



Republic of the Philippines
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
OFFICE OF THE SECRETARY
Manila

0917.13 DPWH
09-10-2020

B00 66

AUG 25 2020

DEPARTMENT ORDER)
NO. 82)
Series of 2020)

SUBJECT: Standard DPWH Multi-Purpose Tent

To provide uniform and quality immediate temporary shelter facilities for the victims of calamities, i.e., earthquake, typhoon and other disasters, a standard plan for DPWH Multi-Purpose Tent that can be erected in short period of time and still reusable, is hereby issued for guidance and reference in the implementation for all Regional and District Engineering Offices.

Said standard plan (Annex "A"), consists of the following options on flooring depending on the actual requirements/needs on the site:

- a) Option 1: Wooden flooring on steel framing platform; and
- b) Option 2: Concrete slab on fill

Soft/electronic copy of said plans may be downloaded from DPWH intranet (<http://dpwhnet>) under Bureau of Design – Standard Plans.

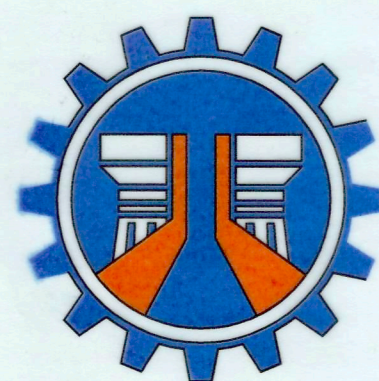
For immediate compliance.

MARK A. VILLAR
Secretary

Department of Public Works and Highways
Office of the Secretary



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REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
BUILDINGS DIVISION

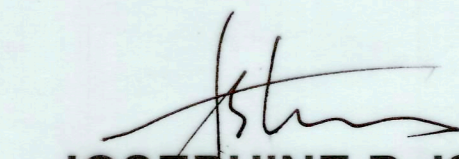
BONIFACIO DRIVE

PORT AREA, MANILA


PROJECT TITLE:

**STANDARD
DPWH MULTI-PURPOSE TENT**

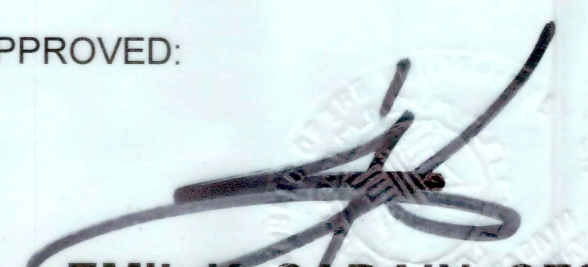
SUBMITTED:


JOSEPHINE P. ISTURIS
CHIEF, BUILDINGS DIVISION, BUREAU OF DESIGN
11/07/2019

RECOMMENDING APPROVAL:


ARISTARCO M. DOROY
OFFICER-IN-CHARGE, BUREAU OF DESIGN
NOV 07 2019

APPROVED:

