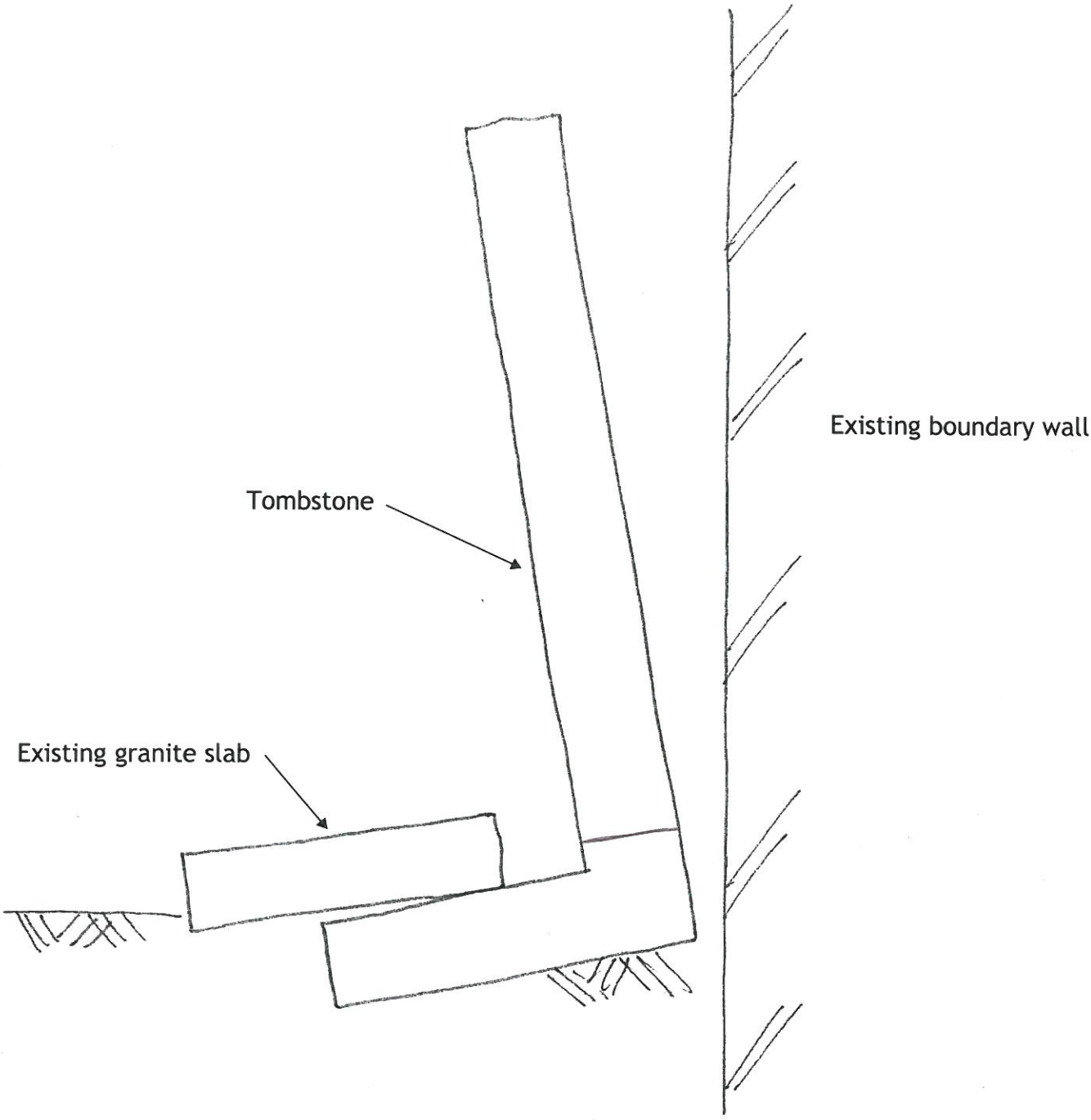
