

GENERAL NOTES:

GENERAL

- G1. The drawings are to be read together with all Architects drawings and specifications.
- G2. Dimensions shall not be obtained by scaling from the drawings. All setting out dimensions shall be verified and discrepancies shall be referred to the Engineer prior to commencement of work.
- G3. Care is required during construction so that structural elements are not over stressed and that the works and excavations required therefore are kept stable at all times.
- G4. Design, materials and workmanship are to be in accordance with current S.A.A standards and statutory authority regulations except where varied by these documents.
- G5. Design live loads are in accordance with AS 1170.1
- G6. Builder to ensure stability of existing structures in the vicinity of excavation works.

FOOTINGS

- F1. FOUNDATION STRATA IS ASSUMED FOR DESIGN PURPOSES IN ACCORDANCE WITH AS 2870-1996 "RESIDENTIAL SLAB AND FOOTINGS-CONSTRUCTION". SEE FOOTNOTE. CLASSIFICATION TO BE VERIFIED BY A GEOTECHNICAL ENGINEER COMMISSIONED BY THE CLIENT FOR CERTIFICATION OF FOUNDATIONS.
- F2. Footings to be constructed and back filled as soon as possible following excavation to avoid softening by rain or drying out by exposure.
- F3. Footings must bear into undisturbed natural ground clear of organic material. Refer to details.
- F4. If rock or variable bearing strata is encountered during excavation of the footings all footings/piers are to be excavated to similar material of greater bearing capacity. The Engineer is to be contacted at that time for approval or review.
- F5. Footings to be cast in approved material having an allowable capacity as follows:
Sand Foundations:
SA1. Required bearing capacity 100 kPa.
SA2. Trenches must be cleaned of all debris and hand compacted prior to placement of reinforcement.
Clay Foundations:
CL1. Required bearing capacity 150 kPa.
CL2. Trenches must be cleaned of all debris. Soft spots must be cut out and filled as per compacted fill notes, prior to placement of reinforcement.
Shale Foundations:
SH1. Required bearing capacity 400 kPa.
SH2. Excavation for footings into shale must be cast or capped with plain concrete on the same day as excavation.
Sandstone Foundations:
SS1. Required bearing capacity 600 kPa.
SS2. Scrape weathered surface to remove cleaved sandstone under footings. Refer adjacent for assumed Design bearing strata.
- F6. Future development of neighboring properties may effect ground water conditions on this site. Consequently, reactivity in subgrade beneath footings may be locally altered therefore putting footing at risk of differential settlement. We recommend that, particularly in clay subgrades, agricultural drainage is installed to the upstream perimeter of the building at a distance from the building which is outside the zone of influence of the footings. The agricultural drain must be installed below the fluctuating seasonal zone which should be identified by geotechnical investigation.

CONCRETE

- C1. All workmanship and materials shall be in accordance with AS 3600.
- C2. Concrete quality shall be as follows and shall be verified by tests.
- C3. All concrete unless otherwise noted shall have a slump of 80mm at point of placement, a max. aggregate size of 20 mm. No water shall be added to the mix prior to or during placement of concrete. Strength as specified on plans.
- C4. Clear concrete cover to reinforcement shall be as follows unless otherwise shown-

ELEMENT	INTERIOR	EXTERIOR	EXTERIOR CAST AGAINST GROUND
FOOTINGS	-	-	50
COLUMNS/PEDESTALS	30 UNO	REFER TO PLAN	-
SLABS/WALLS	25	REFER TO PLAN	40 ON MEMBRANE
BEAMS	25 UNO	REFER TO PLAN	50
A3 BLOCKWORK	55 FROM APPROPRIATE FACE		

- C5. Sizes of concrete elements do not include thickness of applied finishes.
- C6. All Construction Joints locations shall be approved by the Structural Engineer.
- C7. Beam depths are written first and include slab thickness, if any.
- C8. No holes or chases other than those shown on the structural drawings shall be made in concrete elements without the prior approval of the engineer.
- C9. Shrinkage reducing admixtures such as 'Eclipse' or approved equivalent, if specified, must be added to mix prior to pour.
- C10. Water reducing agents, if specified, must be added to mix prior to pour. No extra water is to be added to increase slump.
- C11. Where vertical slab/beam surfaces are formed against a masonry (or other) wall, provide 10 mm styrene separation material.
- C12. Water must not be added to concrete mix prior to placement of concrete.
- C13. Above covers may have to be adjusted if fire rating is a requirement.

