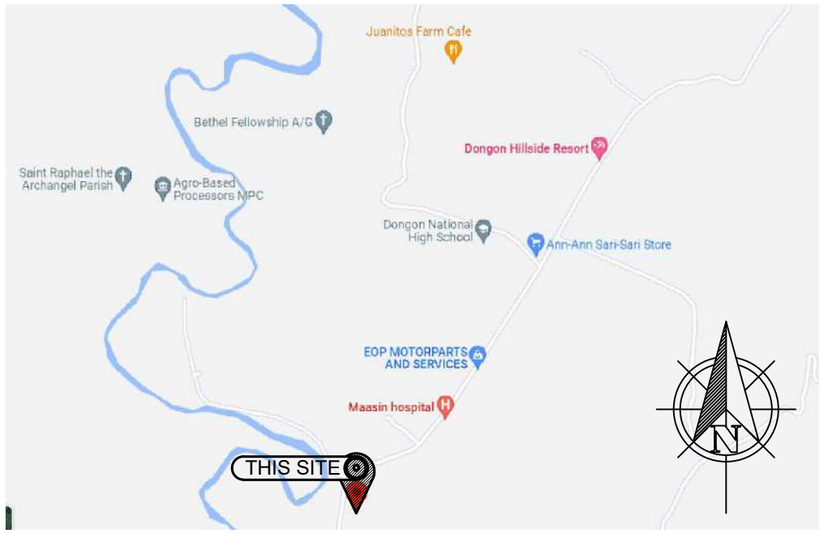

PERSPECTIVE




VICINITY MAP

**INDOOR & OUTDOOR COLOR**

SR+418 LOVELY DAYS
2 coats

NOTE: HEIGHT OF THE BUILDING MAY VARY DEPENDING ON THE NATIONAL ROAD LEVEL (ELEV 0+00)

CONTENTS



REPUBLIC OF THE PHILIPPINES

OFFICE OF THE BUILDING OFFICIAL

LINE AND GRADE

LAND USE AND ZONING

ARCHITECTURAL

STRUCTURAL

SANITARY

ELECTRICAL

MECHANICAL

**PHILIPPINE CARABAO CENTER**
NATIONAL GENE POOL & HEADQUARTERS
CLSU Cpd., Science City of Munoz, Nueva Ecija

| PREPARED BY: | CHECKED BY: | REVIEWED BY: | RECOMMENDING APPROVAL: | PROJECT TITLE/LOCATION: | APPROVED BY: |
|---|---|---|---|---|---|
| AR. ANA FRANCESCA C. DUCUSIN<br>ARCHITECT I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER<br>PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | ENGR. REDENTOR B. VANGUARDIA<br>ENGINEER II, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | ENGR. EDUARDO P. DALUSONG<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | DR. FRANCISCO G. GABUNADA<br>CENTER DIRECTOR<br>PHILIPPINE CARABAO CENTER - VSU | **PROPOSED DAIRY PROCESSING PLANT AND PRODUCTS OUTLET**<br>MAASIN CITY, SOUTHERN LEYTE | DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR, PHILIPPINE CARABAO CENTER |

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| CFFSM | AS SHOWN | A-01 |
| REVISION: | | 01\|19 |
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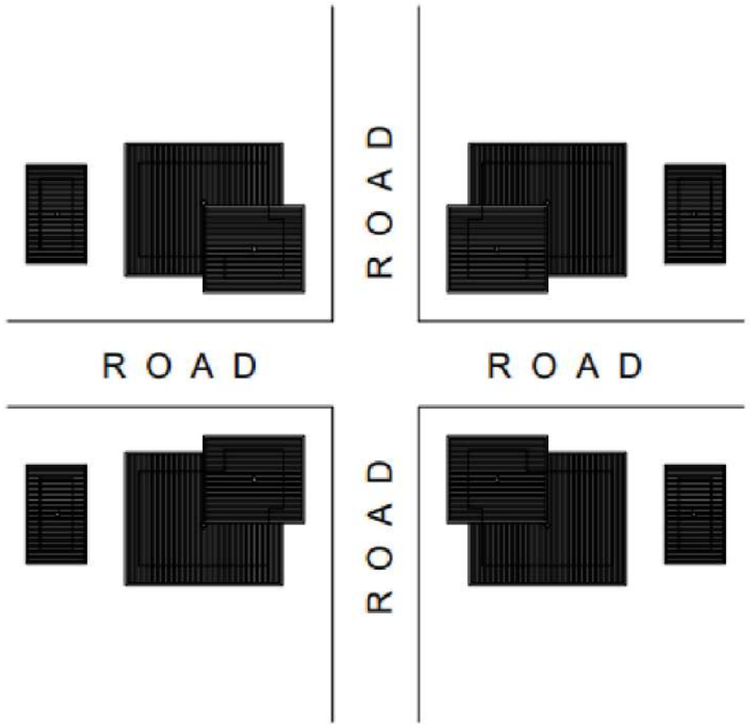
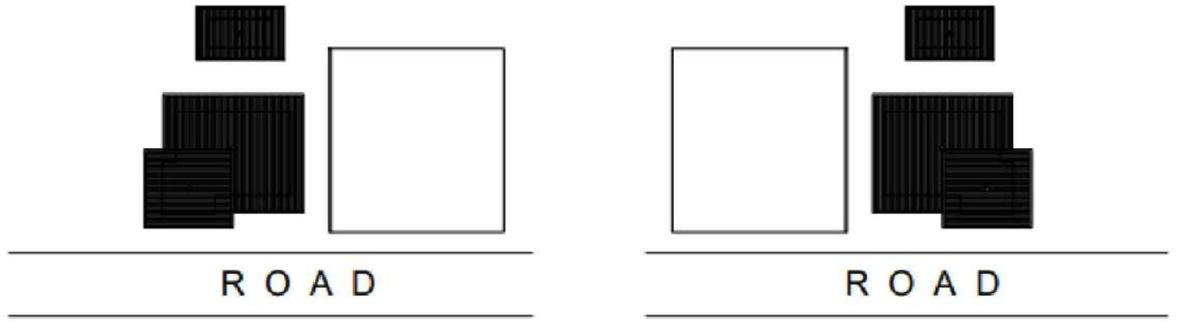



NOTES

FOR CORNER LOTS THE PRODUCTS OUTLET/STORE AND CR SHOULD BE ORIENTED AT THE CORNER

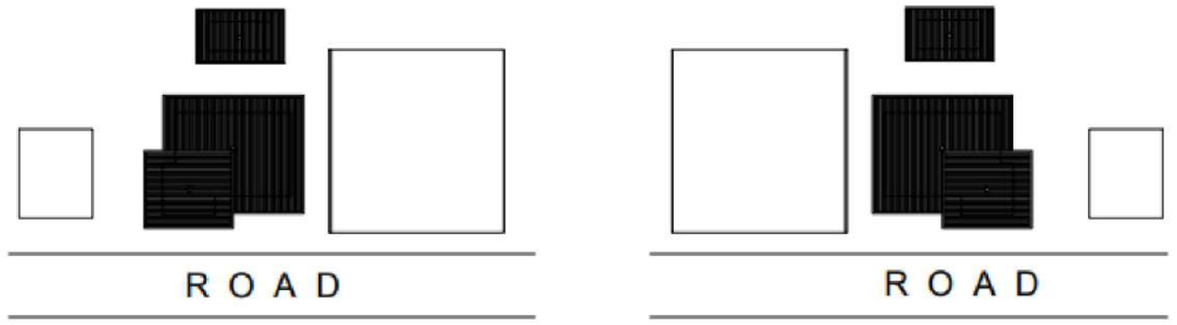
01 / B 01 BUILDING ORIENTATION GUIDE

SCALE NTS

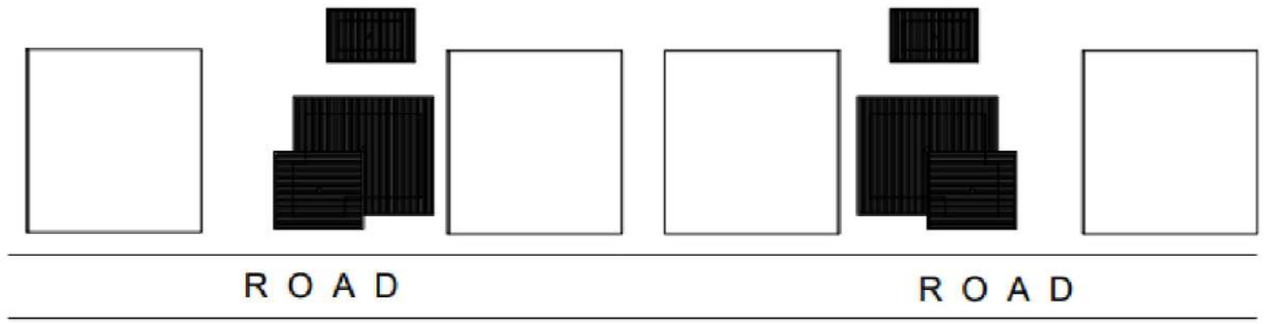



NOTES

AVOID PLACING THE PRODUCT'S OUTLET NEAR OR SIDE BY SIDE WITH WALL STRUCTURES AND BIGGER BUILDINGS , IT MAY SHADOWED THE STORE

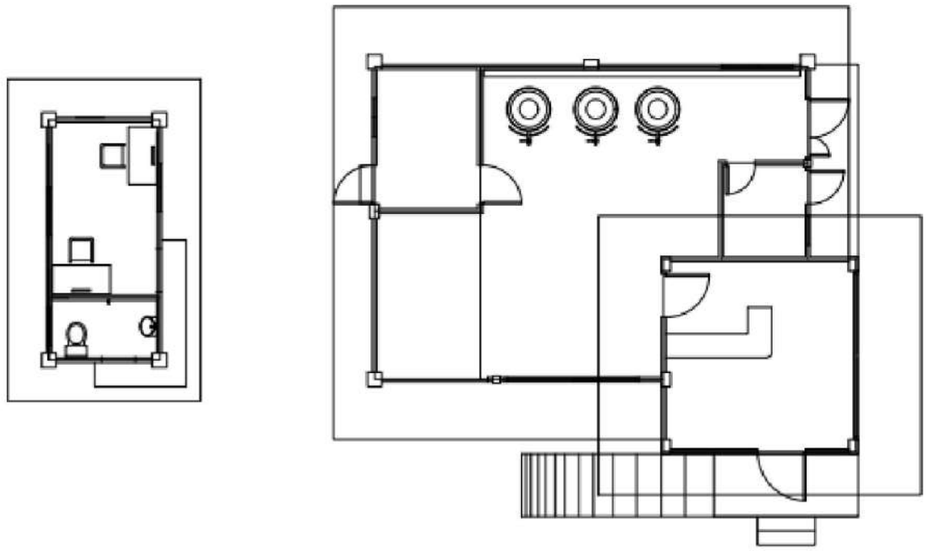


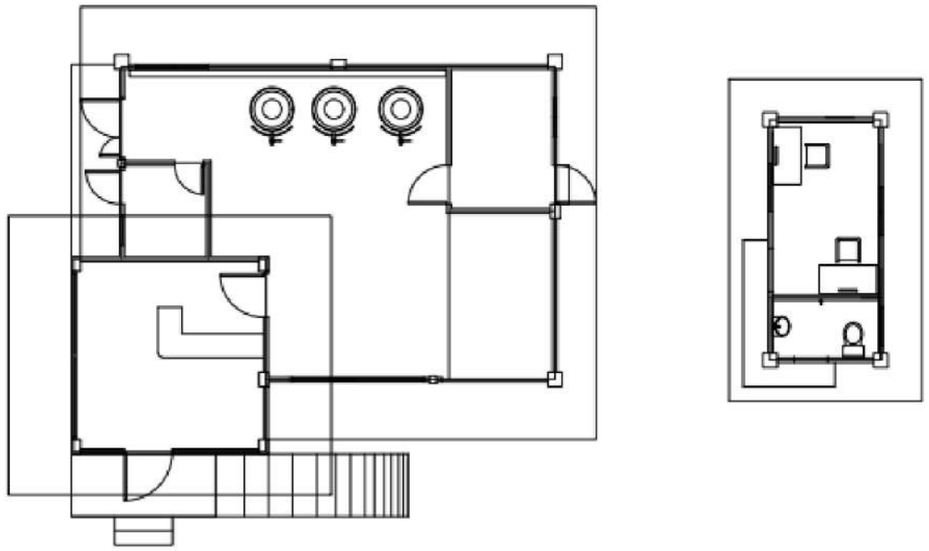

IF THE PRODUCT'S OUTLET IS BETWEEN TWO BUILDINGS PLACE THE PRODUCT'S OUTLET ON THE SIDE OF SMALLER STRUCTURE




IF THE PRODUCT'S OUTLET IS BETWEEN TWO BIG BUILDINGS PLACE THE PRODUCT'S OUTLET ON THE SIDE OF THE FURTHER STRUCTURE

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL GENE POOL & HEADQUARTERS<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>AR. ANA FRANCESCA C. DUCUSIN<br>ARCHITECT I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER<br>PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED BY:<br>ENGR. REDENTOR B. VANGUARDIA<br>ENGINEER II, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | REVIEWED BY:<br>ENGR. EDUARDO P. DALUSONG<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL:<br>DR. FRANCISCO G. GABUNADA<br>CENTER DIRECTOR<br>PHILIPPINE CARABAO CENTER - VSU | PROJECT TITLE/LOCATION:<br>**PROPOSED DAIRY PROCESSING PLANT AND PRODUCTS OUTLET**<br>MAASIN CITY, SOUTHERN LEYTE | APPROVED BY:<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR, PHILIPPINE CARABAO CENTER | DRAFTED BY:<br>CFFSM<br>REVISION: | SHEET CONTENTS:<br>AS SHOWN | SHEET No.<br>A-02<br>02 19 |





01
B 01

## BUILDING MIRRORED GUIDE

SCALE NTS

CONSULT OWNER OR PCC OFFICIALS FOR THE FINAL ORIENTATION OF BUILDING , SHOWN IS THE THE MIRRORED PLANS , BUILDING ORIENTATION WILL BE DEPENDING ON LOCATION

**PHILIPPINE CARABAO CENTER**
NATIONAL GENE POOL & HEADQUARTERS

CLSU Cpd., Science City of Munoz, Nueva Ecija

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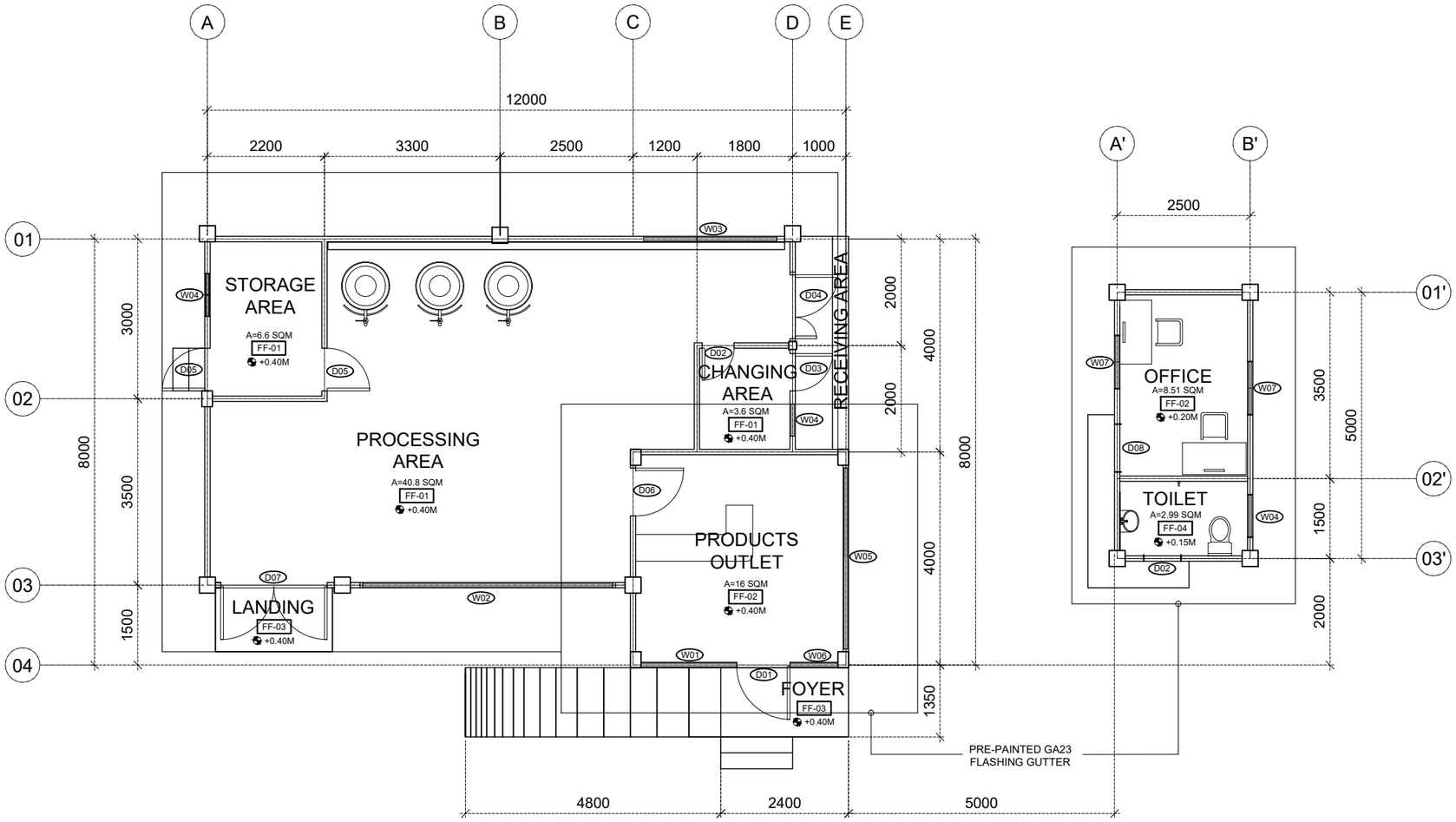


