

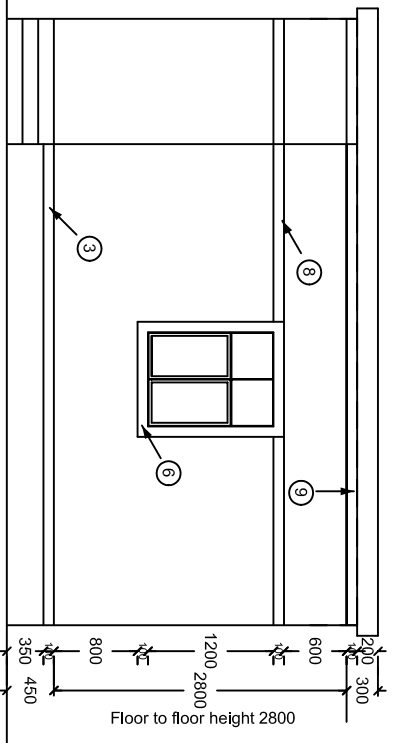
**A typical design of small dwelling unit for Seismic zone III, IV and V
showing architectural and structural drawings for
Brick wall
&
Stone Masonry wall**

Prepared by

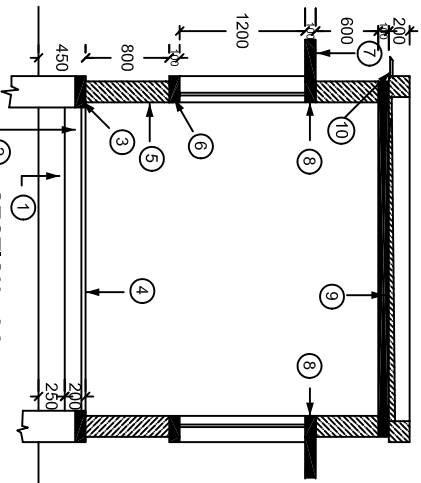
Prof A S Arya
National Seismic Advisor



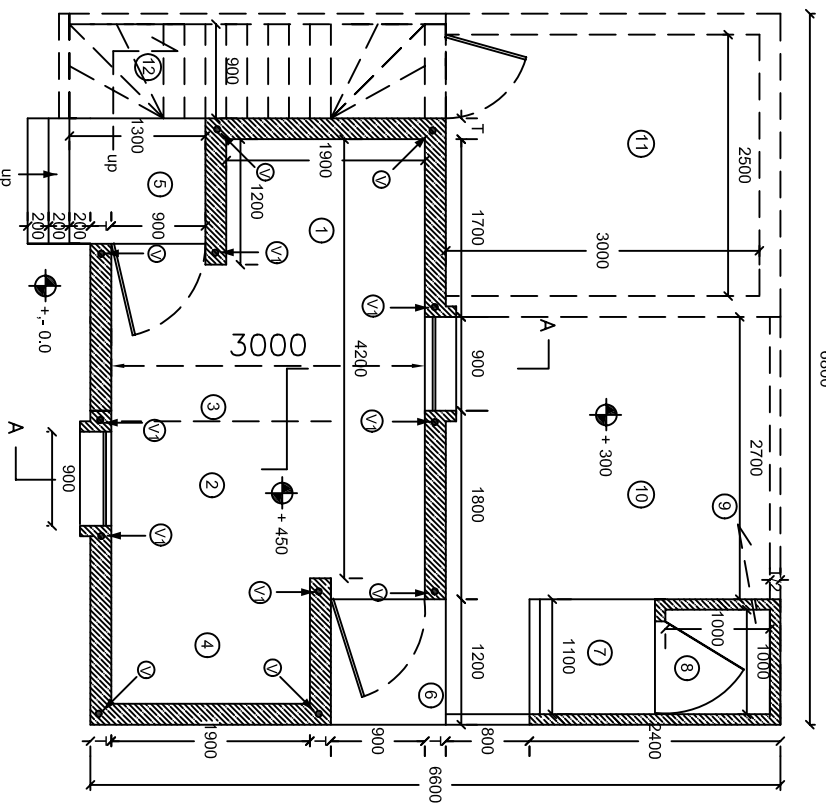
**Government of India
Ministry of Home Affairs
National Disaster Management Division**



