STRUCTURAL SPECIFICATIONS

FLOOR LOADS (kg/m² divided by 4.882 = psf)

Live Loads	
Minister's Living Area	244 kg/m²
Exit Ways & Stairs	490 kg/m²
Rest Rooms	244 kg/m²
Library	290 kg/m²
Dormitory	390 kg/m²
Roof Beams and Purlins	Steel wide flange sections with unknown properties
Corrugated Steel Roof Sheathing	TBD by supplier
Superimposed Dead Loads	
Dormitory	73 kg/m²
Bath & Rest Rooms (10cm)	244 kg/m²

WIND LOADS : For a 50 yr, 3 sec gust speed of 44 m/s at a height of 10m wind pressures are: (-pressure is outward)

Windward on Entire Building	59 kg/m²
1st Floor Windward Walls	80 kg/m²
2nd Floor Windward Walls	110 kg/m²
Windward Roof Slope	−76 kg/m²
Leeward on Entire Building	−36 kg/m²
1st Floor Leeward Walls	−80 kg/m²
2nd Floor Leeward Walls	−110 kg/m²
Leeward Roof Slope	−56 kg/m²

SOIL CONDITIONS (kg/m² divided by 4.8824 = psf) & (kg/m²/m of depth divided by 16 = pcf)

Allowable Soil Bearing Capacity–Dead Load Only	9760 kg/m²
Lateral Bearing (Passive Pressure against Walls)	2400 kg/m²
Coefficient of Friction to Resist Lateral Sliding	0.25
At Rest Pressure on Braced Retaining Walls	1600 kg/m³
Active Pressure on Adequately Drained Free Standing Retaining Walls	960 kg/m³

MATERIAL STRENGTHS: (kg/cm² multiplied by 14.225 = psi)

Concrete 28 Day Strength	f'c = 210 kg/cm²
*Reinforcing Steel Yield Strength	f'c = 4080 kg/cm²
Unit Masonry	f'm = 70 kg/cm²
Unit Masonry Mortar (UBC type S)	= 105 kg/cm²
Structural Steel	fy = 2530 kg/cm²

*All Ø10 and larger bars are to be round deformed bars
Ø6 & Ø8 bars may but need not be deformed

MIX

CONCRETE MIX: 23 liters of water per 43 kg (94#) sack of cement
1 part cement; 2.5 parts sand; 3 parts gravel

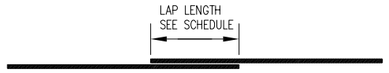
MORTAR MIX: 1 part portland cement; 1 part lime; 4.5 parts sand

CONCRETE COVER FOR REINFORCING STEEL

Footings cast on earth or gravel	75mm
Formed concrete other than vertical reinforcing and bond beams in masonry walls:	
Tops and bottoms of eterior slabs	38mm
Other concrete exposed to earth or weather	50mm
Tops and bottoms of interior slabs	20mm
Column ties and beam stirrups	38mm
Formed concrete in masonry walls:	
Vertical reinforcing and bond beams	15mm
15cm wide headers in detail 4/S−8	25mm

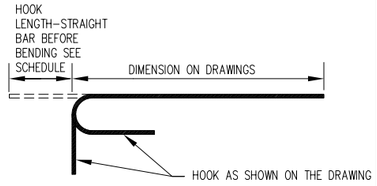
SCHEDULE OF REINFORCING BAR LAPS

Ø6	30cm
Ø8	30cm
Ø10	30cm
Ø12	35cm
Ø14	40cm
Ø16	46cm
Ø20	94cm



SCHEDULE OF REINFORCING BAR HOOKS

Ø6	10cm
Ø8	11cm
Ø10	14cm
Ø12	15cm
Ø14	17cm
Ø16	19cm
Ø20	23cm



MASONRY WALLS

Masonry walls are 15 cm thick and are what are called "confined masonry walls". Masonry units to be laid up in running bond with full bed mortar joints. The confinement members are reinforced concrete horizontal and vertical sections cast against the unit masonry and forms. The horizontal confinement members are called bond beams and the vertical confinement members are called vertical members or verticals.

... (cont. on next column)

Horizontal members are located at each floor and door and window heads. They are sections of concrete that are to be 15cm wide which is the width of the wall by 20cm deep and reinforced with 4Ø10 horizontal bars and Ø6 ties at 20cm on center. Only half the horizontal bars, one bar near one face and the one near the other face of the wall, may be spliced at the same point with not less than a splice length between pairs of spliced bars. That is shown in details 1, 2 and 5 on sheet S−13.

Vertical members are located at wall corners, intersections and ends, under beams, at door and window jambs and not more than 400cm on center where there are no openings. They are sections of concrete that are to be 15cm wide which is the width of the wall by not less than 20cm long along the length of the wall and reinforced with 4Ø10 vertical bars and Ø6 ties at 20cm on center. Vertical bars for the ground floor walls are to be hooked in the walls footing and may be lapped only immediately above the ground floor slab and again immediately above the upper floor slab. Bars in walls that have no wall below are to be hooked in the beam below and bars in walls that have no wall above are to be hooded into the bond beam above. That is shown in details 5/S−13.

NOTE:
ALL DIMENSIONS ARE IN CENTIMETERS UNLESS OTHERWISE SPECIFIED. ALL REINFORCING BAR DIAMETERS ARE IN MILLIMETERS.

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THE LORD'S HOUSE - PASSY, SENEGAL

STRUCTURAL SPECIFICATIONS

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