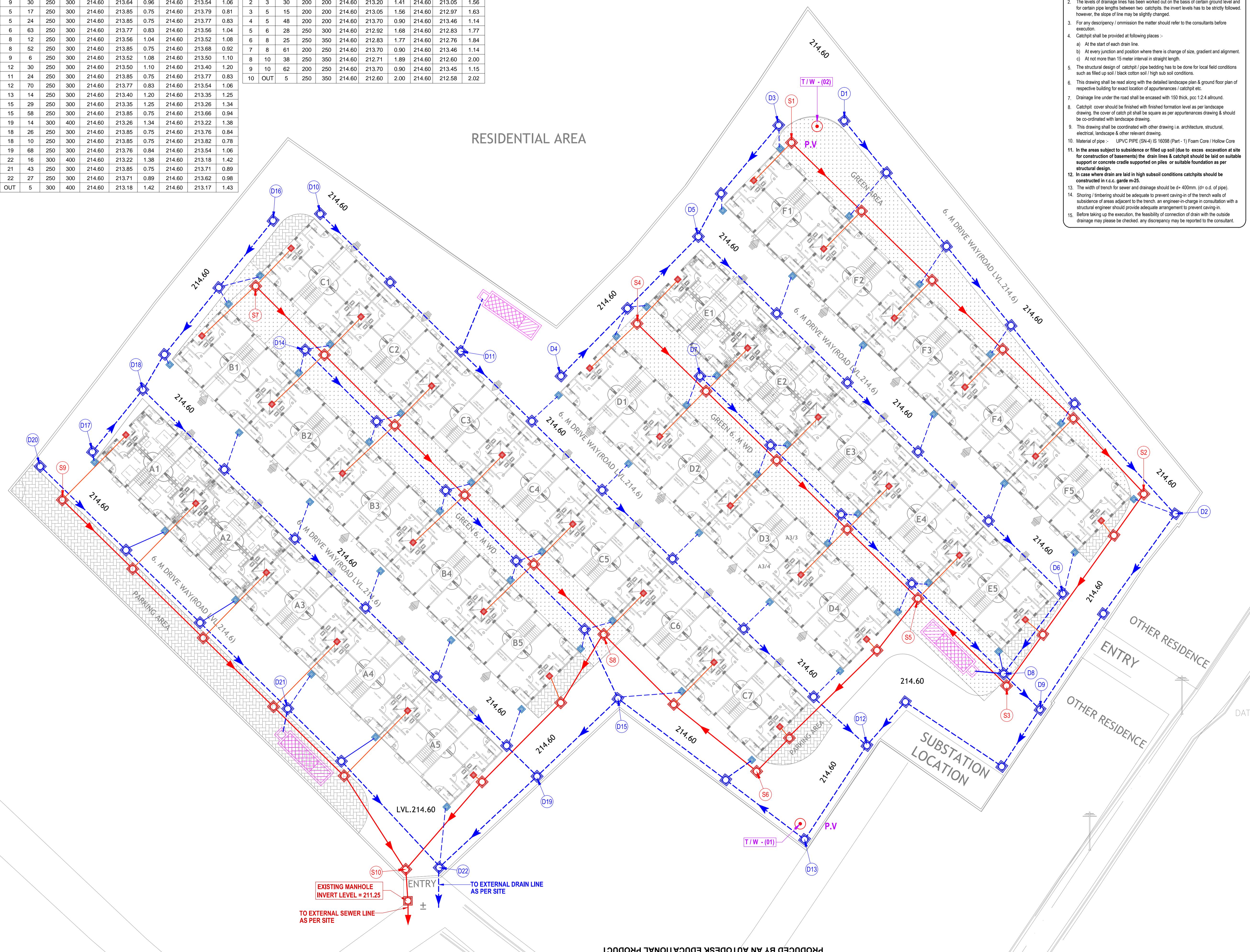


DETAILS OF DRAIN LINES											
Catch Pit No.	From	To	Length (m)	Dia. (mm)	Slope 1 in	C.P. Top Level	Invert Level	Depth	C.P. Top Level	Invert Level	Depth
						Upper End (m)	Lower End (m)	Upper End (m)	Lower End (m)	Upper End (m)	Lower End (m)
1	2	63	250	300	214.60	213.85	0.75	214.60	213.64	0.96	
2	9	30	250	300	214.60	213.64	0.96	214.60	213.54	1.06	
3	5	17	250	300	214.60	213.85	0.75	214.60	213.79	0.81	
4	5	24	250	300	214.60	213.85	0.75	214.60	213.77	0.83	
5	6	63	250	300	214.60	213.77	0.83	214.60	213.56	1.04	
6	8	12	250	300	214.60	213.56	1.04	214.60	213.52	1.08	
7	8	52	250	300	214.60	213.85	0.75	214.60	213.68	0.92	
8	9	6	250	300	214.60	213.52	1.08	214.60	213.50	1.10	
9	12	30	250	300	214.60	213.50	1.10	214.60	213.40	1.20	
10	11	24	250	300	214.60	213.85	0.75	214.60	213.77	0.83	
11	12	70	250	300	214.60	213.77	0.83	214.60	213.54	1.06	
12	13	14	250	300	214.60	213.40	1.20	214.60	213.35	1.25	
13	15	29	250	300	214.60	213.35	1.25	214.60	213.26	1.34	
14	15	58	250	300	214.60	213.85	0.75	214.60	213.66	0.94	
15	19	14	300	400	214.60	213.26	1.34	214.60	213.22	1.38	
16	18	26	250	300	214.60	213.85	0.75	214.60	213.76	0.84	
17	18	10	250	300	214.60	213.85	0.75	214.60	213.62	1.04	
18	19	68	250	300	214.60	213.76	0.84	214.60	213.54	1.06	
19	22	16	300	400	214.60	213.22	1.38	214.60	213.18	1.42	
20	21	43	250	300	214.60	213.85	0.75	214.60	213.71	0.89	
21	22	27	250	300	214.60	213.71	0.89	214.60	213.62	0.98	
22	OUT	5	300	400	214.60	213.18	1.42	214.60	213.17	1.43	

DETAILS OF SEWER LINES											
Manhole No.	From	To	Length (m)	Dia. (mm)	Slope 1 in	MH Top Level	Invert Level	Depth	MH Top Level	Invert Level	Depth
						Upper End (m)	Lower End (m)	Upper End (m)	Lower End (m)	Upper End (m)	Lower End (m)
1	2	61	200	200	214.60	213.70	0.90	214.60	213.40	1.21	
2	3	30	200	200	214.60	213.20	1.41	214.60	213.05	1.56	
3	5	15	200	200	214.60	213.05	1.56	214.60	212.97	1.63	
4	5	48	200	200	214.60	213.70	0.90	214.60	213.46	1.14	
5	6	28	250	300	214.60	212.92	1.68	214.60	212.83	1.77	