## LEGENDS:

| | |
|---|---|
| FF-01 | HEAVY DUTY POLYURETHANE PAINT(GRAY) |
| FF-02 | 40X40CM POLISHED GRANITE FLOOR TILES |
| FF-03 | SMOOTH CEMENT FINISH |
| FF-04 | 30X30CM FLOOR TILES WITH 30X30CM WALL TILES (1.5M HEIGHT FROM FFL) |
| +0.00M | FLOOR ELEVATION |

01 / A 04 — FLOOR PLAN

SCALE 1:100M

**PHILIPPINE CARABAO CENTER**
NATIONAL GENE POOL & HEADQUARTERS
CLSU Cpd., Science City of Munoz, Nueva Ecija

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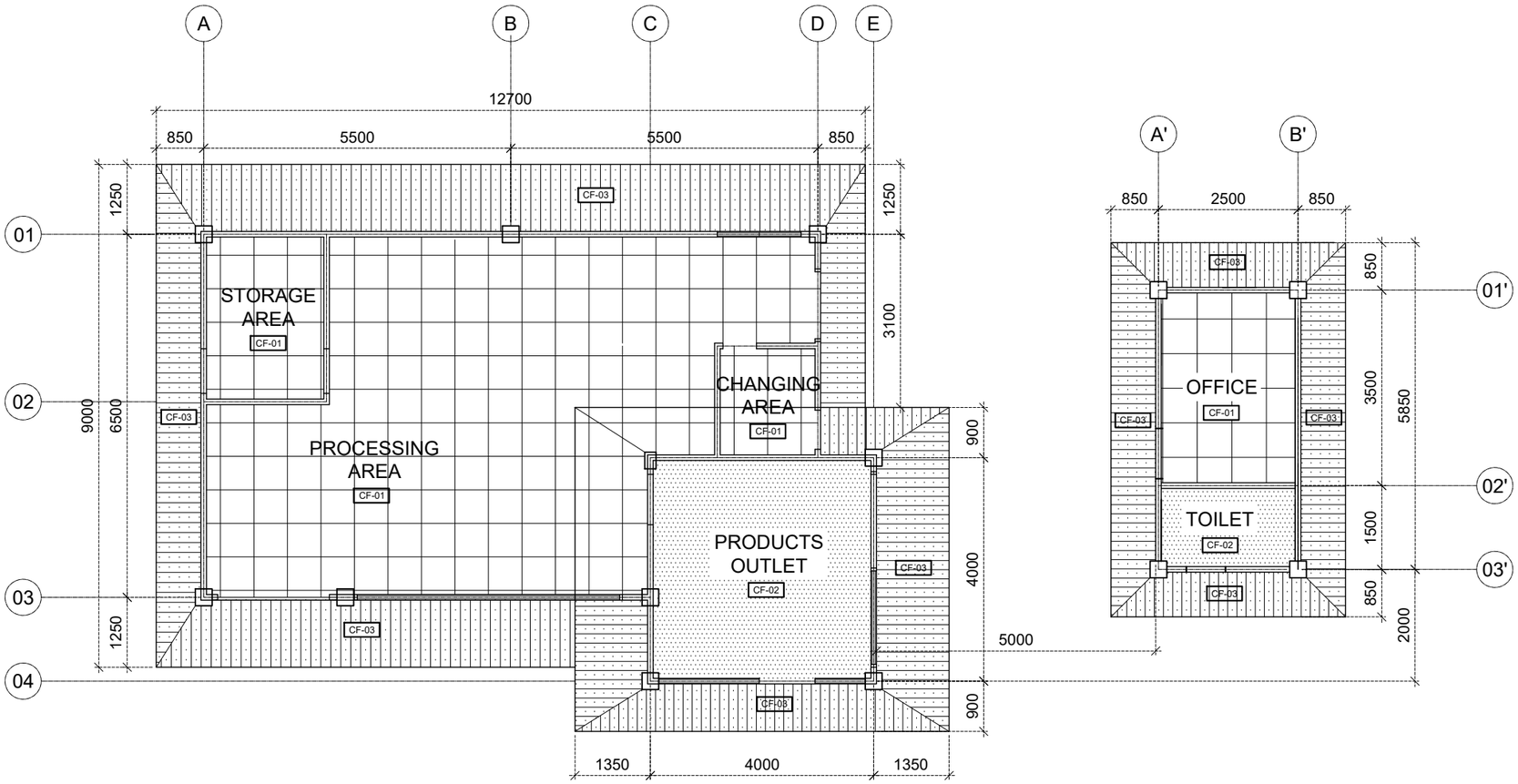


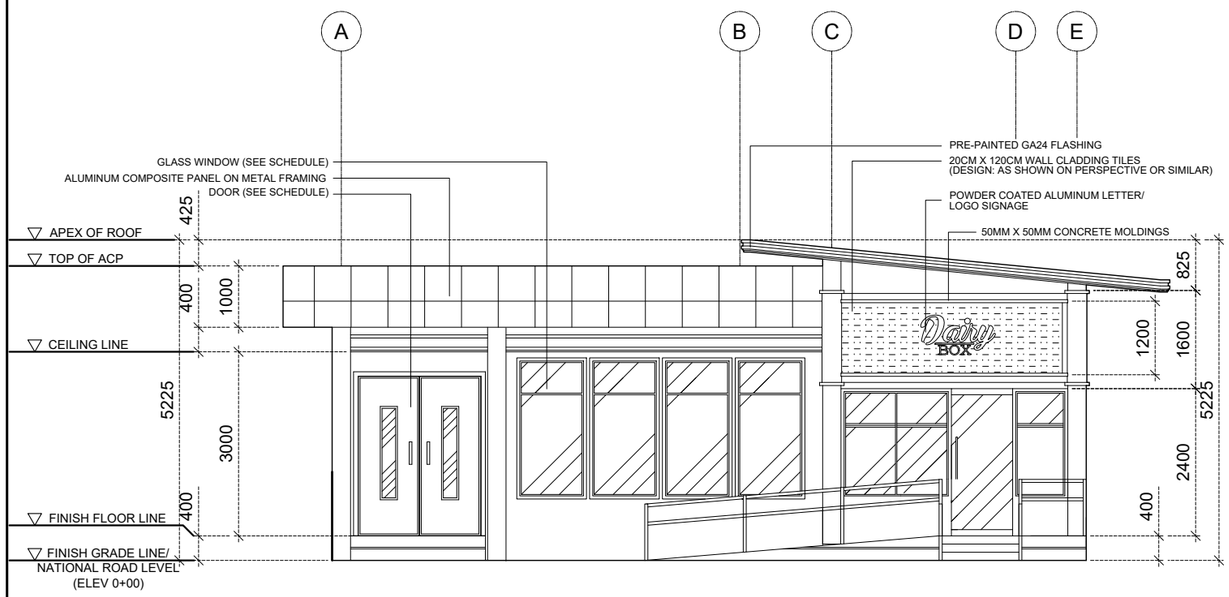

## LEGENDS:

| | |
|---|---|
| CF-01 | 60X60CM MOISTURE-RESISTANT ACOUSTIC CEILING ON METAL T-RUNNERS |
| CF-02 | FIBER CEMENT BOARD ON METAL FURRING IN FLAT ACRYLIC PAINT FINISH |
| CF-03 | PVC SPANDREL CEILING ON METAL FURRINGS |

01 / A 05 — REFLECTED CEILING PLAN

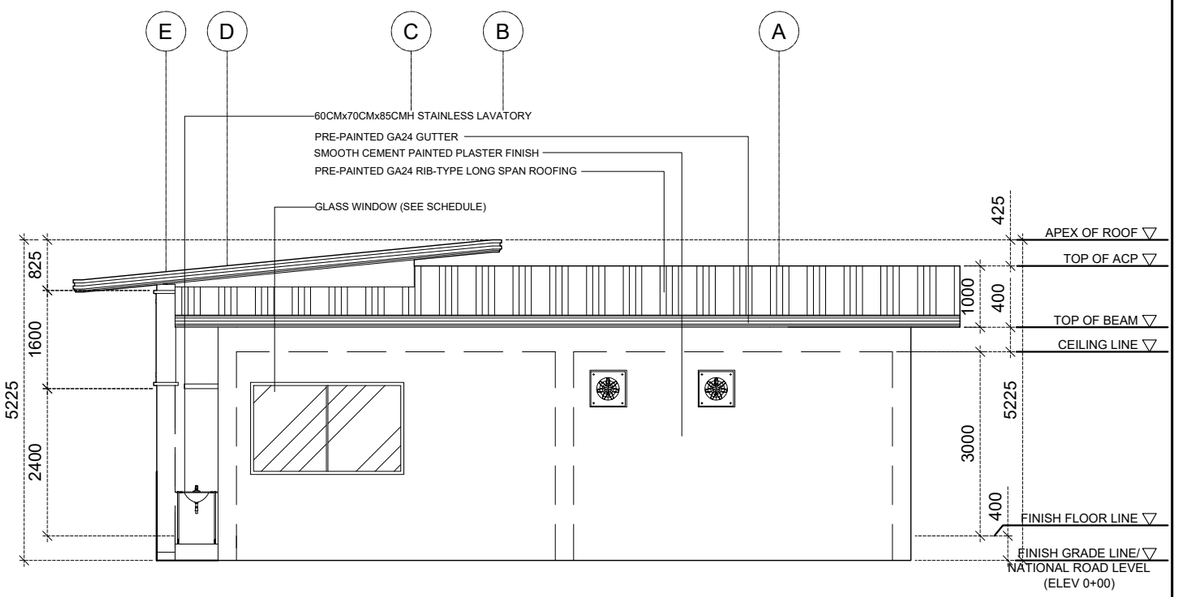
SCALE 1:100M

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL GENE POOL & HEADQUARTERS<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>AR. ANA FRANCESCA C. DUCUSIN<br>ARCHITECT I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER<br>PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED BY:<br>ENGR. REDENTOR B. VANGUARDIA<br>ENGINEER II, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | REVIEWED BY:<br>ENGR. EDUARDO P. DALUSONG<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL:<br>DR. FRANCISCO G. GABUNADA<br>CENTER DIRECTOR<br>PHILIPPINE CARABAO CENTER - VSU | PROJECT TITLE/LOCATION:<br>**PROPOSED DAIRY PROCESSING PLANT AND PRODUCTS OUTLET**<br>MAASIN CITY, SOUTHERN LEYTE | APPROVED BY:<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR, PHILIPPINE CARABAO CENTER | DRAFTED BY: CFFSM<br>REVISION: | SHEET CONTENTS: AS SHOWN | SHEET No. A-05 05 19 |



