

Procurement

Cover Page

To:	From: Myo HLAING
Attention:	Date: 11-Oct-2024
Fax: Email:	Fax: 951-544531, 545634

Total Number of Pages including this page: 83

Attached is Request for Quotation No.: 3200035171 and all related documentation. Please notify the United Nations immediately if any part of this Request for Quotation is missing and/or illegible at the above facsimile number. Please be advised that this facsimile number may be used only to send queries.

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REQUEST FOR QUOTATION

3200035171

1. The United Nations (UN) hereby requests your price quotation for the item(s) specified in this Request for Quotation (RFQ), which consists of this document and the following annexes:
For Annex, please see attached detail
2. Quotations are required to be submitted to the UN in English language and in **ONE COPY**, no **later than 25-Oct-2024 at 03:00 PM (Yangon Time)** (the ClosingTime), by E-mail: procurement@unhabitat.org.mm, or by hand to No.8 C, Saw Mahar Street, Bahan Township, Yangon, Myanmar Tel: 951-543 685. Quotations received after the Closing Time may be considered or evaluated only in exceptional circumstances.
3. Please note that submissions by e-tendering will be rejected.

Validity of Quotations

4. Your Quotation shall be irrevocable and remain valid for acceptance for at least **30** calendar days, commencing on the Closing Time.
5. If deemed necessary by the UN, Bidders may be requested to extend the validity of their Quotations for an additional period(s), in order to finalize the solicitation process. If the extension of the validity period is accepted by a Bidder, the Bidder will not be permitted to otherwise modify or consequently withdraw its Quotation.

Evaluation Criteria and Contract Award

6. All Quotations will be evaluated, and the Quotation which is technically compliant and offers the lowest price may be selected.
7. The UN reserves the right, at its sole discretion, to:
 - 7.1. Award separate or multiple Contracts for same or different elements covered by this RFQ in any combination it may deem appropriate, or only a portion of the requirements. If a Quotation is submitted on an "all or none" basis, it should be clearly stated as such;
 - 7.2. Reject any or all Quotations received in response to this RFQ and negotiate with any of the Bidders in any manner deemed to be in the best interest of the UN;
 - 7.3. Add new considerations, information or requirements at any stage of the process.
8. In exceptional situations, the UN may cancel this RFQ through written notification to all Bidders.

Notice of Award

9. The selected Bidder(s) will be notified in writing that the UN considers an award of the Contract / Purchase Order. No legal obligation exists until the issuance of a Contract or Purchase Order (PO) by the UN.
10. Unsuccessful Bidders will be notified in writing. The UN has the right to retain unsuccessful Quotations. Unsuccessful Bidders having questions about the name of the selected Bidder(s), the Contract/Purchase Order value(s), or the reasons for non-selection of their Quotation, may contact the Procurement Officer at the email/fax number provided for submission of Quotations.
11. Any Contract or Purchase Order entered into with the successful Bidder will be subject to the UN General Conditions of Contract (UNGCC). You will find the link to the UNGCC at https://www.un.org/Depts/ptd/pdf/general_condition_goods_services.pdf. A Draft Form of Contract may also be included in this RFQ. By submitting a Quotation, the Bidder confirms that it has accessed, read,

understood, agreed and accepted the UNGCC and the Draft Form of Contract, if applicable and if provided herein.

Commercial Instructions

Bidders shall provide all the required information as detailed herein, in accordance to the following terms:

12. **Payment Terms.** The standard UN terms of payment are net **30** calendar days following satisfactory delivery of goods, performance of services and the submission of an invoice, whichever is later. Payment for any goods or services by the UN shall not be deemed an acceptance of the goods or services. The provisions of Incoterms 2010 shall apply to any delivery terms specified in this RFQ.
13. The UN policy is to preclude advance payments or payment by Letters of Credit. Such provisions in a Quotation will be prejudicial to its evaluation by the UN.
14. **Currency.** Prices may be quoted in MMK or any currency other than US Dollar. However, for the purposes of comparison of all Quotations, the UN will convert the currency quoted in the Quotation to US Dollar in accordance with the prevailing UN Operational Rate of Exchange at the Closing Time.
15. The Contract/Purchase Order, Bidder's invoices and the UN payments will be made in the currency as originally quoted by the Bidder in their Quotation.
16. **Price.** The offered price should be all inclusive. If the price excludes certain fees and/or charges, the Bidder must provide a detailed list of excluded fees, with a complete explanation of the nature of those fees. Unless otherwise provided in this RFQ, the Contract or the Purchase Order shall be concluded on a Firm Fixed Price basis, and shall not be subject to any adjustment, including the actual cost incurred by the Bidder in performing the Contract or any market price changes.
17. **GSA Clause (for USA vendors only).** The UN is officially eligible, under the United States Foreign Assistance Act of 1961, to receive full benefits under General Services Administration (GSA) Contracts. Accordingly, Quotation must specify whether or not items quoted by the Bidder are currently subject to GSA Federal Supply pricing and indicate the GSA Contract Number and Expiration Date, wherever applicable.

Liquidated Damages

18. Not Applicable

Miscellaneous

19. This RFQ does not commit the UN to award a Contract or to issue a Purchase Order. Any Quotation submitted will be regarded as a proposal by the Bidder and not as an acceptance by the Bidder of any proposal by the UN.
20. Bidders shall bear any and all costs and expenses related to the preparation and/or submission of a Quotation, regardless of whether the Bidder's Quotation is selected or not.
21. Bidders may find the UN Procurement Manual and the UN Financial Rules and Regulations, which are applied to this RFQ, at <https://www.un.org/Depts/ptd/pdf/pm.pdf>.
22. **Vendor registration and update of information:** Only vendors registered with the UN Secretariat in the United Nations Global Marketplace (UNGM) can participate in this solicitation. Vendors must be registered at the appropriate level in UNGM in order to be considered for award. In the event that a vendor fails to achieve the required registration level by the time the UN is ready to make an award, the UN reserves the right to award an alternative vendor. Vendors are responsible to ascertain their registration level at <http://www.ungm.org> and, if in doubt, contact the UN Secretariat at register@un.org. For UNGM account-related issues, please contact: registry@ungm.org. Vendors are responsible for keeping their information up-to-date in UNGM. More information can be found at <https://www.un.org/Depts/ptd/vendor-registration>.

23. Code of Conduct: By submitting a Quotation, the Bidder confirms that he/she has accessed, read, understood and agrees to comply with the UN Supplier Code of Conduct, which, amongst others, prohibits collusive bidding, anti-competitive conduct, improper assistance and corrupt practices. Bidders should refer to the UN Supplier Code of Conduct at: https://www.un.org/Depts/ptd/pdf/conduct_english.pdf
24. The procurement of goods and/or services by the United Nations shall be in compliance with Security Council resolutions, and the rules, regulations and policies promulgated by the United Nations' principal organs.
25. If so requested, the Contractor shall furnish to the UN, within 5 business days of the UN's request, an electronic copy of the applicable price list(s) including item identification references, which shall serve as a catalogue of goods and/or services that can be ordered by the UN.

Independent Price Determination

26. Consistent with the UN Supplier Code of Conduct, by submitting a Quotation, the Bidder certifies that:
- 1) the prices offered in the Quotation have been arrived at independently, without any consultation, communication, or agreement in any manner that would result in restriction of competition with any other Bidder or competitor relating to (a) those prices, (b) the intention to submit a Quotation, and/or (c) the methods or factors used to calculate the prices offered;
 - 2) the prices in the Quotation have not been and will not be knowingly disclosed by the Bidder, directly or indirectly, to any other Bidder or competitor before the UN issues an award under this solicitation; and
 - 3) no attempt has been made or will be made by the Bidder to induce any other entity to submit or not to submit a Quotation for the purpose of restricting competition.

Failure to comply with the above Independent Price Determination provisions shall result in the rejection of the Quotation(s). In addition, the UN reserves the right to exercise any other rights and remedies available to it.

We look forward to your Quotation and thank you in advance for your interest in UN procurement opportunities.



Myo Hlaing
Procurement Associate
UN-Habitat Myanmar



UNITED NATIONS HUMAN SETTLEMENTS PROGRAMME
No. 8C, Saw Mahar Street, Bahan Township, Yangon, Myanmar
desk@unhabitat.org.mm | www.unhabitat.org.mm

FOR A BETTER URBAN FUTURE

Note and Annexes

- Please submit duly filled financial quotations provided in Annex A with subsection of A1 (BOQ's and drawing for Project No. 9) and A-2(BOQ's and drawing for Project No. 20)
- Project location provided as Annex B.
- UN Terms and Conditions are provided as Annex B.
- For those vendors, who are first time working with UN, vendors must be registered at the appropriate level in UNGM at <http://www.ungm.org>, in order to be considered for award.

Financial Bid Form

This section is for **Price Quotation** and should be submitted with the eligible criteria when submitting.

Sr.No	Particular	Qty	Unit Amount (Currency_____)	Total Amount (Currency_____)
1	Total Cost of Material, installation, Labor etc of Project No. 9	1		
2	Total Cost of Material, installation, Labor etc of Project No. 20	1		
Total (In words _____)				

Please Confirm following in quotation

Price Validity (30 days) -
Payment Terms (30 days) -
Delivery & Installation Time -

- 1) DAP: Delivery and installation is in Yangon (attached detail location). Please include transportation cost in above table.
- 2) Prices must be all-inclusive (material price, logistic, installation, transportation etc), excluding all taxes from which the UN is exempt, as per the Tax Exemption section of the General Conditions of Contract. Also indicated expected date of delivery.
- 3) All quotations should be clear, concise, comprehensive, and itemized according to the specifications and quantities indicated below. If currency other than MMK is used, bidders are required to indicate kindly so. Quotations shall be subject to arithmetic review of prices. Where total prices are incorrect, unit prices shall govern.

Signature and Stamp

Project 9 - Rain Water Harvesting Systems (BQ cost)

Annex A-1

Sr No	Particular	unit	Qty	Rate	Amount	Remark
1	6"x3" PVC Tee (13.5)	No	1			
2	4"ø PVC Pipe	meter	60			
3	4"ø PVC Tee (13.5)	No	2			
4	4"x3" PVC Tee (13.5)	No	6			
5	4"ø PVC Elbow (90°)	No	3			
6	4"ø PVC Elbow (45°)	No	4			
7	4"ø clean out plug	No	2			
8	4"ø PVC socket (13.5)	No	4			
9	4"ø hanger clamp	No	40			
10	5/8"ø long thread	No	20			
11	5/8"ø wall plug (steel)	No	40			
12	3"ø PVC Pipe (13.5)	meter	70			
13	3"ø PVC Tee	No	6			
14	3"ø PVC Elbow	No	8			
15	3"ø PVC Socket	No	10			
16	3"ø PVC Elbow(45°)	No	10			
17	3"ø PVC Butterfly Valve	No	6			
18	3"ø Y Strainer with flange type	No	2			
19	5/8" Bolt & Nut with washer	No	42			
20	3"ø PVC Flange	No	16			
21	3"ø Union	No	2			
22	PVC Cement (500mg)	Tin	30			
23	3"ø Clamp bracket	No	15			
24	1/2" Long thread	No	5			
25	1/2" Wall plug	No	20			
26	2' x 2'x 2' SS-304 Screen bucket	set	1			
27	2" ø PVC Valve	No	4			
28	4" ø PVC Butterfly Valve	No	1			
29	4" ø PVC flange	No	2			
30	Labour charges for pipe					
31	4"ø	lot	1			
32	3"ø	lot	1			
	Total material + labour cost					
	Transportation Charges					
	Grand Total					
	Currency___					

Name of Work : Rain Water Collection Tank

Location : P9

Bill of Quantity

Item	Particular	Quantity	Unit	Rate	Amount (Currency___)
	Material Charges				
1	Cement	117.93	Bags		
2	Sand	2.25	Sud		
3	Aggregate	4.48	Sud		
4	Jungle Wood	1.49	Ton		
5	5 ply wood	426.94	Sft		
6	Nail	9.28	Viss		
7	Fuel	9.71	Gals		
8	8 mm Ø	0.05	Ton		
9	10 mm Ø	0.52	Ton		
10	12 mm Ø	0.40	Ton		
11	16 mm Ø	0.18	Ton		
12	20 mm Ø	0.17	Ton		
13	Binding Wire	25.00	Lbs		
14	(0.42mm) 4Angle Sheet	94.43	Rft		
15	Roofing Screw	124.00	Nos		
16	100x50x5 U Beam	15.86	m		
17	100x50x20 Lip Channel	28.70	m		
18	50x50 Hollow Pipe	31.47	m		
19	25x25 Square Mesh	9.90	m ²		
	Cost Of Materials				
	Labour Charges				
1	Mason	4	No		
2	Carpenter	71	No		
3	Bar bender	25	No		
4	Worker	97	No		
5	Machine Driver	2	No		
	Cost Of Labour				
	Total Material & Labour Cost				

WATER TREATMENT DRAWINGS
FOR
STAND ALONE WATER SUPPLY SYSTEMS

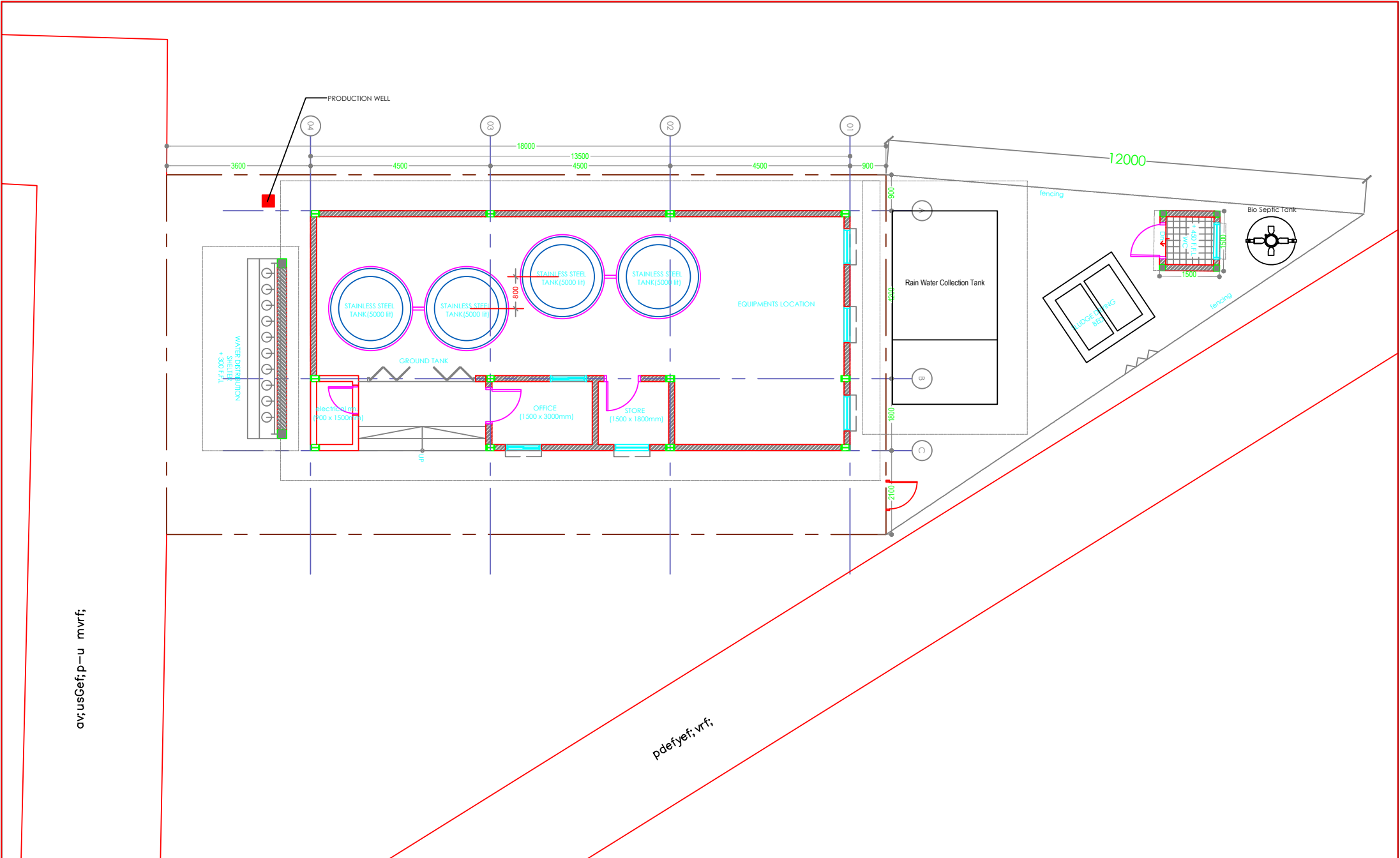
FOR INFORMAL SETTLEMENTS OF YANGON
SUB PROJECT 9
SOUTH DAGON, WARD-54.

SEPTEMBER, 2024

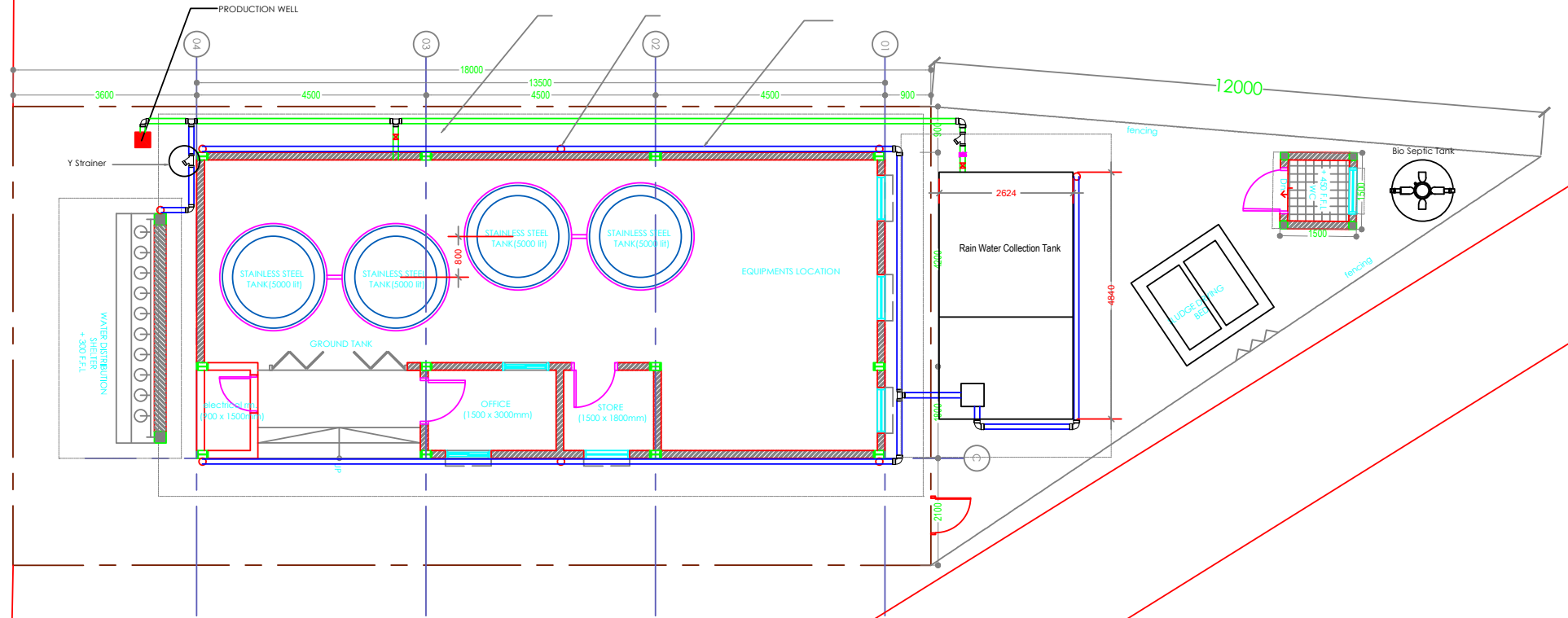
DRAWING LIST

SHEET NO.	DWG NO.	DRAWING TITLE	ISSUE DATE
01	(SD_W54_001)	DRAWING LIST	September, 2024
02	(SD_W54_002)	SITE PLAN	September, 2024
03	(SD_W54_003)	RAIN WATER COLLECTION PIPE PLAN	September, 2024
04	(SD_W54_004)	TANK PLAN & CROSS-SECTION	September, 2024
05	(SD_W54_005)	SCHEMATIC FLOW DIAGRAM	September, 2024
06	(SD_W54_006)	SLUDGE DRYING BED DESIGN	September, 2024
07	(SD_W54_007)	RAIN WATER COLLECTION TANK DESIGN	September, 2024
08	(SD_W54_008)	GENERAL SCHEMATIC DIAGRAM OF WATER DISTRIBUTION PIPE LINES FOR TOILET & WASHING PLACE	September, 2024
09	(SD_W54_009)	PLAN OF WATER SUPPLY & WASH TAP	September, 2024



	Project Name : *Stand Alone Water Supply Systems for Informal Settlements of Yangon* Sub Project-9 (South Dagon - Ward-54)	Drawing Name : DRAWINGS LIST	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist
	Location : Ward-54	Drawing No : SD_W54_001	
	Township : South Dagon	Sheet No : 01	

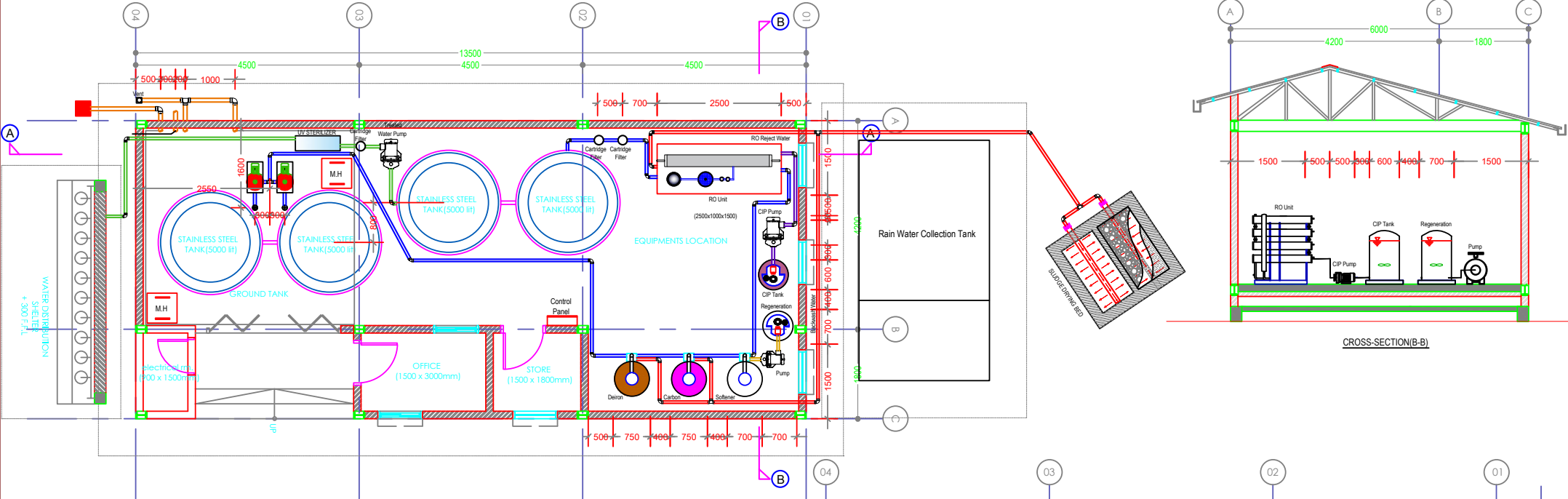


	Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-9 (South Dagon - Ward 22, Apaing 5)	Drawing Name : SITE PLAN	<div><div>A</div>- Architectural</div> <div><div>C</div>- Civil</div> <div><div>S</div>- Structural</div> <div><div>E</div>- Electrical</div> <div><div>PR</div>- Process</div> <div><div>TW</div>- Tube Well</div> <div><div>WT</div>- Water Treatment</div> <div><div>SP</div>- Specialist</div>	
	Location : Ward-54	Drawing No : SD_W54_002		
	Township : South Dagon	Sheet No : 02		



pdefyef;vrf;

No.	Description	Date	Client :		Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-9 (South Dagon - Ward 22, Apaing 5)	Drawing Name : RAIN WATER COLLECTION PIPE PLAN	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	NTS	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar					Date :	10.09.2024	
								Designed By :	MICEG	
			Engineering Services Consultants:		Location : Ward-54	Drawing No : SD_W54_003		Checked By :	Kyaw Soe Win	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : South Dagon	Sheet No : 03		Approved By :	Khin Maung Htaey (PD)	



LEGEND

	Supply Pump
	NaOH
	PAC
	CIP Tank
	Antiscalant Tank
	Air Blower
	Deiron Filter
	Sand Filter
	Carbon Filter
	Reverse Osmosis
	Cartridge Filter
	UV Unit

No.	Description	Date
1.	FINAL SUBMISSION	10.09.2024

Client :
UN-HABITAT Myanmar
Engineering Services Consultants:
Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group



Project Name :	"Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-9 (South Dagon - Ward-54)
Location :	Ward-54
Township :	South Dagon

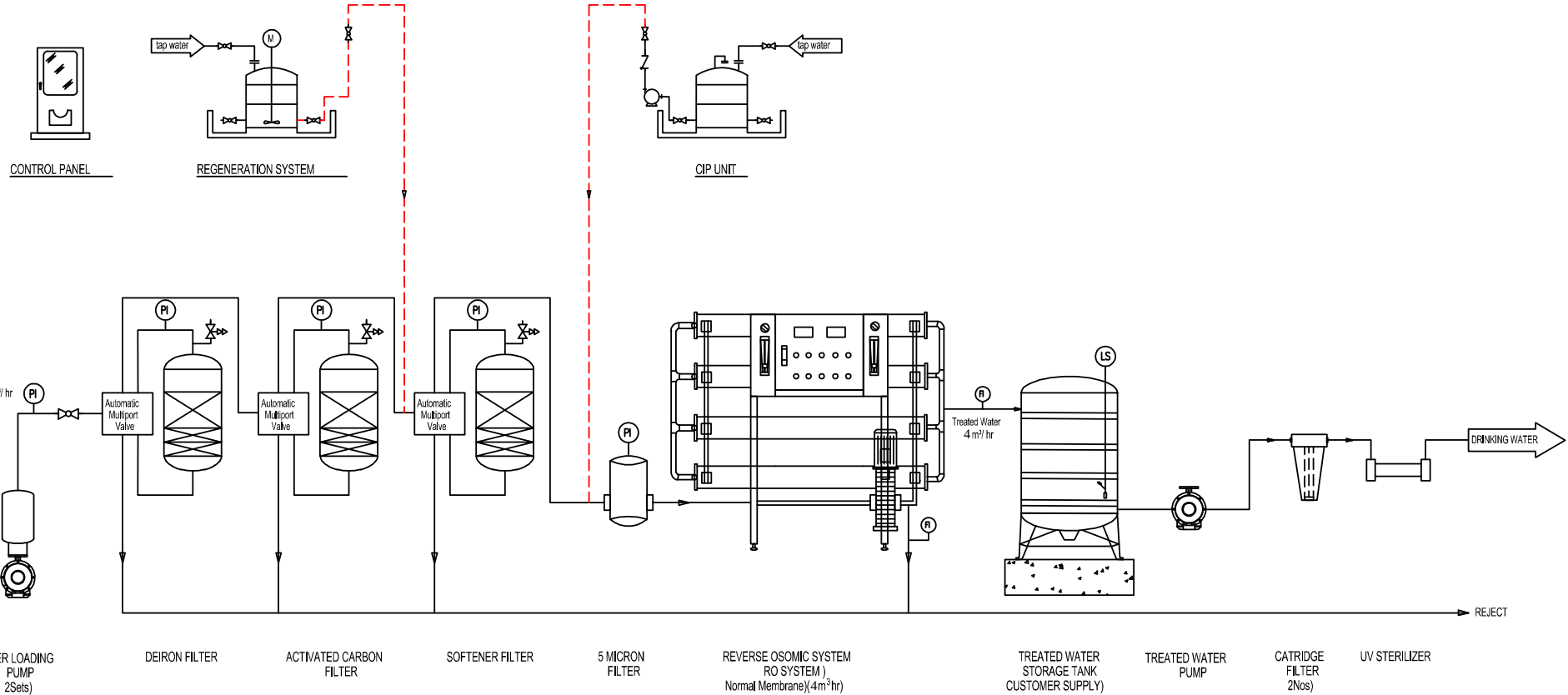
Drawing Name :	TANK PLAN & CROSS-SECTION
Drawing No :	SD_W54_004
Sheet No :	04

Project Status :
A - Architectural
C - Civil
S - Structural
E - Electrical
PR - Process
TW - Tube Well
WT - Water Treatment
SP - Specialist

Scale :	NTS	SIGNATURE
Date :	10.09.2024	
Designed By :	MICEG	
Checked By :	Kyaw Soe Win	
Approved By :	Khin Maung Htaey (PD)	

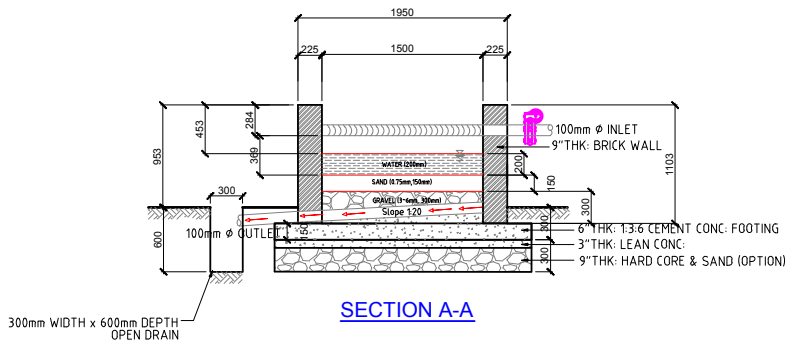
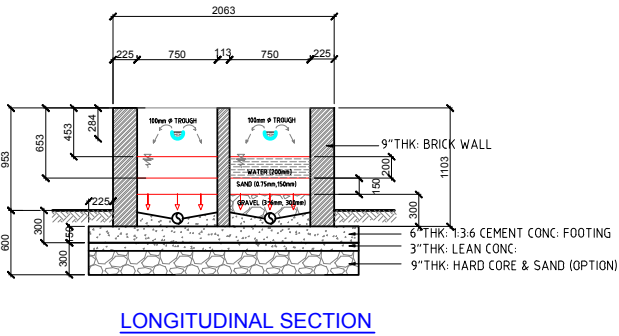
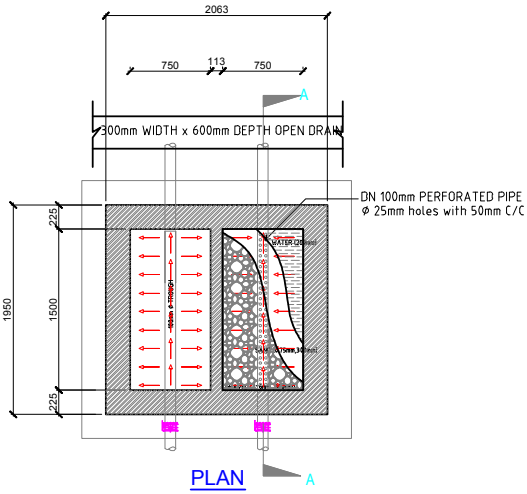
SCHEMATIC FLOW DIAGRAM OF DRINKING WATER TREATMENT SYSTEM (4m³/hr)
(SOUTH DAGON , WARD-54) (Pj-9)






Legend Symbol)	
	BALL VALVE
	CHECK VALVE
	LEVEL SWITCH
	FLOW METER
	PRESSURE GAUGE
	MIXER MOTOR
	CENTRIFUGAL PUMP



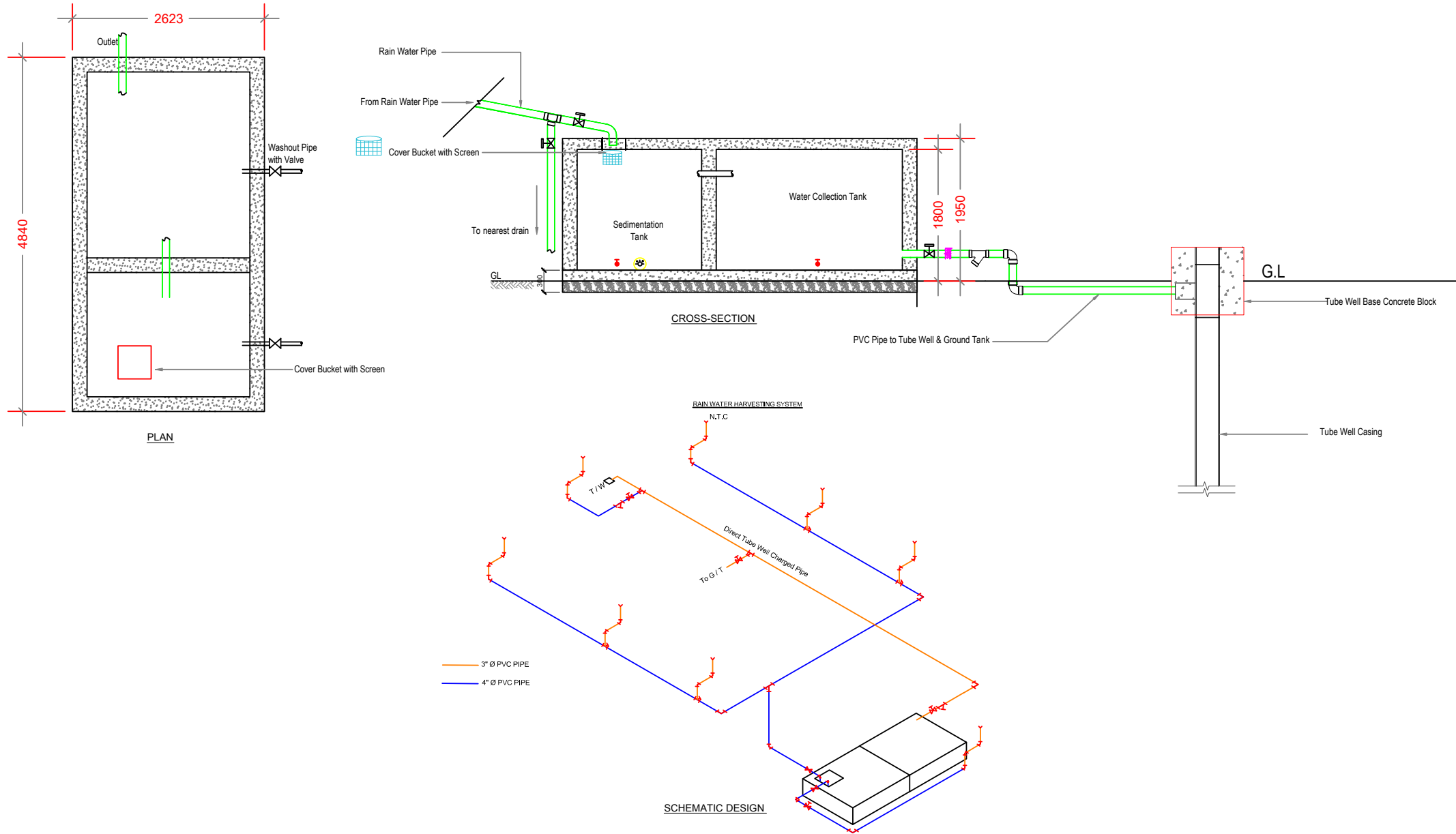
No.	Description	Date	Client :	Project Name :	Drawing Name :	Project Status :	Scale :	NTS	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar	"Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-9 (South Dagon - Ward-54)	SCHEMATIC FLOW DIAGRAM	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	10.09.2024	
			Engineering Services Consultants:	Location : Ward-54	Drawing No : SD_W54_005		Designed By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group	Township : South Dagon	Sheet No : 05		Checked By :	Kyaw Soe Win	
							Approved By :	Khin Maung Htaey (PD)	






SLUDGE DRYING BED DESIGN



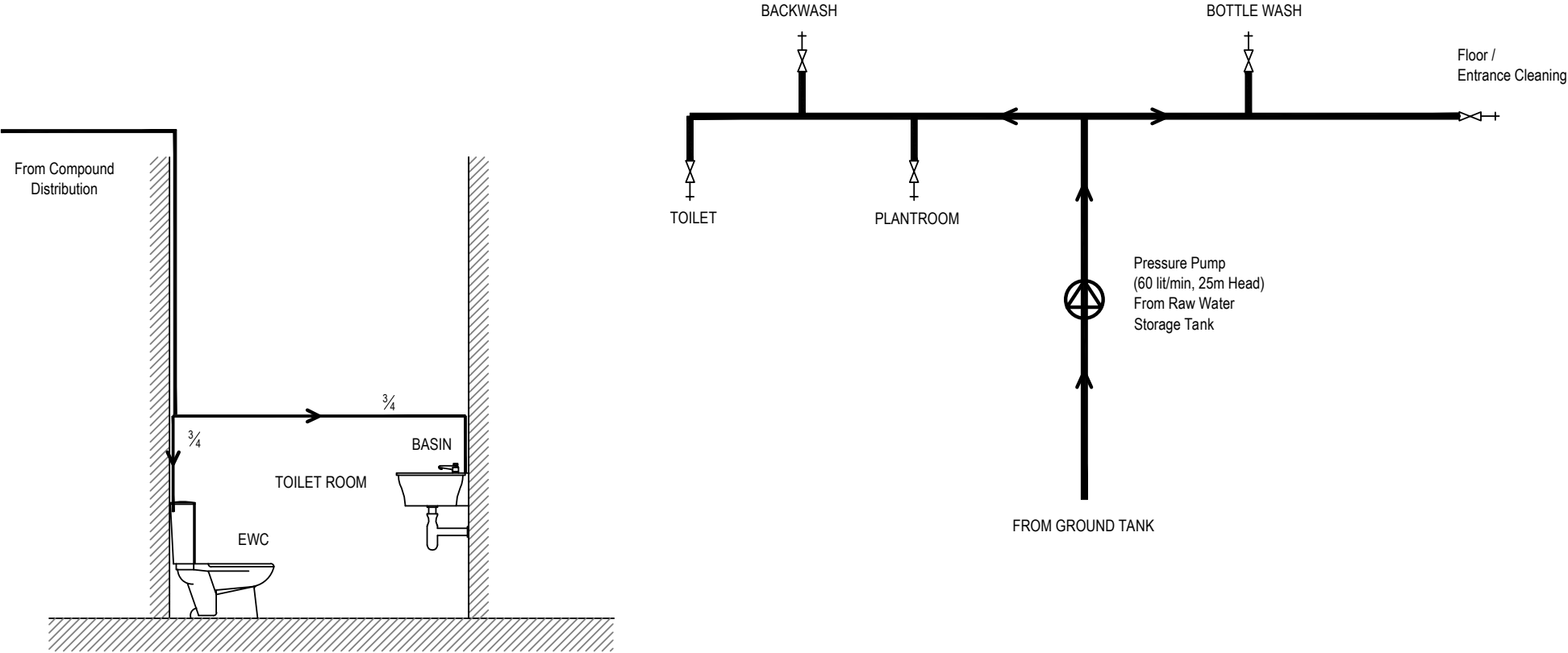
No.	Description	Date	Client :		Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-9 (South Dagon - Ward-54)	Drawing Name : SLUDGE DRYING BED DESIGN	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	1 : 50	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar					Date :	10.09.2024	
			Engineering Services Consultants:		Location : Ward-54	Drawing No : SD_W54_006		Designed By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : South Dagon	Sheet No : 06		Checked By :	Kyaw Soe Win	
								Approved By :	Khin Maung Htaoey (PD)	

RAIN WATER COLLECTION TANK DESIGN








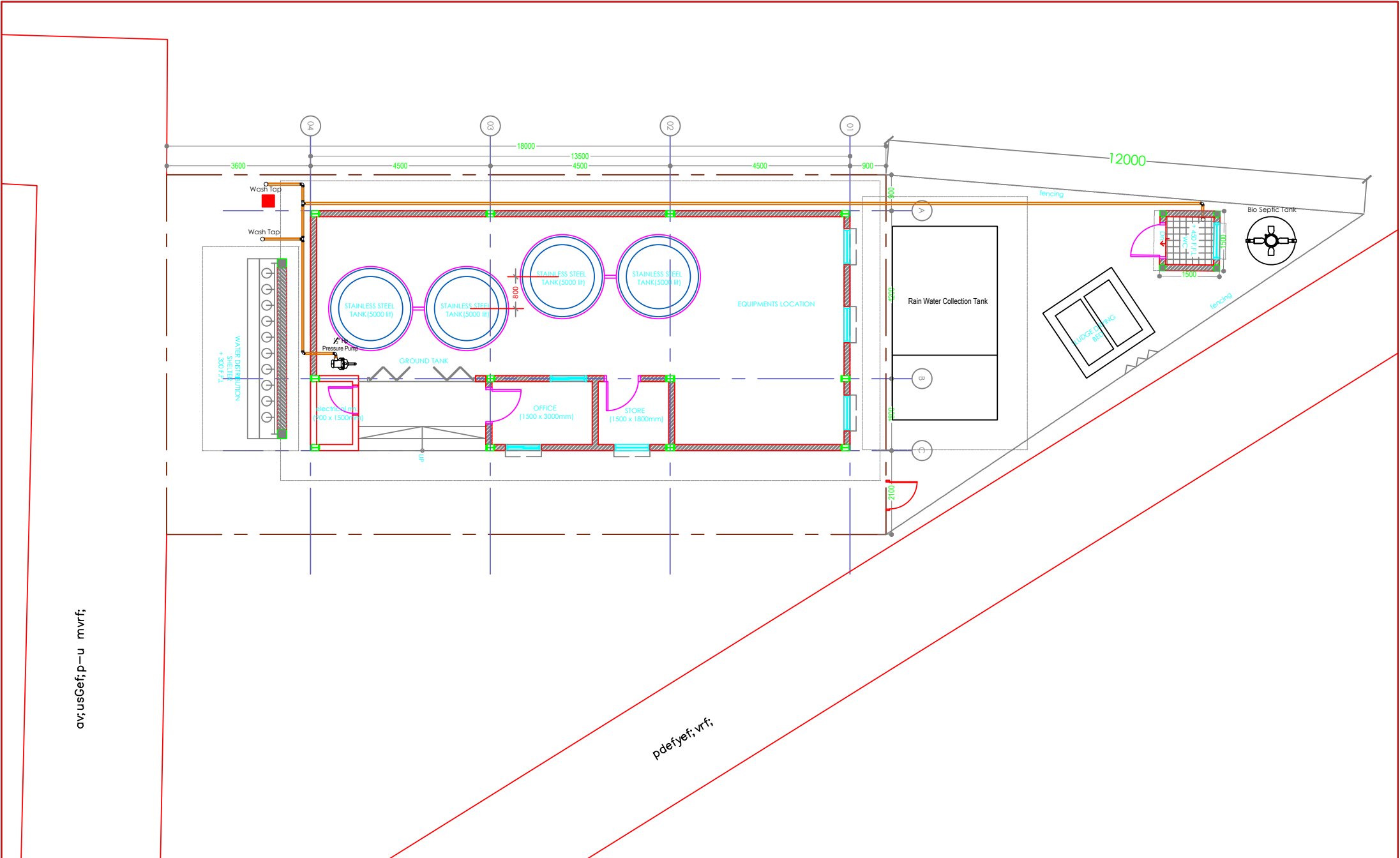
No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1 : 50	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-9 (South Dagon - Ward-54)	RAIN WATER COLLECTION TANK DESIGN	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	10.09.2024	
			Engineering Services Consultants:		Location : Ward-54	Drawing No : SD_W54_007		Designed By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : South Dagon	Sheet No : 07		Checked By :	Kyaw Soe Win	
								Approved By :	Khin Maung Htaey (PD)	



General Schematic Diagram of Water Distribution Pipe Lines
For Toilet & Washing Place in Plant Compound.

