PROPOSED RESIDENTIAL DEVELOPMENT

LOTS 502 & 503 IN D.P. 218045 KNOWN AS
14 YEATS AVENUE KILLARNEY HEIGHTS
PROPOSED CIVIL STORMWATER WORKS
DEVELOPMENT APPLICATION

DRAWING LIST

LOCALITY PLAN

N.T.S

Issue	Description	Date
A	RE-ISSUE FOR APPROVAL	03-06-16
P1	ISSUE FOR APPROVAL	06-04-16

Bar Scales

Client: MR ANDREW TOOHEY

Scales	N.T.S	Drawn	P.F.
		Designed	P.F.
Grid	MGA	Checked	A.T.
Height Datum	AHD	Approved	A.T.

Project: LOTS 502 & 503 IN D.P. 218045 KNOWN AS 14 YEATS AVENUE KILLARNEY HEIGHTS

Title: COVER SHEET AND DRAWING LIST

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Status: FOR APPROVAL

NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No.	Project No.	Issue
DAC001	15-350	A

100mm on Original

SURVEY NOTES

THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY BEE & LETHBRIDGE PTY. LTD. , BEING REGISTERED SURVEYORS. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. AT & L DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.

SHOULD DISCREPANCIES BE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND ACTUAL FIELD DATA, CONTACT AT & L.

PROPOSED WORKS LEGEND

EXISTING (REFER SURVEY NOTES)

PROPOSED

- EXISTING BOUNDARY
- ROOF DRAINAGE PIPES
- RL12.00 — FINISHED SURFACE LEVEL
- VC — VEHICLE CROSSING. REFER DRAWING FOR DETAILS.
- GD — STORMWATER GRATED DRAIN
- A1 — STORMWATER PIT, PIPE, NUMBER & DIAMETER
- ø150
- SUBSOIL PIPE. REFER WARRINGAH COUNCIL STANDARD FOR DETAILS.
- DP — DOWNPIPE
- FP — SUBSOIL FLUSHING POINT. REFER DRAWING FOR DETAILS.
- IR — SUBSOIL INTERMEDIATE RISER. REFER DRAWING FOR DETAILS.
- RWO — RAINWATER OUTLET PIT
- OVERLAND FLOW ARROW
- STORMWATER KERB INLET PIT
- STORMWATER JUNCTION PIT
- STORMWATER SURFACE INLET PIT
- 1 / 4 — BATTER SLOPE

CONCRETE NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH AS 3600 CURRENT EDITION WITH AMENDMENTS, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
2. CONCRETE QUALITY
   ALL REQUIREMENTS OF THE CURRENT ACSE CONCRETE SPECIFICATION DOCUMENT 1 SHALL APPLY TO THE FORMWORK, REINFORCEMENT AND CONCRETE UNLESS NOTED OTHERWISE.

ELEMENT	AS 3600 F'c MPa AT 28 DAYS	SPECIFIED SLUMP	NOMINAL AGG. SIZE
VEHICULAR BASE	32	60	20
KERBS, PATHS, AND PITS	25	80	20

   - CEMENT TYPE SHALL BE (ACSE SPECIFICATION) TYPE SL
   - PROJECT CONTROL TESTING SHALL BE CARRIED OUT IN ACCORDANCE WITH AS 1379.
3. NO ADMIXTURES SHALL BE USED IN CONCRETE UNLESS APPROVED IN WRITING BY AT & L.
4. CLEAR CONCRETE COVER TO ALL REINFORCEMENT FOR DURABILITY SHALL BE 40mm TOP AND 70mm FOR EXTERNAL EDGES UNLESS NOTED OTHERWISE.
5. ALL REINFORCEMENT SHALL BE FIRMLY SUPPORTED ON MILD STEEL PLASTIC TIPPED CHAIRS, PLASTIC CHAIRS OR CONCRETE CHAIRS AT NOT GREATER THAN 1m CENTRES BOTH WAYS. BARS SHALL BE TIED AT ALTERNATE INTERSECTIONS.
6. THE FINISHED CONCRETE SHALL BE A DENSE HOMOGENEOUS MASS, COMPLETELY FILLING THE FORMWORK, THOROUGHLY EMBEDDING THE REINFORCEMENT AND FREE OF STONE POCKETS. ALL CONCRETE INCLUDING SLABS ON GROUND AND FOOTINGS SHALL BE COMPACTED AND CURED IN ACCORDANCE WITH R.M.S. SPECIFICATION R83.
7. REINFORCEMENT SYMBOLS:
   N DENOTES GRADE 450 N BARS TO AS 1302 GRADE N
   R DENOTES 230 R HOT ROLLED PLAIN BARS TO AS 1302
   SL DENOTES HARD-DRAWN WIRE REINFORCING FABRIC TO AS 1304

   NUMBER OF BARS IN GROUP — BAR GRADE AND TYPE
   17 N 20 250
   NOMINAL BAR SIZE IN mm — SPACING IN mm

   THE FIGURE FOLLOWING THE FABRIC SYMBOL SL IS THE REFERENCE NUMBER FOR FABRIC TO AS 1304.
8. FABRIC SHALL BE LAPPED IN ACCORDANCE WITH THE FOLLOWING DETAIL:

BULK EARTHWORKS NOTES

1. ORIGIN OF LEVELS: REFER SURVEY NOTES
2. STRIP ALL TOPSOIL/ORGANIC MATERIAL FROM CONSTRUCTION AREA AND REMOVE FROM SITE OR STOCK PILE AS DIRECTED BY SUPERINTENDENT.
3. EXCAVATED MATERIAL TO BE USED AS STRUCTURAL FILL PROVIDED THE PLACEMENT MOISTURE CONTENT OF THE MATERIAL IS +/- 2% OF THE OPTIMUM MOISTURE CONTENT.
4. COMPACT FILL AREAS AND SUBGRADE TO NOT LESS THAN:

