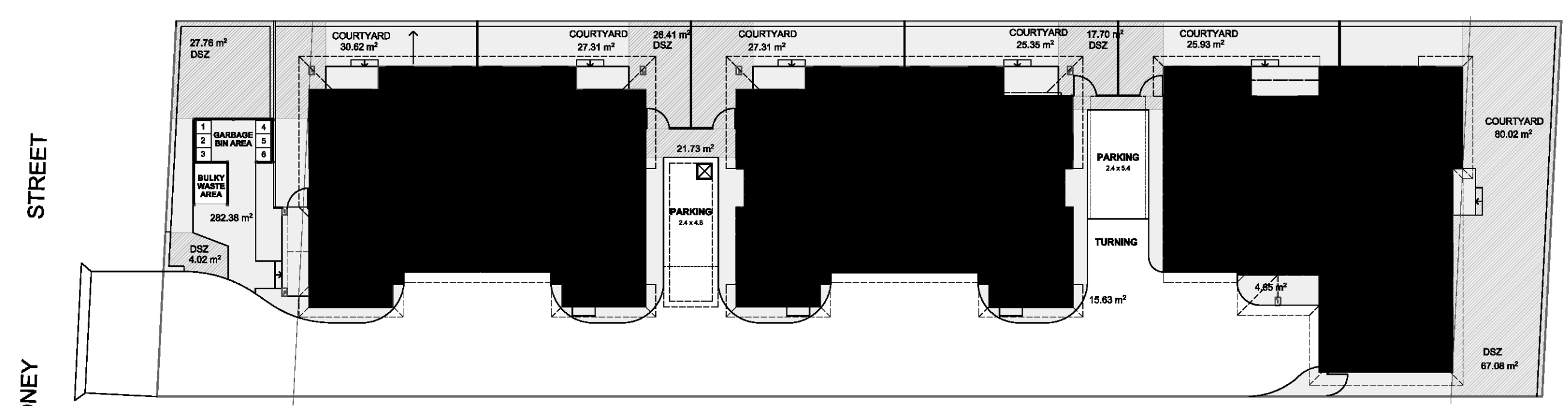
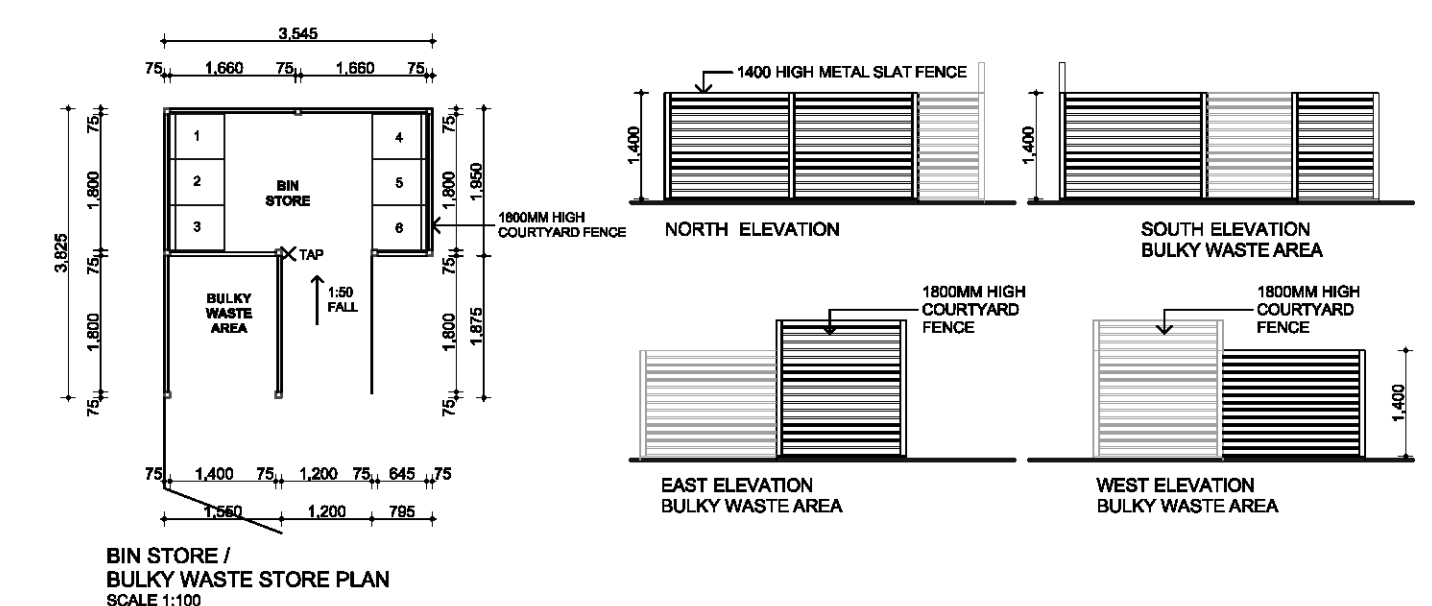


SITE AND GROUND FLOOR PLAN

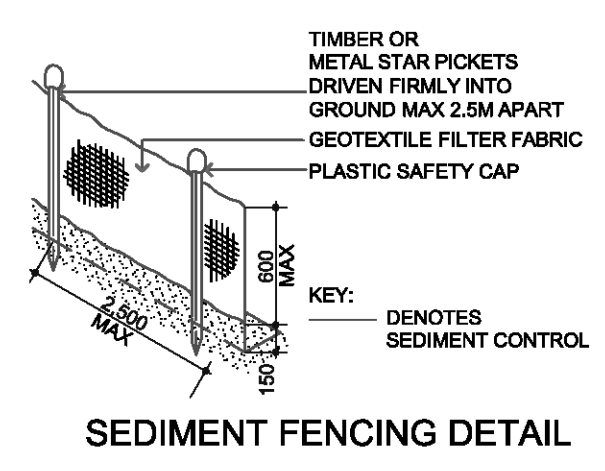


LANDSCAPING CALC
324.39 / 1008.5 = 32.16%

DEEP SOIL ZONE CALC
144.97 / 1008.5 = 14.37%



BIN STORE / BULKY WASTE STORE PLAN
SCALE 1:100



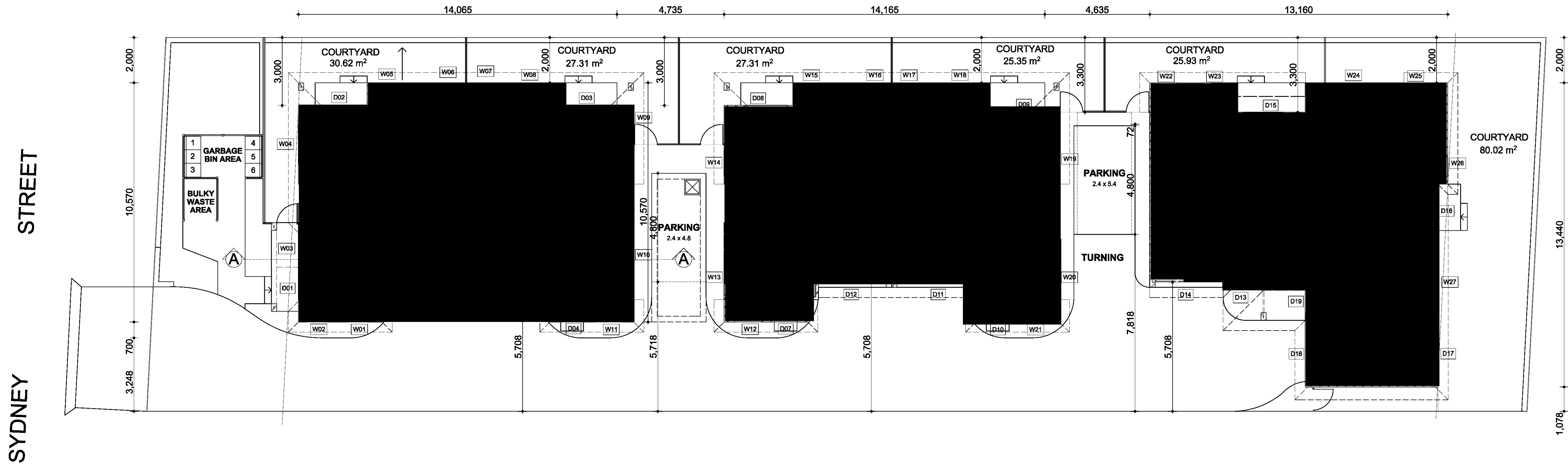
SEDIMENT FENCING DETAIL

SITE CALCULATIONS

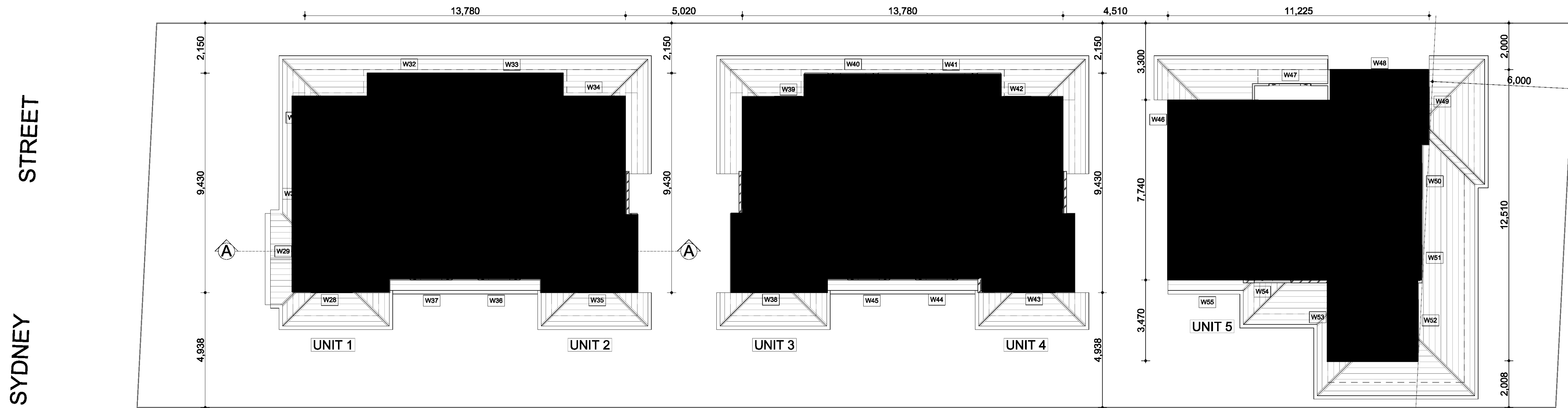
SITE AREA		UNIT 5		WSUD ROOF	
1008.50m ²		LIVING	92.67m ²	DRIVE	546.50m ²
FLOOR AREAS		GARAGE	17.71m ²	PERMEABLE	241.00m ²
UNIT 1	LIVING 109.24m ²	VER'H	6.09m ²	TOTAL	221.00m ²
	GARAGE 18.27m ²	TOTAL	116.47m ²		1008.50m ²
	VER'H 7.00m ²	UNIT 6	LIVING 110.28m ²	LANDSCAPING	
	TOTAL 134.51m ²		GARAGE 18.24m ²	NEED (30%)	302.67m ²
UNIT 2-4	LIVING 109.24m ²		VER'H 4.51m ²	ACTUAL (32.16%)	324.39m ²
	GARAGE 18.27m ²		TOTAL 133.03m ²		
	VER'H 2.30m ²		TOTAL LIVING	DEEP SOIL ZONE	
	TOTAL 129.81m ²		639.91m ²	NEED (15%)	151.275m ²
				ACTUAL (14.37%)	144.97m ²

PROPOSED SEPP 2009 AFFORDABLE HOUSING
LOT 328B, DP 12590
NO 32 SYDNEY STREET, ST MARYS
CLIENT: [REDACTED]
N. F. BILLYARD P/L
11 YORK STREET, OATLANDS
Ph 02 96302122 Fax 02 96302133
04/12/20 SCALE 1:100, 1:200 A1 SHEET
SITE PLAN, LANDSCAPE PLAN, & WASTE DETAILS **1354.DA01**

NOTE: ALL DIMENSIONS ARE TO BE CHECKED ON SITE PRIOR TO CONSTRUCTION. WRITTEN DIMENSIONS WILL TAKE PRECEDENCE OVER SCALE. ANY DISCREPANCIES SHOULD BE REFERRED BACK TO THE ARCHITECT.



SITE AND GROUND FLOOR PLAN

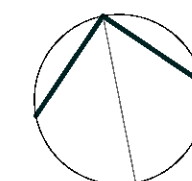


FIRST FLOOR PLAN

WINDOW SCHEDULE				EXTERNAL DOOR SCHEDULE							
01	1800 x 850 SLIDING	1.520M²	20	1800 x 1570 SLIDING	2.826M²	39	600 x 1210 SL (OBSC)	0.726M²	01	2100 X 920 SOLID CORE	
02	1800 x 850 SLIDING	1.520M²	21	1800 x 1210 SLIDING	2.178M²	40	1200 x 2170 SLIDING	2.604M²	02	2100 X 1810 ALUM SLIDING	3.801M²
03	1800 x 1570 SLIDING	2.826M²	22	600 x 850 SL (OBSC)	0.510M²	41	1200 x 2170 SLIDING	2.604M²	03	2100 X 1810 ALUM SLIDING	3.801M²
04	1800 x 1810 SLIDING	3.258M²	23	1030 x 1210 SLIDING	1.573M²	42	600 x 1210 SL (OBSC)	0.726M²	04	2100 X 920 SOLID CORE	
05	1030 x 1210 SLIDING	1.573M²	24	1200 x 1570 SLIDING	1.884M²	43	1200 x 1810 SLIDING	2.172M²	05	2200 X 3000 ROLLER DOOR	
06	600 x 850 SL (OBSC)	0.510M²	25	600 x 610 SL (OBSC)	0.366M²	44	1200 x 1810 SLIDING	2.172M²	06	2200 X 3000 ROLLER DOOR	
07	600 x 850 SL (OBSC)	0.510M²	26	600 x 850 SL (OBSC)	0.510M²	45	1200 x 1810 SLIDING	2.172M²	07	2100 X 920 SOLID CORE	
08	1030 x 1210 SLIDING	1.573M²	27	1800 x 1570 SLIDING	2.826M²	46	600 x 1210 SL (OBSC)	0.726M²	08	2100 X 1810 ALUM SLIDING	3.801M²
09	1800 x 1210 SLIDING	2.178M²	28	1200 x 1810 SLIDING	2.172M²	47	1200 x 1810 SLIDING	2.172M²	09	2100 X 1810 ALUM SLIDING	3.801M²
10	1800 x 1210 SLIDING	2.178M²	29	1200 x 1810 SLIDING	2.172M²	48	1200 x 1810 SLIDING	2.172M²	10	2100 X 920 SOLID CORE	
11	1800 x 1210 SLIDING	2.178M²	30	1200 x 1210 SLIDING	1.452M²	49	1200 x 1810 SLIDING	2.172M²	11	2200 X 3000 ROLLER DOOR	
12	1800 x 1210 SLIDING	2.178M²	31	600 x 1210 SLIDING	0.726M²	50	1200 x 1570 SLIDING	1.884M²	12	2200 X 3000 ROLLER DOOR	
13	1800 x 1570 SLIDING	2.826M²	32	1200 x 2170 SLIDING	2.604M²	51	600 x 850 SL (OBSC)	0.510M²	13	2100 X 920 DR / 2100 X 300SL	0.612M²
14	1800 x 1210 SLIDING	2.178M²	33	1200 x 2170 SLIDING	2.604M²	52	1200 x 1810 SLIDING	2.172M²	14	2200 X 3000 ROLLER DOOR	
15	1030 x 1210 SLIDING	1.573M²	34	600 x 1210 SL (OBSC)	0.726M²	53	1200 x 1810 SLIDING	2.172M²	15	2100 X 1810 ALUM SLIDING	3.801M²
16	600 x 850 SL (OBSC)	0.510M²	35	1200 x 1810 SLIDING	2.172M²	54	600 x 1570 SL (OBSC)	0.942M²	16	2100 X 1810 ALUM SLIDING	3.801M²
17	600 x 850 SL (OBSC)	0.510M²	36	1200 x 1810 SLIDING	2.172M²	55	1200 x 1810 SLIDING	2.172M²	17	2200 X 2550 ROLLER DOOR	
18	1030 x 1210 SLIDING	1.573M²	37	1200 x 1810 SLIDING	2.172M²				18	2200 X 2700 ROLLER DOOR	
19	1800 x 1210 SLIDING	2.178M²	38	1200 x 1810 SLIDING	2.172M²				19	2100 X 920 SOLID CORE	

NOTE: ALL WINDOW FRAMES ARE TO BE ALUMINIUM

NOTE: ALL DIMENSIONS ARE TO BE CHECKED ON SITE PRIOR TO CONSTRUCTION. WRITTEN DIMENSIONS WILL TAKE PRECEDENCE OVER SCALE. ANY DISCREPANCIES SHOULD BE REFERRED BACK TO THE ARCHITECT.

