

**GENERAL**

G1 These drawings shall be read in conjunction with the architectural and other consultants' drawings, specifications and with other such written instructions as may be issued during the construction. Any discrepancy shall be referred to the Engineer before commencing the work.

G2 All dimensions are in millimeters, UNO (unless noted otherwise).

G3 These drawings shall not be scaled, refer to dimensions given only or refer to the Architectural drawings.

G4 All levels and setting out dimensions shown on the drawings shall be checked on site prior to the commencement of the work.

G5 During construction the structure shall be maintained in a stable condition with no part being over stressed.

G6 Existing services, where shown, have been drawn based on supplied information and as such their accuracy can not be guaranteed. It is the responsibility of the contractor to determine their exact location prior to the commencement of work.

G7 All service trenches under vehicular pavements shall be back filled in accordance with the respective authorities requirements.

G8 All trench backfill material shall be compacted to the same density as the surrounding material.

G9 All site disturbed areas shall be reinstated to the original condition, including kerbs, footpaths, concrete areas, gravel and grassed areas, etc.

G10 It is the contractor responsibility to obtain all authority approvals.

**STORMWATER DRAINAGE**

S1 The stormwater drainage design has been carried out in accordance with AS / NZS 3500.3 "Stormwater Drainage" & AS / NZS 3500.2.3 "Stormwater Drainage - Acceptable Solutions".

S2 Any variations to the design levels shall be referred to the engineer immediately for approval.

S3 Any variations to specified products or details shall be referred to the engineer for approval prior to their installation.

S4 Subsoil drainage shall be provided to all retaining walls & embankments. They shall be a minimum of Ø100 slotted pipe in filter rock surrounded by crushed rock. They shall drain to the stormwater drainage system.

**SEDIMENT & EROSION CONTROL NOTES**

E1 The sediment & erosion controls shall be maintained effectively for the duration of the project. They shall not be removed until the site has been stabilized or landscaped to the principal certifying authorities satisfaction.

E2 A single all weather access way shall be provided at the front of the property consisting of 50-80 mm aggregate or similar material with a minimum thickness of 150 mm laid over needle-punched geotextile fabric (Biotin A14 or similar) and installed prior to any works being commenced on site.

E3 Where the building works are greater than a single dwelling development, a shaker pad must be installed as part of the vehicular accessway. The shaker pad shall be:

- Established on suitable prepared & compacted material.
- Constructed such that it is flush with the adjoining surfaces.
- A minimum of 5000 mm in length and breadth.
- Designed with rungs spaced 200-250 mm apart & with a maximum width of 75 mm each.

E4 The contractor shall ensure that no spoil or fill encroaches upon adjacent areas during the project.

E5 The contractor shall ensure that all kerb inlets and drains affected by stormwater flow from the site are protected at all times during the project. Kerb inlet sediment traps shall be installed along the immediate vicinity along the street frontage. These shall be regularly maintained during the project.

E6 The street / road shall be kept clean from dirt and debris from vehicles departing the site.

E7 Sediment fencing shall be secured to posts (please note that if star pickets or similar are used then plastic safety caps shall be installed on top of the posts) at 2000 mm intervals with the geotextile fabric embedded a minimum of 200 mm in to the soil.

E8 All the topsoil stripped from the site shall be stockpiled such that it does not interfere with drainage lines and stormwater inlet pits. The stockpile shall be suitably covered with an impervious membrane and screened by sediment fencing.

**SOIL CONSERVATION NOTE:**

C1 Prior to the commencement of the site works the following shall be provided to capture water borne sediments:

- Sediment fencing
- Sediment trap
- Washout area

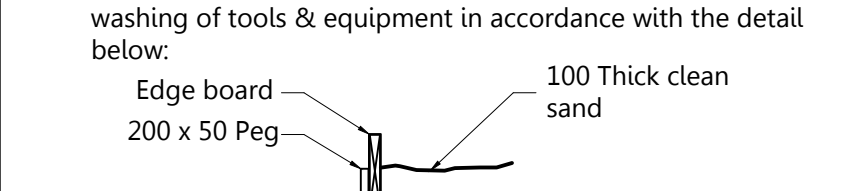
C2 These shall be maintained regularly during the course of the construction with the sediment trap cleaned after each storm event.

**SEDIMENT TRAP**

T1 A 1000 x 1000 mm square by 500 mm deep pit located at the lower point of the site.

**WASHOUT AREA**

W1 The washout area shall be 1800 x 1800 mm allocated for the washing of tools & equipment in accordance with the detail below.

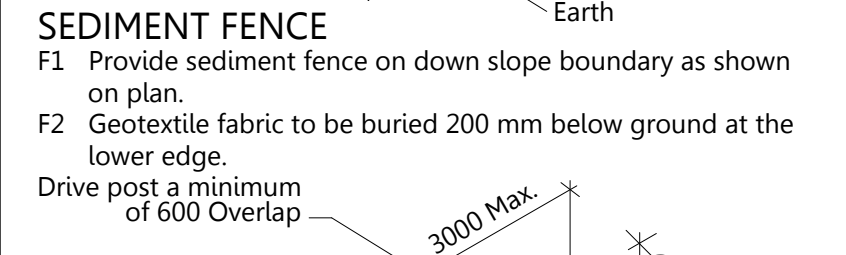


**SEDIMENT FENCE**

F1 Provide sediment fence on down slope boundary as shown on plan.

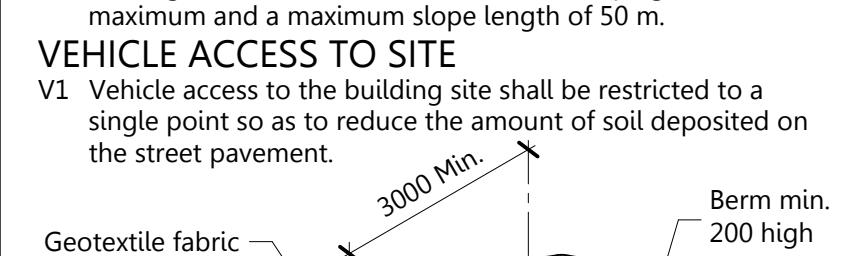
F2 Geotextile fabric to be buried 200 mm below ground at the lower edge.

F3 Drive posts a minimum of 600 mm Overlap.



**VEHICLE ACCESS TO SITE**

V1 Vehicle access to the building site shall be restricted to a single point so as to reduce the amount of soil deposited on the street pavement.

