



**ENGINEERING CONSTRUCTION CONTRACTING SECTION
MONTANA DEPARTMENT OF TRANSPORTATION**

As-Built Drawings

The following are as-built drawings for the structures. MDT provides them for informational purposes only. They do not include drawings for modifications to the structures, such as joint replacements and guardrail revisions and may not completely represent current conditions. Thus, some of the information contained in these documents may be out of date or not applicable with regard to the advertised project. The contractor should not rely solely on the as-built drawings provided for bidding purposes nor does any data in these files supersede the data in the contract documents.

GENERAL NOTES

SPECIFICATIONS: Construction, Bureau of Public Roads F.P.G.I.; Design AASHTO Standard Specifications for Highway Bridges 1957 with subsequent revisions.

DEAD LOAD: Concrete 150 Lbs. per Cu. Ft., Paving allowance 25 Lbs. per Sq. Ft. of roadway surface.

LIVE LOAD: H20-S16-44 Loading. Impact $I = \frac{50}{125+L}$ (L = Span Length). Max. I = 30%.

UNIT STRESSES: $f_c = 1320$ p.s.i., $f_s = 20,000$ p.s.i., $n = 10$.

CONCRETE: All concrete shall be Class "A" except footing seals which shall be Class "S". Maximum size of coarse aggregate shall be 1 1/2". All concrete except Class "S" shall be mixed with an air entraining admixture and shall be vibrated. All exposed corners shall be chamfered 3/4" unless otherwise shown.

FINISHING CONCRETE: Roadway slab and curbs shall be finished according to specifications. The outside faces of slab, both vertical faces of curbs and the exposed faces of the end wings shall be given a "Rubbed Finish". All other surfaces shall be given an "Ordinary Finish".

REINFORCEMENT STEEL: All reinforcement bars shall be intermediate grade steel conforming to ASTM Specifications A15-58T and A305-58T for sizes up to and including #11 bars. For larger sizes the steel shall conform to ASTM Specifications A408-58T. Unless otherwise shown the minimum covering of bars shall be 2" and lapped splices shall be 24 bar diameters.

PILING: Steel shall conform to ASTM Specification A7-58T or A36-60T. Splices, if necessary shall be made by means of single bevel butt weld which will develop the full section of the pile. All piles are to be driven to an allowable load value of 25 tons.

TEST PILES: One test pile shall be driven in each Abutment at the location selected by the Engineer and shall become one of the permanent piles.

STEEL BRIDGE RAILING: All items of rail construction; posts, pipe, beam type rail and all accessories, including the Bridge Markers and Reflector Signals are included in the item for Bridge Superstructure. All items of rail construction except the Bridge Marker and Reflector Signal Plates shall be galvanized.

MISCELLANEOUS STEEL: Bridge bearings and guard angles shall be fabricated from steel conforming to ASTM Specification A7-58T. All welding shall conform to the current "Standard Specifications for Welded Highway and Railroad Bridges" of the American Welding Society. Shop and field contact surfaces and surfaces in contact with concrete shall not be painted. Other surfaces shall be given one prime coat and one intermediate coat of red lead paint. The final field coat shall be white lead zinc oxide paint tinted Concrete Grey. Payment to be included in the item for Bridge Superstructure.

BRIDGE SUPERSTRUCTURE: This item includes all portions of the structure above the top construction joints in the substructure as shown on the drawings, see "Special Provisions".