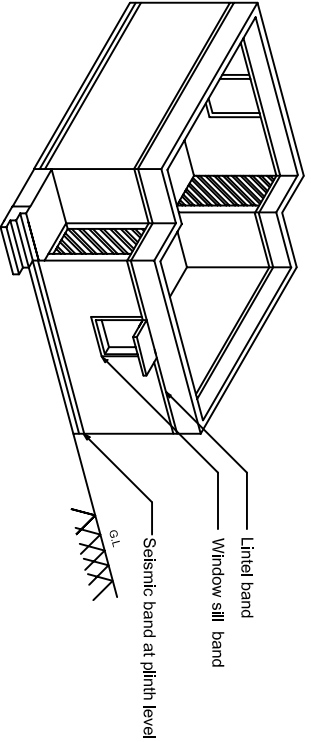
FRONT ELEVATION



- | 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 |



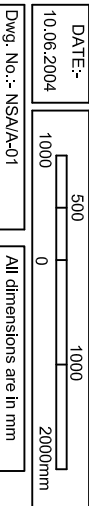
- | FOR PLAN | |
|----------|--------------------------------------|
| 1 | Living space |
| 2 | Dining/living space for tables |
| 3 | Possible partition |
| 4 | Cooking |
| 5 | Front Entrance |
| 6 | Rear Verandah |
| 7 | Washing |
| 8 | W.C. |
| 9 | Connection to two pit latrine system |
| 10 | Courtyard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



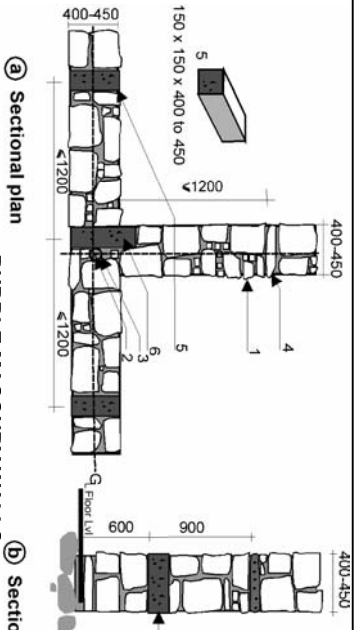
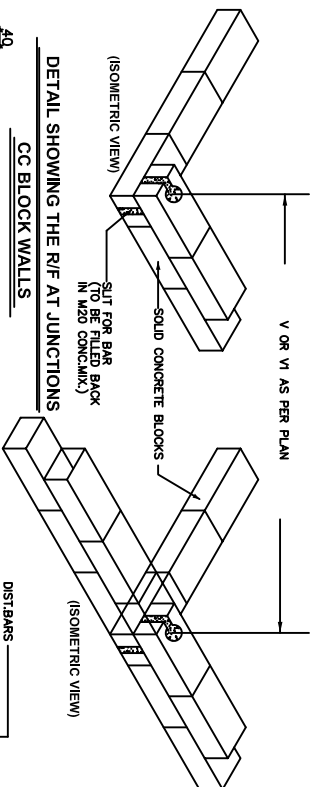
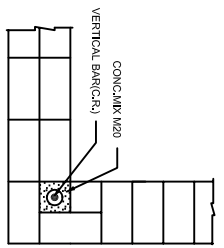
LEGEND	
Proposed Const.	
Prop. Future Extn.	
BUILT UP CARPET AREA :-	
ROOM: 16.00 Sq.m.	
TILET: 1.00 Sq.m.	
TOTAL: 17.00 Sq.m.	
T FOR BK. WALL - 230 mm	
T FOR CC BLOCK - 200 mm	
T FOR STONE WALL - 400 mm	
AREA	