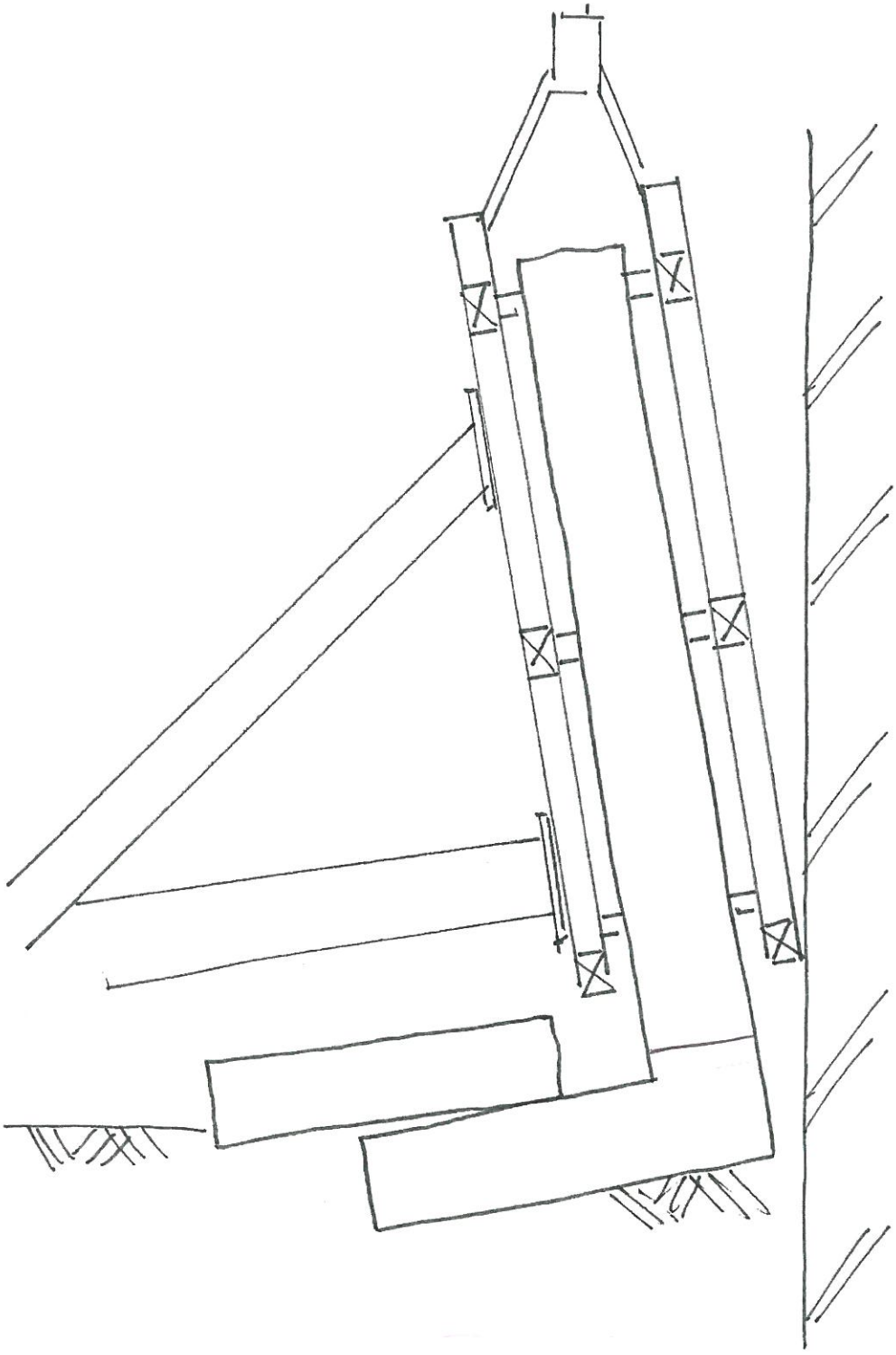


