

DRAWING SCHEDULE - ALL NEW ZEALAND LOCATIONS

STRUCTURAL WORKS - GENERIC DESIGN

BAILEY TANKS LTD AND TANK OWNER TO ENSURE TANK IS PLACED IN A POSITION SUCH THAT VEHICLE LOADS WILL NOT EXCEED 2500KG DURING THE LIFE OF THE TANK. IF UNSURE, CONTACT ENGINEER FOR CLARIFICATION OR SUPPLEMENTARY DESIGN

JOB No.	Dwg No.	TITLE	REV	DATE	DESCRIPTION
11237	RD01	DRAWING SCHEDULE			
11237	RD02	STANDARD NOTES (DURABILITY ZONE D)			
11237	RD03	RESIDENTIAL DRIVEWAY (2500KG VEHICLE OR LESS)			

REFER TO STRUCTURAL SPECIFICATIONS SHEET FOR CONCRETE REINFORCING & OTHER NOTES

CONTRACTOR TO CONFIRM ALL LEVELS AND DIMENSIONS AND LOCATE AND MARK ALL SERVICES & DRAINS ON SITE BEFORE COMMENCING WORK.

CONTRACTOR TO FOLLOW MATERIALS SPECIFICATION AND LIMITS OF LOCATION WITH RELATION TO STRUCTURES AND RETAINING WALLS.

CONTRACTOR TO NOTIFY A CHARTERED PROFESSIONAL ENGINEER IF ANY OF THE DESIGN REQUIREMENTS OUTLINED IN THIS DRAWING PACKAGE ARE NOT ACHIEVEABLE

REFER TO BAILEY TANKS LTD FOR MAXIMUM BURIAL DEPTH ALLOWANCES FOR DIFFERENT TANK DIAMETERS

SLAB DESIGNED FOR LIVE LOAD AS PER NZS1170.1 TABLE 3.1: 'LIGHT VEHICLE TRAFFIC AREAS' ; 2.5 kPA AND POINT LOAD OF 13 kN

BAILEY TANKS LTD AND TANK OWNER TO ENSURE TANK IS PLACED IN A POSITION SUCH THAT VEHICLE LOADS WILL NOT EXCEED 2500KG DURING THE LIFE OF THE TANK. IF UNSURE, CONTACT ENGINEER FOR CLARIFICATION OR SUPPLEMENTARY DESIGN

INSTALLATION OF BAILEY TANKS - 2500 KG VEHICLES FOR BAILEY TANKS LIMITED ALL NEW ZEALAND LOCATIONS

		Design: T REDDY	Job Title: INSTALLATION OF BAILEY TANKS - 2500 KG VEHICLES	Drawing No: RD01
		Date: 25.07.16	Client: BAILEY TANKS LIMITED	Revision No:
		Check: J PERKINS	Address: ALL NEW ZEALAND LOCATIONS,	Scale: @A1
REV	DATE	AMMENDMENTS	Job Number: 11237	Drawing Title: DRAWING SCHEDULE
				Issue: GENERIC DESIGN

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STRUCTURAL SPECIFICATION & NOTES

DURABILITY ZONE D (NZS3604)

GENERAL

THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ALL DISCREPANCIES SHALL BE REFERRED TO THE ENGINEER FOR DECISION BEFORE PROCEEDING WITH THE WORK.

ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED. THE ENGINEERS DRAWINGS SHALL NOT BE SCALED.

DURING CONSTRUCTION THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN A STABLE CONDITION AND ENSURING NO PART SHALL BE OVER STRESSED UNDER CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL DESIGN AND PROVIDE PROPPING TO SUPPORT ALL CAST INSITU AND PRE CAST CONCRETE WORK UNTIL SUCH CONCRETE HAS REACHED THE REQUIRED STRENGTH TO BE SELF SUPPORTING.

WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE RELEVANT NEW ZEALAND STANDARDS AND LOCAL AUTHORITY REGULATIONS, EXCEPT WHERE VARIED IN THE CONTRACT DOCUMENTS.

THE PRESENCE, LOCATION AND DETAILS OF NIBS, UPSTANDS, RECESSES, PLINTHS, PENETRATIONS, INSERTS, SLEEVES, CHASES, REBATES, CAST IN FIXINGS, BRACKETS, HOLES, FLASHINGS, INSERTS, SLEEVES, CHASES, REBATES, CAST IN FIXINGS, BRACKETS, HOLES, FLASHINGS, DAMP PROOFING AND WATERPROOFING ETC ARE NOT NECESSARILY SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO ARCHITECTURAL, SERVICES, CIVIL, AND OTHER PROJECT DRAWINGS FOR THESE ITEMS.

THE LOCATION, SIZE, AND DETAILS OF ALL PENETRATIONS, RECESSES, SLEEVES, HOLES ETC IN STRUCTURAL MEMBERS MUST BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION UNLESS OTHERWISE SHOWN ON STRUCTURAL DRAWINGS.

SUBSTITUTION FOR OR AMENDMENT OF SPECIFIED DETAILS OR MATERIALS SHALL NOT BE CARRIED OUT WITHOUT APPROVAL OF THE ENGINEER.

TIMBER FRAMING

TIMBER SHALL BE OF MOISTURE CONTENT OF NZS 3602 AND TREATED TO NZS 3640. MOISTURE CONTENT SHALL BE 16% OR LESS AT THE TIME OF LINING. EITHER MECHANICALLY STRESS GRADED TO AS/NZS 1748, OR VISUAL GRADING TO NZS 3631. IF NOT OTHERWISE MENTIONED ON PLANS USE MSG8/G8 GRADE TIMBER OR HIGHER.

