



PROJECT

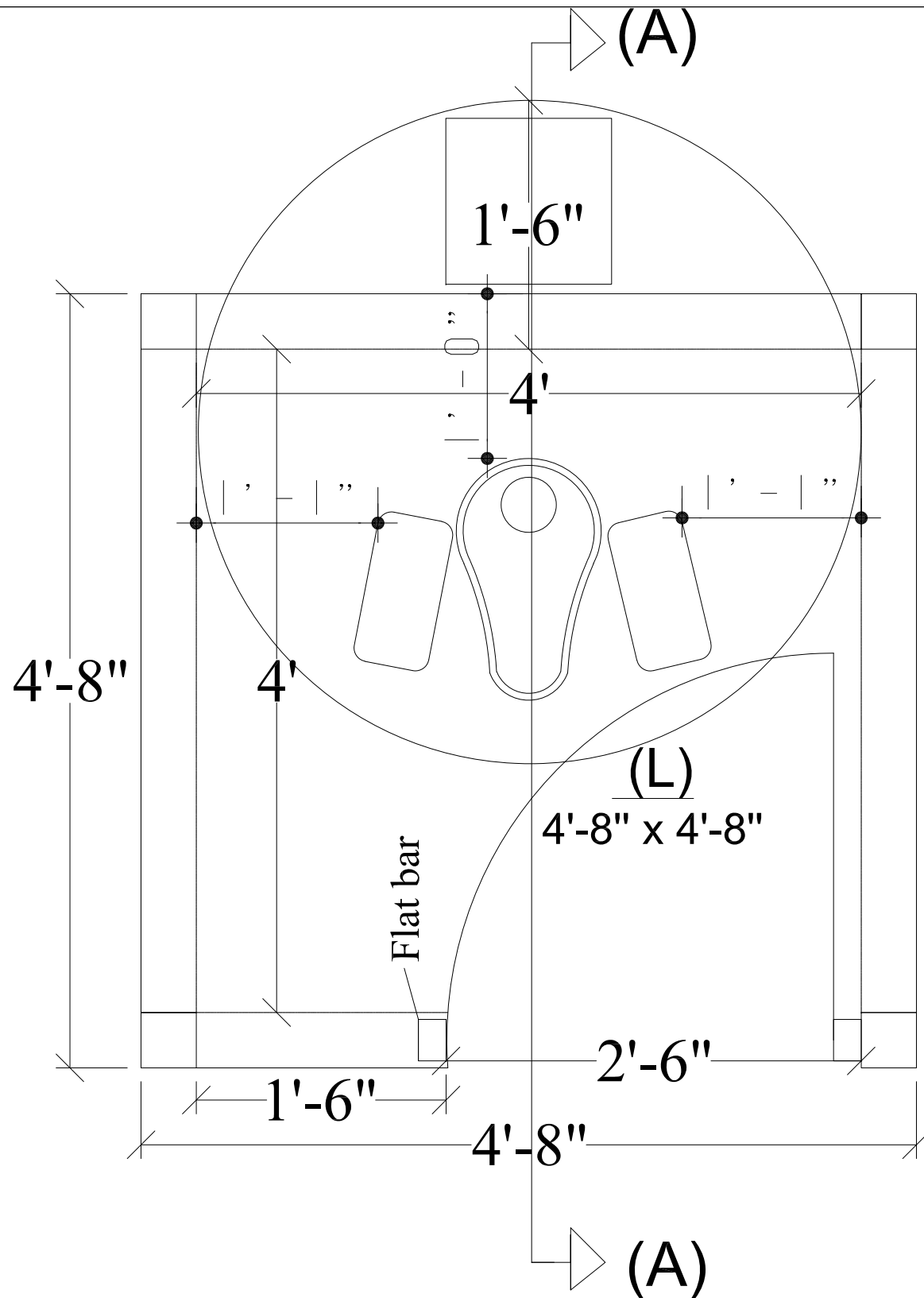
DESIGN AND DRAWING of UNIFIED LATRINE

**SINGLE CUBICLE WOODEN FRAMED SINGLE PIT LATRINE
(Option-01A)**

JULY, 2023

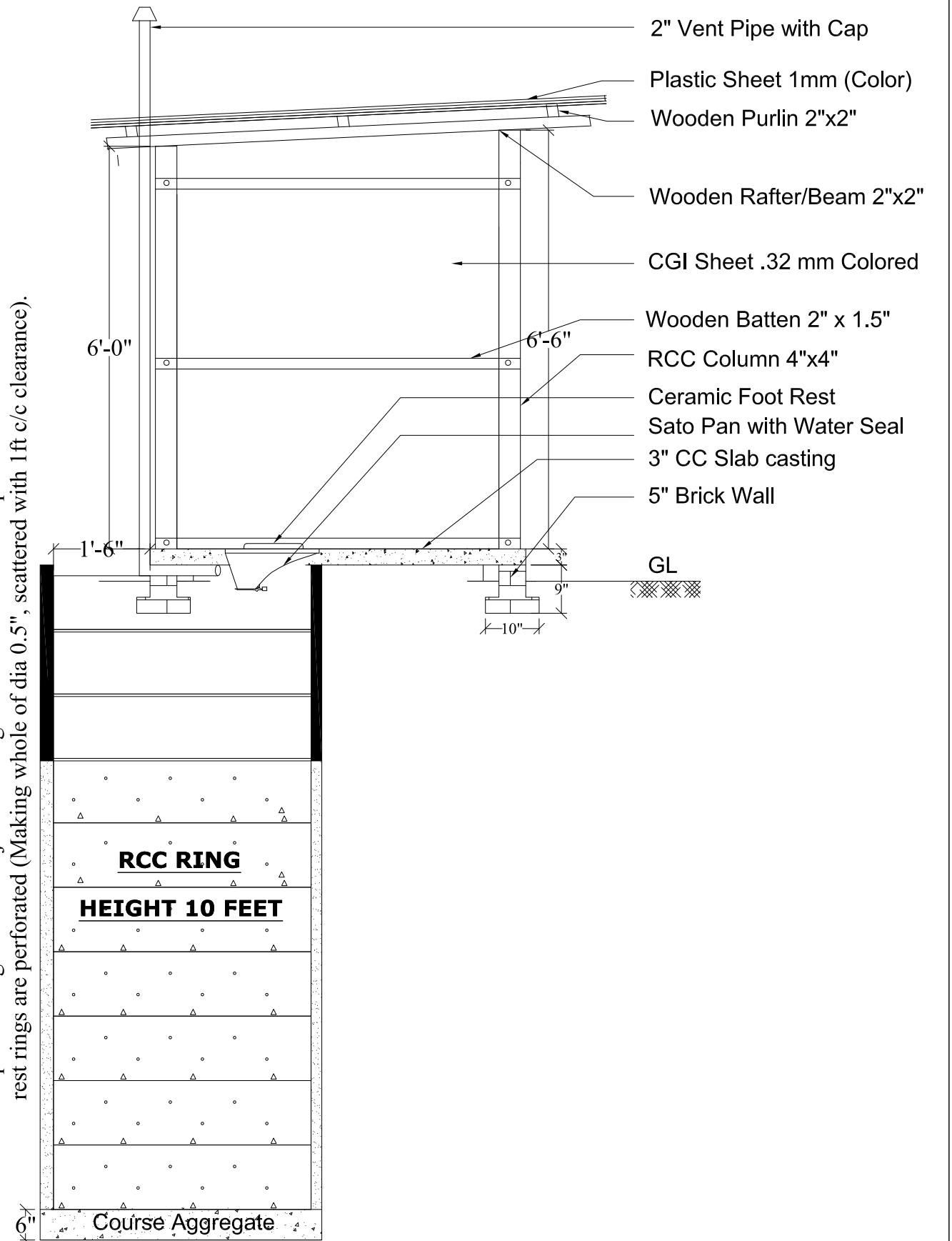
PREPARED By:

**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**



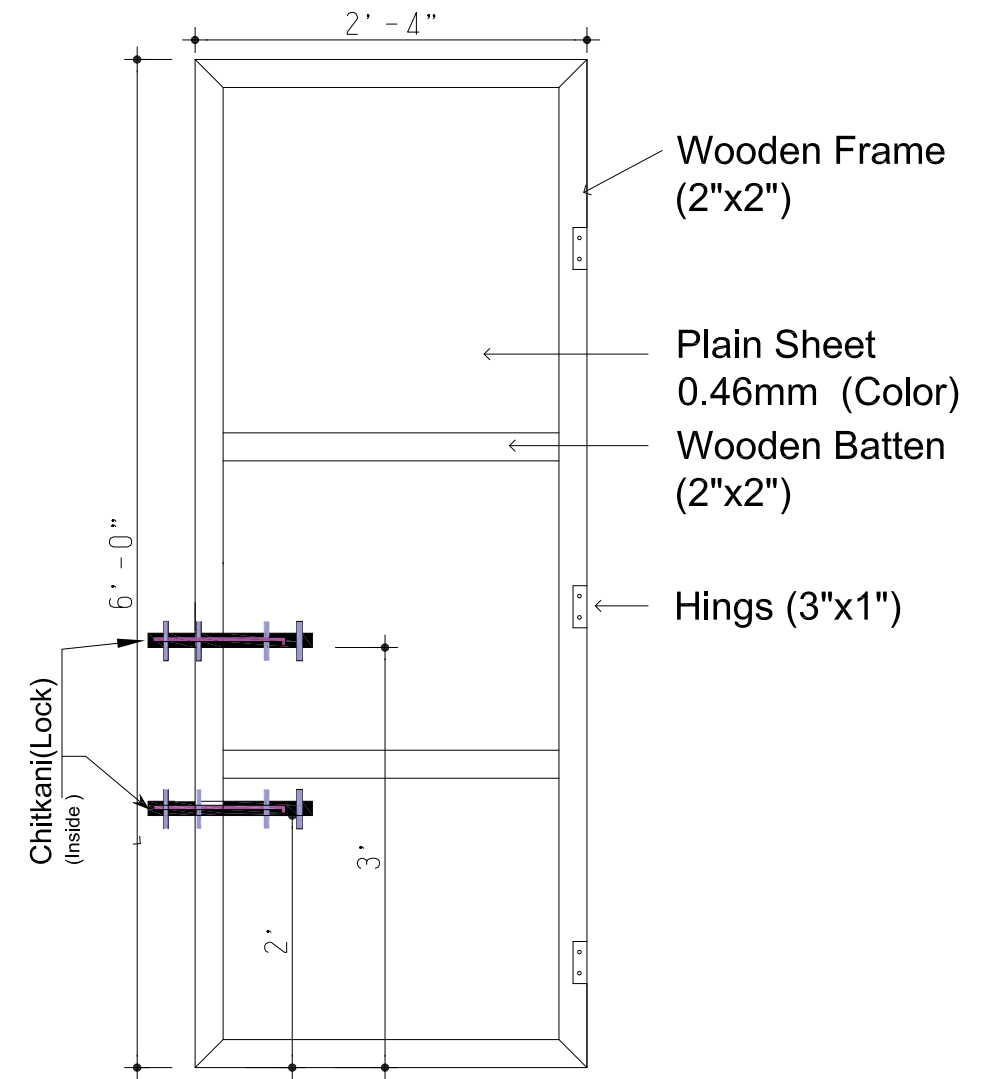
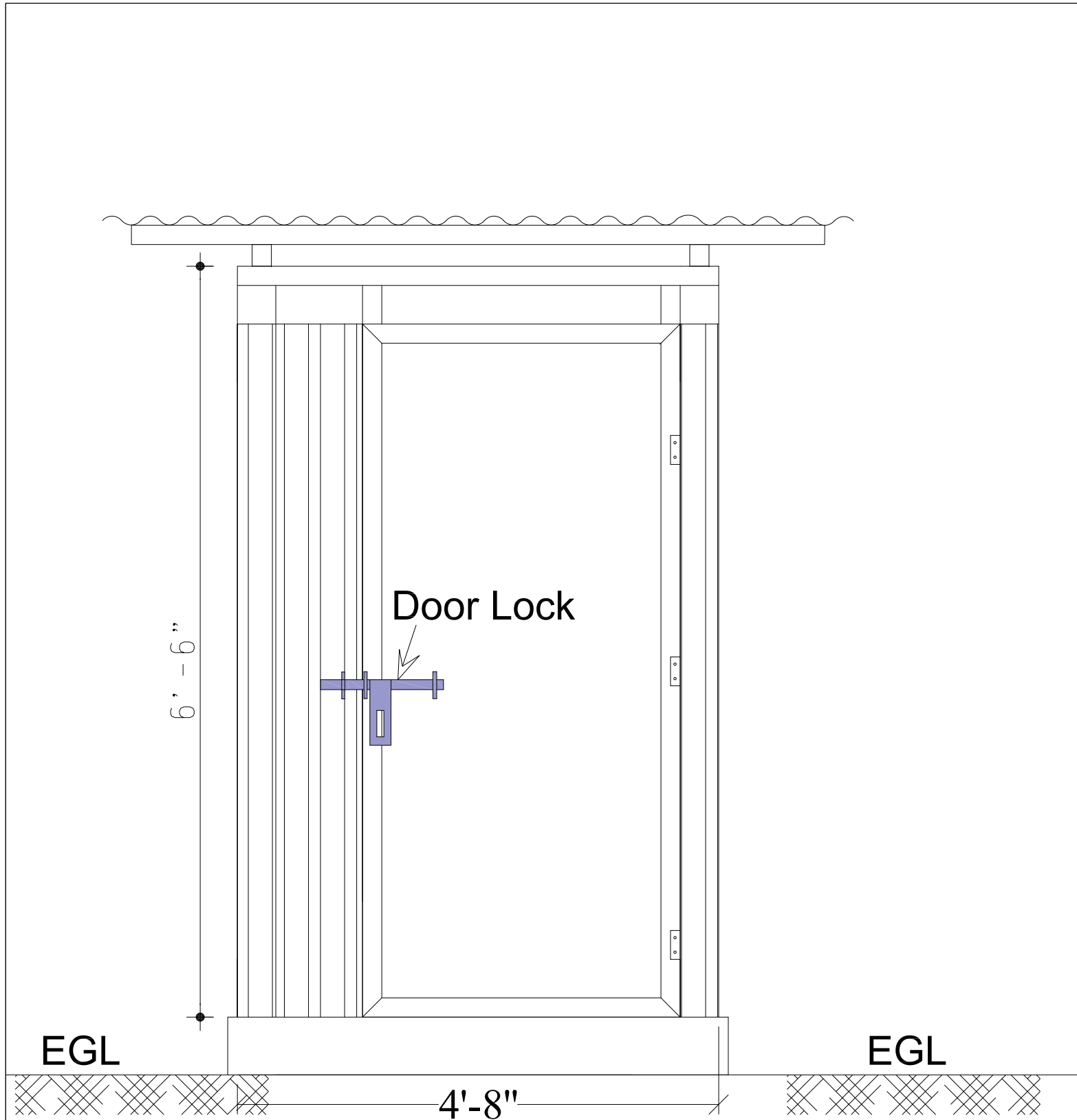
Plan View

RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal), with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance).




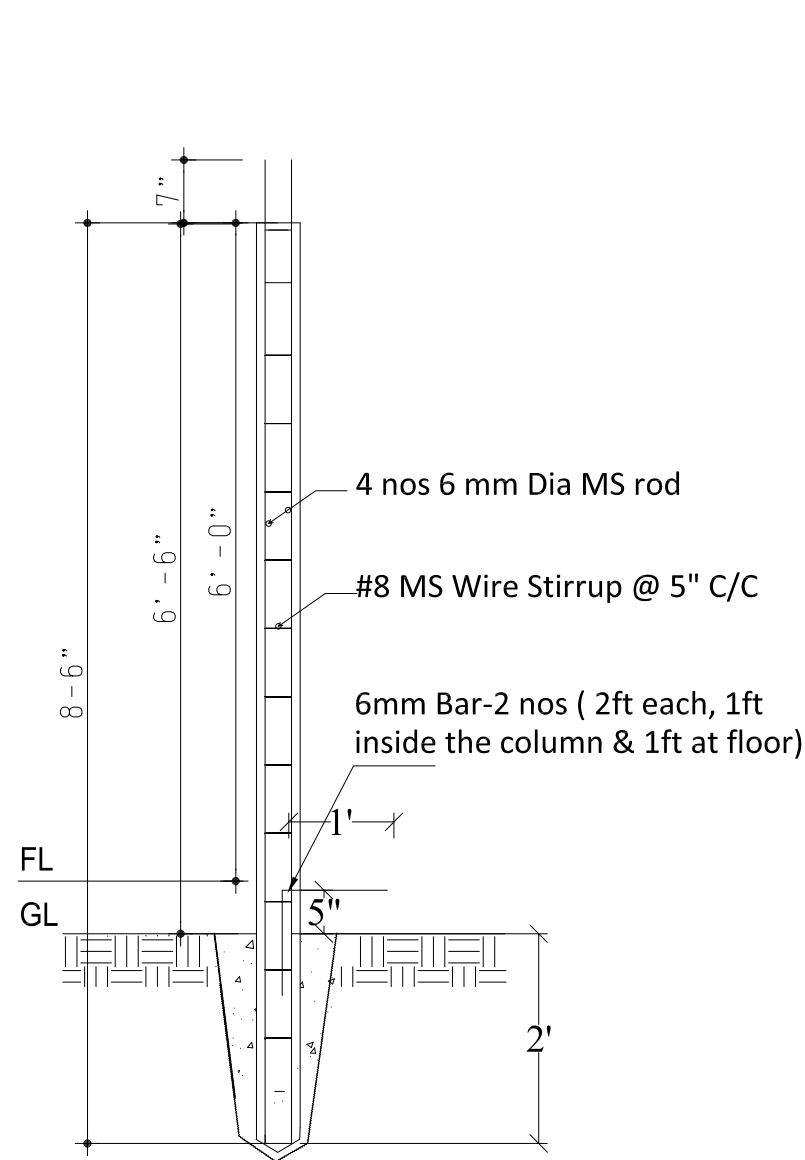
Section A-A

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Single Pit Latrine (Option-01A)	Latrine Design Group	Plan & Section	July, 2023	DPHE Cox's Bazar	RRRC	01

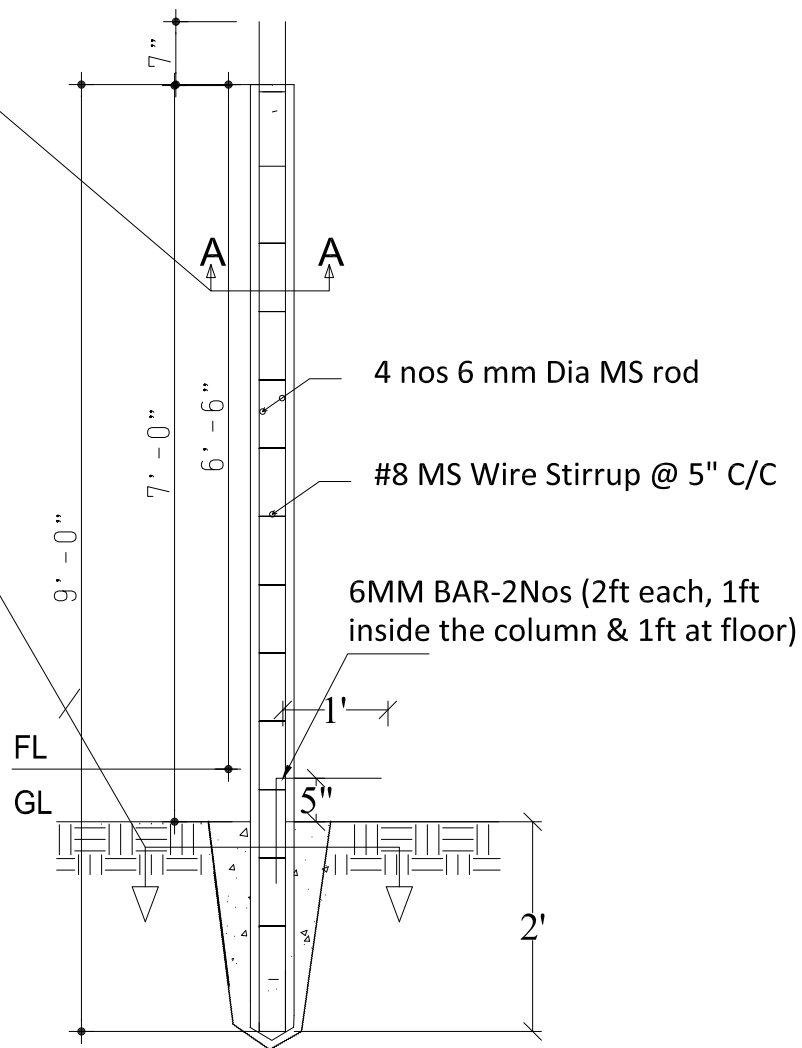
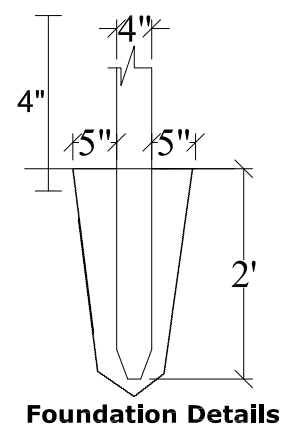
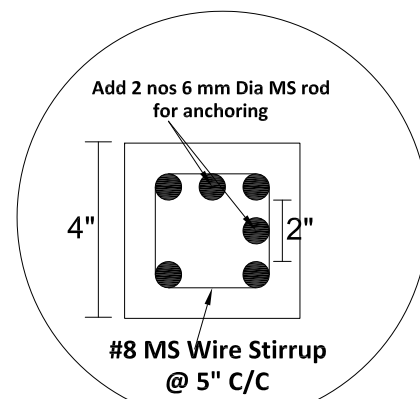
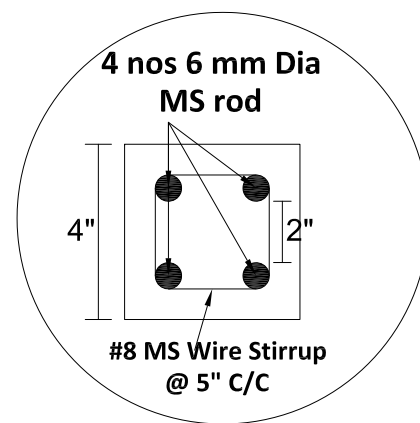


**Door Elevation
(Internal Side)**

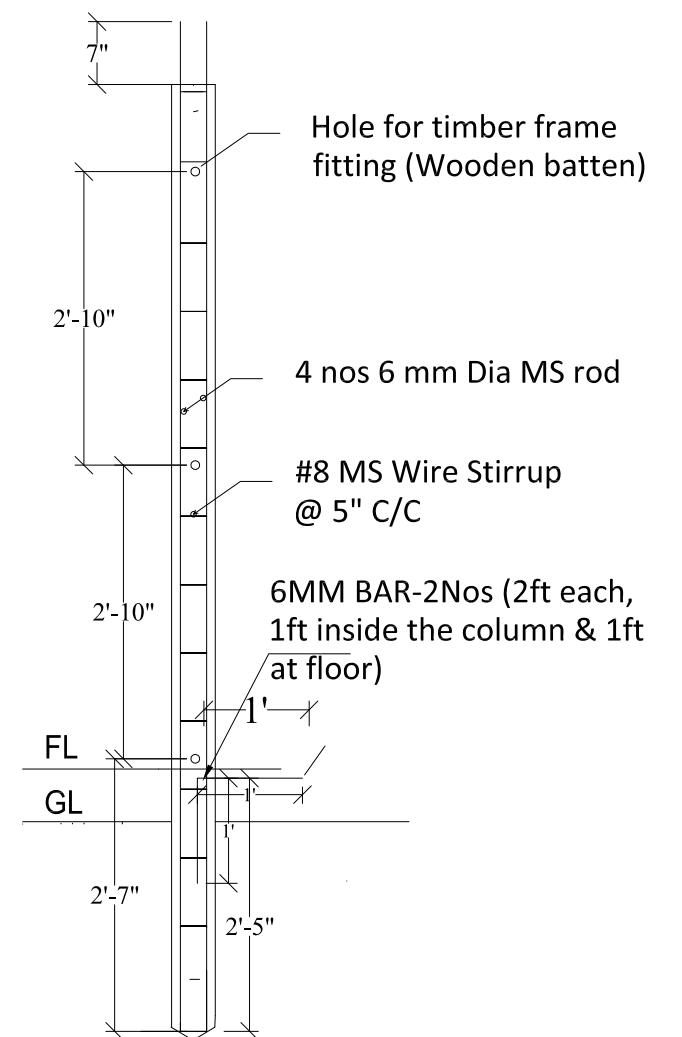
			Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
			Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Single Pit Latrine (Option-01A)	Latrine Design Group	Front View & Door Details	July, 2023	DPHE Cox's Bazar	RRRC	02



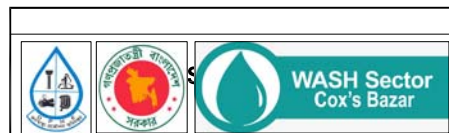
DETAILS OF PRECAST R.C.C PILLAR (Back)



DETAILS OF PRECAST R.C.C PILLAR (Front)



Hole detailing for PRECAST R.C.C PILLAR



Project
Design and Drawing of Unified Latrine

Model:
Single Cubicle Wooden Framed Single Pit Latrine (Option-01A)

Design by:
Latrine Design Group

Drawing Title
Pre Cast Pillar Details

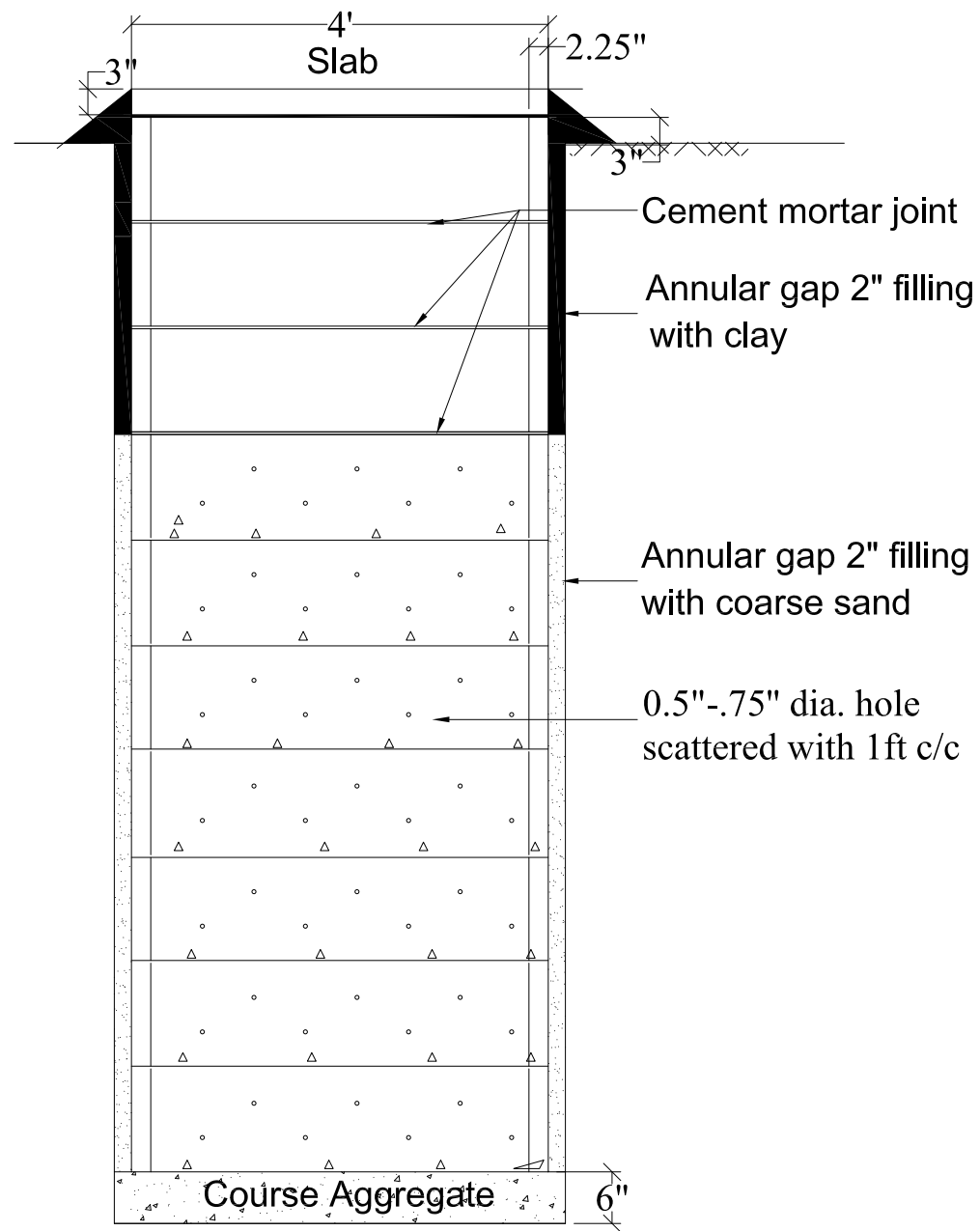
Date
July, 2023

Reviewed by
DPHE Cox's Bazar

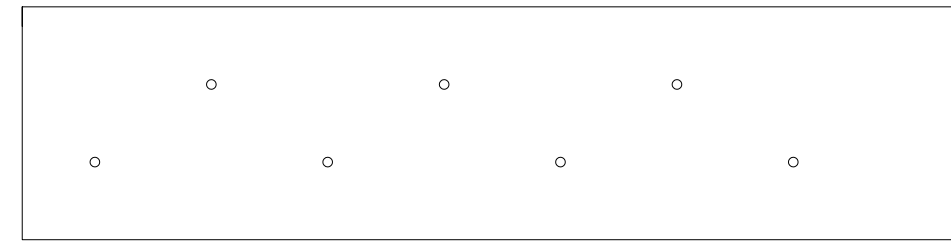
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RRRC

Page
03

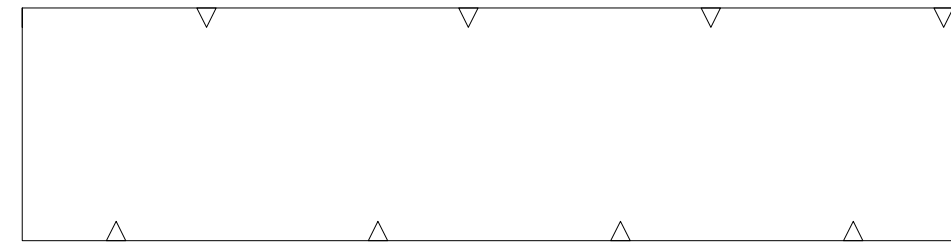
RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal), with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance).



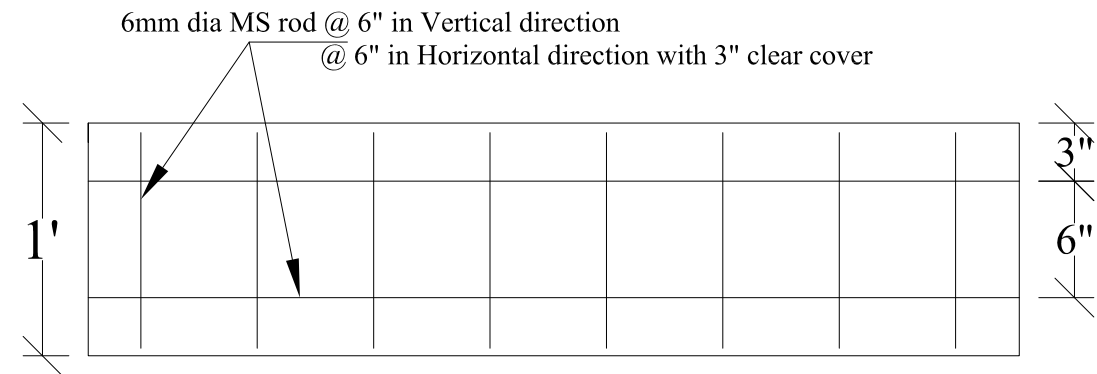
RCC Ring



RCC Ring (Option 1)

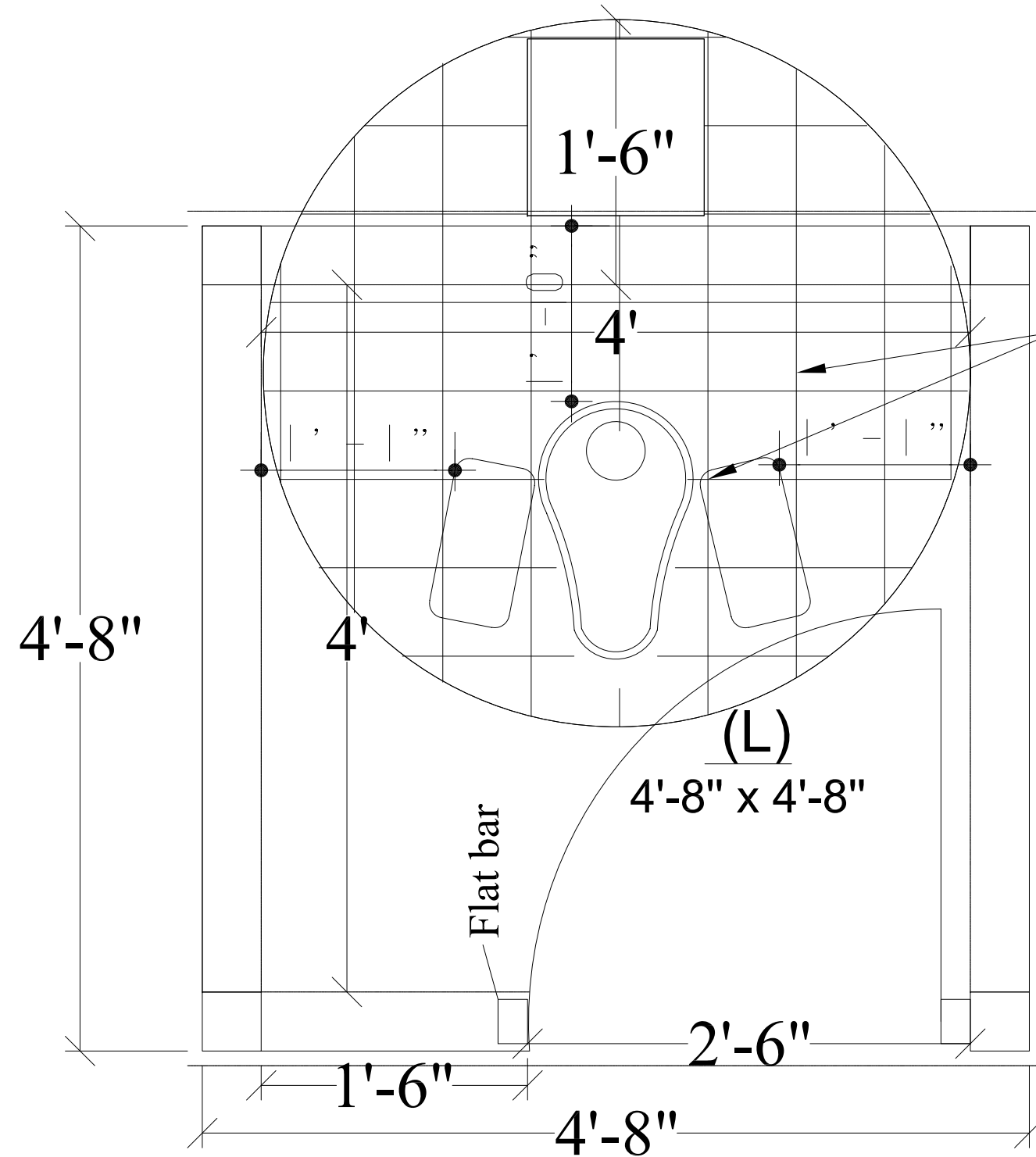


RCC Ring (Option 2)



Section of Ring

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Single Pit Latrine (Option-01A)	Latrine Design Group	Pre Cast Ring Details	July, 2023	DPHE Cox's Bazar	RRRC	04



8 mm Dia MS rod @6" C/C
Both Direction

Slab Reinforcement

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Single Pit Latrine (Option-01A)	Latrine Design Group	Slab Reinforcement Details	July, 2023	DPHE Cox's Bazar	RRRC	05

Bill of Quantities
Latrine Option-01A
Single Cubicle Wooden Framed Single Pit Latrine

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
PART-A: Substructure						
1	Earth Excavation : Earth work in excavation in all kinds of soil for single cubicle direct pit including; providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and providing layout, removing necessary roots and plants, protecting and keeping the trench dry from rain/external water, stacking and levelling surrounding sites with excavated soil. All should be completed under the direct supervision and guidance of the Engineer in-charge, subject to agreed and locally available earth excavation methods. However, Engineer in-charge's approval shall not relieve the contractor of his responsibilities and obligations under the contract.	5.86	cum	259.00	1518	PWD Rates Schedule (2022)
2	Sand Filling : Sand filling in foundation trenches and plinth with sand having F.M. 0.5 to 0.8 in 150 mm layers including leveling, watering and compaction to achieve minimum dry density of 95% with optimum moisture content (Modified proctor test) by ramming each layer up to finished level as per design supplied by the design office only, all complete and accepted by the Engineer-in-charge.	1.05	cum	1,093.00	1149	PWD Rates Schedule (2022)
3	Brick Soling : One layer of brick flat soling in latrine floor with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	1.12	sqm	515.00	574	PWD Rates Schedule (2022)
4	10" Brick Work : 10" Brick works in Foundation of wall of Septic tank with first class bricks in cement/sand mortar (1:6) including filling the interstices with mortar, raking out joints, cleaning and socking the bricks at least for 24 hours and screening of sand before use, necessary scaffolding, curing at least for 7 days etc. all complete including cost of water, electricity and other charges (measurement to given as 250 mm width for one brick length). All work should be completed as per design and guidance of the Engineer in-charge.	0.09	cum	7,501.00	709	PWD Rates Schedule (2022)
5	5" Brick Wall : " thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	0.74	sqm	1,180.00	877	PWD Rates Schedule (2022)
6	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering at floor, inner surface and outer surface, finishing the corner, kobra & top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	2.36	sqm	297.00	699	PWD Rates Schedule (2022)
7	RCC Ring : RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25" Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal),with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. In total 10 rings but top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance.					
	7a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	0.67	cum	8,784.00	5866	PWD Rates Schedule (2022)
	7b) 6 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	43.06	kg	110.00	4737	PWD Rates Schedule (2022)
	7c) Carrying Cost	10.00	each	350.00	3500	Local Field Price
	RCC Slab : Supply, fittings & fixing of pre-cast ring cover 4' dia size, thikness-3" made of 1:2:4 mixing ratio, 8mm dia ms rod (60G) 6" C/C both way & Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest as per the drawing and instruction of EIC.					

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
8	8a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	0.09	cum	8,784.00	782	PWD Rates Schedule (2022)
	8b) 8 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	7.44	kg	110.00	818	PWD Rates Schedule (2022)
	8c) Sato RFL pan (approximately 750 gm)	1.00	each	150.00	150	Local Market Price
	8d) Carrying Cost	2.00	each	400.00	800	Local Field Price
9	Polyethylene Sheet: Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	1.12	sqm	150.00	167	Local Market Price
10	Cement concrete Work: CC casting in Latrine Floor & RCC post base at the bottom [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	0.34	cum	7,817.00	2669	PWD Rates Schedule (2022)
11	Flat Bar : 1 numbers of 3" Flat bar, thickness 6mm & 16" long, to be fitted within top of CC of floor & fitting with wooden bar with bolts for door (Chowkat). All work complete as per design and instruction of Engineer in-charge.	1.00	each	700.00	700	Local Market Price
PART-B: Superstructure						
12	RCC Pillar or Post : RCC Pillar or post 4"x4"x9' long 2 nos and 4"x4"x 8-9" short 2 nos, Reinforced cement concrete works with minimum cement content relates to mix ratio 1:2:4 having minimum f'cr = 24 MPa, satisfying a specified compressive strength f'c= 19 MPa at 28 days on standard cylinders as per standard practice of Code ACI/BNBC/ASTM, cement conforming to BDS EN-197-1-CEM-I, 52.5N (52.5 MPa) / ASTM-C 150 Type – I, best quality sand [50% quantity of best local sand (F.M. 1.2) and 50% quantity of Sylhet sand or coarse sand of equivalent F.M. 2.2] and 20 mm down well graded picked jhama brick chips conforming to ASTM C-33 including breaking chips and screening, making and placing shutter in position maintaining true to plumb, making shutter water-tight properly, placing reinforcement in position; mixing in standard mixer machine with hopper fed by standard measuring boxes or mixing in batching plant, casting in forms, compacting by vibrator machine and curing at least for 28 days, removing centering-shuttering after specified time approved; including cost of water, electricity, laboratory testing charges of materials and concrete cylinders as required, cost of all materials and other charges etc. all complete, approved and accepted by the Engineer-in-charge. (Rate is excluding the cost of reinforcement and its fabrication, placing, binding etc. and the cost of shuttering & centering)					
	12a) Concrete (mix ratio 1:2:4) for RCC post, as per drawing and instruction of EIC	0.11	cum	8,996.00	991	PWD Rates Schedule (2022)
	12b) 6 mm dia deformed-rod (4 nos 6mm dia MS rod), fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	10.00	kg	110.00	1101	PWD Rates Schedule (2022)
	12c) #8 MS wire stirrups @ 125mm C/C, as per drawing and instruction of EIC	6.53	kg	110.00	719	Local Market Price
	2d) Carrying Cost	4.00	each	300.00	1200	Local Field Price
13	Wooden Rafter & Purlin (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of roof truss by using of 2"x2"x7.5' ft rafter 2pcs and 2"x2"x7 ft purlin 3pcs and including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.00	cft	1,200.00	1200	Local Market Price
14	Wooden For wall Batten (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of wooden Batten by using of 2" X 1.5" for Wall including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.29	cft	1,200.00	1551	Local Market Price
15	Wooden for Door (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of Wooden Door by using of 2"x 2" wall bar, 2"x 2" for door batten or frame, 2"x2" Cross batten & 3"x 2"size 2 nos for Door frames (Chowkat) including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.53	cft	1,200.00	1839	Local Market Price

Sl No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
16	Corrugated Plastic Sheet for Roofing: Supplying, fitting & fixing 1mm thick corrugated plastic sheet (Brand Quality), fitting and fixing on wooden frame with screws. all complete and accepted by the Engineer.	5.20	sqm	850.00	4424	Local Market Price
17	CGI Sheet for Wall: Supplying, transport, fitting and fixing of .32mm, 6ft long color sheet good brand CGI sheet including labour charges all work will be completed as per drawing and instruction of Engineer in-charge.	11.15	sqm	850.00	9480	Local Market Price
18	Galvanized Iron Sheet for door: Supplying, fitting and fixing 0.51 mm/24 gate thick (Colored) Plain Galvanized Iron Sheet (Brand Quality) for fitting and fixing on wooden purlin with screws, limpet washers and putty etc. all complete and accepted by the Engineer.	1.39	sqm	550.00	767	Local Market Price
19	Visibility Plaque: Prepare and fixing of Visibility plaque to each latrine door as per given design and color code, print the information and logos over a 6mm PVC board (UV print) of 12"x 8" in size, and fixing want joint-screw.	1	L.S	600	600	Local Market Price
PART-C: Other Supplies & Accessories fitting, fixing & supplying						
20	2" PVC Vent pipe: Supply, fitting & fixing of 50 mm dia PVC vent pipe (class-C) including PVC kawal approved and accepted by the Engineer in-charge.	2.74	rm	130	357	PWD Rates Schedule (2022)
a	Stud Nail (2.5 inch)	2	kg	80	160	Local Market Price
b	MS Clamp Size 1-6" x 2.5"x3mm Thickness	4	each	200	800	Local Market Price
c	Nail Different size (1.5 to 4 inch)	1.5	kg	80	120	Local Market Price
d	Steel Nail 4"	0.5	kg	250	125	Local Market Price
e	Washer 1"	0.5	Kg	110	55	Local Market Price
f	Hinges	3	Each	50	150	Local Market Price
g	Screw for Hinges	1	Dozen	100	100	Local Market Price
h	2" PVC Lbo	1	each	150	150	Local Market Price
i	Chitkani+Lock	3	each	130	390	Local Market Price
Total Quoted Price				BDT	51995	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
Latrine Design Group
ISCG WASH Sector, Cox's Bazar

Reviewed by :
DPHE, Cox's Bazar

Approved by :
Office of Refugee Relief and
Repatriation Commissioner (RRRC),
Cox's Bazar



PROJECT

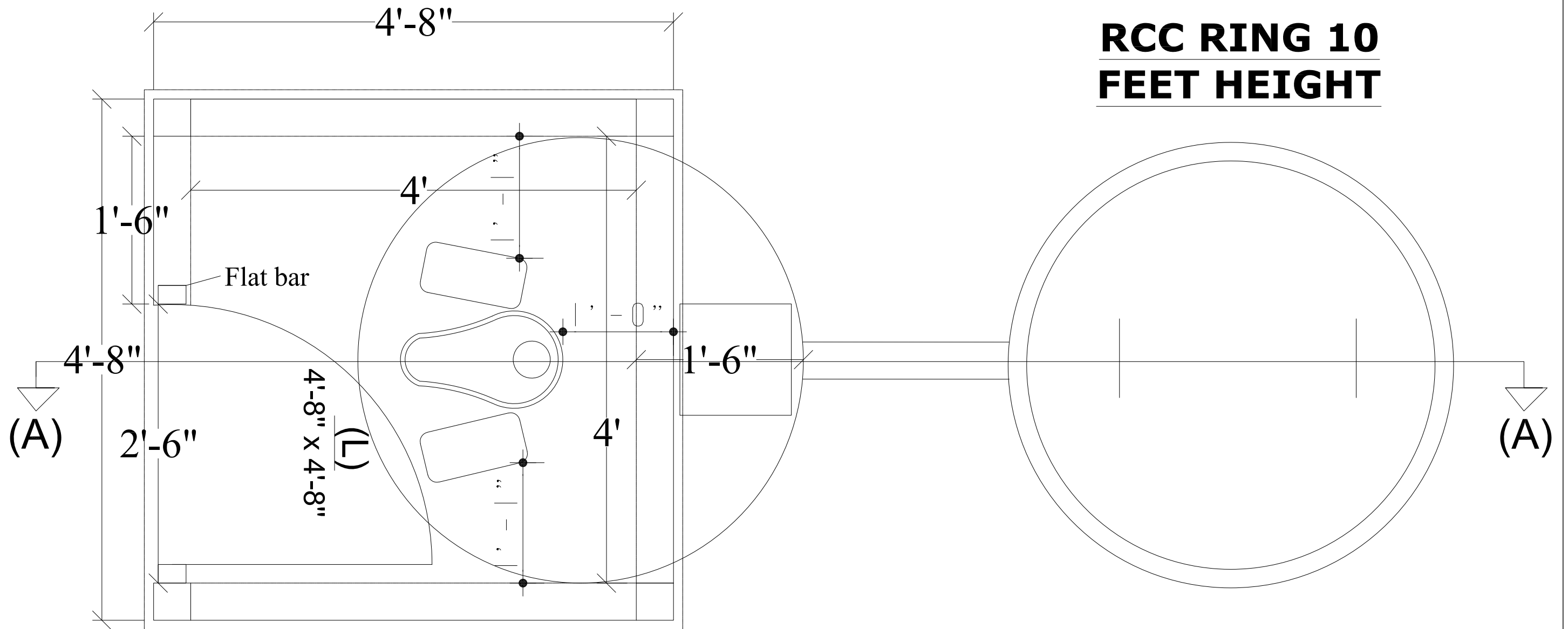
DESIGN AND DRAWING of UNIFIED LATRINE

**Single Cubicle Wooden Framed Direct Twin Pit Latrine
(Option-02A)**

JULY, 2023

PREPARED By:

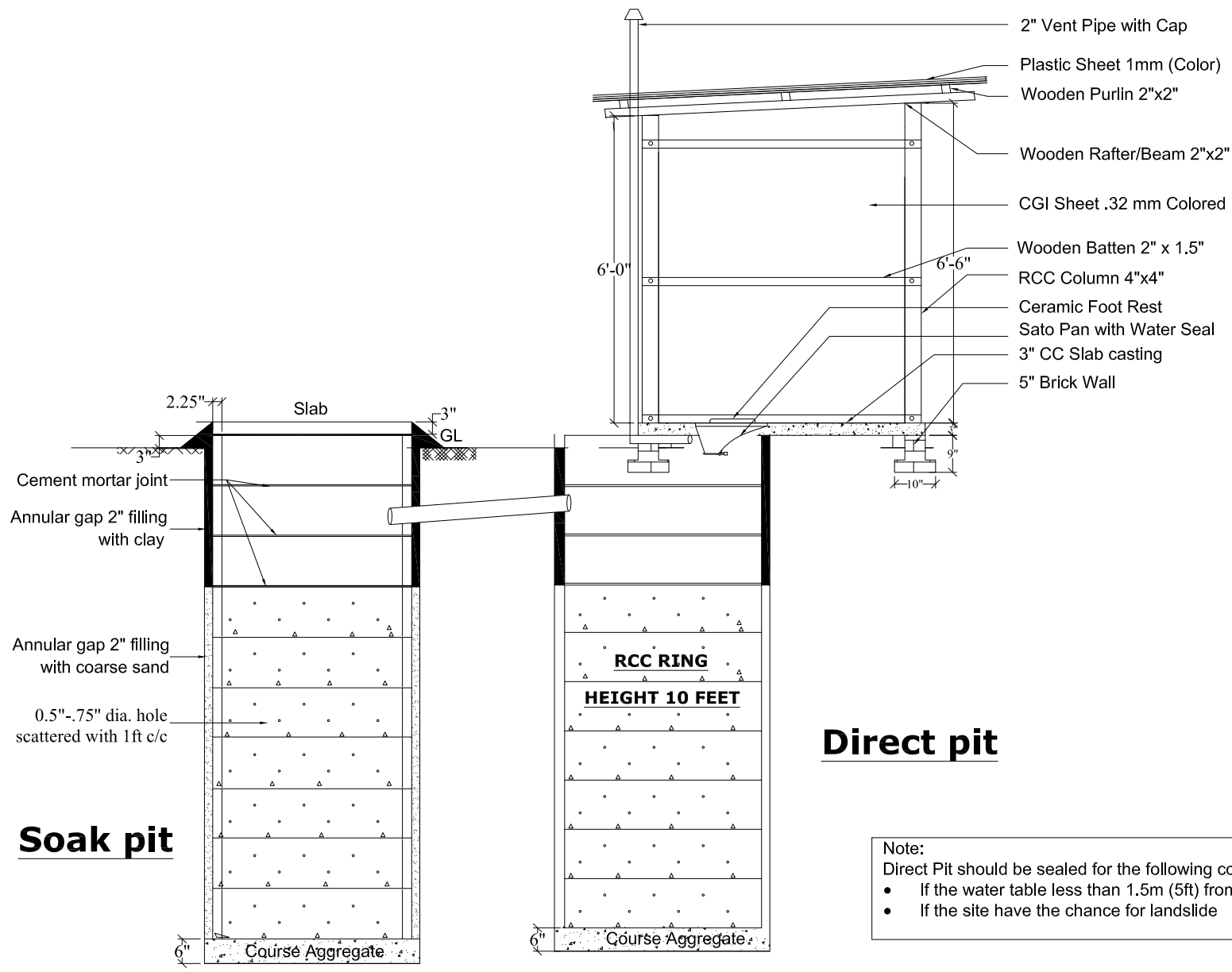
**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**



RCC RING 10 FEET HEIGHT

Plan View

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Direct Twin Pit Latrine (Option-02A)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	01

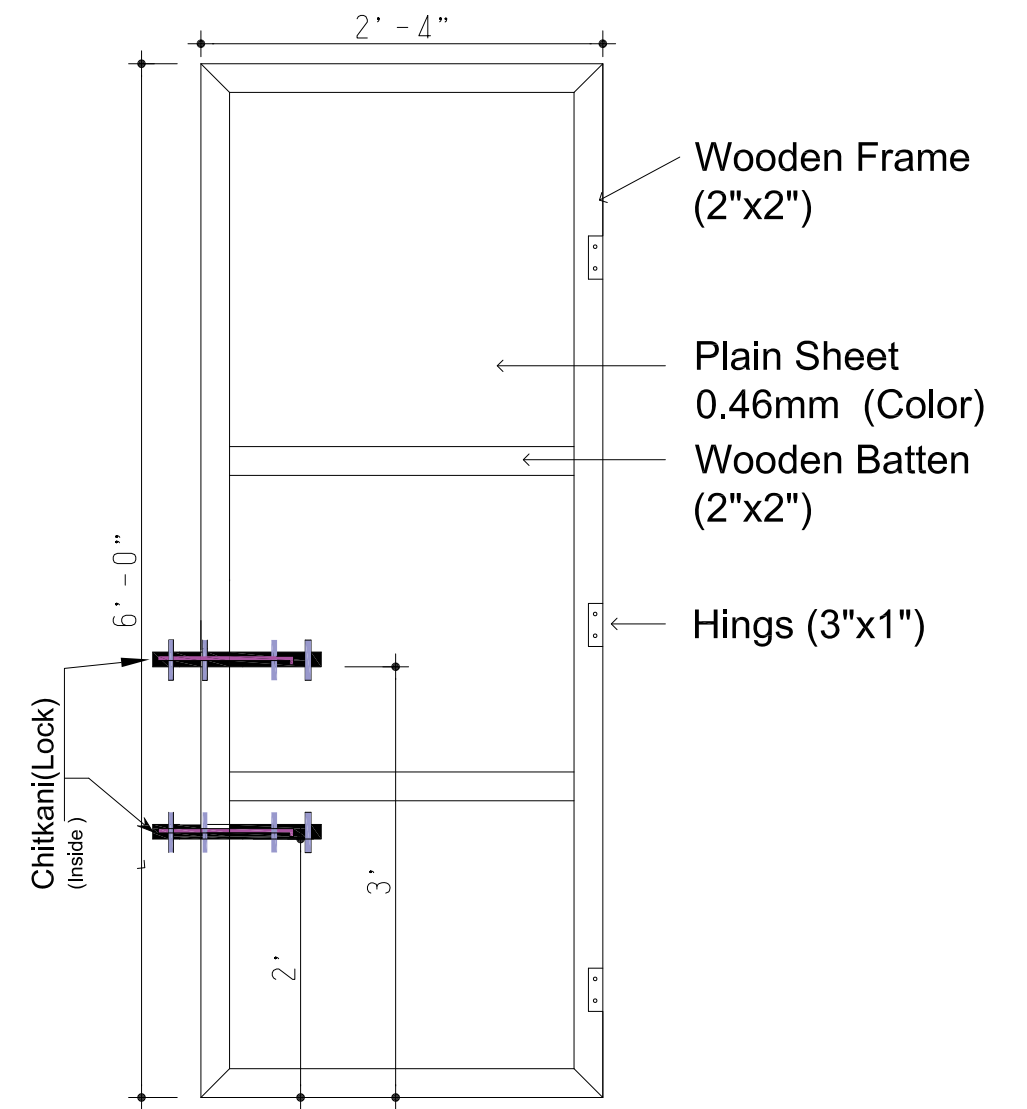
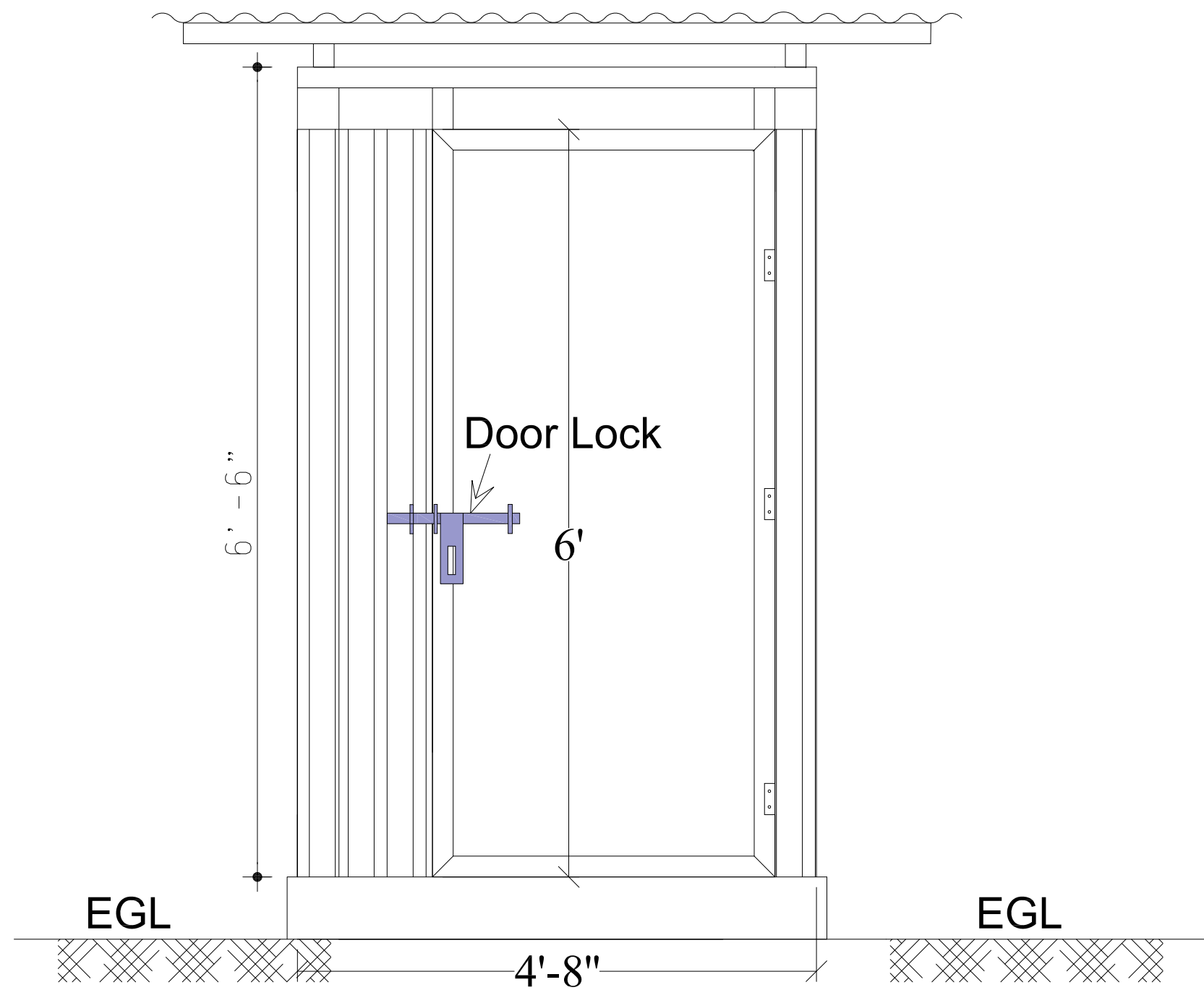


Note:
 Direct Pit should be sealed for the following condition:

- If the water table less than 1.5m (5ft) from the bottom of the pit
- If the site have the chance for landslide

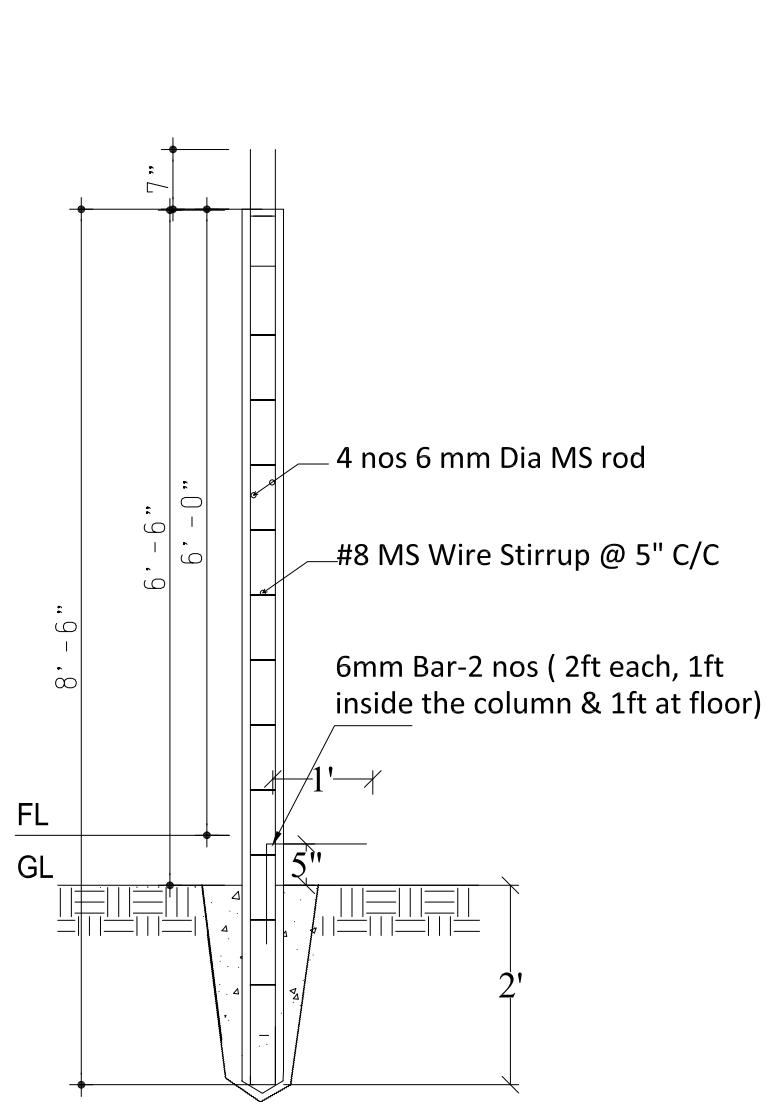
Section A-A

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Direct Twin Pit Latrine (Option-02A)	Latrine Design Group	Section	July, 2023	DPHE Cox's Bazar	RRRC	02

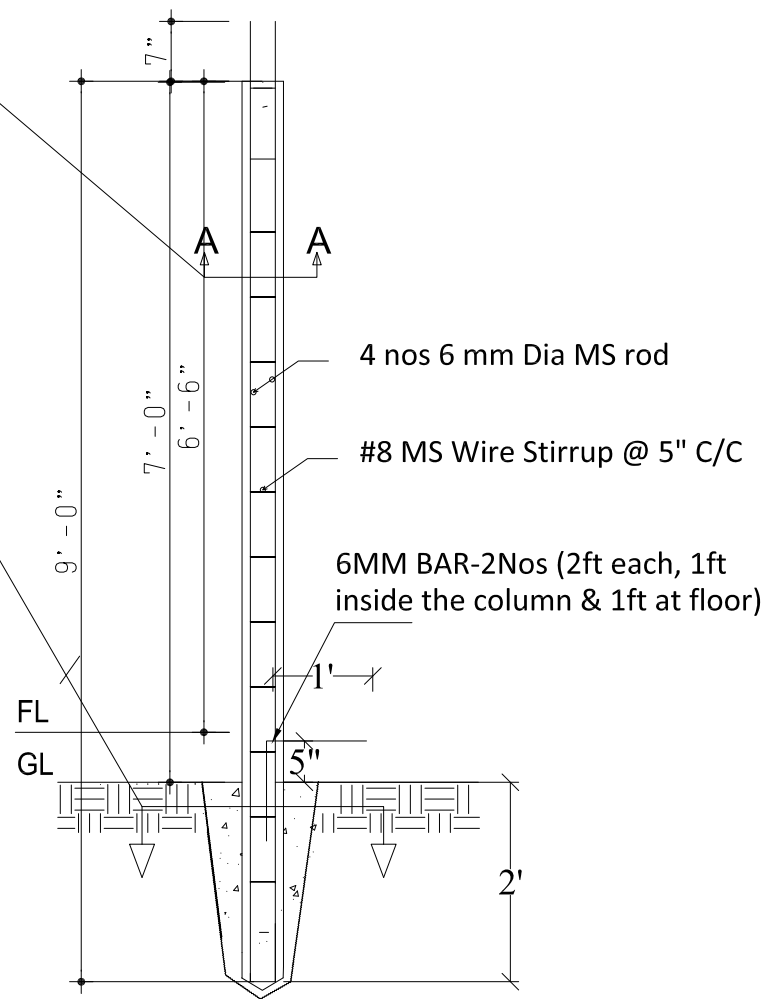
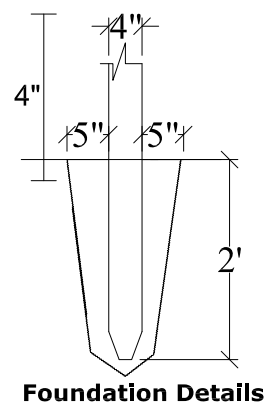
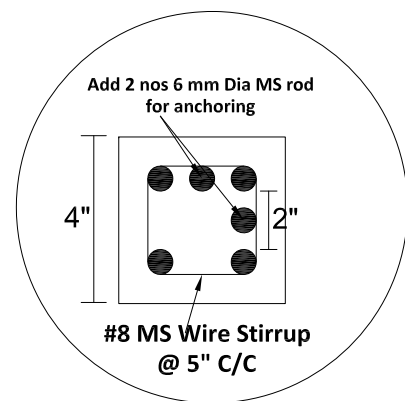
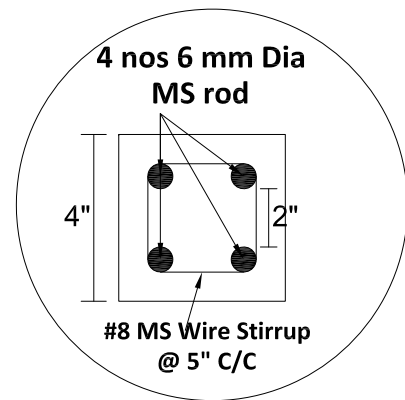


**Door Elevation
(Internal Side)**

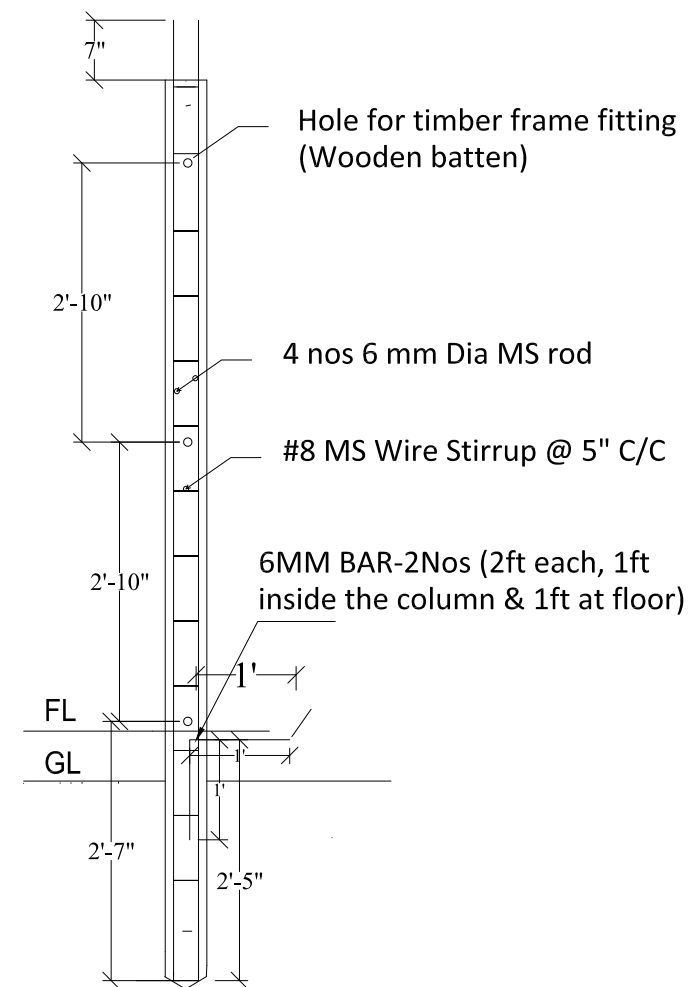
	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Direct Twin Pit Latrine (Option-02A)	Latrine Design Group	Front View & Door Details	July, 2023	DPHE Cox's Bazar	RRRC	03



DETAILS OF PRECAST R.C.C PILLAR (Back)



DETAILS OF PRECAST R.C.C PILLAR (Front)

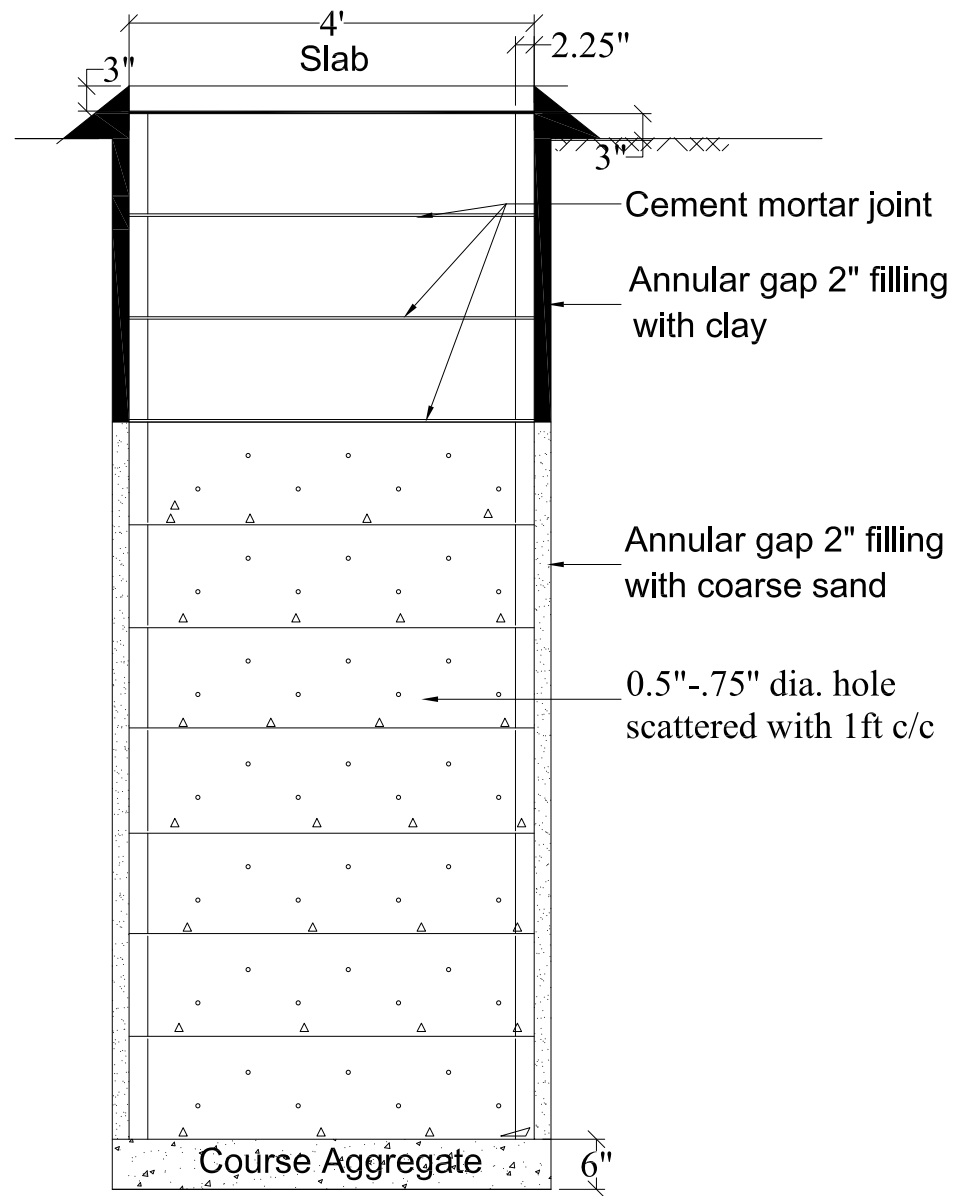


Hole detailing for PRECAST R.C.C PILLAR

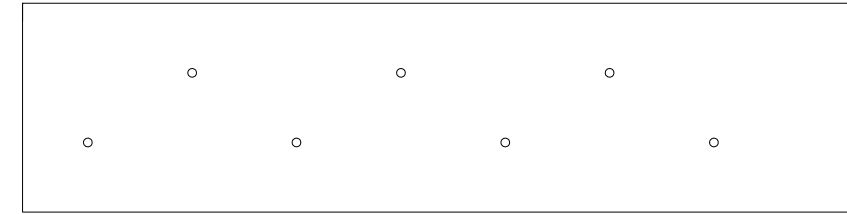


Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Direct Twin Pit Latrine (Option-02A)	Latrine Design Group	Pre Cast Pillar Details	July, 2023	DPHE Cox's Bazar	RRRC	04

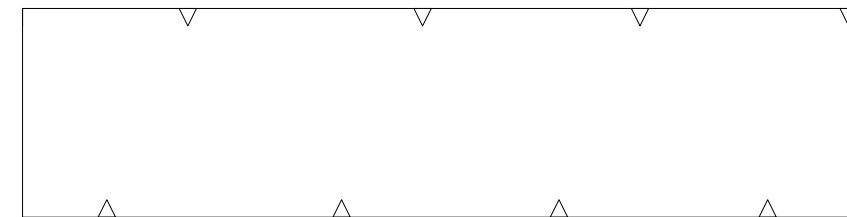
RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal), with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance).



