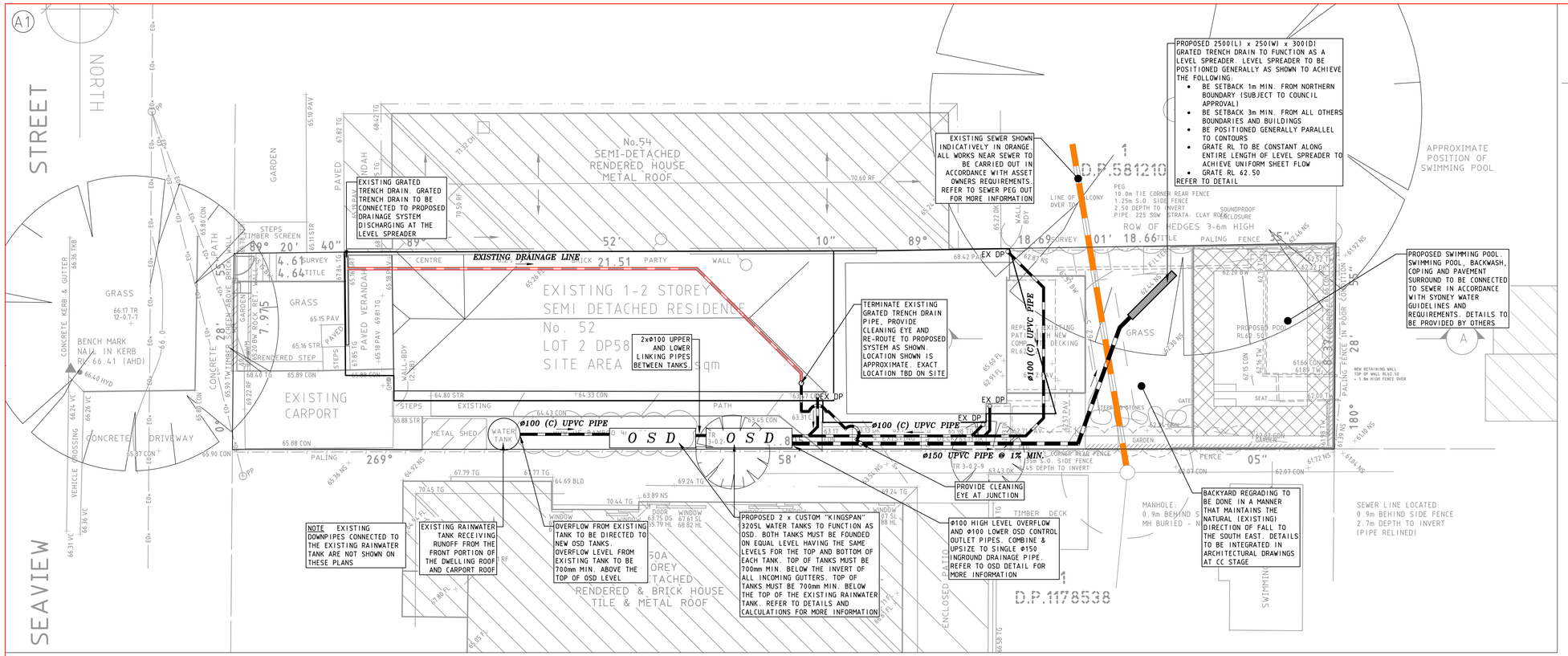


STORMWATER DRAINAGE NOTES:

ALL STORMWATER DRAINAGE WORKS MUST BE CARRIED OUT BY A LICENCED PLUMBER & BE IN ACCORDANCE WITH AS/NZS 3500.3:2021 "STORMWATER DRAINAGE" & AS/NZS 3500.3.2:1998 "STORMWATER DRAINAGE-ACCEPTABLE SOLUTIONS".

ANY VARIATIONS TO THE NOMINATED LEVELS SHALL BE REFERRED TO ENGINEER IMMEDIATELY.

ANY VARIATIONS TO SPECIFIED PRODUCTS OR DETAILS SHALL BE REFERRED TO THE ENGINEER FOR APPROVAL.

BOX COLORBOND OR ZINCALUME STEEL GUTTERS SHALL BE A MINIMUM OF 450 WIDE X 150 DEEP WITH 1:200 FALL ON BASE OF GUTTER UNO.

EAVES GUTTERS SHALL BE COLORBOND OR ZINCALUME STEEL AND HAVE A MINIMUM EFFECTIVE CROSS-SECTIONAL AREA (A_e) OF 8,200mm² UNO. MINIMUM EFFECTIVE EAVES GUTTER SLOPE = 1:500.

