

STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

CONSTRUCTION PLAN FOR BRIDGE NO. 02527

County State Aid Highway No. 14

Between CENTERVILLE And T 35 W
A POINT 1843 FT. SO. OF NORTH A POINT 1875 FT. SO. OF NORTH
From 4 COR. SEC. 15, T31N, R22W To 4 COR. SEC. 15, T31N, R22W

Give proper reference to Sections, Township and Range

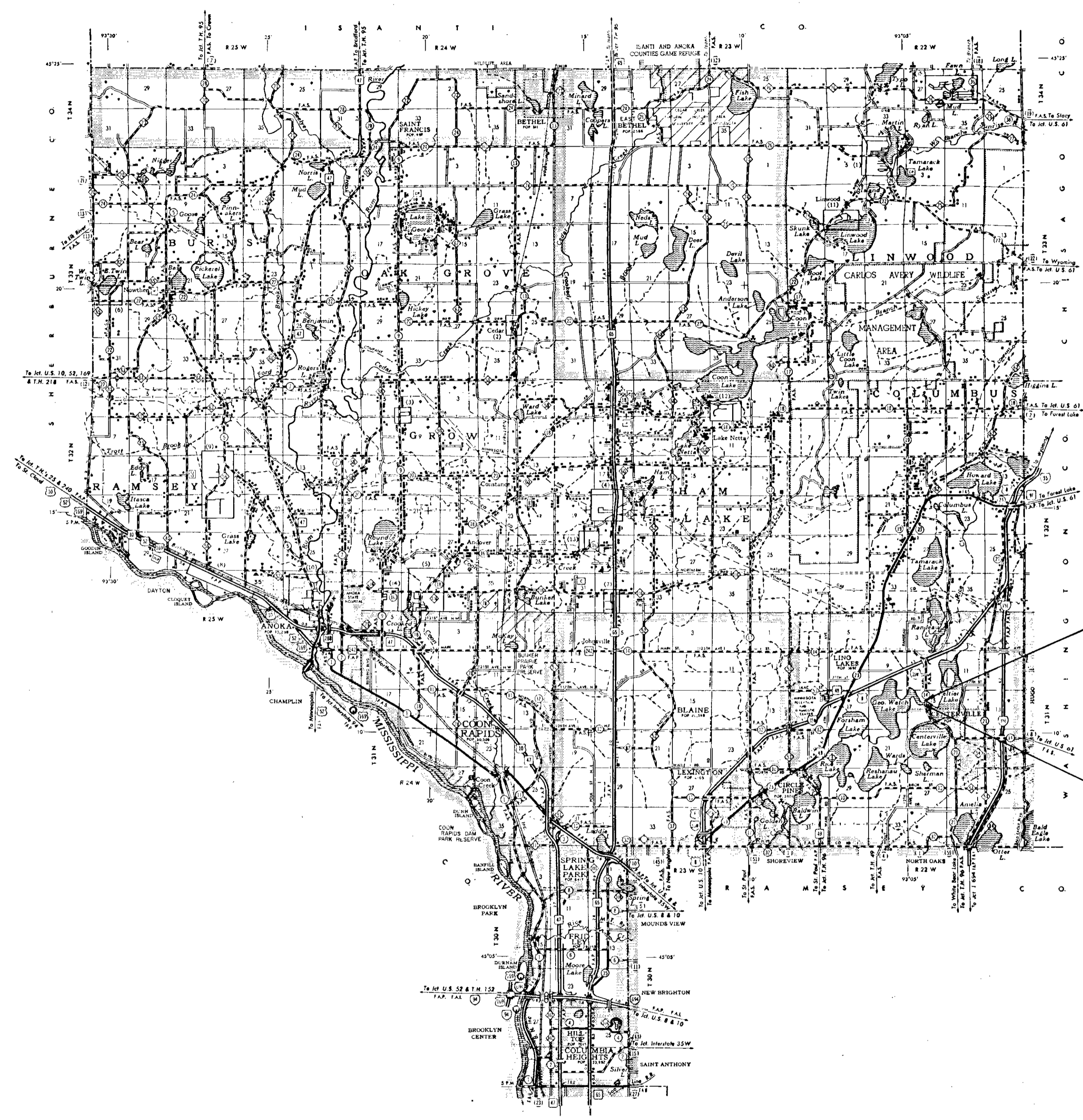
GROSS LENGTH _____ FEET _____ MILES
BRIDGES-LENGTH 32 FEET .006 MILES
EXCEPTIONS-LENGTH _____ FEET _____ MILES
NET LENGTH 32 FEET .006 MILES

INDEX OF SHEETS

Sheet No. _____ Title Sheet & Layout Map
Nos 1-7 Bridge Plans

CONVENTIONAL SIGNS

- 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 (EVEN SAME LINE) _____
- VACATED PLAT PROPERTY _____
- CORPORATE OR CITY LIMITS _____
- TRUNK HIGHWAY CENTER LINE _____
- RETAINING WALL _____
- RAILROAD _____
- RAILROAD RIGHT OF WAY LINE _____
- RIVER OR CREEK _____
- DRY RUN _____
- ORANGE BUSH _____
- ELECTRIC POWER LINE _____
- TELEPHONE OR TELEGRAPH LINE _____
- JOINT TELEPHONE AND POWER _____
- CONDUIT _____
- TELEPHONE CABLE AERIAL _____
- TELEPHONE CABLE UNDERGROUND _____
- POWER CABLE UNDERGROUND _____
- SAW TANK _____
- CULVERT _____
- DROP INLET _____
- GUARD RAIL _____
- BARBED WIRE FENCE _____
- WOVEN WIRE FENCE _____
- CHAIN LINK FENCE _____
- RAILROAD SNOW FENCE _____
- STONE WALL OR FENCE _____
- RESIDE _____
- WATER PIPE _____
- SEWER PIPE _____
- DRAIN TILE _____
- SPRINGS _____
- MARSH _____
- TIMBER _____
- ORCHARD _____
- BRUSH _____
- NURSERY _____
- CATCH BASIN _____
- MANHOLE _____
- FIRE HYDRANT _____
- STREET LIGHT _____
- RAILROAD CROSSING SIGN _____
- RAILROAD CROSSING BELL _____
- ELECTRIC WARNING SIGN _____
- CROSSING GATE _____
- CATTLE GUARD _____
- OVERPASS (Highway Over) _____
- UNDERPASS (Highway Under) _____
- BRIDGE _____
- BUILDING (One Story Frame) _____
- F FRAME _____
- S STONE _____
- B BRICK _____
- ST STUCCO _____
- IRON PIPE OR RIB _____
- MONUMENT (STONE, CONCRETE, OR METAL) _____
- WOODEN HUB _____
- GRAVEL PIT _____
- SAND PIT _____
- BARROW PIT _____
- ROCK QUARRY _____
- MEANDER CORNER _____



BEGIN BRIDGE STA. 138+05.00

BRIDGE NO. 02527

END BRIDGE STA. 138+37.00

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

PLANS & R/W APPROVED Paul K. Ruud COUNTY ENGINEER DATE APRIL 15, 1975

COUNTY REG. NO. 6549
RECOMMENDED FOR APPROVAL M. M. Crawford 4/23 1975 DISTRICT ENGINEER

RECOMMENDED FOR APPROVAL Keith V. Estival 4-23 1975 F&P BRIDGE DESIGN & PLANNING ENGINEER

APPROVED 4-23 1975 Barbara M. Fay STATE AID ENGINEER

Minn. Proj. No. _____ County Proj. No. _____
State Proj. No. _____ S.A.P. 02-614-06

ANOKE County, Minnesota. Plan No. _____

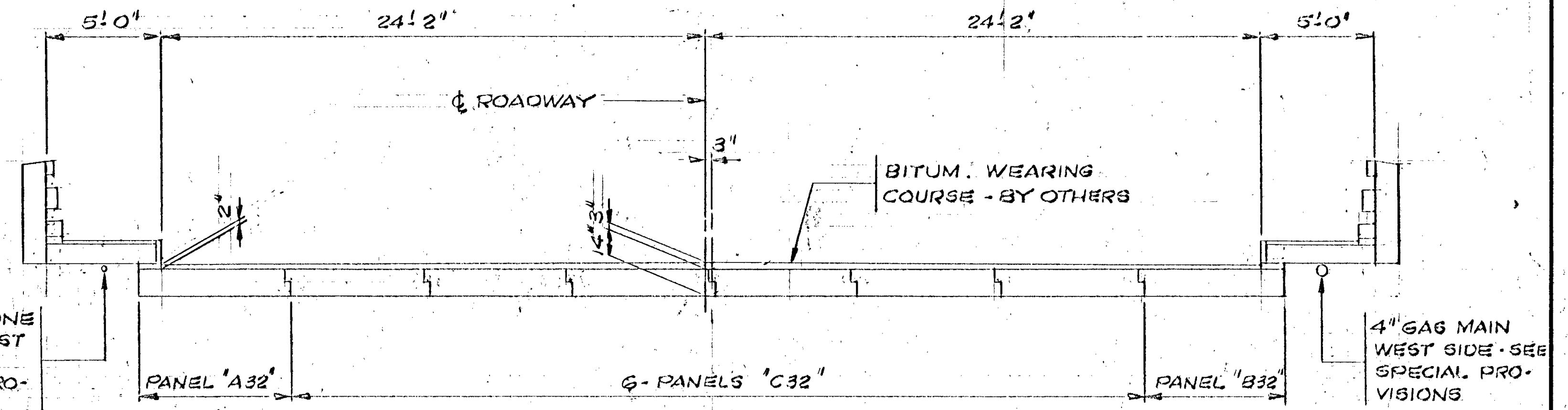
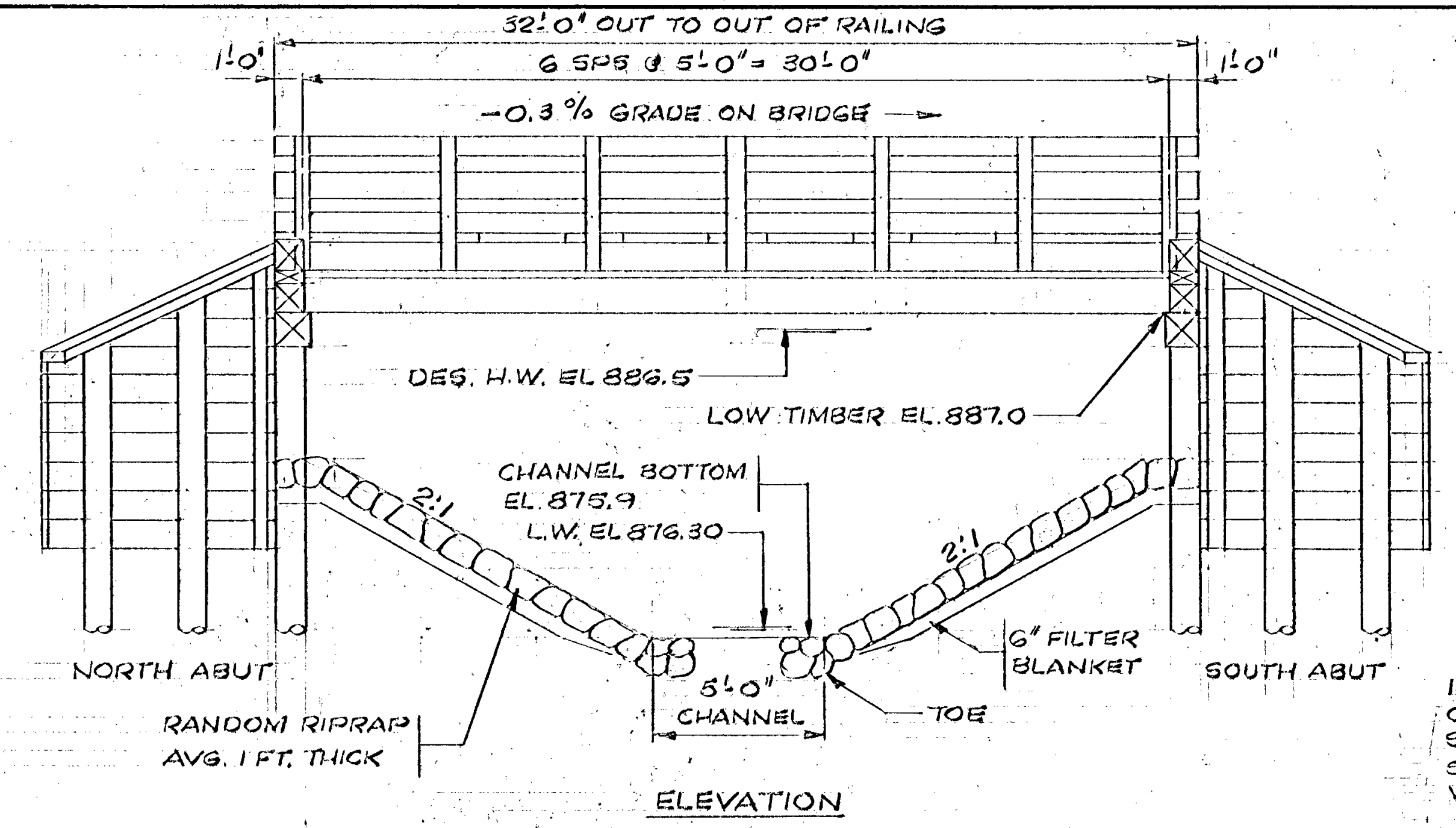
DESIGN DESIGNATION

ADT (CURRENT YEAR) _____
ADT (FUTURE YEAR) _____
T (HEAVY COMMERCIAL) _____
_____ Ton Design
Design Speed _____ MPH
Design Speed not achieved at:
STA. _____ TO STA. _____ MPH _____
STA. _____ TO STA. _____ MPH _____

