

POSITION OF STORMWATER LINES AND PITS MAY BE ADJUSTED SLIGHTLY TO SUIT ON-SITE CONDITIONS. NOTIFY ENGINEER IF DESIGN LEVELS CAN NOT BE ACHIEVED.

MAINTAIN AT LEAST 450mm CLEARANCE BETWEEN EDGE OF PIPE TRENCH AND EXISTING FOOTINGS. PROVIDE TRENCH SHORING AS REQUIRED. NOTIFY ENGINEER IMMEDIATELY IF SOIL COLLAPSES INTO TRENCH.

DO NOT DISPERSE DPS (SPREADERS) DIRECTLY ONTO LOWER ROOF FLASHING OR INTO VALLEY GUTTERS

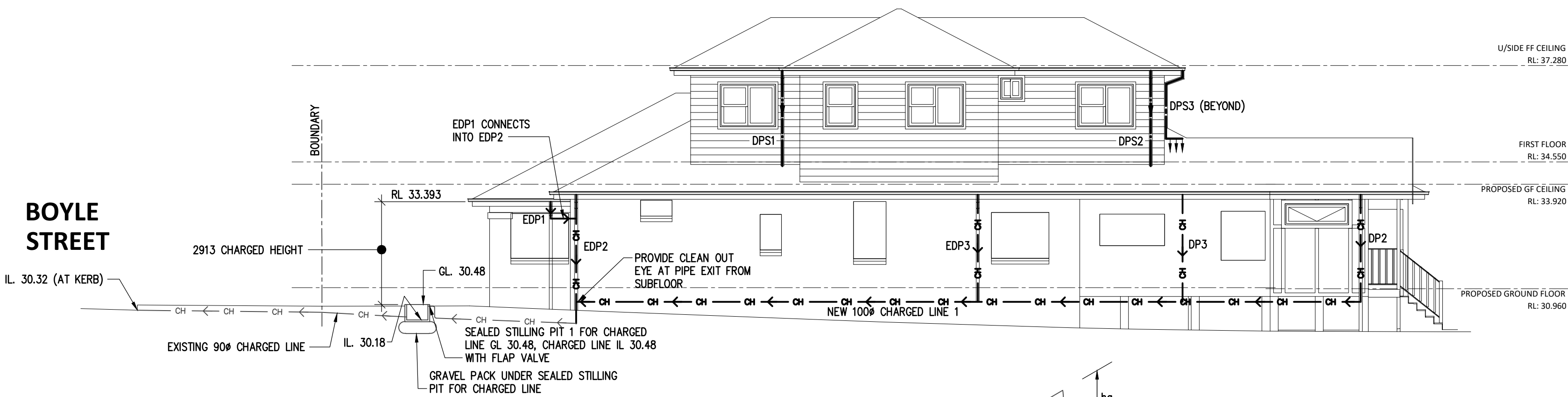
### PLAN - STORMWATER LAYOUT

SCALE 1:100

- ALL DOWNPIPES SHALL BE 100# UPVC
- ALL DRAINAGE LINES SHALL BE 100# UPVC CLASS (S1) STORMWATER DRAINAGE PIPE UNLESS NOTED OTHERWISE.
- ALL CHARGED DRAINAGE LINES SHALL BE MIN. 100# UPVC AIRTIGHT AND SOLVENT WELDED.
- PROVIDE 200 MIN. COVER TO PIPES U.N.O
- ALL ROOF GUTTERS TO HAVE AN EFFECTIVE CROSS SECTIONAL AREA NO LESS THAN 5,300mm<sup>2</sup>
- BOX GUTTERS SIZED FOR 1:100 ARI STORM EVENT, Tc = 5 MIN.  $q_{100} = 265 \text{ mm/hr}$ .
- ROOF GUTTERS SIZED FOR 1:20 ARI STORM EVENT, Tc = 5 MIN.  $q_{100} = 210 \text{ mm/hr}$ .
- ALL ROOF EAVES GUTTERS TO BE LAID AT 1:500 OR STEEPER
- ALL BOX GUTTERS TO BE LAID AT 1:200 OR STEEPER
- DPS DENOTES 100# DOWNPIPE SPREADER TO LOWER ROOF.
- EDP1, EDP2 & EDP3 : EXISTING 100x50 METAL DOWNPIPES TO BE REPLACED BY 100# PVC PIPE FOR CHARGED LINE.

