

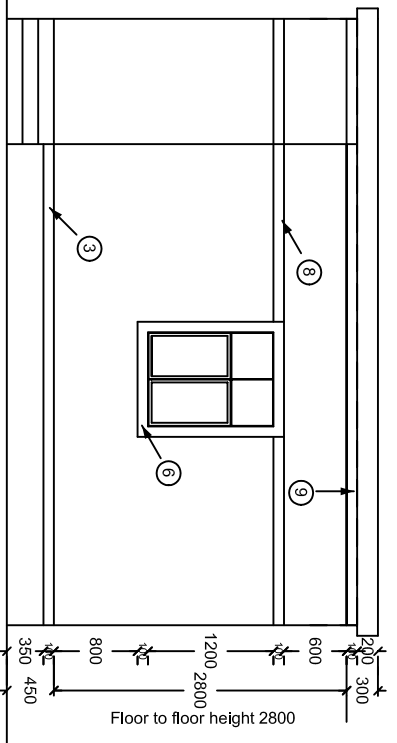
**A typical design of small dwelling unit for Seismic zone III, IV and V  
showing architectural and structural drawings for  
Brick wall  
&  
Stone Masonry wall**

*Prepared by*

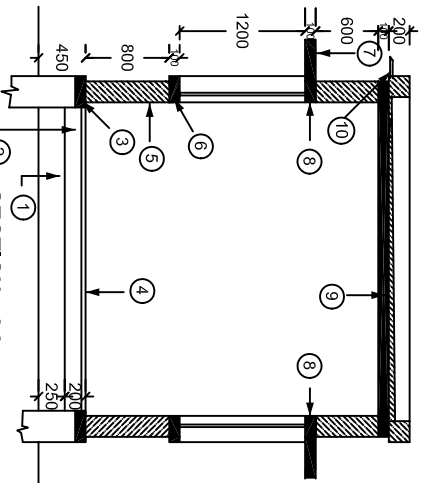
Prof A S Arya  
National Seismic Advisor



