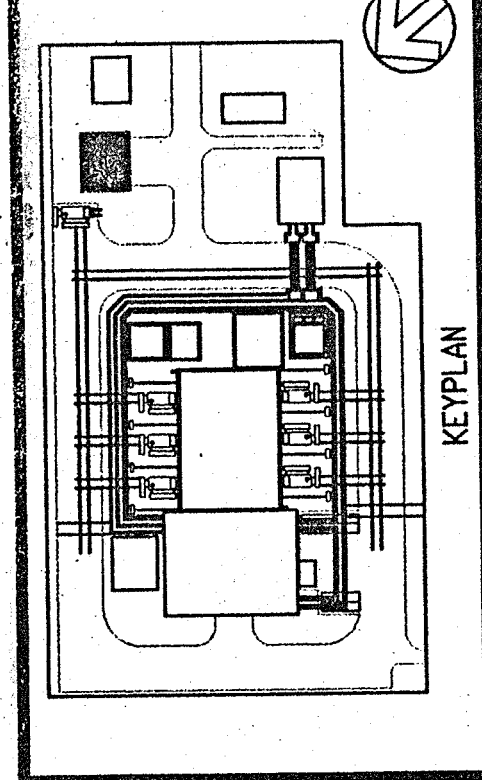




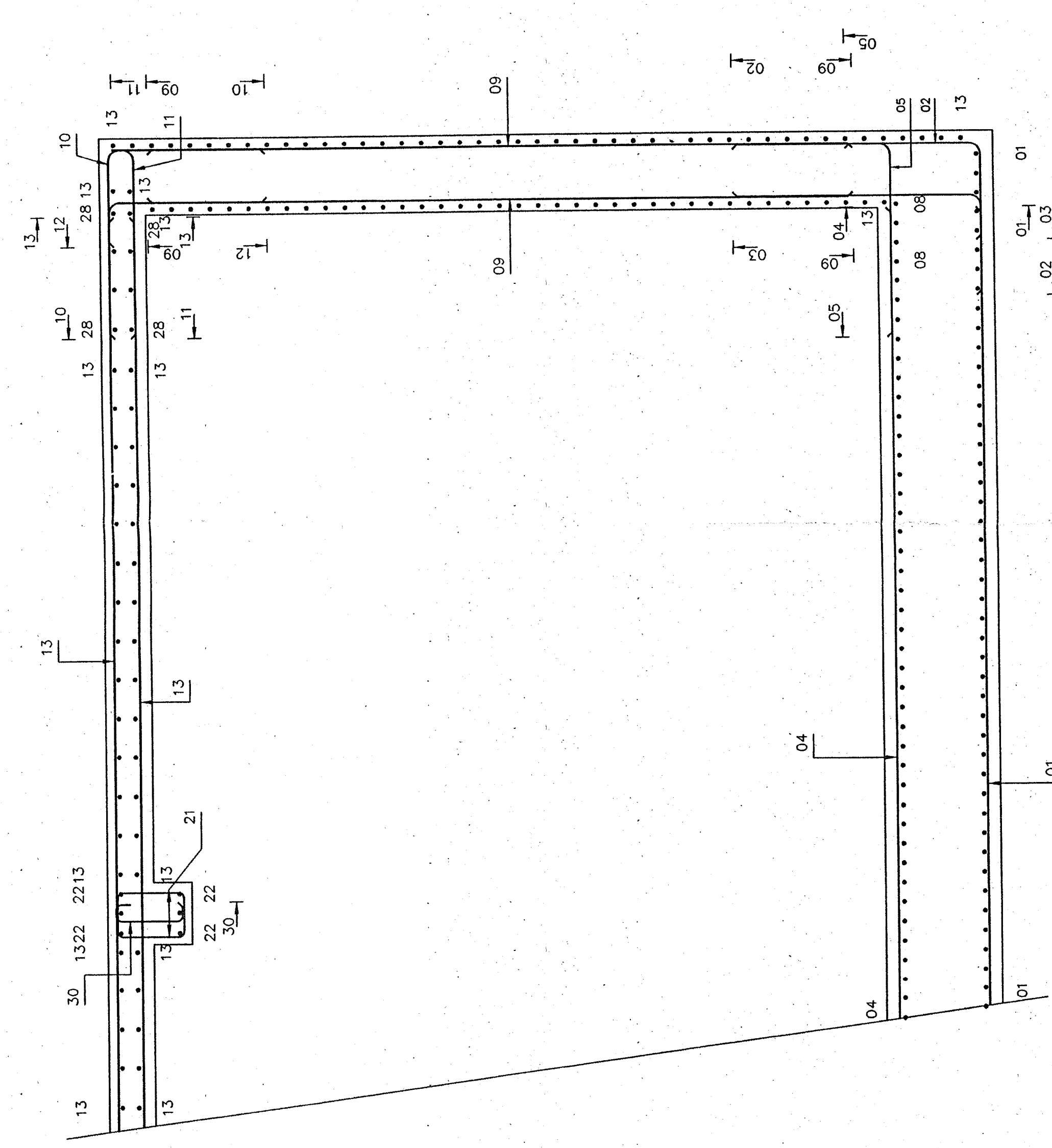
**NOTES**

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER DRAWINGS IN THIS PROJECT ARCHITECTURAL DRAWINGS & SPECIFICATIONS.
- ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH RELEVANT SPECIFICATIONS AND CURRENT INDIAN STANDARDS.
- FOR STRUCTURAL ARRANGEMENT SEE DRG. No. 4979/C/17/07/252.
- ALL LEVELS ARE EXPRESSED IN METRES AND RELATE TO INDIAN DATUM LEVEL.
- ALL DIMENSIONS ARE IN MILLIMETRES.
- ALL CO-ORDINATES RELATE TO THE ESTABLISHED SITE GRID.
- STRUCTURAL CONCRETE TO BE CLASS M25 MAXIMUM AGGREGATE SIZE 20MM.
- ALL REINFORCEMENT TO BE IN ACCORDANCE WITH IS: 432, IS: 1539 AND IS: 1786.
- ALL REINFORCEMENT TO BE CUT AND BENT IN ACCORDANCE WITH IS: 2502.
- MINIMUM CONCRETE COVER TO BE 50mm.
- REINFORCEMENT IS NOTED THUS:-  
 Y8 400 (MIN)  
 Y10 500 (MIN)  
 Y12 600 (MIN)  
 Y16 800 (MIN)  
 Y20 1000 (MIN)  
 Y25 1250 (MIN)  
 Y32 1575 (MIN).  
 12. REINFORCEMENT LAPS UNLESS NOTED TO BE:-  
 BAR SPACING  
 BAR MARK  
 BAR DIAMETER  
 M-MILD STEEL BAR  
 Y-COLD TWISTED HIGH YIELD STEEL BAR  
 NUMBER OF BARS  
 13. REINFORCEMENT SHOWN ON THIS DRAWING IS TO BE IN ACCORDANCE WITH IS: 432, IS: 1539 AND IS: 1786.  
 14. DO NOT SCALE THIS DRAWING.

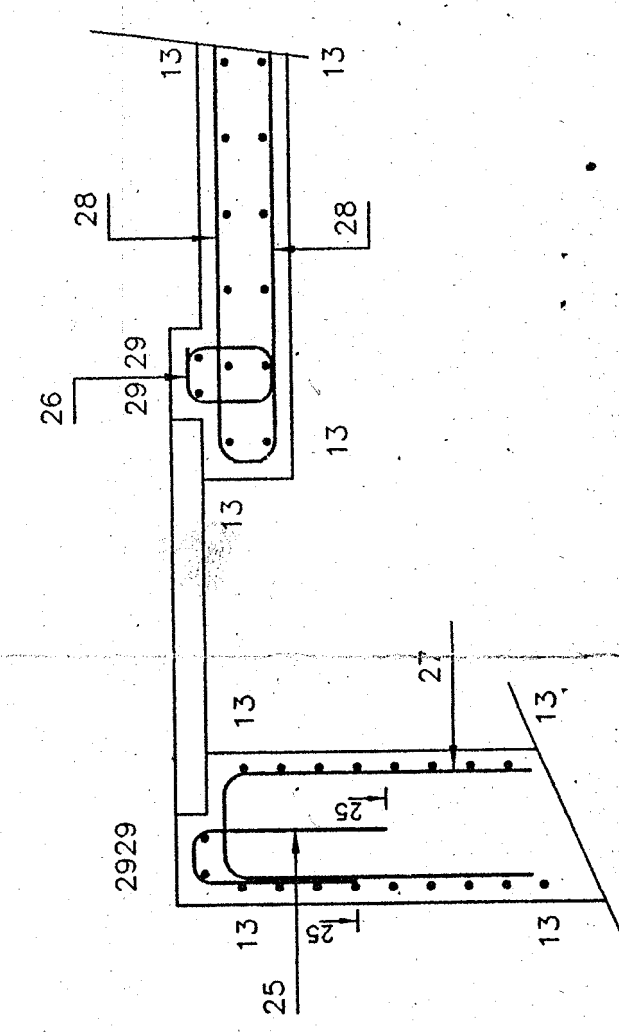


**AS BUILT**

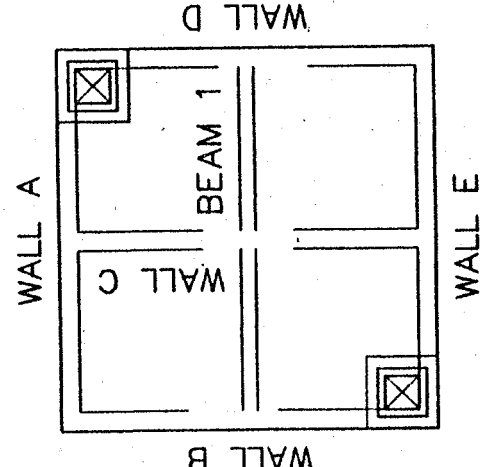
REV	DATE	BY	DESCRIPTION	CHK	APP
0					
DRAWING STATUS: LEVEL 3					
Thomson House Plot Upper Richmond Road LONDON SW15 2JG TEL: 0181 873 0000 FAX: 0181 873 0001 BRANCHES: BANGALORE, CHENNAI, COIMBATORE, DELHI, HYDRABAD, KOLKATA, MUMBAI, NEW DELHI, PUNE, THIRUVANANTHAPURAM, CHANDIGARH, BANGALORE, CHENNAI, COIMBATORE, DELHI, HYDRABAD, KOLKATA, MUMBAI, NEW DELHI, PUNE, THIRUVANANTHAPURAM, CHANDIGARH, BANGALORE, CHENNAI, COIMBATORE, DELHI, HYDRABAD, KOLKATA, MUMBAI, NEW DELHI, PUNE, THIRUVANANTHAPURAM, CHANDIGARH.					
CLIENT: GEC ALSTHOM					
ARCHITECT: HUBBARD FORD					
PROJECT: VIZAG - H.V.D.C. BACK TO BACK PROJECT					
TITLE: VALVE COOLING WATER STORAGE TANKS RC DETAILS					
SCALE	1:50	DATE	NOVEMBER 96	PROJECT NO.	4979
REV	0	BY		CHK	APP
DRAWING NO. C/O/V/C/855					
WSP CONSULTING ENGINEERS					
A member of the WSP GROUP					



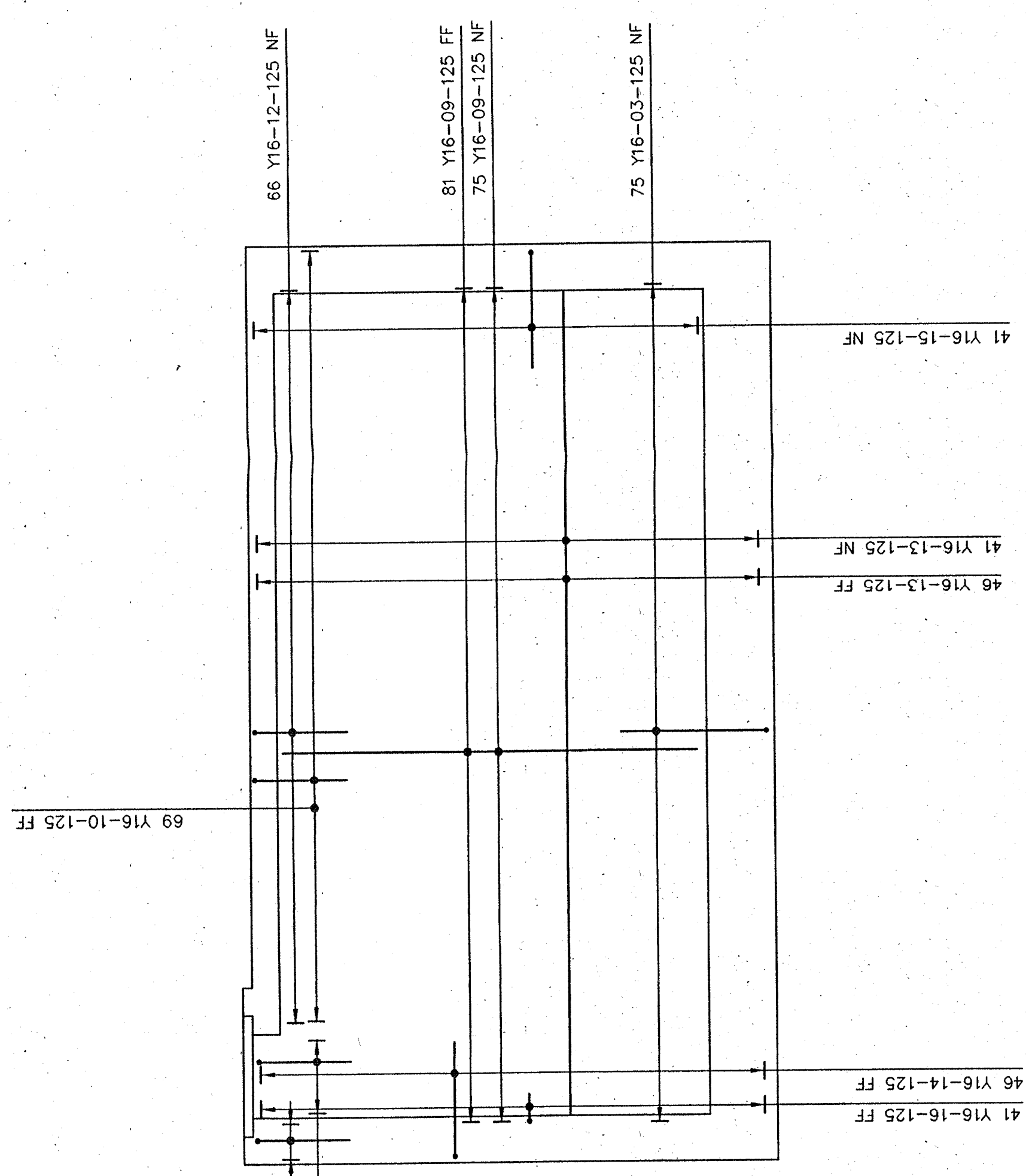
SECTION A-A (1:25)



