# STRUCTURAL DESIGN



## PROPOSED RETAINING WALL **52 WAKEHURST PARKWAY, NORTH NARRABEEN NSW 2101**

REF | ST21025

REVISION | A

CLIENT | PROJECT FLOW

ARCHITECT | DESIGN FORMATION

### GENERAL NOTES

- THESE ENGINEERING DRAWINGS ARE TO BE READ IN CONJUNCTION WITH PROJECT SPECIFICATIONS AND OTHER SULTANTS DRAWINGS ON THE PROJECT
- 2. THESE ENGINEERING DRAWINGS HAVE BEEN PREPARED FROM INFORMATION AVAILABLE AT THE TIME OF ISSUE, AS THIS INFORMATION MAY BE THE SUBJECT OF CHANGE PRIOR TO OR DURING CONSTRUCTION THE CONTRACTOR IS TO ADVISE THE ENGINEER WHERE DISCREPANCIES OCCUR.
- 3. THESE DRAWINGS SHALL NOT BE USED FOR FINAL SETOUT OF THE PROJECT UNLESS SPECIFICALLY STATED.
- NSPECTIONS ARE REQUIRED TO BE PERFORMED BY A DULY APPOINTED INSPECTOR FROM 'DEBOKE'. THESE INSPECTIONS 4 ARE REQUIRED TO BE PERFORMED IN ACCORDANCE WITH THE SCOPE OF INSPECTIONS PREPARED BY 'DEBOKE'. THE INSPECTOR IS TO BE GIVEN A MINIMUM OF 48 HOURS NOTICE.
- 5. PRIOR TO THE COMMENCEMENT OF WORKS THE CONTRACTOR IS TO IDENTIFY ALL EXISTING SERVICES. ANY DAMAGE TO EXISTING SERVICES IS TO BE RECTIFIED AT THE CONTRACTORS EXPENSE. SERVICES SHOWN ON 'DEBOKE' DRAWINGS ARE NDICATIVE ONLY.
- 6. DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STABILITY OF THE WORKS AND ENSURE NO PART IS OVERSTRESSED
- WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT AUSTRALIAN STANDARDS AND BCA 7. Y REQUIREMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENT
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT SUFFICIENT TOLERANCES ARE PROVIDED AND 8. INTEGRATED THROUGHOUT ALL THE ELEMENTS OF THE WORKS
- ALL NON-LOAD BEARING ELEMENTS SHALL BE KEPT CLEAR OF THE STRUCTURE SOFFIT BY AN ALLOWANCE DETERMINED 9. FROM SPAN/250 OR CANTILEVER/125 BUT NOT LESS THAN 20mm, UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- 10. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.
- WIND AND EARTHQUAKE LOADS HAVE BEEN DETERMINED IN ACCORDANCE WITH AS1170.2 AND AS1170.4 RESPECTIVELY BASED ON THE FOLLOWING DESIGN CRITERIA : WIND LOADS: A2 REGION 3 TERRAIN CATEGORY 33 GUST WIND SPEED V (m/s) zu 1.0 SHIELDING M s 1.0 TOPGRAPHIC M t 1.0 IMPORTANCE M I
- SUPERIMPOSED DEAD LOADS AND LIVE LOADS HAVE BEEN DETERMINED IN ACCORDANCE WITH AS1170.1 AND ARE SHOWN 12. ON THE GENERAL ARRANGEMENT DRAWINGS.
- 13. ALL DIMENSIONS ARE IN MILMETERES UNLESS STATED OTHERWISE. ALL LEVELS ARE EXPRESSED IN METERS TO THE 13.
- 14. WORKMANSHP AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RELEVANT CURRENT S.A.A. CODES INCLUDING ALL AMENDMENTS, AND THE LOCAL STATUTORY AUTHORITES, REGULATIONS, ECT. EXCEPT WHERE VARIED BY CONTRACT DOCUMENTS

