

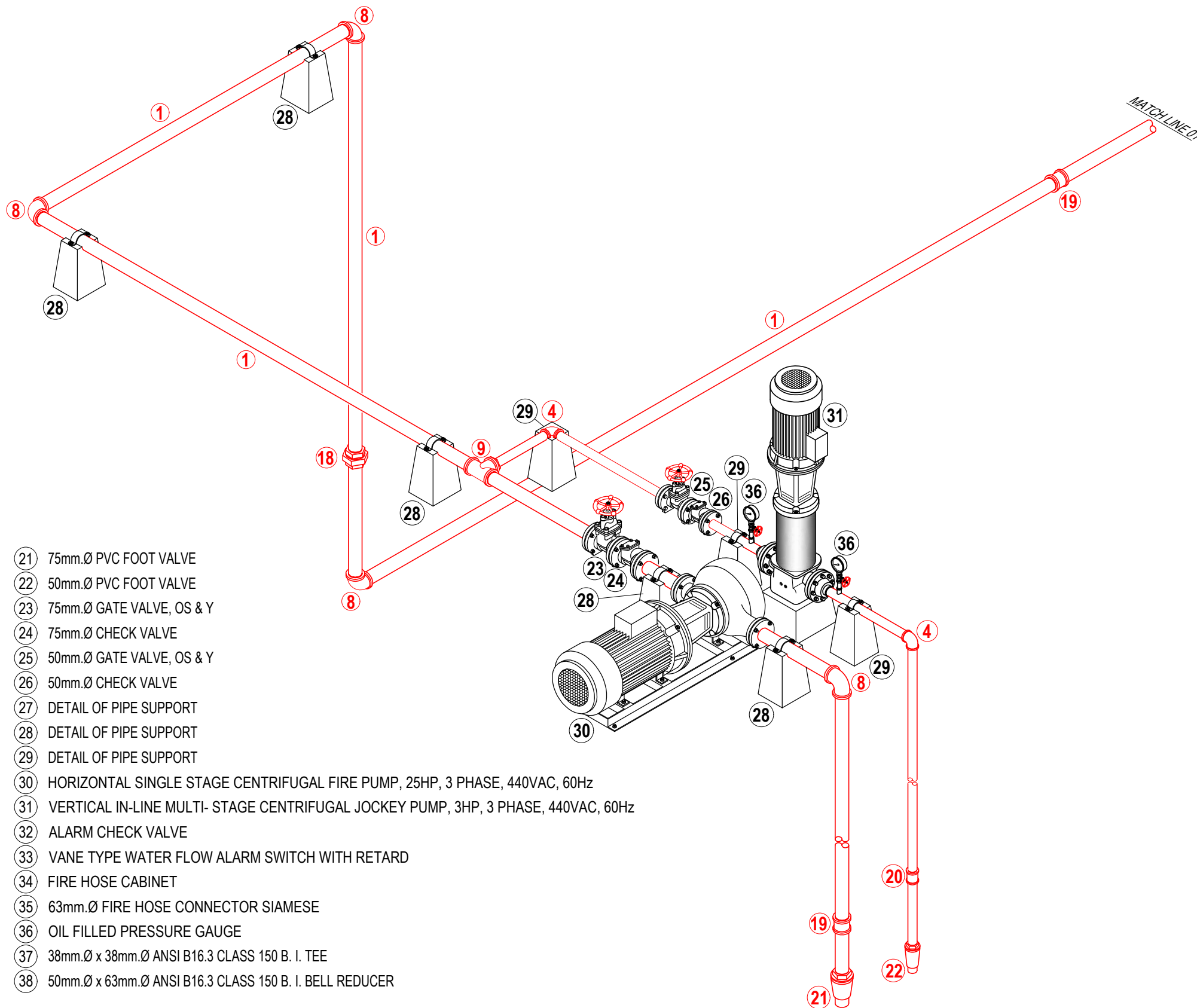


FIRE SPRINKLER DIAGRAM
SCALE: 1:100M.

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REV.	DATE	BY	DESCRIPTION																													
SHEET CONTENT: AS INDICATED																																





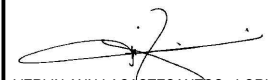

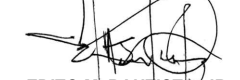


LEGEND:

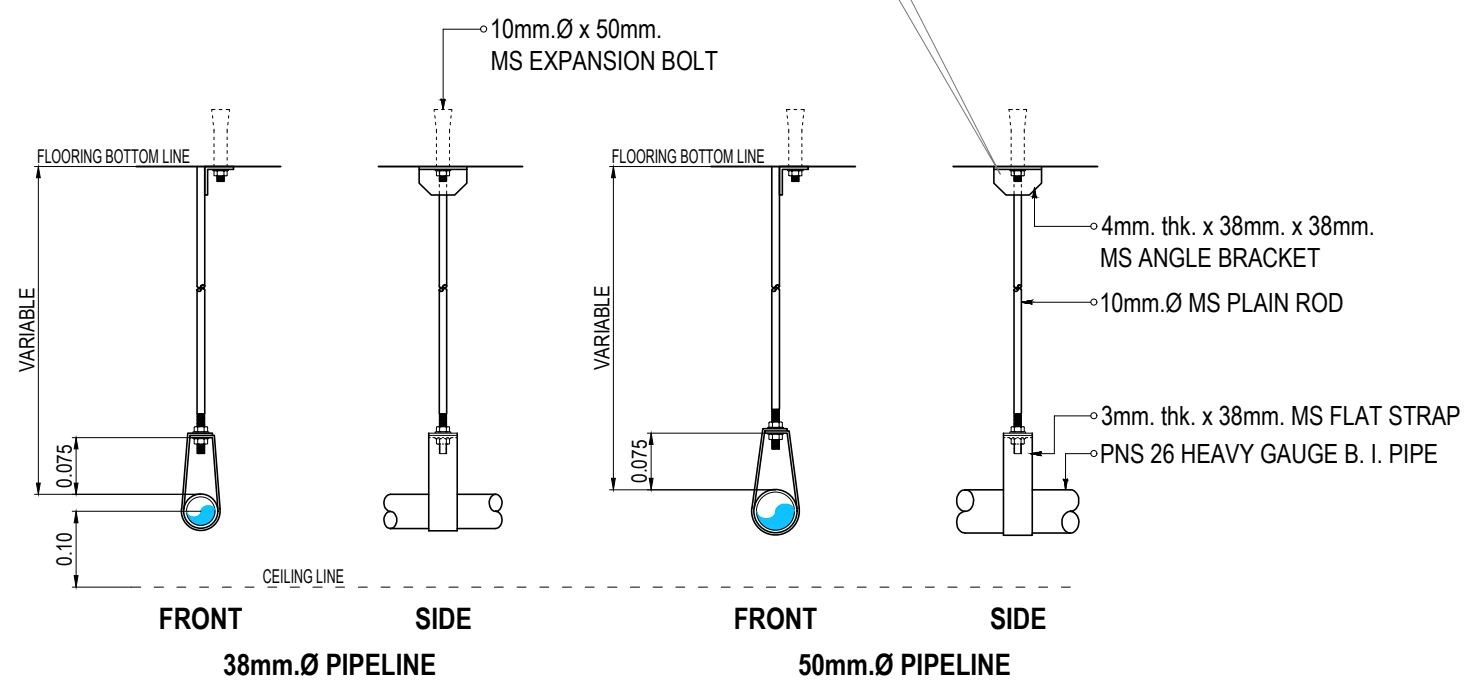
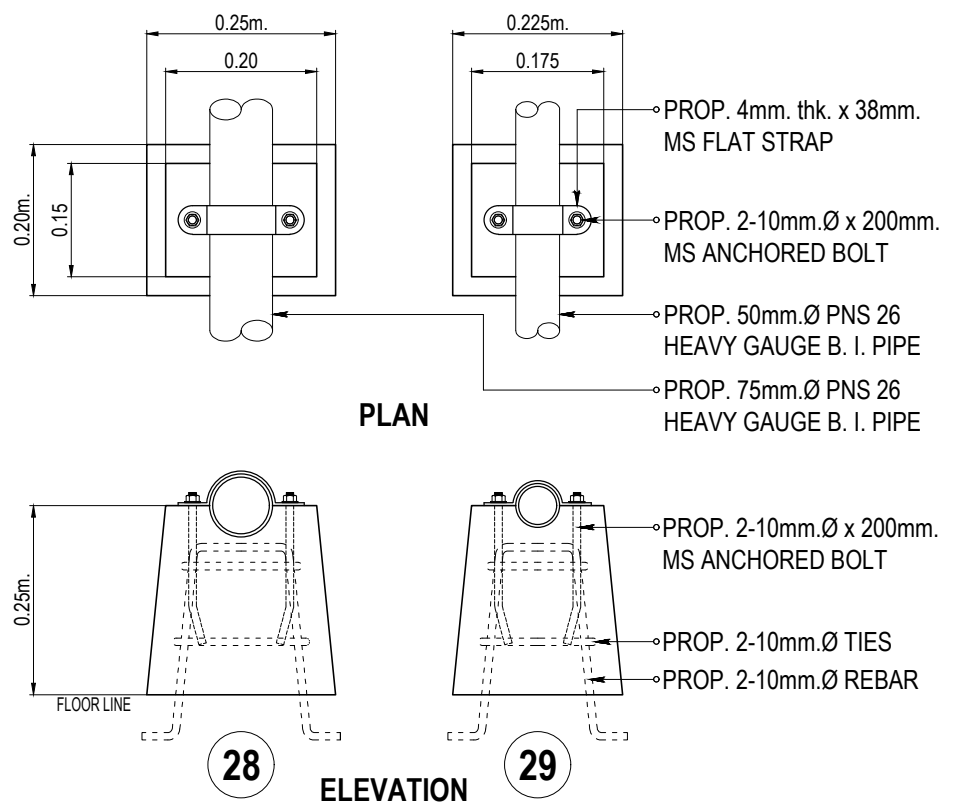
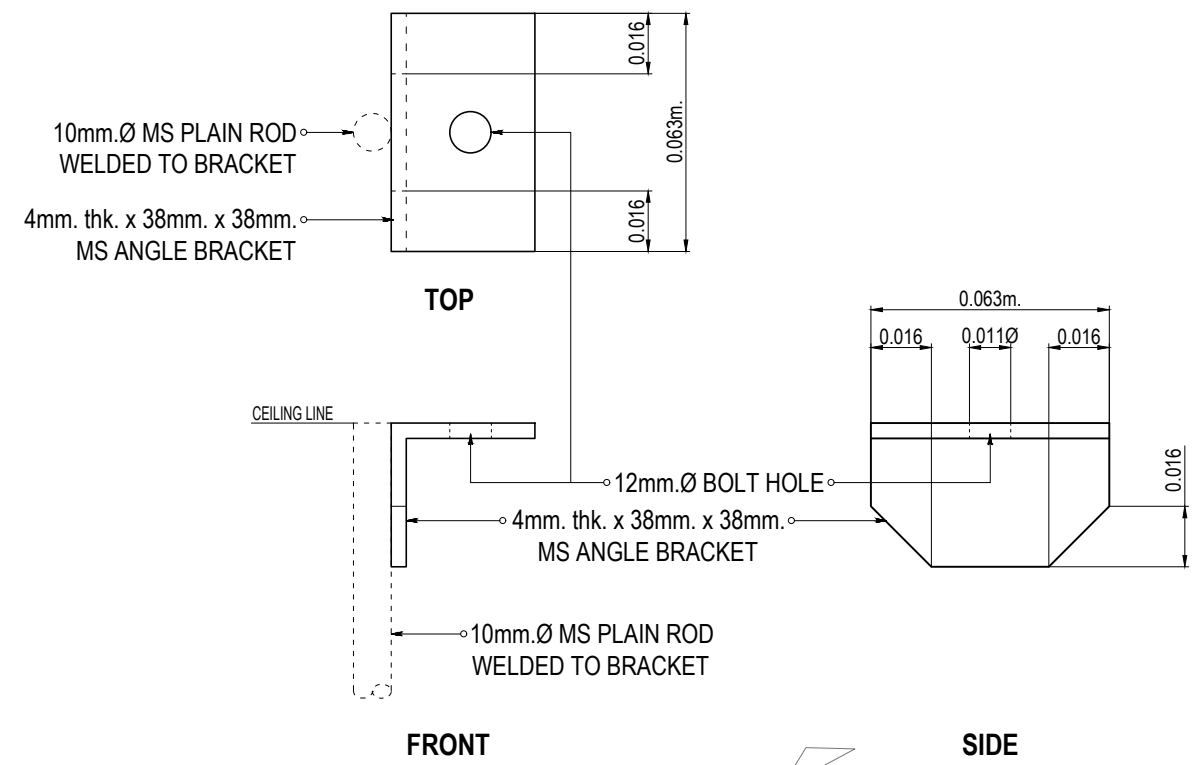
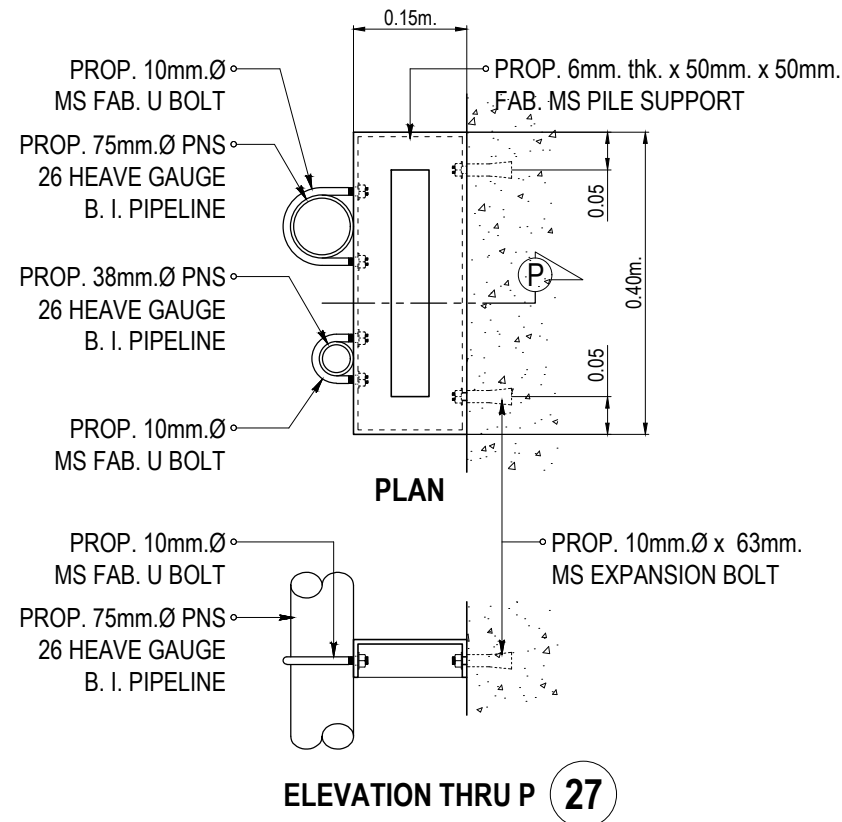
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|--|--|--|---|--|--|--|---|--|--|---|---|---|--|--|-------------------------------|---|--|--|--|-------------------------|-------------------------|-----------------------------|----------------------|-----------------------------|----------------------|--------------------------|--------------------------|--------------------------|--|---|---------------------|---|---------------------|--------------------------------------|-----------------------------|--|---|
| ① 75mm.Ø PNS 26 HEAVY GAUGE B. I. PIPELINE | ② 50mm.Ø PNS 26 HEAVY GAUGE B. I. PIPELINE | ③ 38mm.Ø PNS 26 HEAVY GAUGE B. I. PIPELINE | ④ 50mm.Ø x 90° ANSI B16.3 CLASS 150 B. I. ELBOW | ⑤ 50mm.Ø x 38mm.Ø ANSI B16.3 CLASS 150 B. I. BUSHING REDUCER | ⑥ 38mm.Ø x 25mm.Ø ANSI B16.3 CLASS 150 B. I. BUSHING REDUCER | ⑦ 75mm.Ø x 50mm.Ø ANSI B16.3 CLASS 150 B. I. BUSHING REDUCER | ⑧ 75mm.Ø x 90° ANSI B16.3 CLASS 150 B. I. ELBOW | ⑨ 75mm.Ø x 75mm.Ø ANSI B16.3 CLASS 150 B. I. TEE | ⑩ 25mm.Ø PNS 26 HEAVY GAUGE B. I. PIPELINE | ⑪ 25mm.Ø x 90° ANSI B16.3 CLASS 150 B. I. ELBOW | ⑫ 25mm.Ø x 12mm.Ø ANSI B16.3 CLASS 150 B. I. BELL REDUCER | ⑬ 38mm.Ø x 90° ANSI B16.3 CLASS 150 B. I. ELBOW | ⑭ 38mm.Ø ANSI B16.3 CLASS 150 B. I. UNION PATENT | ⑮ 50mm.Ø x 50mm.Ø ANSI B16.3 CLASS 150 B. I. TEE | ⑯ 38mm.Ø TEST AND DRAIN VALVE | ⑰ 38mm.Ø x 25mm.Ø ANSI B16.3 CLASS 150 B. I. BELL REDUCER | ⑱ 75mm.Ø ANSI B16.3 CLASS 150 B. I. UNION PATENT | ⑲ 75mm.Ø ANSI B16.3 CLASS 150 B. I. COUPLING | ⑳ 50mm.Ø ANSI B16.3 CLASS 150 B. I. COUPLING | ㉑ 75mm.Ø PVC FOOT VALVE | ㉒ 50mm.Ø PVC FOOT VALVE | ㉓ 75mm.Ø GATE VALVE, OS & Y | ㉔ 75mm.Ø CHECK VALVE | ㉕ 50mm.Ø GATE VALVE, OS & Y | ㉖ 50mm.Ø CHECK VALVE | ㉗ DETAIL OF PIPE SUPPORT | ㉘ DETAIL OF PIPE SUPPORT | ㉙ DETAIL OF PIPE SUPPORT | ㉚ HORIZONTAL SINGLE STAGE CENTRIFUGAL FIRE PUMP, 25HP, 3 PHASE, 440VAC, 60Hz | ㉛ VERTICAL IN-LINE MULTI- STAGE CENTRIFUGAL JOCKEY PUMP, 3HP, 3 PHASE, 440VAC, 60Hz | ㉜ ALARM CHECK VALVE | ㉝ VANE TYPE WATER FLOW ALARM SWITCH WITH RETARD | ㉞ FIRE HOSE CABINET | ㉟ 63mm.Ø FIRE HOSE CONNECTOR SIAMESE | ㊱ OIL FILLED PRESSURE GAUGE | ㊲ 38mm.Ø x 38mm.Ø ANSI B16.3 CLASS 150 B. I. TEE | ㊳ 50mm.Ø x 63mm.Ø ANSI B16.3 CLASS 150 B. I. BELL REDUCER |
|--|--|--|---|--|--|--|---|--|--|---|---|---|--|--|-------------------------------|---|--|--|--|-------------------------|-------------------------|-----------------------------|----------------------|-----------------------------|----------------------|--------------------------|--------------------------|--------------------------|--|---|---------------------|---|---------------------|--------------------------------------|-----------------------------|--|---|

FIRE SPRINKLER DIAGRAM

SCALE: _____ NTS.



