FORM 100-A '65

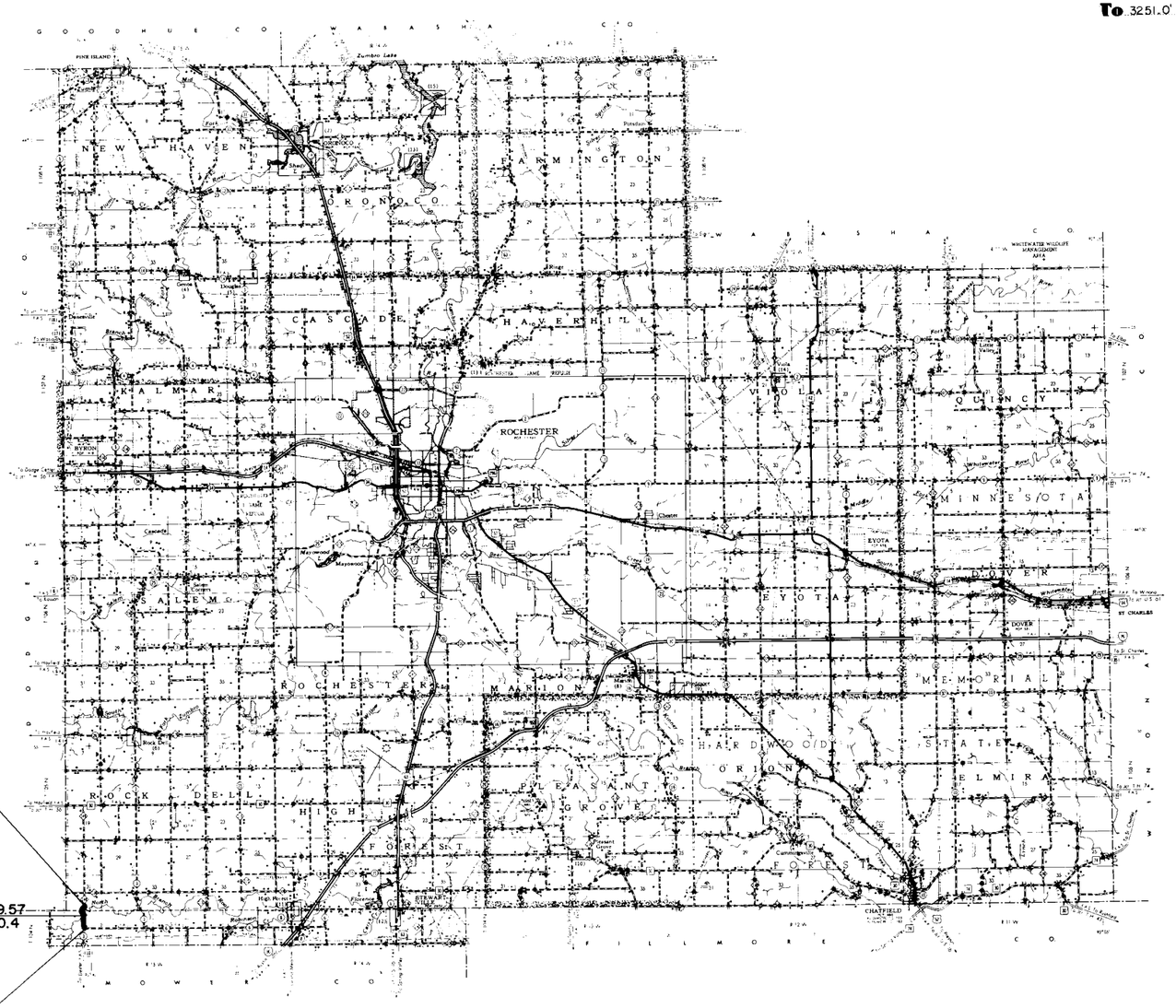
Minn.Proj. No. BR 05 9055(3)

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
DRY RUN
DRAINAGE DITCH
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)
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: CP C149-78-7
STA. 36+00

BRIDGE NO. 55531 STA. 21+49.57
STA. 20+10.4

BEGIN: CP C149-78-7
STA. 0+00

SPECIFICATION REFERENCE
THE 1978 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION
"STANDARD SPECIFCATION FOR HIGHWAY CONSTRUCTION" SHALL GOVERN.

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR GRADING, AGGREGATE BASE AND BRIDGE NO 55531.

COUNTY **HIGHWAY NO.** 149

BETWEEN C.S.A.H. 3 **AND** T.H. 30

From 212.0' SOUTH AND 257.0' EAST OF E1/4 COR. SEC. 6 T.104 N. — R.15 W.
Give proper reference to Sections, Township and Range

To 3251.0' NORTH AND 9.0' WEST OF E1/4 COR. SEC. 6 T.104 N. — R.15 W.

GROSS LENGTH	3600.00	FEET	0.682 MILES
BRIDGES-LENGTH	139.17	FEET	0.026 MILES
EXCEPTIONS-LENGTH		FEET	MILES
NET LENGTH	3600.0	FEET	0.682 MILES

INDEX OF SHEETS

Sheet No 1 Title Sheet & Layout Map
" No 2 Est Quantities & Typical Sec
" No 3 To 4. Plan & Profile
" No 5 To 9 Cross Sections
Sheet No. 1 To 13 Bridge Sheets Br. No. 55531

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

DESIGN SPEED 50 **M. P. H.**

PROJECTED A. D. T. 109

TON DESIGN

SOIL FACTOR 130

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

J.K. Cuba. DATE 12/11/78
COUNTY ENGINEER

Olmsted COUNTY REG. NO. 10219

RECOMMENDED FOR APPROVAL [signature] 12-14-78
DISTRICT STATE AID ENGINEER

RECOMMENDED FOR APPROVAL [signature] 12-13 19 79
BRIDGE ENGINEER

APPROVED 12/27 19 79 [signature]
STATE AID ENGINEER

S.A.P.
State Project No. 55-598-05

OLMSTED County, Minnesota. County Proj. No C149-78-7 **Plan No.** ____ Sheet ____ of ____ Sheets

ESTIMATED QUANTITIES

	SPECIFICATION NO.	ITEM	UNIT		CP C149-78-7	TOTAL ESTIMATED QUANTITIES
	2101.502	CLEARING	TREE		139	139
	2101.507	GRUBBING	TREE		140	140
	2104.501	REMOVE PIPE CULVERTS	LIN. FT.		24	24
	2104.509	REMOVE BOX CULVERT	EACH		3	3
	2105.501	COMMON EXCAVATION	CU. YD.		3,935	3,935
	2105.507	SUBGRADE EXCAVATION	CU. YD.		473	473
	2105.523	COMMON BORROW (C.V.)	CU. YD.		32174(P)	32174(P)
①	2123.501	COMMON LABORERS	HOUR		8	8
①	2123.503	MOTOR GRADER	HOUR		6	6
①	2123.508	14 CU. YD. SCRAPER	HOUR		24	24
①	2123.509	DOZER	HOUR		24	24
②	2211.501	AGGREGATE BASE, CLASS 2	TON		3108	3108
	2442.501	REMOVE OLD BRIDGE	LUMP SUM		1	1
	2501.511	30" C.S. PIPE CULVERT	LIN. FT.		56	56
	2501.511	36" C.S. PIPE CULVERT	LIN. FT.		44	44
	2501.511	36" R.C. PIPE CULVERT, CLASS II	LIN. FT.		74	74
	2501.511	54" R.C. PIPE CULVERT, CLASS II	LIN. FT.		64	64
	2501.515	30" G.S. PIPE APRONS	EACH		2	2
	2501.515	36" G.S. PIPE APRONS	EACH		2	2
	2501.515	36" R.C. PIPE APRONS	EACH		2	2
	2501.515	54" R.C. PIPE APRONS	EACH		2	2
	2501.521	50" SPAN C.S. PIPE-ARCH CULVERT	LIN. FT.		34	34
	2501.525	50" SPAN G.S. PIPE-ARCH APRONS	EACH		2	2
	2511.501	RANDOM RIPRAP CLASS "A"	CU. YD.		25	25
	2511.504	FILTER BLANKET TYPE I	CU YD		12	12

① EQUIPMENT HOURS TO BE USED FOR OBLITERATING OLD ROAD TO LOCATIONS SHOWN ON THE PLAN AND PROFILE SHEETS.

② ITEM NO. 2211.501 INCLUDES 50 TONS FOR 1 FIELD ENTERANCE AND 500 TONS FOR 2 DRIVEWAYS.

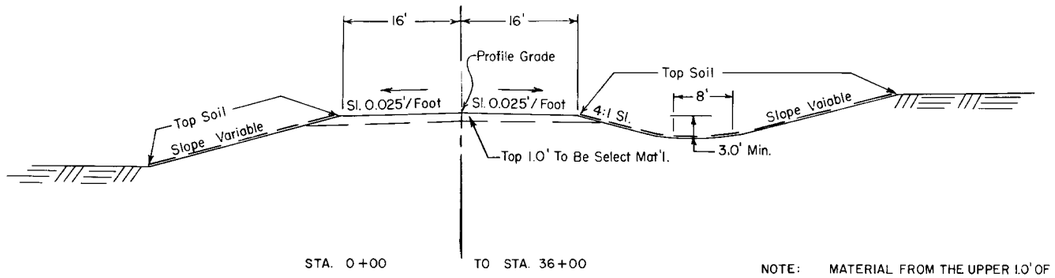
(P) = PLAN QUANTITY IN ACCORDANCE WITH SPEC 1901

STANDARD PLATES

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT.

PLATE NO	DESCRIPTION
0003 A	SPECIFICATION REFERENCE TO STANDARD PLATES.
3000 H	REINFORCED CONCRETE PIPE
3040 F	CORRUGATED METAL PIPE
3100 F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3122 H	METAL APRON FOR C.M. PIPE-ARCH CULVERT.
3123 H	METAL APRON FOR C.M. PIPE.
3124 A	METAL APRON CONNECTION
3133 A	RIPRAP AT RCP OUTLETS
3145 A	CONCRETE PIPE JOINT TIES. (EYE BOLT TIE)
8000 F	STANDARD BARRICADES.
9000 B	APPROACHES AND ENTRANCES.

TYPICAL GRADING SECTION



STA. 0+00 TO STA. 36+00

NOTE: MATERIAL FROM THE UPPER 1.0' OF THE NATURAL TOP SOIL 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.

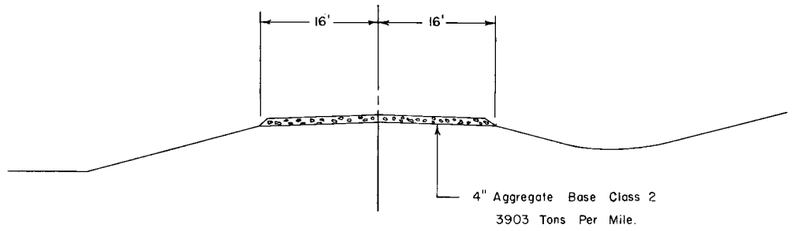
NOTE: CORRUGATED STEEL AND REINFORCED CONCRETE PIPE CULVERT EXCAVATION WILL BE CONSIDERED INCIDENTAL, AND WILL BE INCLUDED FOR PAYMENT UNDER UNIT PRICE FOR "PIPE CULVERT."

NOTE: SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE 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" BEDDING AS DIRECTED BY THE ENGINEER. ALL BEDDING TO BE CONSIDERED AS INCIDENTAL AND NO DIRECT COMPENSATION SHALL BE MADE THERE FOR.

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

TYPICAL AGGREGATE BASE SECTION



STA. 0+00 TO STA. 36+00

AS BUILT PLANS

ALBINSON, INC. MINNEAPOLIS 55405

Fed. Proj. No.

F.E. LT. 16+10
INPL. 24"x 24' CMP.
REMOVE

36" X 44' C.S. PIPE CULV.
2-36" G.S. PIPE APRONS
MOVE TO STA. 10+85

BOX CULV. RT. 19+10
3'W x 3'D x 25'
REMOVE BOX CULV.

NO CULV. REQ'D.

NORTH BRANCH ROOT RIVER

P.I. 15+05.0
Δ LT. 6° 32'
D 1° 00'
T 327.02
L 653.33
E 9.32

P.C. 11+77.98

P.T. 18+31.31

MATCH LINE STA. 20+00

P.I. 3+29.7
ΔRT. 51° 46'
D 16° 00'
T 173.75
L 323.54
E 39.93

P.C. 1+53.95

P.T. 4+79.95

RATE SUPER 0.058' / FOOT
LENGTH OF RUNOFF 100'

BEGIN: CP C149-78-7
STA. 0+00

C.S.A.M. 3

FIELD TILE OUTLET

FM. E. RT. 19+60
NO CULV. INPL.

MOVE FM. E. RT. TO STA. 18+00.
30" X 56' C.S. PIPE CULV.
2-30" G.S. PIPE APRONS

PLACE CULV. IN DRIVE RT. STA. 19+12
50" SPAN X 34' C.S. PIPE ARCH CULV.
2-50" SPAN G.S. PIPE-ARCH APRONS.

B.M. EL. 1278.80
SPK. IN. P. P.
LT. STA. 2+35

B.M. EL. 1275.47
SPK. IN P. P.
RT. STA. 9+82

B.M. EL. 1269.95
S.E. COR. B.C.
WING W. 19+12

℄ SUBGRADE ELEVATION

P.I. +50.0
ELEV. 83.86
200' V.C.
M=0.1

P.V.C. +50
ELEV. 84.16

P.V.T. +50.0
ELEV. 83.16

P.V.C. +40.0
ELEV. 77.62

P.I. +40.0
ELEV. 76.22
400' V.C.
M=0.5

P.V.T. +40.0
ELEV. 76.82

P.V.C. +00
ELEV. 77.0

P.I. +00
ELEV. 77.6
400' V.C.
M=0.3

P.V.T. +00
ELEV. 77.0

PROFILE 75' LT.
PROFILE 75' RT.

0.3%
-0.7%
+0.3
-0.3%

COMMON EXCAVATION	1905	CU. YDS.	EMB.	15796	CU. YDS.
COMMON BORROW	14482	CU. YDS. (C.V.)			
SUBGRADE EXCAVATION	308	CU. YDS.			

SUBGRADE TREATMENT:
EXCAVATE 1.0' BELOW PROFILE GRADE
FROM STA 9+00 TO STA 13+00

AS BUILT PLANS

OLMSTED COUNTY, MINN.

State Proj. No. 55-598-05 CP C149-78-7 **Sheet No.** 3 **of** 9 **Sheets**

Fed. Proj. No.

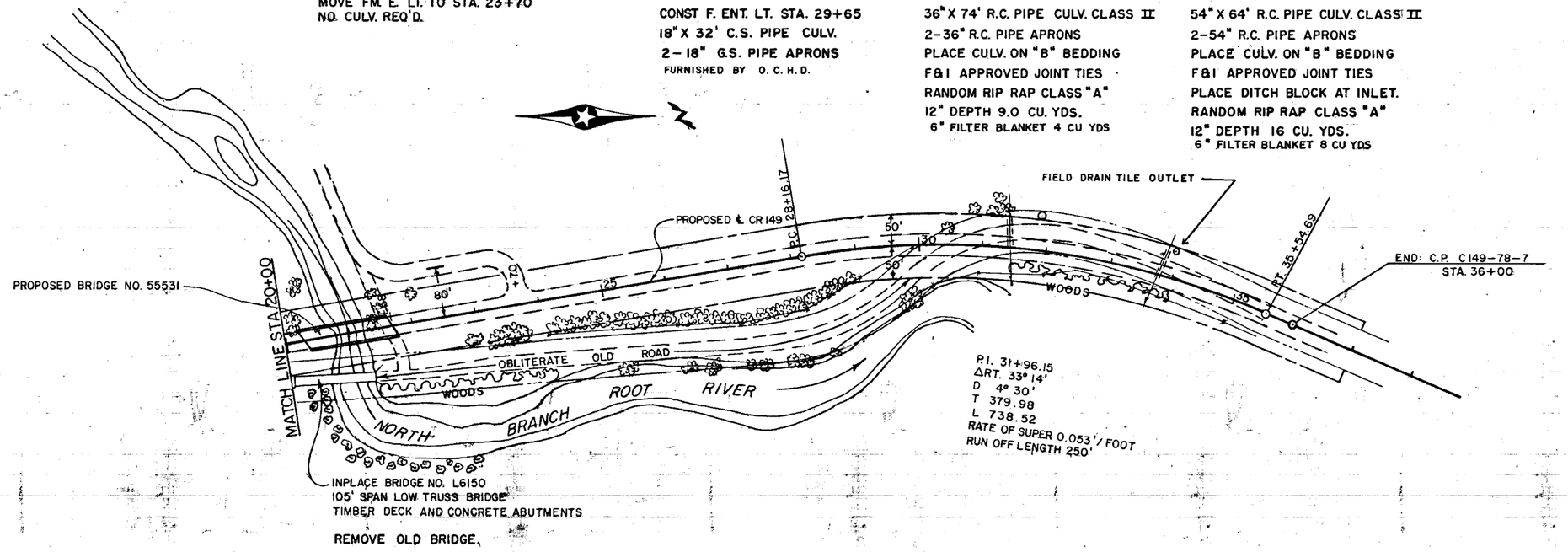
FM. E. LT. 21+68
NO CULV. INPL.

