

-C-P-	Document No (Project/Doc) 000025-CPL-XX-CA-CE-000001	Page 1.00
Subject Column and Foundation Design		
Ref	Calculations	
	Provision of a king post wall design with precast concrete panels 150mm thickness of panels, posts at 3m centres. Panels are proprietary and not part of this design Design of the steel columns to be undertaken for 3No arrangements, 4m, 3m and 2m retained heights Surcharge is limited to domestic gardens of 2.5kN/m2 as per BS 8002 Design in accordance with BS EN 1990, BS EN 1991, BS EN 1992 & BS EN 1993. Free Draining Material behind the wall, Self Weight of Panels is supported on a concrete strip foundation and not applied to the steelwork supports Section Post Centres 3.00 m post centres Soil Parameters Unit Weight 20.00 kN/m³ Unfactored 27.00 kN/m³ Factored Phi 30.00 deg Ka 0.33 kp 3.00 Surcharge 2.50 kN/m2 unfactored 3.75 kN/m2 factored Retained Height 4.00 m 3.00 m 2.00 m V.ED Surcharge 45.00 kN 33.75 kN 22.50 kN V.ED Soil 40.00 kN 30.00 kN 20.00 kN V.ED Total 85.00 kN 63.75 kN 42.50 kN M.ED Surcharge 90.00 kN.m 50.63 kN.m 22.50 kN.m M.ED Soil 53.33 kN.m 30.00 kN.m 13.33 kN.m M.ED Total 143.33 kN.m 80.63 kN.m 35.83 kN.m Steelwork Grade S 275.00 Min Wply 521.21 cm3 293.18 cm3 130.30 cm3 Min Beam of 305 x 127 x 42 UB 203 x 133 x 30 UB 178x102x19 UB 305 x 165 x 40 UB 254 x 102 x 28 UB 356 x 127 x 39 UB 305 x 102 x 28 UB 406 x 140 x 39 UB	

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	Root Mounted Foundations to be derived		
	Factors of Positive Actions reduced to 1		
	Retained Height	4.00 m	3.00 m 2.00 m
	Proposed Concrete Diameter	0.45 m	0.45 m 0.45 m
	Embedment Depth	7.00 m	5.00 m 4.00 m
	Soil Restraint Shear	94.50 kN	67.50 kN 54.00 kN
	Restraining Moment	220.50 kN.m	112.50 kN.m 72.00 kN.m
	Applied Moment	143.33 kN.m	80.63 kN.m 35.83 kN.m
	Therefore	Okay	Okay Okay kN.m