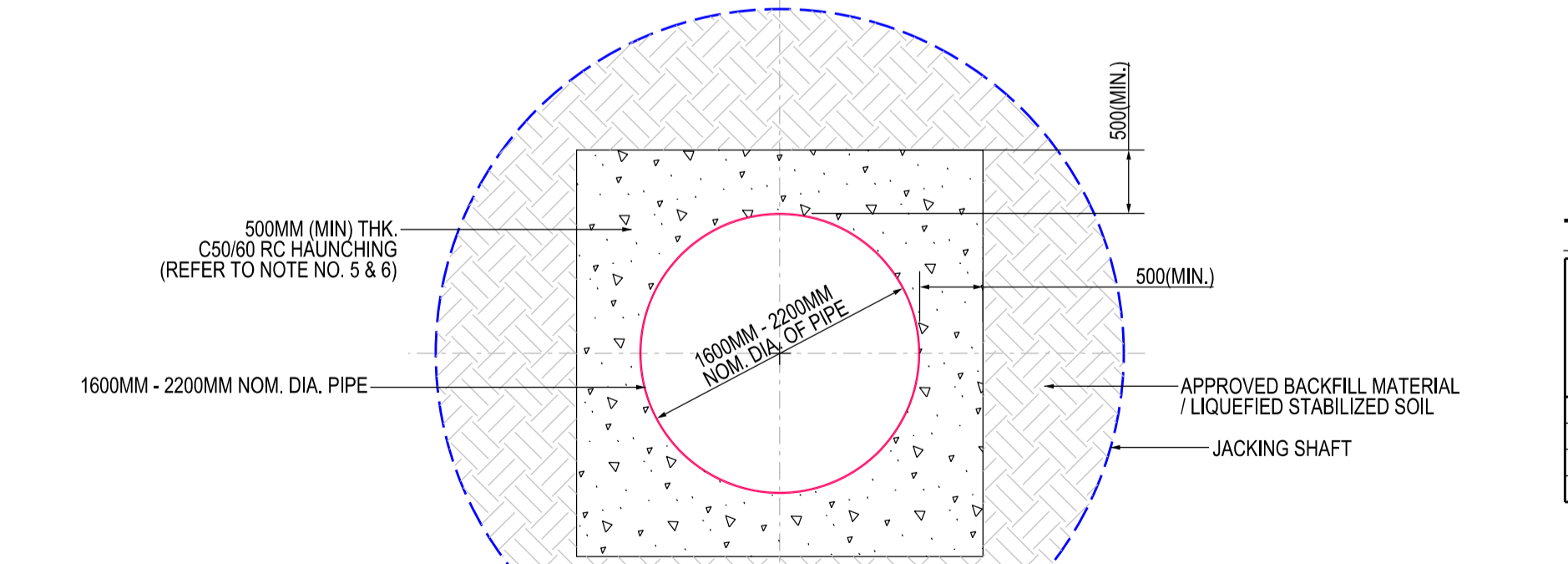