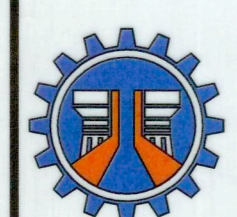
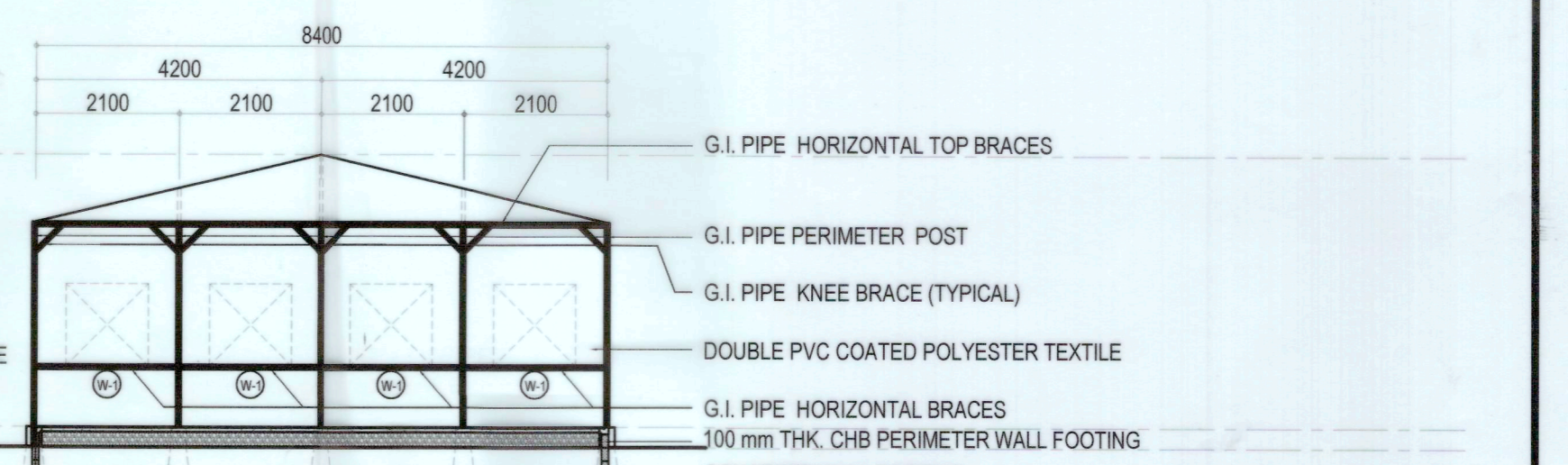
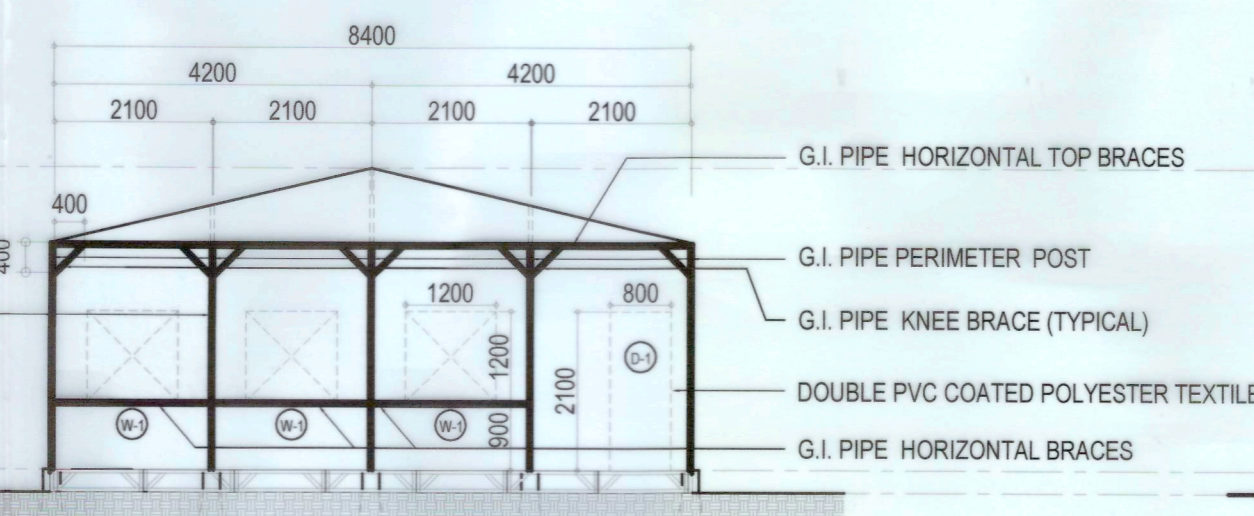
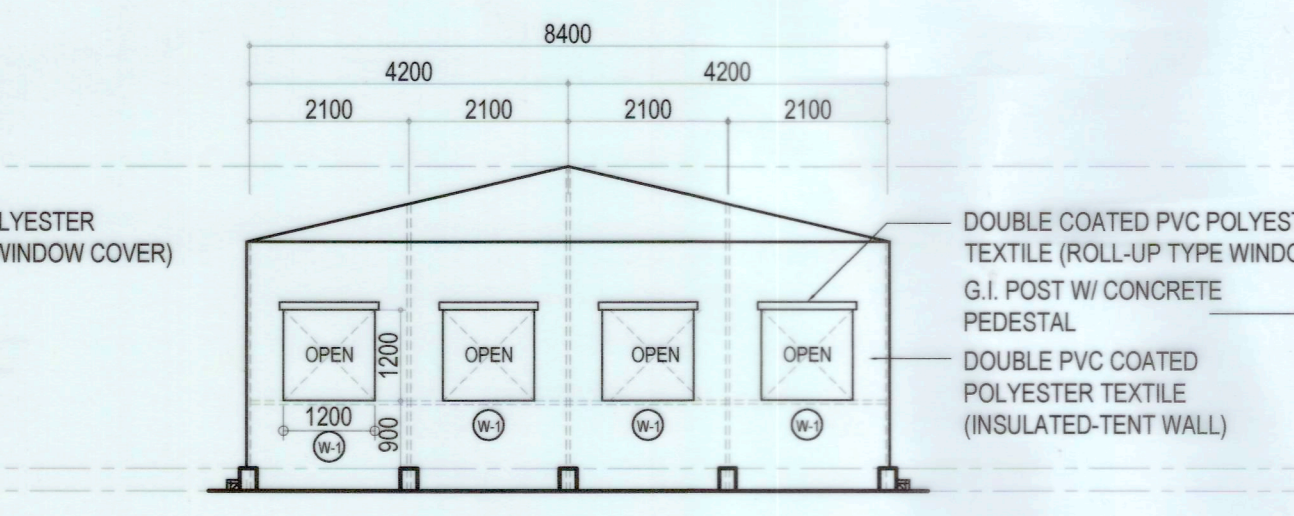
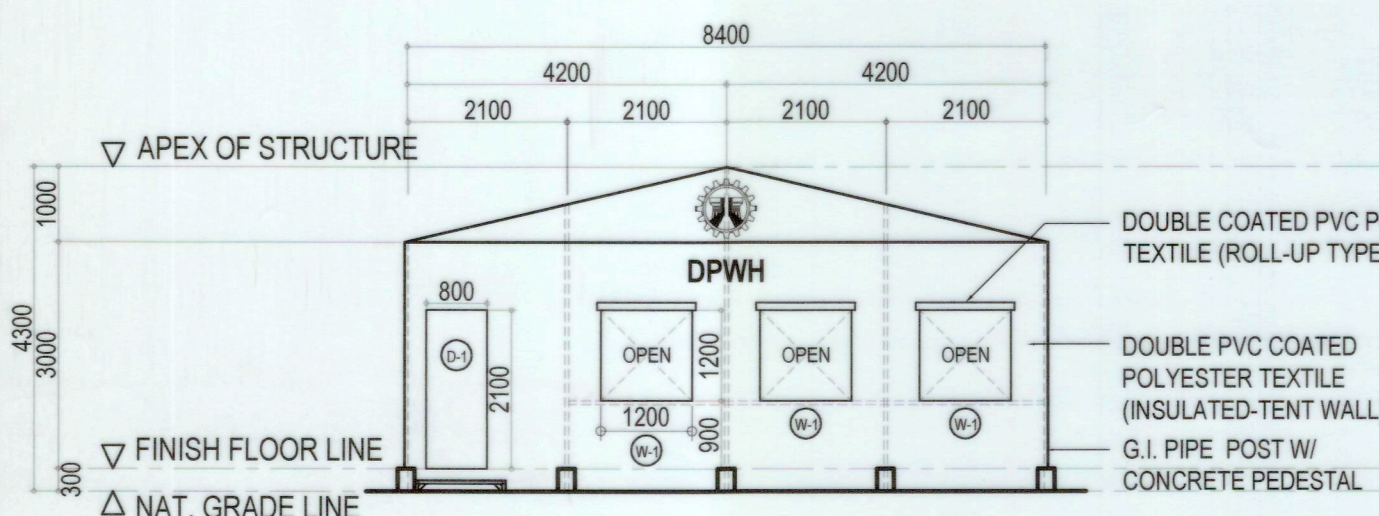
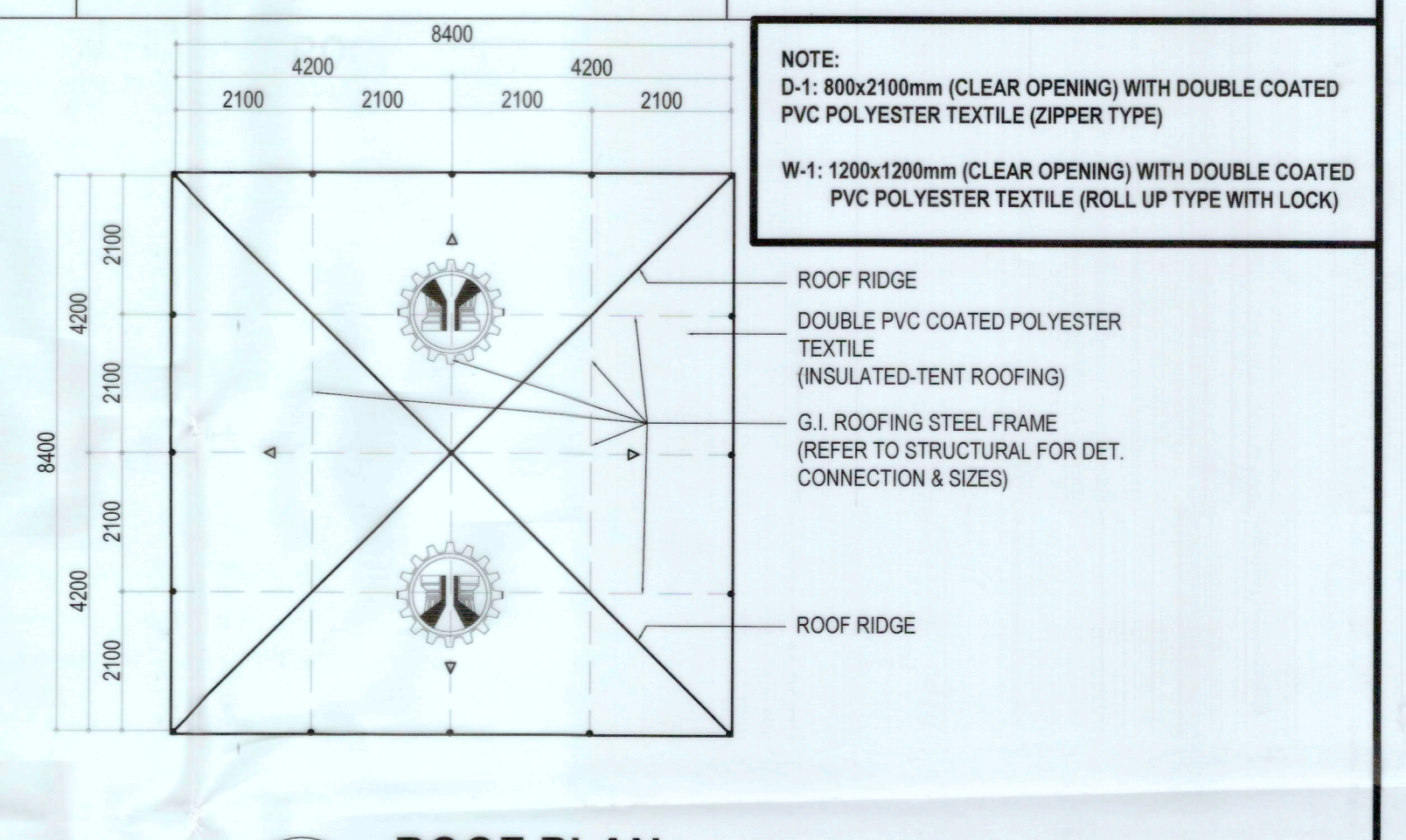
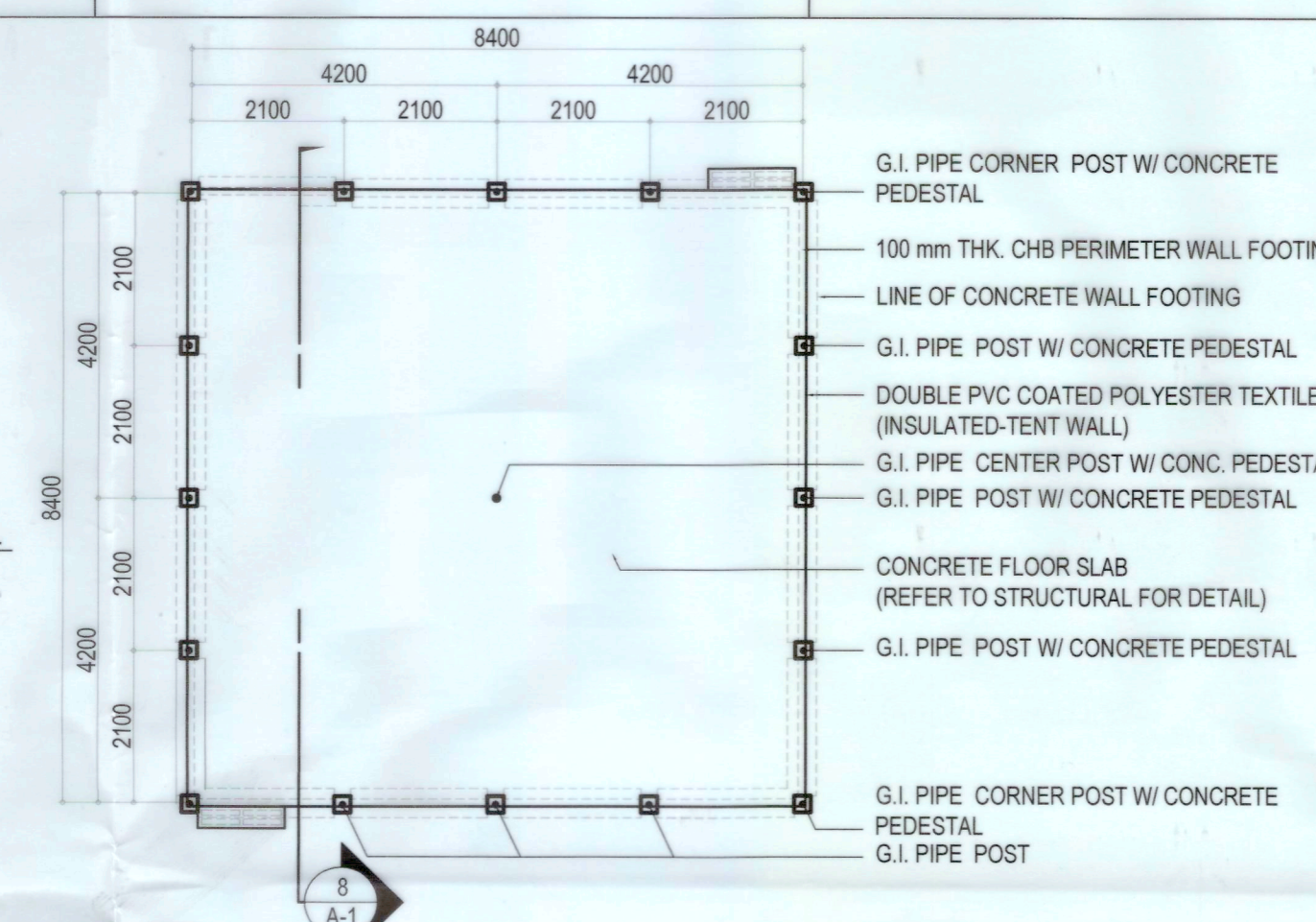
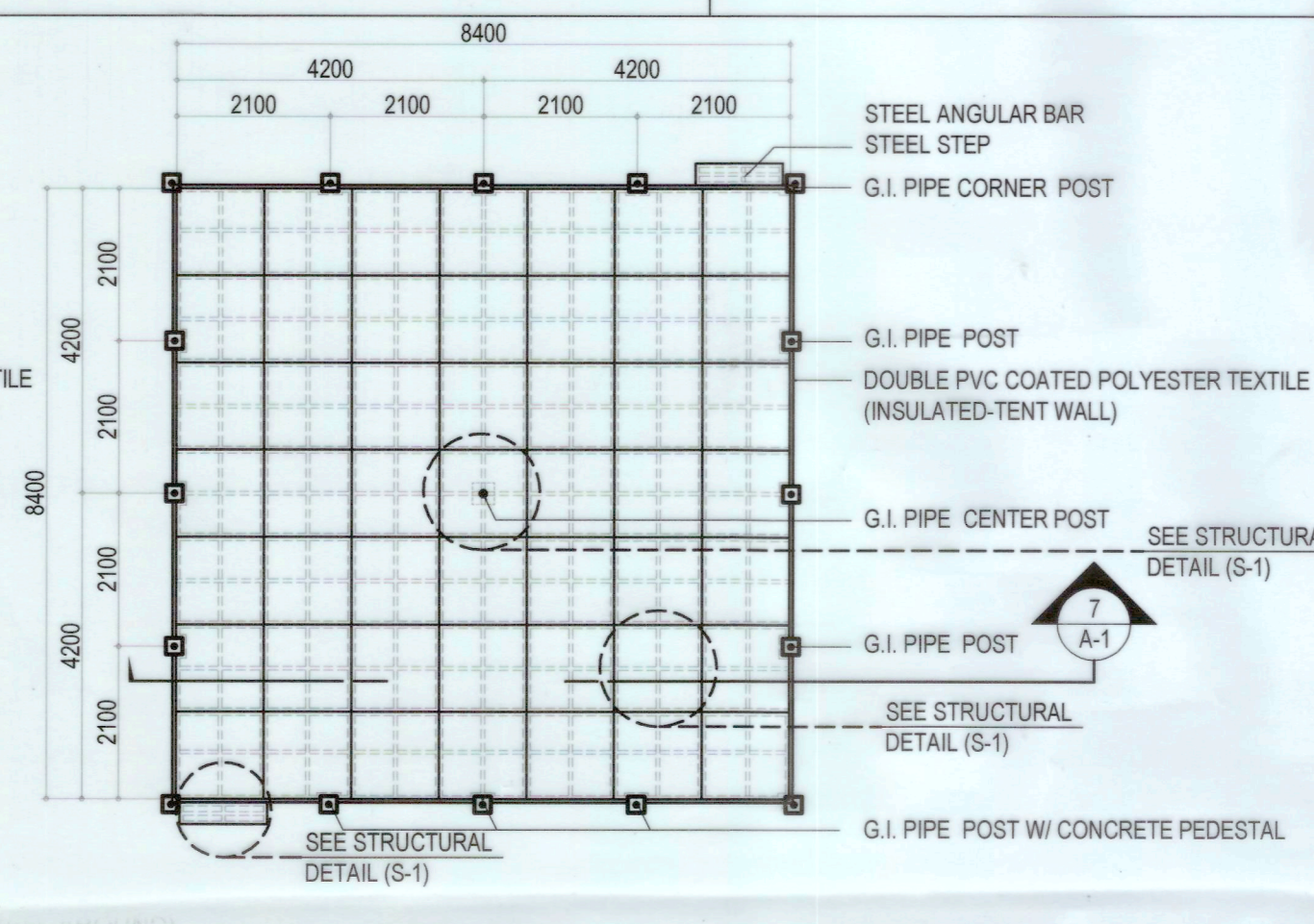
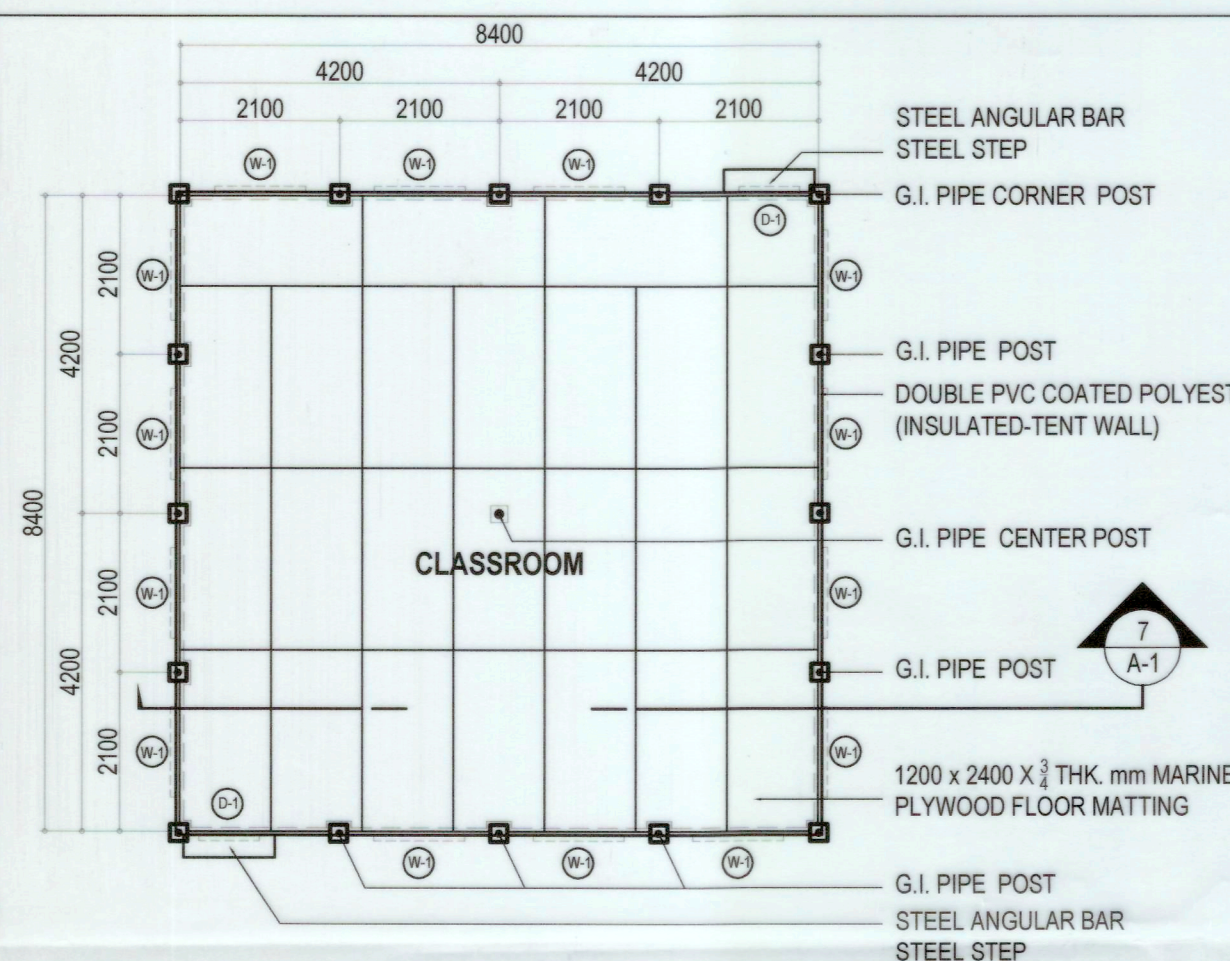

EMIL K. SADAIN, CESO I
UNDERSECRETARY
FOR UPMO OPERATIONS & TECHNICAL SERVICES, DPWH



P E R S P E C T I V E

TABLE OF CONTENTS

ARCHITECTURAL	STRUCTURAL	ELECTRICAL	MECHANICAL
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REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
BUREAU OF DESIGN
BUILDINGS DIVISION
BONIFACIO DRIVE PORT AREA, MANILA

PROJECT TITLE:
**STANDARD
DPWH MULTI-PURPOSE TENT**

SHEET CONTENTS:
PERSPECTIVE, TABLE OF CONTENTS, GROUND FLOOR PLAN
FLOOR PLAN (OPTION 1 & 2), ROOF PLAN
FRONT/REAR ELEVATION (OPTION 1 & 2),
LEFT/RIGHT SIDE ELEVATION (OPTION 1 & 2)
SECTION (OPTION 1), SECTION (OPTION 2)

ARCHITECTURAL CONCEPT:
ARCHITECTURAL SECTION
CADD:
GINO PAOLO L. VILLANUEVA
ARCHITECT II
CHECKED:
FRANCIS G. SERRANO
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SUBMITTED:
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TECHNICAL SERVICES

SET NO.
BOD
B
SHEET NO.
A-1
1 5

DESIGN CRITERIA :

1.0 DEAD LOADS (DL) :

1.1 CONCRETE	24.00 kN/m ³
1.2 STEEL	77.00 kN/m ³
1.3 SOIL	16.00 kN/m ³
1.4 ROOFING & INSULATION	0.20 kPa
1.4 100MM THK. CHB WALL	2.10 kPa

2.0 LIVE LOADS (LL) :

2.1 ROOF	0.60 kPa
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3.0 WIND LOAD (WL)

THE WIND LOAD ON STRUCTURE AND BUILDING SHALL BE CALCULATED, BASED ON NATIONAL STRUCTURAL CODE OF THE PHILIPPINES, CONSIDERING BASIC WIND SPEED (3 SECOND GUST SPEED) EQUALS TO 94.44 M/SEC.