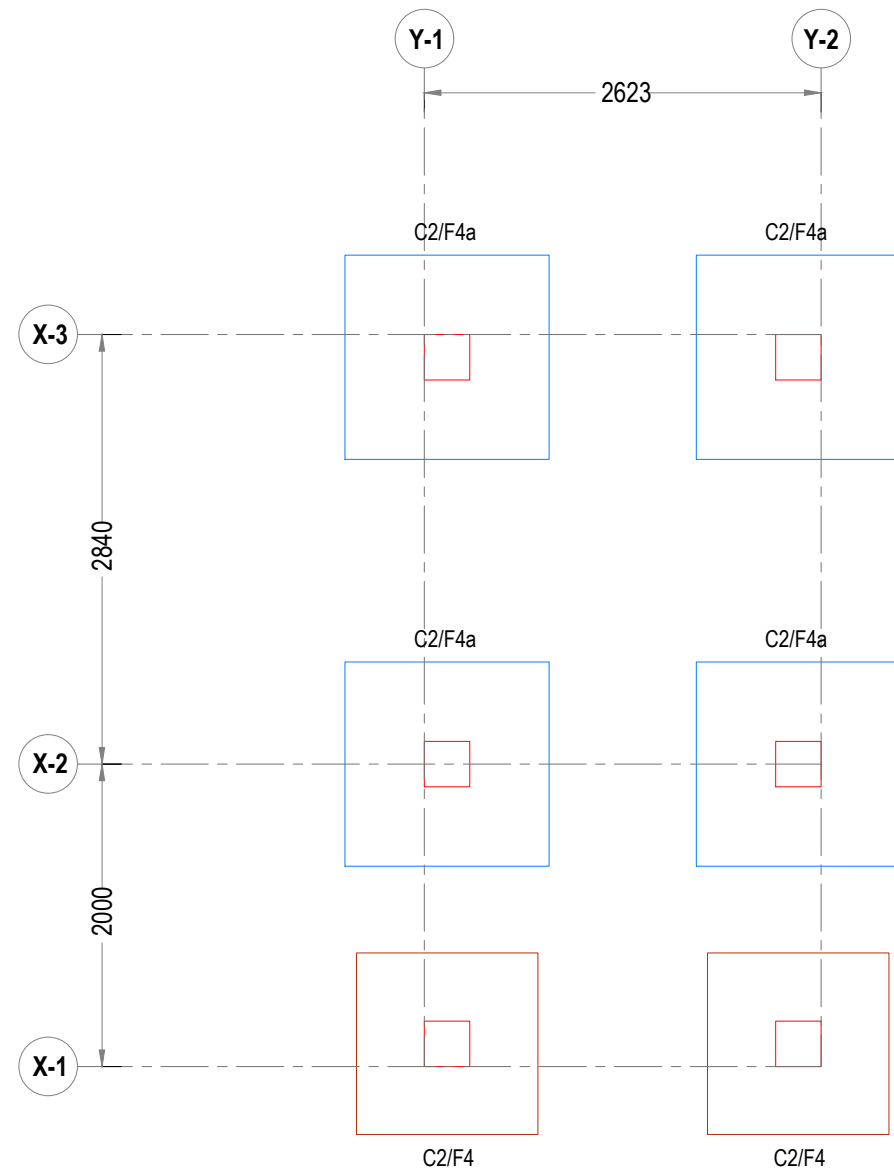


Notes; See in BOQ for More Information.

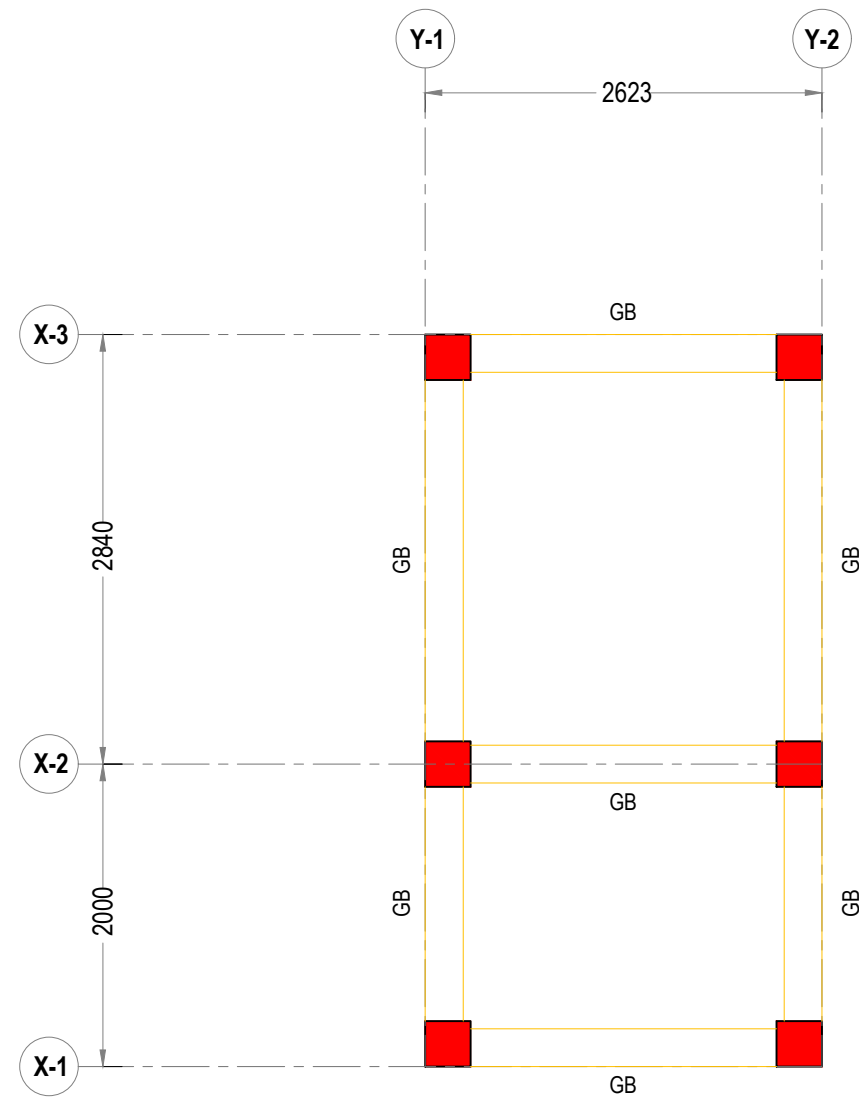
No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	NTS	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-9 (South Dagon - Ward-54)	General Schematic Diagram of Water Distribution Pipe Lines for Toilet & Washing Place	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	10.09.2024	
			Engineering Services Consultants:		Location : Ward-54	Drawing No : SD_W54_008		Designed By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : South Dagon	Sheet No : 08		Checked By :	Kyaw Soe Win	
								Approved By :	Khin Maung Htaey (PD)	



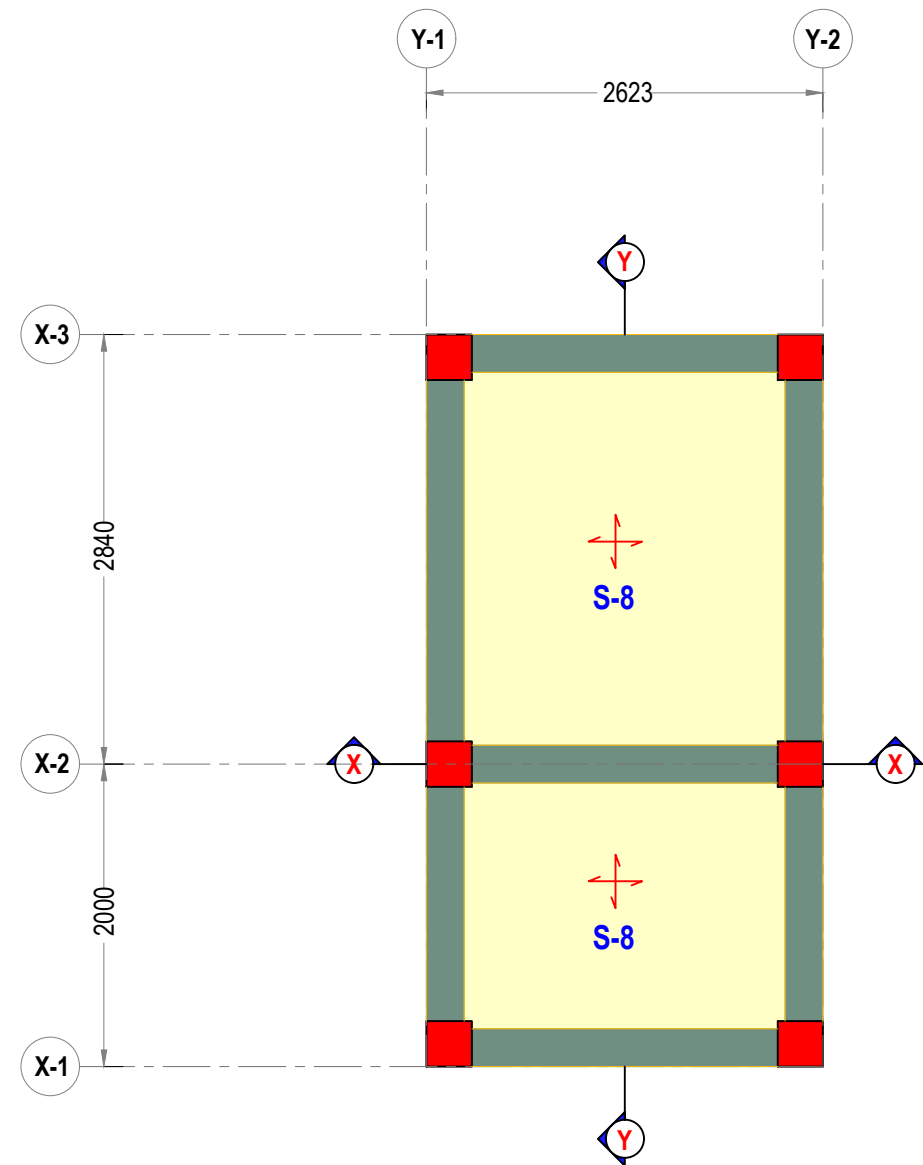
No.	Description	Date	Client :		Project Name :	Drawing Name :	<div>A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist</div>	Scale :	NTS	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-9 (South Dagon - Ward 22, Apaing 5)	WATER SUPPLY & WASH TAP PLAN		Date :	10.09.2024	
			Engineering Services Consultants:		Location :	Drawing No :		Designed By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Ward-54	SD_W54_009		Checked By :	Kyaw Soe Win	
					Township :	Sheet No :		Approved By :	Khin Maung Htaey (PD)	
					South Dagon	09				



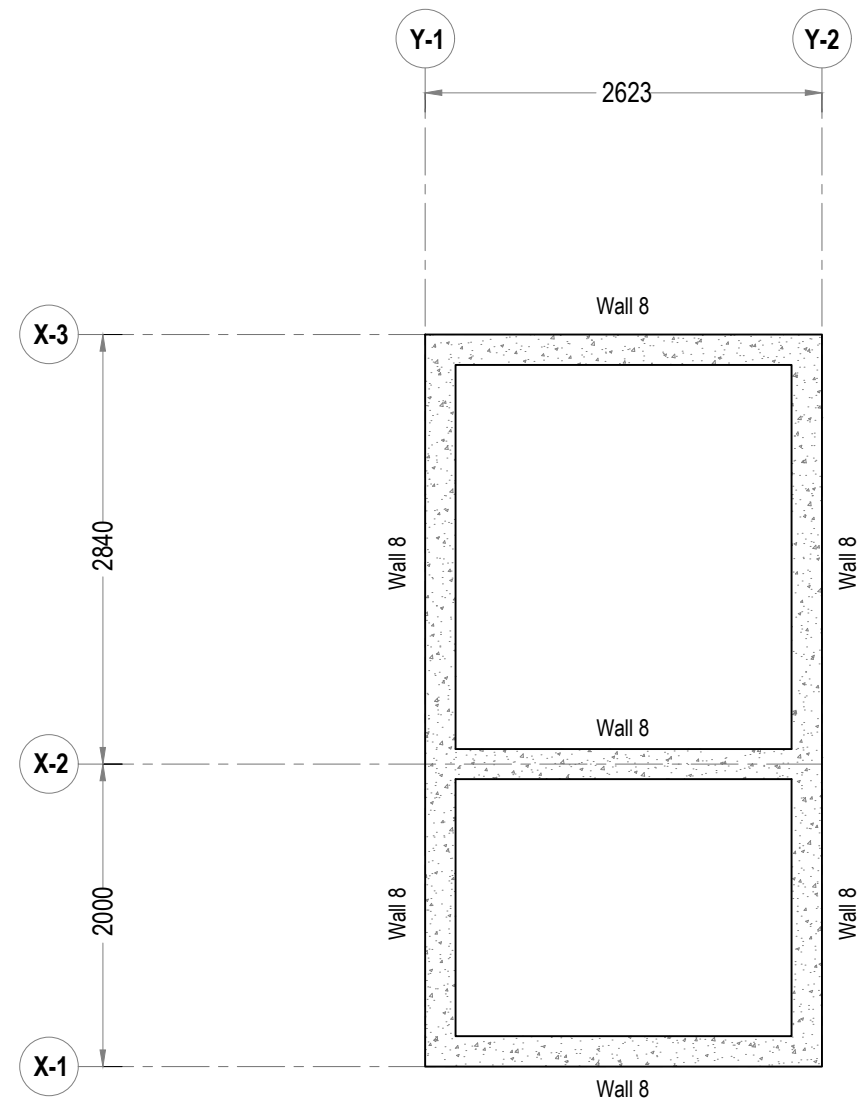
RAIN WATER COLLECTION TANK FOUNDATION PLAN
(-2.100 m LEVEL)



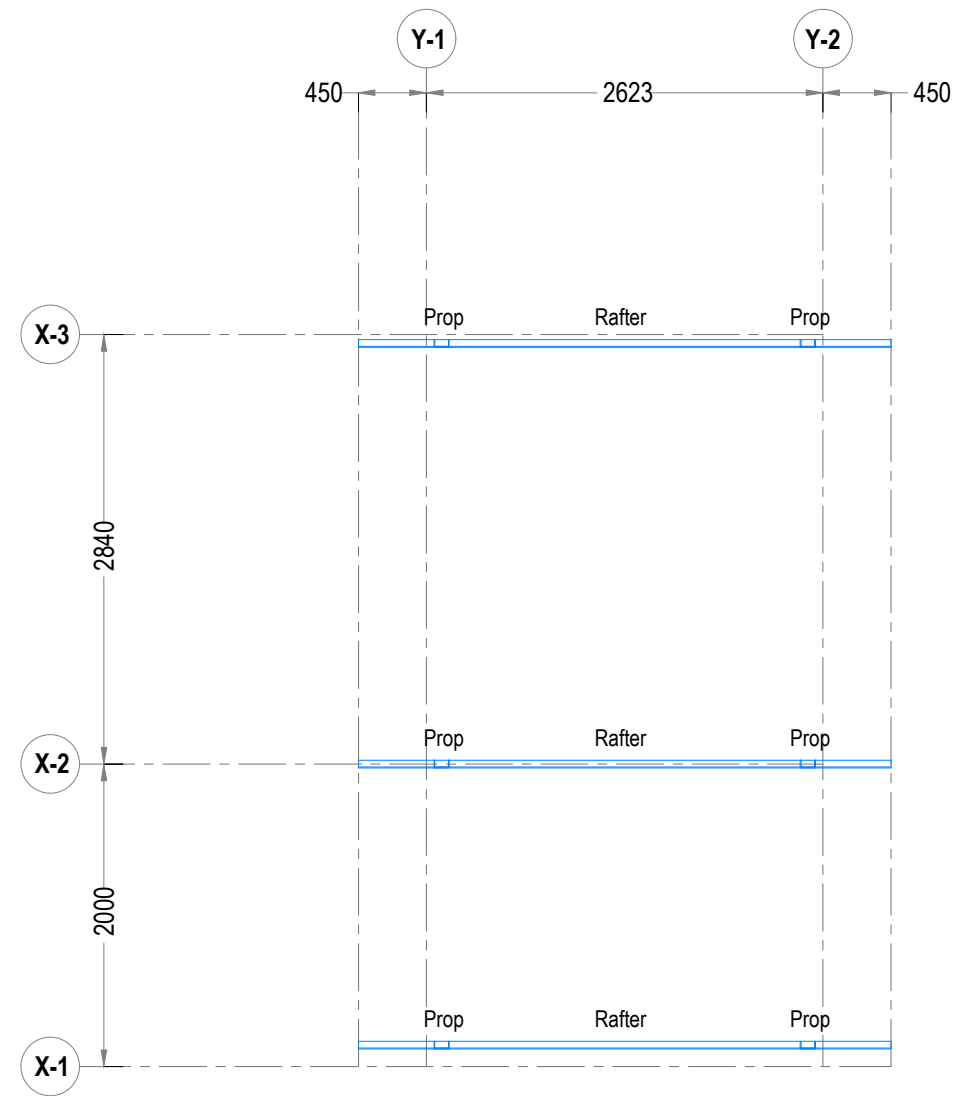
RAIN WATER COLLECTION GROUND BEAM PLAN
(+0.300 m LEVEL)



RAIN WATER COLLECTION BASE SLAB BEAM PLAN
(+0.300 m LEVEL)

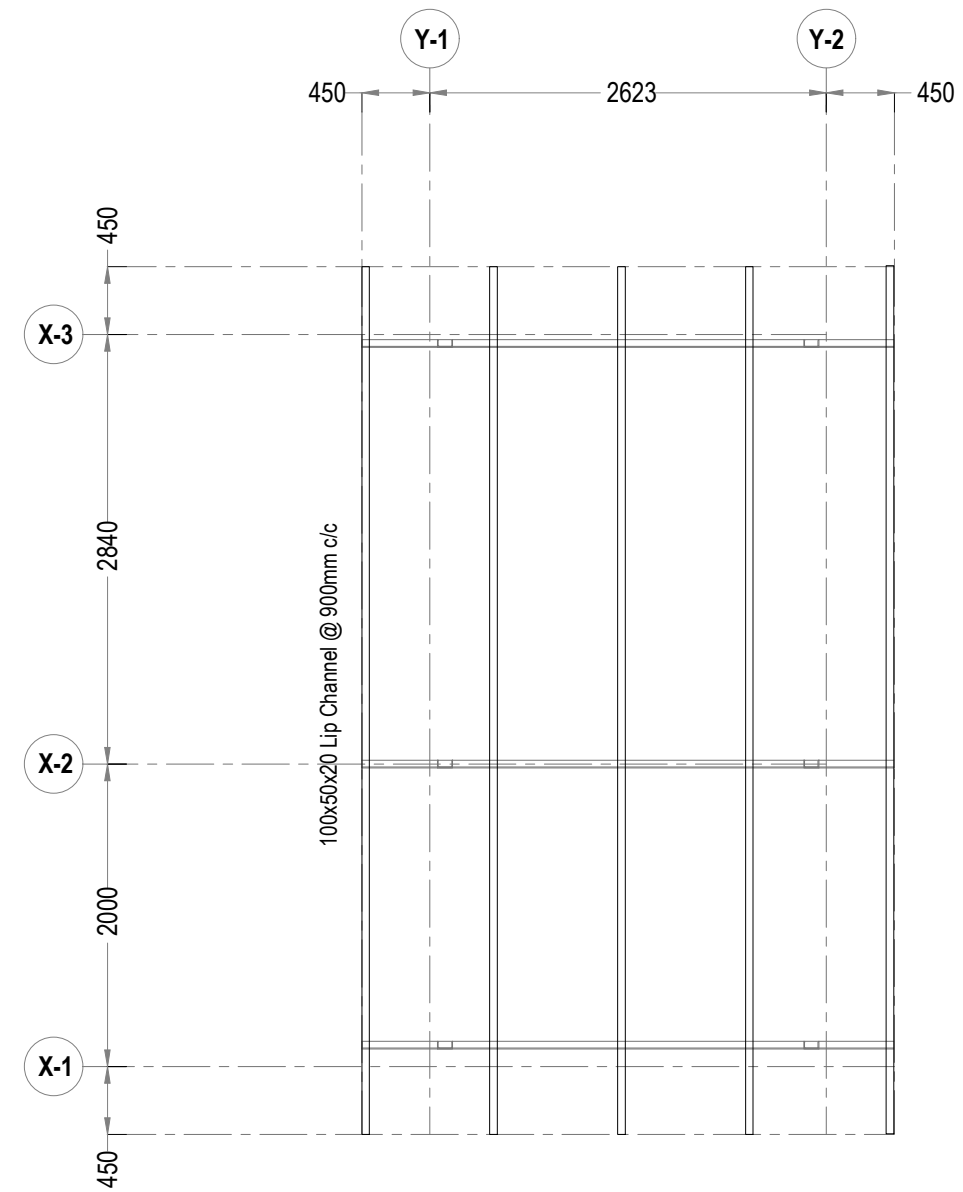


200mm THICK R.C WALL PLAN
(+0.300 m LEVEL to +2.100 m LEVEL)

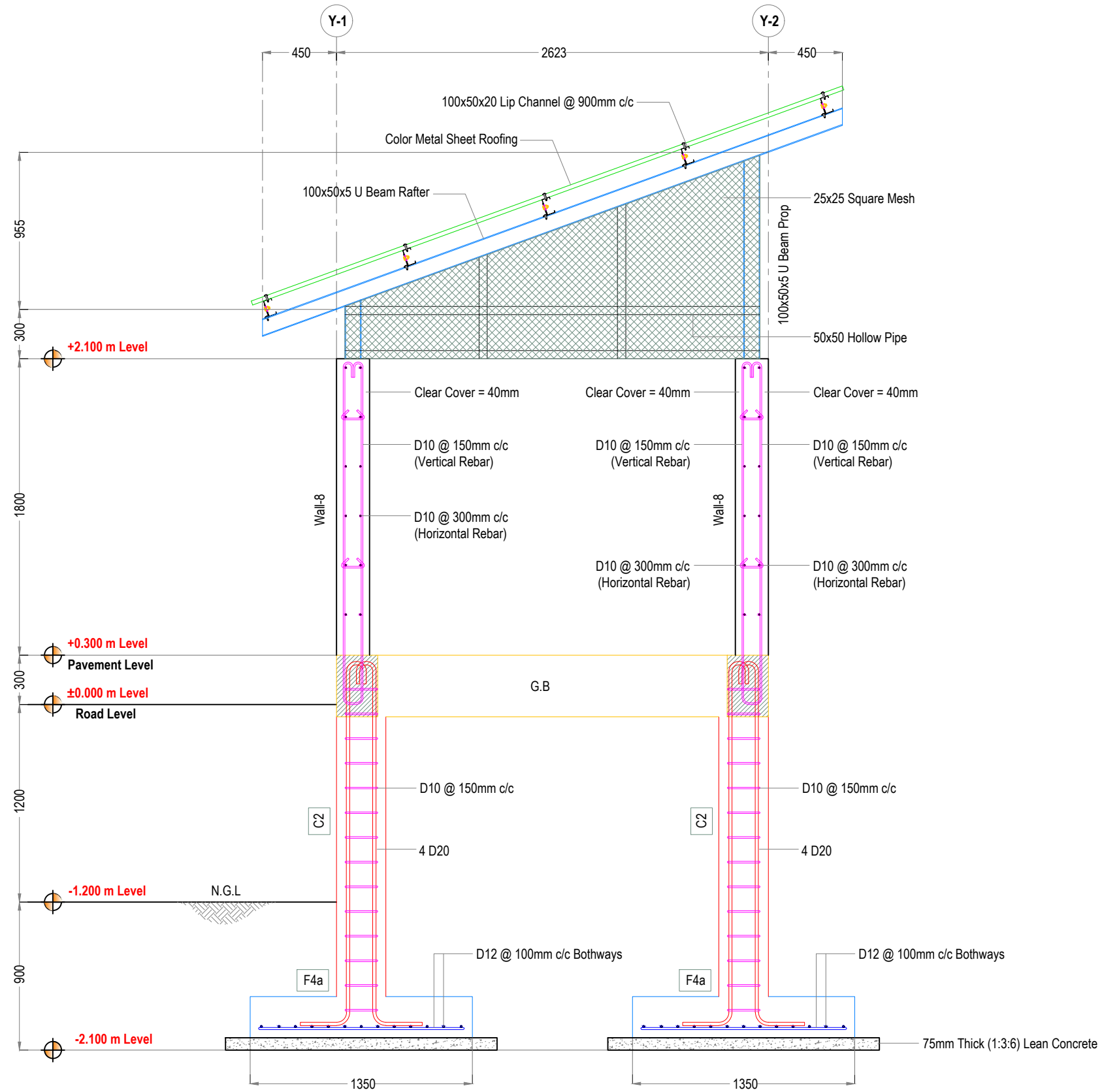


Rafter = (100x50)-5mm Thick U Beam
 Prop = (100x50)-5mm Thick U Beam

STEEL PROP AND RAFTER PLAN



PURLIN PLAN



SECTION
(X-X)

Project 20 Rain Water Harvesting Systems (BQ cost)

Annex A-2

Sr No	Particular	unit	Qty	Rate	Amount	Remark
1	6"x3" PVC Tee (13.5)	No	1			
2	4"ø PVC Pipe	meter	50			
3	4"ø PVC Tee (13.5)	No	2			
4	4"x3" PVC Tee (13.5)	No	6			
5	4"ø PVC Elbow (90°)	No	6			
6	4"ø PVC Elbow (45°)	No	4			
7	4"ø clean out plug	No	2			
8	4"ø PVC socket (13.5)	No	4			
9	4"ø hanger clamp	No	40			
10	5/8"ø long thread	No	20			
11	5/8"ø wall plug (steel)	No	40			
12	3"ø PVC pipe	meter	70			
13	3"ø PVC tee	No	6			
14	3"ø PVC elbow(90°)	No	8			
15	3"ø PVC socket	No	10			
16	3"ø PVC elbow(45°)	No	10			
17	3"ø PVC Butterfly Valve	No	6			
18	3"ø Y Strainer with flange type	No	2			
19	3"ø PVC Flange	No	16			
20	4"ø PVC Butterfly Valve	No	1			
21	4"ø PVC Flange	No	2			
21	2"ø PVC Valve	No	4			
22	3"ø PVC Union	No	2			
23	PVC Cement (500)	Tin	30			
24	3"ø Clamp bracket	No	20			
25	1/2" Long thread	No	6			
26	1/2" Wall plug	No	30			
27	2' x 2'x 2' SS-304 Screen bucket	set	1			
28	5/8" "ø Bolt & Nut with washer	No	42			
29	Labour charges					
30	4"ø	lot	1			
31	3"ø	lot	1			
	Total material + labour cost				-	
	Transportation Charges					
	Grand Total					
	Currency:_____					

Name of Work : Rain Water Collection Tank

Location : P20

Bill of Quantity

Item	Particular	Quantity	Unit	Rate	Amount (Curr:_____)
	Material Charges				
1	Cement	117.93	Bags		
2	Sand	2.25	Sud		
3	Aggregate	4.48	Sud		
4	Jungle Wood	1.49	Ton		
5	5 ply wood	426.94	Sft		
6	Nail	9.28	Viss		
7	Fuel	9.71	Gals		
8	8 mm Ø	0.05	Ton		
9	10 mm Ø	0.52	Ton		
10	12 mm Ø	0.40	Ton		
11	16 mm Ø	0.18	Ton		
12	20 mm Ø	0.17	Ton		
13	Binding Wire	25.00	Lbs		
14	(0.42mm) 4Angle Sheet	94.43	Rft		
15	Roofing Screw	124.00	Nos		
16	100x50x5 U Beam	15.86	m		
17	100x50x20 Lip Channel	28.70	m		
18	50x50 Hollow Pipe	31.47	m		
19	25x25 Square Mesh	9.90	m²		
	Cost Of Materials				
	Labour Charges				
1	Mason	4	No		
2	Carpenter	71	No		
3	Bar bender	25	No		
4	Worker	97	No		
5	Machine Driver	2	No		
	Cost Of Labour				
	Total Material & Labour Cost				






WATER TREATMENT DRAWINGS
FOR
STAND ALONE WATER SUPPLY SYSTEMS

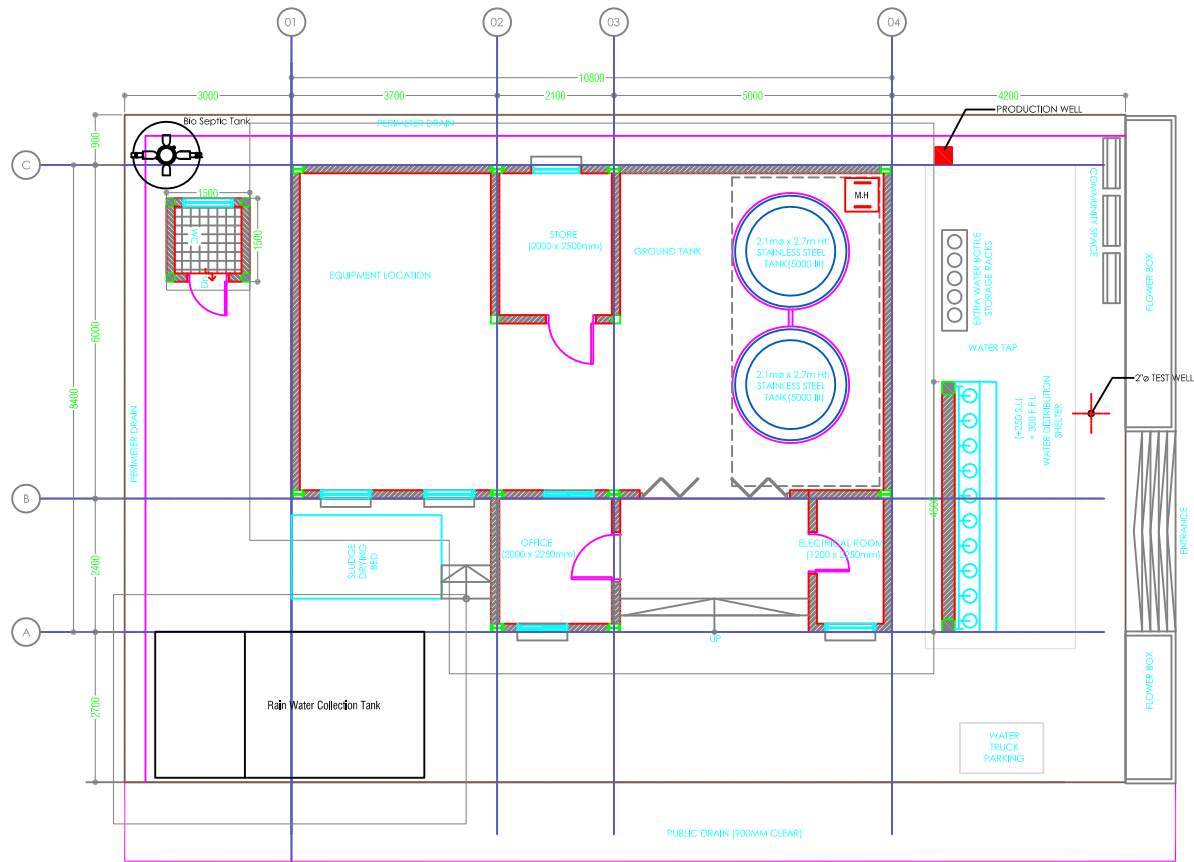
FOR INFORMAL SETTLEMENTS OF YANGON
SUB PROJECT 20
DAGON SEIKKAN, WARD 77.