REINFORCEMENT

- R1. All reinforcement specified is Grade D500 unless noted otherwise.
- R2. Reinforcement is represented diagrammatically it is not necessarily shown in true projection.
- R3. Top reinforcement is to be continuous over supports. Bottom reinforcement to be lapped at supports.
- R4. Welding of reinforcement shall not be permitted unless shown on the structural drawings.
- R5. Pipes or conduits shall not be placed within the zone of concrete cover to the reinforcement without the approval of the engineer.
- R6. All reinforcing bars and fabric shall comply with AS 4671-2001.
- R7. Reinforcement symbols:
N - Grade 500N deformed bar (D500) Normal Ductility
R - Grade 250N plain round bar (R250) Normal Ductility.
SL - Grade 500L welded deformed ribbed mesh (D500) Square Low Ductility.
RL - Grade 500L welded deformed ribbed mesh (D500) Rectangular Low Ductility.
The number immediately following these symbols is the number of millimeters in the bar diameter.
Example : 8 N12-250
Denotes 8, Grade 500N deformed bars, 12 mm diameter at 250 cts.
R8. Fabric reinforcement to be lapped 1 complete square + 25 mm unless noted otherwise.
- R9 All reinforcement shall be firmly supported on bar chairs spaced at a maximum of 750 centres both ways under rod and fabric reinforcement. Reinforcement shall be tied at alternate intersections.

FORMWORK

- FW1. Formwork must be cleaned of all debris prior to casting of concrete.
- FW2. Minimum stripping times for form work shall be as recommended in AS 3610 - 1990 or as directed by the engineer.
- FW3. The finished concrete shall be a dense homogeneous mass, completely filling the form work, thoroughly embedding the reinforcement and free of stone pockets. All concrete elements including slabs on ground and footings shall be compacted with mechanical vibrators.
- FW4. Curing of all concrete is to be achieved by keeping surfaces continuously wet for a period of 3 days, followed by prevention of loss of moisture for seven days followed by a gradual drying out. Approved sprays or curing compounds may be used where no floor finishes are proposed. Polythene sheeting or wet hessian may be used if protected from wind and traffic.

BRICKWORK

- BR1. Brickwork is to be constructed to AS 3700.
- BR2. Two layers of approved greased metal based slip material shall be used over all load bearing walls that support concrete slabs and placed on smooth brickwork or trowelled mortar finish. Non load-bearing walls shall have 10 mm compressible material and ties to the slab soffit.
- BR3. No brickwork shall be constructed on suspended slabs until all propping has been removed from the underside of the slab and the concrete has the specified 28 day cylinder strength verified by tests.
- BR4. Control joints to be placed at a maximum of 8m centres or in accordance with AS 3700.
- BR5. Exposure grade bricks to be used below damp proof course.
- BR6. Vertical control joint material where specified on plan between slabs and brick walls shall be: 10 mm Spandex External UNO. Bitumastic fibreboard internal UNO.

- BR7. Provide stainless steel wall ties below DPC to AS 3700. Provide galvanized wall ties above DPC to AS 3700 & Local Council Specifications.

BLOCKWORK

- BL1. Concrete blocks shall have a minimum compressive strength of 15 MPa and conform to AS 1500. Masonry to be constructed to AS 3700.
- BL2. Where cores of hollow blocks are to be filled, properly compacted 20MPa concrete with 10 mm aggregate and 230 mm slump shall be used. Clean out openings must be utilized for all cores.
- BL3. Location of actual starters is critical to suit block cores, allow 55 mm cover from the outside face of blockwork. All reinforcement lap lengths to conform to AS 3600.
- BL4. Control joints to be placed at a maximum of 8 m centres or in accordance with AS 3700.
- BL5. Vertical control joint material where specified on plan between slabs and brick walls shall be: 10 mm Spandex External UNO. Bitumastic fibreboard internal UNO.
- BL6. Retaining walls or any reinforced and concrete core filled block walls to be of Double 'U' Block Construction.
- BL7. No blockwork shall be constructed on suspended slabs until all propping has been removed from the underside of the slab and the concrete has the specified 28 day cylinder strength verified by tests. unless approved by the Structural Engineer.
- BL8. Max. pour height for unrestrained blockwork is 2000.

