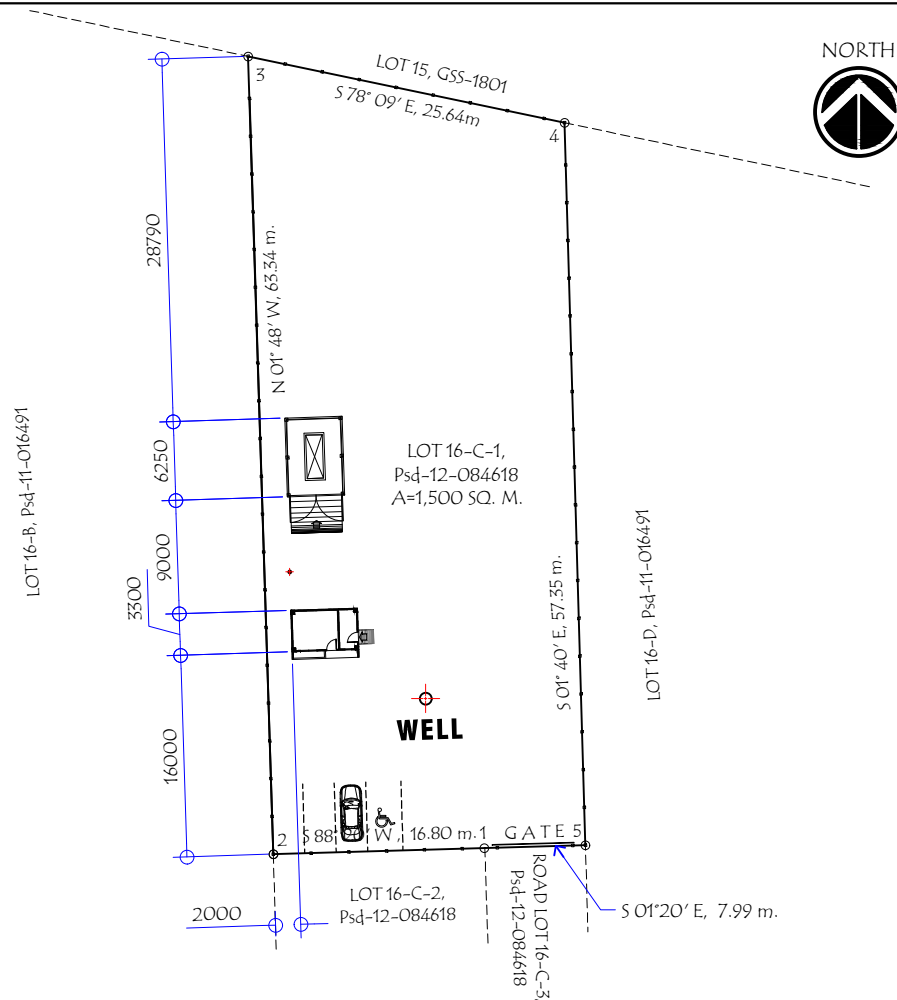
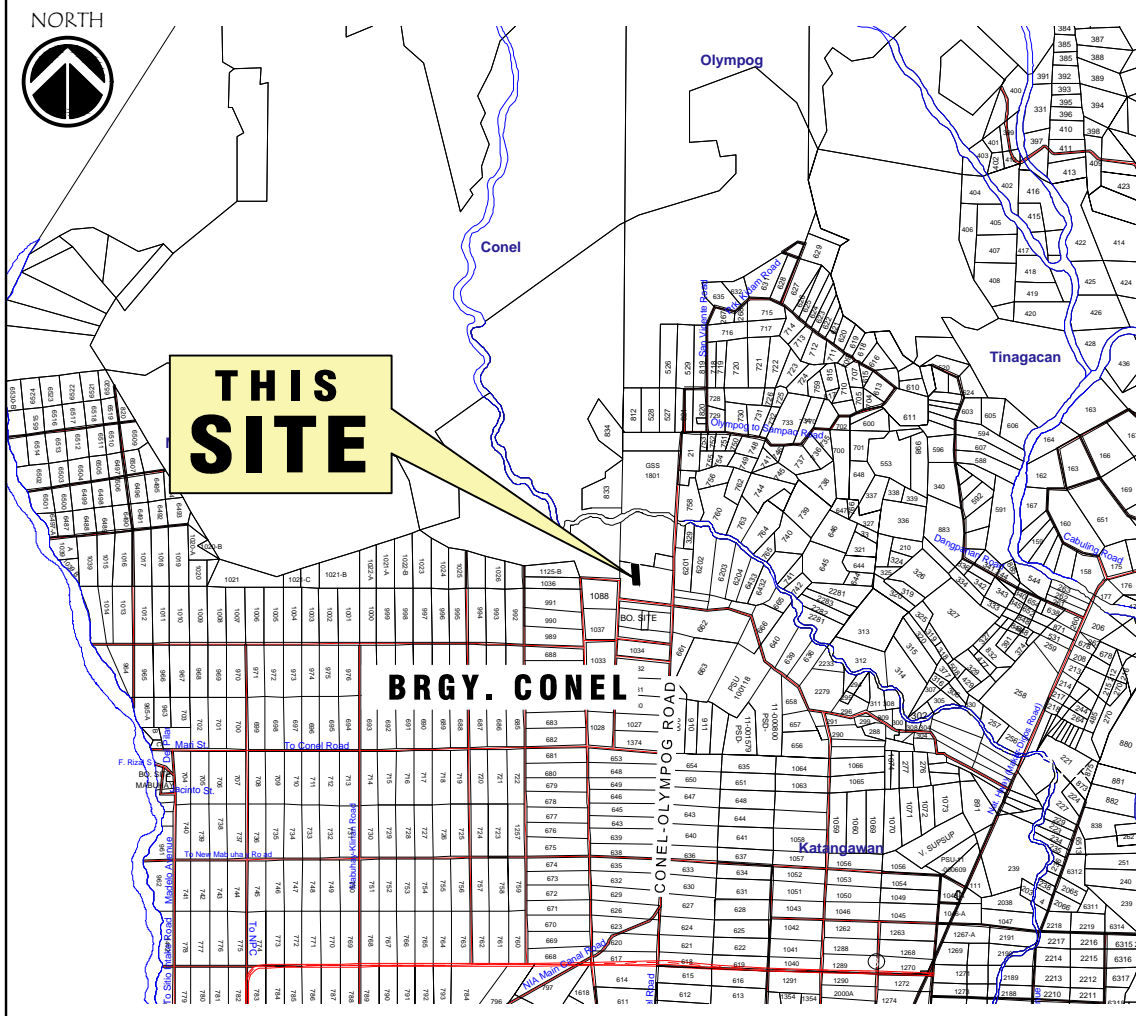




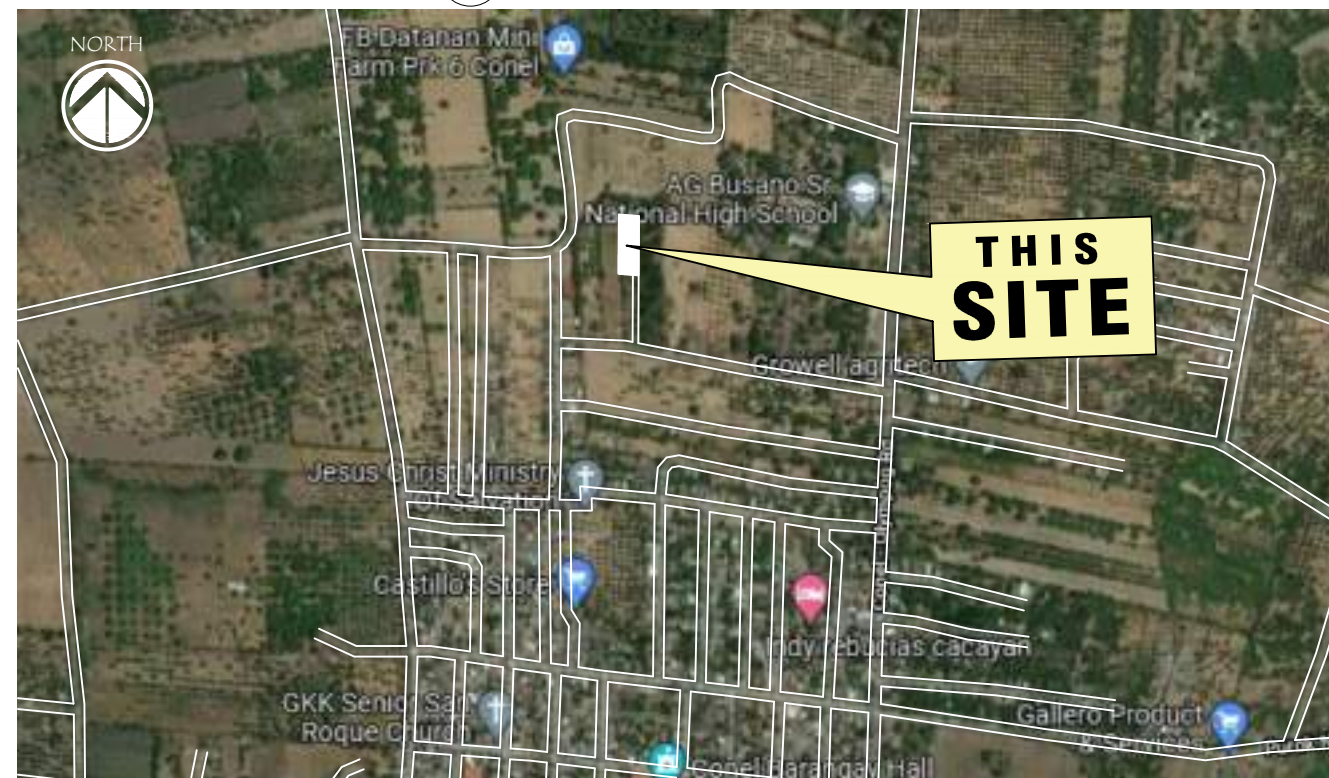
01 PERSPECTIVE
A-01 NOT TO SCALE



02 SITE DEVELOPMENT PLAN
A-01 SCALE: 1:600 M



03 VICINITY MAP
A-01 NOT TO SCALE



04 LOCATION PLAN
A-01 NOT TO SCALE

REPUBLIC OF THE PHILIPPINES
CITY OF GENERAL SANTOS
OFFICE OF THE CITY ENGINEER

OFFICE OF THE BUILDING OFFICIAL

LAND USE & ZONING

LINE AND GRADE

ARCHITECTURAL

STRUCTURAL

SANITARY

ELECTRICAL

MECHANICAL

ELECTRONICS

SHEET CONTENTS SHEET NO.

AS SHOWN

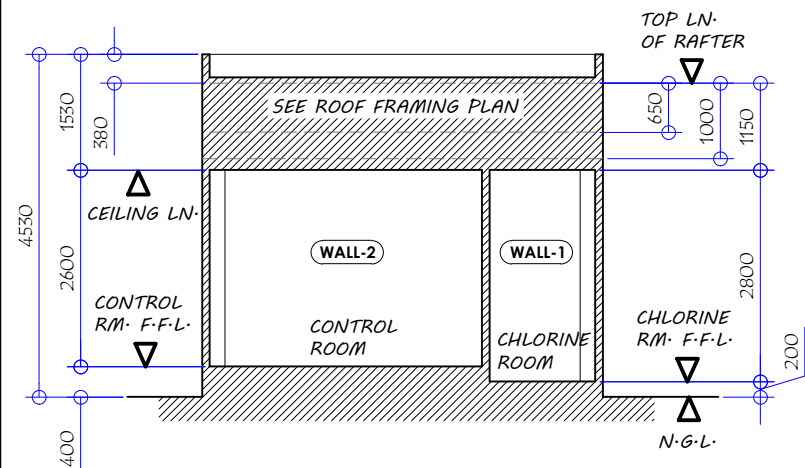
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DRAWN BY: RRA REV. NO.
CHECKED BY: ESA DATE: Jan. 2022

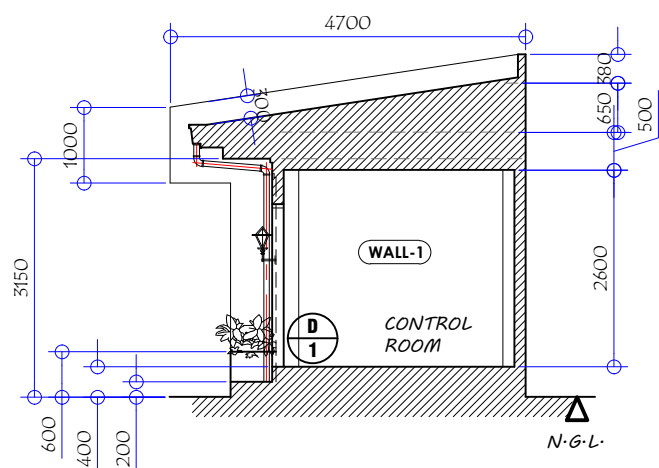
01 20

SCHEDULE OF FINISH

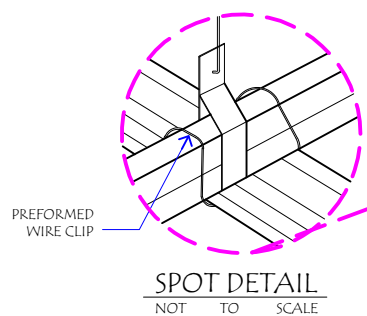
FLOORS :	WALLS :	CEILING :
FL1 PLAIN CEMENT FLOOR FINISH	WALL-1 100mm thk. MACHINE MADE CHB W/ PLAIN CEMENT PLASTER (ACRYLIC PAINT FINISH)	CL1 4.5mm thk FIBER CEMENT BOARD (PAINT FINISH) ON METAL FURRING CEILING FRAMES. USE 0.60mm thk. x 19mm x 50mm x 5000m DOUBLE FURRING CHANNELS @ 0.40m ON CENTER W/ 0.60mm thk. x 38mm x 5000mm CARRYING CHANNELS @ 1.20m ON CENTERS & ROD JOINER (HANERS/SUPPORTS) @ 1.20m O.C., SHORTER SPAN
	WALL-2 150mm thk MACHINE MADE CHB W/ PLAIN CEMENT PLASTER (ACRYLIC PAINT FINISH)	



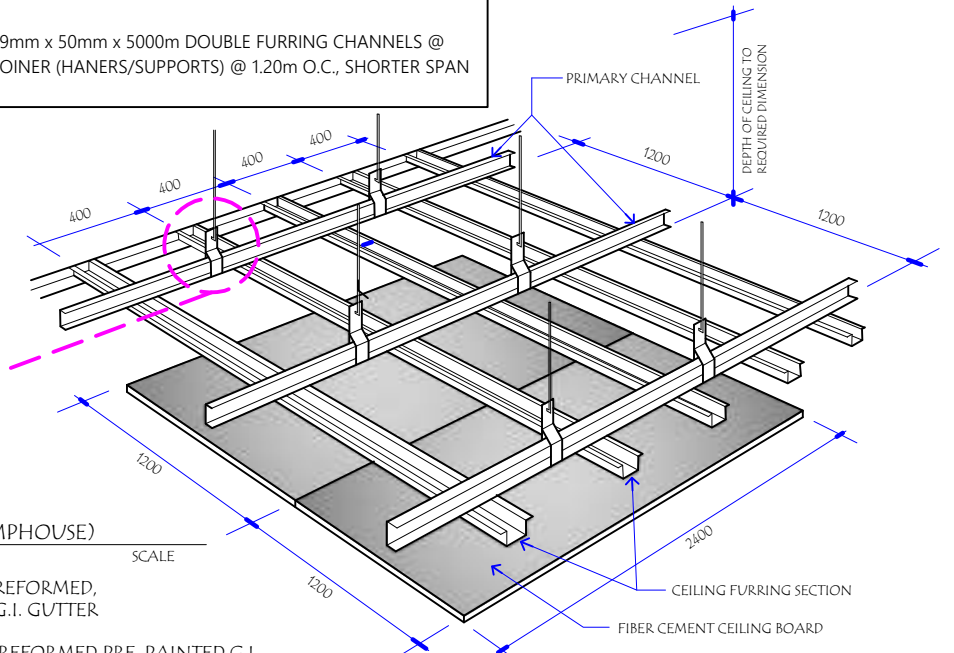
06 LONGITUDINAL SECTION (PUMPHOUSE)
SCALE: 1:100 M



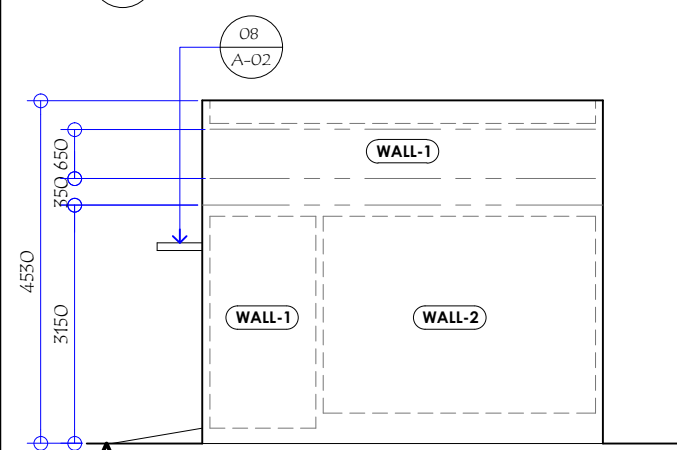
07 CROSS SECTION (PUMPHOUSE)
SCALE: 1:100 M



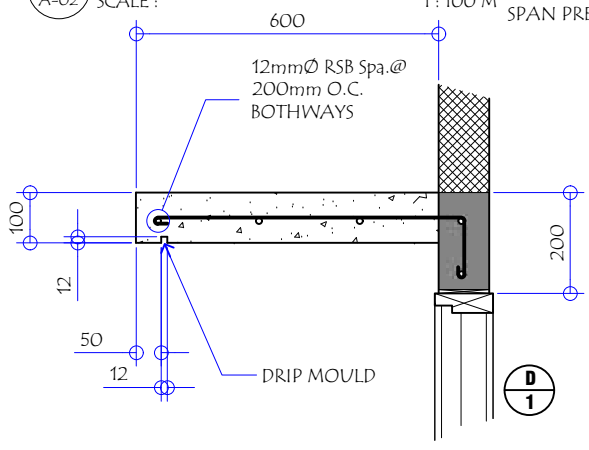
SPOT DETAIL
NOT TO SCALE
11 PERSPECTIVE, CL1 (PUMPHOUSE)
SCALE: NOT TO SCALE



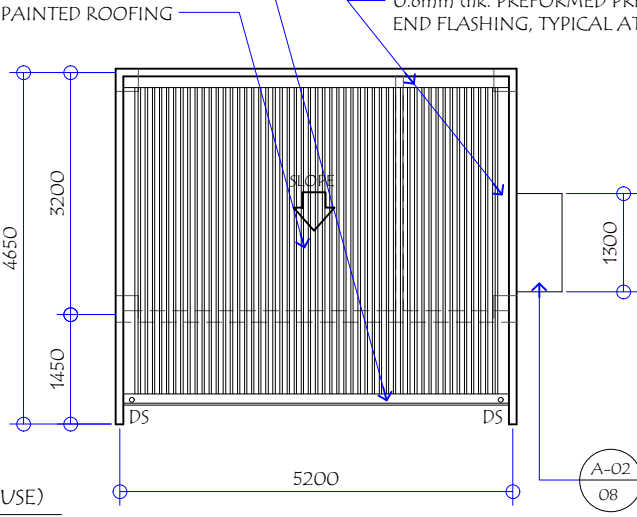
0.60mm thk. PREFORMED, PRE-PAINTED G.I. GUTTER
0.6mm thk. PREFORMED PRE-PAINTED G.I. END FLASHING, TYPICAL AT THE OTHER SIDE
CEILING FURRING SECTION
FIBER CEMENT CEILING BOARD



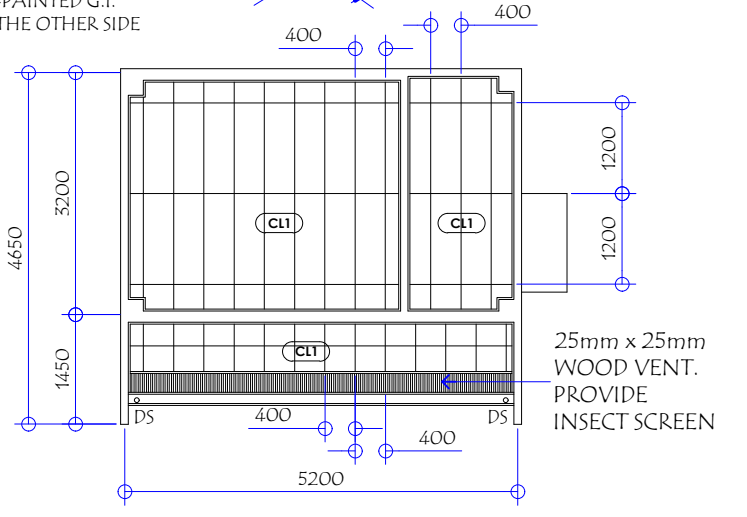
05 REAR ELEVATION (PUMPHOUSE)
SCALE: 1:100 M



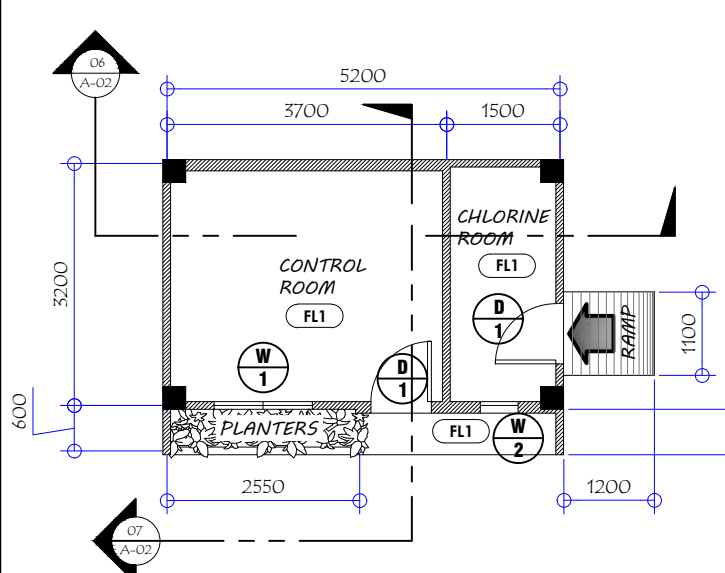
08 CONC. SUNBREAKER DETAIL (PUMPHOUSE)
SCALE: 1:15 M



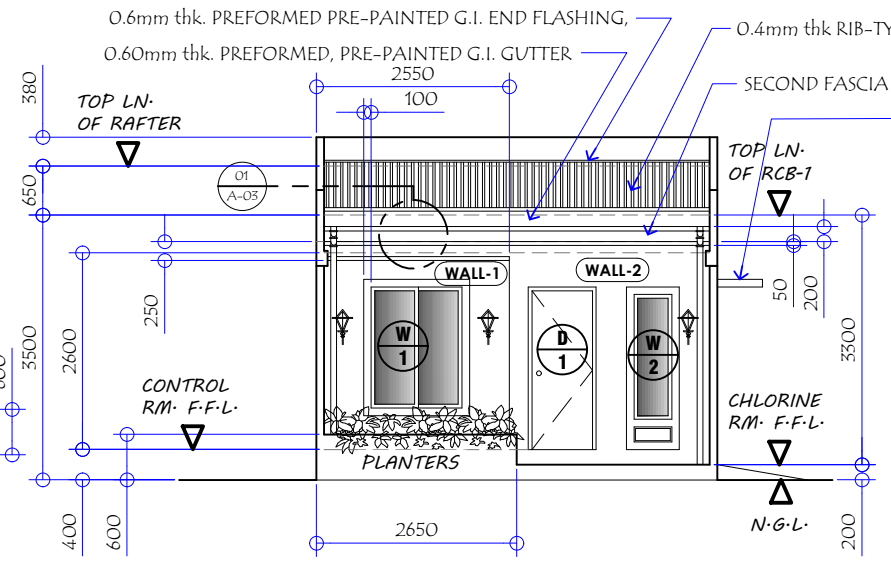
09 ROOF PLAN (PUMPHOUSE)
SCALE: 1:100 M



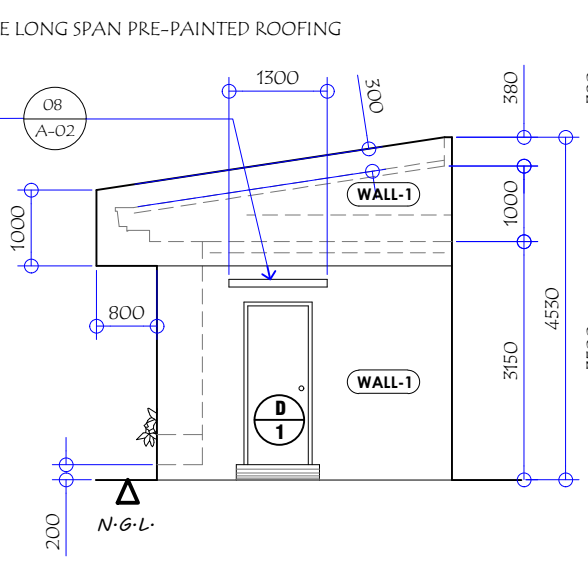
10 REFLECTED CEILING PLAN (PUMPHOUSE)
SCALE: 1:100 M



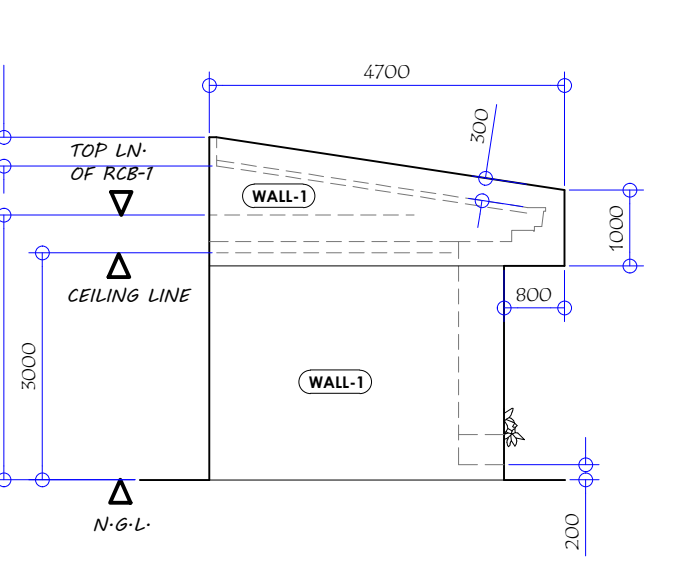
01 FLOOR PLAN (PUMPHOUSE)
SCALE: 1:100 M



02 FRONT ELEVATION (PUMPHOUSE)
SCALE: 1:100 M

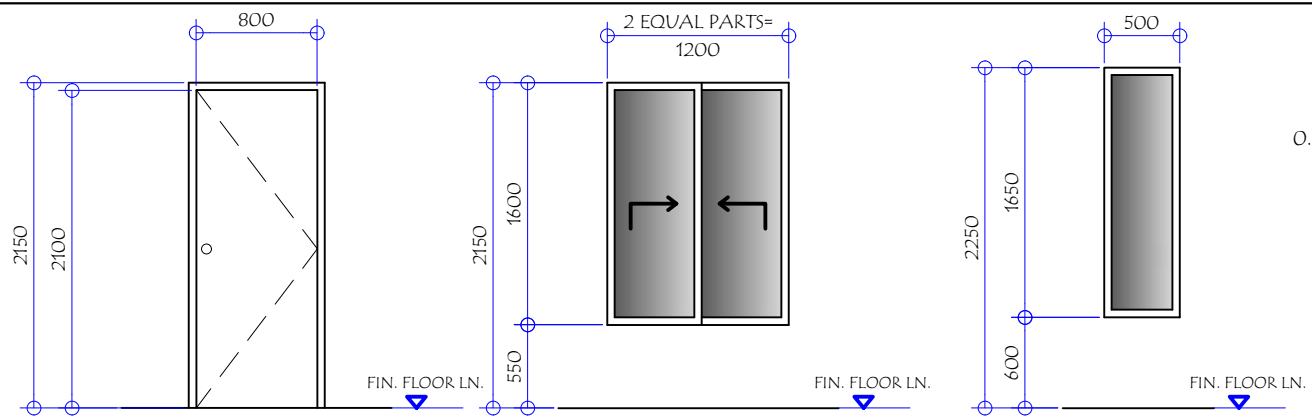


03 RIGHT SIDE ELEVATION (PUMPHOUSE)
SCALE: 1:100 M



04 LEFT SIDE ELEVATION (PUMPHOUSE)
SCALE: 1:100 M

<p>GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 552 - 3824</p>	<p>DANILO M. HORLADOR, JR CIVIL ENGINEER</p>		<p>PROJECT AND LOCATION</p> <p>PROPOSED CONSTRUCTION OF PUMPHOUSE, GENSET SHED, & PERIMETER FENCE</p>	<p>CHECKED:</p> <p>ENGR. MARIA CELIA N. DANDAN</p>	<p>REVIEWED:</p> <p>ENGR. ROGELIO A. BESANA, JR.</p>	<p>APPROVED:</p> <p>ENGR. ARN B. GELLANGARIN</p>	<p>SHEET CONTENTS</p> <p>AS SHOWN</p>	<p>SHEET NO.</p> <p>A-02</p>	
	<p>REG. NO. 0107545</p> <p>TIN. NO. 291-941-997</p>	<p>PTR. NO. 61873A</p> <p>DATE: 01/12/2022</p>	<p>LOCATION: PUROK 6, BRGY. CONEL, GENERAL SANTOS CITY</p>	<p>OIC - PDD</p>	<p>AGM, OPERATION & TECHNICAL SERVICES</p>	<p>GENERAL MANAGER A</p>	<p>DRAWN BY: RRA</p> <p>CHECKED BY: ESA</p>	<p>REV. NO.</p> <p>DATE: Jan. 2022</p>	<p>02</p> <p>20</p>

