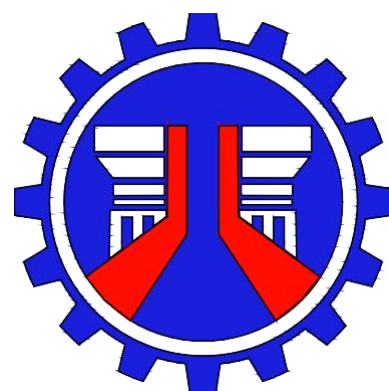




REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
NATIONAL CAPITAL REGION
METRO MANILA FIRST DISTRICT ENGINEERING OFFICE
WEST BANK ROAD, MANGGAHAN FLOODWAY
ROSARIO, PASIG CITY

C.Y. 2025 PROJECT
DETAILED ENGINEERING PLAN FOR
**Construction of Five (5) - Storey 29 Medium-Rise Academic School
Building Classroom School Building at Marikina Science High School**

TOTAL AREA = 6,700 SQ.M.
BRGY. STA ELENA, MARIKINA CITY

SUBMITTED:

ELINO V. CASTRO

CHIEF, PLANNING & DESIGN SECTION

DATE:

RECOMMENDED:

EDUARDO B. DEL ROSARIO

OIC - ASSISTANT DISTRICT ENGINEER

DATE:

APPROVED:

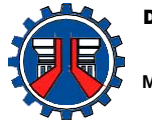
ARISTOTLE B. RAMOS

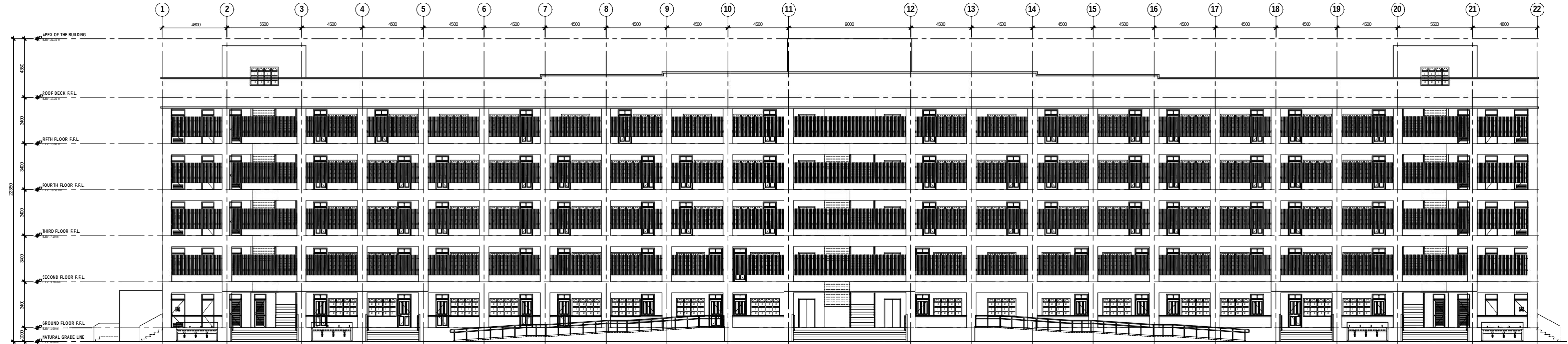
DISTRICT ENGINEER

DATE:

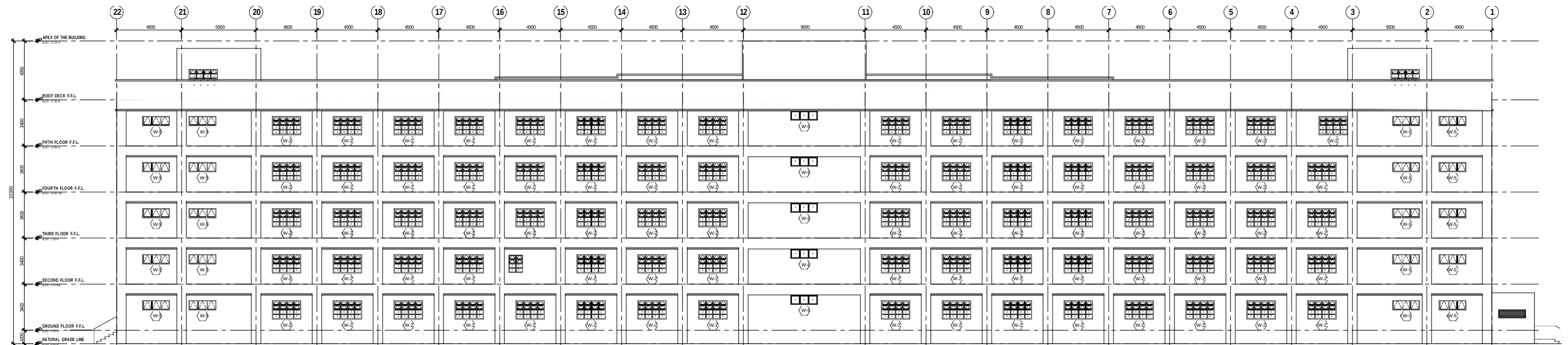


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|-----|--|-----|--|
| 1. | THE CONTRACTOR SHALL VISIT THE SITE AND BE KNOWLEDGEABLE OF CONDITIONS THEREON. HE SHALL BE RESPONSIBLE FOR ALL CONDITIONS OF THE PROJECT AND SHALL NOTIFY THE DESIGNER / OWNER OF ANY CONDITIONS REQUIRING MODIFICATION BEFORE PROCEEDING WITH THE WORK. | 12. | FIRE DAMPERS SHALL BE PROVIDED AS SHOWN AND WHEREVER DUCTS, PIPES (I.E. ELECTRICAL, ELECTRONICS, PLUMBING, ETC.) PENETRATE FIRE-RATED WALLS OR CEILINGS. FIRE DAMPERS SHALL BE BUREAU OF FIRE PROTECTION LISTED AND APPROVED. |
| 2. | THE STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, ELECTRONICS AND OTHER TRADE / DISCIPLINE DRAWINGS ARE OF EQUAL IMPORTANCE WITH THE ARCHITECTURAL DRAWINGS IN DEFINING WITH THE SCOPE OF WORK. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK WITH THE ARCHITECTURAL DRAWINGS BEFORE THE INSTALLATION OF STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, ELECTRONICS AND OTHER TRADE / DISCIPLINE WORK. SHOULD THERE BE DISCREPANCIES BETWEEN THE ARCHITECTURAL DRAWINGS AND ENGINEERING DRAWINGS THAT WOULD CAUSE CONFUSION OR IMPROPER INSTALLATION, IT SHALL BE BROUGHT TO THE DESIGNERS / OWNERS ATTENTION FOR CLARIFICATION PRIOR TO INSTALLATION OF WORK. ANY WORK INSTALLED IN CONFLICT WITH THE ARCHITECTURAL DRAWINGS SHALL BE CORRECTED BY THE CONTRACTOR AT HIS EXPENSE AND NO ADDITIONAL COST TO THE OWNER OR DESIGNER'S OFFICE. | 13. | ALL DISSIMILAR METALS SHALL BE EFFECTIVELY ISOLATED FROM EACH OTHER TO AVOID GALVANIC CORROSION. |
| 3. | SUBCONTRACTORS FOR EACH TRADE ARE ADVISED THAT INFORMATION PERTINENT TO THEIR WORK MAY OCCUR IN OTHER PORTIONS OF THE CONTRACT DOCUMENT. REFER TO CIVIL, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, ELECTRONICS AND OTHER TRADE / DISCIPLINE DRAWINGS FOR ADDITIONAL GENERAL NOTES, ABBREVIATIONS AND SYMBOLS. ALL NOTES ARE TO BE REVIEWED AND APPLIED TO RELATED BUILDINGS COMPONENTS. NOTES APPEAR ON VARIOUS SHEETS FOR DIFFERENT SYSTEMS AND MATERIALS. SHEETS ARE TO BE REVIEWED AND NOTES ON ANY SHEET ARE TO BE APPLIED ON RELATED DRAWING AND DETAILS. | 14. | PROVIDE ACCESS PANELS AS REQUIRED BY APPLICABLE CODES AND AS REQUIRED FOR ALL ENGINEERING WORKS AND THE CONTRACTOR SHALL BE DEEMED TO HAVE ALLOWED FOR THESE IN TENDER WHETHER OR NOT THEY ARE INDICATED ON DRAWINGS. ALL ACCESS PANELS SHALL BE CONCEALED AND LOCATIONS SHALL BE REVIEWED WITH THE DESIGNER / OWNER PRIOR TO PROCEEDING. |
| 4. | THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCURATE PLACEMENT OF BUILDING/S ON SITE. | 15. | WHERE DISCREPANCIES EXIST BETWEEN THE DRAWINGS OF VARIOUS TRADES, CONSULT THE DESIGNER / OWNER BEFORE PROCEEDING WITH WORK. |
| 5. | THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE JOB SITE PRIOR TO THE START OF CONSTRUCTION. IF DISCREPANCIES ARE FOUND, THE DESIGNER / OWNER SHALL BE NOTIFIED FOR CLARIFICATION BEFORE COMMENCING WORK. | 16. | THE CONTRACTOR SHALL FURNISH AND INSTALL ALL STIFFENERS, BRACINGS, BACKING PLATES AND SUPPORTING BRACKETS REQUIRED FOR THE PROPER INSTALLATION OF ALL CASEWORK, TOILET ROOM ACCESSORIES AND TOILET PARTITIONS, AS WELL AS ALL WALL MOUNTED OR SUSPENDED EQUIPMENT. THE CONTRACTOR SHALL BE DEEMED TO HAVE ALLOWED FOR THESE IN TENDER WHETHER SHOWN OR NOT IN THE DRAWINGS INCLUDING OWNER FURNISHED / SUPPLIED ITEMS. |
| 6. | DETAILS NOT SHOWN ARE SIMILAR IN CHARACTER TO THOSE SHOWN. WHERE SPECIFIC DIMENSIONS, DETAILS OR DESIGN INTENT CANNOT BE DETERMINED, CONSULT THE DESIGNER / OWNER BEFORE PROCEEDING WITH THE WORK. | 17. | WHETHER OR NOT EXPLICITLY INDICATED, ALL GLAZING SHALL BE "SAFETY GLAZED" WHEN WITHIN 450mm OF THE FLOOR OR WITHIN 900mm HORIZONTAL DISTANCE FROM ANY WALL OPENING / DOOR. A CERTIFICATE MUST ACCOMPANY ALL GLAZING PRODUCTS STATING THAT THE PRODUCTS CONFORM WITH APPLICABLE CONSUMER SAFETY STANDARDS. |
| 7. | ANY DETAILS, SYSTEMS, MATERIALS WHICH ARE PROPOSED TO BE CHANGED MUST FIRST BE REVIEWED BY THE DESIGNER / OWNER PRIOR TO THE PREPARATION OF THE SHOP DRAWINGS. | 18. | ALL EXTERIOR HANDRAILS AND EXTERIOR EXPOSED METAL SHALL BE GALVANIZED AND PAINTED UNLESS NOTED OTHERWISE, AS PER SPECIFICATIONS. |
| 8. | IN ANY CASE DRAWINGS SHALL NOT BE SCALED. DIMENSIONS SHALL BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANT'S DRAWINGS. | 19. | ALL EXTERIOR JOINTS AROUND WINDOW AND DOOR FRAMES, BETWEEN WALLS AND FOUNDATIONS, BETWEEN WALLS AND ROOF, BETWEEN WALL PANELS, AT PENETRATION OF UTILITIES THROUGH THE ENVELOPE, SHALL BE SEALED, CAULKED OR WEATHER-STRIPPED TO PREVENT AIR AND WATER LEAKAGE / INFILTRATION. |
| 9. | CONTRACTOR SHALL CARRY OUT ALL ASSOCIATED WORKS OUTSIDE SCOPE OF WORK. LIMIT SERVICES TO STUB OUT POINTS. | 20. | THE EXTERIOR WALLS AS SHOWN OR WHETHER NOT SHOWN IN THE DRAWINGS SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE A COMPLETE SYSTEM INCLUDING ALL BACK-UP FRAMING (OTHER THAN THE STRUCTURAL FRAME OF THE BUILDING). ALL STIFFENERS, CONNECTIONS, FASTENERS, FLASHING, AIR BARRIERS, SEALANTS, DRAINAGE SYSTEMS, GASKETS, JOINT FILLERS, MISCELLANEOUS PIECES, AND MATERIAL THICKNESS AS REQUIRED TO FORM A WATERTIGHT AND AIRTIGHT ENCLOSURE IN ACCORDANCE WITH THE STANDARD DESIGN PRACTICE. |
| 10. | ALL DIMENSIONS SHALL BE VERIFIED IN THE FIELD BEFORE PROCEEDING WITH THE WORK. THE DESIGNER / OWNER SHALL BE NOTIFIED OF ANY CORRECTION. | 21. | ALL DETAIL DRAWINGS AND CONNECTIONS, ANCHORS, ETC., SHALL BE COORDINATED WITH THE STRUCTURAL FRAMING AND OTHER BUILDING COMPONENTS, IN ORDER TO PROVIDE A COMPLETE ENCLOSURE OF FINISH MATERIALS. STRUCTURAL AND FIREPROOFING REQUIREMENTS SHALL COMPLY WITH APPLICABLE CODES AND REGULATIONS. |
| 11. | GENERAL CONTRACTOR TO COORDINATE ALL ELECTRICAL, ELECTRONICS, MECHANICAL, PLUMBING, AND OTHER TRADE / DISCIPLINE FLOOR, ROOF AND WALL SLEEVES AND ALL MECHANICAL SHAFTS WITH MECHANICAL, PLUMBING, FIRE PROTECTION, ELECTRICAL, ELECTRONICS, STRUCTURAL AND OTHER TRADE / DISCIPLINE TO ARCHITECTURAL DRAWINGS. | | |

