

THE UNITED REPUBLIC OF TANZANIA



PRESIDENT'S OFFICE
REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROPOSED STANDARD DRAWINGS FOR SCHOOL FACILITIES

Schedule of Materials, Labour & Drawings for 80 Pupils Toilet
Block (4 stances) for Girls – Wet area.

PROJECT AREA

TANZANIA MAINLAND

Ministry of Education, Science and
Technology,

Government City - Mtumba,
AFYA -Street,
P. O. Box 10,
40479 DODOMA.

President's Office,
Regional Administration,
& Local Government
Government City - Mtumba
TAMISEMI Street,
P. O. Box 1923,
41185 DODOMA.

Schedule of Material

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	<u>MATERIALS</u>				
A	SUB-STRUCTURE -PROVISIONAL				
1	<u>Strip Foundation - Grade 15 Plain</u>				
	Aggregate (3/4")	4	M ³		
	Sand	2	M ³		
	Cement-50kgs (42.5)	17	Bags		
2	<u>Foundation Walls</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	290	No		
	Sand	2	M ³		
	Cement -50kgs (42.5)	6	Bags		
3	<u>Moram, Hardcore & Site sterilization</u>				
	Moram (4.5m ³ lorry)	1	Trips		
	Hardcore (4.5m ³ lorry)	1	Trips		
	Sand	2	M ³		
	Adrian 0.5% solution or equal 500mls	1	Bottle		
4	<u>Oversite Concrete (100mm thick - 20 grade) & Ground Beam - 20 grade, columns and Ramp</u>				
	DPM	25	M ²		
	Cement -50kgs (42.5)	15	Bags		
	Aggregates (1/2")	3	M ³		
	Sand	2	M ³		
	Reinforcement - 12mm diameter high tensile	13	PC'S		
	Reinforcement - 8mm diameter	10	PC'S		
	Binding Wire	3	Kg		
	A252 Mesh 200 x200x6.16kg/m2	1	PC'S		
	Timber 1" X 10 " (3.6m long)	6	PC'S		
	Timber 2" X 2"	3	PC'S		
	Nails-4"	3	Kgs		
	Nails-3"	3	Kgs		
	Supporting props	2	PC'S		
	SUB-TOTAL SUBSTRUCTURE				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
B.	SUPERSTRUCTURE				
1	<u>Walls & Ring beam & Columns</u>				
	6" Cement & Sand block - Minimum Strength 3.5 MPa	800	No		
	Cement & Sand Perforated blocks	0	No		
	DPC 25m long x 1m wide)	7	M		
	Sand	5	M ³		
	Cement-50kgs (42.5)	20	Bags		
	Aggregates (1/2")	2	M ³		
	Reinforcement - 12mm diameter high tensile	8	PC'S		
	Reinforcement - 8mm diameter	4	PC'S		
	Binding Wire	2	kg		
	A252 Mesh 200 x200x6.16kg	0	PC'S		
	Timber 1" X 10" to Sides (3.6m long)	4	PC'S		
	Timber 1" X 6" (Plates)	1	PC'S		
	Timber 2" X 2"	2	PC'S		
	Supporting Props	3	PC'S		
	20mm styrofoam comprehensive materials	0	PC'S		
	SUB-TOTAL SUPER STRUCTURE				
C.	ROOF STRUCTURE & COVERING				
1	<u>Roof Structure - Provisional (3.6m long)</u>				
	Timber 2 " X 3" Purlins	5	PC'S		
	Timber 2" X 4" Wall plate,Rafter	6	PC'S		
	Fascia board 1" X 8"	4	PC'S		
	Nails -5"	3	Kgs		
	Nails -4"	3	Kgs		
	Nails -3"	1	Kgs		
	<u>NOTE:</u> The above softwood timber structure should be pressure impregnated treated				
2	<u>Roof Covering</u>				
	28G IT5 resincoated sheet 3m long	8	pcs		
	Roofing Nails	1	Packet		
	TO COLLECTION				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
3	<u>Gutter's</u>				
	Upvc 100mm half round (6m long)-5"	2	PC'S		
	Upvc 75mm diameter down pipe; Class B	1	PC'S		
	PVC outlet	1	PC'S		
	PVC bend 90'	1	PC'S		
	PVC bend 45'	1	PC'S		
	Gutter support bracket	4	PC'S		
	Gutter Clamp 3"	3	PC'S		
	Connector	1	PC'S		
	Connector outer	1	PC'S		
	Corner Inner	1	PC'S		
	SUB-TOTAL ROOF STRUCTURE & COVERING				
D.	DOOR				
1	<u>40mm thick hardwood (mninga) or equal and aproved paneled door shutter</u>				
	920 x 2100mm high	1	PC'S		
	820 x 2100mm high	1	PC'S		
	720 x 2100mm high	5	PC'S		
2	<u>Frames (hardwood),Varnish, Glass & Burglar bar</u>				
	1000 x 2500 mm high frame	1	PC'S		
	900 x 2200 mm high frame	1	PC'S		
	800 x 2200 mm high frame	5	PC'S		
	Brush 3"	1	Pcs		
	Sand paper (msasa) No.80	1	LM		
	Clear Varnish - 4Litres	1	TIN		
	Thinner for Varnish -4Litres	1	Litres		
	Grill with 38mm x 4mm flat bars, 25mm x 25mm square pipespainted with red oxide				
	1000 x 1500mm high	1	No		
	1200 x 750mm high	1	No		
	1350 X 750mm	1	No		
	950 x 750mm	4	No		
3	<u>IronMongerries - ref Union</u>				
	Barrel bolt with pad lock	7	No		
	Flush bolt	7	No		
	Brass hinges - 100mm	11	Pairs		
	SUB-TOTAL FOR DOORS				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
E.	FINISHING				
1	<u>Floor finishing -</u>				
	Bedding/Backing; cement sand and Chipping (1:2:2); to steel finishing				
	Sand	1	M ³		
	Cement-50kgs (42.5)	3	Bags		
	300 x 300mm Non slippery Porcelain floor tiles (1.35 sam per Box)	7	Box		
2	<u>Wall Finishing</u>				
	Sand	3	M ³		
	Cement-50kgs	4	Bags		
	250 X 400x 8mm Wall tiles (1.5 Sqm/Box)	21	Box		
	Wall Puty	4	Bags		
	SUB-TOTAL FOR FINISHING				
F.	PAINTING & DECORATION				
	Emulsion Paint - 20 LTRS	2	buckets		
	Weather guard Paint - 10 LTRS	1	buckets		
	Washable paint -10 LTRS	1	buckets		
	Solvent - 5LTRS	1	TIN		
	Brush 3"	1	Pcs		
	Roller	1	Pcs		
	Gloss paint-4LTR	1	TIN		
	Bitumen paint - 4Litres	1	TIN		
	SUB-TOTAL FOR PAINTING&DECORATION				
G.	PLUMBING & SANITARY INSTALLATION-PROVISIONAL				
	Semi pedestal Hand washing basin complete	No	1		
	WC Asian type complete with p-trap 9 liters single flush cistern	No	5		
	Shataf stainless steel 304, 1000mm long braided hose .	No	5		
	Angle Valve chrome plated brass	No	12		
	HWB PVC-U trap 1.1/4" Falcon	No	1		
	Looking mirror (600mm by 800mm by 6mm)	No	5		
	PVC-U Floor drainer/Trap 110mm	No	1		
	Strainer albeetony/venus	No	1		
	Ceramic toilet paper holder	No	5		
	Toilet brush holder	No	5		
	Complete set of walfare for person with disability, Western WC, stainless steel 304 grab bar, stainless steel 304 folding hand rail, HWB, Pillar tap, Floor drainer and bib cork	No	1		

ITEM	DESCRIPTION OF WORKS	UNIT	QTY	PRICE	AMOUNT
	<u>PIPES WORK IN BUILDING</u>				
	A: SUPPLY PIPE PN 16				
	PPR/IPS pipes class B argentina 3/4"	Pcs	5		
	PPR/IPS socket (20Ø) 3/4"	No	5		
	PPR/IPS elbow (20Ø) 3/4"	No	35		
	PPR/IPS tee (20Ø) 3/4"	No	10		
	PPR/IPS niple (20Ø) 3/4"	No	6		
	PPR/IPS reducing bush (20Ø) 3/4" to 1/2"(15Ø)	No	18		
	PPR/IPS pipes class B argentina 1"(32Ø)	Pcs	2		
	PPR/IPS socket 1"(32Ø)	No	2		
	PPR/IPS elbow 1"(32Ø)	No	4		
	PPR/IPS tee 1"(32Ø)	No	6		
	PPR/IPS niple 1"(32Ø)	No	2		
	PPR/IPS reducing bush (32Ø) 1" to 3/4"(20Ø)	No	6		
	PPR/IPS pipes class B argentina 1 1/2"(50Ø)	Pcs	2		
	PPR/IPS socket 1 1/2"(50Ø)	No	6		
	PPR/IPS elbow 1 1/2"(50Ø)	No	4		
	PPR/IPS tee 1 1/2"(50Ø)	No	4		
	PPR/IPS niple 1 1/2"(50Ø)	No	4		
	PPR/IPS reducing bush (50Ø) 1 1/2" to 1"(32Ø)	No	9		
	B: SOIL DRAINAGE PVC-U PN6 PIPES AND FITINGS -				
	PVC-U pipe class B 1.1/4"	Pcs	2		
	PVC-U elbow 1.1/4", 135deg	No	3		
	PVC-U elbow 1.1/4", 90 deg	No	4		
	PVC-U Ytee 1.1/4"	No	2		
	PVC-U pipe class B 4"	Pcs	2		
	PVC-U elbow 4"	No	9		
	PVC-U Ytee 4"	No	2		
	PVC-U WYES 4"	No	1		
	PVC-U Tangit 1000g	No	2		
	P-Trap ERA 4"	No	6		
	PE 100 Gully trap 4",ERA	No	3		

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
	EXTERNAL WORK				
	A: Drainage works				
	PVC-U pipe class B plascon 4" 6m	Pcs	6		
	ManHole cover 600mm x 600mm medium	No	7		
	Gully trap cover 300mm x 300mm medium	No	3		
	B: Water Supply Pipe HDPE, PE100				
	1.5" HDPE supply pipes Class C	m	12		
	HDPE bend 1.5"	No	2		
	HDPE Tee Polly to polly 1.5"	No	3		
	HDPE polly coupling 1.5"	No	4		
	1.25" HDPE supply pipes Class C	m	12		
	HDPE bend 1.25"	No	5		
	HDPE Male connector 1.25"	No	7		
	HDPE Tee Polly to polly 1.25"	No	7		
	HDPE polly coupling 1.25"	No	2		
	<u>VALVES AND CONTROLS</u>				
	Bib cork pex/martex 1/2" PN 16	No	8		
	Gate valve pex/martex 3/4" PN 16	No	7		
	Ball valve 1 1/4"	No	1		
	<u>WATER STORAGE TANK</u>				
	2,000litres water storage tank	No	1		
	1,000litres water storage tank	No	1		
	Tank connector 1"	No	2		
	Clamp 3"	1	PCS		
	SUB-TOTAL FOR PLUMBING & SANITARY INSTALLATION-				
H.	RISER FOR WATER TANK (3M HIGH)				
	6" Cement & sand block - Minimum strength 3.5 MPa	190	No		
	Cement-50kgs	8	Bags		
	Aggregates (1/2")	1	M3		
	Sand	3	M3		
	Reinforcement - 12mm diameter high tensile	4	Pcs		
	Binding Wire - 25kg	1	kg		
	Timber 1" X 10" to Sides (3.6m long)	6	Pcs		
	Nails-4"	1	kg		
	Nails-3"	1	kg		
	TOTAL; RISER FOR SIM TANK				

ITEM	DESCRIPTION	QTY	UNIT	PRICE-TZS	AMOUNT
J.	MANHOLE,GULLY TRAP, SEPTIC TANK, SOAK PIT.				
	MANHOLE:				
	Construct standard manhole size 600 x 600mm average depth 850mm deep;	No	4		
	GULLY TRAP				
	Construct a standard gully trap 300 × 300mm deep	No	3		
	SEPTIC TANK:				
	Construct septic tank overall internal dimensions; size 3300 x 2400x 3000mm.	No	1		
	SOAK PIT (S.P)				
	Construct Soak pit overall size 3000mm diameter x 3500mm high	No	1		
	TOTAL; MANHOLE,GULLY TRAP, SEPTIC TANK, SOAK PIT.				
K.	<u>INCINERATOR</u>				
	Fire brick 65 X 110X230mm	270	Nr.		
	Fire cement	9	Bag		
	Burnt brick 65 x 110x230mm	1,000	Nr.		
	Clay soil	2	M3		
	Sand	5	M ³		
	Cement-50kgs (42.5)	30	Bags		
	Agregates 1/2'	5	M3		
	Lime 25kg	3	Bags		
	450 x 200mm Peeping door mildsteel complete as per drawing	1	Nr.		
	Steel metal door size 800 x 600mm high ditto	1	Nr.		
	450 x 150mm mild steel pipe for Ashes filter ditto	1	Nr.		
	Mild steel Flue cover (Flexible openable)	1	Nr.		
	200mm diameter metal Chimney Pipe 7m high including cover	1	Nr.		
	SUB-TOTAL FOR INCINERATOR				

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	<u>SUMMARY</u>				AMOUNT TZS
	<u>4no stances toilets block - GIRLS</u>				
A.	SUB-STRUCTURE -PROVISIONAL				
B.	SUPERSTRUCTURE				
C.	ROOF STRUCTURE & COVERING				
D.	DOOR				
E.	FINISHING				
F.	PAINTING & DECORATION				
G.	PLUMBING WORK				
H.	RISER FOR WATER TANK				
J.	MANHOLE, GULLYTRAP,SEPTIC TANK AND SOAK PIT				
K.	INCINARATOR				
L.	ELECTRICAL INSTALLATIONS				
M.	HANDRAILS TO RAMP				
	TOTAL BUILDING MATERIALS CARRIED TO GENERAL SUMMARY				
	<u>ADD:</u>				
	LABOUR COST CARRIED TO GENERAL SUMMARY : (Improve and Fill the respective Labour form)				
	Note:				
	i Refer General Summary for: Preliminary, Transportation and Supervision Costs				
	ii. Preliminary cover the following item:				
	- Setting out working tools, Equipments, Temporary toilets, water for the works, Scaffolding,				
	- Power for the works, Security, store, Materials test, levelling, holdings and removal of rubbish.				
	iii. Supervision cost depend on guideline of the specific project				

