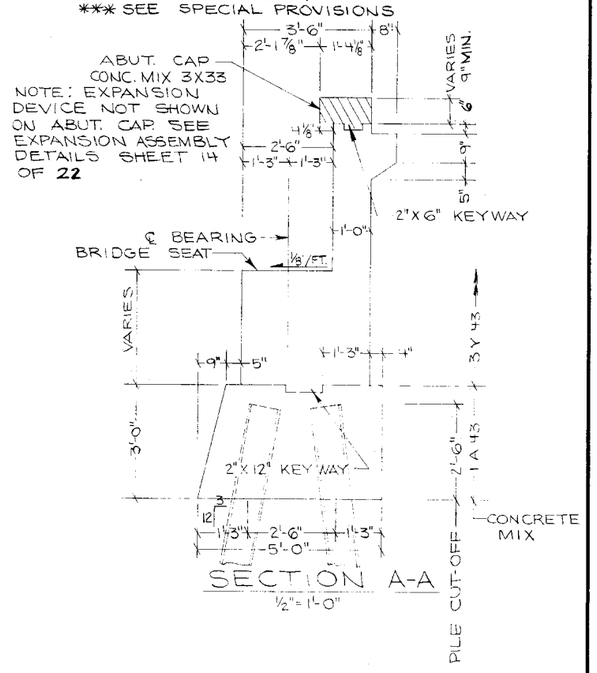
	ITEM	UNIT	QUANTITY
	STRUCTURE EXCAVATION	L.S.	1
	CONCRETE MIX 1A43	CU.YD.	78
	CONCRETE MIX 3Y43	CU.YD.	116
	REINFORCEMENT BARS	LB.	13558
*	STEEL PILING - DELIVERED	L.F.	510
	STEEL PILING - DRIVEN	L.F.	510
	STEEL TEST PILES IN PLACE 50 FT. LONG	EACH	2
**	BENCH MARK DISK	EACH	1
	CONCRETE MIX 3X33	CU. YD	8

COMPUTED PILE LOADS - TONS / PILE	
	TONS / PILE
D.L. + EARTH PRESSURE	43.3
LIVE LOAD	7.7
DESIGN LOAD	51.0

2 STEEL H TEST PILES 50 FT. LONG
18 STEEL H PILES EST. LENGTH 45 FT. LONG
10 STEEL H PILES REQ'D FOR EAST ABUTMENT
10 STEEL H PILES REQ'D FOR WEST ABUTMENT
ALL PILES TO BE 10 BP 42

* DOES NOT INCLUDE TEST PILES
** COUNTY WILL FURNISH BENCH MARK DISK. PAYMENT FOR PLACING TO BE INCLUDED IN PRICE BID FOR OTHER ITEMS. SEE STD. PLT. NO. 9301 FOR PLACING.
*** SEE SPECIAL PROVISIONS

NOTE: EXPANSION DEVICE NOT SHOWN ON ABUT. CAP. SEE EXPANSION ASSEMBLY DETAILS SHEET 14 OF 22



SECTION A-A

½"= 1'-0"

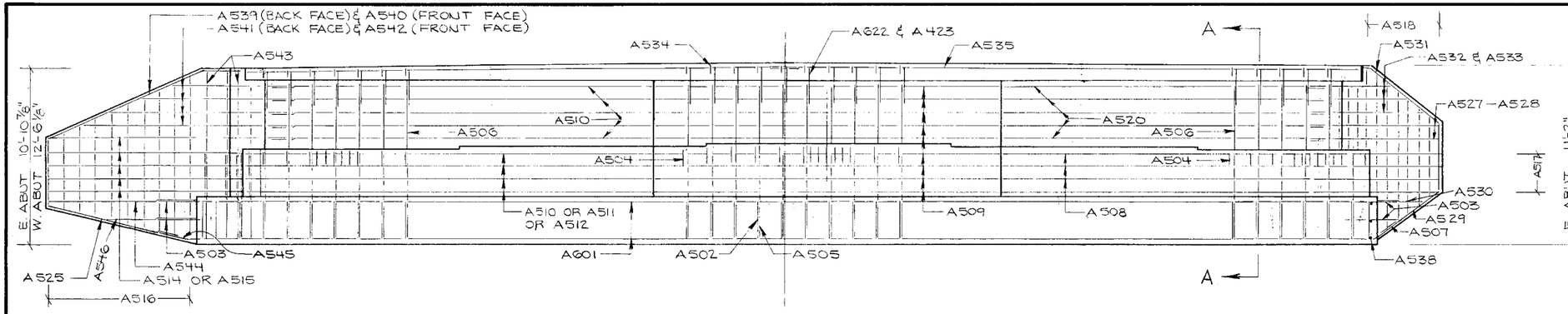
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE 55527

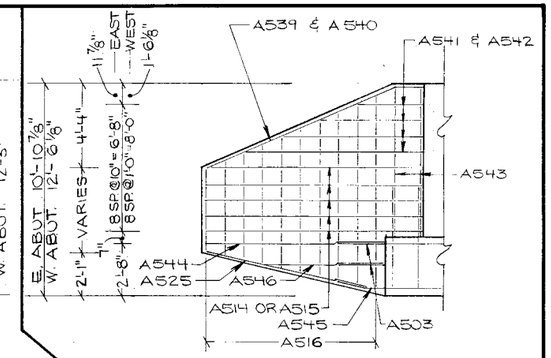
ABUTMENT DETAILS

APPROVED: 3-9-77

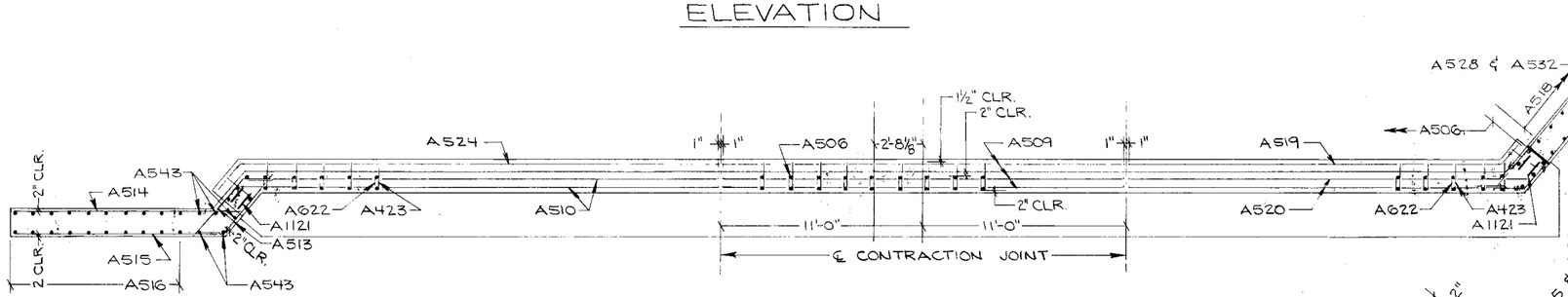
SHEET 3 OF 22 | 55527 | BAN BEL



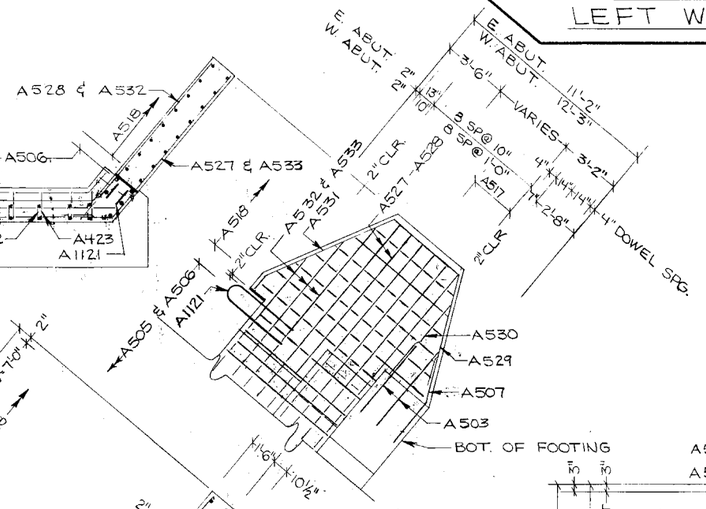
ELEVATION

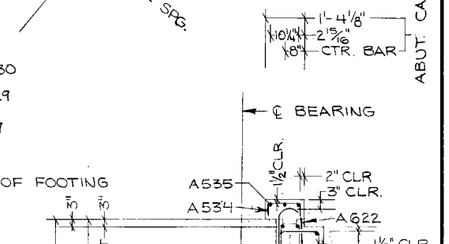


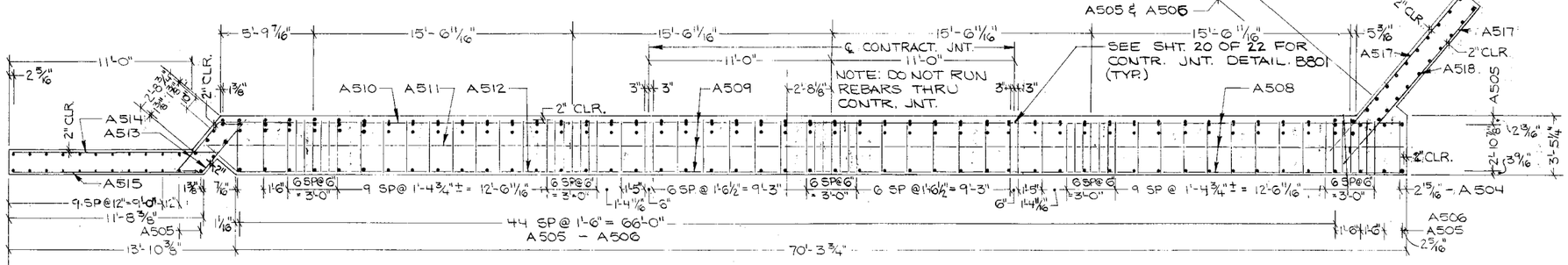
ELEVATION
LEFT WING WALL



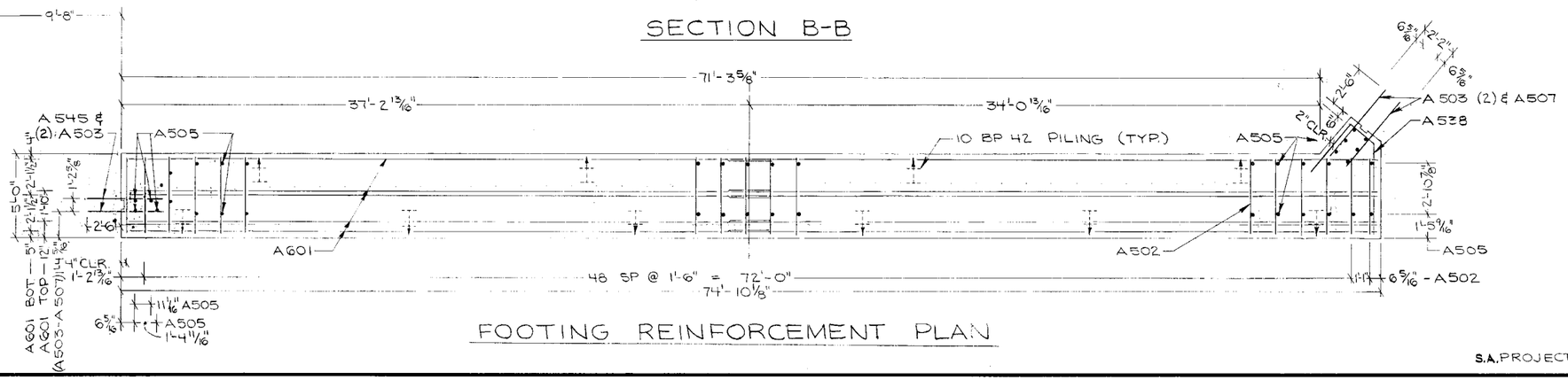
PLAN (FOOTING & ABUT. CAP NOT SHOWN)



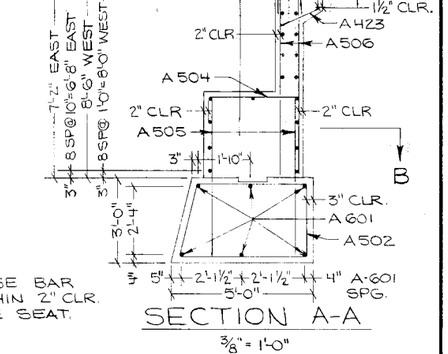




SECTION B-B



FOOTING REINFORCEMENT PLAN



NOTE: RAISE BAR A 504 WITHIN 2" CLR. OF BRIDGE SEAT.

SECTION A-A
3/8" = 1'-0"

S.A. PROJECT NO. 55-605-04

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE 55527

ABUTMENT
REINFORCEMENT

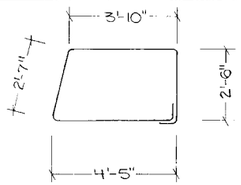
APPROVED: 3-9-77

SHEET 4 OF 22 | 55527 | BAN BEL

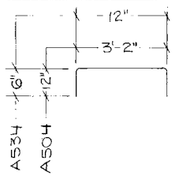
BILL OF REINFORCING -- TWO ABUTMENTS

BAR	NO.	SIZE	LENGTH	SHAPE	LOCATION
A 601	24	#6	38'-5"	STR'T	ABUT. FOOTING
A 502	102	#5	14'-4"	BENT	ABUT. FOOTING
A503	16	#5	5'-0"	STR'T	FOOTING -- WINGWALL
A504	140	#5	5'-2"	BENT	BRIDGE SEAT
*A505	108	#5	5'-6"	STR'T	BRIDGE SEAT-EAST
*A505	108	#5	6'-11"	STR'T	BRIDGE SEAT-WEST
*A506	101	#5	6'-11"	STR'T	BRIDGE SEAT-EAST
*A506	101	#5	8'-3"	STR'T	BRIDGE SEAT-WEST
A507	4	#5	5'-2"	BENT	FOOTING-DOWELS
▽A508	9	#5	23'-4"	STR'T	BRIDGE SEAT-EAST
▽A508	11	#5	23'-4"	STR'T	BRIDGE SEAT-WEST
A509	38	#5	21'-10"	STR'T	BRIDGE SEAT-ABUT. WALL
A510	27	#5	25'-8"	STR'T	ABUT. WALL
A511	2	#5	26'-9"	STR'T	BRIDGE SEAT
▽A512	4	#5	27'-1"	BENT	BRIDGE SEAT-EAST
▽A512	5	#5	27'-1"	BENT	BRIDGE SEAT-WEST
A513	36	#5	5'-11"	BENT	ABUT. WALL
A514	10	#5	12'-3"	STR'T	WINGWALL-LEFT
A515	10	#5	11'-4"	STR'T	WINGWALL-LEFT
*A516	10	#5	14'-6"	STR'T	WINGWALL-LEFT-EAST
*A516	10	#5	15'-10"	STR'T	WINGWALL-LEFT-WEST
▽A517	8	#5	12'-6"	STR'T	WINGWALL-RIGHT-EAST
▽A517	10	#5	12'-6"	STR'T	WINGWALL-RIGHT-WEST
*A518	7	#5	14'-7"	STR'T	WINGWALL-RIGHT-EAST
*A518	7	#5	15'-4"	STR'T	WINGWALL-RIGHT-WEST
A519	2	#5	21'-10"	BENT	ABUT. WALL-TOP
▽A520	10	#5	21'-3"	STR'T	ABUT. WALL-EAST
▽A520	8	#5	21'-3"	STR'T	ABUT. WALL-WEST
A1121	8	#11	8'-7"	BENT	ABUT. CAP-END RAIL
A622	92	#6	4'-11"	BENT	ABUT. CAP
A423	96	#4	4'-1	BENT	ABUT. WALL-TOP
A524	2	#5	27'-9"	BENT	ABUT. WALL
A525	4	#5	8'-6"	STR'T	WINGWALL-LEFT
▽A 527	2	#5	12'-0"	BENT	WINGWALL-RIGHT-EAST
▽A 527	1	#5	12'-0"	BENT	WINGWALL-RIGHT-WEST
▽A 528	2	#5	10'-9"	STR'T	WINGWALL-RIGHT-EAST
▽A 528	1	#5	10'-9"	STR'T	WINGWALL-RIGHT-WEST
A529	4	#5	7'-0"	STR'T	WINGWALL-RIGHT-
A530	4	#5	4'-6"	STR'T	WINGWALL-RIGHT-
A531	4	#5	8'-1"	BENT	WINGWALL-RIGHT
▽A532	3	#5	6'-0" / 9'-6"	STR'T	WINGWALL-RIGHT-EAST
▽A532	3	#5	5'-9" / 9'-9"	STR'T	WINGWALL-RIGHT-WEST
▽A533	3	#5	7'-3" / 10'-9"	BENT	WINGWALL-RIGHT-EAST
▽A533	3	#5	7'-0" / 11'-0"	BENT	WINGWALL-RIGHT-WEST
A534	92	#5	2'-0"	BENT	ABUT. CAP
A535	12	#5	36'-10"	BENT	ABUT. CAP
A436	4	#4	3'-7"	STR'T	GUIDE LUGS
A437	6	#4	3'-6"	BENT	GUIDE LUGS
A538	6	#5	9'-11"	BENT	ABUT. FOOTING
A539	2	#5	12'-8"	BENT	WINGWALL-LEFT
A540	2	#5	13'-4"	BENT	WINGWALL-LEFT
▽A541	4	#5	4'-6" / 10'-1"	STR'T	WINGWALL-LEFT-EAST
▽A541	3	#5	4'-6" / 10'-1"	STR'T	WINGWALL-LEFT-WEST
▽A542	4	#5	3'-6" / 9'-2"	STR'T	WINGWALL-LEFT-EAST
▽A542	3	#5	3'-6" / 9'-2"	STR'T	WINGWALL-LEFT-WEST
*A543	5	#5	7'-9"	STR'T	WINGWALL-LEFT-EAST
*A543	5	#5	9'-4"	STR'T	WINGWALL-LEFT-WEST
A544	4	#5	9'-4"	STR'T	WINGWALL-LEFT
A545	4	#5	5'-0"	BENT	ABUT. FOOTING-DOWEL
A546	4	#5	6'-0"	STR'T	WINGWALL-LEFT

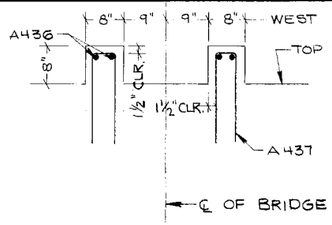
* LENGTH VARIES | ▽ NO. REQ'D VARIES | O CUT 2 FROM 1



A502

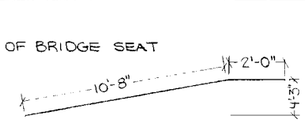


A504, A534

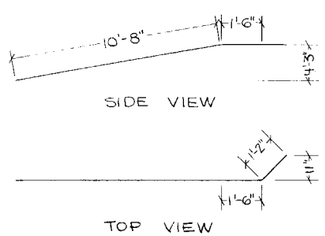


SECTION A-A

3/4"=1'-0"



A539



A540

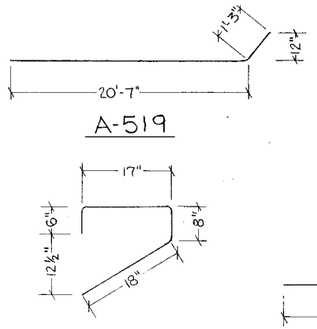
NOTES:
PINTLE SHALL COMPLY WITH MHD 3314 TYPE 11 ALL OTHER STRUCTURAL STL. SHALL COMPLY WITH M.H.D. 3306

GALVANIZE ANCHOR BOLTS PER MHD 3392. GALV. OTHER STRUCTURAL STL. EXCEPT SOLE PLT. PER MHD 3394 AFTER FABRICATION.

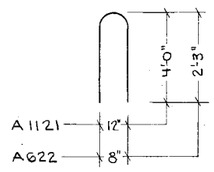
PLTS. SHALL BE FLAT AFTER FABRICATION & WELDING.

