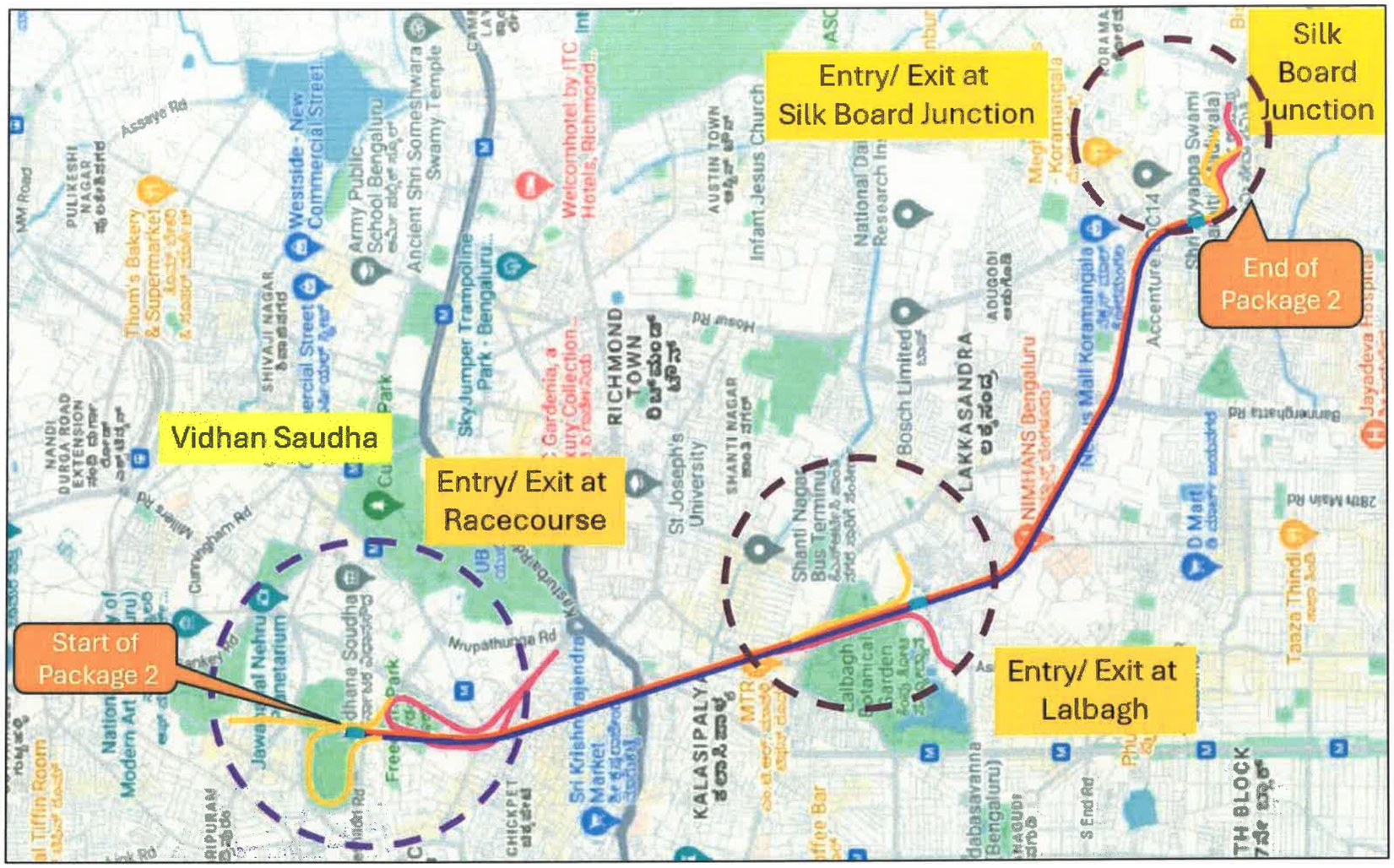
GOVERNMENT OF KARNATAKA

CONSULTANCY SERVICES FOR PREPARATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION



VOLUME-4-TENDER DRAWINGS PACKAGE-2

RODIC CONSULTANTS PVT. LTD

BRUHAT BENGALURU MAHANAGARA PALIKE

Appendix-B-II

TUNNEL TUBE -I

Hebbal Esteem mall junction

Silk Road

Legend

Topographic Survey

Asphalt Edge		Flag Pole		Median	
Building		Foot Path		Palm Tree	
Bus Stop		Gate		Parking	
Bollard		Handrail		Pole	
Concrete		High Mast Light		Power Pole	
Closed Drain		Light Pole		Post	
Curb Top & Bottom		Lamp Post		Retaining Wall Top & Bottom	
Electrical Box	EB	Manhole	MH	Road Centreline	
Fence				Road Median	
Road Sign	SB	Sink		Transformer	
Roof Extension		Sky Walk Bridge		Tree	
Safety Barrier		Sports Field		Tunnel	
Security Room		Stairs		Tree Line	
Shed		Telecommunication Tower		Wall	
Shelter		Telephone Box	TPB	Water Body	
Side Walk		Temporary Barrier		Water Tank	
Sign Board	SB	Track		Zebra Crossing	
Single Post		Traffic Signal	TS		

Legend

Plan		L Profile	
Proposed Tunnel Tube-I		Proposed Road Levels	
Proposed Tunnel Tube-II		Existing Levels	
Proposed Shaft		Proposed NATM	
Proposed Vehicular Cross Passage		Proposed Cut & Cover	
Proposed NATM (Entry Ramp)		Proposed Shaft	
Proposed NATM (Exit Ramp)		G - Gradient %	
Proposed Cut & Cover (Entry Ramp)		Lv - Length of Vertical Curve	
Proposed Cut & Cover (Exit Ramp)		L - Length of Grade(m)	
Proposed Open Cut (Exit Ramp)		K - Ratio Between vertical curve Length & Change of Gradient {Lc/(G2-G1)}	
Proposed Open Cut (Entry Ramp)		e - Superelevation (%)	
Proposed Rights of Way	PROW PROW PROW	D - Straight Length of Horizontal Alignment	
Existing Rights of Way		Lc - Length of Circular Curve	
Airport Metro Line			
Metro Line (Phase-1)			
Metro Line (Phase-2)			
Metro Line (Phase-3A)			
R - Radius of Curve			
Dc - Degree of Curvature			
Lc - Length of Circular Curve			
Ts - Tangent Length			
Es - Apex Distance			
LS - Length of Spiral Curve			
Δ - Deflection Angle			
DS - Design Speed Km/Hr			
PC - Point of Curvature			
PT - Point of Tangent			
HIP - Horizontal Intersection Point			

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Pixina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- H=-1:2500
V=-1:2500
Sheet size: A2

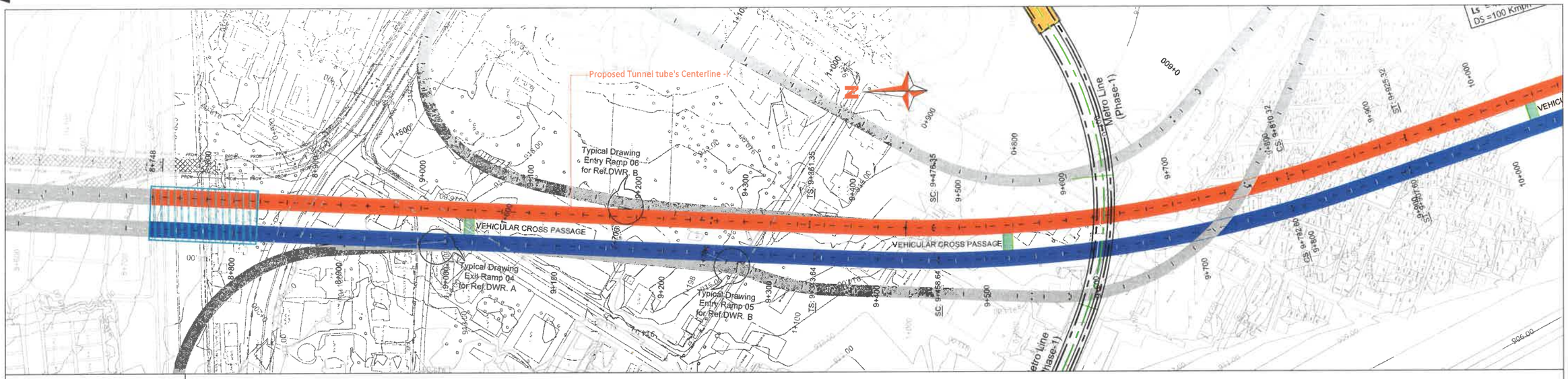
Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