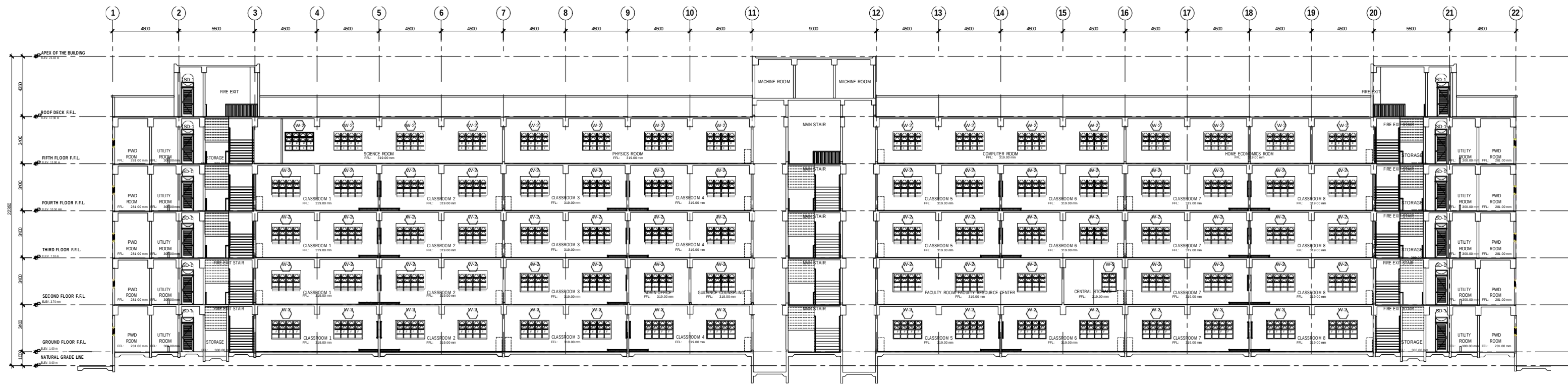
ARCHITECTURAL		STRUCTURAL		SANITARY AND PLUMBING		ELECTRICAL		ELECTRONICS		MECHANICAL		FIRE PROTECTION		BILL OF QUATITIES							
A-0 COVER SHEET	PERSPECTIVES TABLE OF CONTENTS A-2 GROUND FLOOR PLAN (Option 1) GROUND FLOOR PLAN (With Computer Room - Option 2) A-3 GROUND FLOOR PLAN (With Home Economics - Option 3) GROUND FLOOR PLAN (With Science Laboratory - Option 4) A-4 SECOND FLOOR PLAN THIRD FLOOR PLAN A-5 FOURTH FLOOR PLAN ROOF DECK FLOOR PLAN A-6 FRONT ELEVATION REAR ELEVATION A-7 RIGHT SIDE ELEVATION LEFT SIDE ELEVATION CROSS SECTION LONGITUDINAL SECTION A-8 GROUND FLOOR REFLECTED CEILING PLAN (Option 1) GROUND FLOOR REFLECTED CEILING PLAN (With Computer Room - Option 2) A-9 GROUND FLOOR REFLECTED CEILING PLAN (With Home Economics - Option 3) GROUND FLOOR REFLECTED CEILING PLAN (With Science Laboratory - Option 4) A-10 SECOND FLOOR REFLECTED CEILING PLAN THIRD FLOOR REFLECTED CEILING PLAN A-11 FOURTH FLOOR REFLECTED CEILING PLAN ROOF DECK FLOOR REFLECTED CEILING PLAN A-12 TYPICAL CEILING DETAILS	S-1 GENERAL NOTES	S-2 GENERAL NOTES S-3 GENERAL NOTES S-4 COLUMNNATION FOUNDATION PLAN S-5 GROUND FLOOR FRAMING PLAN (Option 1) GROUND FLOOR FRAMING PLAN (With Computer Room - Option 2) S-6 GROUND FLOOR FRAMING PLAN (With Home Economics - Option 3) GROUND FLOOR PLAN (With Science Laboratory - Option 4) S-7 SECOND FLOOR FRAMING PLAN THIRD FLOOR FRAMING PLAN S-8 FOURTH FLOOR FRAMING PLAN ROOF DECK FRAMING PLAN S-9 UPPER ROOF DECK FRAMING PLAN MACHINE ROOM FRAMING PLAN S-10 BEAM & GIRDER SCHEDULE S-11 BEAM & GIRDER SCHEDULE S-12 BEAM & GIRDER SCHEDULE S-13 FOOTING SCHEDULE FOOTING DETAILS S-14 TYPICAL RC BEAM DETAIL TYPICAL RC COLUMN DETAIL COLUMN EMBEDMENT TO FOOTING DETAIL TERMINATION AT JOINT DETAIL FOR GIRDERS AND COLUMNS	P-1 SEWER & DRAINAGE LINE LAYOUT OF GROUND FLOOR PLAN (OPTIONS 1 & 2)	P-2 SEWER & DRAINAGE LINE LAYOUT OF GROUND FLOOR PLAN (OPTIONS 3 & 4)	E-1 GENERAL NOTES ELECTRICAL LEGENDS/SYMBOLS SCHEDULE OF LIGHTING FIXTURES AND LAMPS SINGLE LINE DIAGRAM (OPTION 1)	EC-1 GENERAL NOTES LEGEND FOR ELECTRONICS SYMBOLS ELECTRONICS DRAWING LIST ELECTRONICS ABBREVIATIONS EC-2 FIRE DETECTION AND ALARM SYSTEM RISER DIAGRAM & DESIGN ANALYSIS (OPTION 1 & 2) EC-3 FIRE DETECTION AND ALARM SYSTEM RISER DIAGRAM & DESIGN ANALYSIS (OPTION 3 & 4) EC-4 PUBLIC ADDRESS SYSTEM RISER DIAGRAM AND DESIGN ANALYSIS (OPTIONS 1, 2, 3 AND 4) EC-5 CLOSED CIRCUIT TELEVISION SYSTEM RISER DIAGRAM AND DESIGN ANALYSIS (OPTIONS 1, 2, 3 AND 4) EC-6 STRUCTURED CABLING SYSTEM RISER DIAGRAM AND DESIGN ANALYSIS (OPTIONS 1 AND 2) EC-7 STRUCTURED CABLING SYSTEM RISER DIAGRAM AND DESIGN ANALYSIS (OPTIONS 3 AND 4) EC-8 OPTIONS 1 AND 2 EC-9 FIRE DETECTION AND ALARM SYSTEM (GROUND FLOOR) PUBLIC ADDRESS SYSTEM (GROUND FLOOR) EC-10 FIRE DETECTION AND ALARM SYSTEM (SECOND FLOOR & THIRD FLOOR) EC-11 PUBLIC ADDRESS SYSTEM (SECOND FLOOR & THIRD FLOOR)	M-1 GENERAL NOTES LEGEND & ABBREVIATIONS SCHEDULE OF EQUIPMENTS MISCELLANEOUS DRAWING DETAILS M-2 GROUND FLOOR VENTILATION LAYOUT (OPTION 1) SECOND FLOOR VENTILATION LAYOUT (OPTION 1) M-3 THIRD FLOOR VENTILATION LAYOUT FOURTH FLOOR VENTILATION LAYOUT M-4 GENERAL NOTES LEGEND & ABBREVIATIONS SCHEDULE OF EQUIPMENTS MISCELLANEOUS DRAWING DETAILS M-5 GROUND FLOOR VENTILATION LAYOUT (OPTION 2) SECOND FLOOR VENTILATION LAYOUT (OPTION 2) M-6 GENERAL NOTES LEGEND & ABBREVIATIONS SCHEDULE OF EQUIPMENTS MISCELLANEOUS DRAWING DETAILS M-7 GROUND FLOOR VENTILATION LAYOUT (OPTION 3) SECOND FLOOR VENTILATION LAYOUT (OPTION 3) M-8 GENERAL NOTES LEGEND & ABBREVIATIONS SCHEDULE OF EQUIPMENTS MISCELLANEOUS DRAWING DETAILS M-9 GROUND FLOOR VENTILATION LAYOUT (OPTION 4) SECOND FLOOR VENTILATION LAYOUT (OPTION 4)	FP-1 GENERAL NOTES LEGENDS & ABBREVIATIONS SCHEDULE OF EQUIPMENT FIRE PROTECTION RISER DIAGRAM BOOSTER PUMP CONNECTION DETAIL SEQUENCE OF OPERATION FP-2 GROUND FLOOR FIRE PROTECTION PLAN (OPTION 1) SECOND FLOOR FIRE PROTECTION PLAN FP-3 GROUND FLOOR FIRE PROTECTION PLAN (OPTION 2) SECOND FLOOR FIRE PROTECTION PLAN FP-4 GROUND FLOOR FIRE PROTECTION PLAN (OPTION 3) SECOND FLOOR FIRE PROTECTION PLAN FP-5 GROUND FLOOR FIRE PROTECTION PLAN (OPTION 4) SECOND FLOOR FIRE PROTECTION PLAN FP-6 THIRD FLOOR FIRE PROTECTION PLAN FOURTH FLOOR FIRE PROTECTION PLAN FP-7 ROOF DECK PLAN MISCELLANEOUS DRAWING DETAILS WPS-1 GENERAL NOTES LEGENDS & ABBREVIATIONS ISOMETRIC DIAGRAM OF WATER PUMPING SYSTEM PARTIAL GROUND FLOOR PLAN ROOF DECK PLAN MEL-1 ELEVATOR NOTES BRIEF SPECIFICATIONS ELEVATOR HOISTWAY SECTION PARTIAL GROUND FLOOR PLAN PARTIAL ROOF DECK PLAN	BOQ - 1 ARCHITECTURAL BOQ - 2 STRUCTURAL BOQ - 3 ELECTRONICS ELECTRICAL MECHANICAL FIRE PROTECTION BOQ - 4 PLUMBING											
 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGGAHAN FLOODWAY ROSARIO, PASIG CITY		PROJECT TITLE		SHEET CONTENTS		DRAWN BY: VALENTIN B. DELA CRUZ JR. ENGINEER II PREPARED BY: CRISTINA L. JOSE ARCHITECT II		CHECKED BY MARY JESSICA P. HONRADE ENGINEER II DATE:		SUBMITTED BY ELINO V. CASTRO CHIEF, PLANNING AND DESIGN SECTION DATE:		RECOMMENDING APPROVAL EDUARDO B. DEL ROSARIO OIC - ASSISTANT DISTRICT ENGINEER DATE:		APPROVED BY ARISTOTLE B. RAMOS DISTRICT ENGINEER DATE:		SET A01	SHEET 01 07				
		Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School		AS INDICATED																	



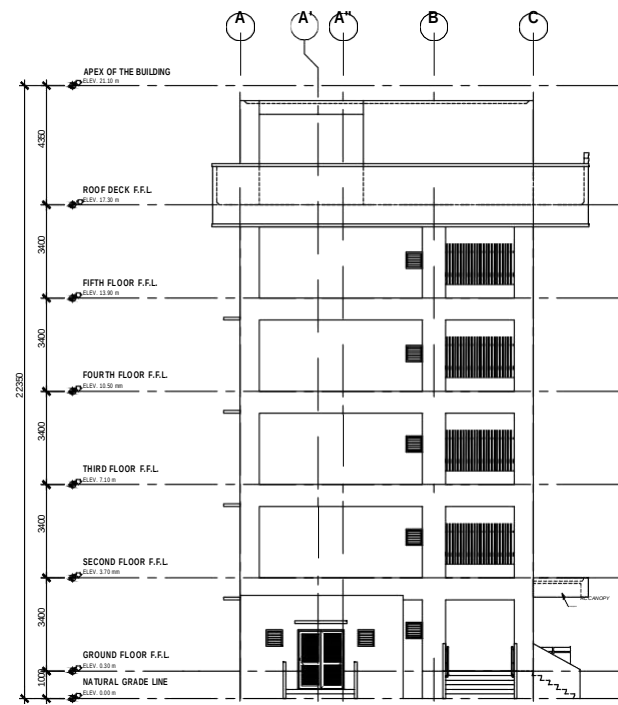
1 FRONT ELEVATION
A - 2 SCALE 1:200



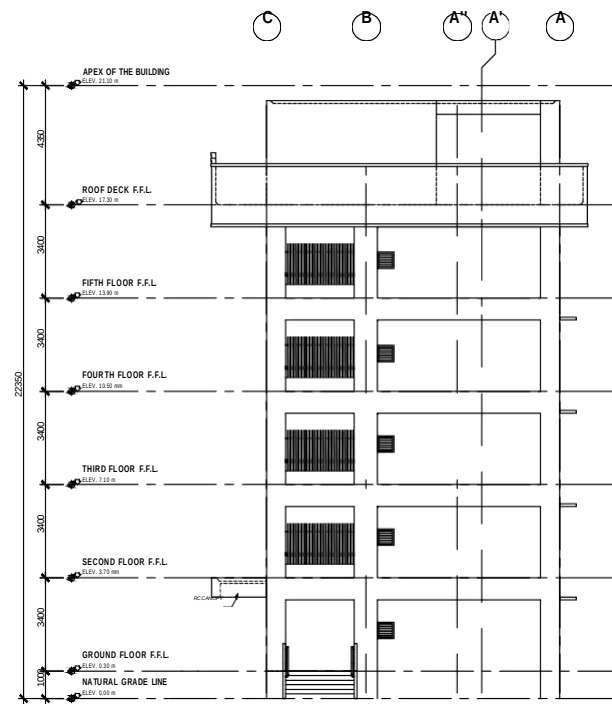
1 REAR SIDE ELEVATION
A - 2 SCALE 1:200



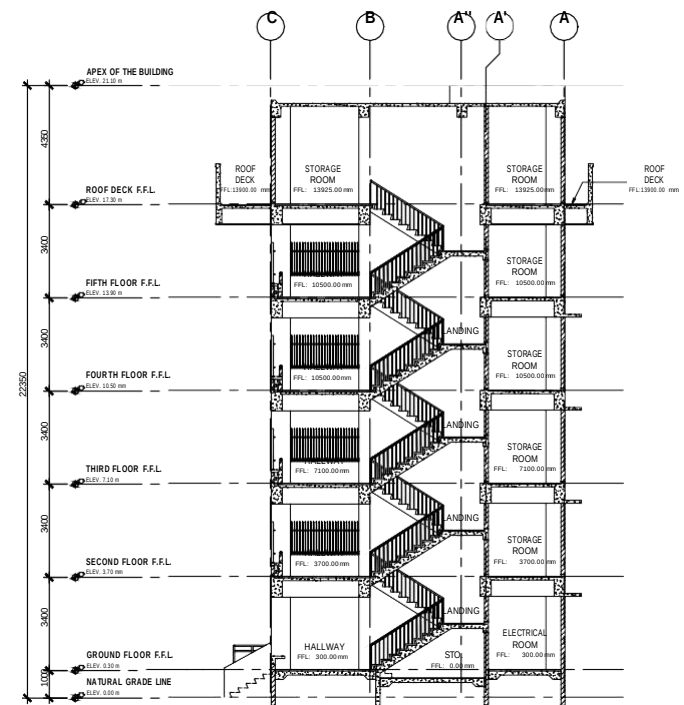
1 CROSS SECTION
A - 2 SCALE 1:200



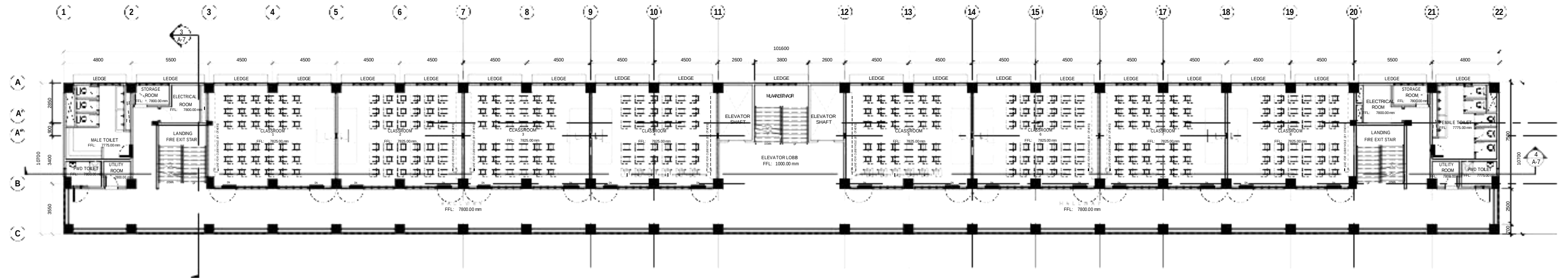
1 LEFT SIDE ELEVATION
A - 2 SCALE 1:200



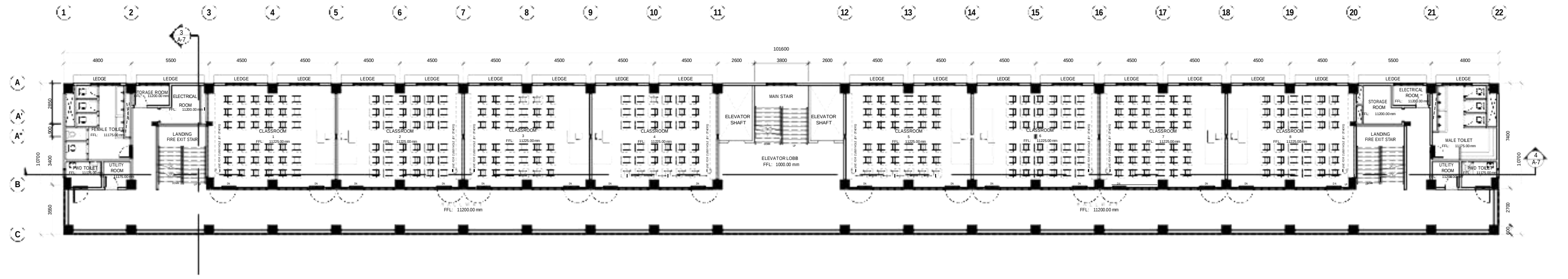
1 RIGHT SIDE ELEVATION
A - 2 SCALE 1:200



