

BASIX NOTES FOR LOT A:

Windows, glazed doors & shading devices to be installed in accordance with the table below.
Relevant overshadowing specifications must be satisfied for each window & glazed door.
The following information requirement must be also satisfied to each window and glazed door.
Each window or glazed door with standard aluminium or timber frames and single clear or tone glass may either match the description, or, have a U-value and a solar gain Coefficient (SHGC) no greater than that listed below. Total system U-value and SHGCs must be calculated in accordance with National Fenestration Council (NFR) conditions.
The description is provided for information only. Alternative systems with complying U-value and SHGC may be substituted.

WINDOW GLASS FRAME & GLASS TYPE

No	AREA	
(Orientation)	(sm)	
WG02 N	5.6	improved aluminium, single pyrolytic low-e (U-value: 4.48, SHGC: 0.46)
WG03 N	6.8	improved aluminium, single pyrolytic low-e (U-value: 4.48, SHGC: 0.46)

SHADING

NONE
NONE

OVERSHADOWING

NONE
NONE

LIGHTING

Install a minimum of 40% of new or altered light fixture are fitted with fluorescent, compact fluorescent, or light-emitted-diode (LED) lamps

Show on CC Plans

✓

Certifier Check

✓

FIXTURES

All showerheads to have a 3 star rating or flow rate no greater than 9 litres/minute.
All toilets to have a flushing system of 3 star rating or flow rate no greater than 4 litres/flush.
Kitchen & basin taps to have a 3 star rating or flow rate no greater than 9 litres/minute.

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✓

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✓

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✓

THERMAL COMFORT COMMITMENTS

The new construction (floors, walls & ceilings) to be in accordance with the the following specification:
except that a) additional insulation is not required where the area of new construction is less than 2msq, b) insulation specified is not required for parts of alter construction where insulation already exist.

CONSTRUCTION

Floor: concrete slab on ground
Flat ceiling, flat roof: framed

ADDITIONAL INSULATION REQ'D

NIL
ceiling: R2.50 (up), roof: foil/sarking

OTHER SPECIFICATION

medium (solar absorbance 0.475 - 0.70)

BASIX NOTES FOR LOT B:

Windows, glazed doors & shading devices to be installed in accordance with the table below.
Relevant overshadowing specifications must be satisfied for each window & glazed door.
The following information requirement must be also satisfied to each window and glazed door.
Each window or glazed door with standard aluminium or timber frames and single clear or tone glass may either match the description, or, have a U-value and a solar gain Coefficient (SHGC) no greater than that listed below. Total system U-value and SHGCs must be calculated in accordance with National Fenestration Council (NFR) conditions.
For projections, the leading edge of each eave, pergola, verandah, balcony or awning must be no more than 500mm above the head of the window or glazed door & no more than 2400mm above sill level.
Pergolas with polycarbonate roof sheeting must have shading coefficient < 0.35
Pergolas with fixed battens must have parallel to the window or glazed door above which they are situated, unless the pergola also shades a particular window. The spacing between battens must not be more than 50mm

WINDOW GLASS FRAME & GLASS TYPE

No	AREA	
(Orientation)	(sm)	
D101 S	5.6	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W101 S	7.2	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W102 S	5.6	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W103 S	1.2	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W104 N	0.5	standard aluminium, single clear, (or U-value: 7.63, SHGC: 0.75)
W105 N	7.2	standard aluminium, single clear, (or U-value: 5.7, SHGC: 0.47)

SHADING

eave/verandah/pergola/balcony > = 900mm
eave/verandah/pergola/balcony > = 900mm
eave/verandah/pergola/balcony > = 900mm
NONE
eave/verandah/pergola/balcony > = 450mm
eave/verandah/pergola/balcony > = 450mm

OVERSHADOWING

NONE
NONE
NONE
NONE
NONE
NONE

LIGHTING

Install a minimum of 40% of new or altered light fixture are fitted with fluorescent, compact fluorescent, or light-emitted-diode (LED) lamps

Show on CC Plans

✓

Certifier Check

✓

FIXTURES

All showerheads to have a 3 star rating or flow rate no greater than 9 litres/minute.
All toilets to have a flushing system of 3 star rating or flow rate no greater than 4 litres/flush.
Kitchen & basin taps to have a 3 star rating or flow rate no greater than 9 litres/minute.

✓

✓

✓

✓

✓

✓

THERMAL COMFORT COMMITMENTS

The new construction (floors, walls & ceilings) to be in accordance with the the following specification:
except that a) additional insulation is not required where the area of new construction is less than 2msq, b) insulation specified is not required for parts of alter construction where insulation already exist.

CONSTRUCTION

floor above existing dwelling or building
external wall: other/undecided
Flat ceiling, pitch roof

ADDITIONAL INSULATION REQ'D

NIL
R1.70 (including construction)
ceiling: R2.50 (up), roof: foil/sarking

OTHER SPECIFICATION

medium (solar absorbance 0.475 - 0.70)

NOTE:
THIS ARCHITECTURAL DOCUMENTATION SHOULD
BE READ IN CONJUNCTION WITH THE FIRE SAFETY
REPORT, BY BUILDING CODE OF AUSTRALIA
CONSULTANT, DATED 13.12.2008 - [REF 1620.1bt-10m]

COUNCIL COPY



These plans relate to Development

Consent No. 168/09

The plans are NOT for construction.