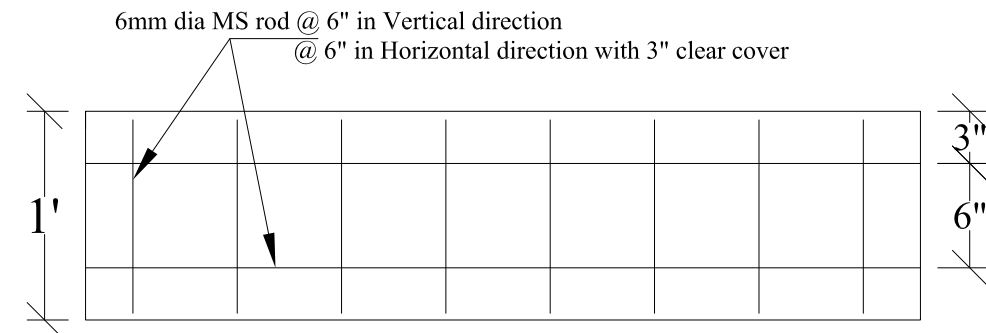
RCC Ring



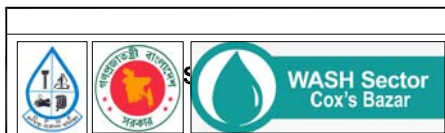
RCC Ring (Option 1)



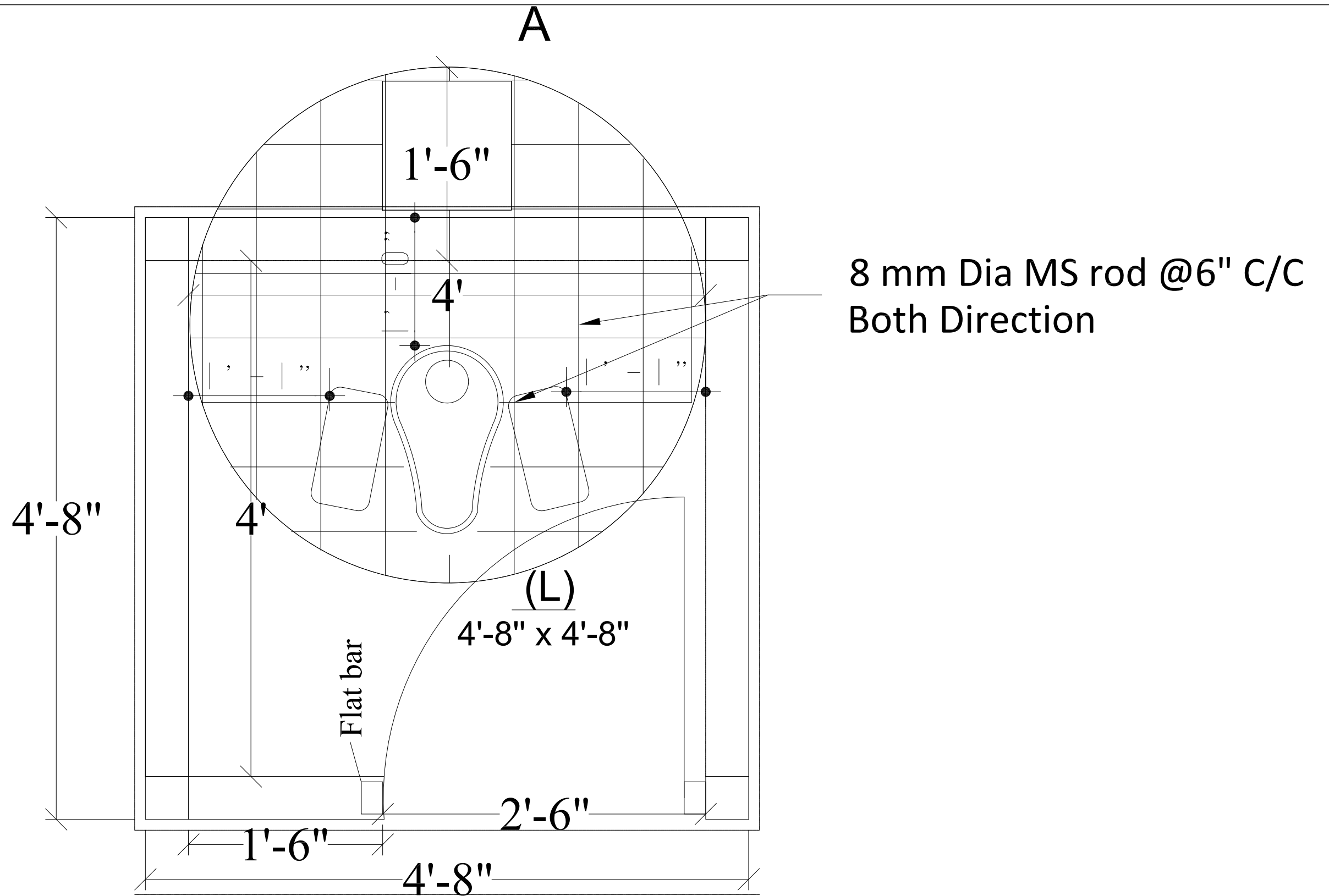
RCC Ring (Option 2)



Section of Ring



Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Direct Twin Pit Latrine (Option-02A)	Latrine Design Group	Pre Cast Ring Details	July, 2023	DPHE Cox's Bazar	RRRC	05



Slab Reinforcement

	Project Design and Drawing of Unified Latrine	Model: Single Cubicle Wooden Framed Direct Twin Pit Latrine (Option-02A)	Design by: Latrine Design Group	Drawing Title Slab Reinforcement Details	Date July, 2023	Reviewed by DPHE Cox's Bazar	Approved by RRRC	Page 06
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Bill of Quantities
Latrine Option-02A

Single Cubicle Wooden Framed Direct Twin Pit Latrine

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
PART-A: Substructure						
1	Earth Excavation : Earth work in excavation in all kinds of soil for single cubicle direct pit including; providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and providing layout, removing necessary roots and plants, protecting and keeping the trench dry from rain/external water, stacking and levelling surrounding sites with excavated soil. All should be completed under the direct supervision and guidance of the Engineer in-charge, subject to agreed and locally available earth excavation methods. However, Engineer in-charge's approval shall not relieve the contractor of his responsibilities	10.48	cum	259.00	2713	PWD Rates Schedule (2022)
2	Sand Filling : Sand filling in foundation trenches and plinth with sand having F.M. 0.5 to 0.8 in 150 mm layers including leveling, watering and compaction to achieve minimum dry density of 95% with optimum moisture content (Modified proctor test) by ramming each layer up to finished level as per design supplied by the design office only, all complete and accepted by the Engineer-in-charge.	1.05	cum	1,093.00	1149	PWD Rates Schedule (2022)
3	Brick Soling : One layer of brick flat soling in latrine floor with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	1.12	sqm	515.00	574	PWD Rates Schedule (2022)
4	10" Brick Work : 10" Brick works in Foundation of wall of Septic tank with first class bricks in cement/sand mortar (1:6) including filling the interstices with mortar, raking out joints, cleaning and socking the bricks at least for 24 hours and screening of sand before use, necessary scaffolding, curing at least for 7 days etc. all complete including cost of water, electricity and other charges (measurement to given as 250 mm width for one brick length). All work should be completed as per design and guidance of the Engineer in-charge.	0.09	cum	7,501.00	709	PWD Rates Schedule (2022)
5	5" Brick Wall : " thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	0.74	sqm	1,180.00	877	PWD Rates Schedule (2022)
6	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering at floor, inner surface and outer surface, finishing the corner, koba & top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	2.36	sqm	297.00	699	PWD Rates Schedule (2022)
7	RCC Ring : RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25" Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal),with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. In total 10 rings but top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance.					
	7a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	1.34	cum	8,784.00	11733	PWD Rates Schedule (2022)
	7b) 6 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	86.12	kg	110.00	9473	PWD Rates Schedule (2022)
	7c) Carrying Cost	10.00	each	350.00	3500	Local Field Price
8	RCC Slab : Supply, fittings & fixing of pre-cast ring cover 4' dia size, thickness-3" made of 1:2:4 mixing ratio, 8mm dia ms rod (60G) 6" C/C both way & Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest as per the drawing and instruction of EIC.					
	8a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	0.18	cum	8,784.00	1564	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
	8b) 8 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	7.44	kg	110.00	818	PWD Rates Schedule (2022)
	8c) Sato RFL pan (approximately 750 gm)	1.00	each	150.00	150	Local Market Price
	8d) Carrying Cost	2.00	each	400.00	800	Local Field Price
9	Polyethylene Sheet: Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	1.12	sqm	150.00	167	Local Market Price
10	Cement concrete Work: CC casting in Latrine Floor & RCC post base at the bottom [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	0.34	cum	7,817.00	2669	PWD Rates Schedule (2022)
11	Flat Bar : 1 numbers of 3" Flat bar, thickness 6mm & 16" long, to be fitted within top of CC of floor & fitting with wooden bar with bolts for door (Chowkat). All work complete as per design and instruction of Engineer in-charge.	1.00	each	700.00	700	Local Market Price
PART-B: Superstructure						
12	RCC Pillar or Post : RCC Pillar or post 4'X4"x9' long 2 nos and 4"X4"X 8-9" short 2 nos, Reinforced cement concrete works with minimum cement content relates to mix ratio 1:2:4 having minimum f'cr = 24 MPa, satisfying a specified compressive strength f'c= 19 MPa at 28 days on standard cylinders as per standard practice of Code ACI/BNBC/ASTM, cement conforming to BDS EN-197-1-CEM-I, 52.5N (52.5 MPa) / ASTM-C 150 Type – I, best quality sand [50% quantity of best local sand (F.M. 1.2) and 50% quantity of Sylhet sand or coarse sand of equivalent F.M. 2.2] and 20 mm down well graded picked jhama brick chips conforming to ASTM C-33 including breaking chips and screening, making and placing shutter in position maintaining true to plumb, making shutter water-tight properly, placing reinforcement in position; mixing in standard mixer machine with hopper fed by standard measuring boxes or mixing in batching plant, casting in forms, compacting by vibrator machine and curing at least for 28 days, removing centering-shuttering after specified time approved; including cost of water, electricity, laboratory testing charges of materials and concrete cylinders as required, cost of all materials and other charges etc. all complete, approved and accepted by the Engineer-in-charge. (Rate is excluding the cost of reinforcement and its fabrication, placing, binding etc. and the cost of shuttering & centering)					
	12a) Concrete (mix ratio 1:2:4) for RCC post, as per drawing and instruction of EIC	0.11	cum	8,996.00	991	PWD Rates Schedule (2022)
	12b) 6 mm dia deformed-rod (4 nos 6mm dia MS rod), fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	10.00	kg	110.00	1101	PWD Rates Schedule (2022)
	12c) #8 MS wire stirrups @ 125mm C/C, as per drawing and instruction of EIC	6.53	kg	110.00	719	Local Market Price
	12d) Carrying Cost	4.00	each	300.00	1200	Local Field Price
13	Wooden Rafter & Purlin (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of roof truss by using of 2"X2"X7.5' ft rafter 2pcs and 2"X2"X7 ft purlin 3pcs and including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.00	cft	1,200.00	1200	Local Market Price
14	Wooden For wall Batten (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of wooden Batten by using of 2" X 1.5" for Wall including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.29	cft	1,200.00	1551	Local Market Price
15	Wooden for Door (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of Wooden Door by using of 2"x 2" wall bar, 2"x 2" for door batten or frame, 2"x2" Cross batten & 3"x 2"size 2 nos for Door frames (Chowkat) including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.53	cft	1,200.00	1839	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
16	Corrugated Plastic Sheet for Roofing: Supplying, fitting & fixing 1mm thick corrugated plastic sheet (Brand Quality), fitting and fixing on wooden frame with screws. all complete and accepted by the Engineer.	5.20	sqm	850.00	4424	Local Market Price
17	CGI Sheet for Wall: Supplying, transport, fitting and fixing of .32mm, 6ft long color sheet good brand CGI sheet including labour charges all work will be completed as per drawing and instruction of Engineer in-charge.	11.15	sqm	850.00	9480	Local Market Price
18	Galvanized Iron Sheet for door: Supplying, fitting and fixing 0.51 mm/24 gate thick (Colored) Plain Galvanized Iron Sheet (Brand Quality) for fitting and fixing on wooden purlin with screws, limpet washers and putty etc. all complete and accepted by the Engineer.	1.39	sqm	550.00	767	Local Market Price
20	Visibility Plaque: Prepare and fixing of Visibility plaque to each latrine door as per given design and color code, print the information and logo's over a 6mm PVC board (UV print) of 12"x 8" in size, and fixing with joint-screw.	1	L.S	600	600	Local Market Price
<u>PART-C: SANITARY work & Ventilation</u>						
21	2" PVC Vent pipe: Supply, fitting & fixing of 50 mm dia PVC vent pipe (class-C) including PVC kawal approved and accepted by the Engineer in-charge.	2.74	rm	130	357	PWD Rates Schedule (2022)
a	Stud Nail (2.5 inch)	2	kg	80	160	Local Market Price
b	MS Clamp Size 1-6" x 2.5"x3mm Thickness	4	each	100	400	Local Market Price
c	Nail Different size (1.5 to 4 inch)	1.5	kg	80	120	Local Market Price
d	Steel Nail 4"	0.5	kg	250	125	Local Market Price
e	Washer 1"	0.5	Kg	110	55	Local Market Price
f	Hinges	3	Each	50	150	Local Market Price
g	Screw for Hinges	1	Dozen	130	130	Local Market Price
h	2" PVC Lbo	1	each	150	150	Local Market Price
i	Chitkani+Lock	3	each	130	390	Local Market Price
Total Quoted Price				BDT	64205	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
Latrine Design Group
ISCG WASH Sector, Cox's Bazar

Reviewed by :
DPHE, Cox's Bazar

Approved by :
Office of Refugee Relief and
Repatriation Commissioner (RRRC),
Cox's Bazar

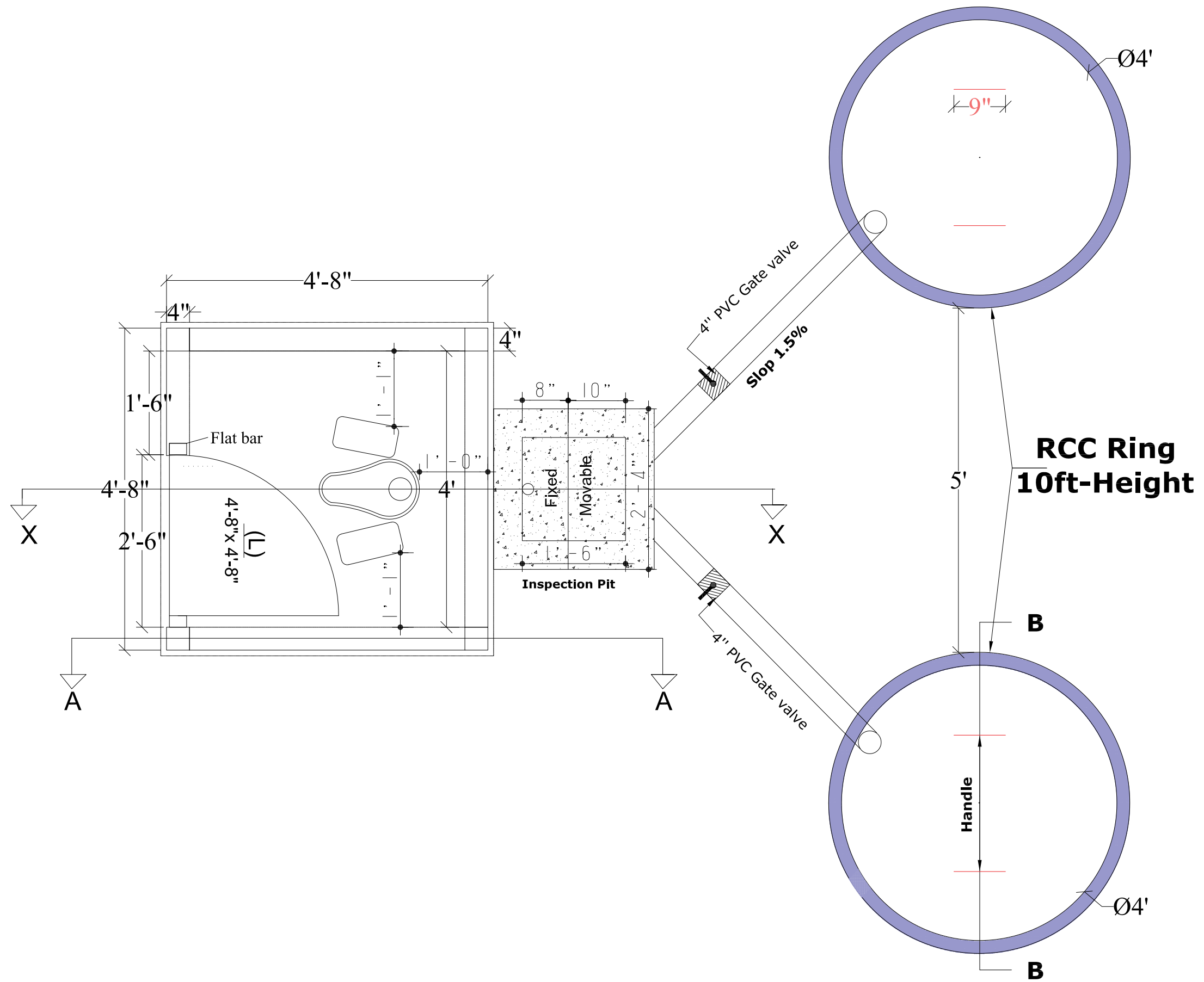


PROJECT
DESIGN AND DRAWING of UNIFIED LATRINE
SINGLE CUBICLE WOODEN FRAMED TWIN PIT LATRINE
(Option-03A)

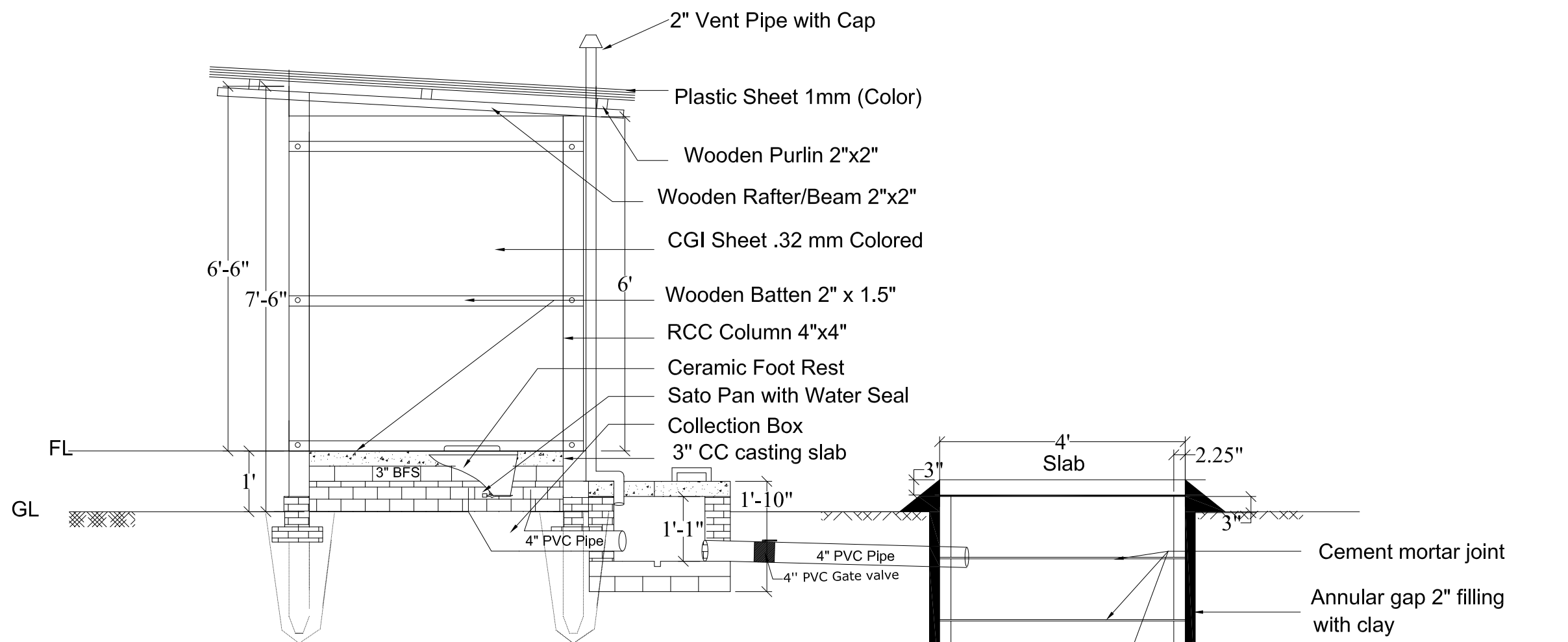
JULY, 2023

PREPARED By:

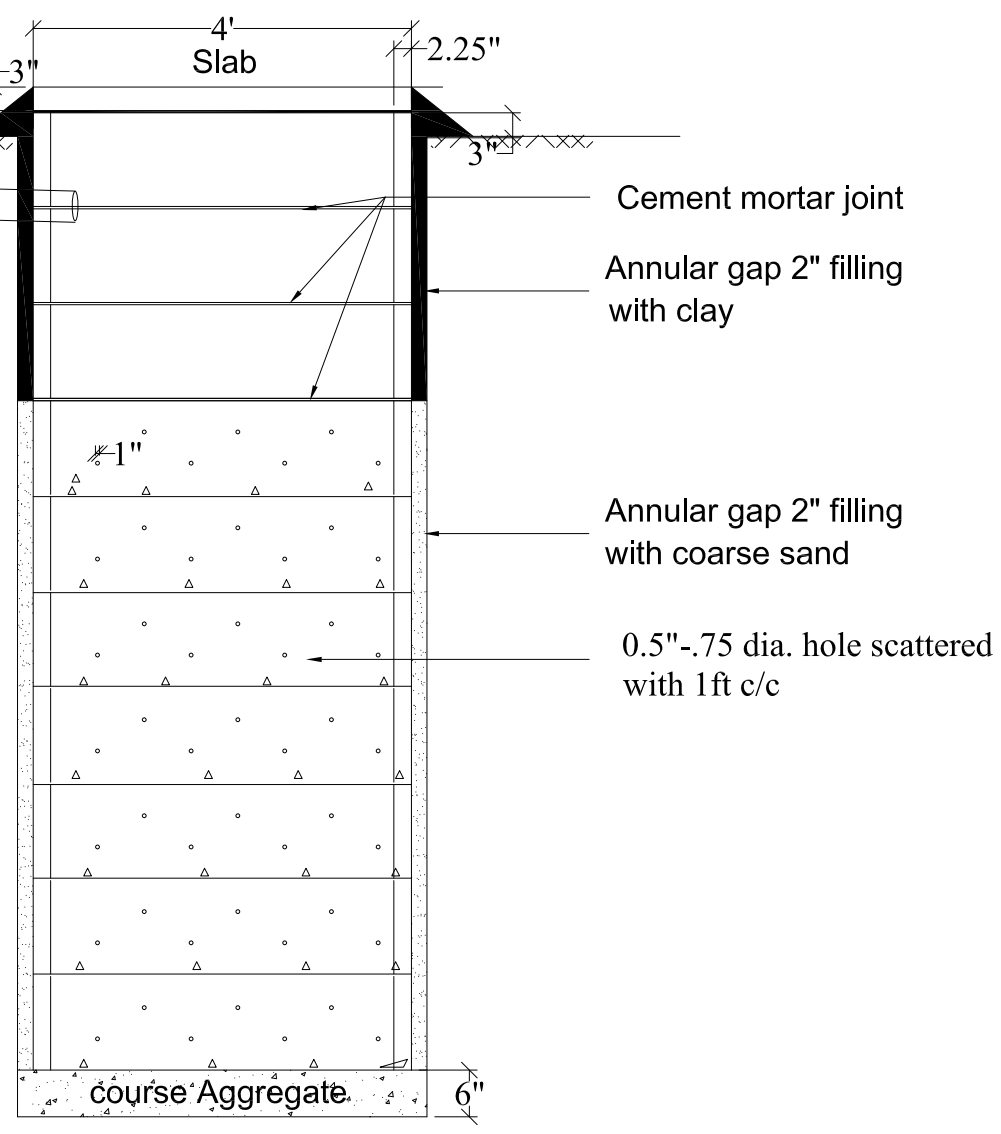
**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**



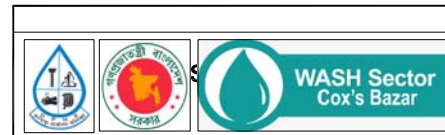
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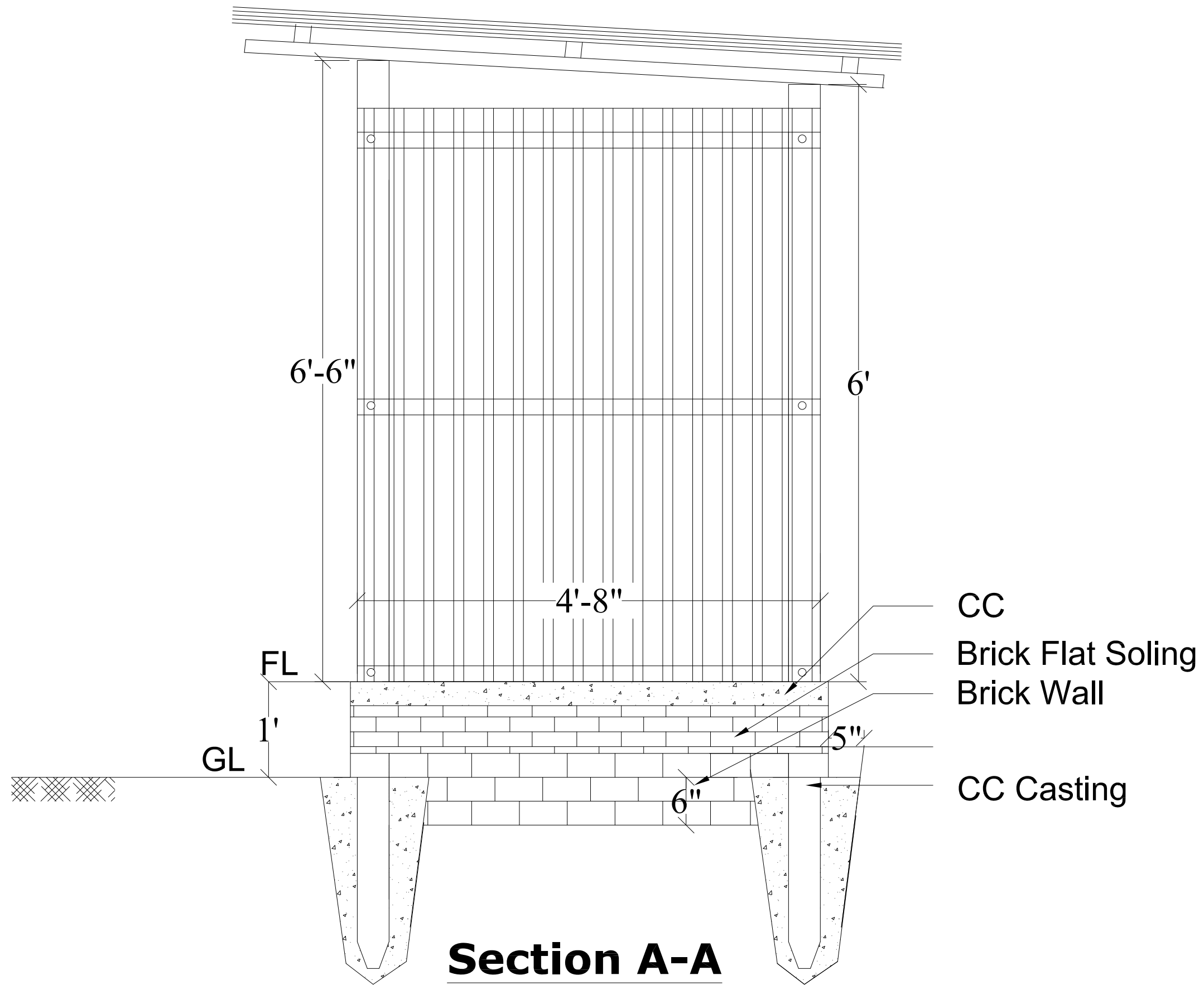
Section X-X




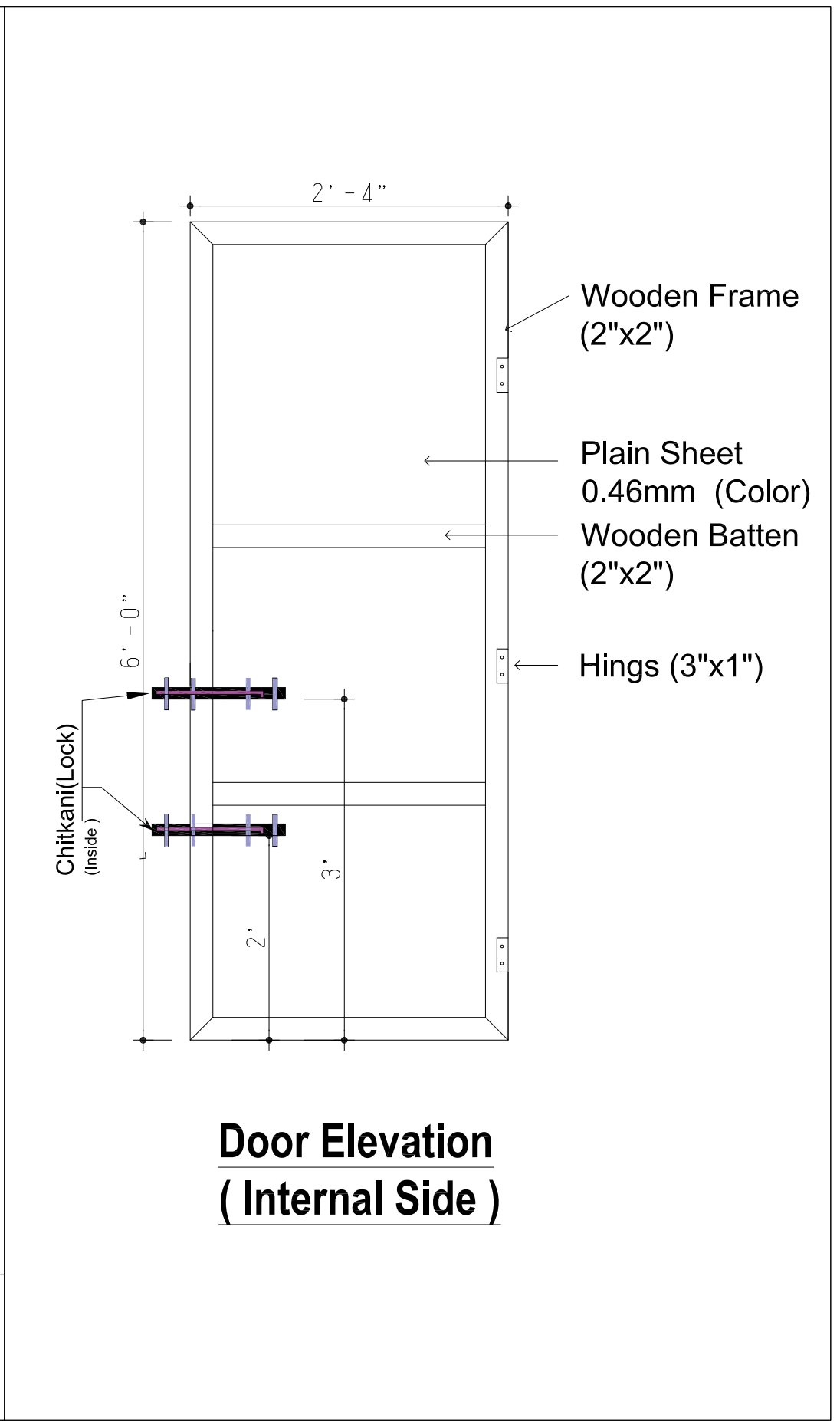
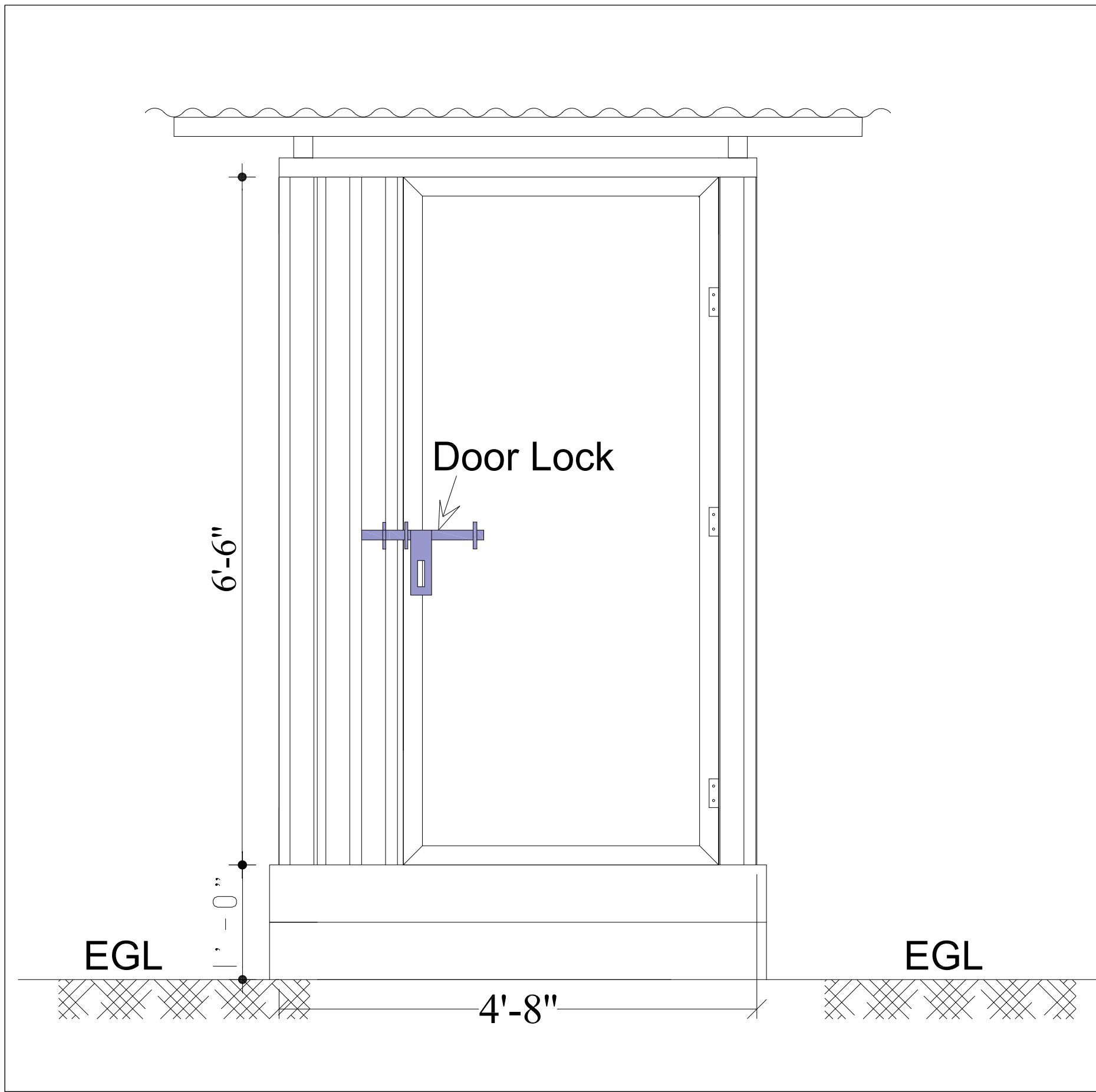
RCC Ring




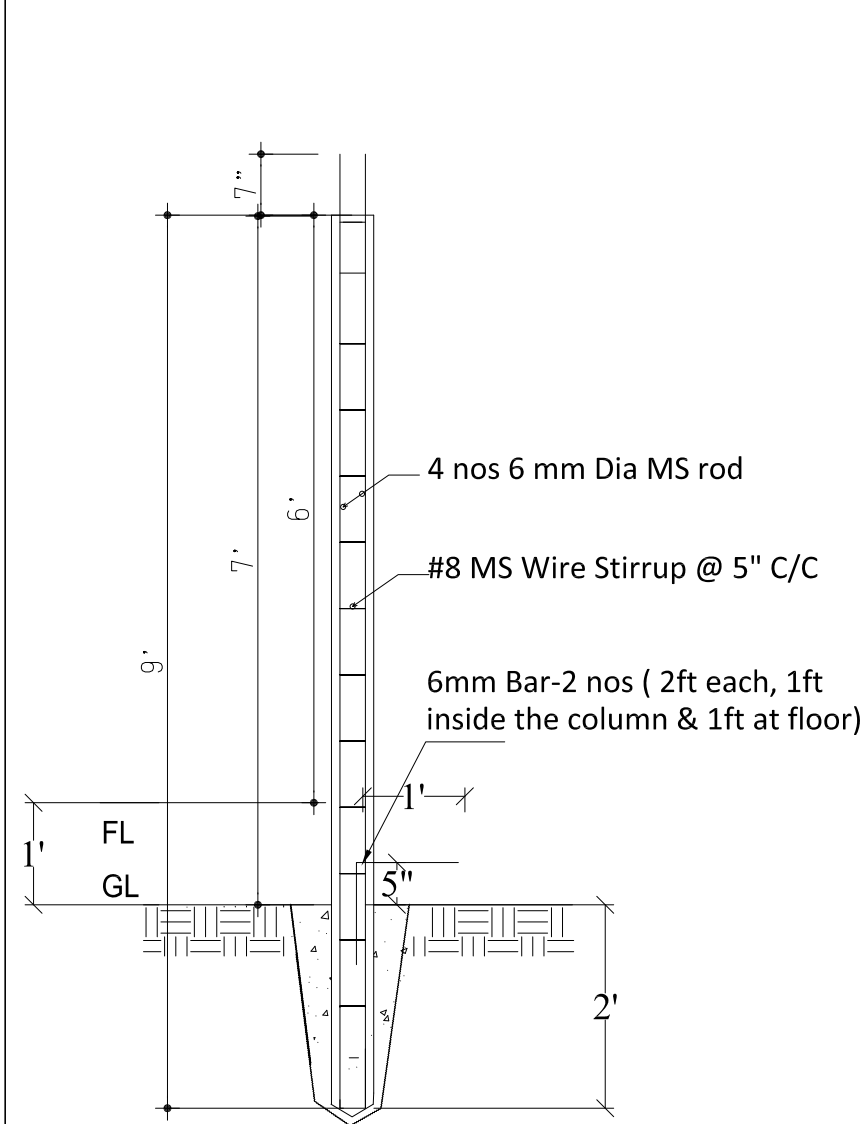
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Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Offset Twin Pit Latrine (Option-03A)	Latrine Design Group	Section	July, 2023	DPHE Cox's Bazar	RRRC	02



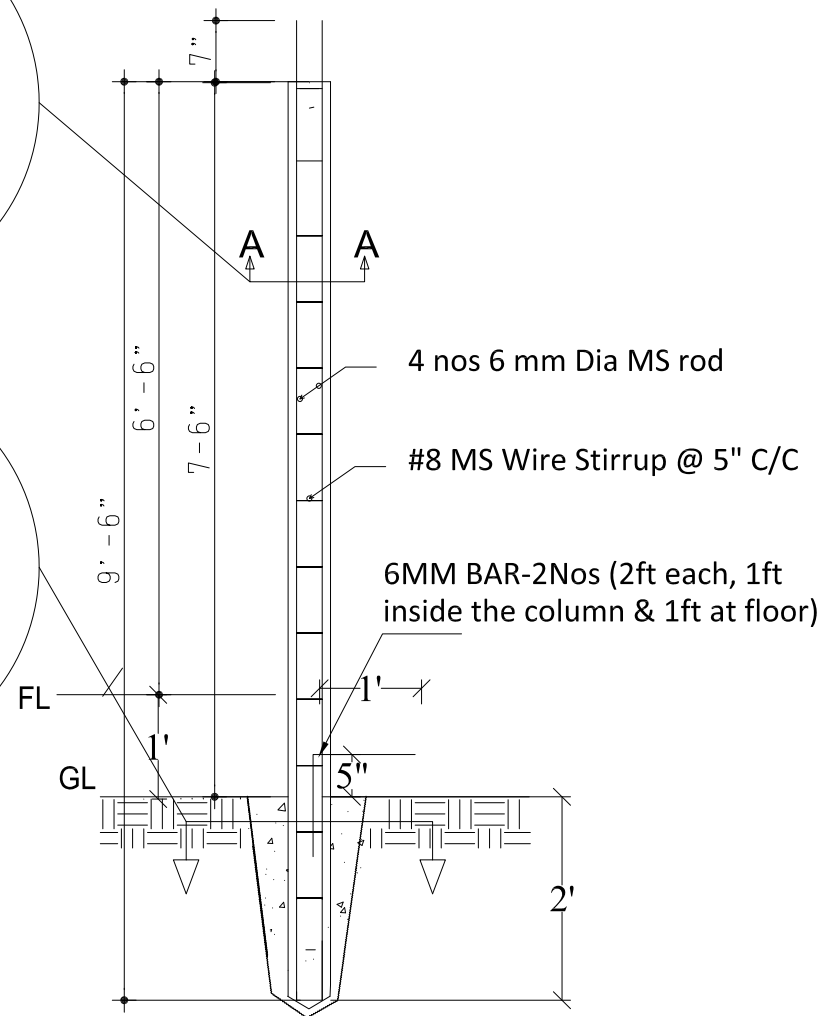
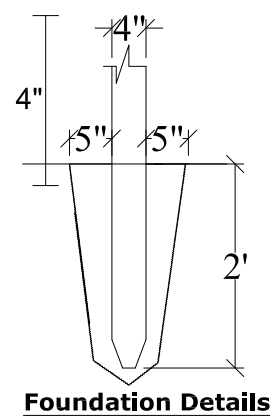
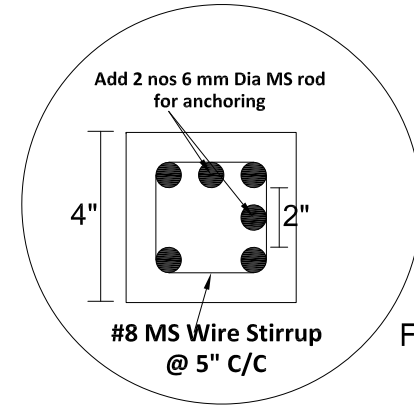
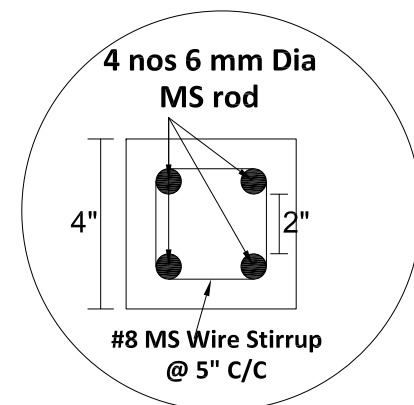
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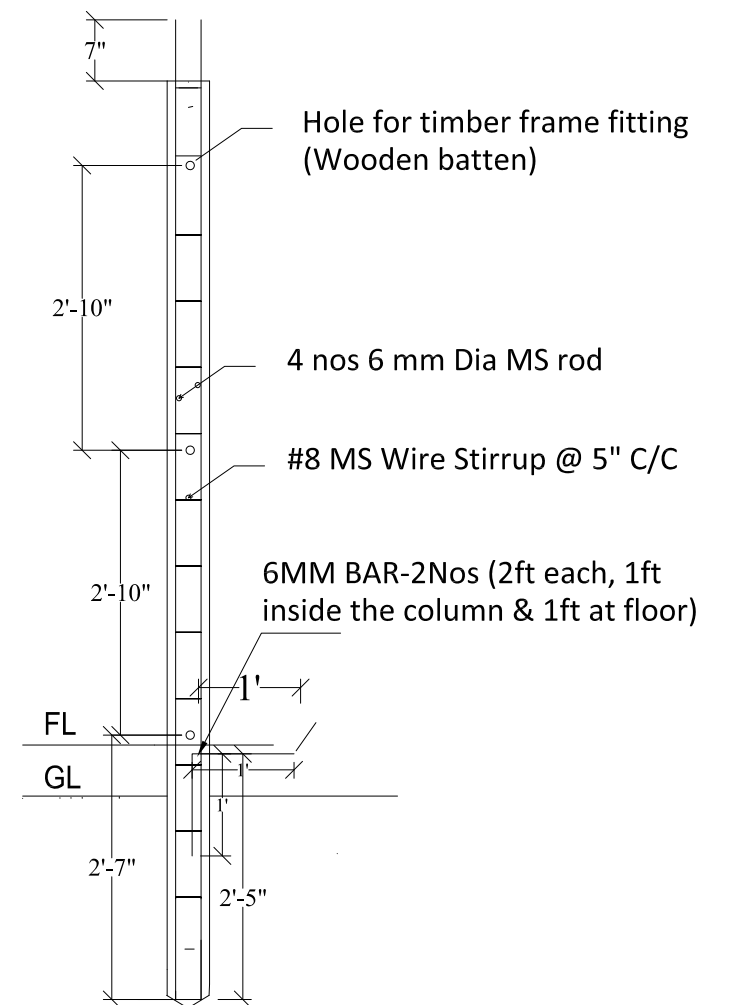
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			Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Offset Twin Pit Latrine (Option-03A)	Latrine Design Group	Front View & Door Details	July, 2023	DPHE Cox's Bazar	RRRC	04



DETAILS OF PRECAST R.C.C PILLAR (Back)



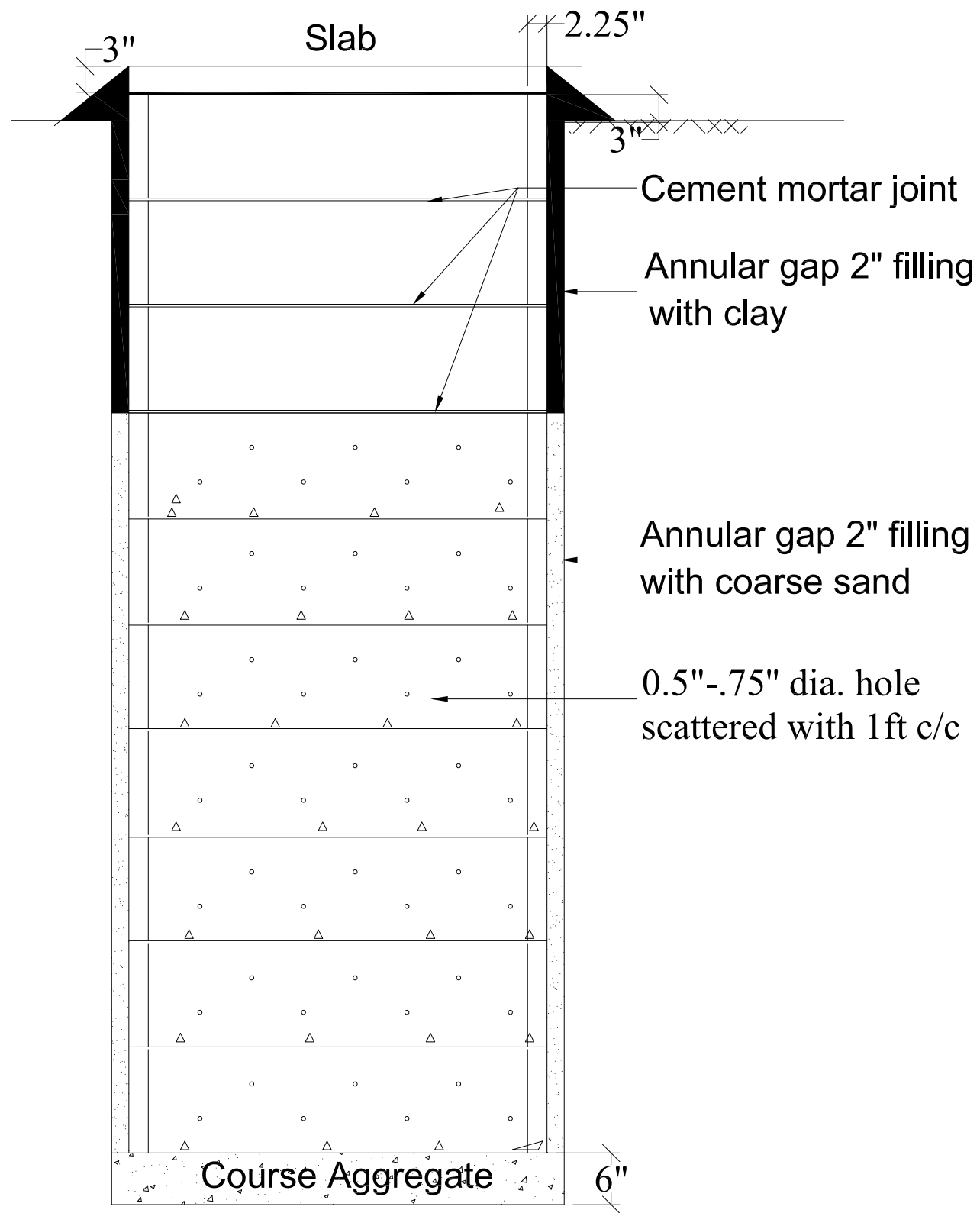
DETAILS OF PRECAST R.C.C PILLAR (Front)



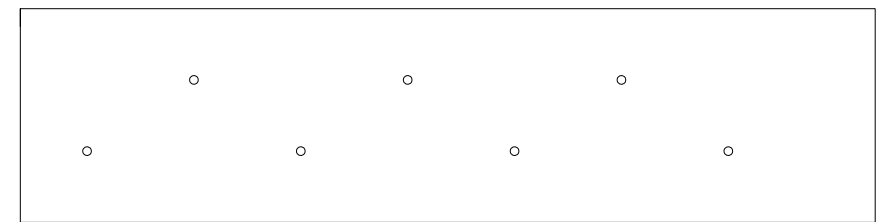
Hole detailing for PRECAST R.C.C PILLAR

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Offset Twin Pit Latrine (Option-03A)	Latrine Design Group	Pre Cast Pillar Details	July, 2023	DPHE Cox's Bazar	RRRC	05

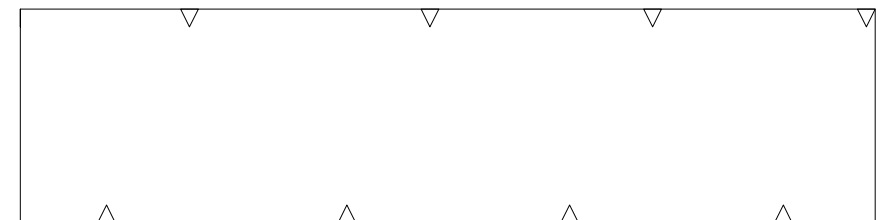
RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal), with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance).



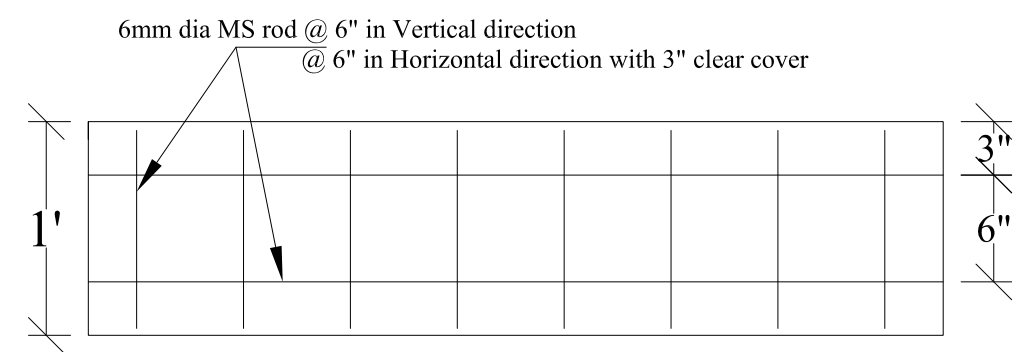
RCC Ring



RCC Ring (Option 1)

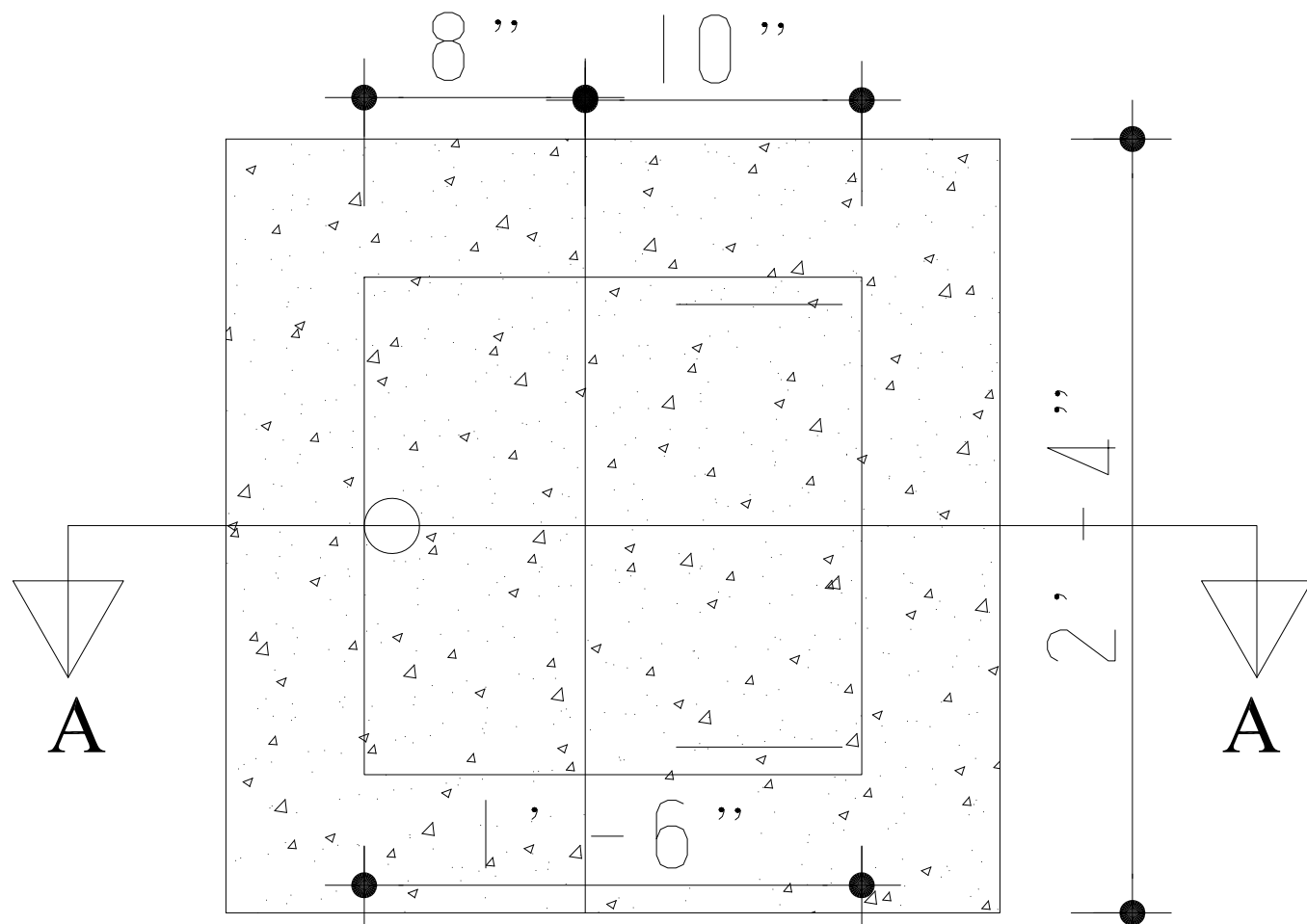


RCC Ring (Option 2)

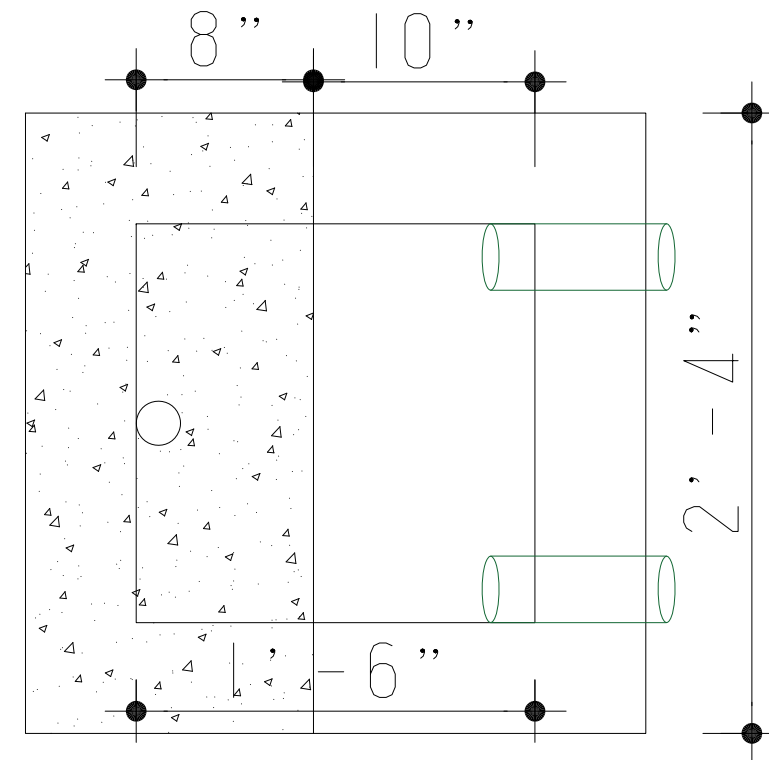


Section of Ring

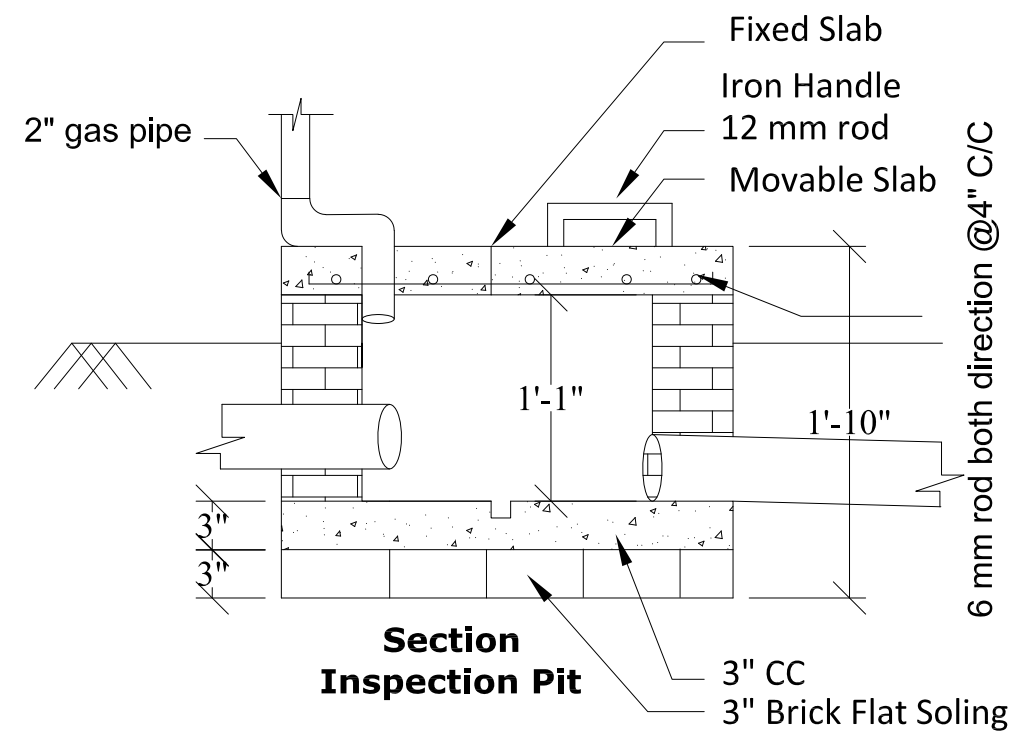
	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Offset Twin Pit Latrine (Option-03A)	Latrine Design Group	Pre Cast Ring Details	July, 2023	DPHE Cox's Bazar	RRRC	06



**Plan
Inspection Pit**

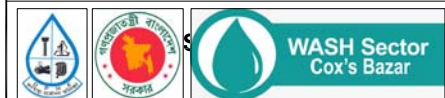


**Inside View
Inspection Pit**



**Section
Inspection Pit**

6 mm rod both direction @4" C/C



Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Single Cubicle Wooden Framed Offset Twin Pit Latrine (Option-03A)	Latrine Design Group	Inspection Pit Details	July, 2023	DPHE Cox's Bazar	RRTC	07

Bill of Quantities
Latrine Option-03A

Single Cubicle Wooden Framed Offset Twin Pit Latrine

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
PART-A:Substructure						
1	Earth Excavation : Earth work in excavation in all kinds of soil for single cubicle direct pit including; providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and providing layout, removing necessary roots and plants, protecting and keeping the trench dry from rain/external water, stacking and levelling surrounding sites with excavated soil. All should be completed under the direct supervision and guidance of the Engineer in-charge, subject to agreed and locally available earth excavation methods. However, Engineer in-charge's approval shall not relieve the contractor of his responsibilities and obligations under the contract.	10.48	cum	259.00	2713	PWD Rates Schedule (2022)
2	Sand Filling : Sand filling in foundation trenches and plinth with sand having F.M. 0.5 to 0.8 in 150 mm layers including leveling, watering and compaction to achieve minimum dry density of 95% with optimum moisture content (Modified proctor test) by ramming each layer up to finished level as per design supplied by the design office only, all complete and accepted by the Engineer-in-charge.	1.05	cum	1,093.00	1149	PWD Rates Schedule (2022)
3	Brick Soling : One layer of brick flat soling in latrine floor with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	2.03	sqm	515.00	1044	PWD Rates Schedule (2022)
4	10" Brick Work : 10" Brick works in Foundation of wall of Septic tank with first class bricks in cement/sand mortar (1:6) including filling the interstices with mortar, raking out joints, cleaning and soaking the bricks at least for 24 hours and screening of sand before use, necessary scaffolding, curing at least for 7 days etc. all complete including cost of water, electricity and other charges (measurement to given as 250 mm width for one brick length). All work should be completed as per design and guidance of the Engineer in-charge.	0.09	cum	7,501.00	709	PWD Rates Schedule (2022)
5	5" Brick Wall : " thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	1.49	sqm	1,180.00	1755	PWD Rates Schedule (2022)
6	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering at floor, inner surface and outer surface, finishing the corner, kobra & top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	2.36	sqm	297.00	699	PWD Rates Schedule (2022)
7	RCC Ring : RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25" Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal), with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. In total 10 rings but top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance.				0	
	7a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	1.34	cum	8,784.00	11733	PWD Rates Schedule (2022)
	7b) 6 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	86.12	kg	110.00	9473	PWD Rates Schedule (2022)
	7c) Carrying Cost	10.00	each	350.00	3500	Local Field Price

Sl No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
8	RCC Slab: Supply, fittings & fixing of pre-cast ring cover 4' dia size, thickness-3" made of 1:2:4 mixing ratio, 8mm dia ms rod (60G) 6" C/C both way & Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest as per the drawing and instruction of EIC.				0	
	8a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	0.18	cum	8,784.00	1564	PWD Rates Schedule (2022)
	8b) 8 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	7.44	kg	110.00	818	PWD Rates Schedule (2022)
	8c) Sato RFL pan (approximately 750 gm)	1.00	each	150.00	150	Local Market Price
	8d) Carrying Cost	2.00	each	400.00	800	Local Field Price
9	RCC Slab for inspection pit: 75 mm thick RCC (1:2:4) Two Types of slab one types are Fixed Slab (size 1'-1" x 2'-4") and another Movable slab (size 1'-3" x 2'-4") of inspection pit cover, including fitting, fixing of. Slab to be cast with 12mm down graded khoa of 1st class bricks 1.5 F.M clear sand (free from clay dirt) and using 6mm MS Bar @ 4" C/C both direction.	1.00	each	1,500.00	1500	Local Market Price
10	Polyethylene Sheet: Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	2.03	sqm	150.00	304	Local Market Price
11	Cement concrete Work: CC casting in Latrine Floor & RCC post base at the bottom [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	0.41	cum	7,817.00	3213	PWD Rates Schedule (2022)
12	Flat Bar : 1 numbers of 3" Flat bar, thickness 6mm & 16" long, to be fitted within top of CC of floor & fitting with wooden bar with bolts for door (Chowkat). All work complete as per design and instruction of Engineer in-charge.	1.00	each	700.00	700	Local Market Price
PART-B: Superstructure						
13	RCC Pillar or Post : RCC Pillar or post 4'X4'X9' long 2 nos and 4'X4'X 8-9" short 2 nos, Reinforced cement concrete works with minimum cement content relates to mix ratio 1:2:4 having minimum f'cr = 24 MPa, satisfying a specified compressive strength f'c= 19 MPa at 28 days on standard cylinders as per standard practice of Code ACI/BNBC/ASTM, cement conforming to BDS EN-197-1-CEM-I, 52.5N (52.5 MPa) / ASTM-C 150 Type – I, best quality sand [50% quantity of best local sand (F.M. 1.2) and 50% quantity of Sylhet sand or coarse sand of equivalent F.M. 2.2] and 20 mm down well graded picked jhama brick chips conforming to ASTM C-33 including breaking chips and screening, making and placing shutter in position maintaining true to plumb, making shutter water-tight properly, placing reinforcement in position; mixing in standard mixer machine with hopper fed by standard measuring boxes or mixing in batching plant, casting in forms, compacting by vibrator machine and curing at least for 28 days, removing centering-shuttering after specified time approved; including cost of water, electricity, laboratory testing charges of materials and concrete cylinders as required, cost of all materials and other charges etc. all complete, approved and accepted by the Engineer-in-charge. (Rate is excluding the cost of reinforcement and its fabrication, placing, binding etc. and the cost of shuttering & centering)					
	13a) Concrete (mix ratio 1:2:4) for RCC post, as per drawing and instruction of EIC	0.11	cum	8,996.00	991	PWD Rates Schedule (2022)
	13b) 6 mm dia deformed-rod (4 nos 6mm dia MS rod), fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	10.00	kg	110.00	1101	PWD Rates Schedule (2022)
	13c) #8 MS wire stirrups @ 125mm C/C, as per drawing and instruction of EIC	6.53	kg	110.00	719	Local Market Price
	13d) Carrying Cost	4.00	each	300.00	1200	Local Field Price
14	Wooden Rafter & Purlin (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of roof truss by using of 2"X2"X7.5' ft rafter 2pcs and 2"X2"X7 ft purlin 3pcs and including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.00	cft	1,200.00	1200	Local Market Price

Sl No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
15	Wooden For wall Batten (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of wooden Batten by using of 2" X 1.5" for Wall including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.29	cft	1,200.00	1551	Local Market Price
16	Wooden for Door (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of Wooden Door by using of 2"x 2" wall bar, 2"x 2" for door batten or frame, 2"x2" Cross batten & 3"x 2" size 2 nos for Door frames (Chowkat) including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.53	cft	1,200.00	1839	Local Market Price
17	Corrugated Plastic Sheet for Roofing: Supplying, fitting & fixing 1mm thick corrugated plastic sheet (Brand Quality), fitting and fixing on wooden frame with screws. all complete and accepted by the Engineer.	5.20	sqm	850.00	4424	Local Market Price
18	CGI Sheet for Wall: Supplying, transport, fitting and fixing of .32mm, 6ft long color sheet good brand CGI sheet including labour charges all work will be completed as per drawing and instruction of Engineer in-charge.	11.15	sqm	850.00	9480	Local Market Price
19	Galvanized Iron Sheet for door: Supplying, fitting and fixing 0.51 mm/24 gauge thick (Colored) Plain Galvanized Iron Sheet (Brand Quality) for fitting and fixing on wooden purlin with screws, limpet washers and putty etc. all complete and accepted by the Engineer.	1.39	sqm	550.00	767	Local Market Price
20	Visibility Plaque: Prepare and fixing of Visibility plaque to each latrine door as per given design and color code, print the information and logos over a 6mm PVC board (UV print) of 12"x 8" in size, and fixing wint joint-screw.	1	L.S	800	800	Local Market Price
PART-C: Other Supplies & Accessories fitting, fixing & supplying						
21	2" PVC Vent pipe: Supply, fitting & fixing of 50 mm dia PVC vent pipe (class-C) including PVC kawal approved and accepted by the Engineer in-charge.	2.74	rm	130	357	PWD Rates Schedule (2022)
a	Stud Nail (2.5 inch)	2	kg	80	160	Local Market Price
b	MS Clamp Size 1-6" x 2.5"x3mm Thickness	4	each	100	400	Local Market Price
c	Nail Different size (1.5 to 4 inch)	1.5	kg	80	120	Local Market Price
d	Steel Nail 4"	0.5	kg	250	125	Local Market Price
e	Washer 1"	0.5	Kg	110	55	Local Market Price
f	Hinges	3	Each	50	150	Local Market Price
g	Screw for Hinges	1	Dozen	100	100	Local Market Price
h	2" PVC Lbo	1	each	150	150	Local Market Price
i	4" PVC ball valve (without thread)	2	each	2500	5000	Local Market Price
j	Solvent Cement- 500 g	1	each	350	350	Local Market Price
k	Chitkani+Lock	3	each	130	390	Local Market Price
Total Quoted Price				BDT	73252	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
Latrine Design Group
ISCG WASH Sector, Cox's Bazar

Reviewed by :
DPHE, Cox's Bazar

Approved by :
Office of Refugee Relief and
Repatriation Commissioner (RRRC),
Cox's Bazar



PROJECT

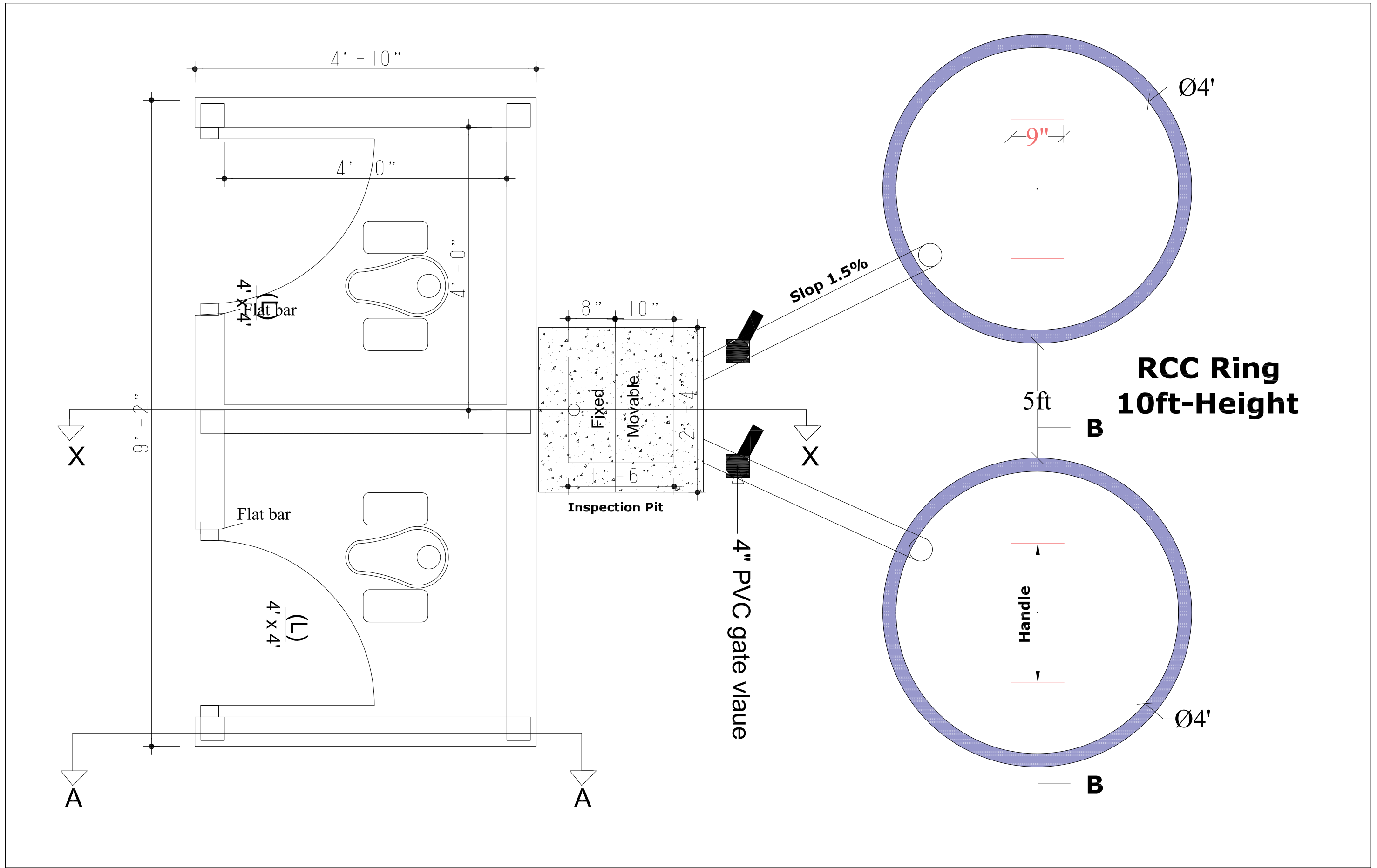
DESIGN AND DRAWING of UNIFIED LATRINE

**TWIN CUBICLES WOODEN FRAMED OFFSET TWIN PIT
LATRINE (Option-04A)**

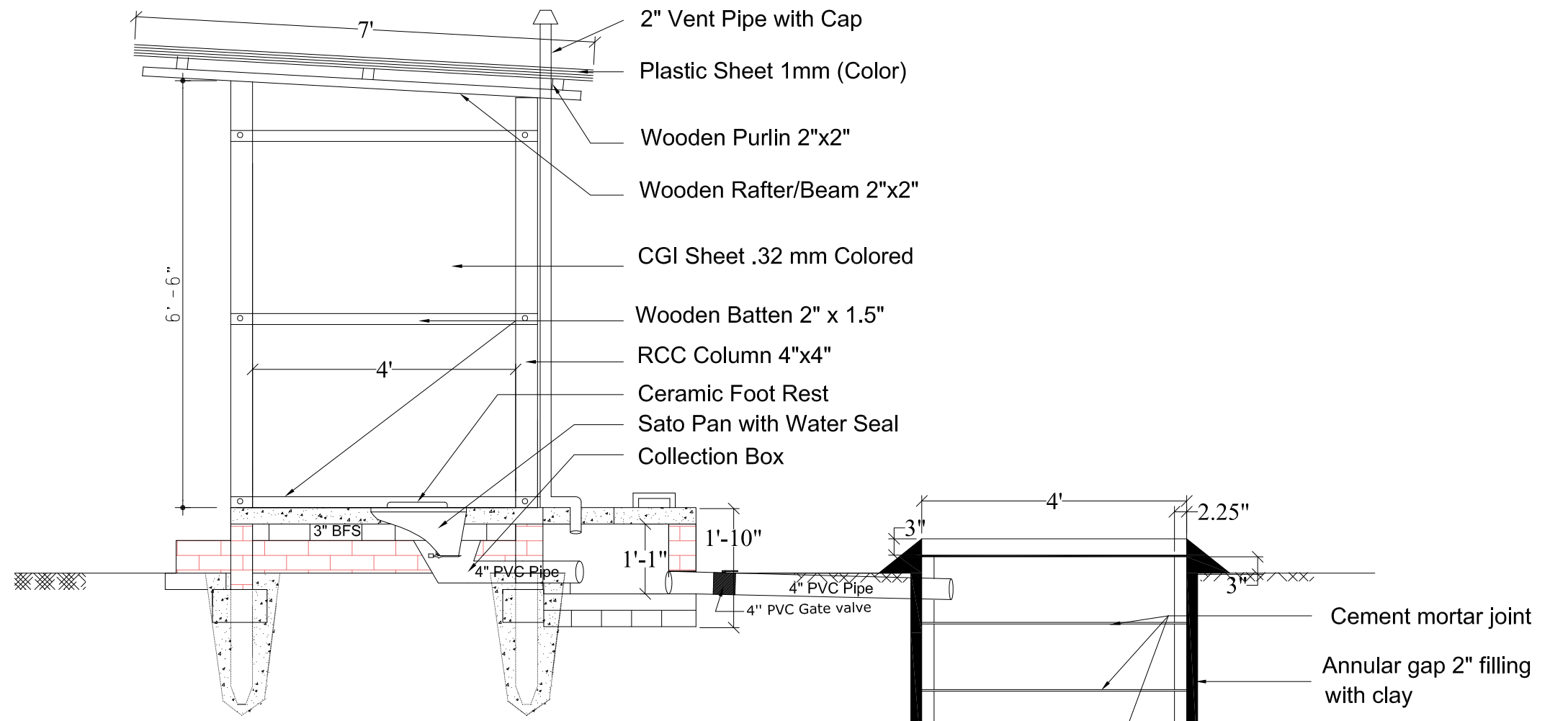
JULY, 2023

PREPARED By:

**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**

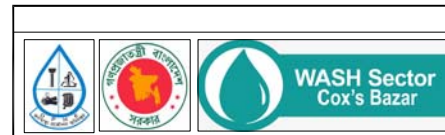


	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Offset Twin Pit Latrine (Option-04A)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	01

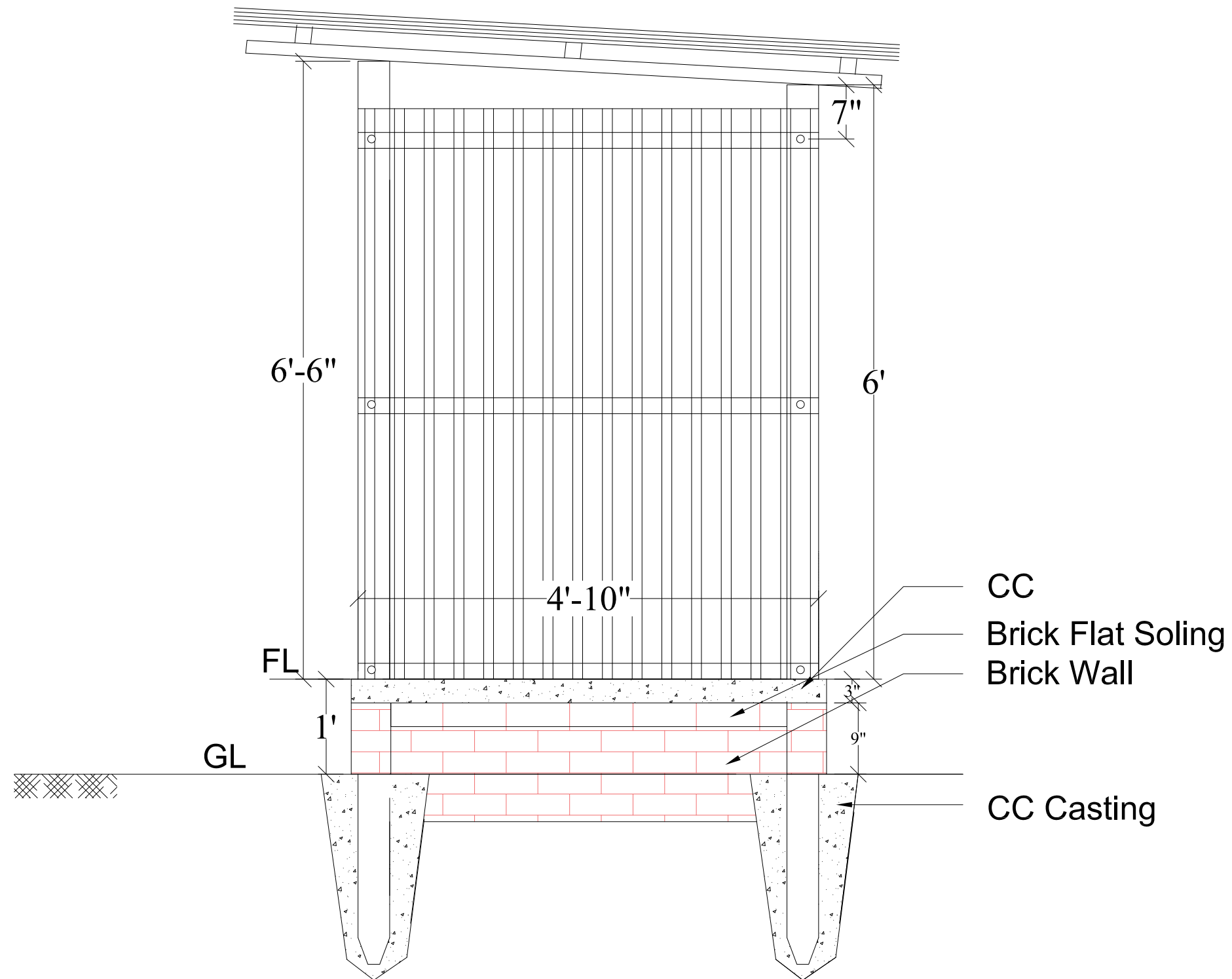


Section X-X

RCC Ring

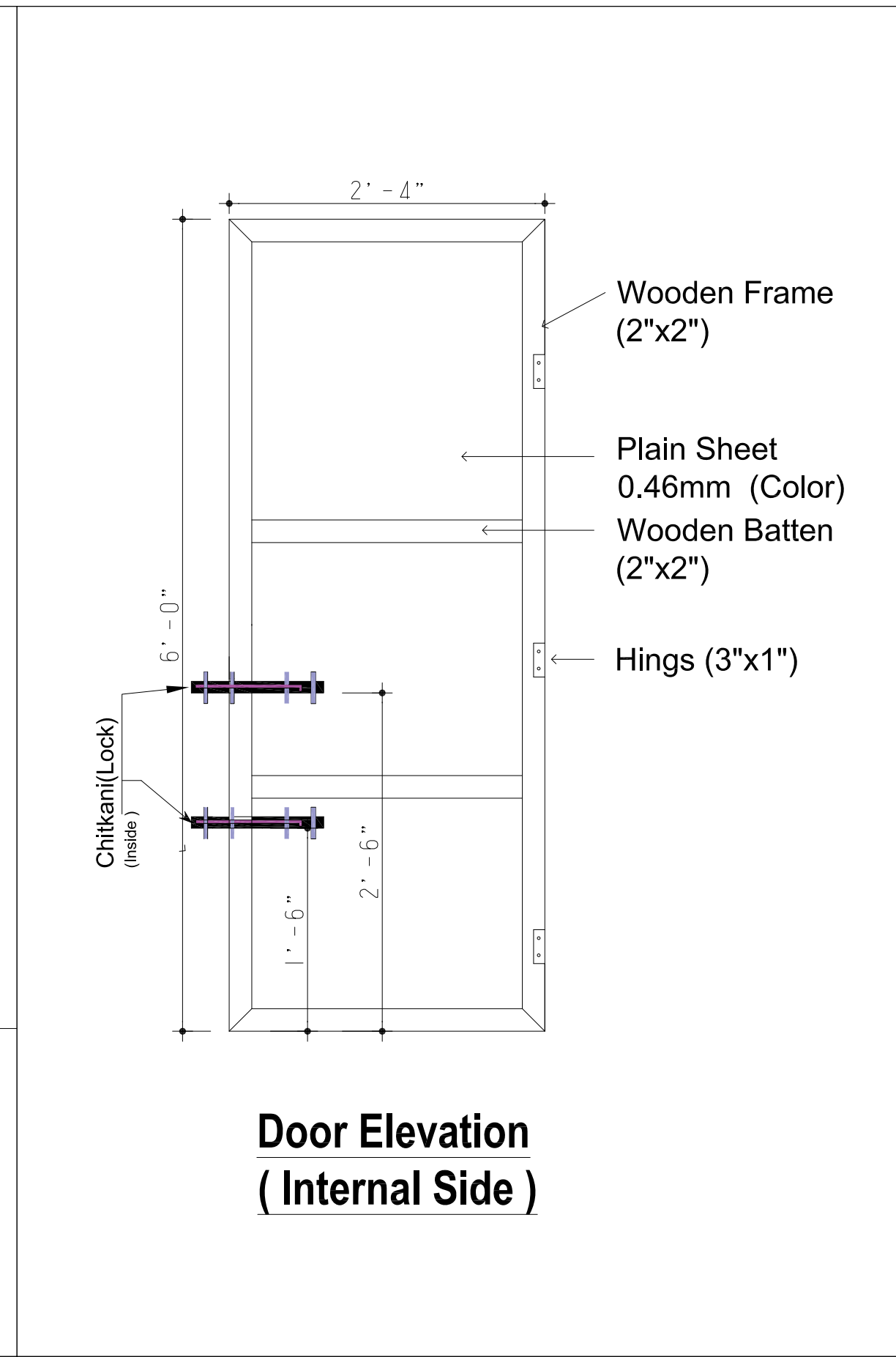
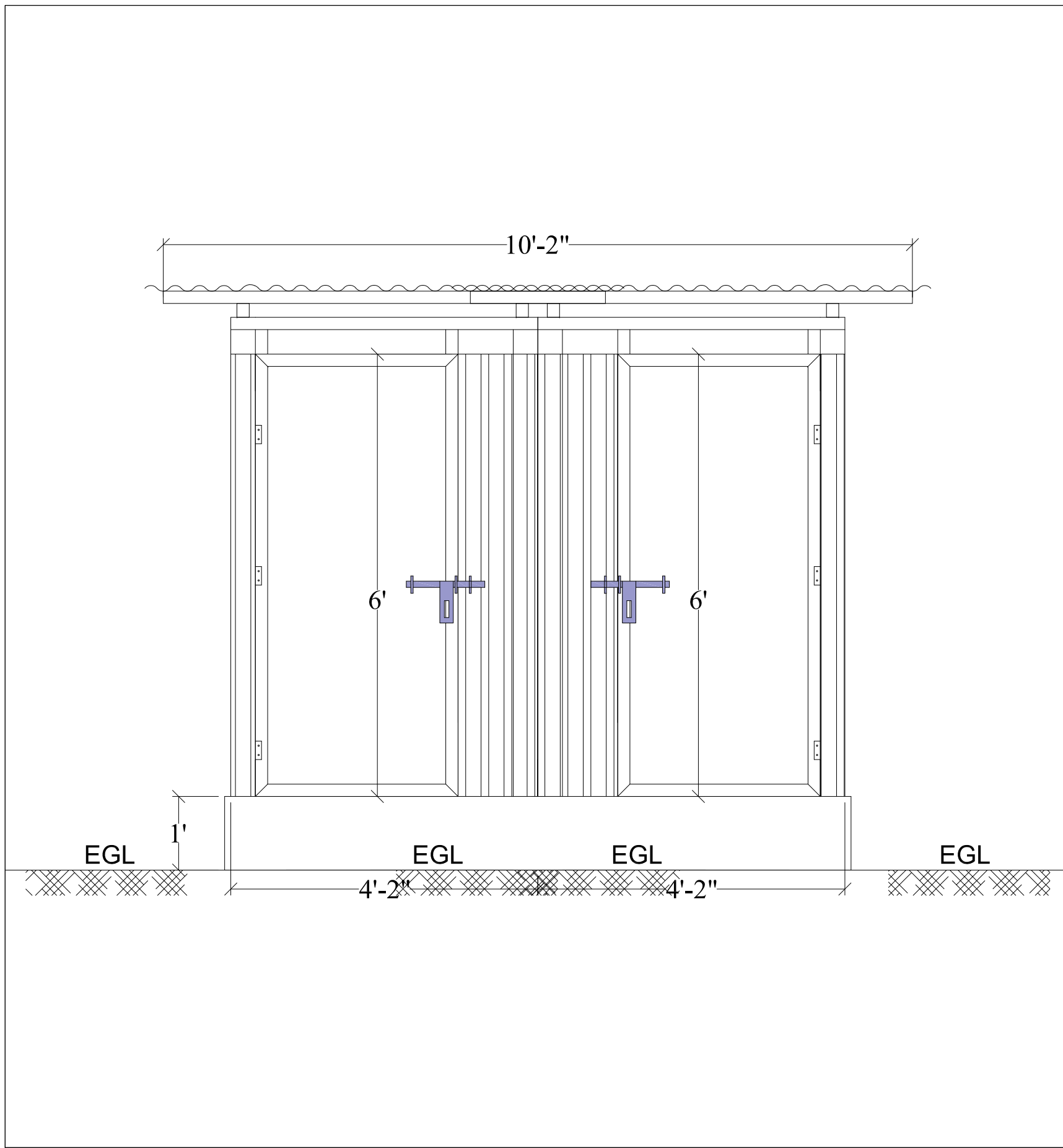


Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Offset Twin Pit Latrine (Option-04A)	Latrine Design Group	Section	July, 2023	DPHE Cox's Bazar	RRRC	02



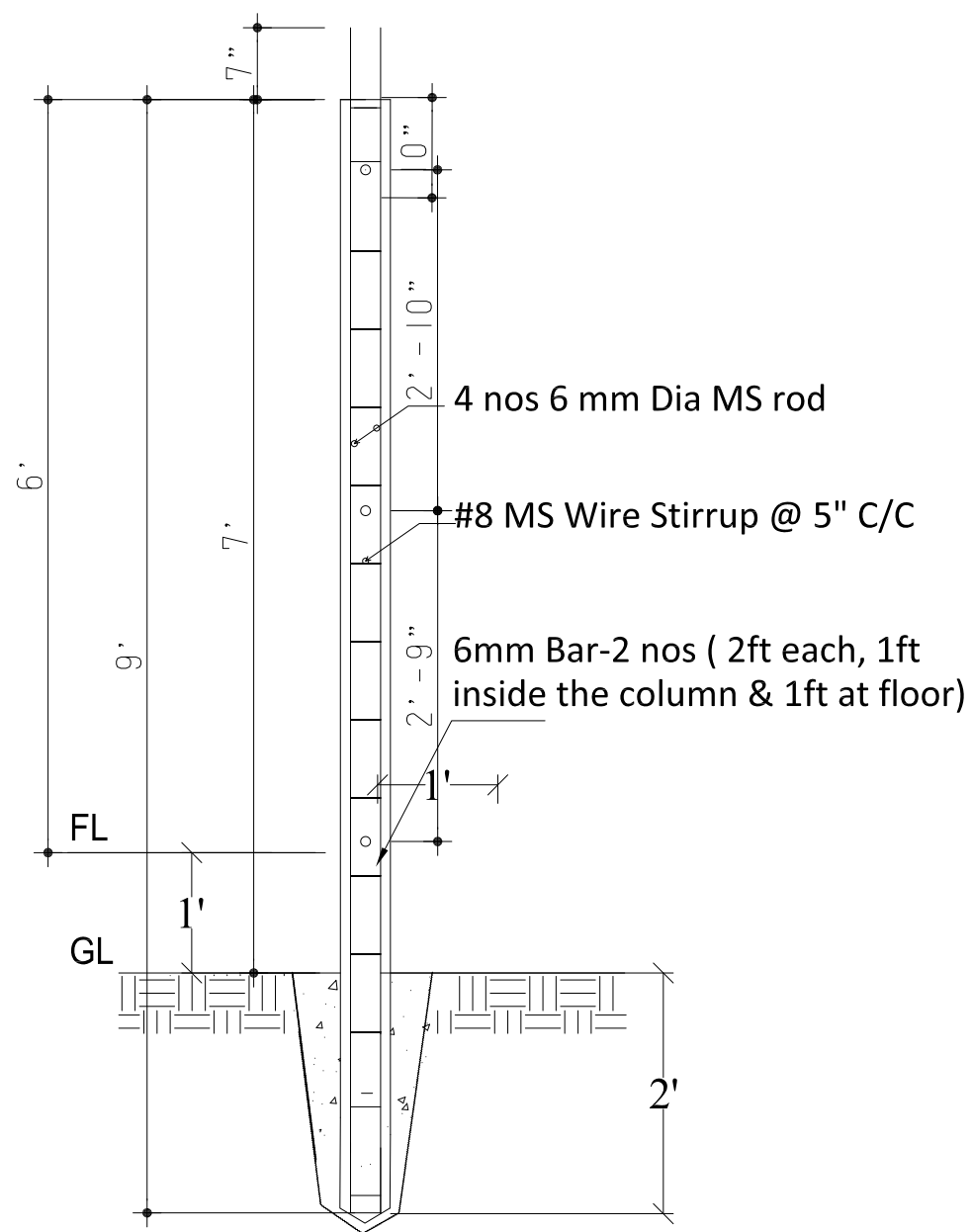
Section A-A

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Offset Twin Pit Latrine (Option-04A)	Latrine Design Group	Section	July, 2023	DPHE Cox's Bazar	RRRC	03

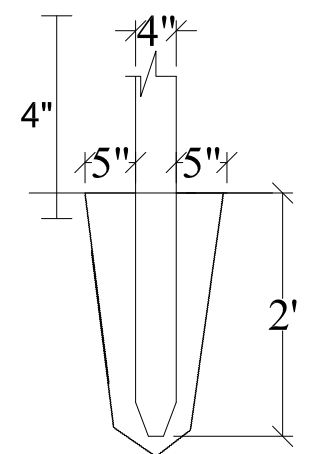
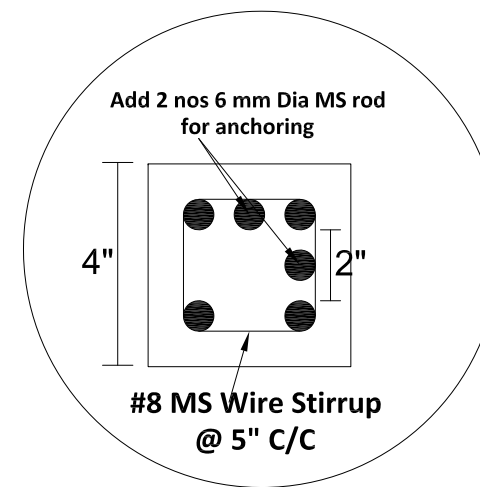
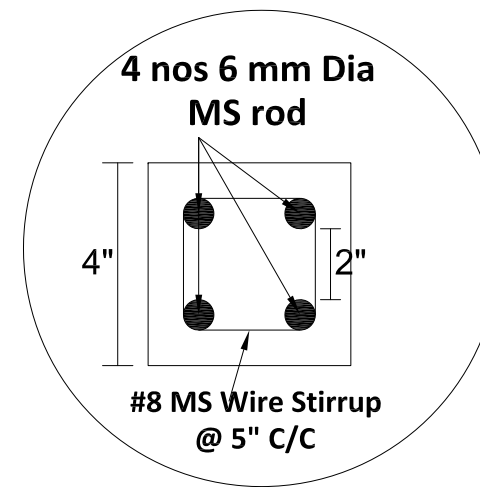


**Door Elevation
(Internal Side)**

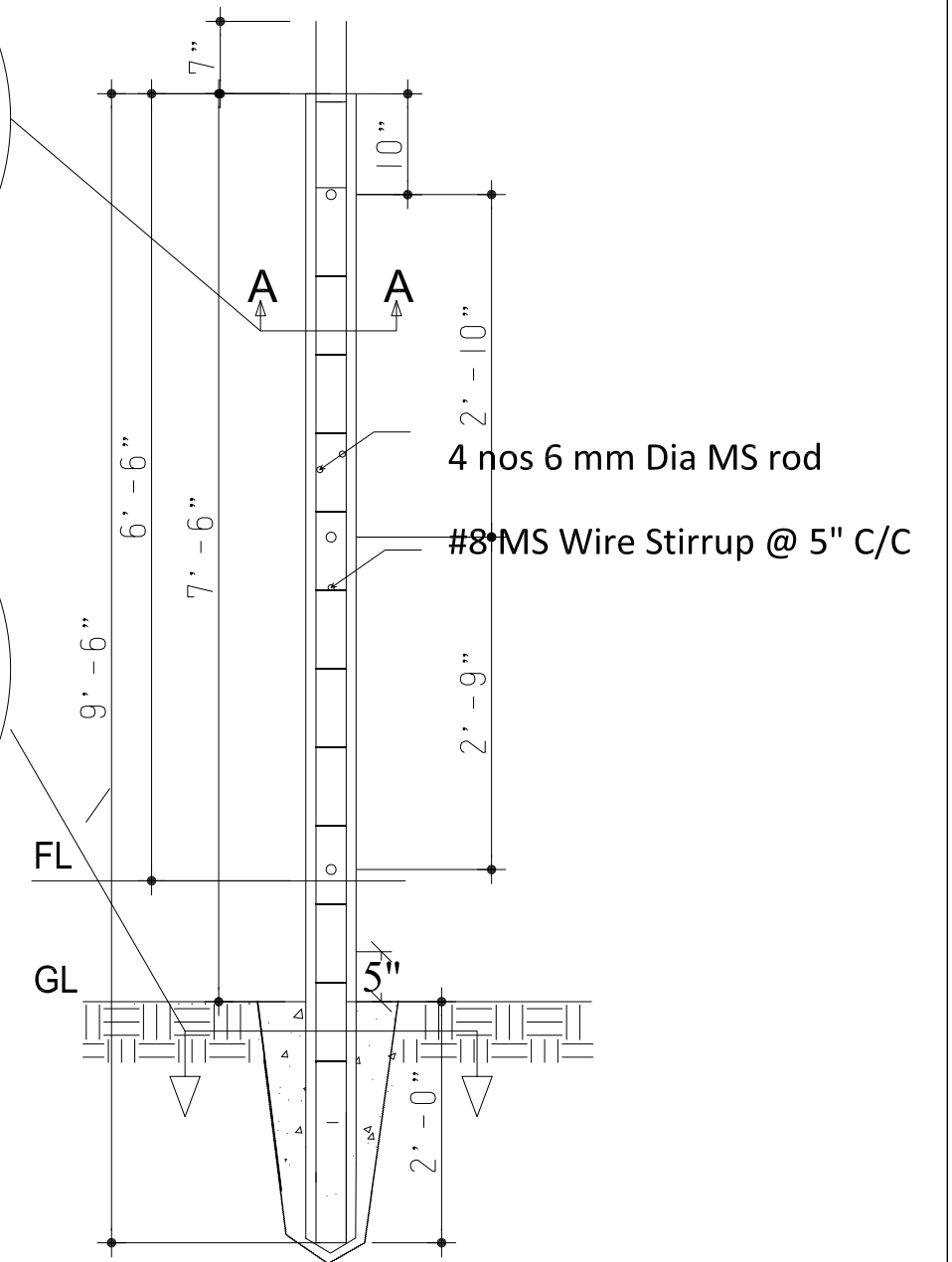
	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Offset Twin Pit Latrine (Option-04A)	Latrine Design Group	Front Elevation & Door Details	July, 2023	DPHE Cox's Bazar	RRRC	04



DETAILS OF PRECAST R.C.C PILLAR (Back)



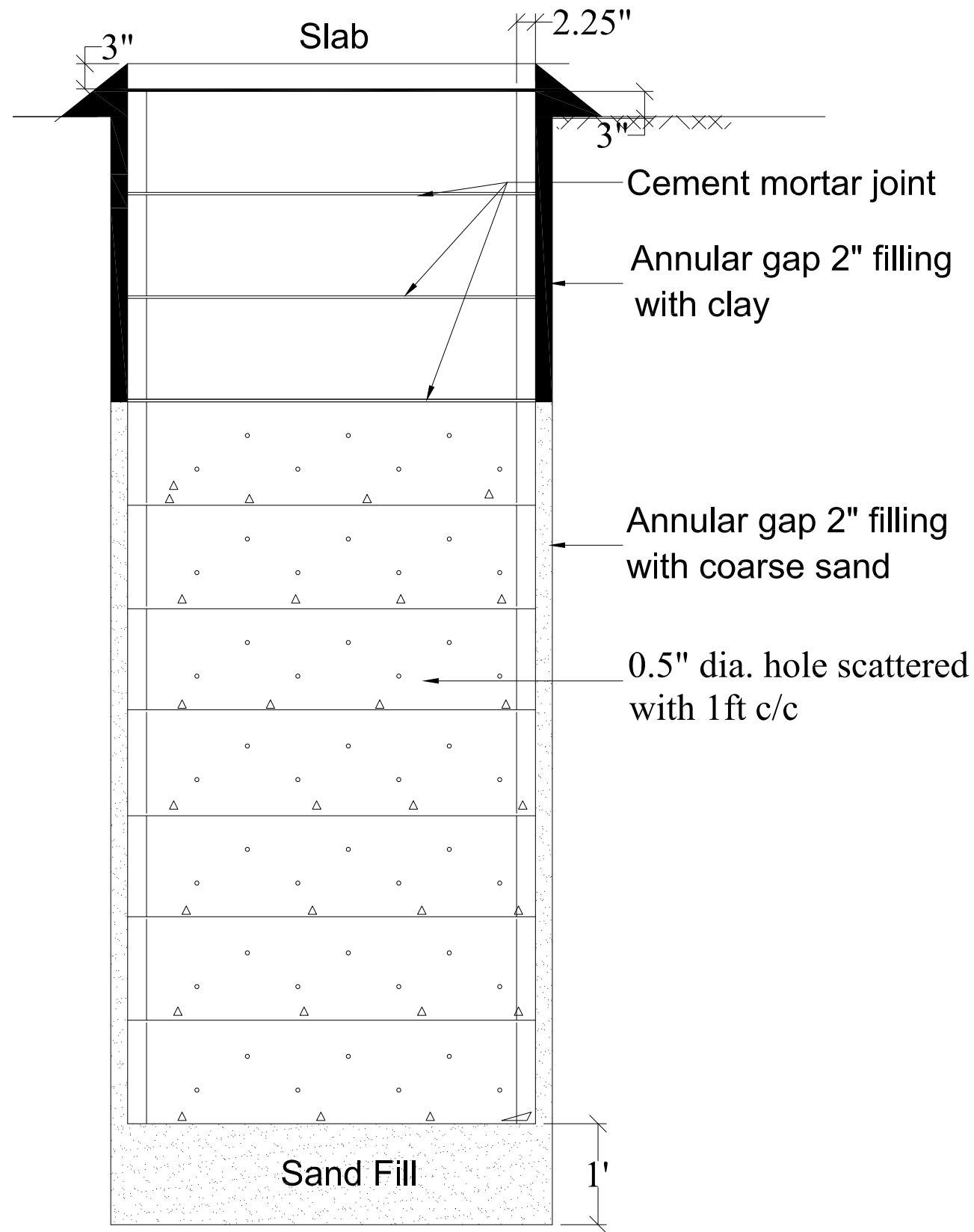
Foundation Details



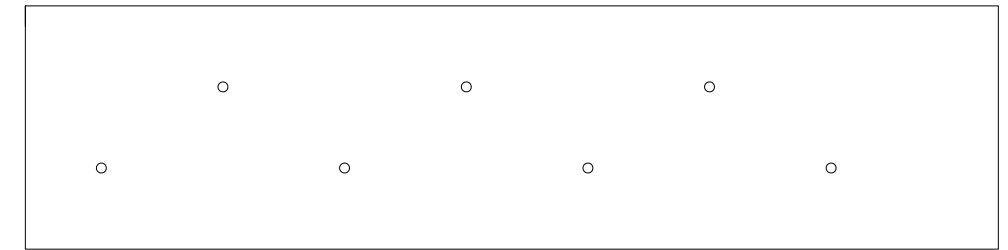
DETAILS OF PRECAST R.C.C PILLAR (Front)

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Offset Twin Pit Latrine (Option-04A)	Latrine Design Group	Pre Cast Column Details	July, 2023	DPHE Cox's Bazar	RRRC	05

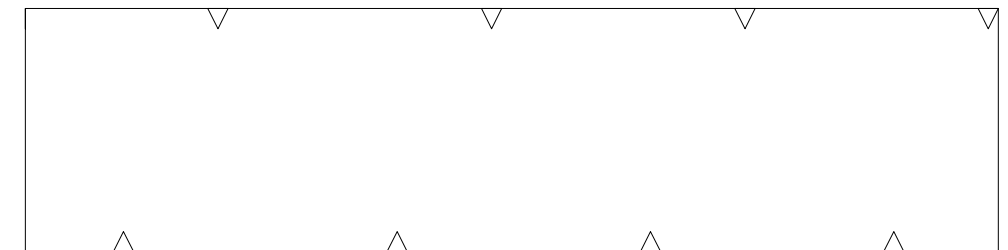
RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal), with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance).



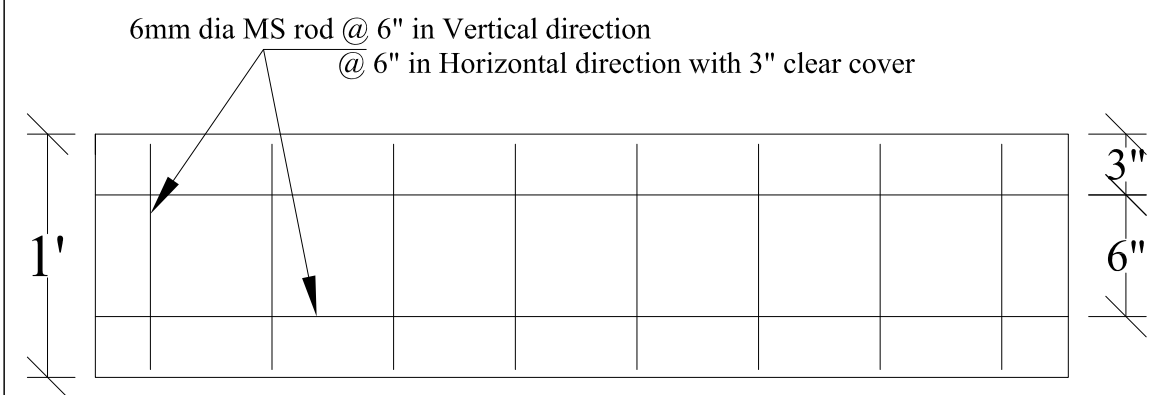
RCC Ring



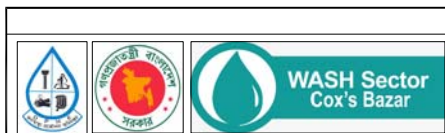
RCC Ring (Option 1)



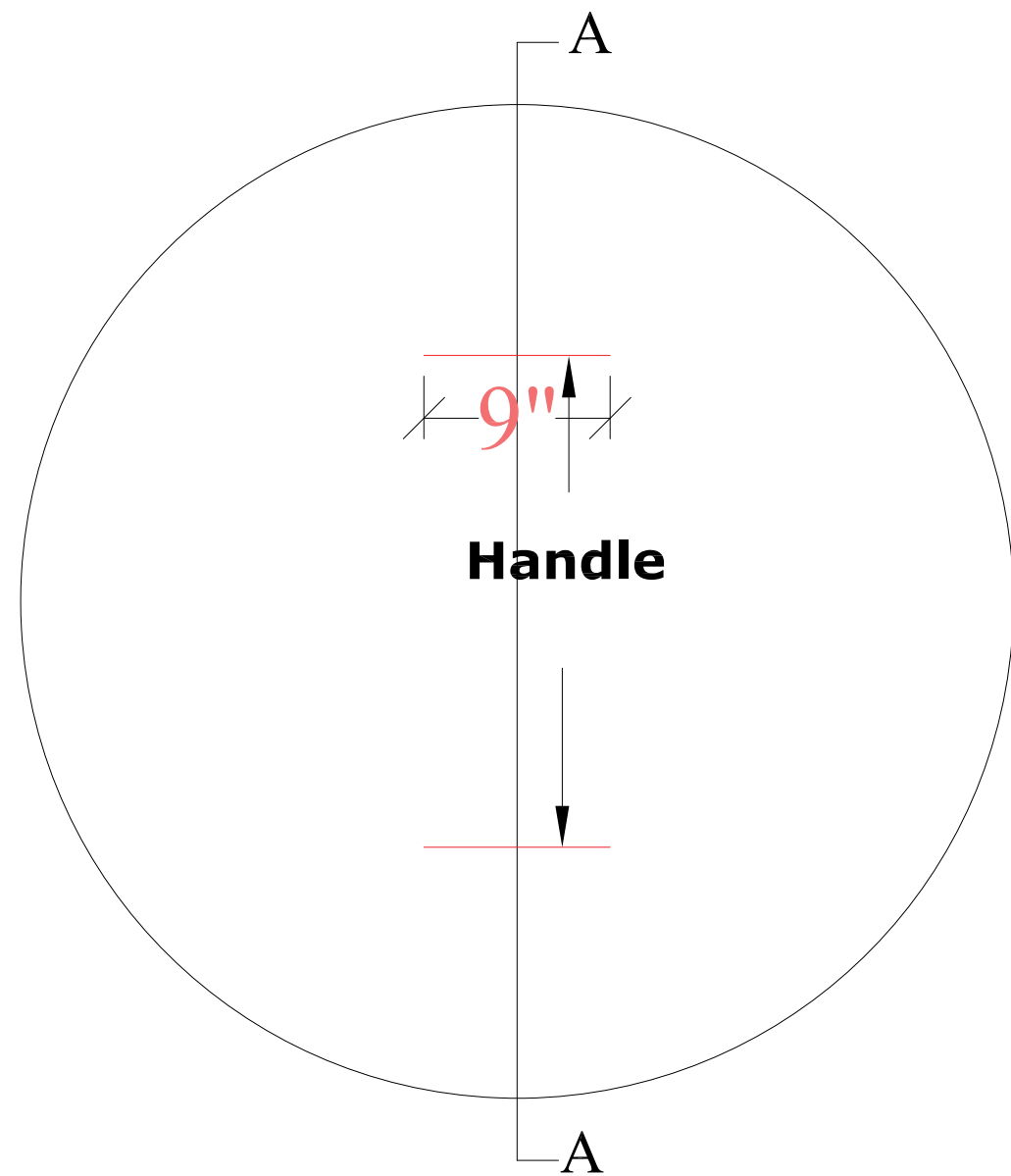
RCC Ring (Option 2)



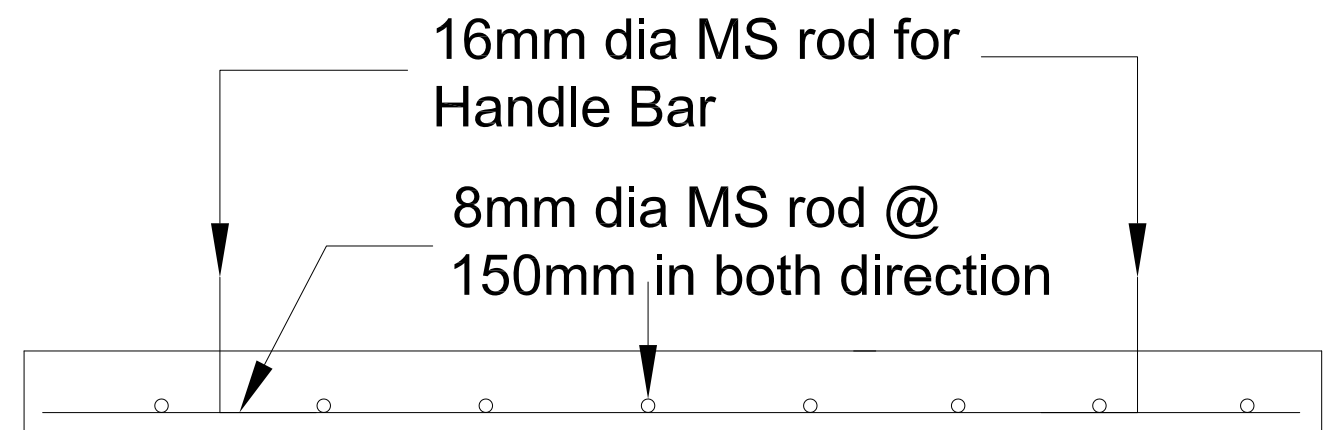
Section of Ring



Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Offset Twin Pit Latrine (Option-04A)	Latrine Design Group	RC Ring Details	July, 2023	DPHE Cox's Bazar	RRRC	06

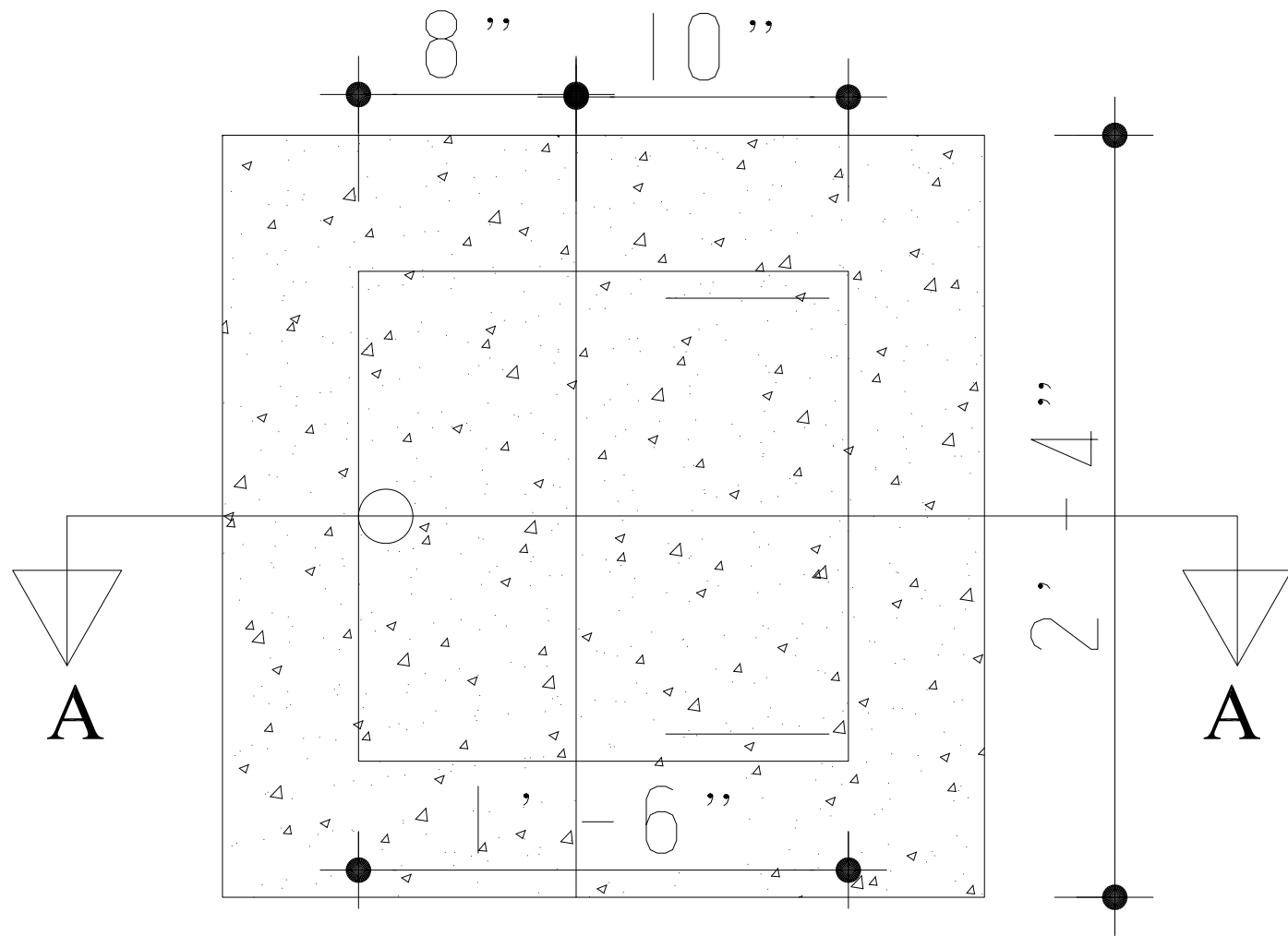


Plan of RCC Slab

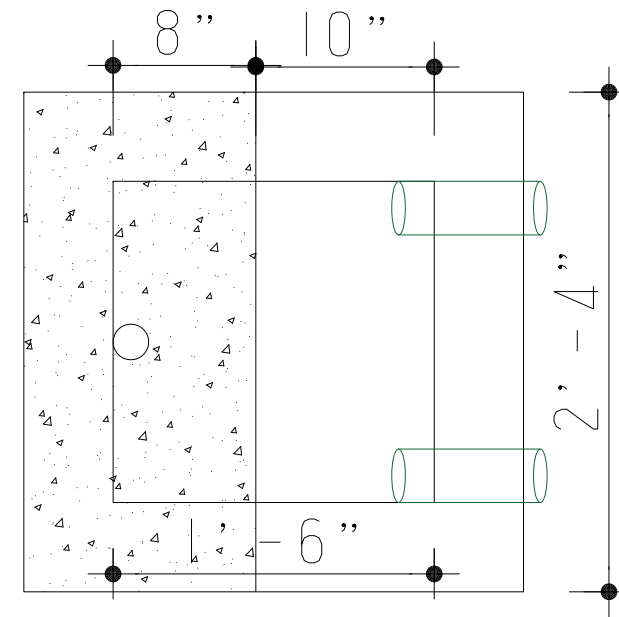


Slab Section A-A

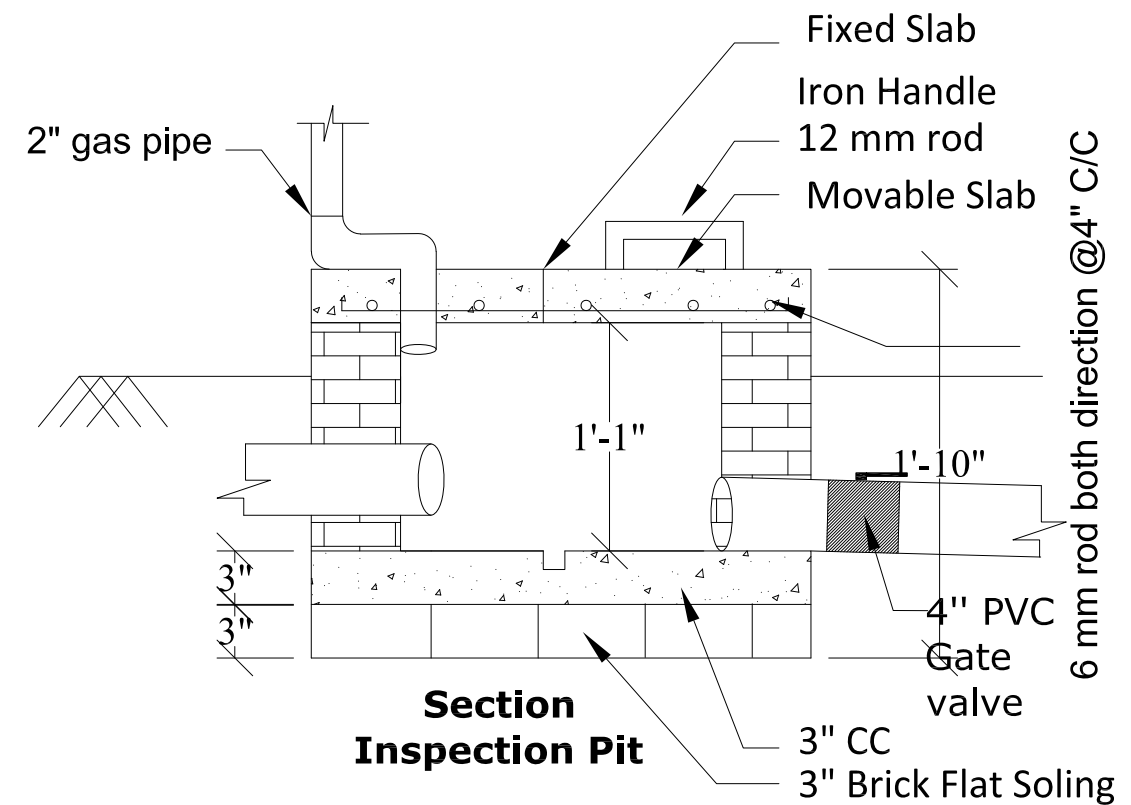
	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Offset Twin Pit Latrine (Option-04A)	Latrine Design Group	Cover Slab Details	July, 2023	DPHE Cox's Bazar	RRRC	07



**Plan
Inspection Pit**



**Inside View
Inspection Pit**



**Section
Inspection Pit**

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Offset Twin Pit Latrine (Option-04A)	Latrine Design Group	Inspection Box Details	July, 2023	DPHE Cox's Bazar	RRRC	08

Bill of Quantities
Latrine Option-04A

Twin Cubicles Wooden Framed Twin Pit Latrine

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
	PART-A:Substructure					
1	Earth Excavation : Earth work in excavation of Foundation for Single Cubicle Direct pit , carrying and disposing of all Excavated materials at a safe distance designated by the EIC, all types of soil except rocky gravelly, organic maintains proper slope, disposing of all back filling of sites of all excavated materials to a safe distance back filling of sites of original level etc, all complete to the direction of the EIC.	11.16	cum	259.00	2891	PWD Rates Schedule (2022)
2	RCC Pillar or Post : RCC Pillar or post 4'X4"x9'-6" long 3 nos and 4"X4"X 9'-3" short 3 nos, Reinforced cement concrete works with minimum cement content relates to mix ratio 1:2:4 having minimum f'cr = 24 MPa, satisfying a specified compressive strength f'c= 19 MPa at 28 days on standard cylinders as per standard practice of Code ACI/BNBC/ASTM, cement conforming to BDS EN-197-1-CEM-I, 52.5N (52.5 MPa) / ASTM-C 150 Type – I, best quality sand [50% quantity of best local sand (F.M. 1.2) and 50% quantity of Sylhet sand or coarse sand of equivalent F.M. 2.2] and 20 mm down well graded picked jhama brick chips conforming to ASTM C-33 including breaking chips and screening, making and placing shutter in position maintaining true to plumb, making shutter water-tight properly, placing reinforcement in position; mixing in standard mixer machine with hopper fed by standard measuring boxes or mixing in batching plant, casting in forms, compacting by vibrator machine and curing at least for 28 days, removing centering-shuttering after specified time approved; including cost of water, electricity, laboratory testing charges of materials and concrete cylinders as required, cost of all materials and other charges etc. all complete, approved and accepted by the Engineer-in-charge. (Rate is excluding the cost of reinforcement and its fabrication, placing, binding etc. and the cost of shuttering & centering)					
	2a) Concrete (mix ratio 1:2:4) for RCC post, as per drawing and instruction of EIC	0.18	cum	8,996.00	1592	PWD Rates Schedule (2022)
	2b) 6 mm dia deformed-rod (4 nos 6mm dia MS rod), fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	15.82	kg	110.00	1740	PWD Rates Schedule (2022)
	2c) #8 MS wire stirrups @ 125mm C/C, as per drawing and instruction of EIC	10.27	kg	110.00	1129	Local Market Price
	2d) Carrying Cost	6.00	each	300.00	1800	Local Field Price
3	10" Brick Work : Brick works in Foundation of wall in latrine with first class bricks in cement/sand mortar (1:6) including filling the interstices with mortar, raking out joints, cleaning and socking the bricks at least for 24 hours and screening of sand before use, necessary scaffolding, curing at least for 7 days etc. all complete including cost of water, electricity and other charges (measurement to given as 250 mm width for one brick length). All work should be completed as per design and guidance of the Engineer in-charge.	0.31	cum	7,501.00	2317	PWD Rates Schedule (2022)
4	5" Brick Wall : 5" thick brick wall in Base of latrine finishing construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	1.77	sqm	1,180.00	2084	PWD Rates Schedule (2022)
5	Sand Filling : Sand filling in foundation trenches and plinth with sand having F.M. 0.5 to 0.8 in 150 mm layers including leveling, watering and compaction to achieve minimum dry density of 95% with optimum moisture content (Modified proctor test) by ramming each layer up to finished level as per design supplied by the design office only, all complete and accepted by the Engineer-in-charge.	1.05	cum	1,093.00	1149	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
6	Polyethylene Sheet: Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	2.97	sqm	150.00	446	Local Market Price
7	Brick Soling : One layer of brick flat soling in latrine floor with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	3.09	sqm	515.00	1593	PWD Rates Schedule (2022)
8	Cement concrete Work: CC casting in Latrine Floor & RCC post base at the bottom [recommanded mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	0.66	cum	7,817.00	5152	PWD Rates Schedule (2022)
9	Flat Bar : 1 numbers of 3" Flat bar, thickness 6mm & 16" long, to be fitted within top of CC of floor & fitting with wooden bar with bolts for door (Chowkat). All work complete as per design and instruction of Engineer in-charge.	2.00	each	700.00	1400	Local Market Price
10	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering at floor, inner surface and outer surface, finishing the corner, kobra & top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	4.42	sqm	297.00	1314	PWD Rates Schedule (2022)
11	RCC Ring: RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25" Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal), with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. In total 10 rings but top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance.					
	11a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	1.34	cum	8,784.00	11733	PWD Rates Schedule (2022)
	11b) 6 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	86.12	kg	110.00	9473	PWD Rates Schedule (2022)
	11c) Carrying Cost	20.00	each	350.00	7000	Local Field Price
12	RCC Slab: Supply, fittings & fixing of pre-cast ring cover 4' dia size, thickness-3" made of 1:2:4 mixing ratio, 8mm dia ms rod (60G) 6" C/C both way & Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest as per the drawing and instruction of EIC.					
	12a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	0.18	cum	8,784.00	1564	PWD Rates Schedule (2022)
	12b) 8 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	14.88	kg	110.00	1637	PWD Rates Schedule (2022)
	12c) Carrying Cost	2.00	each	400.00	800	Local Field Price
	<u>PART-B: Superstructure</u>					
13	Wooden Rafter & Purlin (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of roof truss by using of 2"X2"X7.5' ft rafter 2pcs and 2"X2"X11 ft purlin 3pcs and including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.50	cft	1,200.00	1800	Local Market Price
14	Wooden For wall Batten (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of wooden Batten by using of 2" X 1.5" for Wall including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.75	cft	1,200.00	2100	Local Market Price
15	Wooden for Door (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of Wooden Door by using of 2"x 2" wall bar, 2"x 2" for door batten or frame, 2"x2" Cross batten & 3"x 2" size 2 nos for Door frames (Chowkat) including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	3.06	cft	1,200.00	3667	Local Market Price
16	Corrugated Plastic Sheet for Roofing: Supplying, fitting & fixing 1mm thick corrugated plastic sheet (Brand Quality), fitting and fixing on wooden frame with screws. all complete and accepted by the Engineer.	7.16	sqm	850.00	6083	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
17	CGI Sheet for Wall: Supplying, transport, fitting and fixing of .32mm, 6ft long color sheet good brand CGI sheet including labour charges all work will be completed as per drawing and instruction of Engineer in-charge.	16.73	sqm	850.00	14219	Local Market Price
18	Galvanized Iron Sheet for door: Supplying, fitting and fixing 0.51 mm/24 gauge thick (Colored) Plain Galvanized Iron Sheet (Brand Quality) for fitting and fixing on wooden purlin with screws, limpet washers and putty etc. all complete and accepted by the Engineer.	2.79	sqm	550.00	1533	Local Market Price
	<u>PART-C: SANITARY work & Ventilation</u>					
19	Pan & Foot Rest : Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest including proper levelling of floor.	2.00	each	250.00	500	Local Market Price
20	PVC Collection Box : Supply, fitting & fixing of RFL Collection Box at the discharge point to inspection pit.	2.00	each	200.00	400	Local Market Price
21	4" PVC pipe: Supply, fitting & fixing of 100 mm dia C Class PVC Connection pipe connected to Septic tank, approved and accepted by the Engineer in-charge	4.57	RM	600.00	2744	PWD Rates Schedule (2022)
22	4" Gat valve : 2nos of 4" dia gat-valve (nylone) fixed with . All work should be completed as per design and instruction of Engineer-in-charge	2.00	each	2,600.00	5200	Local Market Price
23	RCC Slab for inspection pit: 75 mm thick RCC (1:2:4) slab of 28"x28" size of inspection pit cover including fitting, fixing of. Slab to be cast with 12mm down graded khoa of 1st class bricks 1.5 F.M clear sand (free from clay dirt) and using 6mm MS Bar @ 3" C/C both direction.	1.00	L.S	1,000.00	1000	Local Market Price
24	2" PVC Vent pipe: Supply, fitting & fixing of 50 mm dia PVC vent pipe (class-C) including PVC kawal approved and accepted by the Engineer in-charge.	2.74	rm	130	357	PWD Rates Schedule (2022)
25	Visibility Plaque: Prepare and fixing of Visibility plaque to each latrine door as per given design and color code, print the information and logoes over a 6mm PVC board (UV print) of 12"x 8" in size, and fixing wint joint-screw.	1	L.S	600	600	Local Market Price
26	Other Supplies & Accessories fitting, fixing & supplying					
a	Stud Nail (2.5 inch)	3	kg	220	660	Local Market Price
b	MS Clamp Size 1-6" x 2.5"x3mm Thickness	8	each	200	1600	Local Market Price
c	Nail Different size (1.5 to 4 inch)	3	kg	150	450	Local Market Price
d	Steel Nail 4"	1	kg	250	250	Local Market Price
e	Washer 1"	1	Kg	110	110	Local Market Price
f	Hinges	8	Each	100	800	Local Market Price
g	Screw for Hinges	2	Dozen	130	260	Local Market Price
h	2" PVC Elbow	1	each	150	150	Local Market Price
i	4" PVC Elbow	2	each	250	500	Local Market Price
j	Chitkani+Lock	6	each	130	780	Local Market Price
Total Quoted Price				BDT	102578	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
Latrine Design Group
ISCG WASH Sector, Cox's Bazar

Reviewed by :
DPHE, Cox's Bazar

Approved by :
Office of Refugee Relief and
Repatriation Commissioner (RRRC),
Cox's Bazar

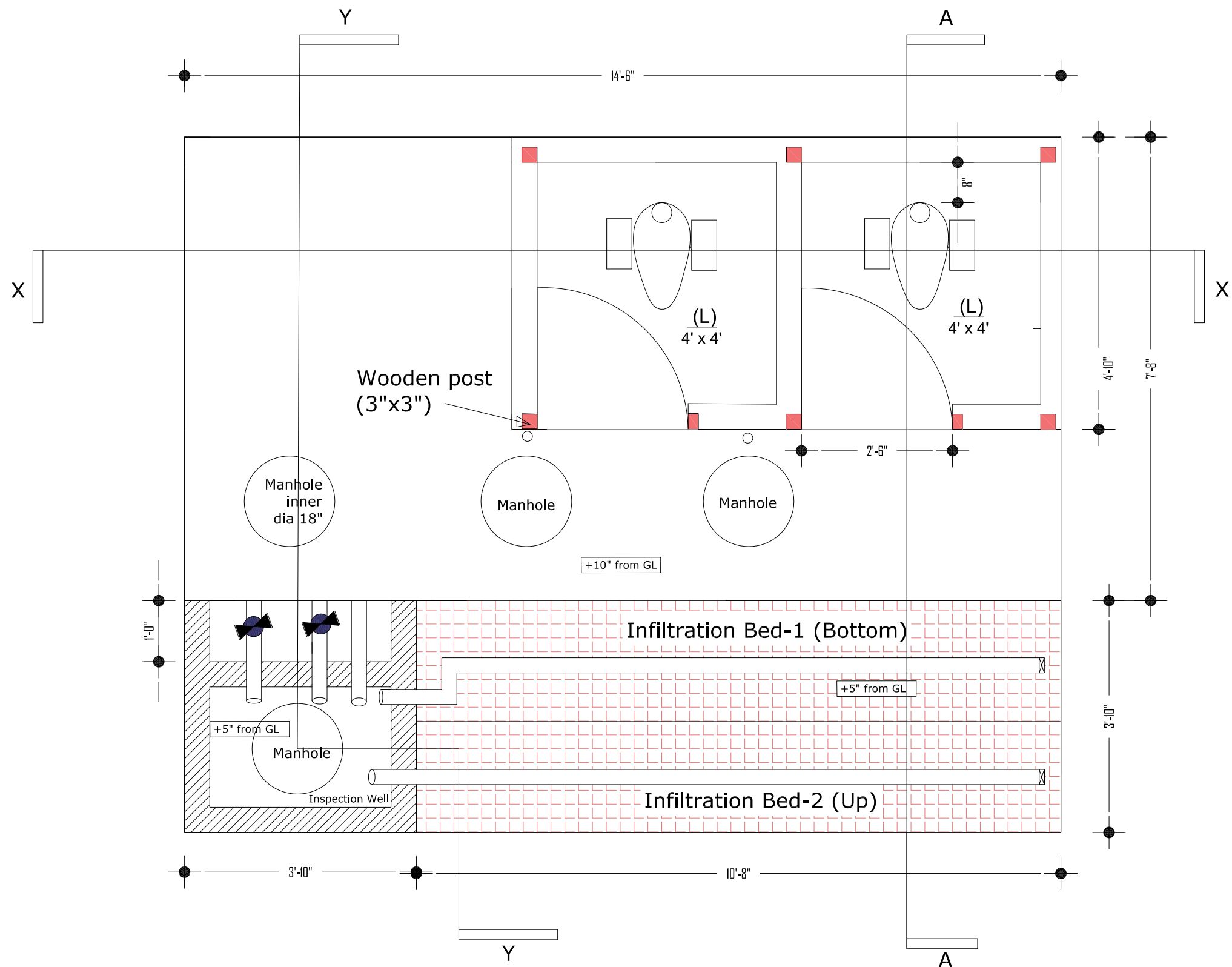


PROJECT
DESIGN AND DRAWING of UNIFIED LATRINE
TWIN CUBICLES WOODEN FRAMED SEPTIC TANK
LATRINE WITH INFILTRATION BED
(Option-05A)


JULY, 2023

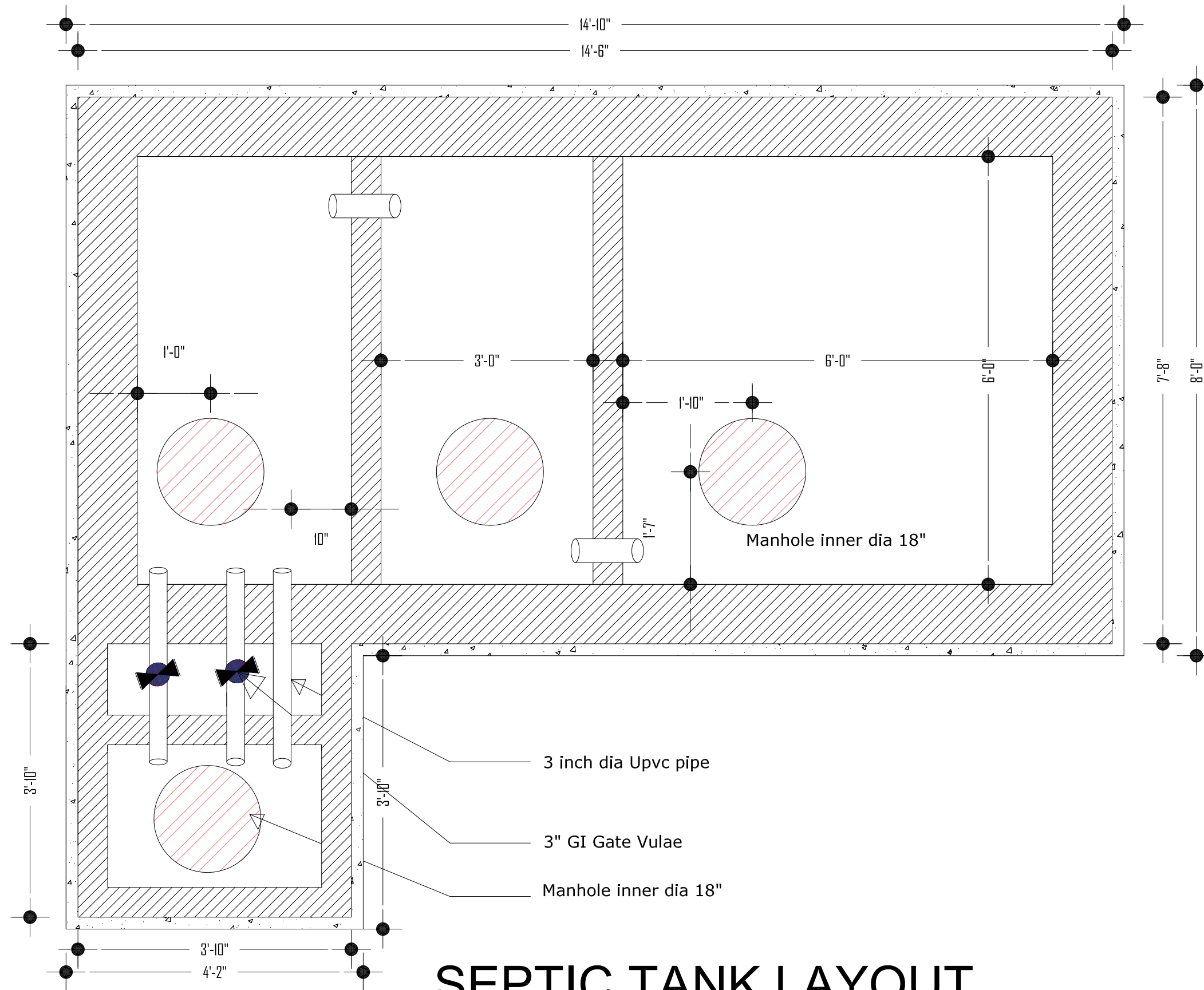
PREPARED By:

LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR



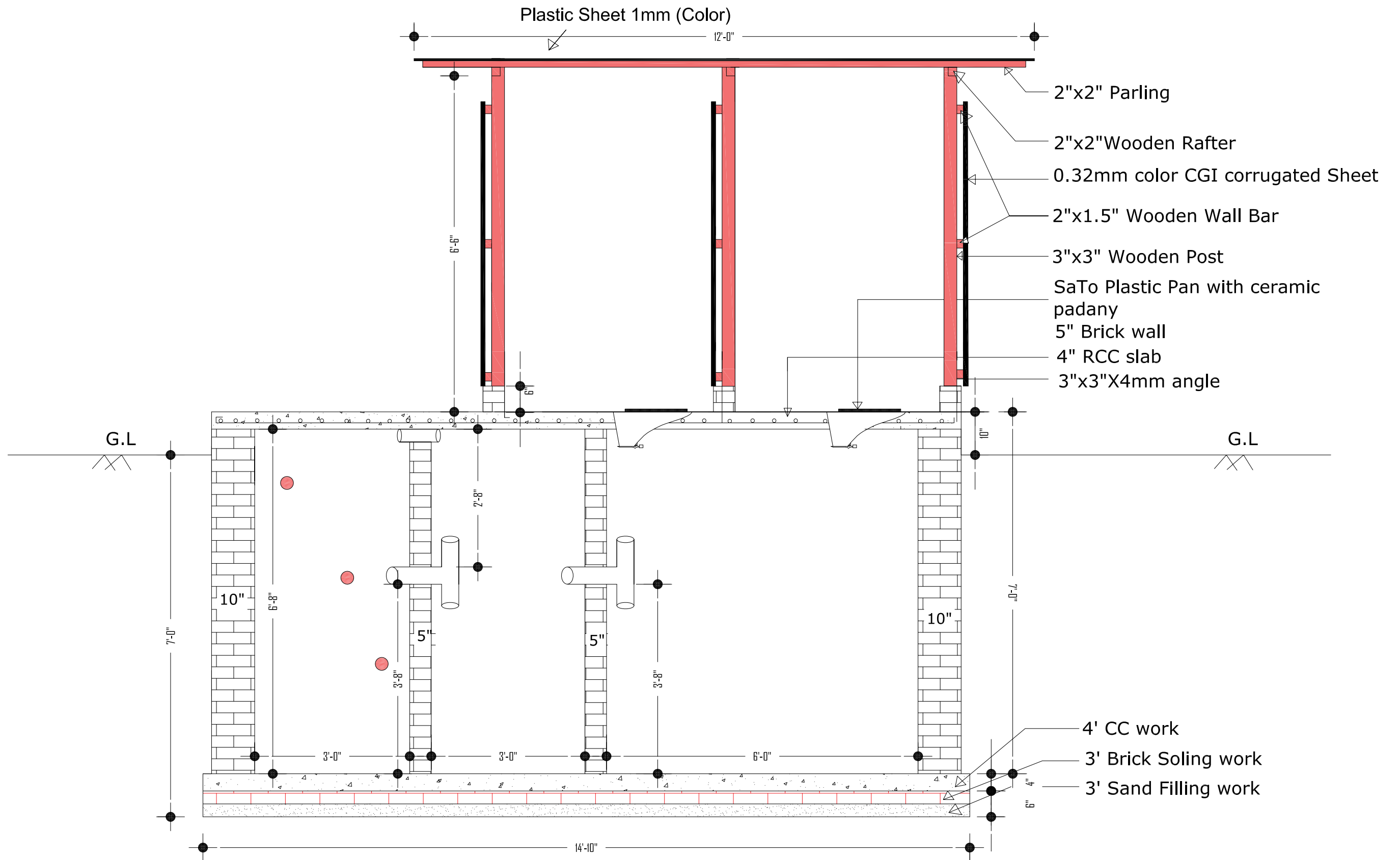
PLAN OF Twin Cubicles Wooden Framed Septic Tank Latrine with Infiltration Bed (Option-05A)

	Project Design and Drawing of Unified Latrine	Model: Twin Cubicles Wooden Framed Septic Tank Latrine with Infiltration Bed (Option-05A)	Design by: Latrine Design Group	Drawing Title Plan	Date July, 2023	Reviewed by DPHE Cox's Bazar	Approved by RRRC	Page 01
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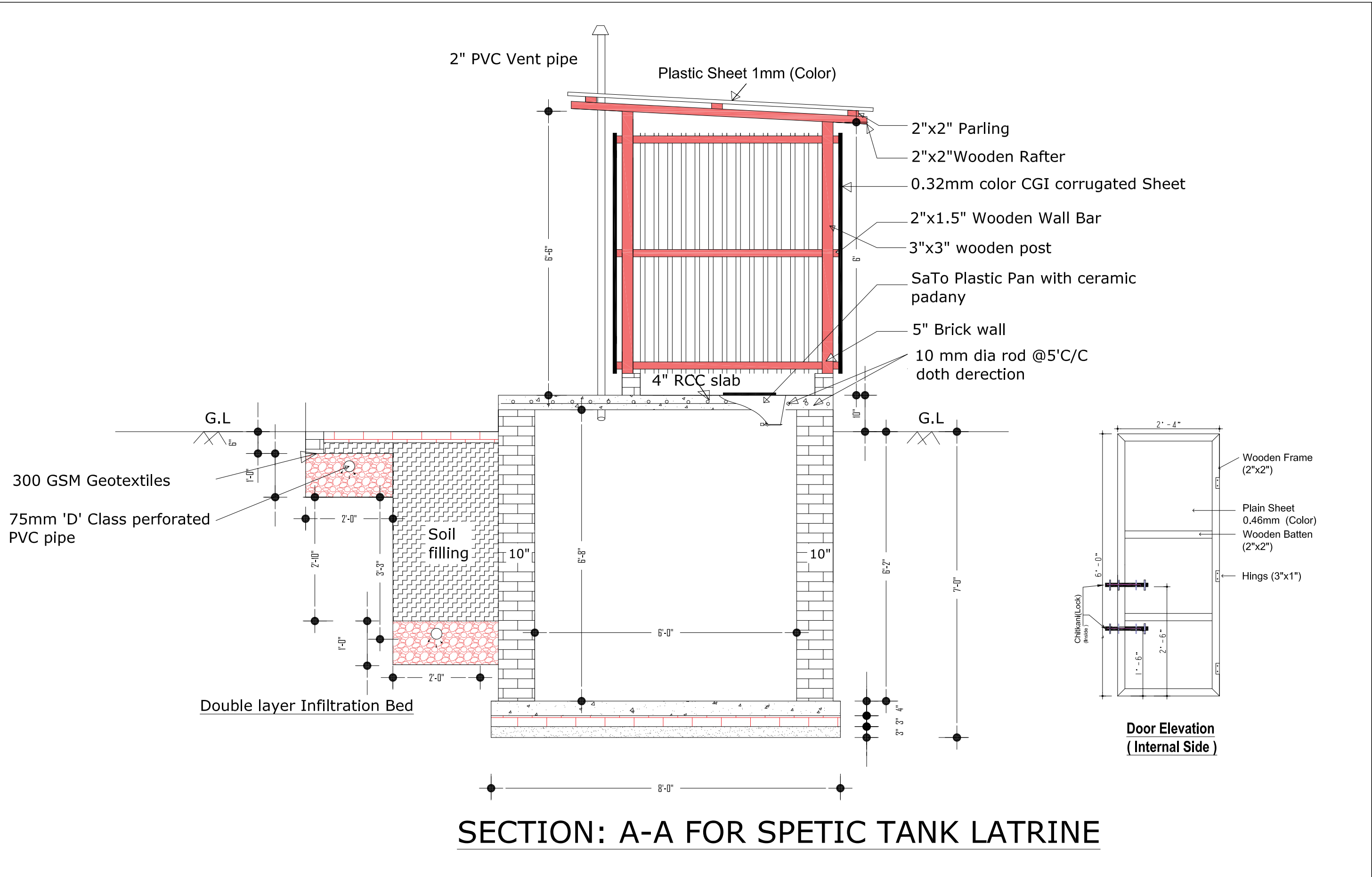
SEPTIC TANK LAYOUT

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Septic Tank Latrine with Infiltration Bed (Option-05A)	Latrine Design Group	Septic Tank Layout	July, 2023	DPHE Cox's Bazar	RRRC	02




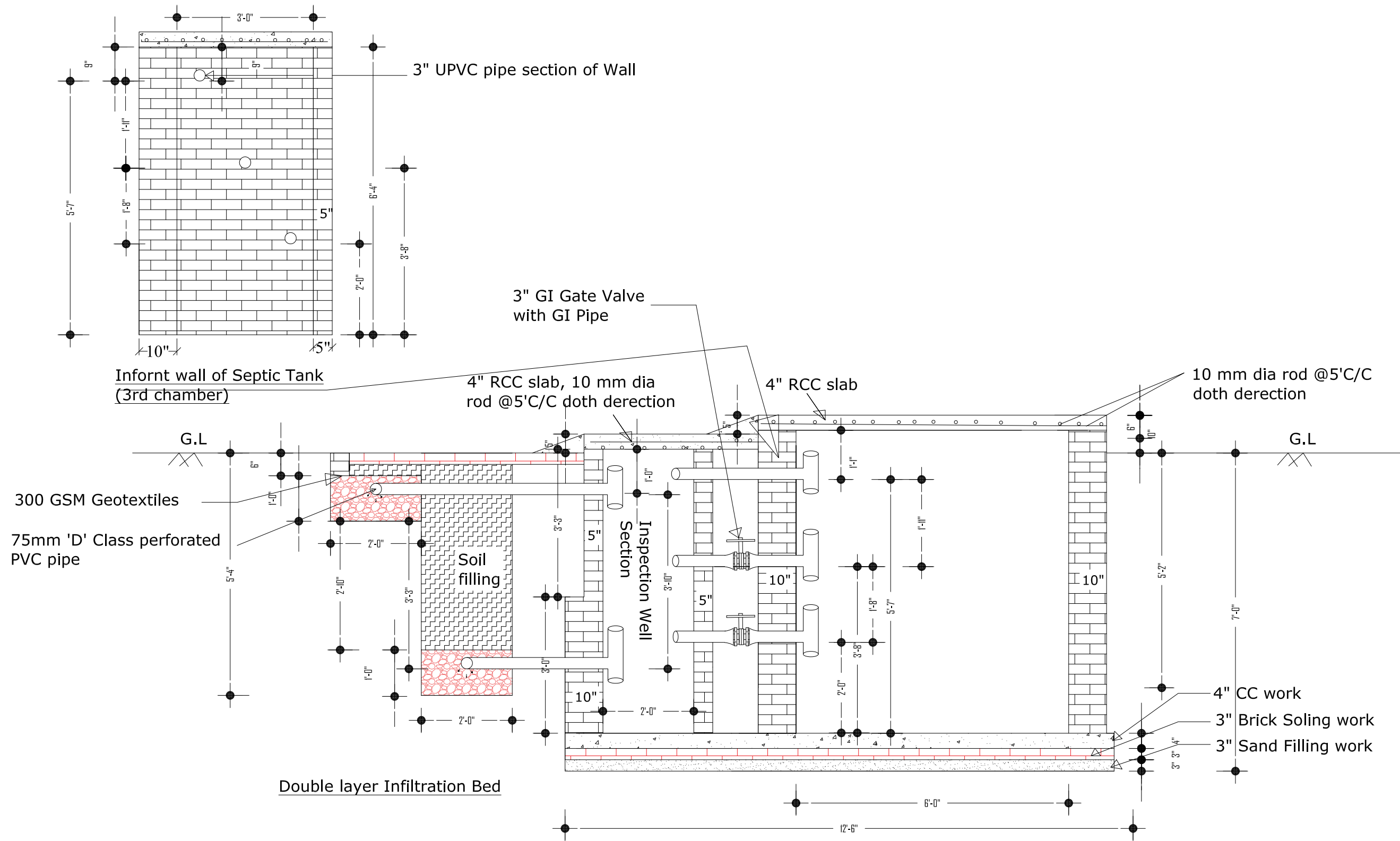
SECTION OF X-X FOR SPETIC TANK LATRINE

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Septic Tank Latrine with Infiltration Bed (Option-05A)	Latrine Design Group	Layout	July, 2023	DPHE Cox's Bazar	RRRC	03



SECTION: A-A FOR SPETIC TANK LATRINE

	Project Design and Drawing of Unified Latrine	Model: Twin Cubicles Wooden Framed Septic Tank Latrine with Infiltration Bed (Option-05A)	Design by: Latrine Design Group	Drawing Title Layout	Date July, 2023	Reviewed by DPHE Cox's Bazar	Approved by RRRRC	Page 04
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SECTION: Y-Y FOR SPETIC TANK LATRINE

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Septic Tank Latrine with Infiltration Bed (Option-05A)	Latrine Design Group	Layout	July, 2023	DPHE Cox's Bazar	RRRC	05

Bill of Quantities

Latrine Option-5A

Two Cubicles Wooden Framed Septic Tank Latrine with Infiltration Bed

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
PART-A: Sub-structure						
1	Earth Excavation : Earth work in excavation in all kinds of soil for septic tank trenches including; providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and providing layout, removing necessary roots and plants, protecting and keeping the trench dry from rain/external water, stacking and levelling surrounding sites with excavated soil. All should be completed under the direct supervision and guidance of the Engineer in-charge, subject to agreed and locally available earth excavation methods. However, Engineer in-charge's approval shall not relieve the contractor of his responsibilities and obligations under the contract.	26.71	cum	259	6918	PWD Rates Schedule (2022)
2	Sand Filling : Sand filling (F.M. 0.5-0.8) in the septic Tank foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	0.95	cum	1,093	1043	PWD Rates Schedule (2022)
3	Polyethylene Sheet: Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	12.51	sqm	150	1877	Local Market Price
4	Brick Soling : One layer of brick flat soling in Tank Foundation with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	17.67	sqm	515	9101	PWD Rates Schedule (2022)
5	Cement concrete Work: 4" Thick CC casting in base tank foundation [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	0.95	cum	7,817	7456	PWD Rates Schedule (2022)
6	10" Brick Wall : 10" Brick works in Foundation of wall of Septic tank with first class bricks in cement/sand mortar (1:6) including filling the interstices with mortar, raking out joints, cleaning and soaking the bricks at least for 24 hours and screening of sand before use, necessary scaffolding, curing at least for 7 days etc. all complete including cost of water, electricity and other charges (measurement to given as 250 mm width for one brick length). All work should be completed as per design and guidance of the Engineer in-charge.	7.21	cum	7,501	54119	PWD Rates Schedule (2022)
7	5" Brick Wall : 5" thick Septic Tank Compartment baffle wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	12.50	sqm	1,180	14754	PWD Rates Schedule (2022)
8	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Septic Tank at floor, inner surface and outer surface, finishing the corner, kobla, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	77.12	sqm	297	22904	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
9	Earth Filling : Earth filling in the trenches surrounding the masonry wall for Septic tank & soak well and up to the pre-defined formation level with 150 mm layers including proper leveling, watering and compaction as necessary and consolidating including local carriage each layer up to finished level including cost of all tools and equipment etc. all complete and accepted by the IOM Engineer in-charge.	5.03	cum	450	2265	PWD Rates Schedule (2022)
10	Reinforced concrete cement works: RCC slabs with concrete (1:2:4) [cement, sand (F.M.1.2) and picked jhama chips] and M.S. deformed bar 10 mm and 6 mm, grade 40 billet) reinforcement of required size and length for all types of RCC work including straightening the rod, removing rust, cleaning, cutting, hooking, bending binding with supply of 22 B.W.G GI wire, screening, washing, mixing, laying, vibrator compaction and curing for at least 14 days including the supply of water, electricity and other charges and costs of tools and plants etc. All work complete as per drawing and instruction of the Engineer in-charge.					
	10a) Concrete (mix ratio 1:2:4)	1.28	cum	8,784.00	11222	PWD Rates Schedule (2022)
	10b) 10 mm dia deformed-rod	141.65	kg	110.00	15581	PWD Rates Schedule (2022)
	10c) Centering and shuttering for the slab casting including keeping provision of man-holes and covers by using of timber, bamboo and other necessary materials.	11.45	sqm	556.00	6367	PWD Rates Schedule (2022)
11	Angle Bar : size of 3"x3"x 6mm angle 20" long & bolts to be fitted within inside of RCC Slab & fitting with wooden post . All work complete as per design and instruction of Engineer in-charge.	8.00	each	480.00	3840	Local Market Price
12	C.I. man hole cover : Supply, fitting and fixing of 550 mm dia C.I. man hole cover etc. all complete approved by the Engineer- in- charge.	2.00	each	1,869.00	3738	Local Market Price
<u>PART-B: Drain field or Infiltration bed</u>						
13	Earth work: Excavation of earth for Infiltration trenches of size (11'x2'x1'ft)2 nos in all kinds of soils/stony layers and stacking excavated soils at a suitable place besides the well, etc. (Including cost of all materials, labor and transportation), complete as per instruction of Engineer-in-charge.	4.26	cum	259	1103	PWD Rates Schedule (2022)
14	Course aggregate (12mm to 18mm) : applying of Brick Chips the bottom(11'x2'x1'ft)2 nos in depth, all complete as per design and as per direction of Engineer in charge.	2.81	cum	5,300	14872	Local Market Price
15	Sand Filling : Supplying of soil filling the Top of Geotextile , all complete as per design and as per direction of Engineer in charge.	2.81	cum	1,093	3067	PWD Rates Schedule (2022)
16	3" Elbow : 3" Elbow (D class)	2.00	each	300	600	Local Market Price
17	UPVC pipe: (3" dia D class UPVC pipe) total length of pipe is 30ft, and total pipe must be Hole & 3" Gas pipe 12 ft for monitoring pipe	12.80	RM	300	3841	Local Market Price
18	Geotextile: 300 GSM Geotextiles total length 30 ft & size of Geotextile bag (4'x30')	2.00	each	250	500	Local Market Price
<u>PART-C: Superstructure</u>						
19	5" Brick Wall : 5" thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	1.10	sqm	1,180	1302	PWD Rates Schedule (2022)
20	Cement concrete Work: CC casting in angle wall (5"x5"x1'-9") [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	0.06	cum	8,996	567	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
21	Wooden Post (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of wooden post Size 3"x3"- 6nos and including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	2.25	cft	1,200	2700	Local Market Price
22	Wooden wall, bar Rafter & Purlin (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of roof truss by using of wooden wall bar 2"x2"-3 nos, 2"x2" rafter-3nos and 2"x2" purlin 3nos and including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.58	cft	1,200	1900	Local Market Price
23	Wooden For wall Batten (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of wooden Batten by using of 2" X 1.5" for Wall including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.78	cft	1,200	2138	Local Market Price
24	Wooden for Door (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of Wooden Door by using of 2"x 2" wall bar, 2"x2" Cross batten & 2"x 2" for door batten or frame including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	2.07	cft	1,200	2483	Local Market Price
25	1 mm thick (Colored) Corrugated Plastic Sheet for Roofing: Supplying, fitting & fixing 1mm thick corrugated plastic sheet (Brand Quality), fitting and fixing on wooden frame with screws. all complete and accepted by the Engineer.	7.81	sqm	850	6636	Local Market Price
26	CGI Sheet for Wall: Supplying, transport, fitting and fixing of .32mm, 6ft long color sheet brand CGI sheet including labour charges all work will be completed as per drawing and instruction of Engineer in-charge.	13.94	sqm	850	11849	Local Market Price
27	Galvanized Iron Sheet for door: Supplying, fitting and fixing 0.51 mm/24 gauge thick (Colored) Plain Galvanized Iron Sheet (Brand Quality) for fitting and fixing on wooden, limpet washers and putty etc. all complete and accepted by the Engineer.	2.79	sqm	550	1533	Local Market Price
28	Celling : Celling by Supply and fitting fixing of diagonally bamboo tarja mat tied with split bamboo battens for latrine roof	7.81	sqm	400	3123	Local Market Price
30	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Latrine wall, floor, inner surface and outer surface, finishing the corner, kobla, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	17.32	sqm	297	5143	PWD Rates Schedule (2022)
31	Visibility Plaque: Supplying fitting and fixing of visibility plaque with the latrine wall including specified messages and logos, the plaque should be made of 12"x8" Tiles and painting on it as per given design.	1.00	L.S	1,000	1000	Local Market Price
PART-D: SANITARY work & Ventilation						
32	Pan & Foot Rest: Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest including proper levelling of floor.	2.00	each	450	900	Local Market Price
33	4" UPVC pipe: Supply, fitting & fixing of 100mm dia uPVC pipe thi,3mm thickness good quality to drain excreta to the sludge storage tank.	3.00	RM	450	1350	Local Market Price
34	4" UPVC Tee : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	2.00	each	400	800	Local Market Price
35	50 mm dia PVC vent: Supply, fitting & fixing of 50 mm dia PVC vent pipe (class-C) including PVC kawal, 2 nos at 10ft height each, approved and accepted by the IOM Engineer in-charge.	6.10	RM	150	915	Local Market Price
36	75 mm dia brass globe valve: Supplying, fitting and fixing of best quality G.I. globe valve, threaded joint with sealant etc. complete approved and accepted by the Engineer- in- charge.	2.00	each	4,760.00	9520	Local Market Price
37	75mm GI pipe: Supplying, fitting and fixing of 75 mm dia G.I. pipe with wall thickness 3.25 mm, outside diameter min 86.5 mm, weight 7.22 kg/m, can withstand min 50 kg/cm2 hydraulic pressure. all complete in all respects approved and accepted by the Engineer- in- charge.	2.00	RM	1,526.00	3052	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
38	RCC slab for Manhole: Supply, fitting & fixing of RCC slab for Manhole for controlling GI Gate Valve size of slab (3'-10" X18") 3" thickness, approved and accepted by the IOM Engineer in-charge.	1.00	each	1,000.00	1000	Local Market Price
39	PART-E: Other Supplies & Accessories fitting, fixing & supplying					
a	Stud Nail (2.5 inch)	2.5	kg	80	200	Local Market Price
b	MS Clamp Size 1-6" x 2.5"x3mm Thickness	4	each	100	400	Local Market Price
c	Nail Different size (1.5 to 4 inch)	1.5	kg	80	120	Local Market Price
d	Hinges	12	each	50	600	Local Market Price
e	Screw for Hinges	1	Dozen	100	100	Local Market Price
f	Hash Bolt (Small for door lock inside & outside)	8	each	25	200	Local Market Price
Total Quoted Price				BDT	244,698	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
 Latrine Design Group
 ISCG WASH Sector, Cox's Bazar

Reviewed by :
 DPHE, Cox's Bazar

Approved by :
 Office of Refugee Relief and
 Repatriation Commissioner (RRRC),
 Cox's Bazar

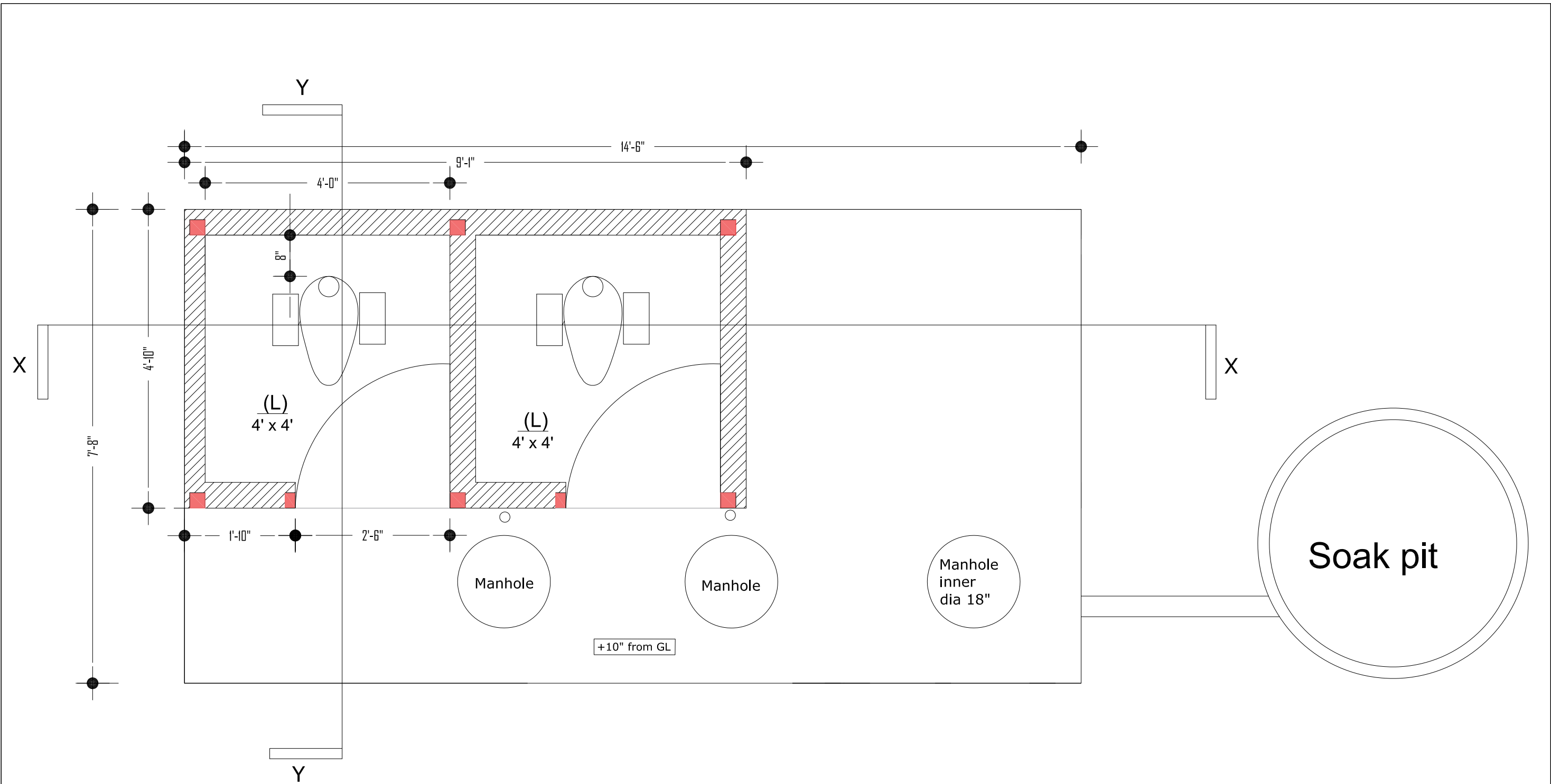


PROJECT
DESIGN AND DRAWING of UNIFIED LATRINE
TWIN CUBICLES WOODEN FRAMED SEPTIC TANK
LATRINE WITH SOAK WELL
(Option-06A)

JULY, 2023

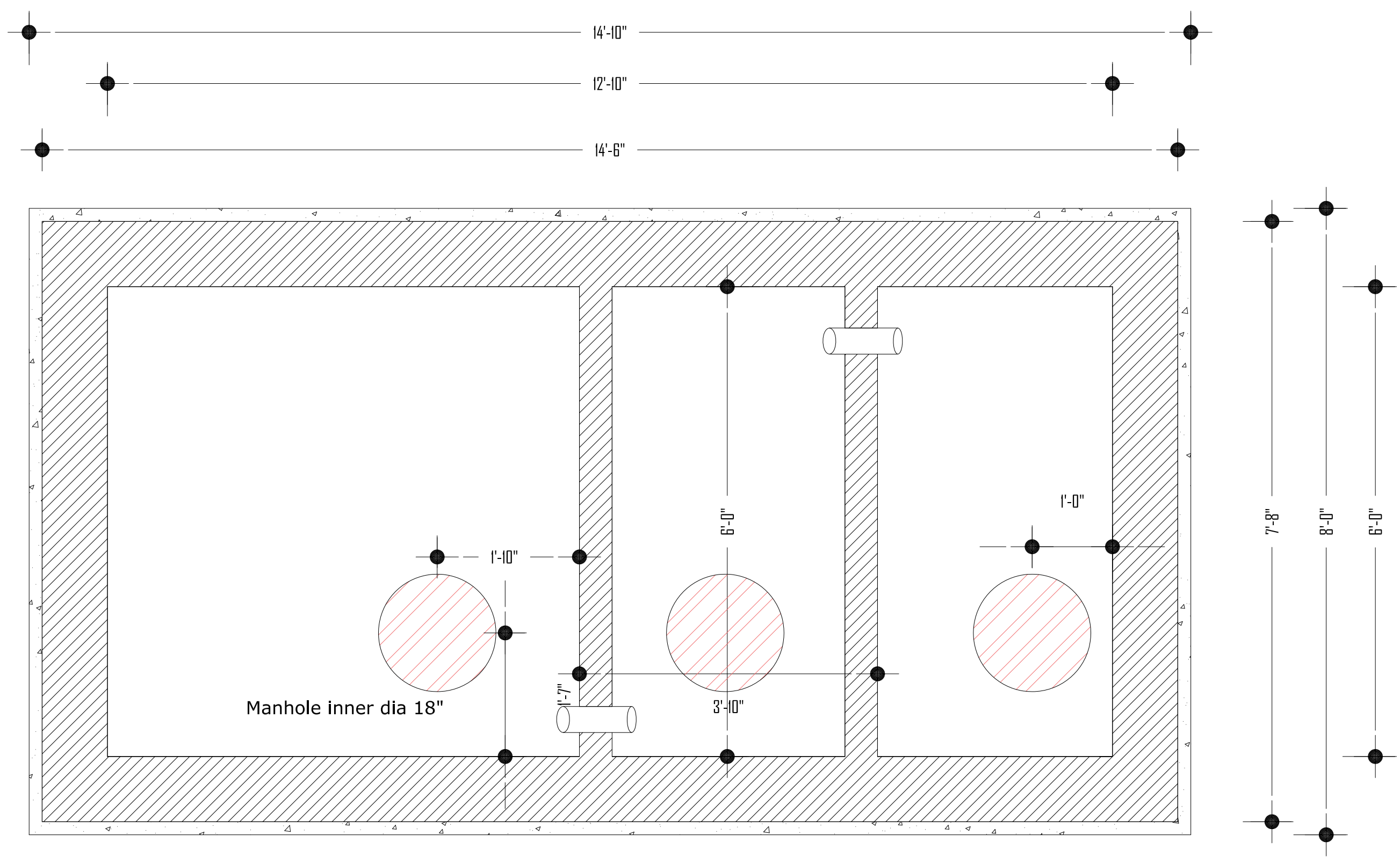
PREPARED By:

**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**



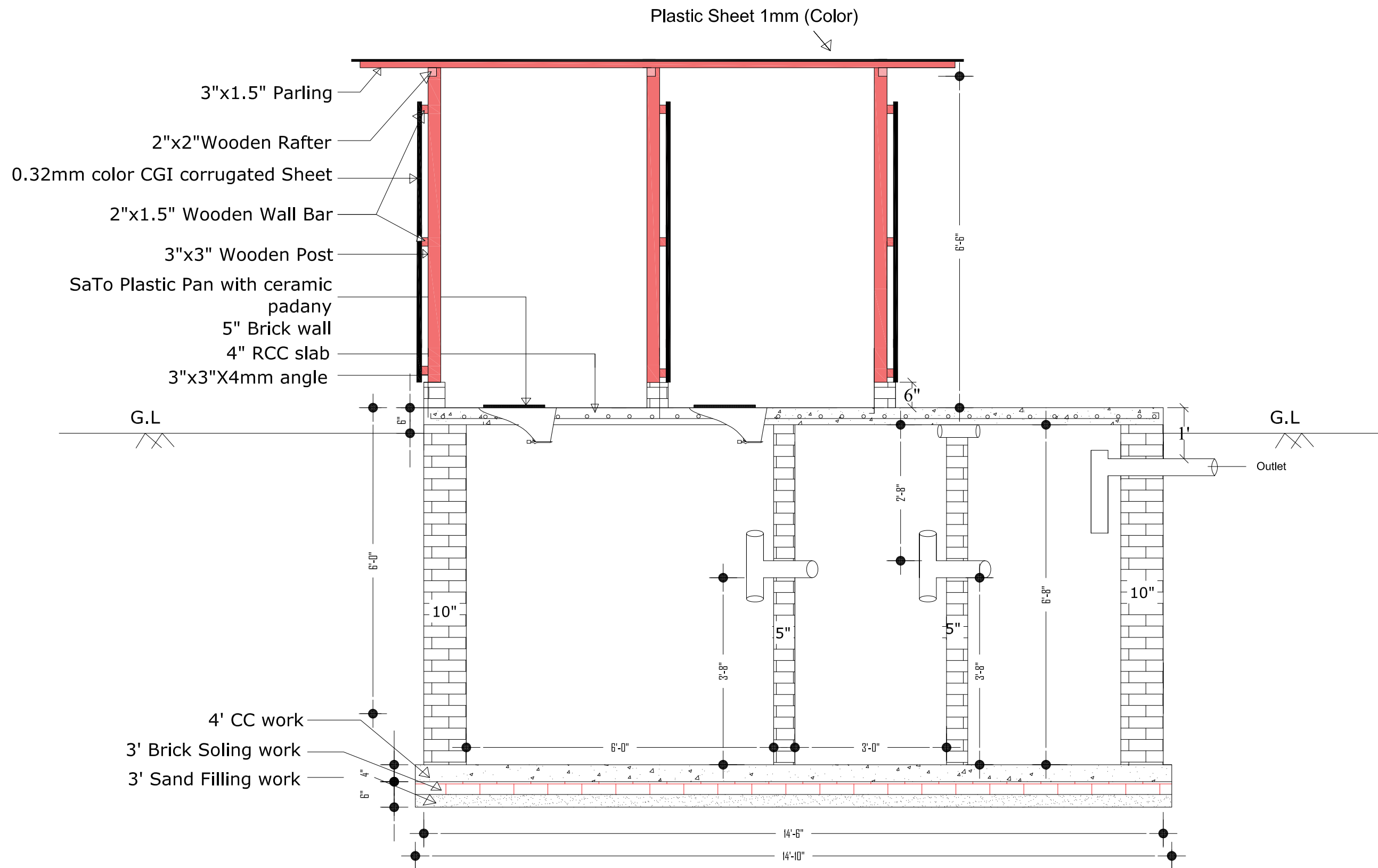
PLAN OF Twin CUBICLES LATRINE SEPTIC TANK WITH SOAK WELL (Option-06A)

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-06A)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	01




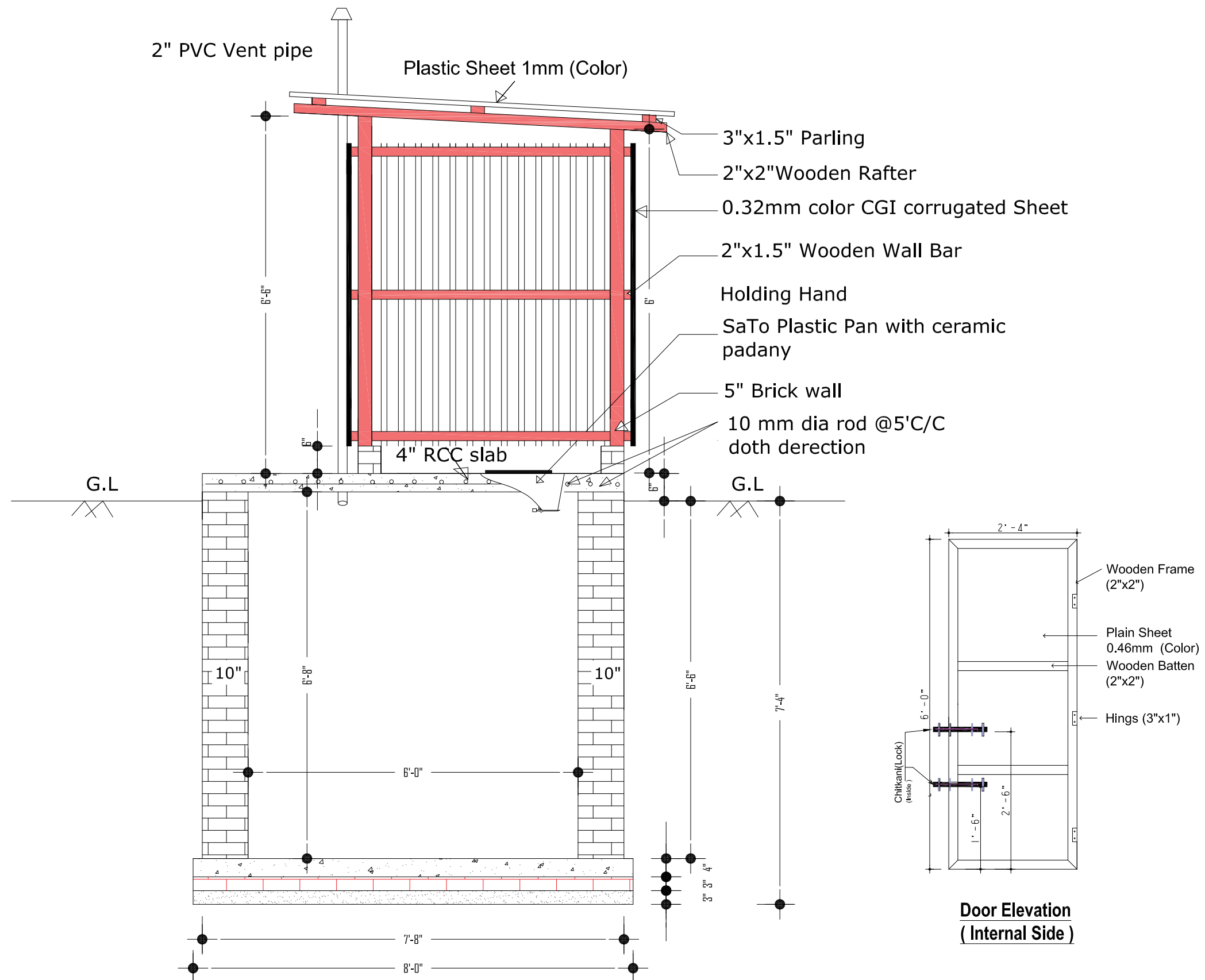
SEPTIC TANK LAYOUT

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-06A)	Latrine Design Group	Septic Tank Layout	July, 2023	DPHE Cox's Bazar	RRRC	02



SECTION OF X-X FOR SPETIC TANK LATRINE

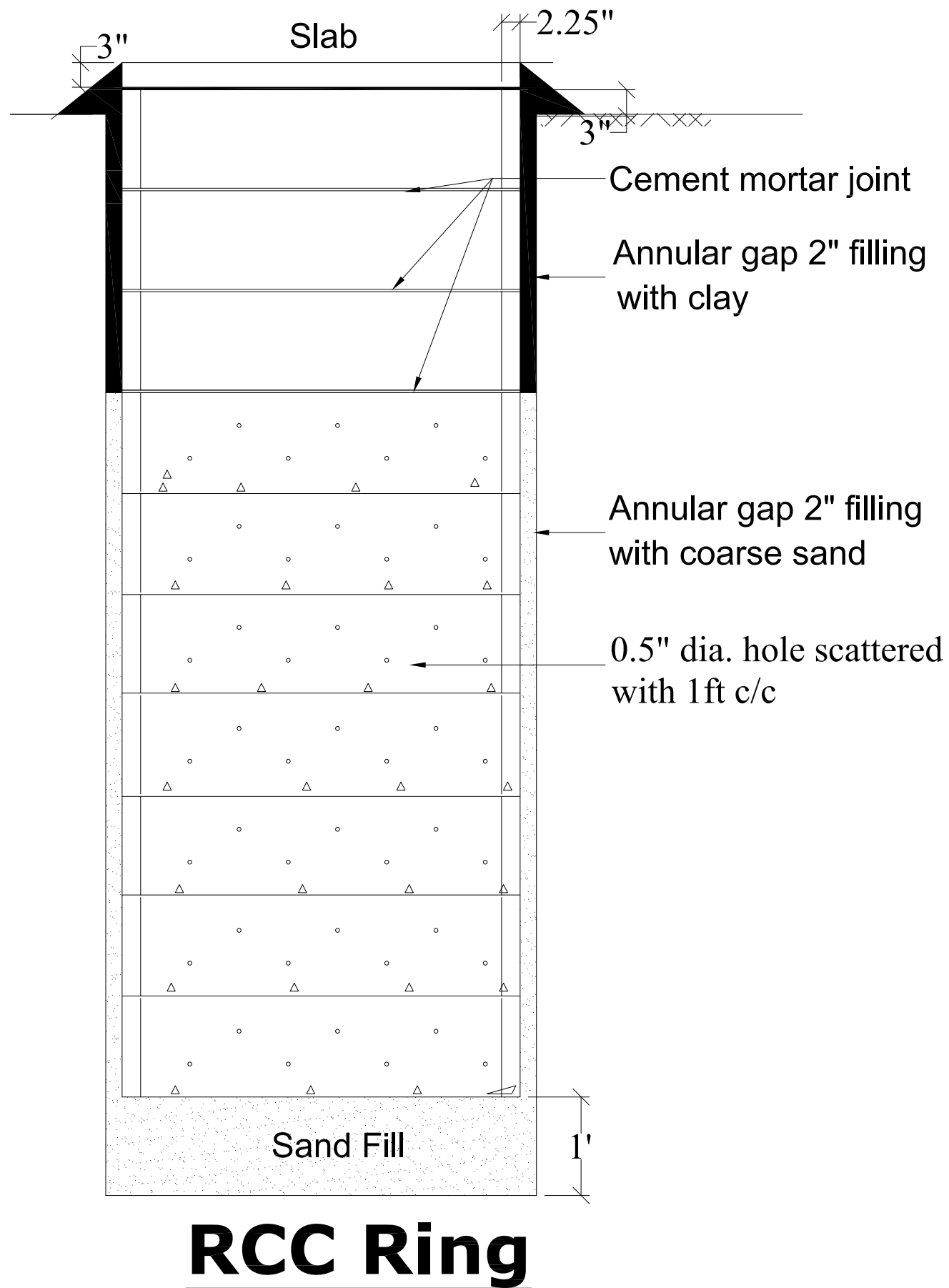
	Project Design and Drawing of Unified Latrine	Model: Twin Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-06A)	Design by: Latrine Design Group	Drawing Title Section	Date July, 2023	Reviewed by DPHE Cox's Bazar	Approved by RRRRC	Page 03
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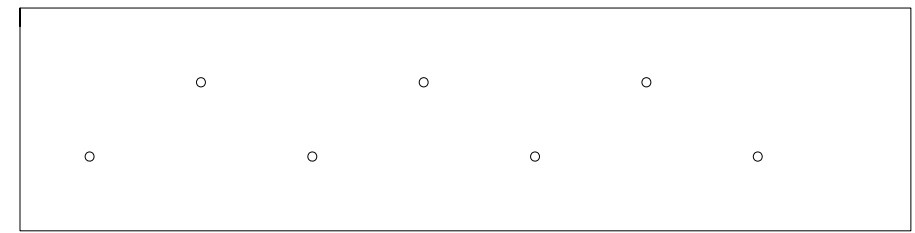
SECTION: Y-Y FOR SPETIC TANK LATRINE

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-06A)	Latrine Design Group	Section	July, 2023	DPHE Cox's Bazar	RRRC	04

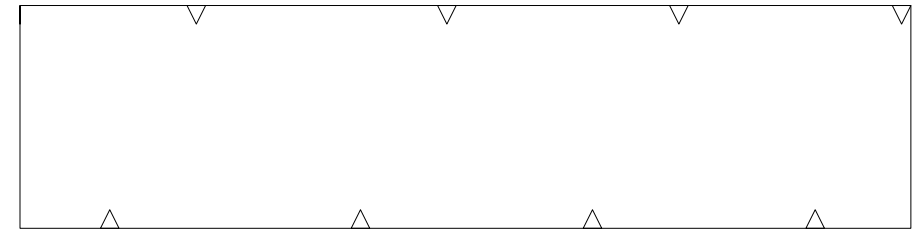
RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal), with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance).



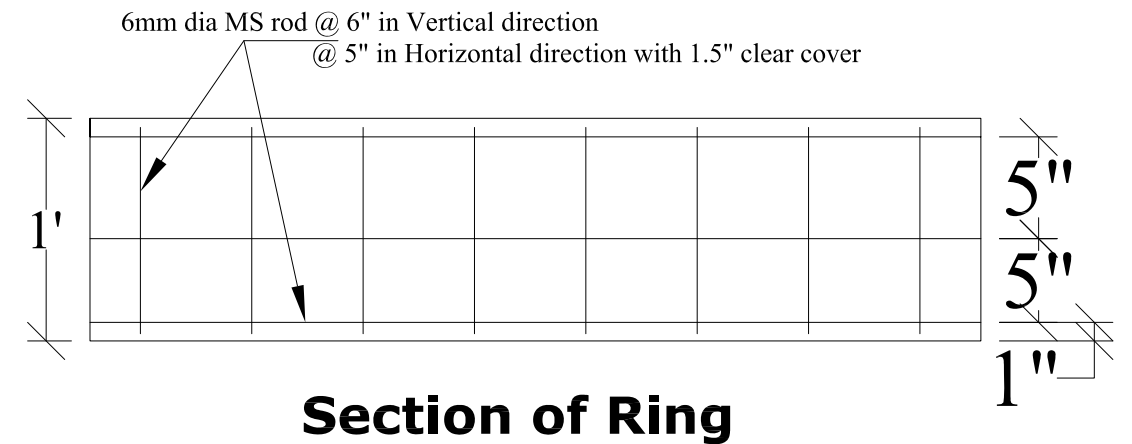
RCC Ring



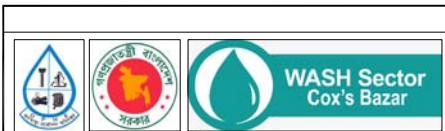
RCC Ring (Option 1)



RCC Ring (Option 2)



Section of Ring



Project
Design and Drawing of
Unified Latrine

Model:
Twin Cubicles Wooden Framed Septic
Tank Latrine with Soak Well (Option-06A)

Design by:
Latrine Design Group

Drawing Title
Pit & Ring Details

Date
July, 2023

Reviewed by
DPHE
Cox's Bazar

Approved by
RRRC

Page
05

Bill of Quantities

Latrine Option-6A

Two Cubicles Wooden Framed Septic Tank Latrine with Soak Well

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
	PART-A: Sub-structure					
1	Earth Excavation : Earth work in excavation in all kinds of soil for septic tank trenches including; providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and providing layout, removing necessary roots and plants, protecting and keeping the trench dry from rain/external water, stacking and levelling surrounding sites with excavated soil. All should be completed under the direct supervision and guidance of the Engineer in-charge, subject to agreed and locally available earth excavation methods. However, Engineer in-charge's approval shall not relieve the contractor of his responsibilities and obligations under the contract.	24.62	cum	259	6375	PWD Rates Schedule (2022)
2	Sand Filling : Sand filling (F.M. 0.5-0.8) in the septic Tank foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	0.84	cum	1,093	919	PWD Rates Schedule (2022)
3	Polyethylene Sheet : Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	11.03	sqm	150	1654	Local Market Price
4	Brick Soling : One layer of brick flat soling in Tank Foundation with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	11.03	sqm	515	5678	PWD Rates Schedule (2022)
5	Cement concrete Work : 4" Thick CC casting in base tank foundation [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	0.84	cum	7,817	6572	PWD Rates Schedule (2022)
6	10" Brick Wall : 10" Brick works in Foundation of wall of Septic tank with first class bricks in cement/sand mortar (1:6) including filling the interstices with mortar, raking out joints, cleaning and socking the bricks at least for 24 hours and screening of sand before use, necessary scaffolding, curing at least for 7 days etc. all complete including cost of water, electricity and other charges (measurement to given as 250 mm width for one brick length). All work should be completed as per design and guidance of the Engineer in-charge.	6.46	cum	7,501	48453	PWD Rates Schedule (2022)
7	5" Brick Wall : 5" thick Septic Tank Compartment baffle wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	7.44	sqm	1,180	8778	PWD Rates Schedule (2022)
8	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Septic Tank at floor, inner surface and outer surface, finishing the corner, kobra, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	66.25	sqm	297	19676	PWD Rates Schedule (2022)
9	Earth Filling : Earth filling in the trenches surrounding the masonry wall for Septic tank & soak well and up to the pre-defined formation level with 150 mm layers including proper leveling, watering and compaction as necessary and consolidating including local carriage each layer up to finished level including cost of all tools and equipment etc. all complete and accepted by the IOM Engineer in-charge.	4.53	cum	350	1585	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
10	Reinforced concrete cement works: RCC slabs with concrete (1:2:4) [cement, sand (F.M.1.2) and picked jhama chips] and M.S. deformed bar 10 mm and 6 mm, grade 40 billet) reinforcement of required size and length for all types of RCC work including straightening the rod, removing rust, cleaning, cutting, hooking, bending binding with supply of 22 B.W.G GI wire, screening, washing, mixing, laying, vibrator compaction and curing for at least 14 days including the supply of water, electricity and other charges and costs of tools and plants etc. All work complete as per drawing and instruction of the Engineer in-charge.					
	10a) Concrete (mix ratio 1:2:4)	1.05	cum	8,784	9230	PWD Rates Schedule (2022)
	10b) 10 mm dia deformed-rod	128.18	kg	110	14100	PWD Rates Schedule (2022)
	10c) Centering and shuttering for the slab casting including keeping provision of man-holes and covers by using of timber, bamboo and other necessary materials.	10.34	sqm	556	5747	Local Market Price
11	Angle Bar : size of 3"x3"x 6mm angle 18" long & bolts to be fitted within inside of RCC Slab & fitting with wooden post . All work complete as per design and instruction of Engineer in-charge.	8.00	each	480	3840	Local Market Price
12	C.I. man hole cover : Supply, fitting and fixing of 550 mm dia C.I. man hole cover etc. all complete approved by the Engineer- in- charge.	2.00	each	1,869	3738	Local Market Price
<u>PART-B: Soak well</u>						
13	Earth Excavation : Earth work in excavation of Foundation for Soak pit carrying and disposing of all Excavated materials at a safe distance designated by the EIC, all types of soil except rocky gravelly, organic maintains proper slope, disposing of all back filling of sites of all excavated materials to a safe distance back filling of sites of original level etc, all complete to the direction	4.61	cum	259	1195	PWD Rates Schedule (2022)
14	RCC Ring: RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal),with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance.					
	14a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	0.67	cum	8,996	6008	PWD Rates Schedule (2022)
	14b) 6 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	43.06	kg	110	4737	PWD Rates Schedule (2022)
	14c) Carrying Cost	10.00	each	400	4000	Local Market Price
15	RCC Slab: Supply, fittings & fixing of pre-cast ring cover 4 ft dia size, thickness-3" made of 1:2:4 mixing ratio, 8mm dia ms rod (60G) 5" C/C both way as per the drawing and instruction of EIC.					
	12a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	0.09	cum	8,784	782	PWD Rates Schedule (2022)
	12b) 8 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	7.44	kg	110	818	PWD Rates Schedule (2022)
	12c) Carrying Cost	2.00	cum	400	800	Local Market Price
16	Sand Filling : Sand filling (F.M. 0.5-0.8) in the septic Tank foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	1.05	each	1,093	1149	PWD Rates Schedule (2022)
17	4" PVC pipe: Supply, fitting & fixing of 100 mm dia D Class PVC Connection pipe connected to Septic Tank to Soak pit approved and accepted by the Engineer in-charge	3.05	RM	260	793	Local Market Price
<u>PART-C: Superstructure</u>						
18	5" Brick Wall : 5" thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	1.10	sqm	1,180	1302	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
19	Cement concrete Work: CC casting in angle wall (5"x5"x1'-9") [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	0.05	cum	7,817	369	PWD Rates Schedule (2022)
20	Wooden Post (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of wooden post Size 3"x3" - 6nos and including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	2.25	cft	1,200	2700	Local Market Price
21	Wooden wall, bar Rafter & Purlin (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of roof truss by using of wooden wall bar 2"x2"-3 nos, 2"x2" rafter-3nos and 2"x2" purlin 3nos and including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.58	cft	1,200	1900	Local Market Price
22	Wooden For wall Batten (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of wooden Batten by using of 2" X 1.5" for Wall including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	1.78	cft	1,200	2138	Local Market Price
23	Wooden for Door (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of Wooden Door by using of 2"x 2" wall bar, 2"x2" Cross batten & 2"x 2" for door batten or frame including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	3.29	cft	1,200	3950	Local Market Price
24	1 mm thick (Colored) Corrugated Plastic Sheet for Roofing: Supplying, fitting & fixing 1mm thick corrugated plastic sheet (Brand Quality), fitting and fixing on wooden frame with screws. all complete and accepted by the Engineer.	7.81	sqm	850	6636	Local Market Price
25	CGI Sheet for Wall: Supplying, transport, fitting and fixing of .32mm, 6ft long color sheet brand CGI sheet including labour charges all work will be completed as per drawing and instruction of Engineer in-charge.	13.94	sqm	850	11849	Local Market Price
26	Galvanized Iron Sheet for door: Supplying, fitting and fixing 0.51 mm/24 gauge thick (Colored) Plain Galvanized Iron Sheet (Brand Quality) for fitting and fixing on wooden, limpet washers and putty etc. all complete and accepted by the Engineer.	2.79	sqm	550	1533	Local Market Price
27	Ceiling : Ceiling by Supply and fitting fixing of diagonally bamboo tarja mat tied with split bamboo battens for latrine roof	7.81	sqm	400	3123	Local Market Price
29	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Latrine wall, floor, inner surface and outer surface, finishing the corner, kobra, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	14.18	sqm	297	4211	PWD Rates Schedule (2022)
30	Visibility Plaque: Supplying fitting and fixing of visibility plaque with the latrine wall including specified messages and logos, the plaque should be made of 12"x8" Tiles and painting on it as per given design.	1.00	L.S	1,000	1000	Local Market Price
PART-D: SANITARY work & Ventilation						
31	Pan & Foot Rest: Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest including proper levelling of floor.	2.00	each	450	900	Local Market Price
32	4" UPVC pipe: Supply, fitting & fixing of 100mm dia uPVC pipe thi,3mm thickness good quality to drain excreta to the sludge storage tank.	1.00	RM	450	450	Local Market Price
33	4" UPVC Tee : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	2.00	each	400	800	Local Market Price
34	50 mm dia PVC vent: Supply, fitting & fixing of 50 mm dia PVC vent pipe (class-C) including PVC kawal, 2 nos at 10ft height each, approved and accepted by the IOM Engineer in-charge.	6.10	RM	150	915	Local Market Price
35	PART-E: Other Supplies & Accessories fitting, fixing & supplying					
a	Stud Nail (2.5 inch)	2.5	kg	80	200	Local Market Price
b	MS Clamp Size 1-6" x 2.5"x3mm Thickness	4	each	100	400	Local Market Price
c	Nail Different size (1.5 to 4 inch)	1.5	kg	80	120	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
d	Hinges	12	each	50	600	Local Market Price
e	Screw for Hinges	1	Dozen	100	100	Local Market Price
f	Hash Bolt (Small for door lock inside & outside)	8	each	25	200	Local Market Price
Total Quoted Price				BDT	201003	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
 Latrine Design Group
 ISCG WASH Sector, Cox's Bazar

Reviewed by :
 DPHE, Cox's Bazar

Approved by :
 Office of Refugee Relief and Repatriation
 Commissioner (RRRC), Cox's Bazar

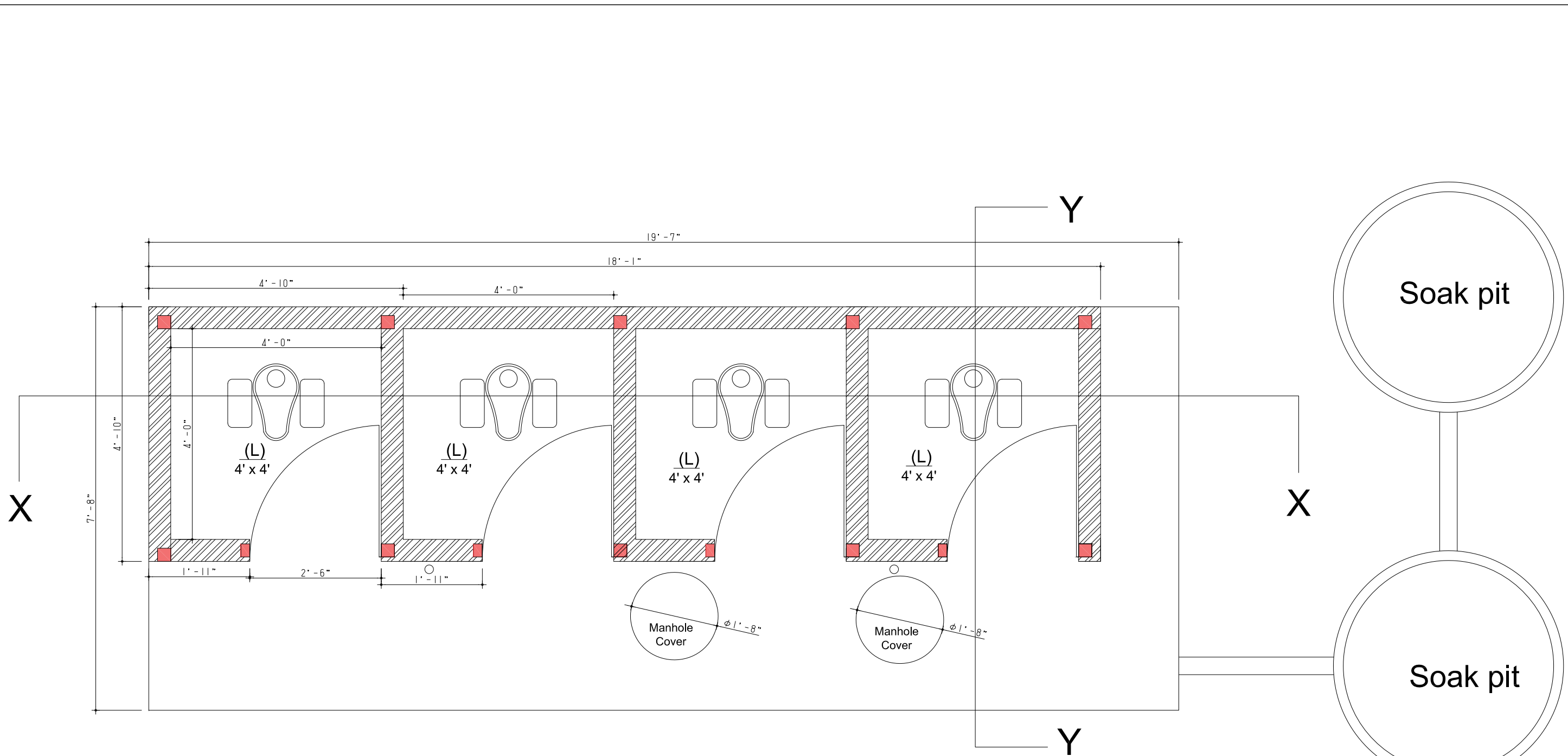


PROJECT
DESIGN AND DRAWING of UNIFIED LATRINE
FOUR CUBICLES WOODEN FRAMED SEPTIC TANK
LATRINE WITH SOAK WELL
(Option-07A)

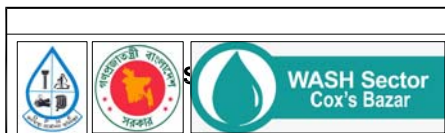
JULY, 2023

PREPARED By:

**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**



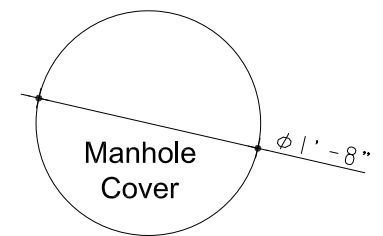
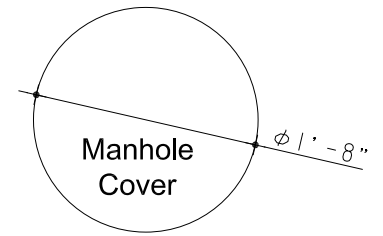
**PLAN OF Twin CUBICLES WOODEN FRAMED SEPTIC TANK
LATRINE WITH SOAK WELL (Option-07A)**



Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Four Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-07A)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	01

19' - 7"

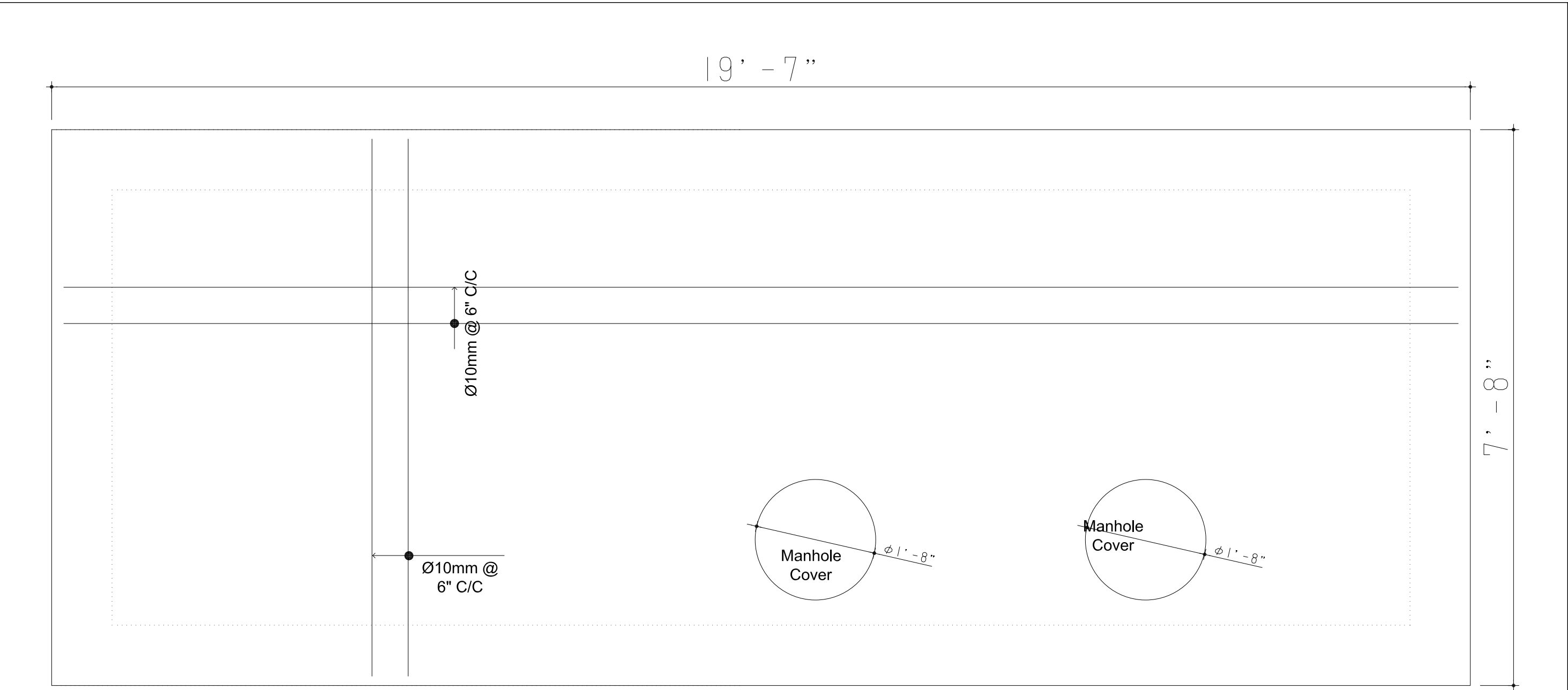
7' - 8"



PLAN OF SEPTIC TANK

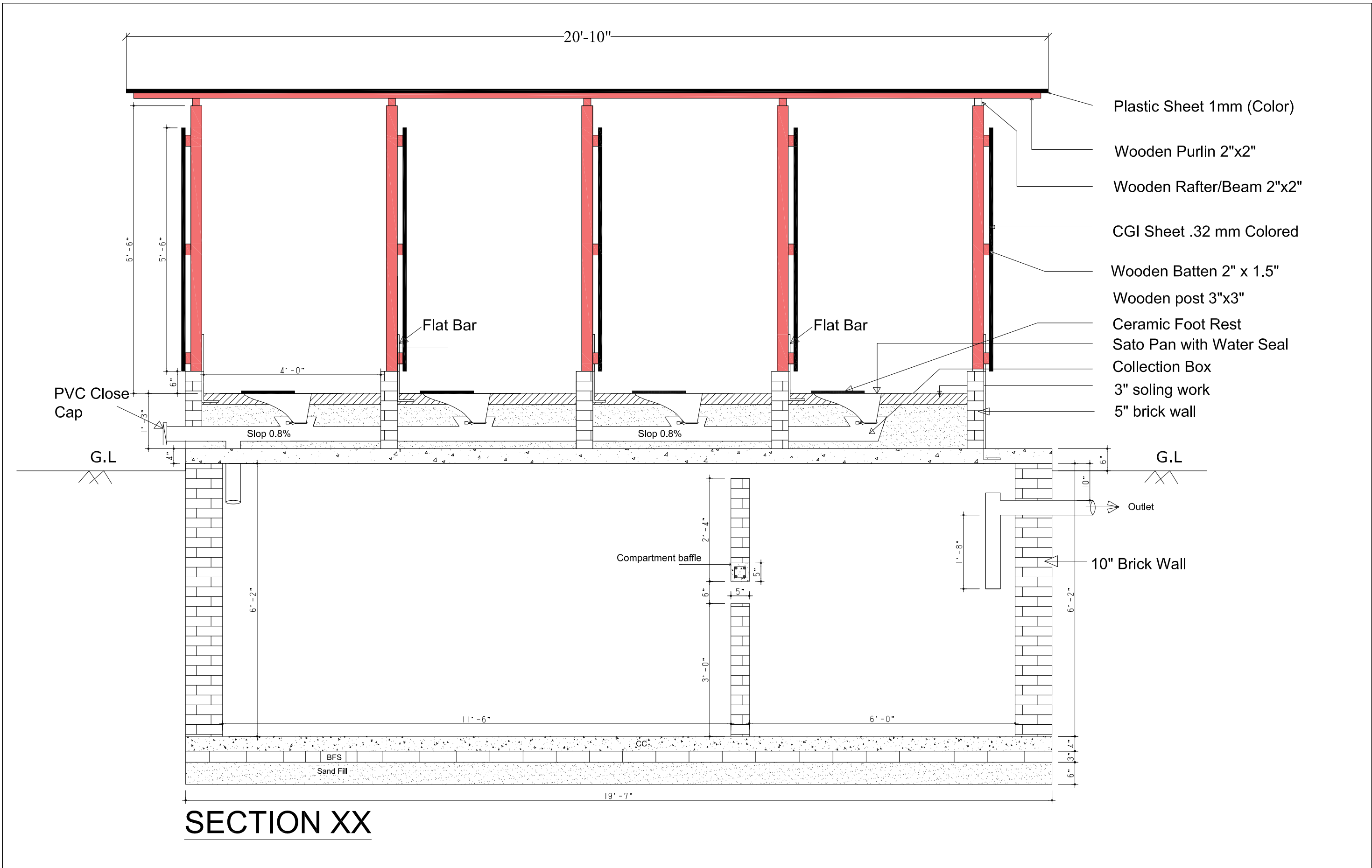


Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Four Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-07A)	Latrine Design Group	Plan f Septic Tank	July, 2023	DPHE Cox's Bazar	RRRC	02

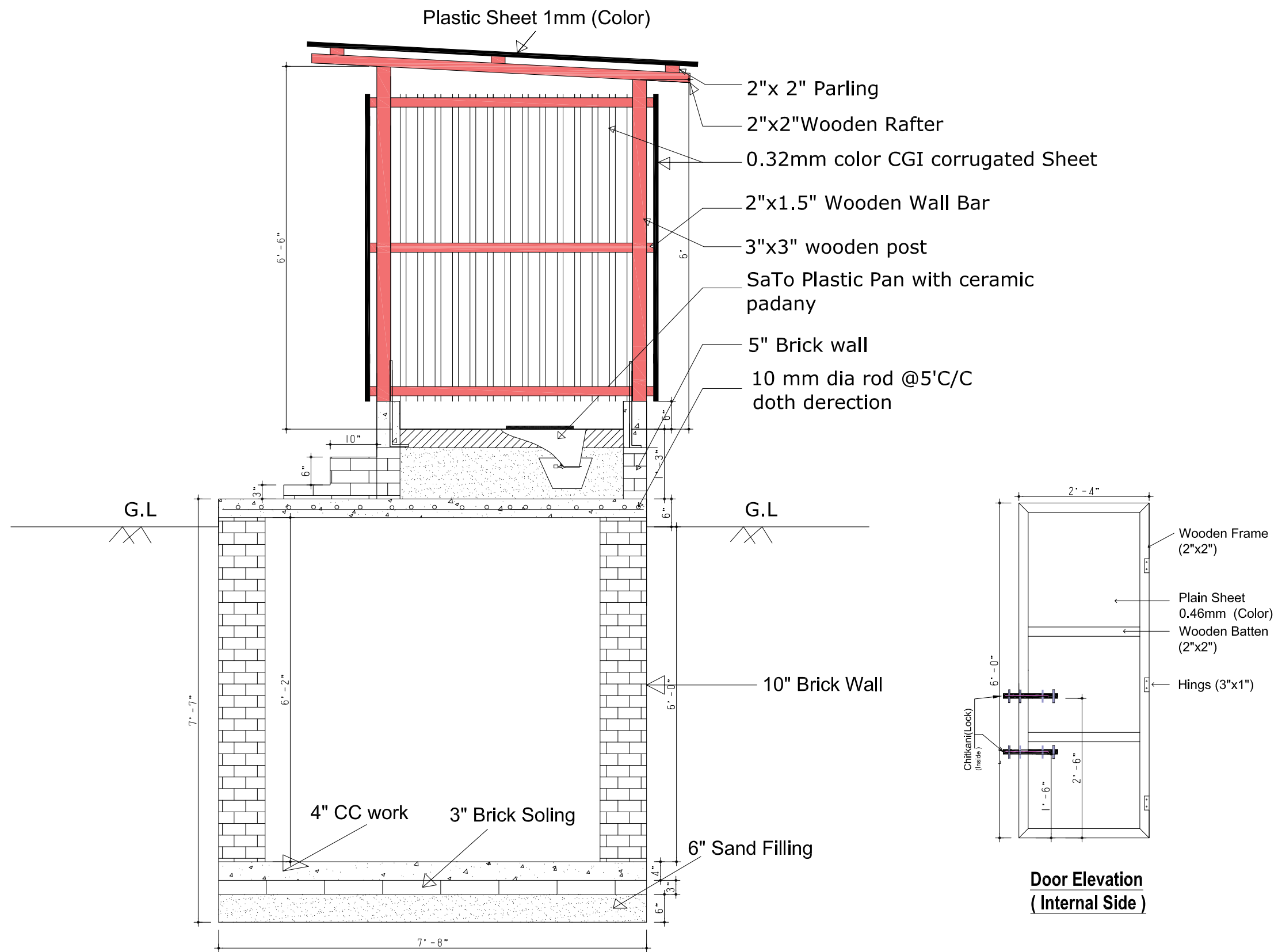


REINFORCEMENT DETAILS OF SEPTIC TANK SLAB

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-07A)	Latrine Design Group	Slab Reinforcement Details	July, 2023	DPHE Cox's Bazar	RRRC	03



	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-07A)	Latrine Design Group	Section	July, 2023	DPHE Cox's Bazar	RRRC	04



Plastic Sheet 1mm (Color)

- 2"x 2" Parling
- 2"x2"Wooden Rafter
- 0.32mm color CGI corrugated Sheet
- 2"x1.5" Wooden Wall Bar
- 3"x3" wooden post
- SaTo Plastic Pan with ceramic padany
- 5" Brick wall
- 10 mm dia rod @5'C/C doth derection

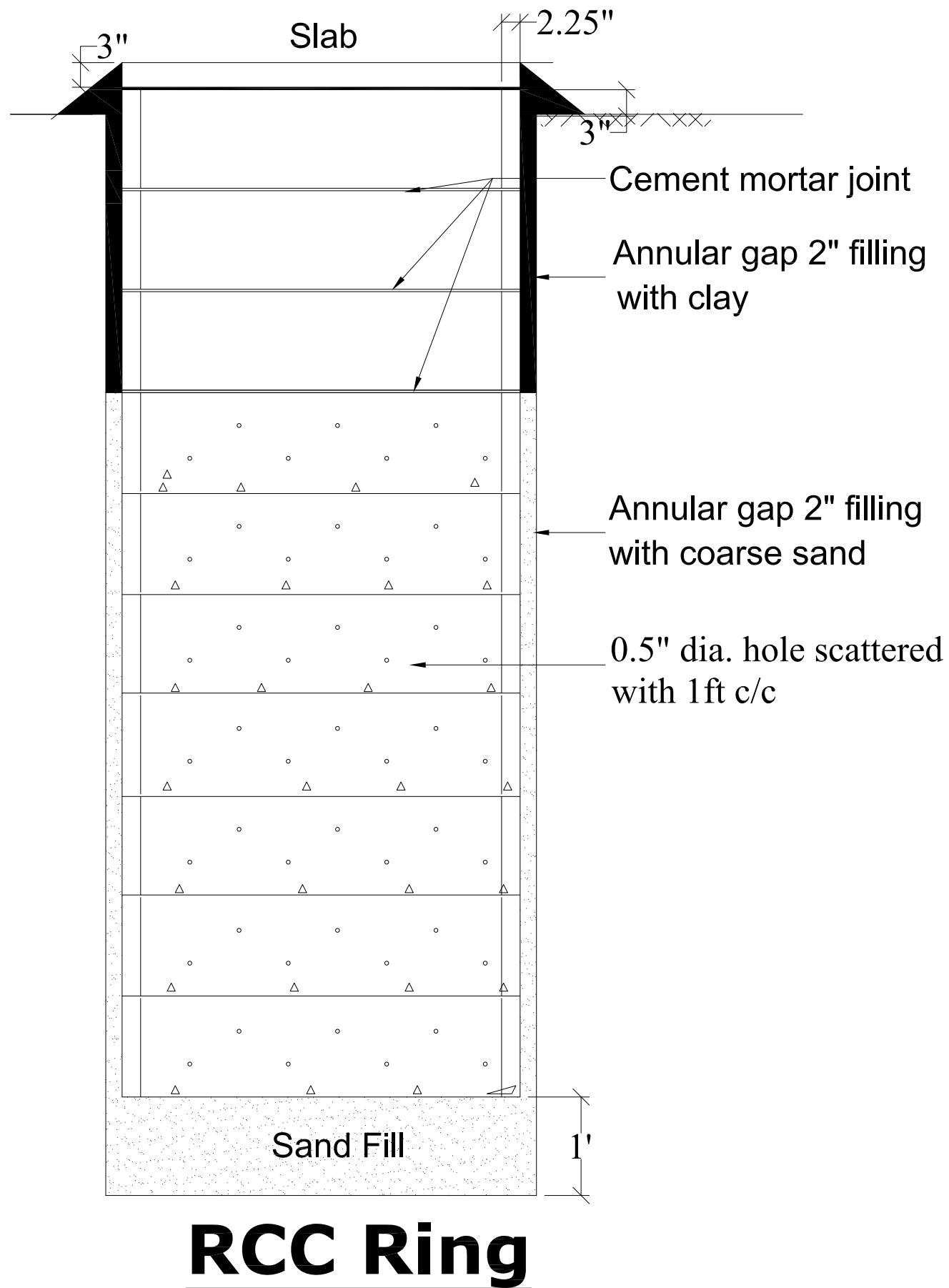
- Wooden Frame (2"x2")
- Plain Sheet 0.46mm (Color)
- Wooden Batten (2"x2")
- Hings (3"x1")

SECTION YY

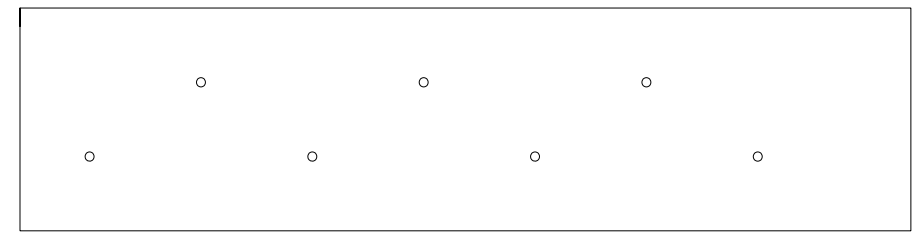
Door Elevation (Internal Side)

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-07A)	Latrine Design Group	Section	July, 2023	DPHE Cox's Bazar	RRTC	05

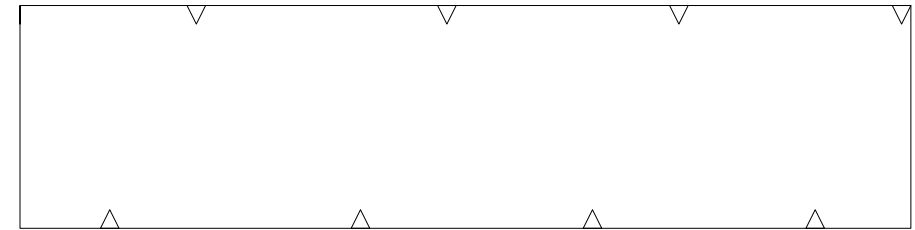
RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal), with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance).



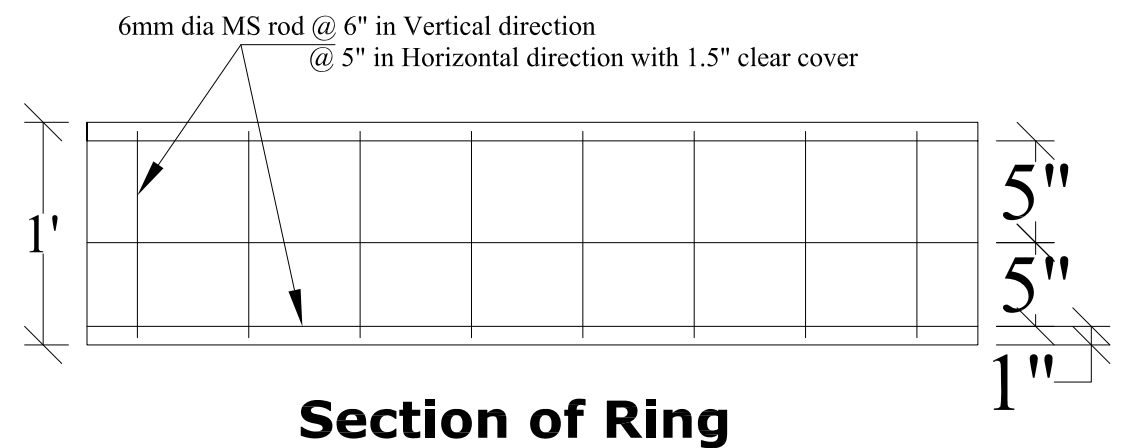
RCC Ring



RCC Ring (Option 1)



RCC Ring (Option 2)



Section of Ring

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-07A)	Latrine Design Group	Section of Pit & Ring	July, 2023	DPHE Cox's Bazar	RRRC	06

Bill of Quantities

Latrine Option-7A

Four Cubicles Wooden Framed Septic Tank Latrine with Infiltration Bed

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
PART-A: Sub-structure						
1	Earth Excavation : Earth work in excavation in all kinds of soil for septic tank trenches including; providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and providing layout, removing necessary roots and plants, protecting and keeping the trench dry from rain/external water, stacking and levelling surrounding sites with excavated soil. All should be completed under the direct supervision and guidance of the Engineer in-charge, subject to agreed and locally available earth excavation methods. However, Engineer in-charge's approval shall not relieve the contractor of his responsibilities and obligations under the contract.	30.14	cum	259	7,806	PWD Rates Schedule (2022)
2	Sand Filling : 6" sand filling (F.M. 0.5-0.8) in the septic Tank foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	2.13	cum	1,093	2,326	PWD Rates Schedule (2022)
3	Polyethylene Sheet : Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	13.96	sqm	150	2,094	Local Market Price
4	Brick Soling : One layer of brick flat soling in Tank Foundation with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	13.96	sqm	515	7,188	PWD Rates Schedule (2022)
5	Cement concrete Work : 4" Thick CC casting in base tank foundation [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	1.55	cum	7,817	12,107	PWD Rates Schedule (2022)
6	10" Brick Work : 10" Brick works in Foundation of wall of Septic tank with first class bricks in cement/sand mortar (1:6) including filling the interstices with mortar, raking out joints, cleaning and socking the bricks at least for 24 hours and screening of sand before use, necessary scaffolding, curing at least for 7 days etc. all complete including cost of water, electricity and other charges (measurement to given as 250 mm width for one brick length). All work should be completed as per design and guidance of the Engineer in-charge.	7.46	cum	7,501	55,949	PWD Rates Schedule (2022)
7	5" Brick Wall : 5" thick Septic Tank Compartment baffle wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	3.44	sqm	1,180	4,060	PWD Rates Schedule (2022)
8	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Septic Tank at floor, inner surface and outer surface, finishing the corner, kobla, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	53.12	sqm	297	15,776	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price BDT	Total Amount BDT	Rate Reference
9	Reinforced concrete cement works: RCC slabs with concrete (1:2:4) [cement, sand (F.M.1.2) and picked jhama chips] and M.S. deformed bar 10 mm and 6 mm, grade 40 billet) reinforcement of required size and length for all types of RCC work including straightening the rod, removing rust, cleaning, cutting, hooking, bending binding with supply of 22 B.W.G GI wire, screening, washing, mixing, laying, vibrator compaction and curing for at least 14 days including the supply of water, electricity and other charges and costs of tools and plants etc. All work complete as per drawing and instruction of the Engineer in-charge.					
	9a) Concrete (mix ratio 1:2:4)	1.58	cum	8,996	14,249	PWD Rates Schedule (2022)
	9b) 10 mm dia deformed-rod	130.34	kg	110	14,337	PWD Rates Schedule (2022)
	9c) Centering and shuttering for the slab casting including keeping provision of man-holes and covers by using of timber, bamboo and other necessary materials.	14.87	sqm	510	7,584	PWD Rates Schedule (2022)
10	Angle Bar & Flat bar : size of 3"x3"x 6mm angle 18" long 10 nos & flat bar size 3"x 6mm bar 18" long 4 nos with bolts to be fitted within inside of RCC Slab & fitting with wooden post . All work complete as per design and instruction of Engineer in-charge.	14.00	each	350	4,900	PWD Rates Schedule (2022)
11	Manhole Cover : Supplying, fitting and fixing best quality heavy tyes CI manhole cover round perforated/solid plate made without locking & unlocking. arrangement. All other remaining cost including all accessories. Their carriage, wages of labor, technician and incidental charges etc. all complete as per direction & approval of EIC. Size 600mm dia without locking	2.00	each	4,000	8,000	PWD Rates Schedule (2022)
<u>PART-B: Drain field</u>						
12	Earth Excavation : Earth work in excavation of Foundation for Drain field carrying and disposing of all Excavated materials at a safe distance designated by the EIC, all types of soil except rocky gravelly, organic maintains proper slope, disposing of all back filling of sites of all excavated materials to a safe distance back filling of sites of original level etc, all complete to the direction.	5.32	cum	259	1,379	PWD Rates Schedule (2022)
13	Course aggregate (12mm to 18mm) : Supplying, fitting and fixing best quality of Course aggregate (12mm to 18mm) the bottom 2 ft in depth, all complete as per design and as per direction of Engineer in charge.	4.26	cum	5,300	22,578	Local Market Price
14	Course sand Filling : 6" sand filling (F.M. 1.2) in the foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instruction of Engineer-in-charge.	1.06	cum	1,093	1,164	PWD Rates Schedule (2022)
15	UPVC pipe: Supplying best quality 3" dia UPVC perforated pipe L.7 (RFI/Aziz/National Polymer D class) for connecting septic tank to drain field including fitting, fixing etc. all complete as per direction of the EIC.	60.00	RFT	150	9,000	Local Market Price
<u>PART-C: Superstructure</u>						
16	5" Brick Wall : 5" thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	11.38	sqm	1,180	13,430	PWD Rates Schedule (2022)
17	Cement concrete Work: CC casting in angle wall (5"x5"x1'-3") [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	0.09	cum	7,817	673	PWD Rates Schedule (2022)
18	Wooden Post (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of wooden post Size 3"x3"- 13nos and including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	3.75	cft	1,200	4,500	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
19	Wooden wall, bar Rafter & Purlin (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of roof truss by using of wooden wall bar 2"x2"-3 nos, 2"x2" rafter-3nos and 2"x2" purlin 3nos and including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	3.22	cft	1,200	3,867	Local Market Price
20	Wooden For wall Batten (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of wooden Batten by using of 2" X 1.5" for Wall including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	3.31	cft	1,200	3,975	Local Market Price
21	Wooden for Door (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of Wooden Door by using of 3"x2" for door chowat, 2"x2" Cross batten & 2"x 2" for door batten or frame including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	4.94	cft	1,200	5,933	Local Market Price
22	Corrugated Plastic Sheet for Roofing: Supplying, fitting & fixing 1mm thick corrugated plastic sheet (Brand Quality), fitting and fixing on wooden frame with screws. all complete and accepted by the Engineer.	13.66	sqm	850	11,612	Local Market Price
23	CGI Sheet for Wall: Supplying, transport, fitting and fixing of .32mm, 6ft long color sheet brand CGI sheet including labour charges all work will be completed as per drawing and instruction of Engineer in-charge.	30.67	sqm	850	26,069	Local Market Price
24	Galvanized Iron Sheet for door: Supplying, fitting and fixing 0.51 mm/24 gaute thick (Colored) Plain Galvanized Iron Sheet (Brand Quality) for fitting and fixing on wooden, limpet washers and putty etc. all complete and accepted by the Engineer.	5.58	sqm	550	3,067	Local Market Price
25	Sand Filling : sand filling (F.M. 0.5-0.8) in the top of RCC slab for floor; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	1.96	cum	1,093	2,138	PWD Rates Schedule (2022)
26	Polyethylene Sheet: Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	5.95	sqm	150	892	Local Market Price
27	Brick Soling : One layer of brick flat soling in Floor for latrine with first class or picked jhama bricks including preparation of floor bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	5.95	sqm	515	3,063	PWD Rates Schedule (2018)
28	Pan & Foot Rest : Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest including proper levelling of floor.	4.00	each	500	2,000	Local Market Price
29	PVC Collection Box : Supply, fitting & fixing of RFL Collection Box at the discharge point to inspection pit.	4.00	each	300	1,200	Local Market Price
30	4" PVC pipe: Supply, fitting & fixing of 100 mm dia D Class PVC Connection pipe connected to Septic tank, approved and accepted by the Engineer in-charge	7.32	rm	260	1,902	Local Market Price
31	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Latrine wall, floor, inner surface and outer surface, finishing the corner, kobla, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	19.81	sqm	297	5,884	PWD Rates Schedule (2022)
32	Visibility Plaque: Supplying fitting and fixing of visibility plaque with the latrine wall including specified messages and logos, the plaque should be made of 12"x8" Tiles and painting on it as per given design.	1.00	L.S	800	800	Local Market Price
33	PART-D: Other Supplies & Accessories fitting, fixing & supplying					
a	Stud Nail (2.5 inch)	2.5	kg	80	200	Local Market Price
b	MS Clamp Size 1-6" x 2.5"x3mm Thickness	4	each	100	400	Local Market Price
c	Nail Different size (1.5 to 4 inch)	1.5	kg	80	120	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
d	Hinges	12	each	50	600	Local Market Price
e	Screw for Hinges	1	Dozen	100	100	Local Market Price
f	Hash Bolt (Small for door lock inside & outside)	8	each	25	200	Local Market Price
g	4" Tee UPVC	6	each	250	1,500	Local Market Price
h	uPVC Long Trap (4" dia)	2	each	250	500	Local Market Price
i	4" L bow UPVC	2	each	250	500	Local Market Price
Total Quoted Price				BDT	285,622	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
 Latrine Design Group
 ISCG WASH Sector, Cox's Bazar

Reviewed by :
 DPHE Cox's Bazar

Approved by :
 Office of Refugee Relief and
 Repatriation Commissioner (RRRC),
 Cox's Bazar

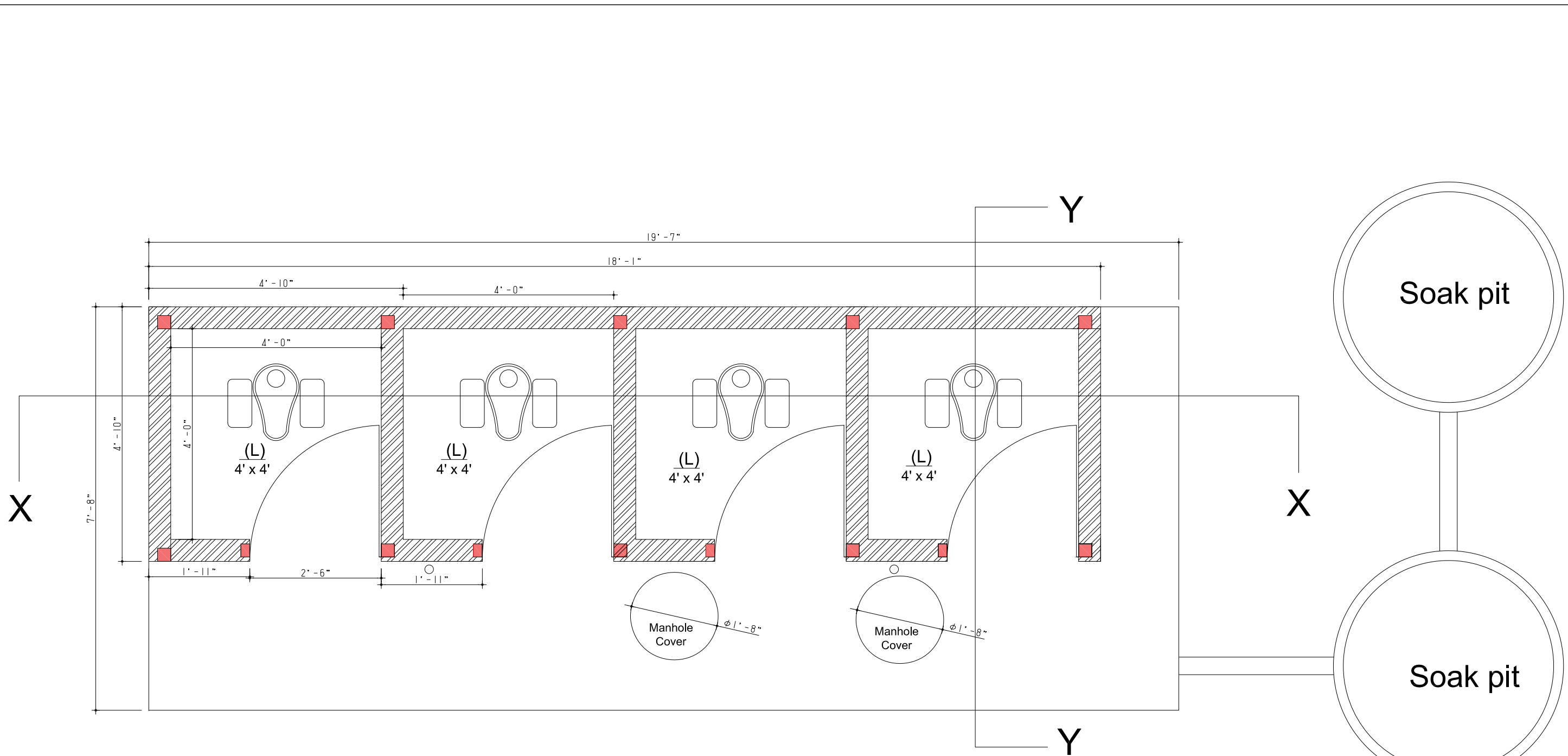


PROJECT
DESIGN AND DRAWING of UNIFIED LATRINE
FOUR CUBICLES WOODEN FRAMED SEPTIC TANK
LATRINE WITH SOAK WELL
(Option-08A)

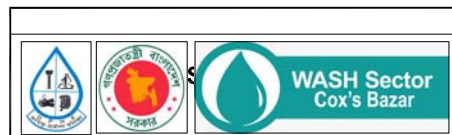
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PREPARED By:

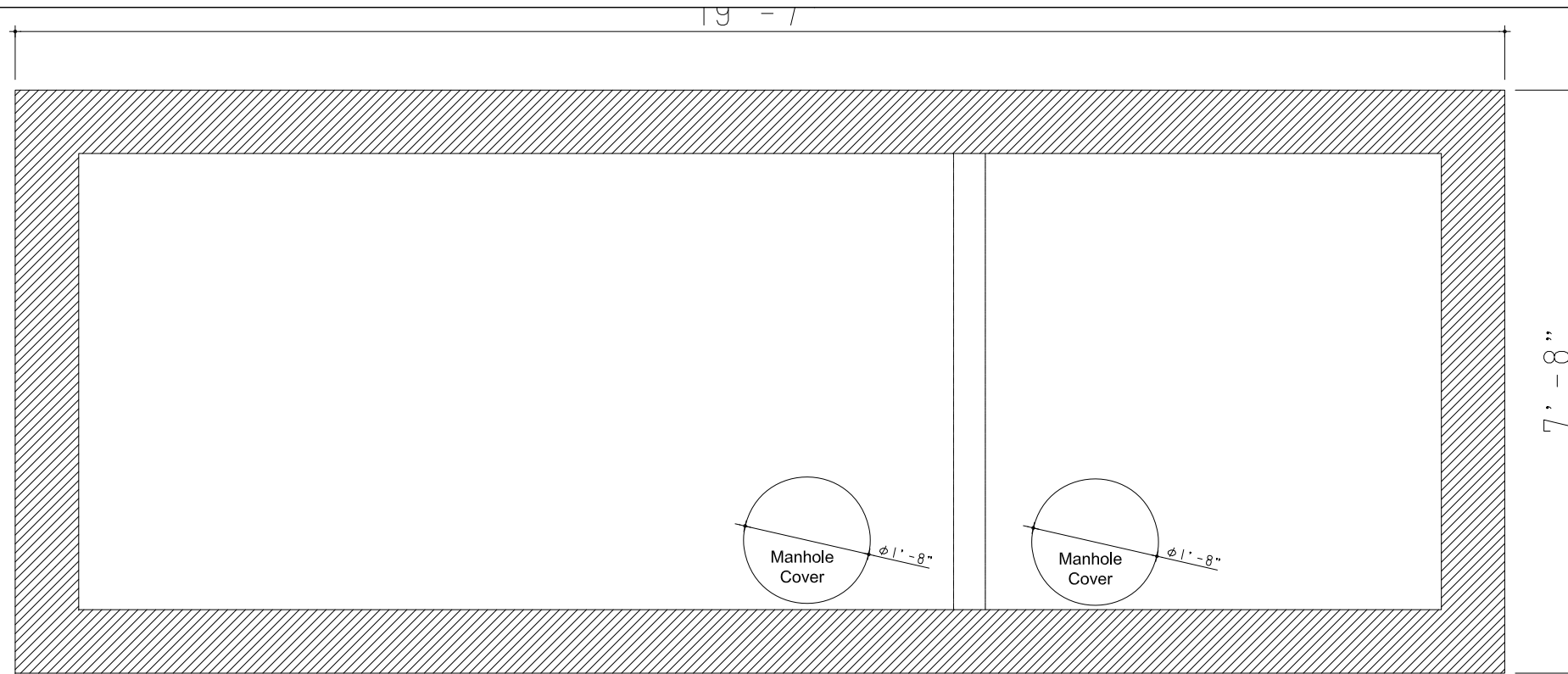
**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**



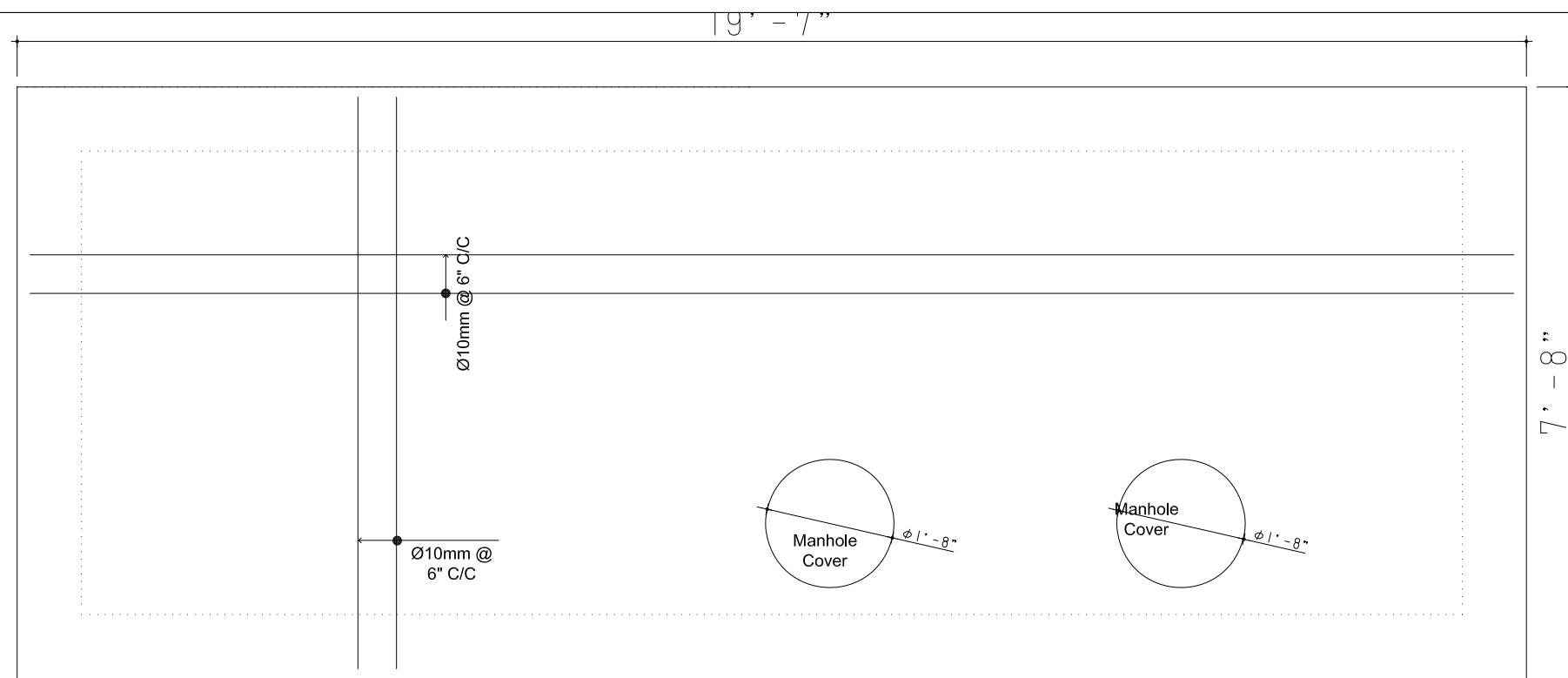
**PLAN OF Twin CUBICLES WOODEN FRAMED SEPTIC TANK
LATRINE WITH SOAK WELL (Option-08A)**



Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Four Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-08A)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	01



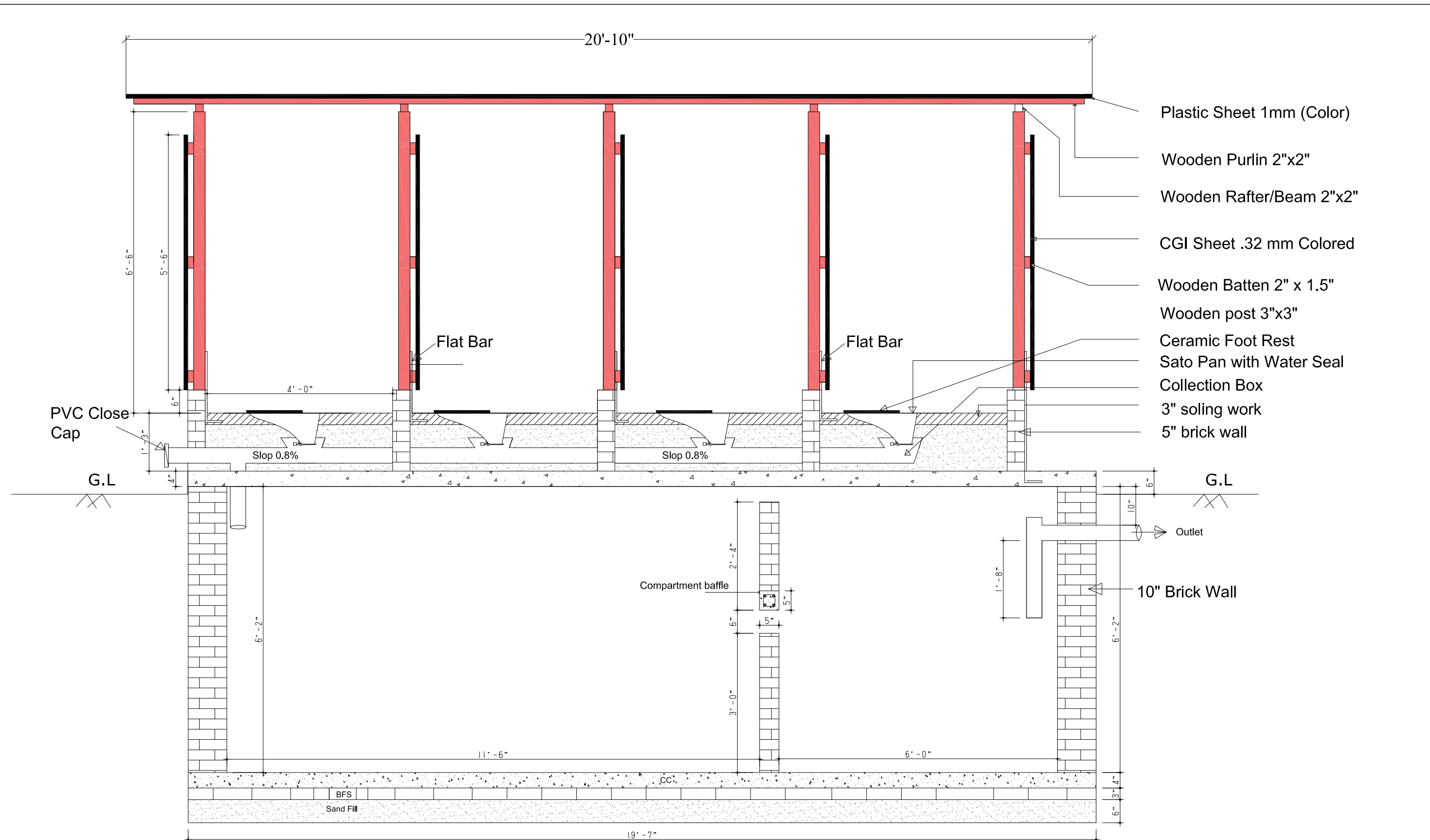
PLAN OF SEPTIC TANK



REINFORCEMENT DETAILS OF SEPTIC TANK SLAB

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-08A)	Latrine Design Group	Septic Tank Details	July, 2023	DPHE Cox's Bazar	RRRC	02

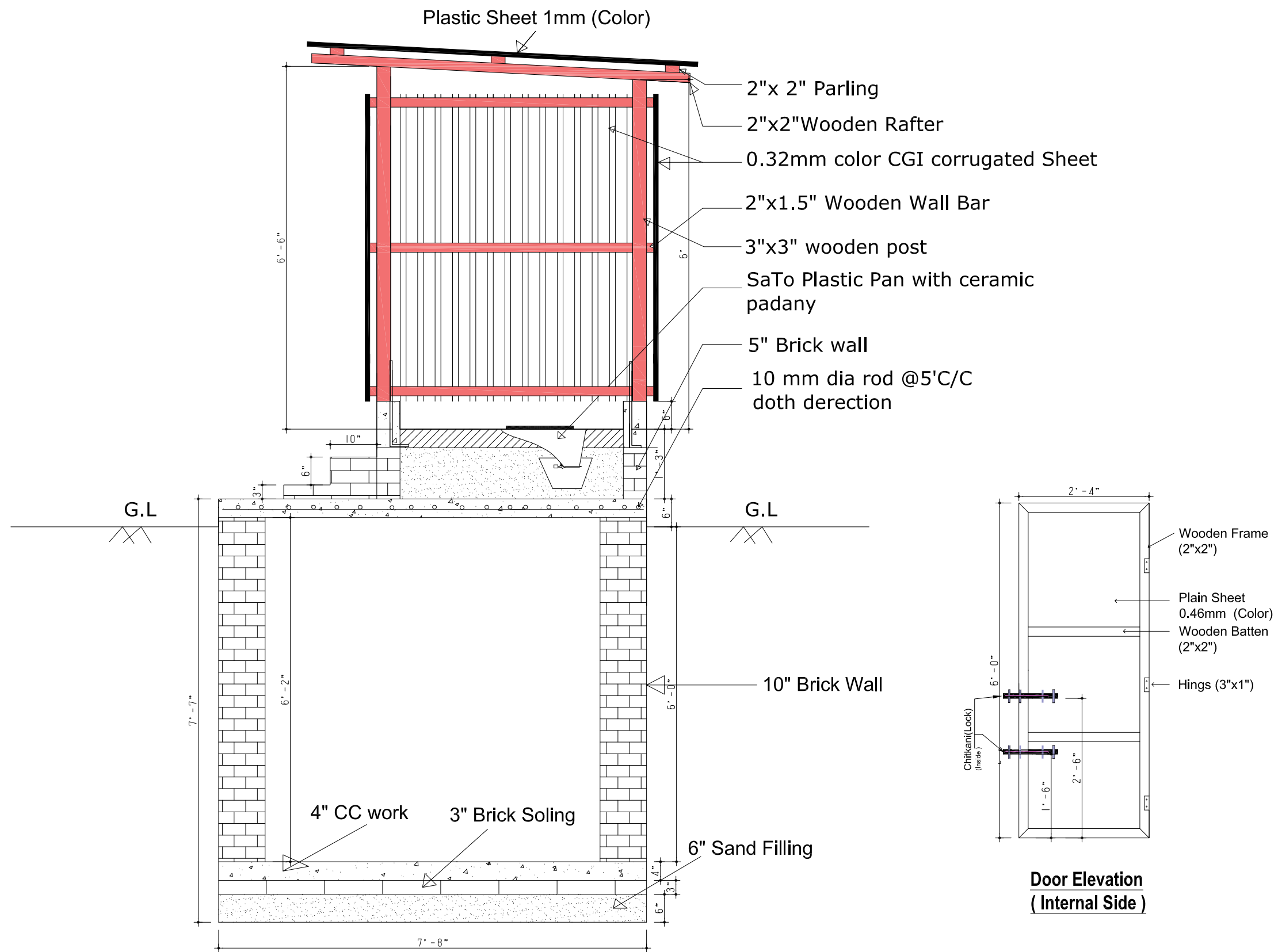
20'-10"



- Plastic Sheet 1mm (Color)
- Wooden Purlin 2"x2"
- Wooden Rafter/Beam 2"x2"
- CGI Sheet .32 mm Colored
- Wooden Batten 2" x 1.5"
- Wooden post 3"x3"
- Ceramic Foot Rest
- Sato Pan with Water Seal
- Collection Box
- 3" soling work
- 5" brick wall

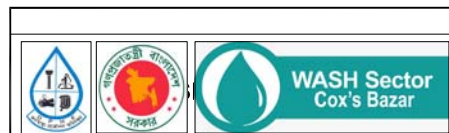
SECTION XX

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-08A)	Latrine Design Group	Section	July, 2023	DPHE Cox's Bazar	RRRC	03



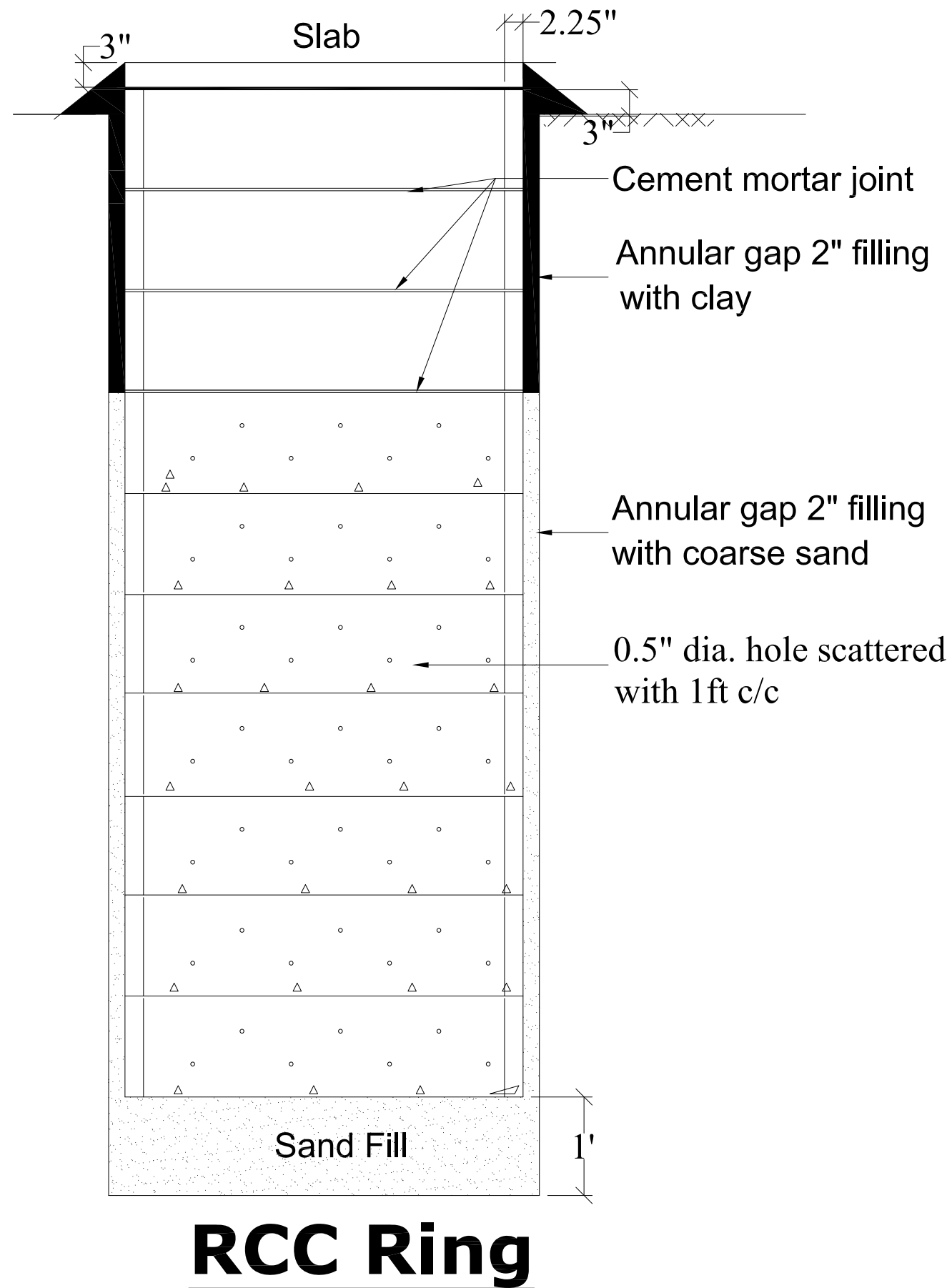
SECTION YY

**Door Elevation
(Internal Side)**

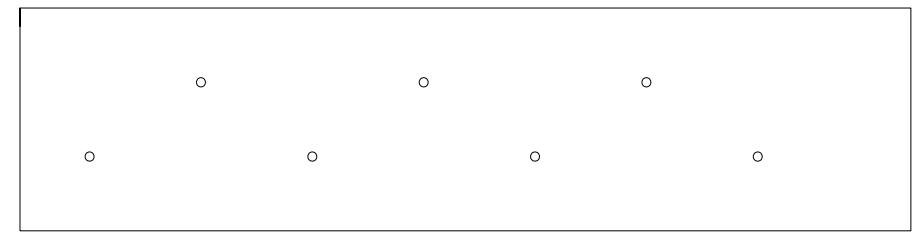


Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Four Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-08A)	Latrine Design Group	Section	July, 2023	DPHE Cox's Bazar	RRTC	04

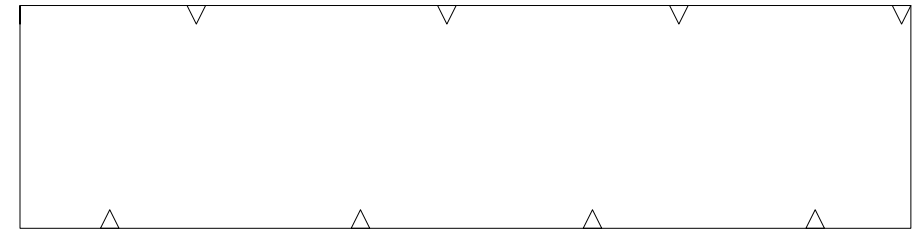
RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal), with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance).