LOCATION	STANDARD DRY DENSITY (AS 1289 E 5.1.1.)
UNDER BUILDING SLABS ON GROUND	98%
UNDER ROADS AND CARPARKS	98%
LANDSCAPED AREAS UNLESS NOTED OTHERWISE	98%

5. FOR NON COHESIVE MATERIAL, COMPACT TO 75% DENSITY INDEX.
6. BEFORE PLACING FILL, PROOF ROLL EXPOSED SUBGRADE WITH AN 8 TONNE (MIN) DEADWEIGHT SMOOTH DRUM VIBRATORY ROLLER TO DETECT THEN REMOVE SOFT SPOTS (AREAS WITH MORE THAN 2mm MOVEMENT UNDER ROLLER).
7. FREQUENCY OF COMPACTION TESTING SHALL BE NOT LESS THAN :-
   (A) 1 TEST PER 200m^2 OF FILL PLACED PER 300 LAYER OF FILL.
   (B) 3 TESTS PER VISIT
   (C) 1 TEST PER 1000m^2 OF EXPOSED SUBGRADE
   TESTING SHALL BE "LEVEL 1" TESTING IN ACCORDANCE WITH AS 3798 (1996).
8. FILLING TO BE PLACED AND COMPACTED IN MAXIMUM 150mm LAYERS
9. NO FILLING SHALL TAKE PLACE TO EXPOSE SUBGRADE UNTIL THE AREA HAS BEEN PROOF ROLLED IN THE PRESENCE OF AT & L AND APPROVAL GIVEN IN WRITING THAT FILLING CAN PROCEED.
9. EARTHWORKS TO BE INDERTAKEN IN ACCORDANCE WITH THE RECOMMENDATIONS OF DOUGLAS & PARTNERS GEOTECHNICAL REPORTS REF. 71089.00 AND 84798.00
10. SALINITY MANAGEMENT WILL BE REUIRED ON SITE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE DOUGLAS AND PARTNERS GEOTECHNICAL REPORT

SITEWORKS NOTES

1. ORIGIN OF LEVELS:- REFER SURVEY NOTES.
2. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND EXISTING LEVELS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES TO BE REPORTED TO AT & L.
3. MAKE SMOOTH CONNECTION WITH EXISTING WORKS.
4. ALL TRENCH BACKFILL MATERIAL SHALL BE COMPACTED TO THE SAME DENSITY AS THE ADJACENT MATERIAL.
5. ALL SERVICE TRENCHES UNDER VEHICULAR PAVEMENTS SHALL BE BACKFILLED WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% MODIFIED MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
6. PROVIDE 10mm WIDE EXPANSION JOINTS BETWEEN BUILDINGS AND ALL CONCRETE OR UNIT PAVEMENTS.
7. ASPHALTIC CONCRETE SHALL CONFORM TO R.M.S. SPECIFICATION R116.
8. ALL BASECOURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH R.M.S. FORM 3051 (UNBOUND), R.M.S. FORM 3052 (BOUND) COMPACTED TO MINIMUM 98% MODIFIED DENSITY IN ACCORDANCE WITH AS 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m^3 OF BASECOURSE MATERIAL PLACED.
9. ALL SUB-BASE COURSE MATERIAL SHALL BE IGNEOUS ROCK QUARRIED MATERIAL TO COMPLY WITH R.M.S. FORM 3051, 3051.1 AND COMPACTED TO MINIMUM 95% MODIFIED DENSITY IN ACCORDANCE WITH A.S 1289 5.2.1 FREQUENCY OF COMPACTION TESTING SHALL NOT BE LESS THAN 1 TEST PER 50m^3 OF SUB-BASE COURSE MATERIAL PLACED.
10. AS AN ALTERNATIVE TO THE USE OF IGNEOUS ROCK AS A SUB-BASE MATERIAL IN (9) A CERTIFIED RECYCLED CONCRETE MATERIAL COMPLYING WITH R.M.S. FORM 3051 AND 3051.1 WILL BE CONSIDERED. SUBJECT TO MATERIAL SAMPLES AND APPROPRIATE CERTIFICATIONS BEING PROVIDED TO THE SATISFACTION OF AT & L.
11. SHOULD THE CONTRACTOR WISH TO USE A RECYCLED PRODUCT THIS SHALL BE CLEARLY INDICATED IN THEIR TENDER AND THE PRICE DIFFERENCE BETWEEN AN IGNEOUS PRODUCT AND A RECYCLED PRODUCT SHALL BE CLEARLY INDICATED.
12. WHERE NOTED ON THE DRAWINGS THAT WORKS ARE TO BE CARRIED BY OTHERS, (eg. ADJUSTMENT OF SERVICES), THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CO-ORDINATION OF THESE WORKS.