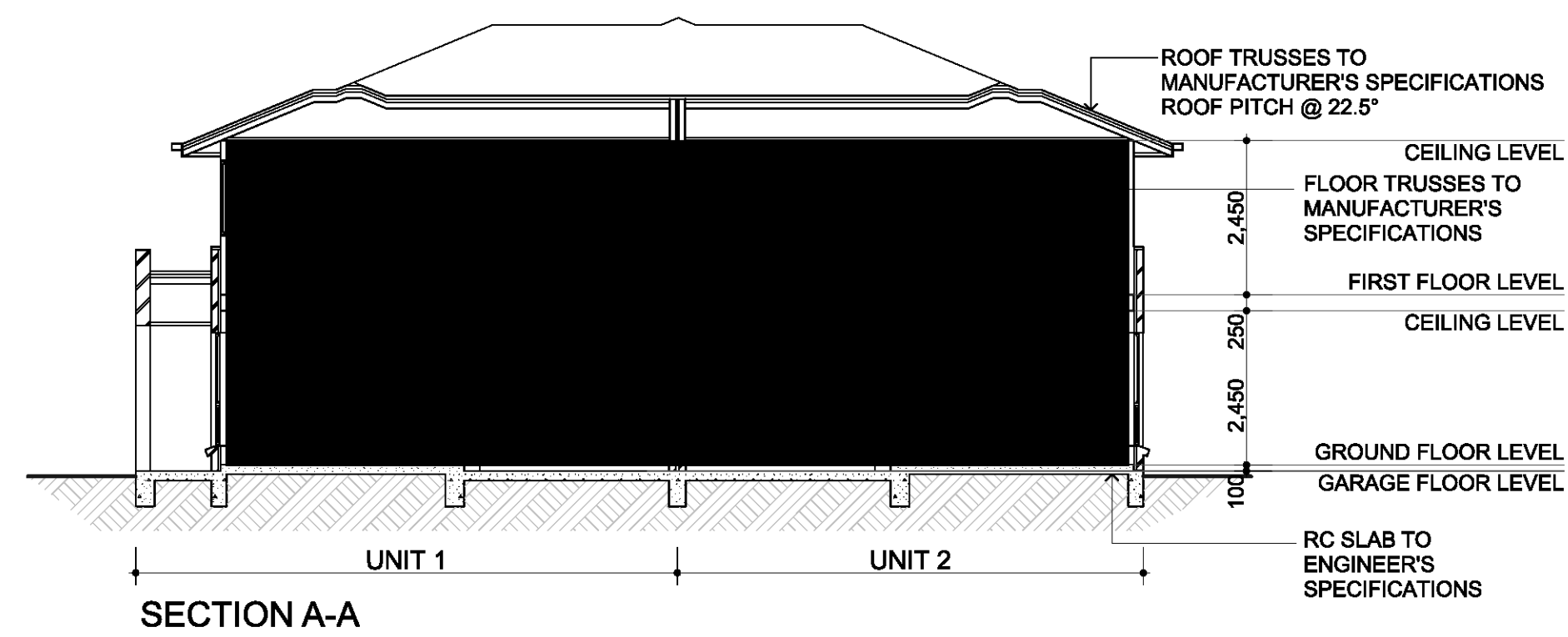
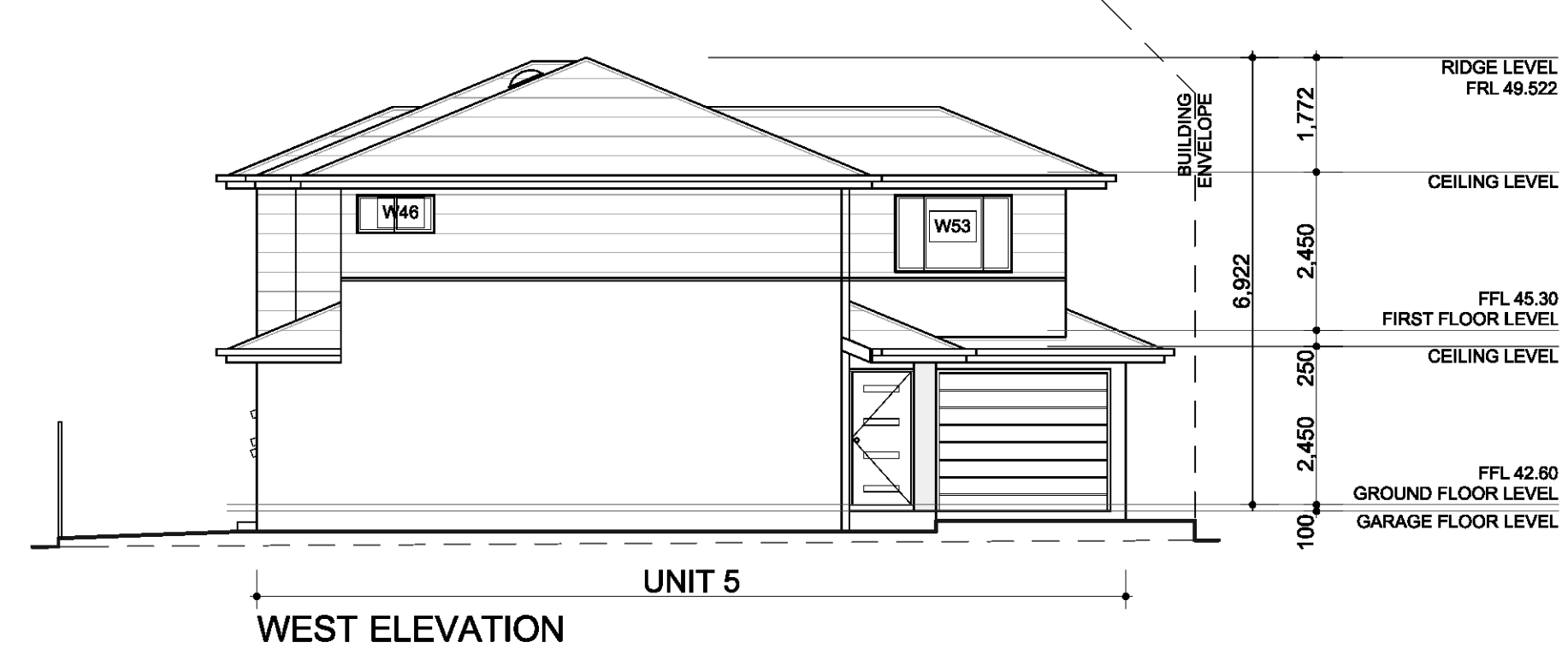
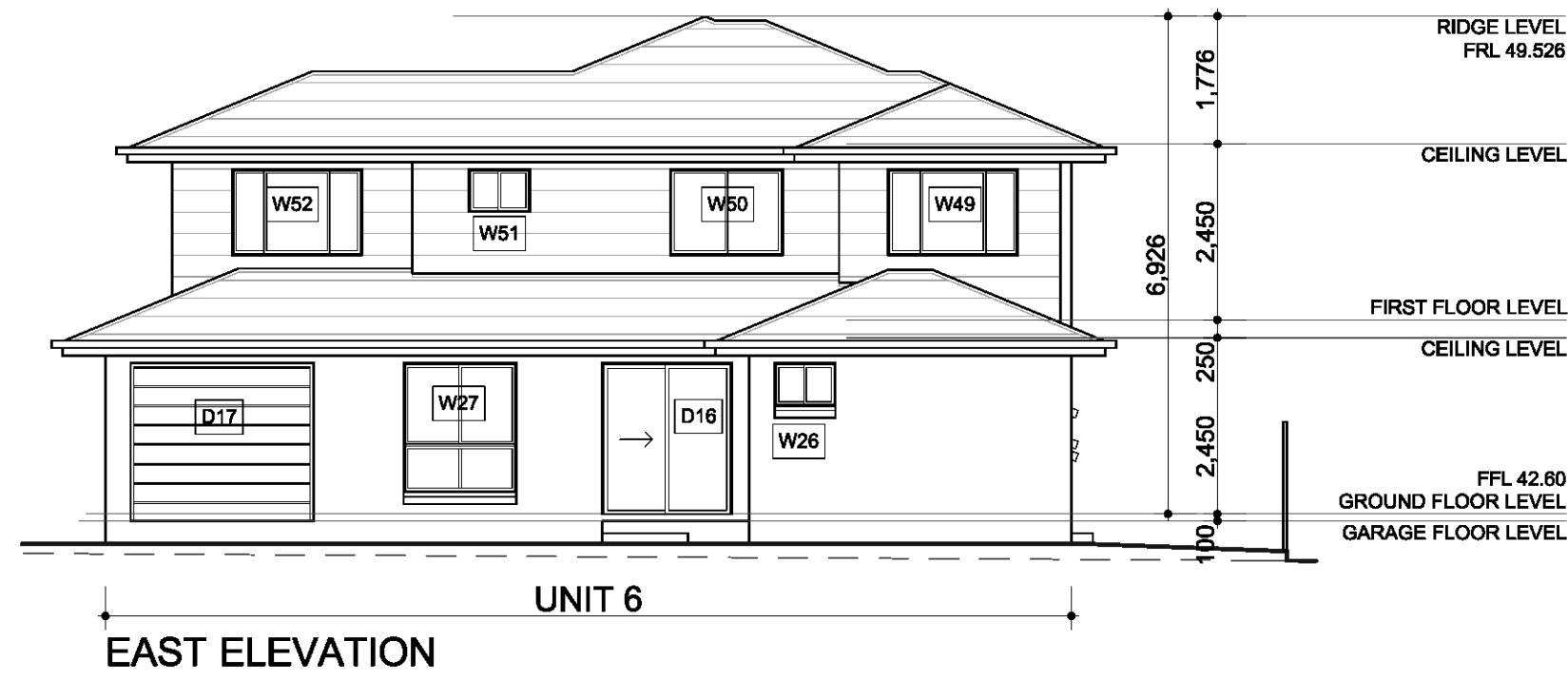
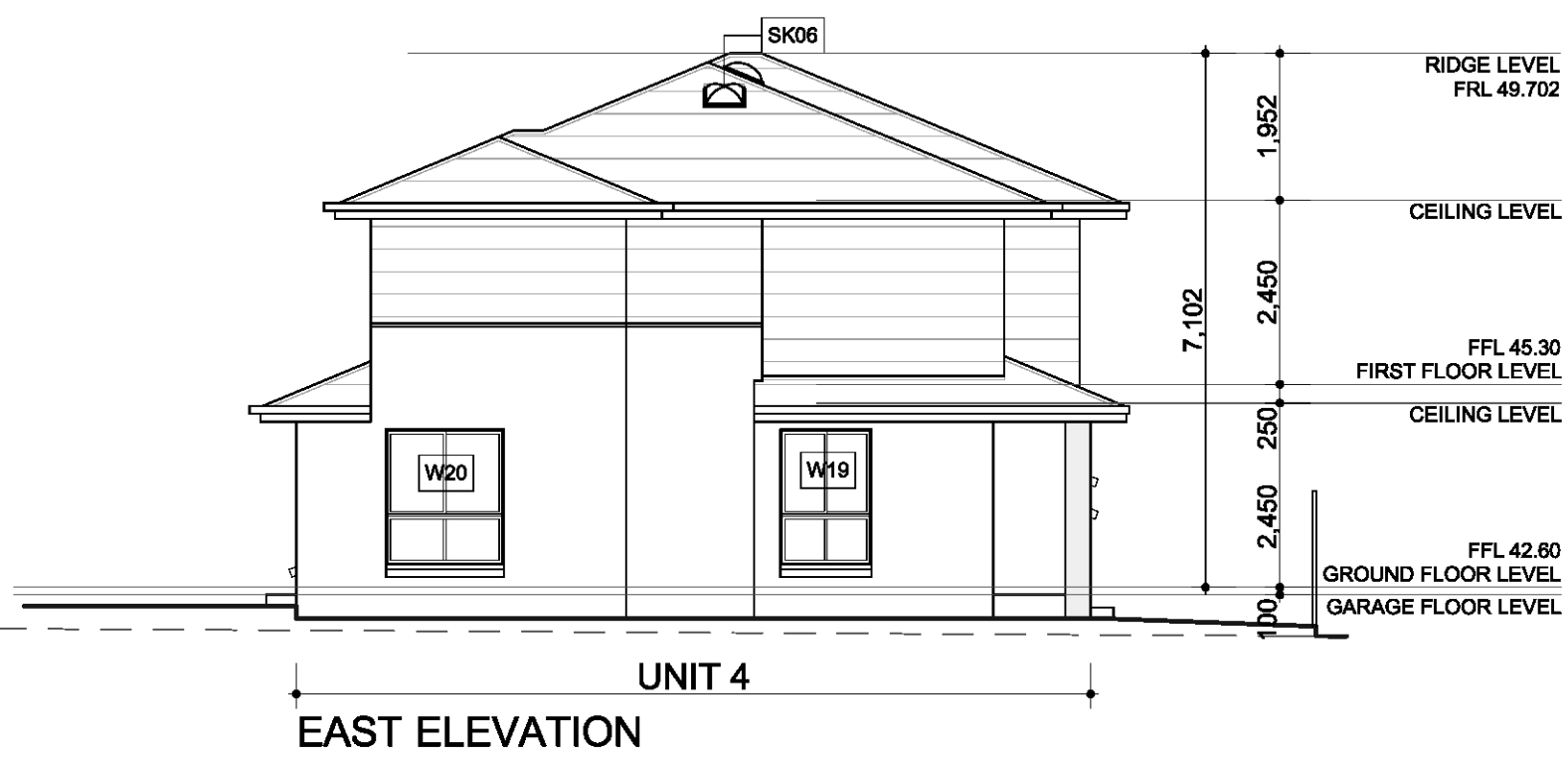
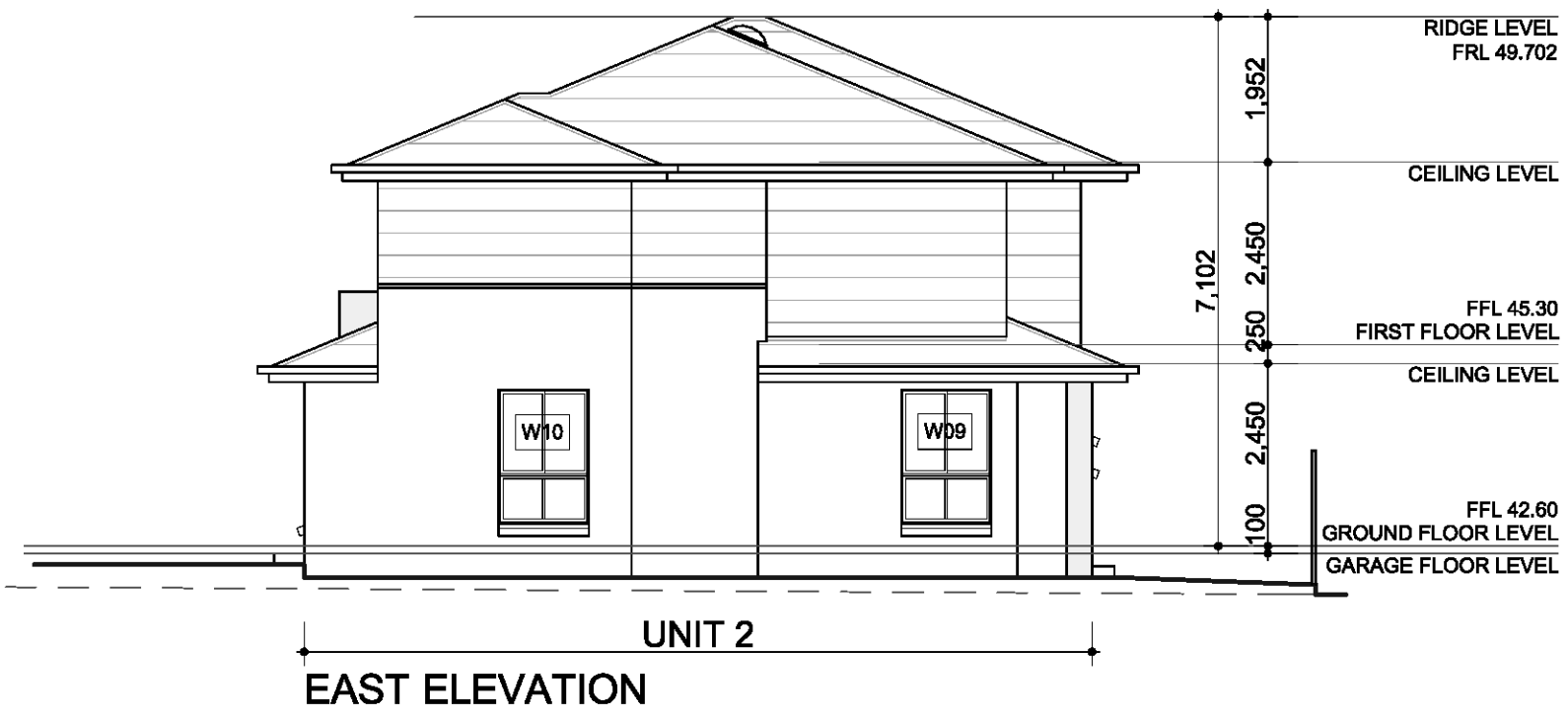
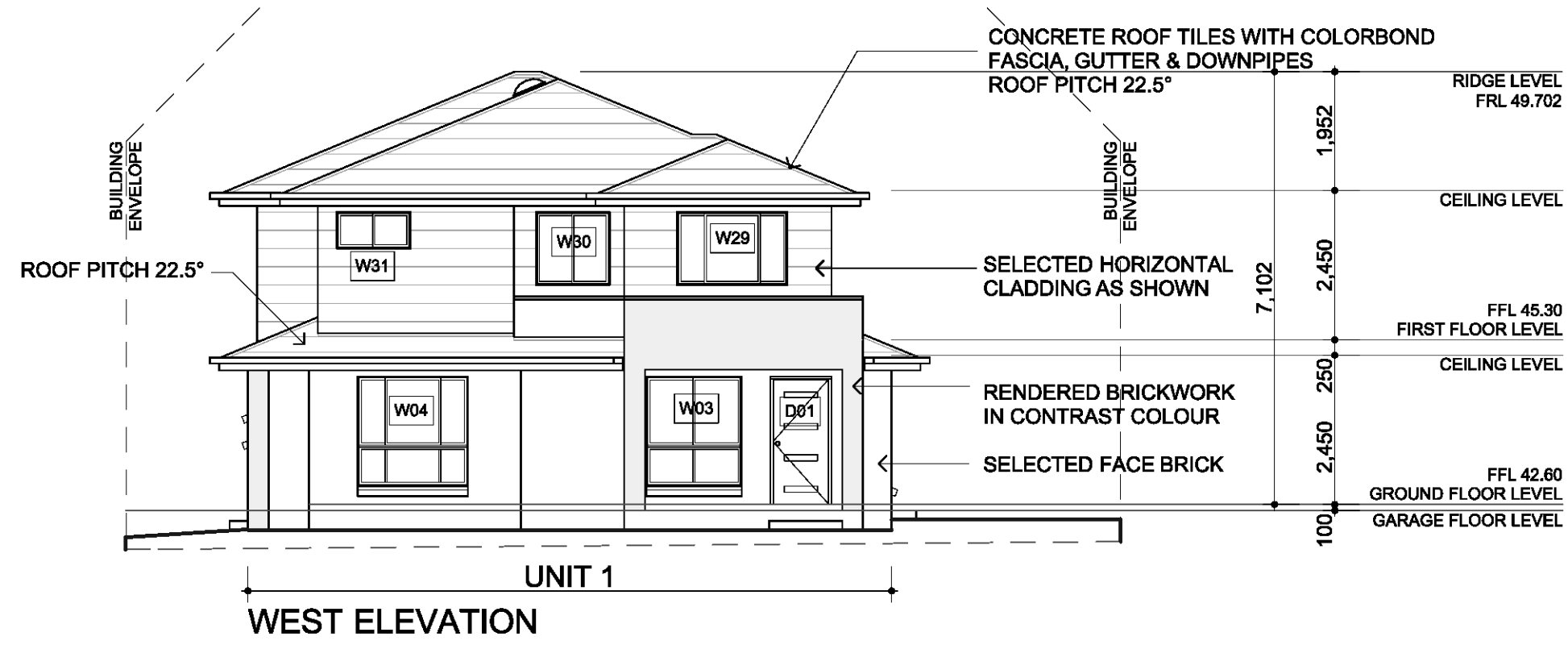
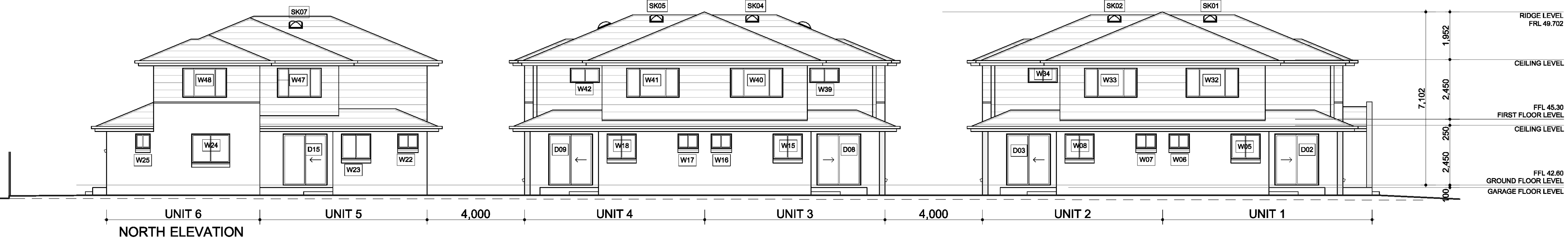
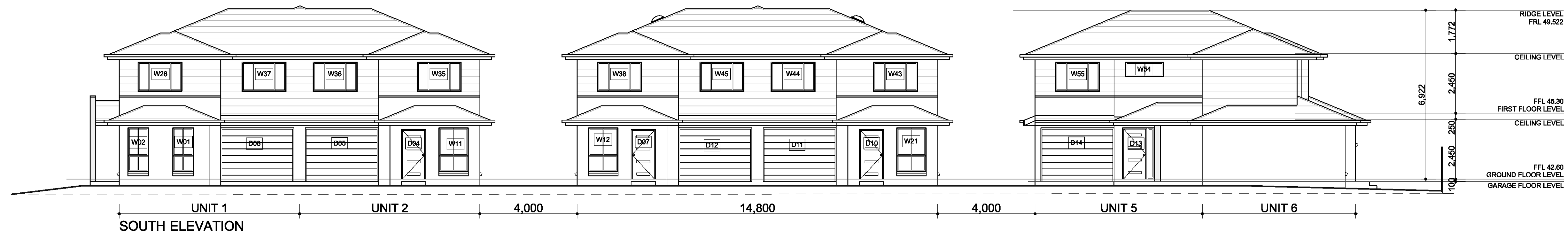


