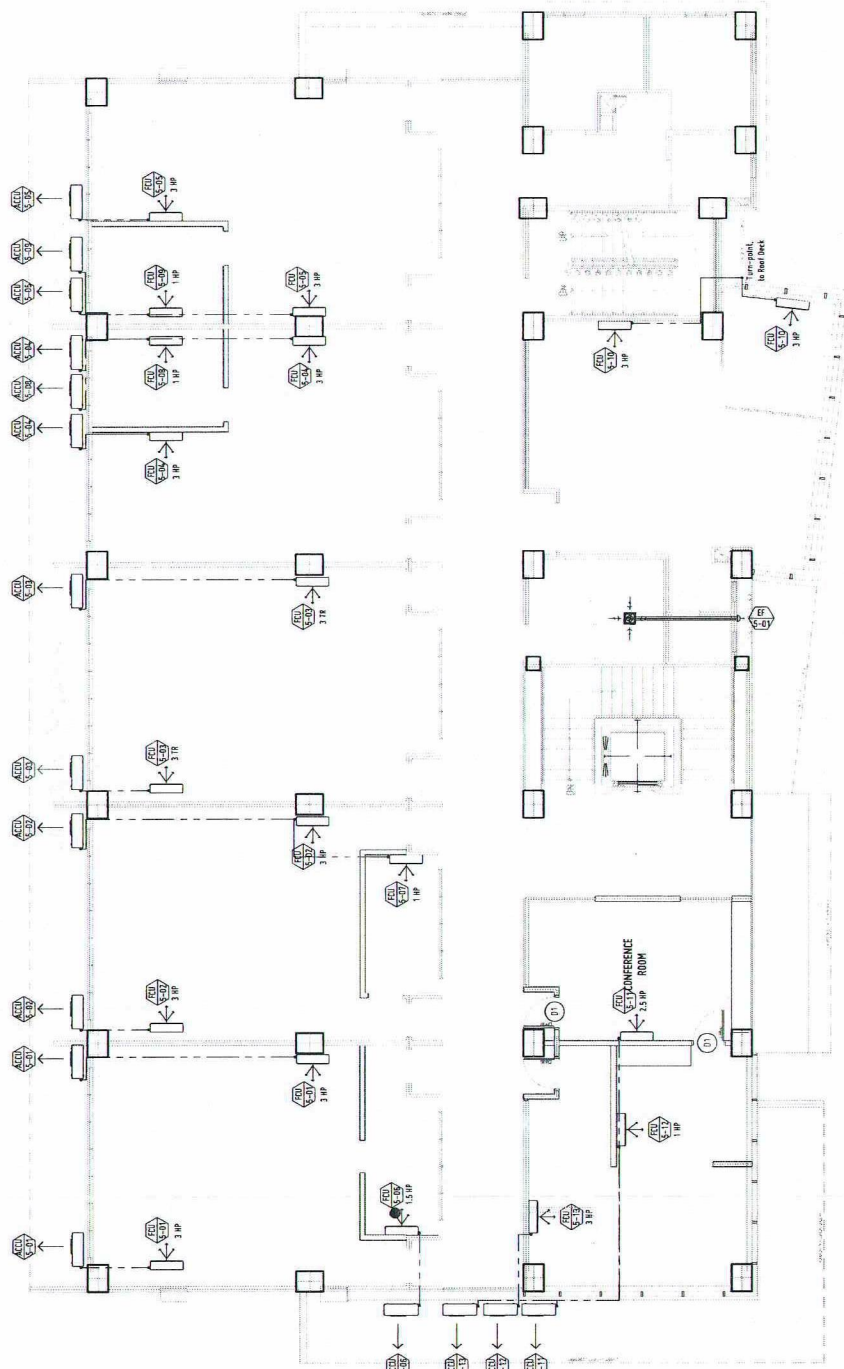


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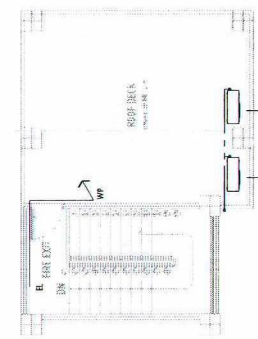


FIFTH FLOOR PLAN



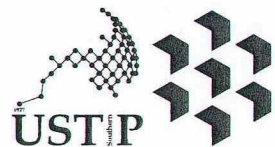
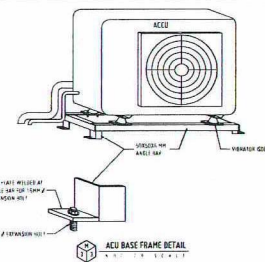
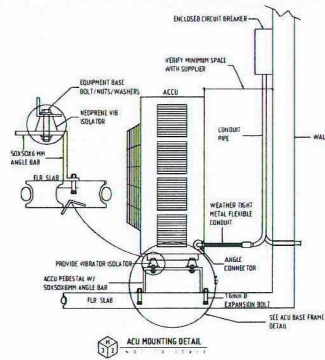
- LEGEND:
- DUPLEX CONFERENCE OUTLET
 - EMERGENCY OUTLET
 - EXIT OUTLET
 - FLOOR CONFERENCE OUTLET WITH SAFETY SHUTTERS
 - AIR CONDITIONING UNIT
 - ACU
 - WEATHERPROOF OUTLET
 - WP
 - PANEL BOARD

MARK NO.	QTY	TYPE	LOCATION	CAPACITY	UNIT HP/TR	SUPPLY FAN		OPERATING TEMPERATURE				COMPRESSOR DATA				REFRIGERANT DATA		
						AIR FLOW LPS	MOTOR WATTS	E.A.T. deg.C	EVAPORATING deg.F	CONDENSING deg.C	deg.F	MOTOR INPUT (KW)	V	PH	HZ			
ACCU 1-01	FCU 1-01	1	Ceiling Mounted	Admin Office	4.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	4.69	230	1	60	R410 OR APPROVE EQUAL
ACCU 1-02	FCU 1-02	4	Wall Mounted	Mechatronics Laboratory	3	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	14.71	230	1	60	R410 OR APPROVE EQUAL
ACCU 1-03	FCU 1-03	2	Ceiling Mounted	Electrical Laboratory	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	8.40	230	1	60	R410 OR APPROVE EQUAL
ACCU 1-04	FCU 1-04	2	Ceiling Mounted	Computer Laboratory	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	9.42	230	1	60	R410 OR APPROVE EQUAL
ACCU 1-05	FCU 1-05	2	Ceiling Mounted	Classroom 1	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	7.96	230	1	60	R410 OR APPROVE EQUAL
ACCU 1-06	FCU 1-06	1	Wall Mounted	Clinic	1.5	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	1.70	230	1	60	R410 OR APPROVE EQUAL
ACCU 1-07	FCU 1-07	1	Ceiling Mounted	Office - 1	3.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	3.36	230	1	60	R410 OR APPROVE EQUAL
ACCU 2-01	FCU 2-01	1	Wall Mounted	Librarian Office	1.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	1.02	230	1	60	R410 OR APPROVE EQUAL
ACCU 2-02	FCU 2-02	4	Ceiling Mounted	Library	2.5	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	11.64	230	1	60	R410 OR APPROVE EQUAL
ACCU 2-03	FCU 2-03	2	Ceiling Mounted	Classroom 3	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	8.14	230	1	60	R410 OR APPROVE EQUAL
ACCU 2-04	FCU 2-04	2	Ceiling Mounted	Classroom 4	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	8.21	230	1	60	R410 OR APPROVE EQUAL
ACCU 2-05	FCU 2-05	2	Ceiling Mounted	Classroom 5	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	7.96	230	1	60	R410 OR APPROVE EQUAL
ACCU 2-06	FCU 2-06	2	Wall Mounted	Faculty Office	2.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	4.87	230	1	60	R410 OR APPROVE EQUAL
ACCU 2-07	FCU 2-07	1	Wall Mounted	Function Room	2.5	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	2.83	230	1	60	R410 OR APPROVE EQUAL
ACCU 2-08	FCU 2-08	2	Ceiling Mounted	E-Library	2.5	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	5.71	230	1	60	R410 OR APPROVE EQUAL
ACCU 3-01	FCU 3-01	2	Ceiling Mounted	Classroom 6 & 11	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	7.96	230	1	60	R410 OR APPROVE EQUAL
ACCU 3-02	FCU 3-02	2	Ceiling Mounted	Classroom 7 & 12	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	8.14	230	1	60	R410 OR APPROVE EQUAL
ACCU 3-03	FCU 3-03	2	Ceiling Mounted	Classroom 8 & 13	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	8.14	230	1	60	R410 OR APPROVE EQUAL
ACCU 3-04	FCU 3-04	2	Ceiling Mounted	Classroom 9 & 14	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	8.14	230	1	60	R410 OR APPROVE EQUAL
ACCU 3-05	FCU 3-05	2	Ceiling Mounted	Classroom 10 & 15	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	7.96	230	1	60	R410 OR APPROVE EQUAL
ACCU 3-06	FCU 3-06	2	Wall Mounted	Faculty Office	3.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	6.27	230	1	60	R410 OR APPROVE EQUAL
ACCU 3-07	FCU 3-07	1	Wall Mounted	Function Room	2.5	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	2.83	230	1	60	R410 OR APPROVE EQUAL
ACCU 3-08	FCU 3-08	2	Wall Mounted	Faculty Office	3.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	6.60	230	1	60	R410 OR APPROVE EQUAL
ACCU 4-01	FCU 4-01	2	Ceiling Mounted	Classroom 6 & 11	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	7.96	230	1	60	R410 OR APPROVE EQUAL
ACCU 4-02	FCU 4-02	2	Ceiling Mounted	Classroom 7 & 12	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	8.14	230	1	60	R410 OR APPROVE EQUAL
ACCU 4-03	FCU 4-03	2	Ceiling Mounted	Classroom 8 & 13	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	8.14	230	1	60	R410 OR APPROVE EQUAL
ACCU 4-04	FCU 4-04	2	Ceiling Mounted	Classroom 9 & 14	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	8.14	230	1	60	R410 OR APPROVE EQUAL
ACCU 4-05	FCU 4-05	2	Ceiling Mounted	Classroom 10 & 15	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	7.96	230	1	60	R410 OR APPROVE EQUAL
ACCU 4-06	FCU 4-06	2	Wall Mounted	Faculty Office	3.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	6.27	230	1	60	R410 OR APPROVE EQUAL
ACCU 4-07	FCU 4-07	1	Wall Mounted	Function Room	2.5	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	2.83	230	1	60	R410 OR APPROVE EQUAL
ACCU 4-08	FCU 4-08	2	Wall Mounted	Faculty Office	3.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	6.60	230	1	60	R410 OR APPROVE EQUAL
ACCU 5-01	FCU 5-01	2	Wall Mounted	Classroom 16	3.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	6.80	230	1	60	R410 OR APPROVE EQUAL
ACCU 5-02	FCU 5-02	2	Wall Mounted	Classroom 17	3.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	7.22	230	1	60	R410 OR APPROVE EQUAL
ACCU 5-03	FCU 5-03	2	Ceiling Mounted	Classroom 18	3.0	TR	VARIABLE	VARIABLE	37	4.44	40	48.8	120	8.14	230	1	60	R410 OR APPROVE EQUAL
ACCU 5-04	FCU 5-04	2	Wall Mounted	Classroom 19	3.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	7.05	230	1	60	R410 OR APPROVE EQUAL
ACCU 5-05	FCU 5-05	2	Wall Mounted	Classroom 20	3.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	6.86	230	1	60	R410 OR APPROVE EQUAL
ACCU 5-06	FCU 5-06	1	Wall Mounted	Office 1	1.5	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	1.45	230	1	60	R410 OR APPROVE EQUAL
ACCU 5-07	FCU 5-07	1	Wall Mounted	Office 2	1.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	1.09	230	1	60	R410 OR APPROVE EQUAL
ACCU 5-08	FCU 5-08	1	Wall Mounted	Office 3	1.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	1.08	230	1	60	R410 OR APPROVE EQUAL
ACCU 5-09	FCU 5-09	1	Wall Mounted	Office 4	1.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	1.08	230	1	60	R410 OR APPROVE EQUAL
ACCU 5-10	FCU 5-10	2	Wall Mounted	Faculty Office	3.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	6.27	230	1	60	R410 OR APPROVE EQUAL
ACCU 5-11	FCU 5-11	1	Wall Mounted	Conference	2.5	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	2.94	230	1	60	R410 OR APPROVE EQUAL
ACCU 5-12	FCU 5-12	2	Wall Mounted	Faculty Office	2.0	HP	VARIABLE	VARIABLE	37	4.44	40	48.8	120	4.82	230	1	60	R410 OR APPROVE EQUAL