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

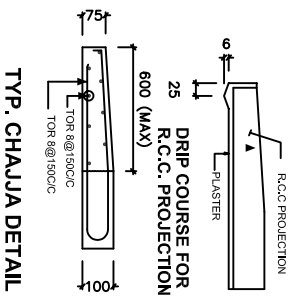
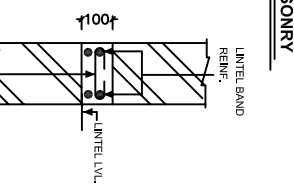
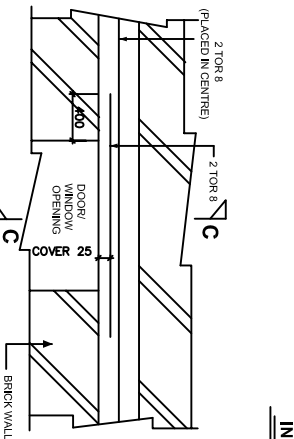
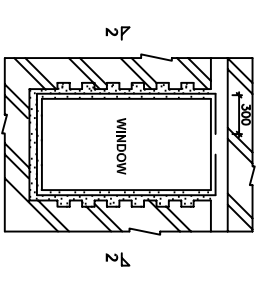
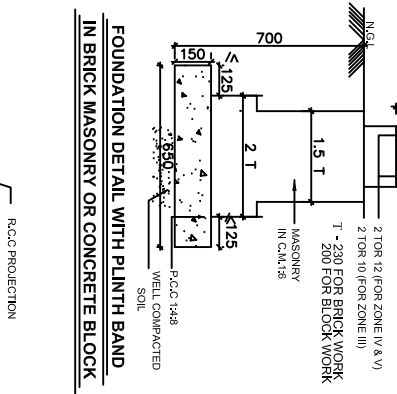
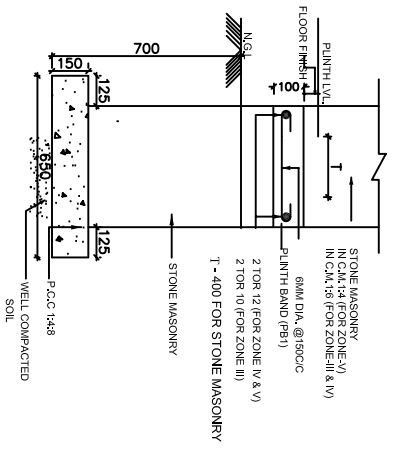
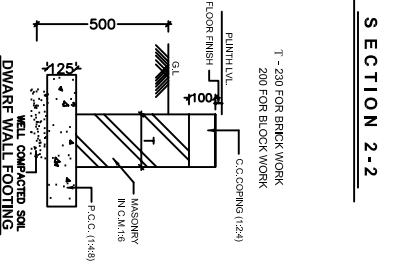
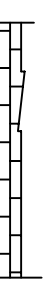
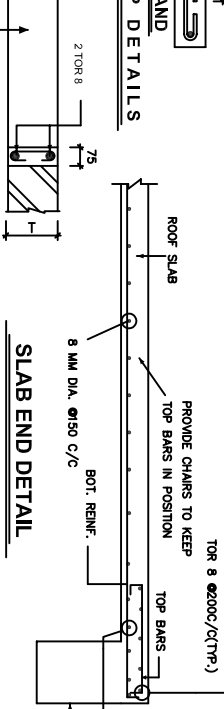
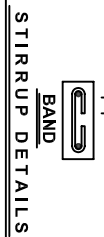
DATE:-	10.06.2004
Dwg. No.:-	NSA/A-01