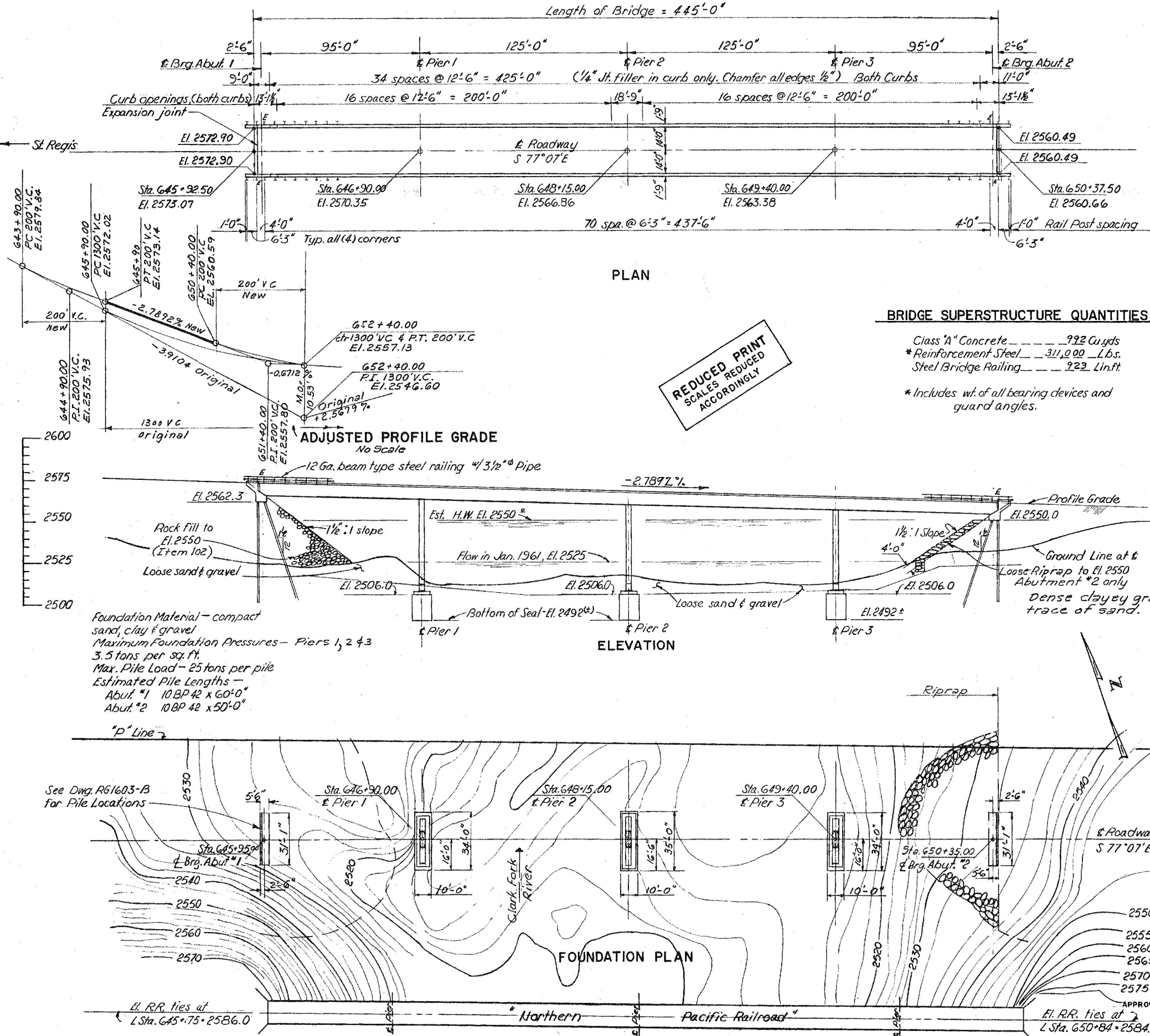
ESTIMATE

Excavation for Structures (Bridges)	1400 Cu. yds.
Structural Steel Piles, Furnished	1,430 Lin Ft.
Driven	24 Each
Test Piles, Struc. Steel	2 "
Pile Splices	10 "
* Class "A" Concrete (Substructure)	294 Cu. yds.
" " Class "S" " "	534 "
** Reinforcement Steel	62,000 Lbs.
Bridge Superstructure	Lump Sum
Cofferdams	
Loose Riprap	1200 Cu. yds.

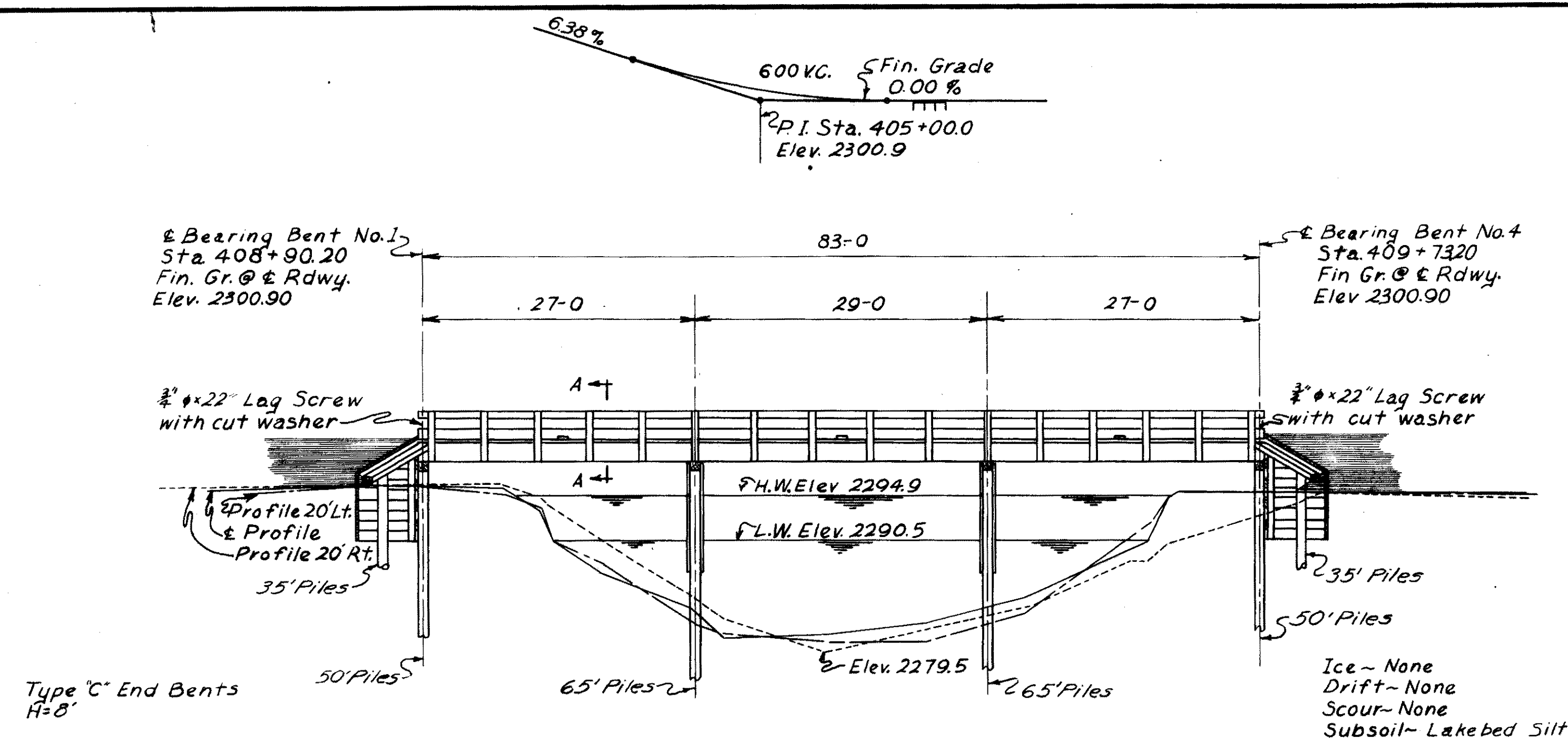
* Includes all concrete for abutments.
 ** " " anchor bolts for bearing devices.