PROPOSED SEPP 2009 AFFORDABLE HOUSING LOT 328B, DP 12590 NO 32 SYDNEY STREET, ST MARYS CLIENT: [REDACTED]

N. F. BILLYARD P/L
11 YORK STREET, OATLANDS
Ph 02 96302122 Fax 02 96302133

04/12/20 SCALE 1:100 A1 SHEET

FLOOR PLANS 1354.DA02



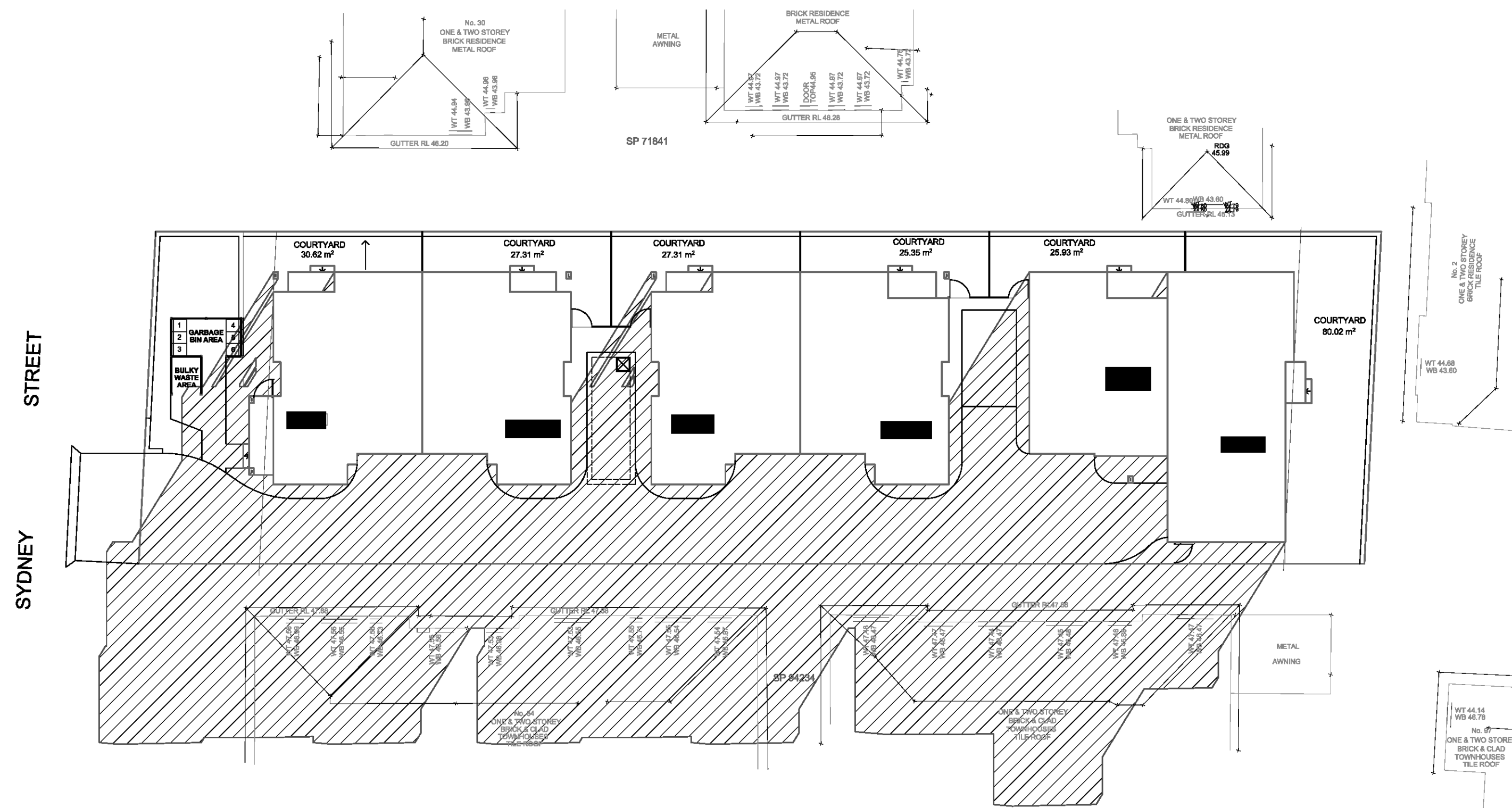
PROPOSED SEPP 2009 AFFORDABLE HOUSING
 LOT 328B, DP 12590
 NO 32 SYDNEY STREET, ST MARYS
 CLIENT: [REDACTED]

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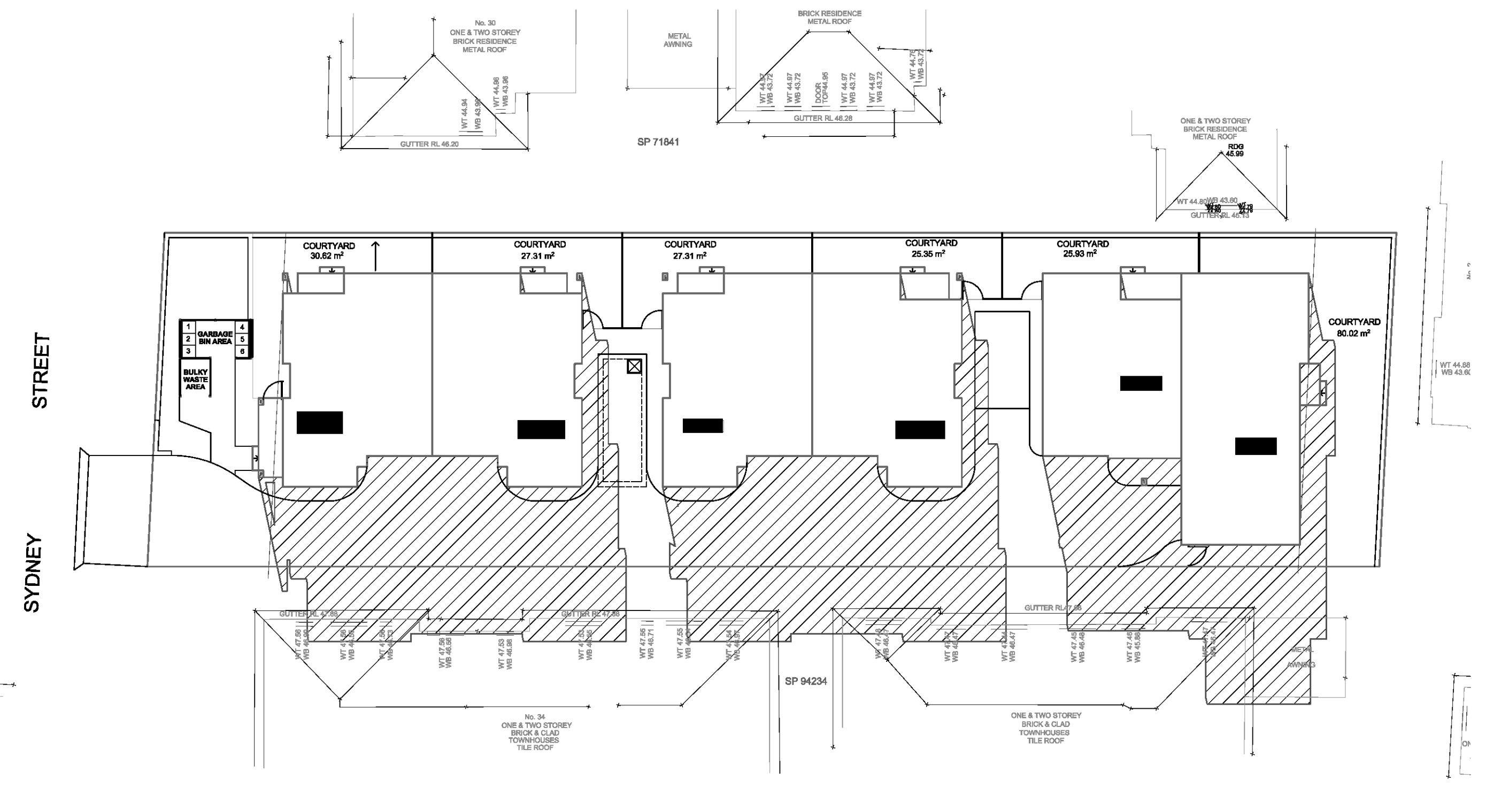
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04/12/20 SCALE 1:100 A1 SHEET

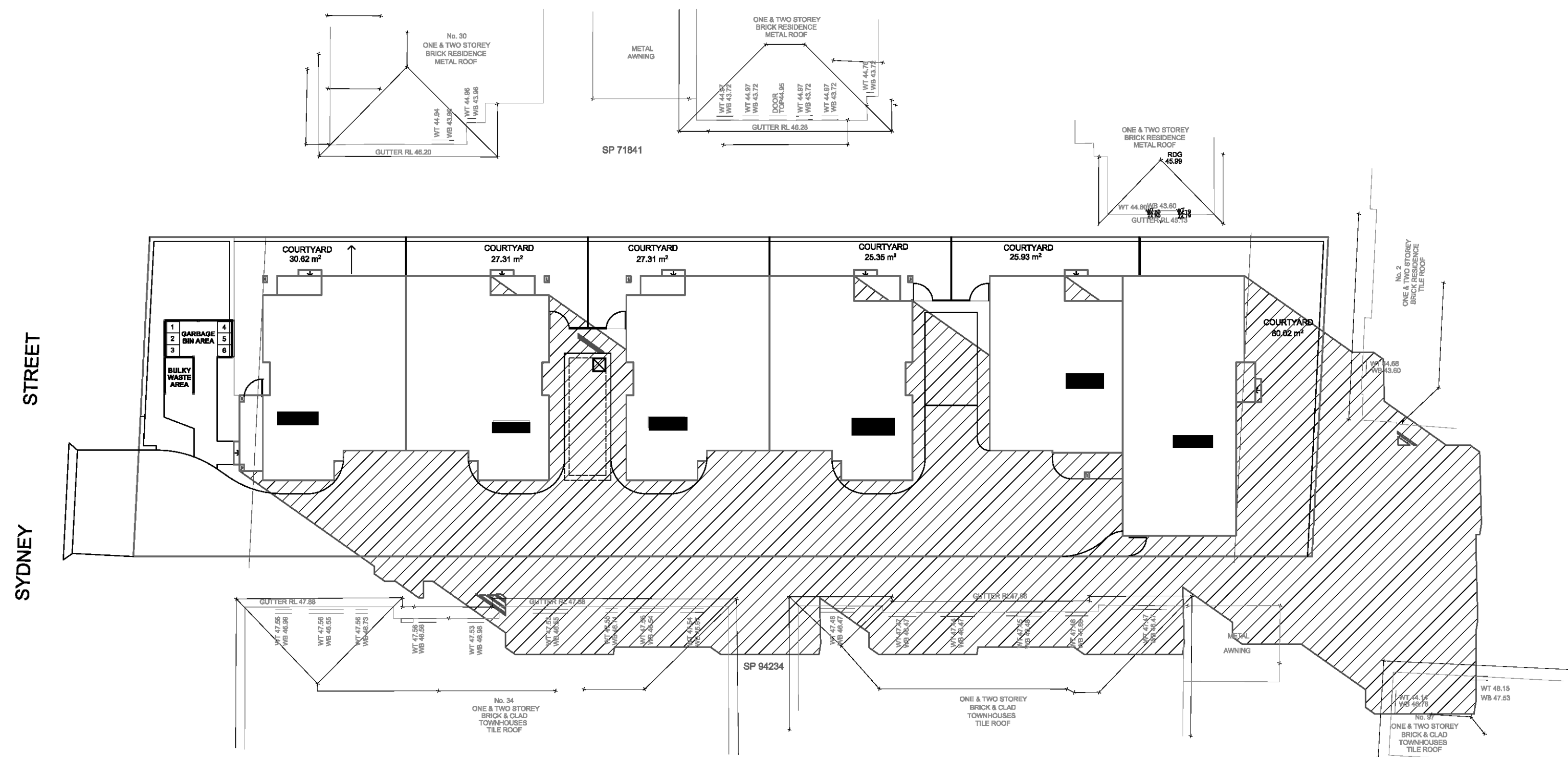
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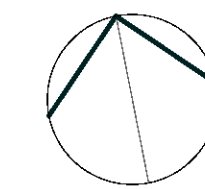
SHADOW DIAGRAMS - 9AM



SHADOW DIAGRAMS - 12 NOON



SHADOW DIAGRAMS - 3PM



PROPOSED SEPP 2009 AFFORDABLE HOUSING
 LOT 328B, DP 12590
 NO 32 SYDNEY STREET, ST MARYS
 CLIENT: [REDACTED]

N. F. BILLYARD P/L
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04/12/20 SCALE 1:200 A1 SHEET

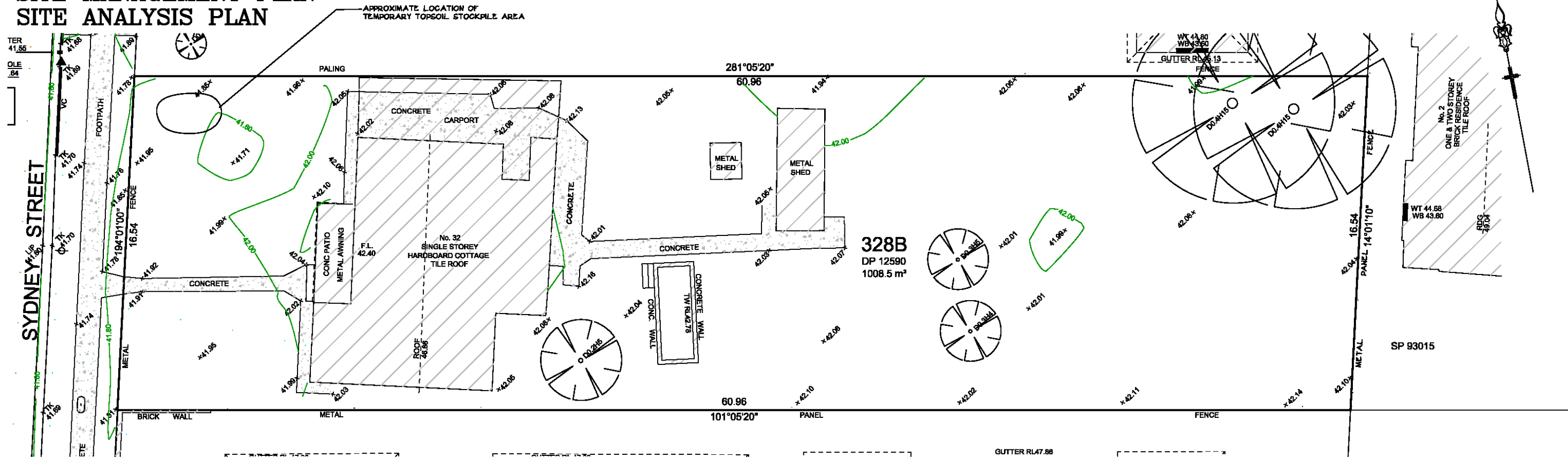
SHADOW DIAGRAMS 1354.DA04

Ref: 1354 Ext



SCHEDULE OF EXTERNAL FINISHES**Proposed Townhouses 32 Sydney St Oxley Park**

Roof	Tiles	Colour – Boral Ebony
Fascia	Colorbond metal	Colour- surfmist
Downpipes	Colorbond metal	Colour- monument
Gutters	Colorbond metal	Colour- monument
Windows	Aluminium Powdercoated	Colour- pearl white
Walls	Face Brick	Colour- Austral blackbutt
	Rendered Brickwork	Colour – Dulux Wallaby
Cladding	FÇ Cladding	Colour – Dune
Driveway	RC Stencil Patterned	Colour- Grey

