

DETAILED ENGINEERING DESIGN PLAN FOR CONVERGENCE AND SPECIAL SUPPORT PROGRAM (CSSP) **BASIC INFRASTRUCTURE PROGRAM (BIP)** MULTI-PURPOSE BUILDINGS/ FACILITIES TO SUPPORT SOCIAL SERVICES CONSTRUCTION OF MULTI-PURPOSE BUILDING, BARANGAY SAN JOSE, SAN PABLO CITY, LAGUNA

LOCATION: COORDINATES :

SUBMITTED/ RECOMMENDED:

MA. SHIRLEY M. SAMIANO CHIEF, PLANNING & DESIGN SECTION CONCURRENT CAPACITY AS OFFICER-IN-CHARGE OFFICE OF THE ASSISTANT DISTRICT ENGINEER

DATE:

Republic of the Philippines DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS LAGUNA 3rd DISTRICT ENGINEERING OFFICE Mariflor Subd., Brgy. Del Remedio, San Pablo City, Region IV-A

C.Y. 2025 PROJECT

SAN PABLO CITY, LAGUNA 14.0610609 N, 121.3439398 E

APPROVED:

CARLOS C. MUERE OFFICER-IN-CHARGE OFFICE OF THE DISTRICT ENGINEER

DATE:



		APPROVED QUANTITY		
ITEM NO.	DESCRIPTION	QUANTITY	UNIT	REMARKS
A.1.4(1)	PROVISION OF PROGRESS PHOTOGRAPHS	5.00	Month	
PART II	OTHER GENERAL REQUIREMENTS			
B.3(1)	PERMIT AND CLEARANCE	1.00	l.s.	
B.7(1)	OCCUPATIONAL SAFETY AND HEALTH PROGRAM	1.00	l.s.	
B.9(1)	MOBILIZATION/ DEMOBILIZATION	1.00	l.s.	
PART III	CIVIL, MECHANICAL, ELECTRICAL AND SANITARY/ PLUMBING WORKS			
801(1)	REMOVAL OF STRUCTURES/ OBSTRUCTION (CONCRETE)	1.00	l.s.	
803(1)a	STRUCTURE EXCAVATION(COMMON SOIL)	57.00	cu.m.	
804(1)a	EMBANKMENT FROM ROADWAY/ STRUCTURE EXCAVATION	30.00	cu.m.	
PART B	PLAIN AND REINFORCED CONCRETE WORKS	12.00	cu.m.	
900(1)c	STRUCTURAL CONCRETE (3000psi, CLASS A, 28 DAYS)	8.00	cu.m.	
900(1)d	STRUCTURAL CONCRETE (4000psi, CLASS A, 28 DAYS)	58.00	cu.m.	
902(1)a1 902(1)a2	REINFORCING STEEL (DEFORMED, GRADE 40) REINFORCING STEEL (DEFORMED, GRADE 60)	5,289.00	kg. ka.	
903(2)	FORMWORKS AND FALSE WORKS	452.00	sq.m.	
PART C	FINISHING WORKS			
C . 1000(1)	1 TERMITE CONTROL WORKS SOIL POISONING	60.00	1	
C.	2 MASONRY WORKS	00.00		
1046(2)a1	CHB NON-LOAD BEARING (INCLUDING REINFORCING STEEL) 100mm	80.00	sq.m.	
1046(2)a2	CHB NON-LOAD BEARING (INCLUDING REINFORCING STEEL) 150mm	182.00	sq.m	
0. 1008(1)a	ALUMINUM GLASS WINDOWS (SLIDING TYPE)	14.00	sq.m.	
1008(1)c	ALUMINUM GLASS WINDOWS (AWNING TYPE)	1.00	sq.m.	
1008(1)d	ALUMINUM GLASS WINDOWS (FIXED TYPE)	32.00	sq.m.	
1007(1)a	ALUMINUM FRAME GLASS DOOR (SLIDING TYPE)	5.00	sq.m.	
1010(2)a	DOORS (FLUSH)	5.00	sq.m.	
1010(2)b	DOORS (WOOD PANEL)	7.00	sq.m.	
1003(1)a1	CEILING (4.5mm, METAL FRAME, FIBER CEMENT BOARD)	129.00	sq.m.	
1003(11)a1	FASCIA BOARD (19mm, FIBER CEMENT BOARD)	7.00	sq.m.	
1003(17)	CARPENTRY AND JOINERY WORKS	1.00	l.s.	
1018(1)	GLAZED TILES AND TRIMS	29.00	sq.m.	
1018(2)	UNGLAZED TILES	19.00	sq.m.	
1021(1)a	CEMENT FLOOR FINISH (PLAIN)	25.00	sq.m.	
1027(1) 1051(1)a	RAILING	513.00	l.s.	
C.	5 PAINTING WORKS			
1032(1)a	PAINTING WORKS (MASONRY/ CONCRETE)	632.00	sq.m.	
1032(1)b 1032(1)c	PAINTING WORKS (WOOD) PAINTING WORKS (STEEL)	94.00	sq.m.	
C.(ROOF FRAMING AND ROOFING WORKS	04.00	·	
1014(1)b2	PREPAINTED METAL SHEETS (ABOVE 0.427mm, RIB TYPE, LONG SPAN)	61.00	sq.m.	
1013(2)b	FABRICATED METAL ROOFING ACCESSORY (GAUGE 26, 0.551mm, FLASHING) FABRICATED METAL ROOFING ACCESSORY (GAUGE 24, 0.701.00, GUTTERS)	7.00	l.m.	
1047(8)a	STRUCTURAL STEEL, (TRUSSES)	991.00	kg.	
1047(8)b	STRUCTURAL STEEL, (PURLINS)	354.00	kg.	
1047(5)d 1047(5)a	METAL STRUCTURAL ACCESSORIES (STEEL PLATES)	132.00	kg.	
1047(5)b	METAL STRUCTURAL ACCESSORIES (SAGRODS)	28.00	kg.	
PART D	PLUMBING/SANITARY WORKS			
1001(8)	SEWER LINE WORKS	1.00	l.s.	
1001(9)	STORM DRAINAGE AND DOWNSPOUT	1.00	I.S.	
1002(4)	PLUMBING FIXTURES	1.00	l.s.	
1001(11)	SEPTIC VAULTS (CONCRETE/CHB)	1.00	l.s.	
PART E	ELECTRICAL WORKS	10.00	eacn	
1100(10)	CONDUIT, BOXES, AND FITTINGS (CONDUIT WORKS/ CONDUIT ROUGH IN)	1.00	l.s.	
1101(33)	WIRES AND WIRING DEVICES	1.00	l.s.	
1102(1)	LIGHTING FIXTURES AND LAMPS	1.00	l.s.	
PART F	MECHANICAL WORKS			
1200(13)	AIR CONDITIONING SYSTEM (PACKAGE/SPLIT TYPE)	1.00	l.s.	



