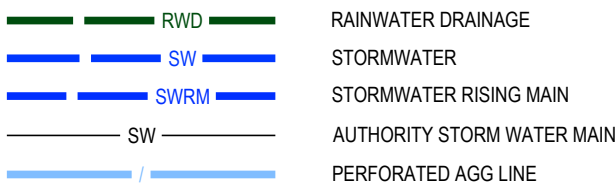


3 WISTON GARDENS, DOUBLE BAY

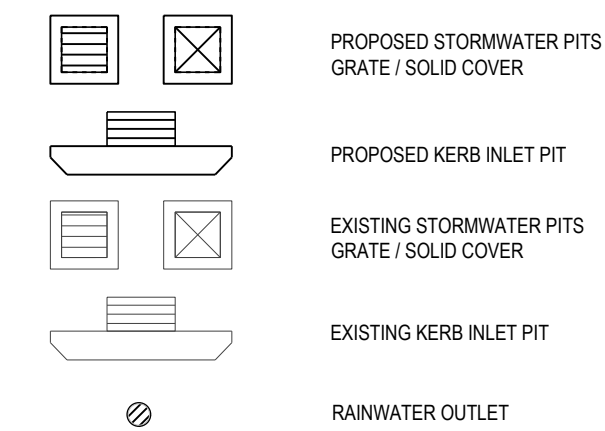
STORMWATER MANAGEMENT



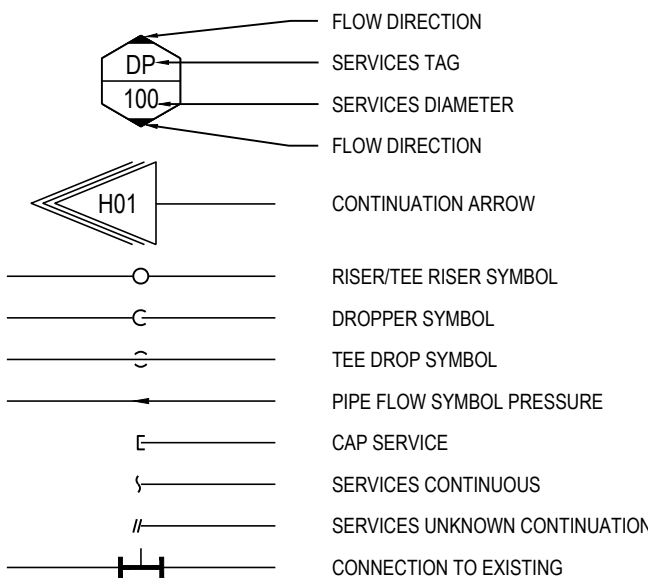
LEGEND - STORMWATER SERVICES



LEGEND - STORMWATER SYMBOLS



LEGEND - GENERAL SYMBOLS



LEGEND - ABBREVIATIONS

DP	DOWNPIPE
IL	INVERT LEVEL
OF	OVERFLOW
RL	REDUCED LEVEL
RWO	RAINWATER OUTLET
SYDP	SYMPHONIC DOWNPIPE
STW	STORMWATER

SITE WORKS - ACCESS AND SAFETY

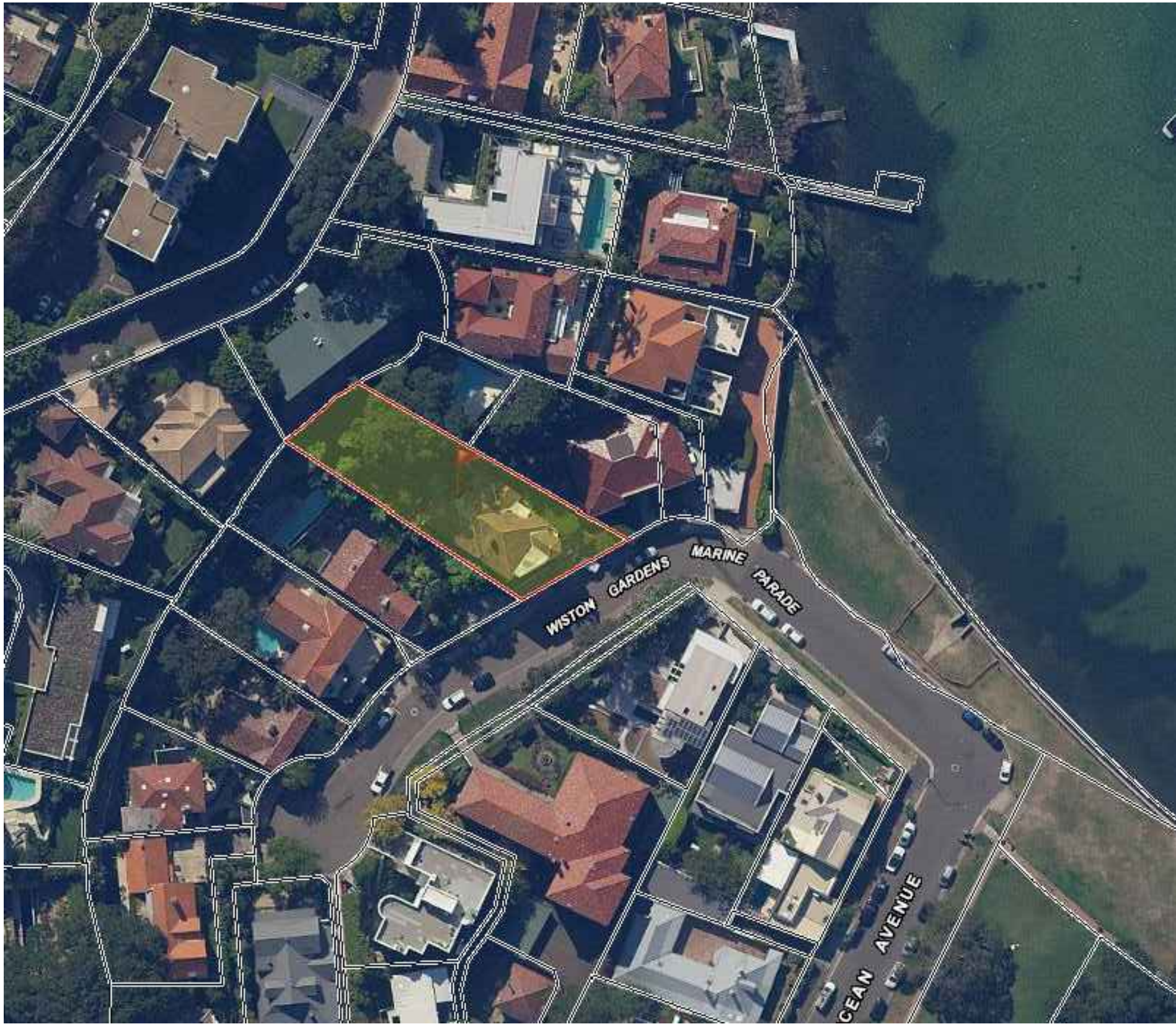
1. ALL WORKS ARE TO BE UNDERTAKEN IN A SAFE MANNER IN ACCORDANCE WITH ALL STATUTORY AND INDUSTRIAL RELATION REQUIREMENTS.
2. ACCESS TO ADJACENT BUILDINGS AND PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.
3. WHERE NECESSARY SAFE PASSAGE SHALL BE PROVIDED FOR VEHICLES AND PEDESTRIANS THROUGH OR ADJACENT TO THE SITE.

SITE WORKS - GENERAL

1. ALL WORKS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH LOCAL COUNCIL, AUSTRALIAN AND AUTHORITY STANDARDS.
2. ALL TRENCHING WORKS ARE TO BE RESTORED TO ORIGINAL CONDITION.
3. THE INTEGRITY OF ALL EXISTING AND NEW SERVICES IS TO BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
4. ALL PLANS ARE TO BE READ IN CONJUNCTION WITH APPROVED ARCHITECTS, STRUCTURAL ENGINEERS AND OTHER CONSULTANT'S PLANS. ANY DISCREPANCIES ARE TO BE NOTIFIED TO THE ENGINEER FOR CLARIFICATION.
5. THE ENGINEER SHALL BE GIVEN A MIN. OF 48 HOURS NOTICE FOR ALL STORMWATER DRAINAGE AND PAVEMENT INSPECTIONS. CONCRETE SHALL NOT BE DELIVERED UNTIL ENGINEERS APPROVAL IS OBTAINED.

