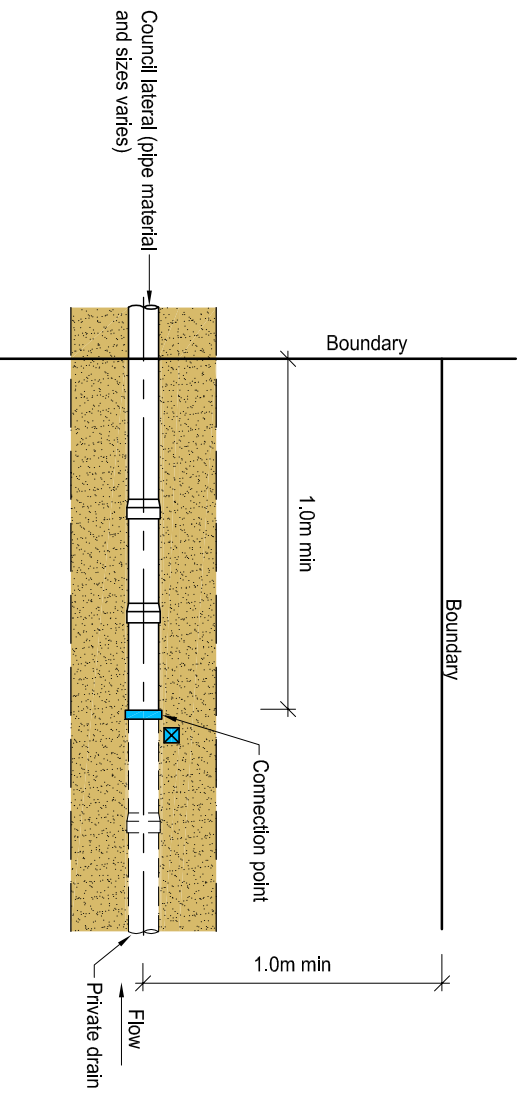
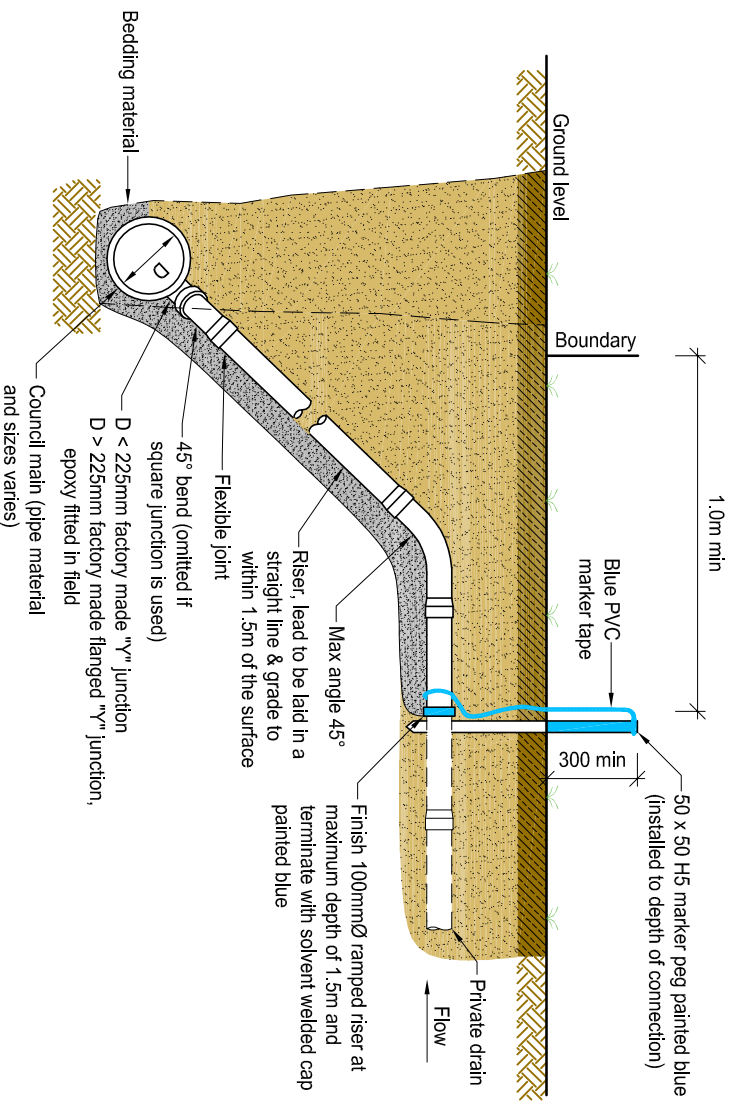


NOTES:

1. Maximum gradient desirable 1:1. Steeper gradient will be permitted to maintain building area.
2. Pipe to be supported by natural ground where possible.
3. Connection to be positioned so that the entire building area can be served in accordance with the Building Act.
4. Connection types shown in this drawing are only applicable to PVC.



PLAN
PROPERTY CONNECTION



ELEVATION

Y (45°) JUNCTION RAMPED RISERS

PROPERTY CONNECTION STANDARD

W531

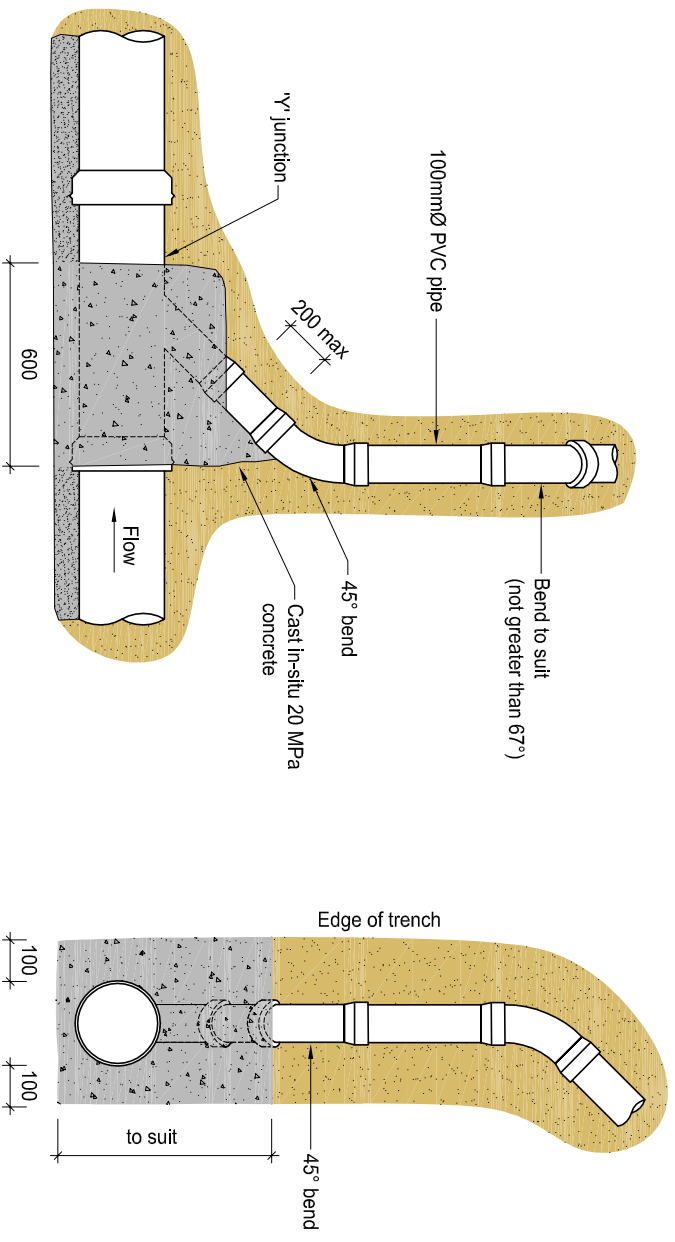
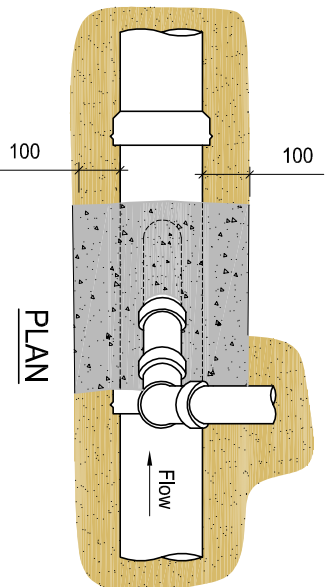
DEVELOPMENT CODE

VERSION 1
AUG 09

1

NOTES:

1. 90° bends will not be accepted.