1	DRAFTED :	REVIEWED :	SUBMITTED/ RECOMMENDED :	APPROVED :
	JEFFERSON R. GABANAN DRAFTSMAN I(B)			
	PREPARED : PATRICK JONES F. MAGAMPON	JOEY CHRISTIAN L. DAYO ENGINEER II	MA. SHIRLEY M. SAMIANO CHIEF, PLANNING & DESIGN SECTION CONCURRENT CAPACITY AS OFFICER-IN-CHARGE OFFICE OF THE ASSISTANT DISTRICT ENGINEER	CARLOS OFFICER OFFICE OF THE D
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		+ SCHEDULE OF DOORS A WINDOWS
ARCHITECTURAL	STRUCTURAL	SANITARY
 +2 + BILL OF MATERIALS +2 + BILL OF MATERIALS +3 + PERSPECTIVE DRAWING + LOCATION PLAN + TABLE OF CONTENT +4 + VICINITY MAP + SITE DEVELOPMENT PLAN +5 + GROUND FLOOR PLAN + SECOND FLOOR PLAN + SECOND FLOOR PLAN + SECOND FLOOR PLAN + SCHEDULE OF FINISHES + FRONT ELEVATION + LEFTSIDE ELEVATION + LEFTSIDE ELEVATION + RIGHT SIDE ELEVATION + RIGHT SIDE ELEVATION + CROSS SECTION + LONGITUDINAL SECTION + PWD TOILET DET. PLAN & SECTIONS + 2ND FLR. TOILET PLAN & SECTION + BLOW-UP DETAILS + SPOT DETAILS + SPOT DETAILS + SPOT DETAILS + SCOND FLOOR REFLECTED CEILING PLAN + SECOND FLOOR REFLECTED CEILING VENT DETAIL + PERSPECTIVE (CEILING) + DET. SECTION + DETAIL 1 + SPOT DETAIL 1 + SPOT DETAIL 2 + SPOT DETAIL 3 + SECTION + SPOT DETAIL 3 + SECTION 	 S-2 + GENERAL STRUCTURAL NOTES S-2 + GENERAL STRUCTURAL NOTES S-3 + FOUNDATION PLAN DETAIL OF STAIR ON FILL REFERENCE DETAILED ELEV. OF COLUMNS DETAIL OF WALL FOOTINGS DETAIL OF WALL FOOTING DETAIL OF FOOTING DETAIL OF TIE BEAM DESIGN CRITERIA SCHEDULE OF FOOTING SCHEDULE OF FOOTING SCHEDULE OF COLUMN S-4 +SECOND FLOOR FRAMING PLAN ROOF FRAMING PLAN ROOF FRAMING PLAN TYPICAL DETAIL OF SUSPENDED SLAB DETAIL OF SUN BREAKER TYPICAL BEAM ELEVATION TYPICAL SLAB ELEVATION +SCHEDULE OF SLABS +SCHEDULE OF SLABS +SCHEDULE OF STAIR DET. SECT. OF STAIR DET. SECT. OF STAIR STAIRWAY FOOTING DET. STAIRWAY FOOTING DET. STAIRWAY FOOTING DET. + LANDING BEAM DET. S-6 + HIP TRUSS-1 DETAIL EAVES DET. SECTION CONNECTION DETAILS ROOFING FIXER SAGROD CONNECTION DETAIL PURLIN CONNECTION DETAIL PURLIN CONNECTION DETAIL TYP. TRUSS ANCHORAGE DET. 	 (DRAINAGE LAYOUT) +STORM DRAINAGE PLAN +GENERAL NOTES +LEGEND P-2 +GROUND FLOOR SEWER LINE LAYOUT PLAN +SECOND FLOOR SEWER LINE LAYOUT PLAN +ISOMETRIC SEWER LAYOUT PLA P-3 +DETAIL OF CATCH BASIN +FLOOR CLEANOUT DET. +FLOOR DRAIN DET. +SEPTIC TANK DET.
+ RAMP DETAILS -10 + DETAIL OF FIRE ESCAPE		
REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGH LAGUNA 3 RD DISTRICT ENGINEERING OFF	WAYS FICE	ROGRAM (CSSP) AM (BIP) TO SUPPORT ULTI-PURPOSE LO CITY, LAGUNA





	TABLE OI	F CONTENTS							
	ELE	CTRICAL	MECH	HANICAL	ELECT	RONICS	BILLB	OARD	
	E-1 +GENERAL NOTES +LEGEND +SITE DEVELOPME +SINGLE LINE DIAG	NT PLAN RAM					B-1 + DETAIL OF DPWH STA BILLBOARD	NDARD	
	E-2 +ELECTRICAL RISE +SCHED. OF LOADS +GROUND FLOOR P +SECOND FLOOR L +SECOND FLOOR L	R DIAGRAM S & COMPUTATION POWER LAYOUT IGHTING LAYOUT IGHTING LAYOUT					B-2 + DETAIL OF COA'S STA BILLBOARD	NDARD	
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JEFFE	DRAFTSMAN I(B)								
PREPARED : PATRICH	(JONES F. MAGAMPON ARCHITECT II	DATE :	AN L. DAYO Ru	MA. SHIRLEY N CHIEF, PLANNING & D CONCURRENT CAPACITY A OFFICE OF THE ASSISTANT	I. SAMIANO DESIGN SECTION S OFFICER-IN-CHARGE T DISTRICT ENGINEER	CARLOS C OFFICER-IN OFFICE OF THE DIS	. MUERE CHARGE IRICT ENGINEER	310	3 23