THE FOLLOWING ARE THE MINIMUM REQUIRED TIMBER TREATMENTS: (IN ACCORDANCE WITH B2/AS1)

H6 - FOR SUBDIVISION BOUNDARY RETAINING WALL POSTS AS SPECIFIED IN DETAILS.

H5 - FOR TIMBER IN CONTACT WITH GROUND OR ENCASED IN CONCRETE

H4 - FOR RETAINING WALL RAILS

H3.2 - FOR EXPOSED TIMBER WETTED IN SERVICE OR WITHIN ENCLOSED CANTILEVERED DECKS

H1.2 - FOR ALL OTHER FRAMING

COACH SCREWS

THE DIAMETER OF THE HOLE FOR THE SHANK OF A COACH SCREW SHALL NOT BE LESS THAN THE SHANK DIAMETER AND SHALL NOT EXCEED IT BY MORE THAN 15mm. THE DIAMETER OF THE HOLE FOR THE THREADED PORTION SHALL NOT EXCEED THE ROOT DIAMETER OF THE SCREW, AND ITS DEPTH SHALL BE AT LEAST TWO DIAMETERS GREATER THAT THE INTENDED DEPTH TO WHICH THE SCREW IS TO BE DRIVEN. IF NOT OTHERWISE SPECIFIED MINIMUM EMBEDMENT SHOULD BE 10X THE SHANK DIAMETER.

COACH SCREWS SHALL NOT BE HAMMERED INTO PLACE BUT TURNED WITH A WRENCH.

WASHERS

THE FOLLOWING MINIMUM WASHER SIZES SHOULD BE USED WITH ALL BOLTS/COACH SCREWS IN TIMBER:

M12 - 35x35x3mm WASHER M16 - 50x50x4mm WASHER M20 - 65x65x5mm WASHER

FIXINGS DURABILITY

MILD STEEL:

NAILS AND SCREWS IN CLOSED AREAS AND NOT IN CONTACT WITH TIMBER TREATED TO H3.2

GALVANISED STEEL:

NAIL PLATES IN 'CLOSED' AREAS

NAILS AND SCREWS IN SHELTERED AREAS AND NOT IN CONTACT WITH TIMBER TREATED TO H3.2 OR HIGHER

HOT-DIPPED GALVANISED:

NAILS AND SCREWS IN 'CLOSED' AREAS AND IN CONTACT WITH TIMBER TREATED TO H3.2 OR HIGHER

WIRE DOGS & BOLTS IN 'CLOSED' AREAS

TYPE 304 STAINLESS STEEL:

SUBFLOOR FIXINGS AND ANY FIXINGS WITHIN 600MM OF THE GROUND

NAILS AND SCREWS FOR CLADDING FIXING THAT ACTS AS BRACING.

ALL STRUCTURAL FIXINGS (INCLUDING BOLTS) IN SHELTERED OR EXPOSED AREAS (NOT ALREADY LISTED ABOVE)

ALL FABRICATED BRACKETS SHALL BE MADE FROM 5MM (MINIMUM THICKNESS) STAINLESS STEEL

CONTRACTOR TO ENSURE AGAINST CONTACT BETWEEN DISIMILAR METALS. REFER NZS3604.

STEEL WORK

ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH NZS 3404 : 1997. ALL WELDING SHALL COMPLY WITH AS 1554.1 IN CONJUNCTION WITH NZS 3404 APPENDIX D. ALL WELDS TO BE 5mm CONTINUOUS FILLET WELDS UNLESS NOTED. ALL STEEL PLATE NOT OTHERWISE SPECIFIED SHALL BE GRADE 300. SHOP DRAWINGS FOR STEEL WORK TO BE PROVIDED TO ENGINEER FOR REVIEW PRIOR TO FABRICATION.

BOLTS NOT DESIGNATED SHALL BE COMMERCIAL BOLTS GRADE 4.6 TO AS 1111 AND AS 1112 TIGHTENED TO A SNUG FIT. BOLTS DESIGNATED 8.8 SHALL BE HIGH STRENGTH BOLTS TO AS 1252 TIGHTENED TO A SNUG FIT. BOLTS DESIGNATED 8.8/TF AND 8.8/TB SHALL BE HIGH STRENGTH BOLTS TO AS 1252 FULLY TENSIONED IN ACCORDANCE WITH NZS 3404.

THE CONTRACTORS SHALL PROVIDE AND LEAVE IN PLACE UNTIL PERMANENT BRACING ELEMENTS ARE CONSTRUCTED SUCH TEMPORARY BRACING AS IS NECESSARY TO STABILIZE THE STRUCTURE DURING ERECTION. THE ENDS OF ALL TUBULAR MEMBERS ARE TO BE SEALED WITH NOMINAL THICKNESS PLATES AND CONTINUOUS FILLET WELD UNLESS OTHERWISE SHOWN. BEFORE FABRICATION IS COMMENCED THE CONTRACTOR SHALL SUBMIT COPIES OF THE SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW. REVIEW DOES NOT INCLUDE CHECKING OF DIMENSIONS.

