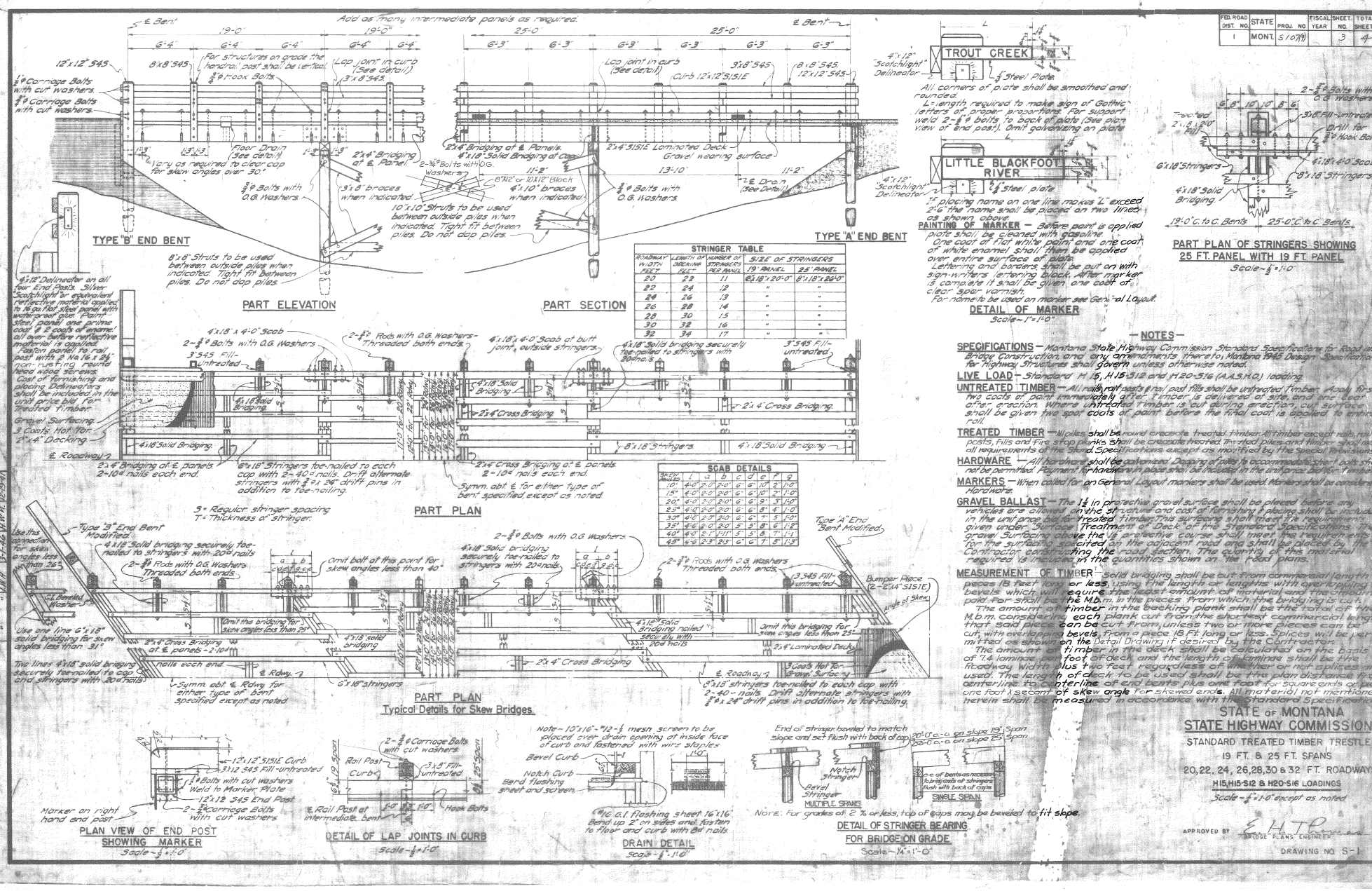
FED. ROAD DIST. NO.	STATE	PROJ. NO	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MONT.	S 1077 (1)		3	4



