



FENCE MANUAL



NON SPECIFIC DESIGN

INSTRUCTIONS FOR USE

The following designs allow for solid masonry free-standing walls/fences to be built up to 2m in height using the Firth Masonry Range. Follow the steps below:

- A. Establish whether or not the proposed fence is to be built within one of the "lee zones" for wind design.
- B. If you ARE working within a lee zone, use the lee zone information in the tables on the following pages to determine the reinforcing and footing width requirements for the proposed fence.
- C. If you ARE NOT working within a lee zone, establish the seismic zone the proposed fence is to be built in, and the information in the tables on the following pages to determine the new fencing and footing width requirements for the proposed fence.

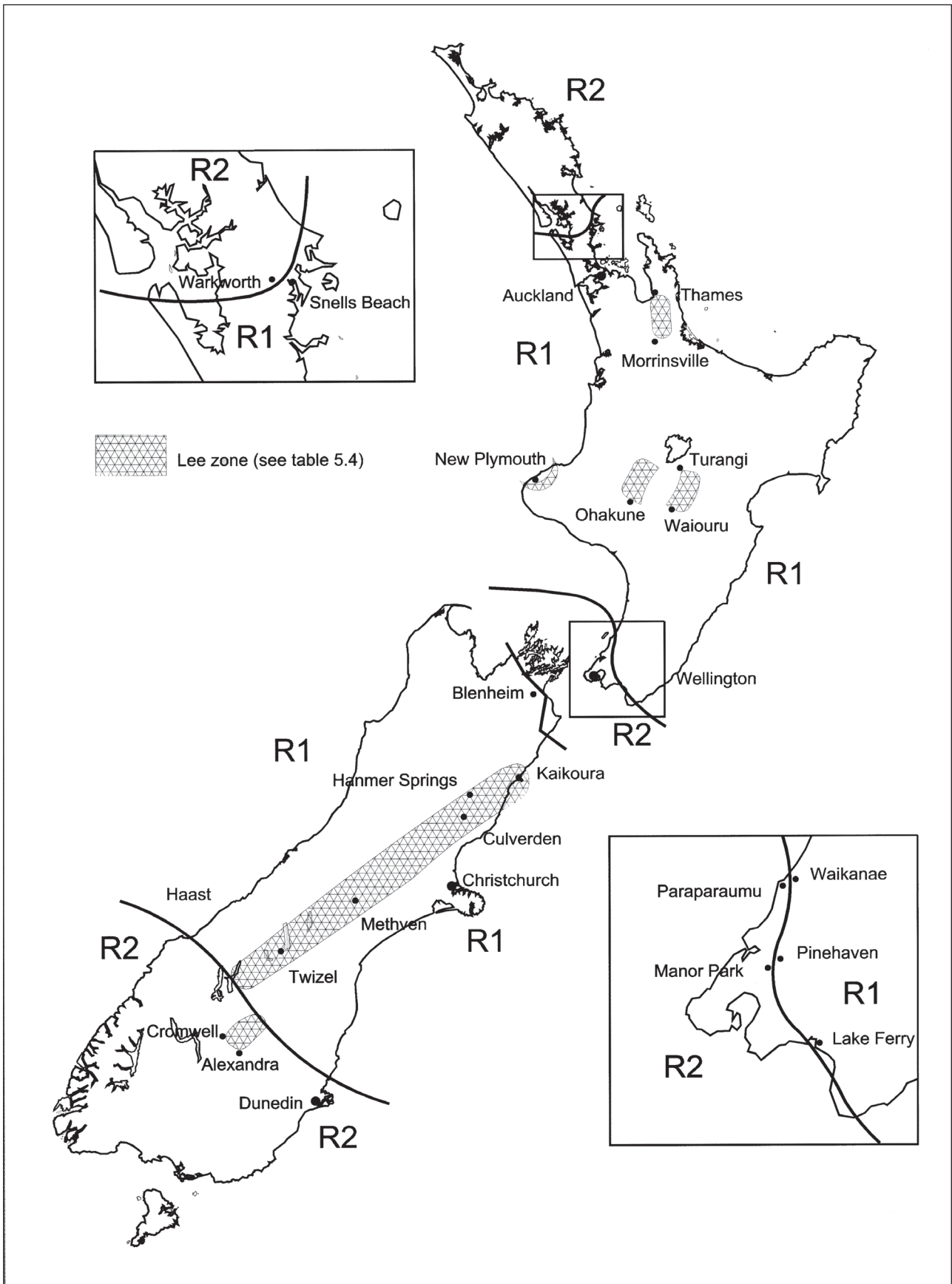
Should your project fall outside these parameters, call Firth on 0800 800 576 for guidance.