MOVE FM. E. LT. TO STA. 23+70
NO. CULV. REQ'D.

CONST F. ENT. LT. STA. 29+65
18"X 32' C.S. PIPE CULV.
2-18" G.S. PIPE APRONS
FURNISHED BY O. C. H. D.

BOX CULV. LT. 31+42
3.5'x3.5'x26' STONE
REMOVE BOX CULV.
36"X 74' R.C. PIPE CULV. CLASS II
2-36" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
F&I APPROVED JOINT TIES
RANDOM RIP RAP CLASS "A"
12" DEPTH 9.0 CU. YDS.
6" FILTER BLANKET 4 CU YDS

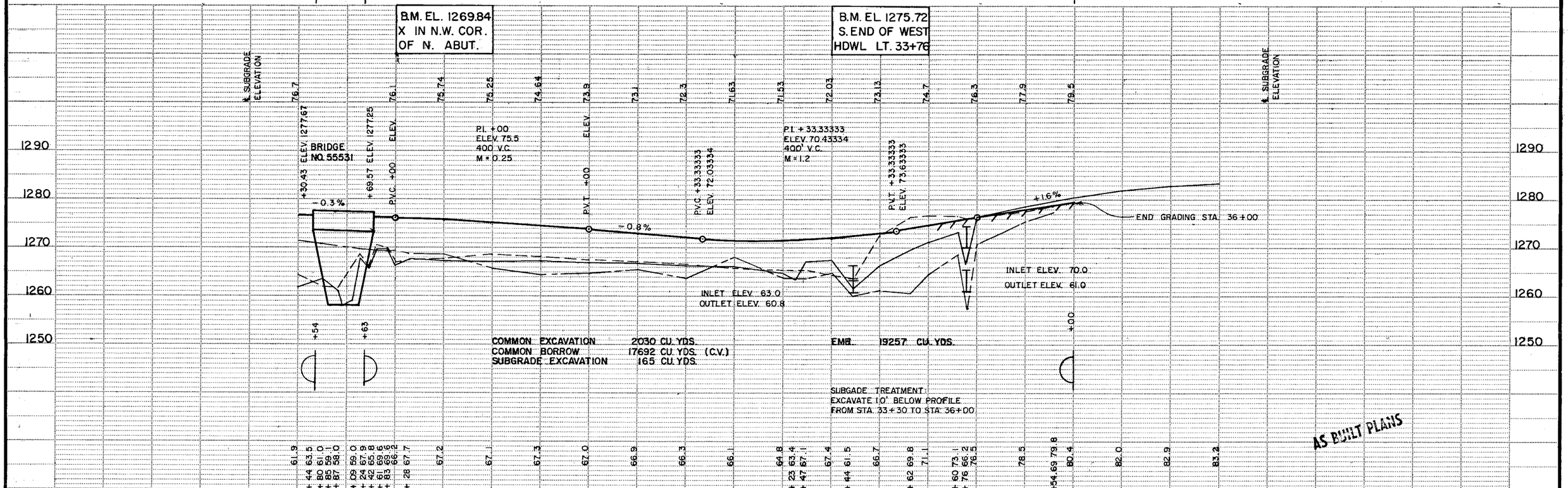
BOX CULV. LT. 33+76
4.5'x 6.0'x 24'
REMOVE BOX CULV.
54"X 64' R.C. PIPE CULV. CLASS II
2-54" R.C. PIPE APRONS
PLACE CULV. ON "B" BEDDING
F&I APPROVED JOINT TIES
PLACE DITCH BLOCK AT INLET.
RANDOM RIP RAP CLASS "A"
12" DEPTH 16 CU. YDS.
6" FILTER BLANKET 8 CU YDS



CL. 6 TREES — GR. 7 TREES — CL. 133 TREES — GR. 133 TREES

B.M. EL. 1269.84
X IN N.W. COR.
OF N. ABUT.

B.M. EL. 1275.72
S. END OF WEST
HDWL LT. 33+76



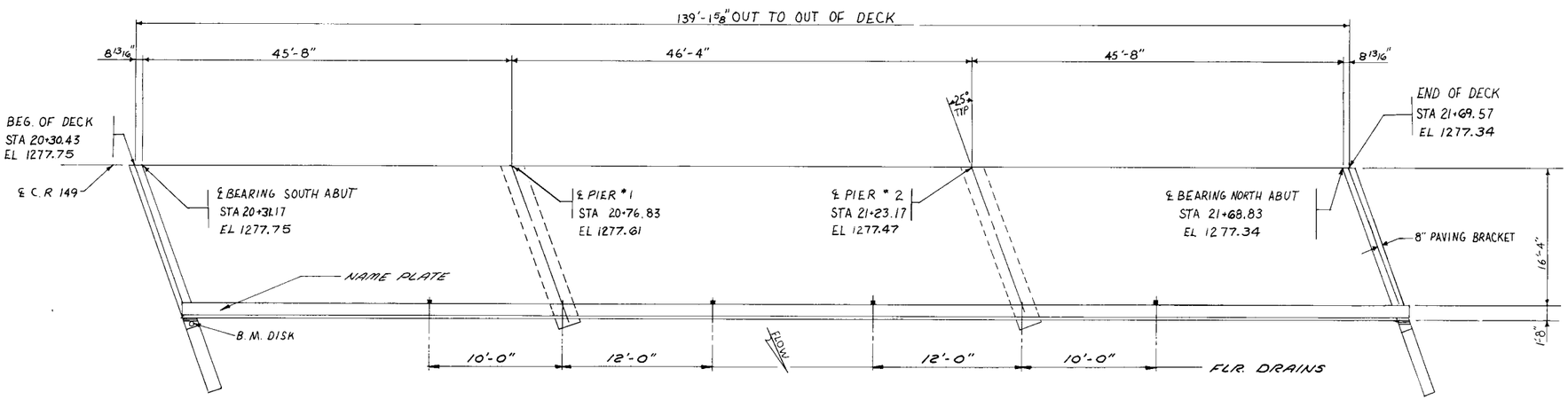
COMMON EXCAVATION	2030 CU. YDS.	
COMMON BORROW	17692 CU. YDS. (C.V.)	
SUBGRADE EXCAVATION	165 CU. YDS.	
EMB.	19257 CU. YDS.	

SUBGADE TREATMENT
EXCAVATE 10' BELOW PROFILE
FROM STA. 33+30 TO STA. 36+00

AS BUILT PLANS

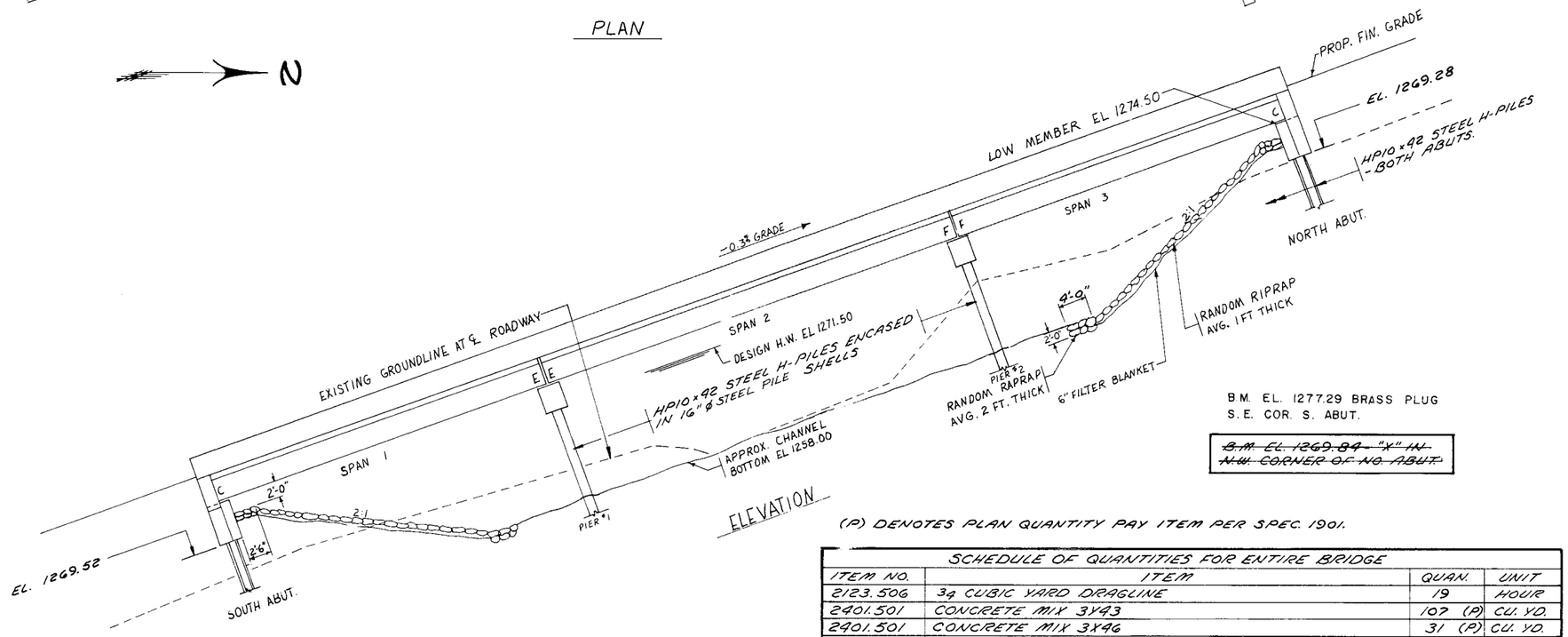
OLMSTED COUNTY, MINN.

State Proj. No. 55-598-05 C.P. C149-78-7 Sheet No. 4 of 9 Sheets



PLAN

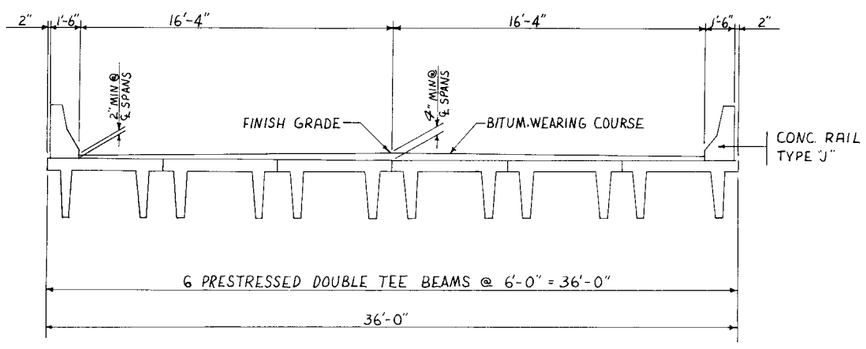
N



ELEVATION

B.M. EL. 1277.29 BRASS PLUG
S.E. COR. S. ABUT.

~~B.M. EL 1269.89 - "X" IN N.W. CORNER OF NO. ABUT.~~



TRANSVERSE SECTION THRU DECK

(P) DENOTES PLAN QUANTITY PAY ITEM PER SPEC. 1901.

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

ITEM NO.	ITEM	QUAN.	UNIT
2123.506	34 CUBIC YARD DRAGLINE	19	HOUR
2401.501	CONCRETE MIX 3Y43	107 (P)	CU. YD.
2401.501	CONCRETE MIX 3X46	31 (P)	CU. YD.
2402.521	STRUCTURAL STEEL (3306)	540 (P)	LB.
2405.505	PRESTRESSED CONC. DOUBLE TEE BEAM-TYPE 22-6-46	18	EACH
2401.541	REINFORCEMENT BARS	13915 (P)	LB.
401.601	STRUCTURE EXCAVATION	1	LUMP SUM
2511.504	FILTER BLANKET TYPE 1	95	CU. YD.
2511.501	RANDOM RIPRAP CLASS A	225	CU. YD.
2452.510	STEEL H-PILING DRIVEN	600	LIN. FT.
2452.511	STEEL H-PILING DELIVERED	600	LIN. FT.
2452.520	STEEL H-TEST PILE 50 FT. LONG.	3	EACH
2452.520	STEEL H-TEST PILE 90 FT. LONG	1	EACH
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	26	GAL.
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	6	TON
2331.508	WEARING COURSE MIXTURE	100	TON
2402.590	ELASTOMERIC BEARING PAD TYPE 1	36	EACH
2402.590	" " " TYPE 2	24	EACH
2402.590	" " " TYPE 3	12	EACH
452.604	16" ϕ STEEL PILE SHELL	200	LIN. FT.
2021.501	MOBILIZATION	1	LUMP SUM

DESIGN DATA

1977 A.A.S.H.T.O. DESIGN SPECIFICATIONS. LOAD FACTOR DESIGN METHOD
HS20 LOADING
MAXIMUM ALLOWABLE DESIGN STRESSES: REINFORCED CONCRETE:
f'c = 4000 P.S.I. n = 8
Fy = 60000 P.S.I. REINFORCEMENT
PRESTRESSED CONCRETE: f'c = 5000 P.S.I. n = 6
f's = 270,000 P.S.I STRANDS
STRUCTURAL STEEL: Fy = 36,000 P.S.I SPEC. 3306
DECK AREA: 5007 SQFT ADT: 82 - PROJECTED 1998

CONSTRUCTION NOTES

THE 1978 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" SHALL GOVERN.

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

PLANS PREPARED BY:
ERICKSON ENGINEERING
3340 REPUBLIC AVE.
ST. LOUIS PARK, MINNESOTA 55426

LIST OF SHEETS

NO.	TITLE
1	GENERAL PLAN & ELEVATION
2	BRIDGE LAYOUT
3	ABUTMENT DETAILS
4	PIER DETAILS
5	BEAM DETAILS
6	SUPERSTRUCTURE DETAILS
7	RAIL DETAILS
8-11	DETAILS
12-13	BRIDGE SURVEY

APPROVED:

COUNTY ENGINEER
OLMSTED COUNTY
DATE: 8/7/78

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.

REG. NO. 6924
DATE: 8-3-78

C.R. 149 OLMSTED COUNTY
MINNESOTA DEPARTMENT
OF TRANSPORTATION

BRIDGE NO. 55531

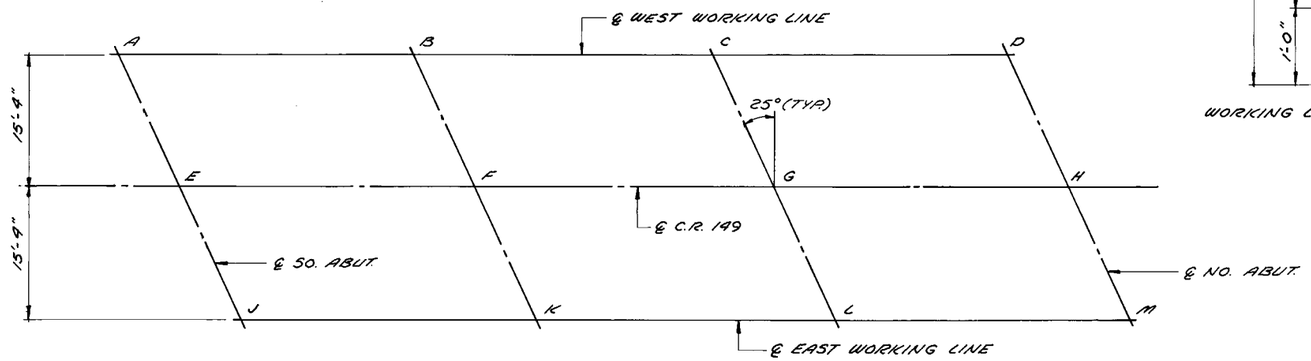
AT MILE POINT 0.47 ON C.R. 149 **OVER N. BR. ROOT RIVER.** 0.4 MILES NORTH OF JCT. CSAH 3

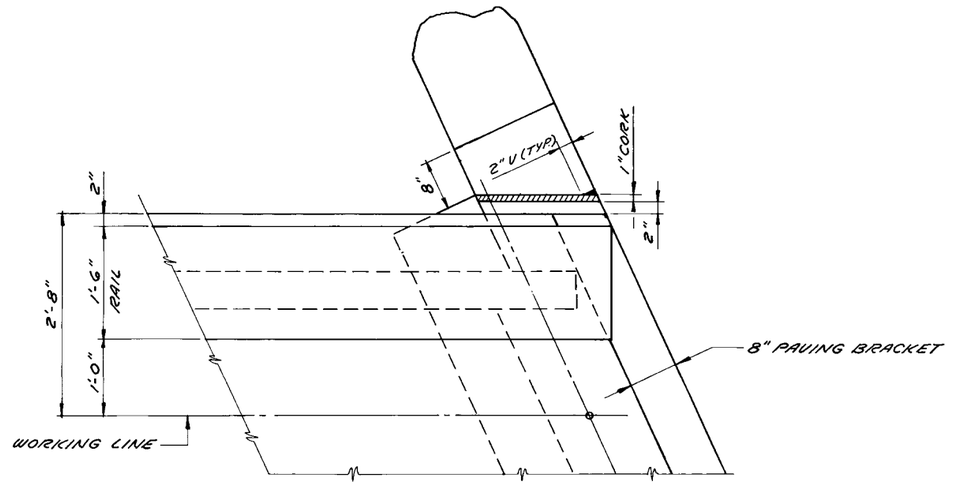
46-46-46 PRESTRESSED CONCRETE DOUBLE TEE BEAM. SPANS-25° SKEW 32'-8" RDWY
SPAN IDENT. 520