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PATRICK JONES F. MAGAMPON ARCHITECT II	DATE -	CONCURRENT CAPACITY AS OFFICER-IN-CHARGE OFFICE OF THE ASSISTANT DISTRICT ENGINEER	OFFICE OF THE D
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GENERAL CONSTRUCTION NOTES **GENERAL NOTES** NOTES ON CONCRETE MIXES & PLACING 3. IF SLABS AR E REINFORCED BOTHWAYS BARS ALONG THE SHORTER SPAN SHALL BE PLACED 1. ALL CONCRETE SHALL DEVELOP A MIN. COMPRESSIVE STRENGTH AT THE END OF TWENTY EIGHT **1.0 STANDARDS AND REFERENCES** (28) DAYS W/ CORRESPONDING MAXIMUM SIZE AGGREGATE & SLUMP AS FOLLOWS BELOW THOSE ALONE THE LONG SPAN AT THE CENTER AND OVER THE LONGER SPAN FOR THE FOLLOWING SHALL GOVERN THE DESIGN FABRICATION AND CONSTRUCTION OF THE PROJECT REINFORCING BARS NEAR THE SUPPORTS. THE SPACING OF THE BARS AT THE COLUMN STRIPS 1.1 NATIONAL STRUCTURAL CODE OF THE PHILIPPINES (N.S.C.P 2015) VOL. 1, SEVENTH EDITION. LOCATION 28 DAYS SHALL NOT BE MORE THAN ONE AND A HALF (1 1) SLAB THICKNESS. 2.0 DESIGN CRITERIA ALL OTHERS, INCLUDING 4. TEMPERATURE BARS FOR SLAB SHALL BE GENERALLY PLACED NEAR THE FACE IN TENSION AND 4000 PS 2.1 LOADINGS SHALL NOT BE LESS THAN 0.0025 X GROSS-SECTIONAL AREA (Ag) OF THE SLAB. SUSPENDED SLABS 4000 PS (SEE SCHEDULE BELOW) A. DEAD LOAD COLUMNS 4000 PS BEAMS CONCRETE 24 kN/m ³ 3000 PS SLAB ON FILL 77 kN/m ³ STEEL 3.3 kPa (INCLUDING FINISH) 150 mm THK. CHB WALL 2. MAINTAIN MINIMUM CONCRETE COVER 2.7 kPa (INCLUDING FINISH) 100 mm THK. CHB WALL SUSPENDED SLABS _____ SLAB ON GRADE _____ B. LIVE LOAD WALLS ABOVE THE GRADE OFFICE 2.40 kPa BEAM STIRRUPS AND COLUMN TIES COMFORT ROOM 2.40 kPa WHERE CONCRETE IS EXPOSED TO EARTH BUT POURED AGAINST FORMS WHERE CONCRETE IS DEPOSITED 5. UNLESS OTHERWISE NOTED IN THE PLANS ALL BEDDED SLABS SHALL BE REINFORCED WITH 10mm Ø 75mm DIRECTLY AGAINST EARTH AT 250mm O.C. EACH WAY TO CENTER OF SLAB AND CONSTRUCTION JOINTS FOR SAME SHALL C. WIND LOAD NOT BE LESS THAN 3.65 METER APART. BUILDING CATEGORY = 1 (ESSENTIAL FACILITIES) 3. CONCRETE SHALL BE DEPOSITED IN ITS FINAL POSISITON WITHOUT SEGREGATION. RE-HANDLING 6. PROVIDE EXTRA REINFORCEMENTS FOR CORNER SLAB (TWO ADJACENT DISCONTINUOES EDGES) OR PLACING SHALL BE DONE PREFERABLY WITH BUGGIES, BUCKETS OR WHEELBARROWS, **OPTION 1** AS SHOWN BELOW. NO CHUTES WILL BE ALLOWED EXCEPT TO TRANSFER CONCRETE FROM HOPPERS TO BUIGGIES, EXPOSURE CAT. ENCLOSED BUILDING "B" WHEELBARROWS OR BUCKETS IN WHICH CASE THEY SHALL NOT EXCEED SIX (6) METERS 7. CONCRETE SLAB REINFORCEMENT BE PROPERLY SUPPORTED WITH 10mm STEEL CHAIR WIND VELOCITY V=260 KPH OR APPROVED EQUIVALENT SPACED AT 1.0 METER ON CENTER BOTHWAYS. IN AGGREGATE LENGTH. (DESIGN WIND PRESSURE) P = qh [(GCpf)-(GCpi)]4. NO DEPOSITING OF CONCRETE SHALL BE ALLOWED WITHOUT THE USE OF VIBRATORS UNLESS WHERE: gh = VELOCITY PRESSURE (kPa) AUTHORIZED IN WRITING DESIGNER AND ONLY FOR UNUSUAL CONDITIONS WHERE VIBRATIONS Ø12x1000 LONG AT GCpf = EXTERNAL PRESSURE COFFECIENT ARE EXTREMELY DIFFICULT TO ACCOMPLISH MID-DEPTH OF SLAB GCpf = INTERNAL PRESSURE COFFECIENT 5. ALL ANCHOR BOLTS, DOWELS, AND OTHER INSERTS SHALL BE PROPERLY POSITIONED & SECURED D. SEISMIC LOAD IN PLACE PRIOR TO PLACING OF CONCRETE. DOWN INTO EDGE BEAM. EXTENDED AT EACH CORNER 4-Ø 12@ 1800 LONG TOP BARS BEND 1-Ø12 TOP & 🗍 6. ALL CONCRETE SHALL BE KEPT MOST FOR A MINIMUM OF SEVEN CONSECUTIVE DAYS IMMEDIATELY $V = \frac{CVI}{DT}W$ (DESIGN BASE SHEAR) BARS MIN. OF 1,200 (4'-0") INTO BARS. BOTT. BARS AFTER POURING BY THE USE O WET BURLAP, FOG SPRAYING, CURING COMPOUNDS OR OTHER 4-Ø12 BOTT. BARS APPROVED METHODS. Vmax = <u>2.50Cal</u> w Vmin = 0.11 CalW 7. STRIPPING OF FORMS AND SHORES: $Vmin = \frac{0.80 \text{ ZNvI}}{2} \text{W} \quad (\text{ZONE 4})$ FOUNDATION SUSPENDED SLAB EXCEPT WHEN _ WHERE: W = TOTAL DEAD LOAD E. LOAD COMBINATION ADDITIONAL LOADS ARE IMPOSED T = NATURAL PERIOD = Ct (h)= NSCP Eq. 203-3 - Eq. 203-7 DRIFT CHECK WALLS WHERE: C = NUMERICAL COEFFICIENT ULTIMATE STRENGTH DESIGN = NSCP 2015 203.3.1 BEAMS h = BUILDING HEIGHT ALLOWABLE STRESS DESIGN = NSCP 2015 203.4.1 COLUMNS ------SERVICE LOAD COMBINATION = NSCP 2015 203.4.2 I = IMPORTANCE FACTOR = 1.00 IN TWO WAY SLAB EXTEND-8. THE CONTRACTOR SHALL SUBMIT THE SCHEDULE OF POURING AND THE LOCATION OF THE R = NUMERICAL FACTOR = 8.50BARS UP TO BEAM SUPPOR CONSTRUCTION JOINTS TO THE STRUCTURAL ENGINEER AT LEAST (4) DAYS PRIOR TO THE SEISMIC COEFFICIENT Cv = 0.44 Nv OMIT TRIMMER BARS WHERE POURING FOR APPROVAL. Ca = 0.64 Nv OPENING IS FRAMED BY BEAM TYPICAL CORNER SLAB DETAIL NEAR SOURCE FACTOR (11.10 km) Nv = 1.6 9. THE CONTRACTOR SHALL FURNISH AND MAITAIN ADEQUATE FORMS AND SHORINGS UNTIL THE **TYPICAL SLAB** CONCRETE MEMBERS HAVE ATTAINED THEIR WORKING CONDITION AND STRENGTH. Na = 12 OPENING DET Z = SEISMIC ZONE = 0.40 (ZONE 4)S = SOIL TYPE = D NOTES ON FOOTINGS 2.2 DESIGN STRESSES 1. FOOTINGS ARE DESIGNED FOR AN ALLOWANCE SOIL BEARING PRESSURE OF 96 KPa (2000psf) NOTES ON COLUMNS CONTRACTOR SHALL REPORT TO THE ENGINEER, IN WRITING , THE ACTUAL SOIL CONDITIONS A. CONCRETE COMPRESSIVE STRENGTH @ 28 DAYS: UNCOVERED AND CONFIRM ACTUAL BEARING CAPACITY OF SOIL BEFORE DEPOSITING CONCRETE. 1. PROVIDE EXTRA SETS OF TIES AT 100 O.C. FOR TIED COLUMN REINFORCEMENT ABOVE a. FOOTINGS, COLUMNS, BEAMS AND SLABS f'c = 20.6 MPa (3,000 psi) 2. FOOTING SHALL REST AT LEAST 1500mm BELOW NATURAL GRADE LINE UNLESS OTHERWISE AND BELOW BEAM-COLUMN CONNECTIONS FOR A DISTANCE FROM FACE OF CONNECTION b. SLAB ON FILL f'c = 20.6 MPa (3,000 psi) f'c = 20.6 MPa (3,000 psi) INDICATED IN PLANS. NO FOOTING SHALL REST ON FILL EQUAL TO GREATER OF THE OVERALL THICKNESS OF COLUMN, 1/6 THE CLEAR HEIGHT OF C. SLAB 3. MINIMUM CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE 75mm CLEAR FOR CONCRETE COLUMN OR 450mm. **B. REINFORCING STEEL BARS** DEPOSITED THE GROUND AND 50mm FOR CONCRETE DEPOSITED AGAINST A FORMWORK. a. FOR BARS 16mm AND GREATER (INTERMEDIATE GRADE DEFORMED BAR) fy = 414 MPa (60,000 psi) 2. COLUMN TIES SHALL BE PROTECTED EVERYWHERE BY A COVERING OF CONCRETE CAST 4. IN CASES WHERE THE SOIL CONDITION IS SUCH THAT THE MINIMUM ALLOWABLE SOIL PRESSURE b. FOR BARS LESS THAN 16mm (STRUCTURAL GRADE DEFORMED BAR) fy = 275 MPa (40,000 psi) MONOLITHICALLY WIT HTHE CORE WITH A MINIMUM THICKNESS OF 40mm AND NOT LESS OF 96KPa (2000 psf) CAN NOT BE ATTAINED AT A PRACTICAL DEPTHS THE USE OF MICROPILES, C. STRUCTURAL STEEL ASTM-A36 THAN 40 TIMES THE MAXIMUM SIZE OF COARSE AGGREGATE IN MILLIMETERS. BORED PILES, OR DRIVEN PILES MAY BE ADOPTED IN LIEU OF STANDARD ISOLATED FOOTINGS. FOR TRUSSES, BRACINGS, & STRUTS fy = 248 MPa (36,000 psi) 3. WHERE COLUMNS CHANGE IN SIZE , VERTICAL REINFORCEMENT SHALL BE OFFSET AT A D. PURLINS SLOPE MONOLITHICALLY WITH THE CORE WITH MINIMUM THICKNESS OF 40mm AND NOTES ON REINFORCEMENT COLD FORMED LIGHT fy = 248 MPa (36,000 psi) NOT LESS THAN 40 TIMES THE MAXIMUM SIZE COARSE AGGREGATE IN MILLIMETERS E. MASONRY UNIT (CHB) 1. UNLESS OTHERWISE NOTED IN PLANS, THE YIELD STRENGTH OF REINFORCING BARS SHALL BE: 4. UNLESS OTHERWISE INDICATED IN THE PLANS, LAP SPLICES FOR VERTICAL COLUMN fm' = 3.45 MPa (500 psi) NON - LOADING BEARING CHB WALLS A. FOOTINGS, FOOTING BEAMS AND GIRDERS _ ___ fy = 414 MPa (60,000 psi) REINFORCEMENT SHALL BE MADE WITHIN THE CENTER HALF OF COLUMN HEIGHT. AND E - 60XX ELECTRODE F. WELDS B. COLUMNS AND SHEAR WALLS ____ G. STRUCTURAL BOLTS ASTM- A307 THE SPLICE LENGTH SHALL BE LESS THAN 40 BAR DIAMETERS. WELDING OR APPROVED a. Ft = 96.60 mPa (14, 000 psi) C. BEAMS AND GIRDER MECHANICAL DEVICES MAY BE USED PROVIDED THAT NOT MORE THAN ALTERNATE BARS b. Fv= 69.00 mPa (10, 000 psi) D. NON-LOAD BEARING WALL PARTITIONS ,BEDDED SLABS , FLOOR & ROOF SLABS, 3.0 IN THE INTERPRETATION OF THE DRAWING, INDICATED DIMENSIONS SHALL GOVERN ARE WELDED OR MECHANICALLY SPLICED AT ANY LEVEL AND THE VERTICAL DISTANCES PARAPETS ,CATCH BASIN,SIDE WALK _ fy = 275 MPa(40,000 psi) DISTANCES AND SIZES SHALL NOT BE SCALED FOR CONSTRUCTIONS PURPOSES BETWEEN THESE WELDS OR SPLICES OF ADJACENT BARS IS NOT LESS THAN 600mm. 2. ALL REINFORCING BARS SIZE 10mm OR LARGER SHALL BE DEFORMED IN ACCORDANCE WITH THE ASTM A-706 4.0 IN REFERENCES TO OTHER DRAWINGS. SEE ARCHITECTURAL DRAWINGS FOR DEPRESSIONS IN FLOOR BARS SMALLER THAN 10mm MAY BE PLAIN. SHOWN IN FIG. B-1 SLABS, OPENINGS IN THE WALLS AND SLABS, INTERIOR PARTITIONS, LOCATIONS OF DRAINS ETC. 3. SPLICES SHALL BE SECURELY WIRED TOGETHER & SHALL LAP OR EXTEND IN ACCORDANCE w/ TABLE B (TABLE OF LAP SPLICE & ANCHORAGE LENGTH) UNLESS OTHERWISE SHOWNON DRAWINGS, SPLICES SHALL BE 5.0 IN CASE OF DISCREPANCIES AS TO THE LAYOUT, DIMENSIONS AND ELEVATIONS BETWEEN THE STAGGERED WHENEVER POSSIBLE. STRUCTURAL PLANS AND ARCHITECTURAL DRAWINGS, THE CONTRACTORS SHALL NOTIFY BOTH THE CROSS-TIE 6.0 ALL CONCRETE WORKS AND CONCRETE REINFORCEMENTS SHALL BE DONE IN ACCORDANCE WITH THE NOTES ON CONCRETE SLABS ACI.318-14M BUILDING CODE REQUIREMENT AND ALL STRUCTURAL STEEL WORKS ACCORDING WITH THE WITH THE AISC-05 IN SOFAR AS THEY DO NOT CONFLICT WITH THE LOCAL BUILDING CODE REQUIREMENT. 1. ALL SLAB REINFORCEMENTS SHALL BE 20mm CLEAR MINIMUM FROM BOTTOM AND FROM THE TOP OF SLAB. 2. UNLESS OTHERWISE SHOWN, REINFORCEMENT IN CONTINUOUS ELEVETED SLAB SHALL BE CUT AS FOLLOWS: 7.0 ACI REFERS TO AMERICAN CONCRETE INSTITUTE, AISC REFERS TO AMERICAN INSTITUTE OF STEEL CONSTRUCTION AND ASTM REFERS TO AMERICAN SOCIETY FOR TESTING MATERIALS. 8.0 CONSTURCTION NOTES AND TYPICAL DETAILS APPLY TO ALL DRAWINGS UNLESS OTHERWISE SHOWN OR -BENT BAR NOTED. MODIFY TYPICAL DETAILS AS DIRECTED TO MEET SPECIAL CONDITIONS. 9.0 SHOP DRAWING WITH ERECTION AND PLACING DIAGRAMS OF ALL STRUCTURAL STEELS, MISCELLANEOUS --ΦΦ---L1 ₺___ $-\overline{\Phi}$ $\overline{\Phi}$ $\underline{L2/4}$ Φ L1/4 L1/4 IRON, PRE-CAST CONCRETE, ETC. SHALL BE SUBMITTED FOR ENGINEERS APPROVAL BEFORE FABRICATION. -TOP BAR 2 Ø 12mm SIDE BARS 10. CONTRACTOR SHALL NOTE AND PROVIDE ALL MISCELLANEUOS CURBS, SILLS, STOOLS EQUIPMENT AND MECHANICAL BASES THAT ARE REQUIRED BY THE ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS. 11. ALL RESULTS OF THE MATERIAL TESTING FOR CONCRETE, REINFORCING BARS & STRUCTURAL STEEL MUST BE NOTED & APPROVED BY THE MATERIALS ENGINEER/STRUCTURAL DESIGNER. - BOTTOM BAR PROJECT TITLE / LOCATION : SHEET CONTENT GENERAL CONSTRUCTION NOTES CONVERGENCE AND SPECIAL SUPPORT PROGRAM (CSSP) BASIC INFRASTRUCTURE PROGRAM (BIP) MULTI-PURPOSE BUILDINGS/ FACILITIES TO SUPPORT

