MINNESOTA DEPARTMENT OF TRANSPORTATION

THE COUNTY OF OLMSTED

CONSTRUCTION PLAN FOR GRADING & AGGREGATE BASE

LOCATED ON C.S.A.H. 32 **BETWEEN** CR. 142 **AND** T.H. 14 **(GEOGRAPHIC DESCRIPTION)**

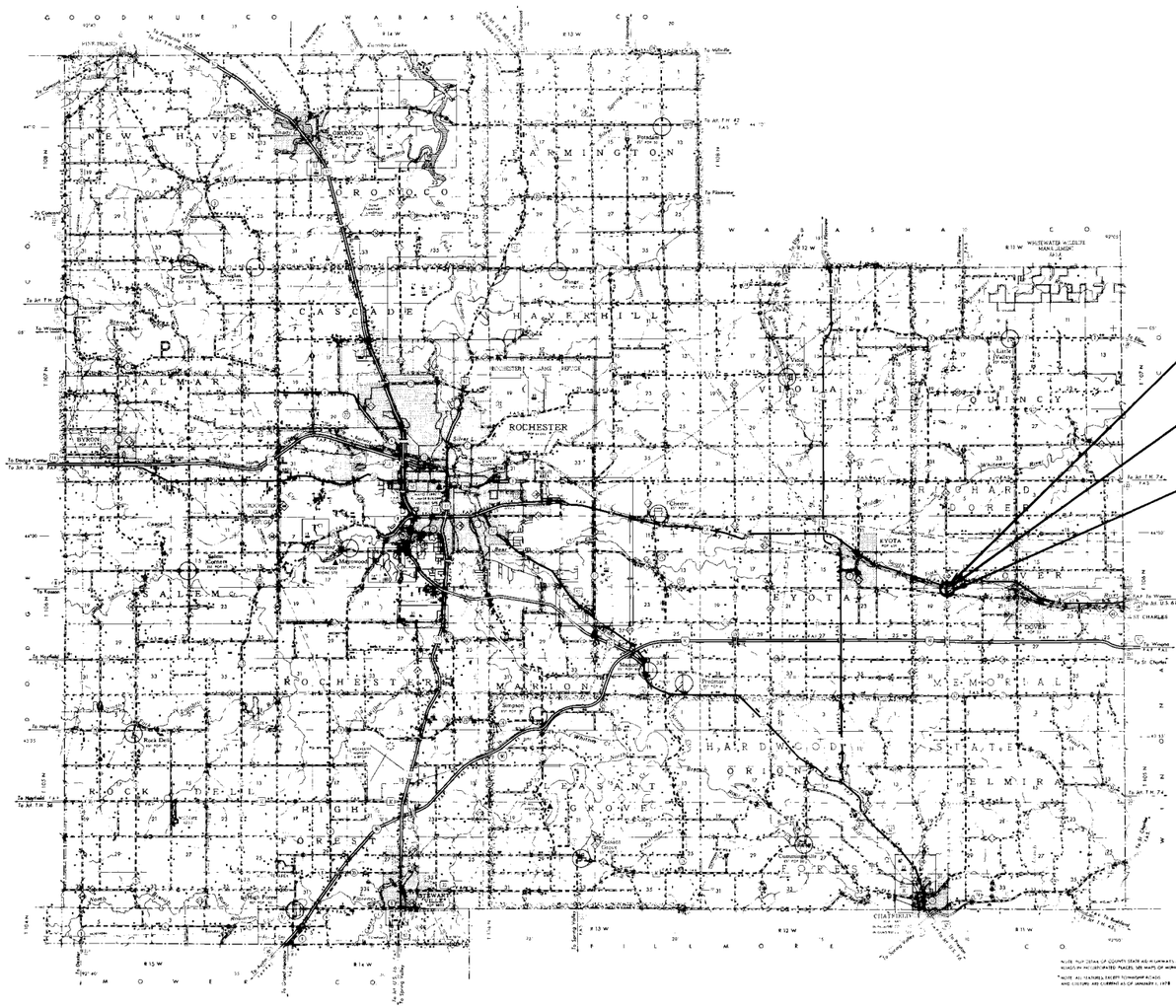
FROM 738' SO. OF S.E. COR. SEC. 18 T106N R11W **TO** 397' NO. OF S.E. COR. SEC. 18 T106N R11W **(LEGAL DESCRIPTION)**

STATE PROJ. NO. .....

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

STATE PROJ. NO. SAP 55-632-02

GROSS LENGTH	1135.00	FEET	0.215 MILES
BRIDGES-LENGTH	95.32	FEET	0.018 MILES
EXCEPTIONS-LENGTH	0	FEET	0 MILES
NET LENGTH	1039.68	FEET	0.197 MILES



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 (TIMBER)
NURSERY
CATCH BASIN C.B.
FIRE HYDRANT
CATTLE GUARD
OVERPASS (Highway Over)
UNDERPASS (Highway Under)
BRIDGE
BUILDING (One Story Frame) (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 (Q)
SLOPE EASEMENT SE

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

SCALES

PLAN		100 FEET
PROFILE		100 FEET HORZ. & 10' VERT.
INDEX MAP		10,560 FEET
CROSS SECTIONS		10 FEET

STATE AID TITLE SHEET 3-77 ALBINSON MPLS 55455

MINN. PROJ. NO. .....

SPECIFICATIONS REFERENCE

The 1978 Edition of the Minnesota Department of Transportation "Standard Specifications For Highway Construction" Shall Govern.

INDEX

SHEET NO. 1 TITLE SHEET & LAYOUT MAP
NO. 2 ESTIMATE OF QUANTITIES & TYPICAL SECTIONS
NO. 3 PLAN & PROFILE
NO. 4 TO NO. 6 CROSS SECTIONS
NO. 7 DETAIL DRAWING

END: SAP 55-632-02
STA. 188+77.0

BRIDGE NO. 55535: STA. 183+29.66
STA. 182+34.34

BEGIN: SAP 55-632-02
STA. 177+42.0

DESIGN DESIGNATION

R .....

EN18 (20)

ADT (Current Year)	=	146	
ADT (Future Year)	=	234	
DHV (Design Hr. Vol.)	=		
D (Directional Distr.)	=		%
T (Heavy Commercial)	=	15	%
SOIL FACTOR		130	

Design Speed 50 MPH
Based on STOPPING Sight Distance
Height of eye 3.75' Height of object 0.5'
Design Speed not achieved at:

STA.	TO STA.	MPH
STA.	TO STA.	MPH
STA.	TO STA.	MPH

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.

DATE 4/16/79 REG. NO. 10219 ENGR. J.K. Dolan

COUNTY Olmsted

Recommended for Approval ..... DISTRICT STATE AID ENGINEER 4-18 1979

Recommended for Approval ..... STATE AID PLANS AND SPECS ENGINEER 5-1 1979

Approved 5/2 1979 ..... STATE AID ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

..... DIVISION ADMINISTRATOR ..... DATE

STATE AID PROJ. NO. 55-632-02
STATE PROJ. NO. ..... **SHEET NO.** 1 **OF** 7 **SHEETS**

ESTIMATED QUANTITIES

SPECIFICATION NO.	ITEM	UNIT	MUNICIPAL	RURAL	TOTAL ESTIMATED QUANTITIES	
2104.501	REMOVE PIPE CULVERT	LIN. FT.		90	90	
2104.521	SALVAGE PIPE CULVERT	LIN. FT.		8	8	
2104.523	SALVAGE CONCRETE APRONS	EACH		1	1	
2105.501	COMMON EXCAVATION	CU. YD.		258	258	(P)
2105.507	SUBGADE EXCAVATION	CU. YD.		142	142	(P)
(1) 2105.523	COMMON BORROW (C.V.)	CU. YD		7491	7491	(P)
2211.502	AGGREGATE BASE, CLASS 2	CU. YD.		771	771	
2501.511	18" C.S. PIPE CULVERT	LIN. FT.		28	28	
2501.511	24" R.C. PIPE CULVERT CLASS II	LIN. FT.		78	78	
2501.511	36" R.C. PIPE CULVERT CLASS IV (RADIUS PIPE)	LIN. FT.		24	24	
2501.515	18" G.S. PIPE APRONS	EACH		2	2	
2501.515	24" R.C. PIPE APRONS	EACH		2	2	
2501.521	43" SPAN C.S. PIPE-ARCH CULVERT	LIN. FT.		28	28	
2501.525	43" SPAN G.S. PIPE APRONS	EACH		2	2	
2501.571	INSTALL CONCRETE CULVERTS	LIN. FT.		8	8	
2501.573	INSTALL CONCRETE APRONS	EACH		1	1	

(P) PLAN QUANTITY

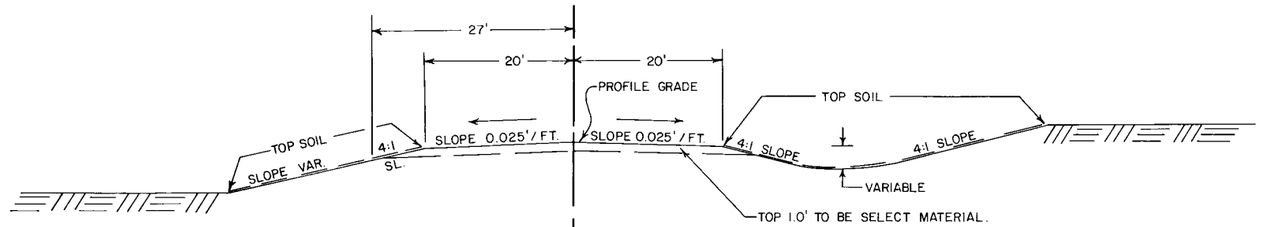
(1) ITEM NO. 2211.502 AGGREGATE BASE CLASS 2 INCLUDES 60 CU. YDS. FOR TWO FIELD ENTRANCES.

