



APD StormSlab® 220D TANKS CLASS M SOILS - TWO STOREY APD LTD

REF NO: 7527-M(2)-220D

1.GENERAL NOTES:

- 1.1 All work to be in accordance with New Zealand Building Code. All codes refer to the current edition
- plus all amendments.

 1.2 These drawings are to read in conjunction with the drawings and specification of other consultants e.g. Architect, Mechanical, Building Services, Electrical etc. The Principal Consultant must be notified of any discrepancy.
- No dimensions are to be scaled from these drawings. All dimensions to be established on site.
- 1.4 During construction, the structure shall be maintained in a stable state by means of temporary propping, bracing and guying and no part shall be overstressed.
- 1.5 During construction, all suspended floors and beams shall be proped U.N.O. for 28 days minimum.
- 1.6 Temporary propping is the responsibility of the contractor.
- 1.7 If during construction any part of the work shows signs of distress, excessive deflection, conflict of components or other indications of a problem, the Contractor shall immediately notify the Engineer who shall investigate and issue such instructions as are considered necessary.
- 1.8 Precast unit end seating shall be to manufacturer recommendations U.N.O.

2. CONCRETE NOTES :

- 2.1 Materials and workmanship to be in accordance with N.Z.S. 3109.
- 2.2 For minimum cover to principal reinforcement refer to NZ 3101 clause 5.11.3.3 or shall be minimum:

	Member	Against natural ground	Against boxing or screed conc.	Exposed to weather	Not exposed to weather
	Foundations, Beams, Columns (Principal reinforcing)	75mm	50mm	50mm	35mm
٠	Slump and mix decign chall be:				

2.3 Slump and mix design shall be:

Member	Concrete slump (max.)	Concrete mix design	
columns, beams floor slab on ground suspended slabs	120mm 80mm 80mm	refer to concreter specification	

- 2.4 No holes or chases are to be made in concrete members other than those shown on drawings.
- 2.5 Concrete grades:
- 25MPa at 28 Days
- Floor slab on grade:
 - Suspended slabs, beams

 - Precast Panels Masonry infill:
- N/A 30MPa at 28 Days 25MPa at 28 Days

25MPa at 28 Days, min tensile strength 3.5MPa U.N.O.

- 2.6 Allowance is to made for all cast-in cleats and bolts for fixing roof and floor beams etc.
- 2.7 Slabs on ground shall be sawcut 1/4 of slab thickness to approved dimension between 24 and 48 hours after pouring unless otherwise instructed. Alternate wires and/or bars are to be cut 40mm from joints and no laps are to occur at joints. Alternative construction may supersede these details ie. pours in panels or strips. Sawcut grids 5000x5000 maximum unless otherwise noted.
- 2.8 Suspended slabs and beam are likely to have a hog (precamber). This must be allowed for in construction and setting out of floor levels and in calculation of concrete topping volumes.
- 2.9 Suspended floors are to be poured to thickness and NOT to a level.
- 2.9a All concrete that is to be poured against is to be scabbled to 5mm amplitude

3. REINFORCEMENT NOTES:

- 3.1 Reinforcement is shown diagrammatically and is not necessarily shown in true projection
- 3.2 Reinforcing has been designated;
- (a) High Yield deformed grade 500E
- (b) High Yield plain grade 500E (c) Mild Steel deformed grada 300E (d) Mild Steel plain grade 300E
- (fv = 500 Mpa) e.g. D20H (fy = 500 Mpa) e.g. R20H (fy = 300 Mpa) e.g. D16

3.3 Laps in concrete reinforcement to be made only in the positions shown and shall be; (unless shown of the positions shown and shall be; (unless shown of the positions) D10 D12 D16 D20 D25 D32 D40 Deformed bars 400 480 640 800 1000 1250 1600 Grade 500 650 800 1050 1300 1650 2100 2600

3.5 Reinforcement mesh laped with a minimum of 2 cross wire but not less than:

SE82-SE92 Mesh lap length 400mm SE62-SE72 Mesh lap length 300mm;