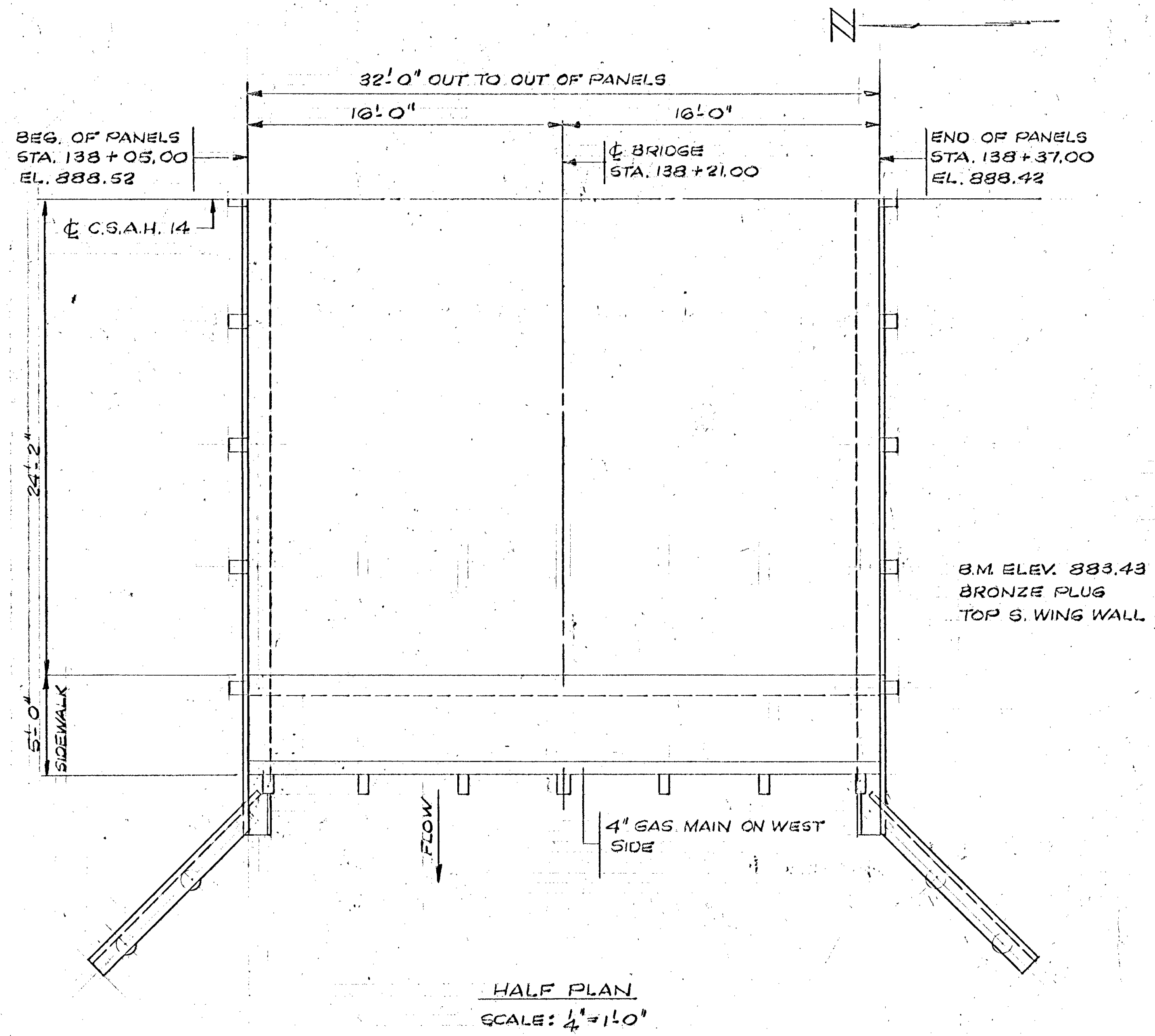
SPECIFICATIONS

THE "STANDARD" SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, DATED JAN. 1, 1972, AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS" DATED JAN. 1, 1974 SHALL GOVERN.

DESIGN DATA
 1973 A.A.S.H.T.O. DESIGN SPECIFICATIONS
 HS 20 LOADING NO IMPACT - 4 LANES
 DECK AREA 1867 SQ. FT.



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



CONSTRUCTION NOTES
 THE MINNESOTA HIGHWAY DEPARTMENT "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" DATED JAN. 1, 1972 AS AMENDED BY "SUPPLEMENTAL SPECIFICATIONS" DATED JAN. 1, 1974 SHALL GOVERN.
 CONSTRUCTION REQUIREMENTS SHALL CONFORM TO M.H.D. 2403.3.
 ALL TIMBER PILING TO MEET REQUIREMENTS OF M.H.D. 3471.
 ALL TIMBER AND PILING TO BE CREOSOTE PRESSURE TREATED PER M.H.D. 3491 EXCEPT AS FOLLOWS:
 RAILPOSTS, RAIL, & SIDEWALK CURBS & SCUPPERS.
 TREATED WITH PENTACHLOROPHENOL SOLUTION IN ACCORDANCE WITH MHD 3491.
 ALL HARDWARE TO BE GALVANIZED PER M.H.D. 3392.
 ALL TIMBER IS ROUGH UNLESS OTHERWISE NOTED.
 TIMBER POSTS SHALL BE 1900 # FB, CAPS SHALL BE 1000 # FC.
 RAIL SHALL BE 1600 # FB, ALL PLANK SHALL BE 1500 # FB. ALL OTHER TIMBER SHALL BE 1200 # FB.

LIST OF SHEETS	
NO.	TITLE
1	GENERAL PLAN & ELEVATION
2	ABUTMENT DETAILS
3	SUPERSTRUCTURE DETAILS
4	SUPERSTRUCTURE DETAILS
5	32 FT. PANEL DETAILS
6	32 FT. SIDEWALK PANEL DETAILS
7	BRIDGE SURVEY

APPROVED *Paul Erickson*
 COUNTY ENGINEER
 DATE: 1/3/75 ANOKA COUNTY

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: 1/3/75 REG. NO. 2297

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

C.S.A.H. 14 ANOKA COUNTY
 STATE OF MINNESOTA
 DEPARTMENT OF HIGHWAYS

BRIDGE NO. 02527
 2 MILES N.W. OF CENTERVILLE BETWEEN
 GEORGE WATCH LAKE & PELTIER LAKE
 SPAN - 48'-4" ROADWAY 2'-5" FT.
 SIDEWALKS. SPAN IDENT. NO. 709
 GENERAL PLAN & ELEVATION
 SEC. 15 TWP. 31N R22W
 LINO LAKE TWP. ANOKA COUNTY
 APPROVED 4-15-75 *P. D. Swanson*
 BRIDGE DESIGN & PLANNING ENGINEER

SCHEDULE OF QUANTITIES FOR ENTIRE BRIDGE			
ITEM NO.	ITEM	QUANTITY	UNIT
2403.502	TREATED TIMBER	9.84	M.B.M.
2403.506	HARDWARE	2720 (P)	POUND
2511.504	FILTER BLANKET, TYPE 1	50	CU. YD.
403.604	PREFAB TIMBER PANELS, TYPE "A32"	1	PANEL
403.604	PREFAB TIMBER PANELS, TYPE "B32"	1	PANEL
403.604	PREFAB TIMBER PANELS, TYPE "C32"	6	PANEL
2452.503	TREATED TIMBER PILING DELIVERED	1460	LIN. FT.
2452.504	TREATED TIMBER PILING DRIVEN	1392	LIN. FT.
2452.517	TREATED TIMBER TEST PILES, 60 FT. LONG.	2	EACH
2511.501	RANDOM RIPRAP, CLASS A	115	CU. YD.
2442.501	REMOVE OLD BRIDGE	1	LUMP SUM
403.604	PREFAB TIMBER PANELS, TYPE "D32"	2	PANEL

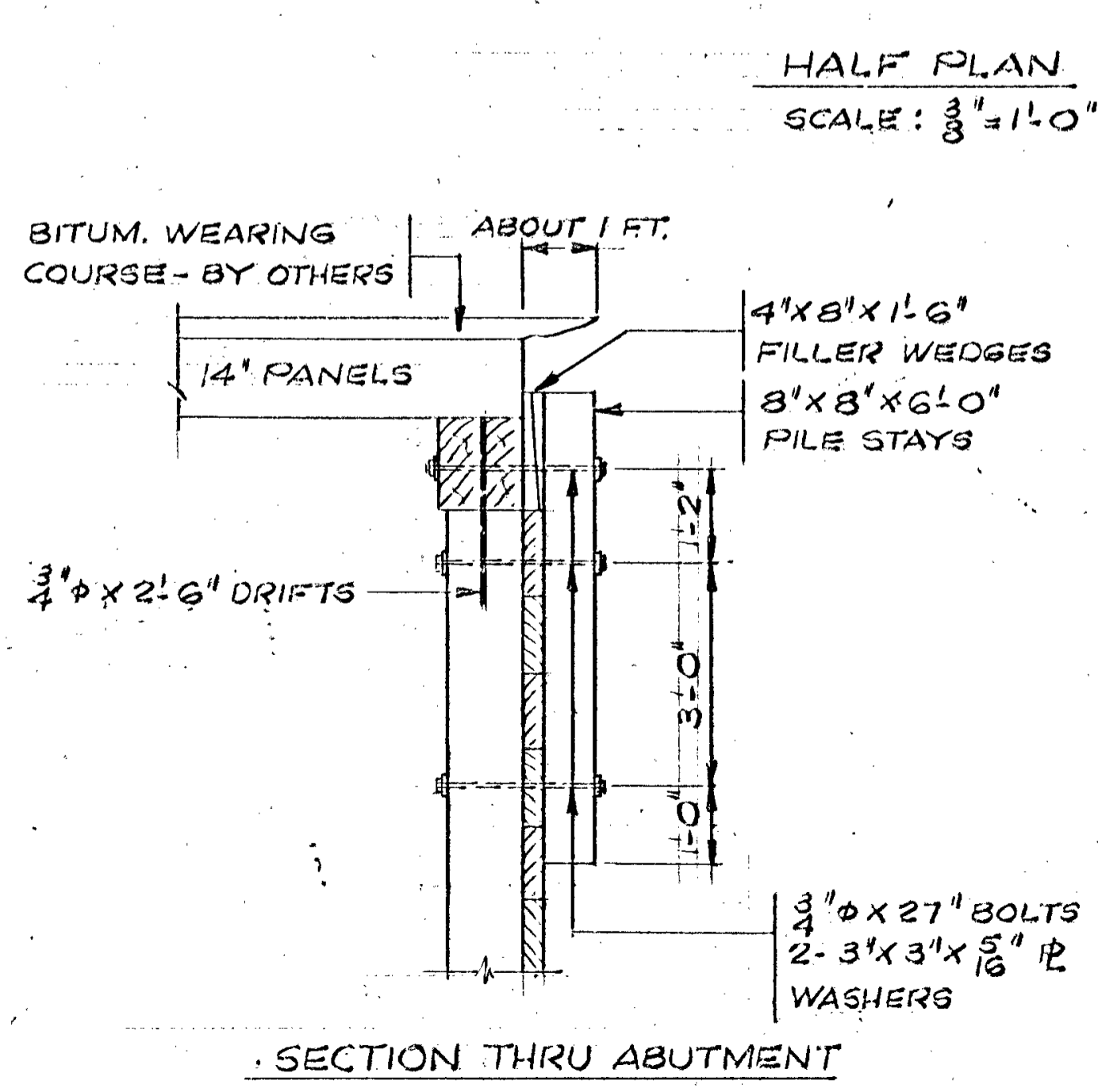
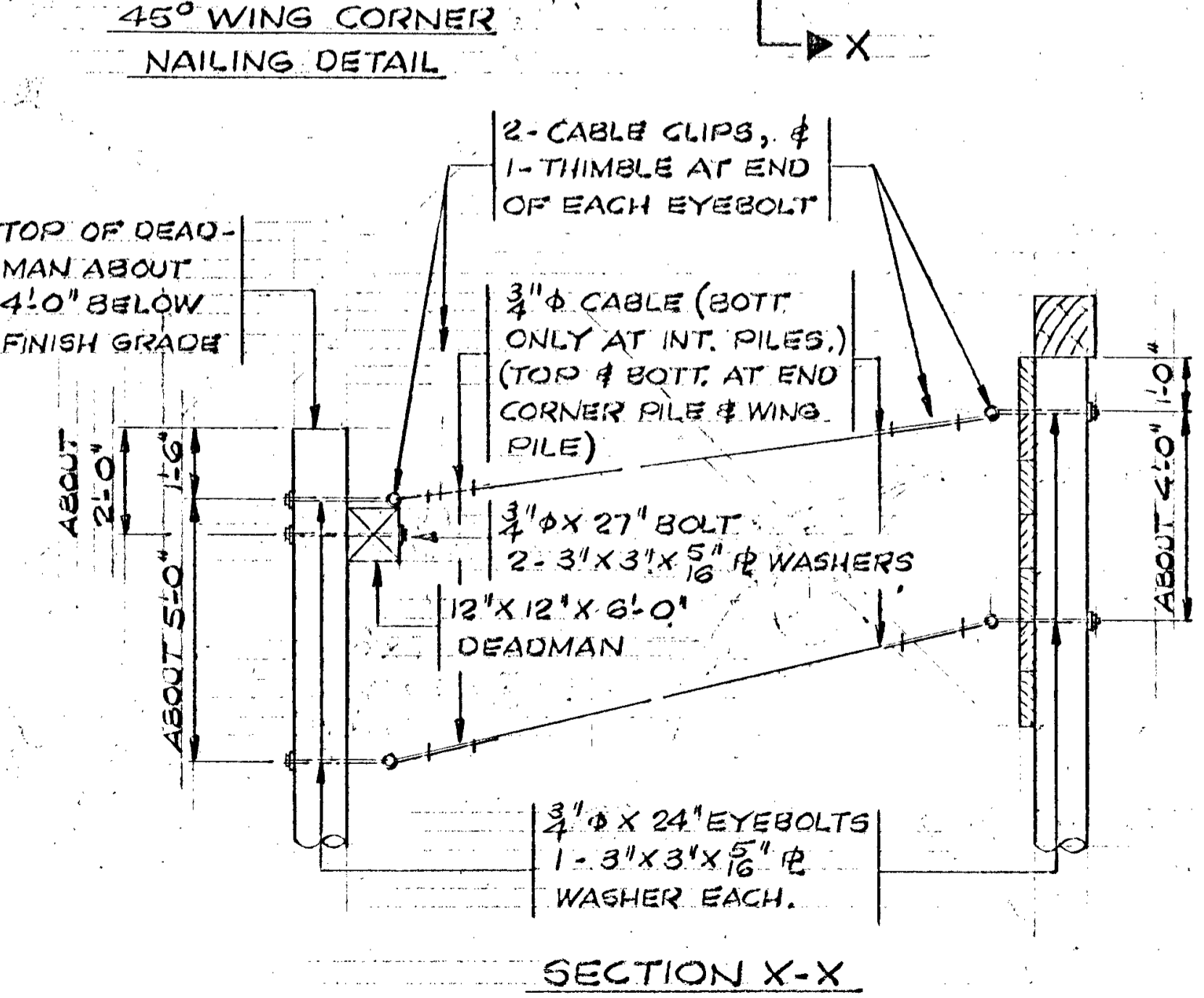
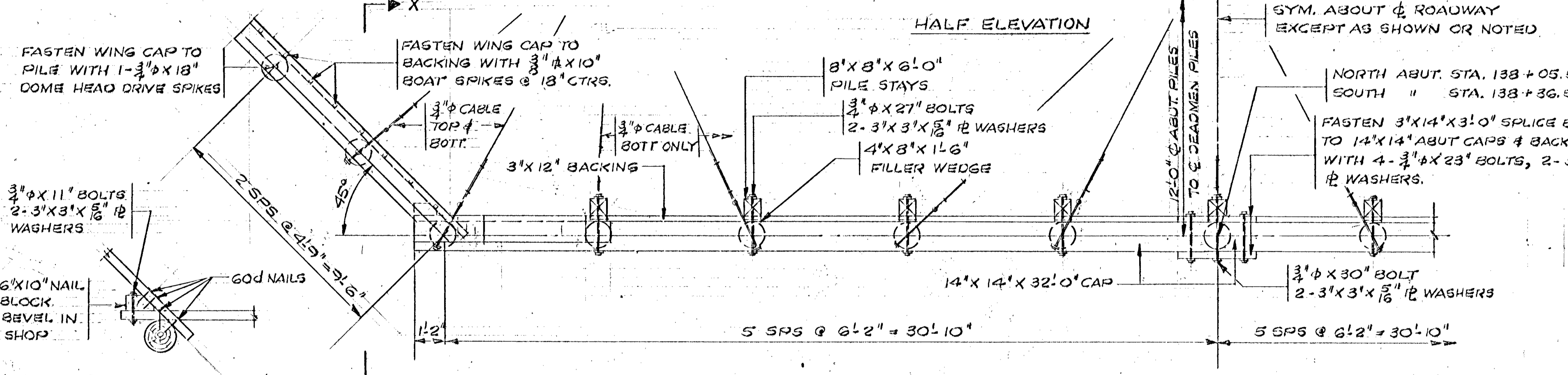
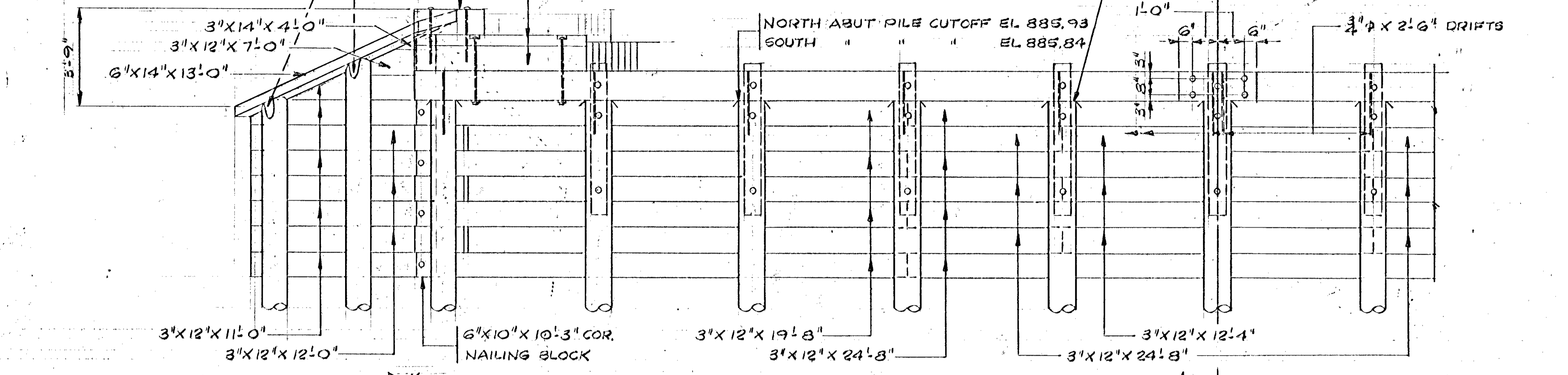
(P) DENOTES PLAN QUANTITY PAY ITEM PER M.H.D. 1901
 ① STA. 138+52