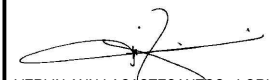

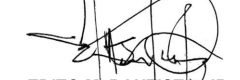


PROVIDE 0.40m. CLEARANCE TO FLOORING

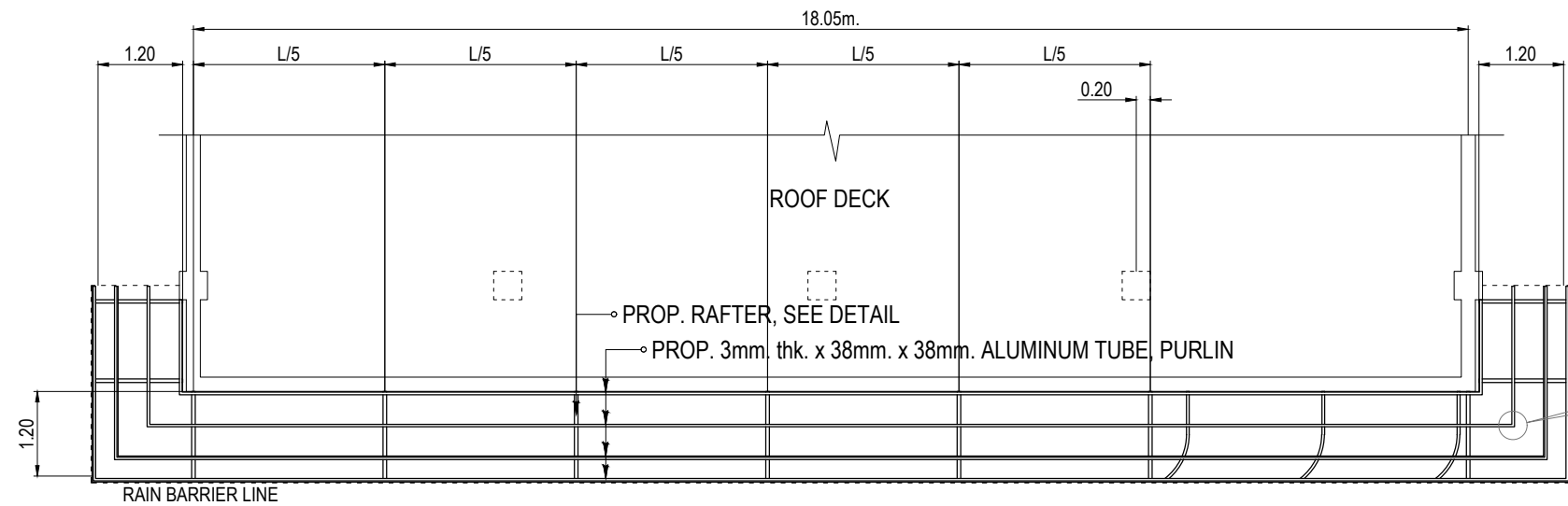
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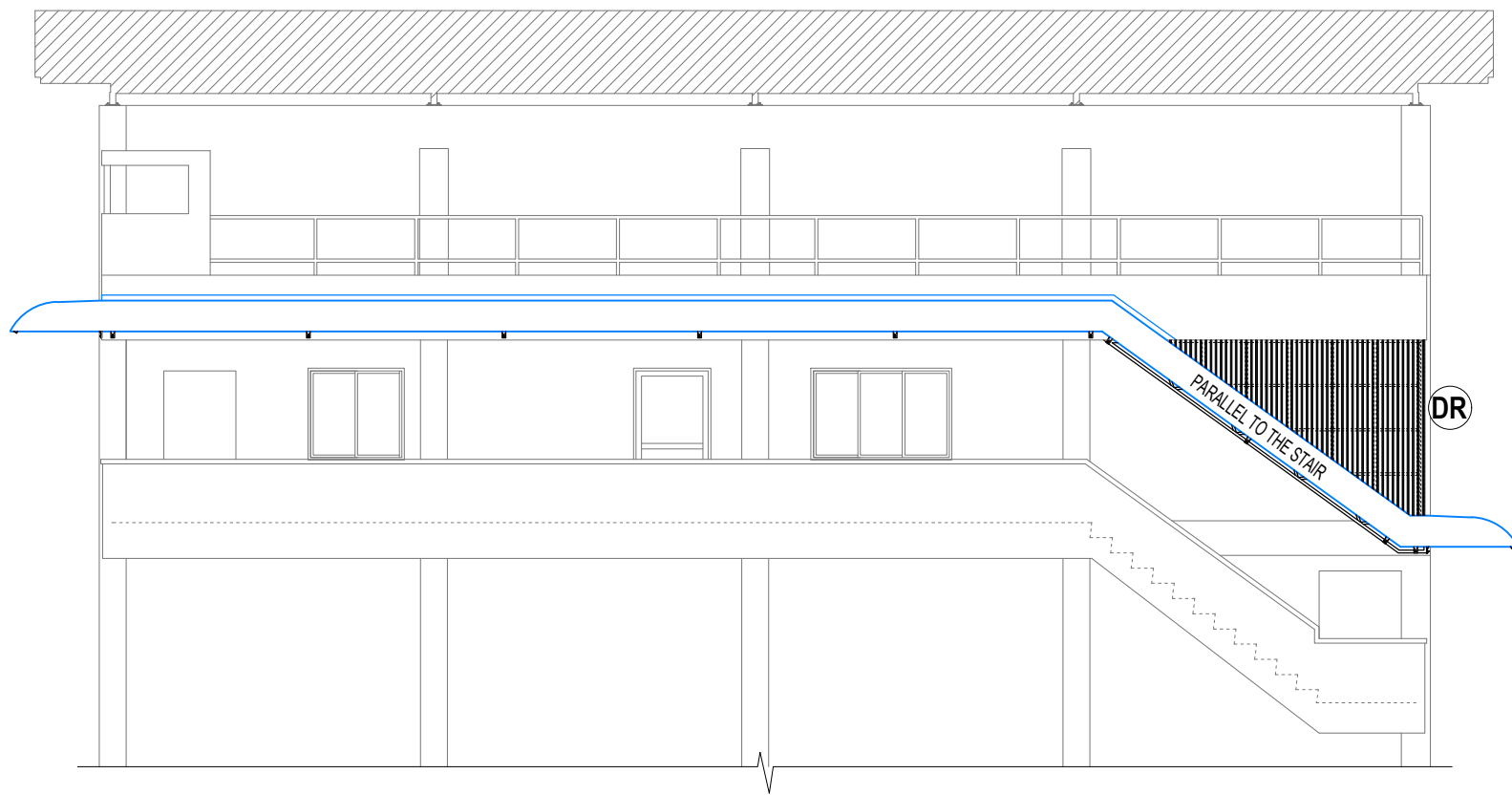
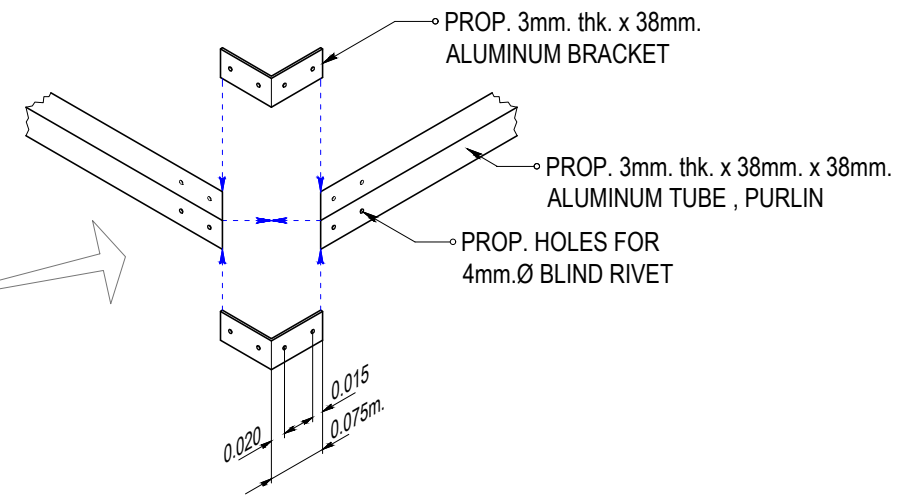
DETAIL OF PIPE SUPPORT
 SCALE: 1:10M.

DETAIL OF FIRE SPRINKLER PIPE HANGER
 SCALE: 1:10M.

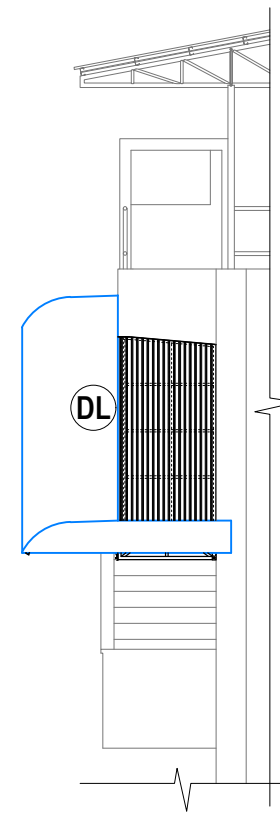
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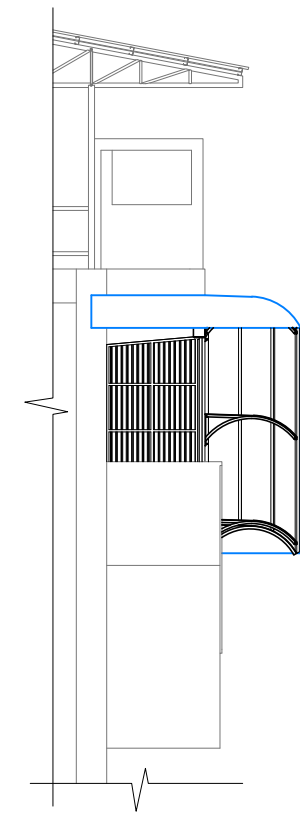
ROOF FRAMING PLAN