**Government of India  
Ministry of Home Affairs  
National Disaster Management Division**

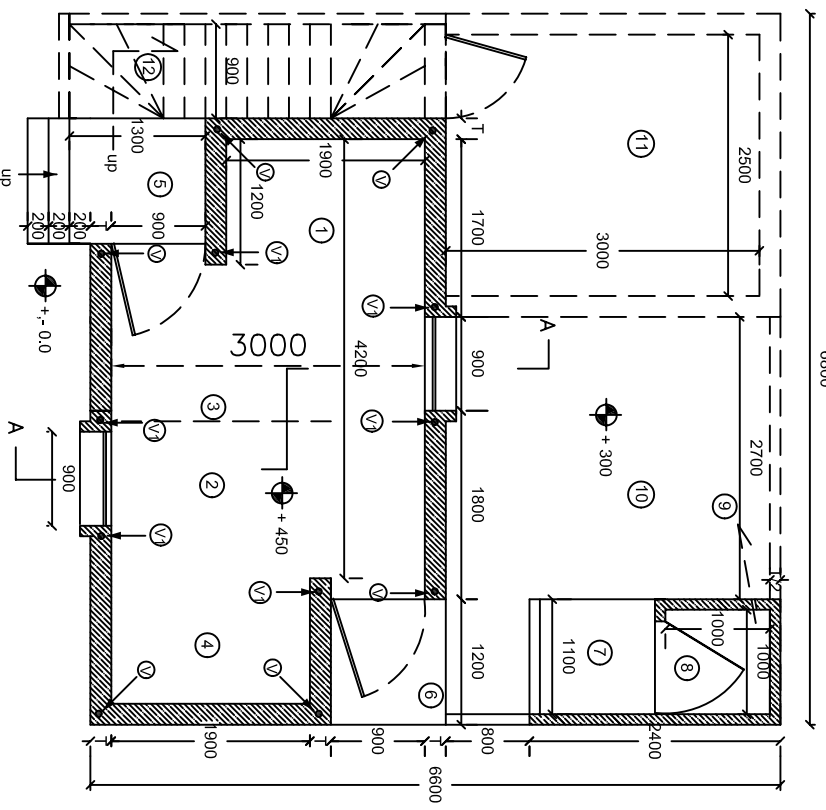


FRONT ELEVATION



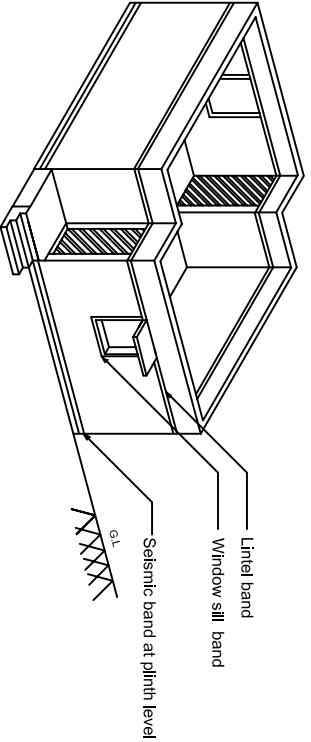
SECTION - AA

FOR SECTION	
1	Compacted earth
2	75mm - 100mm Bk.bat concrete
3	75mm - 100mm thk.plinth band
4	40mm thk.cement floor with red oxide & groove.
5	T thk masonry wall
6	75mm - 100mm thk. window sill band
7	Projection over window lintel band
8	75mm - 100mm thick
9	100mm thk. RCC slab laid to slope to drain rain water through spouts.
10	PVC pipe for water spout



GROUND FLOOR PLAN

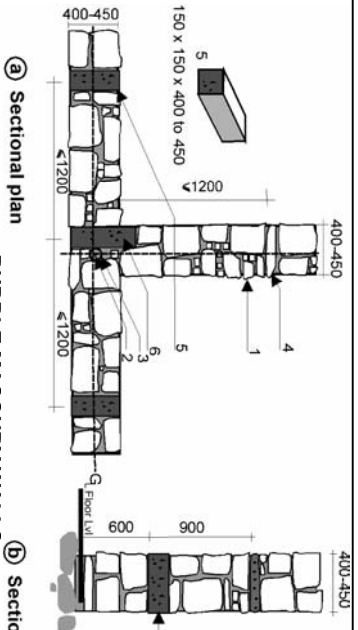
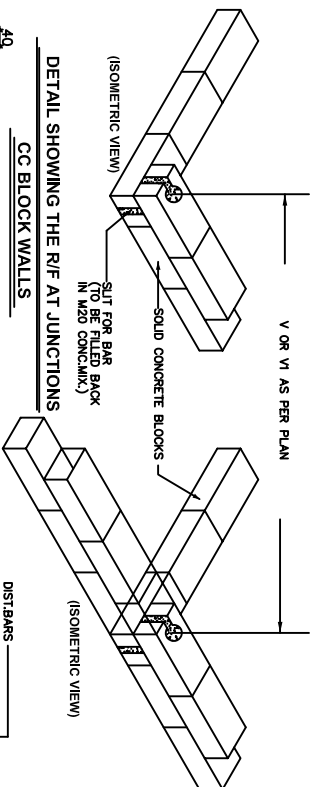
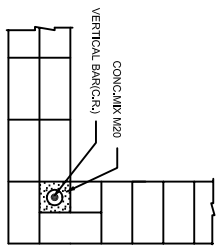
FOR PLAN	
1	Living space
2	Dining/living space for tables
3	Possible partition
4	Cooking
5	Front Entrance
6	Rear Verandah
7	Washing
8	W.C.
9	Connection to two pit latrine system
10	Courtyard
11	Future Room
12	Future Staircase