DESIGN ASSUMPTIONS

A chartered consulting engineer has developed these details in accordance with NZS 4230 and the following assumptions were made:

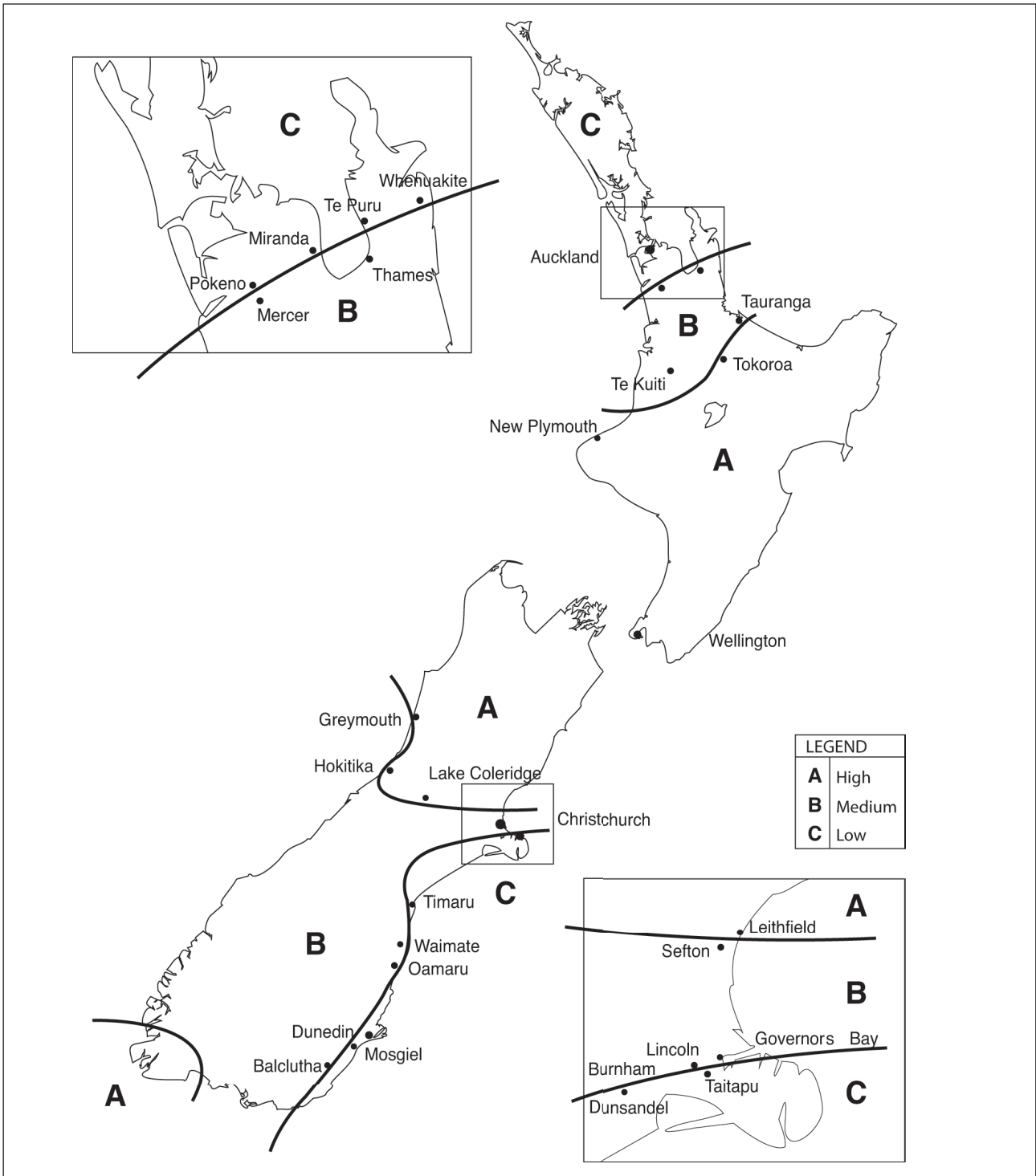
- Fences are for Terrain Category 3 as defined in NZS 1170:2002 (typical suburban sites)
- The supporting ground shall be "good ground" as defined in NZS 3604:1999
- All concrete and grout shall be 17.5MPa strength.
- All reinforcement shall be grade 500E or N deformed steel bars in long lengths, with 75mm cover in footings.
- All masonry shall be constructed in accordance with NZS 4210:2001 with the masonry units laid in running or stretcher bond, by a competent mason and to observation type C or better.