1 LONGITUDINAL ELEVATION
A - 2 SCALE 1:200

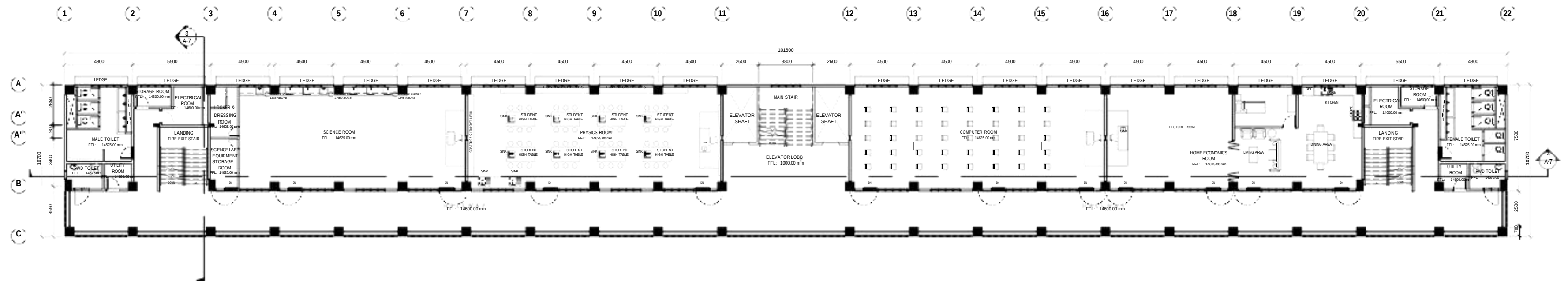


1 THIRD FLOOR PLAN
A - 3 SCALE 1:160

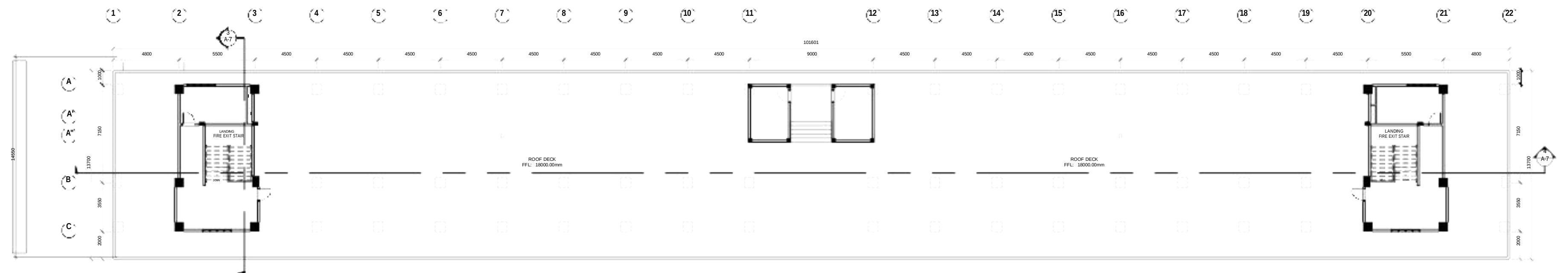


2 FOURTH FLOOR PLAN
A - 3 SCALE 1:160

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGAGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	SHEET CONTENTS BUILDING 3 - SECOND FLOOR PLAN	DRAWN BY: VALENTIN B. DELA CRUZ JR. ENGINEER II PREPARED BY: CRISTINA L. JOSE ARCHITECT II	CHECKED BY	SUBMITTED BY	RECOMMENDING APPROVAL	APPROVED BY	SET	SHEET
				MARY JESSICA P. HONRADE ENGINEER II	ELINO V. CASTRO CHIEF, PLANNING AND DESIGN SECTION	EDUARDO B. DEL ROSARIO OIC - ASSISTANT DISTRICT ENGINEER	ARISTOTLE B. RAMOS DISTRICT ENGINEER	A05	05 07
				DATE:	DATE:	DATE:	DATE:		



1 FIFTH FLOOR PLAN
A - 4 SCALE 1:160

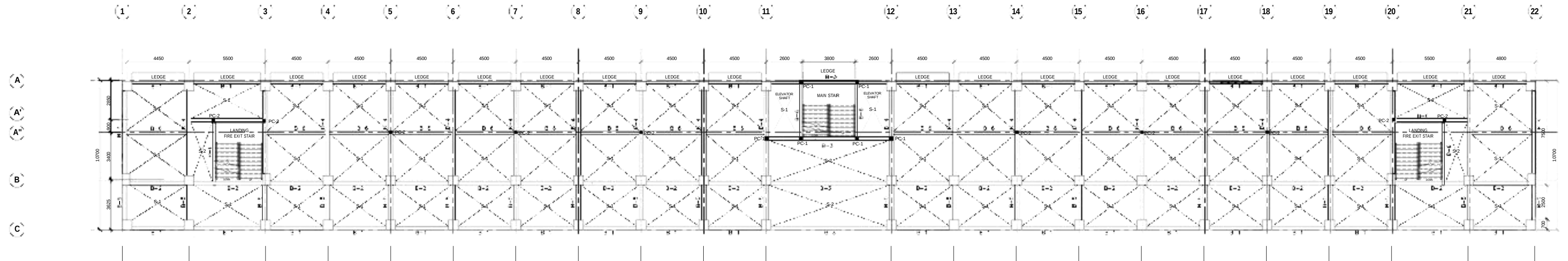


2 ROOF DECK PLAN
A - 4 SCALE 1:160

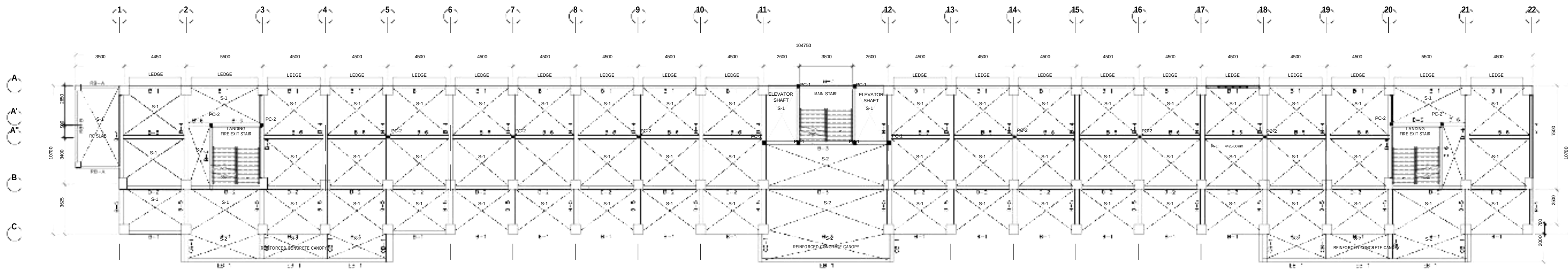


 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE	SHEET CONTENTS	DRAWN BY:	CHECKED BY	SUBMITTED BY	RECOMMENDING APPROVAL	APPROVED BY	SET	SHEET
	Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	BUILDING 3 - SECOND FLOOR PLAN	VALENTIN B. DELA CRUZ JR. ENGINEER II						
			PREPARED BY: CRISTINA L. JOSE ARCHITECT II	MARY JESSICA P. HONRADE ENGINEER II	ELINO V. CASTRO	EDUARDO B. DEL ROSARIO	ARISTOTLE B. RAMOS	A07	07 / 07
			DATE:	DATE:	CHIEF, PLANNING AND DESIGN SECTION	OIC - ASSISTANT DISTRICT ENGINEER	DATE:		

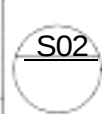
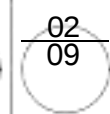


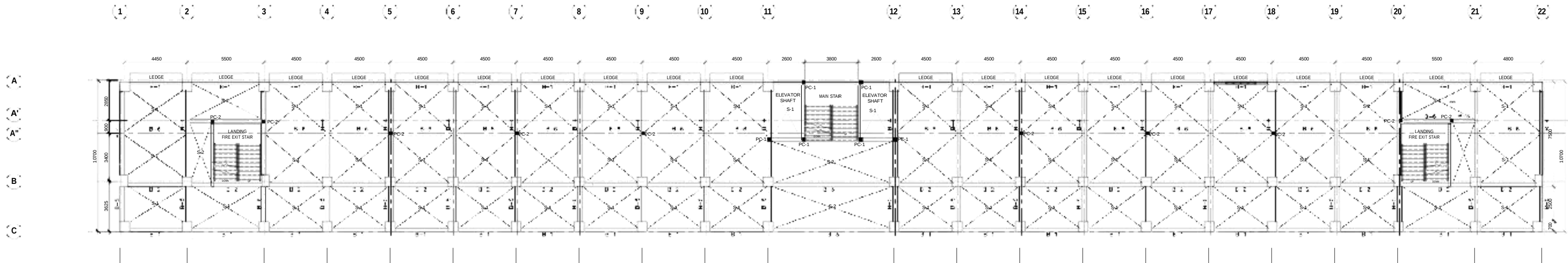


3RD FLOOR FRAMING PLAN
SC6JE 1:100 M.

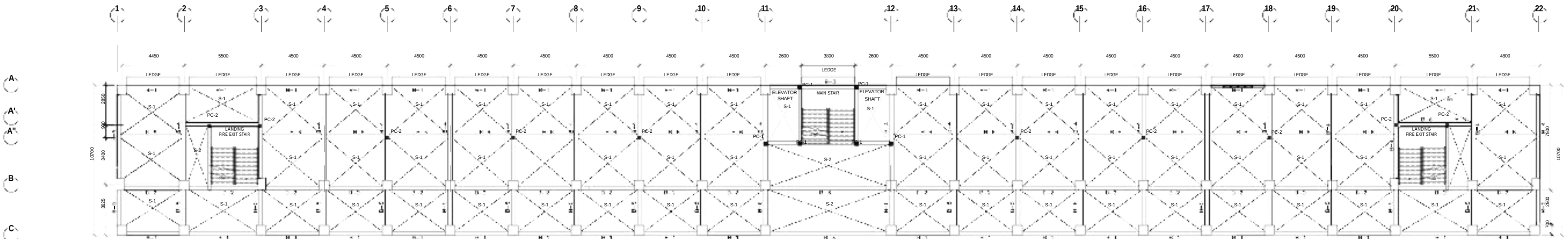


2ND FLOOR FRAMING PLAN
SC6JE 1:100 M.

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE	SHEET CONTENTS	DRAWN BY:	CHECKED BY	SUBMITTED BY	RECOMMENDING APPROVAL	APPROVED BY	SET	SHEET
	Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	AS INDICATED	VALENTIN B. DELA CRUZ JR. ENGINEER II	MARY JESSICA P. HONRADE ENGINEER II	ELINO V. CASTRO CHIEF, PLANNING AND DESIGN SECTION OIC	EDUARDO B. DEL ROSARIO OIC - ASSISTANT DISTRICT ENGINEER	ARISTOTLE B. RAMOS DISTRICT ENGINEER		
			PREPARED BY: KRIZZEL D. MEMBREBE ENGINEER II						

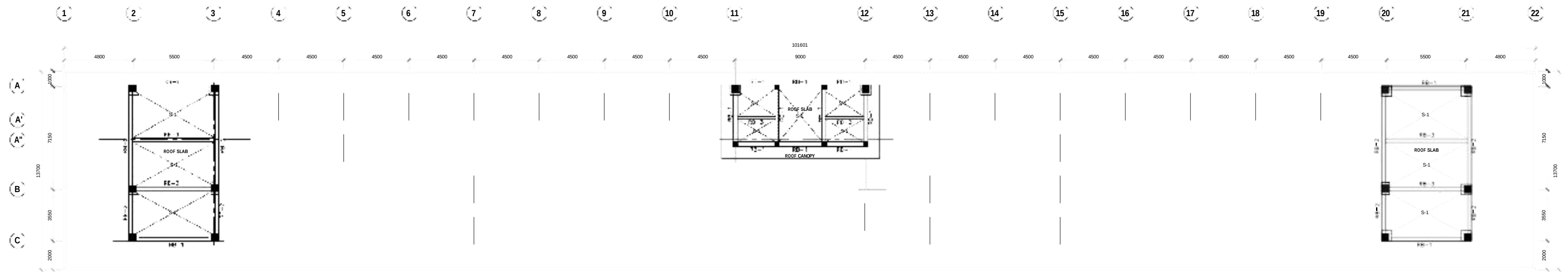


5TH FLOOR FRAMING PLAN
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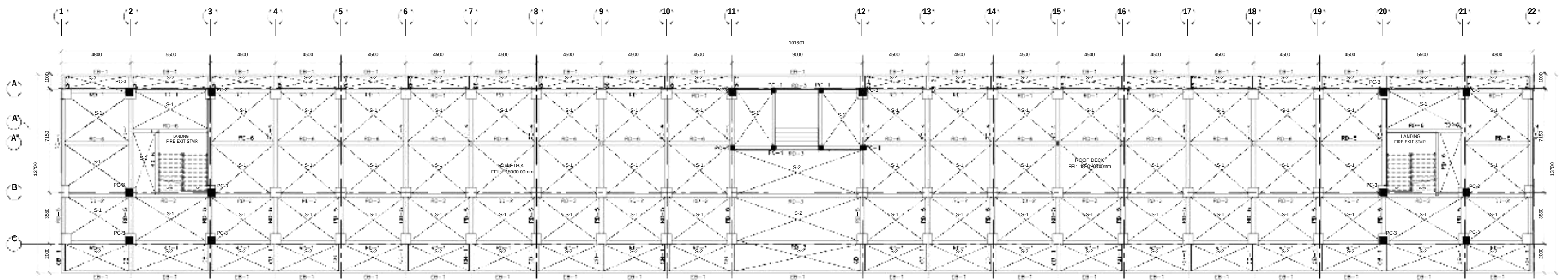


4TH FLOOR FRAMING PLAN
SC6JE 1:100 M.

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	SHEET CONTENTS AS INDICATED	DRAWN BY: VALENTIN B. DELA CRUZ JR. ENGINEER II PREPARED BY: KRIZZEL D. MEMBREBE ENGINEER II		CHECKED BY MARY JESSICA P. HONRADE ENGINEER II DATE:	SUBMITTED BY ELINO V. CASTRO CHIEF, PLANNING AND DESIGN SECTION DATE:	RECOMMENDING APPROVAL EDUARDO B. DEL ROSARIO OIC - ASSISTANT DISTRICT ENGINEER DATE:	APPROVED BY ARISTOTLE B. RAMOS DISTRICT ENGINEER DATE:	SET S03	SHEET 03 09



UPPER ROOFDECK FRAMING PLAN
SC6JE 1:100 M.



ROOFDECK FRAMING PLAN
SC6JE 1:100 M.

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	SHEET CONTENTS AS INDICATED	DRAWN BY: VALENTIN B. DELA CRUZ JR. ENGINEER II PREPARED BY: KRIZZEL D. MEMBREBE ENGINEER II		CHECKED BY MARY JESSICA P. HONRADE ENGINEER II DATE:	SUBMITTED BY ELINO V. CASTRO CHIEF, PLANNING AND DESIGN SECTION DATE:	RECOMMENDING APPROVAL EDUARDO B. DEL ROSARIO DIC - ASSISTANT DISTRICT ENGINEER DATE:	APPROVED BY ARISTOTLE B. RAMOS DISTRICT ENGINEER DATE:	SET S04	SHEET 04 09



DETAIL OF P2

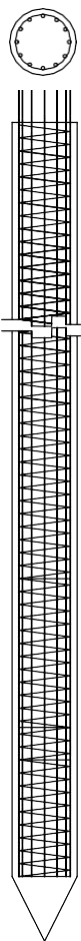


DETAIL OF P1

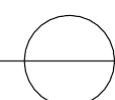
FOOTING SCHEDULE									
MARK	Ø	LENGTH (X)	WIDTH (Y)	THICKNESS	TOP BARS		BOTTOM BARS		REMARKS
		mm	mm	mm	ALONG X	ALONG Y	ALONG X	ALONG Y	
F-1	25	3000	3000	850	15	15	15	15	ISOLATED
F-2	25	6000	3000	850	30	15	30	15	COMBINED
F-3	20	1500	1500	400	8	8	8	8	ISOLATED

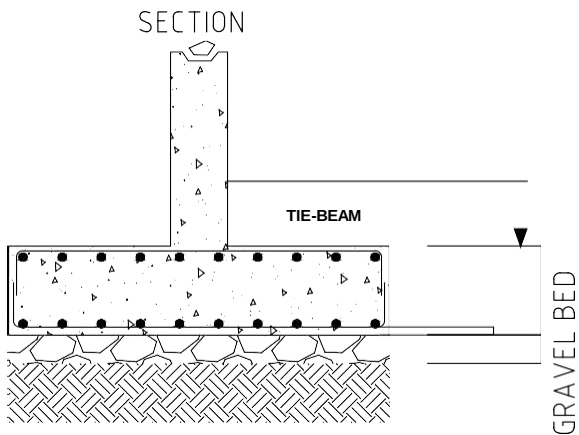
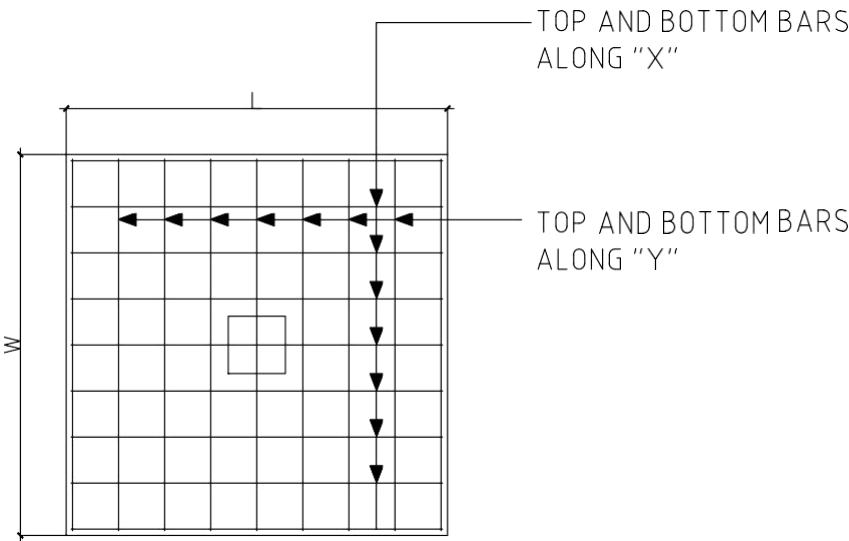
IMPORTANT REMINDER:

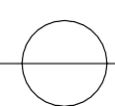
- A. PROVIDE TEMPORARY CASING ON BORED PILES PRIOR TO DROPPING OF REBARS & CONCRETE POURING
- B. AFTER CONCRETE POURING, TEMPORARY CASING MAYBE REMOVED AFTER THE CONCRETE REACH THE APPROPRIATE CONCRETE SETTING.