DEPARTMENT OF COMMERCE
 BUREAU OF PUBLIC ROADS
 SAN FRANCISCO, CALIFORNIA
CLARK FORK RIVER BRIDGE
 PARADISE CUT OFF HIGHWAY
 MONTANA FOREST HIGHWAY PROJECT 9-1(1)

APPROVED *A.M. Goodall*
 CHIEF, WESTERN BRIDGE DESIGN
 SCALE 1" = 30'-0"
 SHEET 1 OF 7 SHEETS
 Revised 11-8-61 FILE NAME: 6337000BREXPO01AB.DGN
 RG 1603-A

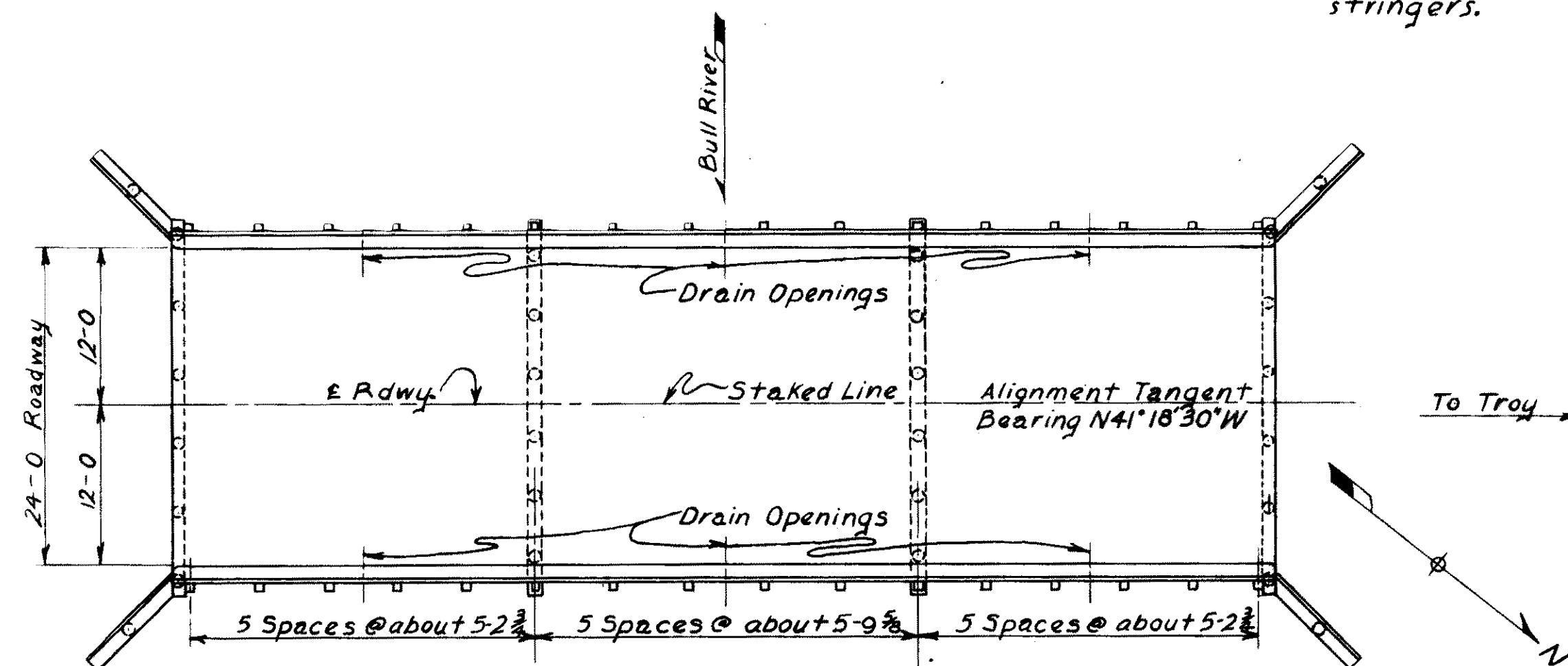


DESIGNED BY A.L.L. June 1961
 DRAWN BY Gillenwater 7/64
 CHECKED BY C.H.G. Sept 1961