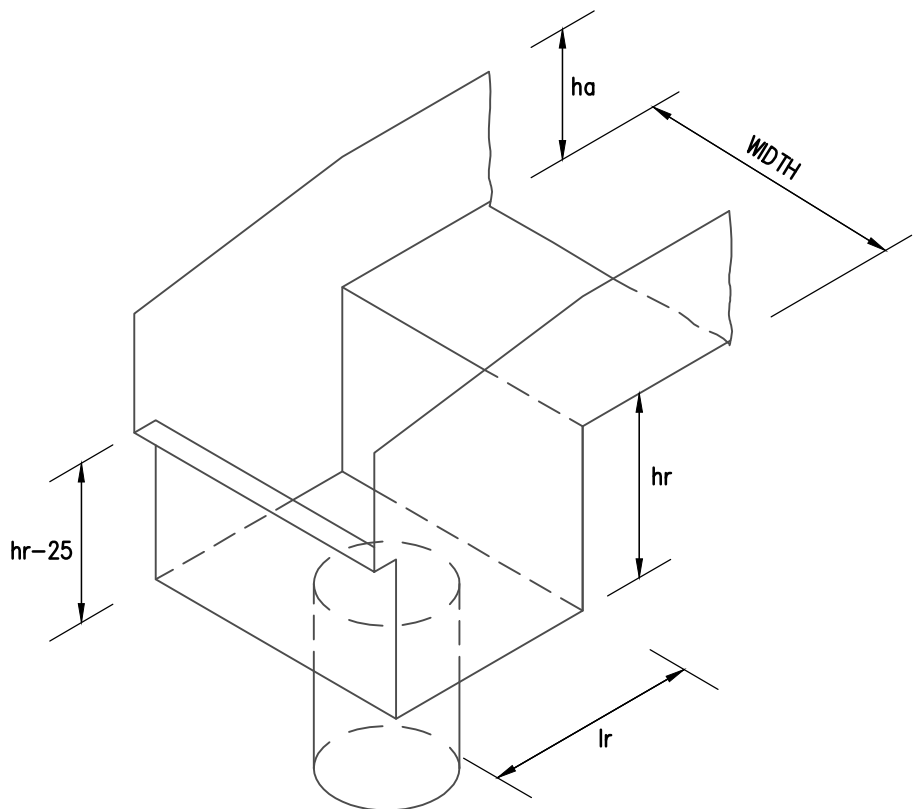
#### NOTES TO PLUMBER:

1. PLUMBER TO CHECK AND CONFIRM EXISTING STORMWATER PIPES. PIPES TO BE CHECKED FOR LEAKS, BLOCKAGES AND SUITABLE GRADIENT TO KERB PIT.
2. PIPES TO BE FLUSHED AND CLEANED OUT. ANY DEFECTIVE PIPES TO BE REPLACED IN ACCORDANCE WITH AS3500.3
3. OUTLET POINT OF EXISTING STORMWATER TO BE CHECKED AND VERIFIED BY PLUMBER. NOTIFY ENGINEER IF STORMWATER DOES NOT CONNECT INTO A REAR ABSORPTION PIT OR REGISTERED S/W EASEMENT AT REAR OF PROPERTY.



### NORTH ELEVATION

SCALE 1:100



### RAINHEAD DETAIL

#### DIMENSIONS (mm)

BOX GUTTER WIDTH	200
DEPTH OF BOX GUTTER (ha)	120
SLOPE OF BOX GUTTER	1:200
DEPTH OF RAINHEAD (hr)	125
LENGTH OF RAINHEAD (lr)	120
DOWNPIPE DIA.	100

#### Charged Line 1 Computation

PIPE FLOW				
ROOF AREA 'A'	=	157.68	m <sup>2</sup>	
RAIN FALL $^{100}I_s$	=	265	mm/hr	Northern Beaches Council
MAX. FLOW 'Q'	=	$0.00028 \times A \times C \times ^{100}I_s$		
	=	11.69986	L/S	
Pipe Flow to Sealed Pit 1				
'Q'	=	11.69986	L/S	Adopt 90 Ø Pipe
a = Pipe Area	=	0.00636	m <sup>2</sup>	
VELOCITY V = $\frac{Q}{a}$	=	$\frac{11.69986 \times 10^{-3}}{0.00636}$		
	=	1.8396	m/s	
H.G.L SLOPE	=	3.25	%	From Graph
DP1 to Sealed Pit 1				
LONGEST PIPE LENGTH	=	39	m	
LINEAR HEAD LOSS	=	1.2675	m	
BEND LOSS	:	$\frac{N \times K \times V^2}{2 \times G}$	m	K = 1.15
	=	1.2675 + 1.190137		
TOTAL HEAD LOSS	=	2.46	m	
RL AT BTM. OF EAVES..		33.39	m AHD	
INV. RL AT Pit 1		30.48	m AHD	
AVAILABLE HEAD	=	33.39 - 30.48		
	=	2.91	m	