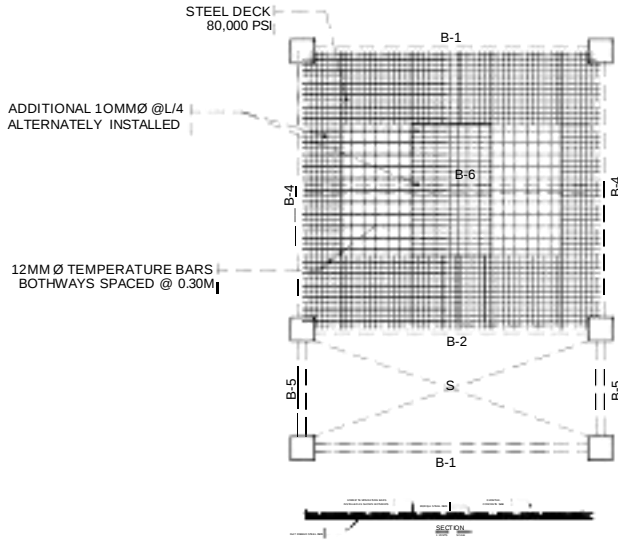
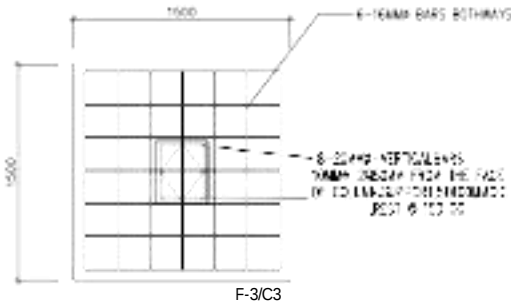
TYPICAL DETAIL OF PILES

SCALE:  SCHEDULE OF FOOTING 1:NTS



 TYPICAL ISOLATED FOOTING DETAILS

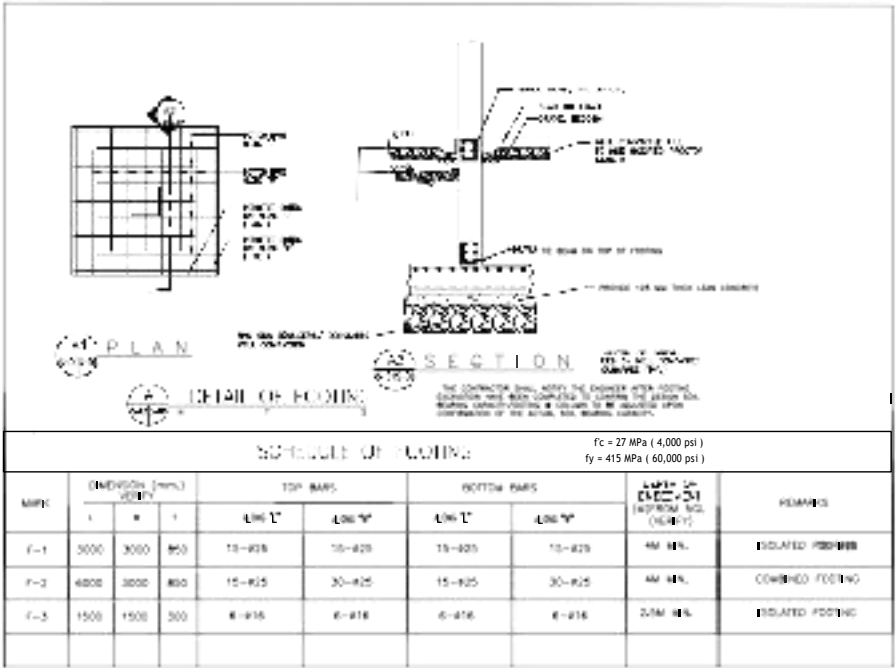
 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE	SHEET CONTENTS	DRAWN BY:	CHECKED BY	SUBMITTED BY	RECOMMENDING APPROVAL	APPROVED BY	SET	SHEET					
	Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	AS INDICATED	VALENTIN B. DELA CRUZ JR. ENGINEER II	MARY JESSICA P. HONRADE ENGINEER II	ELINO V. CASTRO	EDUARDO B. DEL ROSARIO	ARISTOTLE B. RAMOS							
			PREPARED BY:											
			KRIZZEL D. MEMBREBE ENGINEER II							DATE:	CHIEF, PLANNING AND DESIGN SECTION DATE:	OIC - ASSISTANT DISTRICT ENGINEER DATE:	DISTRICT ENGINEER DATE:	



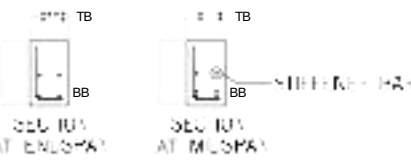
TYPICAL DETAIL OF CONCRETE SLAB

MARK	THICKNESS (mm)	REINFORCEMENT				REMARKS
		PARALLEL TO SHORT SPAN		PARALLEL TO LONG SPAN		
		TOP BARS @ SUPPORT	BOTTOM BARS @ MIDSPAN	TOP BARS @ SUPPORT	BOTTOM BARS @ MIDSPAN	
S-1	125	12mmØ @150mm O.C.	12mmØ @150mm O.C.	12mmØ @150mm O.C.	12mmØ @150mm O.C.	TWO-WAY
S-2	125	12mmØ @150mm O.C.	12mmØ @150mm O.C.	12mmØ @150mm O.C.	12mmØ @150mm O.C.	ONE-WAY
NOTE : 1. 12MM & SMALLER BARS, fy = 275 MPa (48,000 PSI)						

NOTE:
1. 12MMØ AND SMALLER BARS, $F_y = 275 \text{ MPa}$ (40,000 PSI)



NOTES:
1. NO FOOTING SHOULD REST ON BACKFILLED MATERIALS.
2. IN CASE THE SOIL CONDITION AT THE FOUNDATION LEVEL OF THE FOOTING CANT BE ASCERTAINED, THE CONSTRUCTOR MUST CONSULT A SOIL EXPERT OR A GEOTECHNICAL ENGINEER AND EXPLORE THE SUBSURFACE CONDITION.
3. FOUNDATION LEVEL OF FOOTINGS LOCATED AT THE EXTERIOR AREA AFTER APPROVAL BY THE STRUCTURAL ENGINEER, MAY BE ADJUSTED TO ACCOMMODATE THE DEPTH REQUIREMENTS OF THE COLUMN.

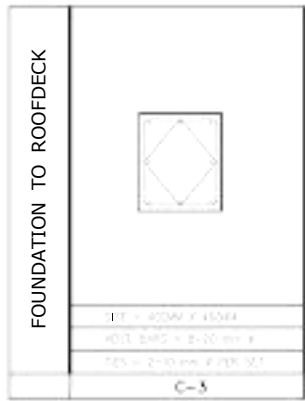


COLUMN SCHEDULE

MARK	THICKNESS (mm)	REINFORCEMENT				REMARKS
		TOP BARS @ SUPPORT	BOTTOM BARS @ MIDSPAN	TOP BARS @ SUPPORT	BOTTOM BARS @ MIDSPAN	
C-1	125	12mmØ @150mm O.C.	12mmØ @150mm O.C.	12mmØ @150mm O.C.	12mmØ @150mm O.C.	TWO-WAY
C-2	125	12mmØ @150mm O.C.	12mmØ @150mm O.C.	12mmØ @150mm O.C.	12mmØ @150mm O.C.	TWO-WAY
C-3	125	12mmØ @150mm O.C.	12mmØ @150mm O.C.	12mmØ @150mm O.C.	12mmØ @150mm O.C.	TWO-WAY
PC-1	125	12mmØ @150mm O.C.	12mmØ @150mm O.C.	12mmØ @150mm O.C.	12mmØ @150mm O.C.	TWO-WAY

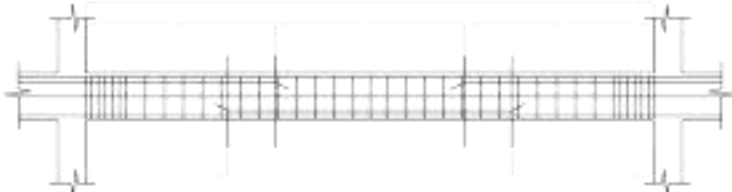
NOTES:
1. NO FOOTING SHOULD REST ON BACKFILLED MATERIALS.
2. IN CASE THE SOIL CONDITION AT THE FOUNDATION LEVEL OF THE FOOTING CANT BE ASCERTAINED, THE CONSTRUCTOR MUST CONSULT A SOIL EXPERT OR A GEOTECHNICAL ENGINEER AND EXPLORE THE SUBSURFACE CONDITION.
3. FOUNDATION LEVEL OF FOOTINGS LOCATED AT THE EXTERIOR AREA AFTER APPROVAL BY THE STRUCTURAL ENGINEER, MAY BE ADJUSTED TO ACCOMMODATE THE DEPTH REQUIREMENTS OF THE COLUMN.

TYPICAL COLUMN FOOTING DETAIL



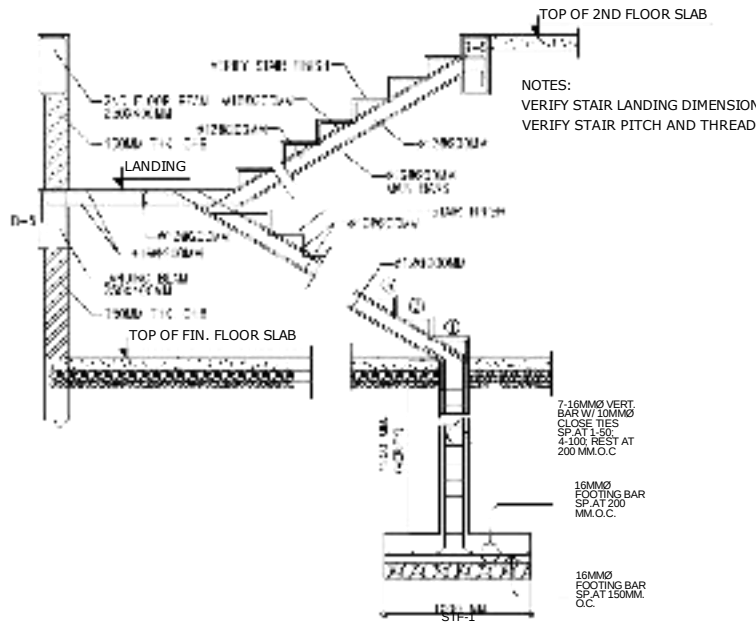
NOTES:
1. 12MMØ AND SMALLER BARS, $F_y = 275 \text{ MPa}$ (40,000 PSI)
2. 16MMØ AND LARGER BARS, $F_y = 415 \text{ MPa}$ (60,000 PSI)

NOTES:
USE 10MMØ STIRRUPS PAGED AT 2 - 50MM, 6 - 100MM REST AT 150MM O.C FROM BOTH FACE OF SUPPORT



MARK	LENGTH (m)	REINFORCEMENTS						DIMENSION B X D (mm)	STIFFENER BARS	STIRRUP SCHEDULE	REMARKS
		LEFT SUPPORT		MID-SPAN		RIGHT SUPPORT					
		TOP (mm)	BOTTOM (mm)	TOP (mm)	BOTTOM (mm)	TOP (mm)	BOTTOM (mm)				
FOOTING TIE BEAMS/GRADE BEAM											
FTB-1/GB-1	VARIES	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	300 X 400		2 - 12mmØ	B
FTB-2/GB-2	VARIES	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	300 X 500		2 - 12mmØ	B
FTB-1A/GB-1A	VARIES	5 - 25mmØ	5 - 25mmØ	5 - 25mmØ	5 - 25mmØ	5 - 25mmØ	5 - 25mmØ	400 X 700		2 - 12mmØ	B
GB-3	VARIES	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	250 X 400			
GB-4	VARIES	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	250 X 500			
SECOND FLOOR / 3RD TO ROOFDECK FLOOR LEVEL BEAMS & ROOF BEAMS											
B - 1	VARIES	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	300 X 400		2 - 12mmØ	B
B - 2	VARIES	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	300 X 400		2 - 12mmØ	B
B - 3	VARIES	6-25mmØ	4-25mmØ	4-25mmØ	6-25mmØ	6-25mmØ	4-25mmØ	400 X 700		2 - 12mmØ	B
B - 4	VARIES	5-25mmØ	3-25mmØ	3-25mmØ	5-25mmØ	5-25mmØ	3-25mmØ	300 X 500		2 - 12mmØ	B
B - 5	VARIES	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	300 X 500		2 - 12mmØ	B
B - 6	VARIES	3 - 20mmØ	3 - 20mmØ	3 - 20mmØ	3 - 20mmØ	3 - 20mmØ	3 - 20mmØ	200 X 400		2 - 12mmØ	
EB - 1	VARIES	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	175 X 500		4 - 12mmØ	
CB - 1	VARIES	6-25mmØ	4-25mmØ					300 X 500		2 - 12mmØ	
CB - 2	VARIES	5-25mmØ	3-25mmØ					300 X 500		2 - 12mmØ	
RB - 1	VARIES	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	2 - 25mmØ	250 X 400		2 - 12mmØ	
RB - 2	VARIES	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	250 X 500		2 - 12mmØ	
RB - 3	VARIES	3 - 20mmØ	3 - 20mmØ	3 - 20mmØ	3 - 20mmØ	3 - 20mmØ	3 - 20mmØ	200 X 400		2 - 12mmØ	
RB - A	VARIES	3 - 20mmØ	3 - 20mmØ	3 - 20mmØ	3 - 20mmØ	3 - 20mmØ	3 - 20mmØ	250 X 400		2 - 12mmØ	
RB - B	VARIES	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	3 - 25mmØ	250 X 500		2 - 12mmØ	
STIRRUPS "A" 10mm Ø DEFORMED BARS SPACED 5 @ 50mm, 5 @ 75mm, 5 @ 100mm, REST @ 125mm O.C. TO MIDSPAN											
STIRRUPS "B" 10mm Ø DEFORMED BARS SPACED 6 @ 50mm 6 @ 75mm, 6 @ 100mm, REST @ 125mm O.C. TO MIDSPAN											
NOTES 1. 12 mmØ AND SMALLER BARS, fy = 275 MPa (40,000 psi) 2. 16 mmØ AND LARGER BARS, fy = 415 MPa (60,000 psi)											

SCHEDULE OF BEAM REINFORCEMENT



TYPICAL STAIR DETAILS

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE	SHEET CONTENTS	DRAWN BY: VALENTIN B. DELA CRUZ JR. ENGINEER II PREPARED BY: KRIZZEL D. MEMBREBE ENGINEER II	CHECKED BY MARY JESSICA P. HONRADE ENGINEER II DATE:	SUBMITTED BY ELINO V. CASTRO CHIEF, PLANNING AND DESIGN SECTION DATE:	RECOMMENDING APPROVAL EDUARDO B. DEL ROSARIO OIC - ASSISTANT DISTRICT ENGINEER DATE:	APPROVED BY ARISTOTLE B. RAMOS DISTRICT ENGINEER DATE:	SET S07	SHEET 07 09
	Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	AS INDICATED							

STRUCTURAL SPECIFICATIONS AND STANDARD DETAILS

1.0 GENERAL

- MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE FOLLOWING BUILDING CODES:
 - NATIONAL STRUCTURAL CODE OF THE PHILIPPINES 2001, 5TH EDITION
ASSOCIATION OF STRUCTURAL ENGINEERS OF THE PHILIPPINES
 - ASEP STEEL HANDBOOK 2440, 3RD EDITION
ASSOCIATION OF STRUCTURAL ENGINEERS OF THE PHILIPPINES
- ALL DRAWINGS SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES UNLESS OTHERWISE INDICATED.
- FOR ALL OTHER REQUIREMENTS REFER TO THE ARCHITECTURAL, SANITARY, STRUCTURAL, ELECTRICAL & MECHANICAL WORKING DRAWINGS.