SIDE ELEVATION

END ELEVATION

PROPERTY CONNECTION

DEPTH > 2.5m

W532

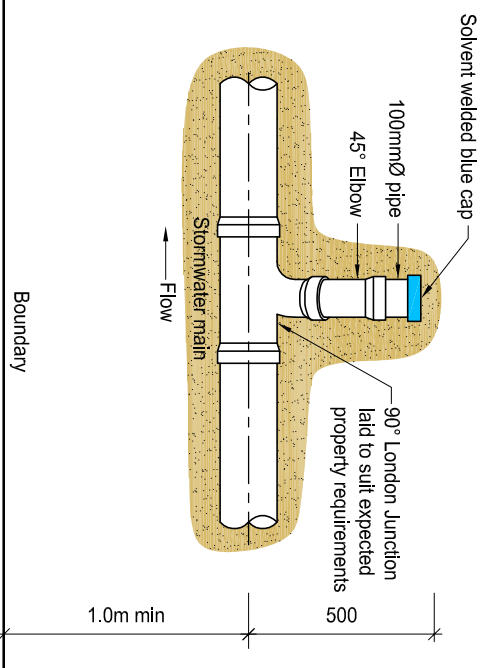
DEVELOPMENT CODE

VERSION 1
AUG 09

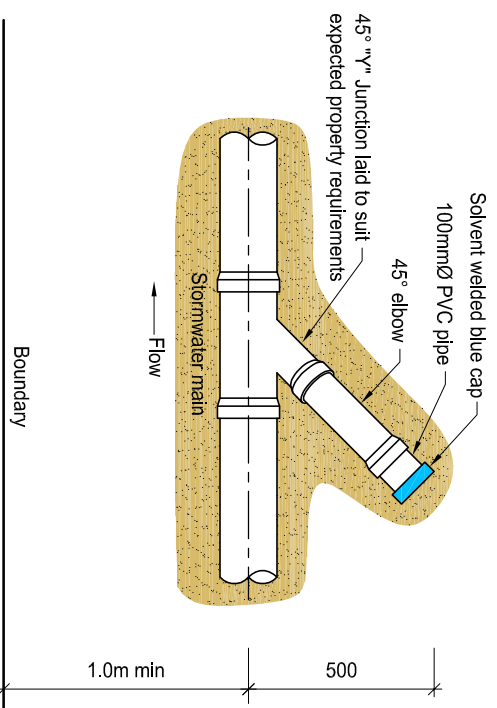
1

NOTES:

1. Connection types shown in this drawing are only applicable to PVC.
2. Grade of property connection stormwater pipe to be not less than 1.65% (1 in 60).



90° CONNECTION



45° CONNECTION

PROPERTY CONNECTION WITHIN PROPERTY

DEVELOPMENT CODE

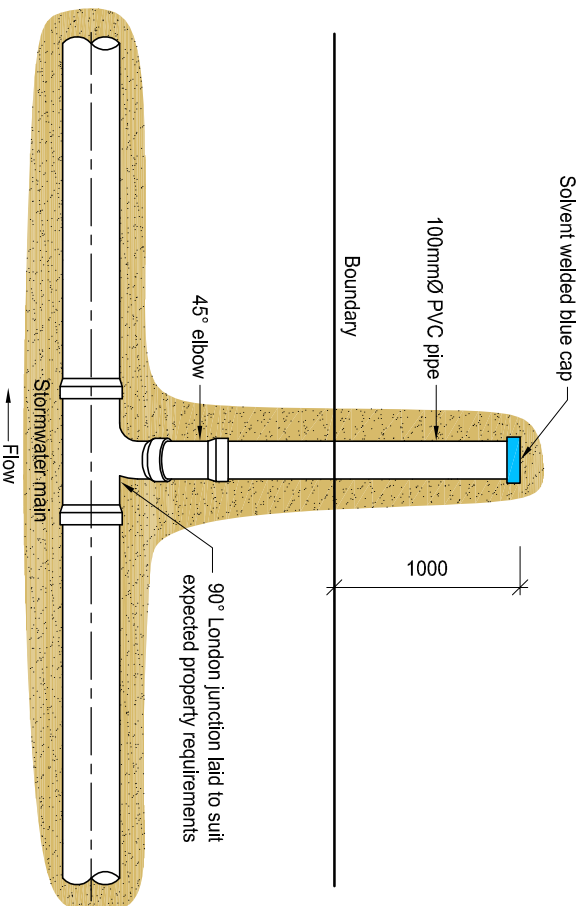
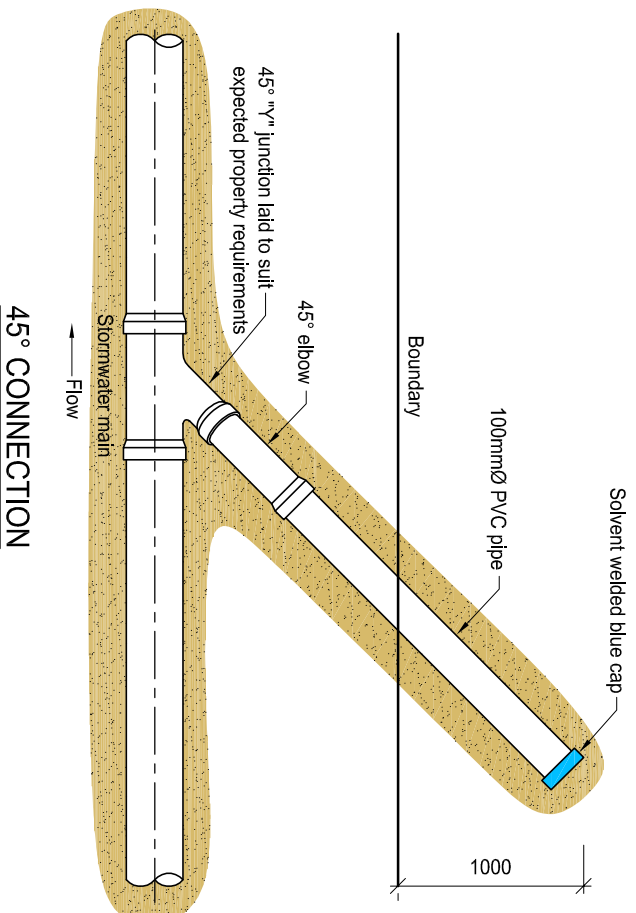
W533

VERSION 1
AUG 09

1

NOTES:

1. Connection types shown in this drawing are only applicable to PVC.
2. Grade of property connection stormwater pipe to be not less than 1.65% (1 in 60).

**90° CONNECTION****45° CONNECTION**

PROPERTY CONNECTION

OUTSIDE PROPERTY

W534

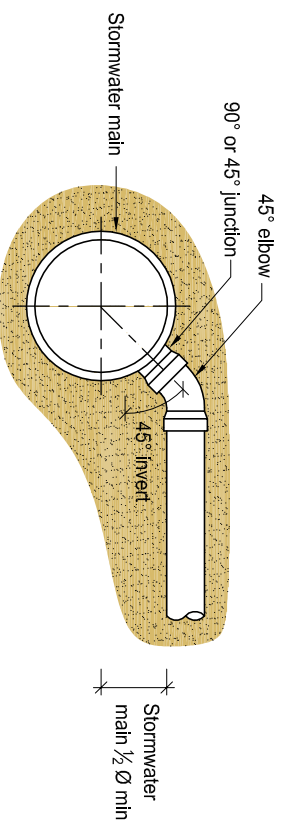
DEVELOPMENT CODE

VERSION 1
AUG 09

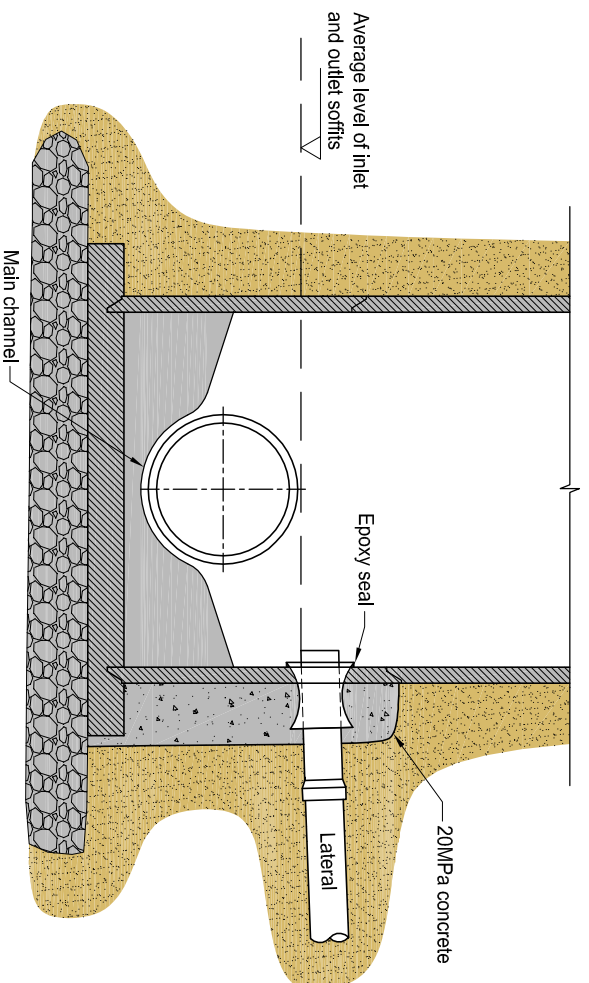
1

NOTES:

1. Invert of lateral pipe prior to junction must be above the soffit level of the stormwater main.
2. Invert of lateral pipe at point of entry to manhole must be above the average soffit level of the inlet and outlet pipes.



LATERAL CONNECTION TO MAIN



LATERAL CONNECTION TO MANHOLE

PROPERTY CONNECTION

ENTRY TO STORMWATER MAIN/MANHOLE

W535

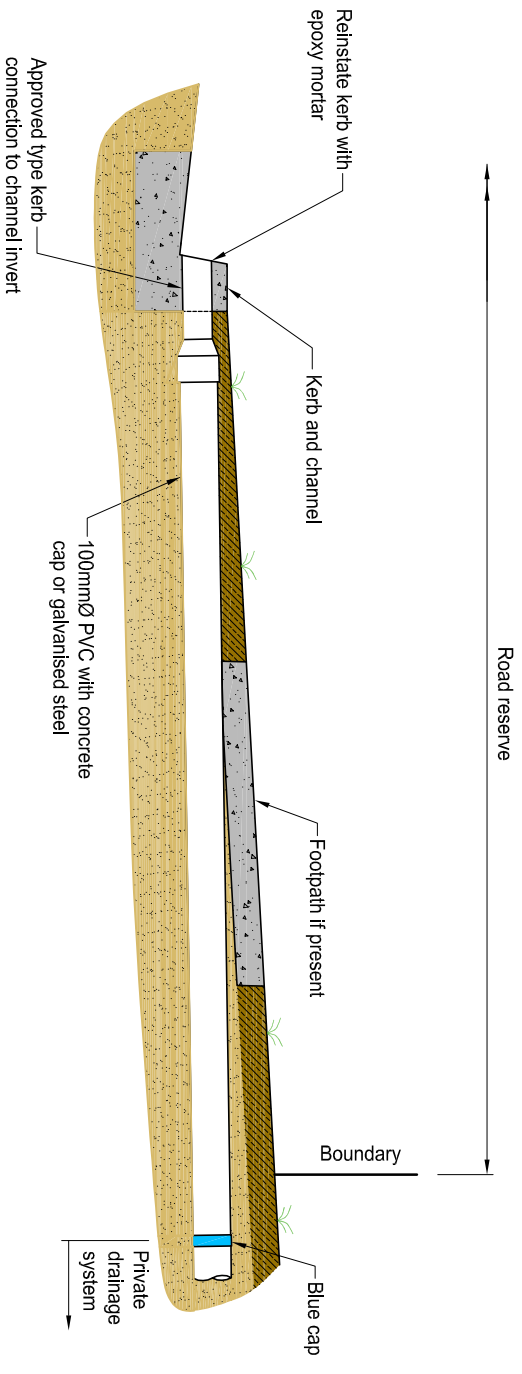
DEVELOPMENT CODE

VERSION 1
AUG 09

1

NOTES:

1. Kerb connections are not an option where mountable kerb and channel is utilised.



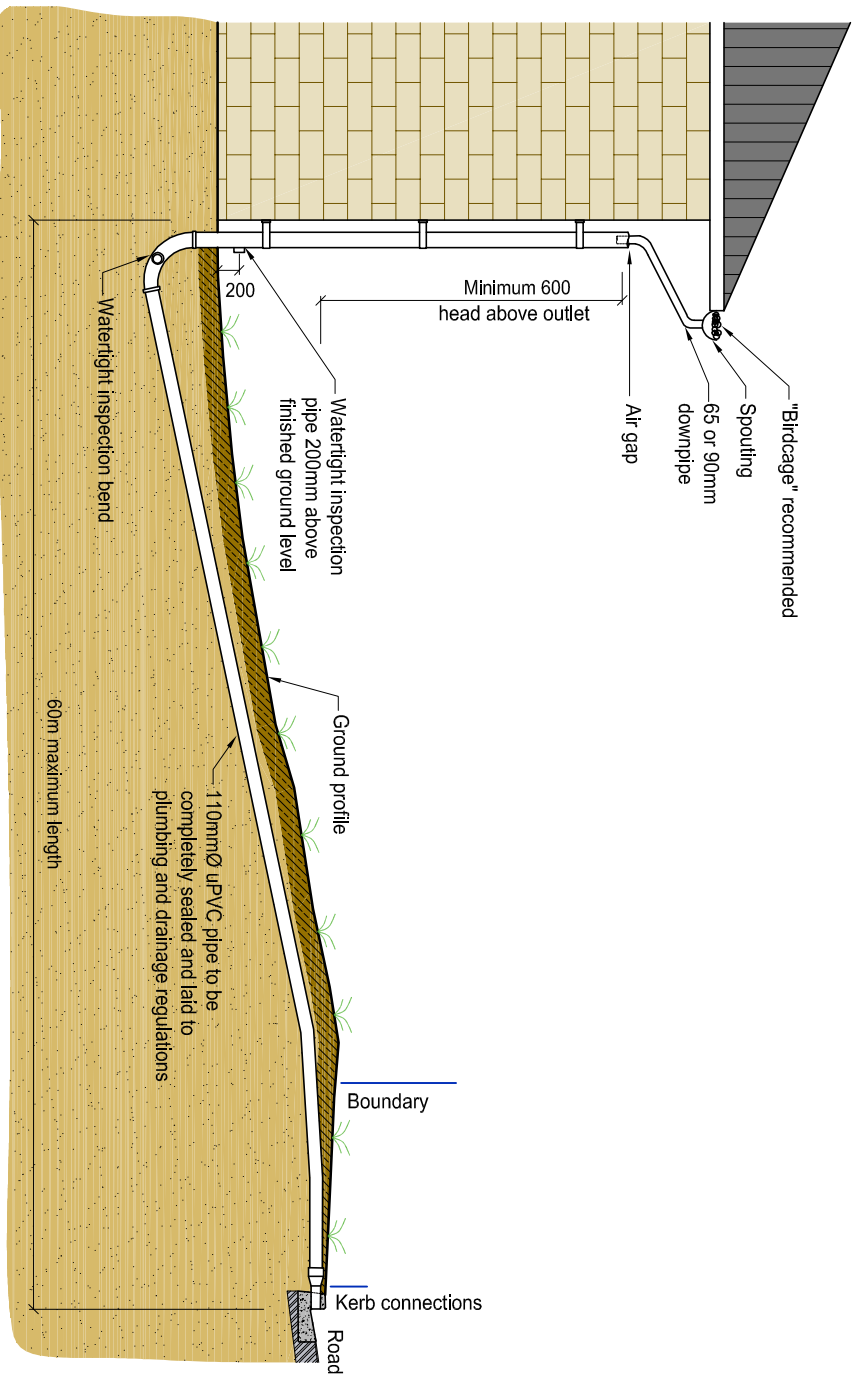
PROPERTY CONNECTION KERB CONNECTION

W536

DEVELOPMENT CODE

VERSION 1
AUG 09

1



TYPICAL CROSS SECTION

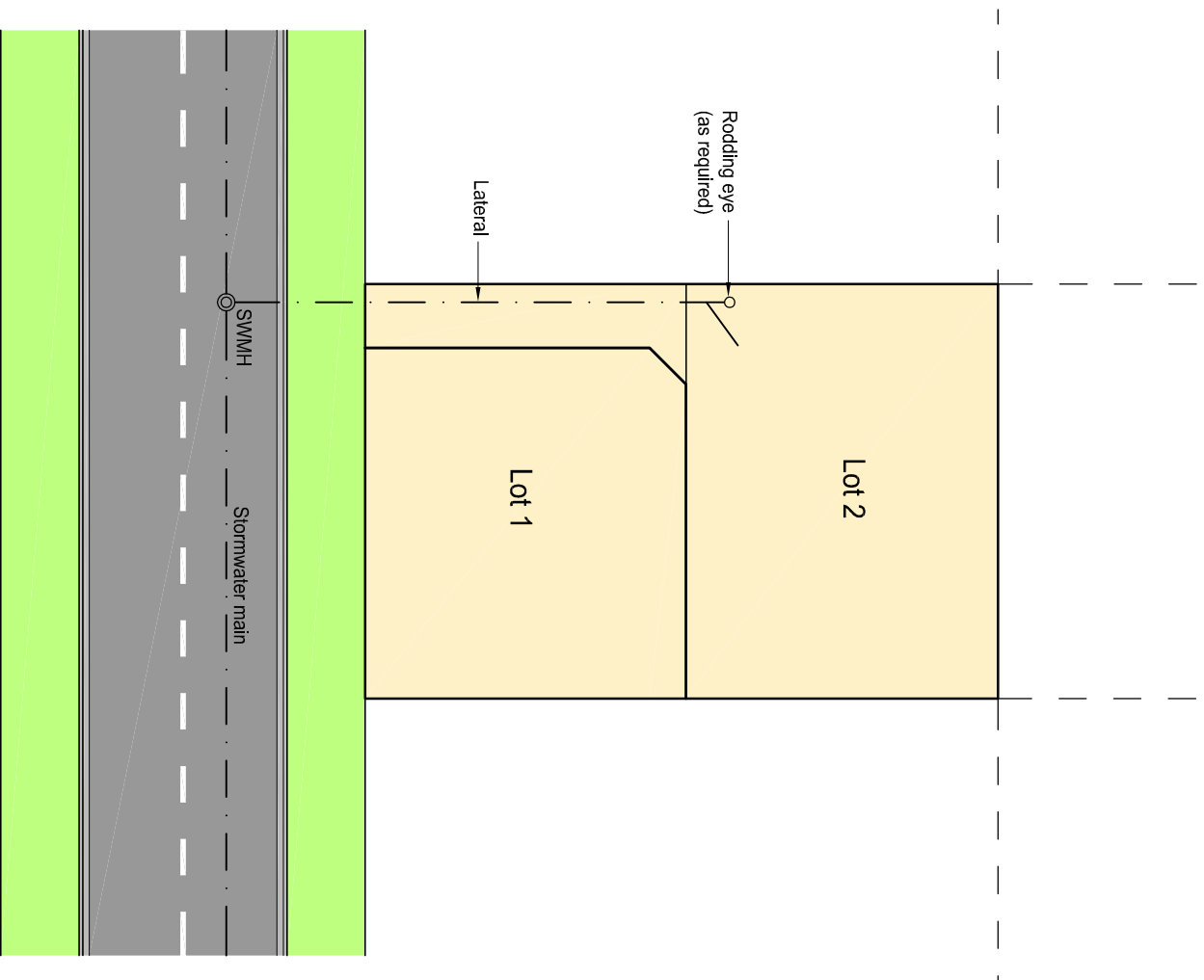
PROPERTY CONNECTION
STORMWATER DOWNPIPE SYPHONS (RESIDENTIAL SITES ONLY)