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 550-600 long



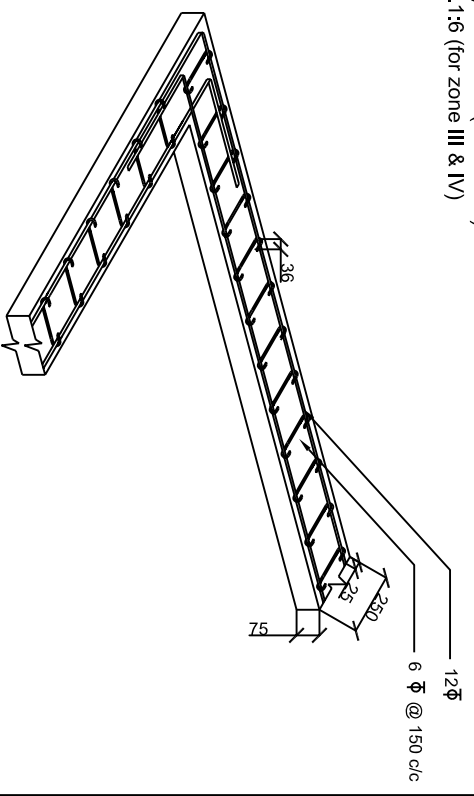
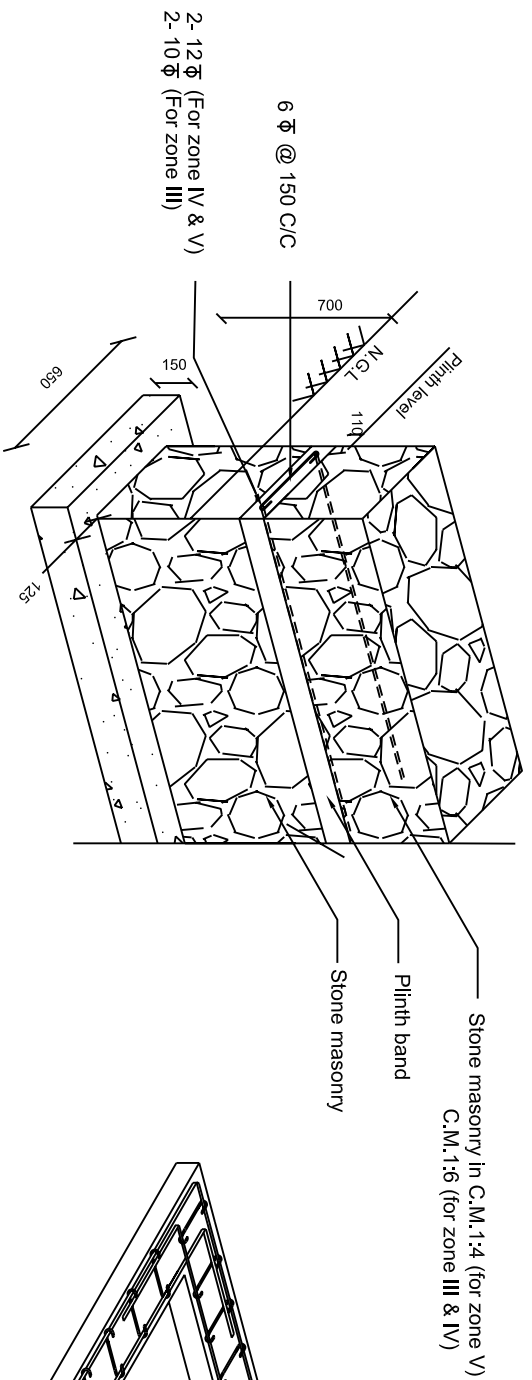
SPECIFICATIONS:-

- 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

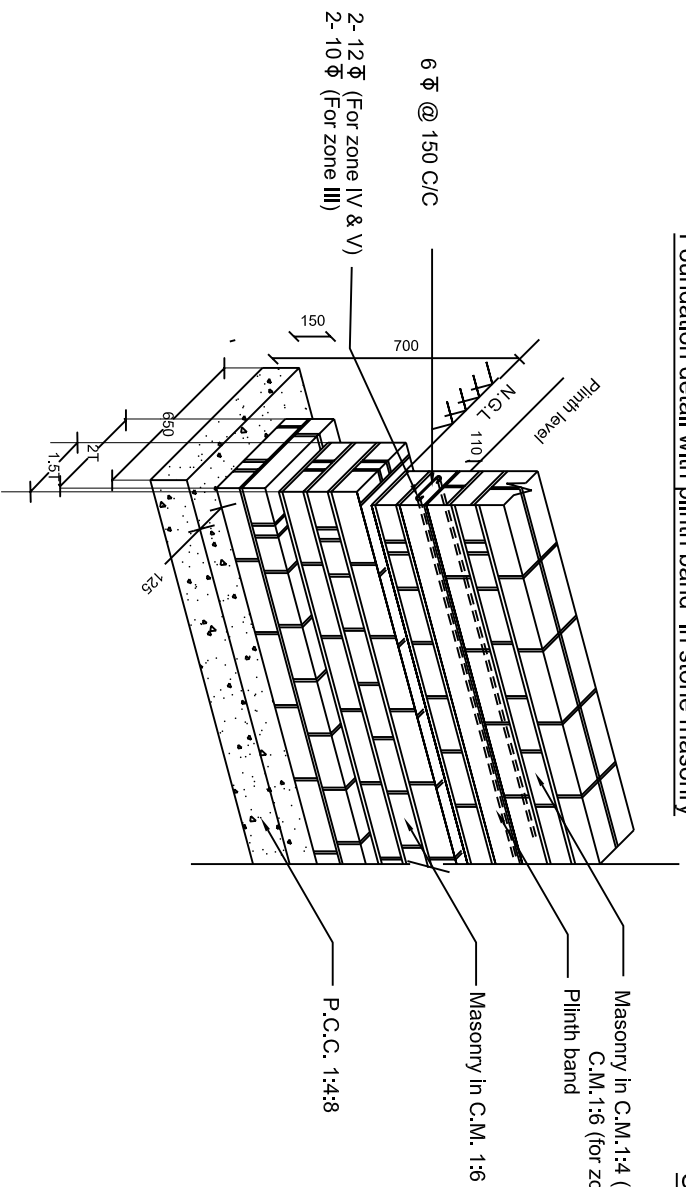
Dwg. No. NSAS-01 All dimensions are in mm

