

**JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
GOVERNMENT OF GUJARAT**

**THE RECONSTRUCTION SUPPORT
FOR THE GUJARAT-EARTHQUAKE DISASTER
IN THE DEVASTATED AREAS IN INDIA**

APPENDICES

OCTOBER, 2002

**YAMASHITA SEKKEI INC.
NIHON SEKKEI, INC.**

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1. GEOTECHNICAL INVESTIGATION

(1) Mundra Site

(2) Anjar Site

2. DRAWINGS

1. GEOTECHNICAL INVESTIGATION

ST1071543

YAMASHITA SEKKEI INC.

TOKYO, JAPAN

**TECHNICAL REPORT OF
GEOTECHNICAL INVESTIGATION**

FOR

**THE RECONSTRUCTION SUPPORT FOR THE
GUJARAT-EARTHQUAKE DISASTER IN THE
DIVASTATED AREAS IN INDIA**

AT

**SHRI BUDHIBAI MATERNITY HOME,
GOVERNMENT OF GUJARAT, MUNDRA**

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Abstract

The report is presented herewith analyses based on thorough study of the geotechnical investigation results.

A complete geotechnical investigation was undertaken by us to obtain the required subsurface information to study and to indicate the nature and behavior of soil under the application of loads of community health centers at Anjar and Mundra to be reconstructed, after devastation caused by Bhuj Earthquake.

Such information were obtained form the following:

1. By making bore holes and collecting disturbed and undisturbed soil samples.
2. By conducting standard penetration tests.
3. By testing soil samples in laboratory for physical properties and strength characteristic of soils.
4. By analysis of results.

The results obtained from above were interpreted, analyzed and following conclusions are derived.

1. The study of soil investigation at the site at various depths and various locations indicate the layers as under:

Bore No.	Depth (m)	Description
BH-1	0.00 to 10.0	Clayey Sand (SC)
BH-2	0.00 to 10.0	Clayey Sand (SC)

2. Isolated footings are suggested for proposed structures. The safe bearing capacities are worked out for various widths of isolated square footings at various depths and are suggested in Appendix - I. The depths of footings for which bearing capacities are calculated are considered with respect to the existing ground level.
3. Drainage properties of soil is fair.
4. Ground water table is not encountered upto the depth of Investigation.
5. Any variation found in stratification in any of the foundation location, shall be studied thoroughly and brought to our notice before executing the foundation work.

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GEOTECHNICAL INVESTIGATION REPORT FOR THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DIVASTATED AREAS IN INDIA AT SHRI BUDHIBAI MATERNITY HOME, MUNDRA

1.0 Introduction

For foundation analysis of the structure on the site, It is necessary

1. To determine the soil profile of the site
2. To know physical properties and strength characteristics of soil at various depths.

For this purpose, the geotechnical investigation was entrusted to us by Yamashita Sekkei Inc. The following points were decided.

1. No. Bore hole – 2
2. Depth of bore hole – 10.0
3. Standard penetration tests at every 1.0 m interval.
4. Undisturbed samples at every 3.0 m interval.
5. Collection of disturbed samples.
6. To find physical properties and strength characteristics of undisturbed samples.
7. To find physical properties of disturbed samples.
8. To locate ground water table, if any.
9. Interpretation of results, Analysis.
10. Recommendations.

Based on the above points the detailed Geotechnical Investigation Program included the following :

(A) Field Investigation

1. Drilling of bore hole.
2. Collection of soil samples (Disturbed and Undisturbed)
3. Conducting Standard Penetration Test.

(B) Laboratory Investigation

1. Bulk Density and moisture content
2. Grain size analysis
3. Index properties
4. Shear tests (Direct shear test)
5. Consolidation test
6. Unconfined Compression Test



(c) Recommendations

Based on above investigations, the results are to be obtained. The findings would be based on interpretation of Results, Analysis and computations as per relevant Indian standards.

2.0 Field Investigation

2.1 Boring

The exploratory boreholes of 150 mm diameter were drilled by Rotary Drilling. The depth of the test bore at the proposed location is as under:

Bore Hole No.	Location	Reduced Level of Bore Hole (m)	Depth Investigated (m)
BH - 1	N 1053.4 E 1085.8	99.3	10.0
BH - 2	N 1085.3 E 1074.5	99.6	10.0

2.2 Sampling

2.2.1 Disturbed samples

Disturbed samples were collected during boring and from the split spoon sampler. The samples recovered were logged, labeled and placed in polyethylene bags and sent to laboratory for testing.

2.2.2 Undisturbed samples

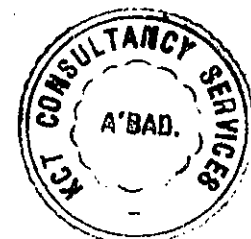
Undisturbed soil samples were collected in thin walled Shelby tubes, as per IS 2132. The samples were sealed with wax, labeled and transported to our laboratory at Paldi, Ahmedabad for testing.

2.2.3 Standard penetration test

The standard penetration tests were conducted in accordance with IS:2131 in test bore at every 1.0 m. The test gives N - Value, the blow counts of last 30 cm penetration of split spoon sampler with 65 kg hammer falling from 75 cm height. These values are given in table no. 1.

3.0 Laboratory investigation

The following laboratory tests were conducted on undisturbed and disturbed soil samples collected from various depths to find physical properties and strength characteristics. For measurements of soil properties in the laboratory the following table lists various laboratory tests, which were conducted in the laboratory.



Tests	Recommended procedure	Type Samples
1. Sample Penetration	IS 2720 Pt I	DS / UDS
2. Moisture Content	IS 2720 Pt II	DS / UDS
3. Dry Unit Weight	LAMBE	UDS
4. Specific Gravity	IS 2720 Pt III	DS
5. Liquid Limit	IS 2720	DS
6. Plastic Limit	IS 2720 Pt V	DS
7. Grain Size Analysis	IS 2720 Pt IV	DS
8. Soil Classification	IS 1498	DS / UDS
9. Consolidation	IS 2720 Pt XV	UDS
10. U.Comp. Strength	IS 2720 Pt X	UDS
11. Direct Shear Test	IS 2720 Pt X	UDS

4.0 Results

- 1) Locations of boreholes are shown in fig no. 1
- 2) Bore log details are shown in fig No. 2 & 3
- 3) SPT N values are appended in table no. 1
- 4) Results of laboratory permeability tests are given in table no. 2
- 5) Laboratory test results of Bore holes are appended in table nos. 3 & 4
- 6) Results of the grain size analysis of are given in fig nos. 4 & 5
- 7) Results of the shear test are given in fig nos. 6 & 7

5.0 General stratification

Stratifications observed in bore holes are as described below :-

Bore No.	Depth (m)	Description
BH-1	0.00 to 10.0	Clayey Sand (SC)
BH-2	0.00 to 10.0	Clayey Sand (SC)

6.0 Computation of Safe Bearing Capacity

The detailed calculations of the safe Bearing capacity for various widths of isolated square footings, at various depths are given in Appendix- I.



7.0 Conclusions

1. The study of soil investigation at the site at various depths and various locations indicate the layers as shown in general stratification.
2. Isolated footings are suggested for proposed structures. The safe bearing capacities are worked out for various widths of isolated square footings at various depths and are suggested in Appendix - I. The depths of footings for which bearing capacities are calculated are considered with respect to the existing ground level.
3. Drainage properties of soil is fair.
4. Ground water table is not encountered upto the depth of Investigation.
5. Any variation found in stratification in any of the foundation location, shall be studied thoroughly and brought to our notice before executing the foundation work.

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APPENDIX - I

Calculation of Safe Bearing Capacity Based on Shear Parameters C - ϕ

$$q_u = 1 / FS [2 / 3 C N_c dc Sc ic + \gamma d (N_q - 1) Sq dq iq Wq + 0.5 \gamma B N_y Sy dy iy W_y]$$

Project : Government of Gujarat Hospital, Shri Budhibai Maternity Home - Mundra

For Isolated Square Footing

Sr. No.	Length of Footing m	Width of Footing of Footing m	Depth of Footing m	C Kg/cm ²	ϕ degree	Nc	Sc	dc	ic	γ gm/cc	Nq - 1	Sq	dq	iq	0.5 γ	Ny	Sy	dy	iy	Water Table Correction		SBC t/m ²
																				Wq	Wy	
1	1.80	1.80	1.80	0.29	21	10.58	1.30	1.26	1.00	1.64	2.71	1.20	1.13	1.00	0.82	2.41	0.80	1.13	1.00	1.00	1.00	19
2	2.00	2.00	1.80	0.29	21	10.58	1.30	1.23	1.00	1.64	2.71	1.20	1.12	1.00	0.82	2.41	0.80	1.12	1.00	1.00	1.00	19
3	2.30	2.30	1.80	0.29	21	10.58	1.30	1.20	1.00	1.64	2.71	1.20	1.10	1.00	0.82	2.41	0.80	1.10	1.00	1.00	1.00	19
4	1.80	1.80	2.00	0.29	21	10.58	1.30	1.29	1.00	1.64	2.71	1.20	1.14	1.00	0.82	2.41	0.80	1.14	1.00	1.00	1.00	20
5	2.00	2.00	2.00	0.29	21	10.58	1.30	1.26	1.00	1.64	2.71	1.20	1.13	1.00	0.82	2.41	0.80	1.13	1.00	1.00	1.00	20
6	2.30	2.30	2.00	0.29	21	10.58	1.30	1.22	1.00	1.64	2.71	1.20	1.11	1.00	0.82	2.41	0.80	1.11	1.00	1.00	1.00	20
7	1.80	1.80	2.30	0.29	21	10.58	1.30	1.33	1.00	1.64	2.71	1.20	1.16	1.00	0.82	2.41	0.80	1.16	1.00	1.00	1.00	19
8	2.00	2.00	2.30	0.29	21	10.58	1.30	1.30	1.00	1.64	2.71	1.20	1.15	1.00	0.82	2.41	0.80	1.15	1.00	1.00	1.00	21
9	2.30	2.30	2.30	0.29	21	10.58	1.30	1.26	1.00	1.64	2.71	1.20	1.13	1.00	0.82	2.41	0.80	1.13	1.00	1.00	1.00	21
10	1.80	1.80	2.50	0.29	21	10.58	1.30	1.36	1.00	1.64	2.71	1.20	1.18	1.00	0.82	2.41	0.80	1.18	1.00	1.00	1.00	21
11	2.00	2.00	2.50	0.29	21	10.58	1.30	1.32	1.00	1.64	2.71	1.20	1.16	1.00	0.82	2.41	0.80	1.16	1.00	1.00	1.00	22
12	2.30	2.30	2.50	0.29	21	10.58	1.30	1.28	1.00	1.64	2.71	1.20	1.14	1.00	0.82	2.41	0.80	1.14	1.00	1.00	1.00	22

K. K. Thaker



Notations

C	Cohesion
ϕ	Angle of internal friction of soil
DS	Disturbed Sample
UDS	Undisturbed Sample
NMC	Natural Moisture Content
NP	Non Plastic Soils
G	Specific Gravity
G	Gravel Content
M	Silt Content
S	Sand Content
C	Clay Content
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
SP	Swelling Pressure
FS	Free Swell Index
R.Q.D.	Rock Quality Designation
Cc	Compression Index
K	Coefficient of Permeability
UCS	Unconfined Compression
N	SPT Value
BH	Bore Hole
Suffix	The Number of Bore Holes
Nc, Nq, Ny	Bearing Capacity Factor
Sc, Sq, Sy	Shape Factors
γ	Density of Soil
D	Depth of foundation
FS	Factor of Safety
Cv	Coefficient of consolidation
UU	Unconsolidated undrained triaxial test
CU	Consolidated undrained triaxial test
CD	Consolidated drained triaxial test
GC	Clayey Gravels
GP	Poorely Graded Gravels
GW	Well Graded Gravels
SC	Clayey Sand
SM	Silty Sand
SW	Wel Graded Sand
SP	Poorly Graded Sand
CH	Clays of High Plasticity
CI	Clays of Intermediate Plasticity
CL	Clays of Low Plasticity
MH	Silts of High Plasticity
MI	Silts of Intermediate Plasticity
ML	Silts of Low Plasticity



REFERENCE

- | | |
|-----------------------|--|
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IBT Publishing & Distributors Delhi. |



TABLE NO. - 1

S.P.T. " N " Values

Sr. No.	Bore Hole No.	Depth (m)	S.P.T. N Value			
			N1 (0 - 15 cm)	N2 (15 - 30cm)	N3 (30 - 45 cm)	N
1	BH - 1	1.0	4	6	9	15
2	BH - 1	3.0	5	7	11	18
3	BH - 1	4.0	6	10	10	20
4	BH - 1	6.0	7	10	13	23
5	BH - 1	7.0	9	11	15	26
6	BH - 1	9.0	11	14	17	31

Sr. No.	Bore Hole No.	Depth (m)	S.P.T. N Value			
			N1 (0 - 15 cm)	N2 (15 - 30cm)	N3 (30 - 45 cm)	N
1	BH - 2	1.0	4	6	8	14
2	BH - 2	2.0	5	7	10	17
3	BH - 2	4.0	8	7	12	19
4	BH - 2	5.0	10	9	16	25
5	BH - 2	7.0	10	12	17	29
6	BH - 2	8.0	12	15	15	30
7	BH - 2	10.0	14	15	19	34

TABLE NO. - 2

Results of laboratory permeability

Sr. No.	Bore Hole No.	Depth (m)	Laboratory permeability (mm / s)
1	BH - 1	1.00	0.62×10^{-3}
2	BH - 1	2.00	0.65×10^{-3}
3	BH - 2	1.00	0.56×10^{-3}
4	BH - 2	3.00	0.60×10^{-3}

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RESULTS OF LABORATORY TEST

Project :- Government of Gujarat Hospital, Shri Buchibhal Maternity Home - Mundra

Co ordinates :- N1085.3 E1074.5

BH No. :- 2

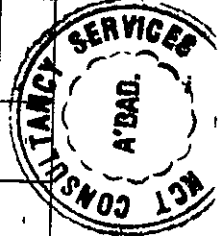
Reduced Level :- 99.60 m

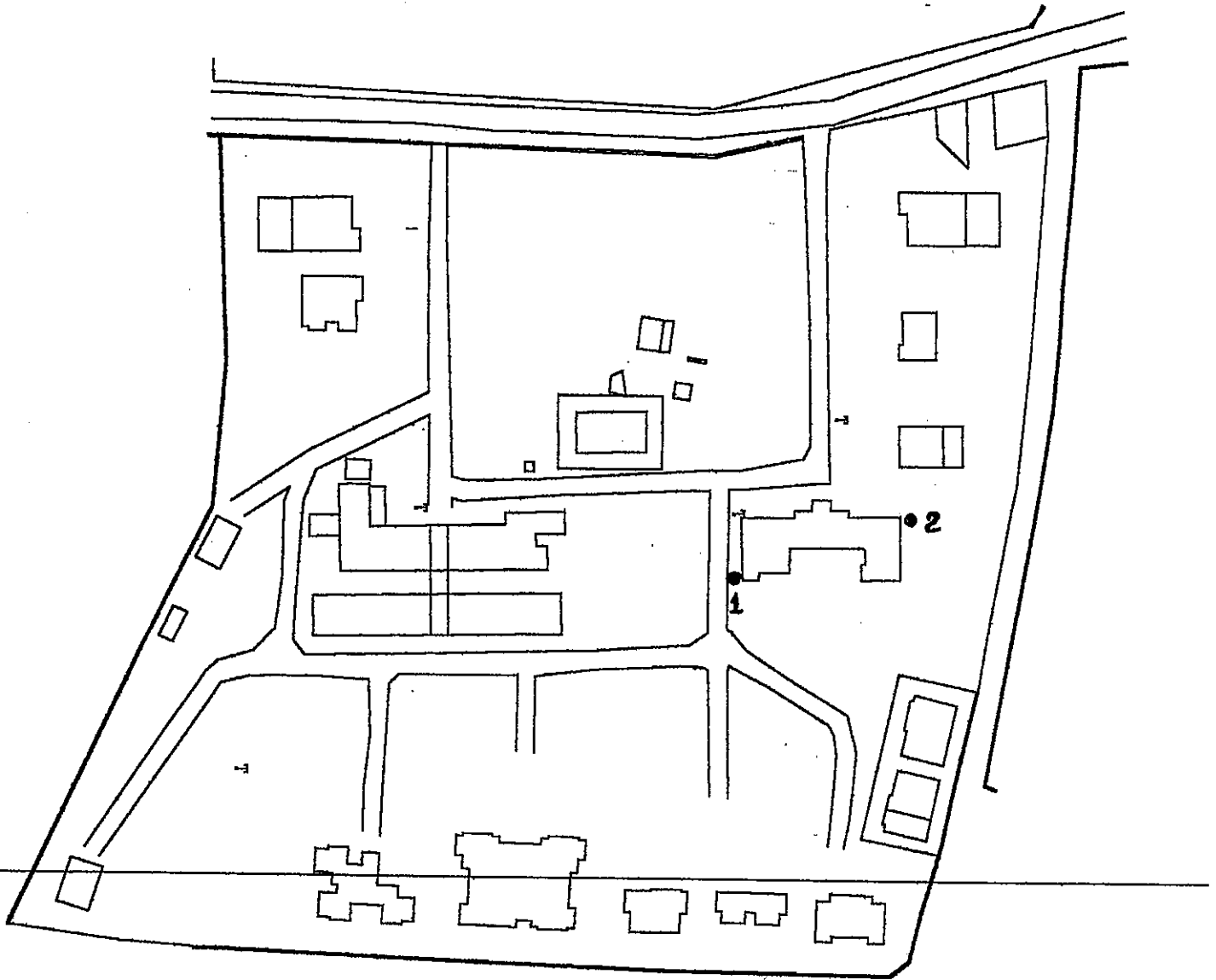
Sr No	Depth of Sample in m	Type of Sample	Field Density gm/cc	NMC %	Sp. Gr.	Grain Size Analysis				Consistency limits				SP Kg/cm ² %	FS %	Soil Classification	Shear Parameter		UCS Kg/cm ²	Comp Index Cc	N Value (No)	ROD %	Voids Ratio	Porosity %	
						G %	S %	M %	C %	LL %	PL %	PI %	SL %				C Kg/cm ²	φ Degree							
1	0.00	DS	-	7.84	-	0	84	13	3	26	17	9	-	-	SC	-	-	-	-	-	-	-	-	-	-
2	1.00	SPT	-	7.87	-	0	87	10	3	21	13	8	-	-	SC	-	-	-	-	-	-	14	-	-	-
3	2.00	SPT	-	7.93	-	0	83	13	4	20	12	8	-	-	SC	-	-	-	-	-	-	17	-	-	-
4	3.00	UDS	1.69	7.95	2.65	0	85	11	4	25	16	9	-	-	SC	0.32	24	-	-	-	-	-	0.57	36.2	-
5	4.00	SPT	-	8.02	-	0	86	12	2	22	14	8	-	-	SC	-	-	-	-	-	-	19	-	-	-
6	5.00	SPT	-	8.07	-	0	85	11	4	22	14	8	-	-	SC	-	-	-	-	-	-	25	-	-	-
7	6.00	UDS	1.70	8.09	2.65	0	84	12	4	28	20	8	-	-	SC	0.36	32	-	-	-	-	-	0.56	35.8	-
8	7.00	SPT	-	8.21	-	0	89	9	2	26	18	8	-	-	SC	-	-	-	-	-	-	29	-	-	-
9	8.00	SPT	-	8.27	-	0	85	13	2	21	12	9	-	-	SC	-	-	-	-	-	-	30	-	-	-
10	9.00	UDS	1.73	8.30	2.66	0	84	13	3	27	19	8	-	-	SC	0.87	30	-	-	-	-	-	0.54	35.0	-
11	10.00	SPT	-	8.34	-	0	87	10	3	27	19	8	-	-	SC	-	-	-	-	-	-	34	-	-	-

For KCT Consultancy Services,

K.K. Thakur
(Dr. K.C. Thakur)

Table No. - 4
(11)





**Locations of Bore
Holes at Budhibai
Maternity Home,
Mundra**

- K.K. Thakur

Fig.1
(12)



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BORE LOG DATA SHEET

Project : Government of Gujarat Hospital, Shri Budhibai Maternity Home - Mundra

Coordinates: N 1053.4 E 1085.8

Reduce Level: 99.3 m

Bore Hole No. : BH - 1

Termination Depth : 10.0 m

Field Test	Nos.	Sample	Nos.
SPT	6	DS	1
		UDS	4

Method of Boring	Casing	Bore Dia. (mm)	Depth (m)	Thickness of Layer (m)	Notation	Soil Description	S.P.T. "N" Value											S.P.T. No. of blows	Undisturbed Sample	Disturbed Sample/S.P.T.	R.Q.D.	Remarks						
							10	20	30	40	50	60	70	80	90	100												
Rotary Drilling Method			0.00															0.00										
			0.50																									
			1.00																									
			1.50																									
			2.00																									
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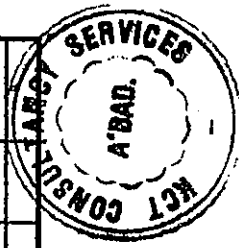


Fig No.2
(13)

K.K.Thakker
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BORE LOG DATA SHEET

Project : Government of Gujarat Hospital, Shri Budhibal Maternity Home - Mundra
 Coordinates: N 1085.3 E 1074.5
 Reduce Level: 99.6 m
 Bore Hole No. : BH - 2
 Termination Depth : 10.0 m

Field Test	Nos.	Sample	Nos.
SPT	7	DS	1
		UDS	3

Method of Boring	Casing	Bore Dia. (mm)	Depth (m)	Thickness of Layer (m)	Notation	Soil Description	S.P.T. "N" Value											S.P.T. No. of blows	Undisturbed Sample	Disturbed Sample	Sample/S.P.T.	R.Q.D.	Remarks		
							10	20	30	40	50	60	70	80	90	100									
Rotary Drilling Method	Not Used	100 mm	0.00			Clayey Sand (SC)													0.00						
			0.50																		1.00				
			1.00																			2.00			
			1.50																				3.00		
			2.00																				4.00		
			2.50																				5.00		
			3.00																				6.00		
			3.50																				7.00		
			4.00																				8.00		
			4.50																				9.00		
			10.00																10.00						

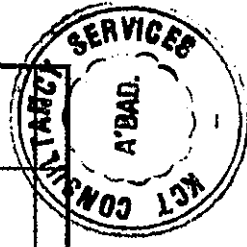


Fig. No. 3
(14)

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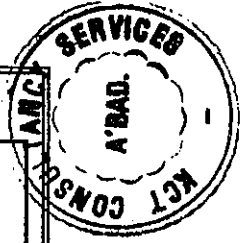
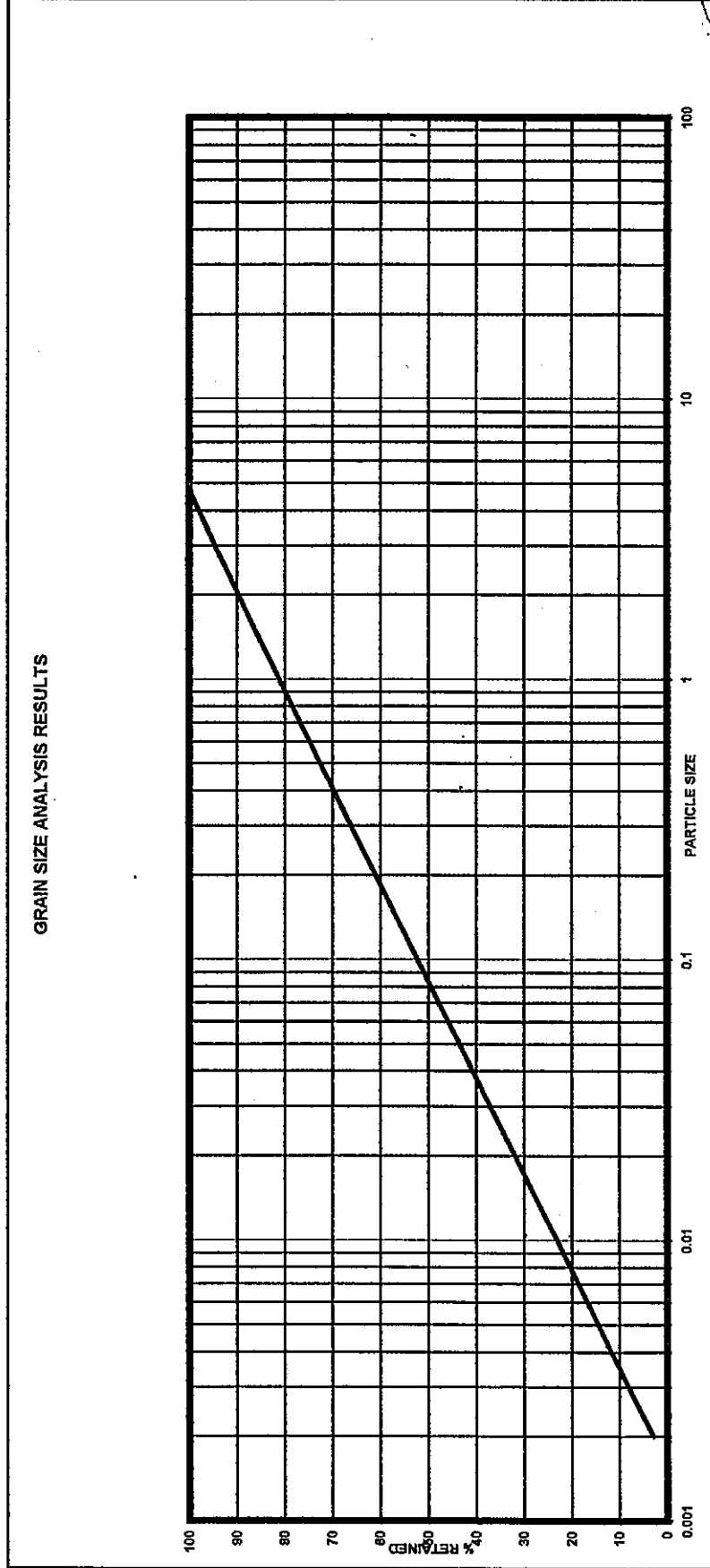


Project :- Government of Gujarat Hospital, Shri Budhibal Maternity Home - Mundra

Bore Hole No :- BH - 1

Depth :- 4.00 m

GRAIN SIZE ANALYSIS RESULTS



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Fig No. :- 4
(4/4)



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Project :- Government of Gujarat Hospital, Shri Budhibal Maternity Home - Mundra

Bore Hole # BH - 1

Depth :- 2.00

RESULTS OF DIRECT SHEAR TEST

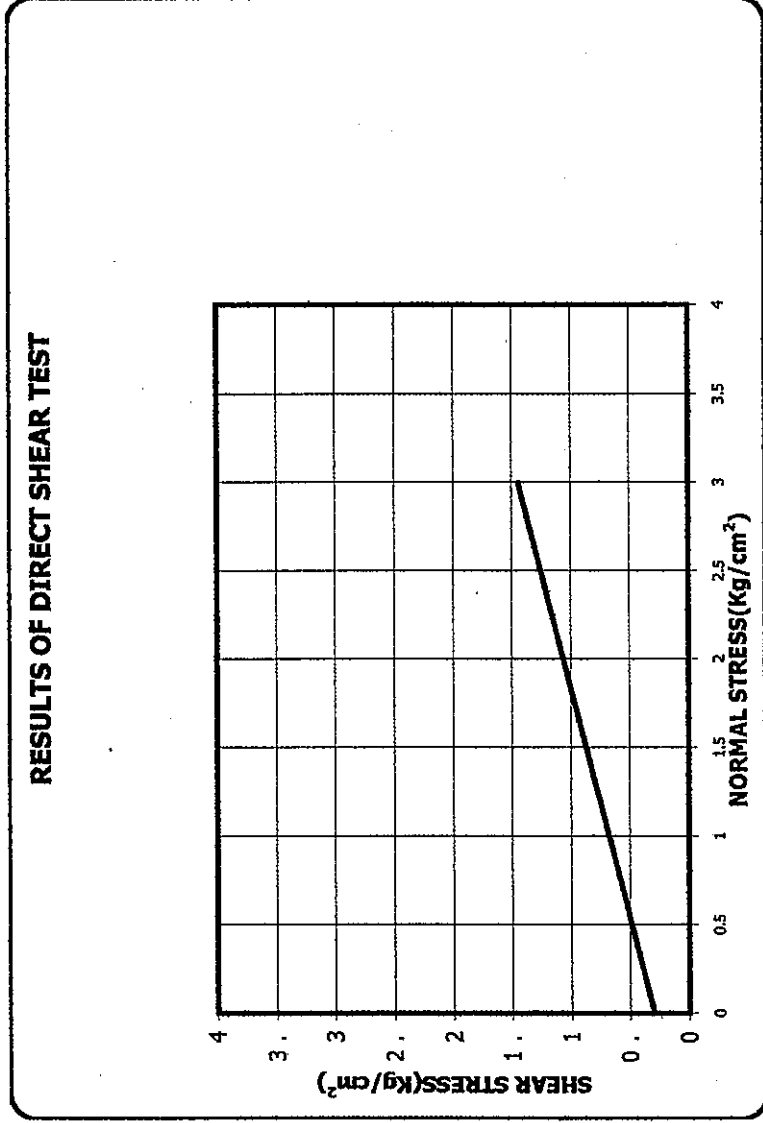


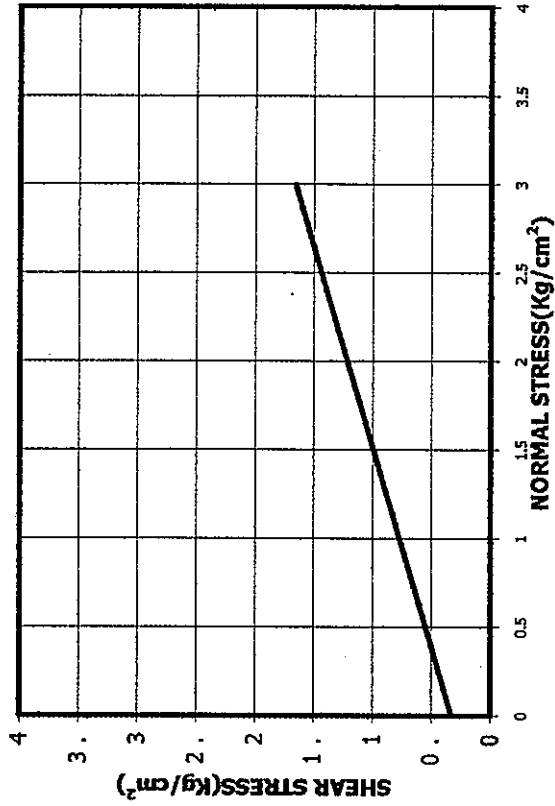
Fig No. - 6
(17)

K.K. Thaker
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Project :- Government of Gujarat Hospital, Shri Budhibai Maternity Home - Mundra

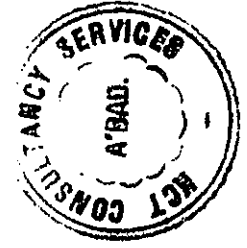
**Bore Hole No. BH - 2
Depth :- 3.00**

RESULTS OF DIRECT SHEAR TEST



K.K. Thaker
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Fig No. - 7
(18)



ST/07/542

YAMASHITA SEKKEI INC.

TOKYO, JAPAN

TECHNICAL REPORT OF

GEOTECHNICAL INVESTIGATION

FOR

**THE RECONSTRUCTION SUPPORT FOR THE
GUJARAT-EARTHQUAKE DISASTER IN THE
DIVASTATED AREAS IN INDIA**

AT

RAFFRAL HOSPITAL, ANJAR

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Abstract

The report is presented herewith analyses based on thorough study of the geotechnical investigation results.

A complete geotechnical investigation was undertaken by us to obtain the required subsurface information to study and to indicate the nature and behavior of soil under the application of loads of community health centers at Anjar and Mundra to be reconstructed, after devastation caused by Bhuj Earthquake.

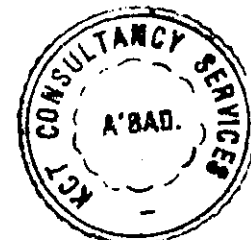
Such information were obtained form the following:

1. By making bore holes and collecting disturbed and undisturbed soil/rock samples.
2. By conducting standard penetration tests.
3. By testing soil/rock samples in laboratory for physical properties and strength characteristic of soils.
4. By analysis of results.

The results obtained from above were interpreted, analyzed and following conclusions are derived.

1. The study of soil investigation at the site at various depths and various locations indicate the layers as under:

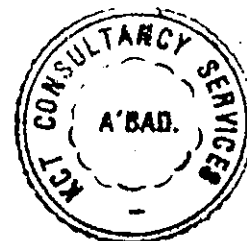
Bore No.	Depth (m)	Description
BH-1	0.00 to 1.40	Clayey Sand (SC)
	1.40 to 10.0	Soft Weathered Rock
BH-2	0.00 to 1.30	Clayey Sand (SC)
	1.30 to 10.0	Soft Weathered Rock
BH-3	0.00 to 0.60	Clayey Sand (SC)
	0.60 to 10.0	Soft Weathered Rock
BH-4	0.00 to 0.80	Clayey Sand (SC)
	0.80 to 10.0	Soft Weathered Rock
BH-5	0.00 to 1.00	Clayey Sand (SC)
	1.00 to 10.0	Soft Weathered Rock
BH-6	0.00 to 0.80	Clayey Sand (SC)
	0.80 to 10.0	Soft Weathered Rock



2. Isolated footings are suggested for proposed structures. The safe bearing capacities are worked out for various widths of isolated square footings at various depths and are suggested in Appendix - I. The depths of footings for which bearing capacities are calculated are considered with respect to the existing ground level.
3. Drainage properties of soil is fair in top layer of clayey soils and poor in case of weathered rock.
4. Ground water table is not encountered upto the depth of Investigation.
5. Any variation found in stratification in any of the foundation location, shall be studied thoroughly and brought to our notice before executing the foundation work.

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GEOTECHNICAL INVESTIGATION REPORT FOR THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DIVASTATED AREAS IN INDIA

1.0 Introduction

For foundation analysis of the structure on the site, It is necessary

1. To determine the soil profile of the site
2. To know physical properties and strength characteristics of soil at various depths.

For this purpose, the geotechnical investigation was entrusted to us by Yamashita Sekkei Inc. The following points were decided.

1. No. Bore hole – 6
2. Depth of bore hole – 10.0
3. Standard penetration tests at every 1.0 m interval.
4. Undisturbed samples at every 3.0 m interval.
5. Collection of disturbed samples.
6. To find physical properties and strength characteristics of undisturbed samples.
7. To find physical properties of disturbed samples.
8. To locate ground water table, if any.
9. Interpretation of results, Analysis.
10. Recommendations.

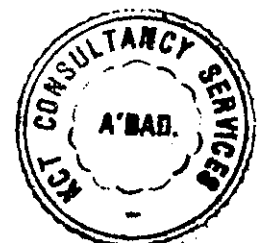
Based on the above points the detailed Geotechnical Investigation Program included the following :

(A) Field Investigation

1. Drilling of bore hole.
2. Collection of soil / rock samples (Disturbed and Undisturbed)
3. Conducting Standard Penetration Test.

(B) Laboratory Investigation

1. Bulk Density and moisture content
2. Grain size analysis
3. Index properties
4. Shear tests (Direct shear test)
5. Consolidation test
6. Unconfined Compression Test



(c) Recommendations

Based on above investigations, the results are to be obtained. The findings would be based on interpretation of Results, Analysis and computations as per relevant Indian standards.

2.0 Field Investigation

2.1 Boring

The exploratory boreholes of 150 mm diameter were drilled by Rotary Drilling. The depth of the test bore at the proposed location is as under:

Bore Hole No.	Location	Reduced Level of Bore Hole (m)	Depth Investigated (m)
BH - 1	N 1004.5 E 1012.6	100.84	10.0
BH - 2	N 969.71 E 983.99	100.87	10.0
BH - 3	N 949.06 E 997.84	100.24	10.0
BH - 4	N 940.39 E 966.79	100.30	10.0
BH - 5	N 941.89 E 925.79	100.44	10.0
BH - 6	N 934.94 E 881.35	099.77	10.0

2.2 Sampling

2.2.1 Disturbed samples

Disturbed samples were collected during boring and from the split spoon sampler. The samples recovered were logged, labeled and placed in polyethylene bags and sent to laboratory for testing.