NOTE:
ALL DIMENSIONS TO BE CHECKED ON SITE.
WRITTEN DIMENSIONS ONLY TO BE USED.
REFER TO ALL DETAIL DWGS BY CONSULTANT
ENGINEERS BEFORE COMMENCING WORK.
REFER ANY DISCREPANCIES TO ARCHITECTS.

ISSUED FOR D.A. 25.05.2009

2058 DA11 A



THE SITE FOREMAN designers project managers
12 CARLTON CRESCENT, SUMMER HILL PH 1300 728 008 - FAX 1300 728 440

DEVELOPMENT APPLICATION DRAWINGS FOR PROPOSED
ALTERATIONS, ADDITIONS AND STRATA SUB-DIVISION AT
No 28 THE CRESCENT, MANLY LOT 7 & 8 D.P. 456039

PROPOSED AADDITION AND ALTERATION

28 THE CRESCENT, MANLY

CONCRETE

CONSTRUCTION NOTES

GENERAL

- G1 THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL DRAWING AND SPECIFICATIONS AND SHALL BE VERIFIED ON SITE BY THE BUILDER
- G2 THESE DRAWINGS SHALL NOT BE SCALED.DIMENSIONS SHALL BE VERIFIED ON SITE BY THE BUILDER PRIOR TO COMMENCING WORK.
- G3 FOR AL WATERPROOFING,FLASHING, DRAINAGE,STEPS NUMBER OF STAIR RISERS,LEVELS AND FALLS REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
- G4 SHOULD ANY OMISSIONS ON THESE DRAWINGS ARISE DURING CONSTRUCTION THEY SHALL BE REPORTED TO THE ARCHITECT AND THE ENGINEER FOR EVALUATION BEFORE RECOMMENCING WORK.
- G5 THE CONTRACTOR/BUILDER SHALL BE RESPONSIBLE FOR MAINTAINING THE STRUCTURE AND NEIGHBOURING STRUCTURES IN A SAFE AND STABLE CONDITION DURING CONSTRUCTION.
- G6 ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE SA CODES AND BY-LAWS AND ORDINANCE of the relevant Buildings Authority. All CODES SHALL BE IN CURRENT EDITION.
- G7 ANY CONFLICT BETWEEN THESE NOTES, THE SPECIFICATIONS OR THE DRAWINGS SHALL RESOLVED BY RAFIC RAHME & ASSOCIATES.
- G8 SUBSTITUTIONS ARE TO BE MADE ONLY WITH APPROVAL OF RAFIC RAHME & ASSOCIATES.
- G9 A MINIMUMOF 24 HOURS NOTICE SHALL BE GIVEN TO RAFIC RAHME & ASSOCIATES FOR ALL INSPECTIONS.

- C1 ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH AS3600

C2 CONCRETE QUALITY:

ELEMENT	SLUMP (mm)	MAX.SIZE AGG.(mm)	CEMENT TYPE	AS3600 F'c (Mpa)	ADMIXTURE
FOOTINGS	80	20	A	25(UND)	NIL
SLABS ON GROUND	80	20	A	25	NIL
SUSPENDED SLABS	80	20	A	32(UND)	NIL
COLUMNS	80	20	A	32(UND)	NIL
PIERS.	80	20	A	25	NIL

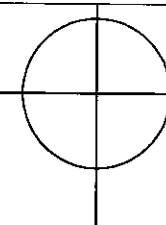
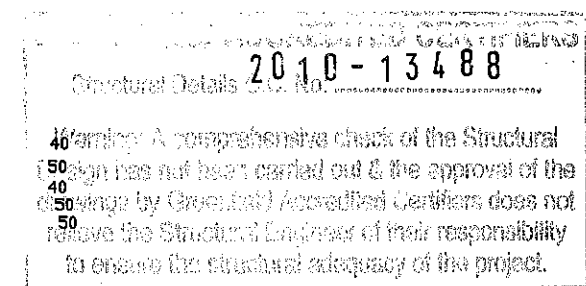
- C3 CLEAR CONCRETE COVER TO REINFORCEMENT SHALL BE AS FOLLOWS:

ELEMENT	CAST AGAINST FORMS		IN CONTACT WITH GROUND OR WATER	
	INTERIOR ENVIRONMENTS	EXTERIOR MEMBRANE ENVIRONMENTS	PROTECTED	UNPROTECTED

COLUMNS/PEDESTALS	40	55	
BEAMS*	40	55	40
FOOTINGS.	50	50	50
SLABS	20	40	30
WALLS.	40	40	50
PIERS.	40	40	50

* COVER TO VERTICAL REIF.IN COLUMN, COVER TO LONGITUDINALREINF.IN BEAMS.

- C4 SIZES OF CONCRETE DO NOT INCLUDE THICKNESS OF APPLIED FINSHES. BEAM DEPTHS ARE WRITTEN FIRST AND INCLUDE SLAB THICKNESS WHERE SLAB IS PLACED WITH THE BEAM.
- C5 CONSTRUCTION JOINTS WHERE NOT SHOWN SHALL BE LOCATED TO THE APPROVAL OF RAFIC RAHME & ASSOCIATES.
- C6 NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF RAFIC RAHME & ASSOCIATES.
- C7 AT PENETRATIONS IN SLABS, UNLESS OTHERWISE DETAILED, REINFORCEMENT MUST NOT BE CUT BUT HALL BE GATHERED EQUALLY TO EACH SIDE OF THE PENETRATION AND EXTRA REINFORCEMENT PROVIDED BETWEEN THE PENETRATIONS AS DIRECTED BY RAFIC RAHME & ASSOCIATES.
- C8 PIPES OR CONDUITS SHALL NOT BE PLACED WITHIN THE CONCRETE COVER TO REINFORCEMENT WITHOUT THE APPROVAL OF RAFIC RAHME & ASSOIATES.
- C9 THE CONTRACTOR SHALL NOTIFY RAFIC RAHME & ASSOCIATES 24 HOURS BEFORE POURING THE CONCRETE.