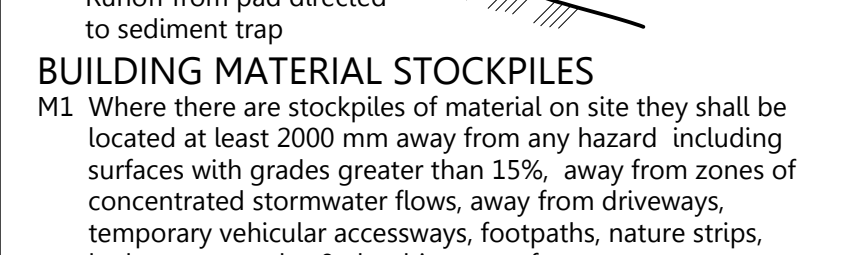


**BUILDING MATERIAL STOCKPILES**

M1 Where there are stockpiles of material on site they shall be located at least 2000 mm away from any hazard including surfaces with grades greater than 15%, away from zones of concentrated stormwater flows, away from driveways, temporary vehicular accessways, footpaths, nature strips, kerbs, open swales & the drip zone of trees.

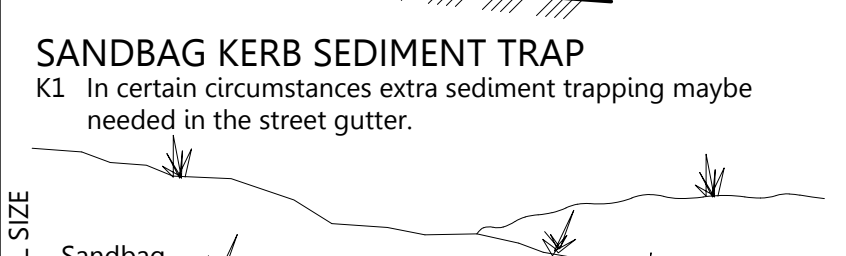
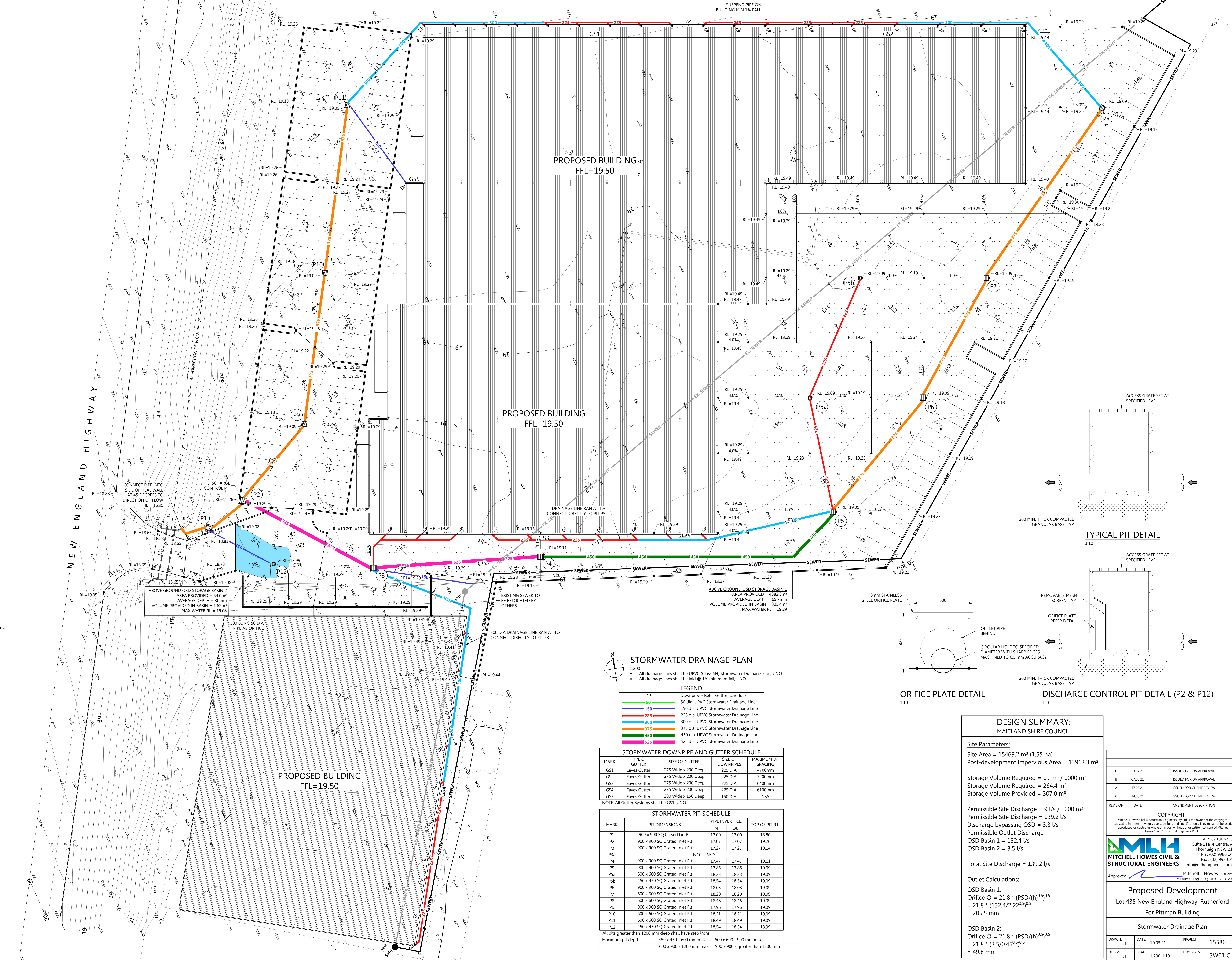
M2 Sediment fencing shall be installed down slope of all stockpiles.

M3 The stockpile shall be covered with an impervious cover and held down firmly at all corners and sides.



**SANDBAG KERB SEDIMENT TRAP**

K1 In certain circumstances extra sediment trapping may be needed in the street gutter.

PROPOSED BUILDING  
FFL=19.50

PROPOSED BUILDING  
FFL=19.50

PROPOSED BUILDING  
FFL=19.50

**STORMWATER DRAINAGE PLAN**

- All drainage lines shall be UPVC (Class SH) Stormwater Drainage Pipe, UNO.
- All drainage lines shall be laid @ 1% minimum fall, UNO.