6	8	25	250	350	214.60	212.83	1.77	214.60	212.76	1.84	
7	8	61	200	250	214.60	213.70	0.90	214.60	213.46	1.14	
8	10	38	250	350	214.60	212.71	1.89	214.60	212.60	2.00	
9	10	62	200	250	214.60	213.70	0.90	214.60	213.45	1.15	
10	OUT	5	250	350	214.60	212.60	2.00	214.60	212.58	2.02	

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## RESIDENTIAL AREA



## NOTES : DRAINAGE SYSTEM

1. THE SIZE OF CATCHPIT SHALL BE AS UNDER (INNER SIZES)
  - a) Upto 900 m.m. depth 600 x 600 m.m.
  - b) 900 to 1650 m.m. depth 900 m.m. dia.
  - c) 1650 to 2250 m.m. depth 1200 m.m. dia.
2. The levels of drainage lines has been worked out on the basis of certain ground level and for certain pipe lengths between two catchpits, the invert levels has to be strictly followed, however, the slope of pipe may be slightly changed.
3. For any discrepancy / omission the matter should refer to the consultants before execution.
4. Catchpit shall be provided at following places :-
  - At the start of each drain line.
  - At every junction and position where there is change of size, gradient and alignment.
  - c) At not more than 15 meter interval in straight length.
5. The structural design of catchpit / pipe bedding has to be done for local field conditions such as filled up soil / black cotton soil / high sub soil conditions.
6. This drawing shall be read along with the detailed landscape plan & ground floor plan of respective building for exact location of appurtenances / catchpit etc.
7. Drainage line under the road shall be encased with 150 thick, pcc 1:2:4 allround.
8. Catchpit cover should be finished with finished formation level as per landscape drawing, the cover of catchpit shall be square as per appurtenances drawing & should be co-ordinated with landscape drawing.
9. This drawing shall be coordinated with other drawing i.e. architecture, structural, electrical, landscape & other relevant drawing.
10. Material of pipe :- UPVC PIPE (SN4) IS 16098 (Part - 1) Foam Core / Hollow Core

