SHEET INDEX

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DESIGN GUILDINES

- Walls should have adequate eves or capping blocks to help reduce errosion due to the direct impact of rain.
- Mudtecc standard blocks are not designed to be submerged in water for extensive periods of time. All applications below grade will require the use of adequate water proof membranes. Both sheet membranes and liquid applied membranes are acceptable products. Mudtec recomends consulting a professional waterproof technician for use below grade.
- Mudtec standard blocks are dense, have a high thermal mass and low insulative properties. As such, correct use of solar passive design to position blocks within a building will help stabilise the internal temperature, incorrect positioning may do the opposite. For building design assistance contact integratedbiotecture@gmail.com

TESTING & STANDARDS

All Mudtec blocks are made to comlpy with
HB195 - 2002 *The Australian Earth building Handbook.*

Mudtec uses NATA accredited Coffey Testing Lab.

AS 1012 *Methods of Testing Concrete*
-Sampling in accordance with AS 1012.14
-Prep/Cap Type: S = Filled sulphur mixture
-Compressive strength in accordance with AS 1012.9
-Density in accordance with AS 1012.12.1
-Moisture condition SSD in accordance with AS 1012.12.1

MUDTEC - ***standard block @ 5% cement stabiliser***

Avg Density - 1933 kg/m^3
Avg MPA - 4.9MPa

(test date 27/03/20)

SOILS

Mudtec standard blocks use a mixture of overburden soils from local quaries in Somersby and Branxton, NSW.
If you are interested in using a particular soil for the production of bespoke blocks please call our design team and we will arrange to collect a sample to assess it's suitability and provide a test block.

NOTE:
Colours and textures of blocks may vary slightly within and between batches. We recomend laying blocks from multiple active pallets to blend these variations successfully.

STABILISERS

Mudtec standard blocks are stabilised with 5% standard portland cement.
White cement may also be used for bespoke orders.
We are also currently looking into alternative stabilisers like lime and fly ash to reduce the amount of cement and thus reducing the carbon footprint of our blocks.

NOTE:
Mudtec standard unstabilised blocks should not be used for external or load bearing use.

COLOURS AND TEXTURES

Our current standard range is a natural earthen colour with no added pigment with a varied texture*.
We are currently looking into the addition of oxides to provide a range of bespoke colours. This will require a sampling and testing period to achieve the desired outcome. For a more organic look we can also wash the surface of the block after pressing to create a more textured face. `
If you are interested in a colour or texture variation call our design team to discuss your bespoke block order today.

NOTE:
As a natural material some weathering (fading & errosion) may occur with increased expossure to sun and rain.
**This slight variation in texture from block to block depends on the distribution of particle sizes on the surface of the blocks and should not affect the strength of the block.*

SURFACE COATINGS & SEALANTS

MUDTEC recomends all external faces of walls be finished with a beathable water-based silane/siloxane emulsion water repellent.
Eg: *Stabilised Earth Water Repellent W*
By Tech-Dry Building Protection Systems Pty. Ltd.
techdry.com.au/product/stabilised-earth-water-repellent/

Otherwise from
The Australian Earth Building Handbook
3.2.3 HB 195 - 2002

Linseed oil—used either as a primer for oil-based paints or alone on internal surfaces prone to wetting. Linseed oil is applied with a brush or rubbed in with a cloth.
Liquid silicate paints—sodium silicate and otassium silicate solutions provide very effective surface protection. Silicate is absorbed into the earth substrate to form a crystalline structure, which prevents ingress of rain but at the same time allows the wall to breathe.
Oil-based paint—slightly more water-resistant than water-based paint. To ensure good adhesion with earth it is often necessary to apply a primer coat of linseed oil or similar product. As with all paints, the coating is vulnerable to abrasive damage.
Proprietary water repellents—PVA or silicone-based emulsions, which are sprayed directly onto the surface of the wall. Designed to penetrate the surface a few millimetres to render material water repellent, whilst allowing water vapour to escape. Typically, two sprayed applications are required, with an application of 1 L to 2 L of emulsion per square metre of wall face. Proprietary water repellents are suitable for use both externally and internally (wet areas).
Slurry (bagging)—a thin slurry layer of clay soil, often mixed with a binder (cement; cow manure and PVA), that is rubbed into the surface of the wall. Slurry is commonly used on sheltered external mud brick walls.
Water-based paint—offering some little beneficial water-resistant properties and, therefore, most effective on internal surfaces. Waterbased paint is applied with a brush. It has a tendency to flake as it ages, and requires regular re-application.
Whitewash (limewash)—a mixture of non-hydraulic lime and water. Around two to three coats of whitewash are applied using a brush. Offers only limited water resistance, and thus most effective internally as a dust suppressant. Requires regular (annual) re-application, as it has a tendency to flake and peel with age.