BASIC WIND SPEED, V = 270 km/hour
OCCUPANCY CATEGORY = I
EXPOSURE CATEGORY = B
VELOCITY PRESSURE AT HEIGHT 'Z', $q = 0.613K_zK_{zt}K_dV^2$ (N/m²); V in m/s

WHERE, V IN KM/HOUR
 K_{zt} = TOPOGRAPHIC FACTOR = 1.00
 K_z = EXPOSURE COEFFICIENTS = $2.01(z/z_0)^{2/5}$
 z_0 = GRADIENT HEIGHT = 457M AND $\alpha = 5$
AND, $QZ = 0.9683 \times Z \times 0.174$ IN KN/M²

THIS VELOCITY PRESSURE SHALL BE USED ALONG WITH FORCE COEFFICIENTS TO CALCULATE WIND LOAD ON SPECIFIC STRUCTURE.

4.0 MATERIALS

4.1 NORMAL WEIGHT CONCRETE :

CONCRETE USED IN THIS WORK SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH @ 28 DAYS AS FOLLOWS :
PRECAST PEDESTAL COL. BASE $f_c' = 21$ MPa (3,000 PSI)
SLAB ON GRADE $f_c' = 10.5$ MPa (1,500 PSI)

4.2 REINFORCING BARS :

UNLESS OTHERWISE SPECIFIED ON PLANS, REINFORCING BARS SHALL BE DEFORMED WITH A MINIMUM YIELD STRENGTH:
10MMØ AND BELOW : $f_y = 227$ MPa (33,000 PSI).
12MMØ AND ABOVE : $f_y = 275$ MPa (40,000 PSI).

4.3 STRUCTURAL STEEL :

FOR ALL STEEL BASE PLATE, STIFF, ANGULAR STEEL & BRACING.
USE ASTM A36 STEEL $F_y = 248$ MPa (36,000 Psi)
FOR ALL PIPE COLUMNS, ROOF & BRACES
USE GALVANIZED IRON (G.I.) PIPES SCHEDULE 40 .

4.4 WELDS :

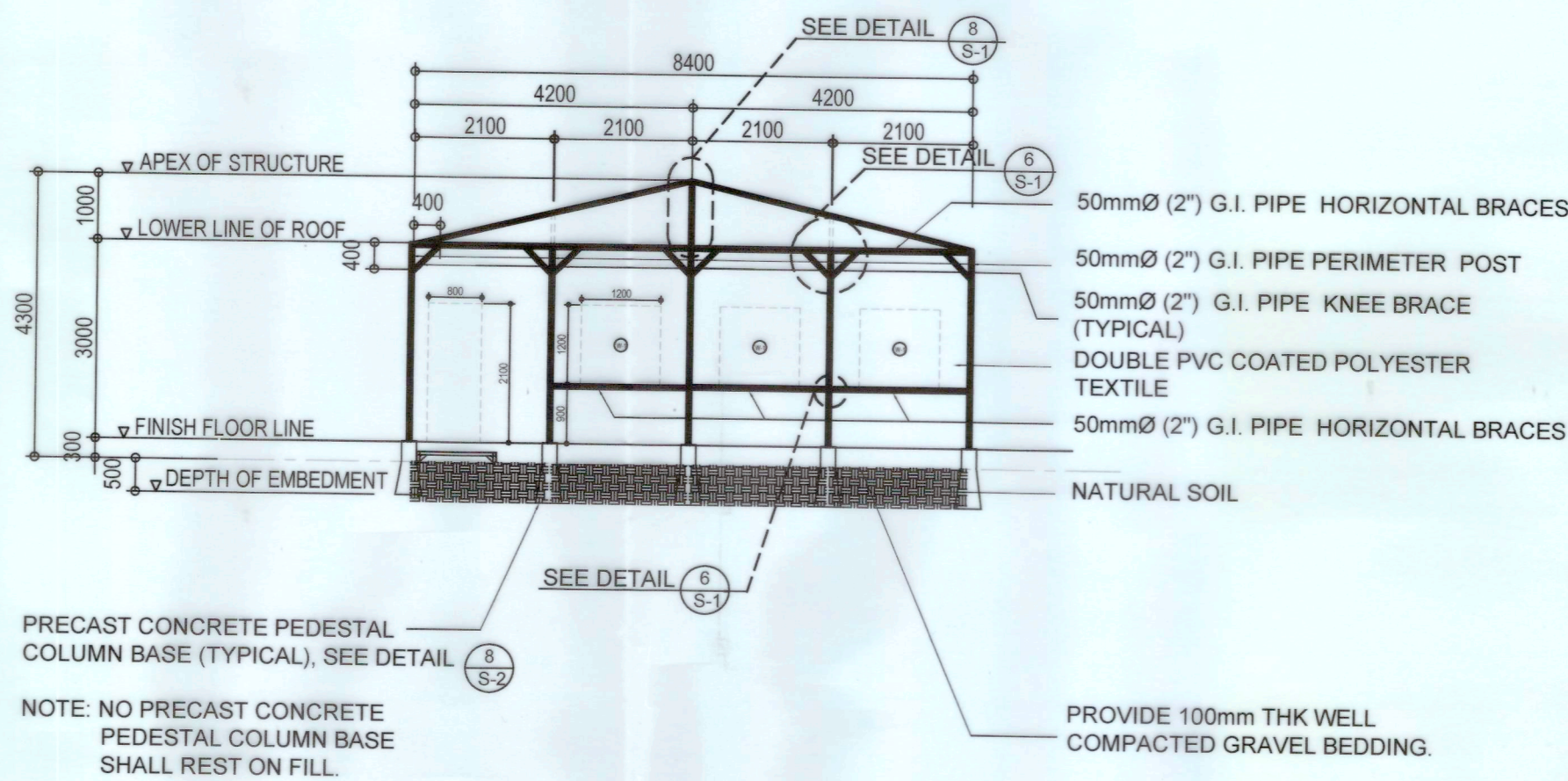
USED E60XX ELECTRODES

4.5 BOLTS :

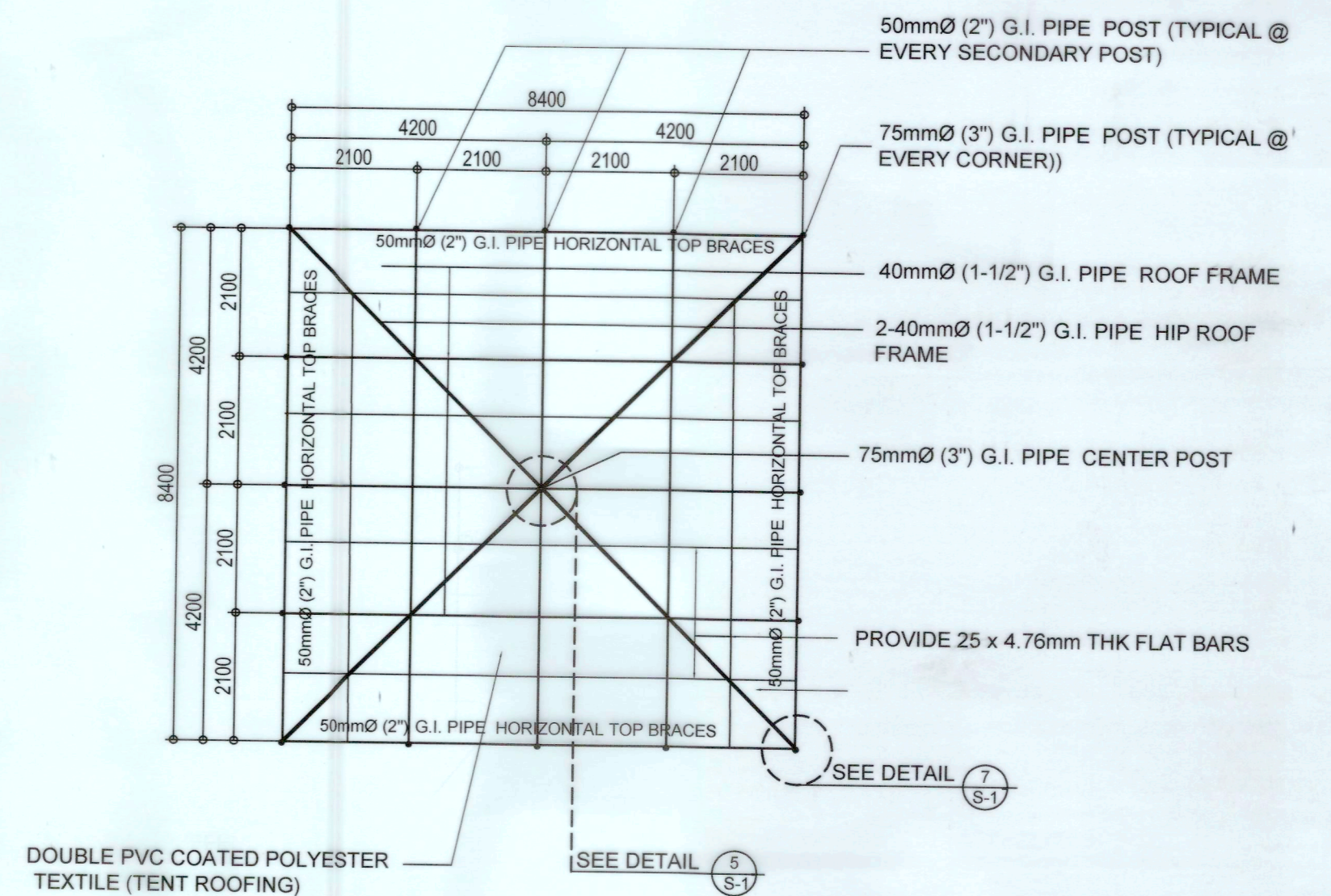
USED MACHINE BOLTS F_t (min.) = 124 MPa (18,000 Psi)

5.0 NOTES ON FOUNDATION

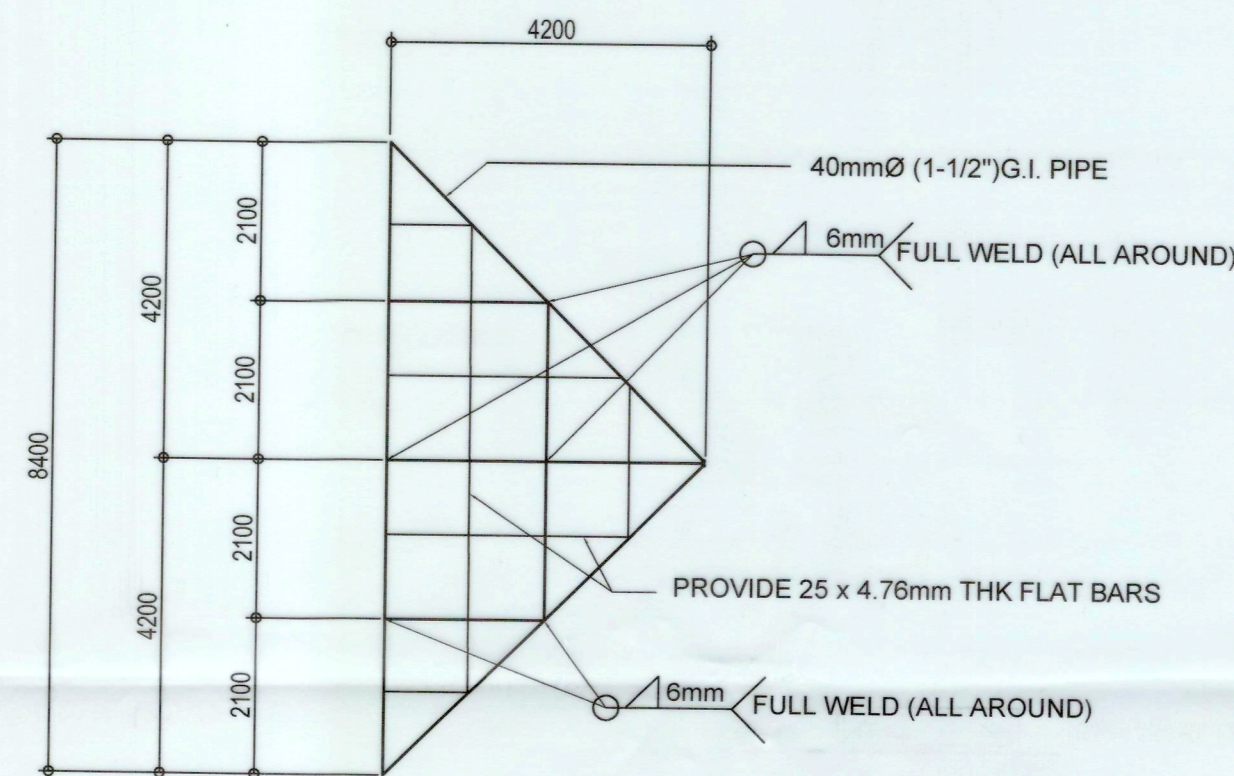
- 5.1 NO FOOTINGS SHALL BE REST ON FILL.
- 5.2 PROVIDE 50mm THK (MIN) PROPERLY WELL COMPACTED GRAVEL BED FOR ALL FOOTING/BASE.