WIND REGIONS AND LEE ZONES



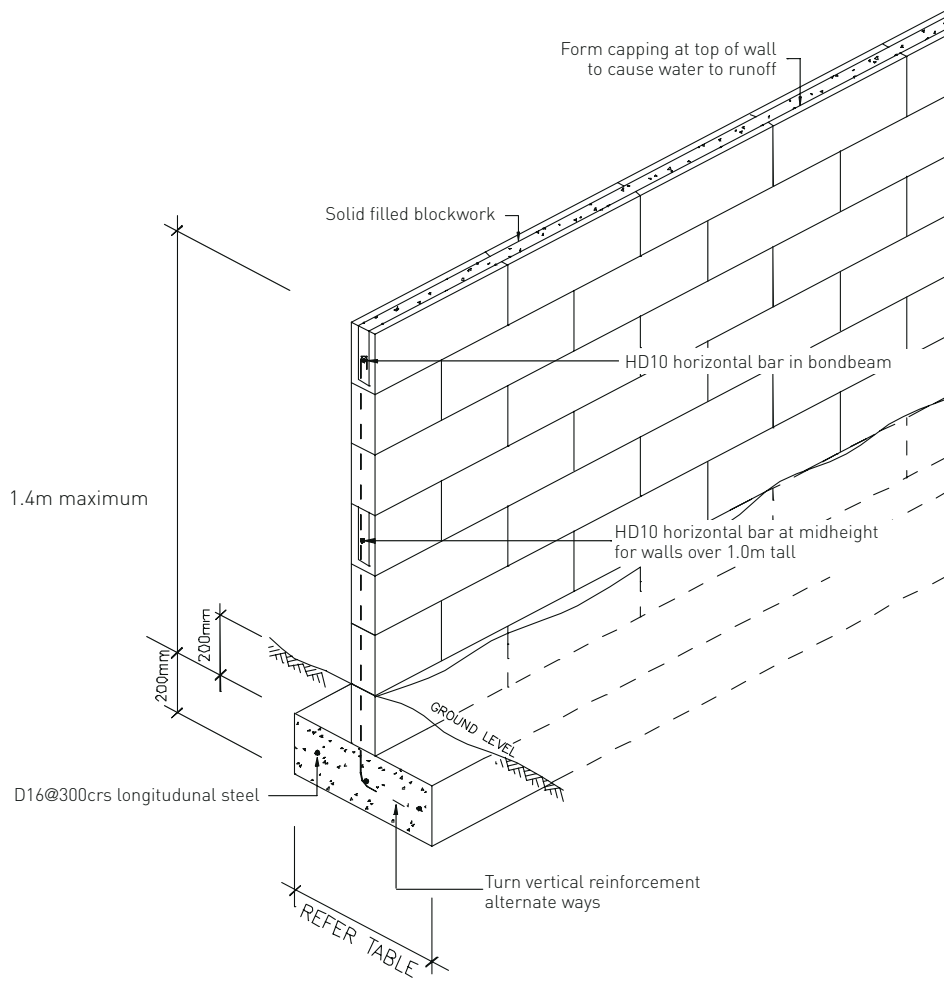
SEISMIC ZONES

NZS 3604:1999 has defined the seismic zones for New Zealand. These are detailed on the map below.



