GENERAL ELECTRICAL NOTES

1. ALL ELECTRICAL INSTALLATION HEREIN SHALL BE DONE IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS, THE APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE RULES AND THE REGULATIONS OF THE LOCAL ENFORCING AUTHORITY, AND THE REQUIREMENTS OF THE LOCAL POWER. ELCTRICAL WORKS SHALL BE UNDER THE IMMEDIATE SUPERVISION OF A DULY LICENSED ELECTRICAL ENGINEER OR MASTER ELECTRICIAN.
2. THE ELECTRICAL SERVICE VOLTAGE SHALL BE THREE PHASE, 4 WIRE, 400 VOLTS, 60HZ, LINE-TO-LINE, DELTA CONFIGURATION.
3. THE CONTRACTOR SHALL VERIFY AND ORIENT THE ACTUAL LOCATION OF THE TAPPING POINT FOR THE CONNECTION TO THE POWER SUPPLY.
4. ALL ELECTRICAL RACEWAYS AND/OR CONDUITS SHALL BE PROVIDED WITH PROPER SUPPORT OR ANCHORAGE NECESSARY FOR PERMANENT CONNECTION TO CONCRETE WALL OR BEAM. A MAXIMUM SUPPORT SPACING OF 1.5M, BETWEEN SUPPORTS, SHALL BE STRICTLY OBSERVED.
5. ALL EQUIPMENT, SWITCHES, PANEL BOARD, CABLE LADDERS, LIGHTING FIXTURES AND ALL NON-CURRENT CARRYING METAL PARTS SHALL BE PROPERLY GROUNDED IN ACCORDANCE WITH THE PHILIPPINE ELECTRICAL CODE.
6. ALL FEEDERS AND BRANCH CIRCUITS SHALL BE INSTALLED AS INDICATED IN THE PLANS. BRANCH CIRCUIT HOMERUN WIRES SHALL BE INSTALLED IN INDIVIDUAL HOMERUN CONDUITS.
7. ALL MATERIALS TO BE USED AND EQUIPMENT TO BE INSTALLED SHALL BE BRAND NEW AND MUST BE OF THE APPROVED TYPES FOR THE PARTICULAR LOCATIONS AND PURPOSES INDICATED.
8. ALL ISOLATOR SWITCHES SHALL HAVE PROPER PROTECTION AGAINST WEATHER, SHALL BE PROPERLY SUPPORTED, AND SHALL BE INSTALLED WHERE AUTHORIZED PERSONNEL MAY OPERATE THE SWITCH SAFELY.
9. FLOOR-MOUNTED PANEL BOARDS SHALL BE ELEVATED TO ALLOW WIRES AND CABLE RACEWAYS TO PASS UNDERNEATH, AND SHALL BE PROPERLY BOLTED TO THE FINISH FLOOR LINE.
10. UNLESS OTHERWISE SPECIFIED IN THIS PLANS, ALL ELECTRICAL WIRING INSTALLATION SHALL BE DONE IN LOCATION AS FOLLOWS:

    A. INTERMEDIATE METALLIC CONDUITS (IMC) SHALL BE USED FOR INSTALLATIONS THAT ARE VISIBLE ABOVE GROUND

    B. POLYVINYL CHLORIDE(PVC) TO BE USED IF EMBEDDED UNDERGROUND.

11. ALL GROUND WIRES AND/OR NEUTRAL WIRES SHALL BE DIRECTLY WIRED BACK TO THE MAIN DISTRIBUTION PANEL BOARD. MAIN GROUND WIRE SHALL BE WIRED TO A GROUNDING ELECTRODE 600MM AWAY FROM THE MAIN DISTRIBUTION BOARD, BURIED 3000MM UNDERGROUND.
12. ALL TERMINATIONS FOR MOTORS SHALL BE A FLEXIBLE LIQUID TIGHT CONDUIT FROM THE END OF THE RIGID PVC OR IMC TO MOTOR TERMINATION.
13. ALL WIRES SHALL BE COPPER AND THERMOPLASTIC INSULATED TYPE "THWN" UNLESS OTHERWISE INDICATED, THE MINIMUM SIZE FOR POWER SHALL BE 3.5mm^2. CONTROL WIRES SHALL BE 2.0mm^2 TW. ALL OTHER WIRES SHALL BE AS INDICATED OR AS SPECIFIED ELSEWHERE ON THE PLANS. PHELPS DODGE, DURAFLEX, COLUMBIA BRANDS, OR EQUIVALENT SHALL BE USED.
14. ALL WIRES SHALL BE COLOR CODED RELATIVE TO THE COLOR OF THE BUS BAR FEEDER TO WHICH THAT SPECIFIC CIRCUIT IS CONNECTED TO.
15. MOUNTING HEIGHTS OF WIRING DEVICES SHALL BE AS FOLLOWS:

A. LIGHTING SWITCHES	1.40m ABOVE FFL
B. CONVENIENCE OUTLETS	0.40m ABOVE FFL
C. PANELBOARDS AND CABINETS	1.40m ABOVE FFL AT CENTER OF PANEL BOARDS AND CABINETS OR AS REQUIRED

ALL CONVENIENCE OUTLETS LOCATED OUTSIDE THE MCC ROOM SHALL BE GROUND-FAULT CIRCUIT-INTERRUPTER (GFCI) AS ADDITIONAL PROTECTION FROM LIQUID INGRESS OR WEATHERPROOF RATED.
ALL MOUNTING HEIGHTS SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL PRIOR INSTALLATION.

16. ALL OUTDOOR LIGHTING ASSEMBLIES SHALL BE WEATHERPROOF RATED OR SHALL HAVE A PROTECTIVE SHROUD AGAINST RAIN OR FALLING DEBRIS.
17. LED FLOOD LIGHT INSTALLATION SCHEDULE SHALL BE AS FOLLOWS:

DESCRIPTION	RATING	INSTALLATION	LOCATION
PERIMETER LIGHTS 1	12W	WALL MOUNTED	AROUND PROCESS TANKS AND OFFICE
PERIMETER LIGHTS 2	30W	POLE MOUNTED	SEE PLAN DETAILS