SOLE PLT. IS INCLUDED IN WGT. OF STRUCTURAL STL. ALL OTHER MATERIAL ON THIS DETAIL IS INCLUDED IN ELASTOMERIC BRG. ASSEMBLY, TYPE 2 FOR PAYMENT.

ANC. RODS TO BE INCLUDED W/ ASSEMBLY FOR PAYMENT.

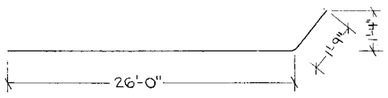


A-519

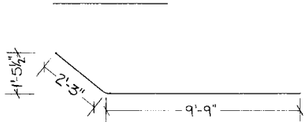


A1121
A622

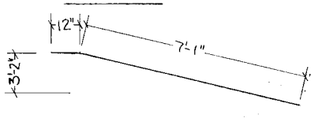
A 423



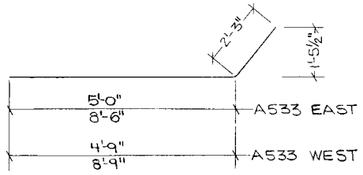
A 524



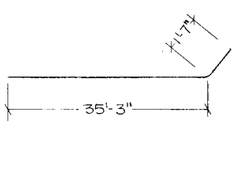
A527



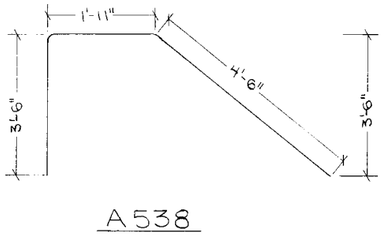
A 531



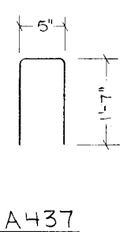
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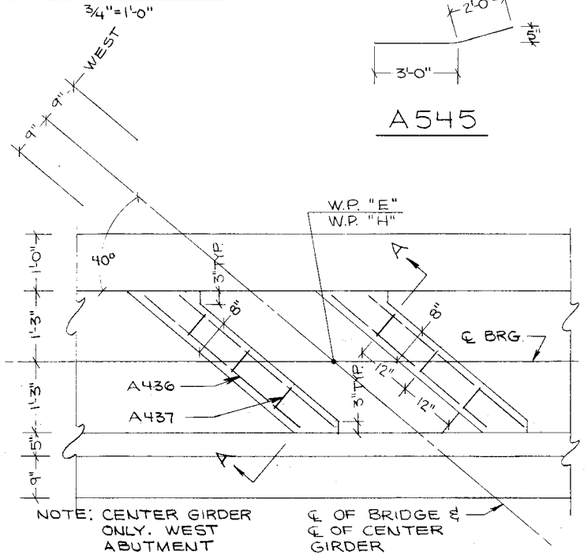
A535



A538

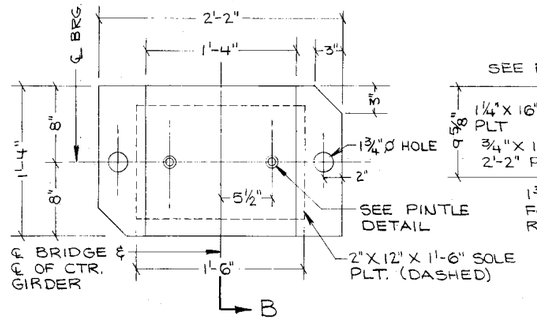


A437



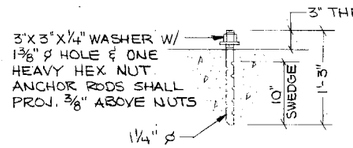
ABUTMENT GUIDE LUGS

3/4"=1'-0"



PLAN VIEW
ELASTOMERIC BRG. ASSEMBLY TYPE 2

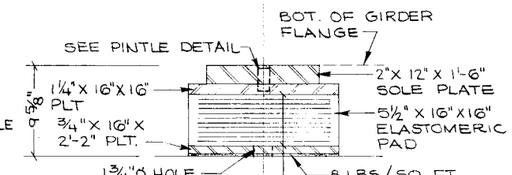
1½"=1'-0"



ANCHOR ROD DETAIL

1" = 1'-0"

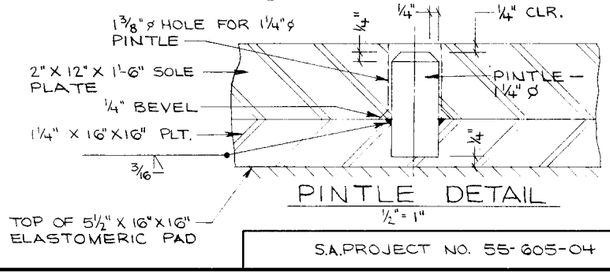
3"X3"X¼" WASHER W/ 1⅜" ø HOLE & ONE HEAVY HEX NUT ANCHOR RODS SHALL PROJ. ⅜" ABOVE NUTS



SECTION B

1½"=1'-0"

5½"X16"X16" ELASTOMERIC PAD
9 — ½" LAYERS OF ELASTOMER W/
8 — ⅛" STEEL SEPARATION PLATES.



PINTLE DETAIL

½"=1"

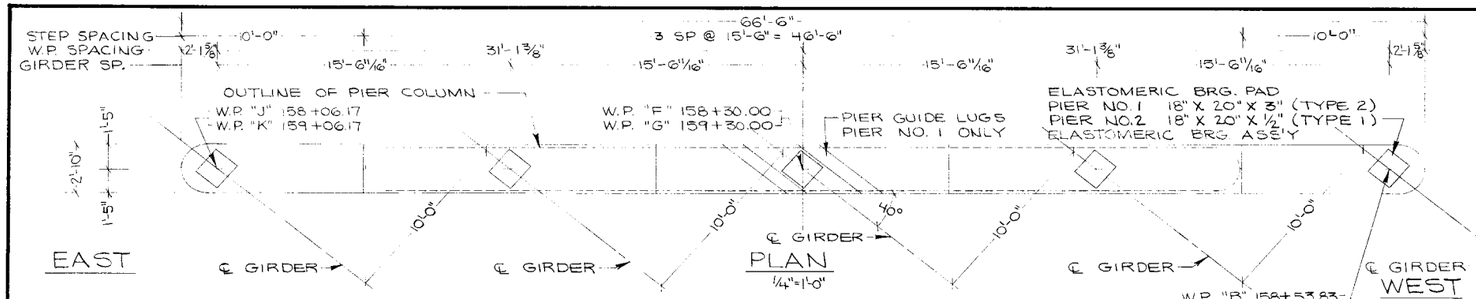
MINNESOTA DEPARTMENT OF TRANSPORTATION

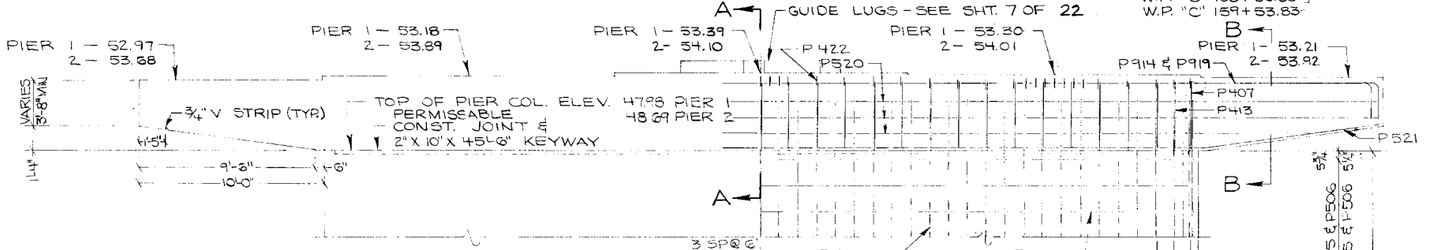
BRIDGE NO. 55527

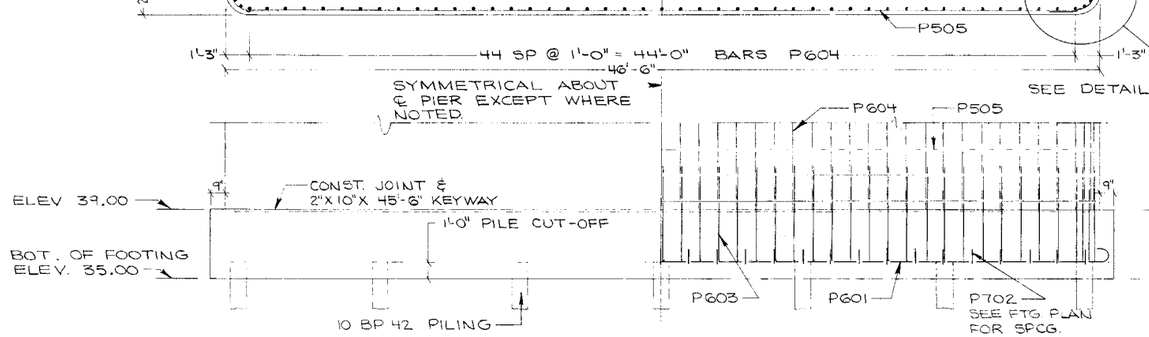
ABUTMENT REINFORCEMENT DETAILS

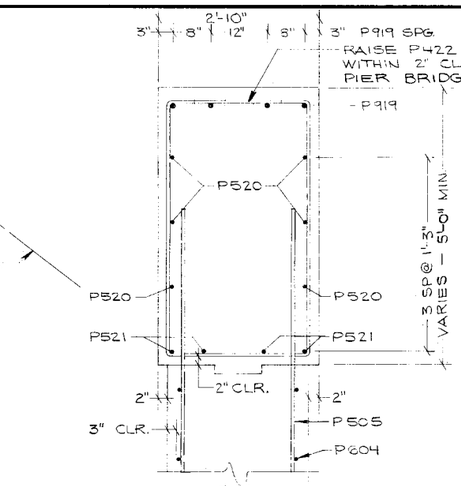
APPROVED: 3-9-77

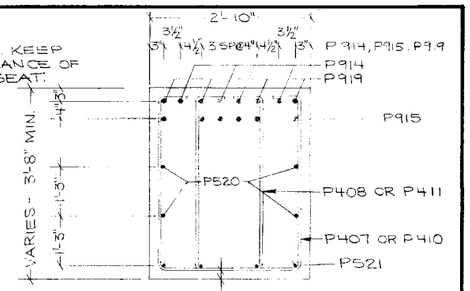
S.A. PROJECT NO. 55-605-04 | SHEET 5 OF 22 | 55527 | BAN BEL

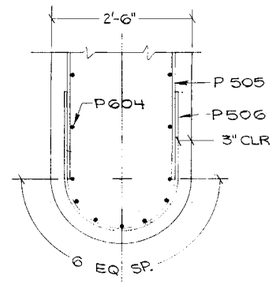












SUMMARY OF QUANTITIES FOR TWO PIERS		
ITEM	UNIT	QUANT.
CONCRETE MIX 3Y43	CU. YD	150
CONCRETE MIX 1A43	CU. YD.	114
* STEEL H PILING - DELIVERED	L.F.	990
STEEL TEST PILES IN PLACE, 40 FT. LONG	EACH	2
REINFORCING STEEL	LB.	6,251
* STEEL H PILING - DRIVEN	L.F.	990

* DOES NOT INCLUDE TEST PILES

COMPUTED PILE LOADS — TONS / PILE	
	TONS / PILE
DEAD LOAD	45.0
LIVE LOAD	6.7
OVERTURNING	10.0
TOTAL	61.7
REDUCED TOTAL (1/2.5)	49.4

2 STEEL H TEST PILES 40 FT. LONG
30 STEEL H PILES EST. LENGTH 33 FT. LONG.
16 STEEL H PILES REQUIRED FOR PIER NO. 1
16 STEEL H PILES REQUIRED FOR PIER NO. 2
ALL PILES TO BE 10 BP 42

PILES MARKED ⊢ TO BE BATTERED 2" PER FOOT IN DIRECTION SHOWN.

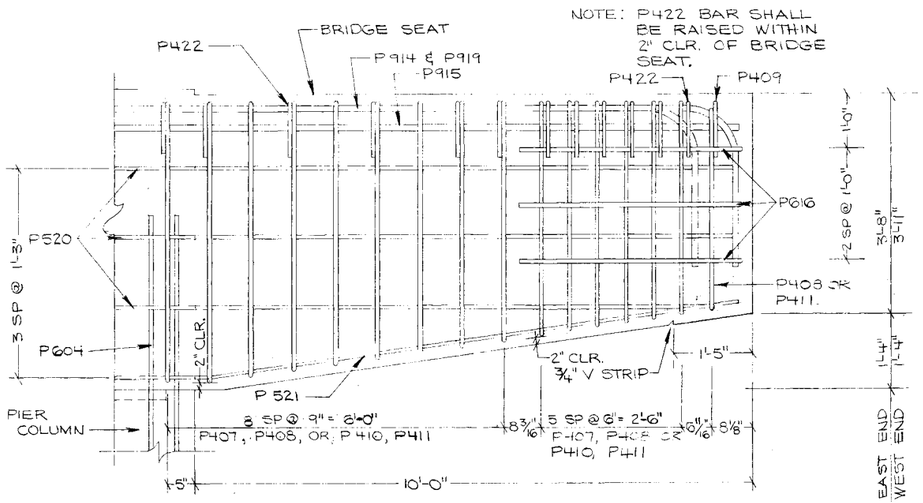
MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55527

PIER DETAILS

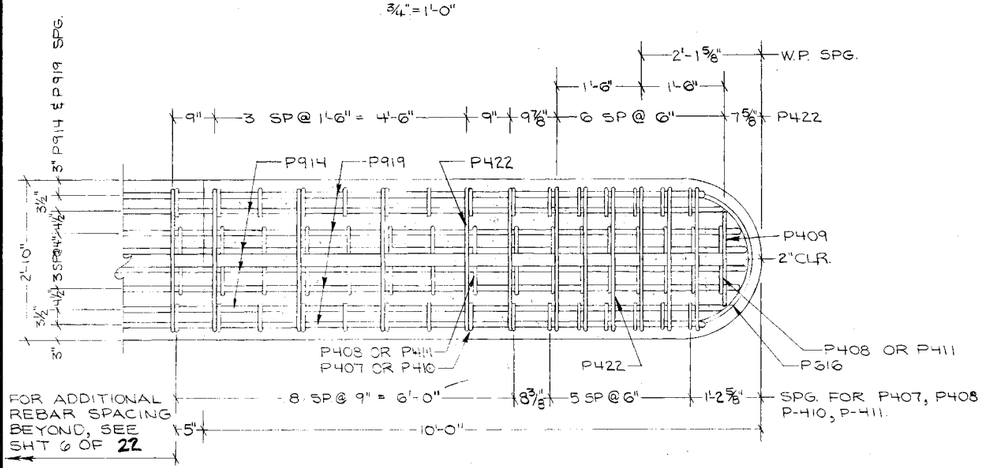
APPROVED: 3-9-77

S.A. PROJ. NO. 55-605-04 | SHEET 6 OF 22 | 55527 | BAN BEL



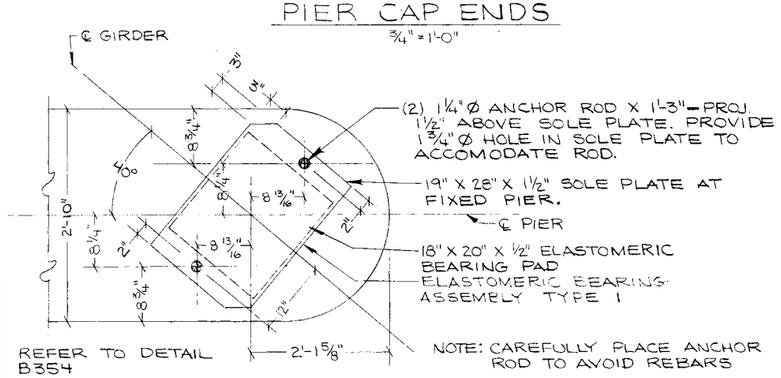
ELEVATION

¾" = 1'-0"



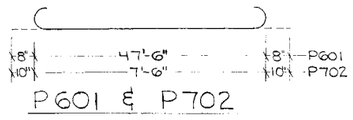
PIER CAP ENDS

¾" = 1'-0"

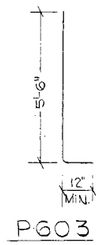


SOLE PLT. CONNECTION @ FIXED PIER

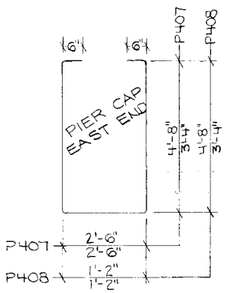
1" = 1'-0"



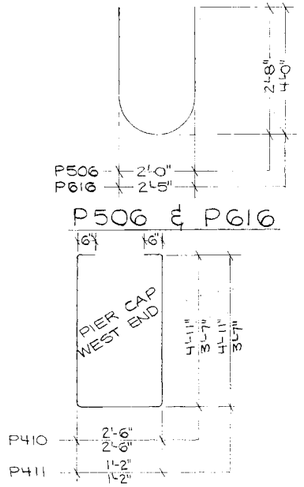
P601 & P702



P603



P407 & P408



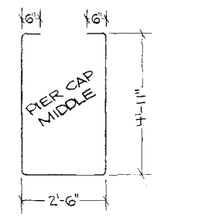
P506 & P616

P410 & P411

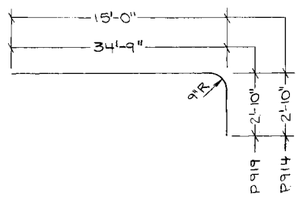
BILL OF REINFORCING FOR TWO PIERS

BAR	NO.	SIZE	LENGTH	SHAPE	LOCATION
P601	12	#6	48'-10"	BENT	PIER FOOTING
P702	48	#7	9'-2"	BENT	PIER FOOTING
P603	200	#6	6'-6"	BENT	BTM. PIER COLUMN
P604	100	#6	12'-11"	STR'T	PIER COL. - PIER NO.1
P604	100	#6	13'-7"	STR'T	PIER COL. - PIER NO.2
P505	14	#5	44'-0"	STR'T	PIER COL. - PIER NO.1
P505	16	#5	44'-0"	STR'T	PIER COL. - PIER NO.2
P506	14	#5	9'-5"	BENT	PIER COL. - PIER NO.1
P506	16	#5	9'-5"	BENT	PIER COL. - PIER NO.2
P407	30	#4	12'-10" 10'-2"	BENT	PIER CAP - EAST END
P408	32	#4	11'-6" 8'-6"	BENT	PIER CAP - EAST END
P409	4	#4	3'-8"	BENT	PIER CAP - ENDS
P410	30	#4	13'-4" 10'-8"	BENT	PIER CAP - WEST END
P411	32	#4	12'-0" 9'-4"	BENT	PIER CAP - WEST END
P413	32	#4	13'-4"	BENT	PIER CAP - MIDDLE
P914	16	#9	17'-10"	BENT	PIER CAP - ENDS
P915	24	#9	14'-0"	STR'T	PIER CAP - ENDS
P616	12	#6	9'-6"	BENT	PIER CAP - ENDS
P417	8	#4	3'-6"	BENT	GUIDE LUGS - PIER NO.1
P418	4	#4	4'-1"	STR'T	GUIDE LUGS - PIER NO.1
P919	16	#9	37'-7"	BENT	PIER CAP - HORIZ.
P520	24	#5	34'-1"	STR'T	PIER CAP - HORIZ.
P521	16	#5	34'-2"	BENT	PIER CAP - HORIZ.
P422	70	#4	4'-6"	BENT	PIER CAP - VERT.

