

CONNECTIONS IN A MASS TIMBER STRUCTURE: DESIGN AND BUDGET STRATEGIES

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KL&A
Engineers & Builders

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Mass Timber Connections

Referenced Projects

General Connection Considerations

Beyond Code Approaches

Deep Beam Notches

Glued In Rod Connections

PLATTE FIFTEEN



OZ Architecture

Adolfson & Peterson Construction

KL&A

Nordic

LOADING DOCK



DU BURWELL CENTER



Lake Flato

Shears Adkins + Rockmore

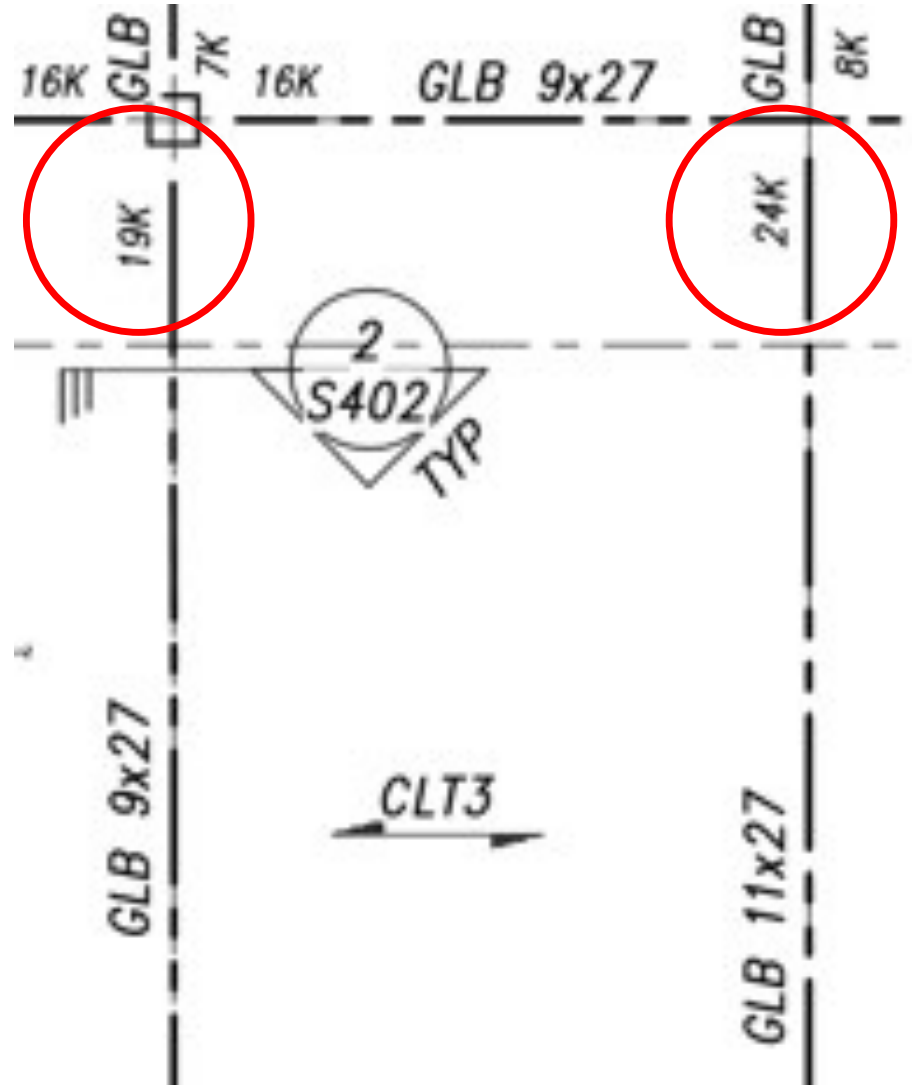
PCL Construction

KL&A

Nordic

Connection Considerations For Mass Timber

High Loads



Connection Considerations For Mass Timber

Aesthetics



Connection Considerations For Mass Timber

Fire Ratings



Connection Considerations For Mass Timber

Interface With Other Materials



Connection Considerations For Mass Timber

High Loads Parallel to Grain



Connection Considerations For Mass Timber

Shrinkage



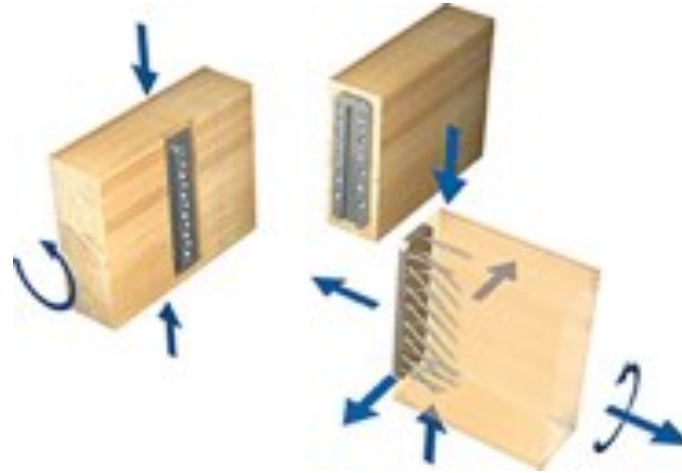
Connection Considerations For Mass Timber