STEEL

- S1. All Structural steelwork to be Grade 300 or greater. Design, fabrication and erection to be in accordance with AS 4100.
- S2. Materials and workmanship shall comply with AS 1250 - 1981, SAA Steel Structures Code and the specification for Structural Steel.
- S3. Rolled steel sections including steel plates shall comply with AS 3678 - 1990.
- S4. Cold formed steel sections shall be Grade 450 Zinc coated in accordance with AS 1538-1988.
- S5. Welded and seamless steel hollow sections shall comply with AS 1163. Grade 350.
- S6. Bolt Designation:
4.6S - Commercial bolts Grade 4.6, snug tightened.
8.8S - High Strength structural bolts Grade 8.8, snug tightened.
8.8TB - High Strength structural bolts Grade 8.8, fully tightened to AS 1511 and acting as a Bearing Joint.
8.8TF - High Strength structural bolts Grade 8.8, fully tensioned to AS 1511 and acting as a Bearing Joint.
Unless noted otherwise, all bolts will be 8.8S.
- S7. Unless shown otherwise, minimum connection shall be 2M16 bolts, 10 thick gusset plates, 6mm continuous fillet welds.
- S8. Load indicating washers shall be used in all fully tensioned joints. (8.8TF & 8.8TB).
- S9. All welding shall be carried out in accordance with AS 1554 SAA Structural Steel Welding Code.
- S10. Unless noted otherwise all welds shall be category SP using E41xx Electrodes. All butt welds shall be complete penetration butt welds category SP.
- S11. Grouting of anchor bolt sleeves and base plates shall be completed by the contractor using High Strength, Non-Shrink grout.
- S12. Fabrication and erection tolerances for Structural Steelwork shall be in accordance with AS 4100.
- S13. Purlin bolts shall be M12 - 4.6S galvanised.
- S14. Steel work shall have one of the following grades of corrosion protection:-
INTERNAL

- a. Thoroughly cleaned wire brushing, followed by two coats of zinc phosphate primer equivalent to Dulux Luxaprim applied by hand using brushes to achieve a total dry film thickness of 70 microns.

EXTERNAL ELEMENTS, & ELEMENTS WITHIN EITHER SKIN OF EXTERNAL CAVITY WALLS

- b. Preparation Blast clean to a minimum standard Class 2.5 in accordance with AS 1627 Part 4.
Primer 2-pack epoxy phosphate at dft 75 microns (Dulux Durepon P14).
Barrier Coat 2-pack epoxy micaeous iron oxide, dft 100 microns
Finish Coat 2-pack epoxy high gloss acrylic to dft 75 microns (e.g. Dulux Acrothane 1 F) in an approved colour.
- c. Hot dipped galvanized to AS 4680.
Where the galvanic (Hot Dip Galvanized) coating is compromised by welding, bolting or damage, inorganic zinc-rich paint (minimum 95% zinc content) is to be applied after wire brushing affected area (use 3 coats minimum). or Hot Metal Spray in accordance with AS 4680.
- S15. Workshop drawings shall be prepared and two copies submitted to the engineer for review prior to fabrication commencement.

ASSUMED FOUNDATION CLASSIFICATION FOR DESIGN PURPOSES -
ASSUMED BEARING STRATA FOR DESIGN PURPOSES -
CONTRACTOR TO ENGAGE GEOTECHNICAL CONSULTANT TO VERIFY FOUNDATION CLASSIFICATION.

TIMBER

- T1. All workmanship and materials to be in accordance with AS 1684, AS 1720 and AS 3959. All soft wood to be Grade F7 unless noted otherwise. All hardwood to be minimum Grade F14 unless otherwise noted. Exposed timber to be CCA treated (to AS 1604) redried after full impregnation, or durability class 1, 2 or 3. ALL SOFTWOOD TIMBER FRAMING TO HAVE A MINIMUM TREATMENT PROTECTION OF H2 or T2 TREATED FOR TERMITE PROTECTION UNLESS NOTED OTHERWISE.
- T2. All joists deeper than 150 to have blocking over support bearers and at a maximum 3000 centres.
- T3. Roof trusses to be designed by the manufacturer to the relevant standards. Pre camber to be an amount equal to dead load deflection u.n.o.
- T4. All holes for bolts to be exact size. Washers to be used under all heads and nuts and to be at least 2.5 times the bolt diameter. Bolts to be M16 grade 4.6 unless noted otherwise.
- T5. Treat all exposed cut ends with Resol by Protim to manufacturers specification to achieve required Hazard Level Exposure Classification.
- T6. Battens for T & G to be Kiln Dried to 12 %.
38mm minimum deep treated pine or as recommended by supplier. Flooring to be installed no sooner than 28 days after slab pour.
- T7. Hot dip galvanized nails/clouts/screws to be used with all timber connections.
- T8. Continuous nailing must not be used for any timber connections.
- T9. All exposed CCA treated pine to have an application of penetrating sealer to reduce warping and twist of the timber due to varying moisture content in service.

COMPACTED FILL

- CF1. Only to be used with approval by Engineer & to be certified by a geotechnical Engineer.
- CF2. Clear organic material and topsoil under proposed slabs/footings.
- CF3. Filling shall be granular material compacted in not more than 200 mm layers to a minimum dry density ratio (AS 1289/E4.2 1982) of 98 percent.
- CF4. During clearing and excavation for slabs and footings cut out soft spots and fill as above.