RENDERS

We recomend only natural clay or lime based renders be applied to all Mudtec standard blocks. The unfired nature of the blocks allows for the transfer of moisture which helps to control internal humidity levels but may cause cement based renders to crack.

MORTARS

The current mortar mix specified by our engineer is Cement:Lime:Sand @ 1:1:6.
We recomend using a 15-20mm mortar joint.

MANUAL HANDLING

Mudec standard blocks can weigh approx 15kg each. Care must be taken when lifting, handling and laying blocks to prevent injury.

For more information on
The Hazardous Manual Tasks Code of Practice
visit www.safework.nsw.gov.au

Notes:
- ALL RETAINING WALLS ABOVE 800mm MUST COMPLY W/ AS 4678-2002.
- DRAWINGS AND FIGURES SHOWN ARE INDICATIVE ONLY AND MUST BE USED IN CONSULTATION WITH AN ENGINEER.
- FOR BEST RESULTS AND LONGEVITY APPLY WATER BASED SILANE/SILOXANE SEALANT TO EXPOSED FACE.

MUDTEC
compressed earth technologies

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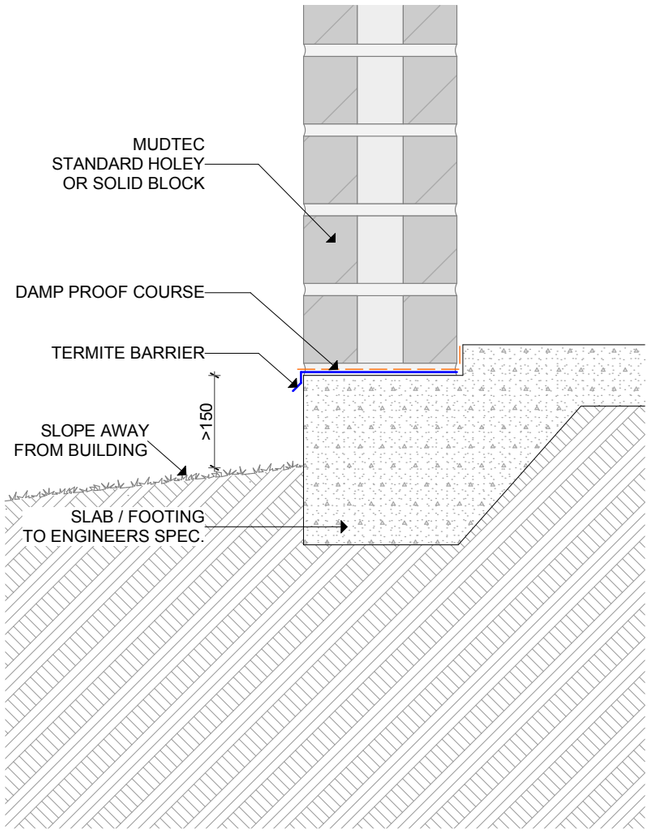
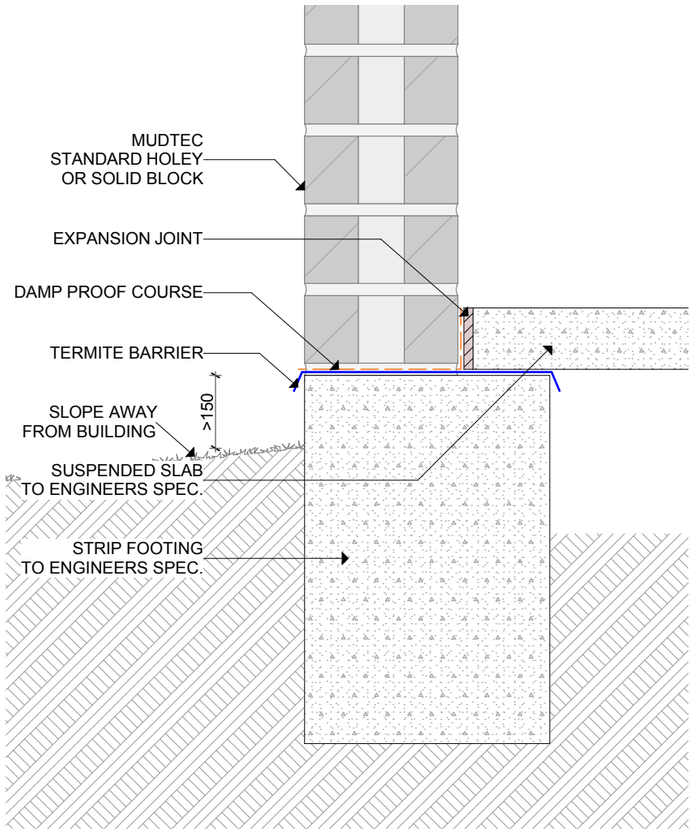
Drawing Name
TECHNICAL GUIDE