St. John in Hampstead Church
Remedial Works to Tombstone

Job No. 212291
Date September 2012

mnp
mason navarro pledge

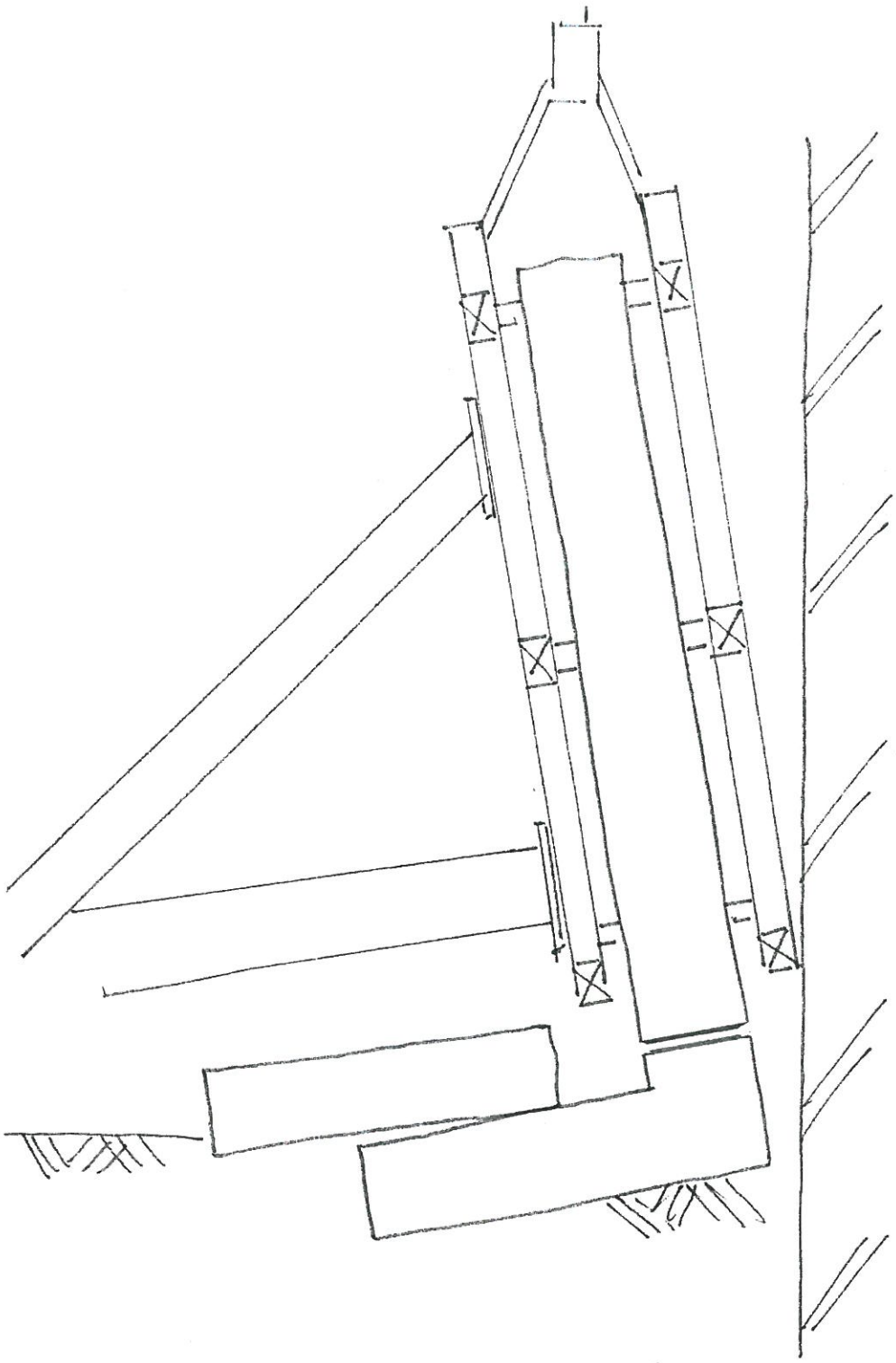


Specialist lifting contractor to design and install frame to support the tombstone. No load to be transferred into the existing boundary wall.

