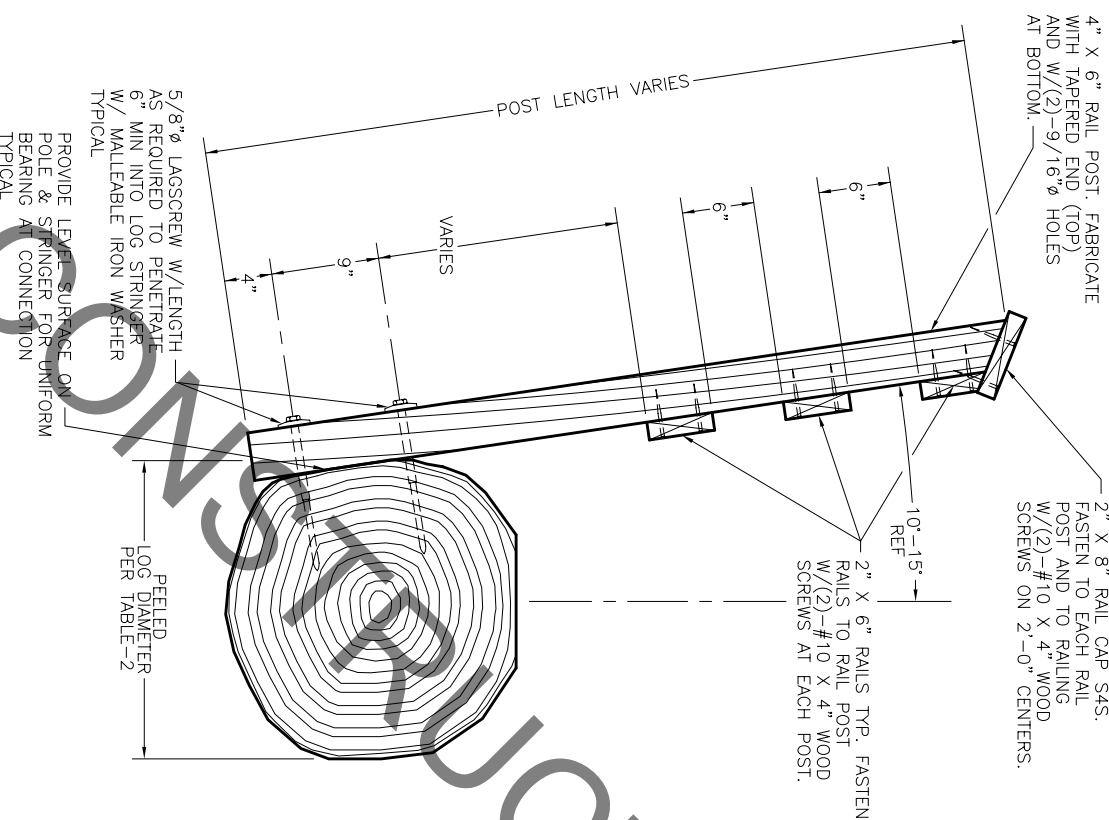


POLE HANDRAIL DETAILS
RA820A3
SCALE: 1 1/2" = 1'-0"



SAWN HANDRAIL DETAILS
RA820B3
SCALE: 1 1/2" = 1'-0"

**TABLE-2: SINGLE ROUND LOG STRINGER
PEELED MID SPAN DIAMETER REQUIREMENTS**

STRINGER SPAN (FEET)	TIMBER SPECIES - DOUGLAS FIR (COASTAL OR INTERIOR NORTH) AND WESTERN LARCH			PEDESTRIAN LOAD			GROUND SNOW LOAD		
	DESIGN LOADING IN POUNDS PER SQUARE FOOT	LOG DIAMETER PER TABLE-2	PEELED LOG DIAMETER PER TABLE-2	DESIGN LOADING IN POUNDS PER SQUARE FOOT	LOG DIAMETER PER TABLE-2	PEELED LOG DIAMETER PER TABLE-2			
10	16"	16"	16"	150	16"	16"			
15	16"	16"	16"	150	16"	16"			
20	16"	16"	16"	150	16"	16"			
25	16"	16"	16"	150	16"	16"			
30	16"	16"	16"	150	16"	16"			
35	18"	19"	17"	150	18"	17"			
40	20"	21"	19"	150	20"	20"			
45	21"	23"	21"	150	22"	24"			

GENERAL NOTES:

SPECIFICATIONS: MATERIALS AND CONSTRUCTION OF THIS STRUCTURE SHALL BE IN ACCORDANCE WITH THE CURRENT ADOPTED USDA FOREST SERVICE SPECIFICATIONS FOR CONSTRUCTION OF ROADS AND BRIDGES, AS MODIFIED FOR THIS CONTRACT.