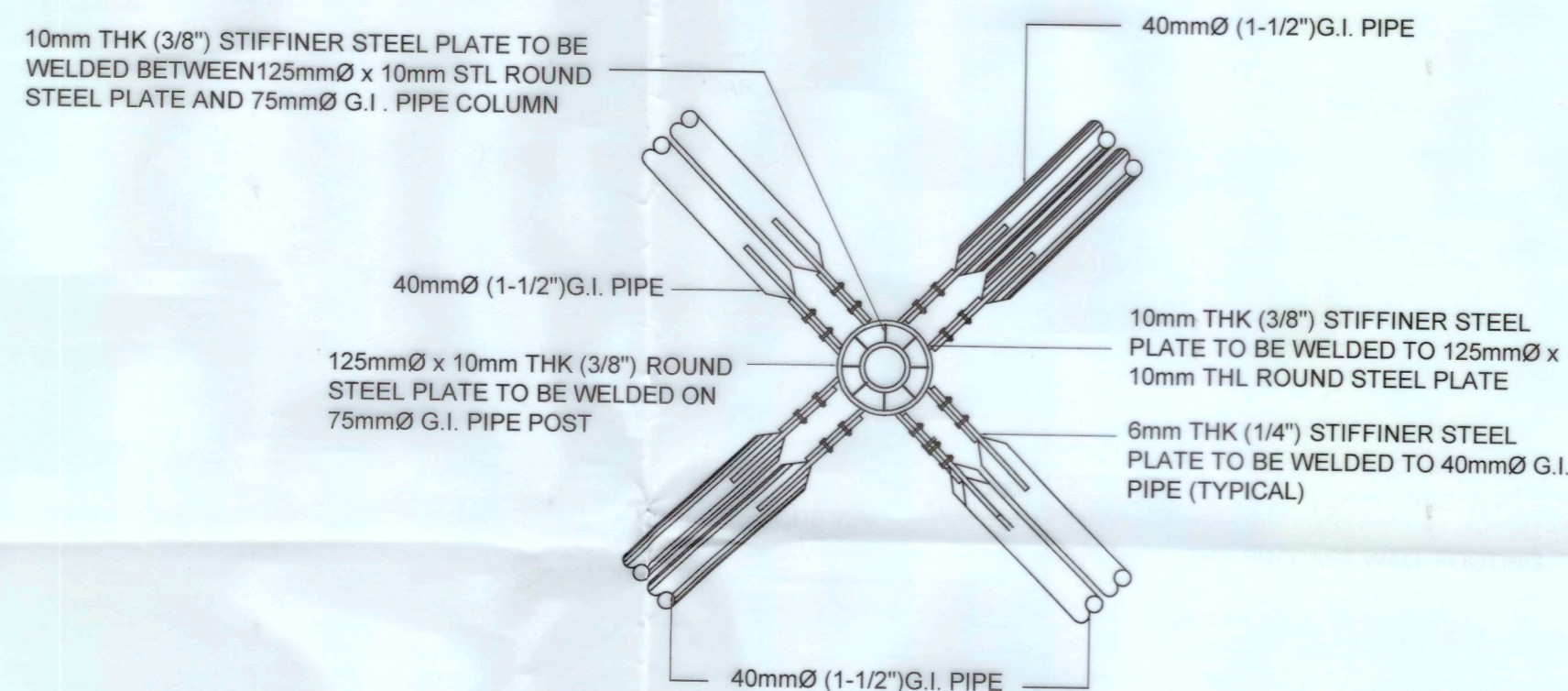
1 SIDE FRAME ELEVATION (ALL SIDES TYPICAL)
SCALE 1:100 m



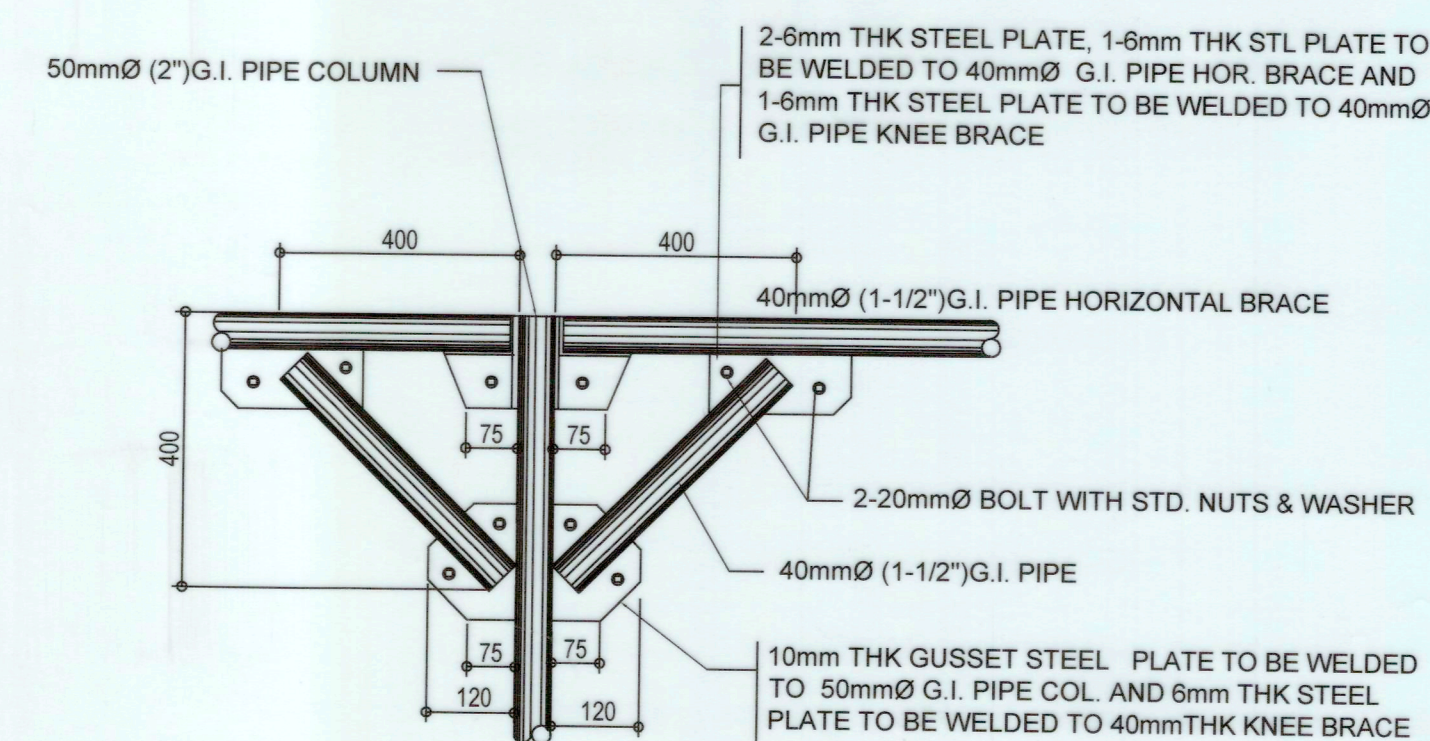
2 ROOF FRAMING PLAN
SCALE 1:100 m



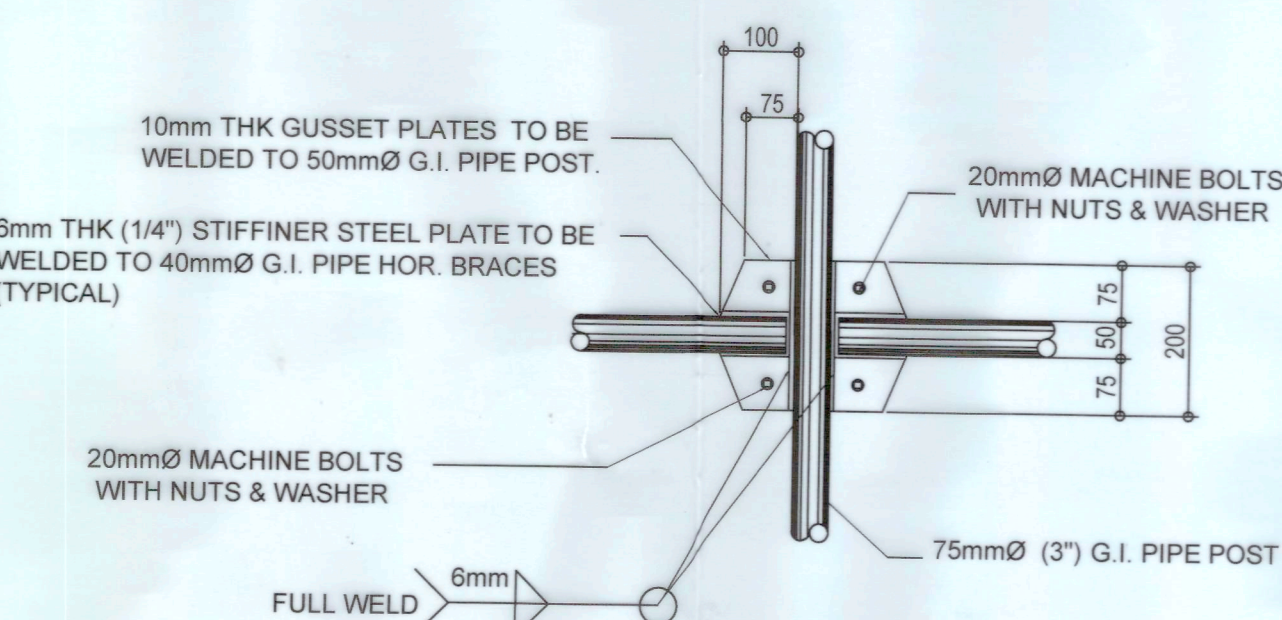
3 QUARTER ROOF FRAME PANEL
SCALE 1:100 m



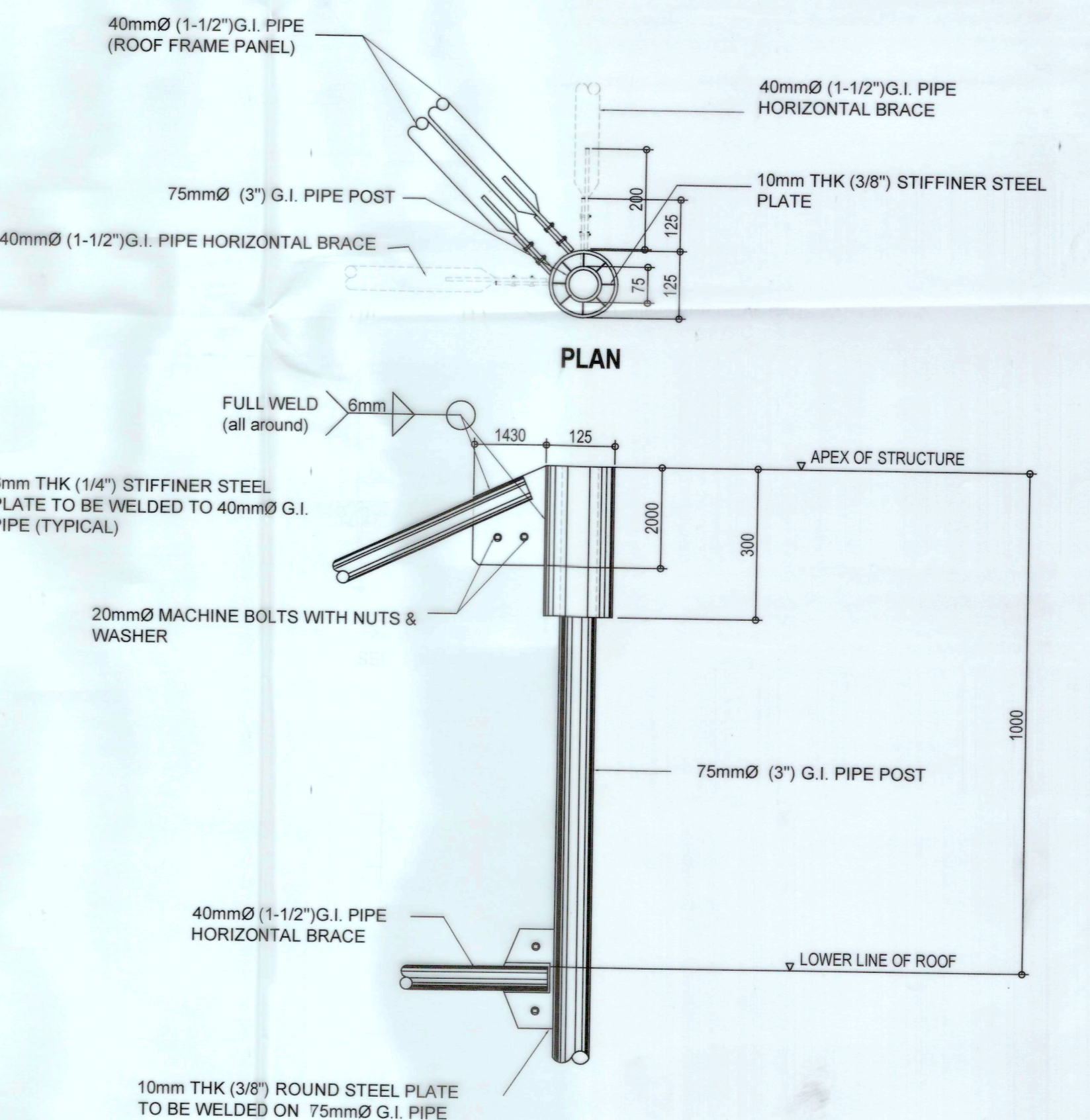
4 DETAIL CONN. AT APEX JOINT OF TRUSS
SCALE (TOP VIEW) 1:10 M