ALL STEELWORK SHALL BE GIVEN ONE OF THE FOLLOWING PREPARATIONS AND PAINT COATINGS IN ACCORDANCE WITH AS/NZS2312:2002:

		Design:	T REDDY
		Date:	25.07.16
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REV	DATE	AMMENDMENTS	Job Number: 11237

STEELWORK PROTECTED FROM THE ATMOSPHERE - STEEL SHALL BE SAND OR GRIT BLASTED TO ACHIEVE A BLAST PROFILE BETWEEN 25 AND 75 MICRONS COMPARABLE WITH THE SELECTED PRIMER AND A FINISH IN ACCORDANCE WITH THE SWEDISH STANDARD SIS 05 5900 OF SA 2.5. AFTER BLASTING APPLY INTERGARD 251 EPOXY PRIMER (OR SIMILAR APPROVED ALTERNATIVE) TO A MINIMUM OF 75 MICRONS DFT. THIS COAT SHALL BE APPLIED WITHIN ONE HOUR OF BLASTING. A COMPATIBLE TOP COAT OF COLOUR MAY BE SELECTED BY THE PRINCIPAL TO BE APPLIED ON SITE.

STEEL WORK EXPOSED TO ATMOSPHERE (CATEGORY D TO AS/NZS2312:2002) - (AS/NZS 2312/PUR5)

STEEL SHALL BE SAND OR GRIT BLASTED TO ACHIEVE A BLAST PROFILE BETWEEN 25 AND 75 MICRONS COMPARABLE WITH THE SELECTED PRIMER AND A FINISH IN ACCORDANCE WITH THE SWEDISH STANDARD SIS 05 5900 OF SA 2.5. AFTER BLASTING, THE MATERIAL SHALL BE GIVEN ONE GOOD COAT OF APPROVED INORGANIC ZINC SILICATE PRIMER TO ACHIEVE A MINIMUM DRY BUILD THICKNESS IN ANY POSITION EXCEEDING 70 MICRONS WITH AN AVERAGE OF ANY TEN REPRESENTATIVE READINGS EXCEEDING 75 MICRONS. THIS COAT SHALL BE APPLIED WITHIN ONE HOUR OF BLASTING.

TOP COATS SHALL BE A MINIMUM OF TWO COATS, FIRST A HIGH BUILD EPOXY OF 200 MICRONS AND THEN A SECOND OF POLYURETHANE GLOSS OF 50 MICRONS AND APPLIED AS SOON AS PRACTICABLE AFTER THE PRIMER COAT IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL ENSURE THAT THE PAINT TYPES ARE COMPATIBLE.

TOUCH-UP OR REPAIR MAY BE REQUIRED DUE TO SITE WELDING OR ANY OTHER DEFECTS OR DAMAGE TO THE COATINGS, IN ACCORDANCE WITH THE ABOVE TO BE CONFIRMED WITH ENGINEER. REGULAR MAINTENANCE OF PAINT SYSTEMS PROTECTING EXPOSED STEEL WORK WILL BE REQUIRED. CONTACT PAINT SUPPLIER FOR DETAILED MAINTENANCE REGIME.

FIRST MAJOR MAINTENANCE IS ANTICIPATED TO BE REQUIRED WITHIN 15-25 YEARS IN ACCORDANCE WITH AS/NZS2312

CONCRETE

ALL WORKMANSHIP AND MATERIAL SHALL BE IN ACCORDANCE WITH NZS. 3101 : 2006

NO HOLES CHASES OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE APPROVAL OF THE ENGINEER.

CAST INSITU SLABS AND BEAMS SHALL BE GIVEN A POSITIVE UPWARD CAMBER OF 2mm PER 1000mm OF SPAN.

CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE SHOWN OR SPECIFICALLY APPROVED BY THE ENGINEER.

ALL CONCRETE IS TO BE MECHANICALLY VIBRATED AND CAREFULLY WORKED AROUND THE REINFORCEMENT AND INTO THE CORNERS OF THE FORM WORK

THE SPECIFIED COMPRESSIVE STRENGTHS OF CONCRETE AT 28 DAYS SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

PILES & FOUNDATIONS	30MPa (DUE TO 'COASTAL FRONTAGE' ZONE)
ONGRADE SLABS	30MPa (DUE TO 'COASTAL FRONTAGE' ZONE)
SUSPENDED SLABS	30MPa
PRECAST	40MPa
SITE CONCRETE	10MPa

CLEAR COVER REQUIREMENTS, INCLUDING TIES, STIRRUPS ETC SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWING.

CONCRETE COVER REQUIREMENTS			
ELEMENT	DESCRIPTION	INSITU COVER	PRECAST COVER
CAST EXPOSED & PERMANENTLY EXPOSED TO EARTH		75	-
ABOVE GROUND EXTERIOR ENVIRONMENTS - 'COASTAL FRONTAGE' TO NZS3101:PART1 2006			
SLABS, WALLS, RIBS	24MM TO 40MM BARS 20MM & LESS BAR/WIRES	50 45	50 40
BEAMS & COLUMNS	PRINCIPAL LONGITUDINAL REINFORCEMENT TIES STIRRUPS & SPIRALS	50 50	50 40
INTERIOR OR PROTECTED ENVIRONMENTS			
SLABS, WALLS, RIBS	40MM & LARGER BARS 24MM TO 32MM BARS 20MM & LESS BARS/WIRES	50 40 30	45 35 25
BEAMS & COLUMNS	16MM & LARGER BARS 12MM & SMALLER BARS TIES, STIRRUPS & SPIRALS 16MM & LARGER 12MM & SMALLER	50 50 35 35	45 40 30 25

REINFORCEMENT

ALL REINFORCEMENT SHALL BE EITHER GRADE 500E OR 300E AND MUST CONFORM TO AS/NZS 4671. ALL HOOK LAPS AND BENDS SHALL BE MADE WITHOUT FRACTURE IN ACCORDANCE TO NZS 3101. GRADE 300E BARS MAY BE REBENT ONCE ONLY, IF IN DOUBT ASK.

