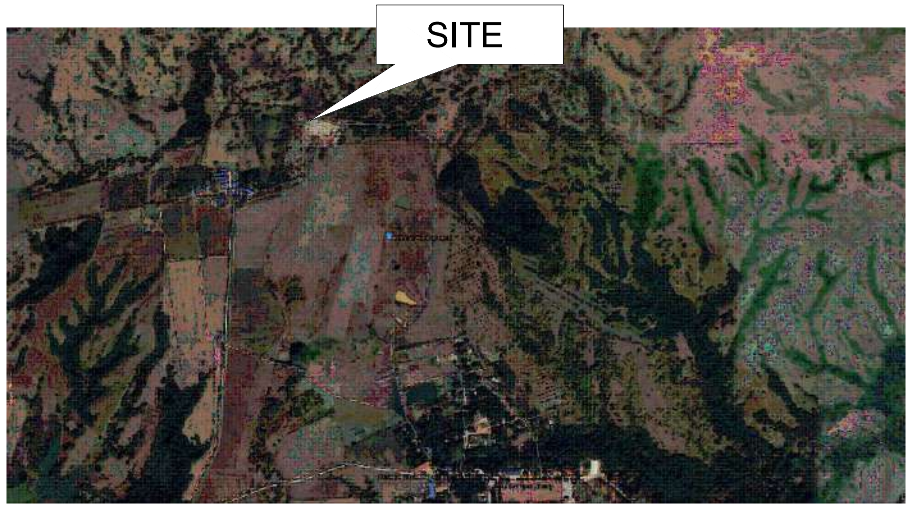
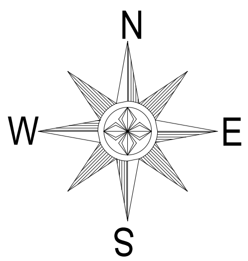
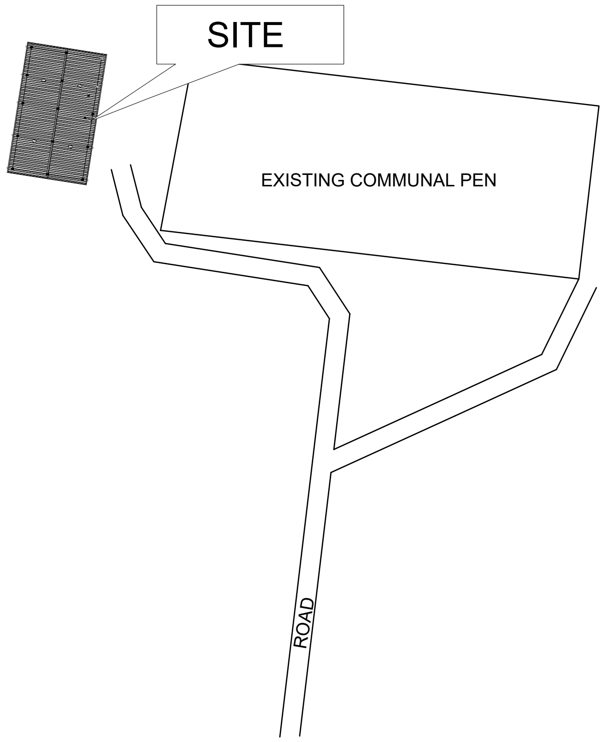
P E R S P E C T I V E




VICINITY MAP

SCALE NTS




SITE DEVELOPMENT PLAN

SCALE NTS

TABLE OF CONTENTS



REPUBLIC OF THE PHILIPPINES

OFFICE OF THE BUILDING OFFICIAL

LINE AND GRADE

LAND USE AND ZONING

ARCHITECTURAL

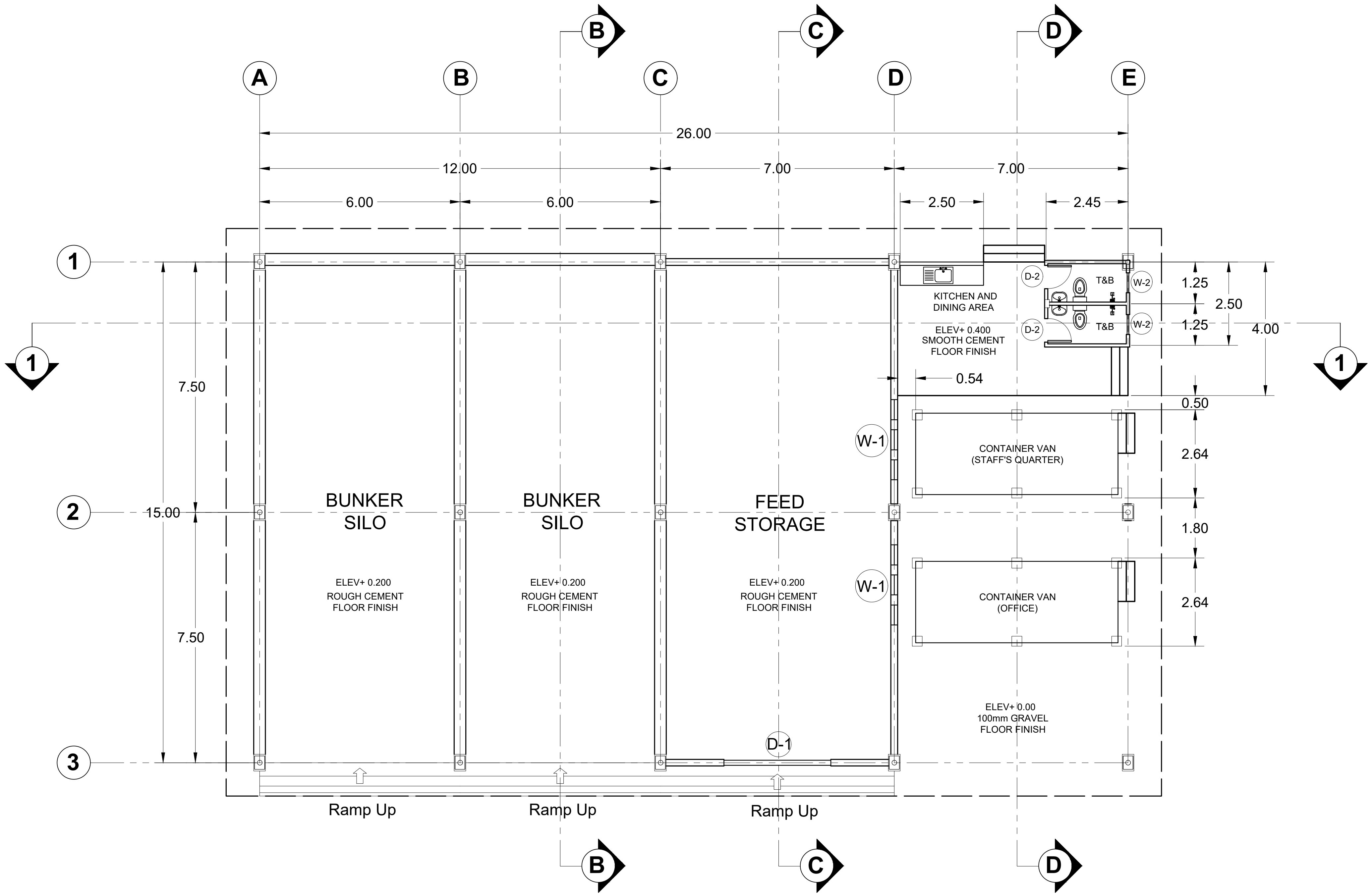
STRUCTURAL

SANITARY

ELECTRICAL

MECHANICAL

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL HEADQUARTERS & GENE POOL<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>ENGR. JEAN HAROLD F. REAMICO<br>ENGINEER I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED AND REVIEWED BY:<br>ENGR. CRIS Y. GUZON<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL<br>DR. ROVINA R. PIÑERA<br>CENTER CHIEF, PHILIPPINE CARABAO CENTER - CSU | PROJECT TITLE/LOCATION:<br>CONSTRUCTION OF BUNKER SILO, FEED STORAGE AND QUARTER'S SHED<br>PIAT, CAGAYAN | APPROVED BY<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR III, PHILIPPINE CARABAO CENTER | DRAFTED BY: JHFR<br>REVISION: | SHEET CONTENTS: AS SHOWN | SHEET No. A-01<br>01 19 |




# FLOOR PLAN

SCALE 1:150

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

PREPARED BY:
ENGR. JEAN HAROLD F. REAMICO
ENGINEER I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER

PRC ID:
PTR NO:
ISSUED ON:
ISSUED AT:

CHECKED AND REVIEWED BY:
ENGR. CRIS Y. GUZON
HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER

RECOMMENDING APPROVAL
DR. ROVINA R. PIÑERA
CENTER CHIEF, PHILIPPINE CARABAO CENTER - CSU

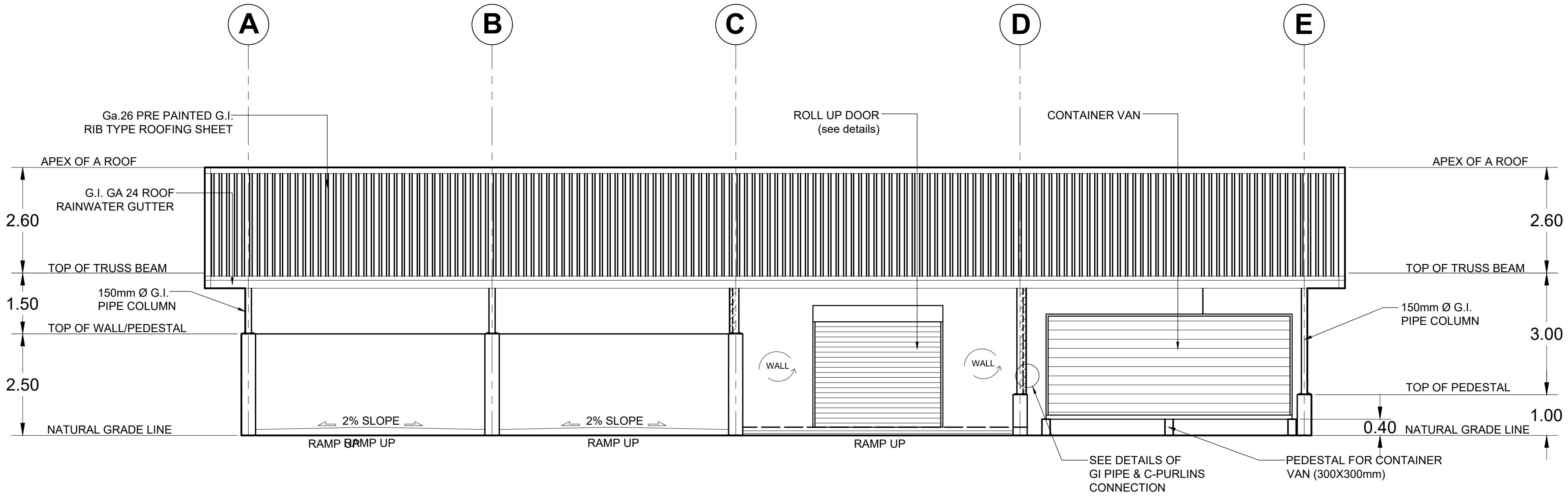
PROJECT TITLE/LOCATION:
CONSTRUCTION OF BUNKER SILO, FEED STORAGE AND QUARTER'S SHED
PIAT, CAGAYAN

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

DRAFTED BY: JHFR
REVISION:

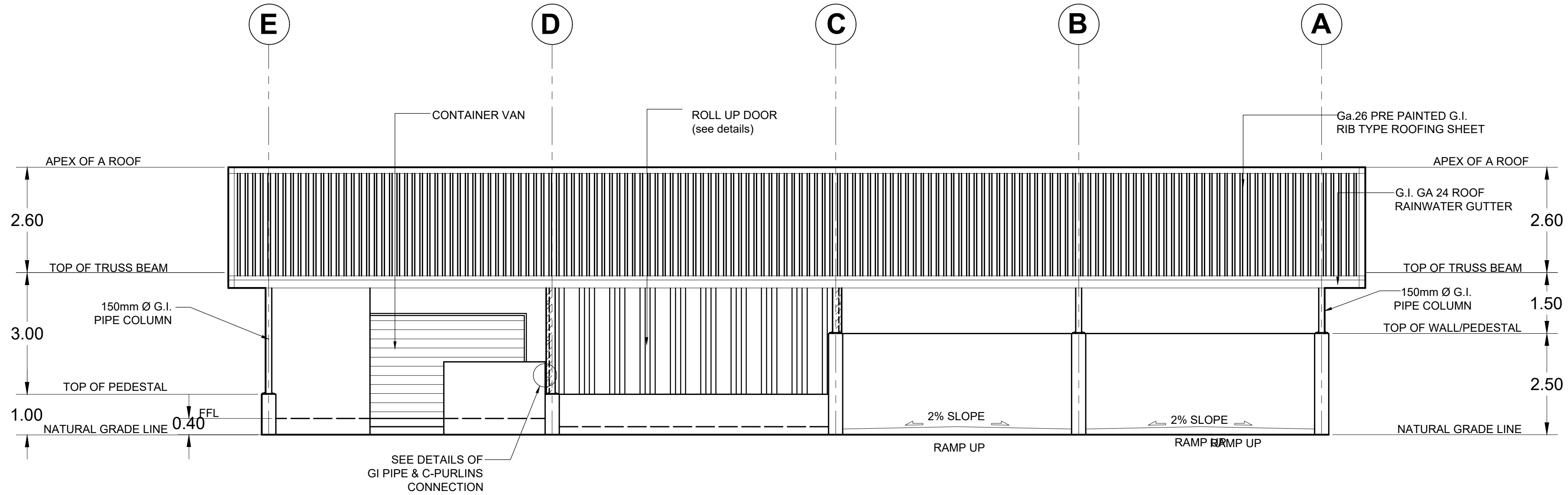
SHEET CONTENTS: AS SHOWN

SHEET No. A-02
02 | 19




# FRONT ELEVATION

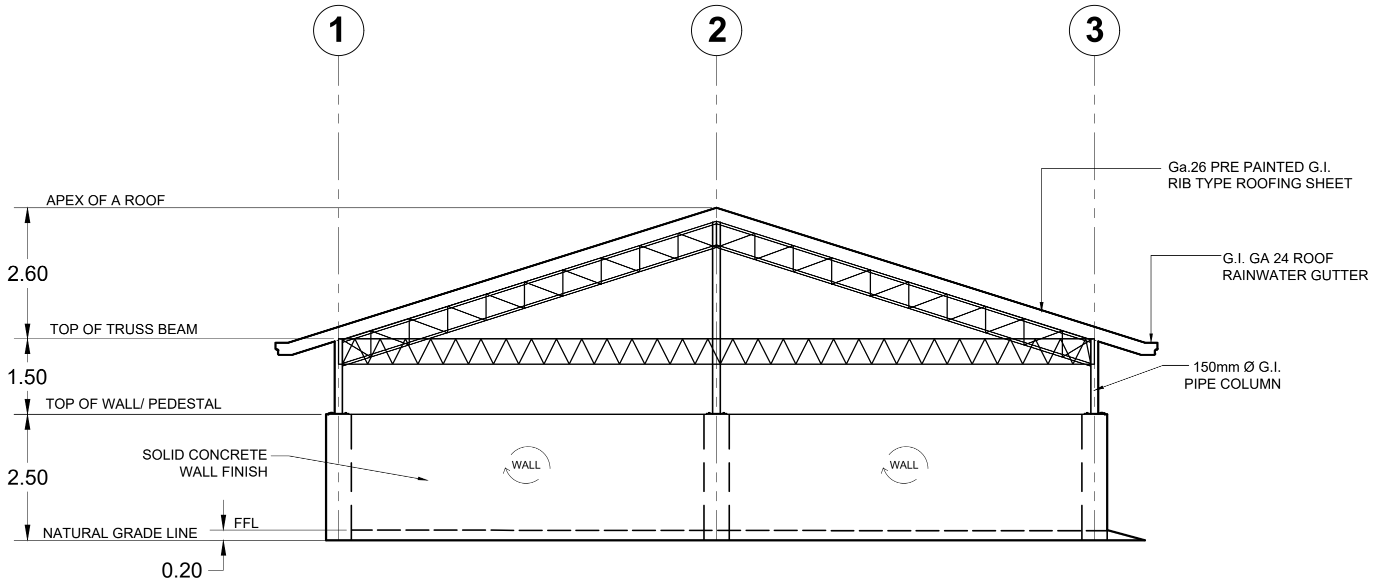
SCALE 1:150



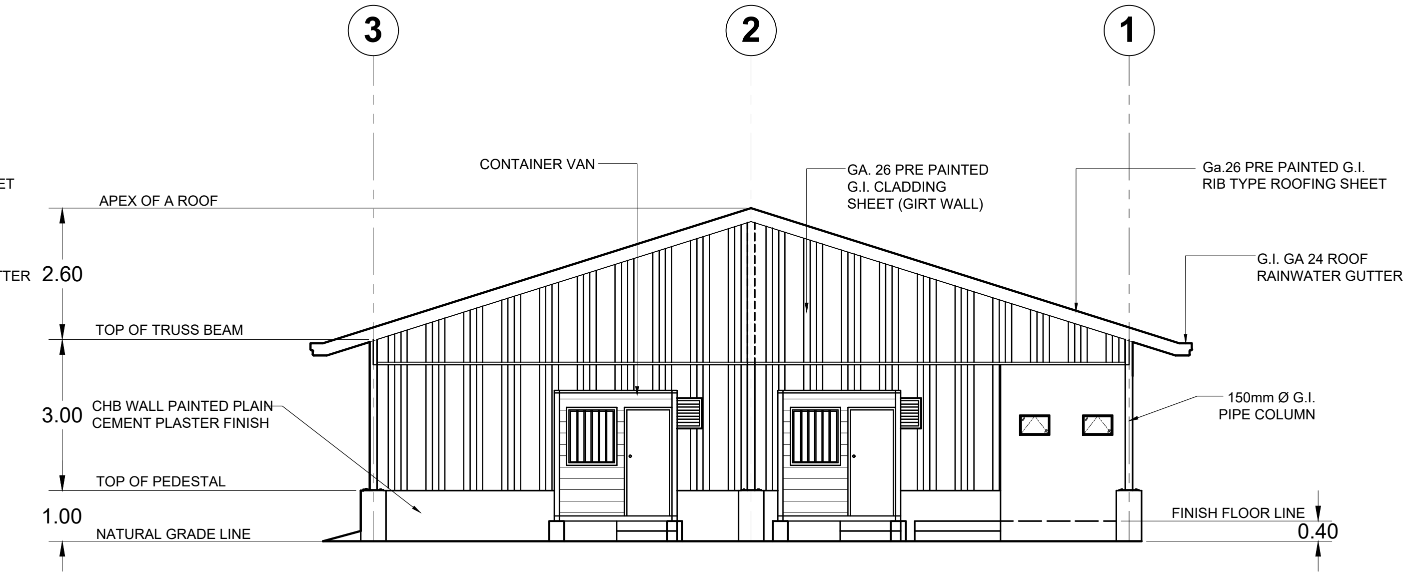

# REAR ELEVATION

SCALE 1:150

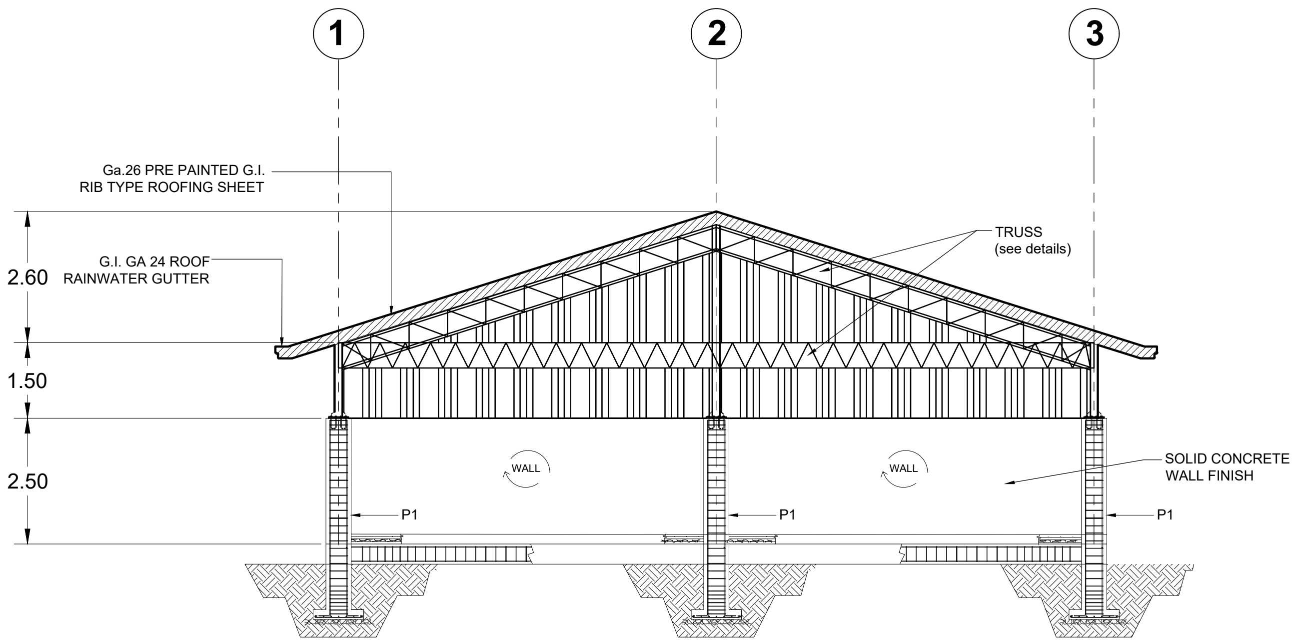
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL HEADQUARTERS & GENE POOL<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>ENGR. JEAN HAROLD F. REAMICO<br>ENGINEER I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER<br>PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED AND REVIEWED BY:<br>ENGR. CRIS Y. GUZON<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL<br>DR. ROVINA R. PIÑERA<br>CENTER CHIEF, PHILIPPINE CARABAO CENTER - CSU | PROJECT TITLE/LOCATION:<br>CONSTRUCTION OF BUNKER SILO, FEED STORAGE AND QUARTER'S SHED<br>PIAT, CAGAYAN | APPROVED BY<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR III, PHILIPPINE CARABAO CENTER | DRAFTED BY:<br>JHFR<br>REVISION: | SHEET CONTENTS:<br>AS SHOWN | SHEET No.<br>A-03<br>03 19 |



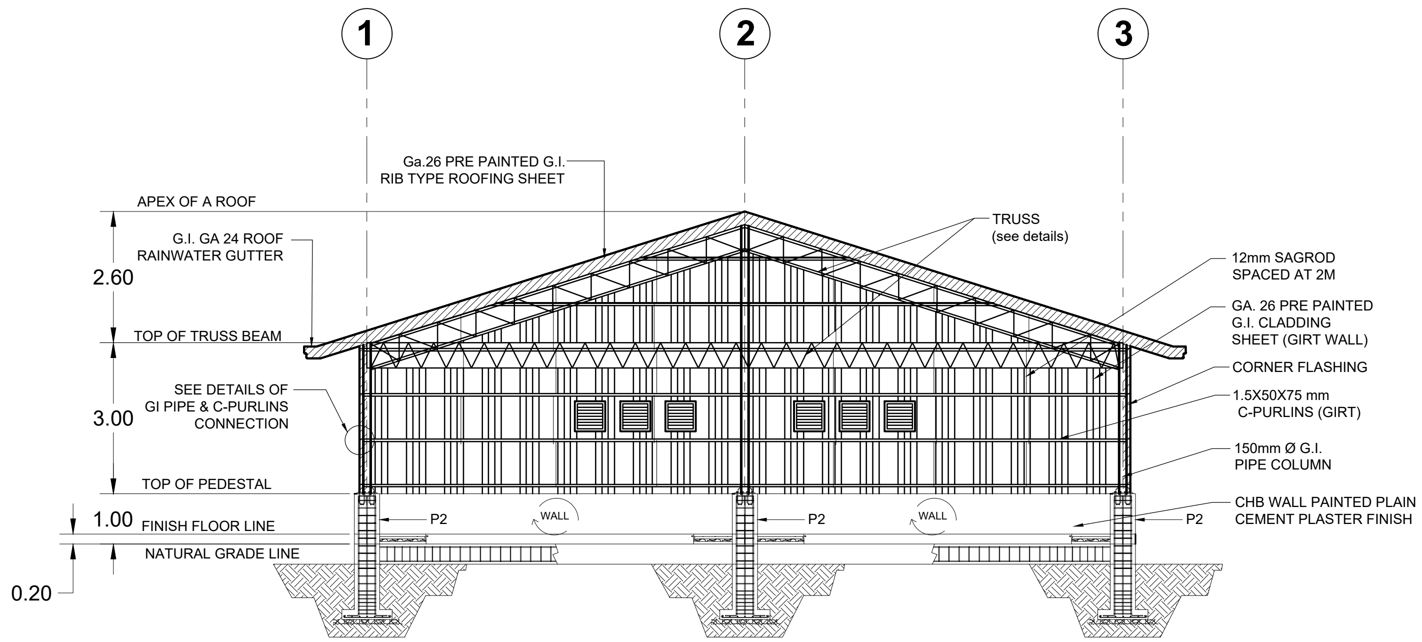

LEFT SIDE ELEVATION
SCALE 1:150




RIGHT SIDE ELEVATION
SCALE 1:150




CROSS SECTION THRU "B-b"
SCALE 1:150




CROSS SECTION THRU "C-c"
SCALE 1:150

| PHILIPPINE CARABAO CENTER<br>NATIONAL HEADQUARTERS & GENE POOL<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>ENGR. JEAN HAROLD F. REAMICO<br>ENGINEER I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED AND REVIEWED BY:<br>ENGR. CRIS Y. GUZON<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL<br>DR. ROVINA R. PIÑERA<br>CENTER CHIEF, PHILIPPINE CARABAO CENTER - CSU | PROJECT TITLE/LOCATION:<br>CONSTRUCTION OF BUNKER SILO, FEED STORAGE AND QUARTER'S SHED<br>PIAT, CAGAYAN | APPROVED BY<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR III, PHILIPPINE CARABAO CENTER | DRAFTED BY:<br>JHFR<br>REVISION: | SHEET CONTENTS:<br>AS SHOWN | SHEET No.<br>A-04<br>04 19 |
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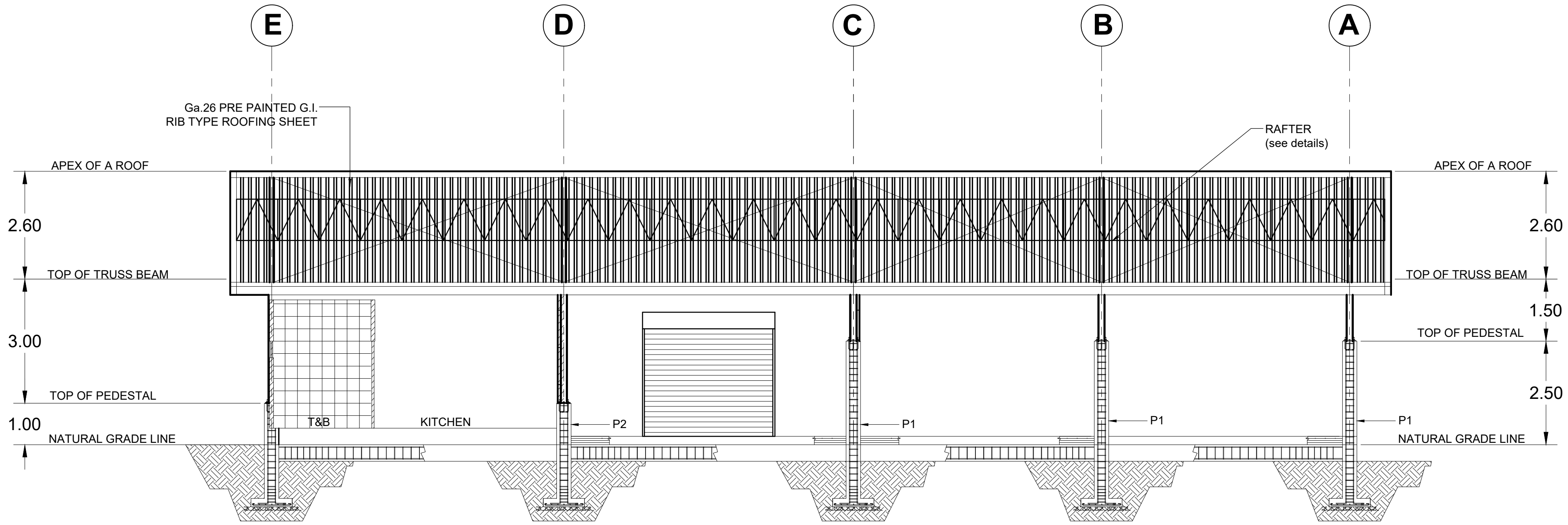


