

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 PARTIONS, 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,	3000 PSI (27.6 MPa)	20mm	100mm
COLUMNS	3000 PSI (27.6 MPa)	20mm	100mm
BEAMS, SLABS	3000 PSI (27.6 MPa)	20mm	100mm
SLAB ON FILL	3000 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	40mm
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-HAND LING OR PLACING SHALL BE DONE PREFERABLY WITH BUGGIES, BUCKETS OR WHEELBARROWS, NO CHUTES WILL BE ALLOWED EXCEPT TO TRANSFER CONCRETE FROM HOPPERS TO BUGGIES, 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 IS 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.

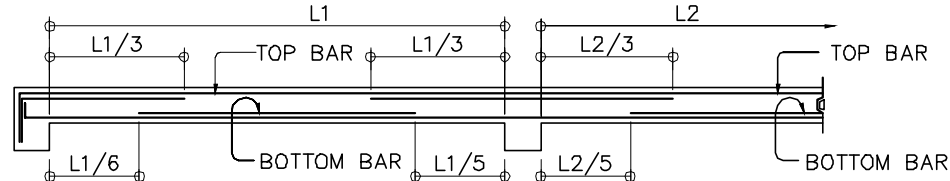
NOTES ON REINFORCEMENT

- UNLESS OTHERWISE NOTED IN PLANS, THE YIELD STRENGTH OF REINFORCING BARS SHALL BE:

A. FOOTINGS, FOOTING BEAMS AND GIRDERS	fy = 275 MPa (40,000 psi)
B. COLUMNS AND SHEAR WALLS	fy = 275 MPa (40,000 psi)
C. BEAMS AND GIRDER	fy = 275 MPa (40,000 psi)
D. NON-LOAD BEARING WALL PARTITIONS, BEDDED SLABS, FLOOR & ROOF SLABS, PARAPETS, CATCH BASIN, SIDE WALK.	fy = 227.5 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:

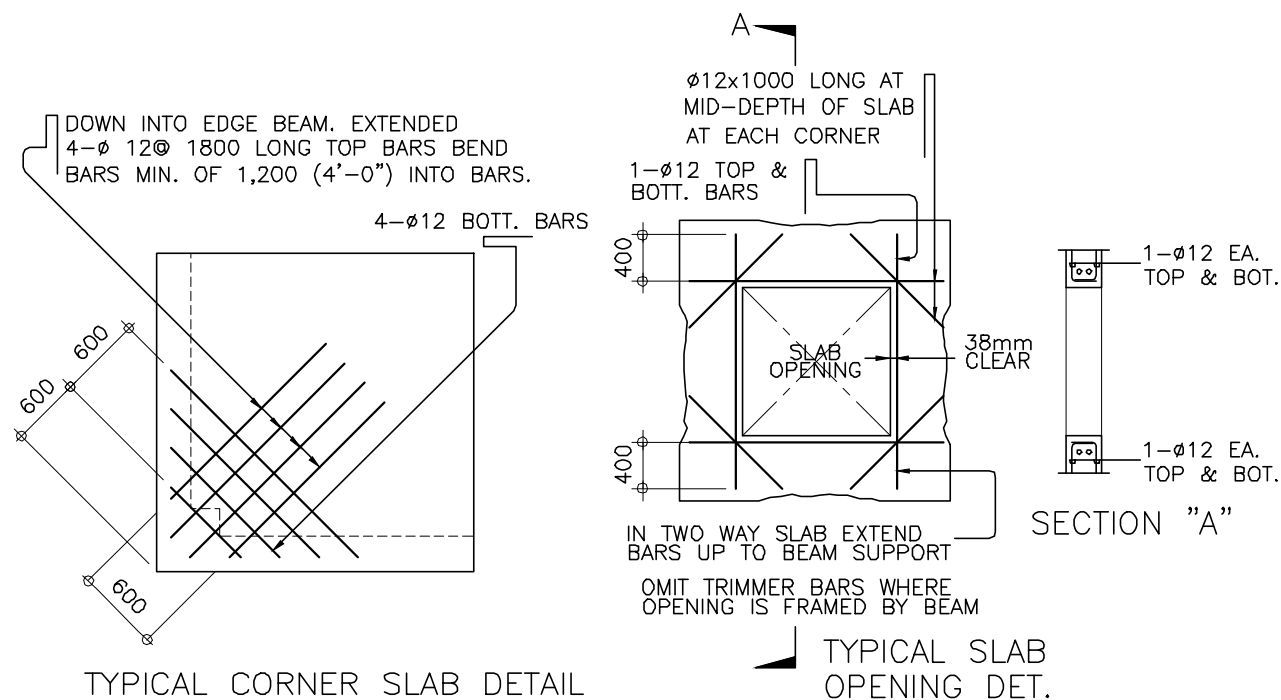


TYPICAL BAR BENDING AND CUTTING DETAILS FOR SLABS

- 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 x GROSS CROSS-SECTIONAL AREA (Ag) OF THE SLAB (SEE SCHEDULE BELOW)

SCHEDULE OF MINIMUM SLAB REINFORCEMENT	
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

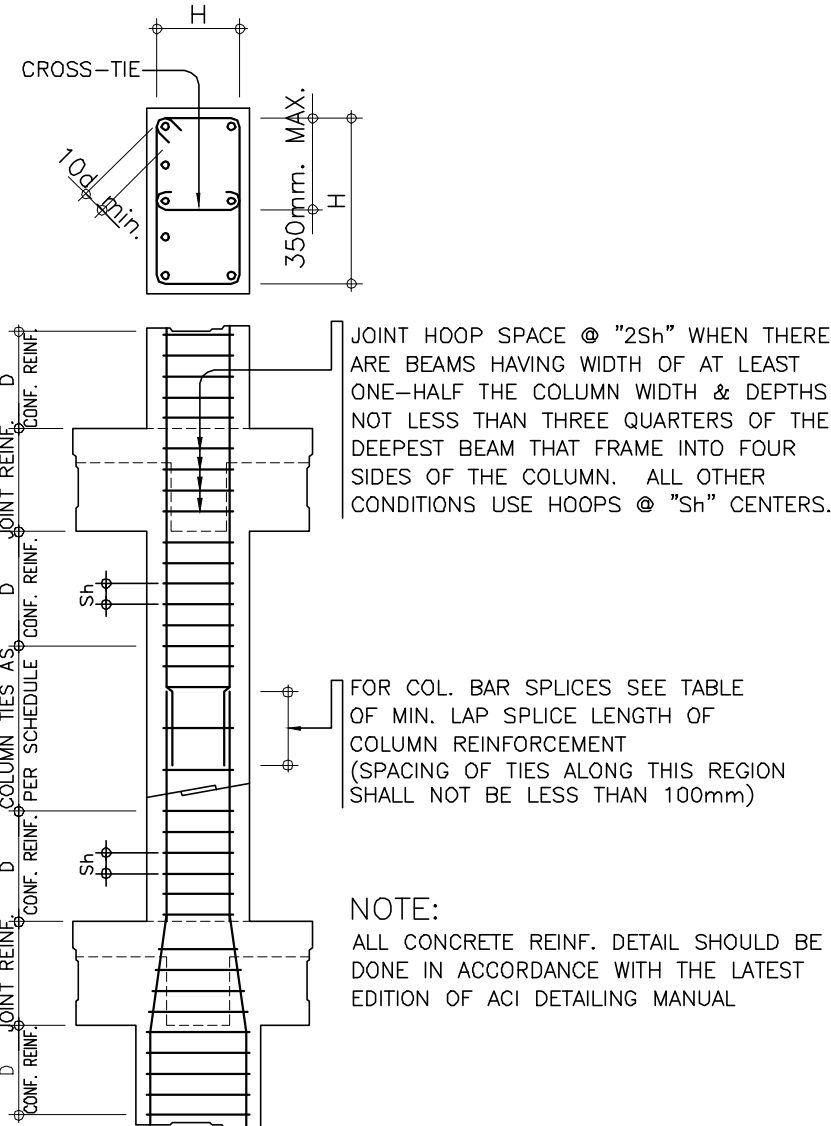


TYPICAL CORNER SLAB DETAIL

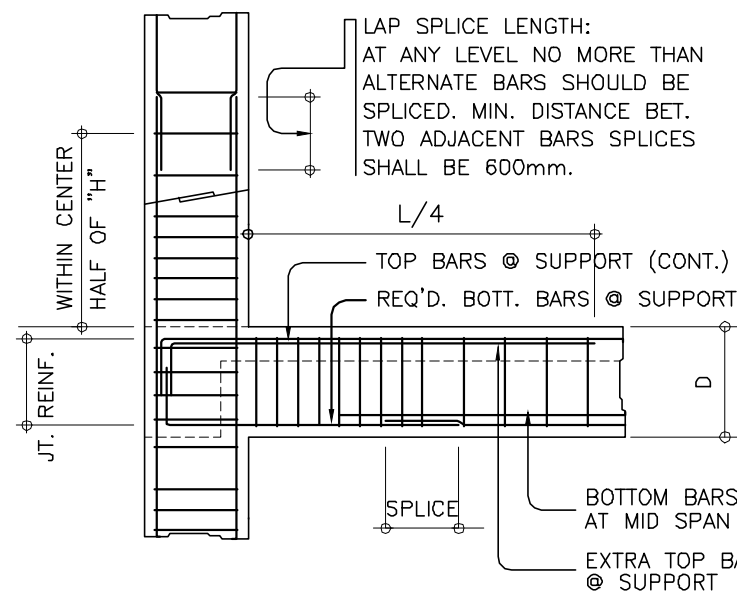
TYPICAL SLAB OPENING DET.

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.

- 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.

NOTES ON BEAMS AND GIRDERS

- UNLESS , OTHERWISE NOTED IN PLANS, CAMBER ALL BEAMS AND GIDER 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.

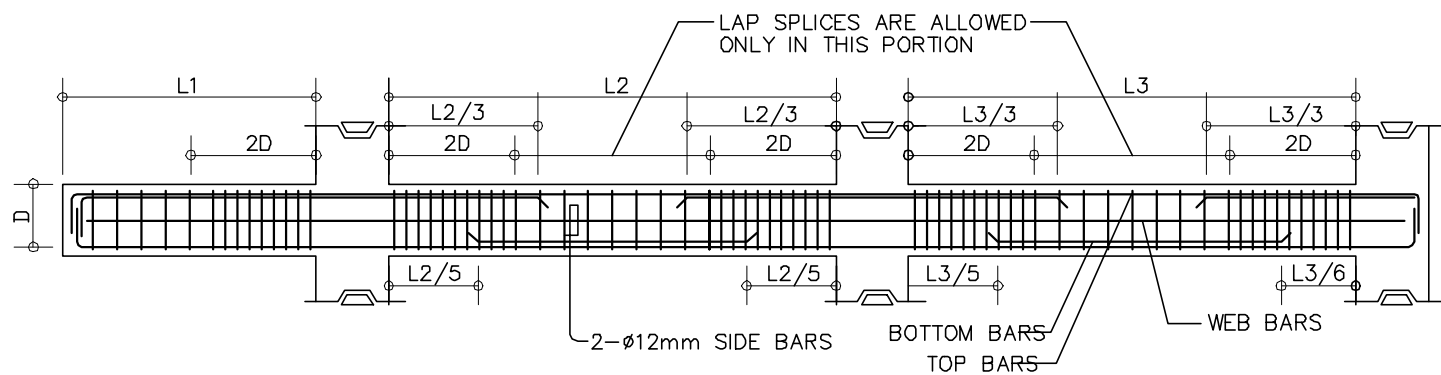


FIG. B-1

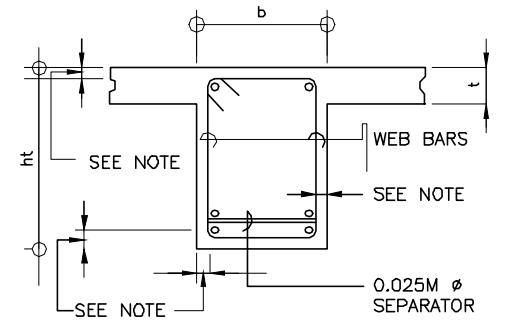
TABLE 'A' TENSION BARS EMBEDMENT LENGTHS AND LAPPED SPLICED IN MILLIMETERS				
BAR SIZE (DEFORMED)	fc' = 20.7MPa(3000psi)	fc' = 27.6MPa(4000psi)	fc' = 20.7MPa(3000psi)	fc' = 27.6MPa(4000psi)
	EMBEDMENT	LAPPED	EMBEDMENT	LAPPED
10mm ϕ	300	300	300	300
12mm ϕ	300	300	300	300
16mm ϕ	300	400	300	400
20mm ϕ	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

TABLE 'B' COMPRESSION BARS EMBEDMENT LENGTHS AND LAPPED SPLICED IN MILLIMETERS				
BAR SIZE (DEFORMED)	fc' = 20.7MPa(3000psi)	fc' = 27.6MPa(4000psi)	fc' = 20.7MPa(3000psi)	fc' = 27.6MPa(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	550	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.