- 3.6 Where laps are not shown on the drawings, reinforcement in slabs and walls may, if approved, be lapped at random in a staggered pattern.
- 3.7 No welding, heating or reverse bending of bars is permitted without the consent of the engineer.
- 3.8 Reinforcement in slabs is to be supported on stools or other approved methods starters to be
- tied in place before pouring. 3.9 All steel to be complient with AS/NZS 4671 or equivalent. Steel reinforcing material shall be ductility class "E"

4. BLOCKWORK NOTES:

- 4.1 All blockwork shall be under the direct supervision of a registered Mason who shall provide continuous inspection. All work shall comply with N.Z.S. 4210 Masonry Materials and Workmanship.
- 4.2 Masonry is to be constructed by the 'High Lift' method with clean out ports at every vertical bar and at the bottom of every lift. Bottom course to be open ended bond beam blocks placed upside
- down.
 4.3 Fix vertical bars before laying blocks and place horizontal bars as laying proceeds.
- 4.4 All cells filled unless otherwise noted.
 4.5 Concrete for filling blockwork to have a compressive strength as shown in CONCRETE note 2.5 above and to have expanding admixture added on site and mixed immidiatly prior to placing.

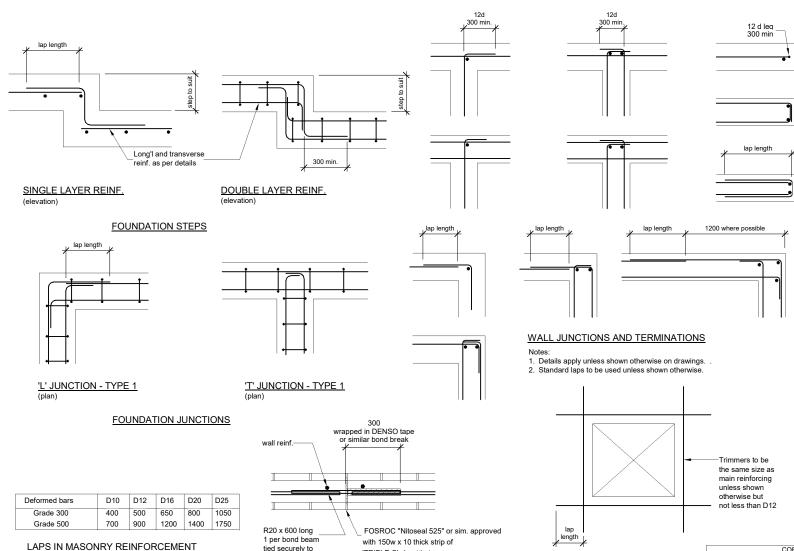
5. STEELWORK NOTES:

- All structural steelwork to be grade 300 unless noted otherwise complying with the appropriate standards listed in N.Z.S 3404.
- 5.2 Bolted connections to be made with grade 8.8 bolts, snug thightened, to A.S.1252. with 2mm clearance to holes unless shown otherwise.
- 5.3 Bolt threads to be excluded from shear plane.
- 5.4 All welding to be arc welding in accordance with AS/N.Z.S. 1554.1. All welds to be 6mm fillet continuous unless noted otherwise.
- 5.5 Do not paint steelwork that is to be encased in concrete.
- 5.6 This set of structural steelwork drawings show the design intent. Shop drawings remain the
- esponsibility of the contractor. 5.7 All holding down bolts and other fixing devices are to be set by a template and checked for level
- and position before concreting.

 5.8 Check and verify all dimensions and levels on site before commencing fabrication of any structural
- 5.9 Unless shown otherwise, all baseplates shall bear directly on 25 +/- 5mm of dry pack mortar.
- 5.10 Washers tapered where necessary, are to be used under all nuts & bolt heads5.11 All R.H.S members are to be capped and all joints sealed.
- 5.12 Where items are to be hot dip galvanised, allow for tolerances, vent holes etc. as necessary
- 5.13 All welding symbols shown on the drawings are in accordance with N.Z.S. 1100.501:1985.

6. INSPECTION NOTES:

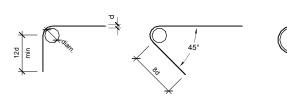
6.1 Adequate notice is required by the Engineer for inspection of the works. The Contractor must be satisfied that the works have been completed in accordance with the drawings and specification before confirming an inspection by the Engineer.



'TRIPLE-S' sheet between.