## CROSS SECTION THRU "1-1"

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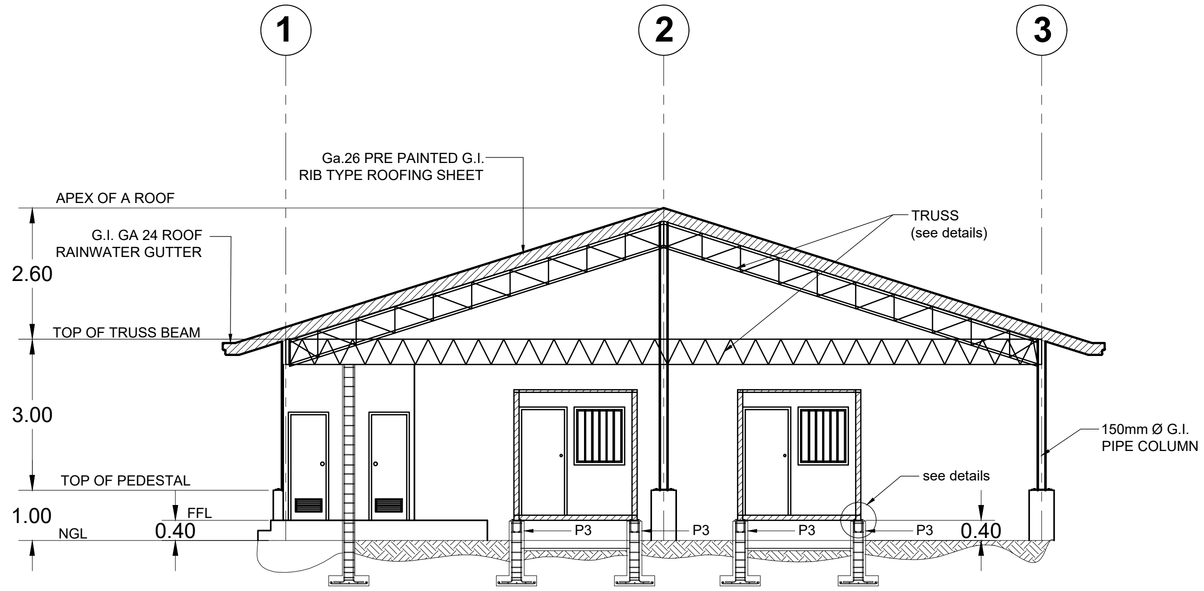


## CROSS SECTION THRU "D-d"

SCALE 1:150

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
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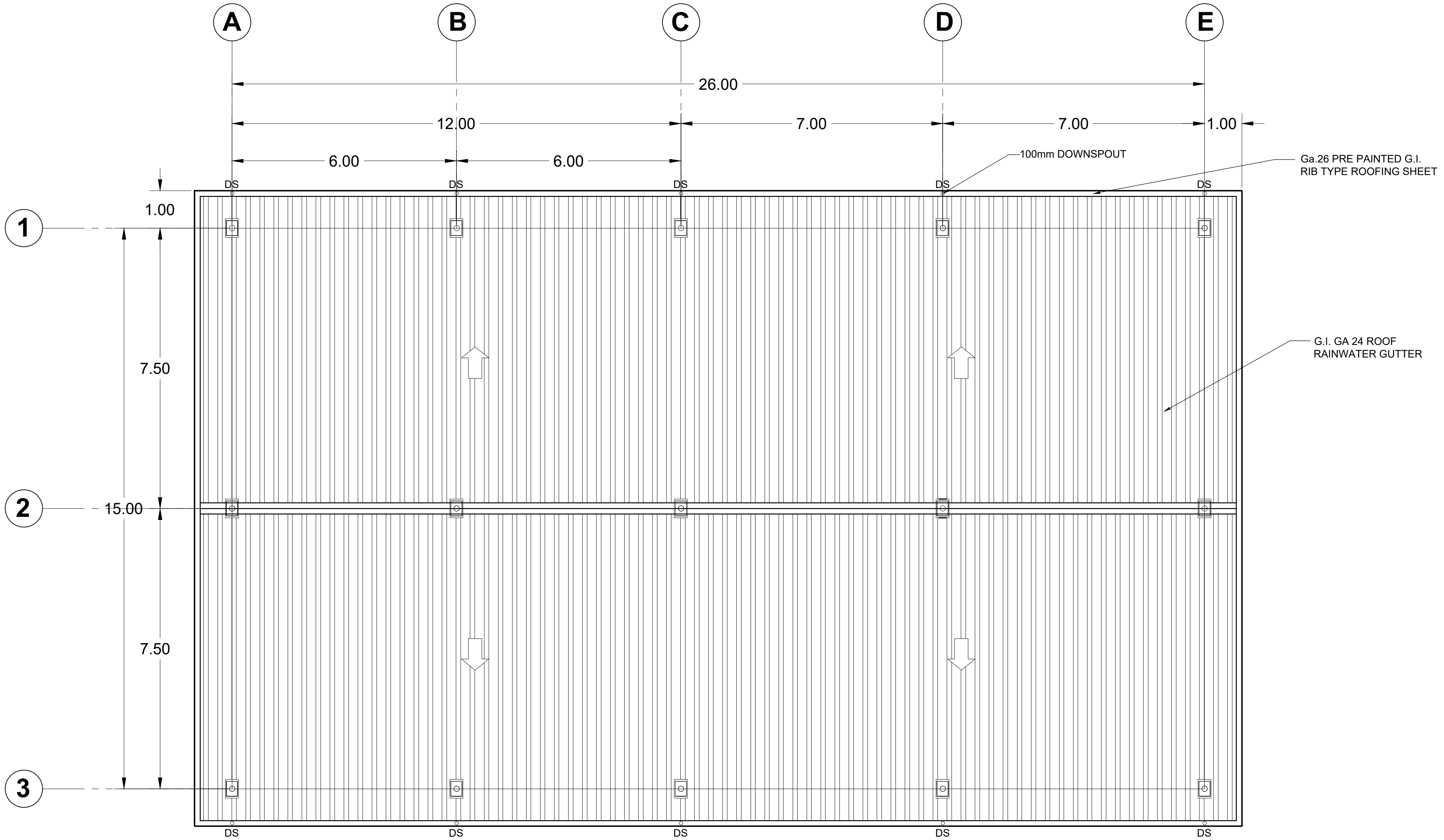


## ROOF PLAN

SCALE 1:150

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
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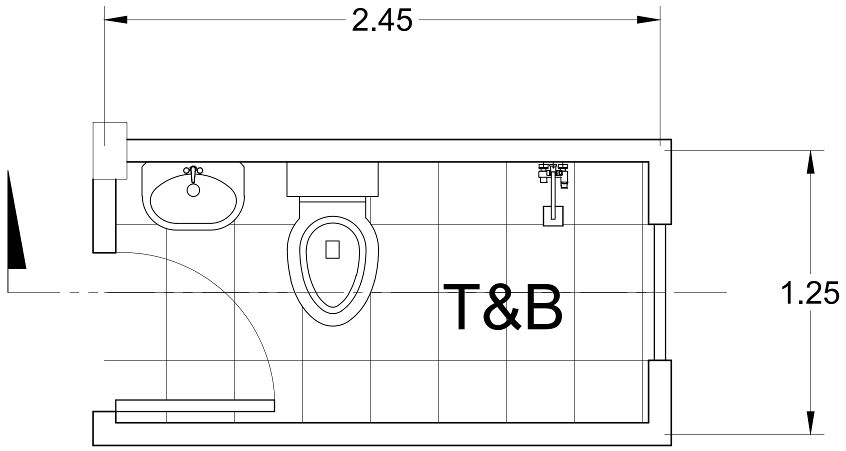
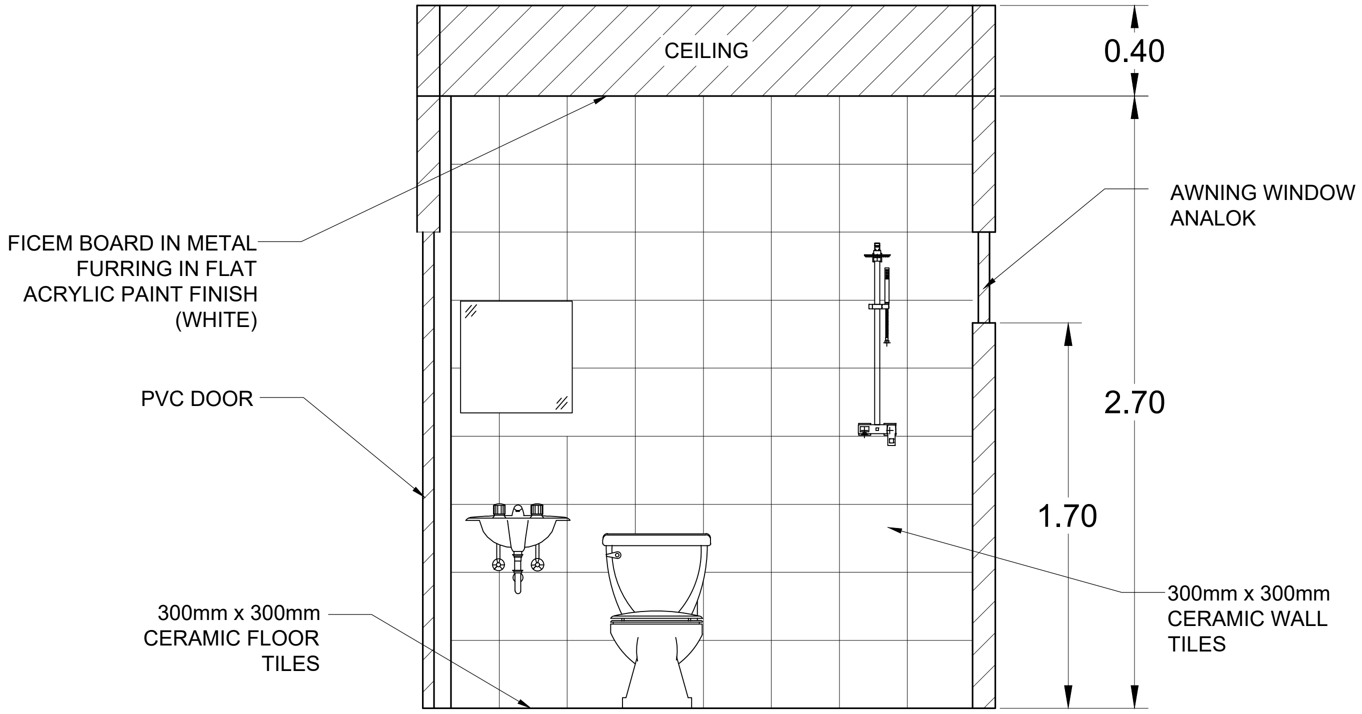
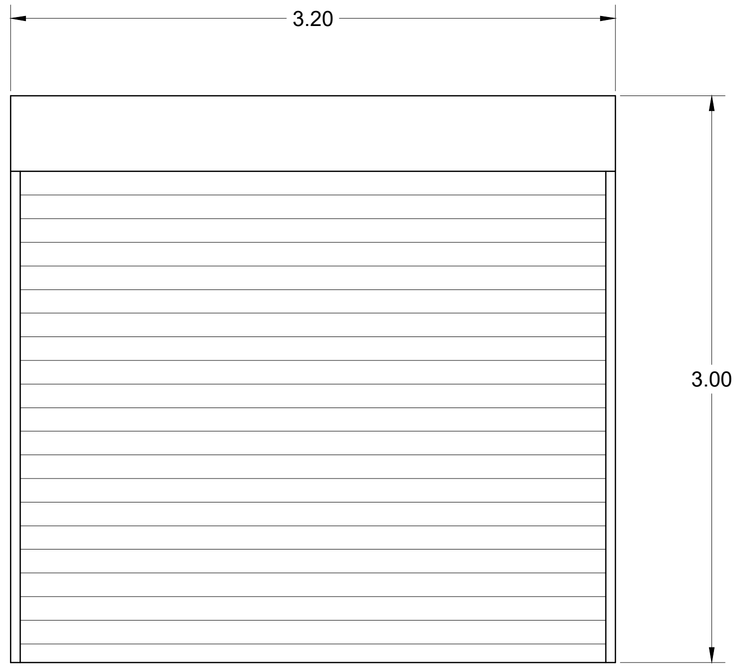