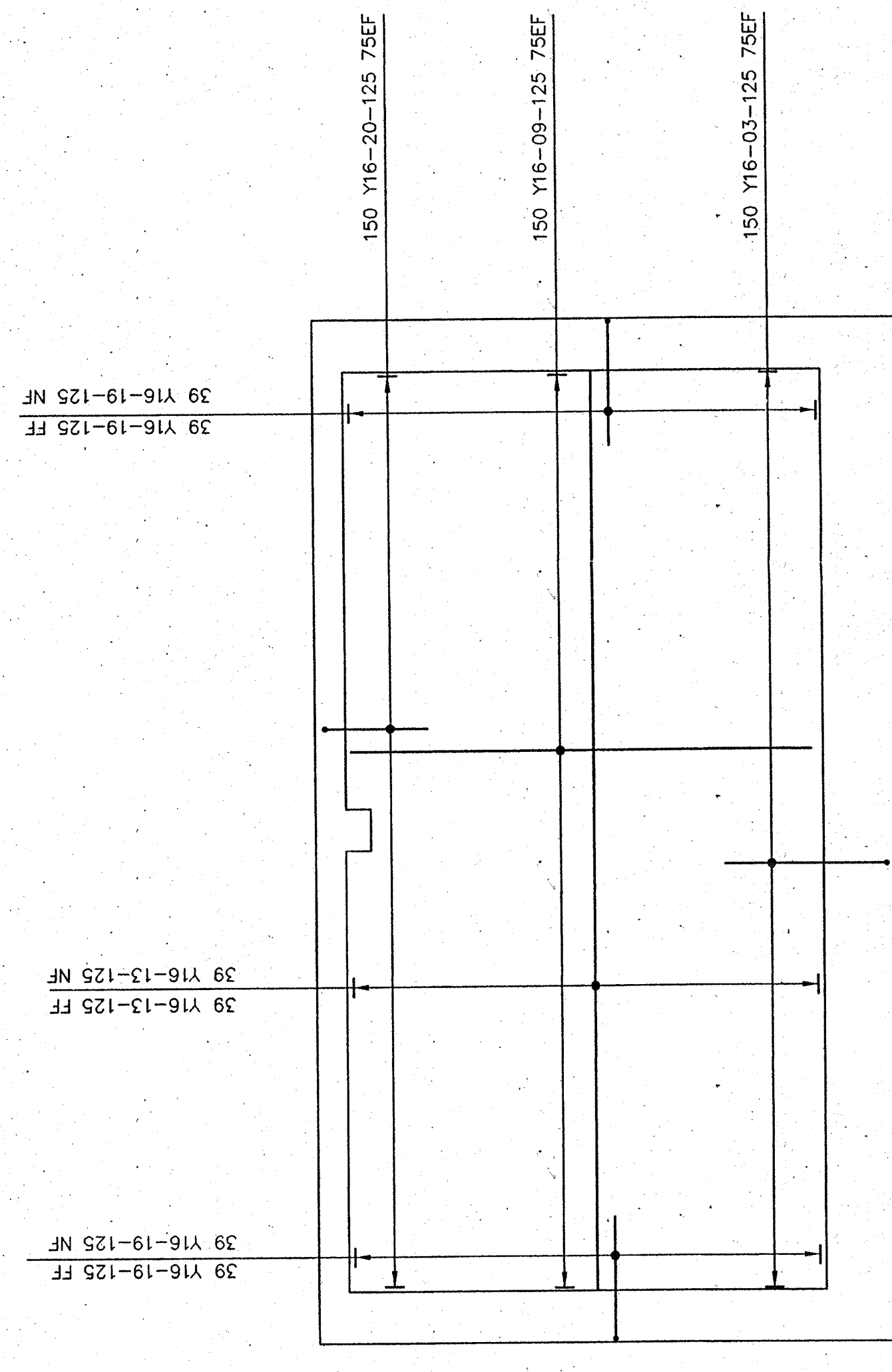
SECTION B-B (1:25)



