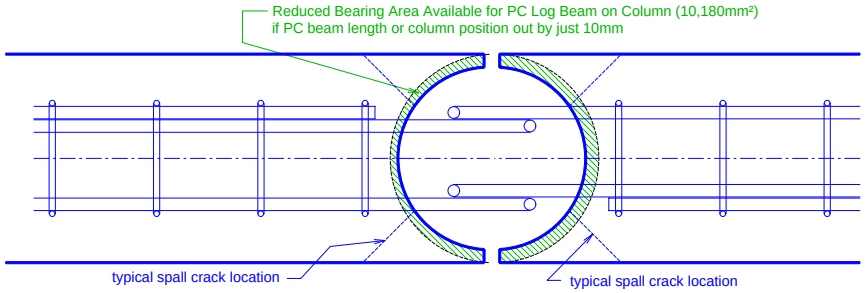
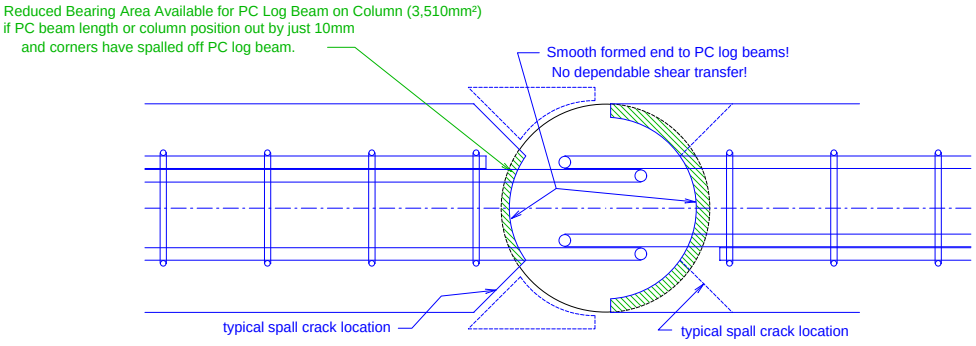
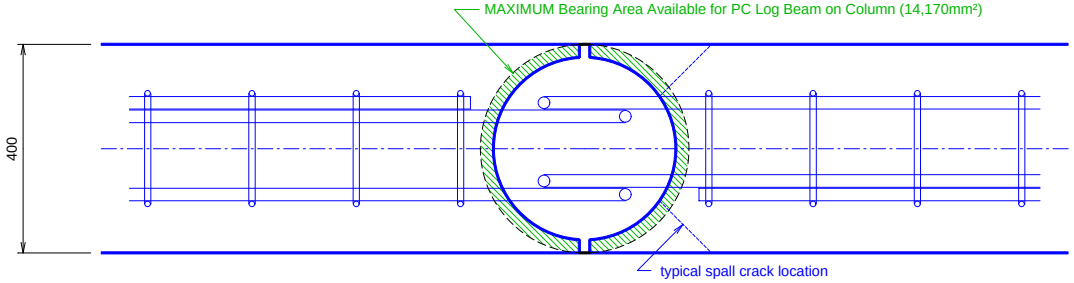


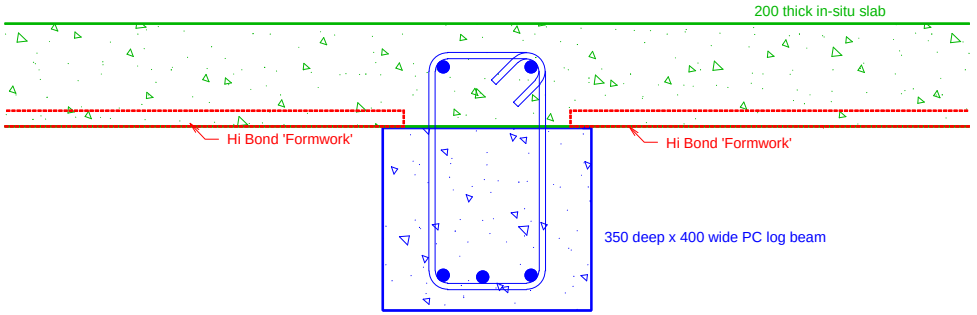
PLAN SECTION 2-2 - INTERIOR BEAM-COLUMN JOINT
(ALLOWING 10mm CONSTRUCTION TOLERANCE)