INSPECTIONS BY ENGINEER

- 48 HOURS NOTICE IS REQUIRED BEFORE ANY SITE INSPECTION
1. Bearing strata of all footings prior to concrete pour.
2. Any reinforcement prior to concrete pour.
3. Timber and Steel framing prior to cladding or lining.
4. Steel lintels after installation.
5. CONTACT YOUR PCA (Principal Certifying Authority) AS TO REQUIREMENTS FOR MANDATORY CRITICAL STAGE INSPECTIONS IN ACCORDANCE WITH REVISED EP4A ACT REGULATIONS EFFECTIVE JULY 1, 2004.

DRAWING SCHEDULE:

S01 - GENERAL NOTES AND DRAWING SCHEDULE
S02 - CARPORT PLANS & DETAILS

WARNING

The stamping of this plan by Insight Building Certifiers Pty Ltd does not relieve:

- The applicant's responsibility to obtain approval from Sydney Water or other utilities.
- The Structural Engineer of their responsibility to ensure the structural adequacy of this project.
- The Applicant, Structural Engineer or other Professional of their responsibility to ensure these stamped details are consistent with the issued Construction Certificate Architectural Details.

DOCUMENT CERTIFICATION

I am a qualified Structural/Civil Engineer.
I hold the following qualifications:
B.E.(Civil), MIEAust, P.Eng
Institute of Engineers Membership No. 194677
I hereby state that this drawing is in compliance with the provisions of the Building Code of Australia and/or relevant Australian/Industry Standards.

Date: 16/7/08
Stewart McGeady
(Director Northern Beaches Consulting Engineers)



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Project:
ALTERATIONS & ADDITIONS
to
52 FRANCIS ST. - MANLY
for
JAMES & ROBYN GRADY

Drawing Title:
GENERAL NOTES
AND DRAWING SCHEDULE

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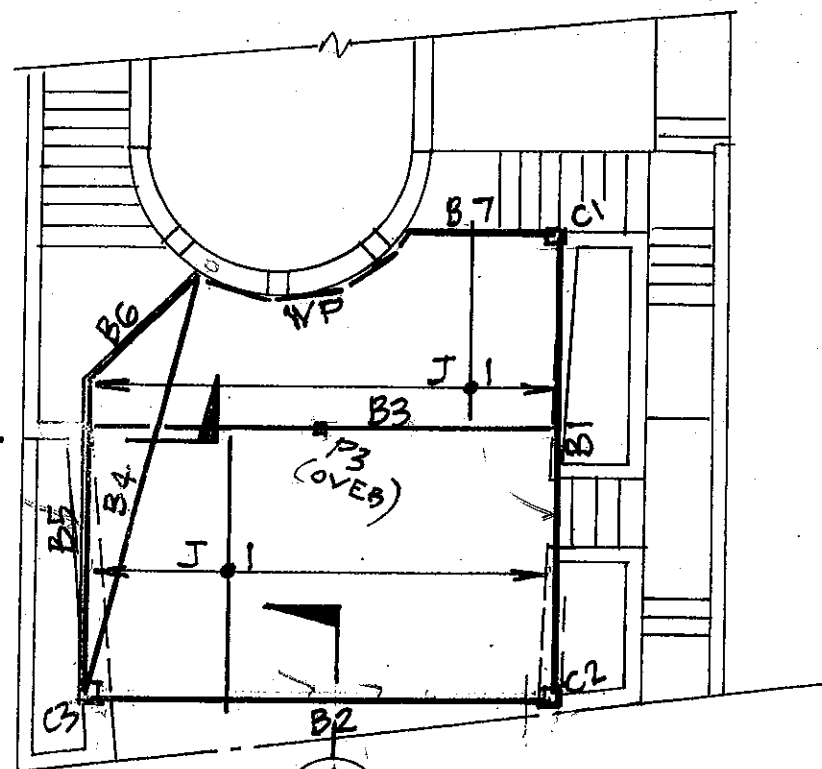
Date: 16/7/08
Job No: 080639
Drawing No: S01
Rev: 1

NOTES:

1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES AND DRAWING SCHEDULE REFER TO DRAWING NUMBER: 571.

MEMBER SCHEDULE

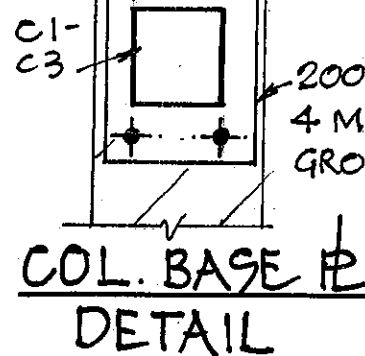
C1 - C3	-	125 x 125 x 4 SHS
B1 - B4	-	200 LJB 29
B5	-	200 PFC
B6 - B7	-	190 x 45 F7 KD
J1	-	190 x 45 F7 @ 450
WP	-	190 x 45 F7 FIXED TO WALL WITH M12 EPOXYSET ANCHORS AT 450 CTS.
RB, HB	-	200 x 63 LVL
PI	-	90 x 90 F7
RI	-	140 x 45 F7 @ 450 OR 130 x 45 LVL @ 450.