T&B PLAN AND SECTION

SCALE 1:300

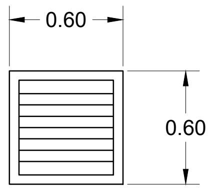



D-1

LOCATION: FEED STORAGE
DESCRIPTION: STANDARD ROLL UP DOOR
NO. OF SETS: 1 SET

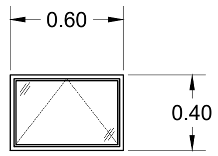

D-2

LOCATION: T&B
DESCRIPTION: PVC DOOR
NO. OF SETS: 2 SETS




W-1

LOCATION: FEED STORAGE
DESCRIPTION: FIXED LOUVERED STEEL WINDOW WITH SCREEN INSIDE
NO. OF SETS: 6 SETS




W-2

LOCATION: T&B
DESCRIPTION: AWNING WINDOW ANALOK
NO. OF SETS: 2 SETS

SCHED. OF DOORS & WINDOWS

SCALE NTS

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|---|---|---|---|---|---|---|---|---|
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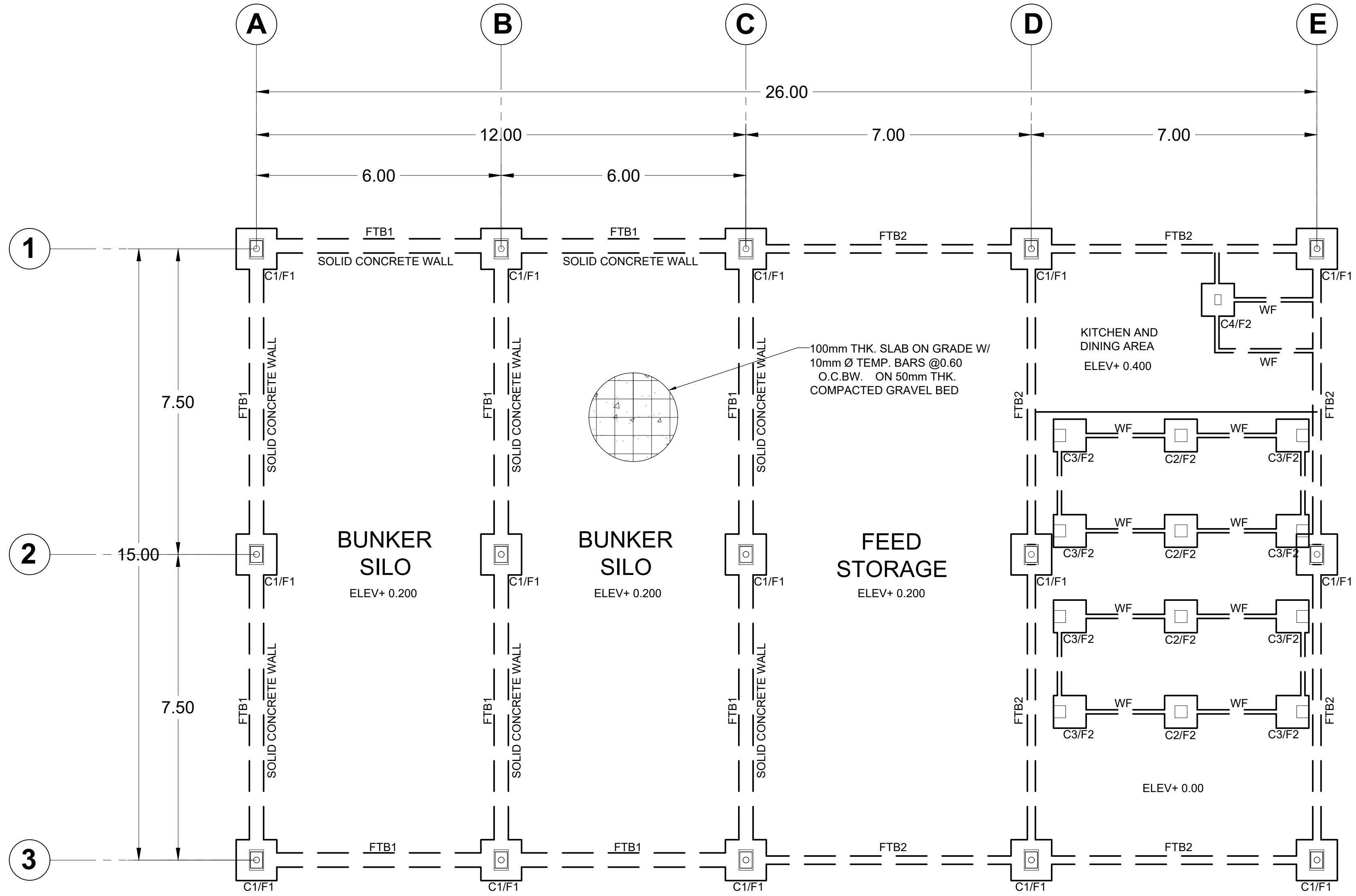


# FOUNDATION PLAN

SCALE 1:150

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
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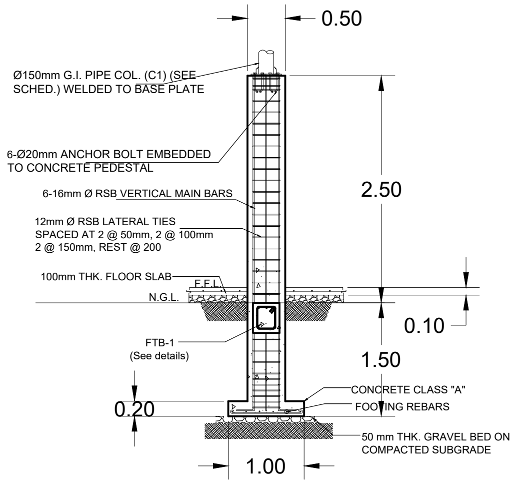
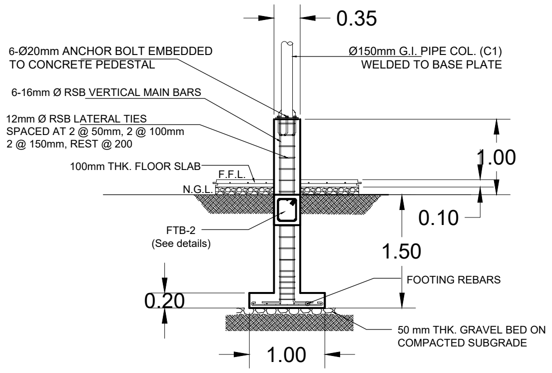
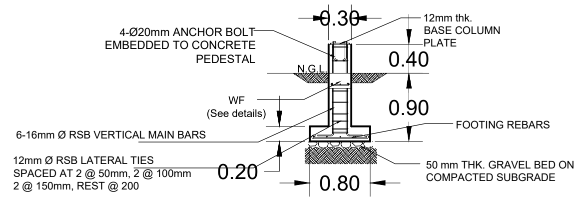