PORTION OF PILE HEADS WHICH PROJECTS OUTSIDE OF WING CAP IS TO BE CUT OR ADZED TO A 45° SLOPE. TREAT TOPS OF BEARING PILES PER M.H.D. 2403.3F.

12"X12"X2'-10" ABUT. BLOCK. FASTEN TO 5"X12" & 12"X12" BLOCKS WITH 2-3/4" X 18" DOME HEAD DRIVE SPIKES

TREAT TOPS OF BEARING PILES WITH 3 COATS OF CREOSOTE PRESERVATIVE OIL CONFORMING TO M.H.D. 3174, THEN PLACE 20"X20" SHEET ZINC 12 GA. SOFT TYPE 1 ON TOP OF BEARING PILES AT BOTH ABUTMENTS PER M.H.D. 2403.3F.

FASTEN 5"X12"X6'-10 1/2" & 12"X12"X6'-10 1/2" S.W. BLOCKS TO 14"X14" CAP WITH 3/4" X 32" (CSK) DOME HEAD BOLTS & 1-3"X3" X 5/16" WASHER EACH BOLT.



- ABUTMENT PILE NOTES.**
- 2 - TREATED TIMBER TEST PILES 60 FT. LG.
 - 6 - TREATED TIMBER DEADMEN PILES 30 FT. LG.
 - 3 - " " WING PILES 35 " "
 - 20 - " " PILES EST. LENGTH 50 FT.
 - 36 - " " REQ'D FOR TWO ABUTMENTS

ESTIMATED PENETRATION 2 FT. LESS THAN LENGTH GIVEN. ALL PILES TO BE DRIVEN TO A BEARING OF NOT LESS THAN 24 TONS PER PILE, EXCEPT WING PILES.

BILL OF TREATED TIMBER FOR TWO ABUTMENTS.					
ITEM	NO	FIN	SIZE	LENGTH	F.B.M.
PILE CAPS	4	R	14X14	32'-0"	2091
ABUTMENT BACKING	6	R	3X12	12'-4"	222
"	16	R	3X12	19'-3"	944
"	20	R	3X12	24'-8"	1480
SPLICE BLOCK	4	R	3X14	3'-0"	42
PILE STAYS	18	R	8X8	6'-0"	576
CORNER NAILING BLOCK	4	R	6X10	10'-3"	205
WING BACKING	4	R	3X14	4'-0"	56
"	4	R	3X12	7'-0"	84
"	20	R	3X12	11'-0"	660
"	12	R	3X12	12'-0"	432
DEADMEN	6	R	12X12	6'-0"	432
WING CAP	4	S4B	6X14	13'-0"	364
ABUTMENT BLOCK	4	R	12X12	2'-10"	136
SIDEWALK BLOCK	4	R	6X12	6'-10 1/2"	165
"	4	R	12X12	6'-10 1/2"	330
FILLER WEDGES	16	SEE DET.	4X8	1'-6"	64
TOTAL F.B.M. FOR TWO ABUTMENTS					8223

BILL OF HARDWARE FOR TWO ABUTMENTS			
UNIT	NO	ITEM	TOTAL WT.
3.78	24	3/4" X 2'-6" DRIFTS - CAP TO PILE	91
3.72	58	3/4" X 27" BOLTS - PILE STAYS & DEADMEN	216
4.10	2	3/4" X 30" " " "	8
1.67	16	3/4" X 11" " - COR. NAILING BLK.	27
2.55	8	3/4" X 18" DM. HD. DR. SPKS - WING CAP	21
0.41	32	3/4" X 10" BOAT SPIKES - " "	13
.85	248	3" X 3" X 5/16" WASHERS FOR 3/4" BOLTS	211
10/16		60D NAILS	60
3.21	8	3/4" X 23" BOLTS - SPLICE BLOCKS	26
3.71	68	3/4" X 24" EYEBOLTS - TIEBACK	252
1.00	460	LIN. FT. 3/4" CABLE	460
1.78	136	CLIPS FOR CABLE	238
.50	68	THIMBLES FOR EYEBOLTS	34
4.93	8	3/4" X 32" DM. HD. BOLTS - S.W. BLOCKS	39
2.55	8	3/4" X 18" DM. HD. DR. SPIKES - ABUT. BLKS	20
TOTAL HARDWARE FOR TWO ABUTMENTS			1716

- ② 22 PCS. SHEET ZINC 20"X20" 12 GA. SOFT TYPE 1 PER M.H.D. 3333
- ① WEDGES CUT 2 FROM 1 IN SHOP.
- ② INCLUDED IN PRICE BID FOR OTHER ITEMS
- ③ 616 TO 5" H & M.

NAILING NOTE:
FASTEN BACKING TO PILES WITH 2-60D NAILS AT EACH INTERSECTION

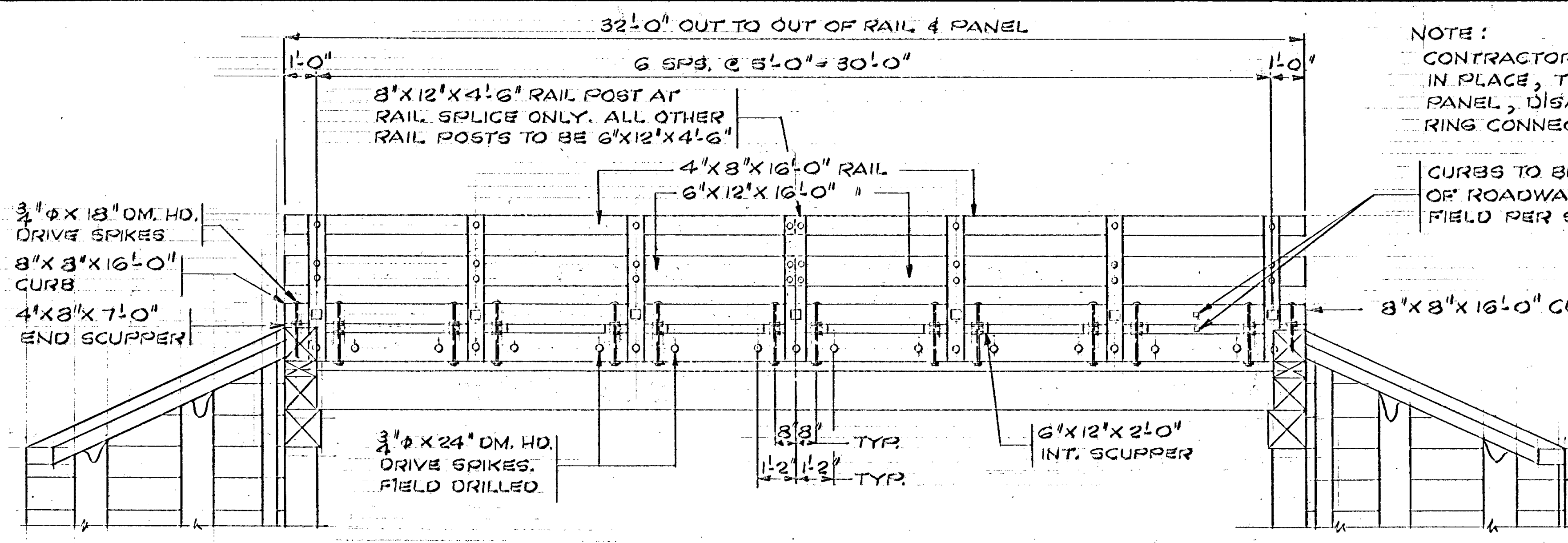
NOTE:
FILL IN BACK OF ABUTMENTS IS NOT TO BE PLACED UNTIL AFTER SUPERSTRUCTURE HAS BEEN COMPLETED.

BOLT NOTE:
BOLT PROJECTIONS EXCEEDING 1" SHALL BE CUT OFF. REPAIR END OF BOLT BY PAINTING WITH ALUMINUM PAINT PER M.H.D. 3527.

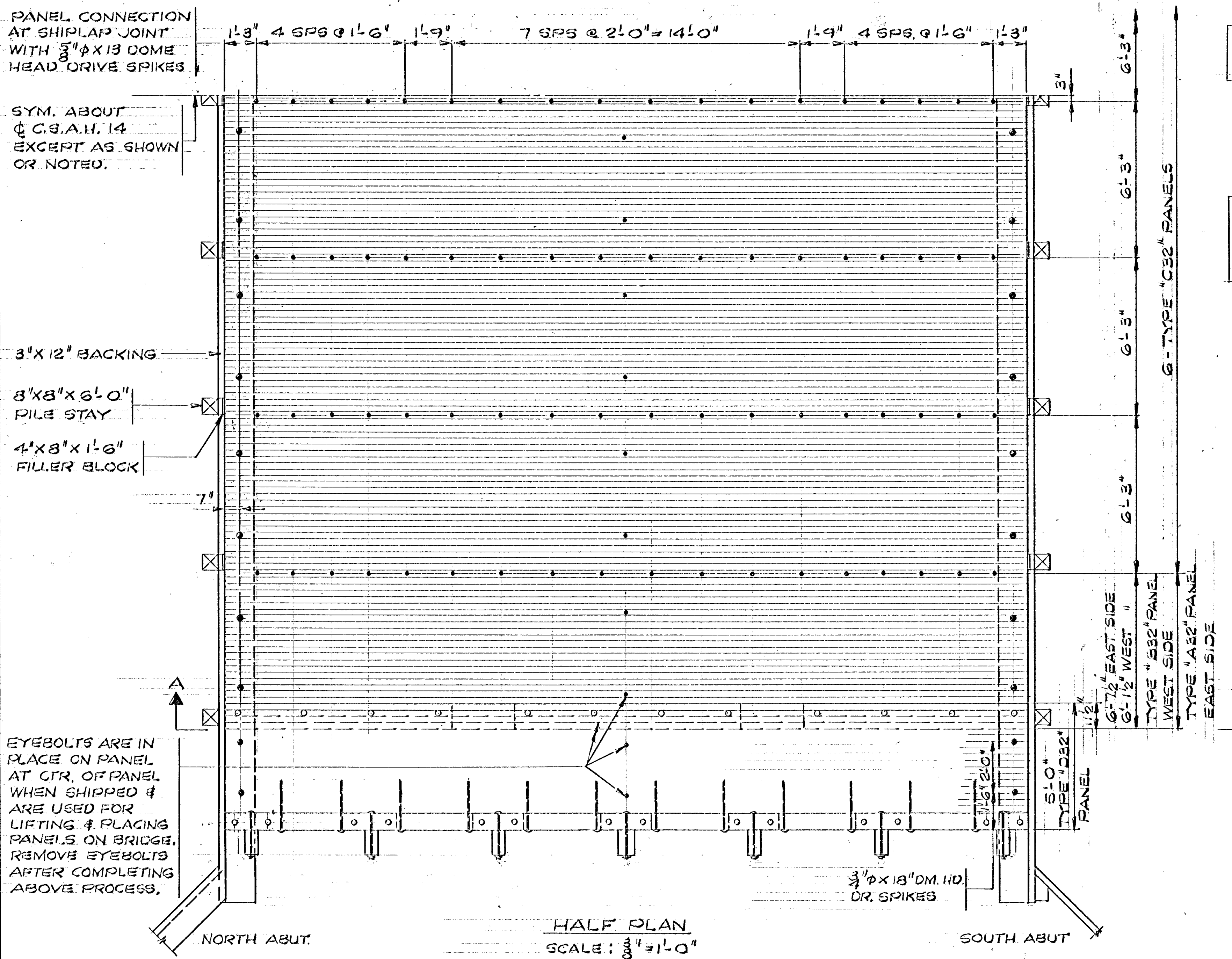
PLANS PREPARED BY
ROBERT G. ERICKSON ENGINEERING CO.
3340 REPUBLIC AVE.
ST. LOUIS PARK, MINN.