STANDARD PLATES

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

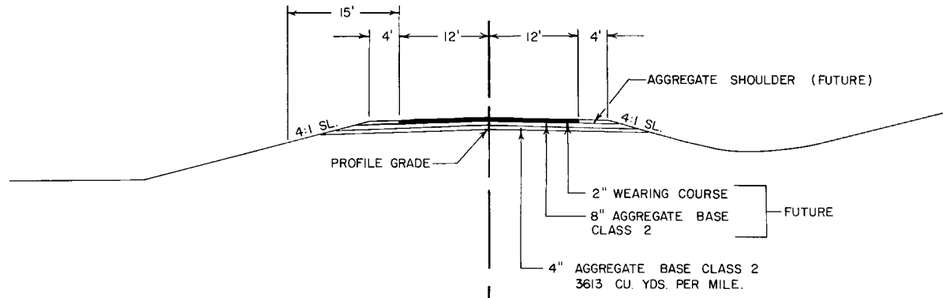
PLATE NO	DESCRIPTION
0003 A	SPECIFICATION REFERENCE TO STANDARD PLATES
3000 H	REINFORCED CONCRETE PIPE
3040 E	CORRUGATED METAL PIPE CULVERT
3100 F	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3122 G	METAL APRON FOR C.M. PIPE-ARCH CULVERT
3123 G	METAL APRON FOR C.M. PIPE
3124 A	METAL APRON CONNECTION
3145 A	CONCRETE PIPE JOINT TIES
3221 A	CORRUGATED STEEL PIPE COUPLING BAND
8000 F	STANDARD BARRICADES
9000 B	APPROCHES AND ENTRANCES

TYPICAL GRADING SECTION



STA. 177+42 TO STA. 188+77

TYPICAL BASE AND SURFACING SECTION



STA. 177+42 TO STA. 188+77

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 APPROXMATE.

ALBINSON INC. MINNEAPOLIS 55401

Fed. Proj. No.

CR 142 LT. STA. 177+42
INPL 29' LT. 36" x 64' R.C. PIPE W / APRONS
SALVAGE 1-36" R.C. PIPE APRON (OUTLET)
SALVAGE 36"x8' R.C. PIPE CULVERT

36" x 24' R.C. PIPE CULVERT CL. IV (RADIUS PIPE)
INSTALL 36"x8' R.C. PIPE CULVERT
INSTALL 1-36" R.C. PIPE APRON
PLACE CULV. ON "B" BEDDING
F&I APPROVED JOINT TIES.
OUTLET ELEV. 90.1
SEE PLAN SHEET NO. 7 FOR DETAIL DRAWING.

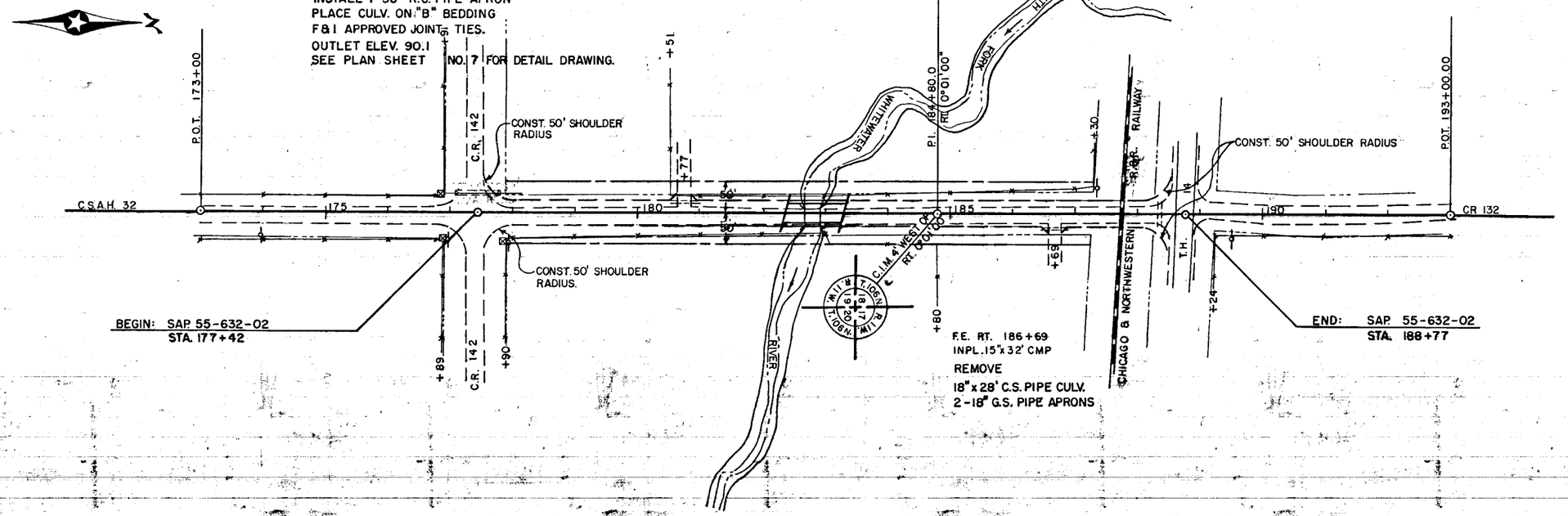
F. E. LT. 180+77
6"x 20' PLASTIC
REMOVE

43" SPAN x 28' C.S. PIPE-ARCH CULV.
2-43" SPAN G.S. PIPE APRONS

BRIDGE NO. 55535
STA. 182+34.34 TO STA. 183+29.66
INPL. 3-32' TREATED TIMBER SPANS
BUILT 1978
NO CHANGE

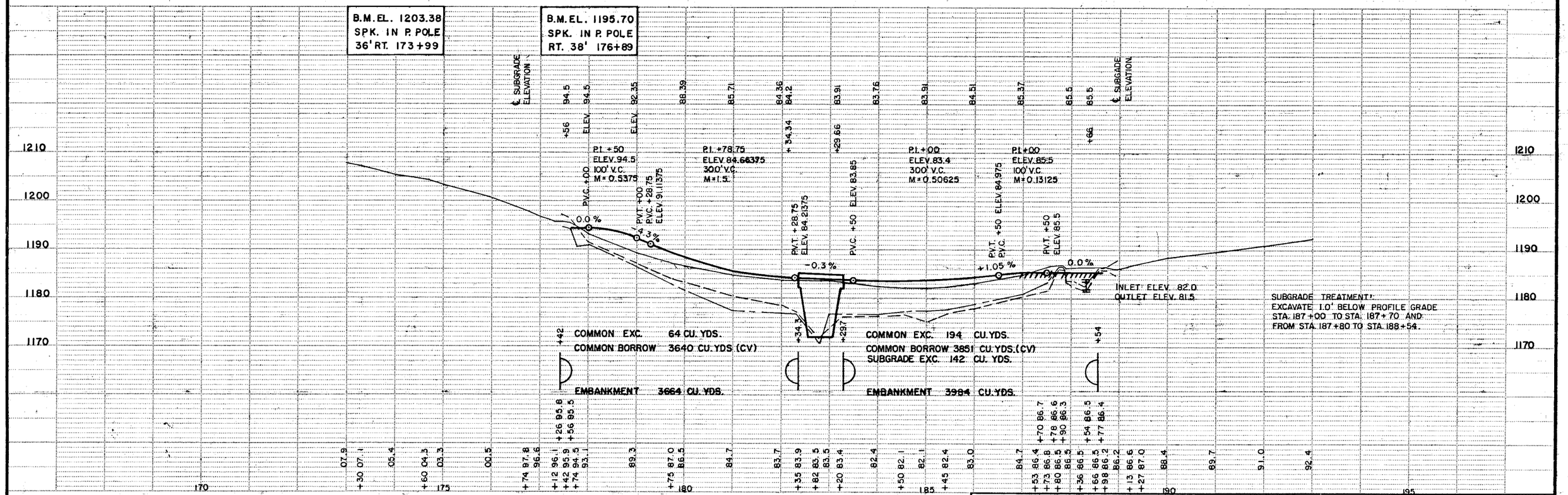
℄ CULV. 188+36
INPL. 15"x 38' CMP.
REMOVE

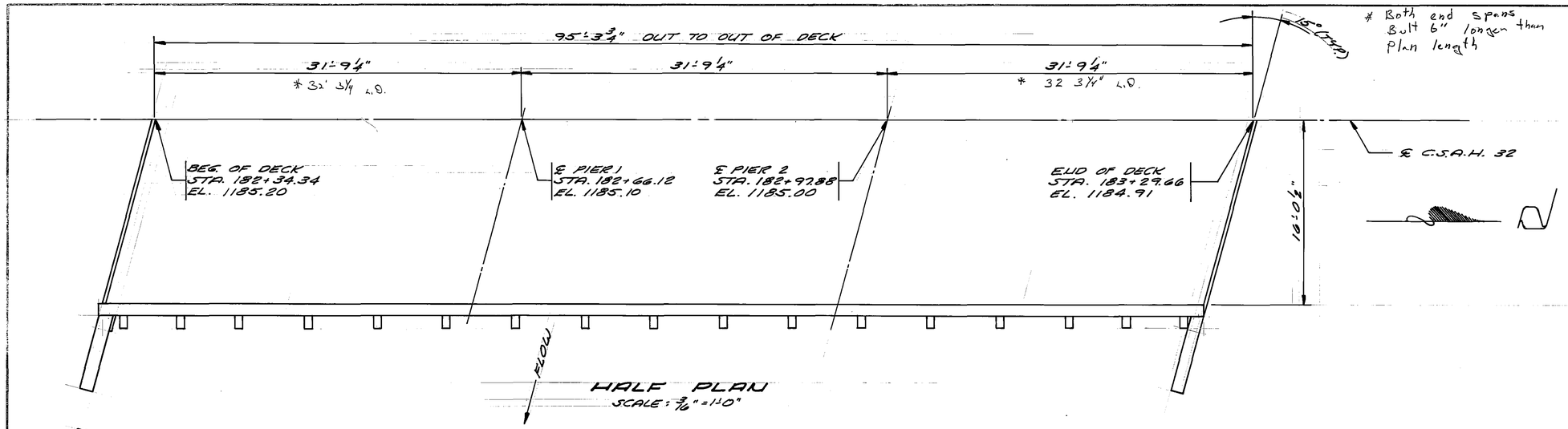
24"x 78' R.C. PIPE CULV. CL. II
2-24" R.C. PIPE APRONS.
PLACE CULVERT "B" BEDDING
F&I APPROVED JOINT TIES



B.M. EL. 1203.38
SPK. IN P. POLE
36' RT. 173+99

B.M. EL. 1195.70
SPK. IN P. POLE
RT. 38' 176+89





HALF PLAN
SCALE: 3/16" = 1'-0"

* Both end spans Built 6" longer than Plan length

DESIGN DATA

1977 & INTERIM, A.A.S.H.T.O. DESIGN SPECS
H520 LOADING - NO IMPACT - 2 LANES
DECK AREA = 3240 SQ. FT.
A.D.T. FOR 1999 = 881