2.0 CONCRETE

- UNLESS OTHERWISE SPECIFIED, THE MINIMUM 28 - DAYS CYLINDER COMPRESSIVE STRENGTH ARE AS FOLLOWS,

FOOTINGS	28 MPa (4,000 PSI)
COLUMNS	28 MPa (4,000 PSI)
SUSPENDED SLABS, BEAMS & GIRDERS	28 MPa (4,000 PSI)
ELEVATOR & STAIRWELL CORES, R.C. WALLS	28 MPa (4,000 PSI)
PARTITIONS & PARAPET WALLS	28 MPa (4,000 PSI)
BEDDED SLABS, CATCH BASINS & SIDEWALK	17.2 MPa (2,500 PSI)
- ALL CONCRETE MUST BE DEPOSITED, VIBRATED AND CURED IN ACCORDANCE WITH THE LATEST EDITION OF AMERICAN CONCRETE INSTITUTE (ACI-318)
- STRIPPING FORMS AND SHORES SHALL BE AS FOLLOWS :

FOUNDATIONS	1 DAY
COLUMNS & WALLS	7 DAYS
BEAMS & GIRDERS	14 DAYS
SLABS	14 DAYS
- CONCRETE SHALL BE DEPOSITED IN ITS FINAL POSITION WITHOUT SEGREGATION, REHANDLING OR FLOWING. PLACING SHALL BE DONE PREFERABLY WITH BUGGIES, BUCKET OR WHEEL BARROWS. NO CHUTES WILL BE ALLOWED EXCEPT TO TRANSFER CONC. FROM HOPPERS TO BUGGIES, WHEEL BARROWS OR BUCKETS IN WHICH CASE THEY SHALL NOT EXCEED SIX METERS (20 FEET) IN AGGREGATE LENGTH. NO DEPOSITING OF CONCRETE SHALL BE ALLOWED WITHOUT THE USE OF VIBRATORS UNLESS AUTHORIZED IN WRITING BY THE DESIGNERS AND ONLY FOR UNUSUAL CONDITIONS WHERE VIBRATIONS IS EXTREMELY DIFFICULT TO ACCOMPLISH.

3.0 REINFORCING BARS

- SCHEDULE OF REINFORCING BARS ARE AS FOLLOWS:

12 MM Ø AND SMALLER BARS	GRADE 33 (230 MPa)
16 MM Ø AND LARGER BARS	GRADE 60 (415 MPa)
- BARS SHALL BE CLEAN OF RUST, GREASE OR OTHER MATERIALS LIKELY TO IMPAIR BOND. ALL REINFORCING BAR BENDS SHALL BE MADE COLD. REINFORCING STEEL OF DIFFERENT GRADES SHALL BE CLEARLY MARKED TO DIFFERENTIATE THEM ON SITE.
- IN GENERAL, BAR SPLICES SHALL BE MADE AT POINTS OF MINIMUM STRESS. SPLICES SHALL BE SECURELY WIRED TOGETHER. STAGGER SPLICES AT LEAST 600 MM. WHENEVER POSSIBLE IN BEAMS AND SLABS SPlice TOP BARS AT MIDSPAN AND BOTTOM BARS NEAR SUPPORT. SPlice OF REINFORCEMENT SHALL BE MADE ONLY AS REQUIRED OR PERMITTED ON DESIGN DRAWINGS OR AS ALLOWED BY THE ACI CODE OR AS AUTHORIZED BY THE ENGINEER.
- SPLICES SHALL BE SECURELY WIRED TOGETHER AND SHALL LAP OR EXTEND IN ACCORDANCE WITH TABLE 1 (TABLE OF LAP SPlice AND ANCHORAGE LENGTH), UNLESS OTHERWISE SHOWN ON DRAWINGS, SPLICES SHALL BE STAGGERED WHENEVER POSSIBLE.
- MINIMUM CONCRETE COVER FOR REINFORCING BARS SHALL BE :

CONCRETE CAST AGAINST EARTH	75 MM
EXPOSED TO EARTH OR OF WEATHER	50 MM
SLAB, WALLS AND JOISTS	20 MM
BEAMS AND COLUMNS	40 MM
SHELLS FOLDED PLATE MEMBERS	12 MM
- WELDING OF REINFORCING STEEL IS NOT PERMITTED UNLESS OTHERWISE SHOWN ON THE DRAWINGS. WELDING OF REINFORCING STEEL SHALL CONFORM TO AWS D1.4-79 "AWS STRUCTURAL WELDING CODE - REINFORCING STEEL" OF THE AMERICAN WELDING SOCIETY. REINFORCING STEEL WHICH IS WELDED SHALL CONFORM TO ASTM A-706. REINFORCING STEEL NOT CONFORMING TO ASTM A-706 MAY BE USED IF MATERIAL PROPERTIES OF THE REINFORCING STEEL CONFORM TO AWS D1.4-79.
- WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A-185. WELDED WIRE FABRIC IN SUSPENDED SLABS SHALL HAVE $F_y = 60$ KSI. LAP 152 MM. MINIMUM OR ONE FULL MESH, WHICHEVER IS GREATER FOR SLABS ON GRADE.
- SHOP DRAWINGS : THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REINFORCING STEEL PREPARED IN ACCORDANCE WITH ACI 315. INDICATE BENDING DIAGRAM, ASSEMBLY DIAGRAM, SPLICING AND LAPS OF RODS AND SHAPES DIMENSIONS AND DETAILS FOR REINFORCING BARS.
- ANCHOR BOLTS, DOWELS AND OTHER EMBEDDED ITEMS ARE TO BE SECURELY TIED IN PLACE BEFORE CONCRETE IS POURED.

4.0. STRUCTURAL STEEL

- ALL STRUCTURAL MILL SECTIONS BUILT UP PLATE SECTIONS SHALL BE DESIGNED IN ACCORDANCE WITH AISC'S LATEST "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS."
- DESIGN LOADS FOR BUILDINGS SHALL MEET THE REQUIRED STRUCTURAL DESIGN CRITERIA.
- STEEL PLATES, SHAPES, BARS AND METAL FABRICATIONS: ASTM A-36.
- STRUCTURAL BOLTS AND NUTS:
ASTM A-325, 7/8 Ø AND BELOW
A-490 1" Ø AND ABOVE
- ELECTRODES FOR WELDING: ASTM A233 E_70XX SERIES; COMPLY WITH D1.1 CODE REQUIREMENTS.
- FLAME CUTTING AND WELDING SHALL BE DONE IN ACCORDANCE WITH THE LATEST "STANDARD CODE FOR WELDING IN BUILDING CONSTRUCTION" OF THE AMERICAN WELDING SOCIETY.
- ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS AND SHALL BE PROPERLY BACK-CHIPPED OR GOUGED. BACK-UP PLATES SHALL BE PROVIDED AS REQUIRED.
- SHOP PAINTING FOR STRUCTURAL STEEL SHALL BE RUST INHIBITIVE PRIMER WITH MINIMUM D.F.T. OF 2.0 MILS.
- TOUCH-UP PAINTING: APPLY PAINT TO EXPOSED AREAS IN MANNER SATISFACTORY TO THE ENGINEER WITH SAME MATERIAL AS SHOP PAINT.
- COMPLY WITH AISC CODE AND SPECIFICATIONS FOR BEARING, ADEQUACY OF TEMPORARY CONNECTIONS AND ALIGNMENT.
- CONTRACTOR SHALL FURNISH COMPLETE ERECTION DRAWINGS FOR THE PROPER IDENTIFICATION AND ASSEMBLY OF ALL BUILDING COMPONENTS. THESE DRAWINGS WILL SHOW ANCHOR BOLT SETTING, PRIMARY AND SECONDARY ROOF FRAMING, AND NECESSARY INSTALLATION DETAILS. SUBMIT SHOP DRAWINGS FOR APPROVAL BEFORE FABRICATION.

5.0. FORMWORKS

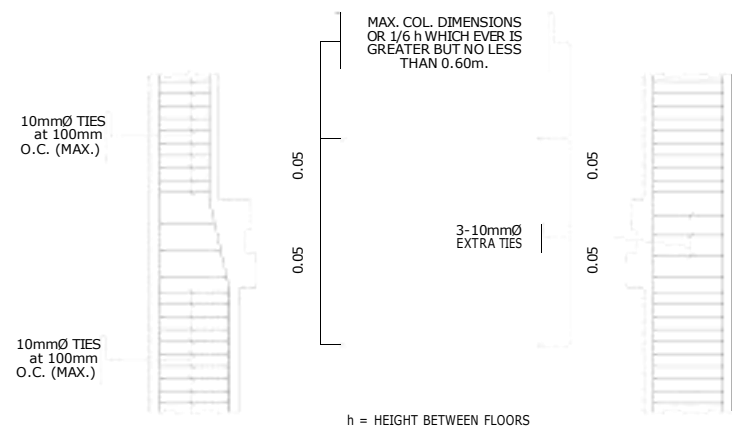
- FORMS SHALL BE PROVIDED FOR ALL CONCRETE INDICATED UNLESS SPECIFIES OTHERWISE. FORMS SHALL BE SET TRUE TO LINE AND GRADE AND MAINTAINED SO AS TO INSURE COMPLETED WORK WITHIN THE ALLOWABLE TOLERANCES SPECIFIED AND SHALL BE MORTAR TIGHT.
- FORMS AND THEIR SUPPORTS SHALL BE DESIGNED SO AS NOT TO DAMAGE PREVIOUSLY PLACED STRUCTURE.
- NO CONSTRUCTION LOAD SHALL BE SUPPORTED ON, NOR ANY SHORING REMOVED FROM ANY PART OF STRUCTURE UNDER CONSTRUCTION EXCEPT WHEN THAT PORTION OF THE STRUCTURE IN COMBINATION WITH THE REMAINING FORMING AND SHORING SYSTEM HAS SUFFICIENT STRENGTH TO SUPPORT SAFELY ITS WEIGHT AND THE ADDITIONAL IMPOSED LOADS.
- FORMS SHALL BE REMOVED IN SUCH MANNER AS NOT TO IMPAIR SAFETY AND SERVICEABILITY OF THE STRUCTURE.

6.0 FOUNDATION

- FOUNDATION IS DESIGNED USING AN ASSUMED ALLOWABLE NET BEARING CAPACITY OF 100kPa (2089 psf).
- FOUNDATION SHALL REST ON NATURAL SOIL. UNLESS OTHERWISE NOTED BY THE ENGINEER, NO PART OF THE FOUNDATION SHALL REST ON FILL.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER AFTER FOOTING EXCAVATION HAVE BEEN COMPLETED AND PRIOR TO CONCRETING TO CONFIRM THE DESIGN SOIL BEARING CAPACITY.

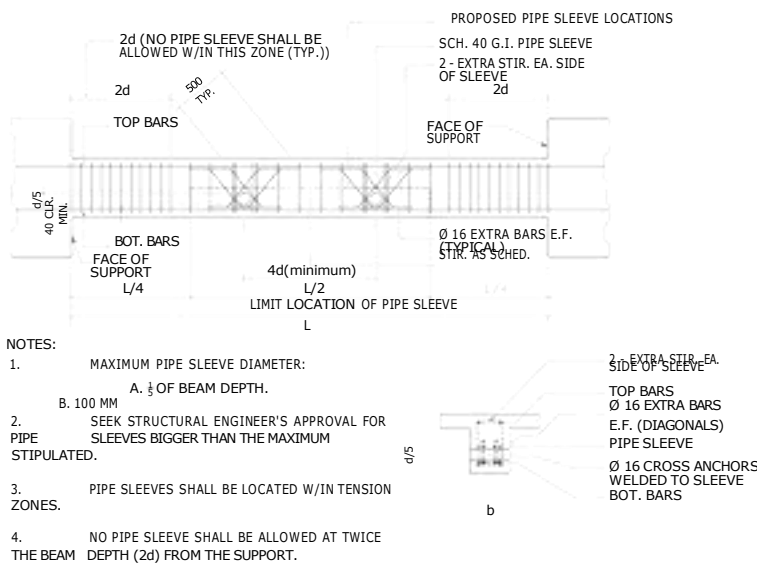
7.0 CONCRETE COLUMNS

- COLUMN TIES SHALL BE PROTECTED EVERYWHERE BY A COVERING OF CONC. CAST MONOLITHICALLY WITH THE CORE WITH MIN. THICKNESS OF 1 1/2" AND NOT LESS THAN 1/2 TIMES MAX. SIZE OF COARSE AGGREGATE WHERE COLUMNS CHANGE IN SIZE. VERTICAL REINFORCEMENT SHALL BE OFF-SET AT A SLOPE OF NOT MORE THAN 1" AND EXTRA 12mm at 3" O.C. SHALL BE PROVIDED THROUGHOUT THE OFF-SET REGION.



8.0 BEAMS & GIRDERS

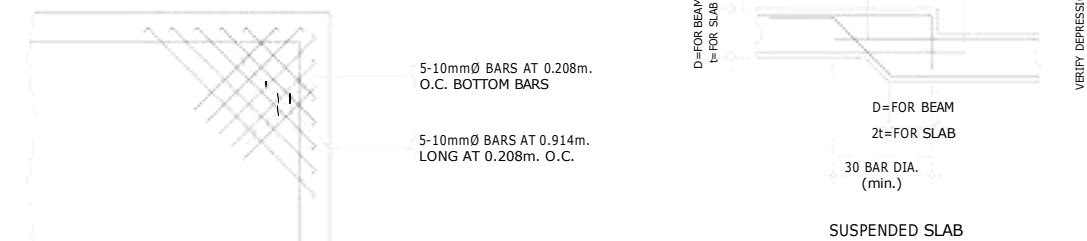
- CAMBER ALL BEAMS AND GIRDERS AT LEAST 10 MM FOR EVERY 4.00M OF SPAN
- FOR TWO OR MORE LAYERS OF REINFORCING BARS, USE SEPARATORS SPACED AT 900 MM O.C. AND IN NO CASE SHALL BE LESS THAN TWO (2) SEPARATORS.