ALL DRAINAGE LINES SHALL BE Φ100 SEWER GRADE UPVC PIPES UNO.

ALL DRAINAGE LINES SHALL BE LAID @ 1% FALL MIN, UNO.

FIRST FLUSH RAINWATER DEVICES TO BE FITTED TO DRAINAGE LINES TO BUILDER'S DETAIL.

SUBSOIL DRAINAGE SHALL BE PROVIDED TO ALL RETAINING WALLS & EMBANKMENTS, WITH LINES FEEDING INTO THE STORMWATER DRAINAGE SYSTEM.

SYMBOLS & ABBREVIATIONS:

DP = Ø100 SEWER GRADE UPVC DOWNPIPE.
FO = Ø150 FLOOR OUTLET
GSIP = GRATED SURFACE INLET PIT (NO LINTEL)
ΦXXX (C) = ΦXXX (COLORBOND PIPE (E.G. Φ150 (C) = Φ150 CHARGED PIPE)
IP = Ø100 INSPECTION PIPE
SP = RAINWATER DOWNPIPE SPREADER
EX DP = EXISTING DOWNPIPE
RH & SP = RAINHEAD AND DOWNPIPE SPREADER
RH & DP = RAINHEAD AND DOWNPIPE
BG = BOX GUTTER
SX = BOX GUTTER SUMP 'X' OUTLET
TOW = TOW OF WALL RL
GSIP = GRATED SURFACE INLET PIT
NGL = NATURAL GROUND LEVEL
SL = SURFACE LEVEL (ALSO DRAIN GRATE / LID LEVEL)
IL = INVERT LEVEL
U/S IL = UPSTREAM INVERT LEVEL
D/S IL = DOWNSTREAM INVERT LEVEL
XXXX = PROPOSED FINISHED SURFACE LEVEL
R16.5m² = CATCHMENT AREA (WHERE R=ROOF, P=PAVED, L=LANDSCAPED, C=COMBINED SURFACE)
FALL = PROPOSED SURFACE FALL DIRECTION
(XXX) = HYDRAULIC GRADE LINE (HGL) POINT MARKER

GENERAL DRAINAGE LAYOUT PLAN

(SCALE 1:100)

-2.5 0 2.5 5.0 7.5
METRES

PIPE NOTATION

EXISTING DRAINAGE PIPE
PROPOSED DRAINAGE PIPE

GENERAL NOTES:

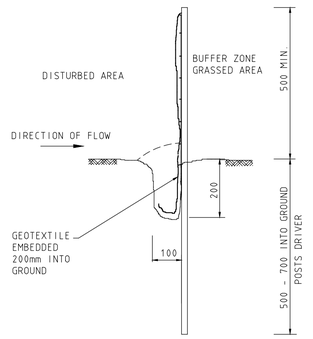
1. ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH NORTHERN BEACHES COUNCIL'S SUB DIVISION, STORMWATER, DETENTION & SEDIMENT CODE
2. THE CONTRACTOR SHALL LOCATE AND LEVEL ALL EXISTING SERVICES PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND MAKE ARRANGEMENTS WITH THE RELEVANT AUTHORITY TO RELOCATE OR ADJUST IF NECESSARY.
3. THE CONTRACTOR SHALL NOT ENTER UPON NOR DO ANY WORK WITHIN ADJOINING LANDS WITHOUT THE PERMISSION OF THE SUPERINTENDENT.
4. ALL NEW WORKS SHALL MAKE SMOOTH CONNECTION TO EXISTING CONDITIONS.
5. ALL IMPORTED FILL SHALL BE APPROVED BY THE COUNCIL. THE FILL SHALL BE PLACED IN NOT MORE THAN 300mm LAYERS AND SHALL BE COMPACTED TO AT LEAST 98% STANDARD COMPACTION TO COUNCIL'S SPECIFICATION.
6. PROVIDE VEHICULAR CROSSING TO COUNCIL'S SPECIFICATION IN KERB WHERE SHOWN (IF APPLICABLE).
7. THE CONTRACTOR SHALL MAINTAIN SERVICES AND ALL WEATHER ACCESS AT ALL TIMES TO ADJOINING PROPERTIES.
8. ALL IMPORTED FILL TO BE USED TO SUPPORT GROUND SLABS SHALL BE COMPACTED TO A MINIMUM LEVEL OF COMPACTION OF 98% OF MAXIMUM DRY DENSITY AT A MOISTURE CONTENT WITHIN +- 2% OF OPTIMUM (AS1289.5.1.1)
9. STEP IRONS AT 300mm CENTRES & TO COUNCIL'S SPECIFICATIONS SHALL BE PROVIDED WHERE PITS ARE DEEPER THAN 1000mm
10. ALL DOWNPIPES ARE SHOWN DIAGRAMATICALLY POSITION OF DOWNPIPES SHALL BE CONFIRMED ON SITE
11. EXISTING LEVELS AND SERVICE DEPTH AND LOCATION TO BE CHECKED PRIOR TO CONSTRUCTION.
12. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH OTHER CONSULTANTS DOCUMENTATION WHICH INCLUDE BUT IS NOT LIMITED TO ARCHITECTURAL AND SURVEY DRAWINGS