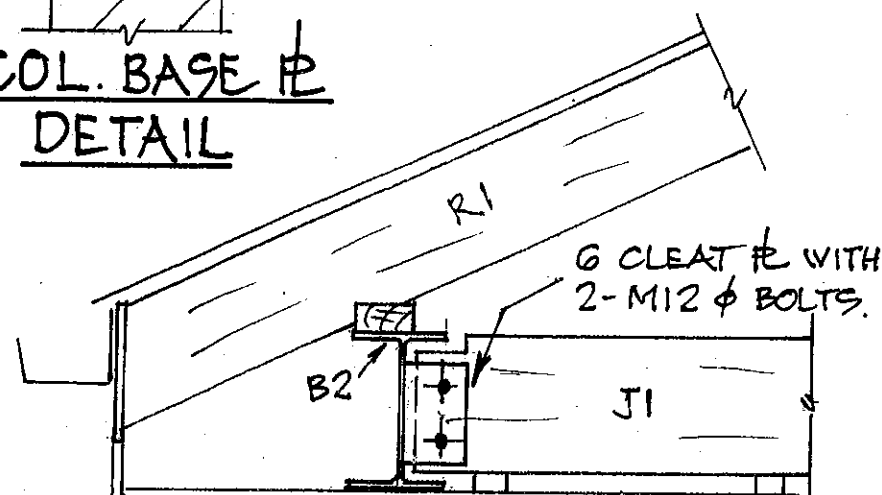
CEILING PLAN

SCALE 1:100

200 x 12 x 300 BASE PL + 4 M16 GALV. BOLTS EPOXY GROUT 300 INTO WALL.