FRONT ELEVATION





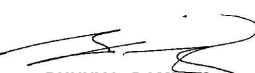

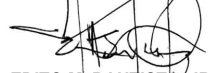


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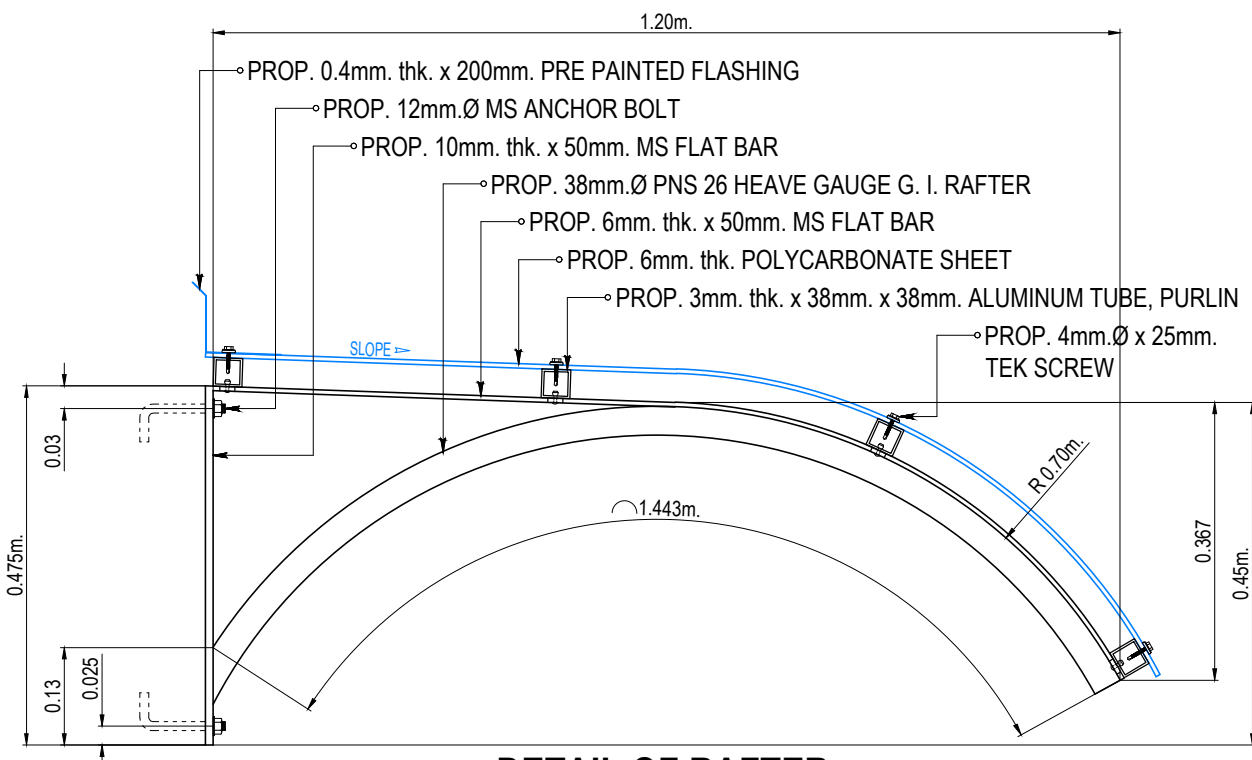
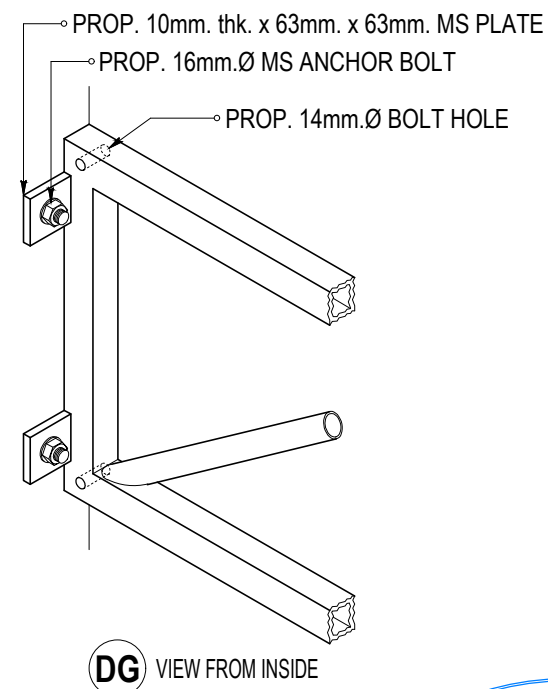
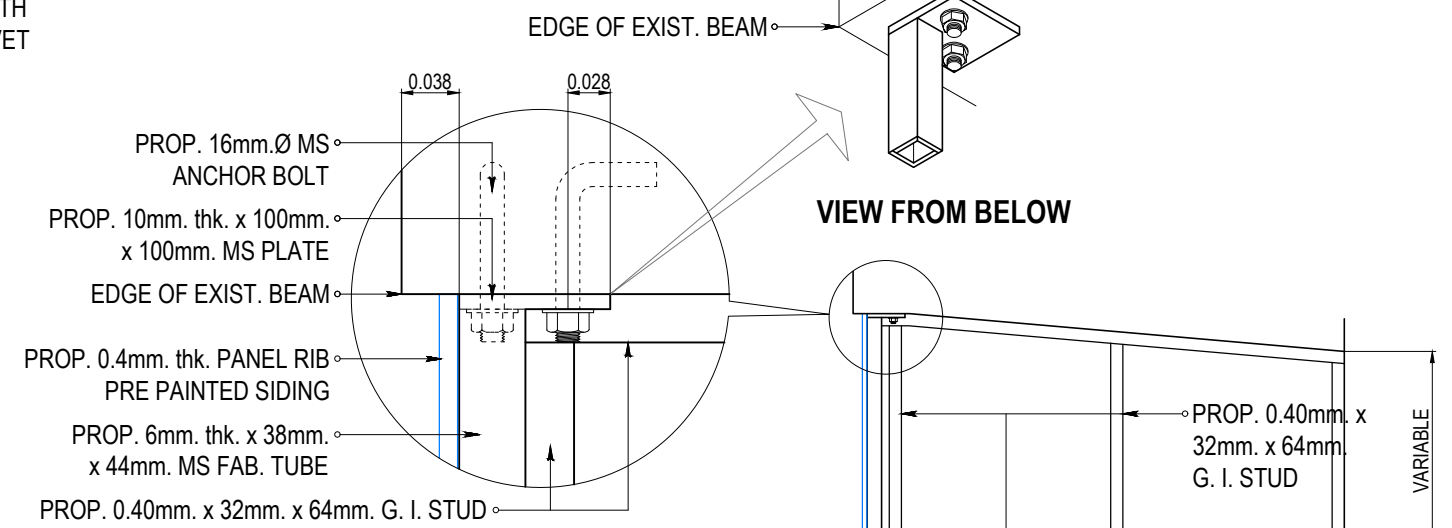
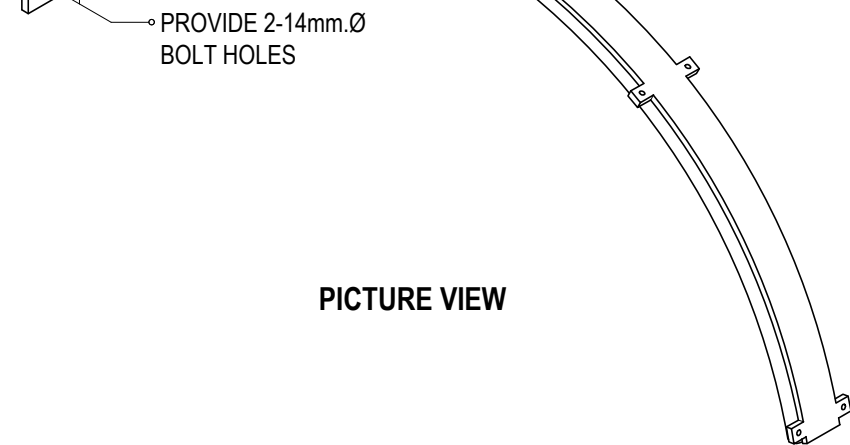
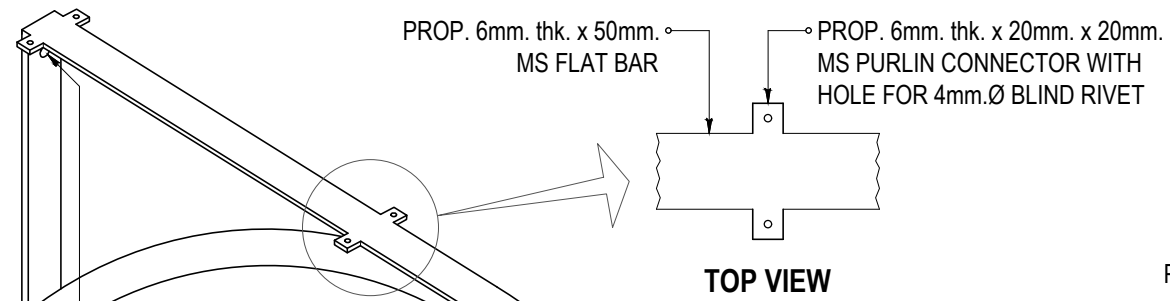