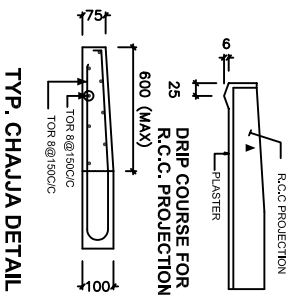
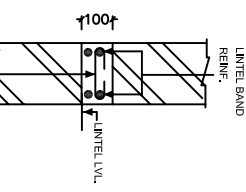
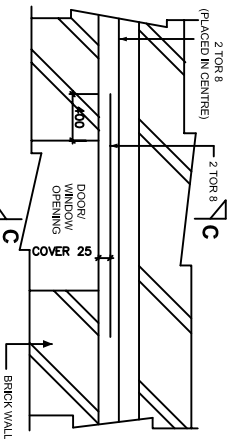
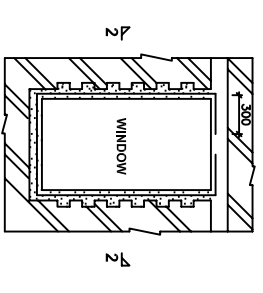
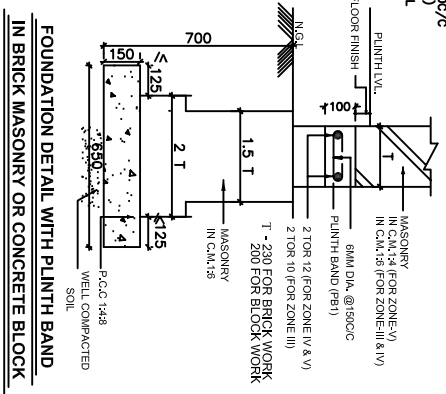
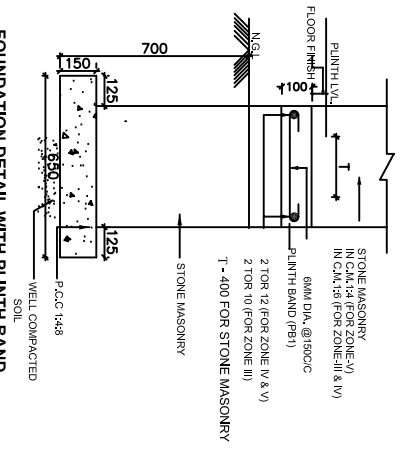
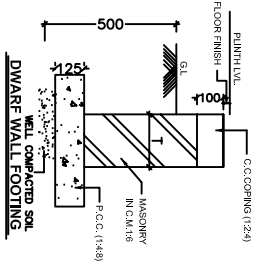
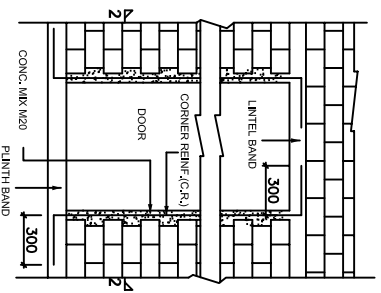
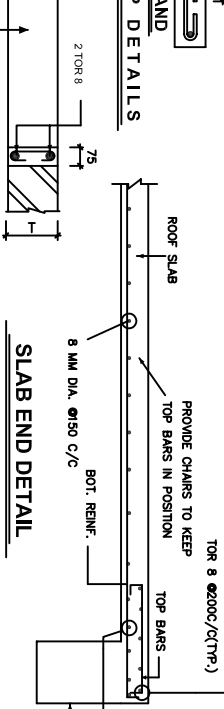
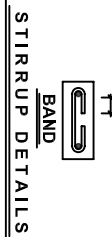
LEGEND	
	Proposed Const.
	Prop. Future Extn.
	- 12 mm dia steel bars
	- 10 mm dia steel bars
	T FOR BK. WALL - 230 mm
	T FOR CC BLOCK - 200 mm
	T FOR STONE WALL - 400 mm

AREA STATEMENT	
TOTAL PLOT AREA :	44.88 Sq.m.
BUILT UP CARPET AREA :-	
ROOM:	16.00 Sq.m.
TOILET:	1.00 Sq.m.
TOTAL:	17.00 Sq.m.
TO OBTAIN COVERED AREA	
ADD WALL AREA TO CARPET	
AREA	

DATE:-	10.06.2004
Dwg. No.:-	NSA/A-01
All dimensions are in mm	



1. Stone wall
  2. Vertical steel bar
  3. casing pipe
  4. 'through' stone
  5. Concrete block
  6. Long concrete block
- 150 x 150 x 400-450 mm long  
150 x 150 x 550-600 long