St. John in Hampstead Church
Remedial Works to Tombstone

Job No. 212291
Date September 2012

mnp
mason navarro pledge

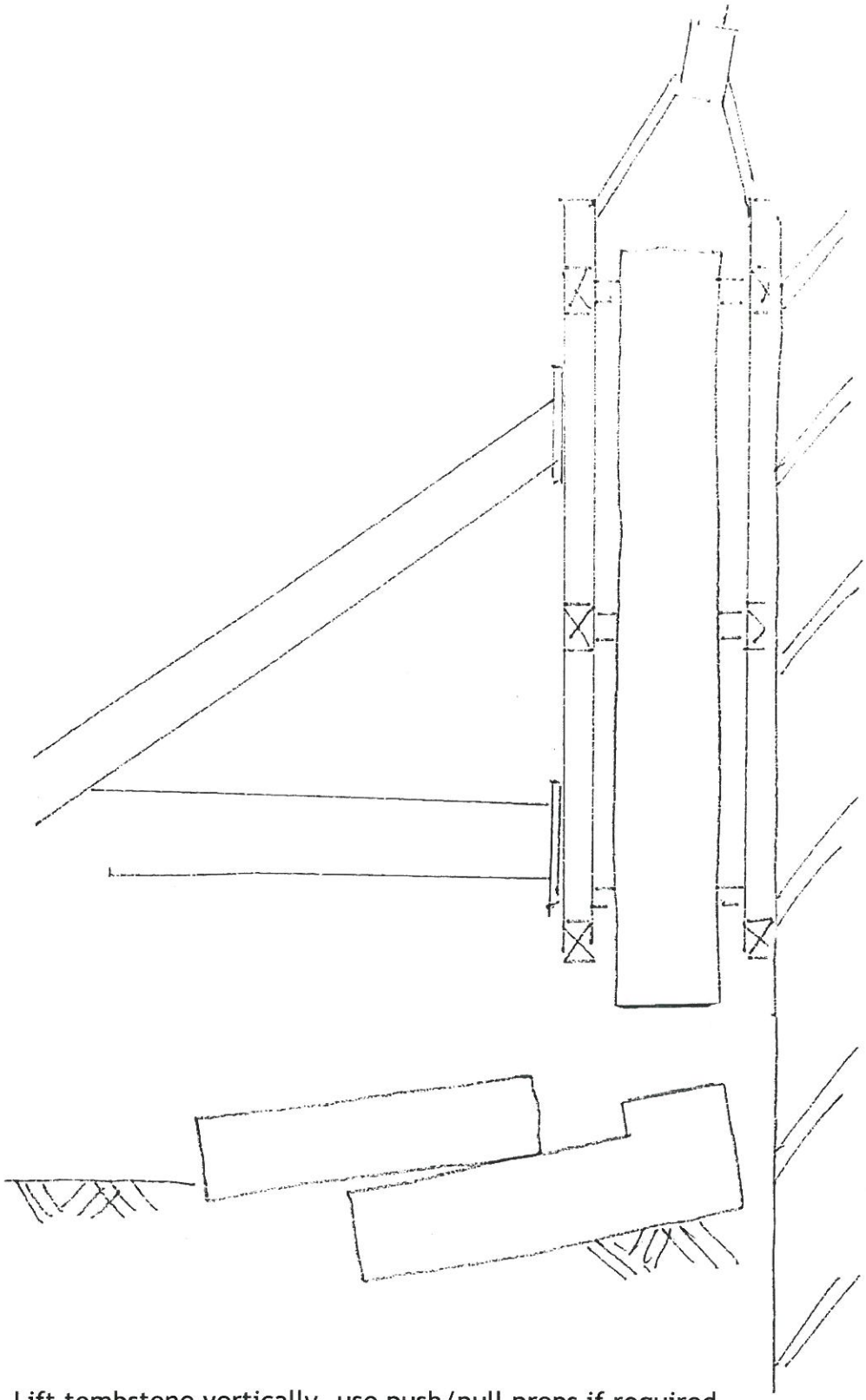


Lift to break joint between tombstone and base. Saw cut through joint if necessary. Note that stone may be dowelled into base. Dowels may be cut as required.

St. John in Hampstead Church
Remedial Works to Tombstone

Job No. 212291
Date September 2012

mnp
mason navarro pledge



Lift tombstone vertically, use push/pull props if required to prevent stone damaging the boundary wall.

St. John in Hampstead Church
Remedial Works to Tombstone

Job No. 212291
Date September 2012

mnp
mason navarro pledge

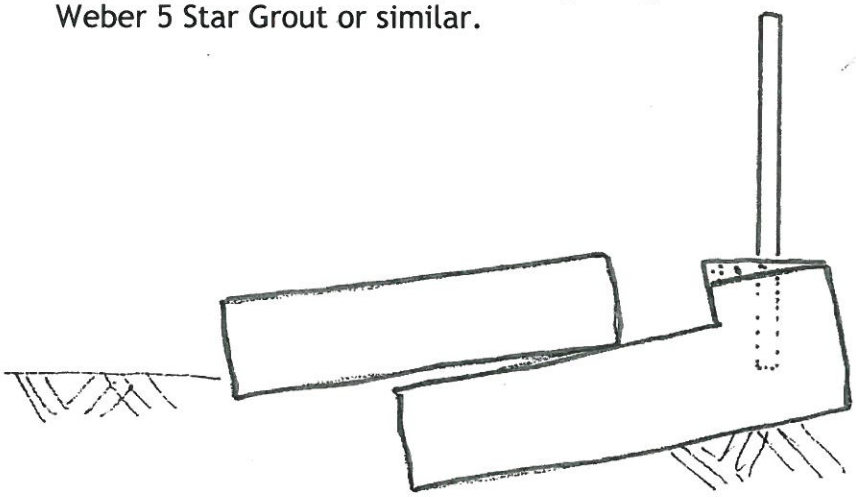
St. John in Hampstead Church
Remedial Works to Tombstone

