

PROPOSED DEVELOPMENT: **S/S 3 BED S/GARAGE - 2 UNITS DEVELOPMENT UNITS WITH STORMWATER DETENTION SYSTEM**

PROJECT ADDRESS: **LOT 222, WILLANDRA BLVD, MELTON WEST**

PROJECT: **FOUNDATION & BEAMS DESIGN**

CLIENT: **MEGA HOMES**

DATE: **19/08/2015**

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PROJECT:
S/S 3 BED 2 UNITS DEV.
PROJECT ADDRESS:
Lot 222, Willandra Blvd,
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SHEET NO: 1/8

Rev.	Remarks/comments	Date	Aprv.
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STANDARDS, MATERIALS, AND WORKMANSHIP REQUIREMENTS

THESE NOTES TO BE FOLLOWED UNLESS NOTED OTHERWISE BY THE ENGINEER

GENERAL NOTES

- G1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH SPECIFICATION AND OTHER WORKING DRAWINGS. ANY DISCREPANCIES SHALL BE NOTIFIED TO THE ENGINEER IMMEDIATELY.
- G2. ALL DIMENSIONS RELEVANT TO SETTING OUT AND OFF-SITE WORK SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION AND FABRICATION IS COMMENCED. THE ENGINEER'S DRAWINGS SHALL NOT BE SCALED.
- G4. MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE SPECIFICATION, THE CURRENT REVISION OF ALL RELEVANT SAA CODES, THE REQUIREMENTS OF THE VICTORIAN BUILDING REGULATIONS, THE BUILDING CODE OF AUSTRALIA AND THE RELEVANT AUTHORITY.
- G5. CONTRACTORS SHALL ENSURE THAT LOCATIONS OF ALL UNDERGROUND SERVICES ARE IDENTIFIED PRIOR TO COMMENCEMENT OF WORKS AND EXCAVATIONS. THE WORK COMMENCES.
- G6. RELEVANT STANDARDS USED:

1	Structural Steel Design	AS4100
2	Structural Reinforced Concrete Design	AS3600
3	Structural Timber Framing	AS1684
4	Timber Structures Design	AS1720
5	Domestic Slab Design	AS2870
6	Brickwork	AS3700
6	Wind Analysis & Design	AS1170
7	Access & Mobility	AS1428
8	Welding	AS1554
9	Bolts & Nuts	AS1252
10	Cold formed Steel	AS 4600
11	Bolts & Nuts	AS1252
12	Stormwater Drainage	AS3500
13	Glazing	AS1288/AS2047
14	Water Proofing to Wet Areas	AS3740/BCA 4-3-1

LIVE LOADS

- L1. THE STRUCTURAL WORK SHOWN ON THESE DRAWINGS HAS BEEN DESIGNED FOR THE FOLLOWING LIVE LOADS:-
- ROOF 0.25 kPa OR (1.8 / A + 0.12) WHICHEVER IS GREATER
- FLOOR 1.5 kPa (OR AS USED FOR COMPUTATIONS)
- Balcony 2.0 kPa (OR AS USED FOR COMPUTATIONS)

TEMPORARY BRACING

- TB1. DURING CONSTRUCTION THE STRUCTURE SHALL BE MAINTAINED IN A STABLE CONDITION AND NO PART SHALL BE OVER STRESSED.
- TB2. THE CONTRACTOR SHALL PROVIDE AND INSTALL ANY ADDITIONAL BRACING EQUIPMENT NECESSARY TO ADEQUATELY AND SAFELY HOLD THE STRUCTURE IN POSITION DURING CONSTRUCTION.

CONCRETE

- C1. ALL CONCRETE AND WORKMANSHIP TO CONFORM TO THE REQUIREMENTS OF AS 3600.
- C2. ALL INSET CONCRETE SHALL BE A CHARACTERISTIC STRENGTH TO BE AS NOTED BELOW AT 28 DAYS UNLESS NOTED OTHERWISE.
- | | |
|-------------------|--------|
| BLINDING CONCRETE | 15 MPa |
| STRIP FOOTINGS | 20 MPa |
| PAD FOOTINGS | 20 MPa |
| SLAB ON GROUND | 20 MPa |
- ALL OTHER MEMBERS TO BE 32 MPa (OR AS NOTED OTHERWISE)
- MAXIMUM SLUMP TO BE 75mm
MAXIMUM AGGREGATE TO BE 20mm
- C3. CONCRETE ELEMENTS SHOWN ON THE DRAWINGS MUST NOT BE REDUCED IN ANY WAY WITHOUT THE ENGINEER'S APPROVAL. NO

HOLES, CHASES DRY EMBEDMENT'S OTHER THAN THOSE SHOWN WILL BE PERMITTED IN ANY CONCRETE ELEMENTS WITHOUT THE ENGINEER'S APPROVAL

- C4. REINFORCEMENT NOTATION:-
N - DENOTES HOT-ROLLED DEFORMED BARS TO AS 4671
RL - DENOTES RECTANGULAR REINFORCEMENT FABRIC TO AS/NZS 4671
SL - DENOTES SQUARE REINFORCEMENT FABRIC TO AS/NZS 4671
LXTM - DENOTES TRENCH MESH REINFORCEMENT TO AS/NZS 4671.

LAPPING REINFORCEMENT:-

REINFORCEMENT SPLICES SHALL BE LAP SPLICES AS REQUIRED BY THE CURRENT CONCRETE CODE UNLESS NOTED IN THE DRAWINGS. FOR FABRIC, THE MINIMUM SPLICE SHALL BE 22mm MINIMUM WITH THE OVERLAP MEASURED BETWEEN THE OUTERMOST WIRES AND NOT LESS THAN THE PITCH OF THE SECONDARY WIRES.

- C5. CLEAR COVER TO REINFORCEMENT AS NOTED ON THE DRAWINGS.
- C6. CONCRETE COVER TO BE MAINTAINED BY THE USE OF APPROVED BAR CHAIRS AND/OR CONCRETE BLOCKS SPACED AT APPROXIMATELY 1000 CROSS CTS. CONDUITS, PIPES ETC. ARE NOT TO BE PLACED IN CONCRETE COVER.
- C7. CONCRETE TO BE KEPT FREE OF SUPPORTING BRICKWORK BY TWO LAYERS OF A SUITABLE MEMBRANE; VERTICAL FACES OF CONCRETE TO BE KEPT FREE BY 12mm THICKNESS OF BITUMINOUS CANEITE.
- C8. ALL MILD STEEL BRACKETS, SLOTS ETC EMBEDDED IN THE CONCRETE SHALL BE HOT-DIP GALVANISED.
- C9. DIRECTION OF MESH ON PLAN INDICATES THE DIRECTION OF MAIN WIRES WHICH SHOULD BE PLACED NEAREST THE RELEVANT SLAB SURFACE.
- C10. ALL CONCRETE SHALL BE PROPERLY COMPACTED BY MEANS OF APPROVED VIBRATORS.
- C11. CONSTRUCTION JOINTS WHERE NOT SHOWN, SHALL BE LOCATED TO THE APPROVAL OF THE ENGINEER.
- C12. FORM WORK SHALL NOT BE STRIPPED UNTIL 3 DAYS HAS ELAPSED FROM TIME OF POUR - UNLESS APPROVED OTHERWISE BY THE ENGINEER. NO LOADS APPLIED FOR 28 DAYS.
- C13. ENGINEER TO BE NOTIFIED 48 HOURS PRIOR TO POURING CONCRETE.
- C14. ALL PIPE WORK CAST INTO CONCRETE IS TO BE SLEEVED OR LAGGED WITH APPROPRIATE COMPRESSIBLE MATERIAL FOR THE FULL LENGTH OF EMBEDMENT.

BRICKWORK - BLOCKWORK

- B1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3700.
- B2. LOAD BEARING BRICKS SHALL HAVE A MINIMUM CHARACTERISTIC UNCONFINED STRENGTH OF 20 MPa AND LOAD BEARING BLOCKS SHALL HAVE A CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF 15 MPa. UNLESS OTHERWISE NOTED.

B3. MORTAR SHALL BE FRESHLY PREPARED AND UNIFORMLY MIXED IN THE RATIO OF ONE PART CEMENT, ONE PART LIME AND SIX

B4. BLOCKWORK CORE FILLING CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE: 20 MPa.

B5. BRICKWORK OR BLOCKWORK SUPPORTING CONCRETE SHALL BE TROWELLED SMOOTH AND SEPARATED AT THE BEARING SURFACE BY A LAYER OF GALVANIZED STRIP OR TWO LAYERS OF BITUMINOUS BUILDING PAPER.

B6. JOINT REINFORCEMENT WHERE SHOWN ON THE PLAN SHALL BE AT EVERY 600mm. WITH AN EXTRA COURSE OVER AND UNDER WINDOW OPENINGS USING 'RECTOR', 'BLOTTER' OR SIMILAR.

B7. NO BRICKWORK OR BLOCKWORK WHICH IS SUPPORTED BY CONCRETE SHALL BE ERECTED UNTIL SUPPORTING FORMWORK HAS BEEN REMOVED.

B8. CAVITY WALL TIES TO BE IN ACCORDANCE WITH THE CURRENT BCA REQUIREMENTS.