18. MULTI-DIRECTIONAL LIGHTING FIXTURES SHALL BE: 30W LED FLOODLIGHT, IP65 AND SHALL BE MOUNTED ON GALVANIZED STEEL POLES (SEE FIGURE A).
19. MULTI-DIRECTIONAL LIGHTING FIXTURE WITH LED FLOOD LIGHTS SHALL BE MOUNTED HORIZONTALLY WITH A MINIMUM LED FLOOD LIGHT HEIGHT CLEARANCE OF 10FT FROM THE STEEL POLE BASE. (I.E. A 4-LED FLOODLIGHT FIXTURE SHALL HAVE 4 LED LIGHTS MOUNTED ON SIDE-BY-SIDE OF EACH OTHER IN A HORIZONTAL CONFIGURATION). (SEE FIGURE A)
20. GALVANIZED STEEL POLE FOR LED FLOOD LIGHTS SHALL BE MOUNTED AS PER PLAN.
21. MULTIPLE LED FLOODLIGHTS MOUNTED ON ONE POLE SHALL BE CONNECTED IN PARALLEL OF ONE ANOTHER.
22. ALL PANEL BOARDS SHALL CONTAIN SINGLE BRAND OF CIRCUIT BREAKER AND MANUFACTURED BY SQUARE-D OR EQUIVALENT. ALL CIRCUIT BREAKERS SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL PRIOR TO ANY FABRICATION OF PANEL BOARD OR INSTALLATION THEREAFTER.
23. ALL PANEL BOARDS SHALL HAVE BUS BARS WITH COLOR CODING. COLOR CODING SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL.
24. ALL ELECTRICAL INSTALLATION METHODOLOGY, ELECTRICAL EQUIPMENT, CABLE ROUTING, AND PANEL BOARDS SPECIFICATION SHALL BE SUBJECT TO THE ENGINEER'S APPROVAL PRIOR TO ANY PROCUREMENT AND/OR INSTALLATION ON SITE.
25. SINGLE PHASE LOAD BALANCING SHALL BE DONE IN THE MAIN DISTRIBUTION PANEL BOARD. TERMINATION OF INCOMING POWER FROM THE TAPPING POINT SHALL COINCIDE WITH THE PROPER BALANCING OF LOADS.
26. ANY DISCREPANCY IN THE LOCATION RATINGS OF EQUIPMENTS AND APPARATUS SHALL BE VERIFIED WITH THE OWNER OR ANY OF HIS REPRESENTATIVES AND CHANGES SHALL BE MADE ACCORDINGLY.
27. ALL ELECTRICAL WORKS SHALL BE DONE UNDER THE SUPERVISION OF A DULY LICENSED REGISTERED ELECTRICAL ENGINEER (REE) OR REGISTERED MASTER ELECTRICIAN (RME).
28. ELECTRICAL PLANS SHALL BE DULY SIGNED AND SEALED BY PROFESSIONAL ELECTRICAL ENGINEER (PEE) AND ANY DOUBTS PLEASE REFER TO THE PEE WHO SIGNED AND SEALED THE PLAN.

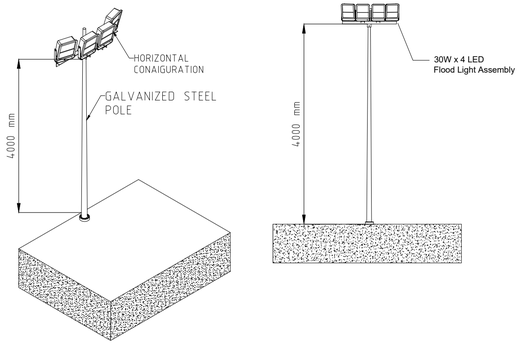
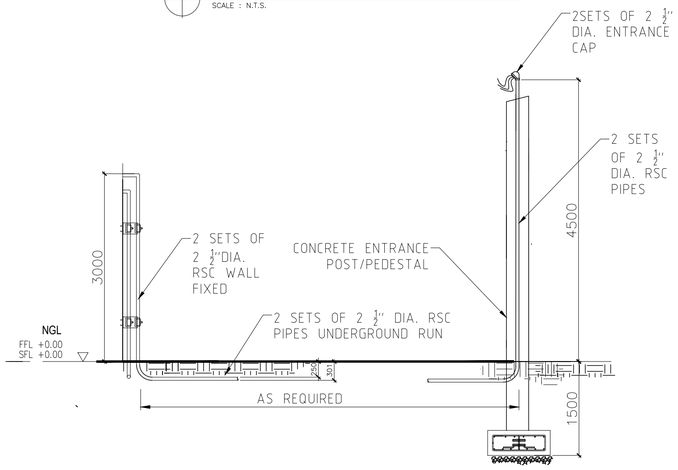


FIG.A. TYPICAL FLOODLIGHT POLE MOUNTING
SCALE : N.T.S.

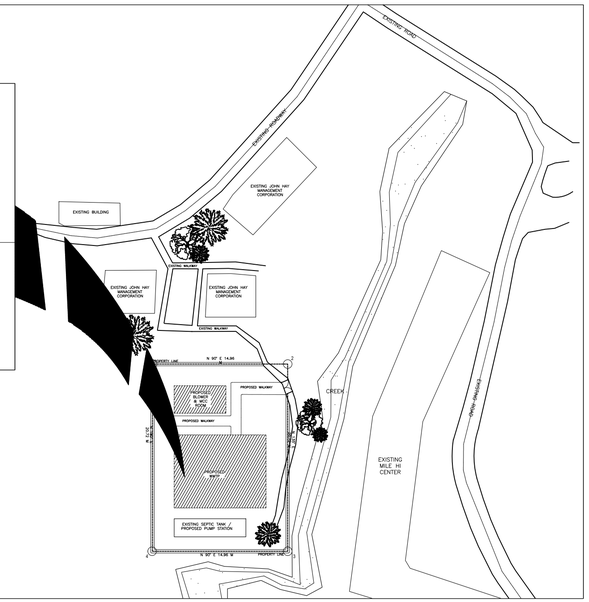


SERVICE ENTRANCE LAYOUT
SCALE : N.T.S.

JOHN HAY MGT. CORP. WASTEWATER TREATMENT PLANT

LOCATION:
BAGUIO CITY

THIS SITE



PROPOSED STP LOCATION
SCALE : N.T.S.

LEGENDS AND SYMBOLS

	GROUND		GENERATOR SET
	PILOT LIGHT (COLOR INDICATED)		CURRENT TRANSFORMER
	CIRCUIT BREAKER		AUTOMATIC TRANSFER SWITCH
K	CONTACTOR		ISOLATOR SWITCH
MPR	MOTOR PROTECTION RELAY	SS	SOFT STARTER
DPM	DIGITAL POWER METER	HR	HOMERUN CIRCUIT
	PUSH BUTTON		CONVENIENCE OUTLET
M	MOTOR		LED BULB (PIN LIGHT)
	FUSE		FLOODLIGHTS
	ILLUMINATED PUSH BUTTON		MULTI-DIRECTIONAL LIGHT ASSEMBLY
TVSS	TRANSIENT VOLTAGE SURGE SUPRESSOR		EMERGENCY LIGHT
	10W LED TUBE FIXTURE ASSEMBLY		
	EXHAUST FAN		

ANTHROSERV
UNIT 302, ECG BUILDING
93 GEN. AVENUE, PROJECT 8
QUEZON CITY 1105 MM

SERVICES OFFERED:
PLANT DESIGN
PLUMBING WORKS
STRUCTURAL DESIGN
ENGINEERING DESIGN AND REVIEW
EQUIPMENT AND MATERIAL SELECTION
ELECTRICAL DESIGN & CALCULATIONS

RECOMMENDING APPROVAL:
ENGINEER'S NAME
PTR NO.: – PRC NO.:
DATE ISSUED: – DATE EXPIRY: –
PLACE ISSUED: –

DESIGN ENGINEER:
ENGINEER'S NAME
PTR NO.: – PRC NO.:
DATE ISSUED: – DATE EXPIRY: –
PLACE ISSUED: –

PROJECT:
JHMC OFFICE
WASTEWATER TREATMENT PLANT
ADDRESS:
CAMP JOHN HAY, BAGUIO

CLIENT:
CLIENT'S NAME

REVISIONS:

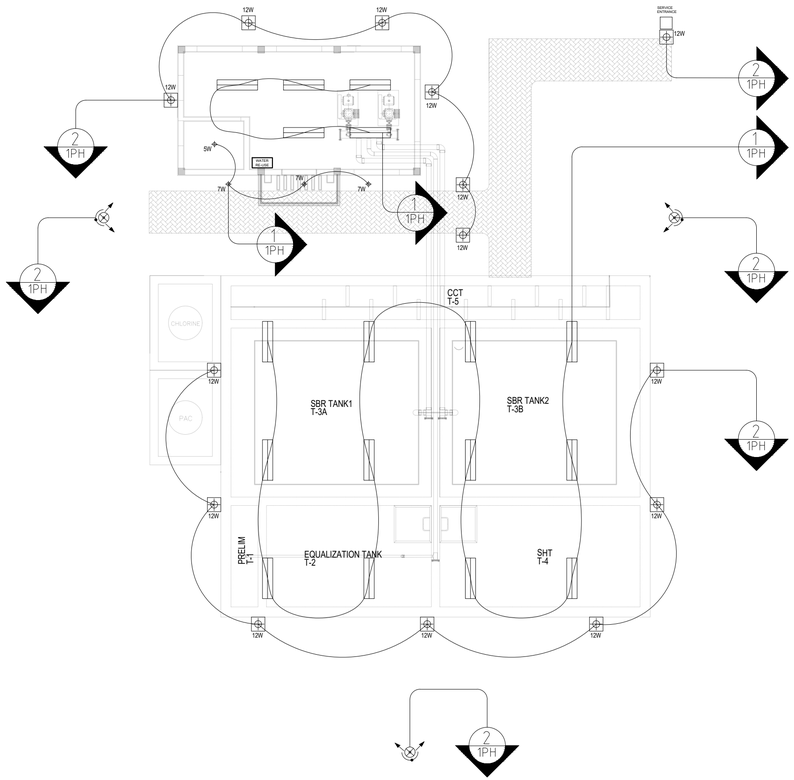
NO.	DESCRIPTION	DATE
0		–
1.1		–
1.2		–
1		–

CONTRACT NO.: WW-22-JHMC-DC-05
STAGE: CONCEPT DESIGN

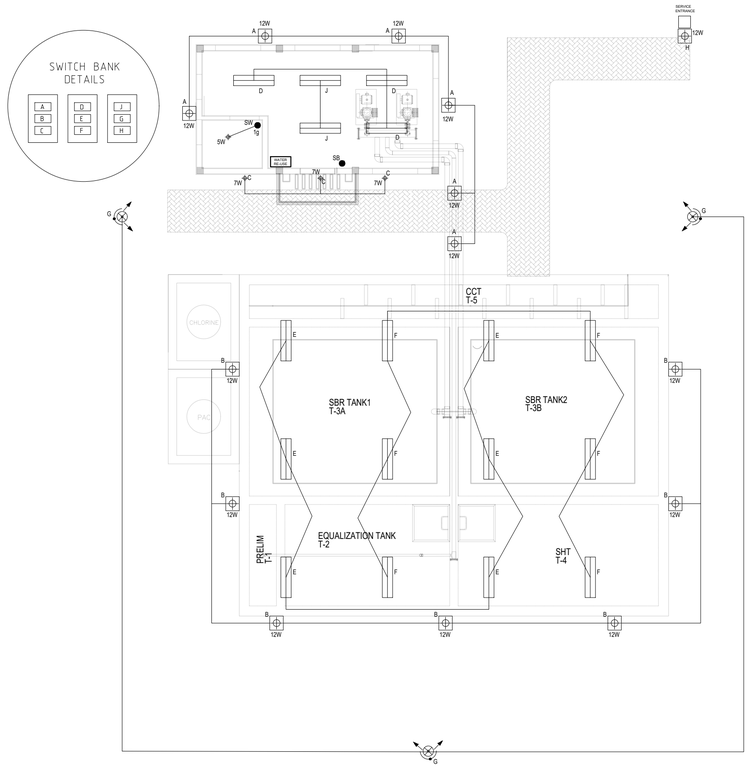
SHEET CONTENTS:
GENERAL ELECTRICAL NOTES
LEGENDS AND SYMBOLS
SERVICE ENTRANCE LAYOUT
PROPOSES STP LOCATION

SCALE –
DATE

SHEET NO.
ELECTRICAL 01 08



LIGHTING LAYOUT
SCALE : 1:100



LIGHT SWITCH LAYOUT
SCALE : 1:100

NOTES

1. Indoor Lights are composed of 2-5W T5 LED lights in a 2-slot lighting fixture
2. All convenience outlets have assumed power of 180VA per outlet.

LEGENDS & SYMBOLS

- 10W LED TUBE LIGHT ASSEMBLY
- EXHAUST FAN
- CONVENIENCE OUTLET
- GFCI CONVENIENCE OUTLET (GFCI)
- PIN LIGHT
- PERIMETER FLOOD LIGHT
- POLE MOUNTED FLOODLIGHT ASSEMBLY
- EMERGENCY LIGHT

ANTHROSERV
UNIT 302, ECG BUILDING
93 GEN. AVENUE, PROJECT 8
QUEZON CITY 1105 MM

SERVICES OFFERED:
PLANT DESIGN
PLUMBING WORKS
STRUCTURAL DESIGN
ENGINEERING DESIGN AND REVIEW
EQUIPMENT AND MATERIAL SELECTION
ELECTRICAL DESIGN & CALCULATIONS

RECOMMENDING APPROVAL:
ENGINEER'S NAME
PTR NO.: | PRC NO.:
DATE ISSUED: – | DATE EXPIRY: –
PLACE ISSUED: – | PLACE ISSUED: –

DESIGN ENGINEER:
ENGINEER'S NAME
PTR NO.: | PRC NO.:
DATE ISSUED: – | DATE EXPIRY: –
PLACE ISSUED: – | PLACE ISSUED: –

PROJECT:
JHMC OFFICE
WASTEWATER TREATMENT PLANT
ADDRESS:
CAMP JOHN HAY, BAGUIO

CLIENT:
CLIENT'S NAME

REVISIONS:

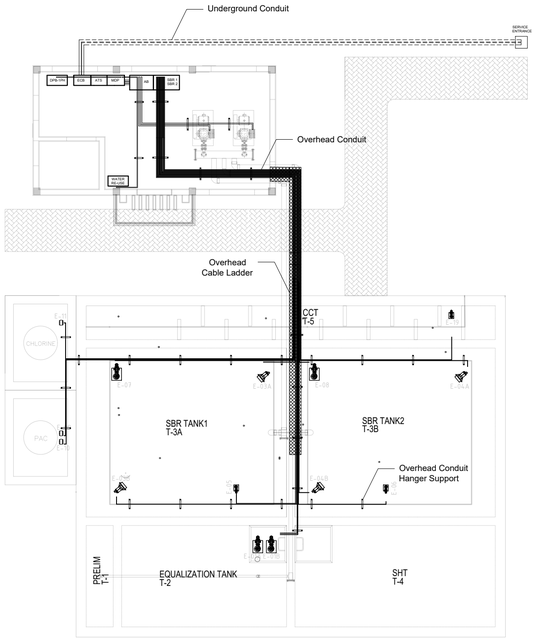
NO.	DESCRIPTION	DATE
0		–
1.1		–
1.2		–
1		–

CONTRACT NO.: WW-22-JHMC-DC-05
STAGE: CONCEPT DESIGN

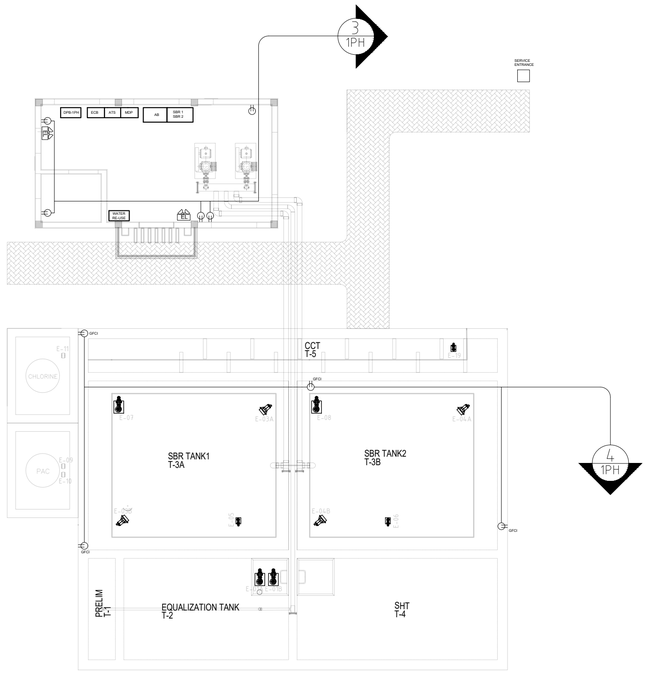
SHEET CONTENTS:
LIGHTING LAYOUT
LIGHT SWITCH LAYOUT