STRINGER TABLE				
ROADWAY WIDTH FEET	LENGTH OF DECKING FEET	NUMBER OF STRINGERS PER PANEL	SIZE OF STRINGERS 19' PANEL	SIZE OF STRINGERS 25' PANEL
20	22	11	8"x18"x20'-0"	8"x18"x26'-0"
22	24	12	"	"
24	26	13	"	"
26	28	14	"	"
28	30	15	"	"
30	32	16	"	"
32	34	17	"	"

SCAB DETAILS								
SKEW ANGLE	l	a	b	c	d	e	f	g
10°	4'-0"	2'-0"	2'-0"	6"	6"	10"	2"	1'-0"
15°	4'-0"	2'-0"	2'-0"	6"	6"	10"	2"	1'-0"
20°	4'-0"	2'-0"	2'-0"	6"	6"	9"	3"	1'-0"
25°	4'-0"	2'-0"	2'-0"	6"	6"	8"	4"	1'-0"
30°	4'-0"	2'-0"	2'-0"	6"	6"	7"	5"	1'-0"
35°	4'-6"	2'-0"	2'-0"	5"	5"	8"	6"	1'-8"
40°	4'-0"	2'-1"	1'-11"	5"	5"	6"	7"	1'-1"
45°	4'-6"	2'-3"	2'-3"	6"	6"	7"	8"	1'-3"

NOTES

SPECIFICATIONS — Montana State Highway Commission Standard Specifications for Road and Bridge Construction, and any amendments thereto; Montana 1949 Design Specifications for Highway Structures shall govern unless otherwise noted.

LIVE LOAD — Standard H 15, H15-S12 and H20-S16 (A.A.S.H.O.) loading.

UNTREATED TIMBER — All rails, rail posts & rail post fills shall be untreated timber. Apply first two coats of paint immediately after timber is delivered at site, and one coat after erection. Where untreated timber is cut during erection, cut surface shall be given two spot coats of paint before the final coat is applied to entire rail.

TREATED TIMBER — All piles shall be round creosote treated timber. All timber except rails, rail posts, fills and fire stop planks shall be creosote treated. Treated piles and timber shall meet all requirements of the Stand. Specifications except as modified by the Special Provisions.

HARDWARE — All hardware shall be galvanized. Dapping of piles to accommodate short bolts shall not be permitted. Payment for hardware in place shall be included in the unit price bid for treated timber.

MARKERS — When called for on General Layout markers shall be used. Markers shall be considered Hardware.

GRAVEL BALLAST — The 1½ in protective gravel surface shall be placed before any vehicles are allowed on the structure and cost of furnishing & placing shall be included in the unit price bid for treated timber. This surfacing shall meet the requirements given under "Surface Treatment of Deck" of the Standard Specifications. The gravel surfacing above the ½ protective course shall meet the requirements for the surfacing specified on the adjacent road and shall be placed by the Contractor constituting the road section. The quantity of this material required is included in the quantities shown on the road plans.

MEASUREMENT OF TIMBER — Solid bridging shall be cut from commercial length pieces 18 feet long or less, using the length or lengths with overlapping bevels which will require the least amount of material and the amount paid for shall be the M.b.m. in the pieces from which the bridging is cut.

The amount of timber in the backing plank shall be the total of the M.b.m. considering each plank cut from the shortest commercial length that said piece can be cut from, unless two or more pieces can be cut with overlapping bevels, from a piece 18 Ft. long or less. Splices will be permitted as shown on the Detail Drawing if desired by the Contractor.

The amount of timber in the deck shall be calculated on the basis of 1.4 laminae per foot of deck, and the length of laminae shall be the roadway width plus two feet regardless of whether or not splices are used. The length of deck to be used shall be the plan distance from centerline to centerline of end bents plus one foot for square ends or plus one foot x secant of skew angle for skewed ends. All material not mentioned herein shall be measured in accordance with the Standard Specifications.