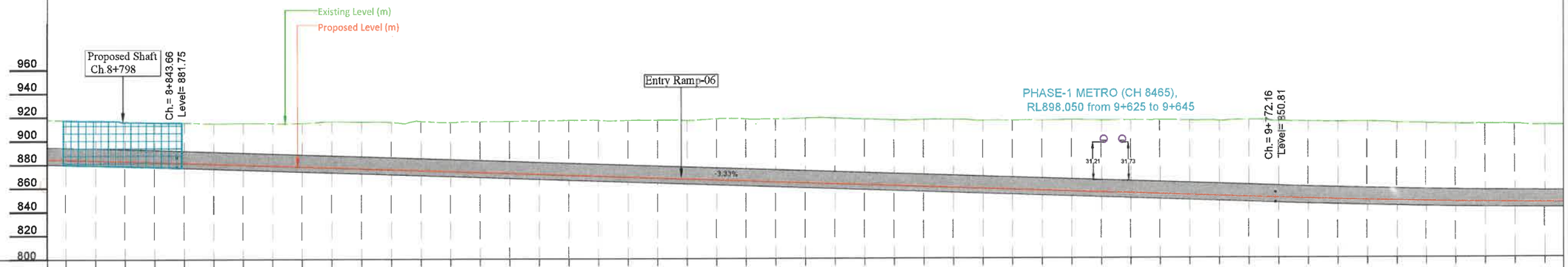
Drawing Title: PLAN & PROFILE (LEGEND)

Drawing No.: BC/1640/HO/HBT,TU/DWG/P&P/Legend/00/R0

Hebbal Esteem mall junction

Silk Road





Chainage	Proposed Levels	Existing Levels	Level Difference
8748.000	884.273	917.393	-33.120
8750.000	883.718	916.885	-33.168
8775.000	883.077	915.977	-32.901
8800.000	882.350	915.426	-33.076
8825.000	881.541	915.271	-33.730
8850.000	880.708	914.674	-33.966
8875.000	879.875	914.841	-34.966
8900.000	879.042	914.725	-35.683
8925.000	878.209	914.784	-36.575
8950.000	877.376	916.191	-38.815
8975.000	876.543	915.872	-39.329
9000.000	875.710	915.410	-39.700
9025.000	874.877	916.208	-41.332
9050.000	874.043	915.190	-41.147
9075.000	873.210	915.904	-42.694
9100.000	872.377	916.149	-43.771
9125.000	871.544	916.448	-44.903
9150.000	870.711	916.816	-46.105
9175.000	869.878	916.677	-46.799
9200.000	869.045	916.624	-47.579
9225.000	868.212	916.708	-48.496
9250.000	867.379	916.655	-49.276
9275.000	866.546	917.817	-51.271
9300.000	865.713	917.572	-51.859
9325.000	864.879	917.669	-52.789
9350.000	864.046	918.403	-54.357
9375.000	863.213	918.398	-55.186
9400.000	862.380	917.553	-55.172
9425.000	861.547	916.754	-55.207
9450.000	860.714	916.962	-56.248
9475.000	859.881	917.093	-57.212
9500.000	859.048	916.127	-57.079
9525.000	858.215	916.108	-57.893
9550.000	857.382	916.247	-58.865
9575.000	856.549	916.670	-60.121
9600.000	855.716	916.136	-60.420
9625.000	854.882	916.115	-61.232
9650.000	854.049	916.138	-62.089
9675.000	853.216	915.800	-62.584
9700.000	852.383	915.455	-63.072
9725.000	851.550	916.257	-64.707
9750.000	850.718	915.116	-64.398
9775.000	849.931	914.819	-64.888
9800.000	849.219	914.481	-65.262
9825.000	848.583	914.595	-66.012
9850.000	848.022	913.535	-65.513
9875.000	847.537	912.930	-65.393
9900.000	847.127	912.504	-63.377
9925.000	846.792	912.358	-65.566
9950.000	846.533	912.139	-65.606
9975.000	846.349	911.445	-65.095
10000.000			