C.S.A.H. 14 ANOKA COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

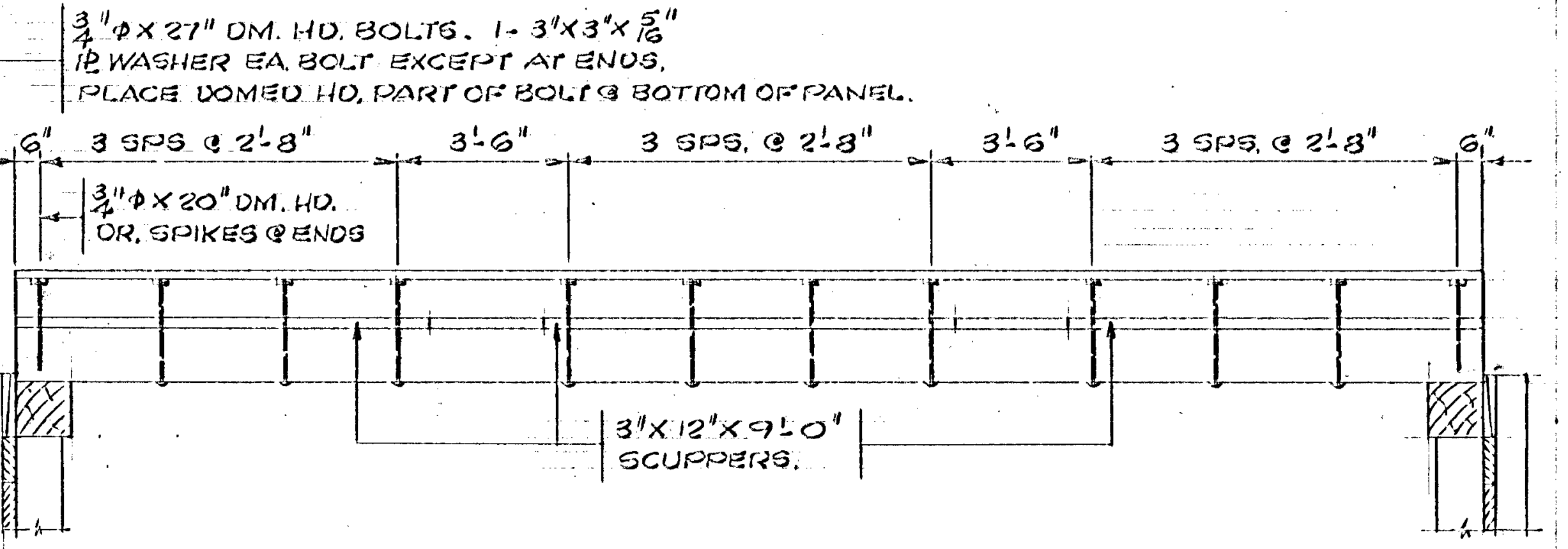
BRIDGE NO. 02527
ABUTMENT DETAILS
APPROVED 4-15-15



PART ELEVATION



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



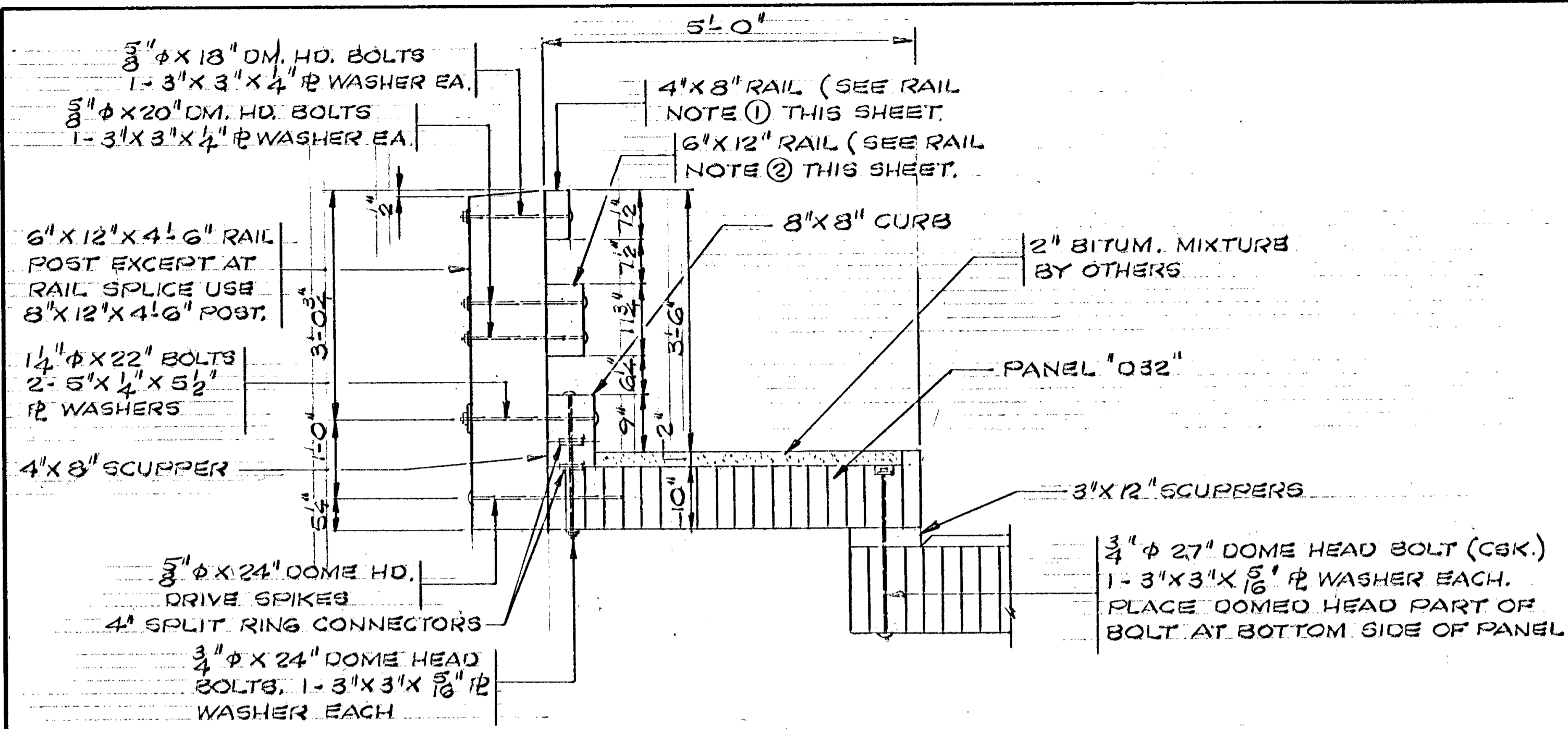
SECTION A-A

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

C.S.A.H. 14 ANOKA COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAY

BRIDGE NO. 02527
SUPERSTRUCTURE DETAILS

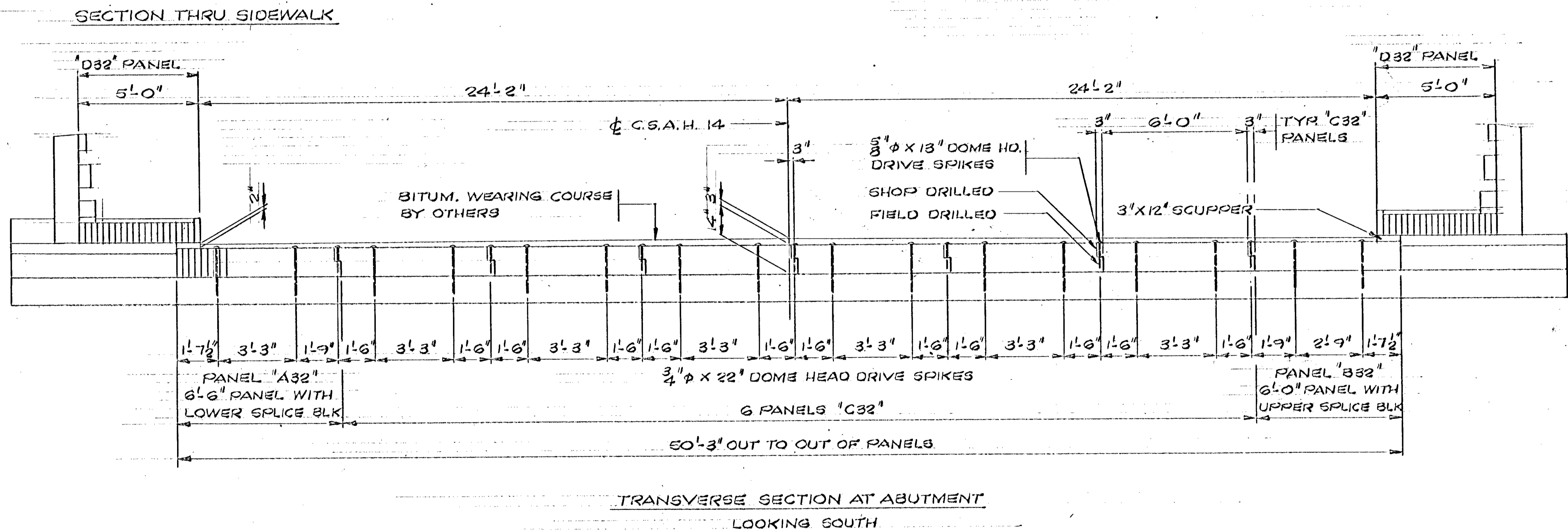
APPROVED 4-15-15



BILL OF TREATED TIMBER FOR SUPERSTRUCTURE					
ITEM	NO	FIN	SIZE	LENGTH	F.B.M
RAIL	4	SEE NOTE 1	4X8	16'-0"	171
RAIL POST	12	R	6X12	4'-6"	324
"	2	"	8X12	4'-6"	72
CURB	4	649	8X8	16'-0"	341
SCUPPER - END	4	646	4X8	7'-0"	78
" - INT	6	645	4X8	2'-0"	32
RAIL	4	SEE NOTE 2	6X12	16'-0"	384
SCUPPER	6	"	3X12	9'-0"	162
TOTAL F.B.M FOR SUPERSTRUCTURE					1561

BILL OF HARDWARE FOR SUPERSTRUCTURE			
UNIT WT	NO.	ITEM	TOTAL WT
2.81	32	3/4" X 20" DM. HD. BOLT RAIL TO POST	90
1.67	10	3/4" X 18" " " " " " " " "	27
15.67	14	1 1/2" X 22" " " " " W/ WASHER	219
		POST TO CURB	
2.37	24	3/8" X 24" DM. HD. DR. SPIKES & POSTS	57
3.91	24	3/4" X 24" DM. HD. BOLT - CURB TO SIDEWALK PANEL	94
.70	56	4" SPLIT RING CONNG CURB BOLTS	39
4.29	20	3/4" X 27" DM. HD. BOLTS - SIDEWALK PANEL TO DECK	86
3.06	32	3/4" X 22" DM. HD. DR. SPIKES - FLR & CAP	98
1.45	126	3/4" X 13" " " " " " " " " CONN.	183
2.55	4	3/4" X 18" " " " " " " " " CURB TO S.W.	10
.85	44	3" X 3" X 1/8" WASHERS - FOR 3/4" BOLTS	37
.68	48	3" X 3" X 1/4" WASHERS - " " " "	33
2.81	4	3/4" X 20" DM. HD. DR. SPIKES - SIDE WALK PANEL TO DECK	11
2.55	8	3/4" X 18" DM. HD. DR. SPIKES - PANEL O32	20
TOTAL HARDWARE FOR SUPERSTRUCTURE			1004 LBS

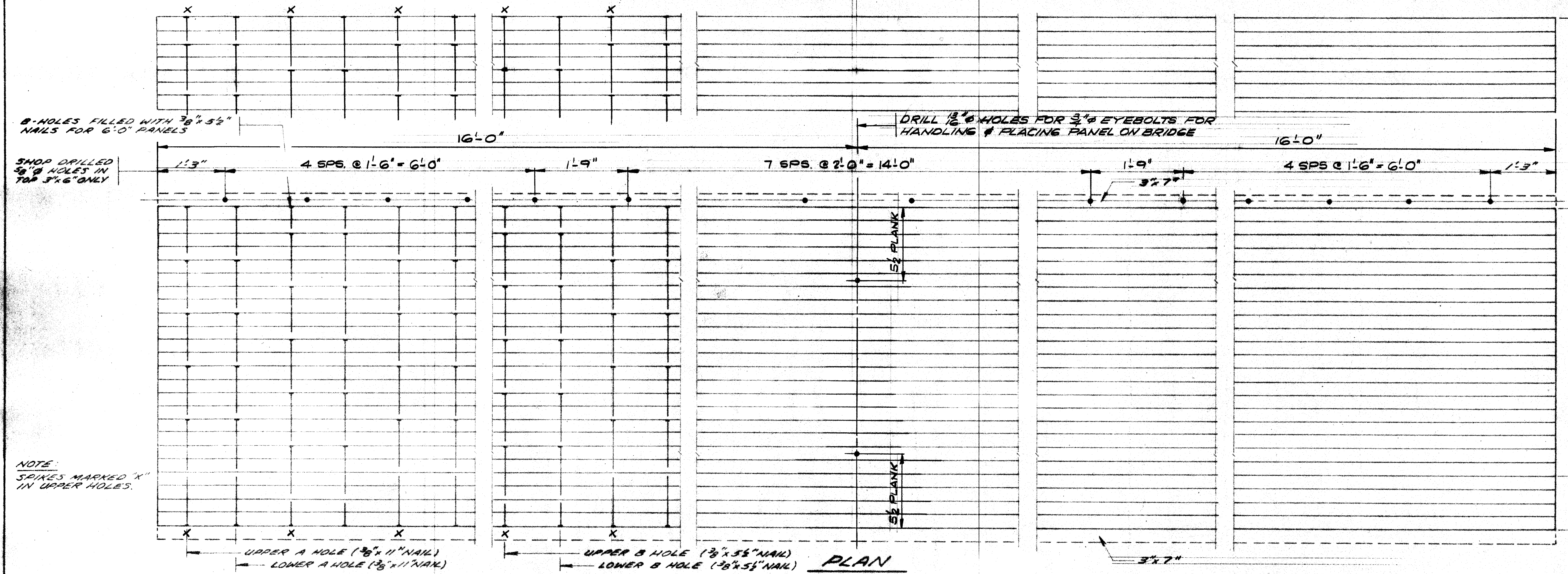
- RAIL TO BE SIS TO 4" AND S2E TO 7 1/2". RAIL TO BE ASSEMBLED WITH SURFACED AREA FACING ϕ ROADWAY.
- RAIL TO BE SIS TO 6" AND S1E TO 11 3/4". RAIL TO BE ASSEMBLED WITH SURFACED AREA FACING UP AND ϕ ROADWAY.
- SIS TO 3" H & M & S2E TO 11 1/2"