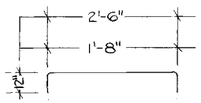
#9 — 3'-4" SPLICE LENGTH
#5 — 1'-11" SPLICE LENGTH



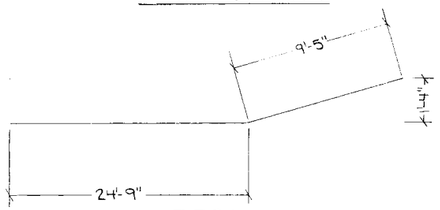
P413



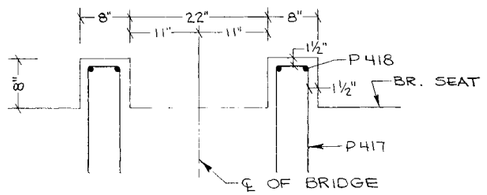
P914 & P919



P409 & P422

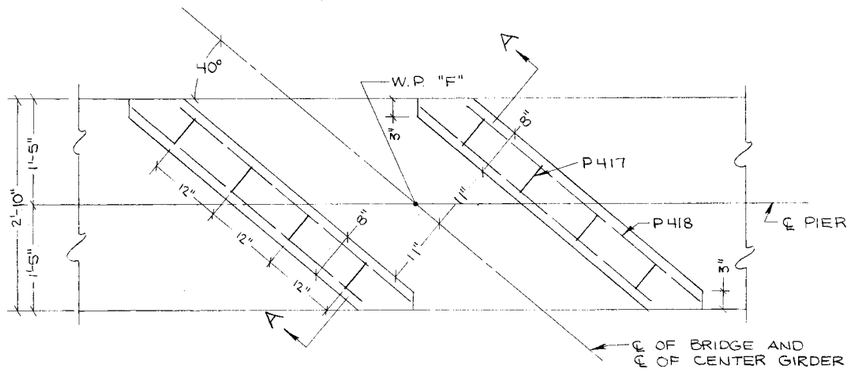


P521



SECTION A-A

1" = 1'-0"



GUIDE LUGS FOR PIER NO.1

1" = 1'-0"

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55527

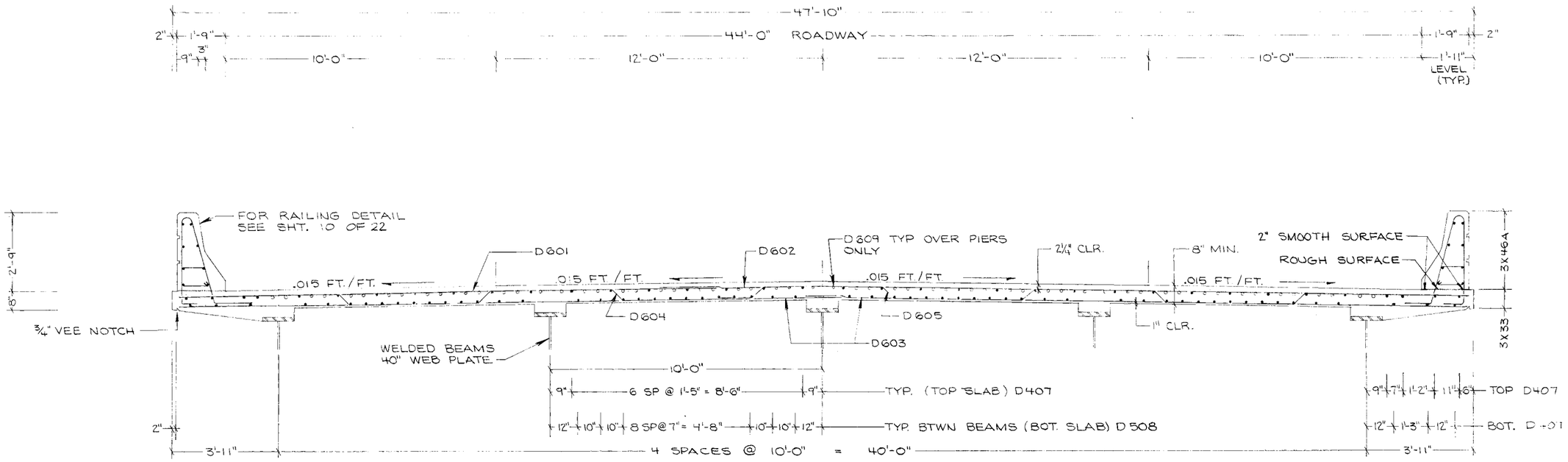
PIER REINFORCEMENT DETAILS

APPROVED: 3-9-77

S.A. PROJECT NO. 55-605-04

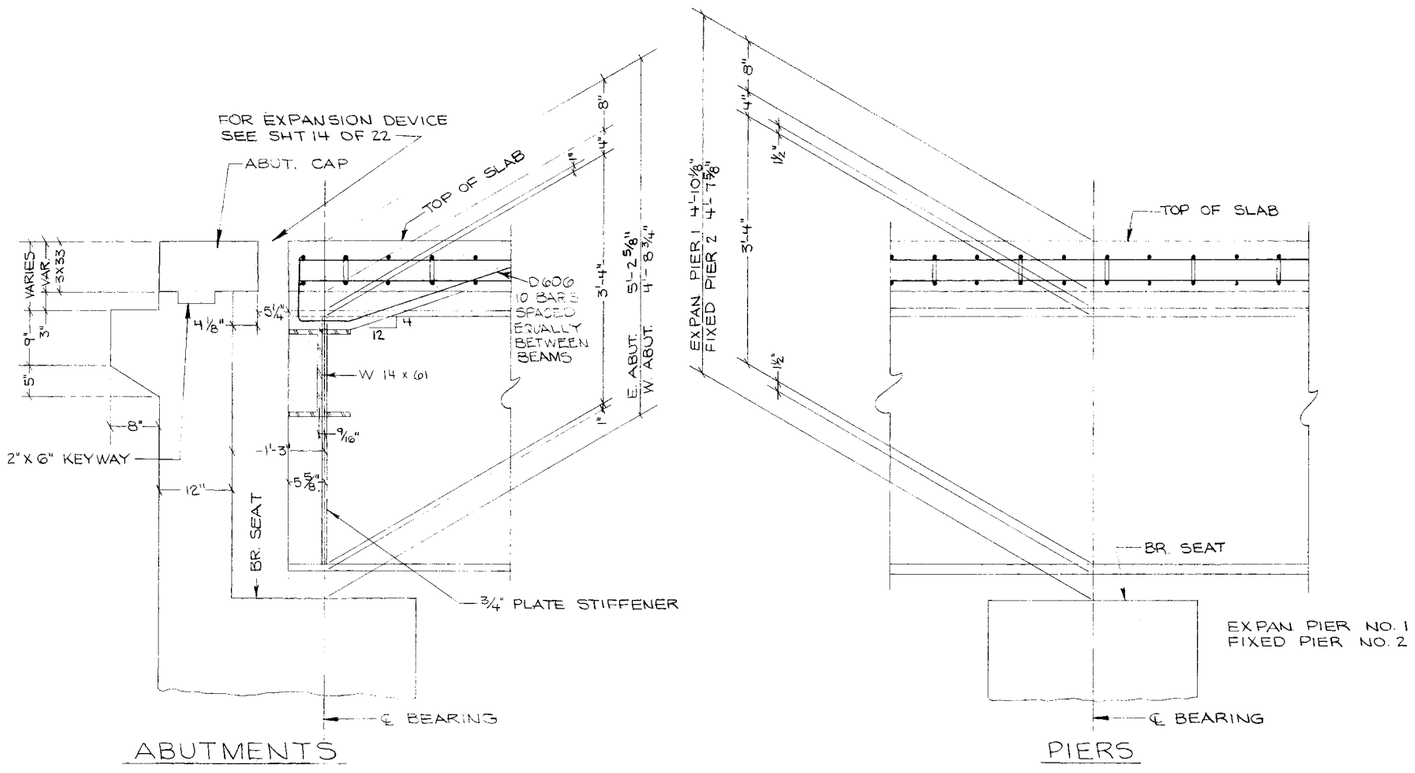
SHEET 7 OF 22 | 55527 | BAN BEL

AS BUILT



TRANSVERSE SECTION THRU DECK LOOKING WEST

½" = 1'-0"



PART LONGITUDINAL SECTION

1" = 1'-0"

	ITEM	UNIT	QUANTITY
DECK →	CONCRETE MIX NO. 3X33	CU. YD.	331
RAILING →	CONCRETE MIX NO. 3X46A	CU. YD.	63
	REINFORCEMENT BARS	LB.	88,860
	STRUCTURAL STEEL (3306)	LB.	1012
	STRUCTURAL STEEL (3309)	LB.	278,437
	FLOOR DRAINS, TYPE	EACH	4
	ELASTOMERIC BEARING PAD DETAIL B355	EACH	10
	ELASTOMERIC BEARING ASSEMBLY DETAIL B354	EACH	5
	ELASTOMERIC BEARING ASSEMBLY TYPE 2 SHEET 5 OF 22	EACH	5

MINNESOTA
DEPARTMENT OF TRANSPORTION

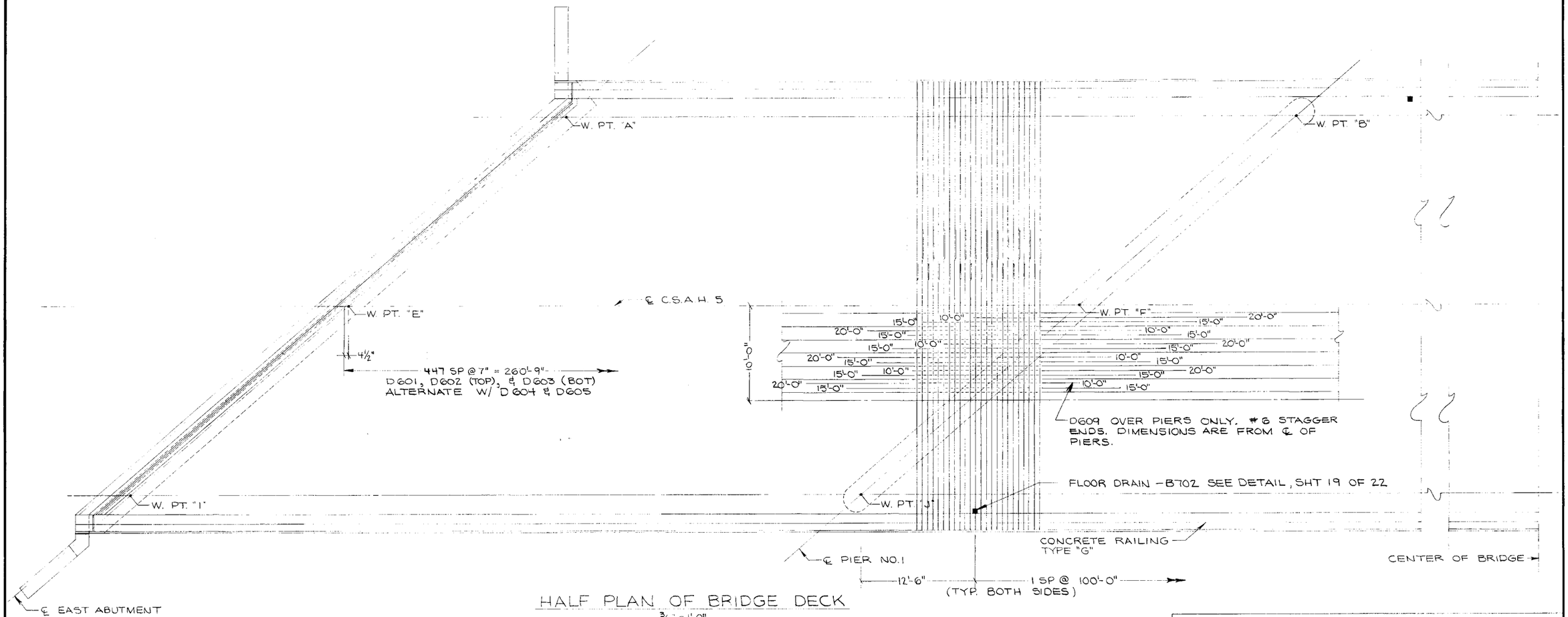
BRIDGE NO. 55527

SUPERSTRUCTURE DETAILS

APPROVED: 3-9-77

S.A. PROJECT NO. 55-605-04

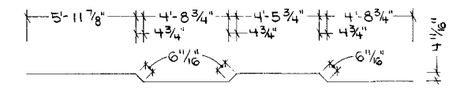
SHEET 8 OF 22 | 55527 | BAN BEL



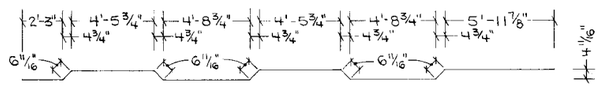
NOTE: ABUT. FOOTINGS NOT SHOWN.

HALF PLAN OF BRIDGE DECK

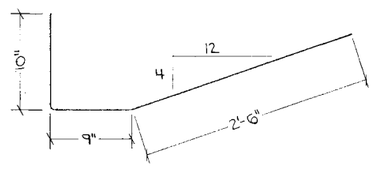
3/16" = 1'-0"



D-604



D-605



D606

BILL OF REINFORCING FOR SUPERSTRUCTURE				
BAR	NO.	LENGTH	SHAPE	LOCATION
D 601	224	19'-11"	STR'T	SLAB - TRANS.
D 602	224	29'-11"	STR'T	SLAB - TRANS.
D603	448	24'-6"	STR'T	SLAB - TRANS.
D604	224	22'-1"	BENT	SLAB - TRANS.
D605	224	28'-6"	BENT	SLAB - TRANS.
D606	80	4'-1"	BENT	SLAB - ENDS
D607	320	34'-0"	STR'T	SLAB LONGIT. - TOP
D608	312	45'-0"	STR'T	SLAB LONGIT. - BOT.
D609	116	30'-0"	STR'T	SLAB OVER PIERS

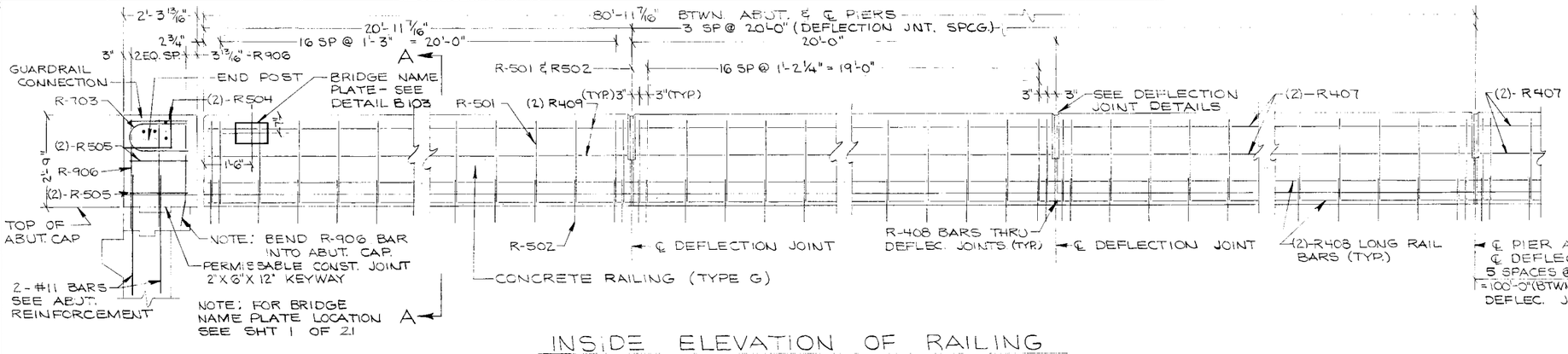
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55527

SUPERSTRUCTURE

APPROVED: 3-9-77

S.A. PROJECT NO. 55-605-04

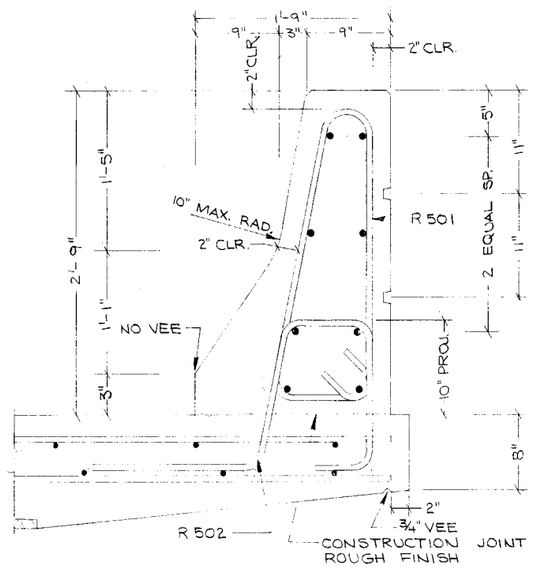


INSIDE ELEVATION OF RAILING

½" = 1'-0"

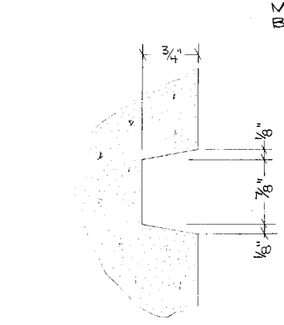
BILL OF REINFORCEMENT FOR RAILING

BAR	NO.	LENGTH	SHAPE	LOCATION
R 501	494	7'-1"	BENT	RAIL VERTICAL
R 502	494	5'-7"	BENT	RAIL VERTICAL
R 703	4	5'-4"	BENT	END POST
R 504	8	3'-0"	BENT	END POST
R 505	16	3'-4"	BENT	END POST
R 906	12	7'-3"	BENT	END POST
R 407	104	19'-8"	STR'T	RAIL LONG.
R 408	56	38'-8"	STR'T	RAIL LONG.
R 409	16	20'-8"	STR'T	RAIL LONG

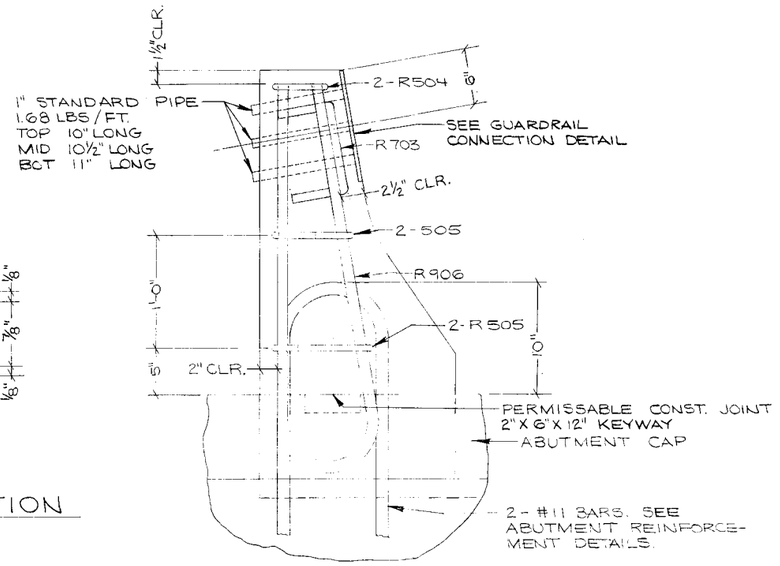


SECTION A-A

1½" = 1'-0"

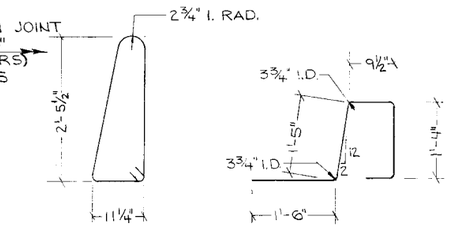


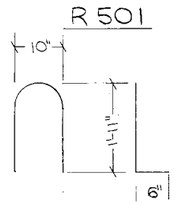
RAIL RUSTICATION



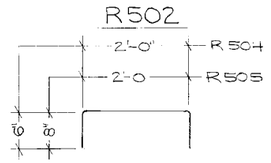
END POST END VIEW

1½" = 1'-0"

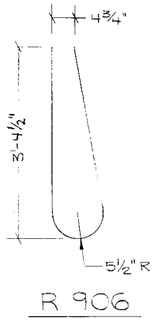




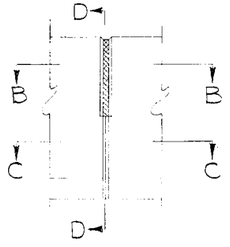
R 703



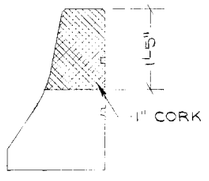
R 504
R 505



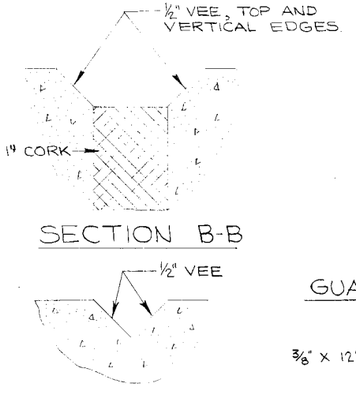
R 906



ELEVATION



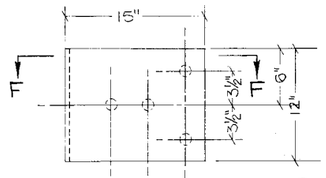
SECTION D-D



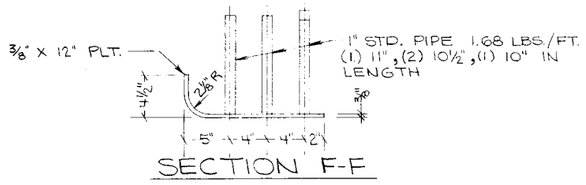
SECTION B-B

SECTION C-C

DEFLECTION JOINT DETAILS



GUARDRAIL CONNECTION DETAIL



SECTION F-F

GENERAL NOTES

RAILING AND END POST TO BE CONCRETE MIX NO. 3X46A

STRUCTURAL STEEL SHALL COMPLY WITH M.H.D. 3306

FINISH ALL EDGES OF RAIL AND END POST WITH ½" VEE EXCEPT WHERE OTHERWISE NOTED.