ALL REINFORCEMENT HAS BEEN DESIGNATED AS FOLLOWS:

500E DEFORMED	HD20
300E DEFORMED	D20
500E PLAIN	HR20
300E PLAIN	R20

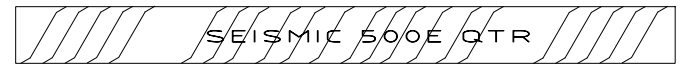
REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY IN TRUE PROJECTION. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITION SHOWN ON THE DRAWINGS OR AS OTHERWISE APPROVED BY THE ENGINEER. ALL REINFORCEMENT SHALL BE FIXED AND TIED WHERE NECESSARY IN ITS SPECIFIED POSITION. FOR PLAIN ROUND BARS LAP LENGTH IS TO BE TWICE THE LAP LENGTH OF DEFORMED BARS.

LAP LENGTHS FOR DEFORMED BARS IN TENSION SHALL BE NO LESS THAN THE FOLLOWING:

DEFORMED BAR DIAMETER	10	12	16	20	25	28
CONCRETE STEEL-300	400	450	600	750	900	1100
CONCRETE STEEL-500	600	750	1000	1200	1500	1700
MASONRY STEEL-300	400	500	650	800	1000	1150
MASONRY STEEL-500	700	850	1150	1400	1750	2000

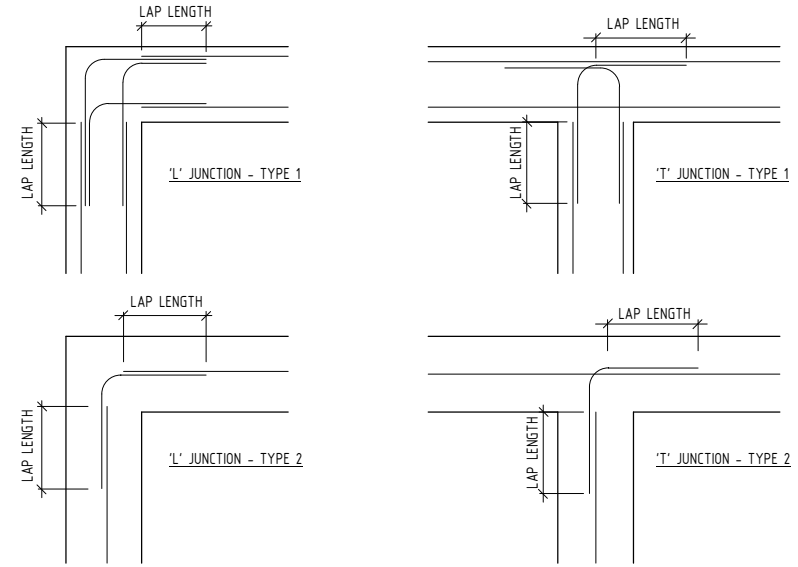
GRADE 500E STEEL SHALL NOT BE WELDED OR REBENT WITHOUT PERMISSION FROM THE ENGINEER & MUST BE CLEARLY MARKED AS MICRO ALLOY GRADE 500E. QUENCHED AND TEMPERED STEEL SHALL NOT BE WELDED OR REBENT.

BAR MARKINGS FOR IDENTIFICATION OF MICRO ALLOY (MA) AND QUENCHED AND TEMPERED (QTR) REINFORCING ARE SHOWN BELOW: (INDICATIVE ONLY)

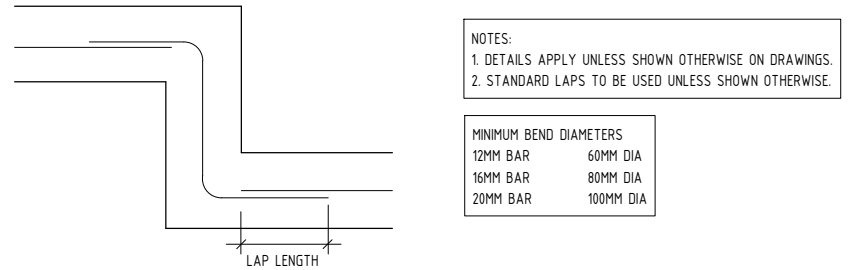


REMOVAL OF FORM WORK	
ITEMS FROM WHICH FORM WORK IS TO BE REMOVED	MINIMUM STRIPPING TIME
SIDES OF BEAMS, WALLS & COLUMNS	12 HOURS
SLAB BEAMS AND SLAB CONSTRUCTION (PROPS TO BE LEFT UNDER SLABS OF SPAN > 2M)	4 DAYS
REMOVAL OF PROPS FROM SLABS/BEAMS OF SPAN > 2M	10 DAYS
BEAMS, SOFFITS AND SLABS OF SPAN > 5M	18 DAYS
NB FOR EACH DAY IN WHICH THE MEAN TEMPERATURE FALLS BELOW 10 DEGREES ADD HALF A DAY TO THE MINIMUM STRIPPING TIME.	