CONSTRUCTION NOTES

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

CONSTRUCTION REQUIREMENTS SHALL CONFORM TO SPEC. 2403.3

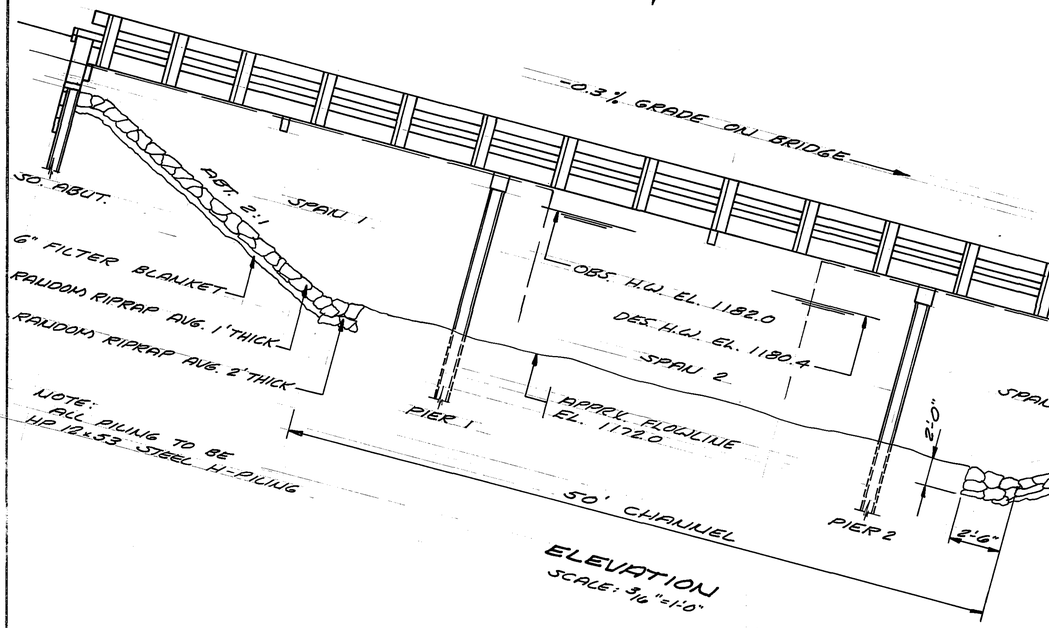
ALL TIMBER TO BE CREOSOTE OR PENTACHLOROPHENOL PRESSURE TREATED PER SPEC. 3491 EXCEPT RAILS. RAILS TO BE PRESSURE TREATED WITH PENTACHLOROPHENOL SOLUTION.

ALL TIMBER PILING TO MEET REQUIREMENTS OF SPEC. 3471 AND TO BE CREOSOTE OR PENTACHLOROPHENOL PRESSURE TREATED PER SPEC. 3491.

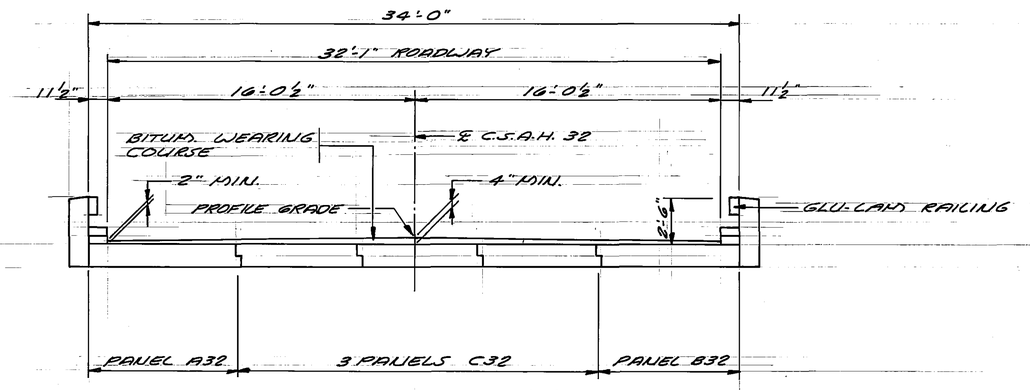
ALL HARDWARE TO BE GALVANIZED PER SPEC. 3392.

ALL TIMBER IS ROUGH UNLESS OTHERWISE NOTED.

TIMBER POSTS SHALL BE 1750 #Fb. CAPS SHALL BE 1200 #Fc. RAIL SHALL BE 2400 #Fb (DRY CONDITIONS). ALL PLANK FOR PREFAB PANELS SHALL BE 1500 #Fb. ALL OTHER TIMBER SHALL BE 1200 #Fb.



ELEVATION
SCALE: 3/16" = 1'-0"



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

B.M. spike
B.M. EL. 1183.77
@ S.E. HEADWALL OF N.B.L. BRIDGE STA. 182+65

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE

ITEM NO.	ITEM	QUAN.	UNIT
2403.502	TREATED TIMBER	7.86	M.F.B.M.
2403.506	HARDWARE	2914 (P)	POUND
2402.521	STRUCTURAL STEEL, (3306)	2095 (P)	POUND
2511.501	RANDOM RIPRAP, CLASS A	135	CU. YD.
2511.504	FILTER BLANKET, TYPE 1	60	CU. YD.
403.602	PREFAB TIMBER PANELS, TYPE "A32"	3	EACH
403.602	PREFAB TIMBER PANELS, TYPE "B32"	3	EACH
403.602	PREFAB TIMBER PANELS, TYPE "C32"	9	EACH
2452.510	STEEL H-PILING DRIVEN	650	LIN. FT.
2452.511	STEEL H-PILING DELIVERED	650	LIN. FT.
2452.520	STEEL H-TEST PILES, 35 FT. LONG.	2	EACH
2452.520	STEEL H-TEST PILES, 40 FT. LONG	2	EACH
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	18	GAL.
2331.504	BITUMINOUS MATERIAL FOR MIXTURE	5	TON
2331.508	WEARING COURSE MIXTURE	76	TON
2123.506	¾ CU. YD. DRAGLINE	17	HOUR
403.604	GLUED LAMINATED RAIL, TYPE 1	189 (P)	LIN. FT.

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

① STA. 182+80

LIST OF SHEETS

NO.	TITLE
1	GENERAL PLAN & ELEVATION
2	ABUTMENT DETAILS
3	PIER DETAILS
4-5	SUPERSTRUCTURE DETAILS
6	PANEL DETAILS
7	PILE SPLICE DETAILS
8-9	BRIDGE SURVEYS

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: 10-12-78

APPROVED

Michael Sheehan 10397
Asst. COUNTY ENGINEER

DATE: 10-17-78

PLANS PREPARED BY
ERICKSON ENGINEERING
3340 REPUBLIC AVE.
ST. LOUIS PARK, MINN.

C.S.A.H. 32 OLMSTED COUNTY
MINNESOTA DEPARTMENT
OF TRANSPORTATION

BRIDGE NO. 55535

3.0 MILES WEST OF DOVER ON C.S.A.H. 32 OVER SO. FORK WHITEWATER RIVER.

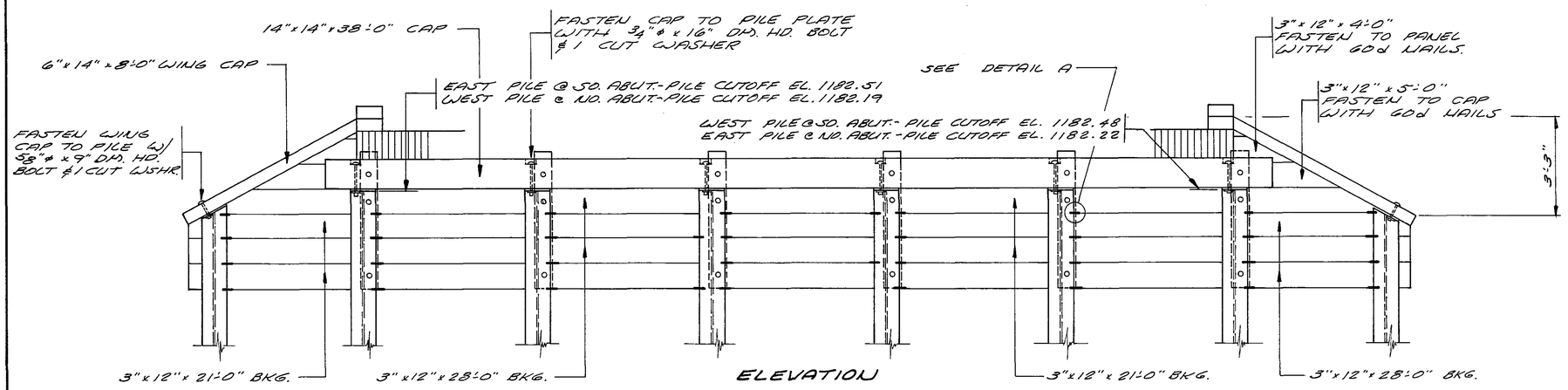
3-32' TREATED TIMBER SPANS
32' RDWY. - 15° SKEW - IDENT. NO. 709

GENERAL PLAN & ELEVATION

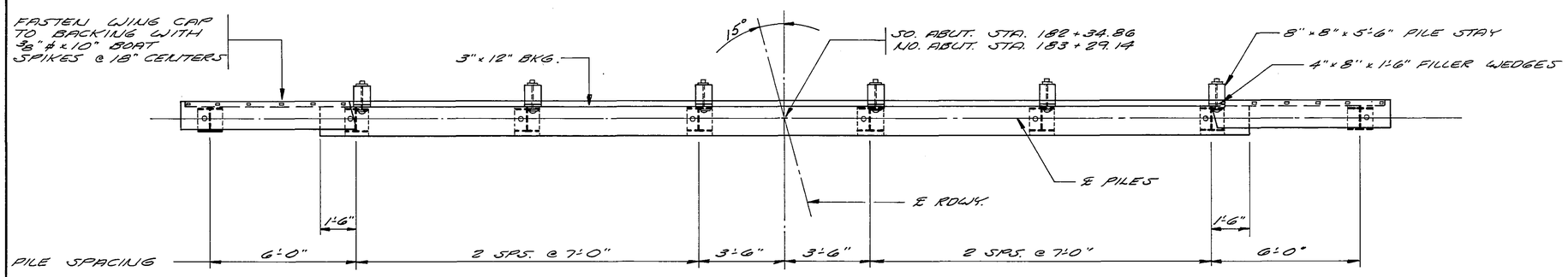
SEC. 19-20 T. 106 N. R. 11 W.

DOVER TOWNSHIP - OLMSTED CO.