SITE SPECIFIC NOTES:

1. THE EXISTING DRAINAGE PIPES SHOWN ON THIS PLAN ARE INDICATIVE AND ARE TO BE CONFIRMED ON SITE.
2. THE EXISTING DRAINAGE SYSTEM INCLUDING (BUT NOT LIMITED TO) PITS, PIPES, GRATED TRENCH DRAINS, DOWNPIPES ETC ARE TO ALL BE ASSESSED BY A LICENCED PLUMBER AND REPLACED WITH NEW IF FOUND TO BE IN POOR WORKING CONDITION.
   2.1. THE EXISTING GRATED TRENCH DRAIN NEAR THE FRONT ENTRY VERANDAH, ITS OUTLET PIPE, AND OTHER ASSOCIATED COMPONENTS ARE TO BE ASSESSED BY ENGINEER AT CC STAGE
3. ALL ROOF AREAS MUST DRAIN TO THE ON SITE DETENTION (OSD) SYSTEM. ANY DOWNPIPES THAT ARE NOT CONNECTED TO THE EXISTING RAINWATER TANK, MUST BE ROUTED TO THE PROPOSED OSD SYSTEM PRIOR TO DISCHARGING VIA THE LEVEL SPREADER
4. RETAINING WALLS / FOOTINGS / STRUCTURES ETC ADJACENT TO THE PROPOSED OSD SYSTEM ARE TO BE ASSESSED (BY OTHERS) FOR THEIR ADEQUACY TO ALLOW FOR THE INSTALLATION OF THE PROPOSED OSD SYSTEM. IF THERE ARE ANY ISSUES, NOTIFY THIS OFFICE

SEDIMENT & EROSION CONTROL

1. THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES TO THE COUNCIL'S SPECIFICATION PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND DURING CONSTRUCTION.
2. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE MAINTAINED IN A SATISFACTORY WORKING ORDER DURING THE CONSTRUCTION PERIOD. INSPECTIONS OF THESE DEVICES SHALL BE CARRIED OUT AFTER EACH STORM. REPAIRS AND/OR DE-CLOGGING SHALL BE CARRIED OUT TO ENSURE PROPER OPERATION OF THE DEVICE.
3. PROVIDE TEMPORARY CONSTRUCTION EXIT TO SHAKE OFF SITE MATERIALS FROM EXITING VEHICLES AND SHALL CONSIST OF A PAD OF COURSE CRUSHED ROCK, (75mm TO 150mm RANGE) HAVING A MINIMUM DEPTH OF 200mm, A MINIMUM LENGTH OF 25m AND 3.5m WIDE OR "CATTLE GRID" SYSTEM.
4. THE GULLY PITS SHALL BE PROTECTED IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS
5. THE GRATED SURFACE PITS SHALL BE PROTECTED IN ACCORDANCE WITH COUNCIL'S REQUIREMENTS



GEOFABRIC LINED "SILT" FENCE

NOTE:
FOR TREES TO BE REMOVED, RETAINED OR NEWLY PLANTED, REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS

EXTREME CARE SHALL BE TAKEN WHEN DOING WORK NEAR EXISTING PIT/STRUCTURES AND UNDERGROUND SERVICES.
LOCATION & DEPTH OF ALL UNDERGROUND CABLES & SERVICES TO BE CONFIRMED PRIOR TO CONSTRUCTION. CONTACT 'DIAL BEFORE YOU DIG' ON 1100

www.dialbeforeyoudig.com.au DIAL 1100 BEFORE YOU DIG

NOT FOR CONSTRUCTION

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CLIENT: CLIFFORD LEESON

PROJECT: PROPOSED ALTERATIONS AND ADDITIONS, AND SWIMMING POOL AT 52 SEAVIEW STREET, BALGOWLAH NSW

APPROVED:

ADAM GILLETT
B.ENG (Hons), M.I.E. AUST.

