

GENERAL NOTES:

1.0 STANDARDS AND REFERENCES

THE FOLLOWING SHALL GOVERN THE DESIGN, FABRICATION AND CONSTRUCTION OF THE PROJECT.

- 1.1 NATIONAL STRUCTURAL CODE OF THE PHILIPPINES (N.S.C.P.), VOL. 1, 6TH EDITION, 2010.

2.0 DESIGN CRITERIA

2.1 LOADINGS

- A. DEAD LOAD
 CONCRETE -23.56kN/m³
 STEEL -76.93kN/m³
 150mm THK. CHB WALL -2.73 kPa
 100mm THK. CHB WALL -2.11 kPa
- B. LIVE ROAD
 ROOF -1.00 kPa
 SLAB ON GROUND -4.80 kPa

- C. 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

- D. SEISMIC LOAD (NSCP 2010)
 $V = \frac{C_a}{R T} W$ (DESIGN BASE SHEAR)

$V_{max} = \frac{2.50 C_a I}{R} W$ $V_{min} = 0.11 C_a I W$
 $V_{min} = \frac{0.80 Z N v I}{R} W$ (ZONE 4)

- WHERE: W = TOTAL DEAD LOAD
 T = NATURAL PERIOD = $C_1 (h_n)^{2/3}$
 WHERE: C = NUMERICAL COEFFICIENT
 h = BUILDING HEIGHT
 I = IMPORTANCE FACTOR = 1.50
 R = NUMERICAL FACTOR = 8.50
 SEISMIC COEFFICIENT $C_v = 0.44 N_v$
 $C_a = 0.64 N_a$
 NEAR SOURCE FACTOR (10km) $N_v = 1.2$
 $N_a = 1.0$
 Z = SEISMIC ZONE = 0.40 (ZONE 4)
 S = SOIL TYPE = D

2.2 DESIGN STRESSES

- A. CONCRETE
 COMPRESSIVE STRENGTH @ 28 DAYS $f'_c = 20.7$ MPa (3,000 psi)
- B. REINFORCING BARS
 a. FOR BARS 16mm # AND GREATER $f_y = 275$ MPa (40,000 psi)
 b. FOR BARS LESS THAN 16mm # $f_y = 230$ MPa (33,000 psi)
- C. STRUCTURAL STEEL, ASTM-A36
 FOR TRUSSES, BRACINGS, & STRUTS $f_y = 248$ MPa (36,000 psi)
- D. PURLINS
 COLD FORMED LIGHT GAGE SHAPES $f_y = 248$ MPa (36,000 psi)
- E. MASONRY UNIT (CHB)
 NON-LOAD BEARING CHB WALLS $f'_m = 3.45$ MPa (500 psi)
- F. WELDS-USED E-60xx ELECTRODE
 G. STRUCTURAL BOLTS, ASTM-A307
 a. $F_t = 96.60$ MPa (14,000 psi) b. $F_v = 69$ MPa (10,000 psi)

3.0 FOUNDATION

- 3.1 ASSUMED SOIL BEARING CAPACITY SHALL BE 96KPa (2,000 PSF)

- 3.1.1 IN CASE THE ACTUAL LOCATION OF THE STRUCTURE IS LESS THAN THE ASSUMED DISTANCE FROM THE SEISMIC SOURCE OF 40km; NOTIFY THE DIRECTOR, BUREAU OF DESIGN FOR PROPER REVISION OF THE DESIGN. REFER TO THE SEISMIC SOURCE MAP PROVIDED IN THE NATIONAL STRUCTURAL CODE OF THE PHILIPPINES OR PHIVOLCS SEISMIC SOURCE MAP.
- 3.1.2 SOIL TEST SHALL BE CONDUCTED PRIOR TO START OF CONSTRUCTION.
- 3.1.3 IN CASE THE ACTUAL SOIL BEARING CAPACITY IS FOUND LESS THAN THE ASSUMED, 96 kPa; NOTIFY THE DIRECTOR, BUREAU OF DESIGN FOR PROPER REVISION OF FOUNDATION.
- 3.1.4 NO FOOTING SHALL REST ON FILL.
- 3.1.5 BOTTOM OF FOOTING SHALL BE AT LEAST 1.00m. BELOW NATURAL GRADE LINE.
- 3.1.6 SOIL BEARING CAPACITY SHALL BE INCREASED BY 33% WHEN IN COMBINATION WITH SEISMIC OR WIND LOAD.

- 3.2 ALL COLUMN FOOTINGS & TIE BEAMS SHALL REST ON 100mm THK. WELL COMPACTED GRAVEL BASE COURSE.

- 3.3 BACK FILL SHALL BE PLACED IN LAYER AND EACH LAYER SHALL BE 200mm THK. AND SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY.