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS LAGUNA 3RD DISTRICT ENGINEERING OFFICE MARIFLOR SUBD., BRGY. DEL REMEDIO, SAN PABLO CITY, REGION IV-A

SOCIAL SERVICES CONSTRUCTION OF MULTI-PURPOSE BUILDING, BARANGAY SAN JOSE, SAN PABLO CITY, LAGUNA

S STRENGTH	MAX. SIZE OF AGGREGATE	MAX SLUMP
SI (28 MPa)	20 mm	100mm
SI (28 MPa) SI (28 MPa) SI (20.6 MPa)	20 mm 20 mm 20 mm	100mm 100mm 100mm
FOR REINFORCING	STEEL AS FOLLOWS	20mm 40mm 25mm 40mm
		50mm

 24 8	HOUR DAYS
21	DAYS
14	DAYS
21	DAYS

fy = 414 MPa	(60,000 psi)
 fy = 414 MPa	(60,000 psi)



SCHEDULE OF MINIMUM SLAB REINFORCEMENT						
	MINIMUM TEMPERATURE BARS					
100 mm	10mm Ø @ 250mm EACH WAY					
125 mm	10mm Ø @ 250mm EACH WAY					
150 mm	10mm Ø @ 250mm EACH WAY					
175 mm	10mm Ø @ 250mm EACH WAY					
200 mm 10mm Ø @ 250mm EACH WAY						









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JEFFERSON R. GABANAN DRAFTSMAN I(B)			
PREPARED : JESSMYN P. VILLAFUERTE	JOEY CHRISTIAN L. DAYO ENGINEER II	MA. SHIRLEY M. SAMIANO CHIEF, PLANNING & DESIGN SECTION CONCURRENT CAPACITY AS OFFICER-IN-CHARGE OFFICE OF THE ASSISTANT DISTRICT ENGINEER	CARLOS OFFICER OFFICE OF THE I
ENGINEER I	DATE :	DATE :	DATE :





GENERAL CONSTRUCTION NOTES

FIN. FLR. LVL

REINFORCING CONCRETE LINTEL BEAMS IN CONCRETE BLOCK WALLS

CLEAR	TOTAL	MIN.	HEIGHT OF	REINFORCEMENT		
(L)	(L+0.40M)	(MPa)	LINTEL - (mm)	BOTTOM	TOP	STIRRUPS
1.20 M	1.60 M		200	1-Ø10	1-Ø10	Ø6 mm @ 200mn
1.50 M	1.90 M	14.0	200	1-Ø10	1-Ø10	Ø6 mm @ 200mn
1.80 M	2.20 M		200	1-Ø12	1-Ø10	Ø6 mm @ 200mn
2.10 M	2.50 M		250	1-Ø12	1-Ø10	Ø6 mm @ 200mn
2.40 M	2.90 M	17.0	250	1-Ø12	1-Ø10	Ø6 mm @ 200mn
2.70 M	3.10 M		250	1-Ø16	1-Ø12	Ø10mm @ 200mr
3.00 M	3.40 M		300	1-Ø16	1-Ø12	Ø10mm @ 200mr
3.30 M	3.70 M	20.0	300	1-Ø16	1-Ø12	Ø10mm @ 200mr
3.60 M	4.00 M		300	1-Ø20	1-Ø12	Ø10mm @ 200mr







ELEVATION



3. IF THE BEAM REINFORCING BARS END IN A WALL, THE CLEAR DISTANCE FROM THE BAR TO THE FARTHER FACE OF THE WALL IS NOT LESS THAN 25mm. EMBEDMENT LENGTH SHALL BE SHOWN IN A TABLE 'A' FOR TENSION BARS AND TABLE 'B' FOR COMPRESSION BARS UNLESS UNLESS SPECIFIED IN PLAN. TOP BARS AND SHALL NOT BE SPLICED WITHIN THE COLUMN OR TWO STIRRUPS SHALL BE PROVED AT ALL SPLICES.

