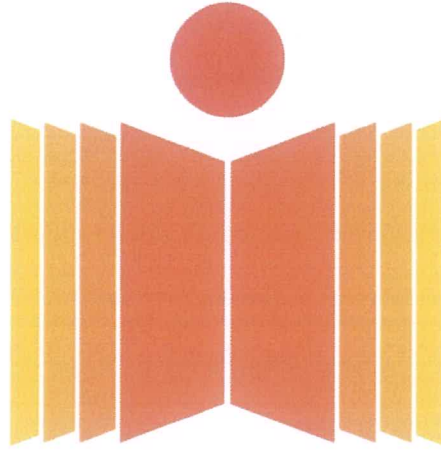


NIT No. IITH/CMD/CIV/NIT/2025-26/26



भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Volume - 5

CONCEPTUAL DRAWINGS & SUB SOIL INVESTIGATION REPORT (Refer BH-05&06)

*Name of the work: Construction of Additional Building for Campus
School (G+1) at IIT Hyderabad Campus, Kandi, Sangareddy.*

*Executive Engineer (Civil)
IIT Hyderabad*

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CONCEPTUAL DRAWINGS

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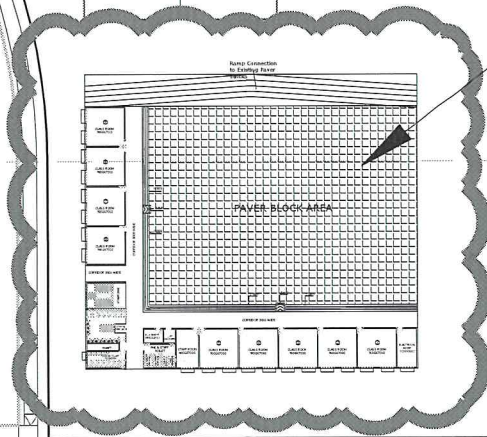
SH3