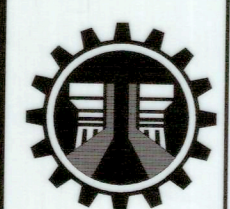
5 DETAIL CONN. OF KNEE BRACES
SCALE (SIDE VIEW) 1:10 m



6 DET. CONN. OF HOR. BRACES
SCALE (SIDE VIEW) 1:10 m



7 DETAIL CONN. OF CORNER JOINT TRUSS
SCALE 1:10 m



REPUBLIC OF THE PHILIPPINES
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BUREAU OF DESIGN
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BONIFACIO DRIVE PORT AREA, MANILA

PROJECT TITLE:
**STANDARD
DPWH MULTI-PURPOSE TENT**

SHEET CONTENTS:
DESIGN CRITERIA
SIDE FRAME ELEVATION
ROOF FRAMING PLAN
QUARTER ROOF FRAME PANEL
DETAIL CONN. OF APEX JOINT OF TRUSS
DET. CONN. OF HOR. & KNEE BRACES

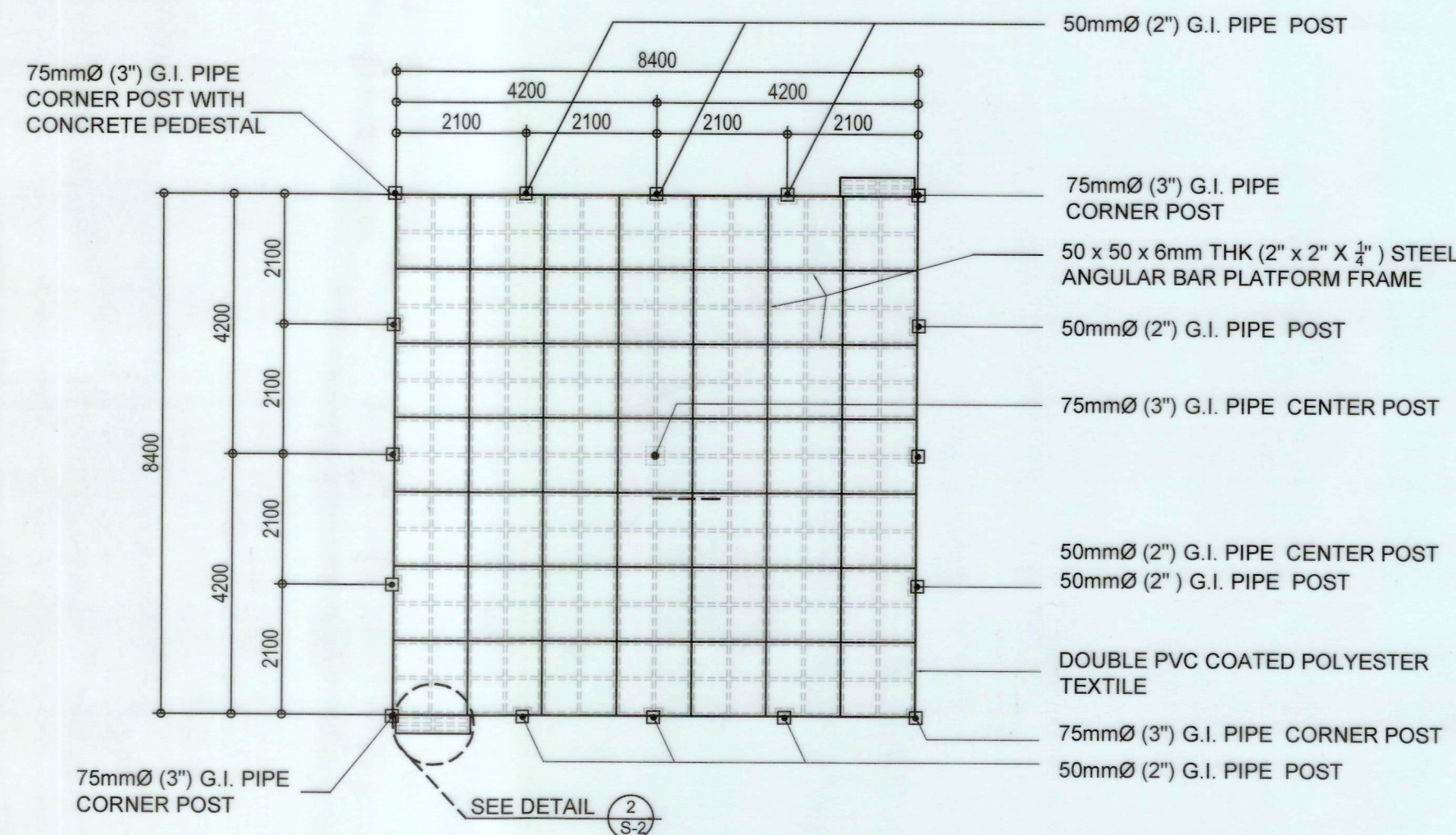
STRUCTURAL CONCEPT:
STRUCTURAL SECTION
CADD: H.D. ESTABILLLO JR.
CHECKED: KATHRINE ANNE C. MACOY

SUBMITTED: JOSEPHINE P. ISTURIS
CHIEF, BUILDINGS DIVISION

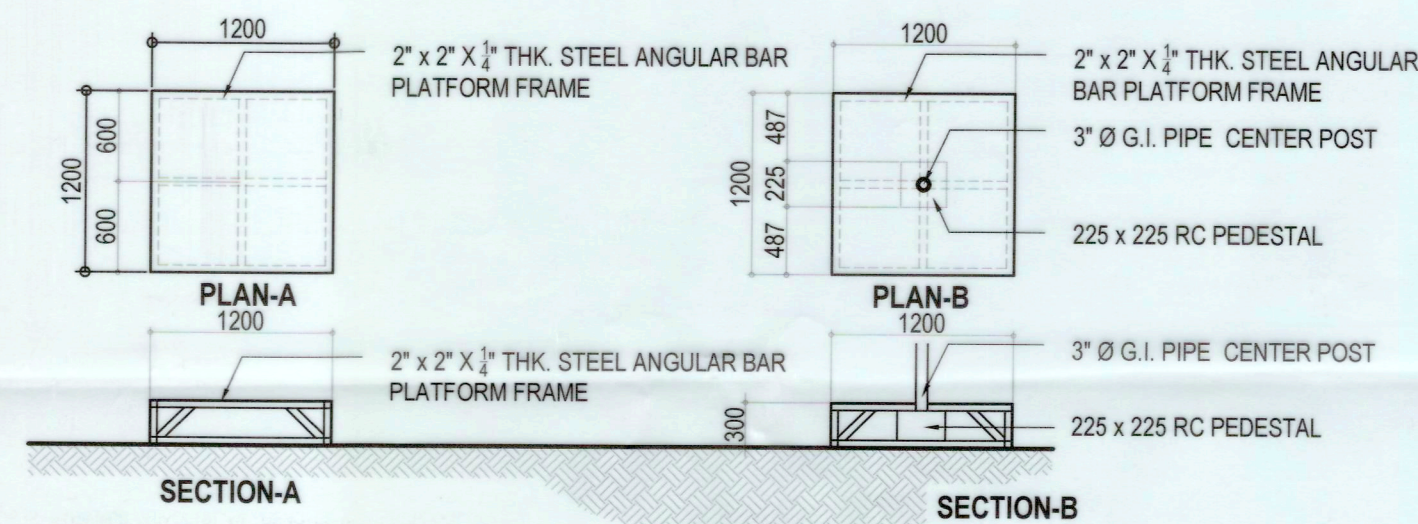
RECOMMENDING APPROVAL: ARISTARCO M. DOROY
OFFICER-IN-CHARGE
BUREAU OF DESIGN

APPROVED: EMIL K. SADAIN
UNDERSECRETARY FOR UPMO OPERATIONS AND
TECHNICAL SERVICES

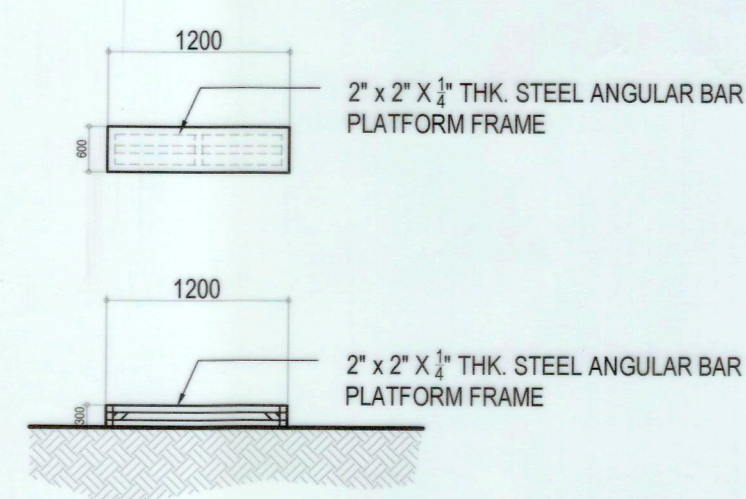
SET NO. BOD
SHEET NO. S-1
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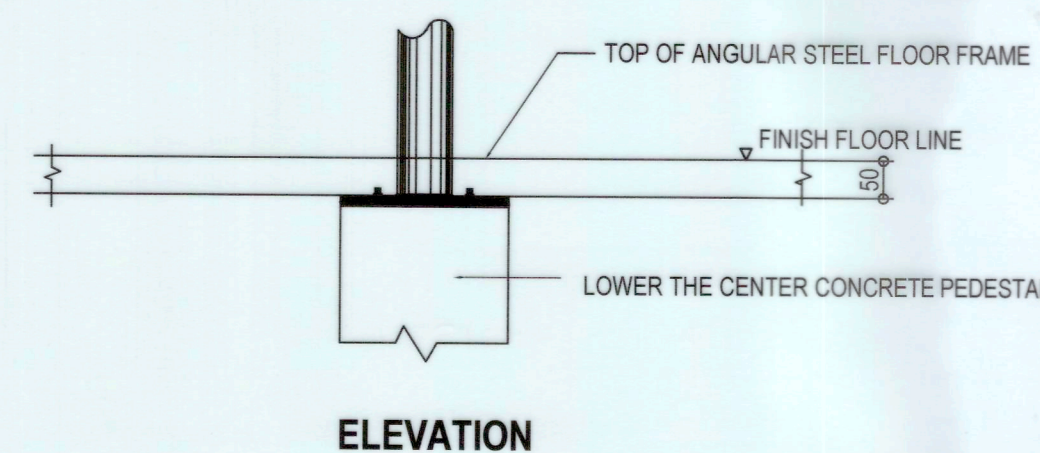
1 STEEL FLOOR FRAMING PLAN (OPTION 1)
S-2 SCALE 1:100 m



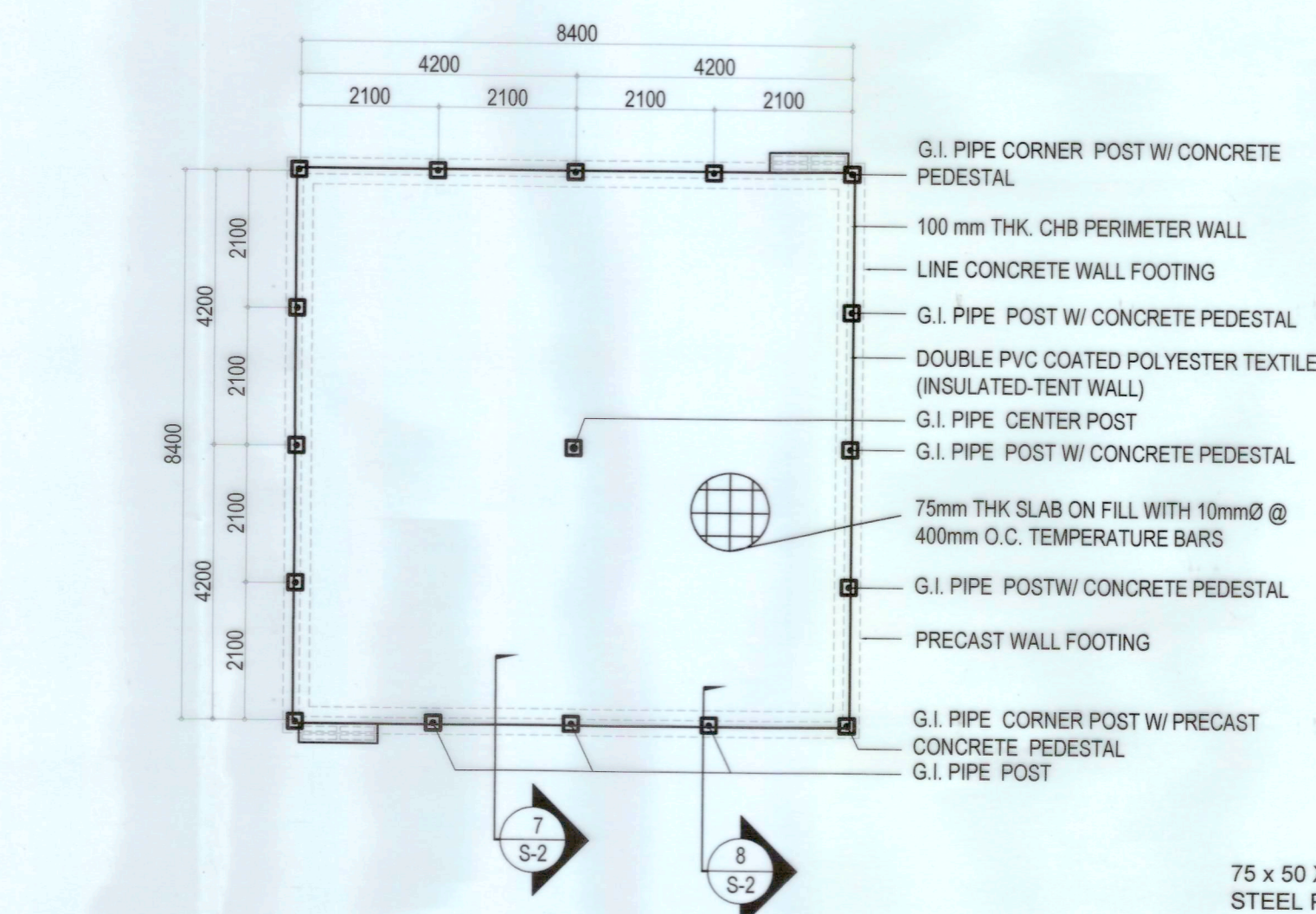
2 STEEL PLATFORM DETAIL (OPTION 1)
S-2 SCALE 1:50 m