SEPTEMBER, 2024

DRAWING LIST


SHEET NO.	DWG NO.	DRAWING TITLE	ISSUE DATE
01	(DS_W60_001)	DRAWING LIST	September, 2024
02	(DS_W60_002)	SITE PLAN	September, 2024
03	(DS_W60_003)	RAIN WATER COLLECTION PIPE PLAN	September, 2024
04	(DS_W60_004)	TANK PLAN & CROSS-SECTION	September, 2024
05	(DS_W60_005)	SCHEMATIC FLOW DIAGRAM	September, 2024
06	(DS_W60_006)	SLUDGE DRYING BED DESIGN	September, 2024
07	(DS_W60_007)	RAIN WATER COLLECTION TANK DESIGN	September, 2024
08	(DS_W60_008)	GENERAL SCHEMATIC DIAGRAM OF WATER DISTRIBUTION PIPE LINES FOR TOILET & WASHING PLACE	September, 2024
09	(DS_W60_009)	PLAN OF WATER SUPPLY & WASH TAP	September, 2024

No.	Description	Date	Client :		Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-20 (Dagon Seikkan, Ward 77)	Drawing Name : DRAWINGS LIST	Project Status :	Scale :	NTS	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar					Date :	10.09.2024	
			Engineering Services Consultants:					Designed By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Location : Ward 77	Drawing No : DS_W77_001		Checked By :	Kyaw Soe Win	
					Township : Dagon Seikkan	Sheet No : 01		Approved By :	Khin Maung Htaey (PD)	

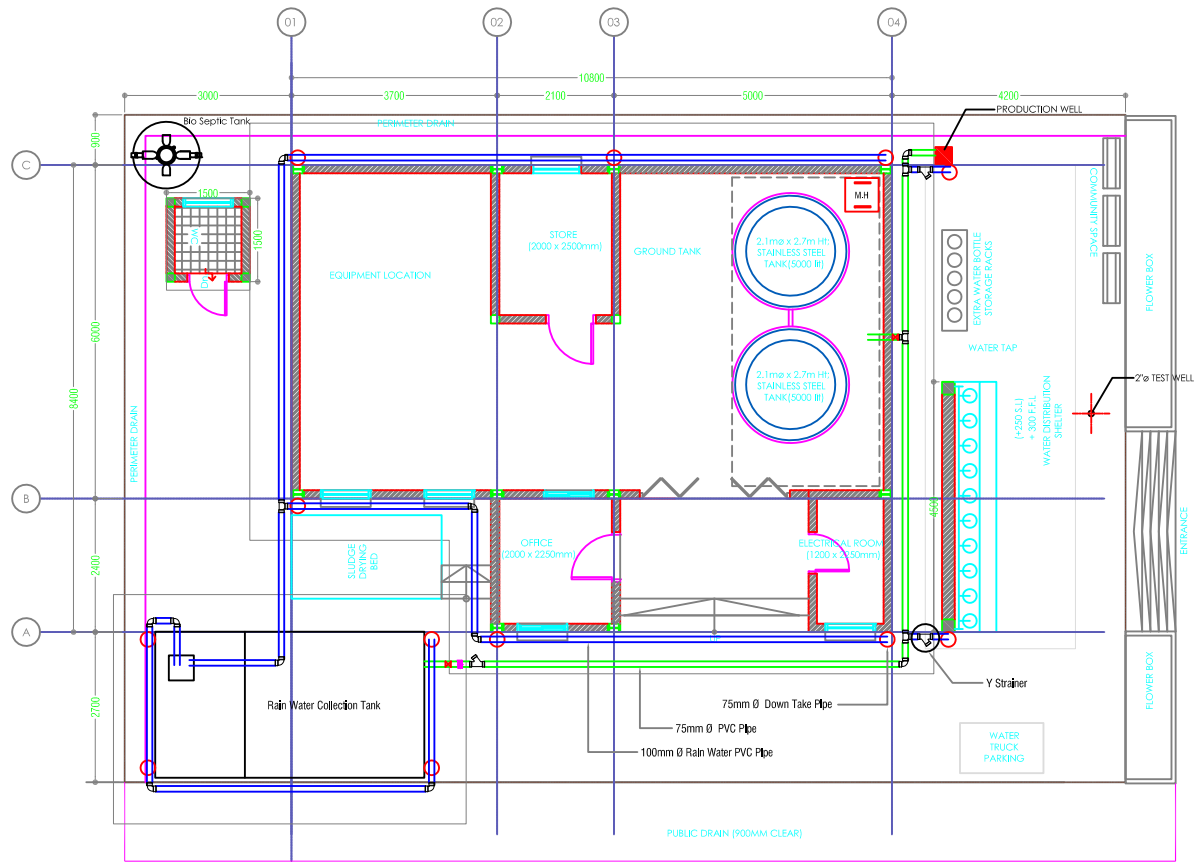


BAWGA THIRI ROAD

THIRIGON ROAD







No.	Description	Date	Client :		Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-20 (Dagon Seikkan, Ward 77)	Drawing Name : SITE PLAN		Scale :	NTS	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar	UN-HABITAT FOR A BETTER URRAN FUTURE				Date :	10.09.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : DS_W77_002		Designed By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : Dagon Seikkan	Sheet No : 02		Checked By :	Kyaw Soe Win	
								Approved By :	Khin Maung Htaey (PD)	

- A - Architectural
- C - Civil
- S - Structural
- E - Electrical
- PR - Process
- TW - Tube Well
- WT - Water Treatment
- SP - Specialist

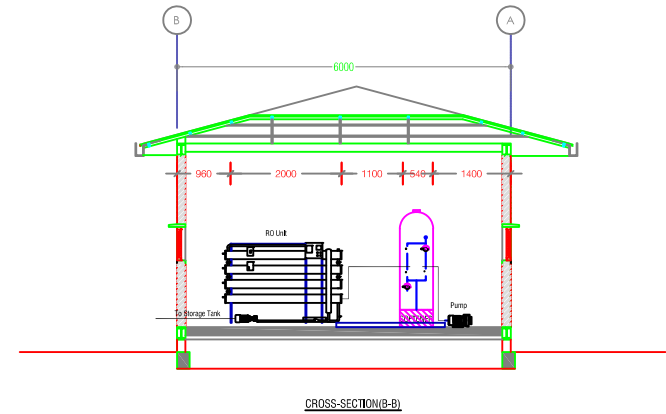
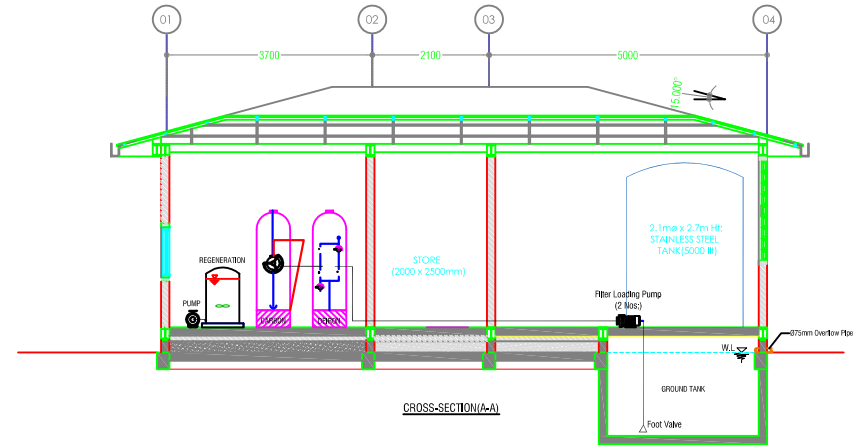
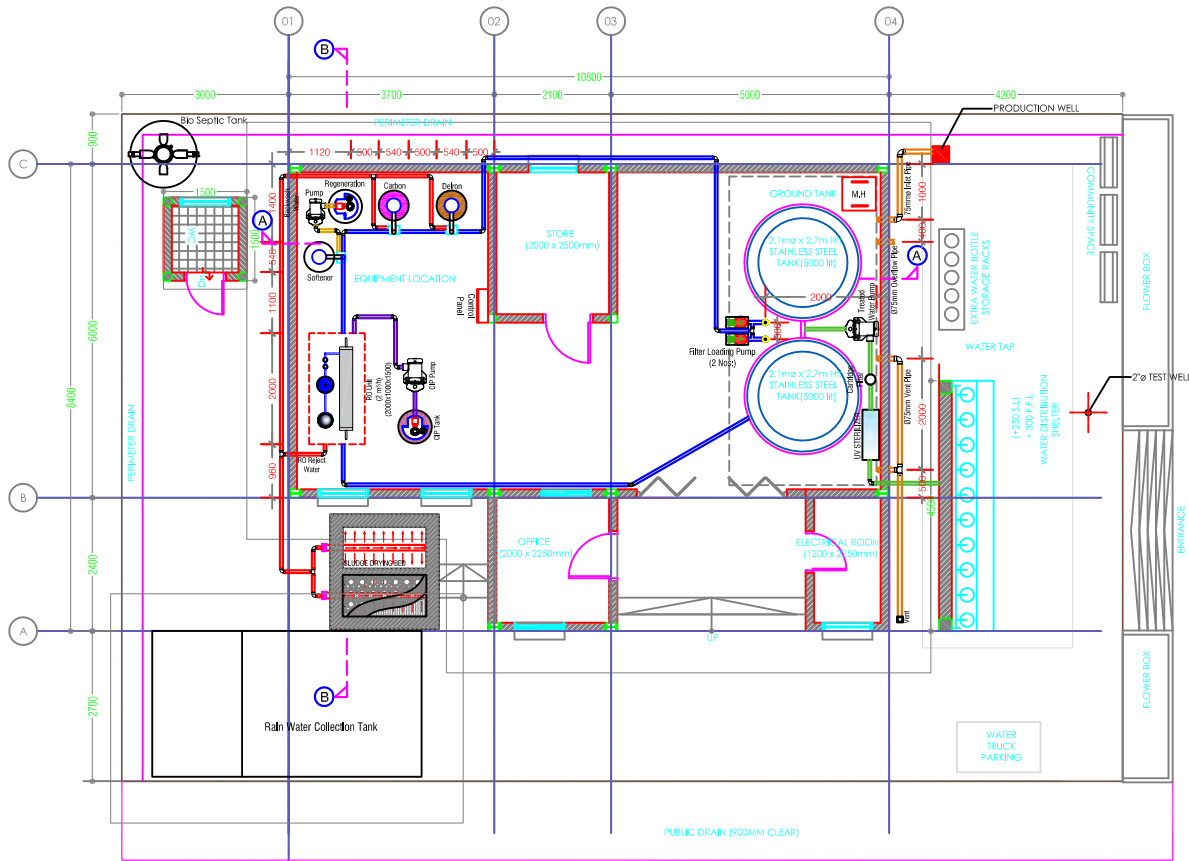


BAWGA THIRI ROAD

THIRIGON ROAD

No.	Description	Date	Client :		Project Name :	Drawing Name :		Scale :	NTS	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar		*Stand Alone Water Supply Systems for Informal Settlements of Yangon*. Sub Project-20 (Dagon Seikkan, Ward 77)	RAIN WATER COLLECTION PIPE PLAN		Date :	10.09.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : DS_W77_003		Designed By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : Dagon Seikkan	Sheet No : 03		Checked By :	Kyaw Soe Win	
								Approved By :	Khin Maung Htaey (PD)	

- A - Architectural
- C - Civil
- S - Structural
- E - Electrical
- PR - Process
- TW - Tube Well
- WT - Water Treatment
- SP - Specialist

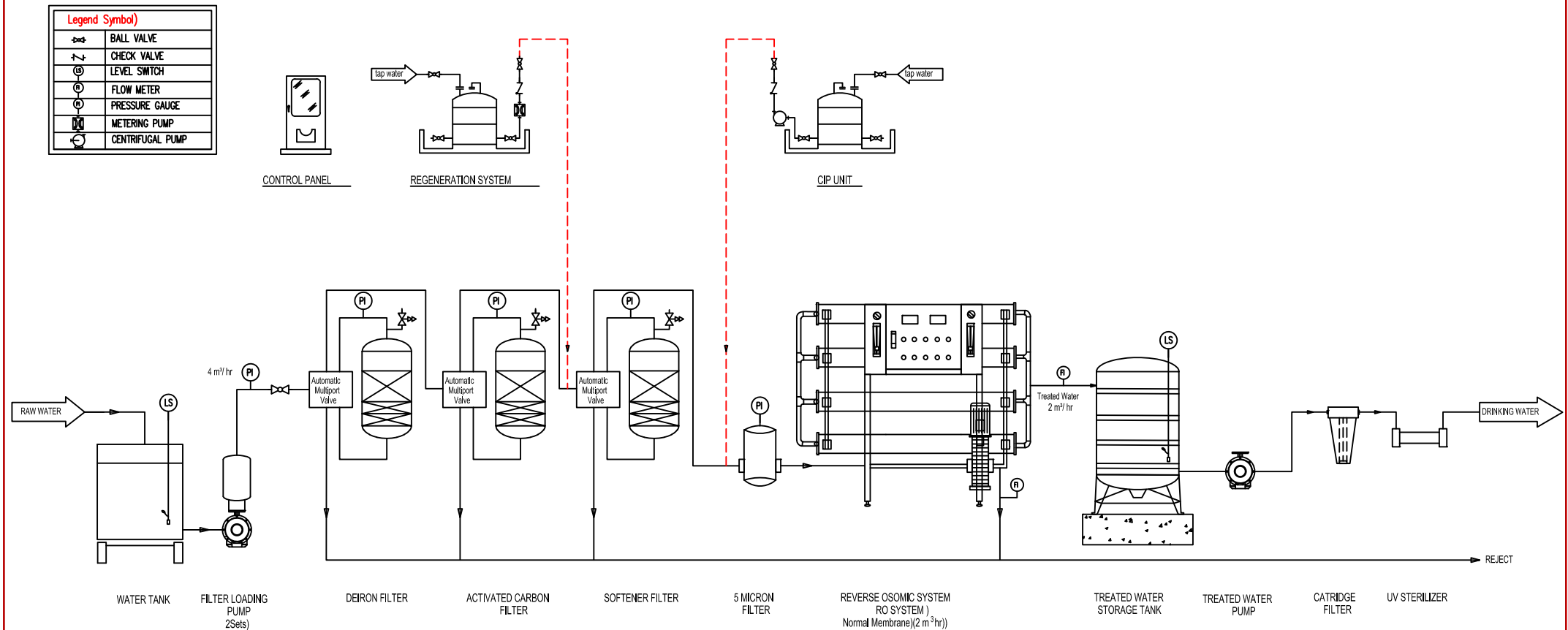







LEGEND

	Supply Pump		Deiron Filter
	NaOH		Sand Filter
	PAC		Carbon Filter
	CIP Tank		Reverse Osmosis
	Antiscalant Tank		Cartridge Filter
	Air Blower		UV Unit

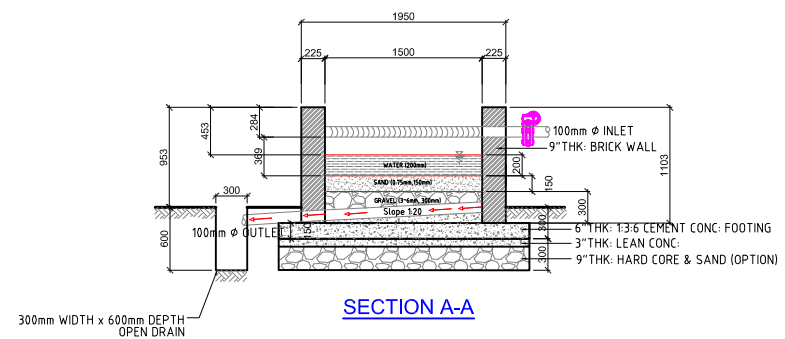
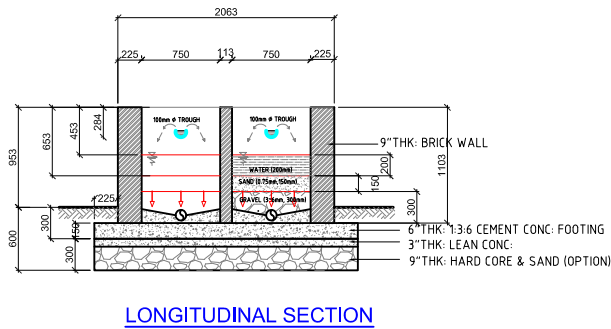
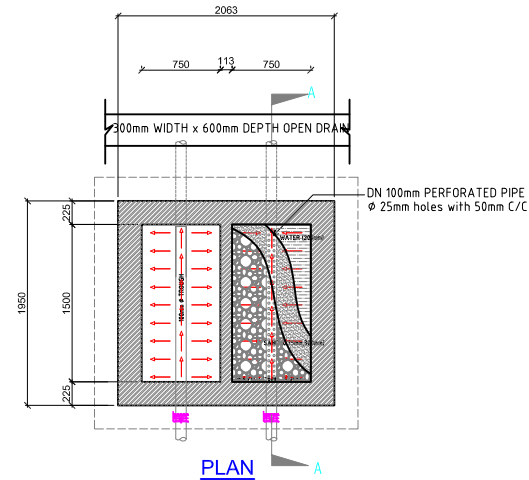
No.	Description	Date	Client :	Project Name :	Drawing Name :	Scale :	NTS	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar	"Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-20 (Dagon Seikkan, Ward 77)	SITE PLAN			
			Engineering Services Consultants:	Location : Ward 77	Drawing No : DS_W77_004			
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group	Township : Dagon Seikkan	Sheet No : 04			



DAGON SEIKKAN , WARD-77)(Pj-20)



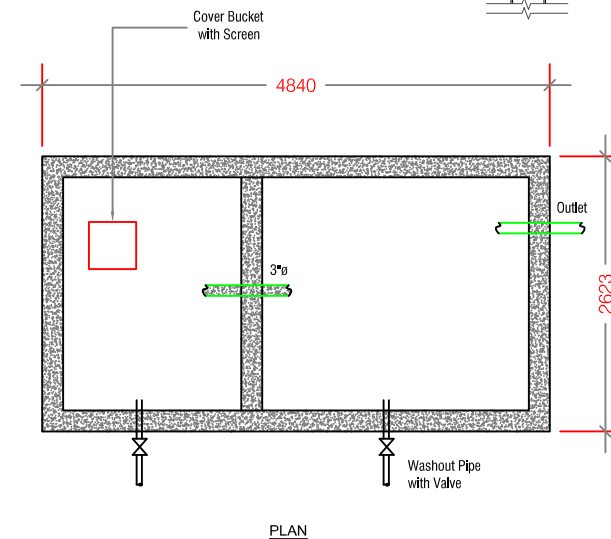
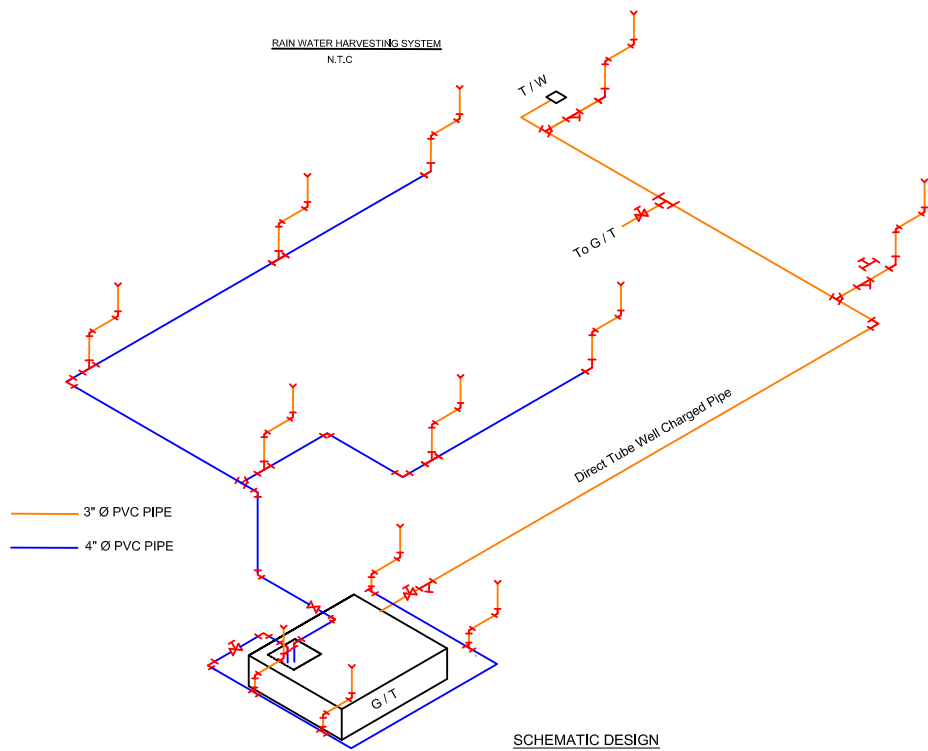
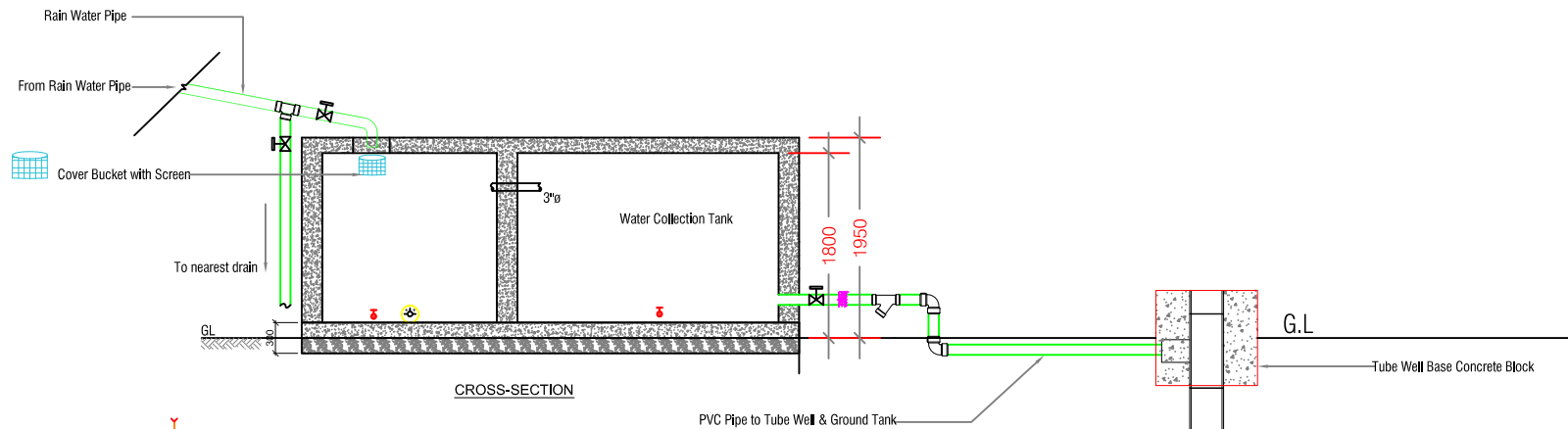
No.	Description	Date	Client : UN-HABITAT Myanmar		Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-20 (Dagon Seikkan, Ward 77)	Drawing Name : SCHEMATIC FLOW DIAGRAM	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	NTS	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024						Engineering Services Consultants: Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		
			Designed By :	MICEG						
			Checked By :	Kyaw Soe Win						
			Approved By :	Khin Maung Htaey (PD)						
					Township : Dagon Seikkan	Sheet No : 05				





SLUDGE DRYING BED DESIGN
FILTRATION RATE 300-900 lt/min/m²



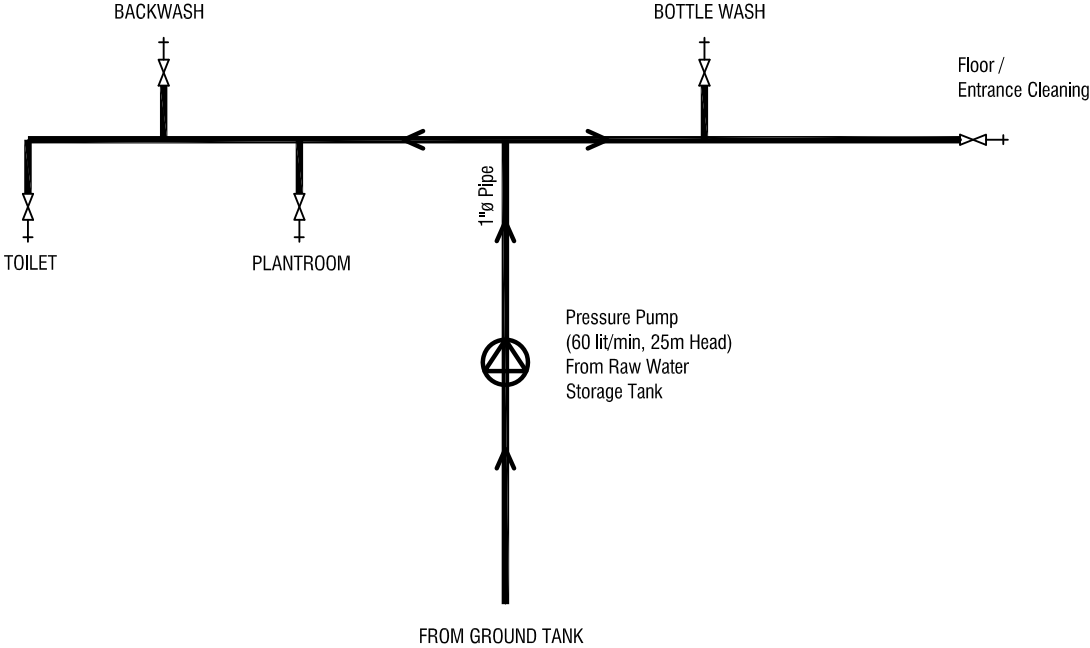
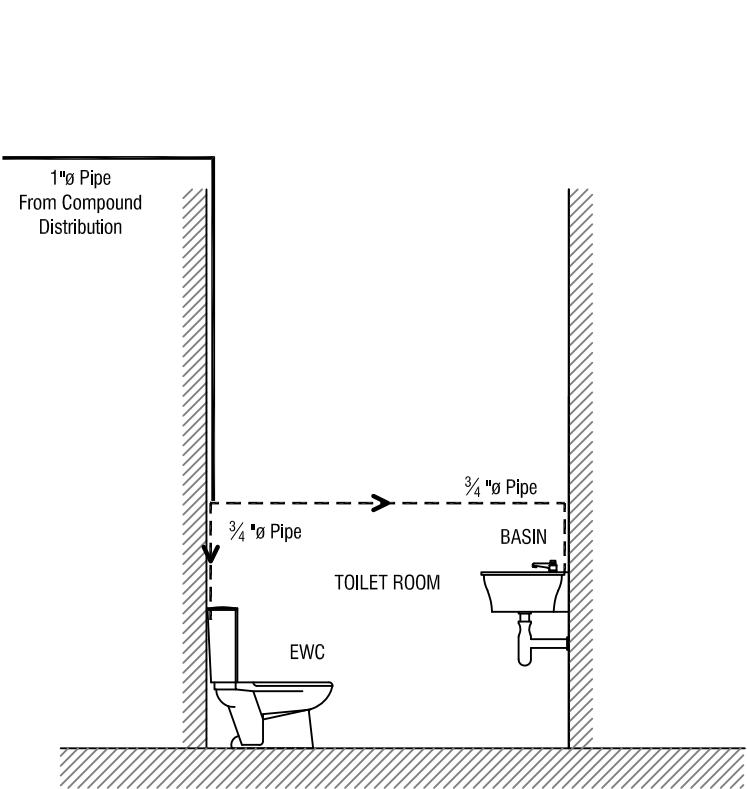
No.	Description	Date	Client :		Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-20 (Dagon Seikkan, Ward 77)	Drawing Name : SLUDGE DRYING BED DESIGN	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	1 : 50	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar					Date :	10.09.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : DS_W77_006		Designed By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : Dagon Seikkan	Sheet No : 06		Checked By :	Kyaw Soe Win	
								Approved By :	Khin Maung Htaey (PD)	

RAIN WATER COLLECTION TANK DESIGN





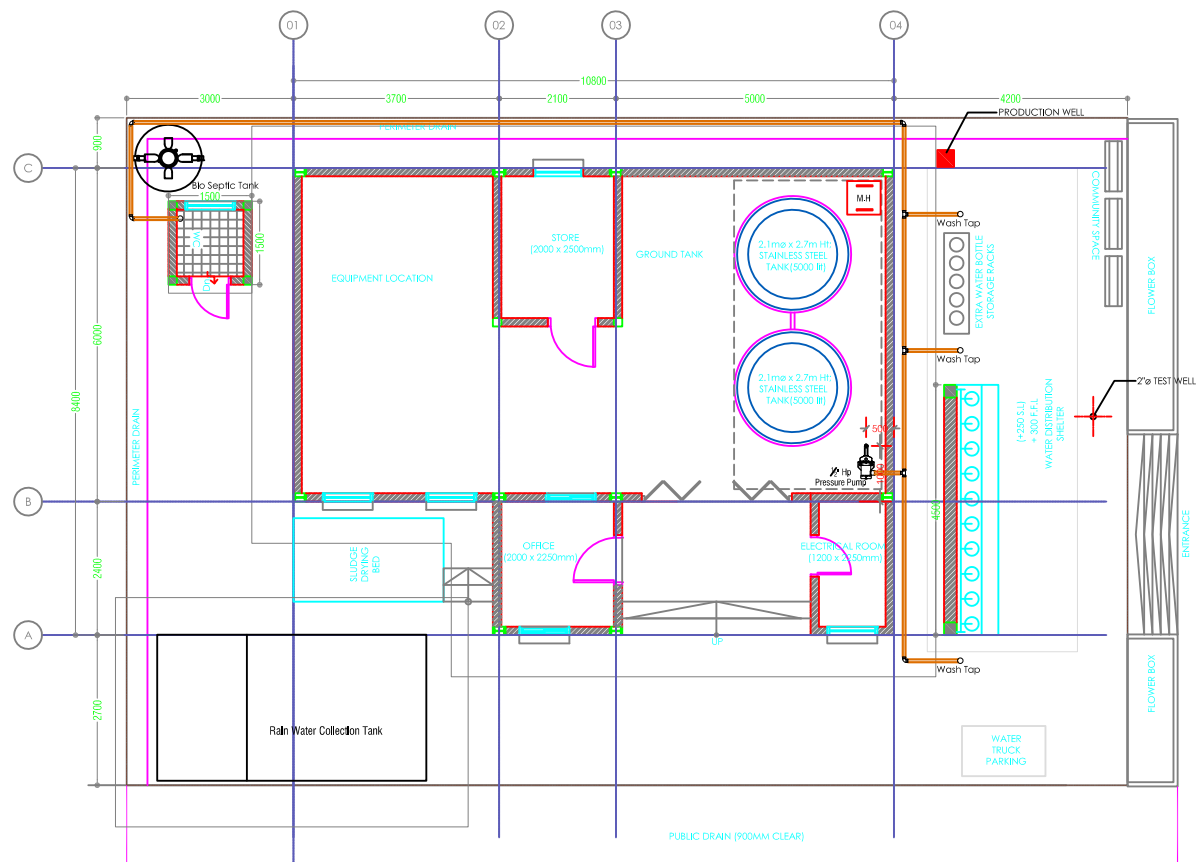
No.	Description	Date	Client :		Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-20 (Dagon Seikkan, Ward 77)	Drawing Name : RAIN WATER COLLECTION TANK DESIGN	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	1 : 50	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar					Date :	10.09.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : DS_W77_007		Designed By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : Dagon Seikkan	Sheet No : 07		Checked By :	Kyaw Soe Win	
								Approved By :	Khin Maung Htaey (PD)	



General Schematic Diagram of Water Distribution Pipe Lines
For Toilet & Washing Place in Plant Compound.



Notes; See in BOQ for More Information.

No.	Description	Date	Client :		Project Name : *Stand Alone Water Supply Systems for Informal Settlements of Yangon*. Sub Project-20 (Dagon Seikkan, Ward 77)	Drawing Name : General Schematic Diagram of Water Distribution Pipe Lines for Toilet & Washing Place	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	NTS	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar		Location : Ward 77	Drawing No : DS_W77_008		Date :	10.09.2024	
			Engineering Services Consultants:		Township : Dagon Seikkan	Sheet No : 08		Designed By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group					Checked By :	Kyaw Soe Win	
								Approved By :	Khin Maung Htaey (PD)	



No.	Description	Date	Client :		Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon". Sub Project-20 (Dagon Seikkan, Ward 77)	Drawing Name : PLAN OF WATER SUPPLY & WASH TAP	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	NTS	SIGNATURE
1.	FINAL SUBMISSION	10.09.2024	UN-HABITAT Myanmar					Date :	10.09.2024	
			Engineering Services Consultants:					Designed By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Location : Ward 77	Drawing No : DS_W77_009		Checked By :	Kyaw Soe Win	
					Township : Dagon Seikkan	Sheet No : 09		Approved By :	Khin Maung Htaoy (PD)	

STRUCTURAL DETAIL DRAWINGS

FOR

STAND ALONE WATER SUPPLY SYSTEMS

FOR INFORMAL SETTLEMENTS OF YANGON

SUB PROJECT 20



(DAGON SEIKKAN - WARD 77)

SEPTEMBER, 2024

DRAWING LIST

SHEET NO.	DWG: NO.	DRAWING TITLE	ISSUE DATE
1	S-001	Drawing List	September , 2024
2	S-002	Specifications	September , 2024
3	S-003	Specifications	September , 2024
4	S-004	Specifications	September , 2024
5	S-005	Specifications	September , 2024
6	S-006	Layout Plan	September , 2024
7	S-007	Foundation Sections	September , 2024
8	S-008	Column & Beam Detail	September , 2024
9	S-009	Ground Tank Base Slab Plan	September , 2024
10	S-010	250mm Thick R.C Wall Plan	September , 2024
11	S-011	250mm Thick R.C Wall Plan	September , 2024
12	S-012	Pipe Position Plan	September , 2024
13	S-013	Pipe Position Section	September , 2024
14	S-014	Footing Plan	September , 2024
15	S-015	Plinth Beam & Ground Tank Top Slab Plan	September , 2024
16	S-016	Base & Top Slab Section	September , 2024
17	S-017	R.C Wall Section	September , 2024
18	S-018	Steel Column & Base Plate Plan	September , 2024
19	S-019	Tie Beam Plan	September , 2024
20	S-020	Prop & Runner Plan	September , 2024
21	S-021	Rafter Plan	September , 2024
22	S-022	Purlin Plan	September , 2024
23	S-023	Roof Section	September , 2024
24	S-024	Roof Section	September , 2024
25	S-025	Water Distribution Shelter Detail	September , 2024
26	S-026	W.C Detail	September , 2024
27	S-027	Culvert Detail	September , 2024
28	S-028	Joint Detail	September , 2024

SHEET NO.	DWG: NO.	DRAWING TITLE	ISSUE DATE
29	S-029	Foundation & G.B Plan	September , 2024
30	S-030	Slab and RC Wall Plan	September , 2024
31	S-031	Rafter & Purlin Plan	September , 2024
32	S-032	Schedules	September , 2024
33	S-033	Section (Y-Y)	September , 2024
34	S-034	Section (X-X)	September , 2024

No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1:30	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	DRAWING LIST	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-001		Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 01		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	

TECHNICAL SPECIFICATIONS AND PARAMETERS

(1) Material Strengths

(A) Concrete

Specified Compressive Design Cylinder Strength, f'_c = 2,500 psi (28 days strength)
 f'_{cu} = 3,200 psi

(B) Reinforcing Steel

Specified Yield Strength, f_y = 50,000 psi (Main Steel)
Specified Yield Strength, f_{ys} = 40,000 psi (Ties)

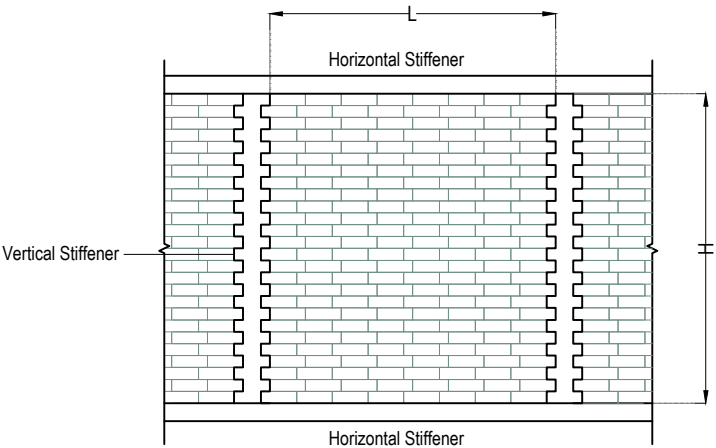
(C) Steel Structures

A36 Steel, F_y = 36,000 psi
 F_u = 58,000 psi
A307, Grade A Bolts
 F_u = 60,000 psi
 F_{nt} = 45,000 psi
 F_{nv} = 24,000 psi

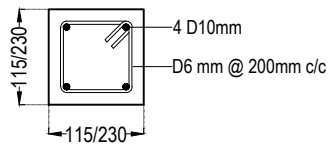
(D) Bricks

Minimum Compression Strength = 1500 psi

Water Absorption - not more than 20% within 2 hours



	Minimum Clear Distance	
	115mm Thick Brick Wall	230mm Thick Brick Wall
L	2000 mm	4000 mm
H	2000 mm	4000 mm



STIFFENER CROSS SECTION

(3) Concrete Protection for Reinforcement (Net Concrete Cover)

(A) Slabs & Walls = $\frac{3}{4}$ " (Not expose directly to weather and ground)
= $1\frac{1}{2}$ " (Expose directly to weather and ground)

(B) Beams & Columns = $1\frac{1}{2}$ " (Not expose directly to weather and ground)
= 2" (Expose directly to weather and ground)

If concrete is poured in direct contact with the ground without the forms,
3 in clear cover must be provided.

(4) Reinforcing bar minimum spacing

(A) Beams = 1.3"

(B) Columns = 1.5"

(C) Slabs and Stairs = 3

(4) Simplified Tension Development Length (l_d)

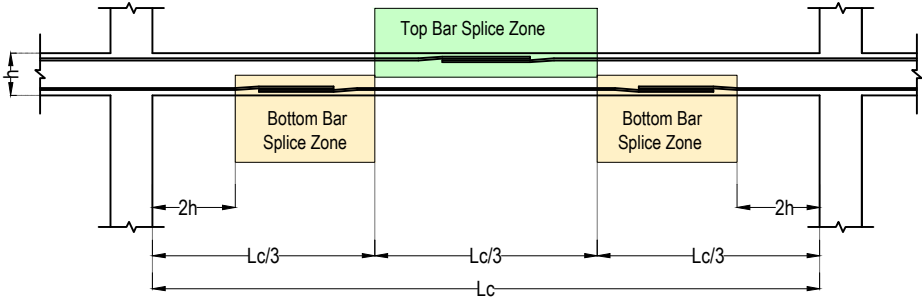
Bar Size	l_d (in) bot:	l_d (in) top	Bar Size	l_d (in) bot:	l_d (in) top
#12	18.9	24.6	#22	43.3	56.3
#16	25.2	32.8	#24	47.2	61.4
#18	28.3	36.8	#25	49.2	64.0
#20	31.5	41.0	Minimum $l_d = 12"$		



(5) Compression Development Length (l_{dc})

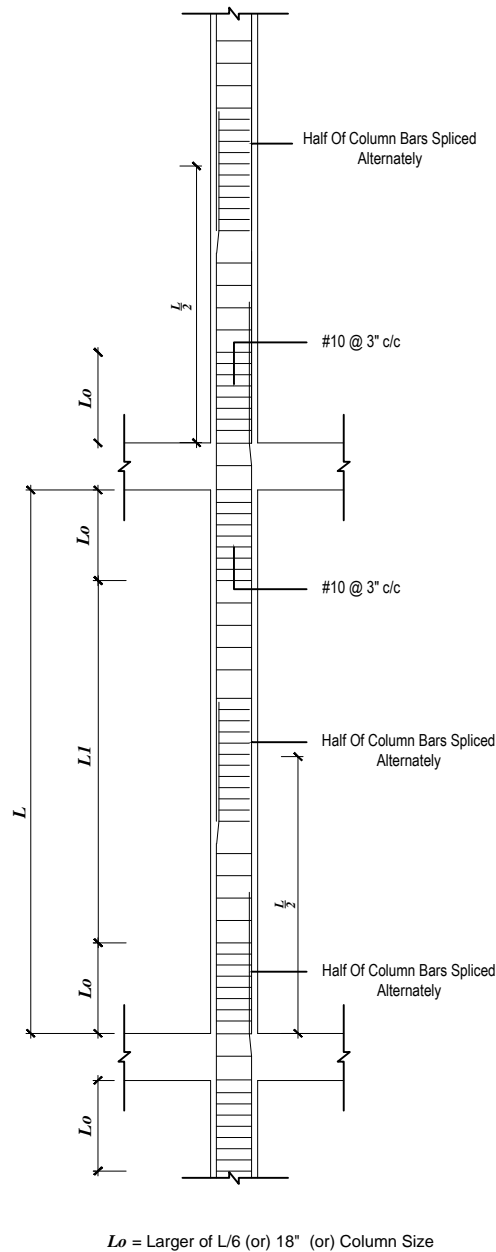
Bar Size	l_{dc} (in)	Bar Size	l_{dc} (in)
#12	9.5	#22	17.3
#16	12.6	#24	18.9
#18	14.2	#25	19.7
#20	15.7	Minimum l_{dc} = 8"	

(6) Lap Splice in Tension

Bar Size	Splice Length (in)	Bar Size	Splice Length (in)
#12	24.6	#22	56.3
#16	32.8	#24	61.4
#18	36.8	#25	64.0
#20	41.0	Minimum Splice Length = 12"	



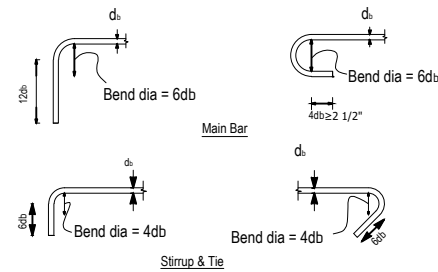
No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1:30	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	SPECIFICATIONS	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-002		Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 02		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	



(7) Lap Splice in Compression

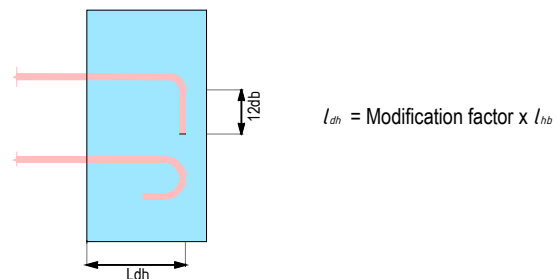
Bar Size	Splice Length (in)	Bar Size	Splice Length (in)
#12	15.7	#22	28.8
#16	21.0	#24	31.5
#18	23.6	#25	32.8
#20	26.2	Minimum Splice Length = 12"	

(8) Standard Bar Hooks



(9) Basic Development Length of Standard Hooks (l_{hb})

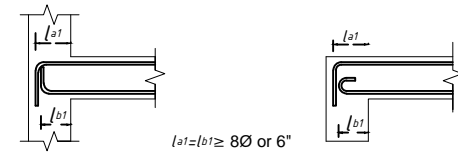
Bar Size	l_{hb} (in)	Bar Size	l_{hb} (in)
#12	9.4	#22	17.3
#16	12.6	#24	18.9
#18	14.2	#25	19.7
#20	15.7	Minimum $l_{hb} = 6$ in	



(10) End Anchorage length

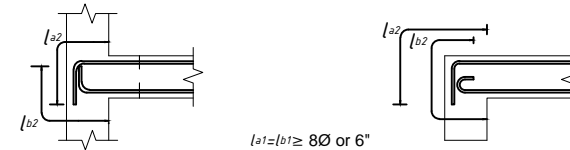
(A) Using Standard Hooks

(a) Beam-Column connections (b) Beam-Girder connections



(B) Using Alternative Method

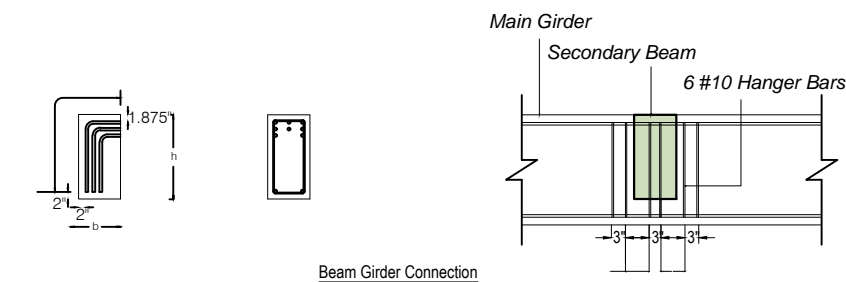
(a) Beam-Column connections (b) Beam-Girder connections