STORMWATER

1. ALL WORKS ARE TO BE UNDERTAKEN IN ACCORDANCE WITH THE FOLLOWING AUSTRALIAN STANDARDS AS2032, AS3500 AND AS3725 AS A MINIMUM.
2. ALL PIPES LESS THAN OR EQUAL TO Ø300mm IN SIZE ARE TO BE SOLVENT WELD-JOINTED UPVC CLASS SN8 U.N.O.
3. ALL PIPES Ø375mm OR GREATER IN SIZE ARE TO BE MIN. CLASS 2 REINFORCED CONCRETE PIPE (RCP) OR FIBRE REINFORCED CONCRETE (FRC) RUBBER RING JOINTED (RRJ) U.N.O.
4. ALL PIPES ARE TO BE LAID AT MIN. 1.0% GRADE U.N.O.
5. PIPE BEDDING IS TO BE HS2 UNDER ROADS AND TRAFFICKED AREAS AND SHALL BE H2 IN LANDSCAPED AND PEDESTRIAN TRAFFICKED AREAS U.N.O.
6. ALL PIPE BENDS AND JUNCTIONS ARE TO BE MADE WITH EITHER PURPOSE MADE FITTINGS OR STORMWATER DRAINAGE PITS.
7. MINIMUM COVER FROM THE OBVERT OF THE STORMWATER PIPE OF 300mm IS TO BE PROVIDED IN LANDSCAPED AREAS AND 600mm IN VEHICULAR TRAFFICKED AREAS U.N.O.
8. WHERE MINIMUM COVER CANNOT BE ACHIEVED CONCRETE ENCASEMENT OF THE AFFECTED PIPE IS MAY BE UNDERTAKEN WITH 20MPa CONCRETE WITH A MIN. COVER OF 150mm TO ALL SIDES OF THE PIPE. THE CONTRACTOR SHALL CONFIRM THIS REQUIREMENT WITH THE ENGINEER OR SUPERINTENDENT.
9. LAID PIPELINES ARE TO HAVE THE FOLLOWING CONSTRUCTED TOLERANCES:
 - a. HORIZONTAL-1:300 ANGULAR DEVIATION FROM REQUIRED ALIGNMENT;
 - b. VERTICAL-1:300 ANGULAR DEVIATION FROM REQUIRED ALIGNMENT.
10. ALL DRAINAGE PITS ARE TO BE CAST IN-SITU. PRECAST DRAINAGE PITS MAY BE USED WITH APPROVAL FROM THE ENGINEER. THE CONTRACTOR SHALL SUBMIT A PRECAST PIT INSTALLATION WORK METHOD STATEMENT FOR ASSESSMENT BY THE ENGINEER FOR APPROVAL.
11. DRAINAGE PIT COVERS ARE TO BE EITHER GALVANISED STEEL OR CAST IRON CLASS 'B' IN LANDSCAPED AND PEDESTRIAN TRAFFICKED AREAS AND CLASS 'D' IN ALL VEHICULAR TRAFFICKED AREAS U.N.O.
12. DRAINAGE PIT COVERS ARE TO BE 'HEELSAFE' TYPE IN ALL PEDESTRIAN TRAFFICKED AREAS U.N.O.
13. EXISTING STORMWATER PIT LOCATIONS AND INVERT LEVELS TO BE CONFIRMED PRIOR TO COMMENCING WORKS ON SITE.
14. PROVIDE CLEANING EYES (RODDING POINTS) TO PIPES AT ALL CORNERS AND T-JUNCTIONS WHERE NO PITS ARE PRESENT.
15. DOWN PIPES CONNECTED DIRECT TO PIPES TO BE CONNECTED AT 45° TO THE FLOW DIRECTION WITH A CLEANING EYE PROVIDED AT GROUND LEVEL.