SCALE – DATE

SHEET NO.
ELECTRICAL
02 | 08



CONDUIT LAYOUT
SCALE : 1:100



POWER LAYOUT
SCALE : 1:100

NOTES

1. Indoor Lights are composed of 2-5W T5 LED lights in a 2-slot lighting fixture
2. All convenience outlets have assumed power of 180VA per outlet.

LEGENDS & SYMBOLS

- 10W LED TUBE LIGHT ASSEMBLY
- EXHAUST FAN
- CONVENIENCE OUTLET
- GFCI CONVENIENCE OUTLET (GFCI)
- PIN LIGHT
- PERIMETER FLOOD LIGHT
- POLE MOUNTED FLOODLIGHT ASSEMBLY
- EMERGENCY LIGHT

ANTHROSERV
UNIT 302, ECG BUILDING
93 GEN. AVENUE, PROJECT 8
QUEZON CITY 1105 MM

SERVICES OFFERED:
PLANT DESIGN
PLUMBING WORKS
STRUCTURAL DESIGN
ENGINEERING DESIGN AND REVIEW
EQUIPMENT AND MATERIAL SELECTION
ELECTRICAL DESIGN & CALCULATIONS

RECOMMENDING APPROVAL:
ENGINEER'S NAME
PTR NO.: | PRC NO.:
DATE ISSUED: – | DATE EXPIRY: –
PLACE ISSUED: – | PLACE ISSUED: –

DESIGN ENGINEER:
ENGINEER'S NAME
PTR NO.: | PRC NO.:
DATE ISSUED: – | DATE EXPIRY: –
PLACE ISSUED: – | PLACE ISSUED: –

PROJECT:
JHMC OFFICE
WASTEWATER TREATMENT PLANT
ADDRESS:
CAMP JOHN HAY, BAGUIO

CLIENT:
CLIENT'S NAME

REVISIONS:

NO.	DESCRIPTION	DATE
0		–
1.1		–
1.2		–
1		–

CONTRACT NO.: WW-22-JHMC-DC-05
STAGE: CONCEPT DESIGN

SHEET CONTENTS:
POWER LAYOUT
CONDUIT LAYOUT

SHEET NO.
ELECTRICAL 03 | 08

SCALE – DATE

LOAD SCHEDULE AND DESIGN ANALYSIS

MCC - AB

Ckt. No.	Description	Duty	kW	HP	V	VA	Phase Current AB	Phase Current BC	Phase Current CA	3 Phase Current	Motor Starter	Conductor Size (mm2)	Conductor Type	Ground Size (mm2)	Ground Type	Conduit Size (in. dia.)	Conduit Type	Circuit Breaker AT	Circuit Breaker Type	Circuit Breaker Poles	Circuit Breaker kAIC
1	Air Blower 1 (D)	C	17	25	400	17600				44.0	VFD	60.0	THWN	8.0	THWN	2	PVC	125	MCCB	3	TBA
2	Air Blower 2 (D)	C	17	25	400	17600				44.0	VFD	60.0	THWN	8.0	THWN	2	PVC	125	MCCB	3	TBA
	Total					35200				88.0											

MCC - SBR

Ckt. No.	Description	Duty	kW	HP	V	VA	Phase Current AB	Phase Current BC	Phase Current CA	3 Phase Current	Motor Starter	Conductor Size (mm2)	Conductor Type	Ground Size (mm2)	Ground Type	Conduit Size (in. dia.)	Conduit Type	Circuit Breaker AT	Circuit Breaker Type	Circuit Breaker Poles	Circuit Breaker kAIC
1	EQT Pump 1	NC	2.2	3	400	2440				6.1	DOL	5.5	THWN	3.5	THWN	1/2	IMC	20	MCB	3	TBA
2	EQT Pump 2	NC	2.2	3	400	2440				6.1	DOL	5.5	THWN	3.5	THWN	1/2	IMC	20	MCB	3	TBA
3	Raw Sewage Pump 1	NC	2.2	3	400	2440				6.1	DOL	5.5	THWN	3.5	THWN	1/2	IMC	20	MCB	3	TBA
4	WAS Pump 1	NC	0.4	1/2	400	556				1.4	DOL	3.5	THWN	3.5	THWN	1/2	IMC	15	MCB	3	TBA
5	WAS Pump 2	NC	0.4	1/2	400	556				1.4	DOL	3.5	THWN	3.5	THWN	1/2	IMC	15	MCB	3	TBA
6	Decant Pump 1	NC	2.2	3	400	2440				6.1	VFD	5.5	THWN	3.5	THWN	1/2	IMC	20	MCB	3	TBA
7	Decant Pump 2	NC	2.2	3	400	2440				6.1	VFD	5.5	THWN	3.5	THWN	1/2	IMC	20	MCB	3	TBA
8	Anoxic Mixer 1	NC	1.5	2	400	1716				4.3	DOL	5.5	THWN	3.5	THWN	1/2	IMC	15	MCB	3	TBA
9	Anoxic Mixer 2	NC	1.5	2	400	1716				4.3	DOL	5.5	THWN	3.5	THWN	1/2	IMC	15	MCB	3	TBA
10	Anoxic Mixer 3	NC	1.5	2	400	1716				4.3	DOL	5.5	THWN	3.5	THWN	1/2	IMC	15	MCB	3	TBA
11	Anoxic Mixer 4	NC	1.5	2	400	556				1.4	DOL	3.5	THWN	3.5	THWN	1/2	IMC	15	MCB	3	TBA
12	PAC Dosing Pump 1	NC	0.75	1	400	920				2.3	DOL	3.5	THWN	3.5	THWN	1/2	IMC	15	MCB	3	TBA
13	PAC Dosing Pump 2	NC	0.75	1	400	920				2.3	DOL	3.5	THWN	3.5	THWN	1/2	IMC	15	MCB	3	TBA
14	Spare																	20	MCB	3	TBA
	Total					20856	0.0	0.0	0.0	52.1											

