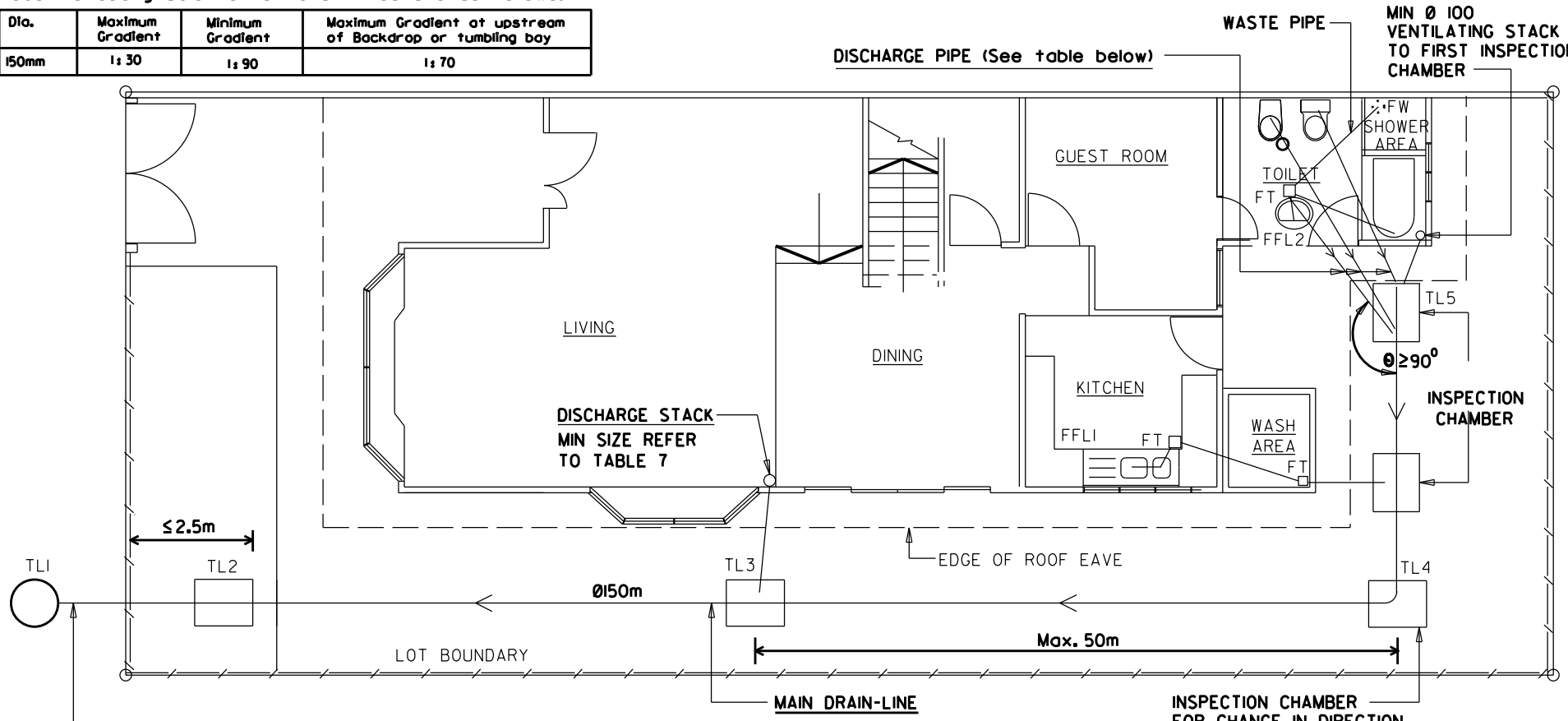


Recommended gradients for drain-lines are as follows:

Dia.	Maximum Gradient	Minimum Gradient	Maximum Gradient at upstream of Backdrop or tumbling bay
150mm	1:30	1:90	1:70



CONNECTION TO MANHOLE - MIN. $\varnothing 200mm$
 CONNECTION TO SEWER VIA RAISED/Y-JUNCTION - SAME SIZE AS THE SEWER (MIN. $\varnothing 150mm$)

LEGEND

- WC
- BIDET
- WASHBASIN
- FT FLOOR TRAP
- FW FLOOR WASTE
- BT BIDET TRAP
- LONGBATH
- SINK

TL: Top Level of IC/MANHOLE
 FFL: Finish Floor Level

NOTES:

TL1 < TL2, TL3, TL4, TL5, FFL1, FFL2

SIZE, LENGTH AND GRADIENT OF DISCHARGE PIPE ON GROUND LEVEL			
Sanitary Appliance/fitting Served	Maximum Length (m)	Minimum Size (mm)	Gradient
Ultra-low capacity WC (< 3.5 L per flush)	75	10	Not flatter than 1:50
Low capacity WC (< 3.5 L to 4.5 L per flush)	100	15	Not flatter than 1:50
Floor trap (receiving flow from sanitary appliances or washing machine)	100	15	Between 1:20 and 1:60
Floor trap (receiving only floor washing water, i.e. no appliance connected)	75	15	Between 1:20 and 1:60
Urinal trap (receiving flow from: (i) up to 3 urinals) (ii) 4 TO 10 urinals.	(i) 75 (ii) 100	15	Between 1:20 and 1:60

ALL DIMENSIONS ARE IN mm.

LAYOUT OF SANITARY DRAINAGE SYSTEM