STATE OF MONTANA
STATE HIGHWAY COMMISSION

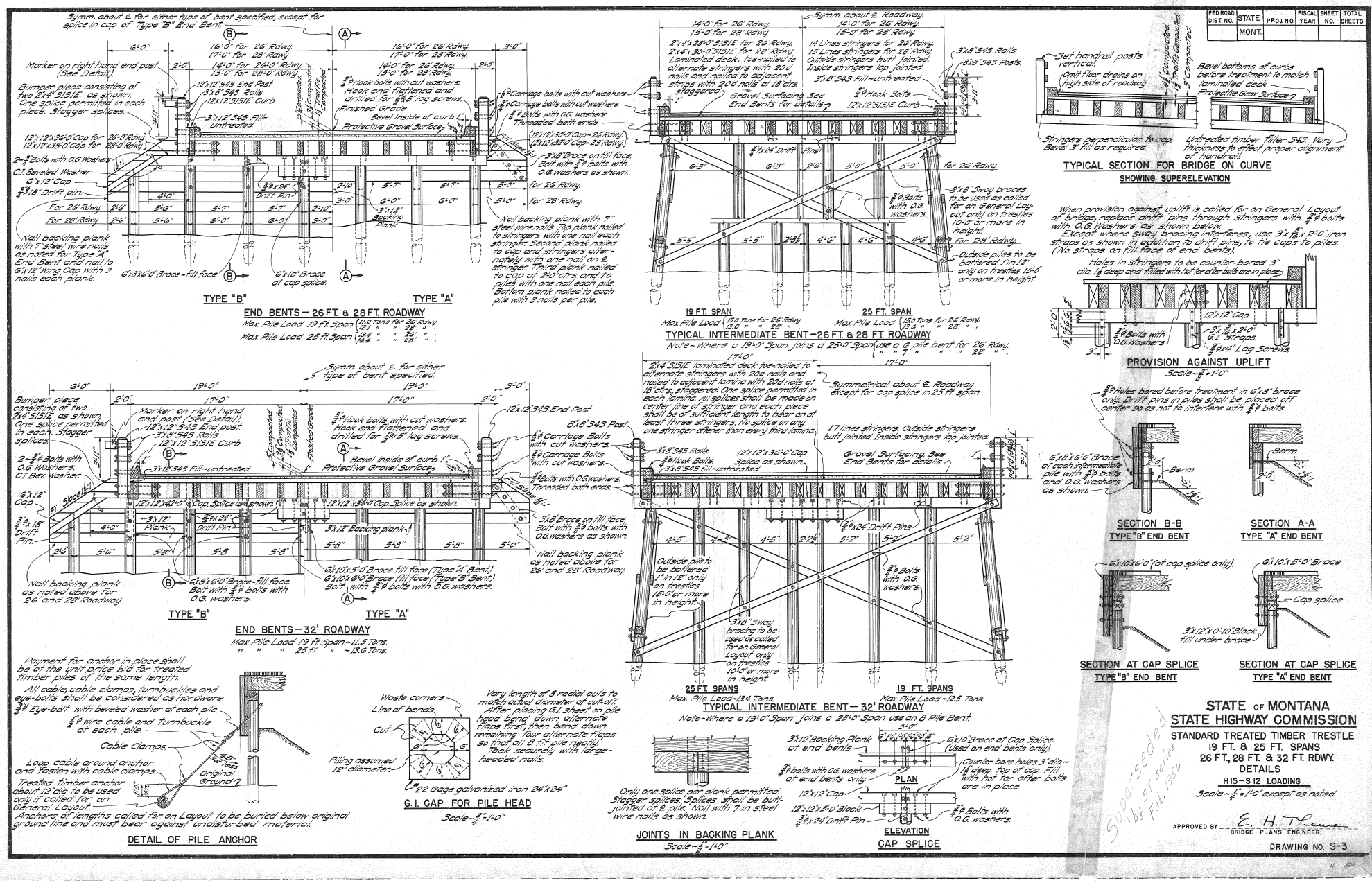
STANDARD TREATED TIMBER TRESTLE
19 FT. & 25 FT. SPANS
20, 22, 24, 26, 28, 30 & 32 FT. ROADWAYS
H15, H15-S12 & H20-S16 LOADINGS
Scale - ¼" = 1'-0" except as noted