GENERAL PLAN AND ELEVATION

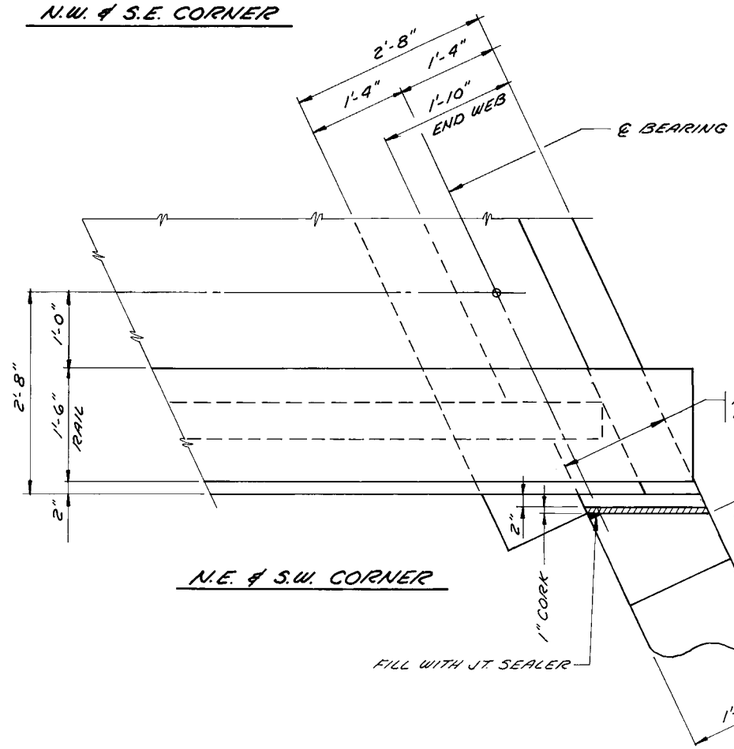
SEC: 05 TWP 104 N. R 15 W.
TOWNSHIP: ROCKDELL COUNTY: OLMSTED

APPROVED: 12-13-78
BRIDGE ENGINEER





N.W. & S.E. CORNER



N.E. & S.W. CORNER

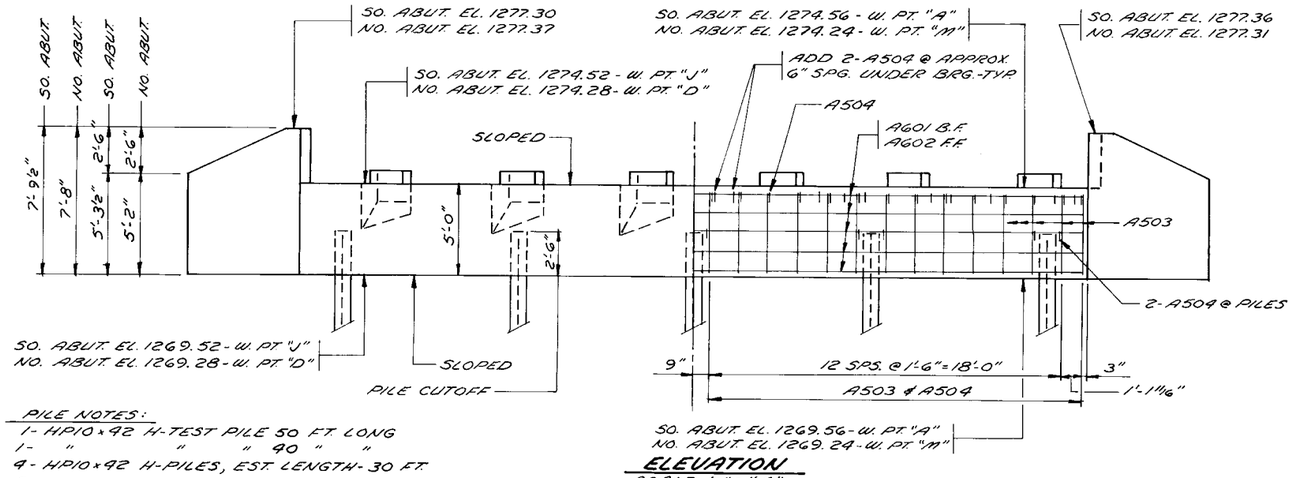


DIMENSIONS BETWEEN WORKING POINTS														ELEVATIONS			
PT.	STATION	A	B	C	D	E	F	G	H	J	K	L	M	FIN. GRADE	DIST.	BR. SEAT	PT.
A	20+24.02		45.67	92.00		16.92	55.00	100.33		33.84	67.35	110.64					A
B	20+69.68			46.33	92.00	91.46	16.92	55.64	100.33	43.87	33.84	67.95	110.64				B
C	21+16.02				45.67	86.22	42.08	16.92	55.00	83.53	94.35	33.84	67.35				C
D	21+61.68						86.22	41.96	16.92		83.53	93.87	33.84				D
E	20+31.17						45.67	92.00		16.92	55.00	100.33		1277.75	3.21	1274.54	E
F	20+76.83							96.33	92.00	91.46	16.92	55.64	100.33	1277.61	3.08	1274.53	F
G	21+23.17								95.67		92.08	16.92	55.00	1277.47	3.00	1274.47	G
H	21+68.83											91.46	16.92	1277.34	3.08	1274.26	H
J	20+38.32										45.67	92.00					J
K	20+83.98											96.33	92.00				K
L	21+30.32												45.67				L
M	21+75.98																M

C.R. 149 OLMSTED COUNTY
MINNESOTA DEPT. OF TRANSPORTATION

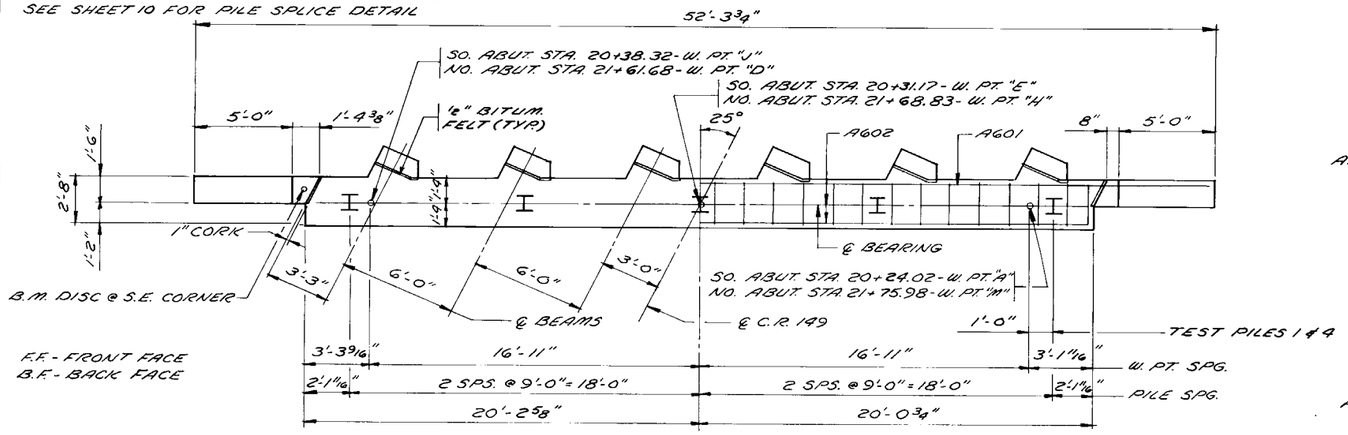
BRIDGE NO. 55531
BRIDGE LAYOUT

APPROVED: 12-19-79

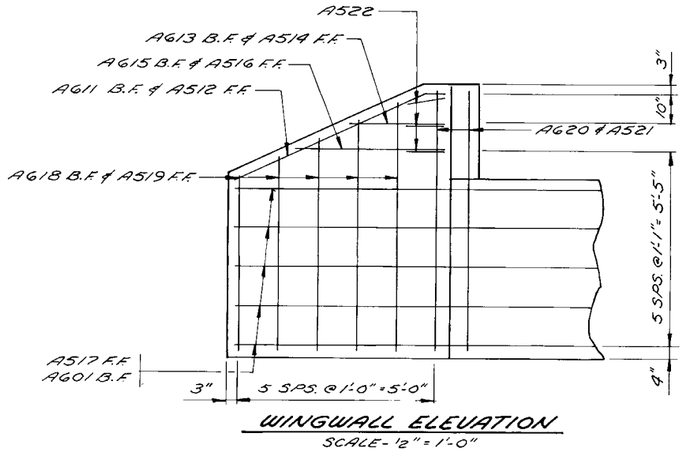


ELEVATION
SCALE - 1/4" = 1'-0"

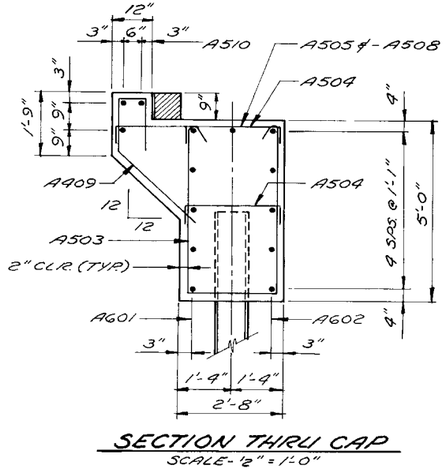
PILE NOTES:
1 - HP10 x 42 H-TEST PILE 50 FT. LONG
1 - " " " 40 " "
9 - HP10 x 42 H-PILES, EST. LENGTH - 30 FT.
4 - " " " " " 40 FT.
10 - HP10 x 42 H-PILES REQ'D. FOR 2 ABUTS.
SEE SHEET 10 FOR PILE SPLICE DETAIL



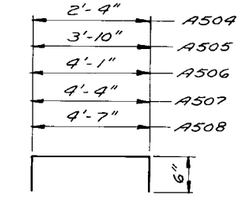
PLAN
SCALE - 1/4" = 1'-0"



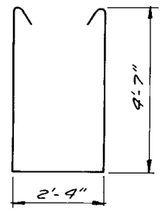
WINGWALL ELEVATION
SCALE - 1/2" = 1'-0"



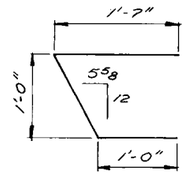
SECTION THRU CAP
SCALE - 1/2" = 1'-0"



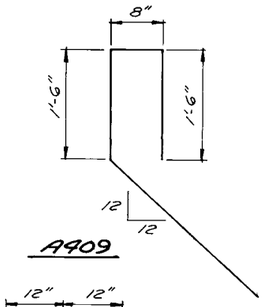
A504-A508



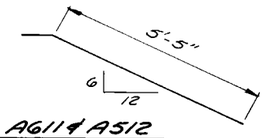
A503



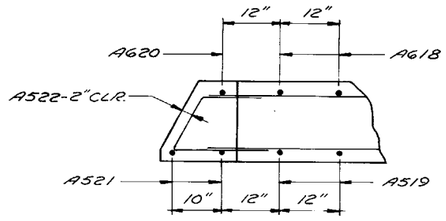
A522



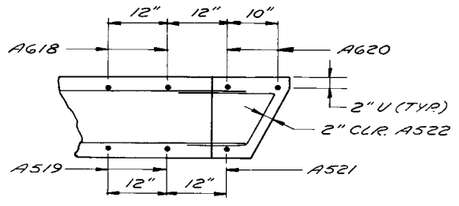
A909



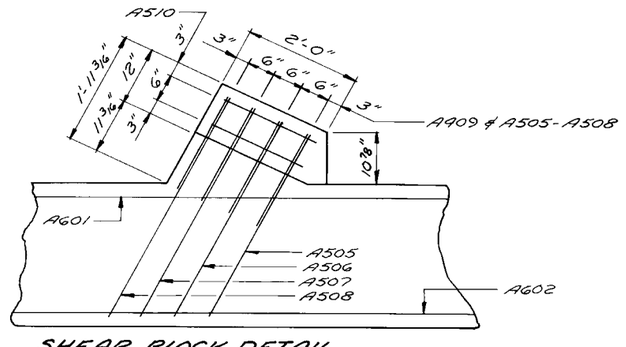
A611 & A512



N.E. & S.W. CORNERS



N.W. & S.E. CORNERS



SHEAR BLOCK DETAIL
SCALE - 3/4" = 1'-0"

BILL OF REINFORCEMENT FOR 2 ABUTMENTS				
BAR	NO.	LENGTH	SHAPE	LOCATION
A601	10	51'-11"	STR.	CAP - LONG
A602	12	39'-11"	STR.	" "
A503	56	12'-5"	BENT	CAP - STIRRUPS
A504	124	3'-4"	"	CAP - TIES
A505	12	4'-10"	"	SHEAR BLOCK - TIES
A506	12	5'-1"	"	" " "
A507	12	5'-4"	"	" " "
A508	12	5'-7"	"	" " "
A909	98	6'-5"	"	" " "
A510	36	1'-9"	STR.	SHEAR BLOCK - LONG
A611	4	5'-10"	BENT	WINGWALL - TOP
A512	4	5'-10"	BENT	" "
A613	4	2'-4"	STR.	WINGWALL - HORIZONTAL
A519	4	2'-4"	"	" "
A615	4	4'-0"	"	" "
A516	4	4'-0"	"	" "
A517	20	7'-5"	"	" "
(2) A618	10	11'-11"	"	WINGWALL - VERTICAL
(2) A519	10	11'-11"	"	" "
A620	6	7'-9"	"	" "
A521	6	7'-4"	"	" "
A522	12	3'-9"	BENT	WINGWALL - HORIZONTAL

(2) CUT 2 FROM 1 IN FIELD

QUANTITIES FOR 2 ABUTMENTS		
ITEM	NO.	UNIT
CONCRETE MIX NO. 3Y43	53	CU. YD.
STRUCTURE EXCAVATION	1	LUMP SUM
REINFORCEMENT BARS	3930	LB.
(1) B.M. DISC PER STD. R 9300	1	DISC
* HP10 x 42 STEEL H-PILING DRIVEN & DELIVERED	280	LIN. FT.
HP10 x 42 STEEL H-TEST PILE ~~45~~ FT. LONG 50'	1	EACH
" " " " ~~35~~ FT. LONG 40'	1	EACH

(1) COUNTY WILL FURNISH DISC. PAYMENT FOR PLACING INCLUDED IN PRICE BID FOR OTHER ITEMS. SEE STANDARD PLATE NO. 9301 FOR PLACING.