STORMWATER DRAINAGE NOTES

1. STORMWATER DESIGN CRITERIA:
   (A) AVERAGE RECURRENCE INTERVAL:
   1:100 YEARS ROOFED AREAS TO SURCHARGE PIT
   1:20 YEARS EXTERNAL PAVEMENTS
   (B) RAINFALL INTENSITIES:
   TIME OF CONCENTRATION: 5 MINUTES
   1:100 YEARS= 219 mm/hr
   1:20 YEARS= 168 mm/hr
   (C) RUNOFF COEFFICIENTS:
   ROOF AREAS: C_{100} =1.0
   EXTERNAL PAVEMENTS: C_{20} =1.0
2. PIPES 300 DIA. AND LARGER TO BE REINFORCED CONCRETE CLASS '3' APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINTS. U.N.O.
3. PIPES UP TO 300 DIA SHALL BE SEWER GRADE uPVC WITH SOLVENT WELDED JOINTS.
4. EQUIVALENT STRENGTH VCP OR FRC PIPES MAY BE USED.
5. ALL STORMWATER DRAINAGE LINES UNDER PROPOSED BUILDING SLABS TO BE uPVC PRESSURE PIPE GRADE 6 U.N.O. ENSURE ALL VERTICALS AND DOWNPIPES ARE uPVC PRESSURE PIPE, GRADE 6 FOR A MIN OF 3.0m IN HEIGHT U.N.O.
6. PIPES TO BE INSTALLED TO TYPE HS3 SUPPORT IN ACCORDANCE WITH AS 3725 (2007) IN ALL CASES BACKFILL TRENCH WITH SAND TO 300mm ABOVE PIPE. WHERE PIPE IS UNDER PAVEMENTS BACKFILL REMAINDER OF TRENCH TO UNDERSIDE OF PAVEMENT WITH SAND OR APPROVED GRANULAR MATERIAL COMPACTED IN 150mm LAYERS TO MINIMUM 98% STANDARD MAXIMUM DRY DENSITY IN ACCORDANCE WITH AS 1289 5.2.1. (OR A DENSITY INDEX OF NOT LESS THAN 75)
7. ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH THE REQUIREMENTS OF AS 3500 3.1 (1998) AND AS/NZS 3500 3.2 (1998).
8. PRECAST PITS MAY BE USED EXTERNAL TO THE BUILDING SUBJECT TO APPROVAL BY AT & L.
9. ENLARGERS, CONNECTIONS AND JUNCTIONS TO BE PREFABRICATED FITTINGS WHERE PIPES ARE LESS THAN 300 DIA.
10. WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS AND VEHICULAR PAVEMENTS, UNSLOTTED uPVC SEWER GRADE PIPE IS TO BE USED.
11. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
12. GRATES AND COVERS SHALL CONFORM TO AS 3996.
13. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO ENSURE AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
14. ALL EXISTING STORMWATER DRAINAGE LINES AND PITS THAT ARE TO REMAIN ARE TO BE INSPECTED AND CLEANED. DURING THIS PROCESS ANY PART OF THE STORMWATER DRAINAGE SYSTEM THAT WARRANTS REPAIR SHALL BE REPORTED TO THE SUPERINTENDENT/ENGINEER FOR FURTHER DIRECTIONS.

EROSION AND SEDIMENT CONTROL NOTES

GENERAL INSTRUCTIONS

1. THE SITE SUPERINTENDENT/ENGINEER WILL ENSURE THAT ALL SOIL AND WATER MANAGEMENT WORKS ARE LOCATED AS DOCUMENTED.
2. ALL WORK SHALL BE GENERALLY CARRIED OUT IN ACCORDANCE WITH
   a. LOCAL AUTHORITY REQUIREMENTS
   b. EPA REQUIREMENTS
   c. NSW DEPARTMENT OF HOUSING MANUAL "MANAGING URBAN STORMWATER, SOILS AND CONSTRUCTION", 4th EDITION, MARCH 2004.
3. MAINTAIN THE EROSION CONTROL DEVICES TO THE SATISFACTION OF THE SUPERINTENDENT AND THE LOCAL AUTHORITY.
4. WHEN STORMWATER PITS ARE CONSTRUCTED, PREVENT SITE RUNOFF ENTERING UNLESS SEDIMENT FENCES ARE ERECTED AROUND PITS.
5. CONTRACTOR IS TO ENSURE ALL EROSION & SEDIMENT CONTROL DEVICES ARE MAINTAINED IN GOOD WORKING ORDER AND OPERATE EFFECTIVELY. REPAIRS AND OR MAINTENANCE SHALL BE UNDERTAKEN AS REQUIRED, PARTICULARLY FOLLOWING STORM EVENTS.

LAND DISTURBANCE

6. WHERE PRACTICAL, THE SOIL EROSION HAZARD ON THE SITE WILL BE KEPT AS LOW AS POSSIBLE. TO THIS END, WORKS SHOULD BE UNDERTAKEN IN THE FOLLOWING SEQUENCE:
   (A) INSTALL A WIND FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
   (B) INSTALL A SEDIMENT FENCE ALONG THE BOUNDARIES AS SHOWN ON PLAN. REFER DETAIL.
   (C) CONSTRUCT STABILISED CONSTRUCTION ENTRANCE TO LOCATION AS DETERMINED BY SUPERINTENDENT/ENGINEER. REFER DETAIL.
   (D) INSTALL SEDIMENT BASIN AS SHOWN ON PLAN
   (E) INSTALL SEDIMENT TRAPS AS SHOWN ON PLAN.
   (F) UNDERTAKE SITE DEVELOPMENT WORKS IN ACCORDANCE WITH THE ENGINEERING PLANS. WHERE POSSIBLE, PHASE DEVELOPMENT SO THAT LAND DISTURBANCE IS CONFINED TO AREAS OF WORKABLE SIZE.

EROSION CONTROL

7. DURING WINDY WEATHER, LARGE, UNPROTECTED AREAS WILL BE KEPT MOIST (NOT WET) BY SPRINKLING WITH WATER TO KEEP DUST UNDER CONTROL.
8. FINAL SITE LANDSCAPING WILL BE UNDERTAKEN AS SOON AS POSSIBLE AND WITHIN 20 WORKING DAYS FROM COMPLETION OF CONSTRUCTION ACTIVITIES.