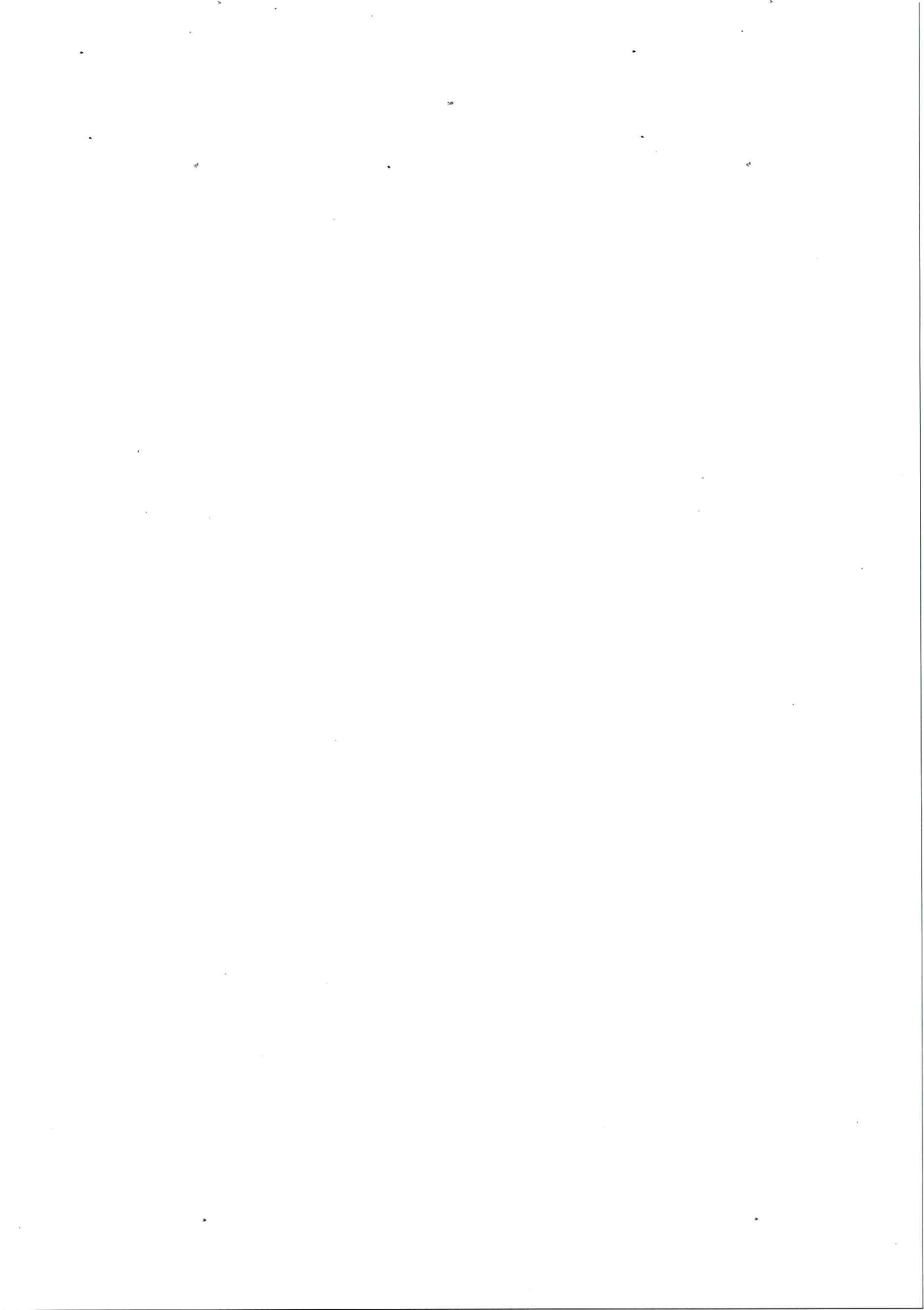
CS

Existing School

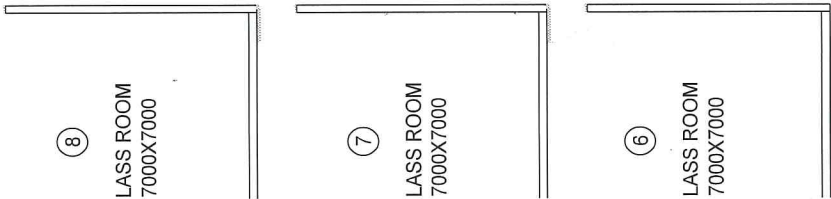
GUARD ROOM

Proposed Location
New School

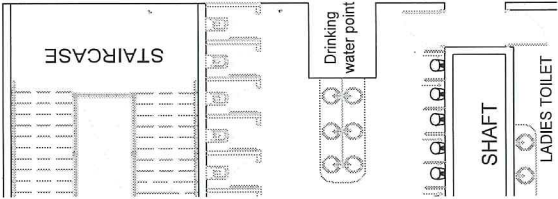




CORRIDOR 3000 WIDE



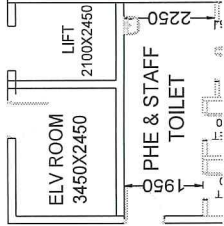
IDOR 3000 WIDE



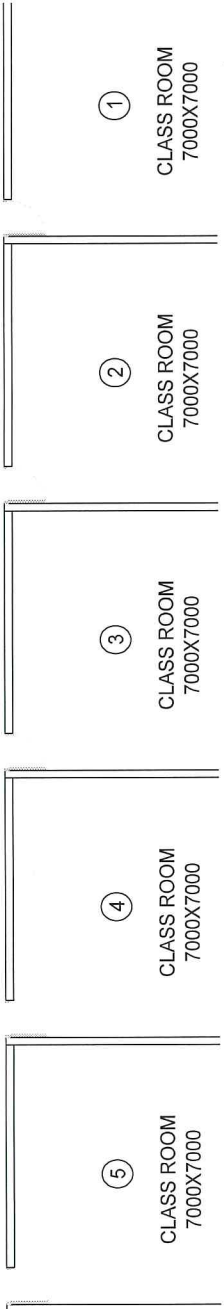
Drinking water point

SHAFT

LADIES TOILET



CORRIDOR 3000 WIDE