## FOUNDATION NOTES

- REFER TO THE GEOTECHNICAL ENGINEERING REPORT SPECIFIED IN THE GENERAL NOTES FOR SITE SPECIFIC DTECHNICAL INFORMATION
- 2. FOOTINGS TO BE FOUNDED ON MATERIAL HAVING AN ALLOWABLE BEARING CAPACITY OF 150 kPa IN CLAY, WHERE DIFFICULTY IN REACHING THE REQUIRED CAPACITY IS EXPERIENCED, 'DEBOKE' ARE TO BE CONTACTED TO RE-ASSESS
- THE CONTRACTOR IS TO ENGAGE AND PAY A GEOTECHNICAL ENGINEER TO VERIFY THE BEARING CAPACITY OF THE 3. FOUNDATIONS PRIOR TO PLACEMENT OF THE BLINDING LAYER
- 4. ALL LOOSE MATERIAL AND WATER TO BE CLEANED OUT OF THE FOUNDATION. FORMWORK TO BE USED WHERE THE SIDES OF THE FOUNDATION ARE NOT STABLE.
- A 50mm MINIMUM BLINDING LAYER SHOULD BE APPLIED TO THE BASE OF ALL FOUNDATIONS IMMEDIATELY AFTER 5. VERIFICATION OF THE BEARING CAPACITY BY THE GEOTECHNICAL ENGINEER. WHERE THE FOUNDING MATERIAL IS UIRED FOR THE FOOTING THE EXCAVATION IS TO BE BACKFILLED WITH A WEAK MIX CONCRETE (N10) TO THE UNDERSIDE OF THE FOOTING.
- WHERE AN EXCAVATION IS REQUIRED OR EXISTS BELOW THE BASE OF A FOOTING THE SIDE OF THE EXCAVATION SHALL BE LOCATED AWAY FROM EDGE OF FOOTING BY THE AME DISTANCE THAT THE EXCAVATION IS BELOW FOOTING BASE. WHERE THIS CANNOT BE ACHIEVED, 'DEBOKE' SHALL BE CONTACTED FOR FURTHER DIRECTION. MASS CONCRETE IS TO EXTEND TO THE INFLUENCE LINE AS REQUIRED.
- 7. ALL WALLS AND COLUMNS SHALL BE CONCENTRIC WITH THE SUPPORTING FOOTINGS UNLESS NOTED OTHERWISE ON THE DRAWINGS
- FOOTINGS EXCAVATIONS SHALL BE CLEANED AND FREE OF LOOSE MATERIAL WHEN INSPECTED, IMMEDIATELY PRIOR TO POURING OF CONCRETE AND DURING POURING
- DESIGN OF FOOTINGS AND GROUND-WORKS WILL ONLY BE CERTIFIED WHEN A QUALIFIED GEOTECHNICAL ENGINEER HAS CERTIFIED THE BEARING CAPACITY AND SITE CLASSIFICATION.