SEDIMENT CONTROL

9. STOCKPILES WILL NOT BE LOCATED WITHIN 2 METRES OF HAZARD AREAS, INCLUDING LIKELY AREAS OF CONCENTRATED OR HIGH VELOCITY FLOWS SUCH AS WATERWAYS. WHERE THEY ARE BETWEEN 2 AND 5 METRES FROM SUCH AREAS, SPECIAL SEDIMENT CONTROL MEASURES SHOULD BE TAKEN TO MINIMISE POSSIBLE POLLUTION TO DOWNSLOPE WATERS, E.G. THROUGH INSTALLATION OF SEDIMENT FENCING.
10. ANY SAND USED IN THE CONCRETE CURING PROCESS (SPREAD OVER THE SURFACE) WILL BE REMOVED AS SOON AS POSSIBLE AND WITHIN 10 WORKING DAYS FROM PLACEMENT.
11. WATER WILL BE PREVENTED FROM ENTERING THE PERMANENT DRAINAGE SYSTEM UNLESS IT IS RELATIVELY SEDIMENT FREE, I.E. THE CATCHMENT AREA HAS BEEN PERMANENTLY LANDSCAPED AND/OR ANY LIKELY SEDIMENT HAS BEEN FILTERED THROUGH AN APPROVED STRUCTURE.
12. TEMPORARY SOIL AND WATER MANAGEMENT STRUCTURES WILL BE REMOVED ONLY AFTER THE LANDS THEY ARE PROTECTING ARE REHABILITATED.

OTHER MATTERS

13. ACCEPTABLE RECEPTORS WILL BE PROVIDED FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS, LIGHT-WEIGHT WASTE MATERIALS AND LITTER.
14. ANY EXISTING TREES WHICH FORM PART OF THE FINAL LANDSCAPING PLAN WILL BE PROTECTED FROM CONSTRUCTION ACTIVITIES BY:
   (A) PROTECTING THEM WITH BARRIER FENCING OR SIMILAR MATERIALS INSTALLED OUTSIDE THE DRIP LINE
   (B) ENSURING THAT NOTHING IS NAILED TO THEM
   (C) PROHIBITING PAVING, GRADING, SEDIMENT WASH OR PLACING OF STOCKPILES WITHIN THE DRIP LINE EXCEPT UNDER THE FOLLOWING CONDITIONS.
   (I) ENCROACHMENT ONLY OCCURS ON ONE SIDE AND NO CLOSER TO THE TRUNK THAN EITHER 1.5 METRES OR HALF THE DISTANCE BETWEEN THE OUTER EDGE OF THE DRIP LINE AND THE TRUNK, WHICH EVER IS THE GREATER
   (II) A DRAINAGE SYSTEM THAT ALLOWS AIR AND WATER TO CIRCULATE THROUGH THE ROOT ZONE (E.G. A GRAVEL BED) IS PLACED UNDER ALL FILL LAYERS OF MORE THAN 300 MILLIMETRES DEPTH
   (III) CARE IS TAKEN NOT TO CUT ROOTS UNNECESSARILY NOR TO COMPACT THE SOIL AROUND THEM.

KERBING NOTES

1. ALL CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF N25 U.N.O IN REINFORCED CONCRETE NOTES.
2. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSINGS TO BE CONSTRUCTED ON 100mm GRANULAR BASECOURSE COMPACTED TO MINIMUM 95% MODIFIED DRY DENSITY (AS 1289 5.2.1).
3. EXPANSION JOINTS (E.J) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILLER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX 12m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLABS.
4. WEAKENED PLANE JOINTS TO BE MIN 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE WEAKENED PLANE JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLABS.
5. BROOMED FINISH TO ALL RAMPED AND VEHICULAR CROSSINGS. ALL OTHER KERBING OR DISH DRAINS TO BE STEEL FLOAT FINISHED.
6. IN THE REPLACEMENT OF KERB AND GUTTER :-
   EXISTING ROAD PAVEMENT IS TO BE SAWCUT 900mm U.N.O FROM THE LIP OF GUTTER. UPON COMPLETION OF THE NEW KERB AND GUTTER NEW BASECOURSE AND SURFACE TO BE LAID 900mm WIDE U.N.O.

   EXISTING ALLOTMENT DRAINAGE PIPES ARE TO BE BUILT INTO THE NEW KERB AND GUTTER WITH 100mm DIA HOLE.

   EXISTING KERB AND GUTTER IS TO BE COMPLETELY REMOVED WHERE NEW KERB AND GUTTER IS SHOWN.

EXISTING UNDERGROUND SERVICES NOTES

THE LOCATIONS OF UNDERGROUND SERVICES SHOWN IN THIS SET OF DRAWINGS HAVE BEEN PLOTTED FROM SURVEY INFORMATION AND SERVICE AUTHORITY INFORMATION. THE SERVICE INFORMATION HAS BEEN PREPARED ONLY TO SHOW THE APPROXIMATE POSITIONS OF ANY KNOWN SERVICES AND MAY NOT BE AS CONSTRUCTED OR ACCURATE.
AT & L CAN NOT GUARANTEE THAT THE SERVICES INFORMATION SHOWN ON THESE DRAWINGS ACCURATELY INDICATES THE PRESENCE OR ABSENCE OF SERVICES OR THEIR LOCATION AND WILL ACCEPT NO LIABILITY FOR INACCURACIES IN THE SERVICES INFORMATION SHOWN FROM ANY CAUSE WHATSOEVER.

CONTRACTORS SHALL TAKE DUE CARE WHEN EXCAVATING ONSITE INCLUDING HAND EXCAVATION WHERE NECESSARY.

CONTRACTORS ARE TO CONTACT THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.

CONTRACTORS ARE TO UNDERTAKE A SERVICES SEARCH, PRIOR TO COMMENCEMENT OF WORKS ON SITE. SEARCH RESULTS ARE TO BE KEPT ON SITE AT ALL TIMES.