CLASS ROOM 7000X7000

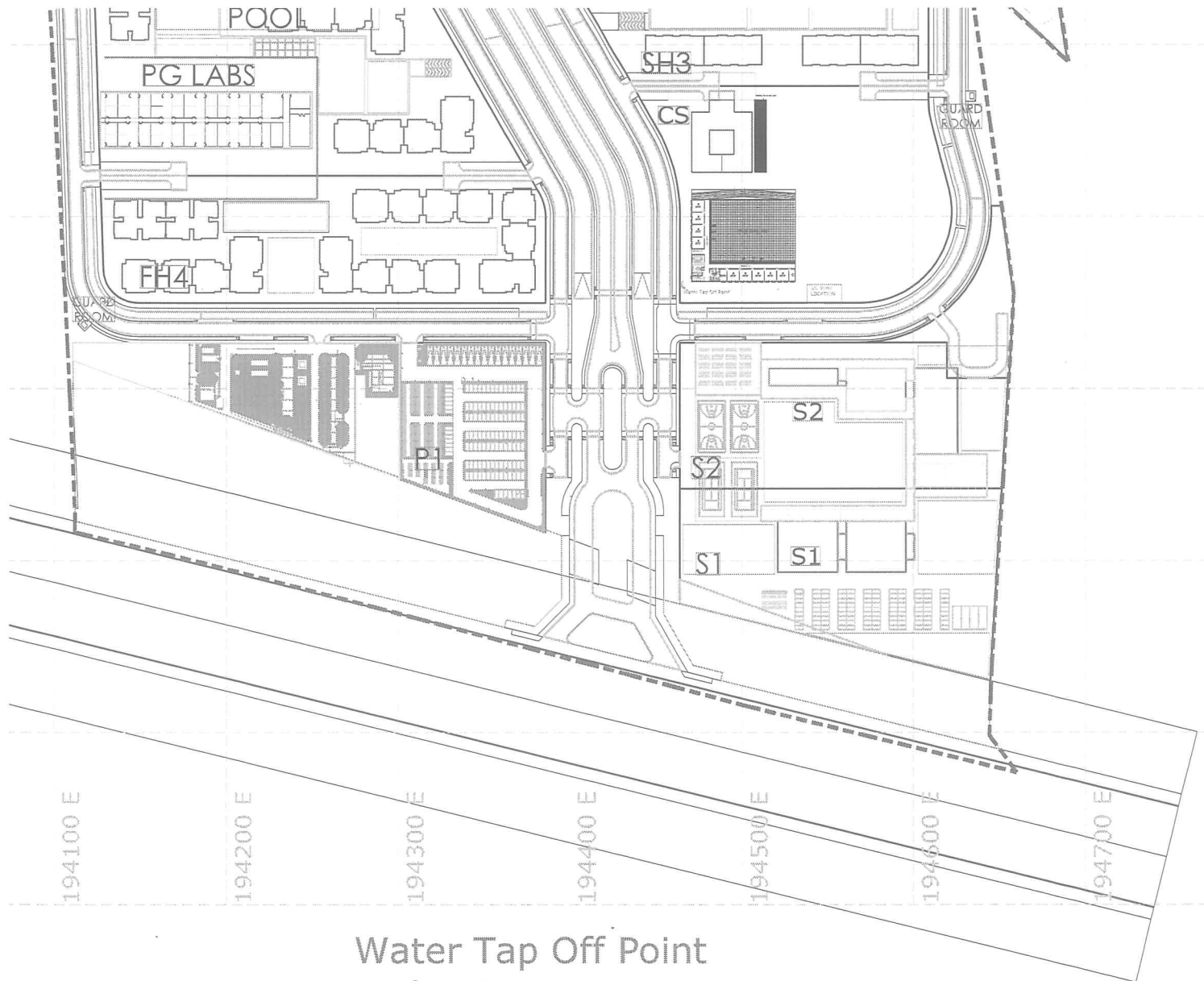
CLASS ROOM 7000X7000

CLASS ROOM 7000X7000

CLASS ROOM 7000X7000

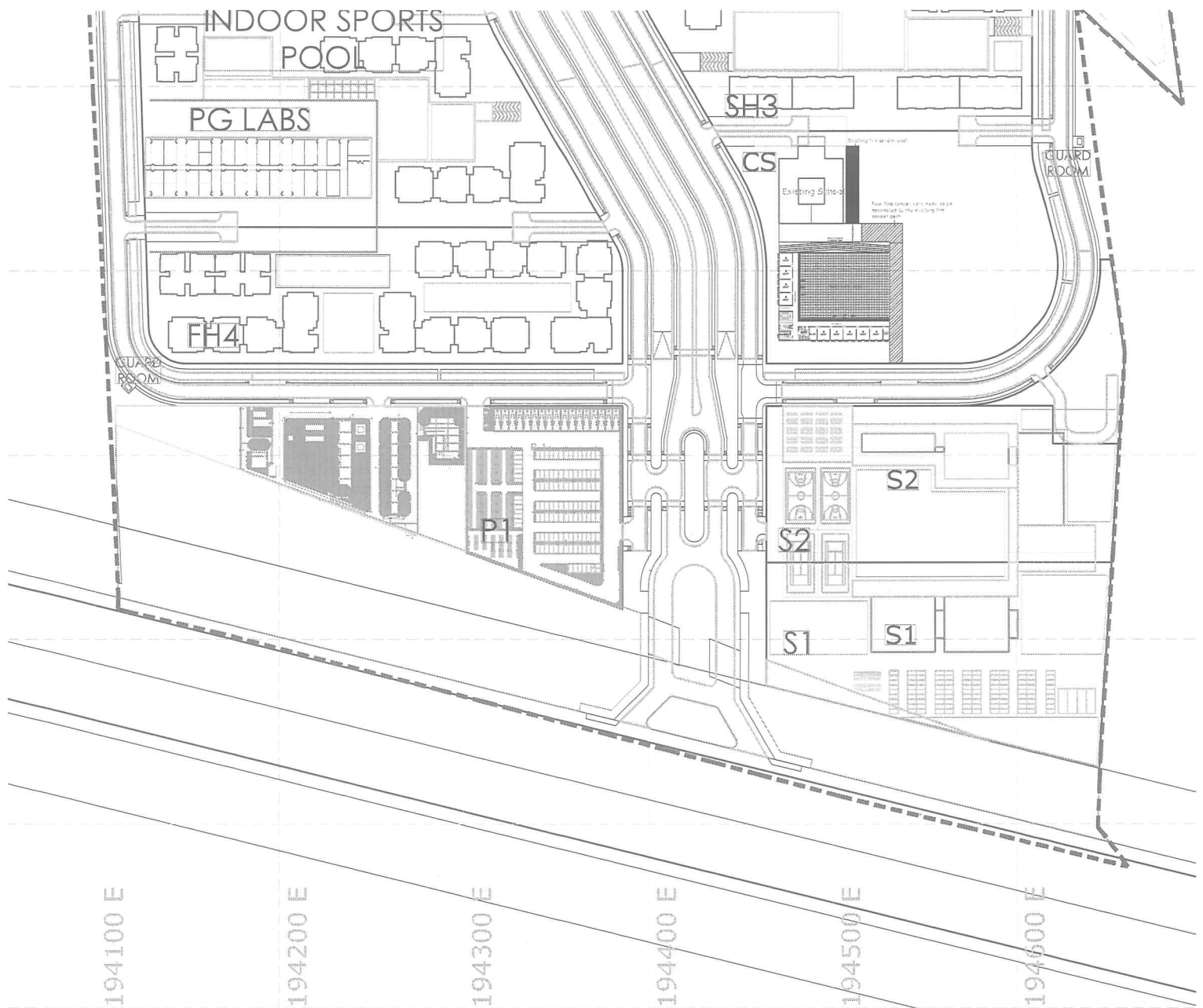
CLASS ROOM 7000X7000

STAFF ROOM 4000X7000

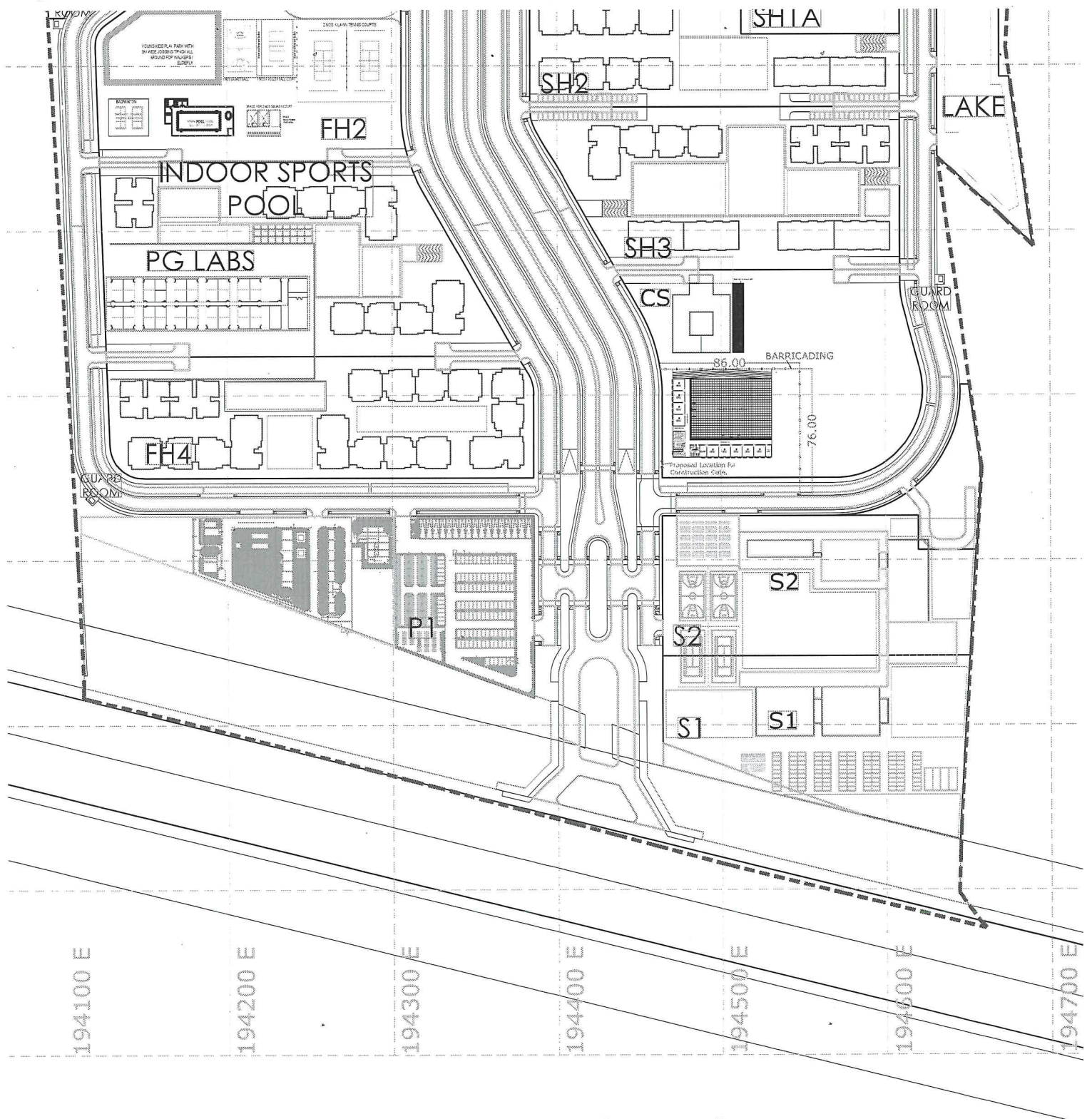


Water Tap Off Point
and UG Sump
Location Drawing

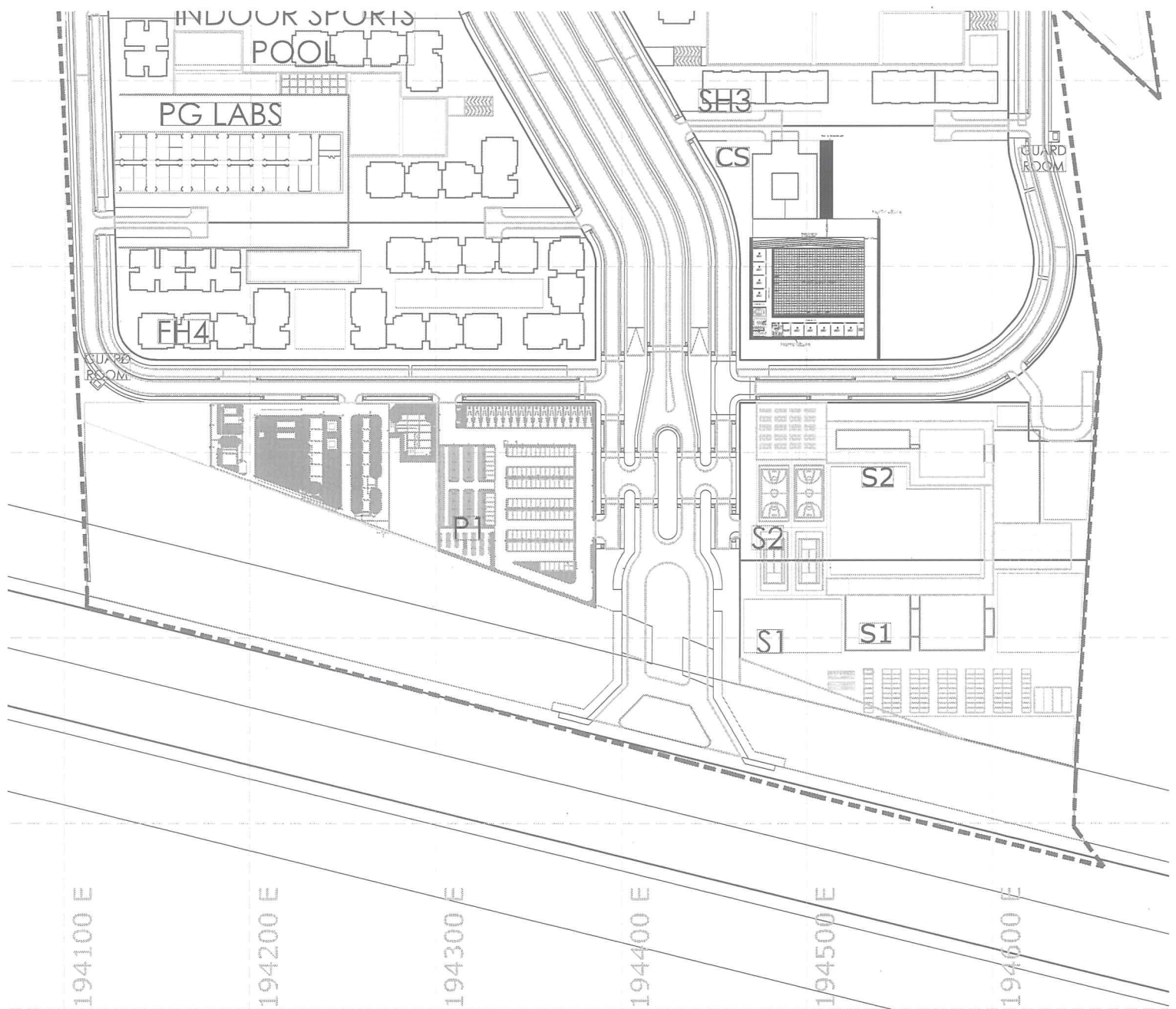




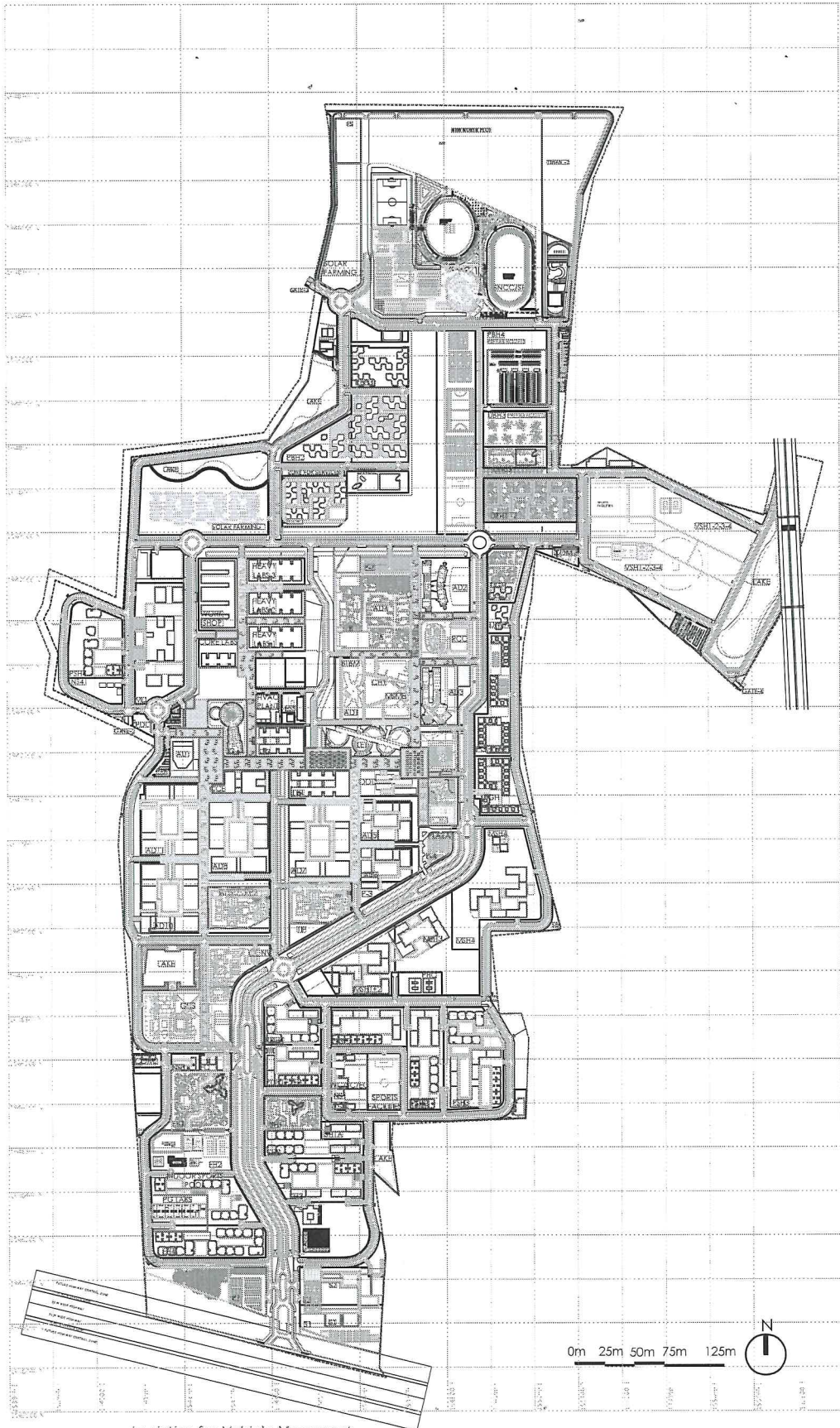