2.2.2 Undisturbed samples

Undisturbed soil samples were collected in thin walled Shelby tubes where it was possible, however at all other depths intact core samples were taken using double tube core barrel, as per IS 2132. The samples were sealed with wax, labeled and transported to our laboratory at Paldi, Ahmedabad for testing.

2.2.3 Standard penetration test

The standard penetration tests were conduct in accordance with IS:2131 in test bore at every 1.0 m. The test gives N - Value, the blow counts of last 30 cm penetration of split spoon sampler with 65 kg hammer falling from 75 cm height. These values are given in table no. 1.



3.0 Laboratory Investigation

The following laboratory tests were conducted on undisturbed and disturbed soil / rock samples collected from various depths to find physical properties and strength characteristics. Measurements of soil / rock properties in the laboratory the following table lists various laboratory tests, which were conducted in the laboratory.

Tests	Recommended procedure	Type Samples
1. Sample Penetration	IS 2720 Pt I	DS / UDS
2. Moisture Content	IS 2720 Pt II	DS / UDS
3. Dry Unit Weight	LAMBE	UDS
4. Specific Gravity	IS 2720 Pt III	DS
5. Liquid Limit	IS 2720	DS
6. Plastic Limit	IS 2720 Pt V	DS
7. Grain Size Analysis	IS 2720 Pt IV	DS
8. Soil Classification	IS 1498	DS / UDS
9. Consolidation	IS 2720 Pt XV	UDS
10. U.Comp. Strength	IS 2720 Pt X	UDS
11. Direct Shear Test	IS 2720 Pt X	UDS

4.0 Results

- 1) Locations of boreholes are shown in fig no. 1
- 2) Bore log details are shown in fig No. 2 to 7
- 3) SPT N values are appended in table no. 1
- 4) Results of laboratory permeability tests are given in table no. 2
- 5) Laboratory test results of Bore holes are appended in table nos. 3 to 8
- 6) Results of the grain size analysis of are given in fig nos. 8 to 13
- 7) Results of the shear test are given in fig nos. 14 to 19.



5.0 General stratification

Stratifications observed in bore holes are as described below :-

Bore No.	Depth (m)	Description
BH-1	0.00 to 1.40	Clayey Sand (SC)
	1.40 to 10.0	Soft Weathered Rock
BH-2	0.00 to 1.30	Clayey Sand (SC)
	1.30 to 10.0	Soft Weathered Rock
BH-3	0.00 to 0.60	Clayey Sand (SC)
	0.60 to 10.0	Soft Weathered Rock
BH-4	0.00 to 0.80	Clayey Sand (SC)
	0.80 to 10.0	Soft Weathered Rock
BH-5	0.00 to 1.00	Clayey Sand (SC)
	1.00 to 10.0	Soft Weathered Rock
BH-6	0.00 to 0.80	Clayey Sand (SC)
	0.80 to 10.0	Soft Weathered Rock

6.0 Computation of Safe Bearing Capacity

The detailed calculations of the safe Bearing capacity for various widths of isolated square footings, at various depths are given in Appendix- I.

7.0 Conclusions

1. The study of soil investigation at the site at various depths and various locations indicate the layers as shown in general stratification.
2. Isolated footings are suggested for proposed structures. The safe bearing capacities are worked out for various widths of isolated square footings at various depths and are suggested in Appendix - I. The depths of footings for which bearing capacities are calculated are considered with respect to the existing ground level.
3. Drainage properties of soil are fair in top layer of clayey soils and poor in case of weathered rock.
4. Ground water table is not encountered upto the depth of Investigation.
5. Any variation found in stratification in any of the foundation location, shall be studied thoroughly and brought to our notice before executing the foundation work.

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APPENDIX - I

Calculation of Safe Bearing Capacity Based on Shear Parameters C - ϕ

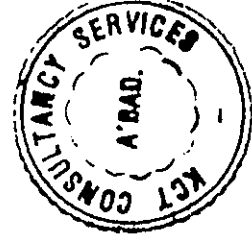
$$q_u = 1 / FS [2 / 3 C N_c dc Sc ic + \gamma d (N_q - 1) S_q dq iq W_q + 0.5 \gamma B N_y S_y d_y i_y W_y]$$

Project : Raffral Hospital at Mundra Road, Anjar

For Isolated Square Footing

Sr. No.	Length of Footing m	Width of Footing m	Depth of Footing m	C Kg/cm ²	ϕ degree	Nc	Sc	dc	ic	γ gm/cc	Nq - 1	Sq	dq	iq	0.5 γ	Ny	Sy	dy	iy	Water Table Correction		SBC t/m ²
																				Wq	Wy	
1	1.80	1.80	1.50	0.00	31	21.26	1.30	1.25	1.00	1.88	12.13	1.20	1.12	1.00	0.94	9.79	0.80	1.12	1.00	1.00	1.00	24
2	2.00	2.00	1.50	0.00	31	21.26	1.30	1.22	1.00	1.88	12.13	1.20	1.11	1.00	0.94	9.79	0.80	1.11	1.00	1.00	1.00	25
3	2.30	2.30	1.50	0.00	31	21.26	1.30	1.19	1.00	1.88	12.13	1.20	1.10	1.00	0.94	9.79	0.80	1.10	1.00	1.00	1.00	25
4	1.80	1.80	1.80	0.00	31	21.26	1.30	1.30	1.00	1.88	12.13	1.20	1.15	1.00	0.94	9.79	0.80	1.15	1.00	1.00	1.00	29
5	2.00	2.00	1.80	0.00	31	21.26	1.30	1.27	1.00	1.88	12.13	1.20	1.13	1.00	0.94	9.79	0.80	1.13	1.00	1.00	1.00	29
6	2.30	2.30	1.80	0.00	31	21.26	1.30	1.23	1.00	1.88	12.13	1.20	1.12	1.00	0.94	9.79	0.80	1.12	1.00	1.00	1.00	30
7	1.80	1.80	2.00	0.00	31	21.26	1.30	1.33	1.00	1.88	12.13	1.20	1.16	1.00	0.94	9.79	0.80	1.16	1.00	1.00	1.00	32
8	2.00	2.00	2.00	0.00	31	21.26	1.30	1.30	1.00	1.88	12.13	1.20	1.15	1.00	0.94	9.79	0.80	1.15	1.00	1.00	1.00	32
9	2.30	2.30	2.00	0.00	31	21.26	1.30	1.26	1.00	1.88	12.13	1.20	1.13	1.00	0.94	9.79	0.80	1.13	1.00	1.00	1.00	32
10	1.80	1.80	2.30	0.00	31	21.26	1.30	1.38	1.00	1.88	12.13	1.20	1.19	1.00	0.94	9.79	0.80	1.19	1.00	1.00	1.00	36
11	2.00	2.00	2.30	0.00	31	21.26	1.30	1.34	1.00	1.88	12.13	1.20	1.17	1.00	0.94	9.79	0.80	1.17	1.00	1.00	1.00	36
12	2.30	2.30	2.30	0.00	31	21.26	1.30	1.30	1.00	1.88	12.13	1.20	1.15	1.00	0.94	9.79	0.80	1.15	1.00	1.00	1.00	37

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Notations

C	Cohesion
ϕ	Angle of internal friction of soil
DS	Disturbed Sample
UDS	Undisturbed Sample
NMC	Natural Moisture Content
NP	Non Plastic Soils
G	Specific Gravity
G	Gravel Content
M	Silt Content
S	Sand Content
C	Clay Content
LL	Liquid Limit
PL	Plastic Limit
PI	Plasticity Index
SP	Swelling Pressure
FS	Free Swell Index
R.Q.D.	Rock Quality Designation
Cc	Compression Index
K	Coefficient of Permeability
UCS	Unconfined Compression
N	SPT Value
BH	Bore Hole
Suffix	The Number of Bore Holes
Nc, Nq, Ny	Bearing Capacity Factor
Sc, Sq, Sy	Shape Factors
γ	Density of Soil
D	Depth of foundation
FS	Factor of Safety
Cv	Coefficient of consolidation
UU	Unconsolidated undrained triaxial test
CU	Consolidated undrained triaxial test
CD	Consolidated drained triaxial test
GC	Clayey Gravels
GP	Poorely Graded Gravels
GW	Well Graded Gravels
SC	Clayey Sand
SM	Silty Sand
SW	Wel Graded Sand
SP	Poorly Graded Sand
CH	Clays of High Plasticity
CI	Clays of Intermediate Plasticity
CL	Clays of Low Plasticity
MH	Silts of High Plasticity
MI	Silts of Intermediate Plasticity
ML	Silts of Low Plasticity



REFERENCE

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TABLE NO. - 1

S.P.T. " N " Values

Sr. No.	Bore Hole No.	Depth (m)	S.P.T. N Value			
			N1 (0 - 15 cm)	N2 (15 - 30cm)	N3 (30 - 45 cm)	N
1	BH - 1	1.0	11	22	30	52
2	BH - 1	2.0	12	22	33	55
3	BH - 1	4.0	14	25	33	58
4	BH - 1	5.0	15	26	33	59
5	BH - 1	7.0	20	26	35	61
6	BH - 1	8.0	22	30	33	63
7	BH - 1	10.0	25	31	34	65

Sr. No.	Bore Hole No.	Depth (m)	S.P.T. N Value			
			N1 (0 - 15 cm)	N2 (15 - 30cm)	N3 (30 - 45 cm)	N
1	BH - 2	1.0	13	21	32	53
2	BH - 2	3.0	15	25	31	56
3	BH - 2	4.0	18	24	32	56
4	BH - 2	6.0	21	25	35	60
5	BH - 2	7.0	24	28	35	63
6	BH - 2	9.0	26	30	35	65

Sr. No.	Bore Hole No.	Depth (m)	S.P.T. N Value			
			N1 (0 - 15 cm)	N2 (15 - 30cm)	N3 (30 - 45 cm)	N
1	BH - 3	1.0	16	25	25	50
2	BH - 3	2.0	18	25	27	52
3	BH - 3	4.0	18	27	27	54
4	BH - 3	5.0	22	25	31	56
5	BH - 3	7.0	25	25	33	58
6	BH - 3	8.0	25	27	33	60
7	BH - 3	10.0	28	31	35	66

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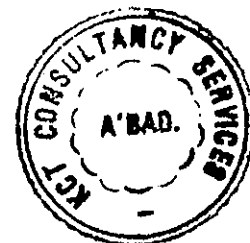


Sr. No.	Bore Hole No.	Depth (m)	S.P.T. N Value			
			N1 (0 - 15 cm)	N2 (15 - 30cm)	N3 (30 - 45 cm)	N
1	BH - 4	1.0	17	20	33	53
2	BH - 4	3.0	17	22	32	54
3	BH - 4	4.0	19	24	36	60
4	BH - 4	6.0	23	28	35	63
5	BH - 4	7.0	25	30	35	65
6	BH - 4	9.0	25	32	35	67

Sr. No.	Bore Hole No.	Depth (m)	S.P.T. N Value			
			N1 (0 - 15 cm)	N2 (15 - 30cm)	N3 (30 - 45 cm)	N
1	BH - 5	1.0	16	22	32	54
2	BH - 5	2.0	18	28	30	58
3	BH - 5	4.0	18	29	30	59
4	BH - 5	5.0	20	30	32	62
5	BH - 5	7.0	26	28	36	65
6	BH - 5	8.0	28	28	49	69
7	BH - 5	10.0	27	31	38	73

Sr. No.	Bore Hole No.	Depth (m)	S.P.T. N Value			
			N1 (0 - 15 cm)	N2 (15 - 30cm)	N3 (30 - 45 cm)	N
1	BH - 6	1.0	21	25	26	51
2	BH - 6	3.0	24	25	30	55
3	BH - 6	4.0	24	26	31	57
4	BH - 6	6.0	25	29	30	59
5	BH - 6	7.0	26	31	33	64
6	BH - 6	9.0	29	30	40	70

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TOKYO , JAPAN
THE RECONSTRUCTION SUPPORT FOR THE GUJARAT – EARTHQUAKE
DISASTER IN THE DIVASTATED AREAS IN INDIA
RAFFRAL HOSPITAL, ANJAR

TABLE NO. – 2

Results of laboratory permeability

Sr. No.	Bore Hole No.	Depth (m)	Laboratory permeability (mm / s)
1	BH – 1	1.00	0.65×10^{-3}
2	BH – 2	1.00	0.68×10^{-3}
3	BH – 3	0.50	0.56×10^{-3}
4	BH – 4	0.50	0.59×10^{-3}
5	BH – 5	0.50	0.61×10^{-3}
6	BH – 6	0.50	0.68×10^{-3}


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RESULTS OF LABORATORY TEST



Project :- Raffral Hospital at Mundra Road, Anjar

Co ordinates :- N649.06 E997.84

BH No. :- 3

Reduced Level :- 100.24 m

Sr No	Depth of Sample m	Type of Sample	Field Density gm/cc	NMC %	Sp.		Grain Size Analysis					Consistency limits				FS %	Soil Classification	Shear Parameter		UCS Kg/cm ²	Comp Index Cc	H Value (No)	RQD %	Voids Ratio	Porosity %			
					Gr.	G	G	S	M	C	LL	PL	PI	SL	%			%	%							%	C	φ Degree
1	0.00	DS	-	9.26	-	0	84	13	3	29	20	9	-	-	SC	-	-	-	-	-	-	-	-	-	-	-	-	
2	1.00	SPT	-	1.40	-	-	-	-	-	NP	NP	NP	NP	-	W.ROCK	-	-	-	-	-	-	50	-	-	-	-	-	
3	2.00	SPT	-	1.33	-	-	-	-	-	NP	NP	NP	NP	-	W.ROCK	-	-	-	-	-	-	52	-	-	-	-	-	
4	3.00	UDS	1.88	1.27	2.74	-	-	-	-	NP	NP	NP	NP	-	W.ROCK	-	-	31	-	-	-	-	-	0.46	31.4	-	-	
5	4.00	SPT	-	1.27	-	-	-	-	-	NP	NP	NP	NP	-	W.ROCK	-	-	-	-	-	-	54	-	-	-	-	-	
6	5.00	SPT	-	1.25	-	-	-	-	-	NP	NP	NP	NP	-	W.ROCK	-	-	-	-	-	-	58	-	-	-	-	-	
7	6.00	UDS	1.95	1.21	2.76	-	-	-	-	NP	NP	NP	NP	-	W.ROCK	-	-	34	-	-	-	-	-	0.42	29.3	-	-	
8	7.00	SPT	-	1.18	-	-	-	-	-	NP	NP	NP	NP	-	W.ROCK	-	-	-	-	-	-	58	-	-	-	-	-	
9	8.00	SPT	-	1.17	-	-	-	-	-	NP	NP	NP	NP	-	W.ROCK	-	-	-	-	-	-	60	-	-	-	-	-	
10	9.00	UDS	1.99	1.16	2.78	-	-	-	-	NP	NP	NP	NP	-	W.ROCK	-	-	-	-	47.00	-	-	-	-	0.40	28.4	-	-
11	10.00	SPT	-	1.13	-	-	-	-	-	NP	NP	NP	NP	-	W.ROCK	-	-	-	-	-	-	66	-	-	-	-	-	

For KCT Consultancy Services,

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Table No. - 5
(15)



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RESULTS OF LABORATORY TEST

Project :- Raffral Hospital at Mundra Road, Anjar

Co ordinates :- N940.39 E966.79

BH No. :- 4

Reduced Level :- 100.30 m

Sr No	Depth m	Type of Sample	Field Density gm/cc	NMC %	Sp. Gr. G	Grain Size Analysis					SP Kg/cm ²	FS %	Soil Classification	Shear Parameter		UCS Kg/cm ²	Comp Index Cc	N Value (No)	RQD %	Voids Ratio	Porosity %
						G %	S %	M %	C %	LL %				PL %	PI %						
1	0.00	DS	-	8.28	-	0	84	13	3	28	19	9	-	SC	-	-	-	-	-	-	-
2	1.00	SPT	-	1.37	-	-	-	-	-	NP	NP	NP	-	W.ROCK	-	-	-	53	-	-	-
3	2.00	UDS	1.86	1.32	2.73	-	-	-	-	NP	NP	NP	-	W.ROCK	-	32	-	-	-	0.47	31.9
4	3.00	SPT	-	1.27	-	-	-	-	-	NP	NP	NP	-	W.ROCK	-	-	-	54	-	-	-
5	4.00	SPT	-	1.23	-	-	-	-	-	NP	NP	NP	-	W.ROCK	-	-	-	60	-	-	-
6	5.00	UDS	1.97	1.21	2.75	-	-	-	-	NP	NP	NP	-	W.ROCK	-	33	-	-	-	0.40	28.4
7	6.00	SPT	-	1.19	-	-	-	-	-	NP	NP	NP	-	W.ROCK	-	-	-	63	-	-	-
8	7.00	SPT	-	1.14	-	-	-	-	-	NP	NP	NP	-	W.ROCK	-	-	-	65	-	-	-
9	8.00	UDS	2.06	1.09	2.78	-	-	-	-	NP	NP	NP	-	W.ROCK	-	-	-	-	-	0.35	25.9
10	9.00	SPT	-	1.08	-	-	-	-	-	NP	NP	NP	-	W.ROCK	-	-	-	67	-	-	-
11	10.00	UDS	2.13	1.08	2.79	-	-	-	-	NP	NP	NP	-	W.ROCK	-	-	-	-	-	0.31	23.7

For KCT Consultancy Services,

K.K. Thaker
(Dr. K.C. Thaker)

Table No. - 6
(16)



KCT Consultancy Services, Ahmedabad

RESULTS OF LABORATORY TEST



Project :- Rafiqul Hospital at Mundra Road, Anjar

Co ordinates :- N641.89 E925.79

BH No. :- 5

Reduced Level :- 100.44 m

Sr No	Depth m	Type of Sample	Field Density gm/cc	NMC %	Sp. Gr. G	Grain Size Analysis				Consistency limits				SP Kg/cm ²	FS %	Soil Classification	Shear Parameter		Comp Index Cc	N Value (No)	RQD %	Voids Ratio	Porosity %	
						G %	S %	M %	C %	LL %	PL %	PI %	SL %				C Kg/cm ²	φ Degree						
1	0.00	DS	-	9.29	-	0	88	10	2	23	15	8	-	-	SC	-	-	-	-	-	-	-	-	
2	1.00	SPT	-	1.38	-	-	-	-	-	NP	NP	NP	-	-	W.ROCK	-	-	-	54	-	-	-	-	
3	2.00	SPT	-	1.34	-	-	-	-	-	NP	NP	NP	-	-	W.ROCK	-	-	-	58	-	-	-	-	
4	3.00	UDS	1.94	1.32	2.77	-	-	-	-	NP	NP	NP	-	-	W.ROCK	-	31	-	-	-	0.43	-	30.0	
5	4.00	SPT	-	1.28	-	-	-	-	-	NP	NP	NP	-	-	W.ROCK	-	-	-	59	-	-	-	-	
6	5.00	SPT	-	1.25	-	-	-	-	-	NP	NP	NP	-	-	W.ROCK	-	-	-	62	-	-	-	-	
7	6.00	UDS	1.89	1.21	2.78	-	-	-	-	NP	NP	NP	-	-	W.ROCK	-	34	-	-	-	0.40	-	28.4	
8	7.00	SPT	-	1.21	-	-	-	-	-	NP	NP	NP	-	-	W.ROCK	-	-	-	65	-	-	-	-	
9	8.00	SPT	-	1.20	-	-	-	-	-	NP	NP	NP	-	-	W.ROCK	-	-	-	69	-	-	-	-	
10	9.00	UDS	2.13	1.16	2.79	-	-	-	-	NP	NP	NP	-	-	W.ROCK	-	-	-	-	-	44.00	-	0.31	23.7
11	10.00	SPT	-	1.11	-	-	-	-	-	NP	NP	NP	-	-	W.ROCK	-	-	-	73	-	-	-	-	

For KCT Consultancy Services,

K.K. Thakker
(Dr. K.C. Thakker)

Table No. - 7
(17)



KCT Consultancy Services, Ahmedabad

RESULTS OF LABORATORY TEST



Project :- Raffral Hospital at Munda Road, Anjar

Co ordinates :- N934.94 E886.35

BH No. :- 6

Reduced Level :- 99.77 m

Sr No	Depth of Sample m	Type of Sample	Field Density gm/cc	NMC %	Sp. Gr. G	Grain Size Analysis					Consistency limits				SP Kglcm ²	FS %	Soil Classification	Shear Parameter		Comp Index Cc	N Value (No)	RQD %	Voids Ratio	Porosity %
						G %	S %	M %	C %	LL %	PL %	PI %	SL %	C Kglcm ²				φ Degree						
1	0.00	DS	-	9.20	-	0	86	11	3	20	11	9	-	-	-	SC	-	-	-	-	-	-	-	-
2	1.00	SPT	-	1.57	-	-	-	-	-	NP	NP	NP	-	-	-	W.ROCK	-	-	-	51	-	-	-	-
3	2.00	UDS	1.80	1.51	2.73	-	-	-	-	NP	NP	NP	-	-	-	W.ROCK	-	33	-	-	-	0.52	-	34.1
4	3.00	SPT	-	1.48	-	-	-	-	-	NP	NP	NP	-	-	-	W.ROCK	-	-	-	55	-	-	-	-
5	4.00	SPT	-	1.47	-	-	-	-	-	NP	NP	NP	-	-	-	W.ROCK	-	-	-	57	-	-	-	-
6	5.00	UDS	1.78	1.42	2.78	-	-	-	-	NP	NP	NP	-	-	-	W.ROCK	-	32	-	-	-	0.56	-	36.0
7	6.00	SPT	-	1.41	-	-	-	-	-	NP	NP	NP	-	-	-	W.ROCK	-	-	-	59	-	-	-	-
8	7.00	SPT	-	1.35	-	-	-	-	-	NP	NP	NP	-	-	-	W.ROCK	-	-	-	64	-	-	-	-
9	8.00	UDS	1.83	1.29	2.75	-	-	-	-	NP	NP	NP	-	-	-	W.ROCK	-	34	-	-	-	0.50	-	33.5
10	9.00	SPT	-	1.29	-	-	-	-	-	NP	NP	NP	-	-	-	W.ROCK	-	-	-	70	-	-	-	-
11	10.00	UDS	1.95	1.26	2.78	-	-	-	-	NP	NP	NP	-	-	-	W.ROCK	-	35	-	-	-	0.43	-	29.9

For KCT Consultancy Services,

K.K. Thakur
(Dr. K.C. Thaker)

Table No. - 8
(18)

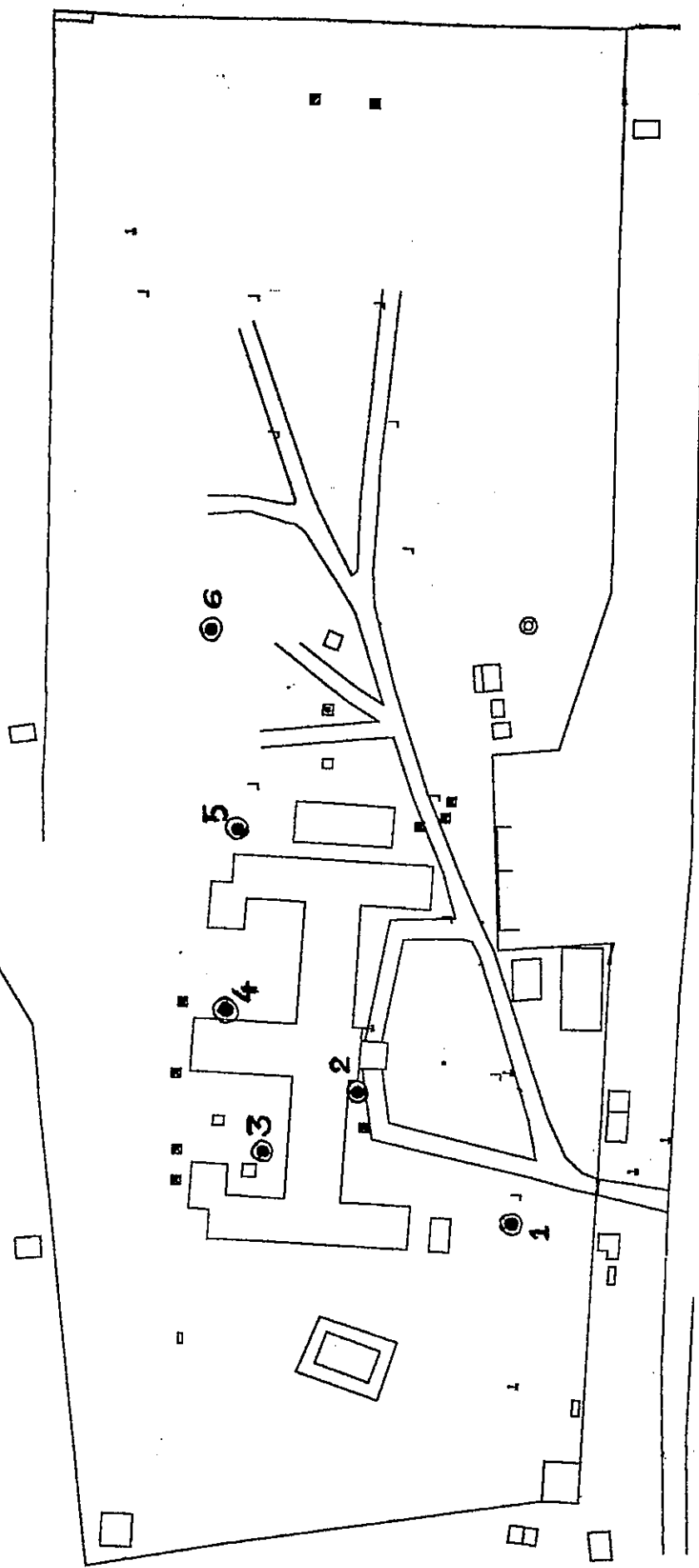




Locations of Bore Holes at Raffral Hospital, Anjar

K.K. Thakur

Fig. No. 1
(19)



KCT CONSULTANCY SERVICES, AHMEDABAD

BORE LOG DATA SHEET

Project : Rairfal Hospital at Mundra Road, Anjar
 Coordinates: N 941.89 E 925.79
 Reduce Level : 100.44 m
 Bore Hole No. : BH - 5
 Termination Depth : 10.0 m

Field Test	Nos.	Sample	Nos.
SPT	7	DS	1
		UDS	3

Method of Boring	Casing	Bore Dia. (mm)	Depth (m)	Thickness of Layer (m)	Notation	Soil Description	S.P.T. "N" Value											S.P.T. No. of blows	Undisturbed Sample	Disturbed Sample/S.P.T.	R.Q.D.	Remarks								
							10	20	30	40	50	60	70	80	90	100														
Rotary Drilling Method	Not Used	100 mm	0.00	1.00 m	Diagonal hatching	Clayey Sand (SC)	54												0.00											
			0.50																											
			1.00																											
			1.50																											
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9.50																														
10.00																														



Fig No. 6
(24)

K.K.Thaker
(K.K.Thaker)

KCT CONSULTANCY SERVICES, AHMEDABAD

BORE LOG DATA SHEET

Project : Rafiqal Hospital at Mundra Road, Anjar
 Coordinates: N 934.94 E 886.35
 Reduce Level : 99.77 m
 Bore Hole No. : BH - 6
 Termination Depth : 10.0 m

Field Test	Nos.	Sample	Nos.
SPT	6	DS	1
		UDS	4

Method of Boring	Casing	Bore Dia. (mm)	Depth (m)	Thickness of Layer (m)	Notation	Soil Description	S.P.T. "N" Value											S.P.T. No. of blows	Undisturbed Sample	Disturbed Sample	Samples, P.T.	R.Q.D.	Remarks					
							10	20	30	40	50	60	70	80	90	100												
Rotary Drilling Method	Not Used	100 mm	0.00	0.80		Clayey Sand (SC)													0.00									
			0.50																									
			1.00																									
			1.50																									
			2.00																									
			2.50																									
			3.00																									
			3.50																									
			4.00																									
			4.50																									
			5.00	9.20		Soft Weathered Rock																						
			5.50																									
			6.00																									
			6.50																									
			7.00																									
			7.50																									
			8.00																									
			8.50																									
			9.00																									
			9.50																									
			10.00																									



Fig. No. 7
(25)

K.K. Thaker
(K.K. Thaker)

KCT Consultancy Services, Ahmedabad

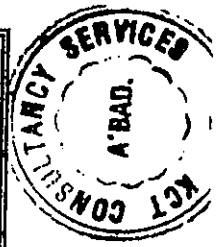
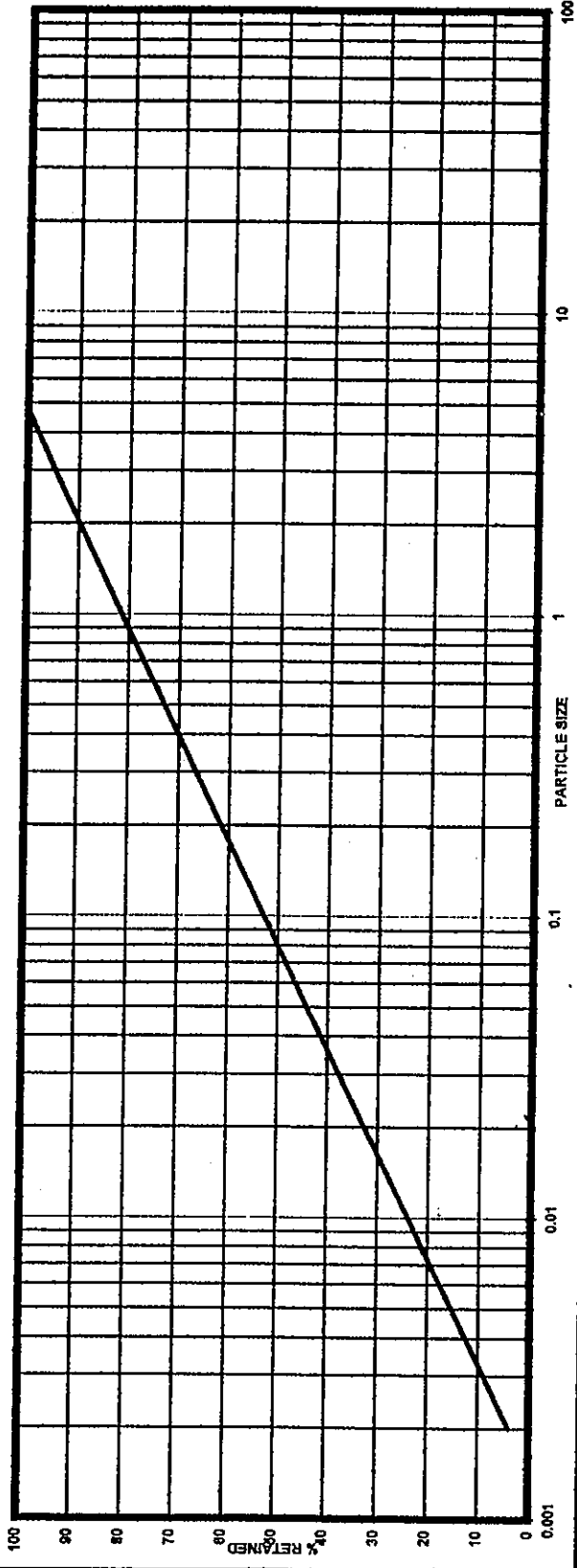


Project :- Raffral Hospital at Mundra Road, Anjar

Bore Hole No :- BH - 1

Depth :- 1.00 m

GRAIN SIZE ANALYSIS RESULTS



K.K. Thaker

(Dr.K.C. Thaker)

Fig No. :- 8
(26)

KCT Consultancy Services, Ahmedabad

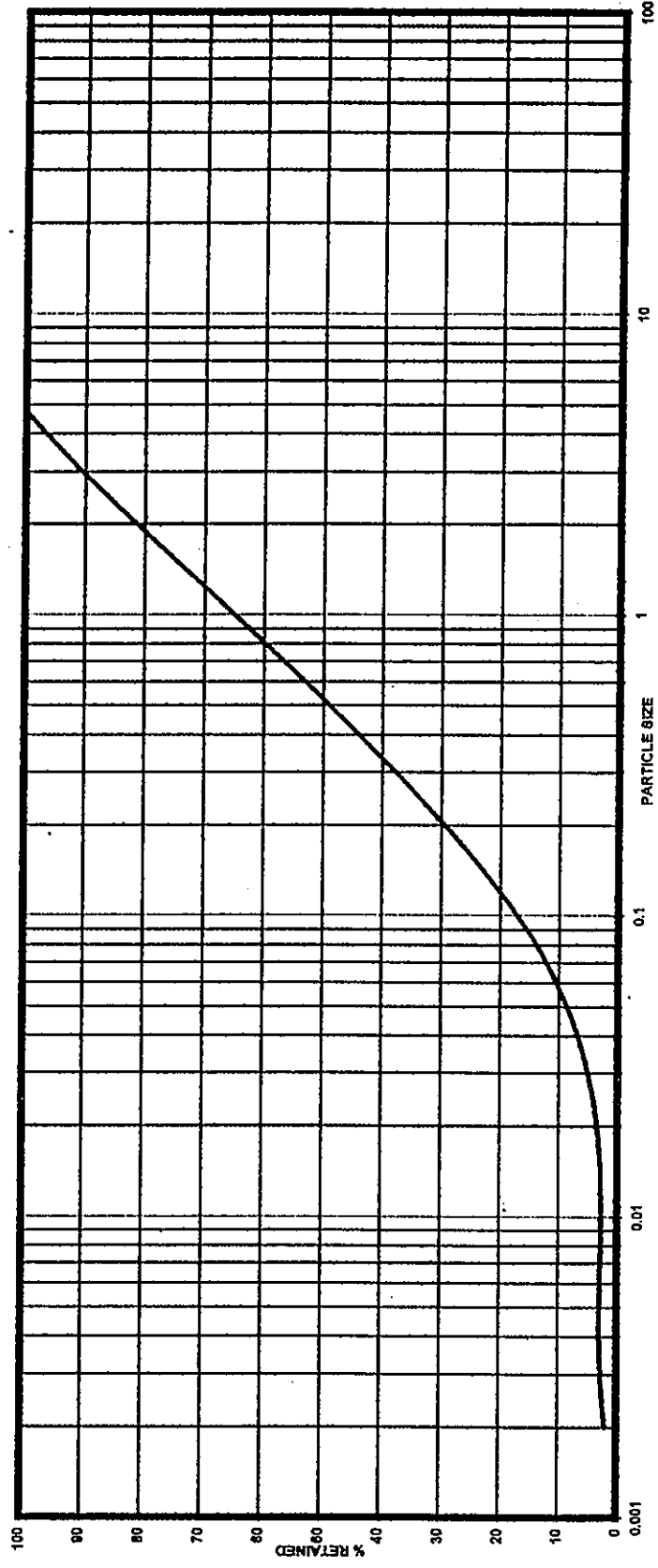
Project :- Raffral Hospital at Mundra Road, Anjar

Bore Hole No :- BH - 2

Depth :- 1.00 m



GRAIN SIZE ANALYSIS RESULTS



K.K. Thaker
(Dr.K.C. Thaker)

Fig No. :- 9
(27)