ROOF DECK PLAN (POWER LAYOUT)
-for future development

SCALE 1:100 MTS



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WEBSITE: www.ustp.edu.ph

PROFESSIONAL ELECTRICAL ENGINEER
PRC NO.: PTR NO.:
DATE: PLACE:
TIN NO.:

PROJECT
CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III,
VILLANUEVA CAMPUS
LOCATION
USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
OWNER
UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:
ENGR. GRACE C. BABA
DIRECTOR, IPFDO

RECOMMENDING APPROVAL:
ATTY. ERWIN B. BOSJO
VP FOR ADMINISTRATION & LEGAL AFFAIRS

APPROVED BY:
DR. AMBROSIO B. CULTURA II
PRESIDENT, USTP SYSTEM

SHEET CONTENTS:
FOURTH FLOOR PLAN (POWER LAYOUT)
FIFTH FLOOR PLAN (POWER LAYOUT)

DRAWN BY:
DATE DRAWN:
PNT:

M3

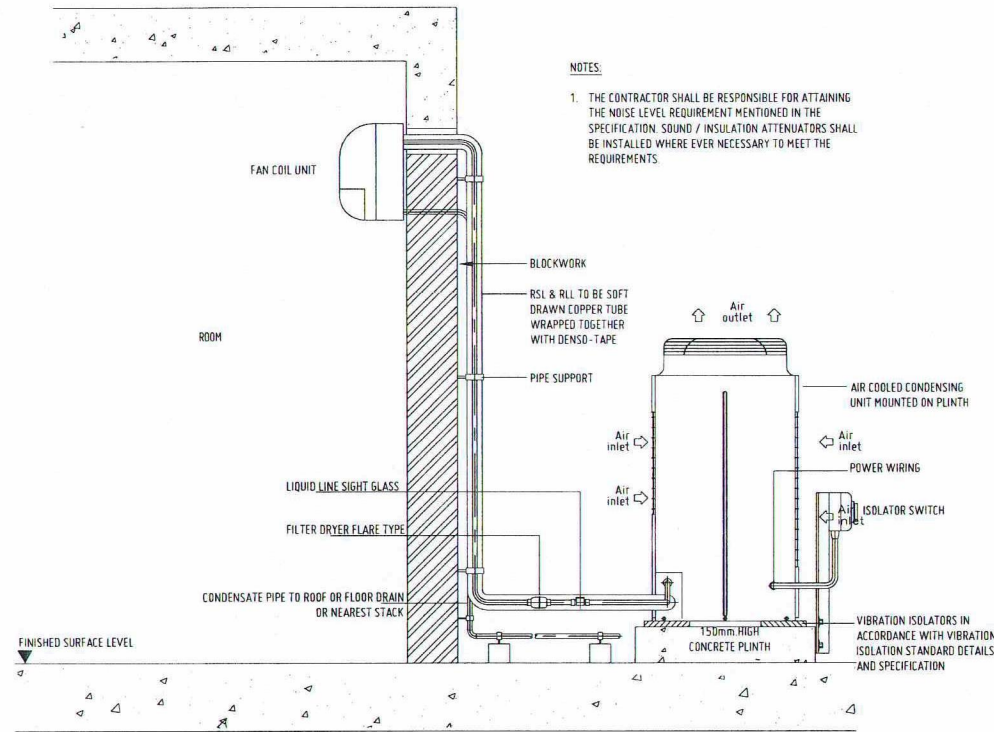
APPROVED BY:

GENERAL NOTES :

1. ALL MECHANICAL WORKS SHALL BE DONE IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE PHILIPPINES NATIONAL BUILDING CODE, PSME CODE, PSVARE ASHRAE, SMACNA, FIRE CODE OF THE PHILIPPINES AND OTHER REGULATION OF THE LOCAL COMMUNITY.
2. THE TOTAL SCOPE OF WORKS SHALL INCLUDE ALL WORKS DESCRIBED IN THE PLANS LISTED IN THE TECHNICAL SPECIFICATIONS FOR MECHANICAL WORKS.
3. THE WORKS SHALL BE EXECUTED IN CLOSED COORDINATION WITH ALL OTHER TRADES.
4. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, EQUIPMENT CATALOG, SAMPLES OF ALL THE MATERIAL TO BE USED BEFORE EXECUTION OF THE WORKS.
5. THE CONTRACTOR OR SUPPLIER SHALL INSTALL ALL MATERIAL AND EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION.
6. ALL PIPE AND DUCT PENETRATION SHALL BE CAULKED WITH FIRE SEALANT.
7. ALL EQUIPMENT REST ON SLAB AND CEILING SHALL BE PROVIDED WITH VIBRATION ISOLATOR TO PREVENT VIBRATION AND NOISE TRANSMISSION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONCRETE PAD AND SUPPORT OF ALL MECHANICAL EQUIPMENT.
9. THE CONTRACTOR SHALL ARRANGED THE PIPING, DUCTING AND EQUIPMENT TO HAVE EASY ACCESS FOR REMOVING, CLEANING AND SERVICING WITHOUT DISMANTLING THE SYSTEM.
10. ALL POWER WIRING UP TO SPLICE BOX SHALL BE THE ELECTRICAL CONTRACTOR FROM SPLICE BOX TO THE EQUIPMENT BY MECHANICAL CONTRACTOR.
11. PROVIDE AND INSTALL CONTROLS AND CONTROL WIRINGS FOR ALL AIR-CONDITIONING EQUIPMENT.
12. PROVIDE THERMOSTAT TO ALL INDOOR UNITS.
13. PROVIDE SEPARATE CONDENSER DRAIN RISER.
14. PIPE ALL EQUIPMENT DRAIN TO THE NEAREST FLOOR DRAIN PROVIDED BY PLUMBING CONTRACTOR.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL BALANCING, TESTING AND COMMISSIONING OF THE WHOLE AIR CONDITIONING, VENTILATION SYSTEM AND SUBMIT WRITTEN DATA PRIOR TO TURN OVER.
16. WORKMANSHIP : THE WORK THROUGHOUT SHALL BE EXECUTED IN THE BEST & MOST THOROUGH MANNER KNOWN TO TRADE & TO THE SATISFACTION OF THE ARCHITECT AND THE ENGINEER.
17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL GOVERNMENT/LOCAL CONSTRUCTION AND OPERATION PERMITS AND PAY ALL THE REQUIRED FEES.
18. ALL ACCU ON GROUND FLOOR SHALL BE PAD MOUNTED.

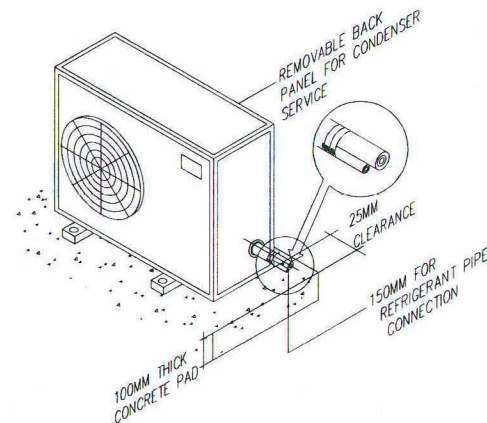
NOTES ON PIPING INSTALLATION:

1. REFRIGERANT PIPES SHALL BE INTERNALLY CLEANED BY SWABBING WITH CLEAN COTTON CLOTH TO REMOVE ALL DUST, BURRS, AND OTHER MISCELLANEOUS DIRT.
2. WHILE SOLDERING JOINTS, A SWEEP OF INERT NITROGEN GAS SHOULD BE PASSED THROUGH PIPES TO PREVENT OXIDATION DEPOSITS INSIDE.
3. FITTINGS:
 - A. USE STANDARD LONG RADIUS COPPER ELBOWS, REDUCERS, ETC. DO NOT USE FIELD-FORMED ELBOWS, REDUCERS, ETC.
 - B. JOINTS BETWEEN PIPES SHOULD BE THROUGH STANDARD COPPER COUPLING FORMED FITTING MADE BY SWAGING OR ENLARGING ONE PIPE END TO BE ABLE TO RECEIVE THE OTHER PIPE SECTION WOULD NOT BE ALLOWED.
 - C. JOINTS TO SCREWED ACCESSORIES SUCH AS EXPANSION VALVES, FILTER DRIER, ETC. SHALL BE MADE WITH STANDARD FLARED FITTINGS.
4. THE COMPLETED PIPING INSTALLATION SHOULD BE LEAK TESTED BY SUBJECTING THE SAME (BOTH LIQUID AND SUCTION LINE) TO A PRESSURE OF 3100 Pa USING DRY NITROGEN GAS. THIS PRESSURE SHOULD BE LEFT FOR 24 HOURS AND IF THERE IS NO NOTICEABLE REDUCTION IN PRESSURE WITHIN THE PERIOD, THE NITROGEN CHARGE SHALL BE RELIEVED DOWN TO 140KPa TO SERVE AS HOLDING CHARGE WHILE WAITING FOR THE EQUIPMENT CONNECTION. IF THERE IS NOTICEABLE REDUCTION IN THE TEST PRESSURE, LEAK SHOULD BE LOCATED AND REPAIRED.
5. PROPERLY TESTED PIPING SHOULD BE SECURELY CAPPED AT BOTH ENDS AND WITH HOLDING CHARGED AS STATED IN ITEM 4 ABOVE WHILE WAITING FOR FINAL CONNECTION TO EQUIPMENT. INSULATE SUCTION PIPING ONLY AFTER PROPER LEAK TESTING.