Fire Tender Path Drawing



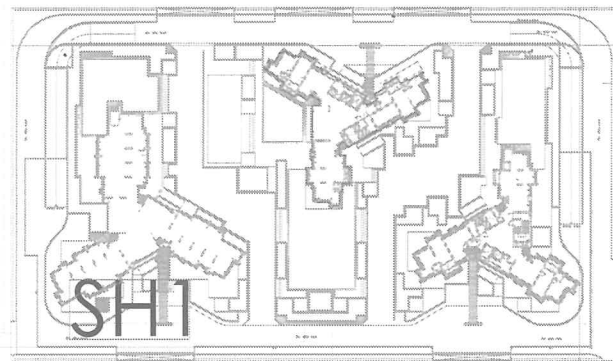
HARD BARRICADING DRAWING



Horticulture Drawing



Logistics for Vehicle Movement
Drawing



Precast Building
ST-1A

Precast Building
ST-2A

Precast Building
ST-2B

EPR

Precast Staff Housing
Electrical Panel Room

450 Meters approximate

Existing
IITH-DAV
Campus School

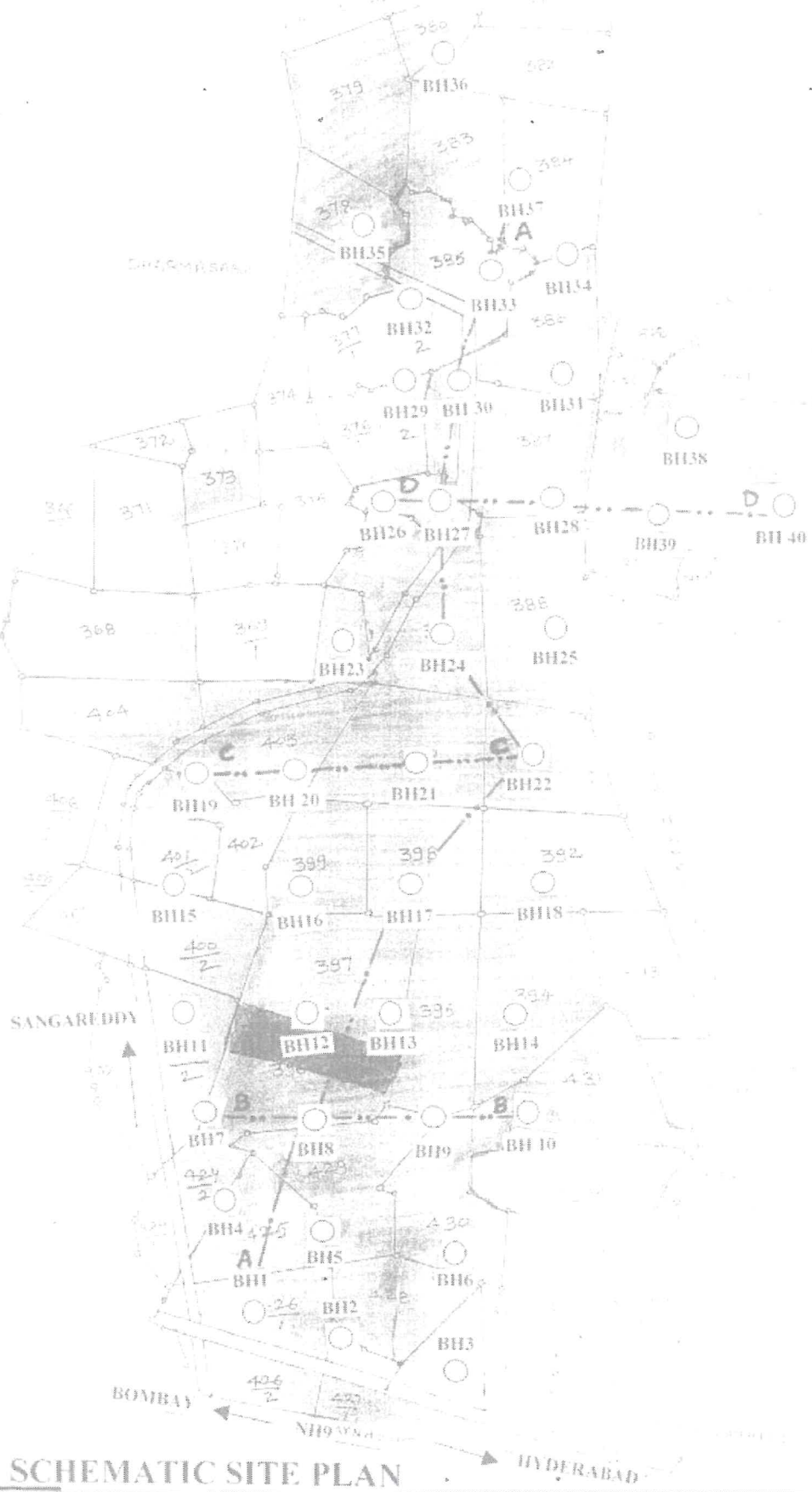
Proposed
IITH-Campus School

Electrical Panel Room

450 Meters approximate

SUB SOIL INVESTIGATION REPORT

(Refer BH-05&06)



SCHEMATIC SITE PLAN



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405/A

8.1.2 An analysis of the data provided in soil profile tables indicates stratification with the presence of the following strata in the sub soil:

- a) Stratum I : Reddish /Whitish / Brownish / Dark Grey Clayey Sandy Silt with/ without Gravels
- b) Stratum II : Whitish / Reddish / Brownish / Dark Greyish Clayey Silty Sand with / without Gravels / Intrusion of Lime
- c) Stratum III : Whitish / Yellowish / Greyish / Reddish /Brownish Grey Granite Based Weathered Rock
- d) Stratum IV : Whitish / Greyish Brown Fissured & Fractured Granite Rock