RAIL QUANTITIES ARE INCLUDED IN SUMMARY OF QUANTITIES FOR SUPERSTRUCTURE.

GUARDRAIL CONNECTION TO BE INCLUDED IN WEIGHT OF STRUCTURAL STEEL M.H.D. 3306

CONC. RAILING = 475 lbs/L.F.

CONC. RAILING = .117 C.Y/L.F.

MINNESOTA DEPARTMENT OF TRANSPORTATION

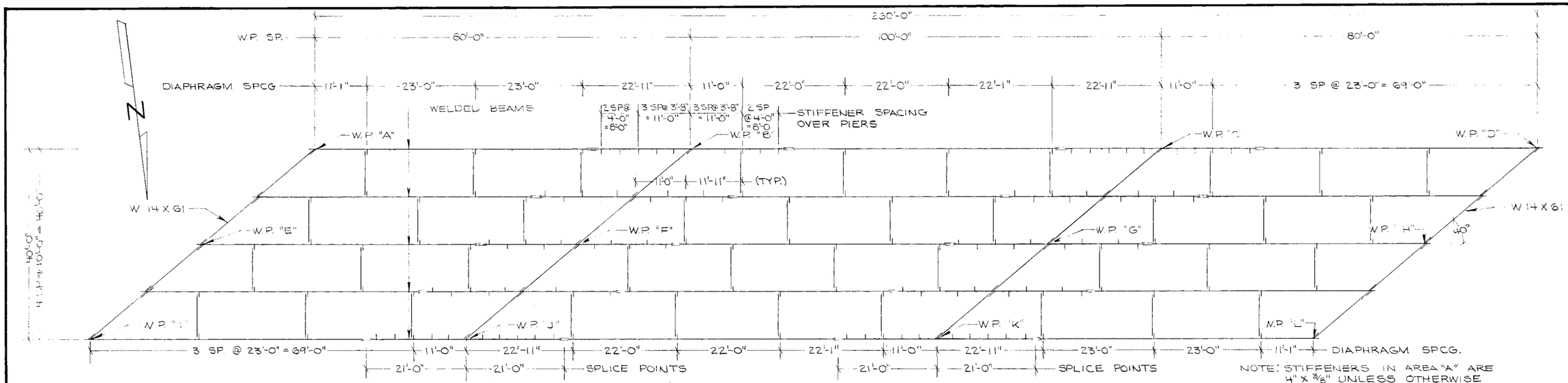
BRIDGE NO. 55527

RAILING & DETAILS (TYPE G)

APPROVED: 3-9-77

S.A. PROJECT NO. 55-605-04

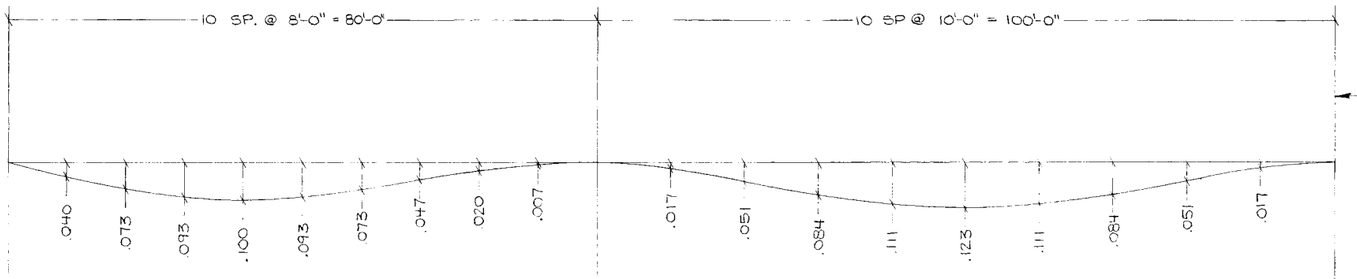
SHEET 10 OF 22 | 55527 | BAN BEL



NOTE: STIFFENERS IN AREA "A" ARE 4" X 3/8" UNLESS OTHERWISE NOTED.
DIAPHRAGM STIFFENERS ARE 7" X 3/8" UNLESS OTHERWISE NOTED.

FRAMING PLAN

3/32" = 1'-0"

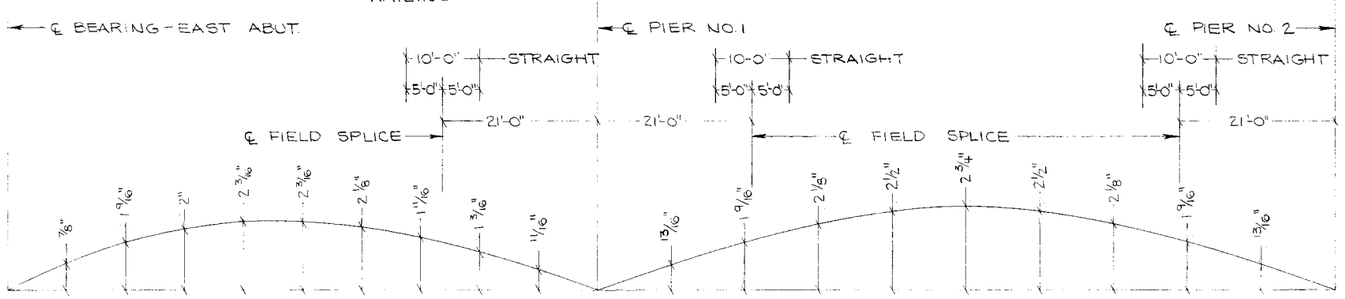


DEFLECTION DIAGRAM

DEFLECTIONS SHOWN ARE FOR WEIGHT OF SLAB, WEARING COURSE & RAILING

NOTE: DEFLECTION & CAMBER DIAGRAM BTWN PIER NO. 2 & WEST ABUT. SAME AS BTWN EAST ABUTMENT & PIER NO. 1.

CAMBER DIAGRAM SHOWN IS FOR BEAM CAMBER WITHOUT ANY DEAD LOAD DEFLECTION. DEAD LOAD DEFLECTIONS DUE TO WEIGHT OF STEEL ARE 12% OF DEFLECTIONS SHOWN ON DEFLECTION DIAGRAM.



CAMBER DIAGRAM

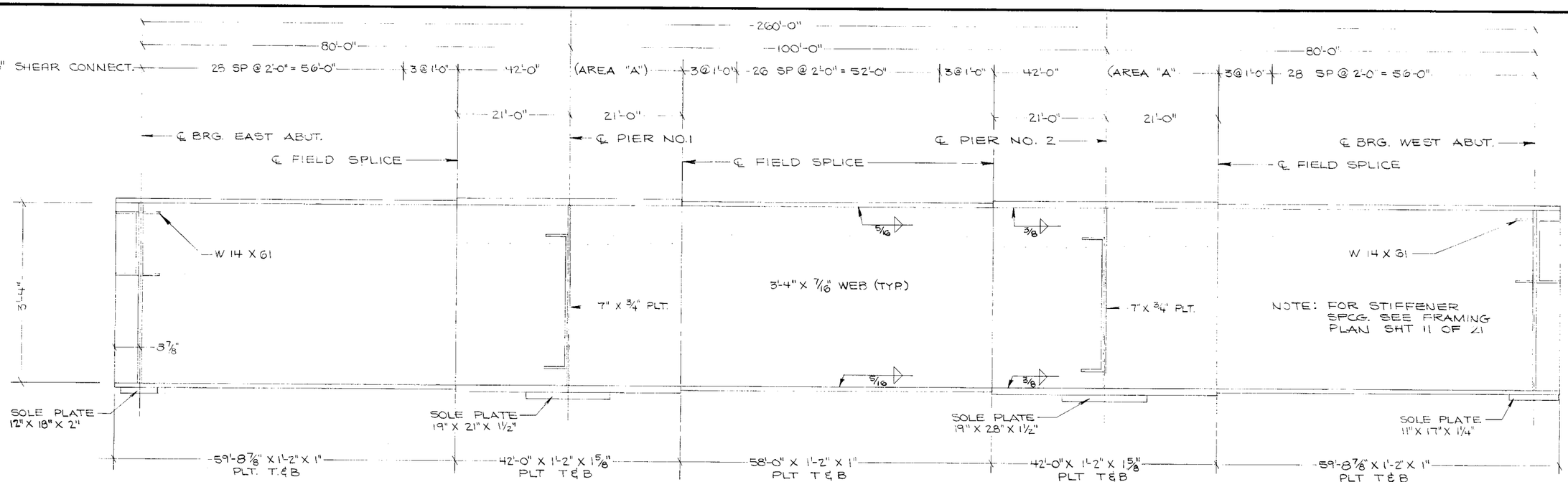
MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO 55527

STRUCTURAL STEEL DETAILS

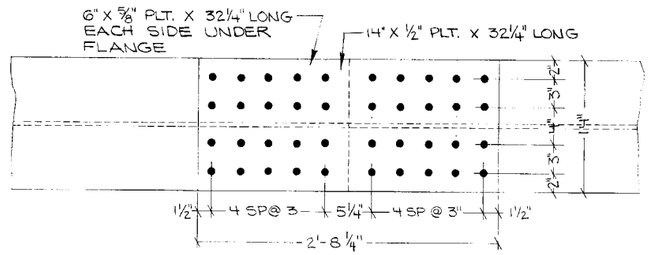
APPROVED: 3-9-77

S.A. PROJECT NO. 55-605-04 | SHEET 11 OF 22 | 55527 | BAN BEL



BEAM ELEVATION

NO SCALE

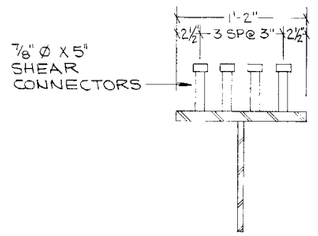


NOTE: USE 7/8"Ø BOLTS W/ NUTS & WASHERS FOR SPLICES ON FLANGE & WEB.

FLANGE

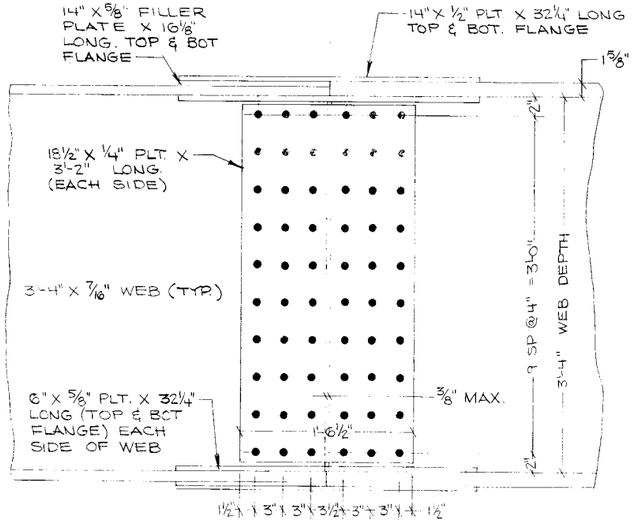
1 1/2" = 1'-0"

PART SECTION AT SPLICE



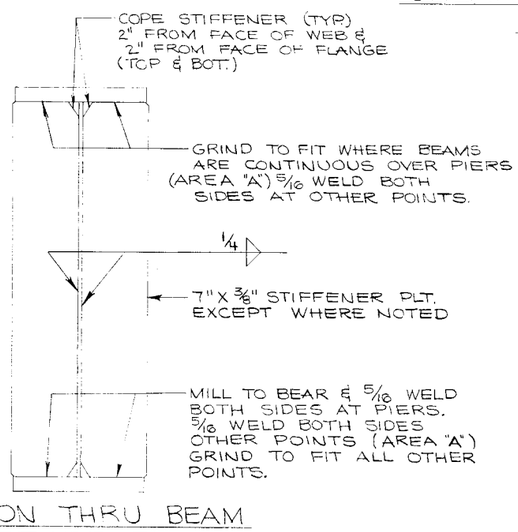
SHEAR CONNECTOR DETAIL

NO SCALE



SPLICE DETAIL

1 1/2" = 1'-0"



SECTION THRU BEAM @ STIFFENER

STRUCTURAL STEEL NOTES

1. ALL STRUCTURAL STEEL SHALL CONFORM TO M.H.D 3309 UNLESS OTHERWISE NOTED.
2. FIELD CONNECTIONS SHALL BE MADE WITH 7/8" HIGH STRENGTH BOLTS OR 7/8" PIN BOLTS, EXCEPT AS NOTED.
3. WEIGHT OF SHEAR CONNECTORS TO BE INCLUDED IN STRUCTURAL STEEL M.H.D. 3309
4. SPEC. REAM. AS MHD 2471. 3E1b WILL BE REQUIRED FOR THE BEAM SPLICES.
5. WEB PLATES SHALL BE FURNISHED IN AVAILABLE MILL LENGTHS. LOCATION OF SPLICES SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER & SHALL BE A MINIMUM OF 1'-0" FROM STIFFENERS OR FLANGE SPLICES.
6. ALL BUTT SPLICES SHALL BE FULL BUTT WELDS USING LOW HYDROGEN PROCESS AND SHALL BE GROUND FLUSH.
7. BEARING STIFFENERS SHALL BE PERPENDICULAR TO FLANGE.
8. ROWS OF SHEAR CONNECTORS SHALL BE ALIGNED PARALLEL TO THE TRANSVERSE SLAB REINFORCEMENT BARS.

MINNESOTA DEPARTMENT OF TRANSPORTATION

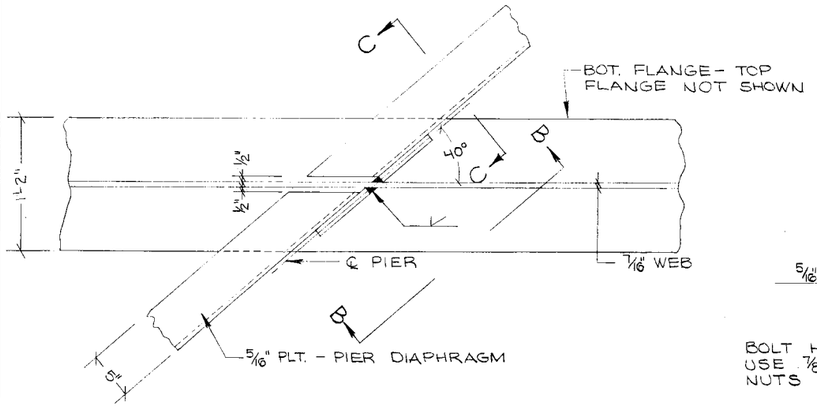
BRIDGE NO. 55527

STRUCTURAL STEEL DETAILS

APPROVED : 3-9-77

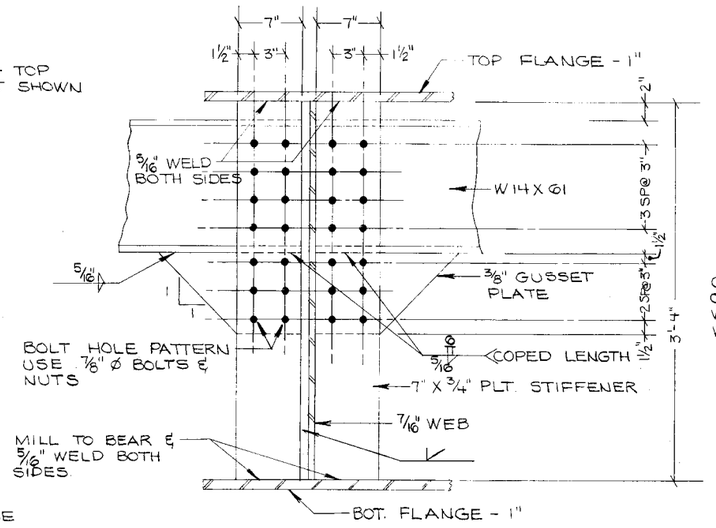
S.A. PROJECT NO. 55-605-04

SHEET 12 OF 22 | 55527 | BAN BEL



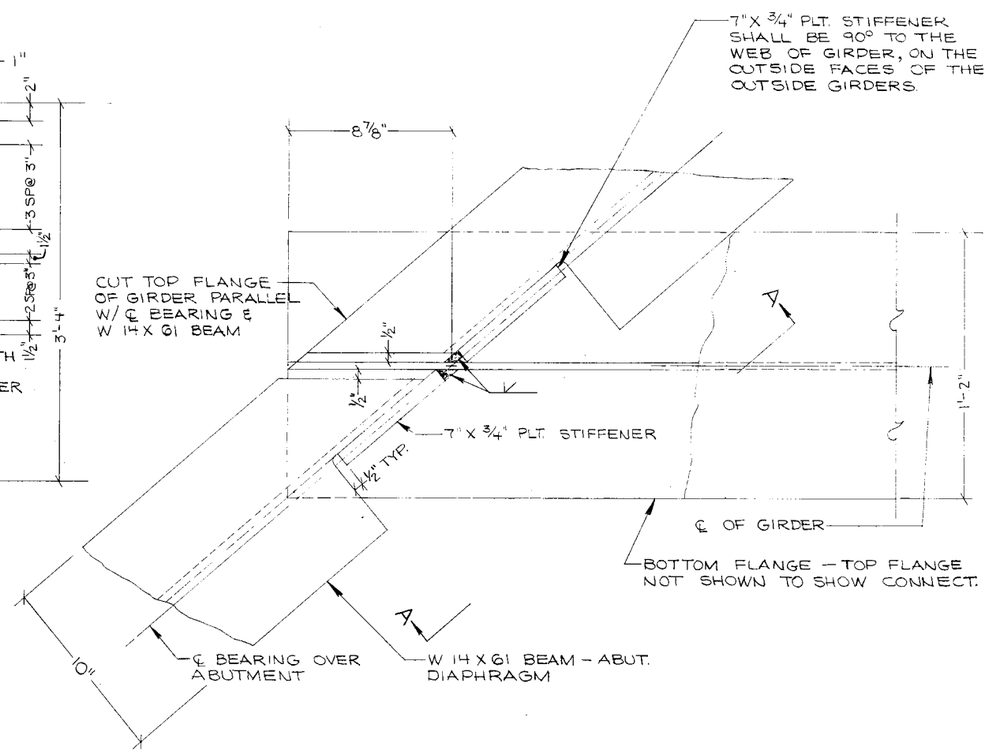
DIAPHRAGM CONNECTION TO GIRDER OVER PIERS

1½" = 1'-0"



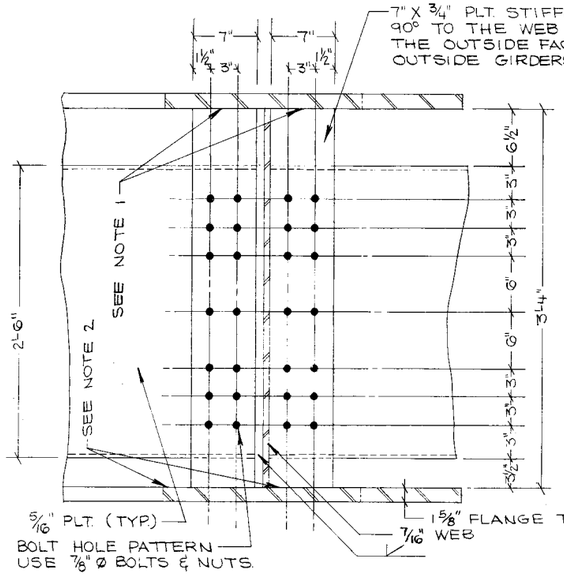
SECTION A-A

1½" = 1'-0"



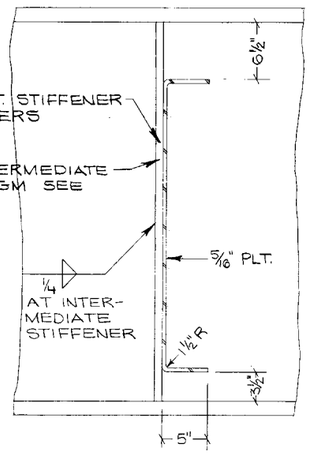
W 14 X 61 CONNECTION TO GIRDER OVER ABUT.