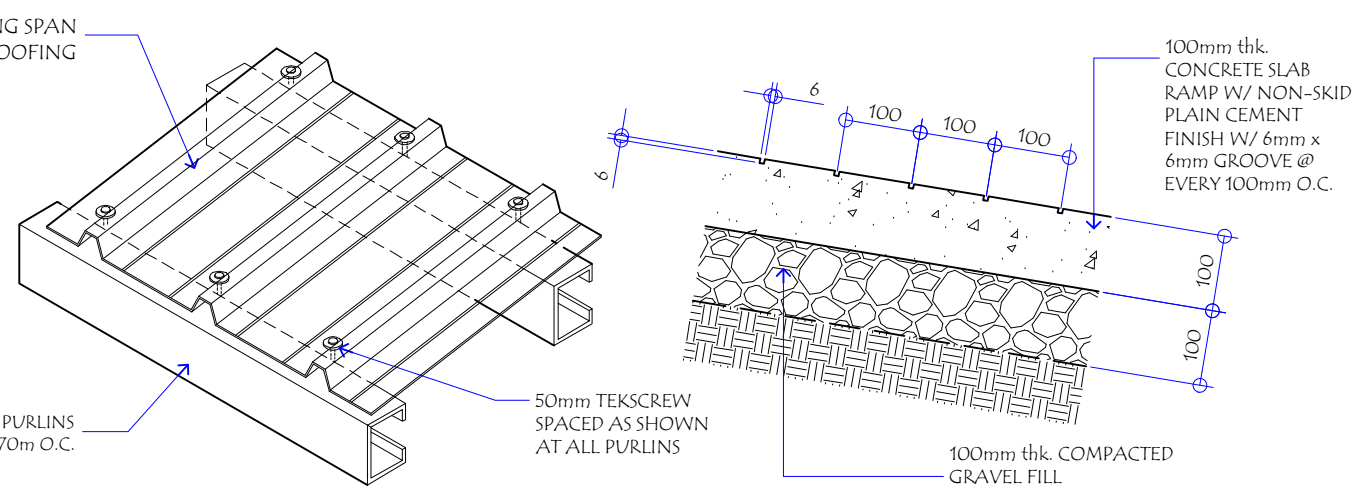


MARK	D 1	W 1	W 2
DESCRIPTION	40mm thk HOLLOW CORE FLUSH DOOR TYPE IN 50 x 150 KD DOOR JAMB WITH 6mm thk MARINE PLYWOOD DOUBLE FACING PAINT FINISH WITH COMPLETE ACCESSORIES	SLIDING WINDOW IN POWDER COATED FINISH ALUMINUM FRAME WITH 6mm thk TEMPERED TINTED GLASS PANEL WITH COMPLETE ACCESSORIES	FIXED WINDOW IN POWDER COATED FINISH ALUMINUM FRAME 6mm thk. TEMPERED TINTED GLASS PANEL W/ COMPLETE ACCESSORIES
LOCATION	CONTROL ROOM, CHLORINE ROOM	CONTROL ROOM	CHLORINE ROOM
QUANTITY	TWO (2) SETS	ONE (1) SET	ONE (1) SET

0.40mm thk RIB TYPE LONG SPAN PRE-PAINTED ROOFING

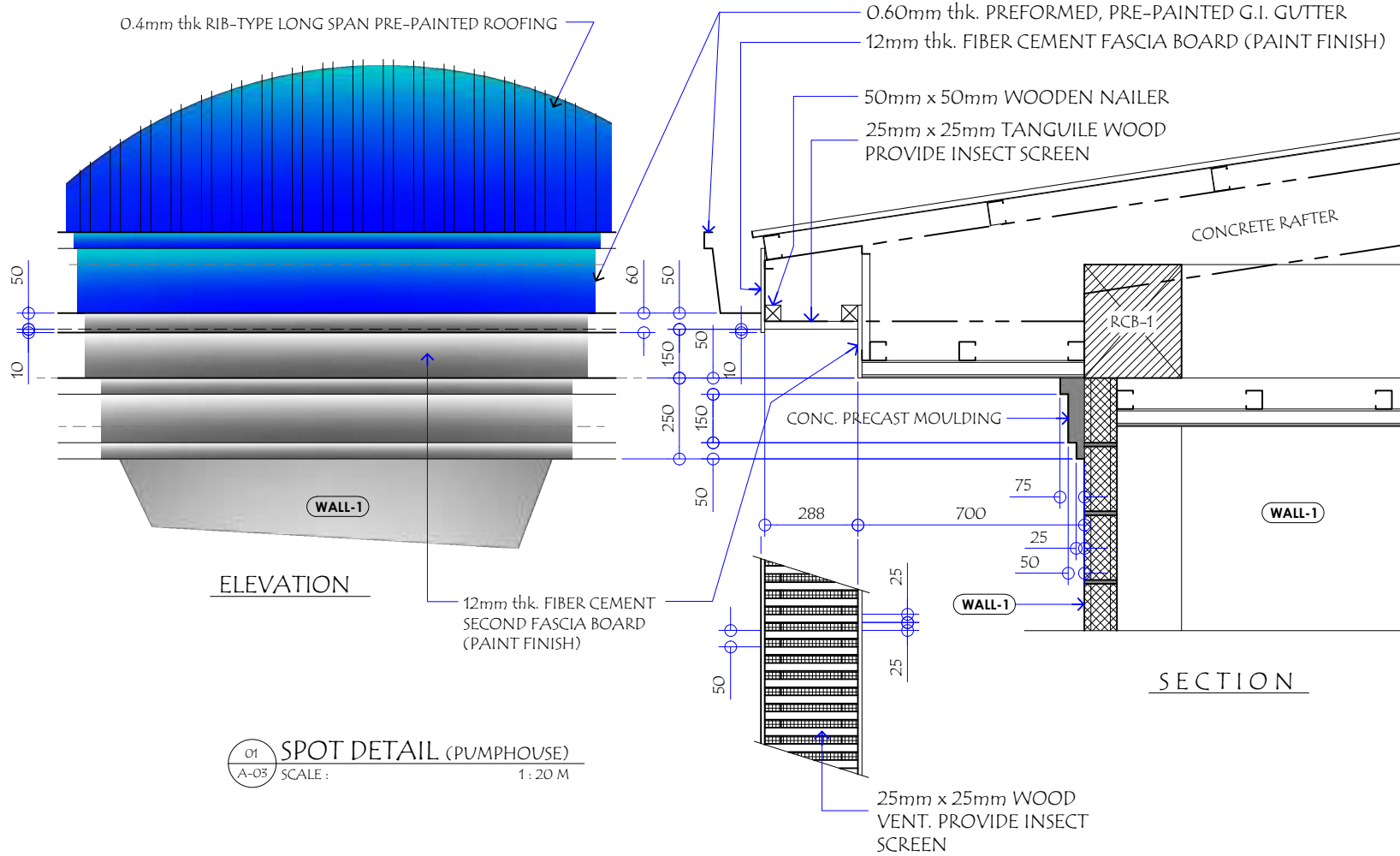
75x50x1.5mm CEE PURLINS Sp. @ 0.70m O.C.

05 ISOMETRIC VIEW OF ROOFING TO PURLINS CONNECTION TO SCALE

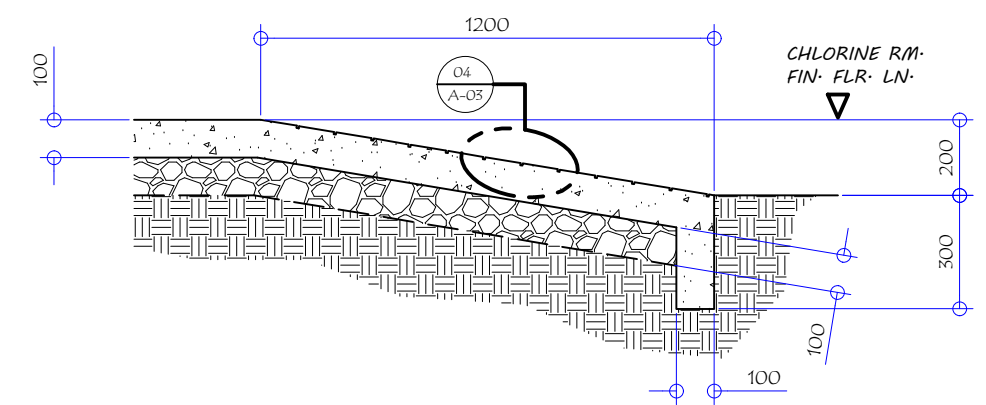


06 SPOT DETAIL SCALE: 1:10 M

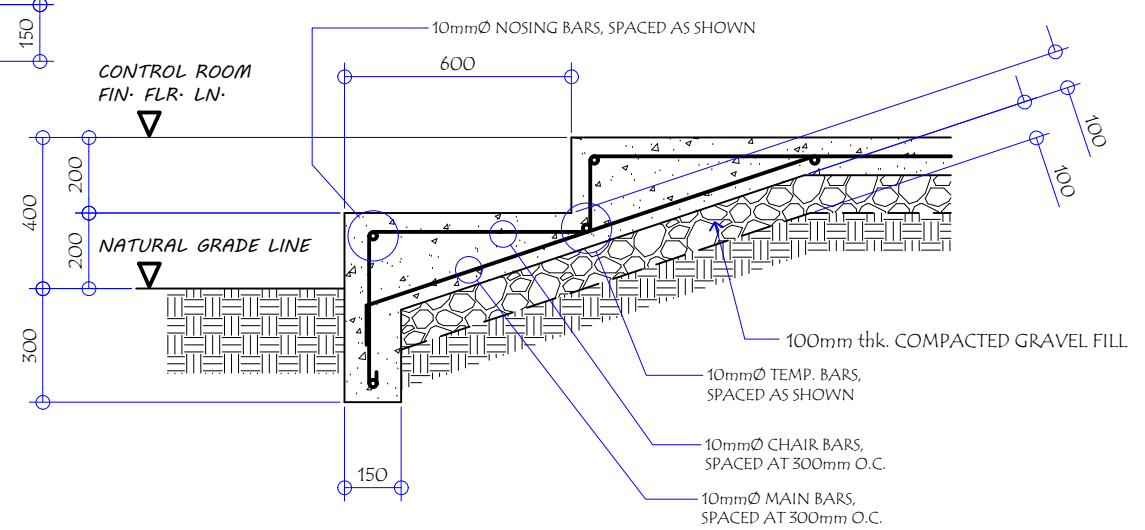
04 SCHEDULE OF DOORS & WINDOWS (PUMPHOUSE) SCALE: 1:50 M



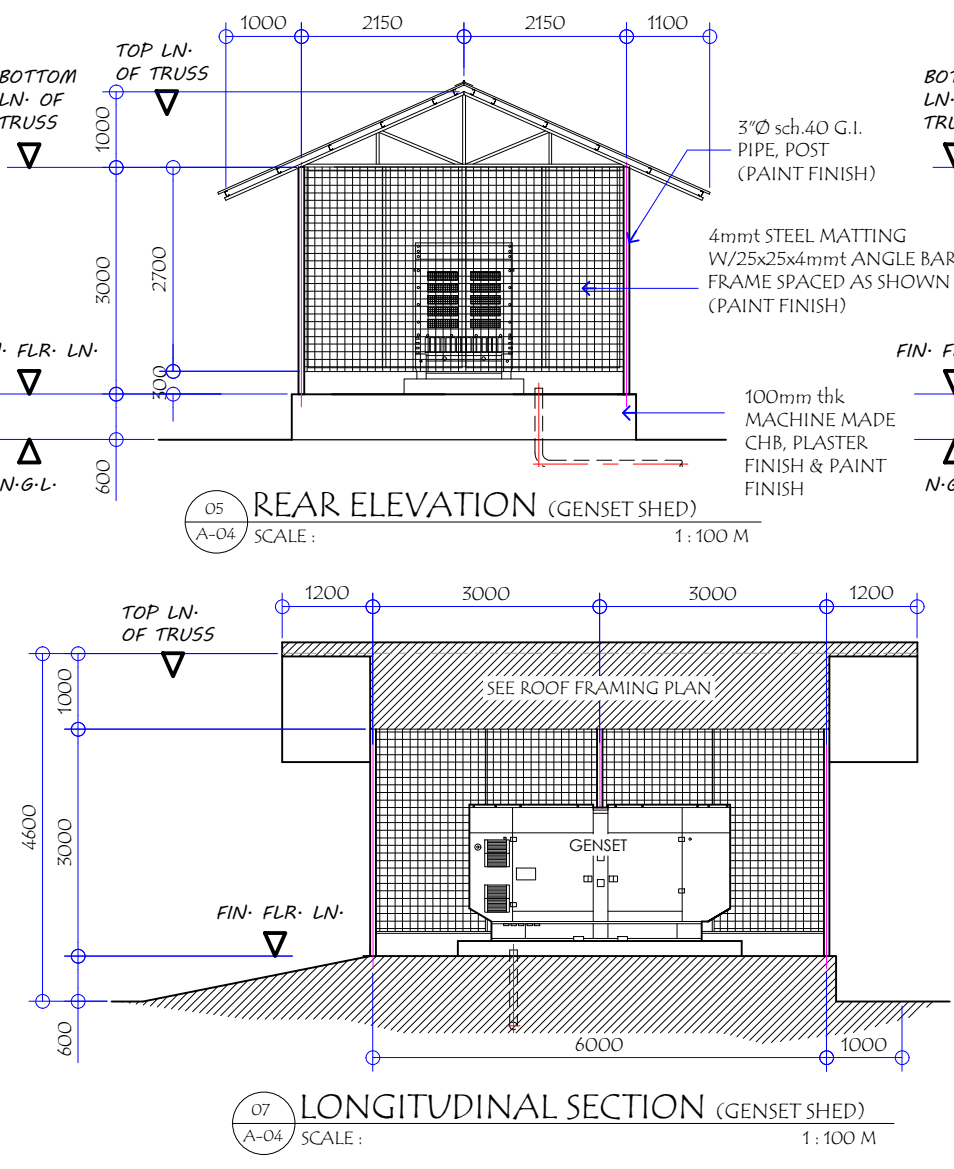
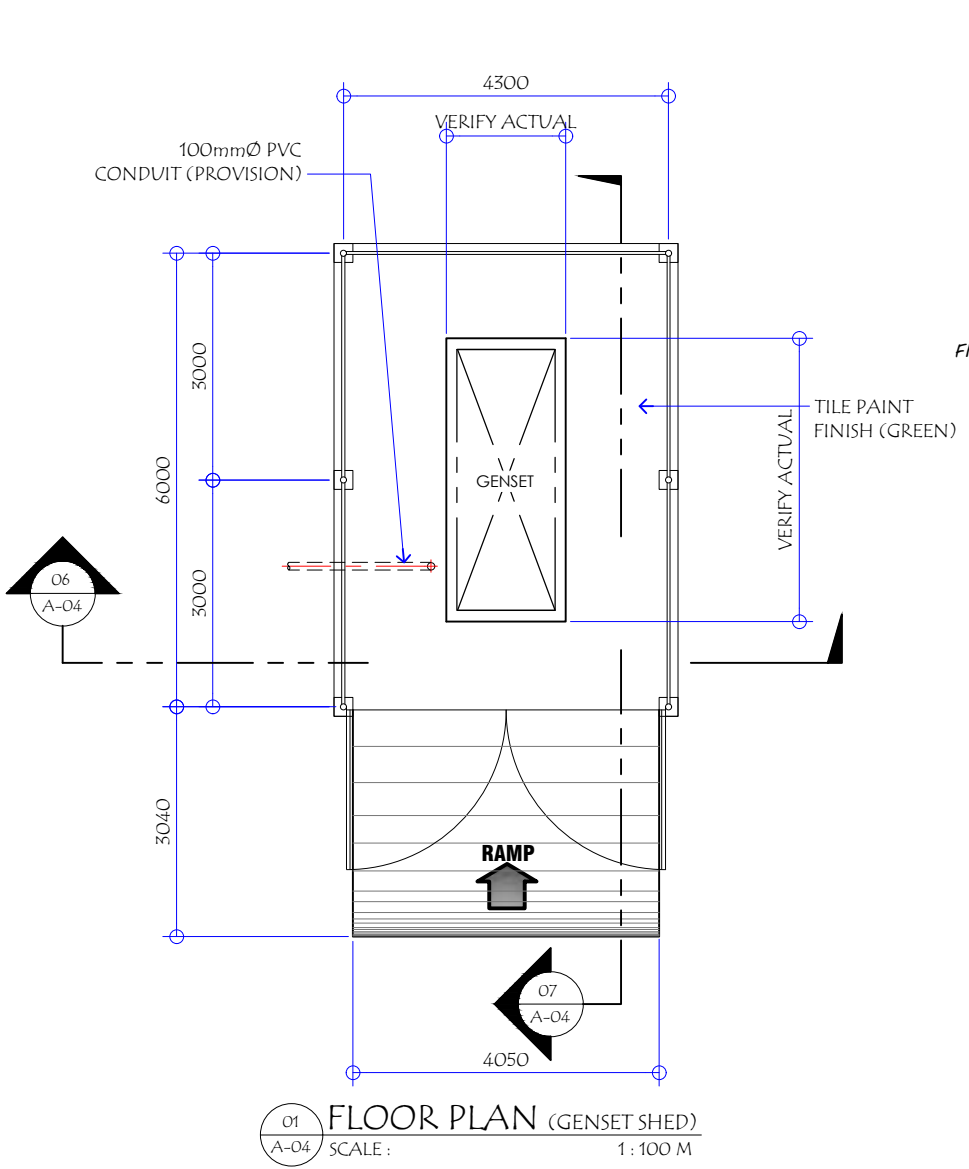
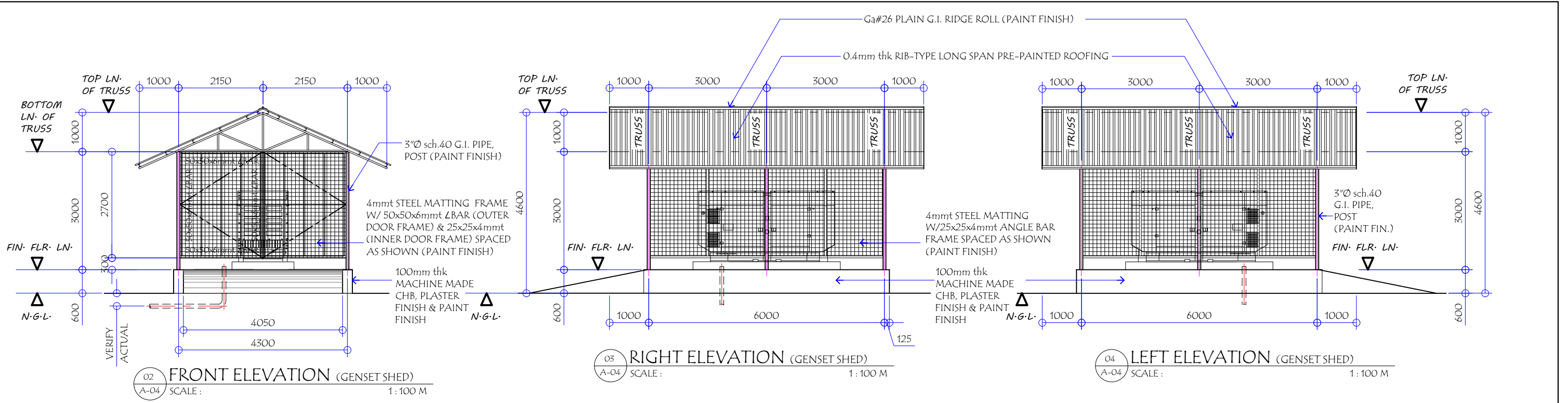
01 SPOT DETAIL (PUMPHOUSE) SCALE: 1:20 M




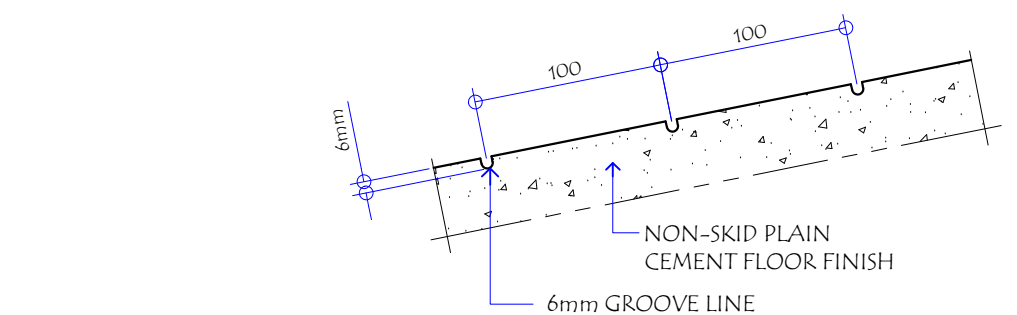
03 DETAIL SECTION OF RAMP (PUMPHOUSE) SCALE: 1:20 M



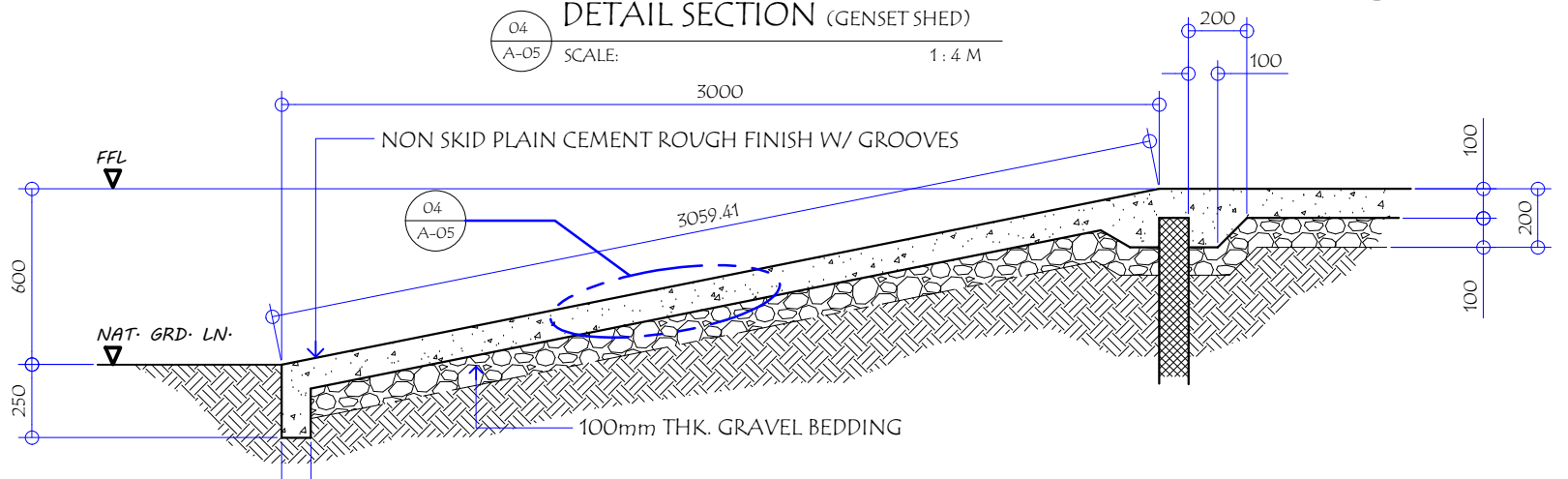
02 DETAIL OF R.C. STAIR (PUMPHOUSE) SCALE: 1:20 M



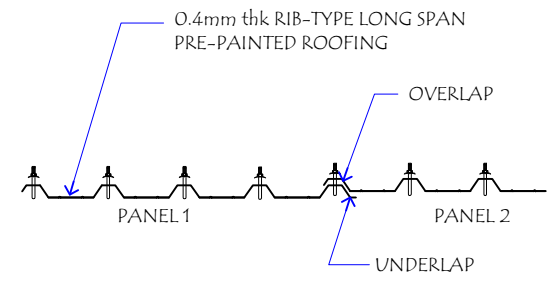
 GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 552 - 3824	DANILO M. HORLADOR, JR CIVIL ENGINEER		PROJECT AND LOCATION PROPOSED CONSTRUCTION OF PUMPHOUSE, GENSET SHED, & PERIMETER FENCE	CHECKED: ENGR. MARIA CELIA N. DANDAN	REVIEWED: ENGR. ROGELIO A. BESANA, JR.	APPROVED: ENGR. ARN B. GELLANGARIN	SHEET CONTENTS AS SHOWN	SHEET NO. A-04		
	REG. NO. 0107545 PTR. NO. 61873A	TIN. NO. 291-941-997 DATE: 01/12/2022	LOCATION: PUROK 6, BRGY. CONEL, GENERAL SANTOS CITY	OIC - PDD	AGM, OPERATION & TECHNICAL SERVICES	GENERAL MANAGER A	DRAWN BY: RRA CHECKED BY: ESA	REV. NO. DATE: Jan. 2022	04	20



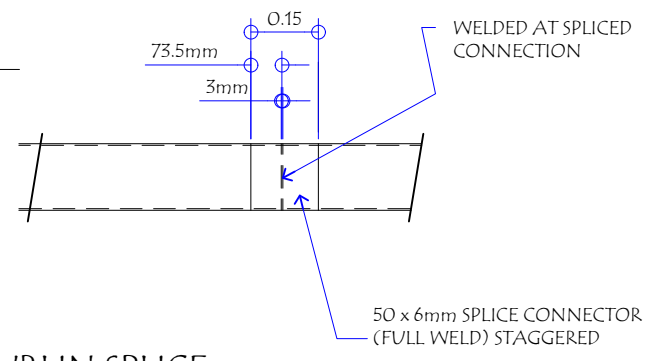
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A-05
SCALE: 1:4 M



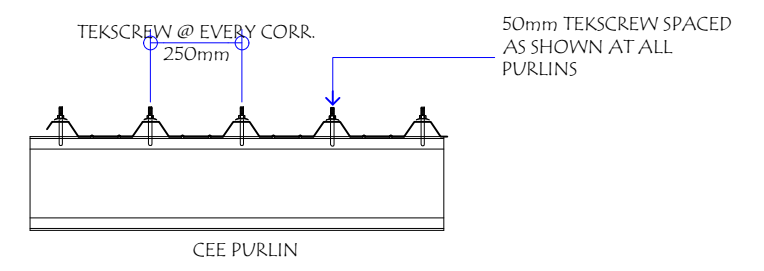
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A-05
SCALE: 1:25 M



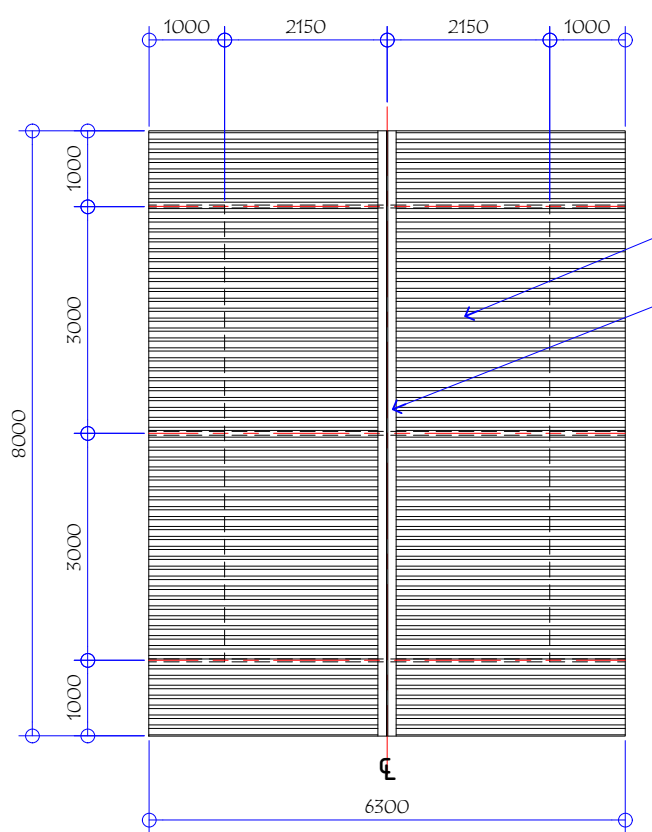
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A-05
SCALE: NOT TO SCALE