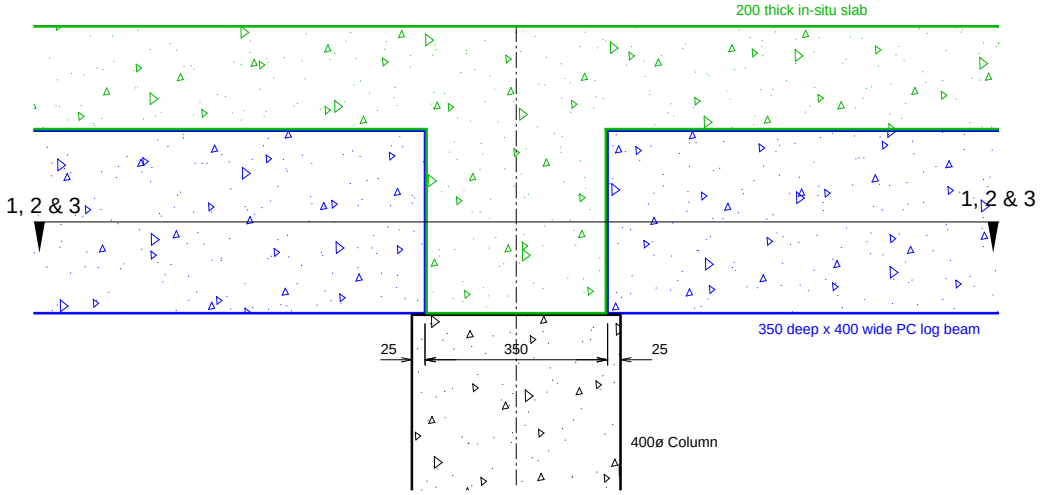
PLAN SECTION 3-3 - INTERIOR BEAM-COLUMN JOINT
(ALLOWING 10mm CONSTRUCTION TOLERANCE + CORNER SPALLING)



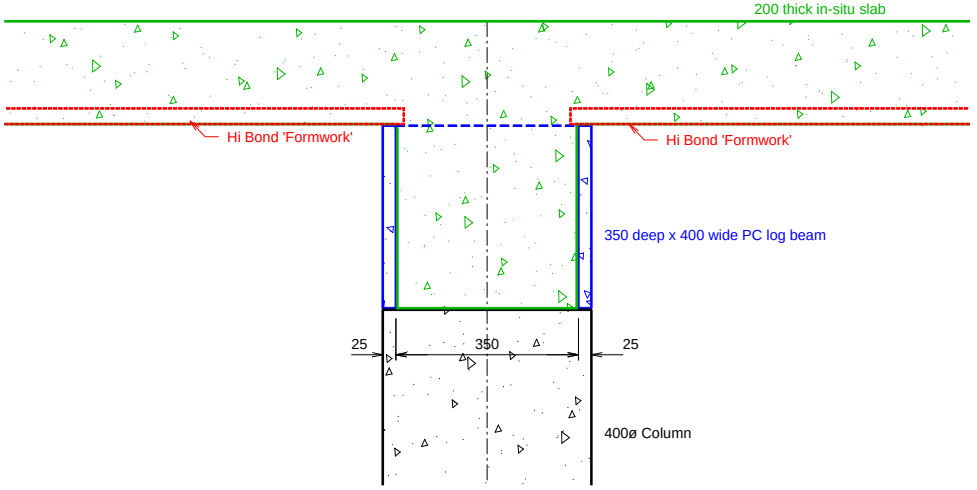
PLAN SECTION 1-1 - INTERIOR BEAM-COLUMN JOINT
(AS DESIGNED)



