

LEGENDS :-

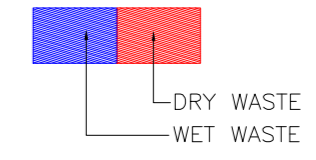
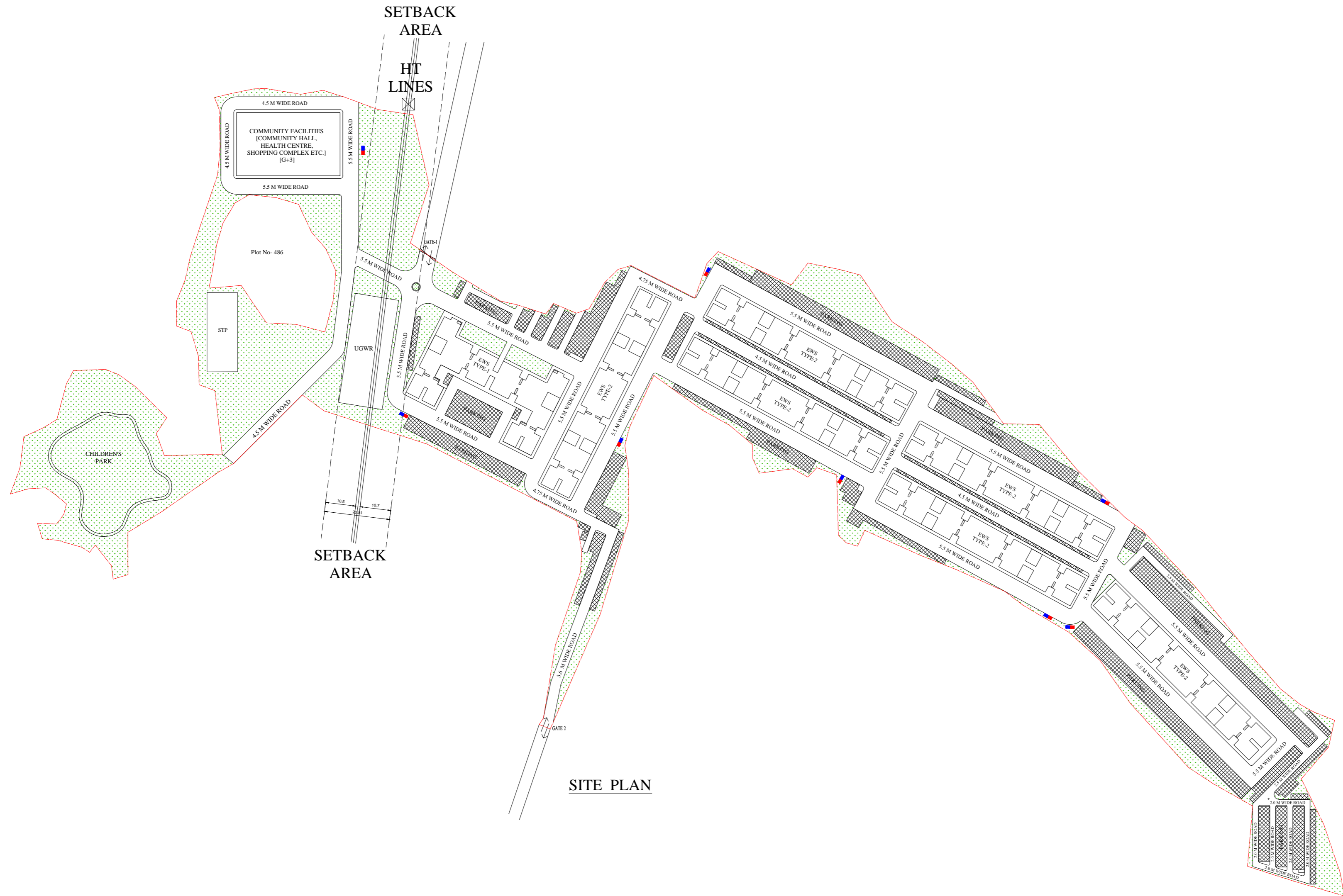
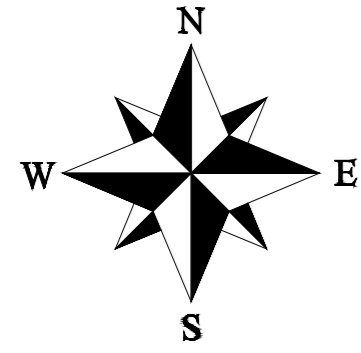
	1100 WASTE WATER PIPE
	1600 SOIL PIPE
	2000 SOIL PIPE
	GULLY TRAP
	MANHOLE