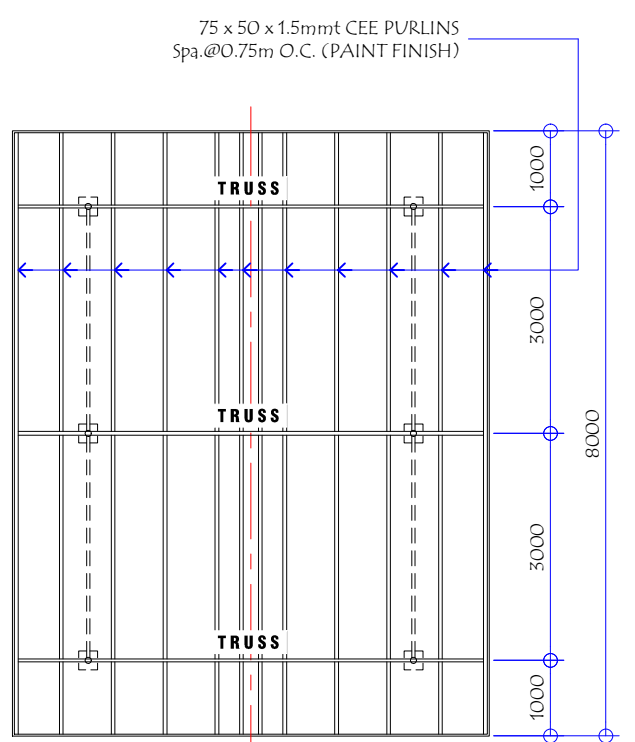
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A-05
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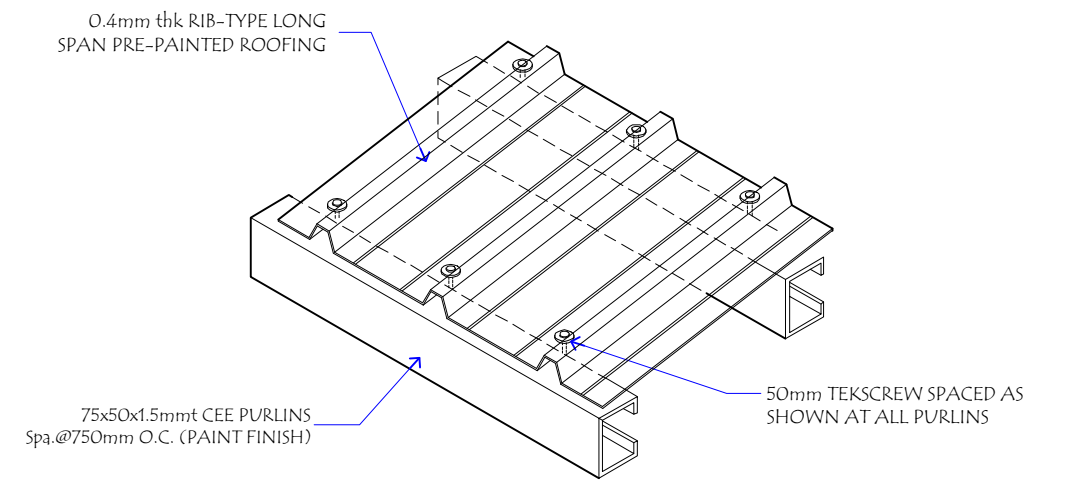
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A-05
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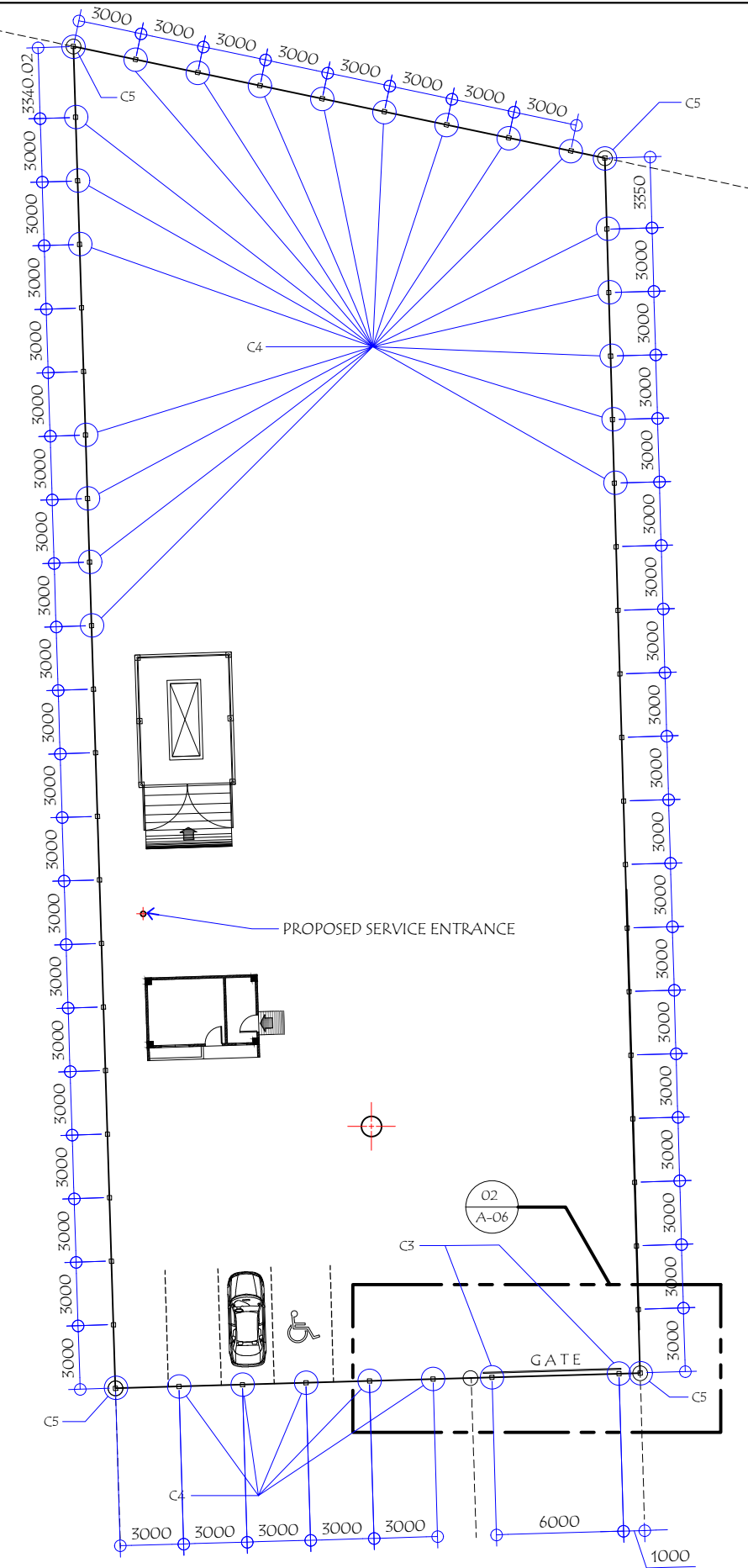
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A-05
SCALE: 1:100 M



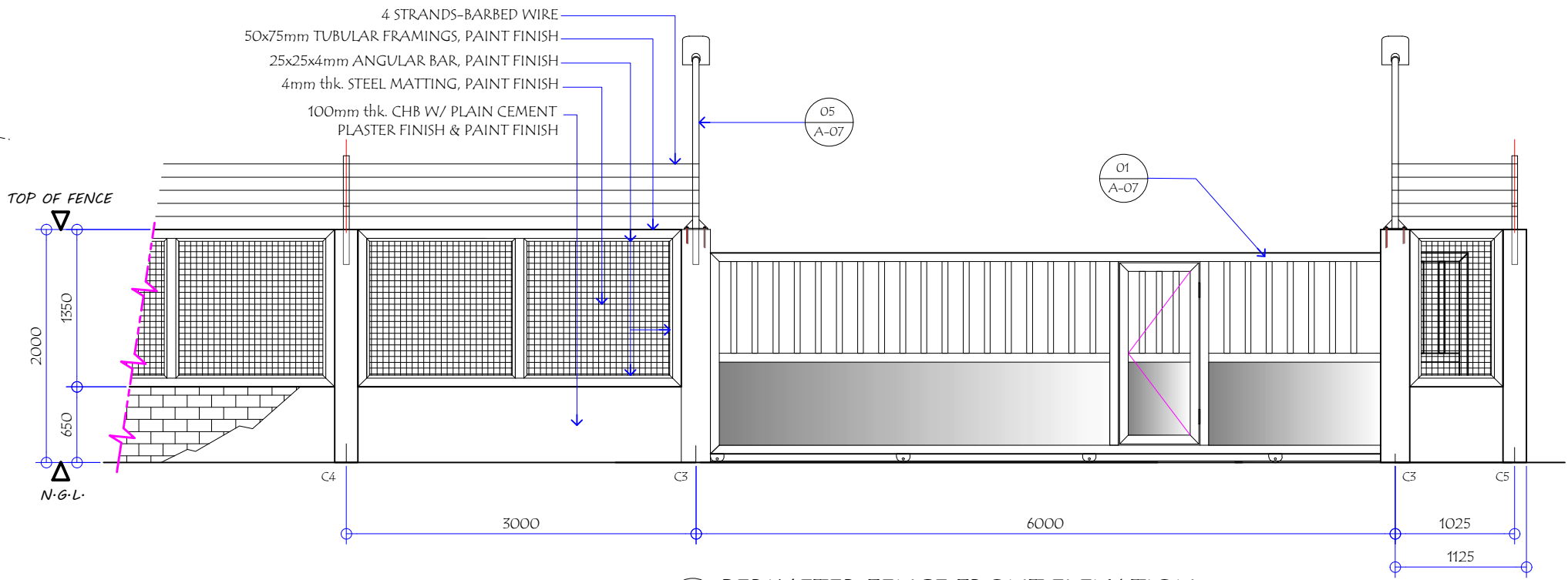
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A-05
SCALE: 1:100 M



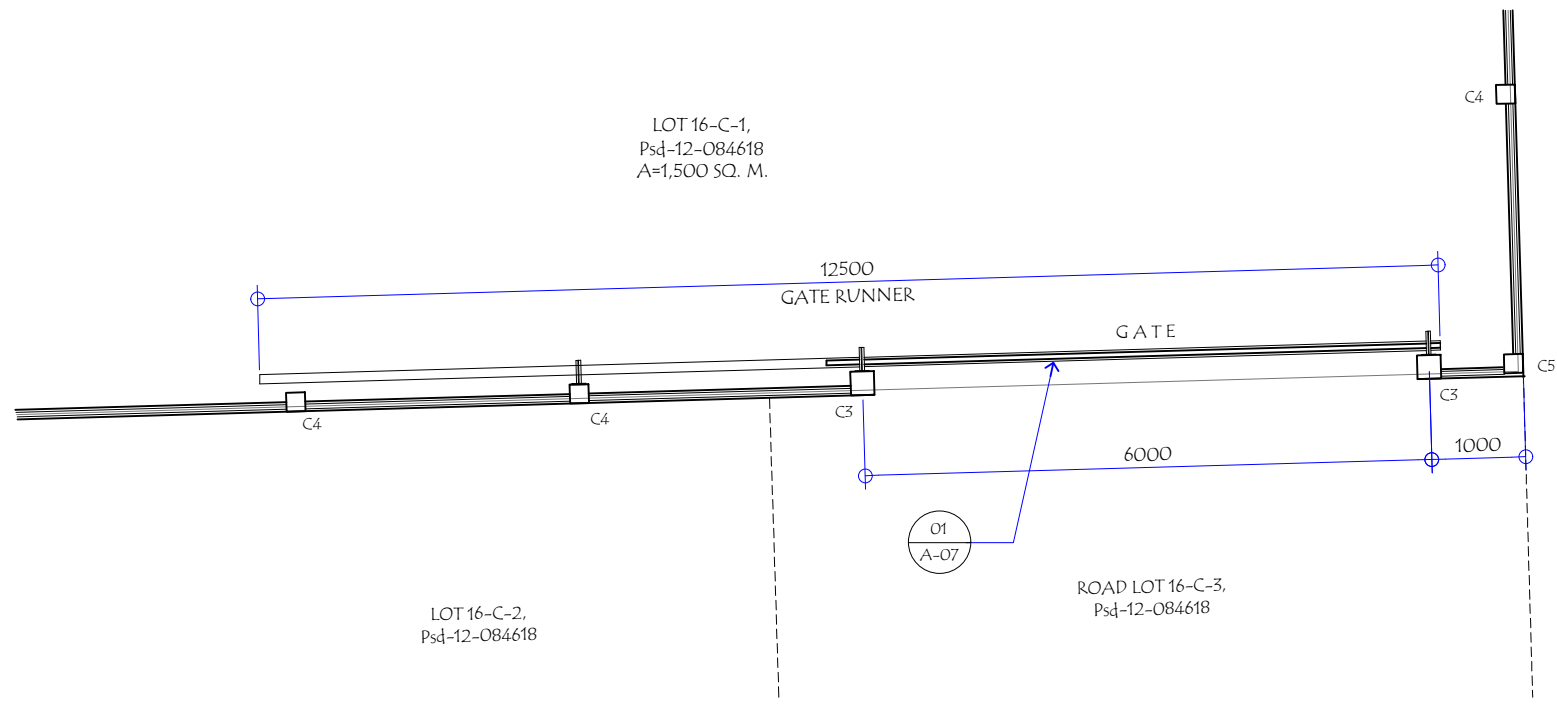
05
A-05
SCALE: NOT TO SCALE



01 PERIMETER FENCE LAYOUT
SCALE: 1:400 M



05 PERIMETER FENCE FRONT ELEVATION
SCALE: 1:50 M



02 SPOT DETAIL
SCALE: 1:60 M

GENERAL CONSTRUCTION NOTES

GENERAL NOTES

- IN THE INTERPRETATION OF THE DRAWING, INDICATED DIMENSIONS SHALL GOVERN AND DISTANCES AND SIZES SHALL NOT BE SCALED FOR CONSTRUCTION PURPOSES.
- IN REFERENCE TO OTHER DRAWINGS, SEE ARCHITECTURAL DRAWINGS FOR DEPRESSIONS IN FLOOR SLABS, OPENINGS IN THE WALLS AND SLABS, INTERIOR PARTITIONS, LOCATION OF DRAINS ETC.
- IN CASE OF DISCREPANCIES AS TO THE LAYOUT, DIMENSIONS, AND ELEVATIONS BETWEEN THE STRUCTURAL PLANS, AND ARCHITECTURAL DRAWINGS, THE CONTRACTOR SHALL NOTIFY BOTH THE STRUCTURAL ENGINEER AND THE ARCHITECT.
- ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH THE ACI 318 95 BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE AND ALL STRUCTURAL STEEL WORK ACCORDING WITH AISC SPECIFICATION (9th EDITION) IN SO FAR AS THEY DO NOT CONFLICT WITH THE LOCAL BUILDING CODE REQUIREMENT.
- ACI REFERS TO AMERICAN CONCRETE INSTITUTE, AISC TO AMERICAN INSTITUTE OF STEEL CONSTRUCTION AND ASTM TO AMERICAN SOCIETY FOR TESTING MATERIALS.
- CONSTRUCTION NOTES AND TYPICAL DETAILS APPLY TO ALL DRAWINGS UNLESS OTHERWISE SHOWN OR NOTED. MODIFY TYPICAL DETAILS AS DIRECTED TO MEET SPECIAL CONDITIONS.
- SHOP DRAWINGS WITH ERECTION AND PLACING DIAGRAMS OF ALL STRUCTURAL STEELS, MISCELLANEOUS IRON, PRE-CAST CONCRETE, ETC. SHALL BE SUBMITTED FOR ENGINEERS APPROVAL BEFORE FABRICATION.
- CONTRACTOR SHALL NOTE AND PROVIDE ALL MISCELLANEOUS CURBS, SILLS, STOOLS, EQUIPMENT'S AND MECHANICAL BASES THAT ARE REQUIRED BY THE ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS.
- ALL RESULTS OF MATERIAL TESTING FOR CONCRETE, REINFORCING BARS, & STRUCTURAL STEEL MUST BE NOTED & APPROVED BY THE STRUCTURAL DESIGNER.

NOTES ON CONCRETE MIXES & PLACING

- ALL CONCRETE SHALL DEVELOP A MIN. COMPRESSIVE STRENGTH AT THE END OF TWENTY EIGHT (28) DAYS W/ CORRESPONDING MAXIMUM SIZE AGGREGATE & SLUMPS AS FOLLOWS.
- | LOCATION | 28 DAYS STRENGTH | MAX. SIZE OF AGGREGATE | MAX. SLUMP |
|--|---------------------|------------------------|------------|
| ALL OTHERS, INCLUDING SUSPENDED SLABS, | 4000 PSI (27.6 MPa) | 20mm | 100mm |
| COLUMNS | 4000 PSI (27.6 MPa) | 20mm | 100mm |
| BEAMS, SLABS | 4000 PSI (27.6 MPa) | 20mm | 100mm |
| SLAB ON FILL | 4000 PSI (27.6 MPa) | 20mm | 100mm |

- MAINTAIN MINIMUM CONCRETE COVER FOR REINFORCING STEEL AS FOLLOWS.
- | | |
|---|------|
| SUSPENDED SLABS | 20mm |
| SLAB ON GRADE | 40mm |
| WALLS ABOVE GRADE | 25mm |
| BEAM STIRRUPS AND COLUMN TIES WHERE CONCRETE IS EXPOSED TO EARTH BUT POURED AGAINST FORMS | 50mm |
| WHERE CONCRETE IS DEPOSITED DIRECTLY AGAINST EARTH | 75mm |
- CONCRETE SHALL BE DEPOSITED IN ITS FINAL POSITION WITHOUT SEGREGATION. RE-HANDLING OR PLACING SHALL BE DONE PREFERABLY WITH BUEGIES, BUCKETS OR WHEELBARROWS, NO CHUTES WILL BE ALLOWED EXCEPT TO TRANSFER CONCRETE FROM HOPPERS TO BUEGIES, WHEELBARROWS OR BUCKETS IN WHICH CASE THEY SHALL NOT EXCEED SIX (6) METERS IN AGGREGATE LENGTH.
 - NO DEPOSITING OF CONCRETE SHALL BE ALLOWED WITHOUT THE USE OF VIBRATORS UNLESS AUTHORIZED IN WRITING BY THE DESIGNERS AND ONLY FOR UNUSUAL CONDITIONS WHERE VIBRATIONS ARE EXTREMELY DIFFICULT TO ACCOMPLISH.
 - ALL ANCHOR BOLTS, DOWELS, AND OTHER INSERTS, SHALL BE PROPERLY POSITIONED & SECURED IN PLACE PRIOR TO PLACING OF CONCRETE.
 - ALL CONCRETE SHALL BE KEPT MOIST FOR A MINIMUM OF SEVEN CONSECUTIVE DAYS IMMEDIATELY AFTER POURING BY THE USE OF WET BURLAP, FOG SPRAYING, CURING COMPOUNDS OR OTHER APPROVED METHODS.
 - STRIPPING OF FORMS AND SHORES:
- | | |
|---|---------|
| FOUNDATION | 24 HRS. |
| SUSPENDED SLAB EXCEPT WHEN ADDITIONAL LOADS ARE IMPOSED | 8 DAYS |
| WALLS | 21 DAYS |
| BEAMS | 14 DAYS |
| COLUMNS | 21 DAYS |
- THE CONTRACTOR SHALL SUBMIT THE SCHEDULE OF POURING AND THE LOCATION OF THE CONSTRUCTION JOINTS TO THE STRUCTURAL ENGINEER AT LEAST (4) DAYS PRIOR TO THE POURING FOR APPROVAL.
 - THE CONTRACTOR SHALL FURNISH AND MAINTAIN ADEQUATE FORMS AND SHORINGS UNTIL THE CONCRETE MEMBERS HAVE ATTAINED THEIR WORKING CONDITION AND STRENGTH.

NOTES ON FOOTINGS

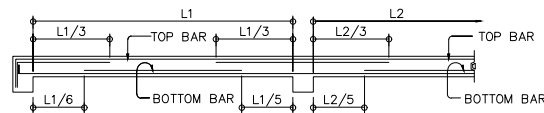
- FOOTINGS ARE DESIGNED FOR AN ALLOWABLE SOIL BEARING PRESSURE OF 96 KPa (2000 psf). CONTRACTOR SHALL REPORT TO THE ENGINEER, IN WRITING, THE ACTUAL SOIL CONDITIONS UNCOVERED AND CONFIRM ACTUAL BEARING CAPACITY OF SOIL BEFORE DEPOSITING CONCRETE.
- FOOTING SHALL REST AT LEAST 1500mm BELOW NATURAL GRADE LINE UNLESS OTHERWISE INDICATED IN PLANS. NO FOOTING SHALL REST ON FILL.
- MINIMUM CONCRETE PROTECTION FOR REINFORCEMENTS SHALL BE 75mm CLEAR FOR CONCRETE DEPOSITED THE GROUND AND 50mm FOR CONCRETE DEPOSITED AGAINST A FORMWORK.

NOTES ON REINFORCEMENT

- UNLESS OTHERWISE NOTED IN PLANS, THE YIELD STRENGTH OF REINFORCING BARS SHALL BE:
 - A. FOOTINGS, FOOTING BEAMS AND GIRDERS ----- $f_y = 275 \text{ MPa}$ (40,000 psi)
 - B. COLUMNS AND SHEAR WALLS ----- $f_y = 275 \text{ MPa}$ (40,000 psi)
 - C. BEAMS AND GIRDER ----- $f_y = 275 \text{ MPa}$ (40,000 psi)
 - D. NON-LOAD BEARING WALL PARTITIONS, BEDDED SLABS, FLOOR & ROOF SLABS, PARAPETS, CATCH BASIN, SIDE WALK. ----- $f_y = 227.5 \text{ MPa}$ (33,000 psi)
- ALL REINFORCING BARS SIZE 10mm OR LARGER SHALL BE DEFORMED IN ACCORDANCE WITH ASTM A 706. BARS SMALLER THAN 10mm MAY BE PLAIN.
- SPLICES SHALL BE SECURELY WIRED TOGETHER & SHALL LAP OR EXTEND IN ACCORDANCE W/ TABLE A & TABLE B (TABLE OF LAP SPLICE & ANCHORAGE LENGTH) UNLESS OTHERWISE SHOWN ON DRAWINGS. SPLICES SHALL BE STAGGERED WHENEVER POSSIBLE.

NOTES ON CONCRETE SLABS

- ALL SLAB REINFORCEMENTS SHALL BE 20mm CLEAR MINIMUM FROM BOTTOM AND FROM THE TOP OF SLAB.
- UNLESS OTHERWISE SHOWN, REINFORCEMENT IN CONTINUOUS ELEVATED SLAB SHALL BE CUT AS FOLLOWS:

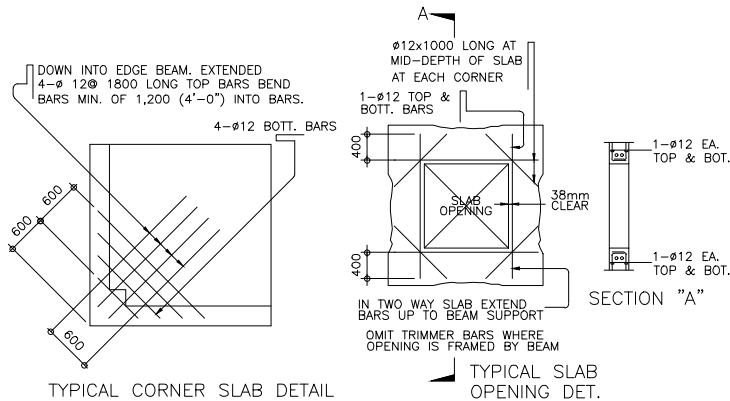


TYPICAL BAR BENDING AND CUTTING DETAILS FOR SLABS

- IF SLABS ARE REINFORCED BOTHWAYS BARS ALONG THE SHORTER SPAN SHALL BE PLACED BELOW THOSE ALONG THE LONG SPAN AT THE CENTER AND OVER THE LONGER SPAN FOR REINFORCING BARS NEAR THE SUPPORTS. THE SPACING OF THE BARS AT THE COLUMN STRIPS SHALL NOT BE MORE THAN ONE AND A HALF (1 1/2) SLAB THICKNESS
- TEMPERATURE BARS FOR SLAB SHALL BE GENERALLY PLACED NEAR THE FACE IN TENSION AND SHALL NOT BE LESS THAN $0.0025 \times \text{GROSS CROSS-SECTIONAL AREA (A}_g\text{)}$ OF THE SLAB (SEE SCHEDULE BELOW)

THICKNESS	MINIMUM TEMPERATURE BARS
100 mm	10 mm ϕ @ 250mm EACH WAY
125 mm	10 mm ϕ @ 225mm EACH WAY
150 mm	10 mm ϕ @ 185mm EACH WAY
175 mm	10 mm ϕ @ 150mm EACH WAY
200 mm	10 mm ϕ @ 140mm EACH WAY

- UNLESS OTHERWISE NOTED IN THE PLANS ALL BEDDED SLABS SHALL BE REINFORCED WITH 10mm ϕ AT 250mm O.C EACH WAY TO CENTER OF SLAB AND CONSTRUCTION JOINTS FOR SAME SHALL NOT BE LESS THAN 3.65 METER APART
- PROVIDE EXTRA REINFORCEMENTS FOR CORNER SLAB (TWO ADJACENT DISCONTINUOUS EDGES) AS SHOWN BELOW.
- CONCRETE SLAB REINFORCEMENTS SHALL BE PROPERLY SUPPORTED WITH 10mm ϕ STEEL CHAIR OR APPROVED EQUIVALENT SPACED AT 1.0 METER ON CENTER BOTHWAYS

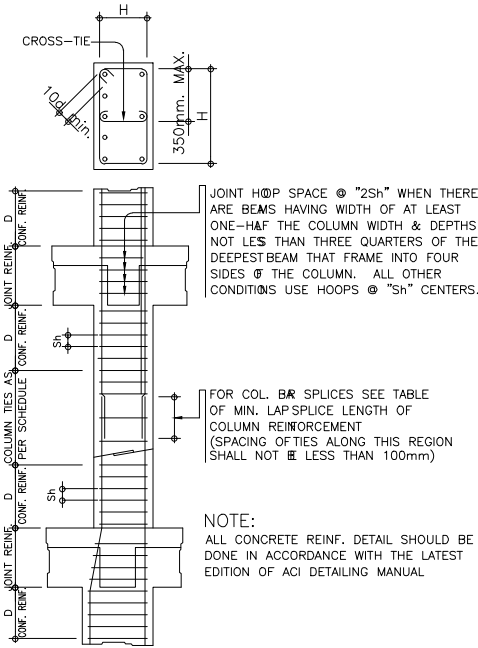


TYPICAL CORNER SLAB DETAIL

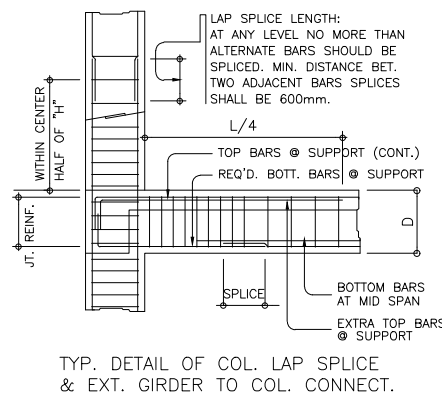
TYPICAL SLAB OPENING DET.

NOTES ON COLUMNS

- PROVIDE EXTRA SETS OF TIES AT 100mm O.C. FOR TIED COLUMN REINFORCEMENT ABOVE AND BELOW BEAM-COLUMN CONNECTIONS FOR A DISTANCE FROM FACE OF CONNECTION EQUAL TO THE GREATER OF THE OVERALL THICKNESS OF COLUMN, 1/6 THE CLEAR HEIGHT OF COLUMN OR 450mm.
- COLUMN TIES SHALL BE PROTECTED EVERYWHERE BY A COVERING OF CONCRETE CAST MONOLITHICALLY WITH THE CORE WITH THE MINIMUM THICKNESS OF 40mm AND NOT LESS THAN 40 TIMES THE MAXIMUM SIZE OF COARSE AGGREGATE IN MILLIMETERS.
- WHERE COLUMNS CHANGE IN SIZE, VERTICAL REINFORCEMENTS SHALL BE OFFSET AT A SLOPE OF NOT MORE THAN 1 IN 6 AND EXTRA 10mm TIES AT 100mm SHALL BE PROVIDED THRU OUT THE OFFSET REGION.
- UNLESS OTHERWISE INDICATED IN THE PLANS, LAP SPLICES FOR VERTICAL COLUMN REINFORCEMENT SHALL BE MADE WITHIN THE CENTER HALF OF COLUMN HEIGHT, AND THE SPLICE LENGTH SHALL NOT BE LESS THAN 40 BAR DIAMETERS. WELDING OR APPROVED MECHANICAL DEVICES MAY BE USED PROVIDED THAT NOT MORE THAN ALTERNATE BARS ARE WELDED OR MECHANICALLY SPLICED AT ANY LEVEL AND THE VERTICAL DISTANCES BETWEEN THESE WELDS OR SPLICES OF ADJACENT BARS IS NOT LESS THAN 600mm.



TYPICAL COLUMN ELEV. SHOWING DOWELS AND TIES SPACING



TYP. DETAIL OF COL. LAP SPLICE & EXT. GIRDER TO COL. CONNECT.

NOTES ON BEAMS AND GIRDERS

- UNLESS OTHERWISE NOTED IN PLANS, CAMBER ALL BEAMS AND GIRDER AT LEAST 6mm ϕ FOR EVERY 4.50M OF SPAN, EXCEPT CANTILEVERS FOR WHICH THE CAMBER SHALL BE AS NOTED IN PLANS OR AS ORDERED BY THE ENGINEER BUT IN NO CASE LESS THAN 20mm FOR EVERY 3.0M OF FREE SPAN.
- TYPICAL BARS BENDING AND CUTTING DETAILS FOR BEAMS SHALL BE AS SHOWN IN FIG. B-1.