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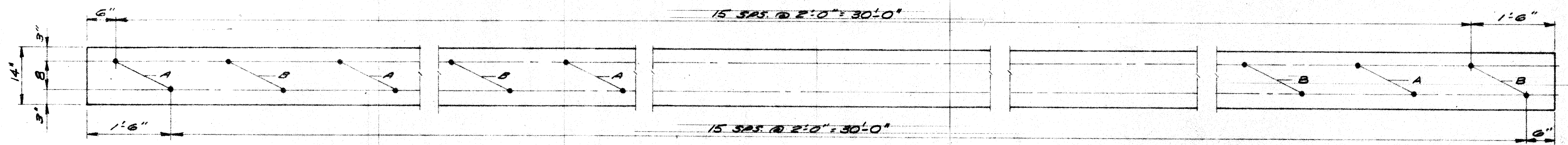
C.S.A.H. 14 ANOKA COUNTY
STATE OF MINNESOTA
DEPARTMENT OF HIGHWAYS

BRIDGE NO. 02527
SUPERSTRUCTURE DETAILS
APPROVED 4-15-15



ADDITIONAL 2 PLANK UNITS TO BE NAILED AS INDICATED TO MAKE 6'-0" UNIT.

10 LINES OF 3 PLANK UNITS TO BE NAILED AS INDICATED TO MAKE 6'-0" UNIT.



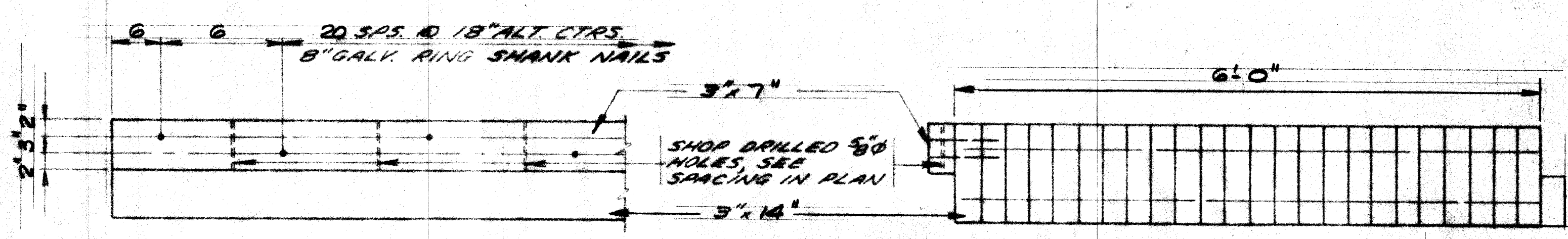
DETAIL OF 3" x 14" PLANK BORING

SHOP FABRICATION OF TIMBER PANELS

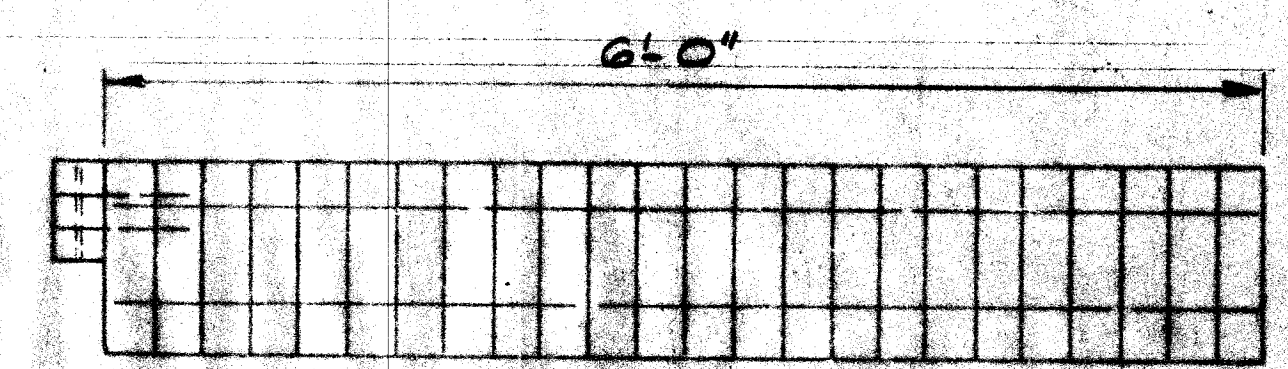
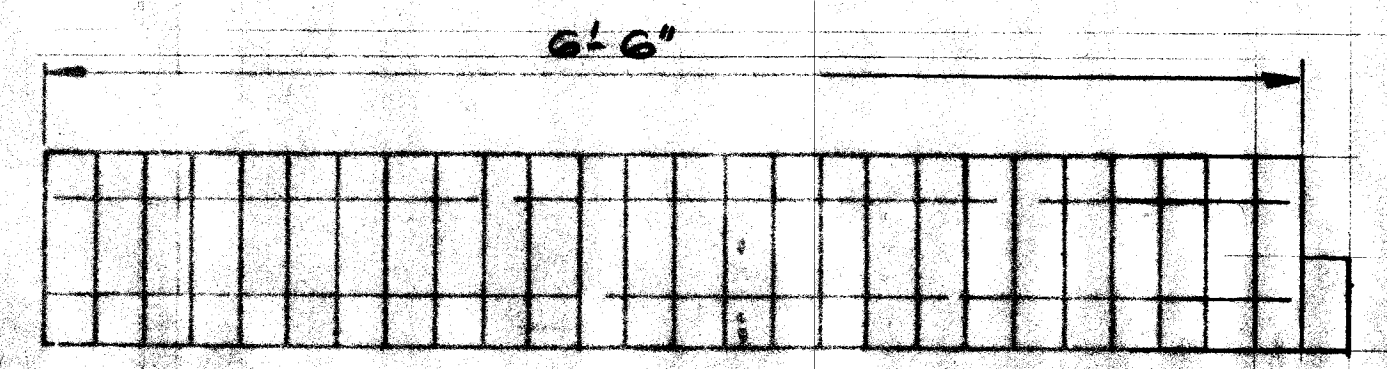
LAMINATE 3" x 14" PLANKS USING 3/8" x 5/8" x 11" GALV. RING SHANK NAILS. FABRICATE 2 PLANKS FIRST AS SHOWN AND THEN ADD 2 PLANK SECTIONS TO MAKE A 6'-0" OR 6'-6" WIDE SECTION. THEN ADD THE 3" x 7" PLANK AS SHOWN DEPENDENT ON THE TYPE NAIL WITH 8" GALV. RING SHANK NAILS. DRILL 5/8" HOLES IN THE UPPER 3" x 7" PLANK SPACED AS DETAILED. DRILL 1/2" HOLES FOR PLACING 3/4" EYEBOLTS FOR HANDLING.

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" & 6'-6" WIDE UNITS.

ALL PLANK ARE SURFACED ONE SIDE SO THAT THE UNITS WILL BE 6'-0" OR 6'-6" WIDE AFTER FABRICATING THE PANELS. PLANKS TO BE CREOSOTE TREATED AS PER M.H.D. 3491.



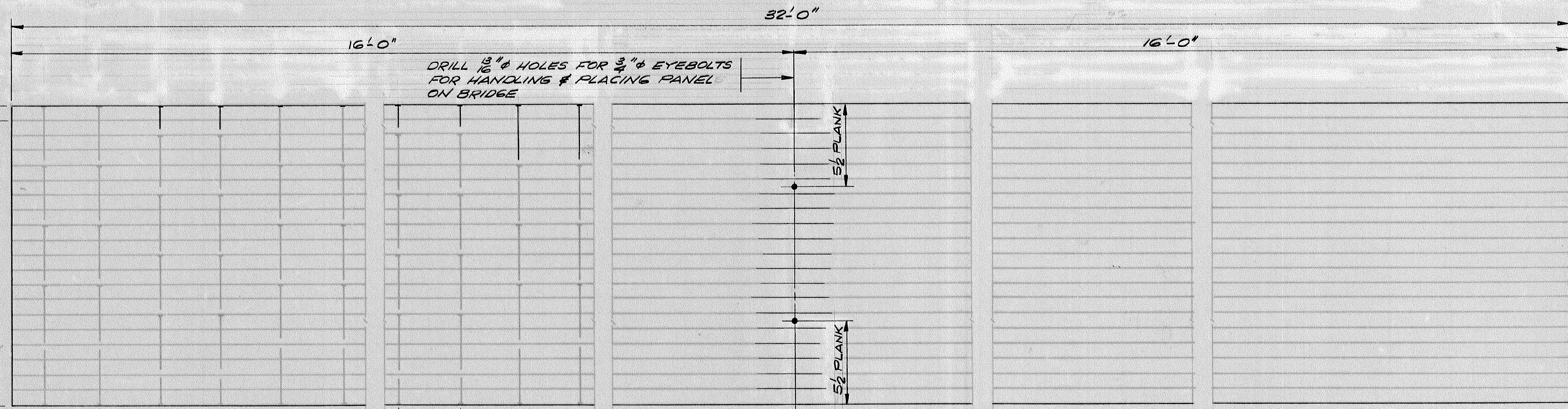
NAILING OF 3" x 7" TIMBER TO PANEL



TREATED TIMBER FOR PANELS					
NO. REQUIRED		ITEM	M. B. M. FOR		
A32	B32		A32	B32	C32
26	24	24	3" x 14" 515-32' LG.	2,912	2,688
1	1	2	3" x 7" 515-32' LG.	056	056
TOTAL M.B.M.			2,968	2,744	2,800

GALVANIZED HARDWARE FOR PANELS					
NO. REQUIRED		ITEM	WEIGHT FOR		
A32	B32		C32	A32	B32
192	176	176	3/8" RING SH. NAILS	77	70
82	32	32	3/8" x 5/8" "	7	7
28	28	28	3/4" x 8" WIRE SPIKES	5	5
TOTAL WEIGHT			89	82	86

PREFAB TIMBER PANEL DETAILS
APPROVED: 4-15-78
BRIDGE NUMBER 02527



NOTE:
SPACES MARKED "X"
IN UPPER HOLES.

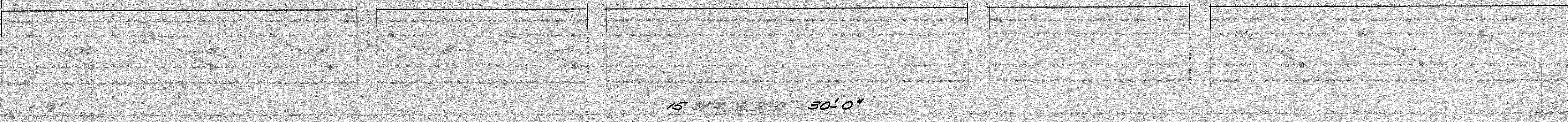
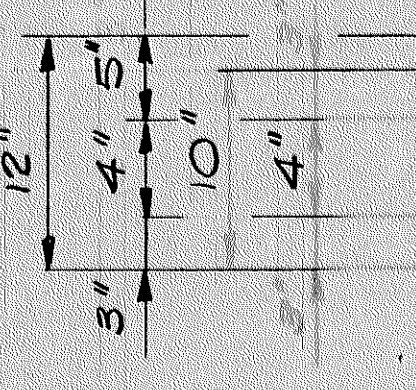
8 LINES OF 2 PLANK UNITS
TO BE NAILED AS INDICATED
TO MAKE 5'-0" SIDEWALK
UNIT.

UPPER A HOLE (3/8" x 1" NAIL)
LOWER A HOLE (3/8" x 1" NAIL)

UPPER B HOLE (3/8" x 5/8" NAIL)
LOWER B HOLE (3/8" x 5/8" NAIL)

PLAN

15 SPS @ 2'-0" = 30'-0"



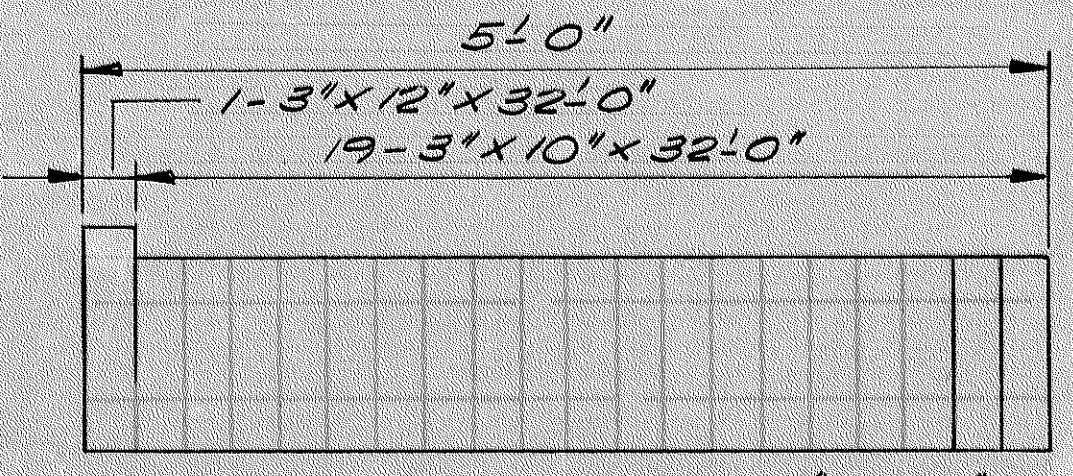
15 SPS @ 2'-0" = 30'-0"

DETAIL OF 3"x10" & 3"x12" PLANK BORING

SHOP FABRICATION OF TIMBER PANELS

LAMINATE 3"x10" & 3"x12" PLANKS USING 3/8" x 5 1/2" x 11" RING SHANK NAILS. FABRICATE 8 PLANKS FIRST AS SHOWN AND THEN ADD 2 PLANK SECTIONS TO MAKE A 5'-0" WIDE SECTION.

