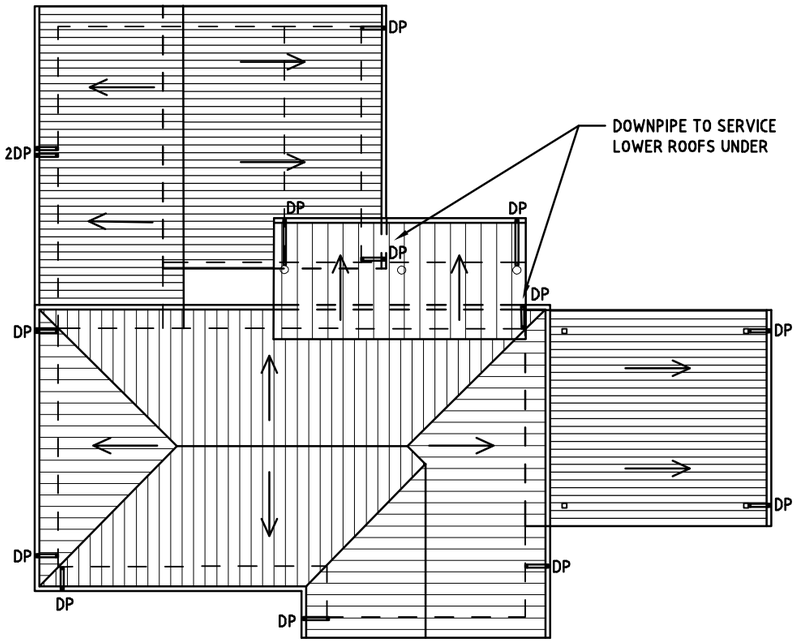
NOTES:

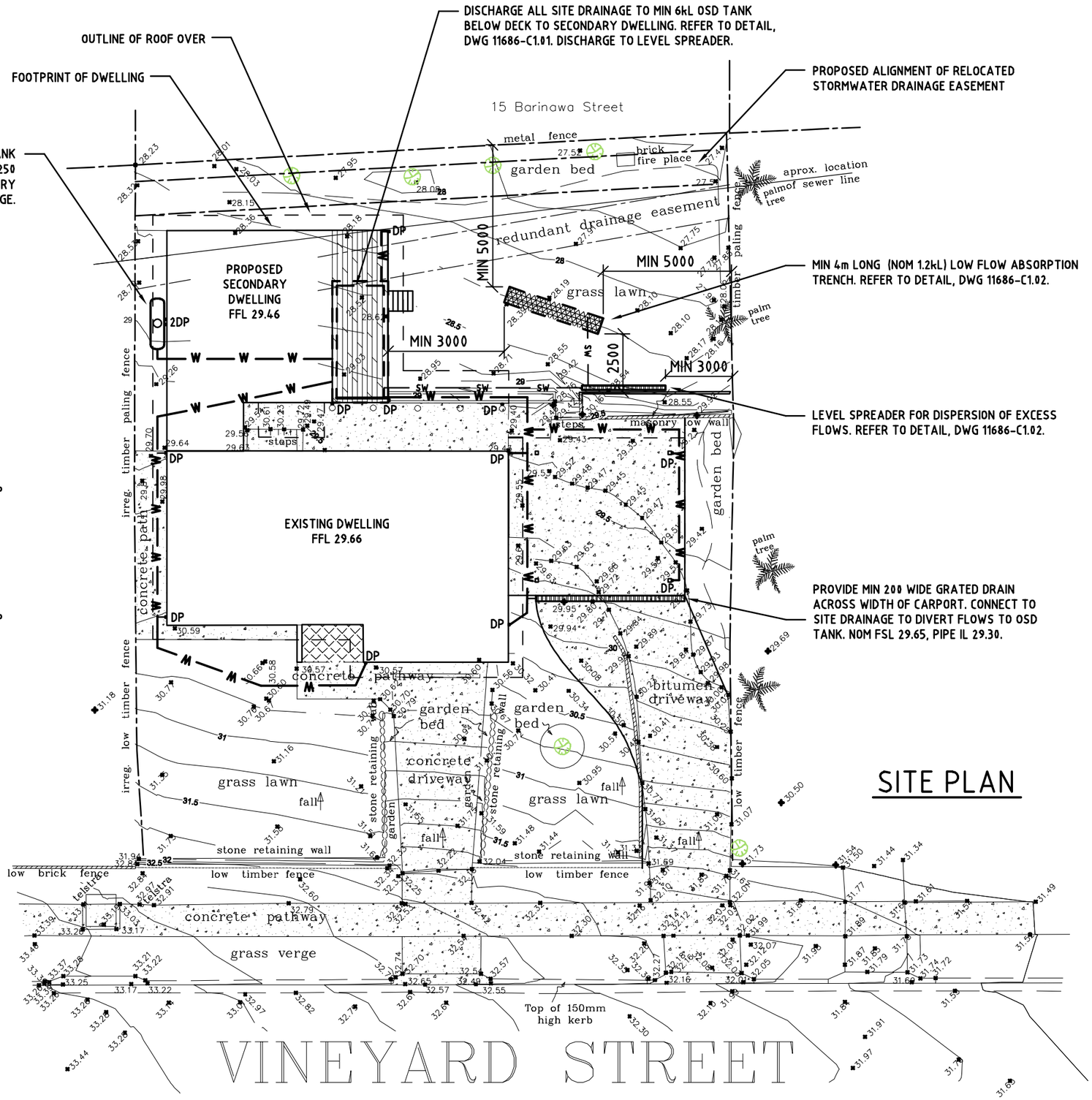
REFER TO DWG 11686-C1.02 FOR NOTES



ROOF PLAN

LEGEND:

31.94	EXISTING SURFACE LEVEL (mAHD)
32	EXISTING SURFACE CONTOUR (mAHD)
W	CHEMICALLY SEALED PRESSURE PIPE (Ø100 DWV UNO)
SW	STORMWATER PIPE (Ø100 uPVC UNO)
DP	MIN 100x75 RHS DOWNPIPE FROM EAVES GUTTER WITH MIN EFFECTIVE CROSS-SECTIONAL AREA OF 8,000mm²
	PAVED/CONCRETE (IMPERVIOUS) SURFACE
	TIMBER DECKING



SITE PLAN

ISSUE	DESCRIPTION	BY	APR	DATE
B	IMPERVIOUS AREAS ADJUSTED FOR DESIGN COORDINATION	KW	KW	25.03.20
A	ISSUED FOR DEVELOPMENT APPLICATION	KW	KW	21.03.20

CHARTERED PROFESSIONAL ENGINEERS:
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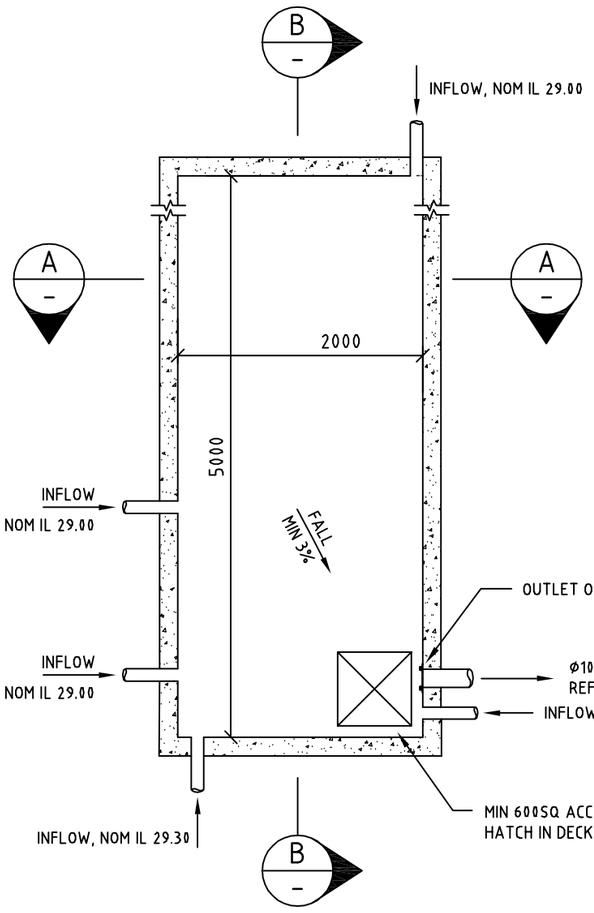
ACN 130 522 851
Structural and Civil Engineering Consultants
P.O. Box 1044 Manly NSW 1655
Phone 0414 393 807 or 0420 823 178
Email enquiries@wadconsulting.com

PROJECT:
PROPOSED ALTERATIONS AND ADDITIONS
58 VINEYARD STREET. MONA VALE
BRETT GLOVER

DRAWING TITLE:
STORMWATER MANAGEMENT PLAN

DESIGN: K.W.	DATE: FEB 2020		
DRAWN: K.W.	SCALE: 1:200		
FILENAME: 11686-C1.00 (A).DWG			
SIGNED:		SIZE	A3
DRAWING No: 11686-C1.00		REV	B



PLAN OF OSD TANK
SCALE 1:50

NOTES:

1. CONSULT ENGINEER TO REVIEW ORIFICE SIZE IF TANK CONFIGURATION IS VARIED.
2. REFER TO DWG 11686-C1.00 FOR SITE PLAN AND DWG 11686-C1.02 FOR NOTES.