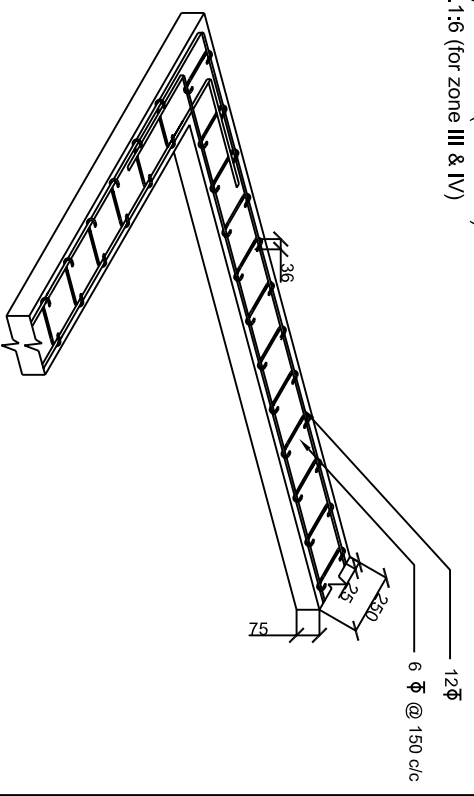
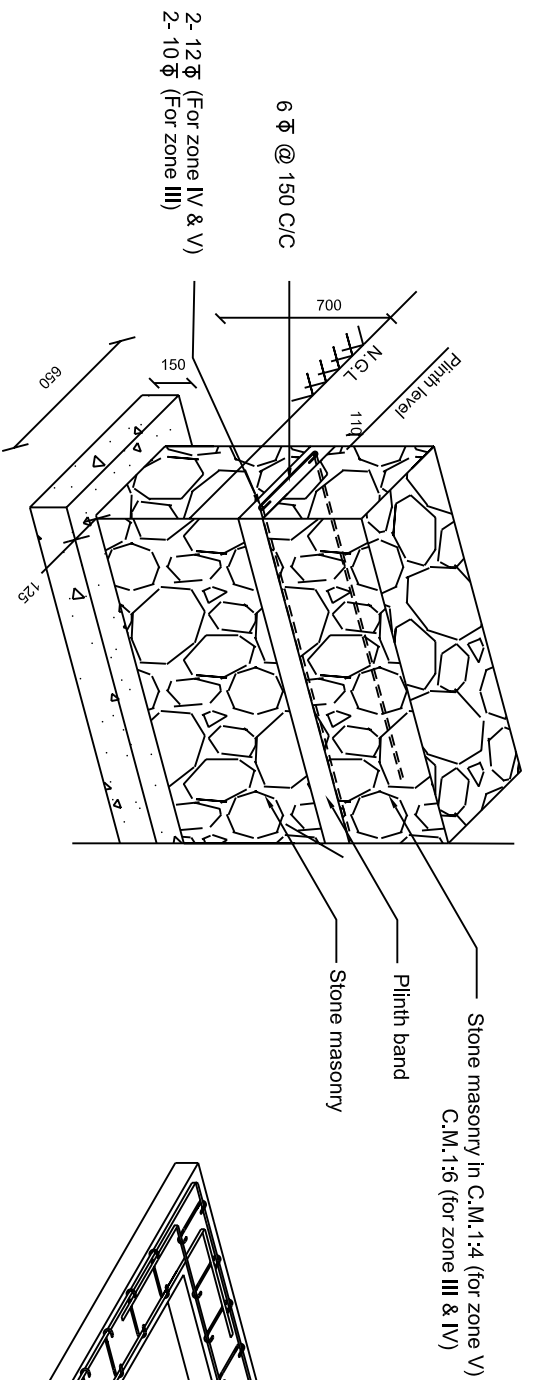
**SPECIFICATIONS:-**

- 1) P.C.C. below Masonry works shall be in Concrete Mlx 1:5:10
- 2) Masonry work shall be in C.M. 1:4 in Zone V & 1:6 in Zone IV
- 3) Thick Masonry shall be in C.M. 1:4
- 4) All R.C.C work shall be in Concrete Mlx M 20 (or nominal mix 1:1:5:3)
- 5) All Reinforcement shall be of TOR STEEL Fe 415 Bars.
- 6) Inside plastering (if done optinally) shall be 12 mm thick in C.M. 1:5
- 7) If needed, roof & other R.C.C. members shall be plastered in C.M. 1:3.
- 8) External Plaster shall be in C.L.M. of 1:1:5 Mlx or C.M. 1:5 mix.
- 9) Terracing shall be optional
- 10) Room floor optional
- 11) Door & window frames & shutters and all finishing items (optional)