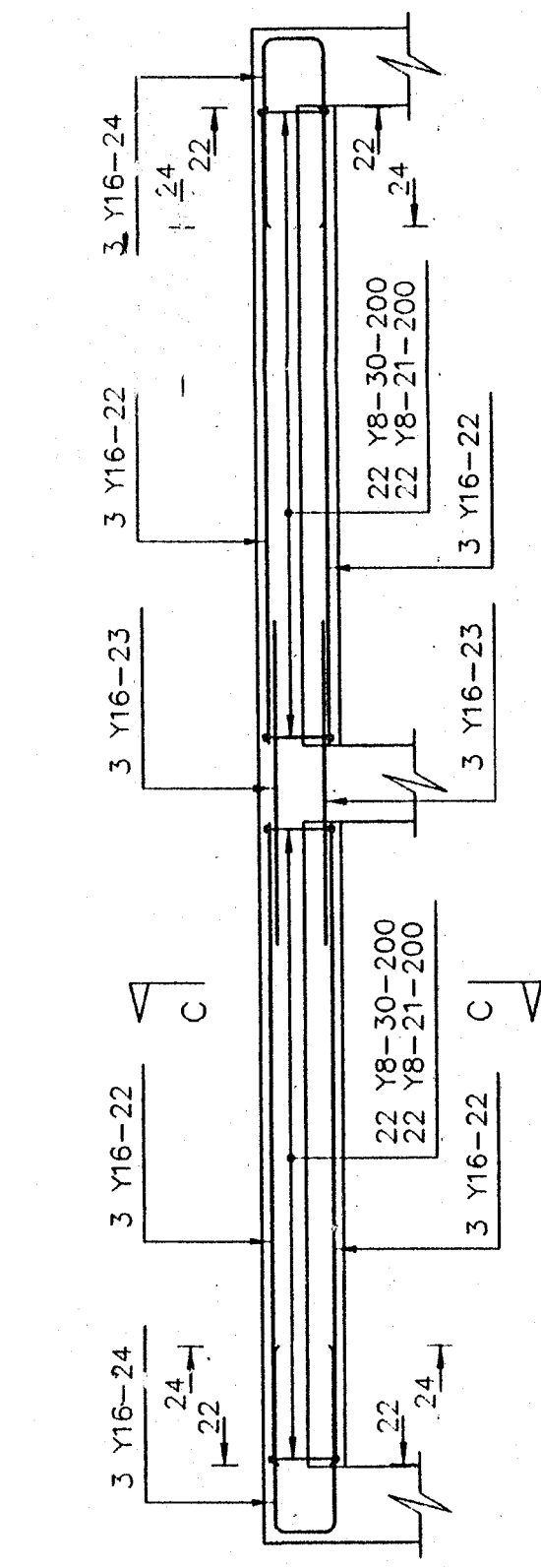
KEY PLAN



ELEVATION ON WALL B  
WALL D SIMILAR  
WALL A & E SIMILAR BUT HANDED  
4 No. THUS

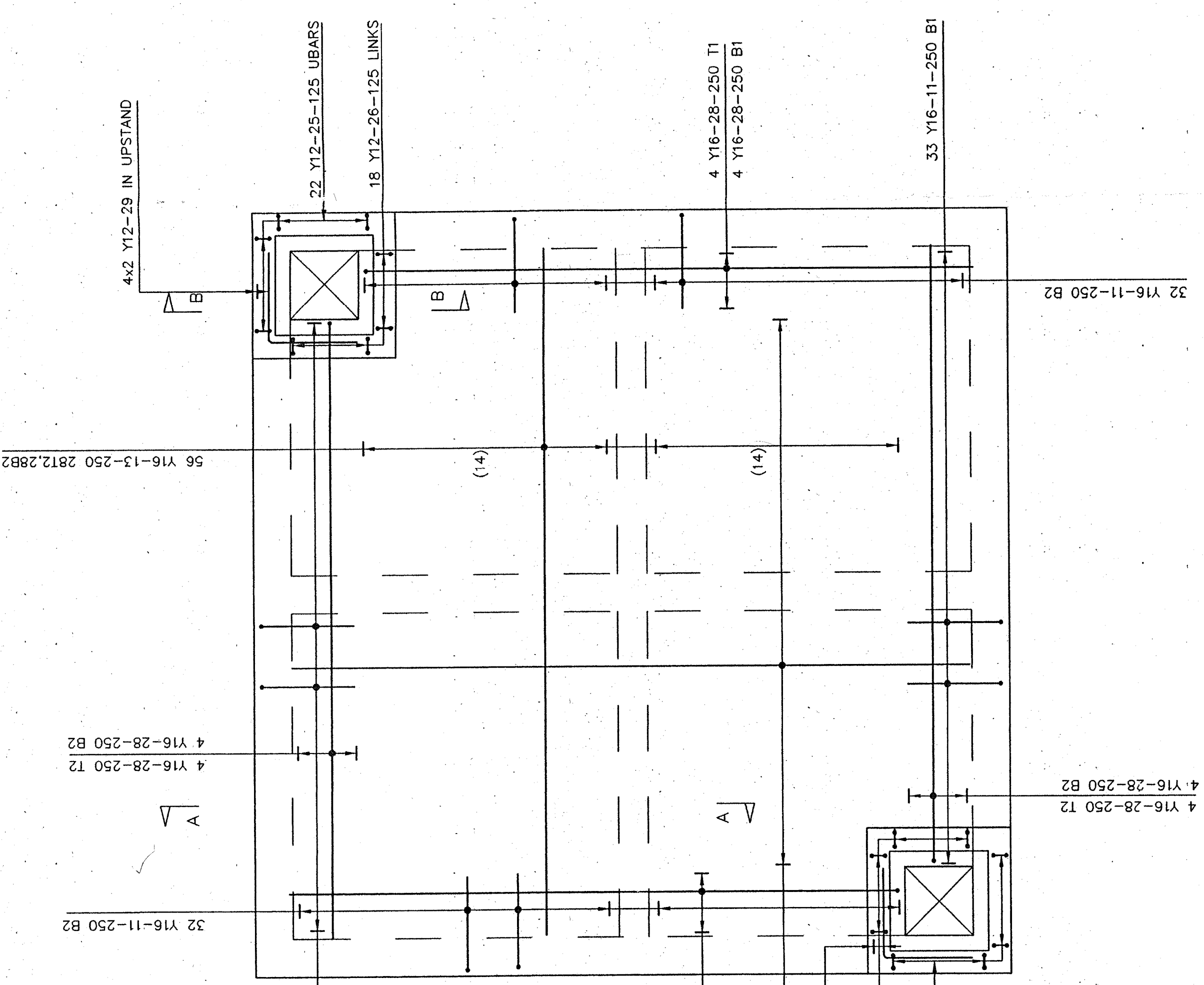


ELEVATION ON WALL C

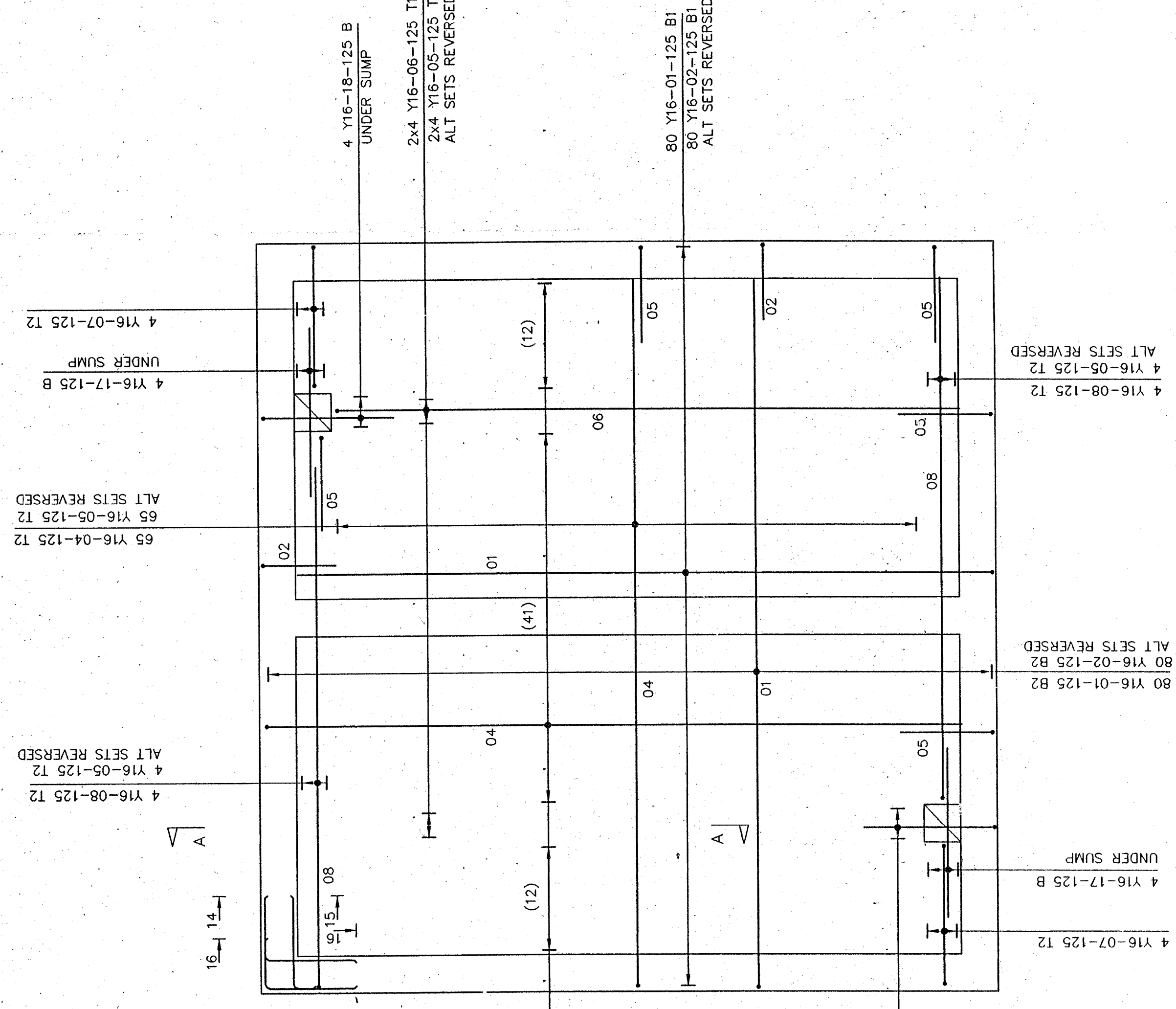


SECTION C-C

BEAM 1



PLAN ON ROOF SLAB



PLAN ON BASE SLAB

DO NOT SCALE

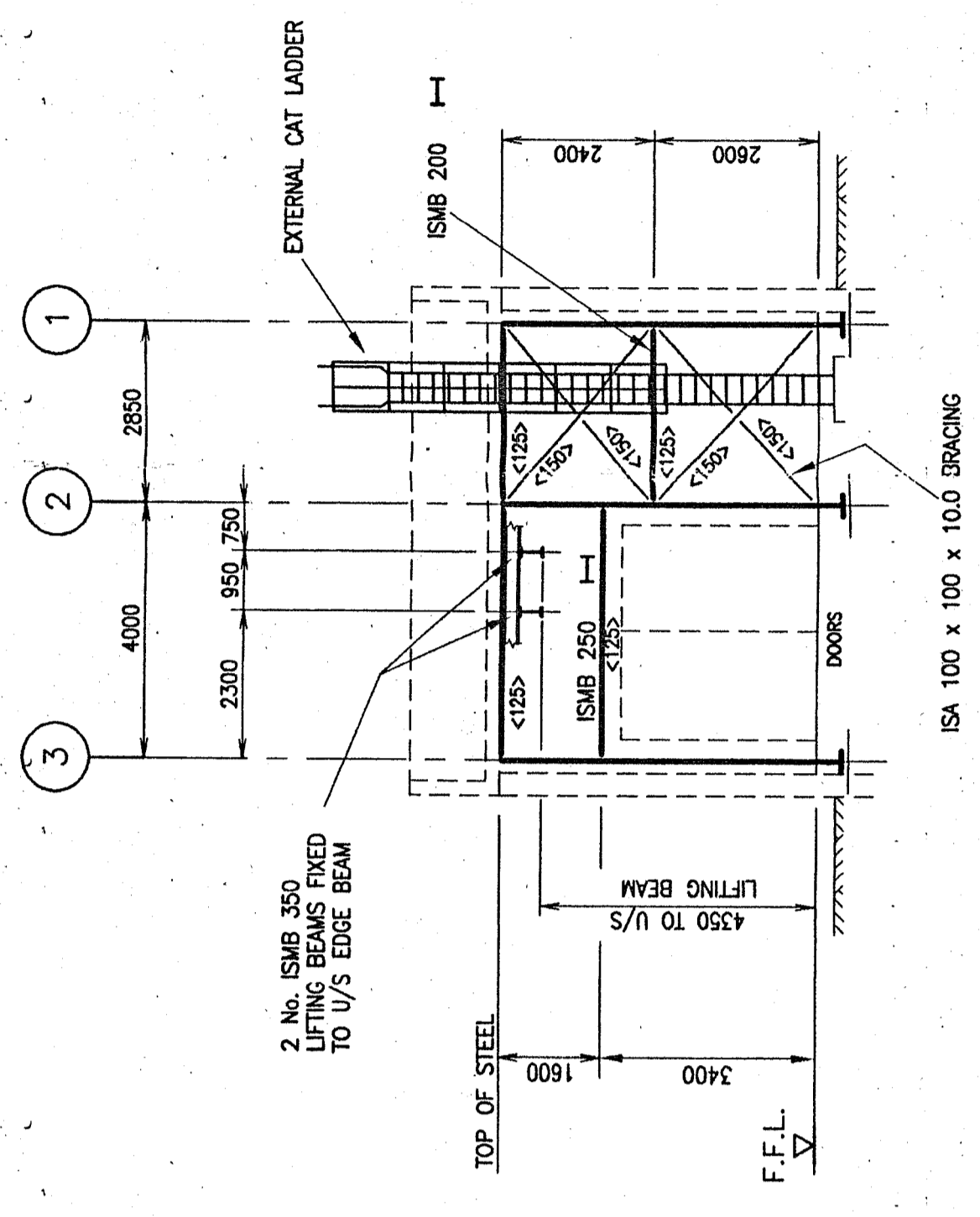
NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL, STRUCTURAL, CIVIL AND MECHANICAL DRAWINGS TOGETHER WITH THE SPECIFICATION.
2. ALL STEELWORK TO HAVE A MINIMUM GUARANTEED WELD STRENGTH OF 250 N/mm<sup>2</sup> IN ACCORDANCE WITH S.S. 568.
3. ALL HOT ROLLED SECTIONS I.e. BEAMS, COLUMNS, CHANNEL & ANGLE SECTIONS TO BE IN ACCORDANCE WITH S.S. 568.
4. ZING COATINGS OF AT LEAST 0.815 kg/m<sup>2</sup> TO BE IN ACCORDANCE WITH SPECIFICATION CAUSE TO BE IN ACCORDANCE WITH S.S. 568.
5. FOR DETAILS OF HOLDING DOWN BOLTS SEE DRAWING No. 4979/C/7/M/5/51
6. WITH SPECIFICATION CAUSE TO BE IN ACCORDANCE WITH S.S. 568.
7. FOR SECTION SIZES, FRING DETAILS AND OF CUT LADDER SEE DRAWING No. 4979/C/4/M/1/4-B Incl.
8. LOADINGS - ALL LOADS SHOWN IN INCL. NET-

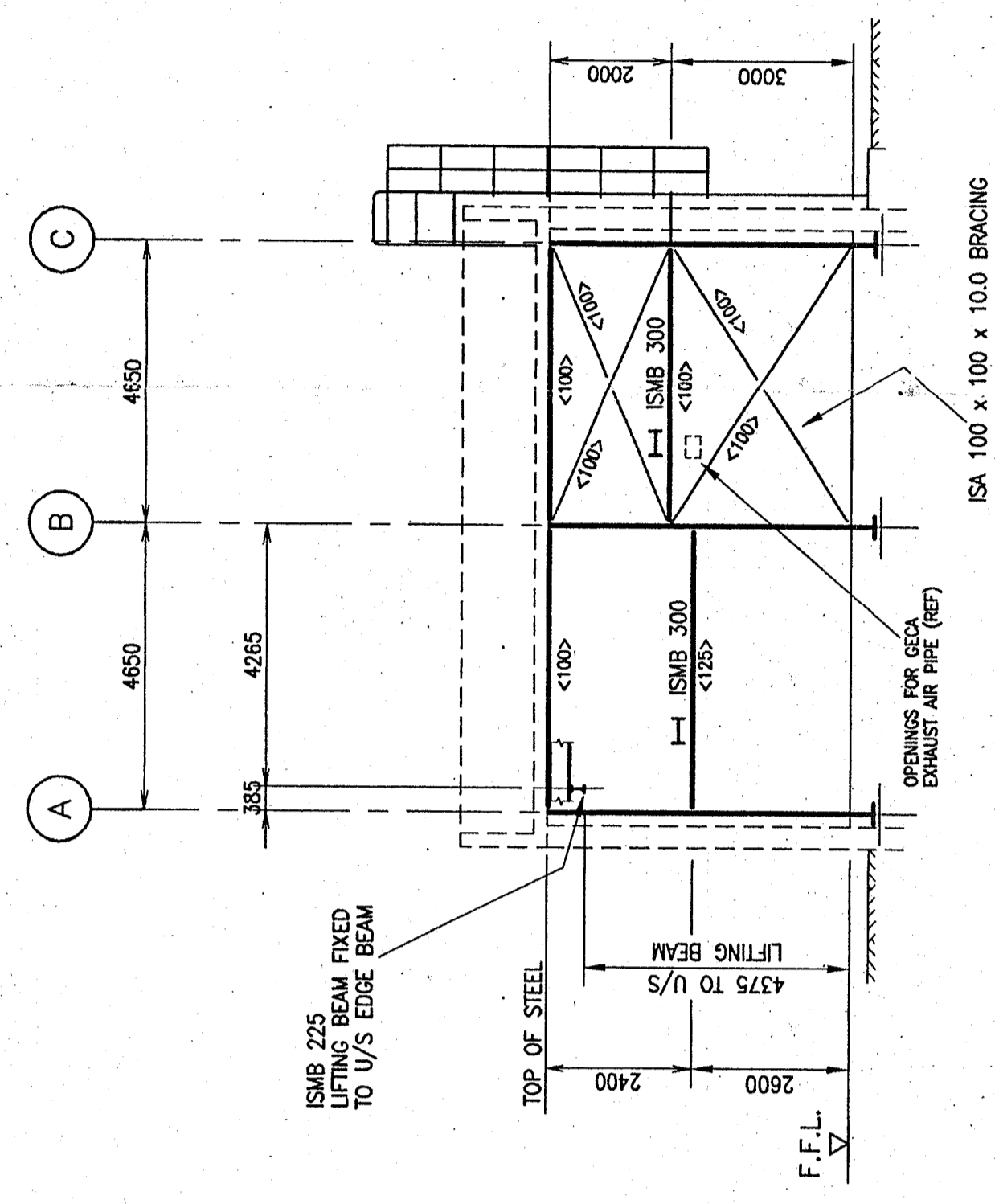
SECTION (VERTICAL SHEAR) AXIAL LOAD

ALL UNSPECIFIED BEAM CONNECTIONS TO BE DESIGNED FOR A MINIMUM LOAD OF 40 kN VERTICAL SHEAR.

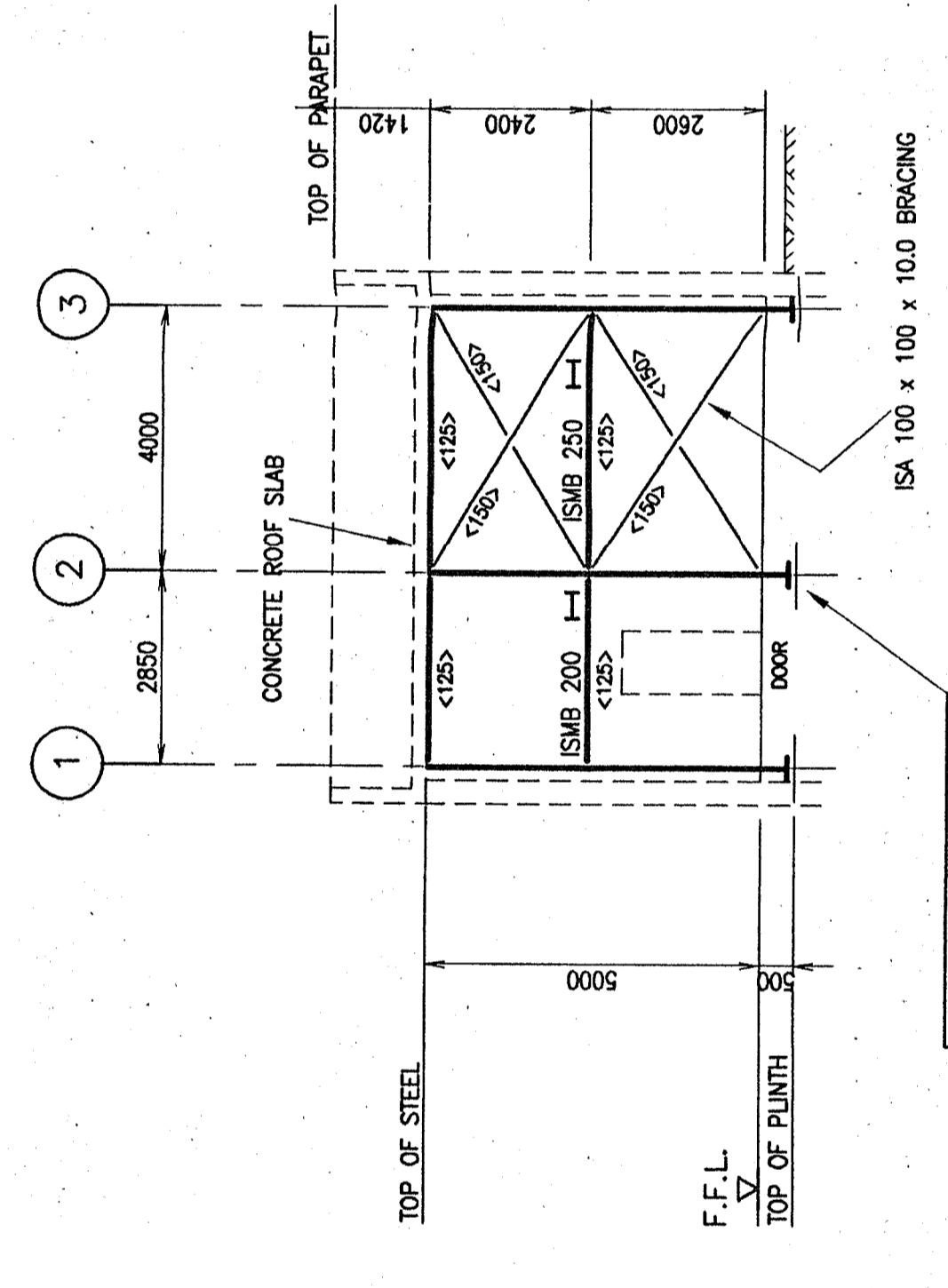
ALL UNSPECIFIED BEAM CONNECTIONS TO BE DESIGNED FOR A MINIMUM LOAD OF 40 kN AXIAL LOAD.