FOUNDATION JUNCTIONS (PLAN)



SINGLE LAYER REINFORCEMENT: FOUNDATION STEP ELEVATION



BLOCKWORK

ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH NZS 4210 : 1989. ALL MASONRY SHALL BE GRADE B MASONRY UNLESS NOTED OTHERWISE.

ALL MASONRY UNITS SHALL BE OPEN ENDED REINFORCING UNITS AND SHALL HAVE ALL CELLS GROUTED UNLESS OTHERWISE APPROVED BY THE ENGINEER.

THE SPECIFIED STRENGTH OF GROUT SHALL BE 25MPa. (DUE TO COASTAL/SEASPRAY ZONE - REFER SECTION 4 OF NZS3604:2010)

FOUNDATIONS

FOUNDATIONS ARE TO BE FOUNDED ON ORIGINAL UNDISTURBED GROUND, AT A MINIMUM DEPTH OF 600mm. BEFORE ANY CONCRETE IS PLACED THE SOILS SHALL BE VERIFIED TO BE 'GOOD GROUND' TO NZS3604. (UNLESS FOUNDATIONS ARE PILED OR DESIGNED IN ACCORDANCE WITH A GEOTECH REPORT)

50MM OF SITE CONCRETE MAY BE PLACED UNDER FOUNDATIONS TO CREATE A CLEAN SURFACE TO PLACE REINFORCING ON WHEN REQUIRED.

DRIVEN TIMBER PILES

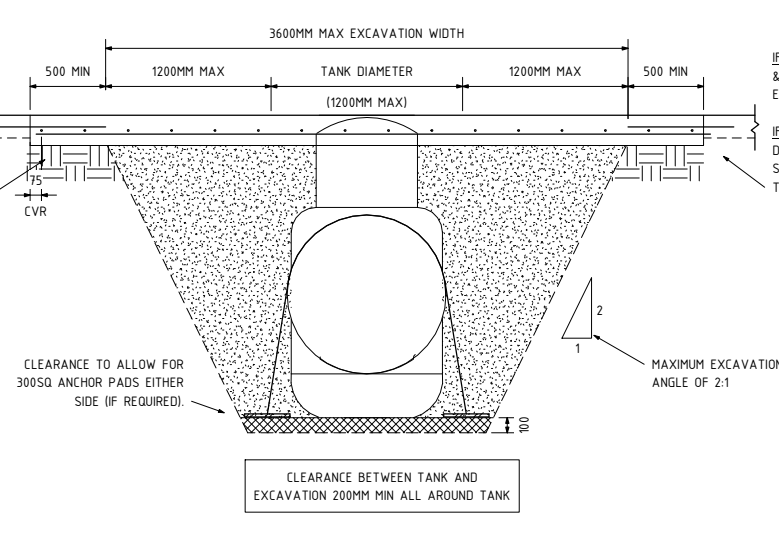
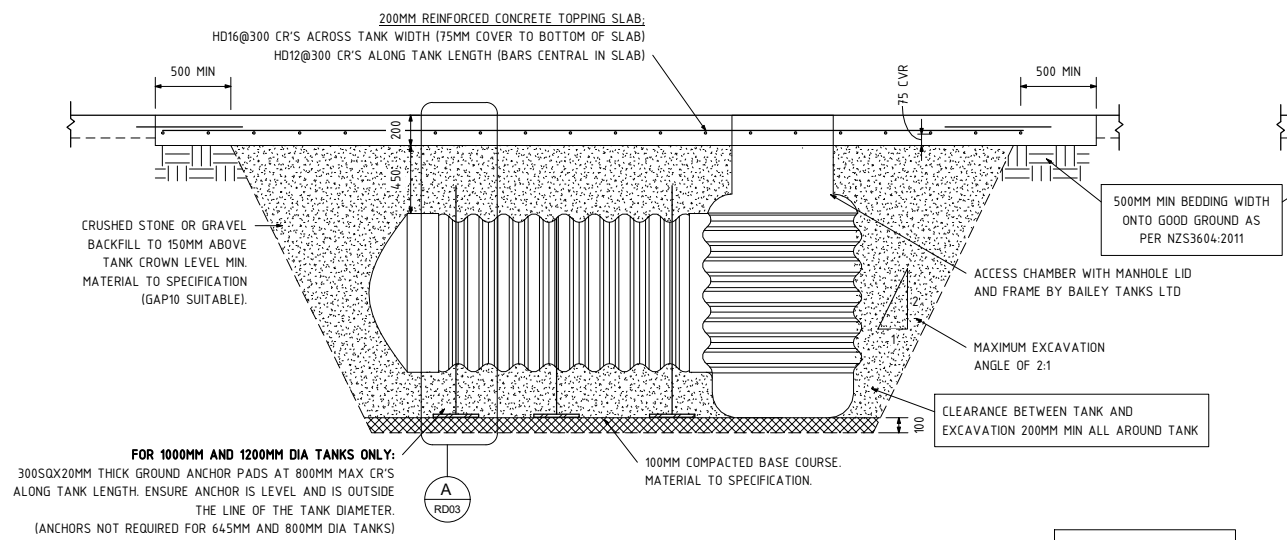
ALL DRIVEN PILES ARE TO BE H5 TREATED COMPLYING WITH THE REQUIREMENTS OF NZS 3604 & AS NOTED ON THE FOUNDATION/SLAB PLAN.