DPB -1PH

Ckt. No.	Description	Duty	kW	HP	V	VA	Phase Current AB	Phase Current BC	Phase Current CA	3 Phase Current	Motor Starter	Conductor Size (mm2)	Conductor Type	Ground Size (mm2)	Ground Type	Conduit Size (mm dia.)	Conduit Type	Circuit Breaker AT	Circuit Breaker Type	Circuit Breaker Poles	Circuit Breaker kAIC
1	Lighting 1 - Office & Process Lights	C	-	-	230	196	0.85					3.5	THHN	2.0	THHN	1/2	PVC	15	MCB	2	TBA
2	Lighting 2 - Perimeter Lights	C	-	-	230	528		2.30				3.5	THWN	2.0	THWN	1/2	PVC	15	MCB	2	TBA
3	Convenience Outlet 1	C	-	-	230	900			3.91			3.5	THWN	2.0	THHN	1/2	PVC	15	MCB	2	TBA
4	Convenience Outlet 2	C	-	-	230	720	3.13					3.5	THWN	2.0	THHN	1/2	PVC	15	MCB	2	TBA
5	EQT MOV 1	NC	-	-	230	23	0.1					3.5	THHN	2.0	THHN	1/2	PVC	15	MCB	2	TBA
6	EQT MOV 2	NC	-	-	230	23			0.1			3.5	THHN	2.0	THHN	1/2	PVC	15	MCB	2	TBA
7	Blower MOV 1	NC	-	-	230	23		0.1				3.5	THHN	2.0	THHN	1/2	PVC	15	MCB	2	TBA
8	Blower MOV 2	NC	-	-	230	23			0.1			3.5	THHN	2.0	THHN	1/2	PVC	15	MCB	2	TBA
9	Chlorine Dosing Pump	NC	0.012	-	230	23	0.1					3.5	THWN	2.0	THWN	1/2	IMC	15	MCB	2	TBA
10	Instrumentation	C	-	-	230	400		1.7				2.0	THHN	2.0	THHN	1/2	PVC	15	MCB	2	TBA
11	Spare																	15	MCB	2	TBA
12	Spare																	15	MCB	2	TBA
	Total					2859	4.2	4.1	4.1												

WATER RE-USE

Ckt. No.	Description	Duty	kW	HP	V	VA	Phase Current AB	Phase Current BC	Phase Current CA	3 Phase Current	Motor Starter	Conductor Size (mm2)	Conductor Type	Ground Size (mm2)	Ground Type	Conduit Size (in. dia.)	Conduit Type	Circuit Breaker AT	Circuit Breaker Type	Circuit Breaker Poles	Circuit Breaker kAIC
1	Water Re-Use Pump	NC	11	15	400	10800				27.0	VFD	30.0	THWN	14.0	THWN	1 1/4	IMC	70	MCCB	3	TBA
	Total					10800	0.0	0.0	0.0	27.0											

MAIN DPB BREAKER

Ckt. No.	Description	Duty	kW	HP	V	VA	Phase Current AB	Phase Current BC	Phase Current CA	3 Phase Current	Motor Starter	Conductor Size (mm2)	Conductor Type	Ground Size (mm2)	Ground Type	Conduit Size (in. dia.)	Conduit Type	Circuit Breaker AT	Circuit Breaker Type	Circuit Breaker Poles	Circuit Breaker kAIC
1	Unitized Panel Board	C			400	56056	0.0	0.0	0.0	163.7		50.0	THHN	22.0	THHN	1 1/2	PVC	225	MCB	3	TBA
2	Water Re-Use	C			400	10800	4.2	4.1	4.1	27.0		30.0	THHN	14.0	THHN	1 1/2	PVC	70	MCB	3	TBA
3	DPB-1PH	C			400	2864	0.0	0.0	0.0	7.3		8.0	THHN	5.5	THHN	3/4	PVC	20	MCB	3	TBA
	Total					69720	4.2	4.1	4.1	197.9											

DESIGN ANALYSIS

MCC - AB CENTER MAIN BREAKER
Demand Load 99.00 A
Use 150 AT MCCB, kAIC

MCC - SBR CENTER MAIN BREAKER
Demand Load 53.67 A
Use 70 AT MCCB, kAIC

UNITIZED PANEL BOARD
$I_{UNI\ LOAD}$ = (99 A + 53.67 A + (0.25 x highest motor)) x DF
= 163.67A x 100%
= 163.67 A

Use 225 AT MCCB, kAIC
Use 2 sets of 3-50 mm2 THHN + 22 mm2 THHN (GW)
in 1 1/2" PVC Pipe per Set

DPB-1 MAIN BREAKER
I_{DPB-1} = highest demand load x 1.732
= 1.732 x 4.2
I_{DPB-1} = 7.28 A

Use 20 AT MCCB, kAIC
Use 5.5 mm2 THHN + 3.5 mm2 THHN (GW)
in 3/4" PVC Pipe

WATER RE-USE MAIN BREAKER
Use 70 AT MCCB, kAIC
Use 30mm2 THHN + 14 mm2 THHN (GW)
in 1-1/2" PVC Pipe

MAIN DBP BREAKER
I_{TOTAL} = (163.67 A + 33.75 A + 7.28 A + (0.25 x highest motor)) x DF
= 215.7A x 100%
= 215.70 A

Use 300 AT MCCB, kAIC
Use 2-sets of 3-100 mm2 THWN + 22 mm2 THWN (GW) per phase
in 2 1/2" RSC Pipe per Set

NOTES

1. Indoor Lights are composed of 2-5W T5 LED lights in a 2-slot lighting fixture
2. All convenience outlets have assumed power of 180VA per outlet.

ANTHROSERV
UNIT 302, ECG BUILDING
93 GEN. AVENUE, PROJECT 8
QUEZON CITY 1105 MM

SERVICES OFFERED:
PLANT DESIGN
PLUMBING WORKS
STRUCTURAL DESIGN
ENGINEERING DESIGN AND REVIEW
EQUIPMENT AND MATERIAL SELECTION
ELECTRICAL DESIGN & CALCULATIONS

RECOMMENDING APPROVAL: ENGINEER'S NAME
PTR NO.: | PRC NO.:
DATE ISSUED: – | DATE EXPIRY: –
PLACE ISSUED: – | PLACE ISSUED: –