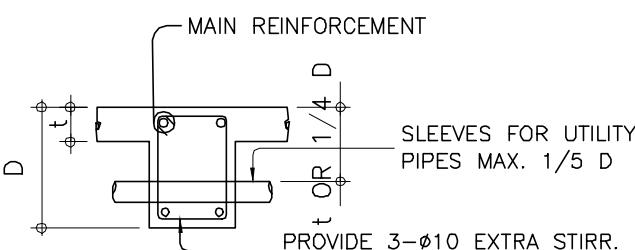
- IF THE BEAM REINFORCING BARS END IN A WALL THE CLEAR DISTANCE FROM THE BAR TO THE FARTHER FACE OF THE WALL NOT BE LESS THAN 25mm. EMBEDMENT LENGTH SHALL BE AS SHOWN IN A TABLE 'A' FOR TENSION BARS AND TABLE 'B' FOR COMPRESSION BARS UNLESS SPECIFIED IN PLAN. TOP BAR SHALL NOT BE SPLICED WITHIN THE COLUMN 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

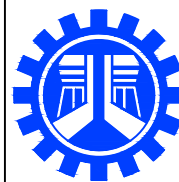
20 mm CLEAR FOR JOIST
40 mm CLEAR FOR BEAMS
AND GIRDERS

FIG. B-2



TYP. DET. FOR SLEEVES
THRU CONCRETE BEAM

FIG. B-3



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE No. IV-A
BATANGAS 2ND DISTRICT ENGINEERING OFFICE
KUMINTANG ILAYA, BATANGAS CITY

PROJECT TITLE / LOCATION :

C.Y. 2025 PROJECT
CONVERGENCE AND SPECIAL SUPPORT PROGRAM,
BASIC INFRASTRUCTURE PROGRAM (BIP),
MULTI-PURPOSE BUILDINGS/FACILITIES TO SUPPORT SOCIAL SERVICES,
CONSTRUCTION OF MULTI-PURPOSE BUILDING
(TINGLOY MUNICIPAL TOURISM AND CULTURAL ARTS BUILDING) ,
AT TINGLOY, BATANGAS

DRAWN & PREPARED BY :

BRYAN EDWARD R. ANDAL
ENGINEER II

DATE :

REVIEWED & SUBMITTED :

GEMMA L. OLAN
OFFICER-IN-CHARGE,
PLANNING & DESIGN SECTION

DATE :

RECOMMENDED :

ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER

DATE :

APPROVED :

SONIA D. PAGLICAUAN
DISTRICT ENGINEER

DATE :

CHECKED, SIGNED & SEALED :

CIVIL/STRUCTURAL ENGINEER

PRC No. VALIDITY :

PTR No. DATE ISSUED :

PLACE ISSUED: TIN :

SHEET CONTENT :

SHEET NO.:

GENERAL CONSTRUCTION NOTES

S-1

GENERAL CONSTRUCTION NOTES

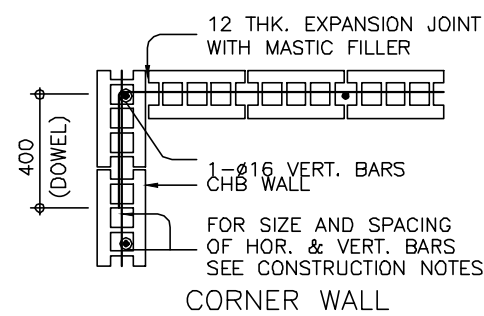
NOTES ON CONCRETE HOLLOW BLOCK WALLS

- 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.

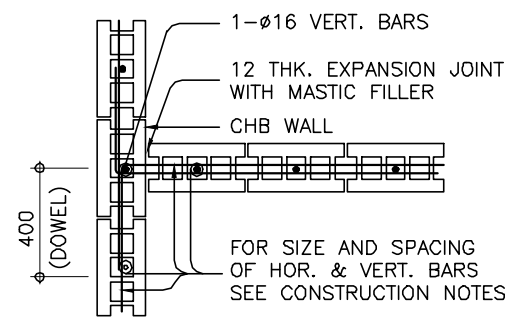
BLOCK THICKNESS	REINFORCEMENT		NOTES
	HORIZONTAL	VERTICAL	
75 mm	10mm ϕ @ 600mm O.C.	10mm ϕ @ 600mm O.C.	A. MINIMUM LAPS AT SPLICE = 0.25M B. PROVIDE RIGHT ANGLED REINFORCEMENT AT CORNERS 0.92M LONG C. WHERE CHB OR CER. BLK. WALL DOWELS JOIN COL. R.C. BEAMS AND WALL DOWELS WITH THE SAME SIZE AS VERT. OR HOR. REINFORCEMENTS SHALL BE PROVIDED
125 mm	10mm ϕ @ 600mm O.C.	10mm ϕ @ 600mm O.C.	
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) (m)	TOTAL LENGTH (L+0.40M)	MIN. f_c (MPa)	HEIGHT OF LINTEL (mm)	REINFORCEMENT		
				BOTTOM	TOP	STIRRUPS
1.20	1.60M	14.0	200	1- ϕ 10	1- ϕ 10	ϕ 6mm @ 200mm
1.50	1.90M		200	1- ϕ 10	1- ϕ 10	ϕ 6mm @ 200mm
1.80	2.20M		200	1- ϕ 12	1- ϕ 10	ϕ 6mm @ 200mm
2.10	2.50M	17.0	250	1- ϕ 12	1- ϕ 10	ϕ 6mm @ 200mm
2.40	2.90M		250	1- ϕ 12	1- ϕ 10	ϕ 6mm @ 200mm
2.70	3.10M		250	1- ϕ 16	1- ϕ 12	ϕ 10mm @ 200mm
3.00	3.40M	20.0	300	1- ϕ 16	1- ϕ 12	ϕ 10mm @ 200mm
3.30	3.70M		300	1- ϕ 16	1- ϕ 12	ϕ 10mm @ 200mm
3.60			300	1- ϕ 20	1- ϕ 12	ϕ 10mm @ 200mm

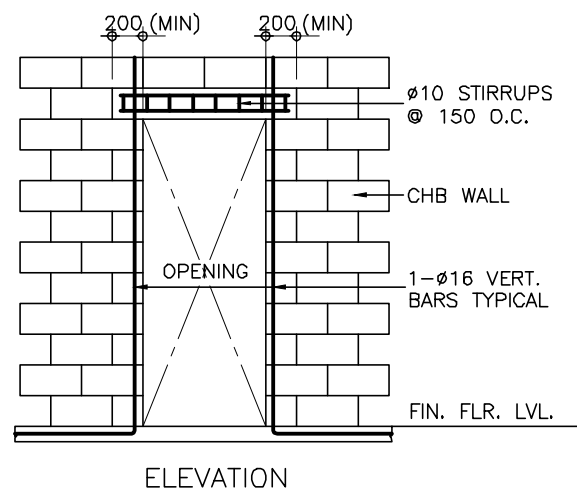


CORNER WALL

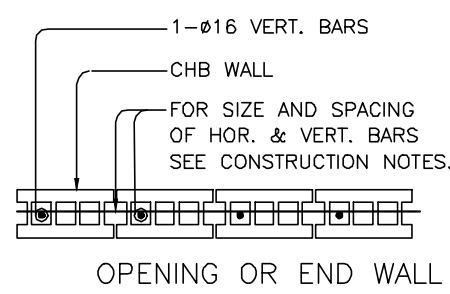


INTERSECTION WALL

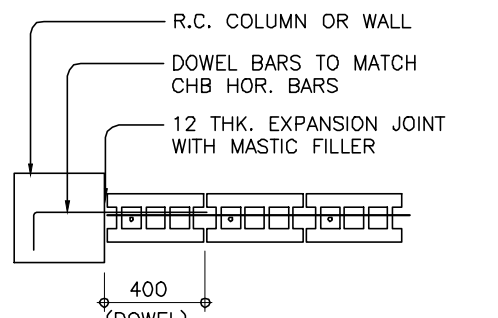
TYPICAL CONNECTION DETAIL OF MASONRY WALL



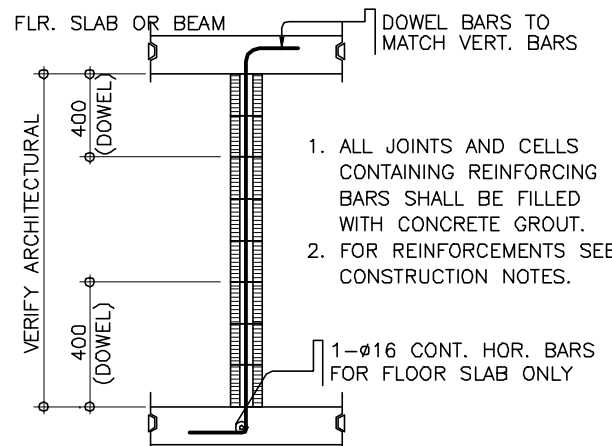
TYP. DET. OF LINTEL BEAM AT CHB WALL OPENING



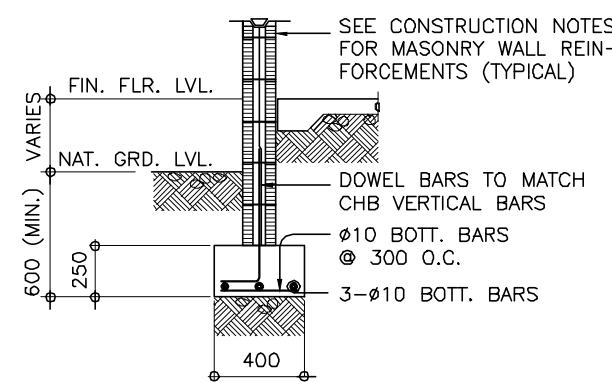
OPENING OR END WALL



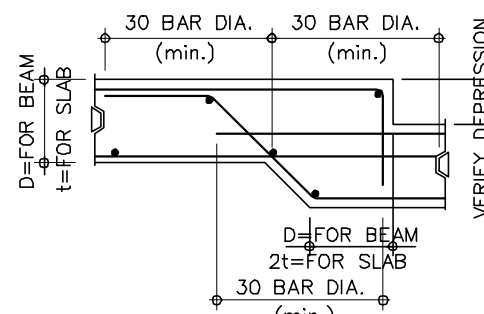
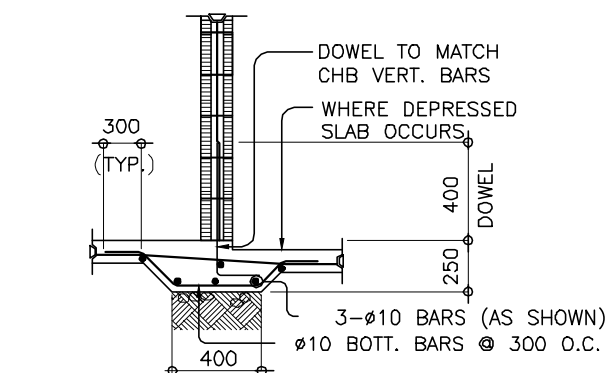
INTERSECTING R.C. COL. OR WALL



TYP. SECTION OF MASONRY PARTITION REINFORCEMENTS



TYPICAL CHB FOOTING DETAILS (WHERE APPLICABLE)



TYPICAL DETAIL FOR BEAM OR SLAB CHANGE SOFFIT

NOTE:

PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATION OF RA 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

THE DESIGN CONSULTANT SHALL BE HELD FULLY RESPONSIBLE FOR THE FAILURE OF THE FACILITY/ES/STRUCTURES DUE TO FAULTY DESIGN EXCEPT FOR THE CHANGES MADE

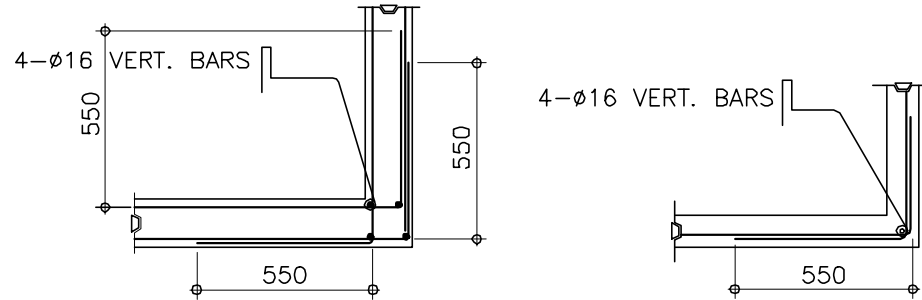
NOTES ON CONCRETE WALLS

- 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	ϕ 10mm @ 250mm O.C.	ϕ 10mm @ 300mm O.C.	HORIZONTAL BARS AT CENTERS VERTICAL BARS STAGGERED OUT	
125mm	ϕ 10mm @ 200mm O.C.	ϕ 10mm @ 250mm O.C.		
150mm	ϕ 12mm @ 250mm O.C.	ϕ 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 LAPING A DISTANCE EQUAL TO 30 DIAMETERS AND WIRED SECURELY WITH 16 G.I. WIRE PROVIDED THAT SPLICES IN ADJACENT BARS ARE STAGGERED AT LEAST 1.50M O.C.
- 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 WHOEVER 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.