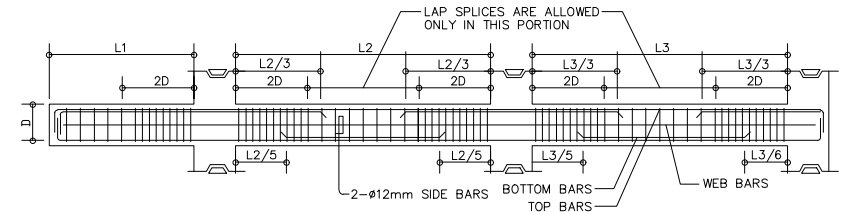


FIG. B-1

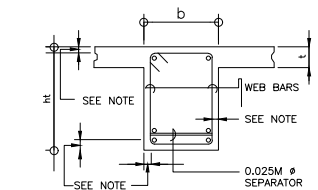
BAR SIZE (DEFORMED)	$f_c' = 20.7 \text{ MPa (3000psi)}$		$f_c' = 27.6 \text{ MPa (4000psi)}$	
	EMBEDMENT	LAPPED	EMBEDMENT	LAPPED
10mm ϕ	300	300	300	300
12mm ϕ	300	300	300	300
16mm ϕ	300	400	300	400
20mm ϕ	400	550	350	500
25mm ϕ	600	800	550	750
28mm ϕ	750	1000	650	850
32mm ϕ	950	1300	850	1100

NOTE : TOP PLAIN BARS , MULTIPLY VALUE BY 2

BAR SIZE (DEFORMED)	$f_c' = 20.7 \text{ MPa (3000psi)}$		$f_c' = 27.6 \text{ MPa (4000psi)}$	
	EMBEDMENT	LAPPED	EMBEDMENT	LAPPED
10mm ϕ	225	300	200	300
12mm ϕ	275	300	250	300
16mm ϕ	350	400	325	400
20mm ϕ	450	500	475	500
25mm ϕ	625	625	550	625
28mm ϕ	625	675	625	675
32mm ϕ	700	775	700	775

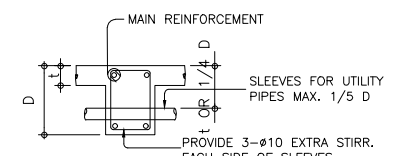
NOTE : TOP PLAIN BARS , MULTIPLY VALUE BY 2
VALUES GIVEN ABOVE CAN ALSO BE USED FOR COLUMNS.

- IF THE BEAM REINFORCING BARS END IN A WALL THE CLEAR DISTANCE FROM THE BARS TO THE FARTHER FACE OF THE WALL NOT BE LESS THAN 25mm. EMBEDMENT LENGTH SHALL BE AS SHOWN IN A TABLE 'A' FOR TENSION BARS AND TABLE 'B' FOR COMPRESSION BARS UNLESS SPECIFIED IN PLAN. TOP BAR SHALL NOT BE SPLICED WITHIN THE COLUMN OR WITHIN A DISTANCE TWICE THE MEMBER DEPTH FROM THE FACE OF THE COLUMN. AT LEAST TWO STIRRUPS SHALL BE PROVIDED AT ALL SPLICES.
- IF THERE ARE TWO OR MORE LAYERS OF REINFORCING BARS, USE 25mm ϕ BAR SEPARATORS SPACED AT 1.0M ON CENTER. IN NO CASE SHALL THERE BE LESS THAN TWO (2) SEPARATORS BETWEEN TWO LAYERS OF BARS.
- MINIMUM CONCRETE PROTECTION FOR REINFORCING BARS OR STEEL SHAPES SHALL BE AS SHOWN IN FIG. B-2 UNLESS SPECIFIED ELSEWHERE.



NOTE 1
20 mm CLEAR FOR JOIST
40 mm CLEAR FOR BEAMS AND GIRDERS

FIG. B-2



TYP. DET. FOR SLEEVES THRU CONCRETE BEAM

FIG. B-3

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

GENERAL CONSTRUCTION NOTES

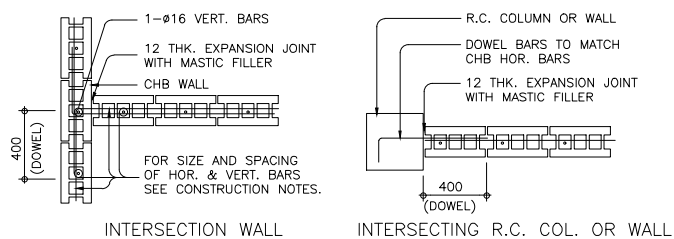
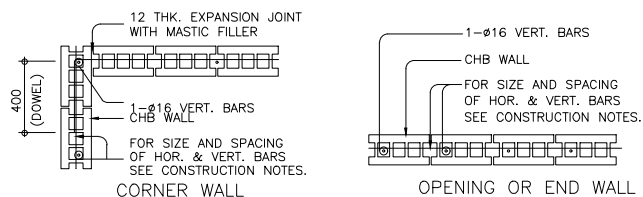
NOTES ON CONCRETE HOLLOW BLOCK WALLS

- 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.
- PROVIDE 150mm x 300mm STIFFENER COLUMN REINFORCED WITH 4-12mm WITH 6mm ϕ 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.

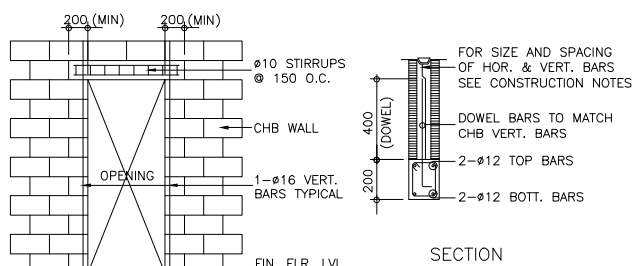
BLOCK THICKNESS	REINFORCEMENT		NOTES
	HORIZONTAL	VERTICAL	
75 mm	10mm ϕ @ 600mm O.C.	10mm ϕ @ 600mm O.C.	A. MINIMUM LAPS AT SPICE = 0.25M B. PROVIDE RIGHT ANGLED REINFORCEMENT AT CORNERS 0.92M LONG
125 mm	10mm ϕ @ 600mm O.C.	10mm ϕ @ 600mm O.C.	C. WHERE CHB OR CER. BLK. WALL DOWELS JOIN COL. R.C. BEAMS AND WALL DOWELS WITH THE SAME SIZE AS VERT. OR HOR. REINFORCEMENTS SHALL BE PROVIDED
150 mm	10mm ϕ @ 600mm O.C.	10mm ϕ @ 600mm O.C.	
200 mm	12mm ϕ @ 600mm O.C.	12mm ϕ @ 600mm O.C.	

REINFORCING CONCRETE LINTEL BEAM IN CONCRETE BLOCK WALLS

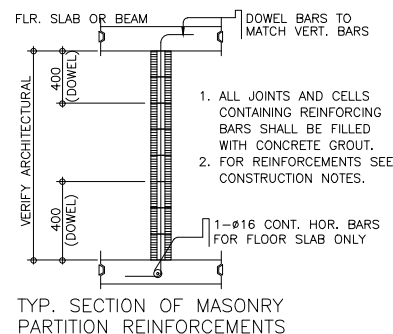
LINTELS IN BLOCK WALLS						
CLEAR SPAN (L)	TOTAL LENGTH (L+0.40M)	MIN. f'c (MPa)	HEIGHT OF LINTEL (MM)	REINFORCEMENT		
				BOTTOM	TOP	STIRRUPS
1.20M	1.60M	14.0	200	1- ϕ 10	1- ϕ 10	#6mm @ 200mm
1.50M	1.90M	200	200	1- ϕ 10	1- ϕ 10	#6mm @ 200mm
1.80M	2.20M	200	200	1- ϕ 12	1- ϕ 10	#6mm @ 200mm
2.10M	2.50M	17.0	250	1- ϕ 12	1- ϕ 10	#6mm @ 200mm
2.40M	2.90M	250	250	1- ϕ 12	1- ϕ 10	#6mm @ 200mm
2.70M	3.10M	250	250	1- ϕ 16	1- ϕ 12	#10mm @ 200mm
3.00	3.40M	300	300	1- ϕ 16	1- ϕ 12	#10mm @ 200mm
3.30	3.70M	20.0	300	1- ϕ 16	1- ϕ 12	#10mm @ 200mm
3.60	4.00	300	300	1- ϕ 20	1- ϕ 12	#10mm @ 200mm



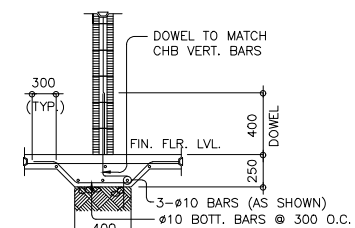
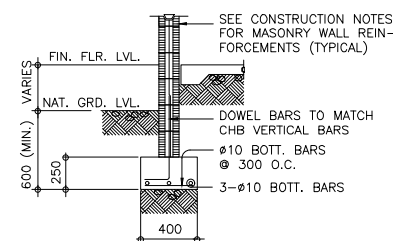
TYPICAL CONNECTION DETAIL OF MASONRY WALL



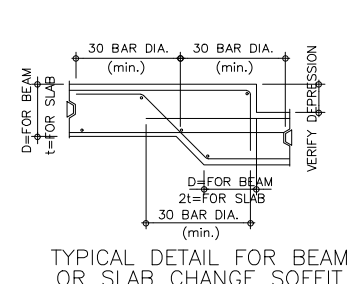
TYP. DET. OF LINTEL BEAM AT CHB WALL OPENING



TYP. SECTION OF MASONRY PARTITION REINFORCEMENTS



TYPICAL CHB FOOTING DETAILS (WHERE APPLICABLE)



TYPICAL DETAIL FOR BEAM OR SLAB CHANGE SOFFIT

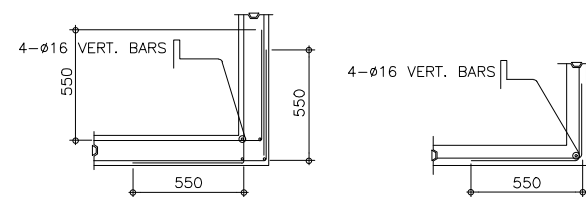
NOTES ON CONCRETE WALLS

- ALL WALLS SHALL BE REINFORCED ACCORDING TO THE FOLLOWING SCHEDULE OF WALL REINFORCEMENT UNLESS OTHERWISE INDICATED IN THE PLANS.

WALL THICKNESS	REINFORCEMENT		REMARKS	VERTICAL SECTION
	HORIZONTAL	VERTICAL		
100mm	#10mm @ 250mm O.C.	#10mm @ 300mm O.C.	HORIZONTAL BARS AT CENTERS VERTICAL BARS STAGGERED OUT	VERT. BARS HORIZ. BARS
125mm	#10mm @ 200mm O.C.	#10mm @ 250mm O.C.		
150mm	#12mm @ 250mm O.C.	#12mm @ 300mm O.C.		

- 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.
- 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 WIRE SECURELY WITH 16 G.I. WIRE PROVIDED THAT SPLICES IN ADJACENT BARS ARE STAGGERED AT LEAST 1.50M O.C.

- UNLESS OTHERWISE NOTED IN THE PLANS, ALL OPENINGS IN WALLS 250mm OR THICKER SHALL BE REINFORCED AROUND WITH 2-20mm ϕ BARS FOR 225mm, 200mm, 175mm, 150mm, USE 2-16mm ϕ . FOR 125mm AND 100mm WALLS, USE 2-12mm ϕ BARS. ALL WALLS SPANNING SHALL HAVE VERTICAL REINFORCEMENT BENT TO A U-FORM LIKE STIRRUPS AND SPACED ACCORDING TO THE SCHEDULE UNLESS OTHERWISE NOTED (SEE FIG.1)



TYPICAL CONNECTION DETAIL OF R.C. WALL AT CORNERS

NOTES ON WELDS

- USE E70xx ELECTRODES FOR ALL MEMBERS WELDED.
- WELDS SHALL DEVELOP THE FULL STRENGTH OF MEMBERS JOINED UNLESS OTHERWISE SHOWN OR DETAILED IN THE DRAWINGS.

NOTES ON STRUCTURAL STEEL

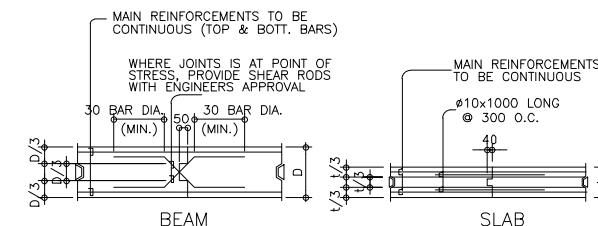
- STRUCTURAL STEEL TO BE USED FOR FABRICATION AND ERECTION OF THIS STRUCTURE SHALL COMPLY WITH ALL THE PERTINENT PROVISION OF AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDING LATEST EDITION.
- ALL STRUCTURAL STEEL SHAPES SHALL CONFORM TO ASTM A36 STRUCTURAL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

NOTES ON EMBEDDED PIPES

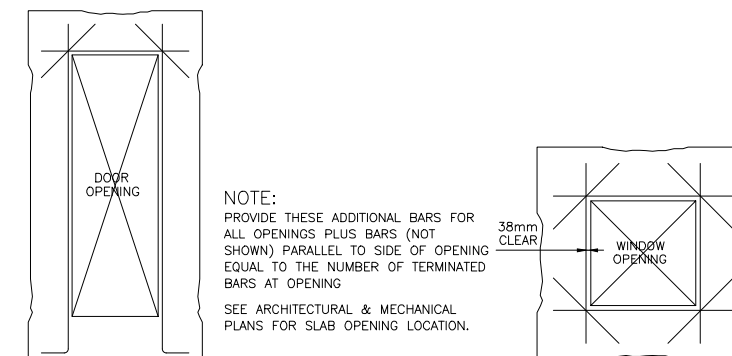
- ALL EMBEDDED PIPES FOR UTILITIES, ETC. THAT PASS THRU BEAMS SHALL NOT EXCEED 100mm IN DIAMETER OR 1/3 BEAM DEPTH WHICHEVER IS LESS, UNLESS OTHERWISE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.
- NO PIPES SHALL BE ALLOWED TO PASS THRU BEAMS VERTICALLY.
- NO PIPES SHALL BE EMBEDDED IN COLUMNS.

NOTES ON CONSTRUCTION JOINTS IN CONCRETE

- 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 PROVIDED AT THE JOINT.



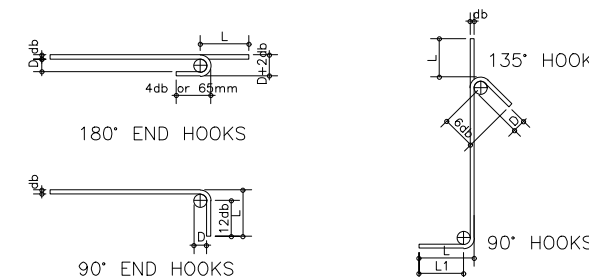
TYPICAL SLAB & BEAM CONSTRUCTION JOINT DET.



TYP. EXTERIOR WINDOW & DOOR OPENING

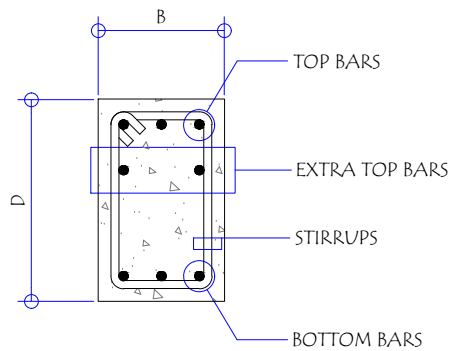
NOTES OF STIRRUPS

- ALL REINFORCEMENT SHALL BE BENT COLD UNLESS OTHERWISE PERMITTED BY THE STRUCTURAL ENGINEER.
- REINFORCEMENT PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FILLED BENT, EXCEPT AS SHOWN IN THE DESIGN DRAWINGS OR PERMITTED BY THE STRUCTURAL ENGINEER.
- TIES & CLOSE STIRRUPS MUST BE BENT AT 135°.

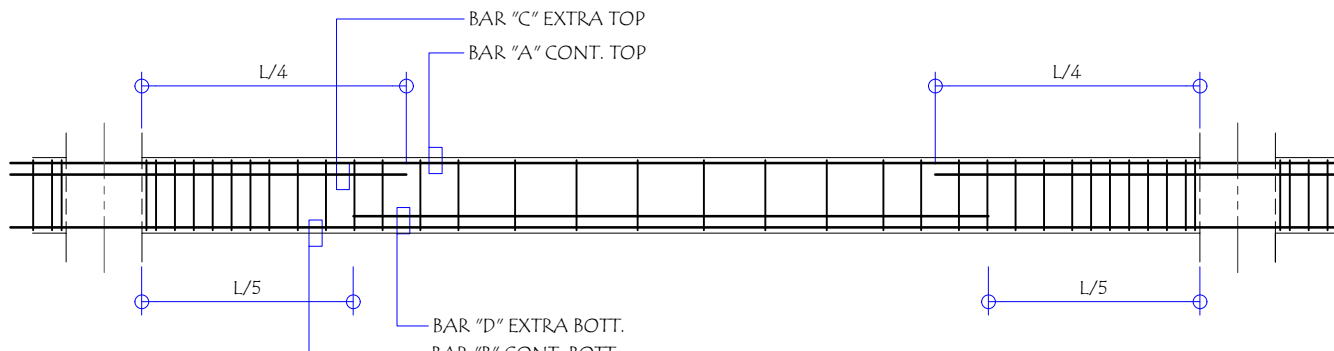


MAIN BAR END HOOKS (ALL GRADES)				
BAR SIZE (DEFORMED)	DIAMETER (mm)	180° HOOK		90° HOOK
		D+2db	L	L
10mm ϕ	60	75	125	150
12mm ϕ	75	100	150	200
16mm ϕ	95	125	175	250
20mm ϕ	115	150	200	300
25mm ϕ	150	200	230	450
28mm ϕ	240	300	350	550
32mm ϕ	300	335	450	600

STIRRUP AND TIE HOOKS (ALL GRADES)				
BAR SIZE (DEFORMED)	DIAMETER (mm)	180° HOOK		90° HOOK
		D+2db	L	L
10mm ϕ	40	125	85	100
12mm ϕ	50	165	115	115
16mm ϕ	65	200	140	150
20mm ϕ	115	250	165	300
25mm ϕ	150	365	230	405



TYP. R.C. BEAM SECTION @ SUPPORT

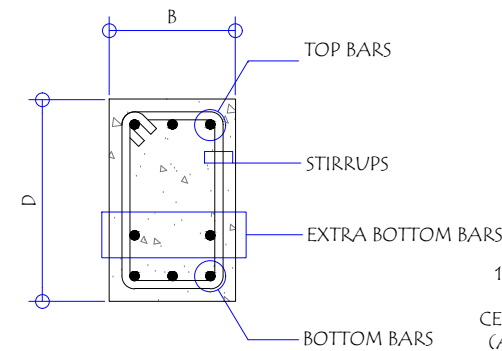


SPACING OF STIRRUPS

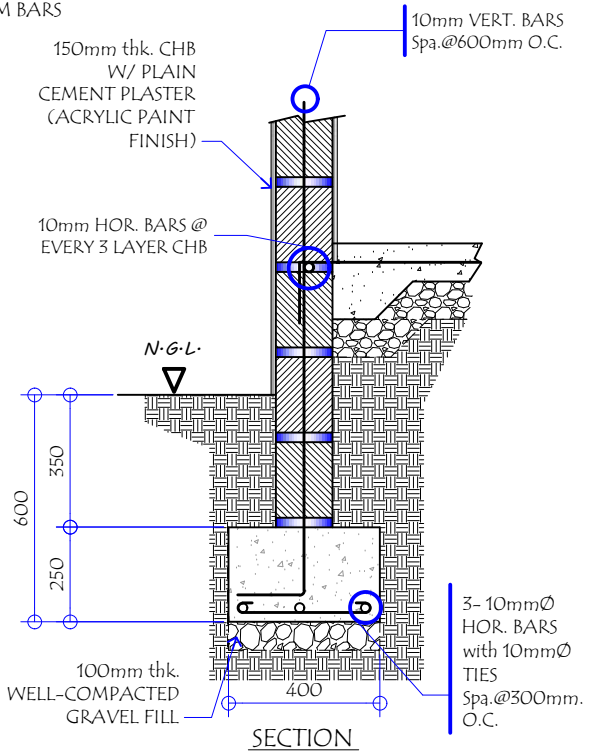
A	-	Ø10mm - 1@50, 6@100, 4@150, 2@200, REST @ 300mm O.C.
B	-	Ø10mm - 1@50, 3@75, 4@100, REST@200mm O.C.

BEAM MARK	SIZES		REINFORCEMENT				SPACING OF STIRRUPS
	WIDTH	DEPTH	BAR "A"	BAR "B"	BAR "C"	BAR "D"	
RCB-1	B	D	CONT. TOP	CONT. BOTT.	EXTRA TOP	EXTRA BOTT.	A
RCB-2	250	350	3-Ø16mm	3-Ø16mm	2-Ø16mm	2-Ø16mm	B

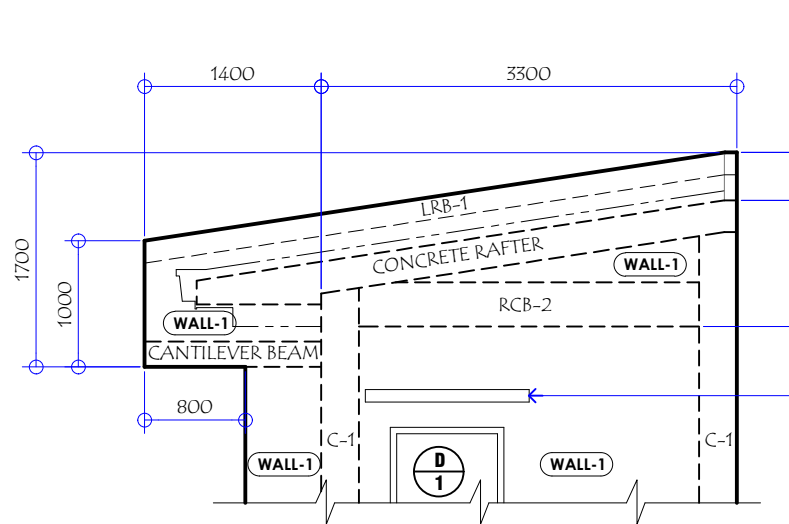
NOTE:
ALL REINFORCEMENT BARS SHALL BE GRADE 40 UNLESS OTHERWISE SPECIFIED IN THE DRAWING



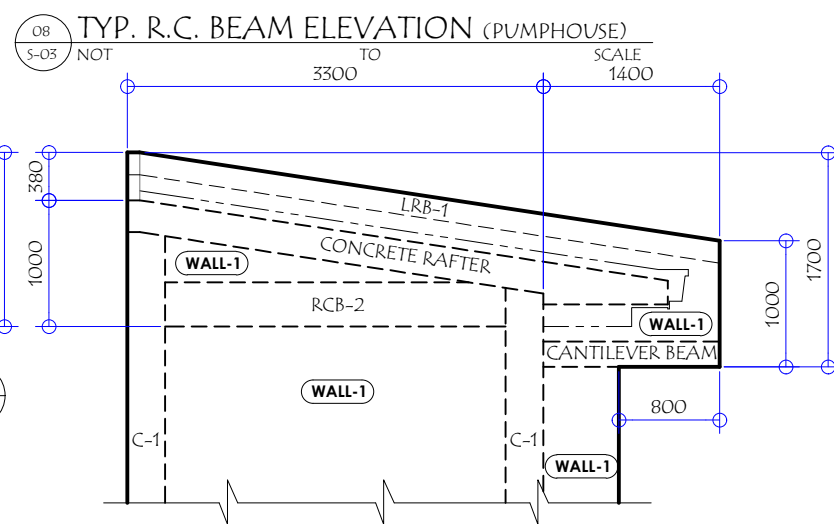
TYP. R.C. BEAM SECTION @ MID-SPAN



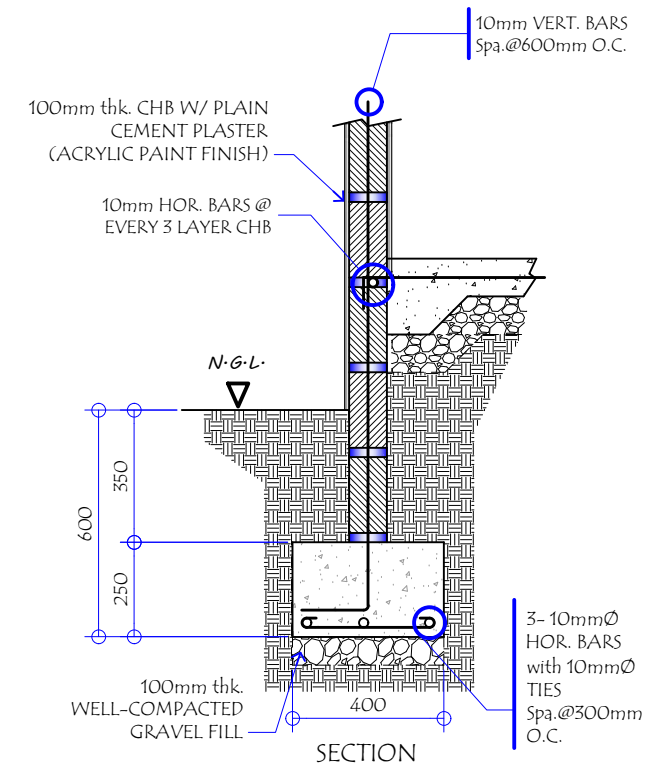
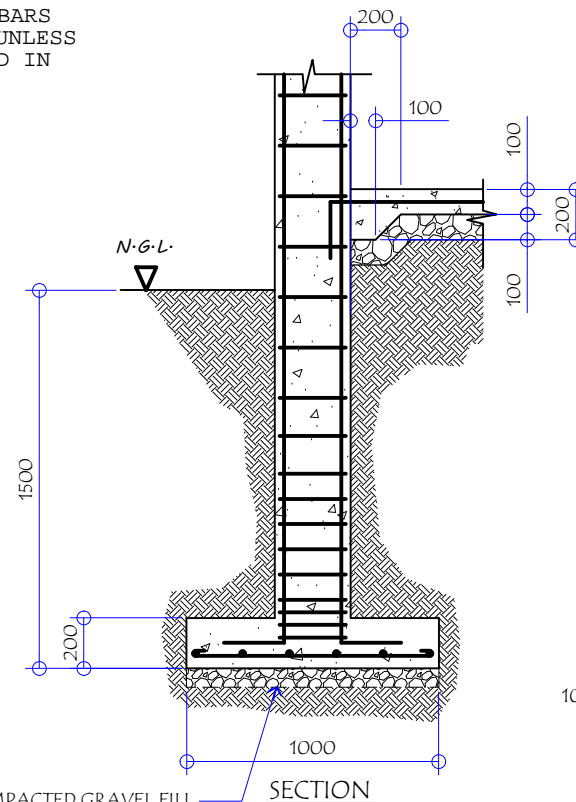
WF-2 DETAIL (PUMPHOUSE)
SCALE: 1:100 M



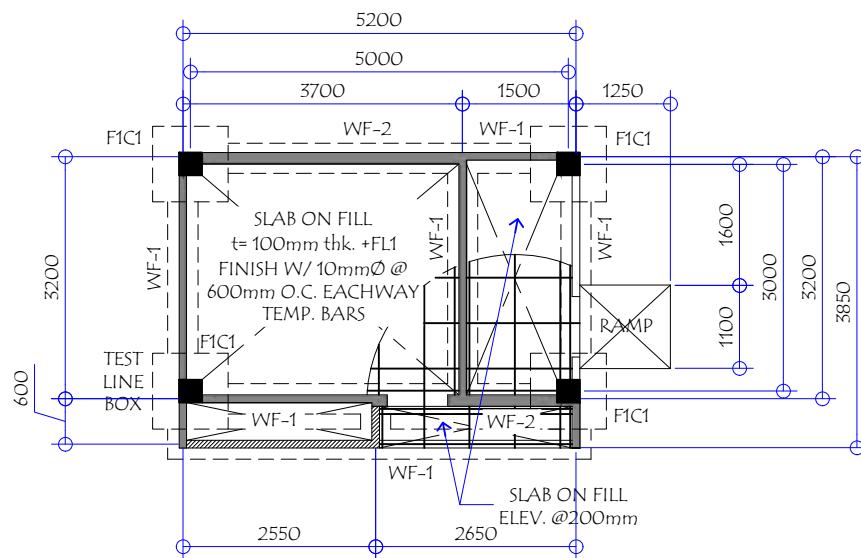
ELEV. OF RIGHT SIDE WALL FRAME (PUMPHOUSE)
SCALE: 1:60 M