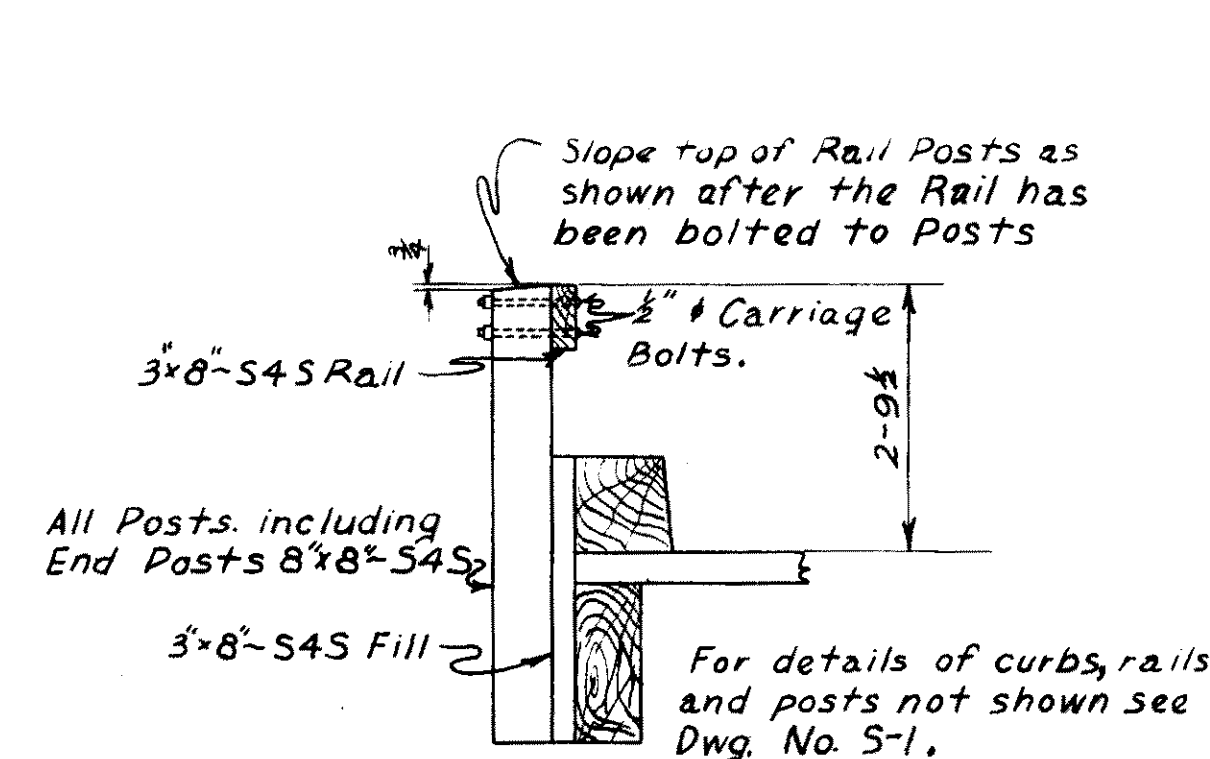


BRIDGE AT STATION 409+31.7
Name on markers "Bull River"
Scale - 1" = 1'-0"

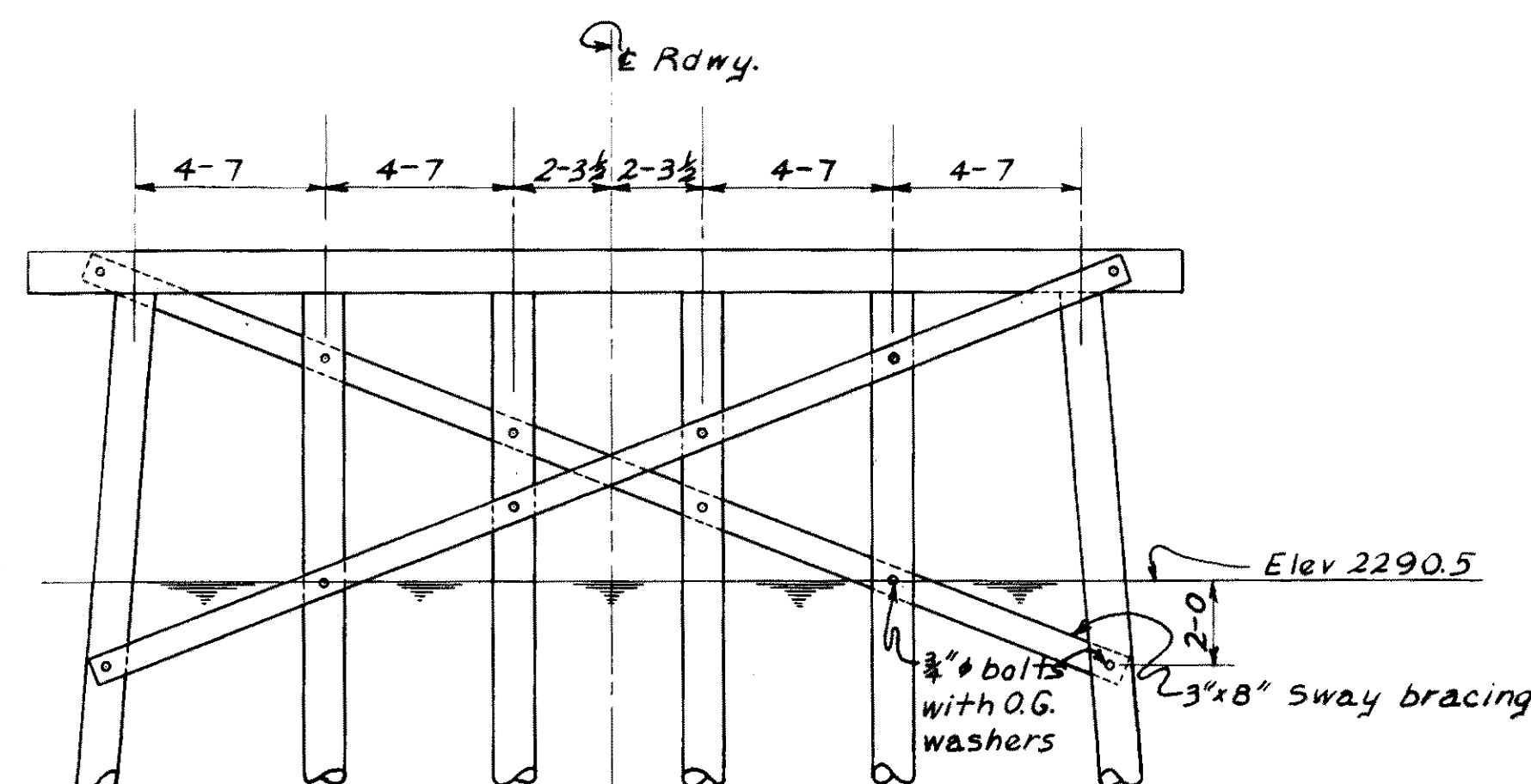
Note: Use 8"x20" Stringers and 4"x20" solid Bridging and splice plates instead of 8"x18" and 4"x18" as called for on Standard Drawing S-1. Modify the hardware as necessary to fit the 8"x20" stringers.