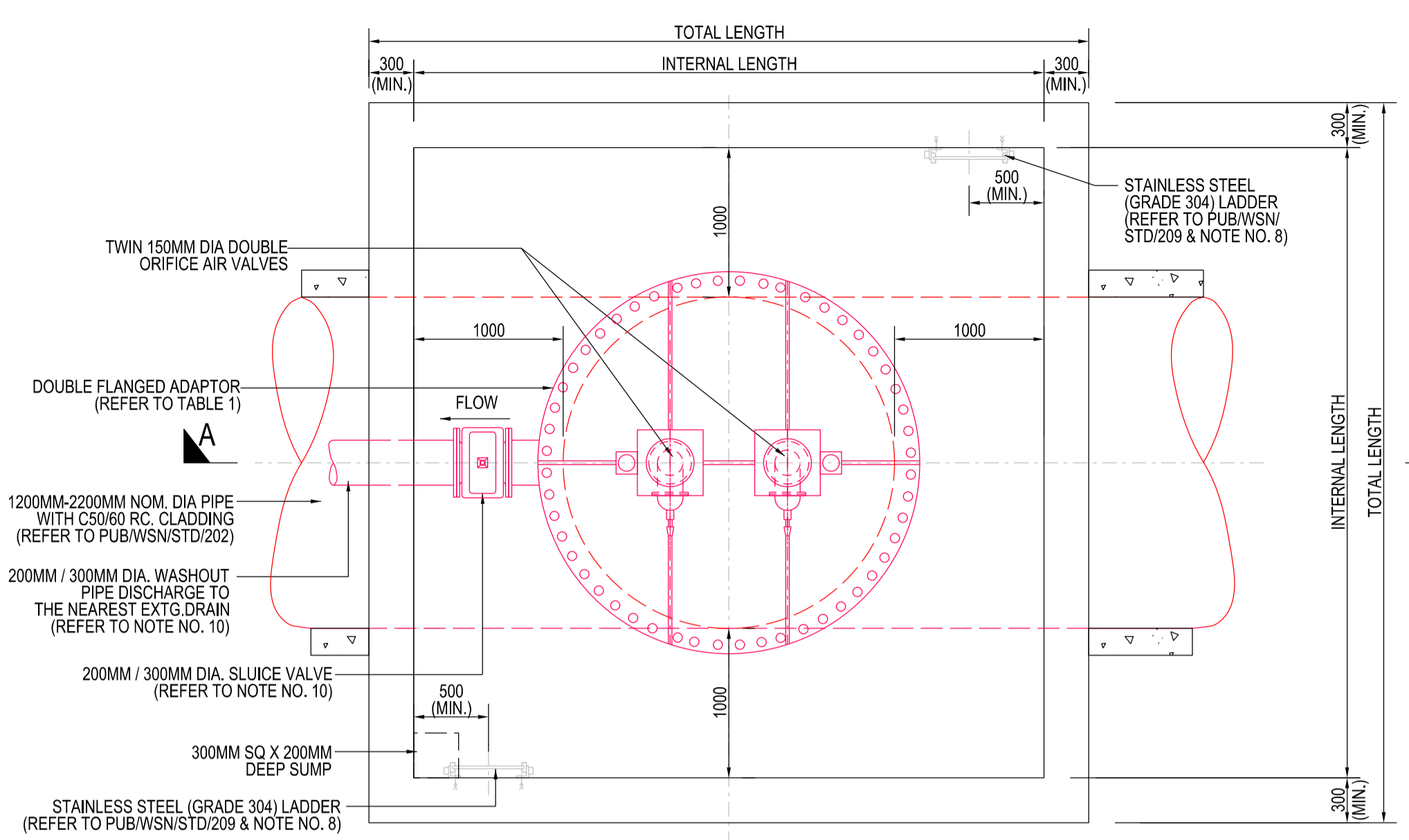