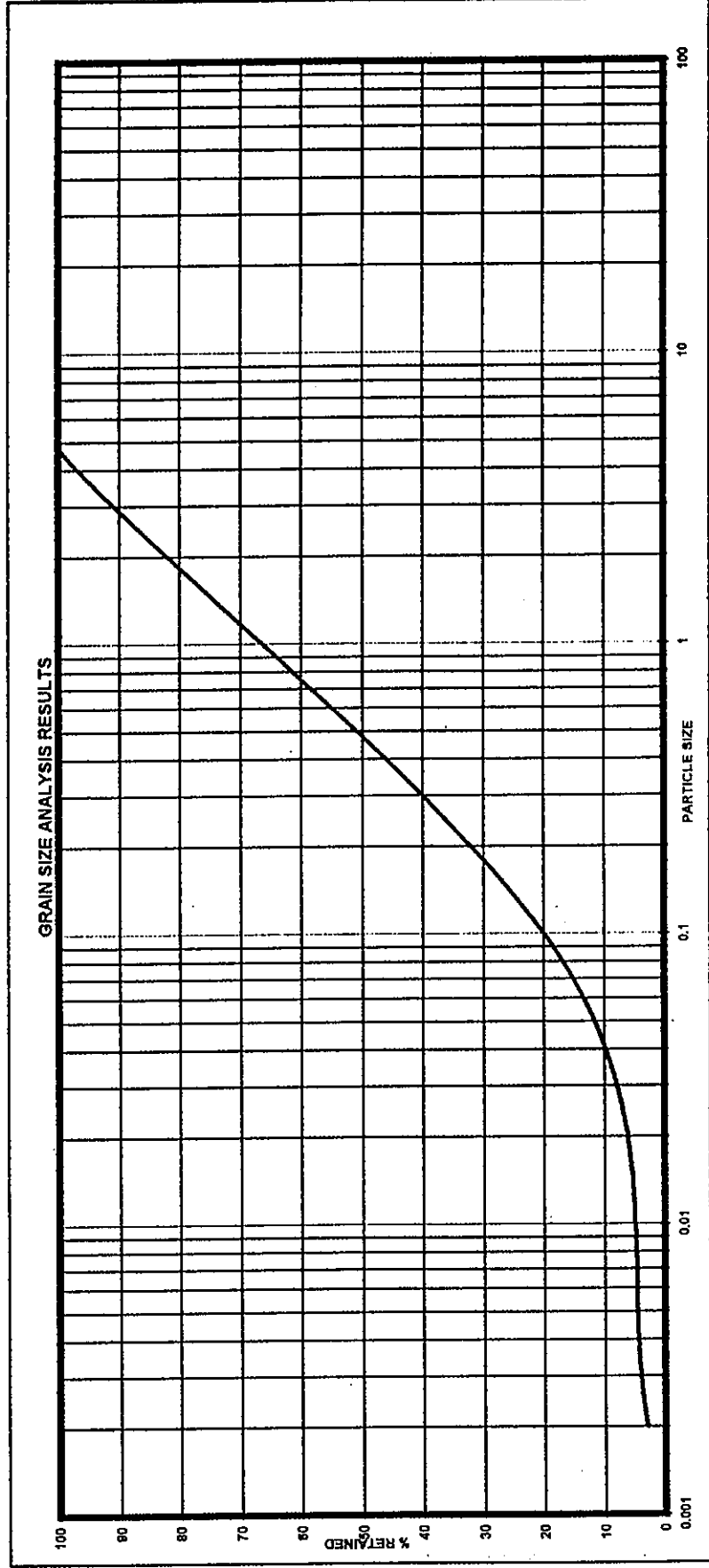


KCT Consultancy Services, Ahmedabad

Project :- Raffal Hospital at Mundra Road, Anjar

Bore Hole No :- BH - 3

Depth :- 0.00 m



K.K. Thaker
(Dr.K.C. Thaker)

Fig No. :- 40
(28)



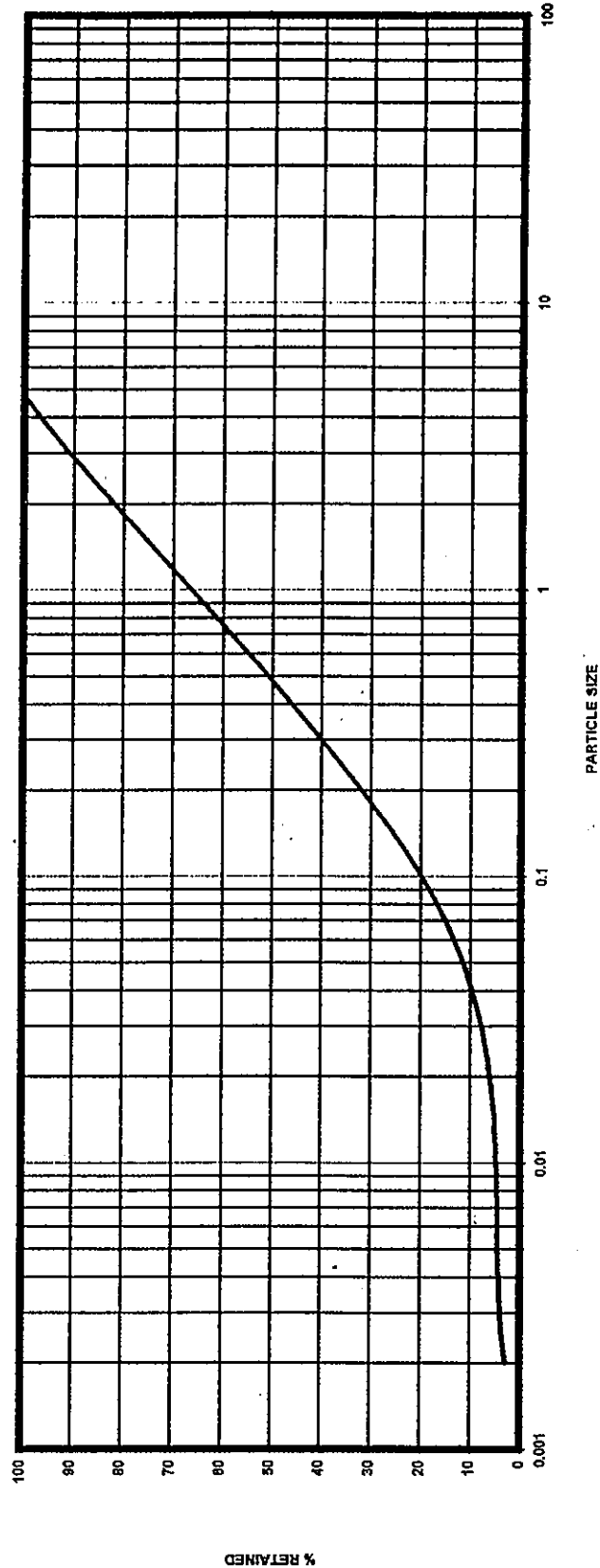
KCT Consultancy Services, Ahmedabad

Project :- Raffral Hospital at Mundra Road, Anjar

Bore Hole No :- BH - 4

Depth :- 0.00 m

GRAIN SIZE ANALYSIS RESULTS



K.K. Thaker
(Dr.K.C. Thaker)

Fig No. :- 11
(29)



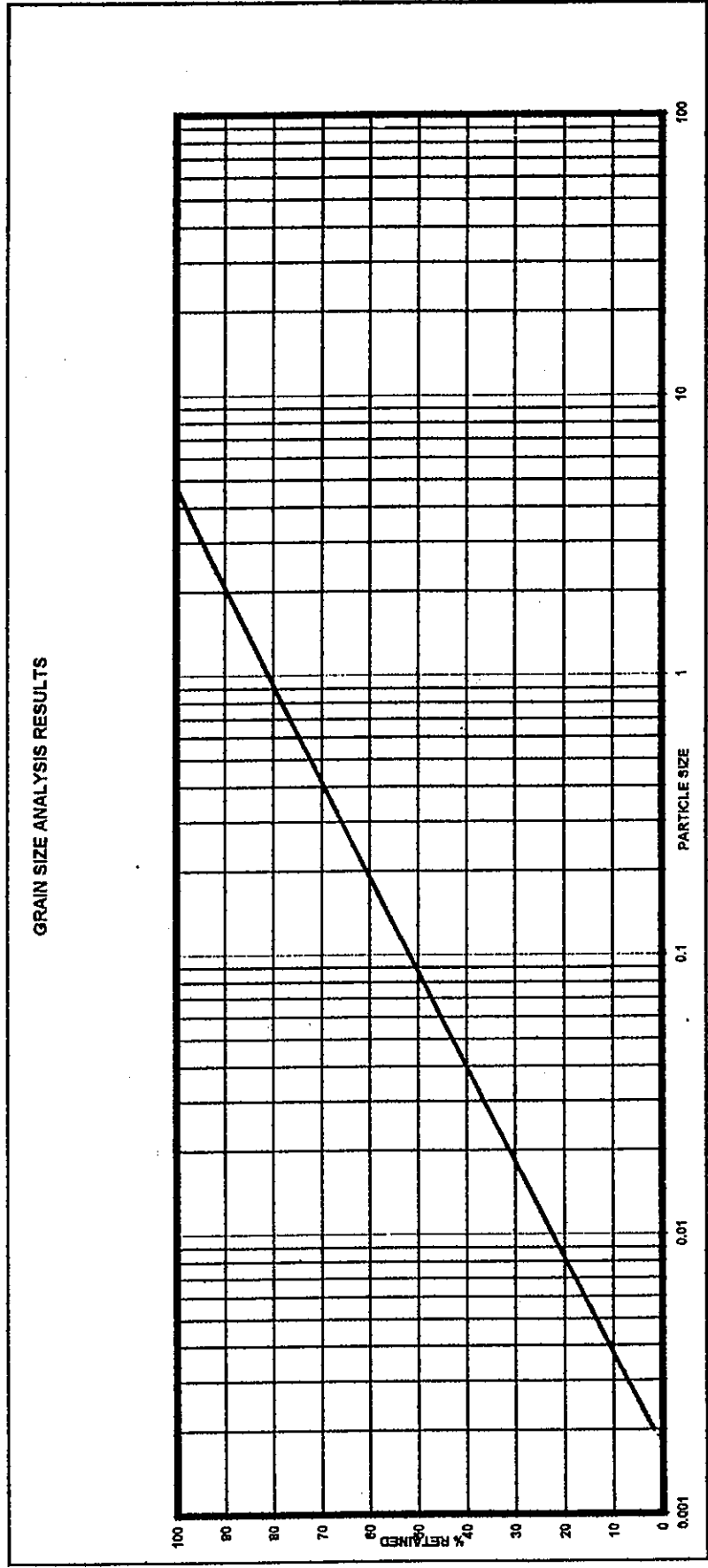
KCT Consultancy Services, Ahmedabad

Project :- Raffral Hospital at Mundra Road, Anjar

Bore Hole No :- BH - 5

Depth :- 0.00 m

GRAIN SIZE ANALYSIS RESULTS



K.K. Thaker
(Dr.K.C. Thaker)

Fig No. :- 12
(30)

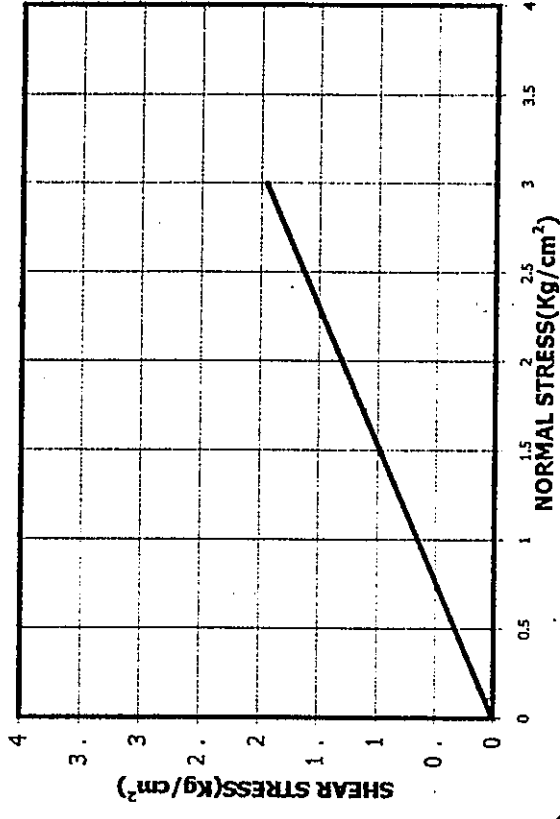


Project :- Raffral Hospital at Mundra Road, Anjar

Bore Hole # BH - 2

Depth :- 3.00

RESULTS OF DIRECT SHEAR TEST



K.K. Thaker
(K.K. Thaker)

Fig No. - 15
(33)

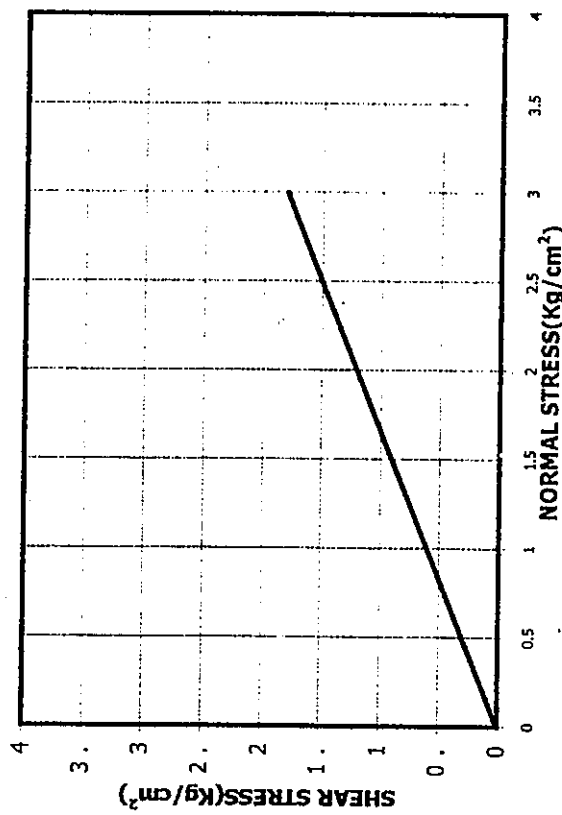


Project :- Raffral Hospital at Mundra Road, Anjar

Bore Hole # BH - 3

Depth :- 3.00

RESULTS OF DIRECT SHEAR TEST



K.K. Thaker
(K.K. Thaker)

Fig No. - 16
(34)





KCT Consultancy Services, Ahmedabad

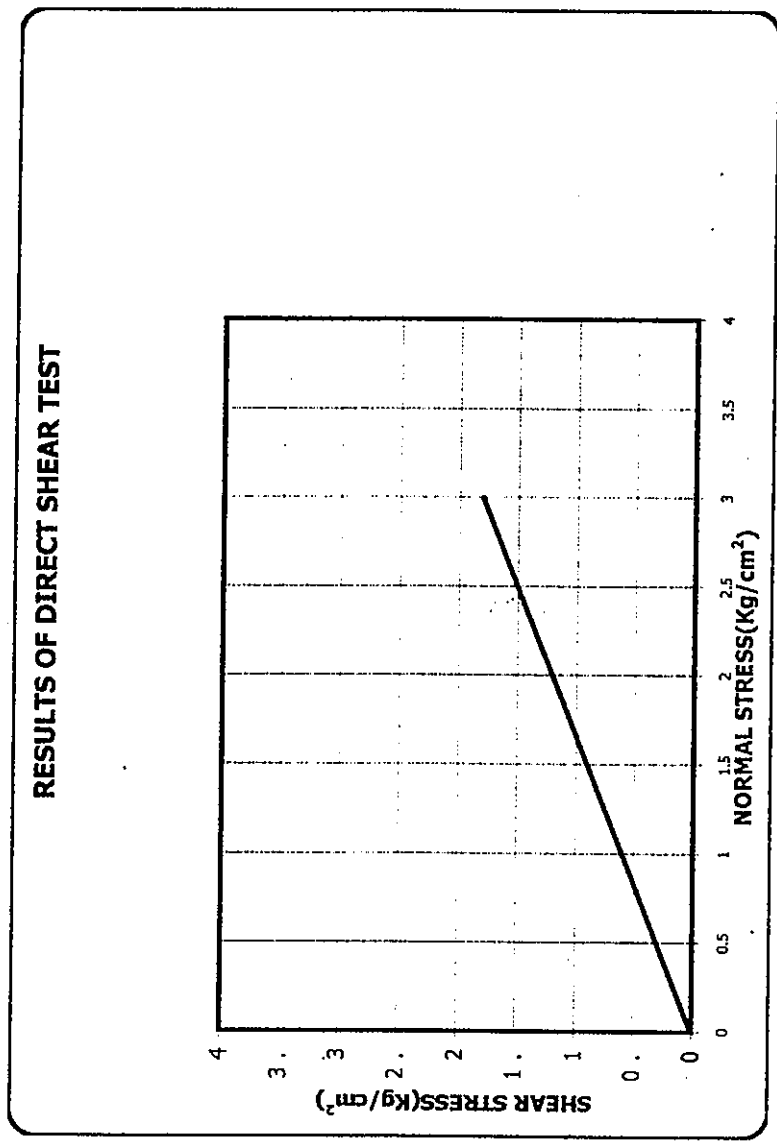


Project :- Raffral Hospital at Mundra Road, Anjar

Bore Hole N BH - 5

Depth :- 3.00

RESULTS OF DIRECT SHEAR TEST



K.K. Thaker
(K.K. Thaker)

Fig No. - 18
(36)



KCT Consultancy Services, Ahmedabad

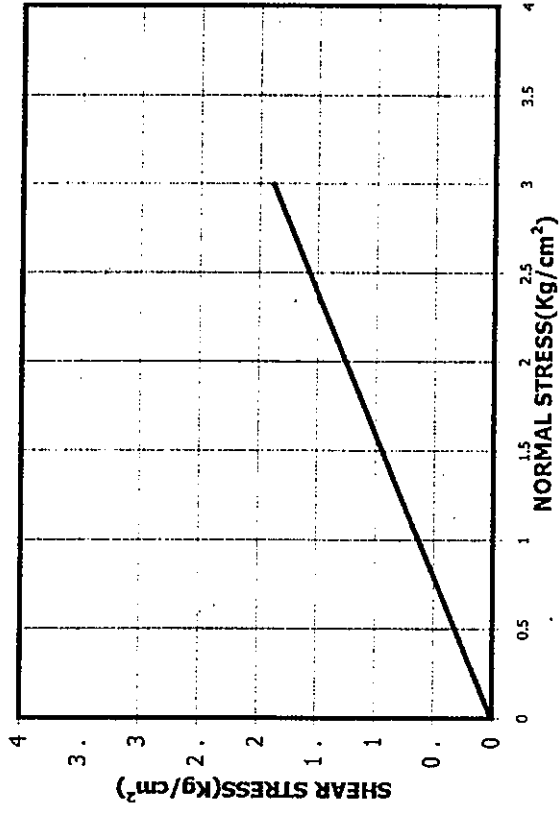


Project :- Raffral Hospital at Mundra Road, Anjar

Bore Hole # BH - 6

Depth :- 5.00

RESULTS OF DIRECT SHEAR TEST

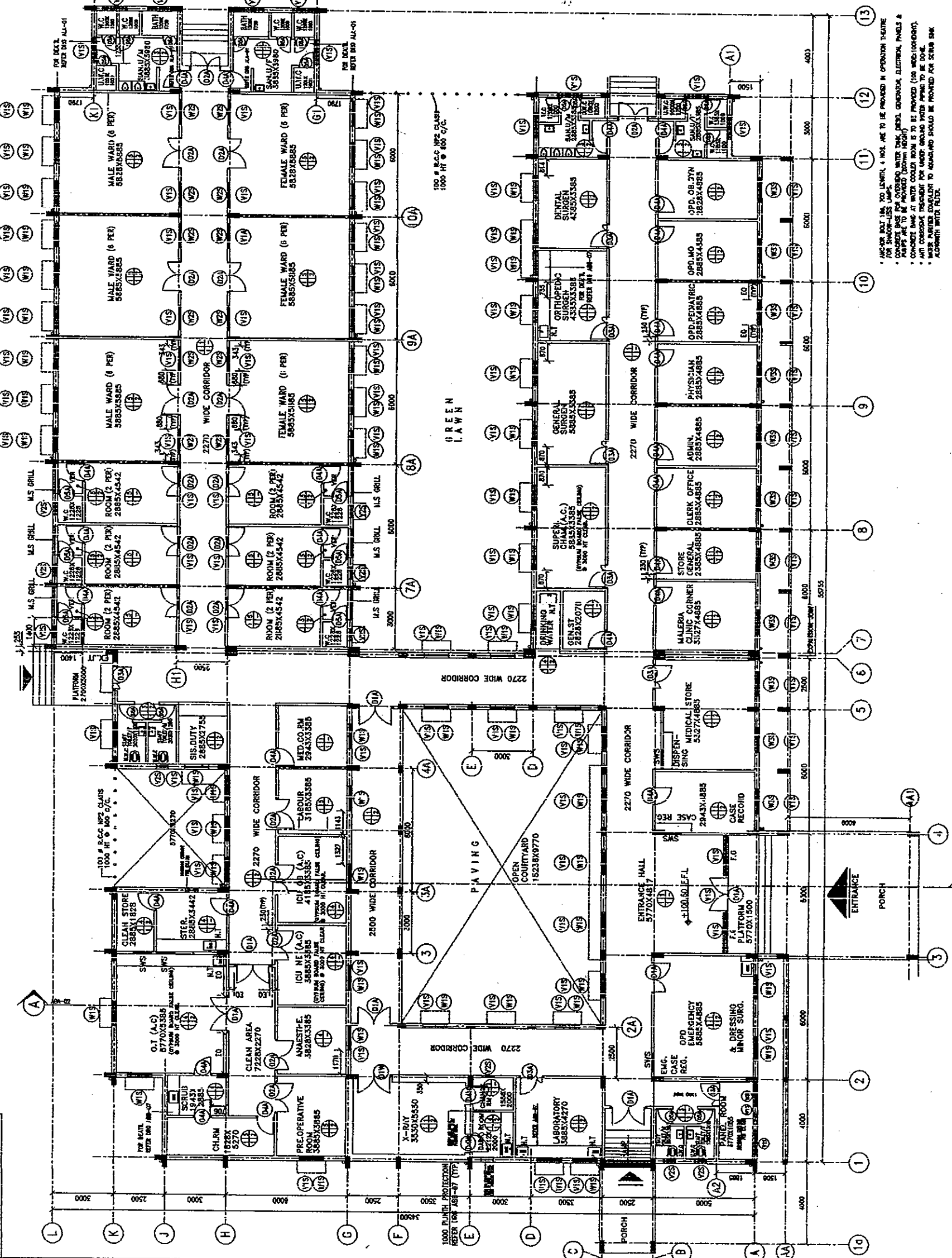


K.K. Thaker
(K.K. Thaker)

Fig No. - 19
(37)

2. DRAWINGS

0114138-ABA-01



SCHEDULE OF OPENINGS (DOORS, WINDOWS & VENTILATORS)

TYPE	SIZE	NOS	SILL TOP	REMARKS
D1A	1800 x 2100	07	-	DOUBLE SHUTTER POWDER COATED ALUMINE PARTLY GLAZED AND PARTLY PRE-LAMINATED PANEL
D1W	1600 x 2100	01	-	DOUBLE SHUTTER WOODEN PANELLED WITH LEAD SHEET 1mm THICK
D2A	1500 x 2100	17	-	DOUBLE SHUTTER POWDER COATED ALUMINE PARTLY GLAZED AND PARTLY PRE-LAMINATED PANEL
D3A	1200 x 2100	08	-	DOUBLE SHUTTER POWDER COATED ALUMINE PARTLY GLAZED AND PARTLY PRE-LAMINATED PANEL
D4A	900 x 2100	27	-	SINGLE SHUTTER POWDER COATED ALUMINE PARTLY GLAZED AND PARTLY PRE-LAMINATED PANEL BOTH SIDE
D4W	900 x 2100	02	-	SINGLE SHUTTER WOODEN PANELLED WITH LEAD SHEET 1mm THICK
D5A	750 x 2100	23	-	SINGLE SHUTTER POWDER COATED ALUMINE WITH EXTERIOR GRADE PRE-LAMINATED PANEL BOTH SIDE
W1S	1200 X 900	38	1200	FULLY GLAZED M.S POWDER COATED OPENABLE WITH GRILL
W2S	1200 X 800	12	1200	FULLY GLAZED M.S POWDER COATED OPENABLE
W3S	1200 X 1200	12	900	FULLY GLAZED M.S POWDER COATED OPENABLE WITH GRILL
SWS	600 X 600	05	1000	FULLY GLAZED M.S POWDER COATED TOP RANGED WITH FRICTION HAWKS
V1S	1200 X 600	100	-	FRYED GLASS 7" TYPE M.S POWDER COATED
V2S	800 X 600	10	1500	FRYED GLASS 7" TYPE M.S POWDER COATED

FINISH SCHEDULE

ITEM	DESCRIPTION
F	FLOOR
IW	INTERNAL SURFACE OF WALL
EW	EXTERNAL SURFACE OF PERIPHERAL WALLS
C	CEILING

(1) PUSHED KOTHA STONE WITH 10MM HEIGHT SKIRTING
 (2) CERAMIC TILES 10MM HEIGHT SKIRTING
 (1) 12MM THK IMLA PLASTER WITH RAT ENAMEL PAINT
 (2) 23MM THK (12mm + 8mm) SHD FACE PLASTER WITH CELESTIC PAINT
 (3) 12MM THK IMLA PLASTER WITH WHITE WASH
 (4) CERAMIC TILES 600 UP TO FALSE CEILING/UNITEL U/L
 (5) ENAMEL PAINT + REDD UP TO SILL LEVEL
 (1) 14MM THK IMLA PLASTER WITH WHITE WASH
 (2) 14MM THK IMLA PLASTER WITH RAT ENAMEL PAINT

- ### ABBREVIATIONS
- CHIRM : CHANGING ROOM
 - O.T (A.C) : OPERATION THEATRE
 - DU : DIRTY UTILITY
 - SIS DUTY : SISTER DUTY
 - SAJ : SANITATION JOINT
 - SAJ/M : SANITARY UNIT MALE
 - SAJ/F : SANITARY UNIT FEMALE
 - OPD : OPHTHALMOLOGIC
 - OPD/MO : OPHTHALMOLOGIC MEDICAL OFFICER
 - OPD/PED : OPHTHALMOLOGIC PEDIATRICIAN
 - ACHIN : ADMINISTRATION ROOM
 - DISPENS : DISPENSING
 - CASE REC : CASE REGISTRATION
 - SWS : SERVICE WINDOW STEEL
 - OPEN VER. : OPEN VERANDAH
 - DR : DRAWING
 - EX.FAN : EXHAUST FAN
- ### ENG CASE REG.
- EMERGENCY CASE REGISTRATION
 - ORTHOPEDIC EMERGENCY STAFF TOILET
 - MINOR SURG. ROOM
 - AMAEHTHIC UNIT
 - INTENSIVE CARE UNIT NEONATAL
 - INTENSIVE CARE UNIT OBSTETRIC
 - INTENSIVE CARE UNIT MEDICAL COUNSELLING
 - SUPERINTENDENT CHAMBER
 - ALUMINIUM
 - GENERAL STORE
 - UNIVERSAL
 - WATER GLAZET
 - W.C
 - F.O
- NOTE: (1) ALL DIMENSIONS ARE IN MILLIMETRES.
 (2) DIMENSIONS GIVEN ARE EXCLUDING PLASTER THICKNESS
 (3) ALL SILL LEVELS ARE FROM FINISHED FLOOR LEVEL

AS-BUILT DRAWING Scale: 1:100

THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA

GROUND FLOOR PLAN

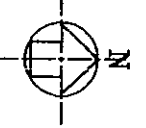
COMMUNITY HEALTH CENTRE-ANAR

YAMASHITA SEKKI INC.-NISON SEKKI, INC. JAPAN

Palal Consultants And Engineers Ltd. Ahmedabad - India

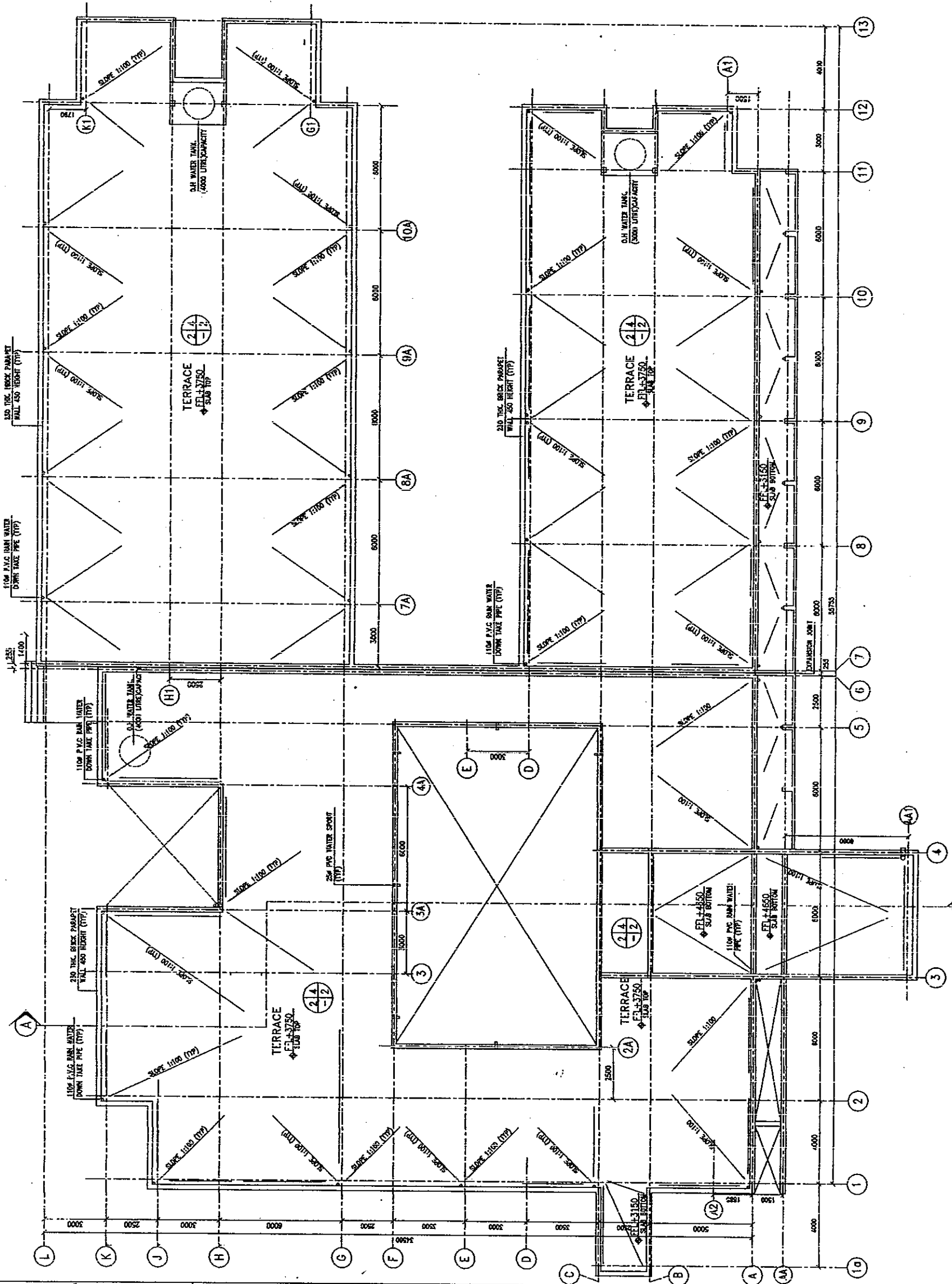
0114138-ABA-01 R1

NO.	REVISION	DATE	BY	CHK.	APP.
1	ISSUED FOR CONSTRUCTION				



- ABB-05 WINDOWS & VENTILATORS, ELEVATIONS & DETAILS
- ABB-04 DOORS, ELEVATIONS & DETAILS
- ABA-03 ROOF PLAN
- ABA-02 SECTION & ELEVATIONS
- ABA-01 PLOT PLAN

0114138-ABA-03



FINISH SCHEDULE	
F	W
C	EW
F : FLOOR	EW : INTERNAL SURFACE OF PERIPHERAL WALLS
W : WALL	C : CEILING
FLOOR (1) POLISHED KOTNAI STONE (40MM TO 50MM THK) (2) 1/2" WITH COBALT BASES WATER PROOFING	
WALL (1) SINGLE COAT M.S.A PLASTER WITH FLAT ENAMEL PAINT -12MM THK (2) DOUBLE COAT SANDFACED PLASTER-20MM THK(1244) (3) SINGLE COAT M.S.A PLASTER WITH WHITE WASH-12MM THK (4) SINGLE COAT M.S.A PLASTER WITH COBALT PAINT-12MM THK	
CEILING (1) SINGLE COAT M.S.A PLASTER WITH LIME WASH-8MM TH. (2) WHITE WASH	

ABBREVIATIONS

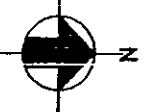
- A. : ALUMINIUM
- DRG. : DRAWING
- TRK. : THICKNESS
- FIN. : FINISHED FLOOR LEVEL
- O.H. : OVER HEAD
- M.M. : MILLIMETRE
- L.S. : INDIAN PAVING STONE
- TYP. : TYPICAL

NOTES:

- (1) ALL DIMENSIONS ARE IN MILLIMETRES.
- (2) ALL LEVELS ARE FROM FT. (P.M.T.M)

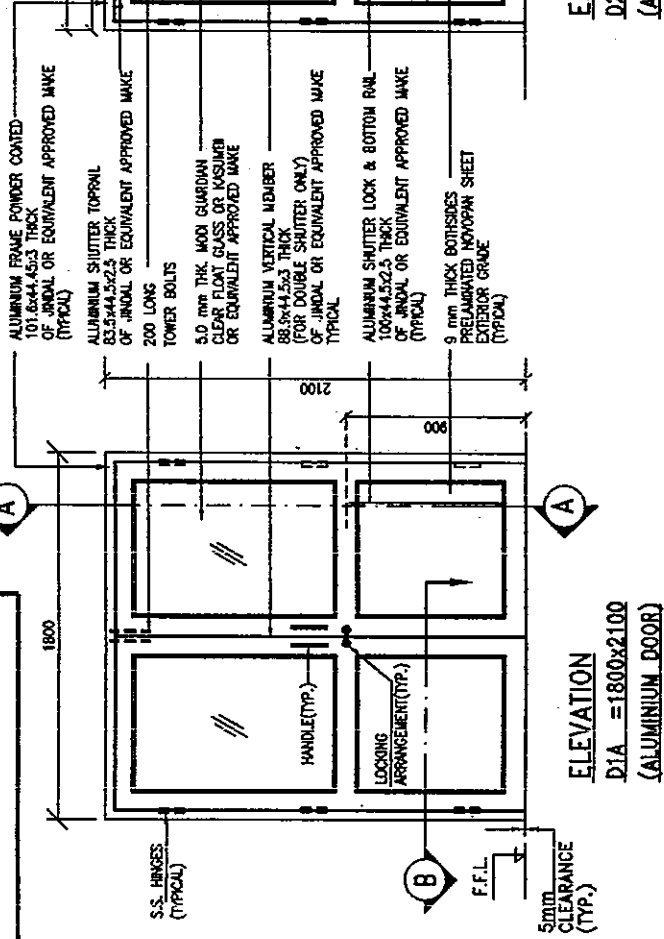
AS-BUILT DRAWING THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA		SCALE : 1:100
CONTRACTOR MITSUBI KENSETSU INDIA LIMITED 14/75A SUPREMACY ENCLAVE, NEW DELHI-110021, INDIA		PROJECT NO. 0114138-ABA-03
CLIENT COMMUNITY HEALTH CENTRE-ANJAR YAMASHITA SEIKI INC.-NIHON SEIKI, INC. JAPAN		DRAWN BY [Signature]
DESIGNER Dalal Consultants and Engineers Ltd. 10/10, 10/11, 10/12, 10/13, 10/14, 10/15, 10/16, 10/17, 10/18, 10/19, 10/20, 10/21, 10/22, 10/23, 10/24, 10/25, 10/26, 10/27, 10/28, 10/29, 10/30, 10/31, 10/32, 10/33, 10/34, 10/35, 10/36, 10/37, 10/38, 10/39, 10/40, 10/41, 10/42, 10/43, 10/44, 10/45, 10/46, 10/47, 10/48, 10/49, 10/50, 10/51, 10/52, 10/53, 10/54, 10/55, 10/56, 10/57, 10/58, 10/59, 10/60, 10/61, 10/62, 10/63, 10/64, 10/65, 10/66, 10/67, 10/68, 10/69, 10/70, 10/71, 10/72, 10/73, 10/74, 10/75, 10/76, 10/77, 10/78, 10/79, 10/80, 10/81, 10/82, 10/83, 10/84, 10/85, 10/86, 10/87, 10/88, 10/89, 10/90, 10/91, 10/92, 10/93, 10/94, 10/95, 10/96, 10/97, 10/98, 10/99, 10/100		CHECKED BY [Signature]
SECTION & ELEVATIONS ABA-02 ABA-03		APPROVED BY [Signature]
GROUND FLOOR PLAN REFERENCE DRAWING		REGION