RAFIC RAHME & ASSOCIATES
CONSULTING ENGINEERS
(CIVIL,STRUCTURAL,HYDRAULICS)

5/423 KING GEORGES ROAD
BEVERLY HILLS
NEW SOUTH WALES 2209
tel: 9585 9693...fax: 9585 9791

DRAWING TITLE:

STRUCTURAL DETAILS.AT: 28 THE CRESCENT, MANLY

SHEET: 1 OF 4

SCALE: AS SHOWN

DRAWN: A.R.

checked by : R.R.

CAD FILE 28THECRESCENT

DWG No: 80210

DATE: 8/02/10

THE SITE FOREMAN designers project managers
12 CARLTON CRESCENT, SUMMER HILL PH 1300 728 008 - FAX 1300 728 440

C10 CONCRETE CURING TO BE IN ACCORDANCE WITH THE RELEVANT SA CODES, CONCRETE TO BE CURED A MINIMUM OF 7 DAYS AFTER POURING.

C11 NEITHER WALLS NOR ANY PERMANENT LOADINGS SHALL BE ERECTED ON ANY PART OF THE STRUCTURE WHILE IT IS SUPPORTED BY FORMWORK OR PROPING.WHERE FORMWORK IS NOT USED, APPROVAL SHALL BE OBTAINED FROM THE ENGINEER BEFORE ANY WALL OR ANY ANY OTHER PERMANENT LOADING IS ERECTED ON THE CONCRETE SLAB AND/OR BEAM.

C12 CONCRETE IN WALLS, COLUMNS, PIERS AND PEDESTALS SHALL BE PLACED A MINIMUM OF 24 HOURS BEFORE CASTING CONCRETE IN SLABS AND BEAMS OVER.

C13 ALL CONCRETE SHALL BE COMPACTED WITH IMMERSION TYPE VIBRATORS.

C14 STRIPPING OF FORMWORK AND BACKPROPING TO BE STRICTLY IN ACCORDANCE WITH AS 3600 SECTION 19.6

REINFORCEMENT

R1 ALL REINFORCEMENT TO BE SUPPORTED ON APPROVED CHAIRS AT 800mm CENTRES BOTH WAYS.

R2 MESH REINFORCEMENT SHALL NOT BE LAPPED IN POSITIONS OF MAXIMUM MOMENT, i.e. MIDSPAN OR OVER SUPPORTS.

R3 MESH REINFORCEMENT IN SLABS SHALL EXTEND ON THE SUPPORT WALL OR BEAM SUCH THAT THE TRANSVERSE WIRE IS EMBEDDED A MINIMUM OF 25 mm WITHIN THE SUPPORT.

R4 ALL UNSUPPORTED BARS SHALL BE TIED IN THE TRANSVERSE DIRECTION TO N12 AT 400mm CENTRES.

R5 MINIMUM LAP SQUARE MESH: END SQUARE + 25mm SIDE SQUARE+25mm

R6 REINFORCEMENT IS REPRESENTED DIAGRAMATICALLY, IT IS NOT NECESSARILY SHOWN IN TRUE PROJECTION.

R7 SPLICES IN REINFORCEMEN SHALL BE MADE ONLY IN THE POSITIONS SHOWN.THE WRITTEN APPROVAL OF THE ENGINEER SHALL BE OBTAINED FOR ANY OTHER SPLICES. WHERE LAP LENGTHS ARE NOT SHOWN THEY SHALL SATISFY THE REQUIREMENTS OF AS3600.

R8 WELDING OF REINFORCEMENT WILL NOT BE PERMITTED UNLESS SHOWN ON THE STRUCTURAL DRAWINGS.

R9 REINFORCEMENT SYMBOLS

N	HOT-ROLLED DEFORMED BARS, GRADE 400Y TO AS3600
S	STRUCTURAL GRADE DEFORMED, GRADE 230S TO AS1302
R	PLAIN ROUND GRADE 230R TO AS1302
F	FBHARD DRAWN REINFORCING FABRIC TO AS1304

R10 ALL STEEL WIRE MESH SHALL BE SUPPLIED IN FLAT SHEETS

R11 THE CONTRACTOR SHALL NOTIFY RAFIC RAHME & ASSOCIATES 24 HOURS BEFORE REINFORCEMENT IS COMPLETED. THE CONTRACTOR SHALL ALLOW AFTER THE COMPLETION OF THE REINFORCEMENT TWO HOURS MINIMUM FOR THE RAFIC RAHME & ASSOCIATES INSPECTION.

BRICKWORK AND BLOCKWORK

B1 ALL WORKMANSHIP AND MATERIALS TO BE IN ACCORDANCE WITH AS3700

B2 TWO LAYERS OF APPROVED METAL SLIP JOINT MATERIAL SHALL BE LAID UNDER ALL SLABS AND BEAMS WHERE THEY BEAR ON BRICKWORK.

B3 WALLS SHOWN ON STRUCTURAL DRAWINGS ARE LOAD BEARING WALLS, NON LOAD BEARING WALLS UNDER SLABS SHALL BE SEPARATED FROM THE SLAB IN AN APPROVED MANNER.