STRUCTURAL STEELWORK

- S1. ALL WORKMANSHIP, FABRICATION, ERECTION AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 4100.
- S2. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AND APPROVED BEFORE FABRICATION IS COMMENCED.
- S3. EXCEPT AS SHOWN, STEEL MEMBERS SHALL NOT BE SPLICED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
- S4. WELDING OF STEELWORK TO BE IN ACCORDANCE WITH AS 1554 AND UNLESS OTHERWISE NOTED, SHALL BE 6mm FILLET WELD ALL AROUND.
- S5. ALL HIGH STRENGTH BOLTS SHALL BE ASSEMBLED AND INSPECTED IN ACCORDANCE WITH AS 1252.
- 8.8/S BOLTS ARE HIGH STRENGTH BOLTS.
8.8/TB BOLTS ARE HIGH STRENGTH BEARING TYPE SLOTS
8.8/BF BOLTS ARE HIGH STRENGTH FRICTION TYPE BELTS.
- S6. STEEL WORK TO BE ENCASED IN CONCRETE SHALL NOT BE PAINTED, BUT SHALL BE GIVEN ONE COAT OF CEMENT WASH.
- S7. STEEL WORK NOT ENCASED OR OTHERWISE NOTED SHALL BE GIVEN ONE COAT OF APPROVED METALLIC PRIMER AT LEAST 48 HOURS BEFORE DISPATCH.
- S8. STEEL WORK TO BE ENCASED SHALL BE WRAPPED WITH 3mm WIRE AT 100mm PITCH AND ENCASED IN 4:2:1 CONCRETE WITH A MINIMUM COVER OF 50mm.
- S9. ALL STEEL WORK BELOW GROUND SHALL BE ENCASED IN CONCRETE AND IF EXPOSED, GALVANISE TO HAVE 600 g/sq.m OF GALVANISE.
- S10. ALL CLEATS AND DRILLING FOR FIXING OF ARCHITECTURAL ELEMENTS, TIMBER FRAMING ETC SHALL BE PROVIDED BY THE FABRICATOR. THE STRUCTURAL DRAWINGS ARE DEEMED TO PROVIDE FOR ALL THE NECESSARY MAJOR STRUCTURAL STEEL WORK AND CONNECTIONS. MINOR NON-STRUCTURAL ITEMS SUCH AS TRIMMERS, CLEATS AND OTHER ITEMS SHOWN ON THE ARCHITECTURAL DRAWINGS, BUT NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE ALLOWED FOR BY THE CONTRACTOR IN HIS TENDER PRICE, AND DETAILED.
- S11. THE CONTRACTOR SHALL PROVIDE BRACING AND LEAVE IN PLACE UNTIL PERMANENT BRACING ELEMENTS ARE CONSTRUCTED OR CLEATS, ETC. AS IS NECESSARY TO STABILISE THE STRUCTURE DURING ERECTION.
- S12. ALL UB, UC AND PFC MEMBERS TO HAVE $F_y = 300$ MPa MINIMUM.

TIMBER NOTES

- T1. ALL TIMBER MATERIALS, WORKMANSHIP AND PRACTICE SHALL BE IN ACCORDANCE WITH THE TIMBER ENGINEERING CODE AS 1720 AND THE TIMBER FRAMING CODE AS 1684. ALL LINTELS, BEAMS ETC NECESSARY FOR THE PROPER SUPPORT OF ROOF FRAMING SHALL BE PROVIDED EITHER AS SHOWN ON THE DRAWINGS OR AS REQUIRED IN ACCORDANCE WITH AS 1684.
- T2. ALL TIMBER SHALL BE IN ACCORDANCE WITH THE STRESS GRADE NOMINATED ON THE DRAWINGS AND SHALL BE FREE OF DEFECTS, SPLITS, ROT ETC. THE ENGINEER RESERVES THE RIGHT TO REJECT UNSUITABLE TIMBER.
- T3. ALL BOLTED TIMBER CONNECTIONS SHALL BE MADE WITH M12 BOLTS UNLESS NOTED OTHERWISE. MILO STEEL WASHERS SHALL BE PLACED UNDER THE HEAD AND NUT IN ACCORDANCE WITH THE TABLE BELOW:-
- | | |
|-------------|------------------------|
| WASHER SIZE | |
| 50x50x3mm | BOLTS UP TO M12 |
| 65x65x5mm | M16, M20 BOLTS |
| 75x75x5mm | BOLTS GREATER THAN M20 |
- ALL EXPOSED BOLTS AND FITTINGS SHALL BE HOT-DIP GALVANISED.
- T4. ALL BOLTS SHALL BE RE-TIGHTENED AT THE COMPLETION OF THE CONTRACT AND AGAIN AT THE END OF THE MAINTENANCE PERIOD. BOLTS WHICH ARE INACCESSIBLE AT THE COMPLETION OF THE STRUCTURAL WORKS SHALL BE RE-TIGHTENED IMMEDIATELY BEFORE BEING BUILT-IN.
- T5. ALL PROPRIETARY FIXINGS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS, OR AS NOTED ON THE STRUCTURAL DRAWINGS.
- T6. THE STRUCTURAL DRAWINGS ARE DEEMED TO PROVIDE FOR ALL NECESSARY MAJOR STRUCTURAL TIMBER AND CONNECTIONS. MINOR NON-STRUCTURAL ITEMS SUCH AS TRIMMERS, CLEATS AND OTHER ITEMS AS SHOWN ON THE ARCHITECTURAL DRAWINGS, BUT ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS, SHALL BE ALLOWED FOR BY THE CONTRACTOR IN HIS TENDER PRICE, AND DETAILED AT THE SHOP DRAWING STAGE IF REQUIRED.

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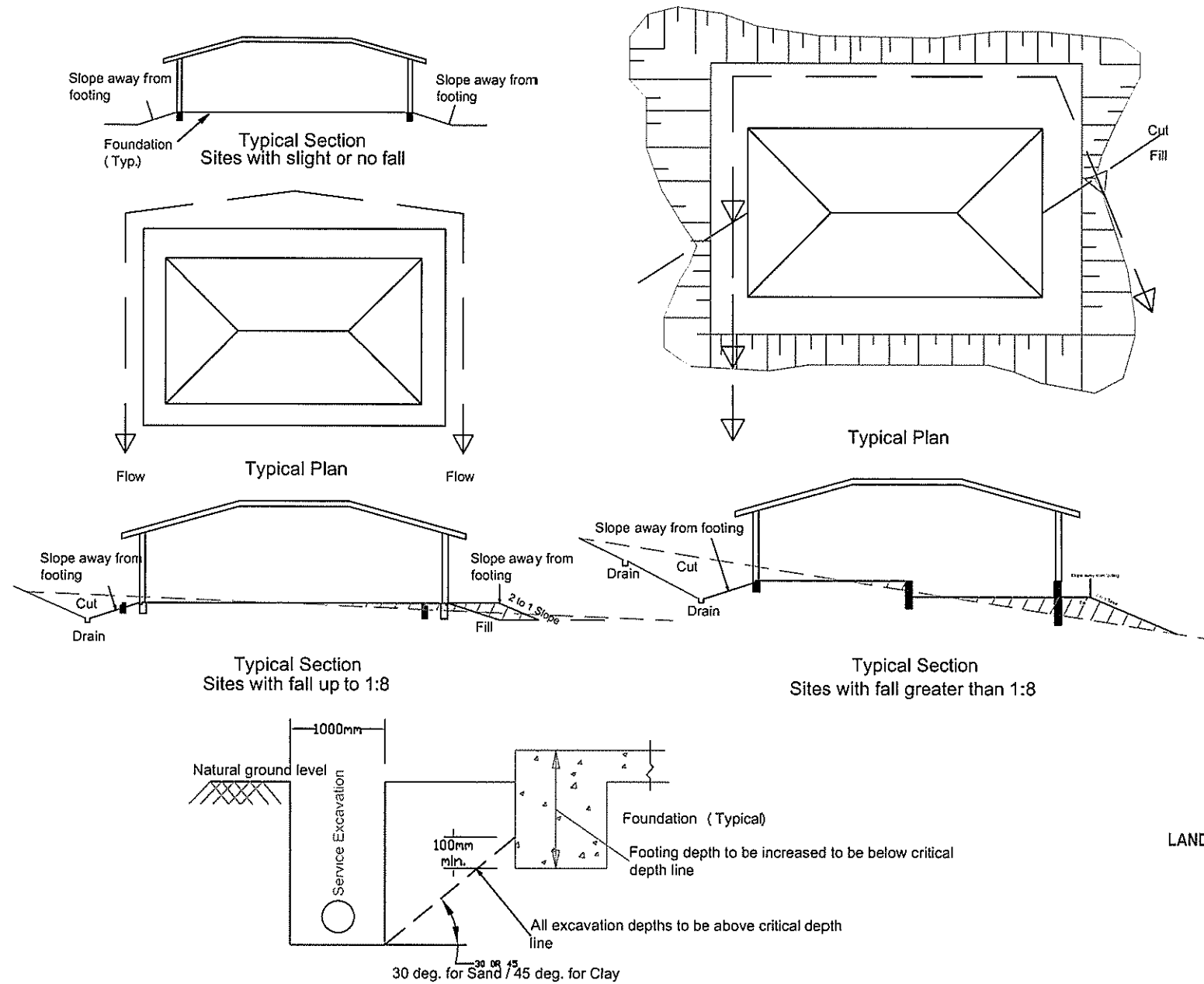
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SITE DRAINAGE REQUIREMENTS

TYPICAL STORMWATER DRAINAGE



SERVICE TRENCH EXCAVATION ADJACENT TO FOUNDATIONS

MAINTENANCE:

- THE MAINTENANCE OF THE SITE AROUND A NEW HOME IS AN IMPORTANT FACTOR IN THE LONG-TERM PERFORMANCE OF THE FOOTING SYSTEM
- THE PRIMARY OBJECTIVE OF THIS MAINTENANCE IS TO MINIMISE THE VARIATION IN SOIL MOISTURE LEVEL AROUND THE FOOTING THAT COULD LEAD TO EXCESSIVE SOIL MOVEMENT AND POSSIBLE DISTRESS TO THE SUPERSTRUCTURE AND/OR FOOTING. WHEN THE SLAB FORMS PART OF THE TERMITE BARRIER SYSTEM FOR THE HOUSE, THEN IT IS ALSO NECESSARY TO MAINTAIN THE EFFECTIVENESS OF THAT BARRIER BY APPROPRIATE MAINTENANCE ACTIVITIES.
- WHEN A CONCRETE SLAB-ON-GROUND IS USED AS PART OF THE TERMITE BARRIER SYSTEM AS OUTLINED IN AS3660.0, THEN IT CANNOT BE TOO HIGHLY STRESSED THAT REGULAR INSPECTION AND MAINTENANCE OF THE SLAB SURROUNDING BY A COMPETENT PROFESSIONAL IS REQUIRED TO ENSURE THAT ANY TERMITE INFESTATION IS DETECTED AND TREATED PROMPTLY.
- ONGOING MAINTENANCE AND INSPECTION ON A REGULAR BASIS IS A REQUIREMENT OF AS3660.1 AND OWNERS SHOULD BE CLEARLY ADVISED OF THEIR RESPONSIBILITIES TO ENSURE THAT THEIR INVESTMENT IS PROPERLY PROTECTED.
- LEAKING TAPS, DOWNPIPES, SEWERS, GUTTERS AND DRAINAGE CAN ALSO AFFECT THE MOISTURE CONTENT OF THE SOIL AND THESE MUST BE INSPECTED REGULARLY TO ENSURE AGAINST DAMAGE TO THE FOOTINGS. SIMILARLY, GUTTERS, DOWNPIPES AND COLLECTION POINTS CAN GET BLOCKED WITH LEAF AND OTHER DEBRIS, PREVENTING THE EFFECTIVE DRAINAGE OF STORMWATER AWAY FROM THE HOUSE. REGULAR INSPECTIONS AND MAINTENANCE SHOULD BE CARRIED OUT TO PREVENT BLOCKAGE.
- IT IS IMPORTANT FOR BUILDER TO MAKE THE HOMEOWNER AWARE OF THE MAINTENANCE ISSUES ASSOCIATED WITH ENSURING THE LONG-TERM PERFORMANCE OF THE FOOTING SYSTEM.