ALL FLOOR SLAB PILES SHALL BE CUT-OFF 10mm BELOW CONCRETE SLAB, PAINT END WITH ENSELLE OR SIMILAR AND CAPPED WITH 200x200mm HEAVY GRADE MALTHOID DPC TO ENSURE VAPOUR BARRIER IS NOT PERFORATED

BACKFILL AROUND PILE TOP WITH SAND AND PLACE THE VAPOUR BARRIER, VAPOUR BARRIER IS TO BE CONTINUOUS OVER PILES.

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Revision No:
Scale: @A1
Issue: GENERIC DESIGN





IF DRIVEWAY IS EXISTING, SCABBLE EDGE AND TIE WITH D12 DRILL & EPOXY STARTERS AT 400MM CR'S. EMBED MIN OF 100MM INTO EXISTING AND LAP 600MM INTO NEW TOPPING SLAB.

IF DRIVEWAY IS NEW, LAP TANK TOPPING STEEL WITH GENERAL DRIVEWAY REINFORCING. FULL LAP LENGTH REQUIRED (REFER STANDARD NOTES SHEET). GENERAL DRIVEWAY DESIGN BY OTHERS TO LOCAL AUTHORITY STANDARD.

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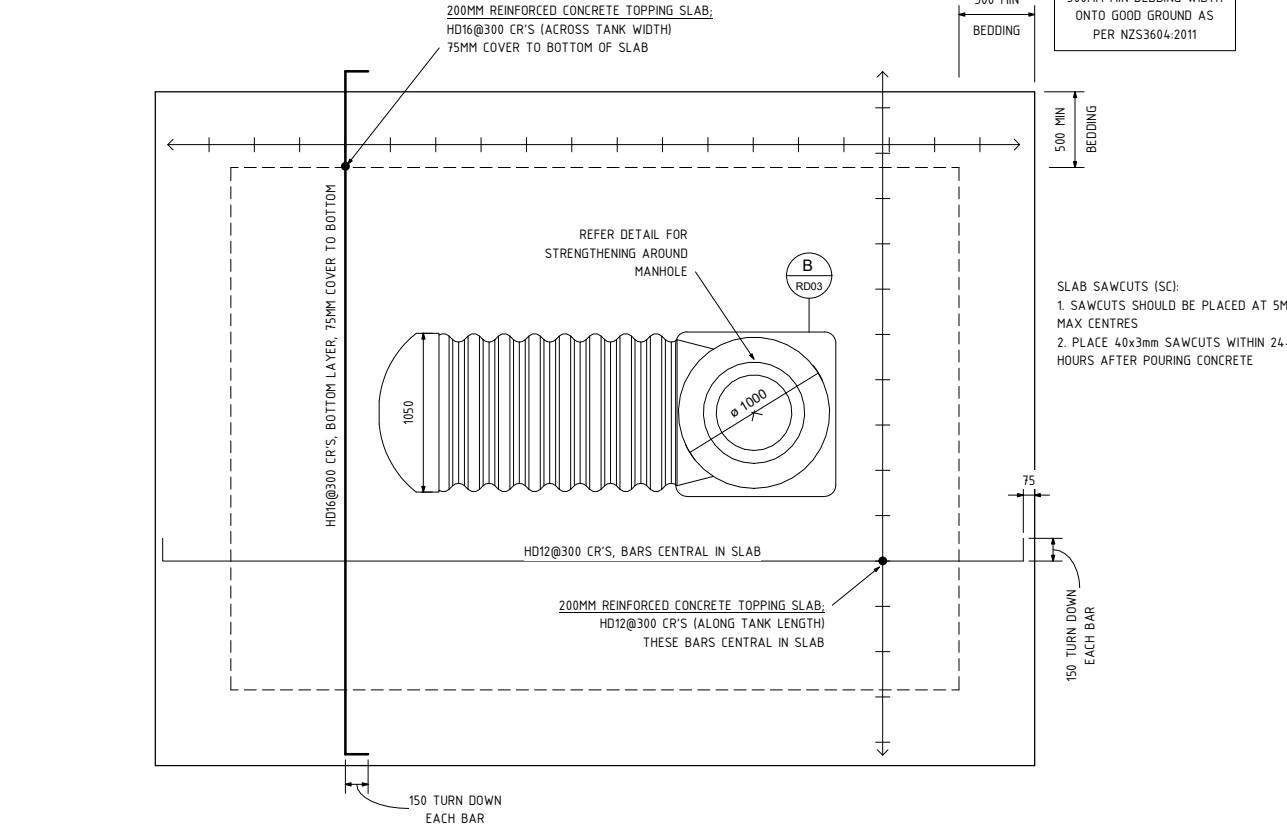
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SLAB DESIGNED FOR LIVE LOAD AS PER NZS1170.1 TABLE 3.1: 'LIGHT VEHICLE TRAFFIC AREAS' ; 2.5 kPa AND POINT LOAD OF 13 kN

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TANK LOCATION - PROXIMITY TO NEARBY STRUCTURES:
THE LOCATION OF THE TANK EXCAVATION IS THE RESPONSIBILITY OF THE CONTRACTOR AND THE TANK OWNER. THE CONTRACTOR IS TO FOLLOW THE LIMITATIONS OF THE DIAGRAMS SHOWN OR NOTIFY A CHARTERED PROFESSIONAL ENGINEER FOR A SITE SPECIFIC CONSULTATION. CONTRACTOR TO ENSURE NEARBY FOUNDATIONS OF NEW AND/OR EXISTING STRUCTURES ARE NOT UNDERMINED BY THE EXCAVATION FOR THE TANK.