NOTES :-

- ALL DIMENSIONS ARE IN METER AND LEVELS IN METER.
- THE LAYOUT HAS BEEN PREPARED IN ACCORDANCE WITH APPLICABLE PROVISIONS OF JHARKHAND BUILDING BYE LAWS - 2016 (FOR AFFORDABLE HOUSING).

DATE	NO.	REVISION	DRAWN	CHECKED	APPROVED
CLIENT: GOVERNMENT OF JHARKHAND JHARKHAND URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD			DATE: 06-JUN-2019		
ENGINEERING CONSULTANT: DARASHAW & CO.PVT.LTD			DRAWN: S.AHMAD		
PROJECT: PREPARATION OF HOUSING FOR ALL PLAN OF ACTION, DPR AND PMC UNDER PMAY AHP/LHP			CHECKED: KALLOL DAS		
TITLE: EXTERNAL SEWER LAYOUT			APPROVED: GEORGE THAMBI		
DRG. NO. DCPL/0460T/LHP/SRWD/26			REV. PO		SCALE: 1:100

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- LEGEND:**
- DUSTBIN
 - PARKING AREA
 - GREEN AREA

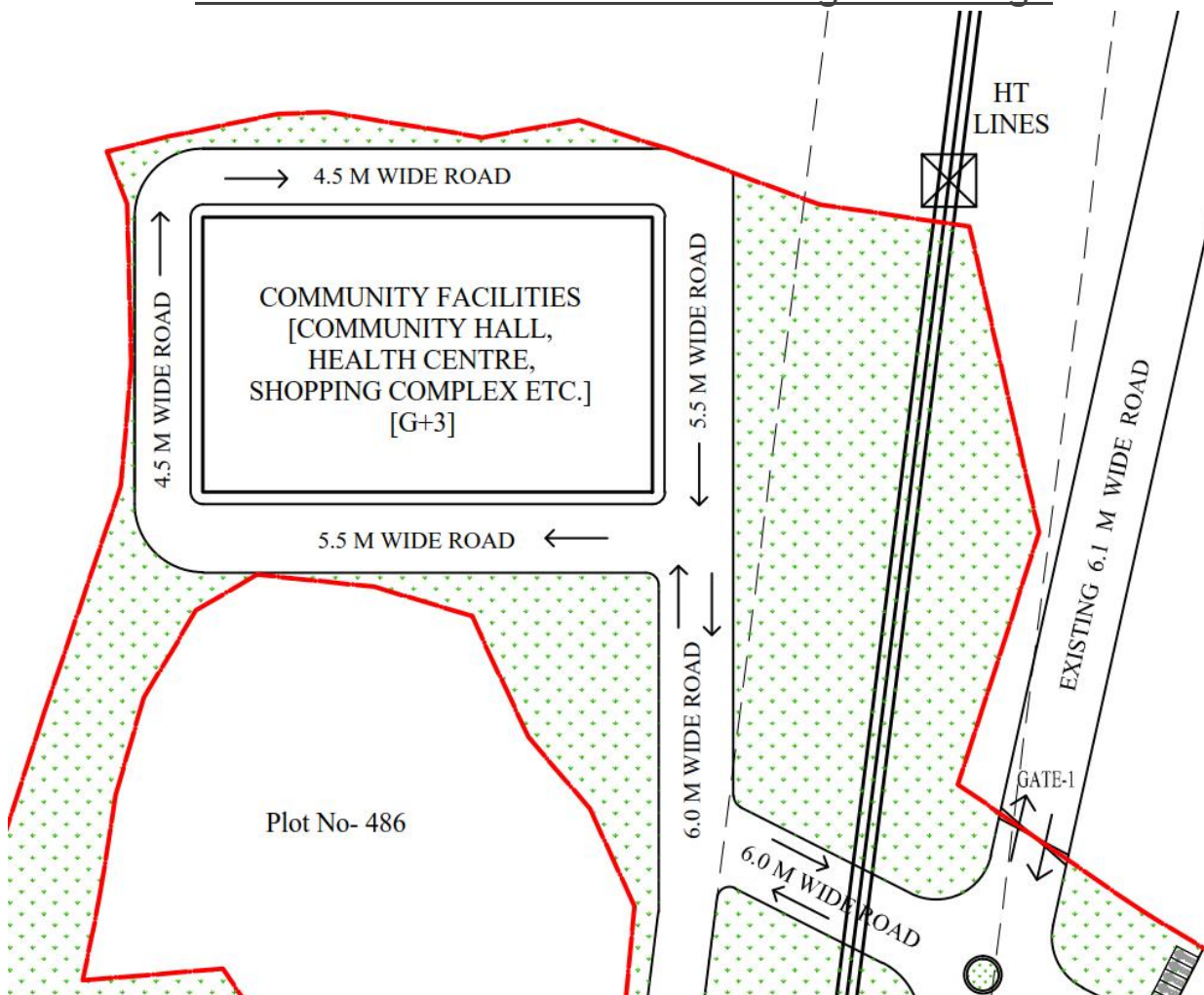
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DARASHAW <small>ALL RIGHTS RESERVED</small>					<small>OFFICE OF ORIGIN</small> <small>RANCHI</small> <small>FULL SCALE 3D FLOOR MARK, TOWER</small> <small>SCALE: 1:1000</small> <small>REVISIONS: 01/2019</small> <small>02/2019</small>
<small>CLIENT:</small> GOVERNMENT OF JHARKHAND JHARKHAND URBAN INFRASTRUCTURE DEVELOPMENT CORPORATION LTD			<small>DATE:</small> 06-JUN-2019		
<small>ENGINEERING CONSULTANT:</small> DARASHAW & CO.PVT.LTD			<small>HEAD OFFICE:</small> 12TH FLOOR, REGENT CHAMBERS, NARAINI POINT, MUMBAI - 400021		<small>DRAWN:</small> S.AHMAD
<small>PROJECT:</small> PREPARATION OF HOUSING FOR ALL PLAN OF ACTION, DPR AND PMC UNDER PMAY AHP/LHP			<small>CHECKED:</small> KALLOL DAS		
<small>TITLE:</small> SOLID WASTE MANAGEMENT PLAN			<small>APPROVED:</small> GEORGE THAMBI		
<small>DRG. NO.</small> DCPL/0460T/LHP/SRWD/28			<small>REV.</small> P0	<small>SCALE</small> NTS	