Date: 10.06.2004 Scale: 1:10

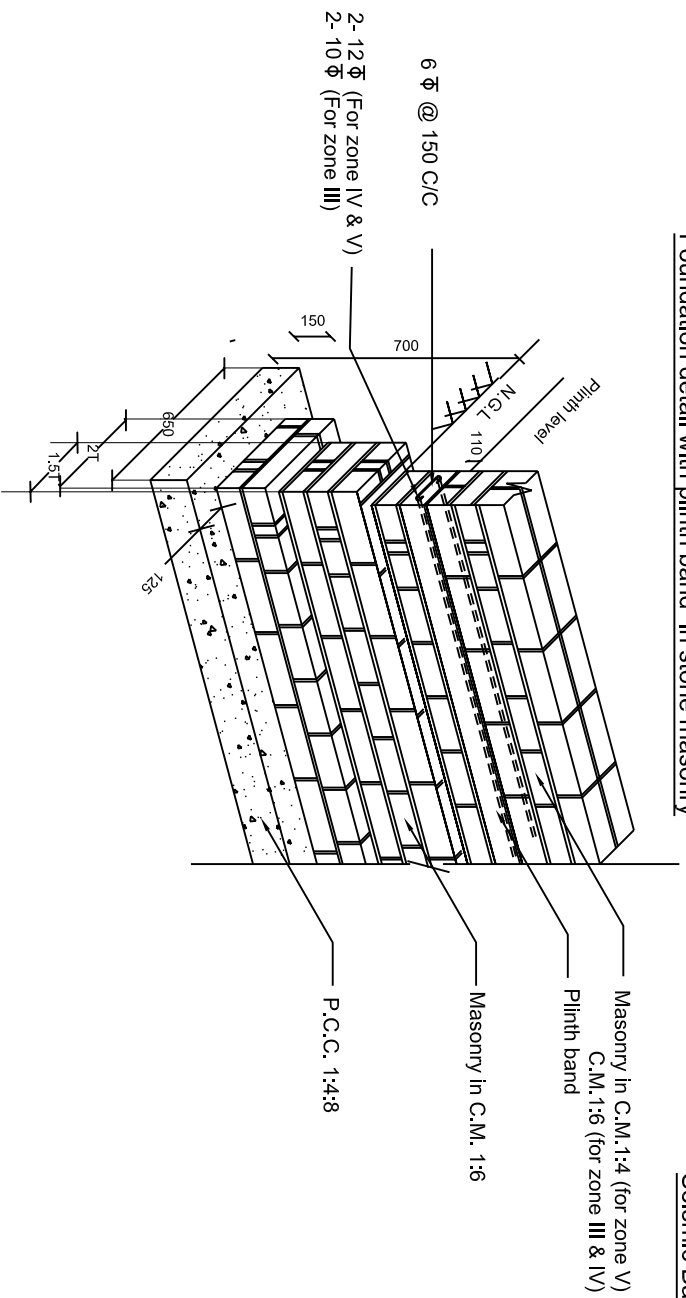
Dwg. No. NSAS-01 All dimensions are in mm

AN EXAMPLE FOR SMALL DWELLING UNIT



Foundation detail with plinth band in stone masonry

Seismic Band at plinth level



Foundation detail with plinth band in brick masonry

**LEGEND**

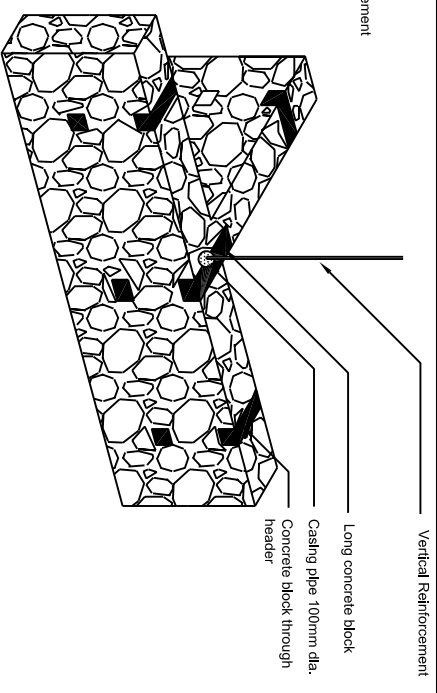
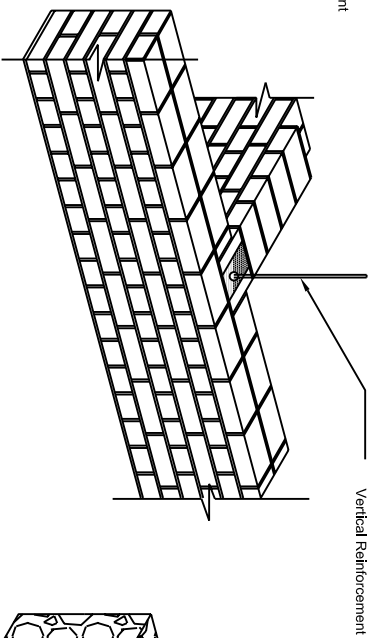
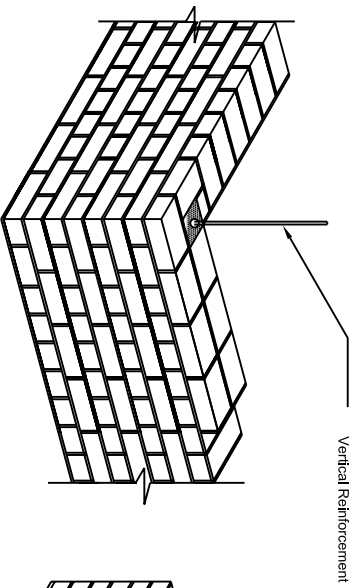
T For Brick wall - 250 mm  
T For Stone wall - 400 mm