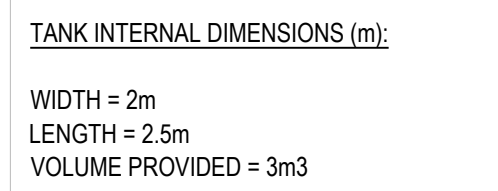
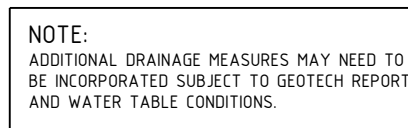


LOCATION PLAN
NOT TO SCALE - COURTESY OF SIXMAPS

STORMWATER MANAGEMENT DRAWING LIST

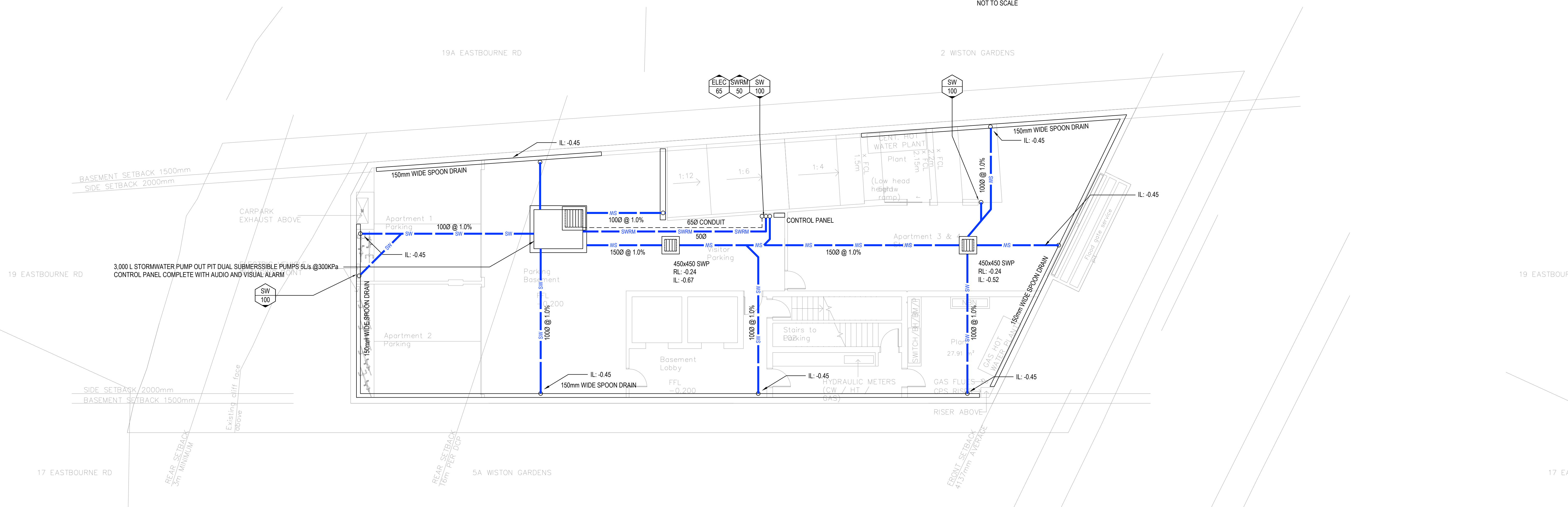
- SW00 - STORMWATER LEGEND AND COVER SHEET
- SW01 - BASEMENT
- SW02 - GROUND FLOOR
- SW03 - DETAIL SHEET

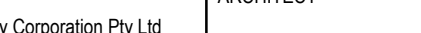
AMENDMENTS/REVISIONS				AMENDMENTS/REVISIONS				CLIENT		ARCHITECT		CONSULTANT		PROJECT		DRAWING TITLE		FOR APPROVAL				
Rev	Description	Init	Date	Rev	Description	Init	Date	 Pier Property Corporation Pty Ltd		 Tzannes		 INTEGRATED GROUP SERVICES		3 WISTON GARDENS, DOUBLE BAY		HYDRAULIC SERVICES LEGEND & COVER SHEET		NOT TO BE USED FOR CONSTRUCTION PURPOSES				
A	ISSUE FOR APPROVAL	BM	16.03.21															DRAWN	DESIGNED	CHECKED	SCALE (AT FULL SIZE)	DATE
B	ISSUE FOR APPROVAL	BM	03.06.21					A: Suite 305, Level 3, 25 Lime St King Street Wharf NSW 2000 P: 02 9249 0400		A: Suite 5, L5, 2-12 Foveaux St, Surry Hills NSW 2010 P: 61 2 9319 3744		Phone +61 2 9488 4800 Fax +61 2 9475 4588 Address Suite 1.11, 75 Mary St, St Peters, NSW 2044 Australia						JS	JS	GM	NTS A1	Mar-21
																		PROJECT No.		DRAWING No.		REVISION
																		EN-N20_145		SW00		B