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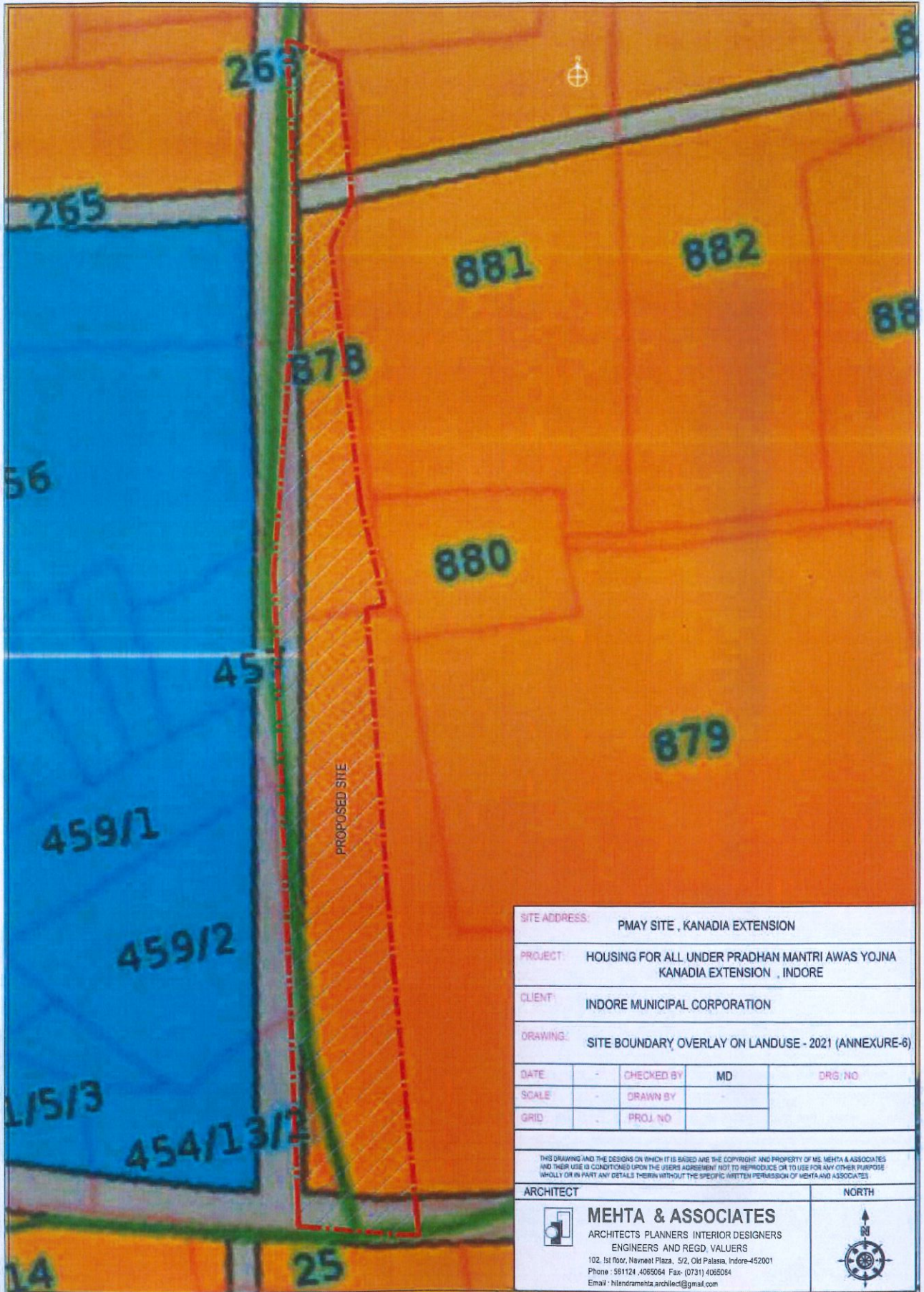
2.2.8 Social Infrastructure Building Drawings