B4 NO BRICKWORK WHICH IS SUPPORTED BY THE SLAB SHALL BE ERECTED UNTILL FORMWORK HAS BEEN REMOVED.

B5 BRICK MORTAR TO BE AS SHOWN ON BRICKWORK SCHEDULE.

B6 BRICK STRENGTH FOR LOAD BEARING BRICKWORK TO BE A MINIMUM OF $f'm=6.3$ FOR ISOLATED AND ENGAGED PIERS $f'm=6.3$. UNLESS NOTED OTHERWISE.

B7 BLOCKS SHALL BE CLASS A DOUBLE 'U' BLOCKS U.N.O. TO AS3700, HAVING A MINIMUM CHARACTERISTIC UNCONFINED COMPRESSIVE STRENGTH OF 15MPa.

B8 BLOCK MORTAR TO BE 1:1:6 PROPORTIONS BY VOLUME CEMENT, LIME, AND SAND. U.N.O. *Warning: A comprehensive check of the Structural design has been carried out & the approval of the design by Queensland Accredited Certifiers does not release the Structural Engineer of their responsibility for the structural adequacy of the project.*

B9 GROUT SHALL CONSIST OF 1 PART CEMENT, 1/10 PART HYDRATED LIME, 3 PARTS SAND AND UP TO 2 PARTS OF 10mm GRAVEL AND SUFFICIENT WATER TO ACHIEVE 230mm SLUMP MIX WHICH WILL FLOW FREELY WITHOUT SEGREGATION AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF $f'c=25MPa$. XYPEX OR SIMILAR IF APPROVED BY THE CLIENT AND RAFIC RAHME & ASSOCIATES TO BE ADDED TO GROUT AT THE RATE SPECIFIED BY THE MANUFACTURER.

B10 CLEAN-OUT BLOCKS SHALL BE PROVIDED AT THE BOTTOM OF ALL REINFORCED BLOCK WALLS TO FACILITATE CLEANING AND TYING OF REINFORCEMENT INT ITS CORRECT POSITION.

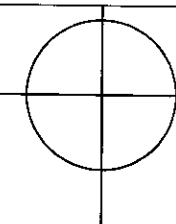
B11 BEFORE GROUTING ALL PROJECTING MORTAR FINS SHALL BE REMOVED BY RODDING AND/OR BRUSHING AND ALL LOOSE MATERIAL REMOVED FROM BOTTOM OF WALL.

B12 ALL GROUTED WALLS SALL BE VIBRATED AND/OR RODDED TO ENSURE COMPLETE FILLING AND COMPACTION OF GROUT IN ALL CORES.

B13 10mm VERTICAL EXPANSION JOINTS DENOTED V.J. TO BE PROVIDED IN ALL EXTERNAL FACE BRICKWORK AT 8m MAXIMUM CENTRES UNLESS NOTED OTHERWISE AND TO BE CO-ORDINATED WITH ARCHITECT.

B14 HORIZONTAL CHASING OF BRICK WALLS IS STRICTLY PROHIBITED UNLESS APPROVED BY THE ENGINEER

B15 WALL TIES AND OTHER BUILT IN STEEL ACCESSORIES TO HAVE A MINIMUM CORROSION RESISTANCE RATING OF R3 TO AS3700 U.N.O.



RAFIC RAHME & ASSOCIATES
CONSULTING ENGINEERS
(CIVIL, STRUCTURAL, HYDRAULICS)

5/423 KING GEORGES ROAD
BEVERLY HILLS
NEW SOUTH WALES 2209
tel: 9585 9693...fax: 9585 9791

DRAWING TITLE:

STRUCTURAL DETAILS AT: 28 THE CRESCENT, MANLY

SHEET: 2 OF 4
SCALE: AS SHOWN

DRAWN: A.R.

checked by: R.R.