DESIGN CRITERIA

- LOADINGS
 - DEAD LOAD
 - CONCRETE $-23.56kN/m^3$
 - STEEL $-76.93kN/m^3$
 - 150mm THK. CHB WALL $-2.73 kPa$
 - 100mm THK. CHB WALL $-2.11 kPa$
 - LIVE ROAD ROOF $-1.00 kPa$
- WIND LOAD (NSCP 2010)
 - BASIC WIND VELOCITY, $V = 250$ KPH
 - $P = qh [(Gcpf) - (Gcpi)]$ (DESIGN WIND PRESSURE)
 - WHERE: qh = VELOCITY PRESSURE, kPa
 $Gcpf$ = EXTERNAL PRESSURE COEFFICIENT
 $Gcpi$ = INTERNAL PRESSURE COEFFICIENT
- SEISMIC LOAD (NSCP 2010)
 - $V = \frac{C_v I}{R T} W$ (DESIGN BASE SHEAR)
 - $V_{max} = \frac{2.50 C_a W}{R}$ $V_{min} = 0.11 C_a W$
 $V_{min} = \frac{0.80 Z N_v W}{R}$ (ZONE 4)
 - WHERE: W = TOTAL DEAD LOAD
 T = NATURAL PERIOD = $C_t (h_x)^{0.75}$
WHERE: C = NUMERICAL COEFFICIENT
 h = BUILDING HEIGHT
 I = IMPORTANCE FACTOR = 1.50
 R = NUMERICAL FACTOR = 8.50
SEISMIC COEFFICIENT $C_v = 0.44 N_v$
 $C_a = 0.64 N$
NEAR SOURCE FACTOR (10km) $N_v = 1.2$
 $N_a = 1.0$
 Z = SEISMIC ZONE = 0.40 (ZONE 4)
 S = SOIL TYPE = D

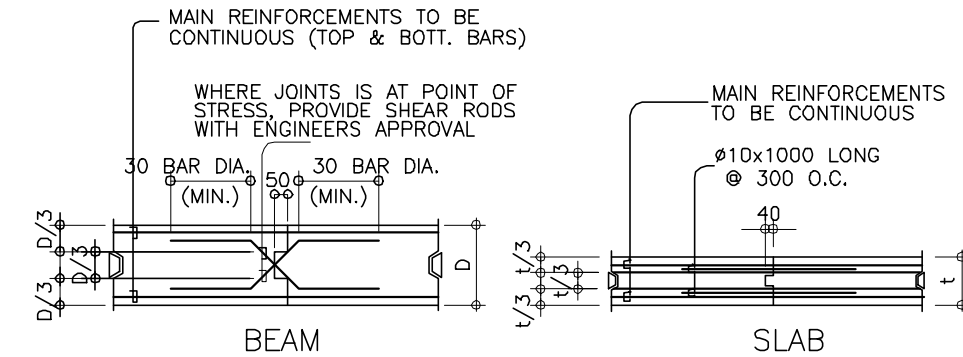
MAIN BAR END HOOKS (ALL GRADES)				
BAR SIZE (DEFORMED)	DIAMETER (mm)	180° HOOK	90° HOOK	
		D+2db	L	L
10mm ϕ	60	75	125	150
12mm ϕ	75	100	150	200
16mm ϕ	95	125	175	250
20mm ϕ	115	150	200	300
25mm ϕ	150	200	230	450
28mm ϕ	240	300	350	550
32mm ϕ	300	335	450	600

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

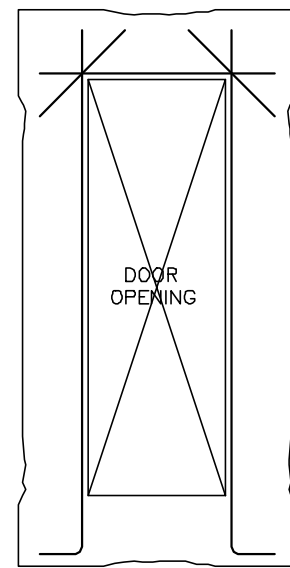
- DESIGN STRESSES
 - CONCRETE
COMPRESSIVE STRENGTH @ 28 DAYS $f_c' = 20.7$ MPa (3,000 psi)
 - REINFORCING BARS
 - FOR BARS 16mm ϕ AND GREATER $f_y = 275$ MPa (40,000 psi)
 - FOR BARS LESS THAN 16mm ϕ $f_y = 230$ MPa (33,000 psi)
 - STRUCTURAL STEEL, ASTM-A36
FOR TRUSSES, BRACINGS, & STRUTS $f_y = 248$ MPa (36,000 psi)
 - PURLINS
COLD FORMED LIGHT GAGE SHAPES $f_y = 248$ MPa (36,000 psi)
 - MASONRY UNIT (CHB)
NON-LOAD BEARING CHB WALLS $f_m' = 3.45$ MPa (500 psi)
 - WELDS-USED E-60xx ELECTRODE
 - STRUCTURAL BOLTS, ASTM-A307
 - $f_t = 96.60$ MPa (14,000 psi)
 - $F_v = 69$ MPa (10,000 psi)

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.



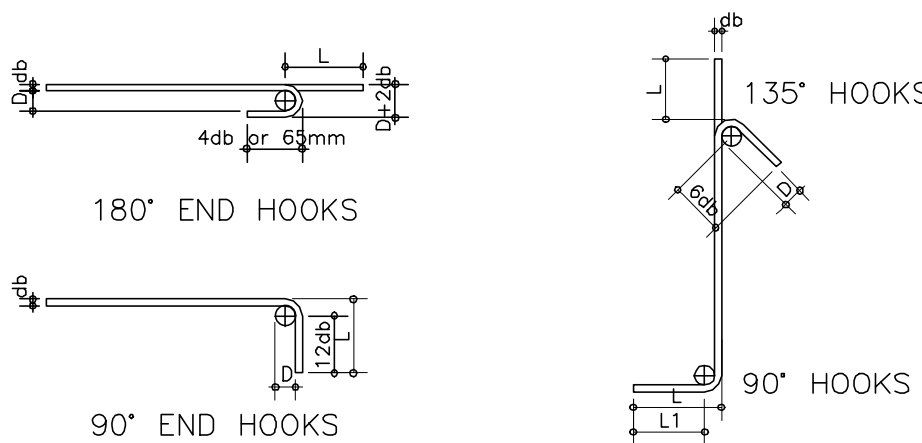
TYPICAL SLAB & BEAM CONSTRUCTION JOINT DET.



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°.



CHECKED, SIGNED & SEALED :

CIVIL/STRUCTURAL ENGINEER

PRC No. VALIDITY :

PTR No. DATE ISSUED :

PLACE ISSUED: TIN :

SHEET CONTENT :

SHEET NO.:

GENERAL CONSTRUCTION NOTES

S-2



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE No. IV-A
BATANGAS 2ND DISTRICT ENGINEERING OFFICE
KUMINTANG ILAYA, BATANGAS CITY

PROJECT TITLE / LOCATION :

C.Y. 2025 PROJECT
CONVERGENCE AND SPECIAL SUPPORT PROGRAM,
BASIC INFRASTRUCTURE PROGRAM (BIP),
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CONSTRUCTION OF MULTI-PURPOSE BUILDING
(TINGLOY MUNICIPAL TOURISM AND CULTURAL ARTS BUILDING),
AT TINGLOY, BATANGAS

DRAWN & PREPARED BY :

BRYAN EDWARD R. ANDAL
ENGINEER II

DATE :

REVIEWED & SUBMITTED :

GEMMA L. OLAN
OFFICER-IN-CHARGE,
PLANNING & DESIGN SECTION

DATE :

RECOMMENDED :

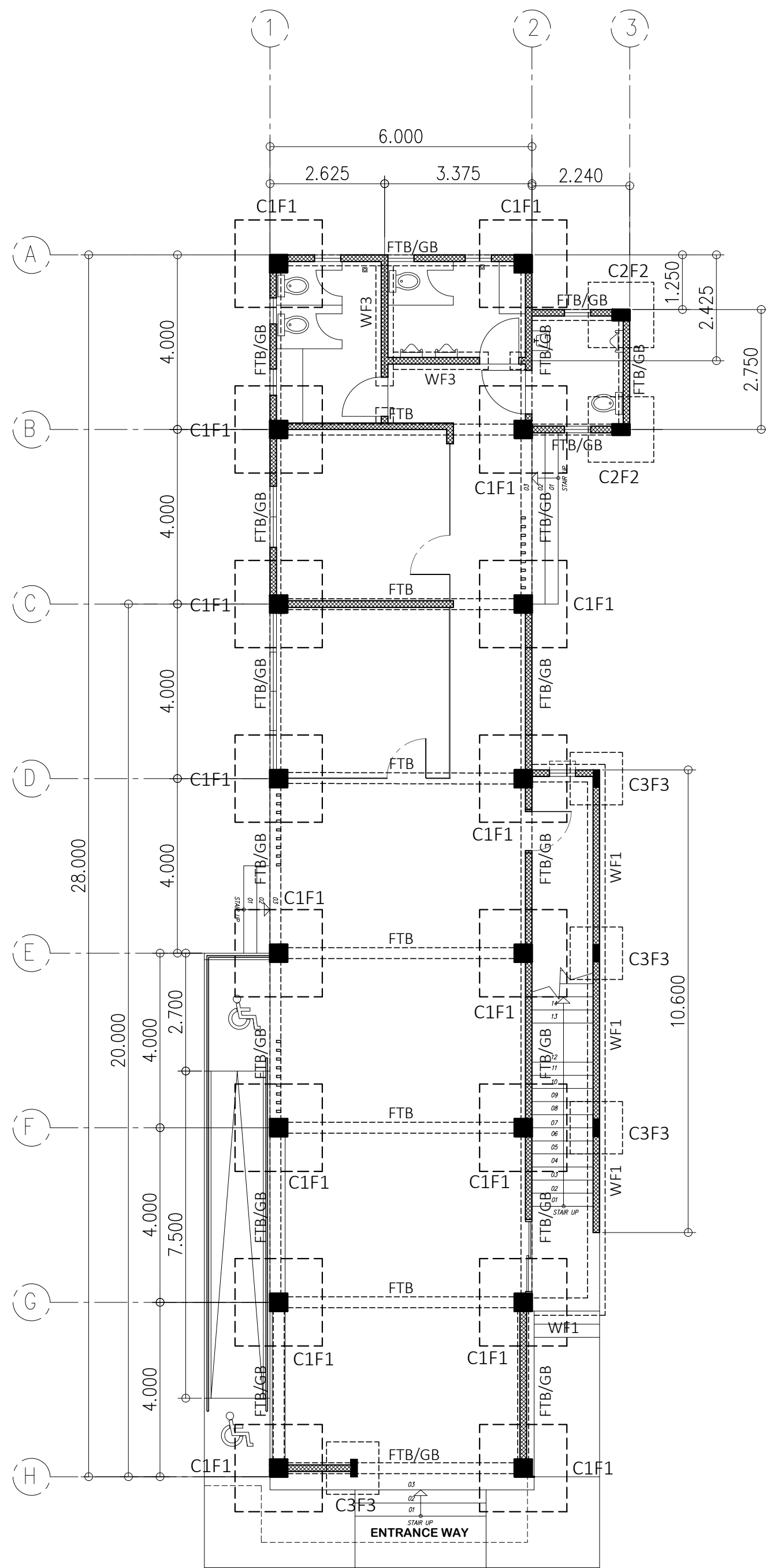
ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER

DATE :

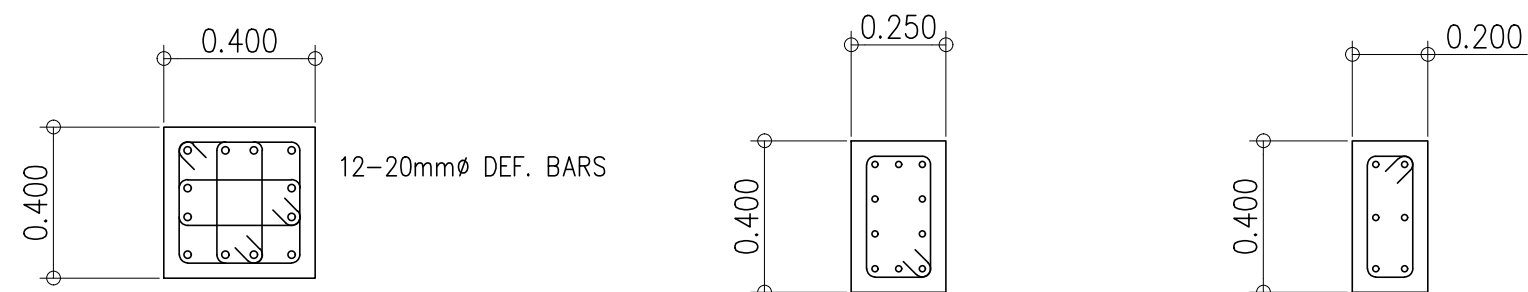
APPROVED :

SONIA D. PAGLICAUAN
DISTRICT ENGINEER

DATE :