Bar Diameter	l_{a2}	l_{b2}
D12(12mm dia)	15 in	14 in
D16(16mm dia)	20 in	18 in
D18(18mm dia)	22 in	20 in
D22(22mm dia)	27 in	25 in
D25(25mm dia)	31 in	28 in

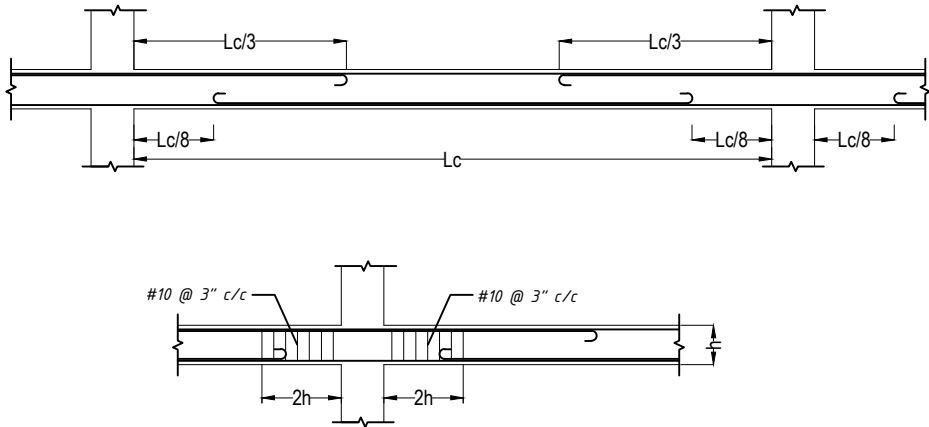
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1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar	"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	SPECIFICATIONS	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-003	Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 03	Checked By :	Myo Nyunt	
							Approved By :	Khin Maung Htaey (PD)	

(C)Maximum Anchorage Length That can be Accommodated in a Given Primary (Girder) Section

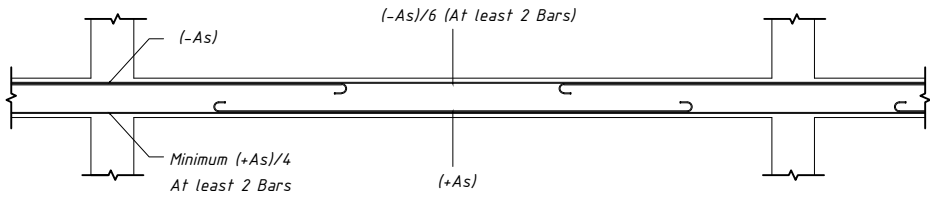


Bar Size , d _s	[max (inch)]		
	First layer	Second layer	Third layer
D12(12mm dia)	b+h-7.06	b+h-8.95	b+h-10.84
D16(16mm dia)	b+h-7.45	b+h-9.97	b+h-12.49
D18(18mm dia)	b+h-7.65	b+h-10.48	b+h-13.32
D22(22mm dia)	b+h-8.04	b+h-11.50	b+h-14.97
D25(25mm dia)	b+h-8.34	b+h-12.27	b+h-16.21

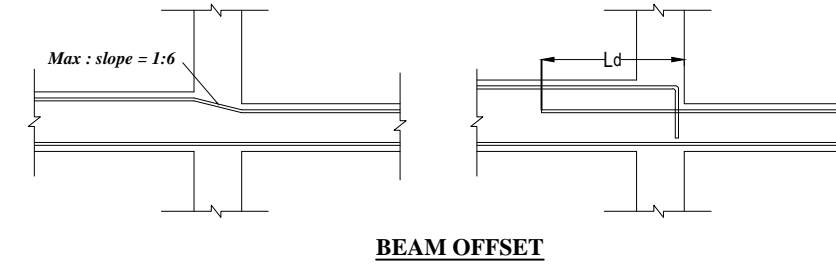
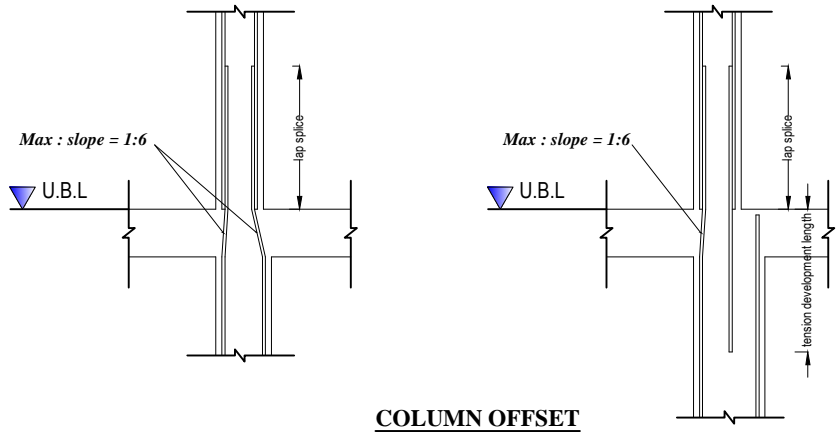
(11) Simplified Cutoff Point



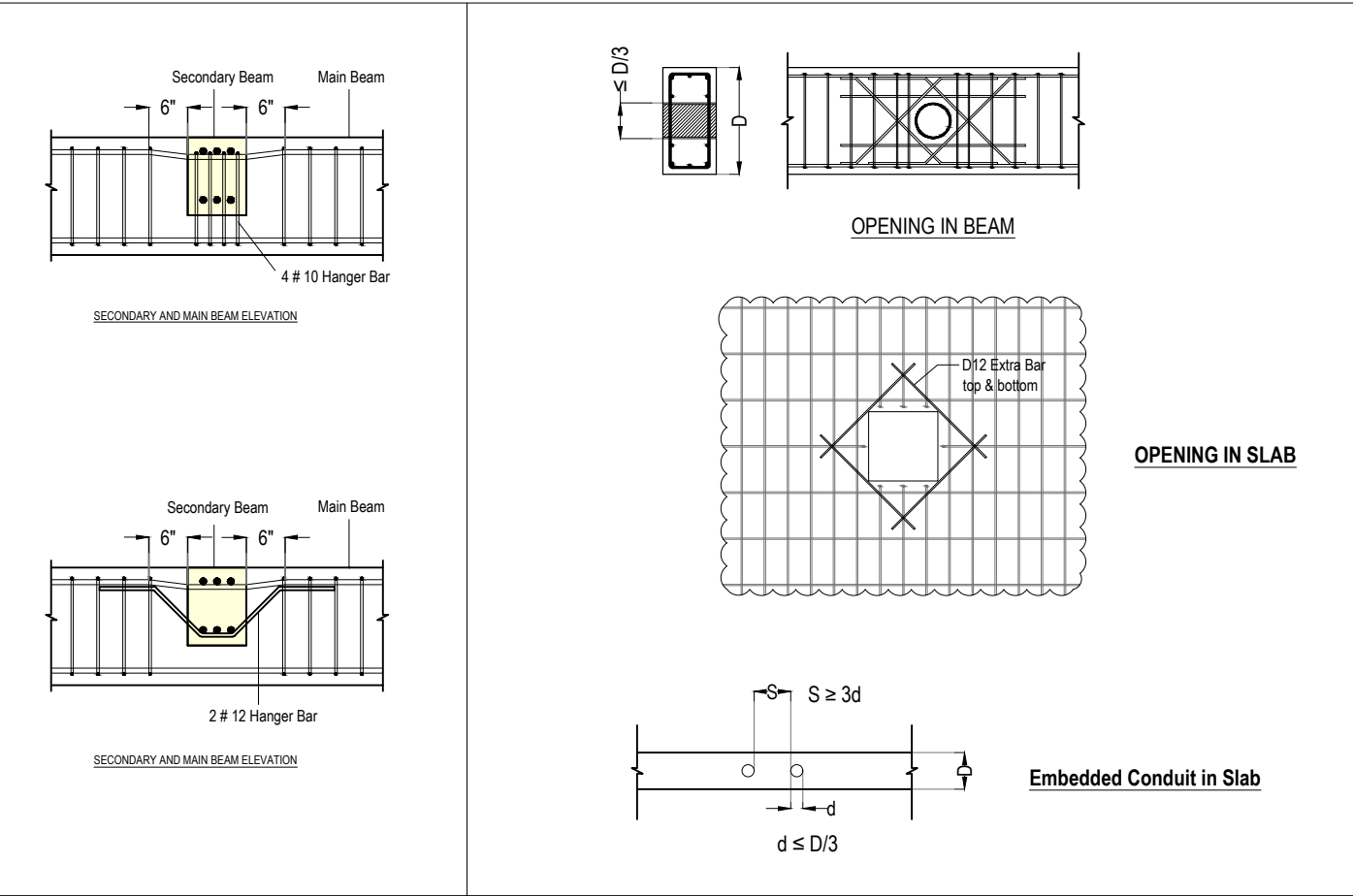
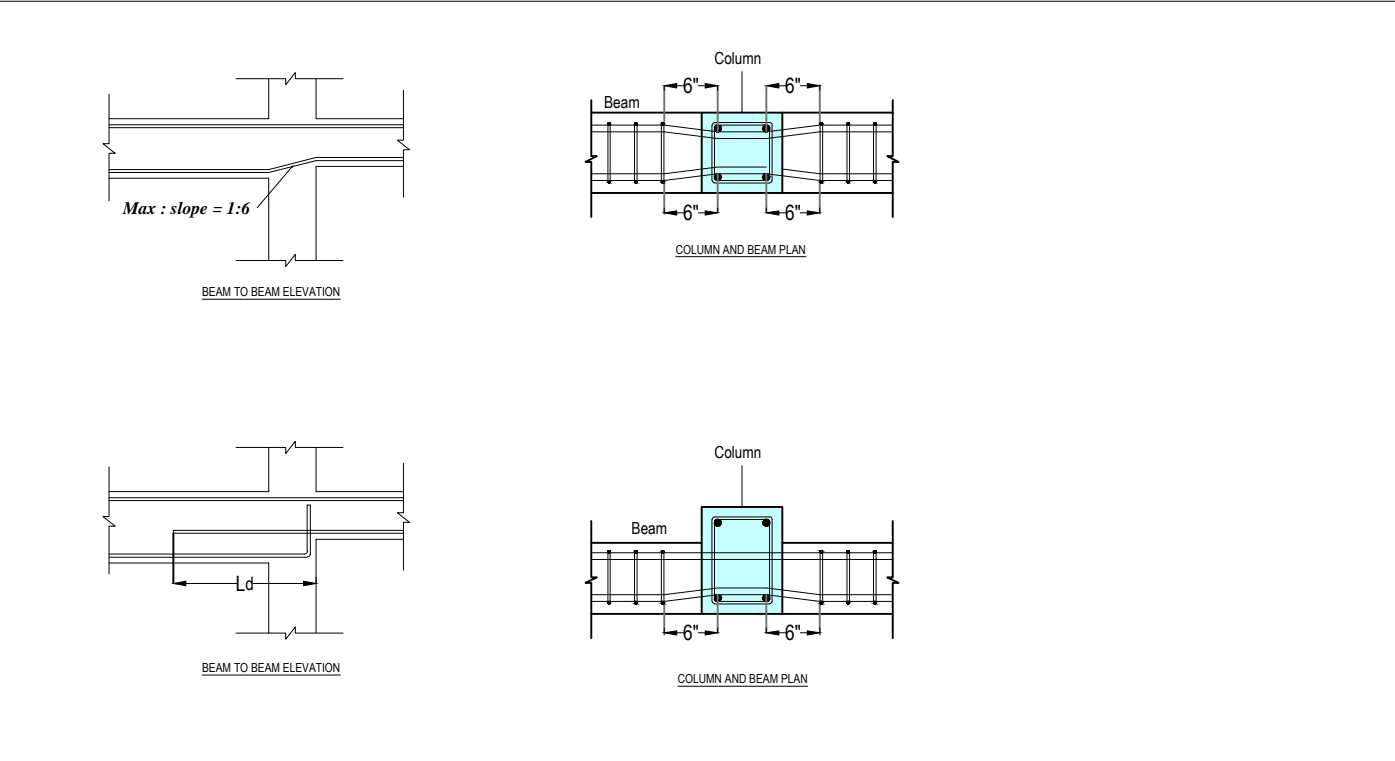
(12) Structural Integrity Requirements



(13) Offsets



No.	Description	Date	Client :	Project Name :	Drawing Name :	Project Status :	Scale :	1:30	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar	"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	SPECIFICATIONS	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-004	Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 04	Checked By :	Myo Nyunt	
							Approved By :	Khin Maung Htaey (PD)	



(14) Others

Codes of practice : M.N.B.C (2016) A.C.I 318-05/I.B.C 2003 for reinforced concrete design

Loading : Gravity loads, in combinations as specified by M.N.B.C.

D.L - Own weight of the structure (Density of Concrete = 150 lb/ft³)
 - Floor finishing = 20 lb/ft²
 - 4 ½" walling = 50 lb/ft²
 - 9" walling = 100 lb/ft²

L.L - 40 psf on room area , 20 psf on Roof Slab

Water - 62.5 lb/ft³

qa (gross) : Design gross allowable bearing capacity of soil at footing
 base level = 0.75 ton/ft²

Foundation type : Single Footing & Mat Footing

Superstructure type : Intermediate Moment Resisting Frame

Software : ETABS version 2016 for superstructure analysis and design

Analysis type : Static Analysis

Detailing : Seismic detailing

(15) Notes

Notation of columns and props

Continued columns/props

Props which only start from level concerned

Discontinued columns/ props

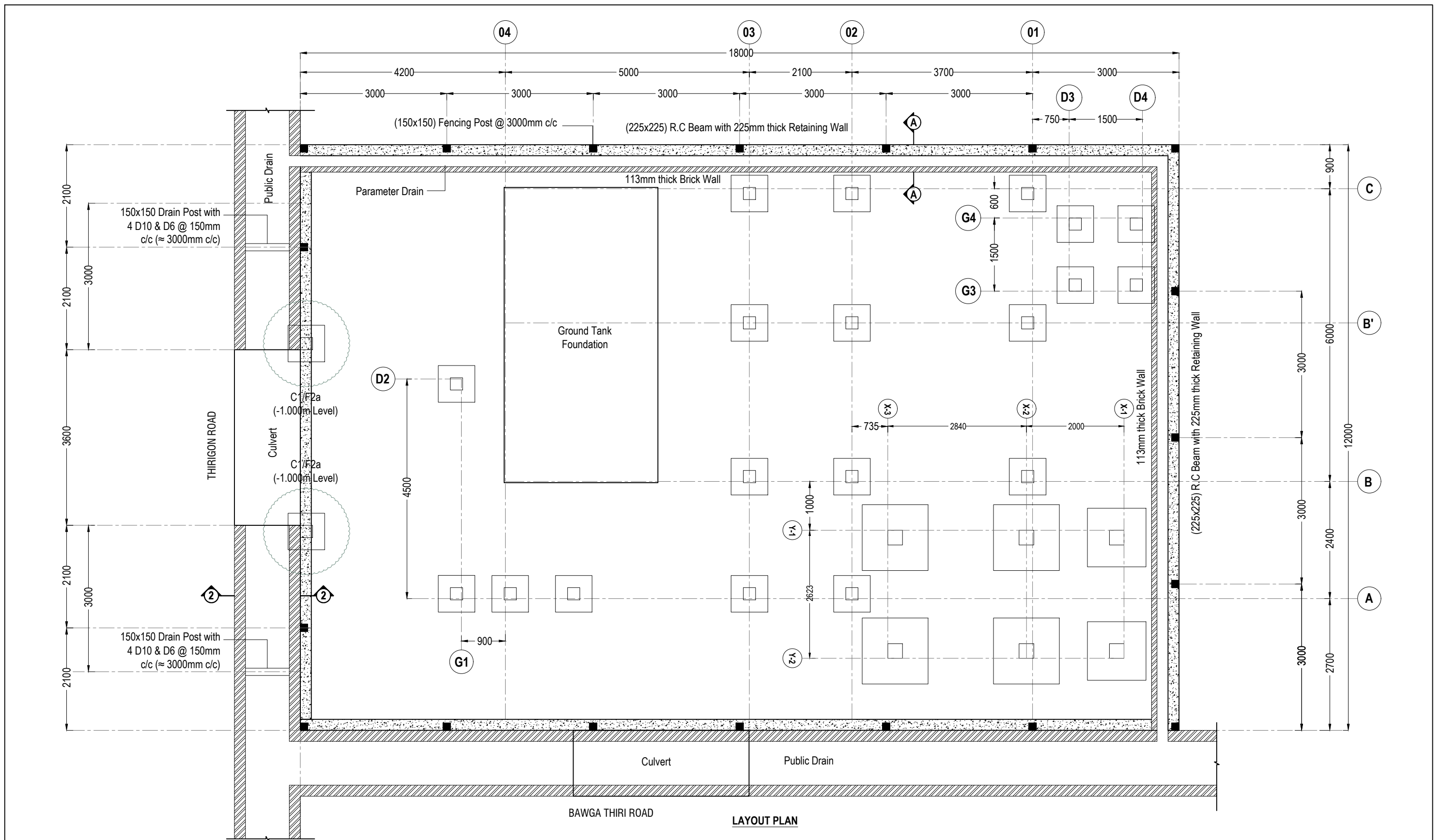
Notation of levels



U.F.L = Unfinished Floor Level

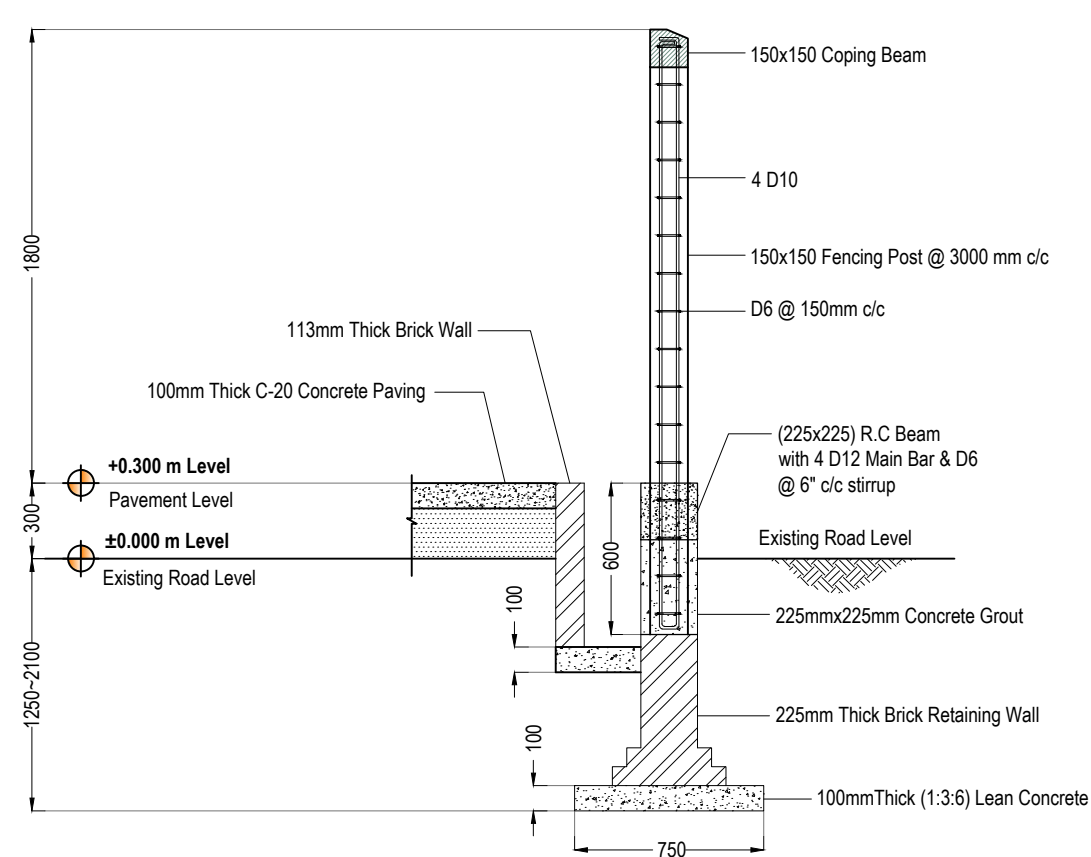
U.B.L = Unfinished Beam Level

N.G.L = Natural Ground Level

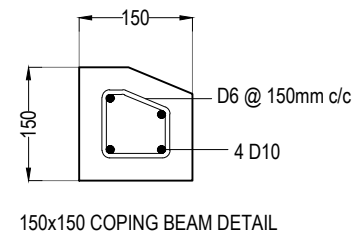
No.	Description	Date	Client :	Project Name :	Drawing Name :	Project Status :	Scale :	1:30	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar	"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	SPECIFICATIONS	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-005	Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 05	Checked By :	Myo Nyunt	
							Approved By :	Khin Maung Htaey (PD)	



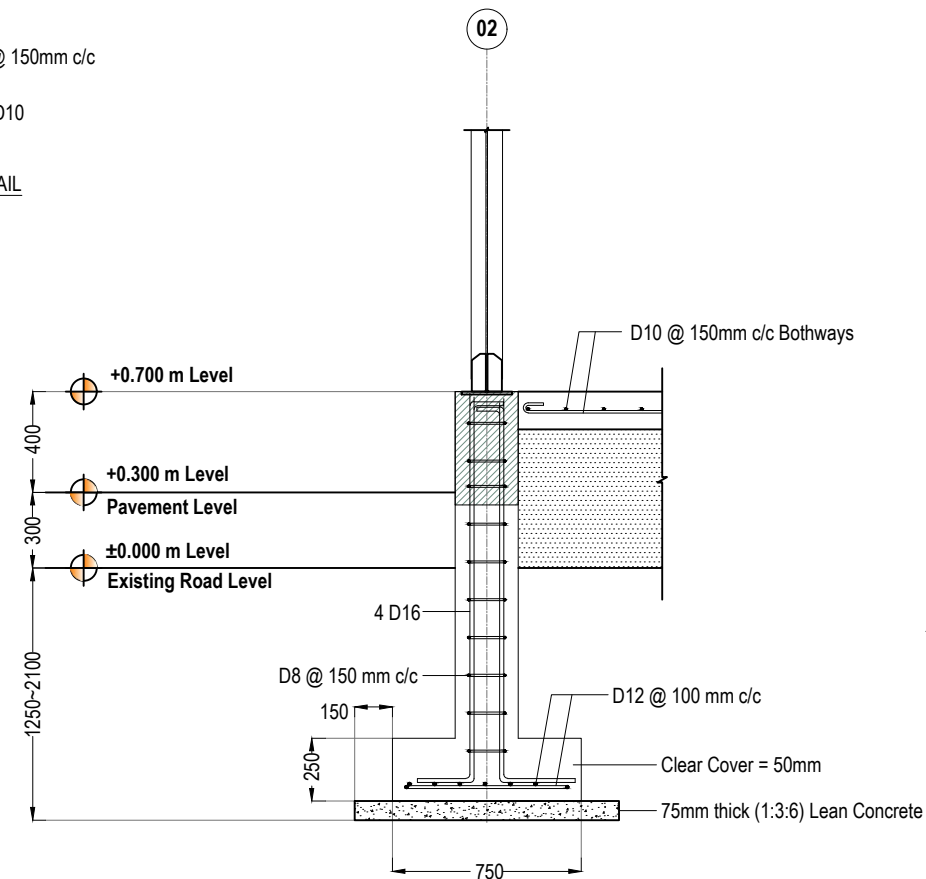
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								Date :	20.9.2024	
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	LAYOUT PLAN	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Design By :	MICEG	
			Engineering Services Consultants:					Checked By :	Myo Nyunt	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group					Approved By :	Khin Maung Htaey (PD)	
					Location : Ward 77	Drawing No : S-006				
					Township : DAGON SEIKKAN	Sheet No : 06				



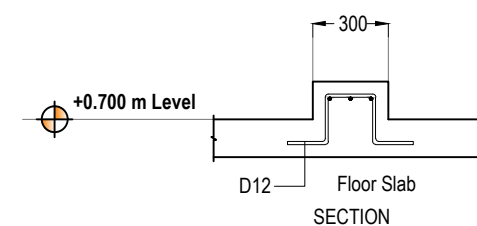
FENCING POST SECTION



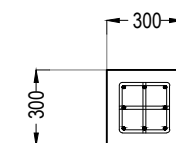
150x150 COPING BEAM DETAIL



TYPICAL FOOTING SECTION
(F2a)

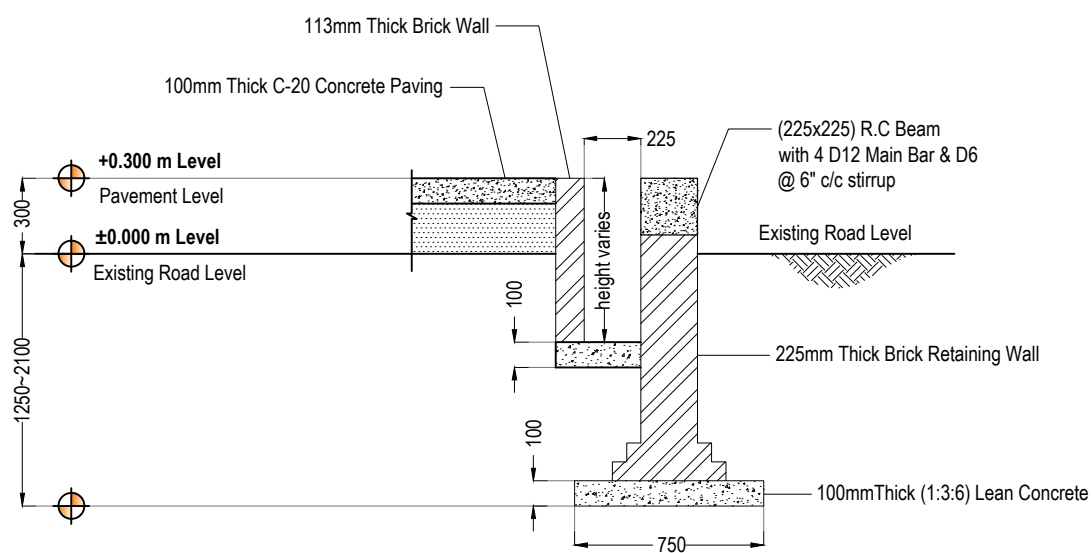


Floor Slab
SECTION

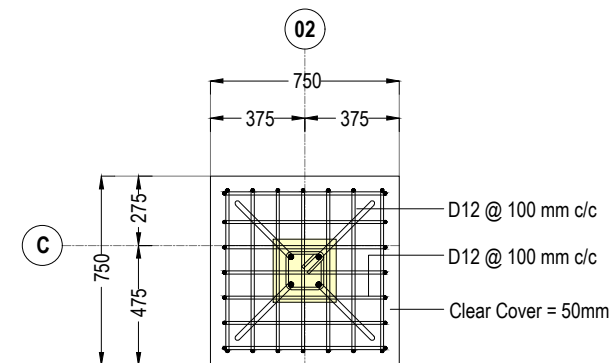


PLAN

TANK & EQUIPMENT FOOTING



RETAINING WALL SECTION
(A-A)



TYPICAL FOOTING REBAR ARRANGEMENT PLAN
(F2a)

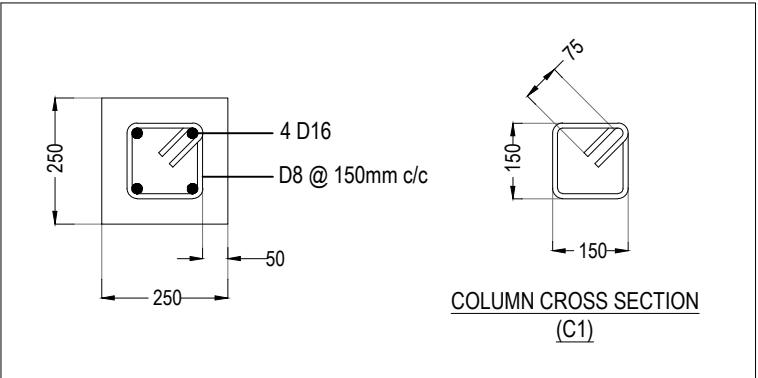
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1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar	"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	FOUNDATION SECTION	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-007	Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 07	Checked By :	Myo Nyunt	
							Approved By :	Khin Maung Htaey (PD)	

R.C COLUMN SCHEDULE

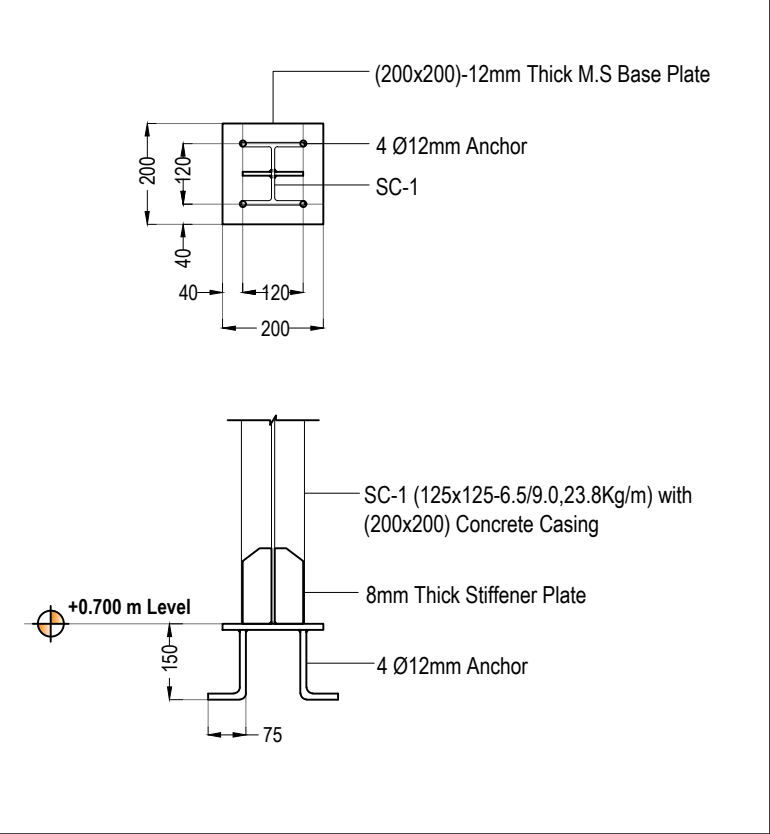
f_c =2,500 psi, f_y = 50,000 psi ,f_{ys} = 40,000 psi

Type	Column Size (mm)		Longitudinal Reinforcement no & size (mm)	Pieces Per Set	Tie Arrangement
	X	Y			
C1	250	250	4 D16	1-Hoop	D8 @ 150mm c/c

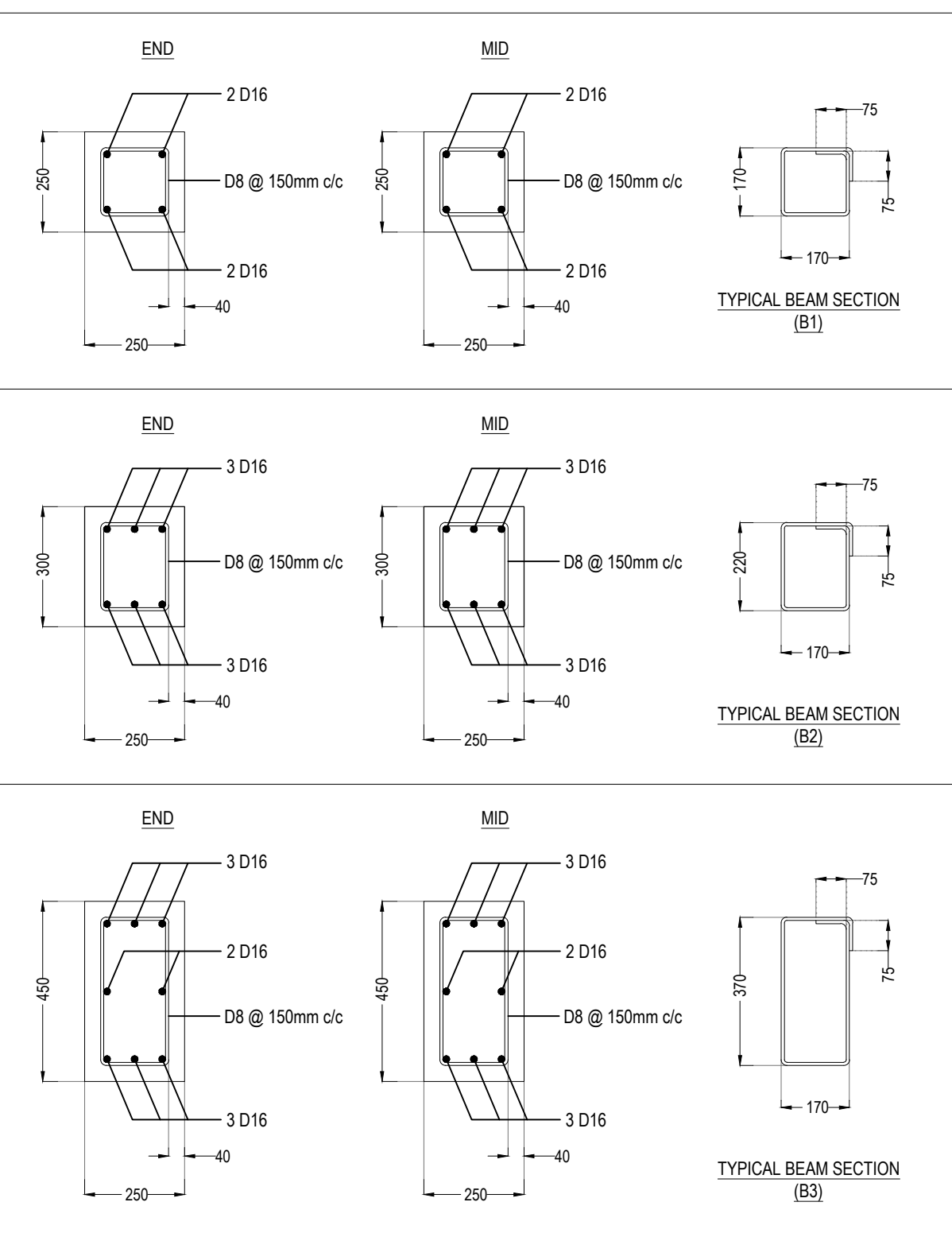
R.C COLUMN SECTION



STEEL COLUMN & BASE PLATE DETAIL



R.C BEAM SECTION

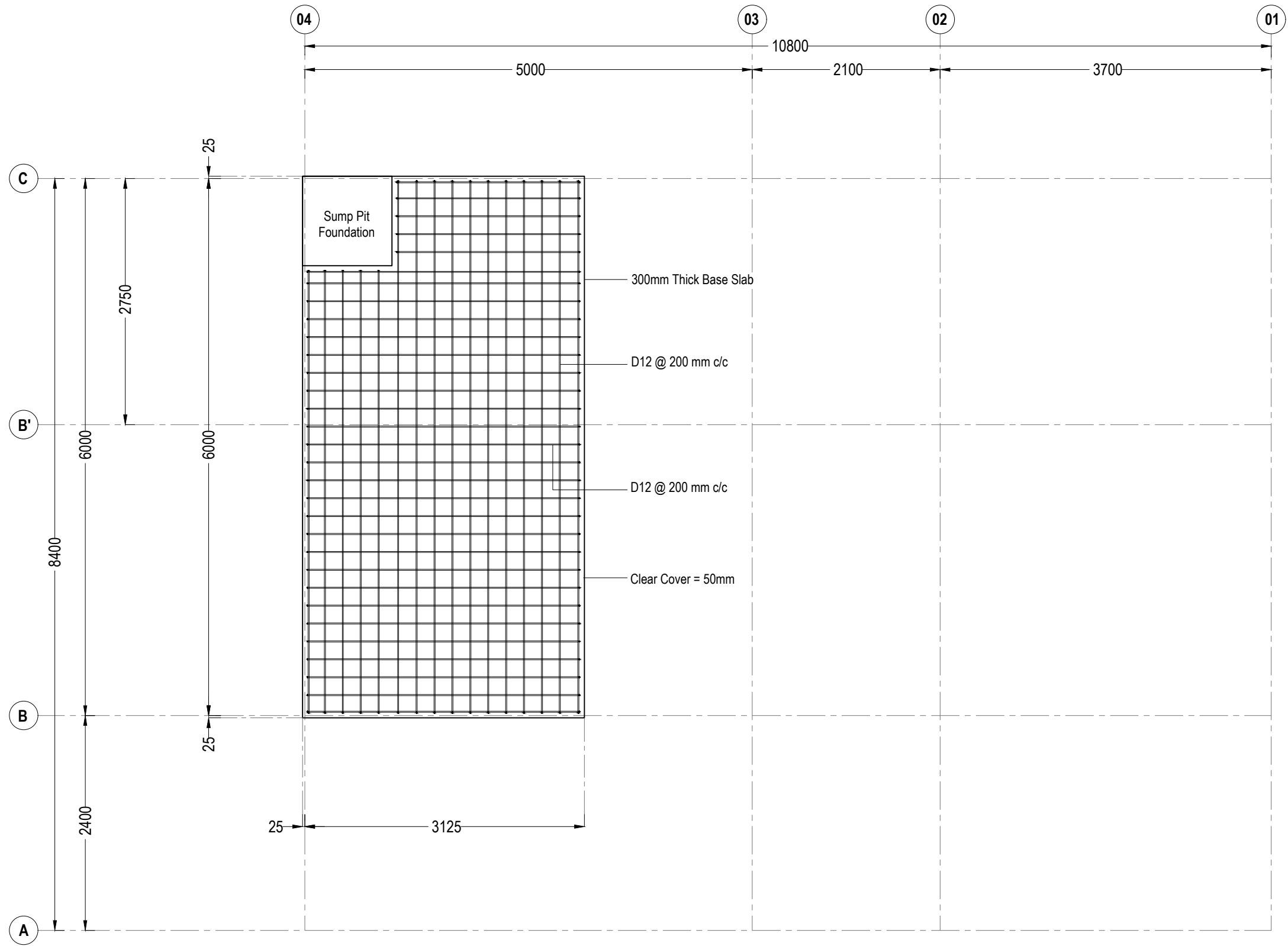


R.C BEAM SCHEDULE



f_c =2,500 psi, f_y = 50,000 psi ,f_{ys} = 40,000 psi

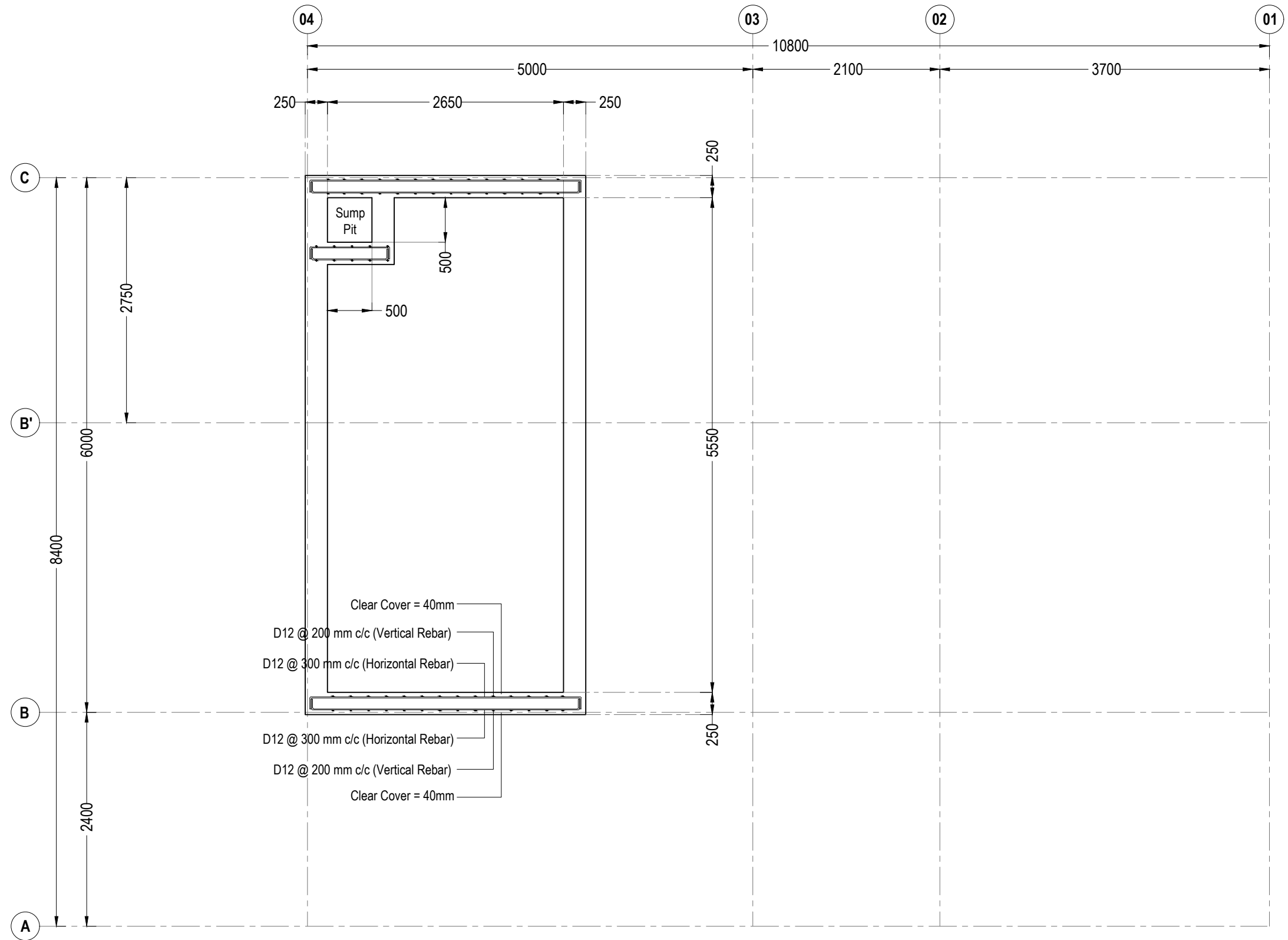
Beam		Top Steel Reinforcement no & size (mm)			Bottom Steel Reinforcement no & size (mm)			Mid Bar	Stirrup requirement shear & torsion size (mm) & spacing (mm)		
Type	Size (mm)	left	mid	right	left	mid	right		left	mid	right
B1	250x250	2 D16	2 D16	2 D16	2 D16	2 D16	2 D16		D8 @ 150mm c/c	D8 @ 150mm c/c	D8 @ 150mm c/c
B2	250x300	3 D16	3 D16	3 D16	3 D16	3 D16	3 D16		D8 @ 150mm c/c	D8 @ 150mm c/c	D8 @ 150mm c/c
B3	250x450	3 D16	3 D16	3 D16	3 D16	3 D16	3 D16	2 D16	D8 @ 150mm c/c	D8 @ 150mm c/c	D8 @ 150mm c/c