* AVERAGE DRIVEN PILE LENGTHS N. ABUT. 34.8' S. ABUT. 36.0'

COMPUTED PILE LOADS IN TONS PER PILE:

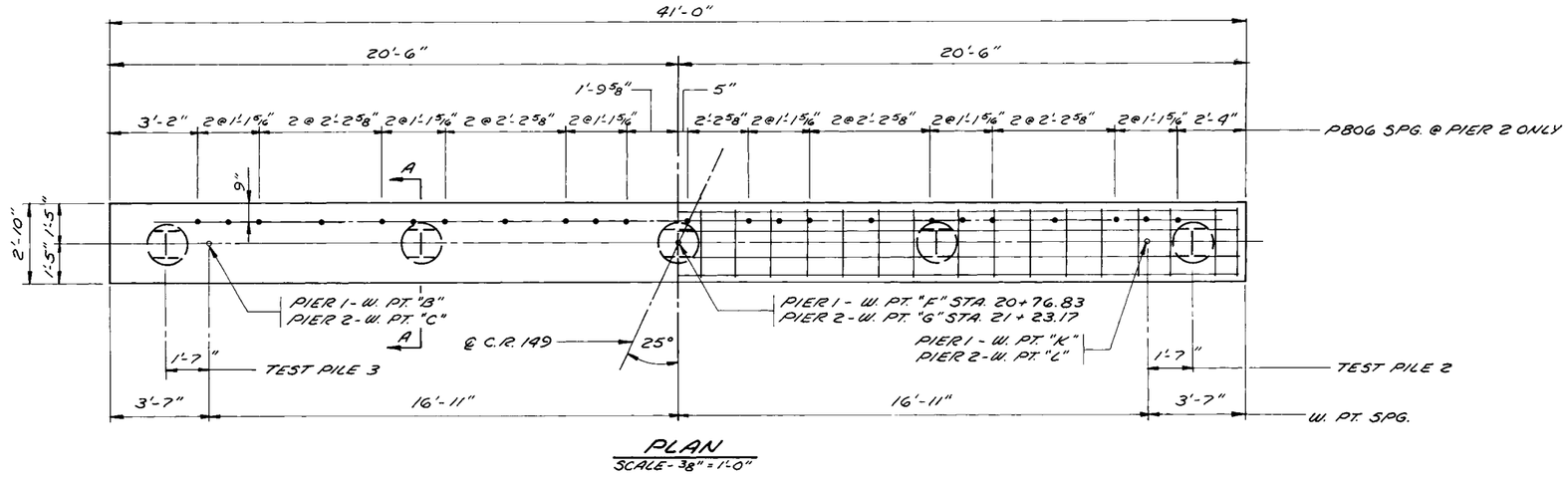
DEAD LOAD	29
LIVE LOAD	13
TOTAL	42

PLANS PREPARED BY
THE ERICKSON ENGINEERING CO.
3340 REPUBLIC AVE. SO.
ST. LOUIS PARK, MN 55426

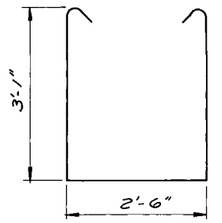
C.R. 149 OLMSTED COUNTY
MINNESOTA DEPT OF TRANSPORTATION

BRIDGE NO. 55531
ABUTMENT DETAILS

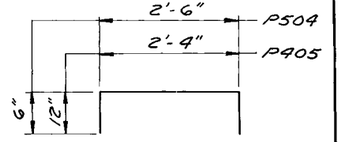
APPROVED: 12-19-79



PLAN
SCALE- 3/8" = 1'-0"



P503

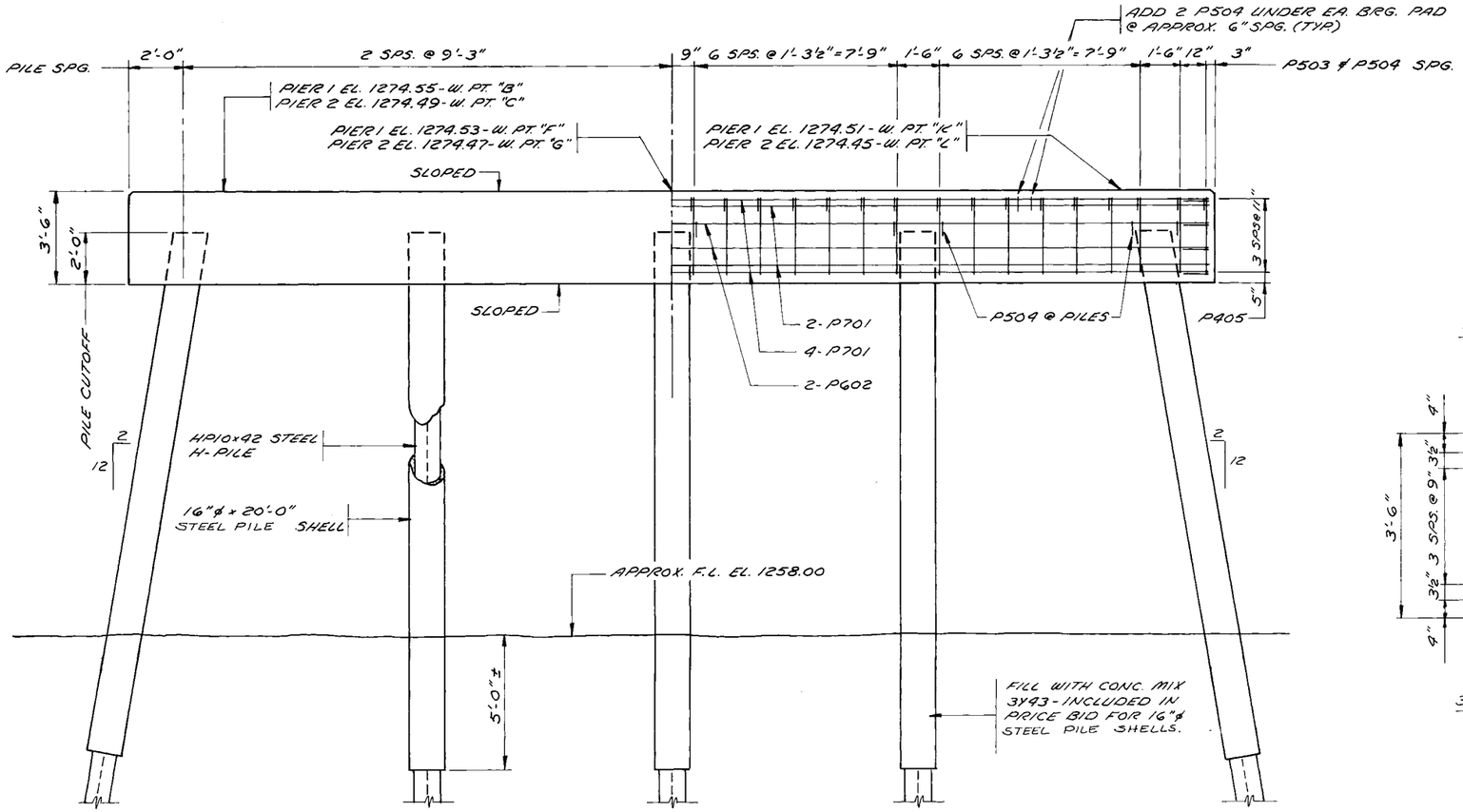


P504 & P405

BILL OF REINFORCEMENT FOR 2 PIERS				
BAR	NO.	LENGTH	SHAPE	LOCATION - TYPE
P701	24	40'-8"	STR.	HORIZONTAL
P602	8	40'-8"	STR.	"
P503	64	9'-7"	BENT	STIRRUP
P504	132	3'-6"	BENT	TIE
P405	16	4'-9"	BENT	TIE
P806	23	1'-6"	STR.	DOWEL - BR. SEAT @ PIER 2

SUMMERY OF QUANTITIES FOR 2 PIERS		
ITEM	NO.	UNIT
CONCRETE MIX NO. 3Y43	31	CU. YD.
REINFORCEMENT BARS	3745	LB.
HP10×42 H-PILING DELIVERED & DRIVEN	320	LIN. FT.
① 16"ϕ STEEL PILE SHELLS	200	LIN. FT.
✱ HP10×42 STEEL H-TEST PILES 95 FT. LONG	2	EACH

① SEE SPECIAL PROVISIONS



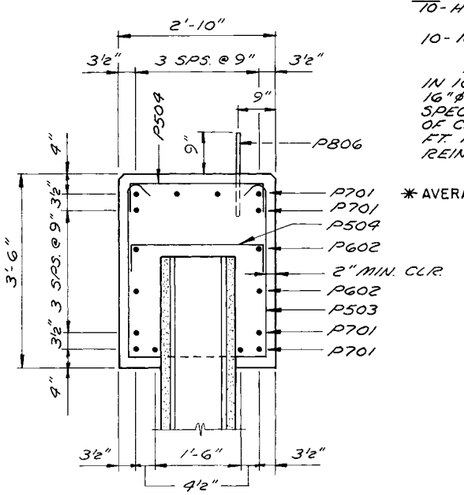
ELEVATION
SCALE- 3/8" = 1'-0"

PILE NOTES

2 - HP10×42 STEEL H-TEST PILES 50 FT. LONG
8 - HP10×42 STEEL PILES, EST. LENGTH - 90 FT.
10 - H10×42 STEEL PILES REQ'D FOR 2 PIERS

10 - 16"ϕ STEEL PILE SHELLS 20 FT. LONG

ALL HP10×42 STEEL H-PILES TO BE ENCASED IN 16"ϕ STEEL PILE SHELLS AS SHOWN. 16"ϕ STEEL PILE TO BE PAINTED PER SPEC. 2452.3J. PILE SPG. SHOWN IS @ BOTTOM OF CAP. END PILES TO BE BATTERED 2" PER FT. IN DIRECTION SHOWN. FOR SPLICES & TIP REINFORCEMENT, SEE SHEET 10.



SECTION A-A
SCALE- 3/4" = 1'-0"

✱ AVERAGE DRIVEN PILE LENGTHS S. PIER 37.7' N. PIER 38.3

COMPUTED PILE LOADS IN TONS PER PILE:	
DEAD LOAD	41
LIVE LOAD	14
TOTAL	55

PLANS PREPARED BY:
THE ERICKSON ENGINEERING CO.
3340 REPUBLIC AVE.
ST. LOUIS PARK, MN 55426

C.R. 149 OLMSTED COUNTY
MINNESOTA DEPT. OF TRANSPORTATION

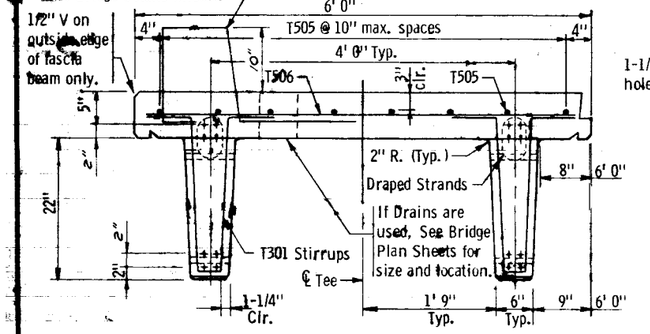
BRIDGE NO. 55531

PIER DETAILS

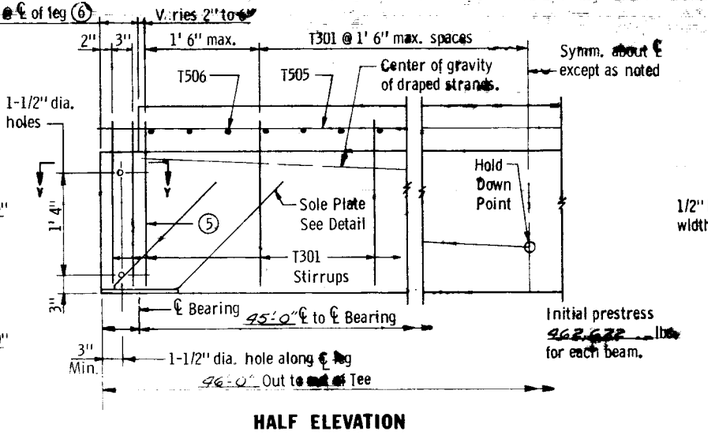
APPROVED: 12-19-79

④ R502 for Type J railing installation. See Bridge Details Sheets.

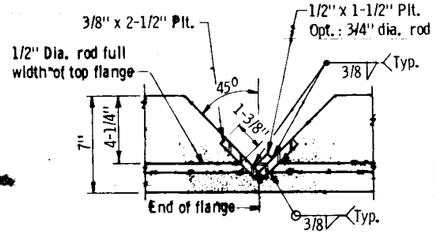
1/2" V on outside edge of fascia beam only.



END SECTION
(Cast-in-place Conc. Railing Option Shown)



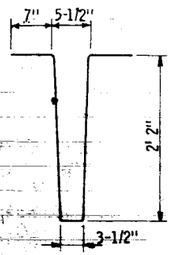
HALF ELEVATION
(Abutment End Shown)



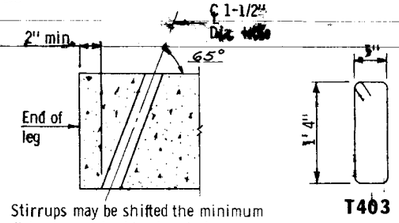
SECTION AT SHEAR CONNECTION

⑨ Cut shear connection rods as necessary at skewed ends and at outside fascia beam locations. (Length of rods to be a min. of 1/2 the top flange width.) Bend rods as necessary to clear end of beam. Shear connection rods to have shear connections at each end unless otherwise noted.

SECTION DATA
Wt. ft. = 846 lb./ft. (6'), 1021 lb./ft. (8')
Cross Sec. area at ℄ of span = 812 in.^{2} (6'), 980 in.^{2} (8')
C. G. (from bottom) = 20.20 in. (6'), 21.11 in. (8')
I = 51,739 in.^{4} (6'), 56,337 in.^{4} (8')
S_B = 2561 in.^{3} (6'), 2669 in.^{3} (8')
1/2" Dia. 270 K strand = .525 lb./ft.
1/2" Dia. 270 K strand area = .1531 sq. in.



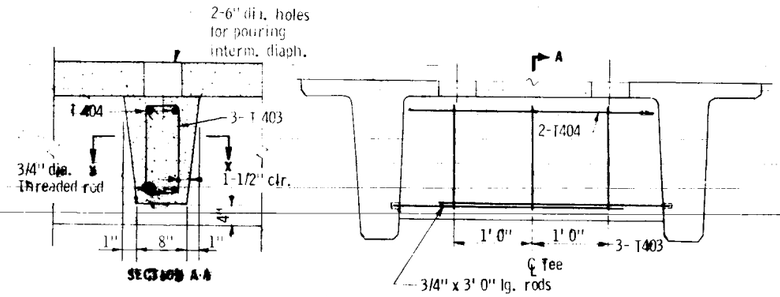
⑤ Place additional T301 stirrup, space to clear adjacent T301 stirrups by 2" min.
Check when expansion device is used.
⑩ *INCLUDED IN PRICE BID FOR 22-6-46 BEAMS*



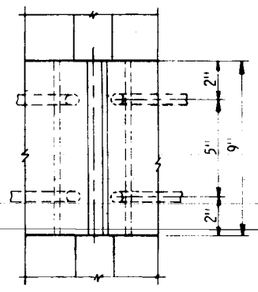
Stirrups may be shifted the minimum distance required to clear holes.

SECTION Y-Y

T403



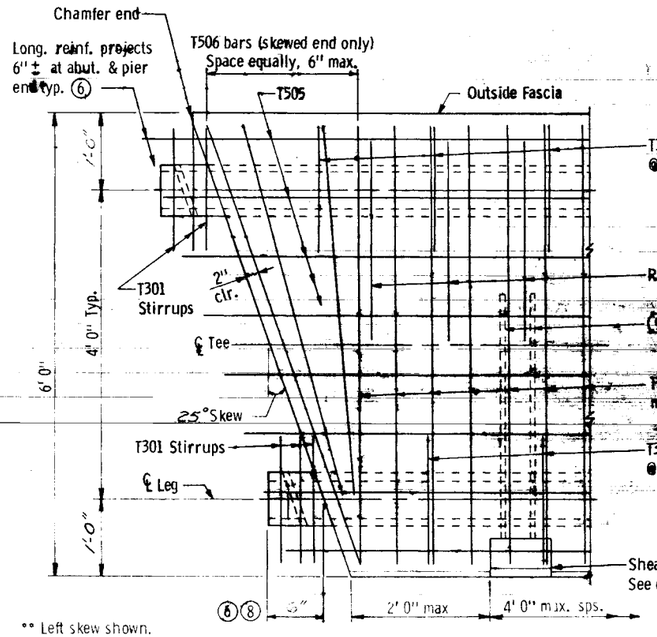
CONC. INTERM. DIAPHRAGM
(For spans of 40' or more)
Locate at ℄ of Span



PLAN

SHEAR CONNECTION

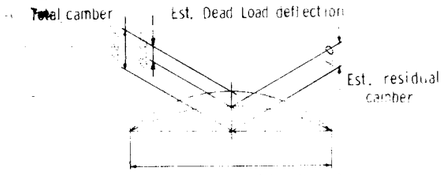
2' 0" max. from beam ends with Max. sps. of 4' 0" @ intermediate locations.



** Left skew shown.
Right skew opposite hand.

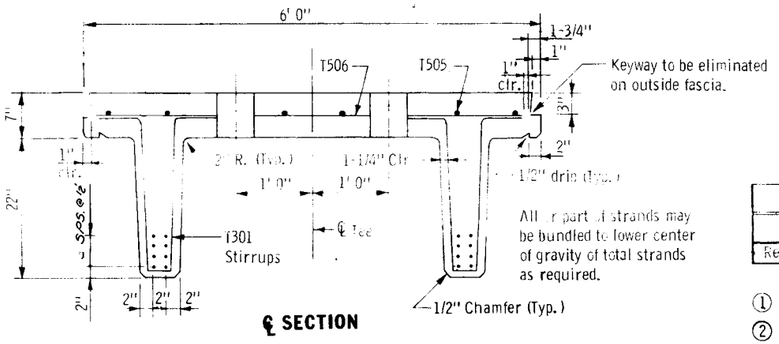
⑧ Along ℄ of leg

PLAN VIEW**
(Prestressed Strands not Shown)



Deflections shown are for weight of wearing course & railing. Engineer will take elevations at top of beams after erection and will allow for deflections shown to enable contractor to construct wearing course to correct grade and specified thickness.

CAMBER DIAGRAM



℄ SECTION

GENERAL NOTES:

The center tee beam shall be erected first in each span of the structure. Other tee beams shall be erected outward from center.

Provide handling hooks or devices as required by Contractor. Hooks or devices provided will be subject to approval of Engineer and shall be installed within 4' 0" of the end of beam.

A modified strand pattern or a bundled strand pattern, which does not change center of gravity of strands, may be submitted to the Engineer for approval.

Each beam shall be marked, showing bridge number, casting date, and individual identification letters and numbers. Markings shall be made on the face of the beam, near the end, so located that they will be exposed after the end diaphragms have been cast. Fascia beams shall be marked on an inside face. All markings shall be stencilled and be clearly legible. For location of beams, see framing plan.

All material and work shown or noted on this sheet shall be included in unit price bid for prestressed concrete beams. See Spec. 2405.

FOR [illegible] USE FACING ADJACENT TRANSVERSELY, EXCEPT FOR AN [illegible] STRIP ADJACENT [illegible]

Approximate weight of beam 79.3 tons.