DESIGN ENGINEER: ENGINEER'S NAME
PTR NO.: | PRC NO.:
DATE ISSUED: – | DATE EXPIRY: –
PLACE ISSUED: – | PLACE ISSUED: –

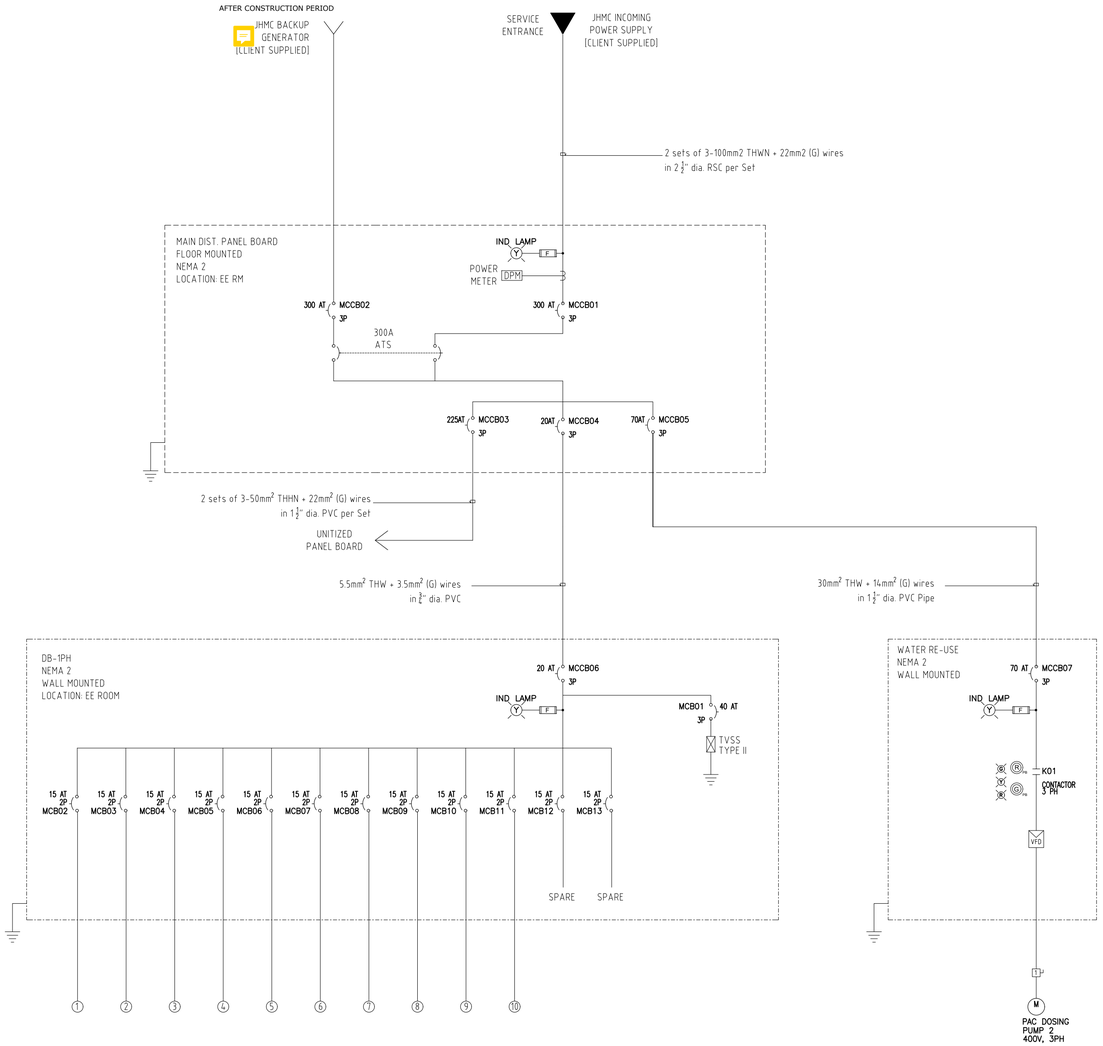
PROJECT: JHMC OFFICE
WASTEWATER TREATMENT PLANT
ADDRESS: CAMP JOHN HAY, BAGUIO

CLIENT: CLIENT'S NAME

REVISIONS:

NO.	DESCRIPTION	DATE
0		–
1.1		–
1.2		–
1		–

CONTRACT NO.: WW-22-JHMC-DC-05
STAGE: CONCEPT DESIGN
SHEET CONTENTS: LOAD SCHEDULE
SHEET NO.: ELECTRICAL 04 08
SCALE – DATE



SINGLE LINE DIAGRAM
SCALE : N.T.S.

ANTHROSERV
UNIT 302, ECG BUILDING
93 GEN. AVENUE, PROJECT 8
QUEZON CITY 1105 MM
SERVICES OFFERED:
PLANT DESIGN
PLUMBING WORKS
STRUCTURAL DESIGN
ENGINEERING DESIGN AND REVIEW
EQUIPMENT AND MATERIAL SELECTION
ELECTRICAL DESIGN & CALCULATIONS

RECOMMENDING APPROVAL:
ENGINEER'S NAME
PTR NO.: – PRC NO.:
DATE ISSUED: – DATE EXPIRY: –
PLACE ISSUED: – PLACE ISSUED: –

DESIGN ENGINEER:
ENGINEER'S NAME
PTR NO.: – PRC NO.:
DATE ISSUED: – DATE EXPIRY: –
PLACE ISSUED: – PLACE ISSUED: –

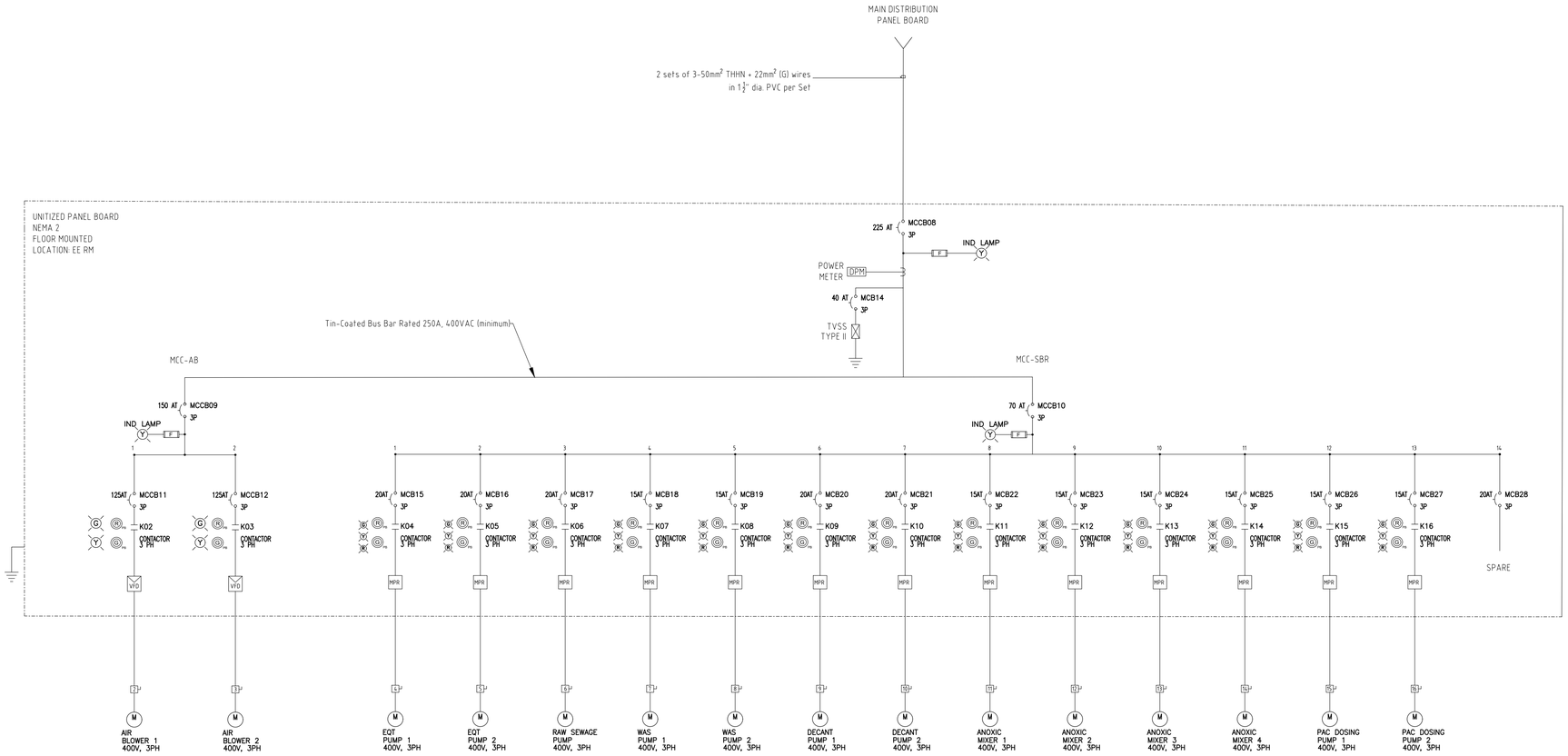
PROJECT:
JHMC OFFICE
WASTEWATER TREATMENT PLANT
ADDRESS:
CAMP JOHN HAY, BAGUIO

CLIENT:
CLIENT'S NAME

REVISIONS:

NO.	DESCRIPTION	DATE
0		–
1.1		–
1.2		–
1		–

CONTRACT NO.: WW-22-JHMC-DC-05
STAGE: CONCEPT DESIGN
SHEET CONTENTS:
SINGLE LINE DIAGRAM
SHEET NO.
ELECTRICAL 05 08
SCALE –
DATE



SINGLE LINE DIAGRAM
SCALE : N.T.S.