SITE MANAGEMENT PLAN SITE ANALYSIS PLAN



LEGEND

-  EXISTING TREES TO REMAIN AND BE PROTECTED
-  EXISTING TREES TO BE REMOVED

GENERAL NOTES:

1. ALL EROSION AND SEDIMENT CONTROL MEASURES, INCLUDING REVEGETATION AND STORAGE OF SOIL AND TOPSOIL SHALL BE IMPLEMENTED TO THE REQUIREMENTS OF THE DOCUMENT "MANAGING URBAN STORMWATER - SOILS AND CONSTRUCTION" 4th EDITION BY THE NSW DEPARTMENT OF HOUSING (2004) REFERRED TO AS THE "BLUE BOOK". MEASURES TO BE INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION, TO BE PROPERLY MAINTAINED FOR DURATION OF WORKS, AND SUITABLY DECOMMISSIONED UPON COMPLETION OF CONSTRUCTION WORKS.
2. SITE WORKS WILL NOT START UNTIL THE EROSION AND SEDIMENT CONTROL WORKS OUTLINED IN THE PLAN ARE INSTALLED AND FUNCTIONAL.
3. ENTRY AND EXIT TO THE SITE WILL BE CONFINED TO ONE STABILISED LOCATION. FENCING WILL BE USED TO RESTRICT ALL VEHICULAR MOVEMENTS TO THE STABILISED ENTRANCE. STABILISATION WILL BE ACHIEVED BY EITHER:
 - CONSTRUCTING A CONCRETE DRIVEWAY TO THE STREET
 - CONSTRUCTING A STABILISED SITE ACCESS, ACCORDING TO STANDARD DRAWING SD 5-7 OR ACCORDING TO ANOTHER SUITABLE TECHNIQUE APPROVED BY COUNCIL.
4. SEDIMENT CONTROL (SD 6-7) AND BARRIER FENCES WILL BE INSTALLED AS REQUIRED
5. MESH AND GRAVEL "SAUSAGE" PROTECTION (SD 6-8) WILL BE PROVIDED TO PROTECT GUTTER INLETS NEAR THE ALLOTMENT.
6. TOPSOIL WILL BE STRIPPED AND STOCKPILED FOR LATER USE IN THE LANDSCAPING SITE. ALL STOCKPILES WILL BE PLACED IN THE LOCATION SHOWN ON THE PLAN AND AT LEAST 2 METRES CLEAR OF ALL AREAS OF CONCENTRATED WATER FLOW AND THE DRIVEWAY PROTECTED BY SITE WORKS (SD 4-1).
7. LANDS TO THE REAR AND SIDE OF THE ALLOTMENT AND ON THE FOOTPATH WILL NOT BE DISTURBED DURING WORKS EXCEPT WHERE ESSENTIAL, E.G. DRAINAGE WORKS ACROSS THE FOOTPATH. WHERE WORKS ARE NECESSARY, THEY WILL BE UNDERTAKEN IN SUCH A WAY TO LEAVE THE LANDS IN A CONDITION OF HIGH EROSION HAZARDS FOR AS SHORT A PERIOD AS PRACTICABLE. THEY WILL BE REHABILITATED AS SOON AS POSSIBLE. STOCKPILES WILL NOT BE PLACED ON THESE LANDS AND THEY WILL NOT BE USED AS VEHICLE PARKING AREAS.
8. APPROVED BINS FOR CONCRETE AND MORTAR SLURRIES, PAINTS, ACID WASHINGS AND LITTER WILL BE PROVIDED AND ARRANGEMENTS MADE FOR COLLECTION AND DISPOSAL.
9. GUTTERING WILL BE CONNECTED TO THE STORMWATER SYSTEM AS SOON AS PRACTICABLE.
10. TOPSOIL WILL BE RESPREAD AND ALL DISTURBED AREAS WILL BE REHABILITATED WITHIN 20 WORKING DAYS OF THE COMPLETION OF WORKS. RESPREAD TOPSOIL TO 100mm DEPTH (MIN) ON BARE SOIL SURFACES AND REVEGETATED.
11. ALL EROSION AND SEDIMENT CONTROLS WILL BE CHECKED AT LEAST WEEKLY AND AFTER RAIN TO ENSURE THEY ARE MAINTAINED IN A FULLY FUNCTIONAL CONDITION.

STOCKPILE NOTES:

1. IF STOCKPILES ARE TO BE IN PLACE FOR LONGER THAN 30 DAYS THEN THEY SHALL BE STABILIZED BY COVERING WITH A MULCH OR WITH TEMPORARY VEGETATION.

SEDIMENTATION CONTROL DEVICES:

1. SILT FENCES SHALL BE CONSTRUCTED BY STRETCHING A FILTER FABRIC (PROPEX OR SIMILAR) BETWEEN POSTS AT 2m CENTRES. FABRIC SHALL BE BURIED 150mm ALONG ITS LOWER EDGE.

SPECIAL NOTES:

1. LOCATION AND EXTENT OF SOIL AND WATER MANAGEMENT DEVICES IS DIAGRAMMATIC ONLY AND THE ACTUAL REQUIREMENTS SHALL BE CONFIRMED ON SITE.
2. CONFORMITY WITH THIS PLAN SHALL IN NO WAY REDUCE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT AGAINST WATER DAMAGE DURING THE COURSE OF THE CONTRACT.
3. MANAGEMENT DEVICES SHALL BE MAINTAINED ON A REGULAR BASIS. WHERE CLEANING IS REQUIRED, THE SEDIMENT SHALL BE REMOVED TO OFFSITE TO A SUITABLE POINT OF DISPOSAL.
4. NO TREES SHALL BE REMOVED WITHOUT COUNCIL'S CLEARANCE.



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A	FIRST ISSUE	15/11/20
No.	AMENDMENT	DATE

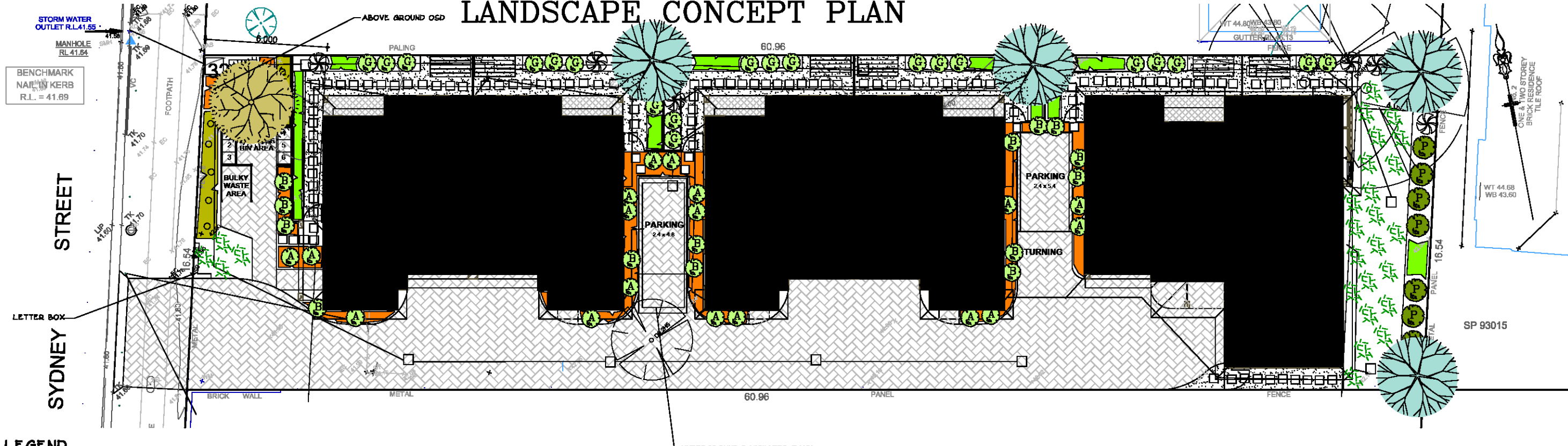
Bio Engineered Solutions Pty. Ltd.
Landscape design and Environmental Management

	DESIGNED KN	SCALES: 1:100	CLIENT: ██████████
	DRAWN KN		
	CHECKED		
APPROVED	DATE		

PROPOSED SEPP 2009
DEVELOPMENT
LOT 328B DP12590
32 SYDNEY STREET, ST MARY'S
SITE MANAGEMENT PLAN / SITE ANALYSIS PLAN

PLAN No.	1865LAN1 A
FILE No.	1065LAN
SHEET 1 OF	SHEETS

LANDSCAPE CONCEPT PLAN

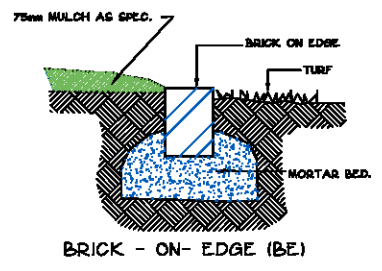
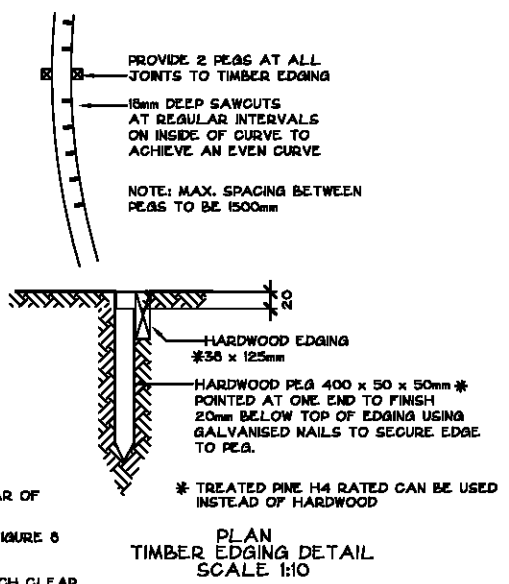
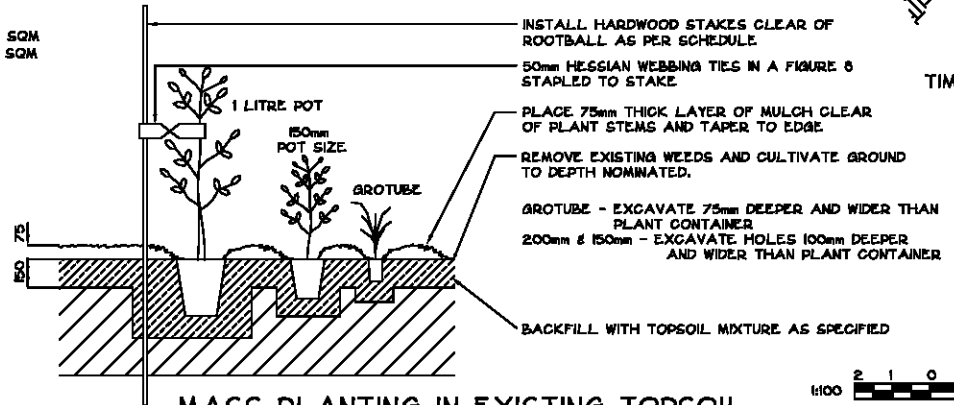


- ### LEGEND
- GROUND COVER (TYPE A)
 - GROUND COVER (TYPE B)
 - HEDGE
 - SCREEN TREE OR SHRUB
P - LILLY PILLY "PINNACLE"
 - FEATURE SHRUB
A - GREVILLEA
B - CALLISTEMON
A - ACACIA
 - FEATURE SHRUB
LILLY PILLY "CASCADE"
 - CANOPY TREE
WATERGUM
 - CANOPY TREE
TUCKEROO
 - TURF BUFFALO "PALMETTO" OR "SIR WALTER"
 - CLOTHES LINE
 - TIMBER OR BRICK EDGE
 - STEPPING STONES IN DECORATIVE PEBBLE MULCH
 - TILED OR PAVED AREA
 - FEATURE FINISHED CONCRETE DRIVEWAY
 - EXISTING TREES TO REMAIN AND BE PROTECTED
 - EXISTING TREES TO BE REMOVED

INDICATIVE SPECIES LIST

BOTANICAL NAME	COMMON NAME	MATURE HEIGHT	POT SIZE APPROX	QUANTITY
GROUND COVER (TYPE A) <i>Liriope muscari</i>	Lily Turf	30-40cm	150mm	84
GROUND COVER (TYPE B) <i>Trachelospermum jasminoides</i>	Star Jasmine	30-40cm	150mm	50
HEDGE <i>Agapanthus 'Hedge Master'</i>	Hedging lilly pilly	1-1.5m	150mm	20
FEATURE SHRUB <i>Callistemon 'Little John'</i>	Dwarf Callistemon	1m	150mm	14
<i>Acacia cognata 'Mini Cog'</i>	Weeping Acacia	1-1.2m	200mm	18
<i>Grevillea 'Robyn Garden'</i>	Grevillea	1-2m	200mm	21
<i>Syzygium 'Cascade'</i>	Weeping lillypilly	2-3m	200mm	6
SCREEN TREES & SHRUBS <i>Syzygium 'Pinnacle'</i>	Lilly Pilly	5-6m	200mm	7
FEATURE TREE <i>Tristania laurina 'Luscious'</i>	Water Gum	8-10m	45 litre	4
<i>Cupania anacardioides</i>	Tuckeroo	6-8m	45 litre	1

PLANTING NOTES
 GROUND COVER TYPE "A" TO BE PLANTED AT 3 - 4 PER SQM
 GROUND COVER TYPE "B" TO BE PLANTED AT 3 - 4 PER SQM
 HEDGE TO BE PLANTED AT 0.5m CENTRES



- ### NOTES
- HARDWOOD STAKES TO BE 38 x 38 x 1800
 - AN APPROVED SLOW RELEASE PELLET TYPE FERTILISER HAVING AN NPK RATIO OF 18:3:31 EQUIVALENT TO OSMOCOTE 12 - 14 MONTH SLOW RELEASE FERTILISER APPLIED AT THE RATE SPECIFIED BY THE MANUFACTURER SHALL BE USED
 - ALL GARDEN AREAS TO BE FILLED WITH APPROVED TOP SOIL AT MINIMUM 150mm DEPTH
 - TOPSOIL SHOULD CONFORM TO AS 4415 'SOILS FOR LANDSCAPING AND GARDEN' AND TO BE SUITABLE FOR NATIVE PLANT GROWTH WITH LOW PHOSPHORUS CONTENT, CONTAINING ORGANIC MATTER AND FREE FROM STONES OR OTHER MATERIAL EXCEEDING 25mm IN ANY DIMENSION
 - IT IS THE CONTRACTORS RESPONSIBILITY TO CHECK AND ADJUST SOIL pH AS REQUIRED
 - IN ALL GARDEN AREAS, EXISTING SOIL TO BE DEEP RIPPED TO 200mm AND CULTIVATED TO 100mm
 - WATERING REGIME, THE FIRST MONTH AFTER PLANTING IS THE CRITICAL TIME FOR WATERING. THE PLANTS REQUIRE HEAVY WATERING EVERY 3 DAYS, 50mm OF WATER PER WEEK AS A MINIMUM SHOULD BE ADOPTED AS A GENERAL GUIDE
 - MULCH PLANTING BEDS TO A MINIMUM OF 50 - 75mm AS REQUIRED MULCH TO BE COURSE GRADE HARDWOOD MULCH, CONFORMING TO AS 4454 'COMPOSTS, SOIL CONDITIONERS AND MULCHES'
 - DECORATIVE PEBBLE MULCH COULD BE USED IN AREAS BORDERING DRIVEWAYS & AREAS SUBJECT TO ONSITE DETENTION
 - IF DECORATIVE MULCH IS USED NEXT TO GARDEN BEDS IN REAR AND SIDES OF UNITS, A CONTRASTING PEBBLE MULCH OR HARDWOOD MULCH TO BE USED WITHIN THE BEDS
 - EXCESS TOPSOIL GENERATED BY THE DEVELOPMENT CAN BE USED TO MOUND UP PLANTING BEDS IN SPECIFIED AREAS
 - DECORATIVE PEBBLE MULCH COULD BE USED IN AREAS BORDERING DRIVEWAYS & AREAS SUBJECT TO ONSITE DETENTION
 - IF DECORATIVE MULCH IS USED NEXT TO GARDEN BEDS IN REAR AND SIDES OF UNITS, A CONTRASTING PEBBLE MULCH OR HARDWOOD MULCH TO BE USED WITHIN THE BEDS
 - EXCESS TOPSOIL GENERATED BY THE DEVELOPMENT CAN BE USED TO MOUND UP PLANTING BEDS IN SPECIFIED AREAS



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A	FIRST ISSUE	13/11/20
No.	AMENDMENT	DATE