**Details of Foundation and  
Seismic Band at Plinth Level**

**AN EXAMPLE FOR  
SMALL DWELLING  
UNIT**

Dwg. No. NSAS-03

All dimensions are in mm

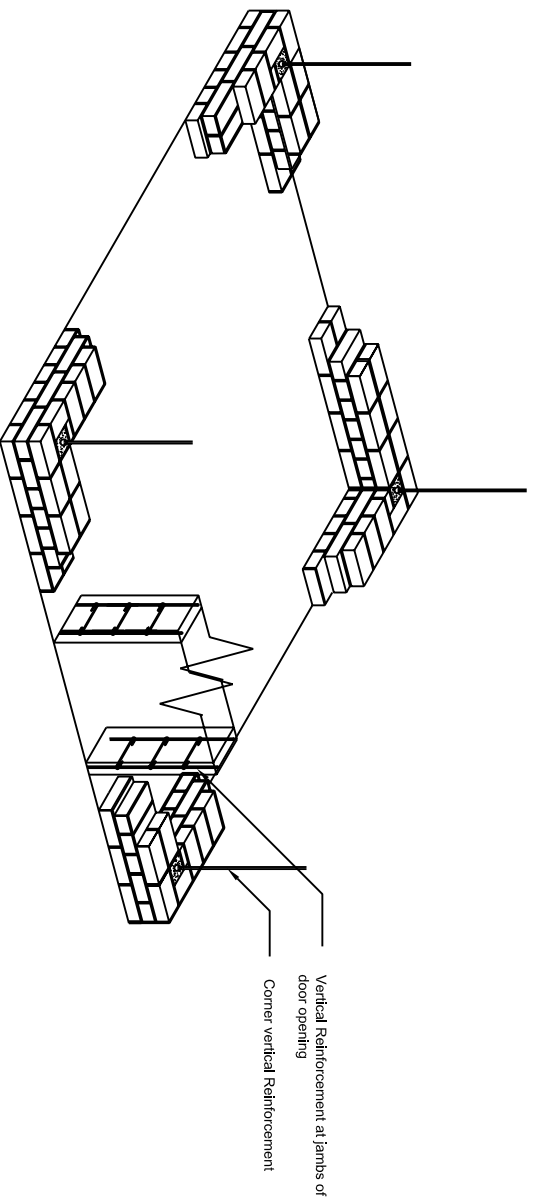


**Vertical steel bars at corners and T-junction in brick masonry**

( Create pockets of 14\*14 mm (1/2\*1/2 brick) in brick work and fill with M20 micro concrete after every 2 courses)

**Details of providing vertical steel bars at T-junction in Rubble masonry wall**

1. Build stone masonry around casing pipe
2. Rotate casing pipe to loosen and raise above masonry
3. Fill the hollow pocket with M20 micro concrete



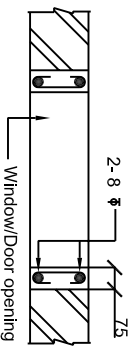
**Details of providing vertical steel bars in brick masonry**