FIRTH CONCRETE MASONRY

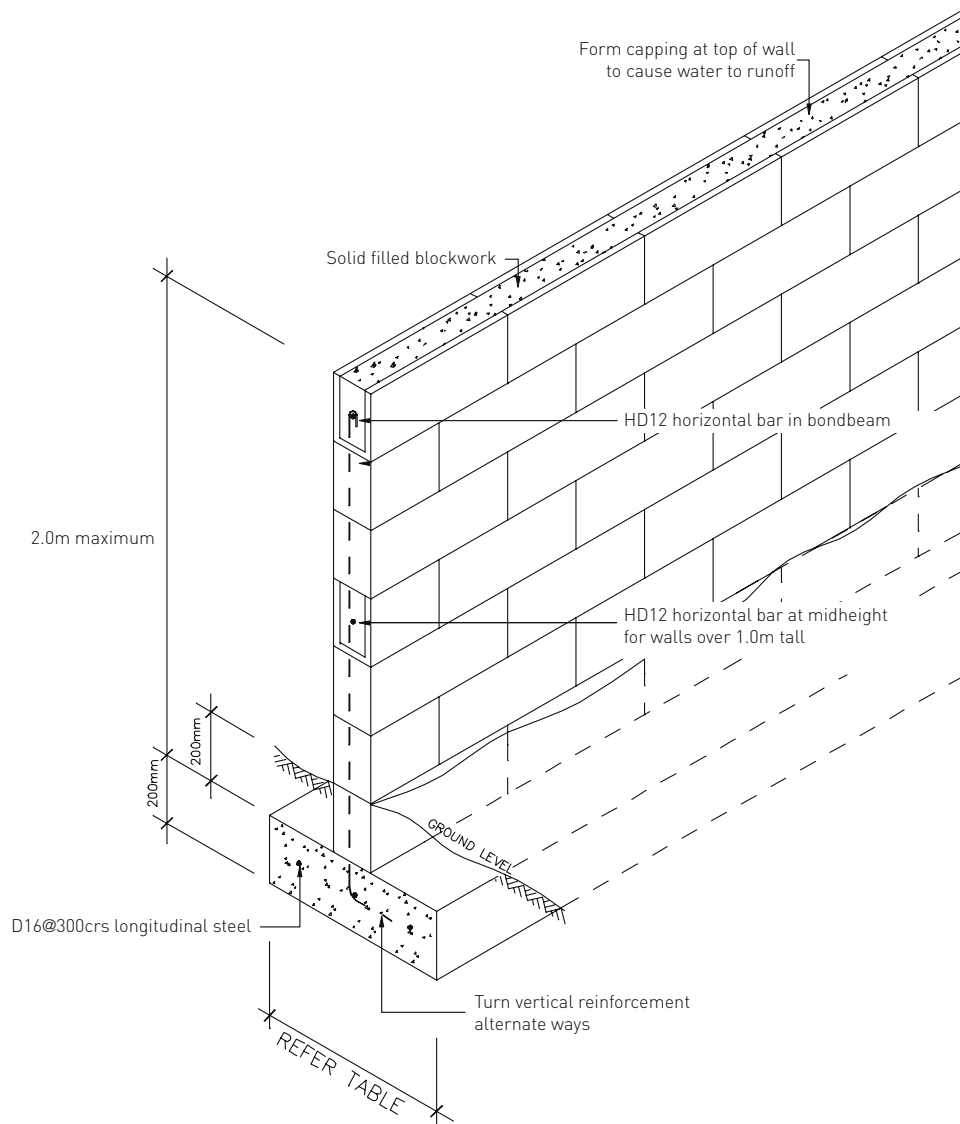
GARDEN FENCE 10 SERIES



Wall height (mm)	SEISMIC ZONE A		SEISMIC ZONES B & C		WIND LEE ZONES	
	Footing Width (mm)	Vertical Steel	Footing Width (mm)	Wall height (mm)	Footing Width (mm)	Vertical Steel
600	250	HD10@600	250	HD10@600	300	HD10@600
800	300	HD10@600	300	HD10@600	400	HD10@600
1000	400	HD10@600	350	HD10@600	500	HD10@600
1200	500	HD10@600	450	HD10@600	600	HD10@600
1400	550	HD10@600	500	HD10@600	-	-
1600	-	-	-	-	-	-
1800	-	-	-	-	-	-
2000	-	-	-	-	-	-