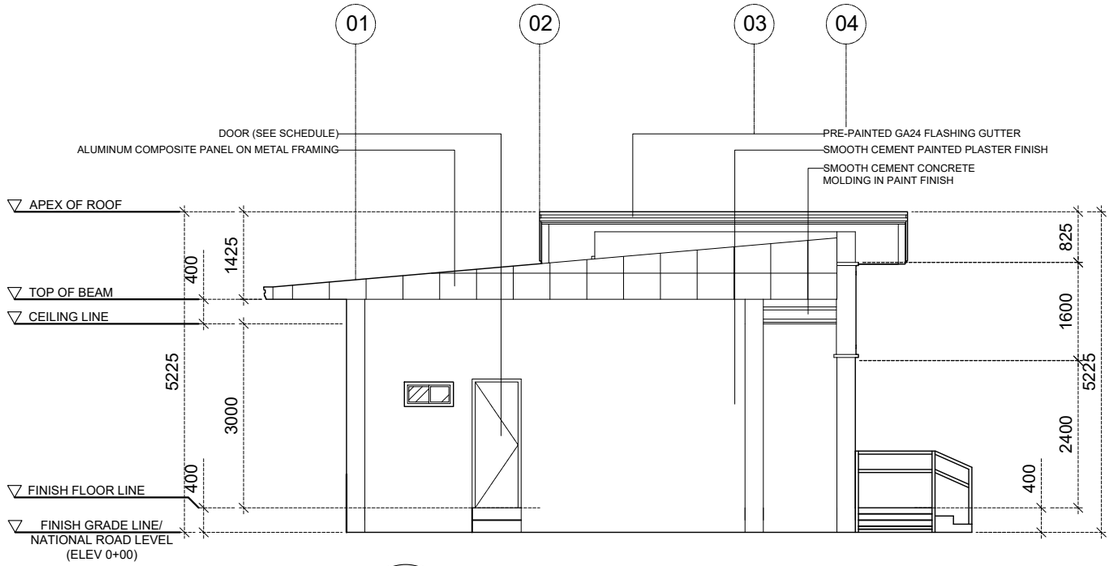

01 A 06 FRONT SIDE ELEVATION

SCALE 1:100M



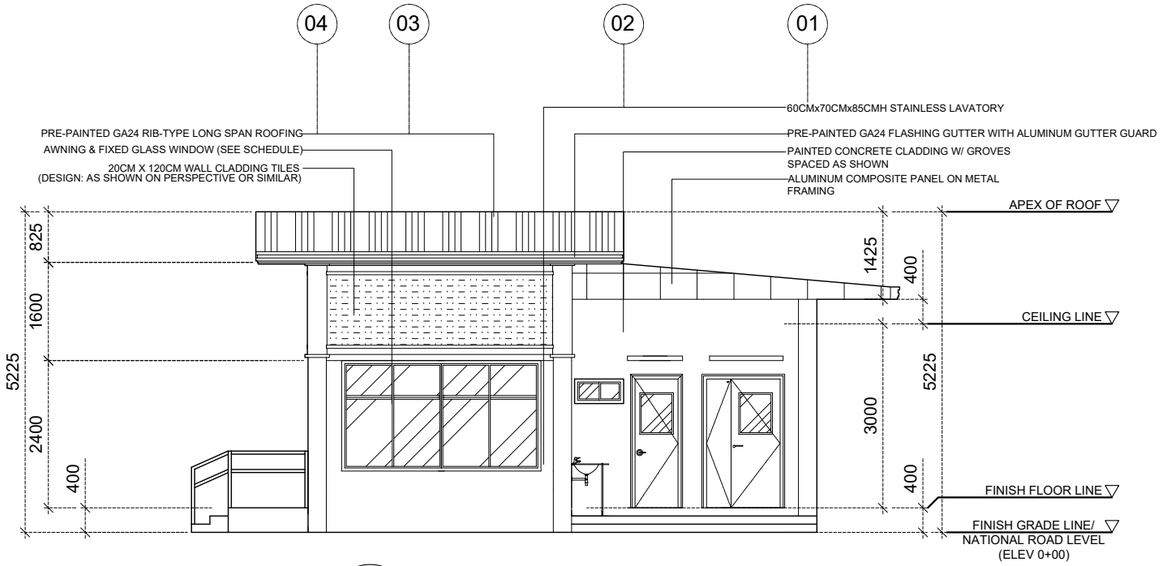

02 A 06 REAR SIDE ELEVATION

SCALE 1:100M




03 A 06 LEFT SIDE ELEVATION

SCALE 1:100M




04 A 06 RIGHT SIDE ELEVATION

SCALE 1:100M

# DAIRY BOX ELEVATIONS

**PHILIPPINE CARABAO CENTER**
NATIONAL GENE POOL & HEADQUARTERS
CLSU Cpd., Science City of Munoz, Nueva Ecija

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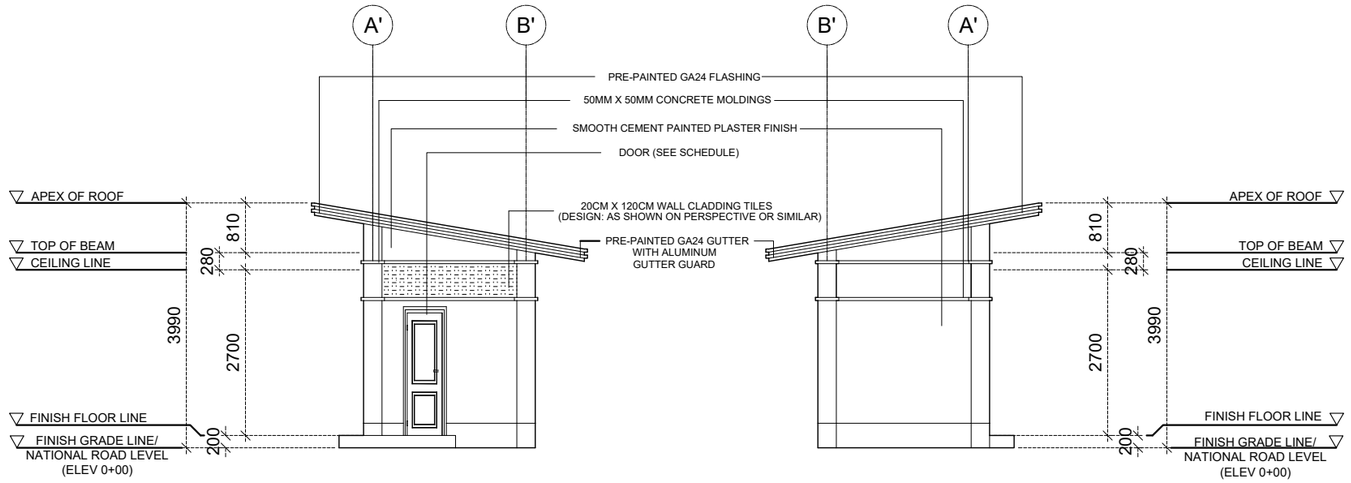
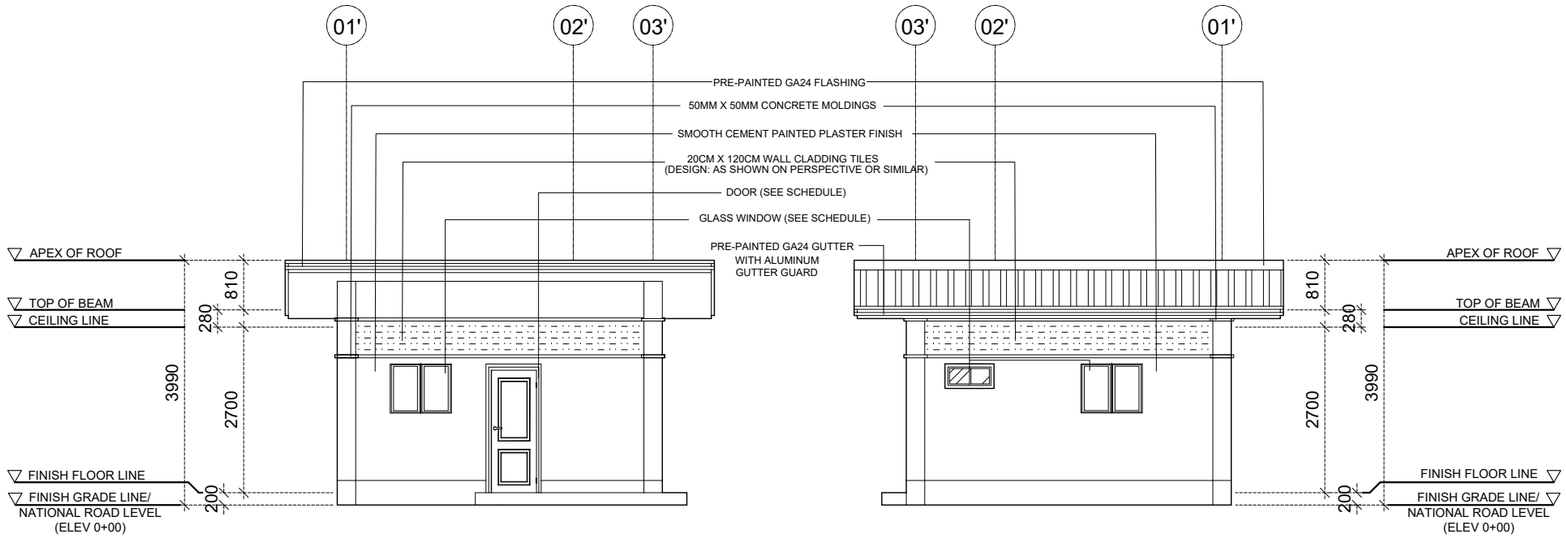



01 / A 07 — FRONT SIDE ELEVATION

SCALE 1:100M

02 / A 07 — REAR SIDE ELEVATION

SCALE 1:100M




03 / A 07 — LEFT SIDE ELEVATION

SCALE 1:100M

04 / A 07 — RIGHT SIDE ELEVATION

SCALE 1:100M

# OFFICE WITH CR ELEVATIONS

**PHILIPPINE CARABAO CENTER**
NATIONAL GENE POOL & HEADQUARTERS
CLSU Cpd., Science City of Munoz, Nueva Ecija

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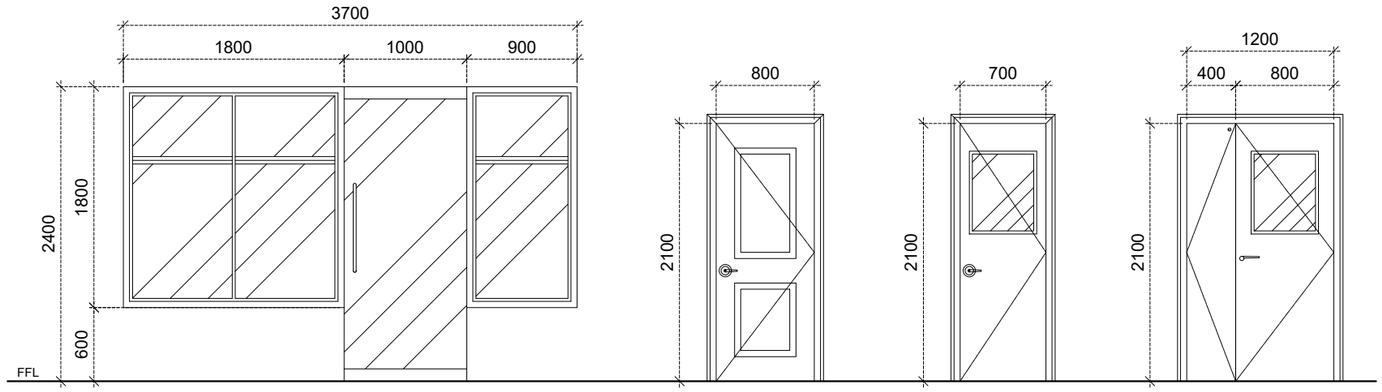
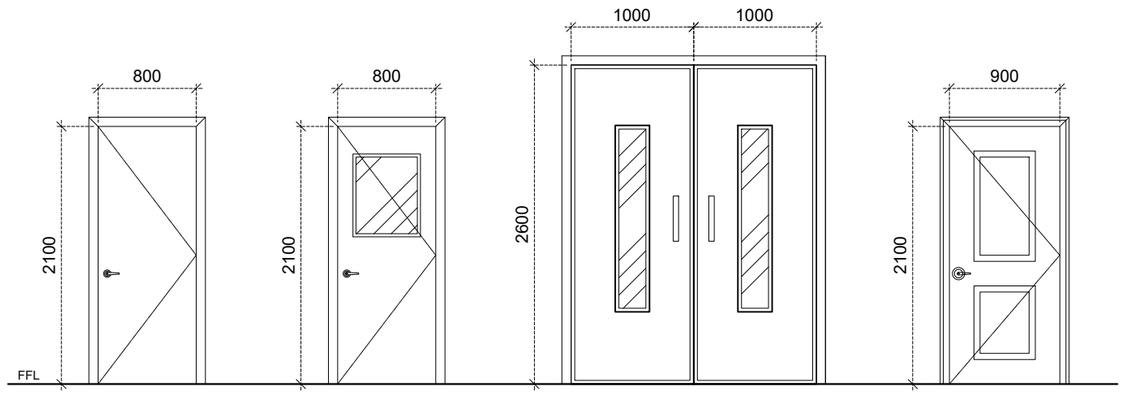
| DOOR # | SETS | LOCATION | DESCRIPTION | HARDWARE |
|---|---|---|---|---|
| 1 | 1 | STORE OUTLET ENTRANCE | POWDER COATED ALUMINUM TOP AND BOT FRAMED 12MM THK ORDINARY CLEAR GLASS SWING DOOR W/ 4.5MM THK FIXED GLASS WINDOW ON POWDER-COATED ALUMINUM FRAME | 2 - HEAVY DUTY STAINLESS STEEL PIVOT HINGES, AUTO CLOSING;<br>STAINLESS STEEL PULL HANDLE;<br>STAINLESS STEEL FOOT BOLT/ LOCKSET |
| 2 | 2 | CHANGING ROOM, CR | WOOD PANEL DOOR IN SOLID WOOD JAMB | 3 - STAINLESS STEEL BALL BEARING HINGES;<br>STAINLESS STEEL LEVER TYPE LOCKSET AND STAINLESS STEEL DEADBOLT;<br>STAINLESS STEEL SURFACE MOUNTED DOOR CLOSER |
| 3 | 1 | CHANGING ROOM | FIRE RATED HOLLOW CORE (HONEYCOMB) STEEL DOOR W/ CLEAR GLASS PEEK WINDOW IN STEEL JAMB | 3 - STAINLESS STEEL BALL BEARING HINGES;<br>STAINLESS STEEL PRIVACY LOCKSET |
| 4 | 1 | MILK RECEIVING AREA | FIRE RATED HOLLOW CORE (HONEYCOMB) STEEL DOOR W/ CLEAR GLASS PEEK WINDOW IN STEEL JAMB | 4 - STAINLESS STEEL BALL BEARING HINGES;<br>STAINLESS STEEL LEVER-TYPE LOCKSET;<br>STAINLESS STEEL SURFACE MOUNTED DOOR CLOSER;<br>INTUMESCENT STRIP |
| 5 | 2 | STORAGE AREAS(PROCESSING) | FIRE RATED HOLLOW CORE (HONEYCOMB) STEEL DOOR W/ INTUMESCENT STRIP IN STEEL JAMB | 4 - STAINLESS STEEL BALL BEARING HINGES;<br>STAINLESS STEEL LEVER-TYPE LOCKSET;<br>STAINLESS STEEL SURFACE MOUNTED DOOR CLOSER |
| 6 | 1 | STORE OUTLET | FIRE RATED HOLLOW CORE (HONEYCOMB) STEEL DOOR W/ PASS-IN SWING TYPE WINDOW | 4 - STAINLESS STEEL BALL BEARING HINGES;<br>STAINLESS STEEL LEVER-TYPE LOCKSET;<br>STAINLESS STEEL SURFACE MOUNTED DOOR CLOSER |
| 7 | 1 | PROCESSING AREA | DOUBLE DOOR- FIRE RATED HOLLOW CORE (HONEYCOMB) STEEL DOOR W/ CLEAR GLASS PEEK WINDOW IN STEEL JAMB | STAINLESS STEEL BALL BEARING HINGES<br>STAINLESS STEEL PULL HANDLE;<br>STAINLESS STEEL FOOT BOLT/ LOCKSET |
| 8 | 1 | OFFICE | WOOD PANEL DOOR IN SOLID WOOD JAMB | 3 - STAINLESS STEEL BALL BEARING HINGES;<br>STAINLESS STEEL LEVER TYPE LOCKSET AND STAINLESS STEEL DEADBOLT;<br>STAINLESS STEEL SURFACE MOUNTED DOOR CLOSER |

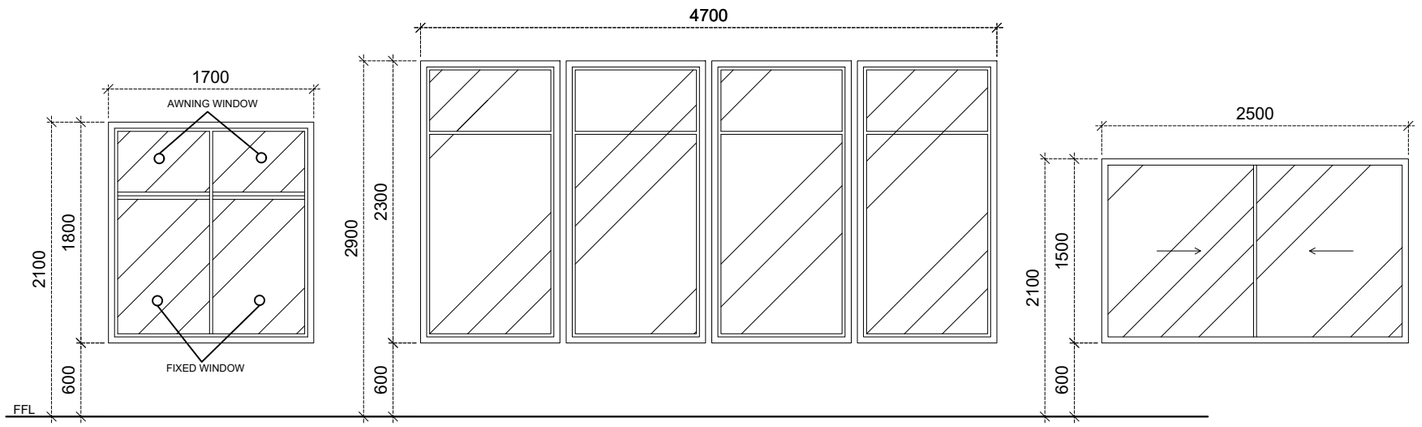



D01 D02 D03 D04




D05 D06 D07 D08

| WINDOW # | SETS | LOCATION | DESCRIPTION | HARDWARE |
|---|---|---|---|---|
| 1 | 1 | STORE OUTLET | POWDER COATED ALUMINUM FRAMED 8MM THK AWNING & FIXED GLASS WINDOW | STANDARD ALUMINUM WINDOW LOCKSET |
| 2 | 1 | PROCESSING AREA | POWDER COATED ALUMINUM FRAMED 8MM THK CLEAR FIXED GLASS WINDOW | STANDARD ALUMINUM WINDOW LOCKSET |
| 3 | 1 | LABORATORY | POWDER COATED ALUMINUM FRAMED 4.5MM THK CLEAR SLIDING GLASS WINDOW | STANDARD ALUMINUM WINDOW LOCKSET |




W01 W02 W03

01 / A 08

# SCHEDULE OF DOORS AND WINDOWS

SCALE 1:50M

**PHILIPPINE CARABAO CENTER**
NATIONAL GENE POOL & HEADQUARTERS
CLSU Cpd., Science City of Munoz, Nueva Ecija

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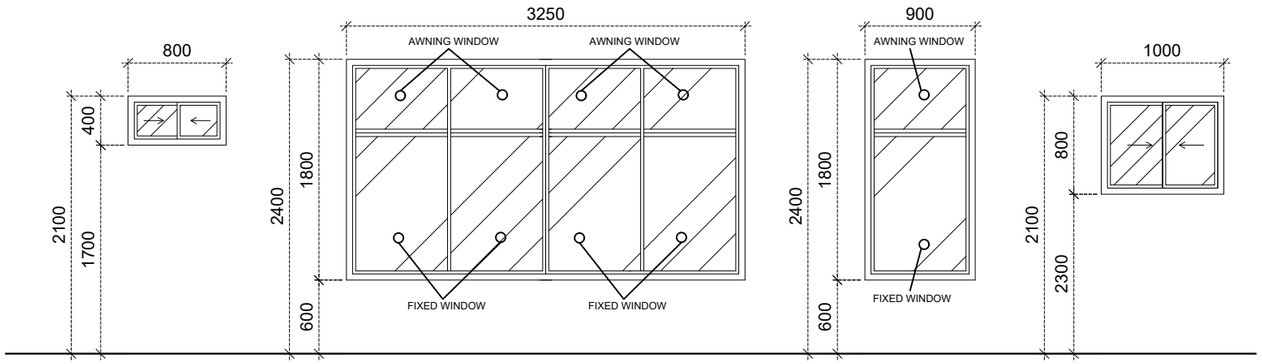
| WINDOW # | SETS | LOCATION | DESCRIPTION | HARDWARE |
|---|---|---|---|---|
| 4 | 3 | CHANGING ROOM AND CR | POWDER COATED ALUMINUM FRAMED 4.5MM THK CLEAR SLIDING GLASS WINDOW | STANDARD ALUMINUM WINDOW LOCKSET |
| 5 | 1 | STORE OUTLET | POWDER COATED ALUMINUM FRAMED 8MM THK CLEAR AWNING FIXED GLASS WINDOW | STANDARD ALUMINUM WINDOW LOCKSET |
| 6 | 1 | STORE OUTLET | POWDER COATED ALUMINUM FRAMED 8MM THK CLEAR AWNING FIXED GLASS WINDOW | STANDARD ALUMINUM WINDOW LOCKSET |
| 7 | 2 | OFFICE AREA | POWDER COATED ALUMINUM FRAMED 4.5MM THK CLEAR SLIDING GLASS WINDOW | STANDARD ALUMINUM WINDOW LOCKSET |

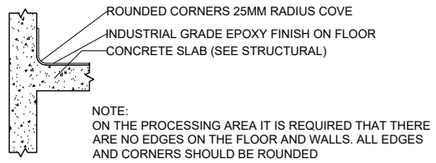



01 / A 09 SCHEDULE OF DOORS AND WINDOWS

SCALE 1:50M


01 / A 09 SIGNAGE DETAIL

SCALE NTS




WALL EDGES

02 / A 09 MISCELLANEOUS DETAILS

SCALE NTS

**FINISHING SCHEDULE**

| AREA/ROOM | FLOOR FINISH | CEILING FINISH | WALL FINISH | REMARKS |
|---|---|---|---|---|
| PRODUCTS OUTLET | 40X40CM POLISHED GRANITE FLOOR TILES | FIBER CEMENT BOARD ON METAL FURRING IN FLAT ACRYLIC PAINT FINISH (WHITE) | PAINT FINISH ,SEMI-GLOSS LATEX YELLOW | |
| PROCESSING AREA | HEAVY DUTY POLYURETHANE PAINT(GRAY) | 60CM x 60CM MOISTURE-RESISTANT ACOUSTIC CEILING ON METAL T-RUNNERS (WHITE) | PAINT FINISH ,SEMI-GLOSS LATEX PAINT (WHITE ) | 150MM BASEBOARD HEAVY DUTY POLYURETHANE PAINT (GRAY ) |
| CHANGING AREA | HEAVY DUTY POLYURETHANE PAINT(GRAY) | 60CM x 60CM MOISTURE-RESISTANT ACOUSTIC CEILING ON METAL T-RUNNERS (WHITE) | INTERIOR WALL, PAINT FINISH SEMI-GLOSS LATEX WHITE | 150MM BASEBOARD HEAVY DUTY POLYURETHANE PAINT (GRAY ) |
| STORAGE | HEAVY DUTY POLYURETHANE PAINT(GRAY) | 60CM x 60CM MOISTURE-RESISTANT ACOUSTIC CEILING ON METAL T-RUNNERS (WHITE) | INTERIOR WALL, PAINT FINISH SEMI-GLOSS LATEX WHITE | 150MM BASEBOARD HEAVY DUTY POLYURETHANE PAINT (GRAY ) |
| OFFICE | 40X40CM POLISHED GRANITE FLOOR TILES | 60CM x 60CM MOISTURE-RESISTANT ACOUSTIC CEILING ON METAL T-RUNNERS (WHITE) | INTERIOR WALL, PAINT FINISH SEMI-GLOSS LATEX WHITE | 150MM BASEBOARD HEAVY DUTY POLYURETHANE PAINT (GRAY ) |
| COMFORT ROOM | 30X30CM FLOOR TILES | FIBER CEMENT BOARD ON METAL FURRING IN FLAT ACRYLIC PAINT FINISH (WHITE) | 30X30CM WALL TILES (1.5M HEIGHT FROM FFL), PAINT THE REMAINING | |
| OUTSIDE WALL, FLOOR & CEILING | SMOOTH CEMENT FINISH | METAL SPANDREL (WHITE) | EXTERIOR WALL (DAVIES SUN AND RAIN, SUNNY DAY SR-472. CHOCO BROWN SR-933) | |