W537

DEVELOPMENT CODE

VERSION 1
AUG 09

1



LATERAL CONNECTION

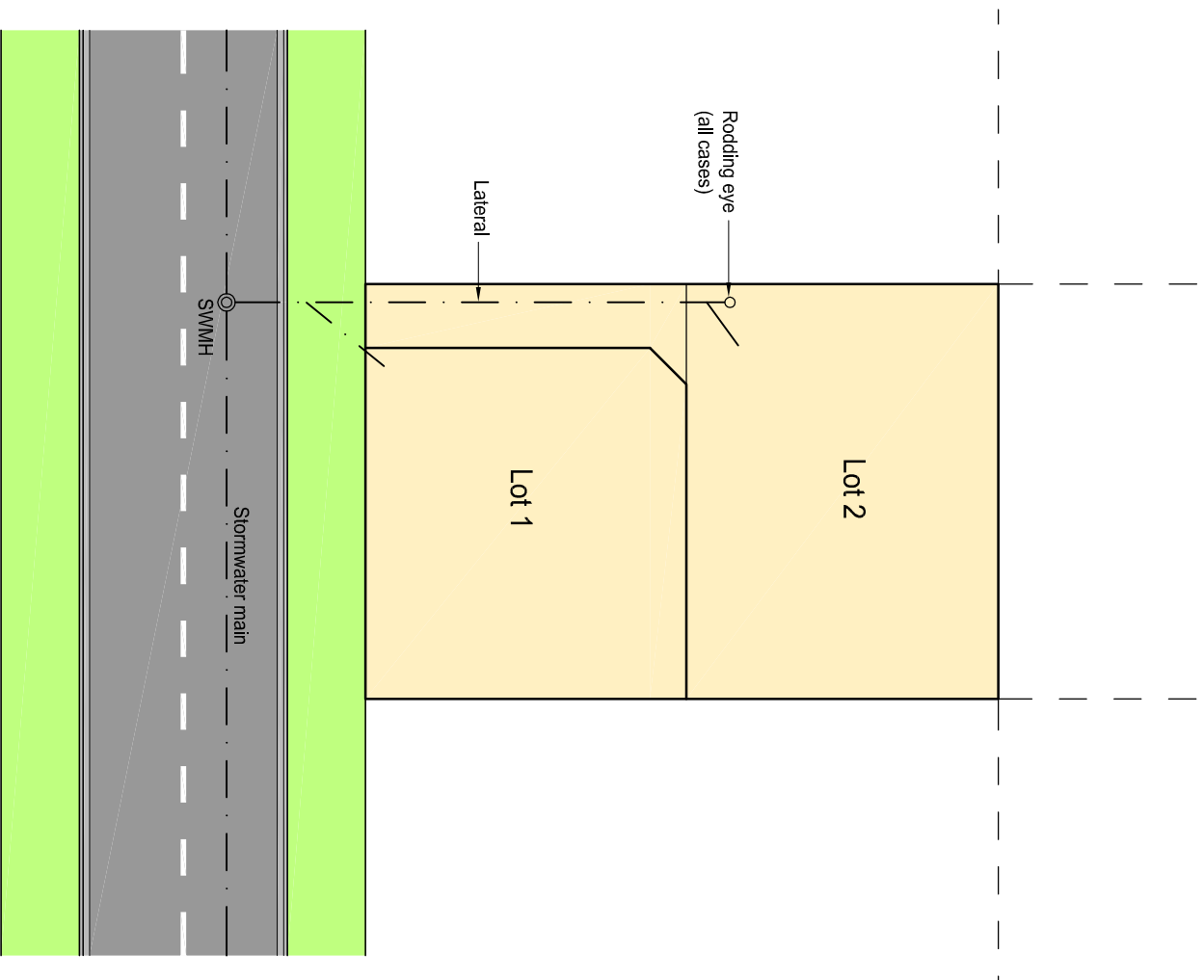
SINGLE CONNECTION TO MANHOLE

W538

DEVELOPMENT CODE

VERSION 1
AUG 09

1



LATERAL CONNECTION

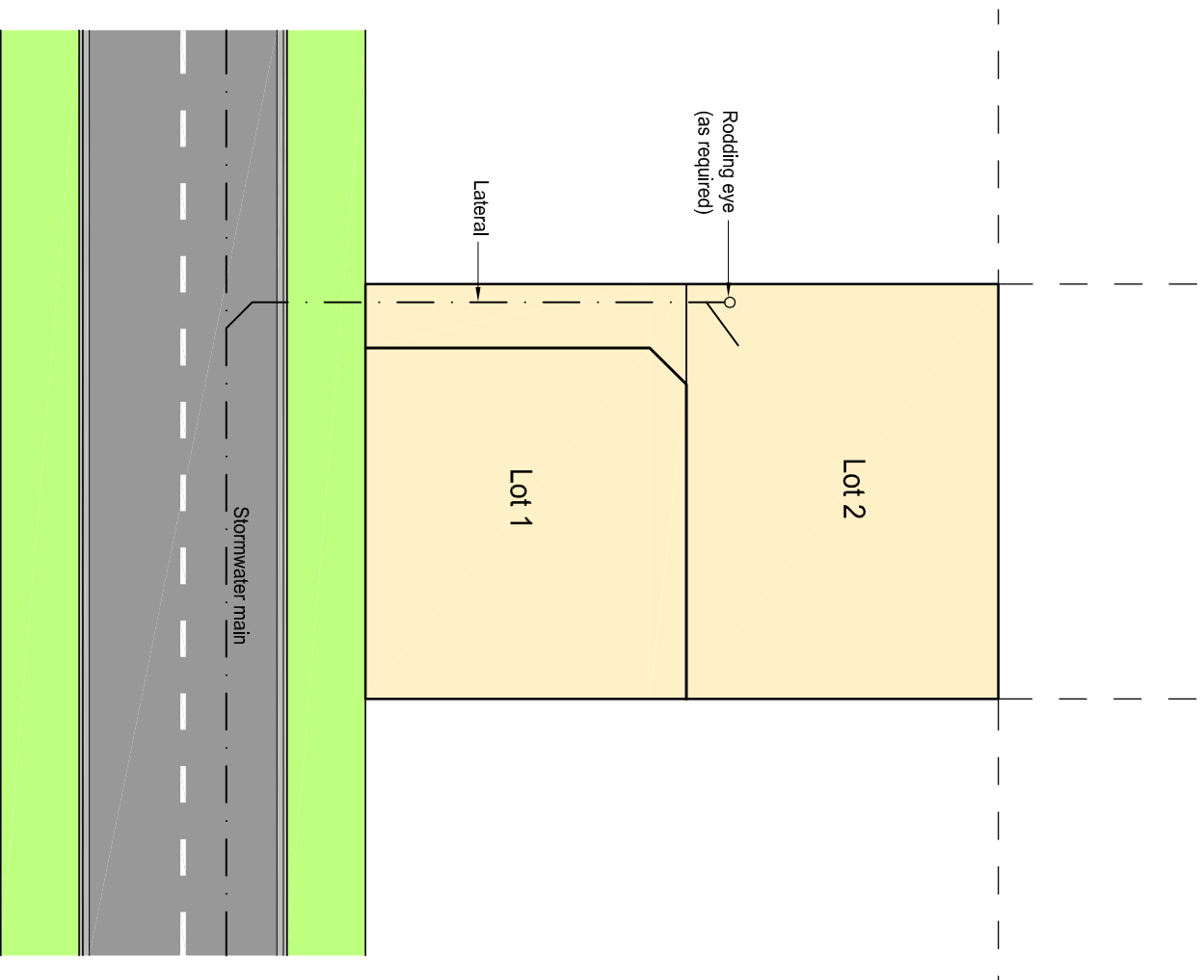
2 TO 6 CONNECTIONS TO MANHOLE

W539

DEVELOPMENT CODE

VERSION 1
AUG 09

1



LATERAL CONNECTION

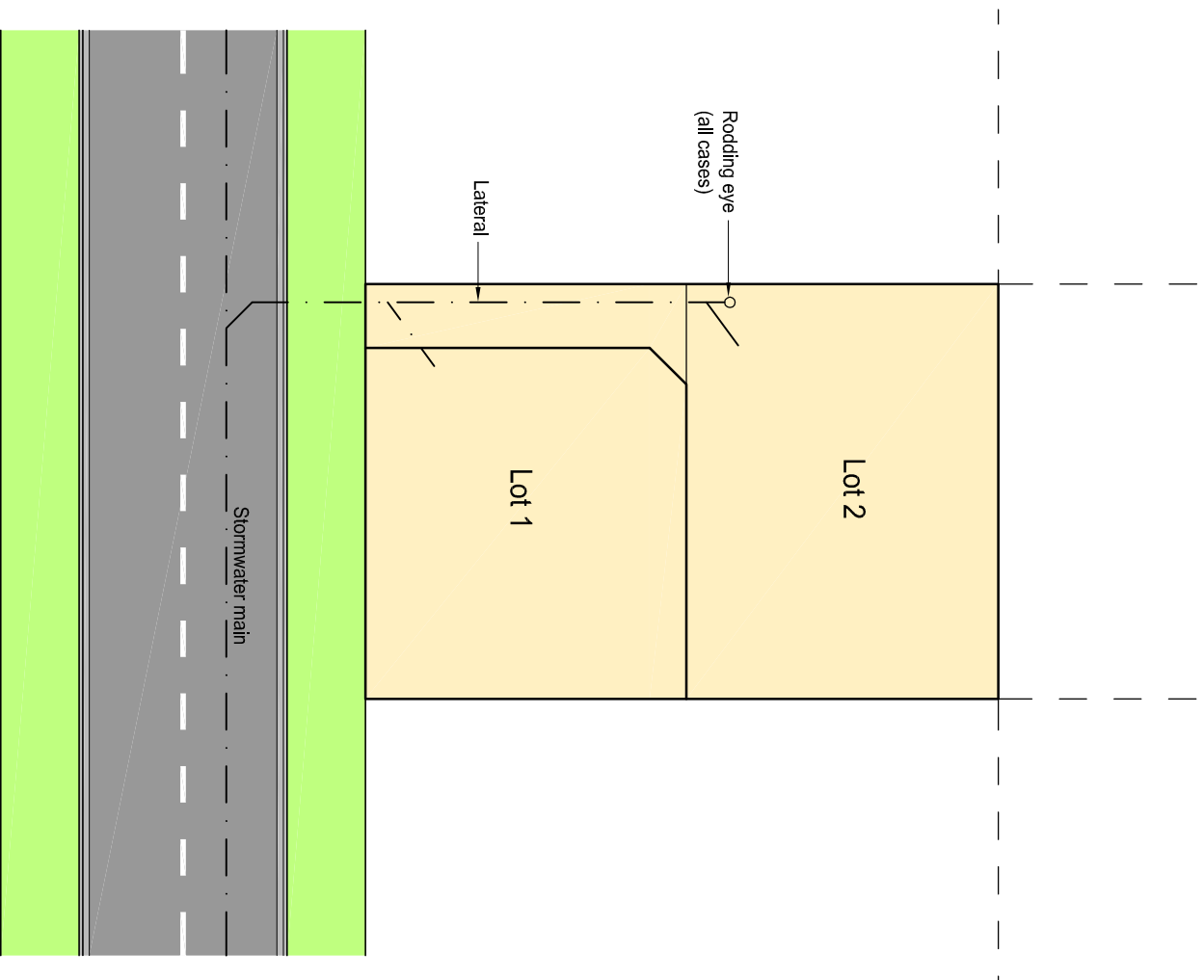
SINGLE CONNECTION TO MAIN

W540

DEVELOPMENT CODE

VERSION 1
AUG 09