## CONCRETE

- 1. CONCRETE WORK SHALL BE IN ACCORDANCE WITH AS3600 AND WITH THE PROJECT SPECIFICATIONS.
- CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE SHOWN ON 'DEBOKE' DRAWINGS OR SPECIFICALLY 2. APPROVED BY 'CAPITAL ENGINEERING CONSULTANTS'.
- ALL THICKNESSES SHOWN ARE MINIMUM STRUCTURAL REQUIREMENTS, NO REDUCTION IN THICKNESS DUE TO FALLS OR TOPPING IS 3. PERMITTED. REFER ARCHITECT DRAWINGS FOR ALL SLAB FALLS AND CONFIRMATION OF SLAB STEPS.
- UNLESS A GROOVE LINE ALLOWANCE HAS BEEN NOTED ON THE DRAWINGS, NO GROOVE LINES ARE PERMITTED, EXCEPT AT SLAB LINES, ALL GROOVE LINES ARE TO BE SUBMITTED TO 'DEBOKE' FOR APPROVAL.
- THE FACE OF ALL CONCRETE AGAINST WHICH NEW CONCRETE IS TO BE CAST IS TO BE THOROUGHLY MECHANICALLY SCABBLED, 5. FULLY EXPOSING THE AGGREGATE MATRIX
- NO PENETRATIONS GREATER THAN 150mm DIAMETER. OR EMBEDMENT OF PIPES GREATER THAN 40mm DIAMETER OTHER THAN 6. THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE SLABS. FOR ALL OTHER CONCRETE MEMBERS NO PENETRATIONS. CHASES OR EMBEDMENT SHALL BE MADE WITHOUT PRIOR APPROVAL BY 'CAPITAL ENGINEERING CONSULTANTS.
- CONDUITS GREATER THAN 25mm DIAMETER CAST INTO CONCRETE MEMBERS SHALL BE SPACED AT A MAXIMUM DISTANCE POSSIBLE AND UNDER NO CIRCUMSTANCES CLOSER THAN A CLEAR SPACING OF TWICE THE LARGER CONDUIT DIAMETER FROM PARALLEL 7. REINFORCEMENT OR ANY OTHER CONDUIT.
- 8. THE CHARACTERISTIC COMPRESSIVE STRENGTH (rc) AT 28 DAYS OF IN PLACE CONCRETE SHALL BE AS NOTED ON THE DRAWINGS.
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- 11. ALL CONCRETE SHALL BE VIBRATED.
- 12. ALL CONCRETE SHALL BE CURED IN ACCORDANCE WITH THE SPECIFICATION
- 13 ALL CONCRETE SHALL BE SAMPLED AND TESTED IN ACCORDANCE WITH AS1012 AND THE PROJECT SPECIFICATION.
- 14. ALL FORMWORK SHALL COMPLY WITH AS3610
- EACH FLOOR SHALL BE FULLY PROPPED TO THE FLOOR BELOW IN ACCORDANCE WITH AS3610 (FORMWORK CODE).
- THE FLOOR BELOW SHALL BE BACKPROPPED THROUGH A MINIMUM OF TWO STOREYS BELOW. THIS RESULTS IN A MINIMUM OF THREE 16.
- PROPS MAY BE REMOVED AFTER 28 DAYS OF CURING OR AFTER 14 DAYS IF THE CONCRETE HAS REACHED ITS CHARACTERISTIC 17. STRENGTH (AS PROVED BY CYLINDER TEST RESULTS).

#### TIMBER NOTES

- 1. AS 1684 IS RELEVANT TO DOMESTIC CONSTRUCTION IN SHELTERED LOCATIONS.
- 2. SOFTWOOD MINIMUM GRADE F7 U.N.O. HARDWOOD MINIMUM GRADE F11 U.N.O.
- EXTERNAL TIMBER TO BE EITHER HARDWOOD DURABILITY CLASS I OR II OR IMPREGNATED GRADE F7. PRESSURE TREATED TO 3. E-DRILLED PRIOR TO USE. SUPPLEMENTARY TREATMENT SHALL BE APPLIED TO ALL CUT SURFACES. PROVIDE DOCUMENTATION.
- ALL BOLTS IN TIMBER CONSTRUCTION TO BE MIN. M16 U.N.O. BOLT HOLES TO BE DRILLED EXACT SIZE. WASHERS UNDER HEADS 4. AND NUTS TO BE AT LEAST 2.5 TIMES BOLT DIAMETER
  - FINISHED TIMBER SIZES. SEASONED SOFTWOOD +5,-0mm UNSEASONED SOFTWOOD F7+3.-3mm F7+2.-4mm SEASONED HARDWOOD +2,-0mm (SEE ALSO CLAUSE 1.6.2 IN AS 2082)
- ALL TIMBER JOINTS AND NOTCHES TO BE 100mm MINIMUM FROM LOOSE KNOTS. SEVERE SLOPING GRAIN, GUM VEINS OR OTHER Minor defects. For Joists Spanning greater than 3m and less than 4.2m provide one row of Blocking Mid-Span. FOR JOISTS SPANNING GREATER THAN 4.2m AND UP TO 6.0m PROVIDE TWO ROWS OF BLOCKING AT 1/3 POINTS. FOR DEEP JOISTED FLOORS WHERE A CONTINUOUS TRIMMING JOIST IS NOT PROVIDED AT END OF JOISTS. BLOCKING IS REQUIRED AT 1800 MAXIMUM CENTERS. (REFER TO AS 1684)
- BLOCKING IS NOT REQUIRED FOR JOISTS SPANNING LESS THAN 3m.

