

TWIN PIPELINES IN COMMON TRENCH

WHERE,

S = DISTANCE BETWEEN TWIN PIPES IN COMMON TRENCH, mm

Bd = EFFECTIVE TRENCH WIDTH, mm

Bc1 = OUTSIDE DIAMETER OF PIPE (CONDUIT 1),mm

Bc2 = OUTSIDE DIAMETER OF PIPE (CONDUIT 2),mm

Bc3 = OUTSIDE DIAMETER OF PIPE (CONDUIT 3),mm

Bd1 = TRENCH WIDTH FOR CONDUIT 1, mm

Bd2 = TRENCH WIDTH FOR CONDUIT 2, mm

Bd3 = TRENCH WIDTH FOR CONDUIT 3, mm

TABLE OF DIMENSIONS FOR BED, SURROUND & MATERIAL SIZE

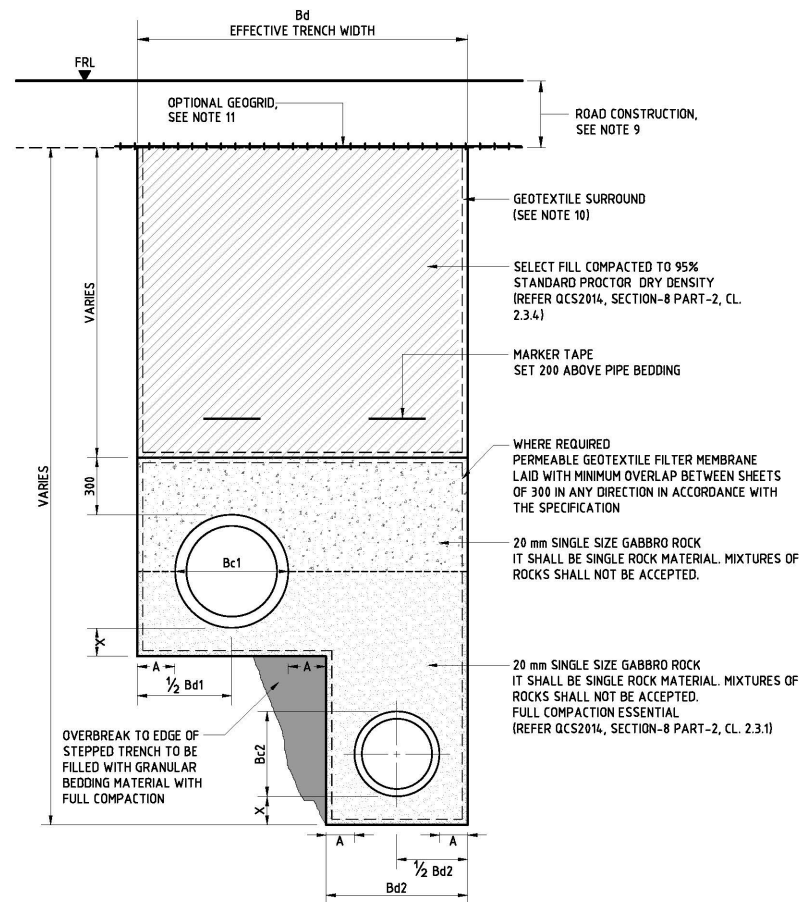
PIPE DIA (D mm)	MAXIMUM PERMISSABLE TRENCH WIDTH	BEDDING DEPTH, mm X			A (MIN) mm	PIPE BEDDING MATERIAL SIZE mm
	AT 300MM ABOVE CROWN OF PIPE	UNIFORM SOIL	MACHINE DUG	ROCK		
100	550	100	150	200	150	14
150	600	100	150	200	150	14
200	800	150	200	250	150	20
300	900	150	200	250	150	20
400	1000	150	200	250	200	20
500	1250	150	200	250	200	20
600	1350	175	225	275	300	20
800	1550	175	225	275	300	20
1000	2000	200	250	300	450	25
1200	2300	200	250	300	450	25
1400	2500	200	250	300	450	25
1500	2700	200	250	300	450	25