PLAN
Scale - 1" = 10'-0"



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



PLAN OF INTERMEDIATE BENT
Scale 1/4" = 1'-0"

NOTES

SPECIFICATIONS - Montana State Highway Commission Standard Specifications for Road and Bridge Construction, adopted January 1, 1946, and any amendments thereto, and Special Provisions shall govern unless otherwise noted. Design prepared in accordance with A.A.S.H.O. Specifications, 1953 Edition.

LIVE LOAD - Standard H15-S12 Loading.

FINISHED GRADE - Finished plan grade of bridge is same as profile grade shown on road plans.

EXCAVATION - Payment for all excavation necessary to the driving and cutting off of piles and to the placing of caps, stringers, backing plank, and bracing shall be included in the unit price bid for treated timber.

PILE PENETRATION - In case 10ft of pile penetration below the low point of the channel cannot be obtained by ordinary driving, the contractor shall do the necessary shooting to obtain the required penetration, exercising care to shatter only the subsoil immediately around the pile, or he shall excavate and set the piles the required depth and strike the piles with the hammer to bring them to a firm bearing. Cost of such work shall be included in the unit price bid for treated timber piling.

PEELING OF PILING - All piles shall be peeled in accordance with the Standard Specifications soon after cutting. All peeling shall be accomplished by such means as will not damage, destroy, or remove any of the sapwood.

DETAILS - Structure shown on this sheet shall be built in accordance with details shown on Dwg. S-1, S-2, S-5-7 with modifications shown hereon.

REFERENCES				
DWG. NO.	REV. DATE	RDWY.	DESCRIPTION	
S-1	12-19-47	24'	Standard Treated Timber Trestle	
S-2	3-1-47	24'	" " " "	
S-7	2-10-48	24'	" " " "	

STATE OF MONTANA
STATE HIGHWAY COMMISSION
BRIDGE OVER BULL RIVER
STATION 409+31.7
FED. AID SECONDARY PROJECT NO. S38(3)
SANDERS COUNTY
GENERAL LAYOUT
Scale - As Noted

DESIGNED		
DRAWN	R.F.M.	8-26-53
TRACED	A.B.S.	9-5-55
CHECKED	P.E.P.	9-7-55
REVISED		
REVISED		

APPROVED BY: *[Signature]*
BRIDGE ENGINEER
STATE PROJECT NUMBER 3038-02
DRAWING NO. 3764

GENERAL NOTES

Specifications: Construction, Bureau of Public Roads, F.P. 57, Design, A.A. S.H.O. Standard Specifications for Highway Bridges 1953.
Dead Load: Concrete 150 Lbs. per cu. ft., paving allowance 25 Lbs. per sq. ft. of roadway surface.
Live Load: H20-S16-44 Loading.
Unit Stresses: $f_c = 1320 \text{ p.s.i.}$ $f_s = 20,000 \text{ p.s.i.}$
 $n = 10$

Concrete: All concrete shall be Class "A" Max. Size of coarse aggregate shall be $1\frac{1}{2}$ ". All concrete shall be mixed with Type II Portland Cement (low alkali) with an air entraining admixture. All concrete shall be vibrated. All exposed corners shall be chamfered $\frac{3}{4}$ " unless otherwise noted.

Finishing Concrete: Roadway slab and curbs shall be finished according to specifications. The outside faces of the slab and curbs shall be given a "rubbed finish". All other concrete surfaces shall be given an "ordinary finish".

Reinforcement Steel: All bars shall be deformed intermediate grade steel conforming to A.S.T.M. Specification A15-54T. All bars in the slab shall be supported on "metal chairs" or on approved type of concrete saddle.

Steel Bridge Railing: All items of rail construction are included in the contract item for "Steel Bridge Railing" and include the metal plate rail, steel posts, and all rail and post securing bolts, nuts, washers and shims. All items of steel rail construction shall be galvanized.

The pay length for the steel bridge railing shall be measured out to out of end wings.

Lumber: All lumber shall conform to W.C.L. I. B. Standard Rule 15. All lumber to be rough, Douglas Fir, Construction Grade 123-b, $f = 1500$. Boxed heart will be allowed.

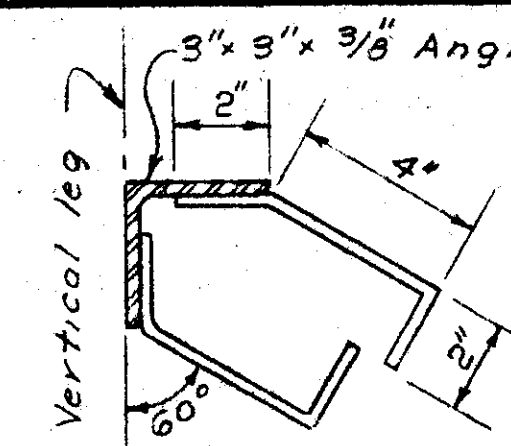
Lumber Inspection: Certificate of grading inspection by the W.C.L. I. B., or other acceptable inspection service shall be furnished in triplicate by the contractor.

Timber Piling: All piling shall be Douglas Fir. Ordered pile lengths shall be determined following the driving of the two treated test piles. The ordered length of the two test piles shall be 50 feet. All piling except wing piles shall be driven to a depth sufficient to develop a minimum load bearing capacity of twenty-five (25) tons per pile. Wing piles to be ordered to lengths shown. See plan for location of test piles. Treated test piles to be apart of the foundation of the bridge.