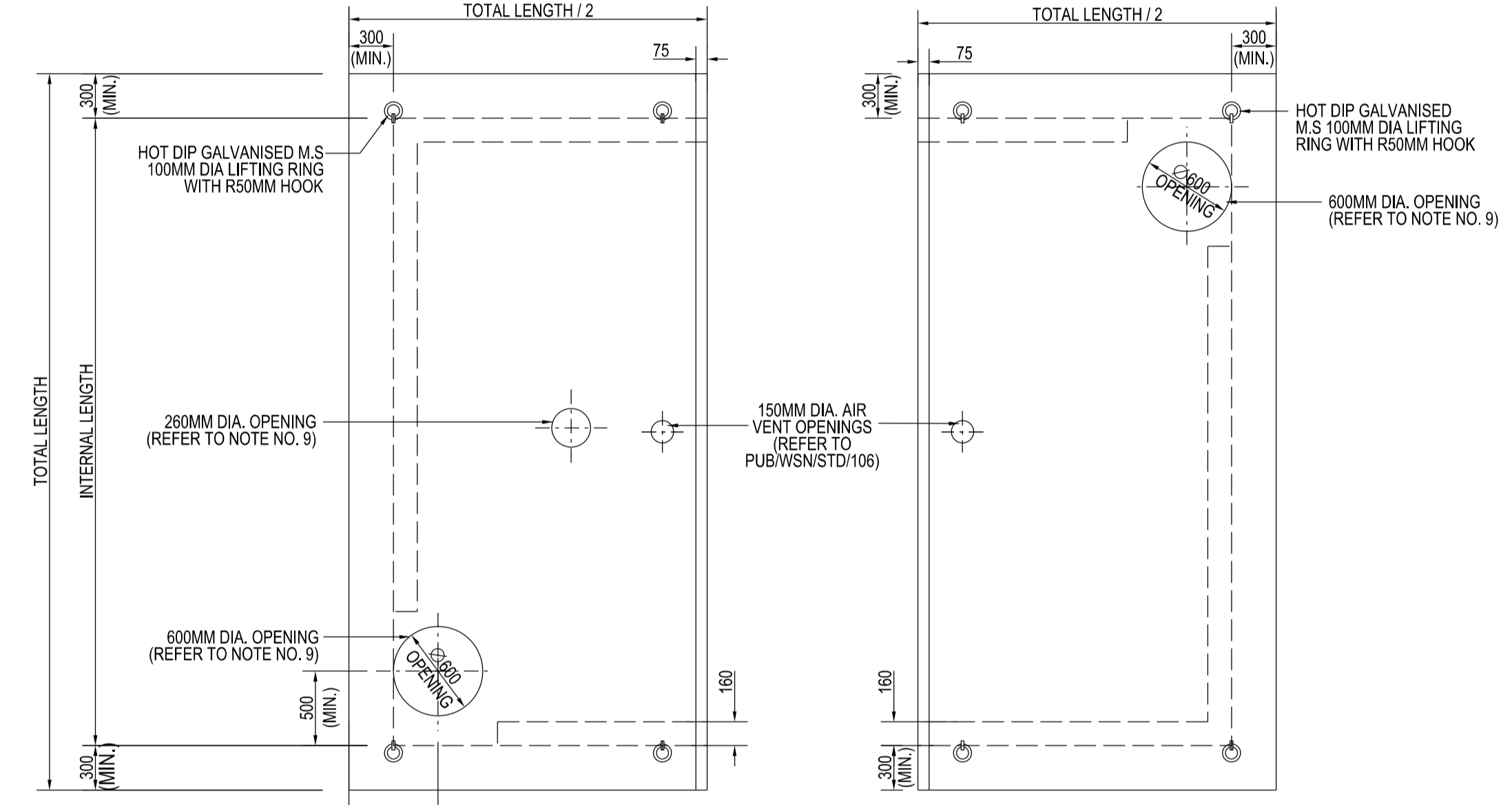
SECTION A-A  
SCALE 1:75



SECTION B-B  
SCALE 1:50



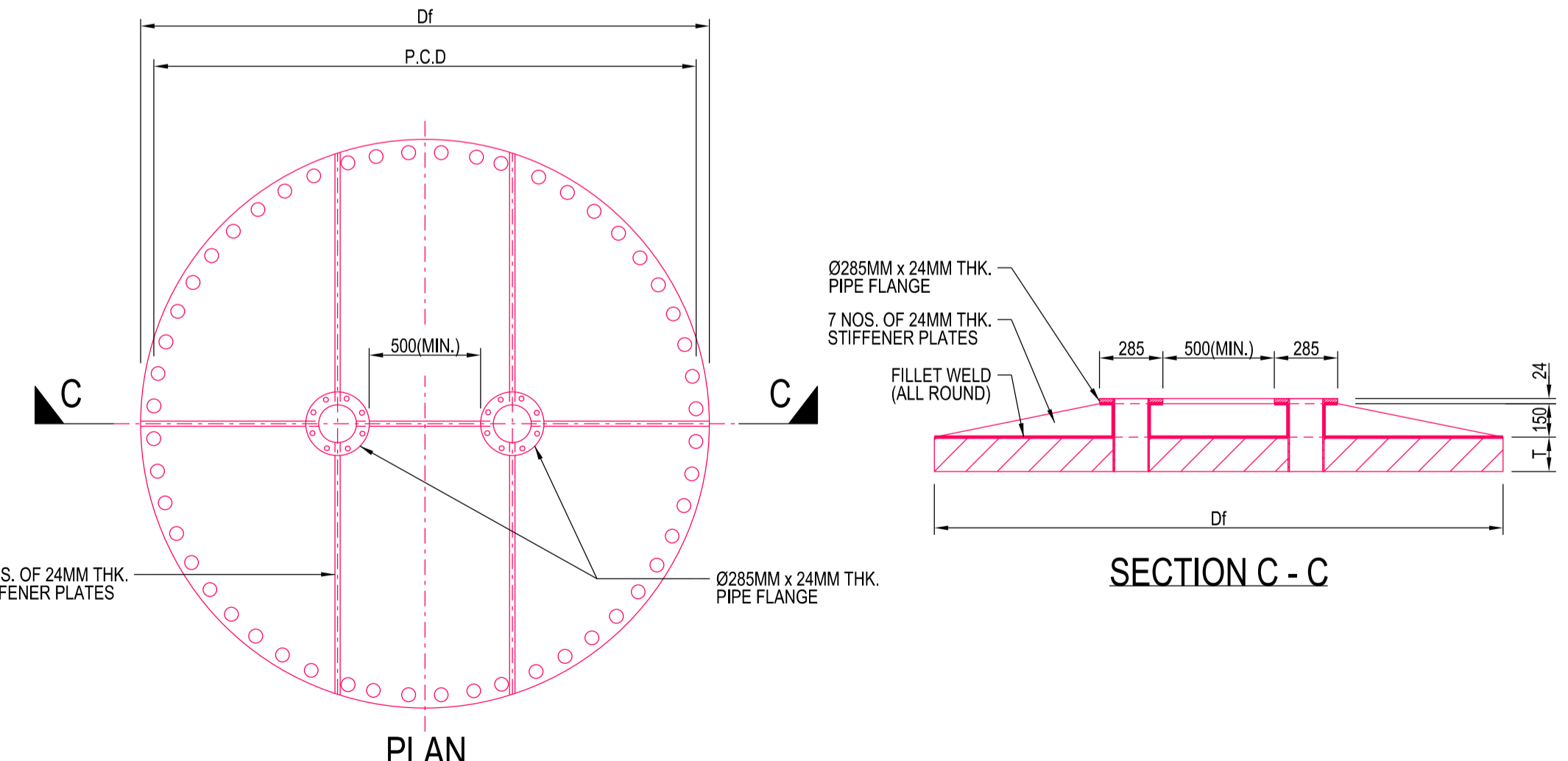
PLAN  
TYPICAL DEEP VERTICAL PIPE WITH INDIRECT WASHOUT AND  
AIR VALVE ASSEMBLY AT PIPE JACKING SHAFT (FOR 1600MM - 2200MM DIA. PIPE)  
SCALE 1:35



PLAN  
DETAILS OF PRECAST RC COVER SLAB  
(FOR 1600MM - 2200MM DIA. PIPE)  
SCALE 1:35

TABLE 1

PIPE NOMINAL DIA. (MM)	EXT. DIA. (D) (MM)	FLANGE DIA. (Df) (MM)	P.C.D. (MM)	NO. & SIZE OF BOLT HOLE	THICKNESS OF FLANGE (T) (MM)	BOLT DIA. (MM)
150	168.28	285	240	8 x 22	24	M20
1600	1549.4	1930	1820	40 x 56	115	M52
1800	1746.3	2130	2020	44 x 56	126	M52
2200	2216.2	2555	2440	52 x 62	154	M56