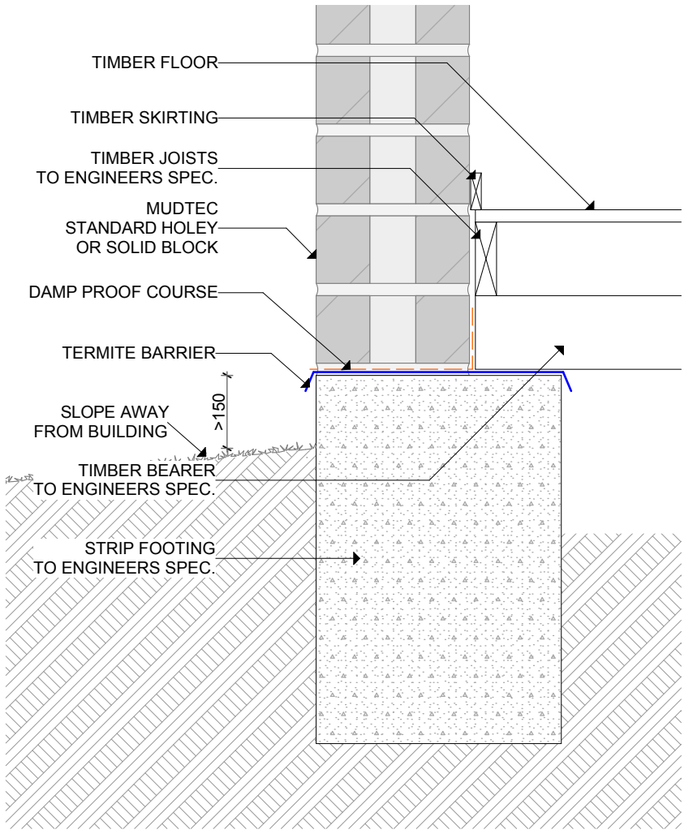
Drawn by	Date	Drawing Scale
KL	1/05/2020	AS SHOWN @ A3
	Drawing Number	Revision
	A.01	A