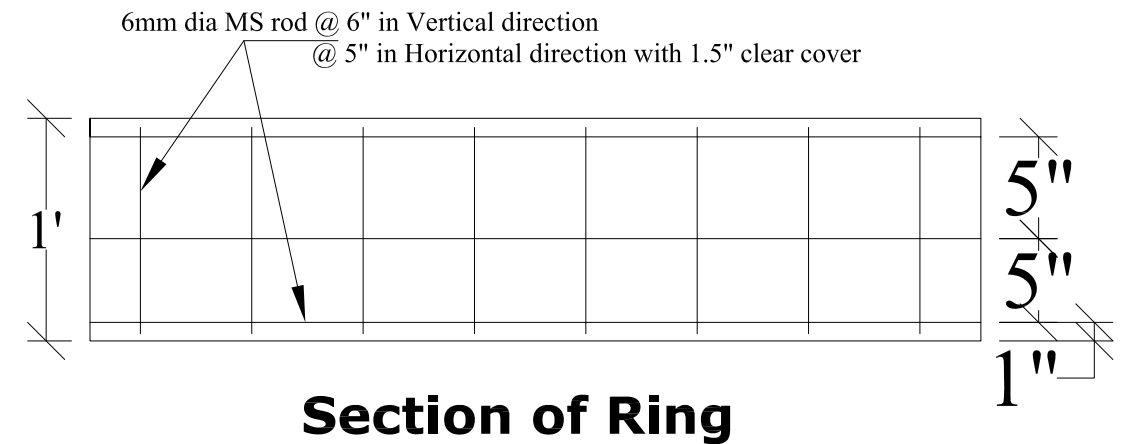
RCC Ring



RCC Ring (Option 1)



RCC Ring (Option 2)



Section of Ring

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Wooden Framed Septic Tank Latrine with Soak Well (Option-08A)	Latrine Design Group	Section of Pit & Ring	July, 2023	DPHE Cox's Bazar	RRRC	05

Bill of Quantities

Latrine Option-8A

Four Cubicles Wooden Framed Septic Tank Latrine with Soak Well

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
PART-A: Sub-structure						
1	Earth Excavation : Earth work in excavation in all kinds of soil for septic tank trenches including; providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and providing layout, removing necessary roots and plants, protecting and keeping the trench dry from rain/external water, stacking and levelling surrounding sites with excavated soil. All should be completed under the direct supervision and guidance of the Engineer in-charge, subject to agreed and locally available earth excavation methods. However, Engineer in-charge's approval shall not relieve the contractor of his responsibilities and obligations under the contract.	30.14	cum	259	7806	PWD Rates Schedule (2022)
2	Sand Filling : 6" sand filling (F.M. 0.5-0.8) in the septic Tank foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	2.13	cum	1,093	2326	PWD Rates Schedule (2022)
3	Polyethylene Sheet : Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	13.96	sqm	150	2094	Local Market Price
4	Brick Soling : One layer of brick flat soling in Tank Foundation with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	13.96	sqm	515	7188	PWD Rates Schedule (2022)
5	Cement concrete Work : 4" Thick CC casting in base tank foundation [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	1.55	cum	7,817	12107	PWD Rates Schedule (2022)
6	10" Brick Work : 10" Brick works in Foundation of wall of Septic tank with first class bricks in cement/sand mortar (1:6) including filling the interstices with mortar, raking out joints, cleaning and socking the bricks at least for 24 hours and screening of sand before use, necessary scaffolding, curing at least for 7 days etc. all complete including cost of water, electricity and other charges (measurement to given as 250 mm width for one brick length). All work should be completed as per design and guidance of the Engineer in-charge.	7.46	cum	7,501	55949	PWD Rates Schedule (2022)
7	5" Brick Wall : 5" thick Septic Tank Compartment baffle wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	3.44	sqm	1,180	4060	PWD Rates Schedule (2022)
8	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Septic Tank at floor, inner surface and outer surface, finishing the corner, kobla, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	53.12	sqm	297	15776	PWD Rates Schedule (2022)
9	Reinforced concrete cement works : RCC slabs with concrete (1:2:4) [cement, sand (F.M.1.2) and picked jhama chips] and M.S. deformed bar 10 mm and 6 mm, grade 40 billet) reinforcement of required size and length for all types of RCC work including straightening the rod, removing rust, cleaning, cutting, hooking, bending binding with supply of 22 B.W.G GI wire, screening, washing, mixing, laying, vibrator compaction and curing for at least 14 days including the supply of water, electricity and other charges and costs of tools and plants etc. All work complete as per drawing and instruction of the Engineer in-charge.					
	9a) Concrete (mix ratio 1:2:4)	1.58	cum	8,996	14249	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
	9b) 10 mm dia deformed-rod	130.34	kg	110	14337	PWD Rates Schedule (2022)
	9c) Centering and shuttering for the slab casting including keeping provision of man-holes and covers by using of timber, bamboo and other necessary materials.	14.87	sqm	510	7584	PWD Rates Schedule (2022)
10	Angle Bar & Flat bar : size of 3"x3"x 6mm angle 18" long 10 nos & flat bar size 3"x 6mm bar 18" long 4 nos with bolts to be fitted within inside of RCC Slab & fitting with wooden post . All work complete as per design and instruction of Engineer in-charge.	14.00	each	350	4900	PWD Rates Schedule (2022)
11	Manhole Cover : Supplying, fitting and fixing best quality heavy tyes CI manhole cover round perforated/solid plate made without locking & unlocking. arrangement. All other remaining cost including all accessories. Their carriage, wages of labor, technician and incidental charges etc. all complete as per direction & approval of EIC. Size 600mm dia without locking	2.00	each	4,000	8000	PWD Rates Schedule (2022)
PART-B: Soak Pit						
12	Earth Excavation : Earth work in excavation of Foundation for Soak pit carrying and disposing of all Excavated materials at a safe distance designated by the EIC, all types of soil except rocky gravelly, organic maintains proper slope, disposing of all back filling of sites of all excavated materials to a safe distance back filling of sites of original level etc, all complete to the direction	9.23	cum	259	2390	PWD Rates Schedule (2022)
13	RCC Ring: RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal),with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance.					
	11a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	1.34	cum	8,784	11733	PWD Rates Schedule (2022)
	11b) 6 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	86.12	kg	110	9473	PWD Rates Schedule (2022)
	11c) Carrying Cost	20.00	each	400	8000	Local Field Price
14	RCC Slab: Supply, fittings & fixing of pre-cast ring cover 4 ft dia size, thickness-3" made of 1:2:4 mixing ratio, 8mm dia ms rod (60G) 5" C/C both way as per the drawing and instruction of EIC.					
	12a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	0.18	cum	8,784	1564	PWD Rates Schedule (2022)
	12b) 8 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	14.88	kg	110	1637	PWD Rates Schedule (2022)
	12c) Carrying Cost	2.00	each	400	800	Local Field Price
15	Sand Filling : Sand filling (F.M. 0.5-0.8) in the septic Tank foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	2.10	cum	1,093	2299	PWD Rates Schedule (2022)
16	4" PVC pipe: Supply, fitting & fixing of 100 mm dia D Class PVC Connection pipe connected to Septic Tank to Soak pit approved and accepted by the Engineer in-charge	4.57	RM	260	1189	Local Field Price
PART-C: Superstructure						
16	5" Brick Wall : 5" thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	11.38	sqm	1,180	13430	PWD Rates Schedule (2022)
17	Cement concrete Work: CC casting in angle wall (5"x5"x1'-3") [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	0.09	cum	7,817	673	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
18	Wooden Post (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of wooden post Size 3"x3"- 13nos and including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	3.75	cft	1,200	4500	Local Market Price
19	Wooden wall, bar Rafter & Purlin (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of roof truss by using of wooden wall bar 2"x2"-3 nos, 2"x2" rafter-3nos and 2"x2" purlin 3nos and including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	3.22	cft	1,200	3867	Local Market Price
20	Wooden For wall Batten (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of wooden Batten by using of 2" X 1.5" for Wall including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	3.31	cft	1,200	3975	Local Market Price
21	Wooden for Door (Gorjon/Jaam/Mehogini): Supply, transport, fixing and fitting of Wooden Door by using of 3"x2" for door chowat, 2"x2" Cross batten & 2"x 2" for door batten or frame including cutting, levelling jointing, drilling etc including labour charges, all work complete as per drawing and instruction of EIC.	4.94	cft	1,200	5933	Local Market Price
22	Corrugated Plastic Sheet for Roofing: Supplying, fitting & fixing 1mm thick corrugated plastic sheet (Brand Quality), fitting and fixing on wooden frame with screws. all complete and accepted by the Engineer.	13.66	sqm	850	11612	Local Market Price
23	CGI Sheet for Wall: Supplying, transport, fitting and fixing of .32mm, 6ft long color sheet brand CGI sheet including labour charges all work will be completed as per drawing and instruction of Engineer in-charge.	30.67	sqm	850	26069	Local Market Price
24	Galvanized Iron Sheet for door: Supplying, fitting and fixing 0.51 mm/24 gauge thick (Colored) Plain Galvanized Iron Sheet (Brand Quality) for fitting and fixing on wooden, limpet washers and putty etc. all complete and accepted by the Engineer.	5.58	sqm	550	3067	Local Market Price
25	Sand Filling : sand filling (F.M. 0.5-0.8) in the top of RCC slab for floor; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	1.96	cum	1,093	2138	PWD Rates Schedule (2022)
26	Polyethylene Sheet: Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	5.95	sqm	150	892	Local Market Price
27	Brick Soling : One layer of brick flat soling in Floor for latrine with first class or picked jhama bricks including preparation of floor bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	5.95	sqm	515	3063	PWD Rates Schedule (2022)
28	Pan & Foot Rest : Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest including proper levelling of floor.	4.00	each	500	2000	Local Market Price
29	PVC Collection Box : Supply, fitting & fixing of RFL Collection Box at the discharge point to inspection pit.	4.00	each	300	1200	Local Market Price
30	4" PVC pipe: Supply, fitting & fixing of 100 mm dia D Class PVC Connection pipe connected to Septic tank, approved and accepted by the Engineer in-charge	7.32	rm	260	1902	Local Market Price
31	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Latrine wall, floor, inner surface and outer surface, finishing the corner, kobla, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	19.81	sqm	297	5884	PWD Rates Schedule (2022)
32	Visibility Plaque: Supplying fitting and fixing of visibility plaque with the latrine wall including specified messages and logos, the plaque should be made of 12"x8" Tiles and painting on it as per given design.	1.00	L.S	800	800	Local Market Price
33	<u>PART-D: Other Supplies & Accessories fitting, fixing & supplying</u>					
a	Stud Nail (2.5 inch)	2.5	kg	80	200	Local Market Price
b	MS Clamp Size 1-6" x 2.5"x3mm Thickness	4	each	100	400	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
c	Nail Different size (1.5 to 4 inch)	1.5	kg	80	120	Local Market Price
d	Hinges	12	each	50	600	Local Market Price
e	Screw for Hinges	1	Dozen	100	100	Local Market Price
f	Hash Bolt (Small for door lock inside & outside)	8	each	25	200	Local Market Price
g	4" Tee UPVC	6	each	250	1500	Local Market Price
h	uPVC Long Trap (4" dia)	2	each	250	500	Local Market Price
i	4" L bow UPVC	2	each	250	500	Local Market Price
				Total Quoted Price	BDT	290,586

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
 Latrine Design Group
 ISCG WASH Sector, Cox's Bazar

Reviewed by :
 DPHE, Cox's Bazar

Approved by :
 Office of Refugee Relief and Repatriation
 Commissioner (RRRC), Cox's Bazar

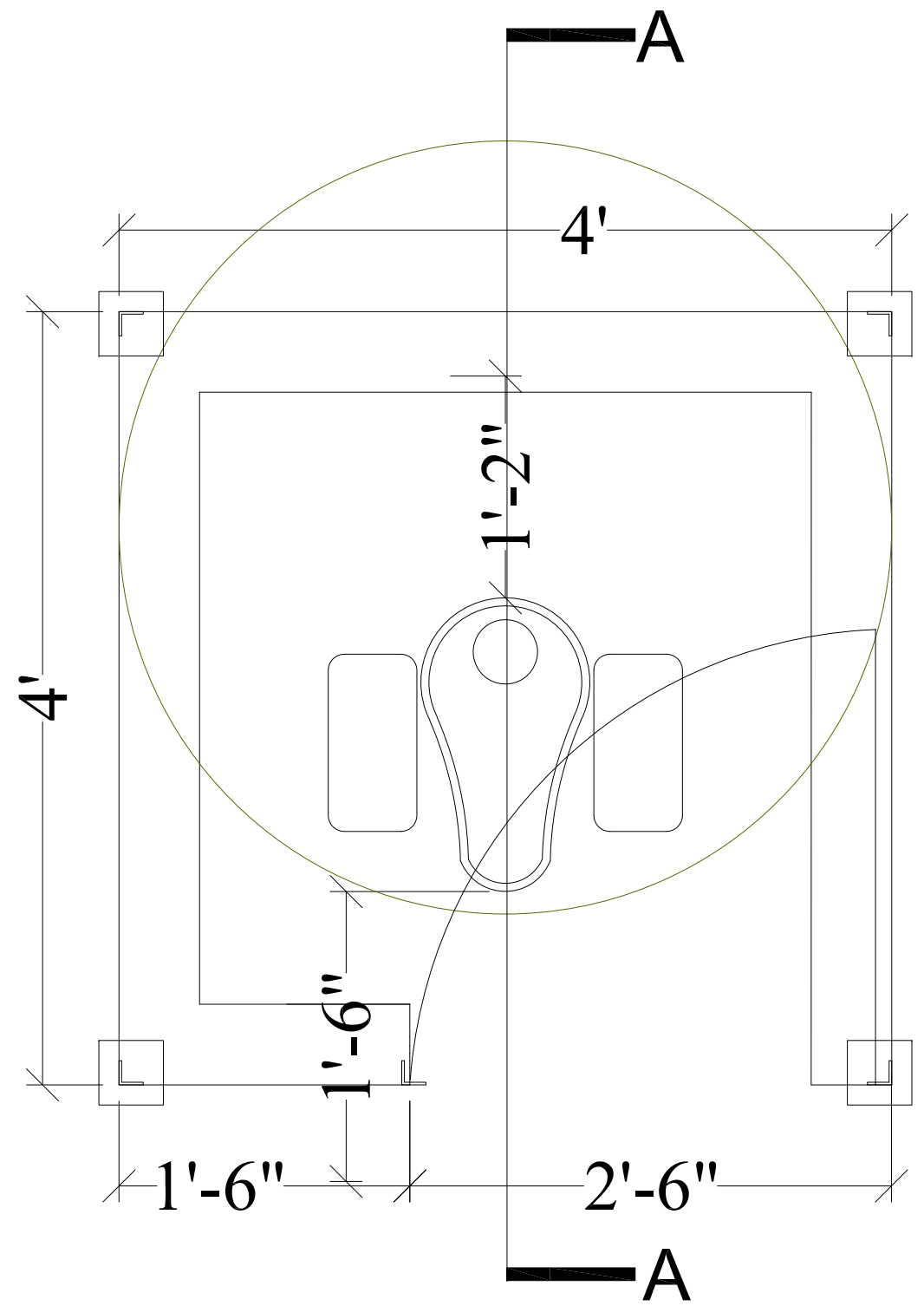


PROJECT
DESIGN AND DRAWING of UNIFIED LATRINE
SINGLE CUBICLE STEEL FRAMED SINGLE PIT LATRINE
(Option-01B)

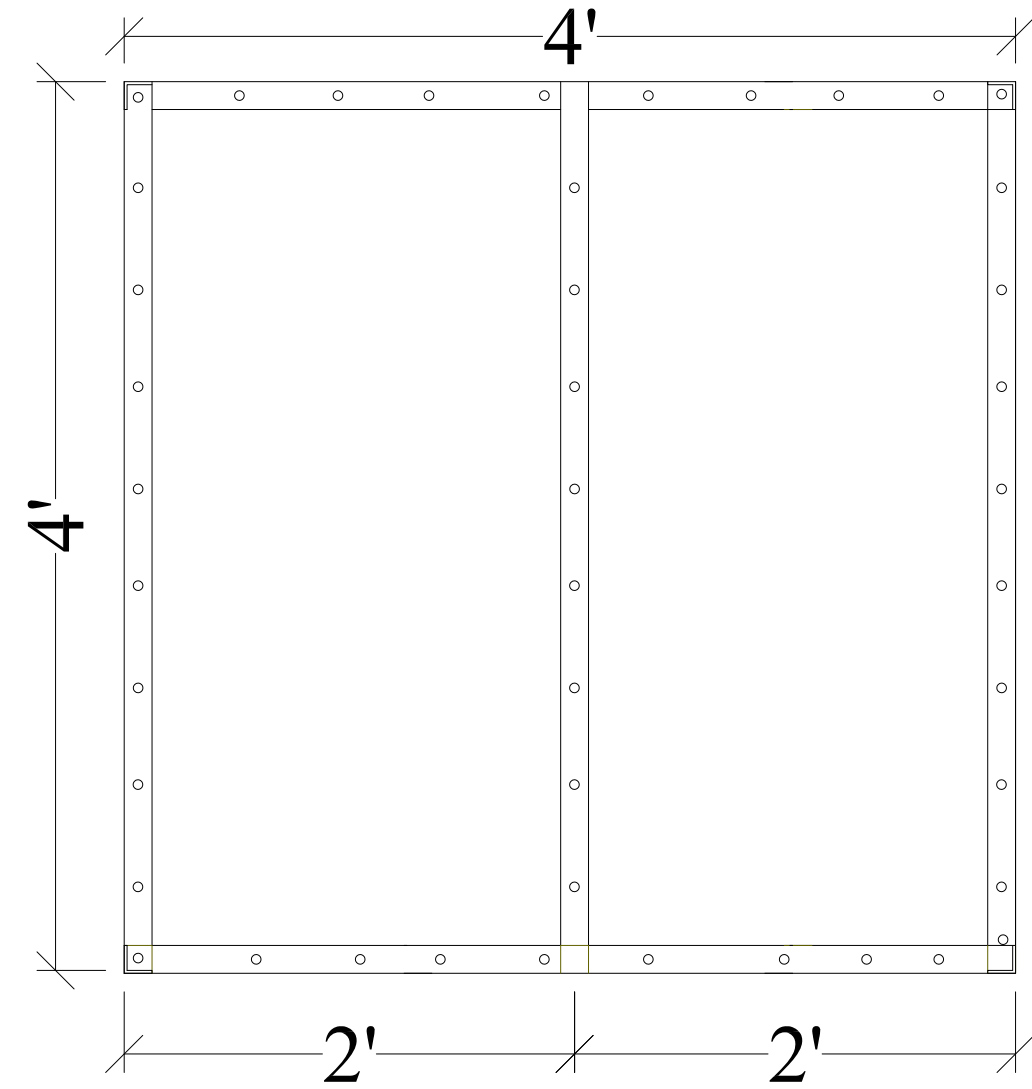
JULY, 2023

PREPARED By:

**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**



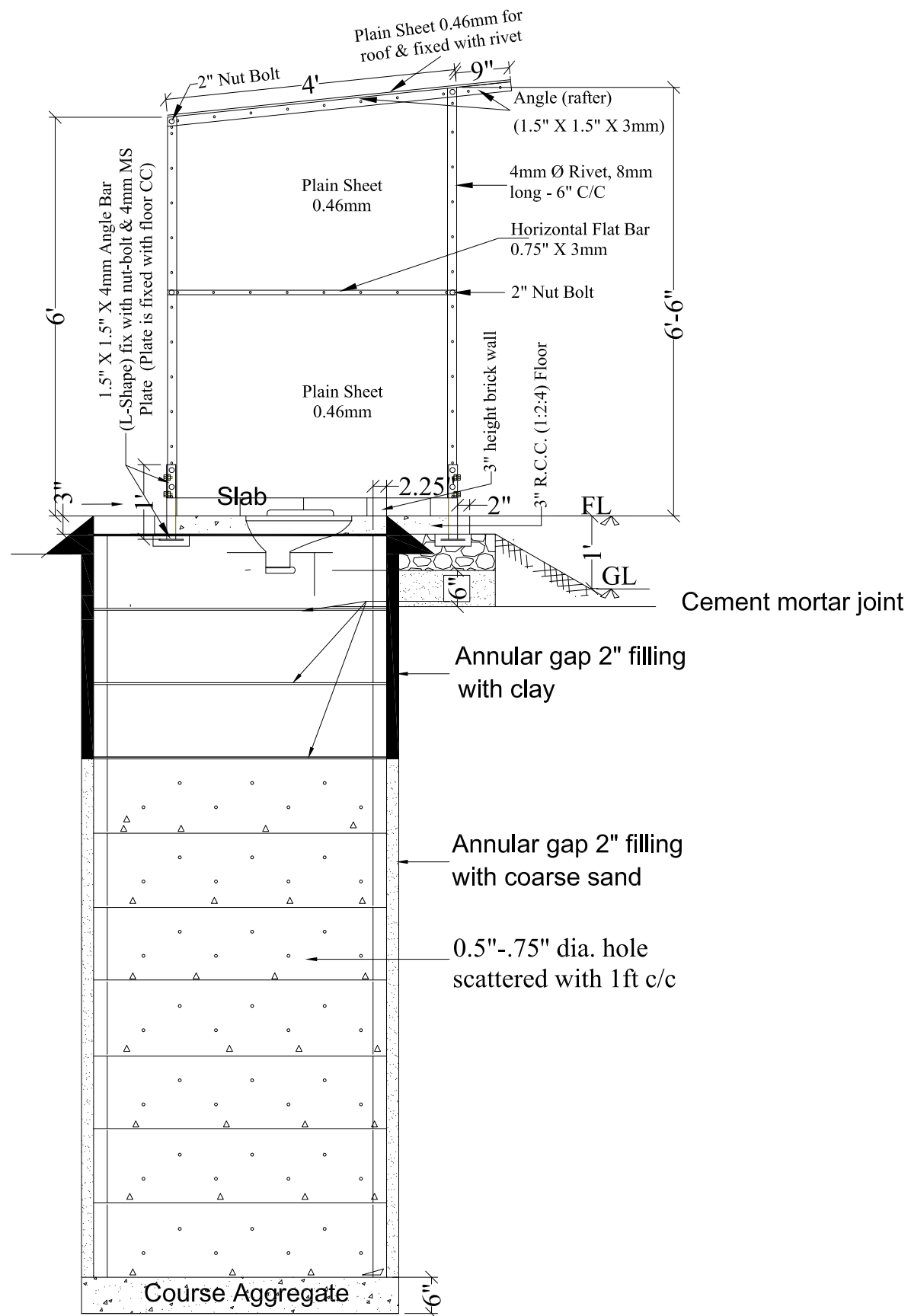
Plan View



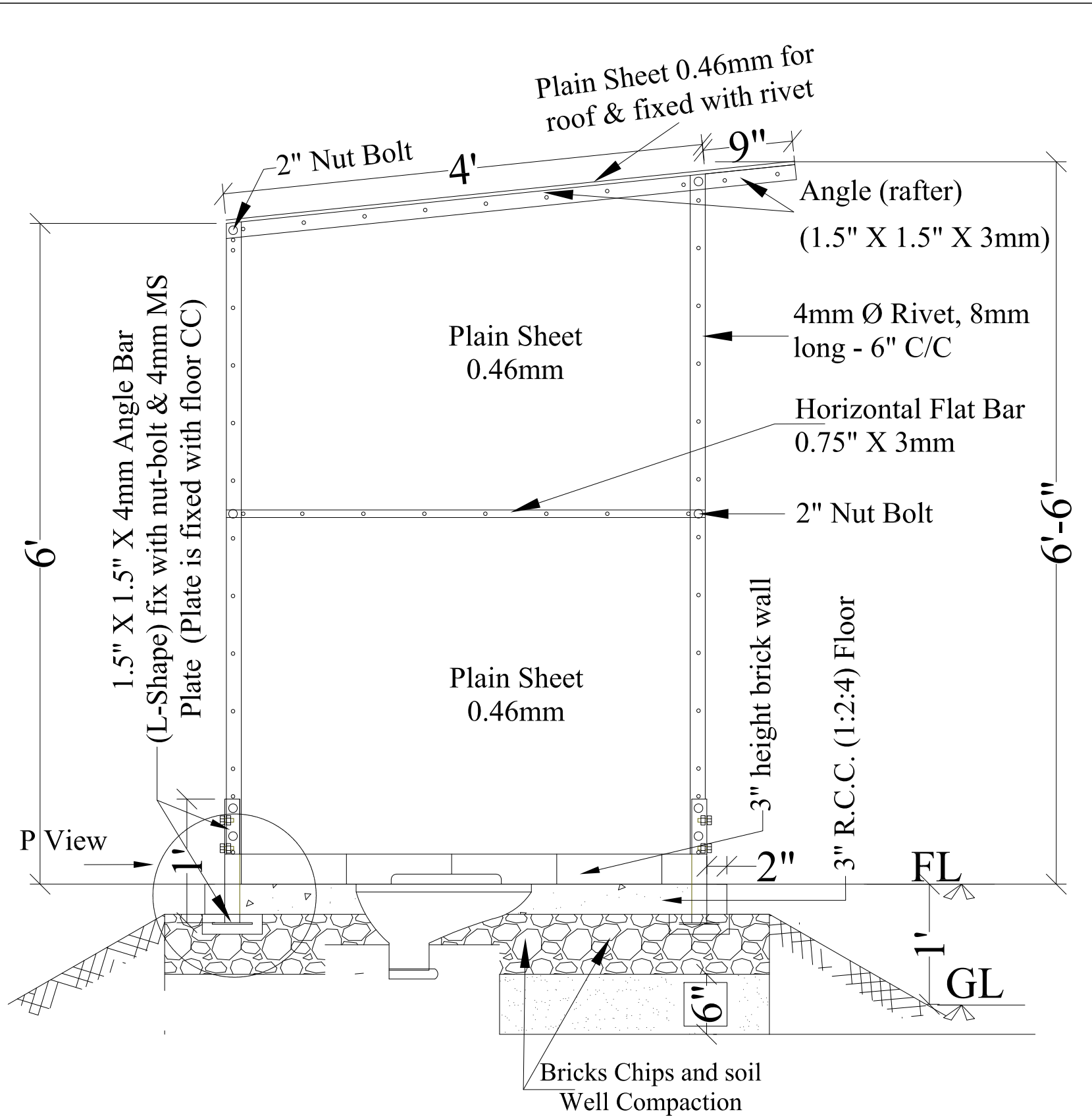
Roof View



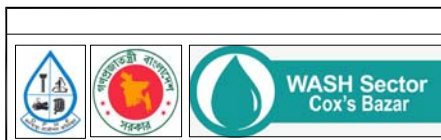
Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Single Pit Latrine (Option-01B)	Latrine Design Group	Plan & Roof View	July, 2023	DPHE Cox's Bazar	RRRC	01



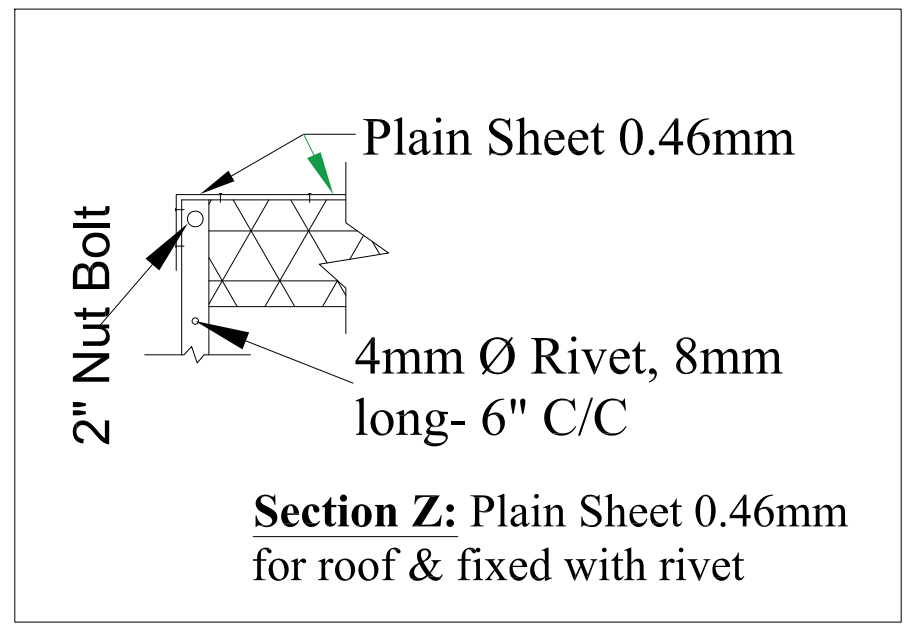
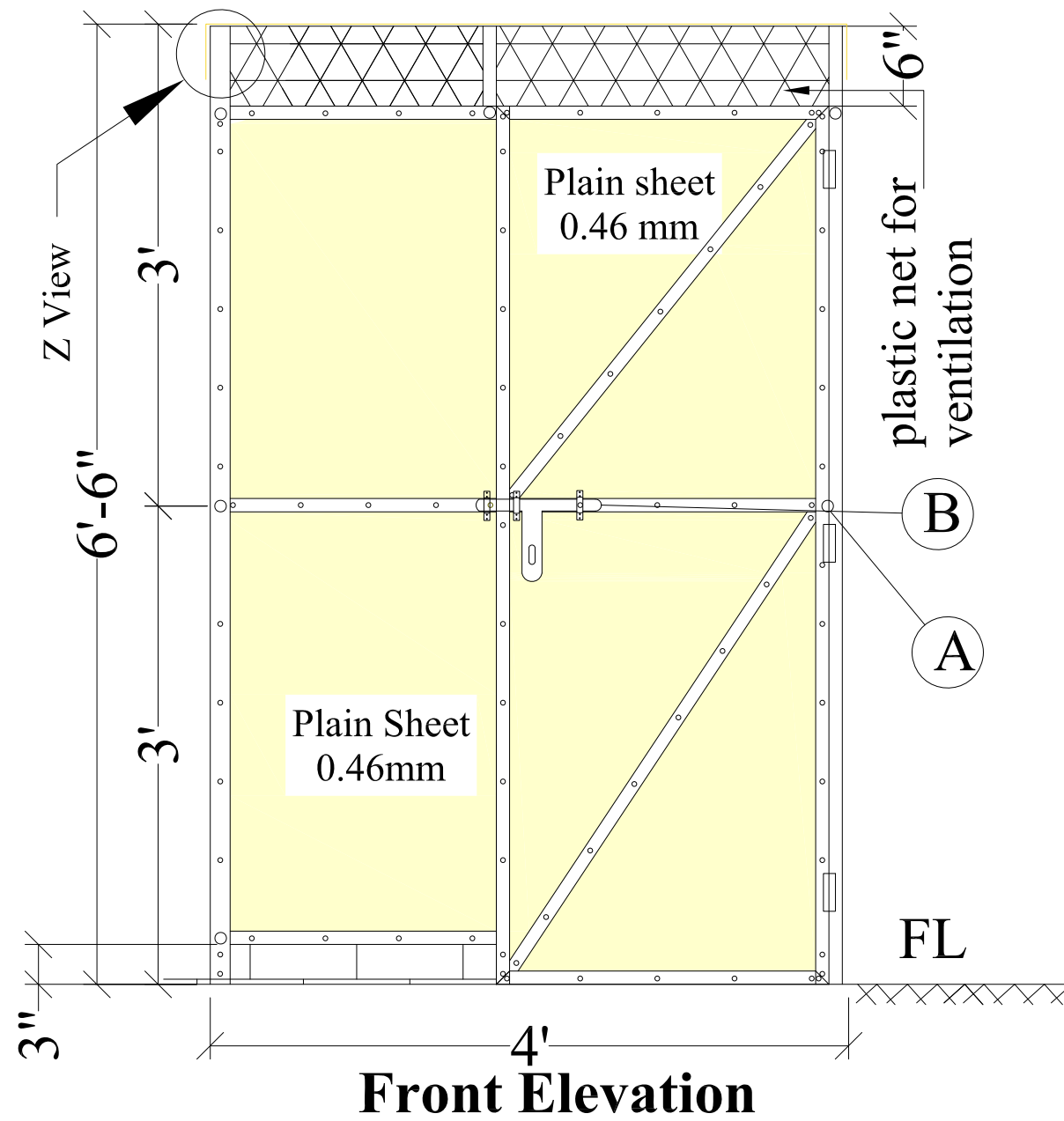
Section A-A



Side Elevation



Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Single Pit Latrine (Option-01B)	Latrine Design Group	Section	July, 2023	DPHE Cox's Bazar	RRTC	02



Details of "Z"

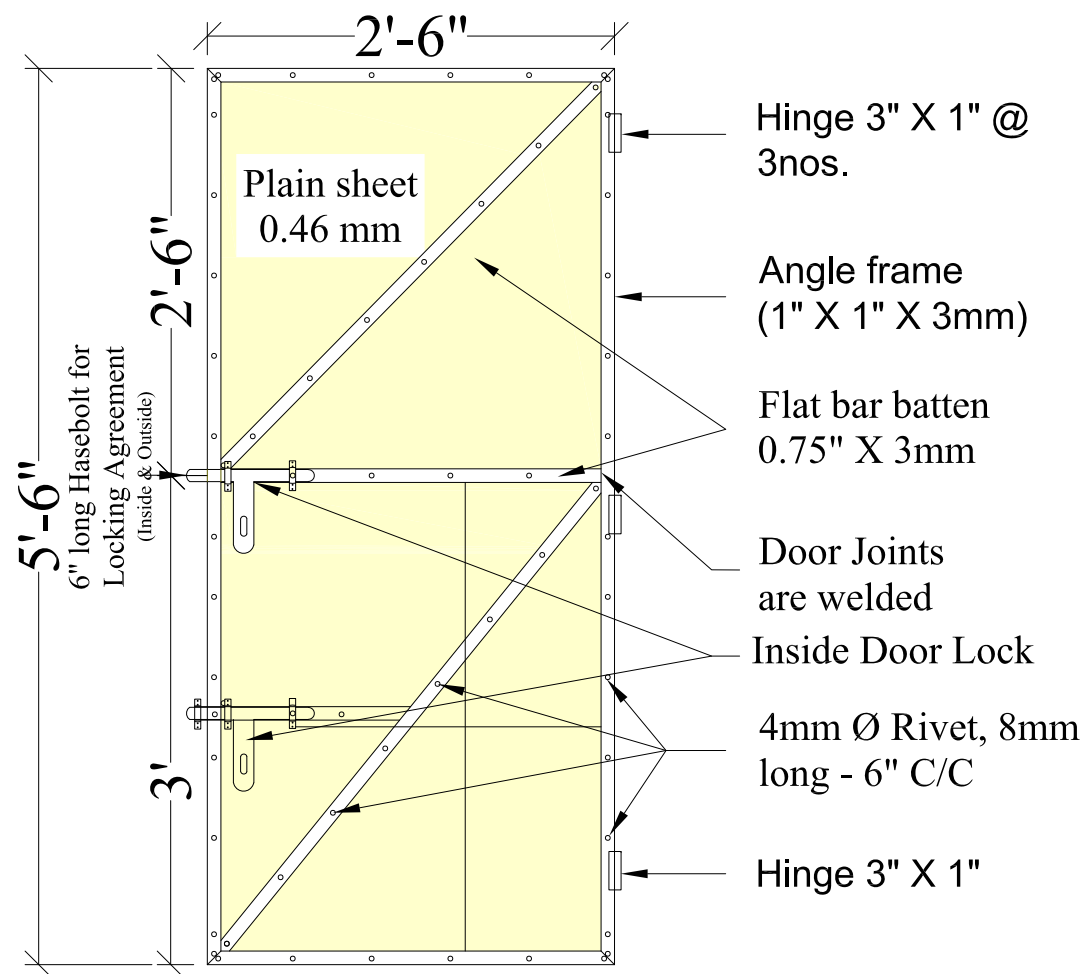
Additional Note :

NB.: No welding on this structure. All joint will joint with different sizes nut bolts and reviles.

A= 6mm dia 18mm long Rivet for door frame joints.

B= S.S. Door locks 150mm long fixing with MS frame with nut bolts.

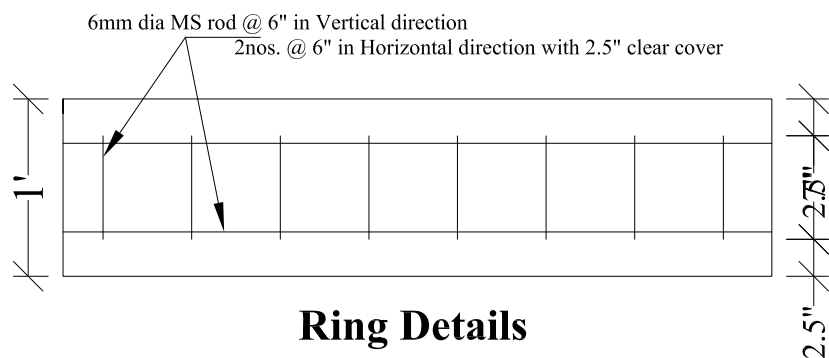
	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Single Pit Latrine (Option-01B)	Latrine Design Group	Elevation	July, 2023	DPHE Cox's Bazar	RRRC	03



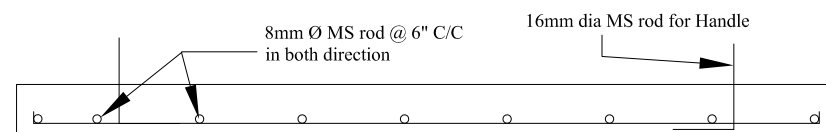
Door Details

Additional Note:

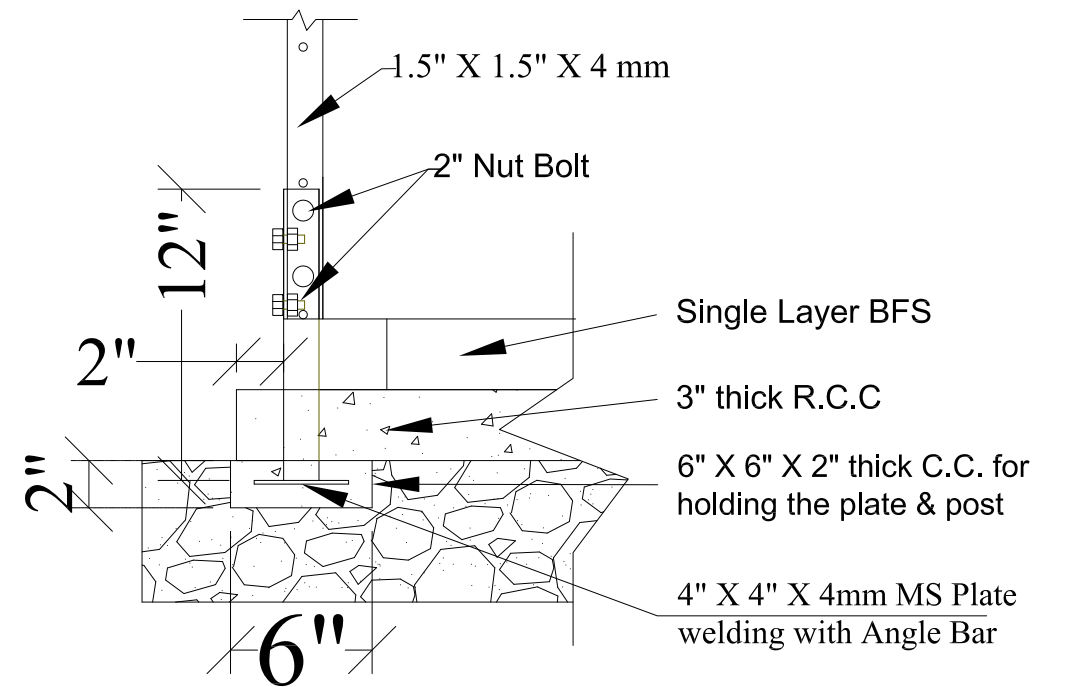
NB.: all sheet will short 4mm to 8mm along horizontally direction. This will for protect people from any incidents due to sharpen the MS sheets. All door joint with 6.4mm dia rivets 18mm long maximum. Door frame will be fitted with 3 nos. Butt Hinges will be setup MS column and MS door frame with 6mm dia 10mm long rivets. Front side fencing bars will placed outside of the column with nut bolt.




Ring Details

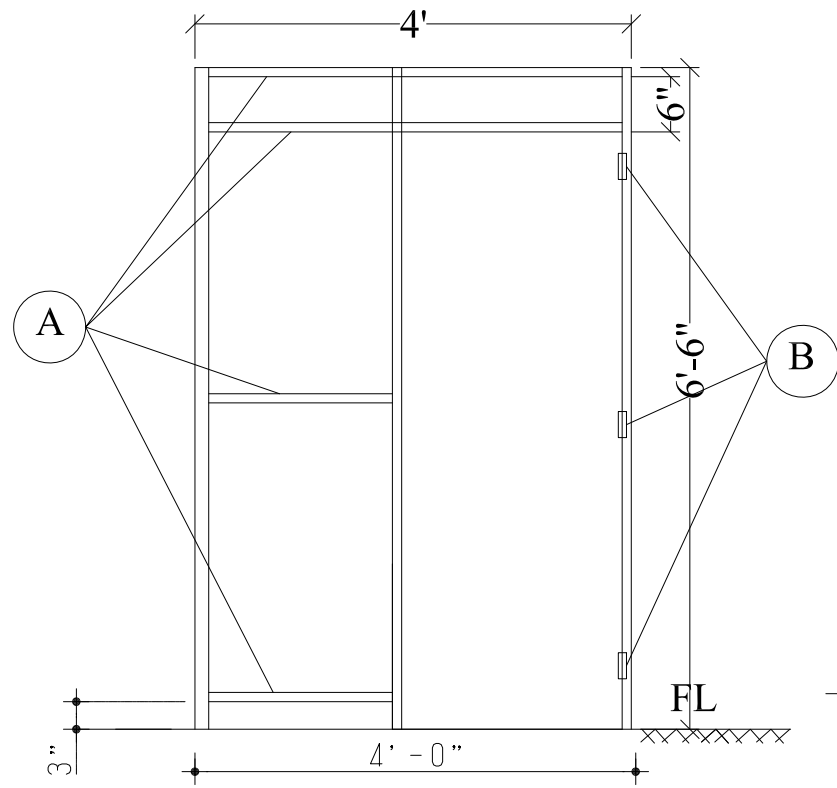


Cover Slab Details

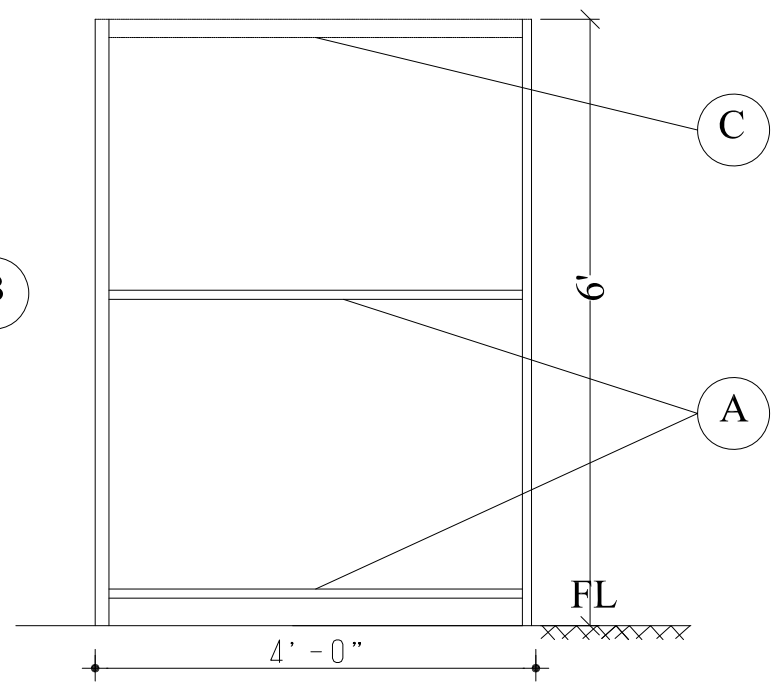


Section P: Joint Section

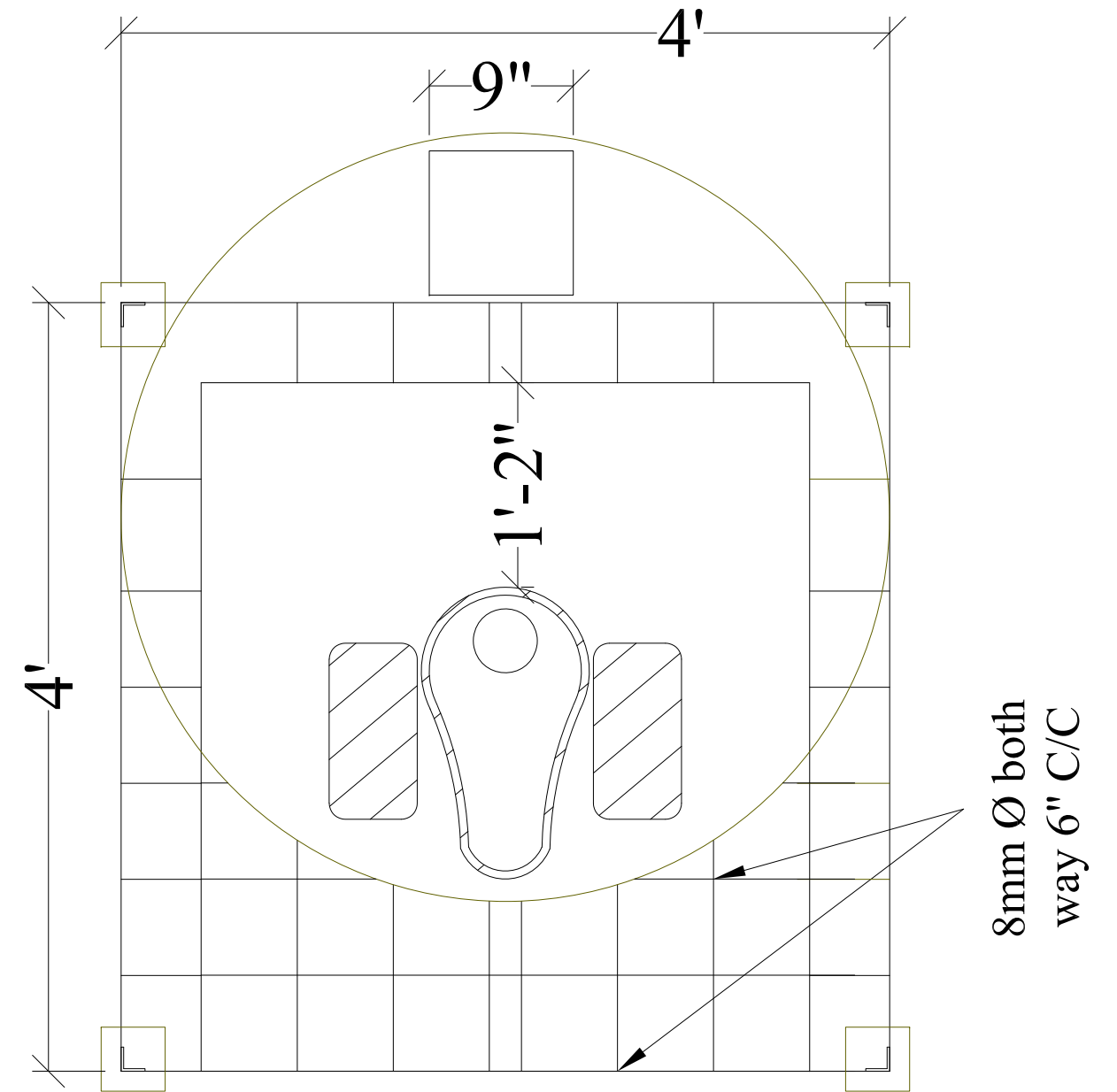
Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
 Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Single Pit Latrine (Option-01B)	Latrine Design Group	Door, Ring and Joint Details	July, 2023	DPHE Cox's Bazar	RRRC	04



Angle Bar Details of front Fencing



Angle Bar Details of front Fencing



Section: Reinforcement Details of Slab

Additional Note :

NB : Front side fencing bars will placed out side of the column with nut bolts
 GI net will fix with flat bars with washer & 6mm dia rivetes (Washer inside hole 6mm dia & out side maximum 18mm :rivet 6mm Dia 10mm long)

A= Flat bar 19mm X 3mm Size

B= 100mm long butt hinge with 8mm dia 10mm long rivet fitting

C= Roof frame purlin 25mm X 25mm X 3mm size on back/rear side

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Single Pit Latrine (Option-01B)	Latrine Design Group	Angle Bar and Slab Details	July, 2023	DPHE Cox's Bazar	RRRC	05

Bill of Quantities
Latrine Option-1B
Single Cubicle Steel Framed Single Pit Latrine

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
<u>PART-A:Super-structure</u>						
1	MS angle short column will be placed in 4 (Four)corner; fixed and welded with anchor plate in middle position. Superstructure columns will joint with short column by 8mm dia Nut-bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 305mm (1'-0") Hight.	4.00	kg	88	352	Local Market Price
2	MS angle column will be placed in middle of the front side for locking the door and fixed with floor and roof. This column will not be fixed with anchor plate and MS short column by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 2007mm (6'-7") Hight.	5.36	kg	88	472	Local Market Price
3	MS angle column will be placed 2 (Two) corner side of the front side and 10mm Nut-bolts joint with those columns and 305mm (1'-0") long MS short column and Anchor bolt by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 1981mm (6'-6") Hight.	10.40	kg	88	915	Local Market Price
4	MS angle column will be placed 2 (Two) corner side of the back/ rear side and 10mm Nut-bolts joint with those columns and 305mm (1'-0") long MS short column and Anchor bolt by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 1829mm (6'-0") Hight.	10.20	kg	88	898	Local Market Price
5	MS angle Rafter will be placed 2 corners for fixing the roof and will be placed along door and backside parallel. 4nos. Corner column will be joint with the rafter by 8mm dia nut bolts. Angle size 25mm (1") X 25mm (1") X 3mm and 1372mm (4'-6") long	5.40	kg	88	475	Local Market Price
6	3nos. MS angle Purlin will be placed on rafter by 8mm dia nutbolts jointing and left/ right portion parallel. One will be placed above the rafter in back side of the rafter Column; Another will be placed in middle of the rafter and other will be placed front corner.Angle size 25mm (1") X 25mm (1") X 3mm and 1219mm (4'-0") long.	4.80	kg	88	422	Local Market Price
7	2nos. MS angle will be placed two side for making the door frame.Angle size 25mm (1") X 25mm (1") X 3mm and 1803mm (5'-11") long.	4.80	kg	88	422	Local Market Price
8	2nos. MS angle will be placed two side for making the door frame. One will be placed bottom of the door (38mm/ 1.5" above from floor) and another will be joint top of the door.Angle size 25mm (1") X 25mm (1") X 3mm and 737mm (2'-5") long.	3.00	kg	88	264	Local Market Price
9	MS Flat bar will be placed in front side for sunlight fencing. One will be fixed in 1829mm (6'-0") from floor height and another will be fixed 1957mm (6'-5") from floor height. All joint will be joint by 8mm dia Nut-bolts with Columns.Flat Bar size 19mm X 3mm and 1219mm (4'-0") long.	2.40	kg	88	211	Local Market Price
10	MS Flat bar will be placed in front side fencing and 2nos. MS Flat bar will used. One will be placed 152mm (6") above of floor and other will be in middle position. All joint will be joint by 8mm dia Nut-bolts with Columns. Flat Bar size 19mm X 3mm and 483mm (1'-7") long.	2.00	kg	88	176	Local Market Price
11	MS Flat bar will be placed for fencing and 3nos.MS Flat bar will use in each side fencing. One will be placed 152mm (6") above of floor; one in middle and other will be placed in top from 1803mm (5'-11") floor height. All joint will be joint by 8mm dia Nut-bolts with Columns.Flat Bar size 19mm X 3mm and 1219mm (4'-0") long.	10.80	kg	88	950	Local Market Price
12	MS Flat bar will be placed in middle of door for fixing sheet. Joint will be joint by 8mm dia Nut-bolts with door frame.Flat Bar size 19mm X 3mm and 737mm (2'-5") long in middle of the door frame.	0.75	kg	88	66	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
13	2nos. MS Flat bar will be placed by incline of door frame for strengthen the door frame. One will be placed inclined in the bellow to middle and other will be placed in middle to top. All joint will be joint by 8mm dia Nut-bolts.Flat Bar size 19mm X 3mm and 1092mm (3'-7") long.	2.00	kg	88	176	Local Market Price
14	2nos. Iron blue color sheet will be placed with door frame. One will joint form bellow portion to middle portion, and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 738mm (2'-5") wide.	16.50	Sft	64	1056	Local Market Price
15	2nos. Iron blue color sheet will be placed in front side fencing with frame. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 483mm (1'-7") wide	12.60	Sft	64	806	Local Market Price
16	2nos. Iron blue color sheet will be placed in left side for fencing. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 991mm (3'-3") wide.	12.60	Sft	64	806	Local Market Price
17	2nos. Iron blue color sheet will be placed in right side for fencing. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 991mm (3'-3") wide.	12.60	Sft	64	806	Local Market Price
18	2nos. Iron blue color sheet will be placed in rear/ back side for fencing. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 991mm (3'-3") wide.	12.60	Sft	64	806	Local Market Price
19	2nos. Iron blue color sheet will be placed in roof above the purlin. One will joint form backside to middle portion, and another will be placed from front to middle portion. Iron Sheet size 991mm (3'-3") long X 991mm (3'-3") wide.	12.60	Sft	64	806	Local Market Price
20	3nos. MS hinge will set with door and column. One will set 229mm (9") above from bellow frame; one will set 1067mm (3'-6") above from bellow frame and other will be set 76mm (3") form top edge frame. Hinge size 102mm (4") X 76mm (3")	3.00	pcs	100	300	Local Market Price
21	Rivet will be placed for iron sheet fixing and all rivet will be placed 152mm (6") C/C.Rivet size 4mm dia	200.00	pcs	2	400	Local Market Price
22	Rivet will be placed for iron sheet fixing and all rivet will be placed Rivet size 6.2mm dia	60.00	pcs	3	150	Local Market Price
23	Nut Bolt 2" dia 10mm	20.00	nos	5	100	PWD Rates Schedule (2022)
24	6" Handle with Hasbolt made of iron	3.00	nos	100	300	PWD Rates Schedule (2022)
25	Coating : Coating with two layer red oxide and blue color Enamel coat.	110.00	Sft	18	1980	PWD Rates Schedule (2022)
26	Ventilation Mesh	2.00	Sft	80	160	Local Market Price
27	MS bolt connection work, welding all steel connection which needed with best quality welding rod etc. all complete as per direction of the engineer-in charge.	1.00	job	8,700	8700	Local Market Price
PART-B: Sub-structure						
1	Earth Excavation : Earth work in excavation of Foundation for Steel structure Latrine, carrying and disposing of all Excavated materials at a safe distance designated by Engineer, all types of soil except rocky gravelly, organic maintains proper slope, disposing of all back filling of sites of all excavated materials to a safe distance back filling of sites of original level etc, all complete to the direction of the EIC.	123.00	Cft	5	615	PWD Rates Schedule (2022)
2	Sand Filling: Sand filling in foundation trenches and plinth with fine local sand having minimum fineness modulus (FM) of .50 in 150mm / 75 mm layers, leveling, watering and consolidating each layer by layer up to finished level, etc. All filling completed as per direction of engineer-in-charge and as per drawing and design	12.00	Cft	32	384	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
3	Supply, fittings & fixing of 48" dia RCC Ring, 2.5" thickness and 6 mm bar used as reinforcement as per the drawing and instruction of EIC.	10.00	nos	1,000	10,000	PWD Rates Schedule (2022)
4	3" CC Casting Cement concrete work in foundation and floor with Portland cement, sand(Min FM 1.50) and first class /Picket Jhama brick chips 20mm down graded, in/c mixing appropriately, casting, laying, compacting and curing for the requisite period. The mixture proportion of cement sand and aggregate should be 1:2:4. All complete as per the instruction of the EIC/UNHCR.	8.00	Cft	250	2,000	PWD Rates Schedule (2022)
5	48" Cover slab with mini pocket slab	1.00	pcs	1,000	1,000	Local Market Price
6	5" brick work: 5" thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	1.45	Sqm	1,180	1,711	PWD Rates Schedule (2022)
7	12 mm thick plaster with NCF	30.00	Sft	25	750	Local Market Price
8	Sato pan & Slab with footrest with good quality	1.00	nos	124	124	PWD Rates Schedule (2022)
9	Hand Washing Station: Supply, fitting & fixing of hand washing frame made of best quality steel & 65 L water tank with lid, might be installed with CC casting, locking arrangement etc. all complete as per design, drawing and accepted by the Engineer.	1.00	nos	5,000	5,000	Local Market Price
Total Quoted Price				BDT	44,562	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
Latrine Design Group

Reviewed by :
DPHE, Cox's Bazar

Approved by :
Office of Refugee Relief and
Repatriation Commissioner (RRRC),

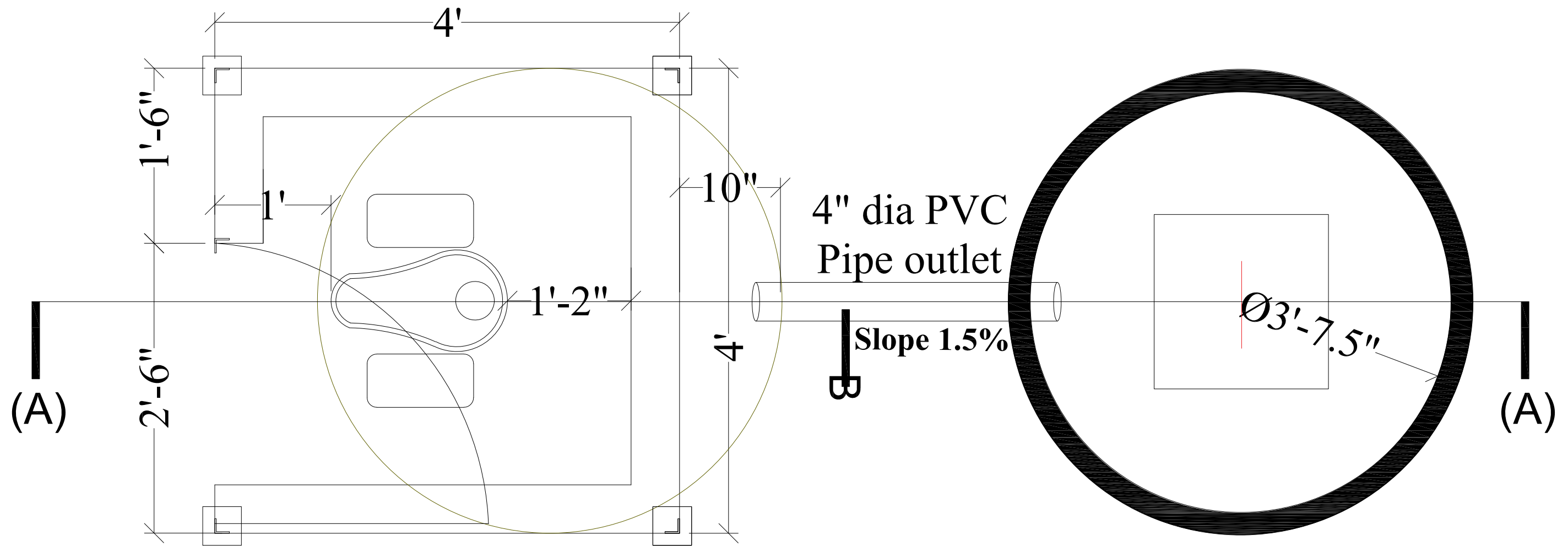


PROJECT
DESIGN AND DRAWING of UNIFIED LATRINE
SINGLE CUBICLE STEEL FRAMED DIRECT TWIN PIT LATRINE
(Option-02B)

JULY, 2023

PREPARED By:

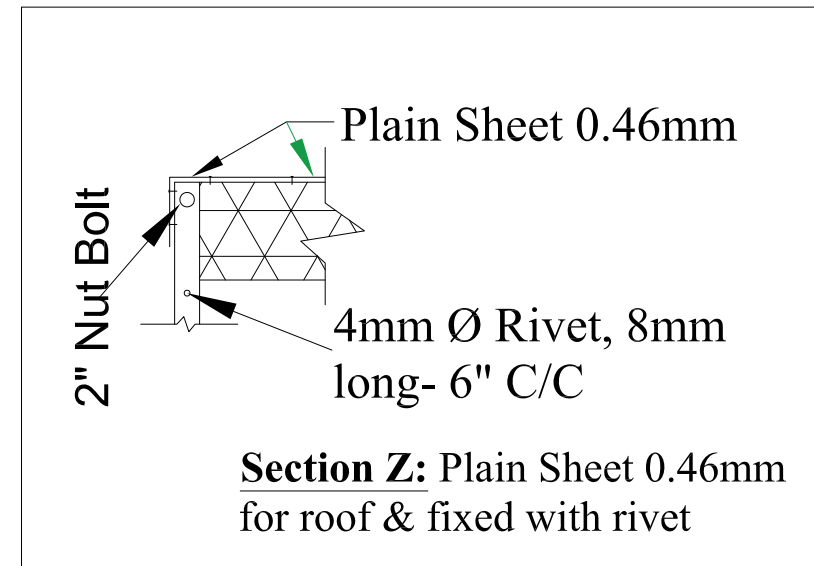
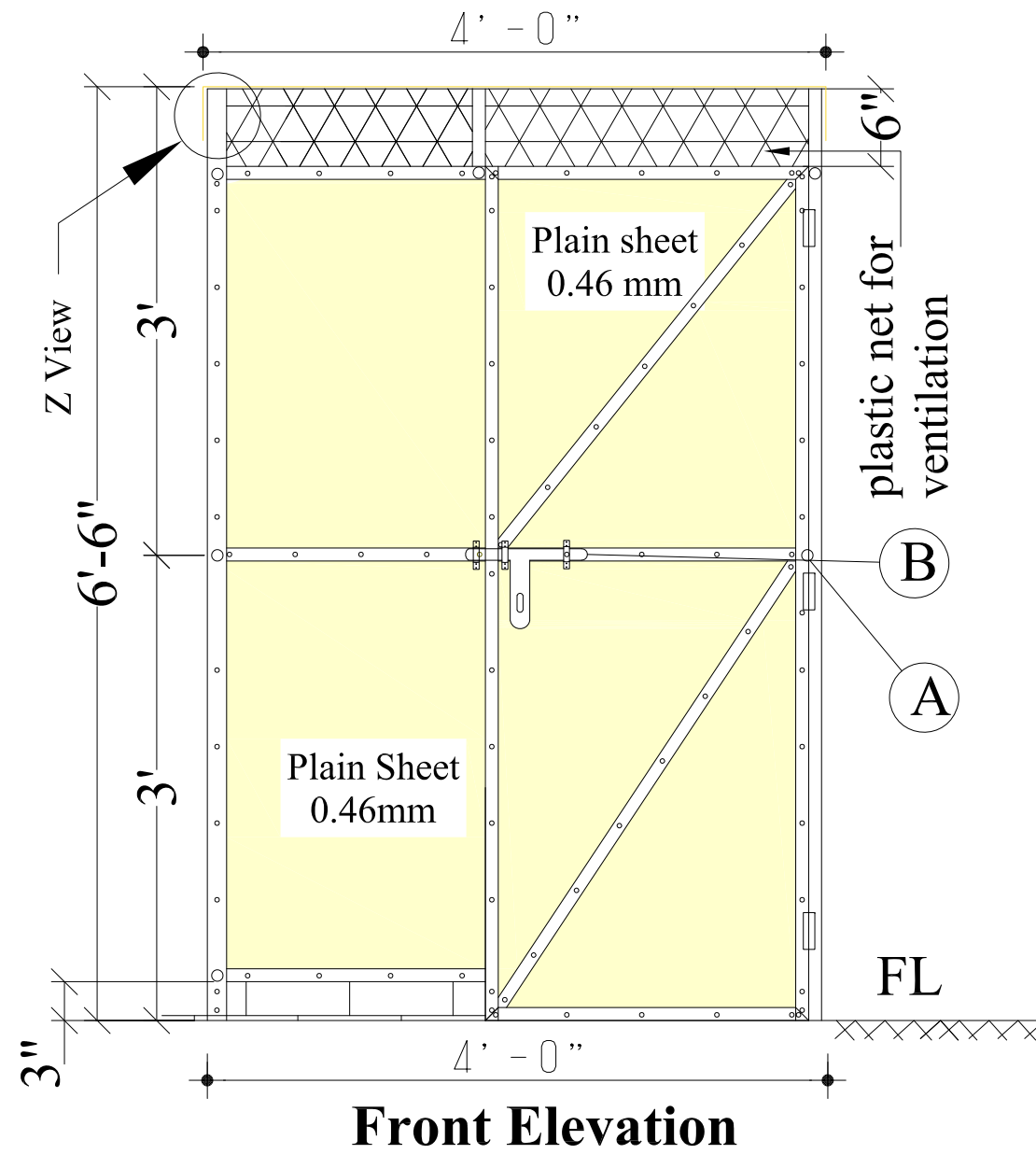
**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**



Plan View



Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Direct Pit Latrine (Option-02B)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	01



Details of "Z"

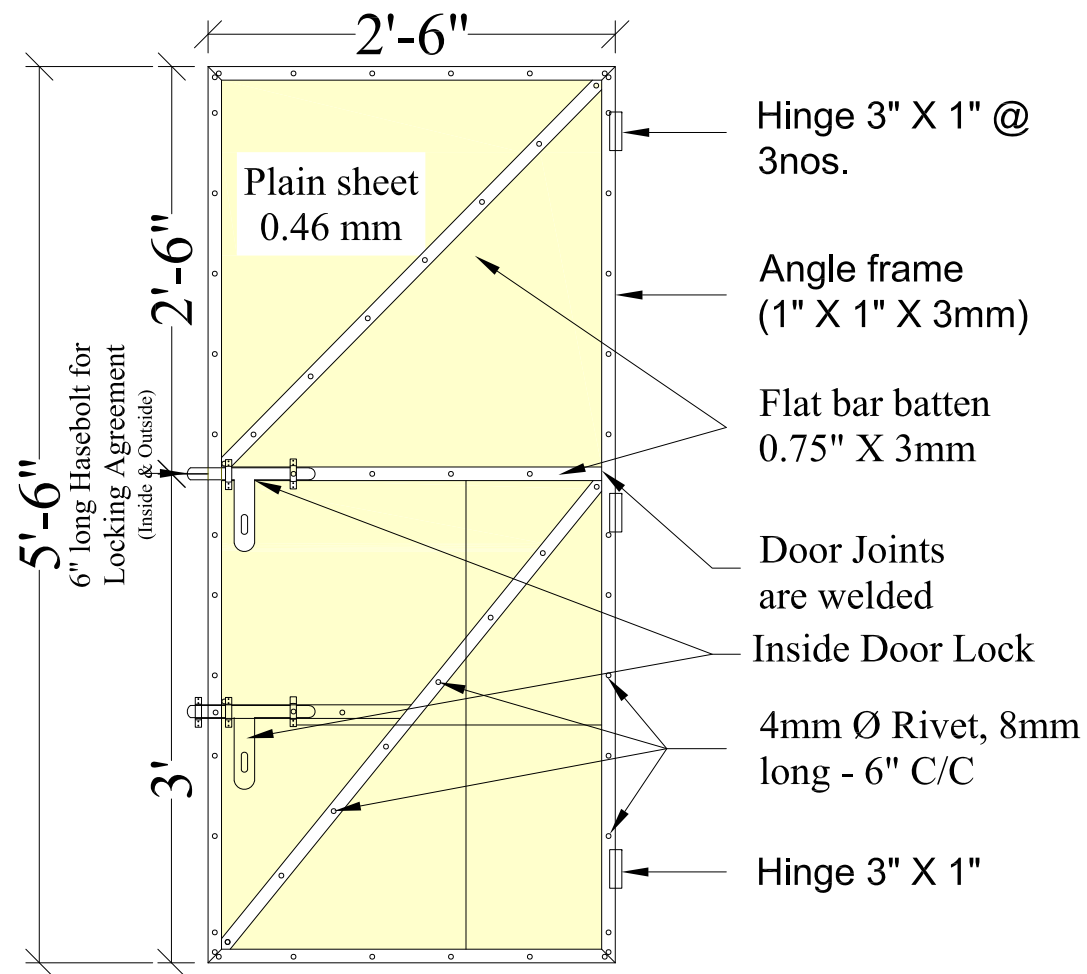
Additional Note :

NB.: No welding on this structure. All joint will joint with different sizes nut bolts and reviles.

A= 6mm dia 18mm long Rivet for door frame joints.

B= S.S. Door locks 150mm long fixing with MS frame with nut bolts.

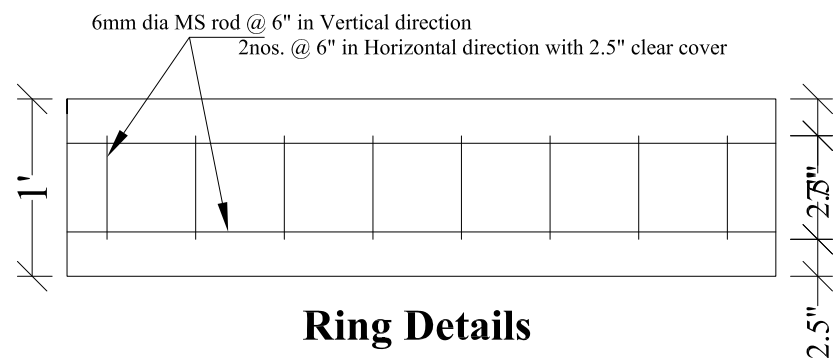
	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Direct Pit Latrine (Option-02B)	Latrine Design Group	Elevation	July, 2023	DPHE Cox's Bazar	RRRC	03



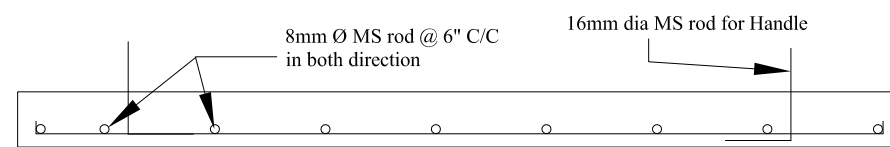
Door Details

Additional Note:

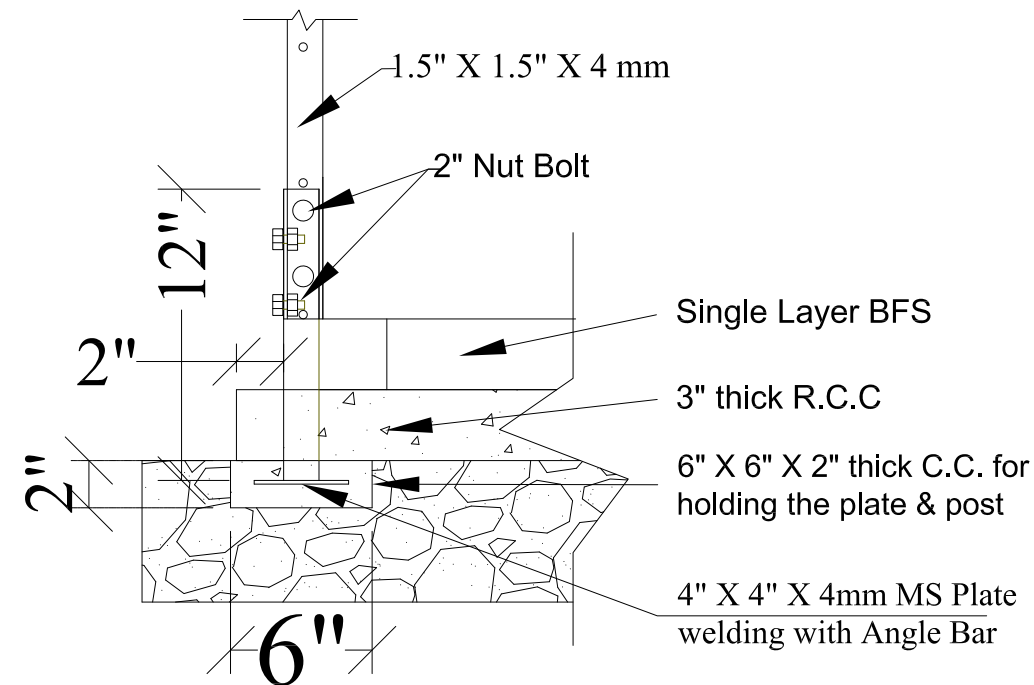
NB.: all sheet will short 4mm to 8mm along horizontally direction. This will for protect people from any incidents due to sharpen the MS sheets. All door joint with 6.4mm dia rivets 18mm long maximum. Door frame will be fitted with 3 nos. Butt Hinges will be setup MS column and MS door frame with 6mm dia 10mm long rivets. Front side fencing bars will placed outside of the column with nut bolt.