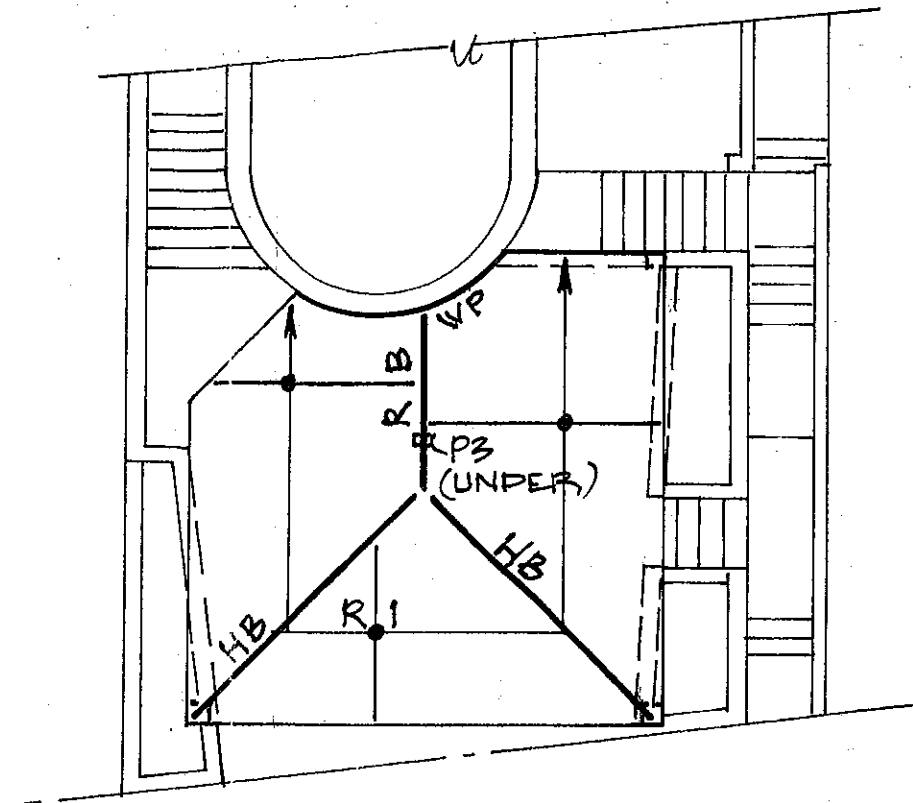


COL. BASE PL DETAIL



SECTION

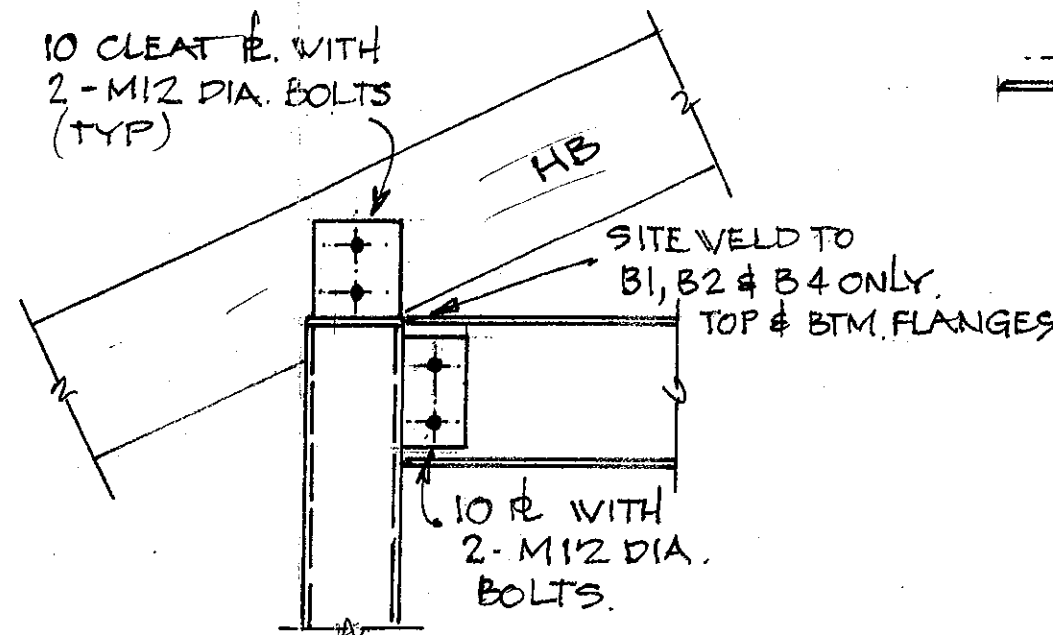
SCALE 1:10



ROOF PLAN

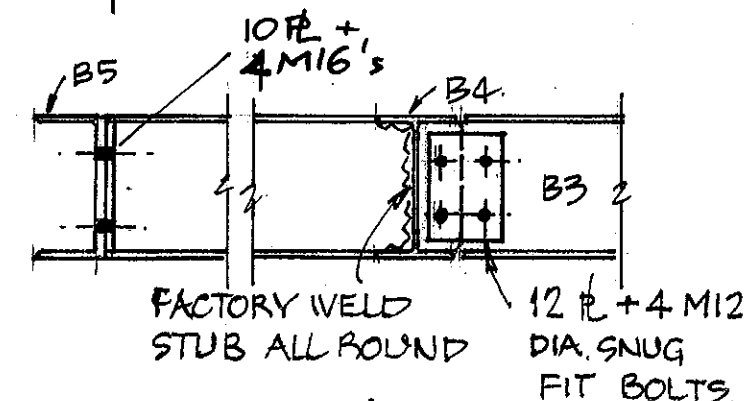
SCALE 1:100

10 CLEAT PL WITH 2 - M12 DIA. BOLTS (TYP)



TYPICAL COLUMN/BEAM CONNECTION

SCALE 1:10



SECTION

SCALE 1:10

NOTE:- ALL STEELWORK TO BE PAINTED WITH ZINCANODE 304 AND TOUCHED UP AFTER SITE WELDING.

Date:	Rev:	Amendment:
Date:	Design:	Drawn:
Date:	Job No:	Rev:
July '08	9M	JO'D
080639	502	

A3

DOCUMENT CERTIFICATION

Date: 16/7/08
Stewart McGeady
(Director Northern Beaches Consulting Engineers)

I am a qualified Structural/Civil Engineer.
I hold the following qualifications:
B.E. (Civil), MIE Aust, P. Eng
Institute of Engineers Membership No. 194677
I hereby state that this drawing is in compliance with the provisions of the Building Code of Australia and/or relevant Australian/Industry Standards.



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Project:
ALTERATIONS & ADDITIONS
to
52 FRANCIS ST - MANLY
for
JAMES & ROBYN GRADY

Drawing Title:
CARPORT PLANS
AND
DETAILS

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NOTES:

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2. FOR GENERAL NOTES REFER TO DRAWING NUMBER: S01.