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MINISTRY OF EDUCATION SCIENCE AND TECHNOLOGY

IN COLLABORATIONS WITH

PRESIDENT'S OFFICE, REGIONAL ADMINISTRATION AND LOCAL GOVERNMENT

PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS

Ministry of Education, Science and Technology
Government City-Mtumba,
Afya Street,
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40479 DODOMA

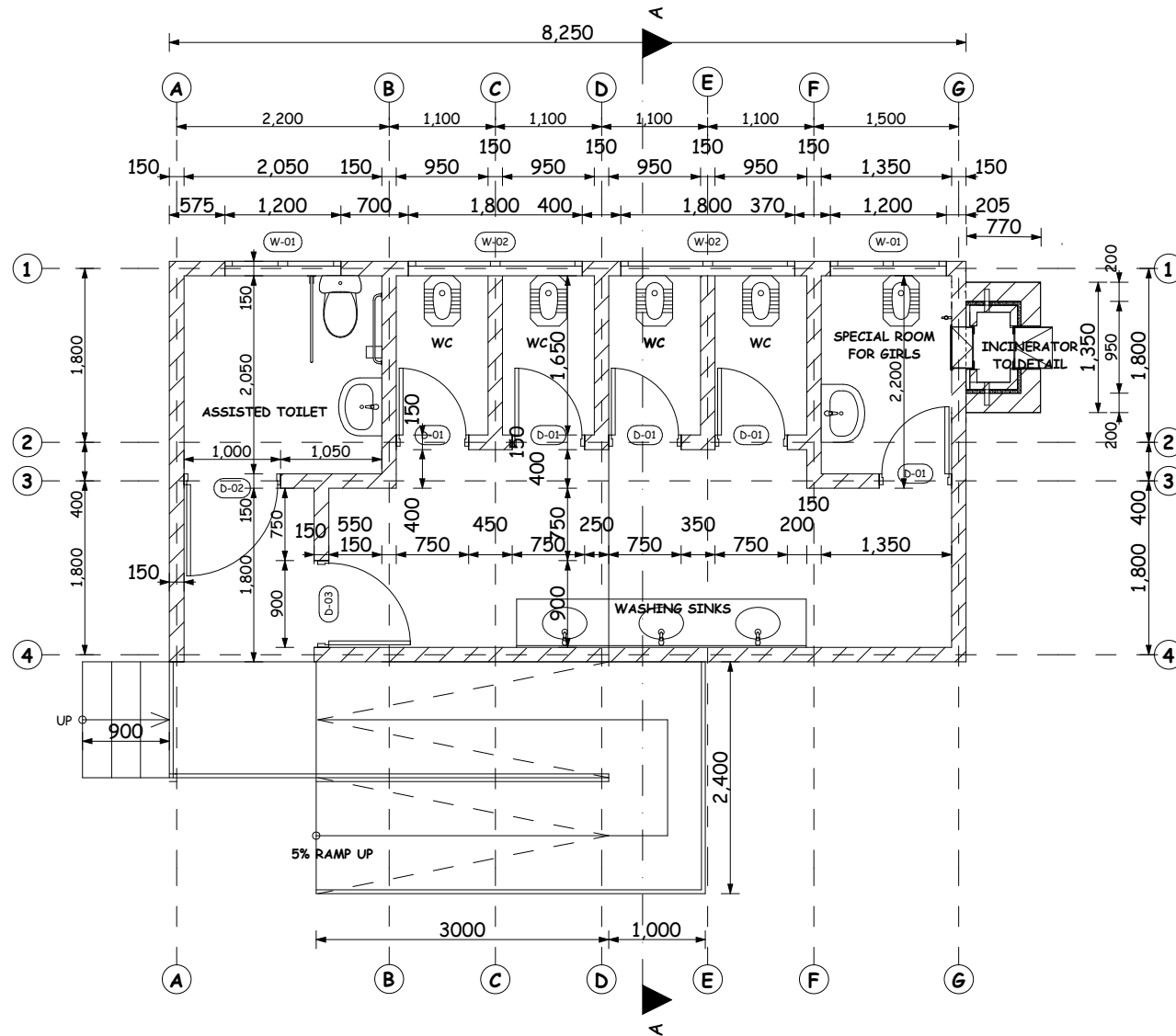
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JANUARY, 2023

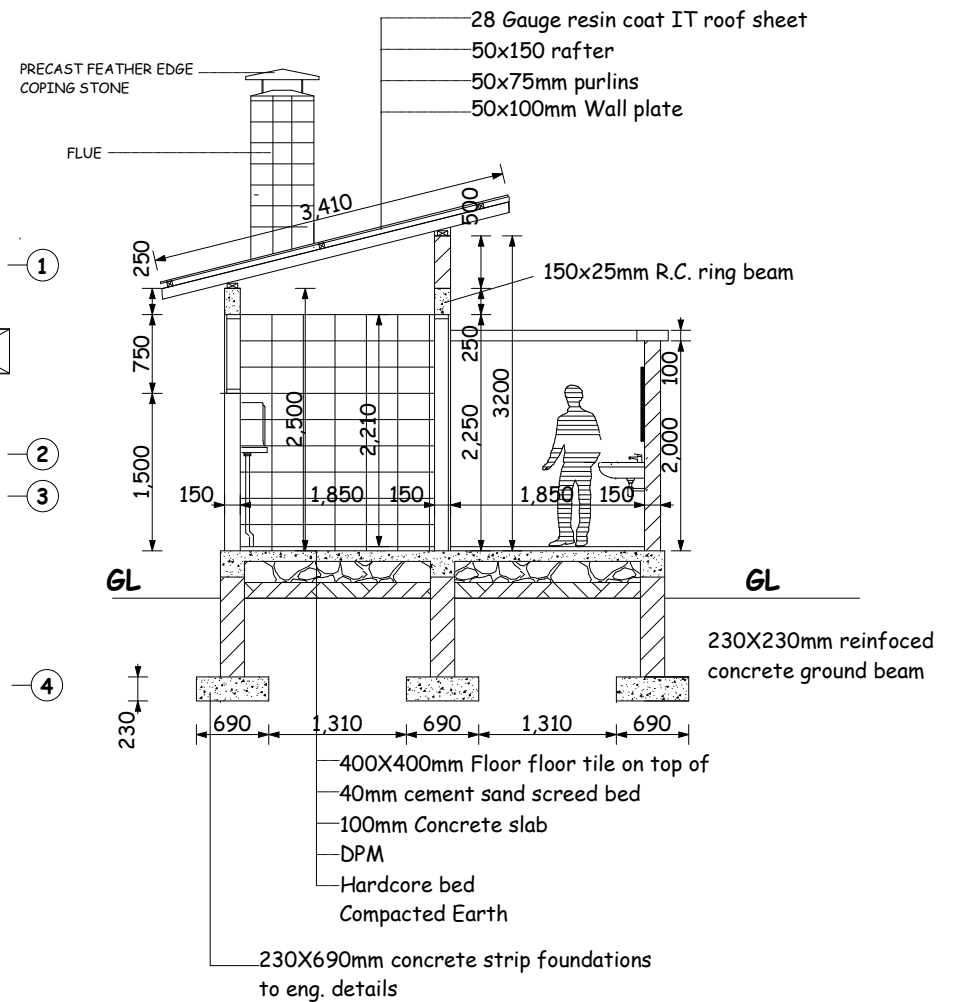
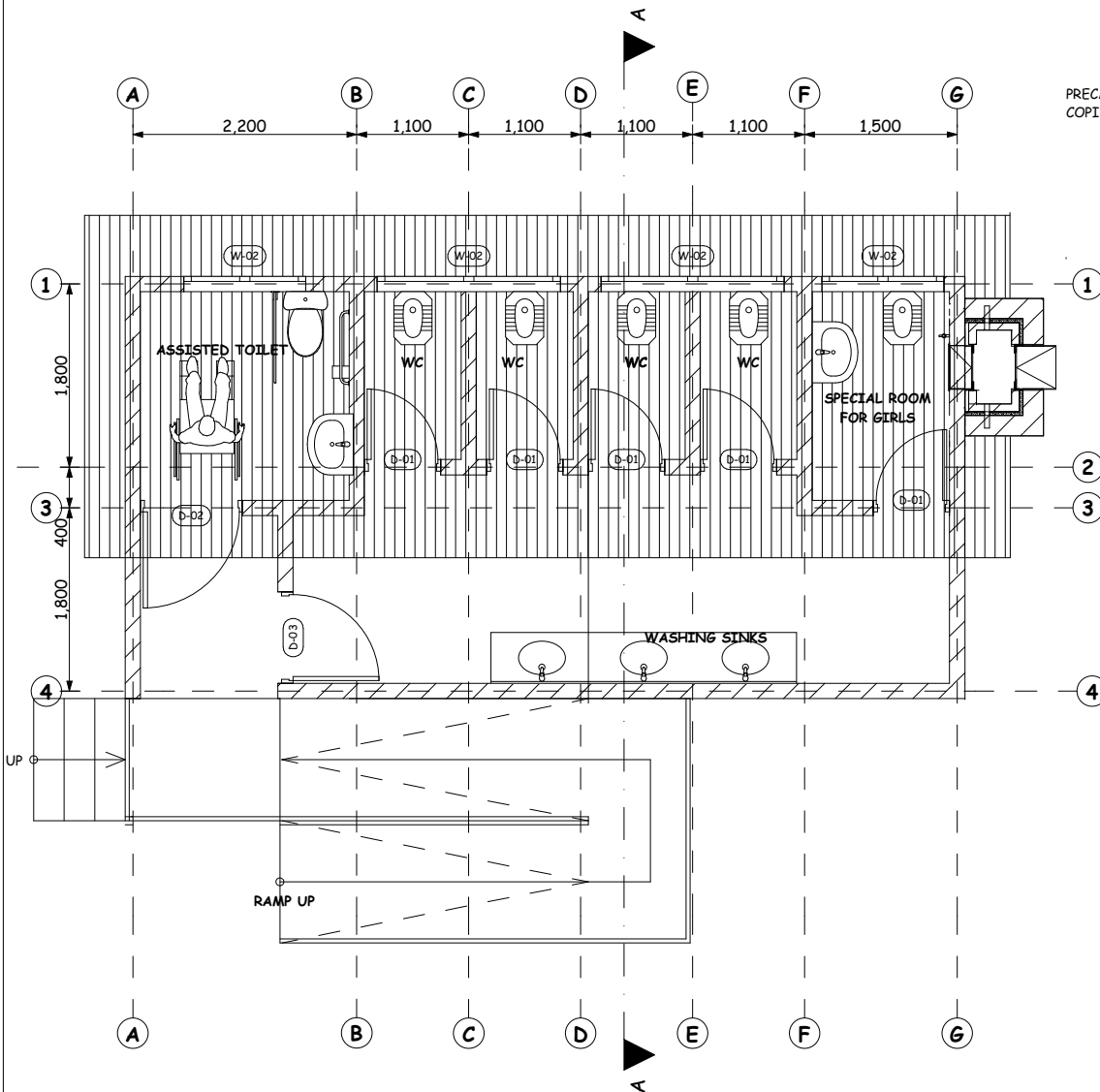
ARCHITECTURAL DRAWINGS

**TOILET BLOCKS - PIPED WATER AREA
80 GIRLS (4 STANCES) WITH FACILITY FOR DISABLED
AND SPECIAL ROOM**

WINDOW SCHEDULE		
WINDOW TYPE	HEIGHT X WIDTH	QUANTITY
W-01	750 X 1200	02
W-02	750 X 1800	02
DOOR SCHEDULE		
DOOR TYPE	HEIGHT X WIDTH	QUANTITY
D-01	2100 X 750	05
D-02	2100 X 1000	01
D-03	2100 X 900	01

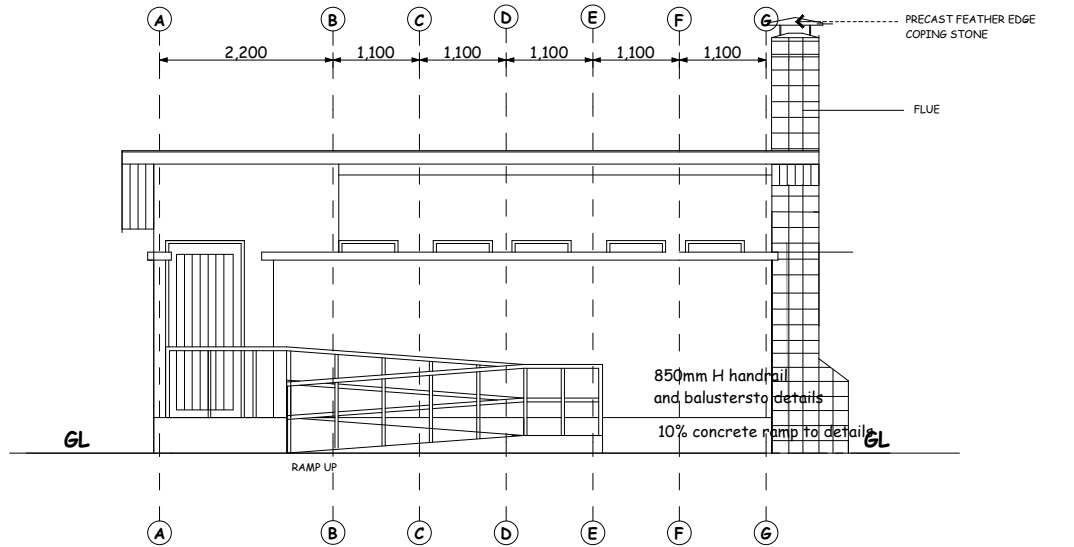


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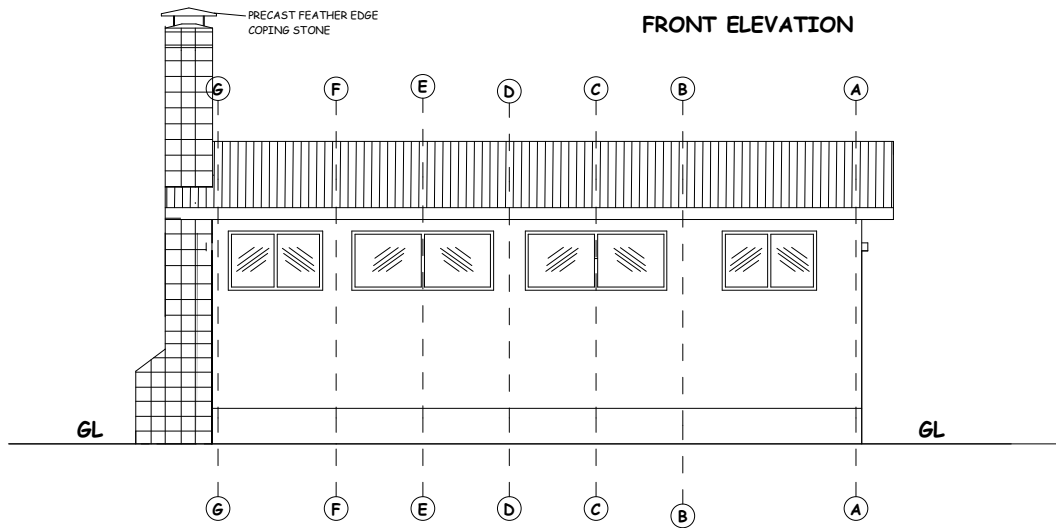