ON-SITE DETENTION CALCULATIONS

SITE AREA 848m²

	EXISTING	PROPOSED	INCREASE
SITE IMPERVIOUS COVERAGE	361m²	456m²	94m²

PITTWATER 21 DCP OSD STORAGE REQUIREMENT: 6,000 L
PITTWATER 21 DCP PERMISSIBLE DISCHARGE RATE: 3 L/s

MITIGATION OF FLOWS FROM PROPOSED DEVELOPMENT:

PEAK FLOW FROM UNDEVELOPED SITE:

20 YEAR ARI EVENT	100 YEAR ARI EVENT
C = 0.605 * 1.05 = 0.63	C = 0.605 * 1.20 = 0.73
t_C = 5 mins	t_C = 5 mins
I_{20} = 214 mm/hr	I_{100} = 270 mm/hr
Q_{20} = C.I.A/3600 = 32 L/s	Q_{100} = C.I.A/3600 = 46 L/s

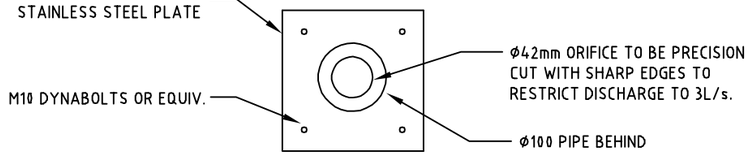
AREA BYPASSING OSD STORAGE = 848 - 456 = 392m², PEAK BYPASS FLOW RATE:

Q_{20} = 15 L/s	Q_{100} = 21 L/s

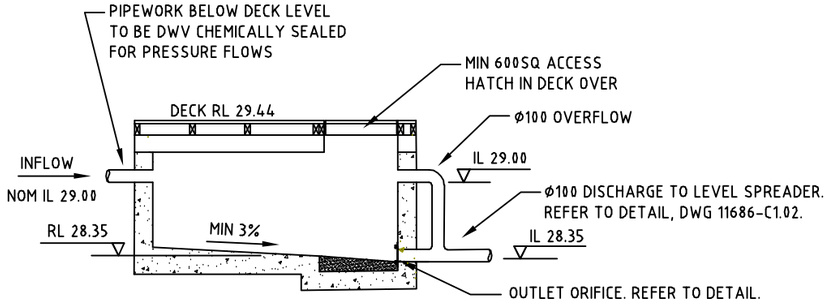
VOLUME REQUIRED TO ATTENUATE FLOWS USING MASS CURVE ANALYSIS:

Q_{OSD} = 32 - 15 = 17 L/s	Q_{OSD} = 46 - 21 = 25 L/s
OSD VOLUME = 3 kL	OSD VOLUME = 4 kL

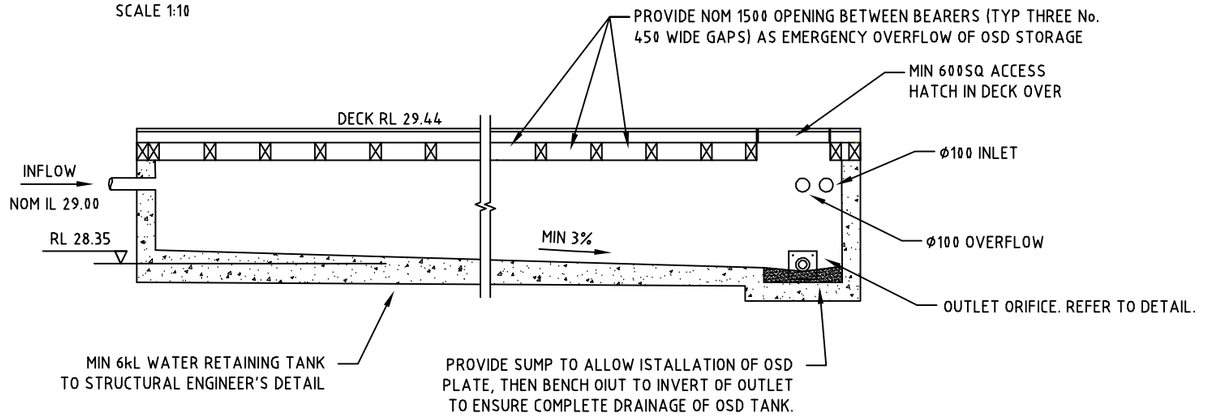
PITTWATER 21 DCP REQUIREMENTS EXCEED MITIGATION REQUIREMENTS AND ADOPTED AS MOST CONSERVATIVE ASSESSMENT TO MITIGATE INCREASED FLOW RATES. RAINWATER REUSE TANK AND LOW FLOW ABSORPTION TRENCH INCORPORATED TO MITIGATE RUNOFF VOLUME.