PIPE SLEEVE THRU BEAM DETAIL

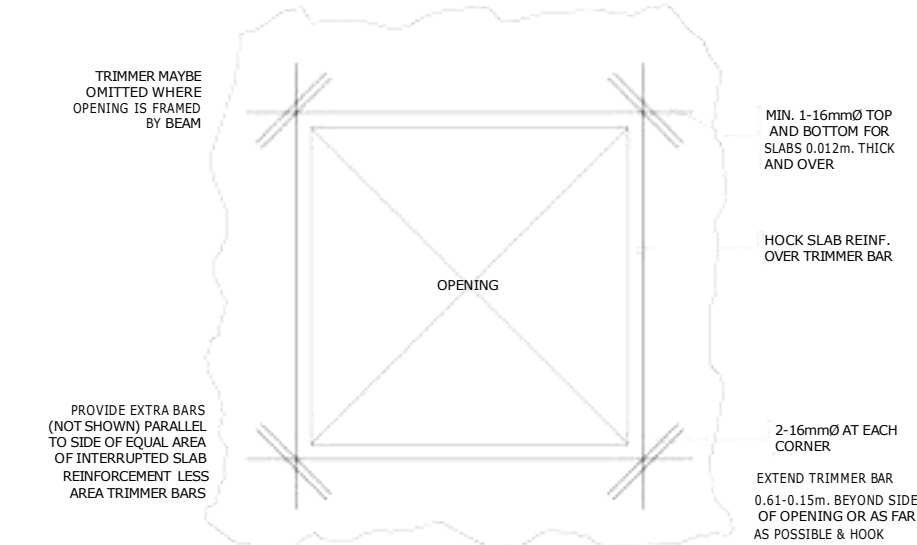
9.0 CONCRETE SLAB

- ALL REINFORCEMENT SHALL BE 20MM CLEAR MINIMUM FROM TOP AND BOTTOM OF SLAB.
- FOR TWO-WAY SLAB, REINFORCEMENT ALONG THE SHORTER SPAN SHALL BE PLACED BELOW THOSE ALONG THE LONGER SPAN AT CENTER AND OVER THE LONGER SPAN BARS NEAR THE SUPPORT UNLESS OTHERWISE INDICATED OR SHOWN IN DETAILS THE SPACING OF THE BARS AT THE COLUMN STRIPS CAN BE APPROXIMATELY 1-1/2 OF THE MIDDLE STRIP IN NO CASE GREATER THAN 2 TIMES THE SLAB THICKNESS.
- TEMPERATURE BARS FOR SLAB SHALL BE GENERALLY PLACED NEAR THE TENSION FACE AND SHALL NOT BE LESS THAN 0.0025 BT.
- PROVIDE EXTRA REINFORCEMENT AT CORNER SLAB (TWO ADJACENT DISCONTINUOUS EDGE) AS SHOWN BELOW.



SLAB ON GRADE

- PROVIDE SUPPLEMENTARY REINFORCEMENT AT SMALL UNFRAMED OPENINGS IN FLOOR SLABS AS SHOWN BELOW.



- UNLESS OTHERWISE NOTED, ALL BEDDED SLAB SHALL BE REINFORCED WITH 10mmØ BAR AT 0.25m. O.C.E.W. AT CENTER OF SLAB CONSTRUCTION JOINT FOR SLAB SHALL NOT BE MORE THAN 3.00m. APART.

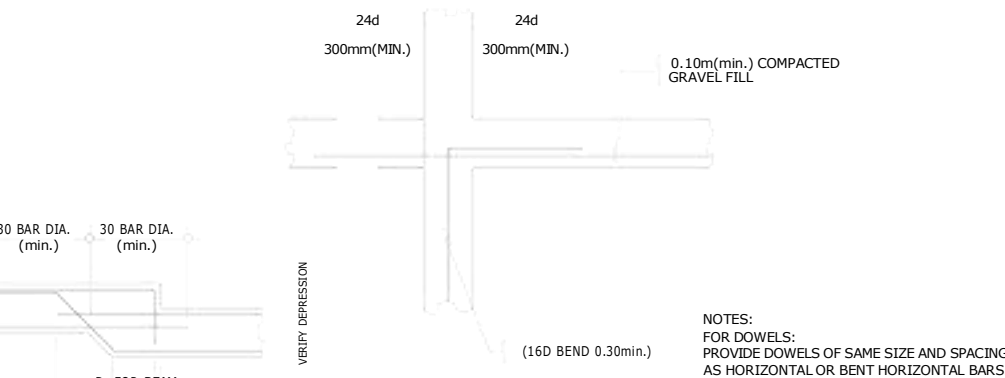


TABLE OF LAP SPlice & ANCHORAGE LENGTH											NOTES :	
BAR DIAMETER (mm)	ANCHORAGE LENGTH (m)	STANDARD HOOK (m)			LAP SPlice (m)				UNIT WEIGHT (Kg/m)	MIN. LAP SPlice LENGTH OF COL. REINF. INDIVIDUAL BARS		
					TENSION BAR		COMP. BAR			W/ TIES		W/ SPIRAL
		90 DEG	180 DEG	135 DEG	TOP BAR	BOT BAR	TOP BAR	BOT BAR				
10	0.60	0.15	0.13	0.10	0.42	0.30	0.42	0.30	0.617	0.30	0.30	
12	0.60	0.20	0.15	0.12	0.42	0.30	0.42	0.30	0.889	0.30	0.30	
16	0.60	0.25	0.18	0.14	0.73	0.52	0.87	0.62	1.580	0.52	0.47	
18	0.60	0.30	0.20	0.20	0.91	0.65	1.10	0.78	2.469	0.65	0.58	
20	0.68	0.40	0.28	0.26	1.15	0.82	1.40	1.00	3.858	0.80	0.73	
25	0.86	0.48	0.38		1.45	1.03	1.53	1.09	4.840	0.90	0.82	
32	1.12	0.56	0.43		1.90	1.35	1.74	1.24	6.327	1.03	0.93	
36	1.43	0.61	0.48		2.40	1.70	2.00	1.40	8.000	1.20	1.05	

1. ACI SECTION 12.4 STATES THAT DEVELOPMENT LENGTH OF INDIVIDUAL BARS W/IN A BUNDLE, IN TENSION OR COMPRESSION, SHALL BE THAT FOR THE INDIVIDUAL BAR, INCREASED 20% FOR THREE BAR BUNDLE, AND 33% FOR FOUR-BAR BUNDLE.

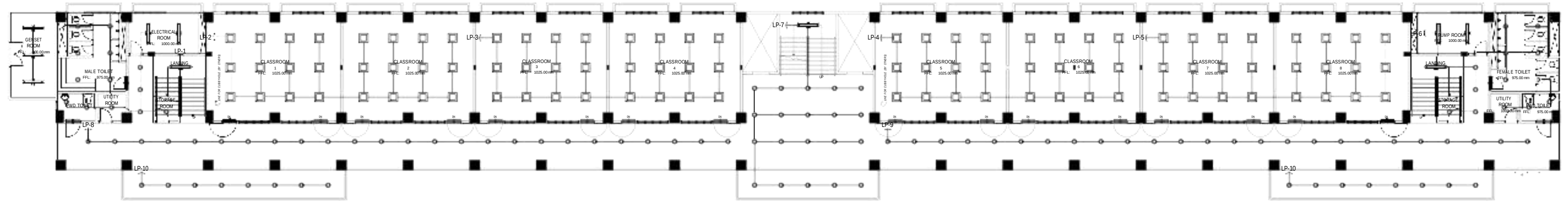
2. FOR COLUMNS, AT ANY LEVEL NO MORE THAN ALTERNATE BARS SHOULD BE SPICED. NOT MORE THAN 33 % OF THE BARS SHALL BE SPICED W/IN THE REQUIRED LAP LENGTH. MINIMUM DISTANCE BETWEEN TWO ADJACENT BAR SPLICES SHALL BE 600 MM.

3. TOP BARS ARE HORIZONTAL. BARS W/ MORE THAN 300 MM DEPTH OF CONCRETE CAST BELOW THE REINFORCEMENT.

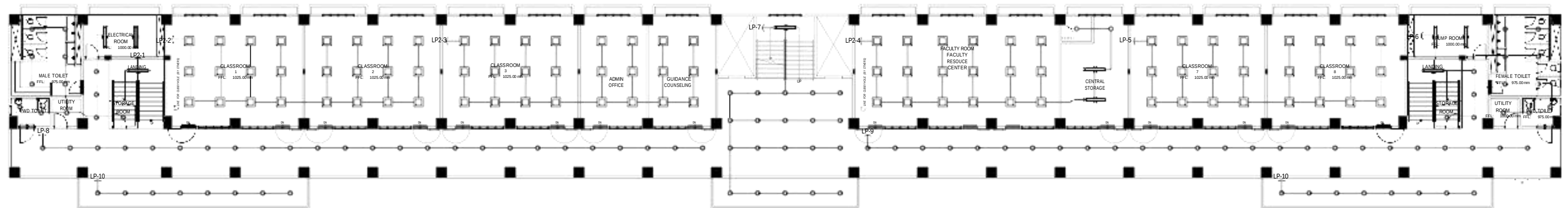
4. AS MUCH AS POSSIBLE, SPLICES SUBJECTED TO TENSILE STRESSES ARE DISCOURAGED, THESE SHOULD BE AVOIDED OR PROVIDED W/ STANDARD HOOKS.

- NOTES :
- ACI SECTION 12.4 STATES THAT DEVELOPMENT LENGTH OF INDIVIDUAL BARS W/IN A BUNDLE, IN TENSION OR COMPRESSION, SHALL BE THAT FOR THE INDIVIDUAL BAR, INCREASED 20% FOR THREE BAR BUNDLE, AND 33% FOR FOUR-BAR BUNDLE.
 - FOR COLUMNS, AT ANY LEVEL NO MORE THAN ALTERNATE BARS SHOULD BE SPLICED. NOT MORE THAN 33 % OF THE BARS SHALL BE SPLICED W/IN THE REQUIRED LAP LENGTH. MINIMUM DISTANCE BETWEEN TWO ADJACENT BAR SPLICES SHALL BE 600 MM.
 - TOP BARS ARE HORIZONTAL BARS W/ MORE THAN 300 MM DEPTH OF CONCRETE CAST BELOW THHE REINFORCEMENT.
 - AS MUCH AS POSSIBLE, SPLICES SUBJECTED TO TENSILE STRESSES ARE DISCOURAGE, THESE SHOULD BE AVOIDED OR PROVIDED W/ STANDARD HOOKS.

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE	SHEET CONTENTS	DRAWN BY:	CHECKED BY	SUBMITTED BY	RECOMMENDING APPROVAL	APPROVED BY	SET	SHEET
	Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	AS INDICATED	VALENTIN B. DELA CRUZ JR. ENGINEER II	MARY JESSICA P. HONRADE ENGINEER II	ELINO V. CASTRO CHIEF, PLANNING AND DESIGN SECTION	EDUARDO B. DEL ROSARIO OIC - ASSISTANT DISTRICT ENGINEER	ARISTOTLE B. RAMOS DISTRICT ENGINEER	S09	09 09
			KRIZZEL D. MEMBREBE ENGINEER II						
			DATE:						

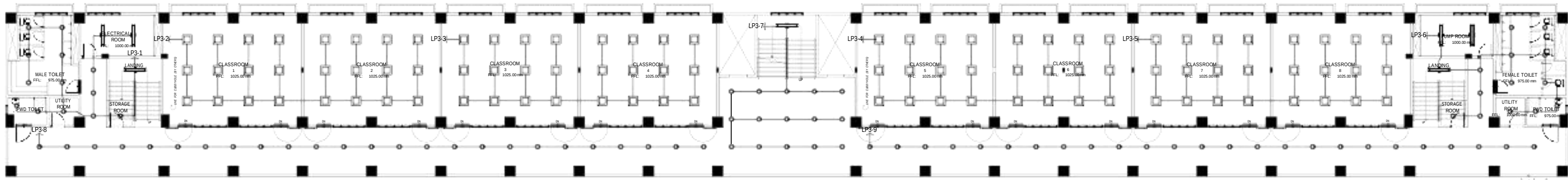


ground floor
LIGHTING LAYOUT
SCALE: 1:100M

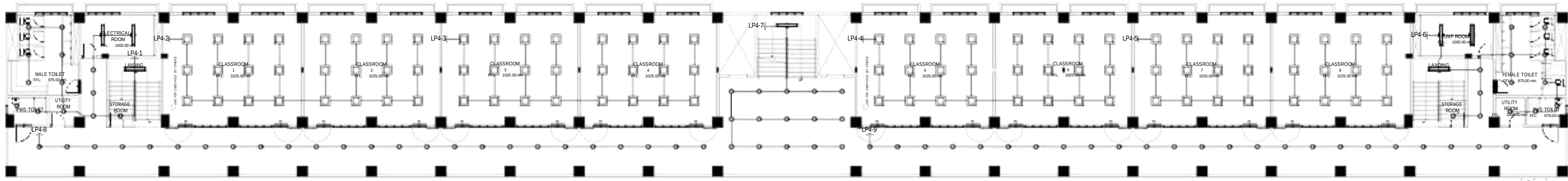


second floor
LIGHTING LAYOUT
SCALE: 1:100M

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE	SHEET CONTENTS	DRAWN BY	CHECKED BY	SUBMITTED BY	RECOMMENDING APPROVAL	APPROVED BY	SET	SHEET
	Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	AS INDICATED	MARK JOSEPH A. ADРАНЕDА	JOENEL A. ANCAJAS	ELINO V. CASTRO	EDUARDO B. DEL ROSARIO	ARISTOTLE B. RAMOS	E01	01 08
			ENGINEER II	ENGINEER II	CHIEF, PLANNING AND DESIGN SECTION	OIC - ASSISTANT DISTRICT ENGINEER	DISTRICT ENGINEER		
			DATE:	DATE:	DATE:	DATE:	DATE:		

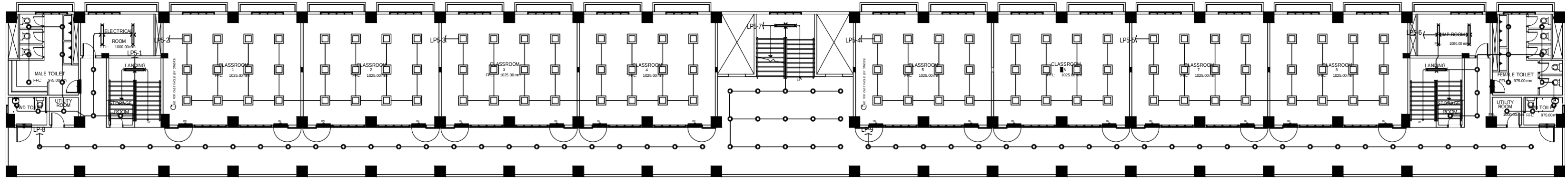


third floor
LIGHTING LAYOUT
SCALE: 1:100M

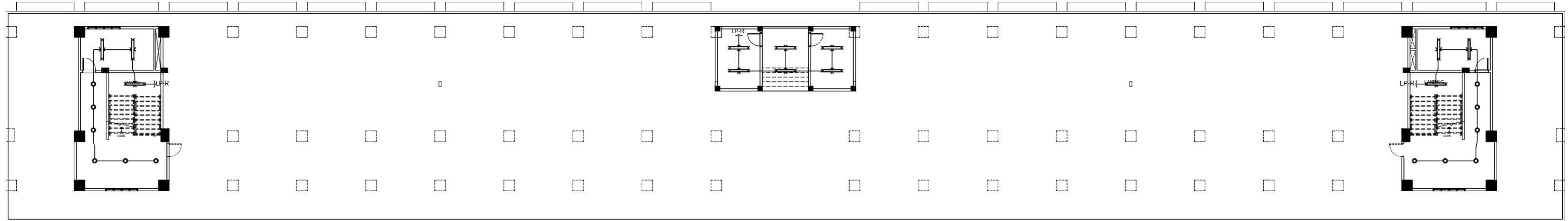


fourth floor
LIGHTING LAYOUT
SCALE: 1:100M

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE	SHEET CONTENTS	DRAWN BY	CHECKED BY	SUBMITTED BY	RECOMMENDING APPROVAL	APPROVED BY	SET	SHEET
	Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	AS INDICATED	MARK JOSEPH A. ADRANEDA ENGINEER II	JOENEL A. ANCAJAS ENGINEER II	ELINO V. CASTRO	EDUARDO B. DEL ROSARIO	ARISTOTLE B. RAMOS	E02	02 08
			DATE:	DATE:	CHIEF, PLANNING AND DESIGN SECTION	DATE:	DISTRICT ENGINEER		
					DATE:	DATE:			