TYPICAL SECTION

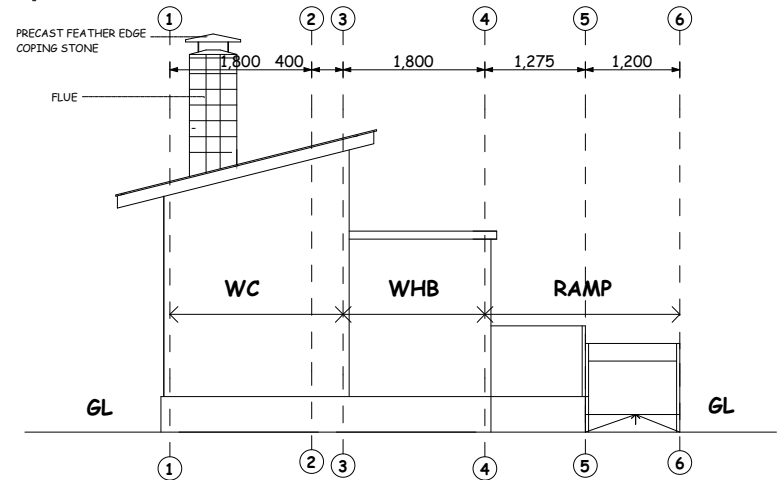
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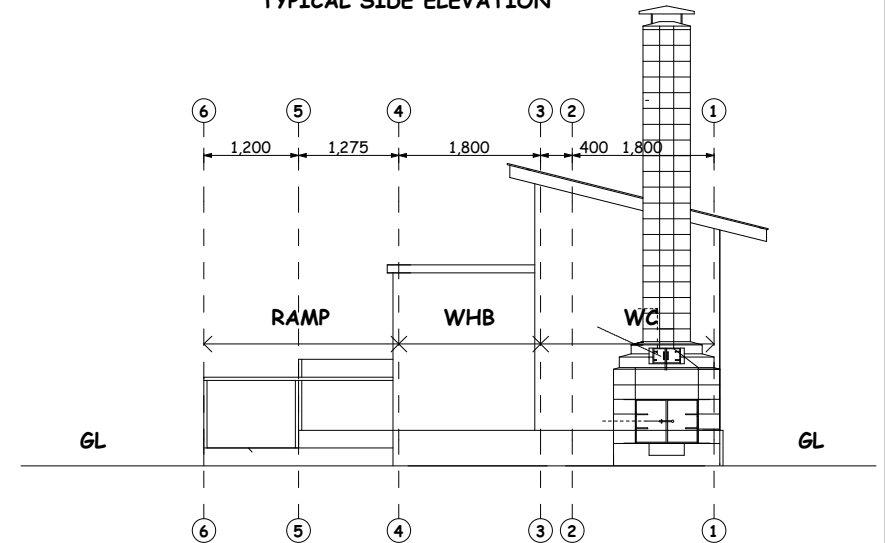
FRONT ELEVATION



REAR ELEVATION



TYPICAL SIDE ELEVATION



TYPICAL SIDE ELEVATION

REVISED 1

LIST OF DRAWINGS

DRAWING NO.

DESCRIPTION,

BP/PL/TLT/01

LEGEND AND NOTES

BP/PL/TLT/02

WATER SUPPLY SYSTEM

BP/PL/TLT/03

RAIN WATER HARVESTING SYSTEM

BP/PL/TLT/04

RAISED WATER TANK

BP/PL/TLT/05

WASTE WATER DRAINAGE SYSTEM

BP/PL/TLT/06

SEPTIC TANK AND SOAK PIT DETAILS

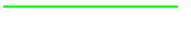
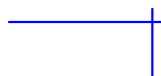
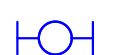
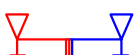
BP/PL/TLT/07

MANHOLE DETAILS

BP/PL/TLT/08

PART PLAN AND SECTION DETAILS

LEGEND

-  Cold Water supply pipes
-  Sanitary drainage pipes
-  Hot water supply pipes
-  Vent pipe
-  Gate valve
-  Check valve
-  Water meter
-  Hand operated angle valve
-  Flexible pipe
-  Hose bib
-  Straight tee
-  90° elbow
-  elbow going downwards
-  elbow going upwards
-  tee going upwards
-  tee going downwards
-  Direction of water flow
-  Shower mixer
-  Wall mounted electric water heater

NOTE
All ppr-pipes exposed to sunlight should be insulated

NOTE
ALL DIMENSIONS ARE IN MILLIMETRES
ALL PIPE DIAMETERS ARE EXTERNAL DIAMETERS

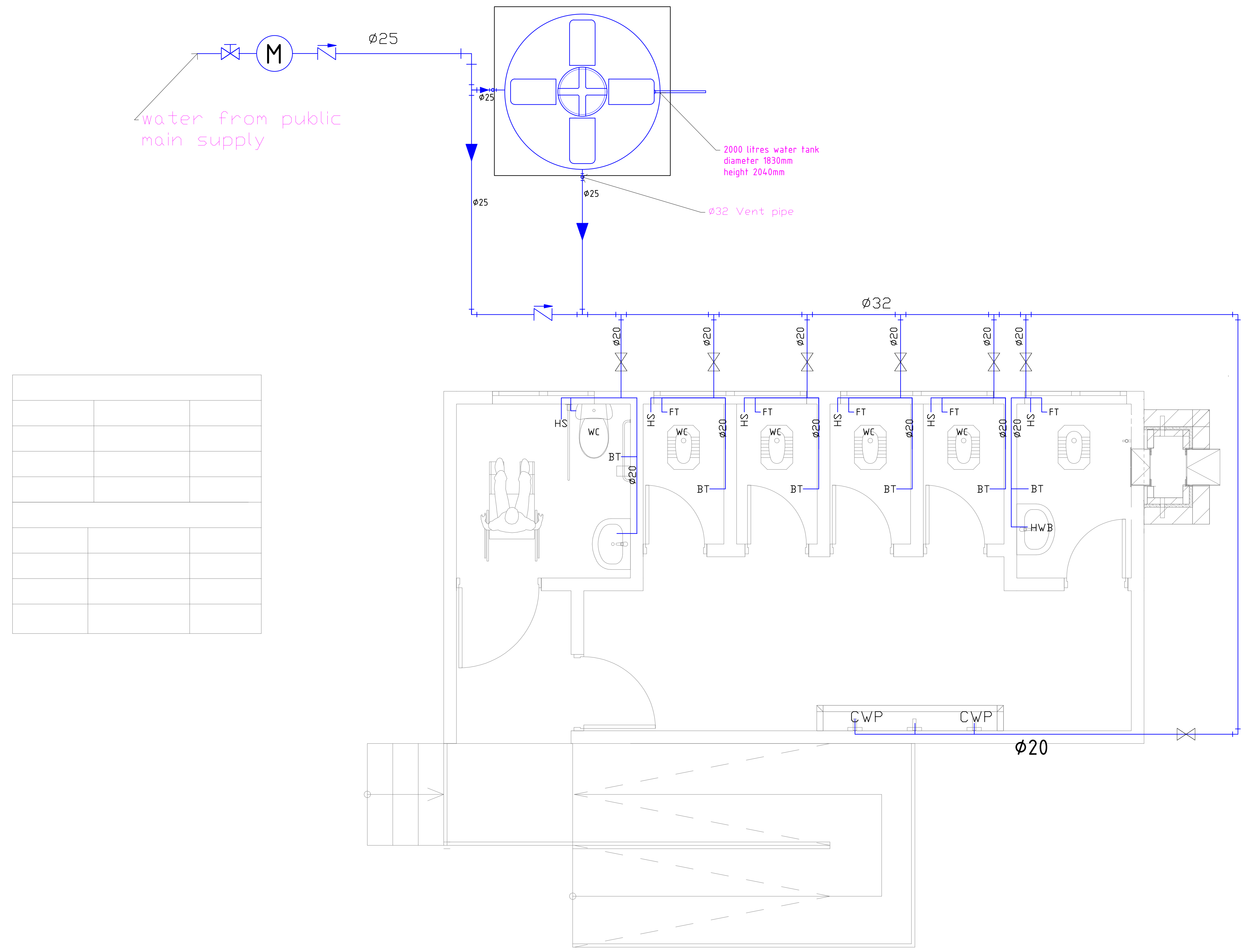
- HWB- hand wash basin
- HB- Hose Bib
- WC- Water closet
- UR- Urinals
- HS- Handspray
- SHW- Shower tray
- WH- Electric water heater
- GT- Gully trap
- IC- Inspection chamber
- IL- Invert level
- FD- Floor drain
- VP- Vent pipe
- CWP- Cold water provision
- WWP- Waste water provision

NOTE:
ALL SANITARY APPLIANCES SHOULD BE CONNECTED TO THE WATER SUPPLY PIPE THROUGH AN ANGLE VALVE

NOTE:
ALL PIPES DIAMETER SPECIFIED ARE EXTERNAL DIAMETRES AND HAVE BEEN SPECIFIED ACCORDING TO ISO 4427, THESE PIPES ARE PPR-PIPES WITH PN1.6

Notes

1. Pipe dimensions are in mm internal diameter (DN).
2. All internal water supply pipes and riser shall be embedded in walls/floor as shown on the drawings
3. All internal water supply pipes shall be in PPR (Fusion) and external pipe should be HDPE
4. All wastewater pipes shall be of uPVC class "B" embedded to wall/concrete floor where applicable except for vent pipes
5. All drains pipes passing under building or drive way should be incased in 150mm concrete surrounding
6. Manhole cover and Gully trap covers in walking areas to be air tight and their top finishing to match with their surroundings otherwise mahole to be cast iron medium duty
7. Slope of horizontal wastewater pipes from appliances should not exceed 1:40
8. Slopes of horizontal wastewater pipes from GT to MH or MH to MH should not exceed1:100
9. Slopes of storm water drainage should not exceed 1%
10. All work to be carried out in accordance with all rellevant acts, regulators, statutory authority requirements ans best practices
11. All relevant details, level dimensions must be checked onsite. Any discepancies must be reported for approval prior to implementation
- 12.The design including details must be coordinated with other designs(Structural, PLhitectural and other services) prior to implementation
13. ALL LABORATORY WASTE PIPES ARE VULCATHENE PIPES
14. These drawings must be used in conjunction with PLhitectural drawings for dimension reference
15. Site information must be analysed before use of these drawings