SLAB ON GROUND 1:10



SUSPENDED SLAB 1:10



SUSPENDED TIMBER FLOOR 1:10

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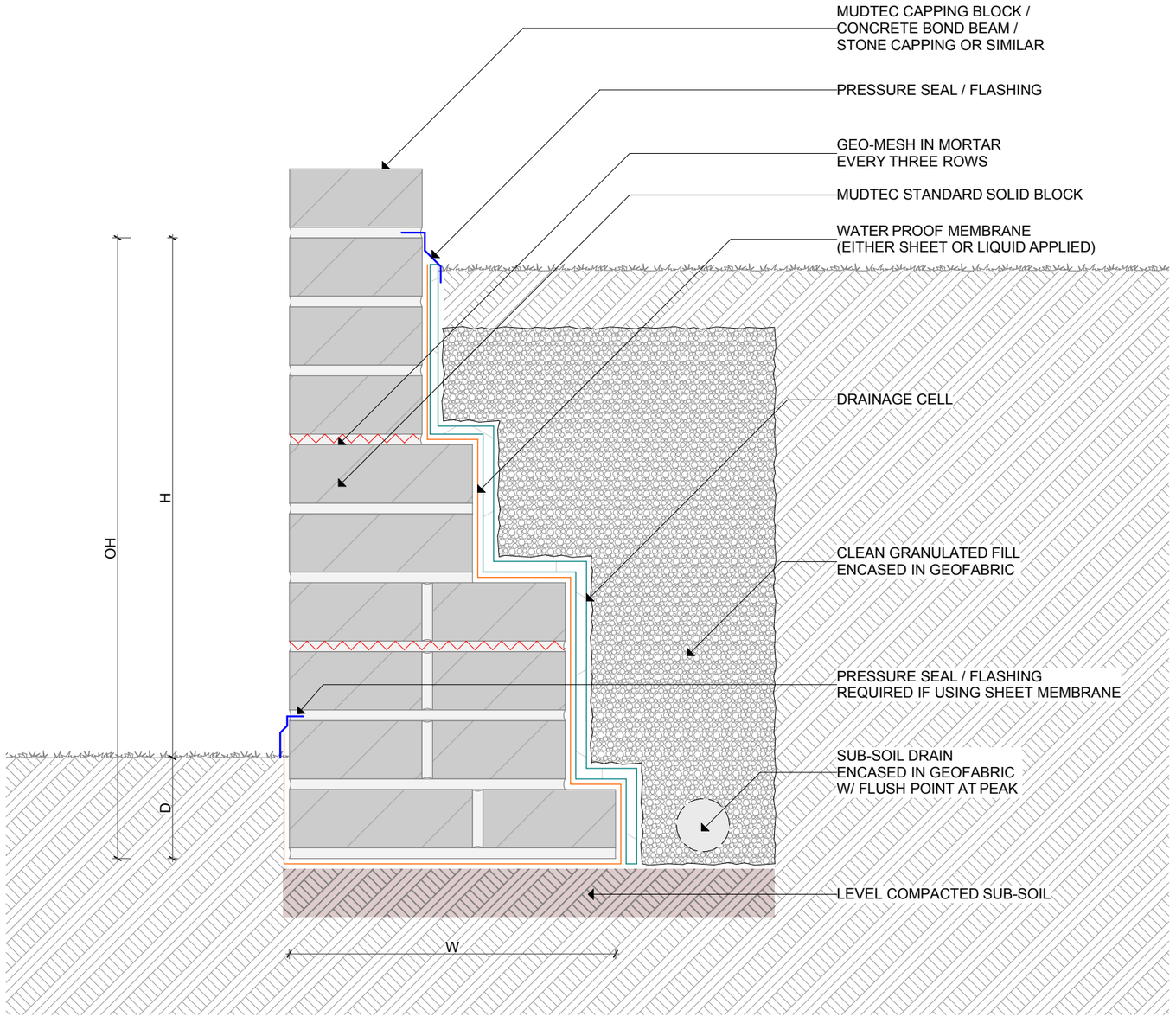
Drawing Name
TYPICAL WALL FOOTING DETAILS

Drawn by	Date	Drawing Scale
KL	1/05/2020	**AS SHOWN @ A3**
	Drawing Number	Revision
	A.02	**A**