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

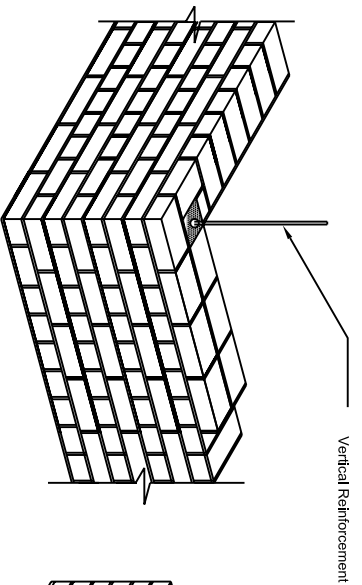
LEGEND
 T For Brick wall - 250 mm
 T For Stone wall - 400 mm

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

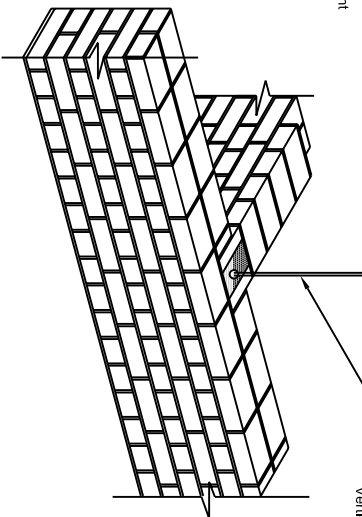
**AN EXAMPLE FOR
 SMALL DWELLING
 UNIT**