## REINFORCEMENT 1. REINFORCEMENT IS TO BE MANUFACTURED IN ACCORDANCE WITH AS1302 AND SHALL BE FIXED AS SHOWN ON DRAWINGS. MATERIAL IS INDICATED BY THE FOLLOWING SYMBOLS: 2.

- N DEFORMED BAR GRADE 500 (NORMAL DUCTUATY) PLAIN ROUND BAR GRADE 250 W PLAIN WIRE GRADE 450 E FABRICS GRADE 450 THE BAR SIZE IS INDICATED BY A NUMBER AFTER THE SYMBOL, WHICH INDICATES THE BAR DIAMETER IN MILLIMETERS. REINFORCEMENT SPACING NOMINATED ON DRAWINGS IS TO ASSIST SCHEDULER AND STEEL FIVER TO ASSESS TOTAL NUMBER OF BARS REQUIRED. WHERE BARS PLACED IN ACCORDANCE WITH SPACING NOMINATED FOUL WITH OTHER STRUCTURAL REQUIREMENTS, PREFERENCE IS TO BE GIVEN TO RELOCATING BARS BY LOCALLY ADJUSTING SPACING TO ENABLE ASSEMBLY
- OF REINFORCEMENT TO BE COMPLETED. ENGINEER IS TO BE CONTACTED IN THE EVENT THAT REINFORCEMENT IS NEEDED TO BE CUT ON SITE PRIOR TO CONTINUING.
- LAP LENGTHS TO REINFORCEMENT BARS TO BE AS NOTED ON THE RELEVANT DRAWINGS. 5.
- 6. WELDING OF REINFORCEMENT BARS IS NOT PERMITTED UNLESS APPROVED.
- COVER SHALL BE AS NOTED ON THE RELEVANT DRAWINGS.

Y DEFORMED BAR GRADE 400

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- 8. 8CONCRETE COVERS NOTED ARE MEASURED FROM THE FORMWORK OR GROUND FACE TO THE OUTERMOST REINFORCEMENT COMPONENT, ie. IN COLUMNS AND BEAMS TO THE OUTSIDE OF TIES OR LIGATURES.
  - COVER TO BE MAINTAINED DURING POURING BY THE USE OF PLASTIC CHAIRS OR PLASTIC TIPPED METAL CHAIRS.
- WHERE NO REINFORCEMENT IS SHOWN ON THE DRAWING AT RIGHT ANGLES TO THE MAIN REINFORCEMENT DISTRIBUTION REINFORCEMENT IS TO BE PROVIDED.