STORMWATER SUB-SOIL PUMP STATION 3m³

NOT TO SCALE



AMENDMENTS/REVISIONS				AMENDMENTS/REVISIONS				CLIENT	ARCHITECT	CONSULTANT	PROJECT	DRAWING TITLE	FOR APPROVAL							
Rev	Description	Init	Date	Rev	Description	Init	Date	 Pier Property Corporation Pty Ltd A: Suite 305, Level 3, 25 Lime St King Street Wharf NSW 2000 P: 02 9249 0400	 Tzannes A: Suite 5, L5, 2-12 Foveaux St, Surry Hills NSW 2010 P: 61 2 9319 3744	 IGS INTEGRATED GROUP SERVICES Phone +61 2 8488 4600 Fax +61 2 9475 4588 Address Suite 1.11, 75 Mary St, St Peters, NSW 2044 Australia	3 WISTON GARDENS, DOUBLE BAY		STORMWATER MANAGEMENT BASEMENT		NOT TO BE USED FOR CONSTRUCTION PURPOSES					
A	ISSUE FOR APPROVAL	BM	16.03.21												DRAWN	DESIGNED	CHECKED	SCALE (AT FULL SIZE)	DATE	
B	ISSUE FOR APPROVAL	BM	03.06.21												JS	JS	GM	1:100	A1	Mar-21
															PROJECT No.		DRAWING No.		REVISION	
															EN-N20_145		SW01		B	