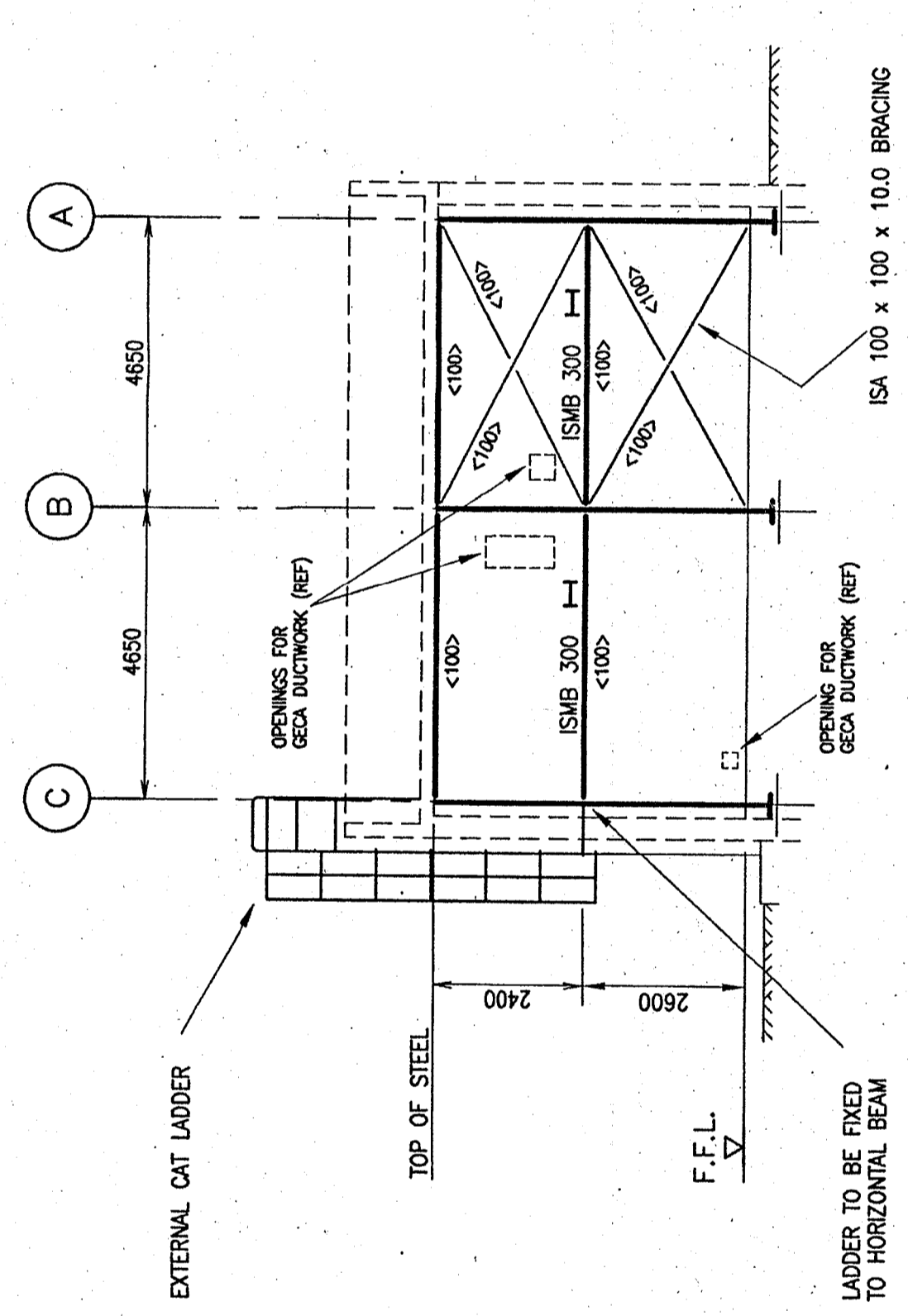
ELEVATION ON LINE C



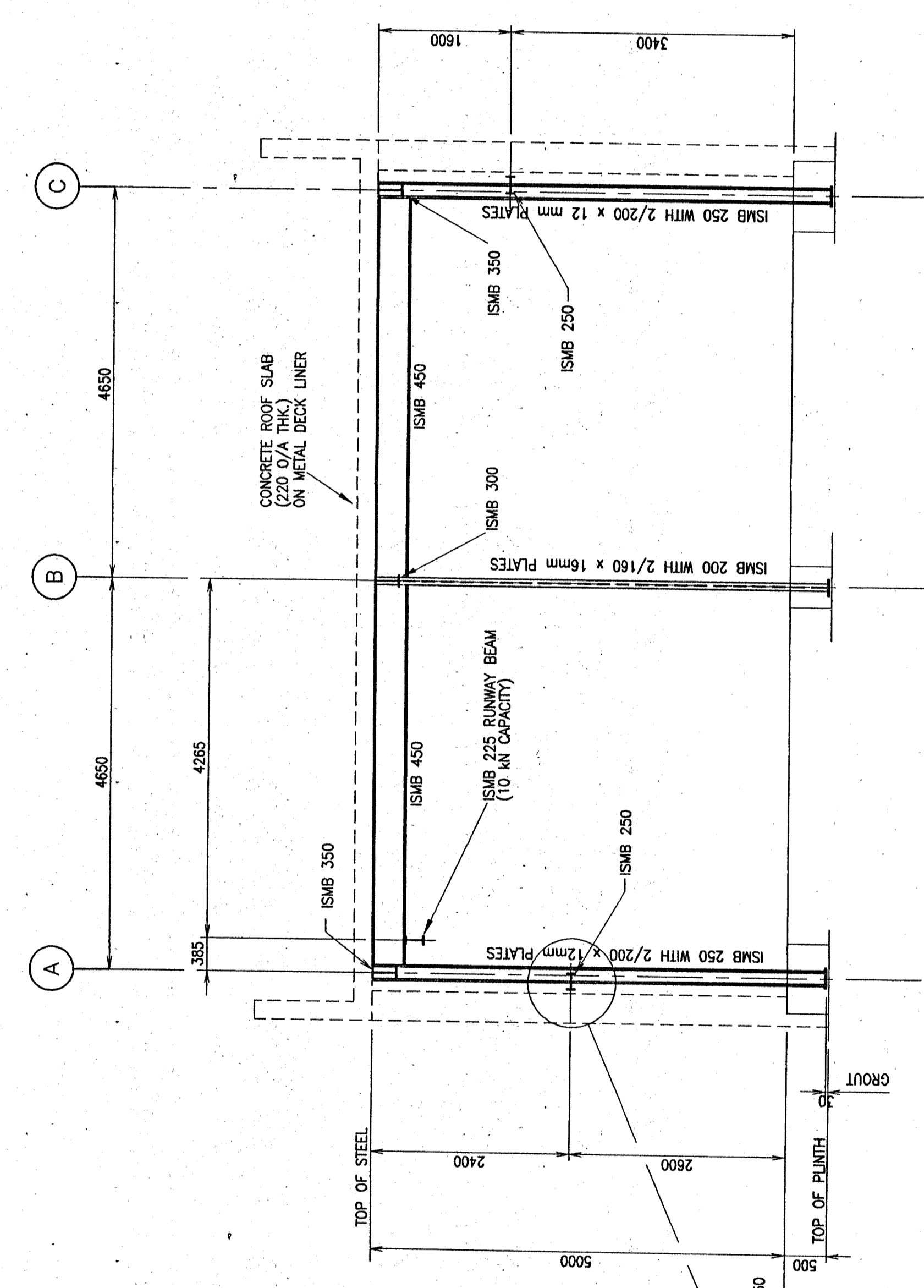
ELEVATION ON LINE 3



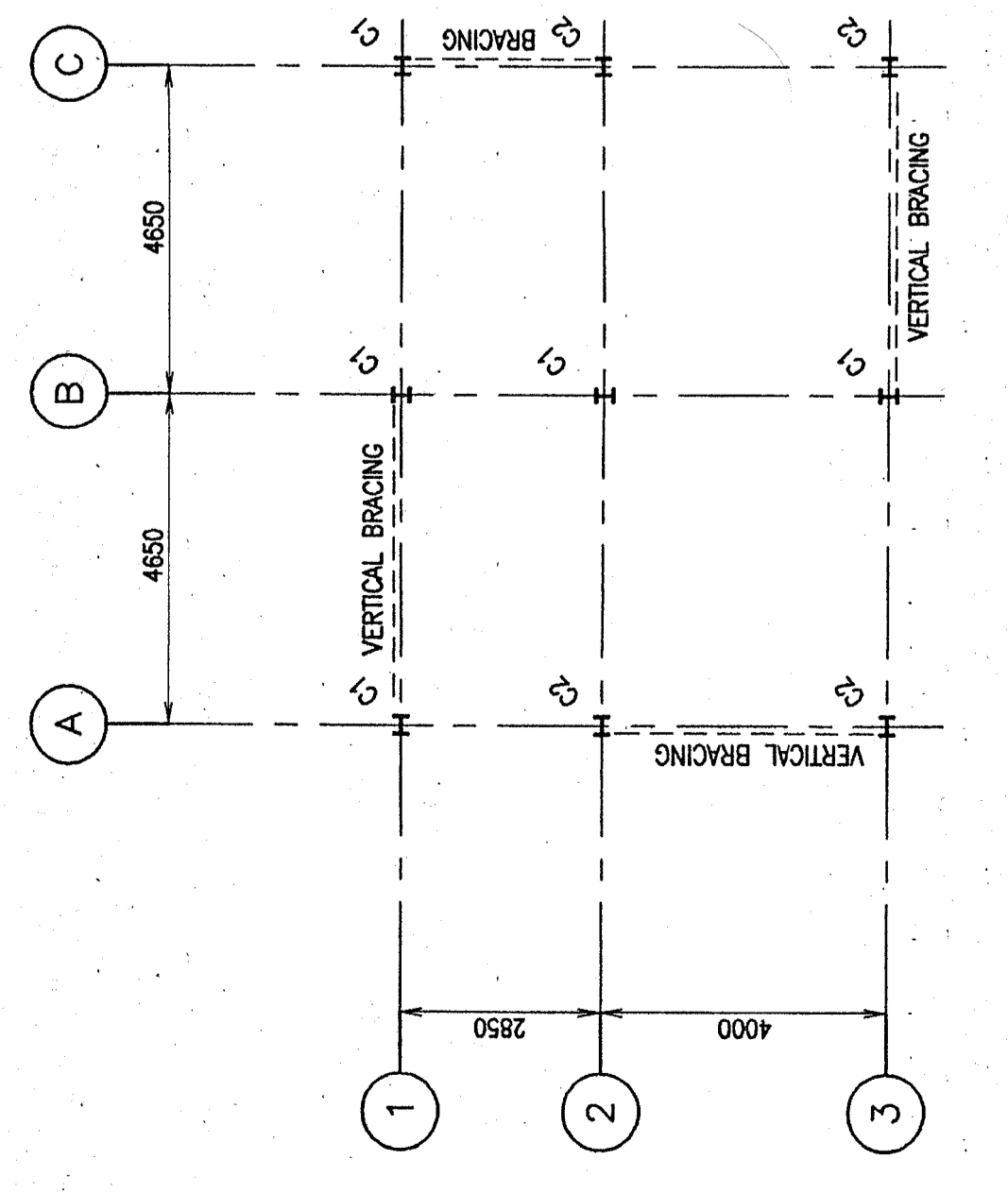
ELEVATION ON LINE A



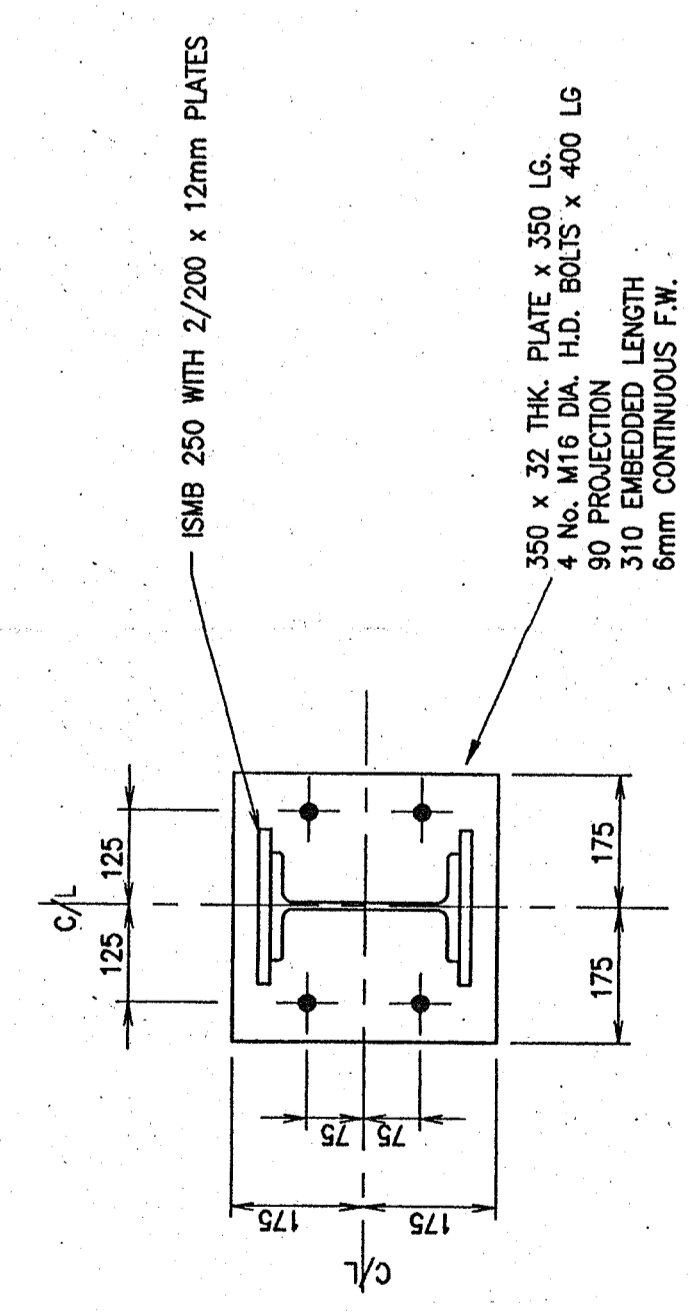
ELEVATION ON LINE 1



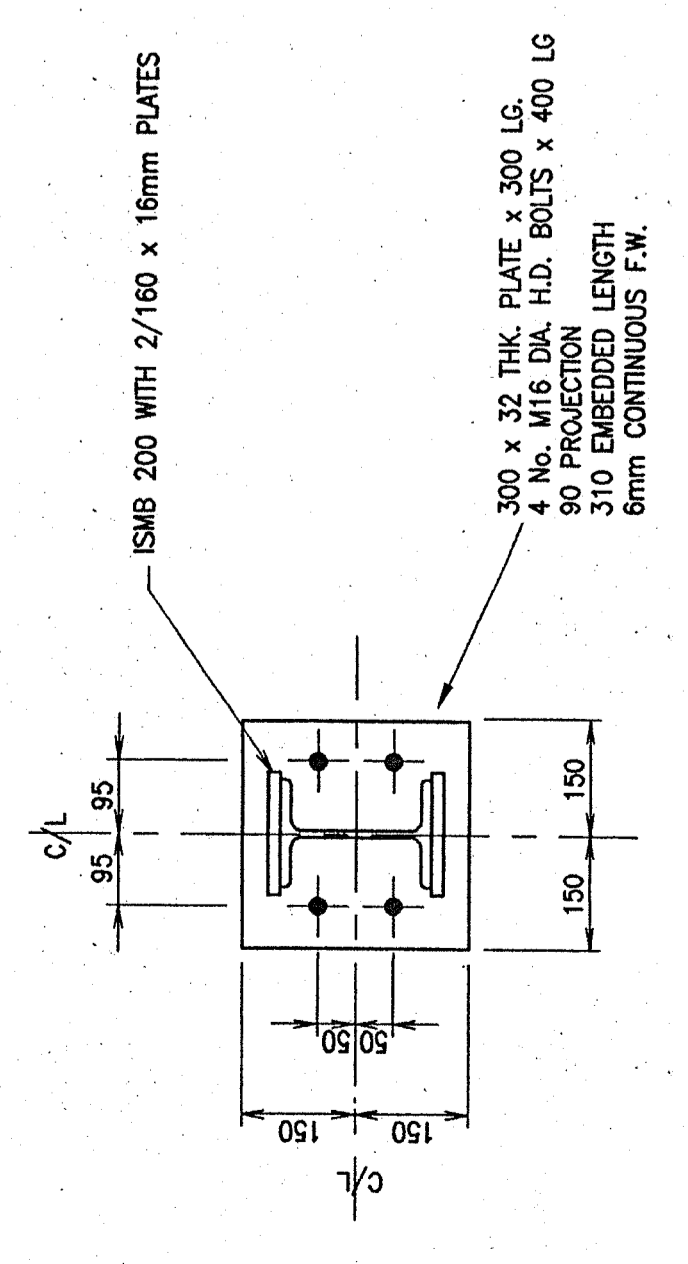
CROSS SECTION ON LINE 2 (SCALE 1:50)