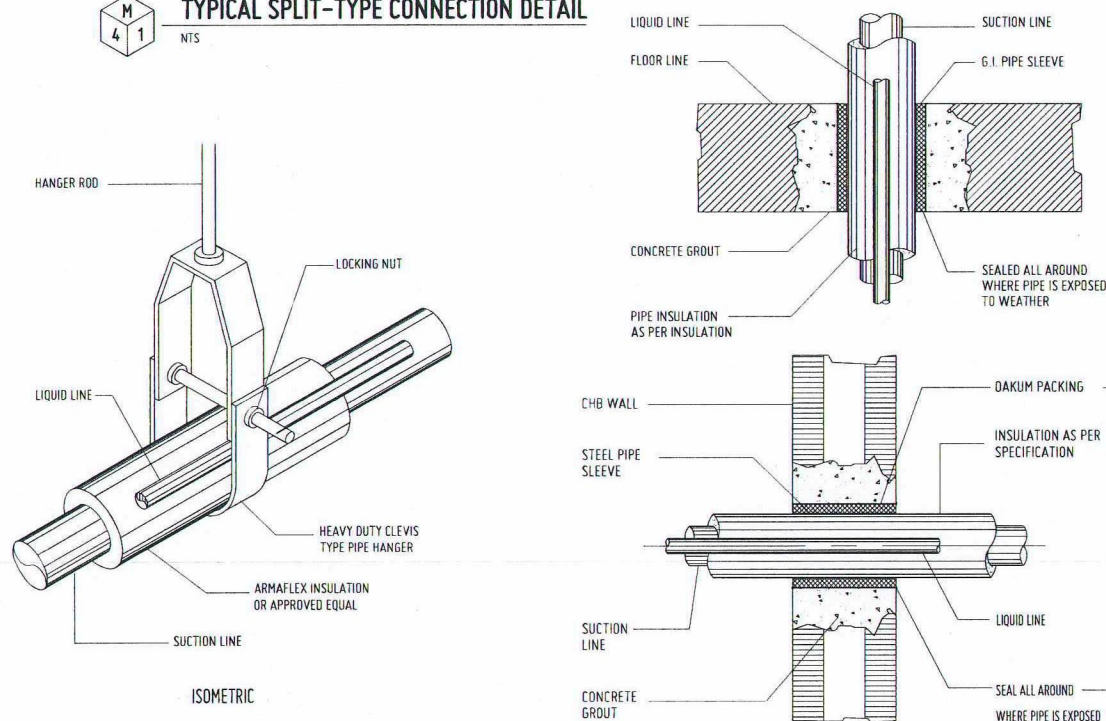
NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ATTAINING THE NOISE LEVEL REQUIREMENT MENTIONED IN THE SPECIFICATION SOUND / INSULATION ATTENUATORS SHALL BE INSTALLED WHERE EVER NECESSARY TO MEET THE REQUIREMENTS.



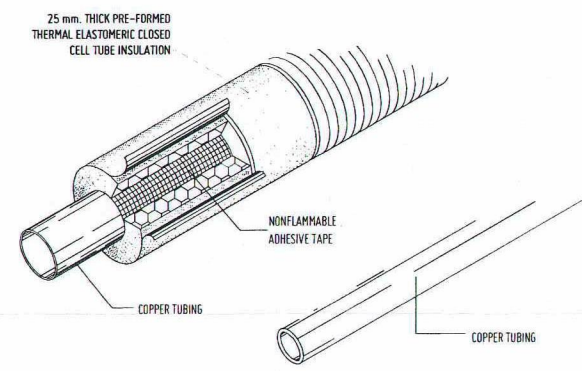
M 4 2
NTS
ACCU MOUNTING DETAIL

M 4 1
NTS
TYPICAL SPLIT-TYPE CONNECTION DETAIL



M 4 3
NTS
REFRIGERANT PIPE HANGER DETAIL

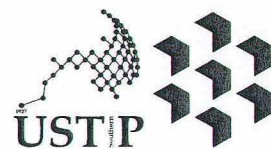
M 4 4
NTS
REFRIGERANT PIPE THRU WALL DETAIL



NOTE:

1. CONDENSATE DRAIN PIPE INSULATION SHALL BE OF SIMILAR MATERIAL BUT 19 mm THICK.
2. PROVIDE ALUMINUM CLADDING FOR OUTDOOR REFRIGERANT PIPING.

M 4 5
NTS
REFRIGERANT PIPE INSULATION DETAIL



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PROFESSIONAL ELECTRICAL ENGINEER	
PRC NO.:	PTR NO.:
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TIN NO.:	

PROJECT	CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III, VILLANUEVA CAMPUS
LOCATION	USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
OWNER	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:
Grace C. Baba
ENGR. GRACE C. BABA
DIRECTOR, IPFDD

RECOMMENDING APPROVAL:
Erwin B. Bulig
ATTY. ERWIN B. BULIG
VP FOR ADMINISTRATION & LEGAL AFFAIRS

APPROVED BY:
Ambrosio B. Cultura II
DR. AMBROSIO B. CULTURA II
PRESIDENT, USTP SYSTEM

SHEET CONTENTS:	
DRAWN BY:	
DATE DRAWN:	
INT:	

M4

APPROVED BY:

GENERAL NOTES :

1. MOTORS, GENERATORS AND OTHER ELECTRICAL EQUIPMENT SHALL BE PROVIDED WITH NON-COMBUSTIBLE SPLASH PROOF SHIELDS OR HOODS.
2. SPRINKLER HEADS SPACED LESS THAN 1.80 M. (6 FT.) SHALL BE PROVIDED WITH Baffles OR DEFLECTORS.
3. FLOOR DRAINS FOR OIL SPILLS SHALL BE PROVIDED IN FLOOR SLAB FOR TRANSFORMER VAULT, BY PLUMBING CONTRACTOR.
4. ALL PORTABLE FIRE EXTINGUISHER (PFE) INSIDE FIRE HOSE CABINETS SHALL BE "ABC" TYPE DRY CHEMICAL.
5. ALL ELECTRICAL, MECHANICAL AND ROOMS TO BE PROVIDED WITH 10 LBS. FE-36 TYPE PORTABLE FIRE EXTINGUISHER.
6. TRANSFORMER VAULT SHALL BE PROVIDED WITH 1-50 LBS. WHEELIE TYPE FE-36 PORTABLE FIRE EXTINGUISHER.
7. ALL WIRE FOR LOAD SIDE SHALL BE BY FIRE PROTECTION CONTRACTOR SCOPE OF WORK.
8. PUMP CONCRETE PUMP SHALL BE BY OTHERS SCOPE.
9. PROVIDE FIRE SEALANT TO ALL PIPE PENETRATIONS THRU ROOMS AND FLOOR LEVELS.
10. ALL SPRINKLERS AT AREAS WITH CEILING SHALL BE PENDENT TYPE. ALL SPRINKLERS AT AREAS WITHOUT CEILING SHALL BE UPRIGHT TYPE.
11. MINIMUM SPACING BETWEEN SPRINKLER HEAD AND LIGHTING FIXTURE SHALL BE 300mm.
12. ALL PIPES PASSING THRU BEAMS/GIRDERS SHALL BE PROVIDED WITH PIPE SLEEVE ONE (1) SIZE HIGHER.
13. FIRE PUMP SHALL BE PROVIDED WITH AUTOMATIC TRANSFER SWITCH (ATS).
12. FIRE AND JOCKEY PUMP SHALL HAVE SEPARATE SENSING LINE. MATERIAL SHALL BE STAINLESS STEEL.

MATERIAL SPECIFICATIONS :

- FIRE LINES** FIRE LINES SHALL BE BLACK IRON (B.I.) PIPES SCHEDULE 80/40 "STANDARD" CONFORMING TO ASTM A-120-199 "SUPERIOR" OR "SUPREME" BRAND OR APPROVED EQUIVALENT.
- GATE VALVES** SHALL BE OUTSIDE SCREW AND YOKE (OS&Y) TO ASTM B-82 CHECK AND GLOBE VALVES TO ASTM B-82.
- SPRINKLER HEADS** ALL SPRINKLER HEADS, PENDENT (CONCEALED, UPRIGHT & SIDEWALL) SHALL BE RATED 57C (135°F) TO 74C (165°F) EXCEPT ON AHU, PUMP, MECHANICAL ROOM & KITCHEN SHALL BE 79C (175°F) TO 100C (212°F).

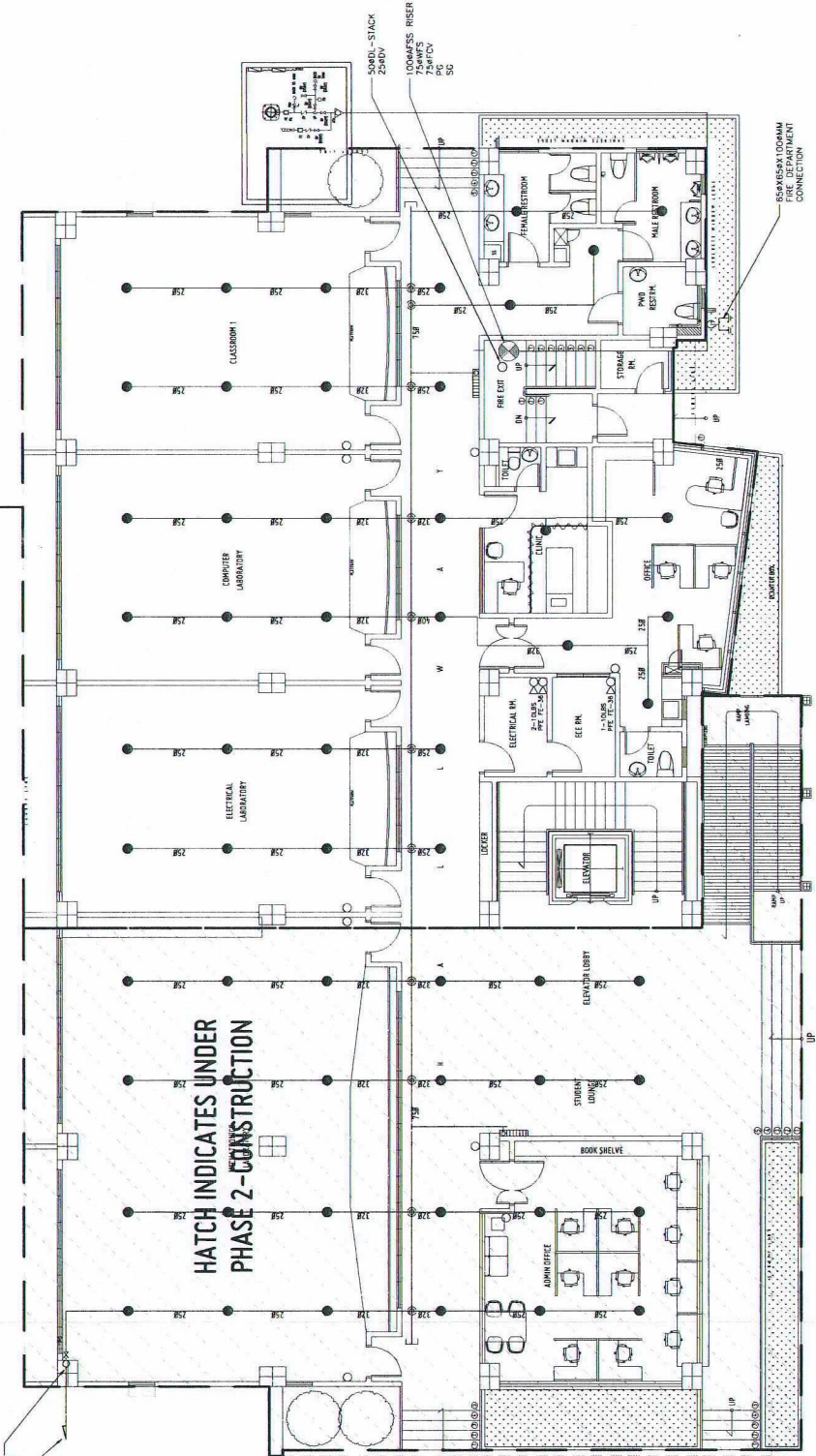
LEGEND :