MINIMUM RECOMENDED DIMENSIONS

# Block Courses	Net Height 'H'	Overall Height 'OT'	Base Width 'W'	Min Depth 'D'
1	60	110	250	60
2	165	240	250	75
3	280	370	250	90
4	395	500	345	105
5	510	630	345	120
6	625	760	520	135
7	740	890	520	150
8	855	1020	520	165
9	970	1150	615	180
10	1085	1280	615	195
11	1200	1410	790	210
12	1315	1540	790	225
13	1430	1670	790	240
14	1545	1800	885	255
15	1660	1930	885	270
16	1775	2060	980	285
17	1890	2190	980	300
18	2005	2320	1075	315
19	2120	2450	1075	330
20	2235	2580	1155	345
21	2350	2710	1155	360
22	2465	2840	1250	375
23	2580	2970	1250	390
24	2695	3100	1345	405
25	2810	3230	1345	420
26	2925	3360	1425	435
27	3040	3490	1425	450
28	3155	3620	1520	465
29	3270	3750	1615	480
30	3385	3880	1710	495
31	3500	4010	1805	510



TYPICAL GRAVITY RETAINING WALL 1:10

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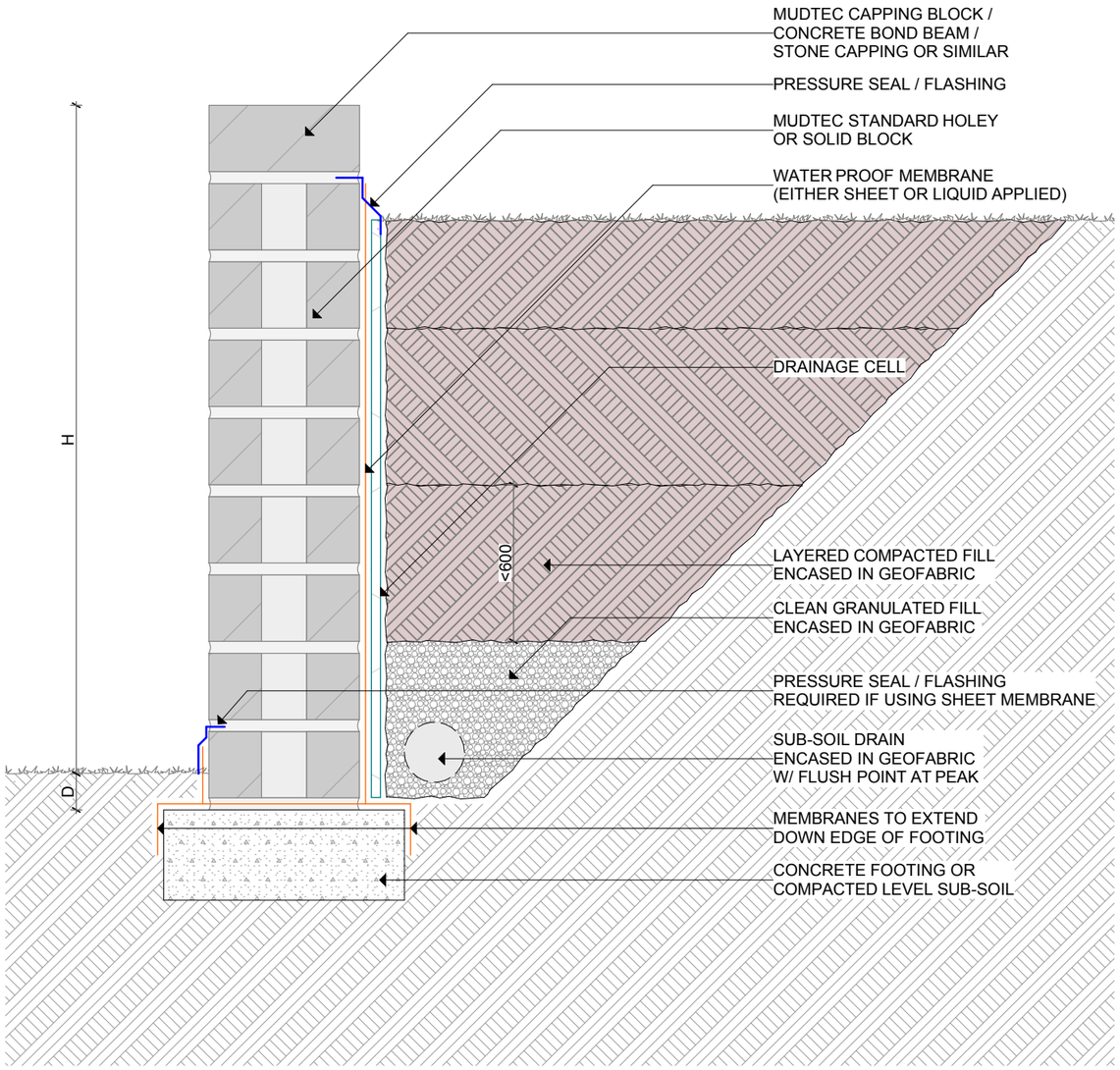
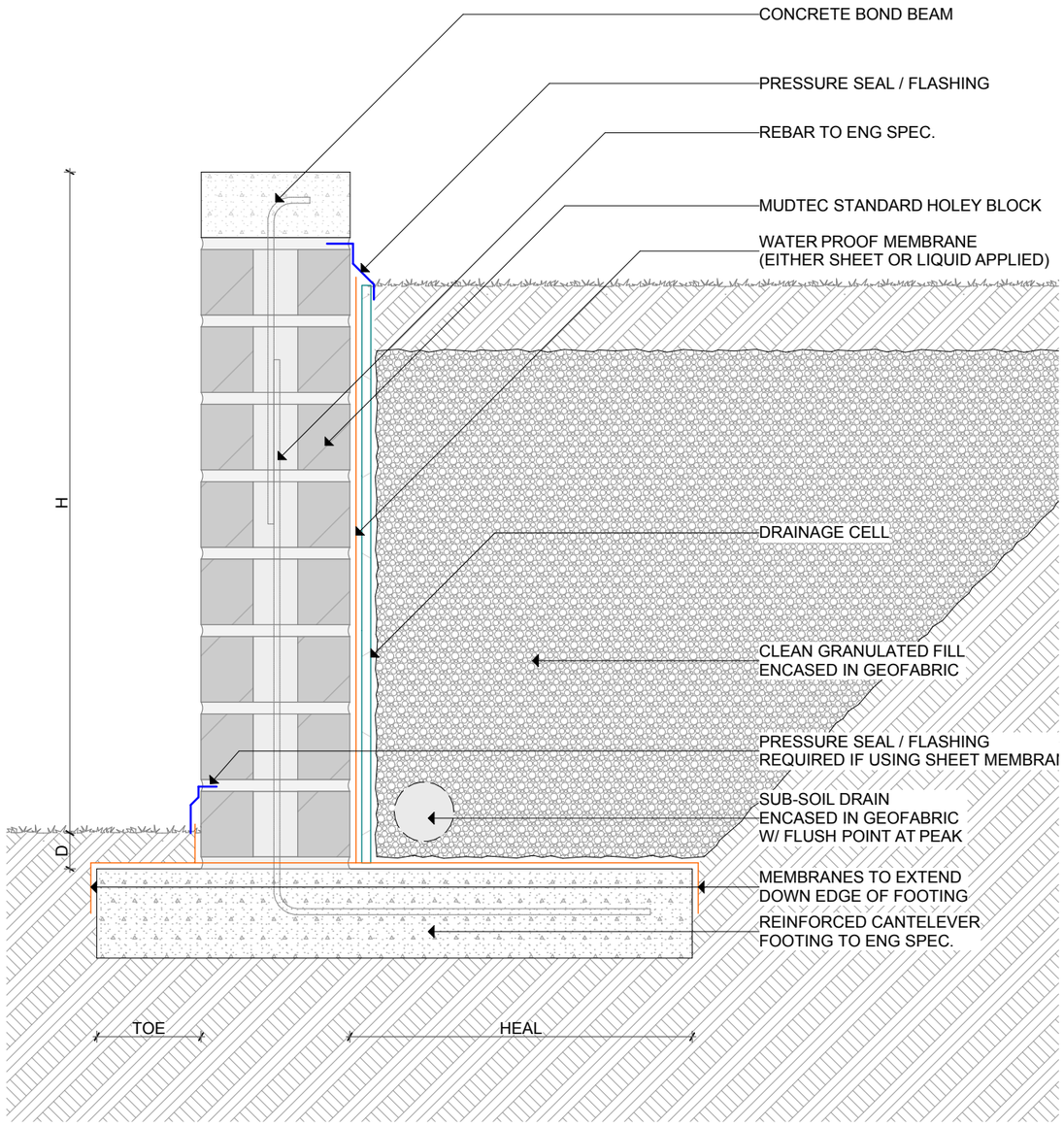
Drawing Name
TYPICAL RETAINING WALLS