TABLE ASSUMES VC PIPE FOR SIZES 100 TO 1000 AND CONCRETE PIPE > 1000

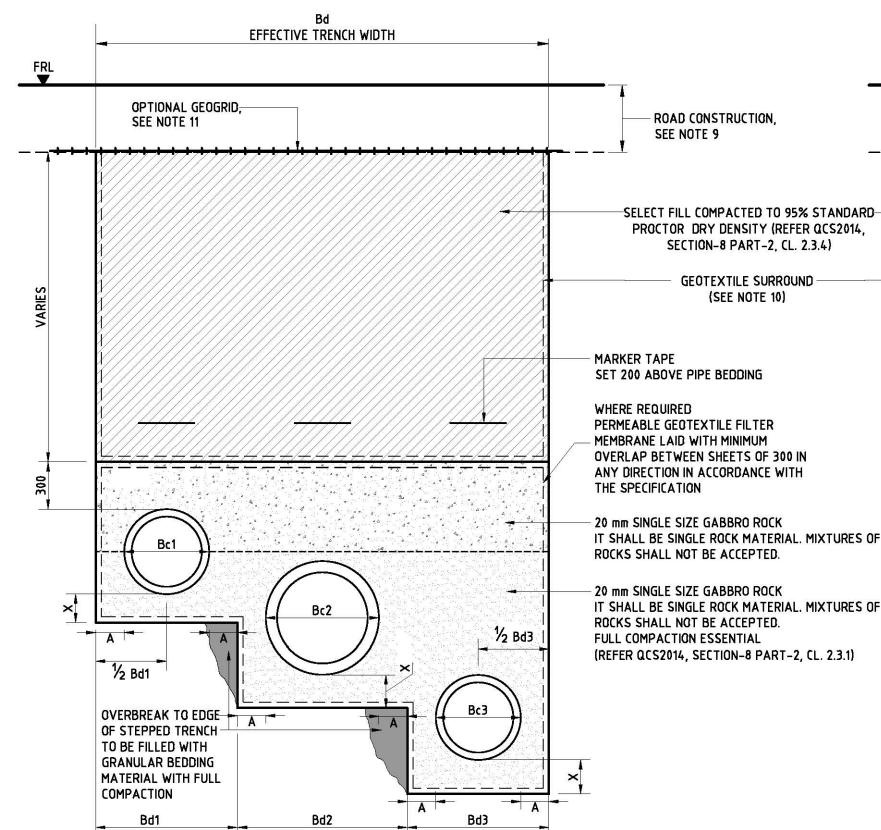
* IF FLEXIBLE PIPES ARE IN THE TRENCH, THEN BEDDING SIZE SHALL BE APPROPRIATE FOR FLEXIBLE PIPES, SEE DRG. No. SD 8-2-308.

NOTE:

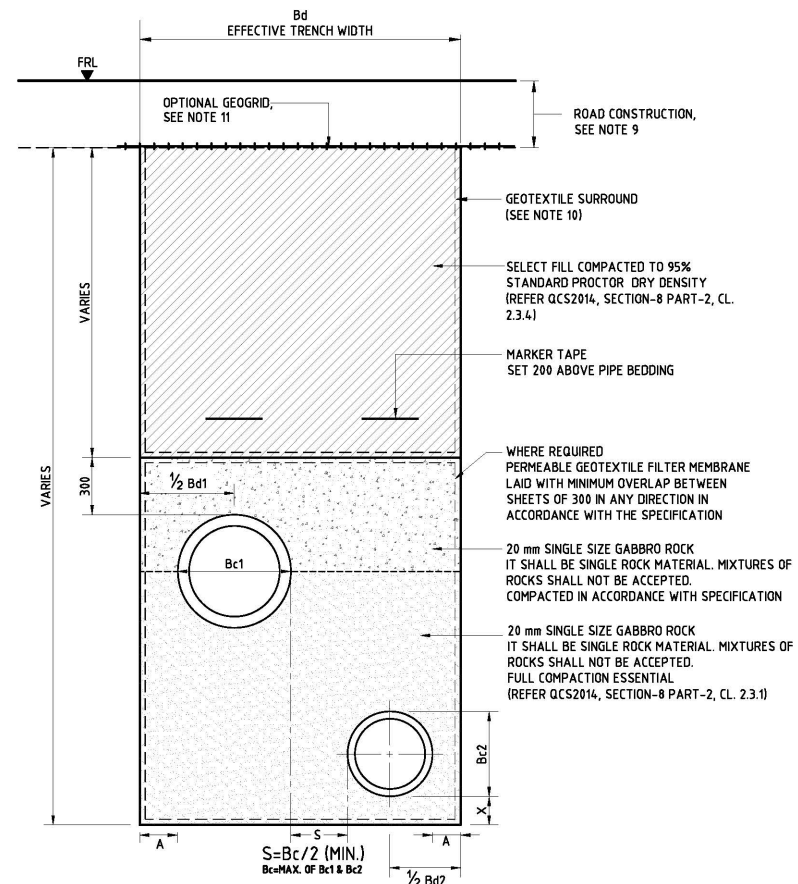
- BEDDING AT SIDES OF PIPE TO BE WELL COMPACTED.
- DIMENSION X:
 - MINIMUM THICKNESS OF BEDDING UNDER SOCKET FOR UNIFORM SOIL, MACHINE DUG & ROCK IS 50mm, 100mm & 150mm RESPECTIVELY.
 - MACHINE DUG: 1/6Bc OR 100MM UNDER BARRELS & 100MM UNDER SOCKETS WHICHEVER IS GREATER (400 MAX).
 - ROCK etc: 1/4Bc OR 200MM UNDER BARRELS & 150MM UNDER SOCKET (400 MAX).
- FOUNDATION STABILIZATION WHERE DIRECTED, FOUNDATION STABILIZATION SHALL BE PLACED PRIOR TO PLACEMENT OF PIPE BEDDING.
- WHERE APPROPRIATE GEOTEXTILES MAY BE USED TO CONTAIN BEDDING MATERIAL.