8.1.3 The thicknesses and the depths at which these strata occur in the bores is given below:

Bore Hole No	(Depth in m : from - to)			
	Stratum I	Stratum II	Stratum III	Stratum IV
BH 1	-	0-2.0	2.0-12.5	12.5-30.0
BH 2	-	0-1.5	1.5-10.0	-
BH 3	0-1.0	1.0-2.5	2.5-20.0	-
BH 4	-	0-3.0	3.0-10.0	-
BH 5	0-2.0	2.0-6.5	6.5-10	-
BH 6	-	0-2.0	2.0-10.0	-
BH 7	0-2.0	2.0-4.0	4.0-20.0	-
BH 8	-	0-4.0	4.0-30.0	-
BH 9	-	0-1.5	1.5-10.0	-
BH 10	0-1.0	1.0-5.0	5.0-10.0	-
BH 11	-	0-2.0	2.0-10.0	-
BH 12	-	0-6.0	6.0-20.0	-
BH 13	-	0-3.0	3.0-10.0	-
BH 14	-	0-3.0	3.0-10.0	-



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BH 15 -	-	0-3.0	3.0-20.0	-
BH 16	0-1.5	1.5-3.0	3.0-10.0	-
BH 17	-	0-2.0	2.0-30.0	-
BH 18	-	0-1.5	1.5-20.0	-
BH 19	-	0-2.5	2.5-10.0	-
BH 20	-	0-1.5	1.5-10.0	-
BH 21	-	0-2.5	2.5-20.0	-
BH 22	-	0-2.5	2.5-6.0 & 10.5 - 12.0	6.0-10.5 & 12.0 -30.0
BH 23	-	0-5.0	5.0-20.0	-
BH 24	0-2.0	-	2.0-10.0	-
BH 25	-	0-3.0	3.0-10.0	-
BH 26	0-2.0	2.0-4.5	4.5-10.0	-
BH 27	-	0-4.0	4.0-10.0	-
BH 28	-	0-4.5	4.5-10.0	-
BH 29	0-2.0	2.0-2.5	3.0-20.0	2.5-3.0
BH 30	0-1.0	1.0-2.0	2.0-20.0	-
BH 31	0-2.0	2.0-3.0	3.0-30.0	-
BH 32	0-3.0	3.0-6.0	6.0-10.0	-
BH 33	0-2.0	2.0-4.5	4.5-10.0	-
BH 34	-	0-6.5	6.5-20.0	-
BH 35	-	0-3.0	3.0-10.0	-
BH 36	-	0-3.0	3.0-10.0	-
BH 37	-	0-2.0	2.0-10.0	-
BH 38	-	0-3.0	3.0-10.0	-
BH 39	-	0-2.0	2.0-10.0	-
BH 40	-	0-6.0	6.0-10.0	-

8.2 Grain Size Distribution

8.2.1 The typical grain size distributions of the sub soil at various depths in the upper strata

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				13

have been presented in the form of grain size distribution curves given in Figure No 17 to 30.

8.2.2 The variation of grain size distribution in Stratum I of Clayey Sandy Silt with / without Gravels is given below.

BH No	Gravel %	Sand %	Silt %	Clay %
BH 3	0	40	42	18
BH 5	2-7	35-38	39-40	18-21
BH 7	1-4	31-36	43-44	20-24
BH 10	1	34	40	23
BH 16	1-8	34-39	42	16-18
BH 24	0	33-44	45-54	11-13
BH 26	1-3	30-33	41-45	16-23
BH 29	5-6	35-36	40-45	17-20
BH 30	0	35	45	20
BH 31	0	42-44	44-46	11-14
BH 32	2-5	33-37	42-43	16-20
BH 33	2-5	29-36	42-45	18-24

8.2.3 The variation of grain size distribution in Stratum II of Clayey Silty Sand with / without Gravels is given below.

BH No	Gravel %	Sand %	Silt %	Clay %
BH 1	4-11	68-72	15-18	4-7
BH 2	2-4	60-64	26-30	6-8
BH 3	3-5	35-71	18-30	6-12
BH 4	6-10	60-69	19-27	5-7
BH 5	2-10	48-66	21-36	5-11
BH 6	6	60-64	25-27	5-7
BH 7	1	67-81	14-24	4-8
BH 8	0-6	40-66	22-35	6-15



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BH 9	10-12	60	23-26	4-5
BH 10	1-6	52-60	24-32	10-12
BH 11	2-4	63-67	21-27	6-9
BH 12	0-8	48-66	21-37	5-15
BH 13	2-5	57-63	26-30	6-8
BH 14	1-7	64-68	19-28	6-8
BH 15	4-9	57-66	22-27	4-7
BH 16	8-10	53-66	18-29	6-10
BH 17	4-11	58-64	20-28	5-7
BH 18	0-2	50-56	29-35	13-15
BH 19	3-8	63-70	17-26	5-8
BH 20	0-8	44-60	22-38	10-18
BH 21	3-5	60-68	23-29	4-7
BH 22	0-8	55-63	20-31	9-13
BH 23	2-6	60-74	16-24	4-7
BH 25	4-5	50-60	29-36	7-9
BH 26	10-12	58-66	19-24	5-6
BH 27	0-2	50-60	28-39	10-12
BH 28	2-8	65-70	18-25	4-6
BH 29	1	84	11	4
BH 30	5	58	27	10
BH 31	1	71	22	6
BH 32	8-10	52-55	25-28	10-12
BH 33	2-5	55-68	26-30	4-15
BH 34	0-5	47-70	20-36	5-17
BH 35	0-4	56-63	27-34	6-9
BH 36	0-8	45-58	27-39	7-16
BH 37	0-8	52-55	30-33	10-12
BH 38	1-10	57-82	13-27	4-6