No.	Description	Date	Client :	UN-HABITAT Myanmar	Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	Drawing Name : COLUMN & BEAM DETAIL	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	1:15	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	Engineering Services Consultants:					Date :	20.9.2024	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Location : Ward 77	Drawing No : S-008		Design By :	MICEG	
					Township : DAGON SEIKKAN	Sheet No : 08		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	





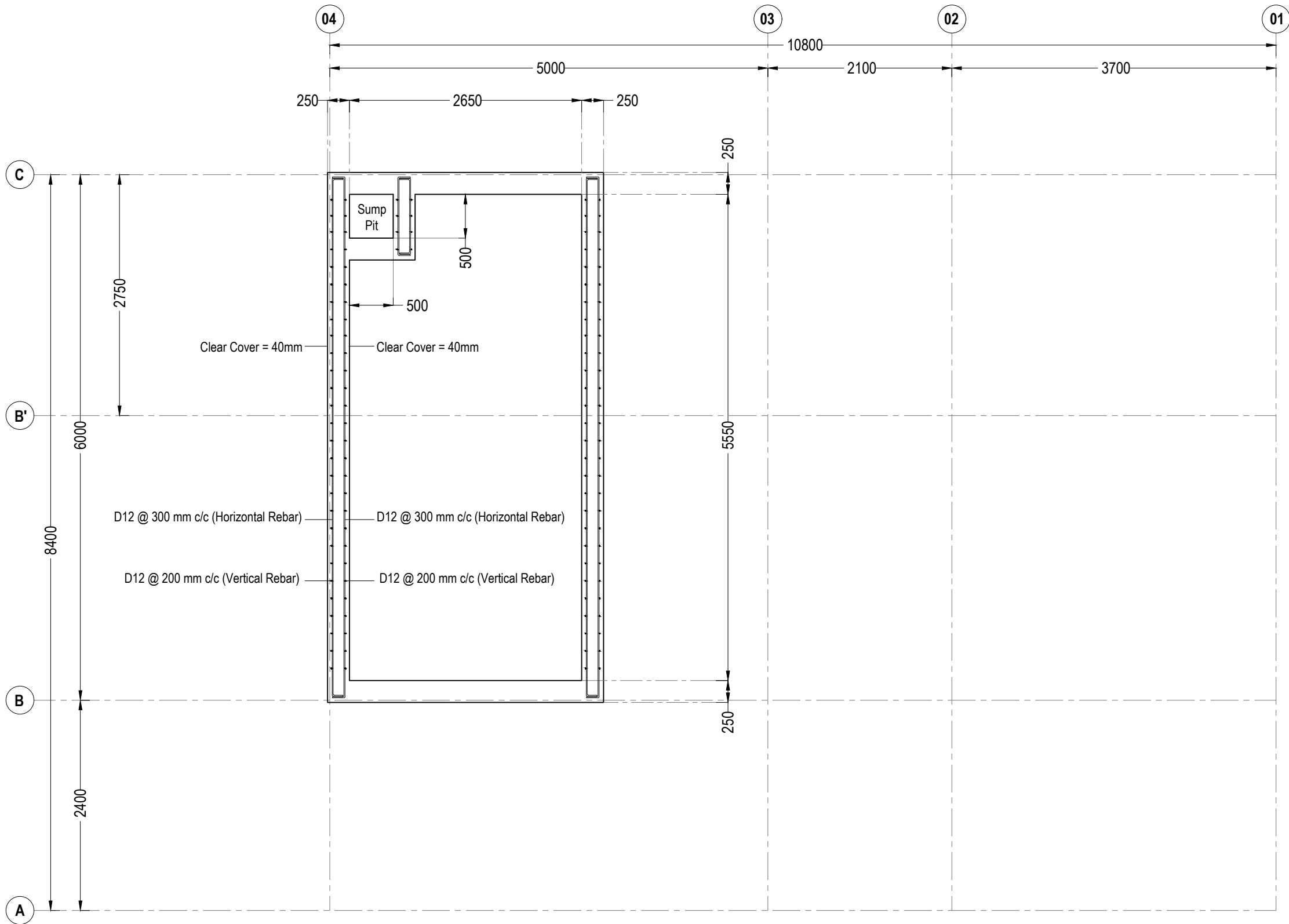
GROUND TANK BASE SLAB TOP & BOTTOM REBAR PLAN
(-1.750 m LEVEL)

No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	1:50	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	GROUND TANK (BASE SLAB PLAN)		Date :	20.9.2024	
			Engineering Services Consultants:		Location :	Drawing No :		Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Ward 77	S-009		Checked By :	Myo Nyunt	
					Township :	Sheet No :		Approved By :	Khin Maung Htaey (PD)	
					DAGON SEIKKAN	09				





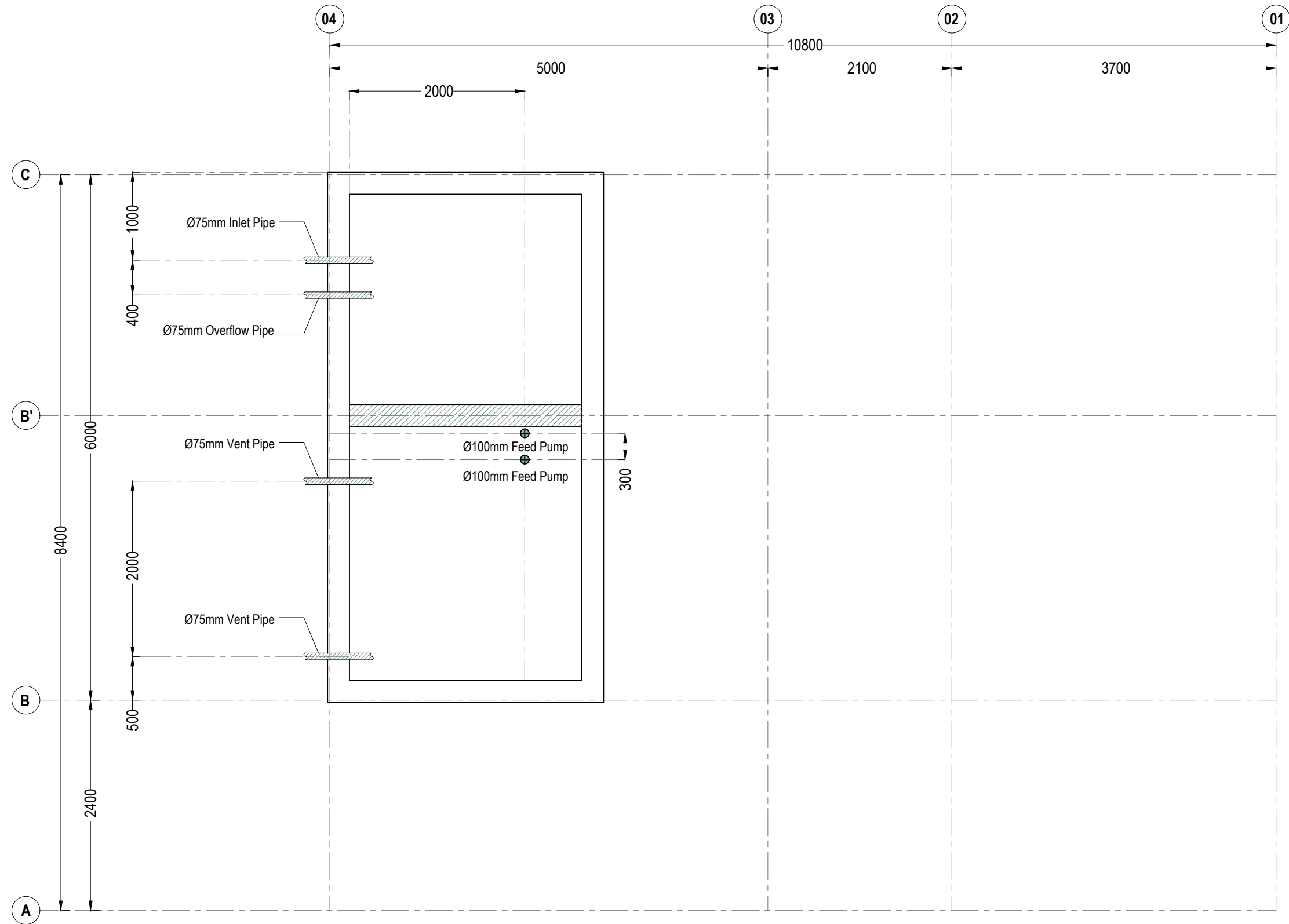
250mm THICK R.C WALL PLAN

No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1:50	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	250mm THICK R.C WALL PALN		Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-010	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 10		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	





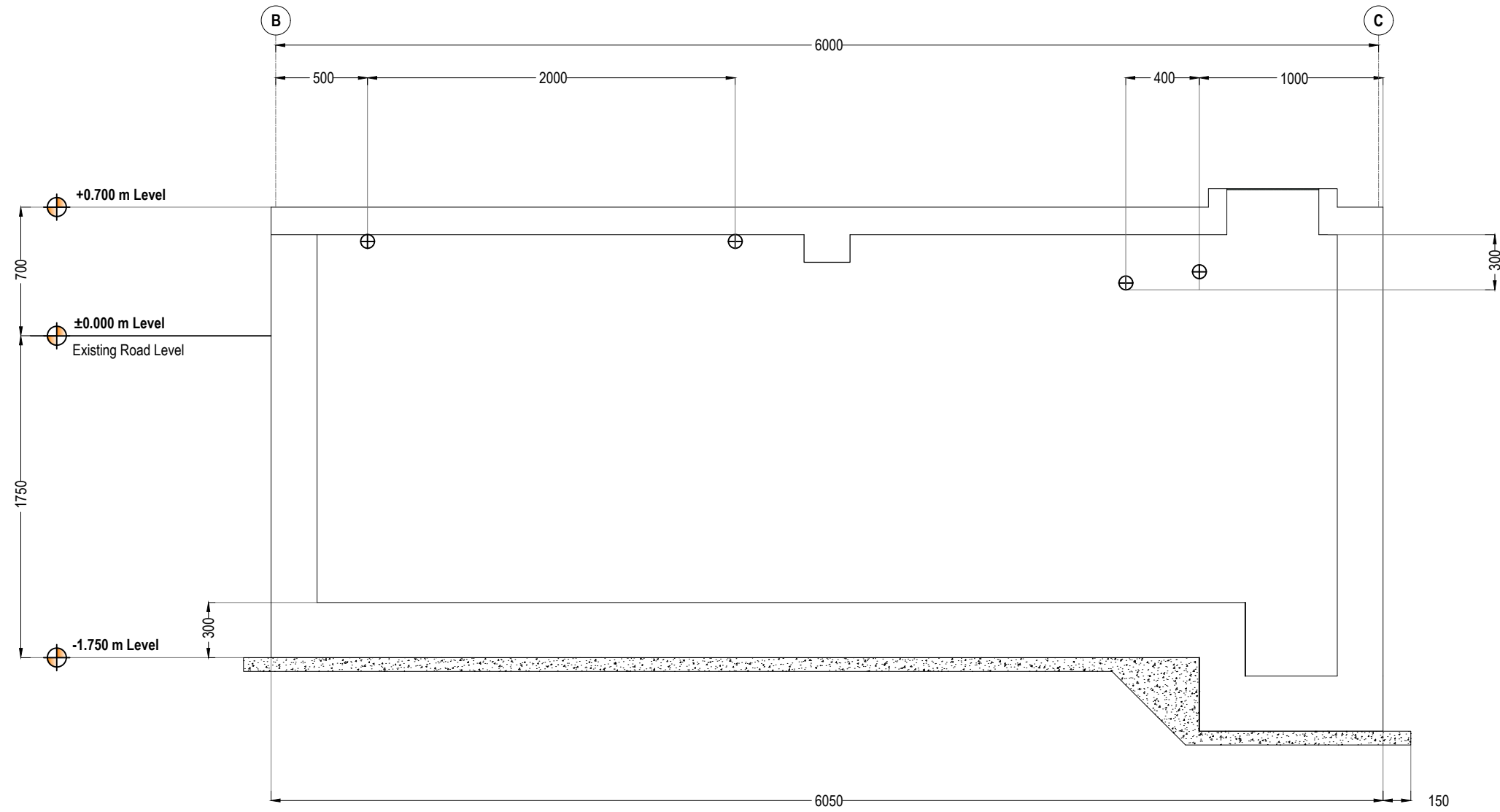
250mm THICK R.C WALL PLAN

No.	Description	Date	Client : UN-HABITAT Myanmar		Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	Drawing Name : 250mm THICK R.C WALL PALN	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	1:50	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024						Date :	20.9.2024	
			Engineering Services Consultants: Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Location : Ward 77	Drawing No : S-011		Design By :	MICEG	
					Township : DAGON SEIKKAN	Sheet No : 11		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	





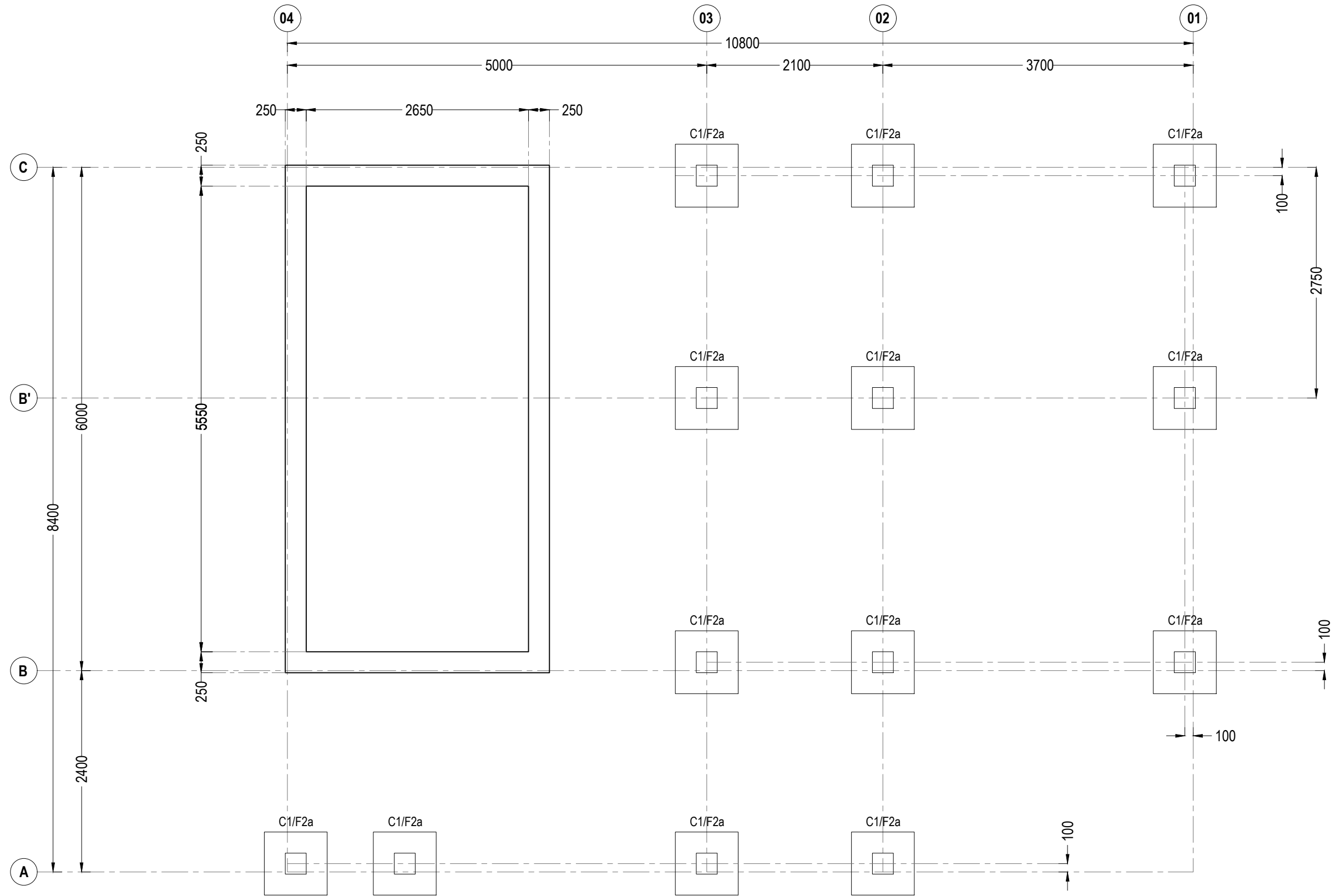
PIPE POSITION PLAN

No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1:50	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	PIPE POSITION PLAN		Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-012	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 12		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	





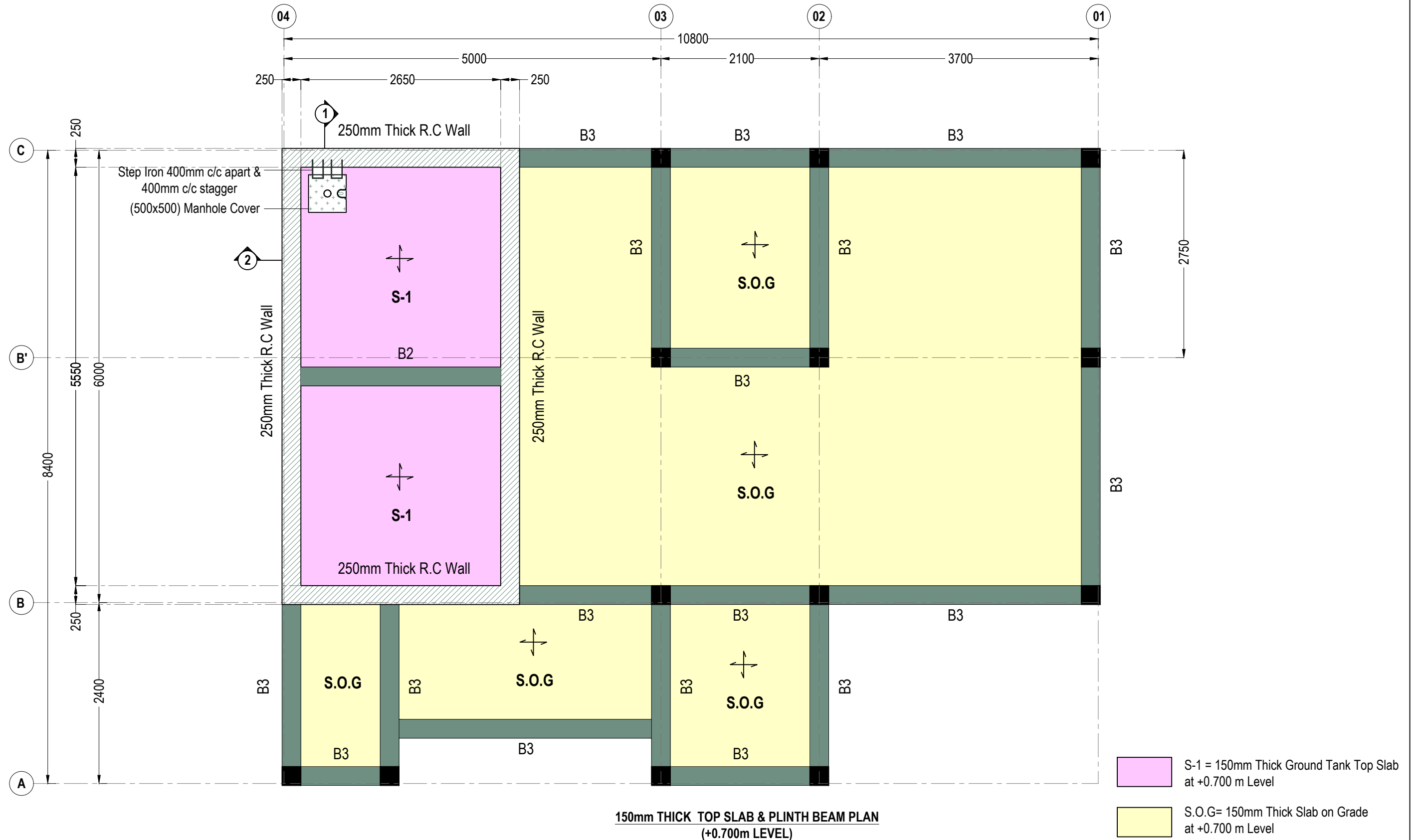
PIPE POSITION SECTION

No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	1:30	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	PIPE POSITION SECTION		Date :	20.9.2024	
			Engineering Services Consultants:		Location :	Drawing No :		Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Ward 77	S-013		Checked By :	Myo Nyunt	
					Township :	Sheet No :		Approved By :	Khin Maung Htaey (PD)	
					DAGON SEIKKAN	13				



FOOTING PLAN

No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	1:50	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	FOOTING PLAN		Date :	20.9.2024	
			Engineering Services Consultants:		Location :	Drawing No :		Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Ward 77	S-014		Checked By :	Myo Nyunt	
					Township :	Sheet No :		Approved By :	Khin Maung Htaey (PD)	
					DAGON SEIKKAN	14				

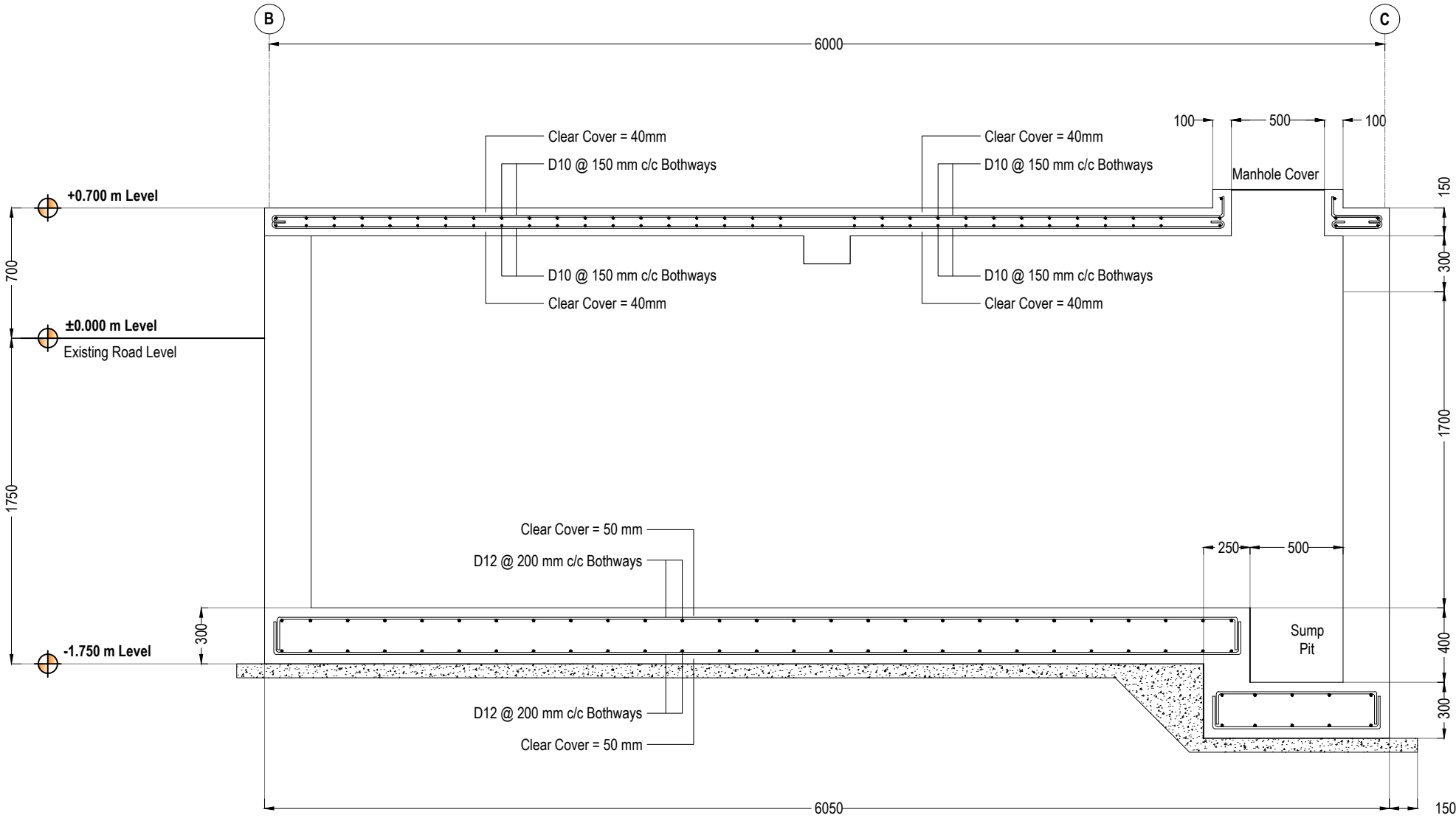


No.	Description	Date	Client :	Project Name :	Drawing Name :	Project Status :	Scale :	1:50	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar	"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	PLINTH BEAM & GROUND TANK TOP SLAB PLAN	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-015	Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 15	Checked By :	Myo Nyunt	
							Approved By :	Khin Maung Htaey (PD)	



FOOTING SCHEDULE

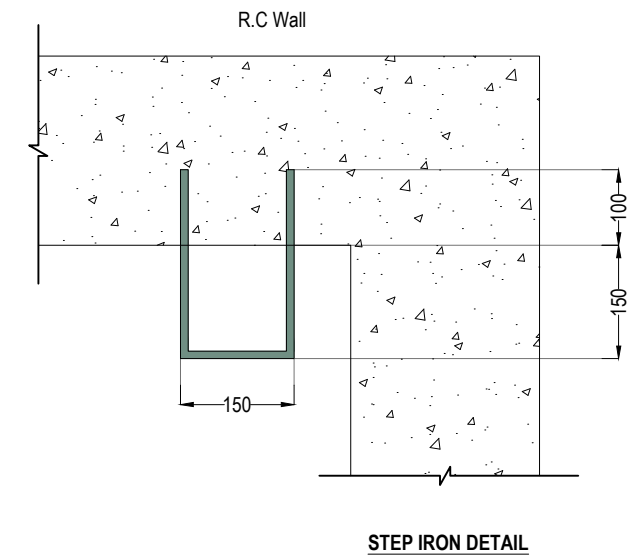
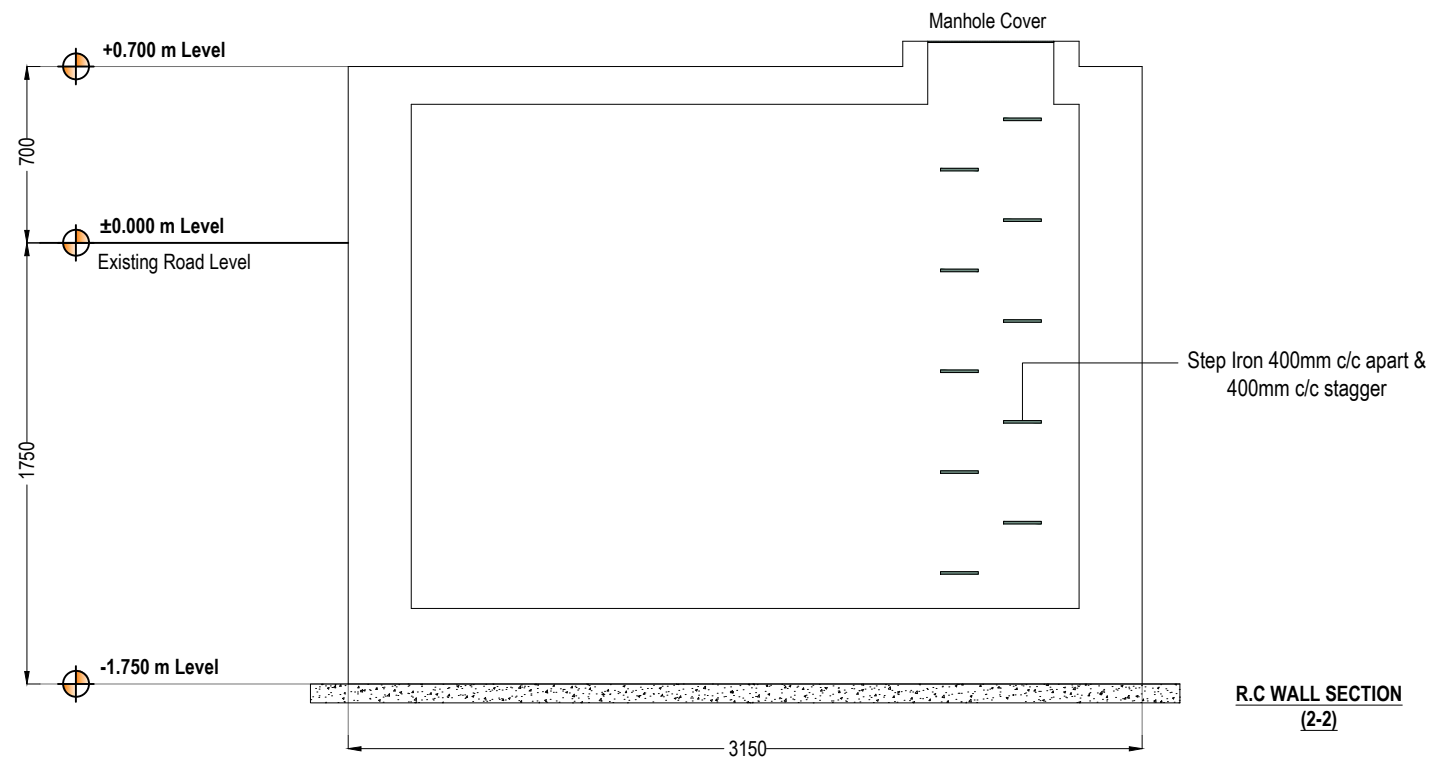
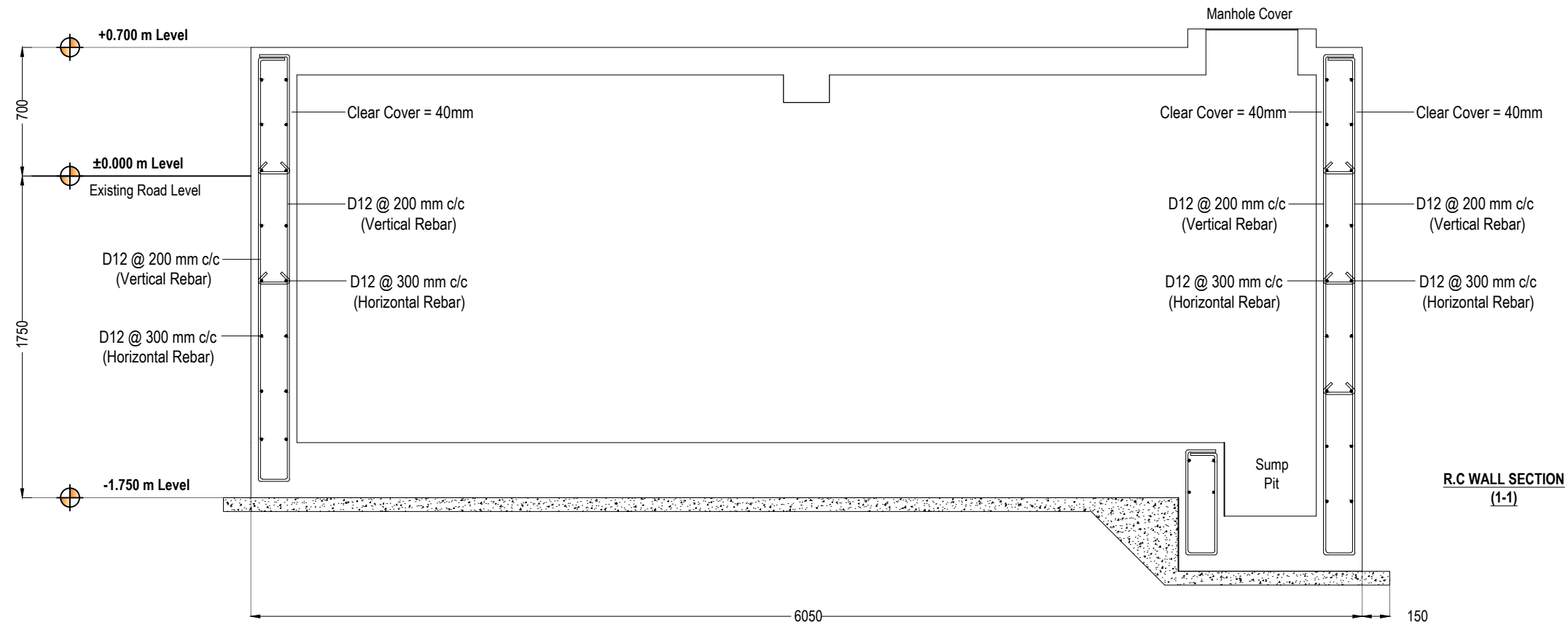
$f_c = 2,500 \text{ psi}$, $f_y = 50,000 \text{ psi}$, $f_{ys} = 40,000 \text{ psi}$



Type	Size (a x b)	Thickness (mm)	Reinforcement		Remark	Concrete Clear Cover
			Parallel to Short Side	Parallel to Long Side		
F2a	750mm x 750mm	250	D12 @ 100mm c/c	D12 @ 100mm c/c	Only Bottom Bar	50 mm

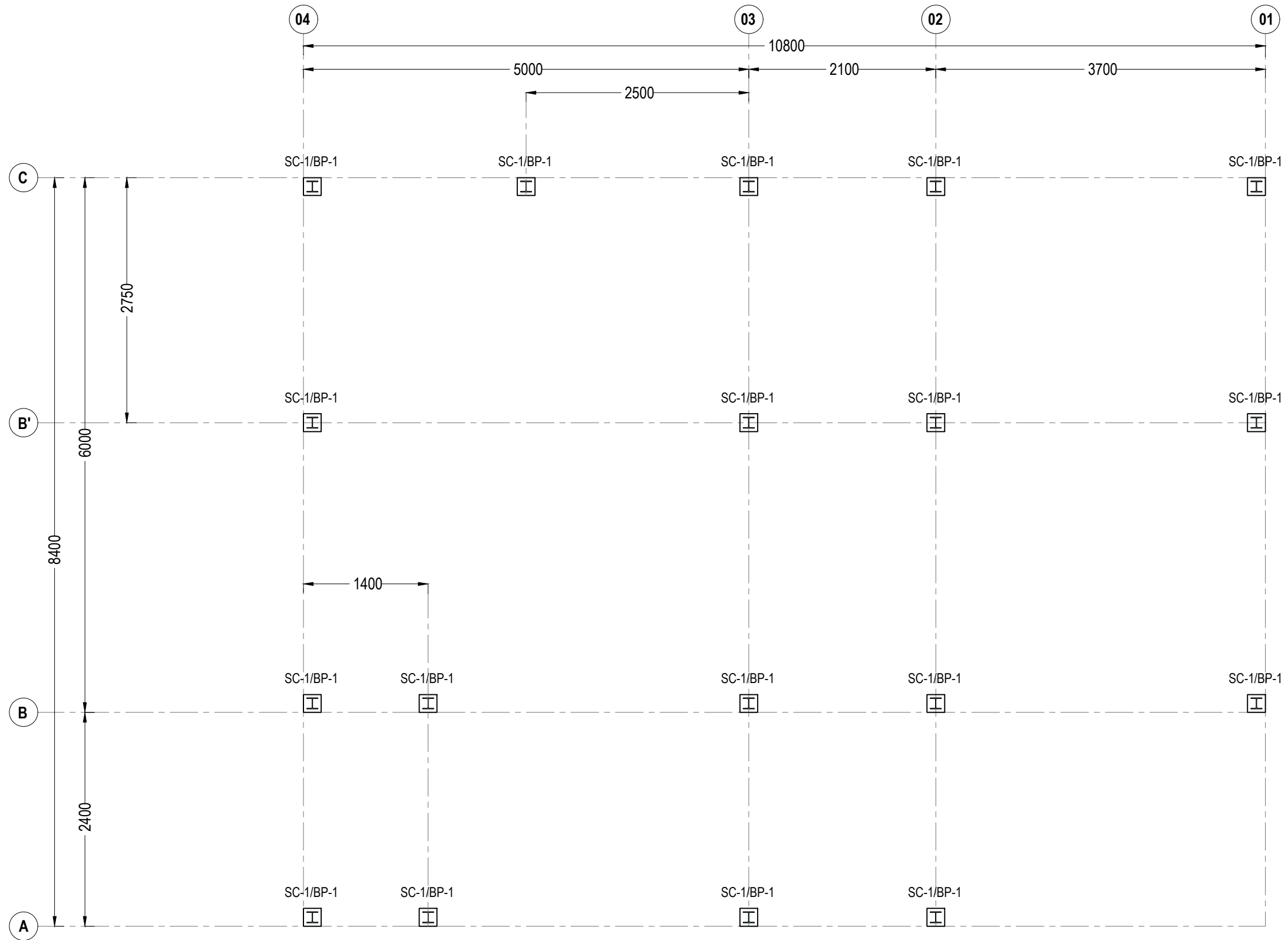


BASE SLAB & TOP SLAB SECTION
(1-1)

No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1:30	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	BASE & TOP SLAB SECTION	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-016		Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 16		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	