**LEGEND**

DP	Downpipe - Refer Gutter Schedule
50	50 dia. UPVC Stormwater Drainage Line
150	150 dia. UPVC Stormwater Drainage Line
225	225 dia. UPVC Stormwater Drainage Line
300	300 dia. UPVC Stormwater Drainage Line
375	375 dia. UPVC Stormwater Drainage Line
450	450 dia. UPVC Stormwater Drainage Line
525	525 dia. UPVC Stormwater Drainage Line

**STORMWATER DOWNPIPE AND GUTTER SCHEDULE**

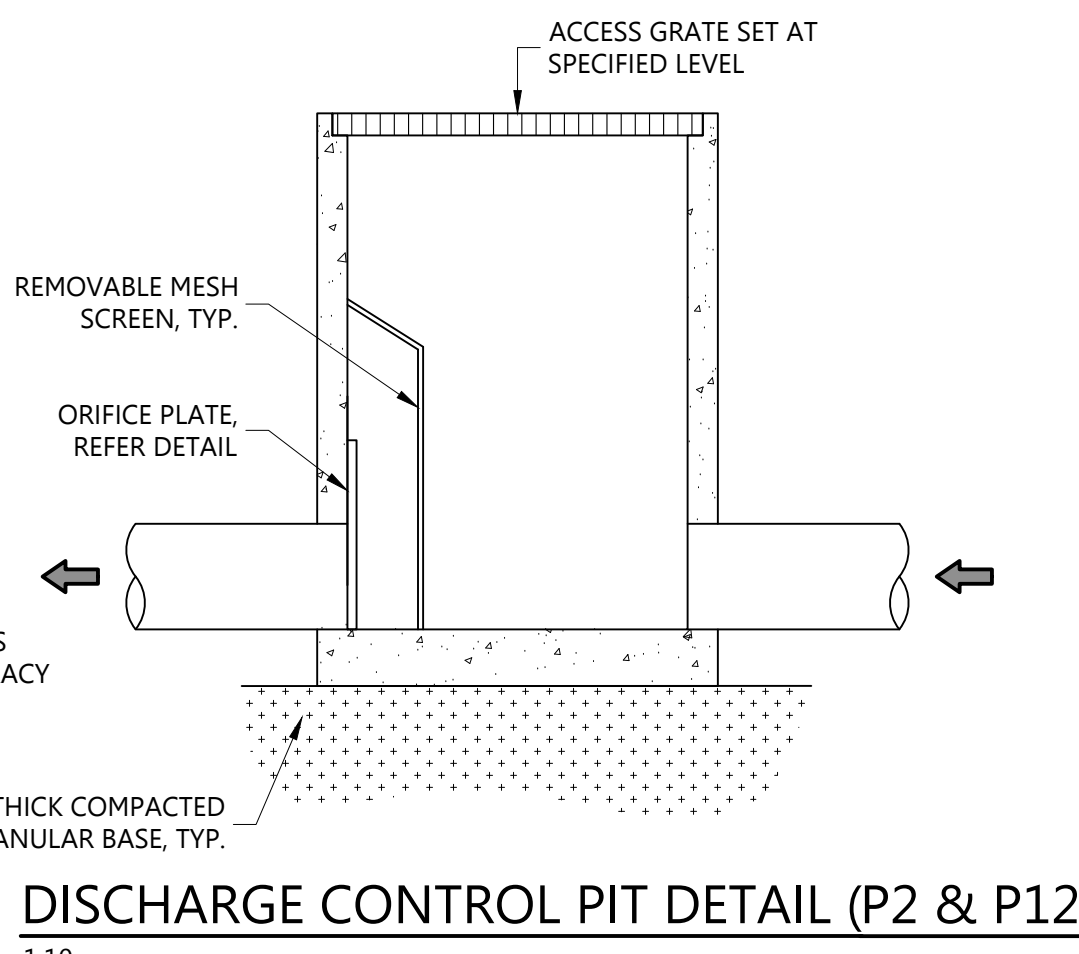
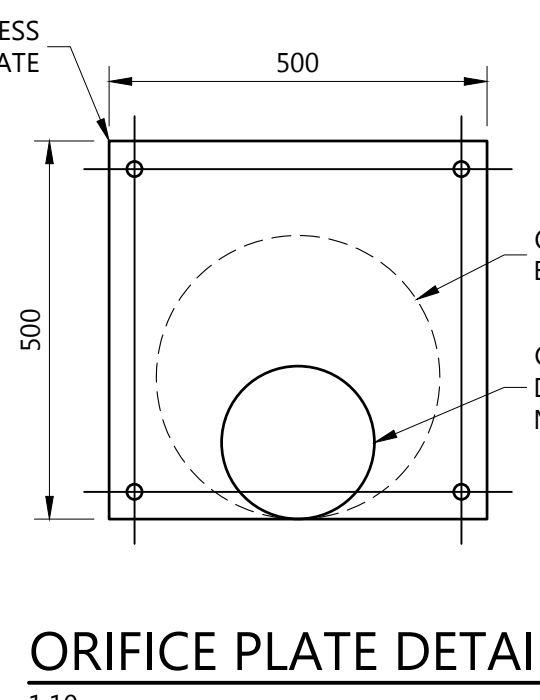
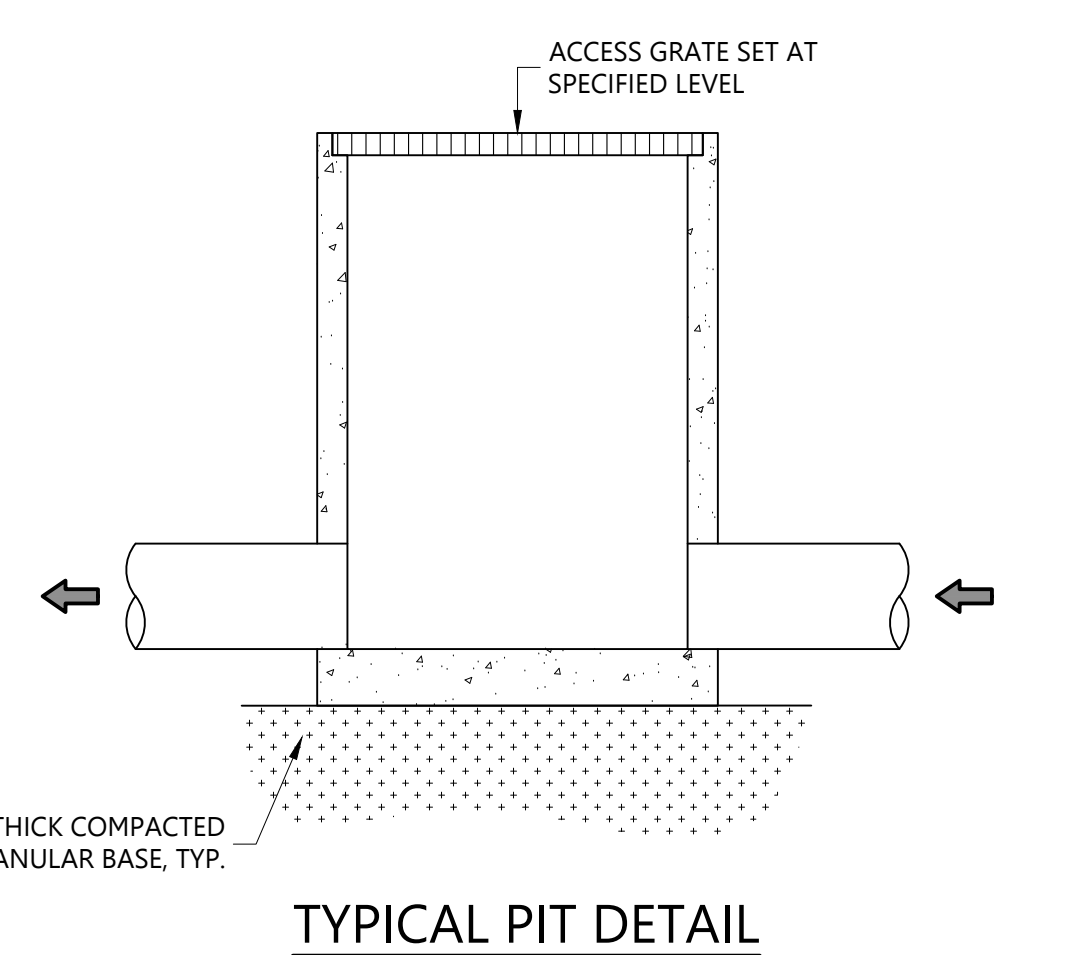
MARK	TYPE OF GUTTER	SIZE OF GUTTER	SIZE OF DOWNPIPES	MAXIMUM DP SPACING
GS1	Eaves Gutter	275 Wide x 200 Deep	225 DIA.	4700mm
GS2	Eaves Gutter	275 Wide x 200 Deep	225 DIA.	7200mm
GS3	Eaves Gutter	275 Wide x 200 Deep	225 DIA.	6400mm
GS4	Eaves Gutter	275 Wide x 200 Deep	225 DIA.	6100mm
GS5	Eaves Gutter	200 Wide x 150 Deep	150 DIA.	N/A