### STORMWATER DRAINAGE NOTES

- SW-1. UNLESS SPECIFICALLY NOTED ON PLAN PIPES MAY BE EITHER VITRIFIED CLAY CLASS 2 GRADE A IN ACCORDANCE WITH AS1741, CONCRETE CLASS X IN ACCORDANCE WITH AS1342, OR UPVC IN ACCORDANCE WITH AS1254.
- SW-2. WORKMANSHIP AND MATERIALS TO COMPLY WITH AS1741 AND 1693 FOR VITRIFIED CLAY PIPES, AS1342 FOR CONCRETE PIPES, AND AS1254 AND 2032 FOR UPVC PIPES AS APPROPRIATE.
- SW-3. INVERT LEVELS SHOWN ON DRAWING ARE TO BE CHECKED ON SITE BEFORE EXCAVATION OR INSTALLATION OF PIPEWORK TO ENSURE CORRECT COVER AND FALL.
- SW-4. DO NOT COVER OR CONCEAL FROM VIEW UNDERGROUND OR ENCLOSED WORK UNTIL IT HAS BEEN INSPECTED AND APPROVED.
- SW-5. TRENCHES FOR DRAINAGE PIPES SHALL BE OF SUFFICIENT WIDTH TO ALLOW FOR BACKFILLING FIRMLY AROUND PIPES AND PROVIDE A CLEARANCE ON EACH SIDE OF PIPE EQUAL TO AT LEAST ONE-SIXTH THE INTERNAL DIAMETER OF THE PIPE BUT NOT LESS THAN 100mm.
- SW-6. PIPES SHALL BE LAID TRUE TO GRADE AND ALIGNMENT ON A FIRM, WELL RAMMED, AND CONSOLIDATED FOUNDATION. ANY SOFT OR YIELDING MATERIAL SHALL BE REMOVED AND REPLACED WITH SOUND, WELL CONSOLIDATED MATERIAL. ANY ROCK ENCOUNTERED SHALL BE EXCAVATED TO A DEPTH NOT LESS THAN 100mm BELOW BOTTOM OF PIPE, AND EXCAVATION REILLED WITH WELL CONSOLIDATED SAND. ALTERNATIVELY ON A ROCK FOUNDATION THE PIPE MAY BE BEDDED FOR AT LEAST ONE-THIRD OF ITS CIRCUMFERENCE IN AN APPROVED CONCRETE CRADLE. RECESSES SHALL BE LEFT SOCKETTED JOINTS TO ALLOW THE BARRELS TO BEAR EVENLY ON THE FOUNDATION FOR THEIR FULL LENGTH.
- SW-7. ANY PIPE WHICH IS NOT IN TRUE ALIGNMENT OR GRADE OR WHICH SHOWS ANY SETTLEMENT AFTER LAYING OR WHICH IS DAMAGED DURING LAYING OR THE OPERATION OF ROLLING THE FORMATION SHALL BE TAKEN UP AND REPLACED.
- SW-8. ANY PIPE WHICH IS NOT IN TRUE ALIGNMENT OR GRADE OR WHICH SHOWS ANY SETTLEMENT AFTER LAYING OR WHICH IS DAMAGED DURING LAYING OR THE OPERATION OF ROLLING THE FORMATION SHALL BE TAKEN UP AND REPLACED.
- SW-9. CONCRETE PIPES SHALL BE JOINTED USING 3 TO 1 CEMENT MORTAR TO GIVE A WATER TIGHT JOINT. CARE SHALL BE TAKEN THAT THE INTERIOR OF THE PIPE IS CLEANED OF ANY EXCESS JOINTING MATERIAL.

### LEGEND

	EXISTING GROUND LEVEL
	PROPOSED DRAINAGE LINE
	PROPOSED CHARGED LINE
	STORMWATER DRAINAGE PIT
	YARD FLOW DIRECTION
	ROOF FLOW DIRECTION
	PAVEMENT FLOW DIRECTION
	F.F.L.
	G.L.
	INVERT LEVEL
	DOWNPIPE
	EXISTING DOWNPIPE
	DOWNPIPE WITH SPREADER
	GUTTER FLOW DIRECTION
	EXISTING ROOF FLOW DIRECTION

CLIENT : CAPE COD AUSTRALIA PTY LTD

www.dialbeforeyoudig.com.au



DIAL BEFORE YOU DIG SHOULD BE CONTACTED PRIOR TO ANY EXCAVATION ON SITE

ISSUE	DATE	APP'D	DESCRIPTION
			REVISIONS



**KNEEBONE & BERETTA CONSULTING** PTY LTD  
CONSULTING STRUCTURAL & CIVIL ENGINEERS  
ABN 43 734 246 264  
UNIT 18, 7 ANELLA AVENUE, CASTLE HILL NSW 2154  
P: (02) 8850-0799 E: info@kbgconsulting.com W: www.kbgconsulting.com



SCALE	1:100, 1:20 (A1)
DATE	7-04-2025
DRAWN	A.W.
CHECKED	L.P.
APPROVED	

PROPOSED ADDITIONS TO RESIDENCE AT  
51 BOYLE STREET, BALGOWLAH  
FOR Mr BEN & Mrs LIBBY WALSTAB

STORMWATER DRAINAGE DETAILS

DRAWING NUMBER

93579-D1

ISSUE