UNLESS NOTED OTHERWISE LAPS IN REINFORCEMENT SHALL BE

	N12	N16	N20	N24	N28	N32
TOP*	600	800	1000	1200	1400	1600
ALL OTHER BARS	500	650	800	950	1150	1300

- DENOTES HORIZONTAL BARS WITH 300mm OR MORE CONCRETE CAST BELOW. UNLESS NOTED OTHER WISE LAPS IN FABRIC TO 12. BE MINIMUM TWO SQUARES
- 13. SLAB REINFORCEMENT SHALL EXTEND MINIMUM 65mm ONTO MASONRY SUPPORT WALLS AND MINIMUM 50% OF BOTTOM EINFORCEMENT TO BE COGGED TO ACHIEVE ANCHORAGE AT SIMPLY SUPPORTED ENDS. TERMINATE ALL TOP BARS WITH STANDARD COGS AT FORM EDGES.
- WELDING OF REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE PROJECT ENGINEER.
- DISTRIBUTION REINFORCEMENT AND TYING STEEL SHALL BE N12-300 MINIMUM FOR CONVENTIONAL SLABS UNLESS NOTED OTHERWISE ON PLAN, LAP WITH MAIN BARS 400mm U.N.O.
- 16 MINIMUM COVER (mm) TO ALL REINFORCEMENT UNLESS SHOWN OTHERWISE ON STRUCTURAL DRAWINGS

FLEMENT	CAST AGAINST	CAST AGAINST FORMS COMPLY WITH AS1509			
ELEMENT	GROUND (MEMBRANE)	EXPOSED	SHELTERED		
SLABS	30	40	25		
SLAB BANDS	NA	40	25		
BEAMS	NA	40	30		
FOOTINGS	50	50	NA		
WALLS	NA	40	25		
PILE CAPS	50	50	NA		

					E: Charbel@deboke.com.au M: 0401 229 361 A: 65 Blaxcell Street, Granville, NSW 2142 COPYRIGHT THIS DRAWING AND THE INFORMATION SHOWN HEREON IS THE PROPERTY OF DEBOKE ENGINEERING CONSULTATIS AND MAY NOT BE USED FOR ANY PURPOSES THAN FOR WHICH SUPPLIED.	deboke	DRAWN:     C.F.     DESIGNED:     C.F.       REVIEWED:     J.D.     DATE: 17.06.2021       APPROVED:     DATE: 17.06.2021       C.F.     DATE: 17.06.2021	DESIGN FORMATION	PROJECTFLOW	PROJECT: PROPOSED RETAINING WALL ADDRESS: 52 WAKEHURST PARKWAY, NORTH NARR, APPLICATION: DEVELOPMENT APPLICATION (DA)
A	ISSUED FOR DEVELOPMENT APPLICATION	2	C.F.	17.06.2021	APPROVAL TYPE:		B.E CIVIL/STRUCTURAL	Building Design Studio		LGA:
REV	DESCRIPTION	APP.	DESIGN	DATE	CONSTRUCTION CENTRICATE CONSTRUCTION CONSTRUCT CONSTRUC		BEng,MIEAust	ARCHITECT:	CLIENT:	NORTHERN BEACH COUNCIL