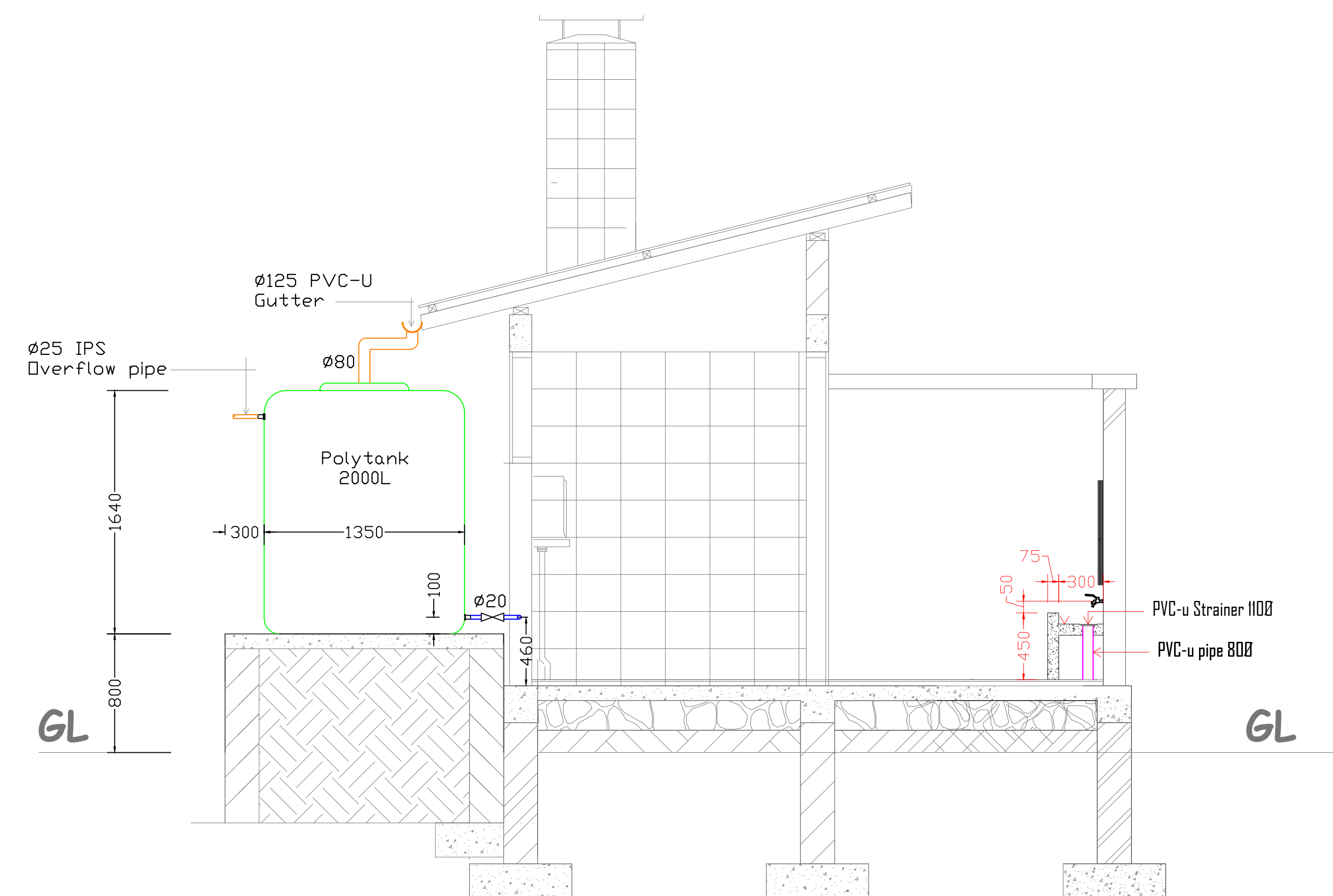
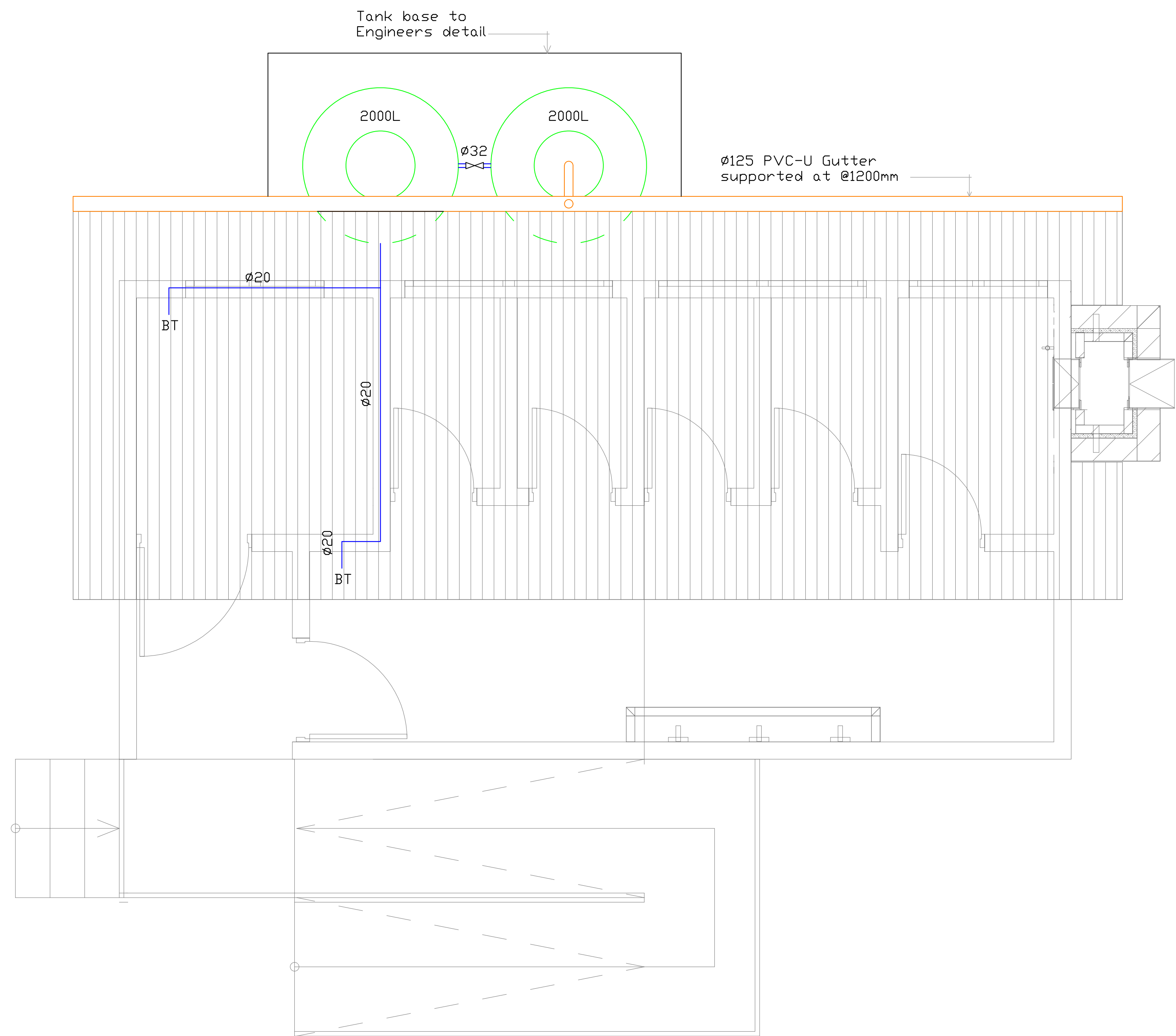


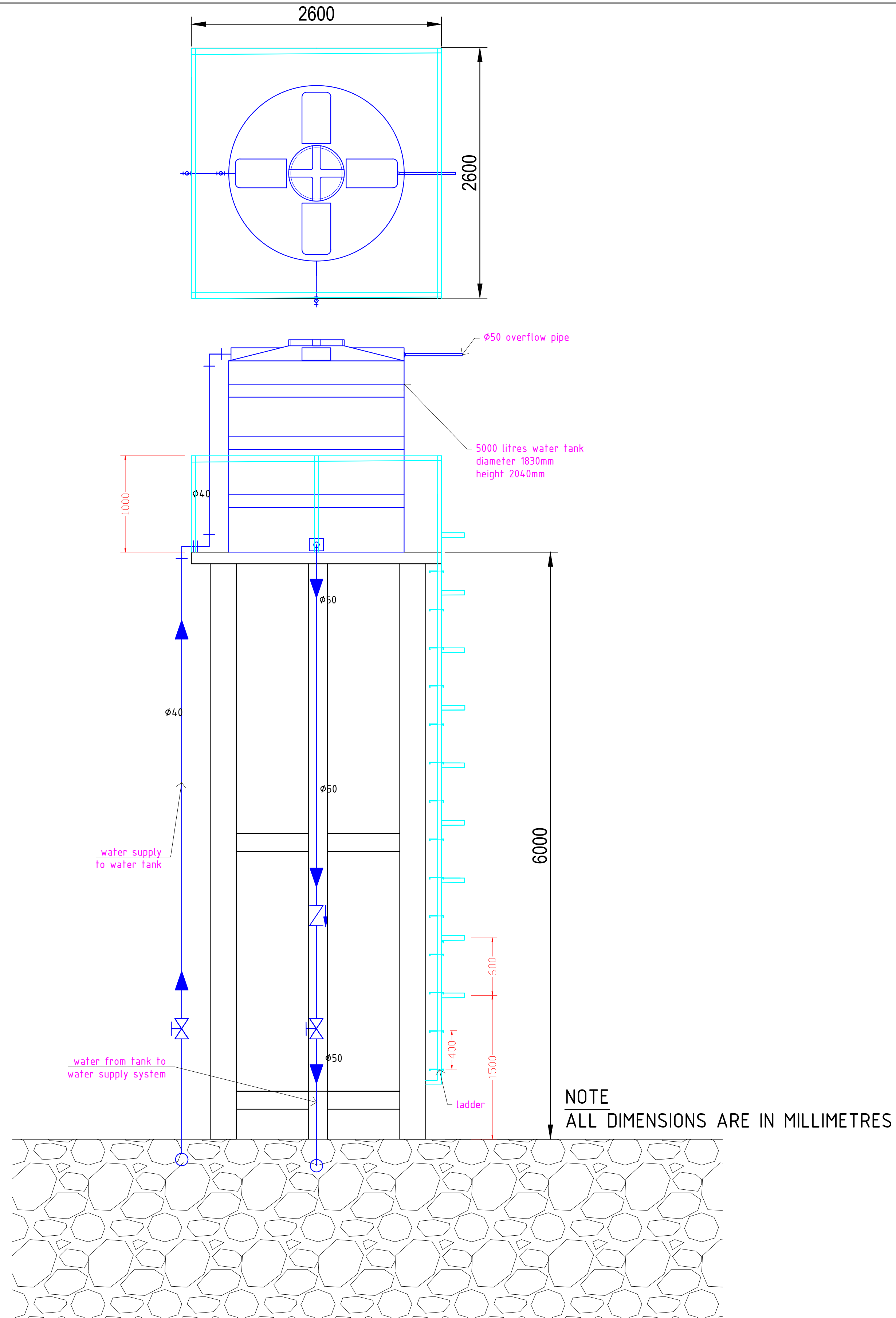
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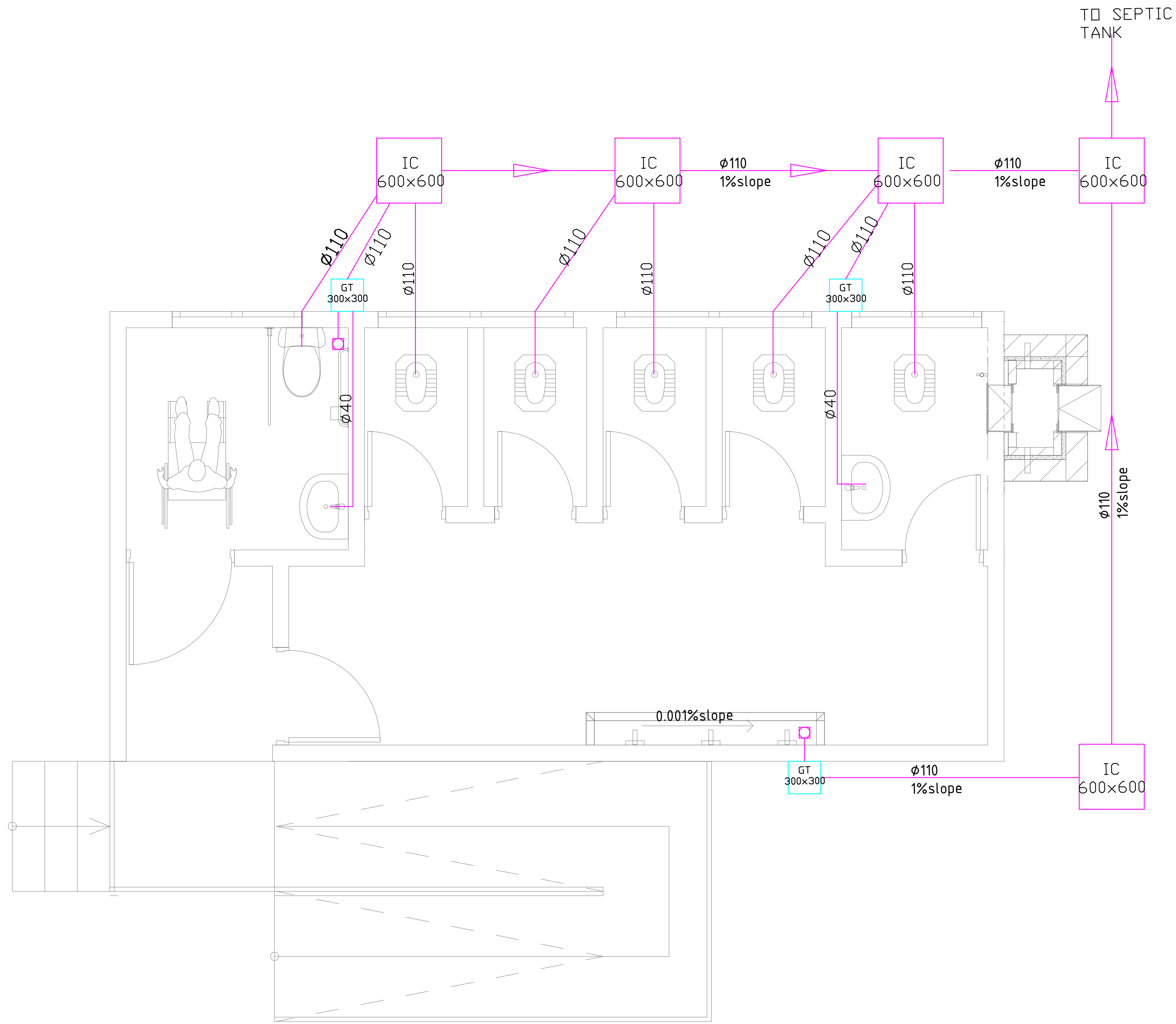
PROVISION OF PHYSICAL FACILITIES IN PRIMARY SCHOOLS

DRAWING TITLE
TOILET FOR 80 GIRLS WITH FACILITY FOR DISABLED
PIPED WATER AREA - WATER SUPPLY SYSTEM
DRAWING NO. BP/PL/TLT/02