PARALLEL LAP

TYP. BLOCK WALL CONTROL JOINT



MAIN REINFORCEMENT min. dia. of bend bar size 300 MPa or

25-40

500 MPa

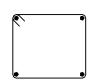
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TIES AND STIRRUPS deformed diam diam 300 MPa or 500 MPa

REINFORCING BENDS

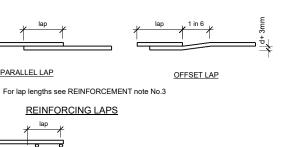


REINFORCING IDENTIFICATION



tied securely to

BEAM AND COLUMN STIRRUPS

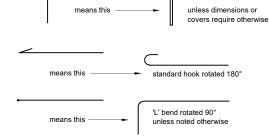


MIN. TRIMMER REQUIRED TO WALL AND SLAB

PENETRATIONS GREATER THAN 200Ø OR

200 x 200 UNLESS SHOWN OTHERWISE





REINFORCING REPRESENTATION

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S	SOME	COMMON ABBREVIATIONS	
GENERAL	COS ES EXTG FL GL LG NTS SED SFL TBA TBC TYP UNO	CHECK ON SITE EQUALLY SPACED EXISTING FINISHED LEVEL GROUND LEVEL LONG NOT TO SCALE SMALL END DIAMETER STRUCTURAL FINISHED LEVEL TO BE ADVISED TO BE CONFIRMED TYPICAL UNLESS NOTED OTHERWISE	
IENT	PC PCP PS RC REO	PRECAST CONCRETE PRECAST CONCRETE PANEL PRESTRESSED CONCRETE REINFORCED CONCRETE REINFORCEMENT	
RETE & REINFORCEMENT	B CCAR CJ CVR EF EW FF H NF SC T V	BOTTOM CENTRAL COVER ALL ROUND CONSTRUCTION/CONTROL JOINT COVER EACH FACE EACH WAY FAR FACE HORIZONTAL NEAR FACE SAWCUT TOP VERTICAL	
CONCRET	ABR ABS LAR NL STA STR TRM	ALTERNATE BAR REVERSED ALTERNATE BAR STAGGERED LAP AT RANDOM NO LAP STARTER(S) STIRRUP TRIMMER	
	TOS T/O U/S	TOP OF STEEL TOP OF UNDERSIDE	
STEEL	CRS DIA PCD R	CENTRES DIAMETER PITCH CIRCLE DIAMETER RADIUS	
	C/W HD HD GA	COMPLETE WITH HOLDING DOWN (BOLTS) LVIOT DIP GALVANISED	
WELDING	FW CFW FWAR SVBW DVBW SBBW DBBW	FILLET WELD CONTINUOUS FILLET WELD FILLET WELD ALL ROUND SINGLE V BUTT WELD DOUBLE V BUTT WELD SINGLE BEVEL BUTT WELD DOUBLE BEVEL BUTT WELD	

NOTES:

1. ALL STRUCTURAL STEEL TO BE CONSTRUCTION CATEGORY 2 IN ACCORDANCE WITH AS/NZS 5131:2016

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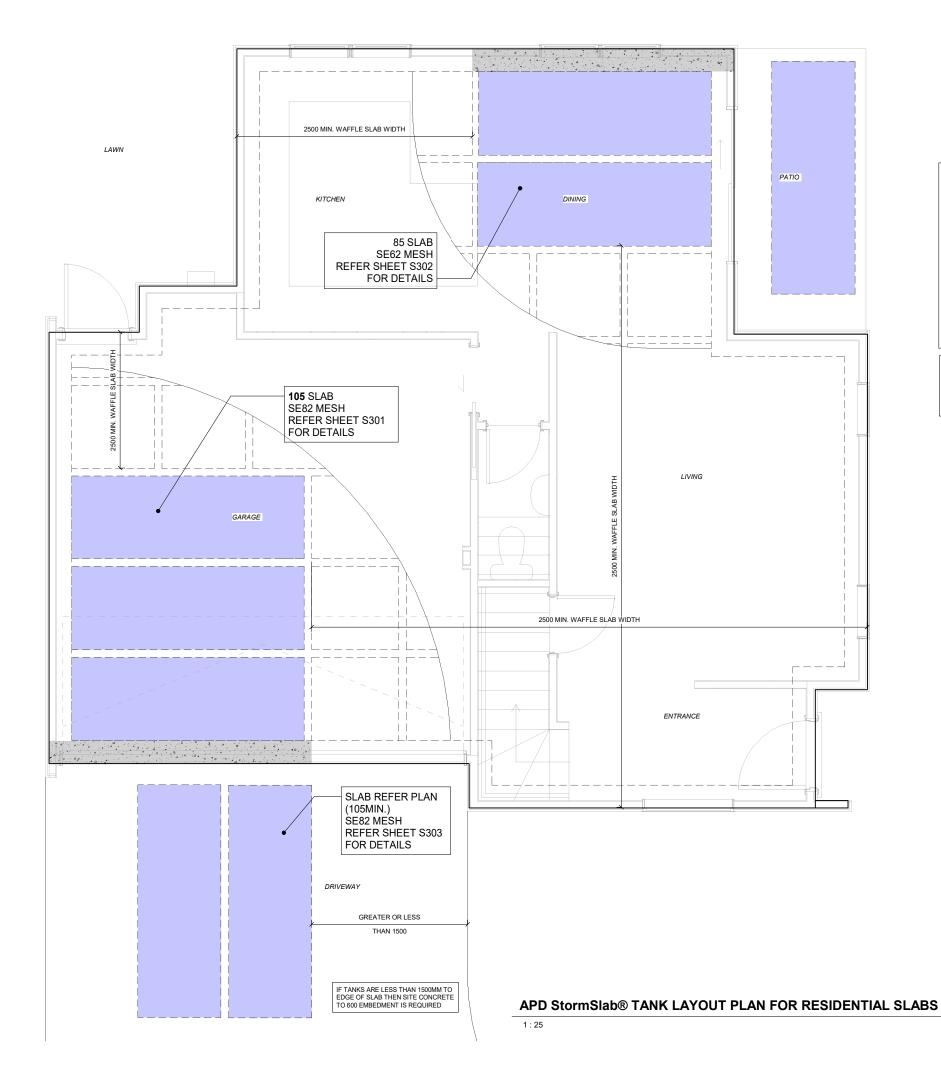


FOR BUILDING CONSENT

CLASS M SOILS - TWO STOREY - 220D TANKS

STANDARD NOTES AND **DETAIL**

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NOTES:

- REFER TO ARCHITECT'S DRAWINGS FOR BOUNDARY LINE SURVEY INFORMATION
- 2. REFER TO ARCHITECTURAL DRAWINGS FOR SETOUT
- 3. REFER TO ARCHITECTURAL DRAWINGS FOR ALL TIMBER FRAMING
- 4. REFER BELOW FOR CONCRETE STRENGTH
- 5. CONTRACTOR TO CONFIRM LOCATION OF EXISTING SERVICES WITH ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION
- 6. FOR REBATES & NIBS LOCATIONS REFER ARCH
- 7. REFER ARCH FOR SITE RETAINING WALLS

MAX UDL AND POINT LOADS AT PERIMETER FOOTING

G = 8.3KN/M (BRICK VENEER) G = 2.16KN/M (WEATHER BOARD) WALL:

FLOOR:

G = 1.5KN/M Q = 3.75KN/M

ROOF: G = 1.35KN/MQ = 0.75KN/M

GARAGE & DRIVEWAY: G_{SDL} = 0.25KPA Q = 2.5KPA

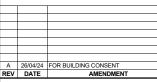
 $Q_{PL} = 12KN$

CONCRETE STRENGTH:

25MPA WITHIN SEASPRAY ZONE 30MPA WITHIN EXPOSURE CLASSIFICATION B2

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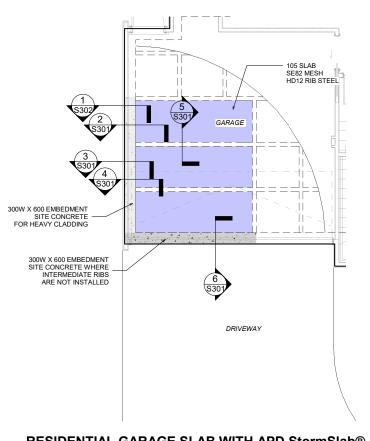


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CLASS M SOILS - TWO STOREY - 220D TANKS