Ring Details

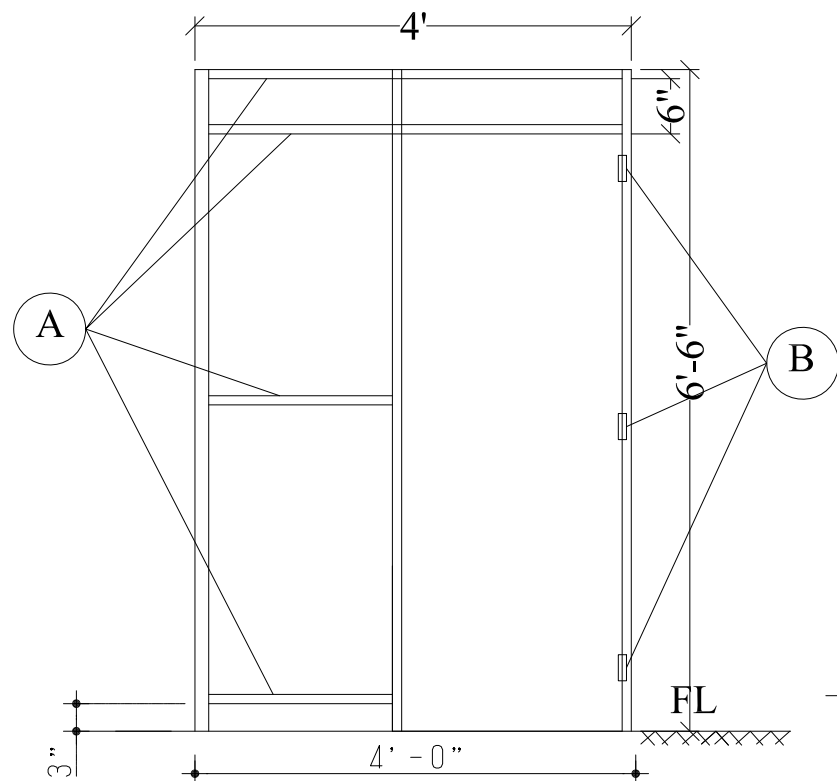


Cover Slab Details

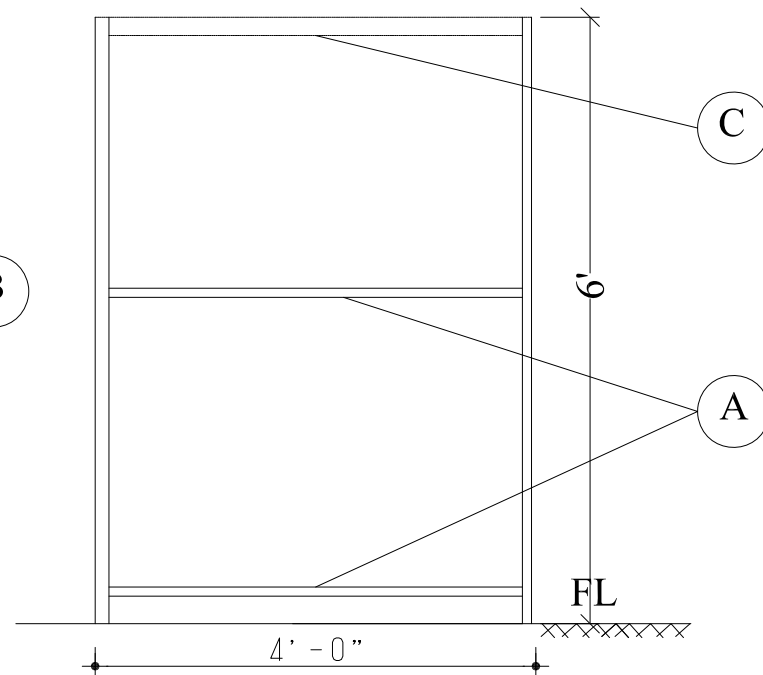


Section P: Joint Section

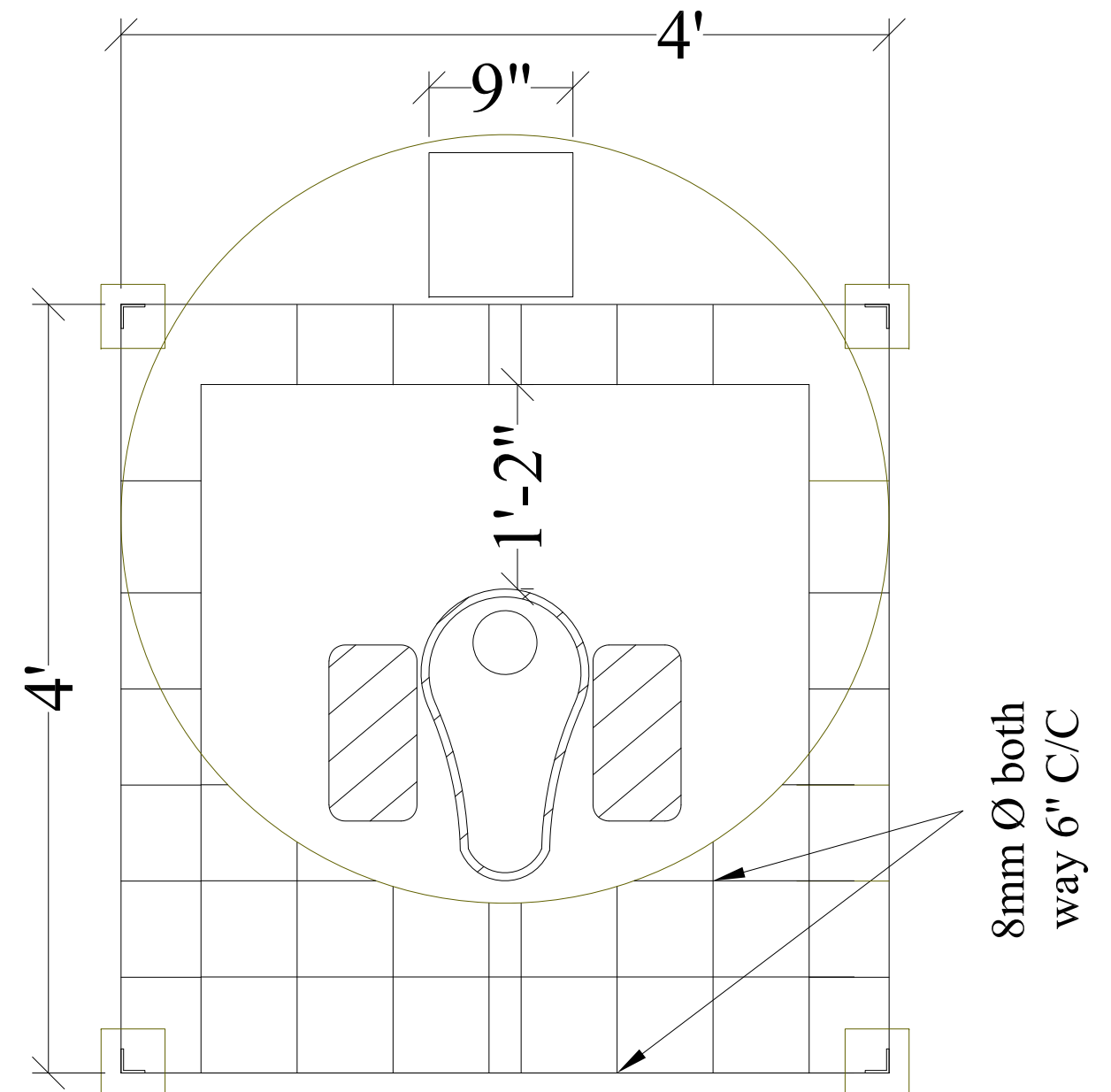
	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Direct Pit Latrine (Option-02B)	Latrine Design Group	Door, Ring and Joint Details	July, 2023	DPHE Cox's Bazar	RRRC	04



Angle Bar Details of front Fencing



Angle Bar Details of front Fencing



Section: Reinforcement Details of Slab

Additional Note :

NB : Front side fencing bars will placed out side of the column with nut bolts
 GI net will fix with flat bars with washer & 6mm dia rivetes (Washer inside hole 6mm dia & out side maximum 18mm :rivet 6mm Dia 10mm long)

A= Flat bar 19mm X 3mm Size

B= 100mm long butt hinge with 8mm dia 10mm long rivet fitting

C= Roof frame purlin 25mm X 25mm X 3mm size on back/rear side

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Direct Pit Latrine (Option-02B)	Latrine Design Group	Angle Bar and Slab Details	July, 2023	DPHE Cox's Bazar	RRRC	05

Bill of Quantities

Latrine Option-2B

Single Cubicle Steel Framed Direct Twin Pit Latrine

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
PART-A:Super-structure						
1	MS angle short column will be placed in 4 (Four)corner; fixed and welded with anchor plate in middle position. Superstructure columns will joint with short column by 8mm dia Nut-bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 305mm (1'-0") Hight.	4.00	kg	88	352	Local Market Price
2	MS angle column will be placed in middle of the front side for locking the door and fixed with floor and roof. This column will not be fixed with anchor plate and MS short column by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 2007mm (6'-7") Hight.	5.36	kg	88	472	Local Market Price
3	MS angle column will be placed 2 (Two) corner side of the front side and 10mm Nut-bolts joint with those columns and 305mm (1'-0") long MS short column and Anchor bolt by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 1981mm (6'-6") Hight.	10.40	kg	88	915	Local Market Price
4	MS angle column will be placed 2 (Two) corner side of the back/ rear side and 10mm Nut-bolts joint with those columns and 305mm (1'-0") long MS short column and Anchor bolt by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 1829mm (6'-0") Hight.	10.20	kg	88	898	Local Market Price
5	MS angle Rafter will be placed 2 corners for fixing the roof and will be placed along door and backside parallel. 4nos. Corner column will be joint with the rafter by 8mm dia nut bolts. Angle size 25mm (1") X 25mm (1") X 3mm and 1372mm (4'-6") long	5.40	kg	88	475	Local Market Price
6	3nos. MS angle Purlin will be placed on rafter by 8mm dia nutbolts jointing and left/ right portion parallel. One will be placed above the rafter in back side of the rafter Column; Another will be placed in middle of the rafter and other will be placed front corner.Angle size 25mm (1") X 25mm (1") X 3mm and 1219mm (4'-0") long.	4.80	kg	88	422	Local Market Price
7	2nos. MS angle will be placed two side for making the door frame.Angle size 25mm (1") X 25mm (1") X 3mm and 1803mm (5'-11") long.	4.80	kg	88	422	Local Market Price
8	2nos. MS angle will be placed two side for making the door frame. One will be placed bottom of the door (38mm/ 1.5" above from floor) and another will be joint top of the door.Angle size 25mm (1") X 25mm (1") X 3mm and 737mm (2'-5") long.	3.00	kg	88	264	Local Market Price
9	MS Flat bar will be placed in front side for sunlight fencing. One will be fixed in 1829mm (6'-0") from floor height and another will be fixed 1957mm (6'-5") from floor height. All joint will be joint by 8mm dia Nut-bolts with Columns.Flat Bar size 19mm X 3mm and 1219mm (4'-0") long.	2.40	kg	88	211	Local Market Price
10	MS Flat bar will be placed in front side fencing and 2nos. MS Flat bar will used. One will be placed 152mm (6") above of floor and other will be in middle position. All joint will be joint by 8mm dia Nut-bolts with Columns. Flat Bar size 19mm X 3mm and 483mm (1'-7") long.	2.00	kg	88	176	Local Market Price
11	MS Flat bar will be placed for fencing and 3nos.MS Flat bar will use in each side fencing. One will be placed 152mm (6") above of floor; one in middle and other will be placed in top from 1803mm (5'-11") floor height. All joint will be joint by 8mm dia Nut-bolts with Columns.Flat Bar size 19mm X 3mm and 1219mm (4'-0") long.	10.80	kg	88	950	Local Market Price
12	MS Flat bar will be placed in middle of door for fixing sheet. Joint will be joint by 8mm dia Nut-bolts with door frame.Flat Bar size 19mm X 3mm and 737mm (2'-5") long in middle of the door frame.	0.75	kg	88	66	Local Market Price
13	2nos. MS Flat bar will be placed by incline of door frame for strengthen the door frame. One will be placed inclined in the bellow to middle and other will be placed in middle to top. All joint will be joint by 8mm dia Nut-bolts.Flat Bar size 19mm X 3mm and 1092mm (3'-7") long.	2.00	kg	88	176	Local Market Price
14	2nos. Iron blue color sheet will be placed with door frame. One will joint form bellow portion to middle portion, and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 738mm (2'-5") wide.	16.50	Sft	64	1056	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
15	2nos. Iron blue color sheet will be placed in front side fencing with frame. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 483mm (1'-7") wide	12.60	Sft	64	806	Local Market Price
16	2nos. Iron blue color sheet will be placed in left side for fencing. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 991mm (3'-3") wide.	12.60	Sft	64	806	Local Market Price
17	2nos. Iron blue color sheet will be placed in right side for fencing. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 991mm (3'-3") wide.	12.60	Sft	64	806	Local Market Price
18	2nos. Iron blue color sheet will be placed in rear/ back side for fencing. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 991mm (3'-3") wide.	12.60	Sft	64	806	Local Market Price
19	2nos. Iron blue color sheet will be placed in roof above the purlin. One will joint form backside to middle portion, and another will be placed from front to middle portion. Iron Sheet size 991mm (3'-3") long X 991mm (3'-3") wide.	12.60	Sft	64	806	Local Market Price
20	3nos. MS hinge will set with door and column. One will set 229mm (9") above from bellow frame; one will set 1067mm (3'-6") above from bellow frame and other will be set 76mm (3") form top edge frame. Hinge size 102mm (4") X 76mm (3")	3.00	pcs	100	300	Local Market Price
21	Rivet will be placed for iron sheet fixing and all rivet will be placed 152mm (6") C/C.Rivet size 4mm dia	200.00	pcs	2	400	Local Market Price
22	Rivet will be placed for iron sheet fixing and all rivet will be placed Rivet size 6.2mm dia	60.00	pcs	3	150	Local Market Price
23	Nut Bolt 2" dia 10mm	20.00	nos	5	100	PWD Rates Schedule (2022)
24	6" Handle with Hasbolt made of iron	3.00	nos	100	300	PWD Rates Schedule (2022)
25	Coating : Coating with two layer red oxide and blue color Enamel coat.	110.00	Sft	18	1980	PWD Rates Schedule (2022)
26	Ventilation Mesh	2.00	Sft	80	160	Local Market Price
27	MS bolt connection work, welding all steel connection which needed with best quality welding rod etc. all complete as per direction of the engineer-in charge.	1.00	job	8,700	8700	Local Market Price
PART-B: Sub-structure						
1	Earth Excavation : Earth work in excavation of Foundation for Steel structure Latrine, carrying and disposing of all Excavated materials at a safe distance designated by Engineer, all types of soil except rocky gravelly, organic maintains proper slope, disposing of all back filling of sites of all excavated materials to a safe distance back filling of sites of original level etc, all complete to the direction of the EIC.	245.00	Cft	5	1225	PWD Rates Schedule (2022)
2	Sand Filling: Sand filling in foundation trenches and plinth with fine local sand having minimum fineness modulus (FM) of .50 in 150mm / 75 mm layers, leveling, watering and consolidating each layer by layer up to finished level, etc. All filling completed as per direction of engineer-in-charge and as per drawing and design	12.00	Cft	32	384	PWD Rates Schedule (2022)
3	Supply, fittings & fixing of 48" dia RCC Ring, 2.5" thickness and 6 mm bar used as reinforcement as per the drawing and instruction of EIC.	20.00	nos	1,000	20000	PWD Rates Schedule (2022)
4	3" CC Casting Cement concrete work in foundation and floor with Portland cement, sand(Min FM 1.50) and first class /Picket Jhama brick chips 20mm down graded, in/c mixing appropriately, casting, laying, compacting and curing for the requisite period. The mixture proportion of cement sand and aggregate should be 1:2:4. All complete as per the instruction of the EIC/UNHCR.	8.00	Cft	250	2000	PWD Rates Schedule (2022)
5	48" Cover slab with mini pocket slab	2.00	pcs	1,000	2000	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
6	5" brick work: 5" thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	1.45	Sqm	1,180	1711	PWD Rates Schedule (2022)
7	12 mm thick plaster with NCF	30.00	Sft	25	750	Local Market Price
8	Sato pan & Slab with footrest with good quality	1.00	nos	124	124	PWD Rates Schedule (2022)
9	Upvc Pipe 4" dia	12.00	rft	45	540	PWD Rates Schedule (2022)
10	Hand Washing Station: Supply, fitting & fixing of hand washing frame made of best quality steel & 65 L water tank with lid, might be installed with CC casting, locking arrangement etc. all complete as per design, drawing and accepted by the Engineer.	1.00	nos	5,000	5000	Local Market Price
Total Quoted Price				BDT	56712	

Note: Total amount of cost can be varied maximum 5%

Prepared by :

Latrine Design Group
ISCG WASH Sector, Cox's Bazar

Reviewed by :

DPHE, Cox's Bazar

Approved by :

Office of Refugee Relief and
Repatriation Commissioner (RRRC),
Cox's Bazar



PROJECT

DESIGN AND DRAWING of UNIFIED LATRINE

**SINGLE CUBICLE STEEL FRAMED OFFSET TWIN PIT LATRINE
(Option-03B)**

JULY, 2023

PREPARED By:

**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**

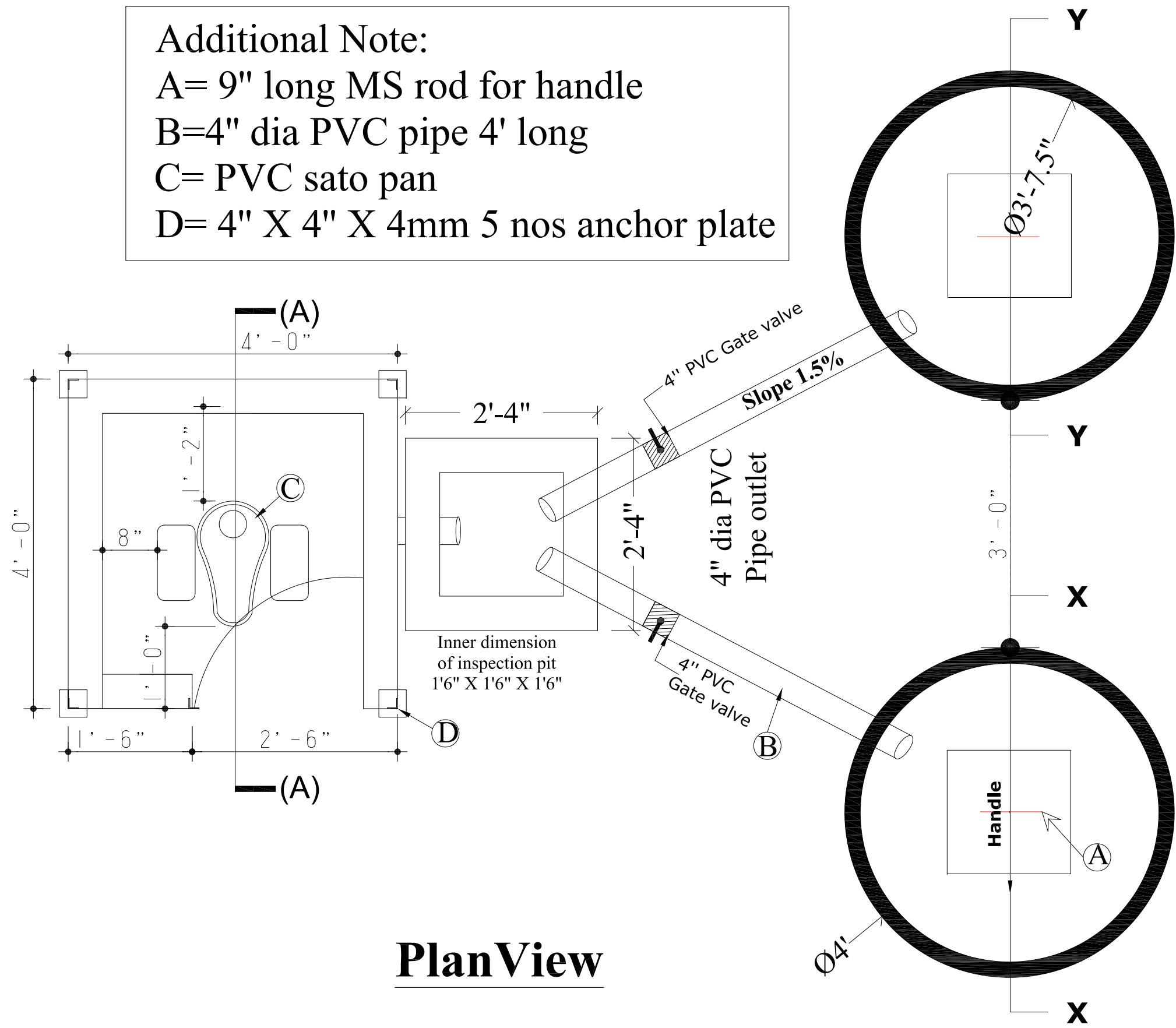
Additional Note:

A= 9" long MS rod for handle

B=4" dia PVC pipe 4' long

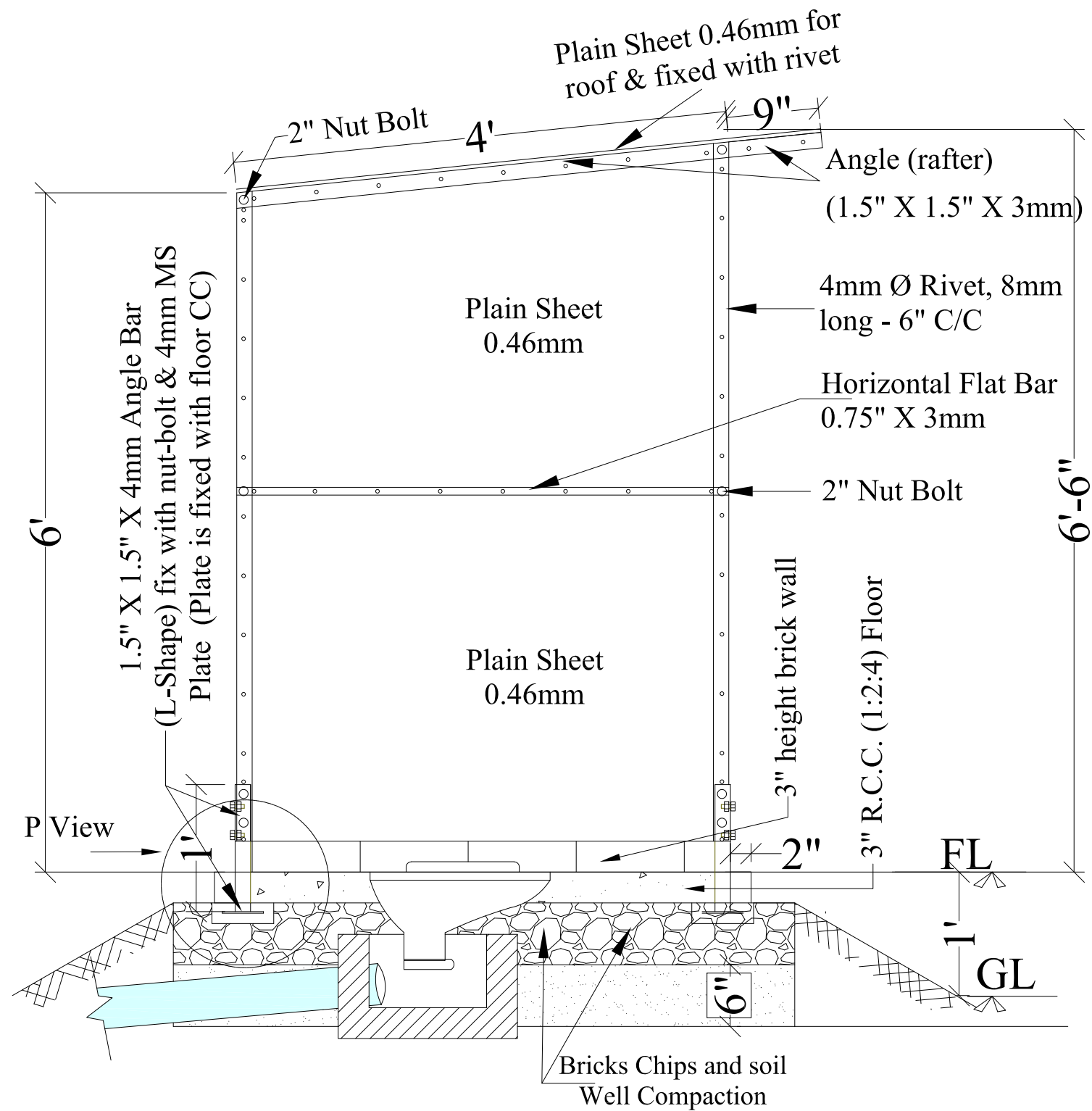
C= PVC sato pan

D= 4" X 4" X 4mm 5 nos anchor plate

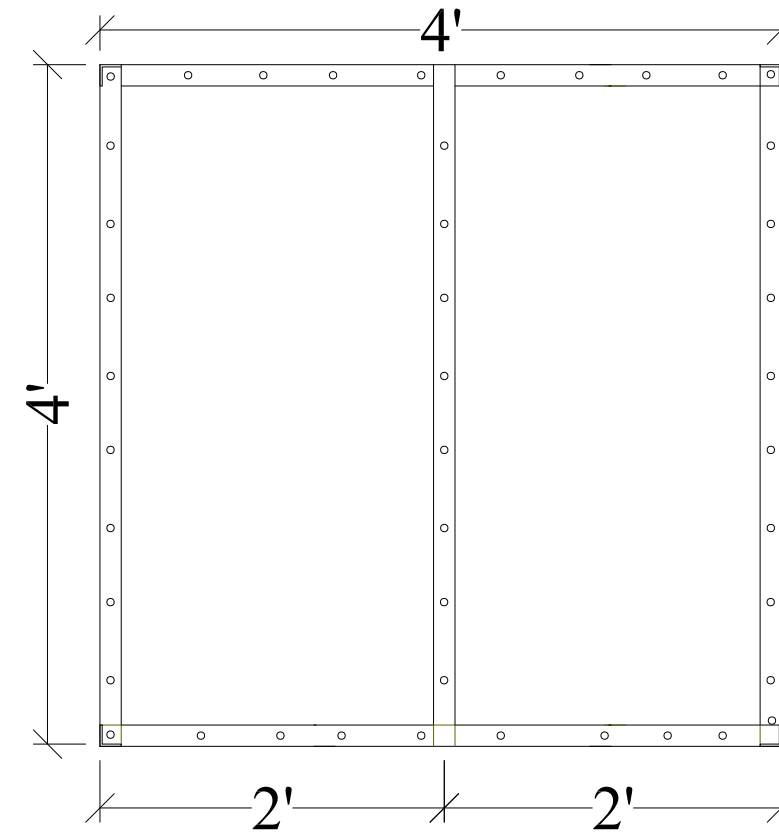


Plan View


	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Offset Twin Pit Latrine (Option-03B)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	01

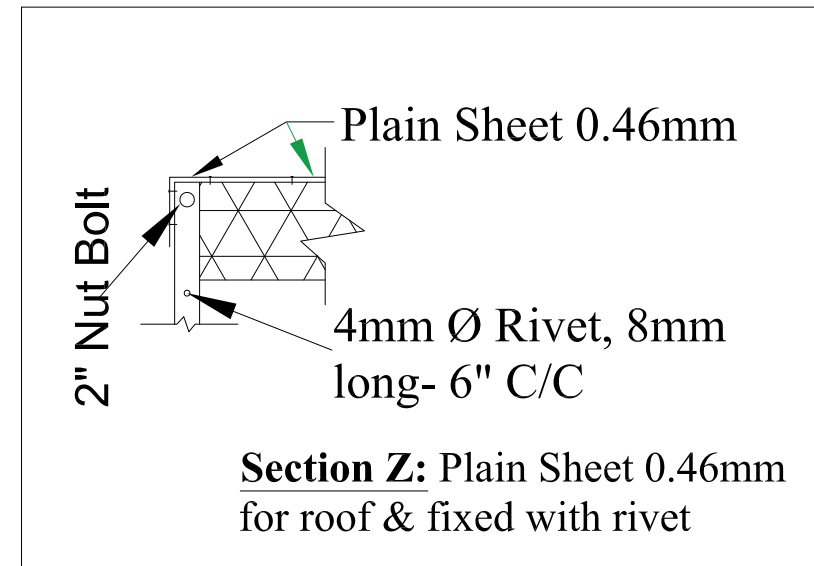
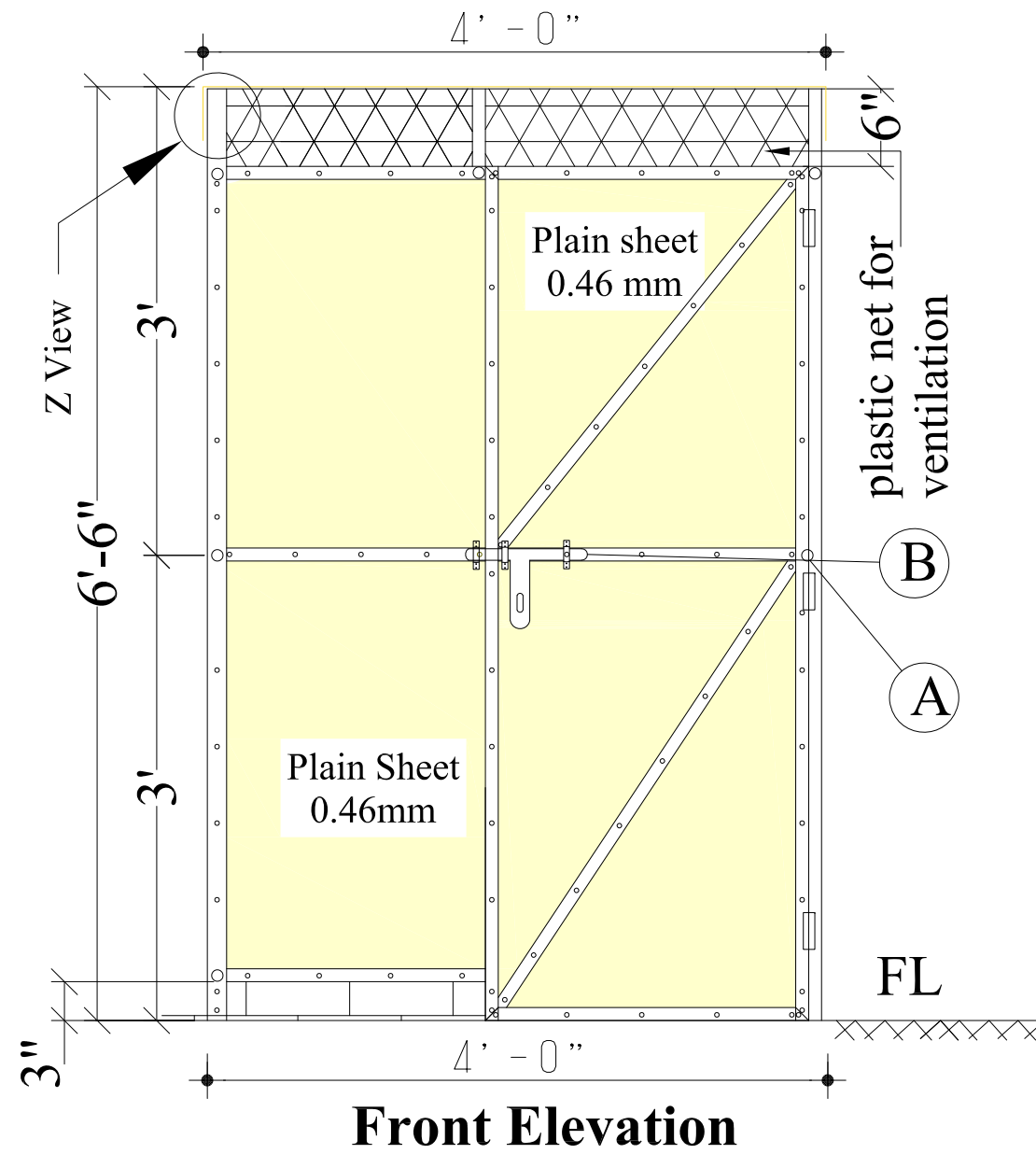


Section A-A



Roof View

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Offset Twin Pit Latrine (Option-03B)	Latrine Design Group	Section & Roof Plan	July, 2023	DPHE Cox's Bazar	RRRC	02



Details of "Z"

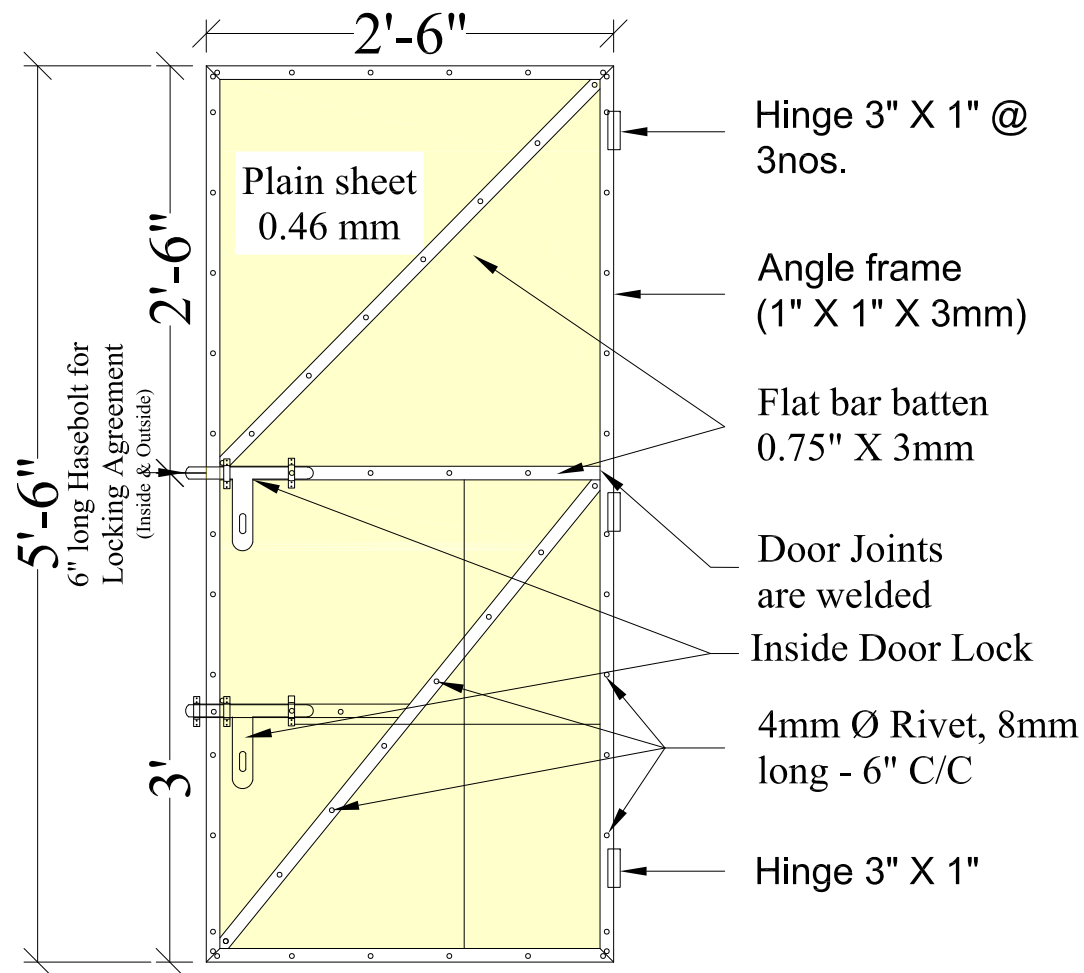
Additional Note :

NB.: No welding on this structure. All joint will joint with different sizes nut bolts and reviles.

A= 6mm dia 18mm long Rivet for door frame joints.

B= S.S. Door locks 150mm long fixing with MS frame with nut bolts.

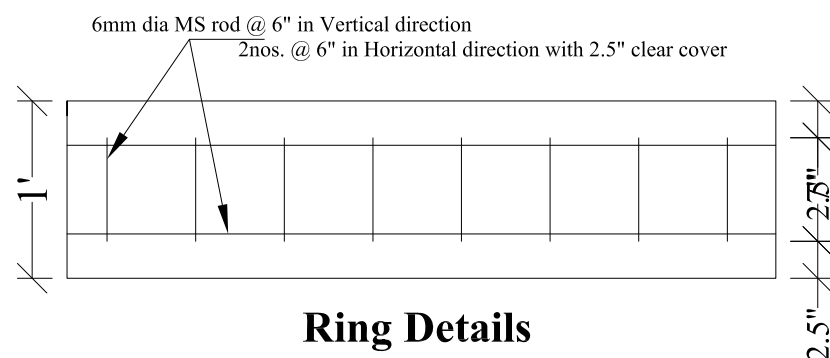
	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Offset Twin Pit Latrine (Option-03B)	Latrine Design Group	Elevation	July, 2023	DPHE Cox's Bazar	RRRC	03



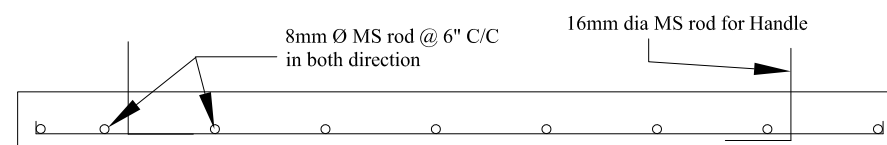
Door Details

Additional Note:

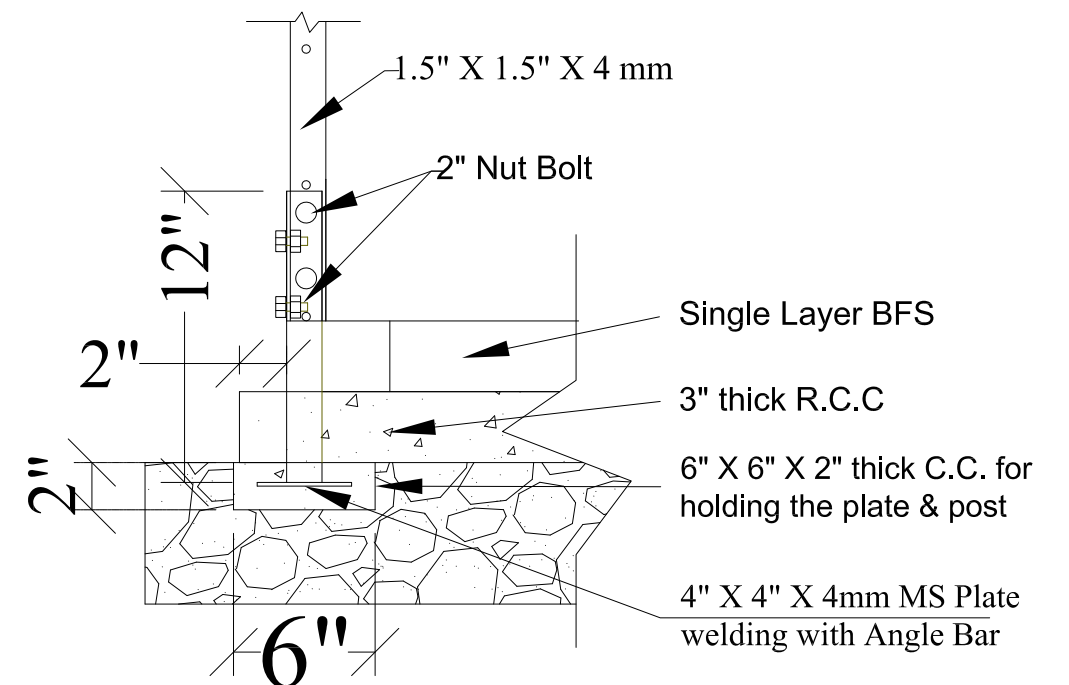
NB.: all sheet will short 4mm to 8mm along horizontally direction. This will for protect people from any incidents due to sharpen the MS sheets. All door joint with 6.4mm dia rivets 18mm long maximum. Door frame will be fitted with 3 nos. Butt Hinges will be setup MS column and MS door frame with 6mm dia 10mm long rivets. Front side fencing bars will placed outside of the column with nut bolt.



Ring Details



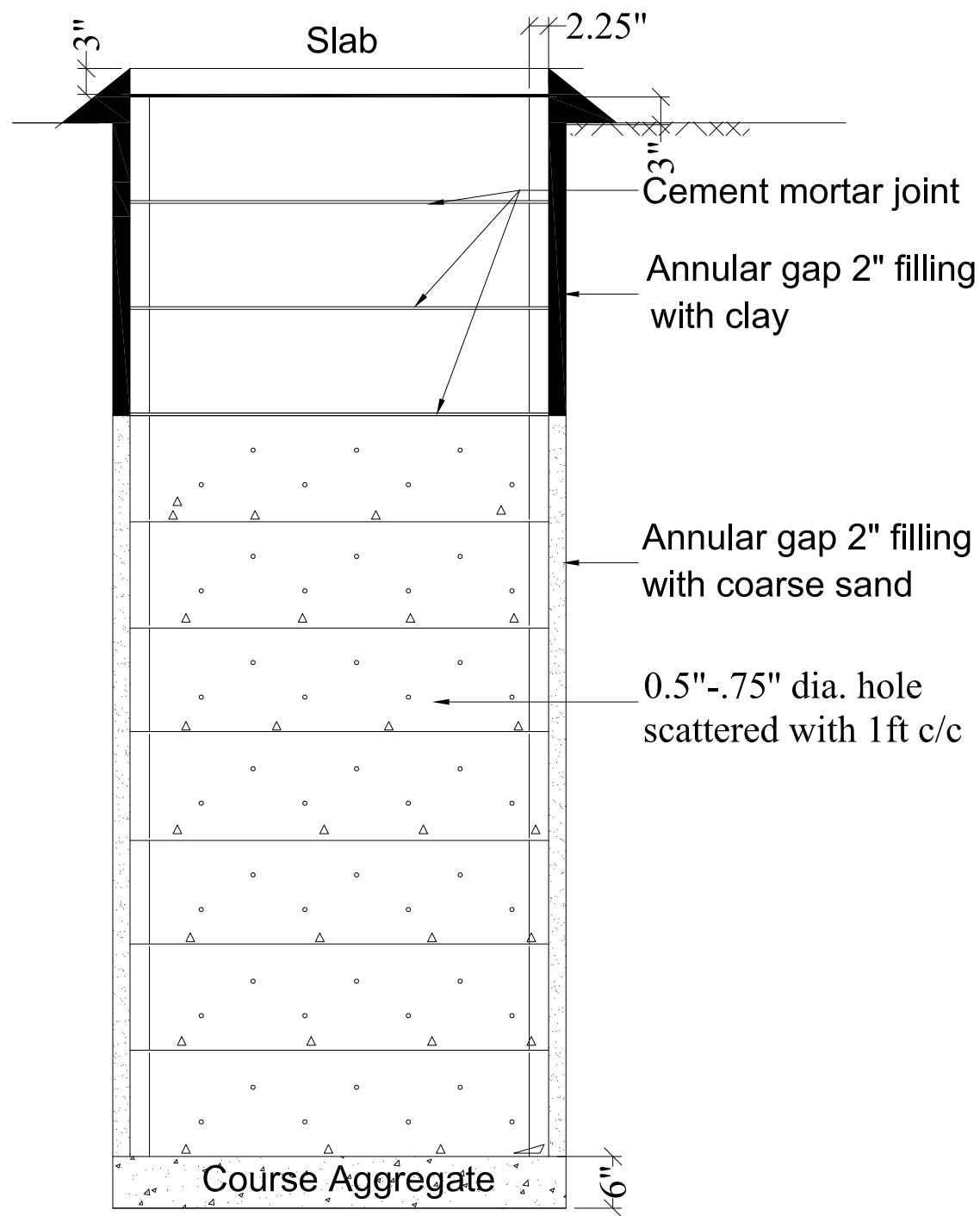
Cover Slab Details



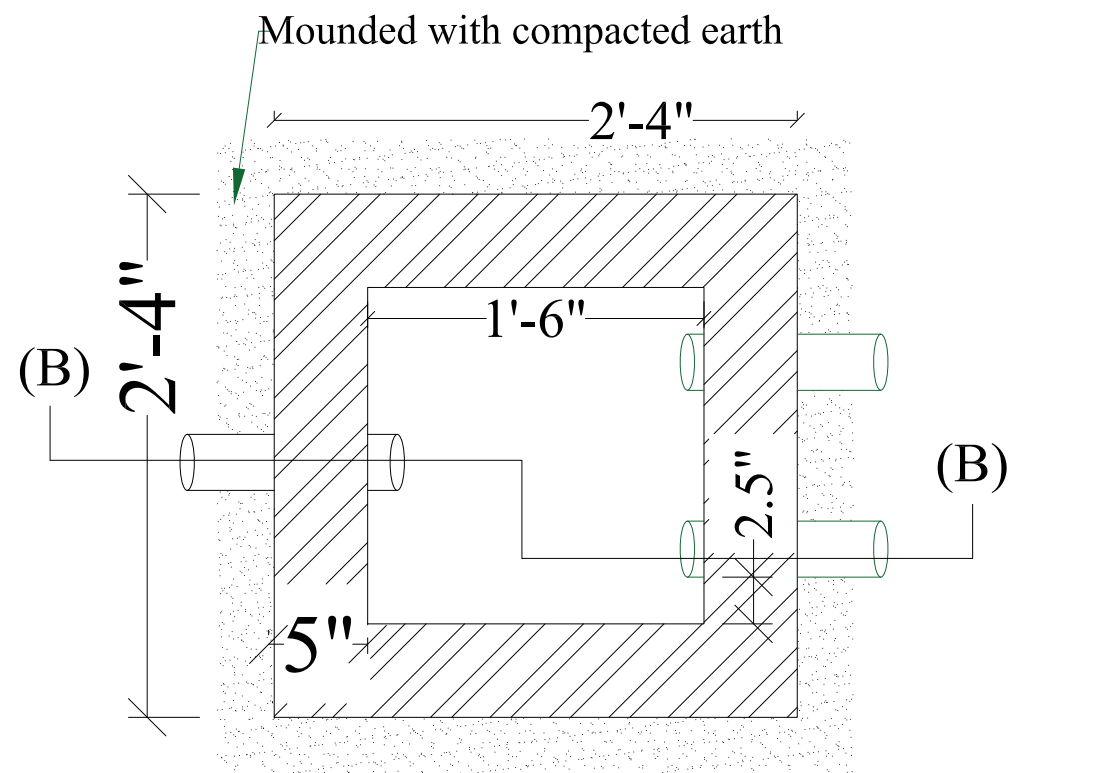
Section P: Joint Section

Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Offset Twin Pit Latrine (Option-03B)	Latrine Design Group	Door, Ring and Joint Details	July, 2023	DPHE Cox's Bazar	RRTC	04

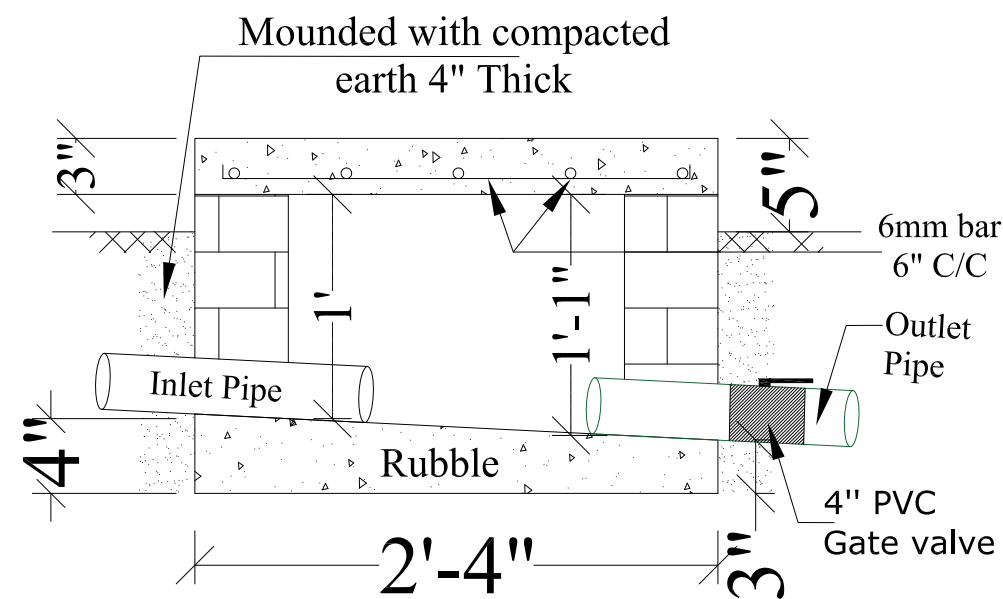
RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal), with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance).



RC Ring Pit Details



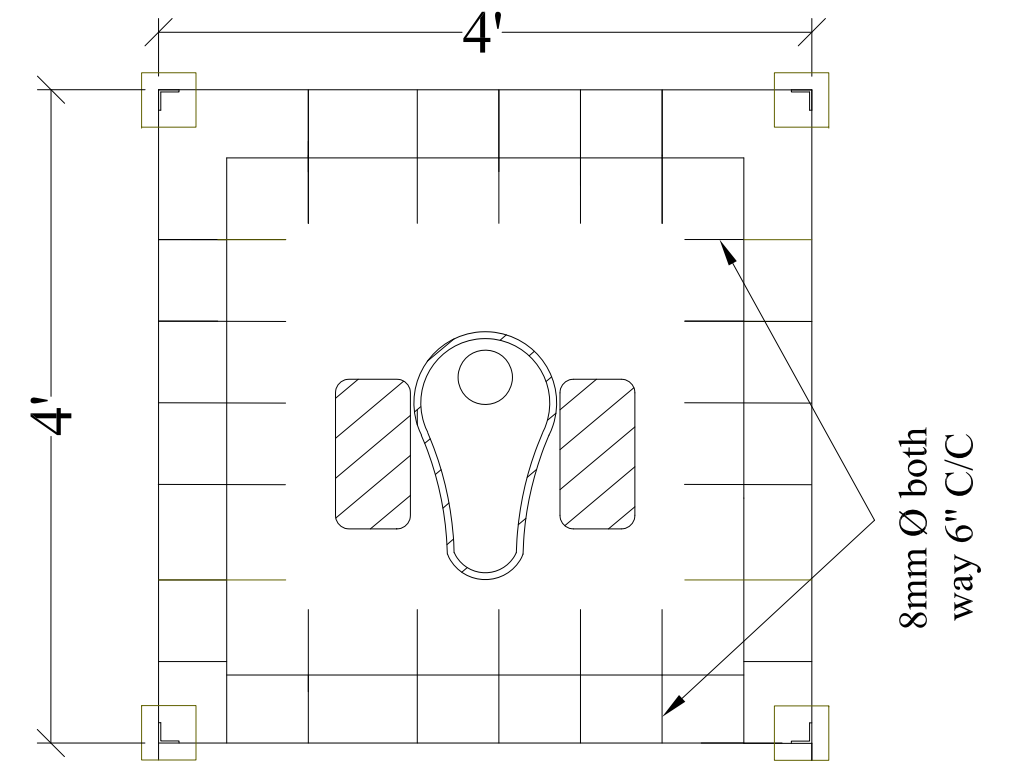
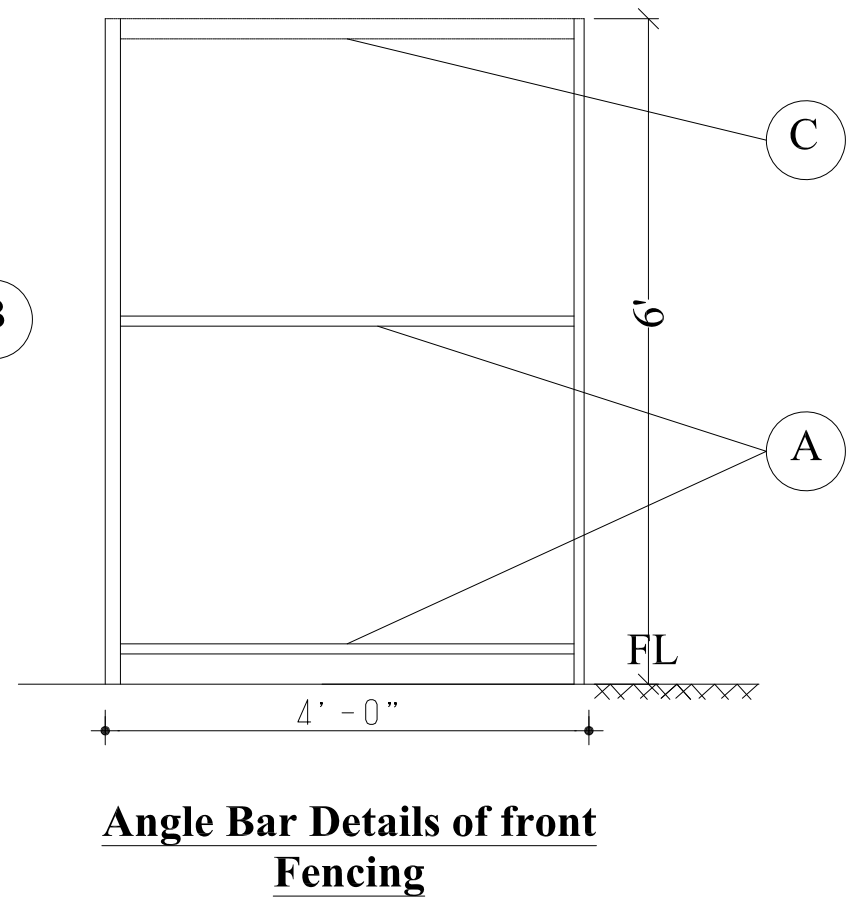
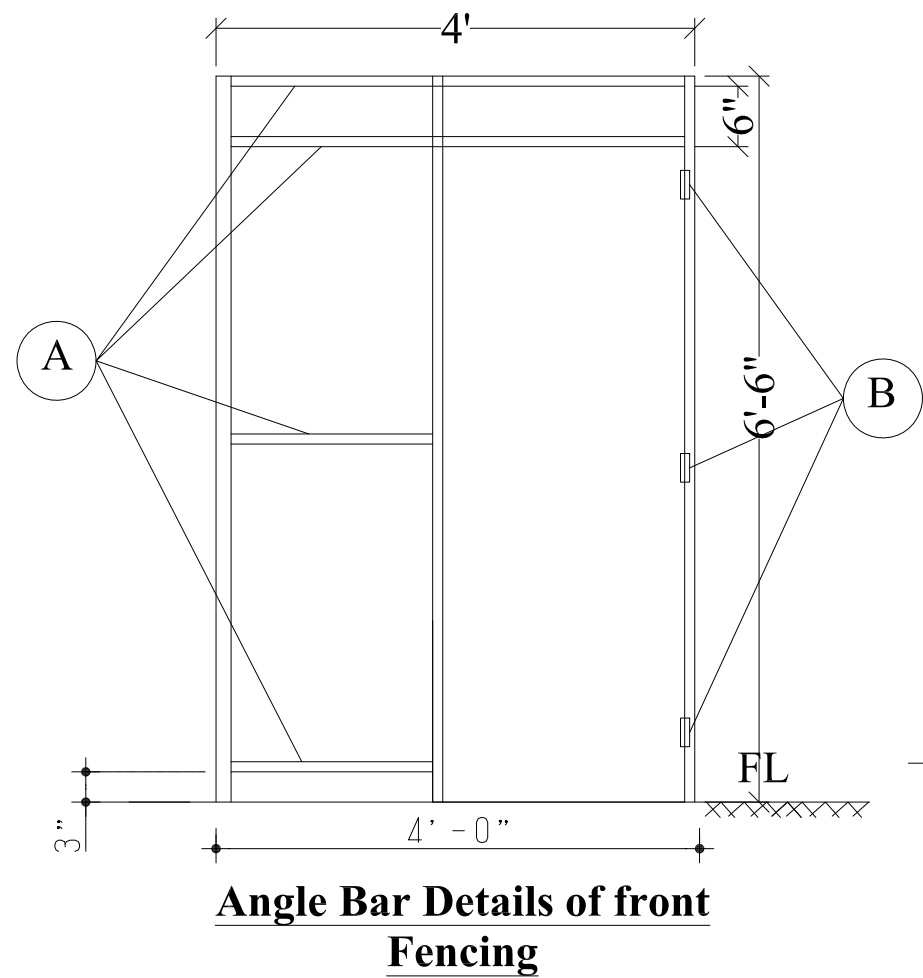
Plan



Section: B-B

Inspection Box Details

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Offset Twin Pit Latrine (Option-03B)	Latrine Design Group	RC Ring Pit & Inspection Box Details	July, 2023	DPHE Cox's Bazar	RIRC	05



Additional Note :

NB : Front side fencing bars will placed out side of the column with nut bolts
 GI net will fix with flat bars with washer & 6mm dia rivetes (Washer inside hole 6mm dia & out side maximum 18mm :rivet 6mm Dia 10mm long)

A= Flat bar 19mm X 3mm Size

B= 100mm long butt hinge with 8mm dia 10mm long rivet fitting

C= Roof frame purlin 25mm X 25mm X 3mm size on back/rear side

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Single Cubicle Steel Framed Offset Twin Pit Latrine (Option-03B)	Latrine Design Group	Angle Bar and Slab Details	July, 2023	DPHE Cox's Bazar	RRRC	06

Bill of Quantities

Latrine Option-3B

Single Cubicle Steel Framed Offset Twin Pit Latrine

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
	PART-A:Super-structure					
1	MS angle short column will be placed in 4 (Four) corner; fixed and welded with anchor plate in middle position. Superstructure columns will joint with short column by 8mm dia Nut-bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 305mm (1'-0") Hight.	4.00	kg	88	352	Local Market Price
2	MS angle column will be placed in middle of the front side for locking the door and fixed with floor and roof. This column will not be fixed with anchor plate and MS short column by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 2007mm (6'-7") Hight.	5.36	kg	88	472	Local Market Price
3	MS angle column will be placed 2 (Two) corner side of the front side and 10mm Nut-bolts joint with those columns and 305mm (1'-0") long MS short column and Anchor bolt by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 1981mm (6'-6") Hight.	10.40	kg	88	915	Local Market Price
4	MS angle column will be placed 2 (Two) corner side of the back/ rear side and 10mm Nut-bolts joint with those columns and 305mm (1'-0") long MS short column and Anchor bolt by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 1829mm (6'-0") Hight.	10.20	kg	88	898	Local Market Price
5	MS angle Rafter will be placed 2 corners for fixing the roof and will be placed along door and backside parallel. 4nos. Corner column will be joint with the rafter by 8mm dia nut bolts. Angle size 25mm (1") X 25mm (1") X 3mm and 1372mm (4'-6") long	5.40	kg	88	475	Local Market Price
6	3nos. MS angle Purlin will be placed on rafter by 8mm dia nutbolts jointing and left/ right portion parallel. One will be placed above the rafter in back side of the rafter Column; Another will be placed in middle of the rafter and other will be placed front corner. Angle size 25mm (1") X 25mm (1") X 3mm and 1219mm (4'-0") long.	4.80	kg	88	422	Local Market Price
7	2nos. MS angle will be placed two side for making the door frame. Angle size 25mm (1") X 25mm (1") X 3mm and 1803mm (5'-11") long.	4.80	kg	88	422	Local Market Price
8	2nos. MS angle will be placed two side for making the door frame. One will be placed bottom of the door (38mm/ 1.5" above from floor) and another will be joint top of the door. Angle size 25mm (1") X 25mm (1") X 3mm and 737mm (2'-5") long.	3.00	kg	88	264	Local Market Price
9	MS Flat bar will be placed in front side for sunlight fencing. One will be fixed in 1829mm (6'-0") from floor height and another will be fixed 1957mm (6'-5") from floor height. All joint will be joint by 8mm dia Nut-bolts with Columns. Flat Bar size 19mm X 3mm and 1219mm (4'-0") long.	2.40	kg	88	211	Local Market Price
10	MS Flat bar will be placed in front side fencing and 2nos. MS Flat bar will used. One will be placed 152mm (6") above of floor and other will be in middle position. All joint will be joint by 8mm dia Nut-bolts with Columns. Flat Bar size 19mm X 3mm and 483mm (1'-7") long.	2.00	kg	88	176	Local Market Price
11	MS Flat bar will be placed for fencing and 3nos. MS Flat bar will use in each side fencing. One will be placed 152mm (6") above of floor; one in middle and other will be placed in top from 1803mm (5'-11") floor height. All joint will be joint by 8mm dia Nut-bolts with Columns. Flat Bar size 19mm X 3mm and 1219mm (4'-0") long.	10.80	kg	88	950	Local Market Price
12	MS Flat bar will be placed in middle of door for fixing sheet. Joint will be joint by 8mm dia Nut-bolts with door frame. Flat Bar size 19mm X 3mm and 737mm (2'-5") long in middle of the door frame.	0.75	kg	88	66	Local Market Price
13	2nos. MS Flat bar will be placed by incline of door frame for strengthen the door frame. One will be placed inclined in the bellow to middle and other will be placed in middle to top. All joint will be joint by 8mm dia Nut-bolts. Flat Bar size 19mm X 3mm and 1092mm (3'-7") long.	2.00	kg	88	176	Local Market Price
14	2nos. Iron blue color sheet will be placed with door frame. One will joint form bellow portion to middle portion, and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 738mm (2'-5") wide.	16.50	Sft	64	1,056	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
15	2nos. Iron blue color sheet will be placed in front side fencing with frame. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 483mm (1'-7") wide	12.60	Sft	64	806	Local Market Price
16	2nos. Iron blue color sheet will be placed in left side for fencing. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 991mm (3'-3") wide.	12.60	Sft	64	806	Local Market Price
17	2nos. Iron blue color sheet will be placed in right side for fencing. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 991mm (3'-3") wide.	12.60	Sft	64	806	Local Market Price
18	2nos. Iron blue color sheet will be placed in rear/ back side for fencing. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion. Iron Sheet size 991mm (3'-3") long X 991mm (3'-3") wide.	12.60	Sft	64	806	Local Market Price
19	2nos. Iron blue color sheet will be placed in roof above the purlin. One will joint form backside to middle portion, and another will be placed from front to middle portion. Iron Sheet size 991mm (3'-3") long X 991mm (3'-3") wide.	12.60	Sft	64	806	Local Market Price
20	3nos. MS hinge will set with door and column. One will set 229mm (9") above from bellow frame; one will set 1067mm (3'-6") above from bellow frame and other will be set 76mm (3") form top edge frame. Hinge size 102mm (4") X 76mm (3")	3.00	pcs	100	300	Local Market Price
21	Rivet will be placed for iron sheet fixing and all rivet will be placed 152mm (6") C/C. Rivet size 4mm dia	200.00	pcs	2	400	Local Market Price
22	Rivet will be placed for iron sheet fixing and all rivet will be placed Rivet size 6.2mm dia	60.00	pcs	3	150	Local Market Price
23	Nut Bolt 2" dia 10mm	20.00	nos	5	100	PWD Rates Schedule (2022)
24	6" Handle with Hasbolt made of iron	3.00	nos	100	300	PWD Rates Schedule (2022)
25	Coating : Coating with two layer red oxide and blue color Enamel coat.	110.00	Sft	18	1,980	PWD Rates Schedule (2022)
26	Ventilation Mesh	2.00	Sft	80	160	Local Market Price
27	MS bolt connection work, welding all steel connection which needed with best quality welding rod etc. all complete as per direction of the engineer-in charge.	1.00	job	8,700	8,700	Local Market Price
<u>PART-B: Sub-structure</u>						
28	Earth Excavation : Earth work in excavation of Foundation for Steel structure Latrine, inspection pit, carrying and disposing of all Excavated materials at a safe distance designated by Engineer, all types of soil except rocky gravelly, organic maintains proper slope, disposing of all back filling of sites of all excavated materials to a safe distance back filling of sites of original level etc, all complete to the direction of the EIC.	260.00	Cft	5	1,300	PWD Rates Schedule (2022)
29	Sand Filling: Sand filling in foundation trenches and plinth with fine local sand having minimum fineness modulus (FM) of .50 in 150mm / 75 mm layers, leveling, watering and consolidating each layer by layer up to finished level, etc. All filling completed as per direction of engineer-in-charge and as per drawing and design	12.00	Cft	32	384	PWD Rates Schedule (2022)
30	Supply, fittings & fixing of 48" dia RCC Ring, 2.5" thickness and 6 mm bar used as reinforcement as per the drawing and instruction of EIC.	20.00	nos	1,000	20,000	PWD Rates Schedule (2022)
31	3" CC Casting Cement concrete work in foundation and floor with Portland cement, sand (Min FM 1.50) and first class /Picket Jhama brick chips 20mm down graded, in/c mixing appropriately, casting, laying, compacting and curing for the requisite period. The mixture proportion of cement sand and aggregate should be 1:2:4. All complete as per the instruction of the EIC/UNHCR.	8.00	Cft	250	2,000	PWD Rates Schedule (2022)
32	48" Cover slab with mini pocket slab	2.00	pcs	1,000	2,000	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
33	5" brick work (foundation + inspection pit): 5" thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	2.00	Sqm	1,180	2,360	PWD Rates Schedule (2022)
34	12 mm thick plaster with NCF	30.00	Sft	25	750	Local Market Price
35	Sato pan & Slab with footrest with good quality	1.00	nos	124	124	PWD Rates Schedule (2022)
36	Upvc Pipe 4" dia	18.00	rft	45	810	PWD Rates Schedule (2022)
37	Hand Washing Station: Supply, fitting & fixing of hand washing frame made of best quality steel & 65 L water tank with lid, might be installed with CC casting, locking arrangement etc. all complete as per design, drawing and accepted by the Engineer.	1.00	nos	5,000	5,000	Local Market Price
38	Supply, fittings & fixing of 4" PVC gate valve as per the drawing and instruction of EIC.	2.00	nos	2,500	5,000	Local Market Price
Total Quoted Price				BDT	62,706	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
Latrine Design Group

Reviewed by :

Approved by :
Office of Refugee Relief and
Repatriation Commissioner (RRRC),

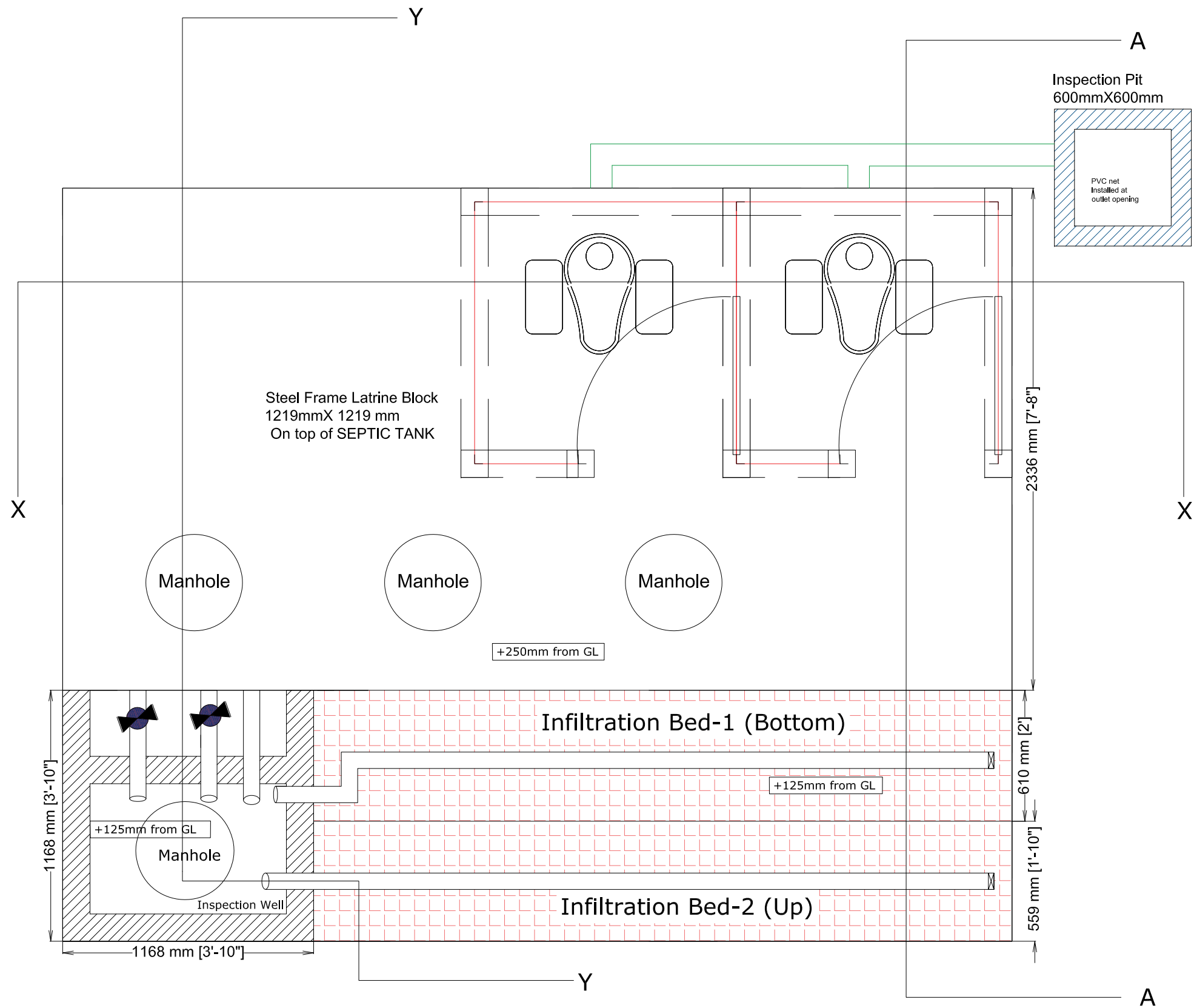


PROJECT
DESIGN AND DRAWING of UNIFIED LATRINE
TWIN CUBICLES STEEL FRAMED SEPTIC TANK
LATRINE WITH INFILTRATION BED
(Option-05B)

JULY, 2023

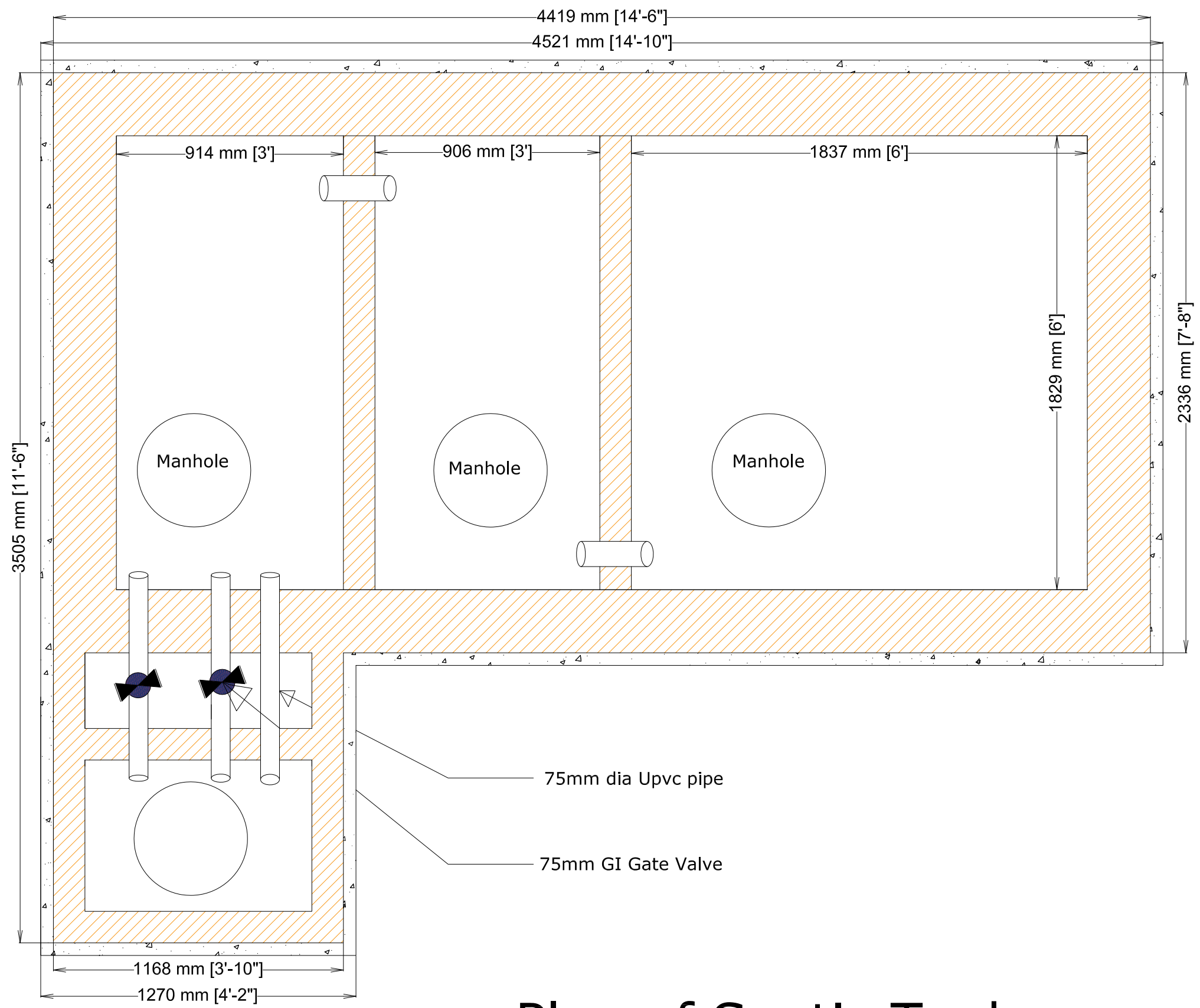
PREPARED By:

**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**



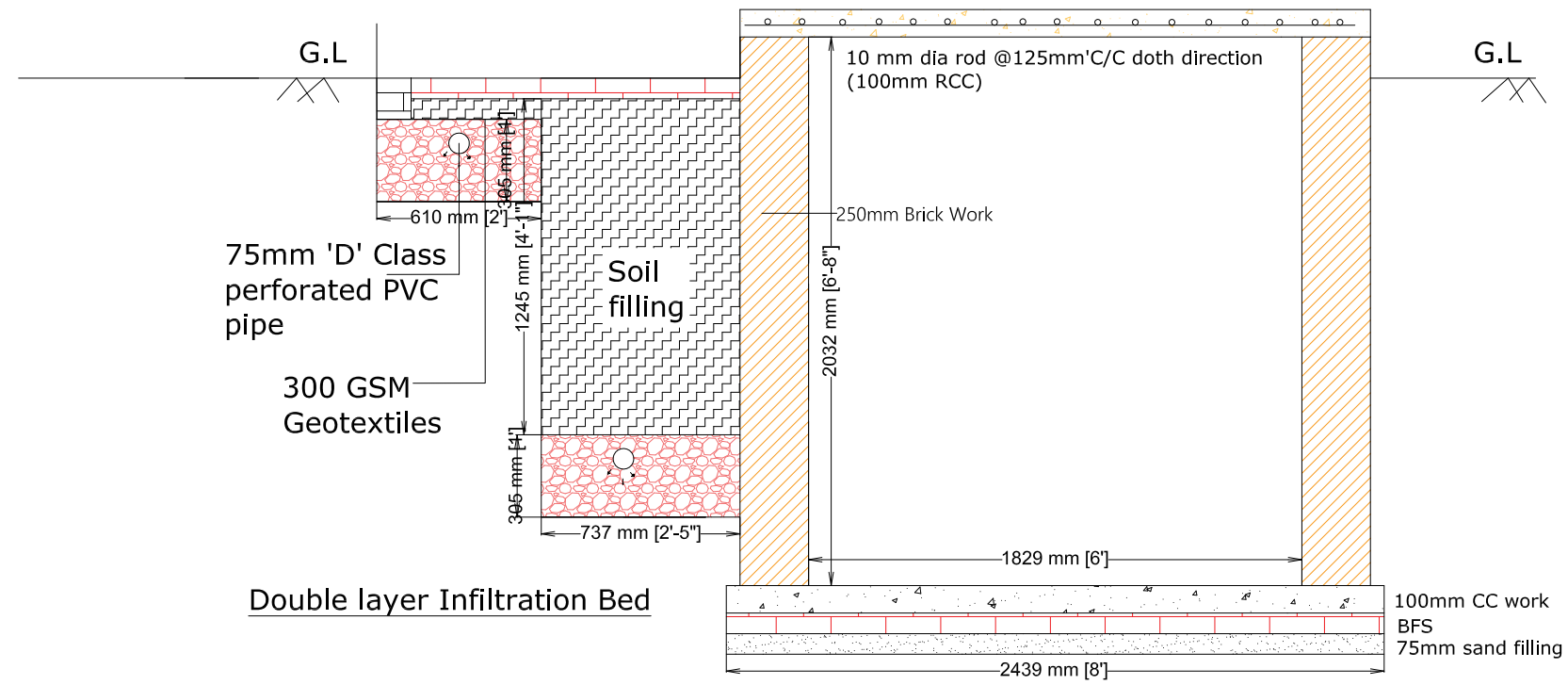
Plan of Septic Tank Latrine With Infiltration Bed

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed (Option-05B)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	01

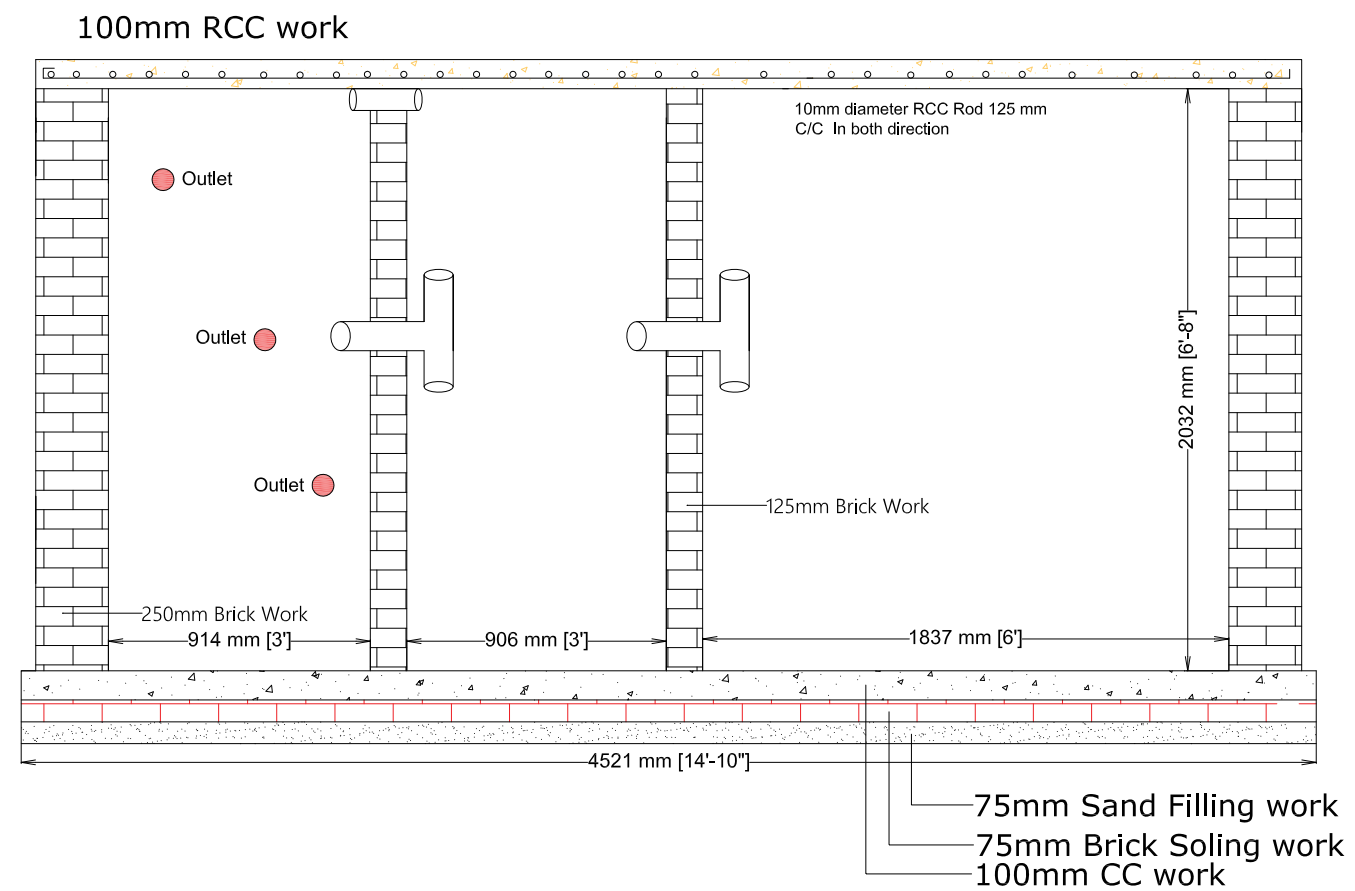


Plan of Septic Tank


	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed (Option-05B)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	02

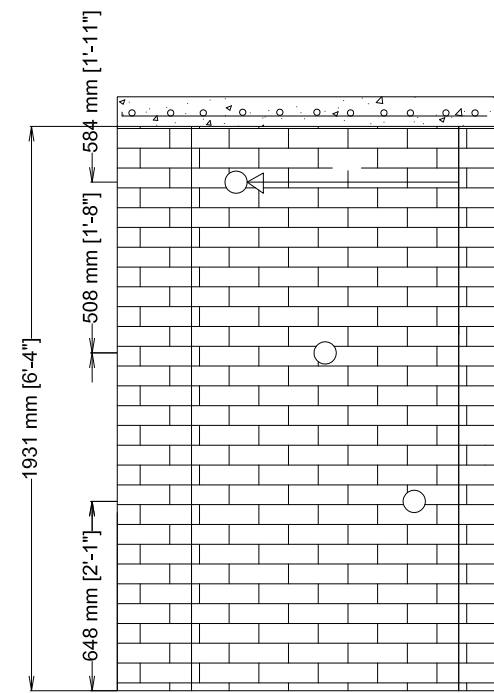


SECTION: A-A FOR SPETIC TANK LATRINE



SECTION OF X-X FOR SPETIC TANK LATRINE

Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
 Design and Drawing of Unified Latrine	Twin Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed (Option-05B)	Latrine Design Group	Section	July, 2023	DPHE Cox's Bazar	RRRC	03