3" = 1'-0"



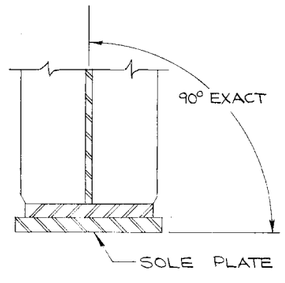
SECTION B-B

1½" = 1'-0"



SECTION C-C

1½" = 1'-0"



TYPICAL DETAIL AT BEARINGS

GENERAL NOTES

1. GRIND TO FIT WHERE BEAMS ARE CONTINUOUS OVER PIERS (AREA "A" SEE SHT 12 OF 22). 5/16" WELD BOTH SIDES AT OTHER POINTS.
2. MILL TO BEAR ℄ 3/8" WELD BOTH SIDES @ PIERS. 3/8" WELD BOTH SIDES OTHER POINTS (AREA "A") GRIND TO FIT ALL OTHER POINTS.
3. USE 7/8" HIGH STRENGTH BOLTS OR 7/8" PIN BOLTS.
4. POINT TOE OF BENT PLATE DIAPHRAGM DOWN GRADE

6. INTERMEDIATE DIAPHRAGMS - SIMILAR TO PIER DIAPHRAGMS — FOR INTERMEDIATE DIAPHRAGMS USE 7" X 3/8" PLT. STIFFENER & PLACE 90° TO THE WEB OF GIRDER (SEE SECTION THRU BEAM AT STIFFENER, SHT 12 OF 22). USE SAME BOLT HOLE PATTERN AS PIER DIAPHRAGMS. SEE SHT. 11 OF 22 FOR DIAPHRAGM LOCATION & SPACING.

MINNESOTA DEPARTMENT OF TRANSPORTATION

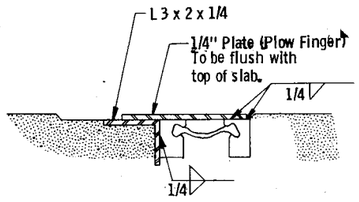
BRIDGE NO. 55527

CONNECTION DETAILS

APPROVED: 3-9-77

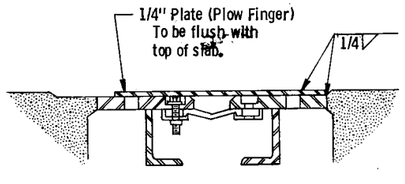
S.A. PROJECT NO. 55-605-04

SHEET 13 OF 22 | 55527 | BAN BEL



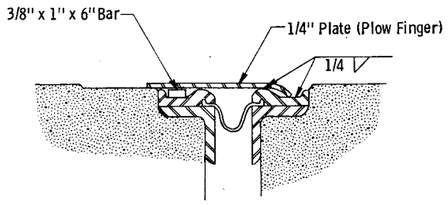
Section A - A

ALT. 1 FINGER



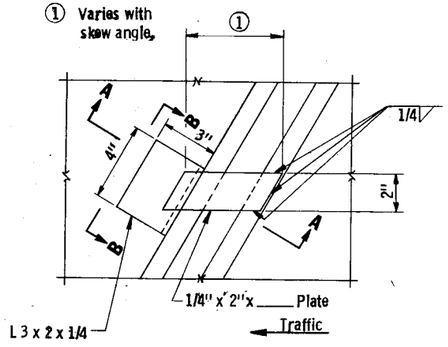
Section A - A

ALT. 2 FINGER

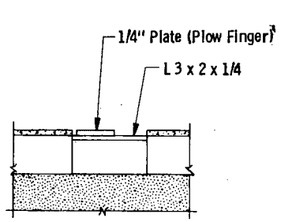


Section A - A

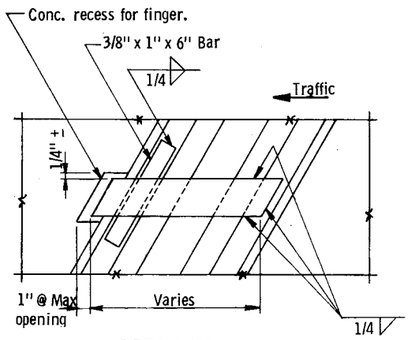
ALT. 3 FINGER



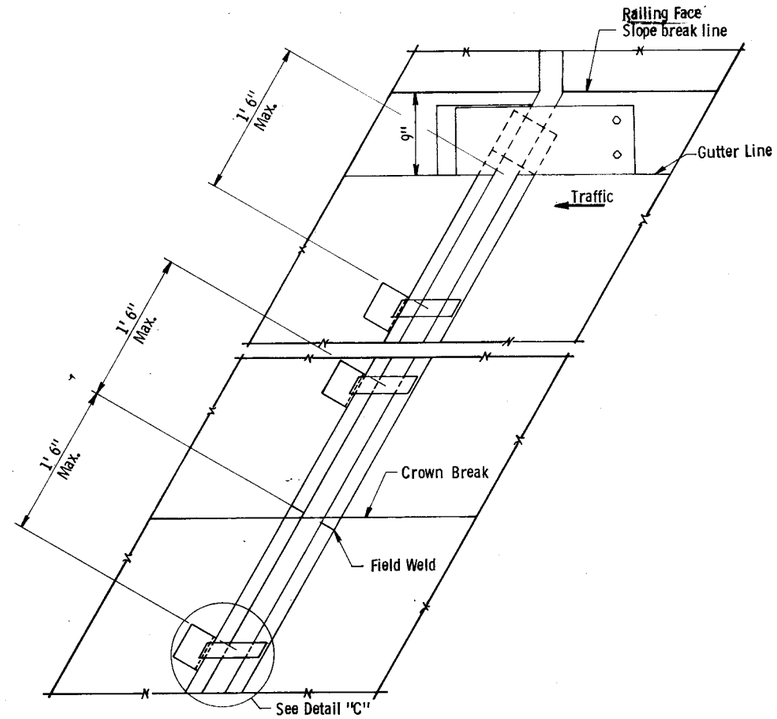
DETAIL "C"
(Alternate 1 Shown)



VIEW B-B



DETAIL "C"
(Alternate 3 Shown)



PLAN VIEW AT EXPANSION JOINT

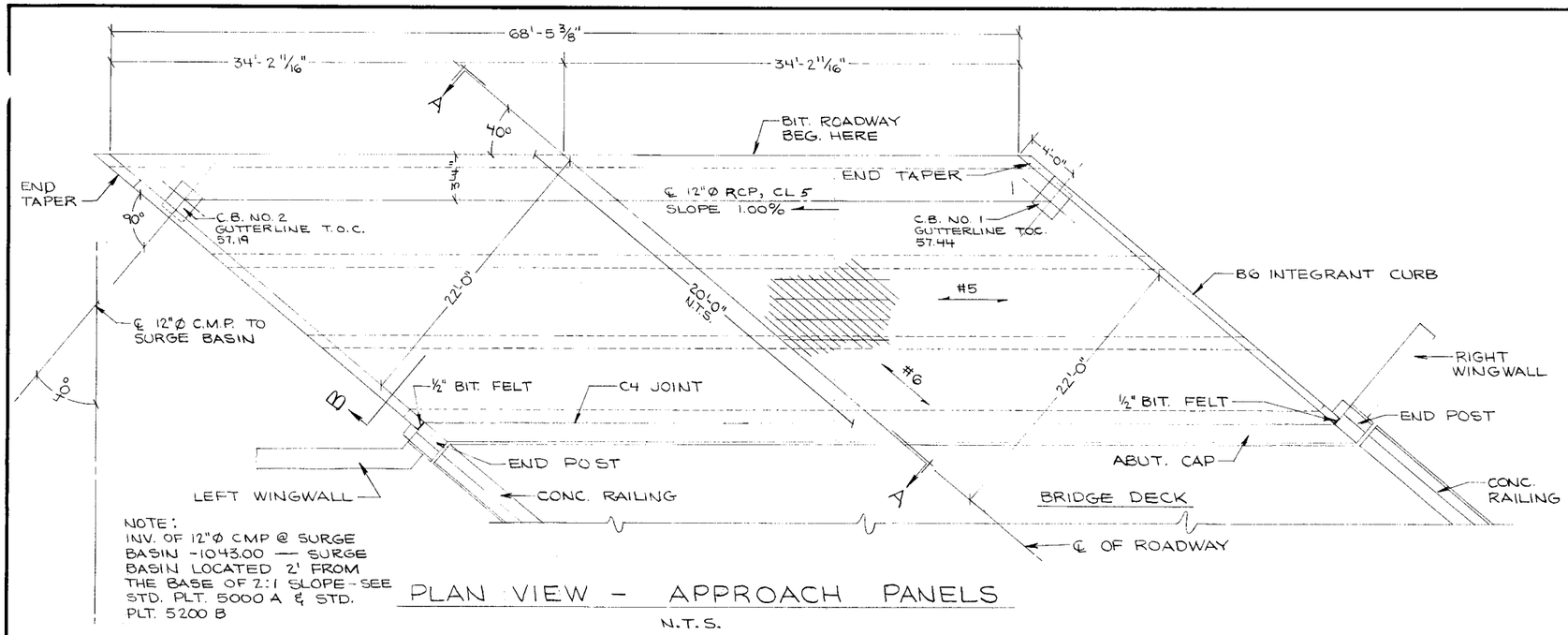
Max. spacing of plow fingers to be 4' 0" except as noted.

Fig 5-397.628

CMI WABO AZ EXTRUSION S-400 GLAND

TITLE: WATERPROOF EXPANSION DEVICE SNOW PLOW PROTECTION (Use on skews over 20°)	DES:	DR:	APPROVED: 3-9-77	Bridge No. 55527
	CHK:	CHK:	Sheet No. 14 of 22 Sheets	

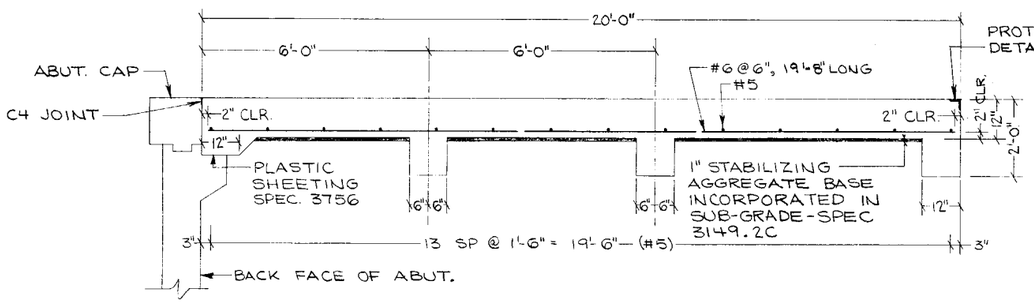
AS BUILT PLANS



NOTE:
INV. OF 12"Ø CMP @ SURGE BASIN -1043.00 — SURGE BASIN LOCATED 2' FROM THE BASE OF 2:1 SLOPE - SEE STD. PLT. 5000 A & STD. PLT. 5200 B

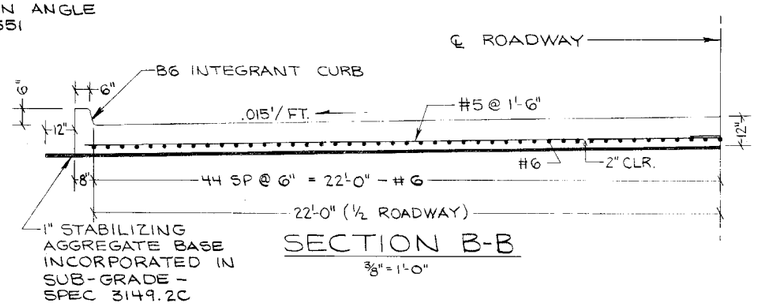
PLAN VIEW - APPROACH PANELS

N.T.S.



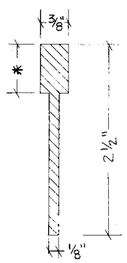
SECTION A-A

½" = 1'-0"



SECTION B-B

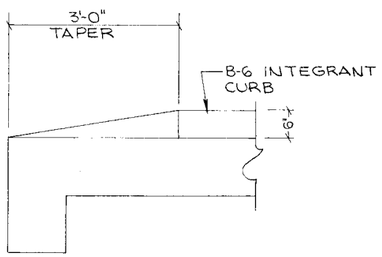
⅜" = 1'-0"



* ¼" GREATER THAN PREFORMED JOINT SEALER.

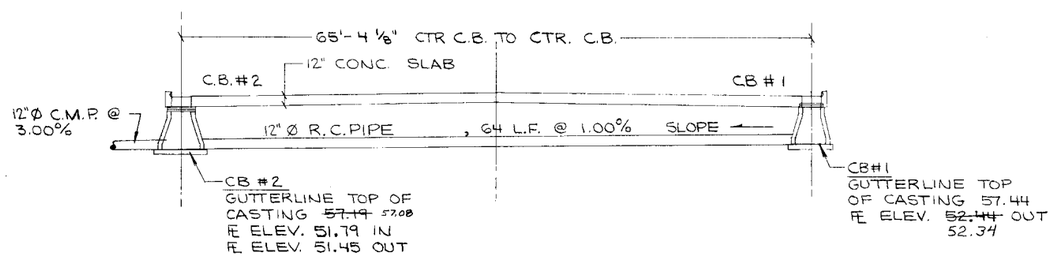
PREFORMED ELASTOMERIC COMPRESSION JOINT SEALS C4 JOINT

ACTUAL SCALE



END TAPER

¾" = 1'-0"



CROSS SECTION @ C.B.

⅛" = 1'-0"

NOTE: MINNESOTA HIGHWAY DEPARTMENT SPECIFICATIONS —
CATCH BASIN FRAME CASTING STD. PLATE 4129-A,
GRATE FRAME CASTING NO. 802,
GRATE NO. 811,
CURB BOX NO. 823,
CATCH BASIN MANHOLE STD. PLT. NO. 4006 F

SURGE BASIN STD PLT. 5200 B
12" Ø R.C.PIPE
12" Ø C.M.P. STD. PLT. 5000 A
B6 INTEGRANT CURB, STD PLT. 7000 C

③ SUMMARY OF QUANTITIES FOR 2 BRIDGE APPROACH PANELS

	ITEM	UNIT	QUANTITY
①	CONCRETE MIX NO. 3A42	CU.YD.	88
②	CATCH BASIN	EA	2
	REINFORCEMENT BARS	LBS.	7411
	12" Ø C.M. PIPE DRAIN	L.F.	32
	12" Ø R.C. PIPE DRAIN	L.F.	64
	CURB DESIGN B6 INTEGRANT	L.F.	80
	STABILIZING AGGREGATE	CU.YD.	0
	SOD	S.Y.	0
	RANDOM RIPRAP CLASS "A"	CU.YD.	4
	FILTER BLANKET	CU.YD.	2
	SURGE BASIN	EA.	1
	STRUCTURAL STL. (3306) PROT. &	LB	888

① THE VOLUME OF CONCRETE SHOWN IS BASED ON AN AVERAGE SLAB DEPTH OF 12" PLUS THE VOLUME OF KEYS AND SILLS AS DIMENSIONED. (CONCRETE FOR CURB DESIGN B INTEGRANT IS NOT INCLUDED IN THIS QUANTITY).

② INCLUDES ALL CONCRETE WORK AND ALL CASTINGS AND APPURTENANCES NECESSARY TO CONSTRUCT THE CATCH BASINS AS SHOWN & NOTED. (C.B. LOCATIONS AT EAST END ONLY.)

③ QUANTITIES LISTED ARE FOR APPROACH PANELS AT BOTH ENDS OF BRIDGE. PAYMENT WILL BE INCLUDED IN THE SINGLE LUMP SUM PRICE FOR "ITEM 301.603 BRIDGE APPROACH PANELS", EXCEPT FOR PROTECTION ANGLE WHICH IS PAID UNDER STRUCTURAL STEEL 3306

MINNESOTA DEPARTMENT OF TRANSPORTATION

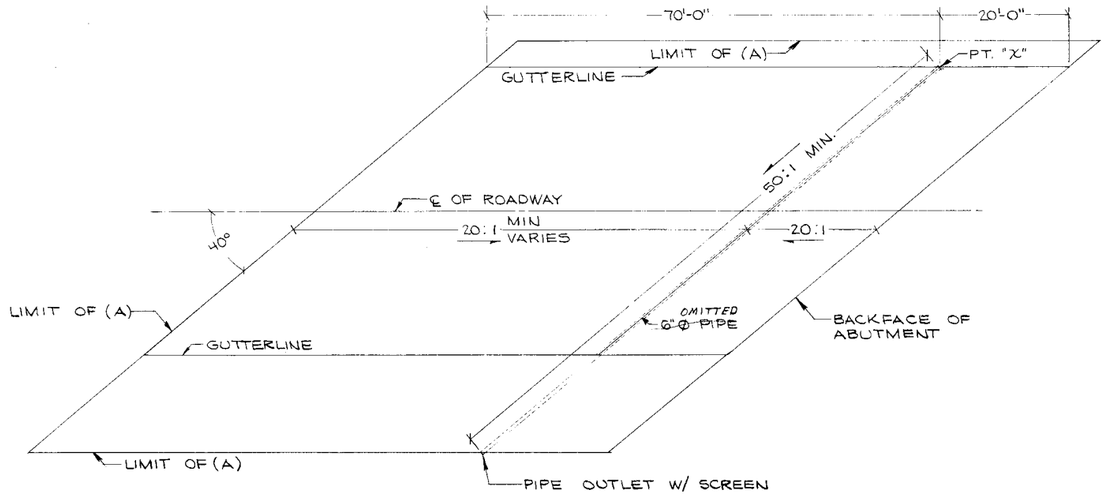
BRIDGE NO. 55527

BRIDGE APPROACH PANEL

APPROVED: 3-9-77

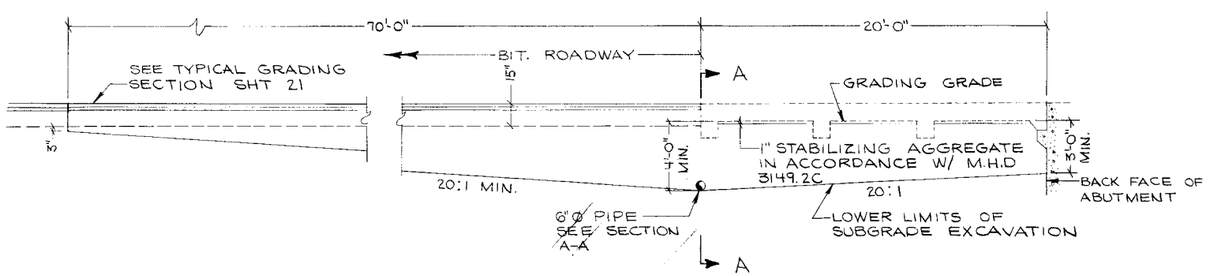
S.A. PROJECT NO. 55-605-04

SHEET 15 OF 22 | 55527 | BAN BEL



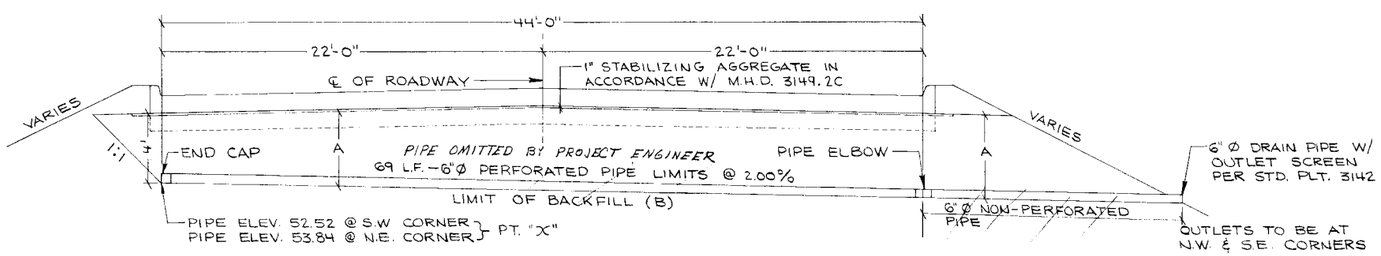
PLAN VIEW

3/32" = 1'-0"



LONGITUDINAL ROADWAY SECTION

1/4" = 1'-0"



SECTION A-A

1/4" = 1'-0"

SUMMARY OF QUANTITIES
FOR APPROACH TREATMENT

ITEM	UNIT	QUANTITY
SUBGRADE EXCAVATION	C.Y.	1089
SELECT GRANULAR BORROW (V)	C.Y.	1083
STABILIZING AGGREGATE	C.Y.	8
END CAP FOR 6" PIPE	EA.	2
6" PERFORATED PIPE	L.F.	138
6" NON-PERFORATED PIPE	L.F.	48
OUTLET SCREEN	EA.	2
ELBOWS	EA.	2

QUANTITIES LISTED ARE FOR BOTH ENDS OF BRIDGE.