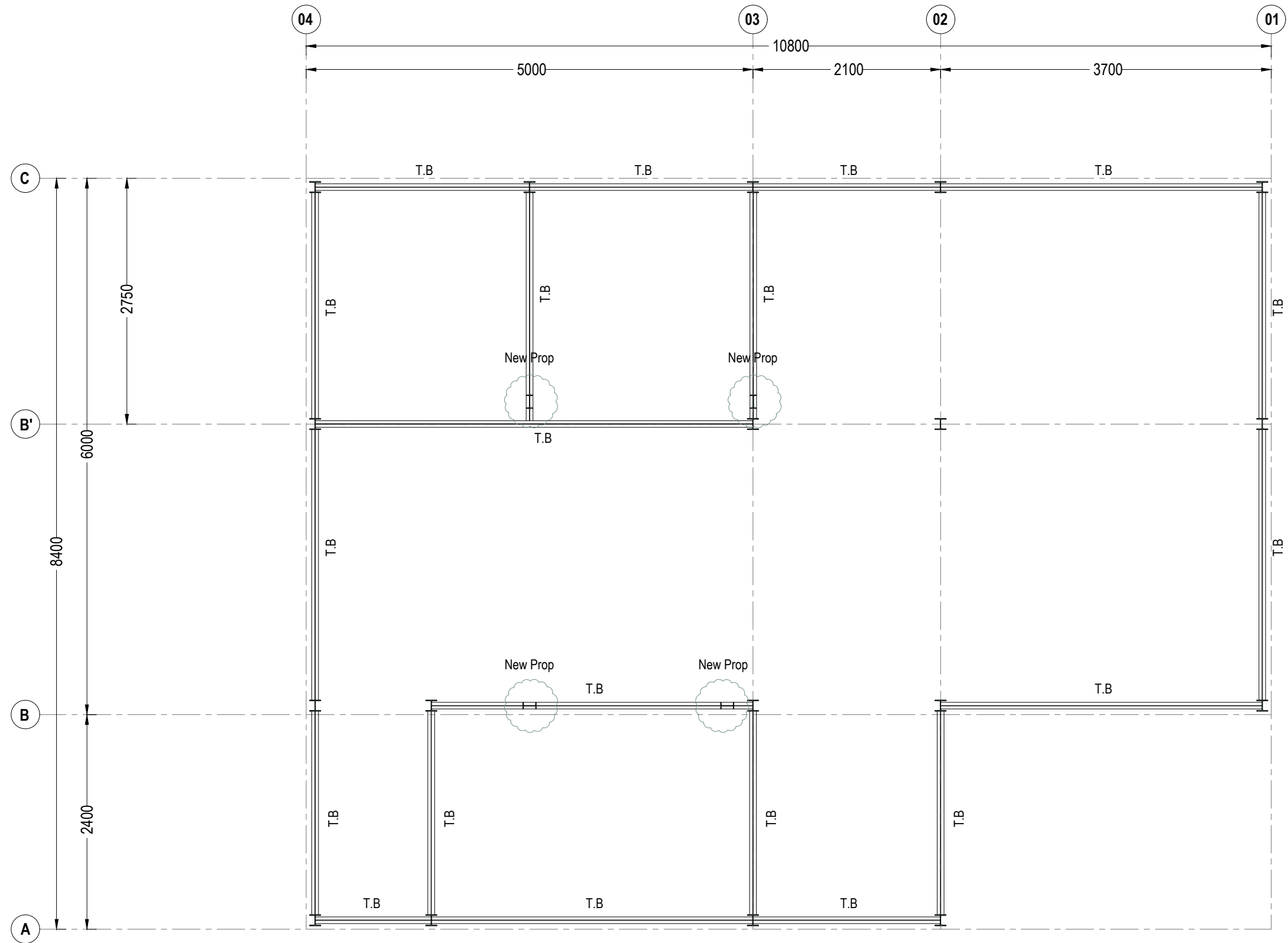
No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1:30	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	R.C WALL SECTION	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-017		Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 17		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	



STEEL COLUMN & BASE PLATE PLAN
(+0.700 m LEVEL TO +4.050m LEVEL)



SC-1 = 200x200 Composite Column with (125x125-6.5/9.0,23.8Kg/m)

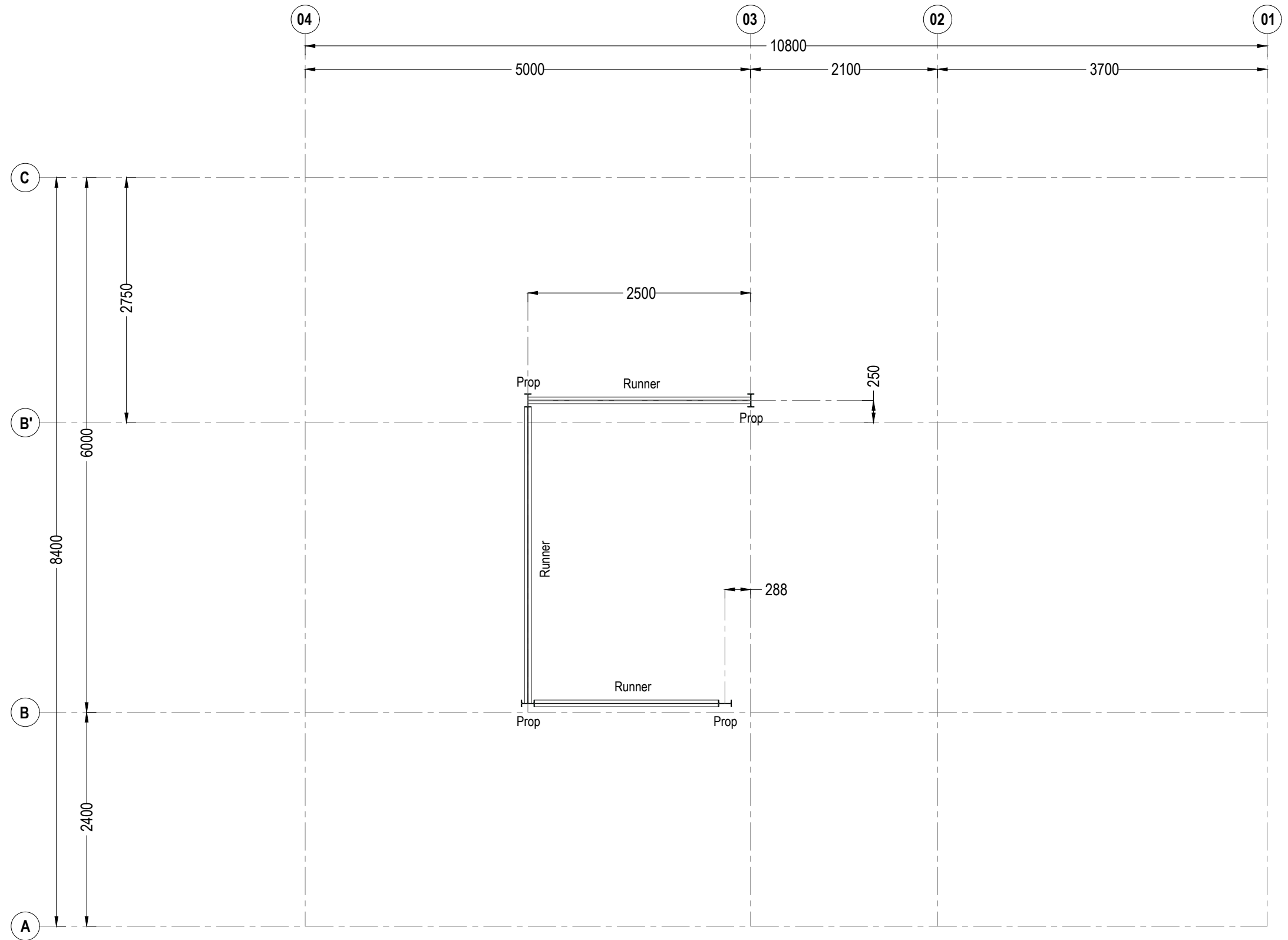
No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1:50	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	STEEL COLUMN & BASE PLATE PLAN		Date :	20.9.2024	
			Engineering Services Consultants:		Location :	Drawing No :	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Ward 77	S-018		Checked By :	Myo Nyunt	
					Township :	Sheet No :		Approved By :	Khin Maung Htaey (PD)	
					DAGON SEIKKAN	18				



TIE BEAM PLAN
(+4.050m LEVEL)



TB = (150x75-5.0/7.0, 14.0 Kg/m)

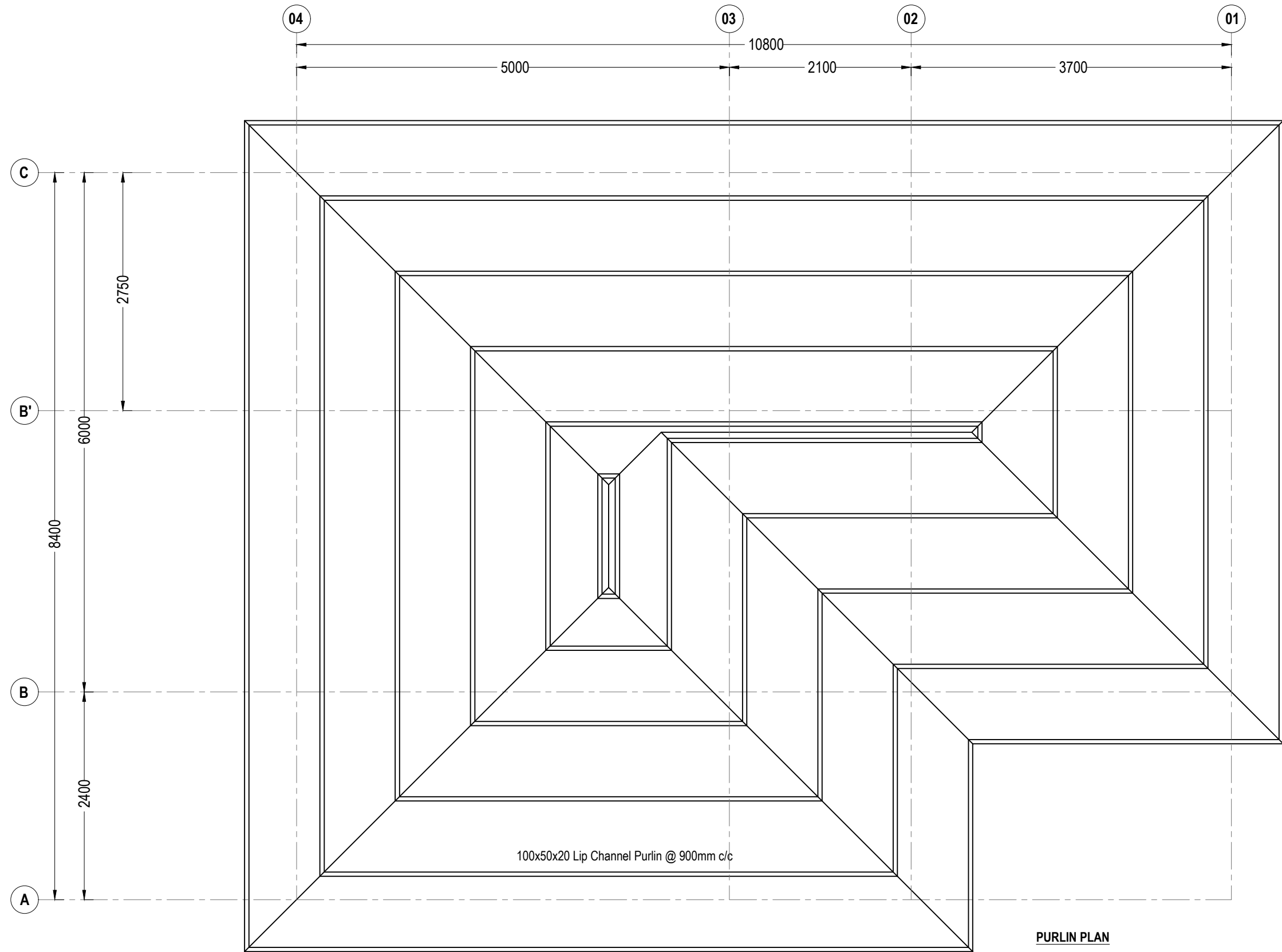
No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1:50	SIGNATURE
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			Engineering Services Consultants:		Location :	Drawing No :	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Ward 77	S-019		Checked By :	Myo Nyunt	
					Township :	Sheet No :		Approved By :	Khin Maung Htaey (PD)	
					DAGON SEIKKAN	19				





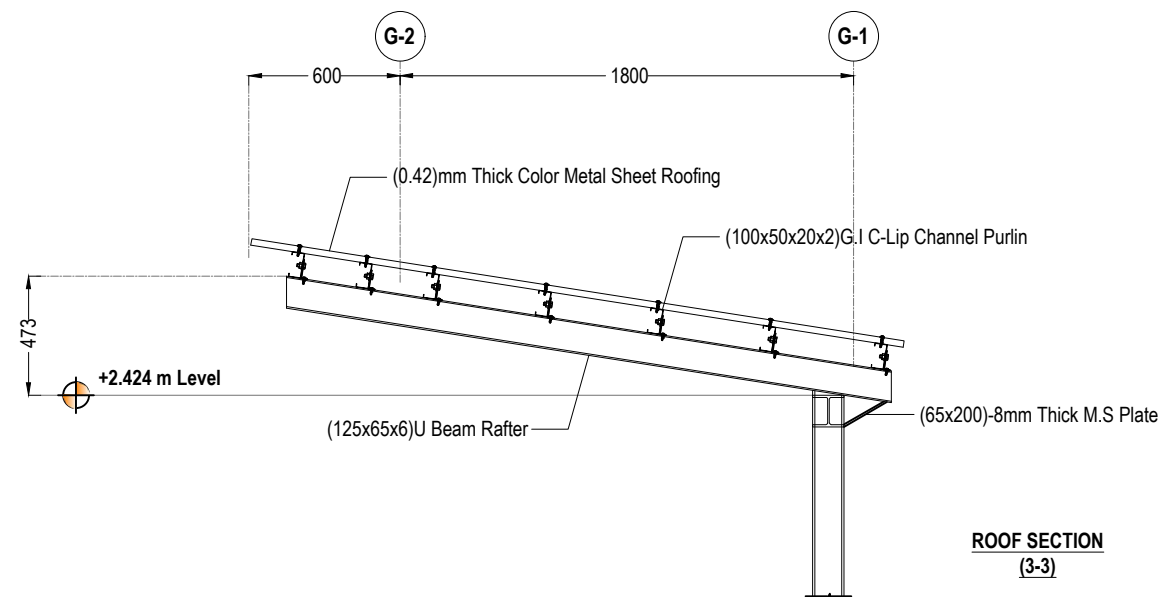
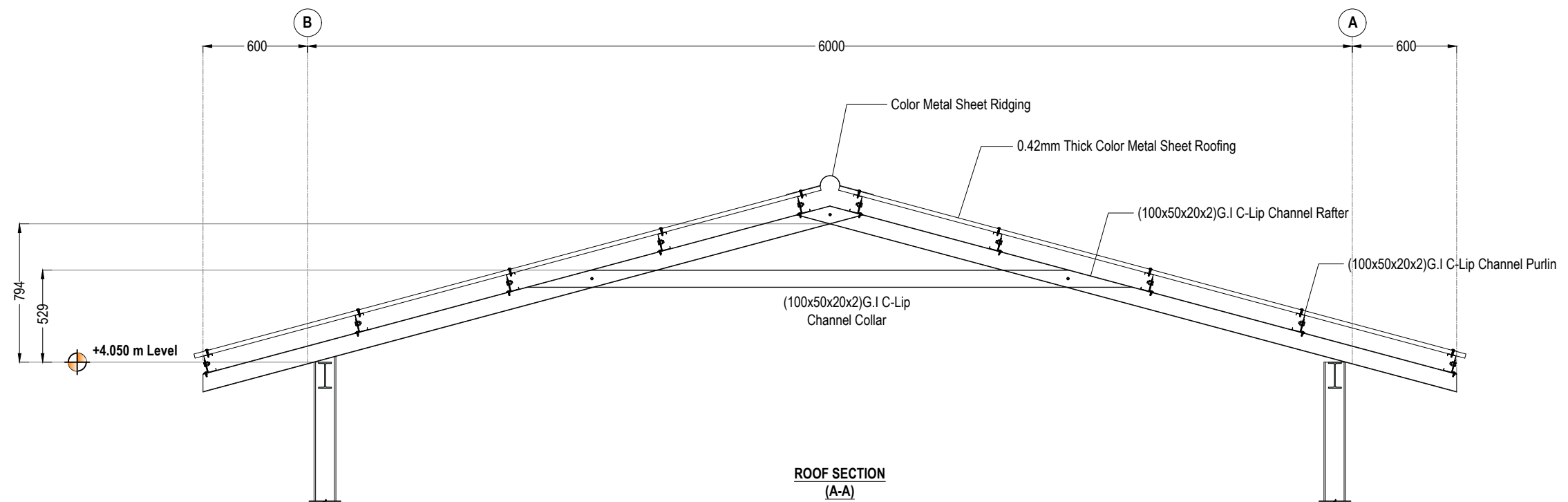
PROP & RUNNER PLAN



Prop & Runner = (150x75-5.0/7.0,14.0 Kg/m)

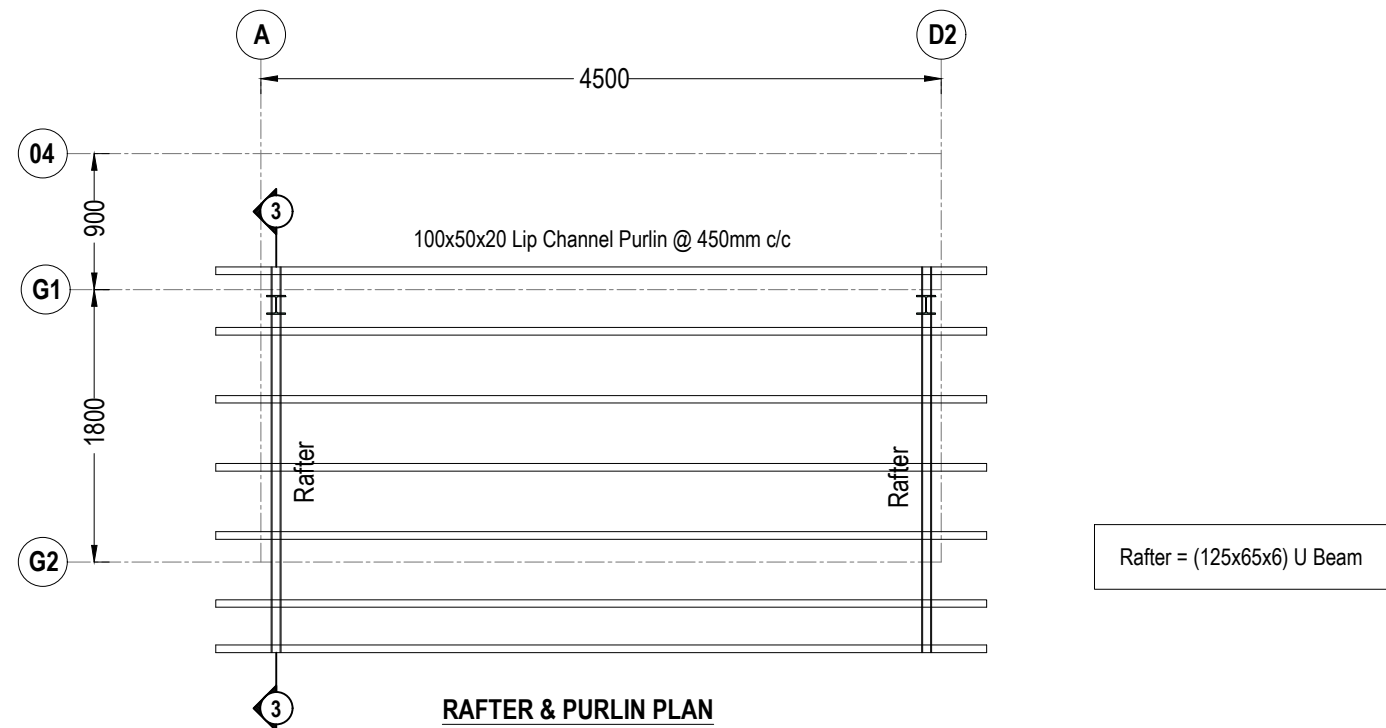
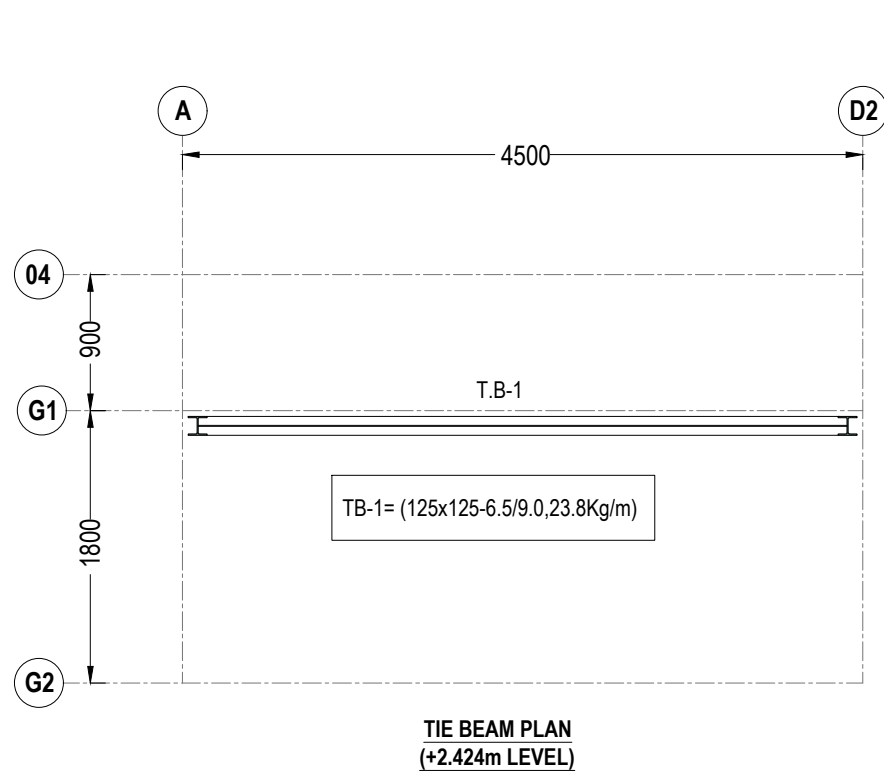
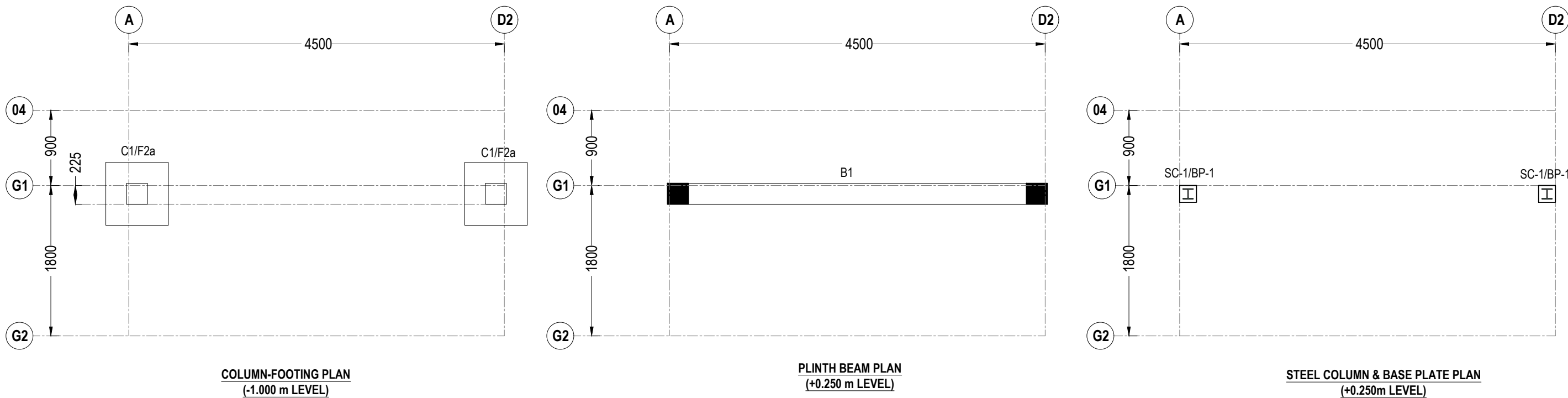
No.	Description	Date	Client :		Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	Drawing Name : PROP AND RUNNER PLAN	Project Status :	Scale :	1:50	SIGNATURE
								Date :	20.9.2024	
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		Location : Ward 77	Drawing No : S-020	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Design By :	MICEG	
			Engineering Services Consultants:					Checked By :	Myo Nyunt	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group					Approved By :	Khin Maung Htaey (PD)	





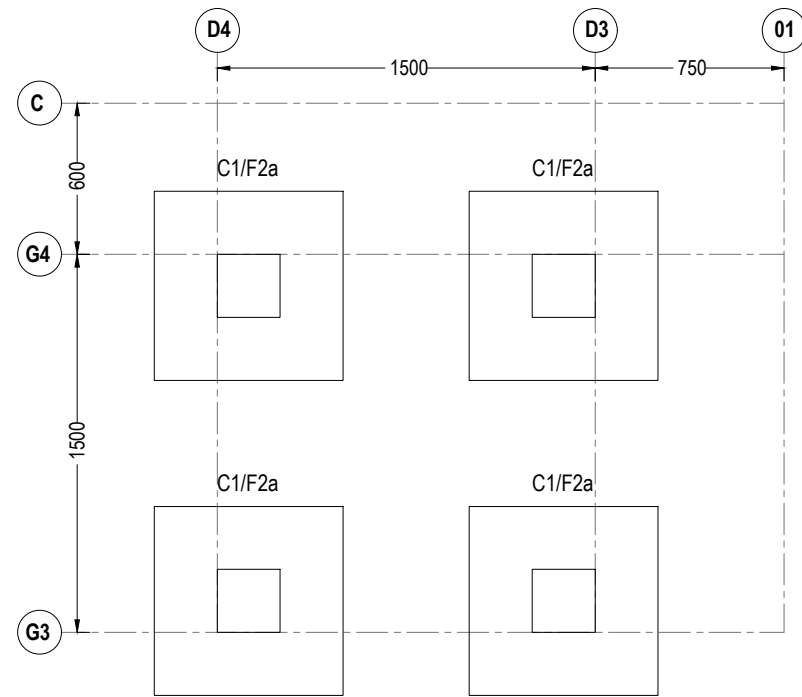
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1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	PURLIN PLAN		Date :	20.9.2024	
			Engineering Services Consultants:		Location :	Drawing No :	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Ward 77	S-022		Checked By :	Myo Nyunt	
					Township :	Sheet No :		Approved By :	Khin Maung Htaey (PD)	
					DAGON SEIKKAN	22				



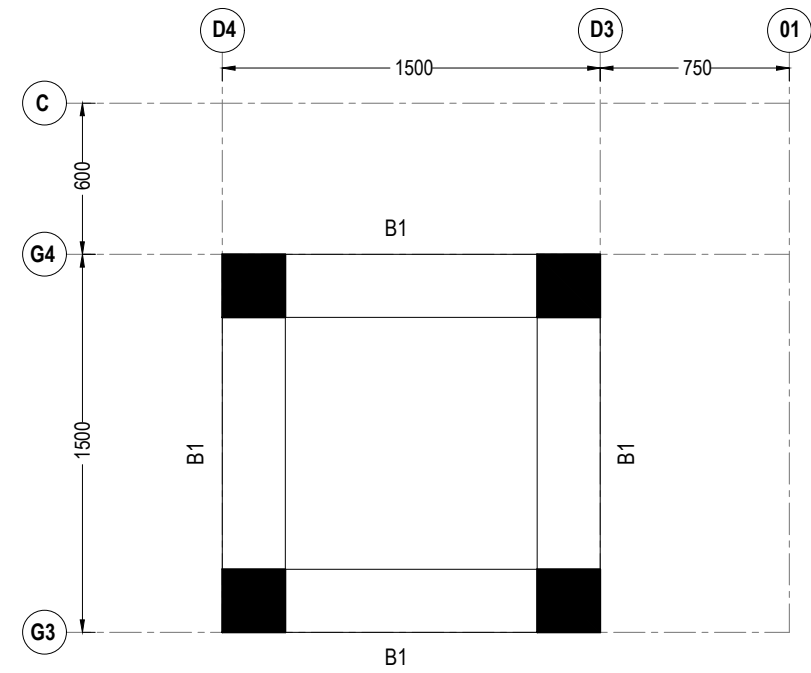
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1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	ROOF SECTION	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-023		Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 23		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	



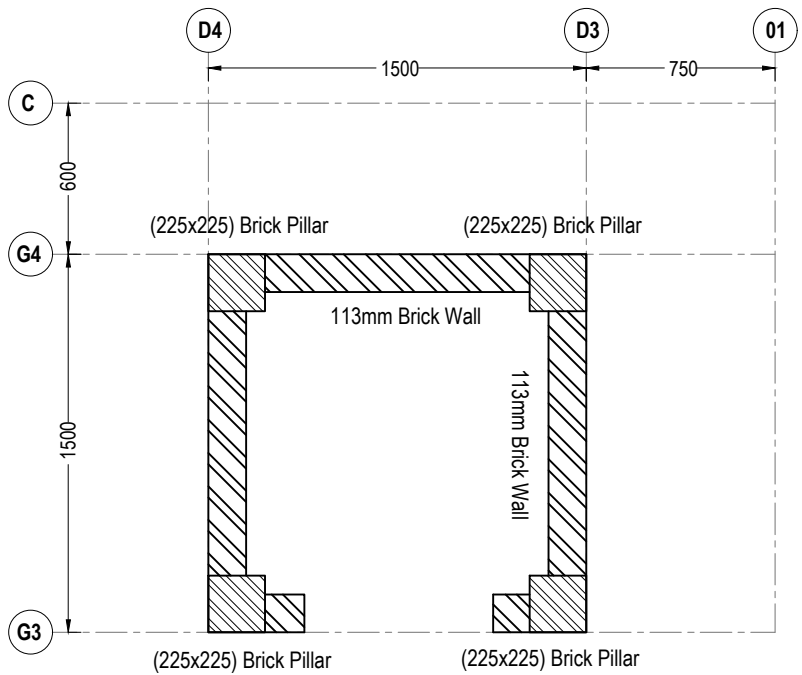
No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1:50	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	WATER DISTRIBUTION SHELTER DETAIL		Date :	20.9.2024	
			Engineering Services Consultants:		Location :	Drawing No :	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Ward 77	S-025		Checked By :	Myo Nyunt	
					Township :	Sheet No :		Approved By :	Khin Maung Htaey (PD)	
					DAGON SEIKKAN	25				



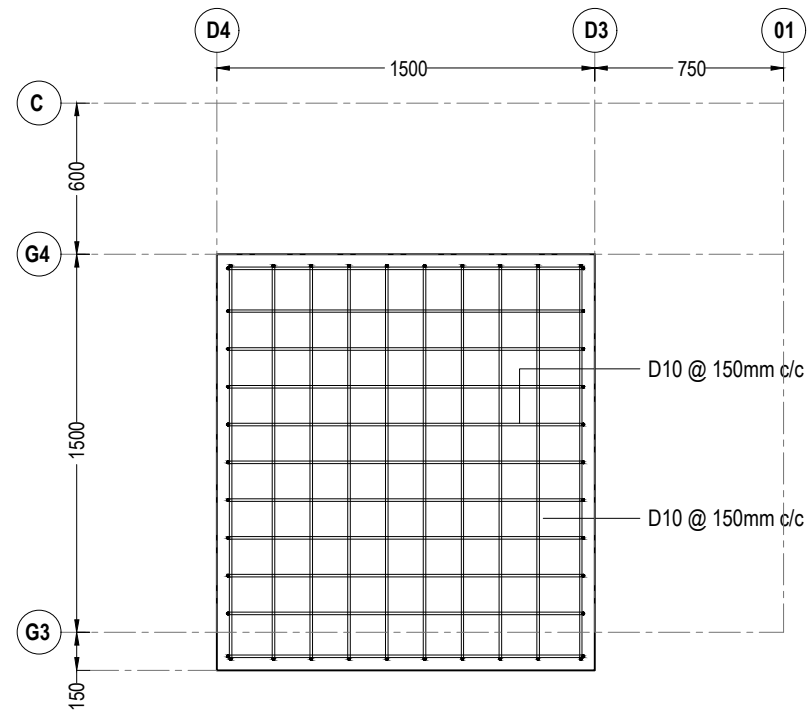
FOUNDATION PLAN (W.C)
(-1.000m LEVEL)





PLINTH BEAM PLAN (W.C)
(+0.400m LEVEL)

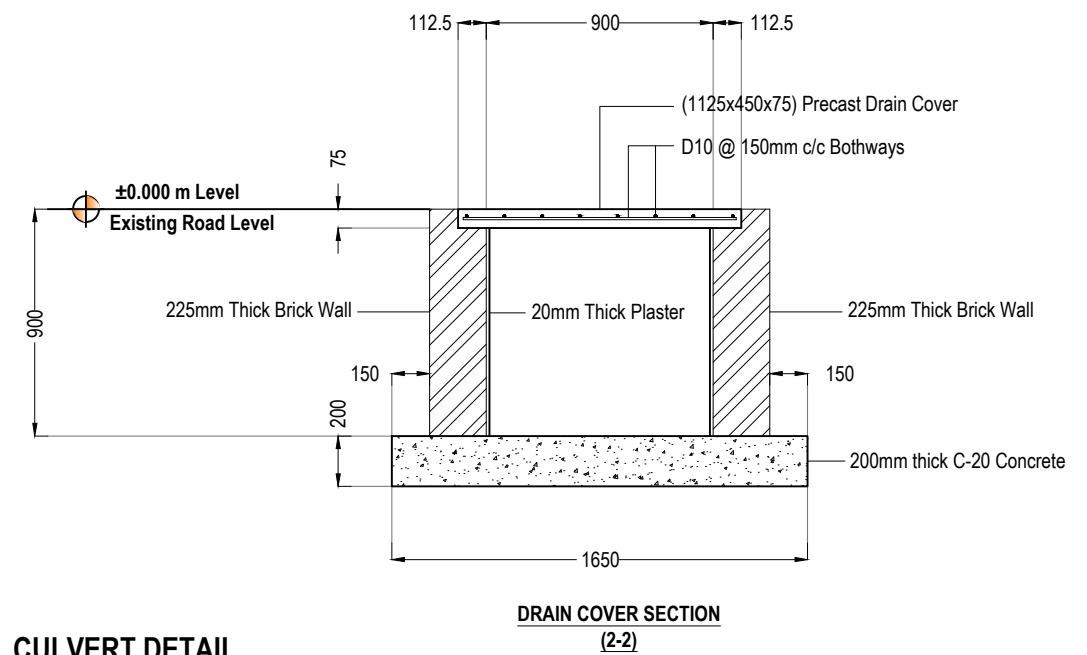
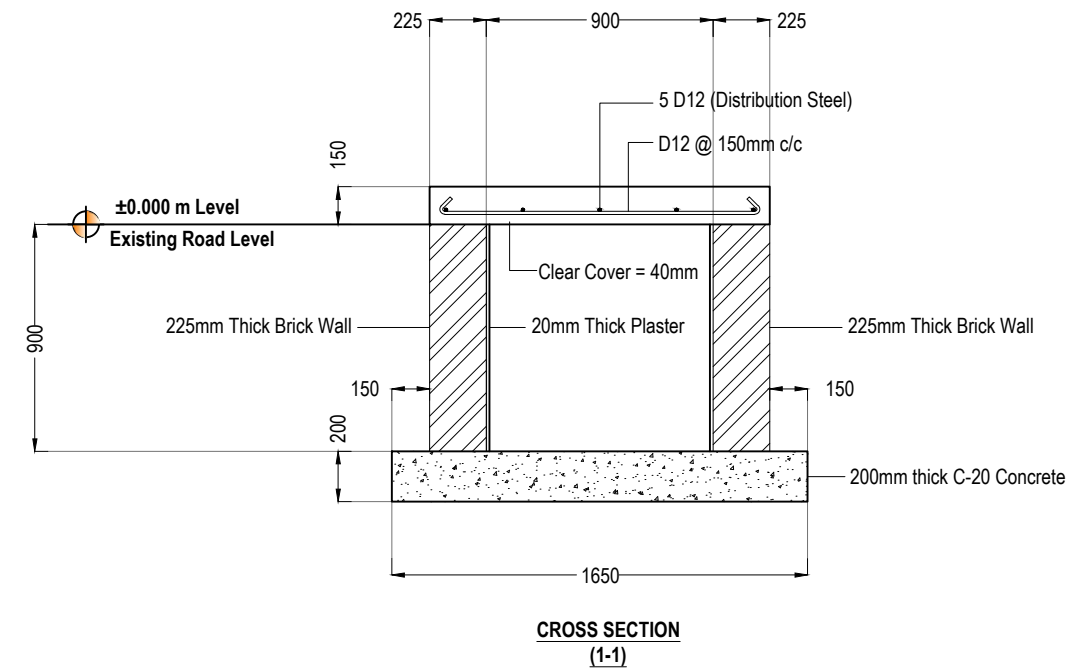
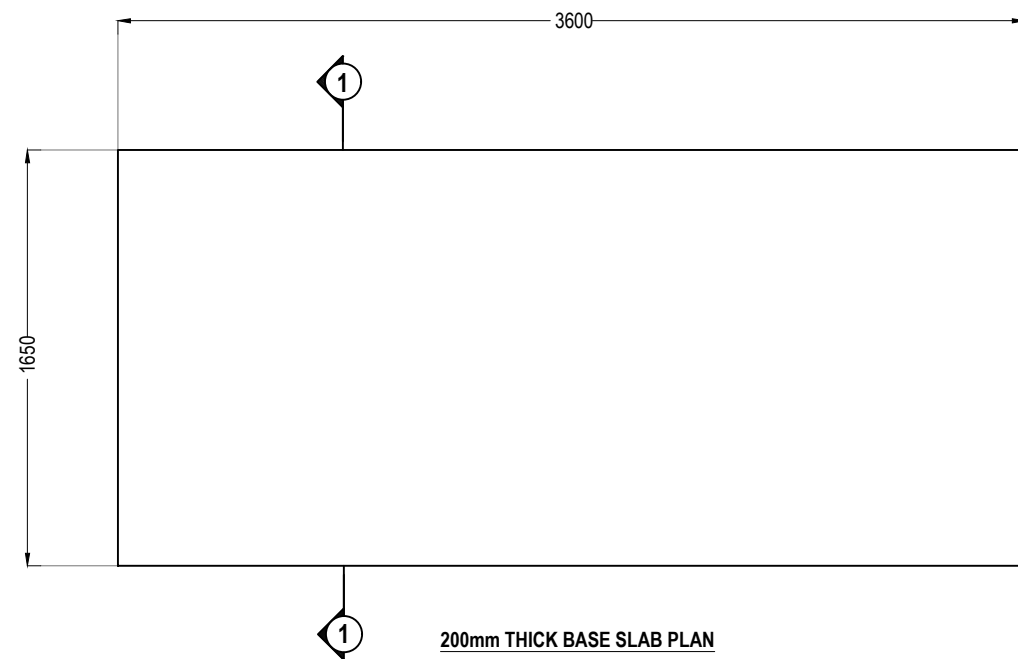
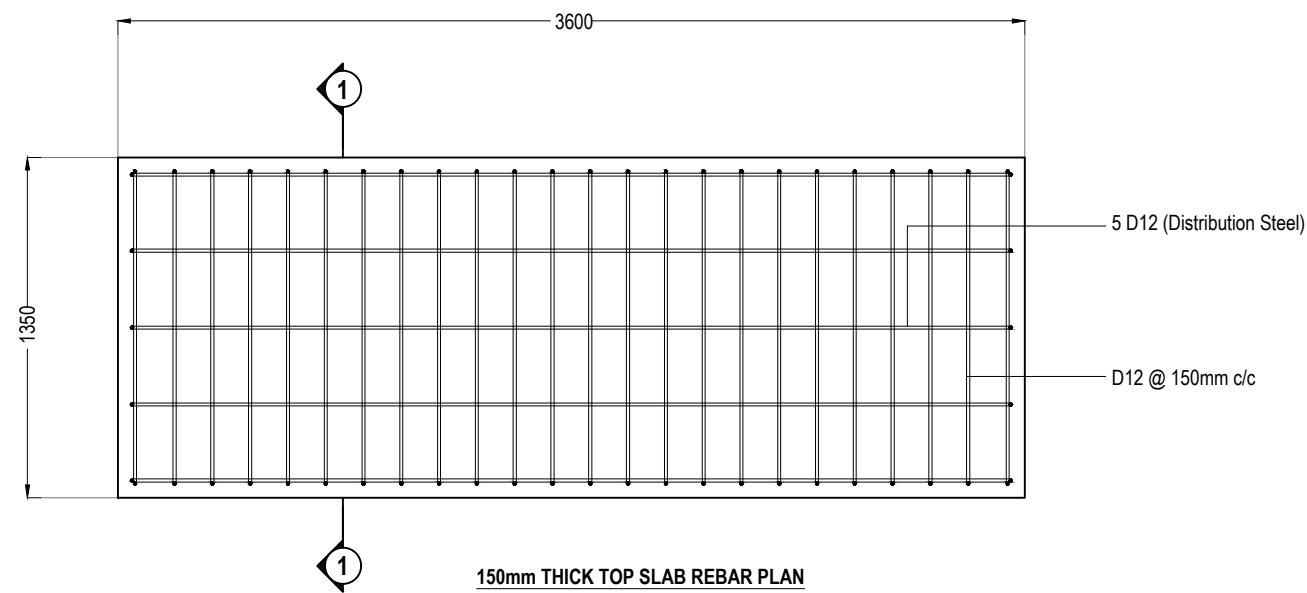