SAFETY IN DESIGN

THERE ARE INHERENT RISKS WITH CONSTRUCTING, MAINTAINING, OPERATING, DEMOLISHING, DISMANTLING AND DISPOSING THE DESIGN THAT ARE TYPICAL OF SIMILAR DESIGNS. AS FAR AS REASONABLY PRACTABLE, RISKS HAVE BEEN ELIMINATED OR MINIMISED THROUGH THE DESIGN PROCESS. HAZARD CONTROLS MUST STILL BE IMPLEMENTED BY THE CONTRACTOR, OWNER OR OPERATOR TO ENSURE THE SAFETY OF WORKERS.

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Issue	Description	Date
A	RE-ISSUE FOR APPROVAL	03-06-16
P1	ISSUE FOR APPROVAL	06-04-16

100mm on Original

Bar Scales

Client: MR ANDREW TOOHEY

Scales: N.T.S
Grid: MGA
Height Datum: AHD

Drawn	P.F.
Designed	P.F.
Checked	A.T.
Approved	A.T.

Project: LOTS 502 & 503 IN D.P. 218045 KNOWN AS 14 YEATS AVENUE KILLARNEY HEIGHTS

Title: GENERAL NOTES AND LEGENDS

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Status: FOR APPROVAL
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A1

Drawing No.	Project No.	Issue
DAC002	15-350	A

Date Plotted: 3 Jun 2016 - 15:20:41 J:\15-350 New House Killarney Heights\Drgs\Civil\Plan\DAC002.dwg

ON SITE DETENTION TANK (LOCATED IN GARAGE LEVEL)

TANK DEPTH:	2.1 m
TOP WATER LEVEL:	104.85
MAX WATER DEPTH IN TANK:	2.0 m
OSD VOLUME REQUIRED:	10.0m^3 (AS PER REVISED SITE DISCHARGE DRAINS CALCULATION V03)
OSD VOLUME PROVIDED:	2 OSD TANKS + 50% OF VOLUME WITHIN REUSE TANK (AS PER WARRINGAH COUNCIL ENGINEERING REFERRAL RESPONSE DA2016/0361 STORMWATER CONDITION 1) VOLUME (2x4m^3) + (50% x 4m^3) = 10m^3

Issue	Description	Date
C	RE-ISSUE FOR APPROVAL	28-10-19
B	RE-ISSUE FOR APPROVAL	17-10-19
A	RE-ISSUE FOR APPROVAL	03-06-16
P1	ISSUE FOR APPROVAL	06-04-16

Bar Scales
1 : 50 @ A1 1 : 100 @ A3
1 : 100 @ A1 1 : 200 @ A3

Client: MR ANDREW TOOHEY

Scales	1:100 @ A1 1:200 @ A3	Drawn	P.F.
		Designed	P.F.
Grid	MGA	Checked	A.T.
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Project: LOTS 502 & 503 IN D.P. 218045 KNOWN AS 14 YEATS AVENUE KILLARNEY HEIGHTS

Title: STORMWATER PLAN

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Status: FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION — A1

Drawing No.	Project No.	Issue
DAC003	15-350	C

100mm on Original

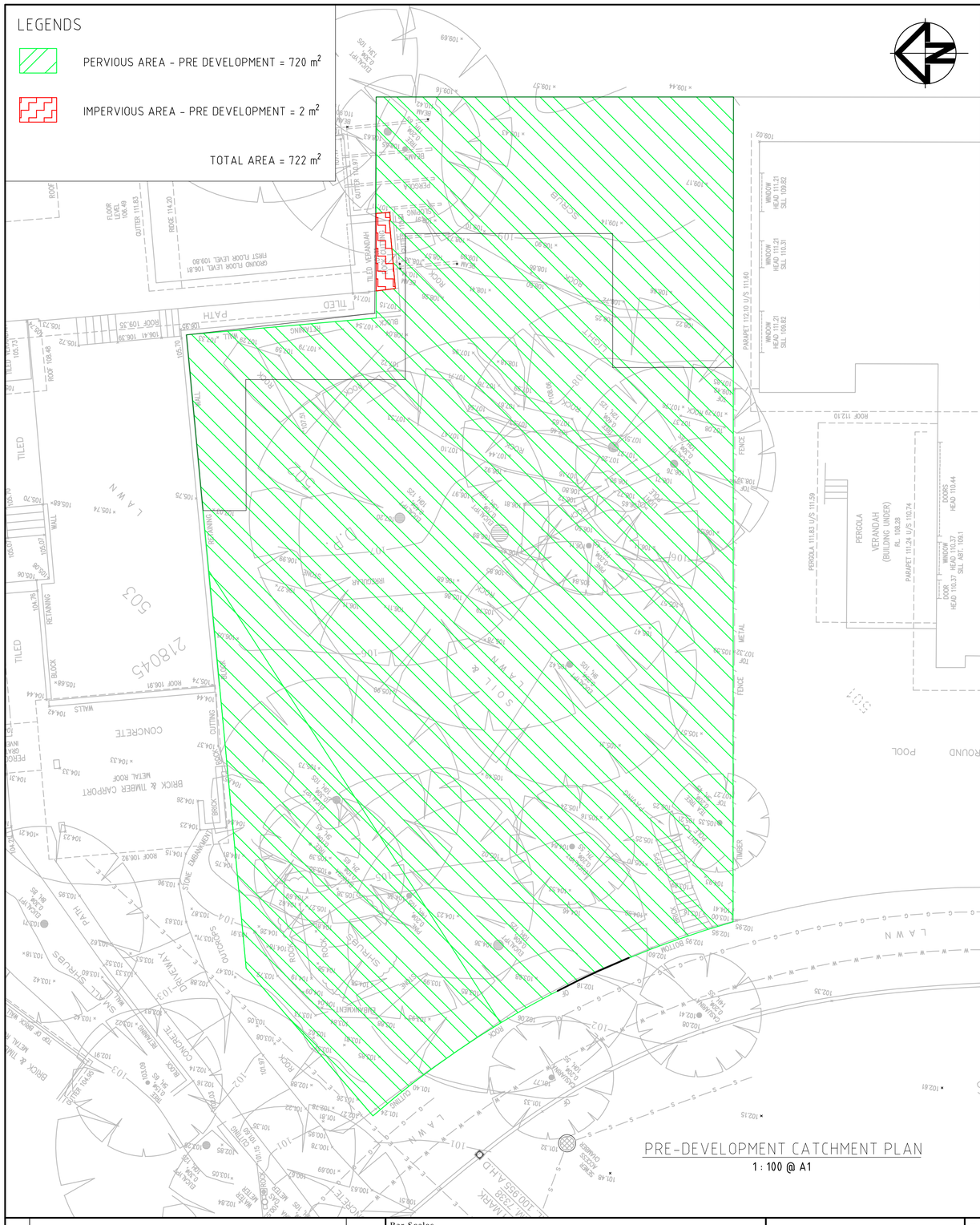
Date Plotted: 29 Oct 2019 - 10:00AM File Name: F:\15-350 New House Killarney Heights\Drgs\Civil\Final\DAC003.dwg