As an alternate to the diaphragm anchorages shown, the contractor may submit details of a cast-in-place anchorage to the engineer for approval. Anchorage must provide an ultimate pull out strength of 15 kips per anchorage.

MINIMUM CONCRETE STRENGTH - P.S.I.		
	① f'ci	② f'c
Required Min. Concrete Strength		

① Minimum concrete strength at time of prestress transfer.

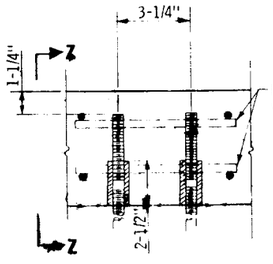
② Minimum concrete strength when curing can be discontinued and beam transported and installed.

Y DISTANCES (IN INCHES)			
	NO.	℄ SPAN	END
Straight strands	[illegible]	[illegible]	
Draped strands	[illegible]	3.25	23.00③
Total strands	[illegible]	[illegible]	

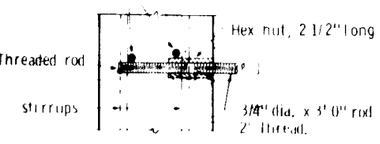
Y = distance of Center of Gravity of strands from bottom of beam. All strands spaced 2" c-c, horizontally and vertically, except as noted.

All strands 1/2" dia. 270 kip, ultimate strength

③ A tolerance of ± 1" will be permitted in this dimension.

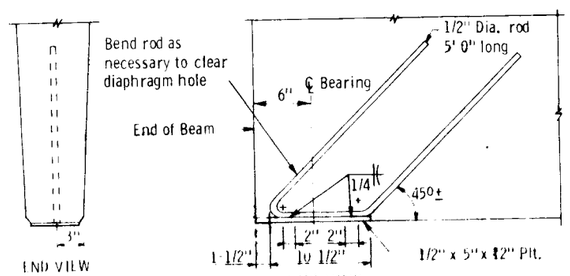


SECTION X-X



Nut and rods per Spec. 3306, No paint.

SECTION Z-Z



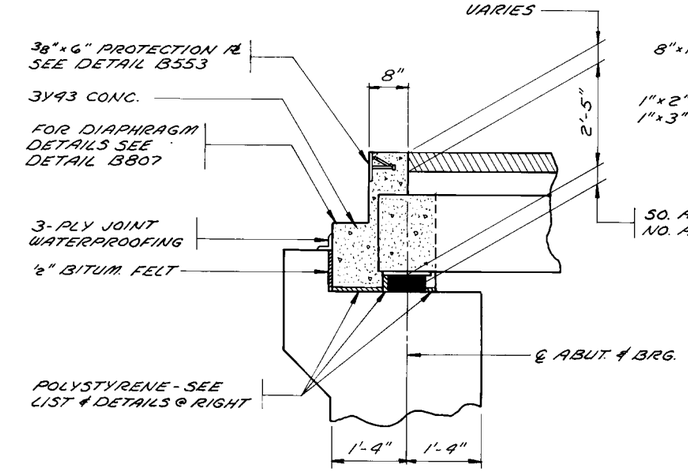
SOLE PLATE DETAIL

Steel as per Spec. 3309.
Bearing plate (see detail B. incl. with Double Tee Bea

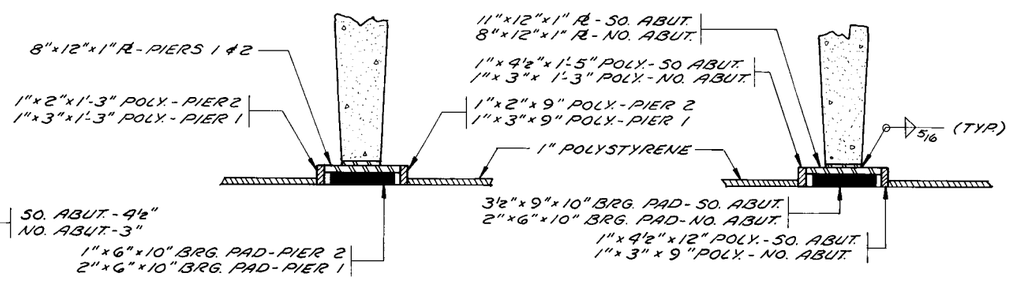
Fig. 5-397.525
Approved: May 30, 1978

TITLE: 22" PRESTRESSED CONCRETE DOUBLE TEE BEAM TYPE 22"-6-46 6'-0" Wide Tee Without Slab	DES:	DR:	APPROVED: 12-7-77	Bridge No. 55531
	CHK:	CHK:	Sheet No. [illegible] of [illegible] Sheets	

55-[illegible]-25



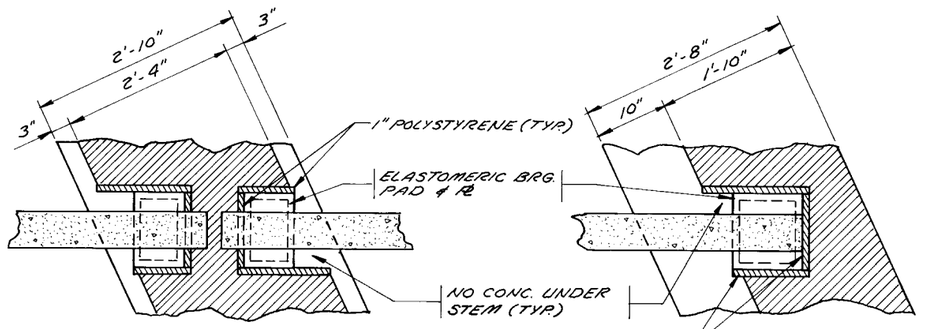
ABUTMENT DETAIL



BEARING @ PIERS

BEARING @ ABUTS.

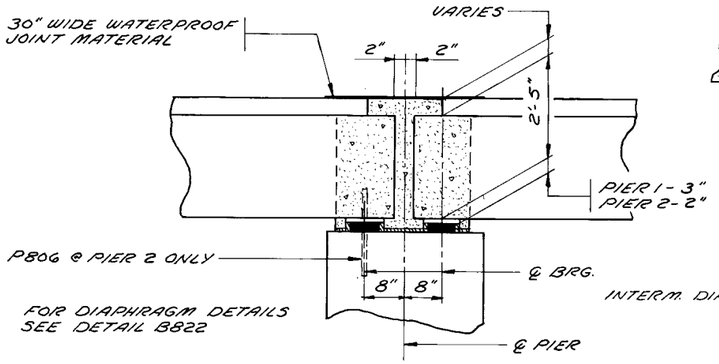
REINFORCEMENT FOR SUPERSTRUCTURE				
BAR	NO.	LENGTH	SHAPE	LOCATION
5401	4	39'-11"	STR.	ABUTMENT DIAPHRAGMS
5402	2	35'-8"	STR.	" "
5403	16	3'-8"	BENT	" "
5404	112	4'-0"	BENT	" "
5405	64	2'-9"	BENT	" "
5406	8	8"	STR.	" "
5407	24	3'-6"	STR.	" "
5408	20	1'-3"	STR.	" "
5509	8	7'-3"	STR.	" "
5510	16	8'-1"	STR.	" "
5511	56	3'-5"	BENT	PIER DIAPHRAGMS
5512	112	5'-2"	BENT	" "
5513	48	3'-6"	STR.	" "
5514	40	1'-3"	STR.	" "
5515	16	6'-5"	STR.	" "
5516	32	8'-1"	STR.	" "
5417	4	39'-9"	STR.	" "



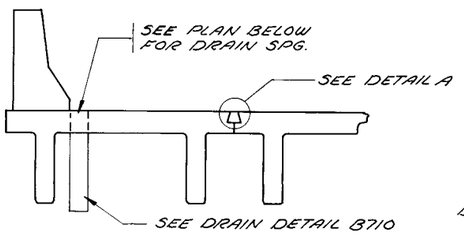
BEARING @ PIERS

BEARING @ ABUTS.

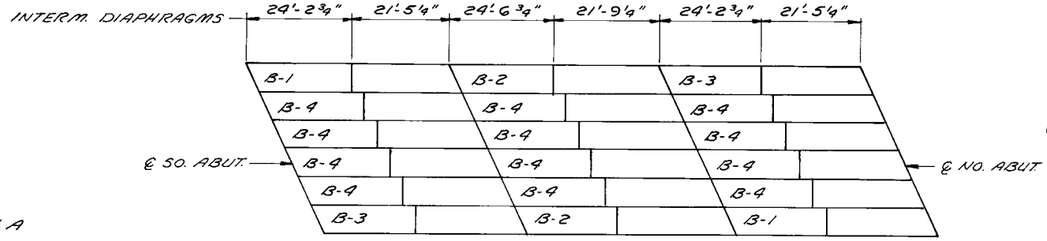
⑤ PREFORMED JOINT FILLER LIST			
TYPE	NO.	SIZE	LOCATION
CORK	2	1"x1'-8 1/8"x2'-9 1/2"	SO. ABUT. - WINGWALL
"	2	1"x1'-8 1/8"x2'-8"	NO. ABUT. - "
"	16	1"x11"x1'-7"	RAIL DEFLECTION JTS.
BITUMINOUS FELT	12	1/2"x9"x2'-5 1/2"	SHEAR BLOCKS
⑥ POLYSTYRENE	2	1"x1'-10"x90'-1 1/8"	ABUT. SEATS
"	2	1"x2'-9"x38'-1"	PIER SEATS
"	22	1"x2"x1'-3"	PIER 2
"	22	1"x2"x9"	PIER 2
"	34	1"x3"x1'-3"	PIER 1 & NO. ABUT.
"	34	1"x3"x9"	PIER 1 & NO. ABUT.
"	36	1"x3"x12"	PIER 1 & NO. ABUT.
"	24	1"x2"x12"	PIER 2
"	12	1"x4'2"x12"	SO. ABUT.
"	12	1"x4'2"x1'-5"	SO. ABUT.
"	12	1"x4'2"x12"	SO. ABUT.
"	1	1"x1'-7"x38'-1"	PIER 1
"	1	1"x1'-6"x38'-1"	PIER 2



PIER DETAIL



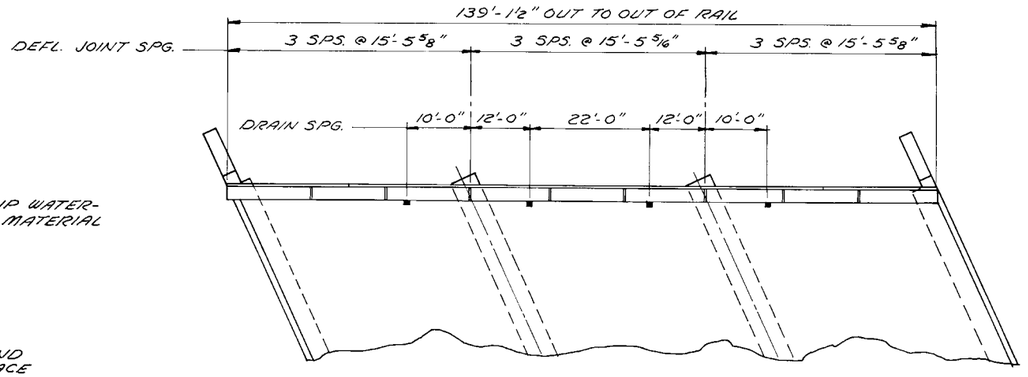
PART SECTION THRU DECK



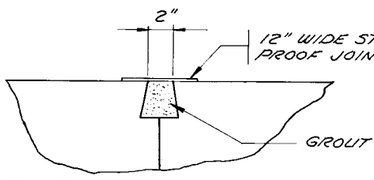
FRAMING PLAN

① SCHEDULE OF QUANTITIES FOR SUPERSTRUCTURE		
ITEM	NO.	UNIT
③⑤ 3-PLY JOINT WATERPROOFING	119	LIN. FT.
REINFORCEMENT BARS	6240	LB.
CONC. MIX NO. 3Y43	23	CU. YD.
⑤ CONC. MIX NO. 3X46	31	CU. YD.
STRUCTURAL STEEL (3306)	540	LB.
② PROTECTION PLATES - 3/8"x6"x16'-3 3/4"	4	EACH
GROUT		
③④ COUNTY NAME PLATE NO. 103	1	EACH
③⑤ WATERPROOF JOINT MATERIAL - 12" WIDE	696	LIN. FT.
③⑤ WATERPROOF JOINT MATERIAL - 30" WIDE	82	LIN. FT.
⑤ PRESTR. CONC. DOUBLE TEE BEAMS - TYPE 22-6-46	18	EACH
⑤ ELASTOMERIC BEARING PAD - TYPE 1	36	EACH
⑤ " " " - TYPE 2	24	EACH
⑤ " " " - TYPE 3	12	EACH

① INCLUDES RAIL QUANTITIES
② INCLUDED IN STRUCTURAL STEEL (3306), SEE DETAIL B553
③ INCLUDED IN PRICE FOR OTHER ITEMS
④ BRIDGE 55531, DATED 1980
⑤ SEE SPECIAL PROVISIONS
⑥ TYPE A



PART PLAN



GROUT REQUIREMENTS: 1 PART 1A AIR ENTRAINED PORTLAND CEMENT, 2 PARTS SAND, MAX. SLUMP-4". VIBRATE IN PLACE PROTECT FROM LOW TEMPERATURE.

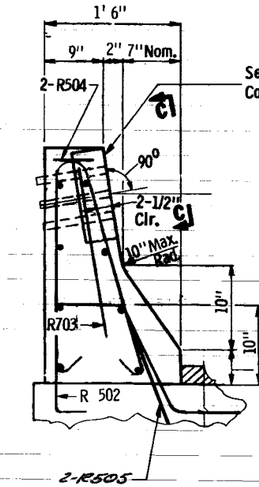
DETAIL A

C.R. 149 OLMSTED COUNTY
MINNESOTA DEPT. OF TRANSPORTATION

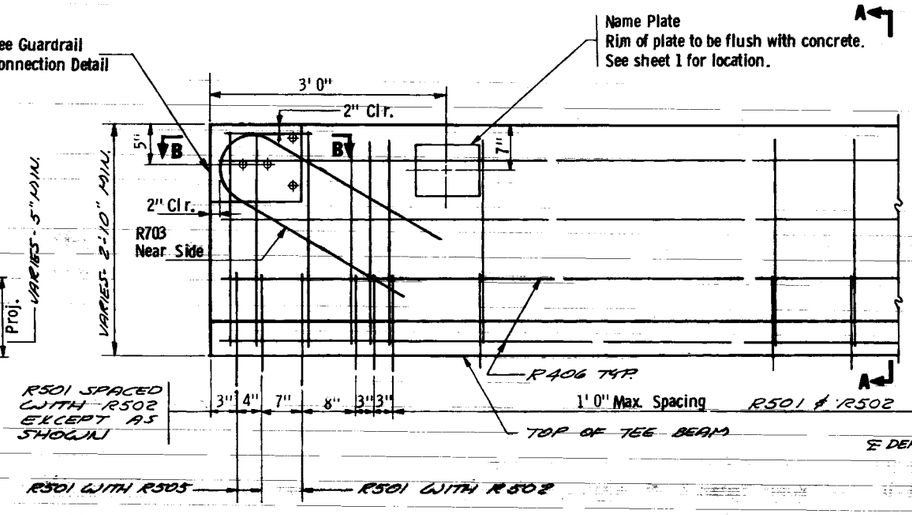
BRIDGE NO. 55531

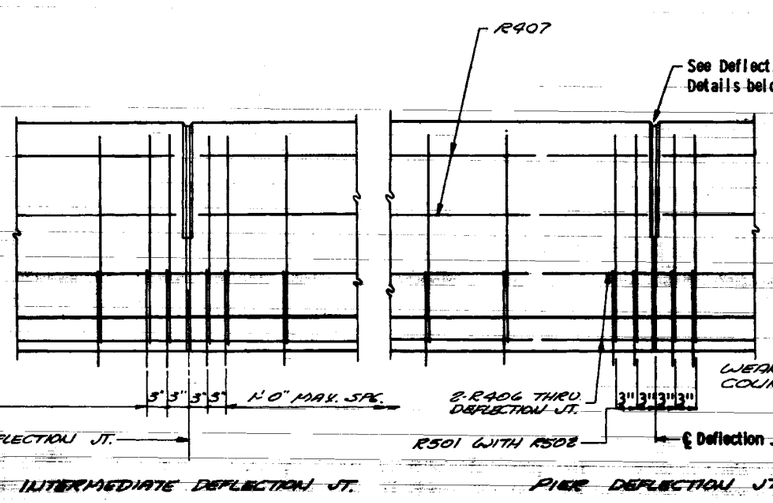
SUPERSTRUCTURE DETAILS

APPROVED: 12-19-79



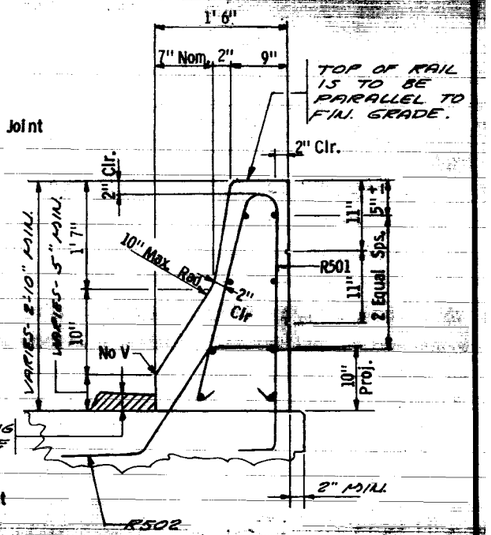
END VIEW





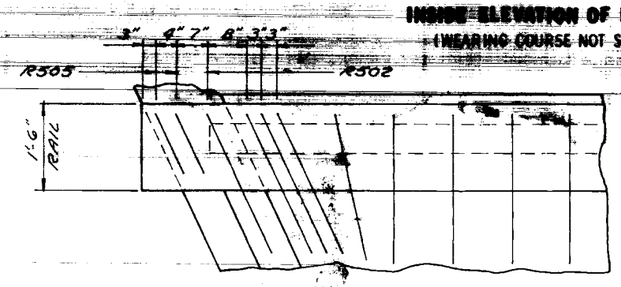
INTERMEDIATE DEFLECTION JT.