1 FOUNDATION PLAN
S-1 SCALE 1:100 MTS.



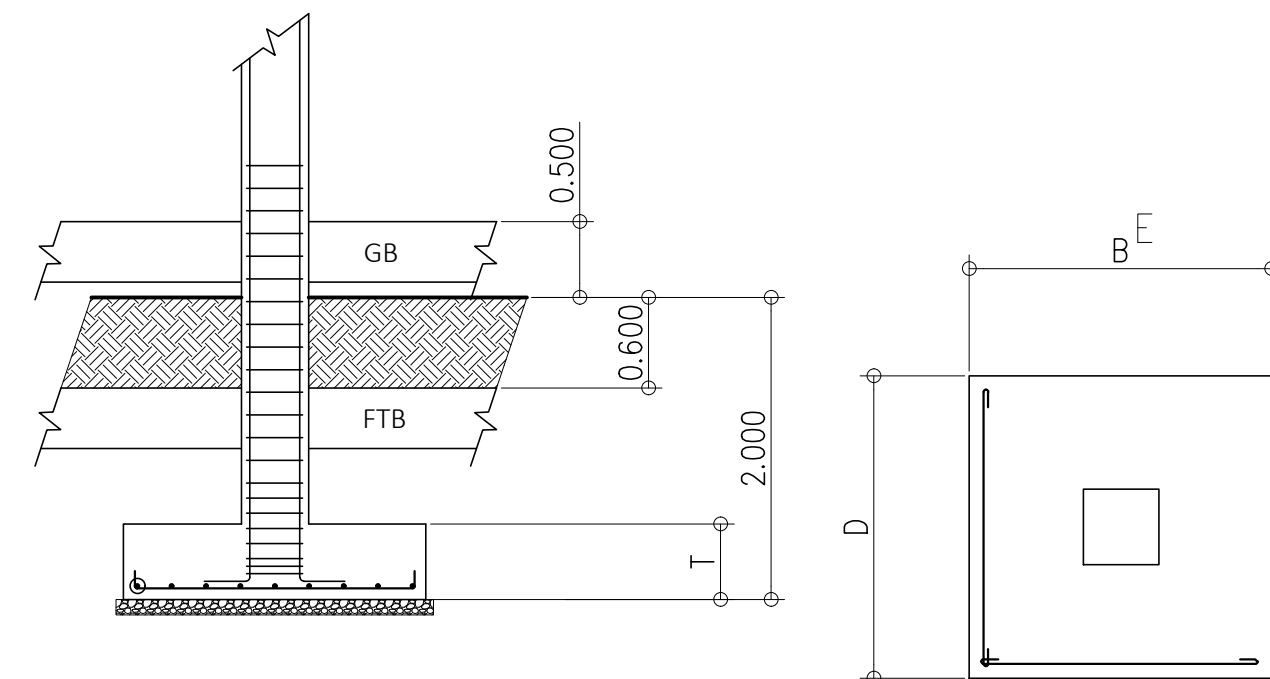
C1 C2 C3

2 COLUMN DETAILS
S-3 SCALE 1:20 MTS.

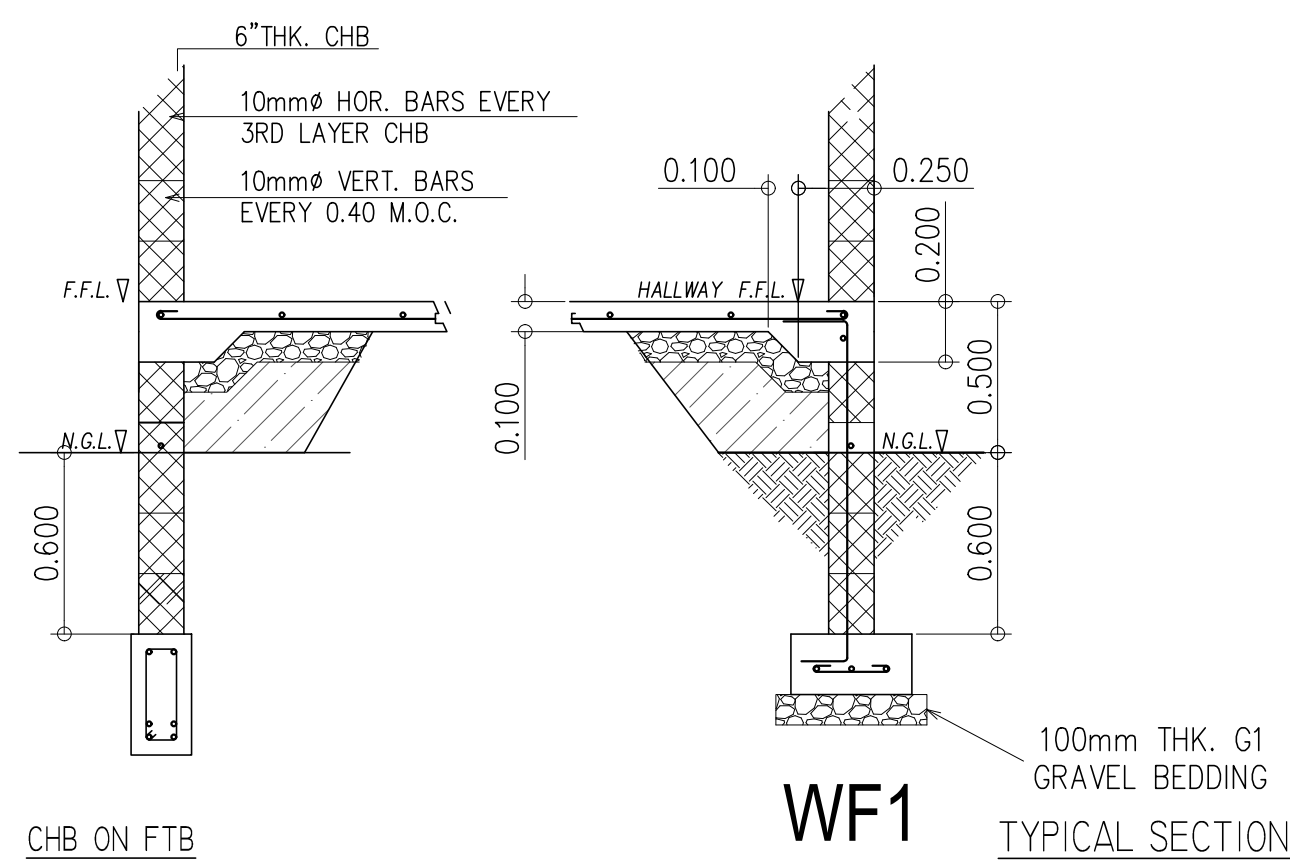
2-10mmØ LATERAL TIES SPACED;
3@0.05m, 3@0.10m, 5@0.15m & REST @ 0.20 M.O.C.

FOOTING SCHEDULE

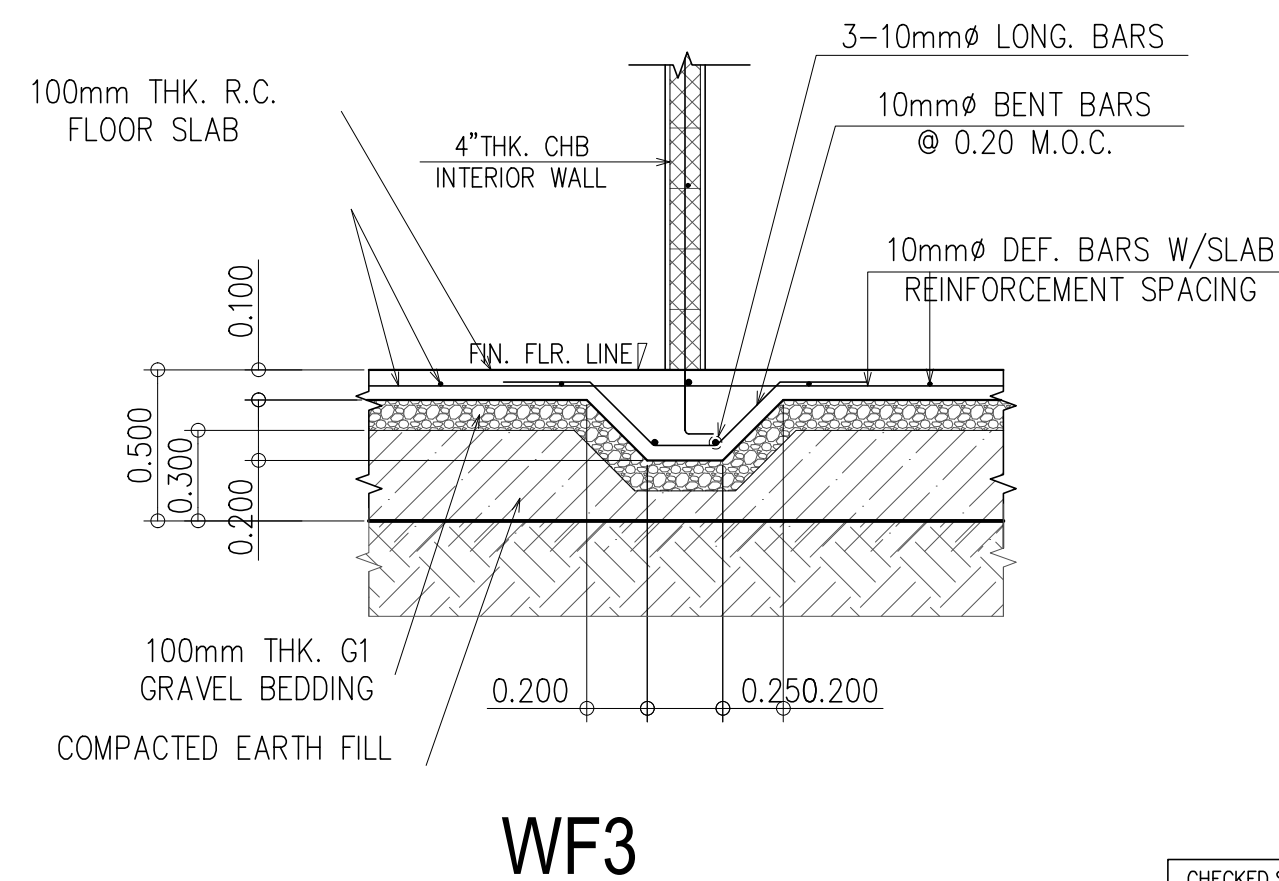
FOOTING NUMBERS	B	D	T	REBAR
F1	2000	2000	300	12-#16 BW
F2	1800	1800	300	10-#16 BW
F3	1200	1200	300	9-#16 BW



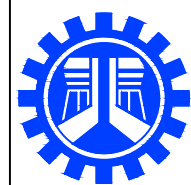
4 COLUMN FOOTING DETAILS
S-3 SCALE 1:25 MTS.



3 WALL FOOTING DETAILS
S-3 SCALE 1:25 MTS.



CHECKED, SIGNED & SEALED :	
CIVIL/STRUCTURAL ENGINEER	
PRC No.	VALIDITY :
PTR No.	DATE ISSUED :
PLACE ISSUED:	TIN :
SHEET CONTENT :	SHEET NO.:
FOUNDATION PLAN COLUMN DETAILS COLUMN FOOTING DETAILS WALL FOOTING DETAILS	S-3



REPUBLIC OF THE PHILIPPINES
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BATANGAS 2ND DISTRICT ENGINEERING OFFICE
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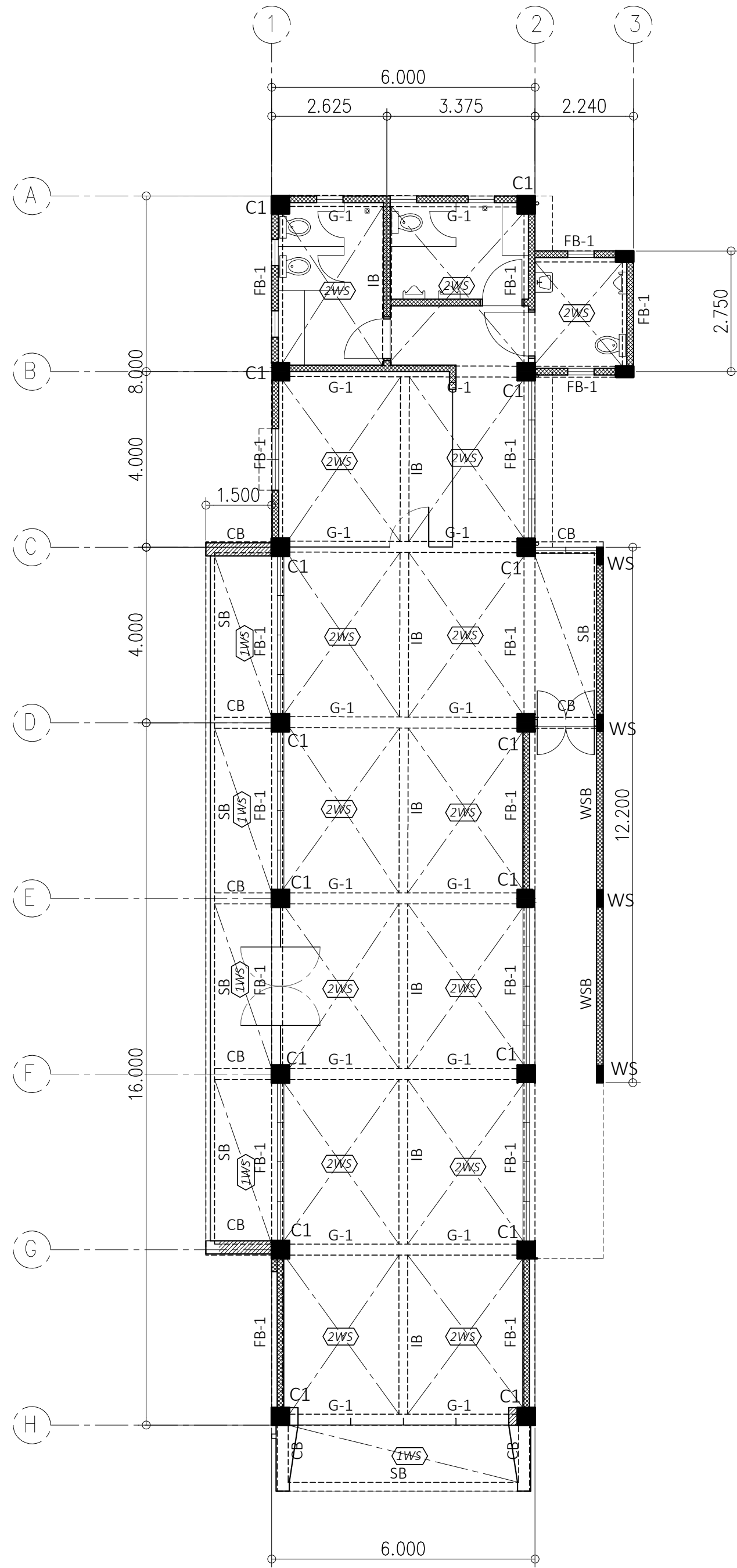
PROJECT TITLE / LOCATION :
C.Y. 2025 PROJECT
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AT TINGLOY, BATANGAS