14. PROVIDE VERTICAL CONTROL JOINTS AT 7m MAXIMUM CENTERS AND 5m MAXIMUM FROM CORNERS IN ALL UNREINFORCED MASONRY ALL WALLS SHALL BE TIED OR BONDED AT THERE INTERSECTIONS 15. 16. ALL TIES AND REINFORCEMENT SHALL HAVE A MINIMUM CLEAR COVER OF 50mm TO EXTERNAL FACE OF MASONRY STRUCTURAL STEELWORK ALL MATERIALS, WORKMANSHIP, FABRICATION AND ERECTION SHALL COMPLY WITH THE REQUIREMENTS OF AS4100, AS1538, AS1554 AND THE SPECIFICATION. UNLESS SHOWN OTHERWISE, ALL STEEL SHALL BE IN ACCORDANCE WITH AS1204 GRADE 300. ALL STEEL HOLLOW SECTIONS SHALL BE GRADE 350 U.N.O. AND SHALL BE IN ACCORDANCE WITH AS1163. ALL PRESSED METAL PURLINS AND GIRTS SHALL BE GRADE 450 STEEL IN ACCORDANCE WITH 2. AS1538 UNLESS SHOWN OTHERWISE ON THE DRAWINGS, ALL CONNECTIONS SHALL BE IN ACCORDANCE WITH THE FOLLOWING MINIMUM REQUIREMENTS: ALL WELDS SHALL BE 6MM CONTINUOUS FILLET WELDS ALL ROUND. (i) ALL BOLTS SHALL BE M20 - 8.8/S, WITH A MINIMUM OF 2 (ii) BOLTS PER CONNECTION, PURLIN BOLTS TO BE M12 - 4.6/S WITH A MINIMUM OF 2 BOLTS PER PURLIN END, ALL GUSSET AND CLEAT PLATES SHALL BE 10 mm THICK. (U.N.O.) (iii) (iv) ALL CAP PLATES SHALL BE 10 mm THICK. (U.N.O.) ALL BASE PLATES SHALL BE 10 mm THICK. (U.N.O.) (v) BOLT DESIGNATION: 4 6/S REFERS TO COMMERCIAL BOLTS OF STRENGTH GRADE 4 6 TO AS1111 TIGHTENED TO A SNUG TIGHT 4 CONDITION 8.8/S REFERS TO HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS1252 TIGHTENED TO A SNUG TIGHT CONDITION. 8.8/TB REFERS TO HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8.8 TO AS1252 FULLY TENSIONED TO AS4100 AS A BEARING JOINT. 8.8/TE REFERS TO HIGH STRENGTH STRUCTURAL BOLTS OF GRADE 8 TO AS1252 FULLY TENSIONED TO AS4100 AS A FRICTION JOINT. HIGH STRENGTH BOLTED JOINTS SHALL BE IN ACCORDANCE WITH AS1511. THE SPECIFIED BOLT TENSION SHALL BE OBTAINED BY USE OF THE "PART TURN" METHOD OF TIGHTENING. ALL WELDS SHALL BE SP (SPECIAL PURPOSE) IN ACCORDANCE WITH 5. AS1554. ALL ELECTRODES SHALL BE CLASS E48. ALL BUTT WELDS SHALL BE FULL STRENGTH COMPLETE 6. ETRATION WELDS. SUBSTITUTIONS FOR STEEL SECTIONS SHOWN ON DRAWINGS SHALL NOT

#### MASONRY NOTES

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1. ALL MASONRY SHALL COMPLY WITH AS3700 AND THE PROJECT SPECIFICATION.

CONCRETE MASONRY UNITS TO HAVE A MINIMUM CHARACTERISTIC UNCONFINED STRENGTH OF 20 MPa IN ACCORDANCE WITH AS2733.

MASONRY TO BE BEDDED IN FRESHLY PREPARED MORTAR (a) CONCRETE BLOCKS - MORTAR MIX TO BE UNIFORMLY MIXED IN A RATIO IMPOUND TO BE BEDDED IN PRACTICE PRE-FACE MONTHAIL (1) CONTRACTE BEDDEDS - INFORMATING TO BE UNFORMATING DE ALTO OF ONE PART CONTENT, ONE PART TUNE AND SEX PARTS SAND CONFORMING TO AS270° MERKES LOAM "PALL NOT BE USED. (1) (LAY BRICKS - MORTAR MIX TO BE UNIFORMLY MIXED IN THE RATIO OF ONE PART CEMENT, THREE PARTS SAND AND ONE FOURTH PART LIME CONFORMING TO AS2701. 'BRICKIES LOAM' SHALL NOT BE USED.

GROUT SHALL HAVE A COMPRESSIVE STRENGTH (Pc) OF 20 MPa AT 28 DAYS, A SLUMP OF 125mm IN A 150mm SLUMP CONE, A MAXIMUM AGGREGATE SIZE OF 10mm AND BE IN ACCORDANCE WITH AS3700.

BEDDING OF MASONRY SHALL BE FULL FACE WITH CROSS JOINTS COMPLETELY FILLED. JOINT THICKNESS SHALL NOT EXCEED 12mm.