FOUNDATION PLAN WITH APD StormSlab®

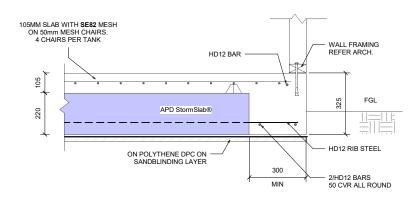
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APD StormSlab® 300 APD StormSlab® MIN F.G.L. APD StormSlab® MIN 588 RSDITS 300 EWBEDWENT 3000 STORMS MIN 300

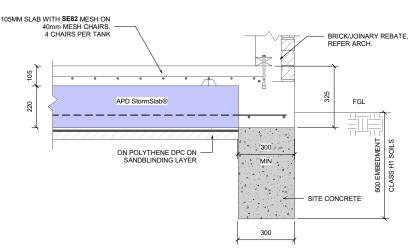
RESIDENTIAL GARAGE SLAB INSTALLATION WITH APD StormSlab®

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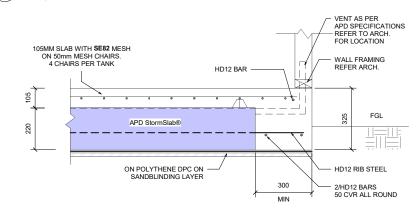


RESIDENTIAL GARAGE SLAB WITH APD StormSlab®

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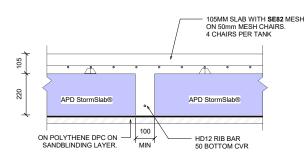


GARAGE SLAB - EDGE RIB WITH VENT

GARAGE SLAB - EDGE RIB WITH BRICK REBATE

CONSTRUCTION NOTES FOR WAFFLE SLAB

- 1. CLEAR ALL TOPSOIL AND ORGANIC MATERIAL TO FORM CLEAN AND LEVEL BUILDING PLATFORM
- 2. CONFIRM THAT THE GROUND CONDITIONS MEET NZS 3604:2011 GOOD GROUND WITH 300KPA ULTIMATE BEARING CAPACITY WITH SOIL EXPANSIVENESS NO GREATER THAN CLASS M, Ys = 40mm MAX.
- 3. IMPORT HARDFILL IF REQUIRED TO RAISE GROUND LEVEL. COMPACTED IN 150 LOOSE LAYERS.
- 4. COVER BUILDING PLATFORM WITH 25MM(MAX.) SAND BLINDING.
- 5. COVER BLINDING WITH DPM, LAPPED AND TAPED, IN ACCORDANCE WITH NZS 3604.
- 6. PLACE 1100 SQ POLYSTYRENE PANELS ON A 1200x1200 GRID TO PATTERN AS SHOWN.
- 7. CUT ANY THICKENING FOR INTERNAL LOAD BEARING WALLS AND REINFORCE AS SHOWN.
- 8. REFER TO ARCHITECT'S DRAWINGS FOR ALL SETOUT DIMENSIONS, REBATES AND SERVICES.
- 9. POUR CONCRETE TOPPING SLAB, ALL THICKENINGS AND RIBS IN ONE OPERATION.
- 10. SAW CUT AS SHOWN. 20MM DEEP IN CONCRETE SLAB IN ACCORDANCE WITH NZS 3604.
- 11. CURE SLAB IN ACCORDANCE WITH NZS 3604 AND GOOD TRADES PRACTICE.
- 12. ENSURE NATURAL GROUND MOISTURE IS MAINTAINED DURING CONSTRUCTION

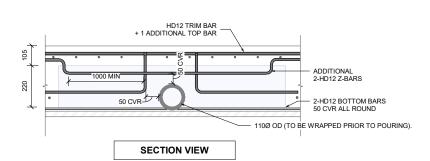


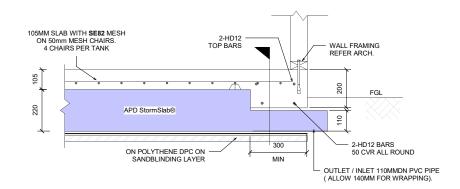
GARAGE SLAB - INTERNAL RIB

REBATE REFER ARCH. HD12 BAR FGL APD StormSlab® APD StormSlab® APD StormSlab® APD StormSlab® APD StormSlab® APD StormSlab® FGL APD 2 RIB STEEL ON POLYTHENE DPC ON SANDBLINDING LAYER 300 2/HD12 BARS 50 CVR ALL ROUND