THE QUANTITIES FOR BRIDGE APPROACH TREAT IS AS SHOWN ABOVE. ANY ADDITIONAL MINOR ITEMS AND SLIGHT CHANGES OF QUANTITIES REQUIRED SHALL BE FURNISHED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION.

NOTES:

A. MATERIAL SHALL COMPLY WITH MHD 3149.2B SELECT GRANULAR BORROW.

B. IF THE SELECT GRANULAR CONTAINS LESS THAN 5% PASSING A NO. 200 SIEVE THE ENGINEER MAY DELETE THE PIPE DRAIN

C. PIPE DRAIN, PERFORATED AND NON-PERFORATED, SHALL CONFORM TO THE REQUIREMENTS OF M.H.D. 3226, 3290, 3293, OR 3285 AS THE CONTRACTOR MAY ELECT EXCEPT THAT ALL PIPE AT ANY ONE LOCATION SHALL BE OF THE SAME MATERIAL. PERFORATED PIPE TO BE WRAPPED WITH POLYPROPHLENE CLOTH FILTER OR EQUIVALENT.

D. PLACEMENT OF DRAIN PIPE AND BACKFILL SHALL COMPLY WITH MHD 2502.3. EXCEPT THAT FILTER AGGREGATE SHALL NOT BE USED.

MINNESOTA
DEPARTMENT OF TRANSPORTATION

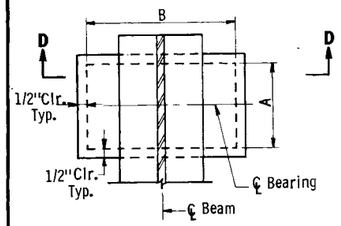
BRIDGE NO. 55527

BRIDGE APPROACH
TREATMENT

APPROVED: 3-9-77

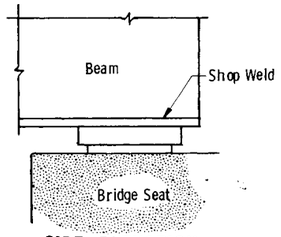
S.A. PROJECT NO. 55-605-04

SHEET 16 OF 22 | 55527 | BAN BEL



PLAN

Note: Min. A dimension shall be 3C
Min. B dimension shall be 2C

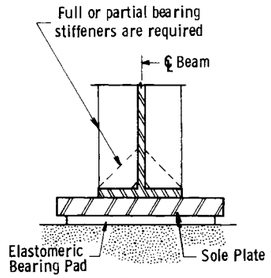


SIDE ELEVATION
(AT beam end shown)

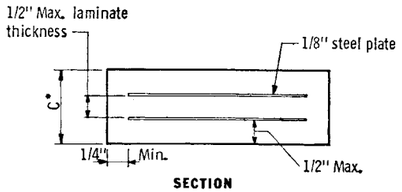
NOTES:

For elastomeric bearing pads, see special provisions.

Sole plate is included in weight of structural steel.



SECTION D-D

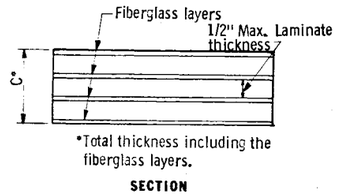


SECTION

* Total thickness including the steel plates

STEEL LAMINATE PAD DETAIL

(1-1/2" Pad Shown)



*Total thickness including the fiberglass layers.

SECTION

FIBERGLASS LAMINATE PAD DETAIL

(1-1/2" Pad Shown)

	MAX. MOVEMENT	PAD THICKNESS C	NO. OF LAMINATES ①	NO. OF LAMINATES ②
	3/8"	1"	2	2
	5/8"	1-1/2"	3	3
	3/4"	2"	4	3
ABUTMENT (WEST) →	1"	2-1/2"	5	4
PIER NO. 1 →	1-1/4"	3"	5	5
	1-3/8"	3-1/2"	6	6
	1-5/8"	4"	7	7
	1-3/4"	4-1/2"	8	7
	2"	5"	9	8
	2-1/4"	5-1/2"	9	9
	2-3/8"	6"	10	10
	2-5/8"	6-1/2"	11	11
	2-3/4"	7"	12	11
	3"	7-1/2"	13	12
	3-1/4"	8"	13	13

① Steel
② Fiberglass

ELASTOMERIC PAD DIMENSIONS FOR BEAMS WITH 9" TO 10-1/2" FLANGES

Pad Size A	Pad Size B	C	DL + LL Min.	DL Max.	DL + LL Max.	Shape Factor	Sole Plt. Size	Pad Type
10"	16"		32.0	80.0	128.0	6	11" x 17" x 1-1/2"	
12"	16"		38.4	96.0	153.6	7	13" x 17" x 1-1/2"	
14"	16"		44.8	112.0	179.2	7	15" x 17" x 1-1/2"	
16"	20"		64.0	160.0	256.0	9	17" x 21" x 2"	
18"	20"		72.0	180.0	288.0	9	19" x 21" x 2"	
20"	20"		80.0	200.0	320.0	10	21" x 21" x 2"	
22"	20"		88.0	220.0	352.0	10	23" x 21" x 2"	
24"	20"		96.0	240.0	384.0	11	25" x 21" x 2"	

ELASTOMERIC PAD DIMENSIONS FOR BEAMS WITH 11-1/2" TO 12" FLANGES

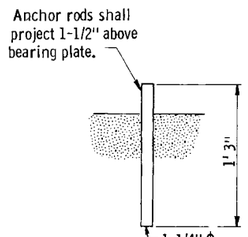
	Pad Size A	Pad Size B	C	DL + LL Min.	DL Max.	DL + LL Max	Shape Factor	Sole Plt. Size	Pad Type
WEST ABUTMENT →	10"	16"	2½"	32.0	80.0	128.0	6	11" x 17" x 1-1/4"	1
	12"	16"		38.4	96.0	153.6	7	13" x 17" x 1-1/4"	
	14"	16"		44.8	112.0	179.2	7	15" x 17" x 1-1/4"	
	16"	20"		64.0	160.0	256.0	9	17" x 21" x 1-1/2"	
PIER NO. 1 →	18"	20"	3"	72.0	180.0	288.0	9	19" x 21" x 1-1/2"	2
	20"	20"		80.0	200.0	320.0	10	21" x 21" x 1-1/2"	
	22"	20"		88.0	220.0	352.0	10	23" x 21" x 1-1/2"	
	24"	20"		96.0	240.0	384.0	11	25" x 21" x 1-1/2"	

ELASTOMERIC PAD DIMENSIONS FOR BEAMS WITH 15" TO 16" FLANGES

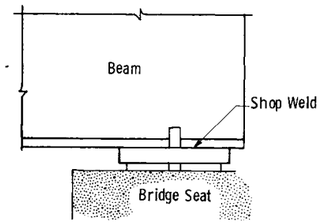
Pad Size A	Pad Size B	C	DL + LL Min.	DL Max	DL + LL Max	Shape Factor	Sole Plt. Size	Pad Type
10"	16"		32.0	80.0	128.0	6	11" x 17" x 1"	
12"	16"		38.4	96.0	153.6	7	13" x 17" x 1"	
14"	16"		44.8	112.0	179.2	7	15" x 17" x 1"	
16"	20"		64.0	160.0	256.0	9	17" x 21" x 1-1/4"	
18"	20"		72.0	180.0	288.0	9	19" x 21" x 1-1/4"	
20"	20"		80.0	200.0	320.0	10	21" x 21" x 1-1/4"	
22"	20"		88.0	220.0	352.0	10	23" x 21" x 1-1/4"	
24"	20"		96.0	240.0	384.0	11	25" x 21" x 1-1/4"	

APPROVED: May 6, 1976 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	MINNESOTA DEPARTMENT OF TRANSPORTATION **ELASTOMERIC BEARING PAD** **STEEL BEAMS** **(EXPANSION)**		DETAIL NO. **B355**

NOTE: FOR ELASTOMERIC BRG. ASSEMBLY FOR EAST ABUTMENT SEE SHT 5 OF 22

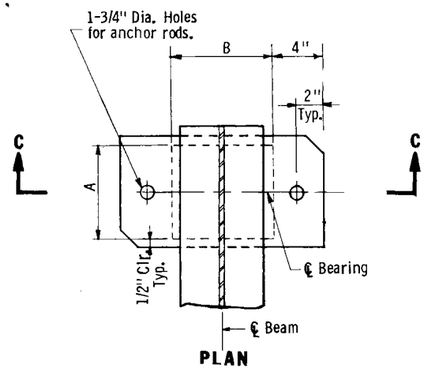


ANCHOR ROD DETAIL

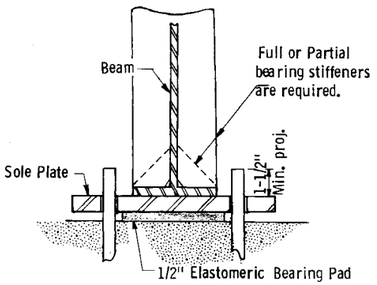


SIDE ELEVATION

(At beam end shown)



PLAN



SECTION C-C

NOTES:

For elastomeric bearing pads, see special provisions,

Anchor rods shall comply with M. H. D. 3306

Galvanize anchor rods per M. H. D. 3394.

Payment for bearing assembly shall include elastomeric bearing pad and anchor rods.

Sole plate is included in weight of structural steel.

1/2" ELASTOMERIC PAD DIMENSIONS FOR BEAMS WITH 9" TO 10-1/2" FLANGES

Pad Size A	Pad Size B	DL + LL Uplift Min.	DL Max	DL + LL Max.	Shape Factor	Sole Plt. Size	Assembly Type
10"	16"	32.0	80.0	128.0	6	11" x 24" x 1-1/2"	
12"	16"	38.4	96.0	153.6	7	13" x 24" x 1-1/2"	
14"	16"	44.8	112.0	179.2	7	15" x 24" x 1-1/2"	
16"	20"	64.0	160.0	256.0	9	17" x 28" x 2"	
18"	20"	72.0	180.0	288.0	9	19" x 28" x 2"	
20"	20"	80.0	200.0	320.0	10	21" x 28" x 2"	
22"	20"	88.0	220.0	352.0	10	23" x 28" x 2"	
24"	20"	96.0	240.0	384.0	11	25" x 28" x 2"	

1/2" ELASTOMERIC PAD DIMENSIONS FOR BEAMS WITH 11-1/2" TO 12" FLANGES

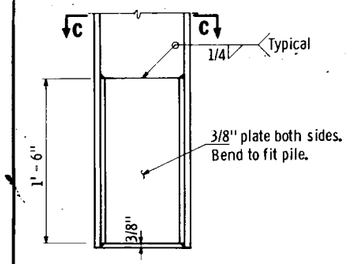
	Pad Size A	Pad Size B	DL + LL Uplift Min.	DL Max	DL + LL Max.	Shape Factor	Sole Plt. Size	Assembly Type
	10"	16"	32.0	80.0	128.0	6	11" x 24" x 1-1/4"	
	12"	16"	38.4	96.0	153.6	7	13" x 24" x 1-1/4"	
	14"	16"	44.8	112.0	179.2	7	15" x 24" x 1-1/4"	
	16"	20"	64.0	160.0	256.0	9	17" x 28" x 1-1/2"	
PIER NO. 2 →	18"	20"	72.0	180.0	288.0	9	19" x 28" x 1-1/2"	1
	20"	20"	80.0	200.0	320.0	10	21" x 28" x 1-1/2"	
	22"	20"	88.0	220.0	352.0	10	23" x 28" x 1-1/2"	
	24"	20"	96.0	240.0	384.0	11	25" x 28" x 1-1/2"	

1/2" ELASTOMERIC PAD DIMENSIONS FOR BEAMS WITH 15" TO 16" FLANGES

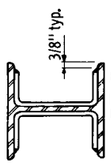
Pad Size A	Pad Size B	DL + LL Uplift Min.	DL Max	DL + LL Max	Shape Factor	Sole Plt. Size	Assembly Type
10"	16"	32.0	80.0	128.0	6	11" x 24" x 1"	
12"	16"	38.4	96.0	153.6	7	13" x 24" x 1"	
14"	16"	44.8	112.0	179.2	7	15" x 24" x 1"	
16"	20"	64.0	160.0	256.0	9	17" x 28" x 1-1/4"	
18"	20"	72.0	180.0	288.0	9	19" x 28" x 1-1/4"	
20"	20"	80.0	200.0	320.0	10	21" x 28" x 1-1/4"	
22"	20"	88.0	220.0	352.0	10	23" x 28" x 1-1/4"	
24"	20"	96.0	240.0	384.0	11	25" x 28" x 1-1/4"	

APPROVED: May 6, 1976 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	MINNESOTA DEPARTMENT OF TRANSPORTATION **ELASTOMERIC BEARING ASSEMBLY** **STEEL BEAMS** **(FIXED)**		DETAIL NO. **B354**

TITLE: **DETAILS**	DES: BAN CHK:	DR: BEL CHK:	APPROVED: 3-9-77
	Sheet No. 17 of 22 Sheets		**Bridge No. 55527**



ELEVATION

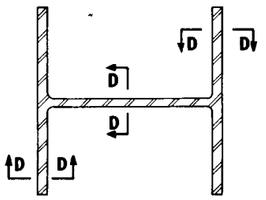


Each pile tip reinforced, will be paid for in amount equal to 5 linear feet of piling delivered.

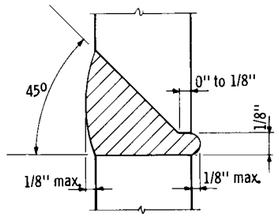
Pile tips shall be reinforced only when directed by the Engineer.

SECTION C - C

DETAIL OF PILE TIP REINFORCEMENT



SECTION AT JOINT



SECTION D - D

NOTES:

A. W. S. Type E7010 or E7018 (low-hydrogen) electrodes shall be used for 100% butt welded splices.

A. W. S. Type E6010, E6011 electrodes, or E7010 or E7018 (low-hydrogen) electrodes, shall be used for the alternate plate type pile splice.

Low-hydrogen electrodes shall be supplied in hermetically (air-tight) sealed containers.

Low-hydrogen electrodes shall be stored in holding ovens at a temperature of not less than 250° F.

Low-hydrogen electrodes shall be placed in a holding oven for at least 8 hours, after having been exposed to the atmosphere for more than 2 hours.

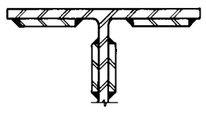
Any type electrode which has become wet, soiled, or damaged shall not be used.

Welding shall not be done when the ambient temperature is lower than 0° F. or when the pile is wet or exposed to falling rain or snow. When the pile metal temperature is below 32° F., the pile metal in the area of the weld shall be heated to a minimum temperature of 70° F. and maintained at this temperature during welding.

100% BUTT WELDED PILE SPLICE

SECTION A - A

ELEVATION



SECTION B - B

PILE SECTION	PLATE X			PLATE Y		
	Size	A	B	Size	C	D
HP10 x 42	2-1/2 x 3/8	1/4	4	3 x 3/8	5/16	4
HP10 x 57	2-1/2 x 1/2	5/16	4	3 x 1/2	5/16	5
HP12 x 53	3-1/2 x 3/8	1/4	5	4 x 3/8	5/16	5
HP12 x 74	3-1/2 x 1/2	5/16	6	4 x 1/2	5/16	6
HP14 x 73	4-1/2 x 3/8	1/4	7	5 x 3/8	5/16	6
HP14 x 89	4-1/2 x 7/16	5/16	7	5 x 1/2	5/16	7
HP14 x 102	4-1/2 x 1/2	5/16	7	5 x 9/16	3/8	7
HP14 x 117	4-1/2 x 9/16	3/8	7	5 x 5/8	3/8	8

ALTERNATE PILE SPLICE

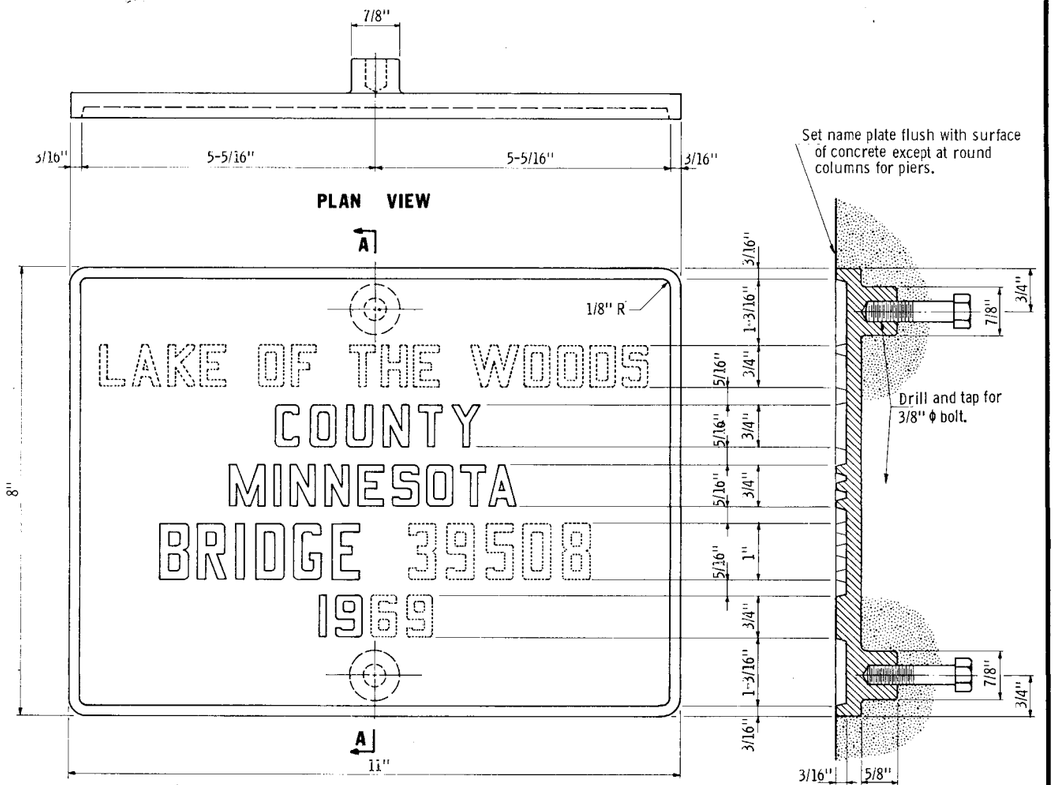
APPROVED July 21, 1972

Douglas Dilfast
Engineering Standards Engineer
RESEARCH AND STANDARDS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

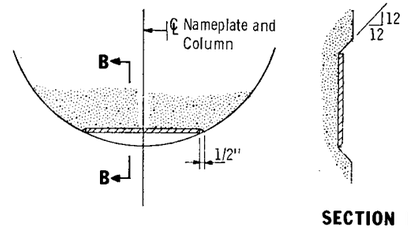
PILE SPLICE and TIP REINFORCEMENT
STEEL H BEARING PILES 10" TO 14"

DETAIL NO.
B202



The numbers shown above are for illustration.
Data to be shown on name plate is as follows:

BRIDGE 55527
YEAR 1977
OLMSTED COUNTY



SECTION B-B

NAMEPLATE PLACEMENT
(Round Concrete Pier Columns)

NOTES:

No shop drawing required.
Material shall comply with M. H. D. 3327.
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.
Furnish 2 steel bolts 3/8" ϕ x 3" long with each plate.
All dimensions for 3/4" high letters and numbers shall be in direct proportion to those shown for the 1" high letters and numbers.
FOR LOCATION OF NAME PLATE SEE SHTS. 1 OF 22 & 10 OF 22.