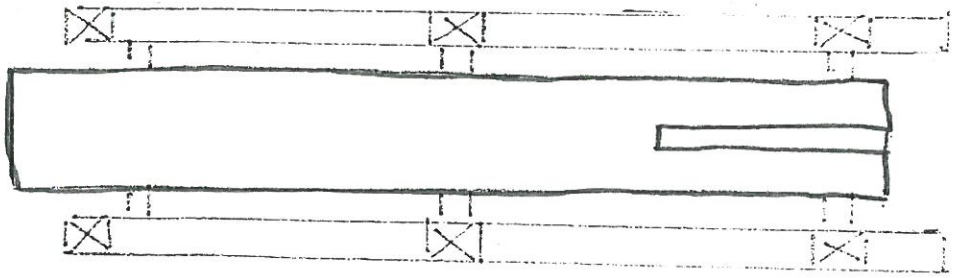
Job No. 212291
Date September 2012

mnp
mason navarro pledge

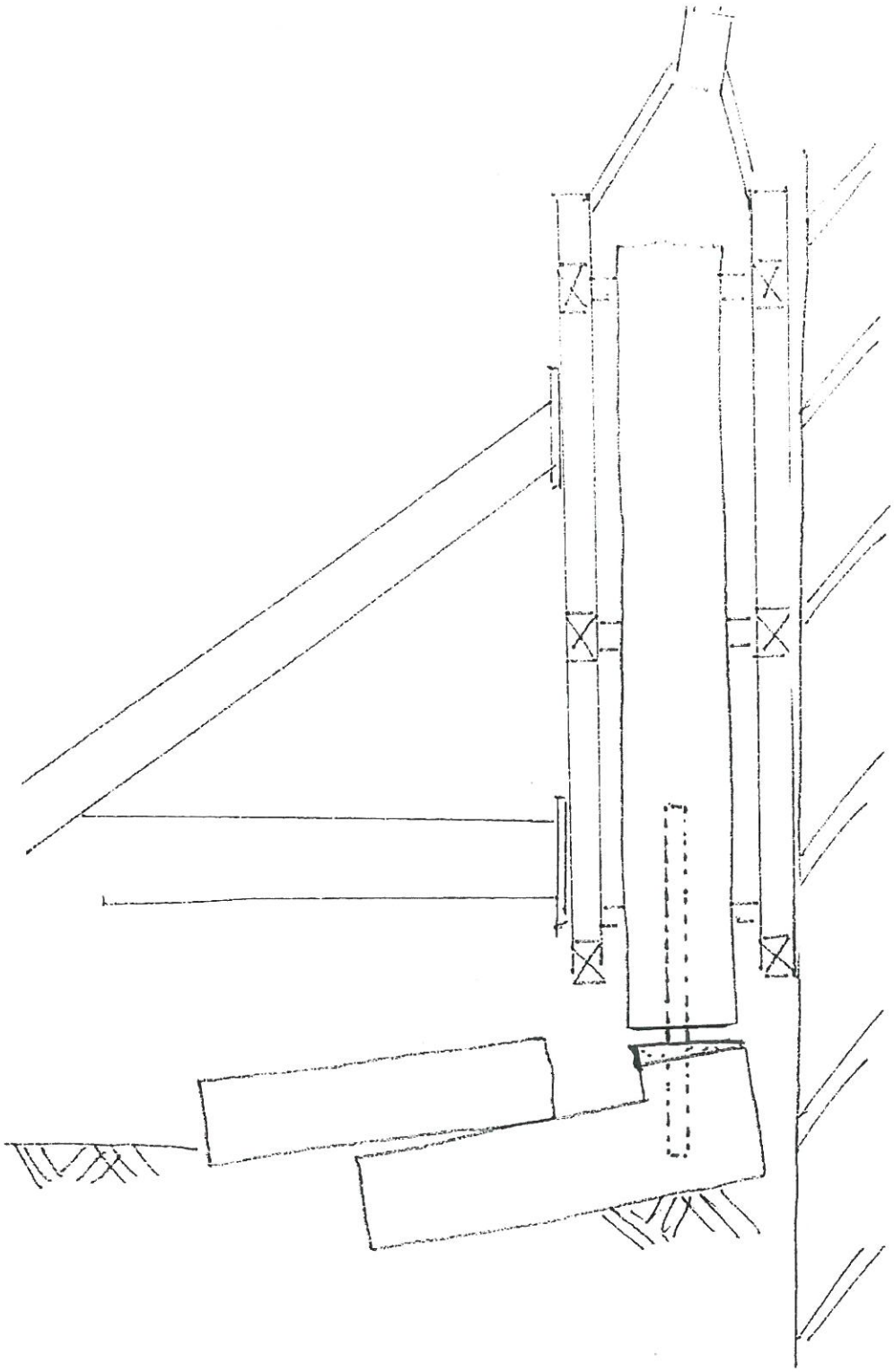
Diamond drill existing base and install 16mm diameter stainless steel dowel bars fixed in Hilti HIT RE 500 resin or similar approved. Min. 4 no. dowels evenly spaced

Build up base to create level bearing using Weber 5 Star Grout or similar.