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 DIMENSION OF 5'-0" WIDE UNIT. ALL PLANK ARE SURFACED ONE SIDE SO THAT THE UNIT WILL BE 5'-0" WIDE AFTER FABRICATING THE PANEL. PLANKS TO BE CREOSOTE TREATED AS PER M.H.D. 3491.



PANEL "D32"

TREATED TIMBER FOR PANELS		
NO. REQUIRED	ITEM	M. E. M. FOR
D32		D32
19	3" x 10" S1S-32' L.B.	1.52
1	3" x 12" S1S-32' L.B.	.10
	TOTAL M.E.M.	1.62

GALVANIZED HARDWARE FOR PANELS		
NO. REQUIRED	ITEM	WEIGHT FOR
D32		D32
144	3/8" RING SHANK NAILS	58
32	3/8" x 5/8" " "	7
	TOTAL WEIGHT	65

PREFAB TIMBER
PANEL DETAILS
APPROVED: 4-15-75

BRIDGE
NUMBER
02527

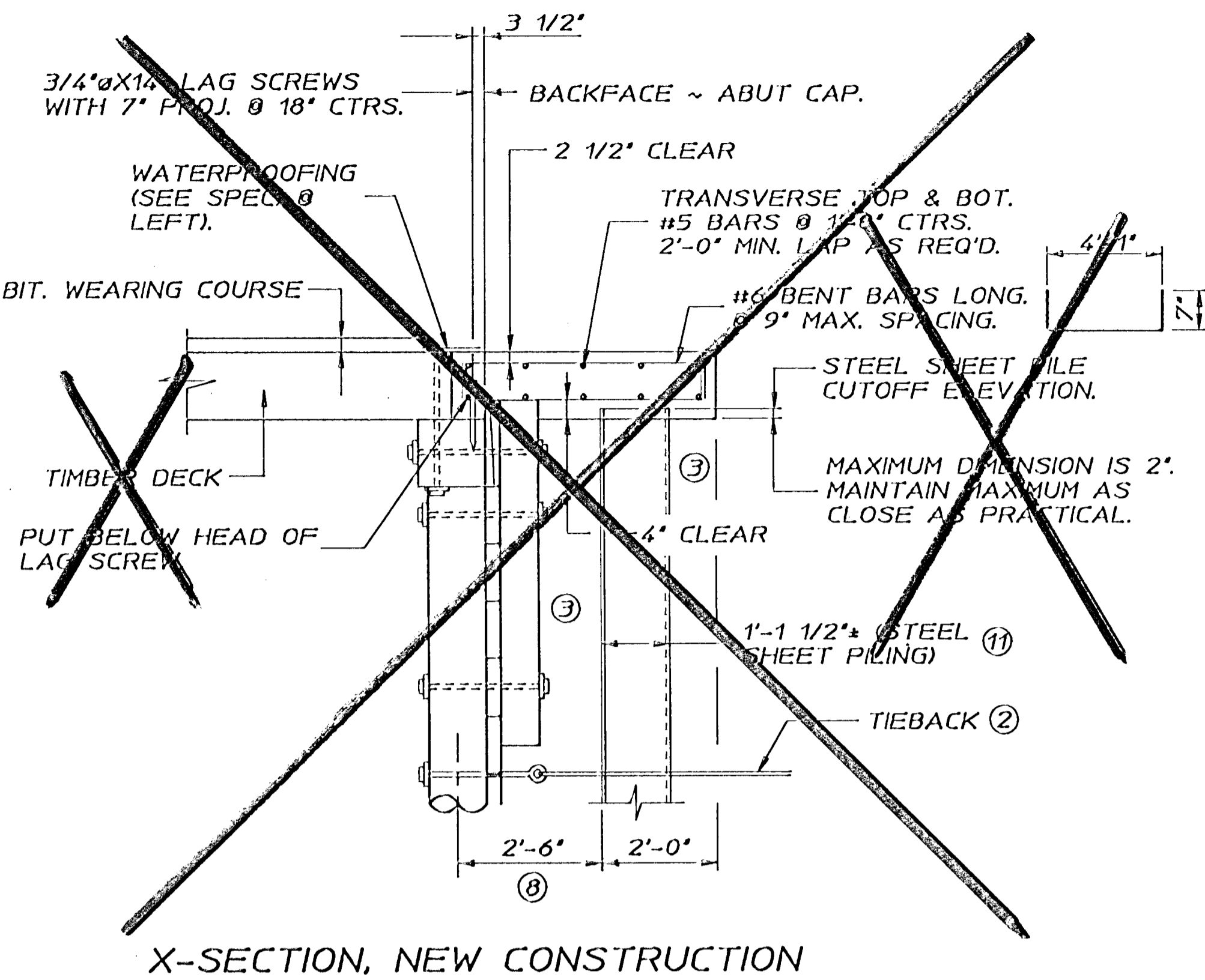
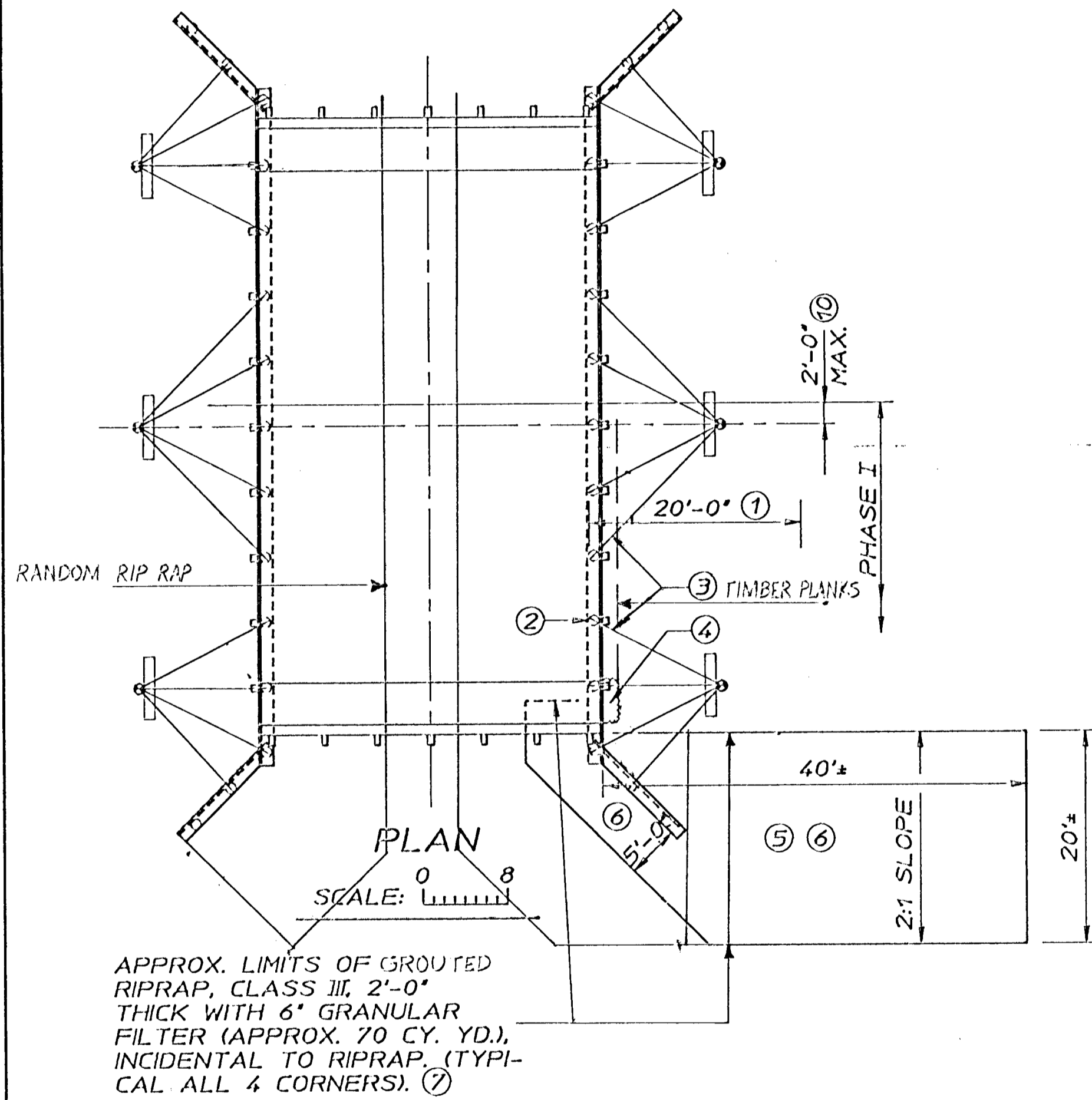
GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY THE MAY 2, 1994 SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN.

JOINT WATERPROOFING SPECIFICATIONS

THIS WORK SHALL CONSIST OF WATERPROOFING THE JOINTS INDICATED IN THE PLANS AS FOLLOWS:
 A ONE FOOT WIDE STRIP OF APPROVED MEMBRANE SHALL BE CENTERED ON THE JOINT ON A SURFACE THAT HAS BEEN PRIMED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
 THE MEMBRANE SHALL CONSIST OF POLYPROPYLENE MESH OF 0.003 INCHES MINIMUM THICKNESS, SURFACE COATED WITH 0.005 INCHES OF WAX ASPHALT LAYER OVER 0.060 INCHES OF RUBBERIZED COVERING, WHICH SHALL REMAIN ON THE MEMBRANE UNTIL IT IS READY FOR PLACEMENT.
 SPEEDS IN THE JOINT WATERPROOFING MEMBRANE MAY BE MADE ONLY WHEN PERMITTED BY THE ENGINEER AND SHALL CONSIST OF A MAXIMUM OF NOT LESS THAN SIX INCHES.
 FURNISHING AND PLACING THE WATERPROOFING AS SPECIFIED ABOVE WILL BE CONSIDERED TO BE AN INCIDENTAL EXPENSE FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.

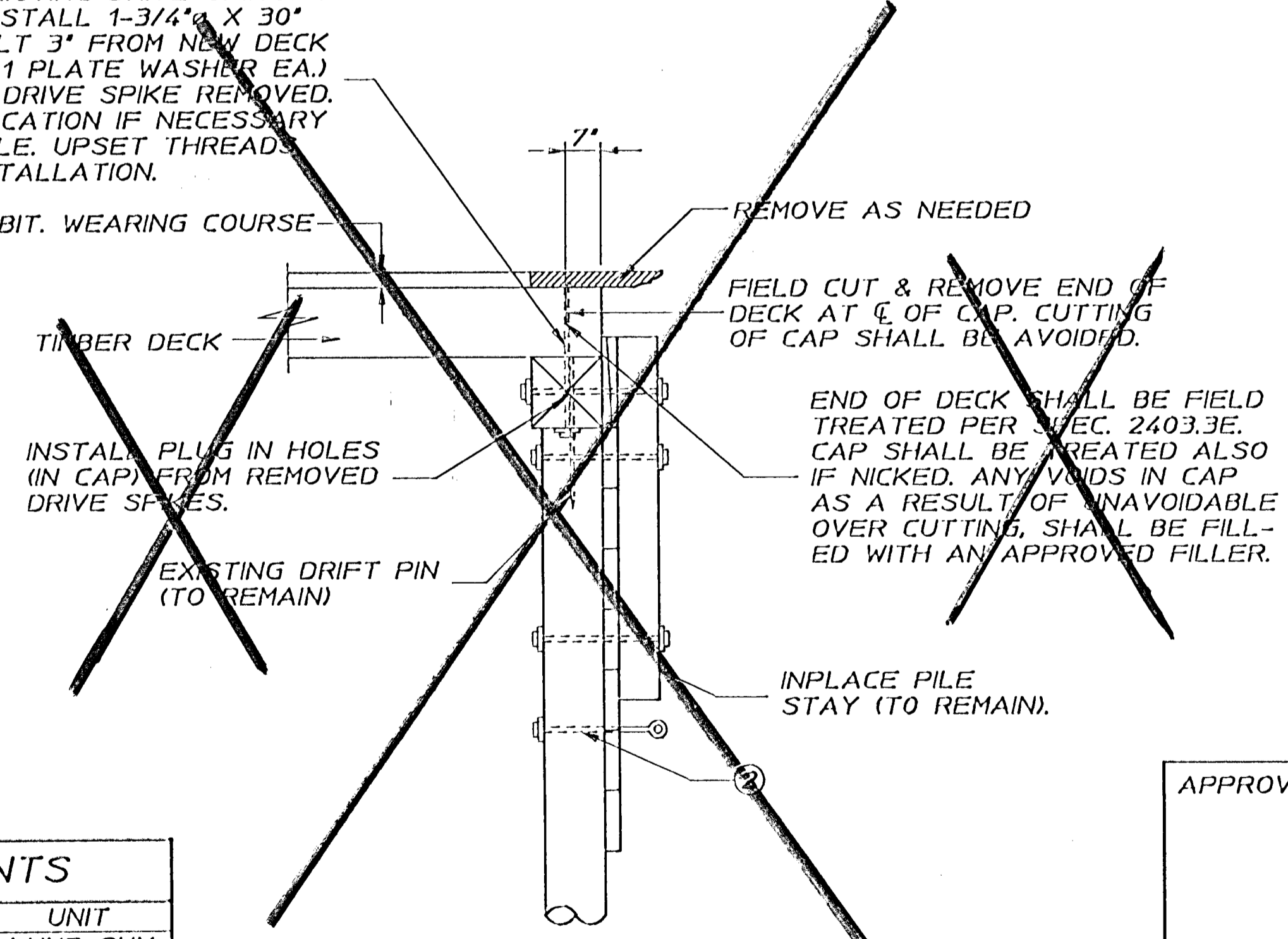
N



X-SECTION, NEW CONSTRUCTION

SCALE: 0 2

REMOVE EXISTING DRIVE SPIKES AS NEEDED, INSTALL 1-3/4" x 30" DM. HD. BOLT 3" FROM NEW DECK END (WITH 1 PLATE WASHER EA.) FOR EACH DRIVE SPIKE REMOVED. ADJUST LOCATION IF NECESSARY TO MISS PILE. UPSET THREADS AFTER INSTALLATION.