- RECESSED PENDENT TYPE SPRINKLER HEAD
- UPRIGHT SPRINKLER HEAD
- SIDEWALL SPRINKLER HEAD
- SPRINKLER RISER
- DRY STANDPIPE RISER
- DL STACK
- CROSSMAN OR FEEDMAN LINE
- (DSP/AFSS) FIRE DEPARTMENT CONNECTION SUPPLY LINE
- FLUSHING CONNECTION
- BRANCH LINE
- RISER NIPPLE
- 2-WAY LONGITUDINAL SWAY BRACE
- 2-WAY LATERAL SWAY BRACE
- 4-WAY RISER SWAY BRACE
- FIRE HOSE VALVE
- HANGER
- FIRE HOSE CABINET
- PIPE SLEEVES
- (10 LBS.) PORTABLE FIRE EXTINGUISHER
- (50 LBS.) PORTABLE FIRE EXTINGUISHER
- WHEELIE TYPE
- DRAIN LINE
- INSPECTOR TEST CONNECTION
- DRAIN VALVE
- 2-WAY DSP & AFSS FIRE DEPT. CONNECTION W/LET
- 2-WAY SQUARE TWIN ROOF OUTLET/ ROOF MANIFOLD
- ALARM CHECK VALVE ASSEMBLY
- PRESSURE GAUGE

ABBREVIATION:

- DSP DRY STAND PIPE
- AFSS AUTOMATIC FIRE SPRINKLER SYSTEM
- OS & YJOY GATE VALVE(OUTSIDE SCREW & YOKE)
- GV GATE VALVE
- DV DRAIN VALVE
- CV CHECK VALVE
- FCV FLOOR CONTROL VALVE
- FH FIRE HYDRANT
- FL FIRE LINE
- ITC INSPECTOR TEST CONNECTION
- PFE PORTABLE FIRE EXTINGUISHER
- FHW FIRE HOSE WALK
- ADV ALARM CHECK VALVE
- DL DRAIN LINE
- FHC FIRE HOSE CABINET
- WFS WATER FLOW SWITCH
- PG PRESSURE GAUGE

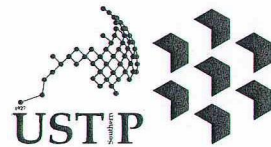
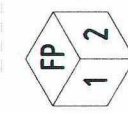
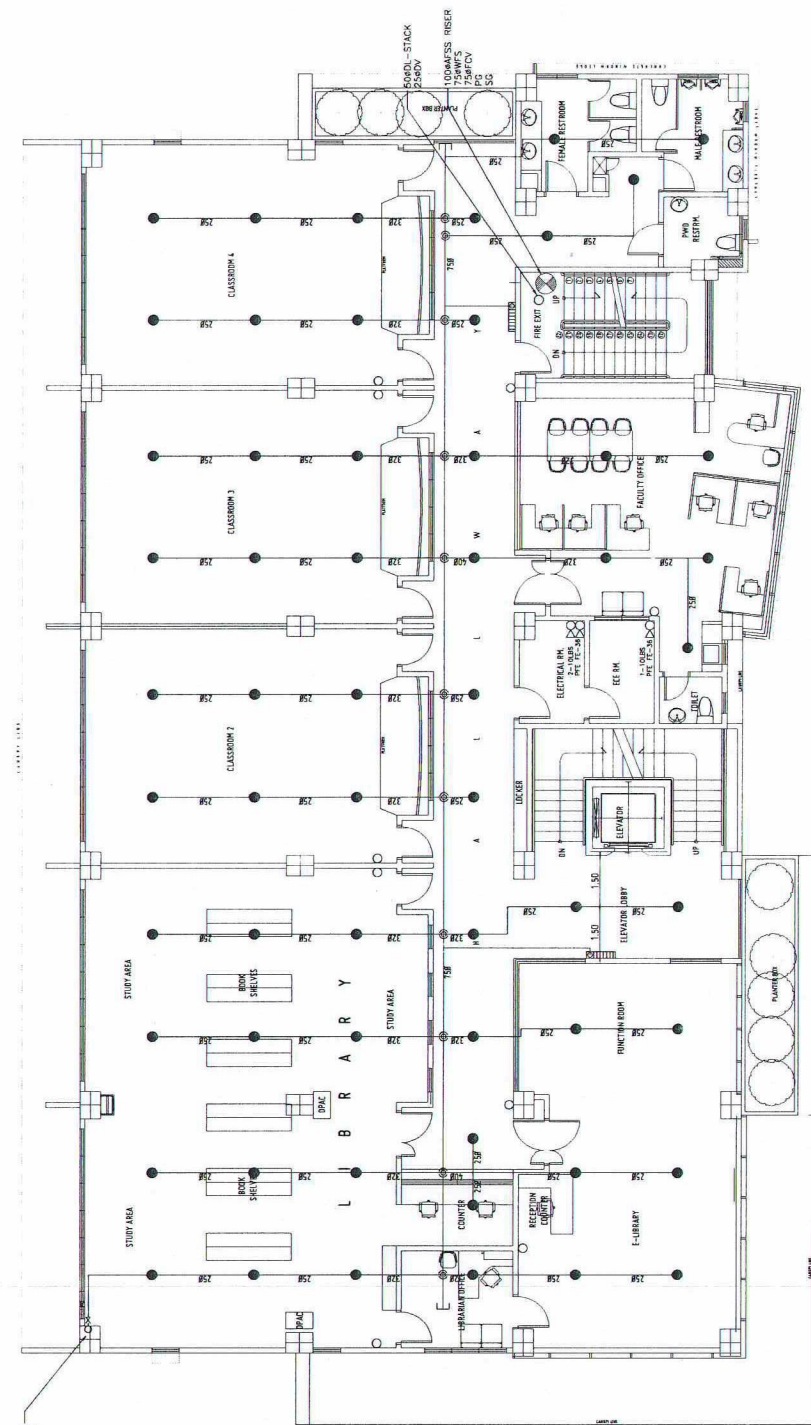
PHASE 1 - CONSTRUCTION



FIRE PROTECTION LAYOUT GROUND FLOOR-under phase 1 & phase 2
SCALE: 1:100 MTS



PHASE 2 - CONSTRUCTION



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UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES
CAGAYAN DE ORO CAMPUS
INFRASTRUCTURE PLANNING AND FACILITY DEVELOPMENT UNIT
CLARID M. RECTO AVENUE, LAPASAN, CAGAYAN DE ORO CITY 9000
TELEPHONE # (0862) 72-60-85 / (0868) 856-1738 / 856-1739 | TELE FAX (086) 856-4886
WEBSITE: www.ustip.edu.ph

PROFESSIONAL MECHANICAL ENGINEER	
PRC NO.:	PTR NO.:
TIN NO.:	PLACE:

PROJECT	CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III, VILLANUEVA CAMPUS
LOCATION	USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
OWNER	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:
ENGR. GRACE C. BABA
DIRECTOR, IPFDO

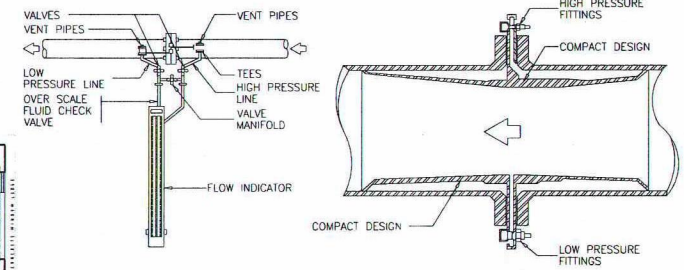
RECOMMENDING APPROVAL:
ATTY. ERWIN B. BUCIO
VP FOR ADMINISTRATION & LEGAL AFFAIRS

APPROVED BY:
DR. AMBROSIO B. CULTURA II
PRESIDENT, USTP SYSTEM

SHEET CONTENTS:	GROUND FLOOR
DRAWN BY:	
DATE DRAWN:	
PNT:	

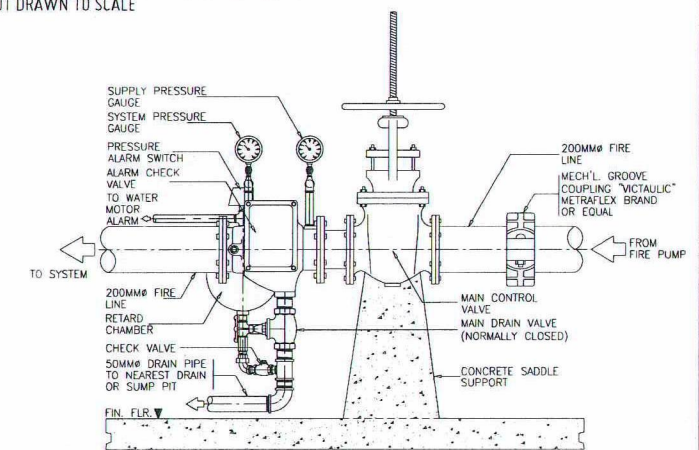


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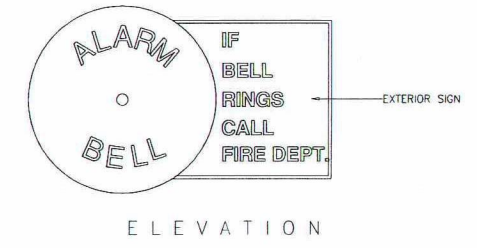
FLOW MEASURING DEVICE DETAIL
NOT DRAWN TO SCALE