**PHILIPPINE CARABAO CENTER**
NATIONAL GENE POOL & HEADQUARTERS
CLSU Cpd., Science City of Munoz, Nueva Ecija

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|---|---|---|---|---|---|---|---|---|
| AR. ANA FRANCESCA C. DUCUSIN<br>ARCHITECT I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER<br>PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | ENGR. REDENTOR B. VANGUARDIA<br>ENGINEER II, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | ENGR. EDUARDO P. DALUSONG<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | DR. FRANCISCO G. GABUNADA<br>CENTER DIRECTOR<br>PHILIPPINE CARABAO CENTER - VSU | **PROPOSED DAIRY PROCESSING PLANT AND PRODUCTS OUTLET**<br>MAASIN CITY, SOUTHERN LEYTE | DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR, PHILIPPINE CARABAO CENTER | CFFSM<br>REVISION: | AS SHOWN | A-09<br>09 \| 19 |

# STRUCTURAL NOTES

## A. GENERAL

1. CONSTRUCTION NOTES AND TYPICAL DETAILS APPLY TO ALL DRAWINGS UNLESS OTHERWISE SHOWN OR NOTED. MODIFY TYPICAL DETAILS AS DIRECTED TO MEET SPECIAL CONDITIONS.
2. SHOP DRAWINGS WITH ERECTION AND PLACING DIAGRAMS OF ALL STRUCTURAL STEEL, MISCELLANEOUS IRON, PRE-CAST CONCRETE ETC. SHALL BE SUBMITTED FOR ENGINEER'S APPROVAL BEFORE FABRICATION.
3. CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE ALL WORK IS TO BEGIN, CHECK WITH MECHANICAL AND ELECTRICAL CONTRACTORS FOR CONDUITS, PIPE SLEEVES, ETC. TO BE EMBEDDED IN CONCRETE.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE SHORINGS AND BRACINGS OF THE STRUCTURE FOR ALL LOADS THAT MAYBE IMPOSED DURING CONSTRUCTION.

## B. CONCRETE & REINFORCEMENT

1. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE LATEST BULDING CODE OF AMERICAN CONCRETE INSTITUTE (ACI-318).
2. ALL CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH AT THE END OF TWENTY EIGHT (28) DAYS WITH CORRESPONDING MAXIMUM SIZE AGGREGATE AND SLUMPS AS FOLLOWS :

| LOCATION | 28 DAYS STRENGTH | MAX. SIZE AGGREGATE | MAX. SLUMP |
|---|---|---|---|
| LEDGE & SLAB ON GRADE | 3000 PSI | 1 IN. (25MM.) | 4 IN. (100MM.) |
| FOUNDATION | 3000 PSI | 1 IN. (25MM.) | 4 IN. (100MM.) |
| WALL FOOTING | 3000 PSI | 1 IN. (25MM.) | 4 IN. (100MM.) |
| COLUMN | 3000 PSI | 1 IN. (25MM.) | 4 IN. (100MM.) |
| BEAMS & SLABS | 3000 PSI | 1 IN. (25MM.) | 4 IN. (100MM.) |

3. ALL REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60 FOR DIA. 16 AND LARGER BARS AND GRADE 40 FOR DIA. 12 AND SMALLER BARS.
4. IN GENERAL, THE LATEST EDITION OF ACI-315, MANUAL OF STANDARD PRACTICE DETAILING REINFORCED CONCRETE STRUCTURES SHALL BE ADHERED TO, UNLESS OTHERWISE SHOWN OR NOTED.
5. MAINTAIN MINIMUM CONCRETE COVER FOR REINFORCING STEEL AS FOLLOWS:

   SUSPENDED SLABS ..... 3/4 IN. ( 19 MM. )

   SLAB ON GRADE ..... 1 1/2 IN. ( 38 MM. )

   WALLS ABOVE GRADE ..... 1 IN. ( 25 MM. )

   BEAM STIRRUPS AND COLUMN TIES ..... 1 1/2 IN. ( 38 MM. )

   WHERE CONCRETE IS EXPOSED TO EARTH BUT POURED AGAINST FORMS ..... 2 IN. ( 50 MM. )

   WHERE CONCRETE IS DEPOSITED DIRECTLY AGAINST EARTH ..... 3 IN. ( 75 MM. )

6. SPLICES SHALL BE SECURELY WIRED TOGETHER AND SHALL LAP OR EXTEND IN
7. ALL CONCRETE SHALL BE KEPT MOIST FOR A MINIMUM OF SEVEN (7) CONSECUTIVE DAYS IMMEDIATELY AFTER POURING BY THE USE OF WET BURLAP, FOG SPRAYING, CURING COMPOUNDS OR OTHER APPROVED METHODS.
8. STRIPPING OF FORMS AND SHORES:

   FOUNDATION ..... 24 HRS.

   SUSPENDED SLAB EXCEPT WHEN ADDITIONAL LOADS ARE IMPOSED ..... 28 DAYS

   WALLS ..... 18 HRS.

   BEAMS ..... 14 DAYS

## C. FOOTINGS

1. UNLESS OTHERWISE INDICATED IN THE PLANS, THE ALLOWABLE SOIL PRESSURE SHALL BE AT LEAST 2000 PSF.
2. FOUNDATION SHALL REST ON NATURAL SOIL, UNLESS OTHERWISE NOTED BY THE ENGINEER, **NO PART OF THE FOUNDATION SHALL REST ON FILL. (PROVIDE 1m MINIMUM EMBEDMENT FROM NATURAL SOIL LEVEL AND BELOW).**
3. TO MAKE SURE OF THE DEPTH OF EXCAVATION, THE CONTRACTOR SHALL EXCAVATE FIRST AT LEAST FOUR (4) FOOTINGS LOCATED AT THE CORNERS OF THE PROPOSED BUILDING. THE DEPTH OF THE EXCAVATION SHALL BE CONFIRMED BY THE STRUCTURAL ENGINEER AS BASIS OF EXCAVATION FOR ALL OTHER FOOTINGS
4. THE STRUCTURAL ENGINEER SHALL BE INFORMED OF ANY DEVIATION OF THE SOIL LAYERING AS COMPARED TO THE FIRST FOUR (4) EXCAVATION
5. EXISTING UNDERGROUND PIPES, TUNNELS ETC. SHALL BE BROUGHT TO THE ATTENTION OF THE STRUCTURAL ENGINEER FOR EVALUATION
6. ANY EXCAVATION ADJACENT TO ANY EXISTING STRUCTURE SHALL BE PROVIDED WITH ADEQUATE SHEET PILING BY THE CONTRACTOR. THE SHEET PILES SHALL BE PROPERLY DESIGNED TO RESIST THE EARTH AND WATER PRESSURES AS WELL AS SURCHARGED LOADINGS ON THE FOOTINGS OF THE ADJACENT EXISTING STRUCTURES.
7. UNLESS OTHERWISE SPECIFIED BY THE STRUCTURAL ENGINEER, THE CHB WALL FOOTING SHALL BE AS SHOWN IN THE STRUCTURAL PLAN
8. R.C. SLABS ON FILL SHALL BE 0.15 M THICK WITH 12MM REINFORCING BARS AT 0.30M O.C. EACH WAY UNLESS OTHERWISE SPECIFIED IN THE PLANS
9. PARKING SIDEWALKS ETC., SHALL BE COMPACTED 90% COMPACTION IN LAYERS OF 0.30M UNLESS OTHERWISE SPECIFIED BY THE STRUCTURAL ENGINEER.

## D. REINFORCED CONCRETE SLABS

1. UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIFICATIONS, CAMBER ALL R.C. SLABS 3mm FOR EVERY 3,300mm OF THE SHORTER SPAN
2. IF SLABS ARE REINFORCED BOTHWAYS, BARS ALONG THE SHORTER SPAN SHALL BE PLACED BELOW THOSE ALONG THE LONGER SPAN AT THE CENTER AND OVER THE LONGER BARS NEAR THE SUPPORTS
3. LENGTHS OF BAR CUT-OFFS SHALL BE AS SHOWN IN THE STRUCTURAL PLANS
4. FOR FLAT SLABS, LONG SPAN BOTTOM BARS SHALL BE PLACED BELOW THE SHORT SPAN BARS AND TOP BARS, VICE VERSA
5. CONCRETE COVERING SHALL BE 20mm CLEAR FOR TOP AND BOTTOM BARS
6. UNLESS OTHERWISE SPECIFIED BY THE STRUCTURAL ENGINEER, BAR CHAIRS SHALL BE PROVIDED AT LEAST 600mm EACH WAY TO SUPPORT THE TOP AND BOTTOM BARS SEPARATELY.

## E. CHB WALLS

1. UNLESS OTHERWISE SPECIFIED, THE VERTICAL AND HORIZONTAL REINFORCEMENTS FO CHB SHALL BE 12MM AT 0.40M O.C. FOR WALL THICKNESS, LAP SPLICES SHALL BE 0.30M LONG (MINIMUM)
2. LINTEL BEAMS TO BE USED SHALL BE (t x 0.20M) REINFORCED BY 4-12MM BARS WITH 10MM AT 0.30M. O.C. TIES WHERE "t" IS THE CHB WALL THICKNESS.
3. LINTEL BEAMS SHALL BE PROVIDED AT THE TOP OF CHB WALL OPENINGS. IT SHALL BE EXTENDED AT LEAST 0.20M BEYOND OPENINGS
4. FOR HIGH WALLS, LINTEL BEAMS SHALL BE PROVIDED AT 3.00m O.C.
5. FOR LONG WALLS, LINTEL BEAMS ACTING AS COLUMN SHALL BE PROVIDED AT 3.0m O.C.
6. WHERE CHB WALL ADJOINS R.C. COLUMN AND BEAMS PRIOR TO POURING TO MATCH CHB WALL REINFORCEMENT, THE DOWEL SHALL BE 12mm BARS AT 0.40m O.C.
7. WHERE THE TOP CHB WALL ADJOINS A BEAM, PROVIDE A 25mm TO FILLED WITH SOFT MATERIAL LIKE BACKER ROD AND SEALANT.
8. WHERE COLUMNS AND BEAMS ARE TO BE POURED WITHOUT CHB WALL DOWEL PROVIDE RAMPSETS AND 16 GA GALVANIZED STEEL STRAPS 0.40m O.C. NO CHIPPING OF CONCRETE COLUMNS AND BEAMS IS ALLOWED UNLESS OTHERWISE PERMITTED BY THE STRUCTURAL ENGINEER.

## F. STRUCTURAL TOLERANCES

UNLESS OTHERWISE SPECIFIED BY THE STRUCTURAL ENGINEER THE FOLLOWING ARE ACCEPTABLE STRUCTURAL TOLERANCES FOR CAST-IN-PLACE CONCRETE CONTRUCTION. ALL DIMENSION WHICH ARE NOT WITHIN THE REQUIRED TOLERANCES SHALL BE CORRECTED PRIOR TO POURING OF CONCRETE.
TOLERANCES FOR PRE-CAST CONCRETE CONSTRUCTION SHALL $\frac{1}{2}$ OF THE VALUES GIVEN BELOW

1.A CROSS SECTIONAL DIMENSIONS AND LOCATION OF REINFORCEMENTS, PRE-STRESSING STEEL AND PRE-STRESSING STEEL DUCTS

| | |
|---|---|
| DIMENSIONS LESS THAN 200mm | +/- 6mm |
| 200mm TO 600mm | +/- 9mm |
| OVER 600mm | +/- 12mm |

2.B. MEMBER LENGTH OR HEIGHT +/- 6mm PER 3.0m (MAXIMUM LIMITATION = 12mm)

3.C. DEVIATION FROM STRAIGHT LINE (SWEEP AND / OR PLUMBERS ) +/- 6mm PER 3.0m

4.D. LOCATION OF BAR CUT-OFFS OR BENDS +/- 50mm

## G. CONSTRUCTION JOINTS

1. CONSTRUCTION JOINTS SHALL BE LOCATED NEAR THE MIDDLE OF THE SPAN OF SLABS,, BEAMS OR GIRDERS
2. AT BEAM / GIRDER INTERSECTION, THE CONSTRUCTION JOINT ON THE GIRDER SHALL BE OFFSET AT A DISTANCE EQUAL TO TWICE THE WIDTH OF THE BEAM. DIAGONAL BARS SHALL BE PROVIDED TO RESIST 100% SHEAR OF THE CONSTRUCTION JOINT
3. CONSTRUCTION JOINTS IN COLUMN SHALL BE LOCATED A DISTANCE ABOVE THE FLOOR EQUAL TO MAXIMUM DIMENSION OR $\frac{1}{6}$ THE STORY HEIGHT
4. WHERE THE JOINT IS TO BE MADE, THE SURFACE OF THE CONCRETE SHALL BE THOROUGHLY WETTED AND COATED WITH NEAT CEMENT GROUT IMMEDIATELY BEFORE PLACING NEW CONCRETE
5. CONSTRUCTION JOINTS IN WALLS, SLABS AND OTHER STRUCTURES THAT ARE SUBJECTED TO WATER PRESSURE SHALL BE PROVIDED WITH WATER STOPS, KIND, TYPE AND SIZE OF WATER STOPS SHALL BE AS APPROVED BY THE ENGINEER

## H. STANDARD HOOK

1. A STANDARD HOOK FOR REBARS IF REQUIRED SHALL BE EITHER OF THE FOLLOWING:
   1.1. A SEMICIRCULAR TUM PLUS AN EXTENSION OF AT LEAST 4 DIA. BUT NOT LESS THAN 62mm AT THE FREE END OF THE BAR
   1.2. A 90 DEG. TURN PLUS AN EXTENSION OF AT LEAST 12 DIA. AT THE FREE AND OF THE BAR
2. MINIMUM DIAMETER OF BEND MEASURED ON THE INSIDE OF THE BAR SHALL BE AS FOLLOW

| | |
|---|---|
| 10mm DIAMETER TO 25mm DIAMETER | 6 DIA. |
| 28mm DIAMETER TO 26mm DIAMETER | 8 DIA. |
| NO. 14 TO NO. 18 | 10 DIA. |

## I. R.C. SLABS ON GROUND

UNLESS OTHERWISE SPECIFIED, THICKNESS AND REINFORCEMENT OF R.C. SLABS FOR DIFFERENT TYPES OF OCCUPANCY:

| BAR SIZE | fc' = 20.7 MPa | fc' = 27.8 MPa |
|---|---|---|
| 10 | 300 | 300 |
| 12 | 300 | 300 |
| 16 | 360 | 360 |
| 20 | 430 | 430 |
| 25 | 810 | 710 |
| 28 | 1,550 | 1,350 |
| 32 | 1,980 | 1,700 |
| 36 | 2,440 | 2,100 |

| OCCUPANCY | ALLOWABLE LIVE LOAD | SLAB THICKNESS | REINFORCEMENT |
|---|---|---|---|
| DOMESTIC OR LIGHT COMMERCIAL | 4.8 kPa | 0.100 M | 10mm DIAMETER @ 300mm B.W. |
| COMMERCIAL | 7.2 kPa | 0.123 M | 10mm DIAMETER @ 300mm B.W. |
| INDUSTRIAL PLANTS, GAS STATIONS & GARAGES | 24.0 kPa | 0.150 M | 12mm DIAMETER @ 300mm B.W. |
| INDUSTRIAL | 48.0 kPa | 0.200 M | 12mm DIAMETER @ 300mm B.W. TOP & BOTTOM |