EXCAVATION CLEARANCE:
CONTRACTOR TO ENSURE A MINIMUM OF 200MM BETWEEN EDGE OF TANK AND EDGE OF EXCAVATION WALL AT THE NARROWEST LOCATION.

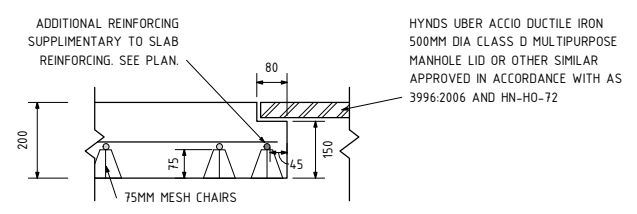
SOIL CONDITIONS:
THIS DESIGN ASSUMES SITE SOILS WILL MEET THE REQUIREMENTS OF NZS3604:2011 CLASSIFICATION OF 'GOOD GROUND'. CONTRACTOR TO CONFIRM SITE EXHIBITS THESE PROPERTIES OR NOTIFY CHARTERED PROFESSIONAL ENGINEER FOR CONSULTATION.

TEMPORARY SUPPORT AND SHORING:
TEMPORARY SUPPORT AND SHORING DURING EXCAVATION AND PREPARATION IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHOULD BE IN ACCORDANCE WITH THE HEALTH AND SAFETY IN EMPLOYMENT REGULATIONS 1995, REGULATION 24 FOR EXCAVATIONS WITH FACE MORE THAN 1.5M HIGH (AS BELOW):
(1) SUBJECT TO SUBCLAUSE (2), EVERY EMPLOYER SHALL TAKE ALL PRACTICABLE STEPS TO ENSURE THAT, WHERE ANY FACE OF ANY EXCAVATION IS MORE THAN 1.5 METRES HIGH, THAT FACE IS SHORED.
(2) SUBCLAUSE (1) DOES NOT APPLY WHERE—
- (A) THE FACE IS CUT BACK TO A SAFE SLOPE, OR
- (B) THE MATERIAL IN THE FACE IS OF PROVEN GOOD STANDING QUALITY UNDER ALL REASONABLY FORESEEABLE CONDITIONS OF WORK AND WEATHER; OR
- (C) BY REASON OF THE NATURE OF THE WORK AND THE POSITION OF ANY EMPLOYEE IN THE VICINITY, THERE IS NO DANGER TO ANY EMPLOYEE; OR
- (D) THE PROVISION OF SHORING IS IMPRACTICABLE OR UNREASONABLE BY REASON OF THE NATURE OF THE WORK AND THE EMPLOYER TAKES ALL PRACTICABLE STEPS TO ENSURE THAT OTHER PRECAUTIONS ARE TAKEN TO MAKE THE FACE AS SAFE AS POSSIBLE IN THE CIRCUMSTANCES.
(3) EVERY EMPLOYER SHALL TAKE ALL PRACTICABLE STEPS TO ENSURE THAT ANY SHORING USED IN ANY EXCAVATION AT THE PLACE OF WORK—
- (A) CONSISTS OF MATERIALS THAT ARE SUITABLE FOR THE PURPOSE FOR WHICH THEY ARE TO BE USED, OF SOUND QUALITY, AND ADEQUATE IN STRENGTH FOR THE PARTICULAR USE; AND
- (B) HAS BRACINGS, JACKS, AND STRUTS THAT ARE SECURELY HELD TO PREVENT ACCIDENTAL DISPLACEMENT, AND PACKINGS AND WEDGES THAT ARE HELD BY NAILS OR SPIKES; AND
- (C) IS PLACED IN A PROPER MANNER BY AN EXPERIENCED PERSON UNDER COMPETENT SUPERVISION; AND
- (D) IS NOT ALTERED, DISMANTLED, OR INTERFERED WITH EXCEPT ON THE INSTRUCTIONS OF THE EMPLOYER OR A REPRESENTATIVE OF THE EMPLOYER.

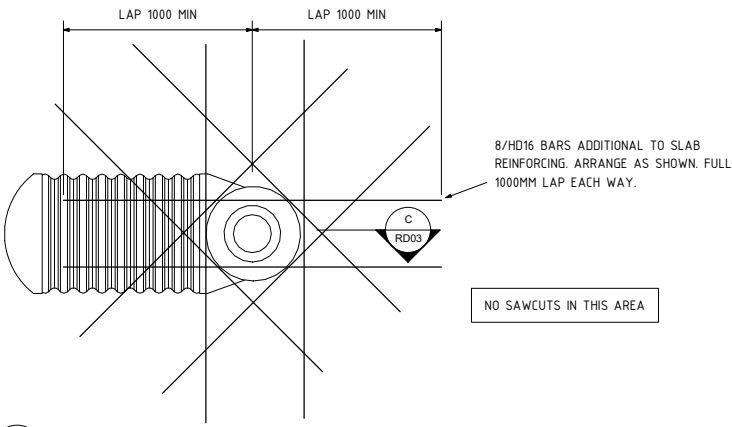
ONCE THE BACKFILL HAS BEEN PLACED, SLOWLY PULL THE SHORING OUT TO THE TOP OF THE BACKFILL AND FILL ANY VOIDS CREATED WITH APPROVED BACKFILL MATERIAL.