**Details of providing vertical steel bars at corners, T-junctions of walls and jambs of openings**

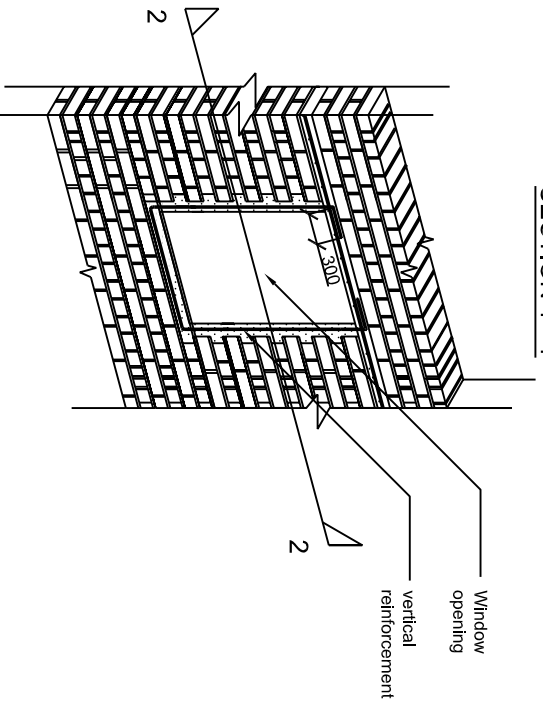
**AN EXAMPLE FOR SMALL DWELLING UNIT**

Dwg. No. NSAS-04

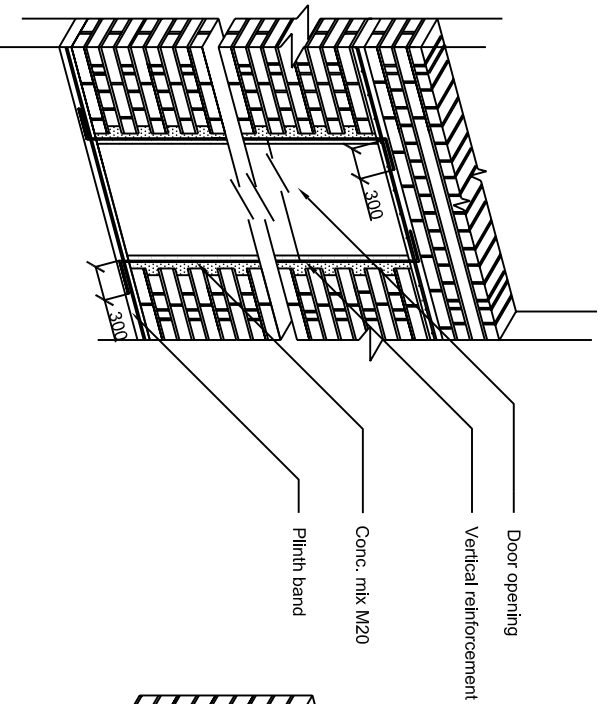
All dimensions are in mm



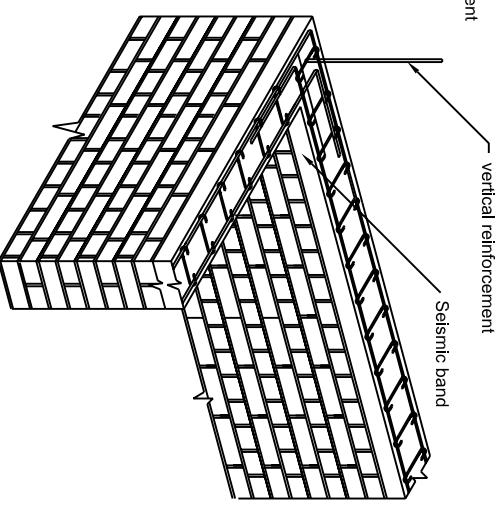
SECTION 1 - 1



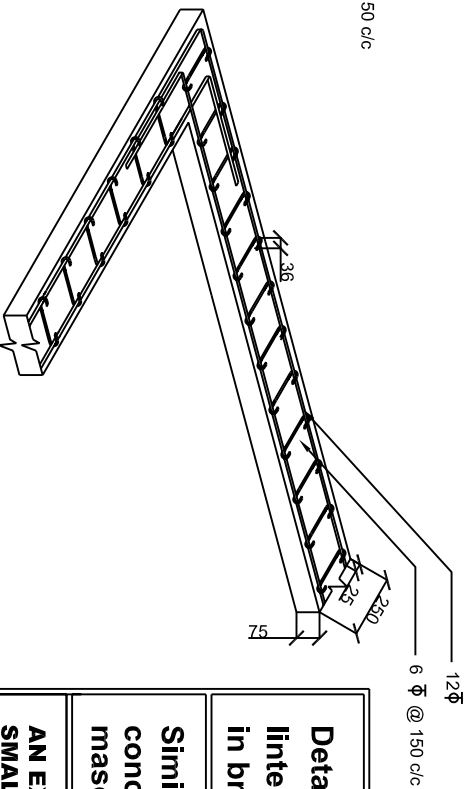
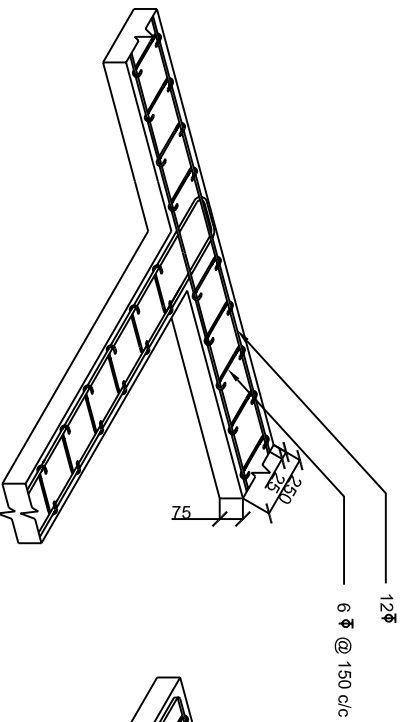
Strengthening masonry around window opening