**PHILIPPINE CARABAO CENTER**
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| REVISION: | | 10\|19 |
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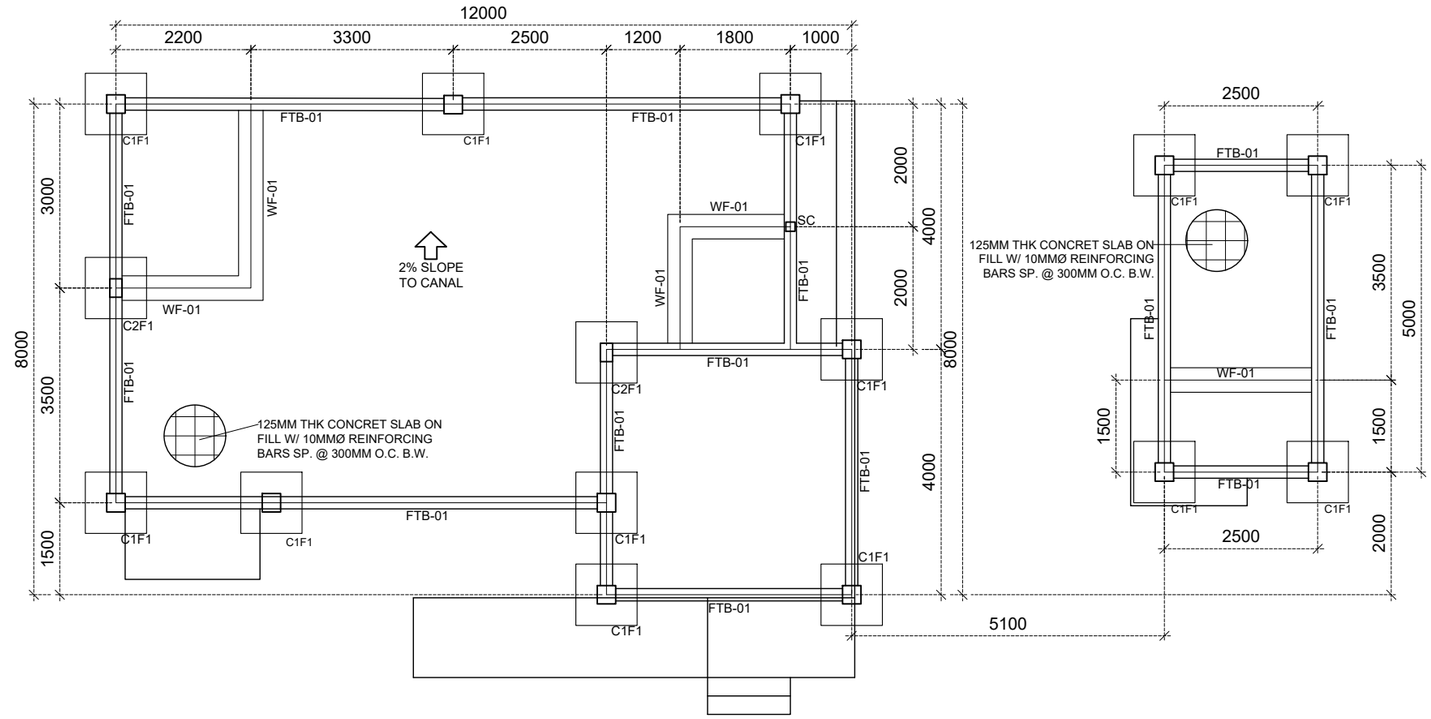





01 / S 02

# FOUNDATION PLAN

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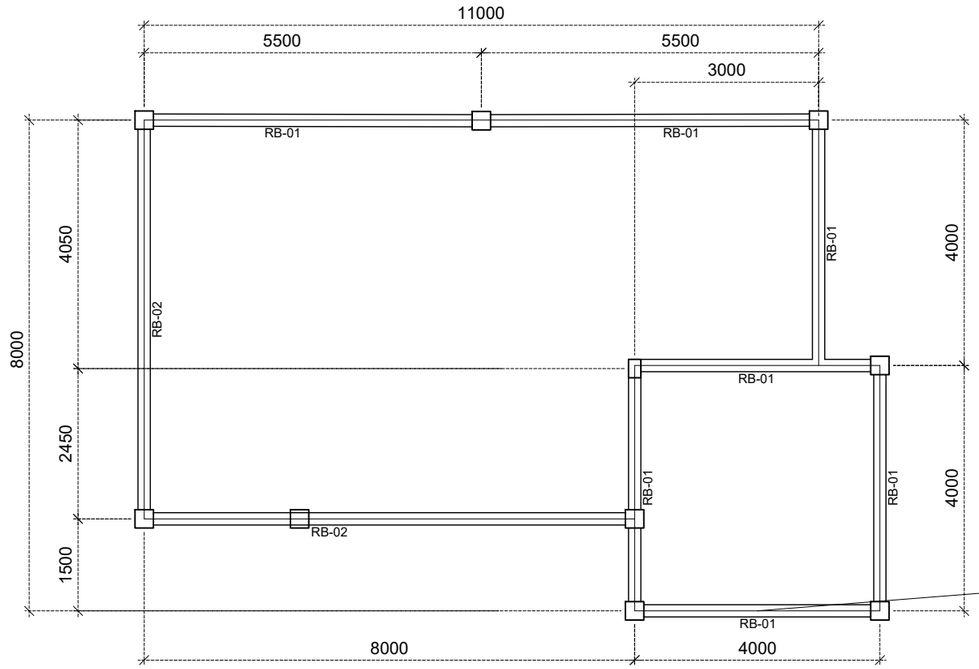


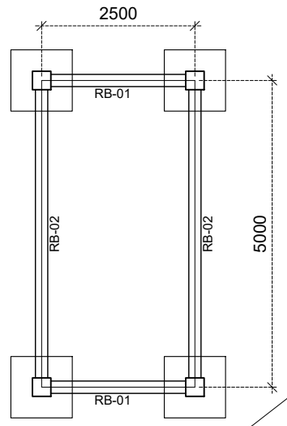


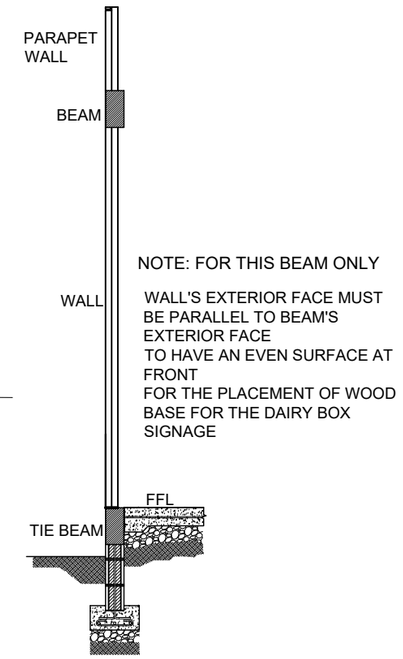


01 / S 02

# ROOF BEAM PLAN

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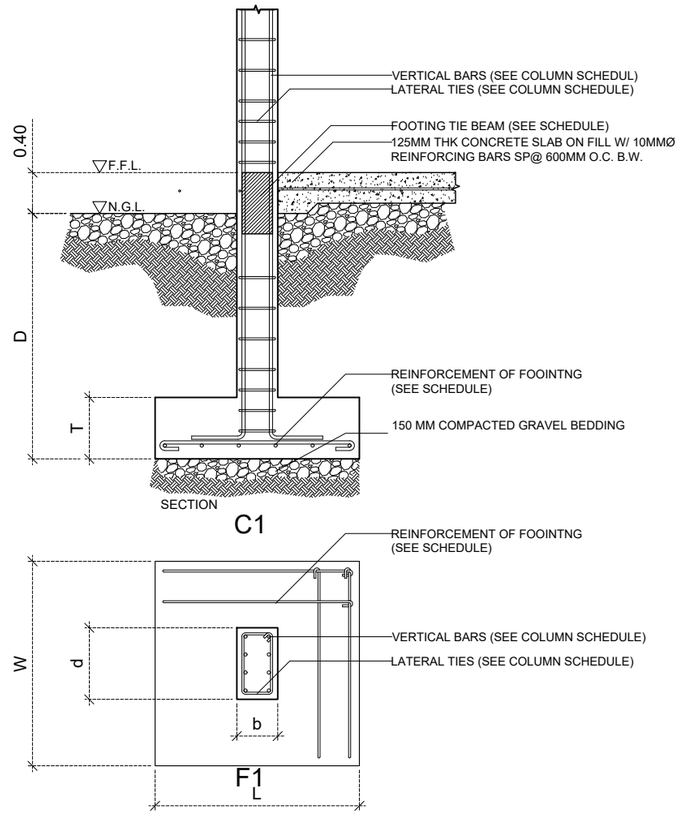
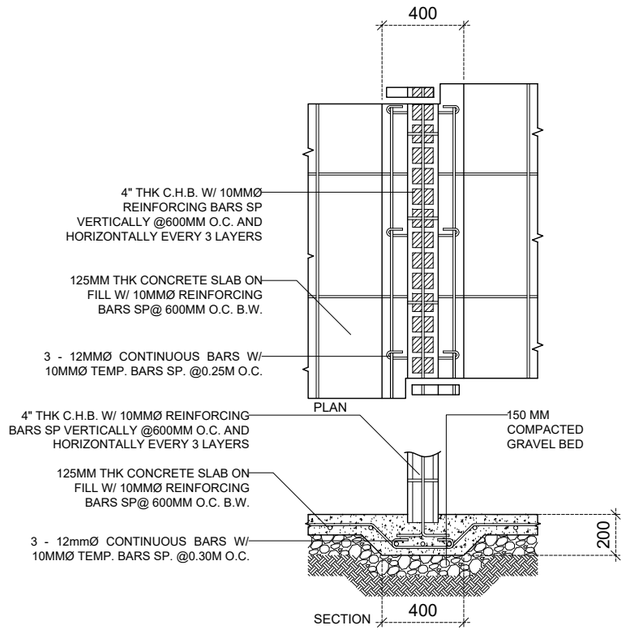
SECTION

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL GENE POOL & HEADQUARTERS<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>ENGR. CHRISTOPHER FEBB F. SAN MIGUEL<br>ENGINEER I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER<br>PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED BY:<br>ENGR. REDENTOR B. VANGUARDIA<br>ENGINEER II, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | REVIEWED BY:<br>ENGR. EDUARDO P. DALUSONG<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL:<br>DR. FRANCISCO G. GABUNADA<br>CENTER DIRECTOR<br>PHILIPPINE CARABAO CENTER - VSU | PROJECT TITLE/LOCATION:<br>**PROPOSED DAIRY PROCESSING PLANT AND PRODUCTS OUTLET**<br>MAASIN CITY, SOUTHERN LEYTE | APPROVED BY:<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR, PHILIPPINE CARABAO CENTER | DRAFTED BY: CFFSM<br>REVISION: | SHEET CONTENTS: AS SHOWN | SHEET No. S-02 11/19 |



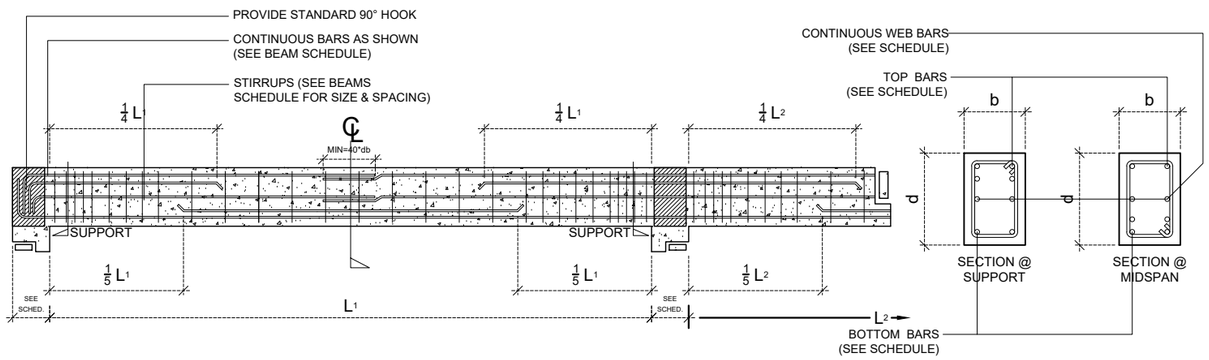




| SCHEDULE OF COLUMNS | | | | |
|---|---|---|---|---|
| COLUMN ID | b(MM) | d(MM) | VERTICAL | LAT. TIES |
| C1 | 300 | 300 | 8-16MMØ | 10MMØ SP. 2@.05, 2@0.10, 2@.15 REST @ .20M. O.C. |
| C2 | 200 | 300 | 6-16MMØ | 10MMØ SP. 2@.05, 2@0.10, 2@.15 REST @ .20M. O.C. |
| SC | 150 | 150 | 4-16MMØ | 10MMØ SP. 2@.05, 2@0.10, 2@.15 REST @ .20M. O.C. |

| SCHEDULE OF FOOTINGS | | | | | |
|---|---|---|---|---|---|
| FOOTING ID | L (MM) | W (MM) | D (MM) | T (MM) | LAT. TIES |
| F1 | 1000 | 1000 | 1900 | 300 | 6 - 16mmØ BOTH WAYS |

01 S 03 TYP. COLUMN & FTG. DET.
SCALE NTS

02 S 03 WALL FTG DETAILS
SCALE NTS




| SCHEDULE OF BEAMS | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| BEAM ID | b(MM) | d(MM) | AT SUPPORT | | AT MIDSPAN | | WEB BARS | STIRRUPS |
| | | | TOP BARS | BOT BARS | TOP BARS | BOT BARS | | |
| FTB1 | 200 | 300 | 2-16MMØ | 2-16MMØ | 2-16MMØ | 2-16MMØ | - | 10MMØ SP. 4@.05, 2@0.10, 2@.15 REST @ .20M. O.C. |
| RB1 | 200 | 300 | 2-16MMØ | 2-16MMØ | 2-16MMØ | 2-16MMØ | - | 10MMØ SP. 4@.05, 2@0.10, 2@.15 REST @ .20M. O.C. |
| RB2 | 200 | 300 | 2-16MMØ | 2-16MMØ | 2-16MMØ | 2-16MMØ | 2-12MMØ | 10MMØ SP. 4@.05, 2@0.10, 2@.15 REST @ .20M. O.C. |

03 S 03 TYP. BEAM DETAILS
SCALE NTS

**PHILIPPINE CARABAO CENTER**
NATIONAL GENE POOL & HEADQUARTERS
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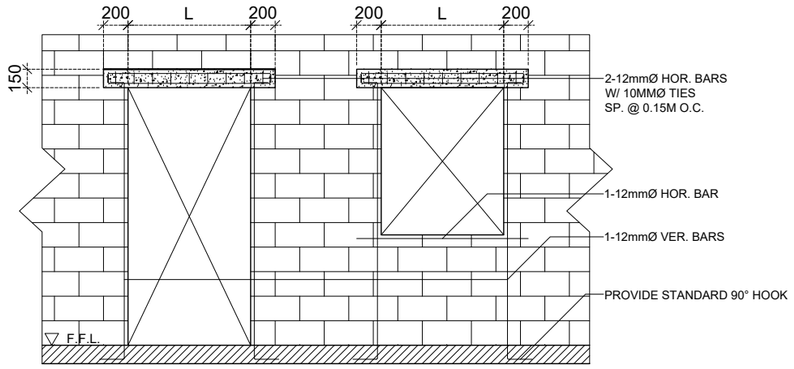
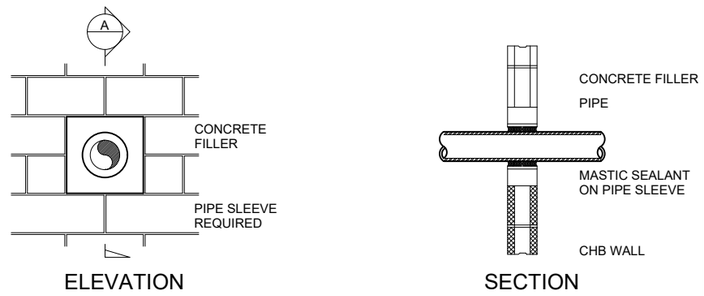