FIRTH CONCRETE MASONRY

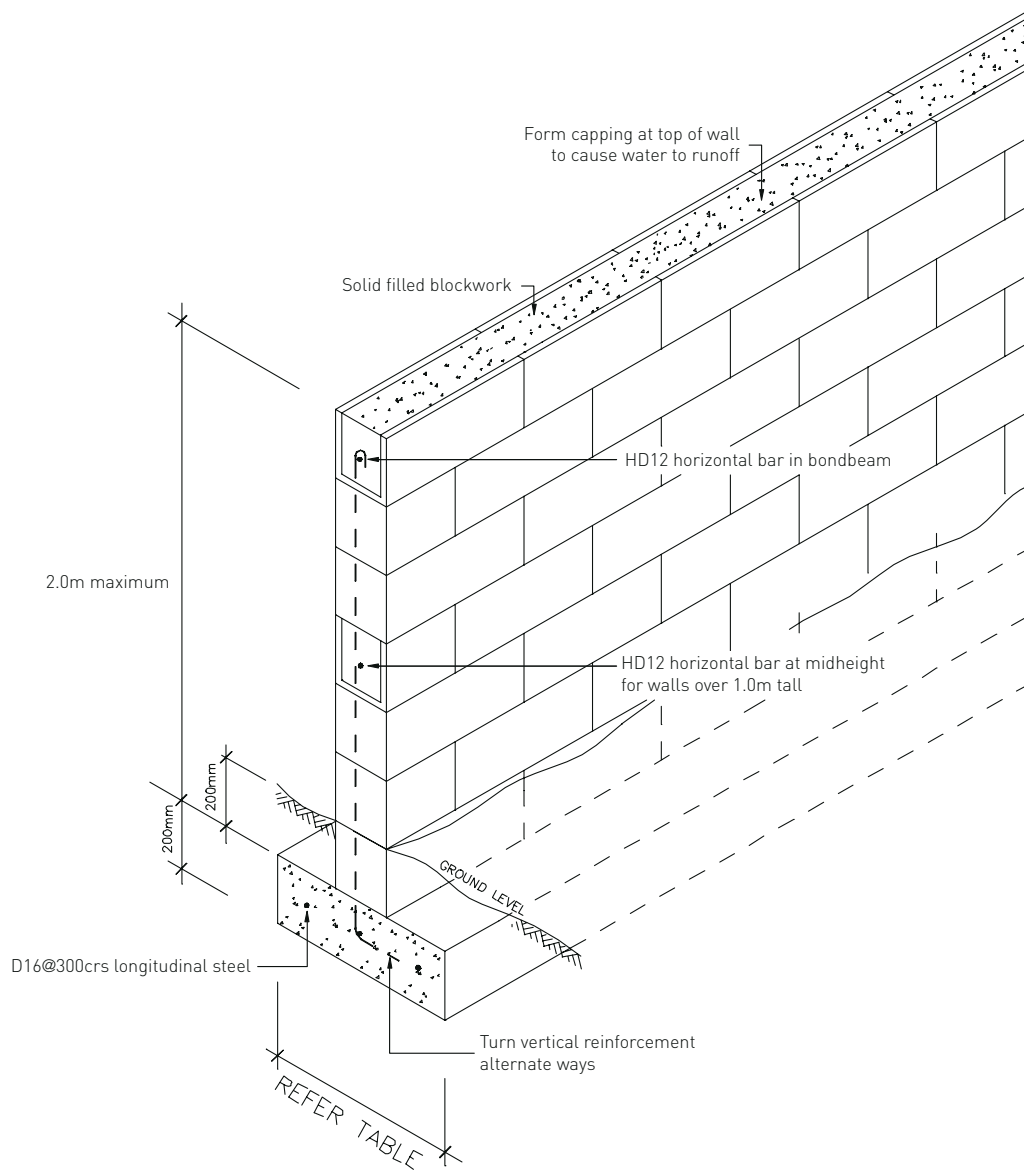
GARDEN FENCE 15 SERIES



Wall height (mm)	SEISMIC ZONE A		SEISMIC ZONES B & C		WIND LEE ZONES	
	Footing Width (mm)	Vertical Steel	Footing Width (mm)	Wall height (mm)	Footing Width (mm)	Vertical Steel
600	250	HD12@800	250	HD12@800	200	HD12@800
800	300	HD12@800	250	HD12@800	350	HD12@800
1000	350	HD12@800	300	HD12@800	400	HD12@800
1200	400	HD12@800	350	HD12@800	550	HD12@800
1400	500	HD12@800	400	HD12@800	650	HD12@800
1600	550	HD12@800	500	HD12@800	700	HD12@800
1800	650	HD12@600	550	HD12@800	750	HD12@800
2000	700	HD12@600	600	HD12@800	850	HD12@800