BRICK WALL PLAN (W.C)





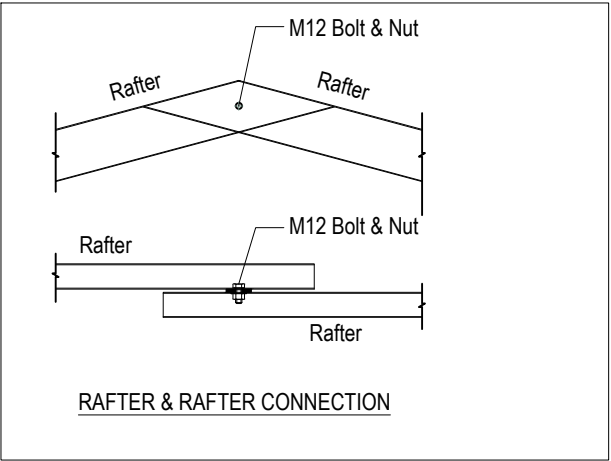
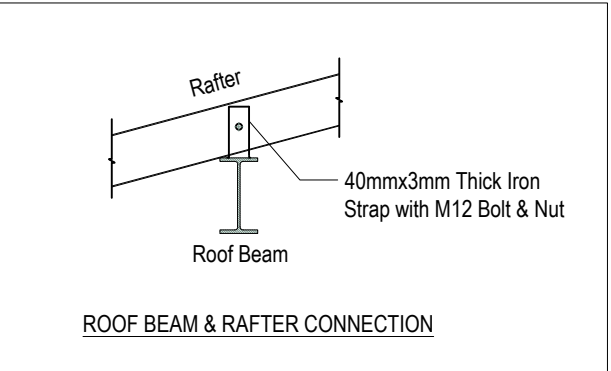
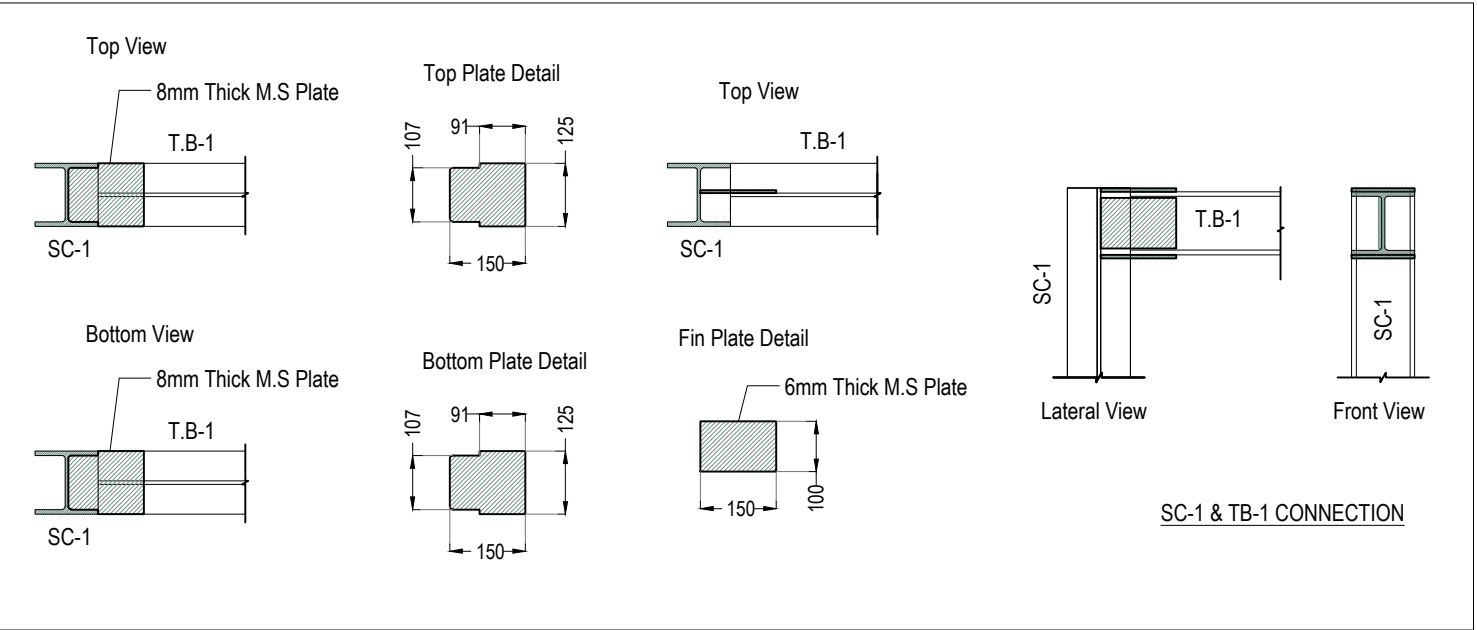
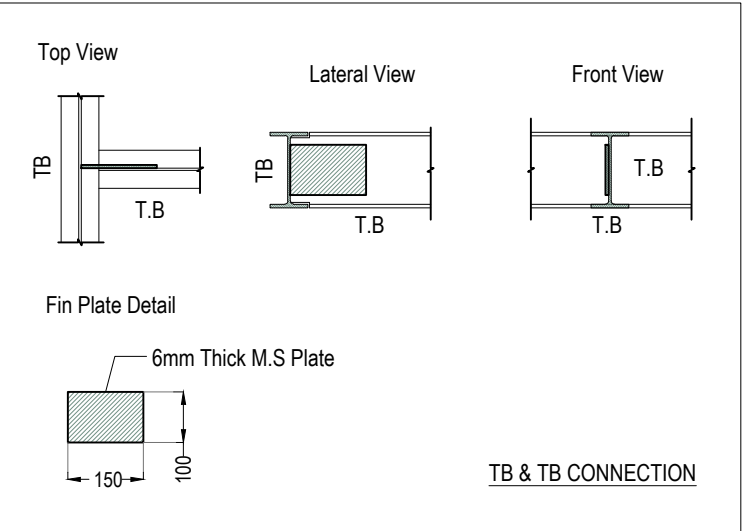
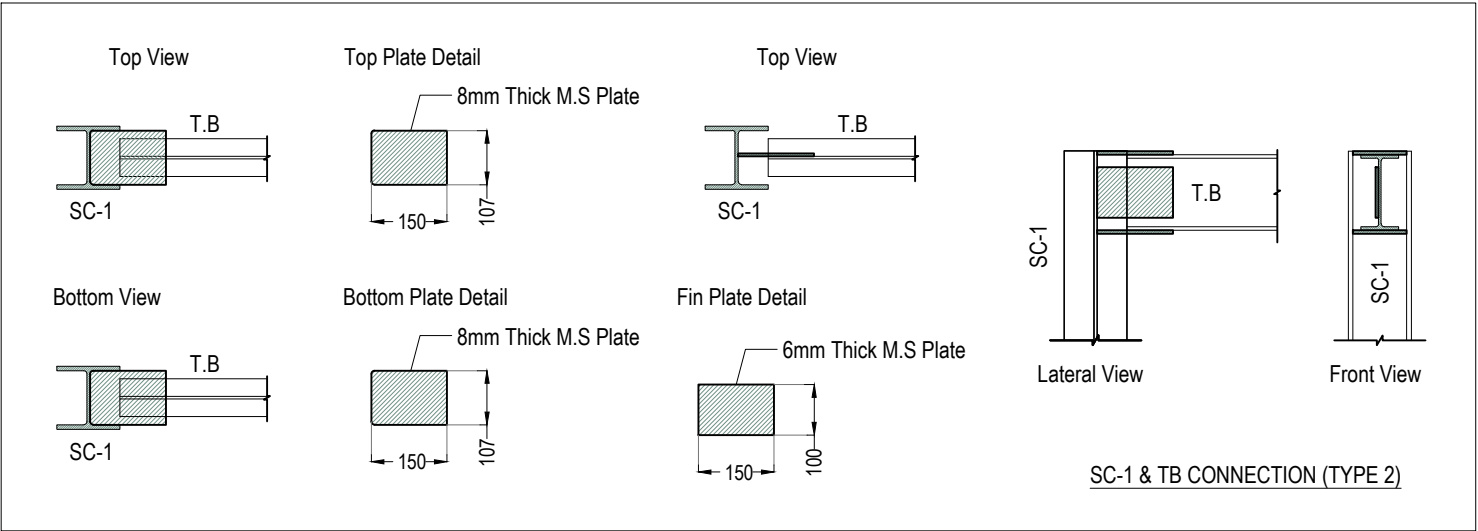
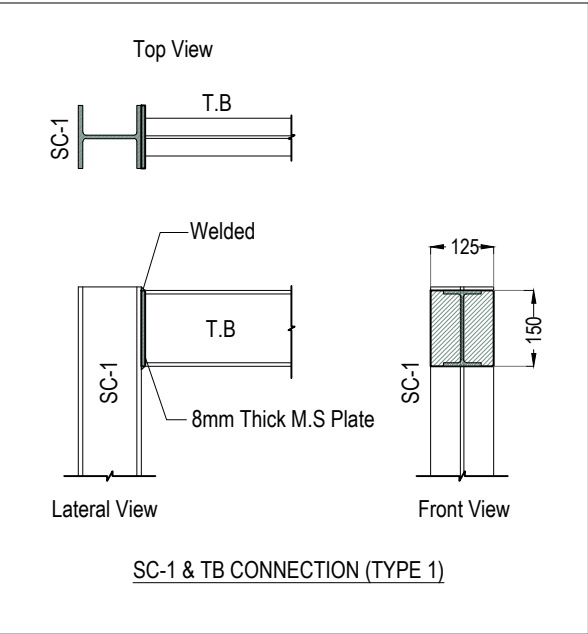
150mm THICK R.C TOP SLAB PLAN (W.C)
(+3.000 m LEVEL)

No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1:30	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	W.C DETAIL	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-026		Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 26		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	



CULVERT DETAIL

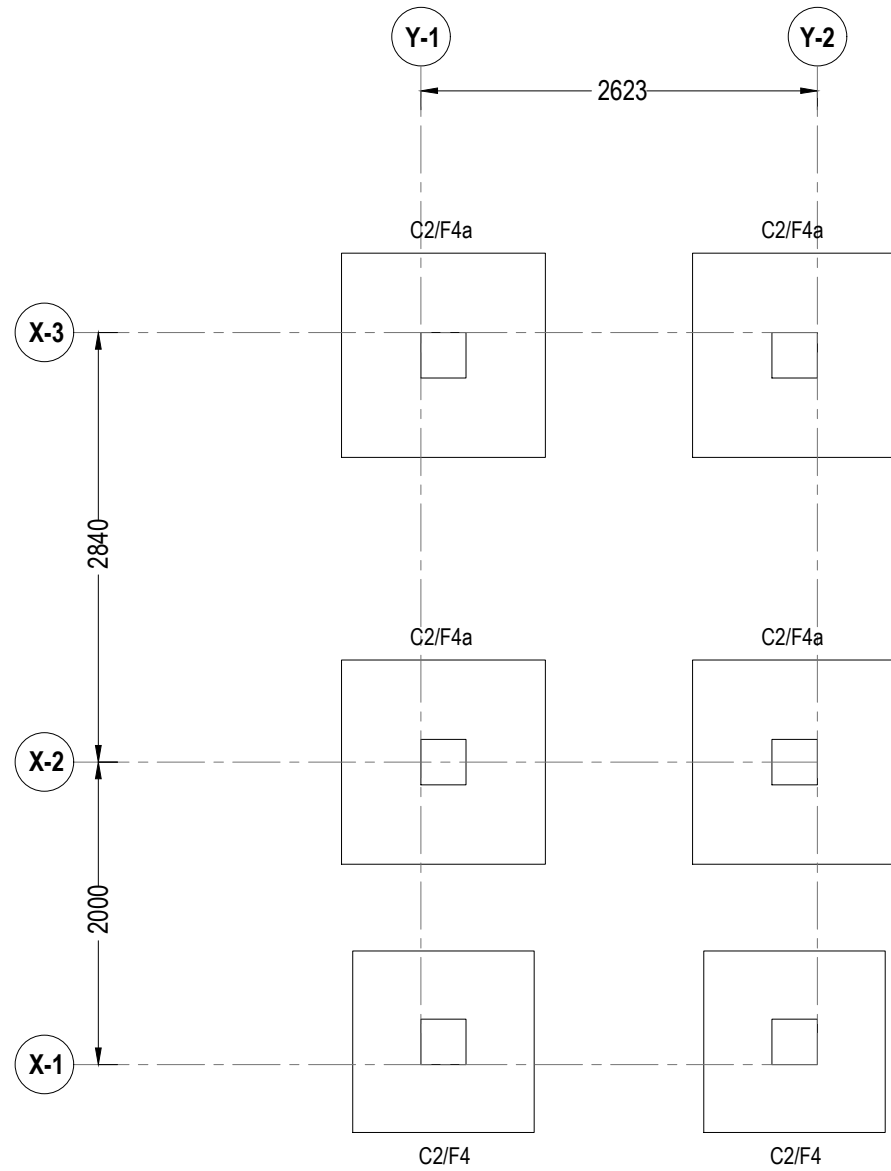
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1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	CULVERT DETAIL	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-027		Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 27		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	



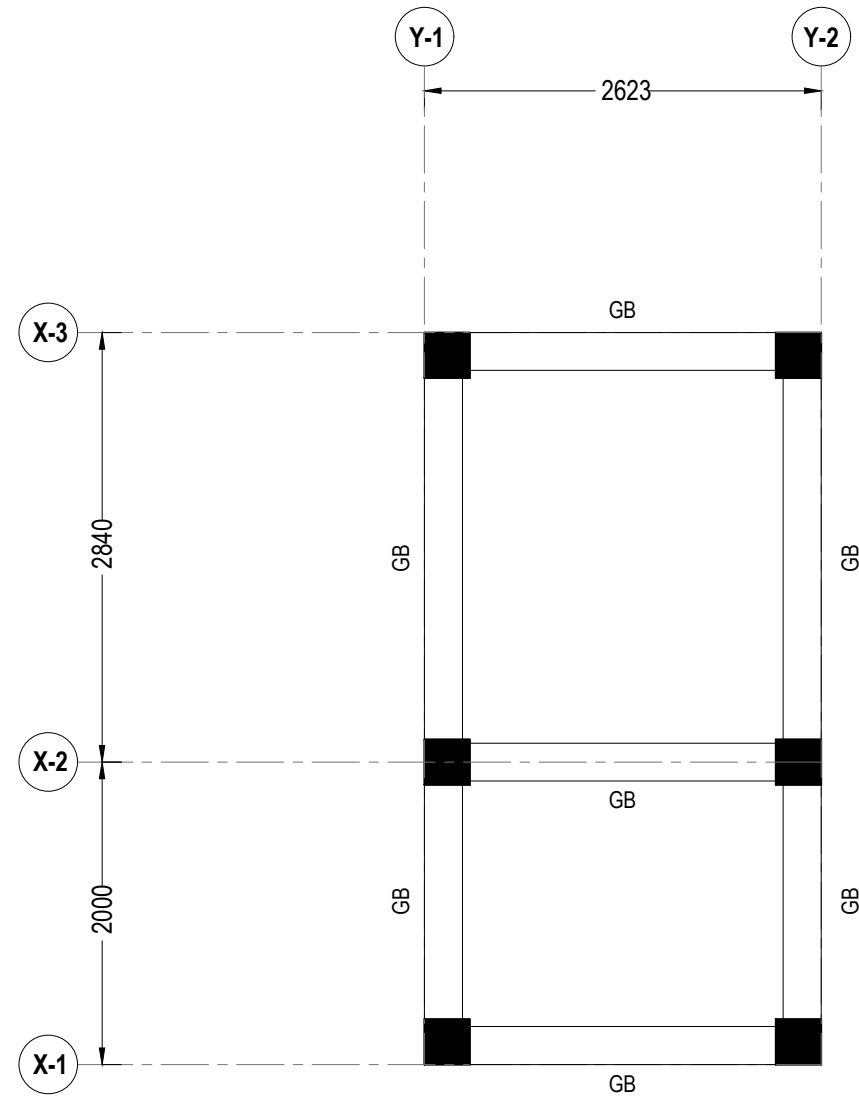
STEEL STRUCTURE SCHEDULE

Type	Size (mm)	Thickness (mm)		Weight (Kg/m)
		Flange	Web	
SC-1	125x125	9.00	6.50	23.80
TB	150x75	7.00	5.00	14.00
TB-1	125x125	9.00	6.50	23.80




No.	Description	Date	Client :	Project Name :	Drawing Name :	Project Status :	Scale :	1:15	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar	"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	JOINT DETAIL	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-028	Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 28	Checked By :	Myo Nyunt	
							Approved By :	Khin Maung Htaey (PD)	

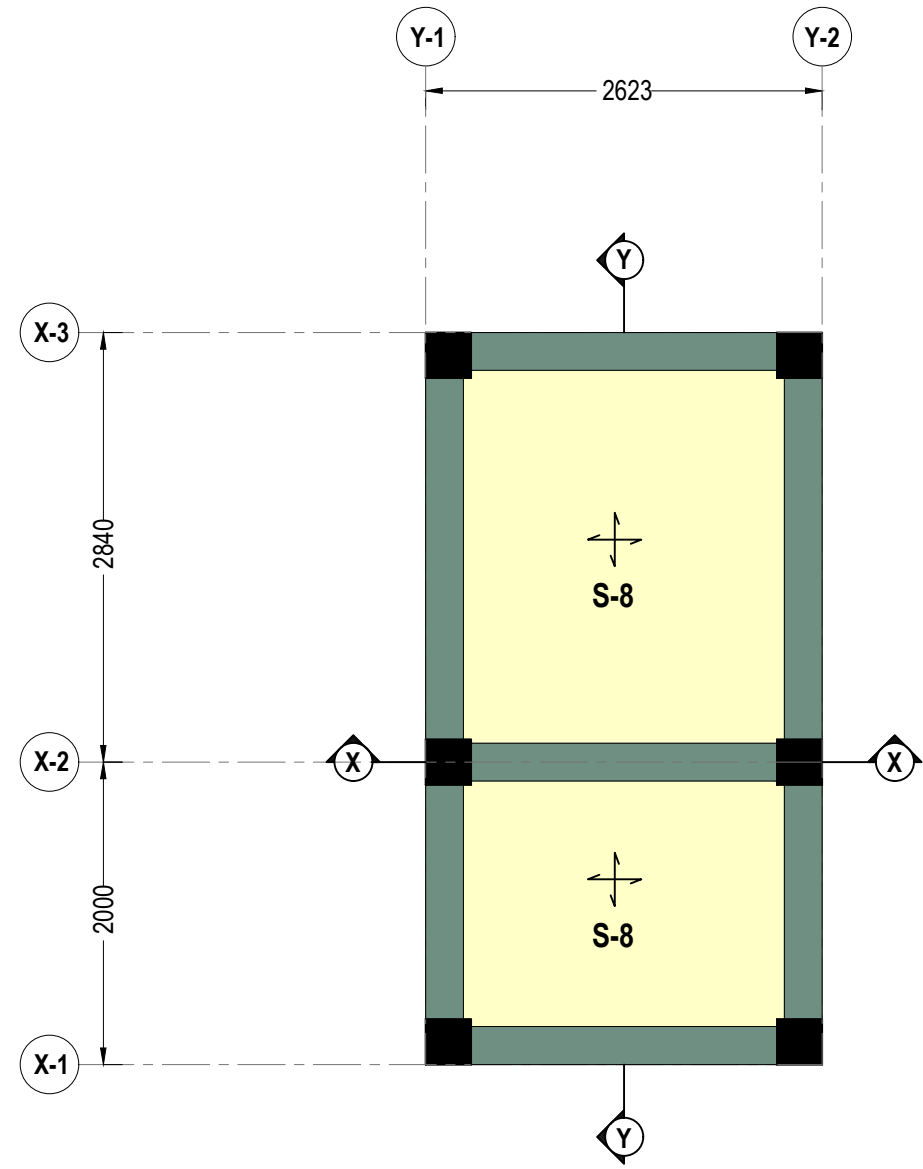


RAIN WATER COLLECTION TANK FOUNDATION PLAN
(-2.100 m LEVEL)

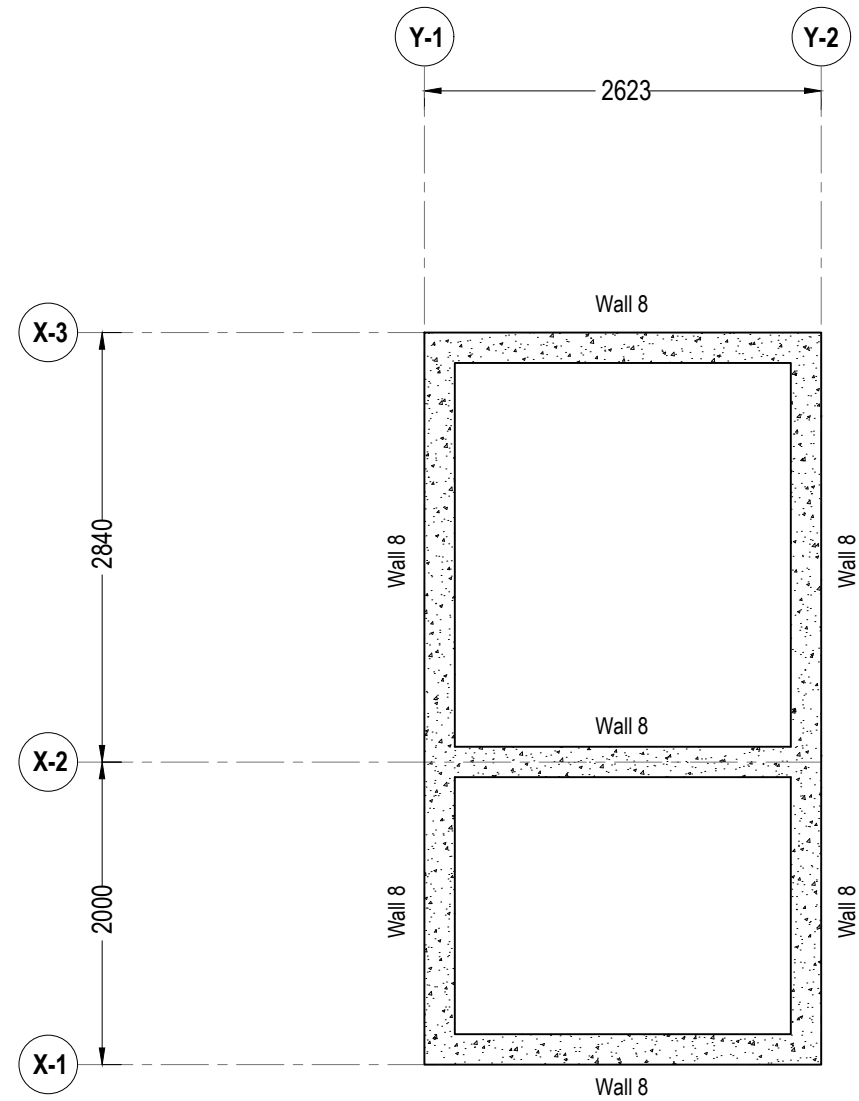


RAIN WATER COLLECTION GROUND BEAM PLAN
(+0.300 m LEVEL)



No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1:50	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	FOUNDATION & G.B PLAN (RAIN WATER COLLECTION TANK)	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
								Design By :	MICEG	
			Engineering Services Consultants: Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Location : Ward 77	Drawing No : S-029		Checked By :	Myo Nyunt	
					Township : DAGON SEIKKAN	Sheet No : 29		Approved By :	Khin Maung Htaey (PD)	

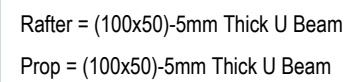


RAIN WATER COLLECTION BASE SLAB BEAM PLAN
(+0.300 m LEVEL)





200mm THICK R.C WALL PLAN
(+0.300 m LEVEL to +2.100 m LEVEL)

No.	Description	Date	Client : UN-HABITAT Myanmar		Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	Drawing Name : SLAB & R.C WALL (RAIN WATER COLLECTION TANK)	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	1:50	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024						Date :	20.9.2024	
			Engineering Services Consultants: Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Location : Ward 77	Drawing No : S-030		Design By :	MICEG	
					Township : DAGON SEIKKAN	Sheet No : 30		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	



PURLIN PLAN

No.	Description	Date	Client :		Project Name :	Drawing Name :	Project Status :	Scale :	1:50	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar		"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	RAFTER & PURLIN PLAN (RAIN WATER COLLECTION TANK)	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:		Location : Ward 77	Drawing No : S-031		Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Township : DAGON SEIKKAN	Sheet No : 31		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	

FOOTING SCHEDULE

f_c =2,500 psi, f_y = 50,000 psi ,f_{ys} = 40,000 psi

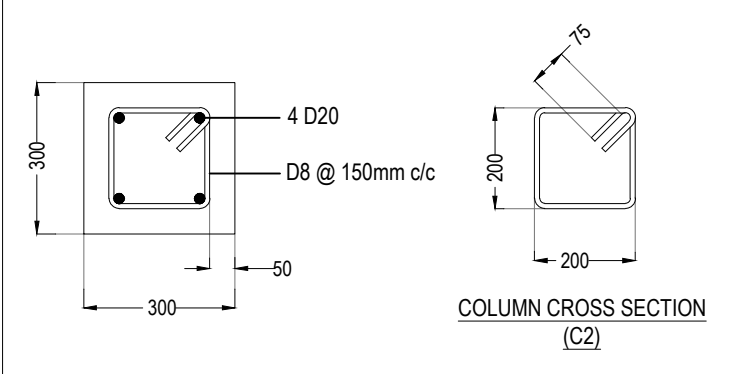
Type	Size (a x b)	Thickness (mm)	Reinforcement		Remark	Concrete Clear Cover
			Parallel to Short Side	Parallel to Long Side		
F4	1200mm x 1200mm	250	D12 @ 100mm c/c	D12 @ 100mm c/c	Only Bottom Bar	50 mm
F4a	1350mm x 1350mm	250	D12 @ 100mm c/c	D12 @ 100mm c/c	Only Bottom Bar	50 mm

R.C COLUMN SCHEDULE

f_c =2,500 psi, f_y = 50,000 psi ,f_{ys} = 40,000 psi

Type	Column Size (mm)		Longitudinal Reinforcement no & size (mm)	Pieces Per Set	Tie Arrangement
	X	Y			
C2	300	300	4 D20	1-Hoop	D10 @ 150mm c/c

R.C COLUMN SECTION

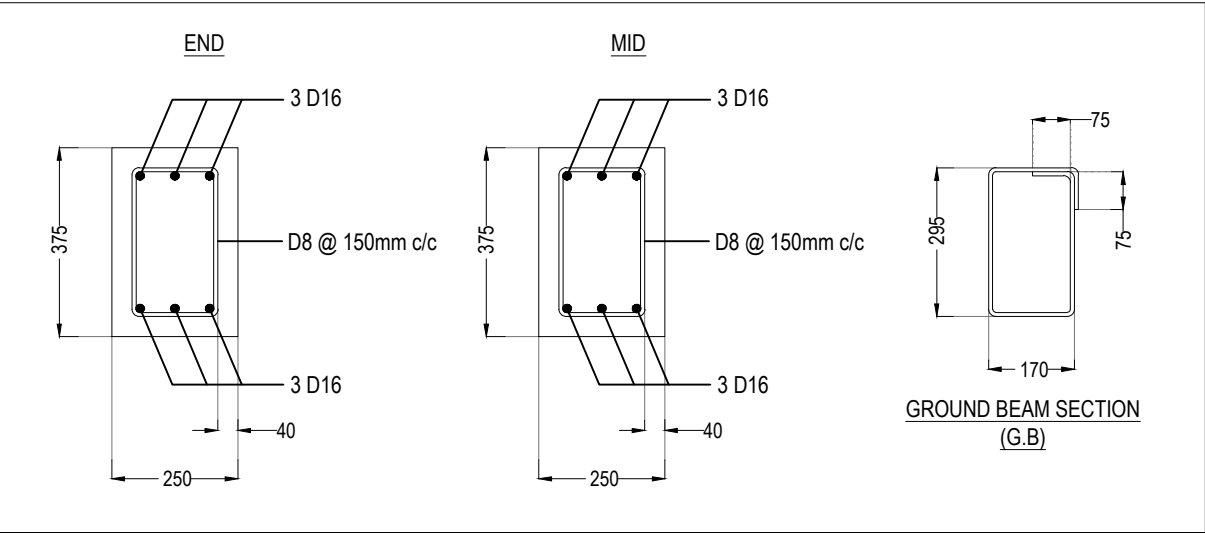


R.C BEAM SCHEDULE

f_c =2,500 psi, f_y = 50,000 psi ,f_{ys} = 40,000 psi

Beam		Top Steel Reinforcement no & size (mm)			Bottom Steel Reinforcement no & size (mm)			Mid Bar	Stirrups requirement shear & torsion size (mm) & spacing (mm)		
Type	Size (mm)	left	mid	right	left	mid	right		left	mid	right
G.B	250x375	3 D16	3 D16	3 D16	3 D16	3 D16	3 D16		D8 @ 150mm c/c	D8 @ 150mm c/c	D8 @ 150mm c/c

R.C BEAM SECTION



R.C SLAB SCHEDULE



f_c =2,500 psi, f_y = 50,000 psi ,f_{ys} = 40,000 psi

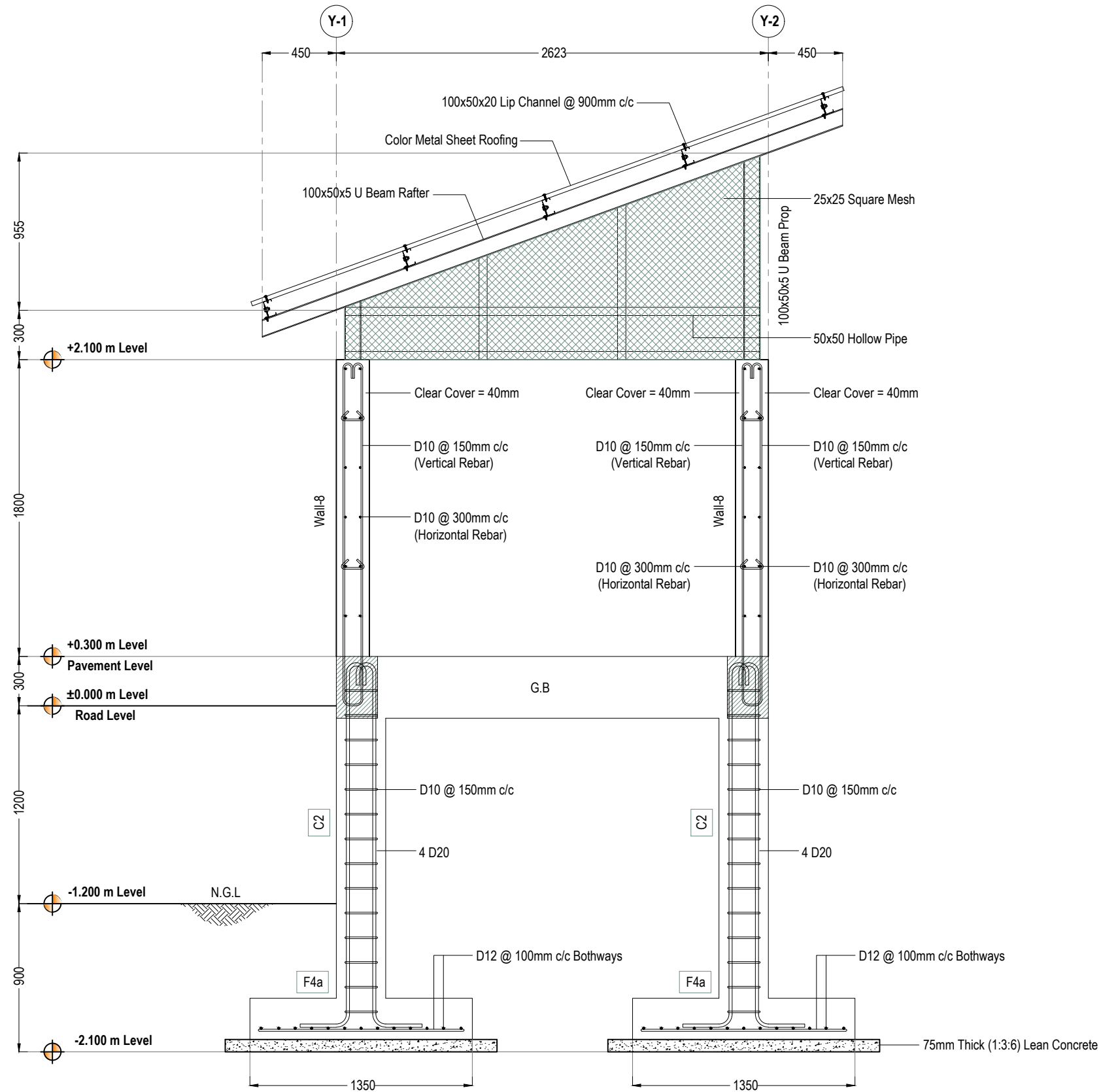
Type	Thickness (mm)	Top Steel Reinforcement		Bottom Steel Reinforcement	
		X Direction	Y Direction	X Direction	Y Direction
S8	200	D12 @ 150mm c/c	D12 @ 150mm c/c	D12 @ 150mm c/c	D12 @ 150mm c/c

R.C WALL SCHEDULE

f_c =2,500 psi, f_y = 50,000 psi ,f_{ys} = 40,000 psi

Type	Thickness (mm)	Vertical Steel Reinforcement		Horizontal Steel Reinforcement	
		Inner Face	Outer Face	Inner Face	Outer Face
Wall 8	200	D10 @ 150mm c/c	D10 @ 150mm c/c	D10 @ 300mm c/c	D10 @ 300mm c/c

No.	Description	Date	Client : UN-HABITAT Myanmar		Project Name : "Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	Drawing Name : SCHEDULES	Project Status : A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Scale :	1:15	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024						Date :	20.9.2024	
			Engineering Services Consultants: Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group		Location : Ward 77	Drawing No : S-032		Design By :	MICEG	
					Township : DAGON SEIKKAN	Sheet No : 32		Checked By :	Myo Nyunt	
								Approved By :	Khin Maung Htaey (PD)	



SECTION
(X-X)

No.	Description	Date	Client :	Project Name :	Drawing Name :	Project Status :	Scale :	1:30	SIGNATURE
1.	FINAL SUBMISSION	20.9.2024	UN-HABITAT Myanmar	"Stand Alone Water Supply Systems for Informal Settlements of Yangon." Sub Project 20 (Dagon Seikkan - Ward 77)	SECTION (X-X)	A - Architectural C - Civil S - Structural E - Electrical PR - Process TW - Tube Well WT - Water Treatment SP - Specialist	Date :	20.9.2024	
			Engineering Services Consultants:	Location : Ward 77	Drawing No : S-034		Design By :	MICEG	
			Federation of Myanmar Engineering Societies-Myanmar International Consulting Engineers Group	Township : DAGON SEIKKAN	Sheet No : 34		Checked By :	Myo Nyunt	
							Approved By :	Khin Maung Htaey (PD)	

Annex B

Location for Solar Power System Installation				
S.No	Township	Ward	Name of Street	Number of Solar Power System
1	South Dagon	TBC	Sub Project 9	1
2	Dagon Seikken	TBC	Sub Project 20	1
Total				2

GENERAL CONDITIONS OF CONTRACT

CONTRACTS FOR THE PROVISION OF GOODS AND SERVICES

1. **LEGAL STATUS OF THE PARTIES:** The United Nations and the Contractor shall also each be referred to as a “Party” hereunder, and:
 - 1.1 Pursuant, *inter alia*, to the Charter of the United Nations and the Convention on the Privileges and Immunities of the United Nations, the United Nations, including its subsidiary organs, has full juridical personality and enjoys such privileges and immunities as are necessary for the independent fulfillment of its purposes.
 - 1.2 The Contractor shall have the legal status of an independent contractor *vis-à-vis* the United Nations, and nothing contained in or relating to the Contract shall be construed as establishing or creating between the Parties the relationship of employer and employee or of principal and agent. The officials, representatives, employees, or subcontractors of each of the Parties shall not be considered in any respect as being the employees or agents of the other Party, and each Party shall be solely responsible for all claims arising out of or relating to its engagement of such persons or entities.
2. **RESPONSIBILITY FOR EMPLOYEES:** To the extent that the Contract involves the provision of any services to the United Nations by the Contractor’s officials, employees, agents, servants, subcontractors and other representatives (collectively, the Contractor’s “personnel”), the following provisions shall apply:
 - 2.1 The Contractor shall be responsible for the professional and technical competence of the personnel it assigns to perform work under the Contract and will select reliable and competent individuals who will be able to effectively perform the obligations under the Contract and who, while doing so, will respect the local laws and customs and conform to a high standard of moral and ethical conduct.
 - 2.2 Such Contractor personnel shall be professionally qualified and, if required to work with officials or staff of the United Nations, shall be able to do so effectively. The qualifications of any personnel whom the Contractor may assign or may propose to assign to perform any obligations under the Contract shall be substantially the same, or better, as the qualifications of any personnel originally proposed by the Contractor.
 - 2.3 At the option of and in the sole discretion of the United Nations:
 - 2.3.1 the qualifications of personnel proposed by the Contractor (*e.g.*, a curriculum vitae) may be reviewed by the United Nations prior to such personnel’s performing any obligations under the Contract;
 - 2.3.2 any personnel proposed by the Contractor to perform obligations under the Contract may be interviewed by qualified staff or officials of the United Nations prior to such personnel’s performing any obligations under the Contract; and,
 - 2.3.3 in cases in which, pursuant to Article 2.3.1 or 2.3.2, above, the United Nations has reviewed the qualifications of such Contractor’s personnel, the United Nations may reasonably refuse to accept any such personnel.
 - 2.4 Requirements specified in the Contract regarding the number or qualifications of the Contractor’s personnel may change during the course of performance of the Contract. Any such change shall be made only following written notice of such proposed change and upon written agreement between the Parties regarding such change, subject to the following:
 - 2.4.1 The United Nations may, at any time, request, in writing, the withdrawal or replacement of any of the Contractor’s personnel, and such request shall not be unreasonably refused by the Contractor.
 - 2.4.2 Any of the Contractor’s personnel assigned to perform obligations under the Contract shall not be withdrawn or replaced without the prior written consent of the United Nations, which shall not be unreasonably withheld.



2.4.3 The withdrawal or replacement of the Contractor's personnel shall be carried out as quickly as possible and in a manner that will not adversely affect the performance of obligations under the Contract.

2.4.4 All expenses related to the withdrawal or replacement of the Contractor's personnel shall, in all cases, be borne exclusively by the Contractor.