PLAN  
STANDARD PIPE FLANGES FOR 1600 x 150, 1800 x 150 AND 2200 x 150 DOUBLE FLANGE ADAPTOR  
SCALE 1:25

- NOTES:
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.
  - THE CONSULTANT SHALL REFER TO THE GENERAL NOTES IN DRAWING NO. PUB/WSN/001.
  - THIS DRAWING SHALL BE READ IN CONJUNCTION WITH PUB/WSN/STD/214.
  - ALL WELDING SHALL BE CARRIED OUT IN ACCORDANCE WITH SS EN 1011-1 AND SS EN 1011-2. ELECTRODES SHALL COMPLY WITH BS639.
  - THE THICKNESS OF THE EXTERNAL RC. WALL CHAMBERS INCLUDING RC. HAUNCHING SHALL BE DESIGNED AND ENDORSED BY A PROFESSIONAL ENGINEER (P.E) ENGAGED BY THE CONSULTANT. THE THICKNESS OF THE EXTERNAL RC WALL CHAMBER SHALL BE MINIMUM 500MM.
  - CONCRETE AROUND VERTICAL PIPE ASSEMBLY AND CHAMBERS SHALL BE GRADE C50/60.
  - THE CONSULTANT'S P.E. SHALL UNDERTAKE THE DETAILED DESIGN OF THE CHAMBER AND SUBMIT (TOGETHER WITH THE ACCREDITED CHECKER APPOINTED BY THE BOARD) TO SUPERINTENDING OFFICER (S.O) AND BCA FOR APPROVAL.
  - SAFETY CAGE SHALL BE INSTALLED FOR ALL STAINLESS STEEL LADDER (GRADE 304) EXCEEDING 3M HEIGHT. (REFER TO PUB/WSN/STD/209).
  - ALL MANHOLE COVERS AND FRAME SHALL BE OF HEAVY DUTY DUCTILE IRON TO GRADE A1 UNDER SS30.
  - USE STANDARD HEAVY DUTY DUCTILE IRON (GRADE A1) DOUBLE TRIANGULAR MANHOLE COVER AND FRAME (REFER TO PUB/WSN/STD/204) FOR 600MM DIA. OPENING.
  - USE STANDARD HEAVY DUTY DUCTILE IRON (GRADE A1) MANHOLE COVER AND FRAME FOR VALVE SPINDLE (REFER TO PUB/WSN/STD/219) FOR 260MM DIA. OPENING.
  - DIAMETER OF WASHOUT AND ASSOCIATED PIPES:  
200mm FOR 700-1600MM DIA MAIN PIPE  
300mm FOR 1800-2200MM DIA MAIN PIPE
  - PLEASE REFER TO DRAWING NO. PUB/WSN/STD/214 FOR THE DIMENSIONS OF THE JACKING PIPE AND VERTICAL RISER PIPE.
  - THE CONSULTANT'S P.E. SHALL UNDERTAKE GEOTECHNICAL ANALYSIS TO ASSESS THE ALLOWABLE BEARING CAPACITY OF THE SOIL AND EXPECTED SETTLEMENT OF THE CHAMBER AND SUBMIT A REPORT TO THE BOARD. IN ADDITION, THE CONTRACTOR SHALL UNDERTAKE PLATE LOAD TESTS TO VERIFY THE IN-SITU SOIL BEARING CAPACITY. IN ACCORDANCE WITH BS EN ISO 22476-13. WHERE THE BEARING CAPACITY IS DEEMED INADEQUATE AND/OR SETTLEMENT IS EXCESSIVE, THE CHAMBER SHALL BE SUPPORTED ON PILES. THE CONSULTANT SHALL DESIGN ALL PILING WORKS AND SUBMIT (IN CONJUNCTION WITH THE ACCREDITED CHECKER APPOINTED BY THE BOARD), TO THE BUILDING AND CONSTRUCTION AUTHORITY (BCA) FOR APPROVAL.
  - THE CONSULTANT SHALL SIZE THE AIR VALVE ABOVE THE VERTICAL PIPE ASSEMBLY TAKING INTO CONSIDERATION THE PIPELINE PROFILE.

ISSUED: NOV 2020

SCALE

DRAWING NO.

LAST REVIEWED: AUG 2021

AS SHOWN

PUB/WSN/STD/116

TYPICAL DEEP VERTICAL PIPE WITH INDIRECT WASHOUT AND AIR VALVE ASSEMBLY