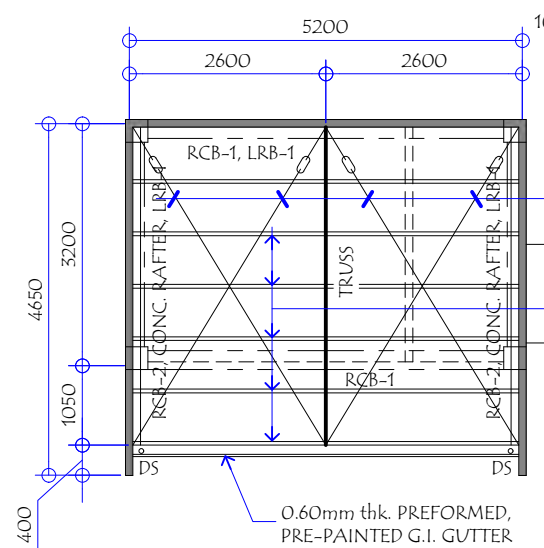
ELEV. OF LEFT SIDE WALL FRAME (PUMPHOUSE)
SCALE: 1:60 M



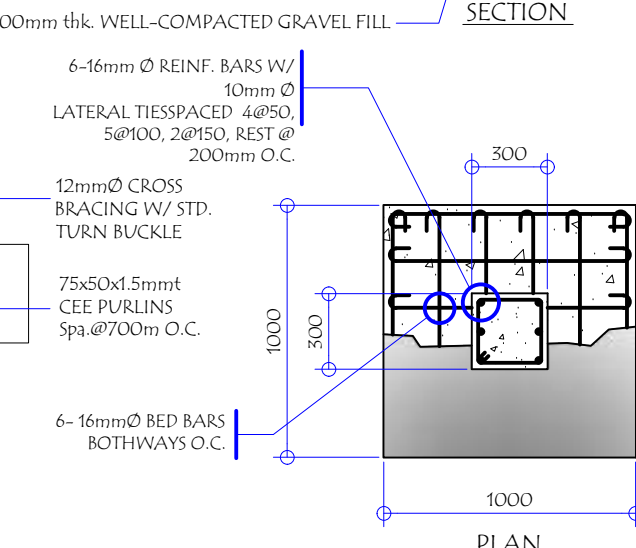
WF-1 DETAIL (PUMPHOUSE)
SCALE: 1:100 M



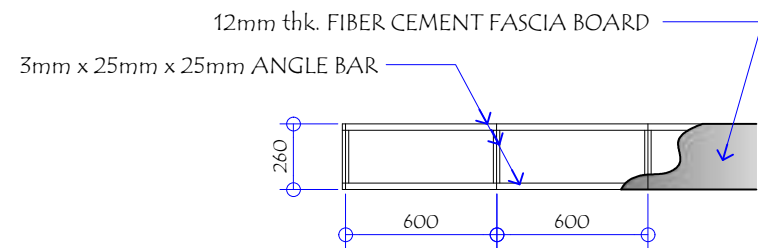
FOUNDATION PLAN (PUMPHOUSE)
SCALE: 1:100 M



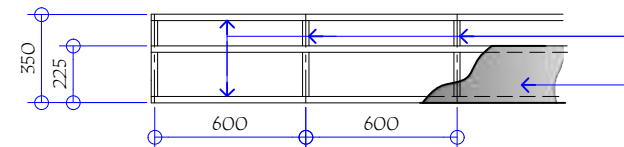
ROOF FRAMING PLAN (PUMPHOUSE)
SCALE: 1:100 M



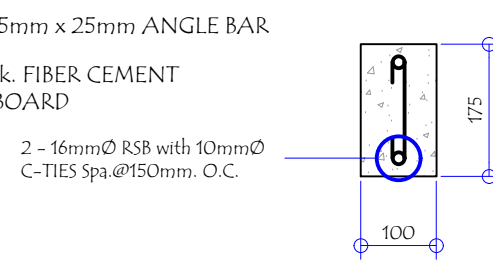
FIC1 DETAIL (PUMPHOUSE)
SCALE: 1:100 M



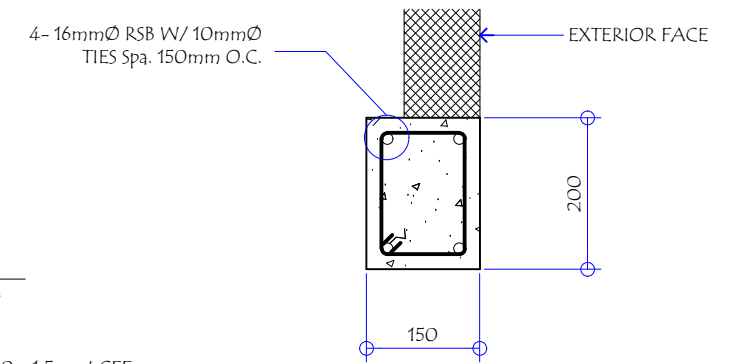
07 FASCIA FRAME DETAIL
S-04 SCALE: 1:30 M



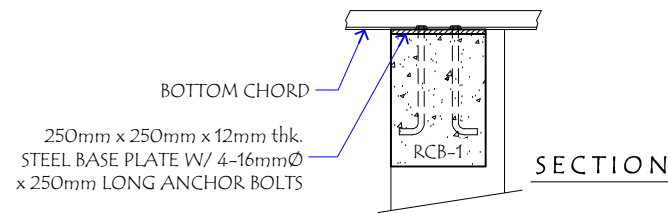
08 SECOND FASCIA FRAME DETAIL
S-04 SCALE: 1:30 M



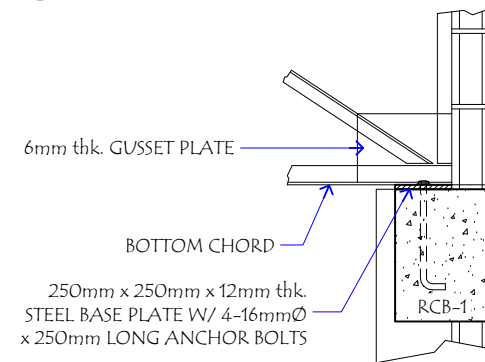
09 DETAIL SECTION OF LRB-1
S-04 SCALE: 1:10 M



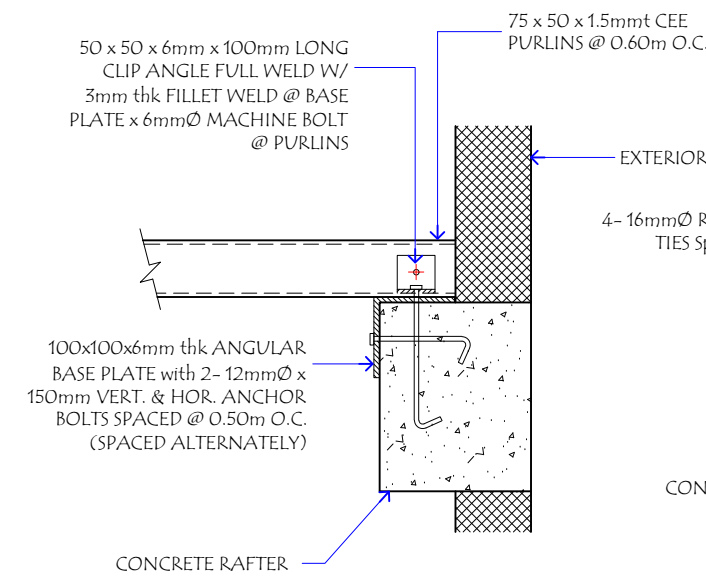
10 CANTILEVER BEAM DETAIL
S-04 SCALE: 1:10 M



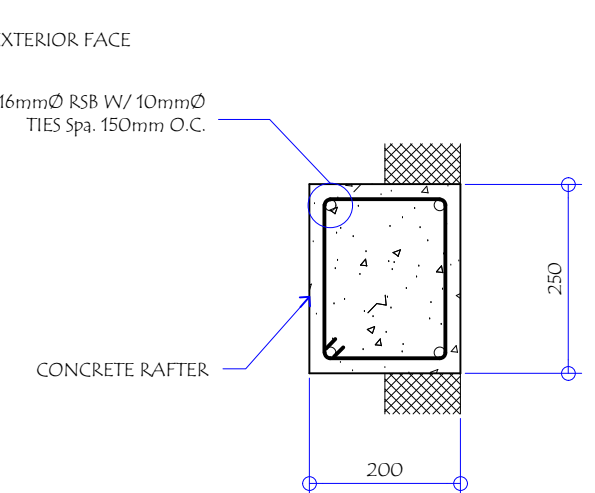
SECTION



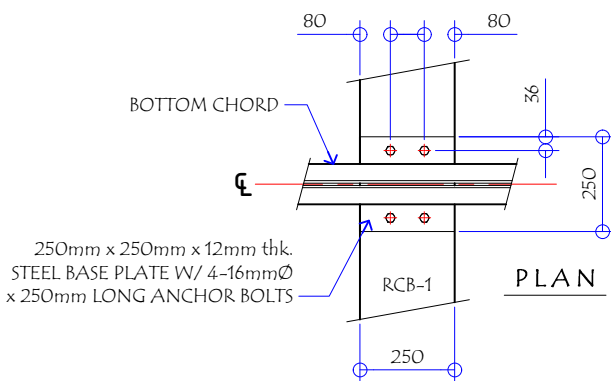
SECTION



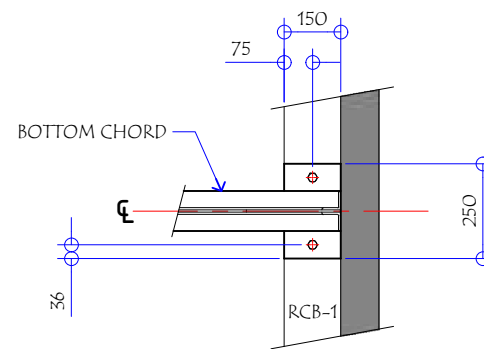
05 CONNECTION OF PURLINS TO CONC. RAFTER
S-04 SCALE: 1:10 M



06 SECTION
S-04 SCALE: 1:10 M



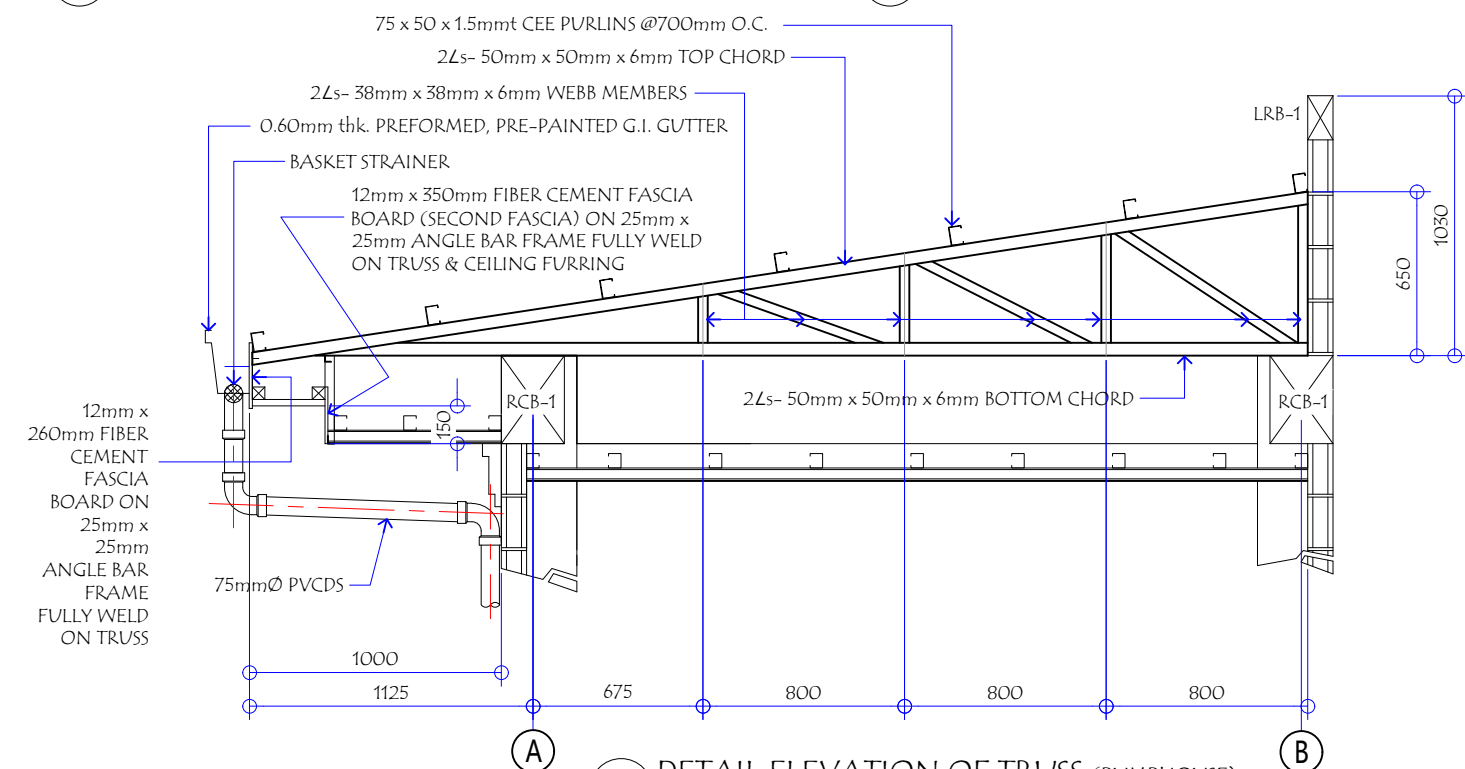
PLAN



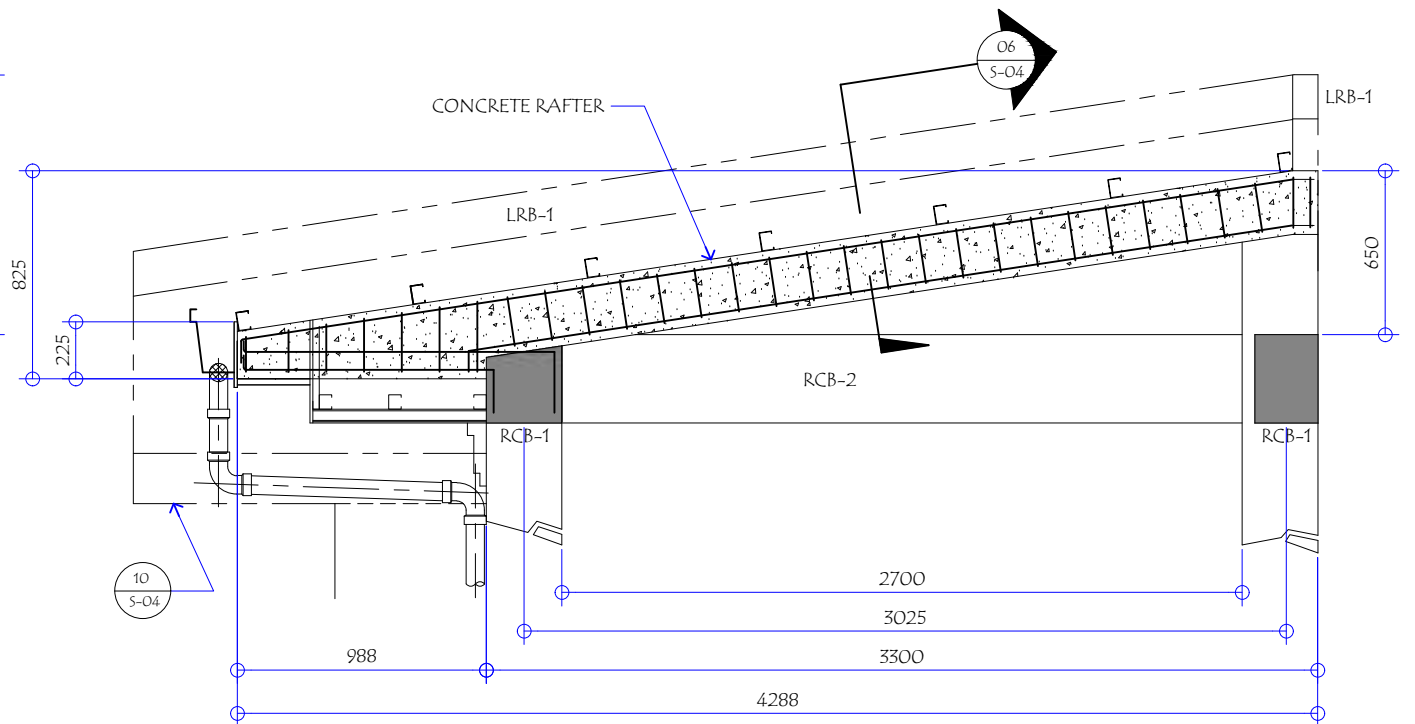
PLAN

03 DETAIL OF TRUSS ANCHORAGE @ GRID LN. A
S-04 SCALE: 1:20 M

04 DETAIL OF TRUSS ANCHORAGE @ GRID LN. B
S-04 SCALE: 1:20 M

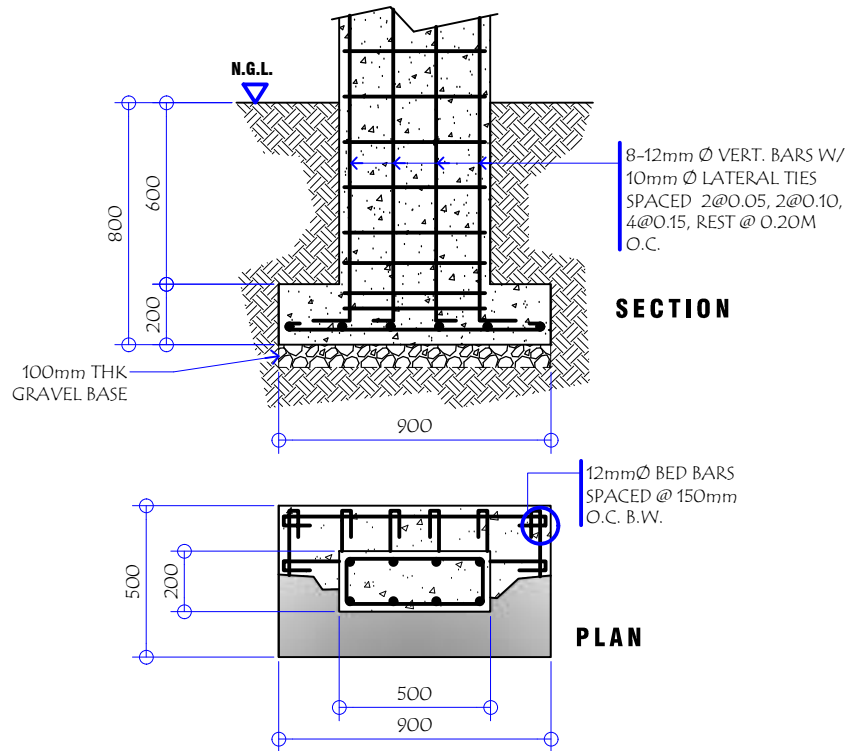


01 DETAIL ELEVATION OF TRUSS (PUMPHOUSE)
S-04 SCALE: 1:30 M



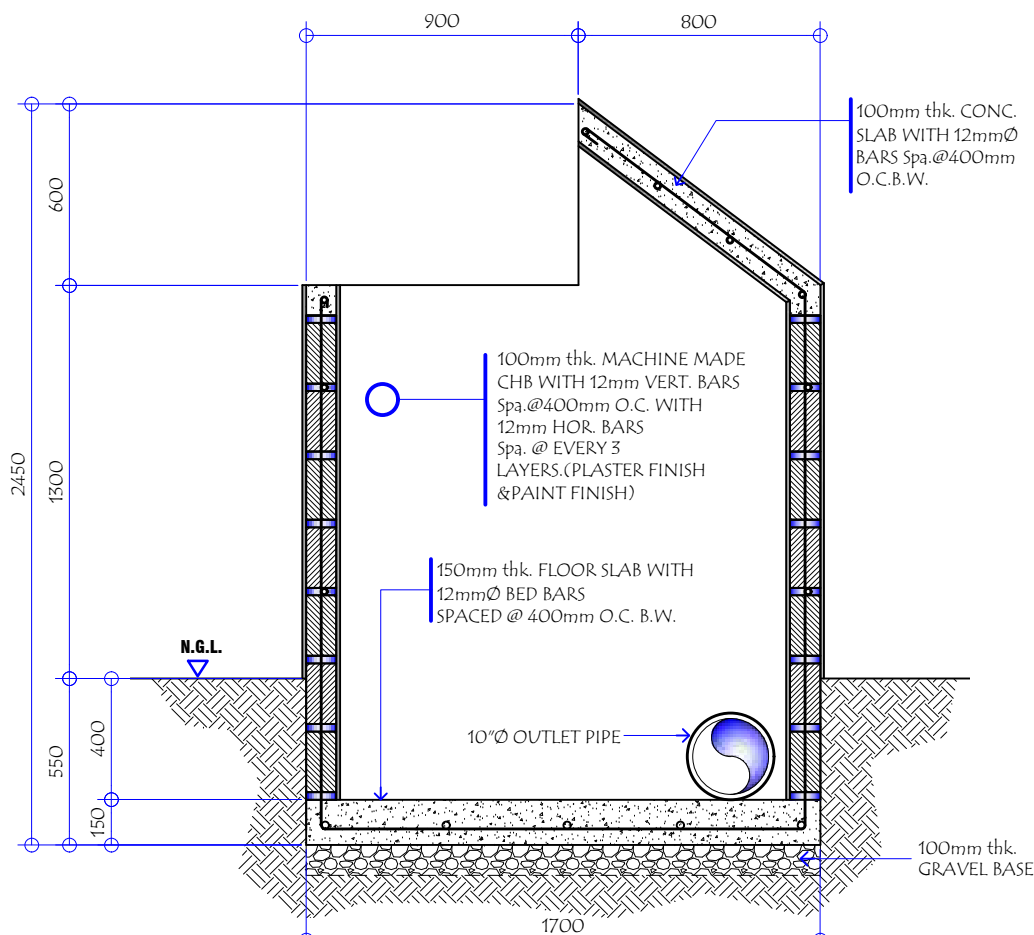
02 CONCRETE RAFTER DETAIL (PUMPHOUSE)
S-04 SCALE: 1:30 M

<p>GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 552 - 3824</p>	<p>DANILO M. HORLADOR, JR. CIVIL ENGINEER</p>		<p>PROJECT AND LOCATION</p> <p>PROPOSED CONSTRUCTION OF PUMPHOUSE, GENSET SHED, & PERIMETER FENCE</p>	<p>CHECKED:</p> <p>ENGR. MARIA CELIA N. DANDAN</p>	<p>REVIEWED:</p> <p>ENGR. ROGELIO A. BESANA, JR.</p>	<p>APPROVED:</p> <p>ENGR. ARN B. GELLANGARIN</p>	<p>SHEET CONTENTS</p> <p>AS SHOWN</p>	<p>SHEET NO.</p> <p>A-04</p>	
	<p>REG. NO. 0107545</p> <p>TIN. NO. 291-941-997</p>	<p>PTR. NO. 61873A</p> <p>DATE: 01/12/2022</p>	<p>LOCATION: PUROK 6, BRGY. CONEL, GENERAL SANTOS CITY</p>	<p>OIC - PDD</p>	<p>AGM, OPERATION & TECHNICAL SERVICES</p>	<p>GENERAL MANAGER A</p>	<p>DRAWN BY: RRA</p> <p>CHECKED BY: ESA</p>	<p>REV. NO.</p> <p>DATE: Jan. 2022</p>	<p>11</p>
	<p>11 20</p>								