Diamond drill headstone to accept new dowels

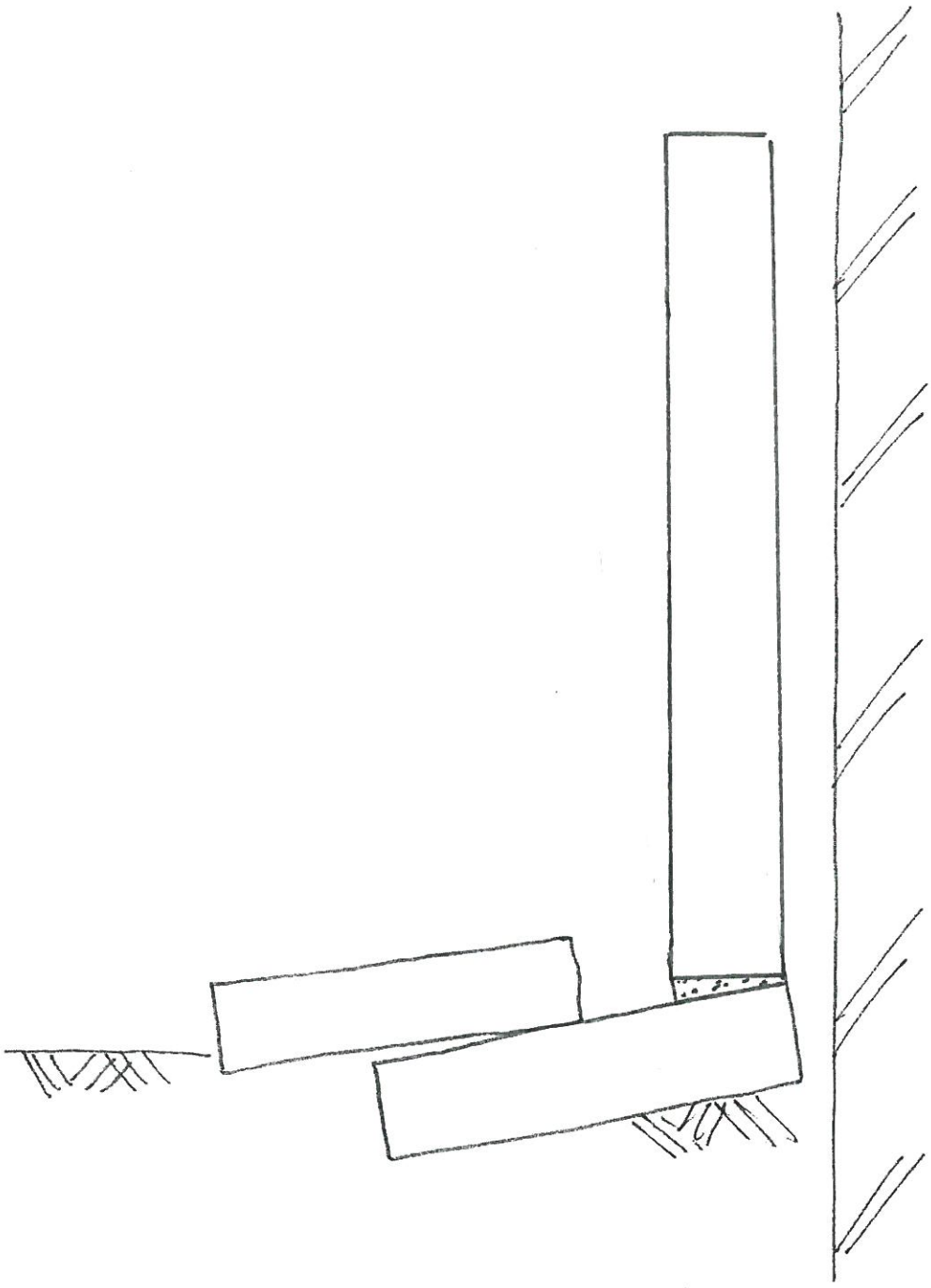


Lift headstone and lower into place onto new dowels.
Use push/pull props to keep stone vertical and prevent loading of existing boundary wall

St. John in Hampstead Church
Remedial Works to Tombstone

Job No. 212291
Date September 2012

mnp
mason navarro pledge



Leave props and lifting support in place to allow grout to cure for a minimum of 24 hours before removing props and supports