DRAINAGE REQUIREMENTS

GENERAL

THESE DRAINAGE AND OTHER REQUIREMENTS FORM PART OF THE FOOTING DESIGN.

DEFECTIVE SURFACE DRAINAGE IS A COMMON FACTOR IN REACTIVE CLAY FOUNDATION MOVEMENT PROBLEMS. THE EFFECTIVE DRAINAGE OF THE SITE IS A PREREQUISITE FOR SATISFACTORY PERFORMANCE OF A FOUNDATION SYSTEM.

THE BUILDER'S RESPONSIBILITY IS TO MAKE THE OWNER AWARE OF THE IMPORTANCE OF SURFACE DRAINAGE, EVEN IF IT IS NOT PART OF BUILDER'S CONTRACT TO CONSTRUCT SURFACE DRAINAGE.

LANDSCAPING AND OTHER FINISHING SITE WORKS MUST BE INCORPORATED WITH WELL DESIGNED SURFACE DRAINAGE TO MITIGATE ANY ADVERSE IMPACT ON A FOUNDATION SYSTEM.

DRAINAGE NOTES

- ALL SURFACE DRAINAGE WORKS SHALL BE INSTALLED IN ACCORDANCE WITH CLAUSE 5.6.3 DRAINAGE REQUIREMENTS OF AS 2871-2011, WHEREIN FOR BUILDINGS ON MODERATELY, HIGH AND REACTIVE SITES
- SURFACE DRAINAGE SHALL BE CONTROLLED THROUGHOUT CONSTRUCTION AND BE COMPLETED BY THE FINISH OF CONSTRUCTION
- THE BASES OF TRENCHES SHALL SLOPE AWAY FROM THE BUILDING
- WHERE PIPES PASS UNDER THE FOOTING SYSTEM, CLAY PLUGS ARE TO BE ADOPTED TO PREVENT THE INGRESS OF WATER
- FOR BUILDINGS ON HIGHLY REACTIVE SITES, DRAINER SHALL PROVIDE DRAINAGE ARTICULATION TO ALL STORMWATER, SANITARY PLUMBING DRAINS AND DISCHARGE PIPES IN ACCORDANCE WITH CLAUSE 5.6.4 PLUMBING REQUIREMENTS, WHEREIN FLEXIBLE JOINTS IMMEDIATELY OUTSIDE BUILDING AND COMMENCING WITHIN 1m OF THE BUILDING PERIMETER ARE REQUIRED TO ACCOMMODATE THE REQUIRED DIFFERENTIAL MOVEMENT BASED ON THE SOIL CLASSIFICATION. REFER TO TABLE BELOW FOR MIN. REQUIREMENTS FOR EXPANSION AND ALLOWABLE FITTINGS
- FLEXIBLE JOINTS ARE REQUIRED AT ENTRY & EXIT OF SLAB/FOOTINGS. SURFACE WATER MUST BE DIVERTED AWAY FROM THE DWELLING AND GRADED AWAY FROM ALL FOUNDATIONS TO GIVE A SLOPE OF NOT LESS THAN 50mm OVER THE FIRST 1000mm FROM THE DWELLING
- SUBSURFACE DRAINS TO REMOVE GROUND WATER SHALL BE DETAILED BY THE DESIGN ENGINEER. FURTHERMORE, DAMP-PROOF MEMBRANE IN ACCORDANCE WITH CLAUSE 5.3.3 OF AS 2870 SHALL BE INSTALLED FOR GROUNDWATER DRAINAGE ON AGGRESSIVE SOILS

LANDSCAPING

- THE WORKS ON GARDENS SHALL NOT IMPACT ON DRAINAGE REQUIREMENTS, SUBFLOOR VENTILATION AND WEEPHOLE DRAINAGE SYSTEMS. GARDEN BEDS ADJACENT TO THE BUILDING SHALL BE AVOIDED. CARE SHALL BE TAKEN TO AVOID OVERWATERING OF GARDENS CLOSE TO THE BUILDING FOOTINGS. (AS 2870 Cl. B2.3(b))
- PLANTING OF TREES SHALL BE AVOIDED NEAR THE FOUNDATION OF A BUILDING OR NEIGHBOURING BUILDING AS THEY CAN CAUSE DAMAGE DUE TO DRYING OF THE CLAY AT SUBSTANTIAL DISTANCES. TO REDUCE THE POSSIBILITY OF DAMAGE TREES SHOULD BE RESTRICTED TO A DISTANCE FROM THE HOUSE AS FOLLOWS:
 - 1 1/2 x MATURE TREE HEIGHT FOR CLASS E SITES
 - 1 1/2 x MATURE TREE HEIGHT FOR CLASS H1 AND CLASS H2 SITES
 - 1 1/2 x MATURE TREE HEIGHT FOR CLASS M SITES
- WHERE ROWS OR GROUPS OF TREES ARE INVOLVED, THE DISTANCE FROM THE BUILDING SHOULD BE INCREASED. REMOVAL OF TREES FROM THE SITE CAN ALSO CAUSE SIMILAR PROBLEMS (AS 2870 82.3 (c))

MINIMUM REQUIREMENTS FOR SEWER RETICULATION

SITE CLASS	SEWER EXIT POINTS		MIN. EXPANSION JOINT CAPACITY	ALLOWABLE ROTATION	LAGGING
	SWIVEL	EXPANDER			
M	0	0	-	-	MIN. 20
H1	1	1	60MM	15°	MIN. 40
H2/H2-D	2	1	90MM	15°	MIN. 40
E	2	1	120MM	15°	MIN. 40
P	2	1	90MM (UNO)	15°	MIN. 40

SITE DRAINAGE REQUIREMENTS

CONSTRUCTION STAGE

THE GEOTECHNICAL REPORT HAS RECOMMENDED THE USE OF A CERTAIN FOOTING THAT IS APPROPRIATE FOR THIS SITE. WHILE MAKING THIS RECOMMENDATION IT HAS BEEN ASSUMED THAT CERTAIN SITE DRAINAGE REQUIREMENTS AS PER AS2870-2001 HAS BEEN MET.

DURING THE CONSTRUCTION OF THE FOOTING THE FOLLOWING SITE DRAINAGE REQUIREMENTS ARE LISTED AS BEING PART OF THE FINAL FOOTING DESIGN BY THE DESIGN ENGINEER.

- MUST PREVENT WATER POOLING AGAINST OR NEAR THE FOOTING
- THE GROUND IN THE IMMEDIATE VICINITY OF THE PERIMETER FOOTING SHALL BE GRADED TO A FALL OF 50mm MIN. AWAY FROM THE FOOTING OVER A DISTANCE OF 1000mm (1.20) AND SHAPED TO PREVENT POOLING OF WATER (THIS INCLUDES THE GROUND UPHILL FROM THE FOOTING ON A CUT/FILL SITE) - WHERE FILLING IS PLACED ADJACENT TO THE BUILDING THE FILLING SHALL BE COMPACTED AND GRADED TO ENSURE DRAINAGE AWAY FROM FOOTINGS OR
- ALL COLLECTED STORMWATER MUST BE DISCHARGED TO A LEGAL POINT OF DISCHARGE
- SURFACE DRAINAGE OF THE SITE SHALL BE CONTROLLED FROM THE START OF THE SITE PREPARATION AND CONSTRUCTION. SURFACE DRAINAGE INCLUDES SURFACE WATER RUN-OFF AND BUILDING WATER (ROOF/FLOOR/CONCRETE) RUN-OFF
- ALL WATER RUN-OFF SHALL BE CONTROLLED AT ALL TIMES
- USE TEMPORARY DOWNPIPES TO COLLECT WATER FROM A ROOFED BUILDING FRAME
- WHEN SILT PITS ARE USED TO GATHER SURFACE WATER FROM AREAS ADJACENT TO THE FOOTINGS THESE SILT PITS ARE TO BE AT LEAST 1000mm AWAY FROM THE FOOTING AND CONNECTED TO THE STORMWATER SYSTEM WITH A SOLID PIPE
- STORMWATER DRAINS SHALL BE AT LEAST 90mm AND HAVE A MINIMUM FALL OF 1:100 AND 100mm COVER UNDER THE SOIL AND OR PAVED AREAS
- INSPECTION OPENINGS SHOULD BE PROVIDED AT EACH PIPE CONNECTION POINT AND AT A NOMINAL SPACING OF 25m
- AVOID UNDERMINING THE FOOTING WITH ANY TRENCHES OR PIPE OR PITS UNLESS THE FOOTING HAS BEEN DESIGNED TO ALLOW FOR SUCH SITUATION. SUB-SURFACE DRAINAGE IS REQUIRED TO REMOVE ANY UNWANTED GROUND WATER BY MEANS OF 50mm SLOTTED PIPE IN A 300mm WIDE TRENCH (MIN FALL OF 1:100). BASE OF THE TRENCH IS FILLED WITH 10mm CRUSHED ROCK OR SIMILAR COVERING THE SLOTTED PIPE
- AG DRAINS MUST NOT BE INSTALLED WITHIN 1500mm FROM ANY FOOTING
- AG DRAINS MUST BE INSTALLED AT THE BASE OF ALL SITE CUTS THAT EXCEED 400mm IN HEIGHT. ALONG THE HIGH SIDE OF A SLOPING SITE AND POSSIBLY ALONG THE LOW SIDE OF A SLOPING SITE ALONG THE BOUNDARY, TO BE CONNECTED TO