BAR SIZES

(DEFORMED MM)

Ø10

Ø12

Ø16

Ø20

Ø25

Ø28

Ø32

NOTES:

- 4. IF THERE ARE TWO OR MORE LAYERS OF REINFORCING BARS, USED 25mm BAR SEPARATORS SPACED AT 1.0M ON ON CENTER ON NO CASE SHALL THERE BE THAN TWO (2) SEPARATORS BETWEEN LAYERS OF BARS
- 5. MINIMUM CONCRETE PROTECTION FOR REINFORCING BARS OR STEEL SHAPES SHALL BE AS SHOWN IN FIGURE B-2 UNLESS ELSEWHERE.



TABLE 'A'

TENSION BARS

TABLE OF LAP SPLICE & ANCHORAGE LENGTH (mm)

LAPPED

300

300

400

550

800

1000

1300

fc`= 20.7MPa(300psi)

EMBEDMENT

300

300

300

400

600

750

950

1. TOP PLAIN BARS, MULTIPLY VALUE BY 2

2. NOT MORE THAN 33% OF THE BARS SHALL BE

SPLICED WITHIN THE REQUIRED LAP LENGTH

BAR SIZES

(DEFORMED MM)

Ø10

Ø12

Ø16

Ø20

Ø25

Ø28

Ø32

NOTES:

fc`= 27.6 MPa (4000psi)

LAPPED

300

300

400

500

750

850

1100

EMBEDMENT

300

300

300

350

550

650

850

TYP. DET. FOR SLEEVES THRU CONCRETE BEAM FIG. B-2



TABLE 'B'

COMPRESSION BARS

TABLE OF LAP SPLICE & ANCHORAGE LENGTH (mm)

LAPPED

300

300

400

500

625

675

775

fc`= 27.6 MPa (4000psi)

LAPPED

300

300

400

500

625

675

775

EMBEDMENT

200

250

325

475

550

625

700

fc`= 20.7MPa(300psi)

EMBEDMENT

225

275

350

450

550

625

700

1. TOP PLAIN BARS, MULTIPLY VALUE BY 2

2. NOT MORE THAN 33% OF THE BARS SHALL BE

SPLICED WITHIN THE REQUIRED LAP LENGTH

3. VALUES GIVEN ABOVE CAN ALSO BE USED FOR COLUMNS

TYP. DET. FOR SLEEVES THRU CONCRETE BEAM FIG. B-3

- 6. WHEN A BEAM CROSSES A GIRDER, REST BEAM ON TOP OF GIRDER BARS, BEAM REINFORCING BARS SHALL BE SYMMETRICAL ABOUT THE CENTER LINE WHENEVER POSSIBLE.
- 7. GENERALLY, NO SPLICES SHALL BE PERMITTED AT POINTS WHERE CRITICAL BENDING STRESSES OCCUR, SPLICES WHERE SO PERMITTED SHALL BE INDICATED IN TABLE 'A' AND 'B'. WELDED SPLICES SHALL DEVELOP IN TENSION AT LEAST 125% OF THE SPLICED YIELD STRENGTH OF THE BAR NOT MORE THAN 50% OF THE BARS AT ANY ONE SECTION IS ALLOWED TO BE SPLICED THEREIN.

NOTES ON CONCRETE HOLLOW BLOCKS WALLS

- 1. UNLESS OTHERWISE SHOWN IN PLANS ALL CONCRETE HOLLOW BLOCKS AND CERAMIC BLOCKS SHALL BE REINFORCED AS SHOWN IN THE SCHEDULE OF CONCRETE HOLLOW BLOCKS AND CERAMIC BLOCK REINFORCEMENT
- 2. PROVIDE 150mm x 300mm STIFFENER COLUMN REINFORCED WITH 4-12mm WITH 10mm Ø TIES AT 150mm ON CENTER WHERE CONCRETE HOLLOW BLOCK TERMINATES AND AT EVERY 3.0M LENGTH OF CONCRETE HOLLOW BLOCK WALLS UNLESS NOTED IN STRUCTURAL PLANS.

NO	NOTES ON CONCRETE HOLLOW BLOCKS WALLS REINFORCEMENTS							
BLOCK THICKNESS	REINFORCE	NOTES						
	HORIZONTAL	LAPPED	A. MINIMUM LAPS AT SPLICE= 0.25 M					
75 mm	10mm Ø EVERY 3RD LEVEL	10mm Ø @ 600mm O.C.	B. PROVIDE RIGHT ANGLED REINFORCEMENT					
125 mm	10mm Ø EVERY 3RD LEVEL	10mm Ø @ 600mm O.C.	C WHERE CHB OR CER BLK WALL DOWELS					
150mm	10mm Ø EVERY 3RD LEVEL	10mm Ø @ 600mm O.C.	WITH THE SAME SIZE AS VER. OR HOR.					
200 mm	12mm Ø EVERY 3RD LEVEL	10mm Ø @ 600mm O.C.						



OPENING OR END WALL

INTERSECTING R.C. COLUMN OR WALL

FOR SIZE AND SPACING - OF HOR. & VERT. BARS SEE CONSTRUCTION NOTES

CHB VERT. BARS

2-Ø12 TOP BARS

TYPICAL CONNECTION DETAIL OF MASONRY WALL



SEE CONSTRUCTION NOTES FOR MASONRY WALL REIN-

FORCEMENTS (TYPICAL)



TYPICAL CONNECTION DETAIL OF R.C. WALL AT CORNERS

NOTES ON WELDS

- 1. USE E60xx ELECTRODES FOR ALL MEMBERS WELDED.
- 2. WELDS SHALL DEVELOP THE FULL STRENGTH OF MEMBERS JOINED UNLESS OTHERWISE SHOWN OR DETAILED IN THE DRAWINGS

NOTES ON STRUCTURAL STEEL

- 1. STRUCTURAL STEEL TO BE USED FOR FABRICATION AND ERECTION OF THIS STRUCTURE SHALL COMPLY WITH ALL THE PERTINENT PROVISION OF AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDING LATEST EDITION.
- 2. ALL STRUCTURAL STEEL SHAPES SHALL CONFORM TO ASTM A36 STRUCTURAL STEEL UNLESS OTHERWISE INDICATED.
- 3. ALL WELDED CONNECTIONS SHALL DEVELOP THE FULL STRENGTH OF THE MEMBERS CONNECTED.
- 4. UNLESS OTHERWISE SPECIFIED ALL WELDING RODS SHALL CONFORM WITH E60 ELECTRODES.
- 5. ALL BOLTS USED UNLESS OTHERWISE SPECIFIED SHALL BE ASTM A 307 BOLTS.

NOTES ON EMBBED PIPES

- 1. ALL EMBEDED PIPES FOR UTILITIES ETC. THAT PASS THRU BEAMS SHALL NOT EXCEED 100mm IN DIAMETER OR 1/3 BEAM DETPH WHICHEVER IS LESS, UNLESS OTHERWISE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.
- 2. NO PIPES SHALL BE ALLOWED TO PASS THRU BEAMS VERTICALLY.
- 3. NO PIPES SHALL BE EMBEDDED IN COLUMNS.

NOTES ON CONSTRUCTION JOINTS IN CONCRETE

1. WHERE A CONSTRUCTION JOINT IS TO BE MADE, THE SURFACE OF CONCRETE SHALL BE CLEANED AND ALL LAITANCE AND STANDING WATER REMOVED SHEAR KEY SHALL BE PROVIDE AT THE JOINT.