75mm UPVC pipe section of Wall

75mm GI Gate Valve with GI Pipe

Infront wall of Septic Tank (3rd chamber)

100mm RCC slab, 10 mm dia rod @125mm C/C both direction

10 mm dia rod @125mmC/C both direction

G.L

G.L

300 GSM Geotextiles

75mm 'D' Class perforated PVC pipe

Soil filling

Inspection Well Section

100mm CC work
75mm Brick Soling work
75mm Sand Filling work

Double layer Infiltration Bed

SECTION: Y-Y FOR SPETIC TANK LATRINE



Project
Design and Drawing of Unified Latrine

Model:
Twin Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed (Option-05B)

Design by:
Latrine Design Group

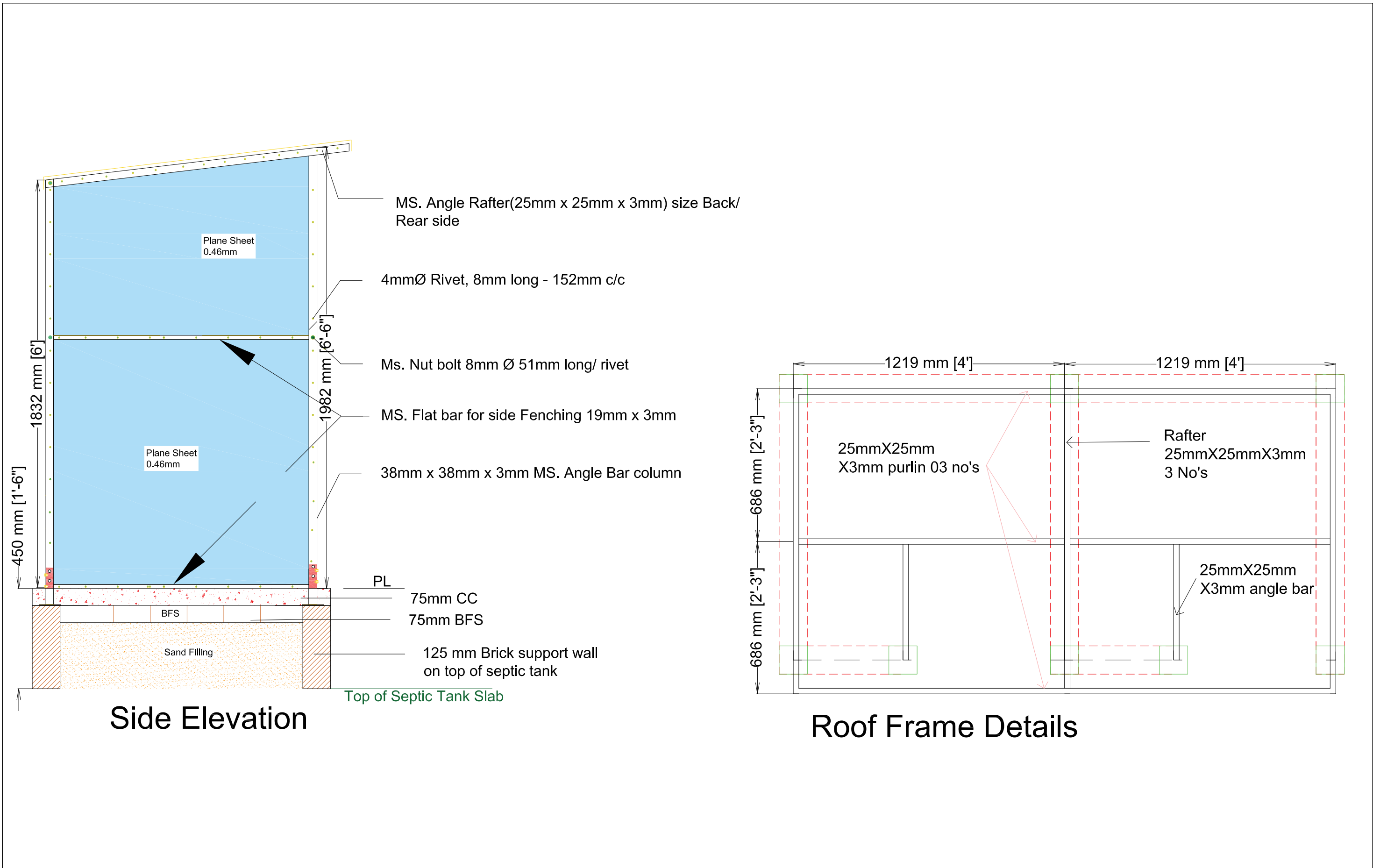
Drawing Title
Section

Date
July, 2023

Reviewed by
DPHE
Cox's Bazar

Approved by
RRRC

Page
04



	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed (Option-05B)	Latrine Design Group	Elevation & Frame Details	July, 2023	DPHE Cox's Bazar	RRRC	06

Bill of Quantities
Latrine Option-5B
Two Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
PART-A:Sub-structure						
1	Earth Excavation : Earth work in excavation in all kinds of soil for septic tank trenches including; providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and providing layout, removing necessary roots and plants, protecting and keeping the trench dry from rain/external water, stacking and levelling surrounding sites with excavated soil. All should be completed under the direct supervision and guidance of the Engineer in-charge, subject to agreed and locally available earth excavation methods. However, Engineer in-charge's approval shall not relieve the contractor of his responsibilities and obligations under the contract.	24.10	cum	259.00	6242	PWD Rates Schedule (2022)
2	Sand Filling : Sand filling (F.M. 0.5-0.8) in the septic Tank foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	0.89	cum	1,093.00	973	PWD Rates Schedule (2022)
3	Polyethylene Sheet : Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	10.56	sqm	150.00	1584	Local Market Price
4	Brick Soling : One layer of brick flat soling in Tank Foundation with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	10.56	sqm	515.00	5438	PWD Rates Schedule (2022)
5	Cement concrete Work : 4" Thick CC casting in base tank foundation [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	1.06	cum	7,817.00	8286	PWD Rates Schedule (2022)
6	10" Brick Wall : 10" Brick works in Foundation of wall of Septic tank with first class bricks in cement/sand mortar (1:6) including filling the interstices with mortar, raking out joints, cleaning and soaking the bricks at least for 24 hours and screening of sand before use, necessary scaffolding, curing at least for 7 days etc. all complete including cost of water, electricity and other charges (measurement to given as 250 mm width for one brick length). All work should be completed as per design and guidance of the Engineer in-charge.	6.35	cum	7,501.00	47647	PWD Rates Schedule (2022)
7	5" Brick Wall : 5" thick Septic Tank Compartment baffle wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	7.44	sqm	1,180.00	8779	PWD Rates Schedule (2022)
8	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Septic Tank at floor, inner surface and outer surface, finishing the corner, koba, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	61.91	sqm	297.00	18387	PWD Rates Schedule (2022)
9	Earth Filling : Earth filling in the trenches surrounding the masonry wall for Septic tank & soak well and up to the pre-defined formation level with 150 mm layers including proper leveling, watering and compaction as necessary and consolidating including local carriage each layer up to finished level including cost of all tools and equipment etc. all complete and accepted by the IOM Engineer in-charge.	5.40	cum	450.00	2430	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
10	Reinforced concrete cement works: RCC slabs with concrete (1:2:4) [cement, sand (F.M.1.2) and picked jhama chips] and M.S. deformed bar 10 mm and 6 mm, grade 40 billet) reinforcement of required size and length for all types of RCC work including straightening the rod, removing rust, cleaning, cutting, hooking, bending binding with supply of 22 B.W.G GI wire, screening, washing, mixing, laying, vibrator compaction and curing for at least 14 days including the supply of water, electricity and other charges and costs of tools and plants etc. All work complete as per drawing and instruction of the Engineer in-charge.					
	10a) Concrete (mix ratio 1:2:4)	1.03	cum	8,784.00	9048	PWD Rates Schedule (2022)
	10b) 10 mm dia deformed-rod	124.48	kg	110.00	13693	PWD Rates Schedule (2022)
	10c) Centering and shuttering for the slab casting including keeping provision of man-holes and covers by using of timber, bamboo and other necessary materials.	10.33	sqm	556.00	5743	Local Market Price
11	C.I. man hole cover : Supply, fitting and fixing of 550 mm dia C.I. man hole cover etc. all complete approved by the Engineer- in- charge.	3.00	each	1,869.00	5607	Local Market Price
		Sub Total Part- A =			133858	
	<u>PART-B: Infiltration Bed</u>					
12	Earth work: Excavation of earth for Infiltration trenches of size (11'x2'x1'ft)2 nos in all kinds of soils/stony layers and stacking excavated soils at a suitable place besides the well, etc. (Including cost of all materials, labor and transportation), complete as per instruction of Engineer-in-charge.	4.57	cum	259.00	1184	PWD Rates Schedule (2022)
13	Course aggregate (12mm to 18mm) : applying of Brick Chips the bottom(11'x2'x1'ft)2 nos in depth, all complete as per design and as per direction of Engineer in charge.	1.21	cum	5,300.00	6413	Local Market Price
14	Sand Filling : Supplying of soil filling the Top of Geotextile , all complete as per design and as per direction of Engineer in charge.	3.47	cum	1,093.00	3793	PWD Rates Schedule (2022)
15	3" Elbow : 3" Elbow (D class)	3	each	300.00	900	Local Market Price
16	3" Tee : 3" Tee (D class)	5	each	300.00	1500	Local Market Price
17	3" Gate Valve : 3" GI Gate Valve	2	each	350.00	700	Local Market Price
18	UPVC pipe: (3" dia D class UPVC pipe) total length of pipe is 30ft, and total pipe must be Hole & 3" Gass pipe 12 ft for monitoring pipe	12	RM	300.00	3600	Local Market Price
19	Geotextile: 300 GSM Geotextiles total length 30 ft & size of Geotextile bag (4'x30')	20	sqm	250.00	5000	Local Market Price
		Sub Total Part- B =			23089	
	<u>PART-C: Superstructure</u>					
19	5" Brick Wall : 5" thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	2.93	sqm	1,180.00	3458	PWD Rates Schedule (2022)
20	Sand Filling : Sand filling (F.M. 0.5-0.8) in the septic Tank foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	1.34	cum	1,093.00	1463	PWD Rates Schedule (2022)
21	Brick Soling : One layer of brick flat soling in Tank Foundation with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	2.97	sqm	515.00	1531	PWD Rates Schedule (2022)
22	Cement concrete Work: CC casting in Floor[recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	1.22	cum	7,817.00	9559	PWD Rates Schedule (2022)
23	Angle Bar : MS angle short column will be placed in 4 (Four)corner; fixed and welded with anchor plate in middle position. Superstructure columns will joint with short column by 8mm dia Nut-bolts. Angle size 38mm X 38mm X 3mm and 305mm (1'-0") Hight.	3.79	kg	88	333	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
24	Angle Bar : MS angle column will be placed 2 (Two) corner side of the front side and rear ,medill portion and door 10mm Nut- bolts joint with those columns and 305mm (1'-0") long MS short column and Anchor bolt by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 1981mm (6'-6") Hight.	34.59	kg	88	3044	Local Market Price
25	MS angle Rafter and Purlin will be placed for fixing the roof and will be placed along door and backside parallel. 4nos. Corner column will be joint with the rafter by 8mm dia nut bolts. Angle size 25mm (1") X 25mm (1") X 3mm and 1372mm (4'-6") long	14.87	kg	88	1309	Local Market Price
26	MS Flat bar will be placed for foundation 6nos. MS Flat bar will used. Falt bar (100mm*100*4mm)	1.88	kg	88	165	Local Market Price
27	MS Flat bar will be placed for Front side, Rear side, Left & Right side fencing and 3nos.MS Flat bar will use in each side fencing. One will be placed 152mm (6") above of floor; one in middle and other will be placed in top from 1803mm (5'-11") floor height. All joint will be joint by 8mm dia Nut- bolts with Columns.Flat Bar size 19mm X 3mm and 1219mm (4'-0") long.	11.35	kg	88	999	Local Market Price
28	Iron blue color sheet(0.46mm thick) will be placed in front,Rear,Left & Right side with fencing frame. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion.	18.10	sqm	688.64	12468	Local Market Price
29	2nos. Iron white color sheet will be placed in roof above the purlin. One will joint form backside to middle portion, and another will be placed from front to middle portion.	6.62	sqm	688.64	4562	Local Market Price
31	3nos. MS butt hinge will set with door and column. One will set 229mm (9") above from bellow frame; one will set 1067mm (3'-6") above from bellow frame and other will be set 100mm (4") 8mm ø form top edge frame.	6.00	each	100.00	600	Local Market Price
32	Rivet will be placed for iron sheet fixing and all rivet will be placed 152mm (6") C/C.Rivet size 4mm dia	400.00	pcs	2	800	Local Market Price
33	Rivet will be placed for iron sheet fixing and all rivet will be placed Rivet size 6.2mm dia	120.00	pcs	3	300	Local Market Price
34	Nut Bolt 2" dia 10mm	40.00	pcs	5	200	PWD Rates Schedule (2022)
35	6" Handle with Hasbolt made of iron	4.00	nos	100	400	PWD Rates Schedule (2022)
36	18 BWG GI Wire Net for Ventilation	0.5	sqm	860	430	Local Market Price
37	Coating : Coating with two layer red oxide and blue color Enamel coat.	20.00	sqm	194	3874	PWD Rates Schedule (2022)
38	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Latrine wall, floor, inner surface and outer surface, finishing the corner, kobla, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	5.87	sqm	297.00	1745	PWD Rates Schedule (2022)
39	Visibility Plaque : Supplying fitting and fixing of visibility plaque with the latrine wall including specified messages and logos, the plaque should be made of 12"X8" Tiles and painting on it as per given design.	1.00	L.S	500	500	Local Market Price
40	Steel Frame fabrication and installation charge	1.00		10000	10000	Local Market Price
41	600mmX600mm inspection box	1.00	LS	4000	4000	Local Market Price
				Sub Total Part- B =		
				61738		
<u>PART-D: SANITARY work & Ventilation</u>						
33	Pan & Foot Rest : Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest including proper levelling of floor.	2.00	each	450	900	Local Market Price
34	4" uPVC pipe : Supply, fitting & fixing of 100mm dia uPVC pipe thi,3mm thickness good quality to drain excreta to the sludge storage tank.	9.00	RM	450	4050	Local Market Price
35	4" uPVC Tee : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	4.00	each	400	1600	Local Market Price
36	4" uPVC L-bow : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	3.00	each	250	750	Local Market Price
37	4" uPVC Long Trap : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	2.00	each	350	700	Local Market Price
				Sub Total Part- D =		
				8000		
38	<u>PART-E: Other Supplies & Accessories fitting, fixing & supplying</u>					

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
a	305mm long Tower Bolt	6	each	120	720	Local Market Price
b	Lubricant	0.2	Kg	500	100	Local Market Price
		Sub Total Part- E =			820	
Total Quoted Price (A+B+C+D+E)					227,505	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
Latrine Design Group

Reviewed by :
DPHE, Cox's Bazar

Approved by :
Office of Refugee Relief and Repatriation
Commissioner (RRRC), Cox's Bazar

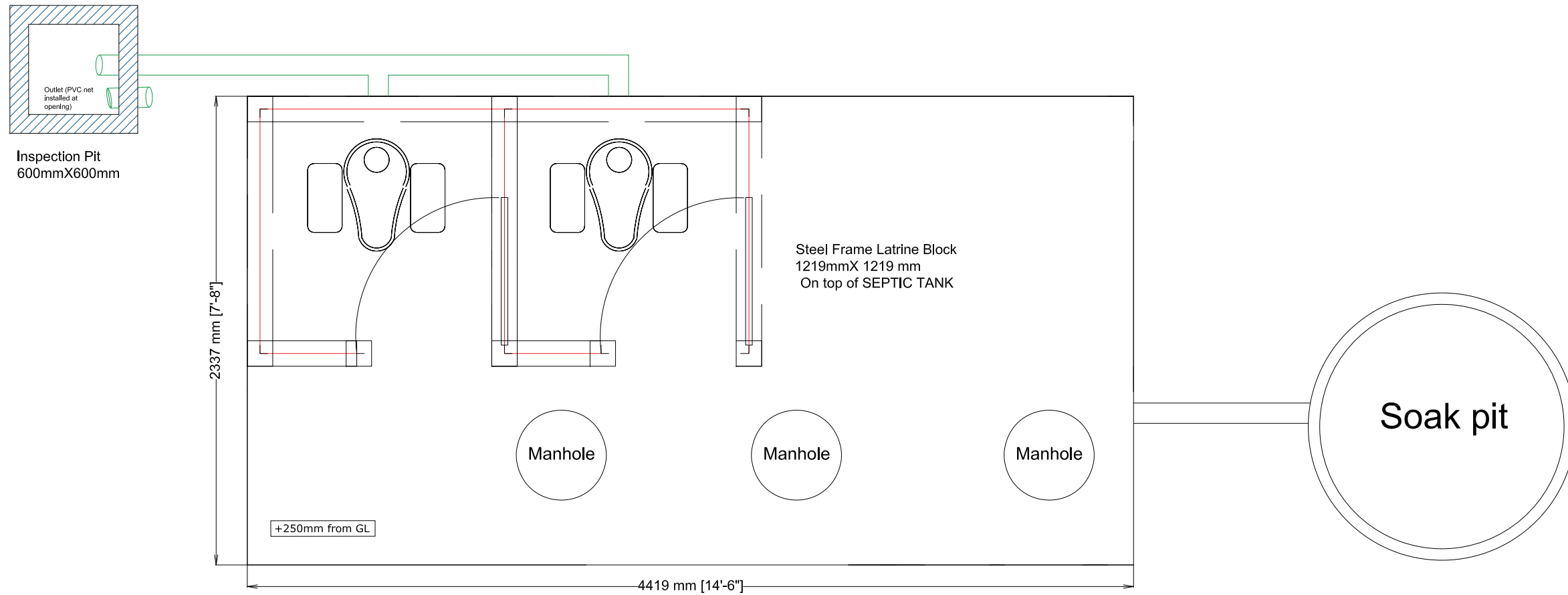


PROJECT
DESIGN AND DRAWING of UNIFIED LATRINE
TWIN CUBICLES STEEL FRAMED SEPTIC TANK
LATRINE WITH SOAK WELL
(Option-06B)

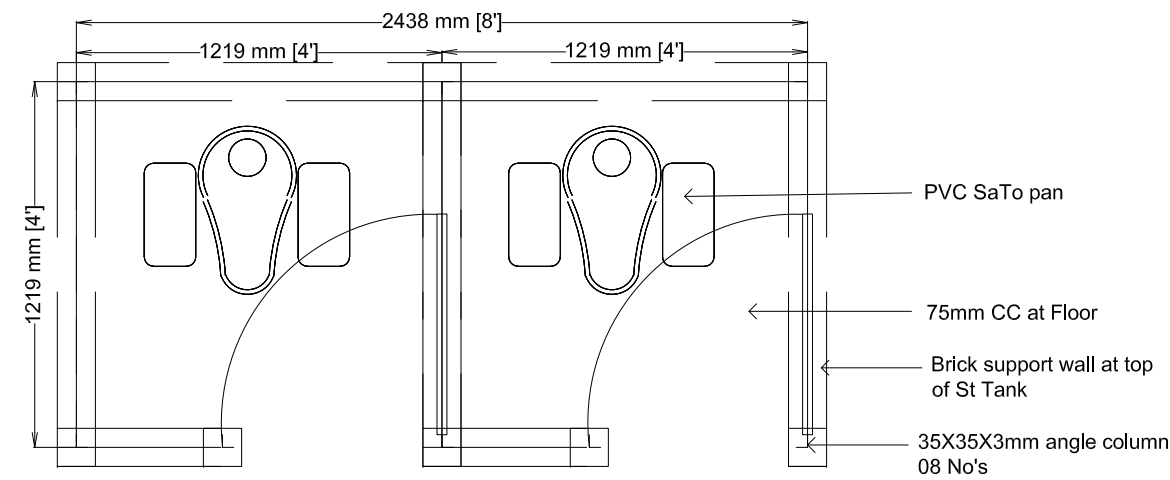
JULY, 2023

PREPARED By:

LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR

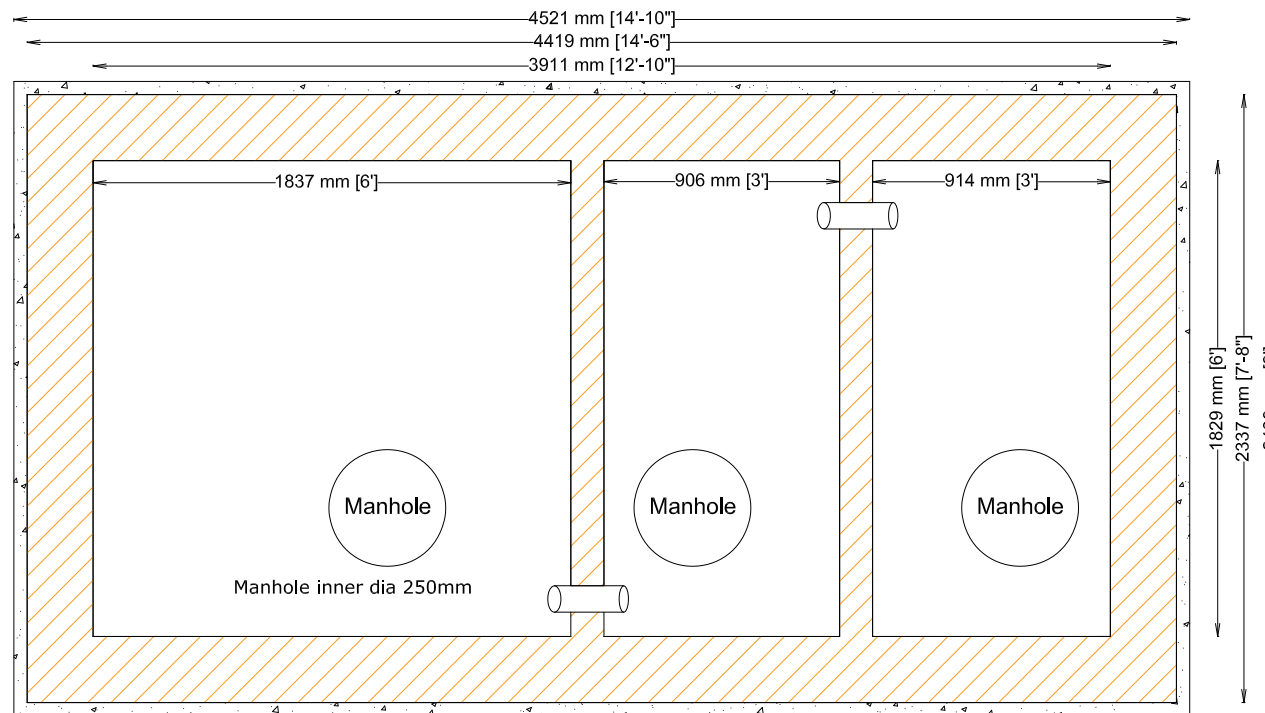


**Plan of Septic Tank Latrine (Option 1B) -
2 cubicle steel frame with soak well**

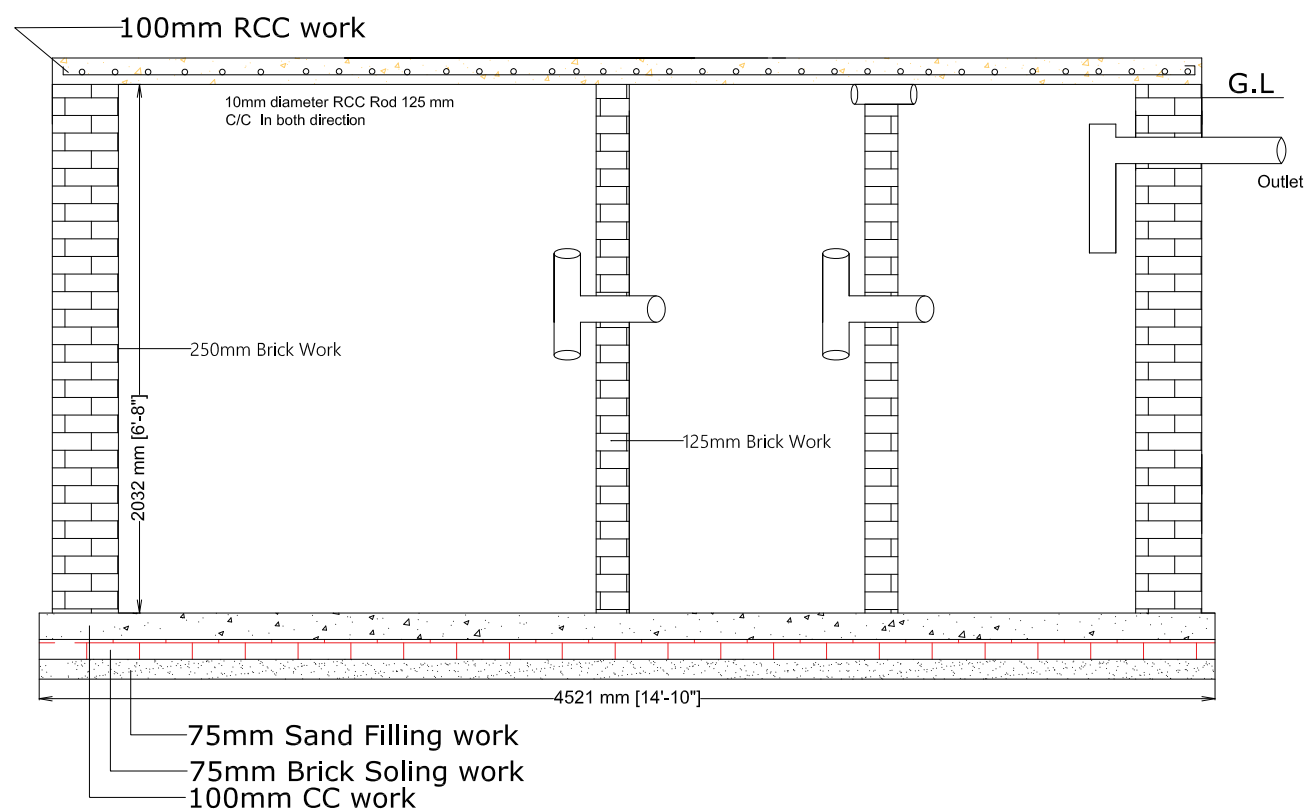


Plan of Septic Tank Latrine (Option 1B)

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Steel Framed Septic Tank Latrine with Soak Well (Option-06B)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	01

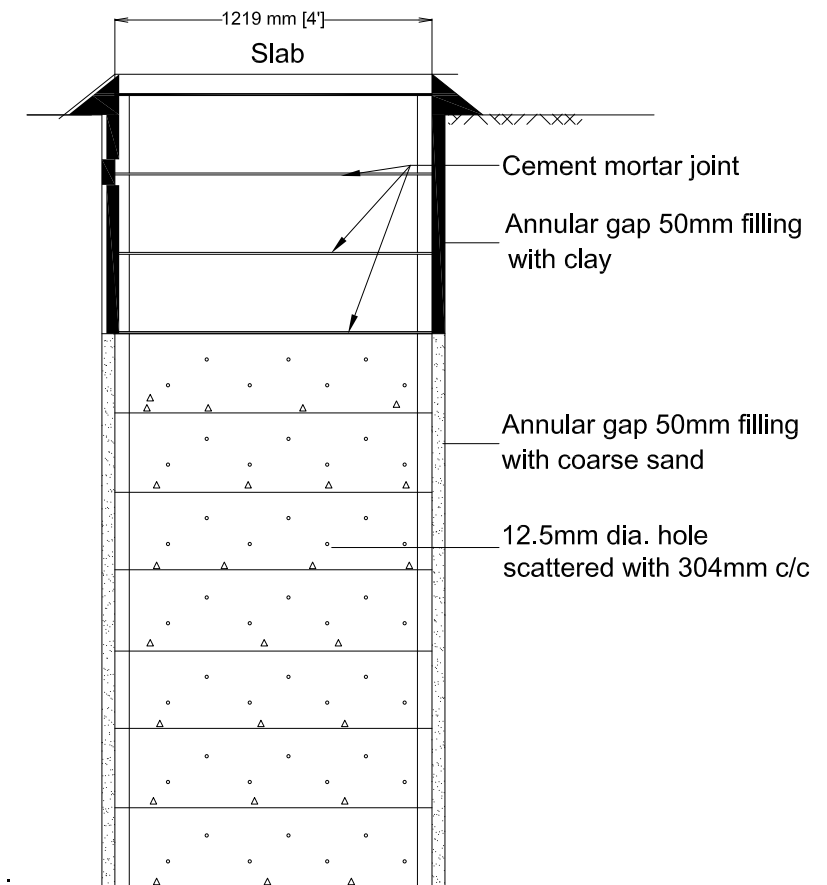


Septic Tank Layout

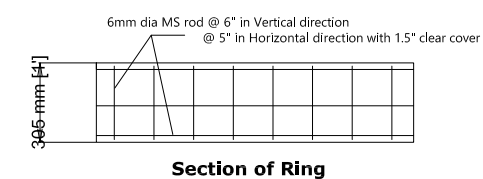


SECTION FOR SPETIC TANK LATRINE

RCC ring (1:2:4) - Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal) , with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance) .



RCC Ring Section

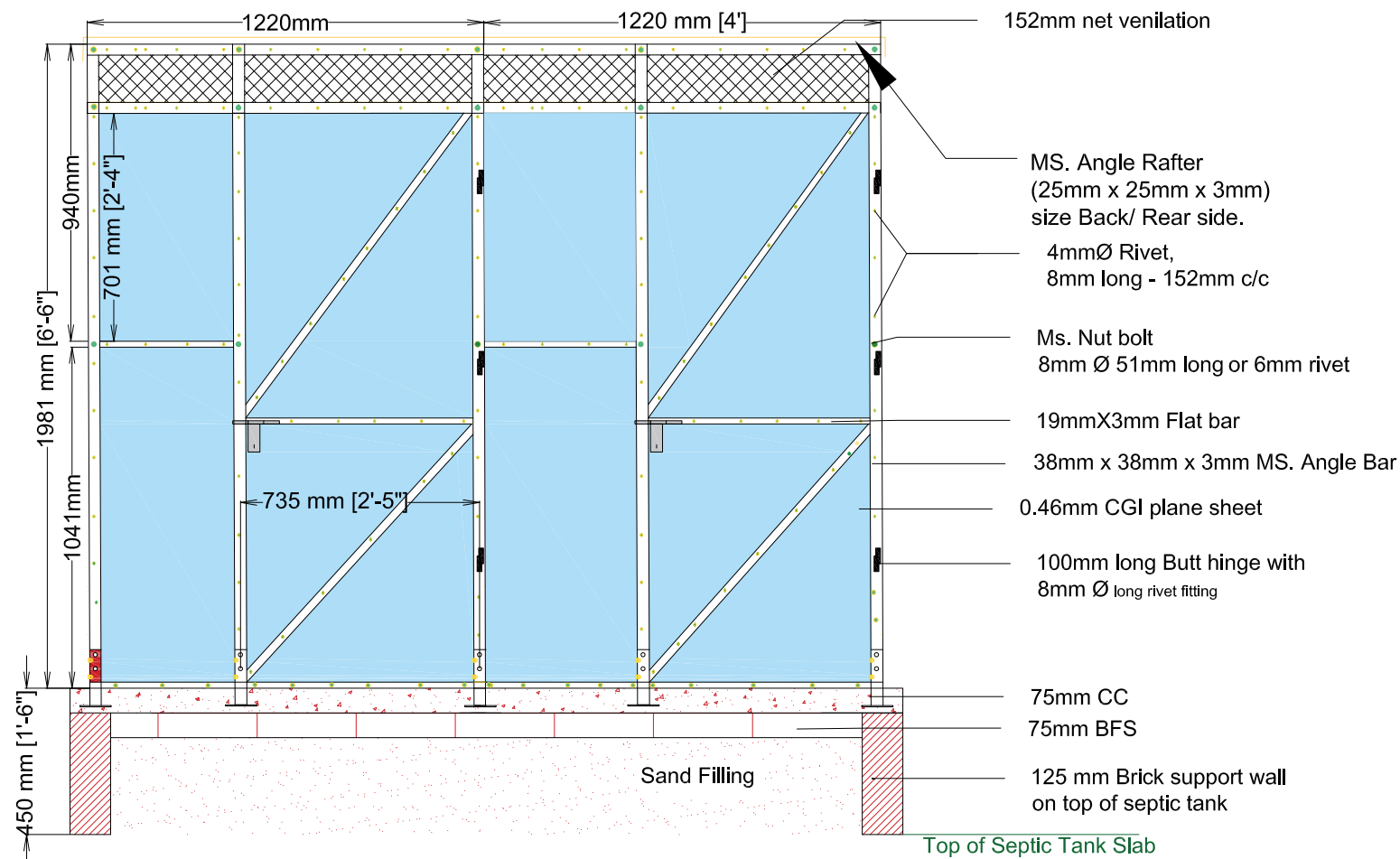


RCC Ring (Option 1)

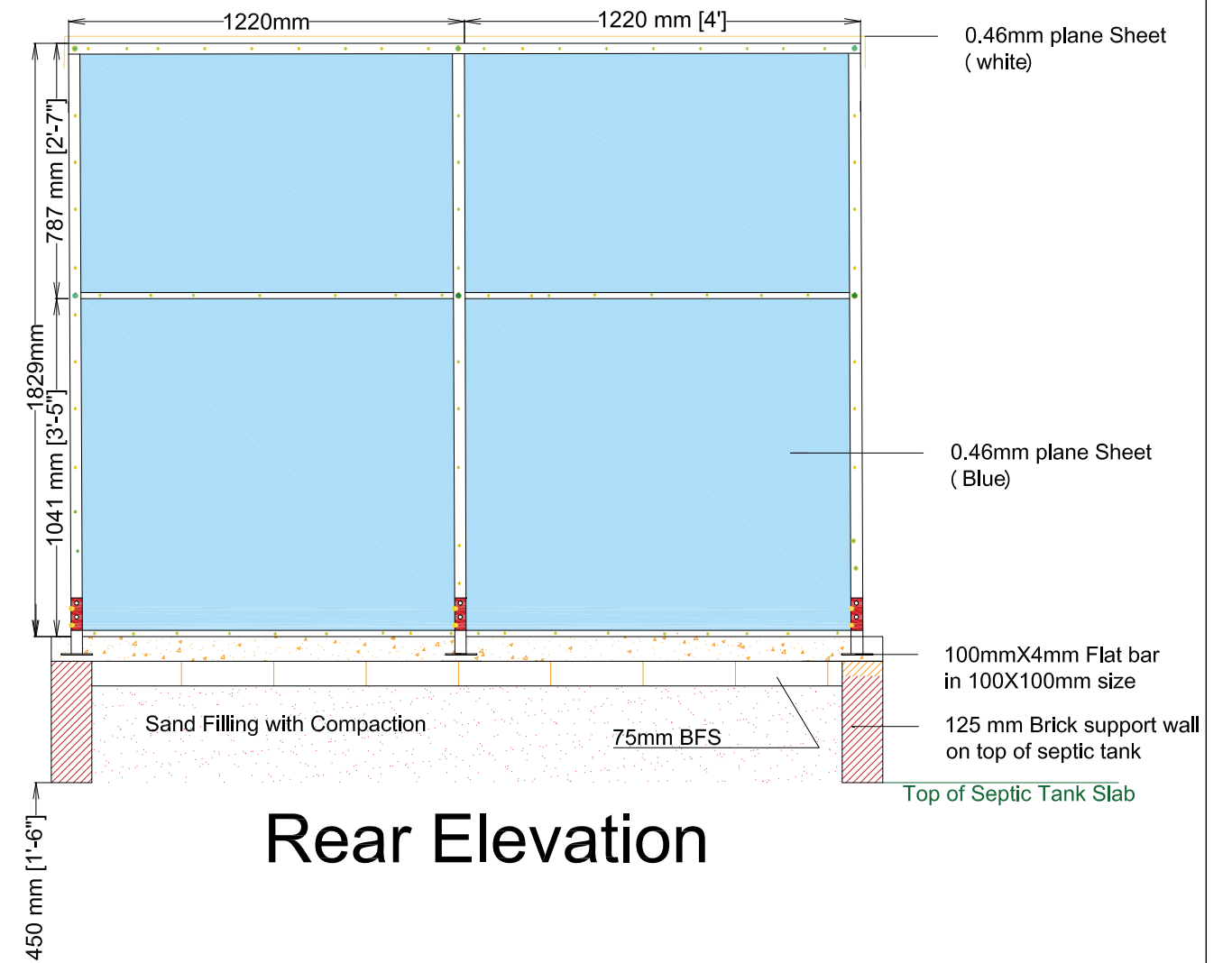
RCC Ring (Option 2)



Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Twin Cubicles Steel Framed Septic Tank Latrine with Soak Well (Option-06B)	Latrine Design Group	Section	July, 2023	DPHE Cox's Bazar	RRRC	02



Front Elevation



Rear Elevation

Additional Note:

*No welding on the structure. All joint will be with nut bolts or rivets.

*6mm 18mm dia rivet will be used in all angle/flat bar joints

*SS door lock

Door: outer frame 25X25X3mm and diagonal support with 19X3mm flat bar
 1 Hashbolt will be placed outside and 02 will be placed inside (1.5' & 2.5' from bottom)



Project
 Design and Drawing of
 Unified Latrine

Model:
 Twin Cubicles Steel Framed Septic Tank
 Latrine with Soak Well (Option-06B)

Design by:
 Latrine Design Group

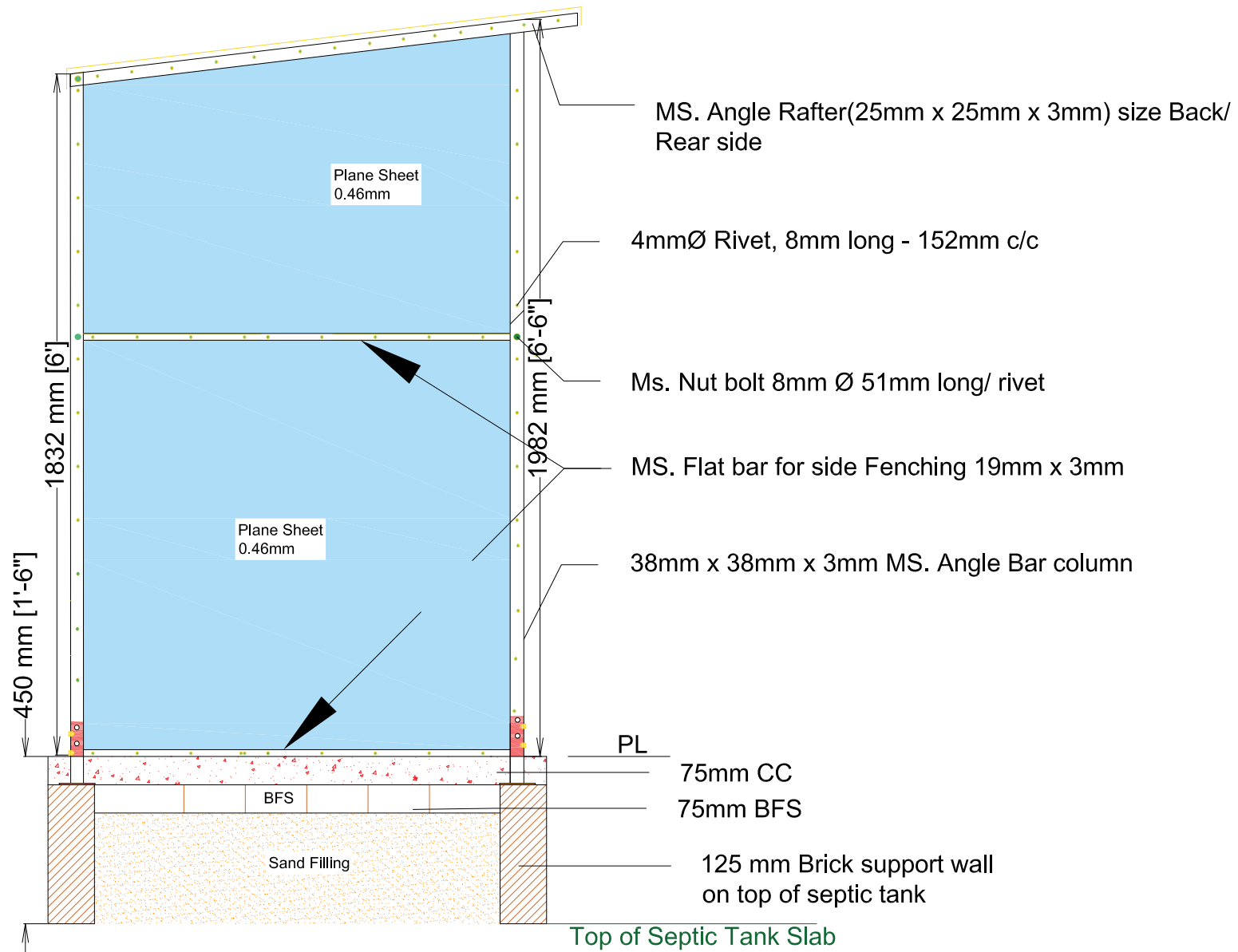
Drawing Title
Elevation

Date
July, 2023

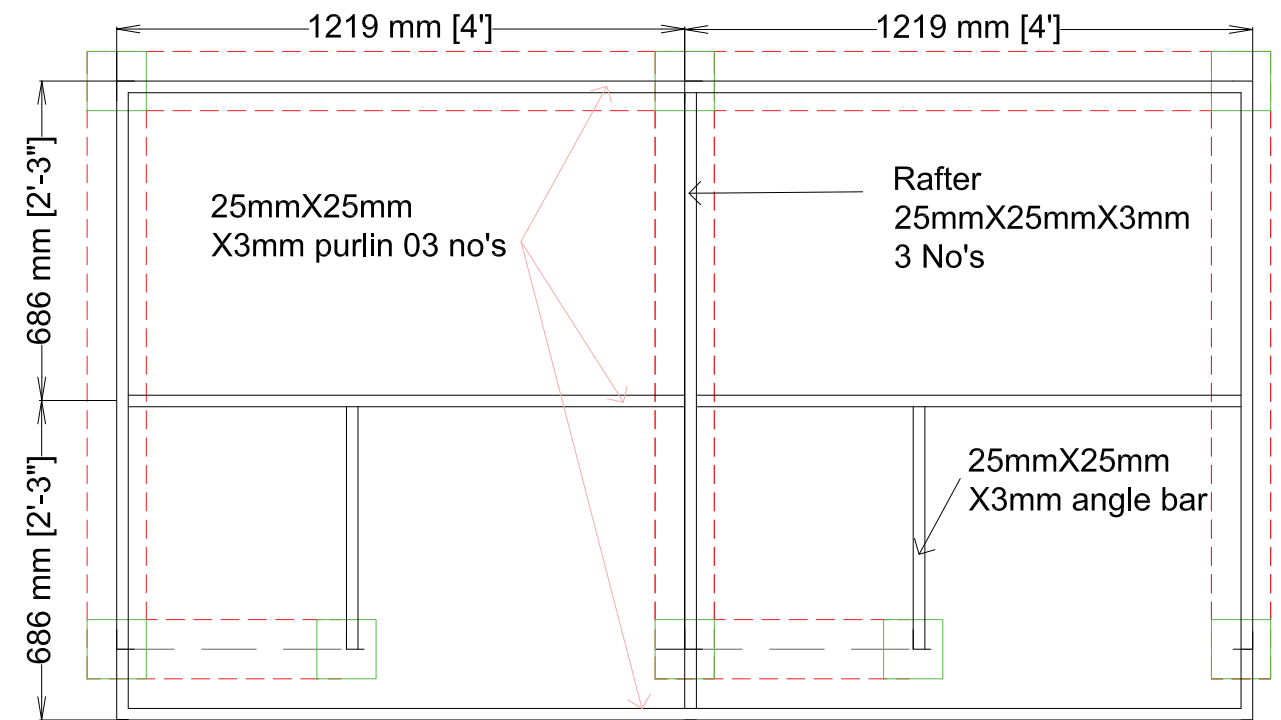
Reviewed by
**DPHE
 Cox's Bazar**

Approved by
RRRC

Page
03



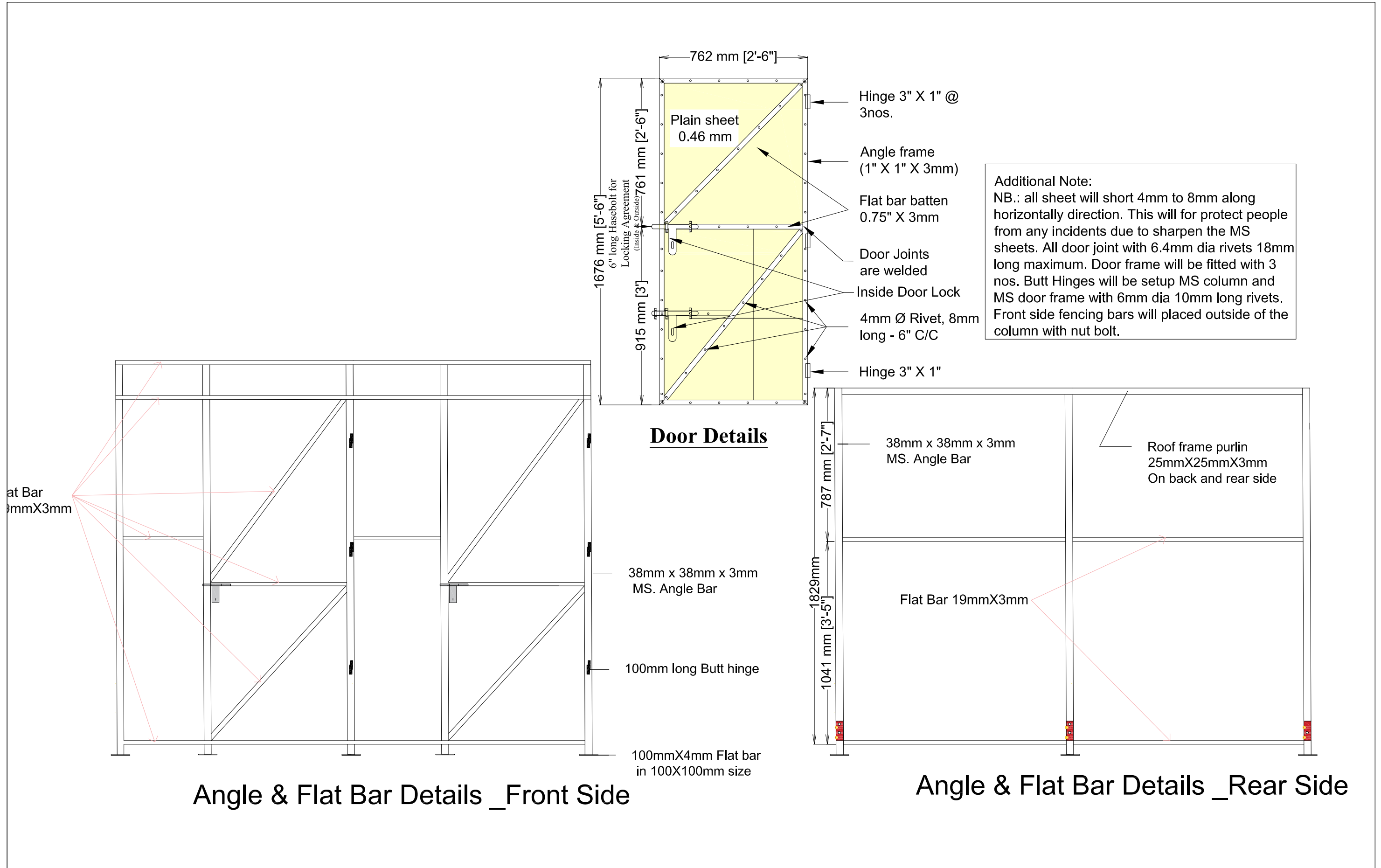
Side Elevation



Roof Frame Details



Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Twin Cubicles Steel Framed Septic Tank Latrine with Soak Well (Option-06B)	Latrine Design Group	Elevation & Frame Details	July, 2023	DPHE Cox's Bazar	RRRC	04



	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Twin Cubicles Steel Framed Septic Tank Latrine with Soak Well (Option-06B)	Latrine Design Group	Angle, Door & Flat Bar Details	July, 2023	DPHE Cox's Bazar	RRRC	05

Bill of Quantities

Latrine Option-6B

Two Cubicles Steel Framed Septic Tank Latrine with Soak Well

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
PART-A:Sub-structure						
1	Earth Excavation : Earth work in excavation in all kinds of soil for septic tank trenches including; providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and providing layout, removing necessary roots and plants, protecting and keeping the trench dry from rain/external water, stacking and levelling surrounding sites with excavated soil. All should be completed under the direct supervision and guidance of the Engineer in-charge, subject to agreed and locally available earth excavation methods. However, Engineer in-charge's approval shall not relieve the contractor of his responsibilities and obligations under the contract.	24.10	cum	259.00	6242	PWD Rates Schedule (2022)
2	Sand Filling : Sand filling (F.M. 0.5-0.8) in the septic Tank foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	0.89	cum	1,093.00	973	PWD Rates Schedule (2022)
3	Polyethylene Sheet : Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	10.56	sqm	150.00	1584	Local Market Price
4	Brick Soling : One layer of brick flat soling in Tank Foundation with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	10.56	sqm	515.00	5439	PWD Rates Schedule (2022)
5	Cement concrete Work : 4" Thick CC casting in base tank foundation [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	1.06	cum	7,817.00	8256	PWD Rates Schedule (2022)
6	10" Brick Wall : 10" Brick works in Foundation of wall of Septic tank with first class bricks in cement/sand mortar (1:6) including filling the interstices with mortar, raking out joints, cleaning and soaking the bricks at least for 24 hours and screening of sand before use, necessary scaffolding, curing at least for 7 days etc. all complete including cost of water, electricity and other charges (measurement to given as 250 mm width for one brick length). All work should be completed as per design and guidance of the Engineer in-charge.	6.35	cum	7,501.00	47647	PWD Rates Schedule (2022)
7	5" Brick Wall : 5" thick Septic Tank Compartment baffle wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	7.44	sqm	1,180.00	8775	PWD Rates Schedule (2022)
8	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Septic Tank at floor, inner surface and outer surface, finishing the corner, koba, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	61.91	sqm	297.00	18386	PWD Rates Schedule (2022)
9	Earth Filling : Earth filling in the trenches surrounding the masonry wall for Septic tank & soak well and up to the pre-defined formation level with 150 mm layers including proper leveling, watering and compaction as necessary and consolidating including local carriage each layer up to finished level including cost of all tools and equipments etc. all complete and accepted by the IOM Engineer in-charge.	5.40	cum	450.00	2429	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
10	Reinforced concrete cement works: RCC slabs with concrete (1:2:4) [cement, sand (F.M.1.2) and picked jhama chips] and M.S. deformed bar 10 mm and 6 mm, grade 40 billet) reinforcement of required size and length for all types of RCC work including straightening the rod, removing rust, cleaning, cutting, hooking, bending binding with supply of 22 B.W.G GI wire, screening, washing, mixing, laying, vibrator compaction and curing for at least 14 days including the supply of water, electricity and other charges and costs of tools and plants etc. All work complete as per drawing and instruction of the Engineer in-charge.					
	10a) Concrete (mix ratio 1:2:4)	1.03	cum	8,784.00	9073	PWD Rates Schedule (2022)
	10b) 10 mm dia deformed-rod	124.48	kg	110.00	13693	PWD Rates Schedule (2022)
	10c) Centering and shuttering for the slab casting including keeping provision of man-holes and covers by using of timber, bamboo and other necessary materials.	10.33	sqm	556.00	5743	Local Market Price
11	C.I. man hole cover : Supply, fitting and fixing of 550 mm dia C.I. man hole cover etc. all complete approved by the Engineer- in- charge.	3.00	each	1,869.00	5607	Local Market Price
		Sub Total Part- A =			133848	
<u>PART-B: Soak well</u>						
12	Earth Excavation : Earth work in excavation of Foundation for Soak pit carrying and disposing of all Excavated materials at a safe distance designated by the EIC, all types of soil except rocky gravelly, organic maintains proper slope, disposing of all back filling of sites of all excavated materials to a safe distance back filling of sites of original level etc, all complete to the direction	4.69	cum	259.00	1214	PWD Rates Schedule (2022)
13	RCC Ring: RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal), with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance.					
	14a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	0.64	cum	8,996	5714	PWD Rates Schedule (2022)
	14b) 6 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	44.31	kg	110.00	4874	PWD Rates Schedule (2022)
	14c) Carrying Cost	10.00	each	400.00	4000	Local Market Price
14	RCC Slab: Supply, fittings & fixing of pre-cast ring cover 4 ft dia size, thickness-3" made of 1:2:4 mixing ratio, 8mm dia ms rod (60G) 5" C/C both way as per the drawing and instruction of EIC.					
	12a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	0.29	cum	8,784.00	2567	PWD Rates Schedule (2022)
	12b) 8 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	3.72	kg	110.00	410	PWD Rates Schedule (2022)
	12c) Carrying Cost	1.00	each	400.00	400	Local Market Price
15	4" PVC pipe: Supply, fitting & fixing of 100 mm dia D Class PVC Connection pipe connected to Septic Tank to Soak pit approved and accepted by the Engineer in-charge	5.00	RM	300.00	1500	Local Market Price
		Sub Total Part- B =			20678	
<u>PART-C: Superstructure</u>						
16	5" Brick Wall : 5" thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	2.93	sqm	1,180.00	3458	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
17	Sand Filling : Sand filling (F.M. 0.5-0.8) in the septic Tank foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instructiuon of engineer-in-charge.	1.34	cum	1,093.00	1463	PWD Rates Schedule (2022)
18	Brick Soling : One layer of brick flat soling in Tank Foundation with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	2.97	sqm	515.00	1531	PWD Rates Schedule (2022)
19	Cement concrete Work : CC casting in Foor[recomanded mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	1.22	cum	7,817.00	9559	PWD Rates Schedule (2022)
20	Angle Bar : MS angle short column will be placed in 4 (Four)corner; fixed and welded with anchor plate in middle position. Superstructure columns will joint with short column by 8mm dia Nut-bolts. Angle size 35mm X 35mm X 3mm and 305mm (1'-0") Hight.	3.79	kg	88	333	Local Market Price
21	Angle Bar : MS angle column will be placed 2 (Two) corner side of the front side and rear ,medill portion and door 10mm Nut- bolts joint with those columns and 305mm (1'-0") long MS short column and Anchor bolt by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 1981mm (6'-6") Hight.	34.59	kg	88	3044	Local Market Price
22	Angle Bar : MS angle Rafter and Purlin will be placed for fixing the roof and will be placed along door and backside parallel. 4nos. Corner column will be joint with the rafter by 8mm dia nut bolts. Angle size 25mm (1") X 25mm (1") X 3mm and 1372mm (4'-6") long	14.87	kg	88	1309	Local Market Price
23	MS Flat bar will be placed for foundation 6nos. MS Flat bar will used. Falt bar (100mm*100*4mm)	1.88	kg	88	166	Local Market Price
24	MS Flat bar will be placed for Front side, Rear side, Left & Right side fencing and 3nos.MS Flat bar will use in each side fencing. One will be placed 152mm (6") above of floor; one in middle and other will be placed in top from 1803mm (5'-11") floor height. All joint will be joint by 8mm dia Nut- bolts with Columns.Flat Bar size 19mm X 3mm and 1219mm (4'-0") long.	11.35	KG	88	998	Local Market Price
25	Iron blue color sheet(0.46mm thick) will be placed in front,Rear,Left & Right side with fencing frame. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion.	18.10	sqm	688.64	12468	Local Market Price
26	2nos. Iron white color sheet will be placed in roof above the purlin. One will joint form backside to middle portion, and another will be placed from front to middle portion.	6.62	sqm	688.64	4562	Local Market Price
27	3nos. MS butt hinge will set with door and column. One will set 229mm (9") above from bellow frame; one will set 1067mm (3'-6") above from bellow frame and other will be set 100mm (4") 8mm ø form top edge frame.	6.00	each	100.00	600	Local Market Price
28	Rivet will be placed for iron sheet fixing and all rivet will be placed 152mm (6") C/C.Rivet size 4mm dia	400.00	pcs	2	800	Local Market Price
29	Rivet will be placed for iron sheet fixing and all rivet will be placed Rivet size 6.2mm dia	120.00	pcs	3	300	Local Market Price
30	Nut Bolt 2" dia 10mm	40.00	pcs	5	200	PWD Rates Schedule (2022)
31	6" Handle with Hasbolt made of iron	4.00	nos	100	400	PWD Rates Schedule (2022)
32	18 BWG GI Wire Net for Ventilation	0.5	sqm	860	430	Local Market Price
33	Coating : Coating with two layer red oxide and blue color Enamel coat.	20.00	sqm	194	3874	PWD Rates Schedule (2022)
34	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Latrine wall, floor, inner surface and outer surface, finishing the corner, kobla, wall edges and top-surface of wall. the wark includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	5.87	sqm	297.00	1745	PWD Rates Schedule (2022)
35	Visibility Plaque : Supplying fitting and fixing of visibility plaque with the latrine wall including specified messages and logoes, the plaque should be made of 12"X8" Tiles and painting on it as per given design.	1.00	L.S	500	500	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
36	Steel Frame fabrication and installation charge	1.00		10000	10000	Local Market Price
37	600mmX600mm inspection box	1.00	LS	4000	4000	Local Market Price
		Sub Total Part- B =			61738	
<u>PART-D: SANITARY work & Ventilation</u>						
38	Pan & Foot Rest: Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest including proper levelling of floor.	2.00	each	450	900	Local Market Price
39	4" uPVC pipe: Supply, fitting & fixing of 100mm dia uPVC pipe thi,3mm thickness good quality to drain excreta to the sludge storage tank.	9.00	RM	450	4050	Local Market Price
40	4" uPVC Tee : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	4.00	each	400	1600	Local Market Price
41	4" uPVC L-bow : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	3.00	each	250	750	Local Market Price
42	4" uPVC Long Trap : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	2.00	each	350	700	Local Market Price
		Sub Total Part- D =			8000	
<u>PART-E: Other Supplies & Accessories fitting, fixing & supplying</u>						
a	305mm long Tower Bolt	6	each	120	720	Local Market Price
b	Lubricant	0.2	Kg	500	100	Local Market Price
		Sub Total Part- E =			820	
Total Quoted Price (A+B+C+D+E)=					225,084	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
Latrine Design Group
ISCG WASH Sector, Cox's Bazar

Reviewed by :
DPHE, Cox's Bazar

Approved by :
Office of Refugee Relief and Repatriation
Commissioner (RRRC), Cox's Bazar



PROJECT

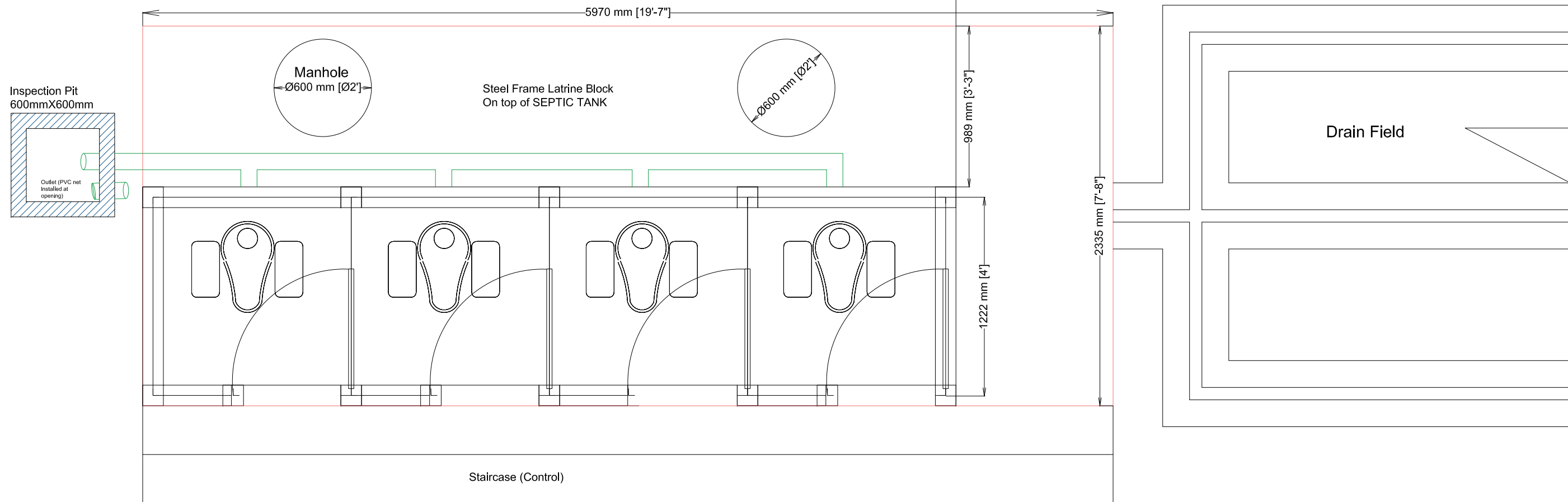
DESIGN AND DRAWING of UNIFIED LATRINE

**FOUR CUBICLES STEEL FRAMED SEPTIC TANK
LATRINE WITH INFILTRATION BED
(Option-07B)**

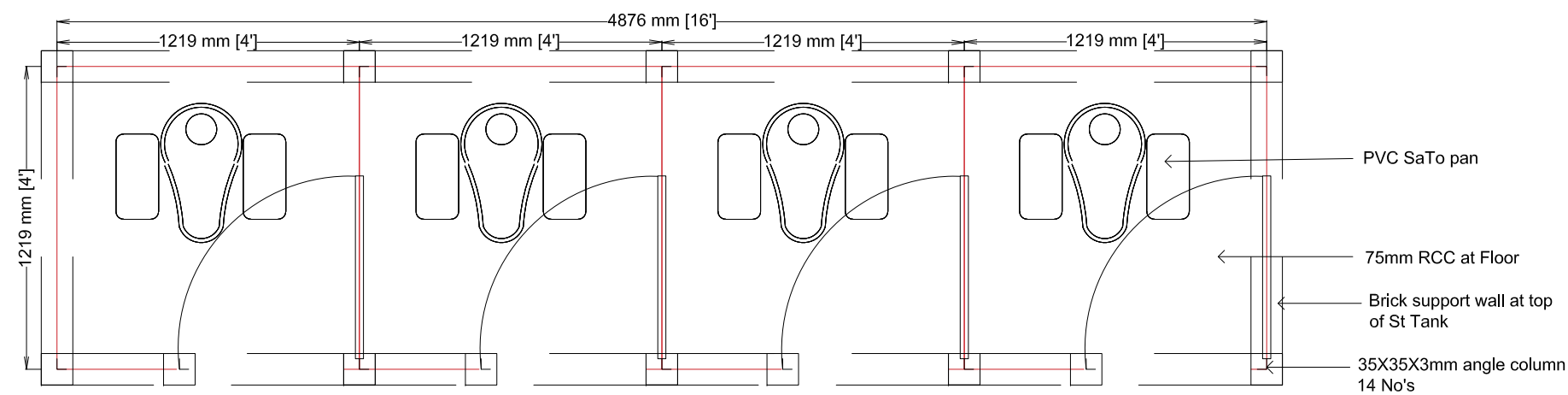
JULY, 2023

PREPARED By:

**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**

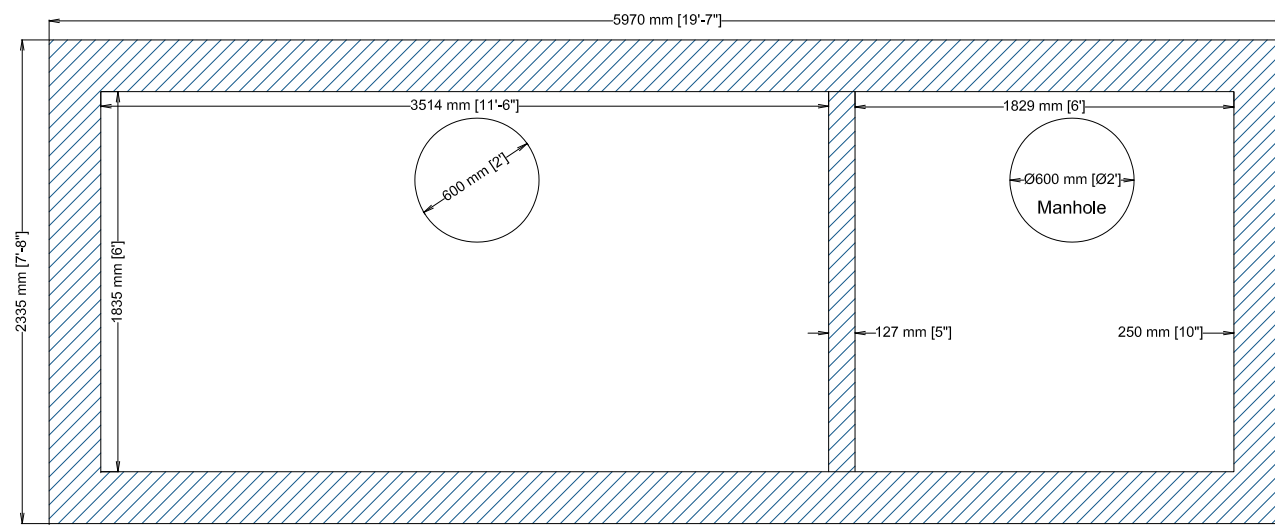


Plan of Septic Tank Latrine (Option 3B) - 4 cubicle steel frame with soak well

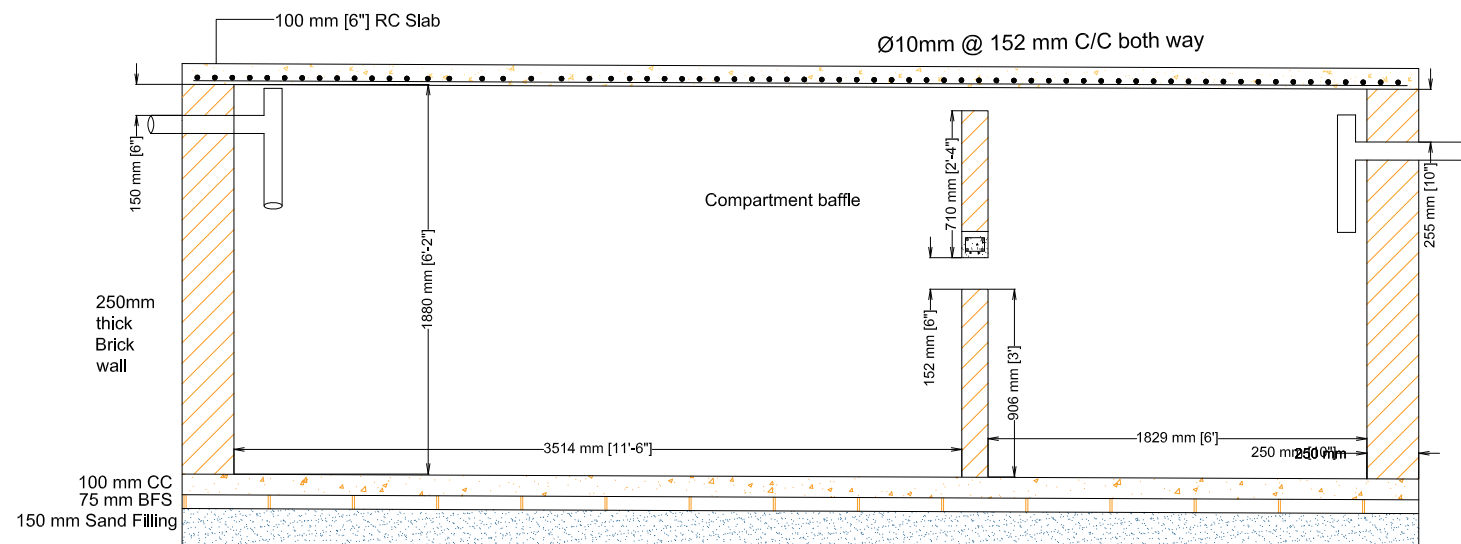
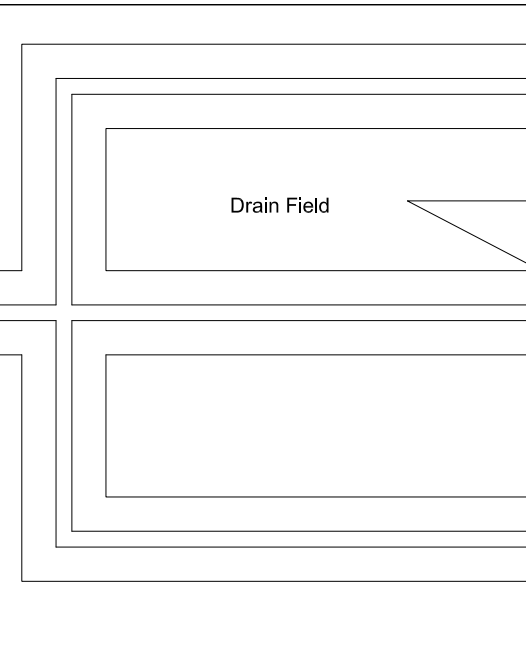


Plan of Septic Tank Latrine (Option 3B)

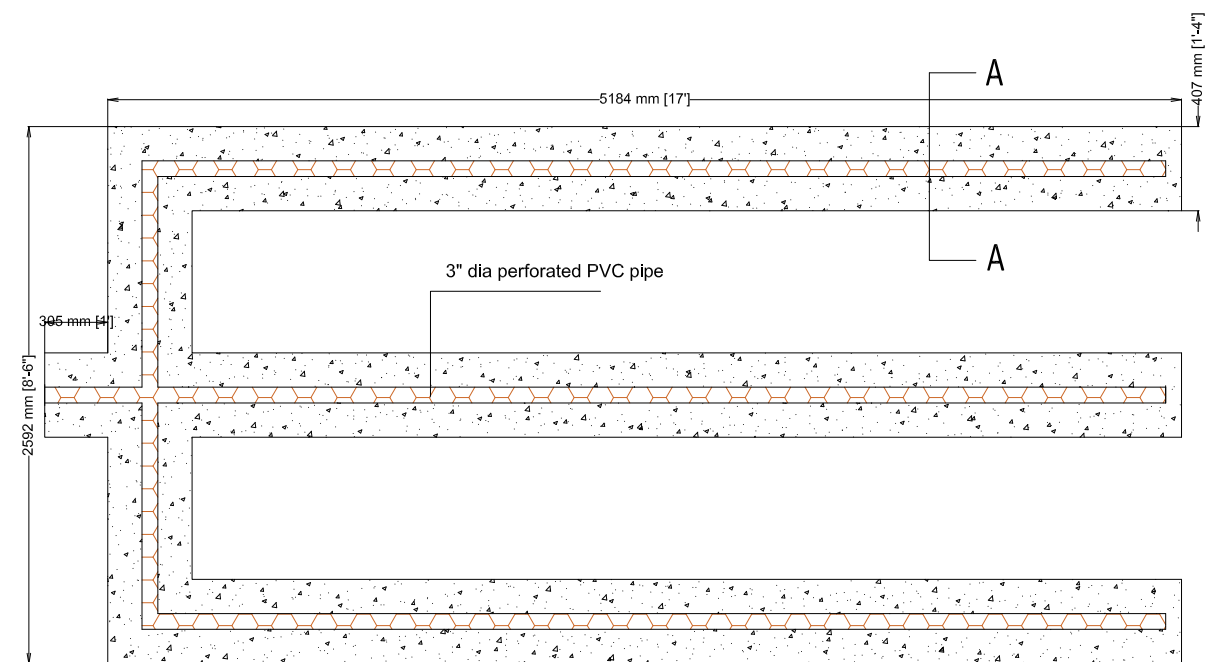
	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed (Option-07B)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	01



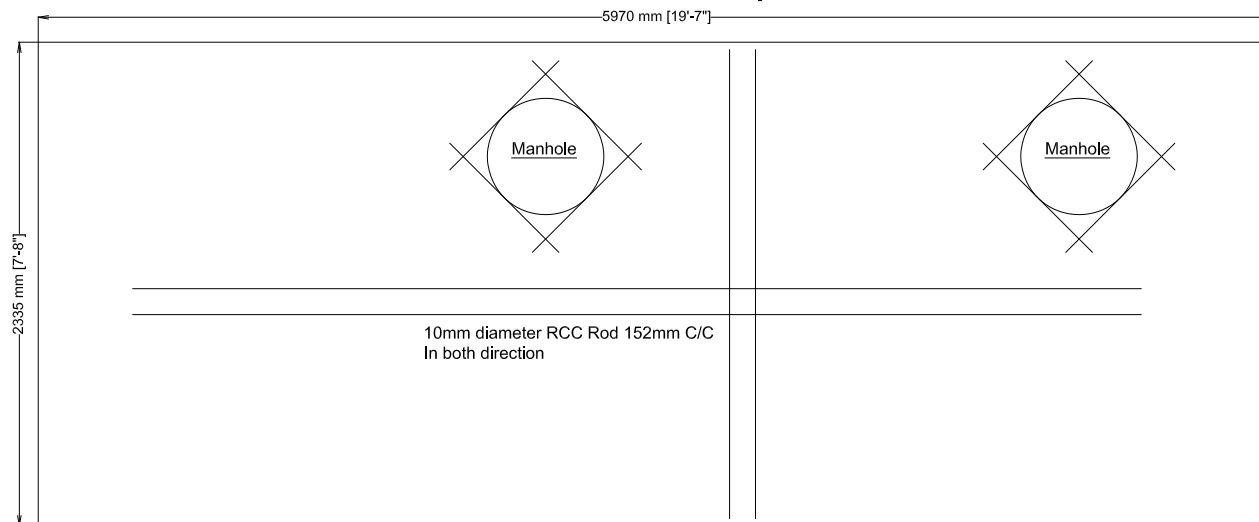
Plan of Septic Tank with soak pit



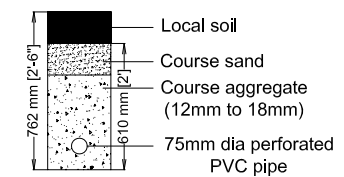
Section of Septic Tank



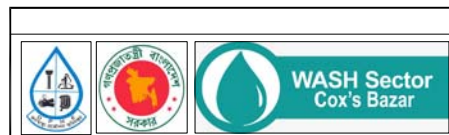
Plan: Drain Field



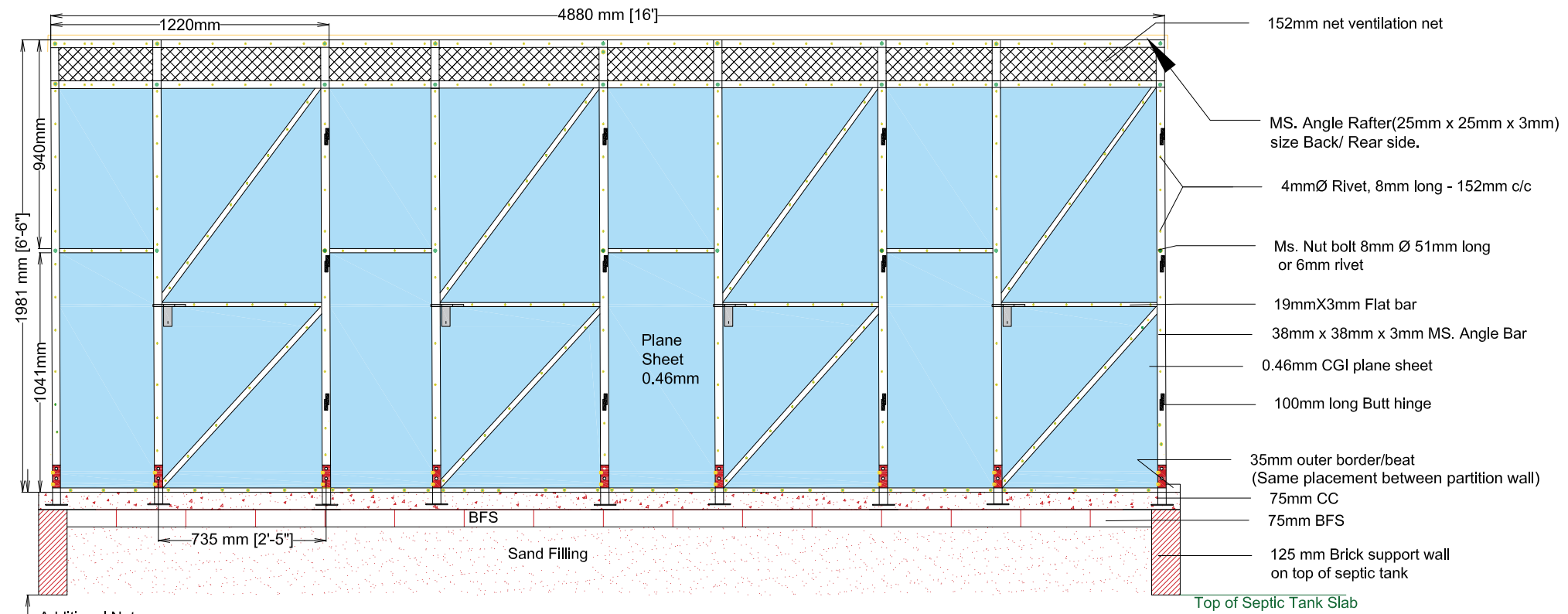
Top Slab Reinforcement Details of Septic Tank



Section AA

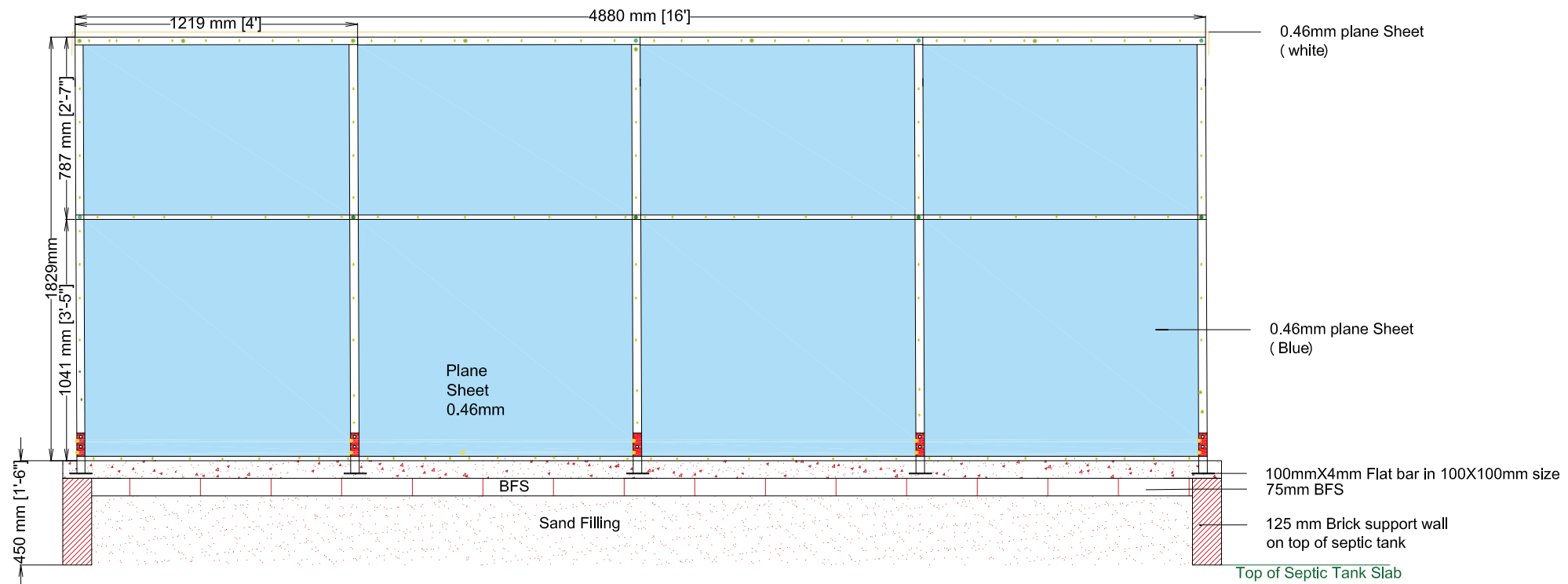


Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Four Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed (Option-07B)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	02