2.3 LHP 3 Madhya Pradesh

2.3.1 Location Map



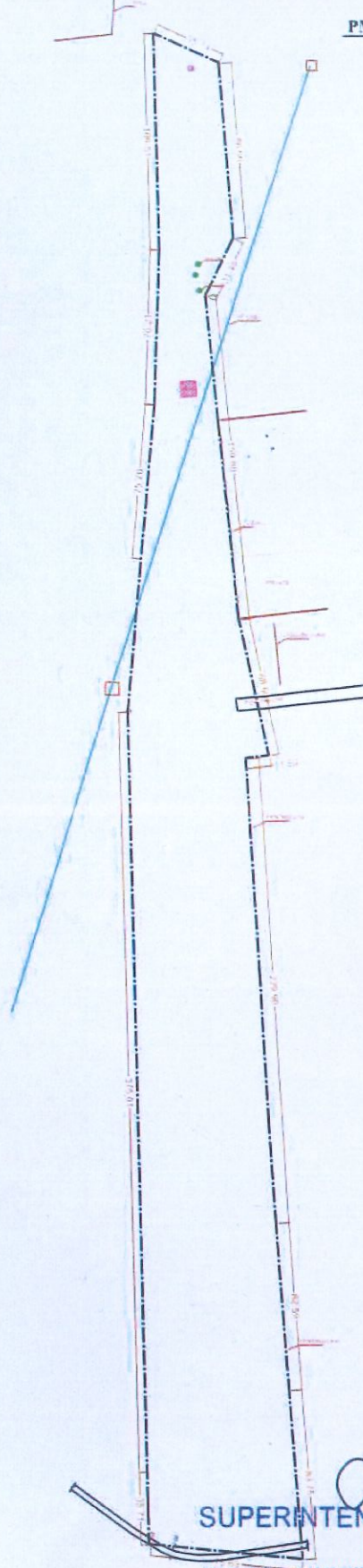


SITE ADDRESS: PMAY SITE , KANADIA EXTENSION			
PROJECT: HOUSING FOR ALL UNDER PRADHAN MANTRI AWAS YOJNA KANADIA EXTENSION , INDORE			
CLIENT: INDORE MUNICIPAL CORPORATION			
DRAWING: SITE BOUNDARY OVERLAY ON LANDUSE - 2021 (ANNEXURE-6)			
DATE	-	CHECKED BY	MD
SCALE	-	DRAWN BY	-
GRID	-	PROJ. NO	-
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ARCHITECT			NORTH
 MEHTA & ASSOCIATES ARCHITECTS PLANNERS INTERIOR DESIGNERS ENGINEERS AND REGD. VALUERS 102, 1st floor, Navneet Plaza, 5/2, Old Palasia, Indore-452001 Phone : 581124, 4065064 Fax: (0731) 4065064 Email : hilandramehta.architect@gmail.com			


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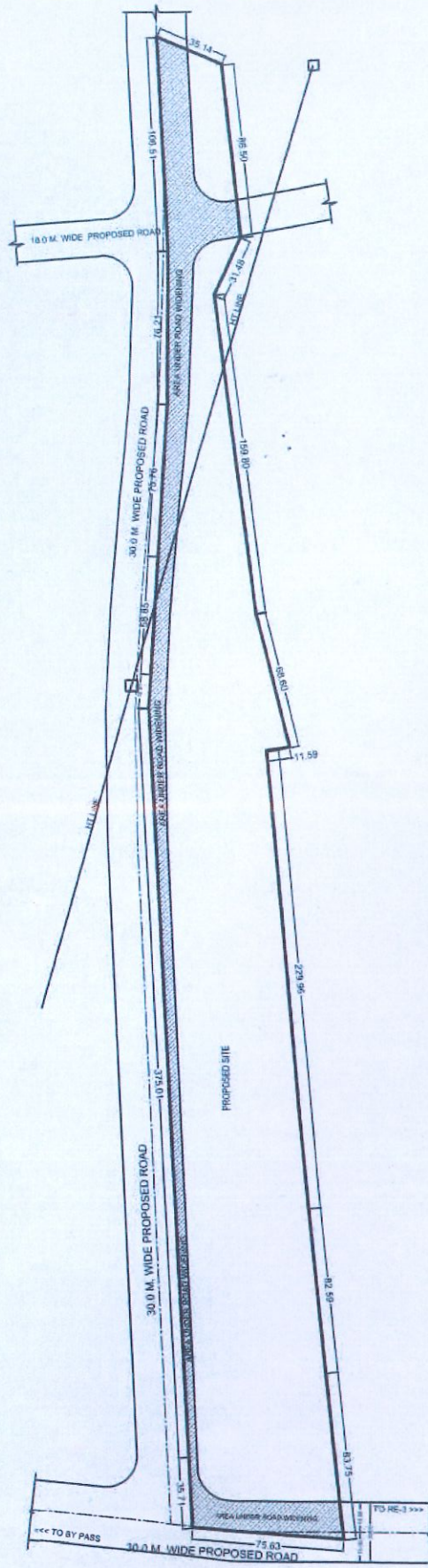