FIRTH CONCRETE MASONRY

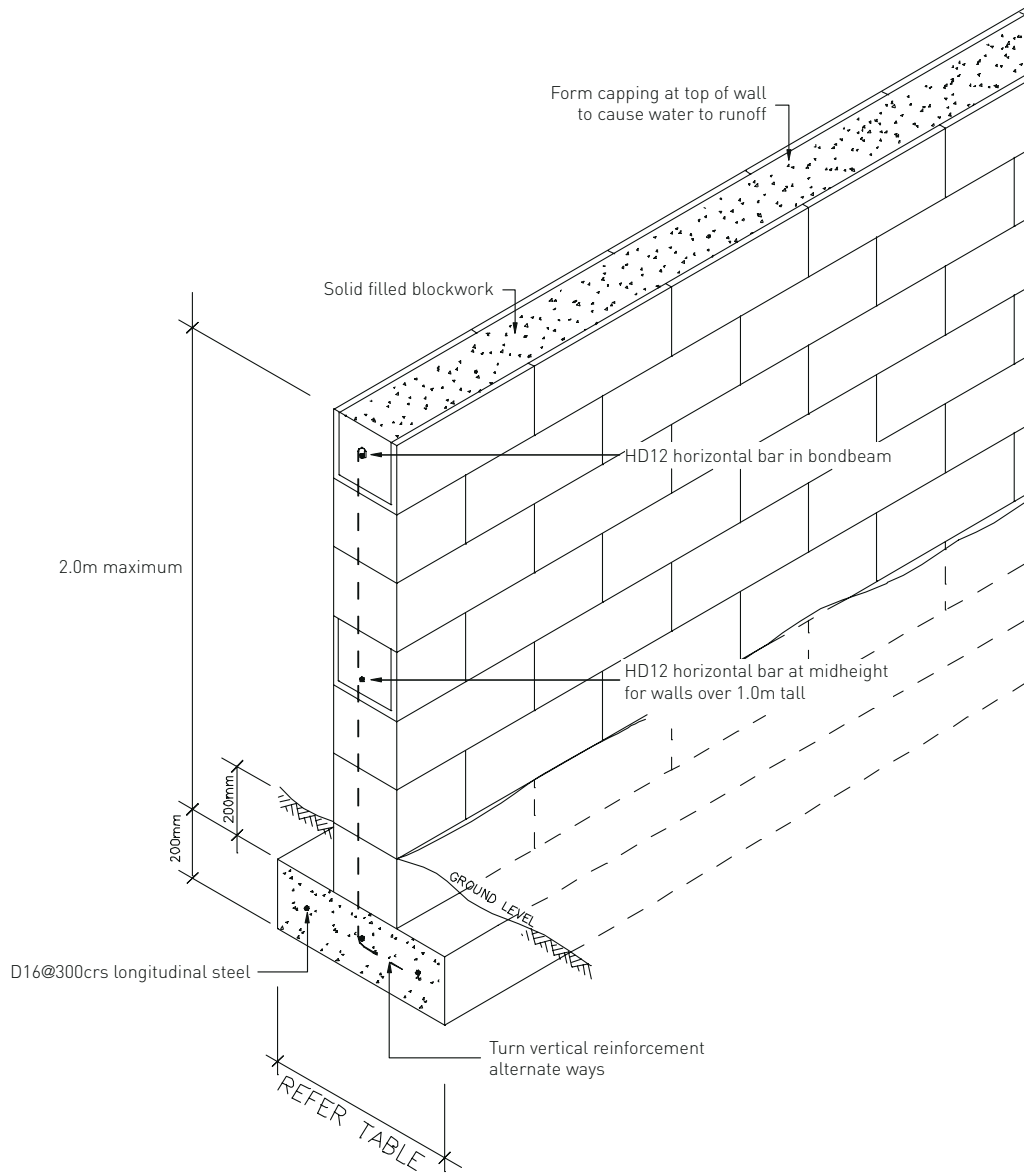
GARDEN FENCE 20 SERIES



Wall height (mm)	SEISMIC ZONE A		SEISMIC ZONES B & C		WIND LEE ZONES	
	Footing Width (mm)	Vertical Steel	Footing Width (mm)	Wall height (mm)	Footing Width (mm)	Vertical Steel
600	250	HD12@800	250	HD12@800	250	HD12@800
800	300	HD12@800	250	HD12@800	300	HD12@800
1000	400	HD12@800	300	HD12@800	400	HD12@800
1200	450	HD12@800	350	HD12@800	450	HD12@800
1400	550	HD12@800	400	HD12@800	550	HD12@800
1600	600	HD12@800	450	HD12@800	600	HD12@800
1800	700	HD12@600	500	HD12@800	700	HD12@600
2000	800	HD12@600	600	HD12@800	800	HD12@600

FIRTH CONCRETE MASONRY

GARDEN FENCE 25 SERIES



Wall height (mm)	SEISMIC ZONE A		SEISMIC ZONES B & C		WIND LEE ZONES	
	Footing Width (mm)	Vertical Steel	Footing Width (mm)	Wall height (mm)	Footing Width (mm)	Vertical Steel
600	300	HD12@800	300	HD12@800	300	HD12@800
800	400	HD12@800	300	HD12@800	400	HD12@800
1000	450	HD12@800	350	HD12@800	450	HD12@800
1200	550	HD12@800	400	HD12@800	550	HD12@800
1400	650	HD12@800	500	HD12@800	650	HD12@800
1600	750	HD12@800	600	HD12@800	750	HD12@800
1800	900	HD12@600	650	HD12@800	900	HD12@600
2000	1000	HD12@600	750	HD12@800	1000	HD12@600



0800 800 576
www.firth.co.nz