ROOF PLAN

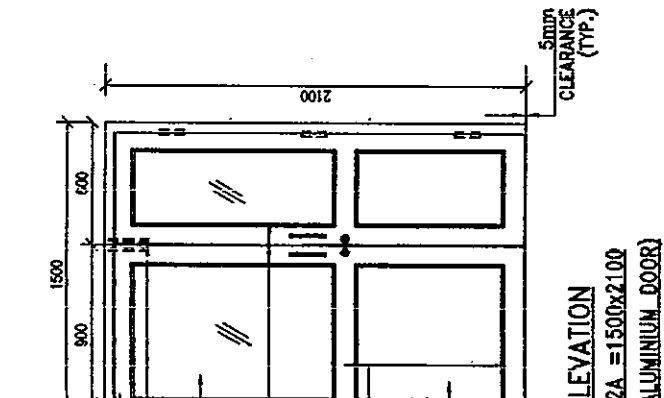


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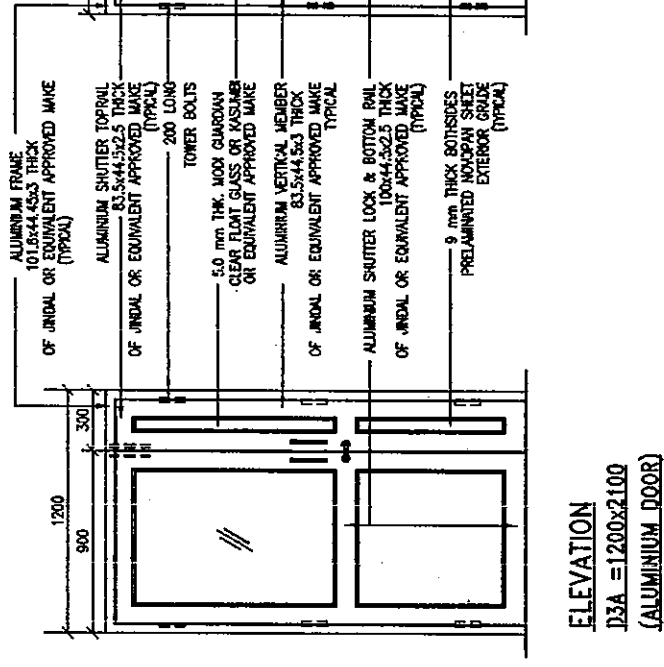
0114138-ABB-04



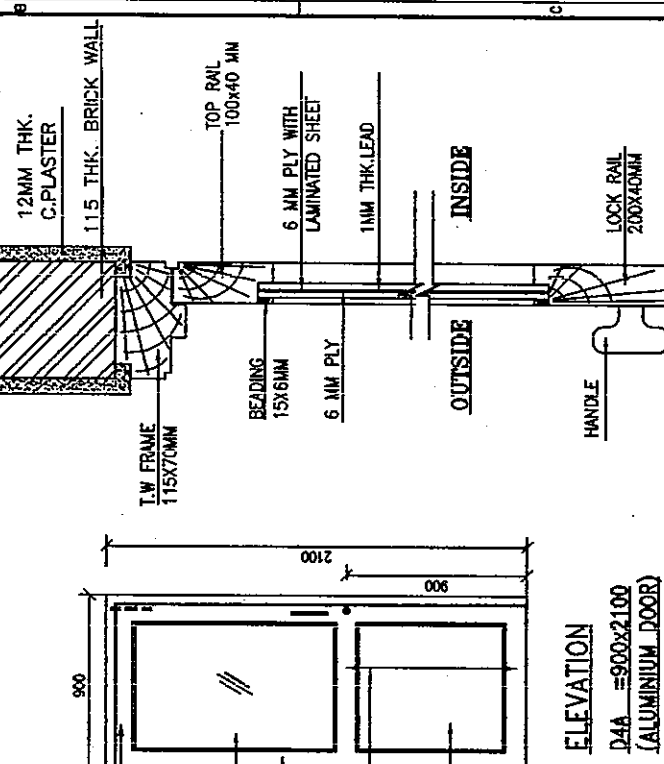
ELEVATION
D1A = 1800x2100
(ALUMINIUM DOOR)



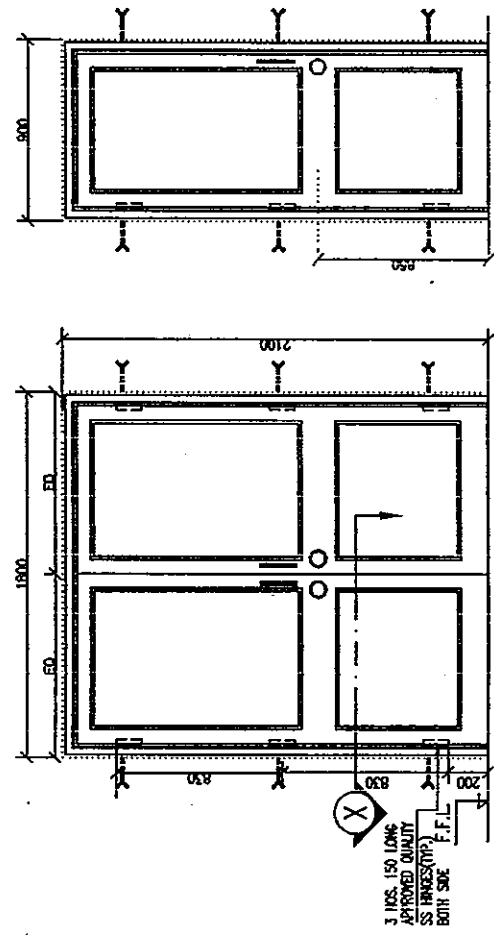
ELEVATION
D2A = 1500x2100
(ALUMINIUM DOOR)



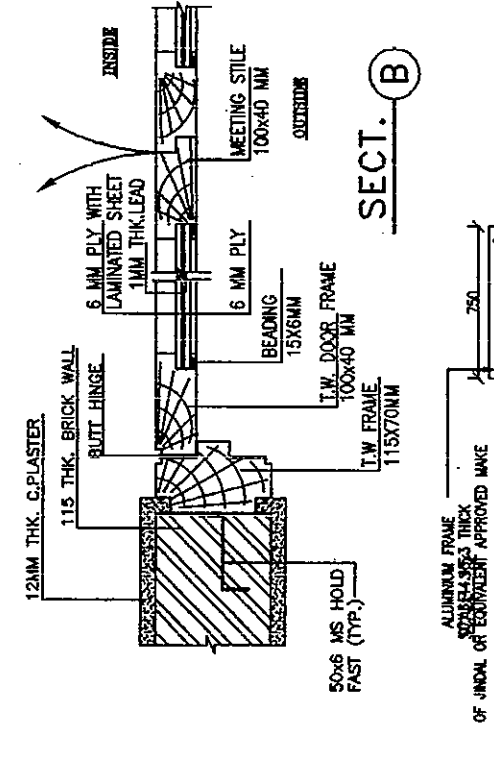
ELEVATION
D3A = 1200x2100
(ALUMINIUM DOOR)



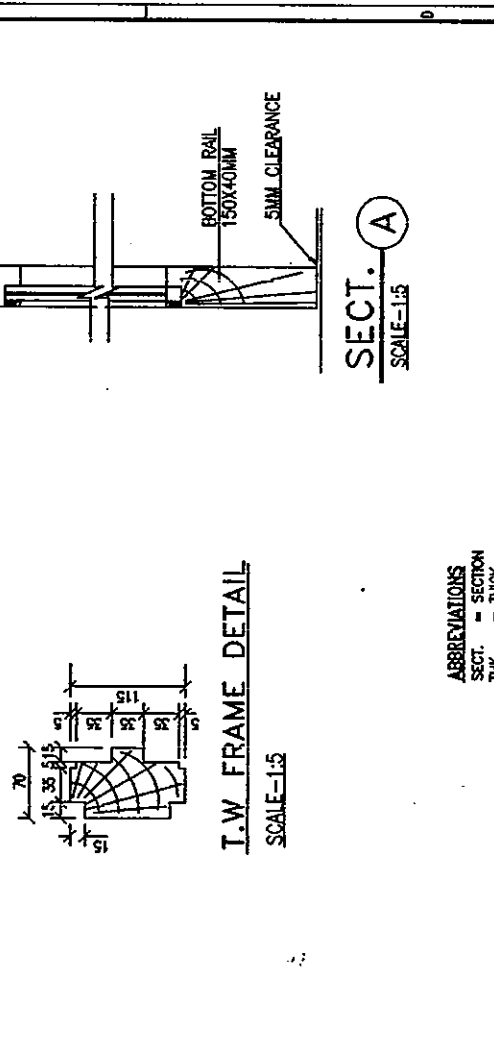
ELEVATION
D4A = 900x2100
(ALUMINIUM DOOR)



ELEVATION
D1W = 1800x2100

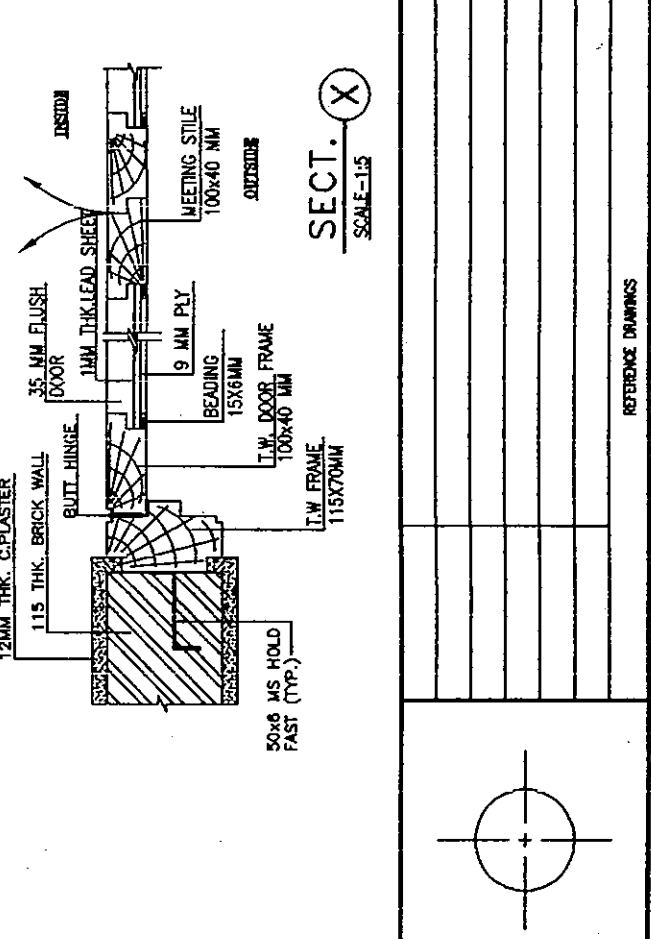


ELEVATION
D2W = 1500x2100

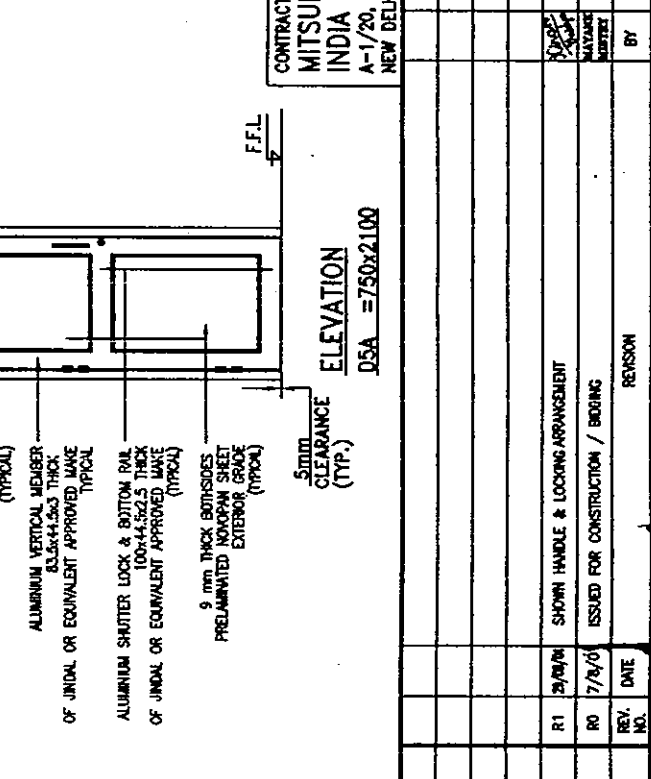


ELEVATION
D3W = 1200x2100

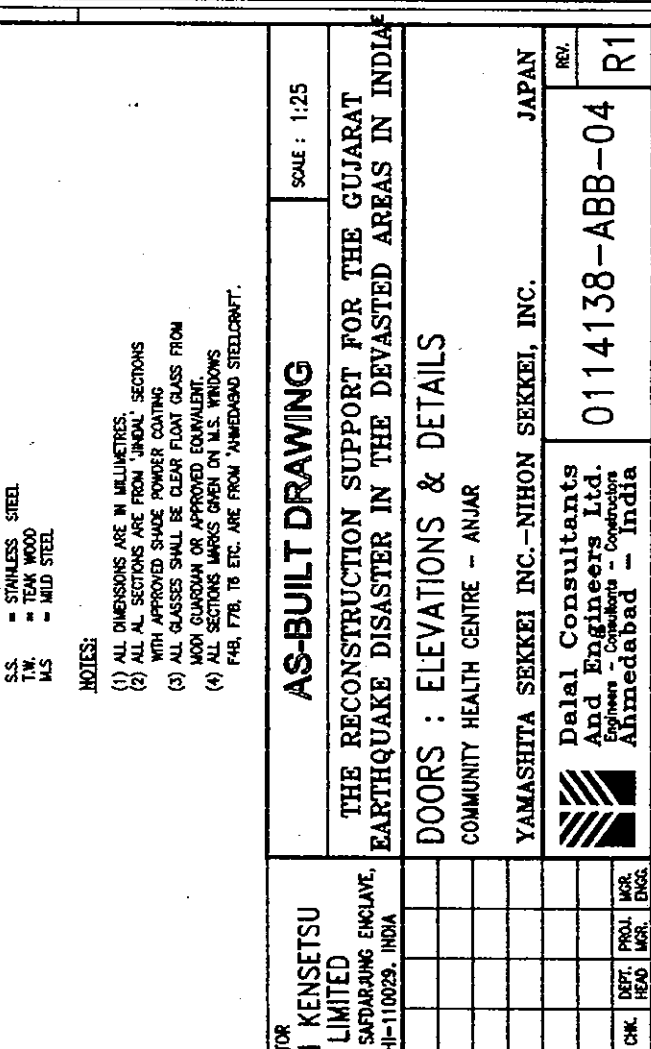
ELEVATION
D4W = 900x2100



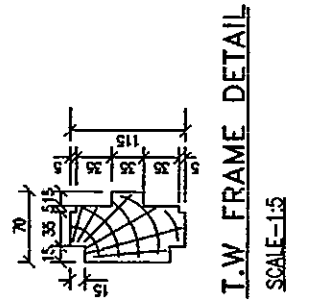
SECTION X
SCALE-1:5



SECTION B
SCALE-1:5



SECTION A
SCALE-1:5



T.W. FRAME DETAIL
SCALE-1:5

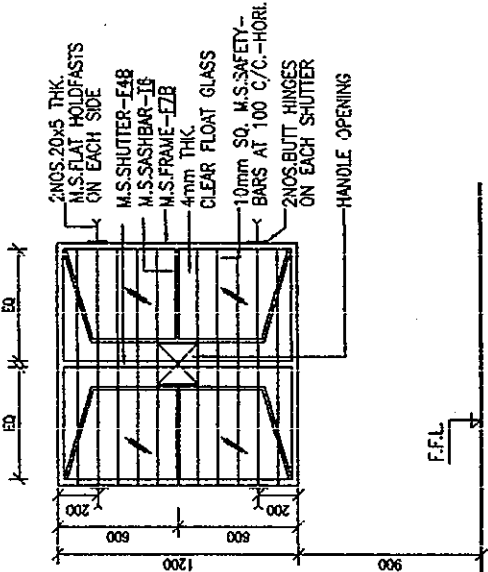
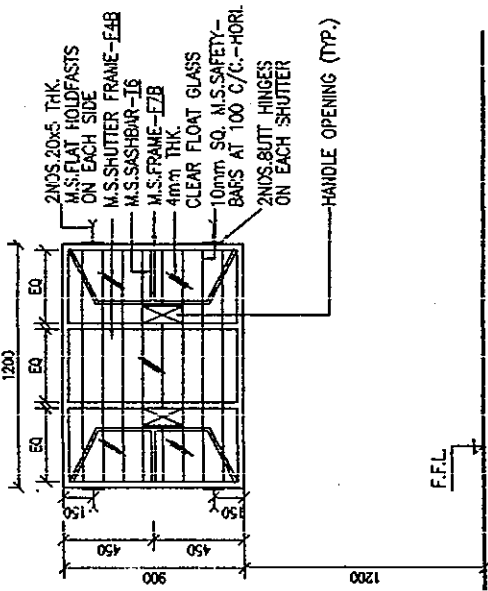
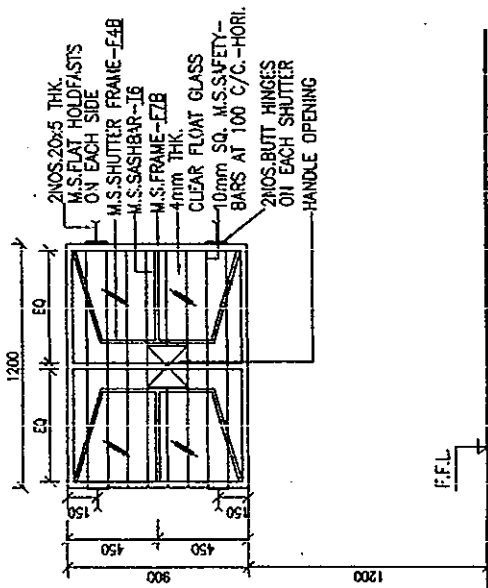
- ABBREVIATIONS
- SECT. - SECTION
 - THK. - THICK
 - NO. - NUMBERS
 - TYP. - TYPICAL
 - F.F.L. - FINISHED FLOOR LEVEL
 - D1W - DOOR 1 WOODEN
 - D2A - DOOR 2 ALUMINIUM
 - MM - MILLIMETRE
 - EQ. - EQUAL
 - S.S. - STAINLESS STEEL
 - T.W. - TEAK WOOD
 - MS - MILD STEEL

- NOTES:
- (1) ALL DIMENSIONS ARE IN MILLIMETRES.
 - (2) ALL AL. SECTIONS ARE FROM 'INDAL' SECTIONS WITH APPROVED SHADE POWDER COATING.
 - (3) ALL GLASSES SHALL BE CLEAR FLOAT GLASS FROM MOQ GUARDIAN OR APPROVED EQUIVALENT.
 - (4) ALL SECTIONS MARKS GIVEN ON U.S. WINDOWS FAB. 17B, 18 ETC. ARE FROM 'AHMEDABAD STEELCRAFT'.

AS-BUILT DRAWING		SCALE : 1:25	
THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTED AREAS IN INDIA			
DOORS : ELEVATIONS & DETAILS			
COMMUNITY HEALTH CENTRE - ANJAR			
YAMASHITA SEKKEI INC.-NIHON SEKKEI, INC.		JAPAN	
Datal Consultants And Engineers Ltd.		0114138-ABB-04	
Engineers - Consultants - Construction		Ahmedabad - India	
CONTRACTOR		MITSUBI KENSETSU INDIA LIMITED	
A-1/20, SAFDARABAD ENCLAVE, NEW DELHI-110029, INDIA		REVISION	
REV. NO.	DATE	BY	REASON
R1	25/04/00	SHOWN HANDLE & LOCKING ARRANGEMENT	
R0	7/9/00	ISSUED FOR CONSTRUCTION / BIDDING	
CHK.	DEPT. MGR.	PRJAL. MGR.	ENGRG.

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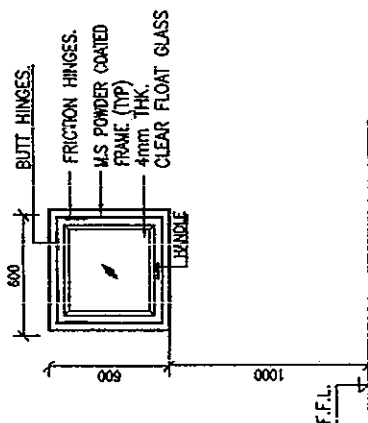
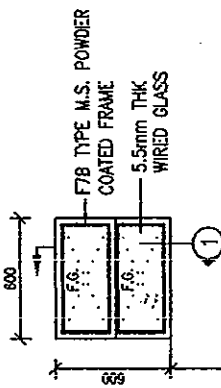
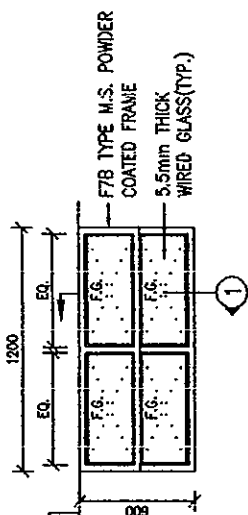
0114138-ABB-05



W1S= 1200x 900 (M.S. POWDER COATED)
(MASONRY OPENING)

W2S= 1200x 900 (M.S. POWDER COATED)
(MASONRY OPENING)

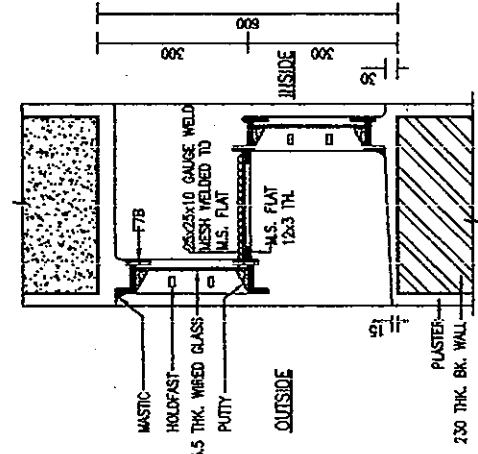
W3S= 1200x1200 (M.S. POWDER COATED)
(MASONRY OPENING)



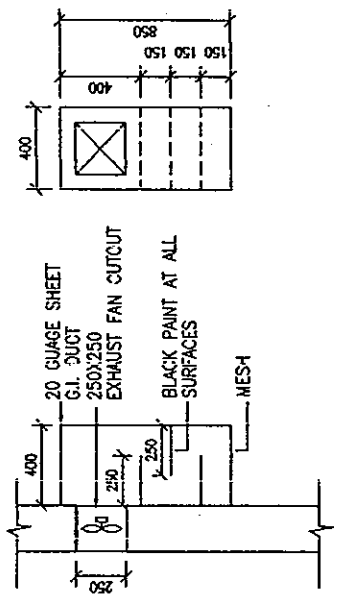
SWA= 600 X 600 (M.S. POWDER COATED)

V1S= 1200x 600 (M.S. POWDER COATED)
(MASONRY OPENING)

V2S= 600 X 600 (M.S. POWDER COATED)
(MASONRY OPENING)



SECTION 1-1
SCALE 1:10



- ABBREVIATIONS
- SWA - SERVICE WINDOW ALUMINIUM
 - THK - THICK
 - F.C. - FIXED GLASS
 - C/C - CENTRE TO CENTRE
 - F.F.L. - FINISHED FLOOR LEVEL
 - W2S - WINDOW 2 STEEL
 - V1S - VENTILATOR 1 STEEL
 - ED. - EQUAL
 - M.S. - MILD STEEL
 - NO. - NUMBER
 - MM. - MILLIMETRE
 - HORI. - HORIZONTALLY
 - BK - BRICK

- NOTES:
- ALL DIMENSIONS ARE IN MILLIMETRES.
 - ALL AL SECTIONS ARE FROM 'JINDAL' SECTIONS WITH APPROVED SHADE POWDER COATING
 - ALL GLASSES SHALL BE CLEAR FLOAT GLASS FROM MOP GUARDIAN OR APPROVED EQUIVALENT.
 - ALL SECTIONS MARKS GIVEN ON M.S. WINDOWS F4B, F7B, 1B ETC. ARE FROM 'AHMEDABAD STEELCRAFT'.

AS-BUILT DRAWING

SCALE : 1:25

THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA

WINDOW & VENTILATORS : ELEVATIONS

COMMUNITY HEALTH CENTRE - ANJAR

JAPAN

YAMASHITA SEKKEI INC.-NIHON SEKKEI, INC.

Dalal Consultants And Engineers Ltd. Engineers - Consultants - Contractors Ahmedabad - India

0114138-ABB-05

REV. R1

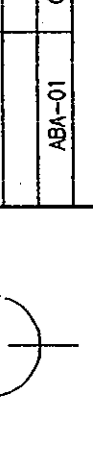
CONTRACTOR
MITSUI KENSETSU INDIA LIMITED
A-1/20, SAFDARJUNG ENCLAVE,
NEW DELHI-110029, INDIA

BY
CHK. MR. DEPT. MR. PROJ. MR. ENCS.

REVISION

REV. NO.	DATE	REVISION
R1	10/9/01	EXHAUST/FRESH AIR DUCT DETAIL IN CORPORATED.
R0	7/8/01	ISSUED FOR CONSTRUCTION / BIDDING

ABA-01 GROUND FLOOR PLAN



0114138-ABB-00

SCHEDULE OF OPENINGS (DOORS, WINDOWS & VENTILATORS)

TYPE	SIZE	NOS	SILL TOP	UNTEL BOTTOM	REMARKS
RS1	2000 X 2500	01	-	2500	PARTLY 12 mm THK. C.R. SHEET & PARTLY GRILL HAND OPERATED ROLLING SHUTTER
D2A	1500 x 2100	01	-	2100	DOUBLE SHUTTER POWDER COATED AL-FRAME PARTLY GLAZED AND PARTLY PRE-LAMINATED PANEL
D4S	900 x 2100	01	-	2100	M.S. PRESSED STEEL FRAME WITH WOODEN SHUTTER PARTLY PANEL & PARTLY LOUVERS
D4S1	900 x 2100	01	-	2100	M.S. PRESSED STEEL FRAME WITH WOODEN SHUTTER
W3S	1200 X 900	03	1200	2100	FULLY GLAZED M.S. POWDER COATED OPENABLE WITH GRILL
V1S	1200 X 600	05	1200	BEAM BOTTOM	FIXED GLASS "Z" TYPE M.S. POWDER COATED

FINISH SCHEDULE

FLOOR & SKIRTING	WALL	CEILING
(1) POLISHED KOTAH STONE WITH 100MM HEIGHT SKIRTING (2) CERAMIC TILES 100MM HEIGHT SKIRTING	(1) 12MM THK MALA PLASTER WITH FLAT ENAMEL PAINT (2) 20MM THK (12mm + 8mm) SAND FACE PLASTER WITH CEMENT PAINT (3) 12MM THK MALA PLASTER WITH WHITE WASH	(1) 8MM THK MALA PLASTER WITH WHITE WASH (2) 8MM THK MALA PLASTER WITH FLAT ENAMEL PAINT

ABBREVIATIONS

- AL : ALUMINIUM
- DRG. : DRAWING
- RS : ROLLING SHUTTER
- THK. : THICK
- mm. : MILLIMETRE
- M.S. : MILD STEEL

NOTE:
 (1) ALL DIMENSION ARE IN MILLIMETRES.
 (2) DIMENSIONS GIVEN ARE EXCLUDING PLASTER THICKNESS.
 (3) ALL SILL LEVELS ARE FROM FINISHED FLOOR LEVEL.

AS-BUILT DRAWING

SCALE : 1:100

THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTED AREAS IN INDIA

PLAN, SECTION AND ELEVATION

AMBULANCE SHED, GENERATOR ROOM, POSTMORTEM ROOM & PUMP ROOM-ANJAR

YAMASHITA SEKKEI INC.-NIHON SEKKEI, INC. JAPAN

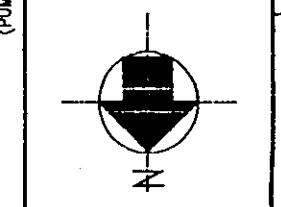
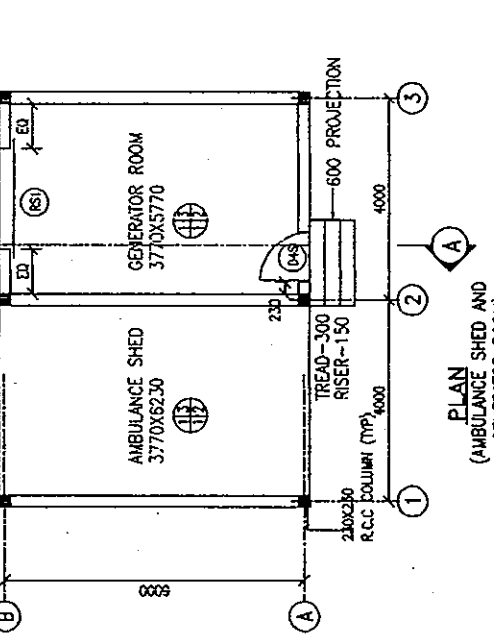
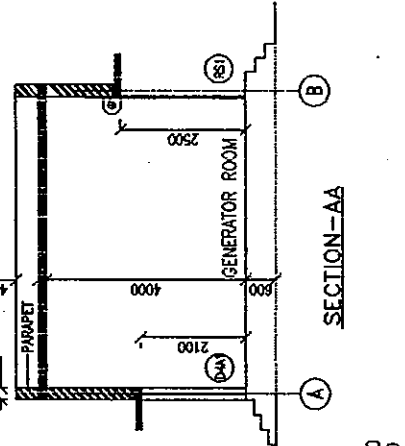
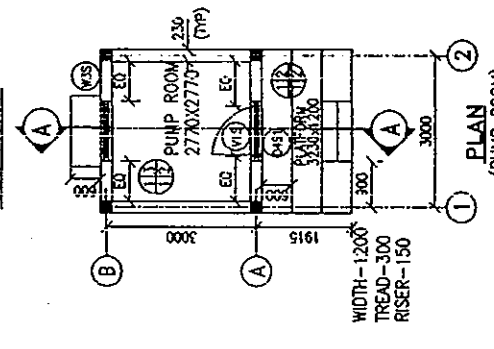
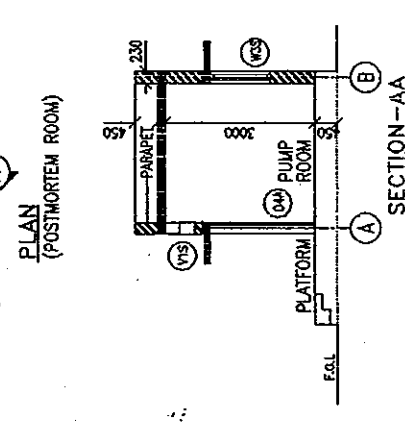
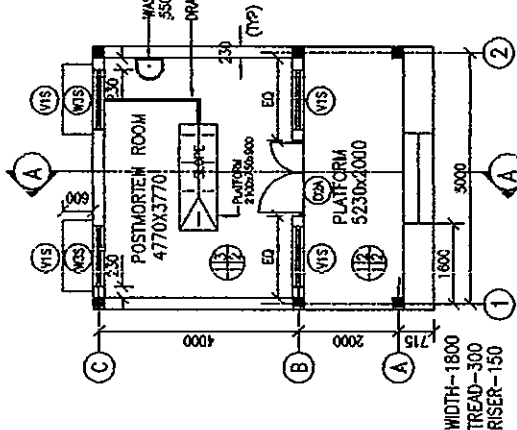
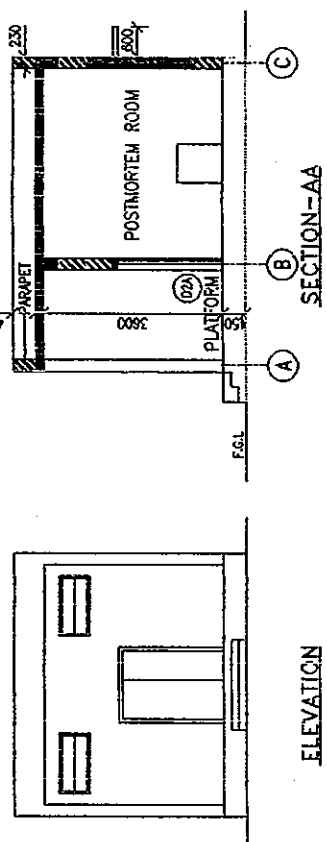
Dalal Consultants And Engineers Ltd. Ahmedabad - India

0114138-ABB-06

JAPAN

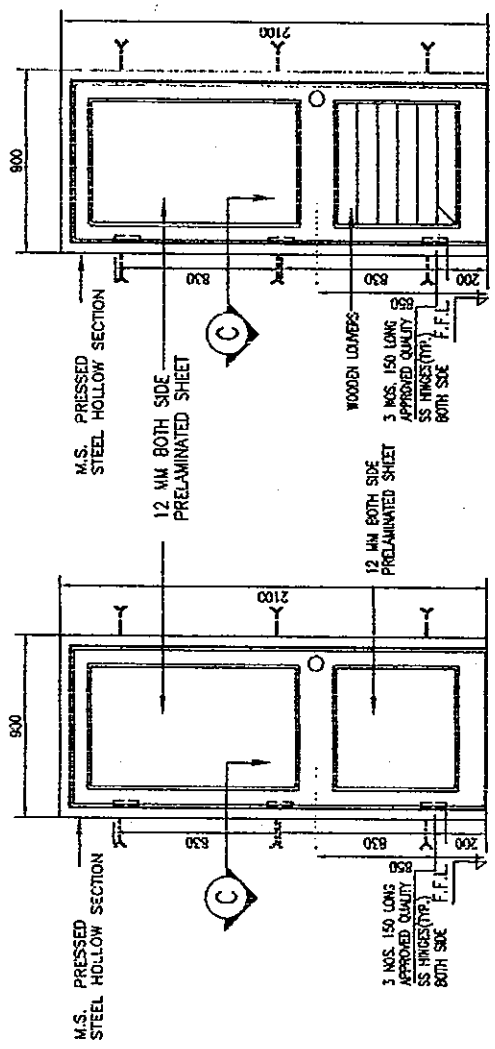
REV. R1

CONTRACTOR	MITSUBI KENETSU INDIA LIMITED
ADDRESS	A-1/20, SAFDARJUNG ENCLAVE, NEW DELHI-110029, INDIA
BY	[Signature]
CHK.	[Signature]
DEPT. HEAD	
PROJ. MGR.	
MR. ENGG.	