DRAWN & PREPARED BY :
BRYAN EDWARD R. ANDAL
ENGINEER II
DATE :

REVIEWED & SUBMITTED :
GEMMA L. OLAN
OFFICER-IN-CHARGE,
PLANNING & DESIGN SECTION
DATE :

RECOMMENDED :
ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER
DATE :

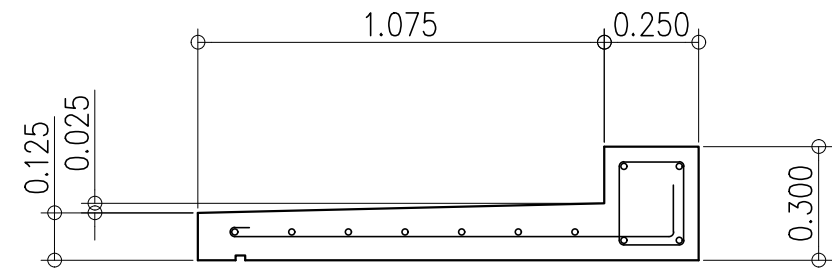
APPROVED :
SONIA D. PAGLICAUAN
DISTRICT ENGINEER
DATE :



1
S-4

SECOND FLOOR FRAMING PLAN

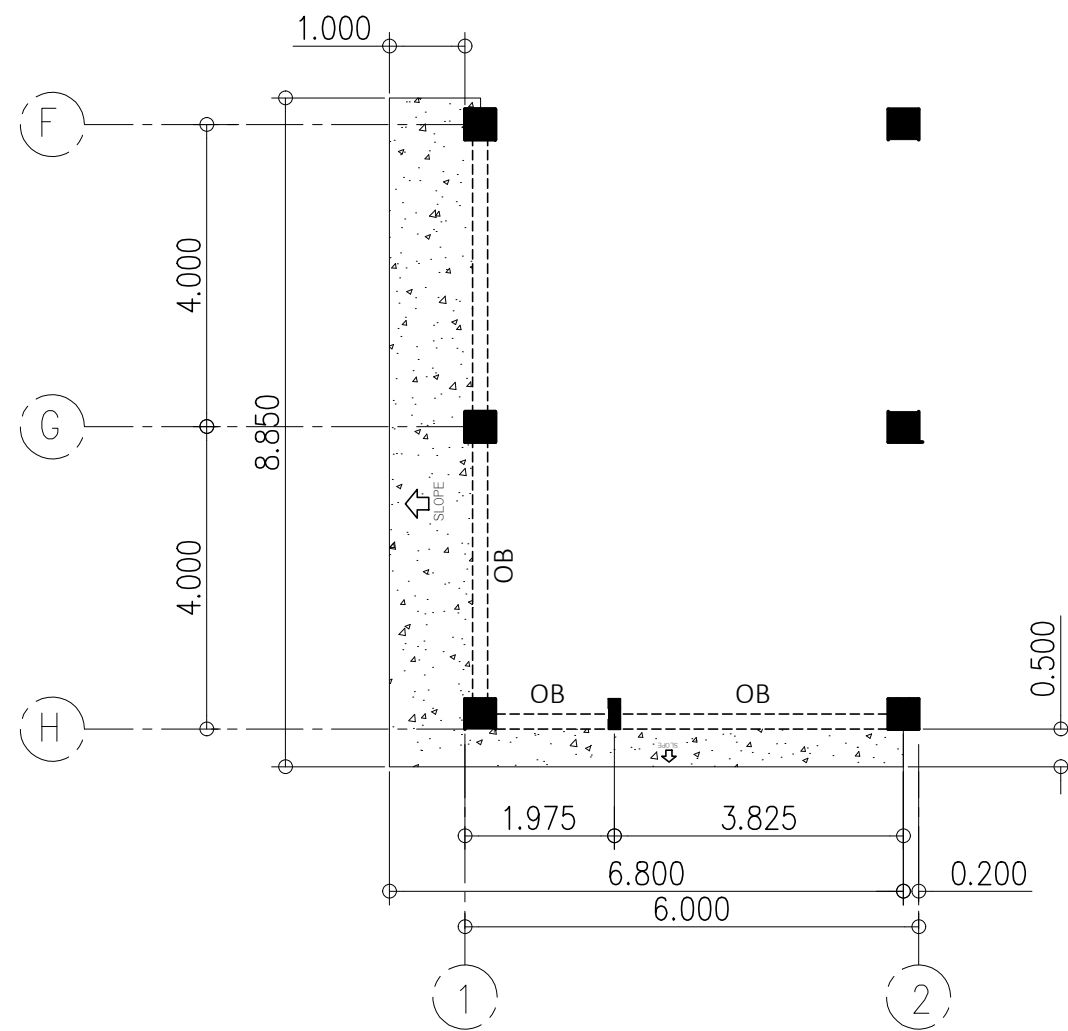
SCALE 1:100 MTS.



4
S-4

FIRST FLOOR
R.C. CANOPY DETAIL

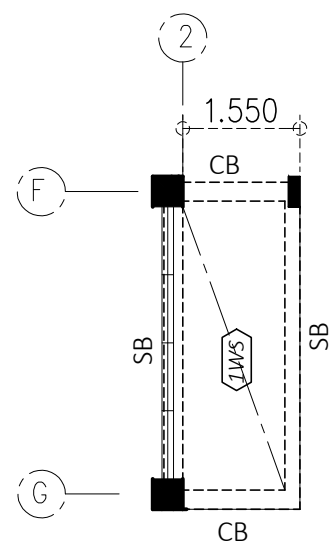
SCALE 1:20 MTS.



3
S-4

FIRST FLOOR
R.C. CANOPY PLAN

SCALE 1:100 MTS.



5
S-4

STAIRWELL
R.C. CANOPY PLAN

SCALE 1:100 MTS.

MARK	WIDTH mm	DEPTH mm	REINFORCING BARS		STIRRUPS sizes / spacing	BEAM DETAILS	
			@ support	@ midspan		@ support	@ midspan
FTB/GB	250	400	4-16MM Ø TOP BARS (TB) 4-16 MM Ø BOTTOM BARS (BB)	3-16 MM Ø TOP BARS (TB) 3-16 MM Ø BOTTOM BARS (BB)	10 MM Ø STIRRUPS SPACED 2 @ 150MM, & REST @ 160MM OC UP TO MIDSPAN		
G1	300	500	6-20 MM Ø TOP BARS (TB) 3-20 MM Ø BOTTOM BARS (BB)	2-20 MM Ø TOP BARS (TB) 5-20 MM Ø BOTTOM BARS (BB)	10 MM Ø STIRRUPS SPACED 2 @ 210MM, & REST @ 210MM OC UP TO MIDSPAN		
FB1	250	500	3-20 MM Ø TOP BARS (TB) 2-20 MM Ø BOTTOM BARS (BB)	2-20 MM Ø TOP BARS (TB) 2-20MM Ø BOTTOM BARS (BB)	10 MM Ø STIRRUPS SPACED 2 @ 220MM, & REST @ 220MM OC UNTIL TO MIDSPAN		
CB	250	500	4-16 MM Ø TOP BARS (TB) 3-16MM Ø BOTTOM BARS (BB)	3-16 MM Ø TOP BARS (TB) 3-16MM Ø BOTTOM BARS (BB)	10 MM Ø STIRRUPS SPACED 2 @ 200MM, & REST @ 210MM OC UNTIL TO MIDSPAN		
IB/SB	250	400	6-16 MM Ø TOP BARS (TB) 3-16 MM Ø BOTTOM BARS (BB)	4-16 MM Ø TOP BARS (TB) 3-16 MM Ø BOTTOM BARS (BB)	10 MM Ø STIRRUPS SPACED 2@ 150MM, & REST @ 150MM OC UP TO MIDSPAN		
RB	200	400	2-16 MM Ø TOP BARS (TB) 2-16MM Ø BOTTOM BARS (BB)	2-16 MM Ø TOP BARS (TB) 2-16MM Ø BOTTOM BARS (BB)	10 MM Ø STIRRUPS SPACED 2 @ 150MM, & REST @ 160MM OC UNTIL TO MIDSPAN		
RG	250	500	4-16 MM Ø TOP BARS (TB) 3-16MM Ø BOTTOM BARS (BB)	3-16 MM Ø TOP BARS (TB) 3-16MM Ø BOTTOM BARS (BB)	10 MM Ø STIRRUPS SPACED 2 @ 200MM, & REST @ 210MM OC UNTIL TO MIDSPAN		

2
S-4

BEAM SCHEDULE

SCALE 1 : 15 MTS.

CHECKED, SIGNED & SEALED :

CIVIL/STRUCTURAL ENGINEER

PRC No. VALIDITY :

PTR No. DATE ISSUED :

PLACE ISSUED: TIN :

SHEET CONTENT :

SHEET NO.:

SECOND FLOOR FRAMING PLAN
BEAM SCHEDULE
1ST FLR. R.C. CANOPY PLAN
R.C. CANOPY DETAIL
STAIRWELL R.C. CANOPY PLAN

S-4



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE No. IV-A
BATANGAS 2ND DISTRICT ENGINEERING OFFICE
KUMINTANG ILAYA, BATANGAS CITY

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(TINGLOY MUNICIPAL TOURISM AND CULTURAL ARTS BUILDING),
AT TINGLOY, BATANGAS

DRAWN & PREPARED BY :
BRYAN EDWARD R. ANDAL
ENGINEER II
DATE :

REVIEWED & SUBMITTED :
GEMMA L. OLAN
OFFICER-IN-CHARGE,
PLANNING & DESIGN SECTION
DATE :

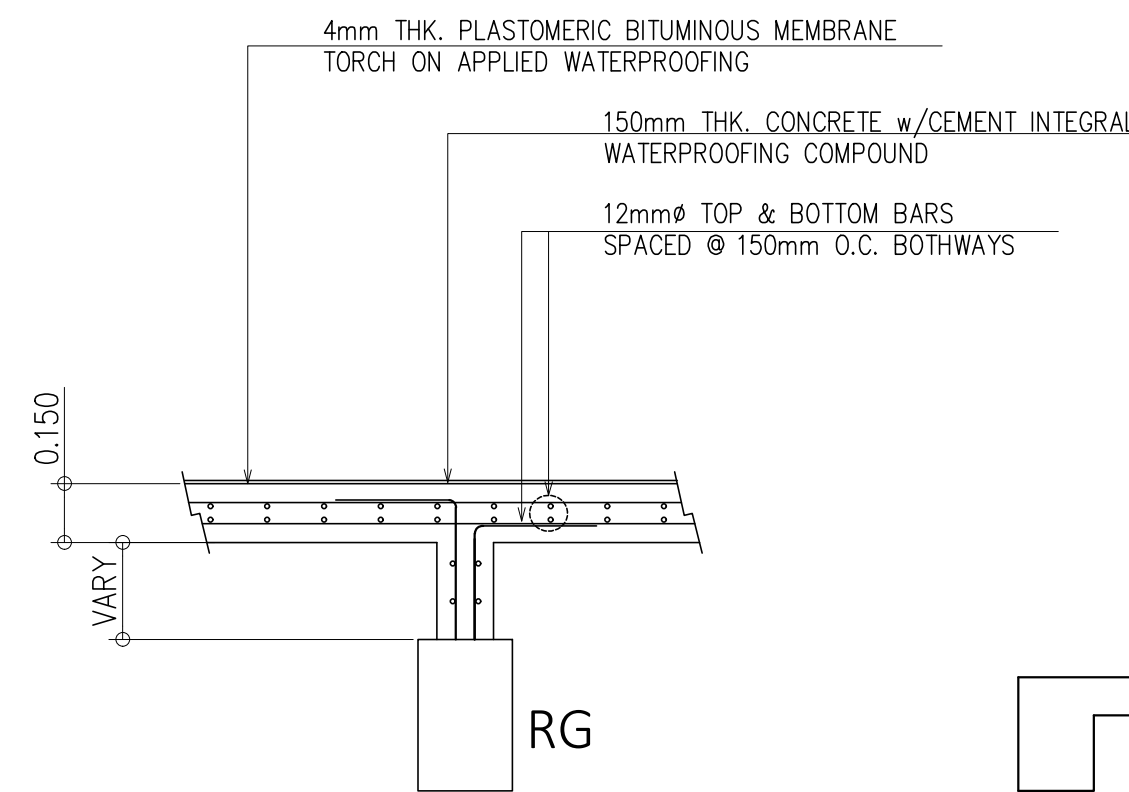
RECOMMENDED :
ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER
DATE :

APPROVED :
SONIA D. PAGLICAUAN
DISTRICT ENGINEER
DATE :