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SLAB & BEAM CONSTRUCTION REQUIREMENTS

THESE NOTES TO BE FOLLOWED UNLESS NOTED OTHERWISE BY THE ENGINEER

1. THE SLAB SUBGRADE SHALL BE SCALPED CLEAR OF GRASS, VEGETATION AND ORGANIC MATIER AND BE PREPARED IN ACCORDA NCE WITH SECTION 6 - AS 2870 - 2011.
2. EXCAVATIONS ARE TO BE EXAMINED CAREFULLY AND ANY UNUSUAL FEATURES REPORTED TO THE GEOTECHNICAL ENGINEER. CARE MUST BE TAKEN TO ENSURE THAT ALL FOOTINGS ARE FOUNDED ON & IN MATERIAL SPECIFIED IN THE SOIL REPORT.
3. THE INTERIOR SLAB PANELS SHALL BE FOUNDED IN SOIL IN ACCORDANCE WITH GEOTECHNICAL REPORT UNLES NOTE OTHERWISE.
4. THE VAPOUR BARRIER SHALL BE WELL LAPPED (MINIMUM 300MM) AND TAPED AT JOINTS. CARE MUST BE TAK EN DURING CONSTRUCTION TO PREVENT PUNCTURE OF MEMBRANE.
5. THE SITE IS TO BE GRADED AWAY FROM THE SLAB SO THAT WATER WILL NOT POND AGAINST THE SLAB.
6. ALL DRAINAGE AND SEWERAGE PIPES ADJACE NTO THE BUILDING ARE TO BE SET BACK AT A DEPTH SUCH THAT IS BEYOND THE INFLUENCE OF THE FOOTINGS. ANGLE OF REPOSE = 45°. PROVIDE LAGGING WHERE SUCH PIPES PASS THROUGH SLAB BEAMS TO ALLOW FOR DIFFERENTIAL MOVEMENT.
7. ALL CONCRETE TO BE PLACED IN POSITION IS TO BE ADEQUATELY MECHANICALLY VIBRATED.
8. THE OWNER AND BUILDER ARE TO REFER TO RELEVANT APPENDICES OF SOIL REPORT, AS2870 ON FOUNDATION MAINTENANCE AND TO C.S.I.R.O.'s PUBLICATION SHEET No. 10-91 "GUIDE TO HOME OWNERS MAINTENANCE AND FOOTING PERFORMANCE" .
9. SITE DRAINAGE SHALL BE IN ACCORDA NCE WITH PLUMBING REQUIREMENTS CLAUSE 5.6.4 OF AS2870 - 2011 & DRAINAGE REQUIREMENTS CLAUSE 5.6.3 OF AS2870 - 2011.
10. WHERE EXISTING OR PROPOSED TREES ARE WITHIN THE ZONE OF INFLUENCE OF ANY FOOTING (I.e. 1.0XMATURE TREE HEIGHT), THEN THE FOOTINGS ARE TO BE DEEPENED AND FOUNDED DIRECTLY ONTO WEATHRED BEDROCK OR VERY STIFF CLAY IF PRESENT OR 2000MM DEEP; WHICHEVER IS SHALLOWER. ALTRNATIVELY THE TREES COULD BE REMOVED (WITH RELEVANT PERMITS OBTAINED) OR TREE ROOT-BARRIERS PLACED.
11. PROVIDE ADDITIONAL CONTROL JOINTS IN MASONARY WALLS ABOVE JUNCTIONS BETWEEN BEAMS FOUNDED ON DIFFERENT SOIL TYPES.

SITE DRAINAGE & PLUMBING REQUIREMENTS

THE REQUIREMENTS STATED IN THE LATEST VERSION OF AS 2870 MUST BE STRICTLY ADHERED TO ALL THE TIME BY THE BUILDER.

PARTICULAR ATTENTION MUST BE PAID TO THE CLAUSED 5.6.3 & 5.6.4 OF AS 2870 REGARDING SITE DRAINAGE AND PLUMBING CONSTRUCTION.

IF ANY OF THE REQUIREMENTS CANNOT BE ACCOMPLISHED, THE BUILDER MUST IMMEDIATELY INFORM THE ENGINEER FOR INSTRUCTIONS.

STEEL & TIMBER BEAMS/LINTELS

- Steel/Timber beams/Lintels to be supported a minimum of 90/100mm UNO.
- Steel beams/Lintels to be protected from corrosion as per Note S9 on sheet 2/6 of this set of plans.

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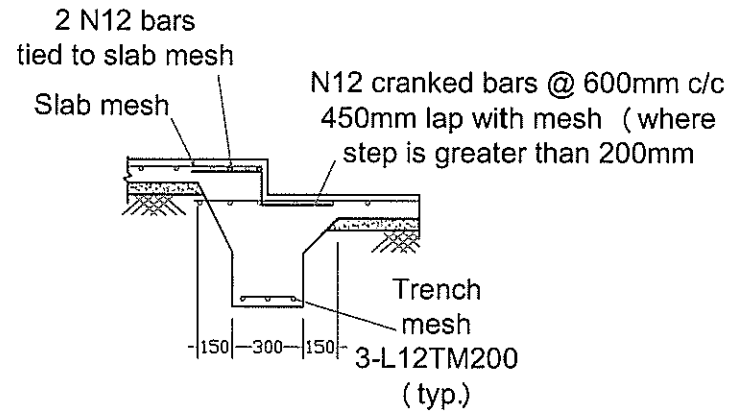
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S/S 3 BED 2 UNITS DEV.
PROJECT ADDRESS:
Lot 222, Willandra Blvd,
Melton West

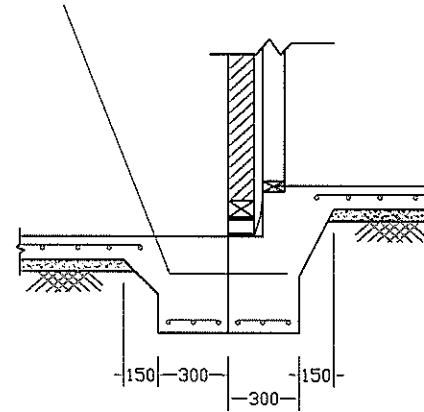
SHEET NO: 4/8

STIFFENED RAFT SLAB ON GROUND - TYPICAL DETAILS

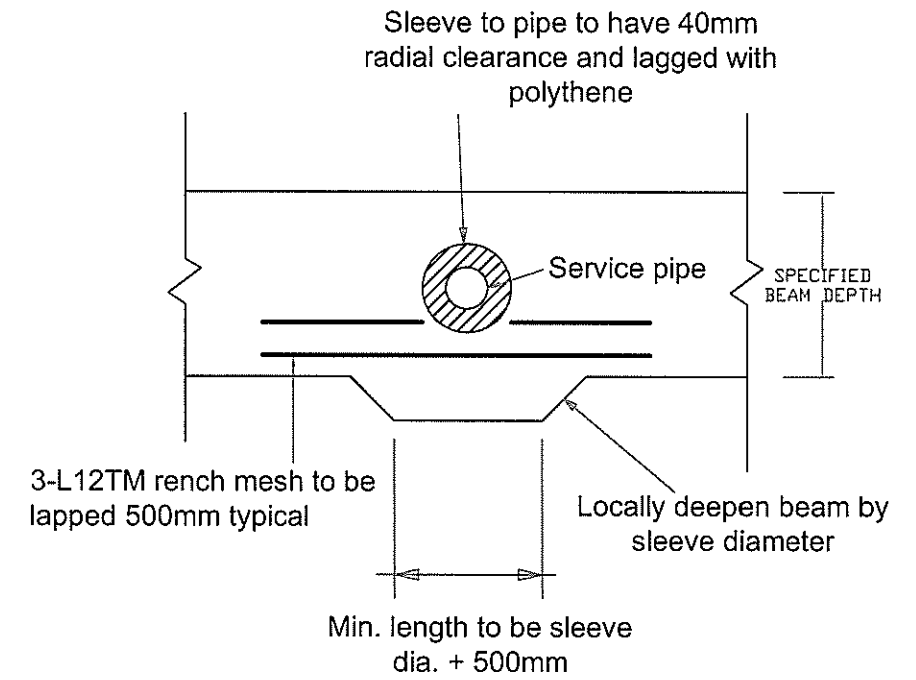


STEP-DOWN

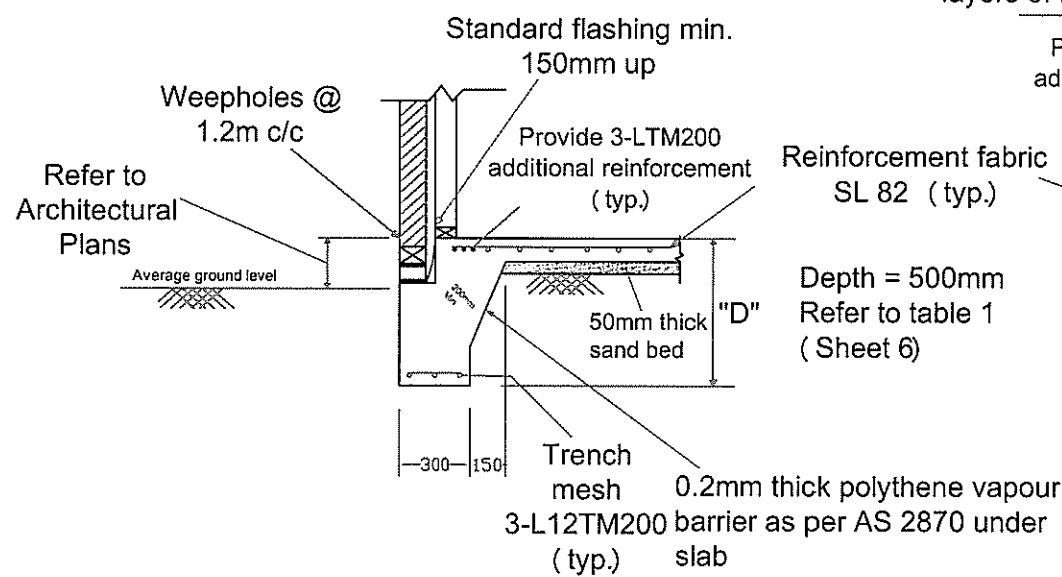
N16 dowell bars @ 400 c/c - 500mm long. One end of bar must be made moveable by wrapping with 'Densotape'.