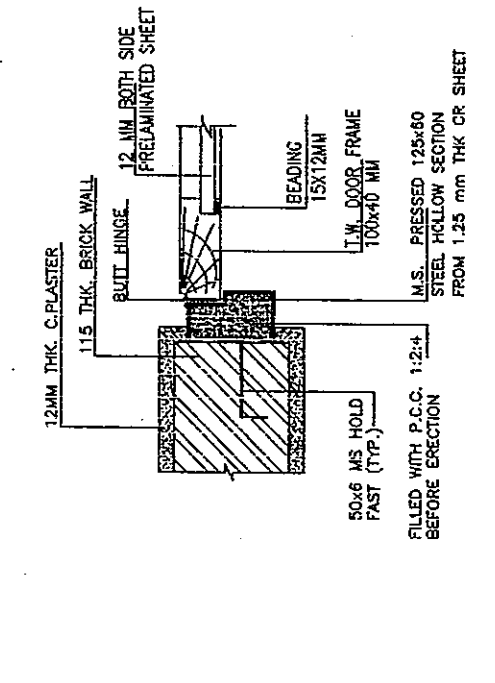


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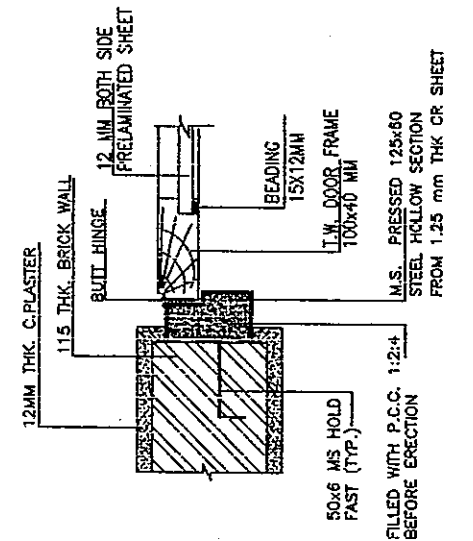


ELEVATION
D/S1 = 900x2100
(M.S. PRESSED STEEL FRAME WITH WOODEN SHUTTER)

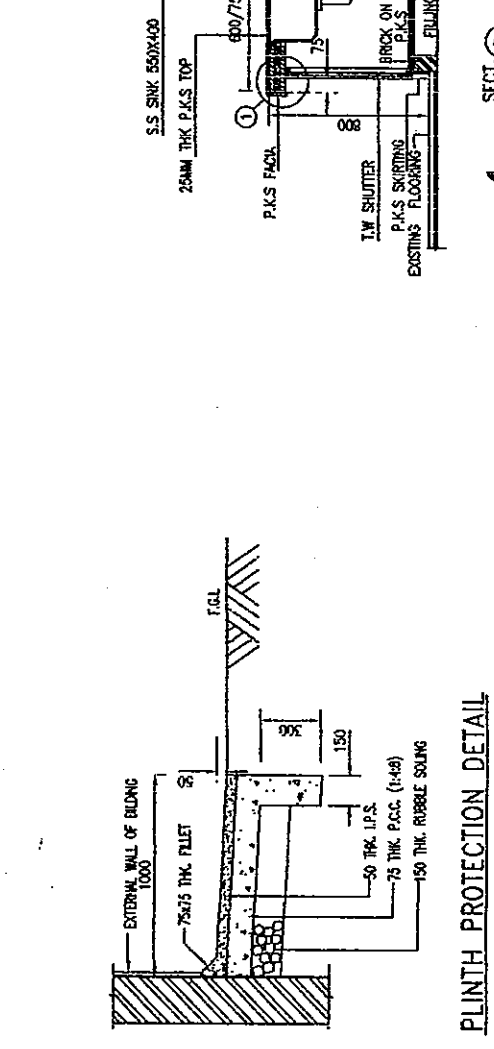


ELEVATION
D/S2 = 900x2100
(M.S. PRESSED STEEL FRAME WITH BRICK WALL)

SECT. C
SCALE=1:15



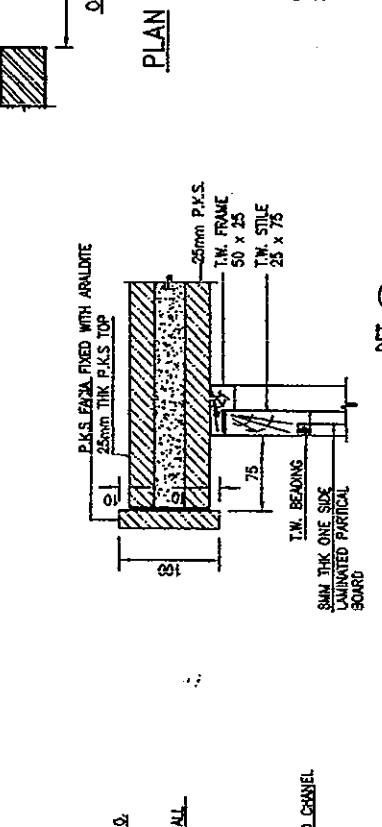
SECT. C
SCALE=1:15



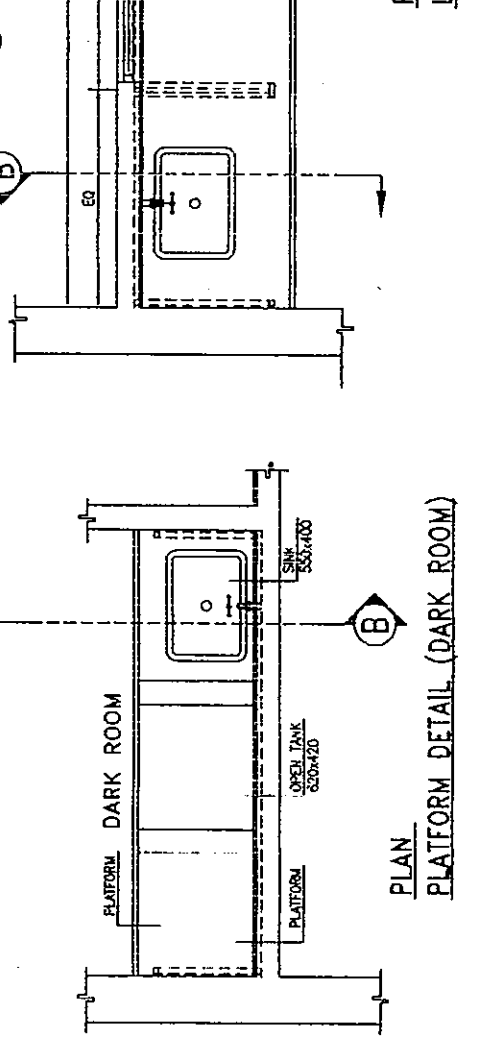
ELEVATION
R/S1 = 2000x2500
(PARTLY 12 mm THK. C.R. SHEET & PARTLY ORBL. HAND OPERATED ROLLING SHUTTER)

ELEV.-A
IN SIDE
OUT SIDE

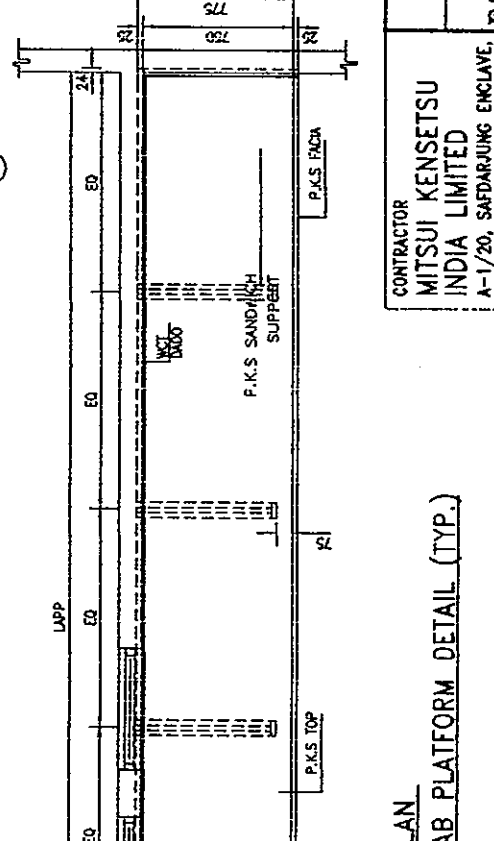
SECT. 1



SECT. 1



PLAN
LAB PLATFORM DETAIL (DARK ROOM)



PLAN
LAB PLATFORM DETAIL (TYP.)

- ABBREVIATIONS**
- SECT. SECTION
 - THK. THICK
 - NOS. NUMBERS
 - TYP. TYPICAL
 - FF.L. FINISHED FLOOR LEVEL
 - D1W DOOR 1 WOODEN
 - D2A DOOR 2 ALUMINIUM
 - MM. MILLIMETRE
 - EQ. EQUAL
 - S.S. STAINLESS STEEL
 - T.W. TEAK WOOD
 - M.S. MILD STEEL
 - LAPP. LAPP
 - LENGTH AS PER PLAN

- NOTES:**
- (1) ALL DIMENSIONS ARE IN MILLIMETRES.
 - (2) ALL GLASSES SHALL BE CLEAR FLOAT GLASS FROM WOOD GLASSOR OR APPROVED EQUIVALENT.
 - (3) ALL SECTIONS MARKS GIVEN ON M.S. WINDOWS 448, 478, 76 ETC. ARE FROM AHMEDABAD STEELCRAFT.
 - (4) WIDTH AS PER PLAN.

AS-BUILT DRAWING SCALE : 1:25

THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTED AREAS IN INDIA

LAB PLATFORM, PLINTH PROTECTION & DOORS DETAIL
ANJAR HOSPITAL

YAMASHITA SEKKEI INC. - NIHOH SEKKEI, INC. JAPAN

Dalal Consultants And Engineers Ltd. Engineers - Consultants - Construction Ahmedabad - India

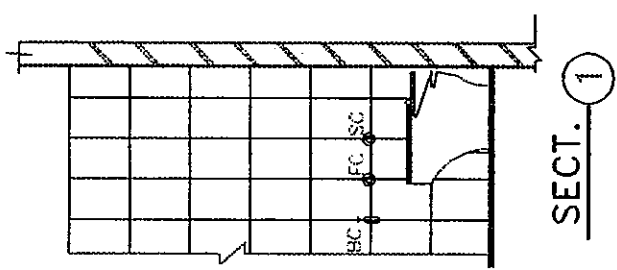
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REV. R1

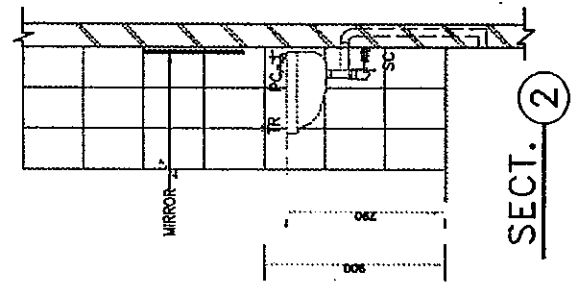
NO.	REV.	DATE	ISSUED FOR CONSTRUCTION/BIDDING	BY	CHK.	DEPT. HEAD	PROJ. MGR.	ENGR.
R1	7/9/01		REVISED LAB PLATFORM TITLE & ADDED LENGTH NOTE IN ABBREVIATION, ADDED PLATFORM DETAIL (DARK ROOM)					
R0	10/09/01		ISSUED FOR CONSTRUCTION/BIDDING					

REFERENCE DRAWINGS

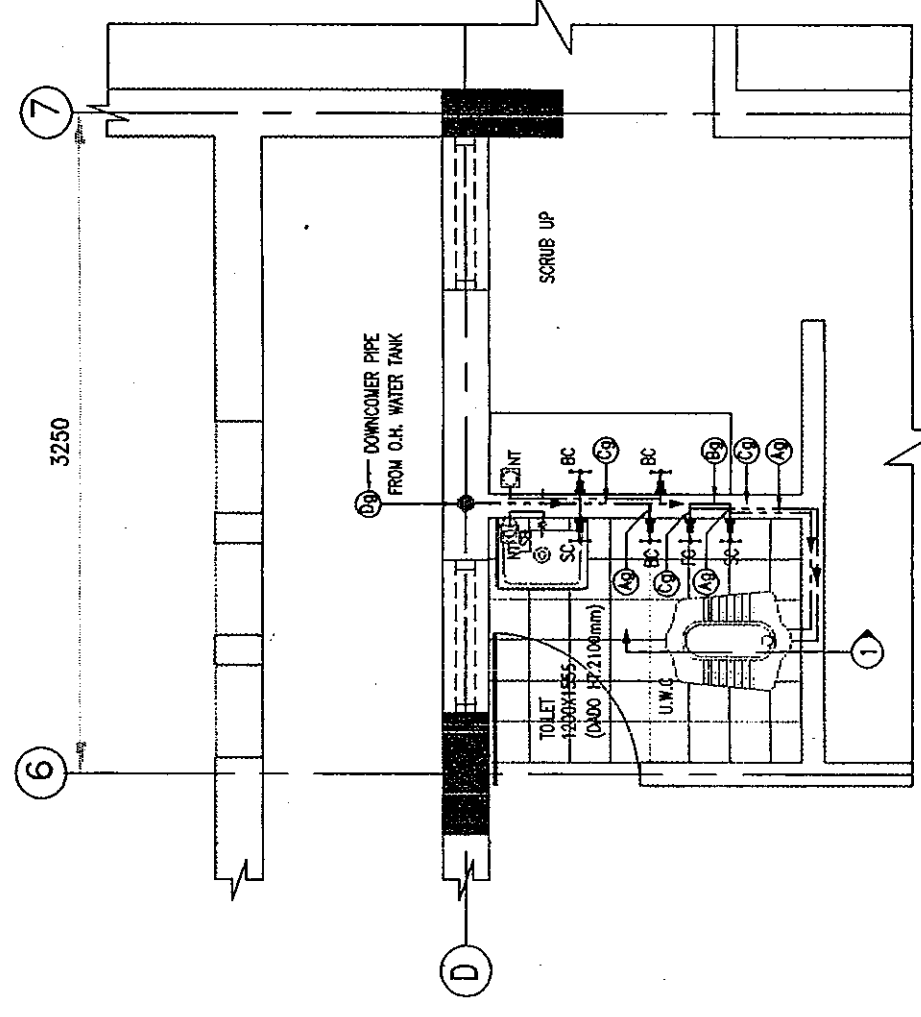
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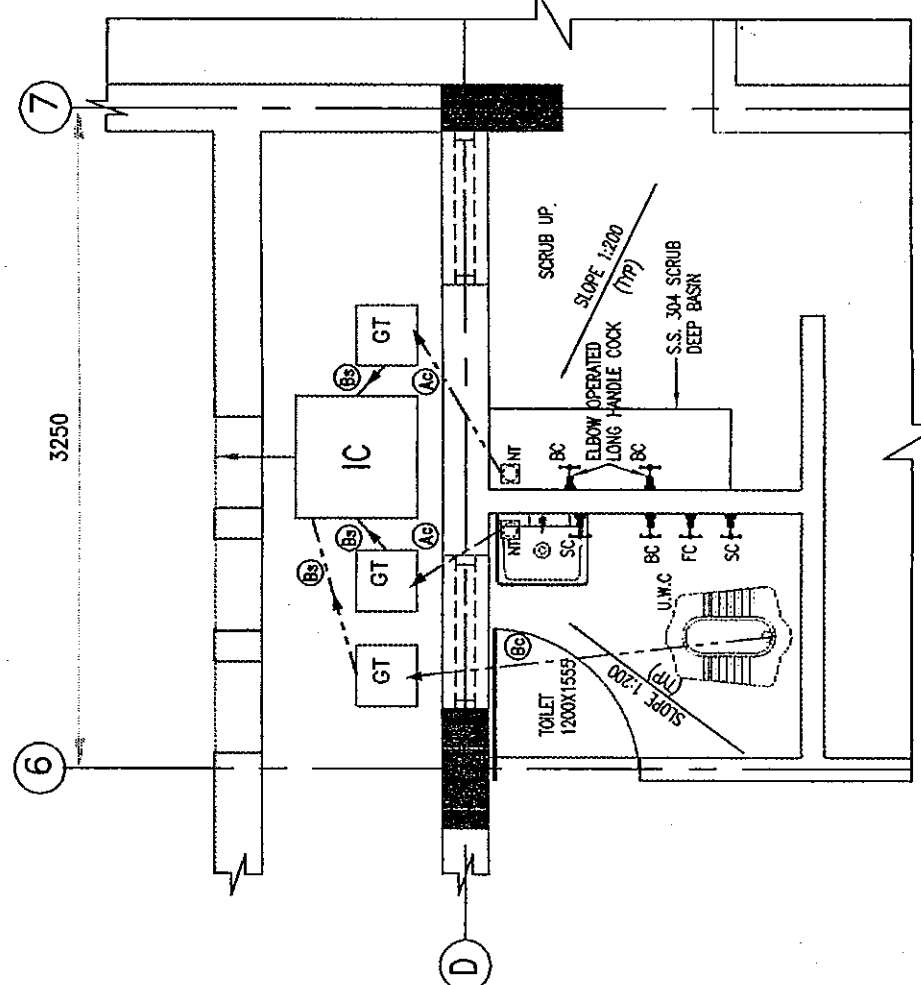
SECT. 1



SECT. 2



LAYOUT PLUMBING SYSTEM



LAYOUT SEWER AND WASTE WATER SYSTEM

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES AND ALL LEVELS ARE IN METRES.
2. DIMENSIONS GIVEN ARE EXCLUDING PLASTER THICKNESS.
3. ALL G.I. PIPES ARE OF CLASS MEDIUM 'B' CLASS
4. ALL C.I. PIPES SHOULD BE CENTRIFUGALLY CAST CONFORMING TO I.S. 1536 LA CLASS, WITH SOCKET AND SPIGOT JOINTS.
5. ALL G.T. SHALL BE OF SIZE 300 x 300.
6. I.C. SHALL BE OF SIZE 600 x 600 UPTO 1000 DEPTH AND 1000 x 1000 FOR DEPTHS MORE THAN 1000 mm. & UP TO 1500 mm.
7. ALL FLOORS SHALL SLOPE 1:200 TOWARDS NT.

U.W.C. - WHITE GLAZED CERAMIC UNIVERSAL W.C. MODEL NO. 2061 OF "CERA" (TYP.) OR EQ. APPROVED MAKE.

WASH BASIN - WHITE GLAZED CERAMIC WASH BASIN MODEL NO. 1001 OF "CERA" SIZE 550 x 400 (TYP.) OR EQ. APPROVED MAKE.

MIRROR - MIRROR OF "PILKINGTON" SIZE 450 x 600 (TYP.) OR EQ. APPROVED MAKE.

FLOORING - 200 x 200 C.C.T. OF JOHNSON OR EQ. APPROVED MAKE. (INSIDE)

DADO - 200 x 300 W.C.T. DADO UPTO 2100 mm. HT. AS MARKED OF JOHNSON OR EQ. APPROVED MAKE (TYP.)

ABBREVIATION'S:

AC	: ANGLE COCK	HT	: HEIGHT
BC	: BIB COCK	LVL	: LEVEL
BT	: BOTTLE TRAP	LH	: LADIES
CI	: CAST IRON	MH	: MANHOLE
CP	: CHROMIUM PLATED	mm	: MILLIMETRE
DIA	: DIAMETER	NT	: NAHNI TRAP
EQ	: EQUIVALENT	OH	: OVER HEAD
EWG	: EUROPEAN WATER CLOSET	PKS	: POLISHED KOTAH STONE
EXH	: EXHAUST	PRH	: TOILET PAPER ROLL HOLDER
FFL	: FINISHED FLOOR LEVEL	PVC	: POLYVINYLCHLORIDE
FC	: FLUSH COCK	RWP	: RAIN WATER DOWNTAKE PIPE
GI	: GALVANISED IRON	SC	: STOP COCK
GT	: GULLEY TRAP	ST	: SEPTIC TANK
HD	: HAND DRYER	THK	: THICKNESS / THICK
HOPE	: HIGH DENSITY POLYETHYLENE	TYP	: TYPICAL
IC	: INSPECTION CHAMBER	TR	: TOWEL ROD.
IL	: INVERT LEVEL	W/C	: WATER CLOSET (INDIAN STYLE)
LFC	: LEVER TYPE FLUSH COCK	CCT	: COLOURED CERAMIC TILES.
LSB	: PLASTIC LIQUID SOAP BOTTLE	SR	: SHOWER ROSE

LEGEND:

Ag	15mm DIA. GI PIPE	Ac	80mm DIA. CI PIPE
Bg	20mm DIA. "	Bc	100mm DIA. "
Cg	25mm DIA. "	Bs	100mm DIA. GLAZED STONWARE PIPE (LAID TO SLOPE 1:60)
Dg	32mm DIA. "	Cs	150mm DIA. "
Eg	40mm DIA. "	Ds	230mm DIA. "
Fg	50mm DIA. "		

CONTRACTOR
MITSUI KENSETSU
INDIA LIMITED
A-1/20, SAFDARJUNG ENCLAVE,
NEW DELHI-110029, INDIA

AS-BUILT DRAWING

SCALE: 1:25

DETAILS OF DOCTORS ROOM TOILET
MUNDRA HOSPITAL
YAMASHITA SEKKI INC.-NIHON DEKKI, INC.



Dalal Consultants
And Engineers Ltd.
Engineers, Consultants, Contractors
Ammedabad - India

JAPAN

REV. 0114138-ABB-503

GROUND FLOOR PAU-MUNDRA HOSPITAL

REFERENCE DRAWINGS

NO.	DATE	REASON	BY	CHK.	SEPT. HEAD	MR. ENGR.
-----	------	--------	----	------	------------	-----------

ISSUED FOR CONSTRUCTION

28-12-08

RO

REV.

DATE

REASON

BY

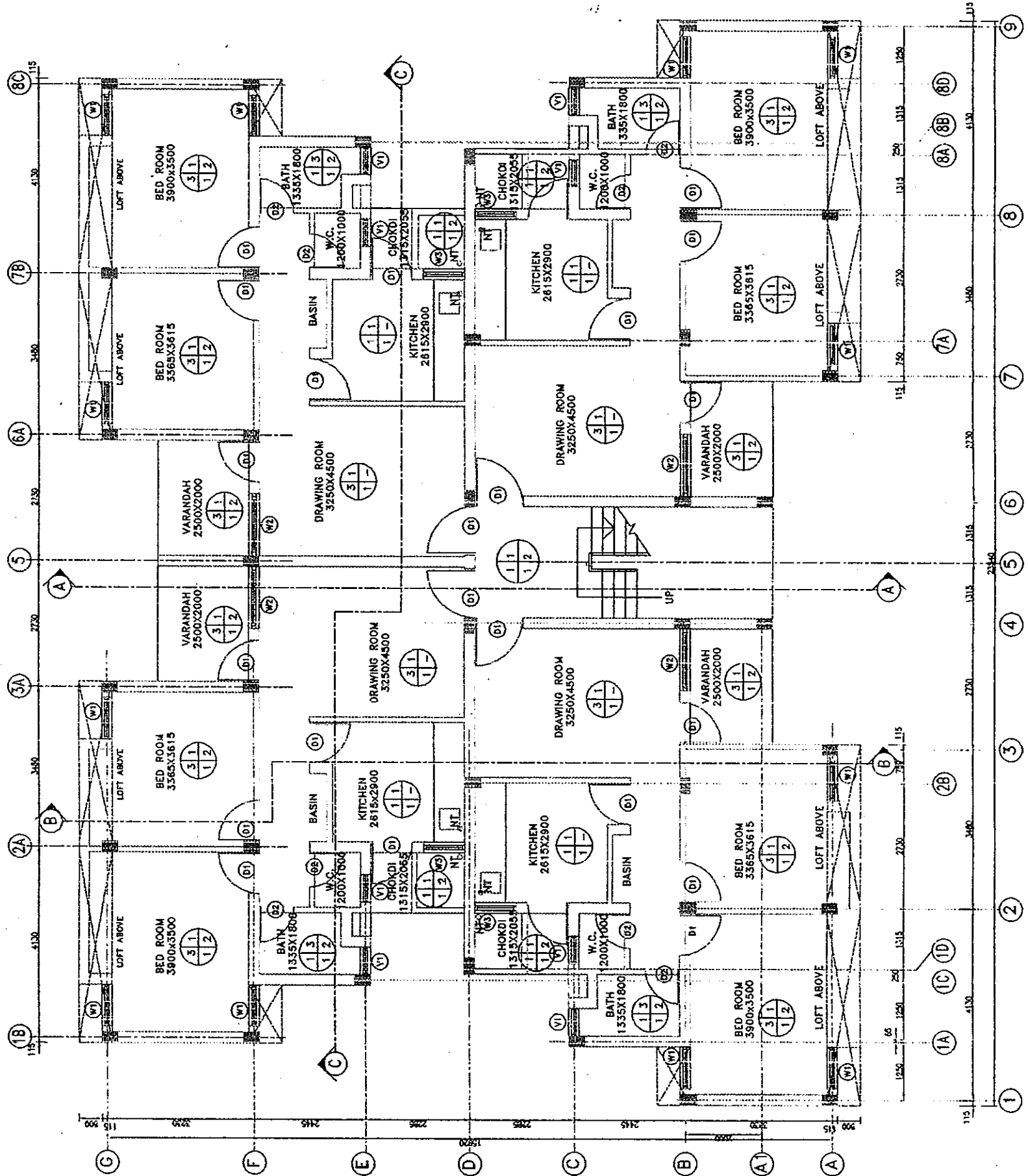
CHK.

SEPT. HEAD

MR. ENGR.

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0114138-ABA-101



SCHEDULE OF OPENINGS & BRIEF DESCRIPTION OF DOORS, WINDOWS & VENTILATORS

TYPE	SIZE	NOS	SILL TOP	REMARKS
D1	900x2100	24	2100	M.S. PRESSED STEEL FRAME WITH WOODEN PANELLED SHUTTERS
D2	750x2100	08	2100	M.S. PRESSED STEEL FRAME WITH WOODEN PANELLED SHUTTERS
V1	900x1350	12	750	M.S. PRESSED STEEL FRAME WITH FULLY GLAZED OPENABLE SHUTTERS.
V2	1350x1350	04	750	M.S. PRESSED STEEL FRAME WITH FULLY GLAZED OPENABLE SHUTTERS.
V3	900x1050	04	1050	M.S. PRESSED STEEL FRAME WITH FULLY GLAZED OPENABLE SHUTTERS.
V4	600x600	08	1500	M.S. PRESSED STEEL FRAME WITH LOUNERS

FINISH SCHEDULE

FLOOR & SURFACING	FINISH
FLOOR	F : FLOOR IW : INTERNAL SURFACE OF WALL EW : EXTERNAL SURFACE OF WALL C : CEILING
FLOOR & SURFACING	(1) POLISHED KOTA STONE (30MM TO 40MM THK) (2) COLOURED CERAMIC TILES 200mm x 200mm (3) MOSAIC TILES
WALL	(1) 12MM THK. SINGLE COAT MASA PLASTER WITH WHITE WASH (2) DOUBLE COAT SANDFACED PLASTER-19MM TH.(12+7) WITH CEMENT PAINT (3) COLOURED GLAZED TILES 200X300X3 JIM DADO UP TO UNTEL LVL.
CEILING	(1) 8mm THK. SINGLE COAT MASA PLASTER WITH WHITE WASH

ABBREVIATIONS

- AL ALUMINIUM
- D DOOR
- DRC. DRAWING
- F.F.L. FINISHED FLOOR LEVEL
- L.P.S. INDIAN PATENT STONE
- NO. NUMBER
- TR. TYPICAL
- TH. THICK
- V VENTILATOR
- W WINDOW

NOTE:

- (1) ALL DIMENSIONS ARE IN MILLIMETRES.
 - (2) DIMENSIONS GIVEN ARE EXCLUDING PLASTER THICKNESS.
 - (3) ALL SILL DIMENSIONS ARE FROM F.F.L. TO TOP OF SILL.
 - (4) ALL UNTEL DIMENSIONS ARE FROM F.F.L. TO BOTTOM OF UNTEL BEAM.
 - (5) ALL DOORS, WINDOWS & VENTILATORS TO BE FROM APPROVED MANUFACTURER. MATERIAL & COLOURS OF INTERNAL & EXTERNAL FINISHES TO BE AS APPROVED BY OWNER.
- * PLEASE REFER TECH. SPECIFICATION FOR CHOKOI AND BASIN AREA.

CONTRACTOR
MITSUBI KENSETSU
INDIA LIMITED
A-17/2, SHARDAJI ENCLAVE,
NETaji SUBE-110002, DELHI

AS-BUILT DRAWING
SCALE: 1:50
THE RECONSTRUCTION SUPPORT FOR THE GUJARAT
EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA
GROUND FLOOR PLAN-C3 CLASS [UNIT-1]
AMAR HOSPITAL

DESIGNER
YAMASAKI SEIKI INC.-NIBON SEIKI, INC.
JAPAN

CONSULTANT
Datta Consultants
And Engineers Ltd.
Plot No. 10, Sector-10,
Gurgaon - 122001 - India

PROJECT NO. 0114138-ABA-101

DATE _____

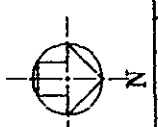
BY _____

CHKD _____

APPD _____

SCALE 1:50

NO. R1



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SCHEDULE OF OPENINGS & BRIEF DESCRIPTION OF DOORS, WINDOWS & VENTILATORS

TYPE	SIZE	NOS	SILL	UNITEL	REMARKS
			TOP	BOTTOM	
D1	900x1900	02	200	2100	M.S. PRESSED STEEL FRAME WITH WOODEN PANELLED SHUTTERS

FINISH SCHEDULE

FINISH	DESCRIPTION
F	FLOOR
IN	INTERNAL SURFACE OF WALL
EW	EXTERNAL SURFACE OF WALL
C	CEILING

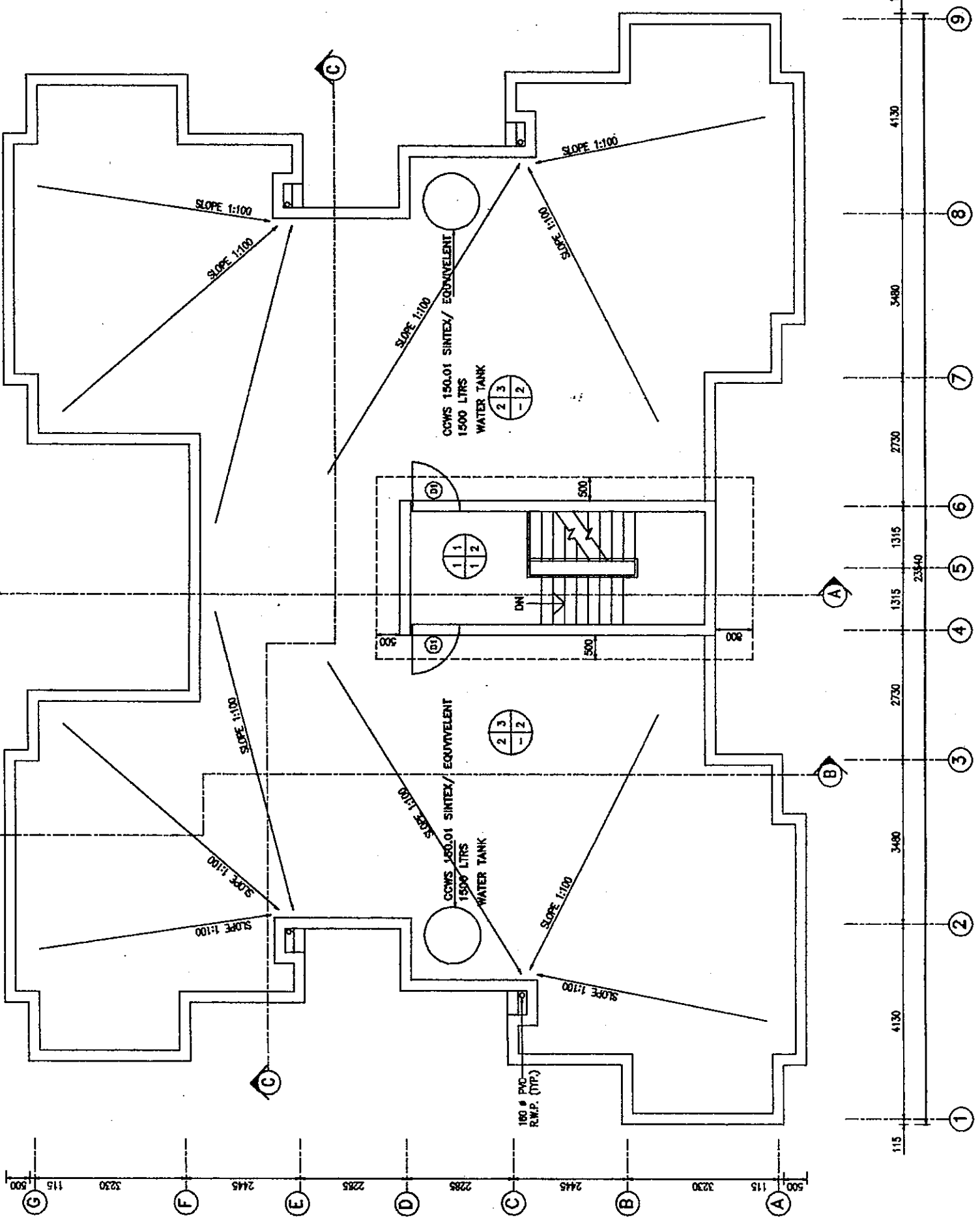
FLOOR	(1) POLISHED KOTA STONE (30MM TO 40MM THK.)
	(2) I.P.S. WITH CEMENT BASED WATER PROOFING
WALL	(1) SINGLE COAT MALA PLASTER WITH WHITE WASH-12MM TH.
	(2) DOUBLE COAT SMOOVED PLASTER-19MM TH(12+7)
	(3) 12 TH. SINGLE COAT MALA PLASTER WITH CEMENT PAINT
CEILING	(1) SINGLE COAT MALA PLASTER WITH LIME WASH-8MM TH.

ABBREVIATIONS

- AL = ALUMINIUM
- D = DOOR
- DRG. = DRAWING
- F.F.L. = FINISHED FLOOR LEVEL
- I.P.S. = INDIAN PATENT STONE
- NO. = NUMBER
- TYP. = TYPICAL
- TH. = THICK.
- V = VENTILATOR
- W = WINDOW

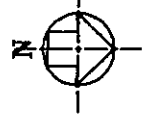
NOTE:

- (1) ALL DIMENSIONS ARE IN MILLIMETRES.
- (2) DIMENSIONS GIVEN ARE EXCLUDING PLASTER THICKNESS.
- (3) ALL SILL DIMENSIONS ARE FROM F.F.L. TO TOP OF SILL.
- (4) ALL UNTEL DIMENSIONS ARE FROM F.F.L. TO BOTTOM OF UNTEL BEAM.
- (5) ALL DOORS, WINDOWS & VENTILATORS TO BE FROM APPROVED MANUFACTURER. MATERIAL & COLOURS OF INTERNAL & EXTERNAL FINISHES TO BE AS APPROVED BY OWNER.