LEFT SIDE ELEVATION

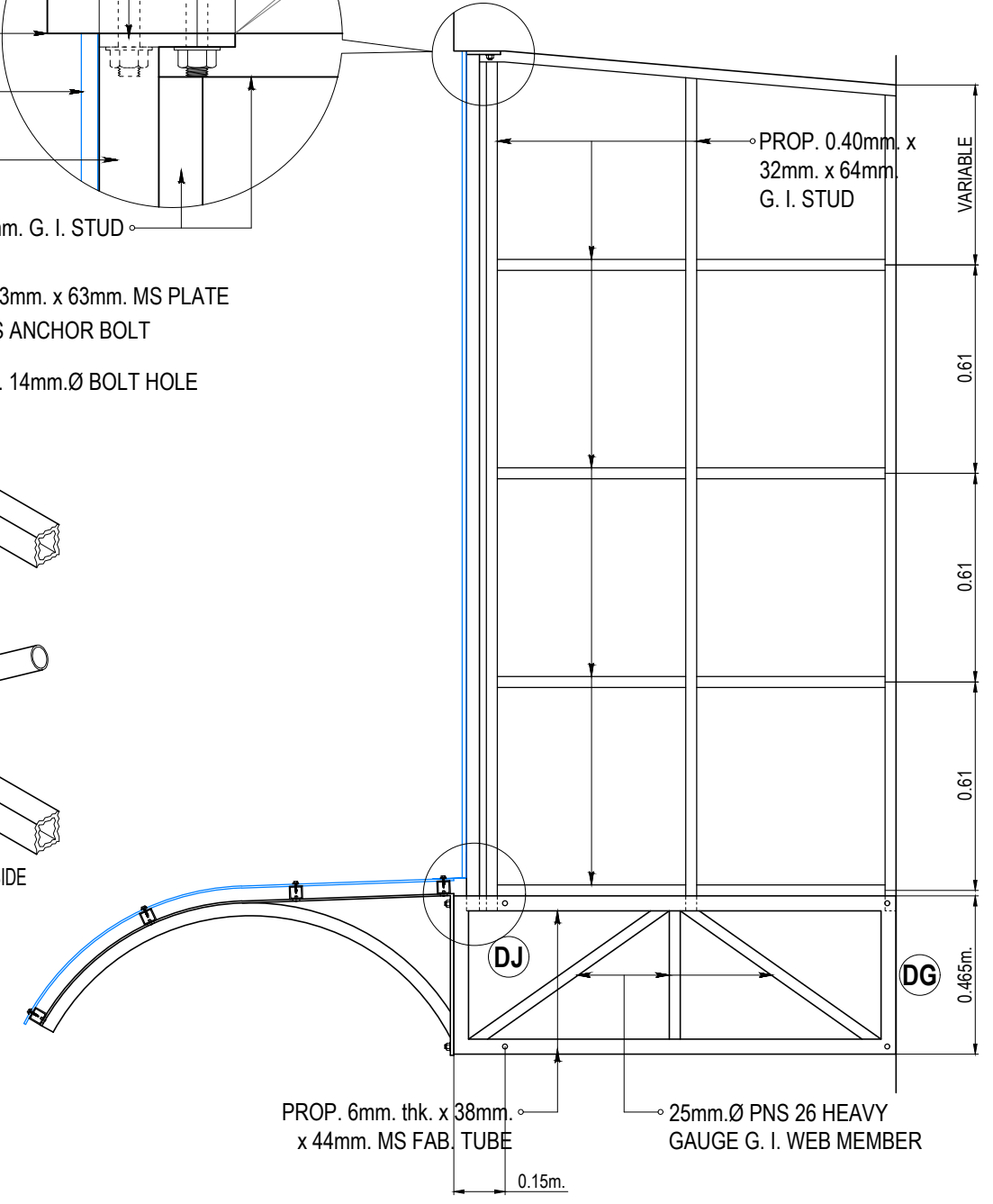
PROP. RAIN BARRIER

SCALE: 1:100M.

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SHEET CONTENT: AS INDICATED																																

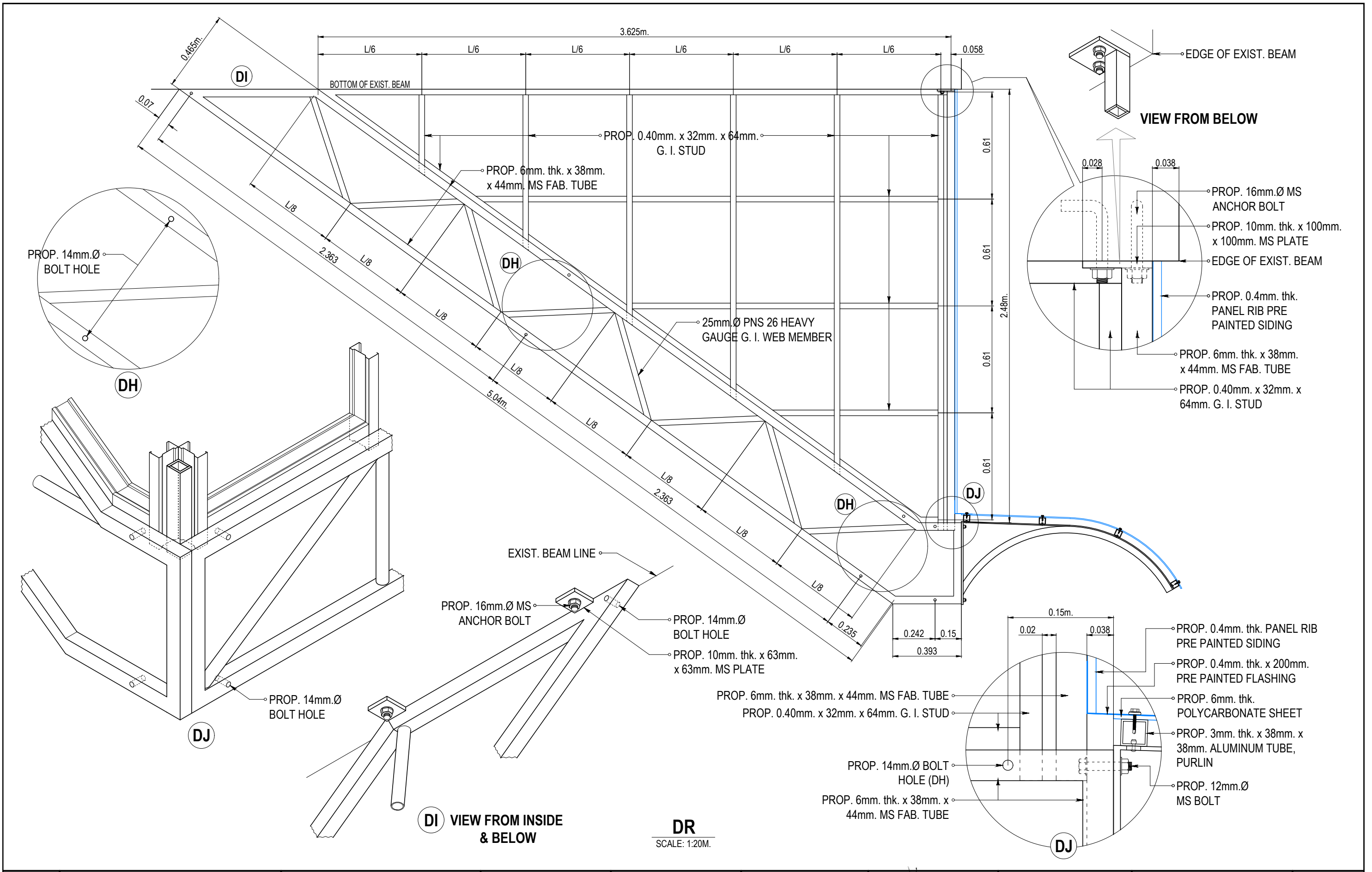


DETAIL OF RAFTER
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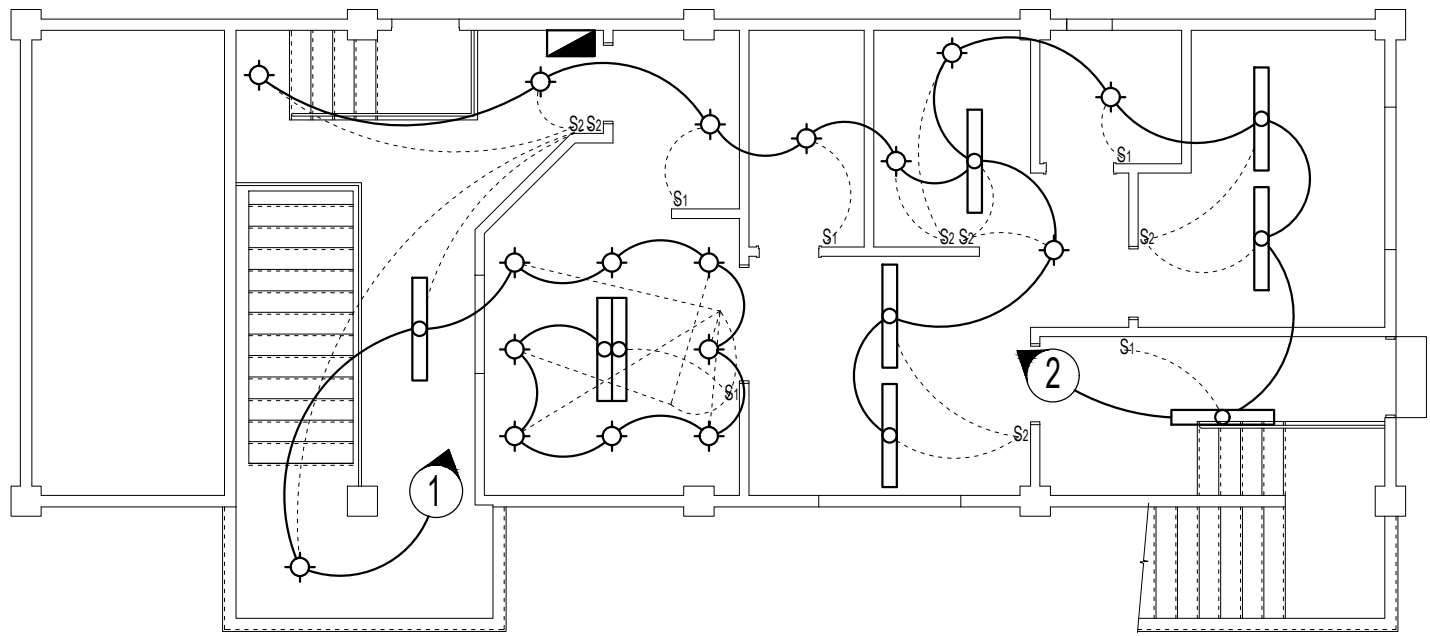