PIER DEFLECTION JT.

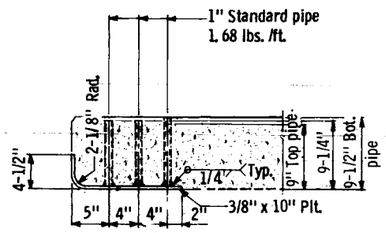


SECTION A-A

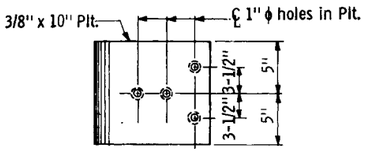
INSIDE ELEVATION OF RAILING
(WEARING COURSE NOT SHOWN)



S.W. & N.E. CORNER

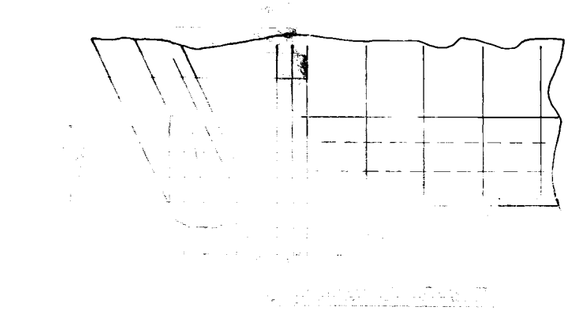


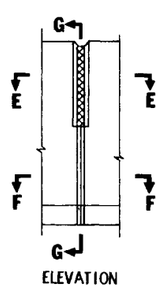
SECTION B-B
(Reinf. not shown)



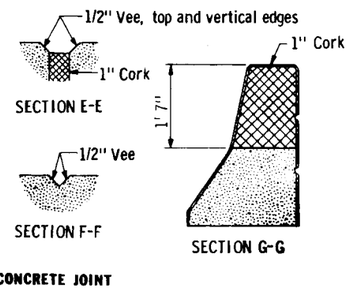
VIEW C-C

GUARDRAIL CONNECTION DETAIL
GALVANIZE AFTER FABRICATION PER SPEC. 3394
Est. Wt. 24 Lbs.



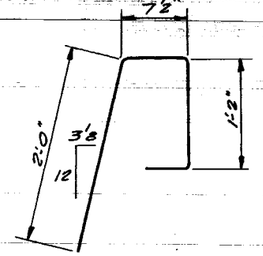


ELEVATION

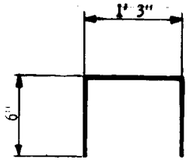


CONCRETE JOINT

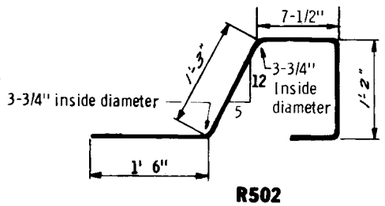
DEFLECTION JOINT DETAILS



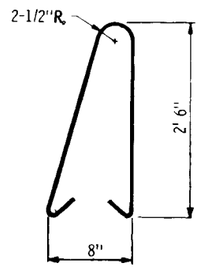
R505



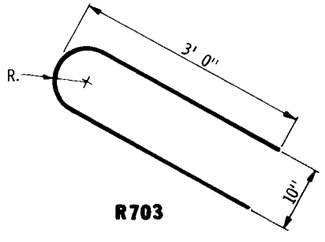
R504



R502



R501



R703

MARK	NO.	LENGTH	TYPE	MATERIAL
R501	332	6'-2"	BENT	RAIL VERTICAL
R502	20	3'-7"	"	" "
R703	4	6'-6"	"	END POST
R504	8	2'-3"	"	" "
R505	8	4'-4"	"	" "
① R406	32	35'-10"	STR	RAIL LONGIT.
R407	72	15'-1"	"	" "

① 4 LINES @ 1'-6" MIN. LAP

GENERAL NOTES

Conc. Railing = 440 lbs. /ft.

Conc. Railing = .109 cu. yds. /ft.

Rail and end post to be Concrete Mix No. 3X46

Guardrail connection shall be Structural Steel, Spec. 3306

Finish all edges of rail and end post with 1/2" vee except where otherwise noted.

See superstructure sheet for joint spacing.

Maximum spacing of concrete deflection joints shall be 20'-0".

Guardrail connection to be included in price bid for other items.

Rail quantities are included in summary of quantities for superstructure.

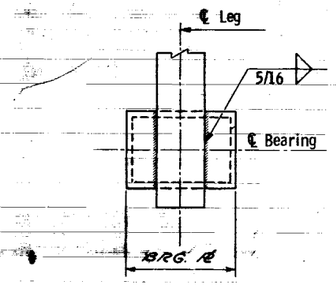
Length of railing concrete to be measured for payment between outside faces of end posts.

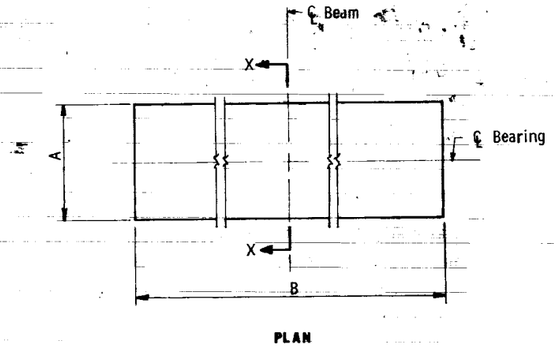
Fig. 5-397.117

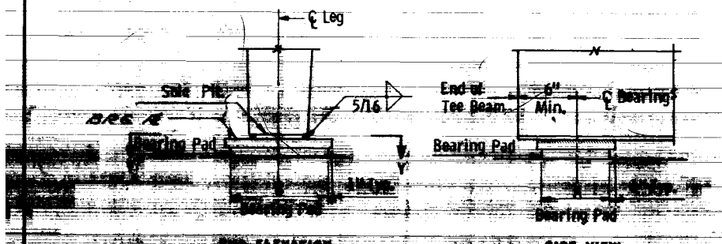
Approved: July 11, 1977

RAIL MODIFICATION

TITLE:	DES:	DR:	APPROVED:	Bridge No.
CONCRETE RAILING (TYPE J) WITH INTEGRAL END POST	CHK:	CHK:		
	Sheet No. of Sheets			



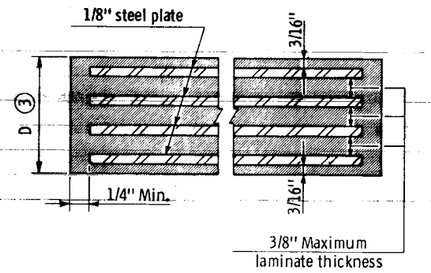




NOTES:

For elastomeric bearing pad material see Spec. 3741.
Minimum A dimension shall be 3(D - 1/8 (No of steel plates)
All bearing pads are to bear evenly on the bearing seat.

ELASTOMERIC BEARING PAD TYPE 1- 2"x6"x10"- NO. ABUT. & PIER 1
ELASTOMERIC BEARING PAD TYPE 2- 1"x6"x10"- PIER 2
ELASTOMERIC BEARING PAD TYPE 3- 3½"x9"x10"- NO. ABUT



③ Total thickness including the steel plates.

STEEL LAMINATE PAD DETAIL

(2" Pad Shown)

MAXIMUM MOVEMENT	PAD THICKNESS (D)	NUMBER OF LAMINATES
3/16"	1"	1
3/8"	1-1/2"	2
9/16"	2"	3
3/4"	2-1/2"	4
15/16"	3"	5
	3½"	6

④ ELASTOMERIC PAD TABLE

Beam Size	A	B	D	DL Min. (Kips)	DL Max. (Kips)	DL + LL Max. (Kips)	Shape Factor ①	Bearing Plate Size ②	Assy. Type
22" & 30"	6"	10"	*	12	30	48	5	8" x 12" x 1"	142
	7"			14	35	56	6	9" x 12" x 1"	
	8"			16	40	64	6	10" x 12" x 1"	
	9"		3½"	18	45	72	6	11" x 12" x 1"	3
	10"	▼		20	50	80	7	12" x 12" x 1"	
	7"	11"		15	39	62	6	9" x 13" x 1-1/4"	
	8"			18	44	70	6	10" x 13" x 1-1/4"	
	9"			20	50	79	7	11" x 13" x 1-1/4"	
	10"			22	55	88	7	12" x 13" x 1-1/4"	
	11"	▼		24	61	97	7	13" x 13" x 1-1/4"	
	7"	12"		17	42	67	6	9" x 14" x 1-1/4"	
	8"			19	48	77	6	10" x 14" x 1-1/4"	
	9"			22	54	86	7	11" x 14" x 1-1/4"	
	10"			24	60	96	7	12" x 14" x 1-1/4"	
	11"	▼		26	66	106	8	13" x 14" x 1-1/4"	
	6"	14"		17	42	67	6	8" x 16" x 1-3/4"	
	7"			20	49	78	6	9" x 16" x 1-3/4"	
	8"			22	56	90	7	10" x 16" x 1-3/4"	
	9"			25	63	101	7	11" x 16" x 1-3/4"	
	10"			28	70	112	8	12" x 16" x 1-3/4"	
▼	11"	▼		31	77	123	8	13" x 16" x 1-3/4"	

① Based on 3/8" maximum laminate thickness.

② THE BRG. ⌀ WILL BE THE SAME MATER SPEC. AS THE SOLE ⌀ IS INCLUDED IN THE BEAM COST. SHOP WELD BRG ⌀ TO SOLE

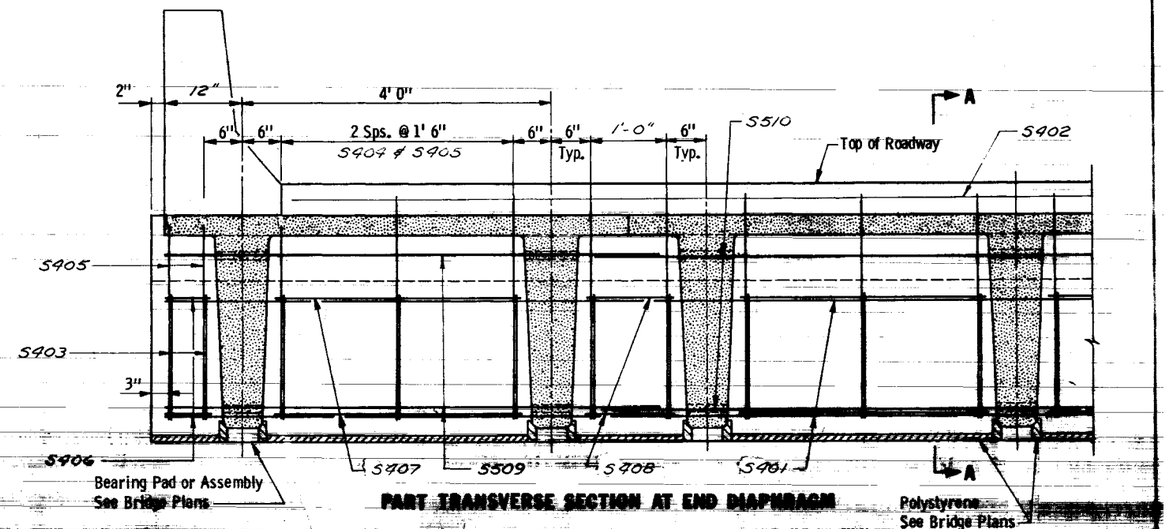
④ Pad dimensions and loads are for one leg of a double tee beam.

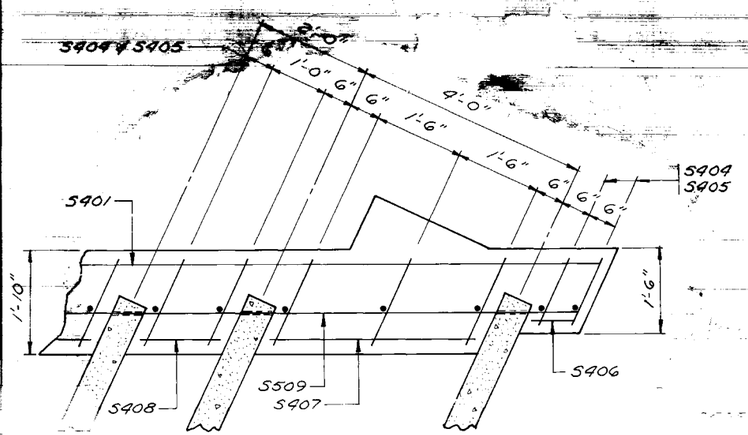
APPROVED: April 26, 1978
Developed by: ENGINEERING STANDARDS AND BRIDGES AND STRUCTURES
Issued by: ENGINEERING STANDARDS

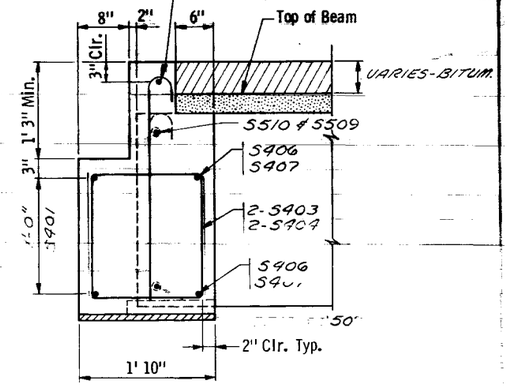
STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

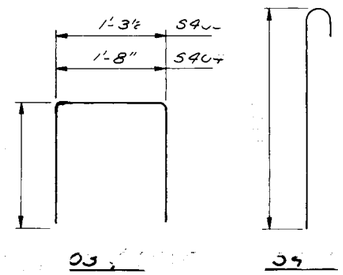
ELASTOMERIC BEARING ASSEMBLY
CONCRETE DOUBLE TEE BEAMS
(FIXED & EXPANSION)

DETAIL NO. **B308**









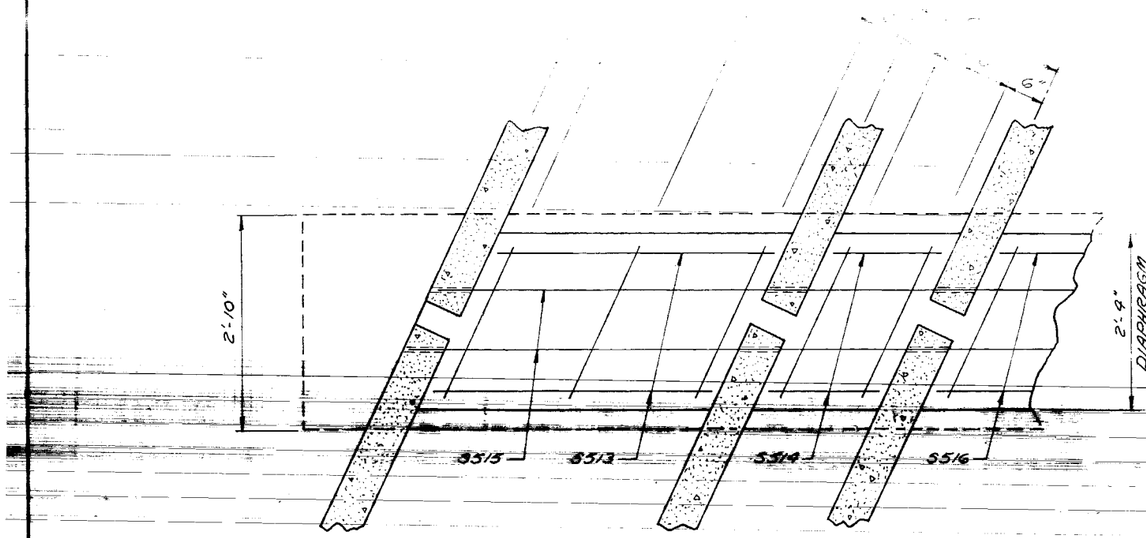
All diaphragm bars shown are listed with the superstructure reinforcement. Diaphragm concrete and reinforcement quantities are included in summary of quantities for superstructure.