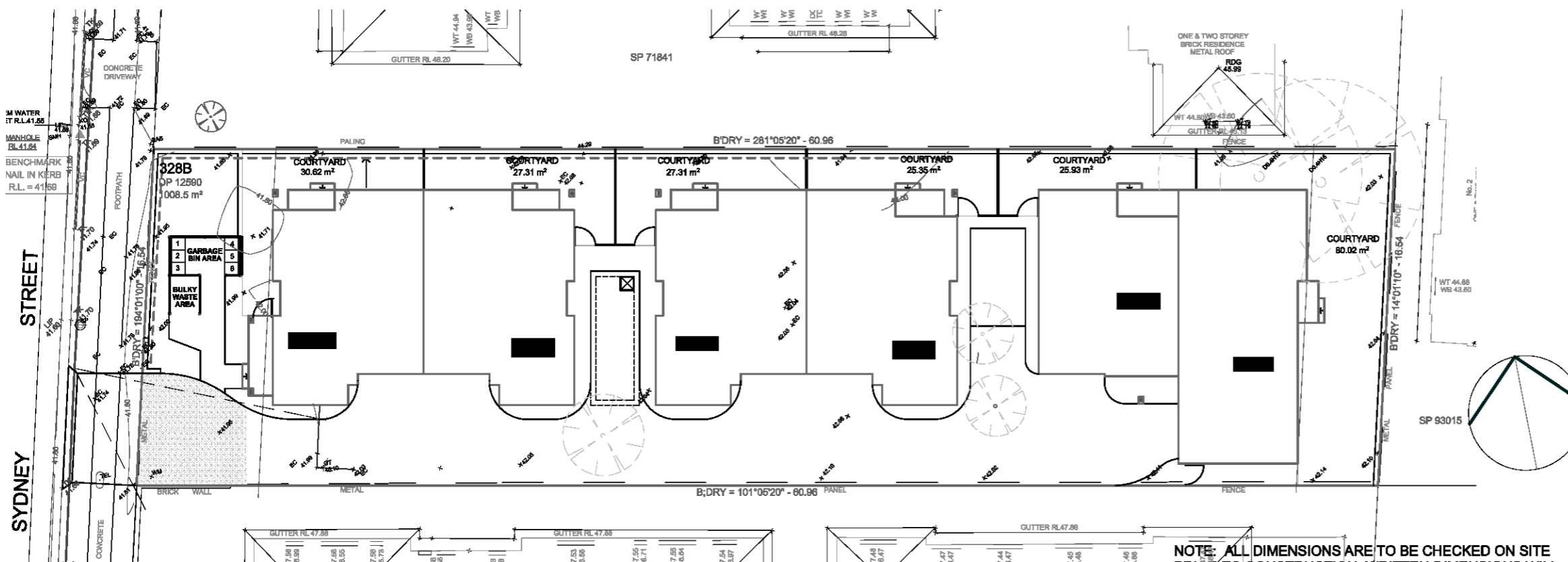
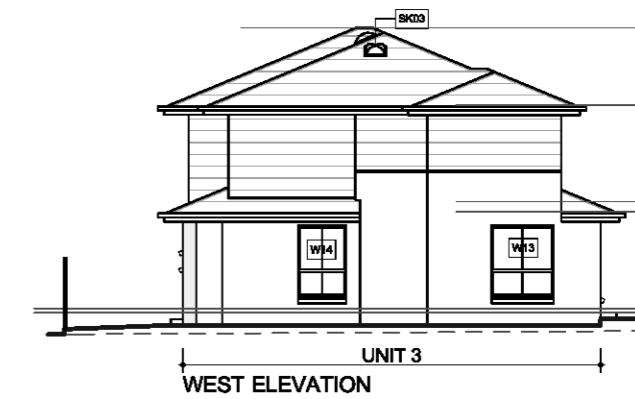
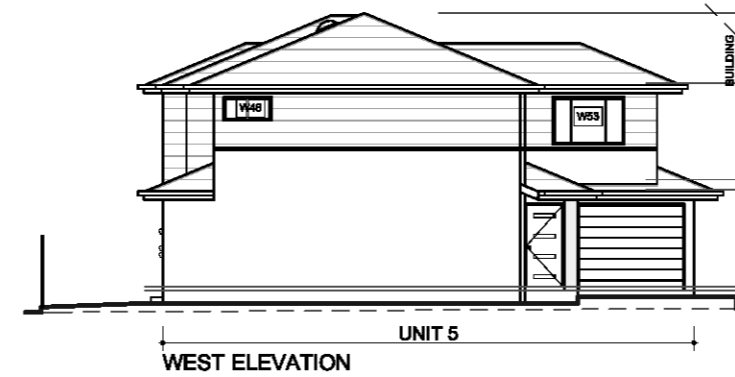
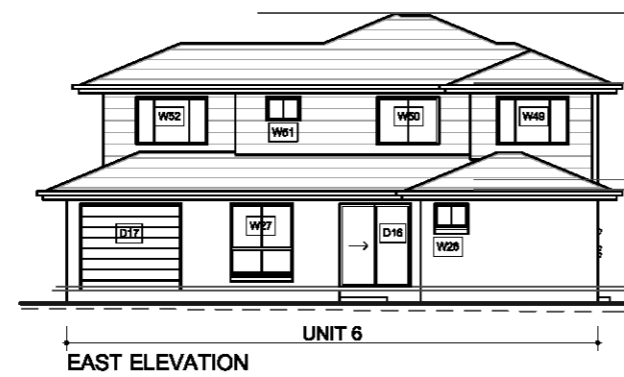
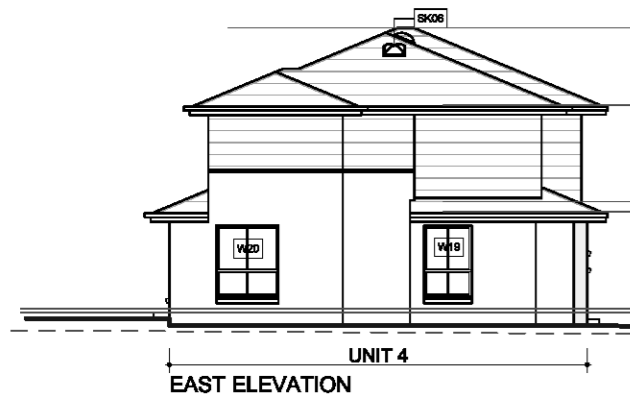
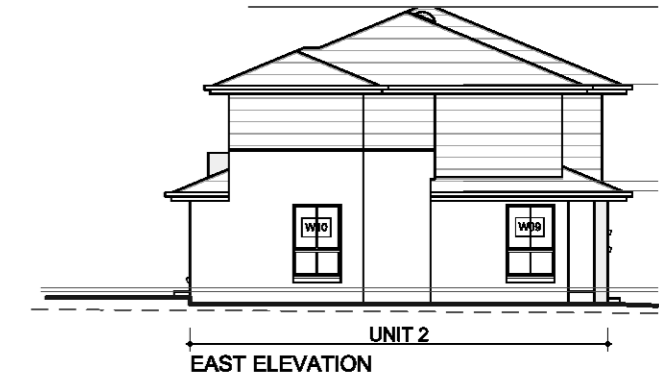
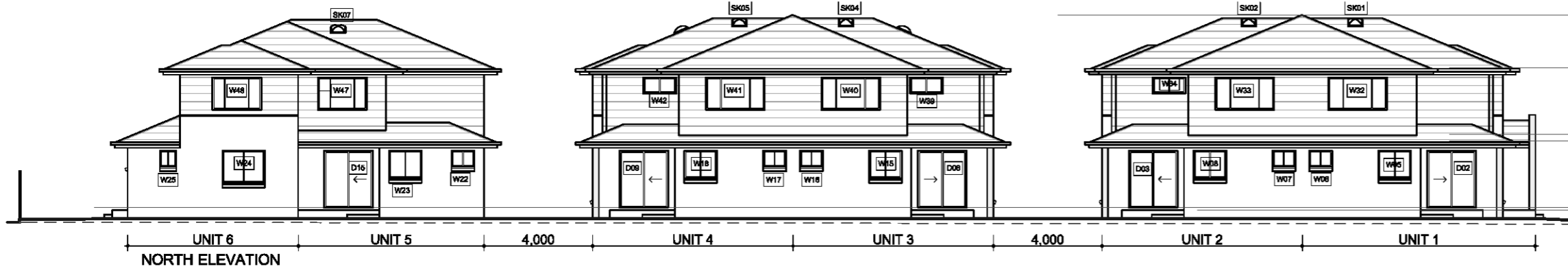
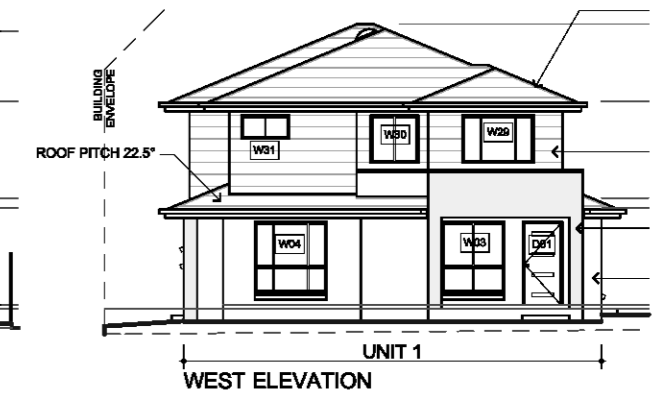
Bio Engineered Solutions Pty. Ltd.
 Landscape design and Environmental Management

DESIGNED: J.K.N.
 DRAWN: J.K.N.
 CHECKED: _____
 APPROVED: _____ DATE: _____

SCALE: 1:100
 CLIENT: _____

PROPOSED SEPP 2003 DEVELOPMENT
 LOT 328B DP12530
 32 SYDNEY STREET, ST MARY'S
 LANDSCAPE CONCEPT PLAN

PLAN No.	1865LAN2 A
FILE No.	1865LAN
SHEET	2 OF SHEETS

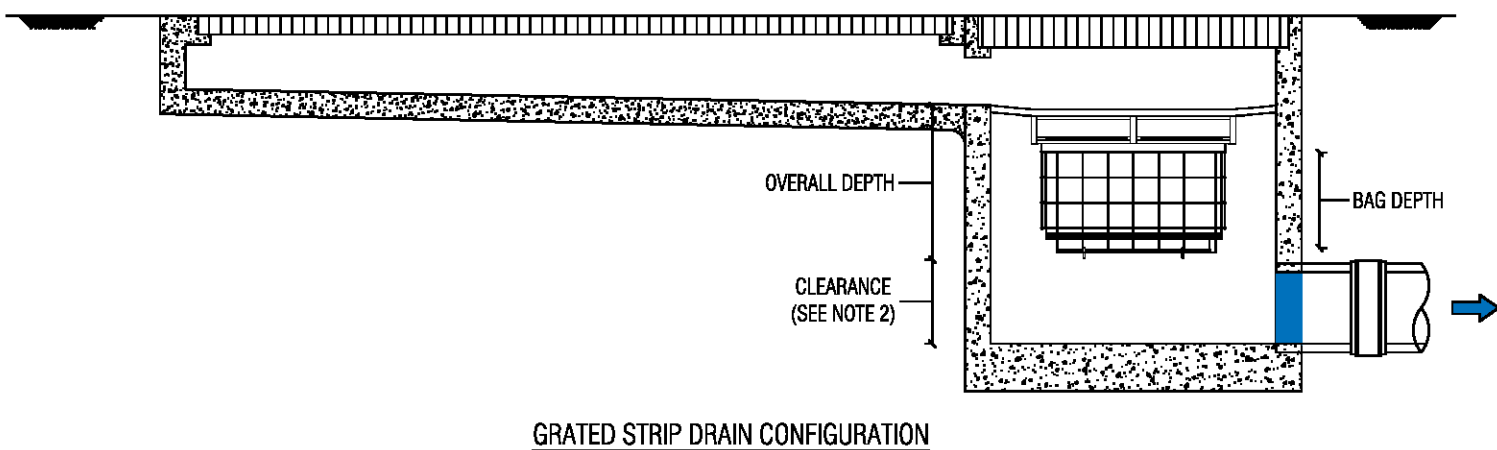
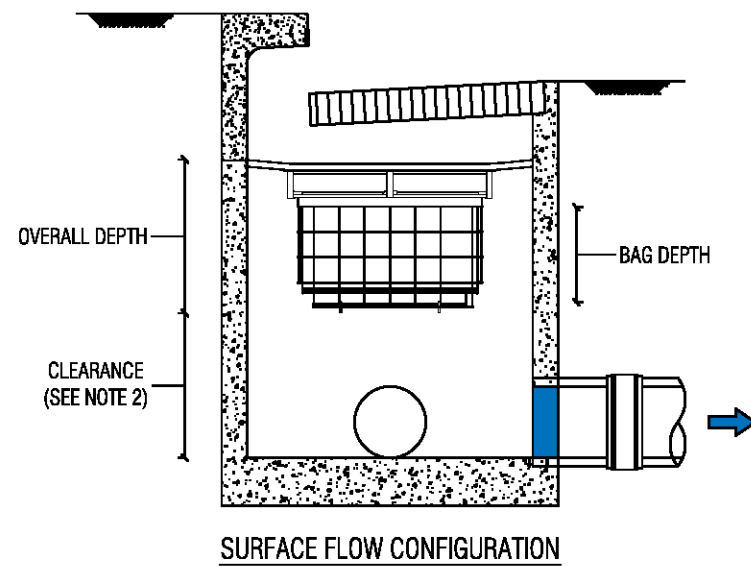
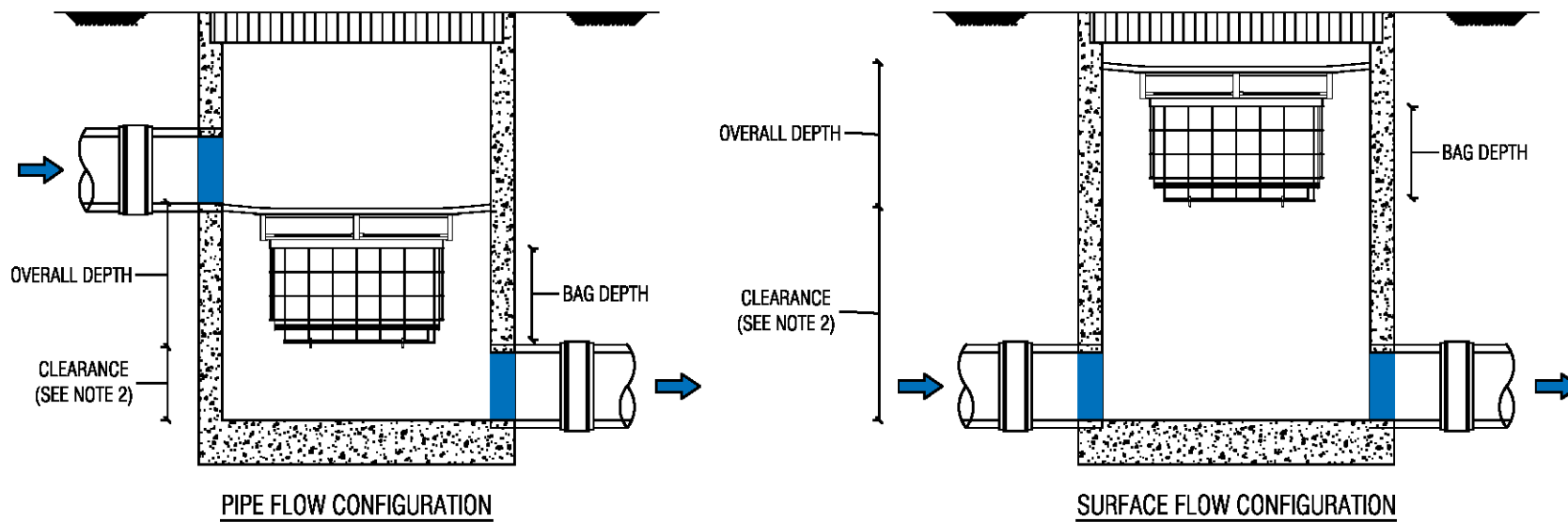


PROPOSED SEPP 2009 AFFORDABLE HOUSING
 LOT 328B, DP 12590
 NO 32 SYDNEY STREET, ST MARYS
 CLIENT: [REDACTED]

N. F. BILLYARD P/L
 11 YORK STREET, OATLANDS
 Ph 02 96302122 Fax 02 96302133

04/12/20 A4 SHEET
 NEIGHBOURHOOD NOTIFICATION PLANS 1354.DA-NN

NOTE: ALL DIMENSIONS ARE TO BE CHECKED ON SITE PRIOR TO CONSTRUCTION. WRITTEN DIMENSIONS WILL TAKE PRECEDENCE OVER SCALE. ANY DISCREPANCIES SHOULD BE REFERRED BACK TO THE ARCHITECT.