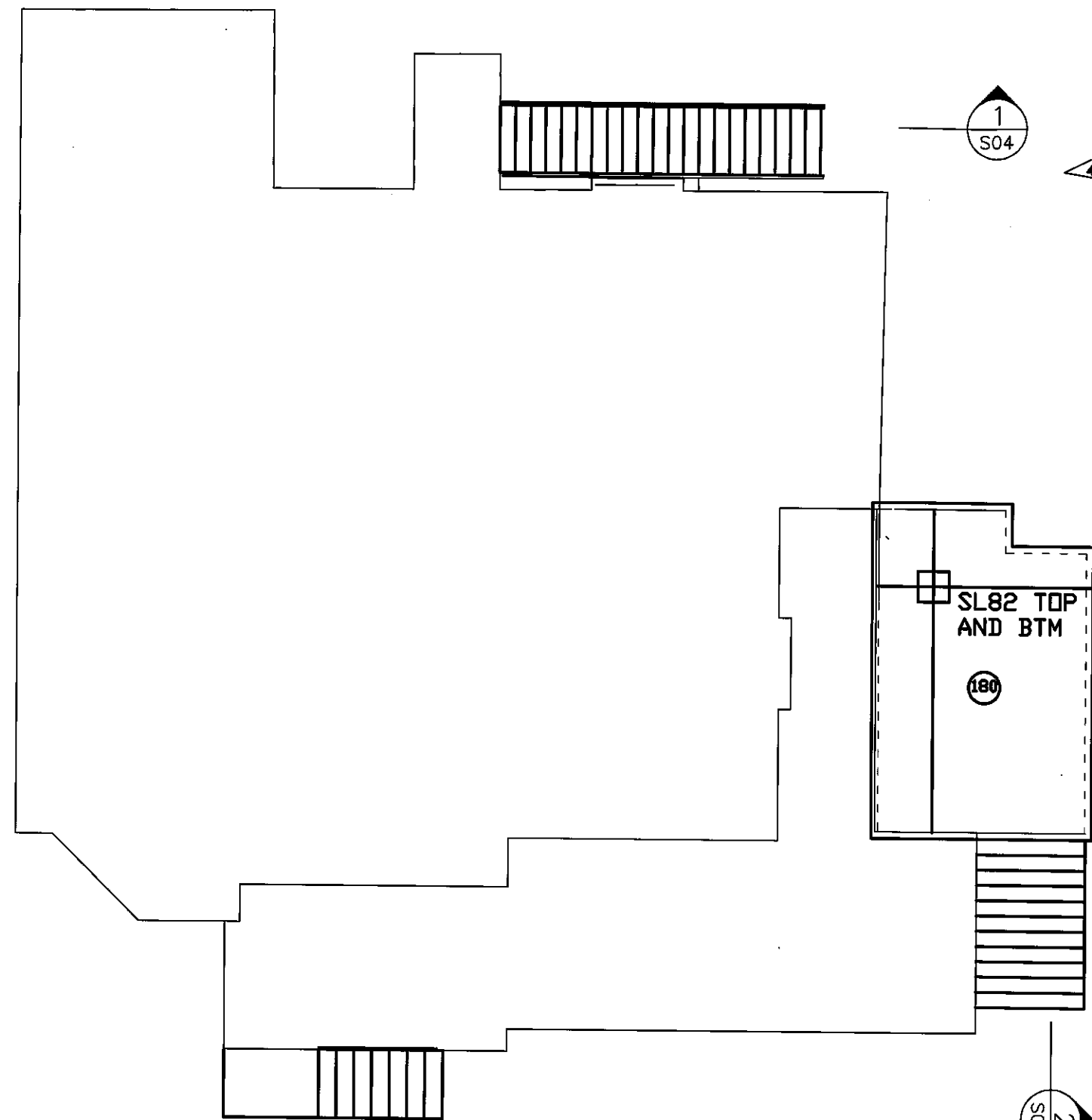
CAD FILE 28THECRESCENT

DWG No: 80210

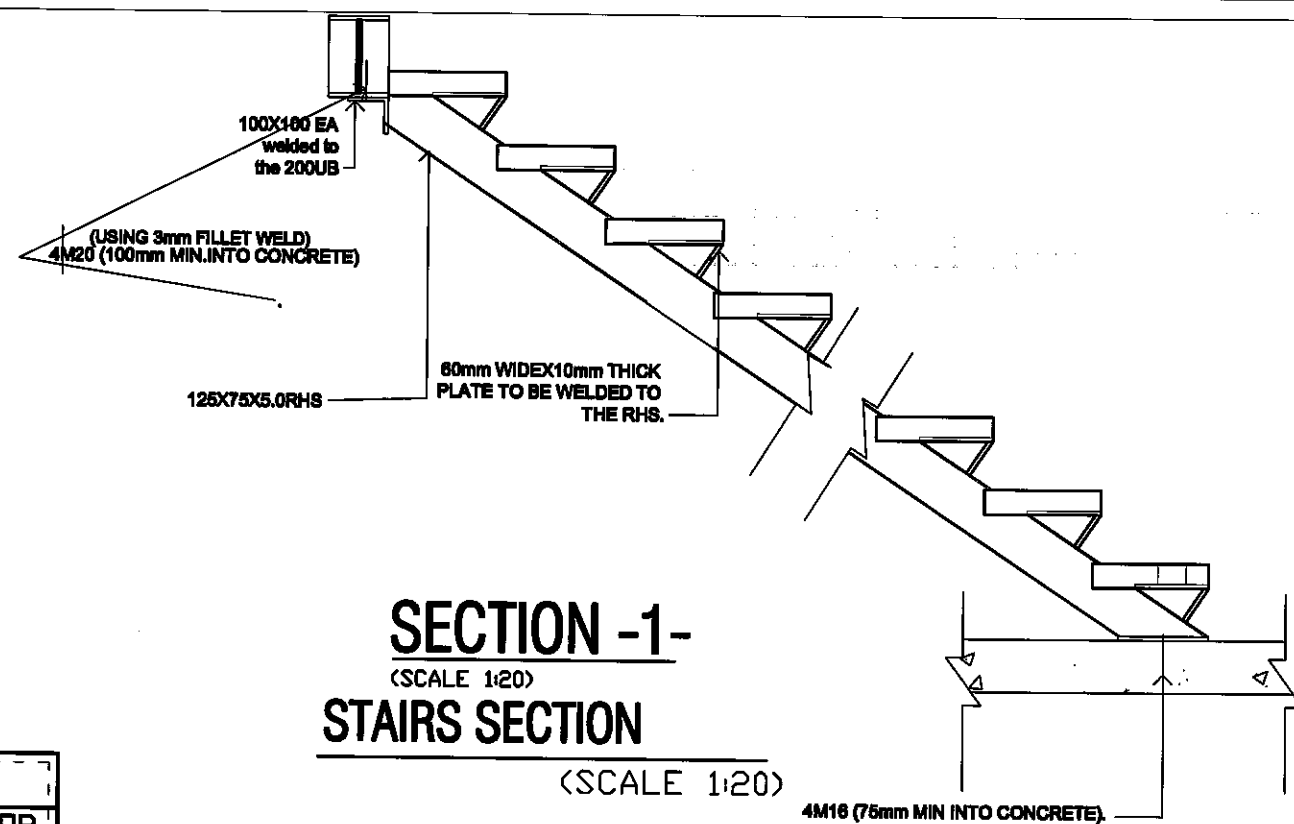
DATE: 8/02/10



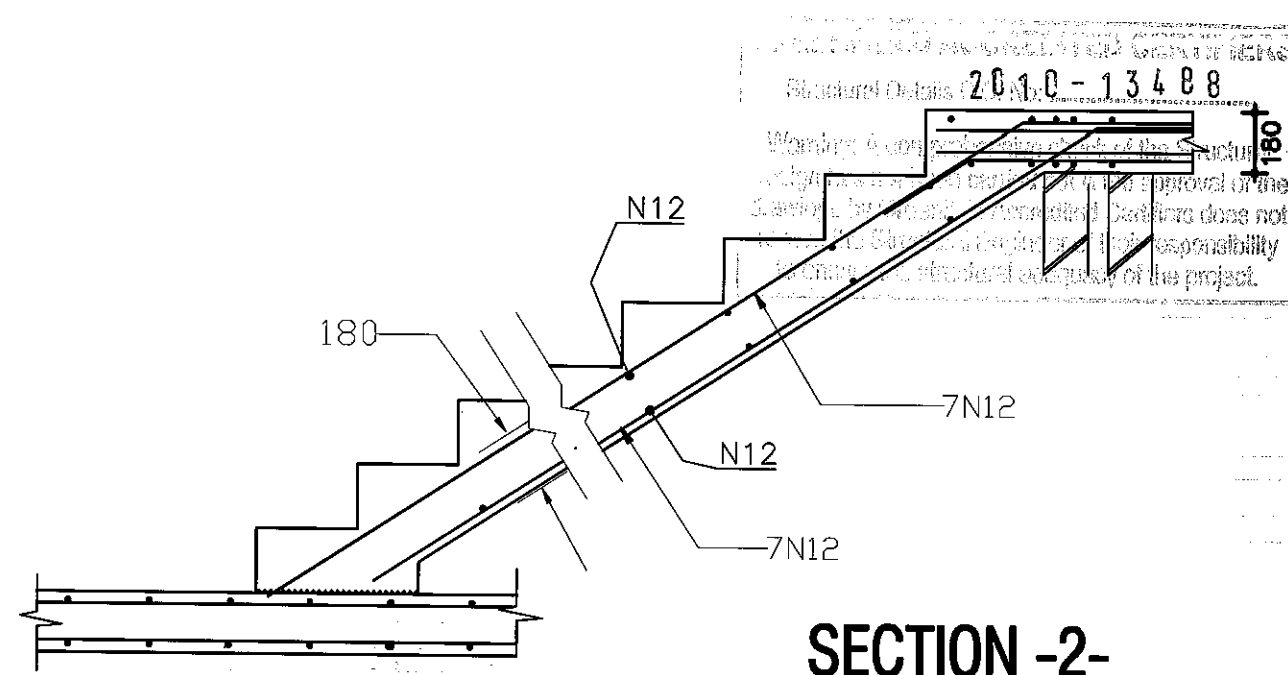
THE SITE FOREMAN designers project managers
12 CARLTON CRESCENT, SUMMER HILL PH 1300 728 008 - FAX 1300 728 440



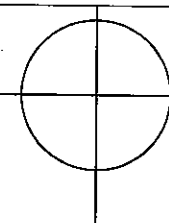
STAIRS & SLAB PLAN (F'c=25MPa.)
(SCALE 1:100)



SECTION -1-
(SCALE 1:20)
STAIRS SECTION
(SCALE 1:20)



SECTION -2-
(SCALE 1:20)
STAIRS SECTION
(SCALE 1:20)



RAFIC RAHME & ASSOCIATES
CONSULTING ENGINEERS
(CIVIL, STRUCTURAL, HYDRAULICS)

5/423 KING GEORGES ROAD
BEVERLY HILLS
NEW SOUTH WALES 2209
tel: 9585 9893...fax: 9585 9791

DRAWING TITLE:

STRUCTURAL DETAILS AT: 28 THE CRESCENT, MANLY

SHEET: 4 OF 4
SCALE: AS SHOWN

DRAWN: A.R.

checked by: R.R.