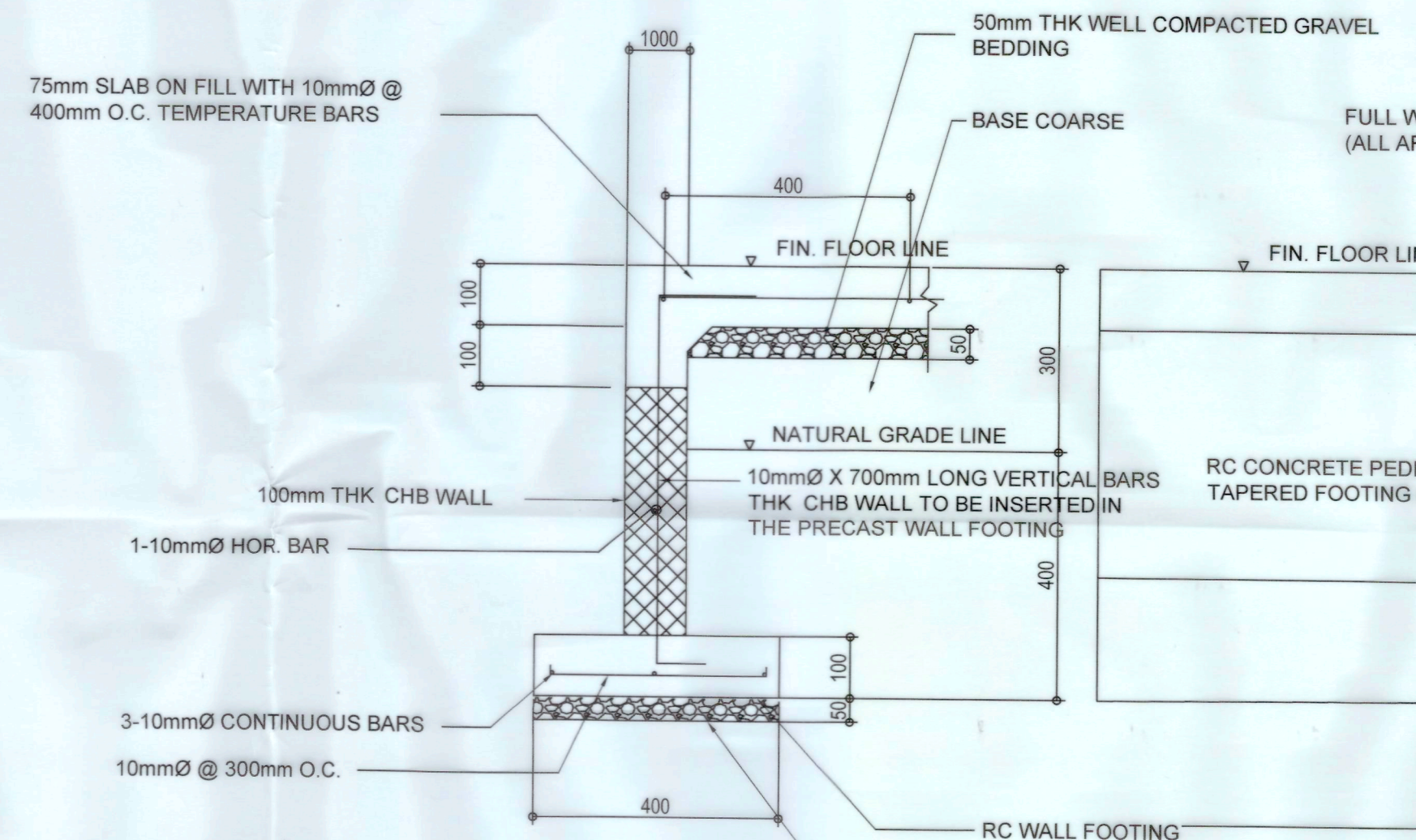
3 STEEL STEPS DETAIL
S-2 SCALE 1:50 m



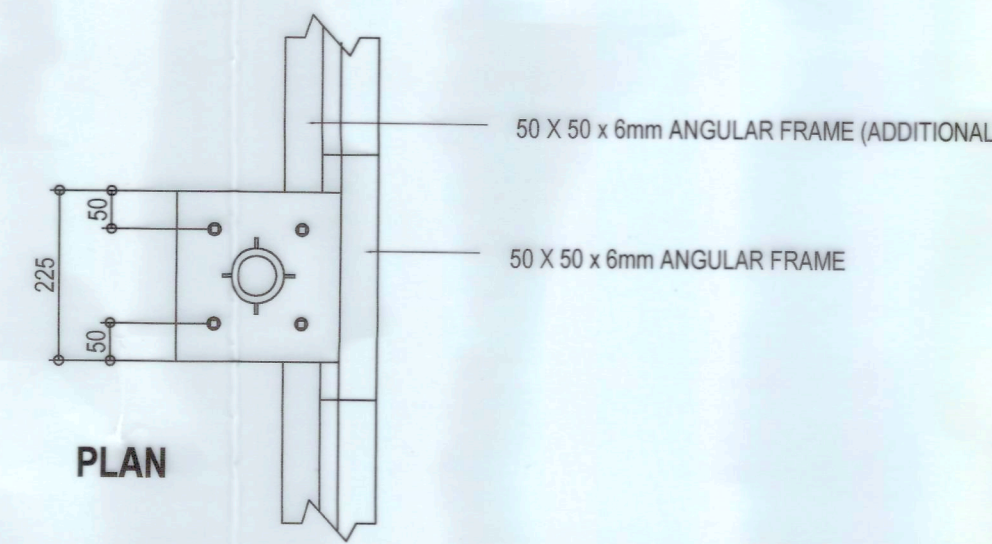
4 CENTER POST CONCRETE RC PEDESTAL (OPTION 1)
S-2 SCALE 1:50 m



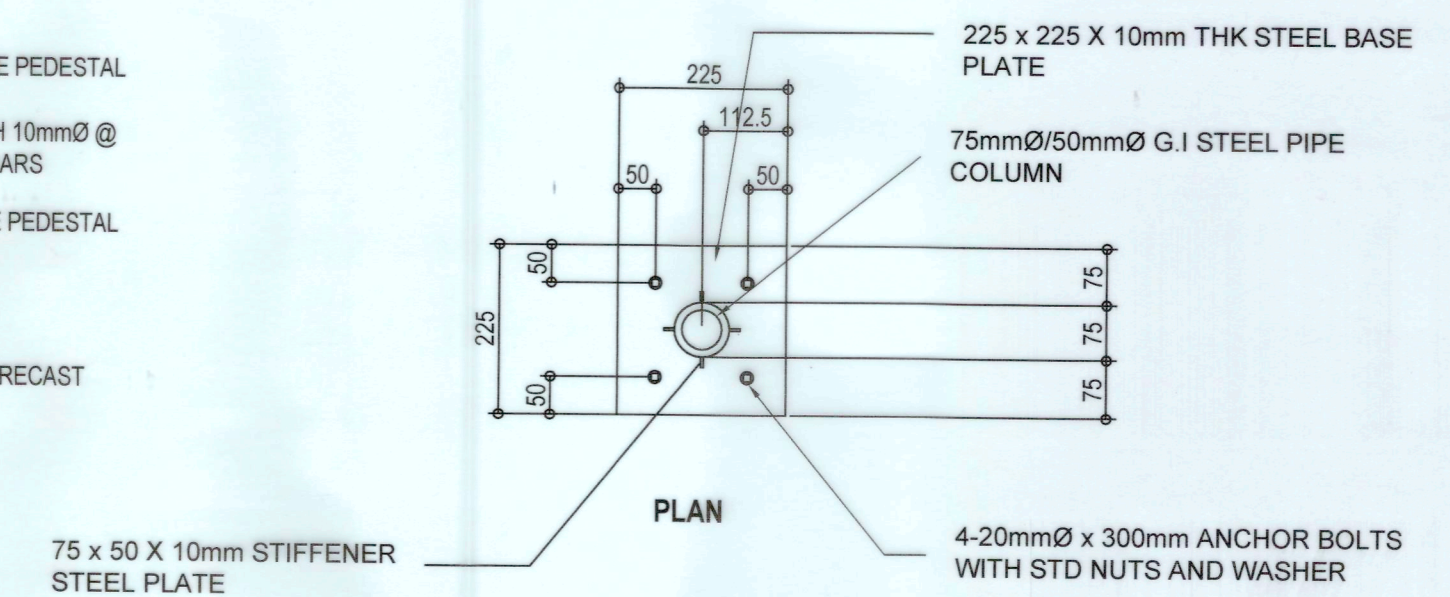
6 RC SLAB ON FILL WITH PRECAST WALL FTG. AND PRECAST CONCRETE COLUMN BASE (OPTION 2)
S-2 SCALE 1:100 m



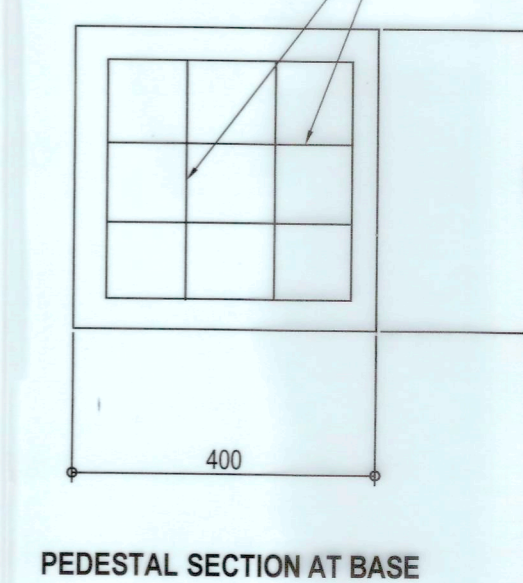
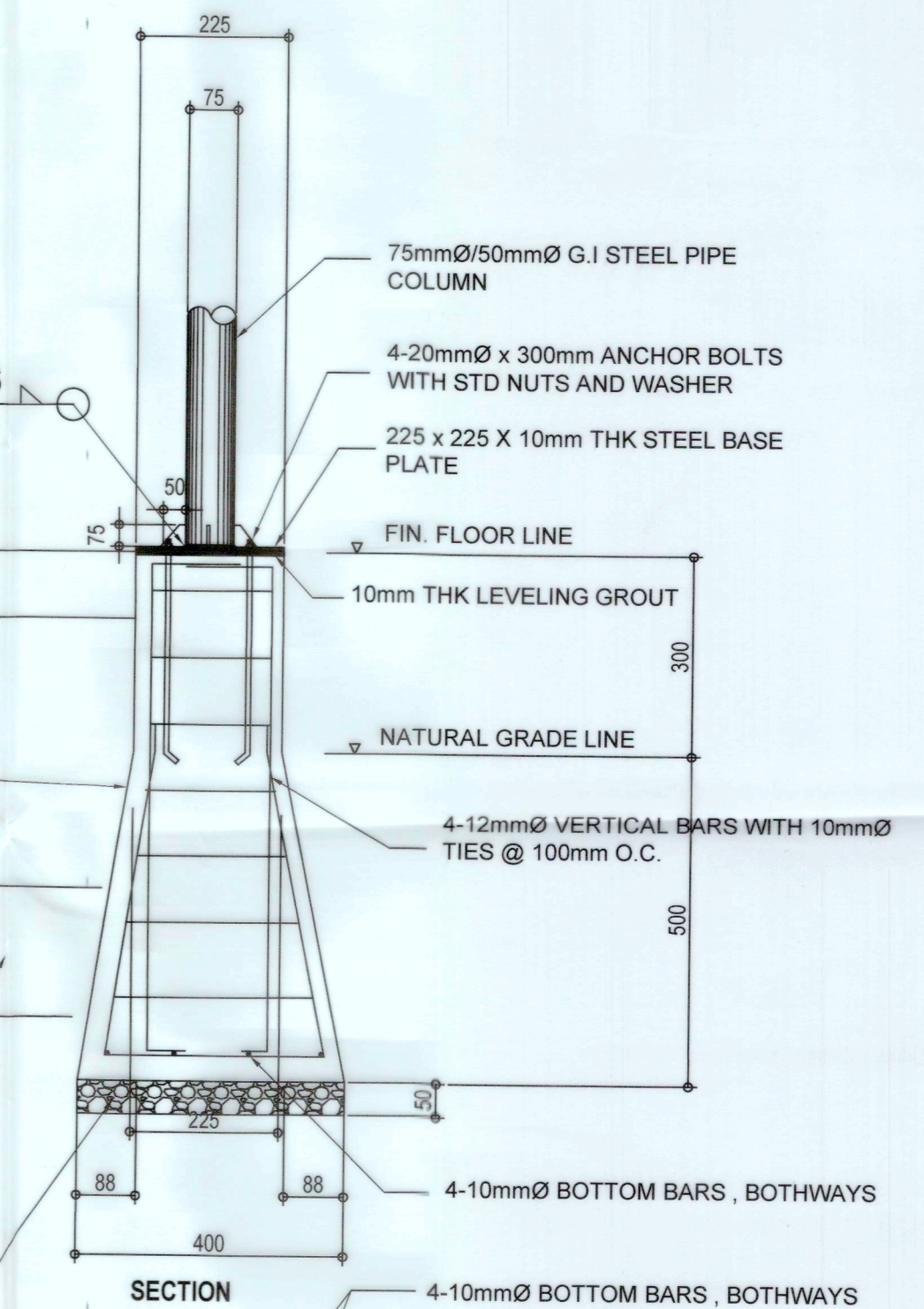
7 DETAIL OF WALL FOOTING (OPTION 2)
S-2 SCALE 1:10 m