PLAN ID	MAXIMUM PIT PLAN DIMENSIONS
S	450mm x 450mm
M	600mm x 600mm
L	900mm x 900mm
XL	1200mm x 1200mm

DEPTH ID	BAG DEPTH	OVERALL DEPTH
1	170	270
2	300	450
3	600	700

PLAN ID	DEPTH ID	DEPTH ID		
		1	2	3
S		■		
M		■	■	
L		■	■	■
XL		■	■	■



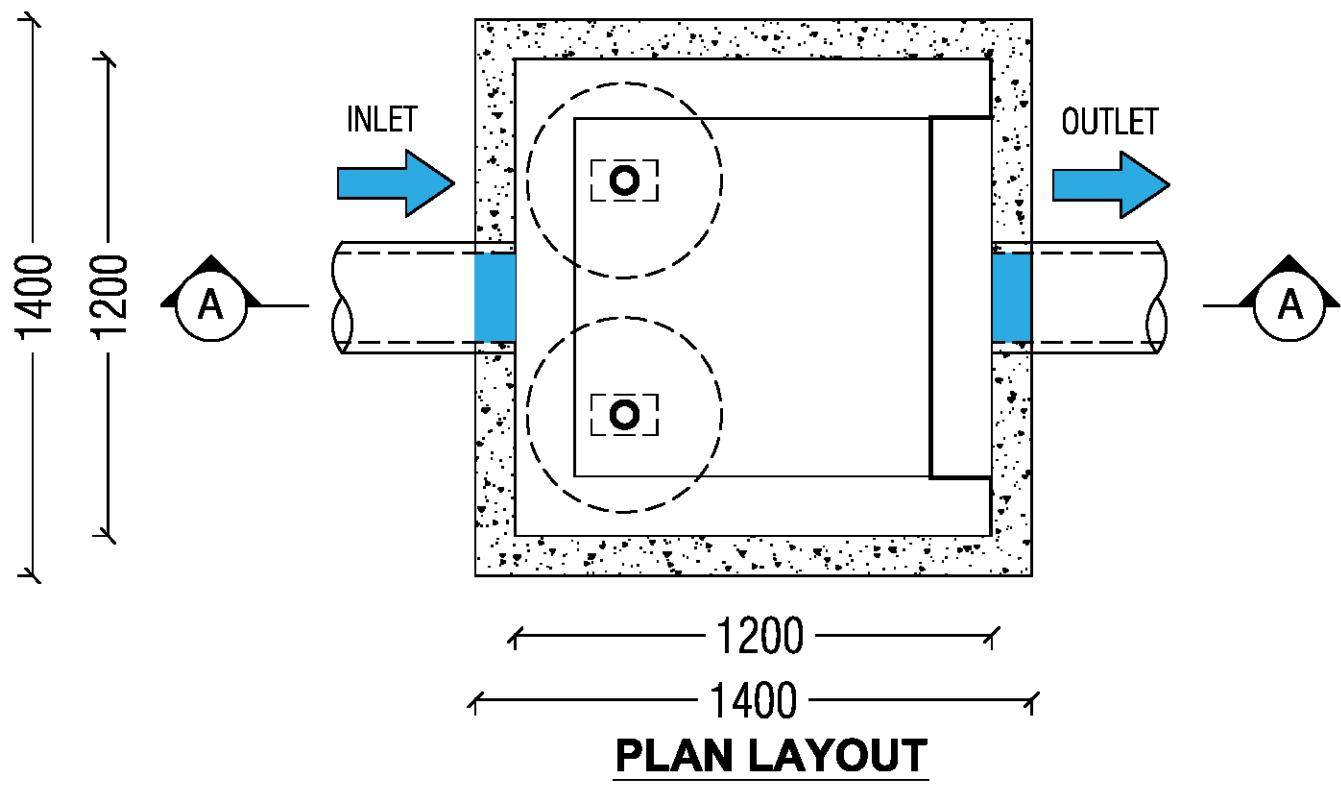
GENERAL NOTES

1. THE MINIMUM CLEARANCE DEPENDS ON THE CONFIGURATION (SEE NOTE 2) AND THE LOCAL COUNCIL REQUIREMENTS.
2. CLEARANCE FOR ANY PIT WITHOUT AN INLET PIPE (ONLY USED FOR SURFACE FLOW) CAN BE AS LOW AS 50mm. FOR OTHER PITS, THE RECOMMENDED CLEARANCE SHOULD BE GREATER OR EQUAL TO THE PIPE OBVERT SO AS NOT TO INHIBIT HYDRAULIC CAPACITY.
3. OCEAN PROTECT PROVIDES TWO FILTRATION BAG TYPES:- 200 MICRON BAGS FOR HIGHER WATER QUALITY FILTERING AND A COARSE BAG FOR TARGETING GROSS POLLUTANTS.
4. DRAWINGS NOT TO SCALE.



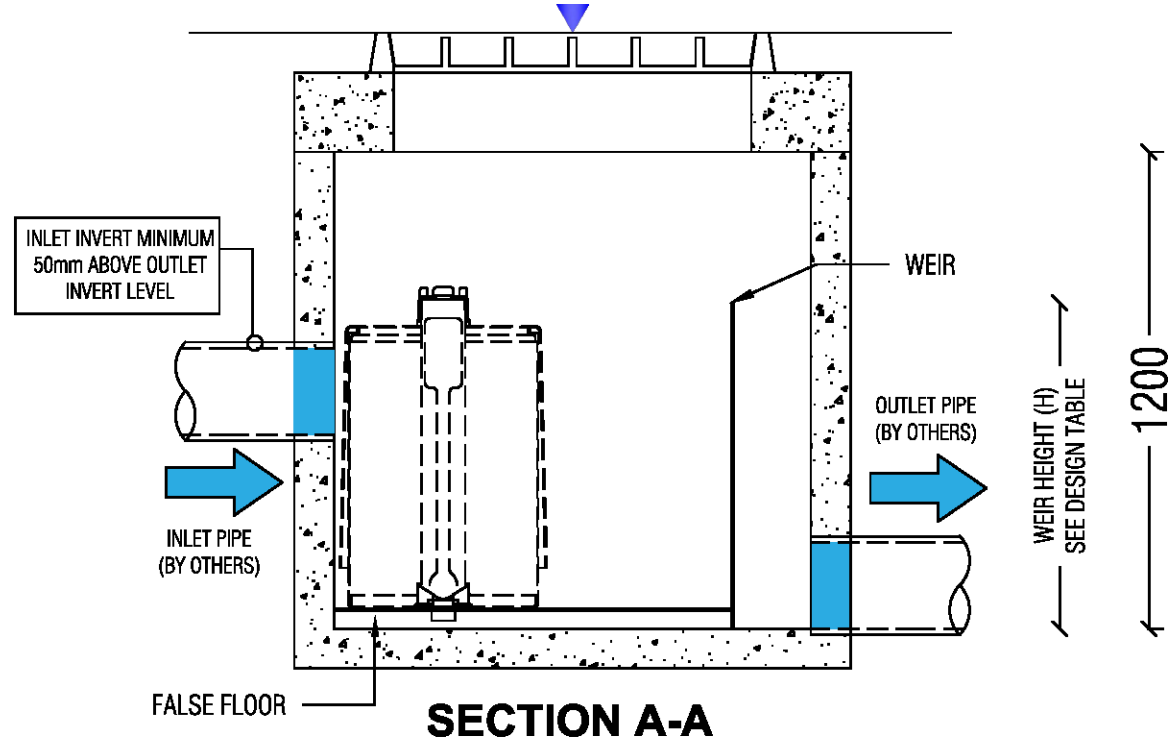
OCEAN PROTECT
OCEANGUARD
TYPICAL ARRANGEMENTS
SPECIFICATION DRAWING

NOT FOR CONSTRUCTION



PLAN LAYOUT

900 SQUARE CAST-IRON SOLID TOP
ACCESS COVER SUPPLIED LOOSE
(OR CAST INTO LID IF REQUIRED)

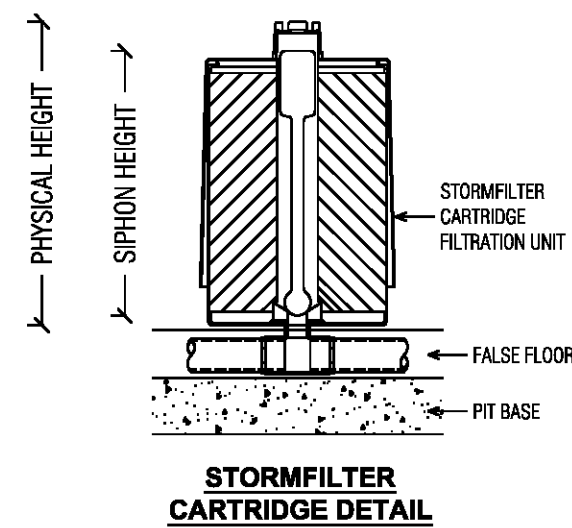


SECTION A-A

STORMFILTER DESIGN TABLE

- STORMFILTER TREATMENT CAPACITY VARIES BY NUMBER OF FILTER CARTRIDGES INSTALLED.
- THE STANDARD CONFIGURATION IS SHOWN. ACTUAL CONFIGURATION OF THE SPECIFIED STRUCTURE(S) PER CERTIFYING ENGINEER WILL BE SHOWN ON SUBMITTAL DRAWING(S).
- FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF-CLEANING. RADIAL MEDIA DEPTH SHALL BE 178mm.

CARTRIDGE NAME / SIPHON HEIGHT (mm)	690	460	310
CARTRIDGE PHYSICAL HEIGHT (mm)	840	600	600
TYPICAL WEIR HEIGHT [H] (mm)	820	590	440
CARTRIDGE FLOW RATE FOR ZPG MEDIA (L/s)	1.6	1.1	0.7
CARTRIDGE FLOW RATE FOR PSORB MEDIA (L/s)	0.9	0.46	0.39



STORMFILTER CARTRIDGE DETAIL

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	[]	[]	[]
NUMBER OF CARTRIDGES REQ'D	[]	[]	[]
SIPHON HEIGHT (310 / 460 / 690)	[]	[]	[]
MEDIA TYPE (ZPG / PSORB)	[]	[]	[]
WATER QUALITY FLOW RATE (L/S)	[]	[]	[]
HYDRAULIC CAPACITY (L/S)	[]	[]	[]
PIPE DATA:	I.L.	MATERIAL	DIAMETER
INLET PIPE #1	[]	[]	[]
INLET PIPE #2	[]	[]	[]
INLET PIPE #3	[]	[]	[]
OUTLET PIPE	[]	[]	[]
PRECAST PIT WEIGHT	TBA		
LID WEIGHT	TBA		

GENERAL NOTES

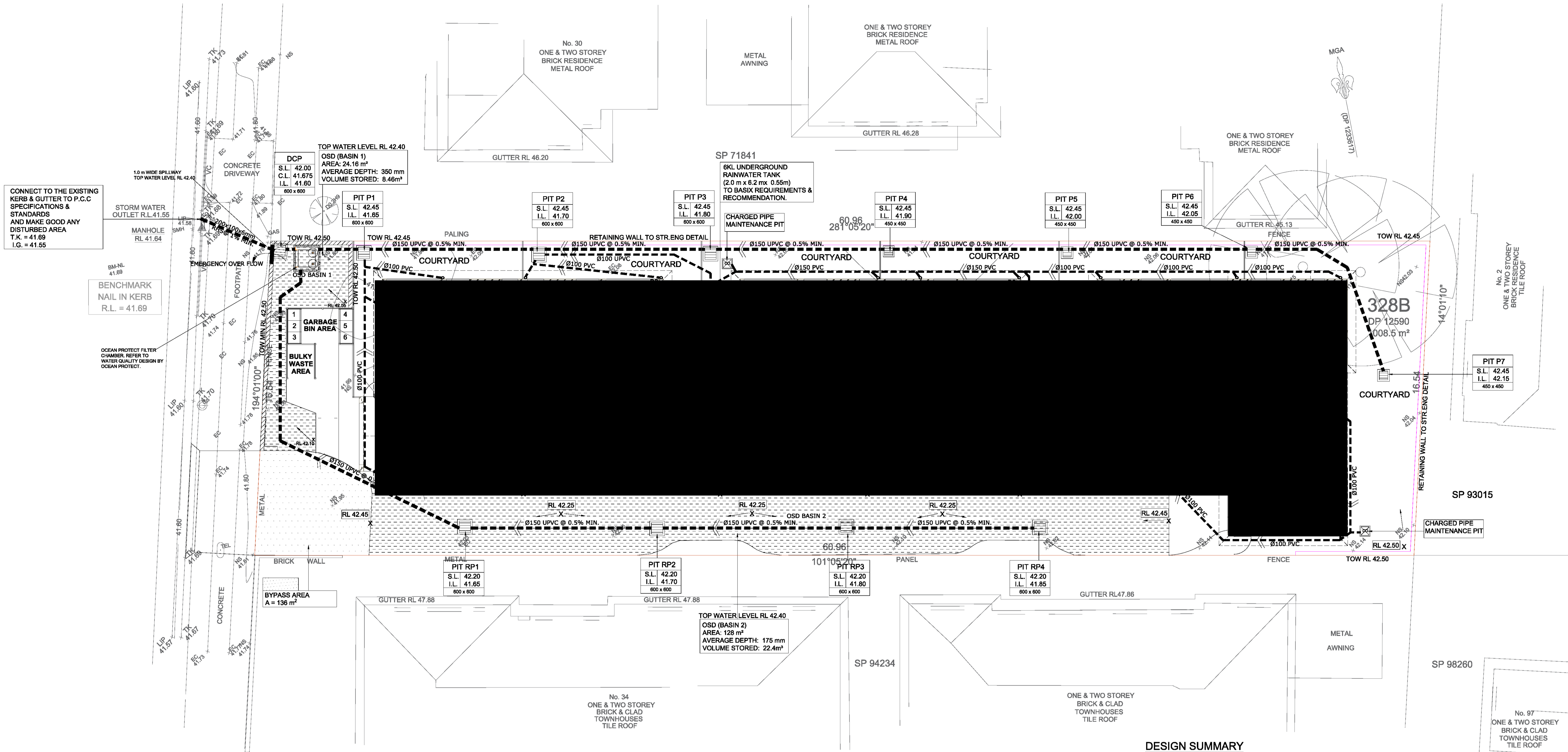
1. PRECAST STRUCTURE SUPPLIED WITH CORE HOLES TO SUIT OUTER DIAMETER OF NOMINATED PIPE SIZE / MATERIAL.
2. PRECAST STRUCTURE SHALL MEET W80 WHEEL LOAD RATING ASSUMING A MAXIMUM EARTH COVER OF 2.0m AND A GROUND WATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. CERTIFYING ENGINEER TO CONFIRM ACTUAL GROUNDWATER ELEVATION. PRECAST STRUCTURE SHALL BE IN ACCORDANCE WITH AS3600.
3. IF THE PEAK FLOW RATE, AS DETERMINED BY THE SITE CERTIFYING ENGINEER, EXCEEDS THE PEAK HYDRAULIC CAPACITY OF THE SYSTEM, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.
4. ALL WATER QUALITY TREATMENT DEVICES REQUIRE PERIODIC MAINTENANCE. REFER TO OPERATION AND MAINTENANCE MANUAL FOR GUIDELINES AND ACCESS REQUIREMENTS.
5. SITE SPECIFIC PRODUCTION DRAWING WILL BE PROVIDED ON PLACEMENT OF ORDER.
6. DRAWING NOT TO SCALE.

INSTALLATION NOTES

1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY CERTIFYING ENGINEER.
2. CONTRACTOR TO PROVIDE ALL EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STORMFILTER STRUCTURE (LIFTING DETAIL PROVIDED SEPARATELY).
3. CONTRACTOR TO APPLY SEALANT TO ALL JOINTS AND TO PROVIDE, INSTALL AND GROUT INLET AND OUTLET PIPES.



OCEAN PROTECT
2 CARTRIDGE STORMFILTER SYSTEM
1200 PIT
SPECIFICATION DRAWING



GROUND FLOOR DRAINAGE PLAN

1:100

CONCEPT PLAN ONLY

DESIGN SUMMARY

BELOW DESIGN IS BASED ON PENRITH COUNCIL STORMWATER DESIGN GUIDELINE SECTION "4.3.5- SIZING OSD SYSTEM."

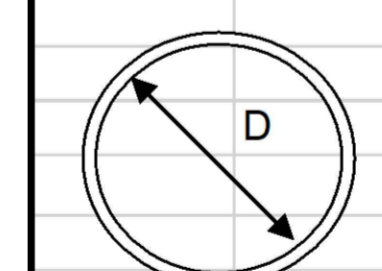
TOTAL SITE AREA = 1008.5 m²
 SSR = 240 m³/ha
 PSD = 120 L/s/ha

VOLUME REQUIRED = 240 x 0.10085 = 24.2 m³
 PERMISSIBLE SITE DISCHARGE = 120 x 0.10085 = 12.1 L/s

BYPASS AREA = 31 m² (3.0%), FROM TABLE 8
 SSR = 268 m³/ha
 PSD = 101.7 L/s/ha
 VOLUME REQUIRED (V) = 268 x 0.10085 = 27.03 m³
 PERMISSIBLE SITE DISCHARGE = 101.7 x 0.10085 = 10.3 L/s
 VOLUME PROVIDED = 8.46 + 22.4 = 30.86 m³

ORIFICE DIAMETER = 75 mm

Orifice Diameter	
C =	0.620
Q =	10.3 l/s
h =	0.725 m
Orifice diameter d =	0.075 m
This equation relies on:	Free discharge Sharp edged orifice



REVISION	AMENDMENT	ISSUE DATE	ISSUE
A	ISSUED FOR DA APPROVAL	29-10-2020	

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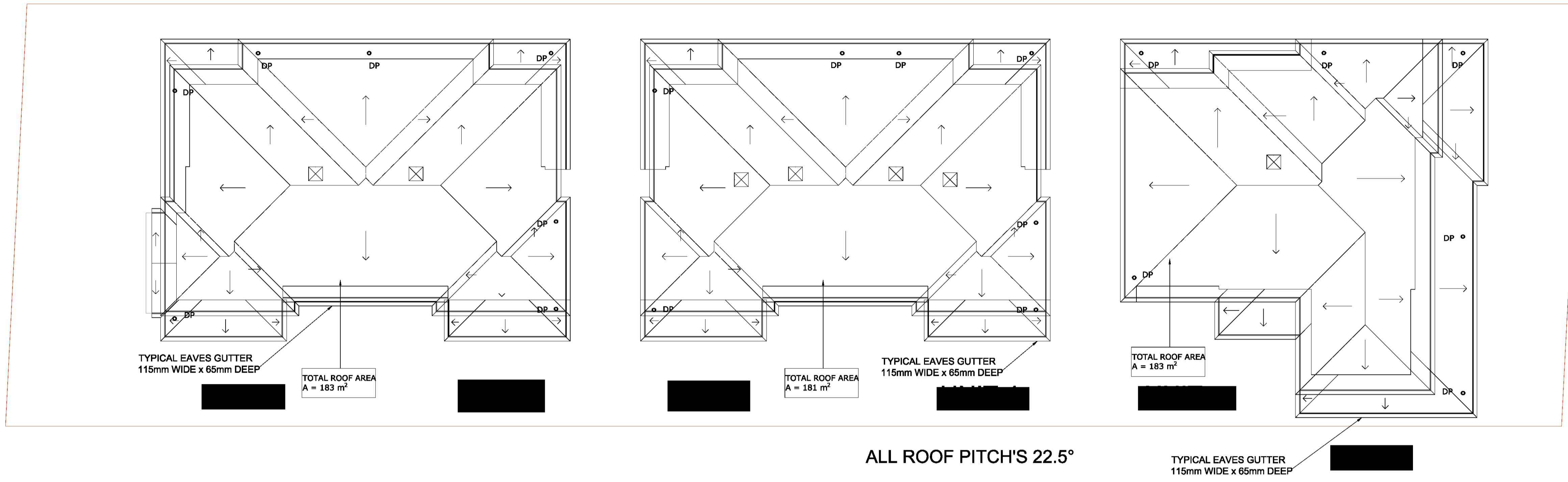