NOTE: All Gutter Systems shall be GS1, UNO.

**STORMWATER PIT SCHEDULE**

MARK	PIT DIMENSIONS	PIPE INVERT R.L.		TOP OF PIT R.L.
		IN	OUT	
P1	900 x 900 SQ Closed Lid Pit	17.00	17.00	18.80
P2	900 x 900 SQ Grated Inlet Pit	17.07	17.07	19.26
P3	900 x 900 SQ Grated Inlet Pit	17.27	17.27	19.14
P3a	NOT USED			
P4	900 x 900 SQ Grated Inlet Pit	17.47	17.47	19.11
P5	900 x 900 SQ Grated Inlet Pit	17.85	17.85	19.09
P5a	600 x 600 SQ Grated Inlet Pit	18.33	18.33	19.09
P5b	450 x 450 SQ Grated Inlet Pit	18.54	18.54	19.09
P6	900 x 900 SQ Grated Inlet Pit	18.03	18.03	19.09
P7	600 x 600 SQ Grated Inlet Pit	18.20	18.20	19.09
P8	600 x 600 SQ Grated Inlet Pit	18.46	18.46	19.09
P9	900 x 900 SQ Grated Inlet Pit	17.96	17.96	19.09
P10	600 x 600 SQ Grated Inlet Pit	18.21	18.21	19.09
P11	600 x 600 SQ Grated Inlet Pit	18.49	18.49	19.09
P12	450 x 450 SQ Grated Inlet Pit	18.54	18.54	18.99

All pits greater than 1200 mm deep shall have step irons.  
Maximum pit depths: 450 x 450 - 600 mm max. 600 x 600 - 900 mm max. 600 x 900 - 1200 mm max. 900 x 900 - greater than 1200 mm



**DESIGN SUMMARY:**  
MAITLAND SHIRE COUNCIL

**Site Parameters:**  
Site Area = 15469.2 m<sup>2</sup> (1.55 ha)  
Post-development Impervious Area = 13913.3 m<sup>2</sup>

Storage Volume Required = 19 m<sup>3</sup> / 1000 m<sup>2</sup>  
Storage Volume Required = 264.4 m<sup>3</sup>  
Storage Volume Provided = 307.0 m<sup>3</sup>

Permissible Site Discharge = 9 l/s / 1000 m<sup>2</sup>  
Permissible Site Discharge = 139.2 l/s  
Discharge bypassing OSD = 3.3 l/s  
Permissible Outlet Discharge  
OSD Basin 1 = 132.4 l/s  
OSD Basin 2 = 3.5 l/s

Total Site Discharge = 139.2 l/s

**Outlet Calculations:**  
OSD Basin 1:  
Orifice Ø = 21.8 \* (PSD/(h<sup>0.5</sup>)<sup>0.5</sup>)  
= 21.8 \* (132.4/2.2<sup>0.5</sup>)<sup>0.5</sup>  
= 205.5 mm

OSD Basin 2:  
Orifice Ø = 21.8 \* (PSD/(h<sup>0.5</sup>)<sup>0.5</sup>)  
= 21.8 \* (3.5/0.45<sup>0.5</sup>)<sup>0.5</sup>  
= 49.8 mm

REVISION	DATE	AMENDMENT DESCRIPTION
C	23.07.21	ISSUED FOR DA APPROVAL
B	07.06.21	ISSUED FOR DA APPROVAL
A	17.05.21	ISSUED FOR CLIENT REVIEW
0	14.05.21	ISSUED FOR CLIENT REVIEW

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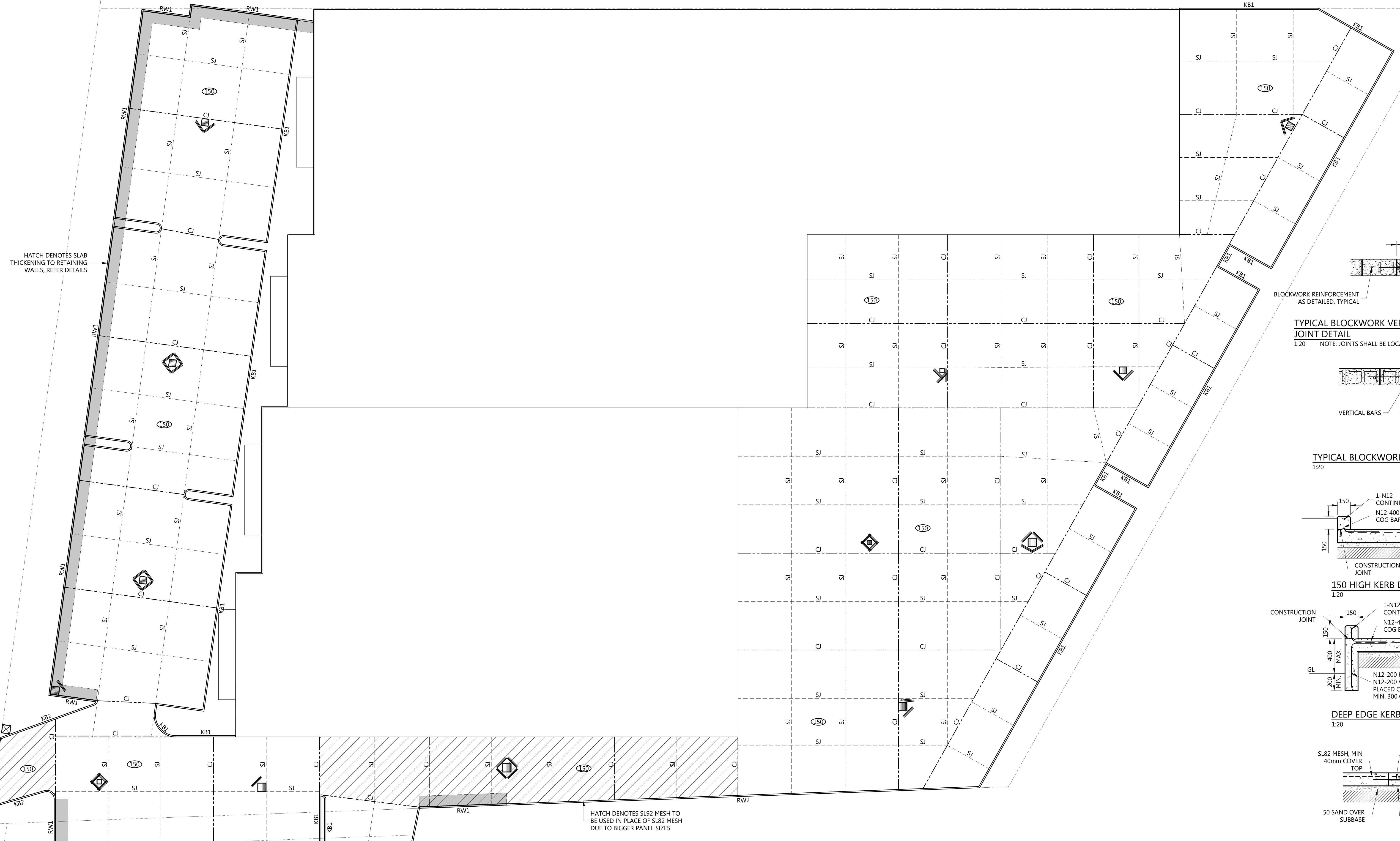
**Proposed Development**  
Lot 435 New England Highway, Rutherford  
For Pittman Building