Strengthening masonry around door opening



Details of R.C. Band



Details of R.C. Band at corner and T-junction

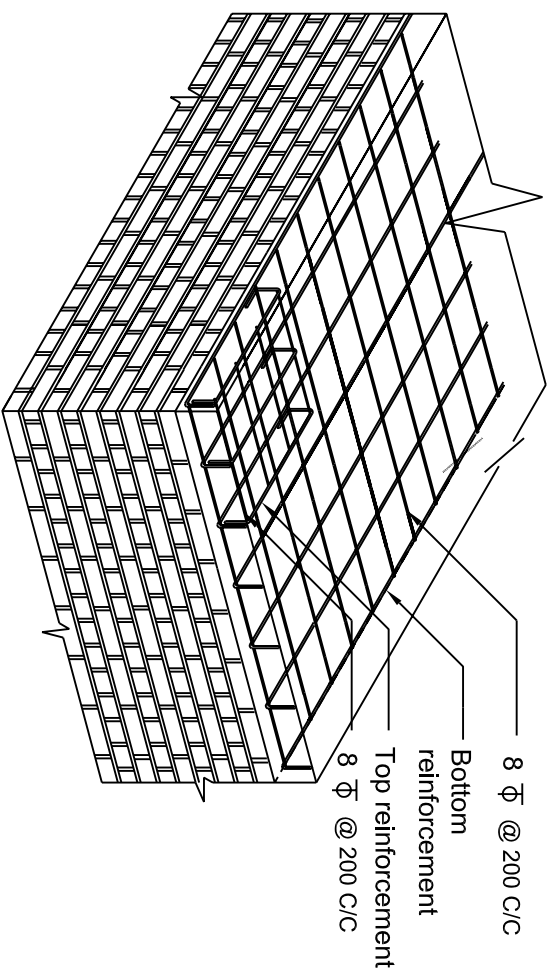
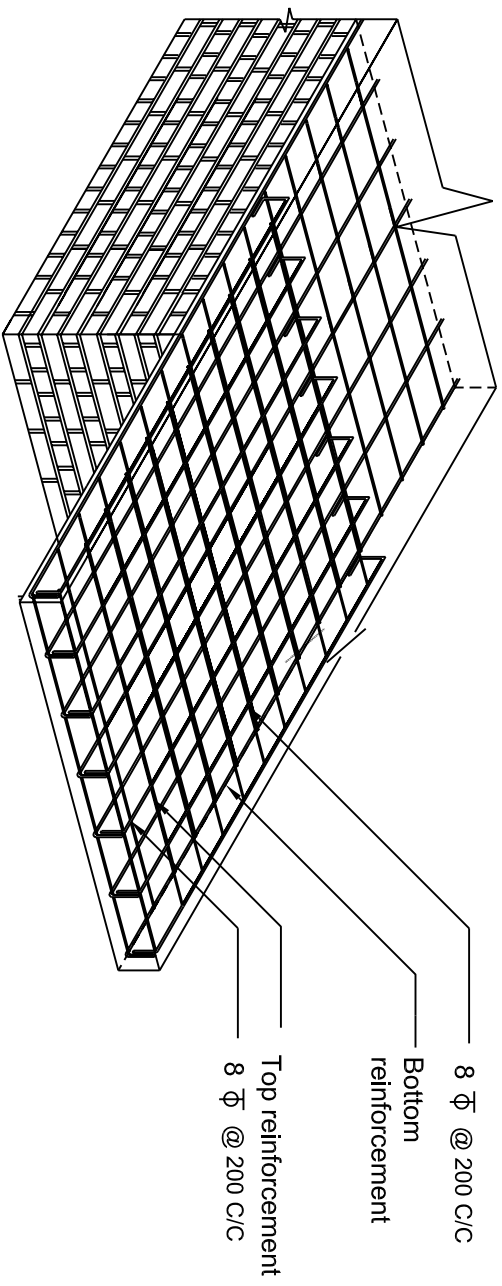
Details of seismic band at lintel level and vertical bars in brick walls

Similar details to be followed in concrete block and stone masonry walls

AN EXAMPLE FOR SMALL DWELLING UNIT

Dwg. No. NSAS-05

All dimensions are in mm



## Slab corner details

### Details of slab

AN EXAMPLE FOR  
SMALL DWELLING  
UNIT

Dwg. No. NSAS-06

All dimensions are in mm