APPROVED:
Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN
Issued by: OFFICE OF ENGINEERING STANDARDS

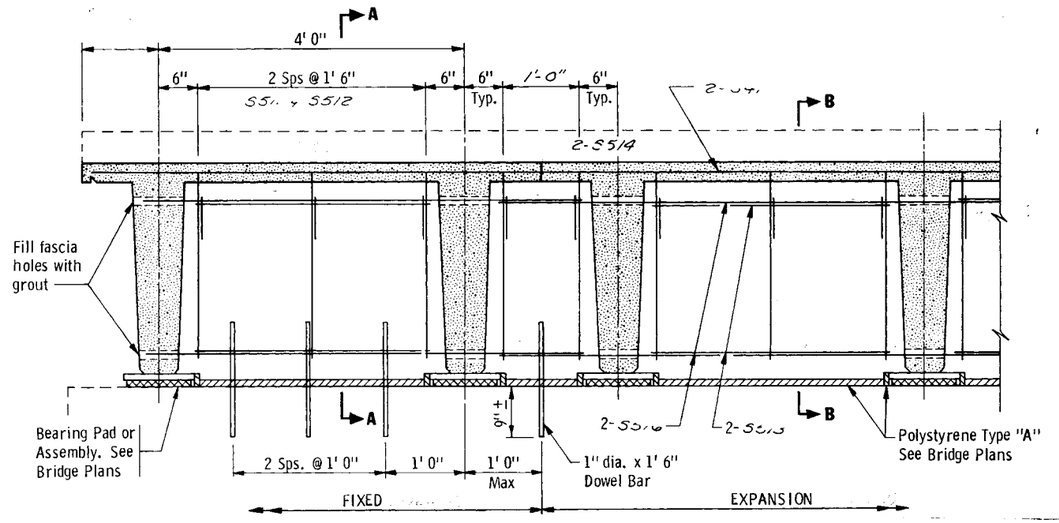
STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

CONCRETE END DIAPHRAGM
(FOR DOUBLE TEE BEAM SPANS WITH PILE BENT ABUTMENT)

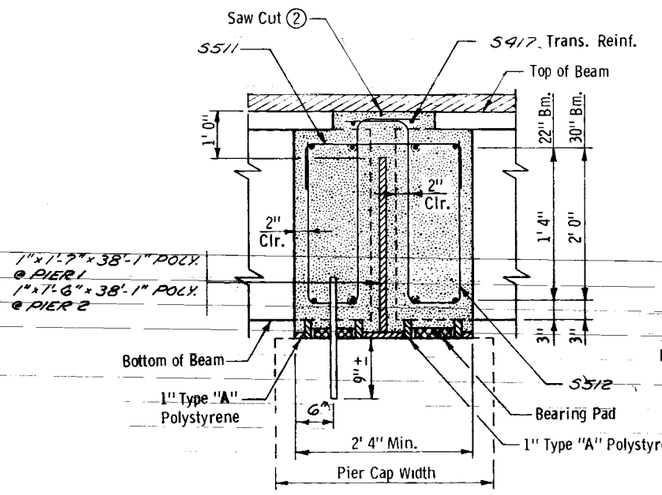
DETAIL NO. **B807**



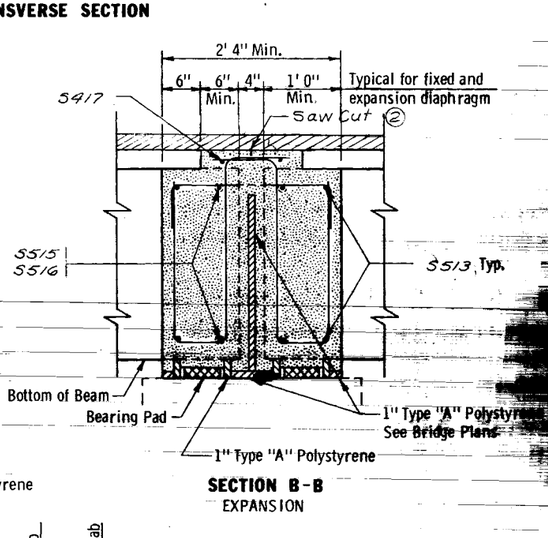
PART SECTION THRU PIER DIAPHRAGM



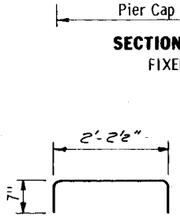
PART TRANSVERSE SECTION



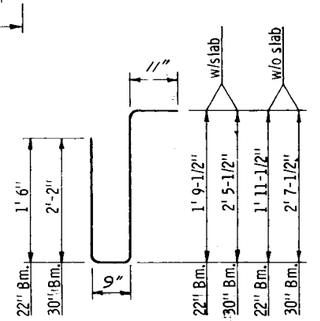
SECTION A-A
FIXED



SECTION B-B
EXPANSION



5511



5512

NOTES

1. All diaphragm concrete and reinforcement bars shown on this detail to be included in summary of quantities for superstructure.
2. Fill saw cuts with concrete joint sealer per Spec. 3723.
3. All reinforcement and concrete details are the same for fixed and expansion, except for dowel bars.

AS BUILT PLANS

APPROVED: December 22, 1977

Developed by: BRIDGE STANDARDS AND THE BRIDGES & STRUCTURES SECTION

Issued by: RESEARCH & STANDARDS

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

CONCRETE PIER DIAPHRAGM
(FOR DOUBLE TEE BEAMS)

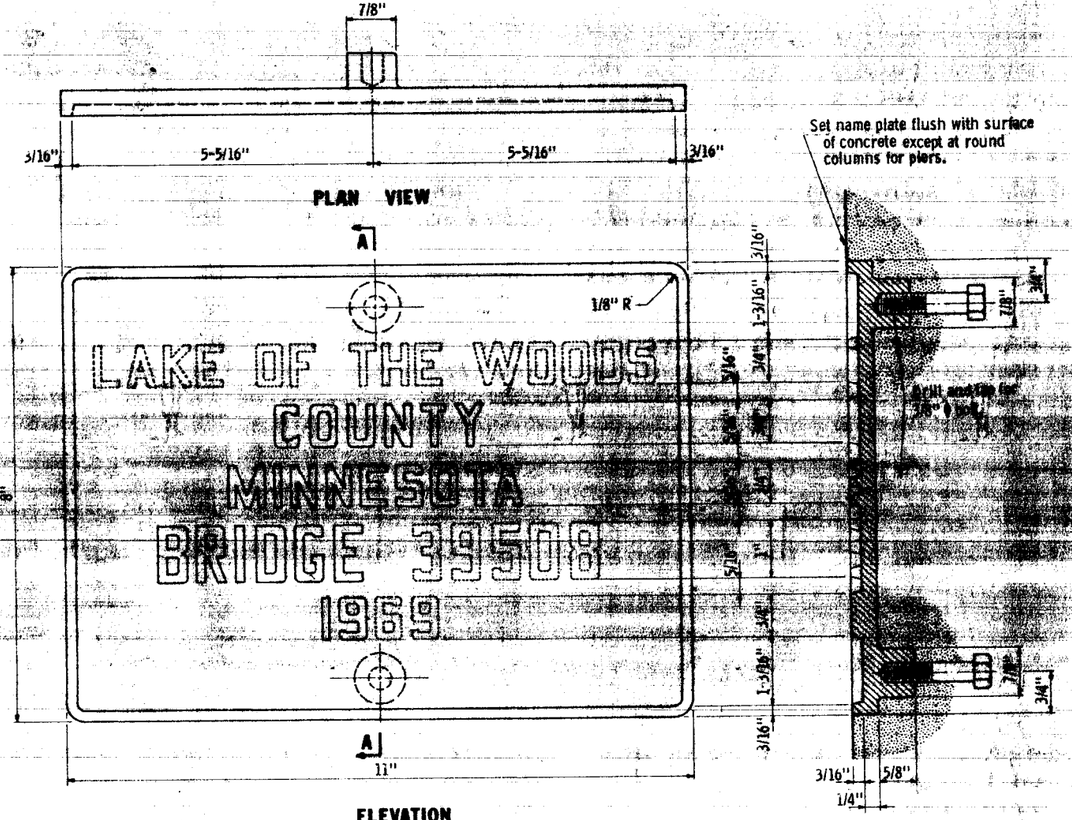
DETAIL NO.

B822

S.P. 55-598-05

SHEET 9 OF 13 SHEETS

5553

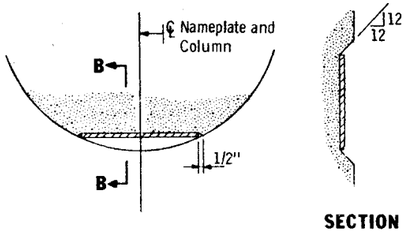


ELEVATION

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

BRIDGE 55531
YEAR 19 C

SECTION A - A



SECTION B-B

NAMEPLATE PLACEMENT

(Round Concrete Pier Columns)

NOTES:

No shop drawing required.
Material shall comply with SPEC. 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.

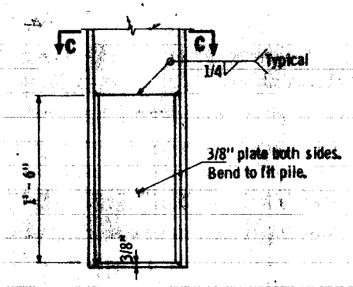
ABCDEFGHIJKLMN OPQRSTUVWXYZ 3/16" 1"

1234567890 3/16" 1"

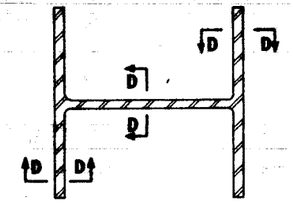
Specification reference: 2471.3H, A.S.T.M. Designation: B145 - Alloy 836.

LETTERS & NUMBERS FOR NAMEPLATES

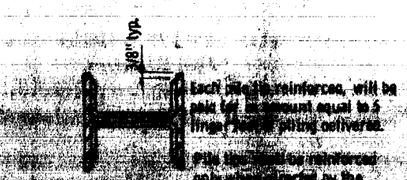
APPROVED: March 15, 1976 Developed by: OFFICE OF ENGINEERING STANDARDS AND BRIDGE DESIGN Issued by: OFFICE OF ENGINEERING STANDARDS	MINNESOTA DEPARTMENT OF TRANSPORTATION **BRIDGE NAMEPLATE** COUNTY BRIDGES		DETAIL NO. **B103**



ELEVATION



SECTION AT JOINT



DETAIL OF PILE TIP REINFORCEMENT

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.

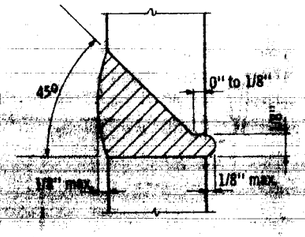
Low-hydrogen electrodes shall be supplied in hermetically (air-tight) sealed containers.

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.

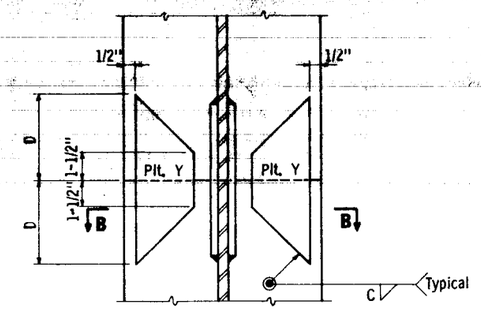
Any type electrode which has become wet, soiled, or damaged shall not be used.

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.

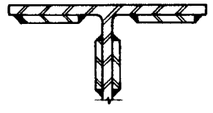


SECTION B - B

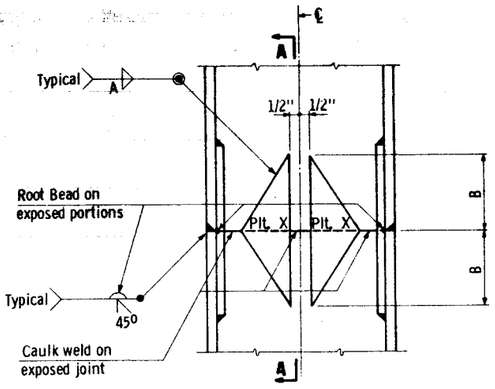
100% BUTT WELDED PILE SPLICE



SECTION A - A



SECTION B - B



ELEVATION

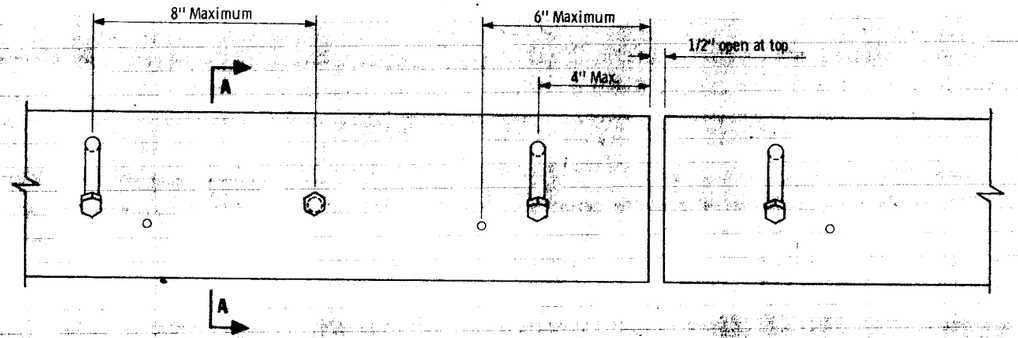
PILE SECTION	PLATE X Size	A	B	PLATE Y Size	C	D
HP10 x 42	2-1/2 x 3/8	1/4	4	3 x 3/8	5/16	4
HP10 x 57	2-1/2 x 1/2	5/16	4	3 x 1/2	5/16	5
HP12 x 53	3-1/2 x 3/8	1/4	5	4 x 3/8	5/16	5
HP12 x 74	3-1/2 x 1/2	5/16	6	4 x 1/2	5/16	6
HP14 x 73	4-1/2 x 3/8	1/4	7	5 x 3/8	5/16	6
HP14 x 89	4-1/2 x 7/16	5/16	7	5 x 1/2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

ABUTS. → PIERS

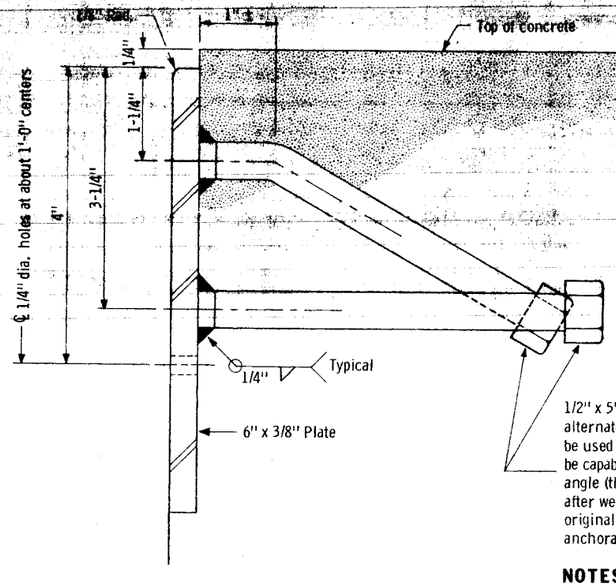
ALTERNATE PILE SPLICE

APPROVED July 21, 1972 Douglas Dibbet Engineering Standards Engineer RESEARCH AND STANDARDS DIVISION	MINNESOTA DEPARTMENT OF TRANSPORTATION **PILE SPLICE and TIP REINFORCEMENT** STEEL H BEARING PILES 10" TO 14"	AS BUILT PLANS	DETAIL NO. **B202**

S.A. 69-(69-05 SHEET 10 OF 13 SHEETS 55531



ELEVATION
(Concrete not shown)



SECTION A-A

1/2" x 5" bolts, or approved equal, at 8" centers with alternate stagger. 1/2" x 5" stud welded fastners may be used as an alternate for bolts. The anchorage shall be capable of being bent cold by hammering thru a 30° angle (the apex of which shall be at the fusion point) after welding and subsequently straightened to its original position without fracture of the weld or anchorage.

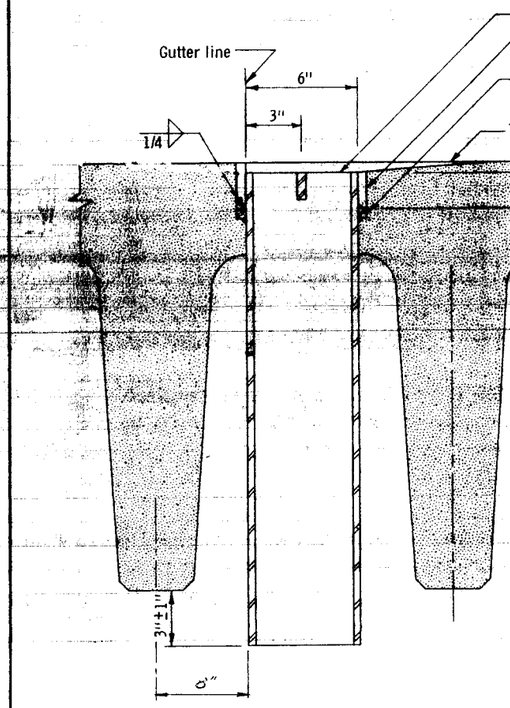
NOTES

Plate shall extend full width of roadway between gutter lines with a 1/2" open joint at each break in crown profile. Maximum length 22 feet.