Dwg. No. NSAS-03

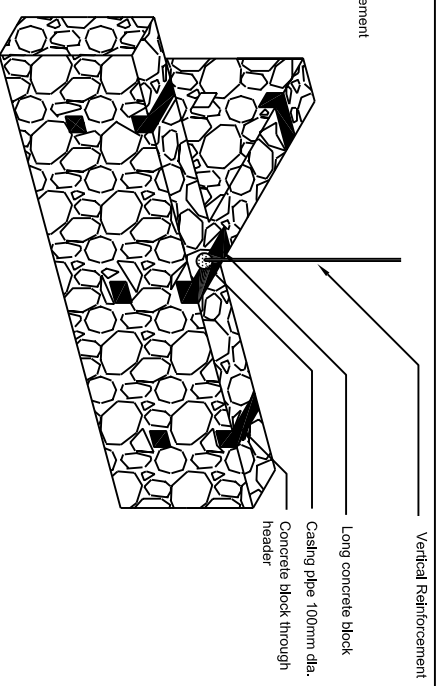
All dimensions are in mm



Vertical Reinforcement



Vertical Reinforcement

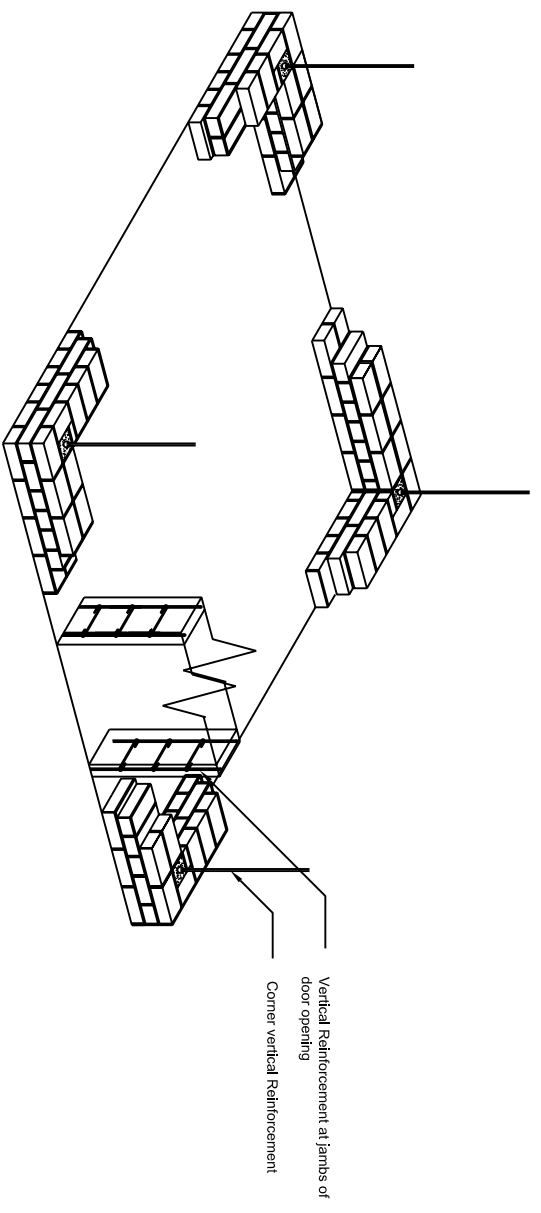


Vertical Reinforcement

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

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)

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



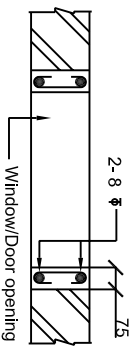
Vertical Reinforcement at jambs of door opening

Corner Vertical Reinforcement

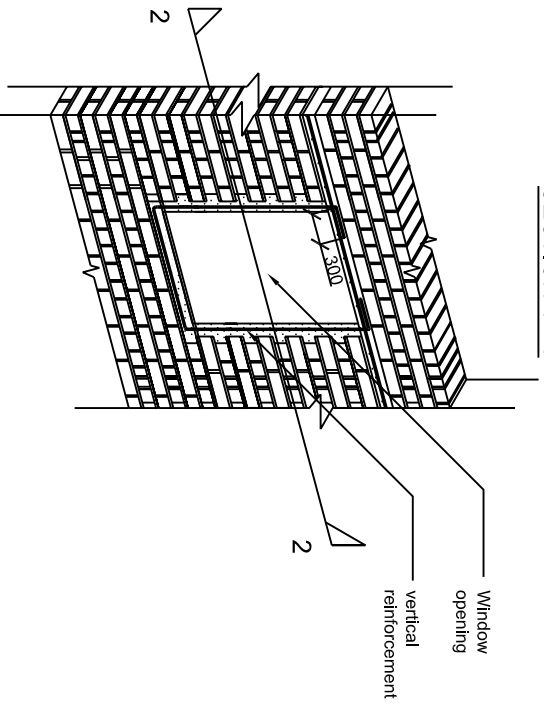
Details of providing vertical steel bars at corners, T-junctions of walls and jambs of openings