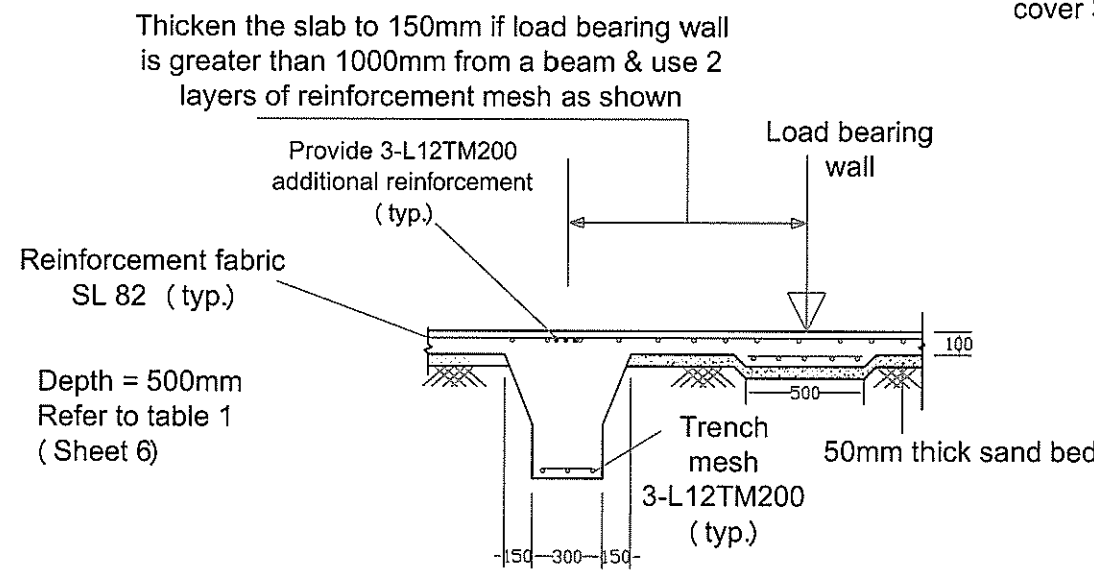
CONSTRUCTION JOINT



SERVICE PENETRATION IN BEAMS



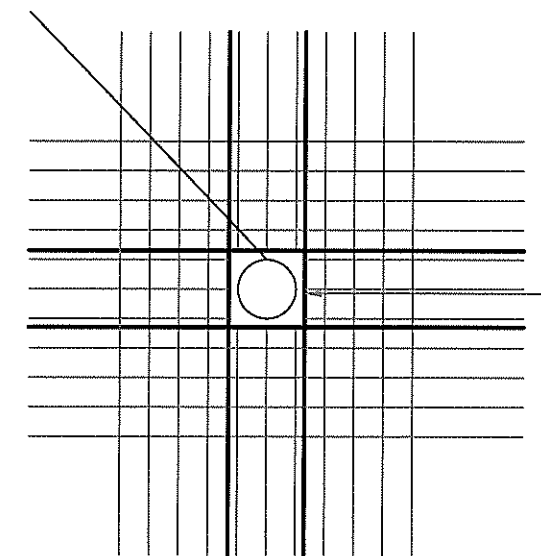
EDGE BEAM



STIFFENING BEAM

Cut mesh wires to insert service pipes with minimum cover 30mm around

Provide additional 4-N12 bars 1200 min. length tied to mesh where service pipe inserts are made for plumbing



SERVICE PENETRATION IN SLABS

SCALE: NOT TO SCALE

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Phone: 03 93913488

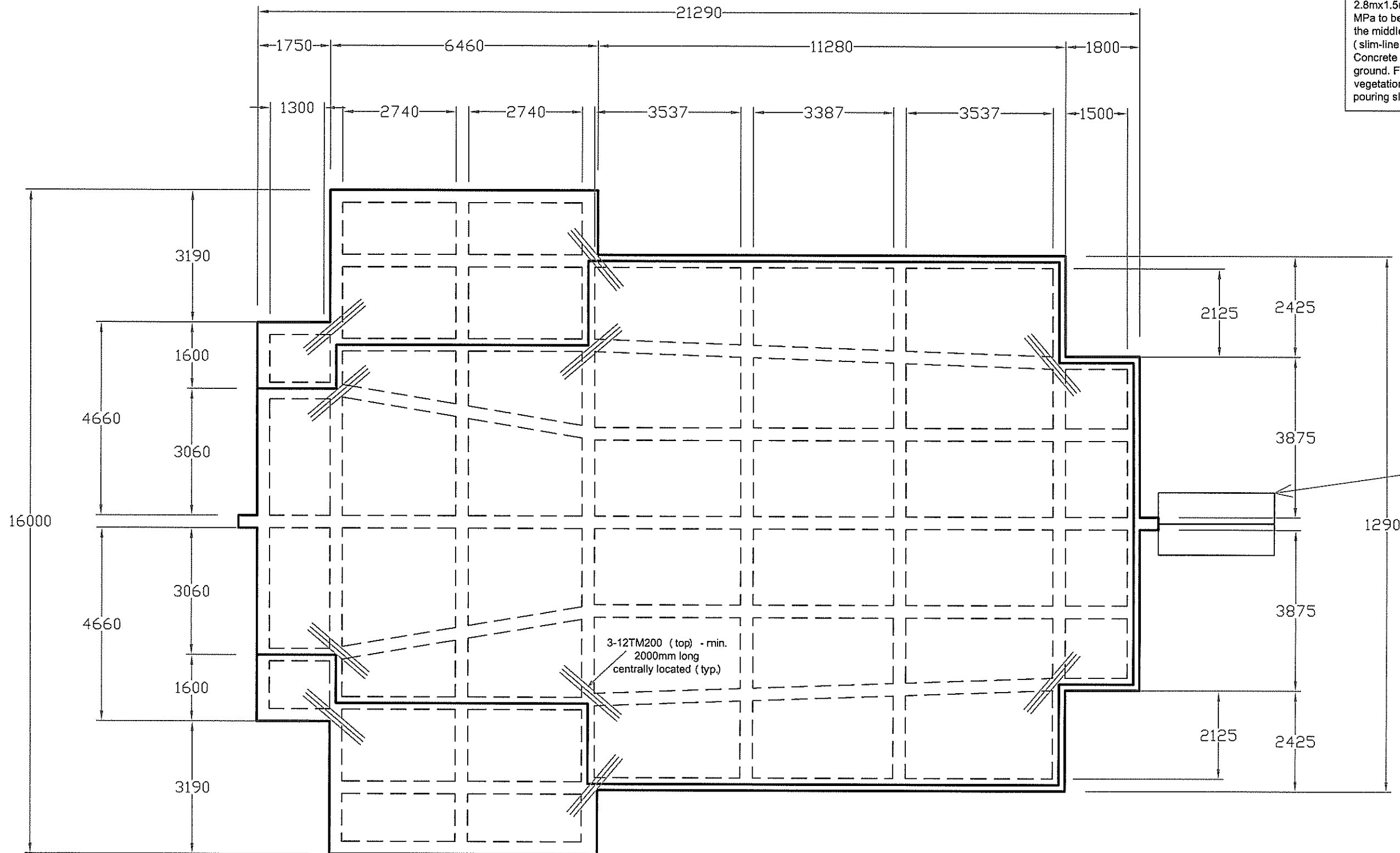
WB CIVIL STRUCTURAL ENGINEERS & BUILDERS
ABN: 84119322436
OFFICE:
NO: 9, NUMERING COURT, MELTON, VIC 3337
Mobile: 0401023328 / Ph: 03 9746 0089
Email: wbcson@gmail.com

Registered Engineer
Priyan Wijeyeratne
EC 19060

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SHEET NO: 5/8

STIFFENED RAFT SLAB ON GROUND



2.8mx1.5mx150mm thick concrete slab grade 20 MPa to be poured with SL82 reinforcement mesh in the middle to place two 3000 liter rain water tanks (slim-line version) side by side as shown. Concrete slab to be founded at 125 mm below ground. Founding ground to be stripped of any vegetation, leveled and compacted well before pouring slab.

Notes 2 & 3:
If the builder to encounters Sand, Gravel or chalk during excavations, such excavations shall be deepened until a clean Clay base is found and verified by the Engineer. Also, if the total depth of rolled material exceeds 600mm (sandy soils) or 300mm (clay soils), the slab to be thickened to 120mm and use additional S82(T) & SL72(B) reinforcement mesh (cover 30mm).