DRAWN BY NSM
CHECKED BY I.A.S.
SCALE 1:200
DEC,2022







NOTES

- A SEPTIC TANK
1. THE DEPTH OF SEPTIC TANKS GIVEN IN TABLE 1 IS THE DEPTH BELOW FULL SUPPLY LEVEL (EXCLUDING FREE BOARD).
2. SEPTIC TANKS MUST NOT BE CONSTRUCTED LESS THAN A DISTANCE OF 6m FROM THE NEAREST BUILDING & MUST BE VENTED BACK THROUGH INCOMING DRAIN BY PROVIDING WITH STACK, VENT OR SOIL CUMPIPE RISING OVER THE EAVES AND DULY FITTED WITH MOSQUITO PROOFED SCREENS ETC.
3. SEPTIC TANKS MUST BE CONSTRUCTED WATER PROOFED BY ADDING 'PUDD' OR SOME OTHER WATER PROOFING AGENT OF APPROVED MAKE IN ALL MASS CONCRETE AND RENDERING.
- B PERCOLATION FACTOR
- IT IS THE TIME (IN MINUTES) TAKEN BY CLEAR WATER FOR SEEPING INTO A CERTAIN SOIL THROUGH A DEPTH OF ONE CENTIMETER.
- TO ASCERTAIN PERCOLATION FACTOR-
1. DIG A HOLE ABOUT 30x30cm SIZE TO THE REQUIRED DEPTH OF TRENCH.
2. KEEP THE HOLE FILLED WITH CLEAR WATER FOR FOUR HOURS SO AS TO SATURATE THE SURROUNDING SOIL.
3. POUR IN CLEAR WATER TO FILL THE HOLE TO A DEPTH ABOUT 20cm.
4. NOTE THE TIME TAKEN BY WATER TO SOAKAWAY.
5. TO CALCULATE THE PERCOLATION FACTOR DIVIDE THE TIME PERIOD (IN MINUTES) BY THE DEPTH OF WATER (IN cm).
- EXAMPLE: 20cm OF WATER TAKES 70 MINUTES TO DISSAPPEAR, THEREFORE,THE SOAKAGE FACTOR = 70/20= 3.5
- C GENERAL NOTES
1. ALL DIMENTIONS ARE IN METERS EXCEPT WHERE MENTIONED OTHERWISE.
2. ALL HOUSE HOLD AND SOIL WASTES ARE TO BE TAKEN TO SEPTIC TANKS WHERE CONNECTIONS TO MAIN SEWERS HAVE BEEN PLANNED NORMALLY THE SOIL WASTES, ONLY ARE TAKEN BY THE SEPTIC TANKS EXCEPT IN THE CASES AS ABOVE WHILE ALL OTHER HOUSE HOLD WASTES ARE DEALT WITH SEPARATELY AND DISPOSED OFF DIRECTLY INTO SOAKAGE PIT ETC.
- D REINFORCED CONCRETE WORK-
- FOR ALL REINFORCED CONCRETE WORK THE MIX SHALL BE 1: 2: 4 BY VOLUME.
- FOR MASS CONCRETE WORK MIX SHALL BE 1:3:6. BY VOLUME EXCEPT MASS CONCRETING IN SEPTIC TANKS WHERE IT SHALL BE 1:2:4. BY VOLUME.
- E FOR PERCOLATION FACTOR
- VALUE LESS THAN 1/5 USE SIZES OF SOAKAGE TRENCHES, SOAKAGE PITS AND SOAKAWAYS AS GIVEN FOR PERCOLATIONS FACTOR OF VALUE EQUAL TO 1/5.

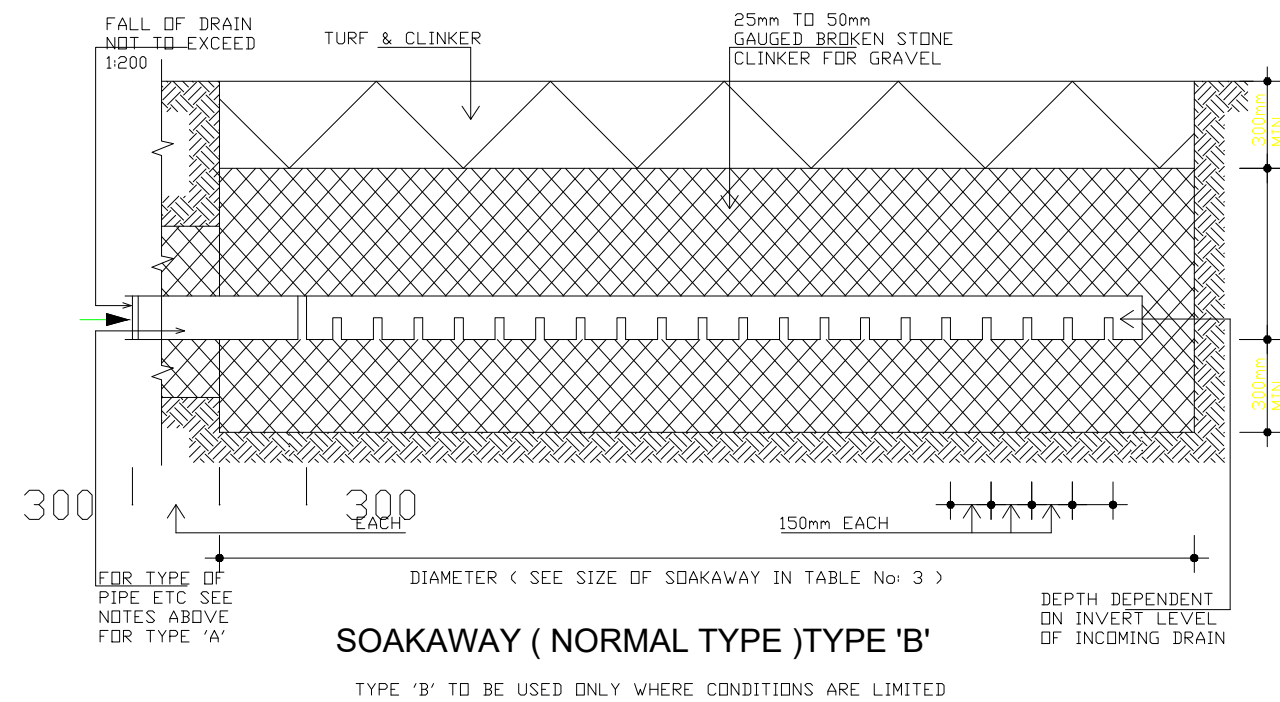
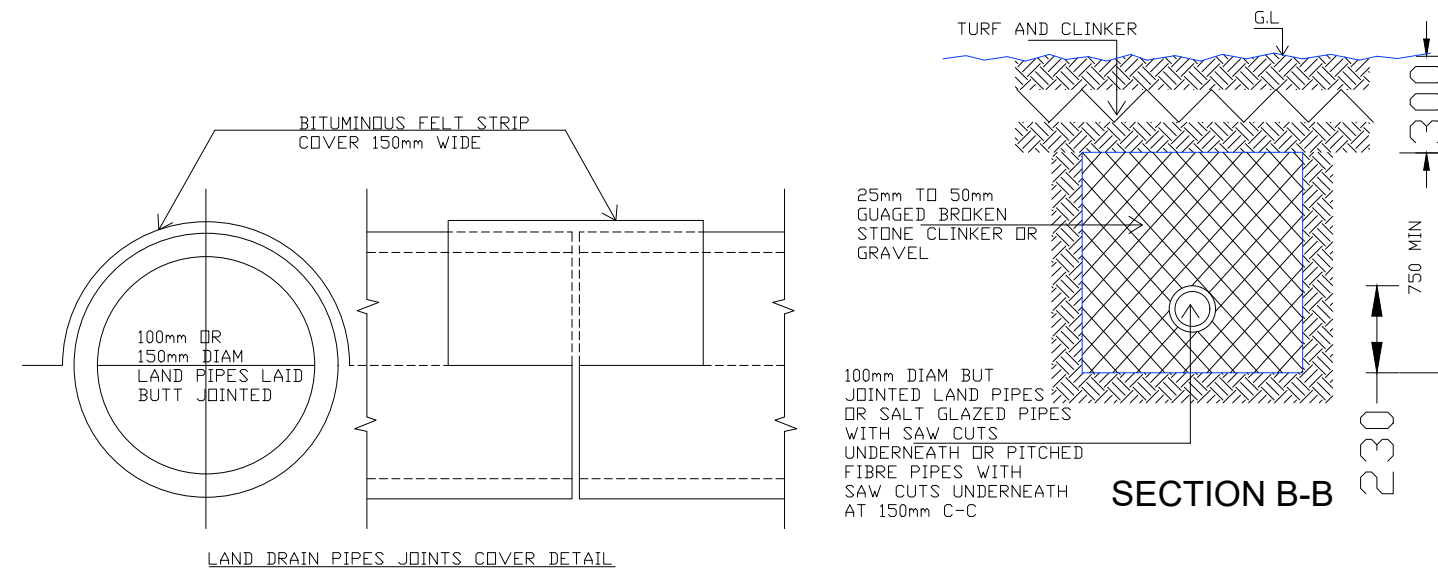
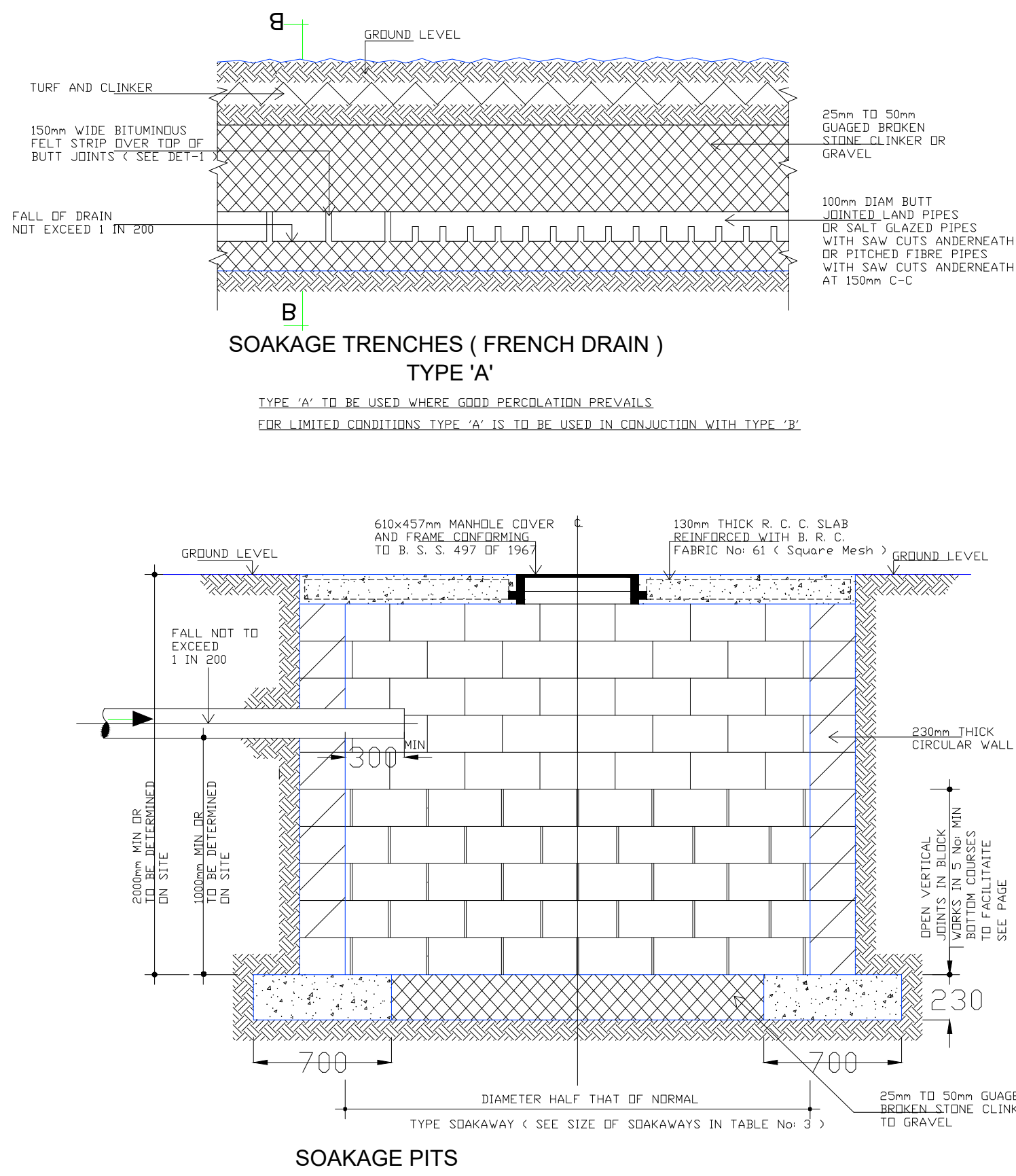
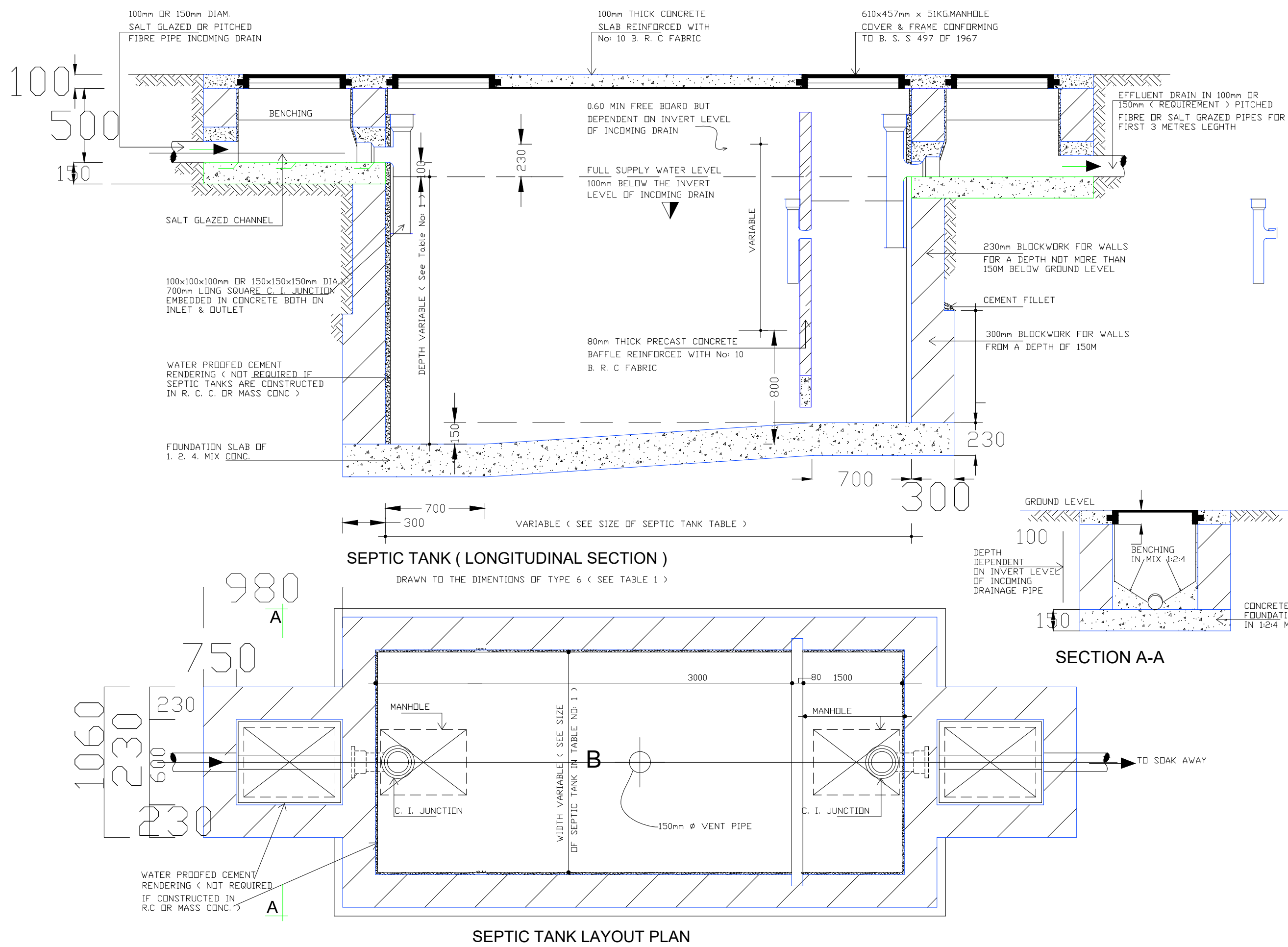
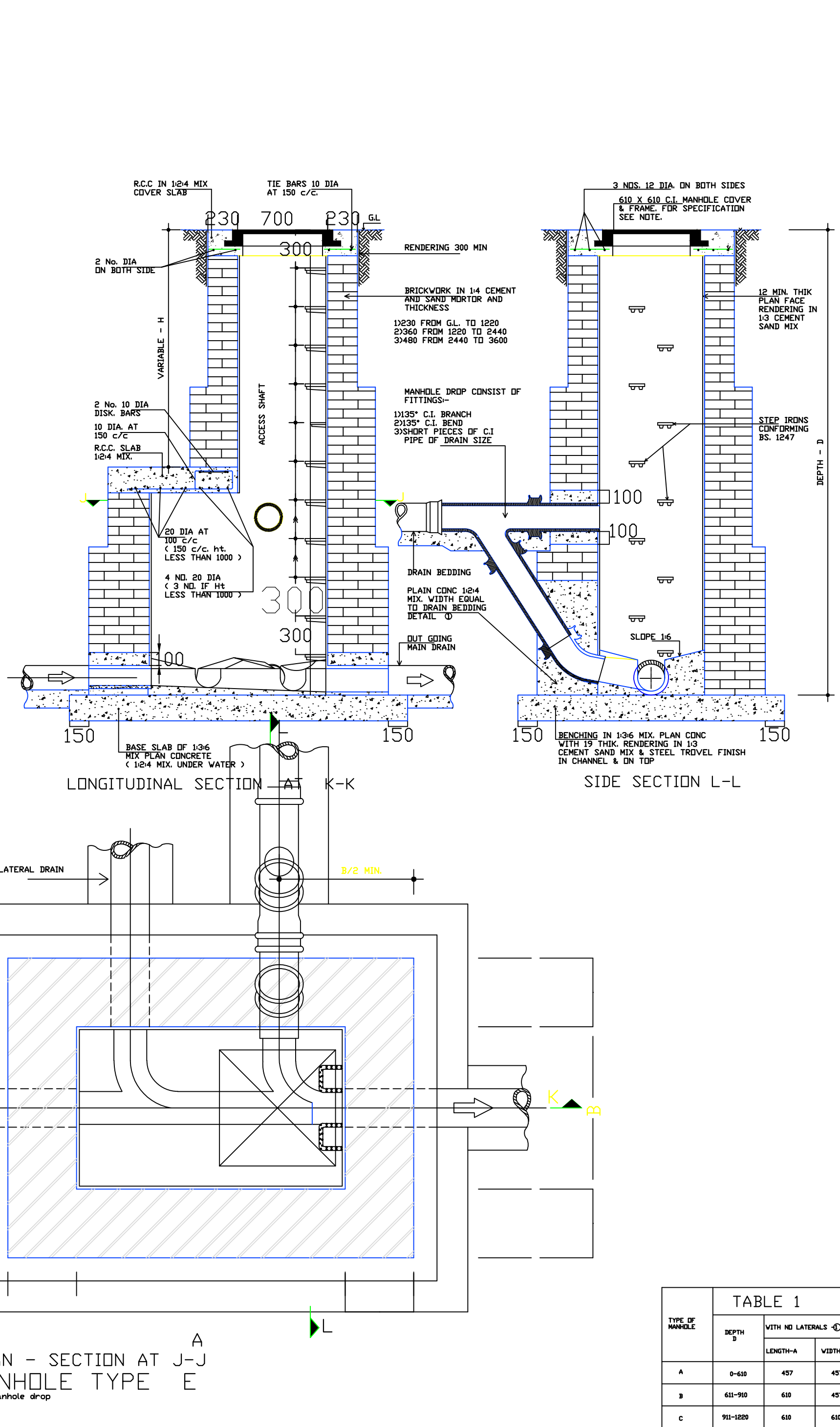
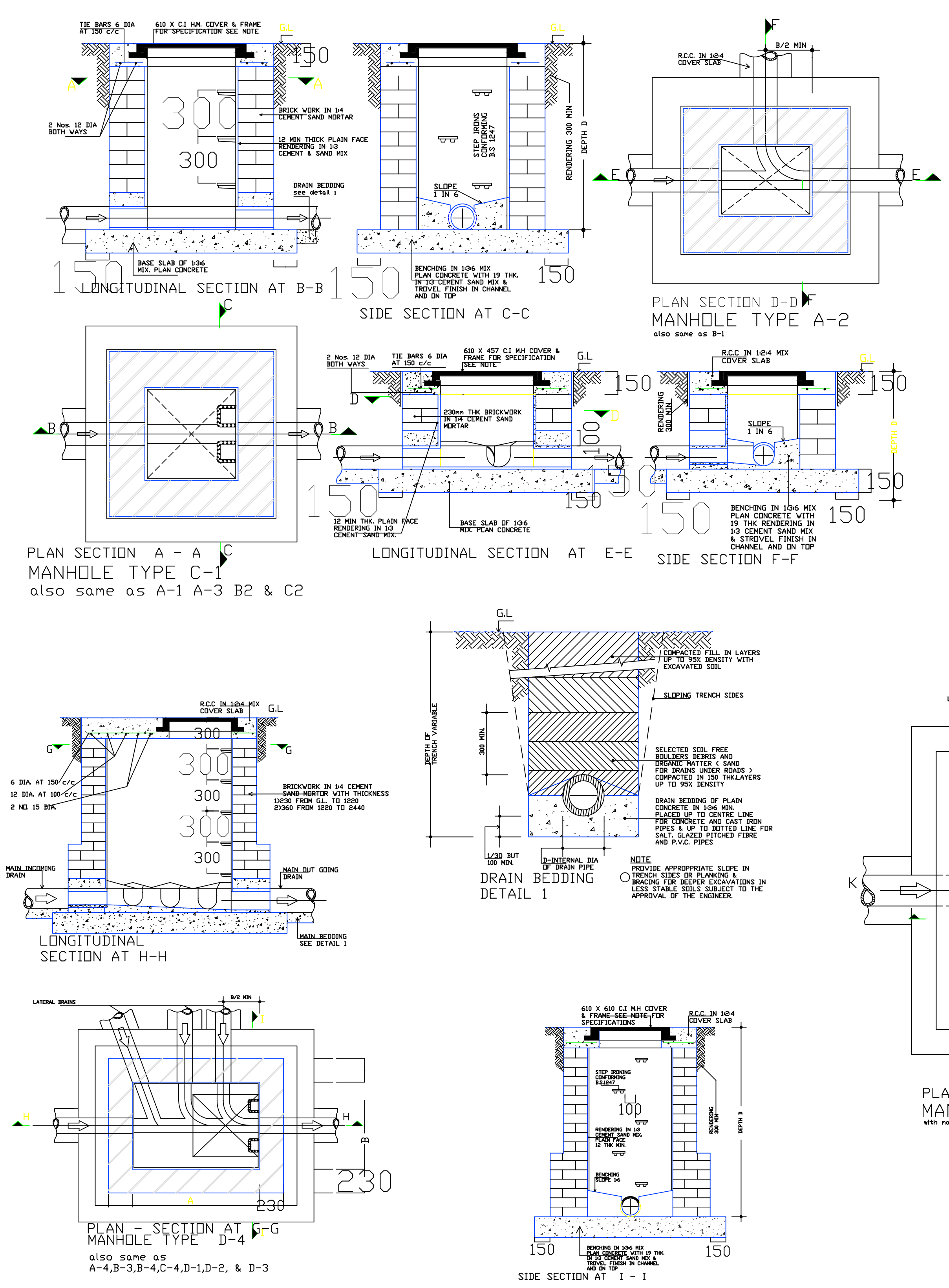