ANTHROSERV
UNIT 302, ECG BUILDING
93 GEN. AVENUE, PROJECT 8
QUEZON CITY 1105 MM

SERVICES OFFERED:
PLANT DESIGN
PLUMBING WORKS
STRUCTURAL DESIGN
ENGINEERING DESIGN AND REVIEW
EQUIPMENT AND MATERIAL SELECTION
ELECTRICAL DESIGN & CALCULATIONS

RECOMMENDING APPROVAL:
ENGINEER'S NAME
PTR NO.: | PRC NO.:
DATE ISSUED: – | DATE EXPIRY: –
PLACE ISSUED: – | PLACE ISSUED: –

DESIGN ENGINEER:
ENGINEER'S NAME
PTR NO.: | PRC NO.:
DATE ISSUED: – | DATE EXPIRY: –
PLACE ISSUED: – | PLACE ISSUED: –

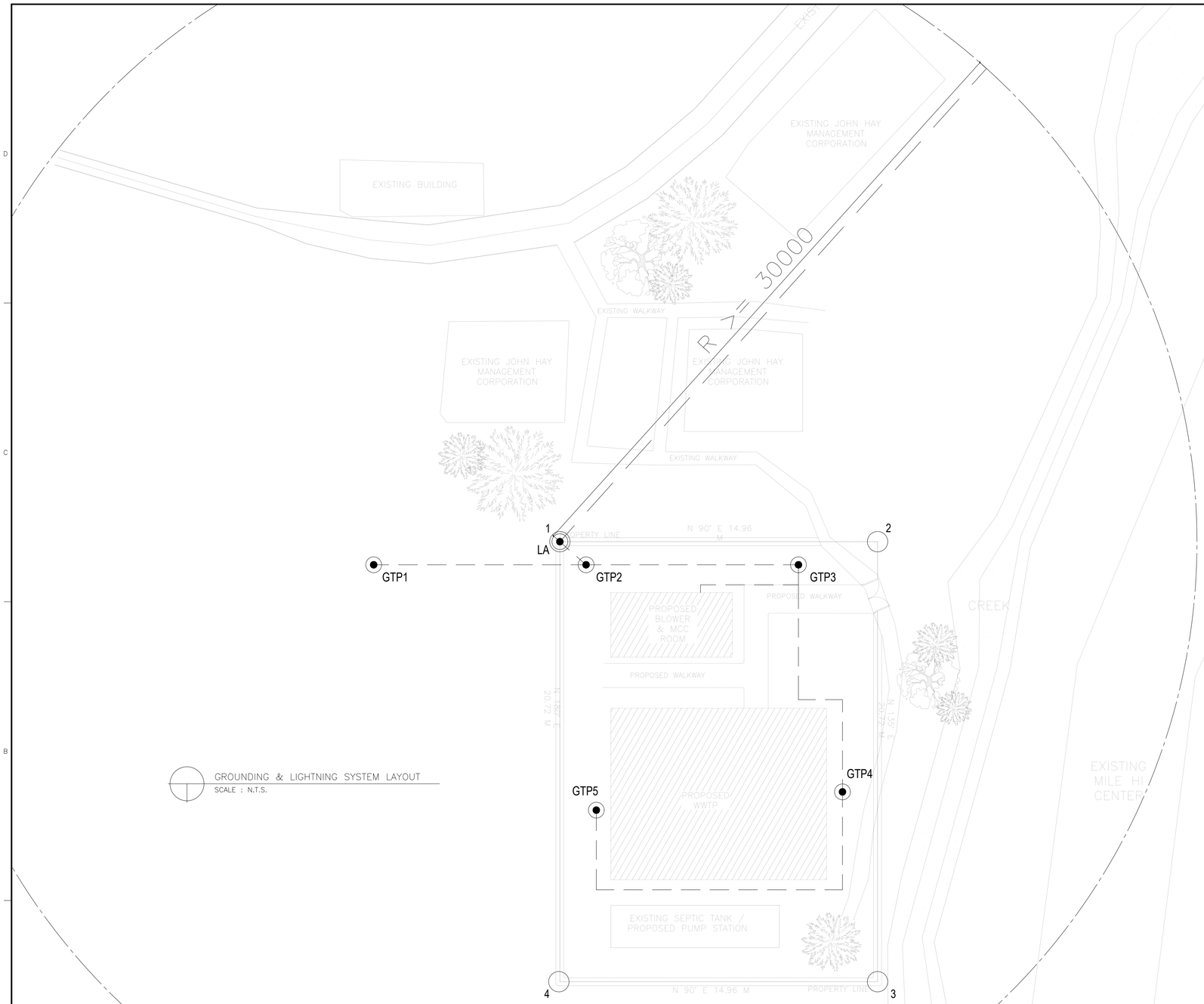
PROJECT:
JHMC OFFICE
WASTEWATER TREATMENT PLANT
ADDRESS:
CAMP JOHN HAY, BAGUIO

CLIENT:
CLIENT'S NAME

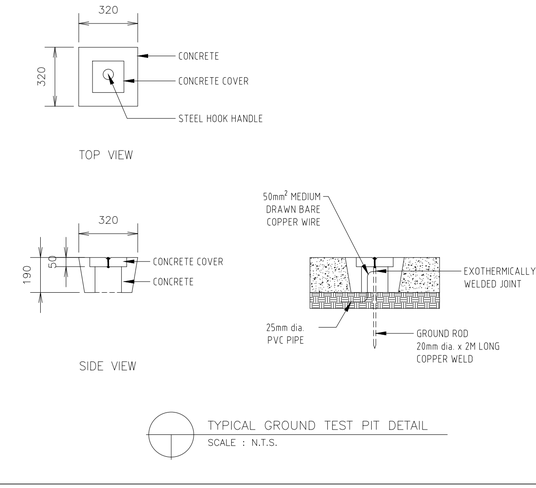
REVISIONS:

NO.	DESCRIPTION	DATE
0		–
1.1		–
1.2		–
1		–

CONTRACT NO.: WW-22-JHMC-DC-05
STAGE: CONCEPT DESIGN
SHEET CONTENTS:
SINGLE LINE DIAGRAM
SHEET NO.
ELECTRICAL
06 | 08
SCALE –
DATE



GROUNDING & LIGHTNING SYSTEM LAYOUT
SCALE : N.T.S.



TYPICAL GROUND TEST PIT DETAIL
SCALE : N.T.S.