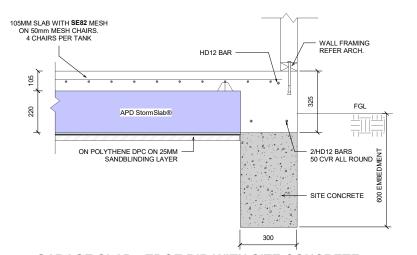
GARAGE SLAB - EDGE RIB WITH REBATE (WHERE APPLICABLE)

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GARAGE SLAB - EDGE RIB WITH FLOW THROUGH



6 GARAGE SLAB - EDGE RIB WITH SITE CONCRETE

1:10

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REFER ARCHITECTURAL DRAWINGS FOR ALL DIMENSION,
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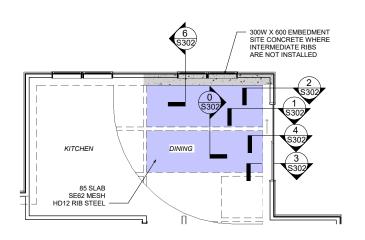
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CLASS M SOILS - TWO STOREY - 220D TANKS

GARAGE SLAB DETAILS WITH APD StormSlab®

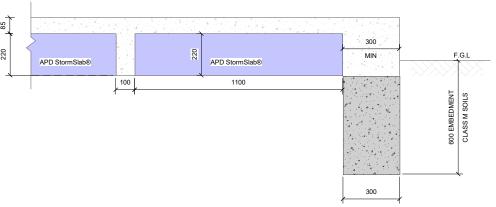
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RESIDENTIAL TYPICAL SLAB WITH APD StormSlab®

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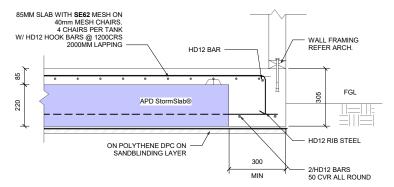


RESIDENTIAL TYPICAL SLAB INSTALLATION WITH APD StormSlab®

85MM SLAB WITH SE62 MESH ON 40mm MESH CHAIRS 4 CHAIRS PER TANK APD StormSlab® APD StormSlab® ON POLYTHENE DPC ON

TYPICAL SLAB - INTERNAL RIB

HD12 TRIM BAR + 1 ADDITIONAL TOP BAR



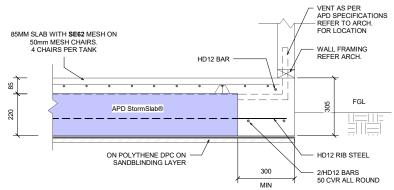
TYPICAL SLAB - EDGE RIB 2

FGL

HD12 RIB STEEL

2/HD12 BARS 50 CVR ALL ROUND

1:10



TYPICAL SLAB - EDGE RIB WITH VENT 3

CONSTRUCTION NOTES FOR WAFFLE SLAB

85MM SLAB WITH SE62 MESH ON 40mm MESH CHAIRS. 4 CHAIRS PER TANK W/ HD16 HOOK BARS @ 1200CRS

- CLEAR ALL TOPSOIL AND ORGANIC MATERIAL TO FORM CLEAN AND LEVEL BUILDING PLATFORM
- CONFIRM THAT THE GROUND CONDITIONS MEET NZS 3604:2011 GOOD GROUND WITH 300KPA ULTIMATE BEARING CAPACITY WITH SOIL EXPANSIVENESS NO GREATER THAN CLASS M, Ys = 40mm MAX.