APPROVED BY E. H. T. Peterson
BRIDGE PLANS ENGINEER

DRAWING NO S-1

DESIGNED BY			
DRAWN BY	T.D.V.	1-22-48	
TRACED BY	J.N.H.	2-17-48	
CHECKED BY	D.D.V.	2-19-48	
REVISED BY	T.H.T.	9-21-48	J.N.H. 5-22-49
REVISED BY	J.N.H.	1-24-50	J.N.H. 12-29-50
REVISED "	"	3-7-50	J.N.H. 12-29-50

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MONT.				



DESIGNED BY	H.W.K.	1-30-45
DRAWN BY	H.W.K.	2-26-45
TRACED BY	I.W.H.	2-26-45
CHECKED BY	J.W.H.	7-9-45
REVISED BY	J.W.H.	3-1-46
REVISED BY		

STATE OF MONTANA
STATE HIGHWAY COMMISSION

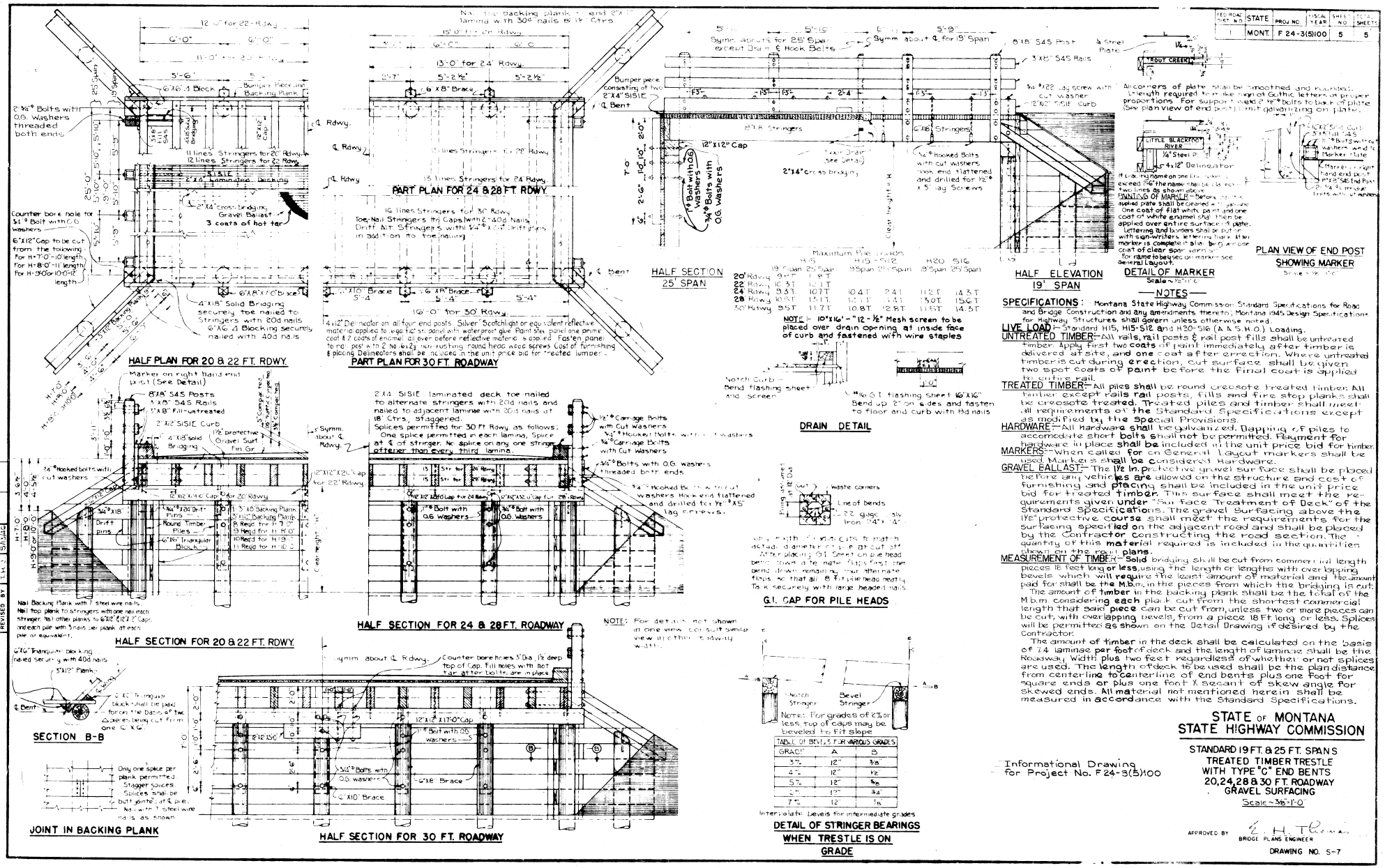
STANDARD TREATED TIMBER TRESTLE
19 FT. & 25 FT. SPANS
26 FT., 28 FT. & 32 FT. RDWY.
DETAILS
H15 - S12 LOADING
Scale - ¼" = 1'-0" except as noted.