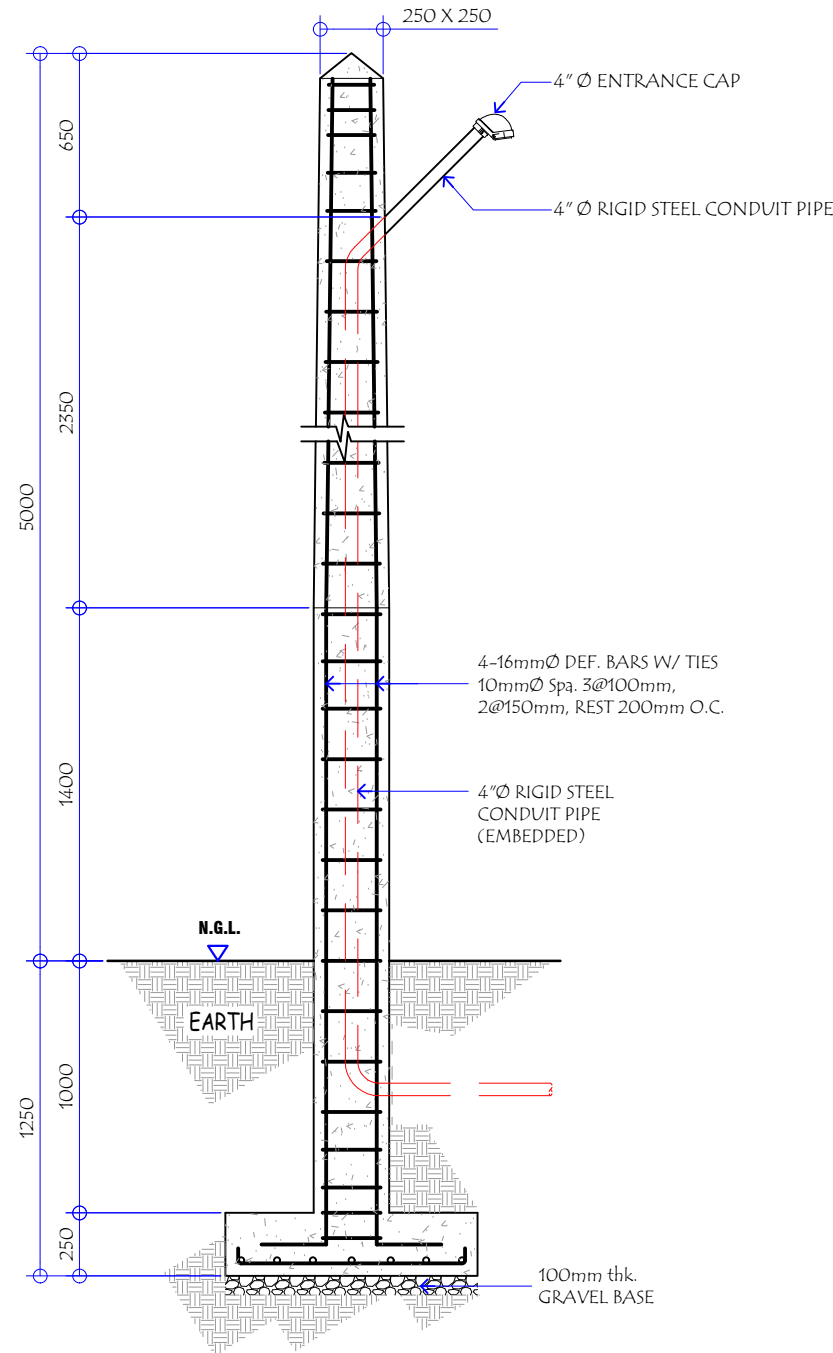
CONCRETE PIPE SUPPORT DETAILS

04
S-05 SCALE: 1: 25 M



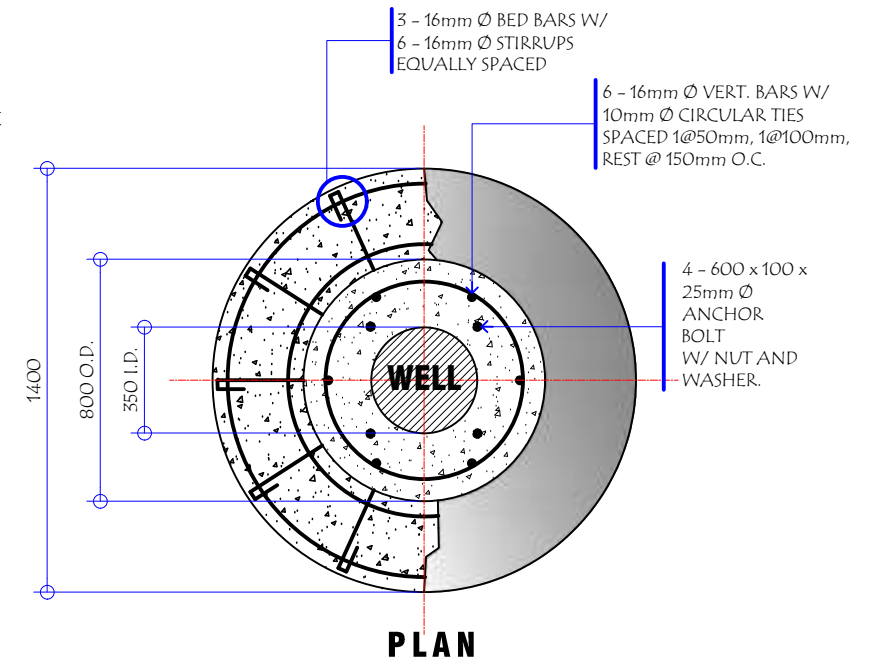
LONGITUDINAL SECTION OF TEST LINE BOX

01
S-05 SCALE: 1: 40 M

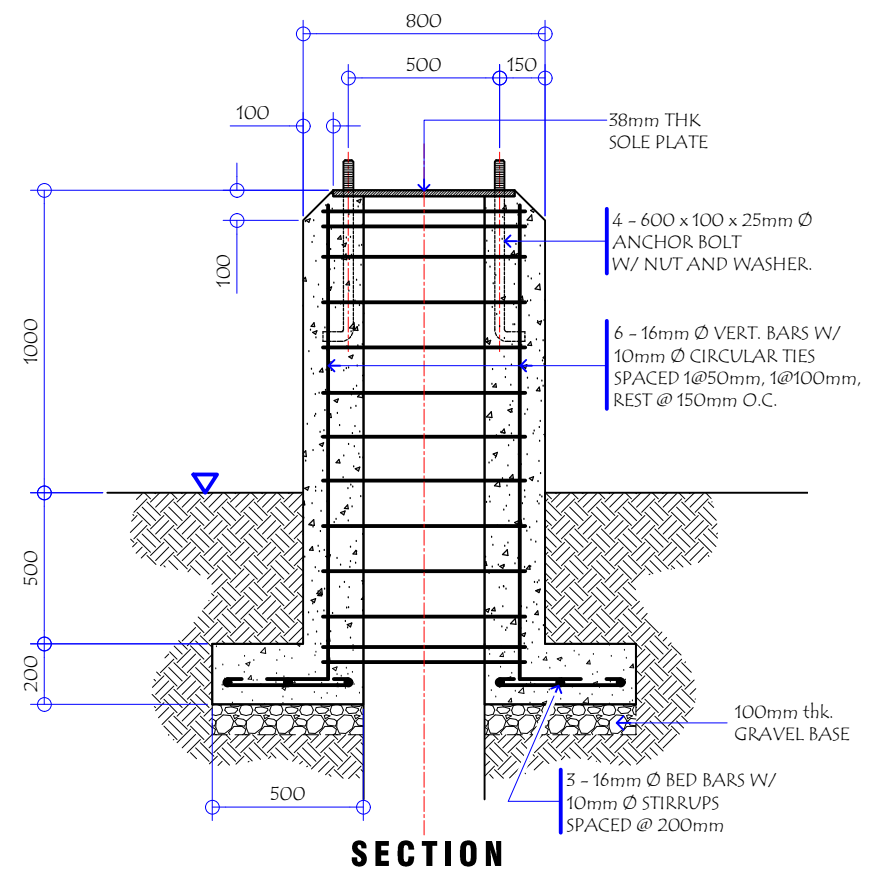


SERVICE ENTRANCE DETAIL

02
S-05 SCALE: 1: 30 M



PLAN

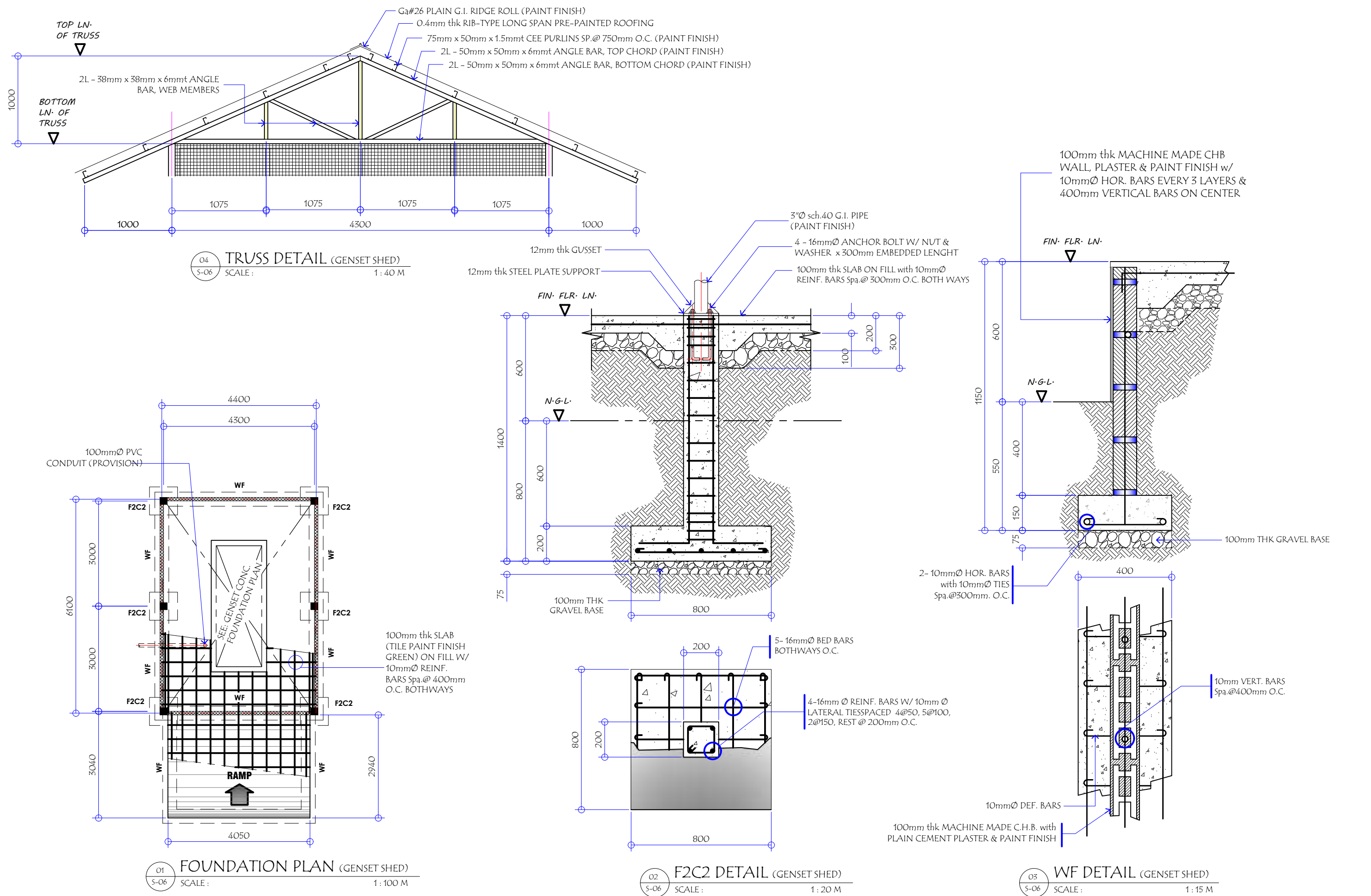



SECTION

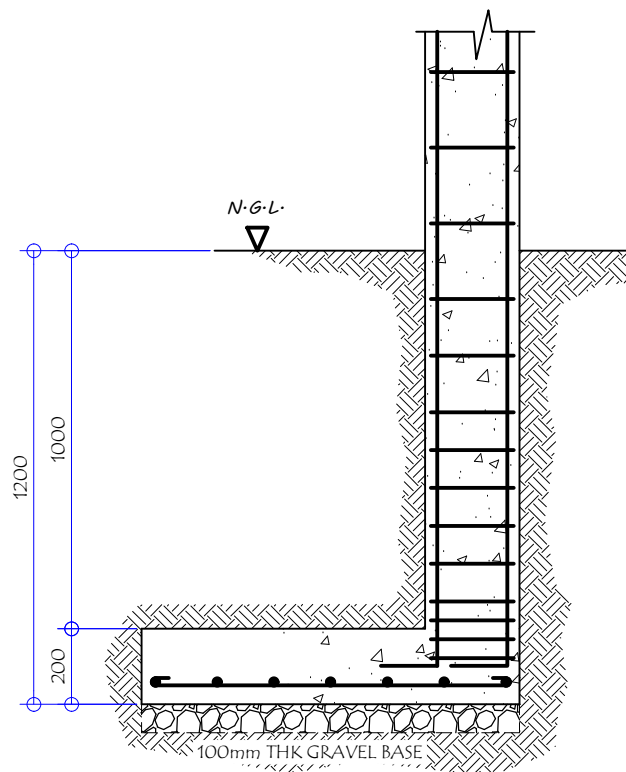
DEEP WELL CONCRETE BASE DETAIL

05
S-05 SCALE: 1: 25 M

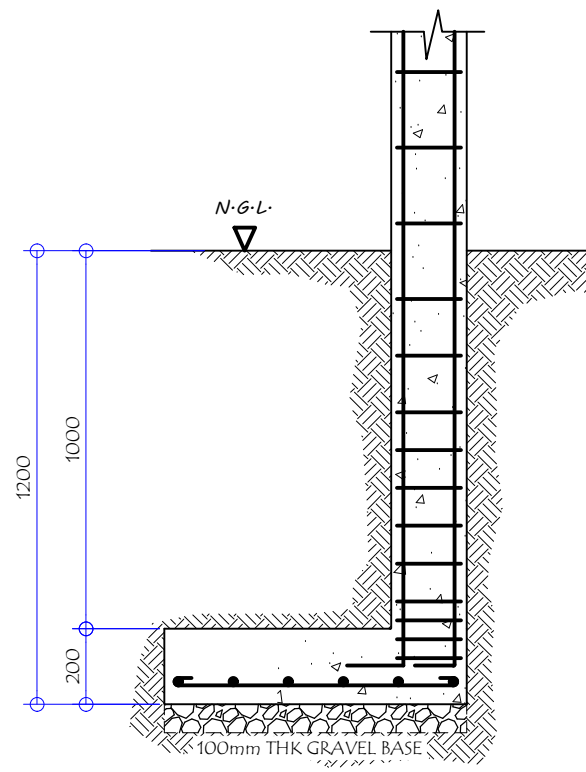
<p>GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 552 - 3824</p>	<p>DANILO M. HORLADOR, JR. CIVIL ENGINEER</p>		<p>PROJECT AND LOCATION</p>	<p>CHECKED:</p>	<p>REVIEWED:</p>	<p>APPROVED:</p>	<p>SHEET CONTENTS</p>	<p>SHEET NO.</p>	
	<p>REG. NO. 0107545</p>	<p>TIN. NO. 291-941-997</p>	<p>PROPOSED CONSTRUCTION OF PUMPHOUSE, GENSET SHED, & PERIMETER FENCE</p>	<p>ENGR. MARIA CELIA N. DANDAN</p>	<p>ENGR. ROGELIO A. BESANA, JR.</p>	<p>ENGR. ARN B. GELLANGARIN</p>	<p>DRAWN BY: RRA</p>	<p>REV. NO.</p>	<p>12</p>
	<p>PTR. NO. 61873A</p>	<p>DATE: 01/12/2022</p>	<p>LOCATION: PUROK 6, BRGY. CONEL, GENERAL SANTOS CITY</p>	<p>OIC - PDD</p>	<p>AGM, OPERATION & TECHNICAL SERVICES</p>	<p>GENERAL MANAGER A</p>	<p>CHECKED BY: ESA</p>	<p>DATE: Jan. 2022</p>	<p>20</p>



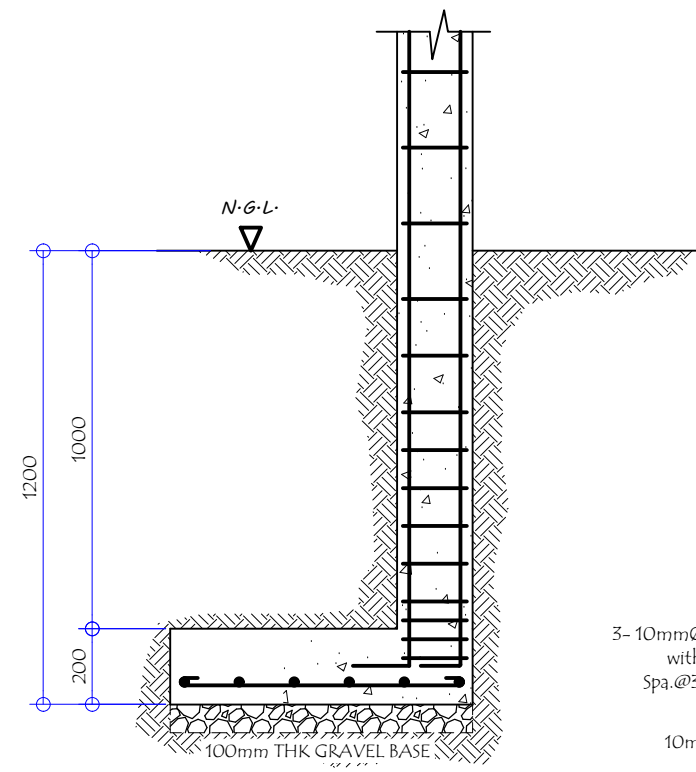
 GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 552 - 3824	DANILO M. HORLADOR, JR CIVIL ENGINEER		PROJECT AND LOCATION PROPOSED CONSTRUCTION OF PUMPHOUSE, GENSET SHED, & PERIMETER FENCE	CHECKED: ENGR. MARIA CELIA N. DANDAN	REVIEWED: ENGR. ROGELIO A. BESANA, JR.	APPROVED: ENGR. ARN B. GELLANGARIN	SHEET CONTENTS AS SHOWN	SHEET NO. S-06	
	REG. NO. 0107545 PTR. NO. 61873A	TIN. NO. 291-941-997 DATE: 01/12/2022	LOCATION: PUROK 6, BRGY. CONEL, GENERAL SANTOS CITY	OIC - PDD	AGM, OPERATION & TECHNICAL SERVICES	GENERAL MANAGER A	DRAWN BY: RRA CHECKED BY: ESA	REV. NO. DATE: Jan. 2022	13 20



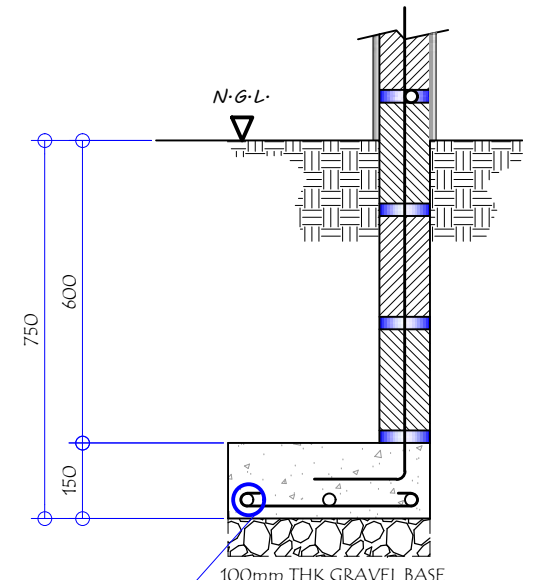
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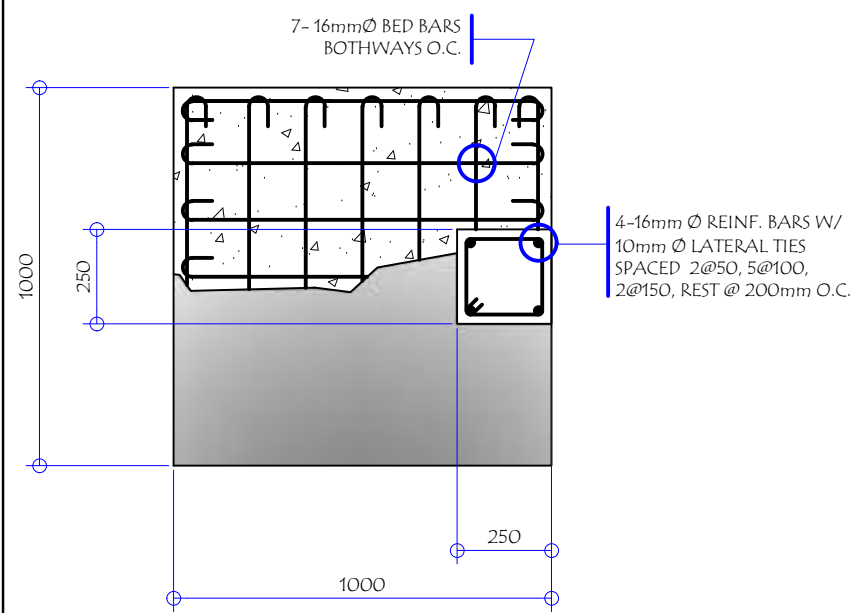
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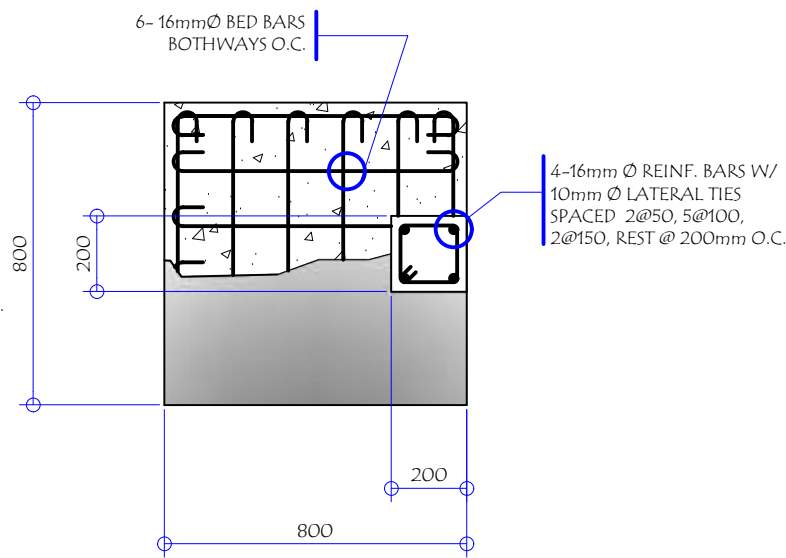
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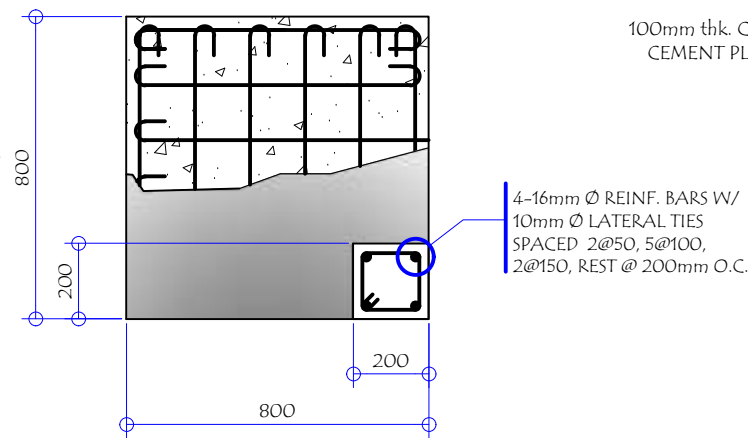
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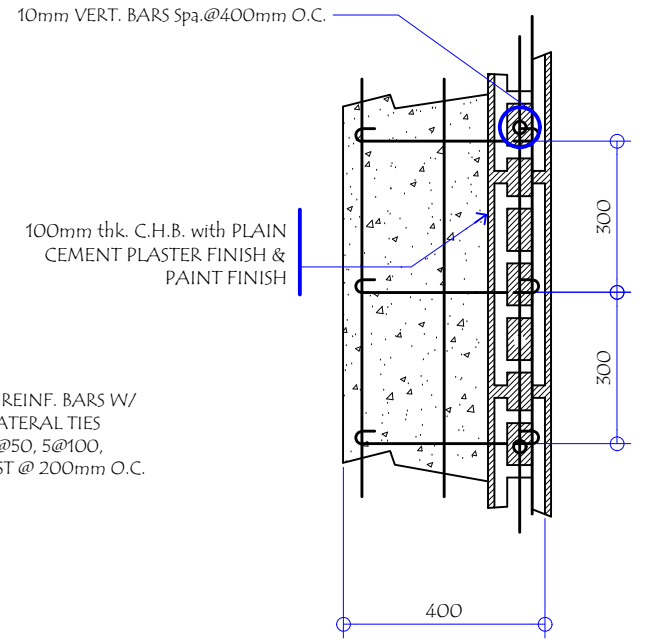
PLAN



PLAN



PLAN




PLAN

01 F3C3 DETAIL (PERIMETER FENCE)
SCALE: 1:20 M

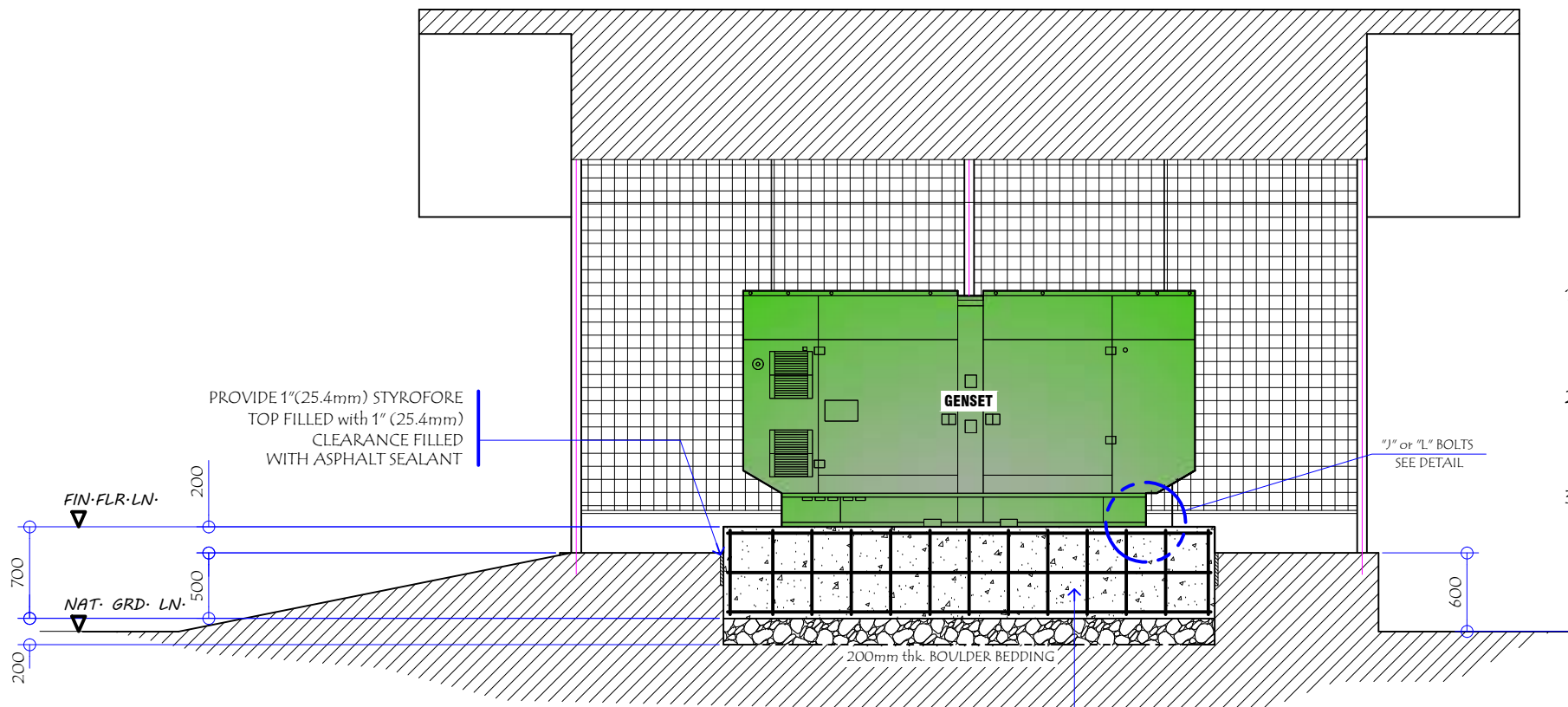
02 F4C4 DETAIL (PERIMETER FENCE)
SCALE: 1:20 M

03 F5C5 DETAIL (PERIMETER FENCE)
SCALE: 1:20 M

04 WF-2 DETAIL (PERIMETER FENCE)
SCALE: 1:20 M

 GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 552-3824	DANILO M. HORLADOR, JR. CIVIL ENGINEER		PROJECT AND LOCATION PROPOSED CONSTRUCTION OF PUMPHOUSE, GENSET SHED, & PERIMETER FENCE	CHECKED: ENGR. MARIA CELIA N. DANDAN	REVIEWED: ENGR. ROGELIO A. BESANA, JR.	APPROVED: ENGR. ARN B. GELLANGARIN	SHEET CONTENTS AS SHOWN	SHEET NO. S-07	
	REG. NO. 0107545 PTR. NO. 61873A	TIN. NO. 291-941-997 DATE: 01/12/2022	LOCATION: PUROK 6, BRGY. CONEL, GENERAL SANTOS CITY	OIC - PDD	AGM, OPERATION & TECHNICAL SERVICES	GENERAL MANAGER A	DRAWN BY: RRA CHECKED BY: ESA	REV. NO. DATE: Jan. 2022	14 20
									14 20

ONE(1) SET BRAND NEW SILENT TYPE 250KVA STANDBY POWERED GENERATING SET COMPLETE WITH ACCESSORIES



1. The foundation should extend at least 6 inches (150 mm) beyond the skid on all sides. This determines the length (l) and width (w) of the foundation.
2. The foundation should extend at least 6 inches (150 mm) above the floor to make service and maintenance of the generator set easier.
3. The foundation should be reinforced concrete with a 28-day compressive strength of at least 3000 psi (20.68 mPa).

1. ENGINE

Configuration	: 4 cycle; in-line; 6 cylinder diesel
Aspiration	: Turbo charged and after cooled
Rated Speed, rpm	: 1800
Speed droop	: 5%
Overspeed limit, rpm	: 2200±50

2. ALTERNATOR

Frequency and Speed	: 60Hz/1800rpm
Insulation System	: Class H/4 POLES
Rated Power Factor	: 0.8
Voltage Regulation	: ±5%
Full Load Current	: >313 Amperes @460V
Excitation	: SELF EXCITATION
Stator Winding	: 2/3
Exciter Voltage Regulator	: Permanent Magnet Generator (PMG)

3. FUEL CONSUMPTION

100% Load	: 50 l/hr
75% Load	: 38 l/hr
50% Load	: 26 l/hr
25% Load	: 15 l/hr

4. ELECTRICAL SYSTEM

Voltage	: 460-480 V
Power Factor	: 0.8
Phase	: 3
Frequency	: 60Hz

5. SOUNDPROOF ENCLOSURE
It should be Factory Assembled Soundproof Enclosure with 90db.

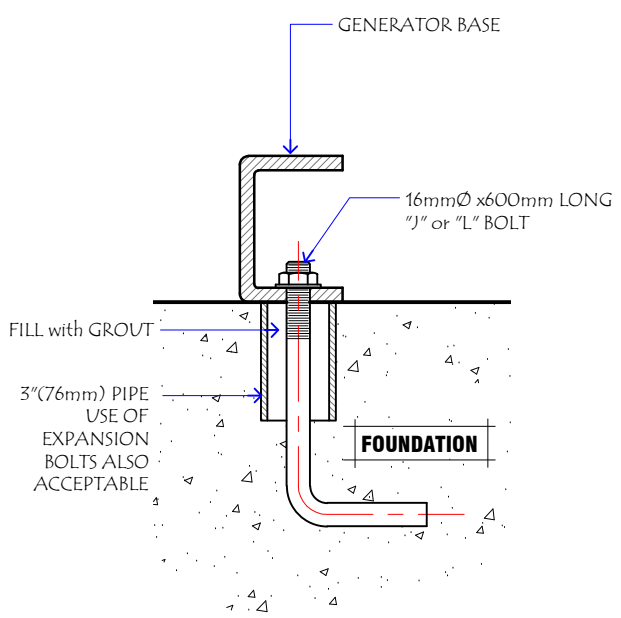
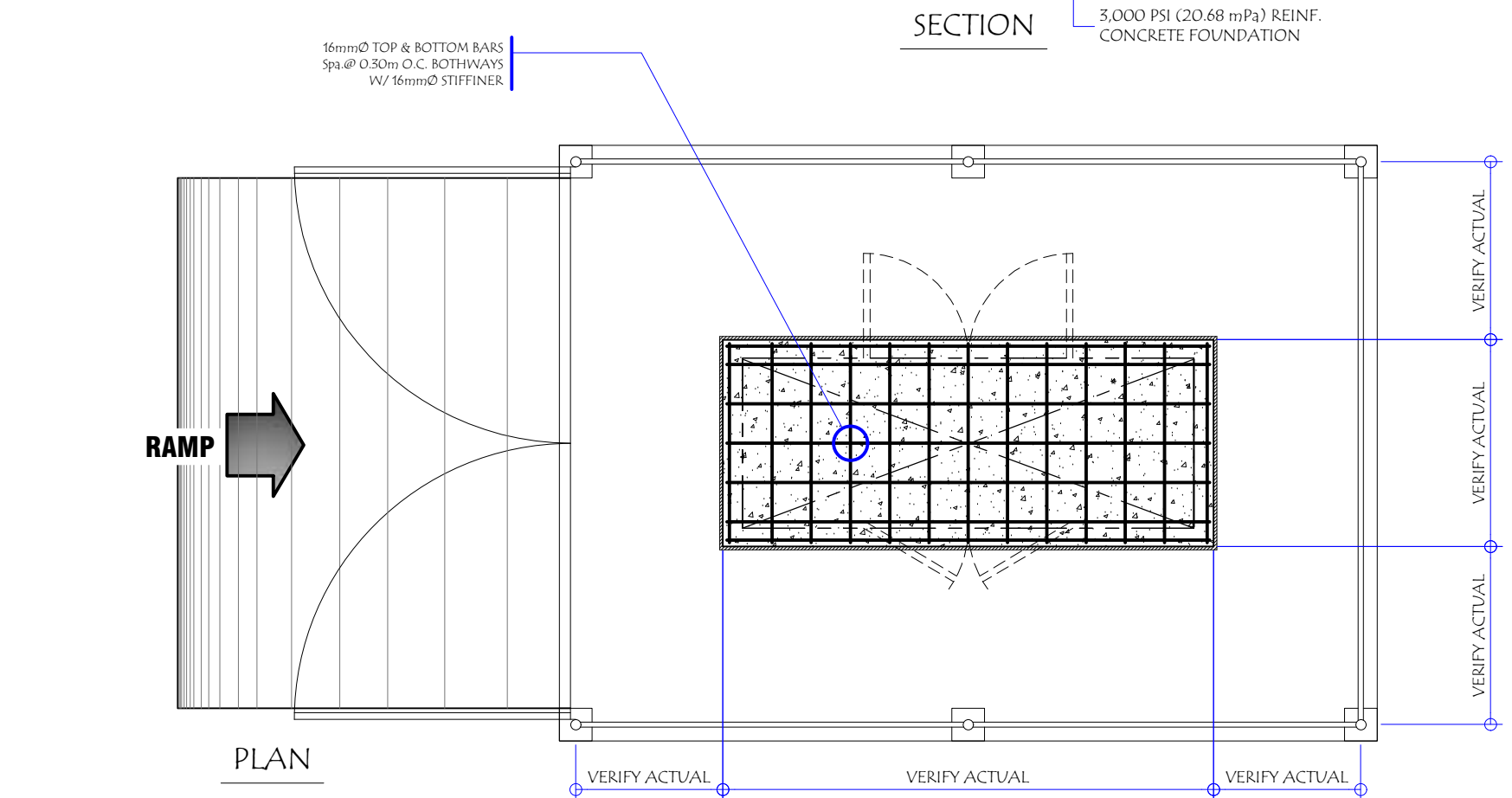
- 6. GENERATING SET CONTROL MODULE FEATURES**
Control System comprised of:
- Protection and control of a diesel engine.
 - Three-phase AC voltage measuring system.
 - Equipped with an LCD display presenting all values and alarms.
 - Automatic engine start/stop..
 - Engine protection.
 - Breaker control.
 - Generator protection.
 - Digital governing and generator set protective functions.
- Single phase full wave SCR type regulator compatible with either shunt or PMG systems.