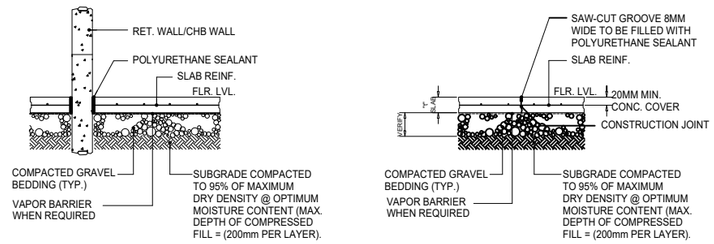

01 S 04 DOOR/WINDOW OPENING DETAILS

SCALE NTS



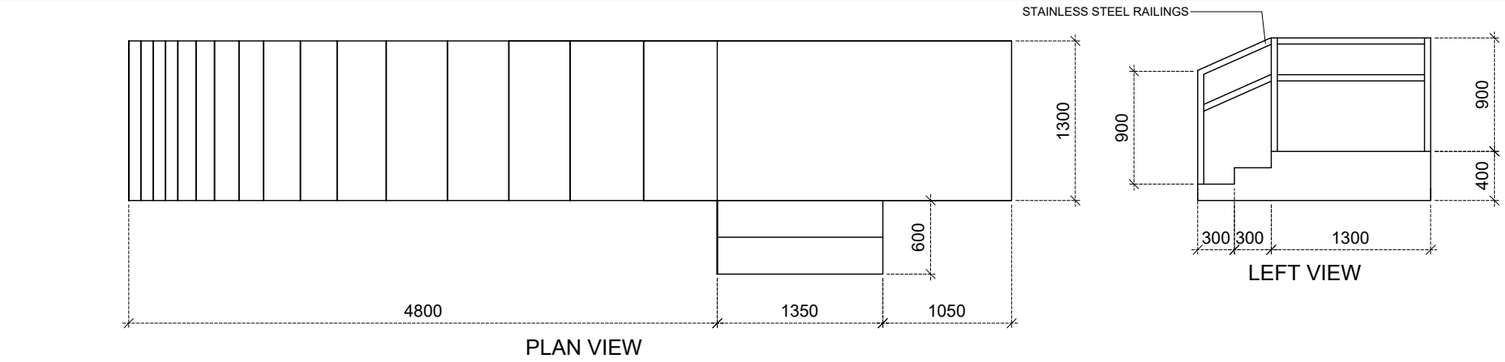

ELEVATION SECTION

PIPE SLEEVE THRU WALL




03 S 04 MISCELLANEOUS DETAILS

SCALE NTS




02 S 04 RAMP AND RAILINGS DETAILS

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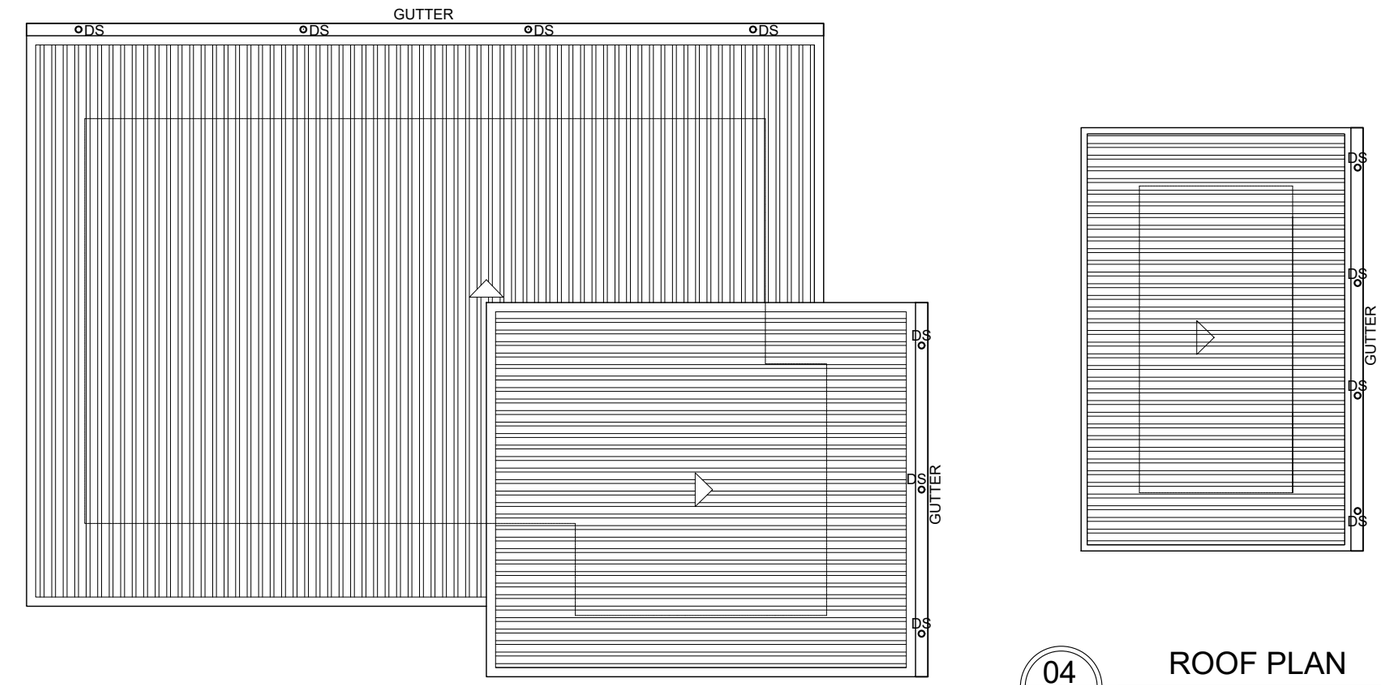


04 S 04 ROOF PLAN

SCALE 1:100M

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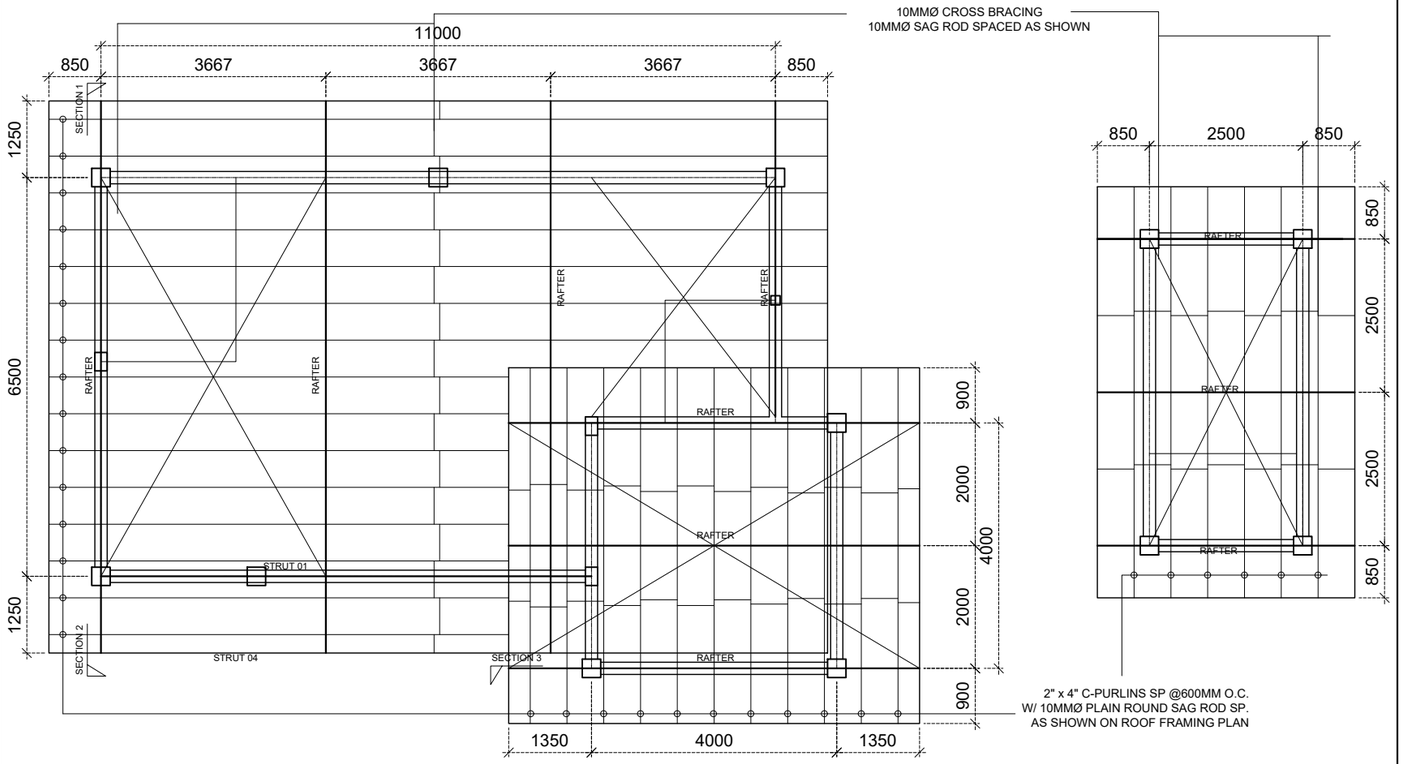
NATIONAL GENE POOL & HEADQUARTERS
CLSU Cpd., Science City of Munoz, Nueva Ecija

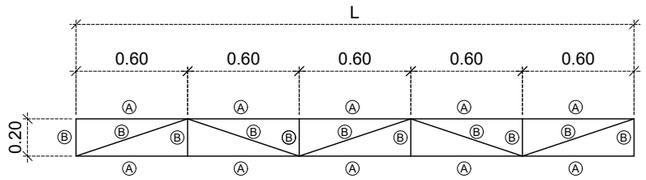
| PREPARED BY: | CHECKED BY: | REVIEWED BY: | RECOMMENDING APPROVAL: | PROJECT TITLE/LOCATION: | APPROVED BY: | DRAFTED BY: | SHEET CONTENTS: | SHEET No. |
|---|---|---|---|---|---|---|---|---|
| ENGR. CHRISTOPHER FEBB F. SAN MIGUEL<br>ENGINEER I, LIVESTOCK ENGINEERING SECTION,<br>PHILIPPINE CARABAO CENTER<br>PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | ENGR. REDENTOR B. VANGUARDIA<br>ENGINEER II, LIVESTOCK ENGINEERING SECTION,<br>PHILIPPINE CARABAO CENTER | ENGR. EDUARDO P. DALUSONG<br>HEAD, LIVESTOCK ENGINEERING SECTION,<br>PHILIPPINE CARABAO CENTER | DR. FRANCISCO G. GABUNADA<br>CENTER DIRECTOR<br>PHILIPPINE CARABAO CENTER - VSU | **PROPOSED DAIRY PROCESSING PLANT AND PRODUCTS OUTLET**<br>MAASIN CITY, SOUTHERN LEYTE | DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR,<br>PHILIPPINE CARABAO CENTER | CFFSM<br>REVISION: | AS SHOWN | S-04<br>13 19 |




## 01 ROOF FRAMING PLAN

S 06

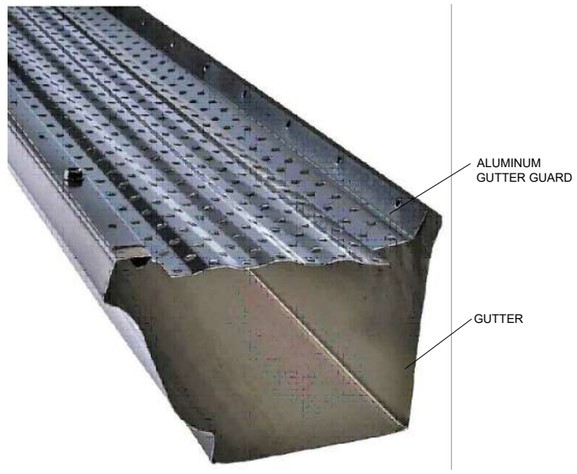
SCALE 1:100M




## RAFTER DETAILS

Ⓐ 2 - ∠ 50MM x 50MM ANGLE BAR TOP AND BOTTOM CHORD

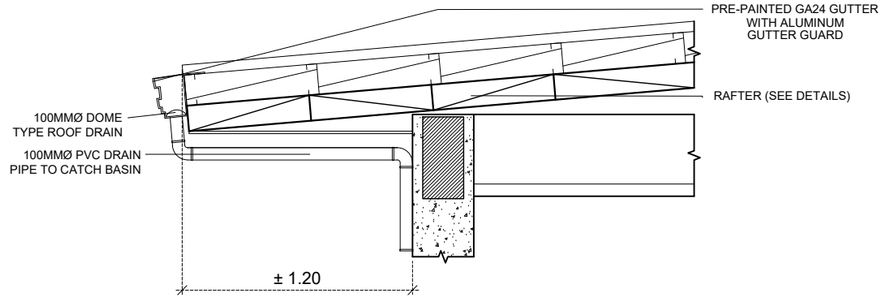
Ⓑ 1 - ∠ 50MM x 50MM ANGLE BAR WEB MEMBERS



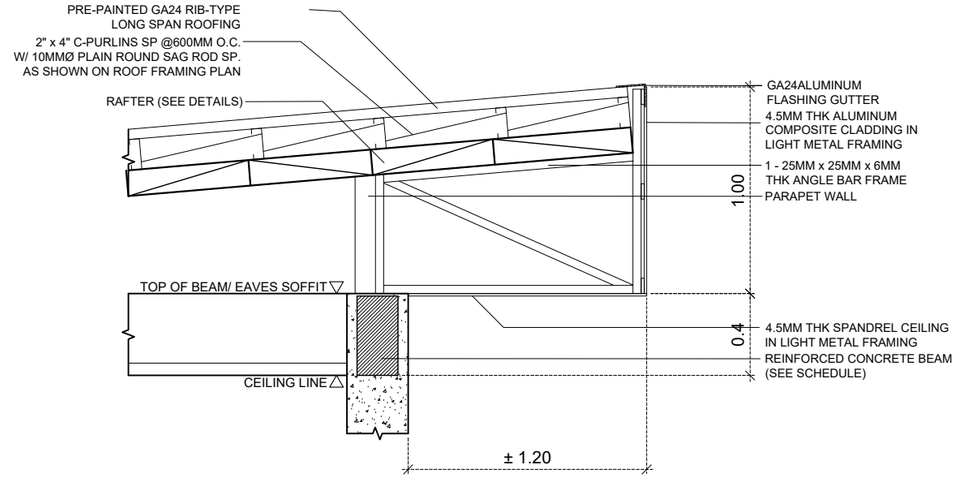

## 02 MISCELLANEOUS DETAILS

S 06

SCALE NTS




## SECTION 1

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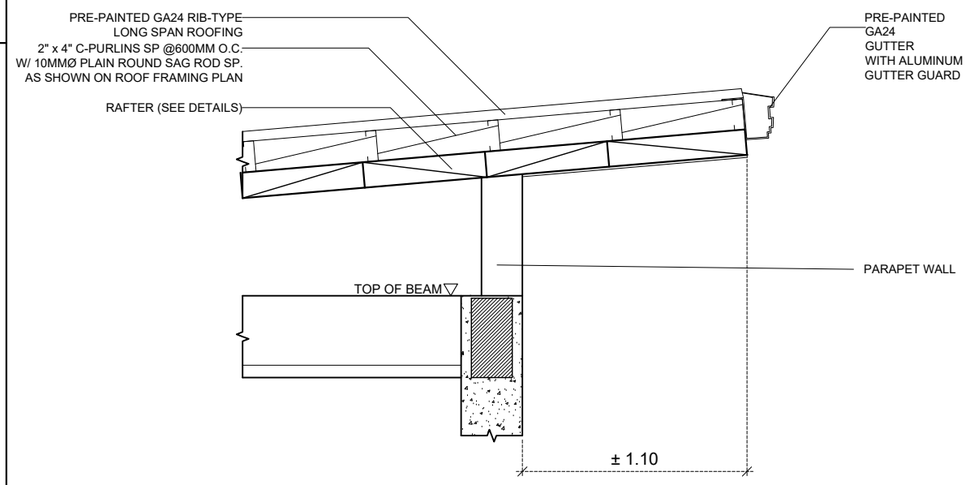



## SECTION 3

## 03 ROOF FRAMING DETAILS

S 06

SCALE NTS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL GENE POOL & HEADQUARTERS<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>ENGR. CHRISTOPHER FEBB F. SAN MIGUEL<br>ENGINEER I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER<br>PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED BY:<br>ENGR. REDENTOR B. VANGUARDIA<br>ENGINEER II, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | REVIEWED BY:<br>ENGR. EDUARDO P. DALUSONG<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL:<br>DR. FRANCISCO G. GABUNADA<br>CENTER DIRECTOR<br>PHILIPPINE CARABAO CENTER - VSU | PROJECT TITLE/LOCATION:<br>**PROPOSED DAIRY PROCESSING PLANT AND PRODUCTS OUTLET**<br>MAASIN CITY, SOUTHERN LEYTE | APPROVED BY:<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR, PHILIPPINE CARABAO CENTER | DRAFTED BY: CFFSM<br>REVISION: | SHEET CONTENTS: AS SHOWN<br>S-05<br>14 19 |

# PLUMBING NOTES

1. ALL MATERIALS, FIXTURES & EQUIPMENT TO BE USED IN THE PLUMBING INSTALLATION SHALL BE NEW, OF THE APPROVED TYPE & SIZE AS TO ITS INTENDED USAGE.

2. ALL INSTALLATION SHALL BE IN CONFORMANCE WITH THE PLUMBING CODE OF THE PHILIPPINES, ITS RULES & REGULATIONS.

3. DRAINAGE PIPING SHALL BE PROVIDED WITH APPROVED INLET FITTINGS FOR FIXTURE CONNECTIONS, CORRECTLY LOCATED ACCORDING TO THE SIZE & TYPE OF FIXTURE PROPOSED TO BE CONNECTED.

4. CHANGE IN DIRECTION OF DRAINAGE PIPING SHALL BE MADE WITH APPROPRIATE USE OF APPROVED FITTINGS & SHALL BE OF THE ANGLES REPRESENTED BY A 1/16 BEND, 1/8 BEND, 1/6 BEND OR OTHER APPROVED FITTINGS OR EQUIVALENT SWEEP.

5. PROVIDE CLEAN-OUT FOR EACH CHANGE IN DIRECTION IF THE TOTAL AGGREGATE CHANGE EXCEEDS 135 DEGREES.

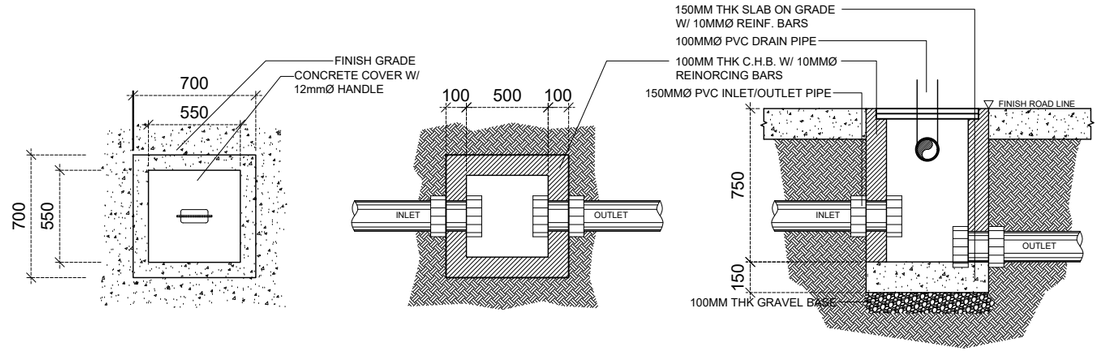
6. EACH CLEAN-OUT SHALL BE INSTALLED SO THAT IT OPENS IN A DIRECTION OPPOSITE TO THE FLOW OF SOIL OR WASTE OR AT RIGHT ANGLES THERETO. ADDITIONAL CLEANOUTS SHALL BE INSTALLED AT INTERVALS NOT TO EXCEED 100 FT (30.5 m.) IN STRAIGHT RUNS.