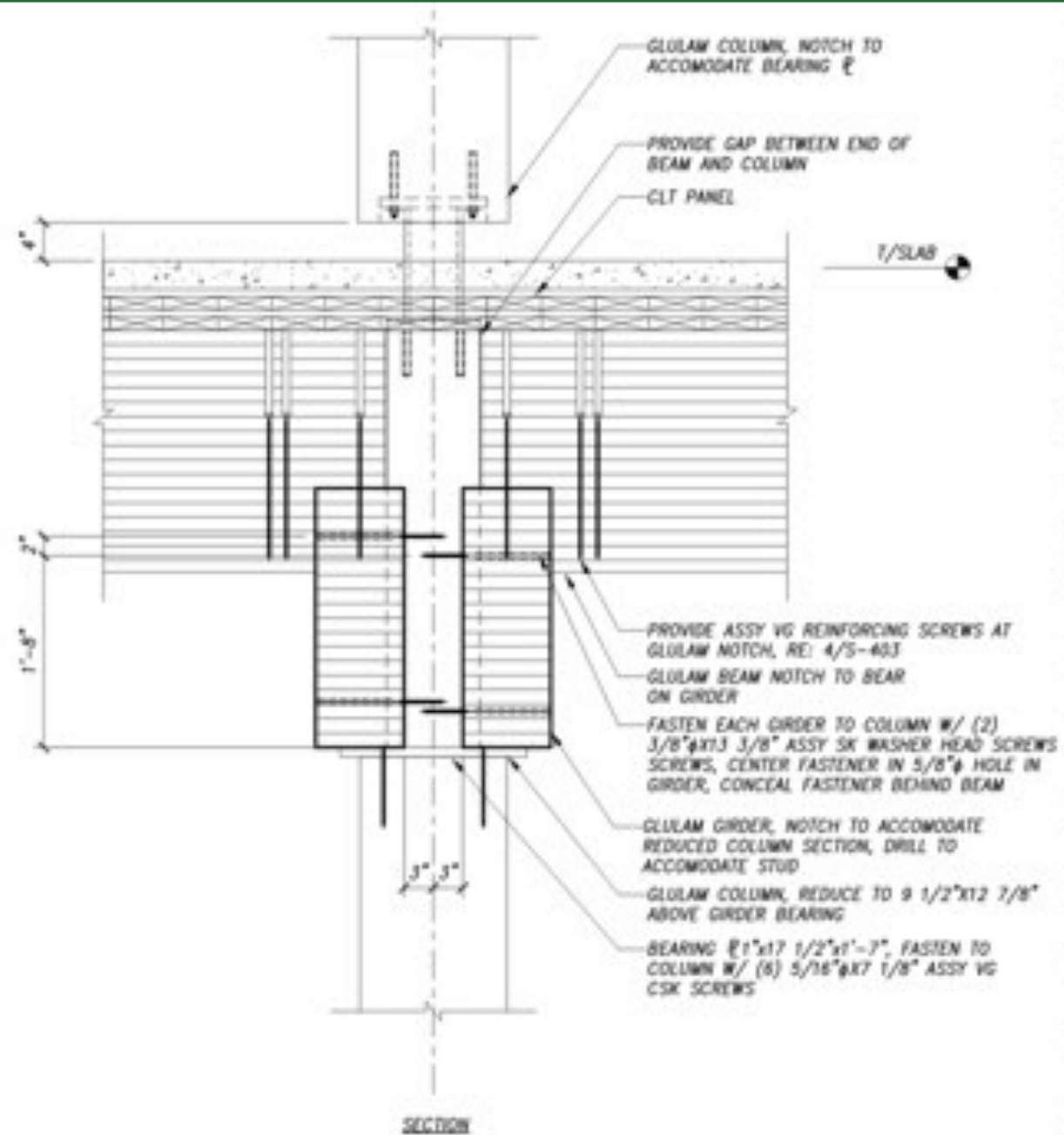