DRAWING TITLE: GENERAL DRAINAGE LAYOUT PLAN & NOTES

ISSUE	DATE	REVISIONS:
A	31/08/2023	ISSUE FOR DEVELOPMENT APPLICATION

DRAWN BY: TM | ENGINEER: TM
DATE: 31/08/2023
SCALE: AS SHOWN ON A1
JOB NO: 230626
SHEET No: C01

A1

REFER TO SHEET C01 FOR NOTES

OSD - HYDROLOGY CALCULATIONS

DEVELOPMENT AREA = 363.4m²

PRE DEVELOPMENT:

IMPERVIOUS AREA

EXISTING ROOF	=	0.0m²
EXISTING PAVEMENT	=	0.0m²
TOTAL IMPERVIOUS AREA	=	0.0m²
FRACTION IMPERVIOUS	=	0.0% (EXISTING SITE MODELLED AS "STATE OF NATURE")

POST - DEVELOPMENT		IN OSD:	BYPASS:
IMPERVIOUS AREA			
PROPOSED ROOF	= 196.9m²	= 186.9m²	= 9.9m²
PROPOSED PAVE	= 91.1m²	= 0.0m²	= 91.1m²
TOTAL IMP. AREA	= 288.0m²	= 186.9m² (100%)	= 101.1m² (57.2%)
FRACTION IMP.	= 79.2%		
LANDSCAPE AREA	= 75.4m²	= 0.0m² (0.0%)	= 75.4m² (42.7%)
TOTAL AREA	= 363.4m²	= 186.9m²	= 176.5m²

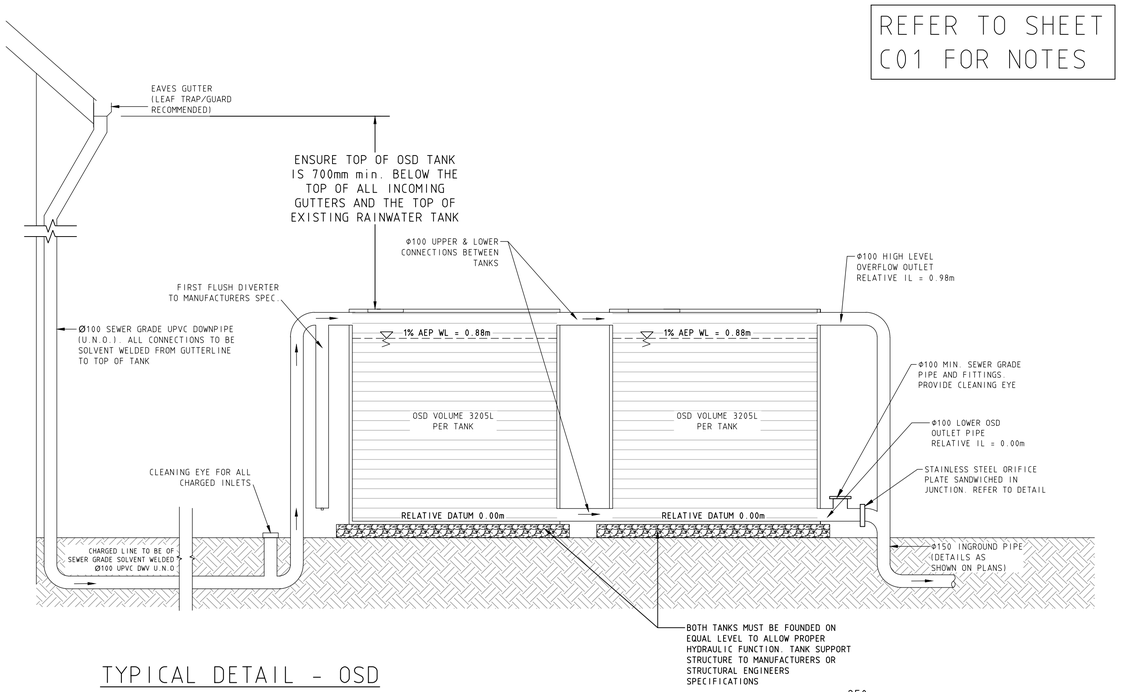
OSD STRATEGY:

OSD HAS BEEN MODELLED TO LIMIT POST DEVELOPMENT SITE FLOWS TO MATCH STATE OF NATURE FLOWS FOR THE ENTIRE SITE FOR THE 1%, 5% AND 20% AEP DESIGN STORM EVENTS. REFER TO DRAINS MODEL OUTPUT SUMMARY TABLE