P1/C1



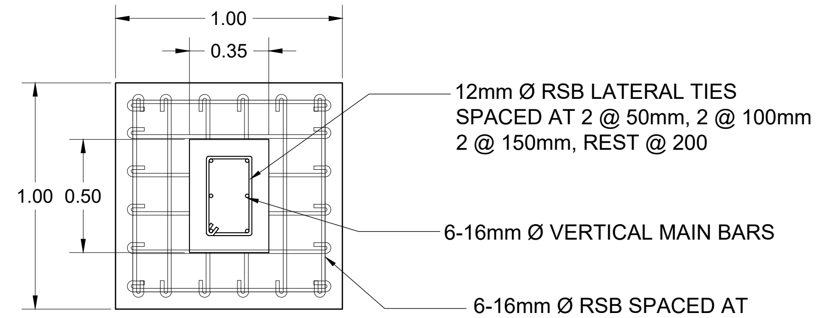

P2/C1



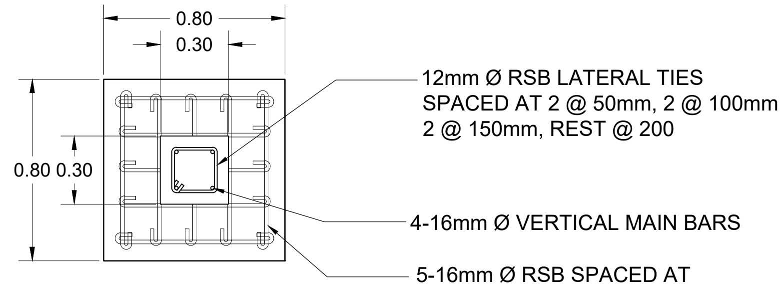

P3/C2

# SECTION OF PEDESTAL COLUMN

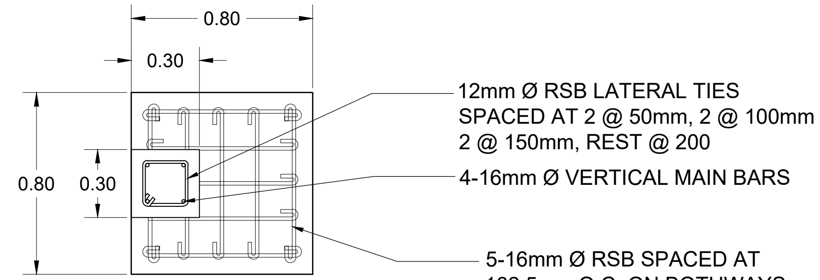
SCALE NTS



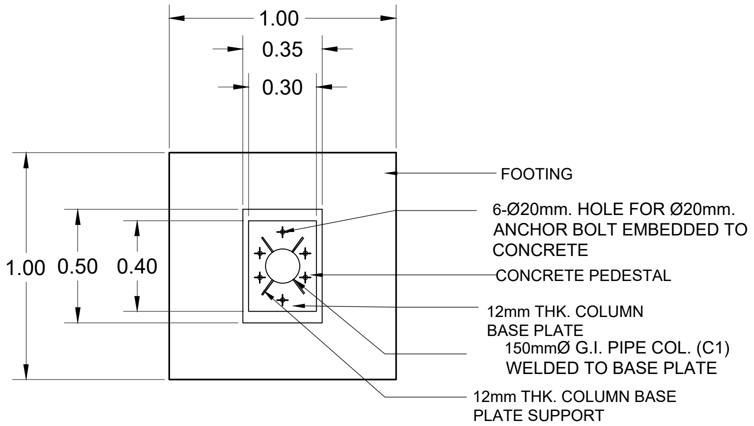

C1/F1

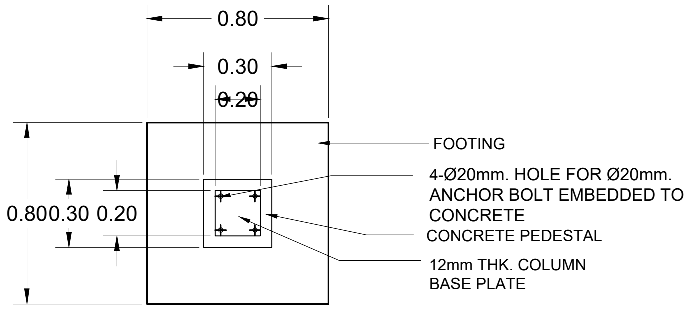


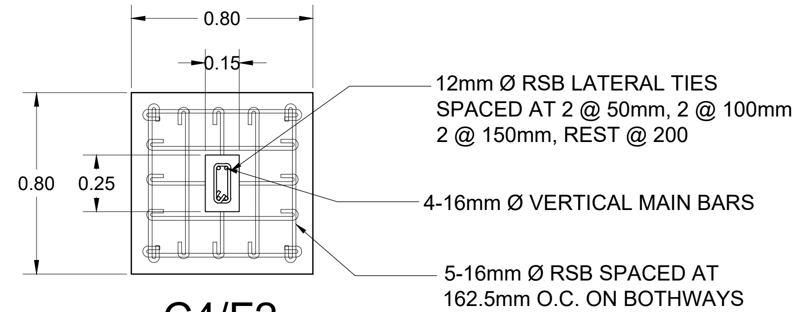

C2/F2




C3/F2




C4/F2

# PLAN & DETAIL OF BASE PLATE IN PEDESTAL

SCALE NTS

# PLAN & DETAIL OF FOOTING

SCALE NTS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
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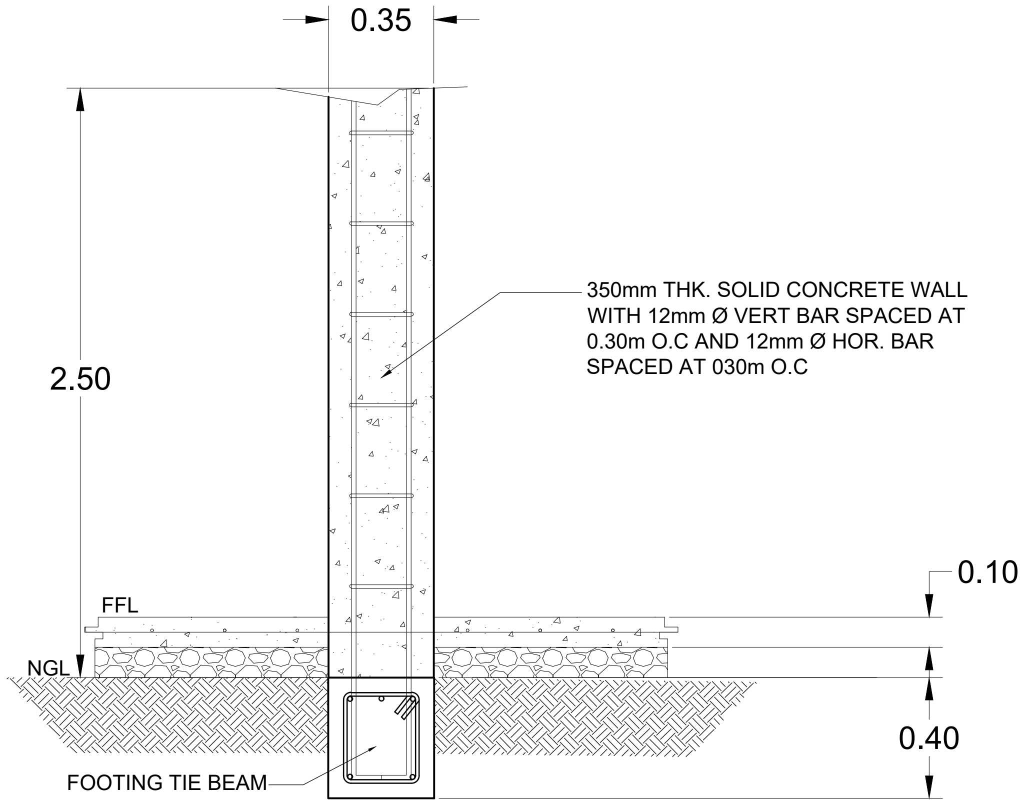
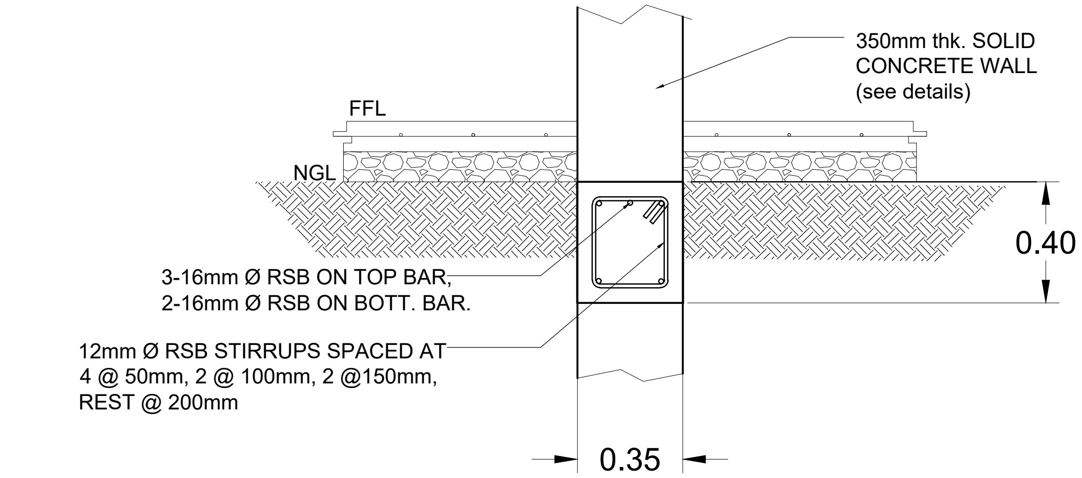



DETAIL OF SOLID CONCRETE WALL

SCALE NTS

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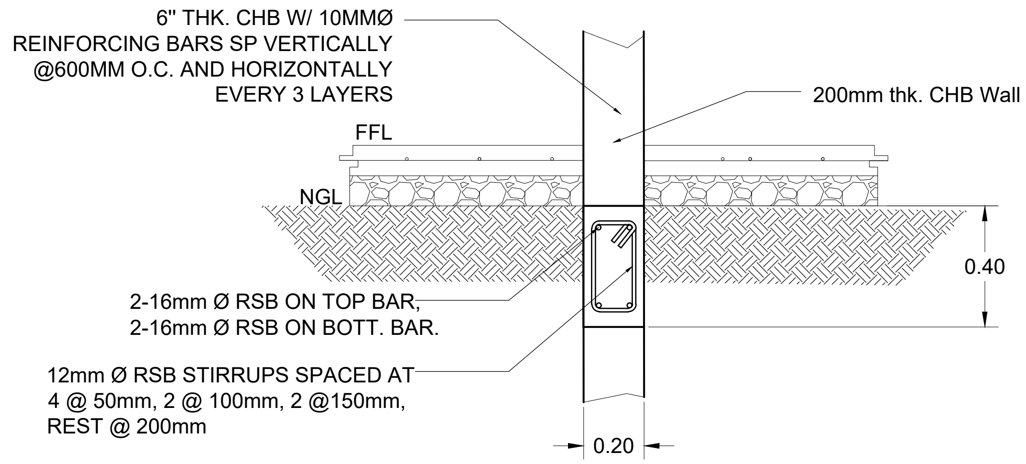


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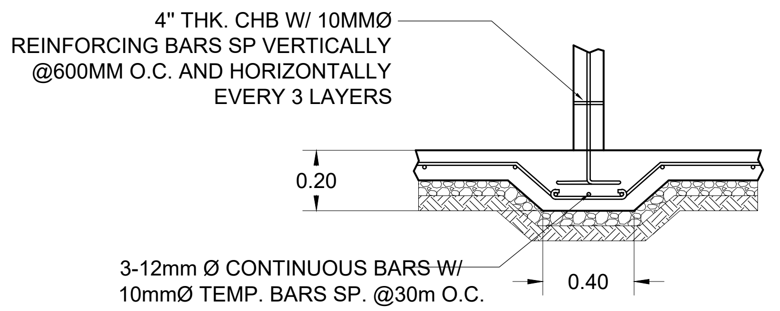


DETAIL OF FTB

SCALE NTS

DETAIL OF WALL FOOTING

SCALE NTS

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
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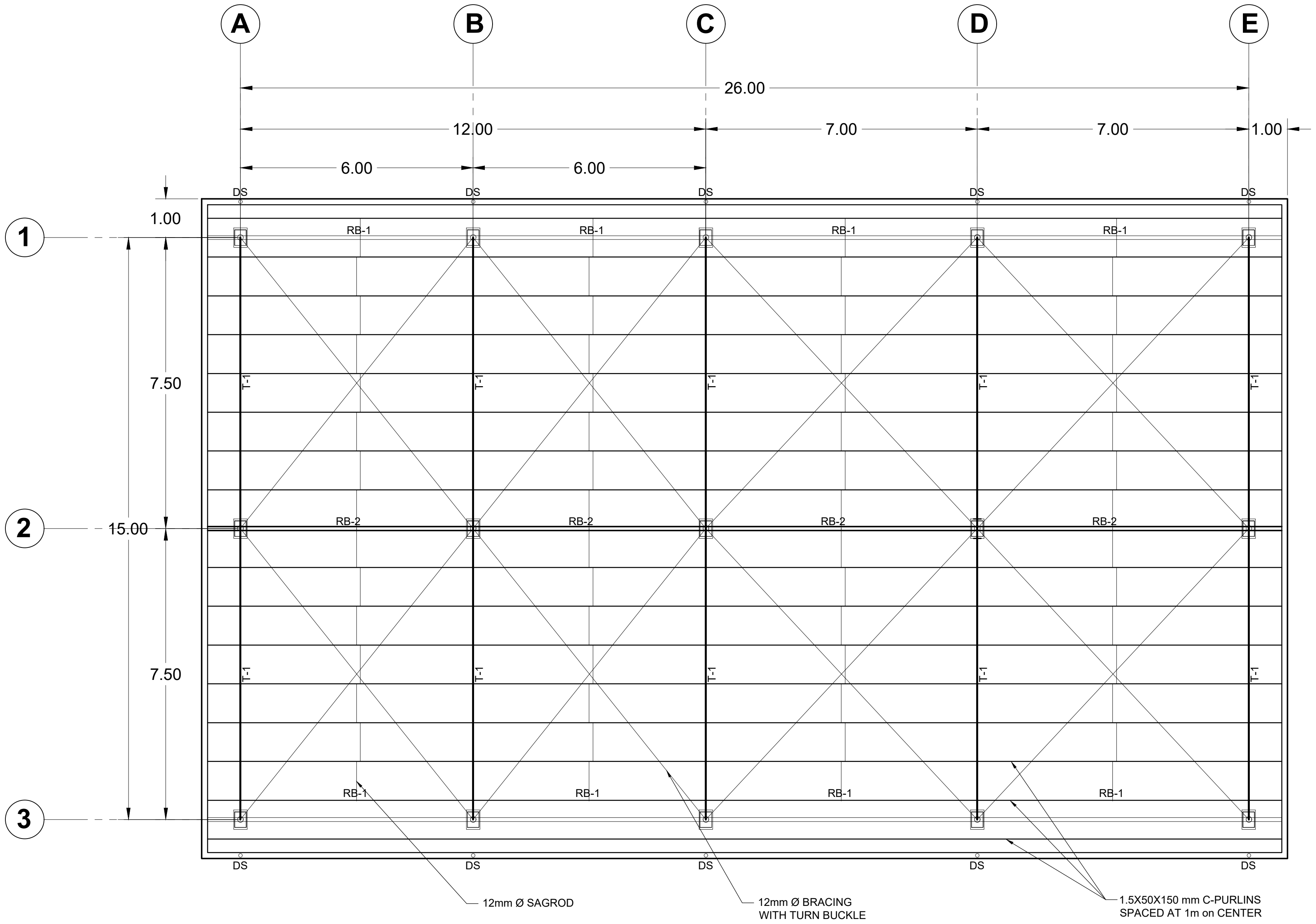
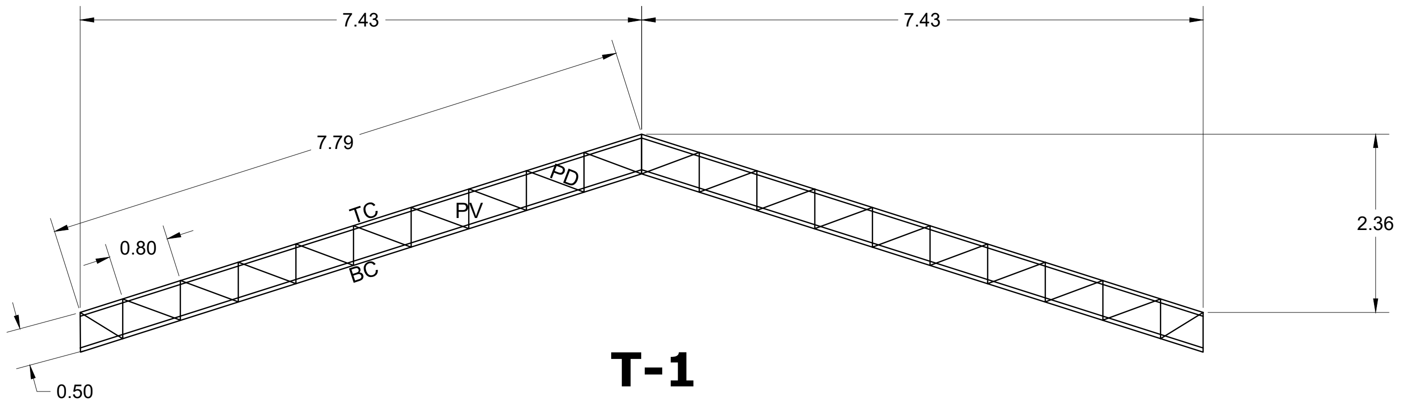



# ROOF FRAMING PLAN

SCALE 1:150

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL HEADQUARTERS & GENE POOL<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>ENGR. JEAN HAROLD F. REAMICO<br>ENGINEER I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED AND REVIEWED BY:<br>ENGR. CRIS Y. GUZON<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL<br>DR. ROVINA R. PIÑERA<br>CENTER CHIEF, PHILIPPINE CARABAO CENTER - CSU | PROJECT TITLE/LOCATION:<br>CONSTRUCTION OF BUNKER SILO, FEED STORAGE AND QUARTER'S SHED<br>PIAT, CAGAYAN | APPROVED BY<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR III, PHILIPPINE CARABAO CENTER | DRAFTED BY:<br>JHFR<br>REVISION: | SHEET CONTENTS:<br>AS SHOWN | SHEET No.<br>S-04<br>11 19 |

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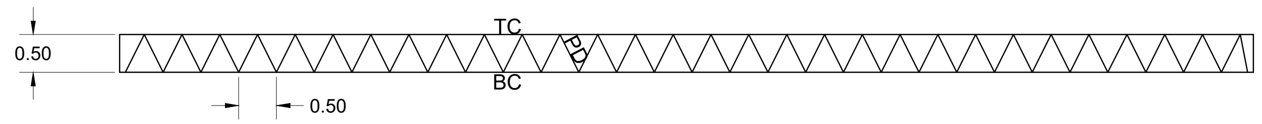


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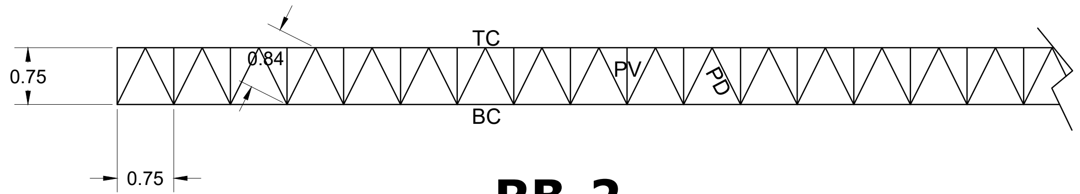


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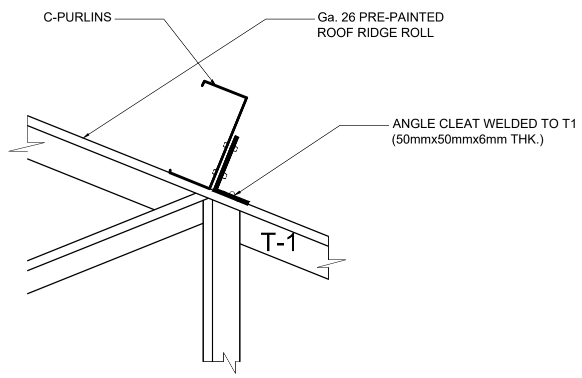
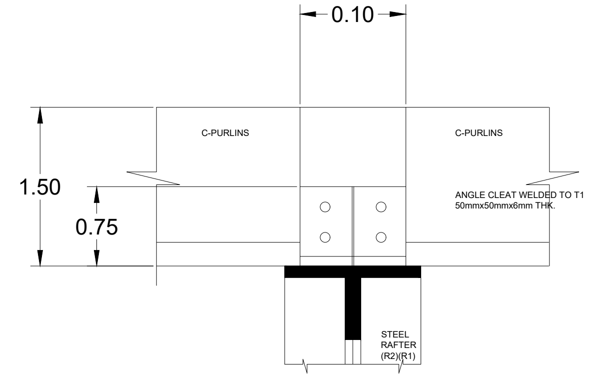