2.3.2 Total Station Survey Map

**SURVEY PLAN FOR
PMAY, LAND AT VILLAGE- KANADIYA , DIST - INDORE (M.P.)**

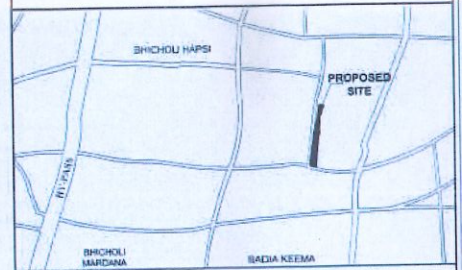


LEGENDS			
ELECTRIC TOWER			□
TREE			●
ELECTRIC LINE			—
BT EDGE			—
RASTA			—
FENCING LINE			—
CD			—
SITE ADDRESS: PMAY SITE, KANADIA EXTENSION			
PROJECT: HOUSING FOR ALL UNDER PRADHAN MANTRI AWAS YOJNA KANADIA EXTENSION , INDORE			
CLIENT: INDORE MUNICIPAL CORPORATION			
DRAWING: SURVEY PLAN			
DATE	CHECKED BY	DRG. NO.	
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MEHTA & ASSOCIATES ARCHITECTS PLANNERS INTERIOR DESIGNERS ENGINEERS AND REGD. VALUERS 102 1st Floor, New Market, 102, Old Market, Indore-492001 Phone: 981123 4382364 Fax: (0731) 4382364 Email: Mehtamohd.associates@gmail.com			NORTH