Timber And Pile Treatment: All timber and piling shall be pressure treated with 10 lb. 50-50 creosote petroleum treatment. All timber shall be incised, cut and completely fabricated prior to treatment. All holes bored in the field in the treated timber shall be impregnated with hot creosote oil by means of an approved bolt hole treater. All field cut surfaces of treated timber shall be field treated according to specifications.

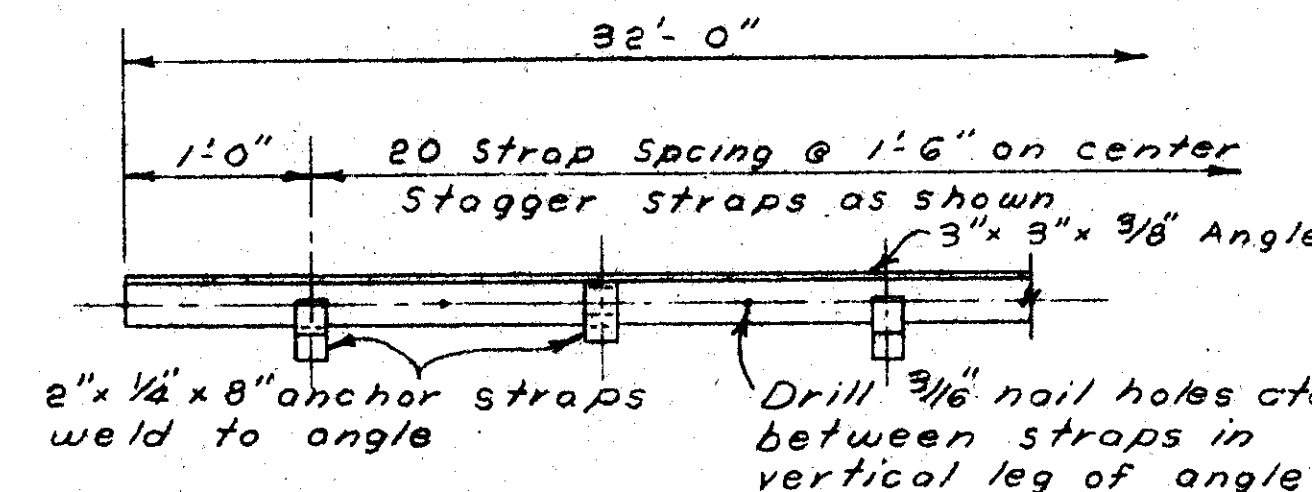
Hardware: All hardware consisting of bolts, nuts, washers, spikes, plates, etc. which are a part of the permanent structure shall be galvanized. No direct payment shall be made for hardware, cost shall be included in cost of material to which hardware is attached.

Bridge Head Reflectors: will be furnished by the Bureau of Public Roads. Cost of installation in the end wings shall be included in the contract item for Class "A" Concrete.



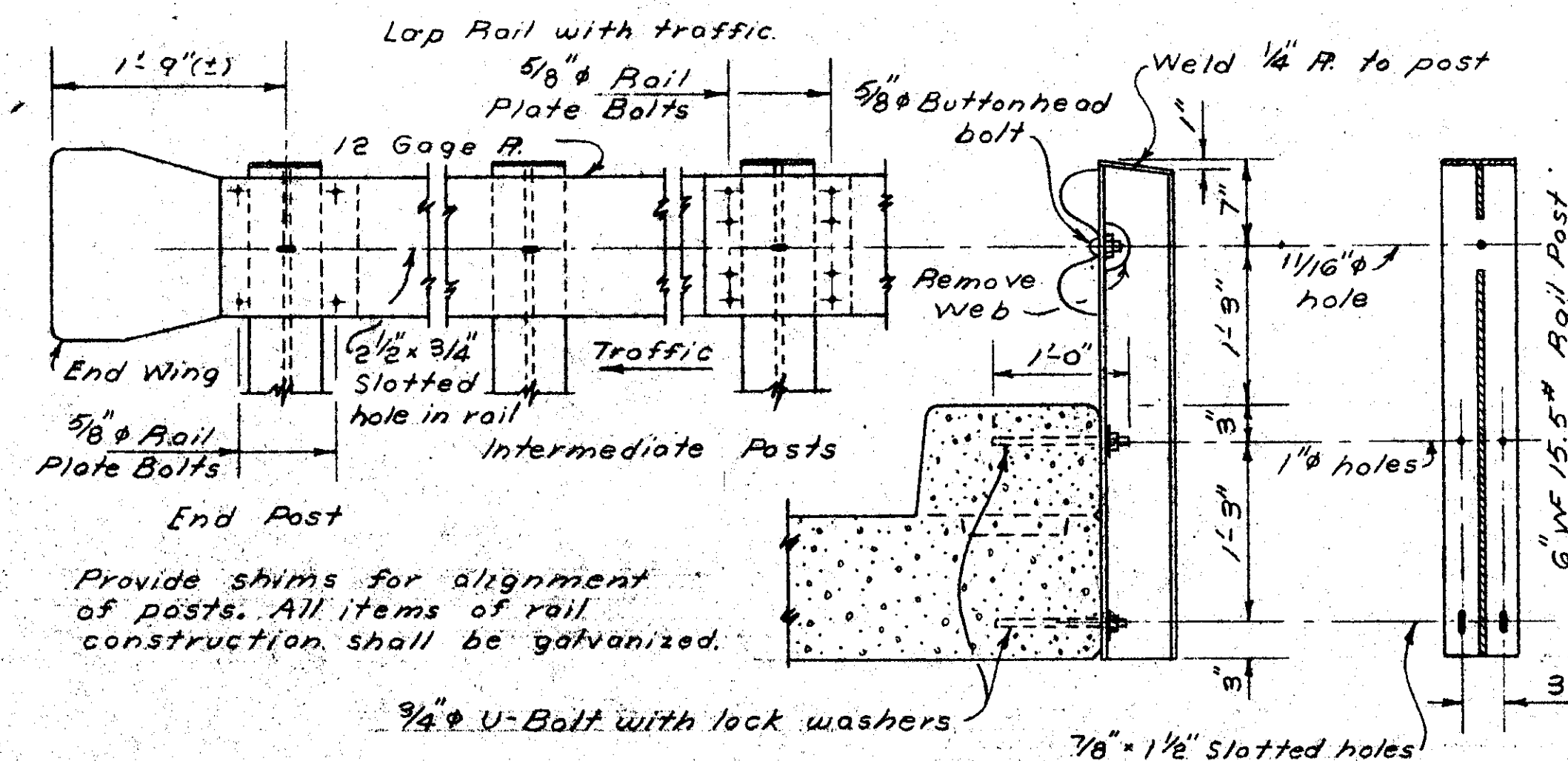
Scale 3" = 1'-0"