SOIL REPORT BY HOME & INDUSTRIAL SOIL TEST PTY LTD
Soil Classification - H2 (AS 2870 - 2011) - Job No: 153589
Slab Design: Stiffened Raft Slab
Slab Thickness to be 100MM
Beams Width to be 300MM
Beams Depths to be 500MM
Builder to follow site drainage requirements as recommended on these plans and soil report

Note 1:
Founding Depths from ave. ground level:
Beams - 300 mm

RAFT SLAB & BEAM REINFORCEMENT DETAIL - TABLE 1	
"D"	Trench Reinforcement
500mm - Beams	3-L12TM200 (T&B)
Minimum grade of concrete used in slab to be 20MPa	
Use Mesh SL82 for SLAB Reinforcement (Min. Lap 300mm)	
Minimum Cover to Reinforcement 30mm	
Use 0.2mm Vapour Barrier Under SLAB	
Approved Fill Material Under SLAB Laid and Compacted in Max. 150mm Layers	

SCALE: 1 : 100

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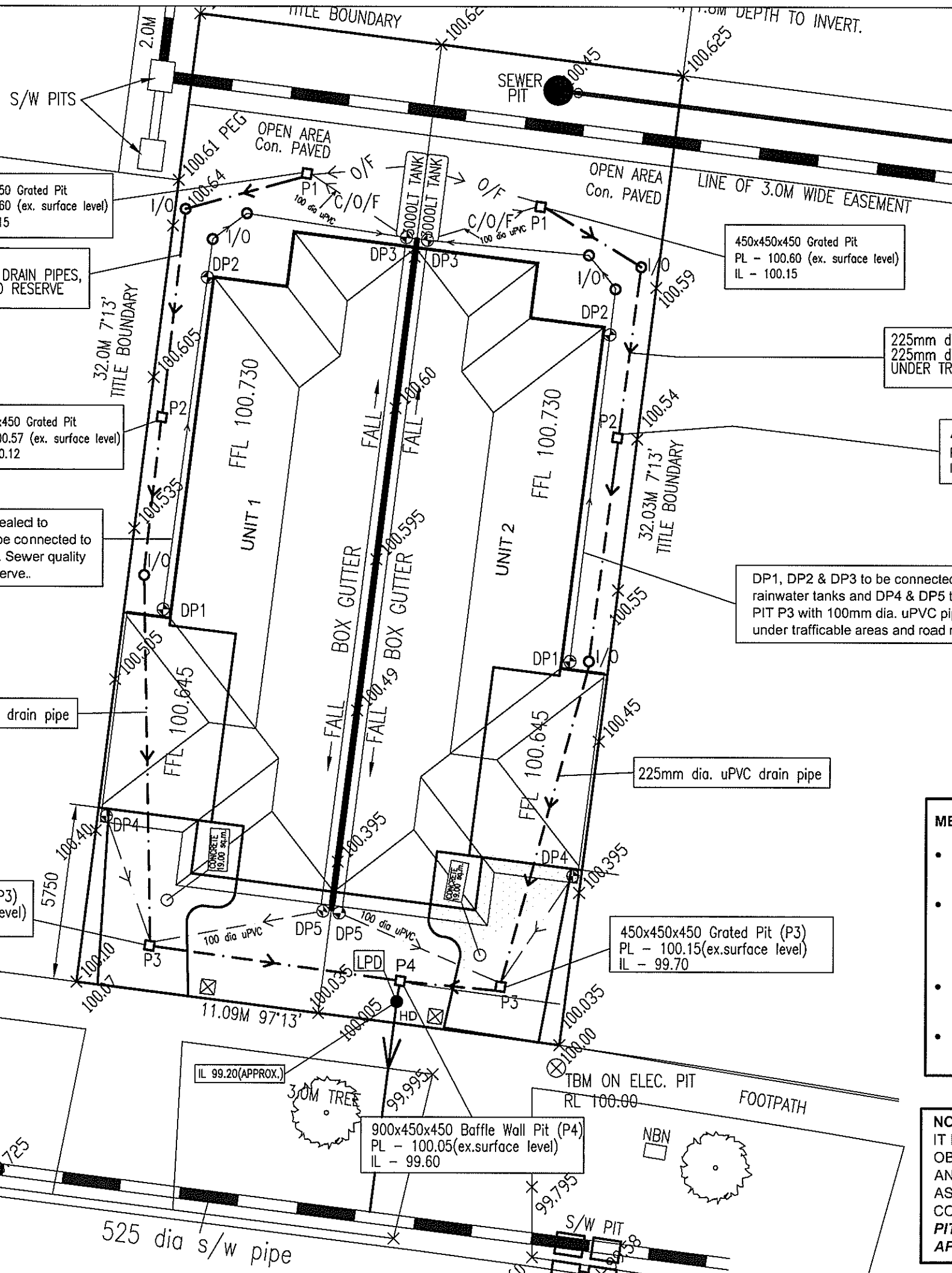
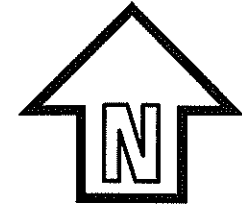
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SHEET NO: 6/8

OSD PLAN



MELTON CITY COUNCIL SPECIAL REQUIREMENT:
 Rain Water Tanks and Baffle Wall Pit must be installed as per the specifications in the drawing sheet 7a/8 (and in compliance with Melton City Council standards)

BUILDING/ALLOTMENT AREAS:
 TOTAL ALLOTMENT AREA- 512 sqm
 TOTAL UNIT 1 BUILDING FOOTPRINT - 139.91 M2
 TOTAL UNIT 2 BUILDING FOOTPRINT - 139.91 M2
 TOTAL BUILDING FOOTPRINT- 279.82 M2
SITE COVERAGE- 54.65 %
PERMEABILITY ASSESSMENT:
 COMBINED BUILDING AREA FOOTPRINT: 279.82 M2
 CONCRETE AREAS: 63.40 M2
 IMPERMEABLE SURFACES = 343.22 M2 / 512 M2 = 67.03 %
PERMEABLE SURFACES = 32.97 % OF SITE

DP INDICATES PVC DOWNPIPE (100mm dia.) DOWNPIPES FULLY SEALED TO RAINWATER TANKS.
I/O Inspection Opening.
450mmx450mmx450mm Grated Pit Use heavy duty on driveways Plastic/HDPE similar or Responsible Authority Standard
O/F Over-flow from tanks.
C/O/F Controlled over-flow from tanks. Through 50 mm Orifice at P4.
 DPs 1,2&3 to be discharged into tanks for re-use. 1/3 of tanks (2X1000 litres) to be made available always empty by fixing an orifice not greater than 50mm of diameter for over flow.

NOTE:
 READ IN CONJUNCTION WITH SHEET NOS: 7a/8 & 8/8

3000 LITRE RAINWATER TANKS ADOPTED AS PART OF DETENTION SYSTEM. RAINWATER TANKS TO DEDICATE 1000 LITRES AS AIRSPACE TO EACH UNIT VIA A CONTROLLED OUTLET NO GREATER THAN 25MM IN DIAMETER. MINIMUM 80% OF ROOF AREA TO BE CONNECTED TO RAINWATER TANKS VIA CHARGED PIPES OF 100mm dia.

SCALE: 1 : 150

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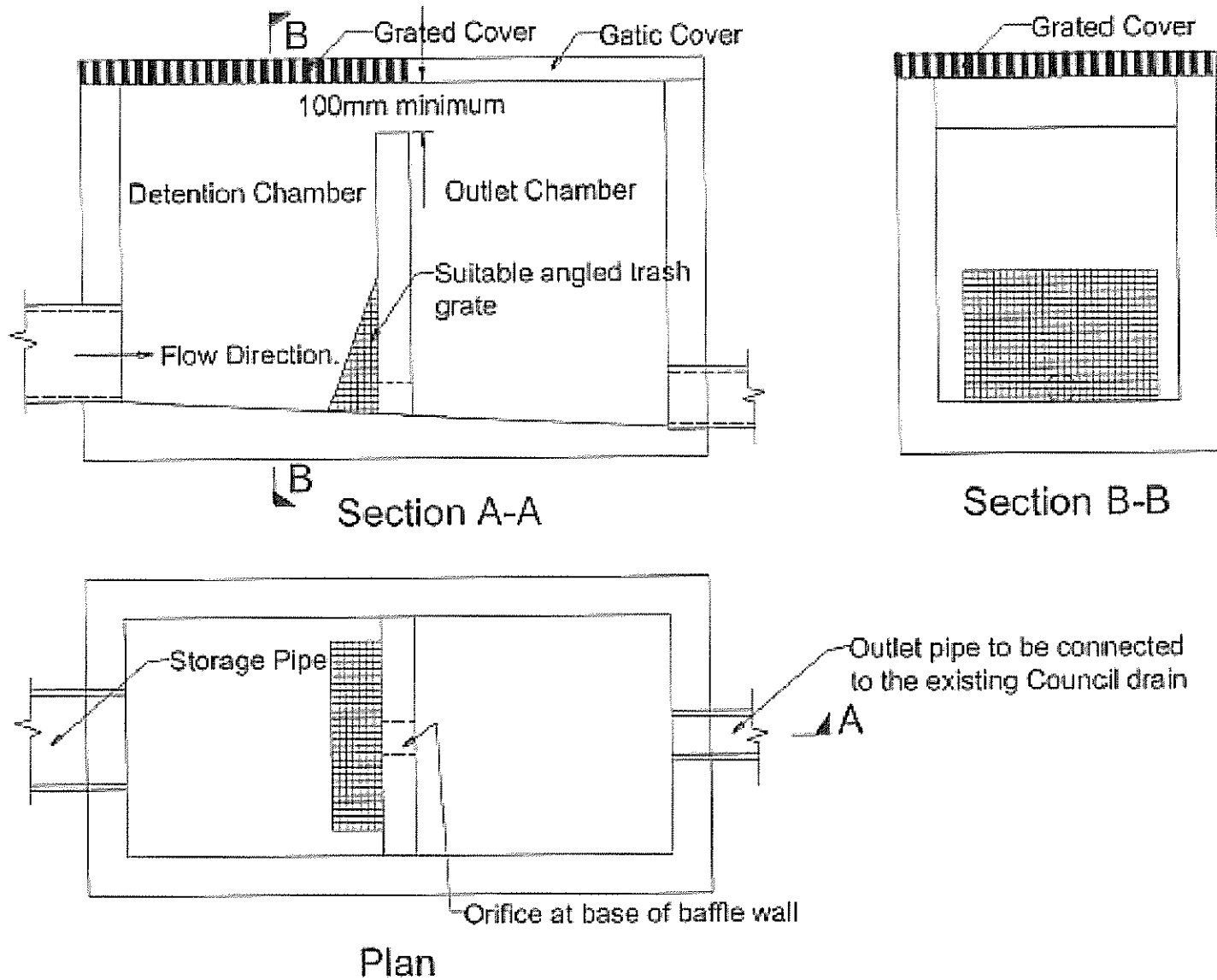
SHEET NO: 7/8