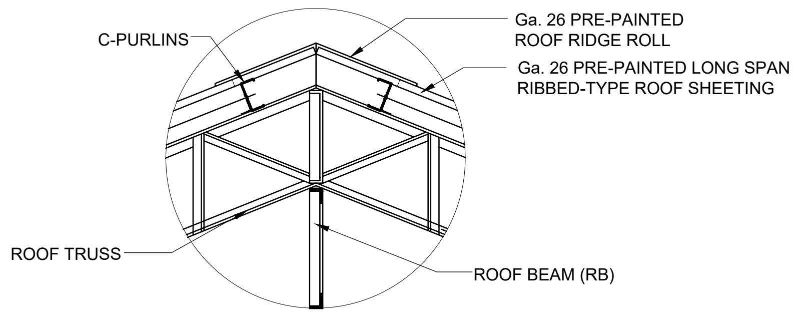

## SECT."X"

SCALE NTS



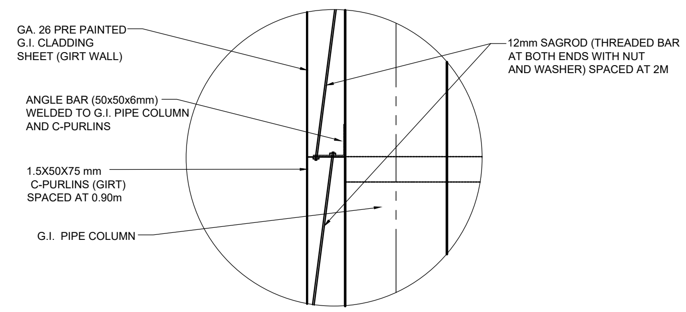

## SECT."Y"

SCALE NTS




## CONN. DET-2@ ROOF APEX

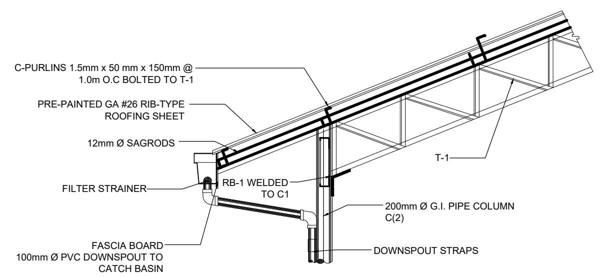
SCALE NTS




## CONNECTION DETAIL OF G.I PIPE COLUMN & C-PURLINS (GIRT)

SCALE NTS

| MARK | MEMBER SIZE in mm | | | |
|---|---|---|---|---|
| | TOP CHORD (TC) | BOTTOM CHORD (BC) | PRIMARY DIAGONAL (PD) | PRIMARY VERTICAL (PV) |
| T-1 | 2-<6 x 50 x 50 | 2-<6 x 50 x 50 | 2-<3 x 32 x 32 | 2-<3 x 32 x 32 |
| RB-1 | 2-<3 x 50 x 50 | 2-<3 x 50 x 50 | 2-<3 x 32 x 32 | 2-<3 x 32 x 32 |
| RB-2 | 2-<3 x 50 x 50 | 2-<3 x 50 x 50 | 2-<3 x 32 x 32 | 2-<3 x 32 x 32 |




## TRUSS DIAGRAM

SCALE NTS

## TYP. TRUSS BEAM CONNECTION DETAIL

SCALE NTS

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| PHILIPPINE CARABAO CENTER<br>NATIONAL HEADQUARTERS & GENE POOL<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>ENGR. JEAN HAROLD F. REAMICO<br>ENGINEER I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER<br>PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED AND REVIEWED BY:<br>ENGR. CRIS Y. GUZON<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL<br>DR. ROVINA R. PIÑERA<br>CENTER CHIEF, PHILIPPINE CARABAO CENTER - CSU | PROJECT TITLE/LOCATION:<br>CONSTRUCTION OF BUNKER SILO, FEED STORAGE AND QUARTER'S SHED<br>PIAT, CAGAYAN | APPROVED BY<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR III, PHILIPPINE CARABAO CENTER | DRAFTED BY: JHFR<br>REVISION: | SHEET CONTENTS: AS SHOWN | SHEET No. S-05<br>12 19 |

# CONSTRUCTION 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 | 3500 PSI | 1 IN. (25MM.) | 4 IN. (100MM.) |
| FOUNDATION | 4000 PSI | 1 IN. (25MM.) | 4 IN. (100MM.) |
| COLUMN | 4000 PSI | 1 IN. (25MM.) | 4 IN. (100MM.) |
| BEAMS & SLABS | 4000 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:

   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

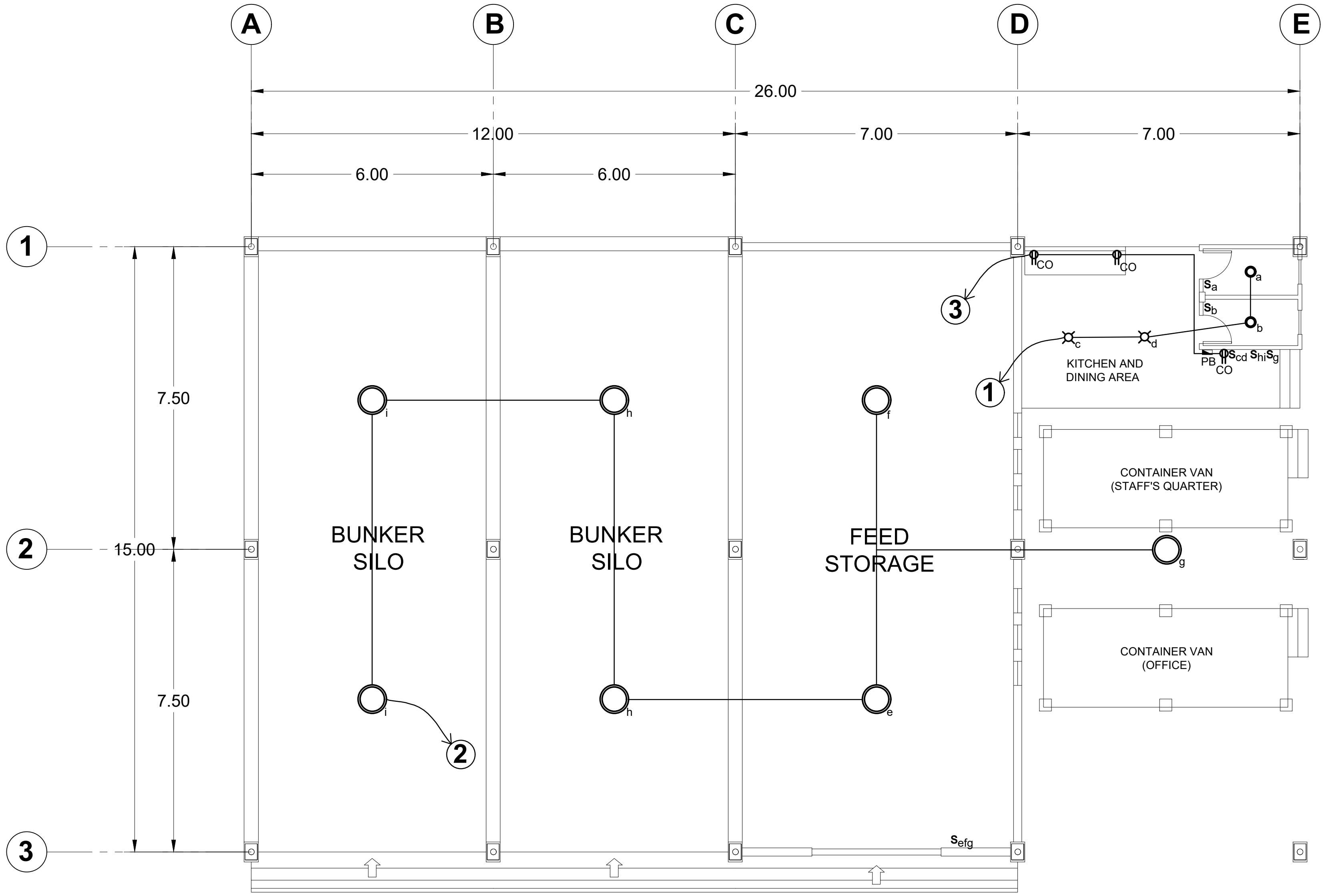
| | |
|---|---|
| 10mm DIAMETER TO 25mm DIAMETER | 6 DIA. |
| 28mm DIAMETER TO 26mm DIAMETER | 8 DIA. |
| NO. 14 TO NO. 18 | 10 DIA. |

## 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 |




# POWER AND LIGHTING LAYOUT

SCALE 1:150

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL HEADQUARTERS & GENE POOL<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED AND REVIEWED BY:<br>ENGR. CRIS Y. GUZON<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL<br>DR. ROVINA R. PIÑERA<br>CENTER CHIEF, PHILIPPINE CARABAO CENTER - CSU | PROJECT TITLE/LOCATION:<br>CONSTRUCTION OF BUNKER SILO, FEED STORAGE AND QUARTER'S SHED<br>PIAT, CAGAYAN | APPROVED BY<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR III, PHILIPPINE CARABAO CENTER | DRAFTED BY:<br>JHFR<br>REVISION: | SHEET CONTENTS:<br>AS SHOWN | SHEET No.<br>E-01<br>14 19 |

# SCHEDULE OF LOADS

| PANEL BOARD (PB) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CIRCUIT NO. | LOAD DESCRIPTION | NO. OF OUTLET | RATED VOLTAGE | WATTS | RATED AMP. | CIRCUIT BREAKER | | | | CABLE SIZE PH+G (mm^2) | CONDUIT SIZE (mm Ø) PVC |
| | | | | | | POLE | AT | AF | KAIC | | |
| 1 | LIGHTING OUTLET (13 Watts) | 4 | 220 | 52 | 0.24 | 2 | 15 | 50 | 10 | (2) 3.5mm^2 THHN + 2.0 mm^2 THHN (G) | 20 |
| 2 | LIGHTING OUTLET (150 Watts) | 7 | 220 | 1050 | 4.77 | 2 | 15 | 50 | 10 | (2) 3.5mm^2 THHN + 2.0 mm^2 THHN (G) | 20 |
| 3 | DUPLEX CONVENIENCE OUTLET | 3 | 220 | 540 | 2.45 | 2 | 20 | 50 | 10 | (2) 3.5mm^2 THHN + 2.0 mm^2 THHN (G) | 20 |
| 4 | SPARE | | 220 | | | 2 | 20 | 50 | 10 | (2) 3.5mm^2 THHN + 2.0 mm^2 THHN (G) | 20 |
| | | | | 1642 | 7.46 | | | | | | |

**LOAD CALCULATION:**

TOTAL CURRENT ($I_T$)

$I_{MDL}$ = (1,642 x 80%)/ 220 = 5.97 Amp

**FOR MAIN CB:**

$CB_{MAIN}$ = Total Current x 1.25

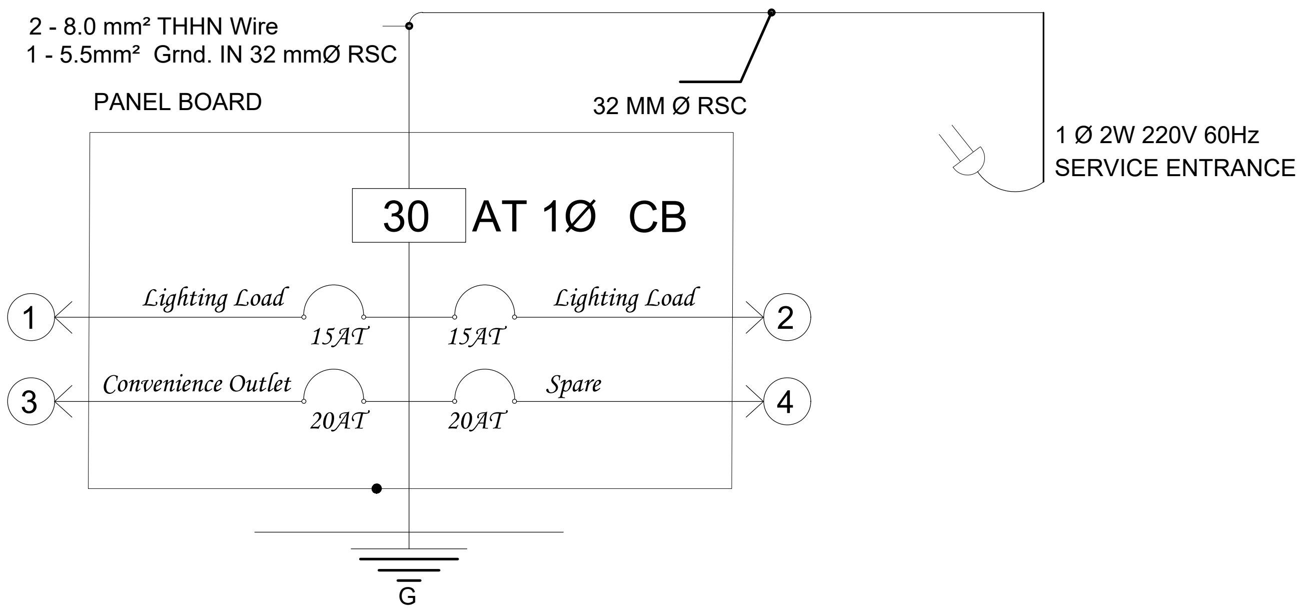
$CB_{MAIN}$ = 5.97 x 1.25 = 7.46 Amp

**FEEDER SIZE:**

USE: 2-8.0 mm^2 THHN CABLES
1-5.5 mm^2 (FOR GROUNDING) WIRE IN 32mmØ RSC

**PROTECTION:**

MAIN: 30 AT/30 AF - 2 - POLE, 220-VOLT




# RISER DIAGRAM

# LEGEND & SYMBOL

- CONVENIENCE OUTLET (W.P)
- CEILING PIN LIGHT 13 WATTS
- LED BULB 13 WATTS
- INDUSTRIAL LED LIGHT 150 WATTS
- PANEL BOARD
- Sgh - TWO GANG SWITCH
- Sabc - THREE GANG SWITCH
- CIRCUIT RUN ( LIGHTING)
- SWITCH RUN
- CIRCUIT RUN (CONVENIENCE OUTLET)
- Circuit Breaker
- Service Entrance
- C1 - Circuit Homerun
- Conduit Run, concealed or embedded

# GENERAL NOTES

1. ALL WORKS HEREIN SHALL COMPLY WITH THE LATEST PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE NATIONAL ELECTRIC CODES WITH THE RULES AND REGULATION OF THE NATIONAL ELECTRICAL CODES WITH THE RULES AND REGULATION OF THE NATIONAL AND LOCAL AUTHORITIES CONCERNED IN THE ENFOCEMENT OF THE ELECTRICAL LAWS AND ORDINANCES AND WITH THE RULES AND REGULATION OF THE POWER COMPANY.