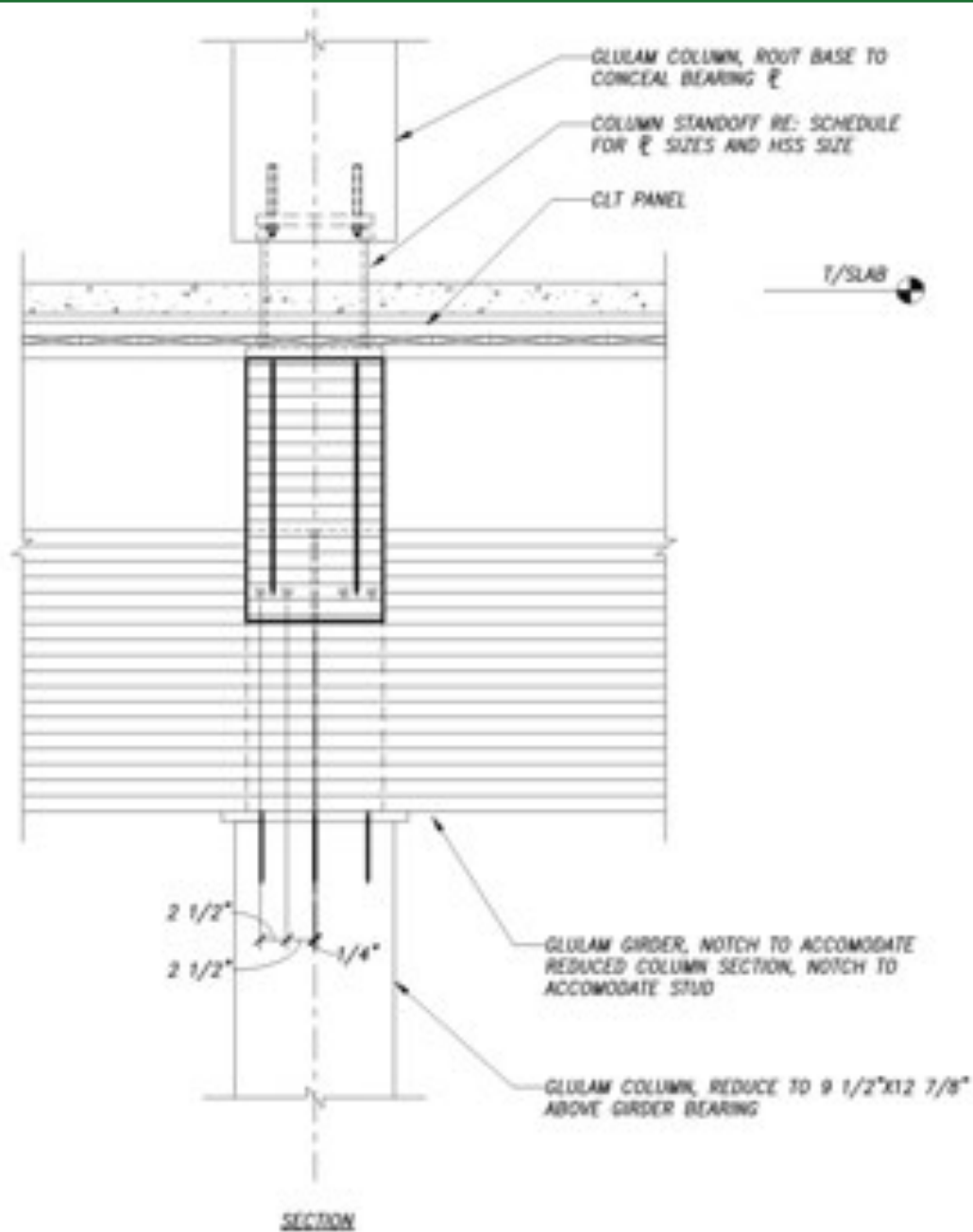
Lateral Loads