MELTON CITY COUNCIL REQUIREMENTS:

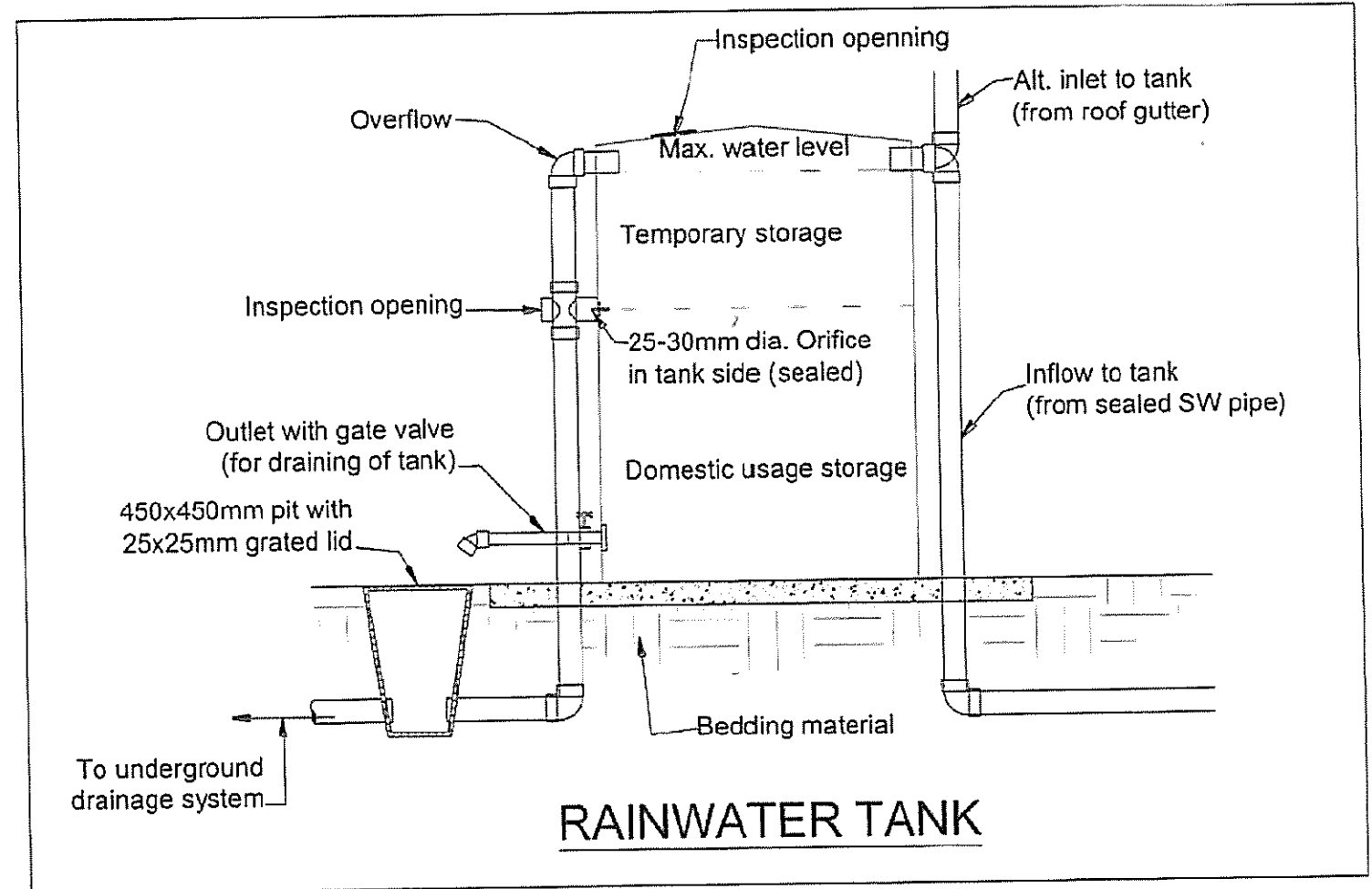
- All works within Council easement, and drainage pipe connection into Council drains, to be supervised by Council's Civil Contracts Unit.
- Relevant permits, but not limited to a vehicle crossing permit, built over easement permit and/or road-opening permit shall be obtained from the Responsible Authority prior to commencing and work, where necessary.
- All structures within drainage easements and Council reserves shall be constructed according to Council's standard drawings.
- All other relevant technical requirements as applicable.

NOTE:
 IT IS PLUMBER'S/BUILDER'S RESPONSIBILITY TO OBTAIN CORRECT LEVEL/LOCATION FOR LPD AND ACHIEVE A SUITABLE SHALLOW (AS FLAT AS POSSIBLE) GRADIENT AND INSTALL FLOW CONTROL DEVICES FOR LAST PITS NO P4.
PIT AND INVERT LEVELS PROVIDED APPROXIMATE ONLY.

RAINWATER TANK, ORIFICE BAFFLE WALL PIT MELTON CC STANDARD & PIT SCHEDULE



ORIFICE PIT ARRANGEMENT WITH BAFFLE WALL



RAINWATER TANK

NOTE:
READ IN CONJUNCTION WITH SHEET
NOS: 7/8 & 8/8

PIT SCHEDULE FOR ON-SITE DETENTION SYSTEM			
PIT NOS (UNIT 1)	TOP LEVEL	INVERT LEVEL	LPD INVERT LEVEL
P1	100.60	100.15	
P2	100.57	100.12	
P3	100.10	99.65	
PIT NOS (UNIT 2)			
P1	100.60	100.15	
P2	100.54	100.10	
P3	100.15	99.70	
P4	100.050	99.60	
<i>Note: All pits to be 450mmx450mmx450mm, grated & uPVC or concrete. To be heavy duty under driveways. Grade, finished ground surface towards pits. P4 Baffle-Wall control pit to be size 900mmx450mmx450mm with Orifice 50mm and min. 300mm head, as per Melton CC Standards.</i>			99.20 approx.

REFER TO MELTON CC
STANDARDS FOR WATER
TANK & BAFFLE WALL PIT

SCALE: NOT TO SCALE

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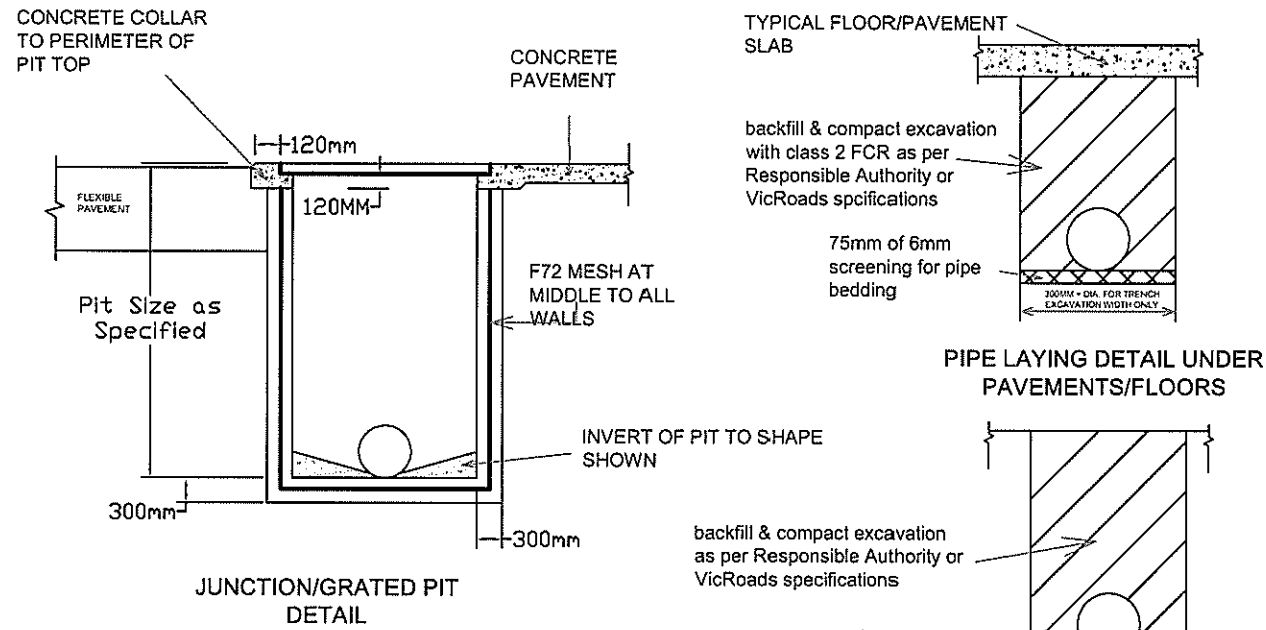
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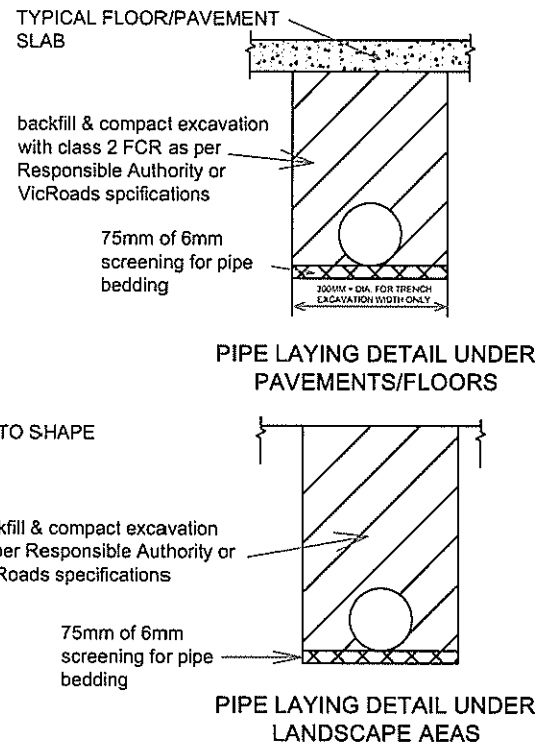
SHEET NO: 7a/8

OSD - APPURTENANCES MATERIAL & CONSTRUCTION - READ WITH SHEETS 7 /8 & 7a/8



NOTES:

1. No reinforcement is required if the pit is not deeper than 1m and not in vehicular path.
2. Provide step @300 c/c, if the depth of pit is greater than 1m.
3. Equivalent plastic/HDPE pits acceptable.