ORIFICE DETAIL
SCALE 1:10



SECTION A-A
SCALE 1:50



SECTION B-B
SCALE 1:50

ISSUE	DESCRIPTION	BY	APR	DATE
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DRAWING TITLE:
STORMWATER DETAILS - SHEET 1 OF 2

DESIGN: K.W.	DATE: FEB 2020		
DRAWN: K.W.	SCALE: 1:50 UNO		
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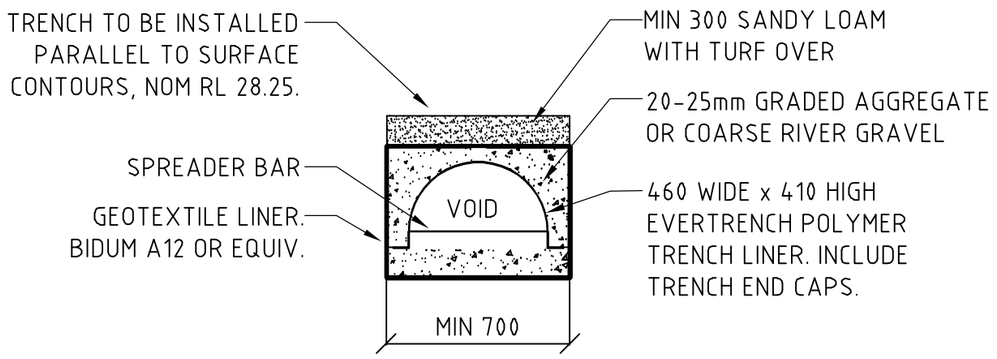
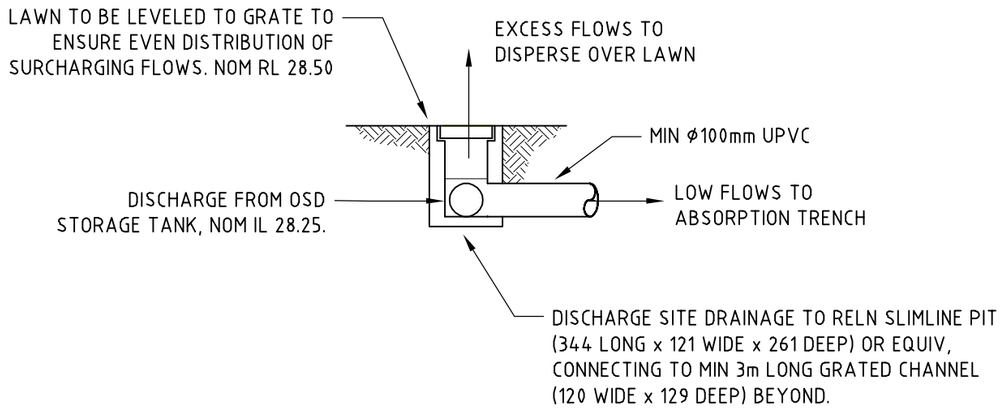


ABSORPTION TRENCH - CROSS SECTION

N.T.S.