LEGENDS

PERVIOUS AREA - PRE DEVELOPMENT = 720 m²

IMPERVIOUS AREA - PRE DEVELOPMENT = 2 m²

TOTAL AREA = 722 m²



LEGENDS

PERVIOUS AREA TO OSD - POST DEVELOPMENT = 143 m² (19.8% OF TOTAL AREA)

BYPASS AREA - POST DEVELOPMENT = 192 m² (26.6% OF TOTAL AREA)

IMPERVIOUS AREA TO OSD - POST DEVELOPMENT = 292 m² (40.4% OF TOTAL AREA)

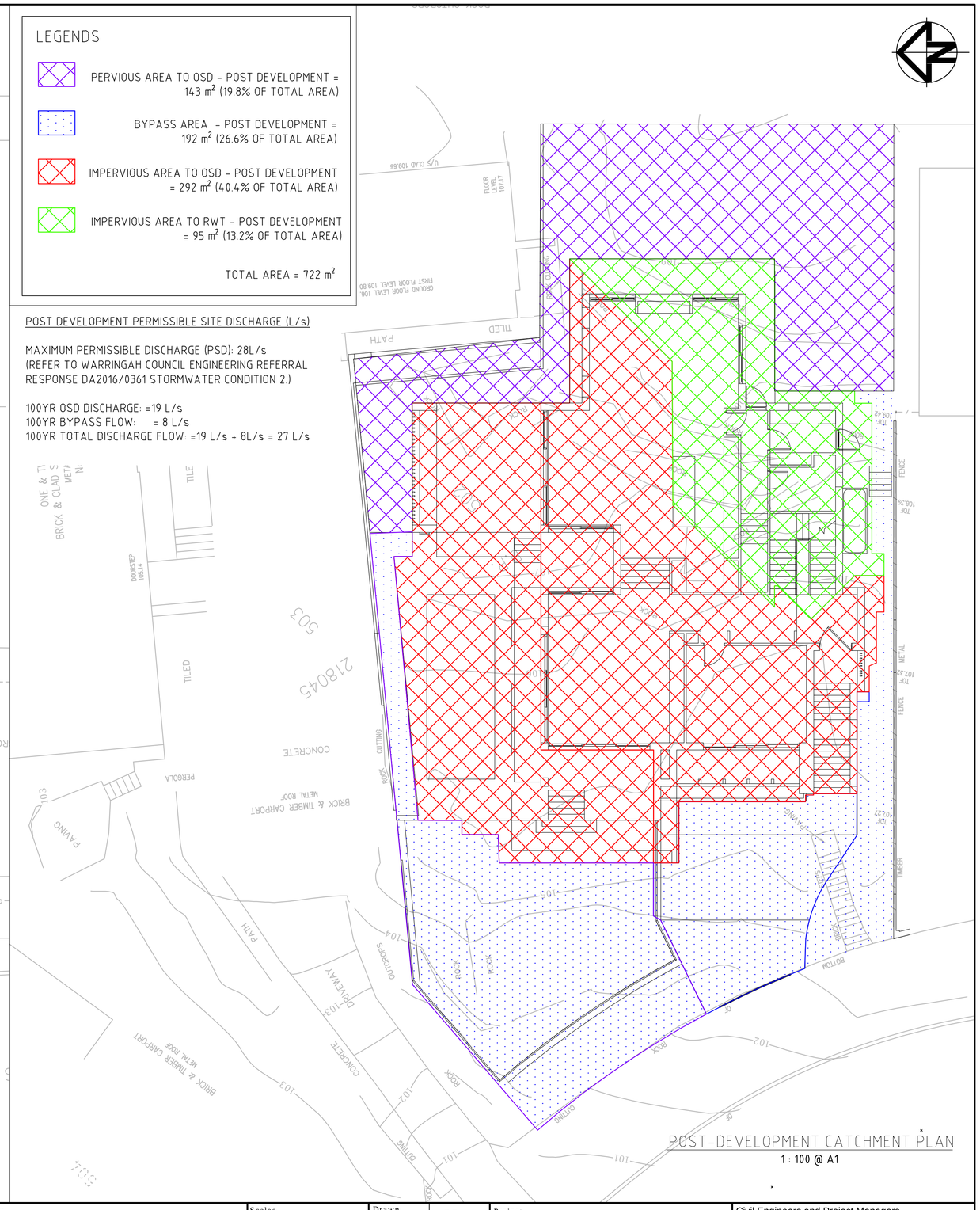
IMPERVIOUS AREA TO RWT - POST DEVELOPMENT = 95 m² (13.2% OF TOTAL AREA)

TOTAL AREA = 722 m²

POST DEVELOPMENT PERMISSIBLE SITE DISCHARGE (L/s)

MAXIMUM PERMISSIBLE DISCHARGE (PSD): 28L/s
(REFER TO WARRINGAH COUNCIL ENGINEERING REFERRAL RESPONSE DA2016/0361 STORMWATER CONDITION 2.)