Specification reference: 2471, 3H, A.S.T.M. Designation: B145 - Alloy 836.

LETTERS & NUMBERS FOR NAMEPLATES

APPROVED: March 15, 1976

Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN

Issued by: OFFICE OF ENGINEERING STANDARDS

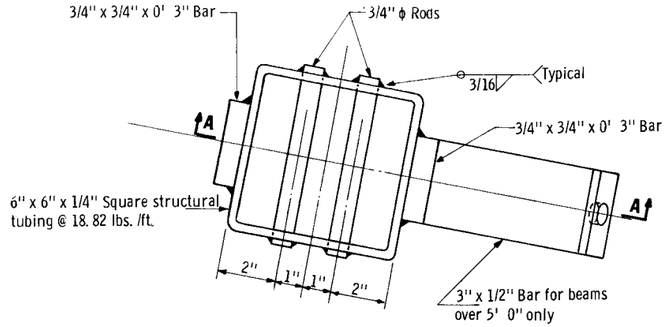
MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE NAMEPLATE
COUNTY BRIDGES

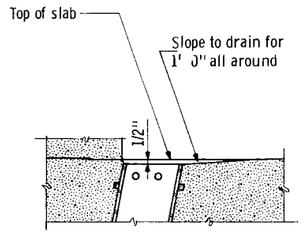
DETAIL NO.
B103

TITLE:	DES: BAN	DR: BEL	APPROVED:	Bridge No.
DETAILS	CHK:	CHK:	3-9-77	55527
	Sheet No. 18 of 22 Sheets			

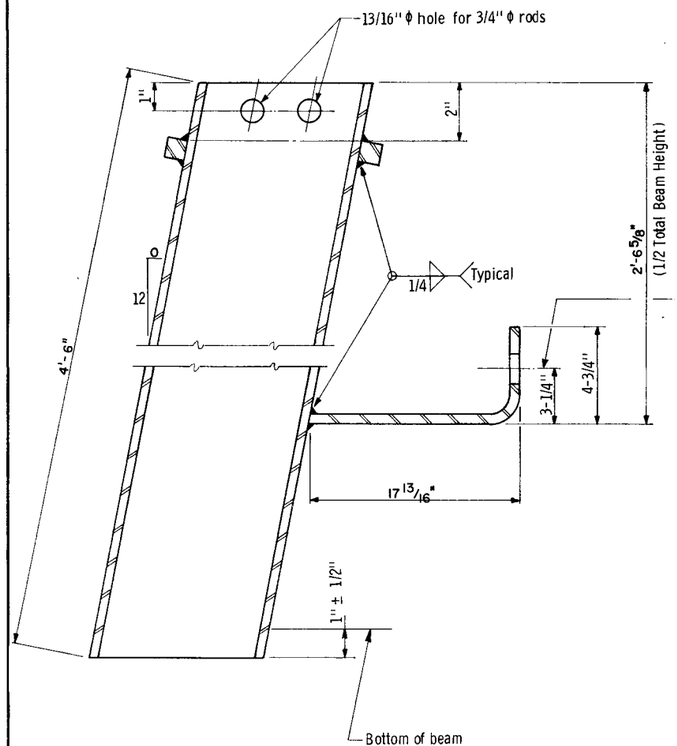
AS BUILT DETAILS



PLAN VIEW



PLACEMENT DIAGRAM



SECTION A - A

NOTES:

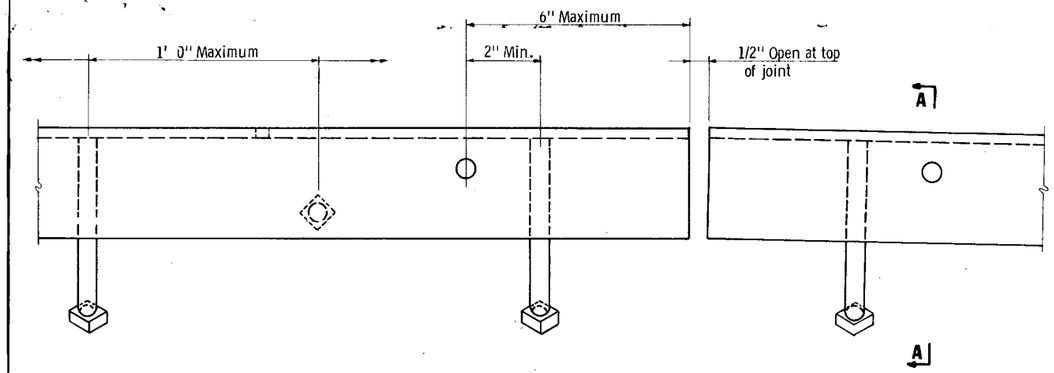
Material to be structural steel per M. H. D. 3306.

Galvanize bolts and washer per M. H. D. 3392.

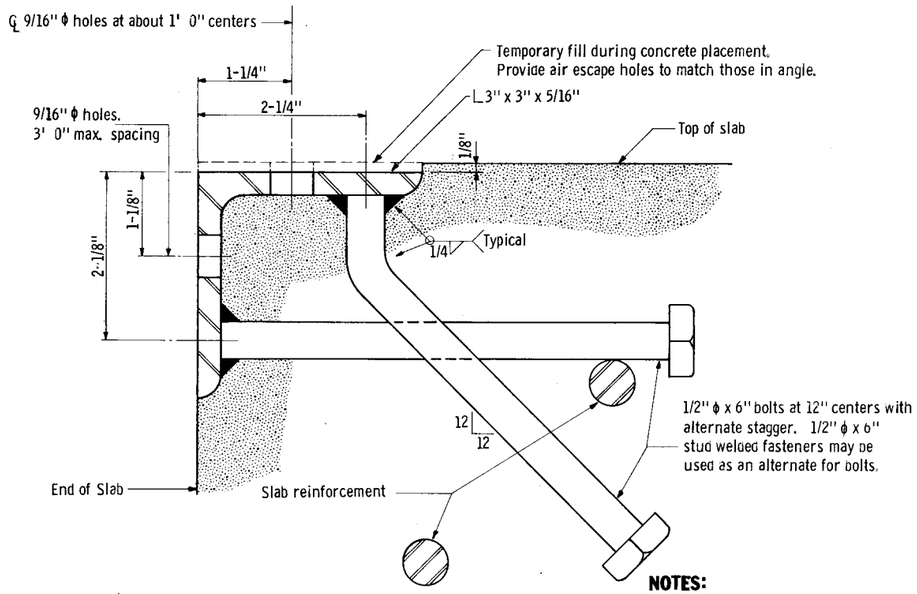
Galvanize other materials per M. H. D. 3394 after fabrication.

Payment for Floor Drain Type __1__ shall include all material shown on this detail.

APPROVED: Aug. 12, 1975 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	MINNESOTA DEPARTMENT OF TRANSPORTATION **BRIDGE FLOOR DRAIN** **STRUCTURAL TUBING**		DETAIL NO. **B702**



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 feet.

Angles shall be straightened to a tolerance of 1/16" in 10 feet after galvanizing

Material: Structural steel per M. H. D. 3306. Galvanize after fabrication per M. H. D. 3394

Set angle to proper grade and crown.

All material will be paid for as structural steel M. H. D. 3306.

APPROVED May 26, 1972 Douglas Duffert Engineering Standards Engineer RESEARCH AND STANDARDS DIVISION	MINNESOTA DEPARTMENT OF TRANSPORTATION **PROTECTION ANGLE** **FOR END OF SLAB**		DETAIL NO. **B551**

TITLE: **DETAILS**	DES: BAN	DR: BEL	APPROVED: 3-9-77	**Bridge No.** 55527
	CHK:	CHK:	**Sheet No. 19 of 22 Sheets**	

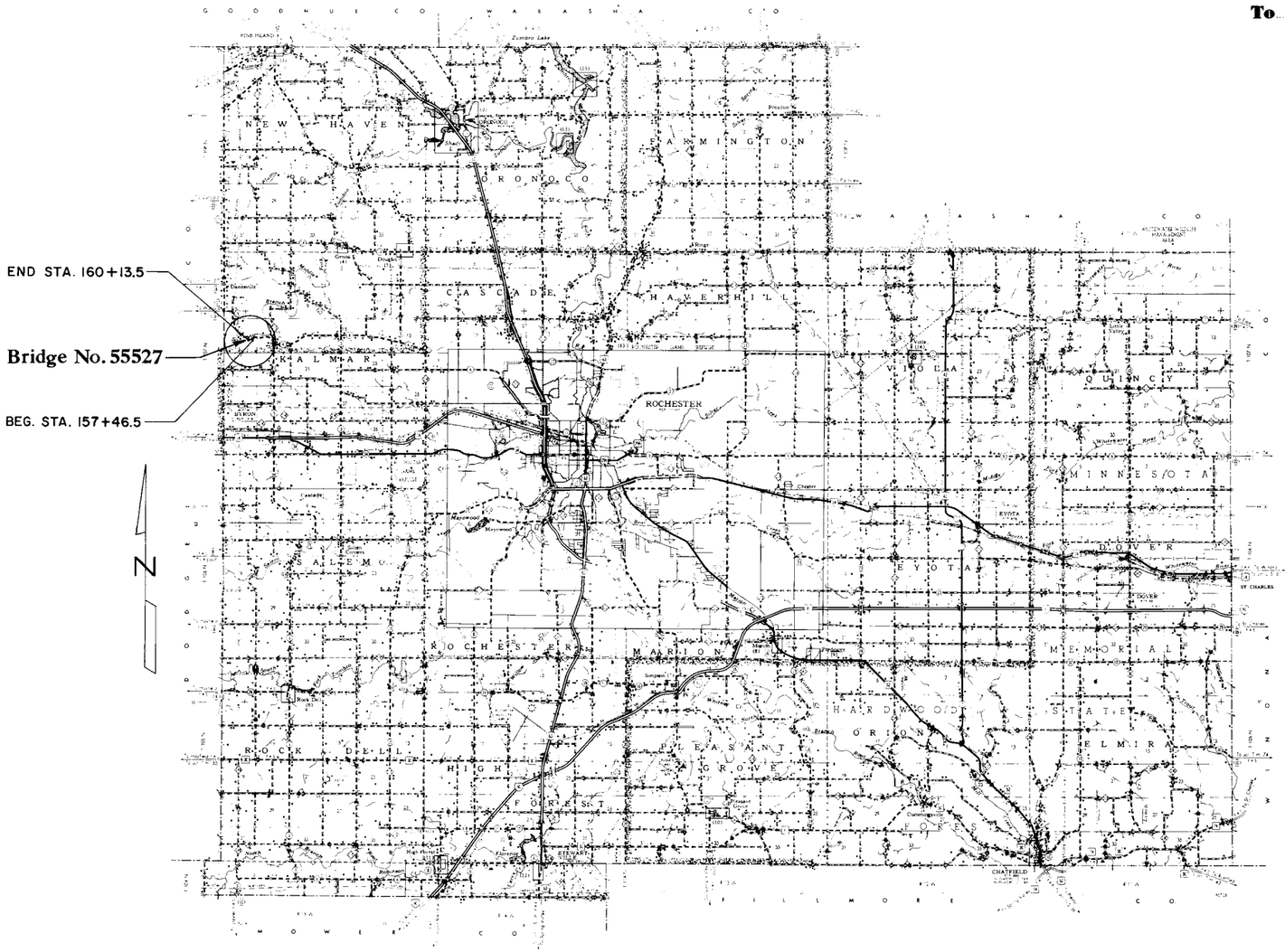
FORM 100-A '65

PLANS SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
SIXTEENTH LINE
RIGHT OF WAY LINE
PRESENT RIGHT-OF-WAY LINE
CONTROL OF ACCESS LINE
PROPERTY LINE (Except Land Lines)
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
TRUNK HIGHWAY CENTER LINE
RETAINING WALL
RAILROAD
RAILROAD RIGHT OF WAY LINE
RIVER OR CREEK (NAME)
DRY RUN
DRAINAGE DITCH (SIZE)
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
STONE WALL OR FENCE
HEDGE
RAILROAD CROSSING SIGN
RAILROAD CROSSING BELL
ELECTRIC WARNING SIGN
CROSSING GATE
MEANDER CORNER
SPRINGS
MARSH
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN C.B.
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame) 1-S-F
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 (R)

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—G
WATER MAIN W—W
CONDUIT
TELEPHONE CABLE IN CONDUIT T—T
ELECTRIC CABLE IN CONDUIT P—P
TELEPHONE MANHOLE T
ELECTRIC MANHOLE P
BURIED TELEPHONE CABLE T-BUR
BURIED ELECTRIC CABLE P-BUR
AERIAL TELEPHONE CABLE T-AE
SEWER, (SANITARY OR STORM)
SEWER MANHOLE



SPECIFICATION—

THE MINNESOTA HIGHWAY DEPARTMENT "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED JANUARY 1, 1972 SHALL GOVERN AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS" DATED APRIL 1, 1976

Fed. Proj. No.

MINNESOTA

DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR BRIDGE 55527

COUNTY STATE AID HIGHWAY NO. 5

BETWEEN C.S.A.H. 4 **AND** C.S.A.H. 14

From 598.2' SO. & 1074.2' W. of the E¼ Cor. of Sec. 18, T107N, R15W
(Give proper reference to Sections, Township and Range)

To 598.2' SO. & 1341.2' W. of the E¼ Cor. of Sec. 18, T107N, R15W

GROSS LENGTH	—	FEET —	MILES
BRIDGES-LENGTH	267.00	FEET .051	MILES
EXCEPTIONS-LENGTH	—	FEET —	MILES
NET LENGTH	267.00	FEET .051	MILES

INDEX OF SHEETS

Title Sheet & Layout Map

1 — 22 BRIDGE PLAN SHEETS

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

J. K. Nolan COUNTY ENGINEER DATE 12-10-76

Olmsted COUNTY REG. NO. 10219

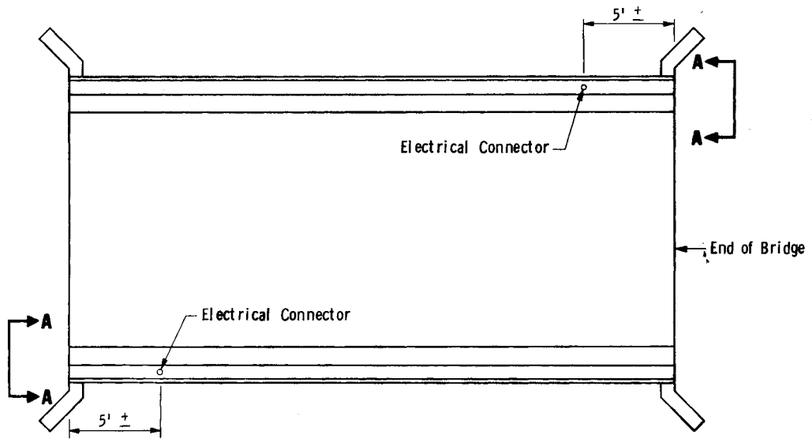
RECOMMENDED FOR APPROVAL G. Wilhaide 12-10 1976 DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL K. V. Gustafson 3-9 1977

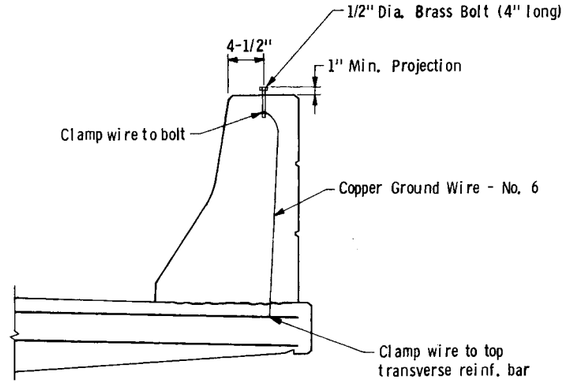
APPROVED 3/11 1977 William M. Hoy STATE AID ENGINEER

Minn. Project No. _____ S.A. Project No. 55-605-04

OLMSTED County, Minnesota. County Proj. No. _____ **Plan No.** 55527



PLAN VIEW OF BRIDGE

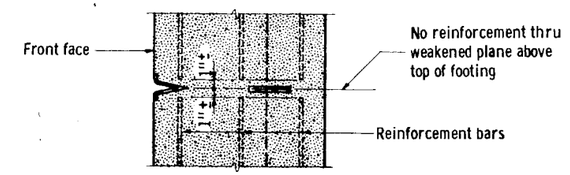


SECTION A-A

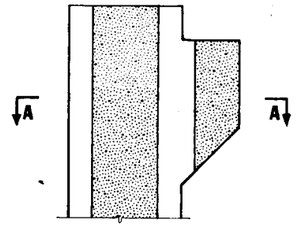
NOTE: Place 2 electrical connectors as shown on each new bridge 300 feet or less in length, plus one additional connector for each additional 300 feet of bridge length or portion thereof as directed by the Engineer.

Furnishing and installing the bolt, wire and clamps shall be considered as incidental work for which no direct payment will be made.