TABLE 1 SEPTIC TANK SIZES						
TYPE	ALL WASTES NO OF USERS	SOIL WASTES NO OF USERS	DIMENTIONS (METERS)			CAPACITY
			LENGTH	WIDTH	DEPTH**	
1	7	10	2.00	1.00	1.30	2.600
2	15	20	2.20	1.00	1.50	3.300
3	30	30	2.50	1.20	1.70	5.100
4	40	45	3.00	1.30	1.80	7.020
5	50	60	3.40	1.50	1.80	9.180
6	60	75	3.70	1.60	1.80	10.660
7	75	90	4.20	1.70	1.80	12.850
8	85	105	4.50	1.80	2.00	16.200
9		120	4.80	1.80	2.00	17.280

TABLE 2 SOAKAGE TRENCH SIZES (TYPE'A')							
ALL WASTES NO OF USERS	SOIL WASTES NO OF USERS	PLAN ARE AS OF SOAKAGE TRENCHS (SQ METERS)					
		PERCOLATION FACTORS **					
		1.5	3.5	6.5	10	15	20
	10	2.97	4.92	5.85	7.34	8.83	10.31
7	20	4.18	6.22	8.27	10.22	12.17	14.49
15	30	5.11	8.18	9.29	11.52	15.24	17.84
30	45	6.22	9.38	12.17	15.51	19.04	21.46
40	60	7.15	10.78	14.31	17.93	21.46	25.08
50	75	7.99	11.99	15.98	19.60	23.60	27.96
60	90	8.73	13.10	17.47	21.83	26.11	30.56
75	105	9.48	14.21	18.77	23.69	28.43	33.17
85	120	10.13	15.33	20.25	25.27	30.47	35.40