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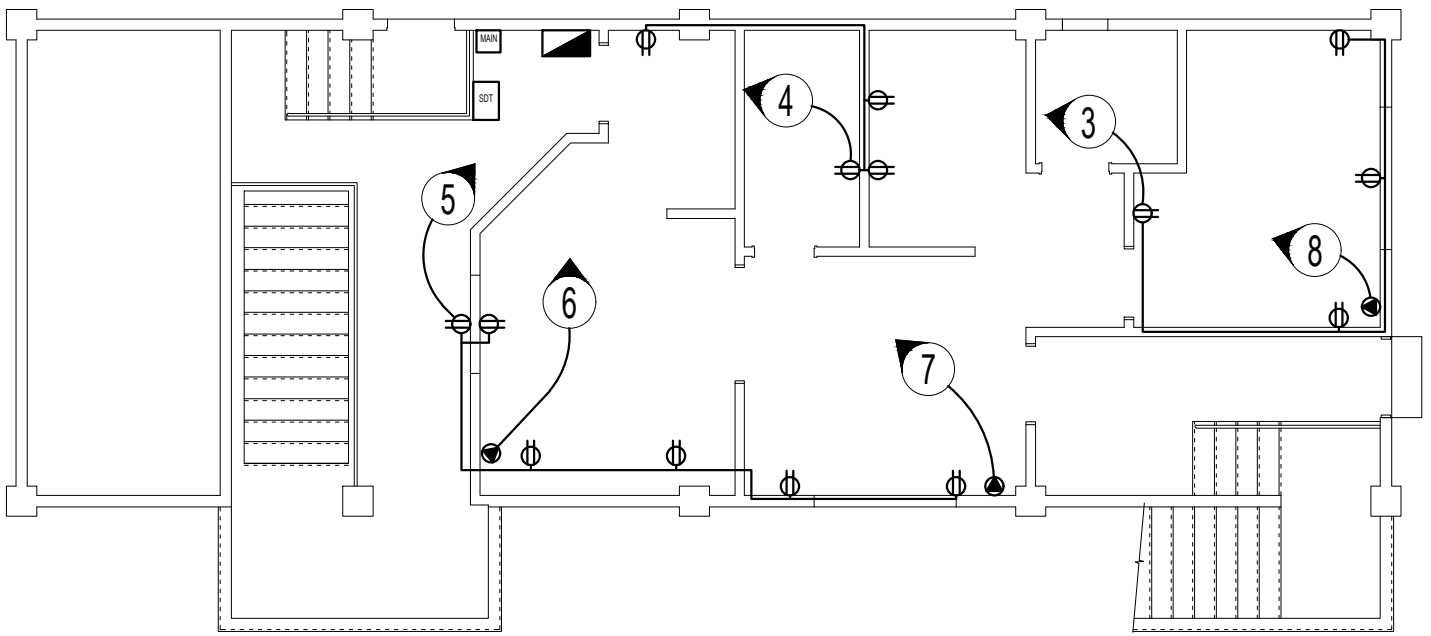
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	SHEET CONTENT: AS INDICATED											



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	SHEET CONTENT: AS INDICATED											



SECOND FLOOR LIGHTING LAYOUT PLAN
SCALE: 1:100M.



SECOND FLOOR POWER OUTLET LAYOUT PLAN
SCALE: 1:100M.

SCHEDULE OF LOAD FOR LIGHTING AND POWER LOAD

CKT. NO.	LOAD DESCRIPTION	PF	W	VA	AMPS	LINE AMPS			CONDUCTOR SIZE	CONDUIT SIZE	BREAKER SIZE	VOLTAGE
						A	B	C				
C1	9 - 18 WATTS LED BULB DOWNLIGHT	0.80	1,200.00	1,500.00	6.52	6.52	6.52	2.0 sq. mm. TW	20 mm PVC	15 A	230 V	
	1 - 18 WATTS LED FLUORESCENT WITH SINGLE TYPE INDUSTRIAL LUMINAIRE											
	1 - 18 WATTS LED FLUORESCENT WITH DUPLEX TYPE INDUSTRIAL LUMINAIRE											
C2	8 - 18 WATTS LED BULB DOWNLIGHT	0.80	1,760.00	2,200.00	9.57	9.57	9.57	2.0 sq. mm. TW	20 mm PVC	15 A	230 V	
	6 - 18 WATTS LED FLUORESCENT WITH SINGLE TYPE INDUSTRIAL LUMINAIRE											
C3	4 - DUPLEX UNIVERSAL OUTLET	0.80	1,440.00	1,800.00	7.83	7.83	7.83	3.5 sq. mm. TW	20 mm PVC	20 A	230 V	
C4	4 - DUPLEX UNIVERSAL OUTLET	0.80	1,440.00	1,800.00	7.83	7.83	7.83	3.5 sq. mm. TW	20 mm PVC	20 A	230 V	
C5	6 - DUPLEX UNIVERSAL OUTLET	0.80	2,160.00	2,700.00	11.74	11.74	11.74	3.5 sq. mm. TW	20 mm PVC	20 A	230 V	
C6	1 - 3 HP AIR CONDITIONING UNIT	0.85	2,238.00	2,632.94	11.45	11.45	11.45	5.5 sq. mm. THW	20 mm PVC	30 A	230 V	
C7	1 - 3 HP AIR CONDITIONING UNIT	0.85	2,238.00	2,632.94	11.45	11.45	11.45	5.5 sq. mm. THW	20 mm PVC	30 A	230 V	
C8	1 - 3 HP AIR CONDITIONING UNIT	0.85	2,238.00	2,632.94	11.45	11.45	11.45	5.5 sq. mm. THW	20 mm PVC	30 A	230 V	
	AVERAGE/TOTAL (3-PHASE)	0.82	14,714.00	17,898.82	77.82	54.63	54.93	46.08				

SECOND FLOOR: 230 VOLTS

COMPUTATION:

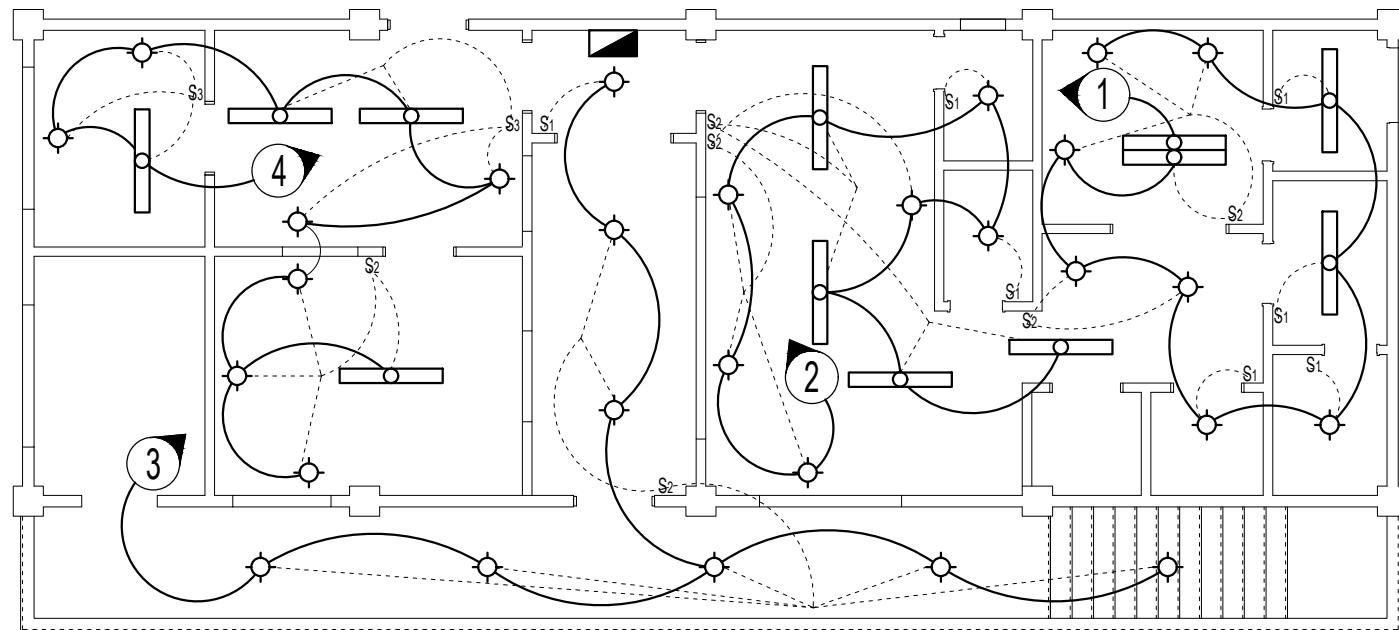
DETERMINE THE SERVICE FEEDER CONDUCTOR:
 APPLYING DEMAND FACTOR:
 TOTAL GENERAL LIGHTING AND OUTLET LOAD: 10,000.00 VA
 FIRST 3000 VA: = 3,000.00 VA
 REMAINING @ 35%: = 2,450.00 VA
 OTHER LOAD @ 100%: 2632.94 VA
 2632.94 VA
 13,348.82 VA
 EQUIVALENT LINE CURRENT = 35.20 AMPS
 USE: 3-14.0 SQ MM THW STRANDED WIRE
 1-3.5 SQ MM THW STRANDED GREEN GROUND WIRE
 32MM PVC CONDUIT

DETERMINE THE SERVICE EQUIPMENT FOR LIGHT AND POWER PANELBOARD:
 APPLYING DEMAND FACTOR:
 TOTAL GENERAL LIGHTING AND OUTLET LOAD: 10,000.00 VA
 FIRST 3000 VA: = 3,000.00 VA
 REMAINING @ 35%: = 2,450.00 VA
 OTHER LOAD @ 100%: 2632.94 VA
 2632.94 VA
 HIGHEST LOAD @ 250%: 6582.35 VA
 17,298.24 VA
 EQUIVALENT LINE CURRENT = 43.47 AMPS
 USE: 60 AMPS, 240 VOLTS, 3POLE, MAIN CIRCUIT BREAKER