St. John in Hampstead Church
Remedial Works to Tombstone

Job No. 212291
Date September 2012

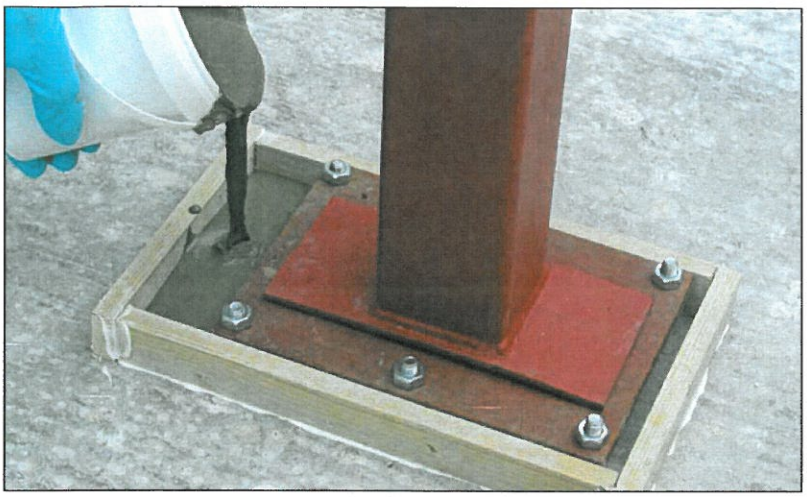
mnp
mason navarro pledge

CI/SfB Yr4
Uniclass L642 June 2010

construction solutions

General-purpose, shrinkage-compensated, cementitious grout for dry packing, grouting, bolt fixing and bedding of machinery

Five Star* grout



About this product

Five Star grout is a premixed cementitious grout developed for applications where an economical grout with good flow and strength is required.
Five Star grout is based on specially selected Portland cements, graded aggregates and admixtures including a special form of carbon.

This special formulation produces a grout which conforms to ASTM C827 *Early Volume Change of Cementitious Mixtures*. It does not contain iron, aluminium or other additives which produce non-shrink characteristics by chemical reaction.

This eliminates any subsequent problems of dimensional instability, corrosion or staining. **Five Star grout** is designed primarily as a flowing grout but can also be used at a trowellable or dry pack consistency.

Technical data

All tests carried out at max. water addition of 5 litres at 20°C unless otherwise stated

Water addition		5 litres		
Water content %		16·7%		
Cone flow (ASTM C939)		< 50 sec		
Table flow (CRD-C227)		77%		
Final set (ASTM C191)		6·7 hours		
Bleeding		none		
Short-term expansion (ASTM C827)		1·0%		
Plastic density		2100 kg/m³		
Long-term expansion (CRD-C588)		none		
Compressive strength		**5°C**	**10°C**	**20°C**
	1 day	0	3 N/mm²	12 N/mm²
	3 day	12 N/mm²	14 N/mm²	23 N/mm²
	7 day	25 N/mm²	28 N/mm²	45 N/mm²
	28 day	38 N/mm²	45 N/mm²	55 N/mm²
Flexural strength	28 day	9 N/mm²		
Tensile strength	28 day	3·5 N/mm²		
Bond strength (grout to concrete)	7 day	1·5 N/mm²		
Elastic modulus		23·3 kN/mm²		

Uses

- Under stanchion plates and machinery (static loads only)
- Grouting bearings, precast units, floors etc
- Fixing anchor bolts, ballustrades, crash barriers, starter bars
- Underpinning
- Void filling

Constraints

Five Star grout must only be used in confined situations, e.g. under baseplates, in holes etc.

Features and benefits

- **Five Star grout** is shown to be effectively non-shrink by ASTM C827 Early Volume Change of Cementitious Mixtures which, unlike other methods, measures expansion or shrinkage from time of placing
- Volume expansion to ASTM C827 when unrestrained is greater than 1·0%
- Precision grout suitable for use over a range of temperatures and site conditions
- Can be pumped, poured, trowelled or dry packed
- Does not contain iron, aluminium or other additives which have not withstood the tests of time
- Thermal expansion similar to that of good quality concrete
- Good flow properties
- Can be applied in thicknesses from 10 mm to 100 mm
- Does not significantly lose workability during pot life

FM 1209

Five Star* grout

Preparation

All surfaces should be clean and sound. Concrete surfaces must be free from any contamination including oil, grease, laitance and dust – and for maximum bond, the surface should be roughened and pre-soaked with clean water.

Immediately prior to grouting, remove free water including that in bolt holes or recesses.