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BH 39	2-4	56-61	28-33	7-9
BH 40	0-10	70-82	14-20	3-4

8.3 Atterberg Limits

8.3.1 Ranges of Liquid and Plastic Limit in Stratum I of Clayey Sandy Silt with / without Gravels are given below.

Liquid Limit : 37.9 to 43.3%

Plastic Limit : 17.3 to 19.7%

8.3.2 Ranges of Liquid and Plastic Limit in Stratum II of Clayey Silty Sand with / without Gravels are given below.

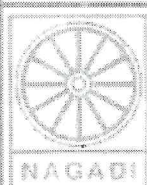
Liquid Limit : Negligible to 39.1%

Plastic Limit : Non Plastic to 18.9%

8.4 Water Content, In-situ Bulk Density & Dry density in Soil

8.4.1 Variations in Water Content, In-situ Bulk Density and Dry Density in soil stratum are given below.

BH No	Depth (m)	Water Content (%)	Bulk Density (gm/cm ³)	Dry Density (gm/cm ³)
BH 1	0.5	4.83	2.04	1.95
	1.5	6.83	2.14	2.01
BH 2	1.0	4.89	2.11	2.02
BH 3	2.0	3.84	2.18	2.10
BH 4	1.0	2.83	1.97	1.93
	2.0	1.84	2.07	2.04
BH 5	2.0	2.76	2.00	1.95
BH 7	2.0	9.06	1.98	1.94
	3.0	6.88	2.20	2.06
BH 8	1.0	6.91	2.11	1.98



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SOIL PROFILE

Project : S I for the Proposed Campus of IIT-H at Kandi Village in Medak District

SOIL PROFILE			B.H. Location :		Water Table : N.E.		Term. Depth : 10 m		B.H. No. : 5			
N-Value *	Depth (m)	Soil Description	Grain Size Analysis				Atterberg		In-situ		Triaxial Test	
			Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Liquid (%)	Plastic (%)	Density (g/cm ³) #	Water Cont (%)	Type	c (kg/cm ²)
	0.0	Ground Level										
	0.5	Whitish / Brownish Grey Clayey Sandy Silt with Gravels	2	38	40	20	41.1	18.6				
58/23 cms	1.0	Whitish / Brownish Grey Clayey Sandy Silt with Gravels	5	35	39	21						
	1.5	Whitish / Brownish Grey Clayey Sandy Silt with Gravels	7	36	39	18	39.4	18.1	2.00	2.76	CD	35
	2.0	Whitish / Brownish Grey Clayey Silty Sand with Gravels & Intrusion of Lime	10	48	31	11						
48/10 cms	3.0	Whitish / Brownish Grey Clayey Silty Sand with Gravels & Intrusion of Lime	2	53	36	9	NP	NP				
	4.0	Whitish / Yellowish Brown Clayey Silty Sand with Gravels & Intrusion of Lime	6	64	24	6						
	5.0	Whitish / Yellowish Brown Clayey Silty Sand with Gravels & Intrusion of Lime	8	66	21	5	NP	NP				
	6.5	Whitish / Greyish Brown Granite Based Weathered Rock		Sp.Gr. : 2.65								
	8.0	Whitish / Greyish Brown Granite Based Weathered Rock										
	10.0	Whitish/Greyish Brown Granite Based Weathered Rock		Sp.Gr. : 2.66								
		* N Values Observed :# : Natural Bulk Density										



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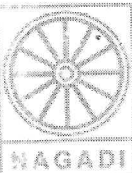
(2492 7870)

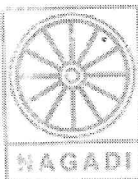
(2775 4446)

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5

SOIL PROFILE														Project : S I for the Proposed Campus of IIT-H at Kandi Village in Medak District									
N-Value *			Depth (m)	Soil Description	Grain Size Analysis				Atterberg		In-situ		B.H. No. : 6										
					Water Table : N/L	Term. Depth : 10 m		Triaxial Test															
					Clay (%)	Silt (%)	Sand (%)	Gravel (%)	Liquid (%)	Plastic (%)	Density (g/cm ³) #	Water Cont (%)	Type	c (kg/cm ²)	φ								
			0.0	Ground Level																			
			0.5	Reddish Brown Clayey Silty Sand with Gravels			60	6	27	7	NP	NP											
56/7.5 cms			1.0	Reddish Brown Clayey Silty Sand with Gravels			64	6	25	5	NP	NP											
			2.0	Whitish / Yellowish Brown Granite Based Weathered Rock			Sp.Gr. : 2.64				2.20	1.88	DS			39							
58/10 cms			3.0	Whitish / Greyish Brown Granite Based Weathered Rock																			
			4.0	Whitish / Greyish Brown Granite Based Weathered Rock			Sp.Gr. : 2.64																
			5.5	Whitish / Greyish Brown Granite Based Weathered Rock																			
			7.0	Whitish / Greyish Brown Granite Based Weathered Rock			Sp.Gr. : 2.65																
			8.5	Whitish / Greyish Brown Granite Based Weathered Rock																			
			10.0	Whitish / Greyish Brown Granite Based Weathered Rock			Sp.Gr. : 2.66																
* N Values Observed: # : Natural Bulk Density DS : Direct Shear Test have been conducted on powdered weathered rock samples																							

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