5 SIDE POST CONCRETE RC PEDESTAL (OPTION 1)
S-2 SCALE 1:50 m



8 DETAIL OF PRECAST CONCRETE PEDESTAL AND CONCRETE BASE (OPTION 2)
S-2 SCALE 1:10 m



	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS BUREAU OF DESIGN BUILDINGS DIVISION BONIFACIO DRIVE PORT AREA, MANILA	PROJECT TITLE: STANDARD DPWH MULTI-PURPOSE TENT	SHEET CONTENTS: STEEL FLOOR FRAMING PLAN (OPTION 1) STEEL PLATFORM DETAIL (OPTION 1) STEEL STEPS DETAIL, CENTER POST AND SIDE POST RC PEDESTAL (OPTION 1) RC SLAB WITH WALL FTG AND PRECAST PEDESTAL (OPTION 2) DET. OF PRECAST CONC. PEDESTAL (OPTION 2)	STRUCTURAL CONCEPT: STRUCTURAL SECTION CADD: H.D. ESTABILLOR JR. CHECKED: KATHRINE ANNE C. MACOY	SUBMITTED: JOSEPHINE P. ISTURIS CHIEF, BUILDINGS DIVISION	RECOMMENDING APPROVAL: ARISTARCO M. DOROS OFFICER-IN-CHARGE BUREAU OF DESIGN	APPROVED: EMIL K. SADAIN UNDERSECRETARY FOR UPMO OPERATIONS AND TECHNICAL SERVICES	SET NO. BOD B	SHEET NO. S-2 2 5
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GENERAL NOTES:

1. ALL ELECTRICAL WORKS SHALL BE DONE IN ACCORDANCE WITH THE PROVISION OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, EXISTING APPLICABLE ORDINANCES, RULES AND REGULATIONS OF THE LOCAL GOVERNMENT AND WITH THE REQUIREMENTS OF THE LOCAL POWER COMPANY.
2. THE TYPE OF SERVICE POWER SUPPLY TO BE USED SHALL BE SINGLE-PHASE, 2-WIRE, 230V, 60 HERTZ, A.C
3. THE CONTRACTOR SHALL VERIFY AND ORIENT THE ACTUAL LOCATION OF SERVICE ENTRANCE FOR CONNECTION TO THE POWER COMPANY SERVICE POINT.
4. UNLESS OTHERWISE SPECIFIED, THE MINIMUM SIZES OF WIRE AND GALVANIZED RIGID STEEL CONDUIT TO BE USED SHALL BE 3.5mm², THHN AND 15mm NOMINAL DIAMETER, RESPECTIVELY. LIKEWISE ALL ELECTRICAL WIRES SHALL BE COLOR-CODED.
5. ALL LIGHTING CIRCUIT HOMERUNS AND CONVENIENCE OUTLETS SHALL BE WIRED WITH NOT LESS THAN 3.5 mm² IN SIZE.
6. WHEREVER REQUIRED AND NECESSARY, PULL OR JUNCTION BOXES SHALL BE INSTALLED AT CONVENIENT AND INCONSPICUOUS LOCATION, ALTHOUGH SUCH BOXES ARE NOT SHOWN ON THE PLAN NOR MENTIONED IN THE SPECIFICATIONS.
7. ALL NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL EQUIPMENT SHALL BE PROPERLY GROUNDED IN ACCORDANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE.
8. ALL MATERIALS TO BE USED SHALL BE BRAND NEW AND OF THE APPROVED TYPE FOR LOCATION AND PURPOSE.
9. STANDARD TYPE OF ACCESSORIES, SPlicing DEVICES, TERMINATIONS AND OTHER APPURTENANCES FOR THE ENTIRE ELECTRICAL INSTALLATION SHALL BE USED.
10. ALL WALL OUTLETS SHALL BE INSTALLED AT THE FOLLOWING HEIGHTS ABOVE THE FINISHED FLOOR LEVEL UNLESS NOTED IN THE PLAN.
- a) WALL SWITCHES @ 1300mm
b) WALL CONVENIENCE OUTLETS @ 300 mm
11. ALL ELECTRICAL WORKS SHALL BE DONE UNDER THE DIRECT AND IMMEDIATE SUPERVISION OF A DULY REGISTERED ELECTRICAL ENGINEER.

ELECTRICAL SYMBOLS

- 1-28 WATTS FLUORESCENT LIGHTING FIXTURE, BOX TYPE, MOUNTED ON CEILING STEEL FRAME WITH APPROVED TYPE OF FITTINGS
- 1-28 WATTS FLUORESCENT LIGHTING FIXTURE WITH BATTERY PACK, BOX TYPE, MOUNTED ON CEILING STEEL FRAME WITH APPROVED TYPE OF FITTINGS
- 2 SINGLE-POLE WALL SWITCHES ON ONE SWITCH PLATE, (15AMPS, 250VOLTS)
- DUPLEX CONVENIENCE OUTLET, GROUNDING TYPE (15AMPS, 250VOLTS) "WP" DENOTES WEATHERPROOF OUTLET
- AUTOMATIC CIRCUIT BREAKER 50AF, 2P, 240VOLTS, 40AT IN NEMA 3R ENCLOSURE
- DISTRIBUTION PANEL
- GENERATING SET, PORTABLE TYPE
- SERVICE KWHR METER
- MANUAL TRANSFER SWITCH
- UNDERGROUND OR UNDERFLOOR CONDUIT RUN
- CONCEALED OR EMBEDDED CONDUIT RUN
- CIRCUIT HOMERUN
- GROUNDING SYSTEM

MAIN DISTRIBUTION PANELBOARD "DP"

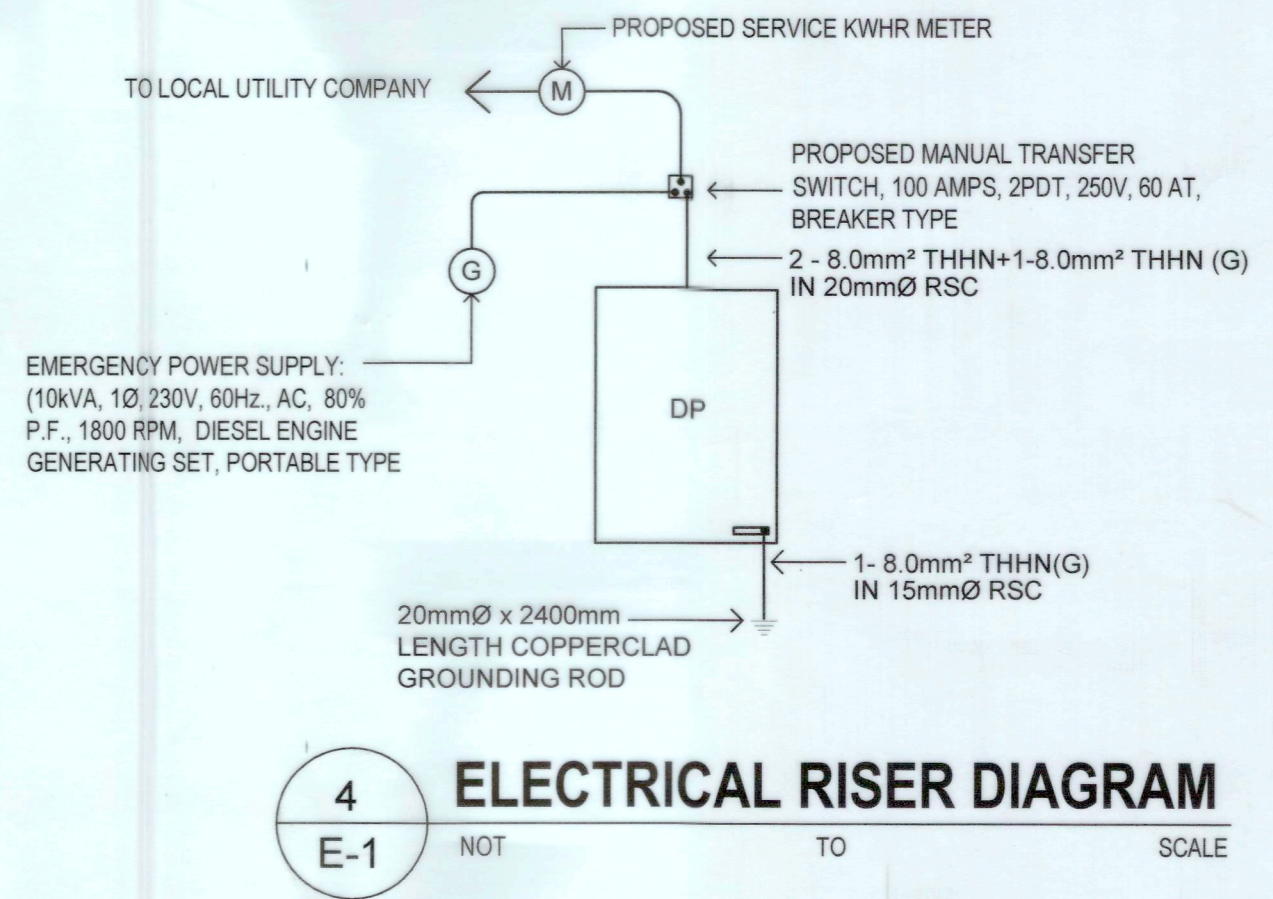
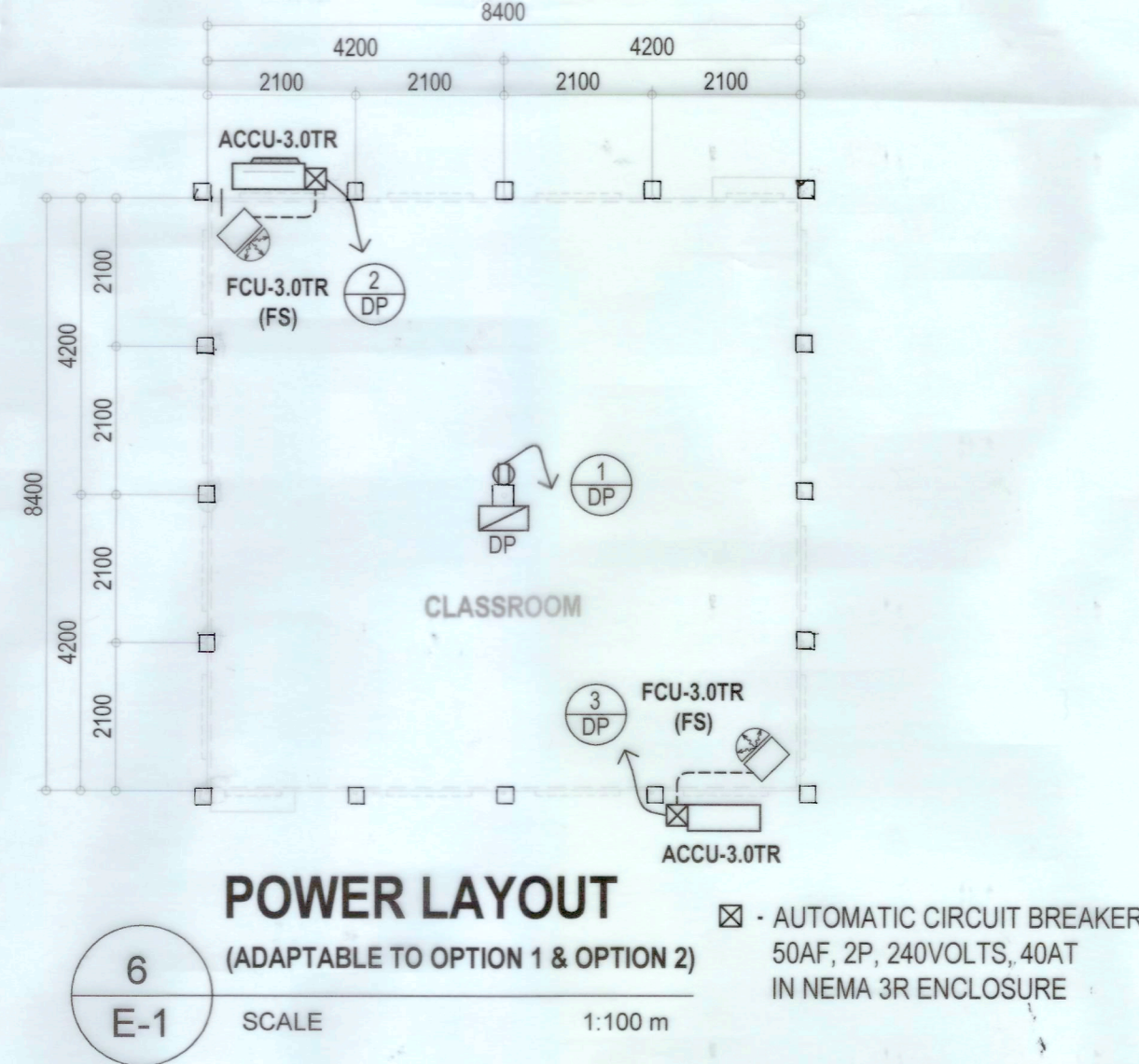
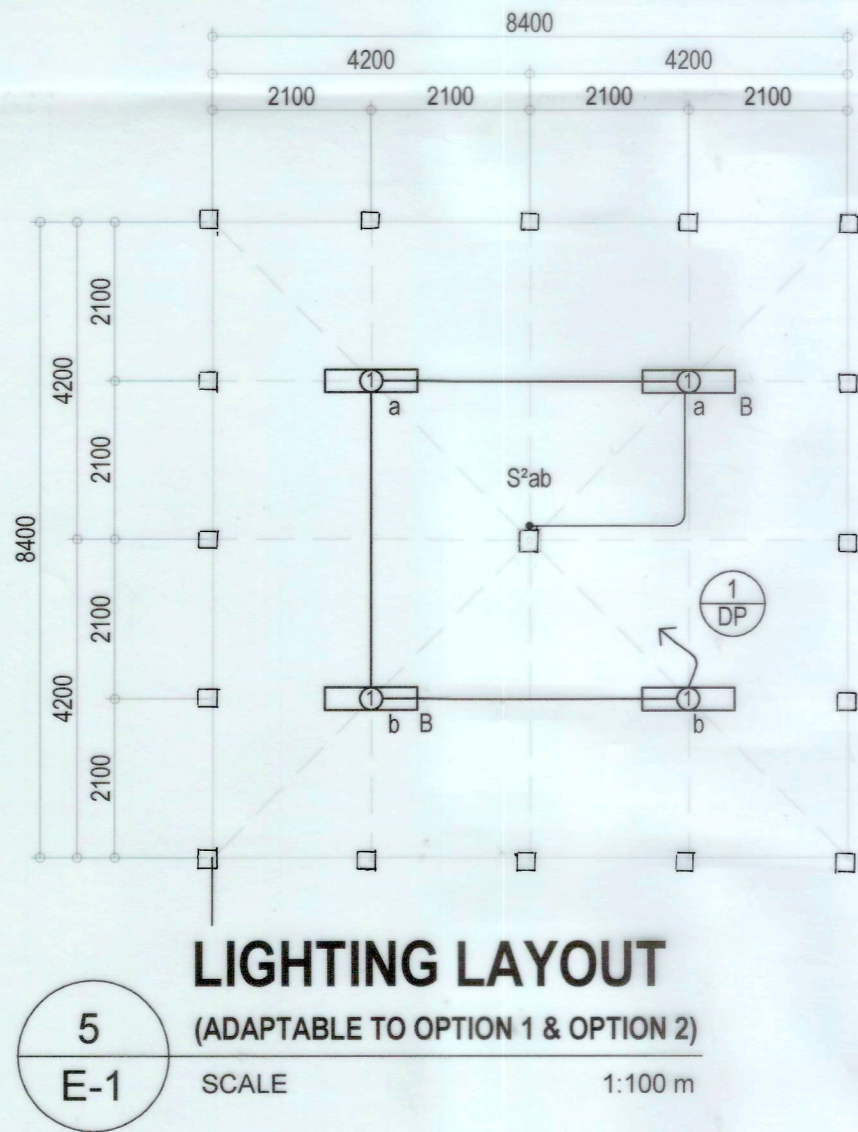
CKT. NO.	LOAD DESCRIPTION	VA PER CKT.	VOLTS	BRANCH CKT. BREAKER			SIZE OF HOMERUN (WIRES IN CONDUIT)
				AF	P	AT	
1	LIGHTING AND CONVENIENCE OUTLET	500	230	225	2	20	2 - 3.5mm² THHN + 1 - 3.5mm² THHN (G) IN 20mm Ø C
2	3.0 TR, 1Ø, SPLIT TYPE ACU	3875	230	225	2	40	2 - 5.5mm² THHN + 1 - 5.5mm² THHN (G) IN 20mm Ø C
3	3.0 TR, 1Ø, SPLIT TYPE ACU	3875	230	225	2	40	2 - 5.5mm² THHN + 1 - 5.5mm² THHN (G) IN 20mm Ø C
T O T A L		8250	MACB : 100AF, 2P, 250V, 60AT, 10KAIC				
TOTAL CONNECTED LOADS: 8250 VA							
$I_L \text{ @ } 85\% \text{ D.F. } = \left(\frac{8250}{230} \right) (0.85) + 0.25 (16.85) = 34.70 \text{ AMPERES}$							
USE : 2 - 8.0mm² THHN + 1 - 8.0mm² THHN (G) IN 20mm Ø RSC (34.70 A / 55 A)							