X-SECTION, REMOVALS

SCALE: 0 2

NOTE: REMOVALS, CUTTING OF DECK AND FIELD TREATING TO BE INCLUDED IN PRICE BID FOR STRUCTURE REMOVALS.

CONSTRUCTION NOTES

- 1 REMOVE EXISTING BITUMINOUS PAVEMENT AS DIRECTED BY THE ENGINEER.
 - 2 DISCONNECT EXISTING CABLE FROM TIMBER PILE BY REMOVING EYE-BOLT. AFTER SHEET PILING IS DRIVEN, CUT HOLE JUST LARGER THAN DIAMETER OF CABLE & EYEBOLT IN SHEET PILING AND RECONNECT EYEBOLT TO TIMBER PILE MATCHING ORIGINAL CONDITIONS. TIGHTEN NUT UNTIL TIE-BACK CABLE IS TIGHT, WITH SLACK REMOVED. ONLY 1 OR 2 TIE BACKS SHALL BE DISCONNECTED AT ANY ONE TIME. INCLUDED IN PRICE BID FOR STRUCTURE REMOVALS.
 - 3 ~~EXISTING DRIVE SPIKES TO BE DISCONNECTED FROM DECK AND DRIVE SHEET PILING BACK PILE WHEN ALL STRUCTURE WORK IS COMPLETED. INCLUDED IN PRICE BID FOR STRUCTURE EXCAVATION.~~
 - 4 BACKFILL EXISTING VOIDS WITH AGGREGATE BEDDING, AS APPROVED BY THE ENGINEER.
 - 5 REMOVE ALL OF EXISTING BITUMINOUS FROM EDGE OF SIDEWALK DOWNSLOPE TO WHERE BITUMINOUS TERMINATES AT WATER. INCLUDED IN PRICE BID FOR REMOVE BITUMINOUS, REGARDLESS OF DEPTH AND EXISTING BASE MATERIAL.
 - 6 CUT AND FILL AS REQUIRED TO ESTABLISH 2:1 SLOPES TO APPROXIMATE LIMITS SHOWN, AS APPROVED BY THE ENGINEER IN THE FIELD. INCLUDED IN PRICE BID FOR SLOPE PREPARATION.
 - 7 RIPRAP SHALL BE FIELD STONE, OR QUARRY RUN CONSISTING OF ST. CLOUD GRANITE OR PRAIRIE DUCHIEN DOLOSTONE (SOUTH METRO QUARRIES). OTHER QUARRY RUN MAY BE USED IF APPROVED BY THE ENGINEER.
 - 8 ~~DIMENSION SHALL BE MAINTAINED AT TOP OF SHEET PILING. VERIFY PLUMBNESS OF EXISTING TIMBER PILES BEFORE DRIVING SHEET PILING.~~
 - 9 ALL TRAFFIC CONTROL DEVICES AND LAYOUTS SHALL CONFORM TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL, DATED APRIL 1995.
 - 10 ~~DIMENSION SHOULD BE LIMITED TO PROVIDE 12 LANES IF POSSIBLE. MORE THAN 2' IS REQUIRED TO COMPLETE PHASE 1. ONLY 1 LANE OF TRAFFIC SHALL BE PERMITTED ACROSS THE BRIDGE TEMPORARILY FOR ONLY THE TIME NEEDED TO DISCONNECT & RECONNECT TIEBACK AT THAT LOCATION.~~
 - 11 ~~STEEL SHEET PILING SHALL BE 32' LONG BELOW CUTOFF ELEVATION. STEEL SHEET PILING TO BE TRINITY CASTEEL CZ14RD OR EQUAL. GRADE 50. MINIMUMS ARE WALL THICKNESS .028" SM/IN. FT. +22 IN.~~
 - 12 6" BITUMINOUS WEAR COURSE INCLUDES: 6" AGGREGATE BASE CLASS 5, 4" TYPE 31 BASE COURSE, 2" TYPE 41 WEAR COURSE.
- CONSTRUCTION REQUIREMENTS SHALL CONFORM TO M.H.D. 2433.
 SEE EXISTING BRIDGE PLANS FOR FURTHER INFORMATION.
 CONTRACTOR SHALL VERIFY THAT UTILITY COMPANIES HAVE BEEN NOTIFIED AND THAT THE UTILITIES WILL NOT INTERFERE WITH HIS OPERATIONS. SEE EXISTING BRIDGE PLANS FOR UTILITIES ON BRIDGE.
 WORK SHALL BE COMPLETED IN PHASES AS SHOWN. WORK FOR PHASE 1 SHALL BE COMPLETED BEFORE WORK FOR PHASE 2 IS STARTED. UNLESS NOTED OTHERWISE TWO LANES OF TRAFFIC SHALL BE MAINTAINED DURING EACH PHASE. UNLESS NOTED OTHERWISE (SEE NOTE 10).

SCHEDULE OF QUANTITIES FOR REPAIR WORK AT ABUTMENTS

NOTE	ITEM NO.	ITEM	QUANTITY	UNIT
	2021.501	MOBILIZATION	1	LUMP SUM
	2401.501	STRUCTURAL CONCRETE (3Y33)	0	CU. YD.
	2401.541	REINFORCEMENT BARS (EPOXY COATED)	0	POUND
	2403.506	HARDWARE (GALV. PER SPEC. 3392)	0	POUND
(2)	2433.501	STRUCTURE REMOVALS	1	LUMP SUM
(1)(5)	2104.505	REMOVE BITUMINOUS PAVEMENT	5000	SQ. FT.
(7)	2511.501	RANDOM RIPRAP, CLASS III	350	TON
(12)	2340.521	6" THICK BITUMINOUS WEARING COURSE	75	SQ. YD.
	0331.601	SLOPE PREPARATION	1	LUMP SUM
	0401.601	STRUCTURE EXCAVATION	1	LUMP SUM
	0401.601	STEEL SHEET PILING (PERMANENT)	0	SQ. FT.
	0653.601	TRAFFIC CONTROL	1	LUMP SUM
	2451.509	AGGREGATE BEDDING	100	TON
ALT 2		PRECAST CABLE CONCRETE (35 LBS./SQ. FT.)	3200	SQ. FT.
ALT 1		GROUTED RIP RAP	280	CU. YD.

APPROVED:

COUNTY ENGINEER ANOKA COUNTY

DATE:

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. 31733

DATE: 9/3/97

PLANS PREPARED BY:
 ERICKSON ENGINEERING
 3340 REPUBLIC AVENUE
 ST. LOUIS PARK, MN 55426

BRIDGE NO. 02527

2 MILES N.W. OF CENTERVILLE BETWEEN GEORGE WATCH LAKE & PELTIER LAKE.
 1-32 FT. TREATED TIMBER PANEL SPAN 48'-4" ROADWAY 2-5 FT. SIDEWALKS. SPAN IDENT. NO. 709

GENERAL PLAN & MISC. DETAILS
 SEC. 15 TWP. 31N R22W
 LINO LAKE TYP. ANOKA COUNTY

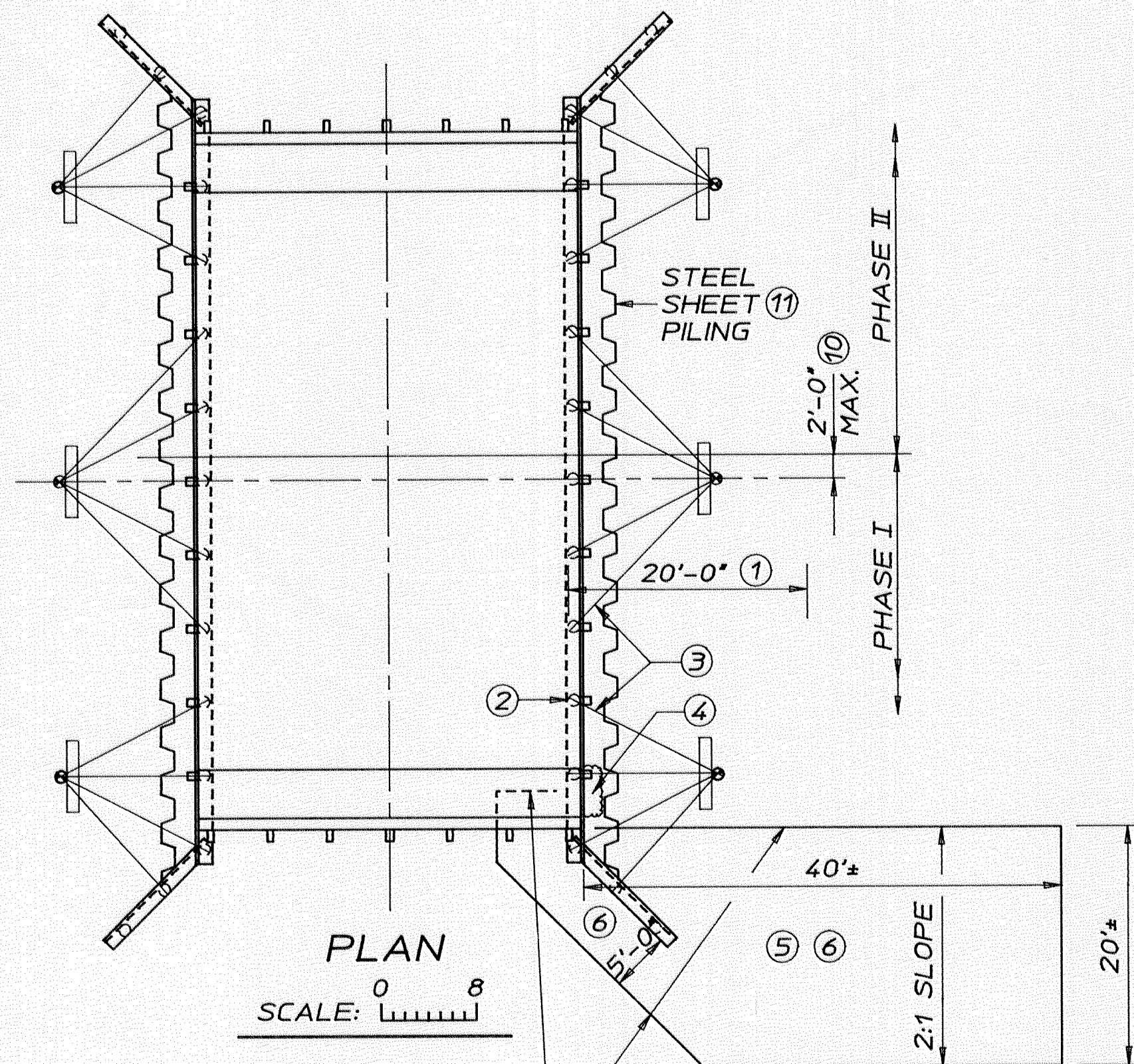
C.P. 97-73-00
 SHEET 1 OF 1 SHEETS
 DES: DWN: 02527
 CHK: CHK:

GOVERNING SPECIFICATIONS

THE 1988 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AS AMENDED BY THE MAY 2, 1994 SUPPLEMENTAL SPECIFICATIONS SHALL GOVERN.

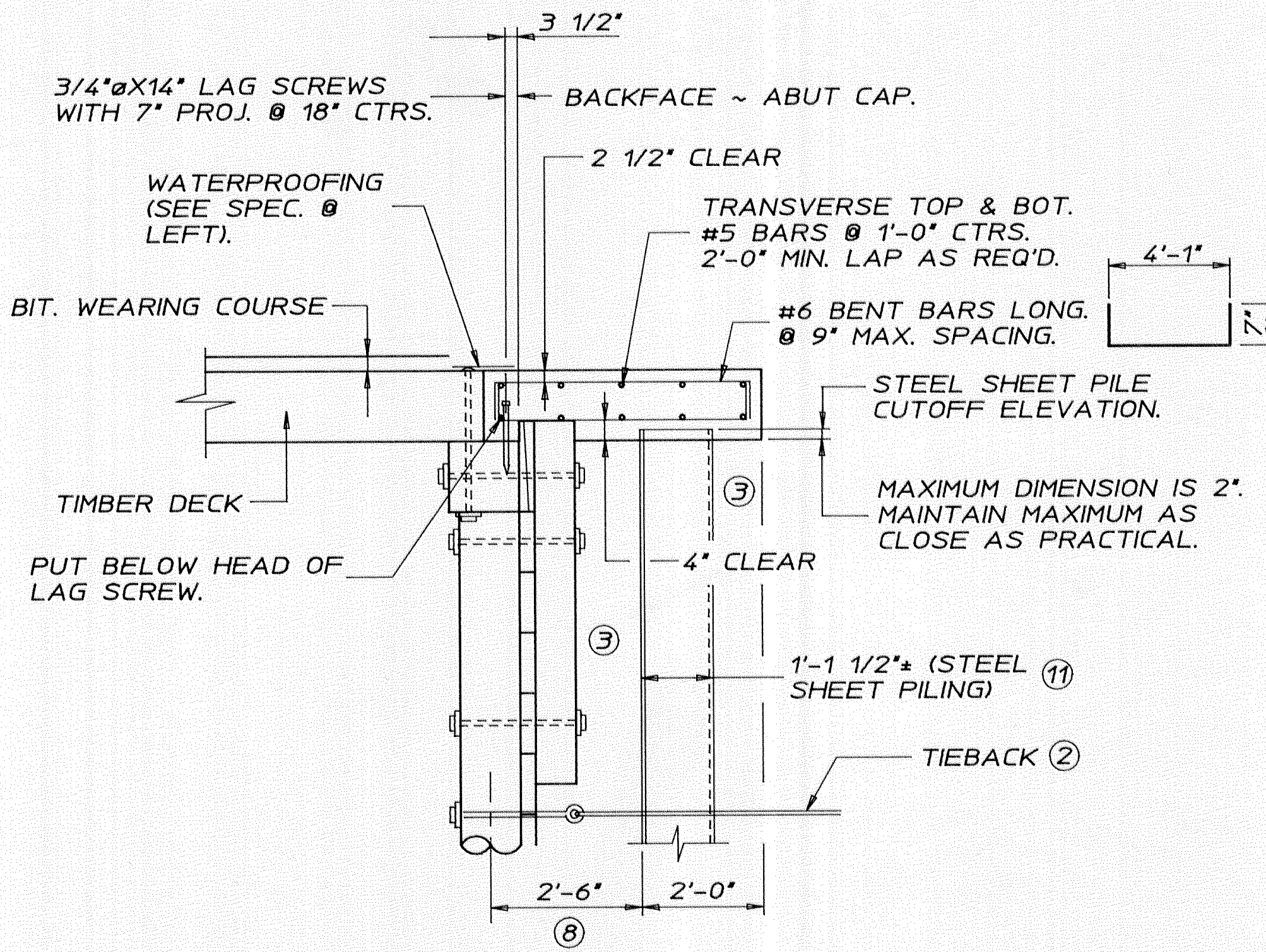
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 THE MEMBRANE SHALL CONSIST OF POLYPROPYLENE MESH OF 0.005 INCHES MINIMUM THICKNESS, SURFACE COATED WITH 0.005 INCHES OF WAX-ASPHALT, LAYED OVER 0.060 INCHES OF RUBBERIZED COVERING, WHICH SHALL REMAIN ON THE MEMBRANE UNTIL IT IS READY FOR PLACEMENT.
 SPLICES IN THE JOINT WATERPROOFING MEMBRANE MAY BE MADE ONLY WHEN PERMITTED BY THE ENGINEER AND SHALL CONSIST OF A LAP OF NOT LESS THAN SIX INCHES.
 FURNISHING AND PLACING THE WATERPROOFING, AS SPECIFIED ABOVE, WILL BE CONSIDERED TO BE AN INCIDENTAL EXPENSE FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.