APPROVED: K.N. Boland 10-29-78
BRIDGE ENGINEER



ELEVATION



PLAN

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

BILL OF TREATED TIMBER - 2 ABUTS.

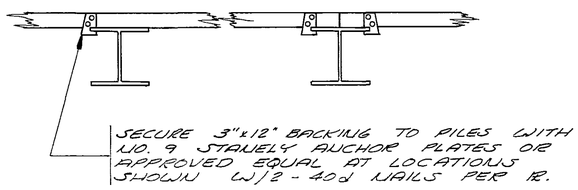
	ITEM	NO.	FIN	SIZE	LGTH.	F.B.M.
(2)	PILE CAP	2	R	14x14	38'-0"	1241
	BACKING	8	R	3x12	21'-0"	504
	"	8	R	3x12	28'-0"	672
	"	4	R	3x12	4'-0"	48
	"	4	R	3x12	5'-0"	60
	WING CAP	4	S45	6x14	8'-0"	224
	PILE STAY	12	R	8x8	5'-6"	352
(1.)	FILLER WEDGES	12	R	4x8	1'-6"	48
	TOTAL F.B.M. FOR 2 ABUTMENTS					3149

(1.) CUT 2 FROM 1

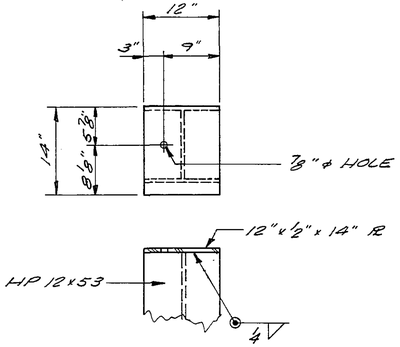
2 Used Pile Cap Splice As Per Attached Drawing

BILL OF HARDWARE - 2 ABUTS.

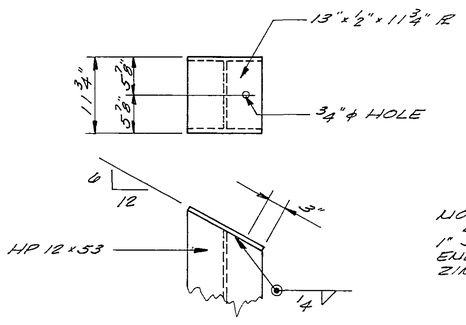
WT. EA.	NO.	ITEM	WT.
2.89	12	3/4" ø x 16" DN. HD. BOLT - CAP TO R	35
0.92	4	5/8" ø x 9" " " - " " "	4
2.06	24	3/4" ø x 14" MACH. BOLT - PILE STAY	49
3.72	12	3/4" ø x 27" " " " "	45
0.41	24	3/8" ø x 10" BOAT SPIKE - WING CAP	10
0.47	72	NO. 9 ANCHOR PLATE - BKG.	34
0.11	4	5/8" CUT WASHER	1
0.15	36	3/4" " "	5
0.85	48	3" x 3" x 5/16" R WSHR (3/4" ø BOLT)	41
10/#		60d NAILS	5
19/#		40d NAILS	10
TOTAL HARDWARE FOR 2 ABUTMENTS			239



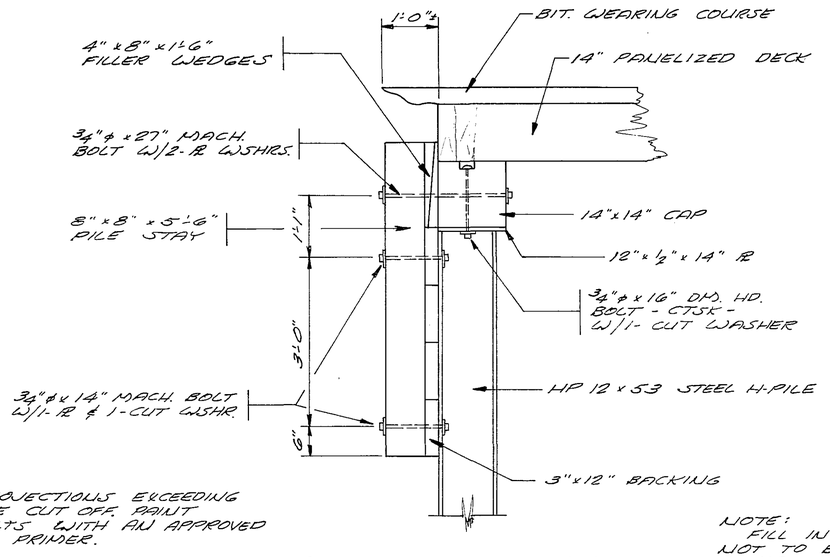
DETAIL A



INTERIOR PILE R DETAIL



WING PILE R DETAIL



SECTION THRU ABUTMENT

SCALE: 3/4"=1'-0"

NOTE:
BOLT PROJECTIONS EXCEEDING 1" SHALL BE CUT OFF. PAINT END OF BOLTS WITH AN APPROVED ZINC RICH PRIMER.

NOTE:
FILL IN BACK OF ABUTMENTS NOT TO BE PLACED UNTIL AFTER SUPERSTRUCTURE HAS BEEN COMPLETED.

BILL OF STRUCTURAL STEEL - 2 ABUTS.

WT. EA.	NO.	ITEM	WT.
24	12	12" x 1/2" x 14" R - INTERIOR PILES	288
22	4	13" x 1/2" x 11 3/4" R - WING PILES	88
TOTAL STRUCTURAL STEEL - 2 ABUTS.			376

PILE NOTES

2 - STEEL H-TEST PILES, 35 FT. LONG
14 - STEEL H-PILES, EST. LGTH. 25 FT.
16 - STEEL H-PILES, REQ'D FOR 2 ABUTS.
Average Piling Driven: 23.5 ft.

ALL PILES TO BE HP 12x53.

SEE DETAIL B202 FOR SPLICES.

PAINT PILES & CAP PLATES PER SPEC. 2452.3J AND SPECIAL PROVISIONS.

ALL PILES TO BE DRIVEN TO A MINIMUM BEARING OF 20 TONS PER PILE, EXCEPT WING PILES.

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55535

ABUTMENT DETAILS

APPROVED: 10-24-98

FASTEN CAP TO PLATE WITH 2 3/4" ϕ x 16" DH. HD. BOLTS (CTSK) ϕ 1 CUT WSHR ϕ 1 LOCK NUT.

PIER 1 WEST PILE CUTOFF EL. 1182.39
PIER 2 WEST PILE CUTOFF EL. 1182.29

PIER 1 EAST PILE CUTOFF EL. 1182.42
PIER 2 EAST PILE CUTOFF EL. 1182.32

WEST

EAST

B

B

L 8 x 8 x 1/2 - 11'-0" LONG, ICE BREAKER ANGLE - UPSTREAM END ONLY.

2

12

2

12

1'-0" APPRX.

APPR'X. CHANNEL BOT. EL. 1172.0

ELEVATION

C9 x 15# x 11'-0" UPSTREAM END ONLY

℄ C.S.A.H. 32

15° (TYP.)

PIER 1 STA. 182 + 66.12
PIER 2 STA. 182 + 97.88

14" x 14" x 38'-0" CAP

1'-6" | 2 SPS. @ 7'-0" | 3'-6" | 3'-6" | 2 SPS. @ 7'-0" | 1'-6"

38'-0"

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

FILL WITH CONCRETE IS INCIDENTAL TO DRIVING OF PILING.

4

ICE BREAKER ANGLE 8" x 8" x 1/2" x 11'-0" PER SPEC. 3306. SEE PAINT NOTE. UPSTREAM END ONLY.

4

C9" x 15#

SECTION B-B

5-1/2" x 3" SLOTS FOR SLOT WELDING PLATE TO PILE

PL 14" x 3/8" x 1'-6" WITH 2-1" ϕ HOLES

HP 12 x 53

14" x 14" CAP

DETAIL B

PILE NOTES:

2 STEEL H-TEST PILES 40 FT. LONG
10 STEEL H-PILES EST. LENGTH 30 FT. Average Piling Project 28.5'
12 STEEL H-PILES REQ'D FOR 2 PIERS

ALL PILES TO BE DRIVEN TO A MINIMUM BEARING OF 20 TONS PER PILE.
PILE SPACING SHOWN IS AT BOTTOM OF CAP.
END PILES TO BE BATTERED 2" PER FOOT IN DIRECTION SHOWN.
FOR SPLICES SEE DETAIL B 202.
ALL PILES TO BE HP 12 x 53.

BILL OF TREATED TIMBER - 2 PIERS

ITEM	NO.	FIN.	SIZE	LEN.	F.B.M.
CAP	2	R	14x14	38'-0"	1241

TOTAL TREATED TIMBER - 2 PIERS - 1241

BILL OF HARDWARE FOR 2 PIERS

UNIT WT.	NO.	ITEM	TOTAL WT.
2.89	24	3/4" ϕ x 16" DH. HD. BOLT w/L. NUT	69
0.15	24	3/4" CUT WASHER	4

TOTAL HARDWARE - 2 PIERS - 73

STRUCTURAL STEEL (3306) - 2 PIERS

NO.	ITEM	WT.
2	L 8 x 8 x 1/2" x 11'-0"	590
4	C9 x 15# x 11'-0"	670
12	R 14" x 3/8" x 1'-6"	328

TOTAL STRUCTURAL STEEL - 2 PIERS - 1588

PAINT AND STRUCTURAL STEEL NOTE FOR PIER PILES, BRACING, PLATES ICE BREAKER ANGLES

PIER PILES, CHANNELS, ICE BREAKER ANGLES, AND PLATES TO BE PAINTED PER SPEC. 2452.3J AND SPECIAL PROVISIONS.
CHANNELS, ANGLES, AND PLATES TO BE STRUCTURAL STEEL PER SPEC. 3306.
EXACT LENGTH OF BRACING TO BE DETERMINED AFTER PILES ARE DRIVEN, CUT TO FIT, WELD TO PILING, GRIND ROUGH EDGES AND BREAK SHARP CORNERS. AREAS OF PILES, BRACING, PLATES AND ICE BREAKER ANGLES BURNED DURING WELDING SHALL BE CLEANED AND SPOT COATED WITH RED LEAD BEFORE FIELD PAINTING IS STARTED.

PLANS PREPARED BY
ROBERT E. ERICKSON ENGINEERING
3340 REPUBLIC AVE.
ST. LOUIS PARK, MINN.