CLIENT
 [Redacted]

PROJECT
 PROPOSED DEVELOPMENT
 32 SYDNEY STREET
 ST MARYS

DRAWING TITLE		
GROUND FLOOR DRAINAGE PLAN		
SCALES AS SHOWN	DESIGNED ZK	DRAFTED MK
DRAWING NO. U20119 SW01	APPROVED ZK	REVISION A

STREET
SYDNEY



Enter Details

Roof Catchment (Plan) Area (sq.m) *(info)*

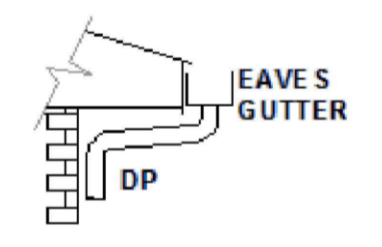
Roof 'Average' Slope (degrees) *(Learn about the average slope)*

Rainfall: Either choose a Location *(Important)* or enter known intensity (mm/hr)

Tick if gutter slope is steeper than 1:500 (ie 1:200)

You will require one of the following DP options :- (dimensions in mm)
(Assuming approximately equal catchment areas)

Flow (L/s)



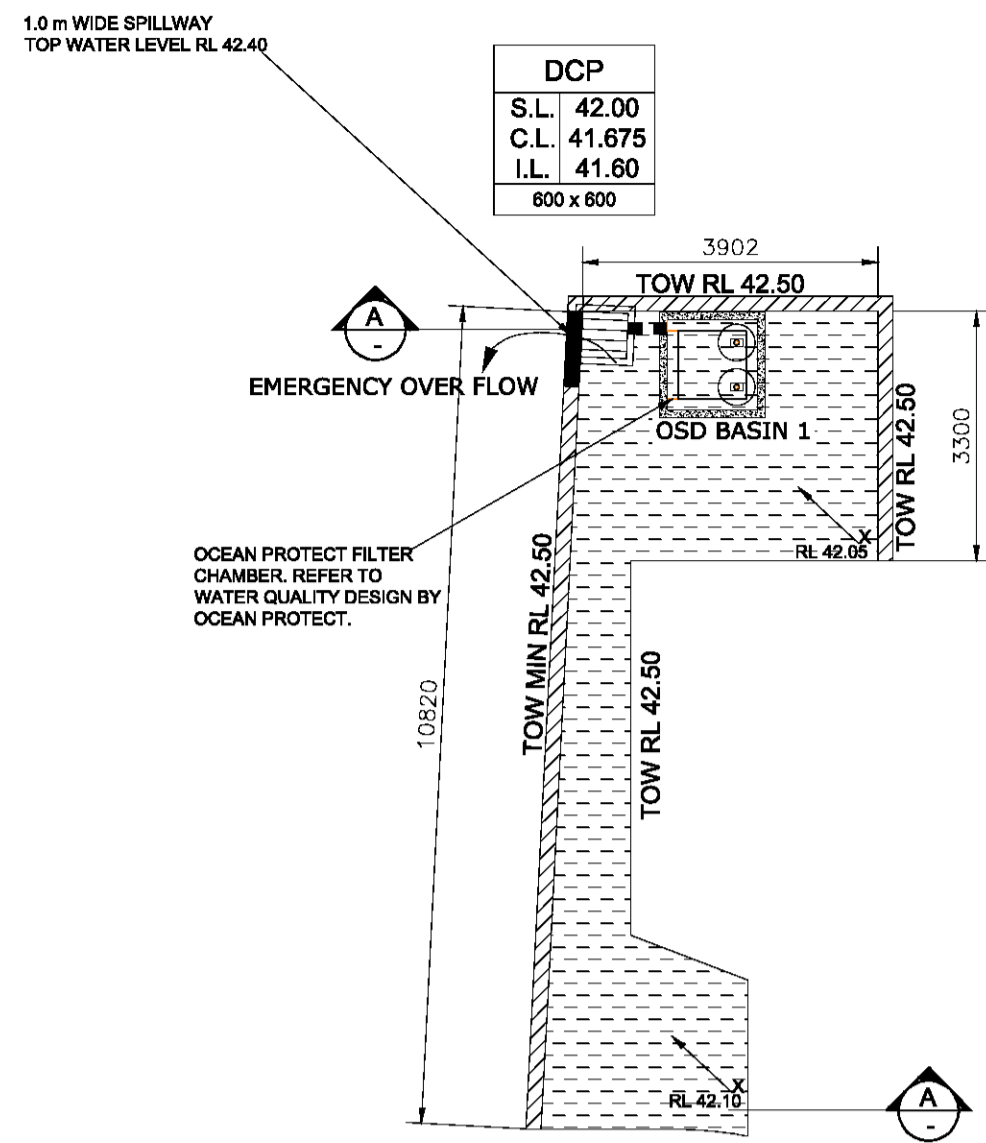
ROOF DRAINAGE PLAN
1:100

Results:

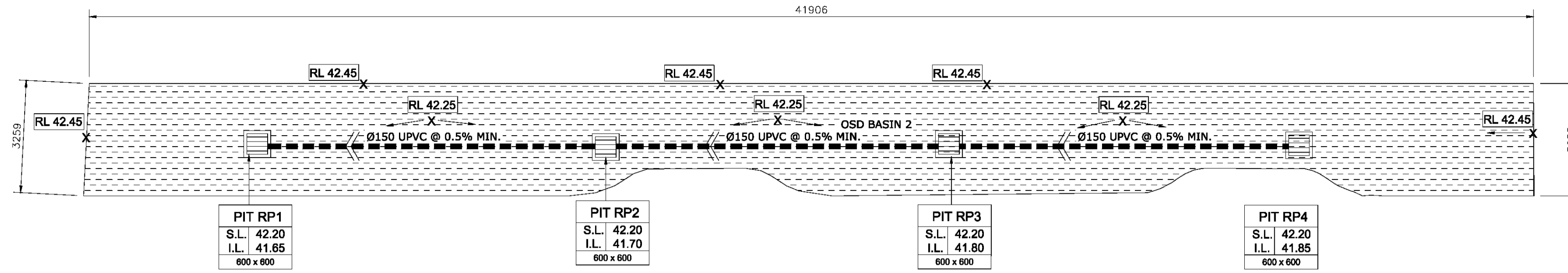
	Number Req'd	Number Used	Gutter Area?	Gutter Width	Gutter Depth?
90 Dia:	<input type="text" value="6.93"/>	<input type="text" value="7"/>	<input type="text" value="6551"/>	<input type="text" value="110"/>	<input type="text" value="60"/>
100 Dia:	<input type="text" value="5.25"/>	<input type="text" value="6"/>	<input type="text" value="7406"/>	<input type="text" value="115"/>	<input type="text" value="65"/>
150 Dia:	<input type="text" value="1.95"/>	<input type="text" value="2"/>	<input type="text" value="17999"/>	<input type="text" value="190"/>	<input type="text" value="95"/>
225 Dia:	<input type="text" value="0.71"/>	<input type="text" value="1"/>	<input type="text" value="31776"/>	<input type="text" value="245"/>	<input type="text" value="130"/>
300 Dia:	<input type="text" value="0.34"/>	<input type="text" value="1"/>	<input type="text" value="31776"/>	<input type="text" value="245"/>	<input type="text" value="130"/>

CONCEPT PLAN ONLY

COPYRIGHT THIS DRAWING REMAINS THE PROPERTY OF ALPHA ENGINEERING & DEVELOPMENT AND MAY NOT BE ALTERED IN ANY WAY WITHOUT ALPHA ENGINEERING'S WRITTEN CONSENT		CLIENT <input type="text"/>		PROJECT PROPOSED DEVELOPMENT 32 SYDNEY STREET ST MARYS		DRAWING TITLE ROOF DRAINAGE PLAN	
REVISION A ISSUED FOR DA APPROVAL AMENDMENT		ISSUE DATE 29-10-2020		SCALES AS SHOWN DRAWING NO. U20119 SW02		DESIGNED ZK APPROVED ZK	
						DRAFTED MK REVISION A	



ON-SITE DETENTION BASIN 1 PLAN
SCALE 1:100

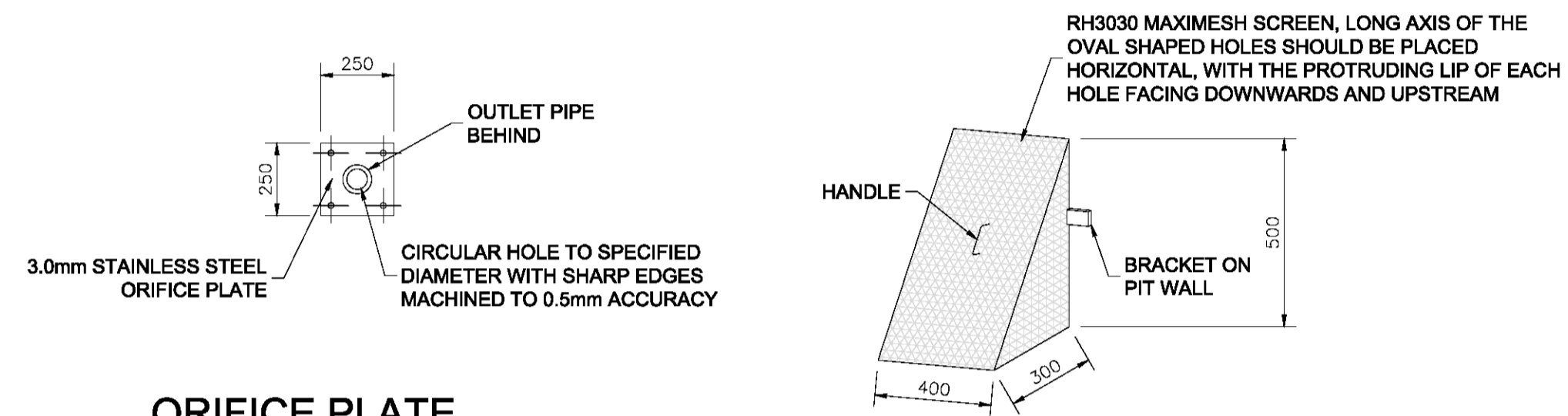


ON-SITE DETENTION BASIN 2 PLAN
SCALE 1:100



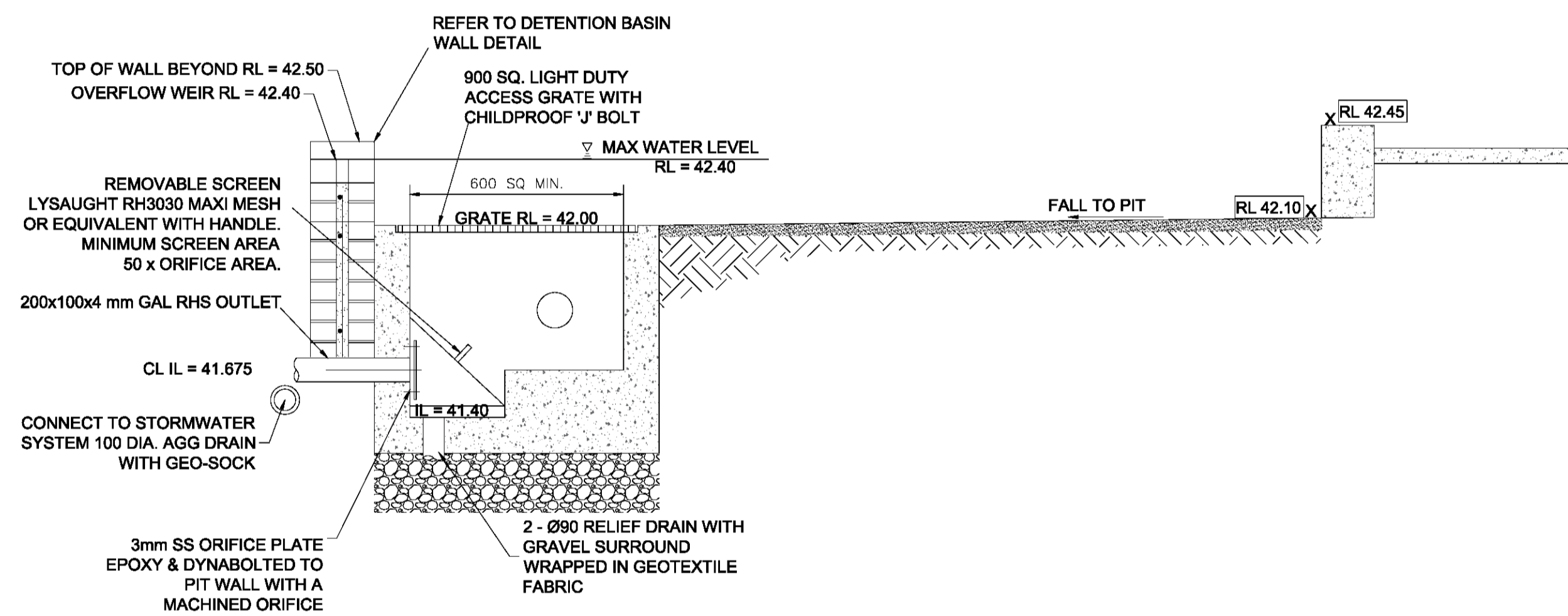
OSD WARNING SIGN
N.T.S.

PROVIDE OSD SIGN ADJACENT TO THE ON-SITE DETENTION SYSTEM IN A CLEAR AND VISIBLE POSITION IN ACCORDANCE WITH PENRITH COUNCIL REQUIREMENTS

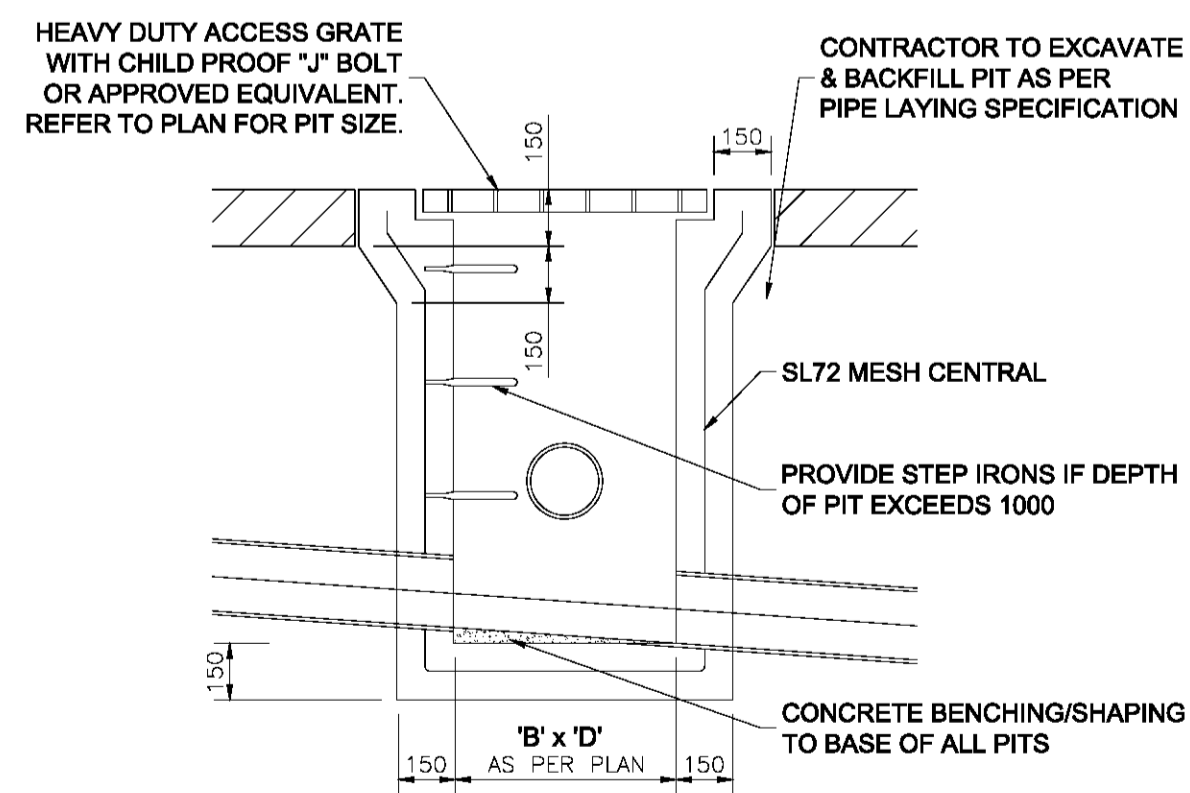


ORIFICE PLATE DETAIL 1:20

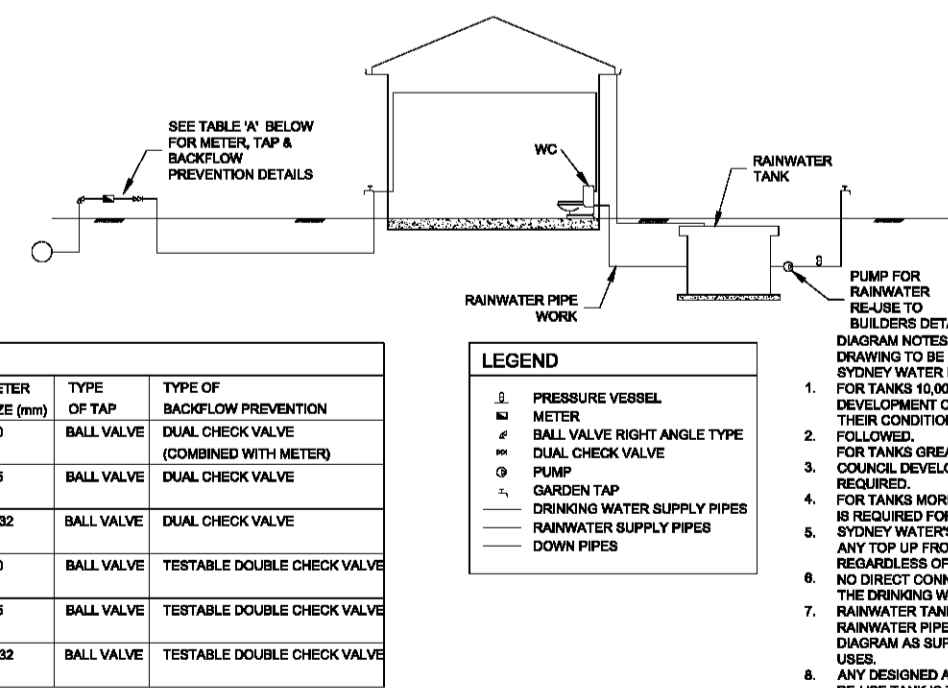
STANDARD TRASH SCREEN N.T.S.