CAD FILE: 28THECRESCENT

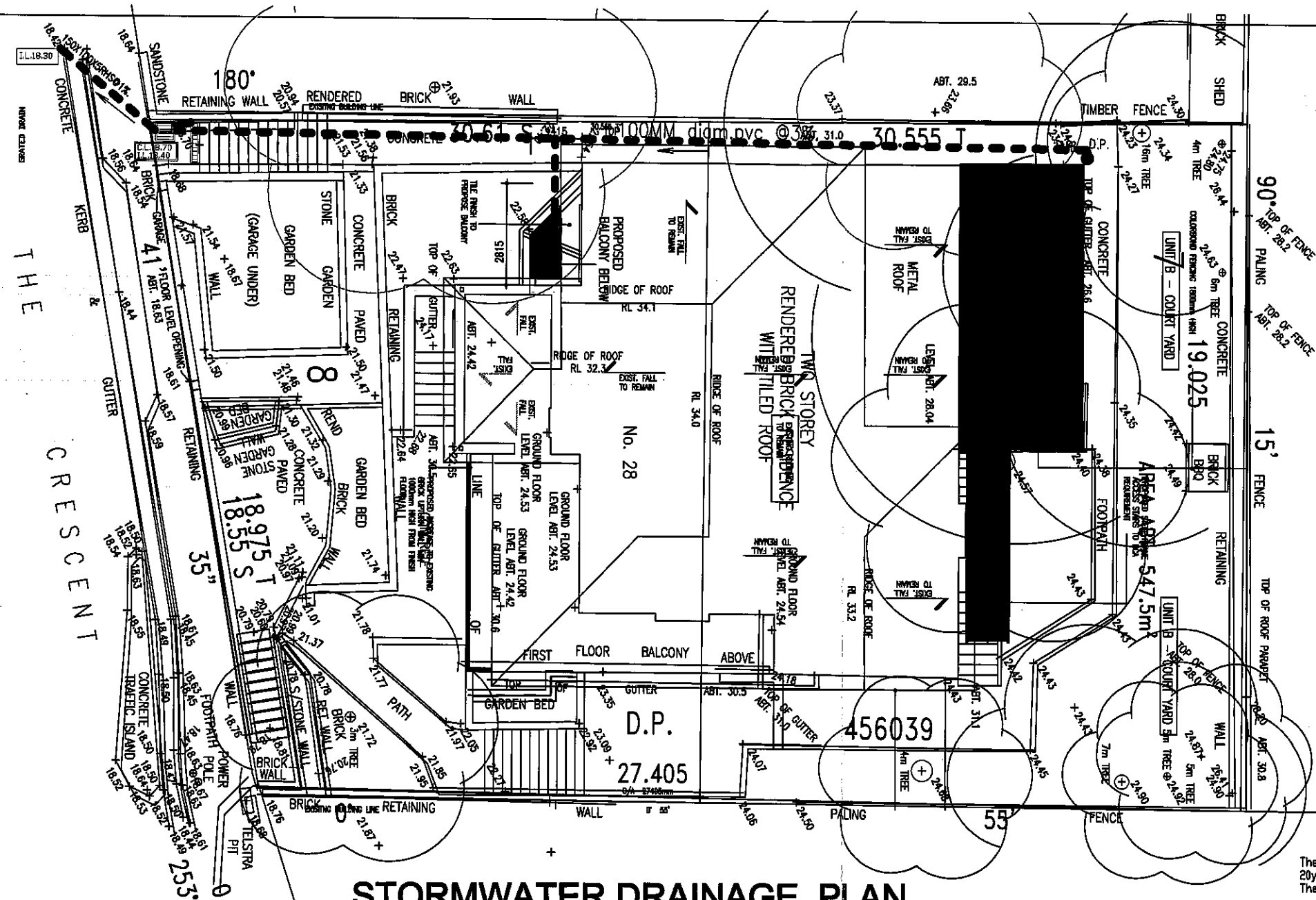
DWG No: 80210

DATE: 8/02/10

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12 CARLTON CRESCENT, SUMMER HILL PH 1300 728 008 - FAX 1300 728 440

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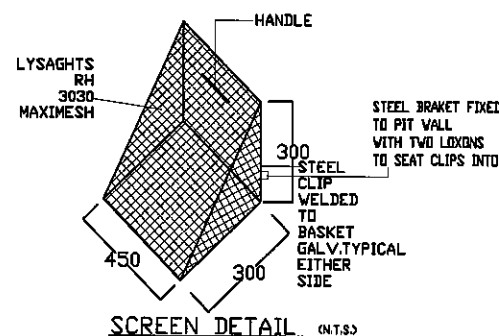
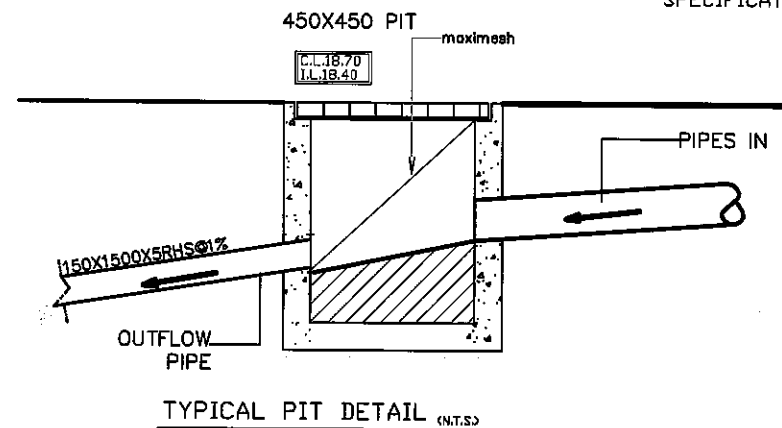


STORMWATER DRAINAGE PLAN

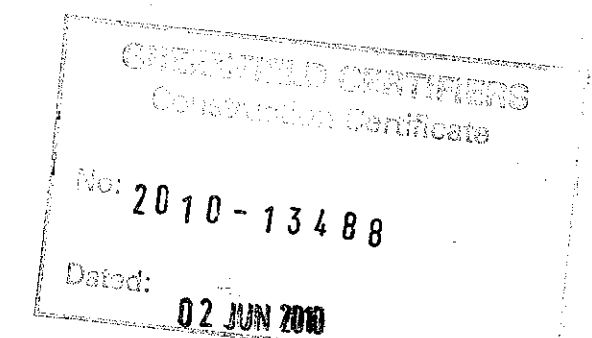
ALL GUTTERS TO BE MINI-LINE MINIMUM SIZE TO ARCHITECTURAL SPECIFICATIONS

ALL DOWNPIPES TO BE 100mm DIAMETER OR 100X50 MIN TO ARCHITECTURAL SPECIFICATIONS OR AS NOTED ON PLAN.