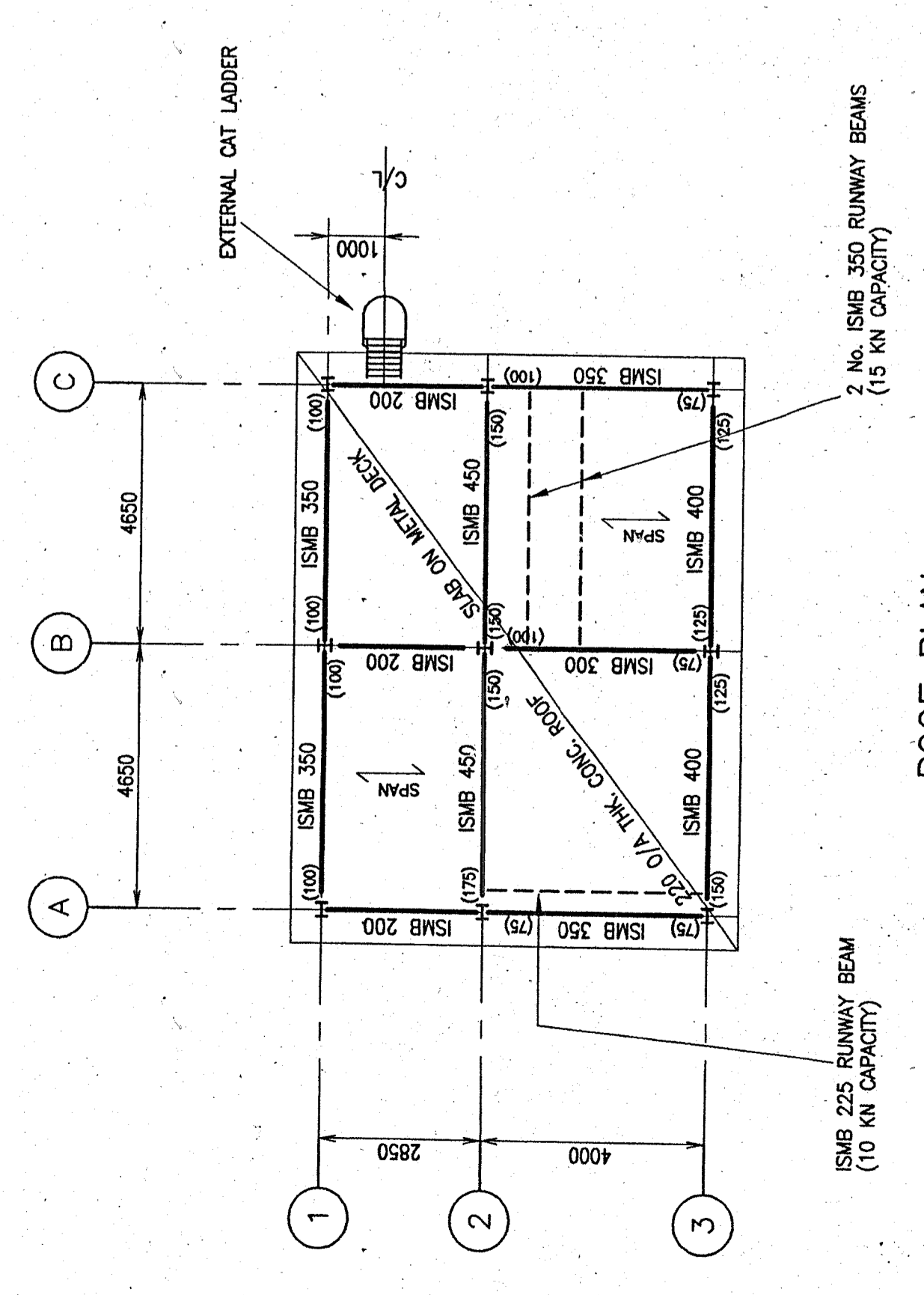
COLUMN LAYOUT  
C1 - INDICATES ISMB 250 WITH 2/160 x 16mm PLATES  
C2 - INDICATES ISMB 250 WITH 2/200 x 12mm PLATES



BASEPLATE TYPE C2  
NOTE ORIENTATION (SCALE 1:10)



BASEPLATE TYPE C1  
NOTE ORIENTATION (SCALE 1:10)



ROOF PLAN

**AS BUILT**

REV	DATE	BY	CHK	APP	DESCRIPTION
A	4.12.98	THK			DRAWING STATUS CHANGED TO AS BUILT
U	4.10.98	THK			FIRST ISSUE

PROJECT: HUBBARD FORD  
CLIENT: GEC ALSTROM  
ARCHITECT: HUBBARD FORD  
PROJECT: WZAG - H.V.D.C. BACK TO BACK PROJECT  
TITLE: VALVE COOLING PUMPHOUSE COLUMN LAYOUT / ROOF PLAN AND SECTIONS

WSP CONSULTING ENGINEERS  
13 Upper Richmond Road, London SW14 2TB  
TEL: 0181 796 8000  
FAX: 0181 796 8041

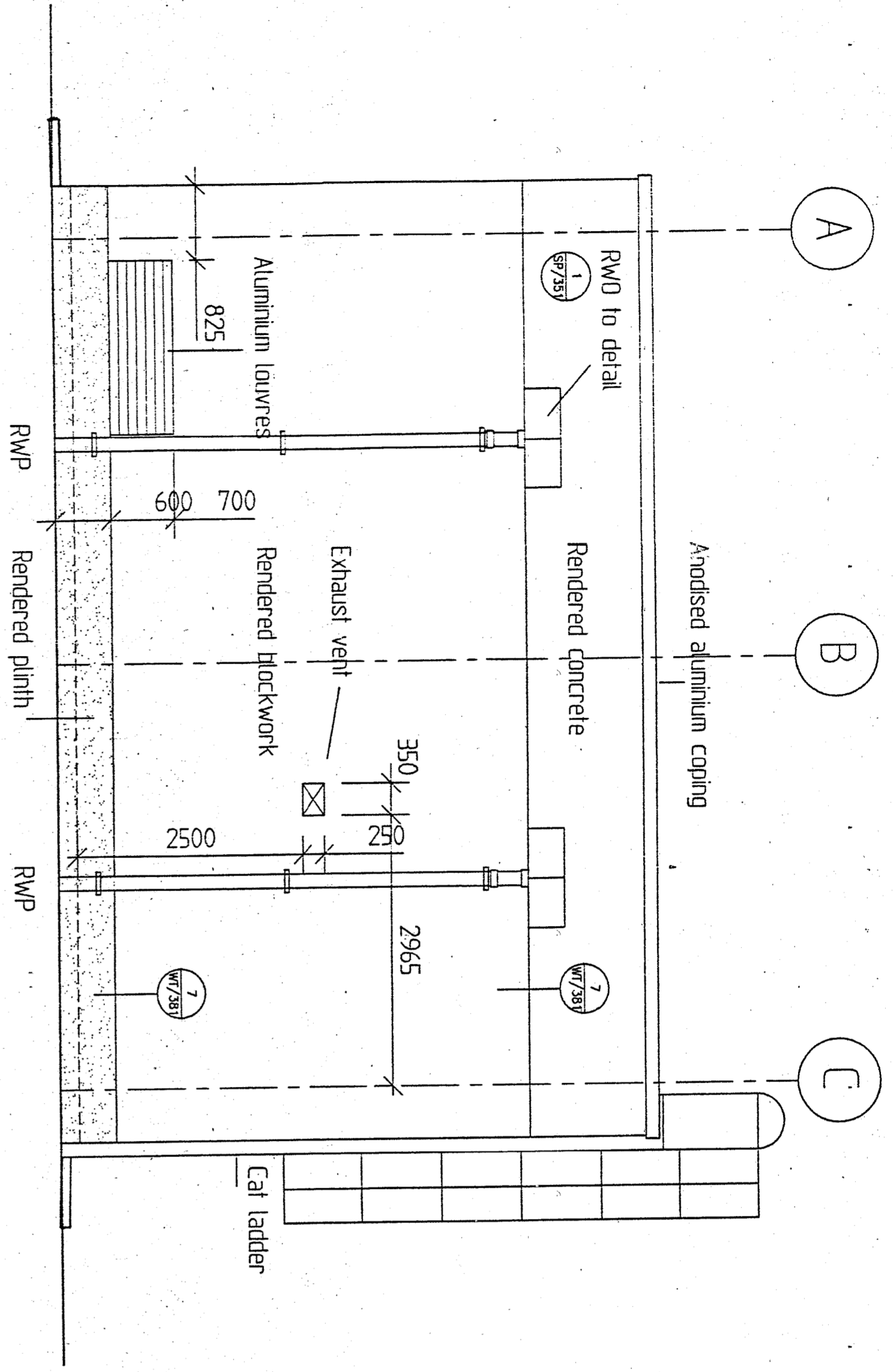
SCALE: 1:100  
DATE: AUG 98  
PROJECT NO: 4979  
DRAWING NO: C/D/AC/851



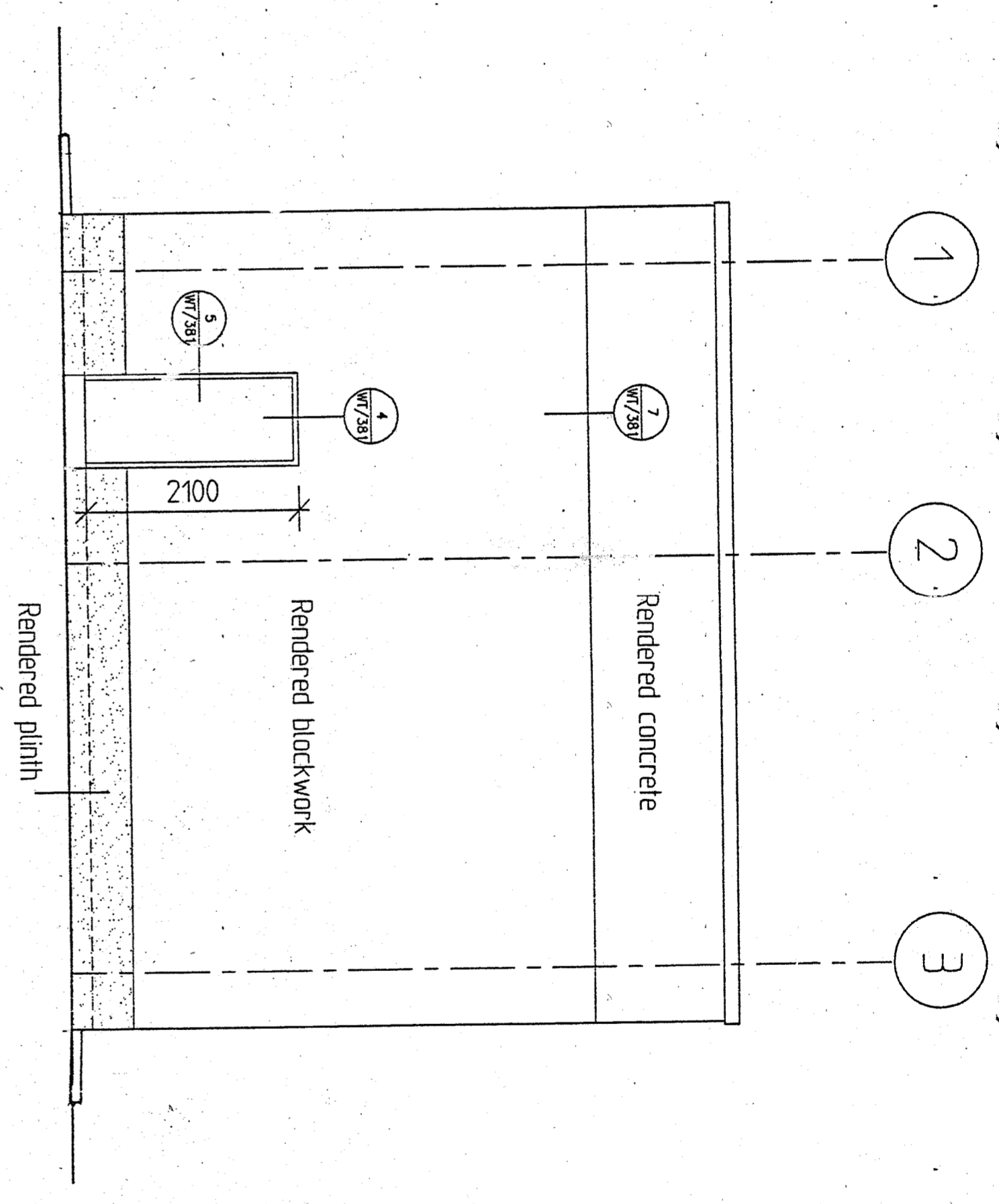
DO NOT SCALE

ALL DIMENSIONS IN MILLIMETRES.

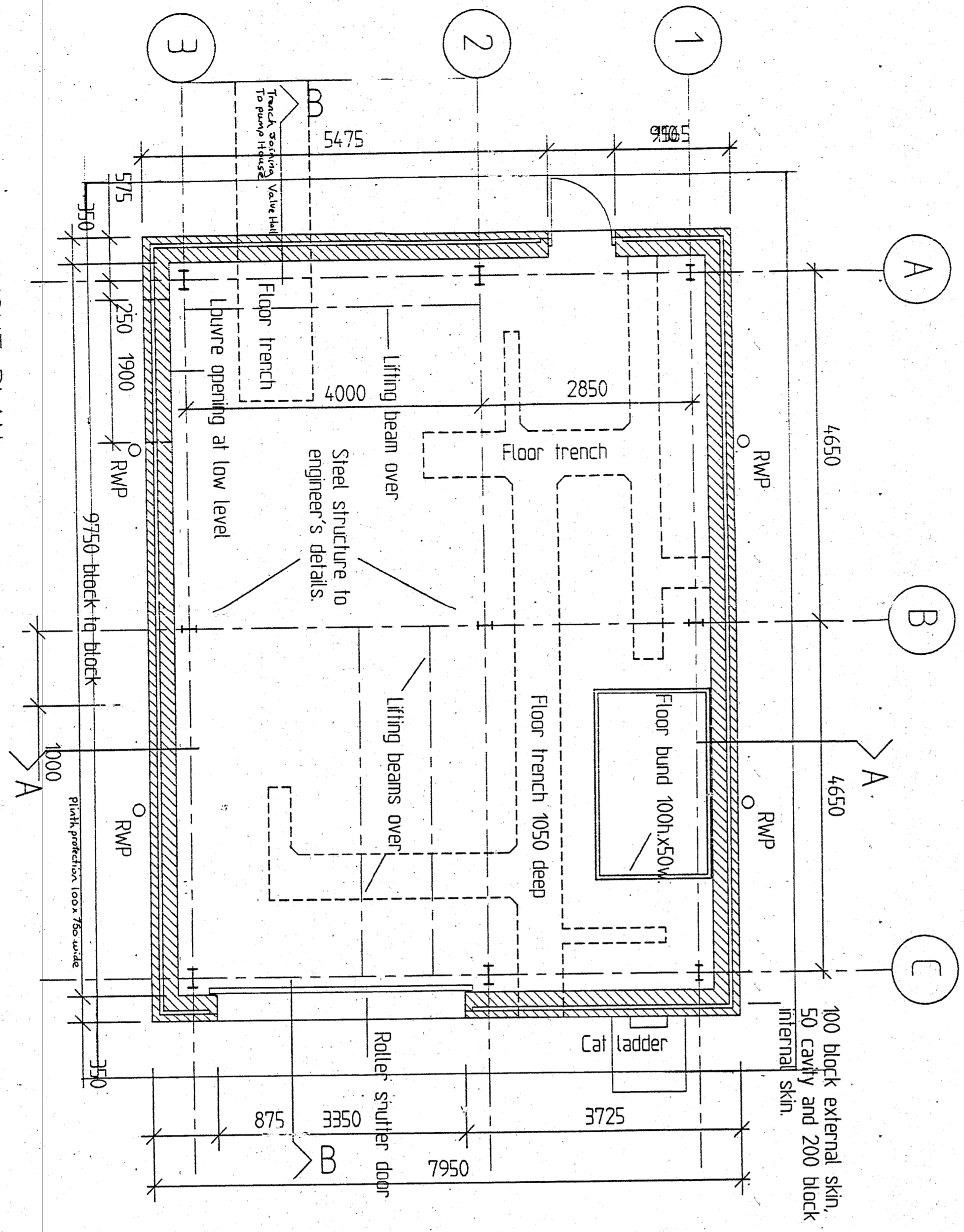
THIS DRAWING TO BE READ IN CONJUNCTION WITH DETAIL DRAWINGS REFERENCED THUS:



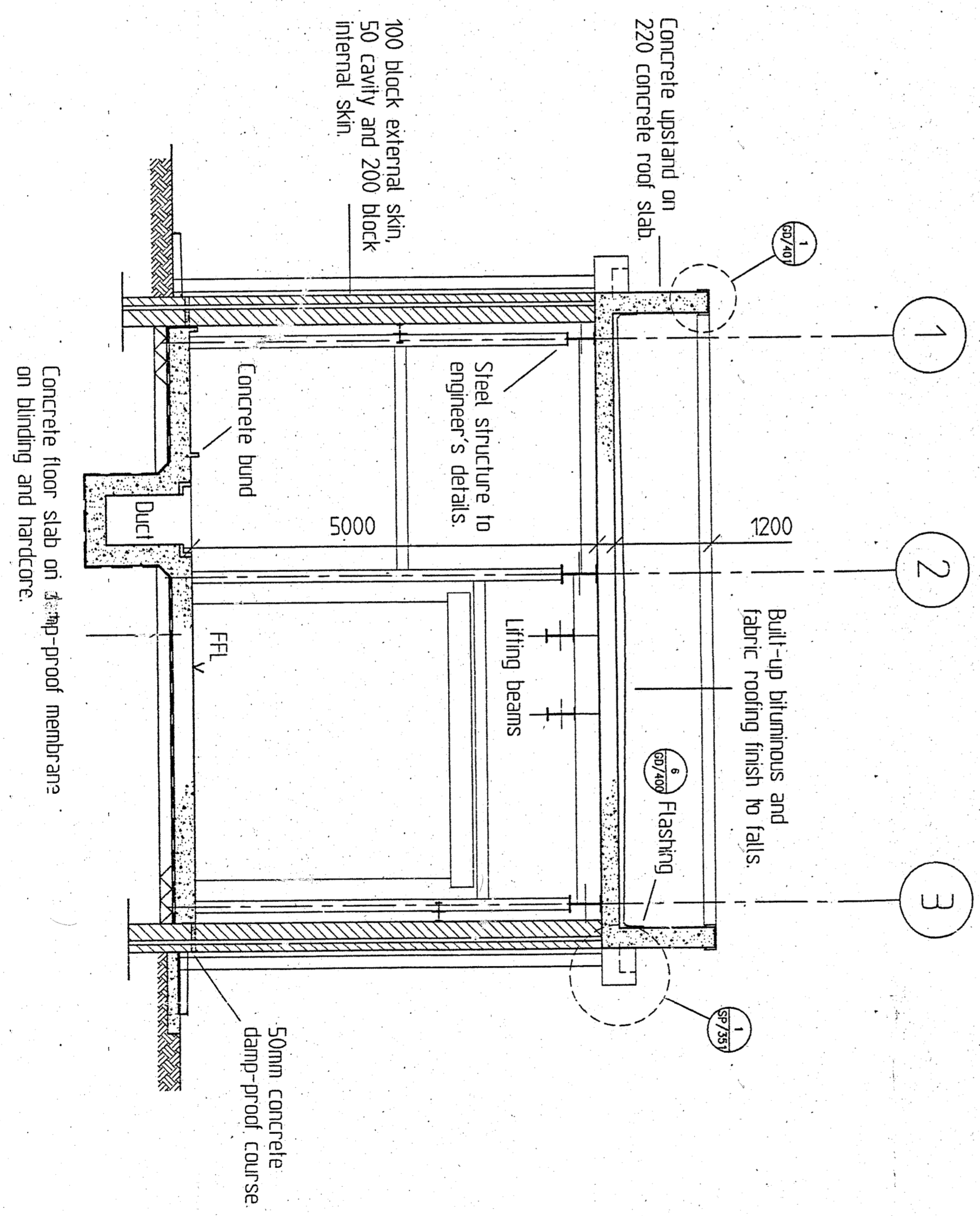
SOUTH-WEST ELEVATION



NORTH-WEST ELEVATION



LAYOUT PLAN



CROSS SECTION A - A

REV	DATE	BY	CHK	DESCRIPTION
0	21/06/96	AS		UPDATE TO AS BUILT
1	27/07/97	AS		REPAIR TO DAMAGED BRICKS
2	06/07/97	AS		REPAIR AND ISSUED FOR TEND J
3	03/07/96	AS		DIMENSIONS ADDED AND TITLE BLOCK REVISED

AS BUILT

**WSP CONSULTING ENGINEERS**

Thames House  
131 Upper Richmond Road  
Putney SW15 2JG  
London SW15 2NU  
Tel: 0181 748 6400  
Fax: 0181 748 6031

BRANCHES: BRISTOL, CAMBRIDGE, CHICHESTER, GLASGOW, LONDON, MANCHESTER, NOTTINGHAM, PLYMOUTH, PORTSMOUTH, SOUTHAMPTON, WIMBORNE

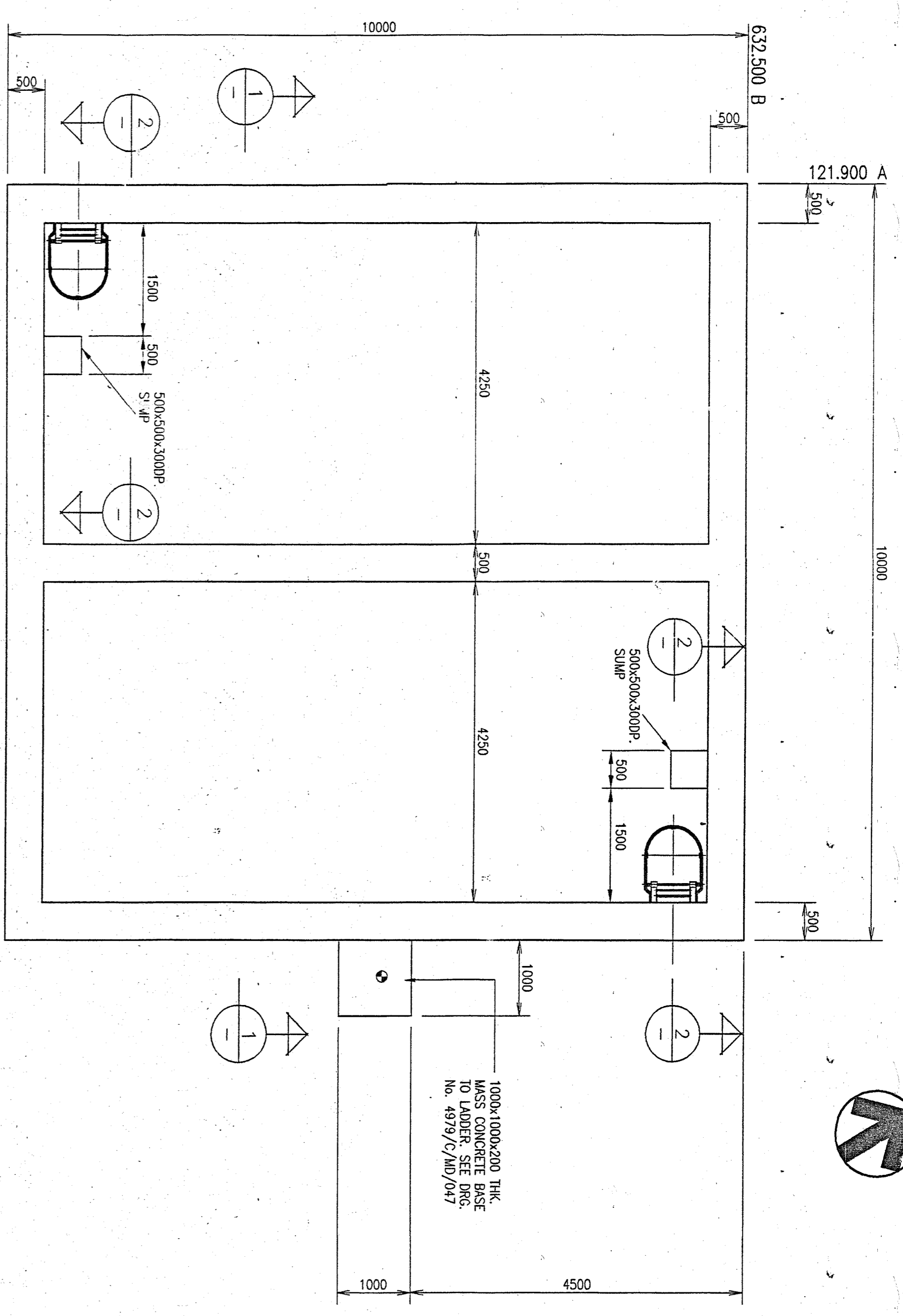
CLIENT: GEC ALSTHOM

ARCHITECT: HUBBARD FORD

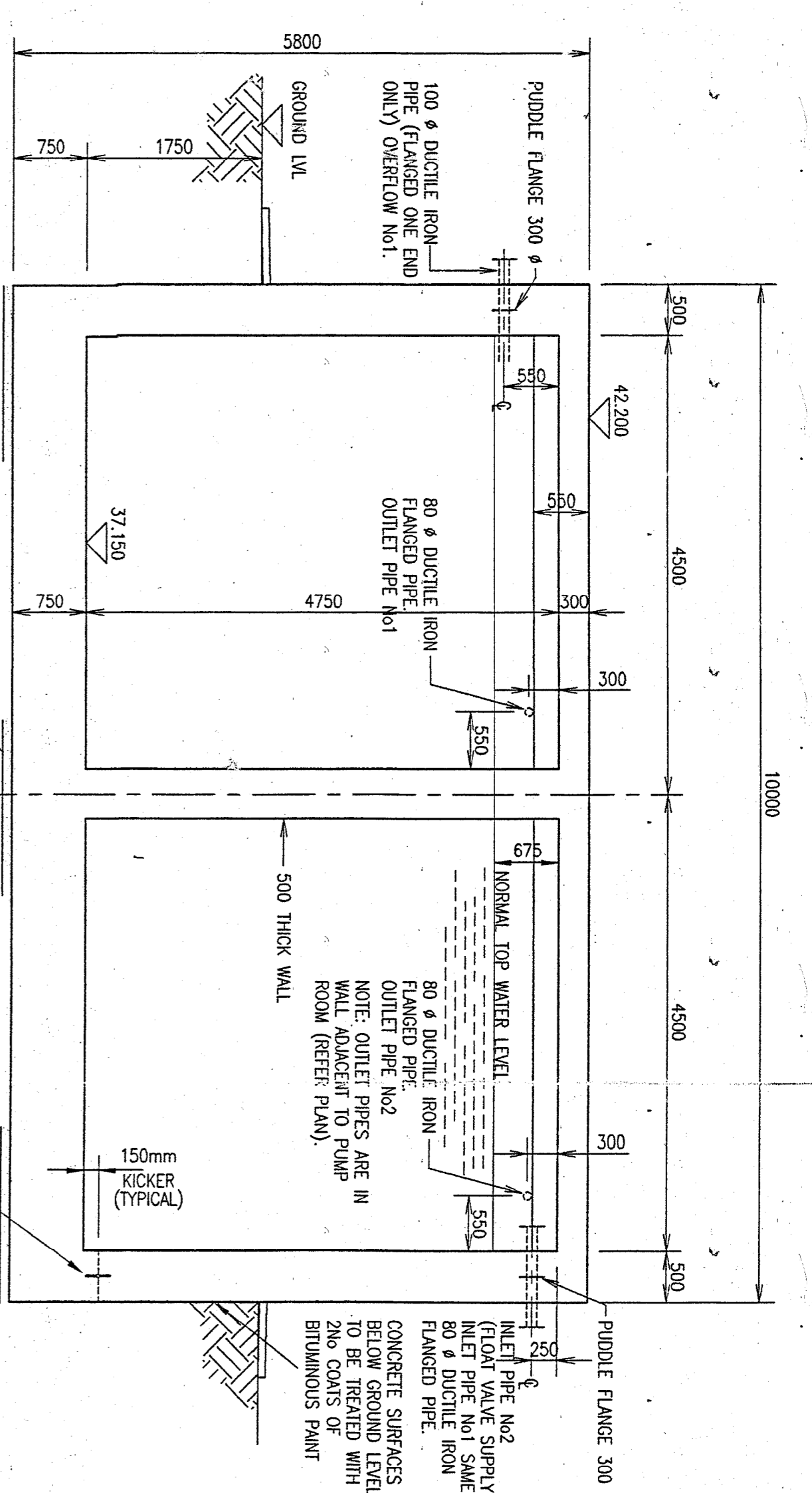
PROJECT: VZAG - H.V.D.C. BACK TO BACK PROJECT