4 TWO-WAY R.C. SLAB SECTION DETAIL
S-5 NOT TO SCALE

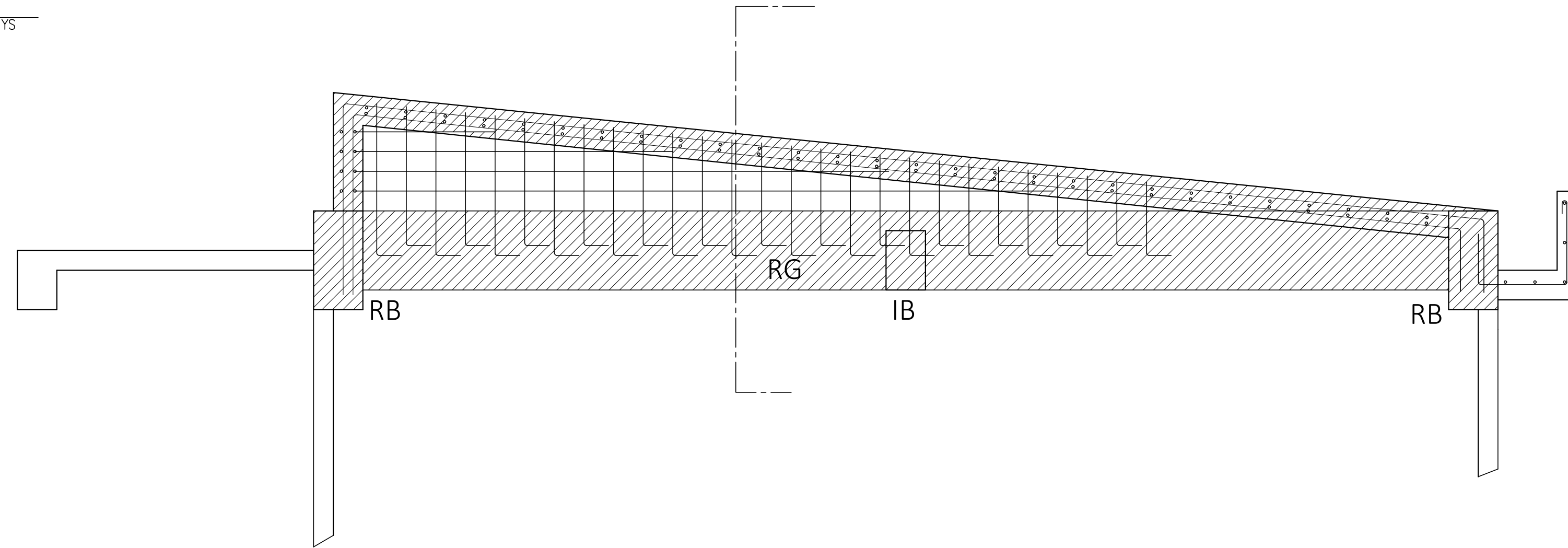




1
S-6

CROSS SECTION ALONG G-1

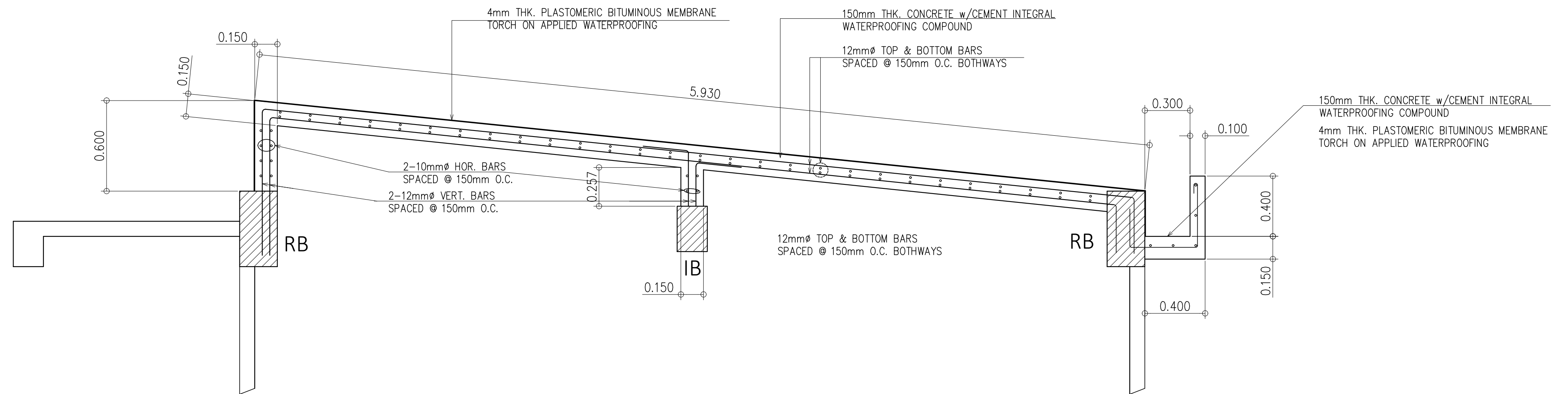
SCALE 1 : 40 MTS.



2
S-6

LONGITUDINAL SECTION ALONG G-1 (GRID A TO H)

SCALE 1 : 20 MTS.

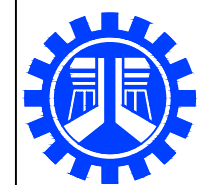


3
S-6

ROOF SLAB DETAIL

SCALE 1 : 20 MTS.

CHECKED, SIGNED & SEALED :	
CIVIL/STRUCTURAL ENGINEER	
PRC No.	VALIDITY :
PTR No.	DATE ISSUED :
PLACE ISSUED:	TIN :
SHEET CONTENT :	SHEET NO.:
CROSS SECTION ALONG G-1 LONGITUDINAL SECTION ALONG G-1 ROOF SLAB DETAIL	S-6



REPUBLIC OF THE PHILIPPINES
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(TINGLOY MUNICIPAL TOURISM AND CULTURAL ARTS BUILDING),
AT TINGLOY, BATANGAS

DRAWN & PREPARED BY :
BRYAN EDWARD R. ANDAL
ENGINEER II
DATE :

REVIEWED & SUBMITTED :
GEMMA L. OLAN
OFFICER-IN-CHARGE,
PLANNING & DESIGN SECTION
DATE :

RECOMMENDED :
ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER
DATE :

APPROVED :
SONIA D. PAGLICAUAN
DISTRICT ENGINEER
DATE :

GENERAL NOTES:

1. ALL PLUMBING WORKS INCLUDED HEREIN SHALL BE EXECUTED ACCORDING TO THE PROVISIONS OF THE NATIONAL PLUMBING CODE, THE NATIONAL BUILDING CODE.
2. COORDINATE THE DRAWING WITH OTHER RELATED DRAWINGS AND SPECIFICATION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCY FOUND THEREIN.
3. ALL PIPES SHALL BE INSTALLED AS INDICATED ON PLANS. ANY RELOCATIONS REQUIRED FOR PROPER EXECUTION OF OTHER TRADE SHALL BE WITH PRIOR APPROVAL OF THE ARCHITECT OR ENGINEER.
4. PROPOSED SANITARY UTILITIES SHALL CONFORM TO THE ACTUAL LOCATION, DEPTH AND INVERT ELEVATION OF ALL EXISTING PIPES AND STRUCTURES AS VERIFIED BY THE CONTRACTOR.
5. ALL SLOPES FOR HORIZONTAL DRAINAGE SHALL MAINTAIN 0.5% AND FOR SEWER SHALL MAINTAIN 1.0% UNLESS OTHERWISE SPECIFIED.
6. ALL WATER FIXTURE SHALL HAVE AN AIR CHAMBER INSTALLED.
7. SIZE OF WATER SUPPLY PIPES TO FIXTURES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
8. THE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES AT SITE, COORDINATE THE WORKS WITH THE SEWER LINE EFFLUENT DISPOSAL POINT AND WATER LINE SERVICE CONNECTING POINT, UNLESS OTHERWISE SPECIFIED.
9. ALL PIPE SIZES ARE IN MILLIMETERS AND ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED. ALL PIPE SIZES USE INSIDE DIAMETER.

MATERIAL SPECIFICATIONS:

COLD WATER LINE	WHEN BURIED UNDERGROUND, TAPPING WATER LINES FROM WATER MAIN TO BUILDING TOILET /OR SUPPLY LINE SHALL BE PVC BLUE CLASS 150. THE FITTINGS SHALL BE CCI OR MECHANICAL GROOVED COUPLER SIMILAR TO "VICTAULIC" BRAND OR APPROVED EQUAL.
	ALL RISER LINES AND ROUGHING-IN OF TOILETS SHALL BE HIGH DENSITY PPRC (POLYPROPYLENE-RANDOM COPOLYMER) CLASS PN-20 POLYPROPYLENE PIPE MATERIALS. FITTINGS SHALL BE FUSION WELD TYPE, IMPORTED CONFORMING TO GERMAN TECHNOLOGY DIN 8077-8078 AND ISO 15874-2 SIMILAR TO "THERMOVAR", "REHAU", "GEORGE FISHER", "ATLANTA PPR" BRAND OR APPROVED EQUAL.
VENT PIPES	SHALL BE POLYVINYL CHLORIDE (PVC) PIPE SERIES 600 BY "NELTEX", "ATLANTA" BRAND OR APPROVED EQUAL. FITTINGS SHALL BE SOLVENT CEMENT JOINT TO ASTM D2564.
SEWER LINES	SHALL BE POLYVINYL CHLORIDE (PVC) PIPE SERIES 1000 BY, "NELTEX", "ATLANTA" BRAND OR APPROVED EQUAL. FITTINGS SHALL BE SOLVENT CEMENT JOINT TO ASTM D2564.
DOWNSPOUT	SHALL BE POLYVINYL CHLORIDE (PVC) PIPE SERIES 1000 BY, "NELTEX", "ATLANTA" BRAND OR APPROVED EQUAL. FITTINGS SHALL BE SOLVENT CEMENT JOINT TO ASTM D2564.
CHECK VALVES	"CRANE", "KITS", OR APPROVED EQUAL.
GATE VALVES	"CRANE", "KITS", OR APPROVED EQUAL.
WATER METER	"ARAD", "ASAHI", "SYNERGY", BRAND OR APPROVED EQUAL.

LEGEND:

WATER DISTRIBUTION SYSTEM

	CWR	COLD WATER RISER
	CWL	COLD WATER LINE
	DN.	COLD WATER LINE (DOWN)
	GV	GATE VALVE
	CV	CHECK VALVE
	WM	WATER METER

SEWER, WASTE & VENT SYSTEM

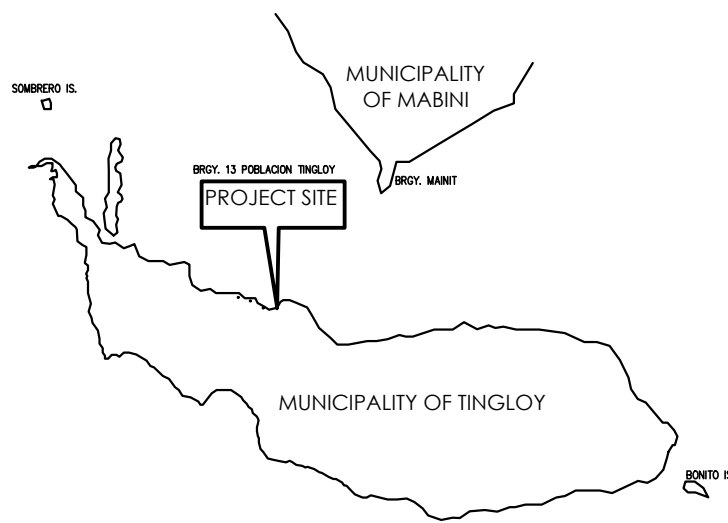
	SP	SOIL PIPE
	SS	SOIL STACK
	VP/VAC	VENT PIPE/VENT ACROSS CEILING
	VS	VENT STACK
	VSTR	VENT STACK THRU ROOF
	VSTW	VENT STACK THRU WALL
	FCO	FLOOR CLEANOUT
	FD	FLOOR DRAIN
	GT	GREASE TRAP

DRAINAGE SYSTEM

	DP	DRAIN PIPE
	CB/AD	CATCH BASIN/AREA DRAIN
	DS	DOWNSPOUT
	GD	GUTTER DRAIN
	DD	DECK DRAIN

STACK DRIECTIONS

F/A	FROM ABOVE
T/A	TO ABOVE
F/B	FROM BELOW
T/B	TO BELOW



MAKILING
BANGS



TINGLOY PORT

SEA WALL

PUBLIC ROAD

PORT
OFFICE

POBLACION BRGY. 13
LATITUDE = 13.661778
LONGITUDE = 120.874028

SITE

TINGLOY PORT

BOAT DOCKING
AREA

COASTGUARD

POLICE

TOURISM

PORT
OFFICE

COAST
GUARD

TO BRGY. 14

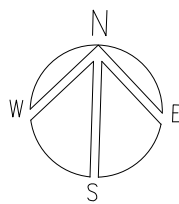
PUBLIC ROAD

PROPOSED BUILDING

200#STORM DRAINAGE PIPE
TO SEA

32#CWL TAP TO EXISTING
MAIN WATER LINE

EXISTING MAIN WATER LINE
(VERIFY AT SITE)



2

SITE DEVELOPMENT PLAN

P-01 SCALE

1:200 MTS.

CHECKED, SIGNED & SEALED BY :

SANITARY ENGINEER

PRC No.

PTR No.