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55535

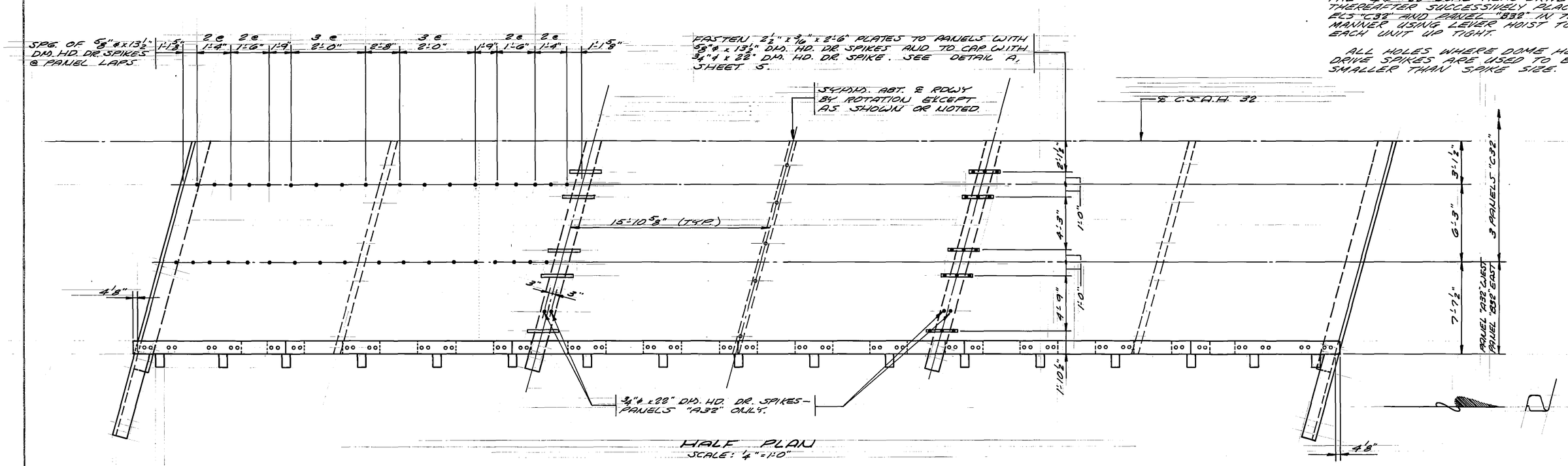
PIER DETAILS

APPROVED: 10-24-78

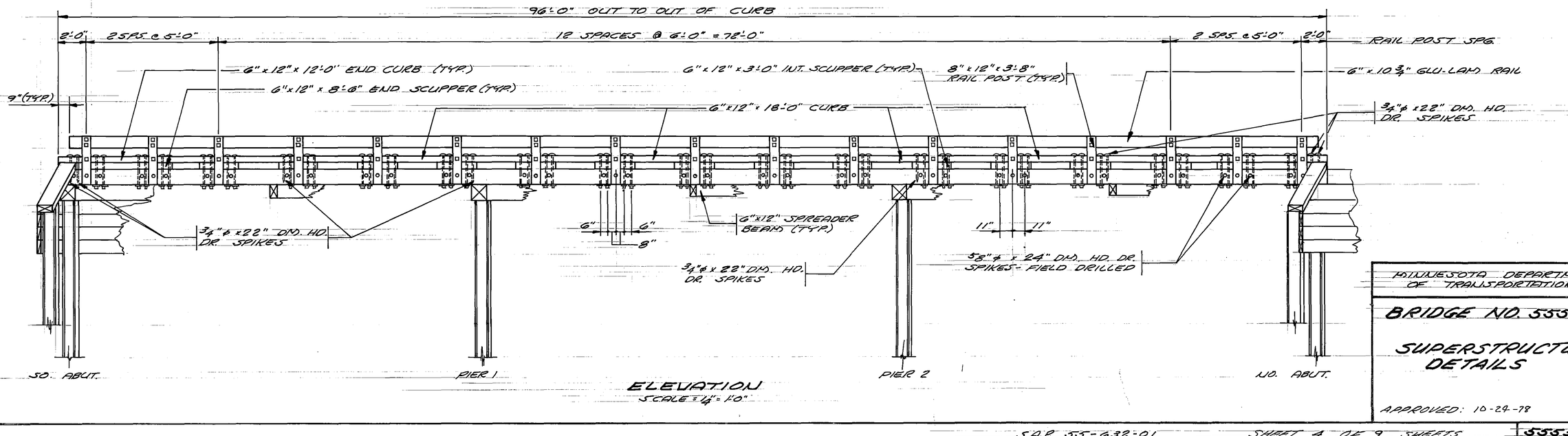
CONSTRUCTION NOTES

PANEL "B32" IS THE FIRST TO BE PLACED IN ITS FINAL POSITION ON THE CAPS AND THEN 1/16"Ø HOLES ARE TO BE DRILLED THRU DECK AND INTO CAP AT LOCATIONS SHOWN. DRIVE THE 3/4"Ø x DOME HEAD DRIVE SPIKES IN THIS SECTION. NEXT PLACE PANEL "C32" SO UPPER SPLICE BLOCKS SET OVER SPLICE BLOCK ON PANEL "B32" AND DRAW TIGHT TOGETHER WITH MIN. 3 TON LEVER HOIST. THEN DRILL HOLES IN LOWER SPLICE BLOCK AND DRIVE DOME HEAD DRIVE SPIKES. DRILL HOLES IN CAPS AND DRIVE THE 3/4"Ø x 22" DOME HEAD DRIVE SPIKES. THEREAFTER SUCCESSIVELY PLACE PANELS "C32" AND PANEL "B32" IN THE SAME MANNER USING LEVER HOIST TO DRAW EACH UNIT UP TIGHT.

ALL HOLES WHERE DOME HEAD DRIVE SPIKES ARE USED TO BE 1/16"Ø SMALLER THAN SPIKE SIZE.



HALF PLAN
SCALE: ¼"=1'-0"



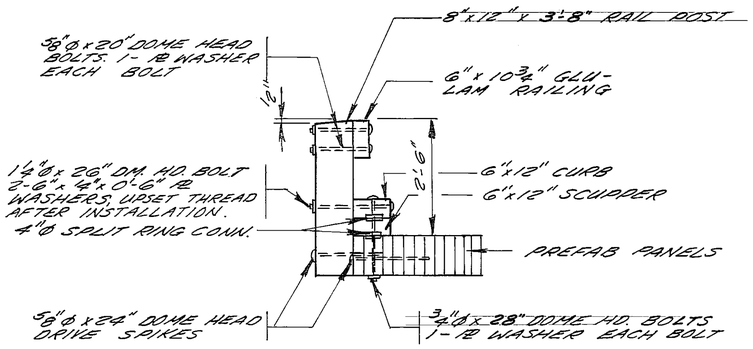
ELEVATION
SCALE: ¼"=1'-0"

MINNESOTA DEPARTMENT OF TRANSPORTATION

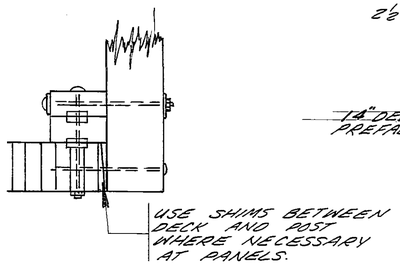
BRIDGE NO. 55535

SUPERSTRUCTURE DETAILS

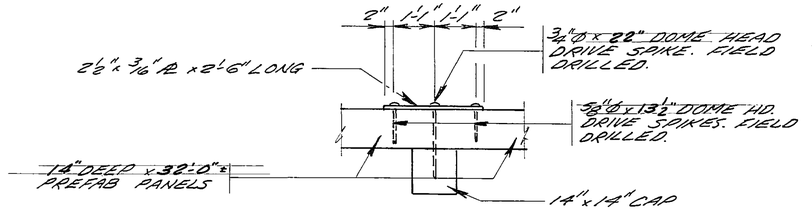
APPROVED: 10-24-78



SEC'N OF RAIL POST & CURB AT PANELS "A32"



SEC'N OF RAIL POST & CURB AT PANELS "B32"

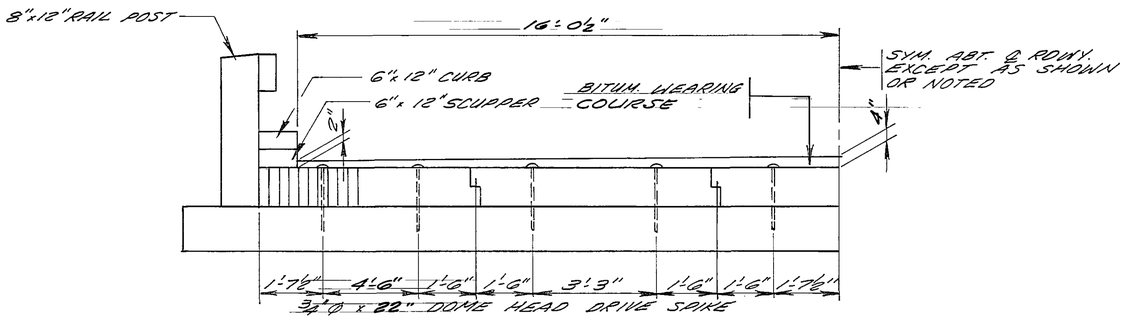


DETAIL A

BILL OF TREATED TIMBER-SUPERSTR.					
ITEM	NO.	FIN. SIZE		LEN.	F.B.M.
SPREADER BEAM	3	R	6x12	36'-0"	648
RAIL POST	34	R	8x12	3'-8"	997
CURB	4	S4S	6x12	12'-0"	288
"	8	S4S	6x12	18'-0"	864
SCUPPER END	4	S4S	6x12	8'-6"	204
" INT.	26	S4S	6x12	3'-0"	468
TOTAL F.B.M. FOR SUPERSTRUCTURE					3969

(1)	GLU-LAM RAIL 6"x 10 3/4"	189 LIN. FT.
(1)	SEE SPECIAL PROVISIONS.	