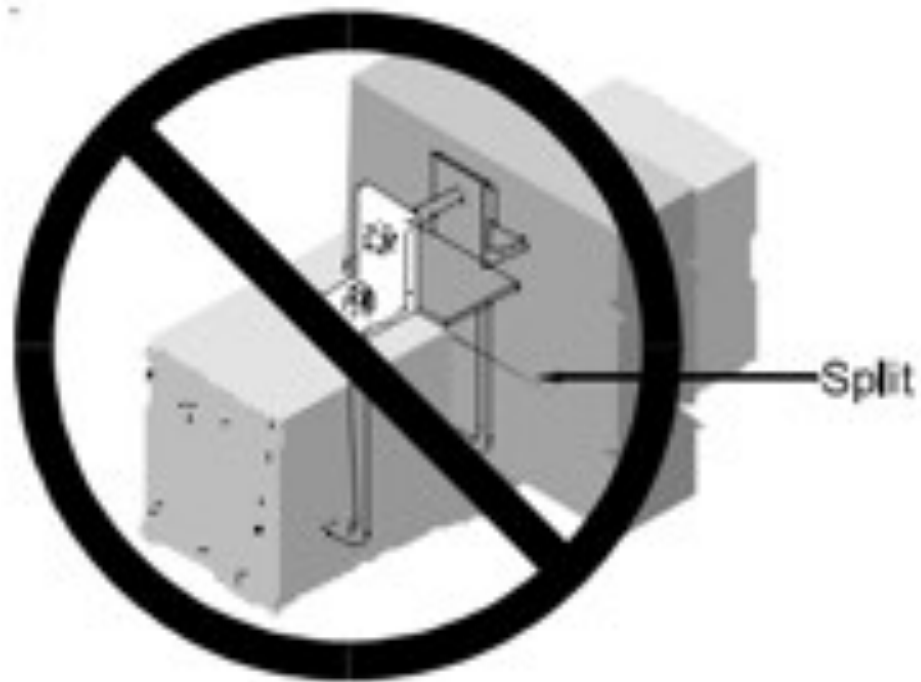
Connection Considerations For Mass Timber

Cost





33A. Notching a beam at its bearing may cause splits.
THIS DETAIL IS NOT RECOMMENDED!