FP 2 4



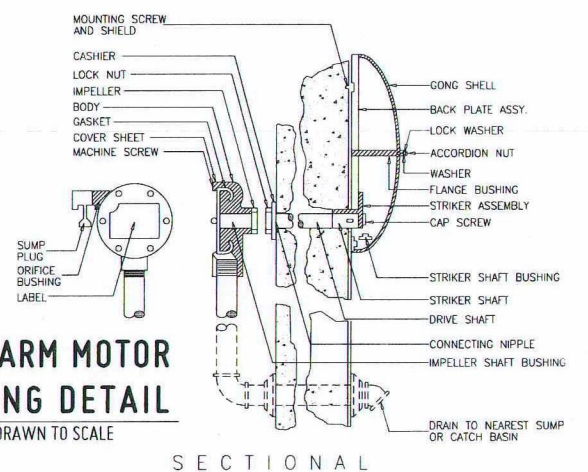
ALARM CHECK VALVE ASSEMBLY (WET TYPE)
NOT DRAWN TO SCALE

FP 2 3

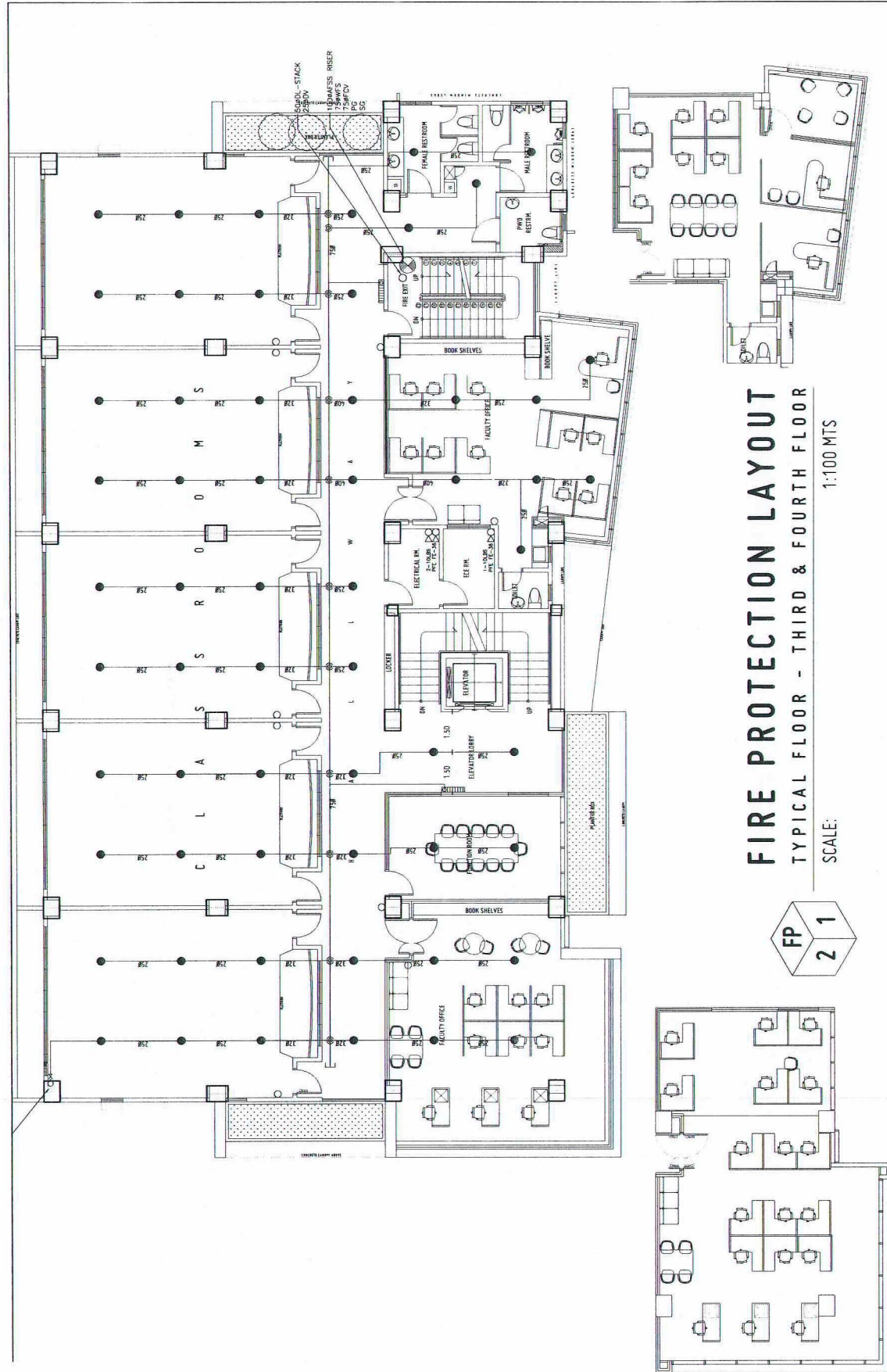


ALARM MOTOR GONG DETAIL
NOT DRAWN TO SCALE

FP 2 4

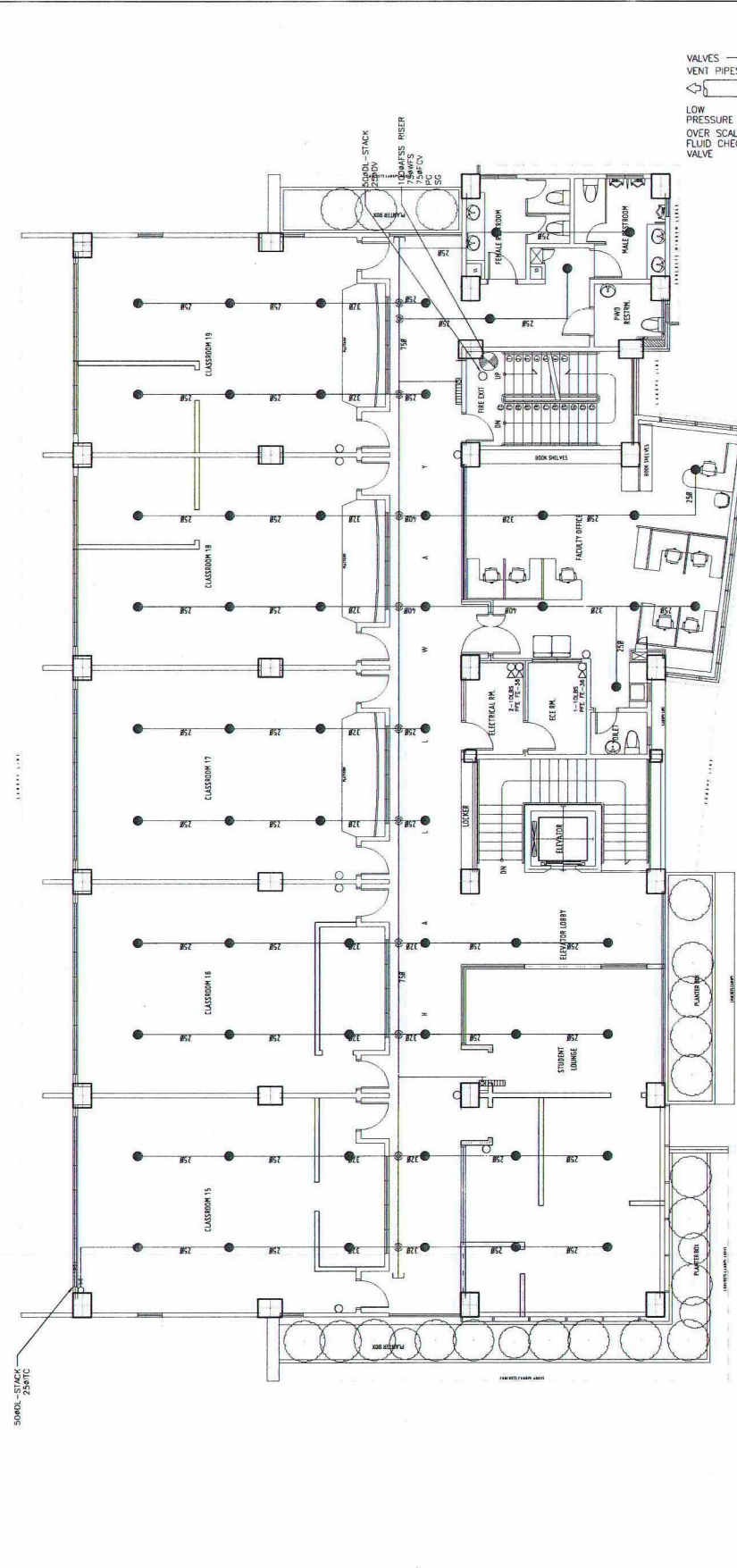


SECTIONAL



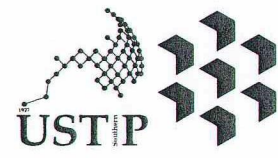
FIRE PROTECTION LAYOUT
TYPICAL FLOOR - THIRD & FOURTH FLOOR
SCALE: 1:100 MTS

FP 2 1



FIRE PROTECTION LAYOUT FIFTH FLOOR
SCALE: 1:100 MTS

FP 2 2



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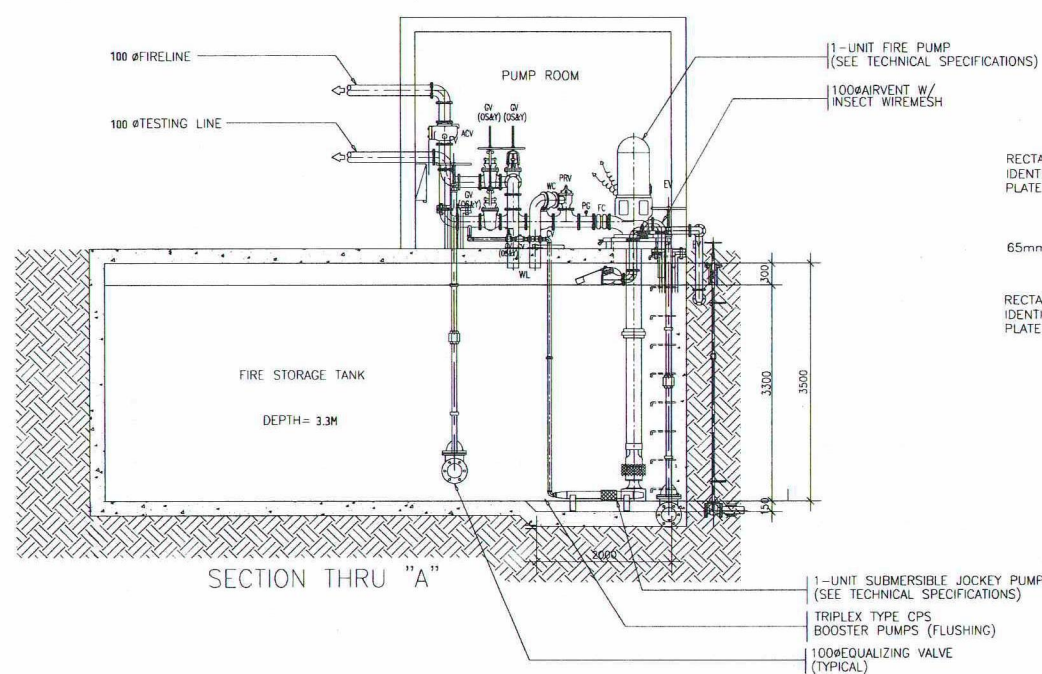
PROFESSIONAL MECHANICAL ENGINEER		PROJECT
PRC NO.:	PTR NO.:	LOCATION
TIN NO.:	PLACE:	OWNER

CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III, VILLANUEVA CAMPUS	RECOMMENDING APPROVAL:
USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL	ENGR. GRACE C. BABA DIRECTOR, IPFDD
UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES	RECOMMENDING APPROVAL:
	ATTY. ERWIN B. BUENO VP FOR ADMINISTRATION & LEGAL AFFAIRS

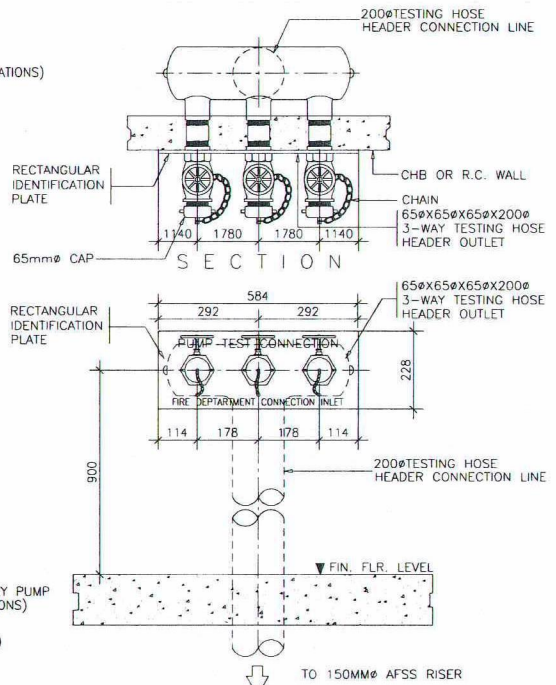
APPROVED BY:	SHEET CONTENTS:	DRAWN BY:
DR. AMBROSIO B. CULTURA II PRESIDENT, USTP SYSTEM	SECOND FLOOR	DATE DRAWN:
		INT:

FP2

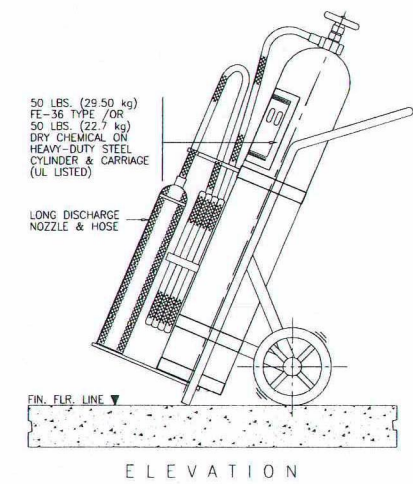
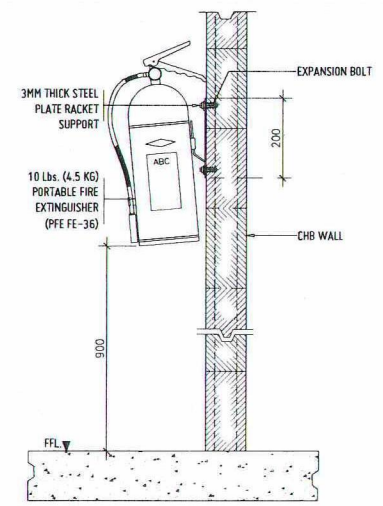
APPROVED BY:



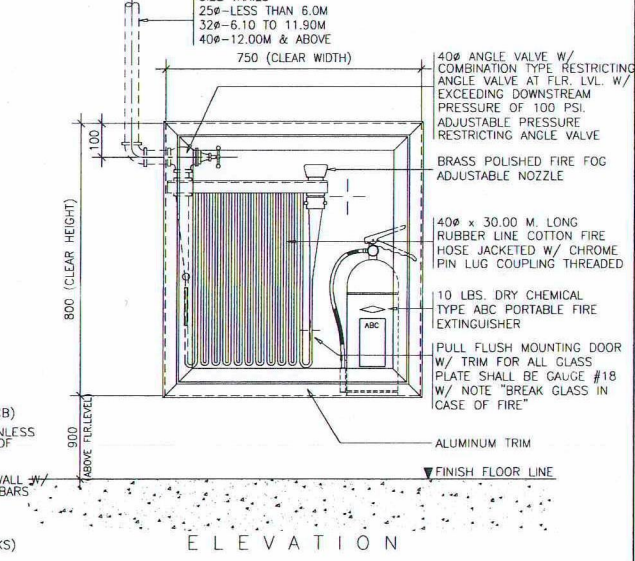
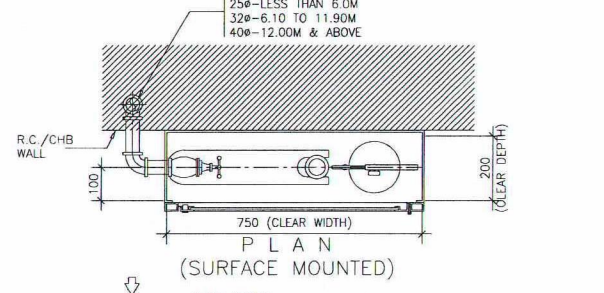
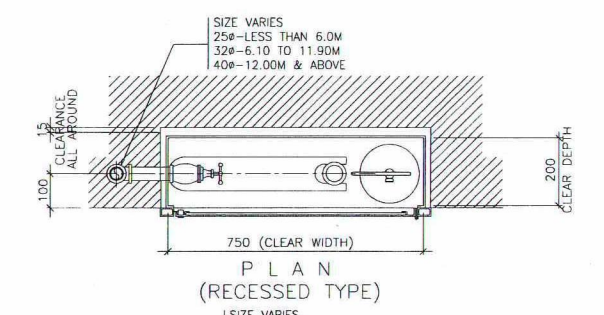
FP 3 1 FIRE STORAGE TANK DETAIL
SCALE: 1:50 MTS



FP 3 4 PUMP TEST CONNECTION DETAIL
SCALE: 1:10 MTS



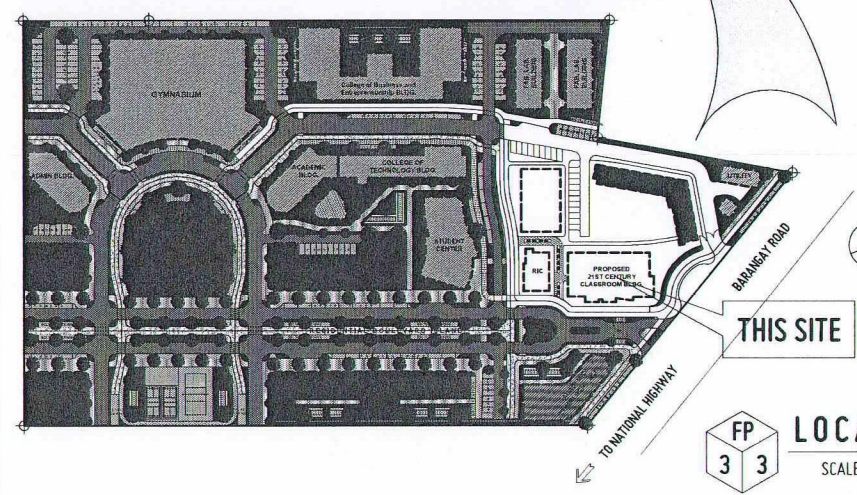
FP 3 6 10 lbs. (45kg) PFE FE-36 PORTABLE FIRE EXTINGUISHER
NOT DRAWN TO SCALE



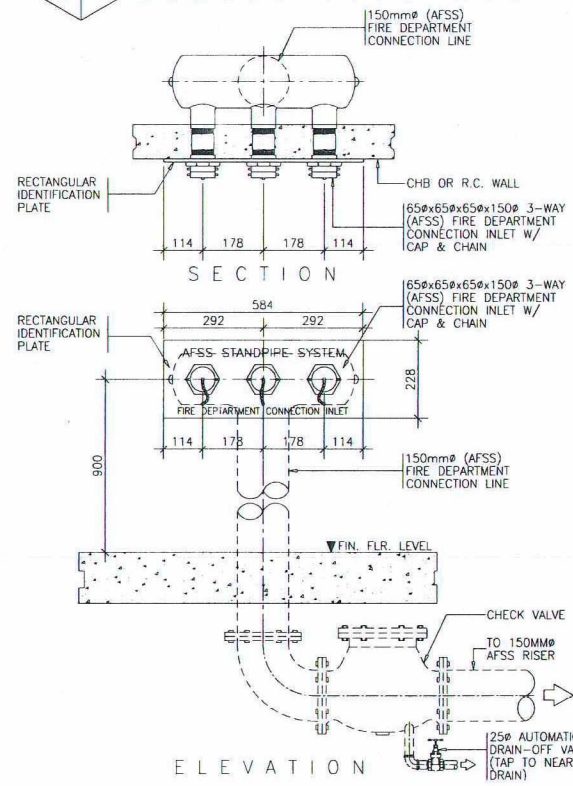
FP 3 8 FIRE HOSE CABINET DETAIL
NOT DRAWN TO SCALE



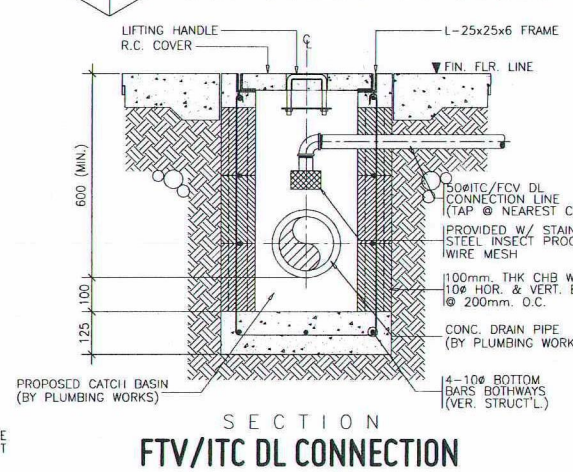
FP 3 2 VICINITY MAP
SCALE: NTS



FP 3 3 LOCATION PLAN
SCALE: 1:1500 MTS



FP 3 5 AFSS FIRE DEPT. INLET DETAIL
SCALE: 1:10 MTS



FP 3 7 FTV/ITC DL CONNECTION TO CATCH BASIN
SCALE: 1:10 MTS



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PROFESSIONAL MECHANICAL ENGINEER	PROJECT
PRC NO.:	LOCATION
PTK NO.:	OWNER
DATE:	
TIN NO.:	
PLACE:	