**Stormwater Drainage Plan**

DRAWN: JH	DATE: 10.05.21	PROJECT: 15586
DESIGN: JH	SCALE: 1:200 1:10	DWG / REV: SW01 C



NEW ENGLAND HIGHWAY

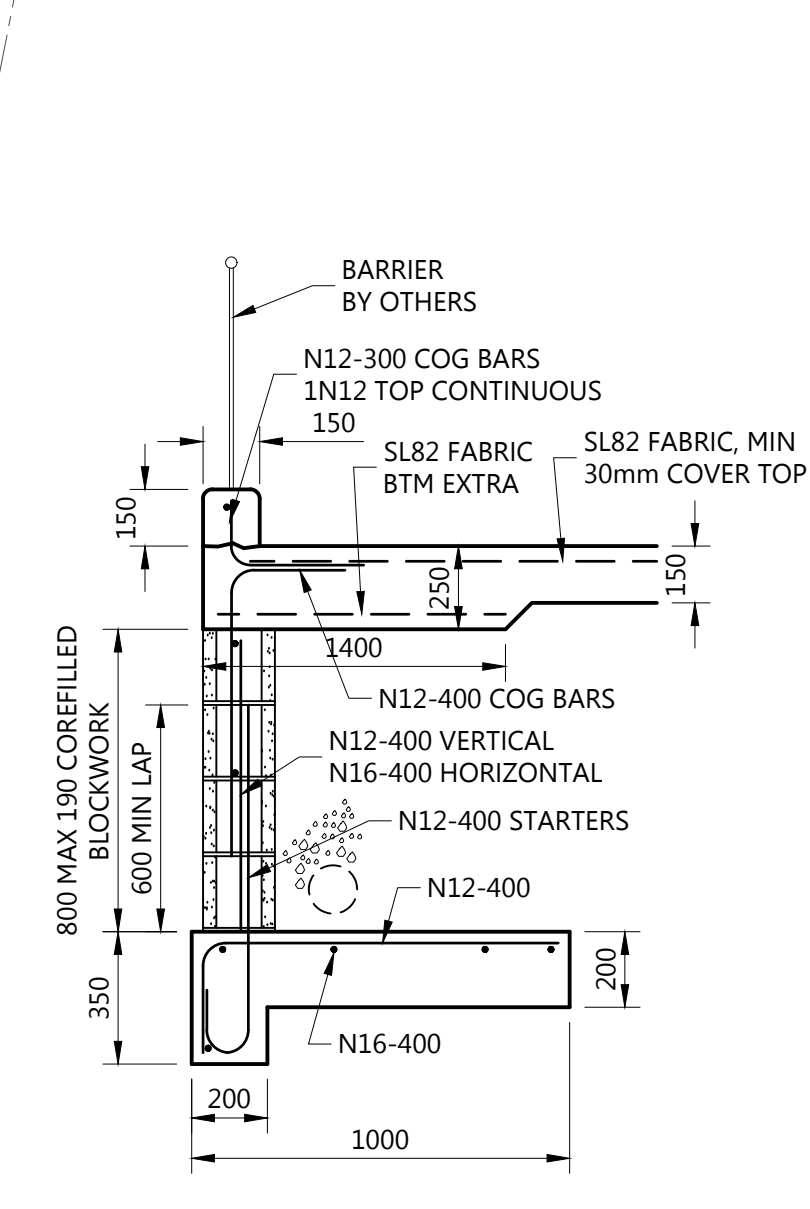


HATCH DENOTES SLAB THICKENING TO RETAINING WALLS. REFER DETAILS

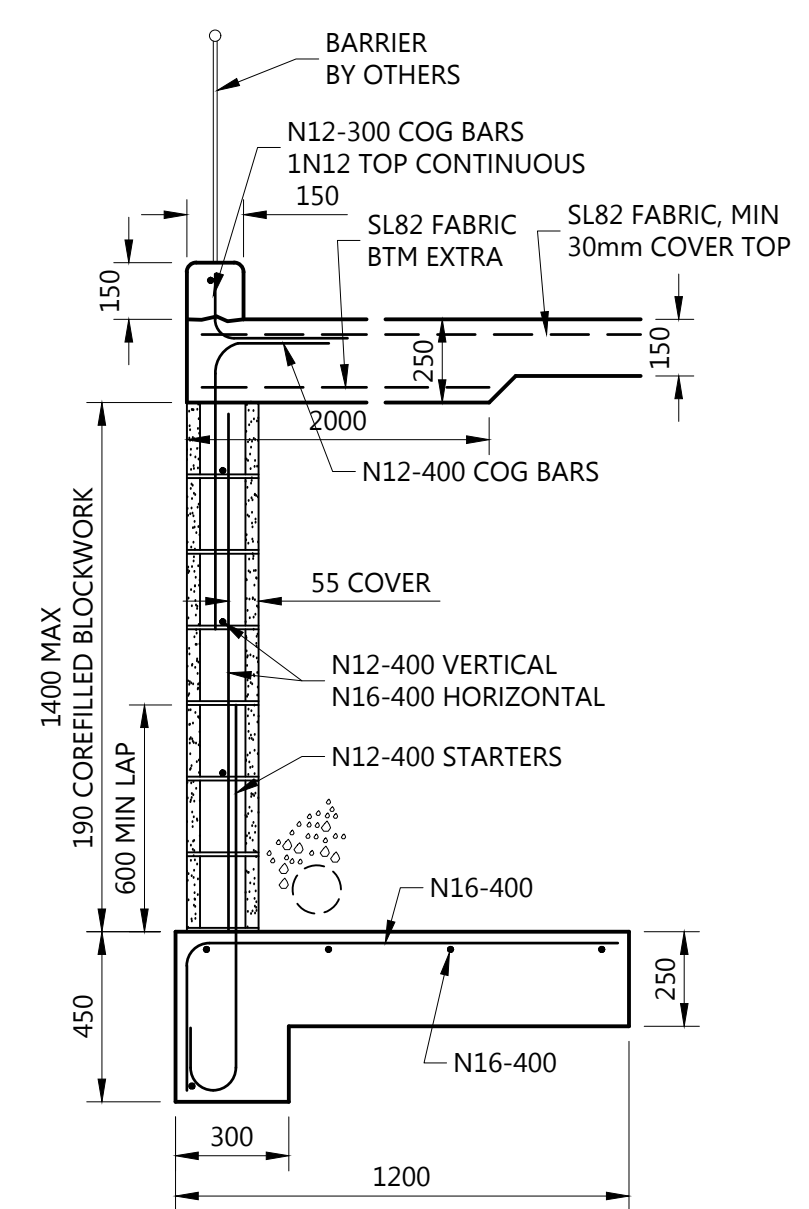
HATCH DENOTES SL82 MESH TO BE USED IN PLACE OF SL82 MESH DUE TO BIGGER PANEL SIZES