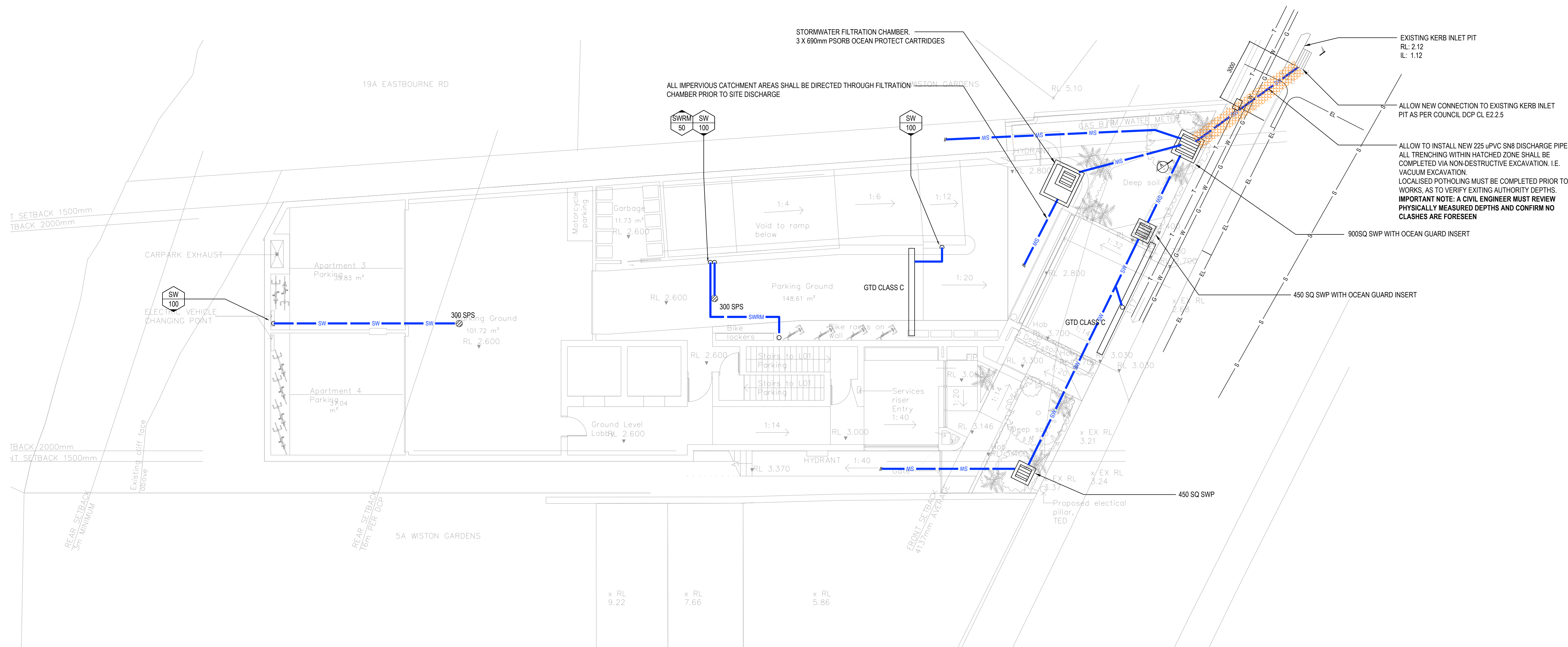

$$Q_y = 0.278 \times C_y \times I_{tc,y} \times A$$

0

$$C_y = F_y \times C_{10}$$

Scroll Down For Time of Concentration Calc

ARR (years)	Frequency Factor (F_v)
1	0.80
2	0.85
5	0.95
10	1.00
20	1.05
50	1.15
100	1.2

Runoff co-efficient, $C_y = 0.865$ [illegible]

CLIENT	 Pier Property Corporation Pty Ltd A: Suite 305, Level 3, 25 Lime St King Street Wharf NSW 2000 P: 02 9249 0400
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ARCHITECT

1%

Tzannes

A: Suite 5, L5, 2-12 Foveaux
St, Surry Hills NSW 2010

P: 61 2 9319 3744

CONSULTANT

 **IGS** INTEGRATED GROUP SERVICES

Phone +61 2 8488 4600 Fax +61 2 9475 450
Address Suite 1.11, 75 Mary St. St Peters.
NSW 2044 Australia

PROJECT

3 WISTON GARDENS, DOUBLE BAY

DRAWING TITLE

STORMWATER MANAGEMENT
GROUND FLOOR

FOR APPROVAL					
NOT TO BE USED FOR CONSTRUCTION PURPOSES					
DRAWN	DESIGNED	CHECKED	SCALE (AT FULL SIZE)		DATE
JS	JS	GM	1:100	A1	Mar-21
PROJECT No.			DRAWING No.		REVISION
EN-N20_145			SW02		B

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 170mm.			
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

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	1L	MATERIAL	DIAMETER
INLET PIPE #1			
INLET PIPE #2			
INLET PIPE #3			
OUTLET PIPE			
PRECAST PIT WEIGHT	TBA		
LID WEIGHT	TBA		

GENERAL NOTES

- PRECAST STRUCTURE SUPPLIED WITH CORE HOLES TO SUIT OUTER DIAMETER OF NOMINATED PIPE SIZE / MATERIAL.
- 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 AS2600.
- 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.
- ALL WATER QUALITY TREATMENT DEVICES REQUIRE PERIODIC MAINTENANCE. REFER TO OPERATION AND MAINTENANCE MANUAL FOR GUIDELINES AND ACCESS REQUIREMENTS.
- SITE SPECIFIC PRODUCTION DRAWING WILL BE PROVIDED ON PLACEMENT OF ORDER.
- DRAWING NOT TO SCALE.