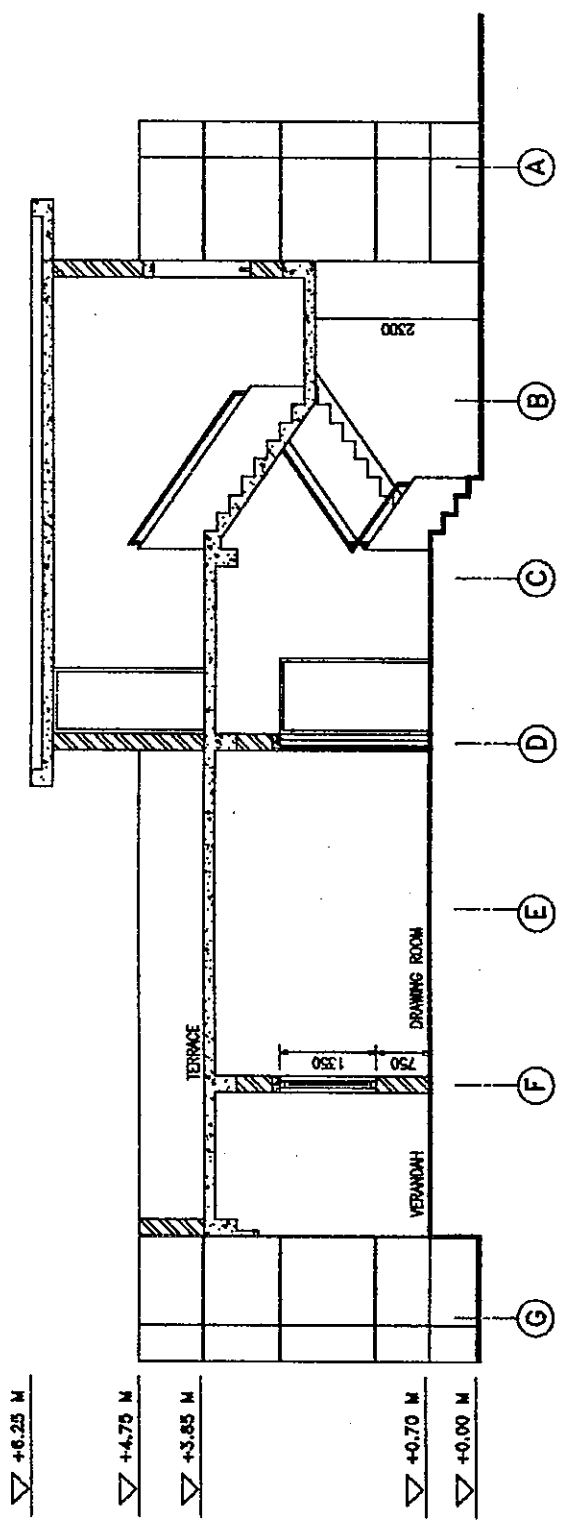
CONTRACTOR		AS-BUILT DRAWING		SCALE: 1:50	
MITSUBI KENKETSU INDIA LIMITED		THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DRASTER IN THE DEVASTATED AREAS IN INDIA		JAPAN	
P-1/20, 24th FLOOR, SURESH, NEW DELHI-110019, INDIA		TERRACE PLAN-C3 CLASS (UNIT-1)		YAMASHITA SEKKI INC.-NIBION SEKKI, INC.	
BY: [Signature]		DATE: [Date]		JAPAN	
CHECKED BY: [Signature]		DATE: [Date]		Daitai Consultants And Engineers Ltd.	
APPROVED BY: [Signature]		DATE: [Date]		New Delhi - India	
PROJECT NO: 0114138-ABA-102		SHEET NO: R1		0114138-ABA-102	

0114138-ABA-102

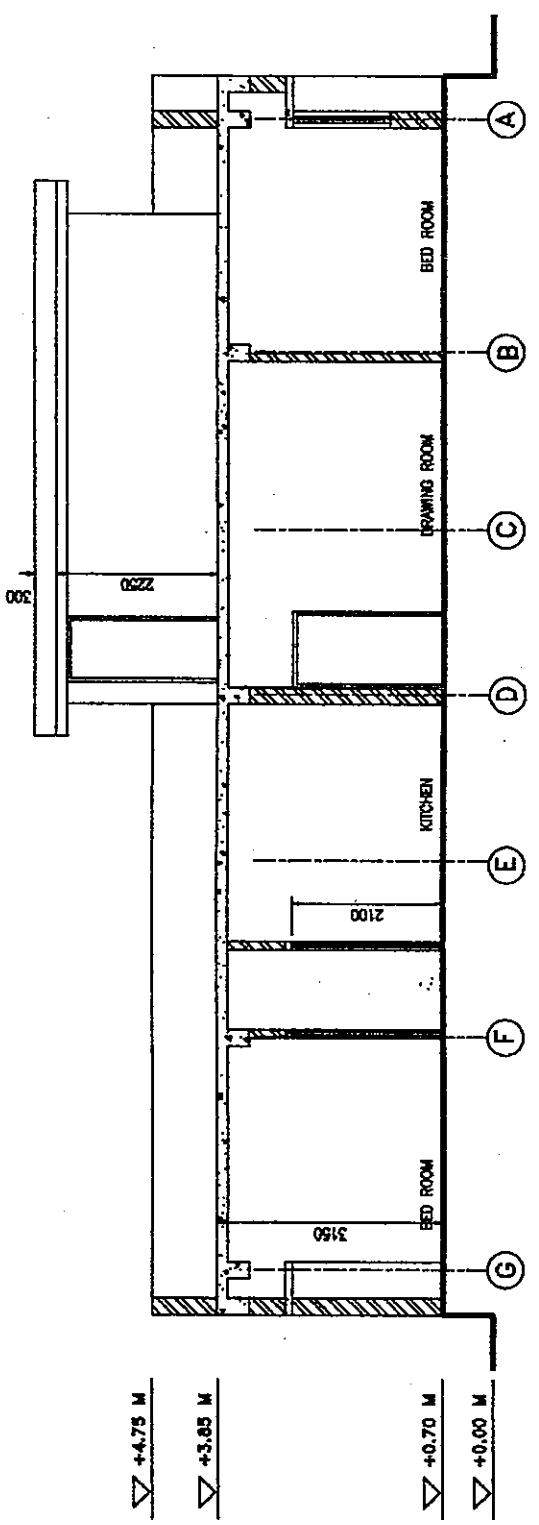


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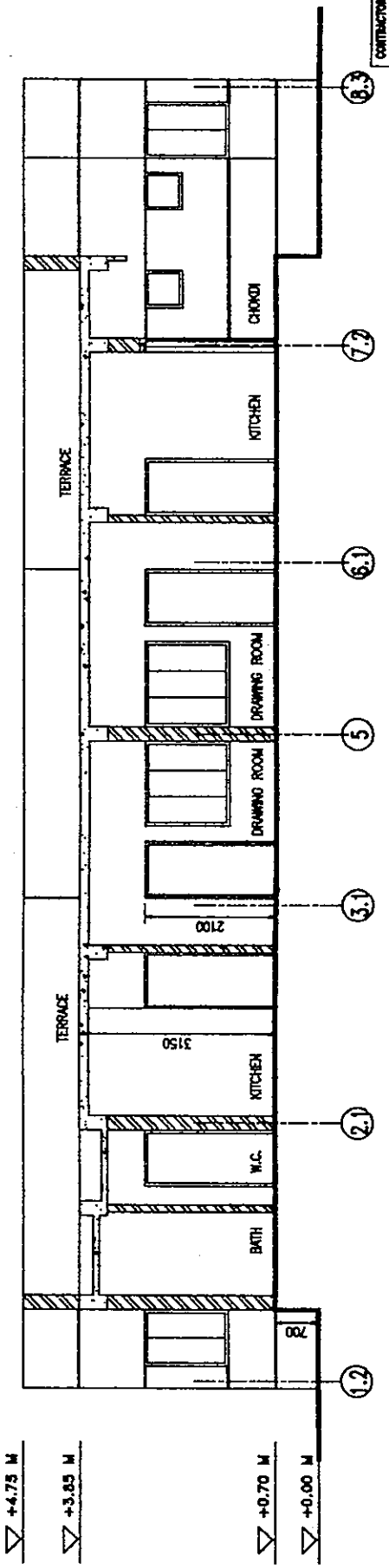
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SECTION-A-A

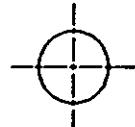


SECTION-B-B



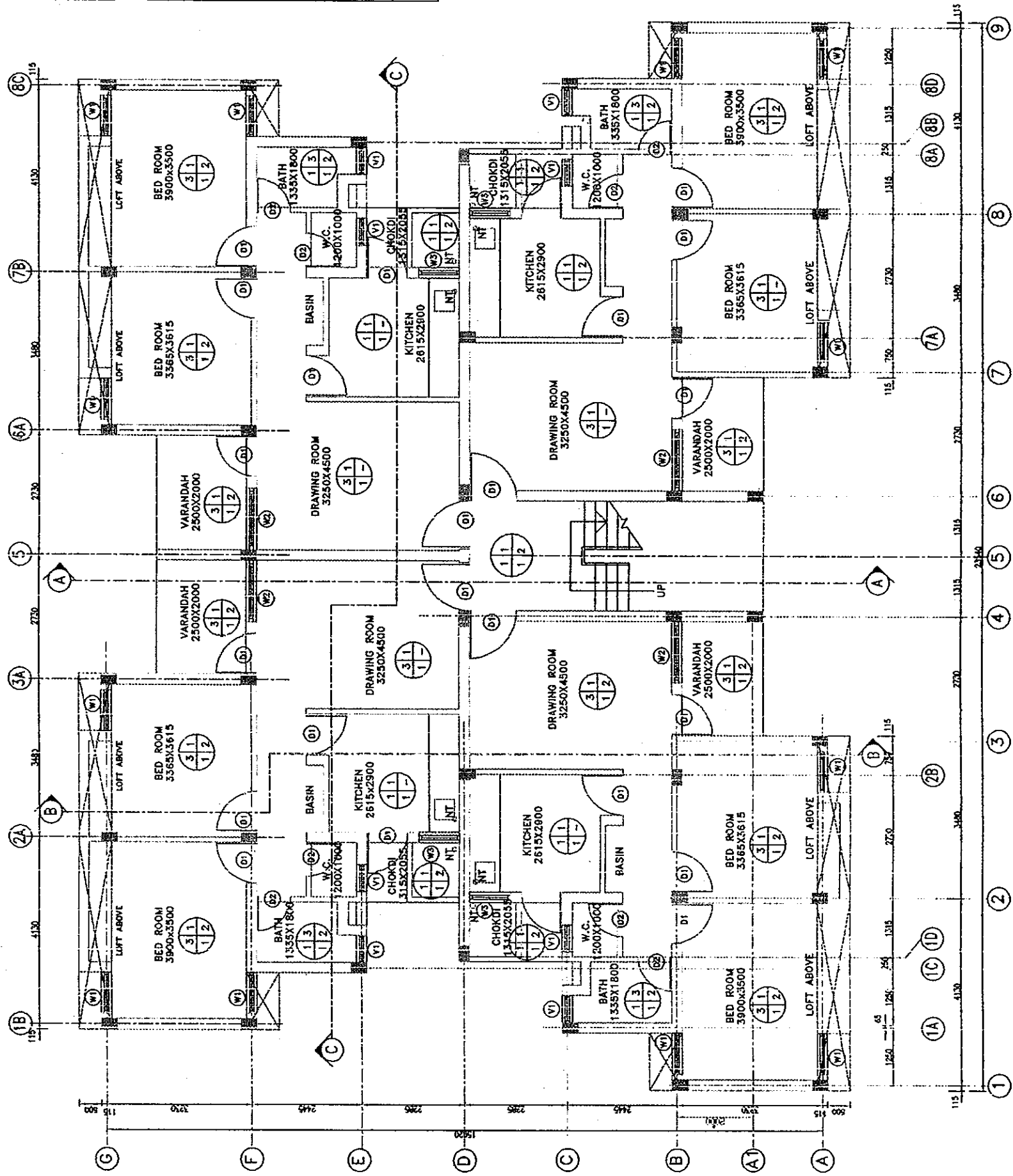
SECTION-C-C

AS-BUILT DRAWING THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA		SCALE: 1:50
CONTRACTOR MITSUBI KENSETSU INDIA LIMITED A-1/70, SARVADAMA ENCLAVE, NEW DELHI-110028, INDIA		SECTION-C3 CLASS [UNIT-1] ANAR HOSPITAL
CONSULTANT YAMASEITA SEKKI INC.-NISON SEKKI, INC. JAPAN		PROJECT NO. 0114138-ABA-103
DESIGNER Daiji Consultants And Engineers Ltd. Ahmedabad - India		DATE 10/05/04
CHECKED BY [Signature]		DATE 10/05/04
APPROVED BY [Signature]		DATE 10/05/04



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0114138-ABA-201



SCHEDULE OF OPENINGS & BRIEF DESCRIPTION OF DOORS, WINDOWS & VENTILATORS

TYPE	SIZE	NOS	SILL TOP	UNTEL BOTTOM	REMARKS
D1	900x2100	24	---	2100	M.S. PRESSED STEEL FRAME WITH WOODEN PANELLED SHUTTERS
D2	750x2100	08	---	2100	M.S. PRESSED STEEL FRAME WITH WOODEN PANELLED SHUTTERS
W1	900x1350	12	750	2100	M.S. PRESSED STEEL FRAME WITH FULLY GLAZED OPENABLE SHUTTERS.
W2	1350x1350	04	750	2100	M.S. PRESSED STEEL FRAME WITH FULLY GLAZED OPENABLE SHUTTERS.
W3	900x1050	34	1050	2100	M.S. PRESSED STEEL FRAME WITH FULLY GLAZED OPENABLE SHUTTERS.
V1	600x600	08	1500	2100	M.S. PRESSED STEEL FRAME WITH LlouvERS

FINISH SCHEDULE

F : FLOOR
 IW : INTERNAL SURFACE OF WALL
 EW : EXTERNAL SURFACE OF WALL
 C : CEILING

FLOOR & SKIRTING
 (1) POLISHED KOTA STONE (30MM TO 40MM THK)
 (2) COLOURED CERAMIC TILES 200mm x 200mm
 (3) MOSAIC TILES

WALL
 (1) 12MM THK. SINGLE COAT W.A. PLASTER WITH WHITE WASH
 (2) DOUBLE COAT SANFACED PLASTER-19MM TH.(12+7) WITH CEMENT PAINT
 (3) COLOURED GLAZED TILES 200x300x5 MM DADO UPTO UNTEL LV.

CEILING
 (1) 8mm THK. SINGLE COAT W.A. PLASTER WITH WHITE WASH

ABBREVIATIONS

- AL = ALUMINIUM
- D = DOOR
- DRG. = DRAWING
- F.F.L. = FINISHED FLOOR LEVEL
- I.P.S. = INDIAN PATENT STONE
- NO. = NUMBER
- TYP. = TYPICAL
- TH. = THICK
- V = VENTILATOR
- W = WINDOW

NOTE:

- (1) ALL DIMENSIONS ARE IN MILLIMETRES.
- (2) DIMENSIONS GIVEN ARE EXCLUDING PLASTER THICKNESS.
- (3) ALL SILL DIMENSIONS ARE FROM F.F.L. TO TOP OF SILL
- (4) ALL UNTEL DIMENSIONS ARE FROM F.F.L. TO BOTTOM OF UNTEL BEAM.
- (5) ALL DOORS, WINDOWS & VENTILATORS TO BE FROM APPROVED MANUFACTURER. MATERIAL & COLOURS OF INTERNAL & EXTERNAL FINISHES TO BE AS APPROVED BY OWNER.

PLEASE REFER TECHNICAL SPECIFICATION FOR CHOKDI AND BASIN AREA

CONTRACTOR
 MITSUBI KENSETSU
 INDIA LIMITED
 4-7/7A, SATYANAGAR ENCLAVE,
 NEW DELHI-110028, INDIA

AS-BUILT DRAWING

SCALE : 1:50

THE RECONSTRUCTION SUPPORT FOR THE GUJARAT
 EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA

GROUND FLOOR PLAN-C3 CLASS [UNIT-2]

ANJAR HOSPITAL

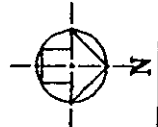
YAMASHITA SEKKI INC.-NIHON SEKKI, INC.

JAPAN

Dalal Consultants
 And Engineers Ltd.
 101, Park Road - 2,
 Ahmedabad - India

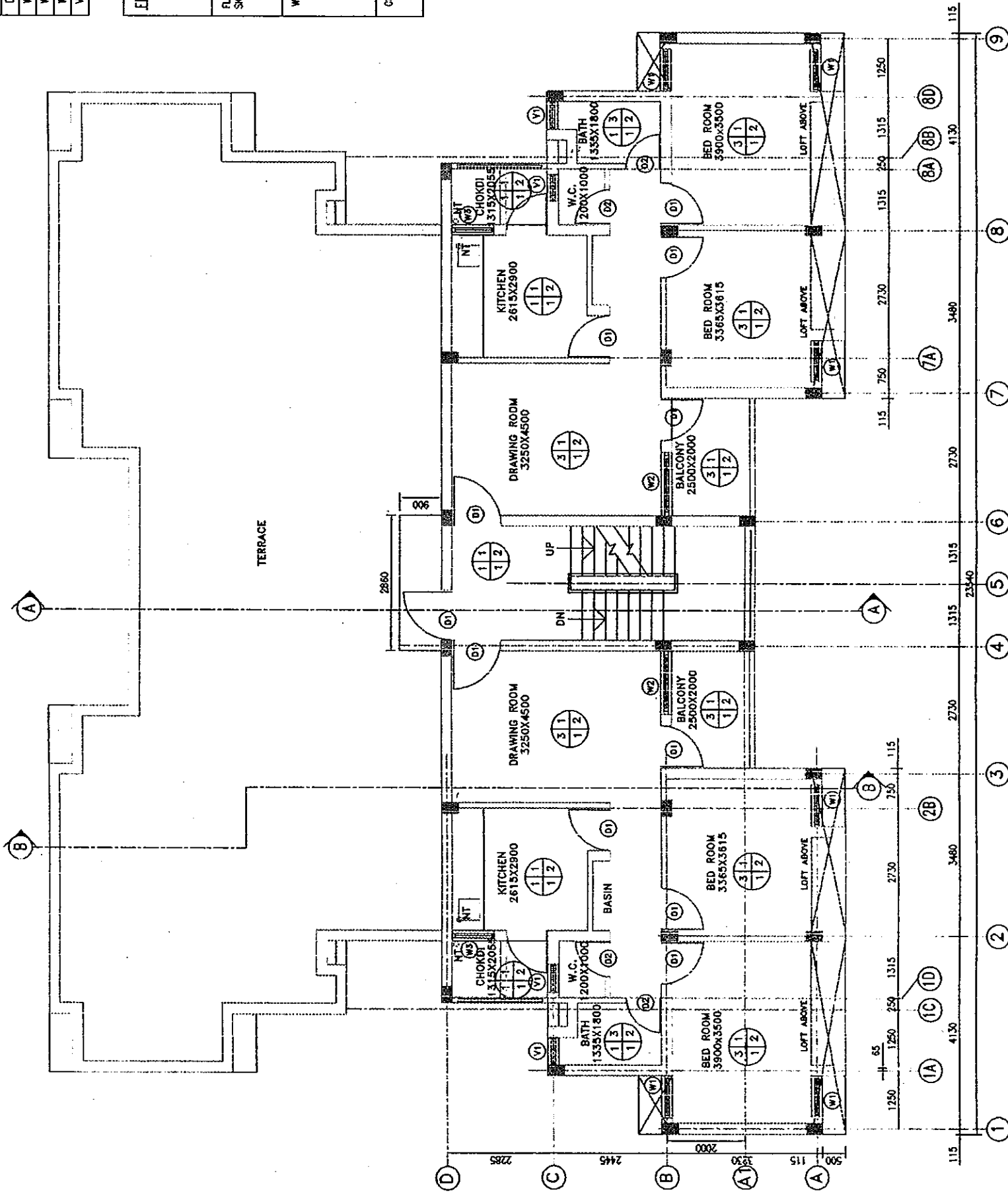
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0114138-ABA-202



SCHEDULE OF OPENINGS & BRIEF DESCRIPTION OF DOORS, WINDOWS & VENTILATORS

TYPE	SIZE	NOS	SILL TOP	UNTEL BOTTOM	REMARKS
D1	900x2100	12	---	2100	M.S. PRESSED STEEL FRAME WITH WOODEN PANELLLED SHUTTERS
D2	750x2100	04	---	2100	M.S. PRESSED STEEL FRAME WITH WOODEN PANELLLED SHUTTERS
W1	900x1350	06	750	2100	M.S. PRESSED STEEL FRAME WITH FULLY GLAZED OPENABLE SHUTTERS.
W2	1350x1350	02	750	2100	M.S. PRESSED STEEL FRAME WITH FULLY GLAZED OPENABLE SHUTTERS.
W3	900x1050	02	1050	2100	M.S. PRESSED STEEL FRAME WITH FULLY GLAZED OPENABLE SHUTTERS.
V1	600x600	04	1500	2100	M.S. PRESSED STEEL FRAME WITH LOUVERS

FINISH SCHEDULE

ITEM	DESCRIPTION
F	FLOOR
EW	INTERNAL SURFACE OF WALL
EW	EXTERNAL SURFACE OF WALL
C	CEILING

(1) POLISHED KOTA STONE (30mm TO 40mm THK.)

(2) COLOURED CERAMIC TILES 200mm x 200mm

(3) MOSAIC TILES

(1) 12mm THK. SINGLE COAT MALA PLASTER WITH WHITE WASH

(2) DOUBLE COAT SANDFACED PLASTER-19MM TH.(12+7)WITH CEHENT PAINT

(3) COLOURED GLAZED TILES 200mm x 300mm DADO UP TO UNTEL LVL.

(1) SINGLE COAT MALA PLASTER WITH WHITE WASH

ABBREVIATIONS

- AL - ALUMINIUM
- D - DOOR
- DRG. - DRAWING
- F.F.L. - FINISHED FLOOR LEVEL
- I.P.S. - INDIAN PATENT STONE
- NO. - NUMBER
- TYP. - TYPICAL
- TH. - THICK.
- V - VENTILATOR
- W - WINDOW

NOTE:

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 - (3) ALL SILL DIMENSIONS ARE FROM F.F.L. TO TOP OF SILL.
 - (4) ALL UNTEL DIMENSIONS ARE FROM F.F.L. TO BOTTOM OF UNTEL BEAM.
 - (5) ALL DOORS, WINDOWS & VENTILATORS TO BE FROM APPROVED MANUFACTURER, MATERIAL & COLOURS OF INTERNAL & EXTERNAL FINISHES TO BE AS APPROVED BY OWNER.
- * PLEASE REFER TECHNICAL SPECIFICATION FOR CHOKDI AND BASIN AREA.

AS-BUILT DRAWING SCALE: 1:50

CONTRACTOR: MITSUBI KENSETSU INDIA LIMITED
A-1/2A, SUPRABHANG ENCLAVE, NEW DELHI-110028, INDIA

THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA

UNIT-2

ANJAR HOSPITAL

YAMASHITA SEKKI INC.-NIBON SEKKI, INC. JAPAN

Delal Consultants And Engineers Ltd.
Plot No. 10, Sector 10, Gurgaon - India

0114138-ABA-202

R1



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0114138-ABA-203

SCHEDULE OF OPENINGS & BRIEF DESCRIPTION OF DOORS, WINDOWS & VENTILATORS

TYPE	SIZE	NOS	SELL NOS	UNTEL TOP	UNTEL BOTTOM	REMARKS
D1	900x1900	02	200	2100		M.S. PRESSED STEEL FRAME WITH WOODEN PANELLED SHUTTERS

FINISH SCHEDULE

F : FLOOR
 IW : INTERNAL SURFACE OF WALL
 EW : EXTERNAL SURFACE OF WALL
 C : CEILING

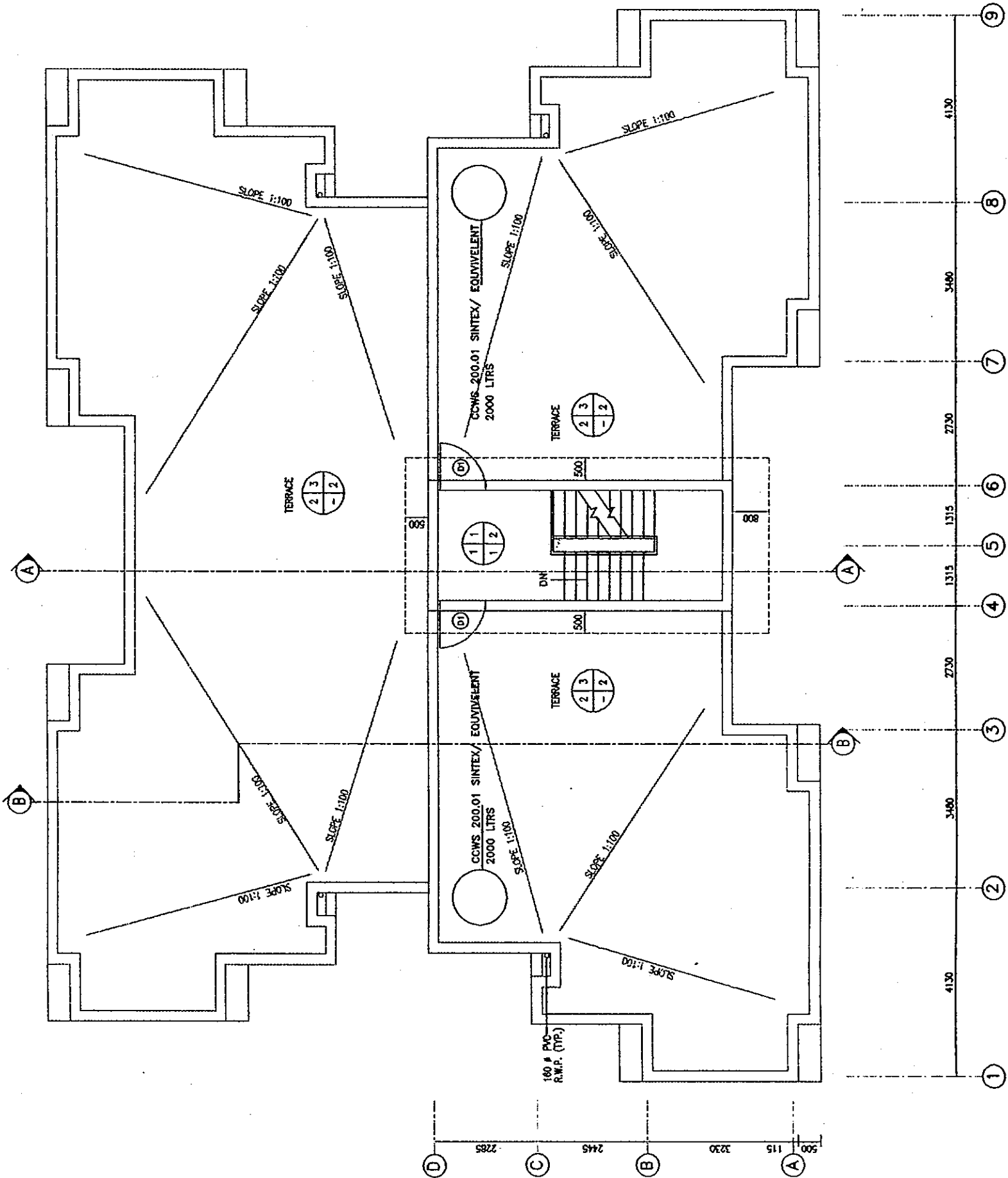
FLOOR	(1) POLISHED KOTA STONE (30mm TO 40mm THK)
	(2) I.P.S. WITH CEMENT BASED WATER PROOFING
WALL	(1) SINGLE COAT MALA PLASTER WITH WHITE WASH 12MM TH.
	(2) DOUBLE COAT SANFACED PLASTER-19MM TH.(12+7)
	(3) 12 TH. SINGLE COAT MALA PLASTER WITH CEMENT PAINT
CEILING	(1) SINGLE COAT MALA PLASTER WITH LIME WASH-9MM TH.

ABBREVIATIONS

- AL = ALUMINIUM
- D = DOOR
- DRG. = DRAWING
- F.F.L. = FINISHED FLOOR LEVEL
- I.P.S. = INDIAN PATENT STONE
- NO. = NUMBER
- TYP. = TYPICAL
- TH. = THICK.
- V = VENTILATOR
- W = WINDOW

NOTE:

- (1) ALL DIMENSIONS ARE IN MILLIMETRES.
- (2) DIMENSIONS GIVEN ARE EXCLUDING PLASTER THICKNESS.
- (3) ALL SILL DIMENSIONS ARE FROM F.F.L. TO TOP OF SILL.
- (4) ALL UNTEL DIMENSIONS ARE FROM F.F.L. TO BOTTOM OF UNTEL BEAM.
- (5) ALL DOORS, WINDOWS & VENTILATORS TO BE FROM APPROVED MANUFACTURER, MATERIAL & COLOURS OF INTERNAL & EXTERNAL FINISHES TO BE AS APPROVED BY OWNER.



CONTRACTOR
 MITSUBI KENSETSU
 INDIA LIMITED
 2-17/28, SARVABHAMA ENCLAVE,
 NEW DELHI-110028, INDIA

AS-BUILT DRAWING

SCALE: 1:50
 THE RECONSTRUCTION SUPPORT FOR THE GUJARAT
 EARTHQUAKE DRAFTER IN THE DEVASTATED AREAS IN INDIA

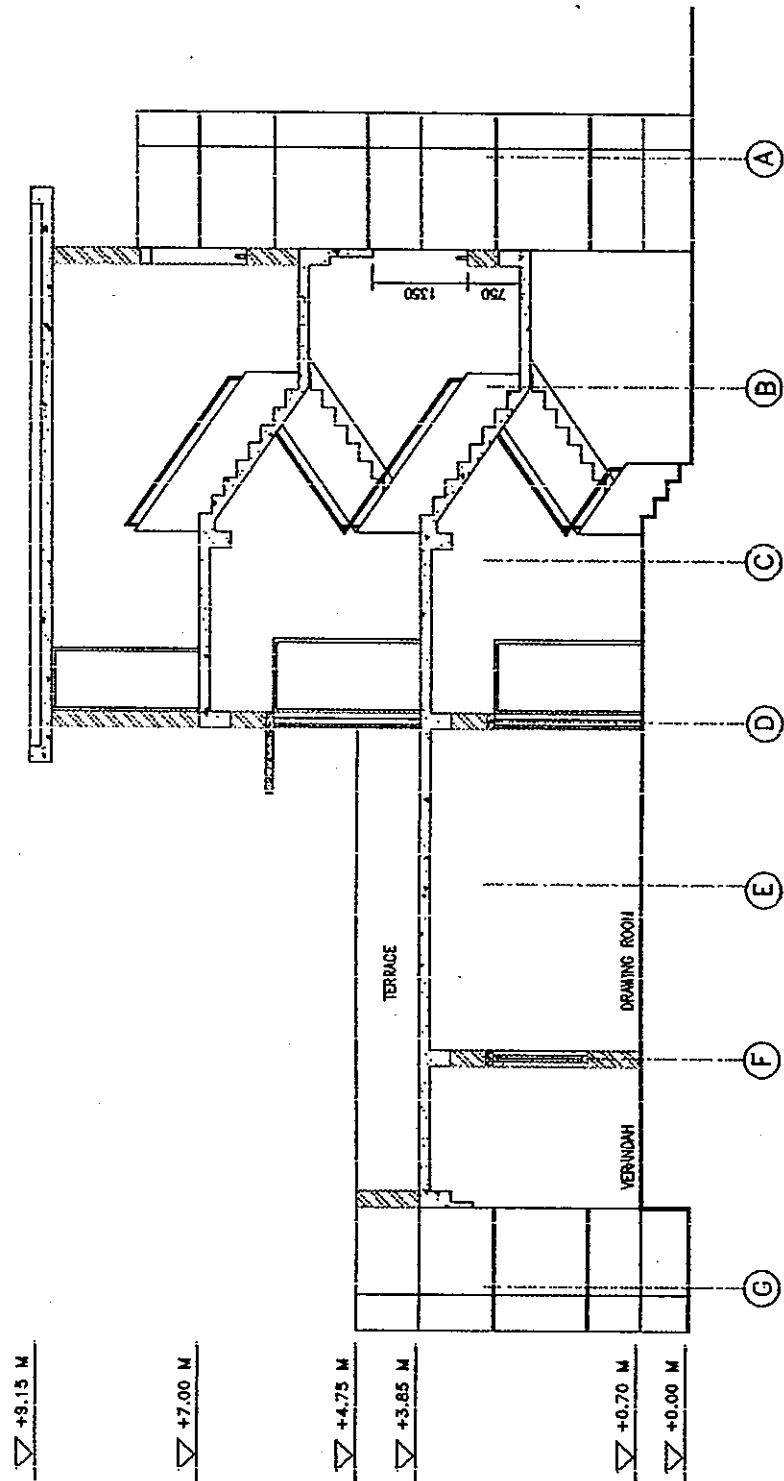
TERRACE PLAN-C3 CLASS [UNIT-2]

AMAR HOSPITAL
 YAMASBITA SREEKI INC.-NIHON SEKKO, INC. JAPAN
 Dalal Consultants
 And Engineers Ltd.
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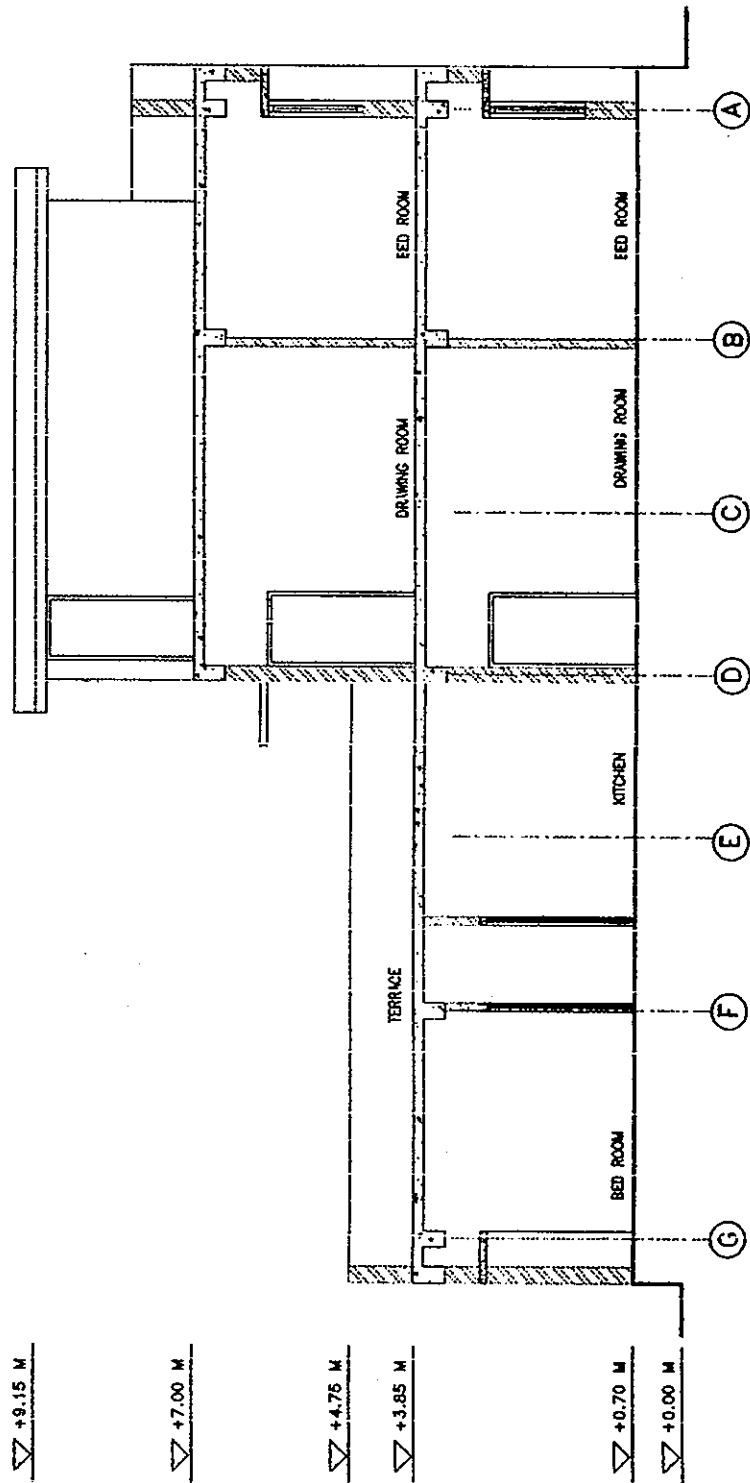


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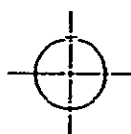


SECTION-A-A



SECTION-B-B

AS-BUILT DRAWING THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA SECTIONS-C3 CLASS [UNIT-2] ANJAL HOSPITAL		SCALE: 1:50
CONTRACTOR mitsui kensetsu INDIA LIMITED 4-7/21, SARAJAHNAGAR ENCLAVE, POST BELUR-560021, INDIA	CONSULTANT Delal Consultants And Engineers Ltd. 20, Sarajahnagar - Enclave, Belur - 560021 - INDIA	PROJECT NO. 0114138-ABA-204
DRAWN BY CHECKED BY DATE	REVISION NO. DATE REVISION	SHEET NO. 01



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0114138-ABA-301

SCHEDULE OF OPENINGS & BRIEF DESCRIPTION OF DOORS, WINDOWS & VENTILATORS

TYPE	SIZE	HQS	SILL TOP	UNTEL BOTTOM	REMARKS
D1	900x2100	10	---	2100	WOODEN FRAME WITH WOODEN PANELED SHUTTER
D2	750x2100	04	---	2100	WOODEN FRAME WITH WOODEN PANELED SHUTTER
W1	900x1350	10	750	2100	WOODEN FRAME WITH WOODEN OPENABLE SHUTTERS/SAFETY GRILL
W2	1500x1350	02	750	2100	WOODEN FRAME WITH WOODEN OPENABLE SHUTTERS/SAFETY GRILL
W3	900x1050	02	1050	2100	WOODEN FRAME WITH WOODEN OPENABLE SHUTTERS/SAFETY GRILL
V1	600x600	04	1500	2100	WOODEN FRAME WITH LOUVERED GLASS VENTILATORS

