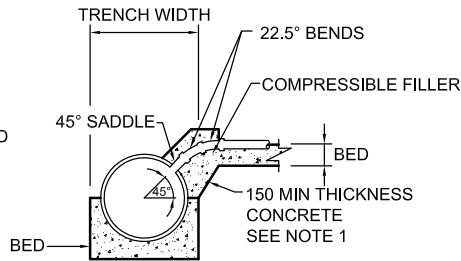
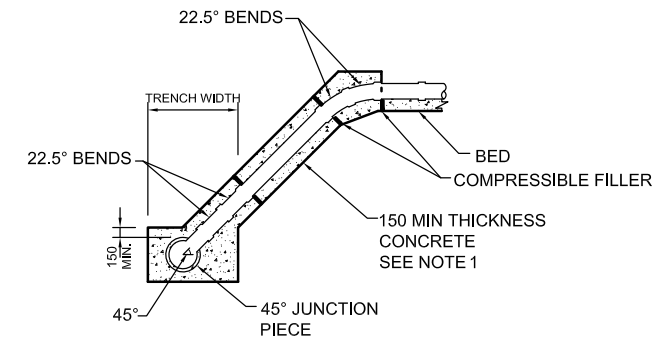


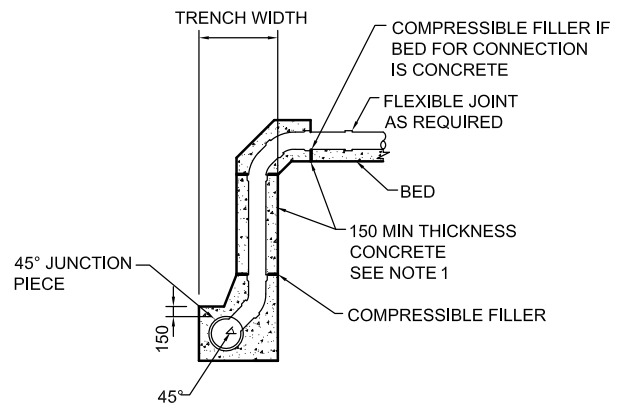
**VERTICAL AND INCLINED RISER SADDLE CONNECTION**



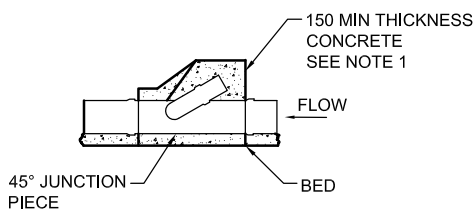
**SHALLOW SADDLE CONNECTION**



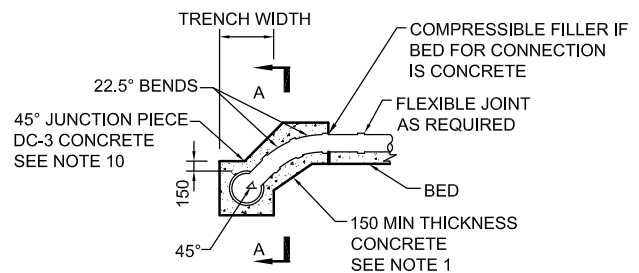
**INCLINED RISER JUNCTION CONNECTION**  
(TO APPLY WHERE AN EXISTING CONNECTION PIPE IS NOT INTERSECTED WITHIN THE TRENCH LIMIT OR THE DIFFERENCE IN INVERT LEVELS IS LESS THAN 3000)



**VERTICAL RISER JUNCTION CONNECTION**  
(TO APPLY WHERE AN EXISTING CONNECTION PIPE IS NOT INTERSECTED WITHIN THE TRENCH LIMIT OR THE DIFFERENCE IN INVERT LEVELS IS GREATER THAN OR EQUAL TO 3000)



**SECTION A-A**



**SHALLOW JUNCTION CONNECTION**

**Notes:**

1. All in situ concrete to be GEN3, C20 or FND3 in sulphate conditions.
2. Where the diameter of the main sewer is less than or equal to 525mm and the diameter of the connection is greater than or equal to 225mm a junction piece must be used.
3. Any connections into existing manholes or inspection chambers are subject to approval by United Utilities.
4. New manholes should be constructed to United Utilities standard details and should be provided for approval.

**About us**

United Utilities is the North West's water company. We keep the taps flowing and toilets flushing for seven million customers every day. From Crewe to Carlisle, we work hard behind the scenes to help your life flow smoothly.