INSTALLATION NOTES

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

PHONE 1300 354 722 www.oceanprotect.com.au

OCEAN PROTECT
3 CARTRIDGE STORMFILTER SYSTEM
1200 PIT
SPECIFICATION DRAWING

LAST MODIFIED: 01-05-19

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

DEPTH ID	1	2	3
PLAN ID			
S			
M			
L			
XL			

GENERAL NOTES

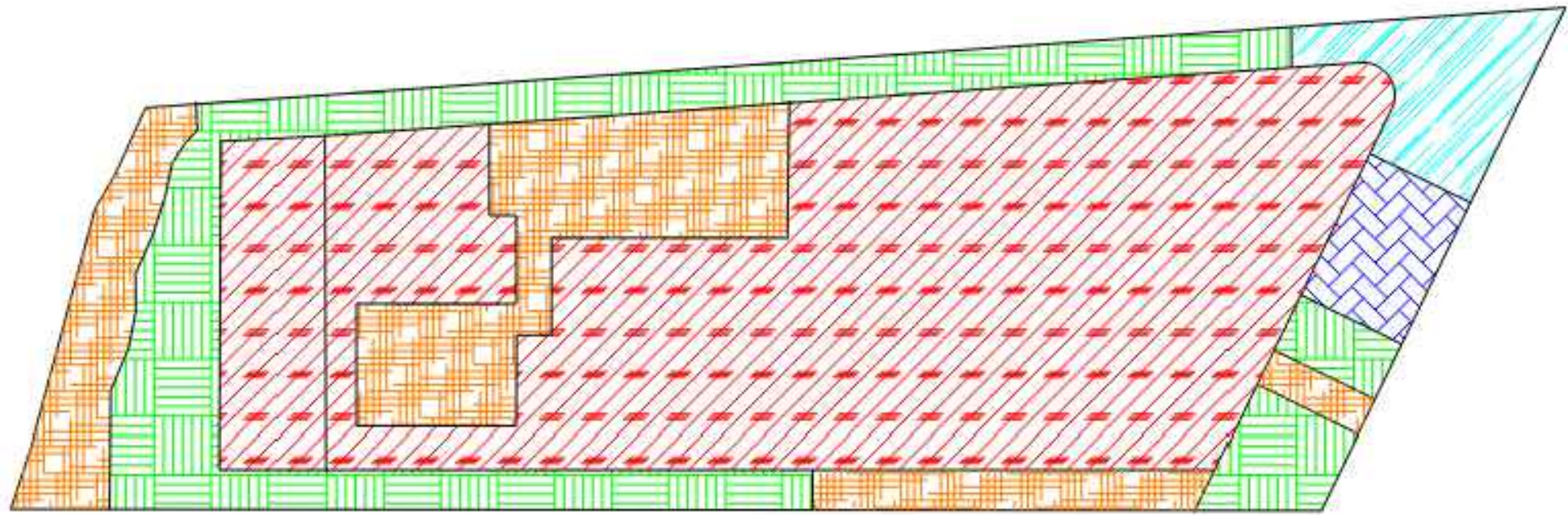
- THE MINIMUM CLEARANCE DEPENDS ON THE CONFIGURATION (SEE NOTE 2) AND THE LOCAL COUNCIL REQUIREMENTS.
- CLEARANCE FOR ANY PIT WITHOUT AN INLET PIPE (ONLY USED FOR SURFACE FLOW) CAN BE AS LOW AS 50mm. FOR OTHER PITS, THE RECOMMENDED CLEARANCE SHOULD BE GREATER OR EQUAL TO THE PIPE OBVERT SO AS NOT TO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