100YR OSD DISCHARGE: =19 L/s
100YR BYPASS FLOW: = 8 L/s
100YR TOTAL DISCHARGE FLOW: =19 L/s + 8L/s = 27 L/s



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100mm on Original

Bar Scales

0 2 4 6 8 10m

1 : 100 @ A1 1 : 200 @ A3

Client

MR ANDREW TOOHEY

Scales
1:100 @ A1
1:200 @ A3

Grid MGA

Height Datum AHD

Drawn	P.F.
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Project

LOTS 502 & 503
IN D.P. 218045 KNOWN AS
16 YEATS AVENUE
KILLARNEY HEIGHTS

Title

STORMWATER
CATCHMENT PLAN

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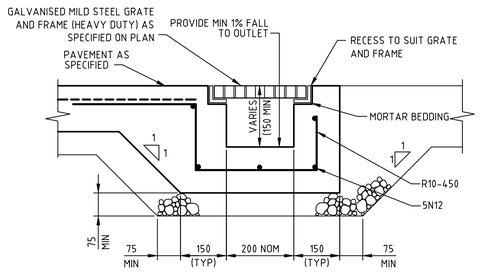
A1

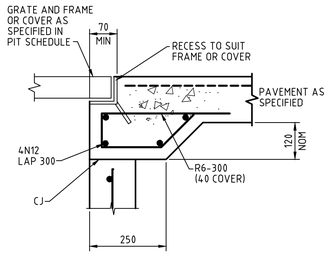
Drawing No.	Project No.	Issue
DAC004	15-350	C

Date Plotted: 29 Oct 2019 - 09:32AM File Name: F:\15-350 New House Killarney Heights\Drgs\Civil\Final\DAC004.dwg



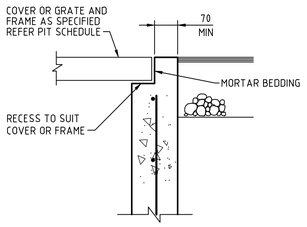
GRATED DRAIN (GD)

SCALE 1:10



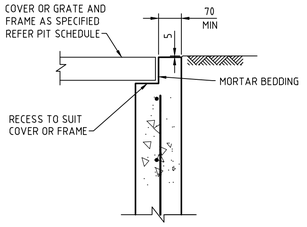
DETAIL "C"

SCALE 1:10



DETAIL "D"

SCALE 1:10



DETAIL "E"