- 6.1 STANDARD FUNCTION**
- Engine Control
 - Generator Monitoring
 - Generator Protection
 - Engine Monitoring
 - Clear Text Display

- 6.2 SHUTDOWN FUNCTION**
- Loss of Speed Signal
 - Alternator Under/Over Voltage
 - Alternator Under/Over Frequency
 - Mains Under/Over Voltage
 - Mains Under/Over Frequency
 - Under/Over Speed
 - Low Oil Pressure
 - High Engine Temperature
 - Phase Sequence Electrical (Option)
 - Earth Fault (Option)

- 6.3 WARNING FUNCTION**
- Alternator Under/Over Voltage
 - Alternator Under/Over Voltage
 - Mains Under/Over Voltage
 - Mains Under/Over Frequency
 - Under/Over Speed
 - Low Oil Pressure Pre-alarm
 - High Engine Temperature Pre-Alarm
 - High/Low Battery Voltage
 - Over-current
 - Periodic Maintenance

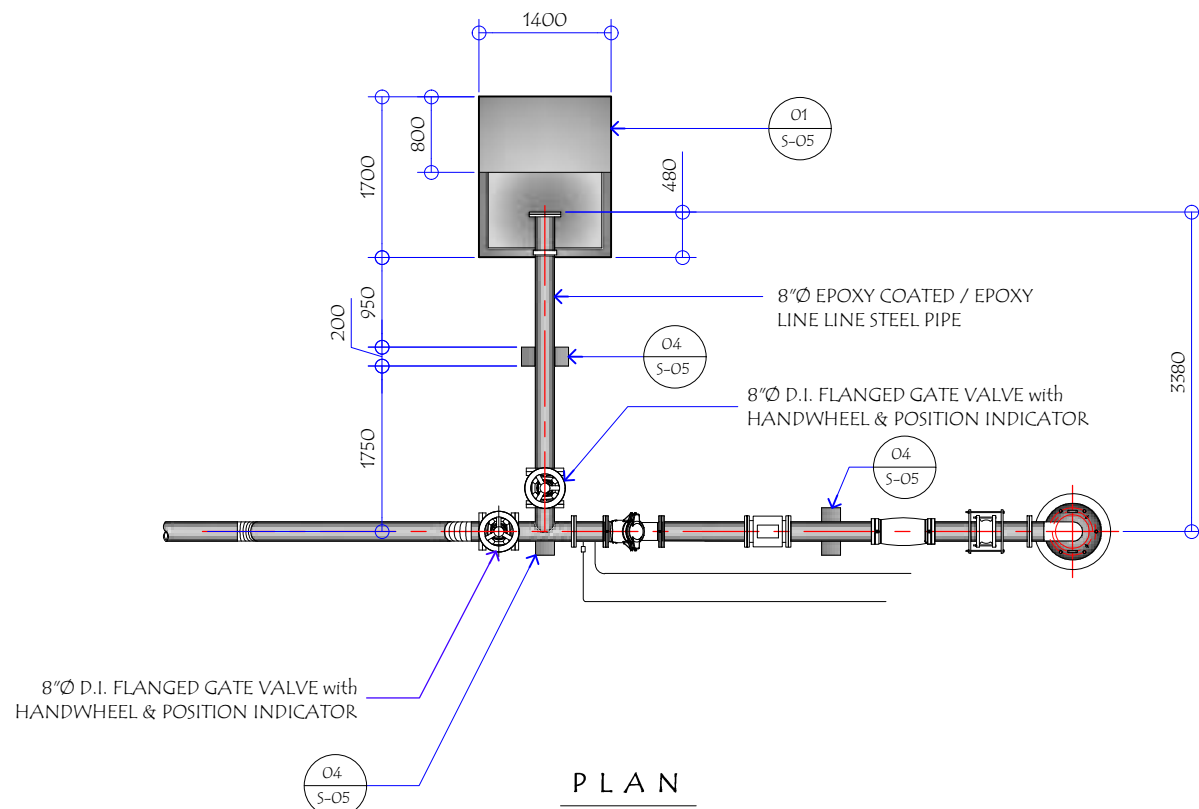
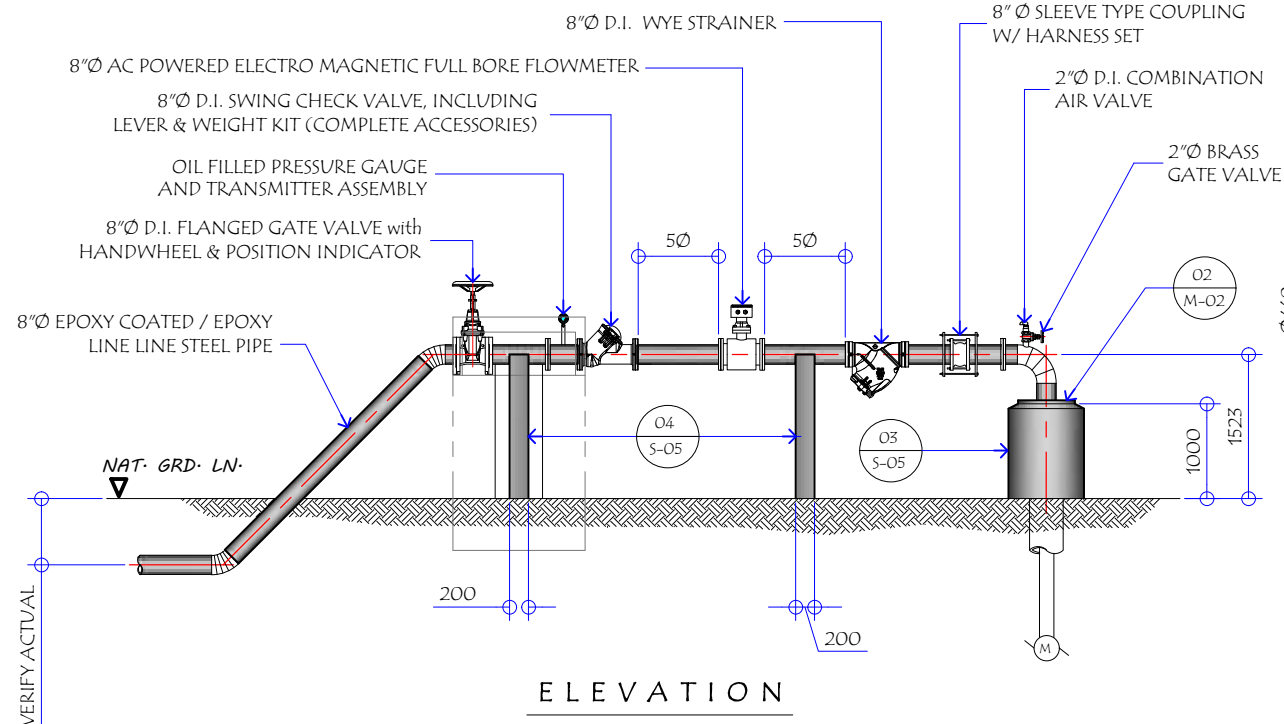
7. GENERATING SET DIMENSION
L = 3.30M W = 1.07m H = 1.60m



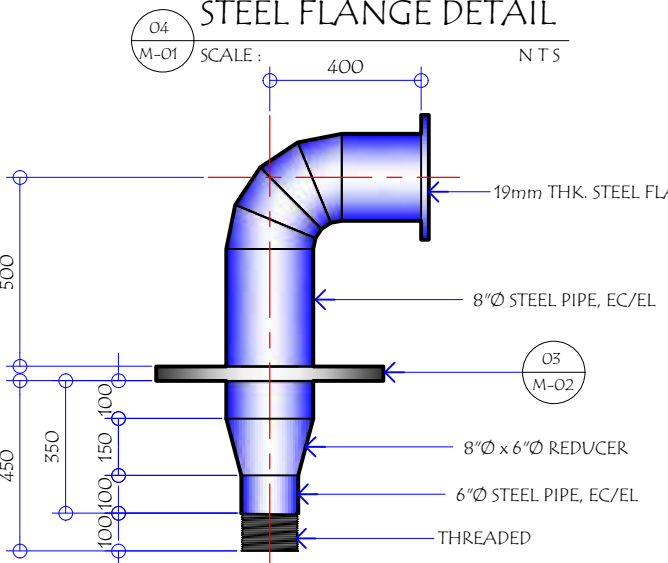
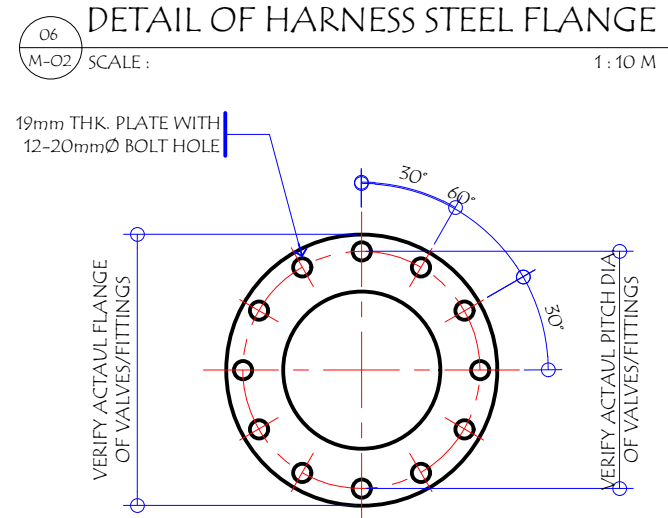
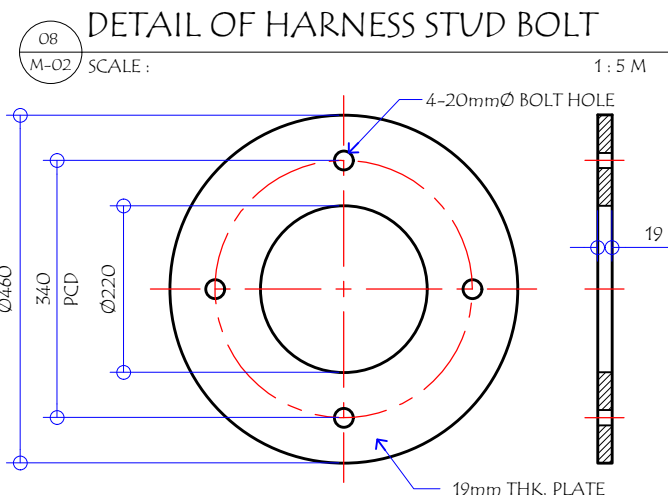
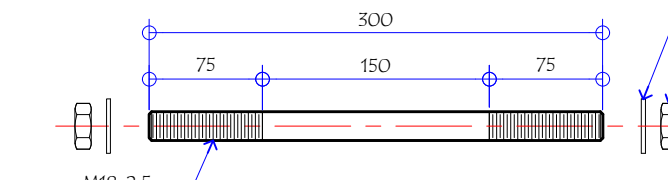
DETAIL OF "J" or "L" BOLT ANCHORING (GENSET SHED)

01 M-01 TYPICAL VIBRATION ISOLATING FOUNDATION (GENSET SHED) SCALE: 1:50 M

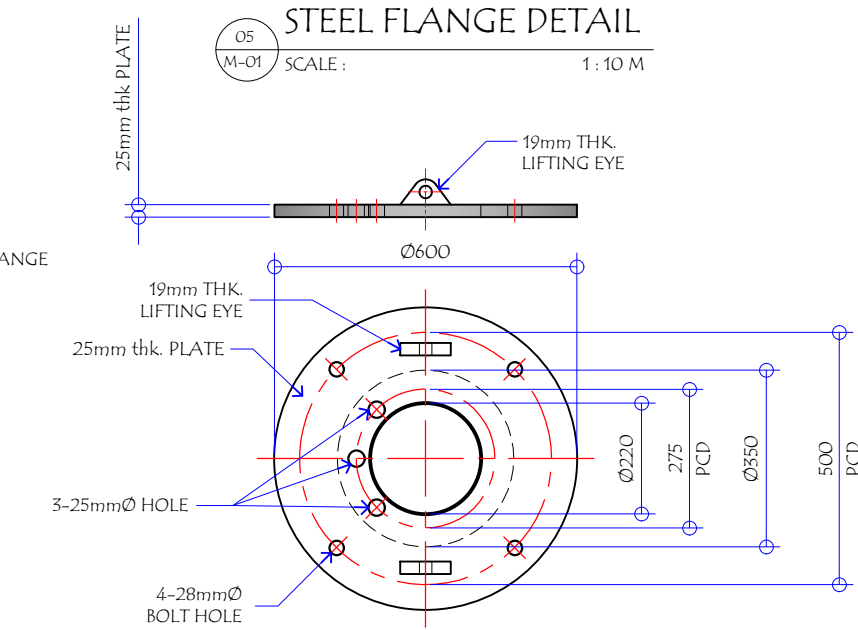
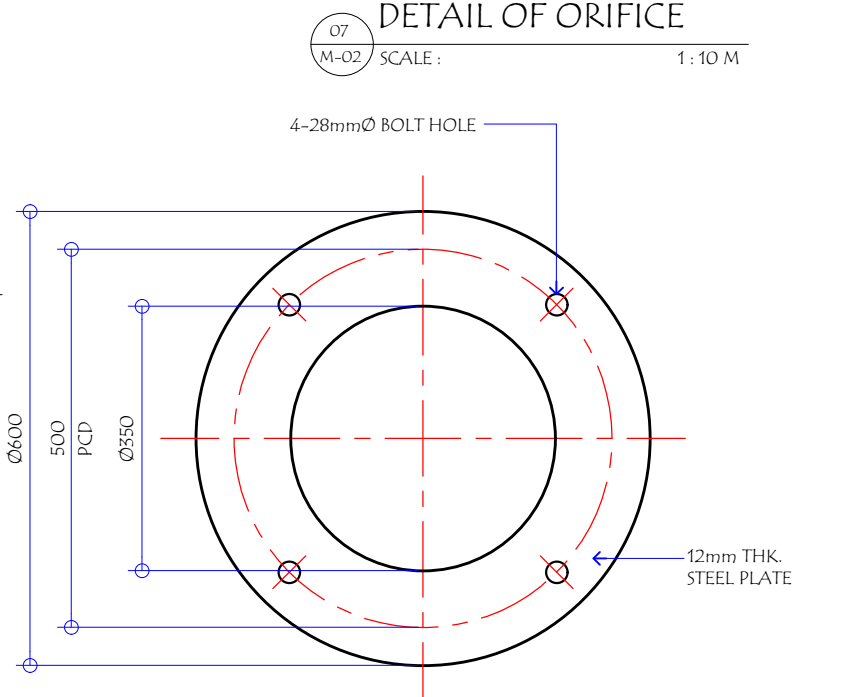
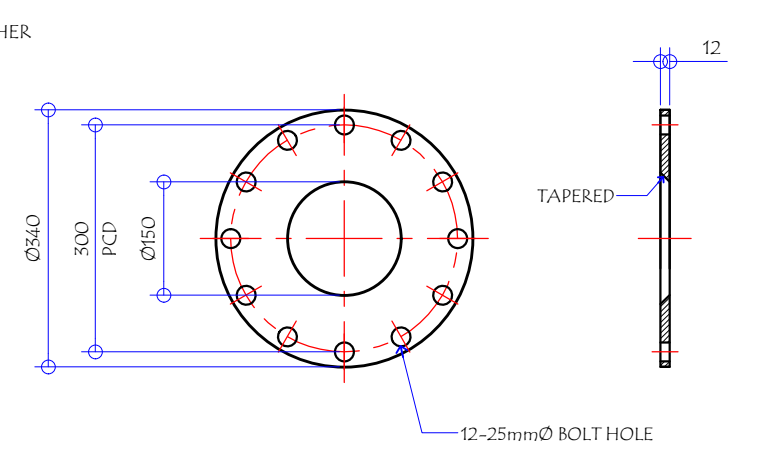
<p>GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 552 - 3824</p>	<p>ARN B. GELLANGARIN PROFESSIONAL MECHANICAL ENGINEER</p>		<p>PROJECT AND LOCATION</p> <p>PROPOSED CONSTRUCTION OF PUMPHOUSE, GENSET SHED, & PERIMETER FENCE</p>	<p>CHECKED:</p> <p>ENGR. MARIA CELIA N. DANDAN</p>	<p>REVIEWED:</p> <p>ENGR. ROGELIO A. BESANA, JR.</p>	<p>APPROVED:</p> <p>ENGR. ARN B. GELLANGARIN</p>	<p>SHEET CONTENTS</p> <p>AS SHOWN</p>	<p>SHEET NO.</p> <p>M-01</p>	
	<p>REG. NO. 3758</p> <p>TIN. NO. 138-365-602</p>	<p>PTR. NO. 52936A</p> <p>DATE: 01/12/2022</p>	<p>LOCATION: PUROK 6, BRGY. CONEL, GENERAL SANTOS CITY</p>	<p>OIC - PDD</p>	<p>AGM, OPERATION & TECHNICAL SERVICES</p>	<p>GENERAL MANAGER A</p>	<p>DRAWN BY: RRA</p> <p>CHECKED BY: ESA</p>	<p>REV. NO.</p> <p>DATE: Jan. 2022</p>	<p>15</p> <p>20</p>
	<p>GENERAL SANTOS CITY WATER DISTRICT</p>								



01 M-02 NOT TO SCALE



02 M-02 SCALE: 1:20 M



03 M-02 SCALE: 1:15 M

<p>GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 552 - 3824</p>	<p>ARN B. GELLANGARIN PROFESSIONAL MECHANICAL ENGINEER</p>		<p>PROJECT AND LOCATION</p> <p>PROPOSED CONSTRUCTION OF PUMPHOUSE, GENSET SHED, & PERIMETER FENCE</p>	<p>CHECKED:</p> <p>ENGR. MARIA CELIA N. DANDAN</p>	<p>REVIEWED:</p> <p>ENGR. ROGELIO A. BESANA, JR.</p>	<p>APPROVED:</p> <p>ENGR. ARN B. GELLANGARIN</p>	<p>SHEET CONTENTS</p> <p>AS SHOWN</p>	<p>SHEET NO.</p> <p>M-02</p>	
	<p>REG. NO. 3758</p> <p>TIN. NO. 138-365-602</p>	<p>PTR. NO. 52936A</p> <p>DATE: 01/12/2022</p>	<p>LOCATION: PUROK 6, BRGY. CONEL, GENERAL SANTOS CITY</p>	<p>OIC - PDD</p>	<p>AGM, OPERATION & TECHNICAL SERVICES</p>	<p>GENERAL MANAGER A</p>	<p>DRAWN BY: RRA</p> <p>CHECKED BY: ESA</p>	<p>REV. NO.</p> <p>DATE: Jan. 2022</p>	<p>16</p>
	<p>16</p>								<p>20</p>

PLUMBING NOTES:

1. GRADES OF HORIZONTAL PIPING
RUN ALL HORIZONTAL PIPINGS IN PERFECT ALIGNMENT AND AT A FORM GRADE OF NOT LESS THAN TWO PERCENT (2%)
2. CHANGE IN DIRECTION
ALL CHANGE IN DIRECTION SHALL BE MADE BY APPROPRIATE USE OF FORTY FIVE DEGREES (45°) WYES, LONG SWEEP QUARTER BEND, SIX-EIGHT OR SIXTEENTH BENDS. WHEN THE CHANGE OF FLOW IS FROM HORIZONTAL TO VERTICAL, 1/8 BEND COMBINATION MAYBE USED ON VERTICAL STACKS AND SHORT QUARTER BENDS MAYBE USED ON WASTE LINE. TEE AND CROSSES MAYBE USED IN VENT PIPES.
3. PROHIBITED FITTINGS
NO DOUBLE HUB OR TEE BRANCH SHALL BE USED ON HORIZONTAL WASTE LINES. THE DRILLINGS AND TAPPINGS OF HOUSE DRAIN, WASTE OR VENT PIPES AND USE OF SADDLE HUB AND BEND ARE PROHIBITED.
4. SLEEVES
PROVIDE PIPE SLEEVES AT WALLS, COLUMNS OR SLABS ONE SIZE BIGGER THAN THE ACTUAL SIZE PASSING THROUGH THE WALLS, COLUMNS OR UNDER SLAB TO PROTECT PIPE FROM LEAKAGE.
5. PIPE CLEAN-OUTS
PIPE CLEAN-OUTS ARE REQUIRED UNDER THE FOLLOWING CONDITIONS:
 - a. EVERY CHANGE IN HORIZONTAL DIRECTIONS EXCEEDING TWENTY-TWO AND ONE-HALF DEGREES (22 1/2°).
 - b. ONE AND ONE-HALF METERS (1.50 m) INSIDE THE PROPERTY LINE BEFORE THE HOUSE DRAINAGE CONNECTION.
 - c. EVERY FIFTEEN METERS (15.00 m) IN HORIZONTAL RUN OF PIPES.
 - d. AT THE END OF ANY HORIZONTAL PIPE LINES.
6. ALL PLUMBING WORKS SHALL BE DONE BY A LICENSED MASTER PLUMBER, AND A LICENSED PLUMBING CONTRACTOR..

SPECIFICATIONS:

ALL PLUMBING WORKS AND INSTALLATION SHALL CONFORM WITH THE LATEST EDITION OF NATIONAL PLUMBING CODE RULES AND REGULATION OF THE ENFORCING AUTHORITY CONCERNED AND CITY

ALL HORIZONTAL PIPINGS SHALL RUN IN PRACTICAL ALIGNMENT AND SHALL BE PROVIDED WITH SLOPE OF NOT LESS THAN 1% SLOPE AND SUPPORTED OR ANCHORED EVERY 3.00m INTERVALS

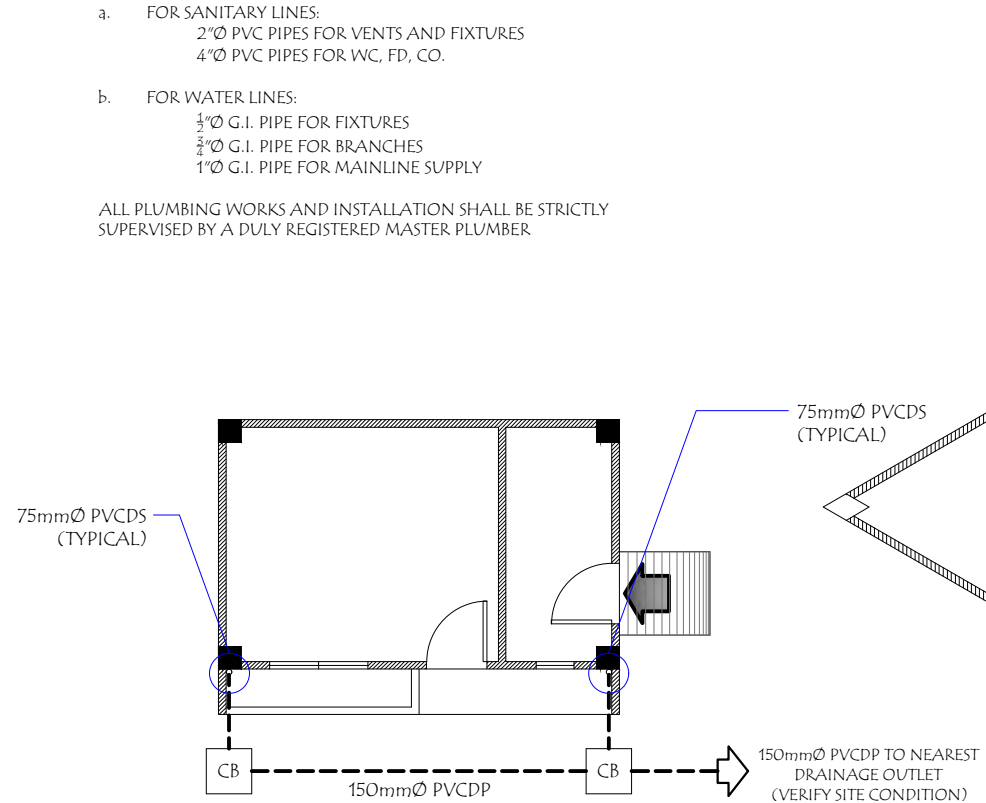
ALL MATERIALS SHALL BE NEW AND APPROVED TYPES:

- a. FOR SANITARY LINES:
 - 2"Ø PVC PIPES FOR VENTS AND FIXTURES
 - 4"Ø PVC PIPES FOR WC, FD, CO.
- b. FOR WATER LINES:
 - 1/2"Ø G.I. PIPE FOR FIXTURES
 - 3/4"Ø G.I. PIPE FOR BRANCHES
 - 1"Ø G.I. PIPE FOR MAINLINE SUPPLY

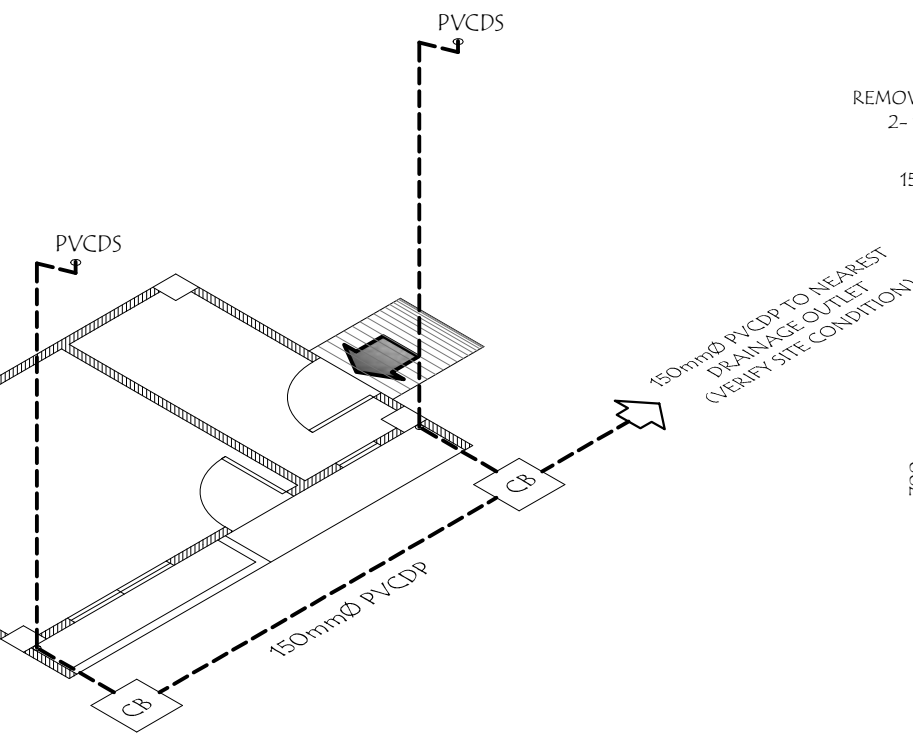
ALL PLUMBING WORKS AND INSTALLATION SHALL BE STRICTLY SUPERVISED BY A DULY REGISTERED MASTER PLUMBER

PLUMBING LEGEND:

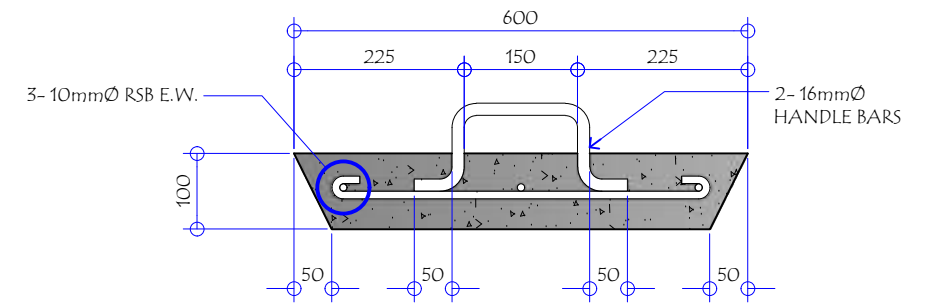
- CB CATCH BASIN
- PVCDP POLYVINYL CHLORIDE DRAINAGE PIPE
- PVCDS POLYVINYL CHLORIDE DOWNSPOUT