Details of providing vertical steel bars in brick masonry

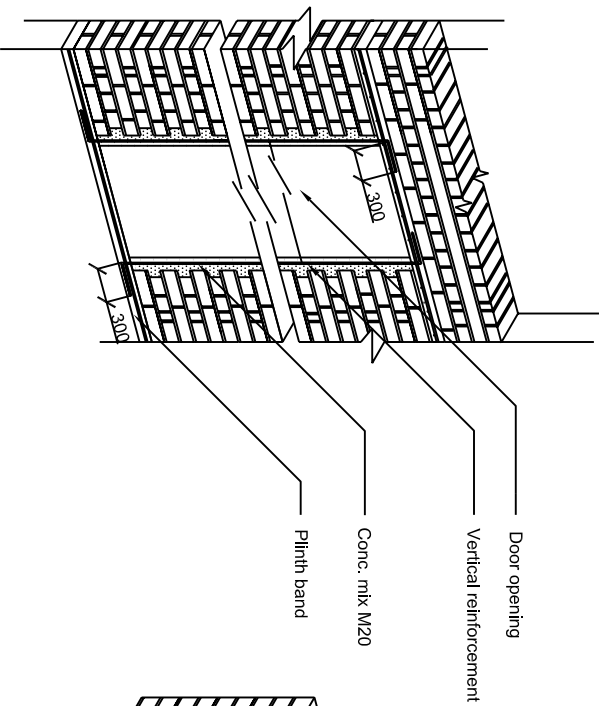
AN EXAMPLE FOR SMALL DWELLING UNIT	
Dwg. No. NSAS-04	All dimensions are in mm



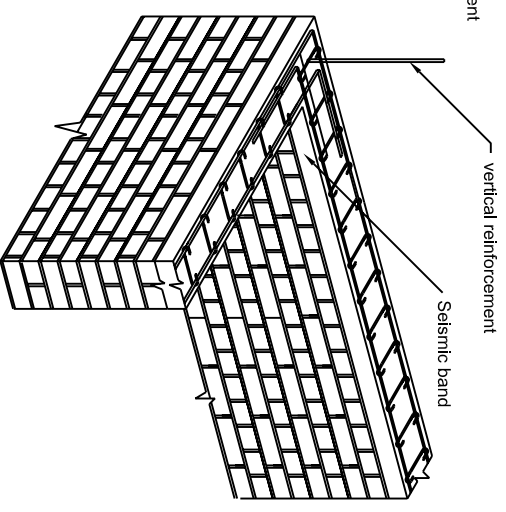
SECTION 1 - 1



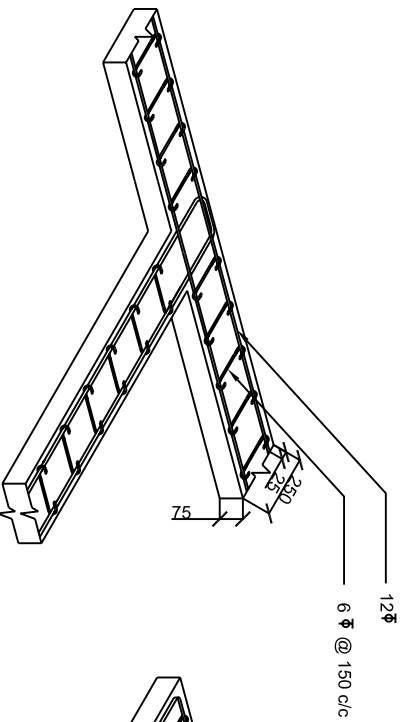
Strengthening masonry around window opening



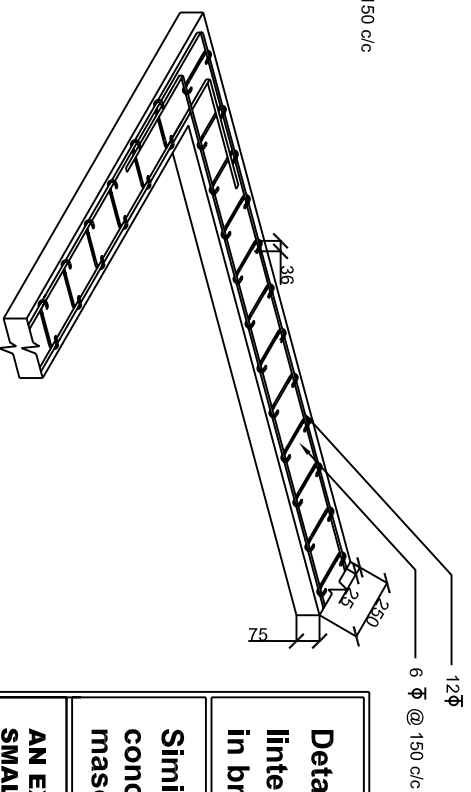
Strengthening masonry around door opening