**EXTERNAL PAVEMENT LAYOUT PLAN**

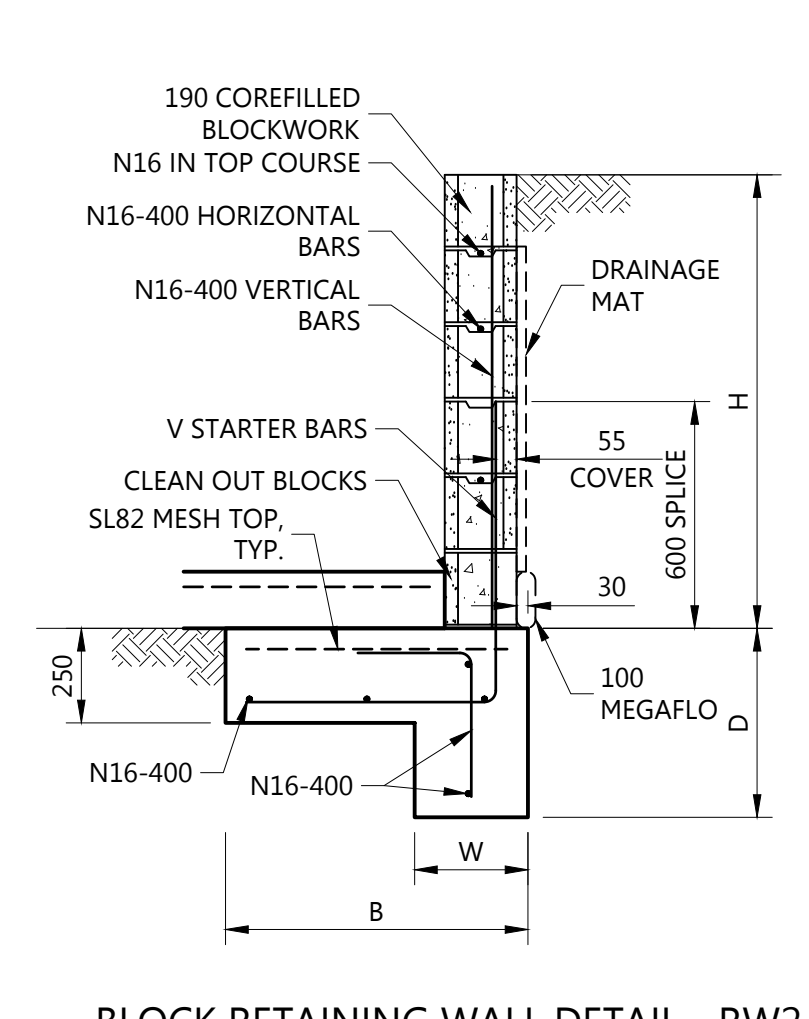
- 1:200
- 1500 Denotes 150 thick 32 MPa concrete slab with SL82 mesh top continuous throughout.
- External pavement slab shall be laid over 100 thick unbound sub-base (UGB20 or similar).
- 3-N12 (1500 long) trimmers shall be located at all re-entrant corners, typical.
- Extra bars as noted on plan and sections.