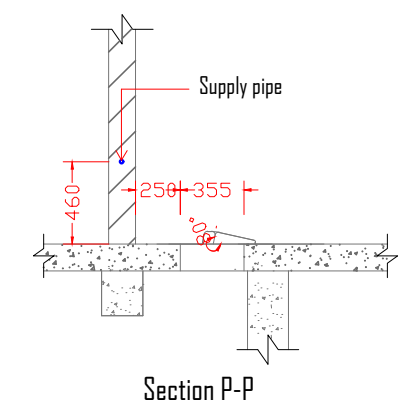
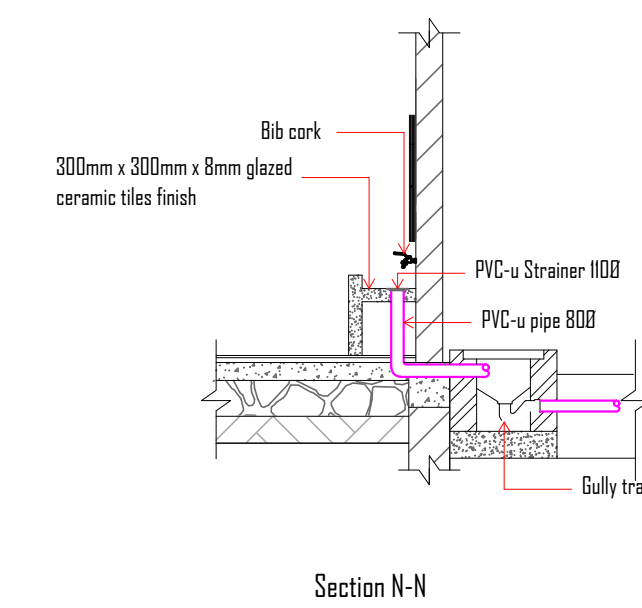
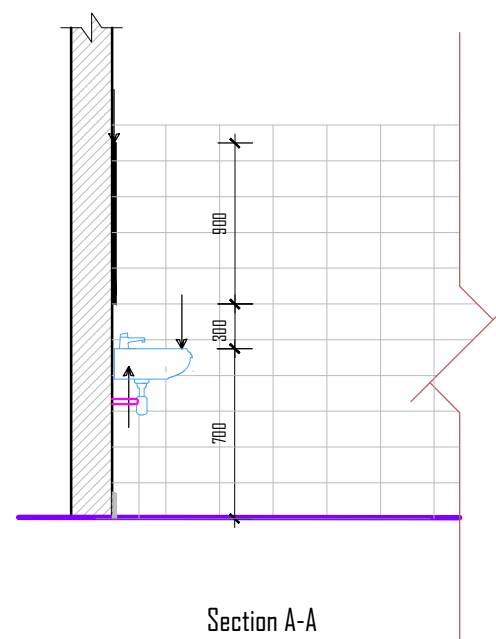
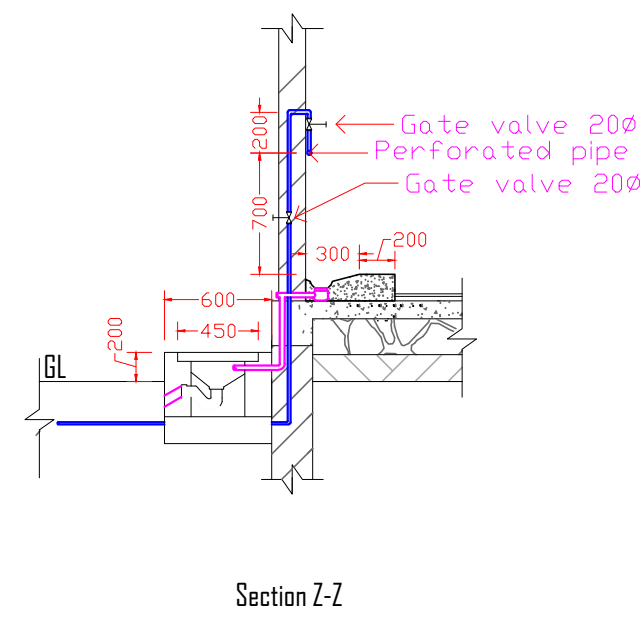
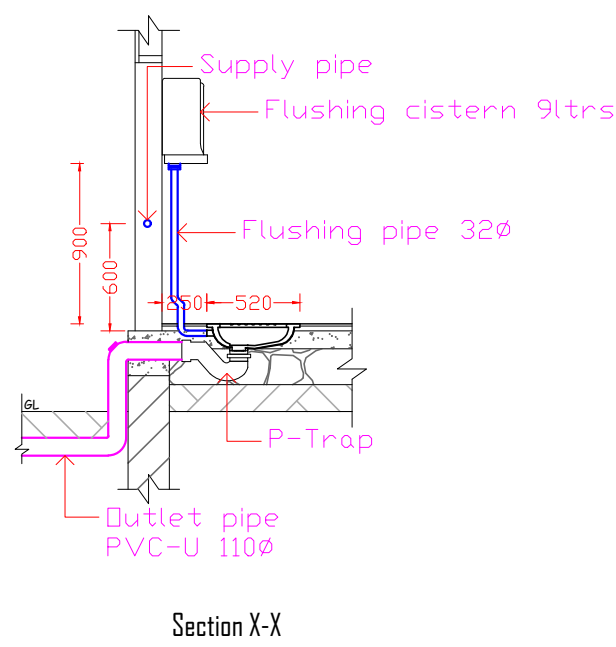
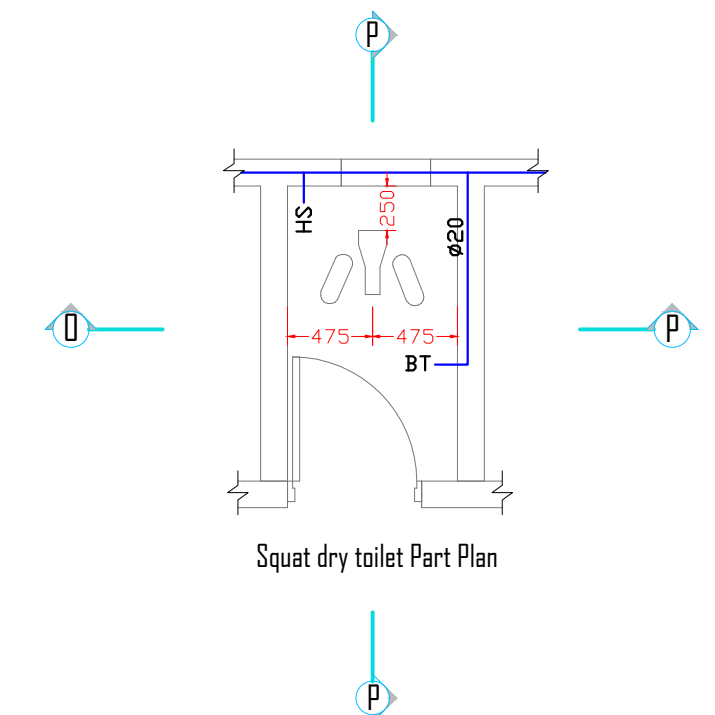
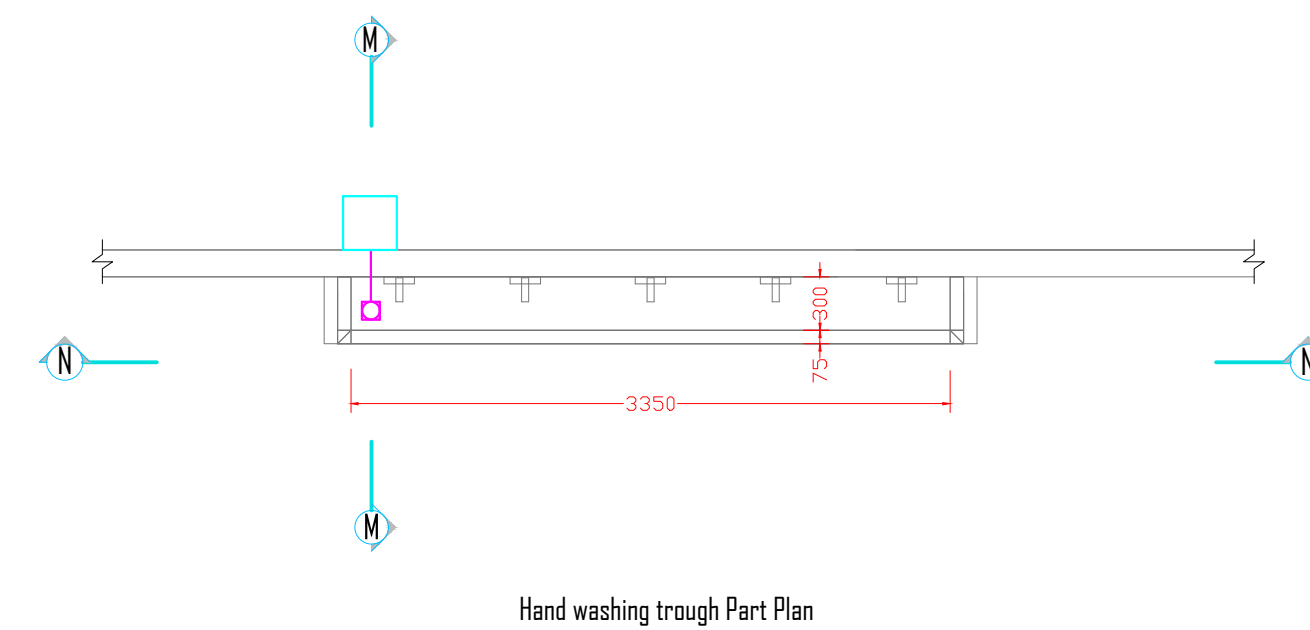
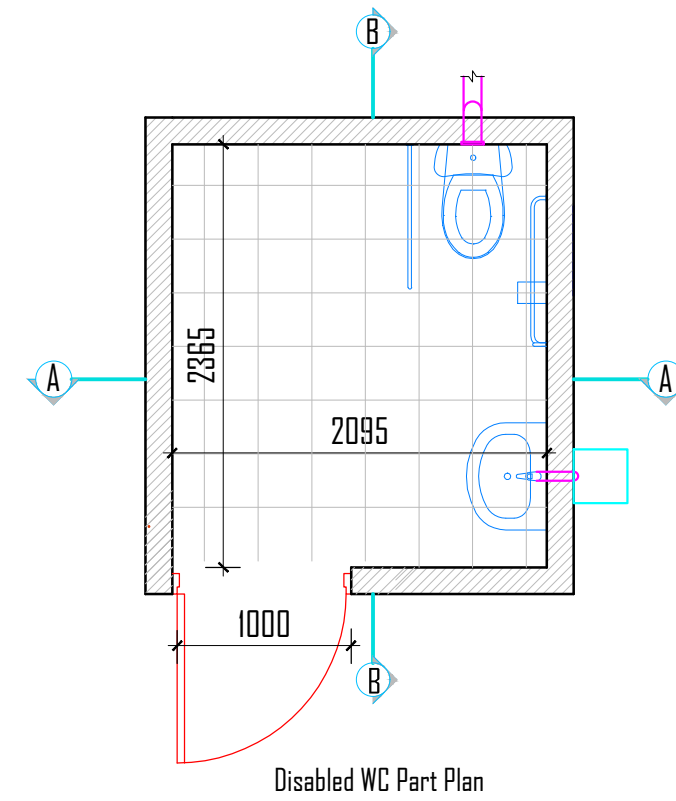
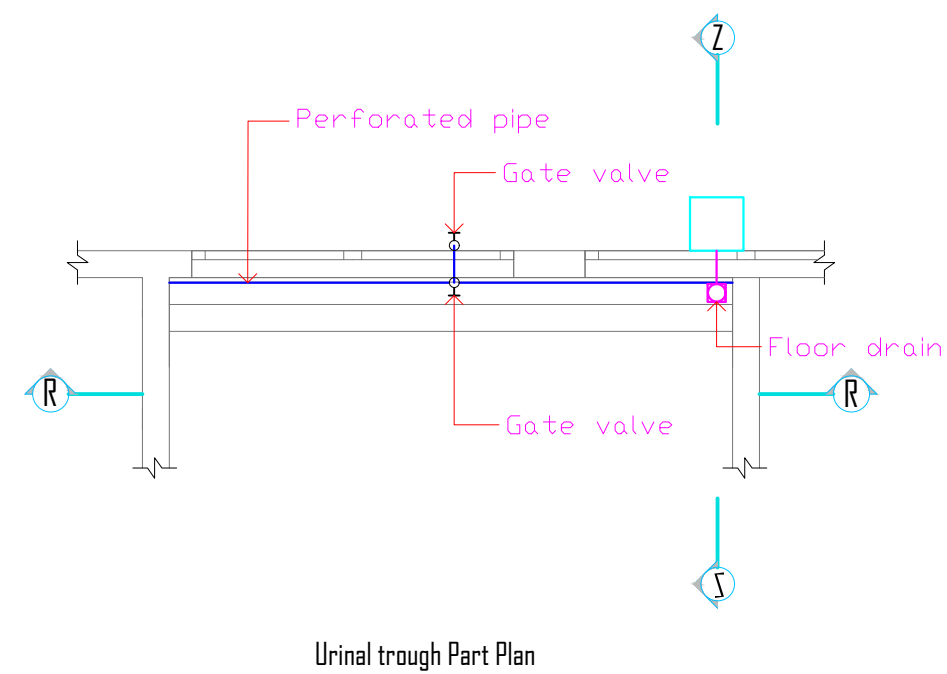
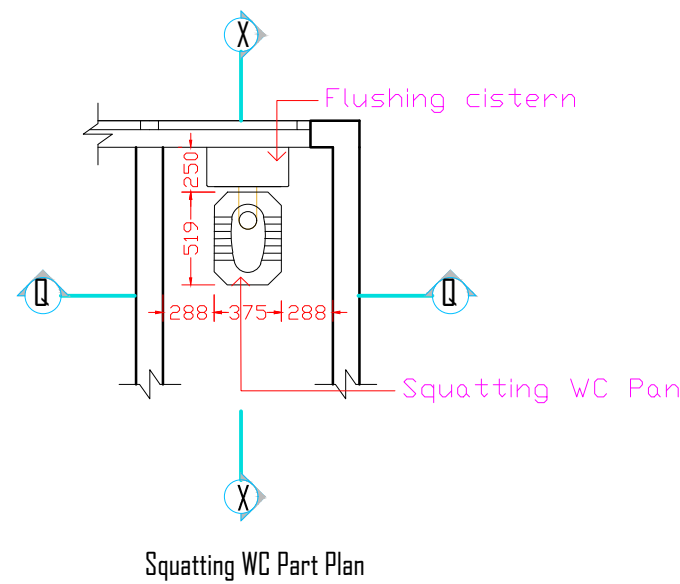
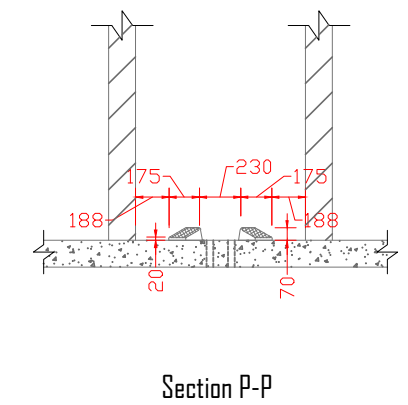
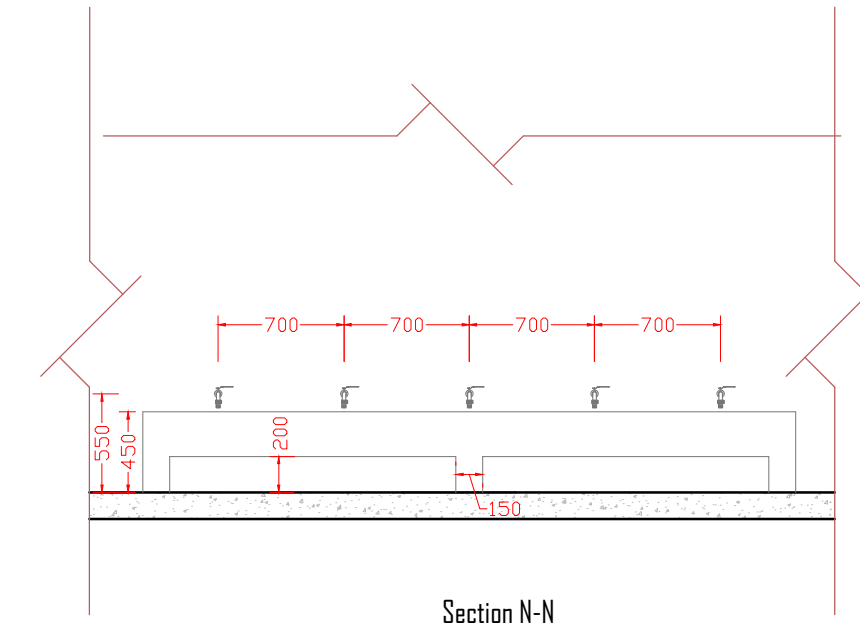
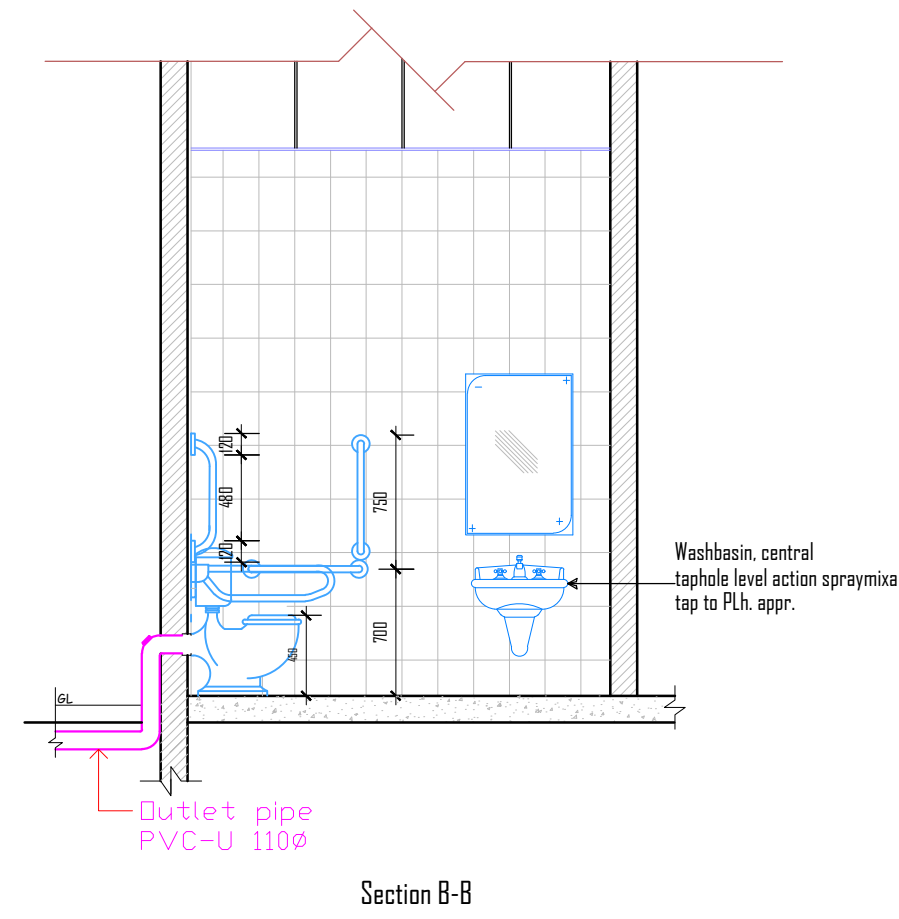
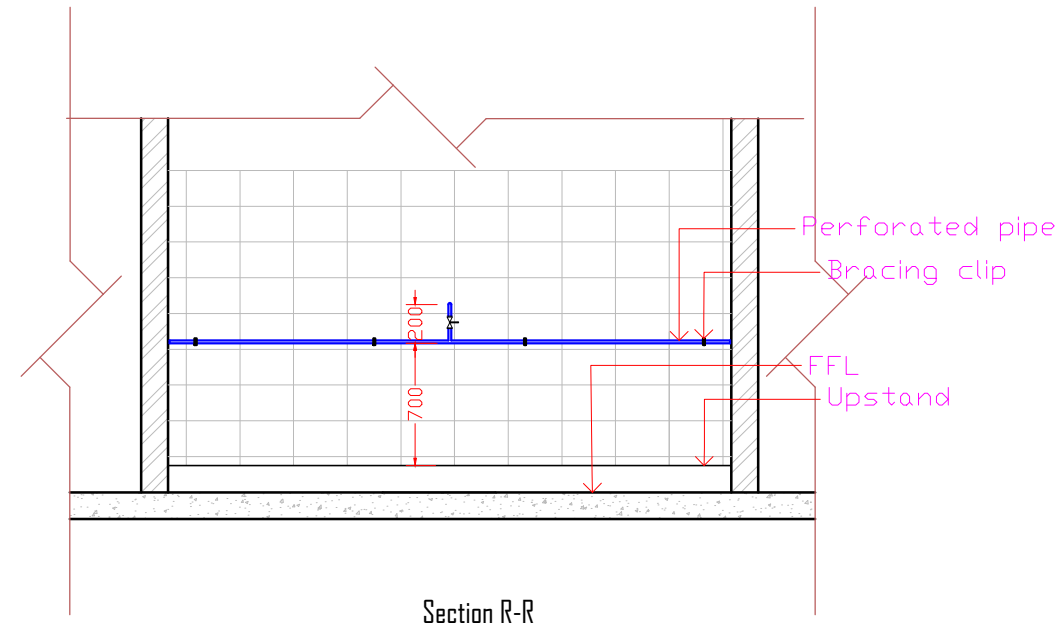
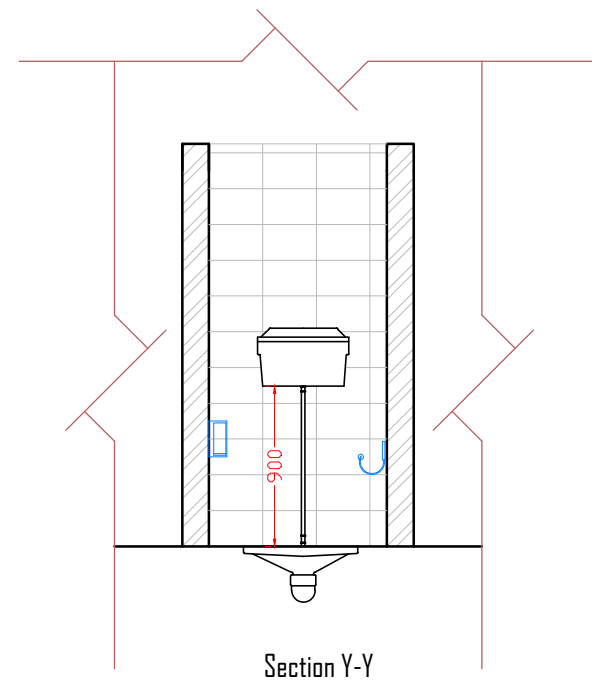
TABLE 3 SOAKAWAY SIZES (TYPE 'B')							
ALL WASTES NO. OF USERS	SOIL WASTES NO. OF USERS	PLAN ARE. AS OF SOAKAGE TRENCHS (SQ METERS)					
		PERCOLATION FACTORS **					
		1.5	3.5	6.5	10	15	20
	10	2.80	3.10	3.50	3.80	4.40	4.80
7	20						
15	30						
30	45	3.10	3.70	4.30	4.80	5.30	5.70
40	60						
50	75						
60	90						
75	105	3.70	4.40	5.10	5.70	6.30	6.70
85	120						