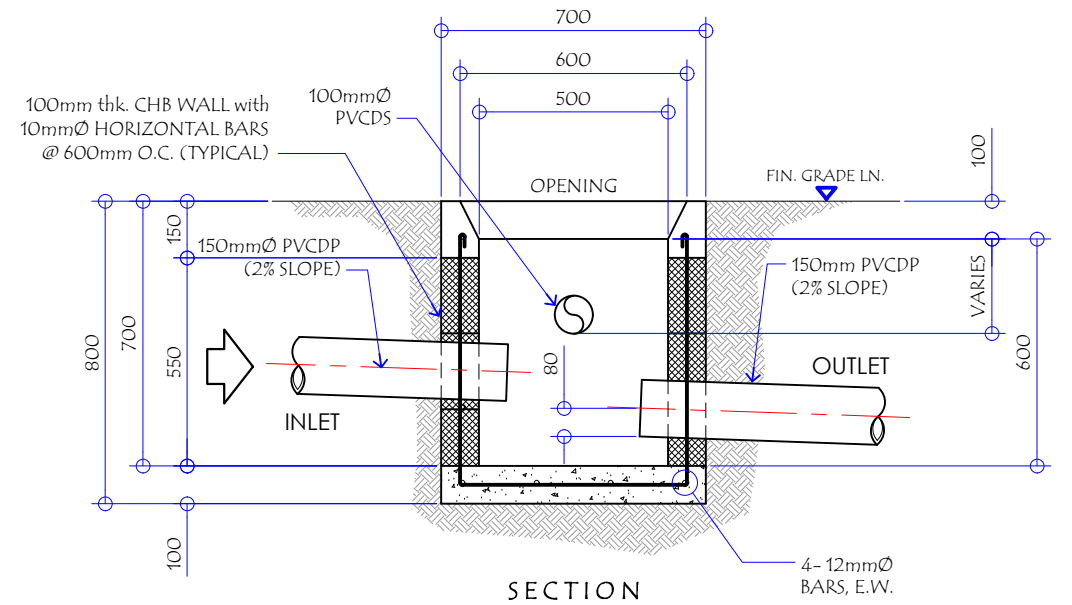
01 FLOOR PLAN PUMPHOUSE (SEWER & DRAINAGE LAY-OUT)
SCALE: 1:100 M



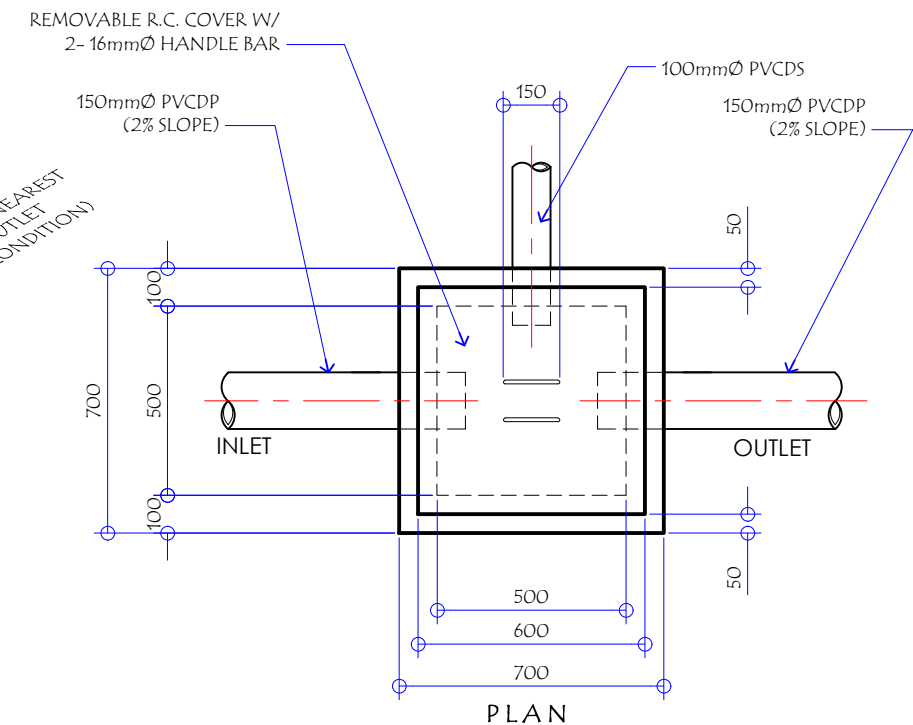
02 ISOMETRIC PUMPHOUSE (SEWER & DRAINAGE LAY-OUT)
SCALE: NTS



04 REMOVABLE R.C. COVER DETAIL
SCALE: 1:10 m




SECTION

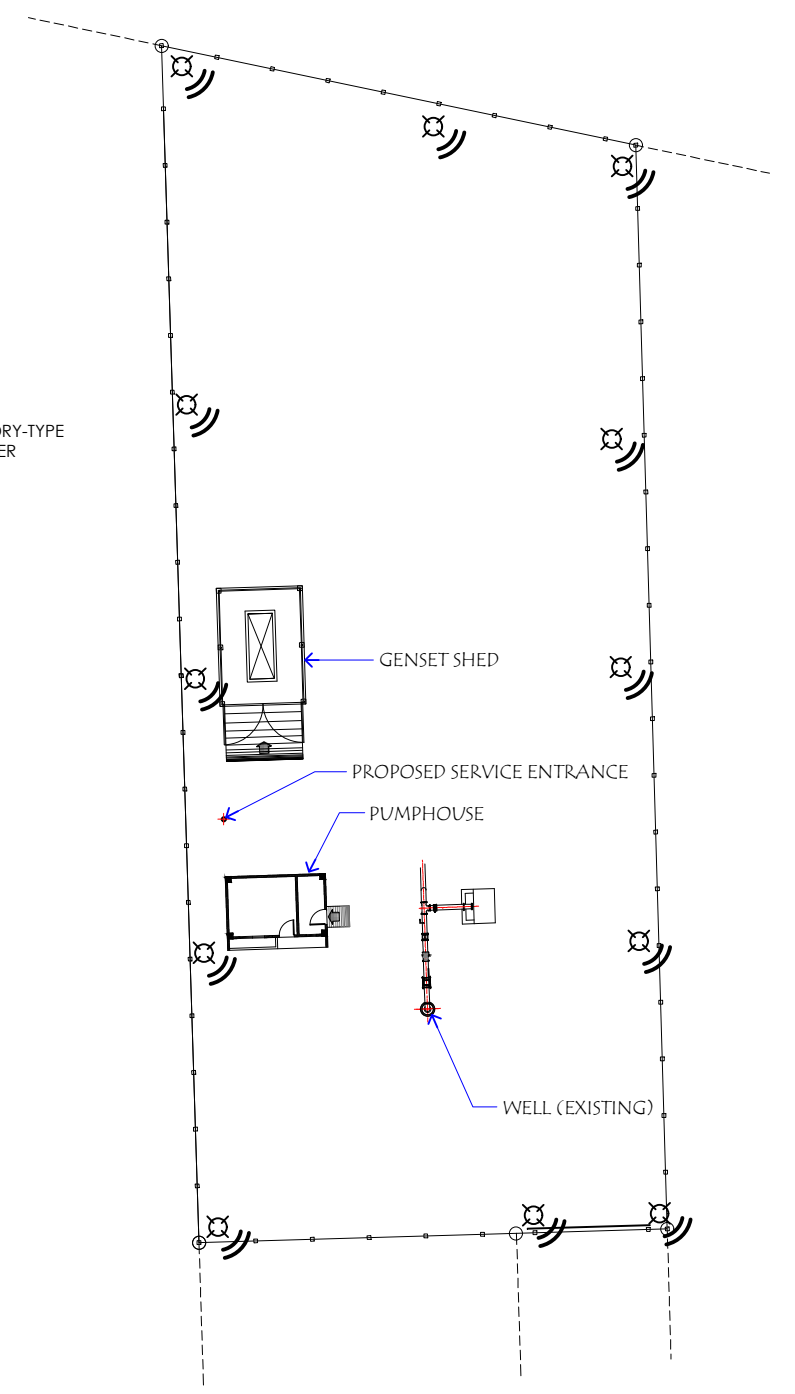
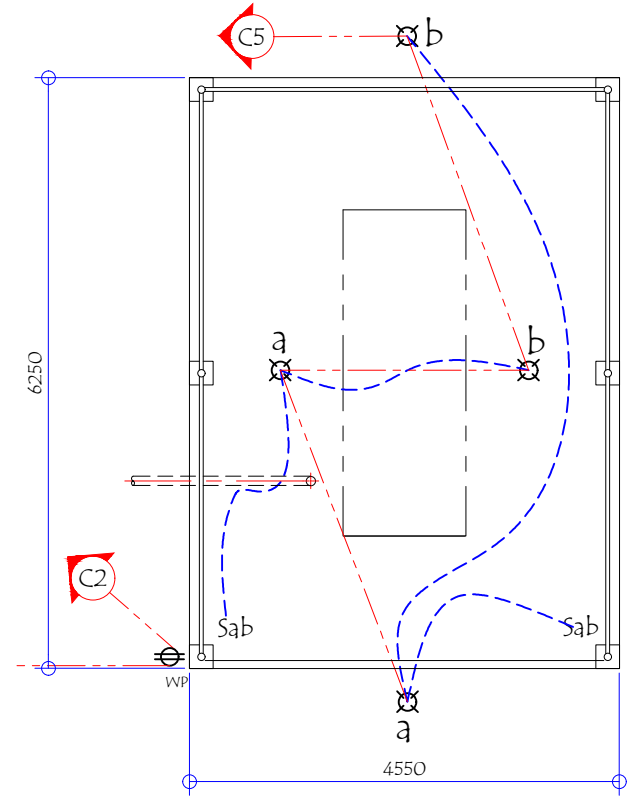
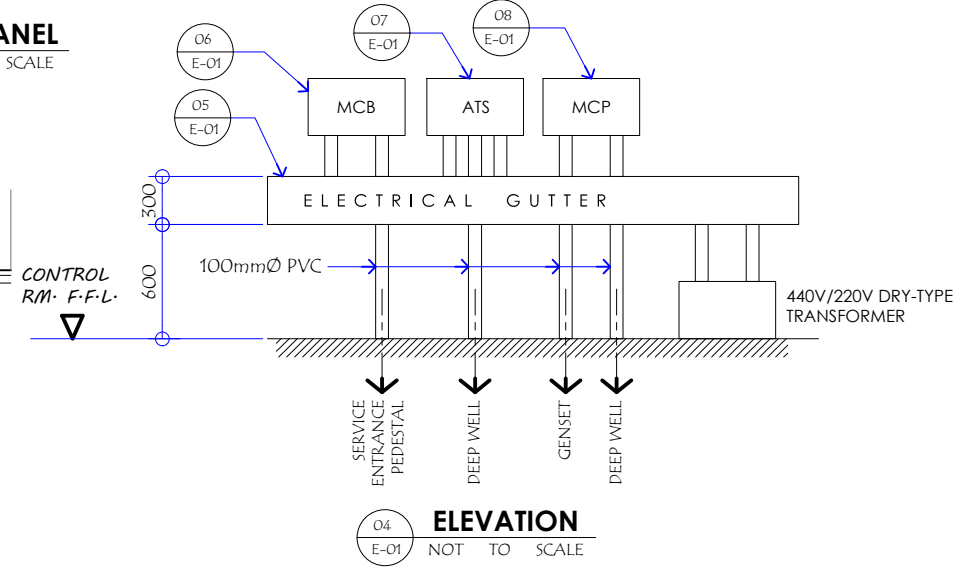
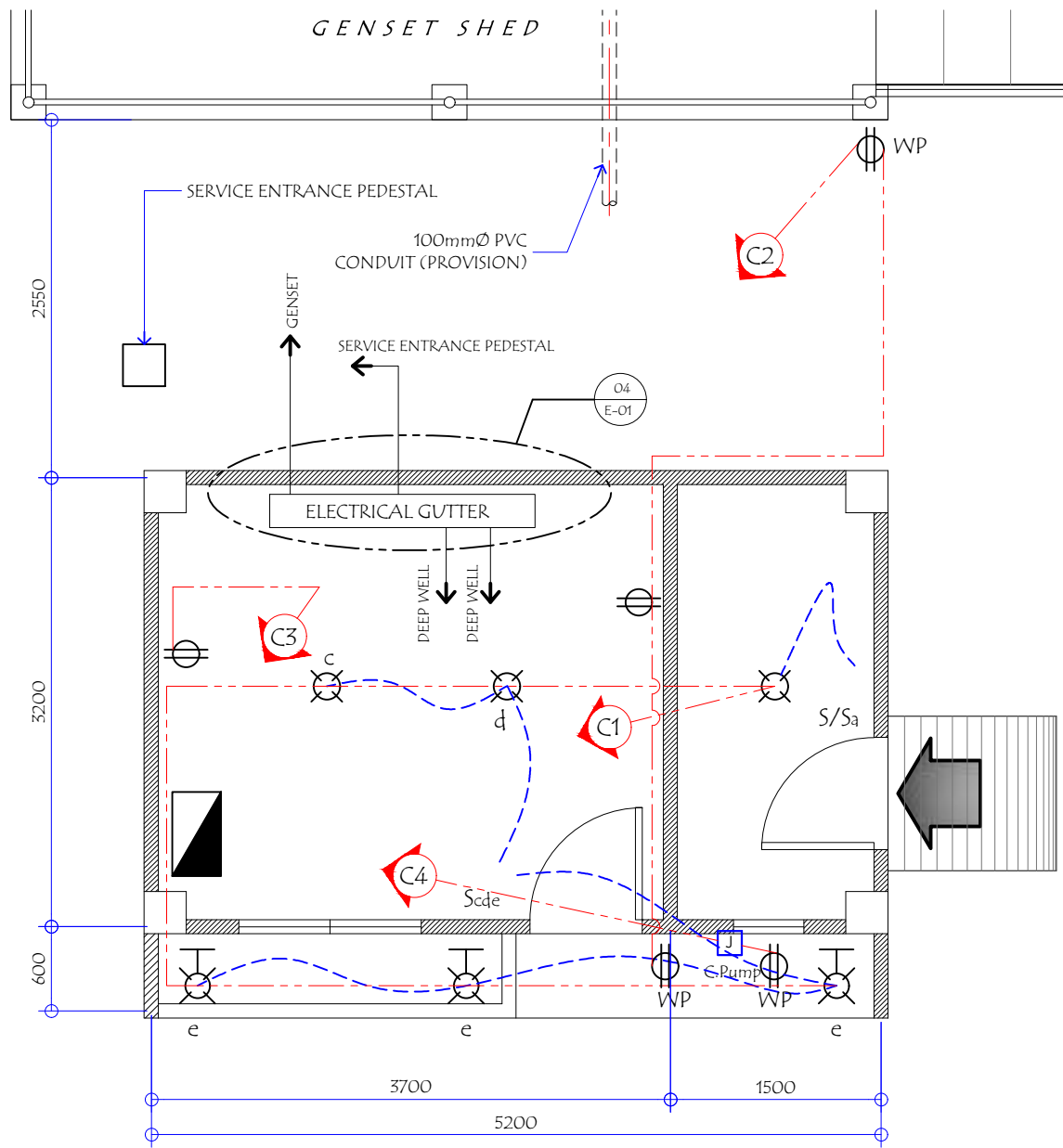
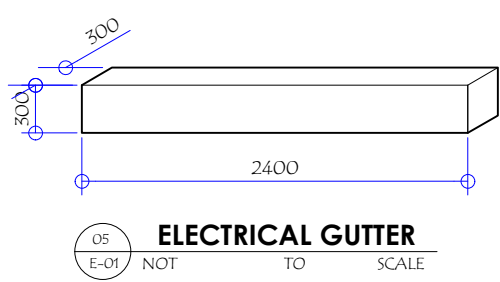
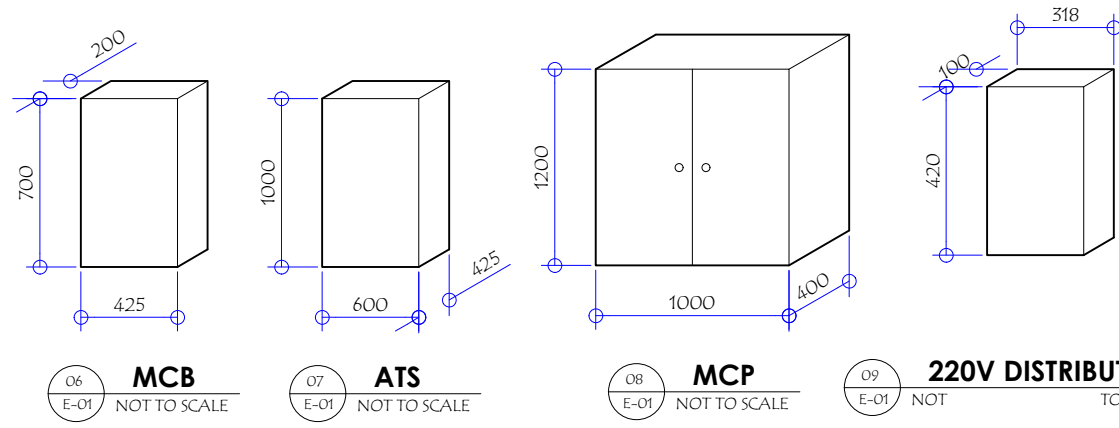


PLAN

03 DETAIL OF CATCH BASIN (PUMPHOUSE)
SCALE: 1:20 M

 <p>GENERAL SANTOS CITY WATER DISTRICT E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY ENGINEERING & CONSTRUCTION DEPARTMENT PLANNING AND DESIGN DIVISION TEL. NO.: (083) 552 - 3824</p>	<p>ROGELIO BESANA JR REGISTERED MASTER PLUMBER</p>		PROJECT AND LOCATION	CHECKED:	REVIEWED:	APPROVED:	SHEET CONTENTS		SHEET NO.	
	REG. NO. 2672	TIN. NO. 190-455-622	PROPOSED CONSTRUCTION OF PUMPHOUSE, GENSET SHED, & PERIMETER FENCE	ENGR. MARIA CELIA N. DANDAN	ENGR. ROGELIO A. BESANA, JR.	ENGR. ARN B. GELLANGARIN	AS SHOWN		P-01	
	PTR. NO. 61872A	DATE: 01/12/2022	LOCATION: PUROK 6, BRGY. CONEL, GENERAL SANTOS CITY	OIC - PDD	AGM, OPERATION & TECHNICAL SERVICES	GENERAL MANAGER A	DRAWN BY: RRA	REV. NO.	17	20
						CHECKED BY: ESA	DATE: Jan. 2022			

USE : 2mm Thick Pre-Painted
G.I. Plain Sheet



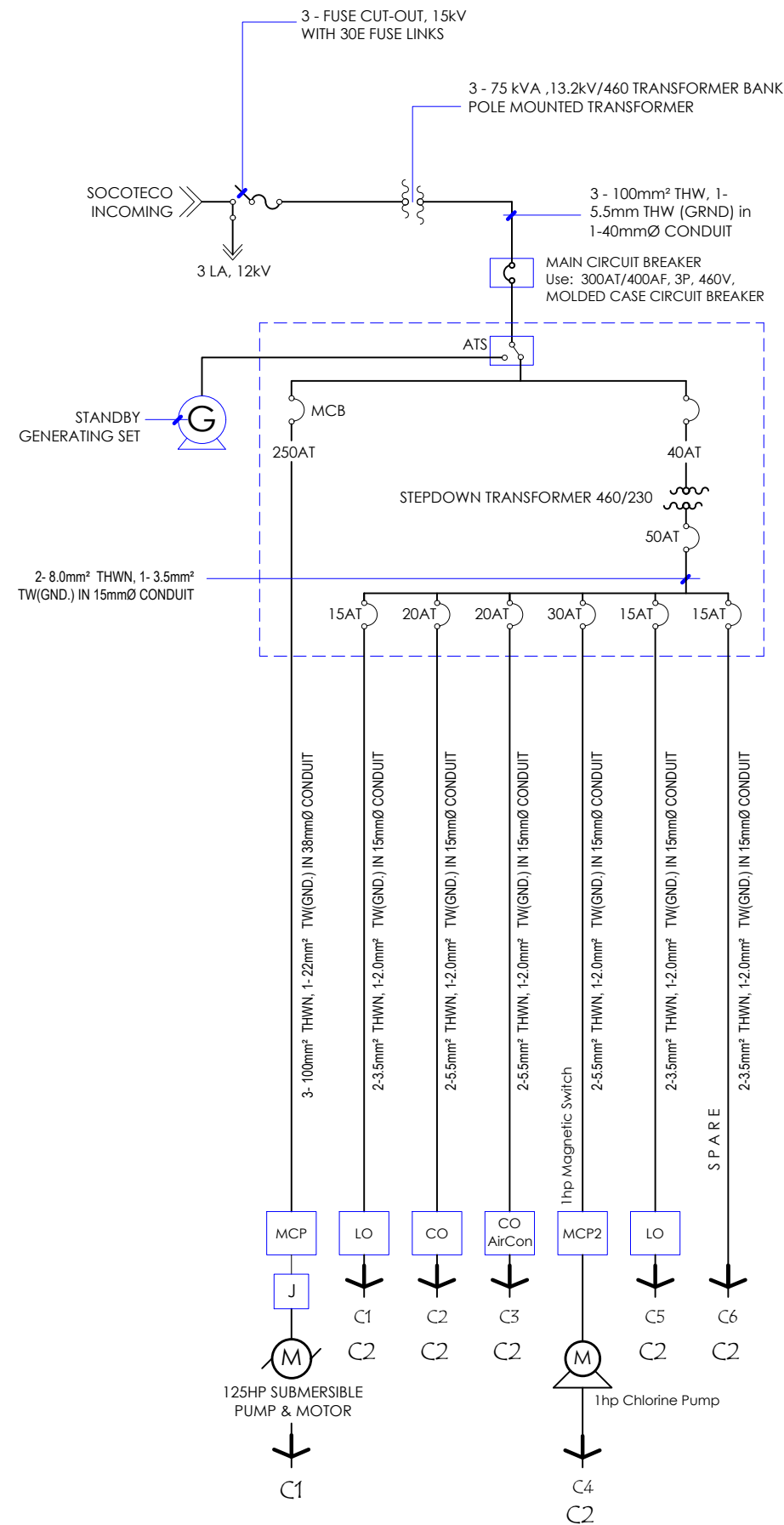
GENERAL SANTOS CITY WATER DISTRICT
E. FERNANDEZ STREET, BRGY. LAGAO, GEN. SANTOS CITY
ENGINEERING & CONSTRUCTION DEPARTMENT
PLANNING AND DESIGN DIVISION
TEL. NO.: (083) 552 - 3824

PROFESSIONAL ELECTRICAL ENGINEER	
REG. NO.	TIN. NO.
PTR. NO.	DATE:

PROJECT AND LOCATION	CHECKED:	REVIEWED:	APPROVED:
PROPOSED CONSTRUCTION OF PUMPHOUSE, GENSET SHED, & PERIMETER FENCE	ENGR. MARIA CELIA N. DANDAN	ENGR. ROGELIO A. BESANA, JR.	ENGR. ARN B. GELLANGARIN
LOCATION : PUROK 6, BRGY. CONEL, GENERAL SANTOS CITY	OIC - PDD	AGM, OPERATION & TECHNICAL SERVICES	GENERAL MANAGER A

SHEET CONTENTS	SHEET NO.
AS SHOWN	E-01
DRAWN BY: RRA	REV. NO.
CHECKED BY: ESA	DATE: Jan. 2022

18	20
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SCHEDULE OF LOADS:

PANEL: LP		VOLTAGE: 220						
FEED: TOP SURFACE		PHASE: 1						
MOUNTING: SURFACE		WIRE: 2						
CIRCUIT NO.	PARTICULARS	NO. OF OUTLET	WATTS	PHASE	VOLTS	AMPERE	CB RATING	WIRE SIZE AND CONDUIT
1	Lighting Outlet, LED Lamp	6	600	1	230	2.61	15 AT	2-3.5mm ² THWN, 1-2.0mm ² TW(GND.) IN 15mm \emptyset CONDUIT
2	Convenience Outlet	3	1,500	1	230	13.04	20 AT	2-5.5mm ² THWN, 1-2.0mm ² TW(GND.) IN 15mm \emptyset CONDUIT
3	ACU, 1 hp Split Type(Magnetic Switch w/ Built-in 3-Prong Outlet	1	746	1	230	3.25	20 AT	2-5.5mm ² THWN, 1-2.0mm ² TW(GND.) IN 15mm \emptyset CONDUIT
4	1 HP Chlorinator pump	1	1,865	1	230	8.11	30 AT	2-5.5mm ² THWN, 1-2.0mm ² TW(GND.) IN 15mm \emptyset CONDUIT
5	Lighting Outlet, LED Lamp	4	400	1	230	1.74	15 AT	2-3.5mm ² THWN, 1-2.0mm ² TW(GND.) IN 15mm \emptyset CONDUIT
6	S P A R E	1	2,000	1	230	8.70	15 AT	2-3.5mm ² THWN, 1-2.0mm ² TW(GND.) IN 15mm \emptyset CONDUIT
TOTAL			7,111					

COMPUTATION: @ 80 % Demand Factor
 Demand load = $7,111 / 230 \times 0.8DF = 24.73$ A
 COMPUTATION FOR MINIMUM STEP DOWN TRANSFORMER 460V/230V:
 $= 24.73 \times 1.25 = 30.91$ AMPS

KVA = $30.91 \times 230 / 1000$
 KVA = 7.11
 USED: 10 KVA, 460V PRI./230V SECONDARY DRY TYPE STEP DOWN TRANSFORMER

FEEDER: 2 - 8mm² THWN wire, 1 - 3.5mm TW (GND) in 20mm \emptyset CONDUIT
 MAIN: 50AT, 100AF, 2P, 230V

PANEL: MCP		VOLTAGE: 460									
FEED: TOP SURFACE		PHASE: 3									
MOUNTING: SURFACE		WIRE: 3									
CKT NO.	PARTICULARS	NO. OF OUTLET	WATTS	PHASE	VOLTS	AMPERE				CB RATING	WIRE SIZE AND CONDUIT
						AB	BC	CA	3 \emptyset		
1	125 HP Submersible Motor	1	94,000	3	460				166	250 AT	3-100mm ² THWN, IN 1-22mm ² TW(GND) IN 38mm \emptyset CONDUIT
2	LP 10 KVA Dry Type X'mer	1	7,111	1	460			15.46		40 AT	2-5.5mm ² THWN, IN 1-2.0mm ² TW(GND) IN 15mm \emptyset CONDUIT
TOTAL			101,111					15.46	166		

















COMPUTATION :
 $I = 166(1.25) + 15.46(1.732)$
 $I = 234.3$ AMPS
 KVA = $234.3(1.732)(460)/1000$
 $= 186.7$

FEEDER: 2 - 125mm² THWN wire, 1 - 22mm THW (GND) in 1-80mm \emptyset CONDUIT
 MAIN: 300AT, 400AF, 3P, 460V

USE : 3 - 75 KVA, 13.2KV/460V TRANSFORMER BANK POLE MOUNTED TRANSFORMER.

01 POWER SYSTEM SINGLE LINE DIAGRAM
 E-02 NOT TO SCALE

LEGEND:


	—	CEILING LIGHT OUTLET
	—	200W SOLAR STREET LIGHT OUTDOOR LED LIGHT OUTLET
	—	WALL LAMP OUTLET
	—	DUPLEX CONVENIENCE OUTLET, GROUNDING TYPE 10 AMPS, 250 VOLT W/ MODERN PLATE COVER
	—	DUPLEX WEATHERPROOF CONVENIENCE OUTLET
	—	PANEL BOARD
	—	MOTOR CONTROL PANEL
	—	KILOWATT HOUR METER
S/Sa	—	ONE GANG DEVICE SWITCH
Sab	—	TWO GANG DEVICE SWITCH
Scde	—	THREE GANG DEVICE SWITCH
	—	HOMERUN DIRECT TO PANEL BOARD
	—	RACEWAY CONDUIT CONCEALED IN CEILING
	—	CIRCUIT RUN
	—	SUBMERSIBLE PUMP MOTOR
	—	DOUBLE THROW
J	—	JUNCTION
	—	GROUNDING SYSTEM
	—	ELECTRIC SERVICE ENTRANCE
	—	1hp CHLORINE BOOSTER PUMP

GENERAL NOTES:

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

MOUNTING HEIGHTS:

CONVENIENCE OUTLETS	:	300mm FROM BOTTOM OF OUTLET TO FINISH FLOOR LEVEL.
WALL SWITCHES	:	1,370mm FROM BOTTOM OF SWITCH TO FINISH FLOOR LEVEL.
PANEL BOARD	:	1,830mm FROM TOP OF PANEL TO FINISH FLOOR LEVEL.
KILOWATT HOUR METER	:	1,830mm FROM CENTER OF DEVICES TO FINISH GRADE LEVEL.

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