APPROX. LIMITS OF RANDOM RIPRAP, CLASS III, 2'-0" THICK WITH 6" GRANULAR FILTER (APPROX. 70 CY. YD.), INCIDENTAL TO RIPRAP. (TYPICAL ALL 4 CORNERS). ⑦

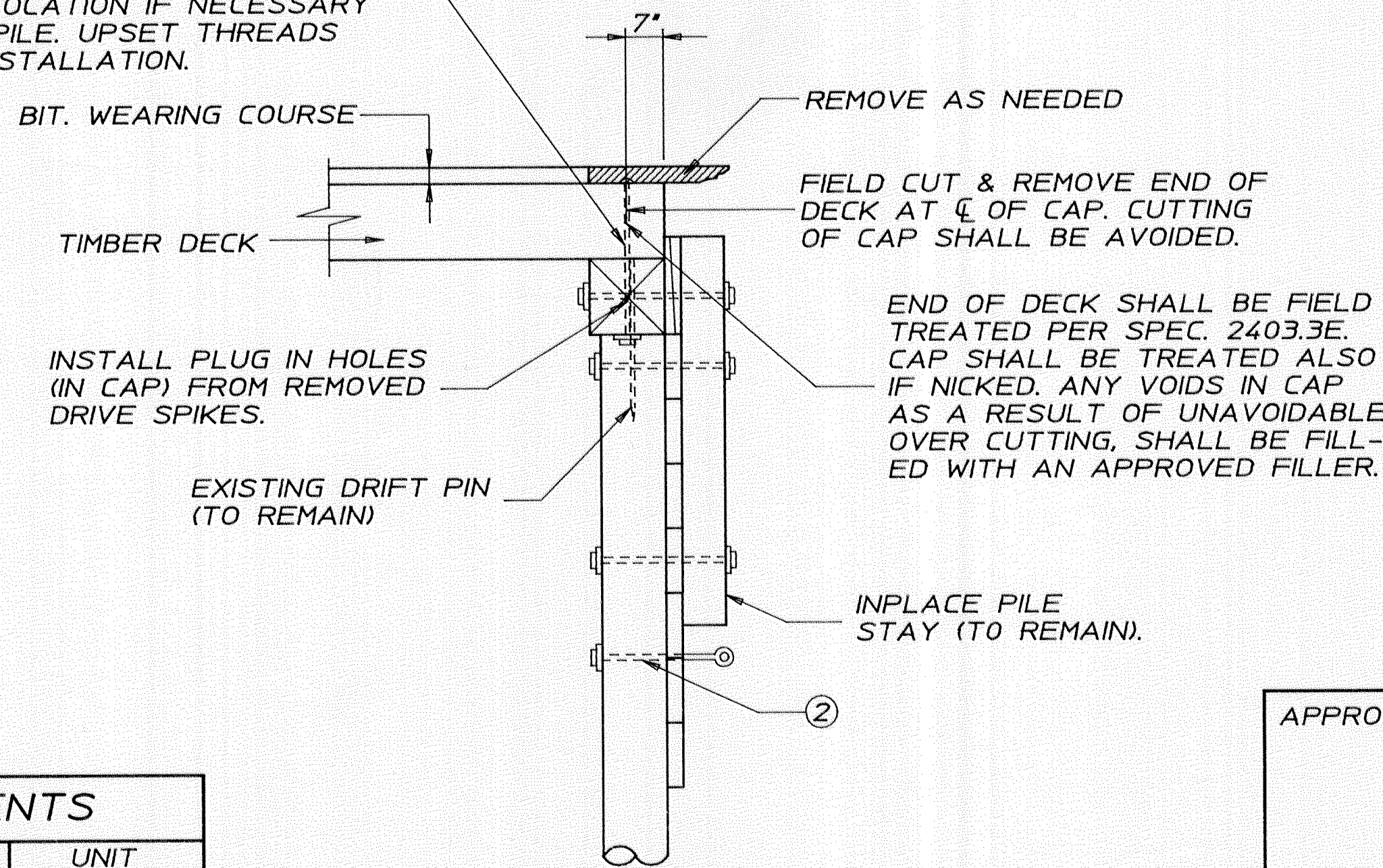
NOTE	ITEM NO.	ITEM	QUANTITY	UNIT
	2021.501	MOBILIZATION	1	LUMP SUM
	2401.501	STRUCTURAL CONCRETE (3Y33)	25	CU. YD.
	2401.541	REINFORCEMENT BARS (EPOXY COATED)	3820	POUND
	2403.506	HARDWARE (GALV. PER SPEC. 3392)	280	POUND
②	2433.501	STRUCTURE REMOVALS	1	LUMP SUM
①⑤	2104.505	REMOVE BITUMINOUS PAVEMENT	7000	SQ. FT.
⑦	2511.501	RANDOM RIPRAP, CLASS III	280	CU. YD.
⑫	2340.521	6" THICK BITUMINOUS WEARING COURSE	265	SQ. YD.
	0331.601	SLOPE PREPARATION	1	LUMP SUM
	0401.601	STRUCTURE EXCAVATION	1	LUMP SUM
	0401.601	STEEL SHEET PILING (PERMANENT)	4290	SQ. FT.
	0653.601	TRAFFIC CONTROL	1	LUMP SUM
	2451.509	AGGREGATE BEDDING	200	TON



X-SECTION, NEW CONSTRUCTION

SCALE: 0 2

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NOTE: REMOVALS, CUTTING OF DECK AND FIELD TREATING TO BE INCLUDED IN PRICE BID FOR STRUCTURE REMOVALS.

X-SECTION, REMOVALS

SCALE: 0 2

CONSTRUCTION NOTES

- REMOVE EXISTING BITUMINOUS PAVEMENT AS DIRECTED BY THE ENGINEER.
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- EXCAVATE AS REQUIRED TO DISCONNECT TIE-BACKS (NOTE ①), MODIFY END OF DECK, AND DRIVE SHEET PILING. BACKFILL WHEN AFFECTED WORK IS COMPLETED. INCLUDED IN PRICE BID FOR STRUCTURE EXCAVATION.
- BACKFILL EXISTING VOIDS WITH AGGREGATE BEDDING, AS APPROVED BY THE ENGINEER.
- REMOVE ALL OF EXISTING BITUMINOUS FROM EDGE OF SIDEWALK DOWNSLOPE TO WHERE BITUMINOUS TERMINATES AT WATER. INCLUDED IN PRICE BID FOR REMOVE BITUMINOUS, REGARDLESS OF DEPTH AND EXISTING BASE MATERIAL.
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- DIMENSION SHOULD BE LIMITED TO PROVIDE 12' LANES IF POSSIBLE. IF MORE THAN 2' IS REQUIRED TO COMPLETE PHASE 1, ONLY 1 LANE OF TRAFFIC SHALL BE PERMITTED ACROSS THE BRIDGE TEMPORARILY, FOR ONLY THE TIME NEEDED TO DISCONNECT & RECONNECT TIE-BACK, AT THAT LOCATION.
- STEEL SHEET PILING SHALL BE 32' LONG BELOW CUTOFF ELEVATION. STEEL SHEET PILING TO BE TRINITY/ CASTEL C2114RD OR EQUAL, GRADE 50. MINIMUMS ARE: WALL THICKNESS= 0.28", SM/IN.FT.=29 IN².
- 6" BITUMINOUS WEAR COURSE INCLUDES: 6" AGGREGATE BASE CLASS 5, 4" TYPE 31 BASE COURSE, 2" TYPE 41 WEAR COURSE.

CONSTRUCTION REQUIREMENTS SHALL CONFORM TO M.H.D. 2433.

SEE EXISTING BRIDGE PLANS FOR FURTHER INFORMATION.

CONTRACTOR SHALL VERIFY THAT UTILITY COMPANIES HAVE BEEN NOTIFIED AND THAT THE UTILITIES WILL NOT INTERFERE WITH HIS OPERATIONS. SEE EXISTING BRIDGE PLANS FOR UTILITIES ON BRIDGE.

WORK SHALL BE COMPLETED IN PHASES, AS SHOWN. WORK FOR PHASE I SHALL BE COMPLETED BEFORE WORK FOR PHASE II IS STARTED UNLESS NOTED OTHERWISE. TWO LANES OF TRAFFIC SHALL BE MAINTAINED DURING EACH PHASE, UNLESS NOTED OTHERWISE (SEE NOTE ⑩).

APPROVED: _____
 COUNTY ENGINEER
 ANOKA COUNTY

DATE: _____

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.

Ronald Benson
 REG. NO. 22737

DATE: 8/5/97

PLANS PREPARED BY:
 ERICKSON ENGINEERING
 3340 REPUBLIC AVENUE
 ST. LOUIS PARK, MN 55426

BRIDGE NO. 02527

2 MILES N.W. OF CENTERVILLE BETWEEN GEORGE WATCH LAKE & PELTIER LAKE.

1-32 FT. TREATED TIMBER PANEL SPAN 48'-4" ROADWAY 2-5 FT. SIDEWALKS.
 SPAN IDENT. NO. 709

GENERAL PLAN & MISC. DETAILS

SEC. 15 TWP. 31N R22W
 LINO LAKE TYP. ANOKA COUNTY

C.P. 97-73-00
 SHEET 1 OF 1 SHEETS
 DES: RAB DWN: WNJ
 CHK: DAD CHK: RAB **02527**

Mn/DOT Structure Inventory Report

Bridge ID: 02527 CSAH 14 over CHAN BETWEEN TWO LAKES

Date: 01/22/2007

+ GENERAL +	+ ROADWAY +	+ INSPECTION +
Agency Br. No.	Bridge Match ID (TIS) 1	Deficient Status S.D.
District METRO Maint. Area	Roadway O/U Key 1-ON	Sufficiency Rating 50.4
County 02 - ANOKA	Route Sys/Nbr CSAH 14	Last Inspection Date 11-21-2006
City LINO LAKES	Roadway Name or Description	Inspection Frequency 12
Township	CSAH 14	Inspector Name PONTIS
Desc. Loc. 1.0 MI S OF JCT TH 35W	Roadway Function MAINLINE	Structure A-OPEN
Sect., Twp., Range 15 - 031N - 22W	Roadway Type 2 WAY TRAF	+ CONDITION CODES +
Latitude 45d 10m 37.61s	Control Section (TH Only)	Deck 4
Longitude 93d 04m 17.58s	Ref. Point (TH Only)	Superstructure 4
Custodian COUNTY	Date Opened to Traffic 09-01-1975	Substructure 5
Owner COUNTY	Detour Length 12 mi.	Channel 5
Inspection By ANOKA COUNTY	Lanes 2 Lanes ON Bridge	Culvert N
BMU Agreement No.	ADT (YEAR) 6,400 (2005)	+ APPRAISAL RATINGS +
Year Built 1975	HCADT 512	Structure Evaluation 4
Year Fed Rehab	Functional Class. RUR/MINOR ART	Deck Geometry 9
Year Remodeled	+ RDWY DIMENSIONS +	Underclearances N
Temp	If Divided NB-EB SB-WB	Waterway Adequacy 7
Plan Avail. COUNTY	Roadway Width 48.3 ft	Approach Alignment 7
+ STRUCTURE +	Vertical Clearance	+ SAFETY FEATURES +
Service On HWY;PED	Max. Vert. Clear.	Bridge Railing UNKN
Service Under STREAM	Horizontal Clear. 48.3 ft	Appr. Guardrail 0-SUBSTANDARD
Main Span Type TIMB SLAB SPAN	Lateral Clr. - Lt/Rt	GR Transition UNKN
Main Span Detail	Appr. Surface Width 30.0 ft	GR Termini N-NOT REQUIRED
Appr. Span Type	Roadway Width 48.3 ft	+ IN DEPTH INSP. +
Appr. Span Detail	Median Width	Frac. Critical
Skew	+ MISC. BRIDGE DATA +	Underwater
Culvert Type	Structure Flared NO	Pinned Asbly.
Barrel Length	Parallel Structure NONE	Spec. Feat.
Number of Spans	Field Conn. ID	+ WATERWAY +
MAIN: 1 APPR: 0 TOTAL: 1	Cantilever ID	Drainage Area 66.5 sq mi
Main Span Length 31.0 ft	Foundations	Waterway Opening 164 sq ft
Structure Length 32.0 ft	Abut. TIMBER - PILE BENT	Navigation Control NO PRMT REQD
Deck Width 60.3 ft	Pier N/A	Pier Protection UNKN
Deck Material TIMBER	+ PAINT +	Nav. Vert./Horz. Clr.
Wear Surf Type BITUMINOUS	Year Painted Pct. Unsound	Nav. Vert. Lift Bridge Clear.
Wear Surf Install Year	Painted Area	MN Scour Code I-LOW RISK
Wear Course/Fill Depth 0.25 ft	Primer Type	Scour Evaluation Year
Deck Membrane NONE	Finish Type	+ CAPACITY RATINGS +
Deck Rebars N/A	+ BRIDGE SIGNS +	Design Load HS20
Deck Rebars Install Year	Posted Load NOT REQUIRED	Operating Rating HS 21.8
Structure Area 1,930 sq ft	Traffic NOT REQUIRED	Inventory Rating HS 14.3
Roadway Area 1,550 sq ft	Horizontal OBJECT MARKERS	Posting
Sidewalk Width - L/R 5.0 ft 5.0 ft	Vertical NOT APPLICABLE	Rating Date 09-27-2004
Curb Height - L/R 1.08 ft 1.08 ft		Mn/DOT Permit Codes
Rail Codes - L/R 06 06		A: N B: N C: N