Where a notch on the tension face cannot be avoided (Figure 4), the depth of a tension side notch is limited to a maximum of 1/10 the depth of the member, not to exceed 3 inches. The design shear reaction at the notch must be limited by Equation 11:

$$R_v \leq \frac{2bd_r F_v C_p C_M C_t C_w}{3} \left(\frac{d_r}{d} \right)^2 \quad (11)$$

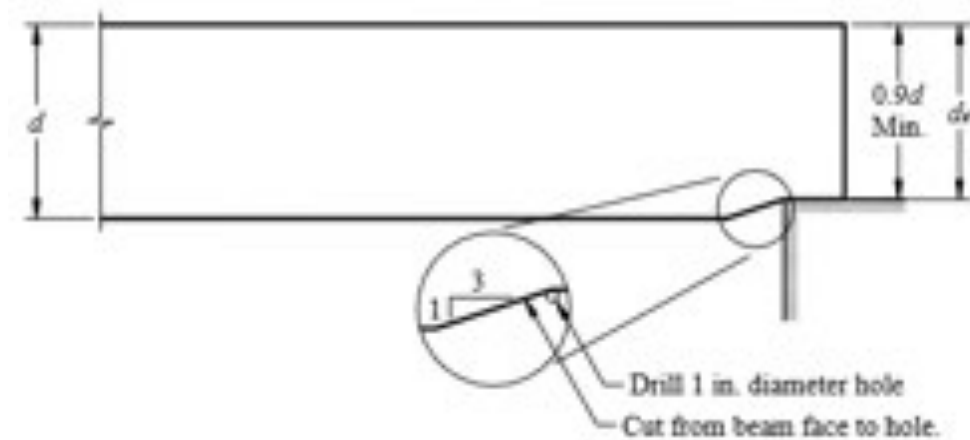
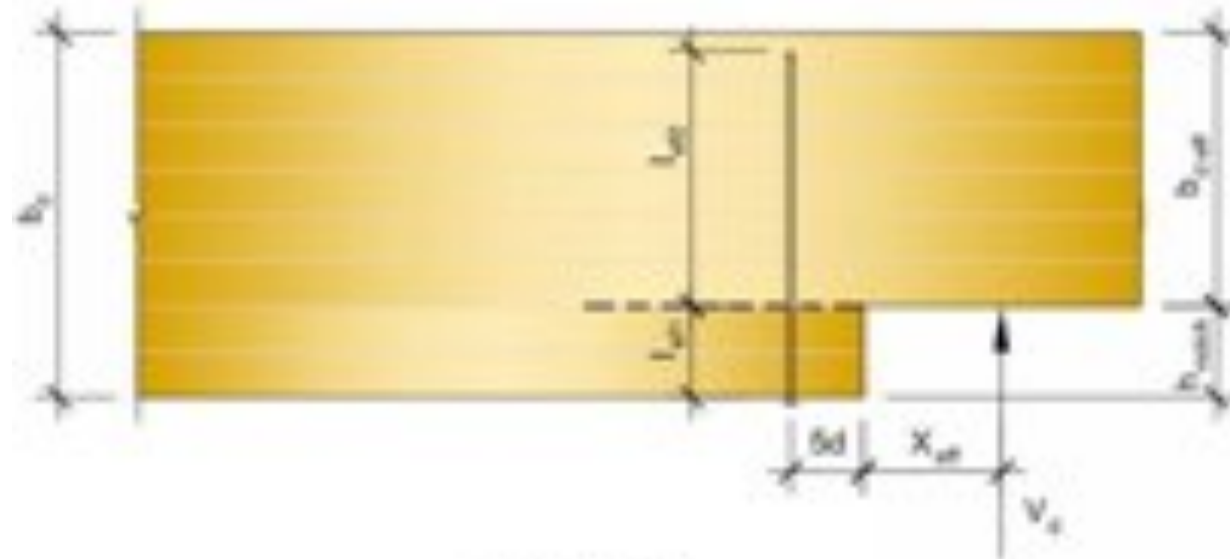