LEGENDS AND SYMBOLS

- LA — LIGHTNING ARRESTER
- GTP — GROUND TEST PIT
- BARE COPPER GROUND WIRE
- RADIUS OF PROTECTION

ANTHROSERV
UNIT 302, ECG BUILDING
93 GEN. AVENUE, PROJECT 8
QUEZON CITY 1105 MM

SERVICES OFFERED:
PLANT DESIGN
PLUMBING WORKS
STRUCTURAL DESIGN
ENGINEERING DESIGN AND REVIEW
EQUIPMENT AND MATERIAL SELECTION
ELECTRICAL DESIGN & CALCULATIONS

RECOMMENDING APPROVAL:			
ENGINEER'S NAME			
PTR NO.:		PRC NO.:	
DATE ISSUED:	–	DATE EXPIRY:	–
PLACE ISSUED:	–	PLACE ISSUED:	–

DESIGN ENGINEER:			
ENGINEER'S NAME			
PTR NO.:		PRC NO.:	
DATE ISSUED:	–	DATE EXPIRY:	–
PLACE ISSUED:	–	PLACE ISSUED:	–

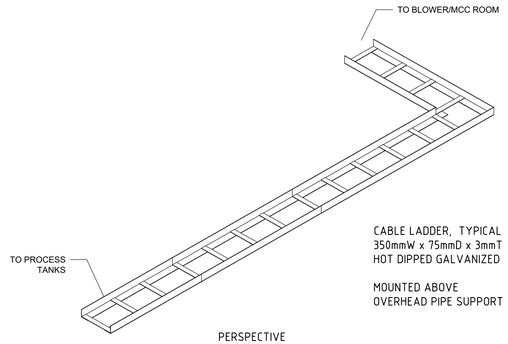
PROJECT:
JHMC OFFICE
WASTEWATER TREATMENT PLANT
ADDRESS:
CAMP JOHN HAY, BAGUIO

CLIENT:
CLIENT'S NAME

REVISIONS:

NO.	DESCRIPTION	DATE
0		–
1.1		–
1.2		–
1		–

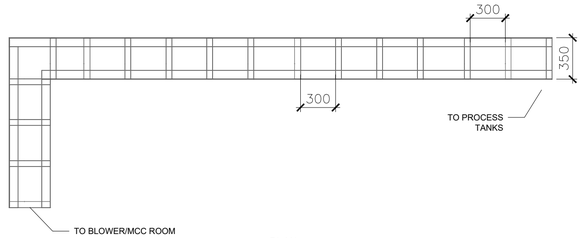
CONTRACT NO.: WW-22-JHMC-DC-05
STAGE: CONCEPT DESIGN
SHEET CONTENTS:
GROUNDING AND LIGHTING SYSTEM LAYOUT
TYPICAL GROUBND TEST PIT DETIAL
SCALE – DATE
SHEET NO.
ELECTRICAL 07 08



PERSPECTIVE VIEW

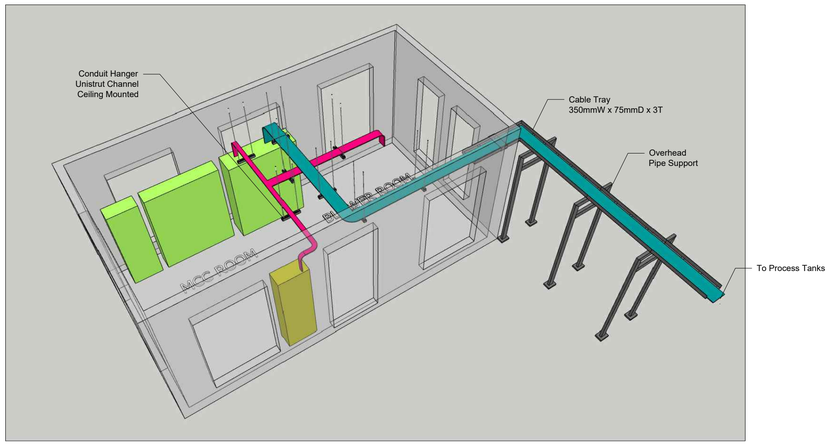
CABLE LADDER, TYPICAL
350mmW x 75mmD x 3mmT
HOT DIPPED GALVANIZED

MOUNTED ABOVE
OVERHEAD PIPE SUPPORT

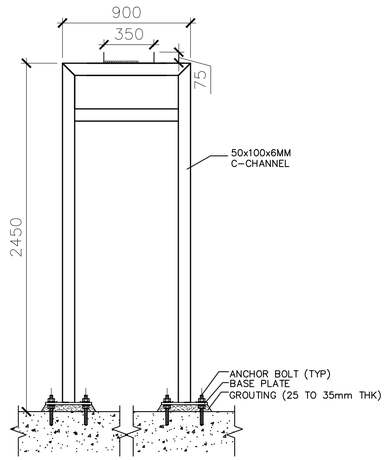


PLAN VIEW

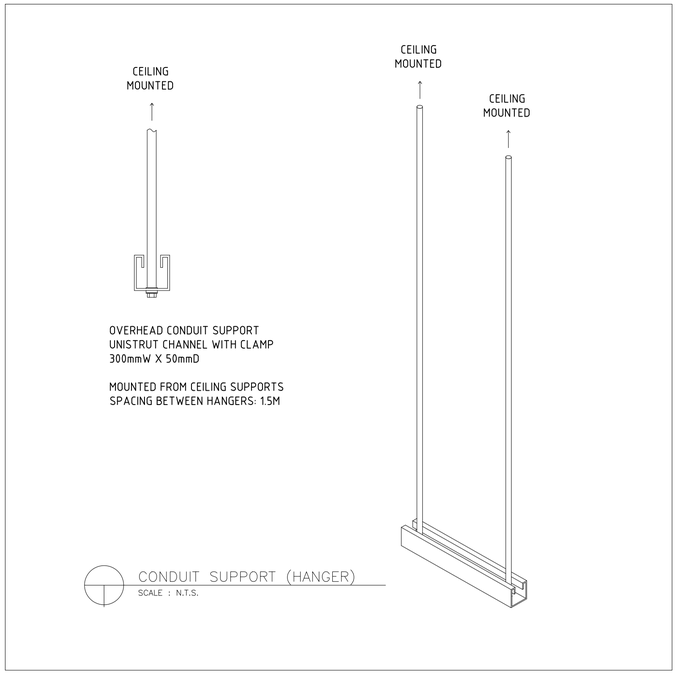
CABLE LADDER DETAIL
SCALE : N.T.S.



SUPPORTS AND HANGERS PERSPECTIVE (BLOWER ROOM)
SCALE : N.T.S.



CABLE LADDER MOUNTING
SCALE : N.T.S.



OVERHEAD CONDUIT SUPPORT
UNISTRUT CHANNEL WITH CLAMP
300mmW X 50mmD

MOUNTED FROM CEILING SUPPORTS
SPACING BETWEEN HANGERS: 1.5M

CONDUIT SUPPORT (HANGER)
SCALE : N.T.S.

ANTHROSERV
UNIT 302, ECG BUILDING
93 GEN. AVENUE, PROJECT 8
QUEZON CITY 1105 MM

SERVICES OFFERED:
PLANT DESIGN
PLUMBING WORKS
STRUCTURAL DESIGN
ENGINEERING DESIGN AND REVIEW
EQUIPMENT AND MATERIAL SELECTION
ELECTRICAL DESIGN & CALCULATIONS

RECOMMENDING APPROVAL:				DESIGN ENGINEER:			
ENGINEER'S NAME				ENGINEER'S NAME			
PTR NO.:		PRC NO.:		PTR NO.:		PRC NO.:	
DATE ISSUED:	–	DATE EXPIRY:	–	DATE ISSUED:	–	DATE EXPIRY:	–
PLACE ISSUED:	–	PLACE ISSUED:	–	PLACE ISSUED:	–	PLACE ISSUED:	–

PROJECT:
JHMC OFFICE
WASTEWATER TREATMENT PLANT
ADDRESS:
CAMP JOHN HAY, BAGUIO

CLIENT:
CLIENT'S NAME

REVISIONS:

NO.	DESCRIPTION	DATE
0		–
1.1		–
1.2		–
1		–

CONTRACT NO.: WW-22-JHMC-DC-05
STAGE: CONCEPT DESIGN

SHEET CONTENTS:
SUPPORTS AND HANGERS LAYOUT
CABLE LADDER DETAILS

SHEET NO.
ELECTRICAL
08 | 08

SCALE –
DATE