Details of R.C. Band



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



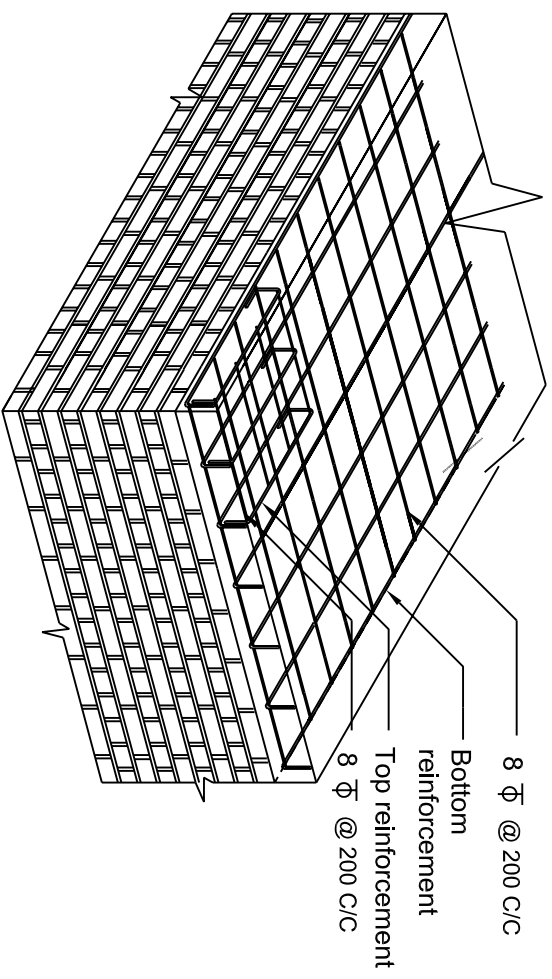
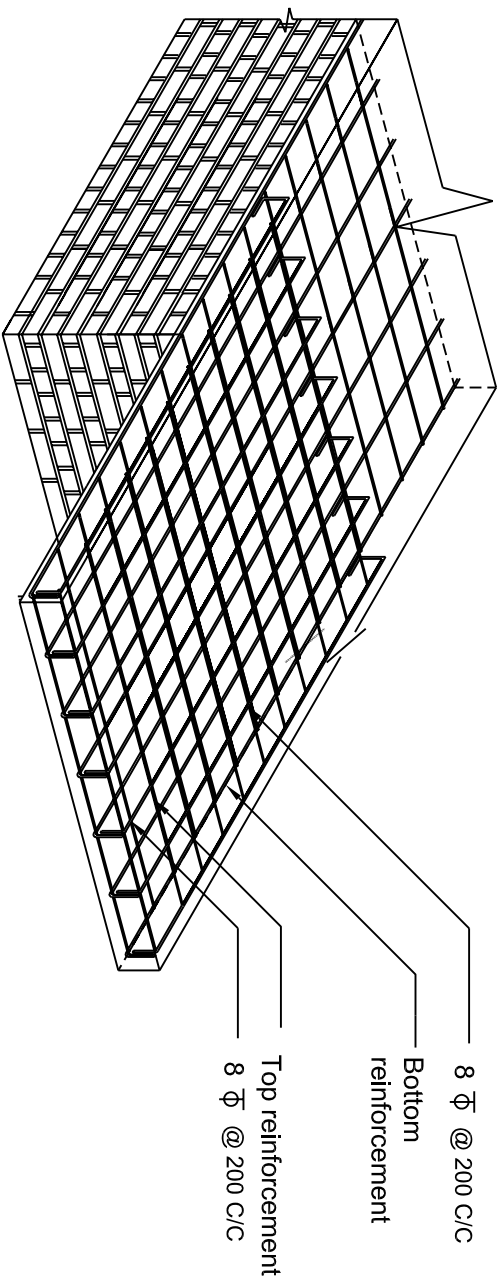
Details of seismic band at lintel level and vertical bars in brick walls

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