CAPACITY OF GENERATING SET:

$KVA = \frac{EI}{1000}$ @ D.F. = 85%, DIVERSITY FACTOR = 1.10

$= \frac{(230) (35.87) (0.85)}{1000 (1.10)} = 6.37 \text{ KVA}$

USE: ONE (1) SET - 10 KVA, 230V, 60 Hz., A.C., 80% P.F., 1800 RPM, DIESEL ENGINE GENERATING SET, PORTABLE TYPE



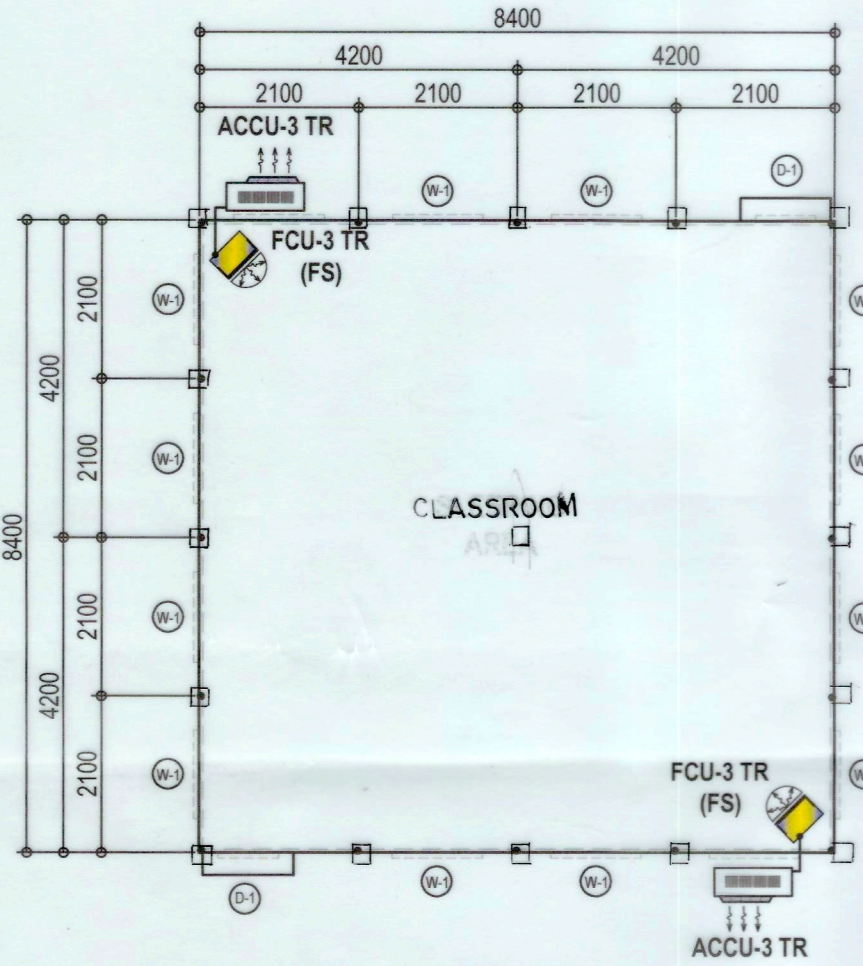
SCHEDULE OF EQUIPMENT

INVERTER TYPE FLOOR MOUNTED AIR CONDITIONER

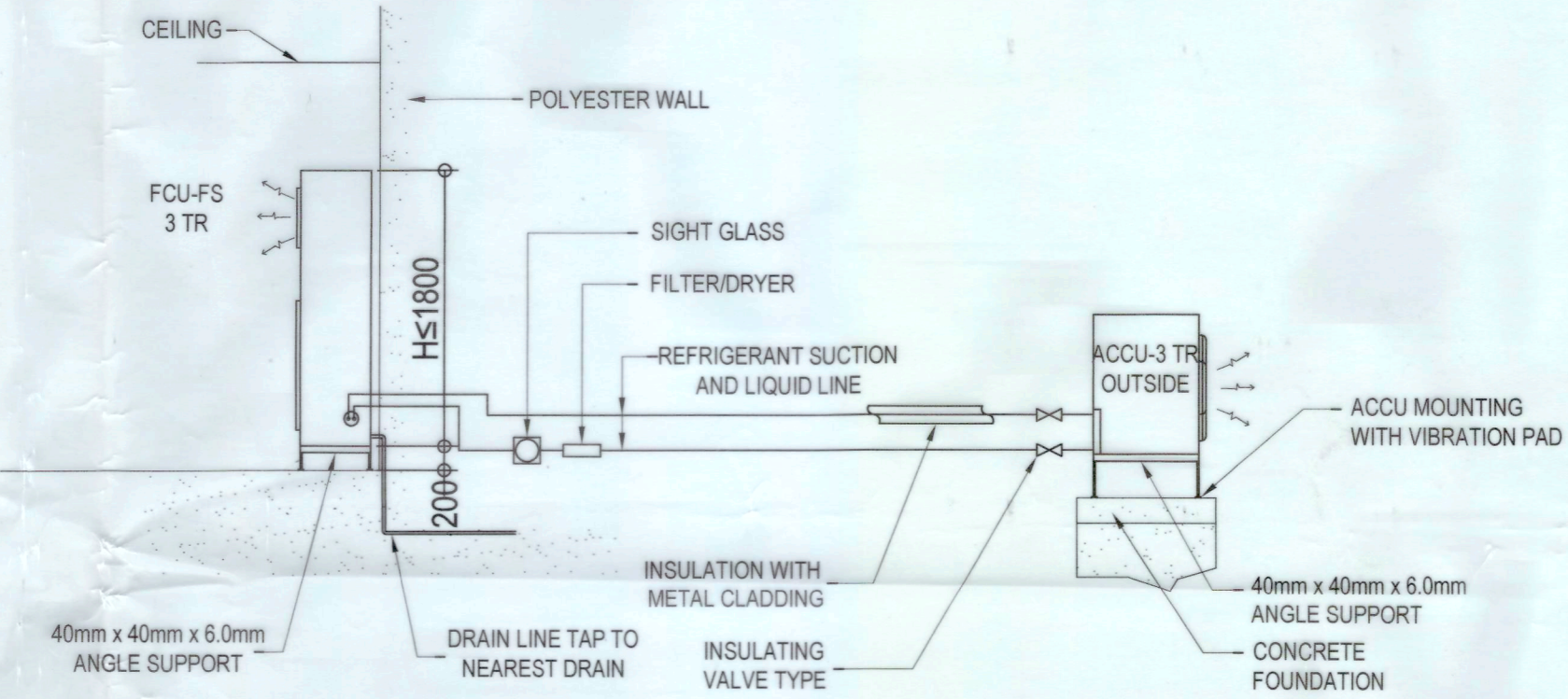
INDOOR UNIT													OUTDOOR UNIT													REMARKS		
DESIGNATION	QTY.	COOLING CAPACITY		TYPE	AIR FLOW m³ / hr	ELECTRICAL DATA				PIPE SIZE (MM)		UNIT DIMENSION W x D x H	DESIGNATION	QTY.	COOLING CAPACITY		MAX PIPE LENGTH M	DIMENSION WxDxH	REFRIGERANT	WEIGHT KG	ELECTRICAL DATA				PIPE SIZE (MM)			LOCATION
		KW	KJ/H			WATTS	VOLTS	PHASE	HERTZ	LIQUID	GAS				KW	BTU/HR					KW	VOLTS	PHASE	HERTZ	LIQUID	GAS		
FCU-3.0TR (FS)	2	11.2	40,090	FLOOR STANDING	1,734	3100	230	SINGLE	60	9.5 Ø	15.9 Ø	550 X 350 X 1800	ACCU (3.0TR)	2	11.2	38,000	50	1030 X 420 X 810	R410A	90	3.1	230	SINGLE	60	9.52 Ø	15.90 Ø	OUTSIDE	ALL UNITS SHALL BE BRAND NEW & COMPLETE ELECTRONIC (REMOTE) CONTROL WITH STANDARD ACCESSORIES, READY FOR SERVICE. NOTE : ALL FAN COIL UNITS (FCU'S) SHALL BE PROVIDED WITH EVAPORATOR DRAIN PIPE.

GENERAL NOTES

- CONTRACTOR IS ADVISED TO VISIT AND SURVEY THE PLACE OF INSTALLATION.
- ALL AIR CONDITIONING UNIT SHALL BE INVERTER TYPE WITH REFRIGERANT R410A ECO FRIENDLY. UNITS SHALL BE APPROVED AND PROVIDED BY THE REPUTABLE MANUFACTURER AND SHALL BE BRAND "KOPPEL" OR APPROVED EQUAL.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE CLOSELY HIS WORK WITH THE OTHER TRADES CONCERNED.
- REFRIGERANT SUCTION LINES SHALL BE INSULATED WITH 25 mm THICK PREMOULDED ELASTOMERIC RUBBER INSULATION AS MANUFACTURED BY "ARMAFLEX", AEROFLEX OR APPROVED EQUAL.
- INDIVIDUAL WEATHER PROOF TYPE CIRCUIT BREAKER SHALL BE PROVIDED FOR ALL CONDENSING UNITS.
- ALL EXPOSED DRAIN LINES TO THE CEILING SHALL BE PROVIDED WITH INSULATION TYPICAL TO REFRIGERANT PIPING. (REFER TO PIPE INSULATION DETAIL.)
- ALL NECESSARY GOVERNMENT PERMITS SHALL BE SECURED AND FOR ACCOUNT OF THE CONTRACTOR.
- AS-BUILT PLANS SHALL BE PROVIDED BY THIS CONTRACTOR AFTER COMPLETION OF WORKS.
- ALL INSTALLATION WORKS SHALL BE DONE IN A NEAT AND WORK-MANLIKE MANNER.
- ALL REFRIGERANT SUCTION LINES EXPOSED INDOORS AND/OR EXPOSED TO WEATHER SHOULD BE PROVIDED WITH GAUGE #24 ALUMINUM CLADDING. (SUBMIT SHOP DRAWING PRIOR TO INSTALLATION)
- ALL ACCU's AND FCU's SHALL BE PROVIDED WITH ANGULAR BAR SUPPORTS. (SUBMIT SHOP DRAWING PRIOR TO INSTALLATION)



1 GROUND FLOOR AIR CONDITIONING PLAN
M - 1 SCALE 1:100 m



2 DETAILS OF INSTALLATION
FCU (FLOOR STANDING TYPE) and ACCU
M - 1 SCALE NTS