FINISH SCHEDULE

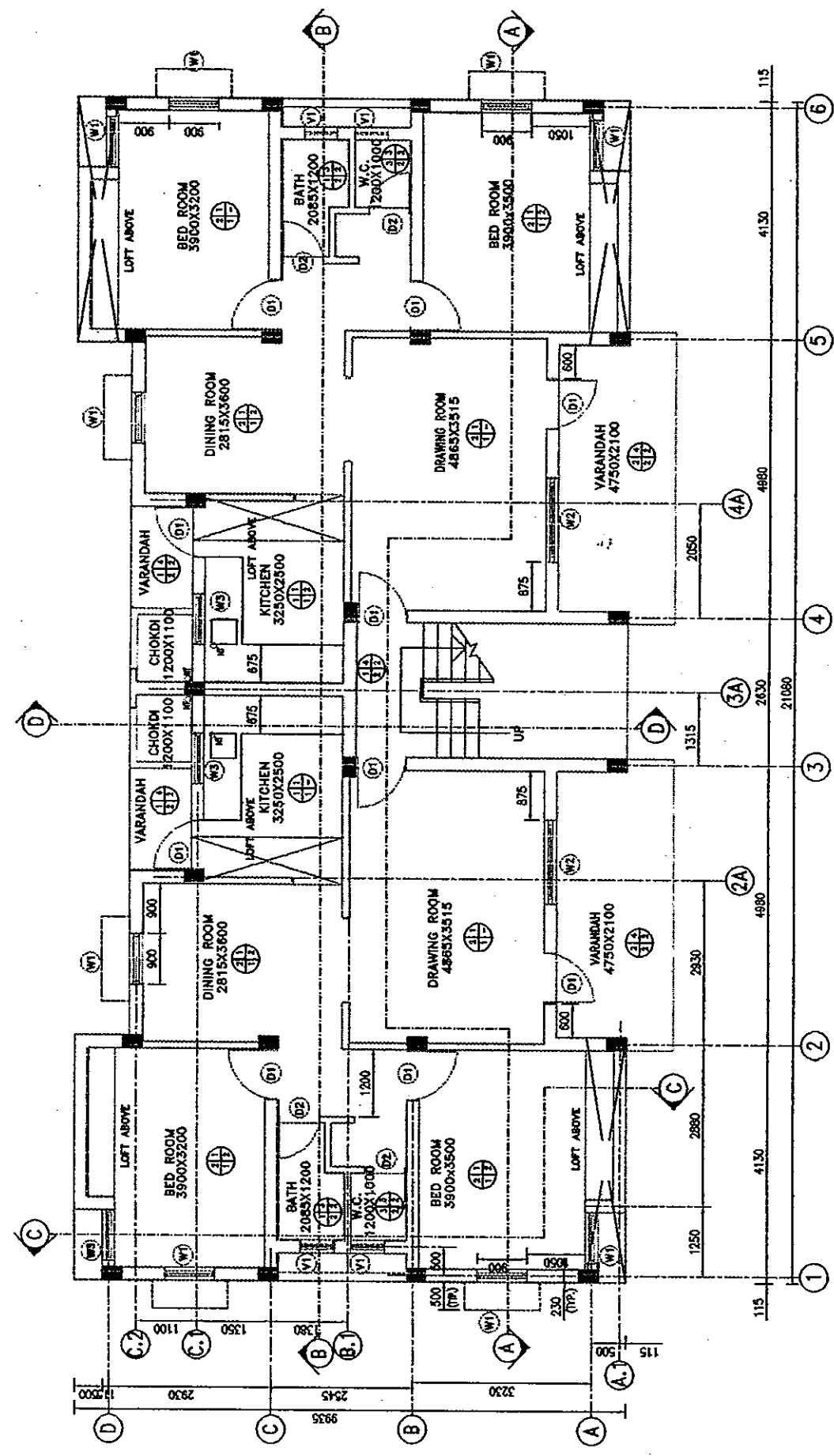
ITEM	DESCRIPTION
F	FLOOR
EW	INTERNAL SURFACE OF WALL
EW	EXTERNAL SURFACE OF WALL
C	CEILING
FLOOR & SKIRTING	(1) POLISHED KOTA STONE (30mm to 40mm THK). (2) COLOURED CERAMIC TILES 300mm x 300mm (3) COLOURED CERAMIC TILES 200mm x 200mm
WALL	(1) 12MM THK SINGLE COAT MALA PLASTER WITH DISTEMPER PAINT (2) DOUBLE COAT SANDFACED PLASTER WITH CEMENT PAINT-19MM THK (12+7) (3) COLOURED CERAMIC TILES 300mm x 200mm DADO UP TO UNTEL LVL. (4) SINGLE COAT MALA PLASTER WITH WHITE WASH 12mm THK
CEILING	(1) 8mm THK SINGLE COAT MALA PLASTER WITH DISTEMPER PAINT (2) 8mm THK SINGLE COAT MALA PLASTER WITH WHITE WASH

ABBREVIATIONS

- AL - ALUMINIUM
- D - DOOR
- DRG. - DRAWING
- F.F.L. - FINISHED FLOOR LEVEL
- I.P.S. - INDIAN PATENT STONE
- NO. - NUMBER
- TYP. - TYPICAL
- TH. - THICK
- V - VENTILATOR
- W - WINDOW

NOTE:

- (1) ALL DIMENSIONS ARE IN MILLIMETRES.
- (2) DIMENSIONS GIVEN ARE EXCLUDING PLASTER THICKNESS.
- (3) ALL SILL DIMENSIONS ARE FROM F.F.L TO TOP OF SILL.
- (4) ALL UNTEL DIMENSIONS ARE FROM F.F.L. TO BOTTOM OF UNTEL BEAM.
- (5) ALL DOORS, WINDOWS & VENTILATORS TO BE FROM APPROVED MANUFACTURER, MATERIAL & COLOURS OF INTERNAL & EXTERNAL FINISHES TO BE AS APPROVED BY OWNER.
- * PLEASE REFER TECHNICAL SPECIFICATION FOR CHOKDI AND BASIN AREA.



CONTRACTOR
MITSUMI KENSETSU INDIA LIMITED
 A-1/2/A, SARABANGA ENCLAVE, NEW DELHI-110028, INDIA

SCALE: 1:50

AS-BUILT DRAWING

THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA

GROUND FLOOR PLAN-C1 CLASS [UNIT-2]

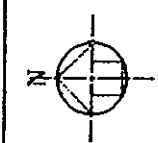
ALUAB HOSPITAL

YAMASEITA SRIKKEI INC.-NIBON SEKKEL INC. JAPAN

Datta Consultants and Engineers Pvt. Ltd. Ahmedabad - India

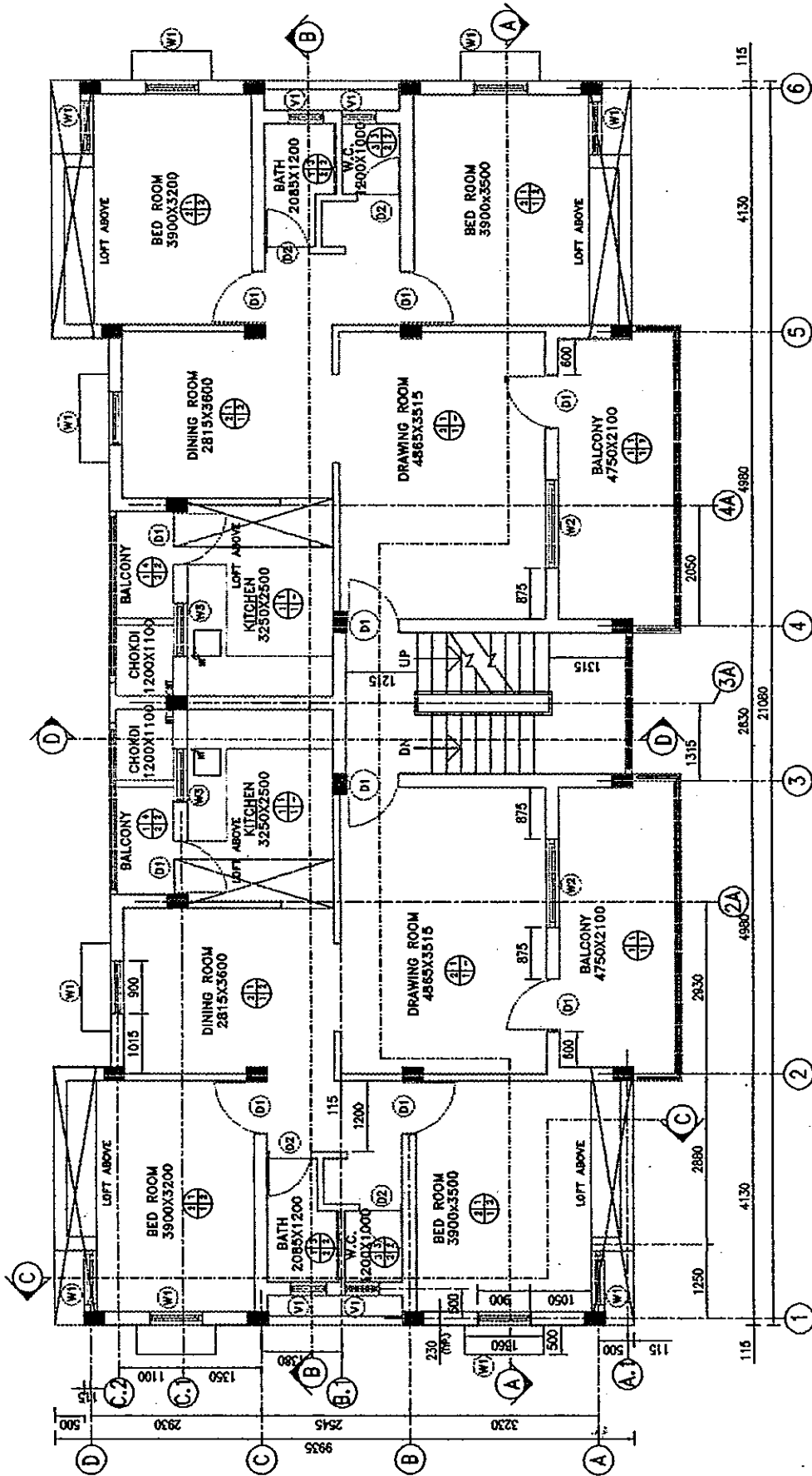
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0114138-ABA-302



SCHEDULE OF OPENINGS & BRIEF DESCRIPTION OF DOORS, WINDOWS & VENTILATORS

TYPE	SIZE	NOS	SILL TOP	LINTEL BOTTOM	REMARKS
D1	900x2100	10	---	2100	WOODEN FRAME WITH WOODEN PANELLED SHUTTER
D2	750x2100	04	---	2100	WOODEN FRAME WITH WOODEN PANELLED SHUTTER
W1	900x1350	10	750	2100	WOODEN FRAME WITH WOODEN OPENABLE SHUTTERS/SAFETY GRILL
W2	1500x1350	02	750	2100	WOODEN FRAME WITH WOODEN OPENABLE SHUTTERS/SAFETY GRILL
W3	900x1050	02	1050	2100	WOODEN FRAME WITH WOODEN OPENABLE SHUTTERS/SAFETY GRILL
V1	600x600	04	1500	2100	WOODEN FRAME WITH LOUVERED GLASS VENTILATORS

FINISH SCHEDULE

F : FLOOR
 IW : INTERNAL SURFACE OF WALL
 EW : EXTERNAL SURFACE OF WALL
 C : CEILING

FLOOR	FINISH
FLOOR	(1) POLISHED KOTA STONE (30MM TO 40MM THK) (2) COLOURED CERAMIC TILES 300mm x 300mm (3) COLOURED CERAMIC TILES 200mm x 200mm
WALL	(1) SINGLE COAT MULA PLASTER WITH FLAT EMULSIF PAINT-12MM TH. (2) DOUBLE COAT SANDFACED PLASTER-19MM TH.(12+7) WITH CEMENT PAINT (3) COLOURED CERAMIC TILES 300mm x 200mm DADO UP TO LINTEL LVL. (4) 12 THK. SINGLE COAT MULA PLASTER WITH WHITE WASH
CEILING	(1) 8 THK. SINGLE COAT MULA PLASTER WITH DISTEMPER PAINT (2) 8 THK. SINGLE COAT MULA PLASTER WITH WHITE WASH

ABBREVIATIONS

- AL = ALUMINIUM
- D = DOOR
- DRG. = DRAWING
- F.F.L. = FINISHED FLOOR LEVEL
- I.P.S. = INDIAN PATENT STONE
- NO. = NUMBER
- TYP. = TYPICAL
- TH. = THICK.
- V = VENTILATOR
- W = WINDOW

NOTE:

- (1) ALL DIMENSIONS ARE IN MILLIMETRES.
- (2) DIMENSIONS GIVEN ARE EXCLUDING PLASTER THICKNESS.
- (3) ALL SILL DIMENSIONS ARE FROM F.F.L. TO TOP OF SILL.
- (4) ALL LINTEL DIMENSIONS ARE FROM F.F.L. TO BOTTOM OF LINTEL BEAM.
- (5) ALL DOORS, WINDOWS & VENTILATORS TO BE FROM APPROVED MANUFACTURER, MATERIAL & COLOURS OF INTERNAL & EXTERNAL FINISHES TO BE AS APPROVED BY OWNER.
- * PLEASE REFER TECHNICAL SPECIFICATION FOR CHOIKI AND BASIN AREA.

CONTRACTOR
 MITSUBI KENSETSU
 INDIA LIMITED
 4-1/2, SATHYANAGAR ENCLAVE,
 NEW DELHI-110028, INDIA

AS-BUILT DRAWING
 SHEET : 150

**THE RECONSTRUCTION SUPPORT FOR THE GUJARAT
 EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA**

RESIDENCE FOR C1 CLASS [UNIT-2]
 FIRST FLOOR PLAN - AHUAR

YAMASHITA SKEKKI INC.-NIBON SKEKKI INC.
 JAPAN

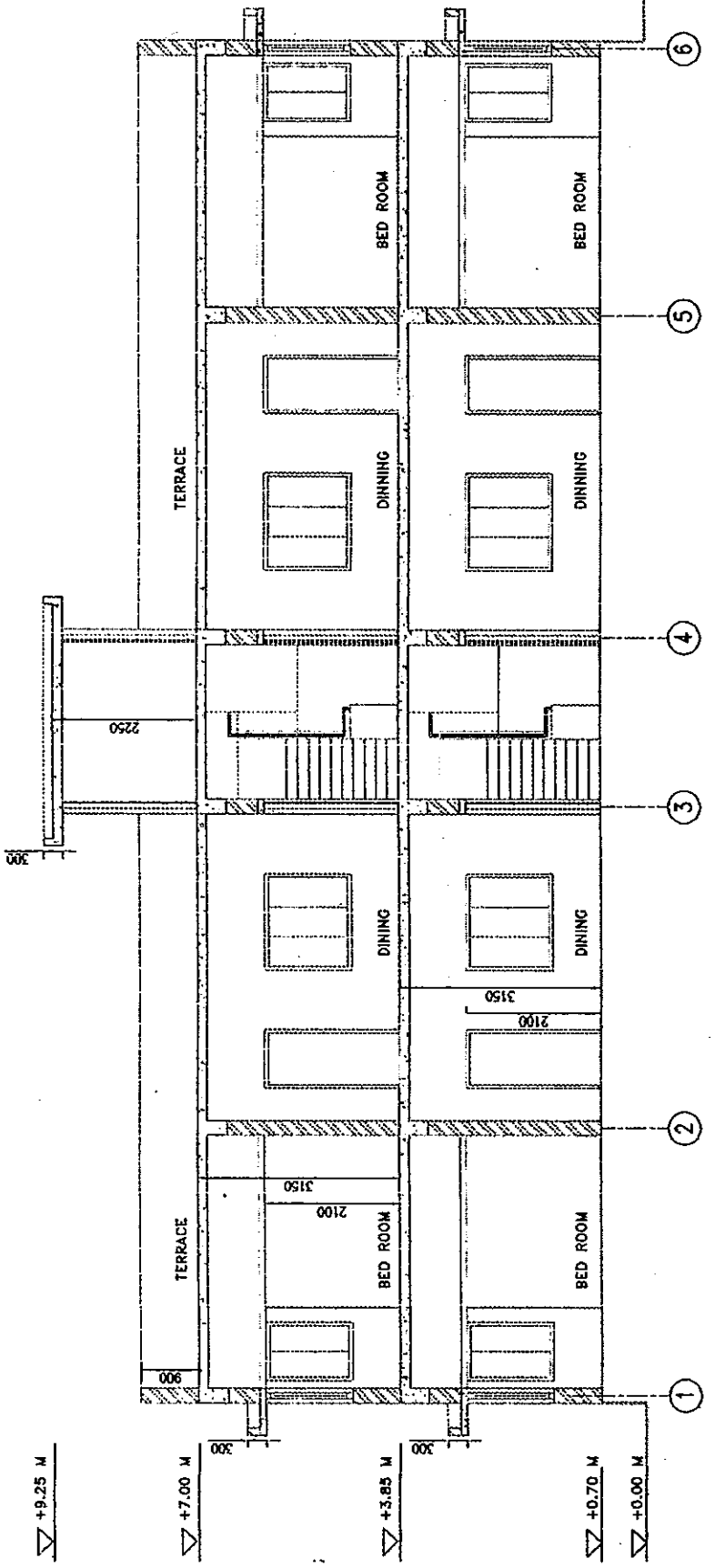
**Dajal Consultants
 And Engineers Ltd.**
 Ahmedabad - India

0114138-ABA-302 R1

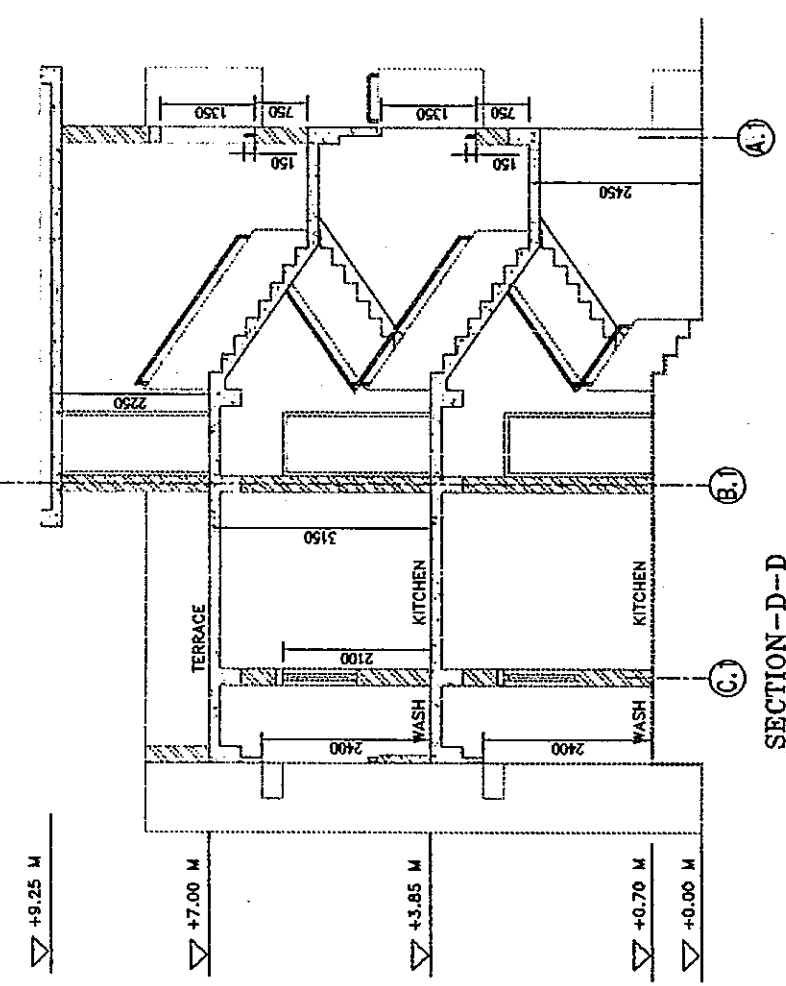


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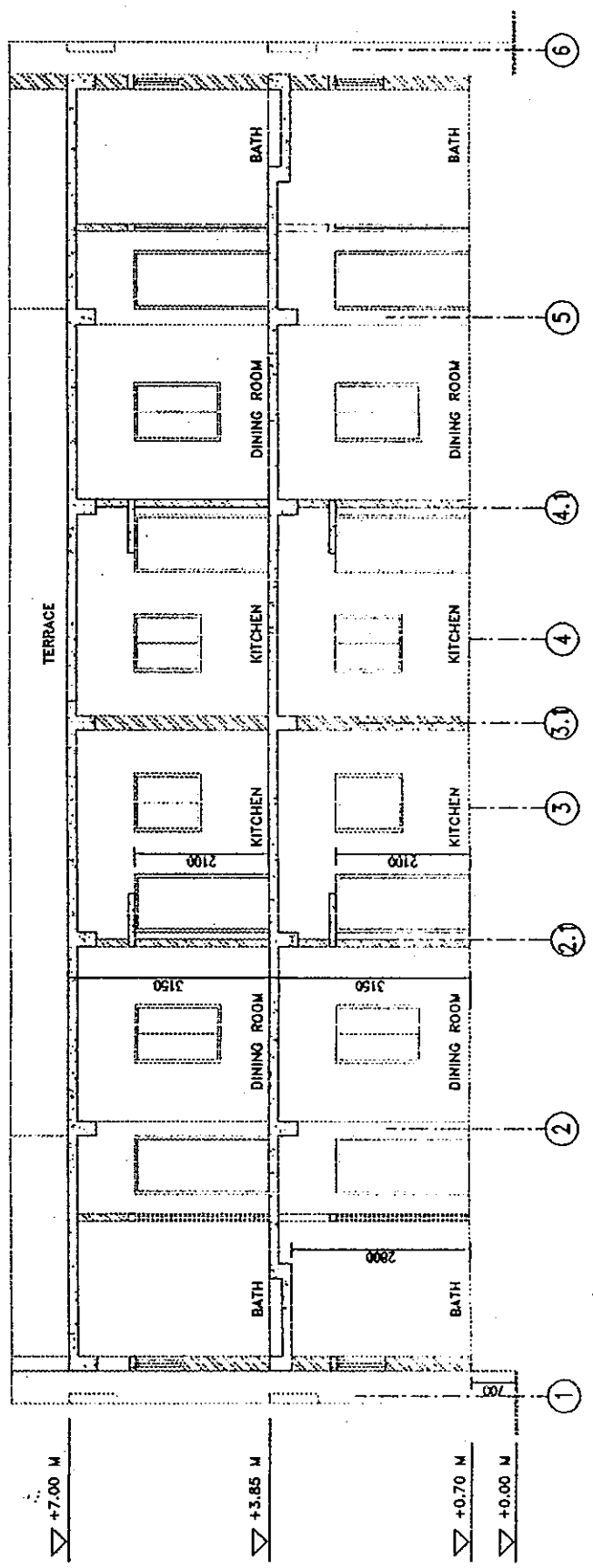
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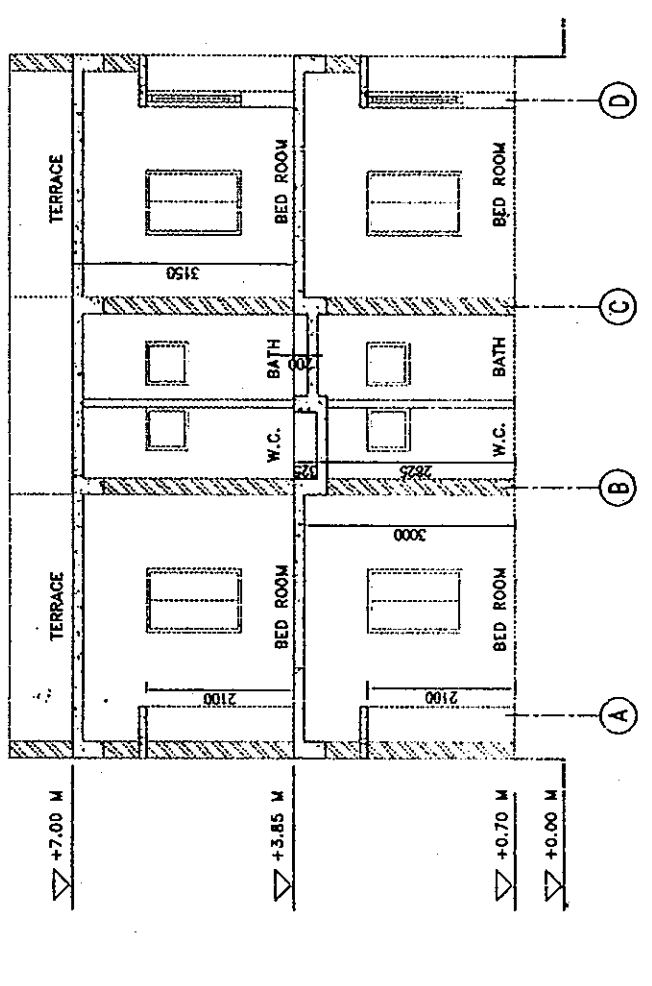
SECTION-A-A



SECTION-D-D



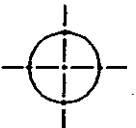
SECTION-B-B



SECTION-C-C

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AS-BUILT DRAWING			
THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA			
SECTIONS-C1 CLASS [UNIT-2]			
ANJAN HOSPITAL			
YAMASBITA SEKKEI INC.-NIBON SEKKEI INC. JAPAN			
Dalal Consultants and Engineers Ltd. Ahmedabad - India			
0114138-ABA-305 RO			
PREPARED FOR CONSTRUCTION / WORK		NO. 7/24/1	
DATE		DATE	
BY		BY	
CHECKED		CHECKED	
APPROVED		APPROVED	



SCHEDULE OF OPENINGS & BRIEF DESCRIPTION OF DOORS, WINDOWS & VENTILATORS

TYPE	SIZE	HKS	SILL TOP	UNTEL BOTTOM	REMARKS
D1	900x1900	D2	200	2100	WOODEN FRAME WITH WOODEN PANELED SHUTTER

FINISH SCHEDULE

F : FLOOR
 IW : INTERNAL SURFACE OF WALL
 EW : EXTERNAL SURFACE OF WALL
 C : CEILING

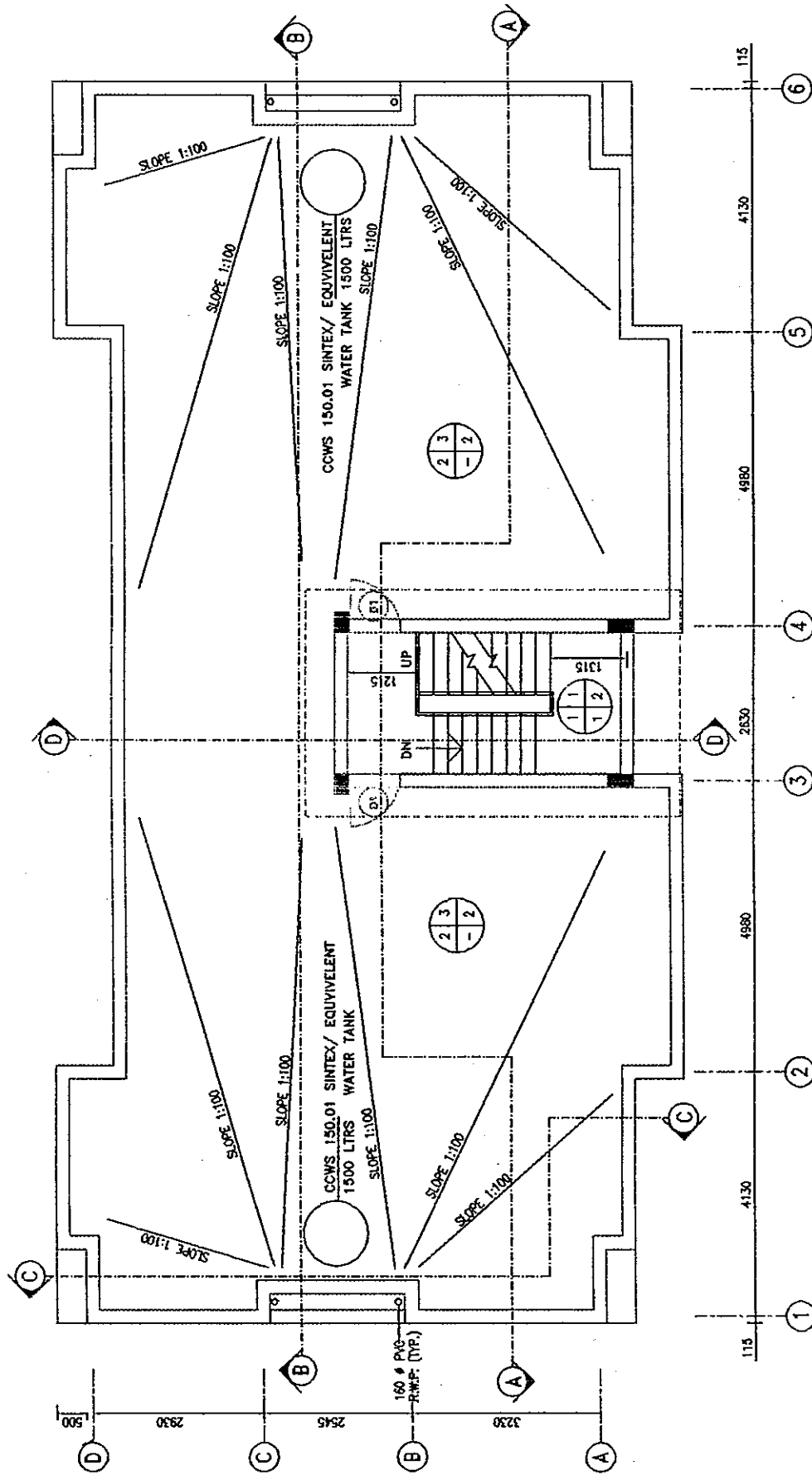
FLOOR	(1) POLISHED KOTA STONE (30mm TO 40mm THK)
	(2) I.P.S. WITH CEMENT BASED WATER PROOFING
WALL	(1) SINGLE COAT MALA PLASTER WITH WHITE WASH 12MM TH.
	(2) DOUBLE COAT SANDFACED PLASTER-19MM TH.(12+7)
	(3) 12 TH SINGAL COAT MALA PLASTER WITH CEMENT PAINT
CEILING	(1) SINGLE COAT MALA PLASTER WITH LAIE WASH-8MM TH.

ABBREVIATIONS

- AL = ALUMINIUM
- D = DOOR
- DRG. = DRAWING
- F.F.L. = FINISHED FLOOR LEVEL
- I.P.S. = INDIAN PATENT STONE
- NO. = NUMBER
- TYP. = TYPICAL
- TH. = THICK
- V = VENTILATOR
- W = WINDOW

NOTE:

- (1) ALL DIMENSIONS ARE IN MILLIMETRES.
- (2) DIMENSIONS GIVEN ARE EXCLUDING PLASTER THICKNESS.
- (3) ALL SILL DIMENSIONS ARE FROM F.F.L. TO TOP OF SILL.
- (4) ALL UNTEL DIMENSIONS ARE FROM F.F.L. TO BOTTOM OF UNTEL BEAM.
- (5) ALL DOORS, WINDOWS & VENTILATORS TO BE FROM APPROVED MANUFACTURER, MATERIAL & COLOURS OF INTERNAL & EXTERNAL FINISHES TO BE AS APPROVED BY OWNER.



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MITSUBI KENSETSU INDIA LIMITED		AS-BUILT DRAWING	
A-1/79, SATYANAGAR ENCLAVE, NEW DELHI-110028, INDIA		THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA	
BY: [Signature]		TERRACE PLAN-C1 CLASS [UNIT-2]	
CHECKED BY: [Signature]		ANJAN HOSPITAL	
DATE: [Date]		YAMASHITA SHIKKI INC.-NISON SHIKKI, INC.	
REVISION		JAPAN	
NO. DATE		0114138-ABA-305	
BY: [Signature]		R1	
DATE: [Date]		Delia Consultants And Engineers Ltd. Gyan - College - Station Ahmedabad - India	

0114138-ABA-401

SCHEDULE OF OPENINGS & BRIEF DESCRIPTION OF DOORS, WINDOWS & VENTILATORS

TYPE	SIZE	HKS	SL. TOP	UNTEL. BOTTOM	REMARKS
D1	900x2100	10	---	2100	WOODEN FRAME WITH WOODEN PANELED SHUTTER
D2	750x2100	04	---	2100	WOODEN FRAME WITH WOODEN PANELED SHUTTER
W1	900x1350	10	750	2100	WOODEN FRAME WITH WOODEN OPENABLE SHUTTERS/SAFETY GRILL
W2	1500x1350	02	750	2100	WOODEN FRAME WITH WOODEN OPENABLE SHUTTERS/SAFETY GRILL
W3	900x1050	02	1050	2100	WOODEN FRAME WITH WOODEN OPENABLE SHUTTERS/SAFETY GRILL
V1	600x600	04	1500	2100	WOODEN FRAME WITH LOUVERED GLASS VENTILATORS

FINISH SCHEDULE

F : FLOOR
 IW : INTERNAL SURFACE OF WALL
 EW : EXTERNAL SURFACE OF WALL
 C : CEILING

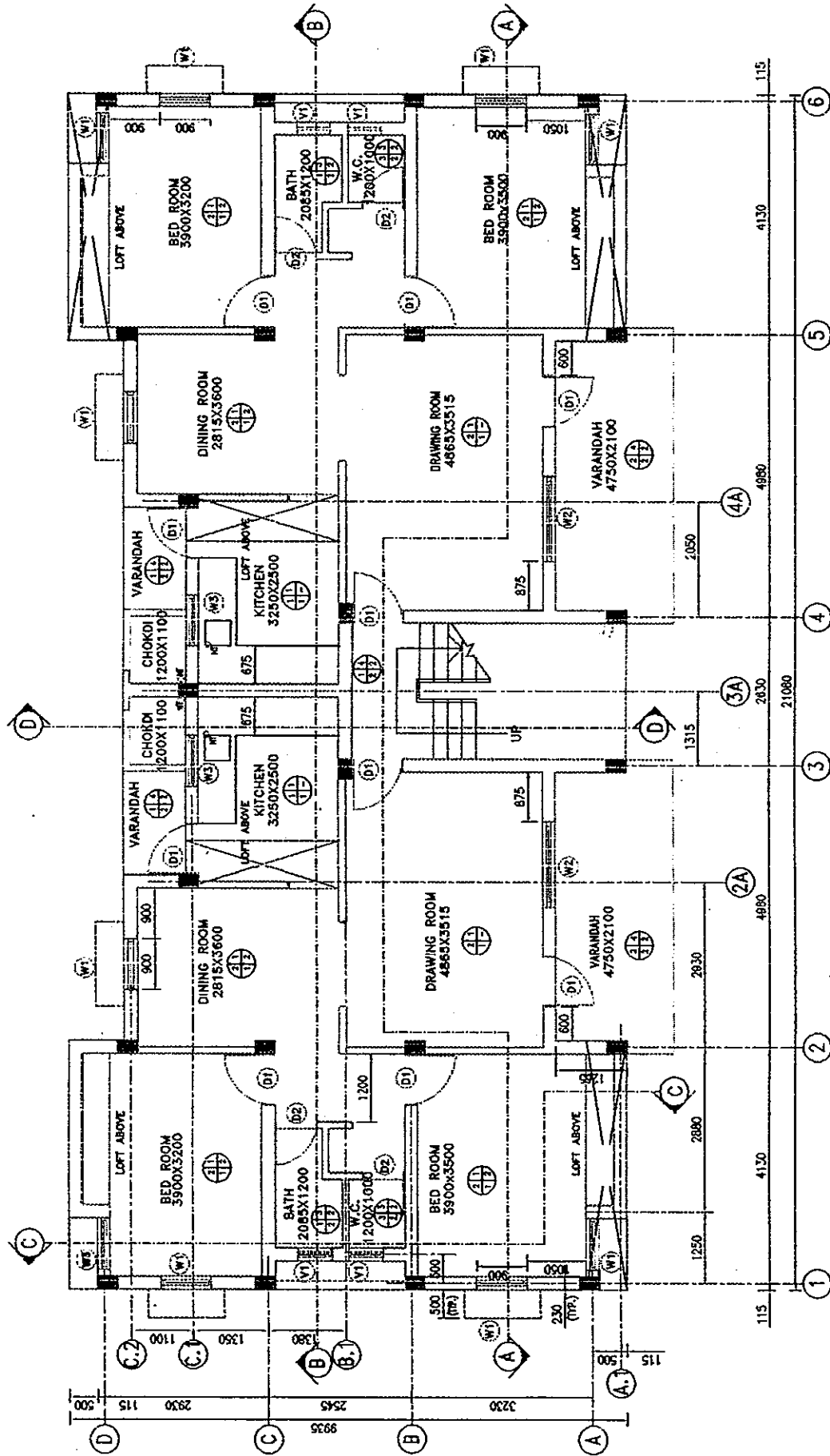
FLOOR & SKIRTING	(1) POLISHED KOTA STONE (40mm to 50mm THK.)
	(2) COLOURED CERAMIC TILES 300mm x 300mm
	(3) COLOURED CERAMIC TILES 200mm x 200mm
WALL	(1) 12MM THK. SINGLE COAT MULA PLASTER WITH DISTEMPER PAINT
	(2) DOUBLE COAT SANDFACED PLASTER WITH COBALT PAINT-19MM THK. (12+7)
	(3) COLOURED CERAMIC TILES 300mm x 300mm x 200mm DADO UP TO UNTEL. LVL
CEILING	(1) SINGLE COAT MULA PLASTER WITH WHITE WASH 12mm THK.
	(2) 8mm THK. SINGLE COAT MULA PLASTER WITH DISTEMPER PAINT
	(3) 8mm THK. SINGLE COAT MULA PLASTER WITH WHITE WASH

ABBREVIATIONS

- AL ALUMINIUM
- D DOOR
- DRG. DRAWING
- F.F.L. FINISHED FLOOR LEVEL
- I.P.S. INDIAN PATENT STONE
- NO. NUMBER
- TYP. TYPICAL
- TH. THICK.
- V VENTILATOR
- W WINDOW

NOTE:

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 - (2) DIMENSIONS GIVEN ARE EXCLUDING PLASTER THICKNESS.
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 - (4) ALL UNTEL. DIMENSIONS ARE FROM F.F.L TO BOTTOM OF UNTEL BEAM.
 - (5) ALL DOORS, WINDOWS & VENTILATORS TO BE FROM APPROVED MANUFACTURER, MATERIAL & COLOURS OF INTERNAL & EXTERNAL FINISHES TO BE AS APPROVED BY OWNER.
- * PLEASE REFER TECHNICAL SPECIFICATION FOR CHOKDI AND BASIN AREA.