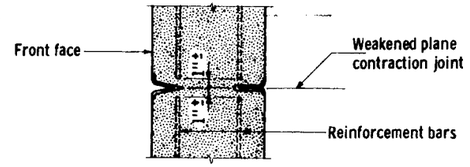
APPROVED: Feb. 25, 1974 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	MINNESOTA DEPARTMENT OF TRANSPORTATION **ELECTRICAL CONNECTIONS FOR TESTING EFFECTIVENESS OF WATERPROOF MEMBRANES**	REVISION	DETAIL NO. **B902**



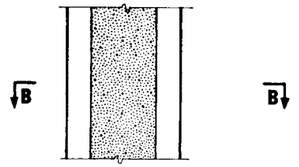
SECTION A - A



SECTION THRU PAVING BRACKET



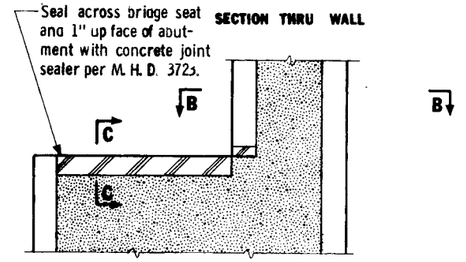
SECTION B - B



SECTION THRU WALL

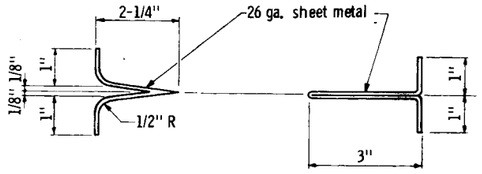


SECTION C - C



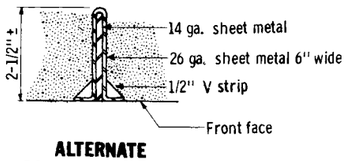
SECTION THRU BRIDGE SEAT

PART SECTION THRU ABUTMENT AT JOINT



BRIDGE SEAT and FRONT STRIP
6" wide

BACK STRIP
8" wide



ALTERNATE BRIDGE SEAT and FRONT STRIP

NOTES:

The methods and materials indicated hereon shall be considered as suggested only. Variations will be permitted, subject to approval by the Engineer, but must provide dummy joints of a depth not less than the depth shown, and a width at the front face of the abutment of not greater than 5/16". The separation of the horizontal reinforcement bars shall be not less than 1-1/2" nor more than 3", centered as shown, regardless of the procedure used for forming the dummy joint.

Front and bridge seat strips shall be removed with forms, except if a suitable plastic or other durable material, satisfactory to the Engineer, is used, the material may be left in place. Back strip to remain in place.

Back metal strips to be galvanized sheet metal. Fasten to forms with 7/8" roofing nails about 6" centers.

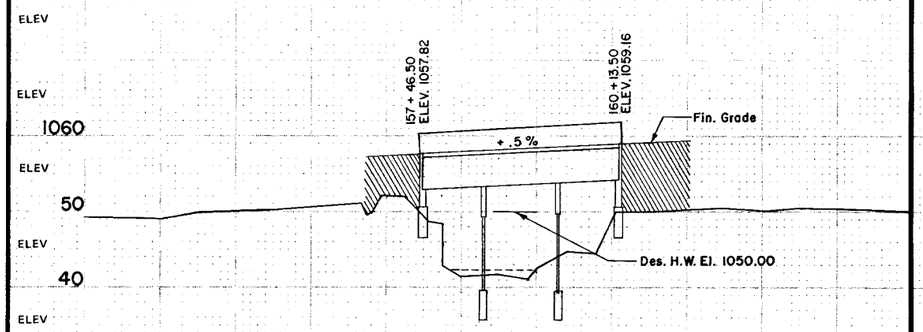
Cost of forming joint to be included in price bid for other items.

APPROVED Feb. 15, 1972 Douglas Differt Engineering Standards Engineer RESEARCH AND STANDARDS DIVISION	MINNESOTA DEPARTMENT OF TRANSPORTATION **CONTRACTION JOINT**		DETAIL NO. **B801**

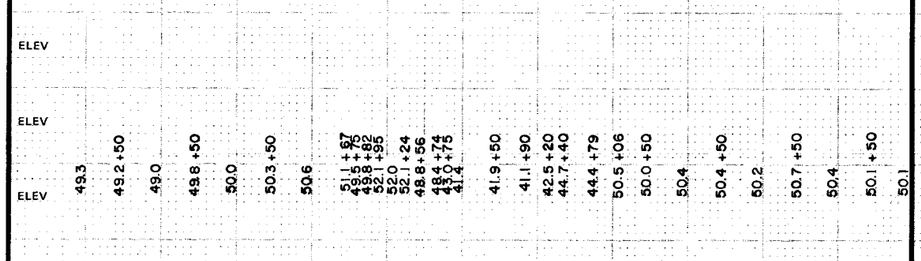
TITLE: DETAILS	DES: BAN	DR: BEL	APPROVED: 3-9-77	Bridge No. 55527
	CHK:	CHK:	Sheet No. 20 of 22 Sheets	

CONTRACTED PROFILE

SCALE: HOR. 0' 50' 100' VER. 0' 5' 10'

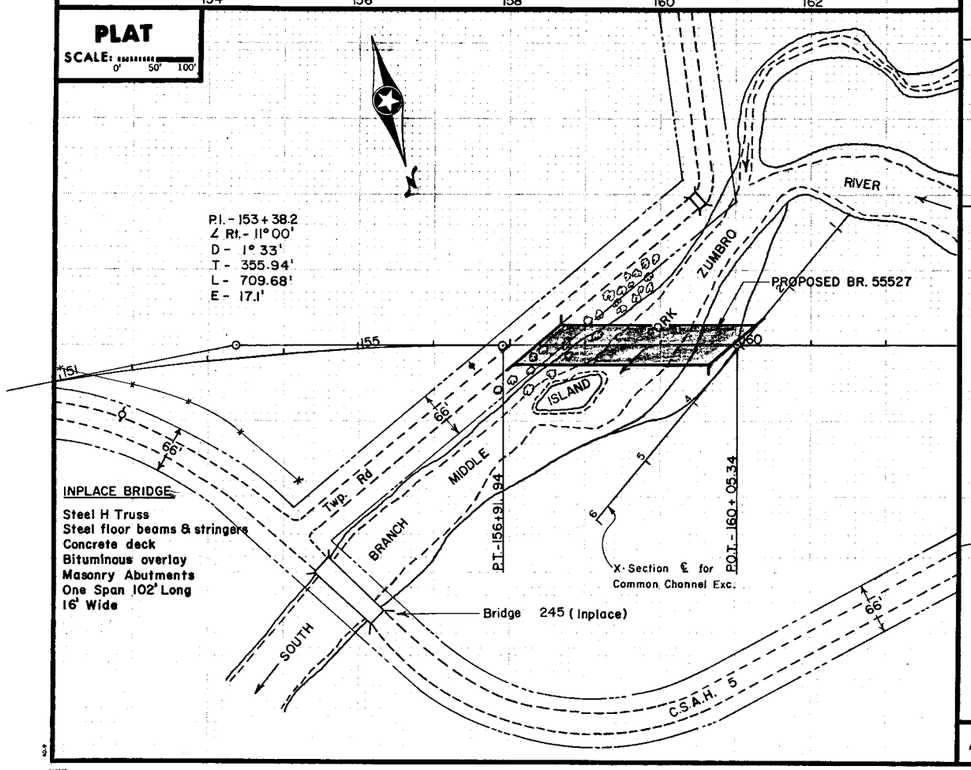


Channel Elev. 1041.0
Top Water Elev. 1042.3
Low Steel Elev. 1053.0
High Water Elev. 1050.0
(Observed 3-1-65)



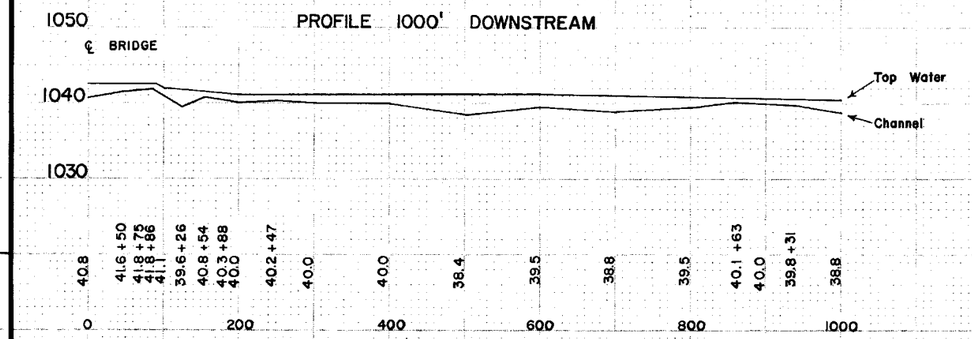
PLAT

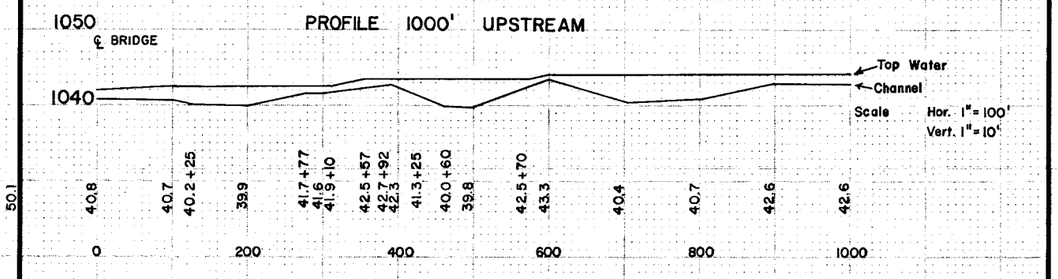
SCALE: 0' 50' 100'

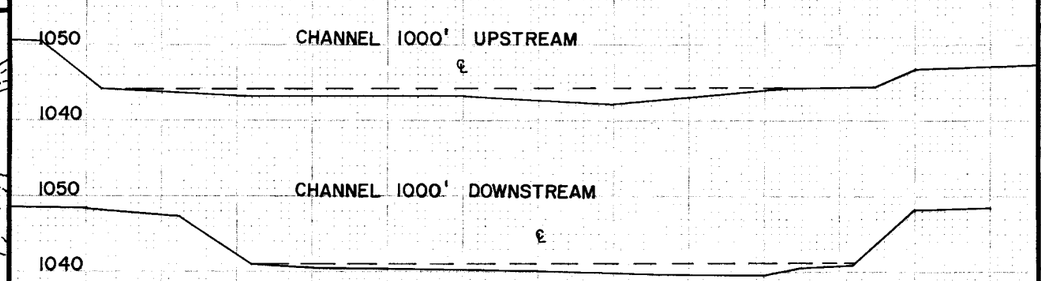


TYPICAL SECTIONS & PERTINENT DATA

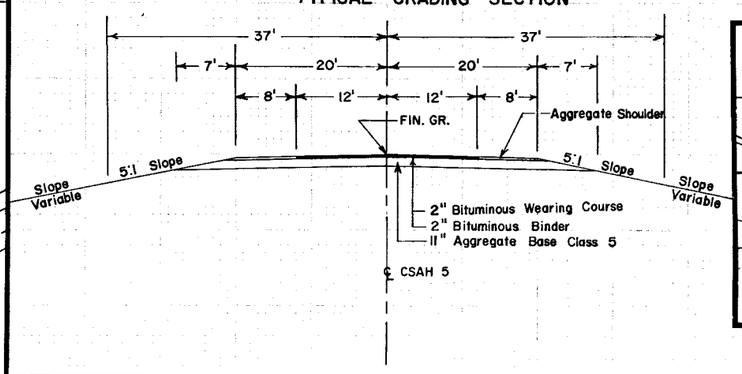
SCALES AS SHOWN

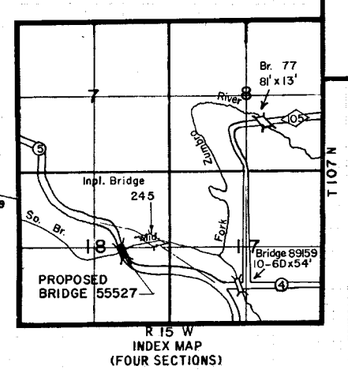






TYPICAL GRADING SECTION





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LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

1. Special Features: Waterfalls, dams, floods, ice, debris, sliding banks, recreational boating.
Subject to driftwood and ice jams.

2. Other bridges or culverts over the same stream (particularly structures which carry high water without overflow of roadway) :Given location, type, length, height above high water, cross-sectional area etc.
Downstream 2.0 Miles 82' Clear Span, Top of Water to Low Steel 13', Channel to Low Steel 15.5', Water opening 82' x 13', Downstream 500' 100' Clear Span x 17.5', Top of Water to Low Steel 12.7', Channel to Low Steel 14.8', Upstream 1.5 Miles 78' Clear Span x 12' x Bottom of Channel to Low Steel 18'

3. Apparent highwater elevation 1050.0' Obtained from Flood on 3-1-65

4. Other data: Approx. velocity of water at time of survey.

HYDRAULIC ENGINEERS RECOMMENDATION

DATE .....

Stream or ditch designation South Branch, Middle Fork, Zumbro River
Drainage area 172 Sq. Mi.
Max. discharge on record ——— Design discharge (50 yr. freq.) 9400 C.F.S.
Max. observed highwater elevation 1050.00 Design highwater elevation 1050.00
Design mean velocity through structure 7.93 F.P.S. Swellhead 0.30 FT.
Low superstructure at or above elevation 1053.00
Flowline elevation 1041.0 Skew angle 50°
Waterway area req'd. below elevation 1050.0 = 1186 Sq. Ft. at Rt. angles to channel

In the interest of flood plain zoning the regional flood (100 yr. freq.) is 11,280 C.F.S. at stage 1050.63 and mean velocity of 8.44 F.P.S. with 0.45 Ft. swellhead. The above recommendation will provide a structure of adequate waterway to pass the regional flood within criteria established by the Dept. of Natural Resources.

FOUNDATION ENGINEERS RECOMMENDATION

DATE .....

Bridge survey sheets made from:

Bench mark elevation 1056.74 (M.S.L. 1929 Adj.)
Location: Box on North End, West Curb, Bridge 245

MINNESOTA
DEPARTMENT OF TRANSPORTATIONS

BRIDGE SURVEY

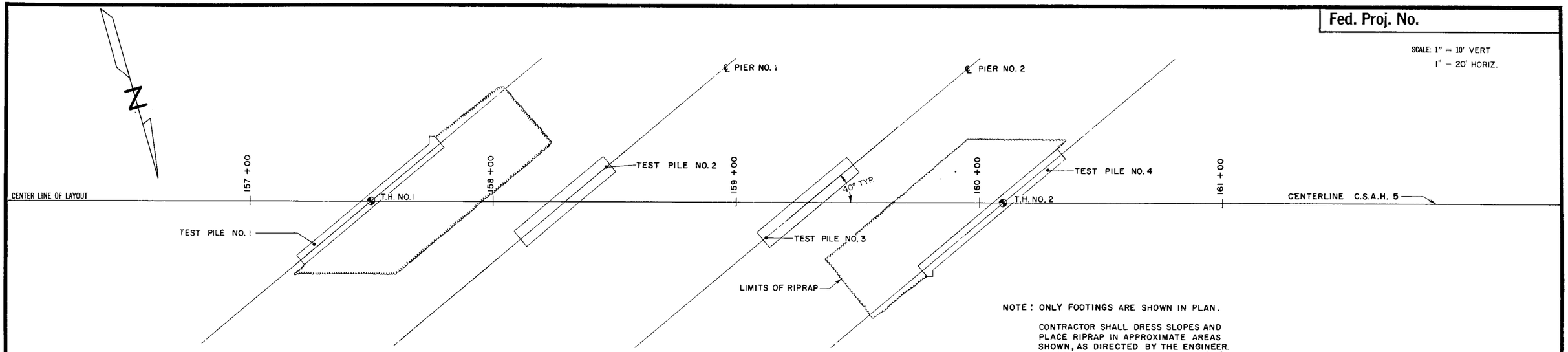
AT MILE POINT. ON CSAH 5 (T.H., C.S.A.H., C.R. etc.)
PROPOSED BRIDGE LOCATED 3.5 MILES North OF BYRON
SEC. 18 TWP. 107 N R. 15 W
TOWNSHIP KALMAR COUNTY OLMSTED
BRIDGE NO. 55527

Area No. Job No. CSAH 5 Olmsted Co. Minn. S.A. Proj. No. 55-605-04 Sheet No. 21 of 22 Sheets

AS BUILT PLANS

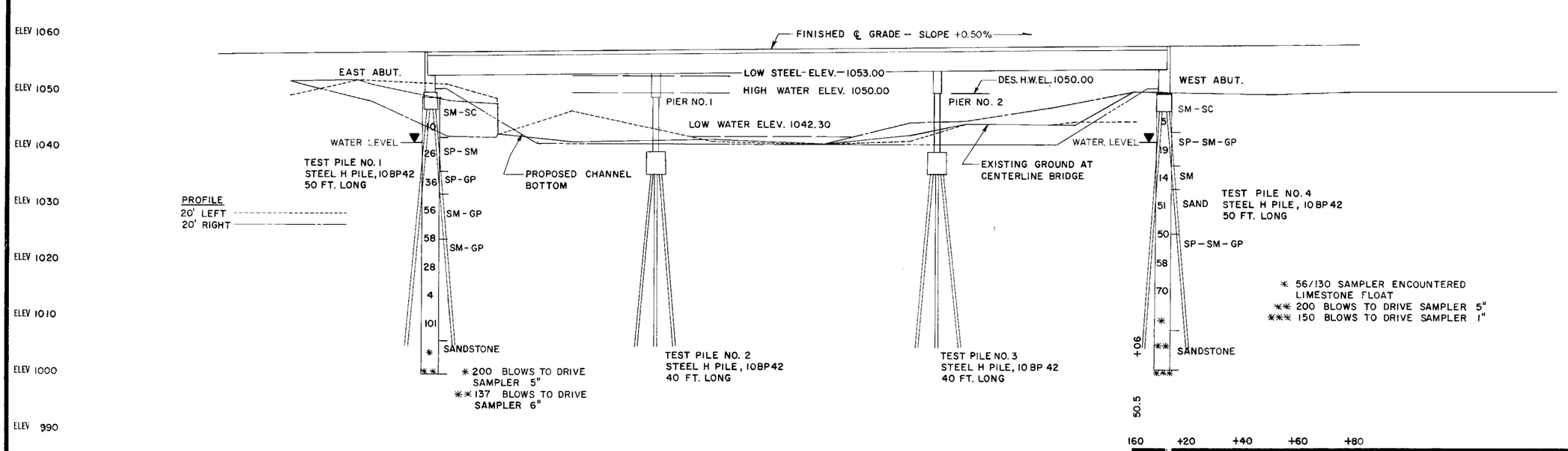
Fed. Proj. No.

SCALE: 1" = 10' VERT
1" = 20' HORIZ.



NOTE : ONLY FOOTINGS ARE SHOWN IN PLAN.

CONTRACTOR SHALL DRESS SLOPES AND PLACE RIPRAP IN APPROXIMATE AREAS SHOWN, AS DIRECTED BY THE ENGINEER. RANDOM RIPRAP CLASS B AVERAGE 1'-6" THICKNESS. SEE SHT 1 OF 22.



BORINGS SHOWN [T] TAKEN WITH
STD. 140 LB. HAMMER
30 INCH DROP
2 1/2 INCH O.D. SAMPLER

ELEV B.M. ELEV (M.S.L. 19 ADJ.)

	+00	+24	+56	+74 +75	+00	+50	+90	+00	+20	+40	+79
	1052.0	52.0	48.8	48.4 43.0	41.4	41.9	41.1		42.5	44.7	44.4

+60 +80 157 +20 +40 +60 +80 158 +20 +40 +60 +80 159 +20 +40 +60 +80

SUBSURFACE EXPLORATION FOR FOUNDATION DESIGN

For the design of the structure foundation, to obtain relative data concerning the character of material in and upon which the foundation might be built, borings and/or soundings were made at points approximately as indicated on this drawing with the log of such exploration data as interpreted for such design purpose as shown. The explorations were made by ordinary and conventional methods and care deemed adequate for such purpose. However, since it is a matter of common knowledge that the exact character of any material and its reaction is difficult to determine from such subsurface exploration and that the kind and character of material at the site where the foundations are built may vary substantially from that indicated by the log they are made available to the bidders simply for what they are worth, without any warranty, expressed or implied that the material to be encountered in building the foundation will conform therewith. If the log is used by the contractor in making his bid, it is hereby expressly stipulated that the Highway Department accepts no responsibility for said use.

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55527

BRIDGE SURVEY
PLAN AND PROFILE

SEE SHEET NO. FOR ADDITIONAL INFORMATION

S.A.Proj. No. 55-605-04

Sheet No. 22 of 22 Sheets

Bridge Survey Sheet (Sheet 2 of 2)