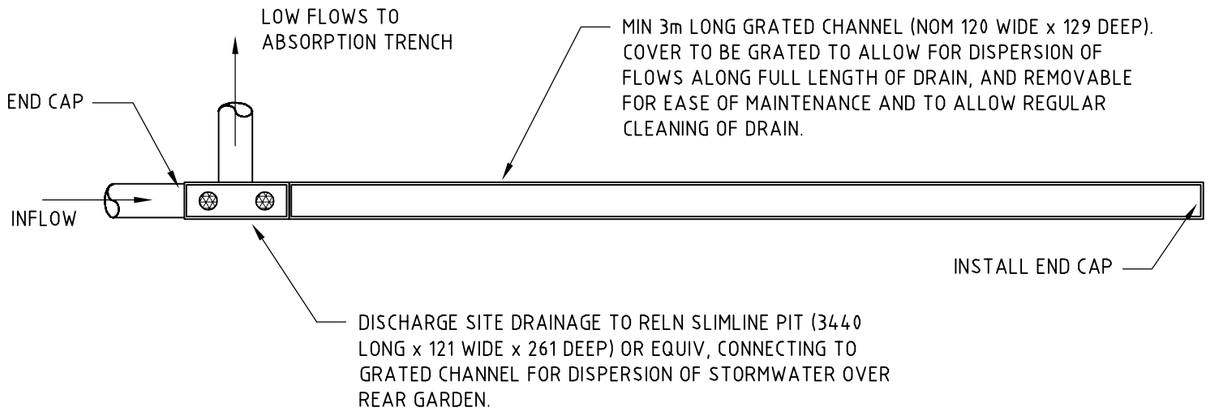
NOTES:

1. REFER TO DWG 11686-C1.00 FOR SITE PLAN. ALL DIMENSIONS TO BE CONFIRMED ON SITE. LEVELS AND SITE LAYOUT BASED ON SURVEY BY DA SURVEYS, (DATED 5 JUNE 2019) AND ARCHITECTURAL PLANS BY BLUE SKY BUILDING DESIGNS, DA ISSUE 2 DATED 4 MARCH 2020. CONSULT ENGINEER SHOULD ANY DISCREPANCY ARISE OR AS REQUIRED FOR COORDINATION WITH OTHER SERVICES.
2. LOCATION OF ALL SERVICES MUST BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF EXCAVATION WORKS.
3. ALL STORMWATER DRAINAGE PIPES AND ASSOCIATED DEVICES ARE TO BE INSTALLED IN ACCORDANCE WITH RELEVANT STANDARDS, THE BUILDING CODE OF AUSTRALIA, MANUFACTURER'S RECOMMENDATIONS, SYDNEY WATER AND LOCAL COUNCIL REQUIREMENTS, AS APPLICABLE. PROVIDE MIN 1% FALL TO OUTLET ON ALL DRAINAGE LINES AND MIN 1:200 FALL IN ALL ROOF GUTTERS.
4. ALL INVERT LEVELS PROVIDED ON THIS DRAWING ARE REDUCED TO AHD AND BASED ON INTERPOLATED SURFACE LEVELS AND SYSTEM REQUIREMENTS. CONSULT ENGINEER IF CHANGES ARE REQUIRED.
5. PROVIDE MIN 25mm ANNULAR SPACE AROUND PIPEWORK CUT THROUGH FOOTINGS, SLABS OR WALLS AND FILL SPACE WITH FLEXIBLE LINER. PROVIDE TWO FLEXIBLE JOINTS IN PIPEWORK AT 300mm AND 700mm FROM FACE OF FOOTING OR WALL. PENETRATIONS BELOW SURFACE LEVEL TO BE SEALED AND MADE WATERTIGHT.
6. WHERE PIPES ARE RUN THROUGH SUBFLOOR AREAS, ENSURE PIPEWORK IS SECURED TO SUBFLOOR OF WALLS AT MIN 1200 CENTRES AND EITHER SIDE OF EACH JOINT OR FITTING TO PROVIDE EVEN FALL TO OUTLET AND PREVENT SAGGING OF PIPEWORK. PIPES TO BE ø100 DWV CHEMICALLY SEALED FOR PRESSURE FLOW
7. GRAVITY PIPES TO BE MIN ø100 uPVC LAID WITH AT LEAST 1% FALL IN INTENDED DIRECTION OF FLOW. PIPES DISCHARGING TO OSD TANK TO BE ø100 DWV CHEMICALLY SEALED FOR PRESSURE FLOWS.
8. GUTTER AND DOWNPIPE DESIGN MAY BE VARIED TO SUIT 100 YEAR ARI EVENT IN ACCORDANCE WITH AS3500. LEVEL SPREADERS MAY BE USED TO DISCHARGE FLOWS FROM UPPER ROOF AREAS OF LESS THAN 10m² TO LOWER ROOF AREAS, PROVIDE THE DISCHARGE IS CONFINED TO A SECTION OF ROOFING WITH NO SIDE LAPS. ALTERNATIVELY, AN UPPER LEVEL DOWNPIPE MAY BE DIRECTED TO A RAINHEAD.



SECTION- LEVEL SPREADER

N.T.S.



PLAN OF LEVEL SPREADER

N.T.S.

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