Shape angle to fit rdwy. crown.



Scale 1" = 1'-0"

GUARD ANGLE DETAILS



Provide shims for alignment of posts. All items of rail construction shall be galvanized.

RAILING DETAILS

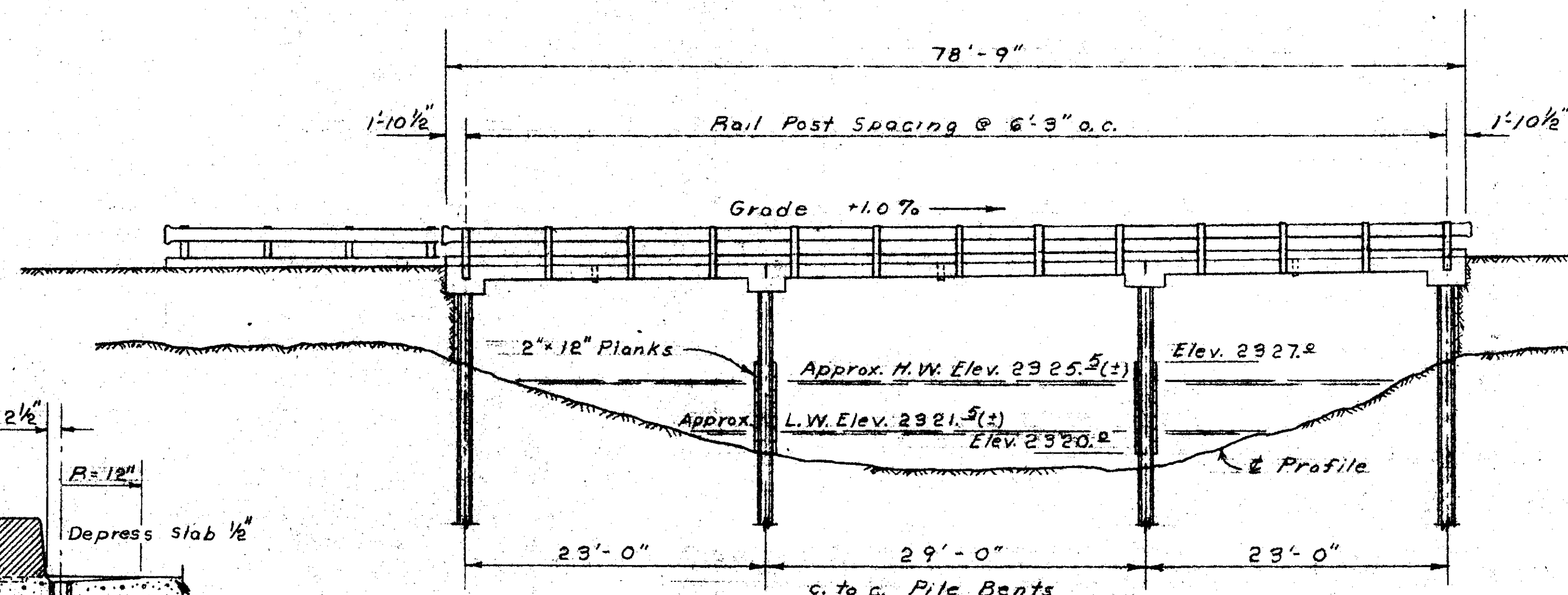
Scale 1" = 1'-0"

Bulkhead: Depth of bulkhead to be determined by the Engineer. Payment for excavation required for placing bulkhead is included in the contract unit price for Treated Timber.

ESTIMATE

Class A Concrete	10.4 Cu. Yds.
Reinforcement Steel	26,000 Lbs.
Treated Timber	4 MBM
Treated Piles - Furnished	1,092 Lin. Ft.
Treated Piles - Driven	32 Each
Steel Bridge Railing	157 Lin. Ft.

*Includes weight of guard angles and drains.