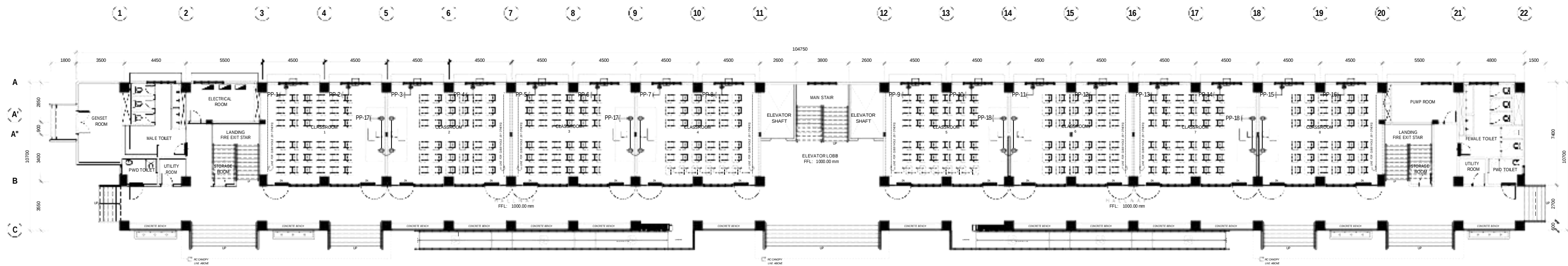


fifth floor
LIGHTING LAYOUT
SCALE: 1:100M

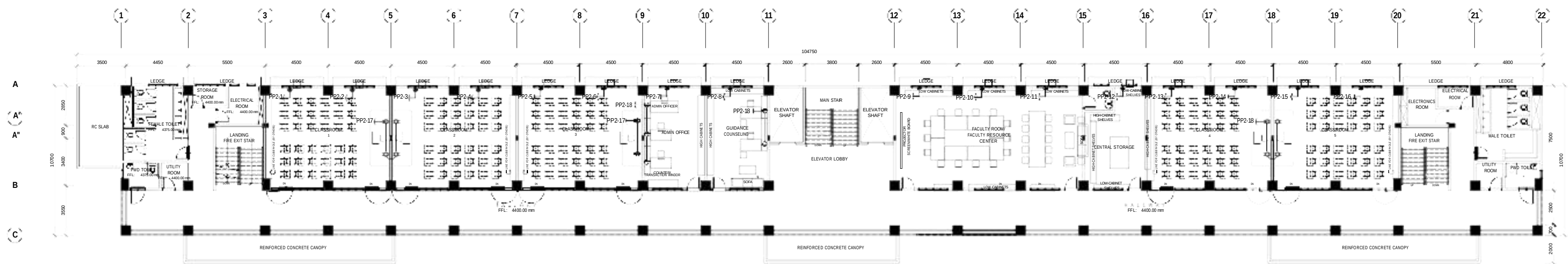


roofdeck
LIGHTING LAYOUT
SCALE: 1:100M

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE	SHEET CONTENTS	DRAWN BY	CHECKED BY	SUBMITTED BY	RECOMMENDING APPROVAL	APPROVED BY	SET	SHEET
	Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	AS INDICATED	MARK JOSEPH A. ADLANEDA	JOENEL A. ANCAJAS	ELINO V. CASTRO	EDUARDO B. DEL ROSARIO	ARISTOTLE B. RAMOS		
			ENGINEER II DATE:	ENGINEER II DATE:	CHIEF, PLANNING AND DESIGN SECTION DATE:	OIC - ASSISTANT DISTRICT ENGINEER DATE:	DISTRICT ENGINEER DATE:		



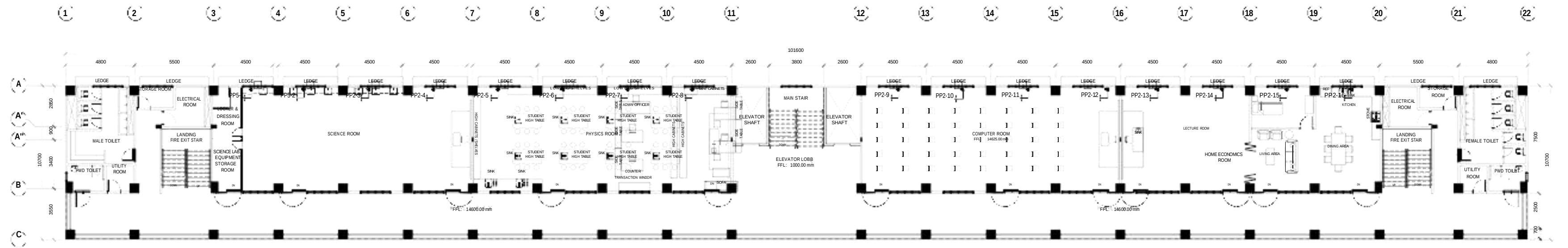
ground floor
POWER LAYOUT
SCALE: 1:100M



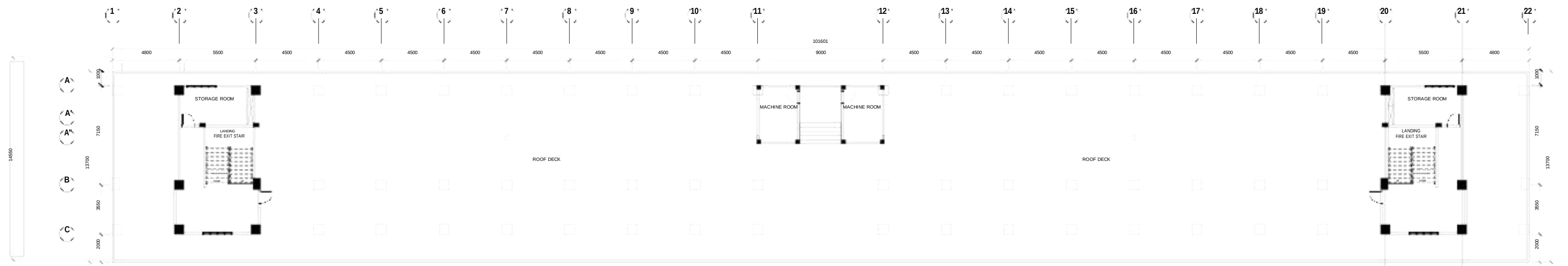
second floor
POWER LAYOUT
SCALE: 1:100M

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE	SHEET CONTENTS	DRAWN BY	CHECKED BY	SUBMITTED BY	RECOMMENDING APPROVAL	APPROVED BY	SET	SHEET
	Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	AS INDICATED	MARK JOSEPH A. ADLANEDA ENGINEER II	JOENEL A. ANCAJAS ENGINEER II	ELINO V. CASTRO	EDUARDO B. DEL ROSARIO	ARISTOTLE B. RAMOS		
			DATE:	DATE:	DATE:	DATE:	DATE:		
					CHIEF, PLANNING AND DESIGN SECTION	DIC - ASSISTANT DISTRICT ENGINEER	DISTRICT ENGINEER		

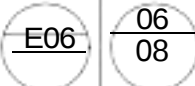


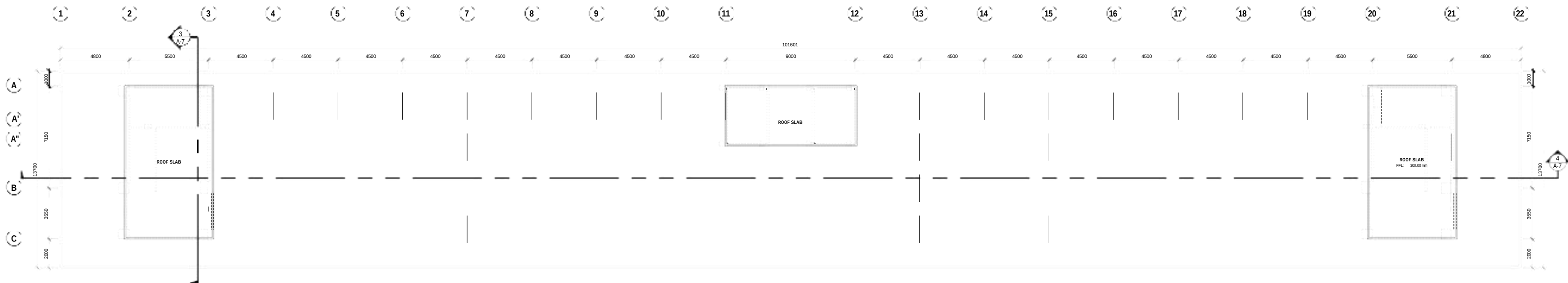


fifth floor
POWER LAYOUT
SCALE: 1:100M



roofdeck
POWER LAYOUT
SCALE: 1:100M

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE	SHEET CONTENTS	DRAWN BY	CHECKED BY	SUBMITTED BY	RECOMMENDING APPROVAL	APPROVED BY	SET	SHEET
	Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	AS INDICATED	MARK JOSEPH A. ADRANEDA	JOENEL A. ANCAJAS	ELINO V. CASTRO	EDUARDO B. DEL ROSARIO	ARISTOTLE B. RAMOS		
			ENGINEER II	ENGINEER II	CHIEF, PLANNING AND DESIGN SECTION	OIC - ASSISTANT DISTRICT ENGINEER	DISTRICT ENGINEER		
			DATE:	DATE:	DATE:	DATE:	DATE:		

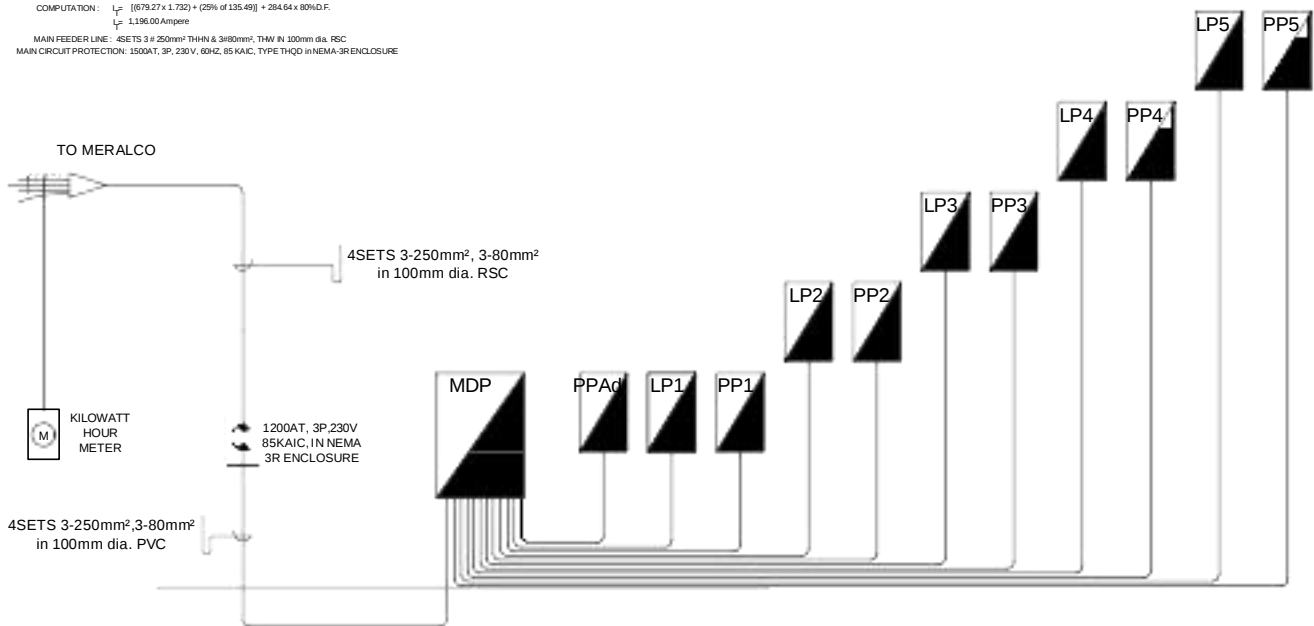


upper roofdeck
POWER LAYOUT
SCALE: 1:100M

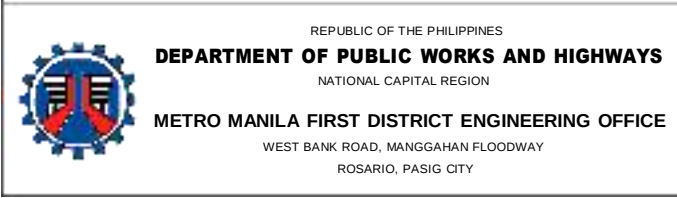
PANEL "PP5"										
IN NEMA 1 ENCLOSURE										
CMT. NO.	DESCRIPTION	VOLTS RATING	POWER RATING	WIRE RATING			CIRCUIT PROTECTION		SIZE OF WIRE & CONDUIT	
				AWG	CM	MC	AT	POLE		
1	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
2	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
3	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
4	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
5	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
6	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
7	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
8	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
9	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
10	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
11	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
12	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
13	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
14	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
15	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
16	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
17	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
18	2.5 Hp Aircon/Outlet	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
COMPUTATION: $I_p = \frac{1000}{\sqrt{3} \times 400} \times 1.732 \times (25\% \text{ of } 18.38) \times 1000 \text{ V}$				18.38						
FEEDER LINE: $I_p = \frac{1000}{\sqrt{3} \times 400} \times 1.732 \times (25\% \text{ of } 18.38) \times 1000 \text{ V}$				18.38						
CIRCUIT PROTECTION: 225AT, 3P, 230 V, 60HZ, 85 KAC, TYPE THQD IN NEMA 1 ENCLOSURE				18.38						
T O T A L				18.38						

PANEL "MDP"										
IN NEMA 1 ENCLOSURE										
CMT. NO.	DESCRIPTION	VOLTS RATING	POWER RATING	WIRE RATING			CIRCUIT PROTECTION		SIZE OF WIRE & CONDUIT	
				AWG	CM	MC	AT	POLE		
1	PANEL LP1	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
2	PANEL LP2	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
3	PANEL LP3	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
4	PANEL LP4	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
5	PANEL LP5	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
6	S.P.A.R.E.	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
7	PANEL PP1	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
8	PANEL PP2	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
9	PANEL PP3	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
10	PANEL PP4	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
11	PANEL PP5	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
12	PANEL PP6	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
COMPUTATION: $I_p = \frac{1000}{\sqrt{3} \times 400} \times 1.732 \times (25\% \text{ of } 18.38) \times 1000 \text{ V}$										
FEEDER LINE: $I_p = \frac{1000}{\sqrt{3} \times 400} \times 1.732 \times (25\% \text{ of } 18.38) \times 1000 \text{ V}$										
CIRCUIT PROTECTION: 225AT, 3P, 230 V, 60HZ, 85 KAC, TYPE THQD IN NEMA 1 ENCLOSURE										

PANEL "PP4d"										
IN NEMA 1 ENCLOSURE										
CMT. NO.	DESCRIPTION	VOLTS RATING	POWER RATING	WIRE RATING			CIRCUIT PROTECTION		SIZE OF WIRE & CONDUIT	
				AWG	CM	MC	AT	POLE		
1	20 hp Pump	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, THW in 20mm dia. PVC
2	20 hp Pump	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
3	20 hp Pump	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
4	20 hp Pump	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
5	20 hp Pump	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
6	20 hp Pump	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
7	20 hp Pump	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
8	20 hp Pump	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
9	20 hp Pump	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
10	20 hp Pump	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
11	20 hp Pump	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
12	S.P.A.R.E.	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
13	S.P.A.R.E.	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
14	S.P.A.R.E.	400V	400V	10.0	3	10	40	2	60	2.5 SPMWZ THHN, & 1.2 SPMWZ THW in 20mm dia. PVC
COMPUTATION: $I_p = \frac{1000}{\sqrt{3} \times 400} \times 1.732 \times (25\% \text{ of } 18.38) \times 1000 \text{ V}$										
FEEDER LINE: $I_p = \frac{1000}{\sqrt{3} \times 400} \times 1.732 \times (25\% \text{ of } 18.38) \times 1000 \text{ V}$										
CIRCUIT PROTECTION: 225AT, 3P, 230 V, 60HZ, 85 KAC, TYPE THQD IN NEMA 1 ENCLOSURE										



POWER ONE LINE DIAGRAM

	PROJECT TITLE	SHEET CONTENTS	DRAWN BY	CHECKED BY	SUBMITTED BY	RECOMMENDING APPROVAL	APPROVED BY	SET	SHEET
	Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	AS INDICATED	MARK JOSEPH A. ADLANEDA ENGINEER II	JOENEL A. ANCAJAS ENGINEER II	ELINO V. CASTRO CHIEF, PLANNING AND DESIGN SECTION	EDUARDO B. DEL ROSARIO OIC - ASSISTANT DISTRICT ENGINEER	ARISTOTLE B. RAMOS DISTRICT ENGINEER	E07	07 08
			DATE:	DATE:	DATE:	DATE:	DATE:		

PANEL "LP1"