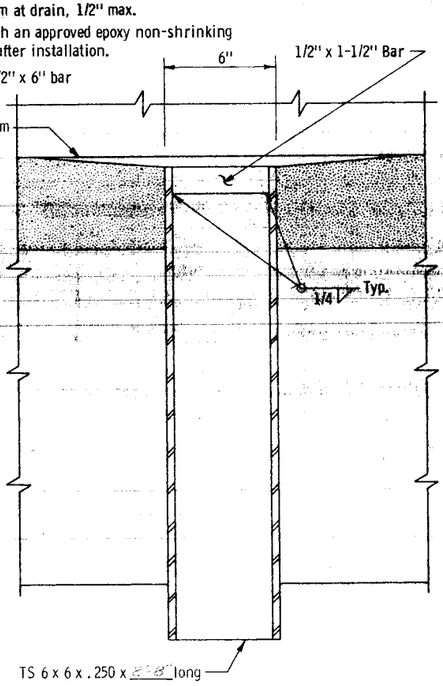
Materials: Structural steel per spec. 3306. Galvanize after fabrication per spec. 3394

Set plate to proper grade and crown. Plates shall be straightened to a tolerance of 1/16" in 10 feet after galvanizing.

APPROVED Sept. 28, 1977	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	DETAIL NO.
Developed by: BRIDGE STANDARDS AND THE BRIDGES & STRUCTURES SECTION	**PROTECTION PLATE FOR END OF SLAB**	**B553**
Issued by: RESEARCH & STANDARDS		



TYPICAL TRANSVERSE SECTION



INSIDE ELEVATION

NOTES

Material to be structural steel per spec. 3306.

Galvanize material per spec. 3394 after fabrication.

ALL MATERIAL SHOWN ON THE DETAIL FOR FLOOR DRAINS SHALL BE INCLUDED IN THE PRICE BID FOR CONCRETE TEE BEAMS.

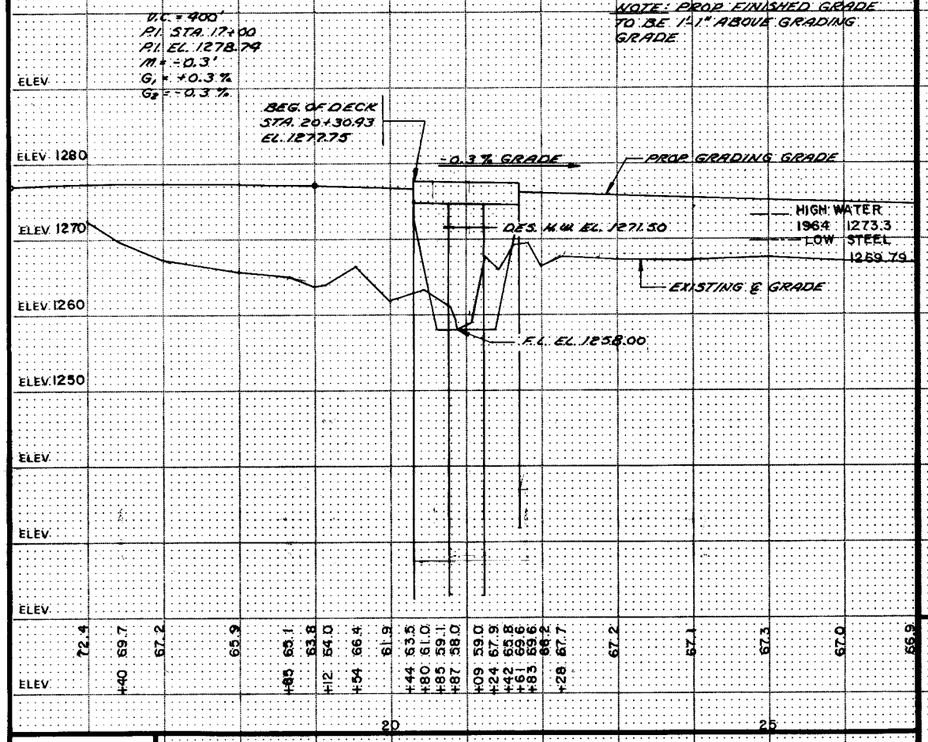
AS BUILT PLANS

APPROVED Sept. 28, 1977	STATE OF MINNESOTA DEPARTMENT OF TRANSPORTATION	REVISION	DETAIL NO.
Developed by: BRIDGE STANDARDS AND THE BRIDGES & STRUCTURES SECTION	**FLOOR DRAIN FOR TEE BEAMS**	Nov. 7, 1977	**B710**
Issued by: RESEARCH & STANDARDS			

S.P. 55-593-15 SHEET 11 OF 13 SHEETS 55.71

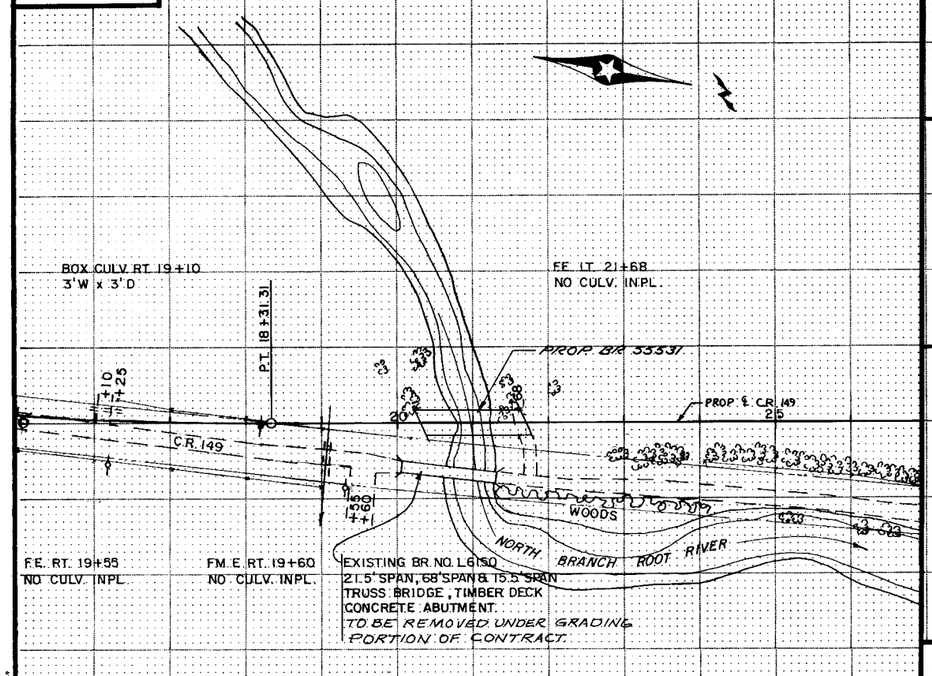
CONTRACTED PROFILE

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



PLAT

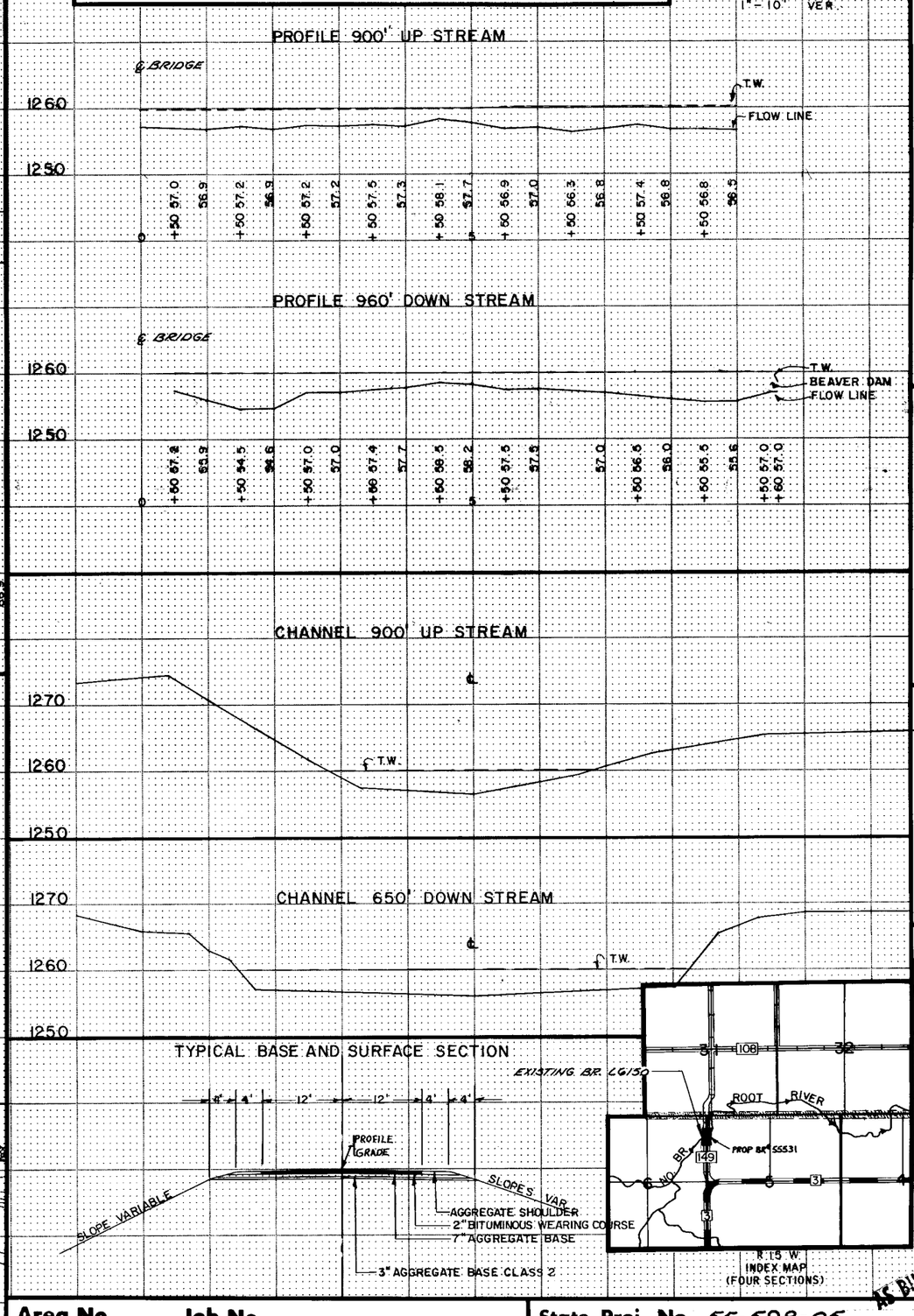
SCALE: 0' 50' 100'



TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN

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



TYPICAL BASE AND SURFACE SECTION

AS BUILT PLANS

Fed. Proj. No.

LOCATION ENGINEER'S OBSERVATIONS AT BRIDGE SITE

1. Special Features: Waterfalls, dams, floods, ice, debris, sliding banks, recreational boating.

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.

3. Apparent highwater elevation ..... Obtained from.....

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

HYDRAULIC ENGINEERS RECOMMENDATION

DATE 2-7-78

Stream or ditch designation ..NORTH BRANCH ROOT RIVER.....
Drainage area .....58.5..... Sq. Miles.....
Max. flood on record UNKNOW. Design flood (..50.... yr. freq.) 6600 ...C.F.S.
Max. observed highwater elevation 1273.7 .....Design highwater elevation..1271.5.....
Design mean velocity through structure ....6.0.....F.P.S.....
Low superstructure at or above elevation .1274.50.....
Flowline elevation .....1258.00.....Skew angle.....25°.....
Waterway area req'd. below elevation 1271.5. = 1100.....Sq. Ft. at Rt. angles to channel

In the interest of flood plain zoning the regional flood (100 yr. freq.) is ..7900.....C.F.S. at stage..1273.00...and mean velocity of..6.4.....F.P.S. with.....0.3.....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.

3-46' DOUBLE TEE
32-8 RDWY
6 @ 6'-0"=36'-0"

Bridge survey sheets made from: OLMSTED COUNTY HIGHWAY DEPT.

Bench mark elevation....1269.84 (M.S.L. 1929 Adj.)
Location: "X" IN N.W. CORNER OF NO. ABUT.

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT ..0.47.. ON C.R. 149 (T.H., C.S.A.H., C.R. etc.)
PROPOSED BRIDGE LOCATED ..0.4.. MILES ..N.. OF
JCT. C.S.A.H. 3
SEC. 05 TWP 104 N R 15 W
TOWNSHIP ROCK DELL COUNTY OLMSTED
BRIDGE NO. 55531

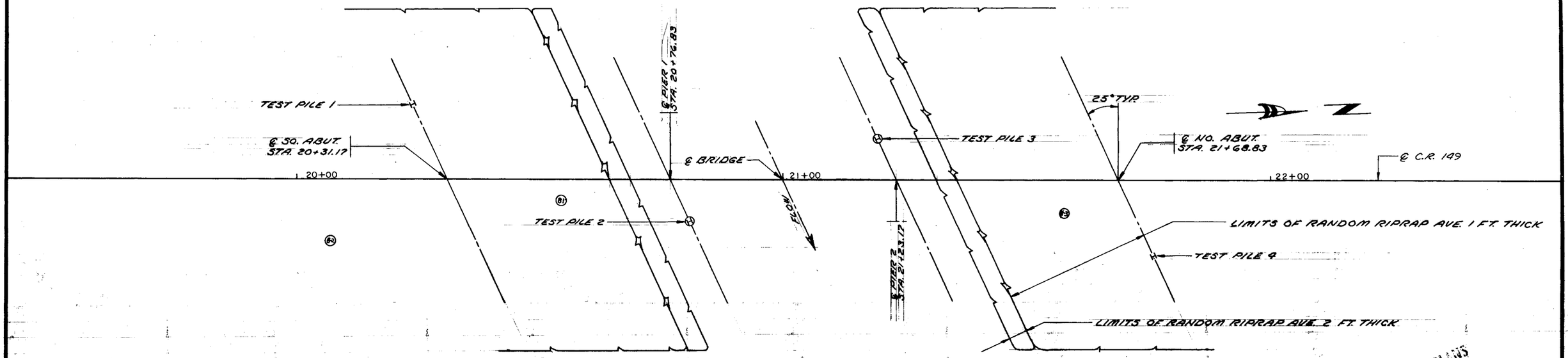
12-19-79

Area No. Job No. State Proj. No. 55-598-05 CR.149 Sheet No. 12 of 13 Sheets

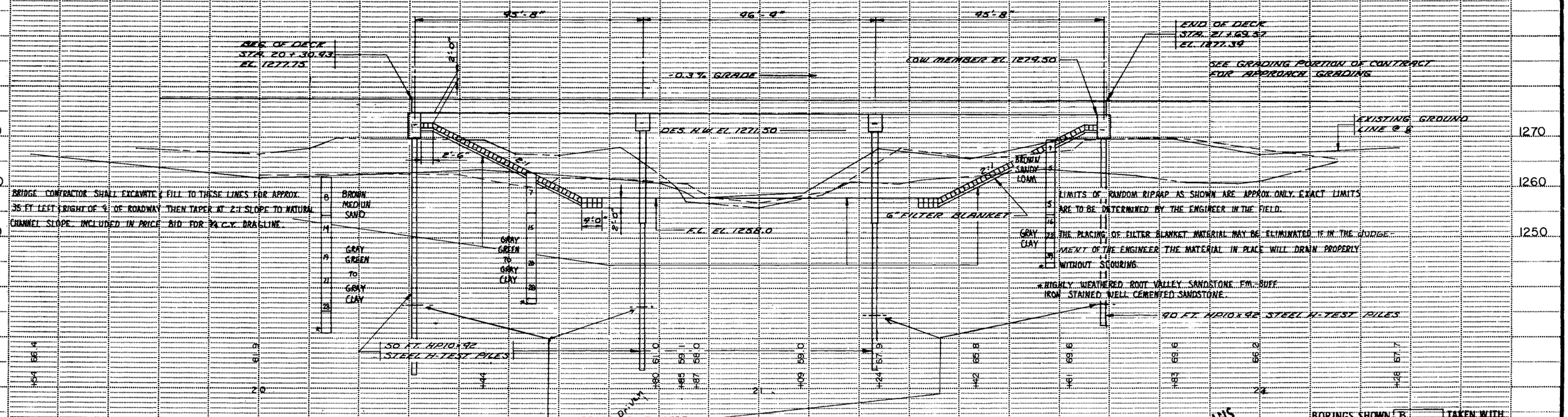
TELEDYNE POST BRIDGE SURVEY 1EC-2 9/76

Fed. Proj. No.

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



AS BUILT PLANS



AS BUILT PLANS

BRIDGE SURVEY PLAN AND PROFILE	DES: FMJ	DR: MAS	APPROVED: 12-19-79	Bridge No. 55531
State Proj. No. 55-598-05	CHK:	CHK: RRT	Sheet No. 13 of 13 Sheets	

Teledyne Post
Bridge Sheet (18) (7/75)

1023670