CONSTRUCTION JOINT DET



TYP. DET. OF LINTEL BEAM AT CHB WALL OPENIN

- CONTAINING REINFORCING
- WITH CONCRETE GROUT. 2. FOR REINFORCEMENTS SEE

□ 1-Ø16 CONT. HOR. BARS

MASONRY

DRCEMENTS



LE OF WALL

WALL		REINFORCEMENT		VERTICAL
THICKNESS	HORIZONTAL	VERTICAL	REMARKS	SECTION
100mm	Ø10mm @ 250mm O.C.	Ø10mm @ 300mm O.C.	HORIZONTAL BARS	
125mm	Ø10mm @ 200mm O.C.	Ø10mm @ 250mm O.C.	AT CENTERS VERTICAL	VER. BARS
150mm	Ø12mm @ 250mm O.C.	Ø12mm @ 300mm O.C.	BARS STAGGED OUT	HOR. BARS

- REINFORCING BARS SHALL HAVE 25mm CLEAR CONCRETE COVER FROM FACE OF WALL EXCEPT FOR WALLS IN CONTACT WITH THE GROUND WHERE A MINIMUM OF 60mm SHALL BE PROVIDED AND FOR EXPOSED FACES OF FORMED WALLS WHERE THE MINIMUM SHALL BE 50mm CLEAR.
- 2. CARRY VERTICAL BARS AT LEAST 60mm ABOVE FLOOR LEVEL TO PROVIDE FOR SPLICES WHEN NECESSARY STOP AT 50mm BELOW TOP SLAB OR SOLID BAND WHERE THE WALL ENDS VERTICAL AND HORIZONTAL BARS SHALL BE SPLICED BY LAPPING A DISTANCE EQUAL TO 30 DIAMETERS AND WIRED SECURELY WITH 16 G.I. WIRE PROVIDED THAT SPLICES IN ADJACENT BARS ARE STAGGERED AT LEAST 1.50M O.C.
- 3. UNLESS OTHERWISE NOTED IN THE PLANS, ALL OPENINGS IN WALLS 250mm OR THICKER SHALL BE REINFORCED AROUND WITH 2-20mmØ BARS. FOR 225mm, 200mm, 175mm, 150mm THICK WALLS, USE 2-16mmØ. FOR 125mm AND 100mm THICK WALLS, USE 2-12mmØ BARS. ALL WALLS SPANNING SHALL HAVE VERTICAL REINFORCEMENT BENT A U-FORM LIKE STIRRUPS AND SPACED ACCORDING TO THE SCHEDULE UNLESS OTHERWISE NOTED.



DRAFTED **REVIEWED** : SUBMITTED/ RECOMMENDED : APPROVED : **JEFFERSON R. GABANAN** DRAFTSMAN I(B) JOEY CHRISTIAN L. DAYO MA. SHIRLEY M. SAMIANO PREPARED CHIEF, PLANNING & DESIGN SECTION OFFICER-IN-CHARGE ENGINEER II CONCURRENT CAPACITY AS OFFICER-IN-CHARGE OFFICE OF THE DISTRICT ENGINEER **JESSMYN P. VILLAFUERTE** OFFICE OF THE ASSISTANT DISTRICT ENGINEER ENGINEER I DATE

NOTES ON CONCRETE WALLS

	1. ALL WALLS REINFORCE	SHALL BE REINFORCED MENT UNLESS OTHERV	ACCORDING TO THE FO	OLLOWING SCHEDUL PLANS.
G	WALL		REINFORCEMENT	
	THICKNESS	HORIZONTAL	VERTICAL	REMARKS
	100	α_{10} mm α_{250} mm α_{10}	$\alpha_{10mm} \otimes 200mm \cap C$	

NOTES ON STIRUPS

1. ALL REINFORCEMENT SHALL BE BENT COLD UNLESS OTHERWISE PERMITTED BY THE STRUCTURAL ENGINEER. 2. AS SHOWN IN THE DESIGN DRAWINGS OR PERMITTED BY THE STRUCTURAL ENGINEER 3. TIES & CLOSE STIRRUPS MUST BE AT 135.





MAIN BAR END HOOKS (ALL GRADES)						
BAR SIZE	DIAMETER	180° I	180° HOOK			
(DEFORMED)	(mm)	D+2db	L	L		
10 mm Ø	60	75	125	150		
12 mm Ø	75	100	150	200		
16 mm Ø	95	125	175	250		
20 mm Ø	115	150	200	300		
25 mm Ø	150	200	230	450		
28 mm Ø	240	300	350	550		
32 mm Ø	300	335	450	600		





STIRRUP AND THE TIE HOOKS (ALL GRADES)						
BAR SIZE	DIAMETER	180° H	180° HOOK			
(DEFORMED)	(mm)	D+2db	L	L		
10 mm Ø	40	125	85	100		
12 mm Ø	50	165	115	115		
16 mm Ø	65	200	140	150		
20 mm Ø	115	300	165	300		
32 mm Ø	150	335	230	405		





MARK	LENGTH (L)	WIDTH (W)	DEPTH (D)	Thickne (t)	
F-1	1500	1500	1500	300	





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JESSMYN P. VILLAFUERTE ENGINEER I	DATE :	CONCURRENT CAPACITY AS OFFICER-IN-CHARGE OFFICE OF THE ASSISTANT DISTRICT ENGINEER DATE :	OFFICE OF THE D



					30		. D C		U	3		D
	FLOOR SLAB THICK- LEVEL MARK NESS in mm		REB	REBAR SPACING ALONG SHORT DIRECTION				REBAR SPACINO				
FLOOR LEVEL		SLAB THICK- IARK NESS _{REBAR} in mm SIZE	REBAR	LEFT SU	PPORT	MIDS	PAN	RIGHT S	UPPORT	REBAR	LEFT SU	PPO
			SIZE	ТОР	BOTT.	ТОР	BOTT.	ТОР	BOTT.	SIZE	ТОР	BO
Δ.												
VEL	S-1	125	12Ø	150	200	-	200	150	200	12Ø	250	30
LE SEC	S-2	125	12Ø	175	175	-	300	300	300	10Ø	300	30
L ND	S-1	100	10Ø	400	-	-	-	400	-	-	400	-
GF LI												

		BE	AM	STE	EEL RE	INFOR	CEME	NTS		
FLOOR LEVEL	OR BEAM EL MARK	BEAM (in / mm)		1)	REBAR	LEFT	LEFT		MID SPAN	
		b	h	(mm Ø)	TOP	воттом	TOP	воттом	ТОР	
г.я.	B-1	250	400	Ø16mm	6	3	2	6	6	
O FL EVE	B-2	250	300	Ø16mm	2	2	2	2	2	
2NI L										
	RB-1	250	300	Ø16mm	3	2	2	3	3	
ш Ц										
Е АМ	FTB-1	300	500	Ø16mm	4	4	2	2	4	
БЩ										
AIR AM	LB-1	250	400	Ø16mm	2	2	2	4	2	
ST/ BE										
NTI VER	CL-1	250	400	Ø16mm	6	2	6	2	6	
L CA										

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JESSMYN P. VILLAFUERTE ENGINEER I	DATE :	OFFICE OF THE ASSISTANT DISTRICT ENGINEER	DATE :





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JESSMYN P. VILLAFUERTE	ENGINEER II	CHIEF, PLANNING & DESIGN SECTION CONCURRENT CAPACITY AS OFFICER-IN-CHARGE OFFICE OF THE ASSISTANT DISTRICT ENGINEER	
ENGINEER I	DATE :	DATE :	DATE :

	SET NO.	SHEET NO.
C. MUERE IN-CHARGE DISTRICT ENGINEER	S 5 6	15 15 23





	SCHEDULE OF TRUSS MEMBERS AND WELDS						
		SIZ	E OF WELDS				
MARK	SIZES	THICKNESS	LENGTH mm	DESCRIPTION			
			L_1 L_2 L_3				
W-1	2∠s - 50 x 50 x 6mm	7mm	FULL WELD	TOP & BOTTOM CHORDS			
W-2 2∠s - 50 x 50 x 4mm		7mm	FULL WELD	WEB MEMBER			



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ENGINEER I	DATE :	OFFICE OF THE ASSISTANT DISTRICT ENGINEER DATE :	DATE :

GENERAL NOTES :

GRADES OF HORIZONTAL PIPINGS

RUN ALL HORIZONTAL PIPINGS IN PERPECT ALIGNMENT AND AT A FORM GRADE NOT LESS THAN TWO PERCENT (2%)

CHANGE IN DIRECTION

ALL CHANGE IN DIRECTION SHALL BE MADE BY APPROPRIATE USE OF FORTY-FIVE DEGREES (45°) WYES, LONG SWEEP QUARTER BEND, SIXTH-EIIGHT OR SIXTEENTH BEND. WHEN THE CHANGE OF FLOW IS FROM HORIZONTAL TO VERTICAL A SINGLE 1/8 BEND COMBINATION MAYBE USED ON VERTICAL STACKS AND SHORT QUARTER BENDS MAYBE USED ON WASTE LINE, TEE AND CROSSES MAYBE USED IN BENT

PROHIBITED FITTINGS

NO DOUBLE HUB OR TEE BRANCH SHALL BE USED ON HORIZONTAL SOIL AND WASTE LINES, THE DRILLINGS AND TAPPING OF HOUSE DRAIN, WASTE OR VENT PIPES AND USED OF SADDLE HUB AND BEND ARE PROHIBITED.