Drawn by	Date	Drawing Scale
KL	1/05/2020	AS SHOWN @ A3
	Drawing Number	Revision
	A.03	A



TYPICAL ENGINEERED SOIL RETAINING WALL 1:10



TYPICAL CANTELEVER RETAINING WALL 1:10

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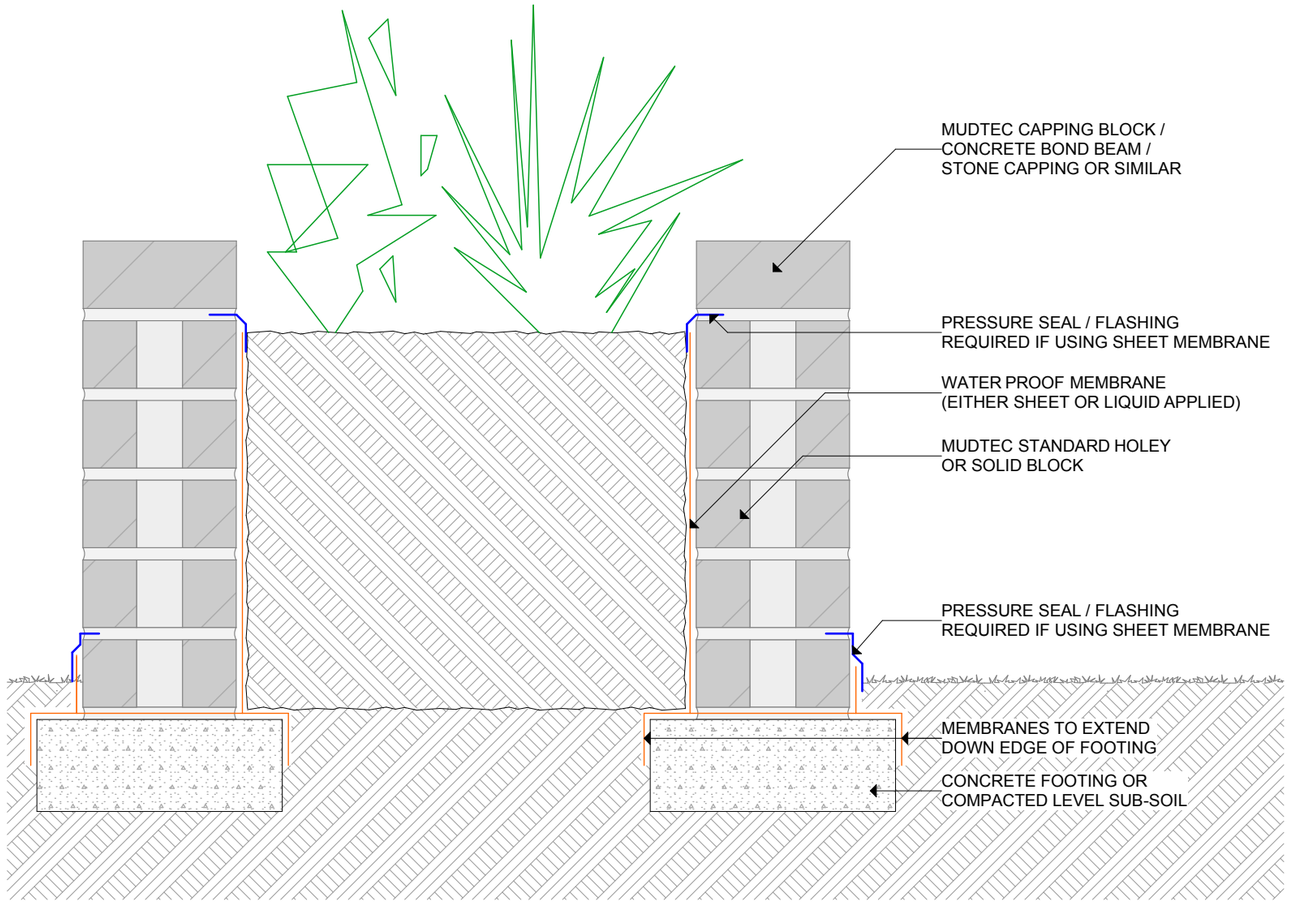
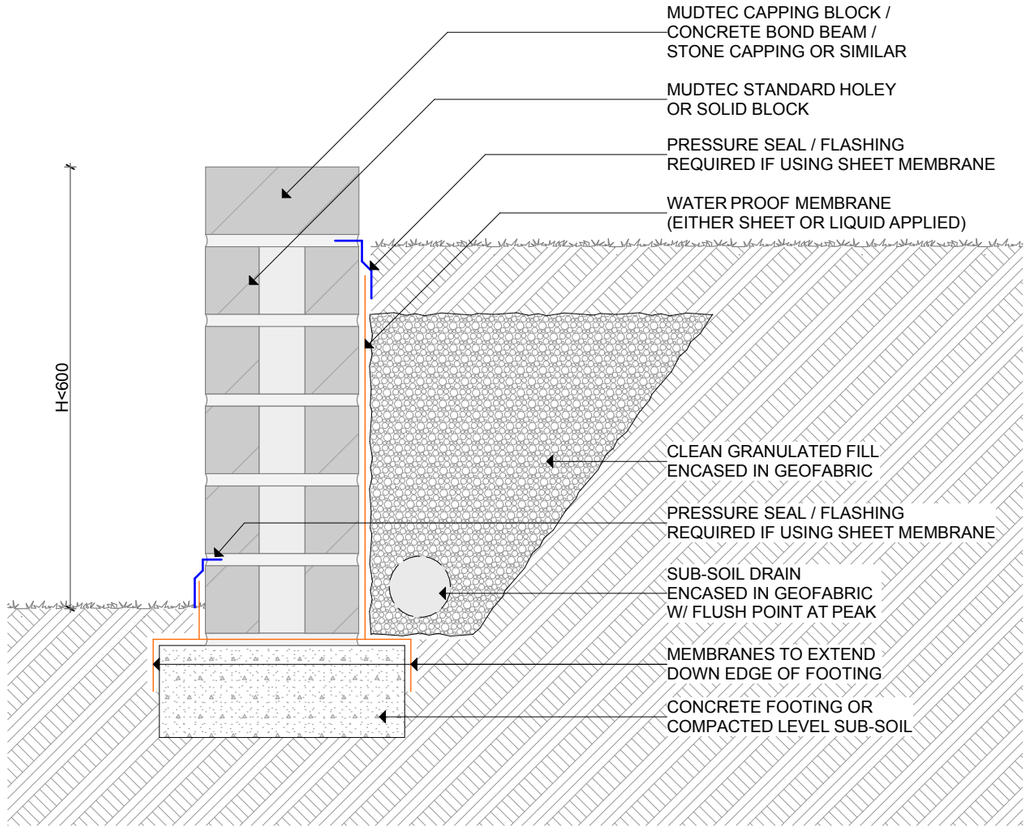
Drawing Name
TYPICAL RETAINING WALLS

Drawn by	Date	Drawing Scale
KL	1/05/2020	**AS SHOWN @ A3**
	Drawing Number	Revision
	A.04	**A**



TYPICAL RAISED GARDEN BED 1:10



TYPICAL LANDSCAPE WALL 1:10

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Drawing Name
TYPICAL LANDSCAPE WALLS

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KL	1/05/2020	AS SHOWN @ A3
	Drawing Number	Revision
	A.05	A