7. HORIZONTAL DRAINAGE PIPING SHALL RUN IN PRACTICAL ALIGNMENT & A UNIFORM SLOPE OF NOT LESS THAN 1/4 OF AN INCH PER FOOT (20.8 mm/mt.) OR 2% TOWARD THE POINT OF DISPOSAL.

8. UNLESS PROHIBITED BY STRUCTURAL CONDITIONS, EACH VENT SHALL RISE VERTICALLY TO A POINT NOT LESS THAN 6" (152.4 mm ABOVE THE FLOOD LEVEL RIM OF THE FIXTURE SERVED BEFORE) OFFSETTING HORIZONTALLY.

9. EACH VENT PIPE OR STACK SHALL EXTEND THROUGH ITS FLASHING & SHALL TERMINATE VERTICALLY NOT LESS THAN 6" (152.4 mm) ABOVE THE ROOF & ONE FOOT (0.30 m.) FROM ANY VERTICAL SURFACE.

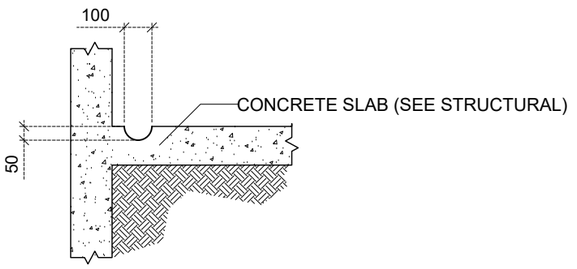
10. PIPING SHALL BE LAID ON A FIRM BED THROUGHOUT ITS ENTIRE LENGTH. IF ANY SUCH PIPING IS LAID IN MADE OR FILLED GROUND, IT SHALL BE LAID ON A BED OF APPROVED MATERIALS & SHALL BE ADEQUATELY SUPPORTED.




CB COVER PLAN | CB MANHOLE PLAN | SECTION

01 / P 01 — CATCH BASIN DETAILS

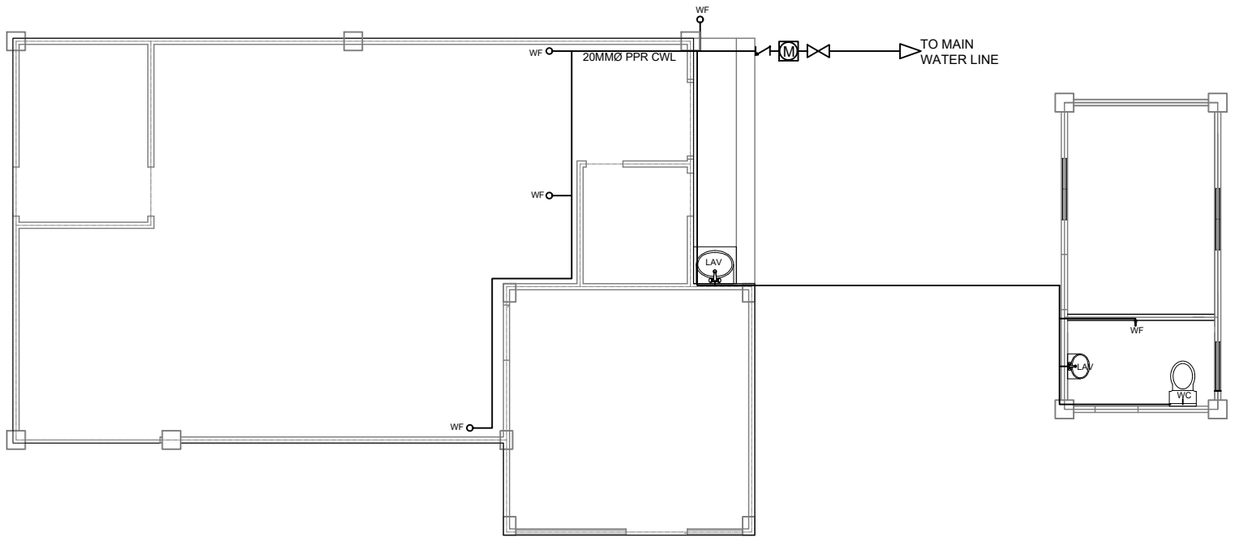
SCALE NTS




02 / P 01 — FLOOR CANAL SECTION

SCALE NTS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL GENE POOL & HEADQUARTERS<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>ENGR. CHRISTOPHER FEBB F. SAN MIGUEL<br>ENGINEER I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER<br>PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED BY:<br>ENGR. REDENTOR B. VANGUARDIA<br>ENGINEER II, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | REVIEWED BY:<br>ENGR. EDUARDO P. DALUSONG<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL:<br>DR. FRANCISCO G. GABUNADA<br>CENTER DIRECTOR<br>PHILIPPINE CARABAO CENTER - VSU | PROJECT TITLE/LOCATION:<br>**PROPOSED DAIRY PROCESSING PLANT AND PRODUCTS OUTLET**<br>MAASIN CITY, SOUTHERN LEYTE | APPROVED BY:<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR, PHILIPPINE CARABAO CENTER | DRAFTED BY: CFFSM<br>REVISION: | SHEET CONTENTS: AS SHOWN | SHEET No. P-01 (15/19) |

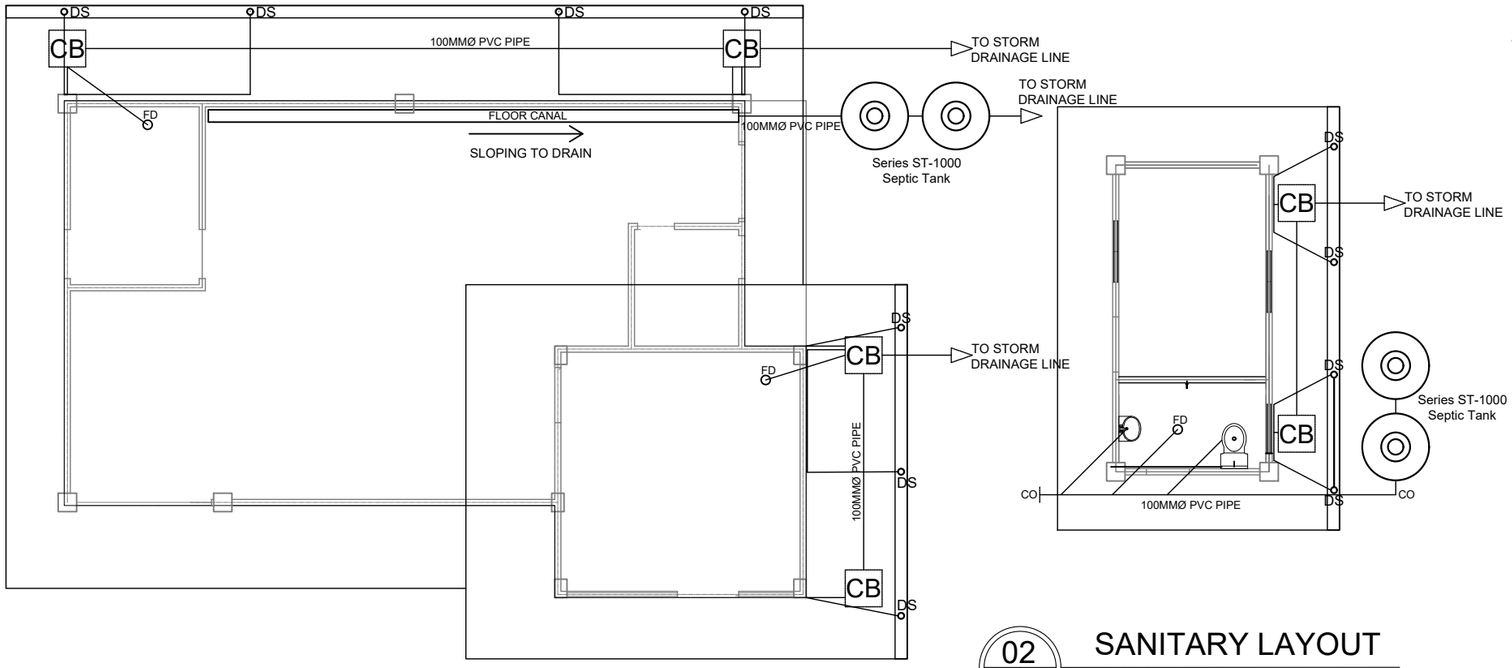



01 / P 02 COLD WATERLINE LAYOUT

SCALE 1:100M

## PLUMBING LEGENDS

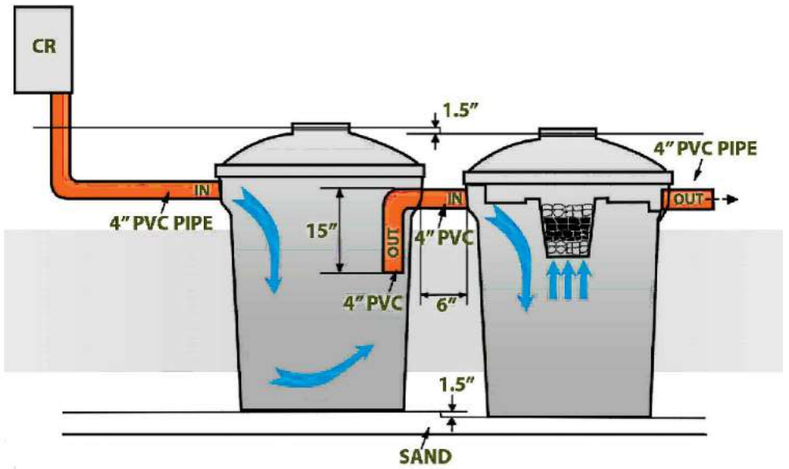
| | | | |
|---|---|---|---|
| —— | COLD WATER LINE | FD | FLOOR DRAIN |
| —— | SANITARY LINE | CO | CLEAN OUT |
| DS | DOWNSPOUT | CB | CATCH BASIN |
| LAV | LAVATORY | M | WATER METER( MAIN) |
| WF | WATER FAUCET | ⋈ | GATE VALVE |
| WC | WATER CLOSET | ⏦ | CHECK VALVE |




02 / P 02 SANITARY LAYOUT

SCALE 1:100M

## SERIES ST-1000 SEPTIC TANK DETAILS




| | | | | | | | | | |
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# ELECTRICAL NOTES

1. ALL ELECTRICAL WORKS HEREIN INCLUDED WERE EXECUTED IN ACCORDANCE WITH THE PROVISION OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE THE RULES AND REGULATIONS OF THE LOCALITY AND THE REQUIREMENTS OF THE POWER COMPANY.
2. ALL ELECTRICAL WORKS HEREIN WERE EXECUTED BY EXPERIENCED MEN UNDER THE DIRECT SUPERVISION OF A FULL-TIME LICENSED ELECTRICAL ENGINEER AND A DULY ACCREDITED ELECTRICAL CONTRACTOR BY PCAB. WORKS WERE NEATLY PLACED, SECURELY FASTENED AND PROPERLY FINISHED.
3. TYPE OF SERVICE ENTRANCE WERE THREE-PHASE, THREE-WIRE PLUS GROUND 13.2KVOLTS, 60 HERTZ TO STEP DOWN TO 230V VIA PAD MOUNTED TRANSFORMERS.
4. ALL MATERIALS WERE CONFORM WITH THE INTERNATIONALLY ACCREDITED RECOGNIZED STANDARDS, IN EVERY CASE WHERE SUCH A STANDARD HAD BEEN ESTABLISHED FOR THE PARTICULAR TYPE OF MATERIAL IN QUESTION.
5. ALL FEEDER CONDUITS WERE INTERMEDIATE METALLIC CONDUIT (IMC) OF HIGH STRENGTH AND GALVANIZED WITH AN ADDITIONAL INTERIOR PROTECTIVE COATING WERE USED OR AS INDICATED ON THE PLAN. ALL EMBEDDED BRANCH CIRCUITS WERE PVC CONDUITS AND FOR EXPOSED INSTALLATION WERE EMT.
6. ELECTRICAL TRADE SIZE WERE USED, A MINIMUM OF 15mm Ø FOR CONDUITS AND IN NO CASE THERE WERE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS IN ANY ONE RUN.
7. ALL CONDUITS WERE PROTECTED AGAINST DAMAGES BY THE ENTRANCE OF WATER AND FOREIGN MATTER DURING CONSTRUCTION. ALL ENDS OF CONDUITS WERE PLUGGED TO EXCLUDE MOISTURE AND DUST IMMEDIATELY AFTER THE CONDUITS WAS PLACED.
8. ALL CONDUIT BENDS WERE FIELD MADE BY USING HYDRAULIC BENDERS. MINIMUM BENDING RADIUS WERE IN ACCORDANCE TO THE CODE REQUIREMENTS.
9. SINGLE CONDUCTOR INSULATED THHN / THWN THERMOPLASTIC 600 V WIRES WERE USED IN CONDUIT. MINIMUM SIZE OF WIRES WERE 2.0 mmØ THHN (#12AWG, SOLID) FOR ALL LIGHTING AND POWER SYSTEM.
10. ALL WIRES AND CABLES WERE COLOR CODED AND WERE UL LISTED AS FOLLOWS:
    PHASE A - BLACK GROUND - GREEN
    PHASE B - RED CONTROL WIRE #1 - BLUE
    PHASE C - YELLOW CONTROL WIRE #2 - WHITE
11. TWISTLOCK CONNECTORS WERE USED IN ALL SPLICING AND CONNECTIONS FROM 2.0 mm dia. UP TO 8.0 sq. mm. WIRES, CRIMPING-TYPE LUGS/CONNECTORS IN ALL OTHER SIZES WITH APPROVED DIES AND HYDRAULIC CRIMPERS, CONNECTORS WERE "ELPRESS".
12. WALL SWITCHES WERE RATED 15 AMPERES, 300 VOLTS TUMBLER TYPE AND CONVE-NIENCE OUTLETS WERE OF GROUNDING TYPE THREE-WIRE, 250 VOLTS OR AS INDICATED ON THE PLANS AND SPECIFICATIONS.
13. SIZING OF ALL PULLBOXES SHALL BE COMPUTED BASED ON THE CODE REQUIREMENTS. SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION. LOCATION OF PULLBOXES WERE APPROVED BY THE ARCHITECT/ENGINEER AND WAS REFLECTED ON THE "AS-BUILT" PLAN. FABRICATOR OF PULLBOXES WERE THE SAME FABRICATOR FOR THE PANELBOARDS.
14. CONTRACTORS HAD SUBMITTED SHOP DRAWINGS OF ALL PANELBOARDS AND PULLBOXES TO THE ENGINEER PRIOR TO FABRICATION. ONLY ONE BRAND OF CIRCUIT BREAKER AND ONLY THE APPROVED PANEL FABRICATOR WERE UTILIZED IN THE ENTIRE PROJECT REQUIREMENT.
15. MOUNTING HEIGHTS OF DEVICES WERE AS APPROVED BY THE ARCHITECT AND/OR AS FOLLOWS :
    PANEL BOARD _ _ _ _ _ _ 1.82 M. above finished floor to top of panel
    WALL SWITCHES_ _ _ _ _ _ 1.37 M. above finished floor to center of device
    CONVENIENCE OUTLET_0.30 M. above finished floor to center of device or
    0.15 M. above working counter to center of device
16. THERE WERE ADEQUATE AND EFFECTIVE EQUIPMENT GROUNDING.
17. UPON COMPLETION OF ELECTRICAL CONSTRUCTION WORK, THE FOLLOWING TESTS WERE PERFORMED BY THE CONTRACTOR INCLUSIVE OF THE INSTALLATION TO BE REPORTED IN DETAILS ON FORMS APPROVED BY THE OWNER'S REPRESENTATIVE :
    A. INSULATION RESISTANCE TEST
    B. GROUND RESISTANCE TEST
    C. OPERATIONAL TEST
    D. PHASE BALANCING TEST
    E. PHASE SEQUENCE TESTING
    F. HI-POT TESTING
    G. SYSTEM TEST
    H. ROUTINE TESTING
18. DOWN CONDUCTOR FOR THE LIGHTNING PREVENTION SYSTEM WERE STRANDED BARE COPPER, 100mm$^2$ FOR CONNECTION TO GROUNDING ELECTRODE USING EXOTHERMIC CONNECTIONS.
19. AIR TERMINAL/IONZER TO BE USED WERE LISTED PER UL 96A, NFPA-78.
20. A PHASE TO PHASE AND PHASE TO GROUND MINIMUM CLEARANCE OF 460mm AND 330mm RESPECTIVELY, WERE MAINTAINED INSIDE THE HIGH VOLTAGE CUBICLE..
21. THE MINIMUM VERTICAL AND HORIZONTAL CLEARANCE OF 34.5KV BARE CONDUCTORS FROM THE BUILDING SHALL BE 3.05 METERS.
22. THE GROUND RESISTANCE OF THE SUBSTATION WAS NOT MORE THAN 5 OHMS, IF GROUND RESISTANCE EXCEEDS 5 OHMS, ADDITIONAL GROUND RODS WERE PROVIDED.
23. THE CONTROLS OF THE MAIN SECONDARY BREAKERS, GENERATOR BREAKERS, THE BREAKERS AND INTERLOCKS WERE TESTED BY MERALCO TO ASSURE THAT THERE IS NO PARALLEL OPERATION WITH OR FEEDBACK INTO THE MERALCO DISTRIBUTION SYSTEM.
24. DANGER SIGNS ON THE POWER ROOM WERE PROVIDED BY THE CUSTOMER.