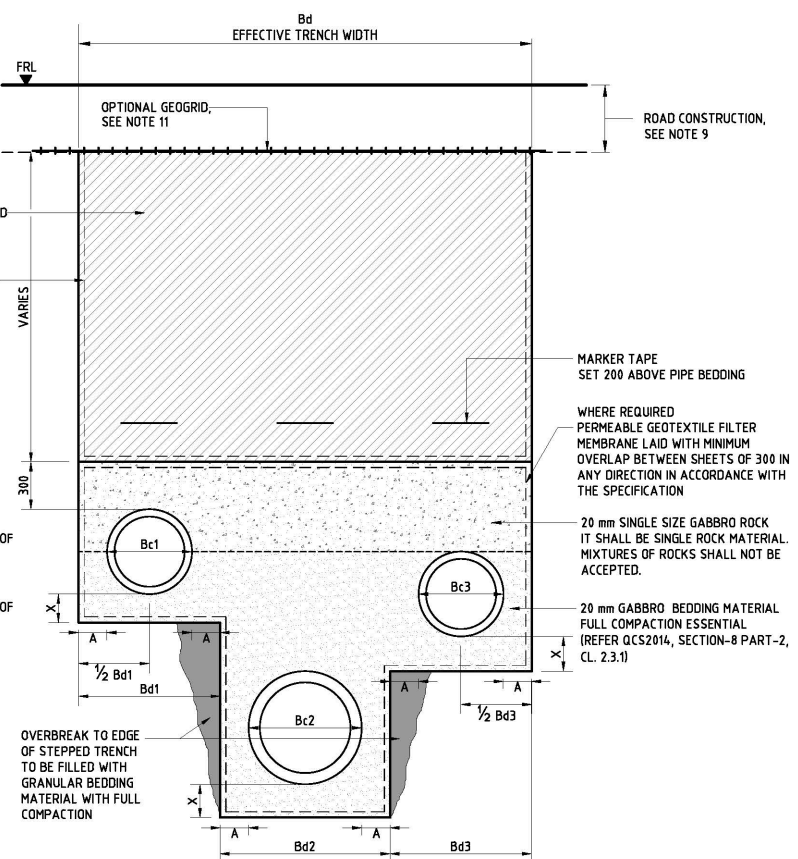
UNEQUAL PIPELINES IN STEPPED TRENCH



UNEQUAL PIPELINES IN STEPPED TRENCH



UNEQUAL PIPELINES IN UNSTEPPED TRENCH



UNEQUAL PIPELINES IN STEPPED TRENCH

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CURRENT Q.C.S. UNLESS OTHERWISE AGREED WITH THE ENGINEER.
- WHERE THERE IS A DISCREPANCY BETWEEN THE REQUIREMENTS IN THE SPECIFICATION AND THOSE SHOWN ON THIS DRAWING THE SPECIFICATION TAKE PRECEDENCE.
- GEOTEXTILES USED FOR FILTRATION, SEPARATION AND DRAINAGE TO BE IN ACCORDANCE WITH:
 - EN 13243 : 2000
 - EN 13252 : 2000
- THESE ARE TYPICAL DETAILS FOR MULTIPLE PIPES IN TRENCHES IN ACCORDANCE WITH BS 9295-2010. THE DESIGNER SHALL SUBMIT STRUCTURAL DESIGNS OF PIPELINES FOR APPROVAL BY THE ENGINEER.
- THIS DRAWING TO BE READ IN CONJUNCTION WITH DRAWING No. SD 8-2-301.
- PIPE MATERIAL AND STRENGTH TO BE STATED BY THE DESIGNER AND SHOWN ON THE LONGITUDINAL SECTIONS.
- FOR STEPPED TRENCH WHERE EDGE OF OVERBREAK IS UNDER CENTERLINE OF UPPER PIPE UTILIZE AN UNSTEPPED TRENCH.
- SEE REINSTATEMENT DETAILS DRG Nos. SD 6-1-201 TO SD 6-1-205 FOR CONSTRUCTION IN EXISTING PAVEMENT.
- GEOTEXTILE SHALL BE NONWOVEN NEEDLE-PUNCHED GEOTEXTILE MANUFACTURED FOR SUBSURFACE DRAINAGE APPLICATIONS AS PER QCS 2014, SECTION 6, PART 18, CLAUSE 18.2.2
- GEOGRID TO BE PLACED BETWEEN MODIFIED SELECT FILL AND SUB-BASE WHEN TRAFFIC LOADS EXCEED 20 MILLION ESAL'S. GEOGRID TO BE USED SHOULD BE AS PER QCS 2014 SECTION 6, PART 18 AND AS DIRECTED BY THE ENGINEER IF REQUIRED. OVERLAP OF GEOGRID SHALL BE AS PER MANUFACTURERS SPECIFICATIONS.

LEGEND:

FRL FINISHED ROAD LEVEL

8	JULY 24	REPLACE IGNEOUS OR METAMORPHIC WITH GABBRO	
7	FEB 22	REPLACE GABBRO WITH IGNEOUS OR METAMORPHIC	
6	MAR 21	ENGR'S INSTRUCTION TEXT REMOVED	
5	MAR 20	NOTE ON GEOTEXTILE, GEOGRID ADDED	
4	APR 19	ISSUED FOR USE	
3	01 MAR 19	REVALIDATED ISSUE	
2	01 MAY 16	ISSUED FOR USE	
1	23 NOV 15	ISSUED FOR USE	
0	15 SEP 13	ISSUED FOR USE	
Rev.	Date	Revision Details	Appd.

هيئة الأشغال العامة
Public Works Authority

P.O Box: 22188
Tel.: 00974 44950000
Fax: 00974 44950999

قطر تستحق الأفضل
Qatar Deserves The Best
www.ashghal.gov.qa

PROJECTS AFFAIRS
QCS Section:
Section 8 - Drainage Works
Part 2 - Earthworks

Drawing Title:
**COMBINED SERVICES
PIPE BEDDING
DETAILS**

Approved:	Sheet No: 1 OF 1
Date: MARCH 2021	Scale: 1:20 on A1
Drawing Number: SD 8-2-303	Revision: 8