PHONE 1300 354 722 www.oceanprotect.com.au

OCEAN PROTECT
OCEANGUARD
TYPICAL ARRANGEMENTS
SPECIFICATION DRAWING

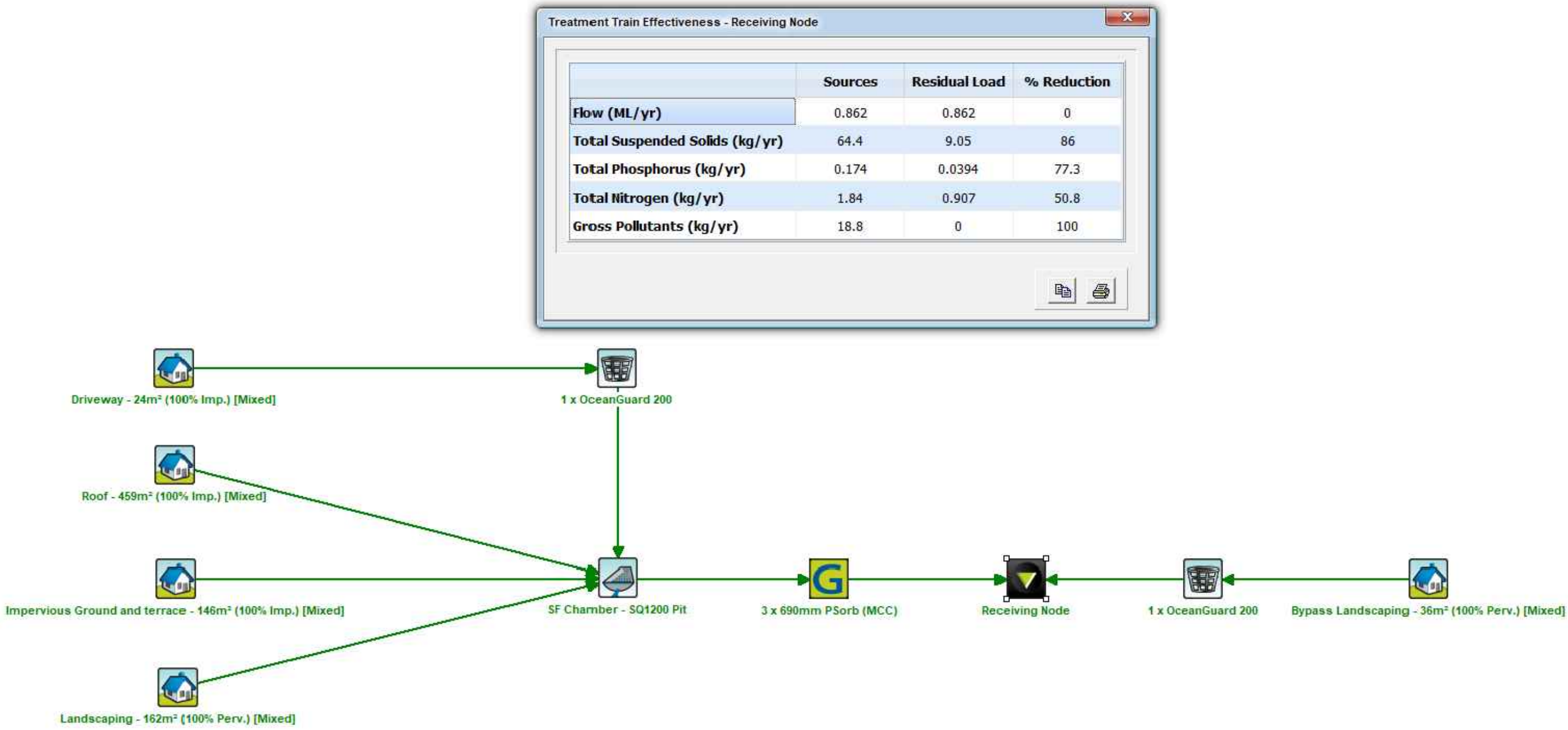
MODIFIED: 15-10-19

MUSIC Model Site Area Breakup



Roof : 459m²	Paved: 146m²
Driveway: 24m²	Landscape: 162m²
Bypass Landscape: 37m²	

14651 - 2 Wiston Gardens, Double Bay (Prelim - Site Area Breakup)



AMENDMENTS/REVISIONS				AMENDMENTS/REVISIONS				CLIENT		ARCHITECT		CONSULTANT		PROJECT		DRAWING TITLE		FOR APPROVAL			
Rev	Description	Init	Date	Rev	Description	Init	Date	 PIER PROPERTY CORPORATION	Pier Property Corporation Pty Ltd A: Suite 305, Level 3, 25 Lime St King Street Wharf NSW 2000 P: 02 9249 0400		Tzannes A: Suite 5, L5, 2-12 Foveaux St Surry Hills NSW 2010 P: 61 2 9319 3744	 IGS INTEGRATED GROUP SERVICES Phone +61 2 8488 4600 Fax +61 2 9475 4588 Address Suite 1-11, 75 Mary St, St Peters, NSW 2044 Australia	3 WISTON GARDENS, DOUBLE BAY	STORMWATER MANAGEMENT DETAIL SHEET	NOT TO BE USED FOR CONSTRUCTION PURPOSES						
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															PROJECT No.		DRAWING No.		REVISION		
															EN-N20_145		SW03		B		