BACKFILL AND BASECOURSE:
BACKFILL AND BASECOURSE MATERIAL TO BE EITHER:
CRUSHED STONE OR GRAVEL: WASHED, WITH ANGULAR PARTICLE SIZES NO LARGER THAN 13.2MM WITH NO MORE THAN 5% PASSING A 2.36MM SIEVE. DRY DENSITY MUST NOT BE LESS THAN 1500KG/CUBIC METRE. APPROVED BACKFILL SHOULD NOT BE MIXED WITH SAND OR NATIVE SOILS AND SHOULD ALWAYS BE BROUGHT UP TO AT LEAST THE TANK CROWN LEVEL. THE USE OF NON-SPECIFIED BACKFILL MATERIAL COULD RESULT IN TANK FAILURE. (I.E. GAP10) OR IF CRUSHED STONE/GRAVEL NOT AVAILABLE, SPECIFIC QUARRY AGGREGATE MIX REQUIRED AS BELOW;
NATURALLY ROUNDED GRAVEL: CLEAN NATURALLY-ROUNDED AGGREGATE. WITH PARTICLE SIZES NO LARGER THAN 19MM WITH NO MORE THAN 5% PASSING A 2.36MM SIEVE. DRY DENSITY MUST NOT BE LESS THAN 1500KG/CUBIC METRE.

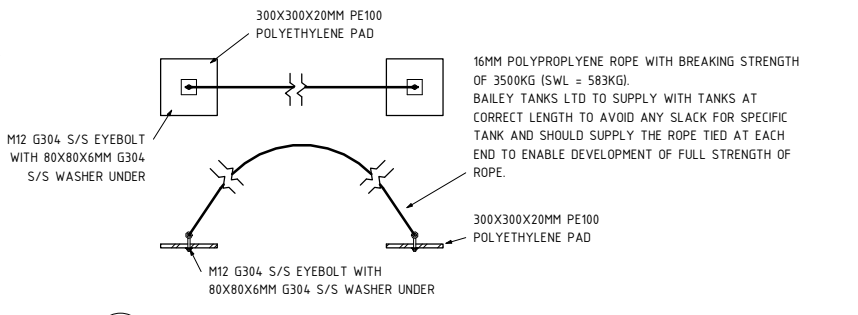
CONTRACTOR TO WORK IN MAXIMUM BACKFILL LIFTS OF 300MM. AFTER EACH LIFT, CONTRACTOR TO USE LONG HANDED PROBE TO WORK THE BACKFILL MATERIAL UNDER THE ENTIRE LENGTH OF THE TANK AND WITHIN ANY RIBS. ALL VOIDS AND SPACES SHOULD BE FILLED TO ENSURE ADEQUATE SUPPORT OF TANK.



C SECTION THROUGH MANHOLE OPENING
RD03 1:10



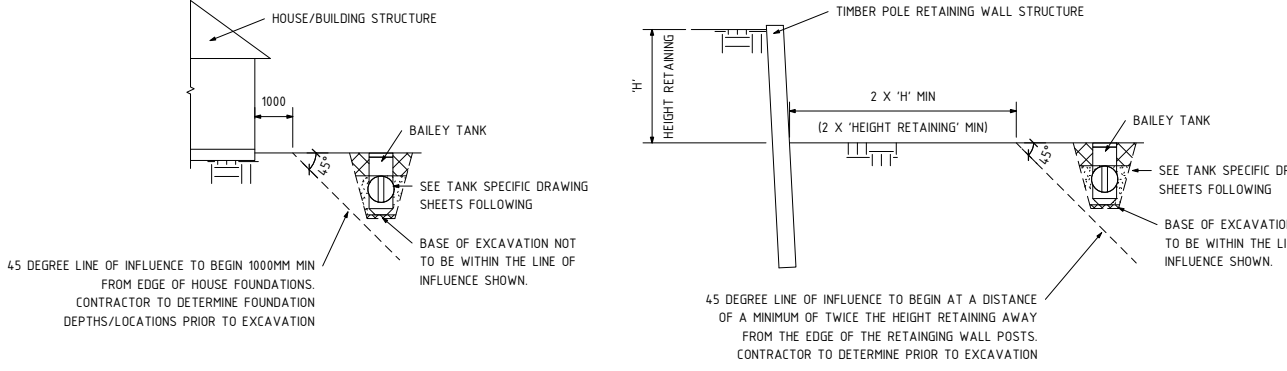
B SLAB STRENGTHENING AROUND MANHOLE OPENING
RD03 1:20



A 300X300X20MM GROUND ANCHOR PADS
RD03 1:20

TANK INSTALLATION BENEATH RESIDENTIAL DRIVEWAY (2500KG OR LESS)
NTS

NOTE: IF TANK EXCAVATION LOCATION DOES NOT COMPLY WITH THE REQUIREMENTS BELOW - CONTRACTOR TO NOTIFY CHARTERED PROFESSIONAL ENGINEER FOR A SITE SPECIFIC CONSULTATION



TANK POSITION NEAR HOUSE - ANCHORS
NTS

TANK POSITION NEAR RETAINING WALL - ANCHORS
NTS

REV	DATE	AMMENDMENTS

Design:	T REDDY
Date:	25.07.16
Check:	J PERKINS
Job Number:	11237

Job Title:	INSTALLATION OF BAILEY TANKS - 2500 KG VEHICLES
Client:	BAILEY TANKS LIMITED
Address:	ALL NEW ZEALAND LOCATIONS,
Drawing Title:	RESIDENTIAL DRIVEWAY (2500KG VEHICLE OR LESS)

Drawing No:	RD03
Revision No:	
Scale:	As indicated @A1
Issue:	GENERIC DESIGN