Figure 4. End bearing notch detail

Reinforced notched beam with ASSY® VG screw

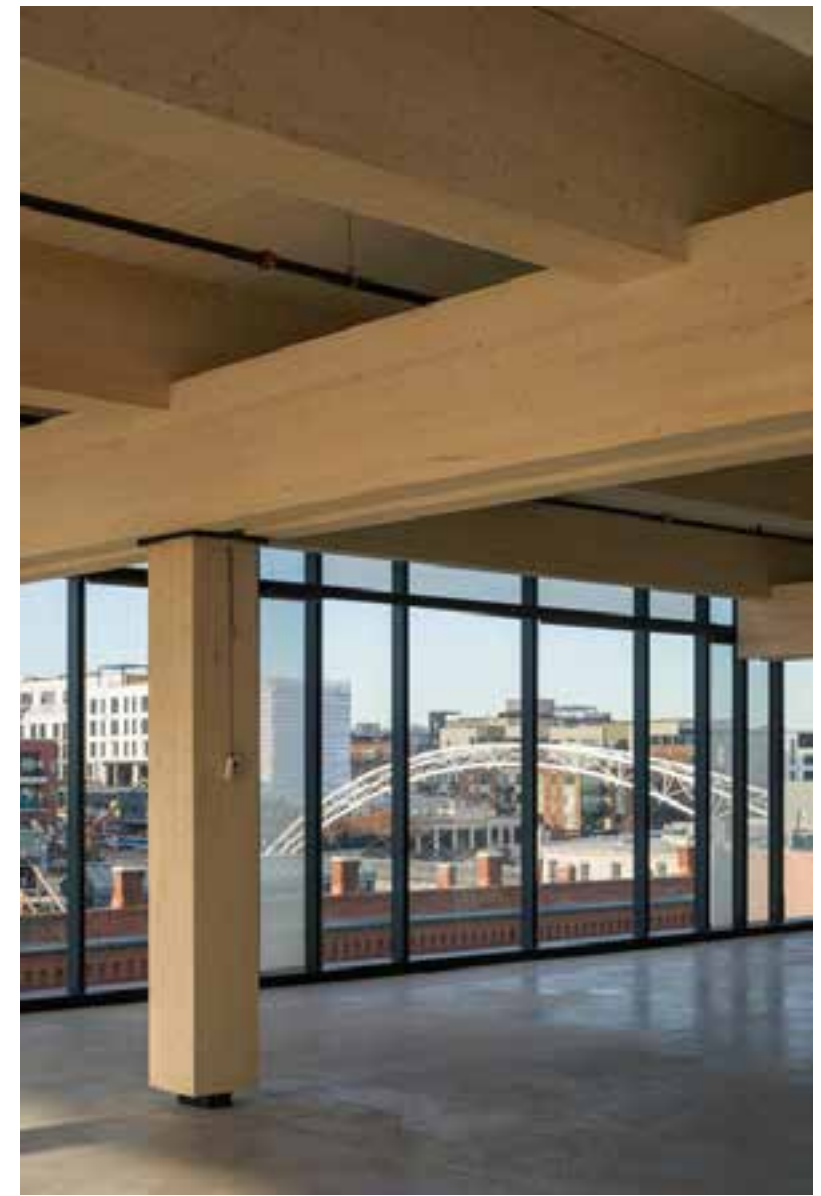