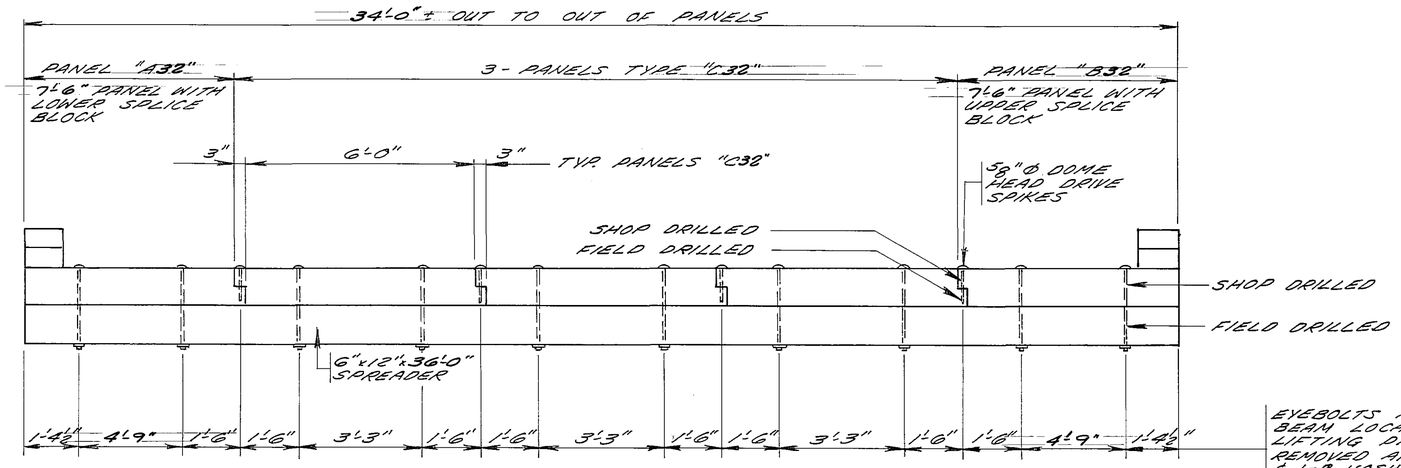
BILL OF HARDWARE - SUPERSTRUCTURE			
UNIT WT.	NO.	ITEM	TOTAL WT.
2.20	68	5/8"Ø x 20" DM. HD. BOLT-RAIL POST	150
18.17	34	1 1/4"Ø x 26" " " " W/R WASHERS	618
2.37	34	5/8"Ø x 24" " " D.R. S.P.K.-POST TO FLR	81
2.37	68	5/8"Ø x 24" " " " " -FLR. TO POST	161
3.06	16	3/4"Ø x 22" " " " " = CURB TO FLR	49
3.06	20	3/4"Ø x 22" " " " " -FLR TO CAP	61
3.06	4	3/4"Ø x 22" " " " " -"A" PANELS	12
3.06	20	3/4"Ø x 22" " " " " -R TO CAP	61
1.49	40	5/8"Ø x 13 1/2" " " " " -R TO PANEL	60
1.49	216	5/8"Ø x 13 1/2" " " " " -PANEL LAP	322
4.42	120	3/4"Ø x 28" " " BOLT-CURB TO FLR	530
4.42	30	3/4"Ø x 28" " " " -SPREADER BM.	133
0.70	272	4"Ø SPLIT RING CONNECTOR	190
0.68	68	3"x3"x4" R WASHER FOR 5/8"Ø BOLT	46
0.85	150	3"x3"x 5/16" R WASHER FOR 3/4"Ø BOLT	128
TOTAL HARDWARE FOR SUPERSTRUCTURE = 2602			
20 - GALV. 2 1/2"x 3/16"x 2'-6" R PER SPEC. 3306			
TOTAL STRUCTURAL STEEL (3306)			81 LBS.



HALF TRANSVERSE SECTION @ ABUTMENT

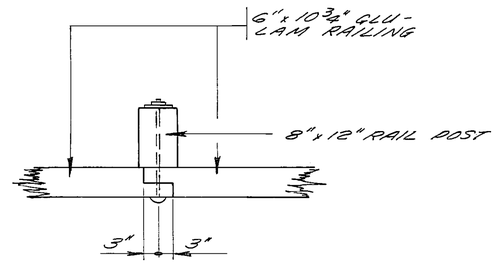
SCALE: 1/2" = 1'-0"

SECTION SHOWN IS PERPENDICULAR TO ℄ RDWY.



SPREADER BEAM DETAIL

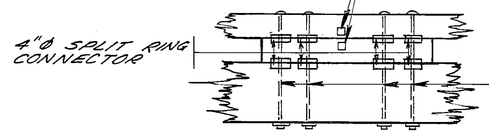
SECTION SHOWN IS PERPENDICULAR TO ℄ RDWY.



RAIL SPLICE DETAIL

EYEBOLTS ARE IN PLACE ON PANELS AT SPREADER BEAM LOCATION WHEN SHIPPED AND ARE USED FOR LIFTING PANELS ON BRIDGE. EYEBOLTS ARE TO BE REMOVED AND REPLACED WITH 3/4"Ø DOME HEAD BOLTS & 1-R WASHER EACH BOLT TO FASTEN SPREADER BEAM. SPREADER BEAM IS FIELD DRILLED.

CURBS TO BE PLACED SO TAGS SHOW FROM ℄ RDWY. MATCH CURBS & SCUPPERS PER SHOP PLACED TAG NUMBERS.



CONTRACTOR TO ASSEMBLE SCUPPER AND CURB IN PLACE, THEN MARK AND DRILL THRU DECK, DISASSEMBLE, GROOVE DECK FOR SPLIT RING, REASSEMBLE AND BOLT DOWN.

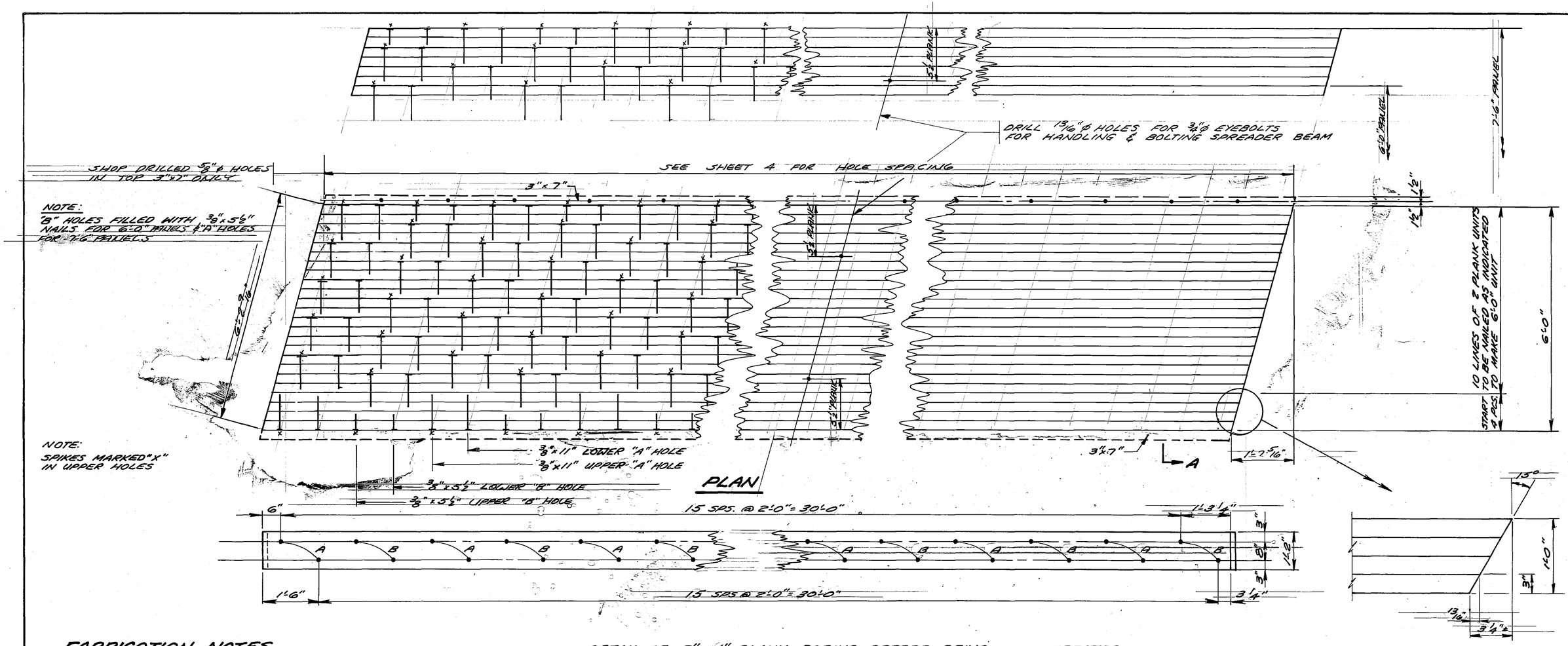
CURB & SCUPPER ASSEMBLY DETAIL

MINNESOTA DEPARTMENT OF TRANSPORTATION

BRIDGE NO. 55535

SUPERSTRUCTURE DETAILS

APPROVED: 10-24-78



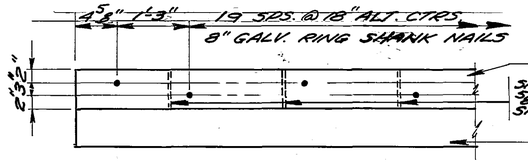
DETAIL OF 3"x14" PLANK BORING BEFORE BEING TREATED

FABRICATION NOTES

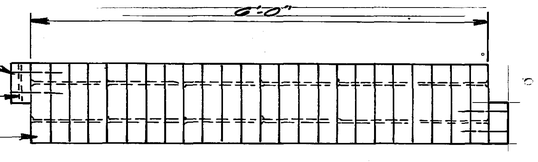
LAMINATE 3"x14" PLANKS USING 3/8"Ø x 5½" & 11" GALV. RING SHANK NAILS. FABRICATE 4 PLANKS FIRST AS SHOWN AND THEN ADD 2 PLANK SECTIONS TO MAKE A 6'-0" WIDE OR 7'-6" WIDE SECTION. THEN ADD THE 3"x7" PLANK AS SHOWN DEPENDING ON THE TYPE. NAIL 8" GALV. RING SHANK NAILS. DRILL 3/8"Ø HOLES IN THE UPPER 3"x7" PLANK AS DETAILED. DRILL 13/16"Ø HOLES FOR PLACING 3/4"Ø EYE-BOLTS FOR HANDLING AND WHEN REMOVED FOR FASTENING THE SPREADER BEAMS. PLANK TO BE PREBORED AS PER DETAIL BEFORE BEING TREATED. SET RING SHANK NAILS IN POSITION IN PREBORED HOLES OF 2 PLANK UNITS. AIR HAMMER TO BE USED TO DRIVE THE NAILS SO PLANKS ARE DRIVEN TIGHT TOGETHER TO MAKE DIMENSIONS OF 6'-0" WIDE & 7'-6" WIDE UNITS.