(1:100)



- ### NOTES
- 1- ALL SERVICES ARE TO BE LOCATED IN THE FIELD IN CONJUNCTION WITH A RESPONSIBLE OFFICER OF EACH RELEVANT AUTHORITY PRIOR TO COMMENCEMENT OF CONSTRUCTION.
 - 2- DRAINAGE PITS ARE TO BE A 450MM WITH A GALVANISED GRATE.
 - 3- DRAINAGE PIPES SIZES ARE 100MM DIAMETER UNLESS OTHERWISE NOTED.
 - 4- DRAINAGE PIPES SHALL BE SEWER GRADE UPVC UNLESS OTHERWISE NOTED.
 - 5- ALL BARE SOIL AREAS ARE TO BE PROTECTED FROM EROSION FROM EROSION BY TEMPORARY MEASURES AND REVEGETATED AT THE CESSATION OF CONSTRUCTION.
 - 6- A SEDIMENT CATCHMENT POND IS TO BE PROVIDED AT THE RATE OF 120M CAPACITY PER HECTARE DRAINED. THE DETENTION TANKS MAY BE USED FOR THIS PURPOSE PROVIDED SUFFICIENT WATER IS RETAINED AS A POOL DURING CONSTRUCTION & ADEQUATE SAFETY FENCING IS PROVIDED.
 - 7- THE DOWNHILL BOUNDARY OF THE SITE IS TO BE PROTECTED BY HAY BALES OR A FILTER FABRIC FENCE DURING CONSTRUCTION AS SHOWN IN THE ATTACHED DETAILS.
 - 8- THE STREET DRAINAGE PIT LOCATED DOWNHILL OF THE SITE SHALL BE PROTECTED FROM SEDIMENT WITH HAY BALES.
 - 9- A SINGLE CONSTRUCTION ENTRANCE SHALL BE ESTABLISHED IN THE MANNER SHOWN IN THE ATTACHED DETAILS.
 - 10- THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL AND STRUCTURAL ENGINEERING DOCUMENTS. ANY DISCREPANCIES SHALL BE REPORTED BY THE BUILDER TO THE ARCHITECT PRIOR TO COMMENCEMENT OF THE ITEM.
 - 11- THESE PLANS ARE DIAGRAMMATIC AND SHOW THE GENERAL LOCATION OF STRUCTURES AND PIPES. WORK SHALL BE SET OUT ON SITE BY THE SITE FOREMAN & MAY VARY FROM THE PLANS TO THE EXTENT REQUIRED. TO ENSURE
 - 12- IF IN DOUBT, ASK THE SUPERINTENDENT WHO SHALL CONSULT THE DESIGNER.



The internal pipework is intended to operate as an open channel for any event up to 20yrs ARI, the pipe grade is assumed to be the grade of the hydraulic grade line. The pipes were designed using Manning's equation

$$Q = \frac{A \times R^{2/3} \times S^{1/2}}{n}$$

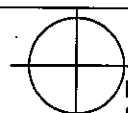
where
 Q is the flowrate, Q (m³/s)
 S is the friction slope, (m/m)
 n is Manning's roughness coefficient (0.012)
 A is the pipe cross section area, (m²)
 R is the pipe hydraulic radius d/4 (m)
 EIA equivalent impervious area

The following table was developed for various pipe sizes and friction slope to indicate the maximum flow that could be taken in each pipe. Pipe Maximum Flow Table (20 yr ARI, Q = 0.05 x EIA)

Friction Slope (%)	100mm PVC Q (L/s)	100mm PVC EIA (m²)	150mm PVC Q (L/s)	150mm PVC EIA (m²)	225mm PVC Q (L/s)	225mm PVC EIA (m²)
1	5.6	112	16.5	330	48.6	973
2	7.9	158	23.3	467	68.8	1376
3	9.7	194	28.6	572	84.3	1685
4	11.2	224	33.0	660	97.3	1946
5	12.5	250	36.9	738	108.8	2175
6	13.7	274	40.4	808	119.2	2383
7	14.8	296	43.7	873	128.7	2574
8	15.8	317	46.7	933	137.6	2752
9	16.8	336	49.5	990	145.9	2919
10	17.7	354	52.2	1043	153.8	3076

LEGEND

- X DENOTES EXISTING LEVEL
- ⊕ DENOTES PROPOSED LEVEL
- D.P. DOWN PIPE
- I.O. INSPECTION OPENING
- C.L. COVER LEVEL
- I.L. INVERT LEVEL
- T.W.L. TOP WATER LEVEL
- CHS. CIRCULAR HOLLOW SECTION (OURAGAL)
- RHS. RECTANGULAR HOLLOW SECTION (OURAGAL)



RAFIC RAHME & ASSOCIATES
CONSULTING ENGINEERS
(CIVIL, STRUCTURAL, HYDRAULICS)

6423 KING GEORGE ROAD
BEVERLY HILLS
NEW SOUTH WALES 2200
Tel: 0800 000000 Fax: 0800 0701

DRAWING TITLE:

STORMWATER DRAINAGE PLAN AT:

28 THE CRESCENT, MANLY

SHEET: 1 OF 1
SCALE: AS SHOWN
DRAWN: A.R.
checked by: R.R.

CAD FILE

28THECRESCENT(STORMWATER)

DWG No:

140410

DATE:

14/04/10

THE SITE FOREMAN designers project managers
12 CARLTON CRESCENT, SUMNER HILL PH 1800 728 000 FAX 1800 728 440