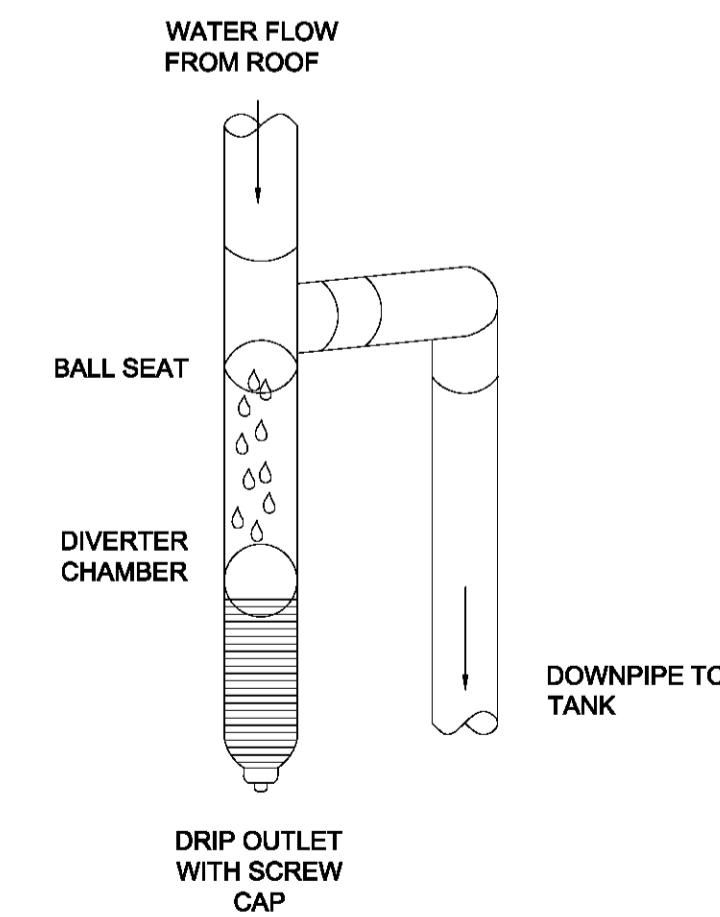
TYPICAL SURFACE INLET PIT DETAIL 1:100
TYPICAL FOR ALL PITS IN NON TRAFFIC AREAS.



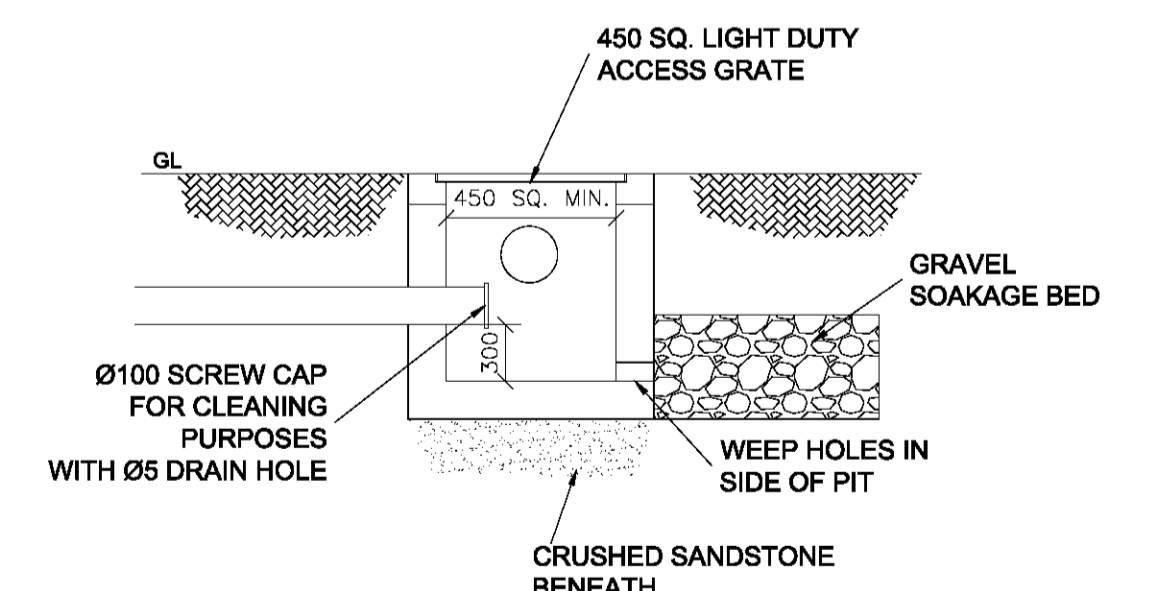
TYPICAL SURFACE INLET PIT DETAIL 1:20
TYPICAL FOR ALL PITS IN DRIVEWAY/CARPAK AREAS.



DUAL WATER & RAINWATER SUPPLY DIAGRAM N.T.S.
THE RAINWATER TANK SHALL BE INSTALLED WITH A FIRST FLUSH DEVICE TO SUPPLIERS DETAILS



PROPRIETARY FIRST FLUSH DIVERTER
SCALE N.T.S.

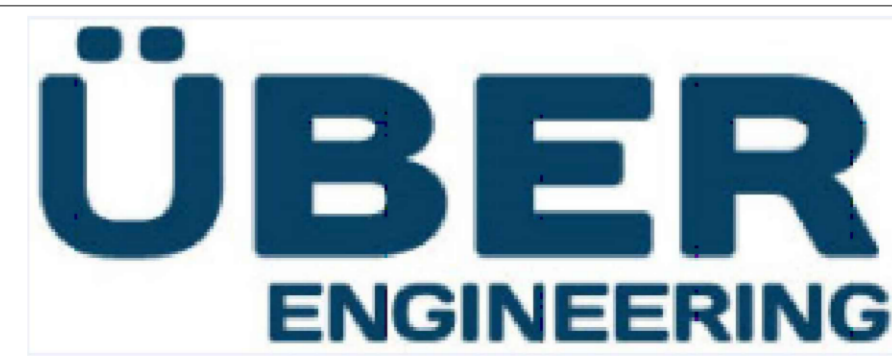


MAINTENANCE PIT DETAIL 1:100

CONCEPT PLAN ONLY

REVISION	AMENDMENT	ISSUE DATE	ISSUE
A	ISSUED FOR DA APPROVAL	29-10-2020	

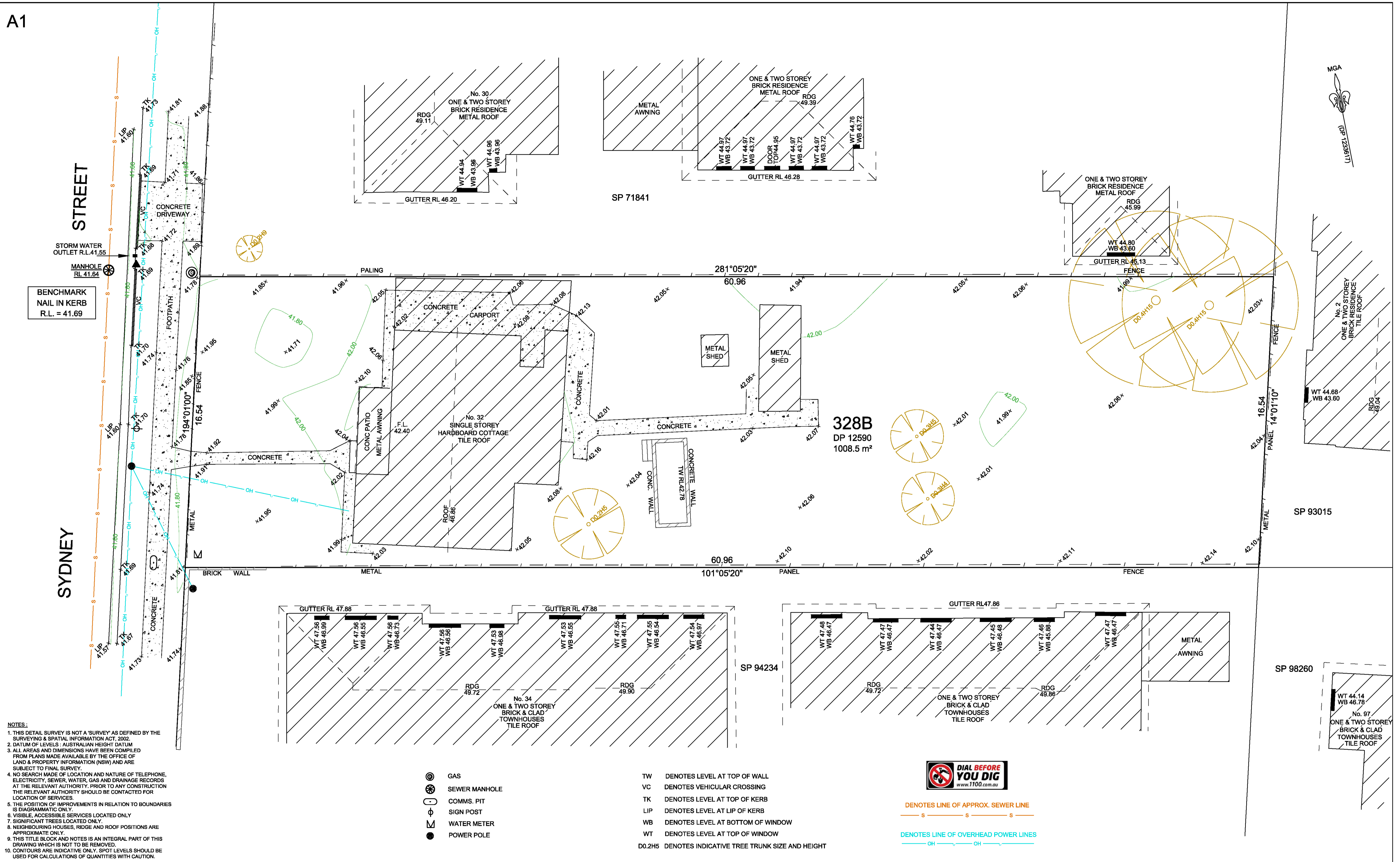
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CLIENT
[REDACTED]

PROJECT
**PROPOSED DEVELOPMENT
32 SYDNEY STREET
ST MARYS**

DRAWING TITLE		
SECTIONS AND DETAILS		
SCALES AS SHOWN	DESIGNED ZK	DRAFTED MK
DRAWING NO. U20119 SW03	APPROVED ZK	REVISION A

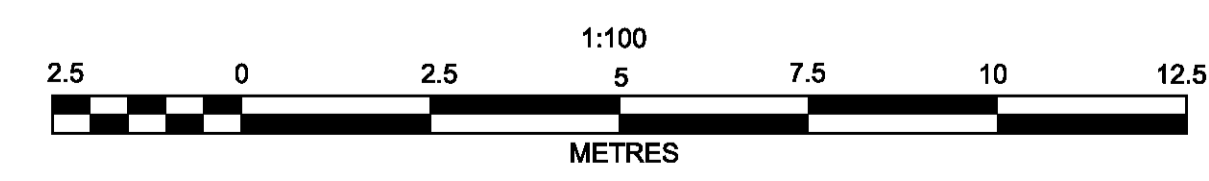


NOTES:
 1. THIS DETAIL SURVEY IS NOT A 'SURVEY' AS DEFINED BY THE SURVEYING & SPATIAL INFORMATION ACT, 2002.
 2. DATUM OF LEVELS: AUSTRALIAN HEIGHT DATUM
 3. ALL AREAS AND DIMENSIONS HAVE BEEN COMPILED FROM PLANS MADE AVAILABLE BY THE OFFICE OF LAND & PROPERTY INFORMATION (NSW) AND ARE SUBJECT TO FINAL SURVEY.
 4. NO SEARCH MADE OF LOCATION AND NATURE OF TELEPHONE, ELECTRICITY, SEWER, WATER, GAS AND DRAINAGE RECORDS AT THE RELEVANT AUTHORITY. PRIOR TO ANY CONSTRUCTION THE RELEVANT AUTHORITY SHOULD BE CONTACTED FOR LOCATION OF SERVICES.
 5. THE POSITION OF IMPROVEMENTS IN RELATION TO BOUNDARIES IS DIAGRAMMATIC ONLY.
 6. VISIBLE, ACCESSIBLE SERVICES LOCATED ONLY.
 7. SIGNIFICANT TREES LOCATED ONLY.
 8. NEIGHBOURING HOUSES, RIDGE AND ROOF POSITIONS ARE APPROXIMATE ONLY.
 9. THIS TITLE BLOCK AND NOTES IS AN INTEGRAL PART OF THIS DRAWING WHICH IS NOT TO BE REMOVED.
 10. CONTOURS ARE INDICATIVE ONLY. SPOT LEVELS SHOULD BE USED FOR CALCULATIONS OF QUANTITIES WITH CAUTION.

- ⊙ GAS
- ⊗ SEWER MANHOLE
- ⊖ COMMS. PIT
- ⊕ SIGN POST
- ⊕ WATER METER
- POWER POLE
- TW DENOTES LEVEL AT TOP OF WALL
- VC DENOTES VEHICULAR CROSSING
- TK DENOTES LEVEL AT TOP OF KERB
- LIP DENOTES LEVEL AT LIP OF KERB
- WB DENOTES LEVEL AT BOTTOM OF WINDOW
- WT DENOTES LEVEL AT TOP OF WINDOW
- D0.2HS DENOTES INDICATIVE TREE TRUNK SIZE AND HEIGHT



— S — S — S —
 DENOTES LINE OF APPROX. SEWER LINE
 — OH — OH — OH —
 DENOTES LINE OF OVERHEAD POWER LINES



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RHCO RICHARD HOGAN & CO.
 SURVEYING & DEVELOPMENT CONSULTANTS
 ABN 59 082 453 165

SURVEYOR: MB
 DRAWN: MB/DG
 REDUCTION RATIO: 1:100 @ A1
 CONTOUR INTERVAL: 0.2m
 SHEET 1 OF 1

ORIGIN OF LEVELS:
 SSM 42445
 RL=41.494 (SCIMS)
 DATUM: AUSTRALIAN HEIGHT DATUM
 DATE: 08/05/2020
 VERSION No.: A

PLAN OF DETAIL AND LEVELS OVER LOT 328B IN D.P. 12590 No 32 SYDNEY STREET, ST. MARYS	
CLIENT:	
L.G.A.: PENRITH	JOB REF: 20234

7. APPENDICES

APPENDIX A

CHECKLIST FOR STORMWATER CONCEPT PLAN (SCP)

Survey Information	Yes	No	NA
1. Site boundaries	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. North point	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Services within the public footway	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Site features, including tree, structures, depressions	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Contours at 0.1m for flat sites ranging to 0.5m for steep sites and extending 10m into adjoining properties	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Top of kerb levels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Boundary levels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Benchmarks	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Levels to AHD where site is affected by overland flow, flooding or where works on Council's drainage network are required	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
General	Yes	No	NA
1. Plans to scale of 1:100 or 1:200	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Designer's name, qualifications, contact details provided	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Design report, including details of any variations provided	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Plan number and date of issue shown	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Consistency between stormwater, architectural and landscape plans	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. 1% AEP overland flow extents shown	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Development layout, building envelope and proposed driveway locations shown	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Drainage calculations to support the proposed design submitted	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Proposed finished floor, garage and ground surface levels shown	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Compliance with freeboard requirements	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Location and level of proposed retaining walls indicated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Appropriate tail water selected	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. No adverse impact on other properties or the stormwater network	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Mainstream flood / local overland flow flood report (if any)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Drainage Layout	Yes	No	NA
1. Pipe size, grade and invert level indicated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Pit location, size, invert level and surface level indicated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Proposed connection point to Council's stormwater system	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OSD	Yes	No	NA
1. A catchment plan showing areas draining to the OSD system.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Location and size of OSD system and WSUD measures shown	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Location and level of OSD discharge points shown	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Compliance with detention volume required	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Compliance with less than 15% of site area bypassing OSD system	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Compliance with the Permissible Site Discharge (PSD) requirements	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Compliance with OSD storage depths	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Overland flows clear from the OSD system	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. OSD storage located within common areas, clear of private courtyards and accessible from the street	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Overflow weir provided and shown	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Details of discharge control pit shown	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Orifice details and calculations shown	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Typical sections of OSD storage, including basin invert level, centreline level of outlet orifice, top water level, finished surface levels provided	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Provision of design certification of the OSD system in accordance with this policy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Others	Yes	No	NA
1. Location of Council's drainage easements, private inter-allotment easements shown (if any)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Location and details of basement pump-out system provided (if any)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Location and details of overland flow path shown (if any)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>