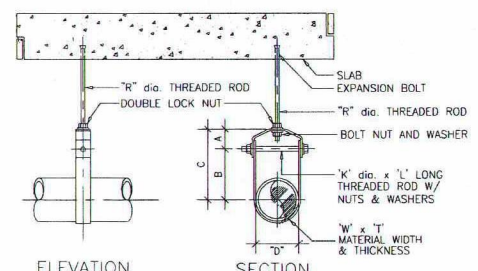
CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III, VILLANUEVA CAMPUS	RECOMMENDING APPROVAL:
USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL	ENGR. GRACE C. BABA DIRECTOR, IPFDO
UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES	RECOMMENDING APPROVAL:
	ATTY. ERWIN B. BUCIO VP FOR ADMINISTRATION & LEGAL AFFAIRS

APPROVED BY:	APPROVED BY:
DR. AMBROSIO B. CULTURA II PRESIDENT, USTP SYSTEM	

SHEET CONTENTS:	DRAWN BY:
FIRE STORAGE TANK DETAIL	
VICINITY MAP & LOCATION PLAN	DATE DRAWN:
PUMP TEST CONNECTION DETAIL	
AFSS FIRE DEPT. INLET DETAIL	FN:
10 LBS. (4.5KG) PFE FE-36 PORTABLE FIRE EXTINGUISHER	
FTV/ITC DL CONNECTION TO CATCH BASIN	
FIRE HOSE CABINET DETAIL	



APPROVED BY:

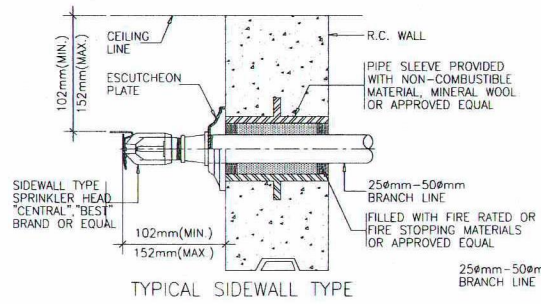


ELEVATION SECTION
CLEVIS HANGERS

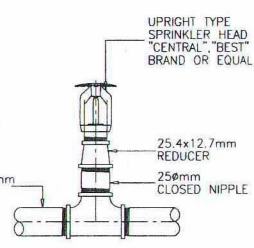
TABLE OF DIMENSIONS IN MM

PIPE SIZE "D" (MM)	ROD DIA. "R" (MM)	B	C	A MAX.	W x T	K x L
50	9.65	111.12	143	69.30	25 x 3	M10 x 85
75	12.7	105.0	165.1	30.23	40 x 6	M12 x 115
100	15.9	133.35	40	33.27	40 x 6	M12 x 130
150	19.1	176.12	267	50.00	40 x 6	M16 x 190

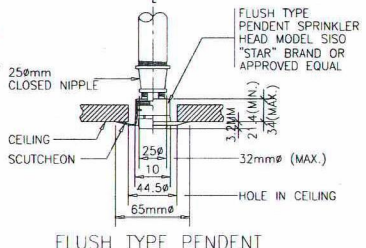
FP 4 1
PIPE HANGER DETAIL
NOT DRAWN TO SCALE



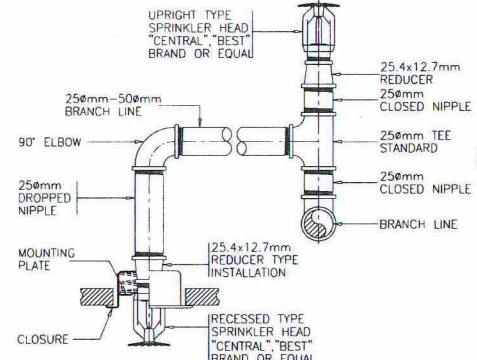
TYPICAL SIDEWALL TYPE



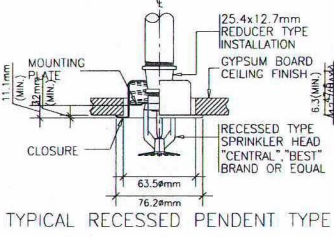
TYPICAL UPRIGHT TYPE



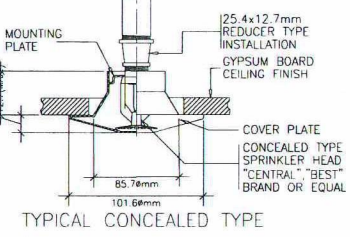
FLUSH TYPE PENDENT



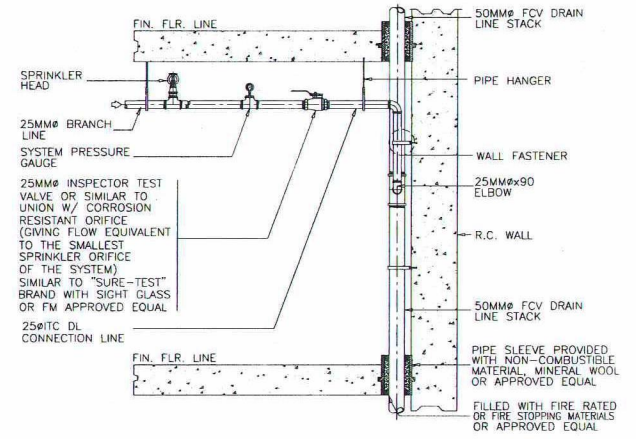
TYPICAL COMBINATION TYPE



TYPICAL RECESSED PENDENT TYPE



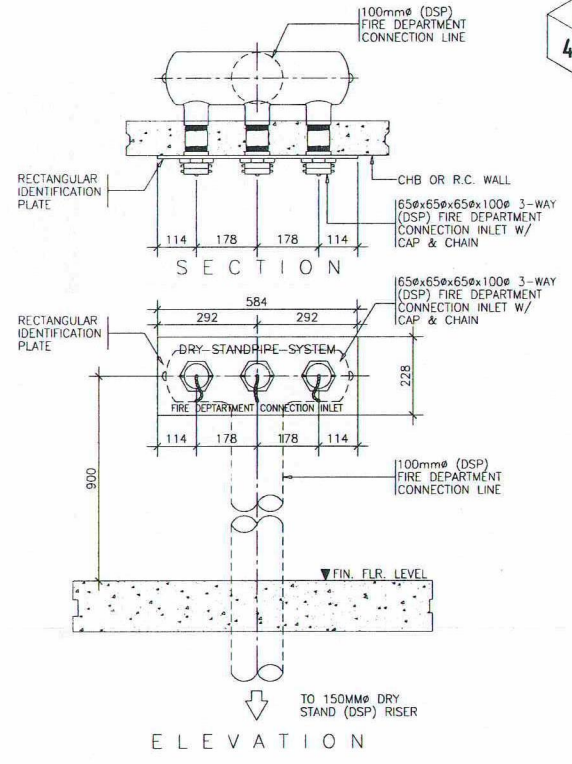
TYPICAL CONCEALED TYPE



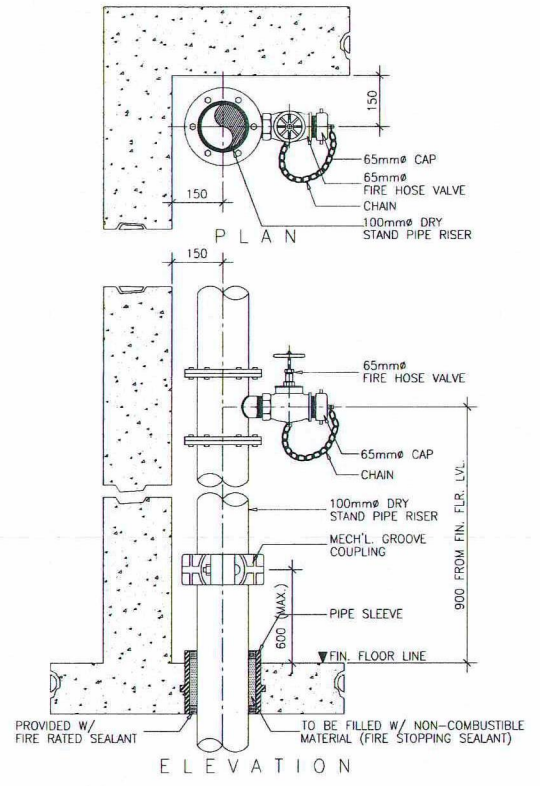
INSPECTOR TEST CONNECTION DETAIL
NOT DRAWN TO SCALE

FP 4 6

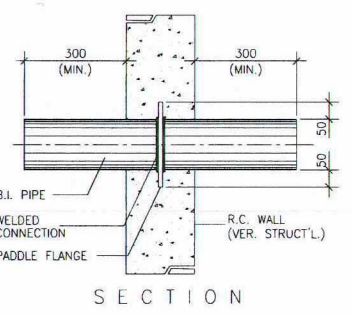
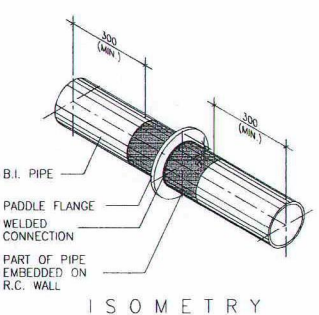
FP 4 2
SPRINKLER HEADS DETAIL
SCALE: 1:3 MTS



FP 4 3
DPSS FIRE DEPT. INLET DETAIL
SCALE: 1:10 MTS



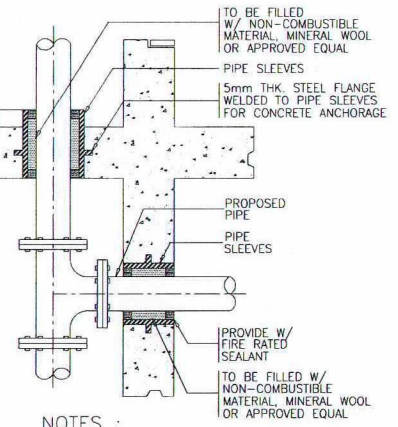
FP 4 4
FIRE HOSE VALVE DETAIL
SCALE: 1:10 MTS



FP 4 5
PADLE FLANGE DETAIL
SCALE: 1:10 MTS

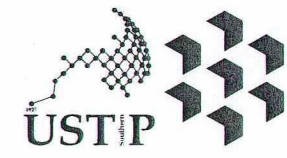
SCHEDULE OF PIPE SLEEVES

SIZE OF BRANCHLINES	SIZE OF PIPE SLEEVES
25MMØ	50MMØ
32MMØ	50MMØ
40MMØ	65MMØ
50MMØ	75MMØ
65MMØ	100MMØ
75MMØ	100MMØ
100MMØ	150MMØ
150MMØ	225MMØ
200MMØ	300MMØ



NOTES:
SLEEVES SHALL BE PROVIDED AROUND ALL PIPING EXTENDING THROUGH WALLS, FLOORS, PLATFORMS AND FOUNDATIONS.
1. THE CLEARANCE BETWEEN THE PIPE SLEEVES SHALL BE FILLED W/NON-COMBUSTIBLE FLEXIBLE MATERIAL SUCH AS MINERAL WOOL, FIBERGLASS OR EQUIVALENT.
2. MINIMUM CLEARANCE BETWEEN PIPE AND SLEEVES SHALL NOT BE LESS THAN 25MM FOR PIPE 25MM THROUGH 75MM & 40MM FOR PIPE SIZE 100MM AND LARGER FLOOR SLEEVES SHALL BE EXTENDED AT LEAST 75MM ABOVE THE TOP OF THE WEARING SURFACE.