800 HIGH RETAINING WALL DETAIL  
BLOCK RETAINING WALL DETAIL - RW1  
1:20

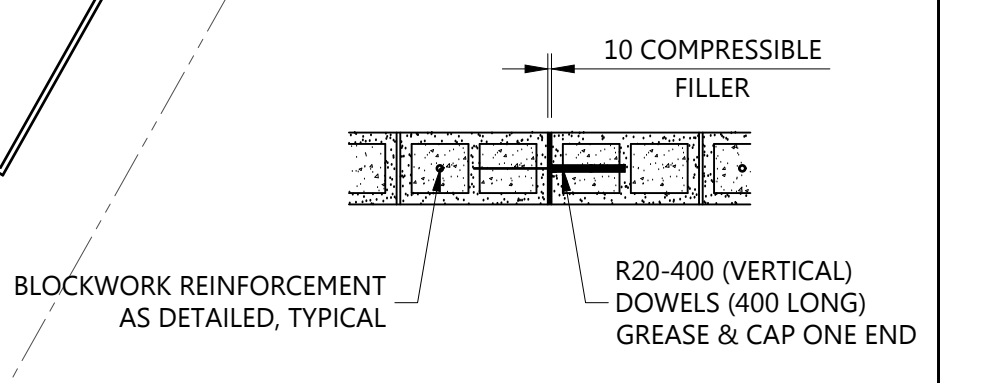


1400 HIGH RETAINING WALL DETAIL  
BLOCK RETAINING WALL DETAIL - RW1  
1:20

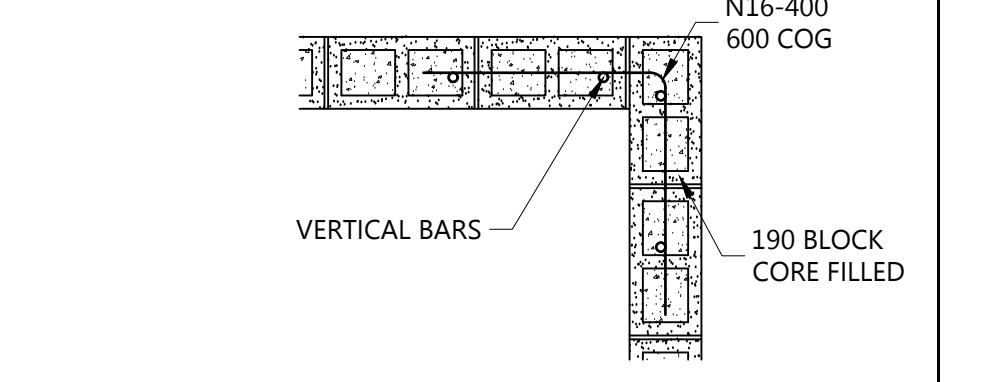


BLOCK RETAINING WALL DETAIL - RW2  
1:20

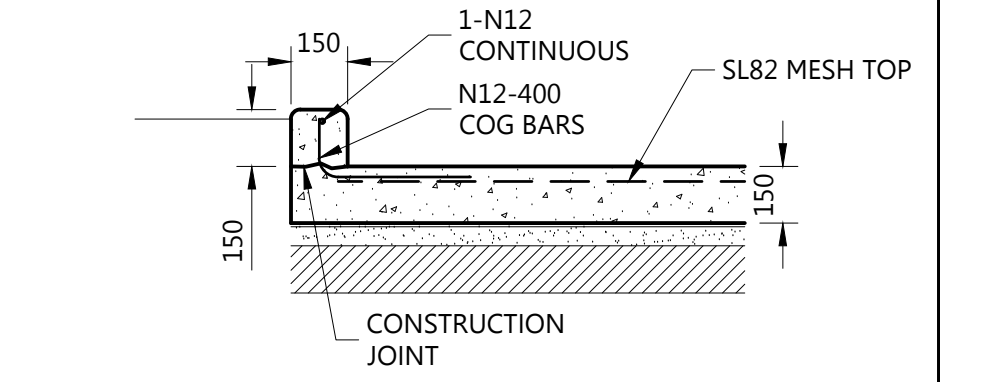
RETAINING WALL BASE SIZES		RETAINING WALL HEIGHT		REINFORCEMENT	
WALL HEIGHT	BASE WIDTH	WALL HEIGHT	BASE WIDTH	V BARS	C BARS
800	600	800	800	N16-400	-
1000	700	1000	1000	N16-400	-
1200	800	1200	1200	N16-400	-



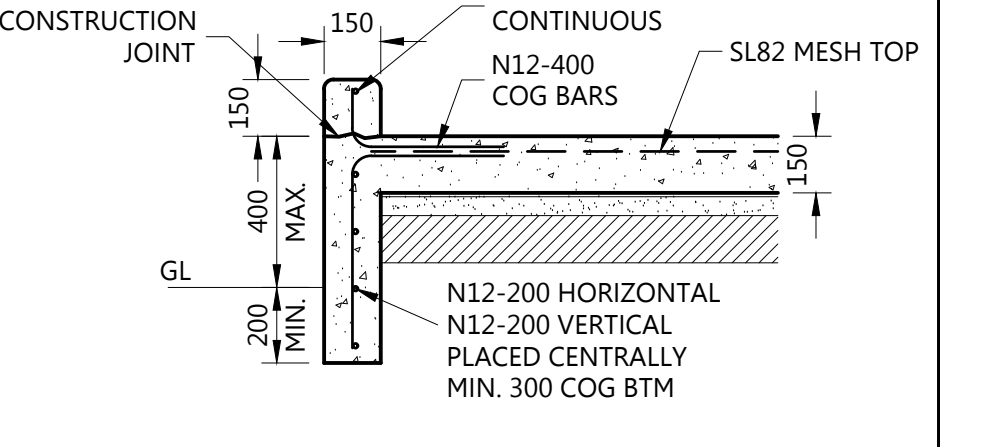
TYPICAL BLOCKWORK VERTICAL EXPANSION JOINT DETAIL  
1:20 NOTE: JOINTS SHALL BE LOCATED AT 8000 C/C MAX.