APPROVED BY E. H. Thomas
BRIDGE PLANS ENGINEER

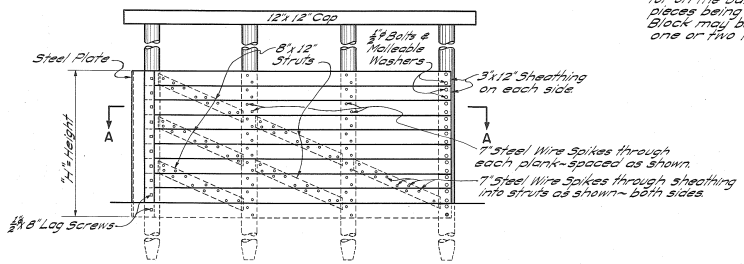
DRAWING NO. S-3

Superseded by ST series Feb. 1956

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MONT.	F 24-3(5)100		5	5

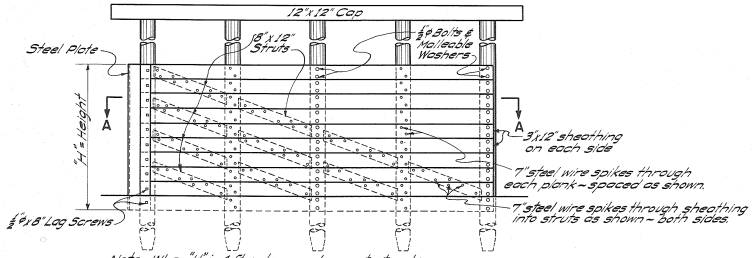


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
1	MONT.				



Note - When "H" is 4 ft. or less use the lower strut only.
When "H" is 5 ft. to 7 ft. use the two lower lines of struts.
When "H" is 8 ft. or more use all three lines of struts.

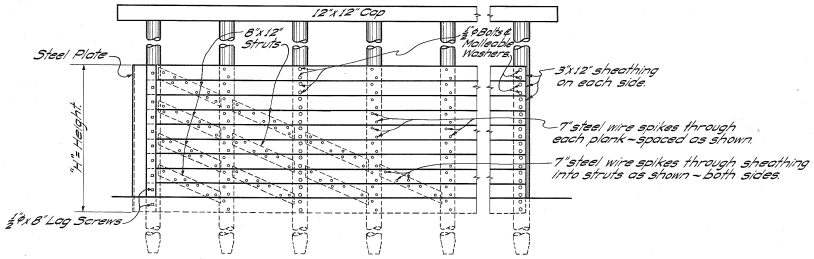
4 PILE BENT



Note - When "H" is 4 ft. or less use lower strut only.
When "H" is 5 ft. or 6 ft. use the two lower lines of struts.
When "H" is 7 ft. to 9 ft. use the three lower lines of struts.
When "H" is 10 ft. or more use all four lines of struts.