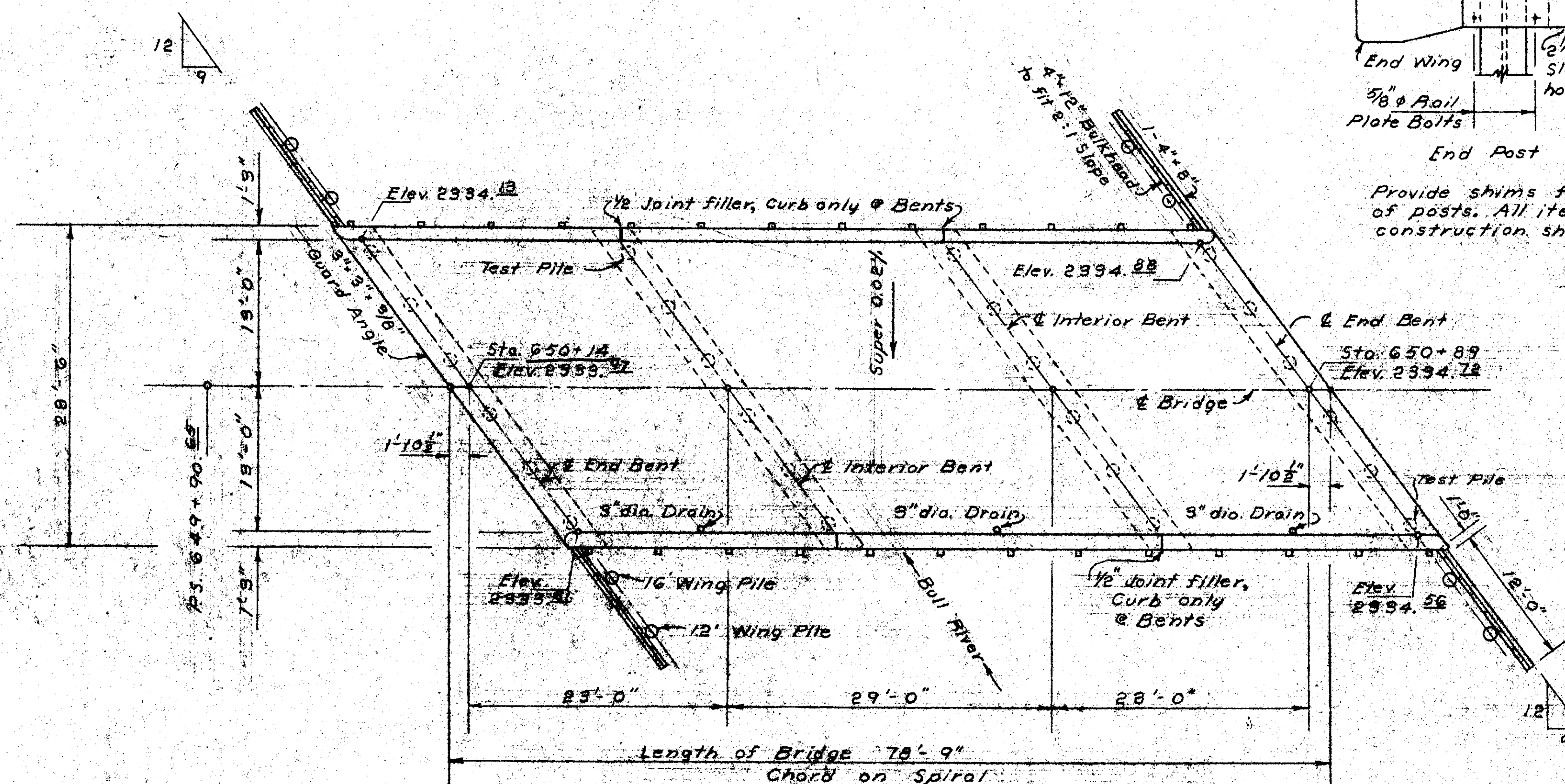
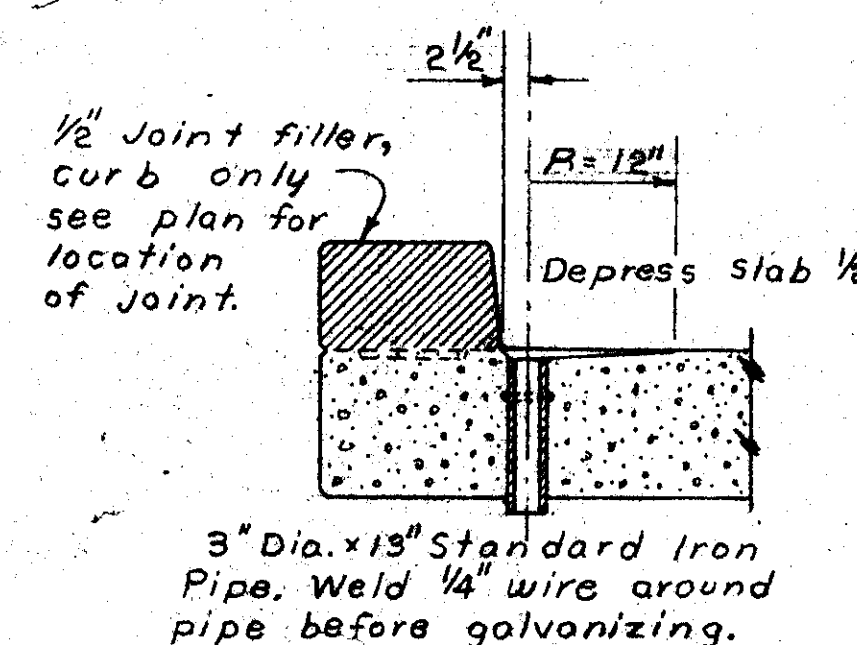


ELEVATION

Scale 1/8" = 1'-0"

DRAIN DETAILS

Scale 3/4" = 1'-0"



PLAN

Scale 1/8" = 1'-0"

DESIGNED	REVISIONS	DATE
Steinbrugg		
DRAWN		
TRACED		
CHECKED		

U. S. DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS	
REGION EIGHT	PORTLAND, OREGON
BULL RIVER BRIDGE	
TROY - NOXON ROAD	
PROJECT NO. MONTANA FOREST HIGHWAY 5-A1B	
DATE: JUNE 1958	SCALE: AS NOTED
SHEET 1 OF 2 SHEETS	DRAWING NO. R8-G-75-A