- 3.4 WHERE LOOSE/SOFT MATERIAL IS ENCOUNTERED AT DEPTH OF EMBEDMENT INDICATED, EXCAVATE TO FIRM LAYER AND REPLACE LOOSE MATERIALS UNDERNEATH THE FOOTING WITHIN THE FOOTING AREA PLUS 1/2 DEPTH OF SOFT MATERIAL ON ALL SIDES WITH SELECT GRANULAR BACKFILL. COMPACT SELECT GRANULAR BACKFILL TO 95% OF MAXIMUM DRY DENSITY.

4.0 MATERIALS

4.1 CONCRETE

- 4.1.1 CONCRETE COVER OVER REINFORCING BARS SHALL BE AS FOLLOWS:
 A. FOOTINGS, FOOTING-TIE BEAMS (CAST AGAINST EARTH) 75mm
 B. BEAMS AND COLUMNS (TO STIRRUPS AND TIES) 40mm
 C. WALLS, SIDE OF FOOTING-TIE BEAMS (CAST AGAINST FORMS) 40mm
 D. SUSPENDED SLAB 20mm

- 4.1.2 BEFORE CONCRETE IS POURED, CHECK WITH ALL TRADES TO ENSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBS, CONDUITS, ETC. RELATING TO THE WORK.

4.2 REINFORCING BARS

- 4.2.1 ALL REINFORCING BARS SHALL BE CLEAN OF RUST, GREASE OR OTHER MATERIALS THAT WILL IMPAIR BOND.

- 4.2.2 ALL REINFORCING BARS SHALL BE ACCURATELY AND SECURELY PLACED BEFORE POURING CONCRETE OR APPLYING MORTAR OR GROUT.

- 4.2.3 LAPPED SPLICES SHALL BE STAGGERED WHERE POSSIBLE.

- 4.2.4 UNLESS OTHERWISE INDICATED, SPlicing OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH ACI-318M, EXCEPT THAT THE MINIMUM LAP SPlice SHALL BE 40 BAR DIAMETER BUT NOT LESS THAN 600mm.

- 4.2.5 UNLESS SHOWN OTHERWISE ON PLANS, SPLICES SHALL BE AS FOLLOWS:

- A. INTERMEDIATE BEAMS: TOP BARS SHALL BE SPLICED AT MID-SPAN, AND BOTTOM BARS AT THE SUPPORT.

- B. BEAMS FRAMING TO COLUMNS: TOP BARS SHALL BE SPLICED AT MID-SPAN AND BOTTOM BARS SHALL NOT BE SPLICED W/IN THE COLUMN OR W/IN A DISTANCE OF TWICE THE MEMBER DEPTH FROM THE FACE OF THE COLUMN. THE SPLICED LENGTH SHALL NOT BE LESS THAN 1.4 TIMES THE DEVELOPMENT LENGTH (Ld) IN 4.2.8 BELOW BUT NOT LESS THAN 600mm.

- C. COLUMNS: LAP SPLICES SHALL BE MADE WITHIN THE CENTER HALF OF HEIGHT AND THE SPlice SHALL NOT BE LESS THAN 30 BAR DIAMETER. WELDING OR THE USE OF APPROVED MECHANICAL DEVICES MAY BE PERMITTED PROVIDED NOT MORE THAN ALTERNATE BARS ARE WELDED OR SPLICED AT ANY LEVEL AND THE MINIMUM VERTICAL DISTANCE BETWEEN TWO ADJACENT BAR SPLICES SHALL BE 600mm.

- D. CHB WALLS: VERTICAL BARS SHALL BE SPLICED AT THE TOP OF WALL FOOTINGS OR FOOTING-TIE BEAMS AND AT THE BOTTOM OF REINFORCED CONCRETE LINTEL BEAMS OR BEAMS.

- 4.2.6 UNLESS OTHERWISE INDICATED: ALL BEAMS TERMINATING AT A COLUMN SHALL HAVE TOP AND BOTTOM BARS EXTENDING TO THE FAR FACE OF THE COLUMN, TERMINATING IN A STANDARD 90 HOOK LENGTH OF ANCHORAGE SHALL NOT BE LESS THAN 600mm.

- 4.2.7 SHOP DRAWING FOR REINFORCEMENT SHALL BE SUBMITTED FOR APPROVAL OF THE ENGINEER PRIOR TO FABRICATION & INSTALLATION.

- 4.2.8 DEVELOPMENT LENGTH (Ld) OF REINFORCING BARS SHALL BE AS FOLLOWS:

SIZE OF REBARS	DEVELOPMENT LENGTH
10 mm	170 mm
12 mm	220 mm
16 mm	270 mm
20 mm	380 mm
25 mm	600 mm

4.3 STRUCTURAL STEEL

- 4.3.1 ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 AND SHALL HAVE A MINIMUM YIELD STRESS, $F_y = 248$ MPa (36,000 psi)

- 4.3.2 ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC SPECIFICATIONS AND CODE OF STANDARD PRACTICE AS AMENDED TO DATE.

- 4.3.3 ALL BOLTS SHALL CONFORM TO ASTM A-307 UNLESS OTHERWISE INDICATED.

- 4.3.4 SHOP AND FIELD WELDING SHALL BE IN ACCORDANCE WITH AWS D1.1 AND PERFORMED BY QUALIFIED WELDERS.