## LEGENDS AND SYMBOLS

| | |
|---|---|
| LP | LP – LIGHTING PANELBOARD PP – POWER PANELBOARD<br>RP – RECEPTACLE PANEL<br>DP – DISTRIBUTION PANEL<br>MDP – MAIN DISTRIBUTION PANEL |
| ——— | POWER LINES |
| ——— | CIRCUIT RUN FOR LIGHTING |
| — — | LIGHTING SWITCH HOMERUN |
| ——— | CIRCUIT RUN UNDERFLOOR OR UNDERGROUND |
| | CIRCUIT HOMERUN DESIGNATION, UPPER HALF DENOTES POWER SOURCE OF THE CIRCUIT WHILE LOWER HALF DESIGNATES CIRCUIT NO. |
| RU | CONDUIT RISER UP |
| RD | CONDUIT RISER DOWN |
| | LIQUIDTIGHT FLEXIBLE CONDUIT |
| PB | PULLBOX, SIZE AS REQUIRED |
| | DUPLEX CONVENIENCE OUTLET , 3–WIRE GROUNDING TYPE, 230VAC 15 AMPERES, FLOOR MOUNTED |
| | DUPLEX CONVENIENCE OUTLET , 3–WIRE GROUNDING TYPE, 230VAC 15 AMPERES |
| WP | DITTO , BUT WITH WEATHERPROOF COVER |
| GFCI | DITTO , BUT WITH GROUND FAULT CIRCUIT INTERRUPTER |
| WP GFCI | DITTO , BUT WITH WEATHER PROOF COVER AND GROUND FAULT CIRCUIT INTERRUPTER COMBINATION |
| S1a | SINGLE–GANG SWITCH, 15 A , 230VAC |
| S2ab | TWO–GANG SWITCH , 15A 230VAC |
| S3abc | TREE–GANG SWITCH , 15A , 230VAC |
| S3Wa | ONE–GANG THREE WAY SWITCH 15 A , 230VAC |
| | 6" DIAMETER PINLIGHT WITH ALUMINUM REFLECTOR AND GLASS COVER 1 X 13 WATTS LED BULB |
| | T5 FLUORESCENT LAMP , DOUBLE BULB WITH CASING AND COVER |
| EF | INDUSTRIAL GRADE WALL EXHAUST FAN WITH SHUTTER 16'' DIAMETER BLADE |
| | 12X12" CEILING EXHAUST FAN |
| | SERVICE ENTRANCE, 13.2KV, 3ø, 4 WIRES, 60HZ |
| | LIGHTING PROTECTION SYSTEM, AIR TERMINAL |
| LA | LIGHTNING ARRESTER, 15KV |
| | FUSE CUT–OUT, 15KV |
| | GROUND SYSTEM W/ 20mmø x 3000mmL GROUND ROD |
| EMH | ELECTRICAL MANHOLE |

**PHILIPPINE CARABAO CENTER**
NATIONAL GENE POOL & HEADQUARTERS
CLSU Cpd., Science City of Munoz, Nueva Ecija

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ISSUED ON:
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REVIEWED BY:
ENGR. EDUARDO P. DALUSONG
HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER

RECOMMENDING APPROVAL:
DR. FRANCISCO G. GABUNADA
CENTER DIRECTOR
PHILIPPINE CARABAO CENTER - VSU

PROJECT TITLE/LOCATION:
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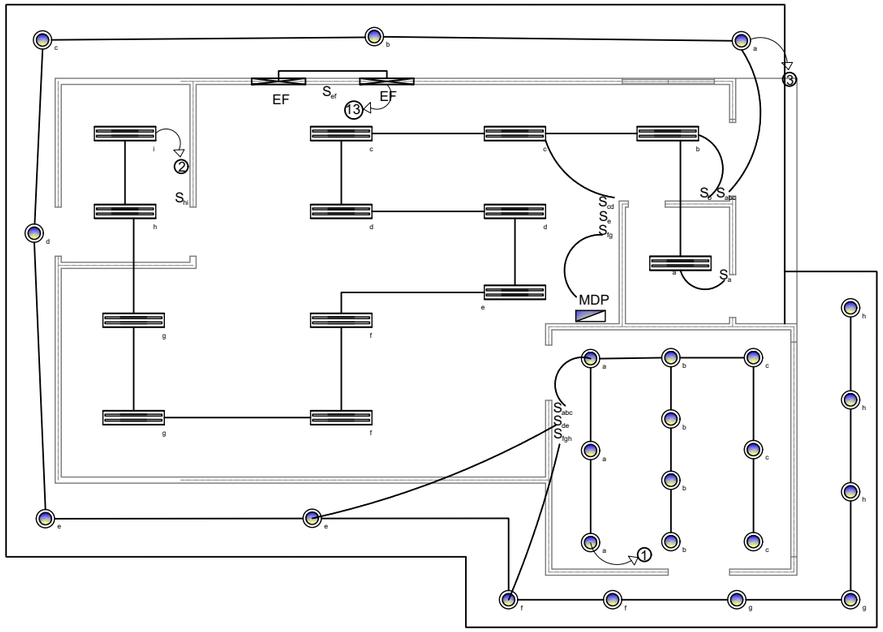
MAASIN CITY, SOUTHERN LEYTE

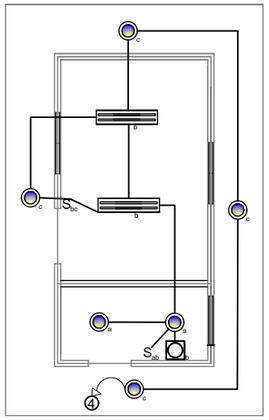
APPROVED BY:
DR. LIZA G. BATTAD
EXECUTIVE DIRECTOR, PHILIPPINE CARABAO CENTER

DRAFTED BY: CFFSM
REVISION:

SHEET CONTENTS: AS SHOWN

SHEET No. E-01 17 19



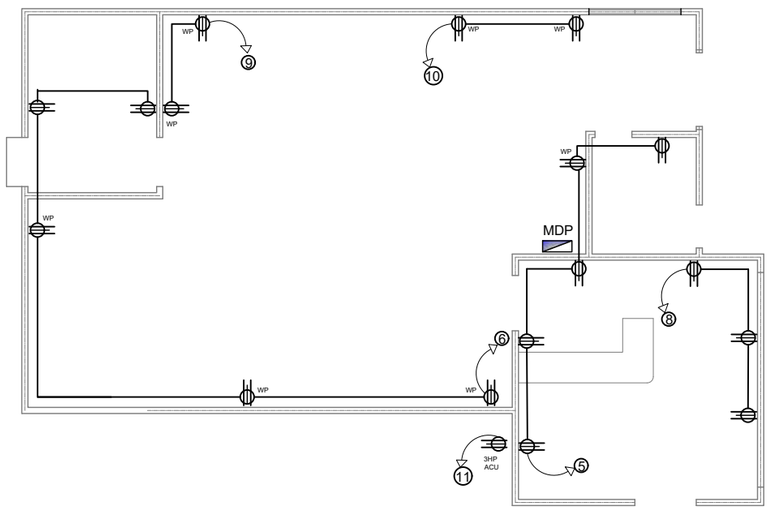
01
E 02

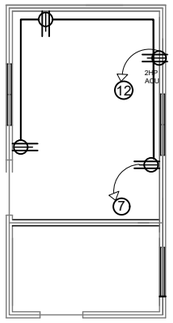
## LIGHTING LAYOUT

SCALE 1:100M

SAMPLE IMAGES FOR
ELECTRICAL FIXTURES
VERIFY TO OWNER /
DESIGNATED OFFICE FOR THE
CHANGE OR ALTERNATIVES
BASED ON MARKET
AVAILABILITY

INDUSTRIAL GRADE WALL
EXHAUST FAN WITH SHUTTER,
16" DIAMETER BLADE




02
E 02

## POWER LINE LAYOUT

SCALE 1:100M

T5 FLUORESCENT LAMP ,
DOUBLE BULB WITH CASING
AND COVER (CASING COVER IS
REQUIRED)

**PHILIPPINE CARABAO CENTER**
NATIONAL GENE POOL & HEADQUARTERS

CLSU Cpd., Science City of Munoz, Nueva Ecija

| PREPARED BY: | CHECKED BY: | REVIEWED BY: | RECOMMENDING APPROVAL: | PROJECT TITLE/LOCATION: | APPROVED BY: | DRAFTED BY: | SHEET CONTENTS: | SHEET No. |
|---|---|---|---|---|---|---|---|---|
| PRC ID: | ENGR. REDENTOR B. VANGUARDIA | ENGR. EDUARDO P. DALUSONG | DR. FRANCISCO G. GABUNADA | **PROPOSED DAIRY PROCESSING PLANT AND PRODUCTS OUTLET** | DR. LIZA G. BATTAD | CFFSM | AS SHOWN | E-02 |
| PTR NO: | ENGINEER II, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | CENTER DIRECTOR PHILIPPINE CARABAO CENTER - VSU | MAASIN CITY, SOUTHERN LEYTE | EXECUTIVE DIRECTOR, PHILIPPINE CARABAO CENTER | REVISION: | | 18 19 |
| ISSUED ON: | | | | | | | | |
| ISSUED AT: | | | | | | | | |

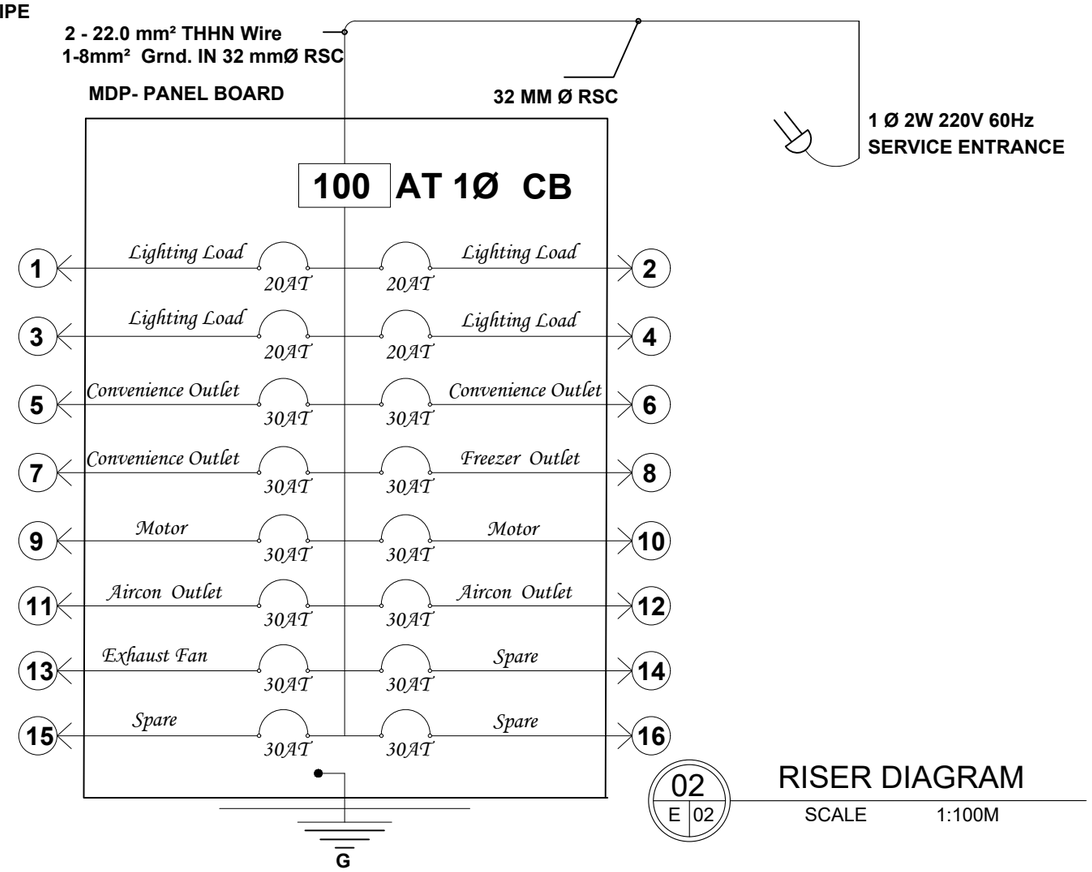
## LOAD SCHEDULE

| PANEL | CKT NO. | LIGHTING OUTLET | | | | | SW | | | CO | OTHERS | QTY | WATTS | VOLT | AMPS | AMPERE | C.B. RATING | | | | SIZE OF WIRE (THHN) | SIZE OF CONDUIT (RSC/EMT.PVC) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 10W | 28W | 40W | 13W | EF | S3G | S2G | S1G | 180 | | | | | | AB | AT | AF | POLE | KAIC | | |
| PANEL-MDP | 1 | | | | 10 | | 1 | | | | | | 130 | 220 | 0.590909 | 0.59 | 20 | 100 | 2 | 10 | 2-2.0mm², 1-2.0mm² GRD. | 20mmØ PVC |
| | 2 | | 26 | | | | | 2 | 2 | | | | 728 | 220 | 3.309091 | 3.31 | 20 | 100 | 2 | 10 | 2-2.0mm², 1-2.0mm² GRD. | 20mmØ PVC |
| | 3 | | | | 13 | | 2 | | 1 | | | | 169 | 220 | 0.768182 | 0.77 | 20 | 100 | 2 | 10 | 2-2.0mm², 1-2.0mm² GRD. | 20mmØ PVC |
| | 4 | | 4 | | 6 | | | 2 | | | CEILING EXHAUST FAN (40W) | 1 | 174 | 220 | 0.790909 | 0.79 | 20 | 100 | 2 | 10 | 2-2.0mm², 1-2.0mm² GRD. | 20mmØ PVC |
| | 5 | | | | | | | | | | POWER OUTLET | 5 | 900 | 220 | 4.090909 | 4.09 | 30 | 100 | 2 | 10 | 2-3.5mm², 1-2.0mm² GRD. | 20mmØ PVC |
| | 6 | | | | | | | | | | POWER OUTLET | 5 | 900 | 220 | 4.090909 | 4.09 | 30 | 100 | 2 | 10 | 2-3.5mm², 1-2.0mm² GRD. | 20mmØ PVC |
| | 7 | | | | | | | | | | POWER OUTLET | 3 | 540 | 220 | 2.454545 | 4.09 | 30 | 100 | 2 | 10 | 2-3.5mm², 1-2.0mm² GRD. | 20mmØ PVC |
| | 8 | | | | | | | | | | FREEZER (400W) | 3 | 1200 | 220 | 5.454545 | 5.45 | 30 | 100 | 2 | 10 | 2-5.5mm², 1-2.0mm² GRD. | 20mmØ PVC |
| | 9 | | | | | | | | | | 1HP (MOTOR) | 2 | 1492 | 220 | 6.781818 | 6.78 | 30 | 100 | 2 | 10 | 2-5.5mm², 1-3.5mm² GRD. | 20mmØ PVC |
| | 10 | | | | | | | | | | 1HP (MOTOR) | 2 | 1492 | 220 | 6.781818 | 6.78 | 30 | 100 | 2 | 10 | 2-5.5mm², 1-3.5mm² GRD. | 20mmØ PVC |
| | 11 | | | | | | | | | | 3HP AC | 1 | 2600 | 220 | 11.81818 | 11.82 | 30 | 100 | 2 | 10 | 2-5.5mm², 1-3.5mm² GRD. | 20mmØ PVC |
| | 12 | | | | | | | | | | 2HP AC | 1 | 1500 | 220 | 6.818182 | 11.82 | 30 | 100 | 2 | 10 | 2-5.5mm², 1-3.5mm² GRD. | 20mmØ PVC |
| | 13 | | | | | | | | | | EXHAUST FAN (750W) | 2 | 1500 | 220 | 6.818182 | 6.82 | 30 | 100 | 2 | 10 | 2-3.5mm², 1-3.5mm² GRD. | 20mmØ PVC |
| | 14 | | | | | | | | | | SPARE | 1 | 1500 | 220 | 6.818182 | 6.82 | 30 | 100 | 2 | 10 | 2-5.5mm², 1-3.5mm² GRD. | 20mmØ PVC |
| | 15 | | | | | | | | | | SPARE | 1 | 1500 | 220 | 6.818182 | 6.82 | 30 | 100 | 2 | 10 | 2-5.5mm², 1-3.5mm² GRD. | 20mmØ PVC |
| | 16 | | | | | | | | | | SPARE | 1 | 1500 | 220 | 6.818182 | 6.82 | 30 | 100 | 2 | 10 | 2-5.5mm², 1-3.5mm² GRD. | 20mmØ PVC |
| TOTAL | | | 30 | | 29 | | 3 | 4 | 3 | | | | 17825 | | | 87.66 | | | | | | |

**IFL = 17,825/ (220) x 1.20 = 97.23 AMPS @ 100% D.F. ( BASED ON LOAD CALCULATION )**

**MCB = 100AT/100AF, 2P, 230V, 10KAIC**

**USE = 2-22mm² THHN WIRE & 1-8mm² GRD THHN WIRE IN 32mm Ø RSC PIPE**




02 / E 02

## RISER DIAGRAM

SCALE 1:100M

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL GENE POOL & HEADQUARTERS<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED BY:<br>ENGR. REDENTOR B. VANGUARDIA<br>ENGINEER II, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | REVIEWED BY:<br>ENGR. EDUARDO P. DALUSONG<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL:<br>DR. FRANCISCO G. GABUNADA<br>CENTER DIRECTOR<br>PHILIPPINE CARABAO CENTER - VSU | PROJECT TITLE/LOCATION:<br>**PROPOSED DAIRY PROCESSING PLANT AND PRODUCTS OUTLET**<br>MAASIN CITY, SOUTHERN LEYTE | APPROVED BY:<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR, PHILIPPINE CARABAO CENTER | DRAFTED BY: CFFSM<br>REVISION: | SHEET CONTENTS: AS SHOWN | SHEET No. E-03 (19 \| 19) |