LOG MEMBERS: LOGS USED FOR STRINGERS SHALL BE ONE OF THE SPECIES LISTED IN TABLE 1.1 WITH MINIMUM, PEELED, MID-SPAN LOG DIAMETERS AS NOTED FOR THE VARIOUS SPANS AND DESIGN LOADING. NATIVE TREES TO BE USED FOR BRIDGE STRINGERS SHALL BE STRAIGHT, SOUND, AND FREE OF DEFECTS AND ROT. STRINGERS SHALL BE CHOSEN FROM TREES WITH RELATIVELY FEW LIMBS, AND HAVE NO KNOT GREATER THAN 3" IN DIAMETER. LOGS SHALL BE DAPPED AT ENDS TO CREATE A LEVEL BEARING SURFACE AT SUPPORTS TAKING CARE TO AVOID OVERCUTTING. DAP UPPER SURFACE OF LOGS TO PROVIDE A LEVEL BEARING SURFACE FOR DECK PLANKS. REFER TO PLANS FOR DAPPING DETAILS.

TIMBER & LUMBER: SOLID SAWN TIMBER MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF THE GRADING RULES AGENCY FOR THE SPECIES, TYPE, AND GRADE SPECIFIED BELOW.

DECK PLANKS, SILLS, AND BACKING PLANKS

BRIDGE RAILS & POSTS (SEE PROJECT CRITERIA)

SAWN - UNTREATED

- REDWOOD, S4S, No.1 GRADE
- GRADING RULES AGENCY - RIS

- WESTERN RED CEDAR, S4S, SELECT STRUCTURAL GRADE
- GRADING RULES AGENCY - WMPA, WCLB

- HEM-FIR/DOUGLAS FIR, S4S, No.1 GRADE
- GRADING RULES AGENCY - WMPA, WCLB

POLES

- LODGE POLE PINE, PEELED AND DRIED.
- GRADING RULES AGENCY - NUGA

TREATMENT: SEE PROJECT CRITERIA FOR MEMBERS IDENTIFIED TO BE TREATED AND FOR TREATMENT TYPE. PRESERVATIVE TREATMENT SHALL BE IN ACCORDANCE WITH THE CURRENT AWPA SPECIFICATIONS USING THE TREATMENT MATERIALS LISTED BELOW. TREATMENT WILL COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF WMPA'S "BEST MANAGEMENT PRACTICES FOR THE USE OF TREATED WOOD IN AQUATIC ENVIRONMENTS".

LOG STRINGERS, POSTS AND POLES

- AWPA C4
- PENTACHLOROPHENOL IN LIGHT OIL (TYPE C SOLVENT)
- COPPER NAPHTHENATE IN HEAVY OIL (TYPE A SOLVENT)

SOLID SAWN LUMBER

- AWPA C2 (ABOVE GROUND USE)
- PENTACHLOROPHENOL IN LIGHT OIL (TYPE C SOLVENT)
- COPPER NAPHTHENATE IN HEAVY OIL (TYPE A SOLVENT)

SOLID SAWN LUMBER AND POLES USED FOR BRIDGE RAILS AND POSTS

- AWPA C2 (ABOVE GROUND USE)
- PENTACHLOROPHENOL IN LIGHT OIL (TYPE C SOLVENT)
- COPPER NAPHTHENATE IN HEAVY OIL (TYPE A SOLVENT)
- OXINE COPPER IN LIGHT OIL (TYPE C SOLVENT)
- ACZA, ACO

FIELD TREATMENT: COPPER NAPHTHENATE (2% SOLUTION) SHALL BE FURNISHED FOR FIELD TREATING OF WOOD. ALL ABRASIONS AND FIELD CUTS - APPROVED BY THE C.O.R. - SHALL BE CAREFULLY TRIMMED AND GIVEN THREE BRUSH COATS OF THE FIELD TREATMENT SOLUTION, WHERE APPROVED FIELD DRILLING OF BOLT OR NAIL HOLES IS REQUIRED. THE HOLES SHALL BE POURED FULL OF PRESERVATIVE PRIOR TO INSERTING THE FASTENERS.

THE ENDS OF UNTREATED LOG STRINGERS (REFER TO THE PROJECT DESIGN CRITERIA) SHALL ALSO RECEIVE THREE BRUSH COATS OF THE FIELD TREATMENT PRIOR TO INSTALLATION OF THE BACKING PLANKS.

HARDWARE AND STRUCTURAL STEEL: SEE PROJECT DESIGN CRITERIA FOR STEEL HARDWARE FINISH. GALVANIZED OR UNFINISHED HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 36, WITH NUTS AND BOLTS CONFORMING TO ASTM A307, GRADE A. WEATHERING STEEL AND HARDWARE SHALL MEET THE REQUIREMENTS OF AASHTO M270, GRADE 50W, WITH BOLTS AND NUTS CONFORMING TO ASTM A325, TYPE 3. USE MALLEABLE IRON WASHERS AGAINST WOOD UNLESS OTHERWISE NOTED.

RA820C3

**-REDUCED-
DO NOT SCALE DRAWING**

REV.	DESCRIPTION	APPROVED	DATE
Δ	REVISED TO R-6 STRUCTURES CAD STANDARDS	MOE	3/24/06

U.S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
THE PACIFIC NORTHWEST REGION (R-6)

SINGLE LOG STRINGER
10 FT - 45 FT LONG
TRAIL BRIDGE

Forest Bridge No.:
Location:
Designed:
Drawn:
Checked:

Approved: /s/ MERVIN O. ERIKSSON
REGIONAL BRIDGE ENGINEER
Date: 03/01/2004

APPROVED:

DATE

FOREST ENGINEER

DWG NO.

SHEET 3 of 4 DESIGN AID RA820