Date Issued:

Place issued:

SHEET CONTENT :

SHEET NO.:

PLUMBING GENERAL NOTES
MATERIAL SPECIFICATIONS
LEGEND
VICINITY MAP
SITE DEVELOPMENT PLAN

P-01



REPUBLIC OF THE PHILIPPINES
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CONSTRUCTION OF MULTI-PURPOSE BUILDING (TINGLOY
MUNICIPAL TOURISM AND CULTURAL ARTS BUILDING), AT
TINGLOY, BATANGAS

CAD AND DESIGNED BY:

PAUL BRIAN C. HORNILLA
ENGINEER II (JO)

DATE :

CHECKED BY:

KIM BRYAN B. BAGOS
ENGINEER II

DATE :

REVIEWED & SUBMITTED :

GEMMA L. OLAN
CHIEF, PLANNING & DESIGN SECTION

DATE :

RECOMMENDED :

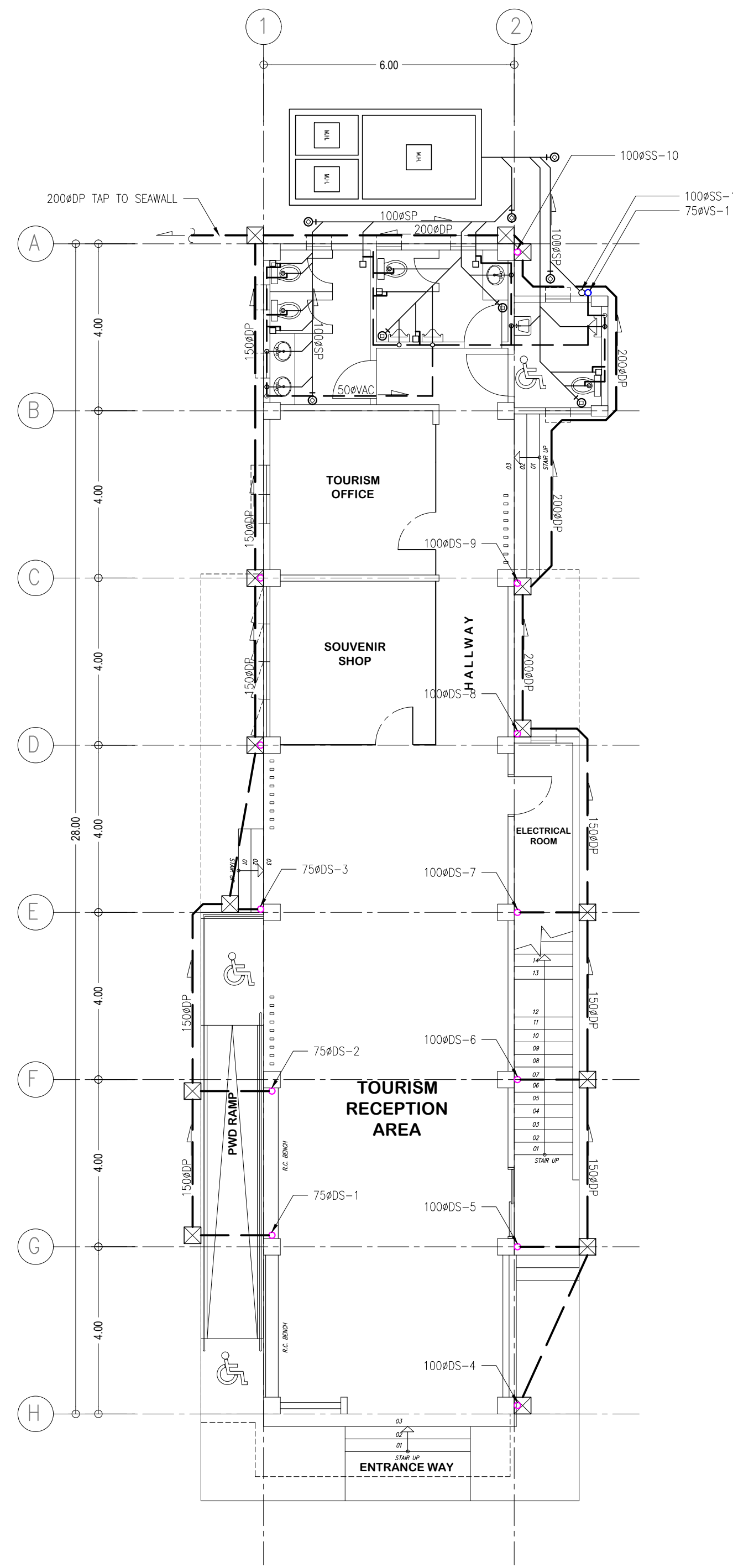
ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER

DATE :

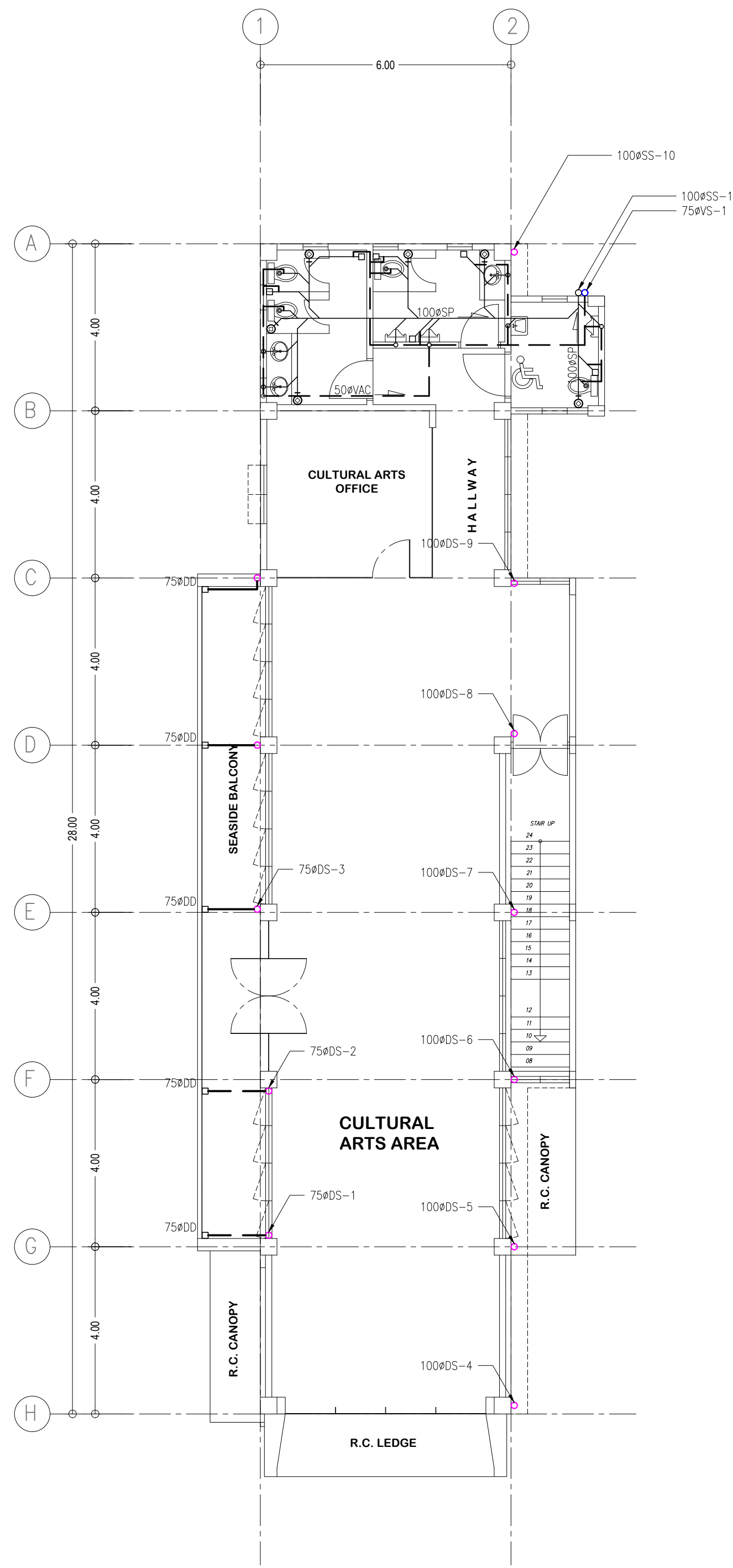
APPROVED :

SONIA D. PAGLICAUAN
DISTRICT ENGINEER

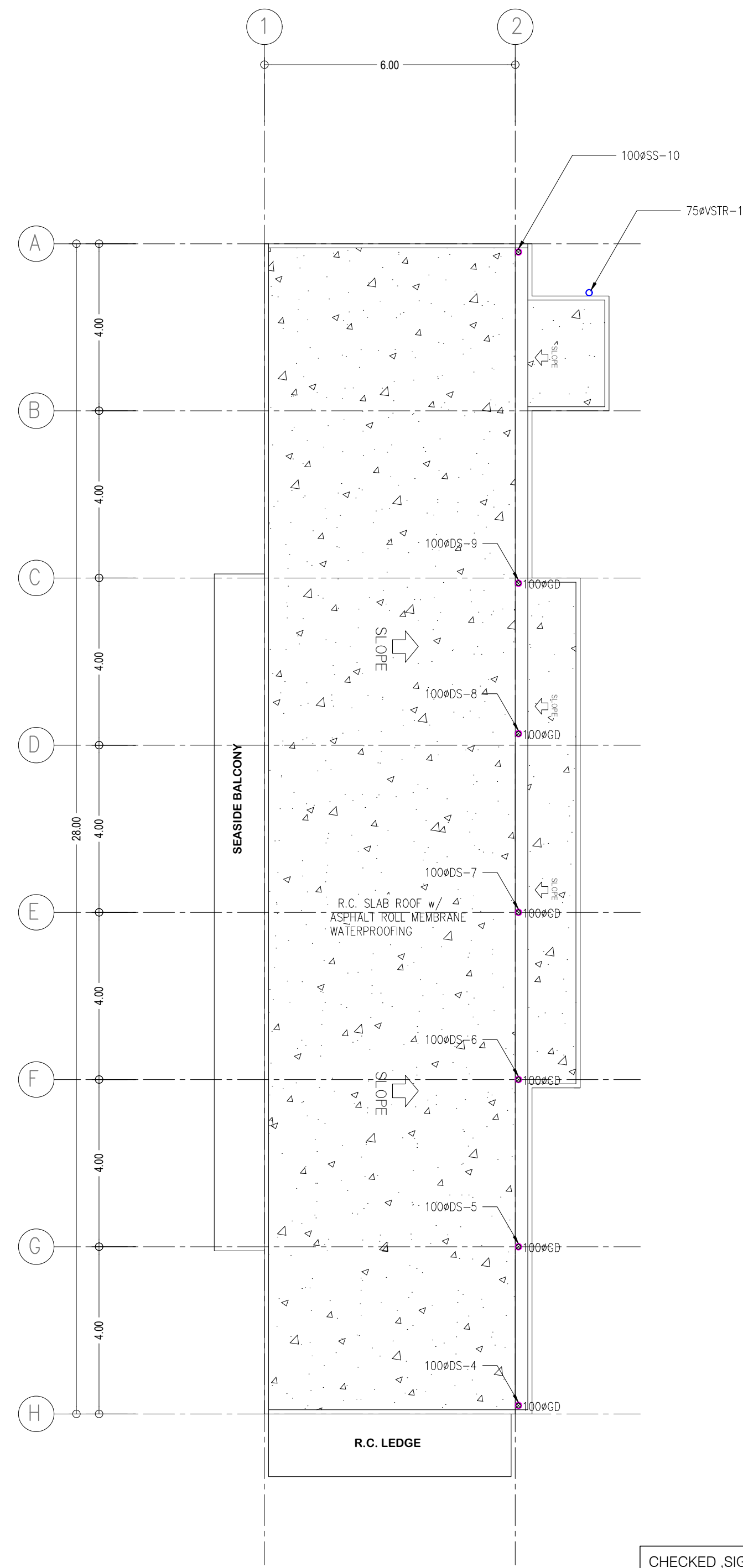
DATE :



1
P-02
SEWER, VENT & STORM DRAINAGE LINE LAYOUT OF
GROUND FLOOR PLAN
SCALE 1:100 MTS.

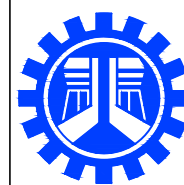


2
P-02
SEWER, VENT & STORM DRAINAGE LINE LAYOUT OF
SECOND FLOOR PLAN
SCALE 1:100 MTS.



3
P-02
SEWER, VENT & STORM DRAINAGE LINE LAYOUT OF
THIRD FLOOR PLAN
SCALE 1:100 MTS.

CHECKED, SIGNED & SEALED BY :	
SANITARY ENGINEER	
PRC No.	PTR No.
Date Issued:	Place issued:
SHEET CONTENT :	SHEET NO.:
SEWER LINE LAYOUT PLAN VENT LINE LAYOUT PLAN STORM DRAINAGE LINE LAYOUT PLAN	P-02



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE No. IV-A
BATANGAS 2ND DISTRICT ENGINEERING OFFICE
KUMINTANG ILAYA, BATANGAS CITY

PROJECT TITLE / LOCATION :
C.Y. 2025 PROJECT
CONVERGENCE AND SPECIAL SUPPORT PROGRAM, BASIC
INFRASTRUCTURE PROGRAM (BIP), MULTI-PURPOSE
BUILDINGS/FACILITIES TO SUPPORT SOCIAL SERVICES,
CONSTRUCTION OF MULTI-PURPOSE BUILDING (TINGLOY
MUNICIPAL TOURISM AND CULTURAL ARTS BUILDING), AT
TINGLOY, BATANGAS

CAD AND DESIGNED BY:

PAUL BRIAN C. HORNILLA
ENGINEER II (JO)
DATE :

CHECKED BY:

KIM BRYAN B. BAGOS
ENGINEER II
DATE :

REVIEWED & SUBMITTED :