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SITE PLAN



LOCATION PLAN

S. NO.	OWNER	KHASKRA NO.	AREA IN HECT.
1	GOVT. LAND	185/1/3	2.428
2	GOVT. LAND	878	1.764
TOTAL AREA			4.192 HECT.

AREA STATEMENT

TOTAL LAND AREA	=	4.192 hect. (41920.00 sq.m.)
AREA UNDER ROAD WIDENING	=	7644.00 SQ.M
NET PLANNING AREA	=	34276.00 SQ.M

SITE ADDRESS: PMAY SITE, KANADIA EXTENSION

PROJECT: HOUSING FOR ALL UNDER PRADHAN MANTRI AWAS YOJNA KANADIA EXTENSION, INDORE

CLIENT: INDORE MUNICIPAL CORPORATION

DRAWING: SITE PLAN

DATE	CHECKED BY	DRG. NO.
SCALE	DRAWN BY	
GRID	PRQJ. NO	

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ARCHITECT

MEHTA & ASSOCIATES
 ARCHITECTS PLANNERS INTERIOR DESIGNERS
 ENGINEERS AND REGD. VALUERS
 102, 1st floor, Nirmal Plaza, 3/2, Old Palusa, Indore-452001
 Phone: 551124, 408594 Fax: (0731) 405504
 Email: indore@mehta.com, mehta@mehta.com

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2.3.3 Soil Testing Report

INDEX LAB & CONSULTANTS

B-11, Navlakha Complex, Agrasen Square, Indore (M.P.) 452 001, India
Ph. : +91-731-4080977, Cell : +91-98935-66736, E-mail : index@indexlabindia.com

Test Report

ILC / TC / 2680/18-19

Format: F-5.1 0/T

The detailed scope of work was as per the instruction of Engineer in-charge. A complete geo-technical investigation work was undertaken to obtain the required subsurface information to study and define the nature and behavior of soil, under the application of loads of proposed structures. Such information was obtained through following steps:

- By making borehole and collecting disturbed soil samples.
- Conducting laboratory tests to classify it and to determine the engineering properties of soil.

An analysis was made to derive the allowable bearing capacity, taking into considerations the anticipated settlements and the present soil conditions with future possibilities. Based on such analysis of the soil properties, the conclusions are made regarding the precautions and protective measures to be taken, if found necessary.

This report has been prepared after a careful study of the field testing and laboratory test results. The type and depth of foundation are suggested.

Site Conditions:


Site Location: Kanadiya Near Impetus I.T. Park.

1.1 Sub Soil Profile: The field data and laboratory classification reveals, from 0 to 3.0 mtr Weather Rock then 3.0 mtr to 15.0 mtr Rock.

2.0 Nature of Investigation:

2.1 Bore Holes: Boreholes were conducted by machinery drilling up to 15.0 mtrs depth below existing ground level. Boring was carried out in accordance with IS: 1892 – 1979 and the disturbed rock samples were collected in core box and sealed packed and brought to our laboratory at Indore for




Authorized Signatory
Pritesh Mahajan
(Technical Manager)

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further investigation.

Format: F-5. I O/T

- 2.2 **Recording of Water Table:** Water table is recorded after 24 hours of completion of the Boreholes and after the analysis water table is not found.
- 2.3 **Sampling:** During the advancement of the boring Disturbed samples are collected up to 15.0 mtrs.
- 3.0 **Laboratory Tests:** Following laboratory tests were carried out to determine the Mechanical properties of disturbed soil samples. Detail procedures are explained in Annexure. I
- | | |
|--|----------------------|
| (A) Field Dry Density & Field Moisture Content | (D) Shear Parameter |
| (B) Atterberg's Limits | (E) Specific Gravity |
| (C) Particle size distribution | (F) Free Swell Test |
- 4.0 **Design:** Calculations for both Safe Bearing Capacity (SBC) and Safe Bearing Pressure (SBP) are carried out considering shear parameters and consolidation characteristics of the sub strata. Values of SBC & SBP are mentioned below:
- 4.1 **SBC Based on Shear:** The ultimate net bearing capacity is evaluated after taking into consideration of shape factor and depth factor of the foundation in accordance with IS: 6403-1981. The net bearing capacity worked out using the following equation.