1



LATERAL CONNECTION

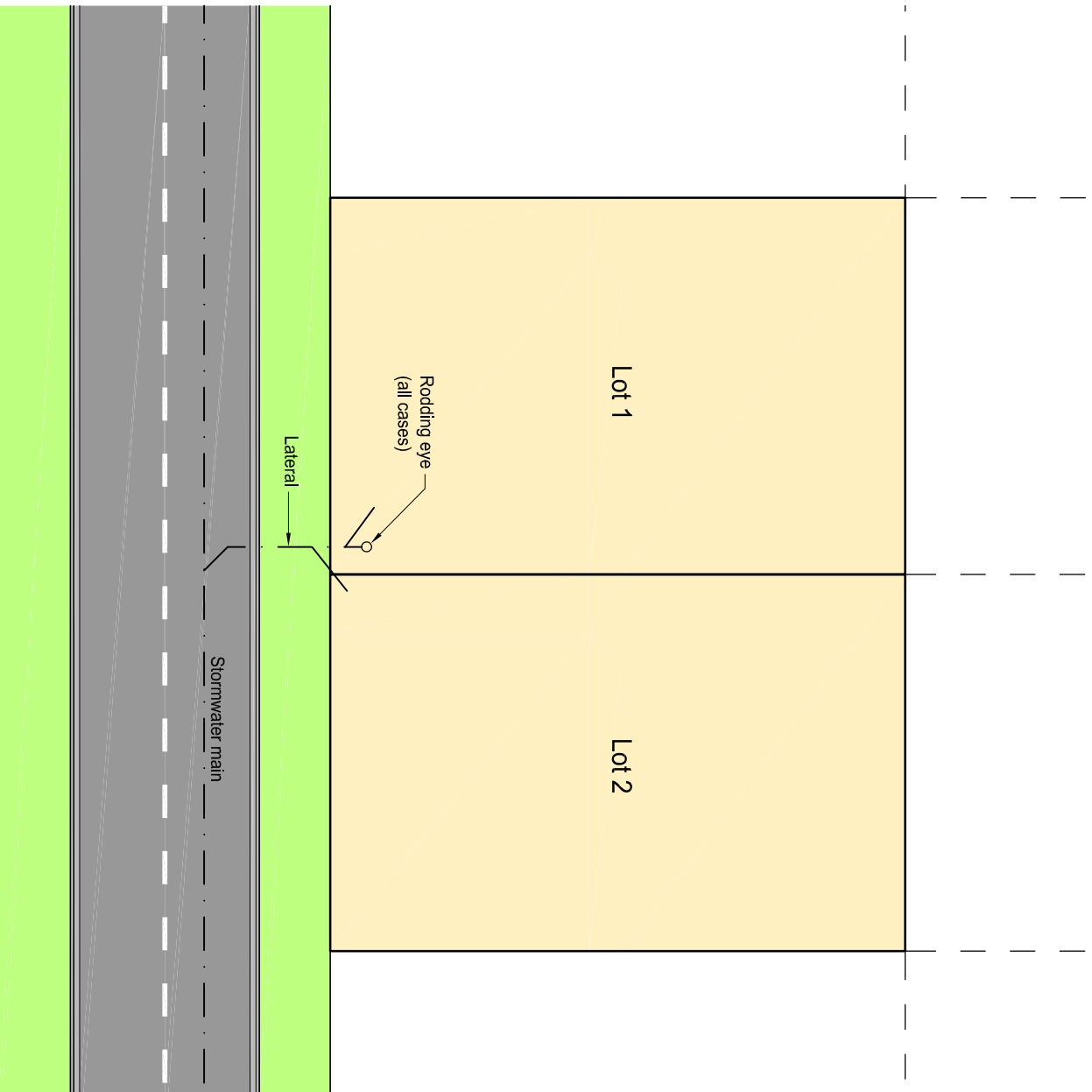
TWO CONNECTIONS TO MAIN

W541

DEVELOPMENT CODE

VERSION 1
AUG 09

1



LATERAL CONNECTION
TWO ADJACENT CONNECTIONS TO MAIN

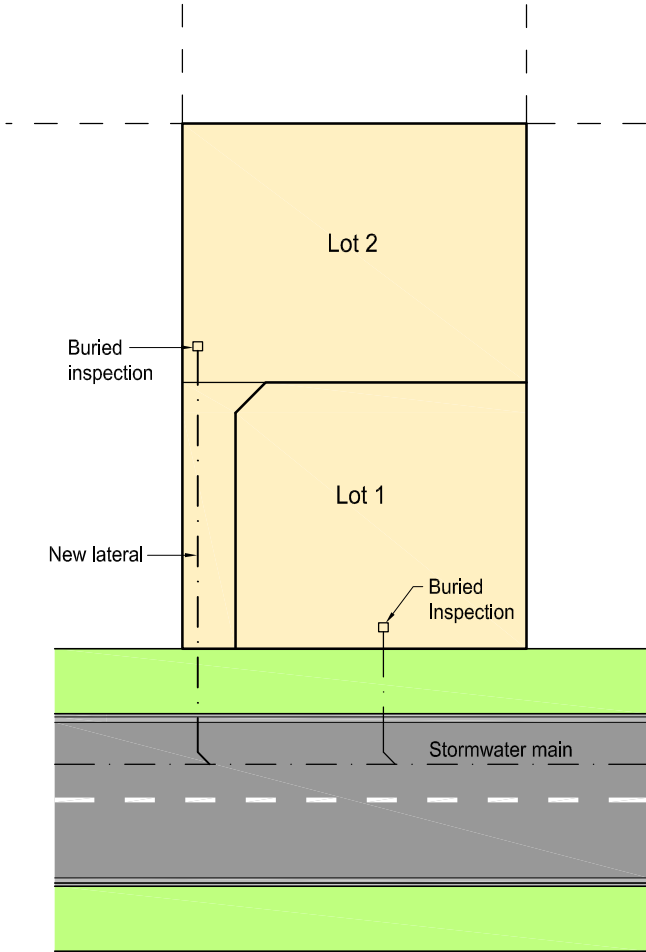
W542

DEVELOPMENT CODE

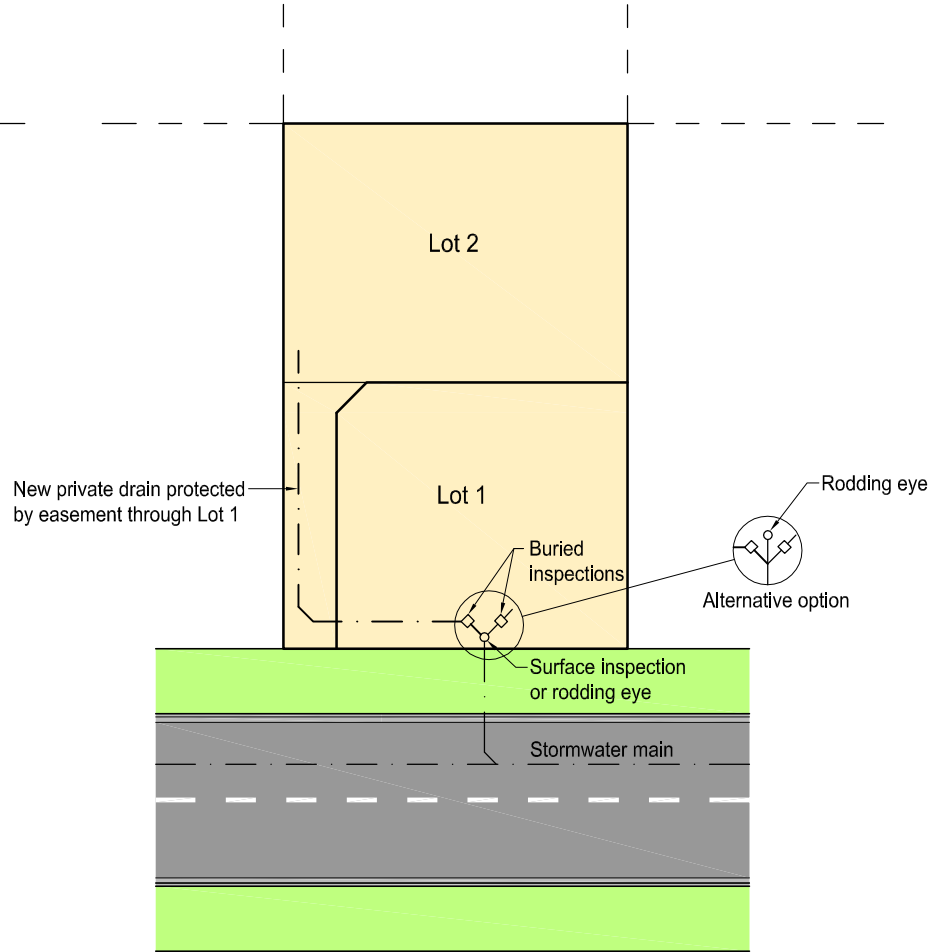
VERSION 1
AUG 09

1

LATERAL CONNECTION
REAR LOT CONNECTION



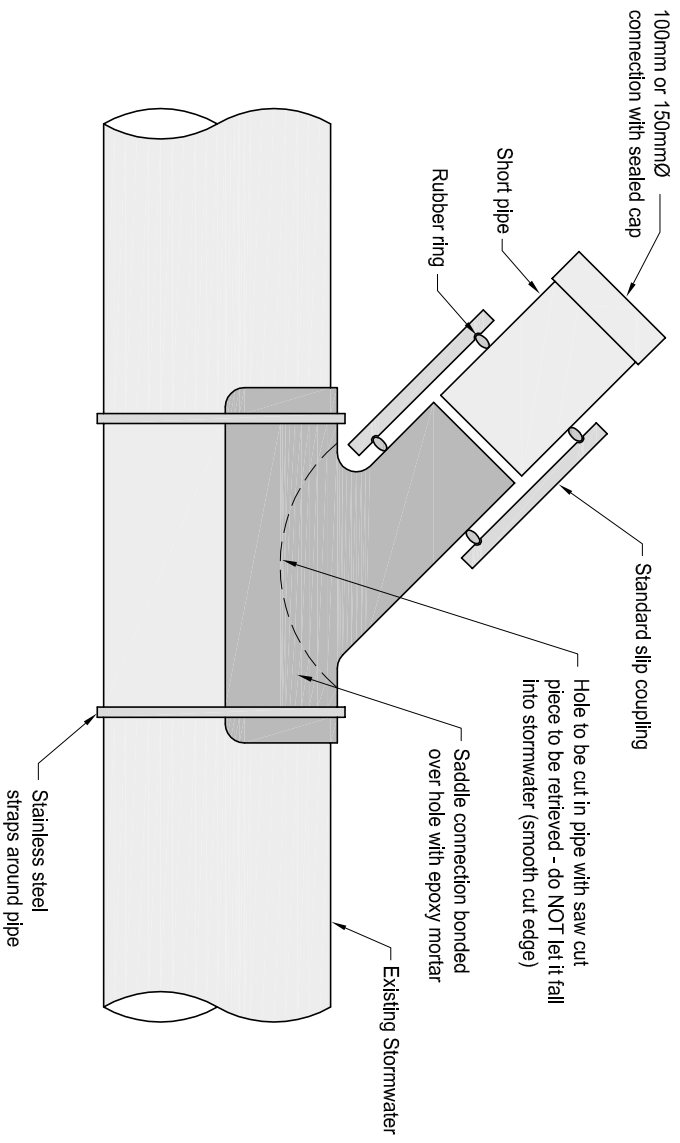
PREFERRED OPTION
(Both laterals are council assets)