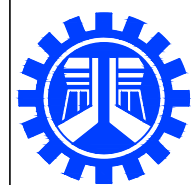
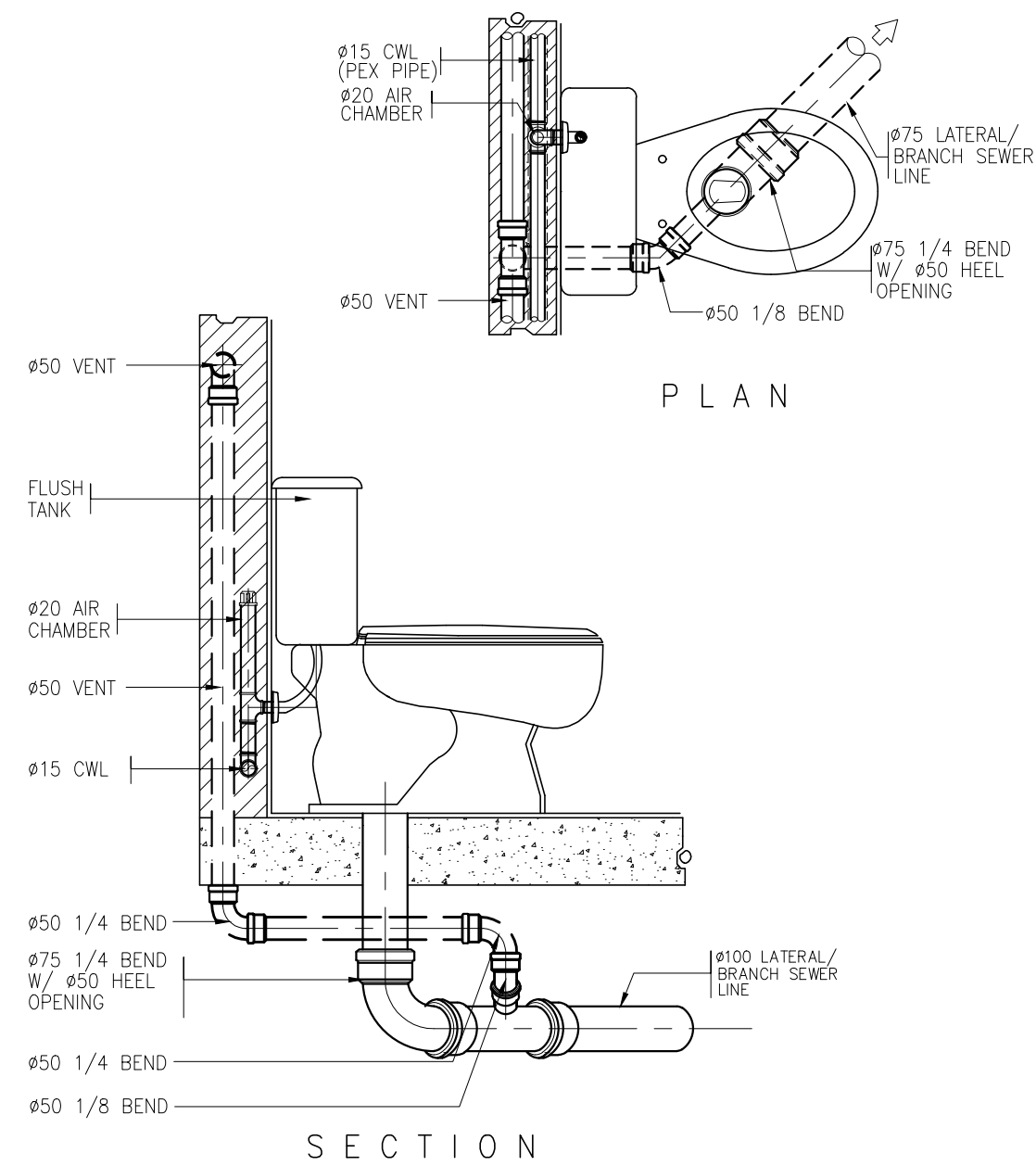
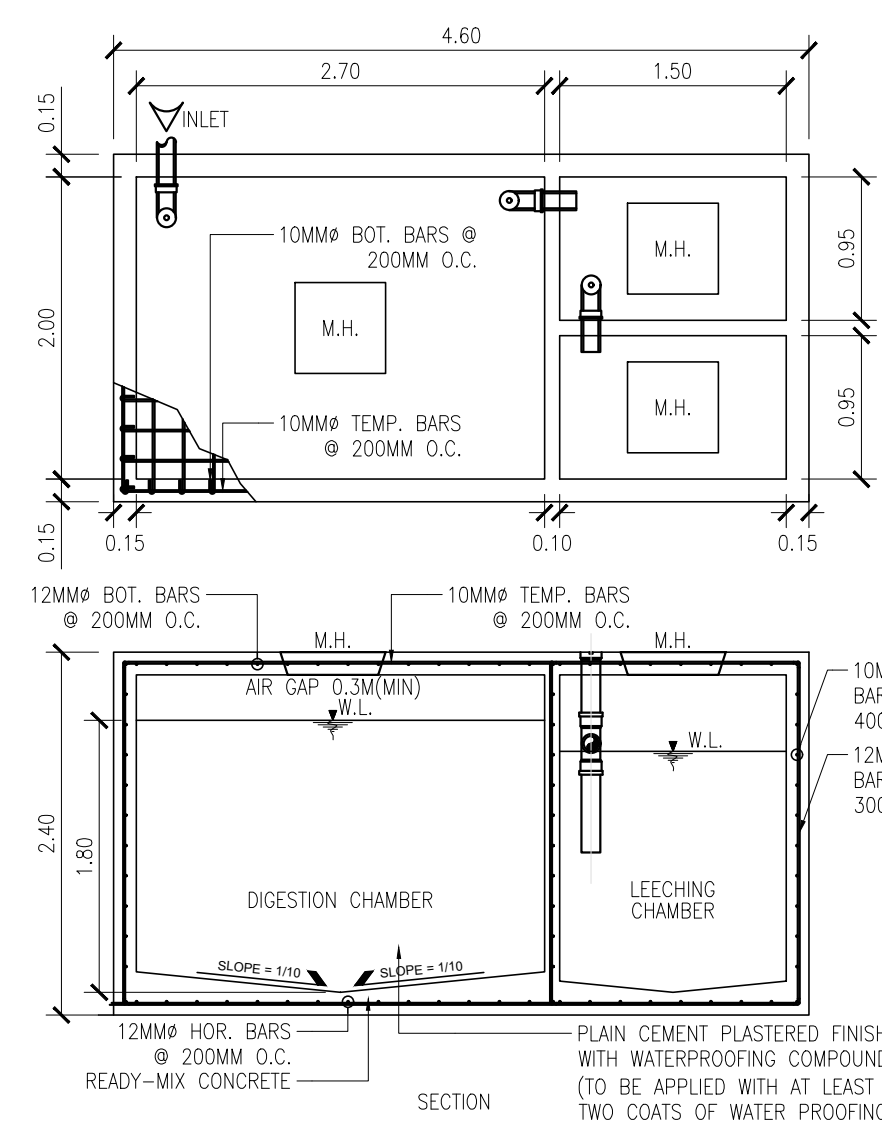
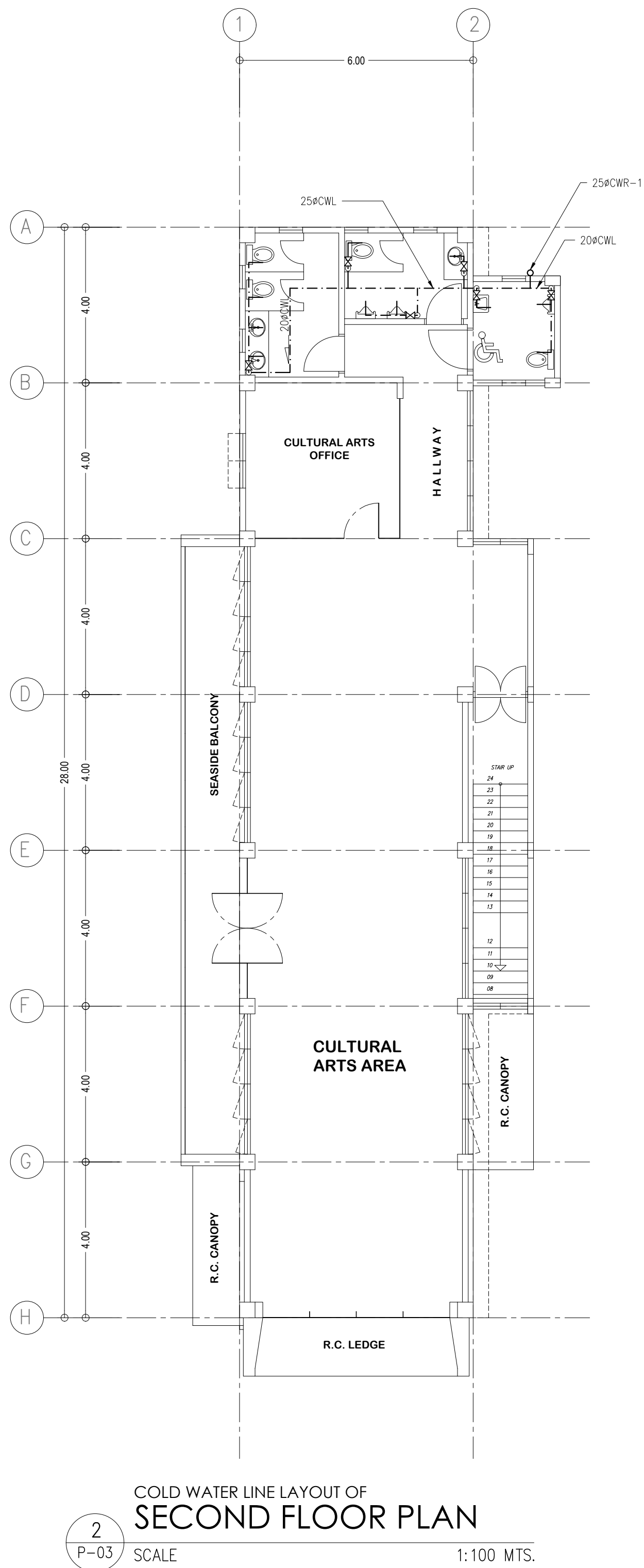
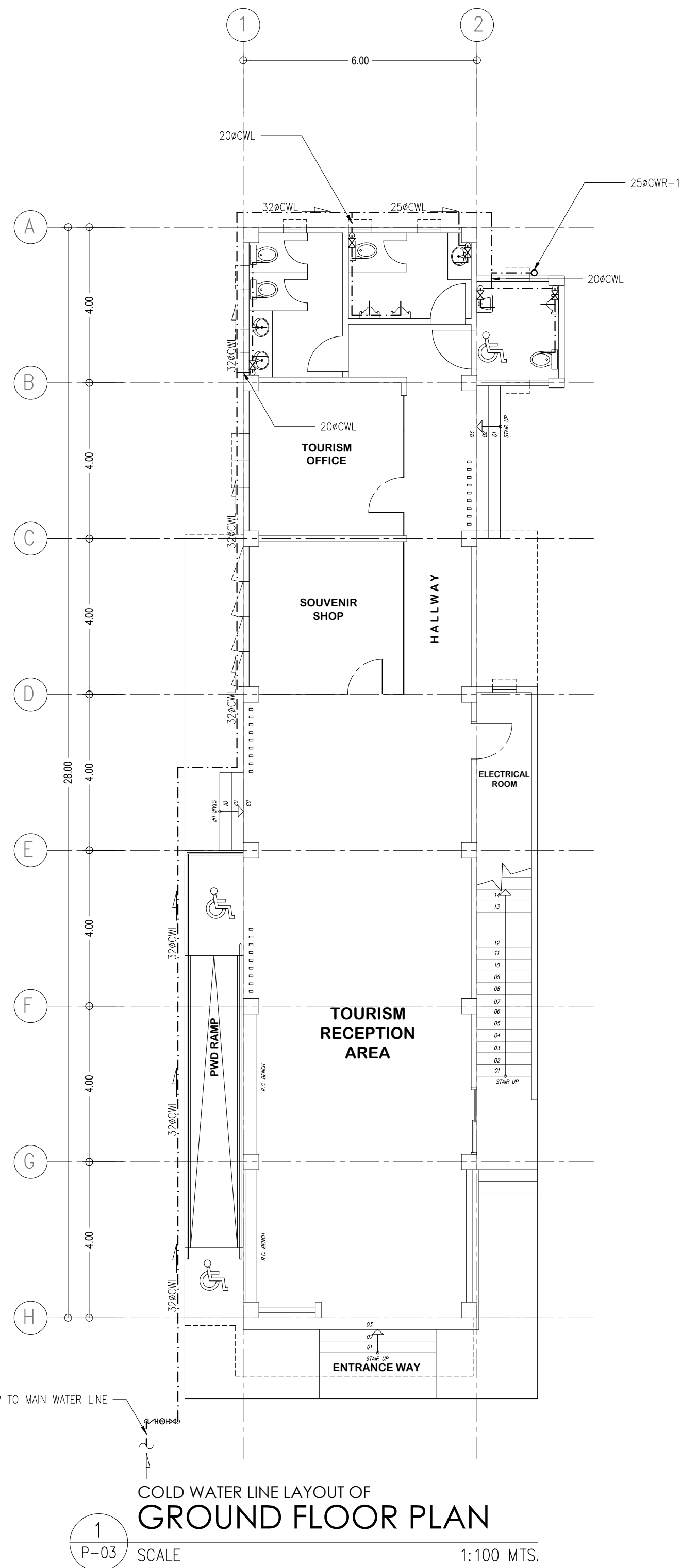
GEMMA L. OLAN
CHIEF, PLANNING & DESIGN SECTION
DATE :

RECOMMENDED :

ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER
DATE :

APPROVED :

SONIA D. PAGLICAUAN
DISTRICT ENGINEER
DATE :



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SANITARY ENGINEER

PRC No.

PTR No.

Date Issued:

Place issued:

SHEET CONTENT :

COLD WATER LINE LAYOUT PLAN
MISCELLANEOUS DETAILS

SHEET NO.:

P-03