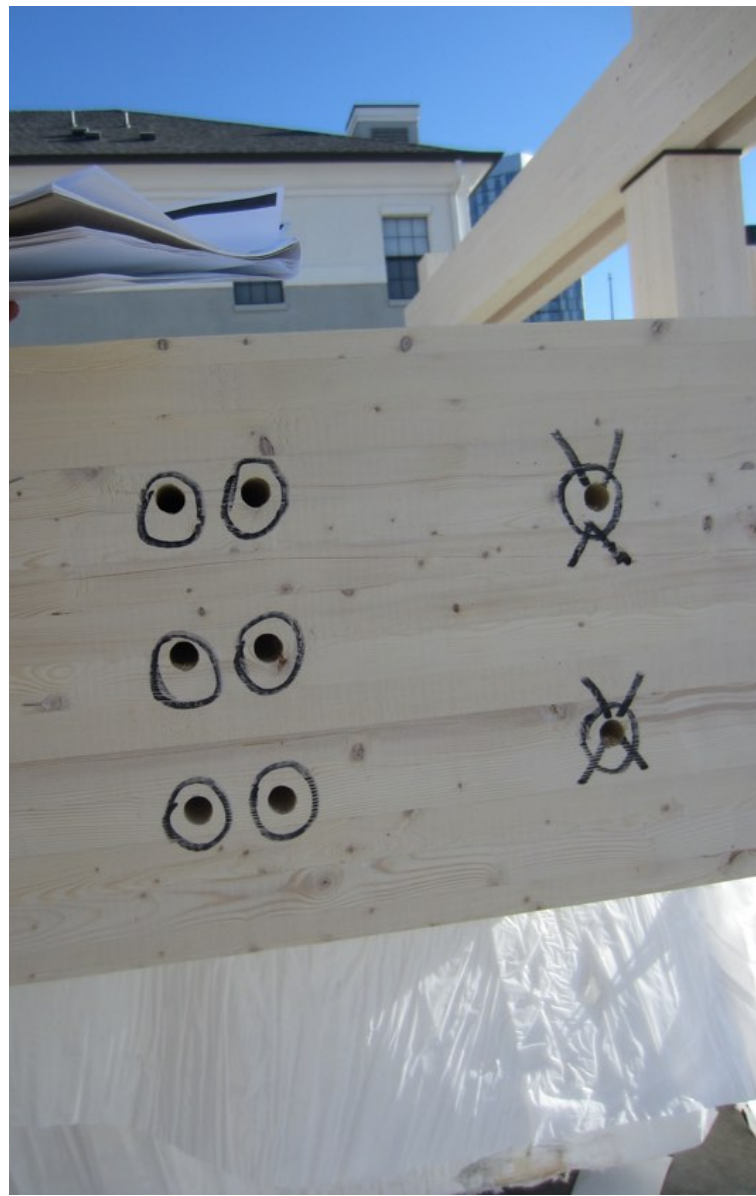
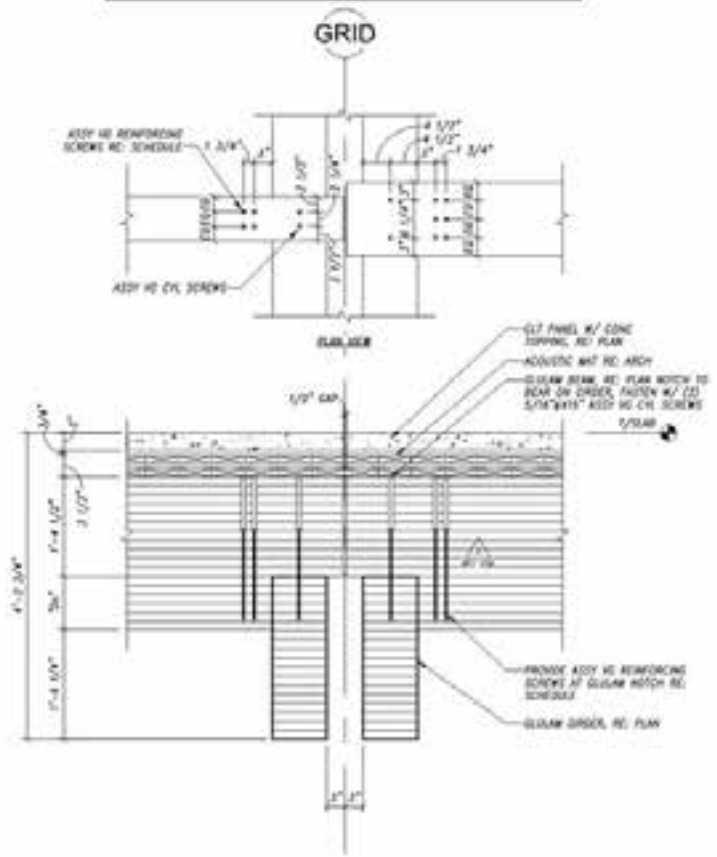