TITLE: VALVE COOLING PUMPHOUSE GENERAL ARRANGEMENT

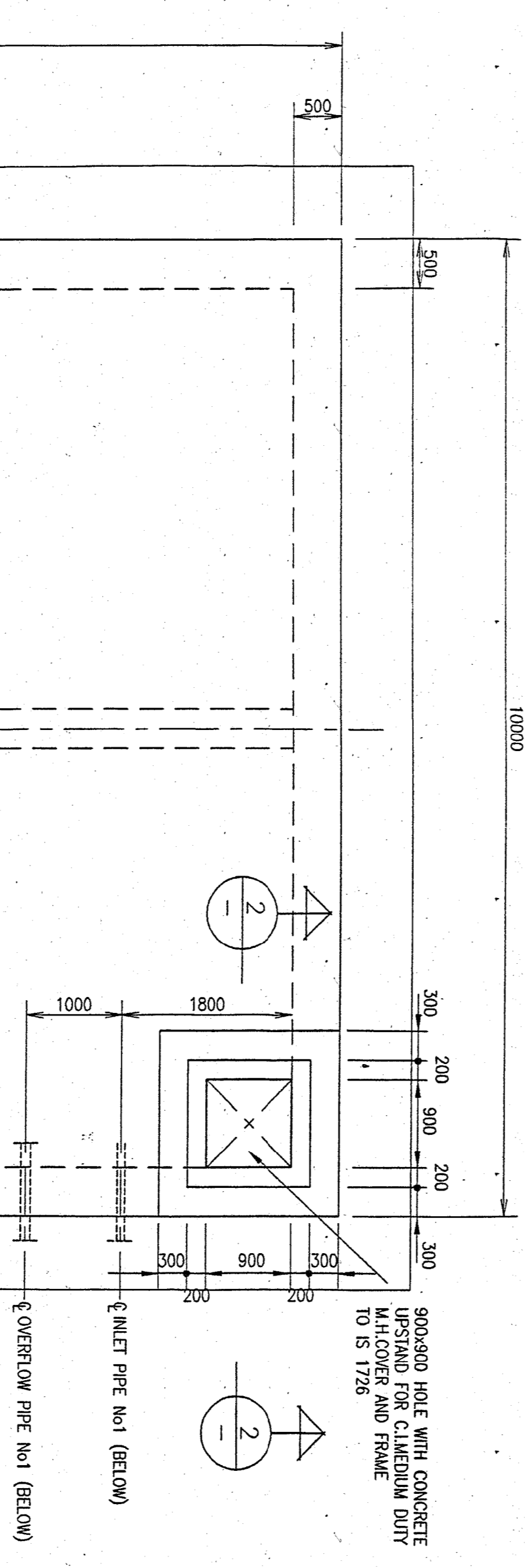
SCALE: 1:50	DATE: 06/06/96	PROJECT NO: 4979	ISSUE NO: 43	REVISED BY: JMC/370
DATE: 06/06/96	PROJECT NO: 4979	ISSUE NO: 43	REVISED BY: JMC/370	DATE: 06/06/96



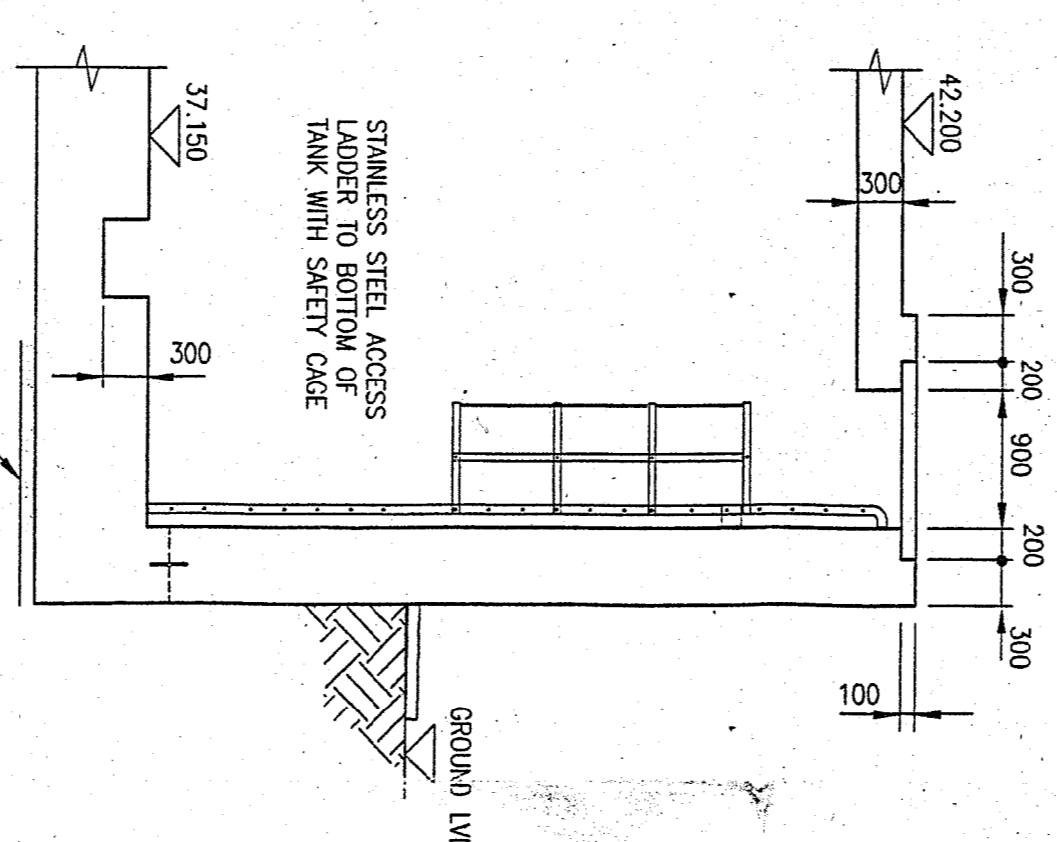
PLAN BASE SLAB



SECTION 1 - 1



P-IN ROOF SLAB

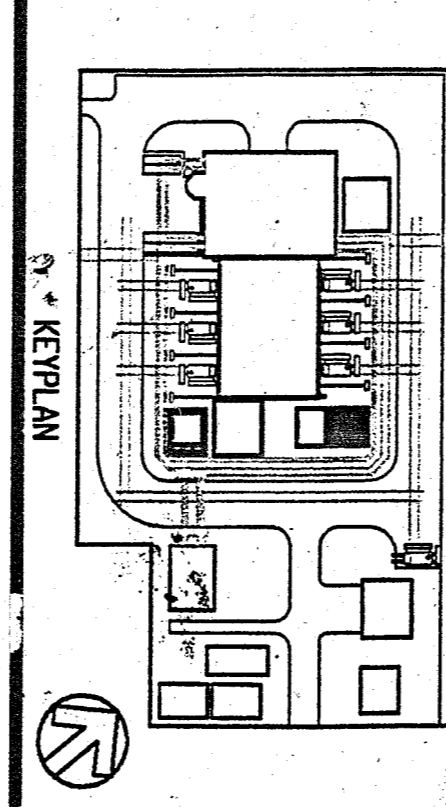


SECTION 2 - 2

NOTE:- ACCESS LADDERS, HANDRAILING AND LOCATIONS OF CAST-IN PIPES FOR INLET WARNING MAKE-UP SUCTION AND FILTERED WATER TOGETHER WITH ANY OTHER HOLES AND CAST-IN ITEMS REQUIRED FOR PLANT OPERATION TO BE AS PLANT MANUFACTURER'S DETAILS.

- DO NOT SCALE**
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL DRAWINGS & SPECIFICATIONS.
  - ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH RELEVANT SPECIFICATIONS AND CURRENT INDIAN STANDARDS.
  - ALL LEVELS ARE EXPRESSED IN METRES AND RELATE TO INDIAN DATUM LEVEL.
  - ALL DIMENSIONS ARE IN MILLIMETRES.
  - ALL CO-ORDINATES RELATE TO THE ESTABLISHED SITE GRID.
  - 25mm CHAMBERS TO BE PROVIDED TO ALL VISIBLE ARRESSES IN THE FINISHED WORK.
  - THIS DRAWING DOES NOT SHOW FINALSISED BUILDERS WORK DETAILS FOR M & E SERVICES.
  - STRUCTURAL CONCRETE TO BE CLASS W25.
  - HANDBOOK AGGREGATE SIZE 20 mm.
  - REINFORCING CONCRETE TO BE CLASS M10.
  - MAXIMUM AGGREGATE SIZE 40 mm.
  - CONCRETE FINISHES:-  
FORMED FACE - F1.  
TOP SURFACE OF GROUND FLOOR SLAB - W2.
  - ALL CAST IN ITEMS TO BE GALVANISED.
  - DO NOT SCALE THIS DRAWING.
  - PIPS THROUGH TANK WALLS TO BE GREAT LINED DUCTILE IRON TO SPECIFICATION ANWA C115-83 WITH FLANGES TO ANS 18.5 (300LB) EACH PIPE FITTED WITH PUDDLE FLANGE.

REV	DATE	BY	DESCRIPTION	CHK	APP
0	22/10/96	TAK	FIRST ISSUE	GS	JH
1			UPDATED TO AS BUILT		
2	31.03.00	KMS	NOT AMENDED AND 100% POINT		
3	4.12.96	KMS	CO-ORDS ADDED		



AS BUILT

**WSP CONSULTING ENGINEERS**

BRANCHES: BOMBAY, CHENNAI, COIMBATORE, DELHI, GUANZHOU, HONGKONG, KUALA LUMPUR, MUMBAI, NEW DELHI, PUNE, SHANGHAI, SINGAPORE, TAIPEI, WASHINGTON, WINCHESTER.

CLIENT: **GEC ALSTHOM**

ARCHITECT: **HUBBARD FORD**

PROJECT: **VIZAG - H.V.D.C. BACK TO BACK PROJECT**

TITLE: **VALVE COOLING WATER STORAGE TANKS GENERAL ARRANGEMENT**

SCALE: 1:50

DATE: SEPT 96

DESIGN/DRAWN: CHKO

CHECKED: JH

PROJECT NO: **4979**

DRAWING NO: **C/1 NC/252**

**WSP GROUP**

1 member of the WSP GROUP

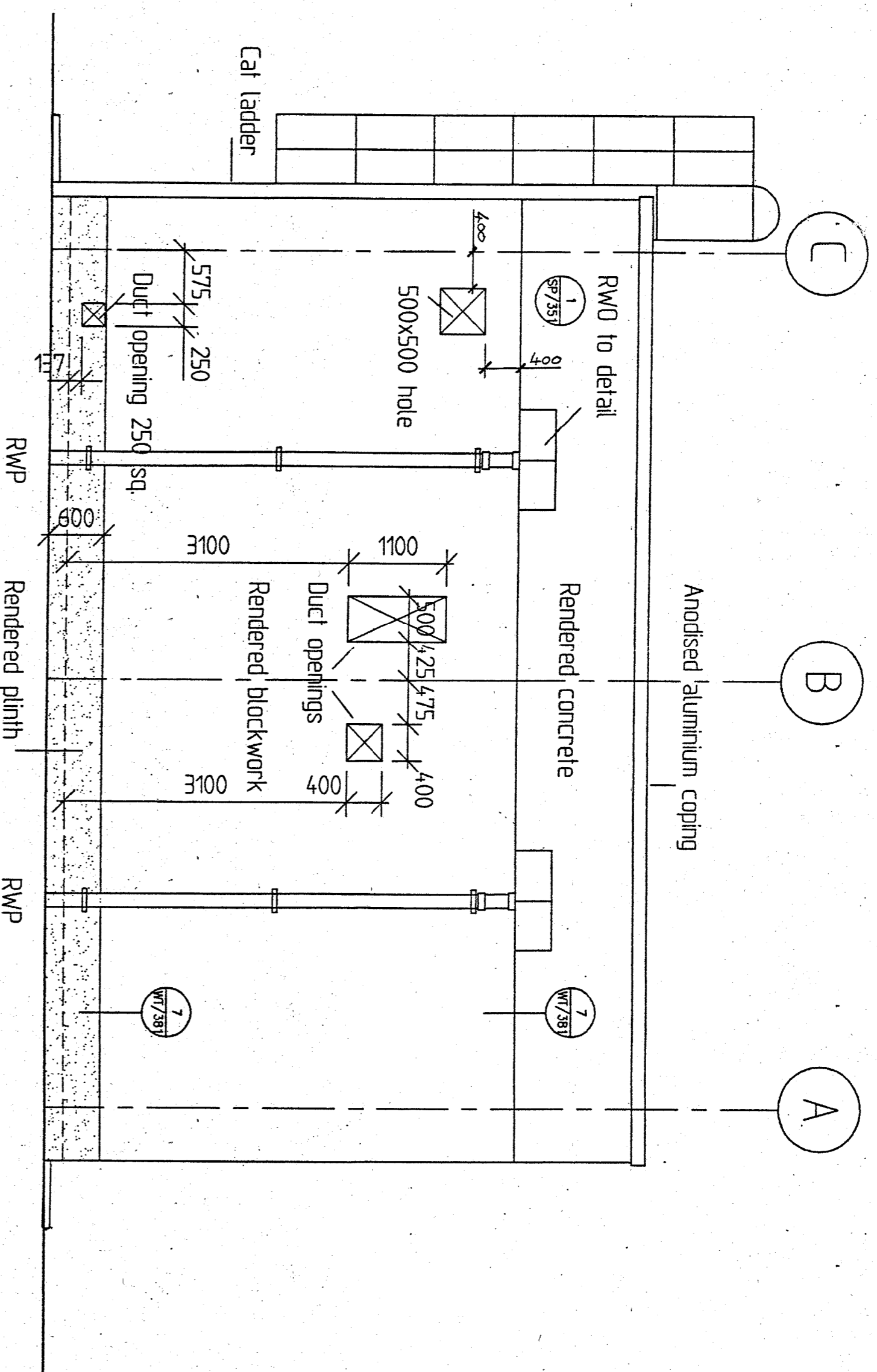




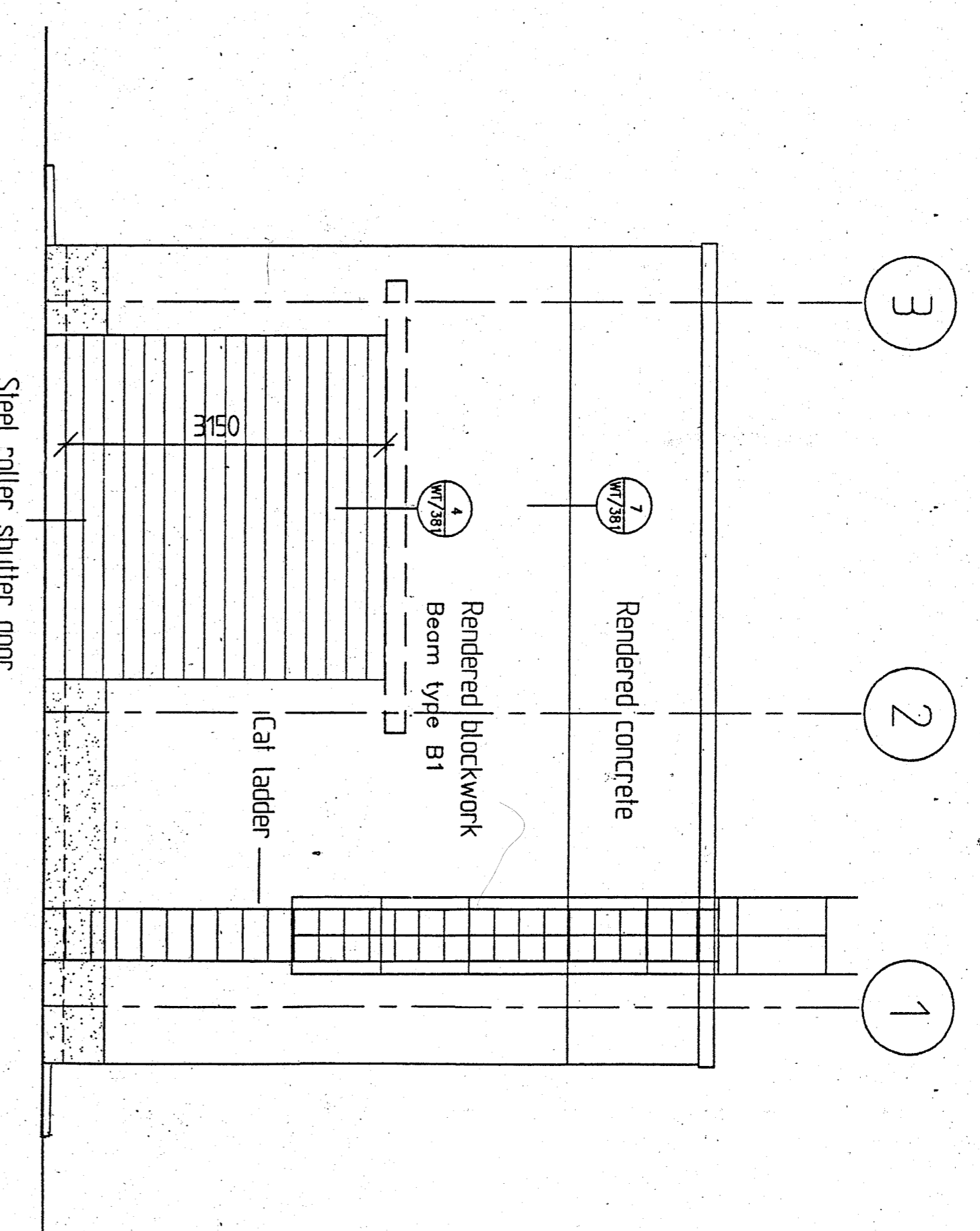
DO NOT SCALE

ALL DIMENSIONS IN MILLIMETRES  
THIS DRAWING TO BE READ IN CONJUNCTION WITH THE  
DETAIL DRAWINGS REFERENCED THEREIN.