PROVIDE WALL TIES AT 600mm MAXIMUM CENTRES VERTICALLY AND HORIZONTALLY. REFER TO MASONRY DETAILS FOR WALL TIE

THE CAVITY SHALL NOT EXCEED 100mm AND SHALL NOT BE SMALLER THAN 40mm UNLESS NOTED OTHERWISE. KEEP CAVITY CLEAN AND CLEAR OF OBSTRUCTION

8. RAKING OF JOINTS IS NOT PERMITTED WITHOUT PRIOR APPROVAL FROM 'DEBOKE.

ALL WALLS TO BE KEPT STABLE AT ALL STAGES OF CONSTRUCTION AND NOT BE OVER STRESSED AT ANY TIME. 10. UNLESS NOTED OR HOWN OTHERWISE ON DRAWINGS THERE ARE TO BE NO CHASES OR RECESSES PERMITTED IN MASONRY WALLS WITHOUT THE PRIOR APPROVAL OF DEBOKE

10. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3700

ALL BLOCKWORK WALLS SHALL BE CONSTRUCTED IN GRADE 16 BLOCKS (15MPa) ACCORDING TO AS 2733.

ALL MASONRY SUPPORTING OR SUPPORTED BY CONCRETE FLOORS SHALL BE PROVIDED WITH VERTICAL JOINTS TO MATCH ANY CONTROL JOINTS WITH THE CONCRETE

13. NO CHASES OR RECESSES ARE PERMITTED IN THE LOAD BEARING MASONRY WITHOUT THE APPROVAL OF THE ENGINEER.

BE MADE WITHOUT THE APPROVAL OF THE ENGINEER. ALL STEELWORK BELOW GROUND OR FINISHED SURFACE LEVEL IS TO BE HOT-DIPPED GALVANIZED

RABEEN		ALL DIMENSIONS IN 'mm' UNLESS OTHERWISE STATED
	SCALE:	PROJECT NO. ST21025 DRAWING NO. S101



CONCRETE QUALITY							
ELEMENT	SLUMP	AG (MA	GREGATE X. SIZE)	CEMENT TYPE	ſ ſc		
FOOTINGS	80mm		20mm	А	32MPa		
BLOCKWALL	120mr	n	10mm	A	32MPa		
REINFORCEMENT COVER SCHEDULE							
MEMDED	CC	COVER ( mm )					
WEWDER	TOP	BOTTON	1 SIDES	; CLAS	SIFICATION		



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MAX SLOPE	- 1	200 SERIES	
4		BLOCKWORK	
	55 COVER	S ARCH	IED TO TECT'S DETAILS
WATERPROOF MEMBRANE-		Å	A.
		►N12-400	
300 WIDE MIN.			
FREE DRAINING GRAVEL		DAILS D	-
		BARS 'C'	- HEIGHT
100 DIA AGG. DRAIN			
FALL TO OUTLET			Î
			LAP
		CLEANOUT BLOCK.	200
			BARS 'D'
		<u> </u>	
	- 30	00 - N12-30	00
	50	DIM 'A'	_>

DIM 'H'	DIM 'A'	BARS 'B'	BARS 'C'	BARS 'D'
800	600	N12-400	N12-400	N12-400
1200	800	N12-400	N12-400	N12-400
1600	1000	N12-400	N16-400	N16-400
2000	1400	N16-400	N16-200	N16-400

DESIGN LOADS: 8.0 kPa EQUIVLENT FLUID PRESSURE 2t/sqm BACKFILL DENSITY MAX 1:4 SLOPE BEHIND WALL MIN ALLOWABLE BEARING CAPACITY 100 kPa

RETAINING WALL - RW1 SCALE 1:20





RABEEN	RETAINING WALL SECTIONS & DETAILS	ALL DIMENSIONS IN 'mm' UNLESS OTHERWISE STATED
	SCALE:	PROJECT NO. ST21025
	0 <u>m_0,2_0,4_0,6_0,8_1,</u> 0 SCALE 1:20 ON ORIGINAL SIZE	DRAWING NO. S201