S. No.	SYMBOL	DESCRIPTION
1.	M.H.	MANHOLE
2.	—	SEWER LINE
3.	□	CATCH PIT
4.	—	UNDER GROUND PIPE DRAIN
5.	■	RAIN WATER HARVESTING & DESILTING TANK
6.	—	RISING MAIN LINE (FROM TW TO O.H.T.)
7.	○	PROPOSED TUBE WELL
8.	○	P.V. PRESSURE VESSEL
9.	—	MASONRY CHAMBER FOR ISOLATING VALVE
10.	—	
11.	—	
12.	—	

## NOTES : SEWERAGE SYSTEM

1. THE SIZE OF MANHOLE SHALL BE AS UNDER (INNER SIZES )
  - a) Upto 900 m.m. depth 600 x 600 m.m.
  - b) 900 to 1650 m.m. depth 900 m.m. dia.
  - c) 1650 to 2250 m.m. depth 1200 m.m. dia.
2. the levels of sewer lines has been worked out on the basis of certain ground level and for certain pipe lengths between two manholes, the invert levels has to be strictly followed, however, the slope of line may be slightly changed.
3. For any discrepancy / omission the matter should refer to the consultants before execution.
4. Manhole shall be provided at following places :-
  - At the start of each sewer line.
  - At every junction and position where there is change of size, gradient and alignment.
  - c) At not more than 45 meter interval in straight length.
5. Where the diameter of pipe is increased the crown of the pipe shall be fixed at the same level and necessary slope shall be given in the invert of the manhole chamber.
6. The structural design of manholes / pipe bedding has to be done for local field conditions such as filled up soil / black cotton soil / high sub soil conditions.
7. This drawing shall be read along with the detailed landscape plan & ground floor plan of respective building for exact location of appurtenances etc.
8. Sewer line under the road shall be encased with 150 thick, pcc 1:2:4 allround.
9. Manhole cover should be finished with finished formation level as per landscape drawing, the cover of manhole shall be square as per appurtenances drawing & should be co-ordinated with landscape drawing.
10. This drawing shall be coordinated with other drawing i.e. architecture, structural, electrical, landscape & other relevant drawing.
11. Material of pipe :- UPVC PIPE (SN4) IS 16098 (Part - 1) Foam Core / Hollow Core
12. In the areas subject to subsidence or filled up soil (due to excess excavation at site for construction of basements) the sewer lines & catchpit should be laid on suitable support or concrete cradle supported on piles or suitable foundation as per structural design.
13. In case where sewers are laid in high subsoil conditions manholes should be constructed in r.c.c. grade m-25.
14. The width of trench for sewer and drainage should be d+400mm. (d= o.d. of pipe).
15. Shoring / timbering should be adequate to prevent caving-in of the earth walls of subsidence of areas adjacent to the trench, an engineer-in-charge in consultation with a structural engineer should provide adequate arrangement to prevent caving-in.
16. Before taking up the execution, the feasibility of connection of drain with the outside drainage may please be checked, any discrepancy may be reported to the consultant.

Rev. No.	Date	Revision
Project : PROPOSED BUILDING PLAN FOR EWS At plot 2A N.H.-24 Ghaziabad for crossing republik		
Title : LAYOUT PLAN		
Subtitle : SERVICES PLAN		
Drawing Released For :		
<input checked="" type="checkbox"/> APPROVAL	<input type="checkbox"/> SUBMISSION	
<input type="checkbox"/> ADVANCE COPY	<input type="checkbox"/> CONSTRUCTION	
Drg. No : CR / EWS / ES-04		
Scale : 1:225	Drawn By : Amit Kamboj	
Date : May. 2018	Design By : Devesh Agarwal	
Ckd By : Anand Havelia		
Architects : BUILDING BELIEFS ARCHITECTS 3/4 MAULSIRI ROAD SHIPRA SUN CITY, INDIRAPURAM, GHAZIABAD. ph.no. 0988218531, 9899410935.		
Services Consultant : Consummate Engineering Services (P) Ltd. Noida Office : B- 67, Sector - 67, Noida - 201 301 Tel : (0120) 6613500 (24 Lines) Lko. Office : R 006, Rohitas Plumeria, Gomti Nagar, Lucknow e-mail : mail@cespl.in, website : www.cespl.in		