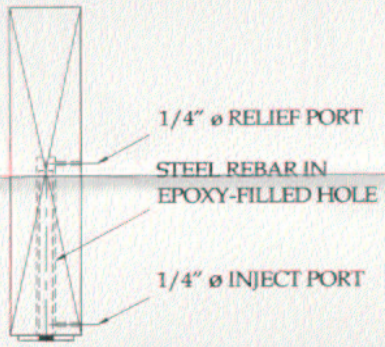
WESTERN WOOD STRUCTURES, INC.

Structural Timber Repairs

Western Wood Structures, Inc. (WWS) incorporated in 1969 as a structural wood products sales & engineering company, specializes in the design, supply & installation of engineered wood systems. Today, in addition to our many engineered wood product lines, WWS offers design & field services for the repair and upgrading of distressed timber beams & trusses.

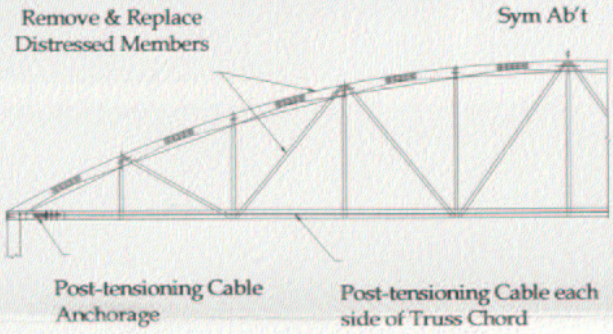
REINFORCING FOR SHEAR FAILURES / REPAIR OF EXCESSIVE SPLITTING



Steel dowels are placed in epoxy filled holes to restore the shear capacity of cracked Glulams.

WWS installed steel dowels in epoxy filled holes to repair a radial tension failure that occurred to these peaked & cambered Glulams that carry the roof structure of a horse arena in Sherwood, Oregon.

BOWSTRING AND "TECO" TRUSS REPAIRS



WWS can repair or replace damaged or overstressed truss members.

These bowstring trusses were post tensioned with high strength cable as a means of upgrading to meet current code requirements. The use of cable allows for greater flexibility in working with existing ceiling joists or other obstructions. Many building departments require existing beams & trusses be upgraded to meet current code in the event of a building remodel.

FIELD INSPECTIONS, ANALYSIS & DESIGN

Irregular moment due to segmented chords.

Moment Diagram for "TECO" Truss

Western Wood Structures' engineers, field superintendents and technical representatives have more than 150 years of combined experience in the inspection, design, and repair of timber beams & trusses in over 100 projects. We use state-of-the-art analysis programs to analyze trusses and beams in arriving at repair recommendations.

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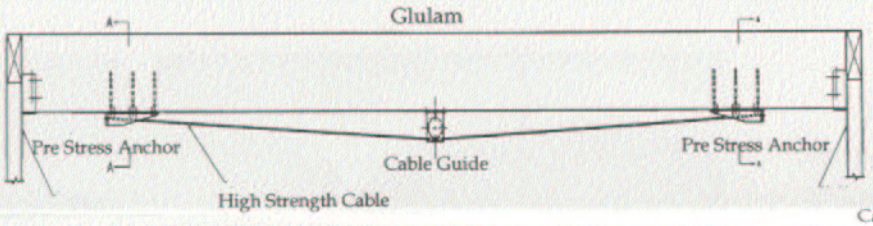
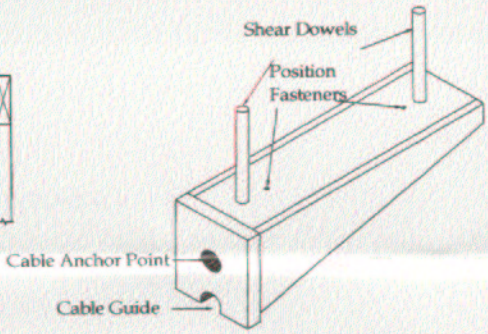
REINFORCING FOR BENDING

WWS uses a high strength cable post tensioning system to increase the moment capacity of existing beams. Steel anchorages are installed at the ends of the tension zone and a cable guide is installed to maintain the distance of the cable from the tension surface of the member. Glulams manufactured prior to 1970 were not made with tension laminations. In these cases it is appropriate to use an allowable bending stress of 1800 psi This system provides the proper strength enhancement for these beams.



Post Tensioned Glulam



Pre-Stress Anchorage

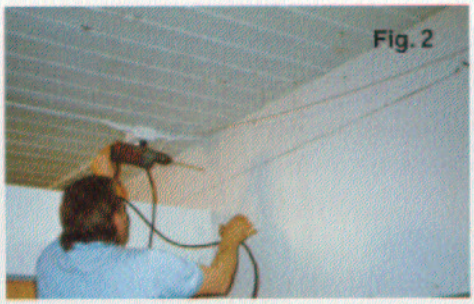


Fig. 1 - Holes are drilled for cable anchorage connectors.

Fig. 2 - An exhaust port is drilled at the top of the cable anchorage connector hole.

Fig. 3 - An injection port is drilled at the bottom of the cable anchorage connector hole.

These beams over this swimming pool in Troutdale, Oregon were post tensioned with high strength cable. The steel connectors were epoxy coated due to the moist environment.

Western Wood Structures, Inc. can offer a solution for your next glulam beam or timber truss problem. Please call us with your technical questions and ask for Terry McKee or Steve Turner. For a closer look, visit us on the world wide web.

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