ALL PLANK ARE SURFACED ONE SIDE SO THAT THE UNITS WILL BE 6'-0" OR 7'-6" WIDE AFTER FABRICATING THE PANELS.

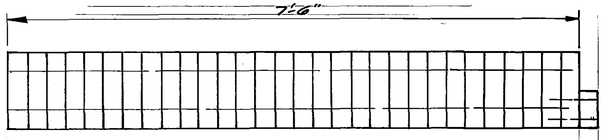
PLANKS TO BE CREO. OR PENTA TREATED AS PER SPEC. 3491.



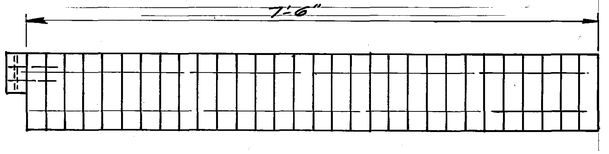
NAILING OF 3"x7" TIMBER TO PANEL



SECTION A-A PANEL "C32"



PANEL "A32"



PANEL "B32"

TREATED TIMBER FOR PANELS				
NO. REQ'D.		ITEM	MB.M. FOR	
"A" & "B"	"C"		"A" & "B"	"C"
30	24	3"x14" SIS - 32' LG.	3.36	2.69
1	2	3"x7" SIS - 32' LG.	.06	.11
		TOTAL M.B.M.	3.42	2.80

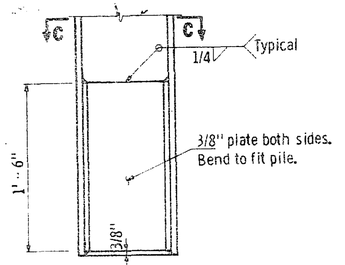
GALVANIZED HARDWARE FOR PANELS				
NO. REQ'D		ITEM	WEIGHT FOR	
"A" & "B"	"C"		"A" & "B"	"C"
224	176	3/8"Ø x 11" RING SH. NAILS	90	70
32	32	3/8"Ø x 5½" " " "	7	7
22	44	5/16"Ø x 8" WIRE SPIKES	4	9
		TOTAL	101	86

MINNESOTA DEPARTMENT OF TRANSPORTATION

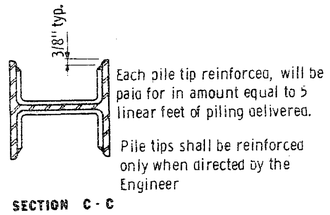
BRIDGE NO. 33535

32 FT. PREFABRICATED TIMBER PANEL DETAILS 15° SKEW

APPROVED: 10-24-78



ELEVATION

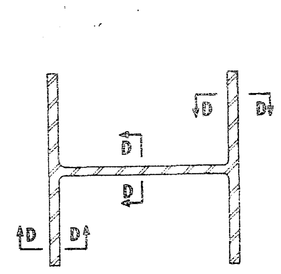


Each pile tip reinforced, will be paid for in amount equal to 5 linear feet of piling delivered.

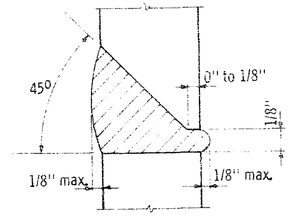
Pile tips shall be reinforced only when directed by the Engineer

SECTION C - C

DETAIL OF PILE TIP REINFORCEMENT



SECTION AT JOINT



SECTION D - D

100% BUTT WELDED PILE SPLICE

NOTES:

A. W. S Type E70lo or E7018 (low-hyorogen) electrodes shall be used for 100% butt welded splices.

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

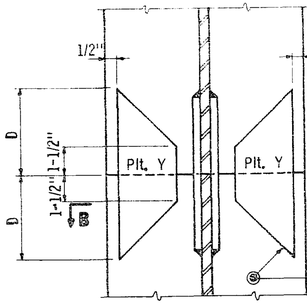
Low-hydrogen electrodes shall be supplied in hermetically (air-tight) sealed containers

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

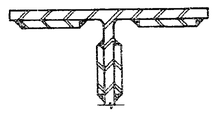
Low-hydrogen electrodes shall be placed in a holding oven for at least 8 hours, after having been exposed to the atmosphere for more than 2 hours

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

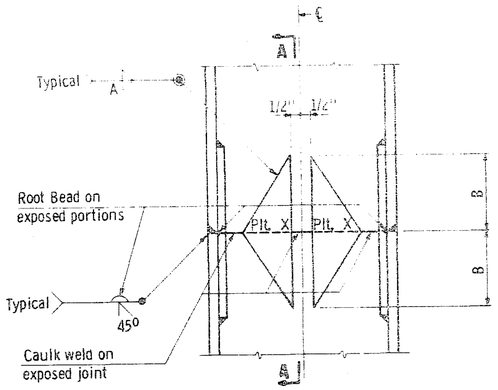
Welding shall not be done when the ambient temperature is lower than 5° F. or when the pile is wet or exposed to falling rain or snow. When the pile metal temperature is below 32° F., the pile metal in the area of the weld shall be heated to a minimum temperature of 70° F and maintained at this temperature during welding



SECTION A - A



SECTION B - B



ELEVATION

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 Differt
Engineering Standards Engineer
RESEARCH AND STANDARDS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION

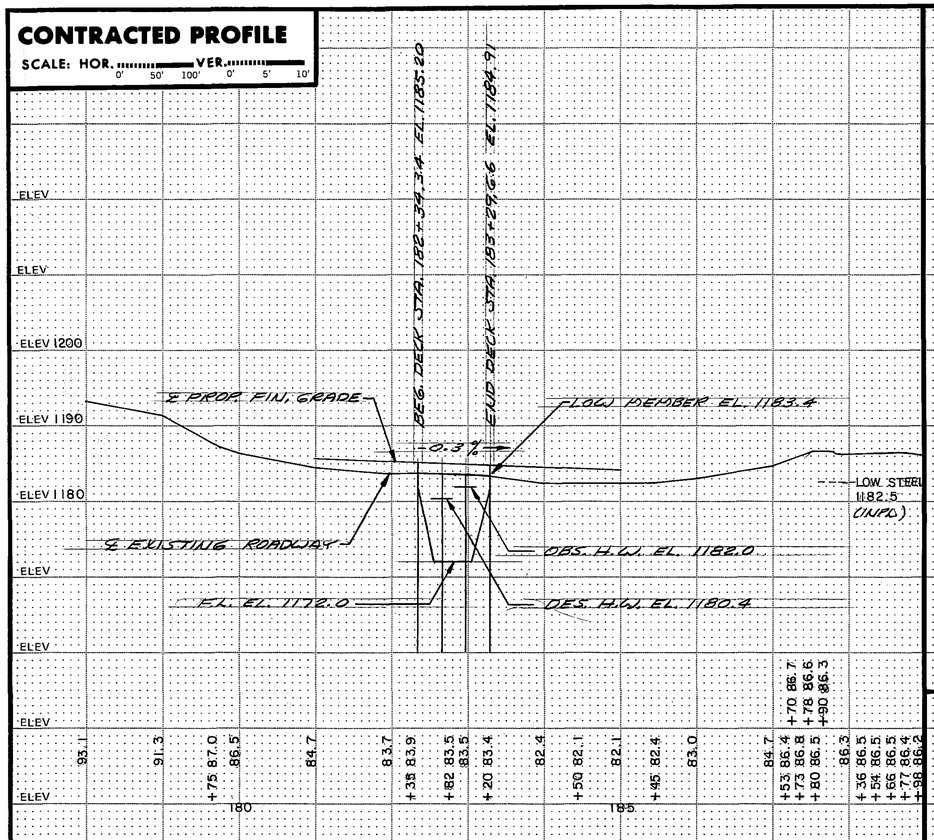
PILE SPLICE and TIP REINFORCEMENT
STEEL H BEARING PILES 10" TO 14"