PIPE CLEAN-OUTS

CLEAN-OUTS ARE REQUIRED UNDER THE FOLLOWING CONDITIONS: a) EVERY CHANGE OF HORIZONTAL DIRECTION EXCEEDING TWENTY TWOAND ONE-HALF DEGREES (22 1/2°). b) ONE AND ONE-HALF METERS (1.50m.) INSIDE THE PROPERTY LINES BEFORE THE HOUSE DRAINAGE CONNECTION. c) EVERY FIFTEEN METERS (15.00m) IN HORIZONTAL RUN OF PIPES. d) AT THE END OF ANY HORIZONTAL PIPE LINES.

THE DIGESTION CHAMBER OF SEPTIC VAULT MUST BE WATERPROOFED.

NOT LESS THAN 0.30 METER OF AIR SPACE MUST BE LEFT BETWEEN THE TOP OF THE SEWAGE AND THE UNDER PART OF VAULT ROOF

NO SEPTIC VAULT SHALL BE CONSTRUCTED UNDER THE BUILDING.

ALL PLUMBING WORKS SHALL BE UNDER THE SUPRVISION OF A LICENSED MASTER PLUMBER AND A LICENCED PLUMBING CONTRACTOR.

2 P-1 SCALE: 1:100 m.

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JESSMYN P. VILLAFUERTE ENGINEER I	DATE :	OFFICE OF THE ASSISTANT DISTRICT ENGINEER	DATE :

LEGEND :

СВ	CATCH BASIN
CDP	CONCRETE D
СО	CLEAN OUT
CV	CHECK VALVE
HB	HOSE BIBB
FD	FLOOR DRAIN
GICWL	GALVANIZED IF
GICWR	GALVANIZED IF
GV	GATE VALVE
МН	MANHOLE
PVCDS	POLYVINYL CH
PVCDP	POLYVINYL CH
PVCDS	POLYVINYL CH
PVCSP	POLYVINYL CH
PVCVAC	POLYVINYL CH
PVCVP	POLYVINYL CH
PVCVS	POLYVINYL CH
PVCVTR	/W POLYVINYL
PVCWP	POLYVINYL CI
PVCWS	POLYVINYL CH
RD	ROOF DRAIN
UD	URINAL DRAIN
WC	WATER CLOSET
LAV	LAVATORY
CS	COUNTER SIN
F	FAUCET

RAIN PIPE

IRON COLD WATER LINE (SCH. 40) IRON COLD WATER RISER (SCH. 40)

CHLORIDE DOWNSPOUT CHLORIDE DRAIN PIPE CHLORIDE DOWNSPOUT CHLORIDE SOIL PIPE CHLORIDE VENT. ACROSS CEILING CHLORIDE VENT. PIPE CHLORIDE VENT STACK CHLORIDE VENT TROUGH ROOF/WALL CHLORIDE WASTE PIPE CHLORIDE WASTE STACK

K

	SET NO.	SHEET NO.
C. MUERE R-IN-CHARGE DISTRICT ENGINEER	P 1 3	17 1723

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JEFFERSON R. GABANAN DRAFTSMAN I(B)			
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JESSMYN P. VILLAFUERTE ENGINEER I	DATE :	OFFICE OF THE ASSISTANT DISTRICT ENGINEER DATE :	DATE :

DESIGN CRITERIA :

- i. LIVE LOAD___ _____ 1000Pa
- ii ALLOWABLE STRESSES 1. CONCRETE
 - a. FOR FOOTING, BEAMS AND SLABS
 - fc'' = 20 MPa
 - 2. CONCRETE MASONRY UNITS (LOAD BEARING CHB)
 - fm' =6.90 MPa, fm = 2.41 MPa 3. REINFORCING STEEL BARS
 - FOR BARS SMALLER THAN 16mmø
 - fy = 230 MPa 4. ASSUMED ALLOWABLE BEARING CAPACITY Y = 100 KPa
- NOTE :
- WATER TABLE IS 1500 BELOW GROUND LEVEL.

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	DATE :	DATE :	DATE :

– 10mmø INLET PIPE

SET NO. SHEET NO.

Ρ 19 33 19 23

			<u>(</u> 2)	_
CUIT ANALYSIS :	VOLTAGE DROP COMPUTATION :	ILLUMINATION LEVEL COMPUTATION :	¢	_
			-¢-	_
	$VD = \frac{2 X k x I x L}{A_{cm}}$	$E = \frac{\Phi X MF X UF}{A}$	© ¥	_ _
it Current, A tage, V r Impedance, Ω edance, Ω	WHERE : VD = Voltage Drop, V k = Constant, 12.9 for Copper I = Current, A L = Length of Conductor, ft	WHERE : E = Maintained Illuminance = System Luminous Flux MF = Maintenance Factor UE = Litilization Factor	⊾ _{sl}	_
	A _{cm} = Cross-sectional Area of Conductor, Circular Mils from Table 8, NEC	A = Illuminated Area	S/Sa	-
Data for Single-Phase and Three-Phase Transformers Supplement", EATON %Z for 15kVA Transformer = 1.3%	VD for Farthest Load, Circuit # 3 :	Illuminance level at Receiving Area and Councilor's Office :	Sab Sabc	_
pedance)	$VD = \frac{2XkxIxL}{A_{cm}}$	Coefficient of Utilization (CU) = 0.35 (Average Fixture, Medium Sized Room)	S3W	_
	$= \frac{2 \times 12.9 \times 1.07 \text{ A} \times 58.07 \text{ ft}}{6530 \text{ CM}}$	Maintenance Factor (MF) = 0.7 (Average Condition)		-
E Standard 242: Z = 0.45 Ω / 305m (for ³ 14.0mm wire) L = 15m	= 0.25 V % Voltage Drop = (0.25 / 230) x 100 = 0.11%	 4 fixtures x <u>2 lamps</u> x <u>1800 lumens</u> 14400 lumens 		_ _ _
ōm	VD for Main Feeder : VD = $-\frac{2 \times 12.9 \times 1 \times L}{2 \times 12.9 \times 1 \times L}$	$E = \frac{\Phi \times MF \times UF}{A}$	\Rightarrow	_
	$= \frac{2 \times 12.9 \times 34.47 \text{ A} \times 49.21 \text{ ft}}{26240 \text{ CM}}$	$= \frac{14400 \text{ lumens x } 0.7 \text{ x } 0.35}{7.3 \text{ m x } 3.5 \text{ m}}$		_
	= 1.67 V	= 138.08 lumens / m ² = 138.08 lux	\Rightarrow_{WP}	-
	% Voltage Drop = (1.67 / 230) x 100 = 0.73%			_
ain Breaker	Total % Voltage Drop = 0.11% + 0.73% =0.84% < 5%			_ _

GENERAL NOTES :