300

MIN

- IMPORT HARDFILL IF REQUIRED TO RAISE GROUND LEVEL. COMPACTED IN 150 LOOSE LAYERS.
- COVER BUILDING PLATFORM WITH 25MM(MAX.) SAND BLINDING

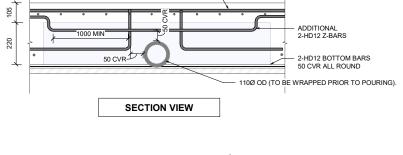
APD StormSlab®

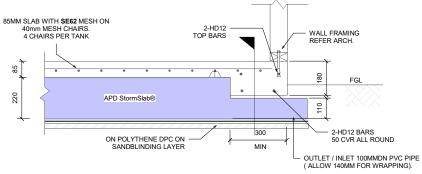
TYPICAL SLAB - EDGE RIB WITH BRICK REBATE

- COVER BLINDING WITH DPM, LAPPED AND TAPED, IN ACCORDANCE WITH NZS 3604.
- PLACE 1100 SQ POLYSTYRENE PANELS ON A 1200x1200 GRID TO PATTERN AS SHOWN.
- CUT ANY THICKENING FOR INTERNAL LOAD BEARING WALLS AND REINFORCE AS SHOWN.
- REFER TO ARCHITECT'S DRAWINGS FOR ALL SETOUT DIMENSIONS, REBATES AND SERVICES.
- POUR CONCRETE TOPPING SLAB, ALL THICKENINGS AND RIBS IN ONE OPERATION.
- SAW CUT AS SHOWN. 20MM DEEP IN CONCRETE SLAB IN ACCORDANCE WITH NZS 3604.
- 11. CURE SLAB IN ACCORDANCE WITH NZS 3604 AND GOOD TRADES PRACTICE.

85MM SLAB WITH **SE62** MESH ON 40mm MESH CHAIRS. 4 CHAIRS PER TANK APD StormSlah@ 300 ROUND

TYPICAL SLAB - INTERNAL THICKENING 5





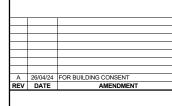
TYPICAL SLAB - EDGE RIB WITH FLOW THROUGH 4

85MM SLAB WITH SE62 MESH ON 40mm MESH CHAIRS. 4 CHAIRS PER TANK WALL FRAMING HD12 BAR ON POLYTHENE DPC ON 50 CVR ALL ROUND - SITE CONCRETE 300

TYPICAL SLAB - EDGE RIB WITH SITE CONCRETE 6

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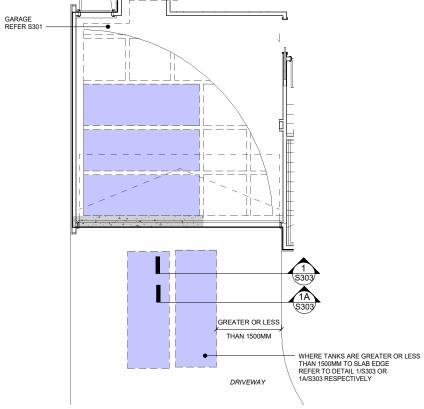


FOR BUILDING CONSENT

CLASS M SOILS - TWO STOREY - 220D TANKS

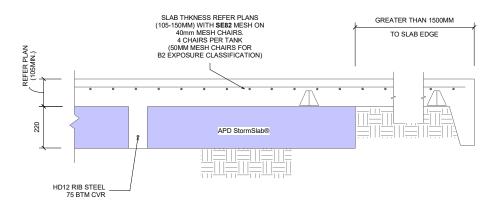
TYPICAL SLAB DETAILS WITH APD StormSlab®

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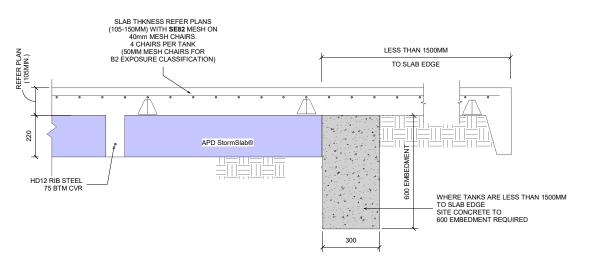


RESIDENTIAL DRIVEWAY SLAB WITH APD StormSlab®

1:50



DRIVEWAY SLAB - TANKS GREATER THAN 1500MM TO SLAB EDGE



DRIVEWAY SLAB - LESS THAN 1500MM TO SLAB EDGE **(1A)**

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FOR BUILDING CONSENT

CLASS M SOILS - TWO STOREY - 220D TANKS

DRIVEWAY SLAB DETAILS WITH APD StormSlab®

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