DRAINS OUTPUT SUMMARY - ILSAX METHOD

DRAINS MODEL OUTPUT SUMMARY

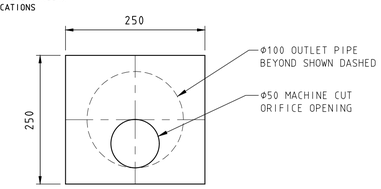
AEP	PRE DEV TOTAL SITE DISCHARGE (L/S)	OSD ORIFICE DISCHARGE (L/S)	OSD OVERFLOW (L/S)	OSD STORAGE DEPTH (M)	OSD VOLUME (M3) REQUIRED	TOTAL BYPASS (L/s)	POST DEV TOTAL SITE DISCHARGE (L/s)
20%	8	3	0	0.42	2.5	5	8
5%	14	4	0	0.62	3.7	8	11
1%	19	5	0	0.88	5.2	11	14



TYPICAL DETAIL - OSD

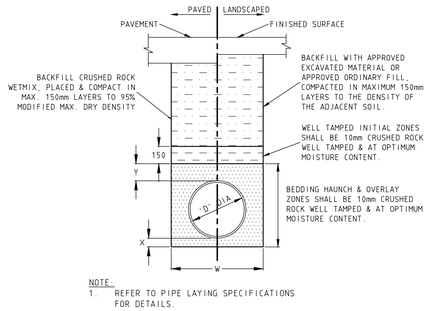
NTS

NOTE:
1. PROVIDE 2 OF CUSTOM KINGSPAN 3205 LITRE MODLINE TANKS, WITH DIMENSIONS AS FOLLOWS:
   WIDTH = 800mm, LENGTH = 3500mm, HEIGHT = 1180mm
2. ENSURE TOP OF OSD TANK IS 700mm BELOW THE INVERT OF ALL INCOMING GUTTERS, AND 700mm MIN. BELOW THE TOP OF THE EXISTING RAINWATER TANK
3. TANK SIZES MAY BE INCREASED TO SUIT SITE CONDITIONS. IF HEIGHT OF TANKS VARY, ENGINEER MUST BE NOTIFIED TO RECALCULATE ORIFICE PLATE OPENING SIZE



ORIFICE PLATE DETAIL

N.T.S

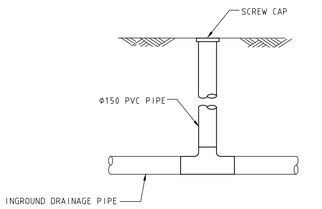


NOTE:
1. REFER TO PIPE LAYING SPECIFICATIONS FOR DETAILS.

TYPICAL DETAIL - UPVC PIPE LAYING

N.T.S

PIPE DIA 'D'	W	X MIN	Y
100-150	300	75	75
225-300	600	75	75

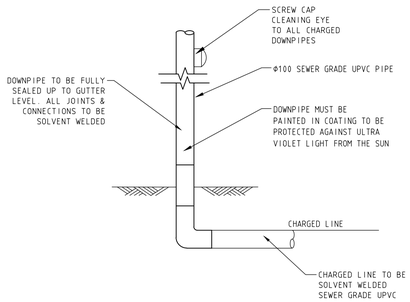


TYPICAL DETAIL - INSPECTION / CLEANING EYE

N.T.S

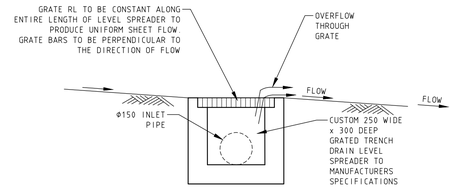
NOTE:

CLEANING EYE TO BE PROVIDED AT START OF CHARGED LINES AND AT CRITICAL JUNCTIONS TO BUILDERS DETAIL



TYPICAL DETAIL - DOWNPIPE TO CHARGED LINE

N.T.S



TYPICAL DETAIL - LEVEL SPREADER

NTS

NB: LOCALLY REGRADE SURROUNDING AREA TO TIE IN NEATLY WITH ADJACENT SURFACES. ENSURE RUNOFF FLOWS UNIMPEDED & NO PONDING RESULTS FROM REGRADING. NOTIFY ENGINEER IF THERE ARE ANY INCONSITENCIES

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DRAWING TITLE: DRAINAGE DETAILS AND CALCULATIONS

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DRAWN BY: TM | ENGINEER: TM

DATE: 31/08/2023

SCALE: AS SHOWN ON A1

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