2. ALL WORKS HEREIN UNDER THE DIRECT AND IMMEDIATE SUPERVISION OF A DULY QUALIFIED AND COMPETENT LICENSED ELECTRICAL ENGINEER.

3. ALL MATERIALS AND EQUIPMENTS SHALL BE NEW AND APPROVED TYPE FOR THE LOCATION AND PURPOSES

4. THE SERVICE ENTRANCE SHALL BE TWO PHASE, THREE WIRES 23O VOLTS,60 Hz AND STANDARD

5. WHENEVER REQUIRED AND NECESSARY PULL AND JUNCTION BOXES GAUGE No. SHALL BE INSTALLED AT CONVENIENT SPACE AND LOCATION.

6. ALL CONVENIENCE OUTLETS, TWO WIRED PARALLEL SLOT AND LIGHTING SWITCHES SHALL BE RATED 10A 250A AND 16A 300V.

7. THE MINIMUM SIZE OF WIRES AND CONDUIT SHALL BE 3.5 MM2 IN THHN AND 15Ø RESPECTIVELY, FEEDER TO LOAD SCHEDULE FOR OTHER WIRE SIZES AND TYPES OF INSULATION.

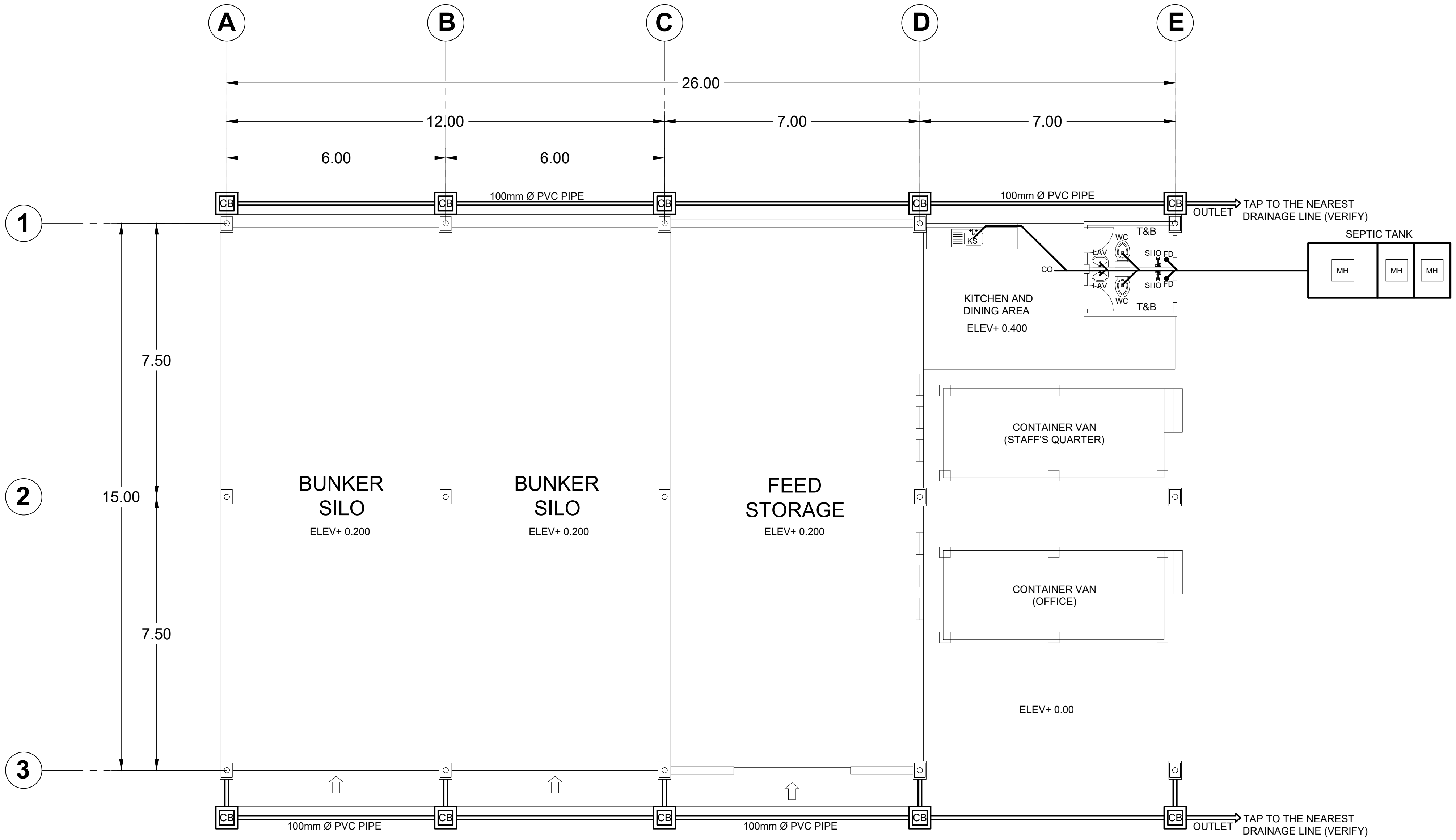
8. ALL PANEL BOARDS SHALL BE BREAKER TYPE ENCLOSED IN A METAL CABINET, ALL MAIN AND MOTOR PANEL SHALL BE BOLT-ON TYPE. LIGHTING PANEL SHALL BE BOLT-ON TYPE.

9. FOR EACH SPARE BRANCH CIRCUIT IN PANEL BOARDS, PROVIDE ONE (1) 15mm Ø EMPTY CONDUIT CONNECTED TO AN OCTAGONAL BOX AT ABOVE CEILING.

10. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF THE SERVICE ENTRANCE FOR THE CONNECTION OF POWER SUPPLY.

11. ALL MOUNTED HEIGHT SHALL BE AS FOLLOWS:
   A. LIGHTING SWITCHES - 1.40 m ABOVE THE FLOOR FINISH
   B. CONVENIENCE OUTLETS - 0.30m ABOVE FLOOR FINISH
   C. PANEL BOARDS, FACP AND CABINETS - 1.80 ABOVE THE FLOOR FINISH
   D. SPECIAL OUTLETS - AS PER INSTRUCTION OF THE OWNER

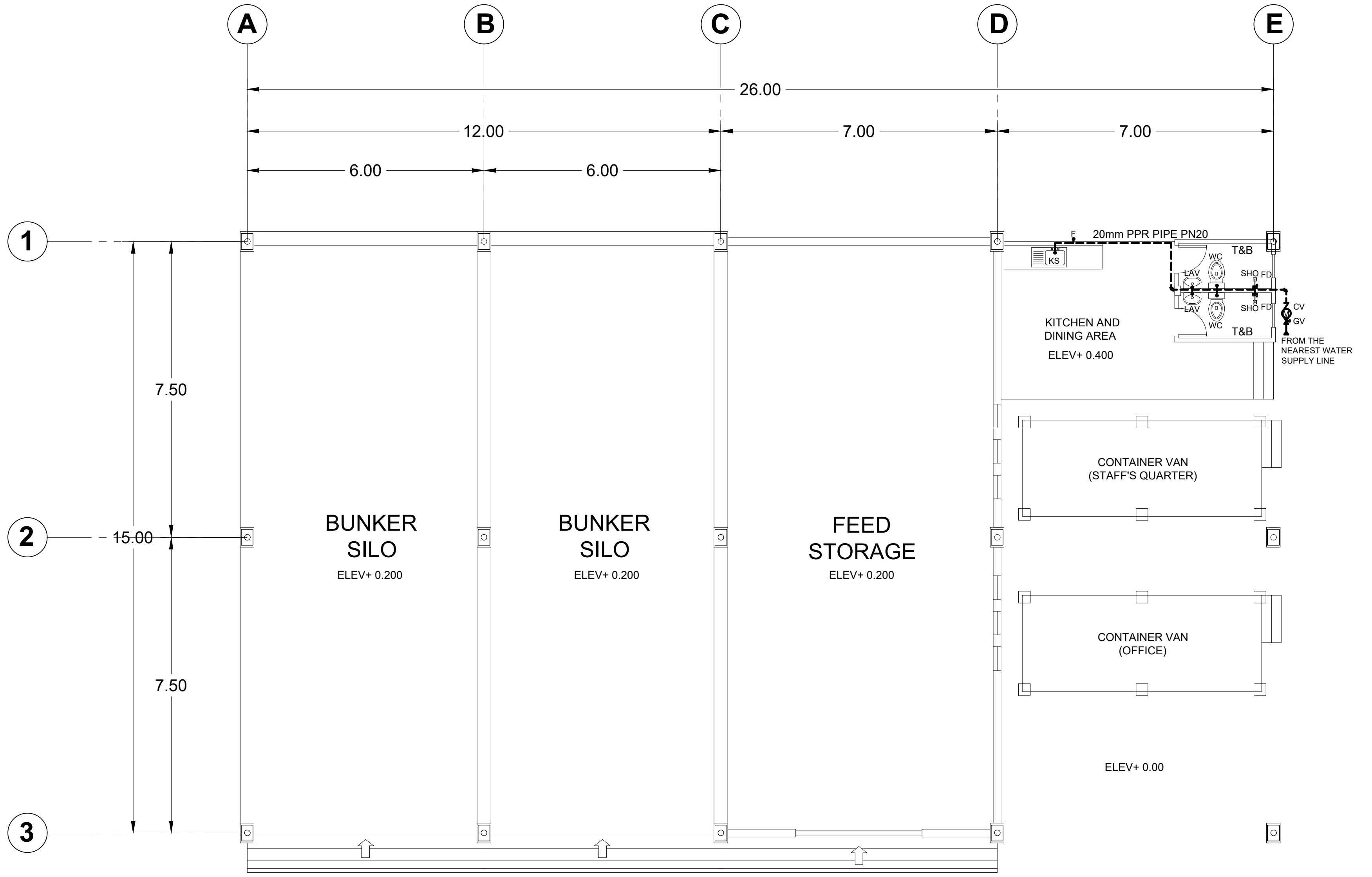
12. ALL METAL HOUSING OF BOXES CONDUITS AND PANELBOARDS SHALL BE PROPERLY CONNECTED TO THE GROUNDING SYSTEM OF THE BUILDING.




# SANITARY LINE LAYOUT & STORM DRAINAGE

SCALE 1:150

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL HEADQUARTERS & GENE POOL<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>ENGR. JEAN HAROLD F. REAMICO<br>ENGINEER I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED AND REVIEWED BY:<br>ENGR. CRIS Y. GUZON<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL<br>DR. ROVINA R. PIÑERA<br>CENTER CHIEF, PHILIPPINE CARABAO CENTER - CSU | PROJECT TITLE/LOCATION:<br>CONSTRUCTION OF BUNKER SILO, FEED STORAGE AND QUARTER'S SHED<br>PIAT, CAGAYAN | APPROVED BY<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR III, PHILIPPINE CARABAO CENTER | DRAFTED BY: JHFR<br>REVISION: | SHEET CONTENTS: AS SHOWN | SHEET No.<br>P-01<br>16 19 |




## COLD WATER LINE LAYOUT

SCALE 1:150

| | PREPARED BY: | | CHECKED AND REVIEWED BY: | RECOMMENDING APPROVAL | PROJECT TITLE/LOCATION: | APPROVED BY |
|---|---|---|---|---|---|---|
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL HEADQUARTERS & GENE POOL<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | ENGR. JEAN HAROLD F. REAMICO<br>ENGINEER I, LIVESTOCK ENGINEERING SECTION,<br>PHILIPPINE CARABAO CENTER | PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | ENGR. CRIS Y. GUZON<br>HEAD, LIVESTOCK ENGINEERING SECTION,<br>PHILIPPINE CARABAO CENTER | DR. ROVINA R. PIÑERA<br>CENTER CHIEF,<br>PHILIPPINE CARABAO CENTER - CSU | CONSTRUCTION OF BUNKER SILO,<br>FEED STORAGE AND QUARTER'S SHED<br>PIAT, CAGAYAN | DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR III,<br>PHILIPPINE CARABAO CENTER |