Metal surfaces must be free from rust, scale, oil or grease but removable metal shims should be lightly oiled.

Ensure bolt holes are free of dust, water or any loose material. Formwork should be well sealed to prevent leakage.

Mixing

This grout needs only to be mixed with sufficient water to give the consistency required. Mixing should be carried out in a proprietary grout mixer or in a bucket (where the height is at least 1½ times its diameter) by using a medium-speed drill (650 rpm) with an MR4-type helical attachment.

When using the maximum water to obtain a pourable grout, the following procedure is recommended. Pour about 2 litres of water into a suitable bucket, then add half the powder and mix to a thick paste consistency, ensuring any lumps are broken down by the shearing action. Continue mixing, adding more powder and some more water gradually into the vortex. After adding all the powder and having produced a mix of uniform creamy consistency, add the rest of the water slowly into the vortex to obtain the pourable grout. **Do not mix the grout for more than 5 minutes.**

Avoid entraining excessive quantities of air during mixing by keeping the mixing head below the grout level at all times.

To obtain the consistency required, add water as follows:

Dry pack mix	Approx. 2.25 litres of water per 25 kg bag
Trowellable mix	Approx. 3.5 litres of water per 25 kg bag
Pourable mix	Up to 5 litres of water per 25 kg bag

Chemical resistance

When properly placed and cured **Five Star grout** is a dense low permeability material which does not suffer damage from frost attack and freeze/thaw conditions. The product does not contain any chlorides, sulphates or other harmful chemicals. Its permeability means it is highly durable and resistant to petrol, oils, diesel fuels, anti-freeze liquid and de-icing salts.

Application

When pouring, the area to be grouted should be shuttered and a header box used to maintain a grout head of 150 – 200 mm during the pour. Machine mixing is recommended to achieve continuous pouring. For large applications **Five Star grout** should be placed by pump and has been formulated to give a 35 minute working time. It does not contain metal particles; wear and tear on equipment is similar to conventional sand/cement mixes.

Mixing and placement can be carried out between +5°C and +40°C. In service, **Five Star grout** will perform similarly to other cementitious mixes based on Portland cement in the temperature range of –20°C to +150°C.

Continuous grout flow is essential and sufficient grout and water should be available to be mixed to ensure there is no discontinuity of the flow.

Where the thickness of grout is greater than 100 mm, use **Five Star repair concrete**.

The grout around the edges of baseplates must be finished flush with the sides by cutting the grout while still green after stripping formwork. Cracking due to expansion may result in such areas where there is no restraint.

Precautions

Five Star grout is based on Portland cement and good concreting practice with regards to placing and curing especially under winter conditions must be observed.

Do not add water above the recommended stated dosages.

Use only clean (potable) water.
Avoid leaving unconfined areas of grout proud around bearings etc.

Packaging

Five Star grout is supplied in 25 kg polythene lined bags.

Coverage

For a pourable mix each 25 kg bag produces approximately 14.0 litres of grout i.e. 71 bags per cubic metre. When using a trowellable mix the yield is 13 litres i.e. 77 bags per cubic metre. For estimating purposes, 5% extra should be allowed for spillage during mixing and placing.

Storage and shelf life

When stored unopened in a dry place at temperatures above 5°C, shelf life is 12 months from date of manufacture.

Health and safety

Contains cement (Contains chromium (VI). May produce an allergic reaction). Harmful by inhalation. Irritating to eyes and skin. Keep out of the reach of children. In case of contact with eyes, rinse immediately with plenty of water and seek medical help. After contact with skin, wash immediately with plenty of soap and water. Wear suitable protective clothing, gloves and eye/face protection.

For further information, please request the Material Safety Data Sheet for this product.

Technical services

Weber's Customer Services Department has a team of experienced advisors available to provide on-site advice both at the specification stage and during application. Detailed specifications can be provided for specific projects or more general works. Site visits and on-site demonstrations can be arranged on request.

Technical helpline
Tel: 01525 722137
Fax: 01525 718988

Sales enquiries

Weber products are distributed throughout the UK through selected stockists and distributors. Please contact the relevant Customer Services Team below for all product orders and enquiries.

England and Wales
Tel: 08703 330070
Fax: 01525 718988

Scotland, Northern Ireland, Isle of Man, Republic of Ireland
Tel: 028 9335 2999
Fax: 028 9332 3232

Saint-Gobain Weber Ltd
Dickens House, Enterprise Way, Maulden Road, Flitwick, Bedford MK45 5BY, UK
Tel: 08703 330070 Fax: (01525) 718988 e-mail: mail@netweber.co.uk