DETAIL NO.
B202

10-29-79

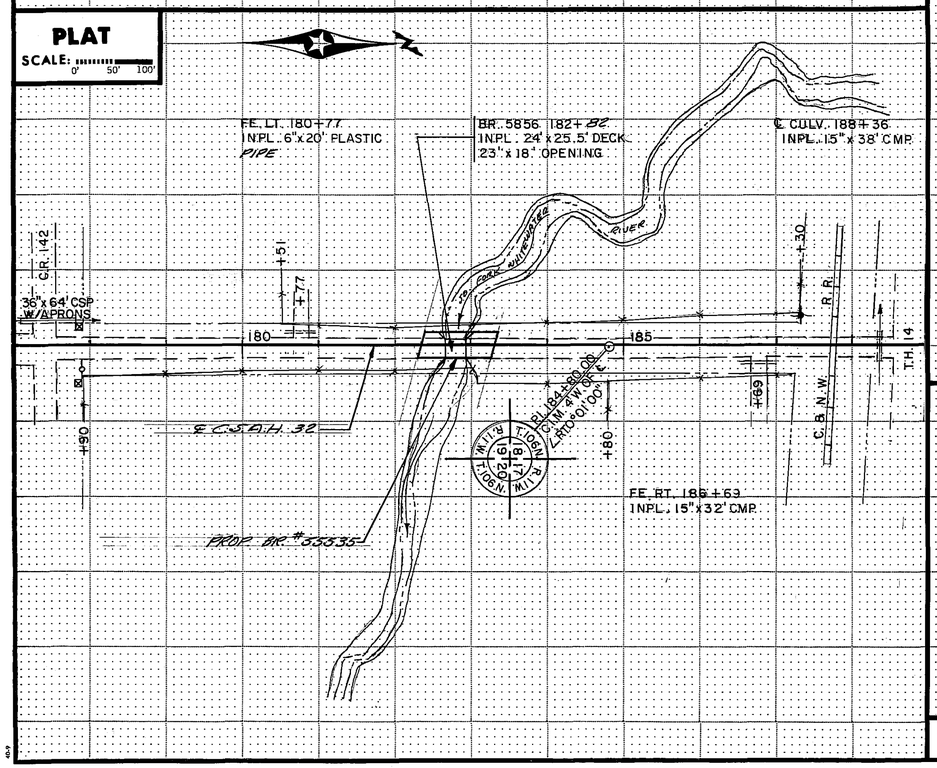
CONTRACTED PROFILE

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



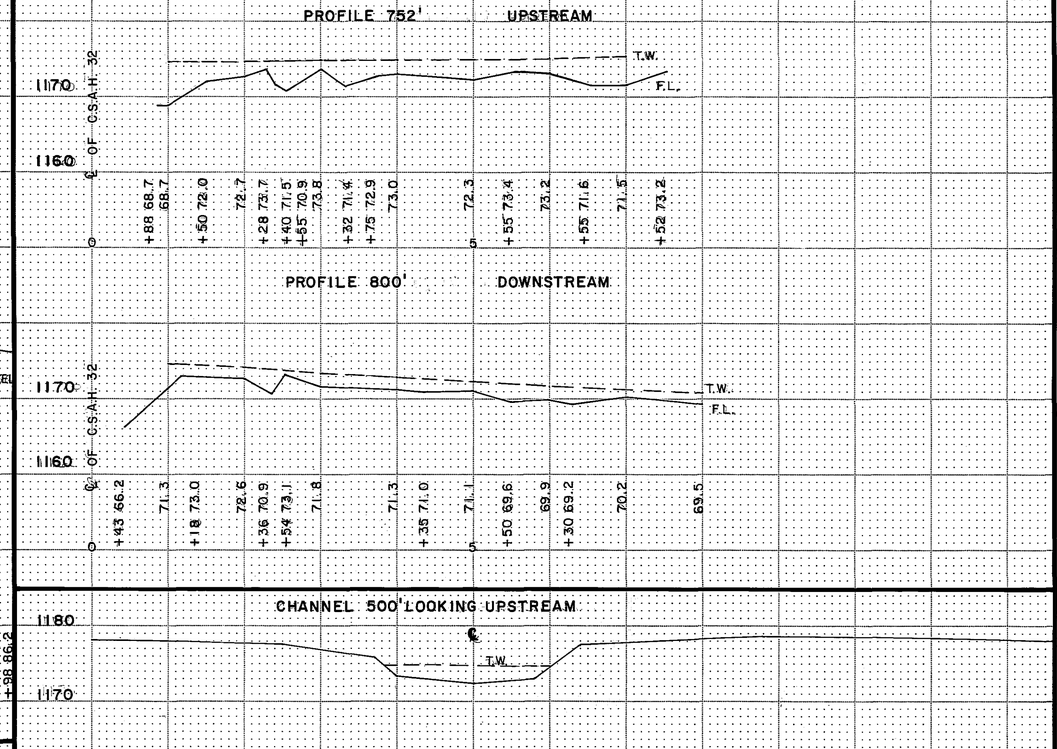
PLAT

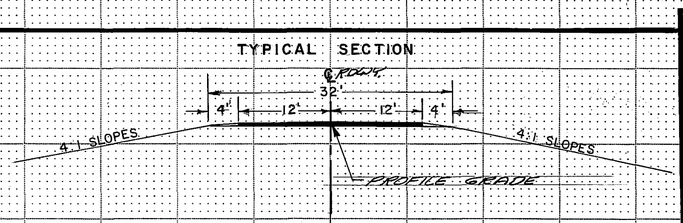
SCALE: 0' 50' 100'

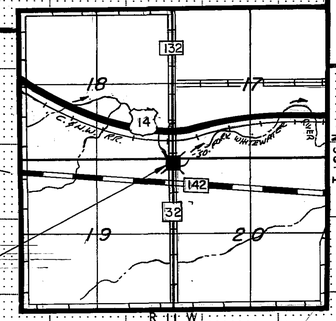


TYPICAL SECTIONS & PERTINENT DATA

SCALES AS SHOWN







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 8-29-78

Stream or ditch designation SO. FORK WHITEWATER RIVER

Drainage area 7.8 SQ. MILES

Max. flood on record UNK. Design flood (50 yr. freq.) 2130 C.F.S.

Max. observed highwater elevation 1182.0 Design highwater elevation 1182.4

Design mean velocity through structure 3.9 F.P.S.

Low superstructure at or above elevation 1183.4

Flowline elevation 1172.0 Skew angle 75°

Waterway area req'd. below elevation 1180.4 = 547 Sq. Ft. at Rt. angles to channel

In the interest of flood plain zoning the regional flood (100 yr. freq.) is 2550 C.F.S. at stage 1181.9 and mean velocity of 4.5 F.P.S. with 1.0 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 8-30-78

32'-38'-32' TREATED TIMBER SPANS

32' ROADWAY

75° SKEW

Bridge survey sheets made from:

Bench mark elevation 1183.77 (M.S.L. 1929 Adj.)

Location E SE HEADWALL OF WW. BRIDGE STD. 182+68

MINNESOTA
DEPARTMENT OF TRANSPORTATION

BRIDGE SURVEY

AT MILE POINT ..... ON C.S.A.H. 32 (T.H., C.S.A.H., C.R. etc.)

PROPOSED BRIDGE LOCATED 2.0 MILES WEST OF DOVER, MN.

SEC. 19-20 TWP. 106 N R. 11 W

TOWNSHIP DOVER COUNTY OLMSTED

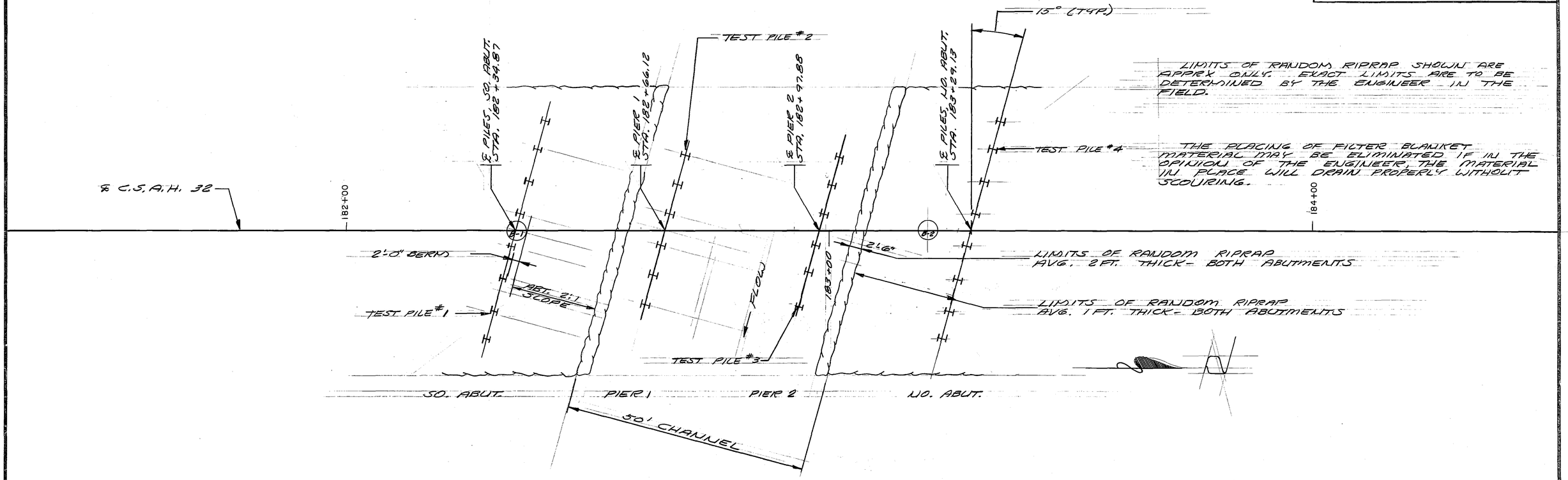
BRIDGE NO. 555535

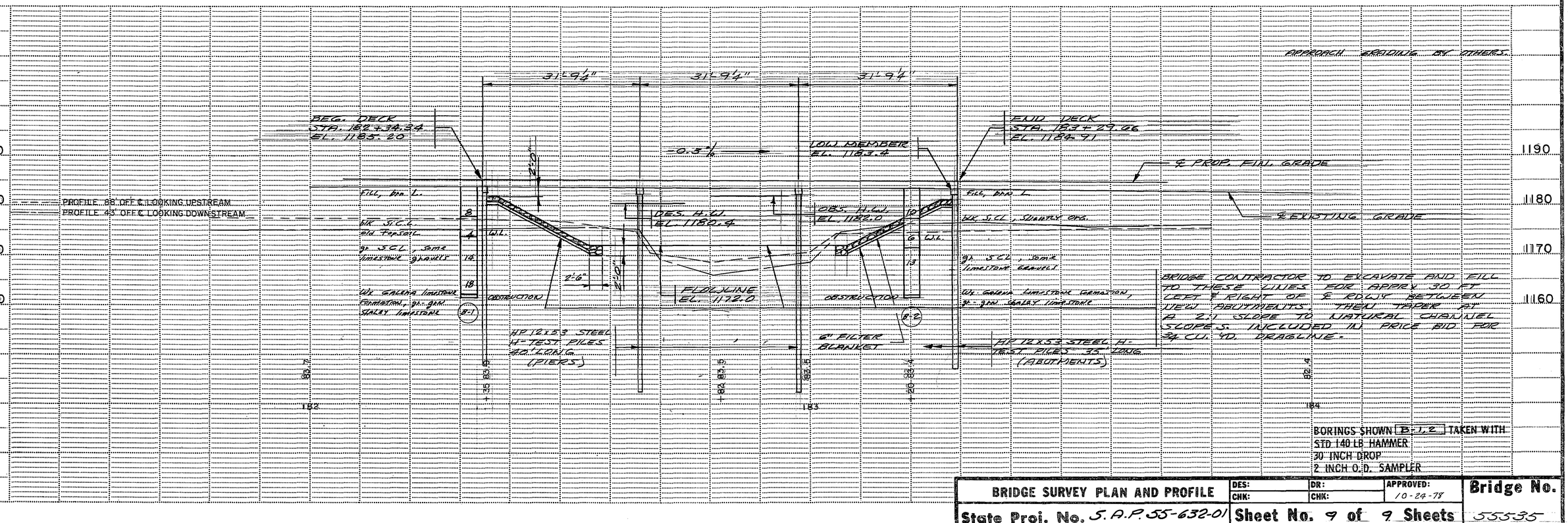
10-27-78

Area No. Job No. State Proj. No. S.A.P. 55-632-01 Sheet No. 8 of 9 Sheets

TELEDYNE POST BRIDGE SURVEY 116-2 9/76

Fed. Proj. No.





BRIDGE SURVEY PLAN AND PROFILE	DES:	DR:	APPROVED: 10-24-78	Bridge No.
	CHK:	CHK:		
State Proj. No. S.A.P. 55-632-01	Sheet No. 9 of 9 Sheets			555355

Bridge Survey Plan
Bridge Sheet 118-1 (7-75)

N23670