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INCREASE IN IMPERVIOUS AREA = 0%

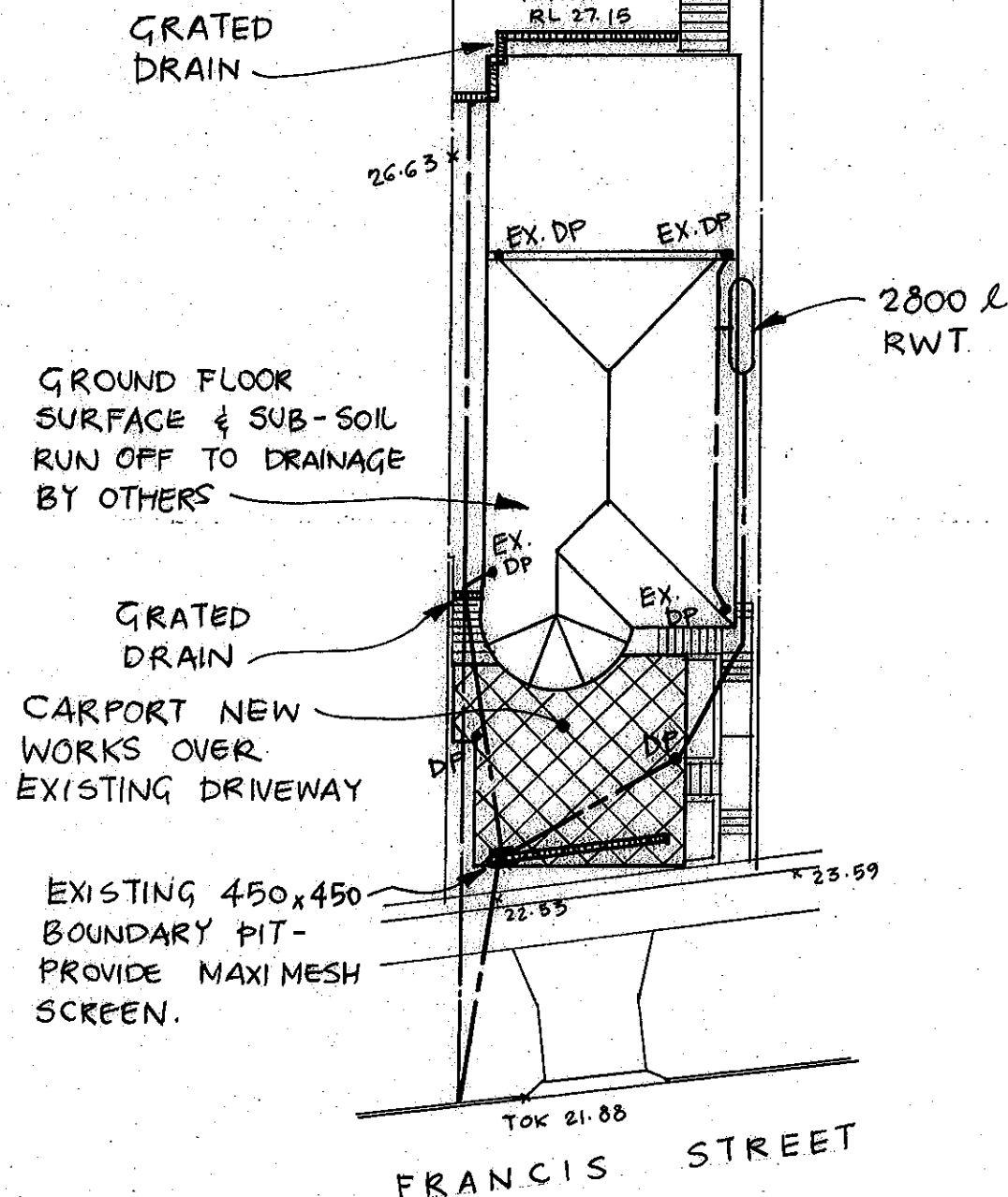
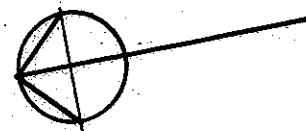
TOTAL IMPERVIOUS AREA > 60%
≈ 73%

RAINWATER TANK PROVIDED
(2800 l)

EX. DP - EXISTING DOWNPIPE
DP - NEW DOWNPIPE 100mm Ø

COUNCIL COPY

NB Northern Beaches Consulting Engineers Pty Ltd.