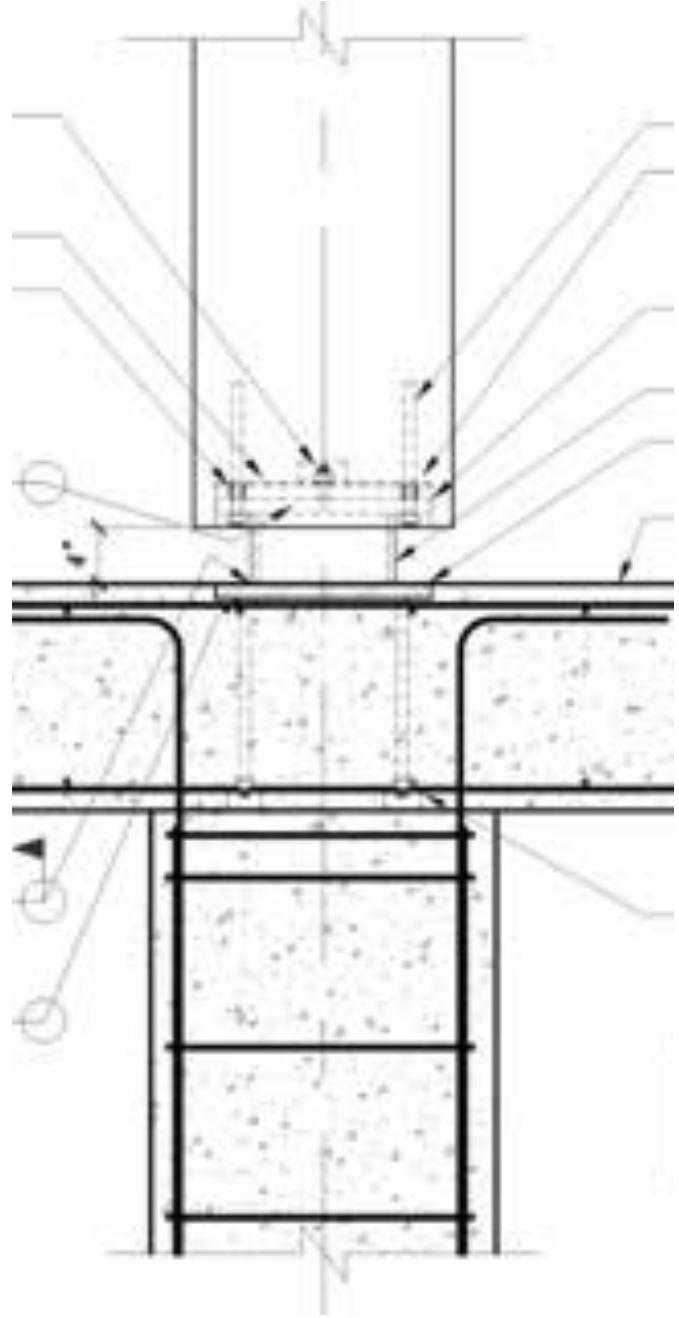
SIDE VIEW



TOP VIEW

NOTCHED BEAM SCREW REINFORCEMENT SCHEDULE			
BEAM SIZE	NOTCH DEPTH, "in"	SCREWS	# OF SCREWS
GLB 12.87x26.26	0'-8 3/4"	ADD NO CYL 5/16"x17"	4
GLB 8x26.26	0'-8 3/4"	ADD NO CYL 5/16"x16"	4
GLB 7.26x26.26	0'-8 3/4"	ADD NO CYL 5/16"x16"	4
GLB 7.26x18.75	0'-2 1/4"	ADD NO CYL 5/16"x16"	4
GLB 7.26x8	0'-0 1/2"	NO REINF SCREWS REQ'D	N/A







QUESTIONS?



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