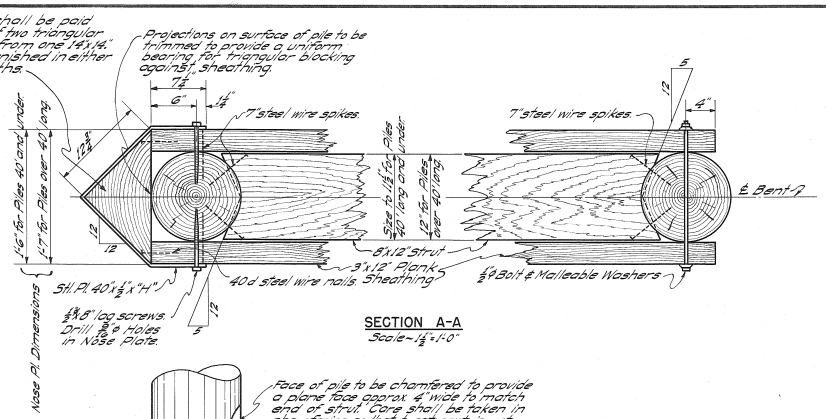
5 PILE BENT

NOTE - Adjust slope of 8"x12" struts to keep top end below edge of top plank. On bents where ice-breakers are used keep outside piles vertical.

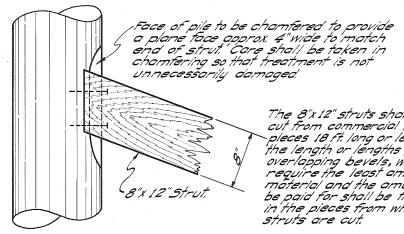


Note - When "H" is 4 ft. or less use lower strut only.
When "H" is 5 ft. or 6 ft. use the two lower lines of struts.
When "H" is 7 ft. to 9 ft. use the three lower lines of struts.
When "H" is 10 ft. or more use all four lines of struts.
On a 6 pile bent bolt planks to piles as shown.
On a 7 pile bent bolt planks to alternate piles.
On an 8 pile bent bolt planks to third, sixth and eighth piles.

6,7 OR 8 PILE BENT



SECTION A-A
Scale - 1 1/2" = 1'-0"



STRUT BEARING AT PILE
Scale - 1 1/2" = 1'-0"

— NOTES —

SPECIFICATIONS — Montana State Highway Commission Standard Specifications for Road and Bridge Construction, and any amendments thereto, and Montana 1945 Design Specifications shall govern unless otherwise noted.

PAINTING NOSE PLATE — Paint nose plate (inside and outside) one shop coat and two field coats as specified for structural steel.

PAYMENT — Only the steel nose plate on ice-breakers shall be paid for as structural steel. Lag screws, nails, spikes, bolts and washers shall be galvanized. Payment for hardware in place shall be included in the unit price bid for timber.

OTHER NOTES — For other notes see accompanying drawings of general layout of bridge and standard treated timber pile trestles.

DESIGNED BY		
DRAWN BY	J.W.H.	12-18-45
TRACED BY	J.W.H.	12-19-45
CHECKED BY		10-30-46
REVISED BY	J.W.H.	3-1-46
REVISED BY		

STATE OF MONTANA
STATE HIGHWAY COMMISSION

STANDARD ICE-BREAKERS
FOR
TREATED TIMBER PILE TRESTLES

Scale - 1/4" = 1'-0" except as noted.

APPROVED BY R. A. Stebleton
BRIDGE CONST. & MAINT. ENGINEER

DRAWING NO. S-8