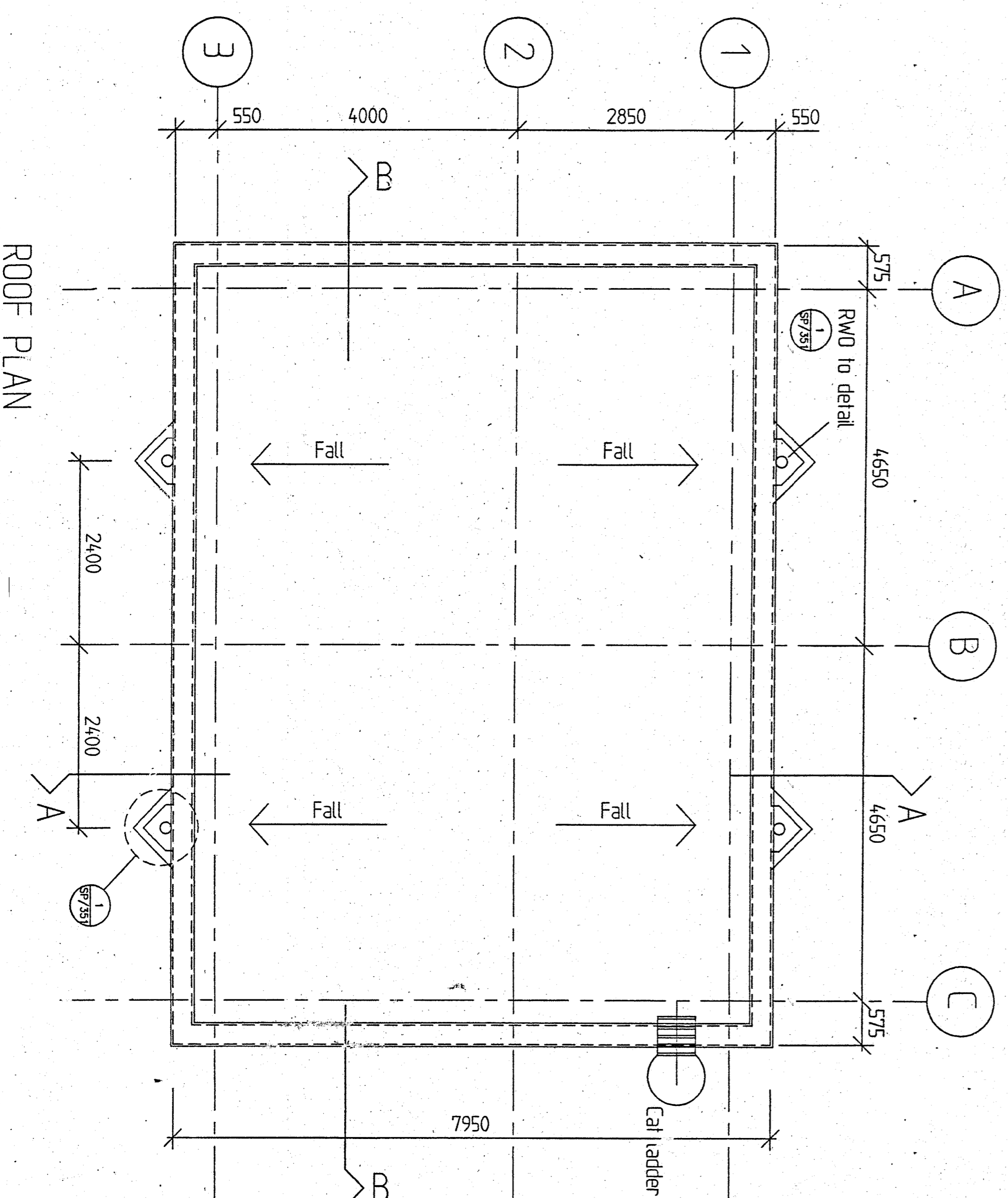
1/2/97



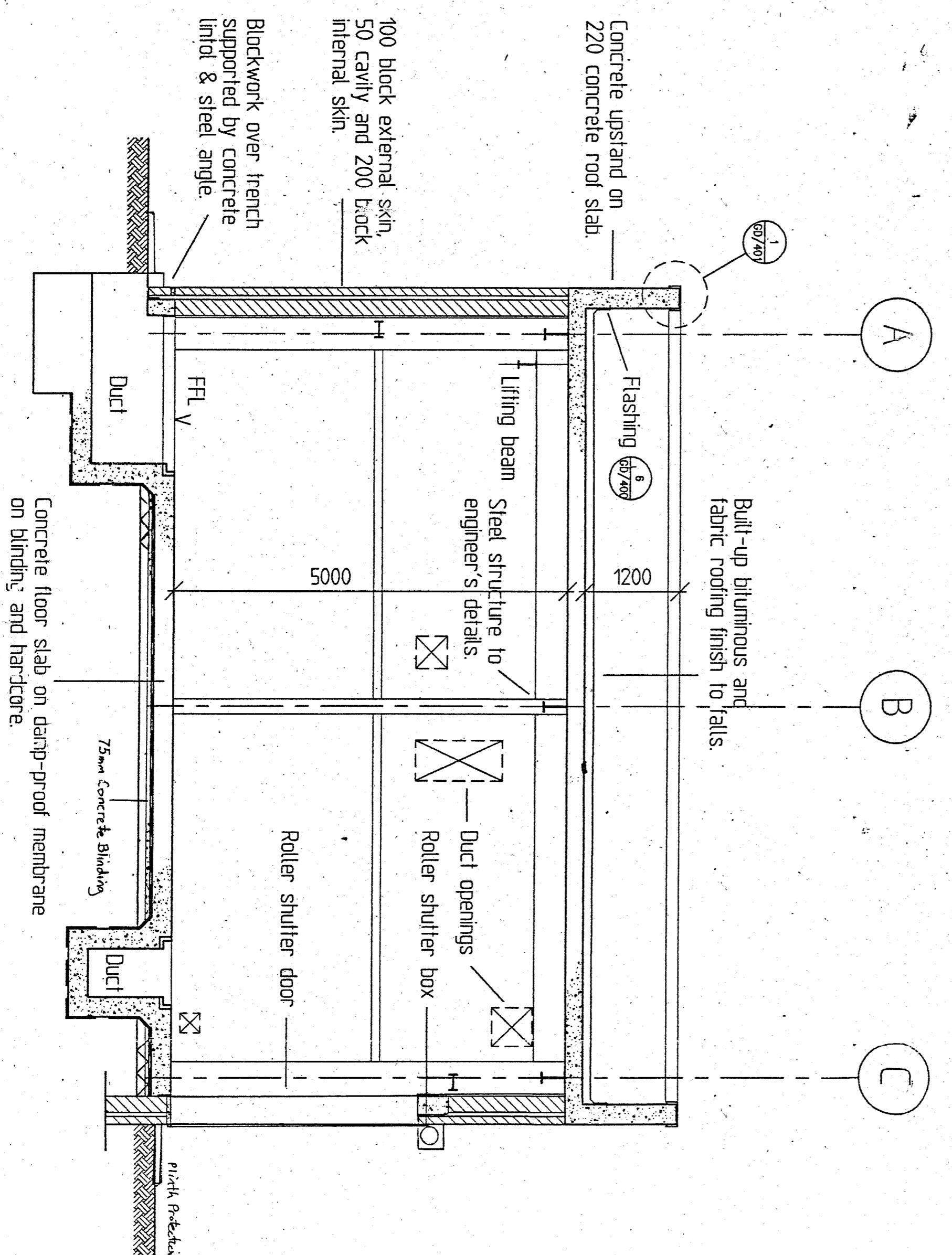
NORTH-EAST ELEVATION



SOUTH-EAST ELEVATION



ROOF PLAN



CROSS SECTION B - B

REV	DATE	BY	CHK	DESCRIPTION
B	31/03/96			AS BUILT
A	25/03/97			REVISED TO AS BUILT
				AS BEH KEYS TO SE ELEVATION

**WSP CONSULTING ENGINEERS**

Tilman House  
131 Upper Richmond Road  
Putney  
LONDON SW15 2TB  
TEL: 0181 780 8000  
FAX: 0181 780 8001

BRANCHES: ENGLAND, WOTWICKHAM, BIRMINGHAM, MANCHESTER, LONDON, CAMBRIDGE, WINCHESTER, DUNDEE, MANCHESTER, WINCHESTER

**GEC ALSTHOM**

**HUBBARD FORD**

**VIZAG - H.V.D.C. BACK TO BACK PROJECT**

**VALVE COOLING PUMPHOUSE GENERAL ARRANGEMENT - 2**

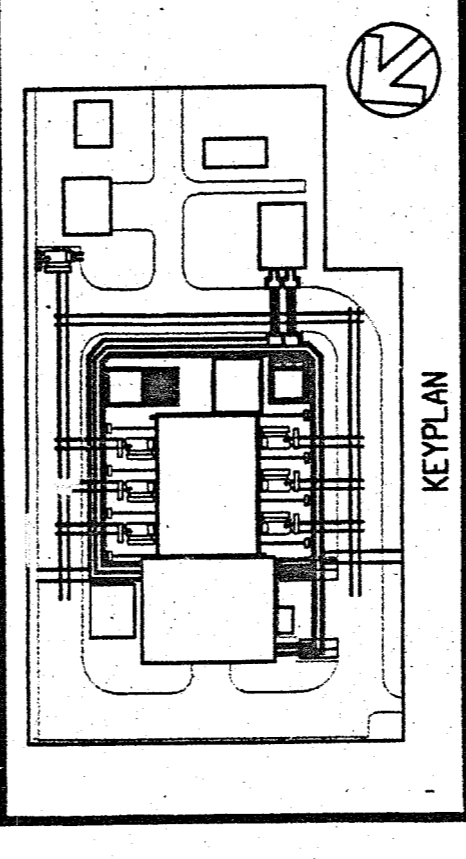
SHEET	DATE	ISSUED BY	CHKD	APP'D	SIT
1/50	15/01/97	AB	TC		AI
PROJECT NO.	4978	DRAWING NO.	/AN/C/371		
REV	A B				

A member of the WSP GROUP

**NOTES:**

- THIS DRAWING IS TO BE FIELD IN CONFORMANCE WITH ALL RELEVANT STRUCTURAL & ARCHITECTURAL DRAWINGS & SPECIFICATIONS.
- ALL MATERIALS AND WORKMANSHIP TO COMPLY WITH RELEVANT SPECIFICATIONS AND CURRENT INDIAN STANDARDS.
- FOR STRUCTURAL ARRANGEMENT SEE DRG. No. 497 / 20 / C / BCC.
- ALL LEVELS ARE EXPRESSED IN METRES AND RELATE TO INDIAN DATUM LEVEL.
- ALL DIMENSIONS ARE IN MILLIMETRES.
- ALL CO-ORDINATES RELATE TO THE ESTABLISHED SITE GRID.
- STRUCTURAL CONCRETE TO BE CLASS M25 MAXIMUM AGGREGATE SIZE 20 mm.
- ALL REINFORCEMENT TO BE IN ACCORDANCE WITH I.S. 432, I.S. 1566 AND I.S. 1786.
- ALL REINFORCEMENT TO BE CUT AND BENT IN ACCORDANCE WITH I.S. 2502.
- MINIMUM CONCRETE COVER TO BE - 25mm
- REINFORCEMENT IS NOTED THUS:-
- REINFORCEMENT LAPS UNLESS NOTED TO BE:-
- REINFORCEMENT SHOWN ON THIS DRAWING IS LISTED ON BENDING SCHEDULE NUMBERS C/V/C/B/S SHTS. 1 TO 3.
- DO NOT SCALE THIS DRAWING.
- FOR DETAILS OF CAST-IN HOLDING DOWN BOLTS SEE STEELWORK DRAWINGS.

REV	DATE	BY	DESCRIPTION	CHK	APP
0	DEC '96	GP	INITIAL ISSUE		



DRAWING STATUS  
**LEVEL 3**

WSP Group plc

**WSP KENCHINGTON FORD CONSULTING ENGINEERS**  
 William Kenning House  
 92 Redcliff Street  
 BRISTOL BS1 6LU  
 TEL 0322 240511  
 FAX 0322 240514  
 BRANCH OFFICES:-  
 BIRMINGHAM  
 BIRMINGHAM  
 BRISTOL  
 BUCKINGHAM  
 GLASGOW  
 LONDON  
 MANCHESTER  
 NEWCASTLE  
 NOTTINGHAM  
 OXFORD  
 PLYMOUTH  
 SOUTHAMPTON  
 WINDCHESTER

CLIENT: **G.E.C. ALSTHOM.**

ARCHITECT: **HUBBARD FORD.**

PROJECT: **VIZAG H.V.D.C. BACK TO BACK PROJECT.**

DRAWING TITLE: **VALVE COOLING PUMPHOUSE ROOF ARRANGEMENT. R.C. DETAILS.**

SCALE: 1:50  
 DATE: DEC '96  
 DESIGN/DRAWN: P.A.L./pb.  
 CHECKED: [Signature]  
 APPROVED: [Signature]  
 PROJECT No. **4979**  
 DRAWING No. **C/11/C/858**