ALTERNATIVE OPTION
(Requires easement and approval by TCC)

NOTES:

1. A saddle connection must only be used on a Stormwater main larger than the branch pipe.



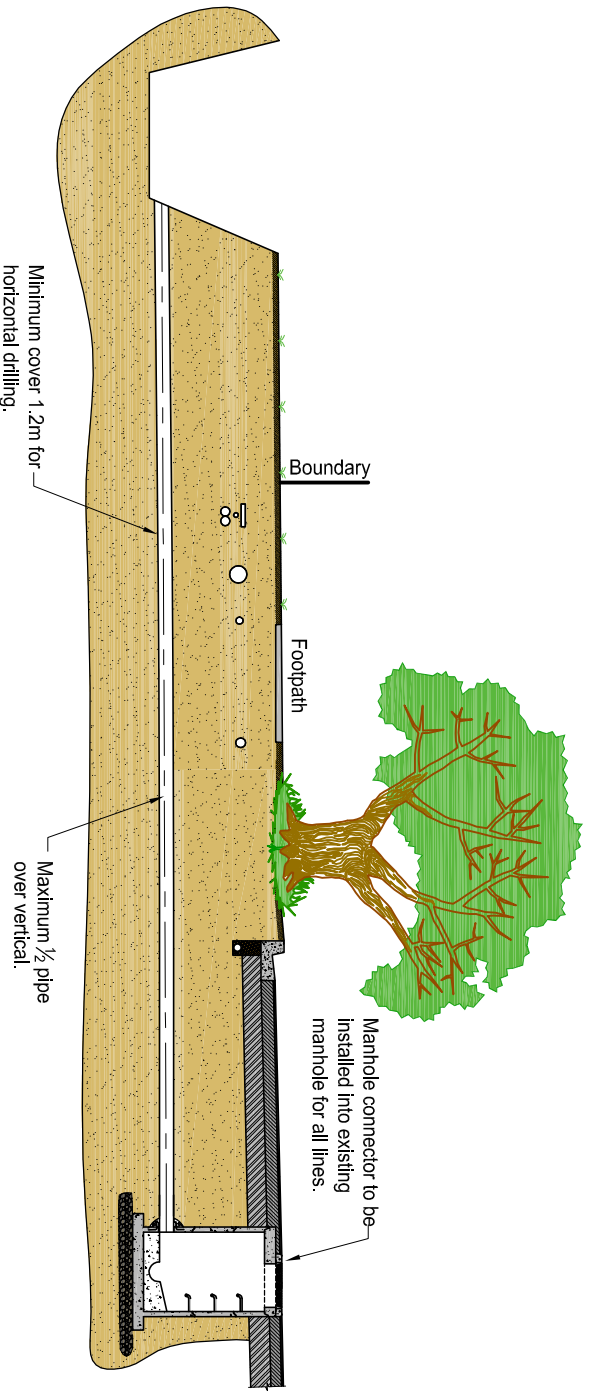
MAINS CONNECTION SADDLE CONNECTION

W544

DEVELOPMENT CODE

VERSION 1
AUG 09

1



DESIGN

Minimum grade of 1 in 100 & minimum of 1.2m below kerb level. For pipelines larger than 150 dia. with belled joints the void between the pipe & drilled hole is to be grouted.

ACCEPTANCE

No under vertical in pipe, maximum $\frac{1}{2}$ pipe over vertical provided no ponding in the line. If not within the specified tolerance the pipe may have to be reconstructed by normal trenching techniques requiring an open excavation permit.

When direct drilled into existing manhole, all debris to be caught and removed. If the drill hole exceeds the pipe outside diameter by more than 25mm it shall be concrete grouted.

MATERIAL

All pipe materials are to comply with the approved standards. In addition, for stormwater thrusting purposes only, PVC pipe of NZS 7649 may be used with the exception that the pipes be solvent cement jointed to the following standard.

DIAMETER AND WALL THICKNESS AS FOLLOWS:

Nominal Size (ID)	Diameter (OD)	Wall
225mm	250mm	8.9mm
300mm	315mm	11.2mm
375mm	400mm	14.2mm

Connections off the above PVC line to be as detailed in the code.