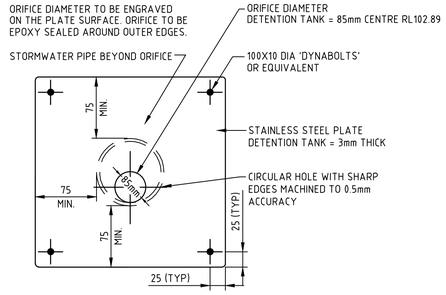
SCALE 1:10

SURFACE INLET PIT

1 : 10

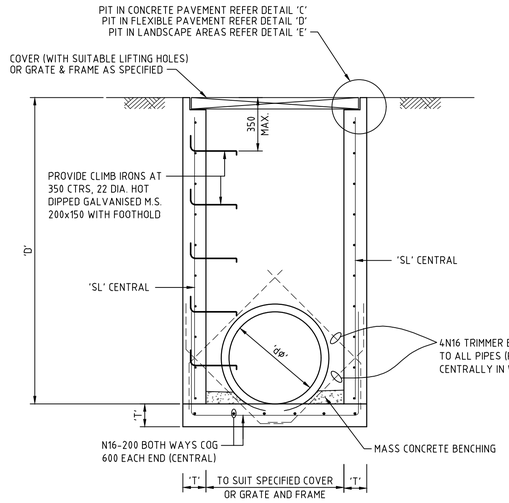
JUNCTION PIT

1 : 10



ORIFICE PLATE DETAIL

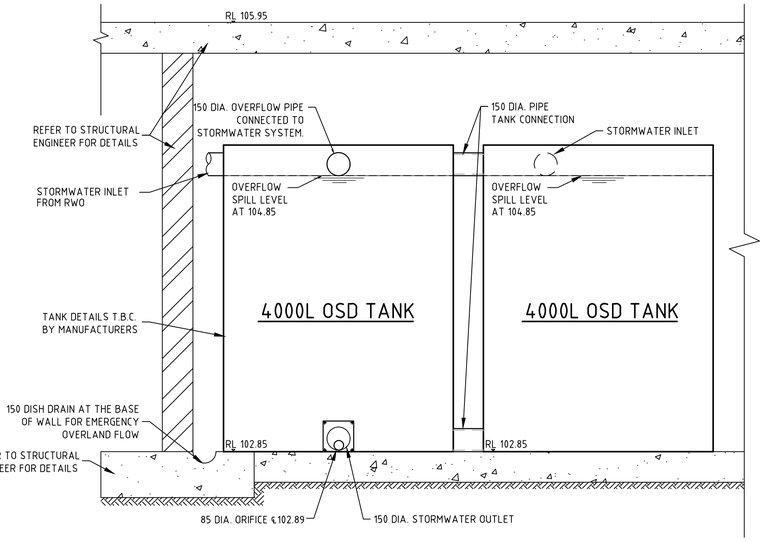
SCALE 1:5



PIT TYPE 'A' DETAIL
SURFACE INLET PIT
FOR PIPES UP TO 525ø

SCALE: 1:20

PIPE DIA. 'dØ'	WIDTH 'W'	DEPTH 'D'	WALL 'T'	FABRIC/COV 'SL'
150	450	450	150	SL72
	450	600	150	SL72
	600	750	150	SL72
	600	900	150	SL72
	-	-	-	-
375	650	800	150	SL72
	650	1200	150	SL72
	650	1600	150	SL72
	650	2000	150	SL72
	650	2400	150	SL72
450	650	800	150	SL72
	650	1200	150	SL72
	650	1600	150	SL72
	650	2000	150	SL72
	650	2400	150	SL72



SECTION 1 (DAC003)

1 : 20

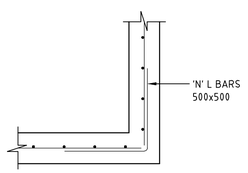
NOTE

1. FOR PIT SIZE REFER TO TABLE (900 MIN LONG).
2. REINFORCING MESH IS TO BE BENT TO LAP 300 AROUND ALL CORNERS. VERTICAL BARS ARE NOT TO BE CUT. ALTERNATELY PROVIDE N12 "L" BARS (500x500) AT 400 VERTICAL CTS.
3. COMPRESSIVE STRENGTH (F'c) FOR CAST IN SITU CONCRETE SHALL BE A MINIMUM 32 MPa AT 28 DAYS.
4. TOP OF BENCHING SHALL BE ½ OF OUTLET PIPE DIAMETER.
5. 100mm SUBSOIL DRAINAGE PIPE 3000 LONG WRAPPED IN FABRIC SOCK TO BE PROVIDE ADJACENT TO INLET PIPES.
6. ALL PITS SHALL BE PROVIDED WITH A LOCKING CLIP.
7. PIT GRATE TO BE 'WELDLOK' GULLY GRATE GG 78-50 OR APPROVED EQUIVALENT.
8. DURING INSTALLATION OF GRATE AND FRAME CONTRACTOR IS TO ENSURE CLEARANCE BETWEEN LINTEL AND OPENED GRATE (REFER TO INSTALLATION TOLERANCE).
9. PROVIDE STEP IRONS AS INDICATED FOR PITS DEEPER THAN 1200.
10. N12 AT 200 CENTRAL MAY BE USED IN LIEU OF MESH. LAP 500 AT CORNERS
11. CONCRETE STRENGTH - UNLESS NOTED OTHERWISE

ELEMENT	f'c MPa (28 DAYS)	SLUMP	MAX AGG SIZE	CEMENT TYPE
PITS	32	80mm	20mm	GP

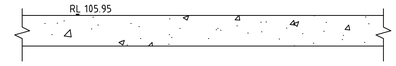
12. COVER - UNLESS NOTED OTHERWISE

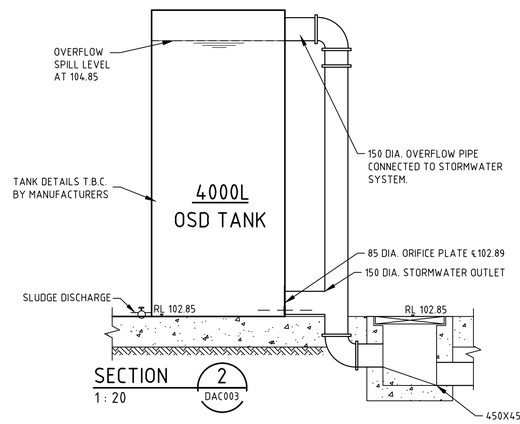
ELEMENT	INTERIOR	EXTERIOR
PITS		45mm
SLAB TOP	45mm	45mm
SLAB BOTTOM	45mm	45mm
BEAM TOP		
BEAM BOTTOM		
BEAM SIDE		
COLUMNS		



TYPICAL CORNER DETAIL

SCALE 1:20





SECTION 2 (DAC003)

1 : 20

Issue	Description	Date
C	RE-ISSUE FOR APPROVAL	28-10-19
B	RE-ISSUE FOR APPROVAL	17-10-19
A	RE-ISSUE FOR APPROVAL	03-06-16
P1	ISSUE FOR APPROVAL	06-04-16

100mm on Original

Bar Scales

0 50 100 200 300 400 500mm

1 : 5 @ A1 1 : 10 @ A3

0 100 200 400 600 800 1000mm

1 : 10 @ A1 1 : 20 @ A3

0 500 1000 1500 2000mm

1 : 20 @ A1 1 : 40 @ A3

Client: MR ANDREW TOOHEY

Scales: AS SHOWN

Grid: MGA

Height Datum: AHD

Drawn: P.F.

Designed: P.F.

Checked: A.T.

Approved: A.T.

Project: LOTS 502 & 503 IN D.P. 218045 KNOWN AS 14 YEATS AVENUE KILLARNEY HEIGHTS

Title: STORMWATER DETAILS AND SECTIONS PLAN

Civil Engineers and Project Managers
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Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION

A1

Drawing No. DAC005

Project No. 15-350

Issue C

Date Plotted: 29 Oct 2019 - 09:33AM File Name: F:\15-350 New House Killarney Heights\Drgs\Civil\Final\DAC005.dwg