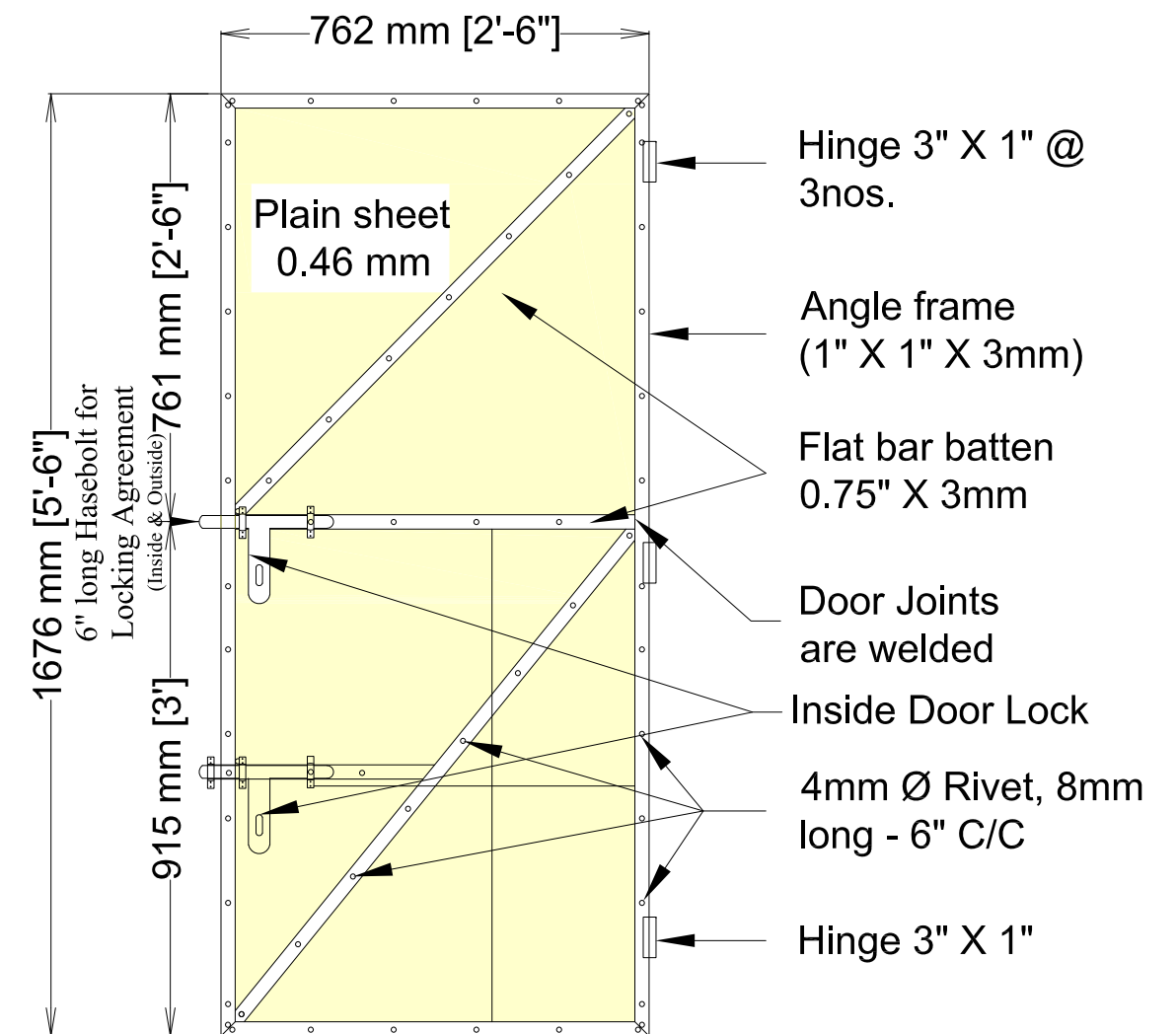
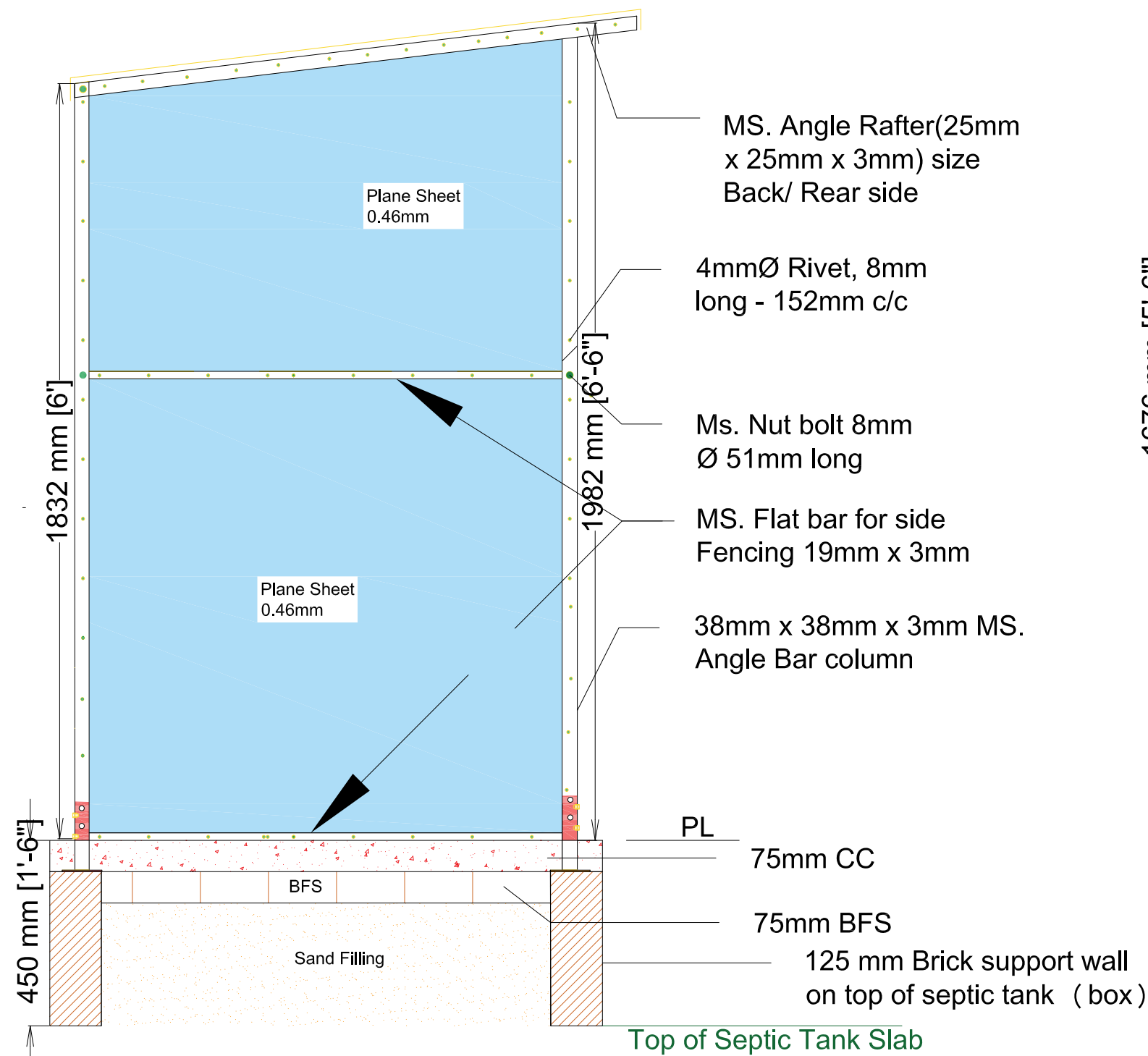
Front Elevation

Additional Note:
 *No welding on the structure. All joint will be with nut bolts or rivets.
 *6mm 18mm dia rivet will be used in all angle/flat far joints
 *SS door lock
 Door: outer frame 25X25X3mm and diagonal support with 19X3mm flat bar
 1 Hashbolt will be placed outside and 02 will be placed inside (1 for Children Uses, 1.5' & 2.5' from bottom)



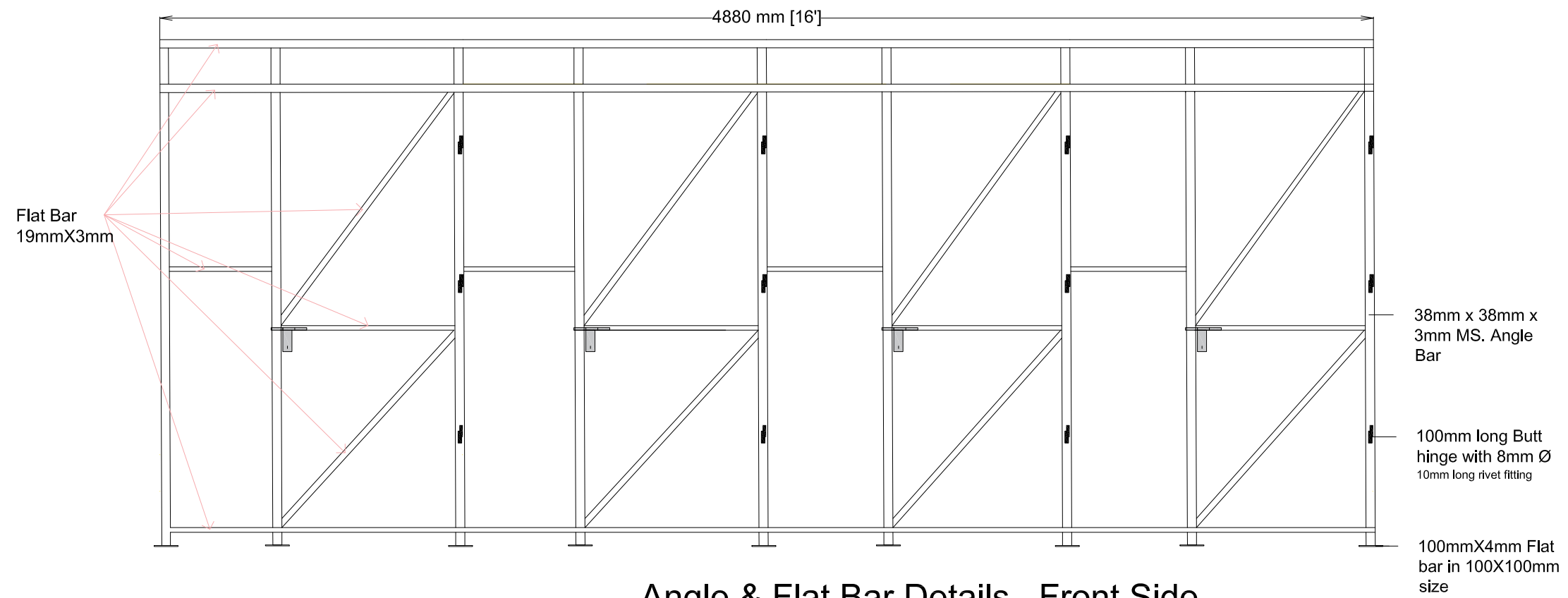
Rear Elevation

Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
 Design and Drawing of Unified Latrine	Four Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed (Option-07B)	Latrine Design Group	Elevation	July, 2023	DPHE Cox's Bazar	RRRC	03

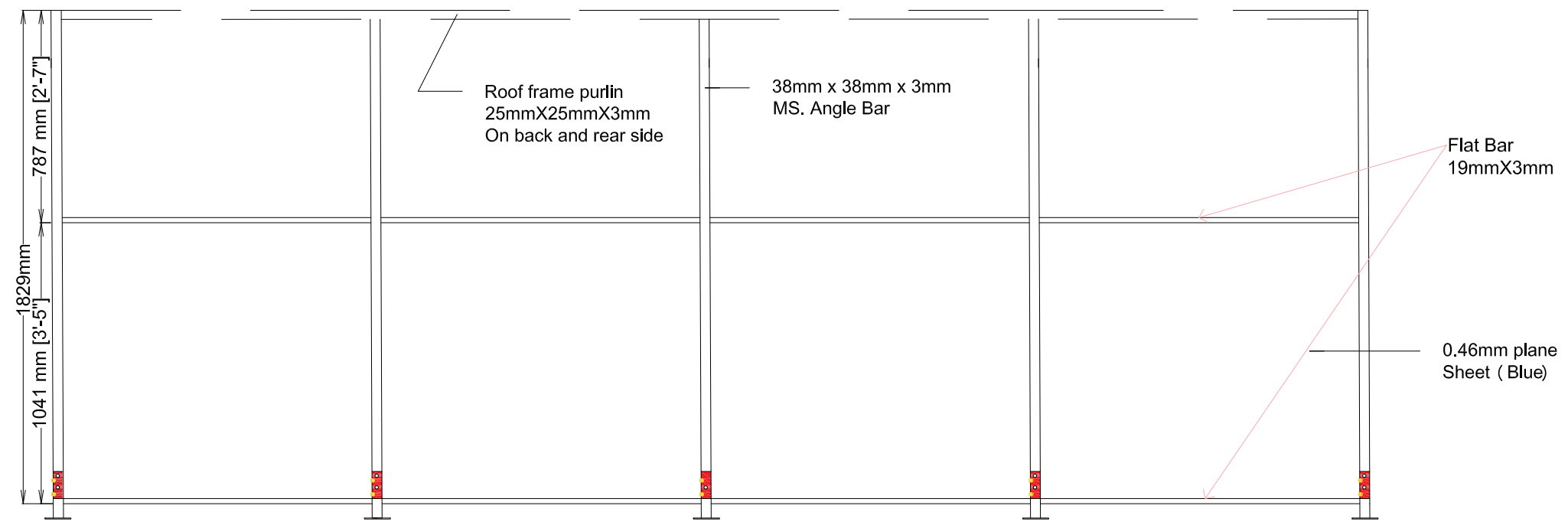


Additional Note:
 NB.: all sheet will short 4mm to 8mm along horizontally direction. This will for protect people from any incidents due to sharpen the MS sheets. All door joint with 6.4mm dia rivets 18mm long maximum. Door frame will be fitted with 3 nos. Butt Hinges will be setup MS column and MS door frame with 6mm dia 10mm long rivets. Front side fencing bars will placed outside of the column with nut bolt.

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed (Option-07B)	Latrine Design Group	Elevation	July, 2023	DPHE Cox's Bazar	RRRC	04

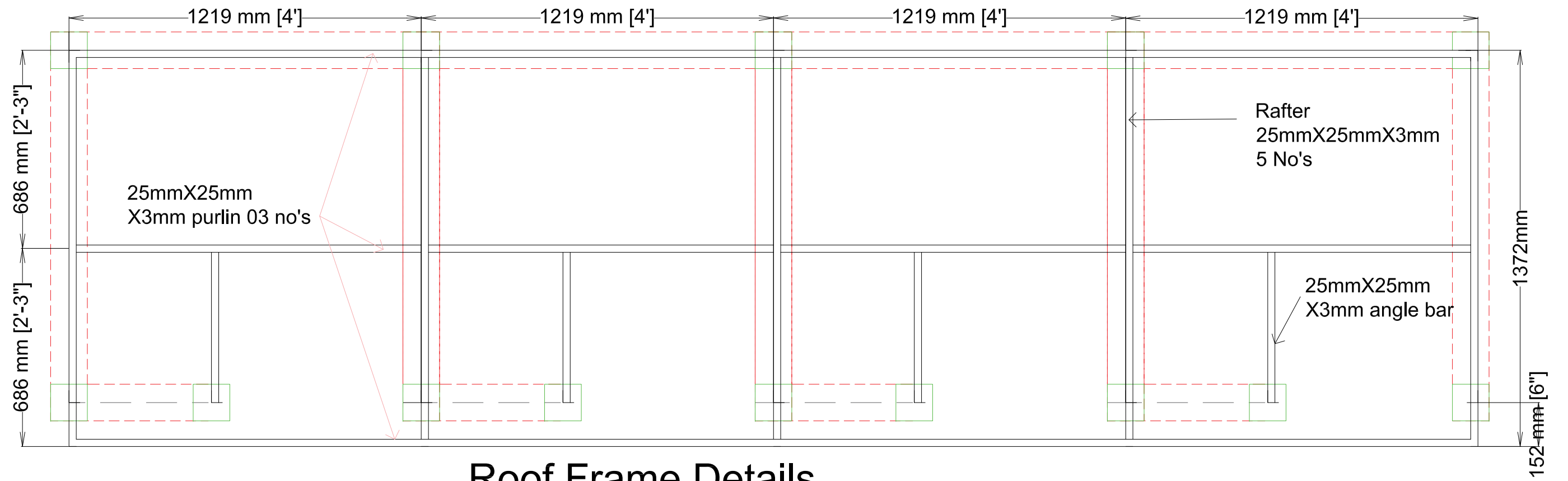


Angle & Flat Bar Details _Front Side



Angle & Flat Bar Details _Rear Side

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed (Option-07B)	Latrine Design Group	Angle & Flat Bar Details	July, 2023	DPHE Cox's Bazar	RRRC	05



Roof Frame Details

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed (Option-07B)	Latrine Design Group	Roof Frame Details	July, 2023	DPHE Cox's Bazar	RRRC	06

Bill of Quantities
Latrine Option-7B
Four Cubicles Steel Framed Septic Tank Latrine with Infiltration Bed

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
PART-A:Sub-structure						
1	Earth Excavation : Earth work in excavation in all kinds of soil for septic tank trenches including; providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and providing layout, removing necessary roots and plants, protecting and keeping the trench dry from rain/external water, stacking and levelling surrounding sites with excavated soil. All should be completed under the direct supervision and guidance of the Engineer in-charge, subject to agreed and locally available earth excavation methods. However, Engineer in-charge's approval shall not relieve the contractor of his responsibilities and obligations under the contract.	38.08	cum	259.00	9863.2	PWD Rates Schedule (2022)
2	Sand Filling : Sand filling (F.M. 0.5-0.8) in the septic Tank foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	2.48	cum	1,093.00	2708.7	PWD Rates Schedule (2022)
3	Polyethylene Sheet : Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	13.94	sqm	150.00	2091.0	Local Market Price
4	Brick Soling : One layer of brick flat soling in Tank Foundation with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	13.94	sqm	515.00	7179.1	PWD Rates Schedule (2022)
5	Cement concrete Work : 4" Thick CC casting in base tank foundation [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	1.39	cum	7,817.00	10896.9	PWD Rates Schedule (2022)
6	10" Brick Wall : 10" Brick works in Foundation of wall of Septic tank with first class bricks in cement/sand mortar (1:6) including filling the interstices with mortar, raking out joints, cleaning and soaking the bricks at least for 24 hours and screening of sand before use, necessary scaffolding, curing at least for 7 days etc. all complete including cost of water, electricity and other charges (measurement to given as 250 mm width for one brick length). All work should be completed as per design and guidance of the Engineer in-charge.	9.16	cum	7,501.00	68745.7	PWD Rates Schedule (2022)
7	5" Brick Wall : 5" thick Septic Tank Compartment baffle wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	4.33	sqm	1,180.00	5109.4	PWD Rates Schedule (2022)
8	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Septic Tank at floor, inner surface and outer surface, finishing the corner, koba, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	61.00	sqm	297.00	18117.0	PWD Rates Schedule (2022)
9	Earth Filling : Earth filling in the trenches surrounding the masonry wall for Septic tank & soak well and up to the pre-defined formation level with 150 mm layers including proper leveling, watering and compaction as necessary and consolidating including local carriage each layer up to finished level including cost of all tools and equipments etc. all complete and accepted by the IOM Engineer in-charge.	6.00	cum	450.00	2700.0	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
10	Reinforced concrete cement works: RCC slabs with concrete (1:2:4) [cement, sand (F.M.1.2) and picked jhama chips] and M.S. deformed bar 10 mm and 6 mm, grade 40 billet) reinforcement of required size and length for all types of RCC work including straightening the rod, removing rust, cleaning, cutting, hooking, bending binding with supply of 22 B.W.G GI wire, screening, washing, mixing, laying, vibrator compaction and curing for at least 14 days including the supply of water, electricity and other charges and costs of tools and plants etc. All work complete as per drawing and instruction of the Engineer in-charge.					
	10a) Concrete (mix ratio 1:2:4)	1.44	cum	8,784.00	12613.8	PWD Rates Schedule (2022)
	10b) 8 mm dia deformed-rod	2	kg	110.00	220.0	PWD Rates Schedule (2022)
	10c) 10 mm dia deformed-rod	130.00	kg	110.00	14300.0	PWD Rates Schedule (2022)
	10c) Centering and shuttering for the slab casting including keeping provision of man-holes and covers by using of timber, bamboo and other necessary materials.	12.78	sqm	556.00	7104.5	Local Market Price
11	C.I. man hole cover : Supply, fitting and fixing of 550 mm dia C.I. man hole cover etc. all complete approved by the Engineer- in- charge.	2.00	each	1,869.00	3738.0	Local Market Price
		Sub Total Part- A =			165387	
	PART-B: Drain Field					
12	Earth Excavation : Earth work in excavation of Foundation for Drain field carrying and disposing of all Excavated materials at a safe distance designated by the EIC, all types of soil except rocky gravelly, organic maintains proper slope, disposing of all back filling of sites of all excavated materials to a safe distance back filling of sites of original level etc, all complete to the direction.	5.37	cum	259.00	1390.83	PWD Rates Schedule (2022)
13	Course aggregate (12mm to 18mm) : Supplying, fitting and fixing best quality of Course aggregate (12mm to 18mm) the bottom 2 ft in depth, all complete as per design and as per direction of Engineer in charge.	3.17	cum	5,300.00	16801.00	Local Market Price
14	Course sand Filling : 6" sand filling (F.M. 1.2) in the foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instructiuon of Engineer-in-charge.	1.12	cum	1,093.00	1224.16	PWD Rates Schedule (2022)
15	UPVC Elbow : Supplying best quality 3" dia UPVC perforated pipe L.7 (RFI/Aziz/National Polymer D class) for connecting septic tank to drain field including fitting, fixing etc. all complete as per direction of the EIC	2.00	each	300.00	600.00	Local Market Price
16	UPVC Tee : Supplying best quality 3" dia UPVC perforated pipe L.7 (RFI/Aziz/National Polymer D class) for connecting septic tank to drain field including fitting, fixing etc. all complete as per direction of the EIC	2.00	each	300.00	600.00	Local Market Price
17	UPVC pipe: Supplying best quality 3" dia UPVC perforated pipe L.7 (RFI/Aziz/National Polymer D class) for connecting septic tank to drain field including fitting, fixing etc. all complete as per direction of the EIC.	20.00	RM	500.00	10000.00	Local Market Price
		Sub Total Part- B =			30616	
	PART-C: Superstructure					
18	5" Brick Wall : 5" thick wall construction with first class bricks and cement mortar (1:4) and making bond with partision walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	4.76	sqm	1,180.00	5619.2	PWD Rates Schedule (2022)
19	Brick Soling : One layer of brick flat soling in Tank Foundation with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	5.20	sqm	515.00	2676.8	PWD Rates Schedule (2022)
20	Cement concrete Work: CC casting in Foor[recommanded mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	1.45	cum	7,817.00	11303.4	PWD Rates Schedule (2022)
21	Angle Bar : MS angle short column will be placed in 4 (Four)corner; fixed and welded with anchor plate in middle position. Superstructure columns will joint with short column by 8mm dia Nut-bolts. Angle size 35mm X 35mm X 3mm and 305mm (1'-0") Hight.	6.63	kg	88	583.2	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
22	Angle Bar : MS angle column will be placed 2 (Two) corner side of the front side and rear ,medill portion and door 10mm Nut- bolts joint with those columns and 305mm (1'-0") long MS short column and Anchor bolt by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 1981mm (6'-6") Hight.	82.80	kg	88	7286.4	Local Market Price
23	MS angle Rafter and Purlin will be placed for fixing the roof and will be placed along door and backside parallel. 4nos. Corner column will be joint with the rafter by 8mm dia nut bolts. Angle size 25mm (1") X 25mm (1") X 3mm and 1372mm (4'-6") long	26.44	kg	88	2326.7	Local Market Price
24	MS Flat bar will be placed for Front side, Rear side, Left & Right side fencing and 3nos.MS Flat bar will use in each side fencing. One will be placed 152mm (6") above of floor; one in middle and other will be placed in top from 1803mm (5'-11") floor height. All joint will be joint by 8mm dia Nut- bolts with Columns.Flat Bar size 19mm X 3mm and 1219mm (4'-0") long.	15.28	kg	88	1344.6	Local Market Price
25	MS Flat bar will be placed for foundation 6nos. MS Flat bar will used. Falt bar (100mm*100*4mm)	4.40	kg	88	387.2	Local Market Price
26	Iron blue color sheet(0.46mm thick) will be placed in front,Rear,Left & Right side with fencing frame. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion.	24.81	sqm	688.64	17085.2	Local Market Price
27	2nos. Iron white color sheet will be placed in roof above the purlin. One will joint form backside to middle portion, and another will be placed from front to middle portion.	7.32	sqm	688.64	5040.8	Local Market Price
28	3nos. MS butt hinge will set with door and column. One will set 229mm (9") above from bellow frame; one will set 1067mm (3'-6") above from bellow frame and other will be set 100mm (4") 8mm ø form top edge frame.	12.00	each	80.00	960.0	Local Market Price
29	Rivet will be placed for iron sheet fixing and all rivet will be placed 152mm (6") C/C.Rivet size 4mm dia	800.00	pcs	2	1,600	Local Market Price
30	Rivet will be placed for iron sheet fixing and all rivet will be placed Rivet size 6.2mm dia	240.00	pcs	3	600	Local Market Price
31	Nut Bolt 2" dia 10mm	80.00	pcs	5	400	PWD Rates Schedule (2022)
32	6" Handle with Hasbolt made of iron	8.00	nos	100	800	PWD Rates Schedule (2022)
33	18 BWG GI Wire Net for Ventilation	1.0	sqm	860	860.0	Local Market Price
34	Coating : Coating with two layer red oxide and blue color Enamel coat.	40.00	sqm	194	7,747	PWD Rates Schedule (2022)
35	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Latrine wall, floor, inner surface and outer surface, finishing the corner, kobla, wall edges and top-surface of wall. the wark includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	10.43	sqm	297.00	3098.9	PWD Rates Schedule (2022)
36	Visibility Plaque : Supplying fitting and fixing of visibility plaque with the latrine wall including specified messages and logos, the plaque should be made of 12"X8" Tiles and painting on it as per given design.	1.00	LS	500	500.0	Local Market Price
37	Steel Frame fabrication and installation charge	1.00		20000	20000.0	Local Market Price
38	600mmX600mm inspection box	1.00	LS	4000	4000.0	Local Market Price
Sub Total Part- B =					94219.5	
PART-D: SANITARY work & Ventilation						
39	Pan & Foot Rest : Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest including proper levelling of floor.	4.00	each	450	1800.0	Local Market Price
40	4" uPVC pipe : Supply, fitting & fixing of 100mm dia uPVC pipe thi,3mm thickness good quality to drain excreta to the sludge storage tank.	15.00	RM	450	6750.0	Local Market Price
41	4" uPVC Tee : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	10.00	each	400	4000.0	Local Market Price
42	4" uPVC L-bow : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	4.00	each	250	1000.0	Local Market Price
43	4" uPVC Long Trap : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	4.00	each	350	1400.0	Local Market Price

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
		Sub Total Part- D =			14950.0	
44	PART-E: Other Supplies & Accessories fitting, fixing & supplying					
a	305mm long Tower Bolt	12	each	120	1440.0	Local Market Price
b	Lubricant	0.5	Kg	500	250.0	Local Market Price
		Sub Total Part- E =			1690.0	
		Total Quoted Price (A+B+C+D+E)			306,863	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
Latrine Design Group

Reviewed by :
DPHE, Cox's Bazar

Approved by :
Office of Refugee Relief and Repatriation
Commissioner (RRRC), Cox's Bazar

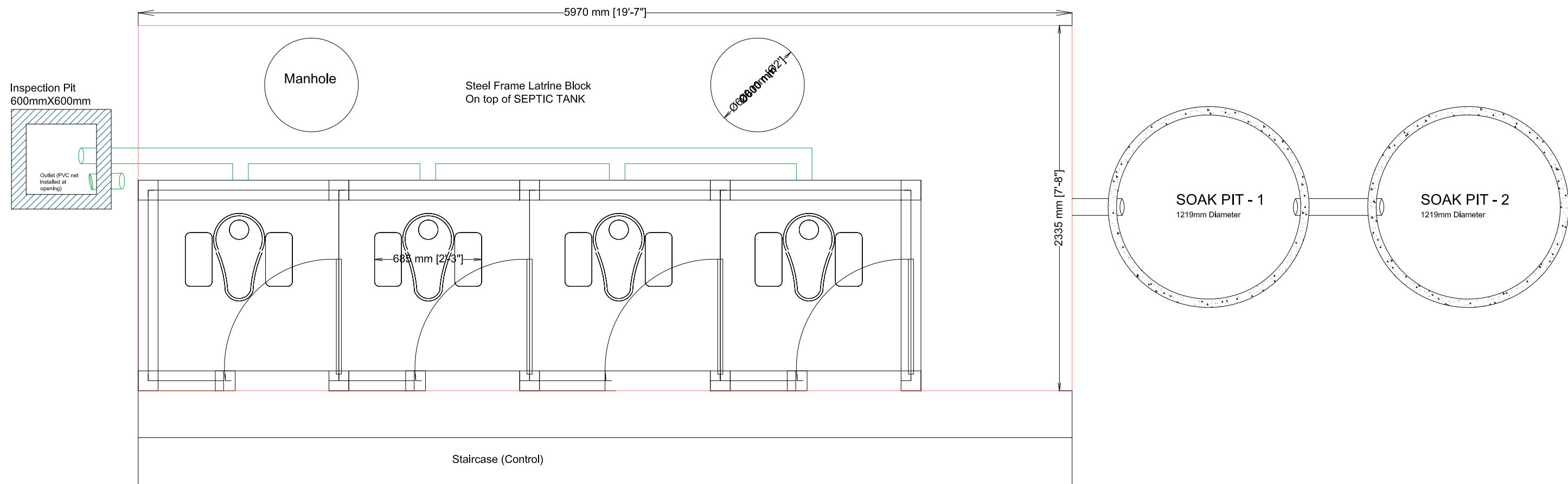


PROJECT
DESIGN AND DRAWING of UNIFIED LATRINE
FOUR CUBICLES STEEL FRAMED SEPTIC TANK
LATRINE WITH SOAK WELL
(Option-08B)

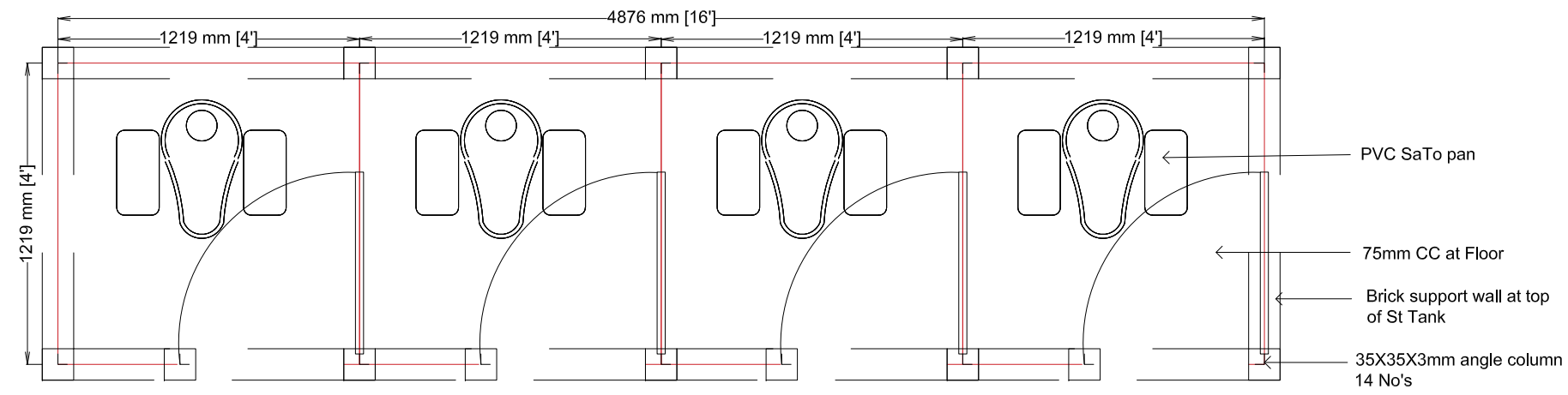
JULY, 2023

PREPARED By:

**LATRINE DESIGN GROUP,
WASH SECTOR, COX'S BAZAR**

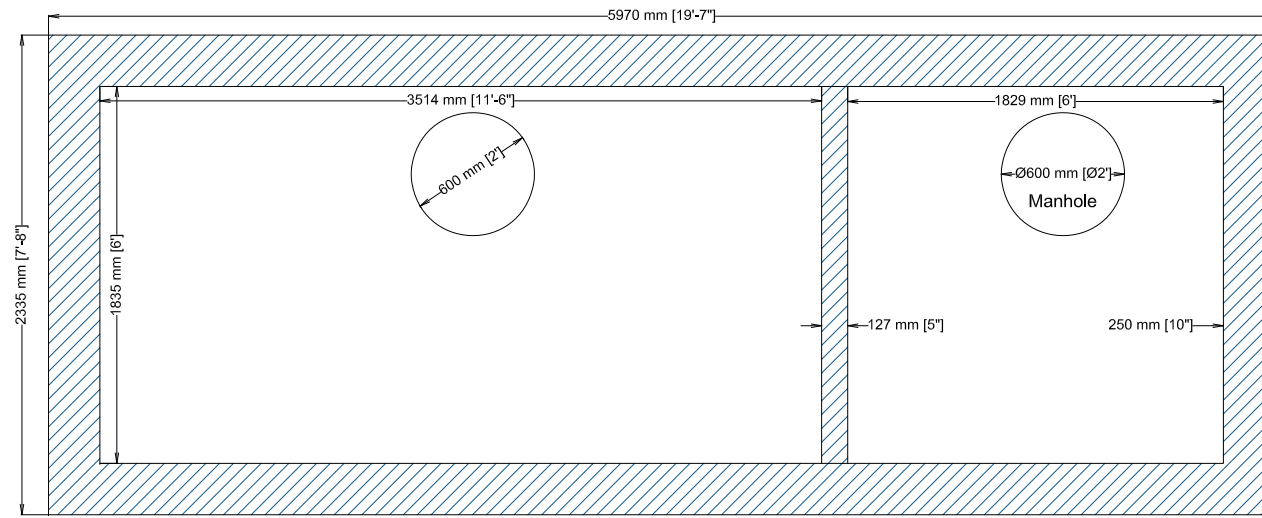


Plan of Septic Tank Latrine (Option 3B) - 4 cubicle steel frame with soak well

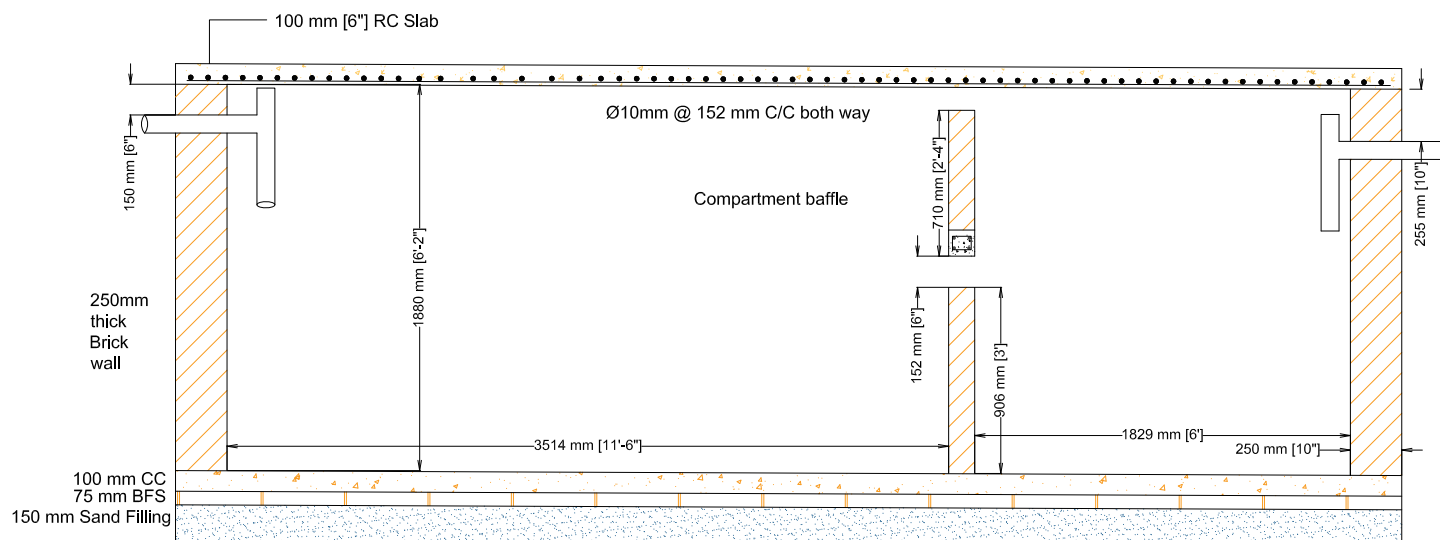
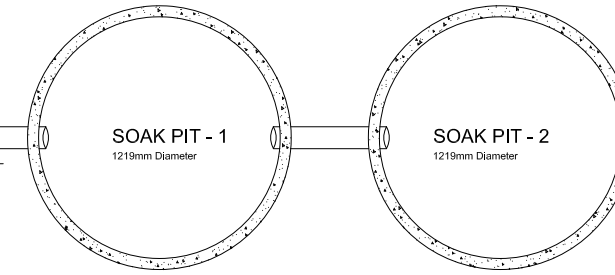


Plan of Septic Tank Latrine (Option 3B)

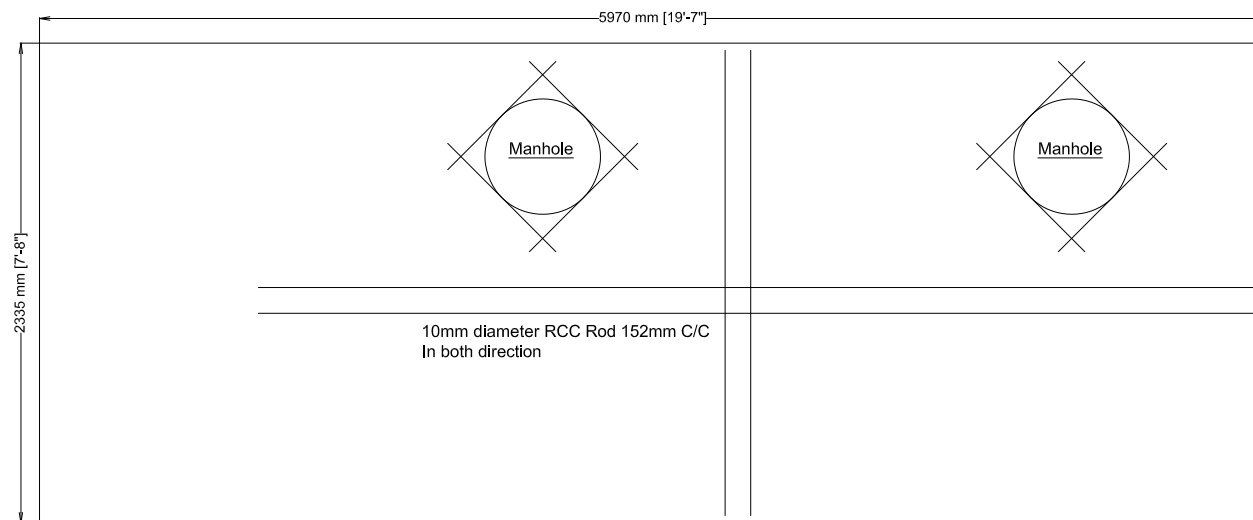
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	Design and Drawing of Unified Latrine	Four Cubicles Steel Framed Septic Tank Latrine with Soak Well (Option-08B)	Latrine Design Group	Plan	July, 2023	DPHE Cox's Bazar	RRRC	01



Plan of Septic Tank with soak pit

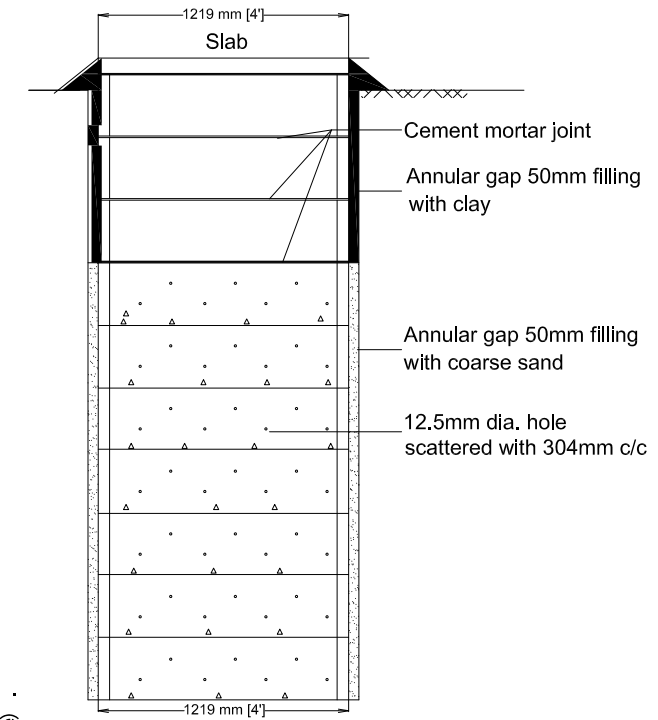


Section of Septic Tank

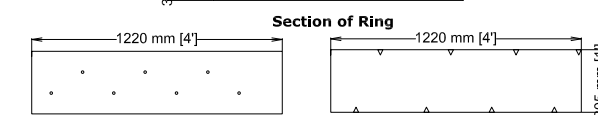
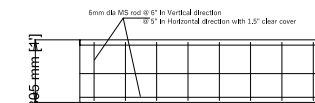


Top Slab Reinforcement Details of Septic Tank

RCC ring (1:2:4) - Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal) , with 0.50" down graded 1st class brick aggregate & 1.6 FM sand. Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance) .

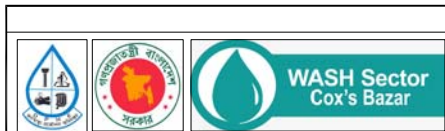


RCC Ring Section



RCC Ring (Option 1)

RCC Ring (Option 2)



Project
Design and Drawing of
Unified Latrine

Model:
Four Cubicles Steel Framed Septic Tank
Latrine with Soak Well (Option-08B)

Design by:
Latrine Design Group

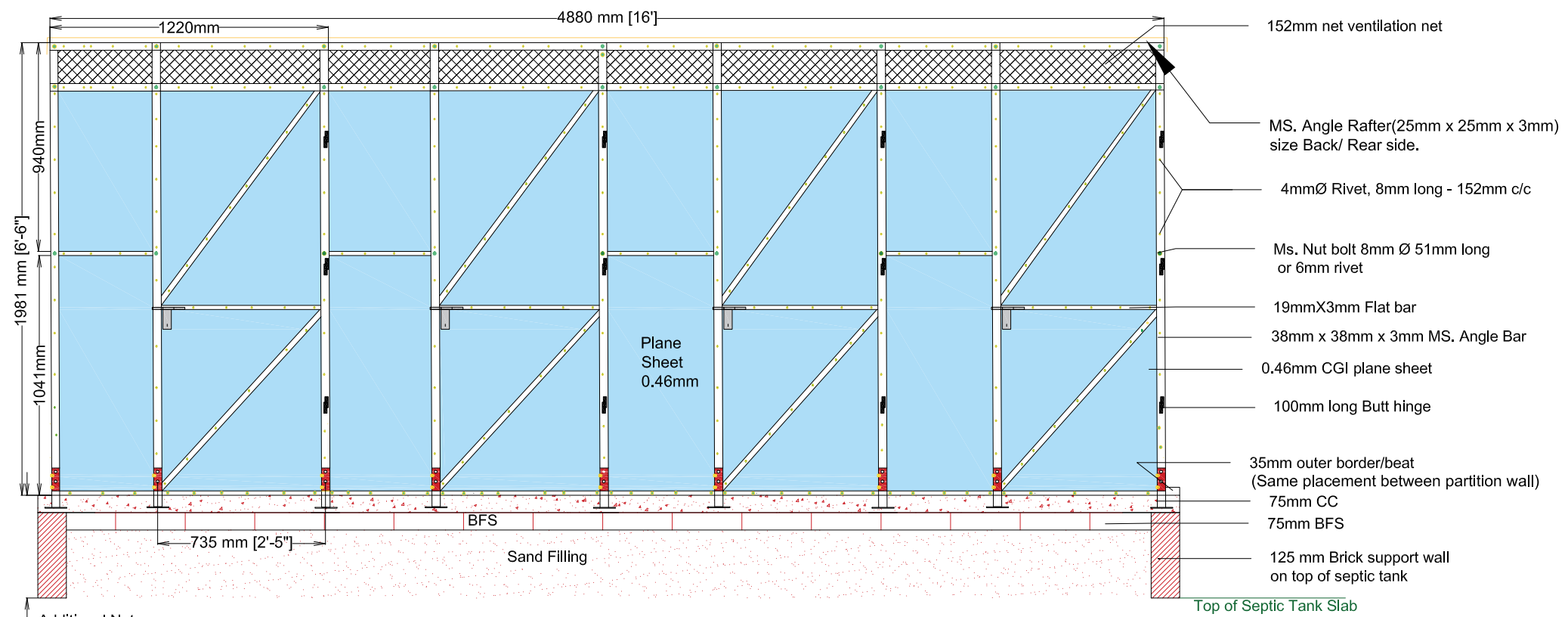
Drawing Title
**Section &
Reinforcement
Details**

Date
July, 2023

Reviewed by
**DPHE
Cox's Bazar**

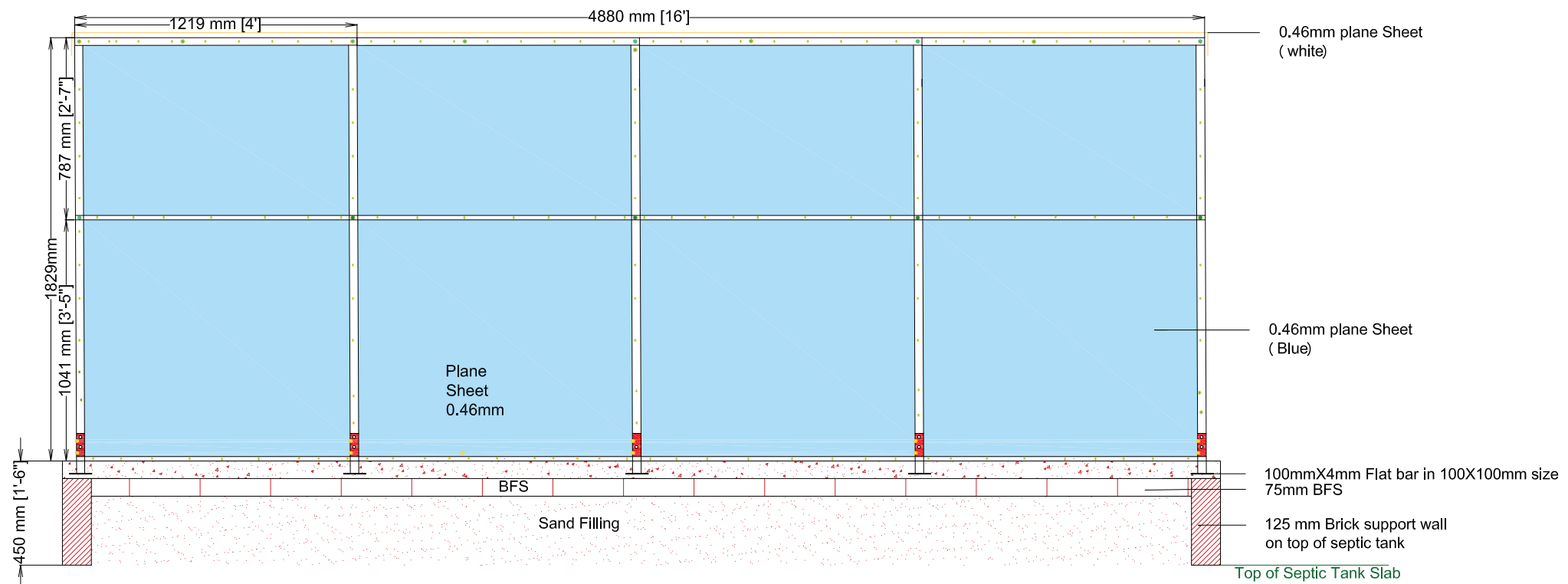
Approved by
RTRC

Page
02



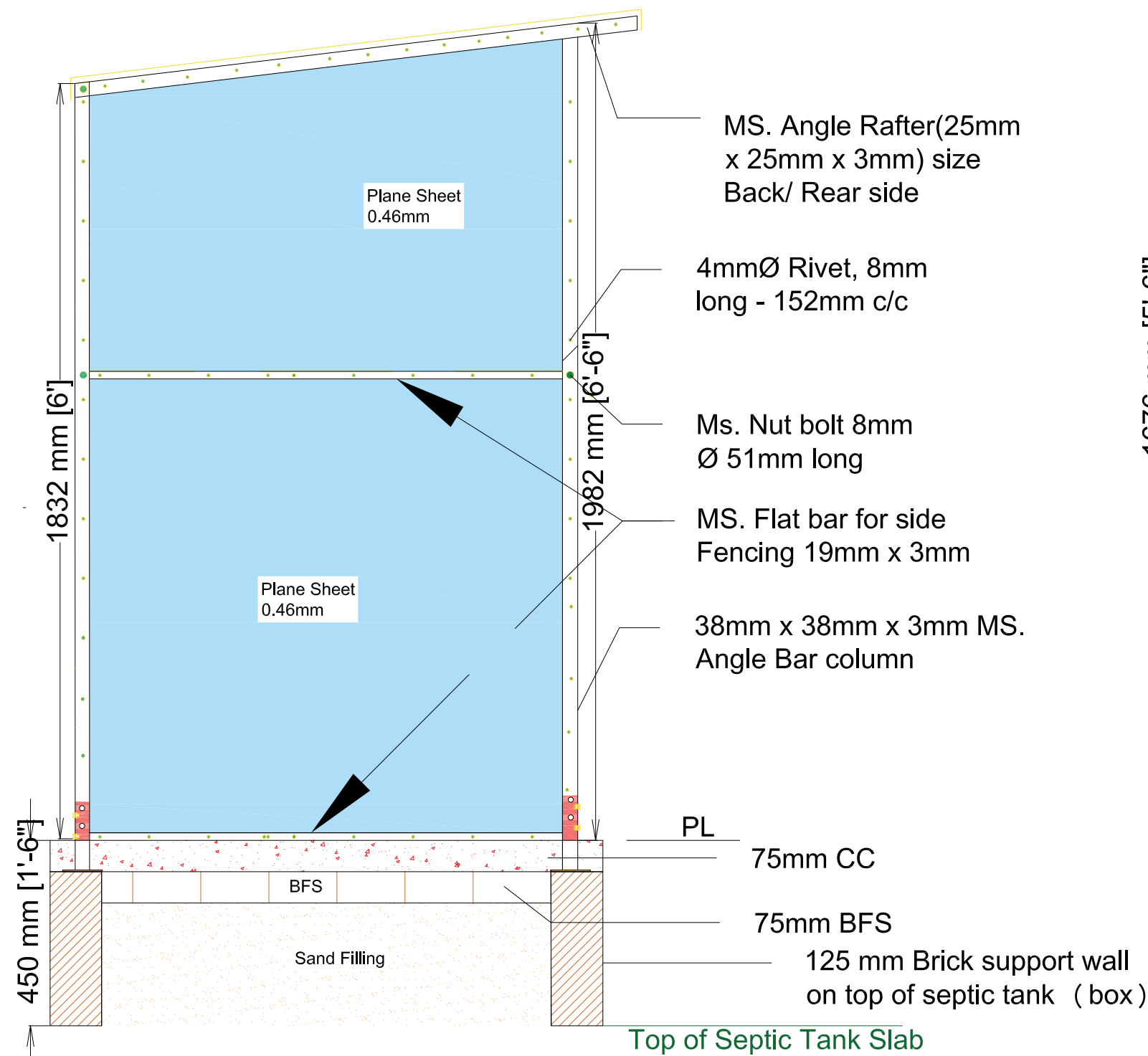
Front Elevation

Additional Note:
 *No welding on the structure. All joint will be with nut bolts or rivets.
 *6mm 18mm dia rivet will be used in all angle/flat far joints
 *SS door lock
 Door: outer frame 25X25X3mm and diagonal support with 19X3mm flat bar
 1 Hashbolt will be placed outside and 02 will be placed inside (1 for Children Uses, 1.5' & 2.5' from bottom)

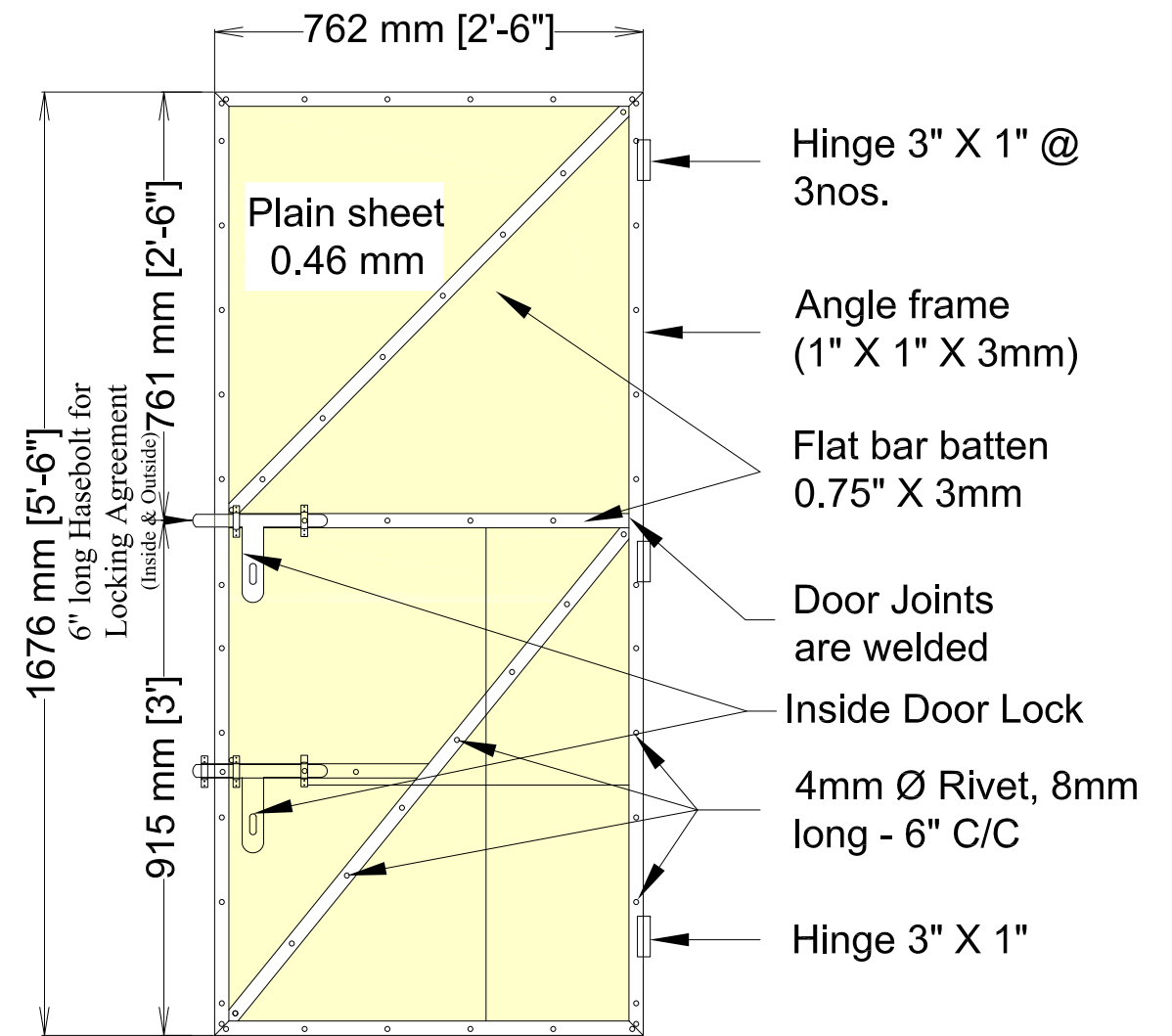


Rear Elevation

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Steel Framed Septic Tank Latrine with Soak Well (Option-08B)	Latrine Design Group	Elevation	July, 2023	DPHE Cox's Bazar	RRRC	03



Side Elevation

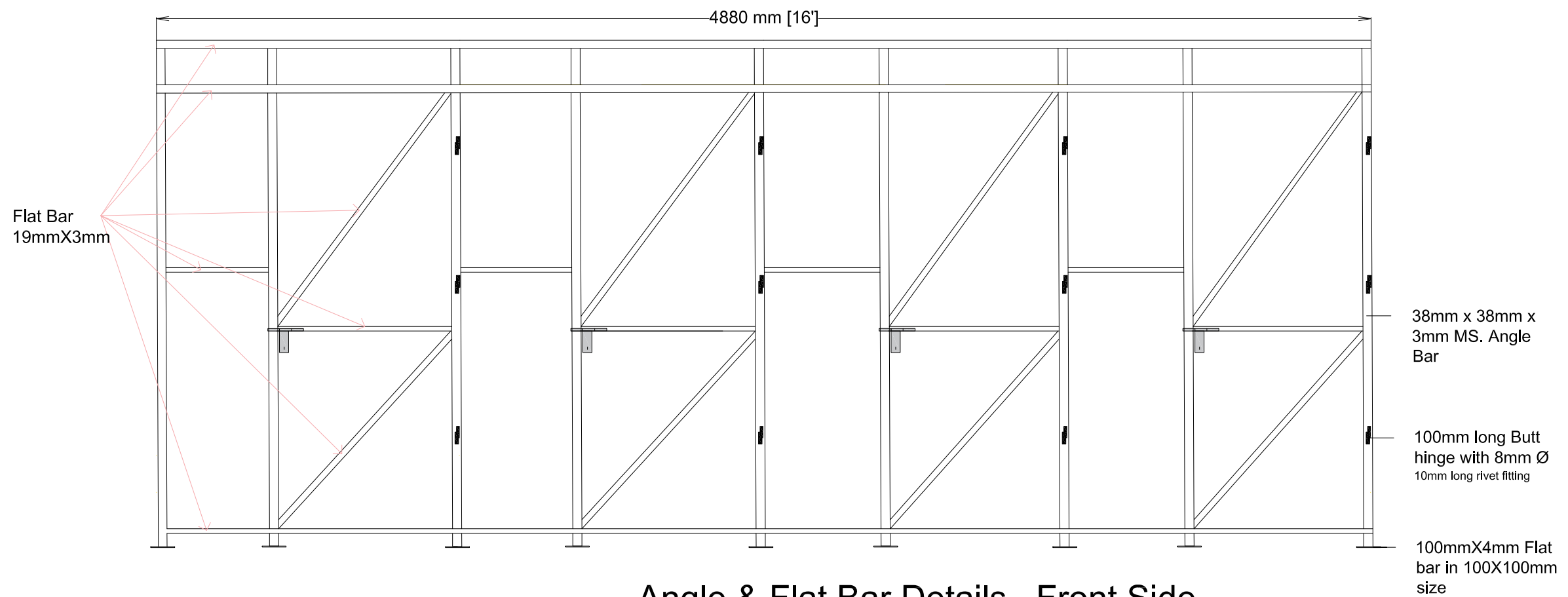


Door Details

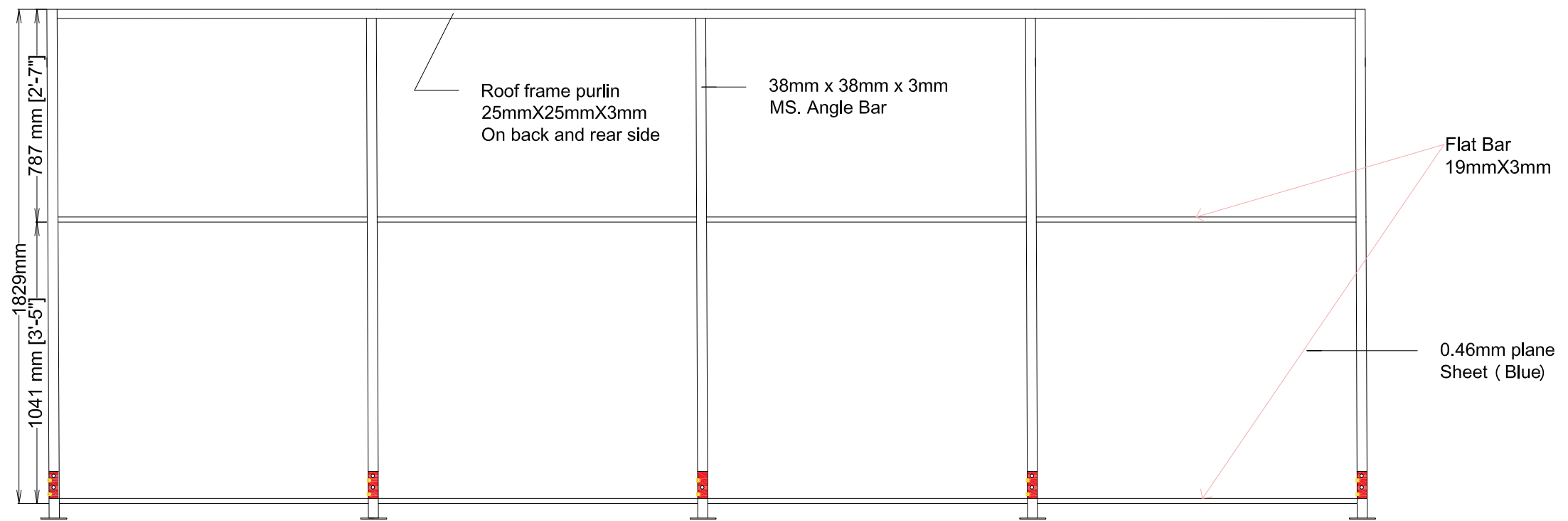
Additional Note:

NB.: all sheet will short 4mm to 8mm along horizontally direction. This will for protect people from any incidents due to sharpen the MS sheets. All door joint with 6.4mm dia rivets 18mm long maximum. Door frame will be fitted with 3 nos. Butt Hinges will be setup MS column and MS door frame with 6mm dia 10mm long rivets. Front side fencing bars will placed outside of the column with nut bolt.

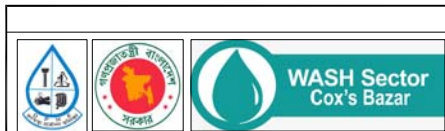
	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Steel Framed Septic Tank Latrine with Soak Well (Option-08B)	Latrine Design Group	Elevation	July, 2023	DPHE Cox's Bazar	RRRC	04



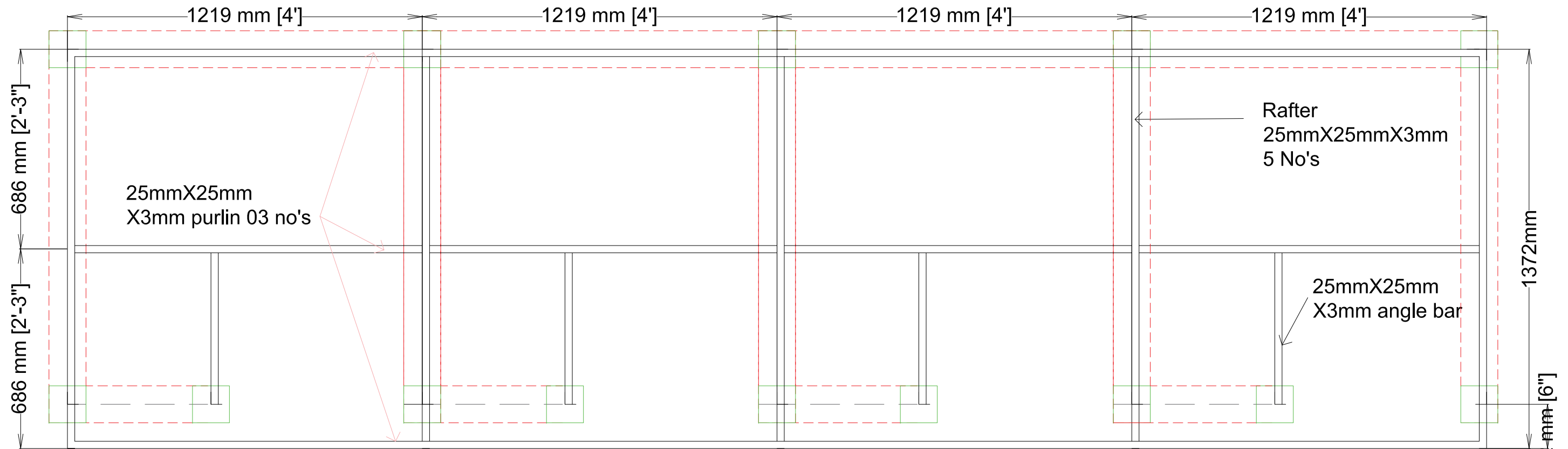
Angle & Flat Bar Details _Front Side



Angle & Flat Bar Details _Rear Side



Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
Design and Drawing of Unified Latrine	Four Cubicles Steel Framed Septic Tank Latrine with Soak Well (Option-08B)	Latrine Design Group	Angle & Flat Bar Details	July, 2023	DPHE Cox's Bazar	RRRC	05



Roof Frame Details

	Project	Model:	Design by:	Drawing Title	Date	Reviewed by	Approved by	Page
	Design and Drawing of Unified Latrine	Four Cubicles Steel Framed Septic Tank Latrine with Soak Well (Option-08B)	Latrine Design Group	Roof Frame Details	July, 2023	DPHE Cox's Bazar	RRRC	06

Bill of Quantities
Latrine Option-8B
Four Cubicles Steel Framed Septic Tank Latrine with Soak Well

Location : Cox's Bazar

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
PART-A: Sub-structure						
1	Earth Excavation : Earth work in excavation in all kinds of soil for septic tank trenches including; providing center lines, local bench-mark pillars, leveling, ramming and preparing the base, fixing bamboo spikes and providing layout, removing necessary roots and plants, protecting and keeping the trench dry from rain/external water, stacking and levelling surrounding sites with excavated soil. All should be completed under the direct supervision and guidance of the Engineer in-charge, subject to agreed and locally available earth excavation methods. However, Engineer in-charge's approval shall not relieve the contractor of his responsibilities and obligations under the contract.	38.08	cum	259.00	9863.2	PWD Rates Schedule (2022)
2	Sand Filling : Sand filling (F.M. 0.5-0.8) in the septic Tank foundation bed; using dry sand and create proper levelling of the septic tank bottom, as per instruction of engineer-in-charge.	2.48	cum	1,093.00	2708.7	PWD Rates Schedule (2022)
3	Polyethylene Sheet : Providing single layer polythene sheet (0.18mm thick) weighting one kilogram per 6.5 square meter in floor or anywhere in ground floor underneath the cement concrete, etc. all complete as per specifications and direction of the Engineer In-charge.	13.94	sqm	150.00	2091.0	Local Market Price
4	Brick Soling : One layer of brick flat soling in Tank Foundation with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	13.94	sqm	515.00	7179.1	PWD Rates Schedule (2022)
5	Cement concrete Work : 4" Thick CC casting in base tank foundation [recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	1.39	cum	7,817.00	10896.9	PWD Rates Schedule (2022)
6	10" Brick Wall : 10" Brick works in Foundation of wall of Septic tank with first class bricks in cement/sand mortar (1:6) including filling the interstices with mortar, raking out joints, cleaning and socking the bricks at least for 24 hours and screening of sand before use, necessary scaffolding, curing at least for 7 days etc. all complete including cost of water, electricity and other charges (measurement to given as 250 mm width for one brick length). All work should be completed as per design and guidance of the Engineer in-charge.	9.16	cum	7,501.00	68745.7	PWD Rates Schedule (2022)
7	5" Brick Wall : 5" thick Septic Tank Compartment baffle wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	4.33	sqm	1,180.00	5105.6	PWD Rates Schedule (2022)
8	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Septic Tank at floor, inner surface and outer surface, finishing the corner, kobla, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	61.00	sqm	297.00	18117.0	PWD Rates Schedule (2022)
9	Earth Filling : Earth filling in the trenches surrounding the masonry wall for Septic tank & soak well and up to the pre-defined formation level with 150 mm layers including proper leveling, watering and compaction as necessary and consolidating including local carriage each layer up to finished level including cost of all tools and equipment etc. all complete and accepted by the IOM Engineer in-charge.	6.00	cum	450.00	2700.0	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
10	Reinforced concrete cement works: RCC slabs with concrete (1:2:4) [cement, sand (F.M.1.2) and picked jhama chips] and M.S. deformed bar 10 mm and 6 mm, grade 40 billet) reinforcement of required size and length for all types of RCC work including straightening the rod, removing rust, cleaning, cutting, hooking, bending binding with supply of 22 B.W.G GI wire, screening, washing, mixing, laying, vibrator compaction and curing for at least 14 days including the supply of water, electricity and other charges and costs of tools and plants etc. All work complete as per drawing and instruction of the Engineer in-charge.					
	10a) Concrete (mix ratio 1:2:4)	1.44	cum	8,784.00	12613.8	PWD Rates Schedule (2022)
	10b) 8 mm dia deformed-rod	2	kg	110.00	220.0	PWD Rates Schedule (2022)
	10c) 10 mm dia deformed-rod	130.00	kg	110.00	14300.0	PWD Rates Schedule (2022)
	10c) Centering and shuttering for the slab casting including keeping provision of man-holes and covers by using of timber, bamboo and other necessary materials.	12.78	sqm	556.00	7104.5	Local Market Price
11	C.I. man hole cover : Supply, fitting and fixing of 550 mm dia C.I. man hole cover etc. all complete approved by the Engineer- in- charge.	2.00	each	1,869.00	3738.0	Local Market Price
		Sub Total Part- A =			165383	
	PART-B: Soak well					
12	Earth Excavation : Earth work in excavation of Foundation for Soak pit carrying and disposing of all Excavated materials at a safe distance designated by the EIC, all types of soil except rocky gravelly, organic maintains proper slope, disposing of all back filling of sites of all excavated materials to a safe distance back filling of sites of original level etc, all complete to the direction	9.37	cum	259.00	2427.03	PWD Rates Schedule (2022)
13	RCC Ring: RCC ring (1:2:4)- Outer dia 4ft, height 1ft, thickness 2.25". Supplying, fabrication, and fixing 6mm dia MS rod @ 150mm in both direction (vertical & horizontal),with 0.50" down graded 1st class brick aggregate & 1.6 FM sand.Top three rings should be jointed using cement mortar and not perforated while the rest rings are perforated (Making whole of dia 0.5", scattered with 1ft c/c clearance.					
14	14a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	1.27	cum	8,784.00	11159.09	PWD Rates Schedule (2022)
15	14b) 6 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	88.61	kg	110.00	9747.43	PWD Rates Schedule (2022)
16	14c) Carrying Cost	22.00	each	400.00	8800.00	Local Market Price
17	RCC Slab: Supply, fittings & fixing of pre-cast ring cover 4 ft dia size, thickness-3" made of 1:2:4 mixing ratio, 8mm dia ms rod (60G) 5" C/C both way as per the drawing and instruction of EIC.					
18	12a) Concrete (mix ratio 1:2:4) for RCC Ring, as per drawing and instruction of EIC	0.58	cum	8,784.00	5134.20	PWD Rates Schedule (2022)
19	12b) 8 mm dia MS deformed-rod, fy (ReH)= 400 MPa but fy not exceeding 450 Mpa, as per drawing and instruction of EIC	7.45	kg	110.00	819.23	PWD Rates Schedule (2022)
20	12c) Carrying Cost	22.00	each	400.00	8800.00	Local Market Price
		Sub Total Part- B =			46887	
	PART-C: Superstructure					
21	5" Brick Wall : 5" thick wall construction with first class bricks and cement mortar (1:4) and making bond with partition walls and properly raking out of joints between bricks, including necessary cleaning and soaking the bricks for at least 24 hours before use and screening. The work includes scaffolding, site cleaning, water carrying, electricity, curing at least for 7 days and other necessary charges. All work complete as per design and instruction of Engineer in-charge.	4.76	sqm	1,180.00	5619.2	PWD Rates Schedule (2022)
	Brick Soling : One layer of brick flat soling in Tank Foundation with first class or picked jhama bricks including preparation of bed and filling the interstices with local coarse sand, cover the brick-soling with polythene sheeting, complete and accepted by the Engineer in-charge.	5.20	sqm	515.00	2676.8	PWD Rates Schedule (2022)
22	Cement concrete Work: CC casting in Floor[recommended mixing proportion 1:2:4] using picked jhama chips, including supply, screening, washing, mixing, laying, compacting to levels and curing for at least 7 days including the supply of water, electricity and other charges and costs of tools and plants etc. all complete and accepted by the Engineer in-charge.	1.45	cum	7,817.00	11304.6	PWD Rates Schedule (2022)

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
23	MS angle short column will be placed in 4 (Four) corner; fixed and welded with anchor plate in middle position. Superstructure columns will joint with short column by 8mm dia Nut-bolts. Angle size 35mm X 35mm X 3mm and 305mm (1'-0") Height.	6.73	kg	88	591.9	Local Market Price
24	Angle Bar : MS angle column will be placed 2 (Two) corner side of the front side and rear ,medill portion and door 10mm Nut- bolts joint with those columns and 305mm (1'-0") long MS short column and Anchor bolt by using 8mm dia Nut bolts. Angle size 38mm (1.5") X 38mm (1.5") X 3mm and 1981mm (6'-6") Height.	82.80	kg	88	7286.4	Local Market Price
25	Angle Bar : MS angle Rafter and Purlin will be placed for fixing the roof and will be placed along door and backside parallel. 4nos. Corner column will be joint with the rafter by 8mm dia nut bolts. Angle size 25mm (1") X 25mm (1") X 3mm and 1372mm (4'-6") long	26.44	kg	88	2326.7	Local Market Price
26	MS Flat bar will be placed for foundation 6nos. MS Flat bar will used. Flat bar (100mm*100*4mm)	4.40	kg	88	387.2	Local Market Price
27	MS Flat bar will be placed for Front side, Rear side, Left & Right side fencing and 3nos.MS Flat bar will use in each side fencing. One will be placed 152mm (6") above of floor; one in middle and other will be placed in top from 1803mm (5'-11") floor height. All joint will be joint by 8mm dia Nut- bolts with Columns. Flat Bar size 19mm X 3mm and 1219mm (4'-0") long.	15.28	kg	88	1344.6	Local Market Price
28	Iron blue color sheet(0.46mm thick) will be placed in front,Rear,Left & Right side with fencing frame. One will joint form brick wall (bellow portion) to middle portion and another will be placed from top to middle portion.	24.81	sqm	688.64	17085.2	Local Market Price
29	2nos. Iron white color sheet will be placed in roof above the purlin. One will joint form backside to middle portion, and another will be placed from front to middle portion.	7.32	sqm	688.64	5040.8	Local Market Price
30	3nos. MS butt hinge will set with door and column. One will set 229mm (9") above from bellow frame; one will set 1067mm (3'-6") above from bellow frame and other will be set 100mm (4") 8mm ø form top edge frame.	12.00	each	80.00	960.0	Local Market Price
31	Rivet will be placed for iron sheet fixing and all rivet will be placed 152mm (6") C/C.Rivet size 4mm dia	800.00	pcs	2	1,600	Local Market Price
32	Rivet will be placed for iron sheet fixing and all rivet will be placed Rivet size 6.2mm dia	240.00	pcs	3	600	Local Market Price
33	Nut Bolt 2" dia 10mm	80.00	pcs	5	400	PWD Rates Schedule (2022)
34	6" Handle with Hatch bolt made of iron	8.00	nos	100	800	PWD Rates Schedule (2022)
35	18 BWG GI Wire Net for Ventilation	1.0	sqm	860	860.0	Local Market Price
36	Coating : Coating with two layer red oxide and blue color Enamel coat.	40.00	sqm	194	7,747	PWD Rates Schedule (2022)
37	Plastering & Net finishing : Minimum 12 mm thick cement plastering using mortar ratio (1:4) including skirting plastering Latrine wall, floor, inner surface and outer surface, finishing the corner, kobla, wall edges and top-surface of wall. the work includes screening of sand cleaning the surface, scaffolding and curing at least for 7 days, water/electricity/other charges and as per drawing and instruction of the Engineer in-charge.	10.43	sqm	297.00	3098.9	PWD Rates Schedule (2022)
38	Visibility Plaque : Supplying fitting and fixing of visibility plaque with the latrine wall including specified messages and logos, the plaque should be made of 12"X8" Tiles and painting on it as per given design.	1.00	L.S	500	500.0	Local Market Price
39	Steel Frame fabrication and installation charge	1.00		20000	20000.0	Local Market Price
40	600mmX600mm inspection box	1.00	LS	4000	4000.0	Local Market Price
				Sub Total Part- B =		94229.5
PART-D: SANITARY work & Ventilation						
41	Pan & Foot Rest : Supplying, fitting and fixing Sato RFL pan (approximately 750 gm) with ceramic foot rest including proper levelling of floor.	4.00	each	450	1800.0	Local Market Price
42	4" uPVC pipe : Supply, fitting & fixing of 100mm dia uPVC pipe thi,3mm thickness good quality to drain excreta to the sludge storage tank.	15.00	RM	450	6750.0	Local Market Price
43	4" uPVC Tee : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	10.00	each	400	4000.0	Local Market Price
44	4" uPVC L-bow : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	4.00	each	250	1000.0	Local Market Price
45	4" uPVC Long Trap : Supply, fitting & fixing of 100mm dia uPVC pipe, Tee 3mm thickness good quality.	4.00	each	350	1400.0	Local Market Price
				Sub Total Part- D =		14950.0

SI No	Description of Item	Quantity	Unit	Unit Price	Total Amount	Rate Reference
				BDT	BDT	
46	PART-E: Other Supplies & Accessories fitting, fixing & supplying					
a	305mm long Tower Bolt	12	each	120	1440.0	Local Market Price
b	Lubricant	0.5	Kg	500	250.0	Local Market Price
Sub Total Part- E =					1690.0	
Total Quoted Price (A+B+C+D+E)					323,140	

Note: Total amount of cost can be varied maximum $\pm 5\%$

Prepared by :
 Latrine Design Group
 ISCG WASH Sector, Cox's Bazar

Reviewed by :
 DPHE, Cox's Bazar

Approved by :
 Office of Refugee Relief and Repatriation
 Commissioner (RRRC), Cox's Bazar