2.4.5 Any request by the United Nations for the withdrawal or replacement of the Contractor's personnel shall not be considered to be a termination, in whole or in part, of the Contract, and the United Nations shall not bear any liability in respect of such withdrawn or replaced personnel.

2.4.6 If a request for the withdrawal or replacement of the Contractor's personnel is *not* based upon a default by or failure on the part of the Contractor to perform its obligations in accordance with the Contract, the misconduct of the personnel, or the inability of such personnel to reasonably work together with United Nations officials and staff, then the Contractor shall not be liable by reason of any such request for the withdrawal or replacement of the Contractor's personnel for any delay in the performance by the Contractor of its obligations under the Contract that is substantially the result of such personnel's being withdrawn or replaced.

2.5 Nothing in Articles 2.2, 2.3 and 2.4, above, shall be construed to create any obligations on the part of the United Nations with respect to the Contractor's personnel assigned to perform work under the Contract, and such personnel shall remain the sole responsibility of the Contractor.

2.6 The Contractor shall be responsible for requiring that all personnel assigned by it to perform any obligations under the Contract and who may have access to any premises or other property of the United Nations shall:

2.6.1 undergo or comply with security screening requirements made known to the Contractor by the United Nations, including but not limited to, a review of any criminal history;

2.6.2 when within United Nations premises or on United Nations property, display such identification as may be approved and furnished by the United Nations security officials, and that upon the withdrawal or replacement of any such personnel or upon termination or completion of the Contract, such personnel shall immediately return any such identification to the United Nations for cancellation.

2.7 Within one working day after learning that any of Contractor's personnel who have access to any United Nations premises have been charged by law enforcement authorities with an offense other than a minor traffic offense, the Contractor shall provide written notice to inform the United Nations about the particulars of the charges then known and shall continue to inform the United Nations concerning all substantial developments regarding the disposition of such charges.

2.8 All operations of the Contractor, including without limitation, storage of equipment, materials, supplies and parts, within United Nations premises or on United Nations property shall be confined to areas authorized or approved by the United Nations. The Contractor's personnel shall not enter or pass through and shall not store or dispose of any of its equipment or materials in any areas within United Nations premises or on United Nations property without appropriate authorization from the United Nations.

3. ASSIGNMENT:

3.1 Except as provided in Article 3.2, below, the Contractor may not assign, transfer, pledge or make any other disposition of the Contract, of any part of the Contract, or of any of the rights, claims or obligations under the Contract except with the prior written authorization of the UN. Any such unauthorized assignment, transfer, pledge or other disposition, or any attempt to do so, shall not be binding on the United Nations. Except as permitted with respect to any approved subcontractors, the Contractor shall not delegate any of its obligations under this Contract, except with the prior written consent of the UN. Any such unauthorized delegation, or attempt to do so, shall not be binding on the United Nations.

3.2 The Contractor may assign or otherwise transfer the Contract to the surviving entity resulting from a reorganization of the Contractor's operations, *provided that*:

3.2.1 such reorganization is not the result of any bankruptcy, receivership or other similar proceedings;
and,



- 3.2.2 such reorganization arises from a sale, merger, or acquisition of all or substantially all of the Contractor's assets or ownership interests; *and*,
- 3.2.3 the Contractor promptly notifies the United Nations about such assignment or transfer at the earliest opportunity; *and*,
- 3.2.4 the assignee or transferee agrees in writing to be bound by all of the terms and conditions of the Contract, and such writing is promptly provided to the United Nations following the assignment or transfer.
4. **SUBCONTRACTING:** In the event that the Contractor requires the services of subcontractors to perform any obligations under the Contract, the Contractor shall obtain the prior written approval of the United Nations. The United Nations shall be entitled, in its sole discretion, to review the qualifications of any subcontractors and to reject any proposed subcontractor that the United Nations reasonably considers is not qualified to perform obligations under the Contract. The United Nations shall have the right to require any subcontractor's removal from United Nations premises without having to give any justification therefor. Any such rejection or request for removal shall not, in and of itself, entitle the Contractor to claim any delays in the performance, or to assert any excuses for the non-performance, of any of its obligations under the Contract, and the Contractor shall be solely responsible for all services and obligations performed by its subcontractors. The terms of any subcontract shall be subject to, and shall be construed in a manner that is fully in accordance with, all of the terms and conditions of the Contract.
5. **PURCHASE OF GOODS:** To the extent that the Contract involves any purchase of goods, whether in whole or in part, and unless specifically stated otherwise in the Contract, the following conditions shall apply to any purchases of goods under the Contract:
- 5.1 **DELIVERY OF GOODS:** The Contractor shall hand over or make available the goods, and the United Nations shall receive the goods, at the place for the delivery of the goods and within the time for delivery of the goods specified in the Contract. The Contractor shall provide to the United Nations such shipment documentation (including, without limitation, bills of lading, airway bills, and commercial invoices) as are specified in the Contract or, otherwise, as are customarily utilized in the trade. All manuals, instructions, displays and any other information relevant to the goods shall be in the English language unless otherwise specified in the Contract. Unless otherwise stated in the Contract (including, but not limited to, in any "INCOTERM" or similar trade term), the entire risk of loss, damage to, or destruction of the goods shall be borne exclusively by the Contractor until physical delivery of the goods to the United Nations in accordance with the terms of the Contract. Delivery of the goods shall not be deemed in itself as constituting acceptance of the goods by the United Nations.
- 5.2 **INSPECTION OF THE GOODS:** If the Contract provides that the goods may be inspected prior to delivery, the Contractor shall notify the United Nations when the goods are ready for pre-delivery inspection. Notwithstanding any pre-delivery inspection, the United Nations or its designated inspection agents may also inspect the goods upon delivery in order to confirm that the goods conform to applicable specifications or other requirements of the Contract. All reasonable facilities and assistance, including, but not limited to, access to drawings and production data, shall be furnished to the United Nations or its designated inspection agents at no charge therefor. Neither the carrying out of any inspections of the goods nor any failure to undertake any such inspections shall relieve the Contractor of any of its warranties or the performance of any obligations under the Contract.
- 5.3 **PACKAGING OF THE GOODS:** The Contractor shall package the goods for delivery in accordance with the highest standards of export packaging for the type and quantities and modes of transport of the goods. The goods shall be packed and marked in a proper manner in accordance with the instructions stipulated in the Contract or, otherwise, as customarily done in the trade, and in accordance with any requirements imposed by applicable law or by the transporters and manufacturers of the goods. The packing, in particular, shall mark the Contract or Purchase Order number and any other identification information provided by the United Nations as well as such other information as is necessary for the correct handling and safe delivery of the goods. Unless otherwise specified in the Contract, the Contractor shall have no right to any return of the packing materials.
- 5.4 **TRANSPORTATION & FREIGHT:** Unless otherwise specified in the Contract (including, but not limited to, in any "INCOTERM" or similar trade term), the Contractor shall be solely liable for making all transport arrangements and for payment of freight and insurance costs for the shipment and delivery of the goods in accordance with the requirements of the Contract. The Contractor shall ensure that the United Nations receives



all necessary transport documents in a timely manner so as to enable the United Nations to take delivery of the goods in accordance with the requirements of the Contract.

- 5.5 **WARRANTIES:** Unless otherwise specified in the Contract, in addition to and without limiting any other warranties, remedies or rights of the United Nations stated in or arising under the Contract, the Contractor warrants and represents that:

5.5.1 The goods, including all packaging and packing thereof, conform to the specifications of the Contract, are fit for the purposes for which such goods are ordinarily used and for any purposes expressly made known in writing in the Contract, and shall be of even quality, free from faults and defects in design, material, manufacturer and workmanship;

5.5.2 If the Contractor is not the original manufacturer of the goods, the Contractor shall provide the United Nations with the benefit of all manufacturers' warranties in addition to any other warranties required to be provided under the Contract;

5.5.3 The goods are of the quality, quantity and description required by the Contract, including when subjected to conditions prevailing in the place of final destination;

5.5.4 The goods are free from any right of claim by any third-party, including claims of infringement of any intellectual property rights, including, but not limited to, patents, copyright and trade secrets;

5.5.5 The goods are new and unused;

5.5.6 All warranties will remain fully valid following any delivery of the goods and for a period of not less than one (1) year following acceptance of the goods by the United Nations in accordance with the Contract;

5.5.7 During any period in which the Contractor's warranties are effective, upon notice by the United Nations that the goods do not conform to the requirements of the Contract, the Contractor shall promptly and at its own expense correct such non-conformities or, in case of its inability to do so, replace the defective goods with goods of the same or better quality or, at its own cost, remove the defective goods and fully reimburse the United Nations for the purchase price paid for the defective goods; and,

5.5.8 The Contractor shall remain responsive to the needs of the United Nations for any services that may be required in connection with any of the Contractor's warranties under the Contract.

- 5.6 **ACCEPTANCE OF GOODS:** Under no circumstances shall the United Nations be required to accept any goods that do not conform to the specifications or requirements of the Contract. The United Nations may condition its acceptance of the goods upon the successful completion of acceptance tests as may be specified in the Contract or otherwise agreed in writing by the Parties. In no case shall the United Nations be obligated to accept any goods unless and until the United Nations has had a reasonable opportunity to inspect the goods following delivery. If the Contract specifies that the United Nations shall provide a written acceptance of the goods, the goods shall not be deemed accepted unless and until the United Nations in fact provides such written acceptance. In no case shall payment by the United Nations in and of itself constitute acceptance of the goods.

- 5.7 **REJECTION OF GOODS:** Notwithstanding any other rights of, or remedies available to the United Nations under the Contract, in case any of the goods are defective or otherwise do not conform to the specifications or other requirements of the Contract, the United Nations, at its sole option, may reject or refuse to accept the goods, and within thirty (30) days following receipt of notice from the United Nations of such rejection or refusal to accept the goods, the Contractor shall, in sole option of the United Nations:

5.7.1 provide a full refund upon return of the goods, or a partial refund upon a return of a portion of the goods, by the United Nations; *or*,

5.7.2 repair the goods in a manner that would enable the goods to conform to the specifications or other requirements of the Contract; *or*,

5.7.3 replace the goods with goods of equal or better quality; *and*,

5.7.4 pay all costs relating to the repair or return of the defective goods as well as the costs relating to the storage of any such defective goods and for the delivery of any replacement goods to the United Nations.



5.8 In the event that the United Nations elects to return any of the goods for the reasons specified in Article 5.7, above, the United Nations may procure the goods from another source. In addition to any other rights or remedies available to the United Nations under the Contract, including, but not limited to, the right to terminate the Contract, the Contractor shall be liable for any additional cost beyond the balance of the Contract price resulting from any such procurement, including, *inter alia*, the costs of engaging in such procurement, and the United Nations shall be entitled to compensation from the Contractor for any reasonable expenses incurred for preserving and storing the goods for the Contractor's account.

5.9 **TITLE:** The Contractor warrants and represents that the goods delivered under the Contract are unencumbered by any third party's title or other property rights, including, but not limited to, any liens or security interests. Unless otherwise expressly provided in the Contract, title in and to the goods shall pass from the Contractor to the United Nations upon delivery of the goods and their acceptance by the United Nations in accordance with the requirements of the Contract.

5.10 **EXPORT LICENSING:** The Contractor shall be responsible for obtaining any export license required with respect to the goods, products, or technologies, including software, sold, delivered, licensed or otherwise provided to the United Nations under the Contract. The Contractor shall procure any such export license in an expeditious manner. Subject to and without any waiver of the privileges and immunities of the United Nations, the United Nations shall lend the Contractor all reasonable assistance required for obtaining any such export license. Should any Governmental entity refuse, delay or hinder the Contractor's ability to obtain any such export license, the Contractor shall promptly consult with the United Nations to enable the United Nations to take appropriate measures to resolve the matter.

6. INDEMNIFICATION:

6.1 The Contractor shall indemnify, defend, and hold and save harmless, the United Nations, and its officials, agents and employees, from and against all suits, proceedings, claims, demands, losses and liability of any kind or nature brought by any third party against the United Nations, including, but not limited to, all litigation costs and expenses, attorney's fees, settlement payments and damages, based on, arising from, or relating to:

6.1.1 allegations or claims that the possession of or use by the United Nations of any patented device, any copyrighted material, or any other goods, property or services provided or licensed to the United Nations under the terms of the Contract, in whole or in part, separately or in a combination contemplated by the Contractor's published specifications therefor, or otherwise specifically approved by the Contractor, constitutes an infringement of any patent, copyright, trademark, or other intellectual property right of any third party; *or*,

6.1.2 any acts or omissions of the Contractor, or of any subcontractor or anyone directly or indirectly employed by them in the performance of the Contract, which give rise to legal liability to anyone not a party to the Contract, including, without limitation, claims and liability in the nature of a claim for workers' compensation.

6.2 The indemnity set forth in Article 6.1.1, above, shall not apply to:

6.2.1 A claim of infringement resulting from the Contractor's compliance with specific written instructions by the United Nations directing a change in the specifications for the goods, property, materials, equipment or supplies to be or used, or directing a manner of performance of the Contract or requiring the use of specifications not normally used by the Contractor; *or*

6.2.2 A claim of infringement resulting from additions to or changes in any goods, property, materials equipment, supplies or any components thereof furnished under the Contract if the United Nations or another party acting under the direction of the United Nations made such changes.

6.3 In addition to the indemnity obligations set forth in this Article 6, the Contractor shall be obligated, at its sole expense, to defend the United Nations and its officials, agents and employees, pursuant to this Article 6, regardless of whether the suits, proceedings, claims and demands in question actually give rise to or otherwise result in any loss or liability.

6.4 The United Nations shall advise the Contractor about any such suits, proceedings, claims, demands, losses or liability within a reasonable period of time after having received actual notice thereof. The Contractor shall have sole control of the defense of any such suit, proceeding, claim or demand and of all negotiations in connection with the settlement or compromise thereof, except with respect to the assertion or defense of the



privileges and immunities of the United Nations or any matter relating thereto, for which only the United Nations itself is authorized to assert and maintain. The United Nations shall have the right, at its own expense, to be represented in any such suit, proceeding, claim or demand by independent counsel of its own choosing.

- 6.5 In the event the use by the United Nations of any goods, property or services provided or licensed to the United Nations by the Contractor, in whole or in part, in any suit or proceeding, is for any reason enjoined, temporarily or permanently, or is found to infringe any patent, copyright, trademark or other intellectual property right, or in the event of a settlement, is enjoined, limited or otherwise interfered with, then the Contractor, at its sole cost and expense, shall, promptly, either:

6.5.1 procure for the United Nations the unrestricted right to continue using such goods or services provided to the United Nations;

6.5.2 replace or modify the goods or services provided to the United Nations, or part thereof, with the equivalent or better goods or services, or part thereof, that is non-infringing; *or*,

6.5.3 refund to the United Nations the full price paid by the United Nations for the right to have or use such goods, property or services, or part thereof.

7. INSURANCE AND LIABILITY:

- 7.1 The Contractor shall pay the United Nations promptly for all loss, destruction, or damage to the property of the United Nations caused by the Contractor's personnel or by any of its subcontractors or anyone else directly or indirectly employed by the Contractor or any of its subcontractors in the performance of the Contract.

- 7.2 Unless otherwise provided in the Contract, prior to commencement of performance of any other obligations under the Contract, and subject to any limits set forth in the Contract, the Contractor shall take out and shall maintain for the entire term of the Contract, for any extension thereof, and for a period following any termination of the Contract reasonably adequate to deal with losses:

7.2.1 insurance against all risks in respect of its property and any equipment used for the performance of the Contract;

7.2.2 workers' compensation insurance, or its equivalent, or employer's liability insurance, or its equivalent, with respect to the Contractor's personnel sufficient to cover all claims for injury, death and disability, or any other benefits required to be paid by law, in connection with the performance of the Contract;

7.2.3 liability insurance in an adequate amount to cover all claims, including, but not limited to, claims for death and bodily injury, products and completed operations liability, loss of or damage to property, and personal and advertising injury, arising from or in connection with the Contractor's performance under the Contract, including, but not limited to, liability arising out of or in connection with the acts or omissions of the Contractor, its personnel, agents, or invitees, or the use, during the performance of the Contract, of any vehicles, boats, airplanes or other transportation vehicles and equipment, whether or not owned by the Contractor; *and*,

7.2.4 such other insurance as may be agreed upon in writing between the United Nations and the Contractor.

- 7.3 The Contractor's liability policies shall also cover subcontractors and all defense costs and shall contain a standard "cross liability" clause.

- 7.4 The Contractor acknowledges and agrees that the United Nations accepts no responsibility for providing life, health, accident, travel or any other insurance coverage which may be necessary or desirable in respect of any personnel performing services for the Contractor in connection with the Contract.

- 7.5 Except for the workers' compensation insurance or any self-insurance program maintained by the Contractor and approved by the United Nations, in its sole discretion, for purposes of fulfilling the Contractor's requirements for providing insurance under the Contract, the insurance policies required under the Contract shall:

7.5.1 name the United Nations as an additional insured under the liability policies, including, if required, as a separate endorsement under the policy;



- 7.5.2 include a waiver of subrogation of the Contractor's insurance carrier's rights against the United Nations;
- 7.5.3 provide that the United Nations shall receive written notice from the Contractor's insurance carrier not less than thirty (30) days prior to any cancellation or material change of coverage; *and*,
- 7.5.4 include a provision for response on a primary and non-contributing basis with respect to any other insurance that may be available to the United Nations.
- 7.6 The Contractor shall be responsible to fund all amounts within any policy deductible or retention.
- 7.7 Except for any self-insurance program maintained by the Contractor and approved by the United Nations for purposes of fulfilling the Contractor's requirements for maintaining insurance under the Contract, the Contractor shall maintain the insurance taken out under the Contract with reputable insurers that are in good financial standing and that are acceptable to the United Nations. Prior to the commencement of any obligations under the Contract, the Contractor shall provide the United Nations with evidence, in the form of certificate of insurance or such other form as the United Nations may reasonably require, that demonstrates that the Contractor has taken out insurance in accordance with the requirements of the Contract. The United Nations reserves the right, upon written notice to the Contractor, to obtain copies of any insurance policies or insurance program descriptions required to be maintained by the Contractor under the Contract. Notwithstanding the provisions of Article 7.5.3, above, the Contractor shall promptly notify the United Nations concerning any cancellation or material change of insurance coverage required under the Contract.
- 7.8 The Contractor acknowledges and agrees that neither the requirement for taking out and maintaining insurance as set forth in the Contract nor the amount of any such insurance, including, but not limited to, any deductible or retention relating thereto, shall in any way be construed as limiting the Contractor's liability arising under or relating to the Contract.
8. **ENCUMBRANCES AND LIENS:** The Contractor shall not cause or permit any lien, attachment or other encumbrance by any person to be placed on file or to remain on file in any public office or on file with the United Nations against any monies due to the Contractor or that may become due for any work done or against any goods supplied or materials furnished under the Contract, or by reason of any other claim or demand against the Contractor or the United Nations.
9. **EQUIPMENT FURNISHED BY THE UNITED NATIONS TO THE CONTRACTOR:** Title to any equipment and supplies that may be furnished by the United Nations to the Contractor for the performance of any obligations under the Contract shall rest with the United Nations, and any such equipment shall be returned to the United Nations at the conclusion of the Contract or when no longer needed by the Contractor. Such equipment, when returned to the United Nations, shall be in the same condition as when delivered to the Contractor, subject to normal wear and tear, and the Contractor shall be liable to compensate the United Nations for the actual costs of any loss of, damage to, or degradation of the equipment that is beyond normal wear and tear.
10. **COPYRIGHT, PATENTS AND OTHER PROPRIETARY RIGHTS:**
- 10.1 Except as is otherwise expressly provided in writing in the Contract, the United Nations shall be entitled to all intellectual property and other proprietary rights including, but not limited to, patents, copyrights, and trademarks, with regard to products, processes, inventions, ideas, know-how, or documents and other materials which the Contractor has developed for the United Nations under the Contract and which bear a direct relation to or are produced or prepared or collected in consequence of, or during the course of, the performance of the Contract. The Contractor acknowledges and agrees that such products, documents and other materials constitute works made for hire for the United Nations.
- 10.2 To the extent that any such intellectual property or other proprietary rights consist of any intellectual property or other proprietary rights of the Contractor: (i) that pre-existed the performance by the Contractor of its obligations under the Contract, or (ii) that the Contractor may develop or acquire, or may have developed or acquired, independently of the performance of its obligations under the Contract, the United Nations does not and shall not claim any ownership interest thereto, and the Contractor grants to the United Nations a perpetual license to use such intellectual property or other proprietary right solely for the purposes of and in accordance with the requirements of the Contract.
- 10.3 At the request of the United Nations, the Contractor shall take all necessary steps, execute all necessary documents and generally assist in securing such proprietary rights and transferring or licensing them to the United Nations in compliance with the requirements of the applicable law and of the Contract.



10.4 Subject to the foregoing provisions, all maps, drawings, photographs, mosaics, plans, reports, estimates, recommendations, documents, and all other data compiled by or received by the Contractor under the Contract shall be the property of the United Nations, shall be made available for use or inspection by the United Nations at reasonable times and in reasonable places, shall be treated as confidential, and shall be delivered only to United Nations authorized officials on completion of work under the Contract.

11. **PUBLICITY, AND USE OF THE NAME, EMBLEM OR OFFICIAL SEAL OF THE UNITED NATIONS:** The Contractor shall not advertise or otherwise make public for purposes of commercial advantage or goodwill that it has a contractual relationship with the United Nations, nor shall the Contractor, in any manner whatsoever use the name, emblem or official seal of the United Nations, or any abbreviation of the name of the United Nations in connection with its business or otherwise without the written permission the United Nations.

12. **CONFIDENTIAL NATURE OF DOCUMENTS AND INFORMATION:** Information and data that is considered proprietary by either Party or that is delivered or disclosed by one Party ("Discloser") to the other Party ("Recipient") during the course of performance of the Contract, and that is designated as confidential ("Information"), shall be held in confidence by that Party and shall be handled as follows:

12.1 The Recipient shall:

12.1.1 use the same care and discretion to avoid disclosure, publication or dissemination of the Discloser's Information as it uses with its own similar Information that it does not wish to disclose, publish or disseminate; *and*,

12.1.2 use the Discloser's Information solely for the purpose for which it was disclosed.

12.2 Provided that the Recipient has a written agreement with the following persons or entities requiring them to treat the Information confidential in accordance with the Contract and this Article 12, the Recipient may disclose Information to:

12.2.1 any other party with the Discloser's prior written consent; *and*,

12.2.2 the Recipient's employees, officials, representatives and agents who have a need to know such Information for purposes of performing obligations under the Contract, and employees officials, representatives and agents of any legal entity that it controls, controls it, or with which it is under common control, who have a need to know such Information for purposes of performing obligations under the Contract, *provided that*, for these purposes a controlled legal entity means:

12.2.2.1 a corporate entity in which the Party owns or otherwise controls, whether directly or indirectly, over fifty percent (50%) of voting shares thereof; *or*,

12.2.2.2 any entity over which the Party exercises effective managerial control; *or*,

12.2.2.3 for the United Nations, a principal or subsidiary organ of the United Nations established in accordance with the Charter of the United Nations.

12.3 The Contractor may disclose Information to the extent required by law, *provided that*, subject to and without any waiver of the privileges and immunities of the United Nations, the Contractor will give the United Nations sufficient prior notice of a request for the disclosure of Information in order to allow the United Nations to have a reasonable opportunity to take protective measures or such other action as may be appropriate before any such disclosure is made.

12.4 The United Nations may disclose Information to the extent as required pursuant to the Charter of the United Nations, or pursuant to resolutions or regulations of the General Assembly or rules promulgated thereunder.

12.5 The Recipient shall not be precluded from disclosing Information that is obtained by the Recipient from a third party without restriction, is disclosed by the Discloser to a third party without any obligation of confidentiality, is previously known by the Recipient, or at any time is developed by the Recipient completely independently of any disclosures hereunder.

12.6 These obligations and restrictions of confidentiality shall be effective during the term of the Contract, including any extension thereof, and, unless otherwise provided in the Contract, shall remain effective following any termination of the Contract.

**13. FORCE MAJEURE; OTHER CHANGES IN CONDITIONS:**

- 13.1 In the event of and as soon as possible after the occurrence of any cause constituting *force majeure*, the affected Party shall give notice and full particulars in writing to the other Party, of such occurrence or cause if the affected Party is thereby rendered unable, wholly or in part, to perform its obligations and meet its responsibilities under the Contract. The affected Party shall also notify the other Party of any other changes in condition or the occurrence of any event which interferes or threatens to interfere with its performance of the Contract. Not more than fifteen (15) days following the provision of such notice of *force majeure* or other changes in condition or occurrence, the affected Party shall also submit a statement to the other Party of estimated expenditures that will likely be incurred for the duration of the change in condition or the event of *force majeure*. On receipt of the notice or notices required hereunder, the Party not affected by the occurrence of a cause constituting *force majeure* shall take such action as it reasonably considers to be appropriate or necessary in the circumstances, including the granting to the affected Party of a reasonable extension of time in which to perform any obligations under the Contract.
- 13.2 If the Contractor is rendered unable, wholly or in part, by reason of *force majeure* to perform its obligations and meet its responsibilities under the Contract, the United Nations shall have the right to suspend or terminate the Contract on the same terms and conditions as are provided for in Article 14, "Termination," except that the period of notice shall be seven (7) days instead of thirty (30) days. In any case, the United Nations shall be entitled to consider the Contractor permanently unable to perform its obligations under the Contract in case the Contractor is unable to perform its obligations, wholly or in part, by reason of *force majeure* for any period in excess of ninety (90) days.
- 13.3 *Force majeure* as used herein means any unforeseeable and irresistible act of nature, any act of war (whether declared or not), invasion, revolution, insurrection, terrorism, or any other acts of a similar nature or force, *provided that* such acts arise from causes beyond the control and without the fault or negligence of the Contractor. The Contractor acknowledges and agrees that, with respect to any obligations under the Contract that the Contractor must perform in areas in which the United Nations is engaged in, preparing to engage in, or disengaging from any peacekeeping, humanitarian or similar operations, any delays or failure to perform such obligations arising from or relating to harsh conditions within such areas, or to any incidents of civil unrest occurring in such areas, shall not, in and of itself, constitute *force majeure* under the Contract.

14. TERMINATION:

- 14.1 Either Party may terminate the Contract for cause, in whole or in part, upon thirty (30) day's notice, in writing, to the other Party. The initiation of conciliation or arbitral proceedings in accordance with Article 17 "Settlement of Disputes," below, shall not be deemed to be a "cause" for or otherwise to be in itself a termination of the Contract.
- 14.2 The United Nations may terminate the Contract at any time by providing written notice to the Contractor in any case in which the mandate of the United Nations applicable to the performance of the Contract or the funding of the United Nations applicable to the Contract is curtailed or terminated, whether in whole or in part. In addition, unless otherwise provided by the Contract, upon sixty (60) day's advance written notice to the Contractor, the United Nations may terminate the Contract without having to provide any justification therefor.
- 14.3 In the event of any termination of the Contract, upon receipt of notice of termination that has been issued by the United Nations, the Contractor shall, except as may be directed by the United Nations in the notice of termination or otherwise in writing:
- 14.3.1 take immediate steps to bring the performance of any obligations under the Contract to a close in a prompt and orderly manner, and in doing so, reduce expenses to a minimum;
 - 14.3.2 refrain from undertaking any further or additional commitments under the Contract as of and following the date of receipt of such notice;
 - 14.3.3 place no further subcontracts or orders for materials, services, or facilities, except as the United Nations and the Contractor agree in writing are necessary to complete any portion of the Contract that is not terminated;
 - 14.3.4 terminate all subcontracts or orders to the extent they relate to the portion of the Contract terminated;



- 14.3.5 transfer title and deliver to the United Nations the fabricated or unfabricated parts, work in process, completed work, supplies, and other material produced or acquired for the portion of the Contract terminated;
 - 14.3.6 deliver all completed or partially completed plans, drawings, information, and other property that, if the Contract had been completed, would be required to be furnished to the United Nations thereunder;
 - 14.3.7 complete performance of the work not terminated; *and*,
 - 14.3.8 take any other action that may be necessary, or that the United Nations may direct in writing, for the minimization of losses and for the protection and preservation of any property, whether tangible or intangible, related to the Contract that is in the possession of the Contractor and in which the United Nations has or may be reasonably expected to acquire an interest.
- 14.4 In the event of any termination of the Contract, the United Nations shall be entitled to obtain reasonable written accountings from the Contractor concerning all obligations performed or pending in accordance with the Contract. In addition, the United Nations shall not be liable to pay the Contractor except for those goods delivered and services provided to the United Nations in accordance with the requirements of the Contract, but only if such goods or services were ordered, requested or otherwise provided prior to the Contractor's receipt of notice of termination from the United Nations or prior to the Contractor's tendering of notice of termination to the United Nations.
- 14.5 The United Nations may, without prejudice to any other right or remedy available to it, terminate the Contract forthwith in the event that:
- 14.5.1 the Contractor is adjudged bankrupt, or is liquidated, or becomes insolvent, or applies for a moratorium or stay on any payment or repayment obligations, or applies to be declared insolvent;
 - 14.5.2 the Contractor is granted a moratorium or a stay, or is declared insolvent;
 - 14.5.3 the Contractor makes an assignment for the benefit of one or more of its creditors;
 - 14.5.4 a Receiver is appointed on account of the insolvency of the Contractor;
 - 14.5.5 the Contractor offers a settlement in lieu of bankruptcy or receivership; *or*,
 - 14.5.6 the United Nations reasonably determines that the Contractor has become subject to a materially adverse change in its financial condition that threatens to substantially affect the ability of the Contractor to perform any of its obligations under the Contract.
- 14.6 Except as prohibited by law, the Contractor shall be bound to compensate the United Nations for all damages and costs, including, but not limited to, all costs incurred by the United Nations in any legal or non-legal proceedings, as a result of any of the events specified in Article 14.5, above, and resulting from or relating to a termination of the Contract, even if the Contractor is adjudged bankrupt, or is granted a moratorium or stay or is declared insolvent. The Contractor shall immediately inform the United Nations of the occurrence of any of the events specified in Article 14.5, above, and shall provide the United Nations with any information pertinent thereto.
- 14.7 The provisions of this Article 14 are without prejudice to any other rights or remedies of the United Nations under the Contract or otherwise.
15. **NON-WAIVER OF RIGHTS:** The failure by either Party to exercise any rights available to it, whether under the Contract or otherwise, shall not be deemed for any purposes to constitute a waiver by the other Party of any such right or any remedy associated therewith, and shall not relieve the Parties of any of their obligations under the Contract.
16. **NON-EXCLUSIVITY:** Unless otherwise specified in the Contract, the United Nations shall have no obligation to purchase any minimum quantities of goods or services from the Contractor, and the United Nations shall have no limitation on its right to obtain goods or services of the same kind, quality and quantity described in the Contract, from any other source at any time.
17. **SETTLEMENT OF DISPUTES:**
- 17.1 **AMICABLE SETTLEMENT:** The Parties shall use their best efforts to amicably settle any dispute, controversy, or claim arising out of the Contract or the breach, termination, or invalidity thereof. Where the



Parties wish to seek such an amicable settlement through conciliation, the conciliation shall take place in accordance with the Conciliation Rules then obtaining of the United Nations Commission on International Trade Law (“UNCITRAL”), or according to such other procedure as may be agreed between the Parties in writing.

17.2 **ARBITRATION:** Any dispute, controversy, or claim between the Parties arising out of the Contract or the breach, termination, or invalidity thereof, unless settled amicably under Article 17.1, above, within sixty (60) days after receipt by one Party of the other Party’s written request for such amicable settlement, shall be referred by either Party to arbitration in accordance with the UNCITRAL Arbitration Rules then obtaining. The decisions of the arbitral tribunal shall be based on general principles of international commercial law. The arbitral tribunal shall be empowered to order the return or destruction of goods or any property, whether tangible or intangible, or of any confidential information provided under the Contract, order the termination of the Contract, or order that any other protective measures be taken with respect to the goods, services or any other property, whether tangible or intangible, or of any confidential information provided under the Contract, as appropriate, all in accordance with the authority of the arbitral tribunal pursuant to Article 26 (“Interim measures”) and Article 34 (“Form and effect of the award”) of the UNCITRAL Arbitration Rules. The arbitral tribunal shall have no authority to award punitive damages. In addition, unless otherwise expressly provided in the Contract, the arbitral tribunal shall have no authority to award interest in excess of the London Inter-Bank Offered Rate (“LIBOR”) then prevailing, and any such interest shall be simple interest only. The Parties shall be bound by any arbitration award rendered as a result of such arbitration as the final adjudication of any such dispute, controversy, or claim.

18. **PRIVILEGES AND IMMUNITIES:** Nothing in or relating to the Contract shall be deemed a waiver, express or implied, of any of the privileges and immunities of the United Nations, including its subsidiary organs.

19. **TAX EXEMPTION:**

19.1 Article II, Section 7, of the Convention on the Privileges and Immunities of the United Nations provides, *inter alia*, that the United Nations, including its subsidiary organs, is exempt from all direct taxes, except charges for public utility services, and is exempt from customs restrictions, duties, and charges of a similar nature in respect of articles imported or exported for its official use. In the event any governmental authority refuses to recognize the exemptions of the United Nations from such taxes, restrictions, duties, or charges, the Contractor shall immediately consult with the United Nations to determine a mutually acceptable procedure.

19.2 The Contractor authorizes the United Nations to deduct from the Contractor’s invoices any amount representing such taxes, duties or charges, unless the Contractor has consulted with the United Nations before the payment thereof and the United Nations has, in each instance, specifically authorized the Contractor to pay such taxes, duties, or charges under written protest. In that event, the Contractor shall provide the United Nations with written evidence that payment of such taxes, duties or charges has been made and appropriately authorized, and the United Nations shall reimburse the Contractor for any such taxes, duties, or charges so authorized by the United Nations and paid by the Contractor under written protest.

20. **MODIFICATIONS:**

20.1 Pursuant to the Financial Regulations and Rules of the United Nations, only the Chief of the United Nations Procurement Division, or such other Contracting authority as the United Nations has made known to the Contractor in writing, possesses the authority to agree on behalf of the United Nations to any modification of or change in the Contract, to a waiver of any of its provisions or to any additional contractual relationship of any kind with the Contractor. Accordingly, no modification or change in the Contract shall be valid and enforceable against the United Nations unless provided by a valid written amendment to the Contract signed by the Contractor and the Chief of the United Nations Procurement Division or such other contracting authority.

20.2 If the Contract shall be extended for additional periods in accordance with the terms and conditions of the Contract, the terms and conditions applicable to any such extended term of the Contract shall be the same terms and conditions as set forth in the Contract, unless the Parties shall have agreed otherwise pursuant to a valid amendment concluded in accordance with Article 20.1, above.



20.3 The terms or conditions of any supplemental undertakings, licenses, or other forms of agreement concerning any goods or services provided under the Contract shall not be valid and enforceable against the United Nations nor in any way shall constitute an agreement by the United Nations thereto unless any such undertakings, licenses or other forms are the subject of a valid amendment concluded in accordance with Article 20.1, above.

21. AUDITS AND INVESTIGATIONS:

21.1 Each invoice paid by the United Nations shall be subject to a post-payment audit by auditors, whether internal or external, of the United Nations or by other authorized and qualified agents of the United Nations at any time during the term of the Contract and for a period of three (3) years following the expiration or prior termination of the Contract. The United Nations shall be entitled to a refund from the Contractor for any amounts shown by such audits to have been paid by the United Nations other than in accordance with the terms and conditions of the Contract.

21.2 The United Nations may conduct investigations relating to any aspect of the Contract or the award thereof, the obligations performed under the Contract, and the operations of the Contractor generally relating to performance of the Contract at any time during the term of the Contract and for a period of three (3) years following the expiration or prior termination of the Contract.

21.3 The Contractor shall provide its full and timely cooperation with any such inspections, post-payment audits or investigations. Such cooperation shall include, but shall not be limited to, the Contractor's obligation to make available its personnel and any relevant documentation for such purposes at reasonable times and on reasonable conditions and to grant to the United Nations access to the Contractor's premises at reasonable times and on reasonable conditions in connection with such access to the Contractor's personnel and relevant documentation. The Contractor shall require its agents, including, but not limited to, the Contractor's attorneys, accountants or other advisers, to reasonably cooperate with any inspections, post-payment audits or investigations carried out by the United Nations hereunder.

22. LIMITATION ON ACTIONS:

22.1 Except with respect to any indemnification obligations in Article 6, above, or as are otherwise set forth in the Contract, any arbitral proceedings in accordance with Article 17.2, above, arising out of the Contract must be commenced within three years after the cause of action has accrued.

22.2 The Parties further acknowledge and agree that, for these purposes, a cause of action shall accrue when the breach actually occurs, or, in the case of latent defects, when the injured Party knew or should have known all of the essential elements of the cause of action, or in the case of a breach of warranty, when tender of delivery is made, except that, if a warranty extends to future performance of the goods or any process or system and the discovery of the breach consequently must await the time when such goods or other process or system is ready to perform in accordance with the requirements of the Contract, the cause of action accrues when such time of future performance actually begins.

23. **ESSENTIAL TERMS:** The Contractor acknowledges and agrees that each of the provisions in Articles 24 to 29 hereof constitutes an essential term of the Contract and that any breach of any of these provisions shall entitle the United Nations to terminate the Contract or any other contract with the United Nations immediately upon notice to the Contractor, without any liability for termination charges or any other liability of any kind.

24. **SOURCE OF INSTRUCTIONS:** The Contractor shall neither seek nor accept instructions from any authority external to the United Nations in connection with the performance of its obligations under the Contract. Should any authority external to the United Nations seek to impose any instructions concerning or restrictions on the Contractor's performance under the Contract, the Contractor shall promptly notify the United Nations and provide all reasonable assistance required by the United Nations. The Contractor shall not take any action in respect of the performance of its obligations under the Contract that may adversely affect the interests of the United Nations, and the Contractor shall perform its obligations under the Contract with the fullest regard to the interests of the United Nations.

25. **OFFICIALS NOT TO BENEFIT:** The Contractor warrants that it has not and shall not offer to any representative, official, employee, or other agent of the United Nations any direct or indirect benefit arising from or related to the performance of the Contract or of any other contract with the United Nations or the award thereof or for any other purpose intended to gain an advantage for the Contractor.



26. **OBSERVANCE OF THE LAW:** The Contractor shall comply with all laws, ordinances, rules, and regulations bearing upon the performance of its obligations under the Contract. In addition, the Contractor shall maintain compliance with all obligations relating to its registration as a qualified vendor of goods or services to the United Nations, as such obligations are set forth in the United Nations vendor registration procedures.
27. **CHILD LABOR:** The Contractor represents and warrants that neither it, its parent entities (if any), nor any of the Contractor's subsidiary or affiliated entities (if any) is engaged in any practice inconsistent with the rights set forth in the Convention on the Rights of the Child, including Article 32 thereof, which, *inter alia*, requires that a child shall be protected from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development.
28. **MINES:** The Contractor represents and warrants that neither it, its parent entities (if any), nor any of the Contractor's subsidiaries or affiliated entities (if any) is engaged in the sale or manufacture of anti-personnel mines or components utilized in the manufacture of anti-personnel mines.
29. **SEXUAL EXPLOITATION:**
- 29.1 The Contractor shall take all appropriate measures to prevent sexual exploitation or abuse of anyone by its employees or any other persons engaged and controlled by the Contractor to perform any services under the Contract. For these purposes, sexual activity with any person less than eighteen years of age, regardless of any laws relating to consent, shall constitute the sexual exploitation and abuse of such person. In addition, the Contractor shall refrain from, and shall take all reasonable and appropriate measures to prohibit its employees or other persons engaged and controlled by it from exchanging any money, goods, services, or other things of value, for sexual favors or activities, or from engaging any sexual activities that are exploitive or degrading to any person.
- 29.2 The United Nations shall not apply the foregoing standard relating to age in any case in which the Contractor's personnel or any other person who may be engaged by the Contractor to perform any services under the Contract is married to the person less than the age of eighteen years with whom sexual activity has occurred and in which such marriage is recognized as valid under the laws of the country of citizenship of such Contractor's personnel or such other person who may be engaged by the Contractor to perform any services under the Contract.

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