- 4.3.5 UNLESS OTHERWISE INDICATED, WELDING ELECTRODES SHALL BE E60.

- 4.3.6 NO STEEL SHALL BE FABRICATED OR ERECTED UNTIL SHOP DRAWINGS HAVE BEEN APPROVED BY THE STRUCTURAL ENGINEER.

- 4.3.7 WELDS/(CONFORM WITH AMERICAN WELDING STANDARDS) USING E 60xx ELECTRODES. $f_y = 93.77$ MPa.

- 4.3.8 ANCHOR BOLTS (CONFORM WITH ASTM A-307) $f_t = 96.60$ MPa. $f_v = 69$ MPa.

4.4 CONCRETE HOLLOW BLOCKS (CHB):

- 4.4.1 UNLESS OTHERWISE INDICATED, CHB USED IN THIS WORK SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH $f'_m = 3.45$ MPa (500 psi)

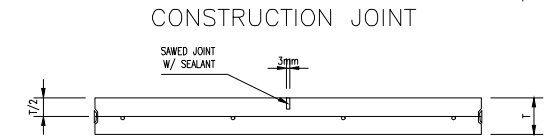
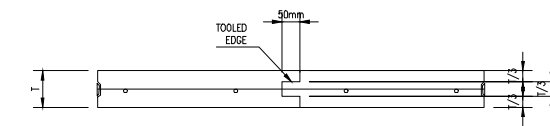
- 4.4.2 ALL CHB CELLS SHALL BE FILLED SOLIDLY WITH GROUT.

5.0 CONSTRUCTION JOINT

- 5.1 CONSTRUCTION JOINT NOT INDICATED ON THE PLANS SHALL BE MADE SO AS TO LEAST IMPAIR THE STRENGTH OF THE STRUCTURE AND SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER EXCEPT SLAB ON GRADE.

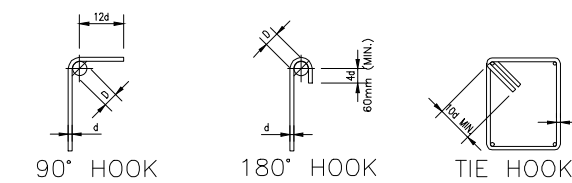
- 5.2 UNLESS SHOWN OTHERWISE, SLAB ON GRADE SHALL HAVE CONTROL JOINTS SPACED AT 6000mm MAXIMUM CENTER TO CENTER.

- 5.3 BEAMS CONSTRUCTION JOINT SHALL BE LOCATED W/ IN THE MIDDLE THIRD OF THE SPAN. IT SHALL BE PROVIDED WITH 3 EXTRA STIRRUPS @ 75mm O.C. ON EACH SIDE OF THE JOINT.



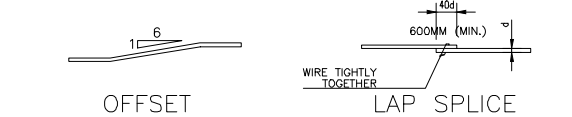
NOTE: CONTROL JOINT CAN BE EITHER CONSTRUCTION JOINT OR WEAKENED PLANE JOINT.

2 CONTROL JOINTS FOR SLAB-ON-FILL
 NOT TO SCALE

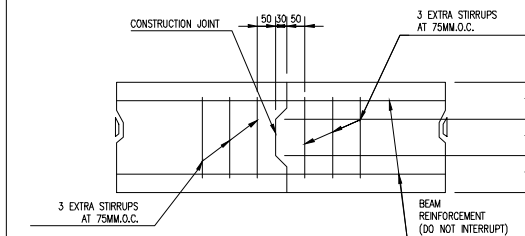


BAR SIZE	D	
	90° HOOK	180° HOOK
10mm Ø THRU 25mm Ø	6d	4d
28mm Ø THRU 36mm Ø	8d	4d

NOTE: 1. ALL BENDS SHOWN IN DETAILS/SCHEDULES SHALL BE STANDARD HOOK OTHERWISE NOTED.
 2. 180° HOOKS MAY BE SUBSTITUTED FOR 90° HOOKS.



3 TYP. REINFORCEMENT DETAIL
 NOT TO SCALE



4 BEAM CONSTRUCTION JOINT
 NOT TO SCALE

1 GENERAL NOTES & STANDARD DETAILS
 NOT TO SCALE



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SHEET CONTENT:
 CONSTRUCTION NOTES

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PROJECT TITLE AND LOCATION:
PROPOSED REPAIR AND IMPROVEMENT OF STRUCTURES/FACILITIES AND ACQUISITION OF EQUIPMENTS (IMPROVEMENT OF MAIN CAMPUS MAIN GATE)
 SLSU MAIN CAMPUS, SOGOD SOUTHERN LEYTE

APPROVED AS PER PLAN:
PROSE IVY G. YEPES, Ed.D
 UNIVERSITY PRESIDENT

SET NO.:
S1

SHEET NO.:
7
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