Typical Section thru PC Log Beam



LONGIITUDINAL SECTION - TYPICAL INTERIOR BEAM-COLUMN JOINT



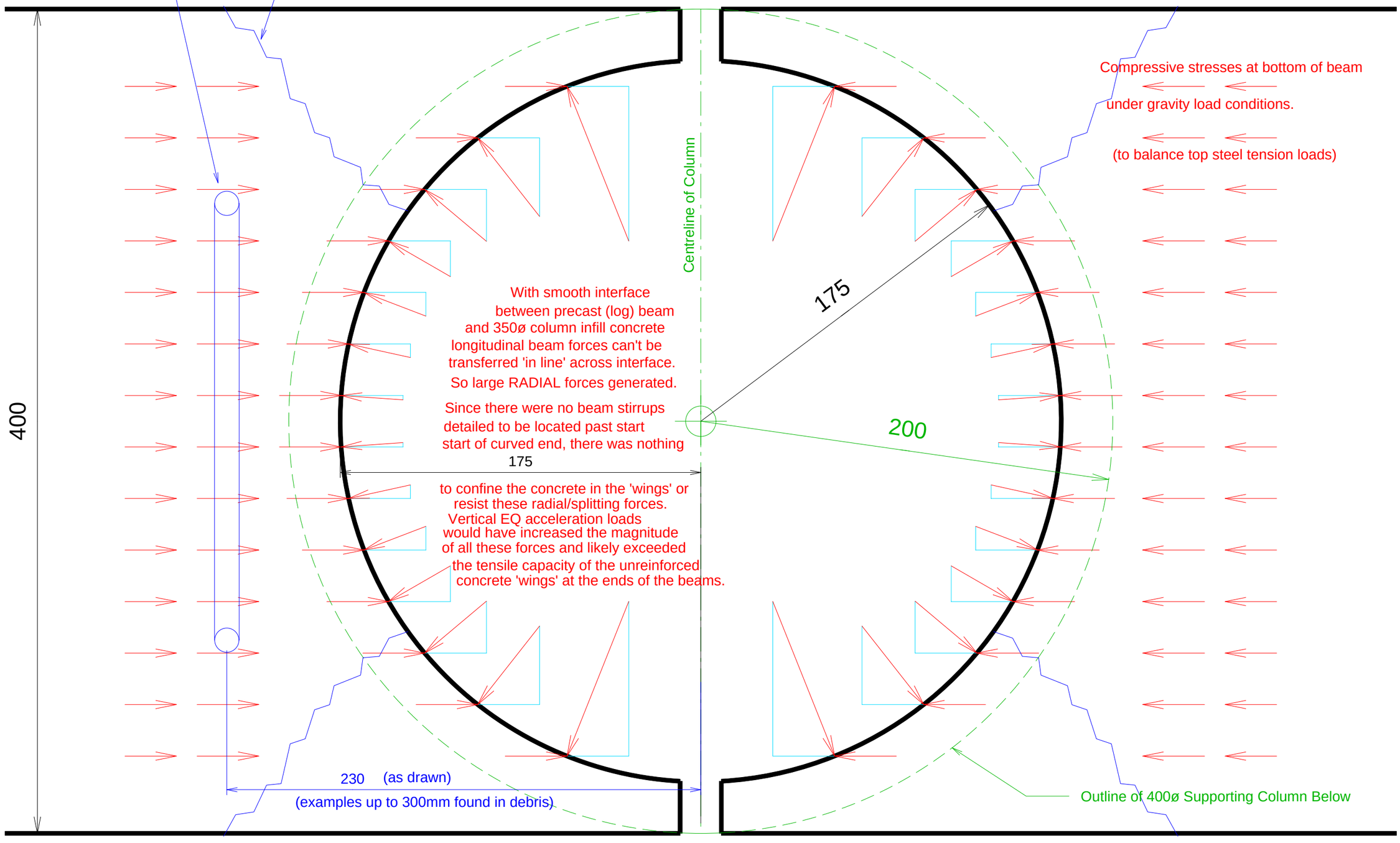
SECTION NEAR COLUMN CENTRELINE

File: CTV Bldg - Interior Beam-Column Joint - GF 20120217.dcd

Approximate location of last stirrup before column

Likely crack location

Original Dwgs call for the gaps between beam ends to be sealed to prevent grout loss during insitu concrete (infill) pour.
It's not clear to me what made up the fill in these nominal 25x20 'rebates' - PEF rod/ sealer/concrete.



Compressive stresses at bottom of beam under gravity load conditions.

(to balance top steel tension loads)

With smooth interface between precast (log) beam and 350ø column infill concrete longitudinal beam forces can't be transferred 'in line' across interface.

So large RADIAL forces generated.

Since there were no beam stirrups detailed to be located past start start of curved end, there was nothing to confine the concrete in the 'wings' or resist these radial/splitting forces.

Vertical EQ acceleration loads would have increased the magnitude of all these forces and likely exceeded the tensile capacity of the unreinforced concrete 'wings' at the ends of the beams.

Precast Log Beam

Precast Log Beam

Refer also to: File: CTV Bldg - Interior Beam-Column Joint - GF 20120217.dcd

generate large RADIAL forces in at the interface.

Plan Section at Typical Interior Column (thru Bottom of Precast Log Beams)

SK GF 20120501

File: CTV PC Beam Stress Concepts - GF 20120501.dcd