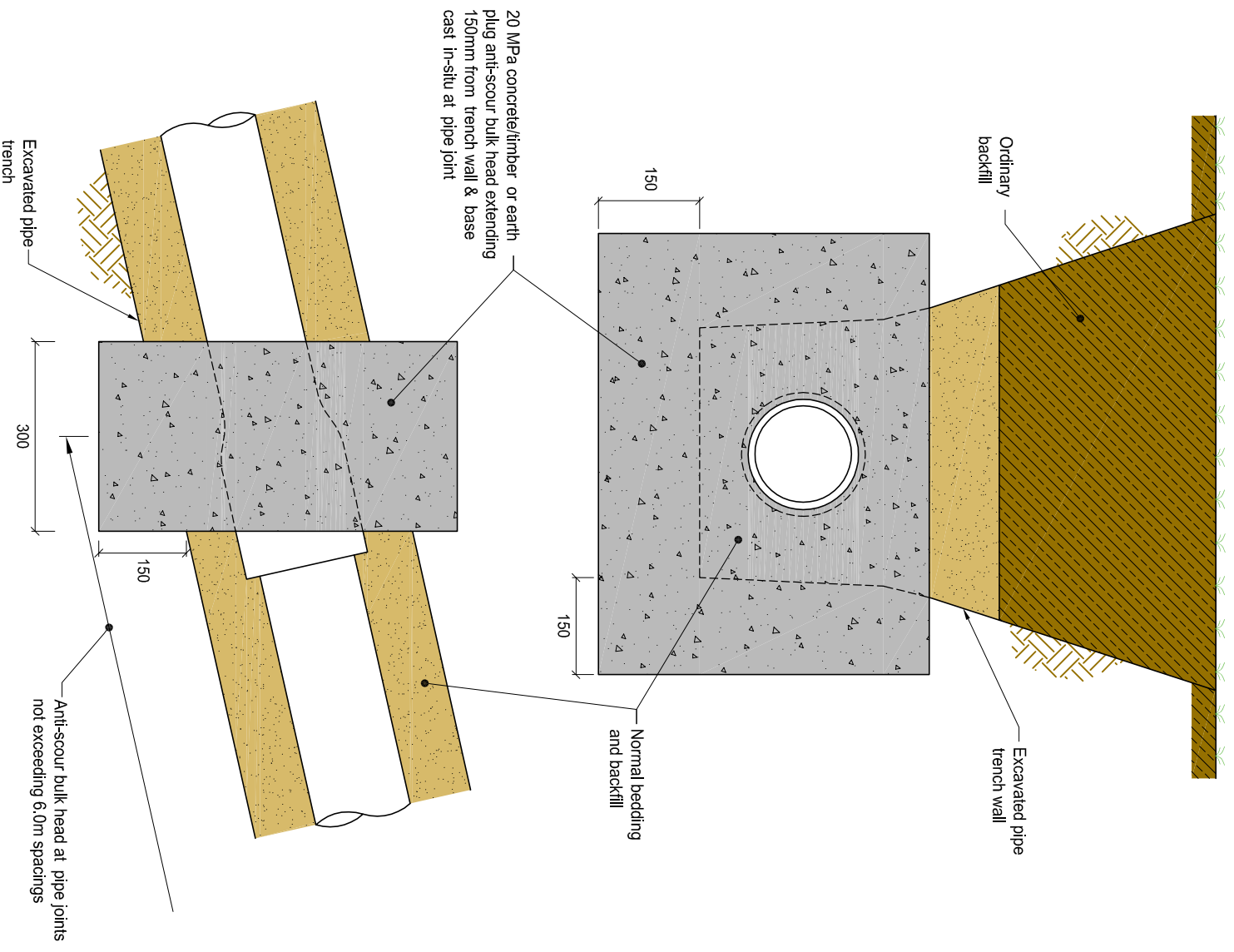
TRENCHLESS PIPE INSTALLATION

W551

DEVELOPMENT CODE

VERSION 1
AUG 09

1



ANTI-SCOUR BLOCKS

W552

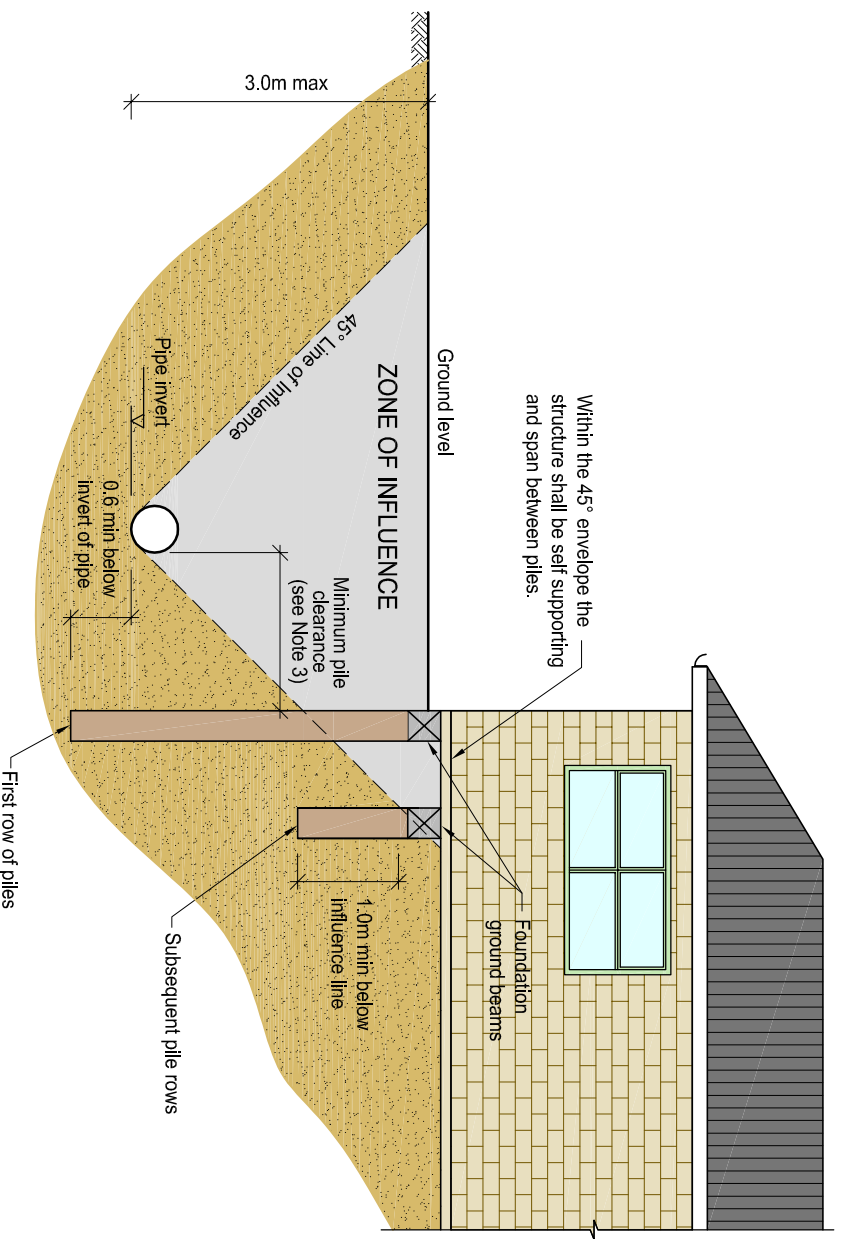
DEVELOPMENT CODE

VERSION 1
AUG 09

1

NOTES:

1. Pile spacing and ground beams are to be designed by Chartered Professional Engineer (CPEng).
2. Ground beams must be fully supported by the piles such that the ground surface is not required to support the structure within the "Line of Influence" of the sewer position.
3. Minimum pile clearance is 1000mm for 150mm diameter mains, and 1500mm for all rising mains and trunk mains (225mm diameter and larger).



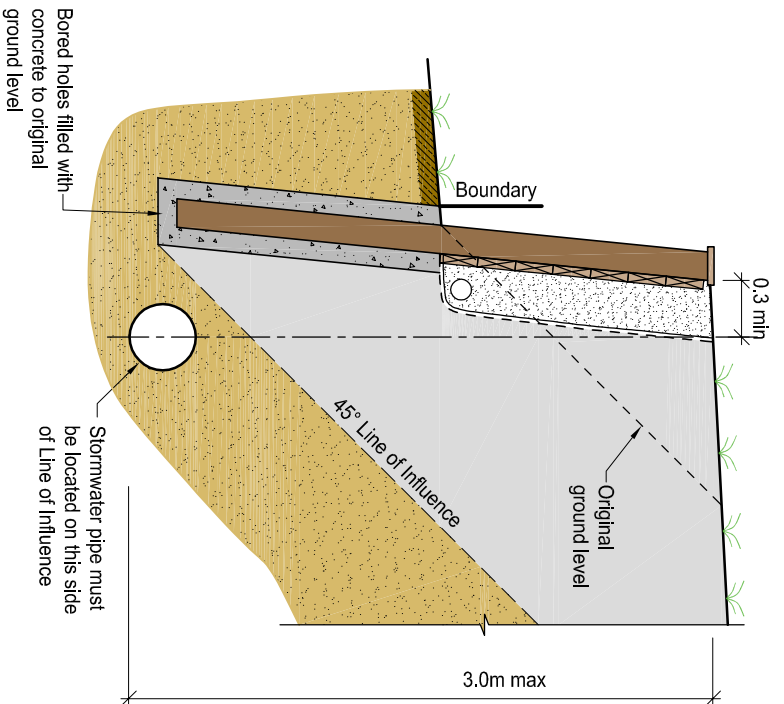
CLOSE PROXIMITY BUILDING NEAR PUBLIC MAINS

W553

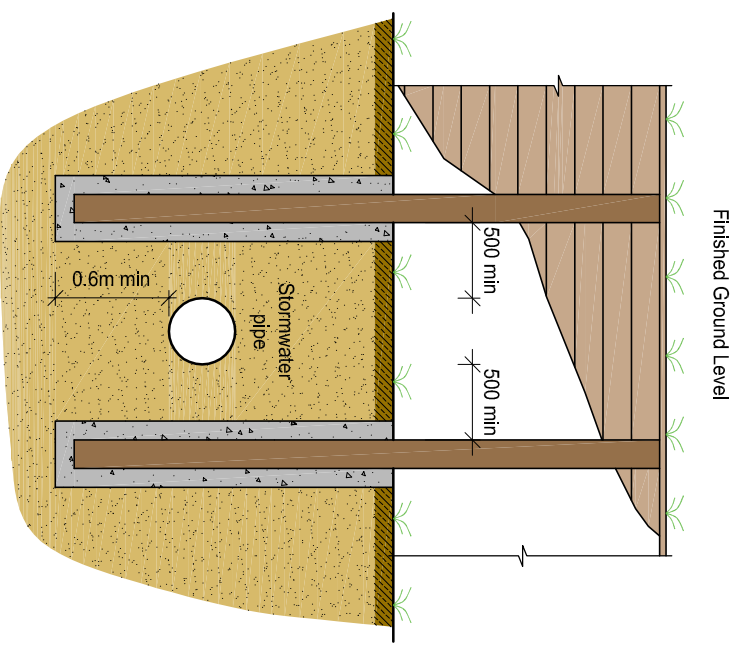
DEVELOPMENT CODE

VERSION 1
AUG 09

1



SECTION
Pipe parallel to retaining wall



SECTION
Pipe perpendicular to retaining wall

**CLOSE PROXIMITY
RETAINING WALL RESTRICTIONS**

W554

DEVELOPMENT CODE

VERSION 1
AUG 09

1