_				-		
	DRAFTED :	REVIEWED :	SUBMITTED/ RECOMMENDED :	APPROVED :	SET NO.	SHEET NO.
	JEFFERSON R. GABANAN DRAFTSMAN I(B)					
	PREPARED :	JOEY CHRISTIAN L. DAYO ENGINEER II	MA. SHIRLEY M. SAMIANO CHIEF, PLANNING & DESIGN SECTION	CARLOS C. MUERE OFFICER-IN-CHARGE	$\begin{pmatrix} E \\ 1 \\ 2 \end{pmatrix}$	$\left(\begin{array}{c} 20\\ 20 \\ 20 \\ 23 \end{array}\right)$
	FRANS ROQUE S. DELA CRUZ ENGINEER II (ELECTRICAL ENGINEER)	DATE :	CONCURRENT CAPACITY AS OFFICER-IN-CHARGE OFFICE OF THE ASSISTANT DISTRICT ENGINEER DATE :	OFFICE OF THE DISTRICT ENGINEER		

```
DESCRIPTION
2X18W, T8 LED IN PARABOLIC LOUVER(RECESSED)
7 W LED DOWNLIGHT (BLACK CYLINDER HOUSING)
7 W LED DOWNLIGHT (RECESSED)
24 W LED CEILING LIGHT
7 W LED PORCH LIGHT (WALL-MOUNTED)
7 W LED SIGN LIGHT (WALL-MOUNTED)
50W EXHAUST FAN
ONE-GANG DEVICE SWITCH
TWO-GANG DEVICE SWITCH
THREE-GANG DEVICE SWITCH
THREE-WAY DEVICE SWITCH
RACEWAY CONDUIT CONCEALED IN CEILING
RACEWAY CONDUIT CONCEALED UNDER FLOOR
PANELBOARD
CKT. BREAKER, RATING AS INDICATED
ENCLOSED CIRCUIT BREAKER (ECB) FOR ACU
DUPLEX CONVENIENCE OUTLET,
GROUNDING TYPE 16 AMPS, 240V
DUPLEX GROUND-FAULT CIRCUIT INTERRUPTER
 WEATHERPROOF DUPLEX CONVENIENCE
 OUTLET, TAMPERED PROOF, GROUNDING TYPE,
CIRCUIT HOMERUN
SERVICE METER
SERVICE ENTRANCE
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THESE PLANS AND SPECIFICATIONS. THE APPLICABLE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE (PEC). THE RULES AND REGULATIONS OF THE LOCAL ENFORCING AUTHORITY AND THE REQUIREMENTS OF THE LOCAL POWER COMPANY. THE ELECTRICAL WORKS SHALL BE UNDER IMMEDIATE SUPERVISION

2. THE ELECTRICAL SERVICE POWER IS 1-PHASE, 2-WIRE + GROUND

4. ALL WIRES SHALL BE COPPER AND THERMOPLASTIC INSULATED TYPE "THHN" UNLESS OTHERWISE INDICATED IN THE PLAN. THE MINIMUM SIZE OF WIRE FOR POWER AND LIGHTING CIRCUIT HOMERUN SHALL BE 3.5mm² AND INSULATED FOR 600 VOLTS. SMALLEST RACEWAY SHALL

5. ALL OUTLET BOXES SHALL BE GALVANIZED GAGE NO. 16 DEEP

6. ALL MATERIALS TO BE USED SHALL BE BRAND NEW AND APPROVED TYPE FOR THE PARTICULAR LOCATION AND PURPOSE OF USAGE.

7. EQUIPMENT GROUNDING SYSTEM SHALL BE PROVIDED TO THE ELECTRICAL SYSTEM AS PER PHILIPPINE ELECTRICAL CODE REQUIREMENT.

8. MOUNTING HEIGHT OF WIRING DEVICES SHALL BE AS FOLLOWS : - 1.50m ABOVE FINISH FLOOR b. CONVENIENCE OUTLET - 0.30m ABOVE FINISH FLOOR - 1.60m ABOVE FINISH FLOOR

DISTRIBUTION PANEL (DP)								
MOUNTING : FLUSH		TYPE: PLUG-IN						
СКТ				CIRCUIT BREAKER			ER	
NO.	DESCRIPTION	LOAD	AMPS	VOLT	POLE	АТ	AF	WIRE & CONDULT SIZE
1	2-24W, LED CEILING LIGHT 4-7W, LED DOWNLIGHT, RECESSED 2-7W, LED WALL LIGHT 4-7W, LED SIGN LIGHT	169	0.73	230	2	15	50	2-3.5mm ² THHN in 20mmØ PVC
2	4-2X18W, T8 LED, RECESSED 2-7W, LED DOWNLIGHT, RECESSED 5-7W, LED DOWNLIGHT, SURFACE-MOUNTED 1-50W, EXHAUST FAN	347	1.51	230	2	15	50	2-3.5mm ² THHN in 20mmØ PVC
3	1-24W, LED CEILING LIGHT 12-7W, LED DOWNLIGHT, RECESSED	154	0.67	230	2	15	50	2-3.5mm ² THHN in 20mmØ PVC
4-2X18W, T8 LED, RECESSED 2-7W, LED DOWNLIGHT, RECESSED 5-7W, LED DOWNLIGHT, SURFACE-MOUNTED 1-50W, EXHAUST FAN		347	1.51	230	2	15	50	2-3.5mm ² THHN in 20mmØ PVC
5	CONVENIENCE OUTLET (7X180VA)	1260	5.48	230	2	20	50	2-3.5mm² THHN + 1-3.5mm² THHN(G) in 20mmØ PVC
6	CONVENIENCE OUTLET (6X180VA)	1080	4.7	230	2	20	50	2-3.5mm ² THHN + 1-3.5mm ² THHN(G) in 20mmØ PVC
7	CONVENIENCE OUTLET (6X180VA)	1080	4.7	230	2	20	50	2-3.5mm ² THHN + 1-3.5mm ² THHN(G) in 20mmØ PVC
8	CONVENIENCE OUTLET (6X180VA)	1080	4.7	230	2	20	50	2-3.5mm ² THHN + 1-3.5mm ² THHN(G) in 20mmØ PVC
9	ACU, INVERTER (1.0hp, Split-type)	1840	8	230	2	20	50	2-3.5mm ² THHN + 1-3.5mm ² THHN(G) in 20mmØ PVC
10	ACU, INVERTER (1.0hp, Split-type)	1840	8	230	2	20	50	2-3.5mm ² THHN + 1-3.5mm ² THHN(G) in 20mmØ PVC
11	ACU, INVERTER (2.5hp, Split-type)	3335	14.5	230	2	30	50	2-5.5mm ² THHN + 1-5.5mm ² THHN(G) in 20mmØ PVC
12	SPARE	1000	4.35	230	2	20	50	
TOTAL CONNECTED LOADS		13532						
TOTAL CONNECTED LOADS = 13532 VA At 0.7 Demand Factor,			Icb= 44. = 51.9 USE : 60A	81 x 1.15 5 A \T/100AF	, 2P, 240	V, MCB		
=	((13532/230) X0.7) + 0.25(14.5) 44.81 A	Iteeder = 44.81 x 1.25 = 56 A USE : 2-14.0mm² THHN + 1-5.5mm² THHN(G) in 25mmØ PVC						

SERVICE ENTRANCE

MARIFLOR SUBD., BRGY. DEL REMEDIO, SAN PABLO CITY, REGION IV-A

DRAFTED : REVIEWED : SUBMITTED/ RECOMMENDED : JEFFERSON R. GABANAN DRAFTSMAN I(B) MA. SHIRLEY M. SAMIANO JOEY CHRISTIAN L. DAYO PREPARED CHIEF, PLANNING & DESIGN SECTION ENGINEER II CONCURRENT CAPACITY AS OFFICER-IN-CHARGE FRANS ROQUE S. DELA CRUZ OFFICE OF THE ASSISTANT DISTRICT ENGINEER ENGINEER II (ELECTRICAL ENGINEER) DATE DATE DATE :

DRAFTED :	REVIEWED :	SUBMITTED/ RECOMMENDED :	APPROVED :
JEFFERSON R. GABANAN DRAFTSMAN I(B)			
PREPARED :	JOEY CHRISTIAN L. DAYO ENGINEER II	MA. SHIRLEY M. SAMIANO CHIEF, PLANNING & DESIGN SECTION CONCURRENT CAPACITY AS OFFICER-IN-CHARGE	CARLOS OFFICER OFFICE OF THE
JESSMYN P. VILLAFUERTE ENGINEER I	DATE :	OFFICE OF THE ASSISTANT DISTRICT ENGINEER	DATE :

MARIFLOR SUBD., BRGY. DEL REMEDIO, SAN PABLO CITY, REGION IV-A

N	FRONT ELEVATION (OPTION 1)		FRONT ELEVATIO (OPTION 2)
DISPLAY AREA 50 X 75 HORIZONTAL GOOD LUMBER 50 X 75 VERTICAL GOOD LUMBER 50 X 50 WOODEN STAKE	DISPLAY AREA (1200X2400X12 MARINE PLYWOOD)		DISPLAY ARE (TARPAULIN 1200X2400X5- MARINE PLYWOOD)
Image: Construction of the second			
ECT BILLBO	ard isometric v	/IEW OF BILLBOARD	

	DRAFTED :	REVIEWED :	SUBMITTED/ RECOMMENDED :	APPROVED :
	JEFFERSON R. GABANAN DRAFTSMAN I(B)			
ľ	PREPARED :	JOEY CHRISTIAN L. DAYO ENGINEER II	MA. SHIRLEY M. SAMIANO CHIEF, PLANNING & DESIGN SECTION	
	JESSMYN P. VILLAFUERTE ENGINEER I	DATE :	CONCURRENT CAPACITY AS OFFICER-IN-CHARGE OFFICE OF THE ASSISTANT DISTRICT ENGINEER DATE :	OFFICE OF THE