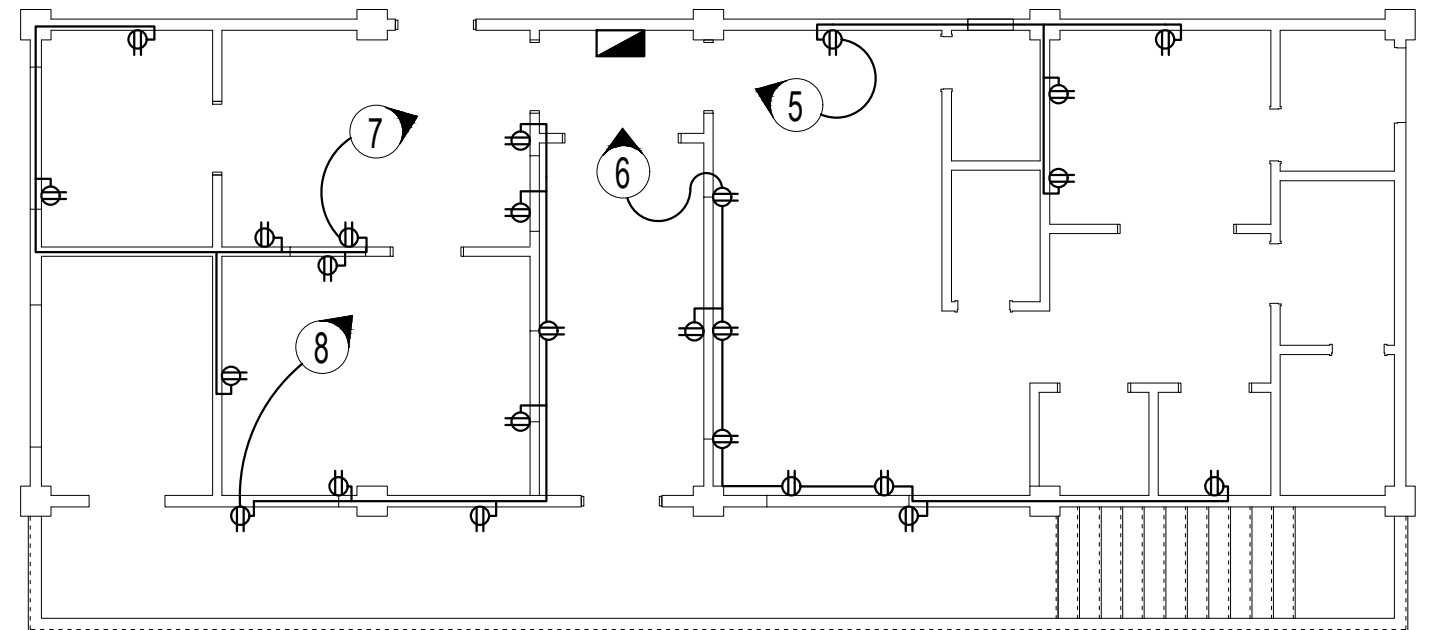
LEGEND:

	DUPLEX OUTLET
	PANELBOARD
	CIRCUIT NUMBER
	CIRCUIT CONNECTION
	SWITCH CONNECTION
	1 GANG SWITCH
	2 GANG SWITCH
	SINGLE T8 LED FL.
	DUPLEX T8 LED FL.
	LED DOWNLIGHT

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	SHEET CONTENT: AS INDICATED								



THIRD FLOOR LIGHTING LAYOUT PLAN
SCALE: 1:100M.



THIRD FLOOR POWER OUTLET LAYOUT PLAN
SCALE: 1:100M.

SCHEDULE OF LOAD FOR LIGHTING AND POWER LOAD

CKT. NO.	LOAD DESCRIPTION	PF	W	VA	AMPS	LINE AMPS			CONDUCTOR SIZE	CONDUIT SIZE	BREAKER SIZE	VOLTAGE
						A	B	C				
C1	7 - 18 WATTS LED BULB DOWNLIGHT	0.80	1,100.00	1,375.00	5.98	5.98	5.98	2.0 sq. mm. TW	20 mm PVC	15 A	230 V	
	2 - 18 WATTS LED FLUORESCENT WITH SINGLE TYPE INDUSTRIAL LUMINAIRE											
	1 - 18 WATTS LED FLUORESCENT WITH DUPLEX TYPE INDUSTRIAL LUMINAIRE											
C2	6 - 18 WATTS LED BULB DOWNLIGHT	0.80	1,360.00	1,700.00	7.39	7.39	7.39	2.0 sq. mm. TW	20 mm PVC	15 A	230 V	
	4 - 18 WATTS LED FLUORESCENT WITH SINGLE TYPE INDUSTRIAL LUMINAIRE											
C3	8 - 18 WATTS LED BULB DOWNLIGHT	0.80	1,160.00	1,450.00	6.30	6.30	6.30	2.0 sq. mm. TW	20 mm PVC	15 A	230 V	
C4	8 - 18 WATTS LED BULB DOWNLIGHT	0.80	1,560.00	1,950.00	8.48	8.48	8.48	2.0 sq. mm. TW	20 mm PVC	15 A	230 V	
	4 - 18 WATTS LED FLUORESCENT WITH SINGLE TYPE INDUSTRIAL LUMINAIRE											
C5	4 - DUPLEX UNIVERSAL OUTLET	0.80	1,440.00	1,800.00	7.83	7.83	7.83	3.5 sq. mm. TW	20 mm PVC	20 A	230 V	
C6	8 - DUPLEX UNIVERSAL OUTLET	0.80	2,880.00	3,600.00	15.65	15.65	15.65	3.5 sq. mm. TW	20 mm PVC	20 A	230 V	
C7	5 - DUPLEX UNIVERSAL OUTLET	0.80	1,800.00	2,250.00	9.78	9.78	9.78	3.5 sq. mm. TW	20 mm PVC	20 A	230 V	
C8	8 - DUPLEX UNIVERSAL OUTLET	0.80	2,880.00	3,600.00	15.65	15.65	15.65	3.5 sq. mm. TW	20 mm PVC	20 A	230 V	
AVERAGE/TOTAL (3-PHASE)		0.80	14,180.00	17,725.00	77.07	53.59	51.63	48.91				

THIRD FLOOR: 230 VOLTS

COMPUTATION:

DETERMINE THE SERVICE FEEDER CONDUCTOR:

APPLYING DEMAND FACTOR:

TOTAL GENERAL LIGHTING AND OUTLET LOAD: 17,725.00 VA

FIRST 10000 VA: = 10,000.00 VA

REMAINING @ 40%: = 3,090.00 VA

13,090.00 VA

EQUIVALENT LINE CURRENT = 32.90 AMPS

USE: 3-14.0 SQ MM THW STRANDED WIRE

1-3.5 SQ MM THW STRANDED GREEN GROUND WIRE

32MM PVC CONDUIT

DETERMINE THE SERVICE EQUIPMENT FOR LIGHT AND POWER PANELBOARD:

APPLYING DEMAND FACTOR:

TOTAL GENERAL LIGHTING AND OUTLET LOAD: 17,725.00 VA

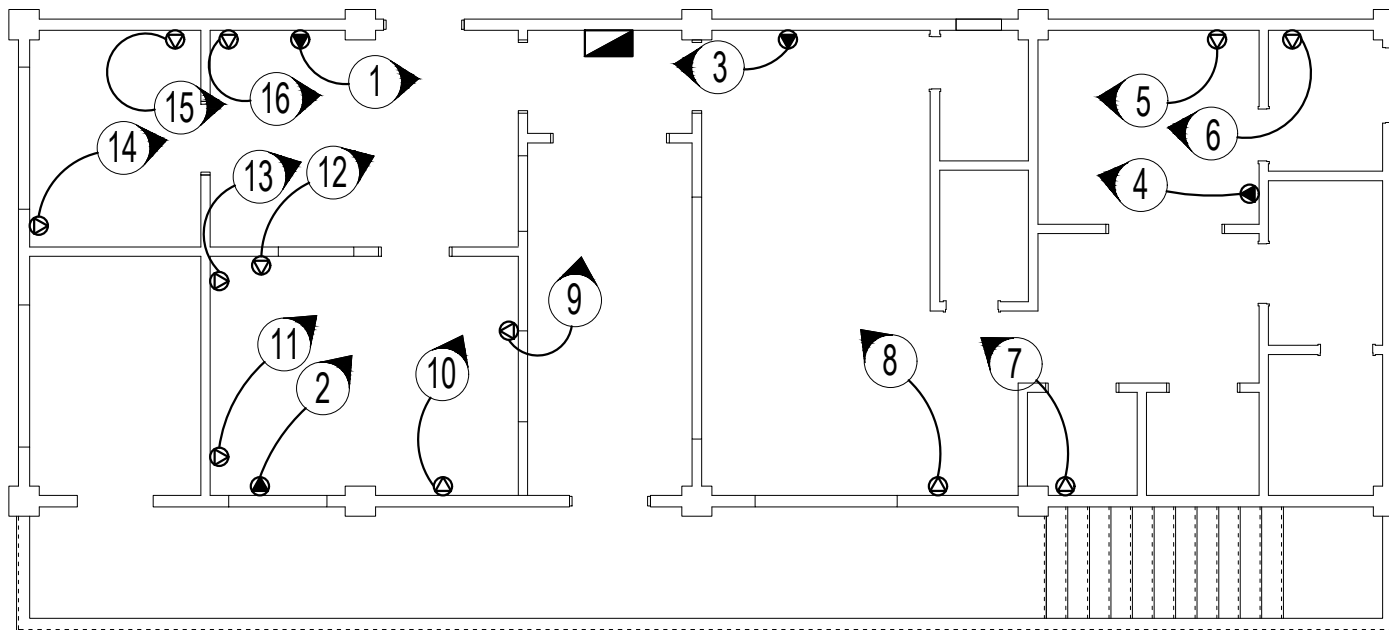
EQUIVALENT LINE CURRENT = 44.55 AMPS

USE: 60 AMPS, 240 VOLTS, 3POLE, MAIN CIRCUIT BREAKER

LEGEND:

	DUPLEX OUTLET		SINGLE T8 LED FL.
	PANELBOARD		DUPLEX T8 LED FL.
	CIRCUIT NUMBER		LED DOWNLIGHT
	CIRCUIT CONNECTION		
	SWITCH CONNECTION		
S ₁	1 GANG SWITCH		
S ₂	2 GANG SWITCH		
S ₃	3 GANG SWITCH		

	<table border="1"> <thead> <tr> <th colspan="4">REVISIONS</th> </tr> <tr> <th>REV.</th> <th>DATE</th> <th>BY</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS				REV.	DATE	BY	DESCRIPTION									PROJECT: PROPOSED LABORATORY RENOVATION, ZCWD WATER TREATMENT PLANT, ZAMBOANGA CITY	DRAWN BY: ARTHUR A. REYES PRINCIPAL DRAFTSMAN B - DESIGN DIVISION	PREPARED BY: ARIANN D. GODINEZ SENIOR ENGINEER A - DESIGN DIVISION	CHECKED & REVIEWED BY: REX D. SALE, JR. SENIOR ENGINEER A - DESIGN DIVISION	REVIEWED AND SUBMITTED BY: EDITO M. BAUTISTA, JR. OIC - DESIGN DIVISION	RECOMMENDING PROJECT IMPLEMENTATION: MARLI ACOSTA - DE FIESTA DM A - ENGINEERING & CONSTRUCTION DEPARTMENT OIC - TECHNICAL SERVICES GROUP	APPROVED FOR PROJECT IMPLEMENTATION: LEONARDO REY D. VASQUEZ GENERAL MANAGER	SHEET NO. 50
	REVISIONS																								
REV.	DATE	BY	DESCRIPTION																						
SHEET CONTENT: AS INDICATED																									



THIRD FLOOR SPECIAL OUTLET LAYOUT PLAN

SCALE: 1:100M.

SCHEDULE OF LOAD FOR LIGHTING AND POWER LOAD

THIRD FLOOR: 230 VOLTS

CKT. NO.	LOAD DESCRIPTION	PF	W	VA	AMPS	LINE AMPS			CONDUCTOR SIZE	CONDUIT SIZE	BREAKER SIZE	VOLTAGE
						A	B	C				
C1	1 - 3 HP AIR CONDITIONING UNIT	0.88	2,238.00	2,557.71	11.12	11.12			5.5 sq. mm. THW	20 mm PVC	30 A	230 V
C2	1 - 3 HP AIR CONDITIONING UNIT	0.88	2,238.00	2,557.71	11.12	11.12			5.5 sq. mm. THW	20 mm PVC	30 A	230 V
C3	1 - 3 HP AIR CONDITIONING UNIT	0.88	2,238.00	2,557.71	11.12	11.12	11.12		5.5 sq. mm. THW	20 mm PVC	30 A	230 V
C4	1 - 3 HP AIR CONDITIONING UNIT	0.88	2,238.00	2,557.71	11.12		11.12	11.12	5.5 sq. mm. THW	20 mm PVC	30 A	230 V
C5	1 - SPECIAL OUTLET	0.80	1,500.00	1,875.00	8.15	8.15	8.15		3.5 sq. mm. TW	20 mm PVC	30 A	230 V
C6	1 - SPECIAL OUTLET	0.80	1,500.00	1,875.00	8.15	8.15	8.15		3.5 sq. mm. TW	20 mm PVC	30 A	230 V
C7	1 - SPECIAL OUTLET	0.80	1,500.00	1,875.00	8.15		8.15	8.15	3.5 sq. mm. TW	20 mm PVC	30 A	230 V
C8	1 - SPECIAL OUTLET	0.80	1,500.00	1,875.00	8.15		8.15	8.15	3.5 sq. mm. TW	20 mm PVC	30 A	230 V
C9	1 - SPECIAL OUTLET	0.80	1,500.00	1,875.00	8.15	8.15		8.15	3.5 sq. mm. TW	20 mm PVC	30 A	230 V
C10	1 - SPECIAL OUTLET	0.80	1,500.00	1,875.00	8.15	8.15		8.15	3.5 sq. mm. TW	20 mm PVC	30 A	230 V
C11	1 - SPECIAL OUTLET	0.80	1,500.00	1,875.00	8.15	8.15	8.15		3.5 sq. mm. TW	20 mm PVC	30 A	230 V
C12	1 - SPECIAL OUTLET	0.80	1,500.00	1,875.00	8.15	8.15	8.15		3.5 sq. mm. TW	20 mm PVC	30 A	230 V
C13	1 - SPECIAL OUTLET	0.80	1,500.00	1,875.00	8.15		8.15	8.15	3.5 sq. mm. TW	20 mm PVC	30 A	230 V
C14	1 - SPECIAL OUTLET	0.80	1,500.00	1,875.00	8.15		8.15	8.15	3.5 sq. mm. TW	20 mm PVC	30 A	230 V
C15	1 - SPECIAL OUTLET	1.00	12,000.00	12,000.00	52.17	52.17		52.17	3.5 sq. mm. TW	20 mm PVC	60 A	230 V
C16	1 - SPECIAL OUTLET	1.00	12,000.00	12,000.00	52.17	52.17		52.17	3.5 sq. mm. TW	20 mm PVC	60 A	230 V
AVERAGE/TOTAL (3-PHASE)		0.91	47,952.00	52,980.86	230.35	175.50	109.70	175.50				

COMPUTATION:

DETERMINE THE SERVICE FEEDER CONDUCTOR:

HIGHEST LINE CURRENT = 175.50 AMPS

TOTAL LOAD + 25% OF LARGEST MOTOR = 178.28 AMPS

USE: 3-80.0 SQ MM THW STRANDED WIRE
1-3.5 SQ MM THW STRANDED GREEN GROUND WIRE
63MM PVC CONDUIT

DETERMINE THE SERVICE EQUIPMENT FOR LIGHT AND POWER PANELBOARD:

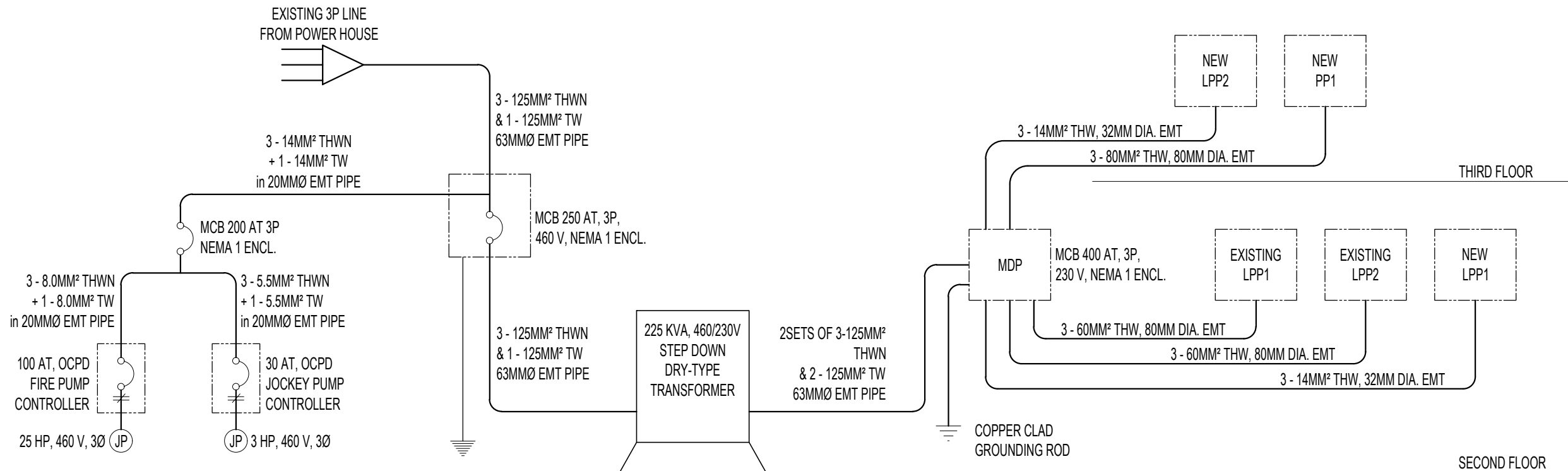
TOTAL LOAD + 250% OF LARGEST MOTOR = 203.30 AMPS

USE: 200 AMPS, 240 VOLTS, 3POLE, MAIN CIRCUIT BREAKER

LEGEND:

	PANELBOARD
	CIRCUIT NUMBER
	CIRCUIT CONNECTION
	SPECIAL/DEDICATED OUTLET
	ACU OUTLET
	MAIN DISTRIBUTION PANEL
	EXISTING LIGHT&POWER PANEBOARD
	NEW LIGHT&POWER PANEBOARD
	NEW POWER PANEBOARD

	REVISIONS REV. DATE BY DESCRIPTION			PROJECT: PROPOSED LABORATORY RENOVATION, ZCWD WATER TREATMENT PLANT, ZAMBOANGA CITY	DRAWN BY: ARTHUR A. REYES PRINCIPAL DRAFTSMAN B - DESIGN DIVISION	PREPARED BY: ARIANN D. GODINEZ SENIOR ENGINEER A - DESIGN DIVISION	CHECKED & REVIEWED BY: REX D. SALE, JR. SUPERVISING ENGINEER A - DESIGN DIVISION	REVIEWED AND SUBMITTED BY: EDITO M. BAUTISTA, JR. OIC - DESIGN DIVISION	RECOMMENDING PROJECT IMPLEMENTATION: MARLI ACOSTA - DE FIESTA DM A - ENGINEERING & CONSTRUCTION DEPARTMENT OIC - TECHNICAL SERVICES GROUP	APPROVED FOR PROJECT IMPLEMENTATION: LEONARDO REY D. VASQUEZ GENERAL MANAGER	SHEET NO. 51
	SHEET CONTENT: AS INDICATED										



POWER SINGLE LINE DIAGRAM

SCALE: NTS

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	SHEET CONTENT: AS INDICATED											