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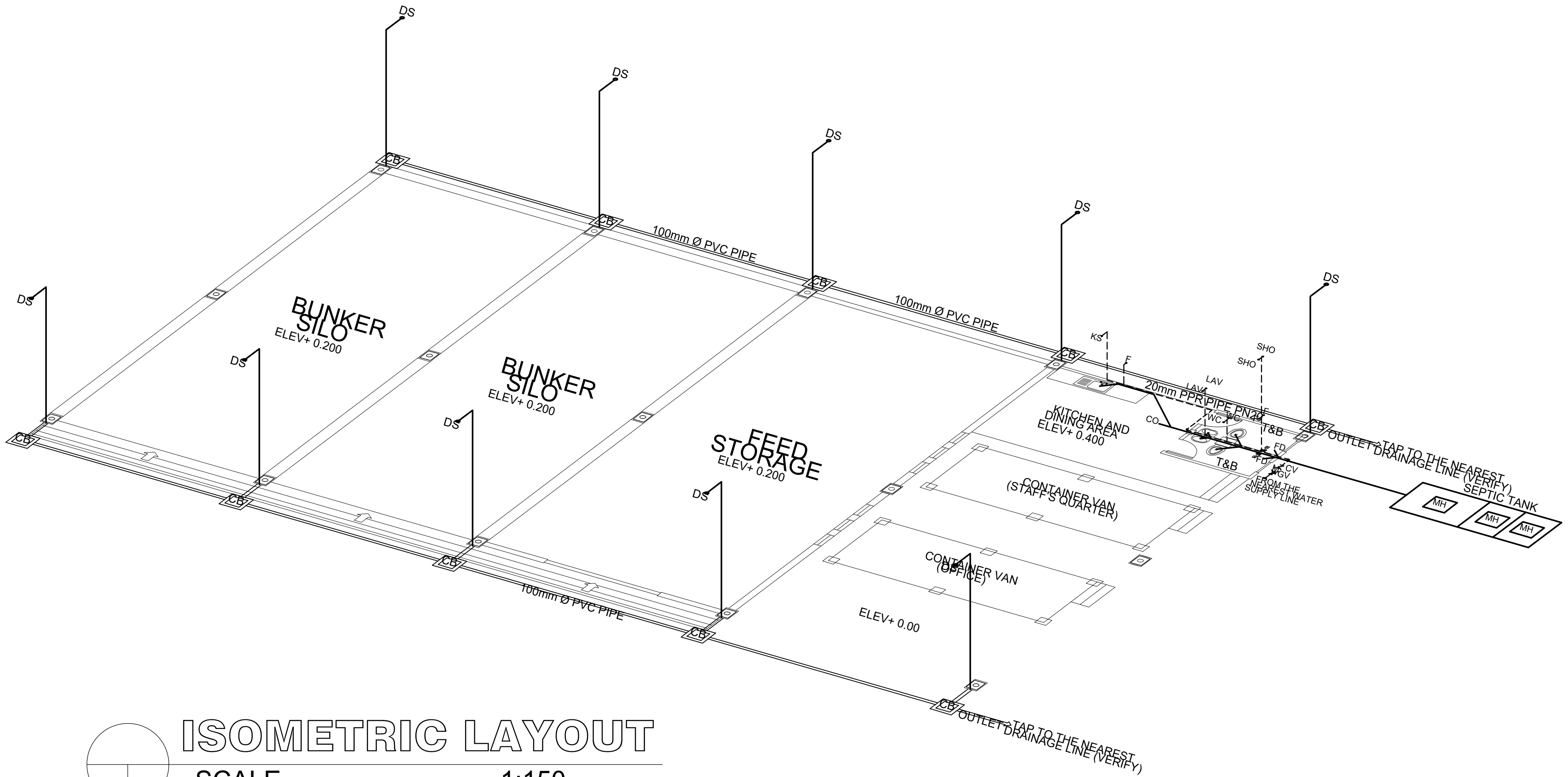
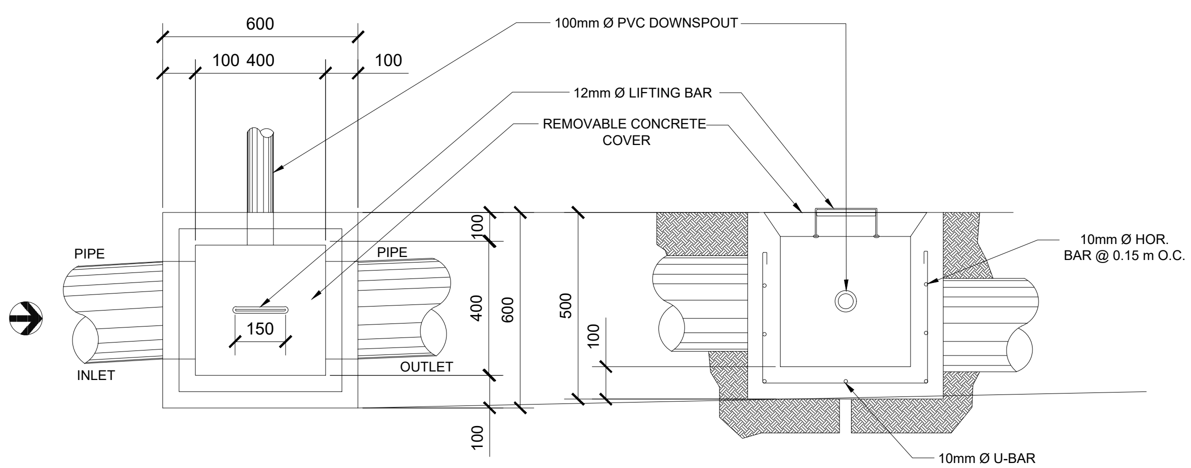



# ISOMETRIC LAYOUT

SCALE 1:150

# LEGEND & SYMBOL

| | |
|---|---|
| - - - - - - - | COLD WATER LINE |
| ——————— | SANITARY LINE |
| DS | DOWNSPOUT |
| LAV | LAVATORY |
| F | WATER FAUCET |
| SHO | SHOWER HEAD |
| KS | KITCHEN SINK |
| WC | WATER CLOSET |
| FD | FLOOR DRAIN |
| CO | CLEAN OUT |
| CB | CATCH BASIN |
| M | WATER METER |
| | DRAINAGE FLOW DIRECTION |
| | CHECK VALVE |
| | GATE VALVE |




# DETAIL OF CATCH BASIN

SCALE NTS

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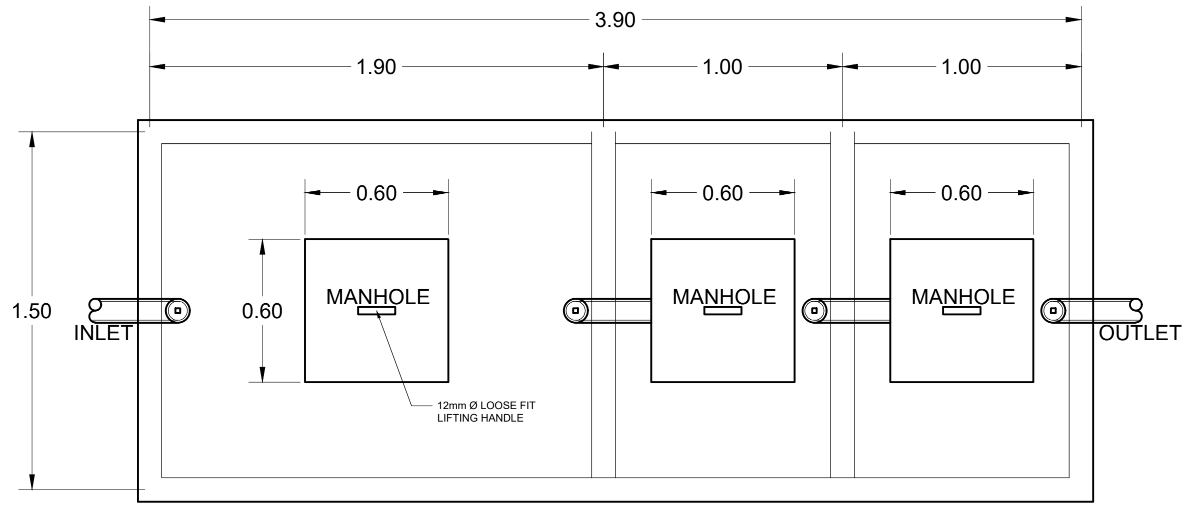
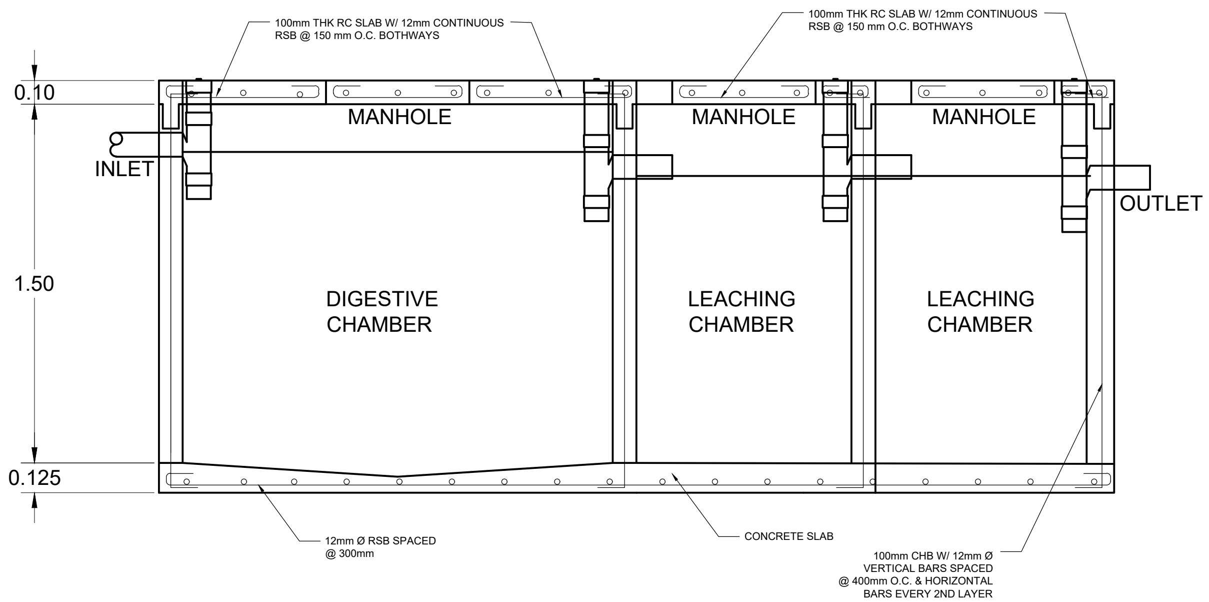
| **PHILIPPINE CARABAO CENTER**<br>NATIONAL HEADQUARTERS & GENE POOL<br>CLSU Cpd., Science City of Munoz, Nueva Ecija | PREPARED BY:<br>ENGR. JEAN HAROLD F. REAMICO<br>ENGINEER I, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | PRC ID:<br>PTR NO:<br>ISSUED ON:<br>ISSUED AT: | CHECKED AND REVIEWED BY:<br>ENGR. CRIS Y. GUZON<br>HEAD, LIVESTOCK ENGINEERING SECTION, PHILIPPINE CARABAO CENTER | RECOMMENDING APPROVAL<br>DR. ROVINA R. PIÑERA<br>CENTER CHIEF, PHILIPPINE CARABAO CENTER - CSU | PROJECT TITLE/LOCATION:<br>CONSTRUCTION OF BUNKER SILO, FEED STORAGE AND QUARTER'S SHED<br>PIAT, CAGAYAN | APPROVED BY<br>DR. LIZA G. BATTAD<br>EXECUTIVE DIRECTOR III, PHILIPPINE CARABAO CENTER | DRAFTED BY:<br>JHFR<br>REVISION: | SHEET CONTENTS:<br>AS SHOWN | SHEET No.<br>P-03<br>18 19 |




## PLAN




## SECTION

## SEPTIC TANK DETAILS

SCALE NTS

## GENERAL NOTES

1. GRADES AND HORIZONTAL PIPINGS:
   RUN ALL HORIZONTAL PIPINGS IN PERFECT ALIGNMENT AND AT A UNIFORM GRADE LESS THAN(2%) TWO PERCENT.

2. CHANGES IN DIRECTION:
   ALL CHANGES IN DIRECTION SHALL BE MADE BY APPROPRIATE USE OF (45°FORTY FIVE DEGREES WYE, LONG SWEEP QUARTER QUARTER BEND SIX-EIGHT OR SIXTEENTH BENDS, WHEN THE CHANGE OF FLOW IS FROM HORIZONTAL TO VERTICAL, A SINGLE 1/8 BEND COMBINATION MAY BE USED ON VENT PIPES.

3. PROHIBITED FITTINGS:
   NO DOUBLE HUB OR DOUBLE TEE BRANCH SHALL BE USED ON HORIZONTAL SOIL OR WASTE LINE THE DRILLINGS & TAPPINGS OF HOUSE DRAIN WASTE OR VENT PIPE & USE OF SADDLE HUB AND BENDS ARE PROHIBITED.

4. SLEEVES:
   PROVIDE PIPE SLEEVES AT WALLS. COLUMNS OR SLABS ONE SIZE BIGGER THAN THE ACTUAL LINES PASSING THROUGH WALLS OR SLABS TO PROTECT PIPES FROM BREAKAGE.

5. PIPE CLEAN-OUTS:
   CLEAN OUTS ARE REQUIRED UNDER THE FOLLOWING CONDITIONS
   A. ) EVERY CHANGE IN HORIZONTAL DIRECTION EXCEEDING TWENTY TWO AND ONE-HALF DEGREES (22°1/2°)
   B.) ONE AND ONE HALF METERS(1.5mts.) INSIDE THE PROPERTY LINE BEFORE THE HOUSE DRAINAGE DIRECTION
   C.) EVERY FIFTEEN METERS (15m) IN HORIZONTAL PIPE
   D.) AT THE END OF ANY HORIZONTAL PIPE LINE;

6. ALL PLUMBING WORKS SHALL BE DONE IN ACCORDANCE WITH THE PROVISION OF NATIONAL PLUMBING CODE & THE REQUIREMENTS OF THE LOCAL PLUMBING INSPECTION OFFICE & PERTINENT PROVISIONS OF THE EXISTING LOCAL BUILDING.

7. ALL PLUMBING WORKS SHALL BE DONE BY A LICENCE MASTER PLUMBER AND A LICENCE PLUMBING CONTRACTOR

- NOTE: VERIFY ACTUAL LOCATION OF STREET DRAINAGE AND WATER SOURCE FOR CONNECTION.

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