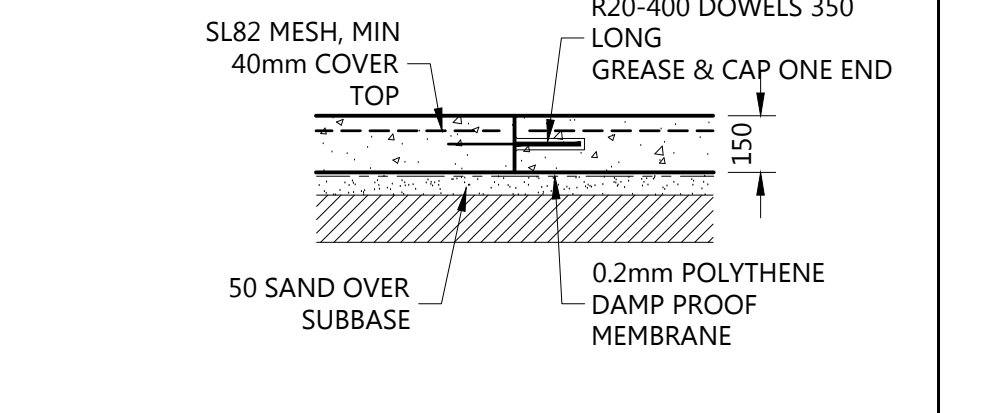
TYPICAL BLOCKWORK CORNER DETAIL  
1:20



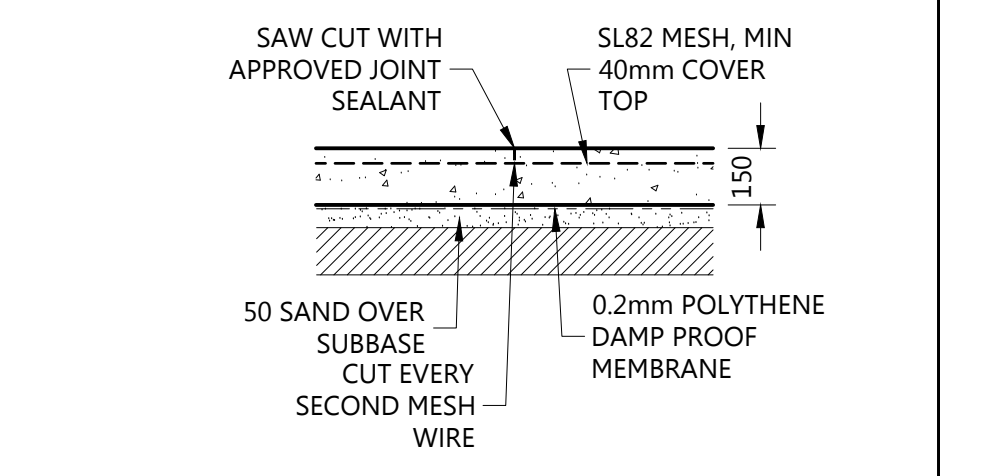
150 HIGH KERB DETAIL - KB1  
1:20



DEEP EDGE KERB DETAIL - KB2  
1:20



CONSTRUCTION JOINT DETAIL - CJ  
1:20 NOTE: CJ MAX. 18m C/C



SAW N JOINT DETAIL - SJ  
1:20 NOTE: SJ MAX. 6m C/C

CONCRETE SPECIFICATION	
Binder:	- Composed of cement to AS3072 and fly ash to AS3082.1 - Fine Grade
Binder Type:	- Sl to AS3072
Minimum Binder Content:	- 330 kg / m3
Maximum Aggregate Size:	- 20mm
Maximum Water / Binder Ratio:	- 0.45
Admixtures (where approved):	- To AS1478
Minimum Compressive Strength (if at 56 days to AS1012.2):	- 32 MPa
Minimum Flexural Strength (if at 56 days to AS1012.2):	- 4.5 MPa
Typical Maximum Drying Shrinkage (if at 28 days to AS1012.2):	- 500 microstrain average
Nominal Slump to AS1012.2:	- 80 mm
Testing of Concrete:	- Project control testing to AS3779 & AS3600
Curing Compound:	- To AS3799
Slab Thickness:	- 150 mm
Slab Reinforcement:	- 150 thick - SL82 mesh top (40 cover)
Placing:	- Hand placed
Saw Cuts within 24 hrs:	- Soft cut G2000 or G3000 to manufacturers specifications
Curing:	- 7 days minimum with approved curing compound or material
NOTE:	- Concrete mix to be approved by Engineer prior to use.

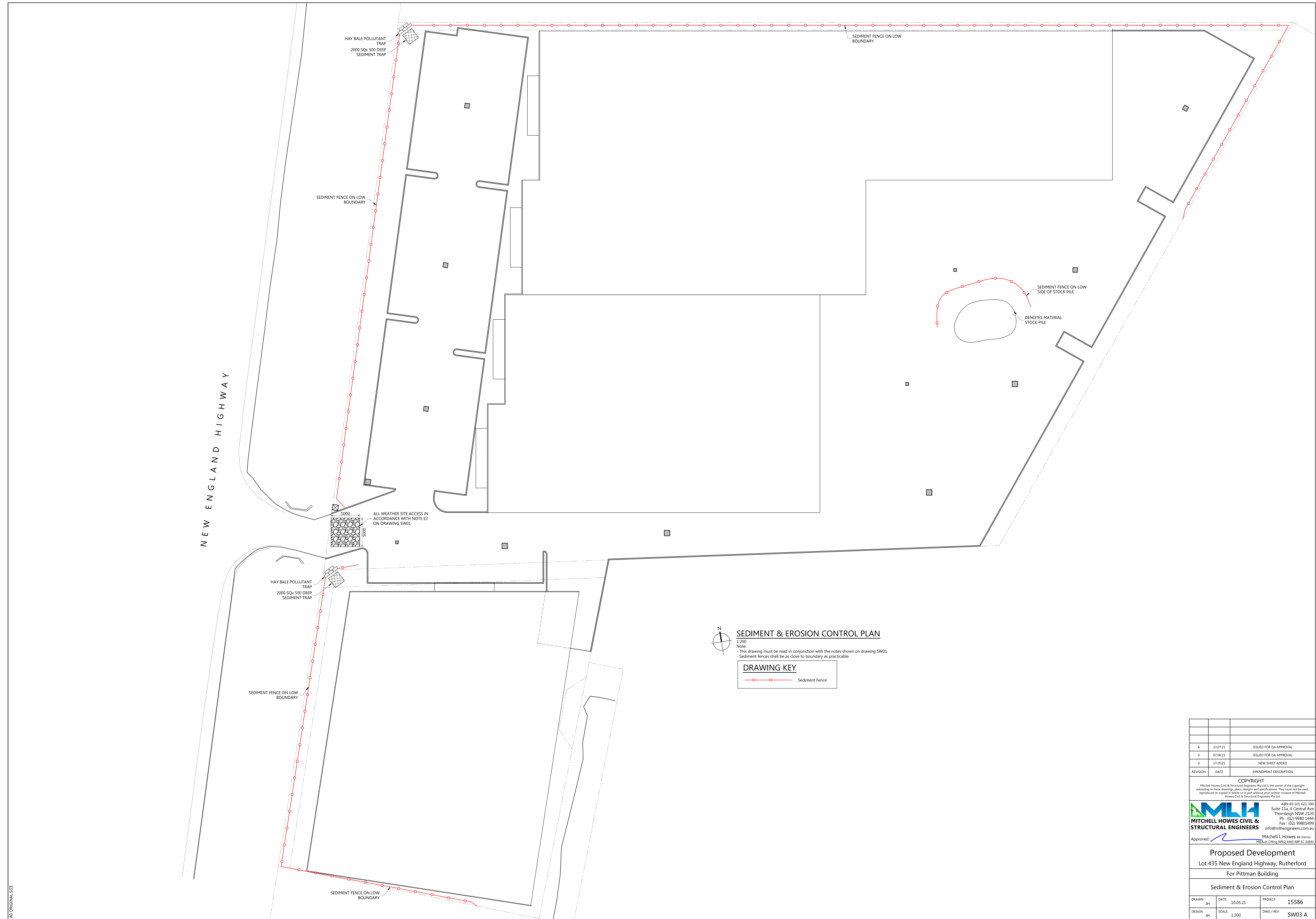
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**Proposed Development**  
 Lot 435 New England Highway, Rutherford  
 For Pittman Building

REVISION	DATE	AMENDMENT DESCRIPTION
A	23.07.21	ISSUED FOR DA APPROVAL
0	07.06.21	ISSUED FOR DA APPROVAL
0	17.05.21	NEW SHEET ADDED

DRAWN: JH DATE: 10.05.21 PROJECT: 15586  
 DESIGN: JH SCALE: 1:200 1:20 DWG / REV: SW02 A





AS ORIGINAL SIZE

**SEDIMENT & EROSION CONTROL PLAN**  
 1:200  
 Note:  
 - This drawing must be read in conjunction with the notes shown on drawing SW01  
 - Sediment fences shall be as close to boundary as practicable

**DRAWING KEY**  
 —○—○— Sediment Fence

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Approved: Mitchell L Howes BE (S4040)  
 REG No: CRNG 8949 RRP EC 20844

**Proposed Development**  
 Lot 435 New England Highway, Rutherford  
 For Pittman Building

Sediment & Erosion Control Plan			
DRAWN:	JH	DATE:	10.05.21
DESIGN:	JH	SCALE:	1:200
PROJECT:	15586	DWG / REV:	SW03 A