CONTRACTOR
 MITSUBI KENSETSU
 INDIA LIMITED
 1-7/24, SHAMBAHO ENCLAVE,
 NEW DELHI-110028, INDIA

AS-BUILT DRAWING

THE RECONSTRUCTION SUPPORT FOR THE GUJARAT
 EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA

GROUND FLOOR PLAN-C1 CLASS [UNIT-1]

ANJAR HOSPITAL

YAMASBITA SEKKI INC.-NIBON SEKKI INC.

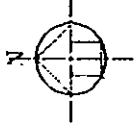
JAPAN

Dalal Consultants
 And Engineers Ltd.
 10/11, Park Road,
 Ahmedabad - INDIA

0114138-ABA-401

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NO.	REVISION	DATE	BY	CHK.	APP.	REMARKS
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SCHEDULE OF OPENINGS & BRIEF DESCRIPTION OF DOORS, WINDOWS & VENTILATORS

TYPE	SIZE	NOS	SILL TOP	LINTEL BOTTOM	REMARKS
D1	300x1900	02	200	2100	WOODEN FRAME WITH WOODEN PANELED SHUTTER

FINISH SCHEDULE

F : FLOOR
 IW : INTERNAL SURFACE OF WALL
 EW : EXTERNAL SURFACE OF WALL
 C : CEILING



FLOOR
 (1) POLISHED KOTA STONE (30mm TO 40mm THK.)
 (2) I.P.S. WITH CEMENT BASED WATER PROOFING

WALL
 (1) SINGLE COAT M.A. PLASTER WITH WHITE WASH-12MM TH.
 (2) DOUBLE COAT SANDFACED PLASTER-19MM TH.(12+7)
 (3) 12 TH SINGLE COAT M.A. PLASTER WITH CEMENT PAINT

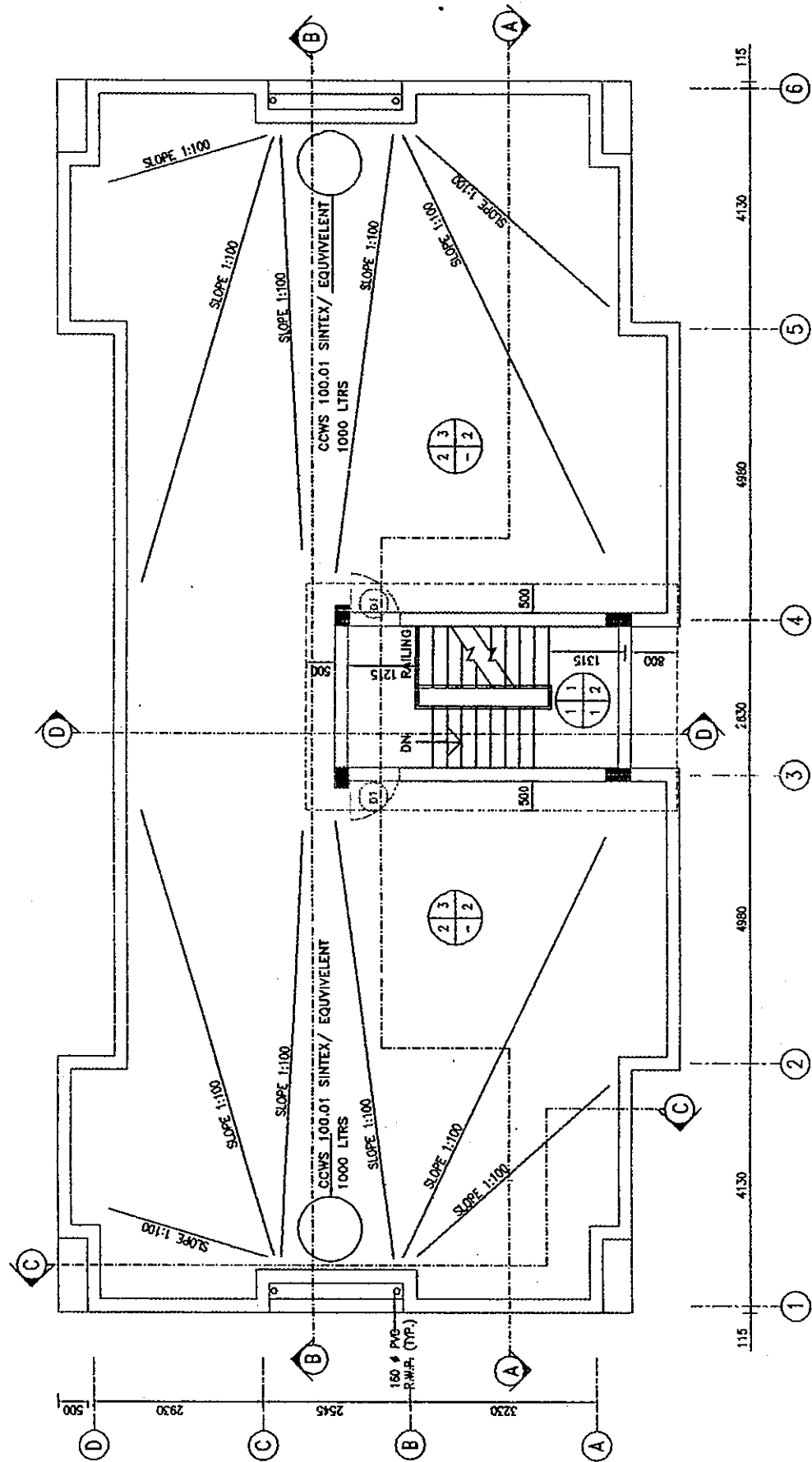
CEILING
 (1) SINGLE COAT M.A. PLASTER WITH LIME WASH-8MM TH.

ABBREVIATIONS

- AL = ALUMINIUM
- D = DOOR
- DRG. = DRAWING
- F.F.L. = FINISHED FLOOR LEVEL
- I.P.S. = INDIAN PATENT STONE
- NO. = NUMBER
- TIP. = TYPICAL
- TH. = THICK
- V = VENTILATOR
- W = WINDOW

NOTE:

- (1) ALL DIMENSIONS ARE IN MILLIMETRES.
- (2) DIMENSIONS GIVEN ARE EXCLUDING PLASTER THICKNESS.
- (3) ALL SILL DIMENSIONS ARE FROM F.F.L. TO TOP OF SILL
- (4) ALL LINTEL DIMENSIONS ARE FROM F.F.L. TO BOTTOM OF LINTEL BEAM.
- (5) ALL DOORS, WINDOWS & VENTILATORS TO BE FROM APPROVED MANUFACTURER, MATERIAL & COLOURS OF INTERNAL & EXTERNAL FINISHES TO BE AS APPROVED BY OWNER.



0114138-ABA-402

CONTRACTOR
 MITSUBI KENSETSU
 INDIA LIMITED
 4-1/2B, SAHAYANIGRAM ENCLAVE,
 NEW DELHI-110028, INDIA

AS-BUILT DRAWING
 THE RECONSTRUCTION SUPPORT FOR THE GUJARAT
 EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA
 TERRACE PLAN-C1 CLASS [UNIT-1]
 ANAR HOSPITAL

SCALE: 1:50

DATE: 11/04/2011

PROJECT NO.: 0114138-ABA-402

REVISION: R1

DESIGNED BY: [Signature]

CHECKED BY: [Signature]

DATE: 11/04/2011

PROJECT NO.: 0114138-ABA-402

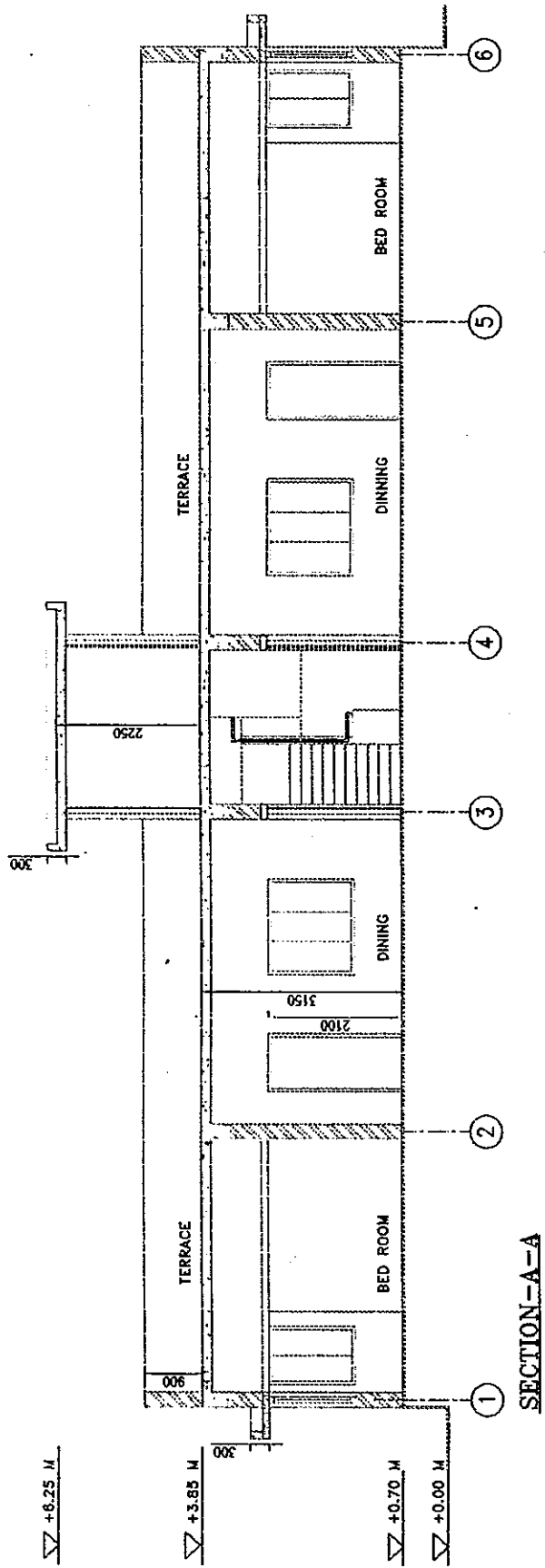
REVISION: R1

CONTRACTOR: Yamashita Seikei Inc.-Nippon Seikei Inc. JAPAN

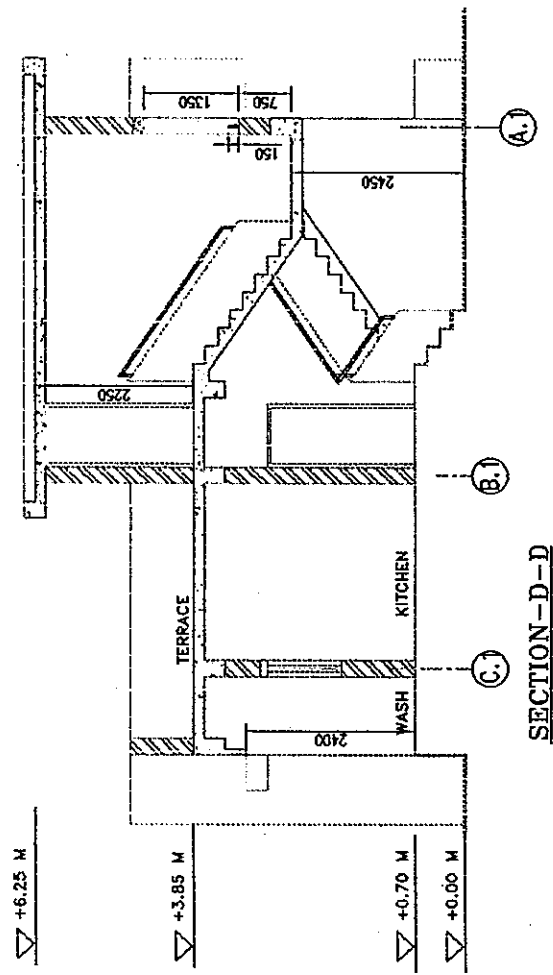
CONSULTANT: Dajal Consultants And Engineers Ltd. Ahmedabad - India

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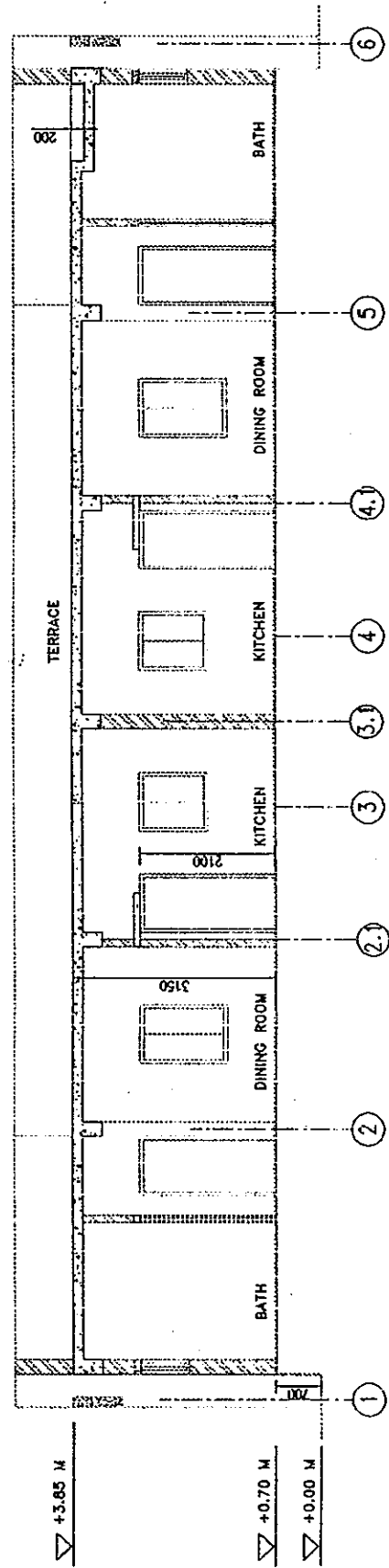
0114138-ABA-403



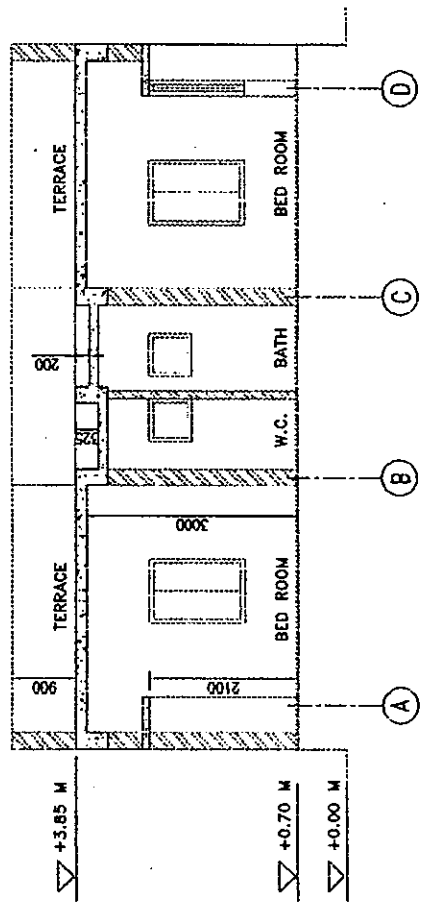
SECTION-A-A



SECTION-D-D



SECTION-B-B

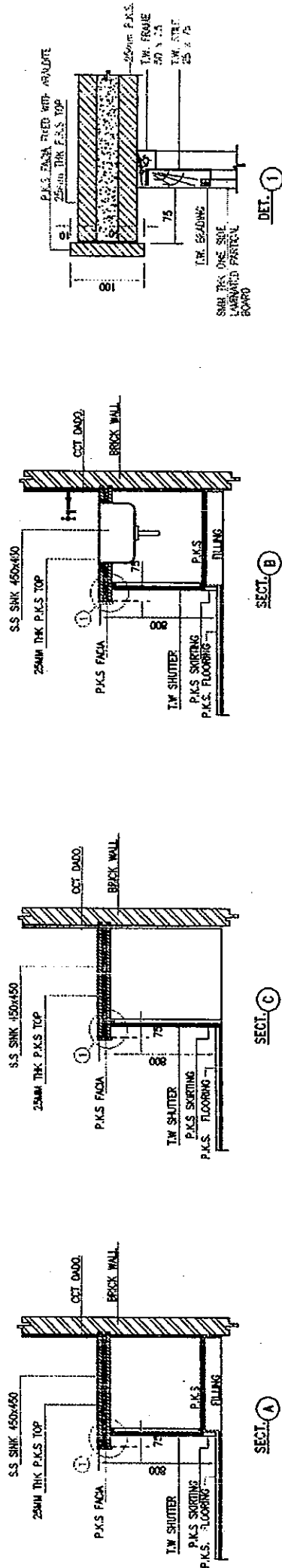


SECTION-C-C

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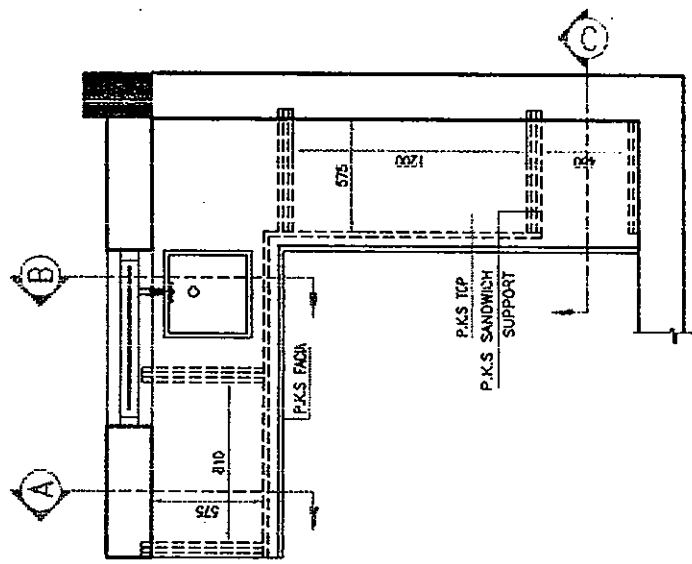
CONTRACTOR MITSUBI KENSETSU INDIA LIMITED 14/721, SATYANAGAR, ENCLAVE, NEW DELHI-110028, INDIA		SCALE: 1:50	
AS-BUILT DRAWING		THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA	
SECTIONS-C1 CLASS [UNIT-1]		AMAR HOSPITAL	
YAMASHITA SEKKI INC.-NIBON SEKKI, INC.		JAPAN	
Dalia Consultants And Engineers Ltd. Ahmedabad - INDIA		0114138-ABA-403	
NO.		RO	
DATE	BY	CHK.	APP.
7/1/91	SPAD FOR CONSTRUCTION / WORK		
NO.	NO.	NO.	NO.
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
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0114138-ABB-108

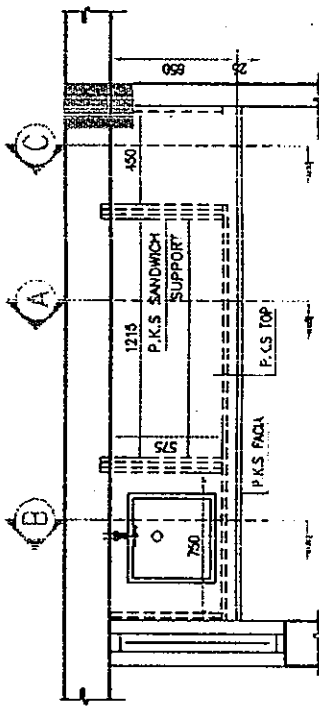


50 DIA MEDIUM DUTY
HOLLOW M.S. PIPE WITH
ENAMEL PAINT.

PLAN
STAIRCASE / BALCONY RAILING



PLAN
KITCHEN PLATFORM (C1 CLASS)



PLAN
KITCHEN PLATFORM (C3 CLASS)

- ABBREVIATIONS**
- SECT. - SECTION
 - THK - THICK
 - NOS. - NUMBERS
 - TYP. - TYPICAL
 - F.L. - FINISHED FLOOR LEVEL
 - FR. - FRAMES
 - W. - WINDOWS
 - D.W. - DOORS
 - ALU. - ALUMINIUM
 - MIL. - MILLIMETRE
 - EQ. - EQUAL
 - S.S. - STAINLESS STEEL
 - T.W. - TYPICAL WOOD
 - M.S. - MILD STEEL

NOTES:

- (1) ALL DIMENSIONS ARE IN MILLIMETRES.
- (2) ALL GLASSES SHALL BE CLEAR FLOAT GLASS FROM MOKI GLASSWORK OR APPROVED EQUIVALENT.
- (3) ALL SECTIONS MARKS GIVEN ON M.S. WINDOWS FAB. F78, T6 ETC. ARE FROM AHMEDABAD STEELCRAFT.

CONTRACTOR
MITSUBI KENSETSU
INDIA LIMITED
A-1/20, SAFDARJUNG ENCLAVE,
NEW DELHI-110029, INDIA

AS-BUILT DRAWING

SCALE : 1:25

THE RECONSTRUCTION SUPPORT FOR THE GUJARAT
EARTHQUAKE DISASTER IN THE DEVASTED AREAS IN INDIA

PLATFORM AND RAILING DETAIL

ANJAR HOSPITAL -- STAFF QUARTERS

YAMASHITA SEKKEI INC.-NISON SEKKEI, INC.

JAPAN

**Datal Consultants
And Engineers Ltd.**
Engineers - Construction
Ahmedabad - India

0114138-ABB-108

REV.

RO

ISSUED FOR CONSTRUCTION/ENDING

RD

REV. NO.

DATE

BY

CHK.

DEPT. HEAD

MR.

MR.

ENGR.

REVISION

RD

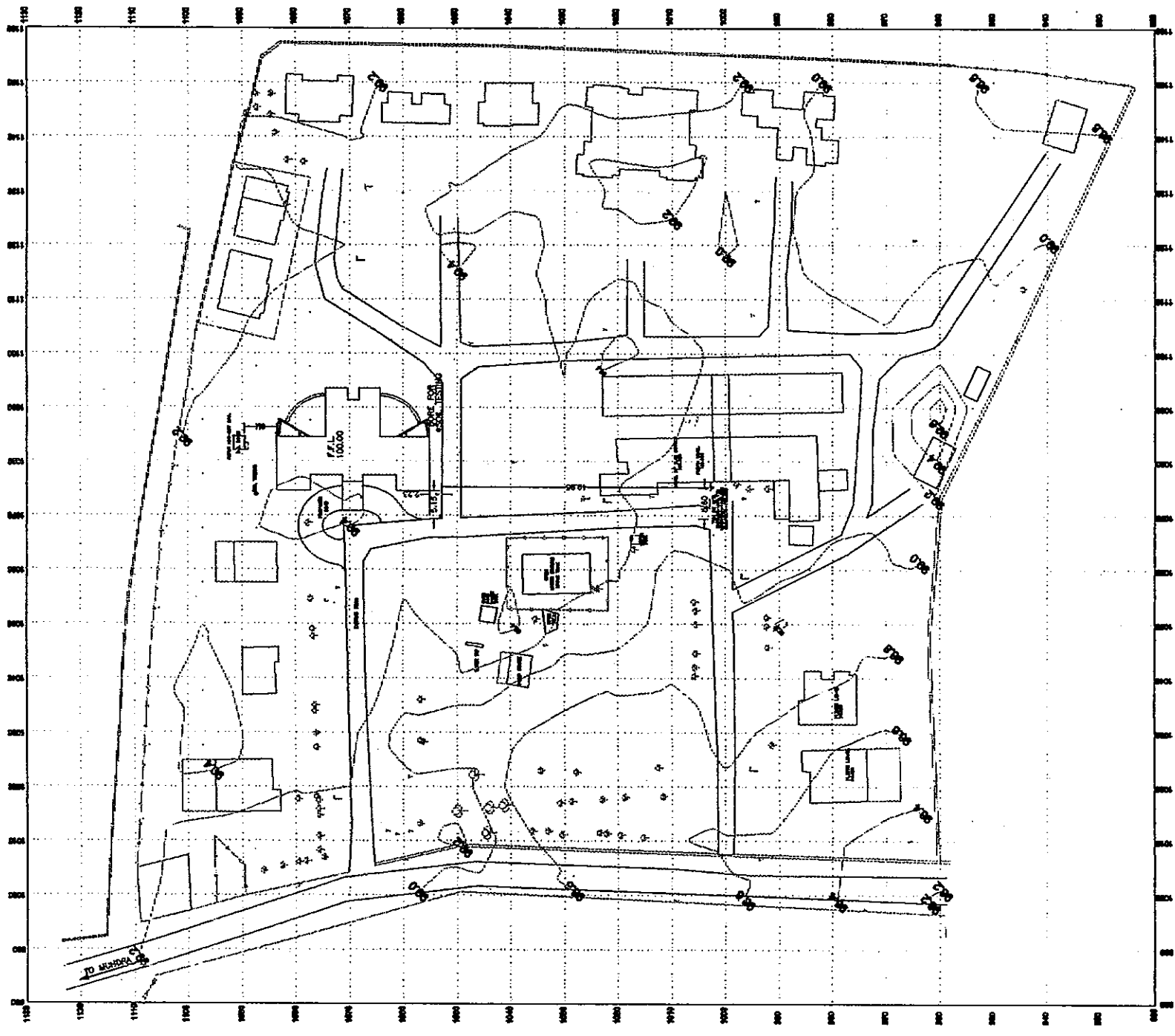
NO.

DATE

BY

CHK.

0114138-APA-501



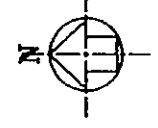
LEGENDS

1.	T.B.M.
2.	MANHOLE
3.	ELE. POLE
4.	TEL. POLE
5.	TREE
6.	LAMP POLE
7.	COMPOUND WALL
8.	WIRE FENCING

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CONTRACTOR
mitsui kensetsu
INDIA LIMITED
 A-1/2A, SARAJAHUNG ENCLAVE,
 NEW DELHI-110028, INDIA

AS-BUILT DRAWING SCALE: 1:500
THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA
SITE PLAN
 MANDIRA HOSPITAL
 YAMASHITA SEKKI INC.-NIBON SEKKI, INC. JAPAN
 Datta Consultants And Engineers Ltd. Ahmedabad - India
 0114138-APA-501
 R0



REFERENCE DRAWING

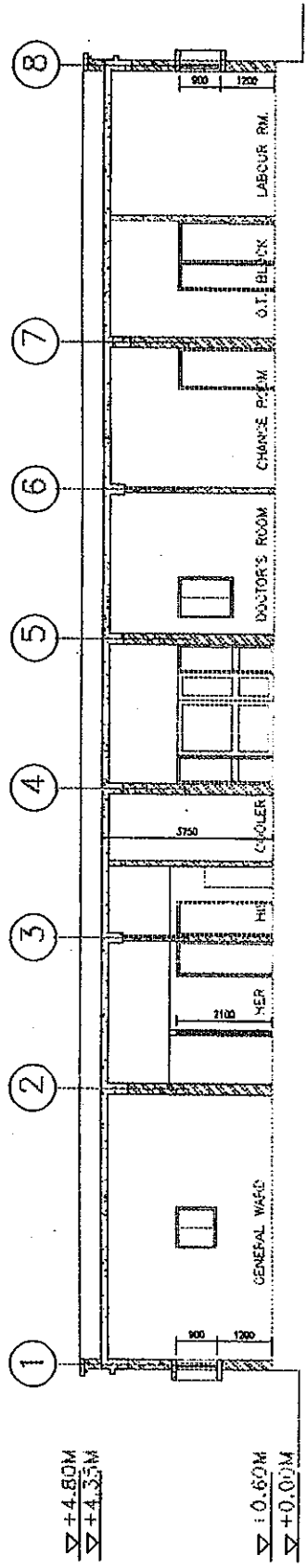
NO. 1/1/01 ISSUED FOR CONSTRUCTION / MANDIRA

BY CHK. DATE

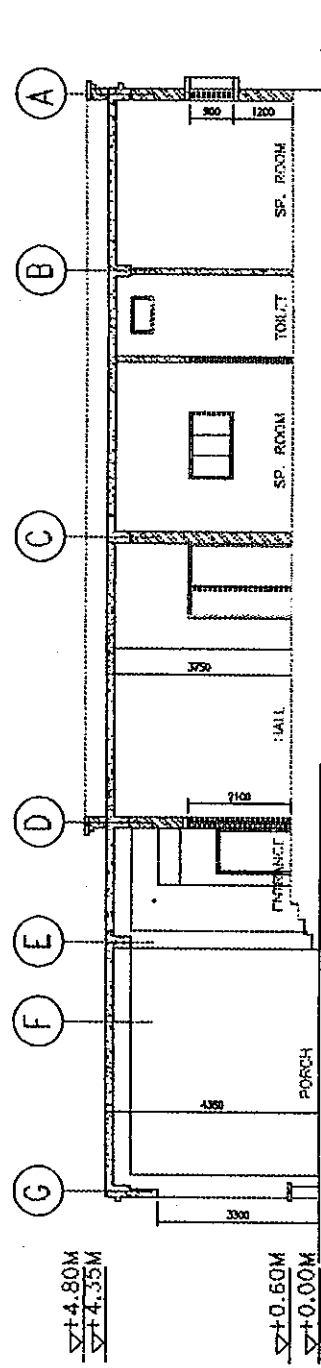
BY CHK. DATE

BY CHK. DATE

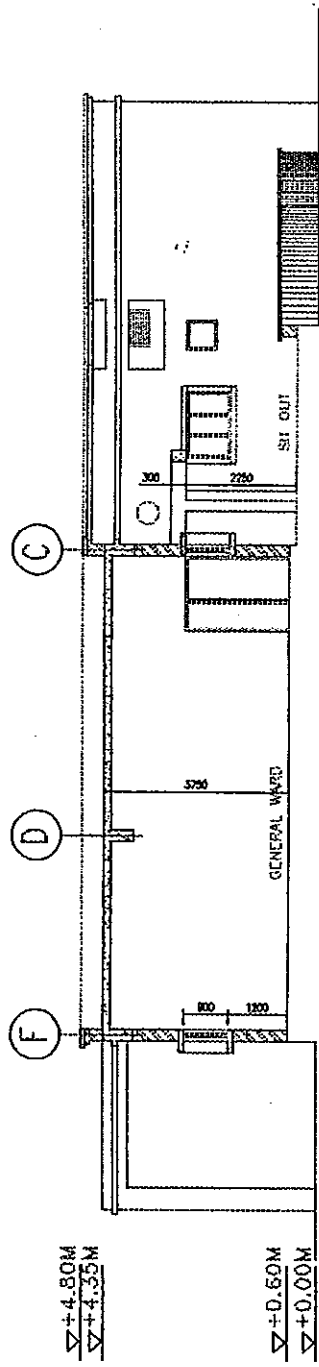
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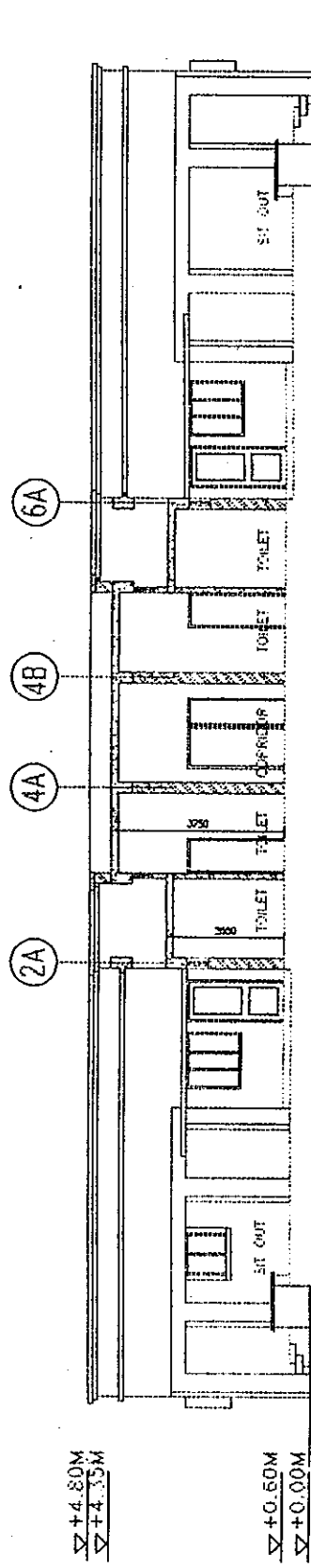
SECTION-A-A



SECTION-B-B

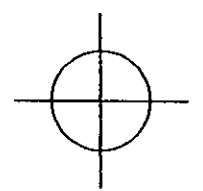


SECTION-C-C



SECTION-D-D

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CONTRACTOR MITSUBI KENSETSU INDIA LIMITED A-1/20, SAFDARJUNG ENCLAVE, NEW DELHI-110029, INDIA		AS-BUILT DRAWING SCALE: 1:100	
THE RECONSTRUCTION SUPPORT FOR THE GUJARAT EARTHQUAKE DISASTER IN THE DEVASTATED AREAS IN INDIA		SECTIONS	
MUNDRA HOSPITAL		YAMASHITA SEKKEI INC.-NIHON SEKKEI, INC. JAPAN	
Delal Consultants And Engineers Ltd. Engineers - Consultants - Contractors Ahmedabad - India		0114138-ABB-502	
REV. NO.		REV.	
R0		R0	

NO.	DATE	REVISION
R0	7/9/01	ISSUED FOR CONSTRUCTION

REFERENCE DRAWINGS