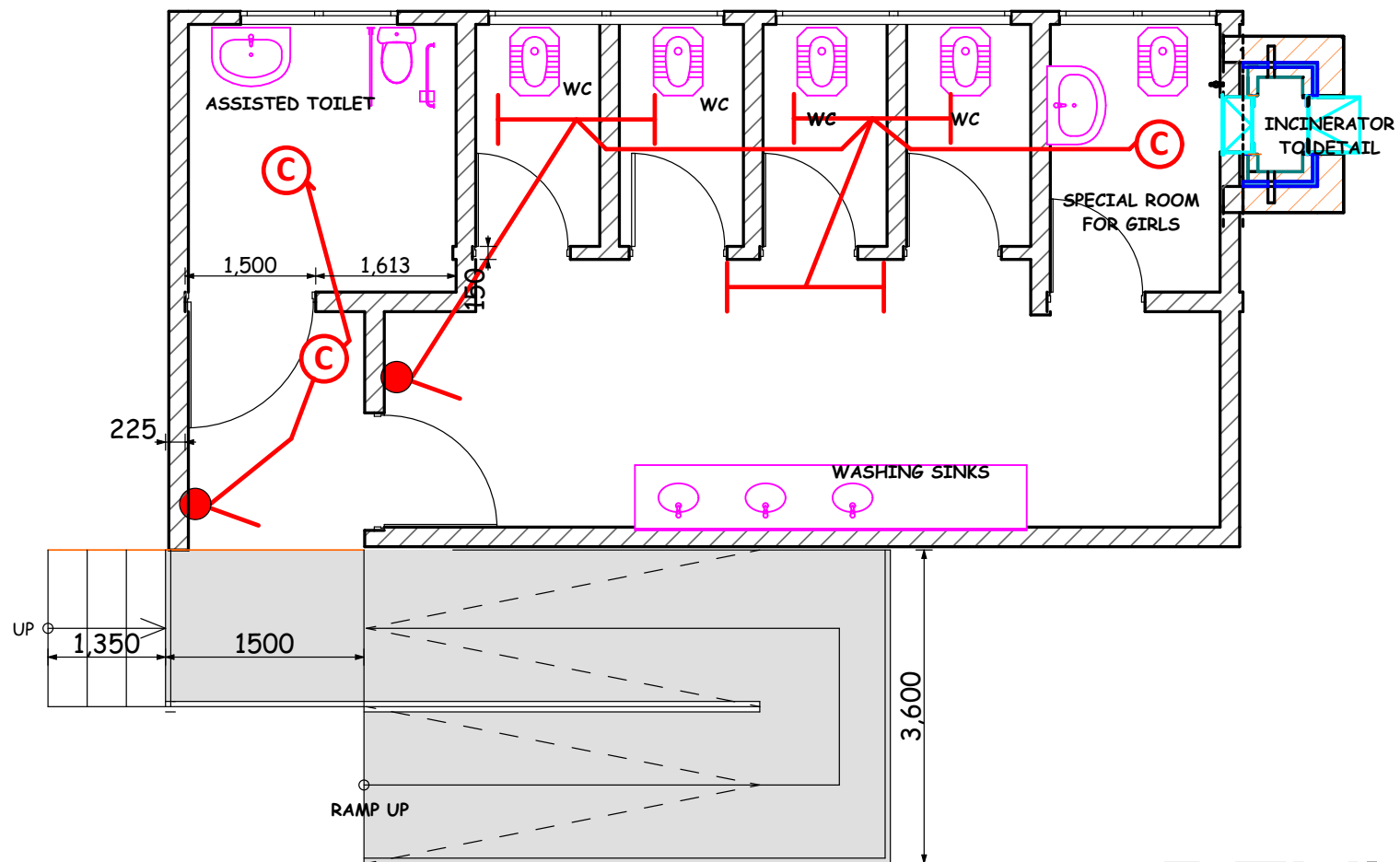
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT WHERE MENTIONED OTHERWISE
2. ALL INTERIOR RENDERING & CONCRETE FOR BENCHING & COVER SLAB MUST BE MADE WITH SULPHATE RESISTING CEMENT
3. WITH LATERALS ON BOTH SIDES OF THE M.H. CONSIDER THE SIDE WITH MAX. NUMBER OF LATERALS TO FIND THE SIZE OF MANHOLE TABLE 1.
4. MIN. DISTANCE BETWEEN ADJACENT LATERAL DRAINS MUST NOT BE LESS THAN $\leq D1+D2$, D1 & D2 ARE INTERNAL DIAMETERS OF THE LATERALS RESECTIVELY IN MM.
5. THE ANGEL BETWEEN INCOMING & OUTGOING DRAINS MUST NOT BE LESS THAN 90° AT ANY POINT OF JUNCTION OR ANY CHANGE OF DIRECTION.
6. A MANHOLE DROP AS SHOWN WITH M.H TYPE E SHOULD BE PROVIDED WHEN DIFFERENCE IN INVERT LEVELS OF LATERAL & MAIN DRAIN IS MORE THAN 600mm. OTHERWISE, PROVIDE DROP IN CHANNEL OF BENCHING
7. PROVIDE CAST IRON M.H. COVERS & FRAMES CONFORMING TO B.S. 497 OF 1967 ACCORDING TO THE REQD OF TRAFFIC LOADING & SEALING SUBJECT TO ENGINEERS APPR.
8. A BED SLOPE OF 1 IN 20 TO 1 IN 30 MUST BE PROVIDED IN BENCHING CHANNEL
9. REINFORCEMENT FOR COVER SLAB OF M.H AS DETAILED IDENTICAL TO TYPES B1 & C1 SHOULD ONLY BE PROVIDED IF THE M.H's ARE SUBJECTD TO TRAFFIC LOADING
10. TABLE 1 GIVES THE SIZES OF M.H's WITH MAIN AND LATERAL DRAINS UP TO 230mm Ø. THE SIZES OF M.H. WITH BIGGER DRAINS. MAY ANYHOW BE ASCERTAINED SUBJECTED TO ENGINNERS APPROVAL.
11. PROPER M.H's MUST BE PROVIDED AT EVERY POINT OF CHANGE OF DIRECTION, SIZE OR SLOPE OF DRAIN OR AT JUCTION OF MAIN & LATERAL DRAIN AT PROPER INTERVALS.

		TABLE 1				MANHOLE SIZES				(millimetres)	
TYPE OF MANHOLE	DEPTH	WITH NO LATERALS ①		WITH 1 LATERALS ②		WITH 2 LATERALS ③		WITH 3 LATERALS ④			
		LENGTH-A	WIDTH-B	LENGTH-A	WIDTH-B	LENGTH-A	WIDTH-B	LENGTH-A	WIDTH-B		
A	0-610	457	457	610	457	610	610	610	910	610	610
B	610-910	610	457	610	610	720	610	610	910	610	610
C	910-1220	610	610	610	610	910	610	610	1220	610	610
D	1220-1830	910	610	910	610	1220	610	610	1830	610	610
E	ABOVE	1370	610	SAME AS FOR TYPE E-1							



ELECTRICAL DRAWINGS



REVISED 1