CKT. NO	DESCRIPTION	VOLTS RATING	POWER RATING	AMPERE RATING	CB PROTECTION				SIZE OF WIRE & CONDUIT	
					AT	POLE	#	#		
		220								
1	19pcs Lighting Outlet		950	4.42			20	2	00	2-3.5mm2, THHN in 15mm dia. PVC
2	24pcs Lighting Outlet		1200	5.45			20	2	00	2-3.5mm2, THHN in 15mm dia. PVC
3	24pcs Lighting Outlet		1200	5.45			20	2	00	2-3.5mm2, THHN in 15mm dia. PVC
4	24pcs Lighting Outlet		1200	5.45			20	2	00	2-3.5mm2, THHN in 15mm dia. PVC
5	24pcs Lighting Outlet		1200	5.45			20	2	00	2-3.5mm2, THHN in 15mm dia. PVC
6	16pcs Lighting Outlet		800	3.64			20	2	00	2-3.5mm2, THHN in 15mm dia. PVC
7	21pcs Lighting Outlet		1050	4.77			20	2	00	2-3.5mm2, THHN in 15mm dia. PVC
8	25pcs Lighting Outlet		1250	4.09			20	2	00	2-3.5mm2, THHN in 15mm dia. PVC
9	25pcs Lighting Outlet		1250	5.68			20	2	00	2-3.5mm2, THHN in 15mm dia. PVC
10	16pcs Lighting Outlet		800	3.64			20	2	00	2-3.5mm2, THHN in 15mm dia. PVC
11	S P A R E		1000	4.54			20	2	00	2-3.5mm2, THHN in 15mm dia. PVC
12	S P A R E		1000	4.54			20	2	00	2-3.5mm2, THHN in 15mm dia. PVC
	T O T A L			57.12						

COMPUTATION : $I = (57.12) \times 100\% \text{ D.F.}$
 $I_L = 57.12 \text{ Ampere}$
 FEEDER LINE : 2 # 14mm² THHN & 1#5.5mm², THW IN 25mm dia. RSC
 CIRCUIT PROTECTION: 75AT, 3P, 230 V, 60HZ, 22 KAIC, TYPE TQC IN NEMA-1 ENCLOSURE

CKT. NO.	DESCRIPTION	VOLTS RATING	POWER RATING	AMPERE RATING				C.B. PROTECTION			SIZE OF WIRE & CONDUIT
				AB	CA	BC	3ø	AT	POLE	AF	
		220									
1	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
2	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
3	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
4	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
5	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
6	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
7	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
8	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
9	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
10	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
11	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
12	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
13	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
14	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
15	2.5 Hp Arccon Outlet		4017	18.26				4	2	60	2-5.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
16	8 pcs Convenience Outlet		1440		6.54			30	2	60	2-3.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
18	8 pcs Convenience Outlet		1440		6.54			30	2	60	2-3.5mm ² , THHN, & 1-2.0mm ² , THW in 20mm dia. PVC
T O T A L				106.96	109.96	86.12					

COMPUTATION : $I_T = [(109.96 \times 1.732) + (25\% \text{ of } 18.26)] \times 100\% \text{ D.F.}$
 $I_T = 195.00 \text{ Ampere}$

FEEDER LINE : 3 # 50mm² THHN & 1 # 22mm², THW IN 40mm dia. RSC

CIRCUIT PROTECTION: 225AT, 3P, 230 V, 60HZ, 22 KAIC, TYPE TQD IN NEMA-1 ENCLOSURE

O.K.T. NO.		DESCRIPTION	VOLTS RATING	POWER RATING	AMPERE RATING					CB PROTECTION			SIZE OF WIRE & CONDUIT
										AT	POLE	AF	
			220										
1	16pcs Lighting Outlet			960	4.42					20	2	80	2-3.5mm ² , THHN in 15mm dia. PVC
2	24pcs Lighting Outlet			1200	5.45					20	2	80	2-3.5mm ² , THHN in 15mm dia. PVC
3	24pcs Lighting Outlet			1200	5.45					20	2	80	2-3.5mm ² , THHN in 15mm dia. PVC
4	22pcs Lighting Outlet			1100	5.00					20	2	80	2-3.5mm ² , THHN in 15mm dia. PVC
5	24pcs Lighting Outlet			1200	5.45					20	2	80	2-3.5mm ² , THHN in 15mm dia. PVC
6	16pcs Lighting Outlet			800	3.64					20	2	80	2-3.5mm ² , THHN in 15mm dia. PVC
7	21pcs Lighting Outlet			1050	4.77					20	2	80	2-3.5mm ² , THHN in 15mm dia. PVC
8	25pcs Lighting Outlet			1250	4.09					20	2	80	2-3.5mm ² , THHN in 15mm dia. PVC
9	25pcs Lighting Outlet			1250	5.68					20	2	80	2-3.5mm ² , THHN in 15mm dia. PVC
10	16pcs Lighting Outlet			800	3.64					20	2	80	2-3.5mm ² , THHN in 15mm dia. PVC
11	S P A R E			1000	4.54					20	2	80	2-3.5mm ² , THHN in 15mm dia. PVC
12	S P A R E			1000	4.54					20	2	80	2-3.5mm ² , THHN in 15mm dia. PVC
		T O T A L			56.67								

COMPUTATION : $I = (56.67) \times 100\% \text{ D.F.}$
 $I_L = 56.67 \text{ Ampere}$
 FEEDER LINE : 2 # 14mm² THHN & 1#5.5mm², THW IN 25mm dia. RSC
 CIRCUIT PROTECTION : 75AT, 3P, 230 V, 60HZ, 22 KAIC, TYPE TQC IN NEMA-1 ENCLOSURE

CKT. NO.	DESCRIPTION	VOLTS RATING	POWER RATING	AMPERE RATING			CB PROTECTION		SIZE OF WIRE & CONDUIT			
				AB	CA	BC	3ø	AT		AF		
		220										
1	2.5 Hp Aircon Outlet		4017	18.26				40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC	
2	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
3	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
4	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
5	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
6	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
7	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
8	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
9	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
10	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
11	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
12	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
13	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
14	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
15	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
16	2.5 Hp Aircon Outlet		4017	18.26					40	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
17	8 pckt Convenience Outlet		1200				4.91		30	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
18	9 pckt Convenience Outlet		1620				7.36		30	2	60	2.5-mm ² THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
T O T A L				109.96	109.96	85.31						

COMPUTATION : $I_T = [(109.96 \times 1.732) + (25\% \text{ of } 18.26)] \times 100\% \text{ D.F.}$
 $I_T = 195.00 \text{ Ampere}$

FEEDER LINE : 3 # 50mm² THHN & 1#22mm², THW IN 40mm dia. RSC

CIRCUIT PROTECTION: 225AT, 3P, 230 V, 60HZ, 22 KAIC, TYPE TQD in NEMA-1 ENCLOSURE

CKT. NO.	DESCRIPTION	VOLTS RATING	POWER RATING	AMPERE RATING					CB PROTECTION			SIZE OF WIRE & CONDUIT
									AT	POLE	AF	
		220										
1	16pcs Lighting Outlet	↓	800	3.64					20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
2	24pcs Lighting Outlet		1200	5.45					20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
3	24pcs Lighting Outlet		1200	5.45					20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
4	24pcs Lighting Outlet		1200	5.45					20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
5	24pcs Lighting Outlet		1200	5.45					20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
6	16pcs Lighting Outlet		800	3.64					20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
7	21pcs Lighting Outlet		1050	4.77					20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
8	25pcs Lighting Outlet		1250	4.09					20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
9	25pcs Lighting Outlet		1250	5.68					20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
10	16pcs Lighting Outlet		800	3.64					20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
11	S P A R E		1000	4.54					20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
12	S P A R E		1000	4.54					20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
	T O T A L			56.34								

COMPUTATION : $I_T = (56.34) \times 100\% \text{ D.F.}$
 $I_T = 56.34 \text{ Ampere}$
 FEEDER LINE : 2 # 14mm² THHN & 1#5.5mm², THW IN 25mm dia. RSC
 CIRCUIT PROTECTION: 75AT, 3P, 230 V, 60HZ, 22 KAIC, TYPE TQC IN NEMA-1 ENCLOSURE

CKT. NO.	DESCRIPTION	VOLTS RATING	POWER RATING	AMPERE RATING			CB PROTECTION			SIZE OF WIRE & CONDUIT	
				AB	CA	BC	3a	AT	POLE		AF
1	2.5 Hp Aircon Outlet	220	4017	18.26				40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
2	2.5 Hp Aircon Outlet		4017	18.26				40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
3	2.5 Hp Aircon Outlet		4017	18.26				40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
4	2.5 Hp Aircon Outlet		4017	18.26				40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
5	2.5 Hp Aircon Outlet		4017			18.26		40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
6	2.5 Hp Aircon Outlet		4017			18.26		40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
7	2.5 Hp Aircon Outlet		4017	18.26				40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
8	2.5 Hp Aircon Outlet		4017	18.26				40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
9	2.5 Hp Aircon Outlet		4017	18.26				40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
10	2.5 Hp Aircon Outlet		4017	18.26				40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
11	2.5 Hp Aircon Outlet		4017	18.26				40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
12	2.5 Hp Aircon Outlet		4017	18.26				40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
13	2.5 Hp Aircon Outlet		4017	18.26				40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
14	2.5 Hp Aircon Outlet		4017	18.26				40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
15	2.5 Hp Aircon Outlet		4017			18.26		40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
16	2.5 Hp Aircon Outlet		4017			18.26		40	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
17	8 pcs Convenience Outlet		1400			6.54		30	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
18	8 pcs Convenience Outlet		1400			6.54		30	2	60	2.5 mm ² THHN, & 1.2 mm ² THW in 20mm dia. PVC
T O T A L				109.96	109.96	86.12					

COMPUTATION : $I_T = [(109.96 \times 1.732) + (25\% \text{ of } 18.26)] \times 100\% \text{ D.F.}$
 $I_T = 195.00 \text{ Ampere}$

FEEDER LINE : 3 # 50mm² THHN & 1#22mm², THW IN 40mm dia. RSC

CIRCUIT PROTECTION: 225AT, 3P, 230 V, 60HZ, 22 KAIC, TYPE TQD IN NEMA-1 ENCLOSURE

CKT. NO.	DESCRIPTION	VOLTS RATING	POWER RATING	AMPERE RATING				CB PROTECTION			SIZE OF WIRE & CONDUIT
								AT	POLE	AF	
		220									
1	16pcs Lighting Outer	↓	800	3.64				20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
2	24pcs Lighting Outer		1200	5.45				20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
3	24pcs Lighting Outer		1200	5.45				20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
4	24pcs Lighting Outer		1200	5.45				20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
5	24pcs Lighting Outer		1200	5.45				20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
6	16pcs Lighting Outer		800	3.64				20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
7	21pcs Lighting Outer		1050	4.77				20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
8	25pcs Lighting Outer		1250	4.09				20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
9	25pcs Lighting Outer		1250	5.68				20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
10	16pcs Lighting Outer		800	3.64				20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
11	S P A R E		1000	4.54				20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
12	S P A R E		1000	4.54				20	2	60	2-3.5mm ² , THHN in 15mm dia. PVC
	T O T A L			57.12							

COMPUTATION : $I_F = (56.34) \times 100\% \text{ D.F.}$
 $I_F = 56.34 \text{ Ampere}$

FEEDER LINE : 2 # 14mm² THHN & 1#5.5mm², THW IN 25mm dia. RSC

CIRCUIT PROTECTION: 75AT, 3P, 230 V, 60HZ, 22 KAIC, TYPE TQC in NEMA-1 ENCLOSURE

CKT. NO.	DESCRIPTION	VOLTS RATING	POWER RATING	AMPERE RATING				CIRCUIT PROTECTION			SIZE OF WIRE & CONDUIT
				AB	CA	BC	3ø	CB	POLE	AF	
1	2.5 Hp Aircon Outlet	220	4037	18.26				40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
2	2.5 Hp Aircon Outlet	4037	18.26					40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
3	2.5 Hp Aircon Outlet	4037	18.26					40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
4	2.5 Hp Aircon Outlet	4037	18.26					40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
5	2.5 Hp Aircon Outlet	4037		18.26				40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
6	2.5 Hp Aircon Outlet	4037		18.26				40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
7	2.5 Hp Aircon Outlet	4037	18.26					40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
8	2.5 Hp Aircon Outlet	4037	18.26					40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
9	2.5 Hp Aircon Outlet	4037	18.26					40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
10	2.5 Hp Aircon Outlet	4037		18.26				40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
11	2.5 Hp Aircon Outlet	4037		18.26				40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
12	2.5 Hp Aircon Outlet	4037	18.26					40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
13	2.5 Hp Aircon Outlet	4037	18.26					40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
14	2.5 Hp Aircon Outlet	4037	18.26					40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
15	2.5 Hp Aircon Outlet	4037	18.26					40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
16	2.5 Hp Aircon Outlet	4037	18.26					40	2	60	2.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
17	8 pcs Convenience Outlet	1440				6.54		30	2	60	3.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
18	8 pcs Convenience Outlet	1440				6.54		30	2	60	3.5-5mm ² , THHN, & 1.2-2.0mm ² THW in 20mm dia. PVC
TOTAL			109.96	109.96	86.12						

COMPUTATION : $I_L = [(109.96 \times 1.732) + (25\% \text{ of } 18.26)] \times 100\% \text{ D.F.}$
 $I_L = 195.00 \text{ Ampere}$
 FEEDER LINE : 3 # 50mm² THHN & 1#22mm², THW IN 40mm dia. RSC
 CIRCUIT PROTECTION : 225AT, 3P, 230 V, 60HZ, 22 KAIC, TYPE TQD IN NEMA-1 ENCLOSURE

O.K.T. NO.	DESCRIPTION	VOLTS RATING	POWER RATING	AMPERE RATING	CB PROTECTION						SIZE OF WIRE & CONDUIT		
					AT	POLE	AF						
		220											
1	16pcs Lighting Outer	↓	800	3.64						2	60	2.3.5mm ² , THHN in 15mm dia. PVC	
2	24pcs Lighting Outer		1200	5.45							2	60	2.3.5mm ² , THHN in 15mm dia. PVC
3	24pcs Lighting Outer		1200	5.45							2	60	2.3.5mm ² , THHN in 15mm dia. PVC
4	24pcs Lighting Outer		1200	5.45							2	60	2.3.5mm ² , THHN in 15mm dia. PVC
5	24pcs Lighting Outer		1200	5.45							2	60	2.3.5mm ² , THHN in 15mm dia. PVC
6	16pcs Lighting Outer		800	3.64							2	60	2.3.5mm ² , THHN in 15mm dia. PVC
7	21pcs Lighting Outer		1050	4.77							2	60	2.3.5mm ² , THHN in 15mm dia. PVC
8	25pcs Lighting Outer		1250	4.09							2	60	2.3.5mm ² , THHN in 15mm dia. PVC
9	25pcs Lighting Outer		1250	5.68							2	60	2.3.5mm ² , THHN in 15mm dia. PVC
10	16pcs Lighting Outer		800	3.64							2	60	2.3.5mm ² , THHN in 15mm dia. PVC
11	S P A R E		1000	4.54							2	60	2.3.5mm ² , THHN in 15mm dia. PVC
12	S P A R E		1000	4.54							2	60	2.3.5mm ² , THHN in 15mm dia. PVC
	T O T A L			\$7.12									

COMPUTATION : $I_F = (56.34) \times 100\% \text{ D.F.}$
 $I_F = 56.34 \text{ Ampere}$
 FEEDER LINE : 2 #14mm² THHN & 1#5.5mm², THW IN 25mm dia. RSC
 CIRCUIT PROTECTION: 75AT, 3P, 230 V, 60HZ, 22 KAIC, TYPE TQC in NEMA-1 ENCLOSURE

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS NATIONAL CAPITAL REGION METRO MANILA FIRST DISTRICT ENGINEERING OFFICE WEST BANK ROAD, MANGGAHAN FLOODWAY ROSARIO, PASIG CITY	PROJECT TITLE	SHEET CONTENTS	DRAWN BY	CHECKED BY	SUBMITTED BY	RECOMMENDING APPROVAL	APPROVED BY	SET	SHEET
	Construction of Five (5) - Storey 29 Medium-Rise Academic School Building Classroom School Building at Marikina Science High School	AS INDICATED	MARK JOSEPH A. ADRANEDA ENGINEER II DATE:	JOENEL A. ANCAJAS ENGINEER II DATE:	ELINO V. CASTRO CHIEF, PLANNING AND DESIGN SECTION DATE:	EDUARDO B. DEL ROSARIO DIC - ASSISTANT DISTRICT ENGINEER DATE:	ARISTOTLE B. RAMOS DISTRICT ENGINEER DATE:		