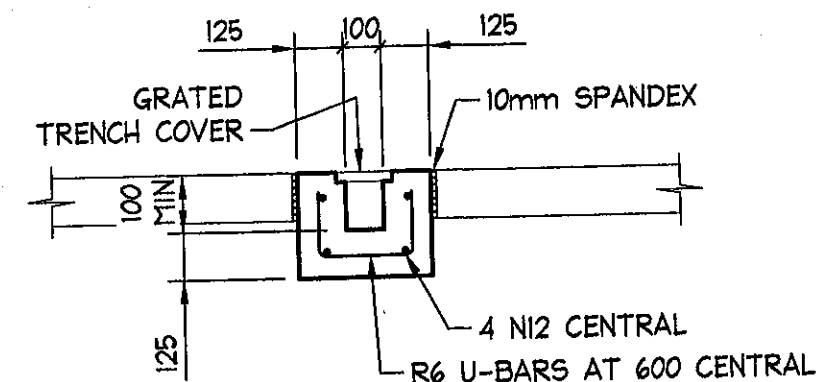


STORMWATER MANAGEMENT PLAN

DOCUMENT CERTIFICATION				NORTHERN BEACHES Consulting Engineers P/L		Project: 52 FRANCIS ST MANDY		Date: NOV. '09	Design: R.M.	Drawn: LFC	Checked:
Date: 4/3/10 Stewart McGeady B.E.(Civil), MIEAust, P.Eng (Director Northern Beaches Consulting Engineers)				A.C.N. 076 121 616 A.B.N. 24 076 121 616 Suite 207, 30 FISHER ROAD DEE WHY N.S.W. 2089 Ph: (02) 9984 7000 Fax: (02) 9984 7444 e-mail: nb@nbconsulting.com.au web page: www.nbconsulting.com.au		Client: JAMES & ROBYN GRADY		Drawing Title: STORMWATER MANAGEMENT PLAN		Job No: 080639	Drawing No: D01
Date:	Rev:	Amendment:	By:	The copyright of this drawing remains with Northern Beaches Consulting Engineers P/L.							

- 1 - ALL PIPES TO BE 100mm ϕ UNLESS NOTED OTHERWISE.
- 2 - ALL PIPES TO BE uPVC TO AS 1254-2002 UNLESS NOTED OTHERWISE.
- 3 - ALL PIPES TO BE LAYED AT 1 % MINIMUM GRADE UNLESS NOTED OTHERWISE.
- 4 - ALL PIPES SHALL BE LAID ON A 75mm SAND BED, COMPACTED TO 100% S.M.D.D. BELOW PAVEMENTS.
(NO COMPACTION REQUIRED BELOW LANDSCAPING)
COVER TO SURFACE FROM TOP OF PIPE TO BE 300mm MINIMUM.
BACKFILL TO BE ADEQUATELY CONSOLIDATED AROUND PIPES BY METHOD OF RAMMING AND WATERING IN. TRENCHES TO BE FILLED WITH GRANULAR MATERIAL AS SPECIFIED.
- 5 - ALL DOWN PIPES TO BE 100mm ϕ UNLESS NOTED OTHERWISE.
- 6 - DOWN PIPE LOCATIONS ARE INDICATIVE ONLY. LOCATIONS TO BE CONFIRMED WITH ARCHITECT PRIOR TO COMMENCEMENT WITH WORK.
- 7 - PROVIDE CLEANING EYES AT ALL DOWNPIPES.
- 8 - ALL PITS TO BE CAST INSITU OR, IF PRECAST, APPROVED BY ENGINEER.
CAST INSITU PITS TO HAVE 150mm THICK CONCRETE WALLS AND BASE.
WALLS TO BE REINFORCED WITH 1 NI2 TOP TIE UNLESS NOTED OTHERWISE.
CAST INSITU PITS GREATER THAN 1000 DEEP TO BE MINIMUM 900x600 AND TO HAVE 150mm THICK CONCRETE WALLS AND BASE. WALLS TO BE REINFORCED WITH NI2 AT 300 EACH WAY UNLESS NOTED OTHERWISE.
- 9 - ALL PITS GREATER THAN 1000mm DEEP SHALL HAVE STEP IRONS AS PER COUNCIL STANDARDS.
- 10 - ALL WORK TO BE IN ACCORDANCE WITH LOCAL COUNCIL STANDARDS AND SPECIFICATIONS.
- 11 - PRIOR TO COMMENCING ANY SITE WORKS THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL MEASURES TO APROVED SEDIMENT AND EROSION CONTROL PLAN, EPA GUIDELINES AND COUNCIL SPECIFICATIONS.
ALL MEASURES TO REMAIN IN PLACE UNTIL COMPLETION AND STABILIZATION OF THE SITE TO COUNCIL SATISFACTION.
- 12 - ALL LEVELS SHOWN ARE TO AHD
- 13 - ENSURE THAT ALL PITS AND STORMWATER PIPES ARE LOCATED CLEAR FROM TREE ROOT SYSTEMS.
- 14 - ALL EXISTING EARTHENWARE PIPES TO BE UPGRADED TO uPVC.
- 15 - ALL WORKS TO BE IN ACCORDANCE WITH AS 3500-2003 NATIONAL PLUMBING DRAINAGE CODE PART 3 - STORMWATER DRAINAGE.

1. ALL DIMENSIONS TO BE VERIFIED ON SITE BY BUILDER BEFORE COMMENCING WITH WORK.
2. FOR GENERAL NOTES REFER TO DRAWING NUMBER: 501.



PRECAST OR CAST INSITU GRATED DRAIN OR
ALTERNATE POLYPROPYLENE DRAIN BY MANUFACTURER

TYPICAL GRATED DRAIN - GD

SCALE = 1 : 20

[illegible]