FP 4 7
PIPE SLEEVE DETAIL
NOT DRAWN TO SCALE



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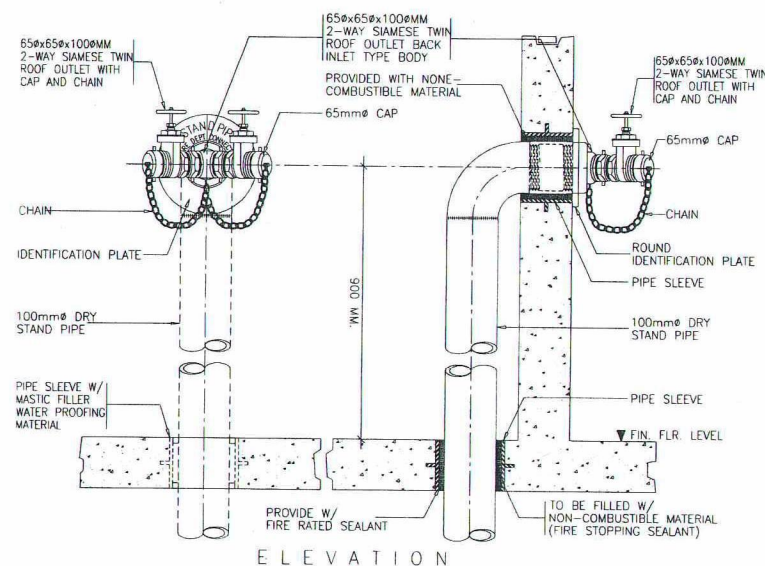
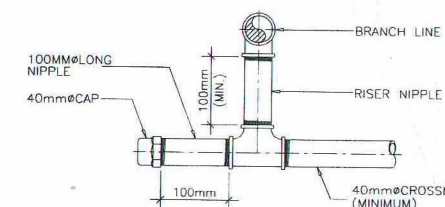
PROFESSIONAL MECHANICAL ENGINEER	PROJECT	CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III, VILLANUEVA CAMPUS
PRC NO.:	LOCATION	USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
PTR NO.:	OWNER	UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES
DATE:		
TIN NO.:	PLACE:	

RECOMMENDING APPROVAL:	RECOMMENDING APPROVAL:	APPROVED BY:	SHEET CONTENTS:	DRAWN BY:
ENGR. GRACE C. BABA DIRECTOR, IPFDO	ATTY. ERWIN B. BUCIO VP FOR ADMINISTRATION & LEGAL AFFAIRS	DR. AMBROSIO B. CULTURA II PRESIDENT, USTP SYSTEM	PIPE HANGER DETAIL SPRINKLER HEADS DETAIL DPSS FIRE DEPT. INLET DETAIL FIRE HOSE VALVE DETAIL PADLE FLANGE DETAIL INSPECTOR TEST CONNECTION DETAIL PIPE SLEEVE DETAIL	
				DATE DRAWN:
				DATE:
				FNT:

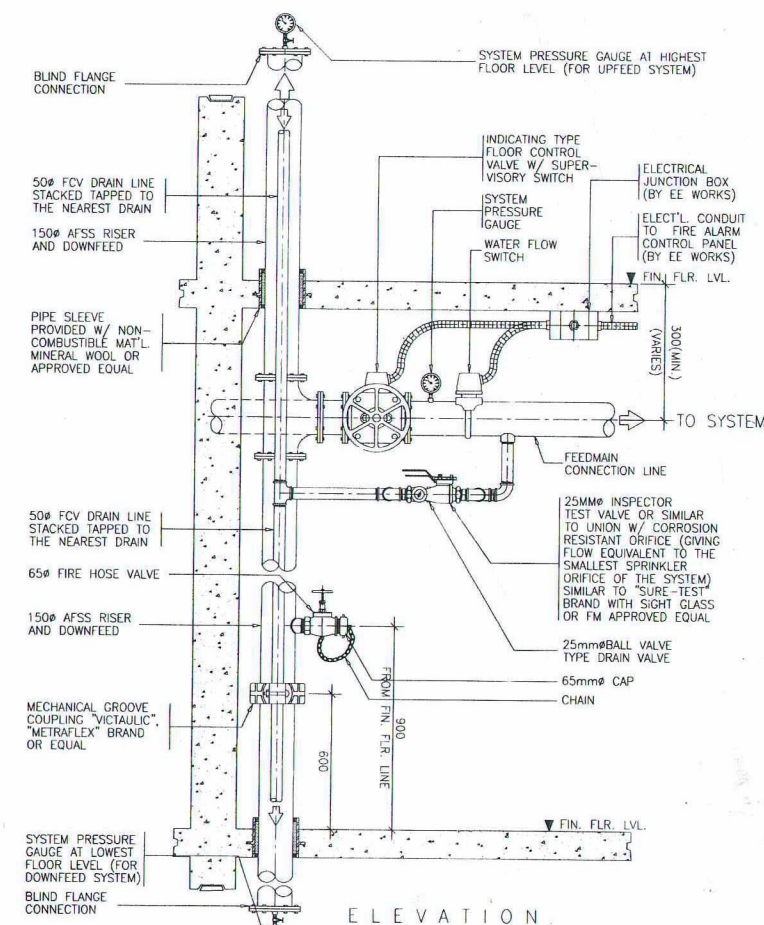
FP4

APPROVED BY:

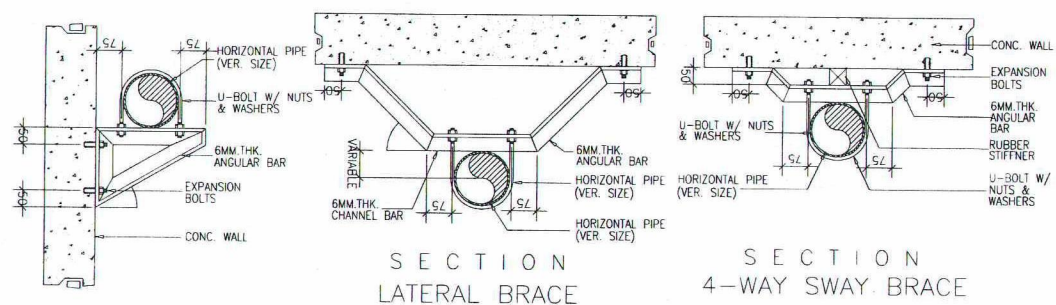
FP 5 4 FLUSHING CONNECTION DETAIL
SCALE: 1:5 MTS



FP 5 2 SIAMESE TWIN ROOF OUTLET DETAIL
SCALE: 1:10 MTS

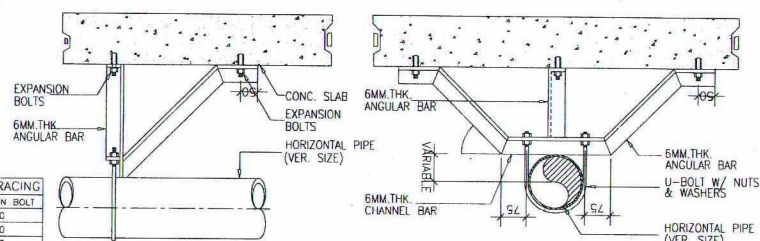


FP 5 5 SUPERVISORY FLOOR CONTROL VALVE ASSEMBLY & VALVE HOSE DETAIL
SCALE: 1:10 MTS



SECTION LATERAL BRACE
SECTION 4-WAY SWAY BRACE

ELEVATION PIPE BRACKET

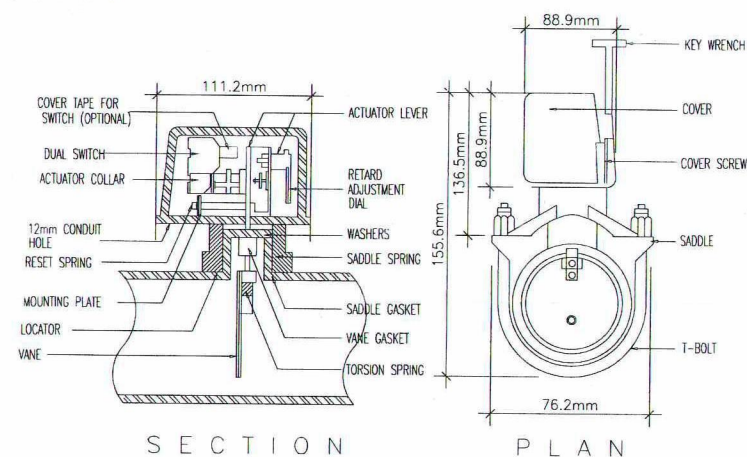


ELEVATION LONGITUDINAL BRACE

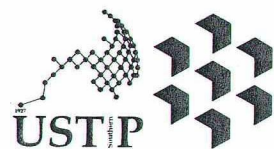
SCHEDULE OF PIPE BRACKET/BRACING

PIPE SIZE	U-BOLT DIA.	ANGLE BAR	EXPANSION BOLT
50	10	50 x 50	10
65	10	50 x 50	10
75	10	50 x 50	10
100	12	65 x 65	12

FP 5 1 SWAY BRACING DETAIL
SCALE: 1:10 MTS



FP 5 3 WATER FLOW SWITCH DETAIL
SCALE: 1:10 MTS



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PROFESSIONAL MECHANICAL ENGINEER
PRC NO. PTR NO.
DATE: PLACE:
TIN NO.

PROJECT: CONSTRUCTION OF 21ST CENTURY CLASSROOM BUILDINGS PHASE III, VILLANUEVA CAMPUS
LOCATION: USTP VILLANUEVA CAMPUS, MISAMIS ORIENTAL
OWNER: UNIVERSITY OF SCIENCE AND TECHNOLOGY OF SOUTHERN PHILIPPINES

RECOMMENDING APPROVAL:
ENGR. GRACE C. BABA
DIRECTOR, IPFDO

RECOMMENDING APPROVAL:
ATTY. ERWIN B. BUCIO
VP. FOR ADMINISTRATION & LEGAL AFFAIRS

APPROVED BY:
DR. AMBROSIO B. CULTURA II
PRESIDENT, USTP SYSTEM

SHEET CONTENTS:
SWAY BRACING DETAIL
SIAMESE TWIN ROOF OUTLET DETAIL
WATER FLOW SWITCH DETAIL
FLUSHING CONNECTION DETAIL
SUPERVISORY FLOOR CONTROL VALVE ASSEMBLY & VALVE HOSE DETAIL

DRAWN BY:
DATE DRAWN:
FMT:

FP5