$$Q = C N_c S_c d_c i_c + q (N_q - 1) S_q d_q i_q + 0.5 B N_r S_r d_r i_r w'$$

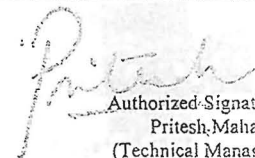
Where, C = Cohesion

Q = Overburden Pressure Density

B Width of the Foundation

N_c, N_q, N_r = Bearing Capacity Factor




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 S_c, S_q, S_r = Shape Factor

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d_c, d_q, d_r = Depth Factor

i_c, i_a, i_y = Inclination Factor

W' = Correction Factor of Location of Water Table

- 4.2 **Safe Bearing Pressure** : (IS: 8009 Part I) The Settlement calculation involves many simplifying assumptions.

The total settlement is computed as summation of immediate and secondary settlement.

$$S_t = S_i + S_c$$

Where, S_i is Immediate Settlement

$$S_i = p B \frac{(1 - \mu^2)}{E} I$$

Where, p = Foundation Pressure, kg/cm^2

B = Width of Footing, m

μ = Poisson's Ratio

I = Influence Factor

E = Modulus of Elasticity, kg/cm^2


S_c is Secondary Settlement

$$S_c = \frac{Ht Cc \text{Log}_{10} \left(\frac{p_0 + p}{p_0} \right)}{(1 + e_0)}$$

Where, Ht = Thickness of Soil Layer, m

Cc = Compression Index




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e_0 = Initial Void Ratio
 p_0 = Initial Effective Pressure
 p = Increase in effective pressure

5.0 Guideline Properties of Rock Mass Classes

Class Description	I Very good rock	II Good rock	III Fair rock	IV Poor rock	V Very poor rock
RMR	100-81	80-61	60-41	40-21	20-0
Q Value	>40	10-40	4-10	1-4	<1
Friction angle ϕ (°)	>45	35-45	25-35	15-25	<15
Cohesion (kPa)	>400	300-400	200-300	100-200	<100
SBP (MPa)	10	4-6	1-2	0.5	<0.2
Safe cut slope (°)	>70	65	55	45	<40
Tunnel support	none	Spot bolts	Pattern bolts	Bolts + Shotcrete	Steel ribs
Stand up time for span	20 yr for 15 m	1 yr for 10m	1 wk for 5m	12h for 2 m	30 min for 1 m

General Shear Failure

$$q_{ult} = cN_c + 0.5 \gamma B N_\gamma + \gamma D N_q$$

Where

q_{ult} = the ultimate bearing capacity

γ = effective unit weight (i.e. submerged unit wt. if below water table) of the rock mass

B = width of foundation

D = depth of foundation below ground surface

c = the cohesion intercepts for the rock mass



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 Pritesh Mahajan
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Local Shear Failure

Format: F-5.10/T

$$q_{ult} = cN_c + 0.5 \gamma BN_\gamma$$

Compressive Failure:

A case characterized by poorly constrained columns of poor rock.

$$q_{ult} = 2c \tan (45 + \phi / 2)$$

Splitting Failure

For widely spaced and vertically oriented discontinuities, failure generally initiates by splitting beneath the foundation.

The ultimate bearing capacity is given by:

For circular foundations

$$q_{ult} = JcN_{ct}$$

For square foundations

$$q = 0.85 JcN_{ct}$$


For continuous strip foundations for $L/B \leq 32$

$$q_{ult} = JcN_{ct} / (22 + 0.18 L/B)$$

Where

J = correction factor dependent upon thickness of the foundation rock and width of foundation.




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Test Report

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L = length of the foundation

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The bearing capacity factor N_{ct} is given by:


$$N_{ct} = \frac{2N\phi^2}{1+N\phi} (\cot \phi) (S/B) \left[1 - \frac{1}{N\phi} \right]$$
$$- N\phi (\cot \phi) + 2 N\phi^{1/2}$$

5.1 Summary of Analysis: Based on the field and laboratory test data allowable bearing capacity is derived for foundation with the consideration of following points.

5.1 The sub soil comprises of Soil & Rock.

5.2 Net bearing capacity is derived based shear parameters and UCS obtained from test conducted on remolded density.




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