DETENTION SYSTEM GENERAL NOTES:

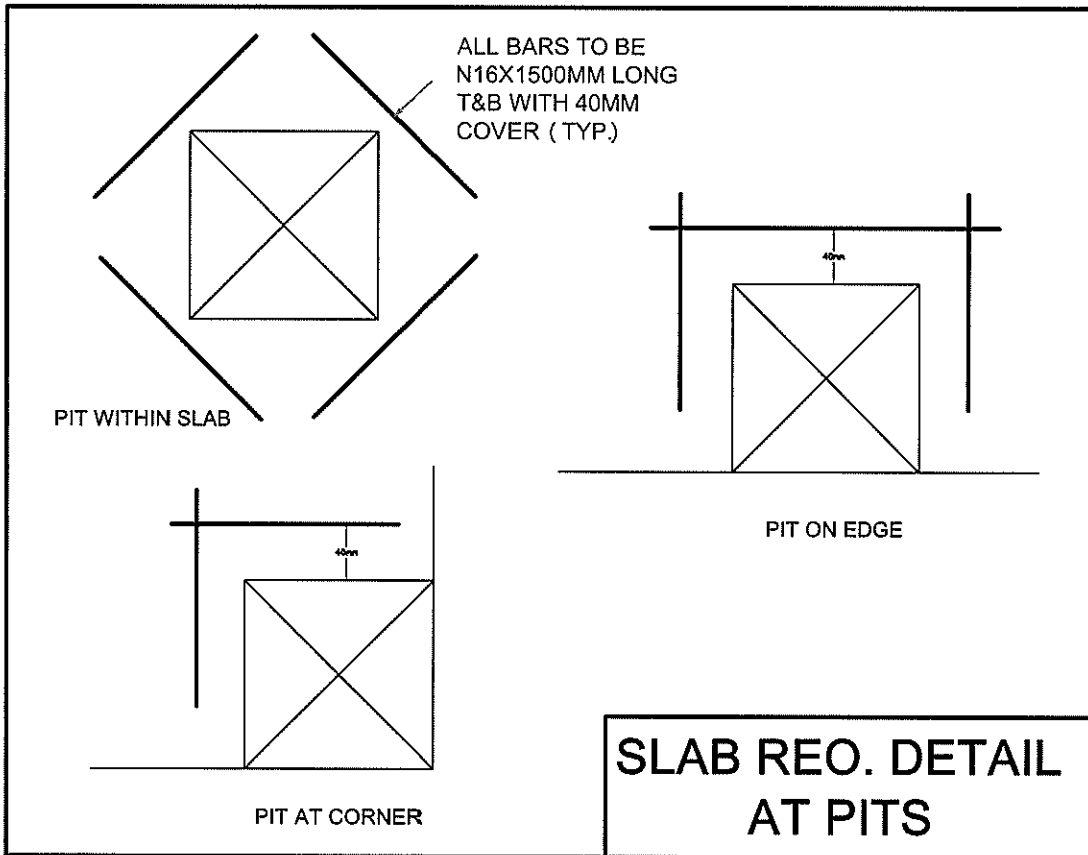
NOTE: RESPONSIBLE AUTHORITY STANDARDS TO TAKE PRECEDENCE

READ IN CONJUNCTION WITH NOTES ON SHEET NOS: 7/8 & 7a/8

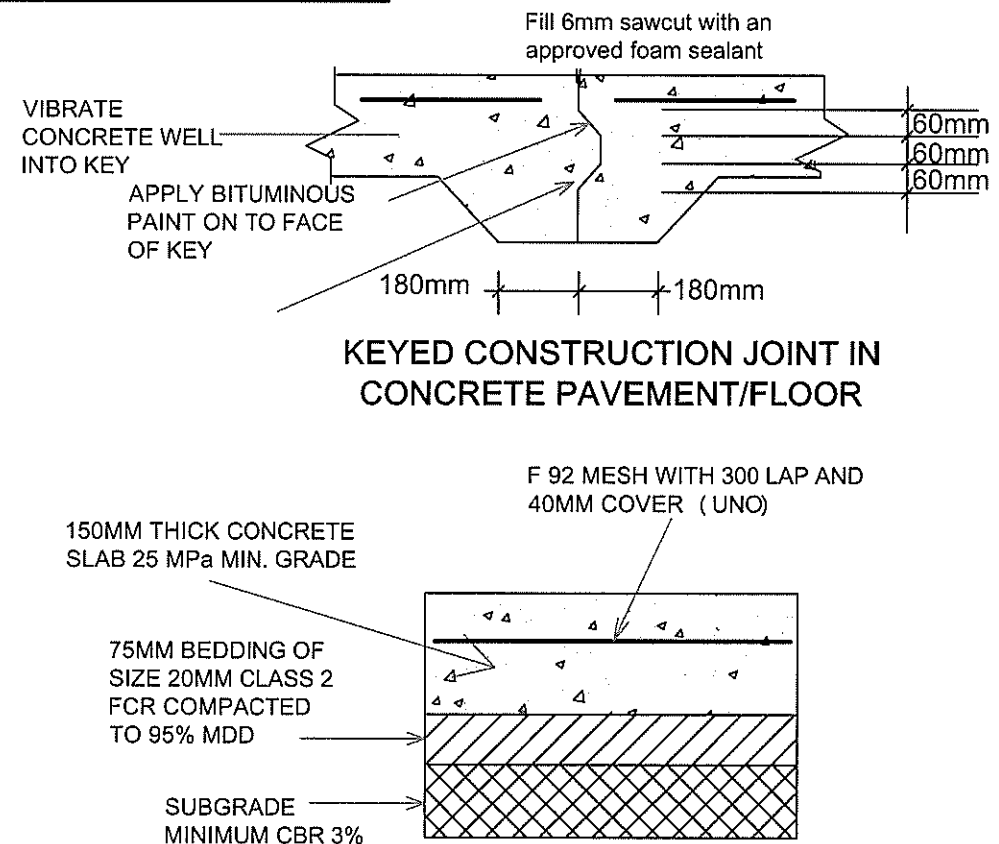
1. TO BE READ IN CONJUNCTION WITH ARCHITECTURAL NOTES.
2. DO NOT SCALE ENGINEERING DRAWINGS.
3. ALL DIMENSIONS ARE IN MM UNO.
4. ALL LEVELS ARE IN mm
5. ALL DRAINAGE AND PAVEMENT WORKS MUST CONFORM TO RESPONSIBLE AUTHORITY SPECIFICATIONS AND INSTRUCTIONS.
6. BUILDER/CONTRACTOR TO VERIFY ALL INFORMATION/DETAILS BEFORE CONSTRUCTION COMMENCES AND NOTIFY THE ENGINEER OF ALL DISCREPANCIES AND REQUEST TO-DATE OR CORRECTED INFORMATION/DETAIL.3
7. ALL WORKS DAMAGED DUE TO WORKS MUST BE REINSTATED BY THE CONTRACTOR TO THE SATISFACTION OF RESPONSIBLE AUTHORITY.
8. DOWN-PIPE LOCATIONS ARE SUBJECT TO ON-SITE VERIFICATION.
9. ALL uPVC PIPES UNDER PAVEMENT AND ROAD-RESERVE TO BE OF SEWER QUALITY AND FILLED AND COMPACTED WITH CLASS 2 FCR.
10. ALL PITS AND ACCESSORIES TO BE SUPPLIED & CONSTRUCTED AS PER RESPONSIBLE AUTHORITY STANDARDS.
11. ALL SOFT-SPOTS TO BE EXCAVATED AND REMOVED, FILLED AND COMPACTED TO 90% MDD WITH CLASS 3 FCR.
12. PIT WALLS AND BASE TO BE REINFORCED CONCRETE WITH MINIMUM 150MM THICKNESS.
13. STRIP EXISTING SUBGRADE TO A DEPTH REQUIRED TO REMOVE ALL VEGETATION AND ROOTS AND FILL AND COMPACT AT LEAST TO 95% MDD WITH AND APPROVED CLEAN FILL.
14. GRATES TO GRATED PITS TO BE BYCLE-FRIENDLY AND REMOVABLE WITH CAST-IN FRAMES.
15. BUTT JOINTS ARE NOT PERMITTED FOR PIPES USED FOR STORAGE PURPOSES.
16. CONTRACTOR/BUILDER TO VERIFY ALIGNMENT AND DEPTHS OF ALL EXISTING SERVICES BEFORE COMMENCING WORKS AND NOTIFY THE ENGINEER OF ALL THE CONFLICTS.

SAWCUTTING NOTES:

1. SLAB MUST BE SAWCUT AS SOON AS PRACTICABLE AFTER FINISHING OF LAB WITHOUT CAUSING DAMAGE TO SAWCUT EDGES, USUALLY WITHIN 12-24 HOURS AFTER FINISHING.
2. SLABS MUST NOT BE POURED IF SITE TEMPERATURE EXCEEDS 32 DEGREES CELSIUS.
3. ANY SLAB BAY IN WHICH CRACKS OCCUR DUE TO LATE SAW CUTTING MUST BE REPLACED BY BUILDER/CONTRACTOR.



PAVEMENT DETAILS



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SHEET NO: 8/8