Horizontal: L: 115.000; R: 1200.000, L: 333.962; L: 115.000

Vertical: G =-3.332%, L =928.500; R =8291.964, K =82.920, L =340.000

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT: GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
01B106 WeWork, Pinkina Tower MG Road Near Sikanderpur Metro Station Sector 28, Omegram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn	SS	
Checked:	AT	
Approved	HRY	

Scale :- H=:-1:2500 V=:-1:2500
Sheet size: A2

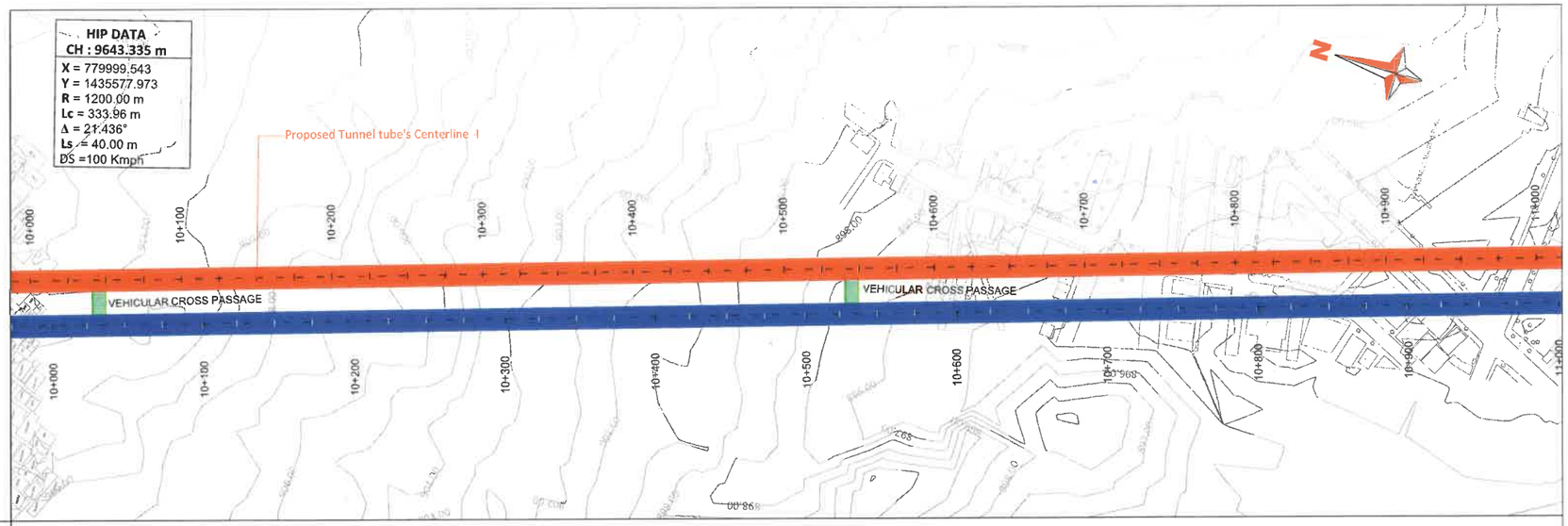
Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

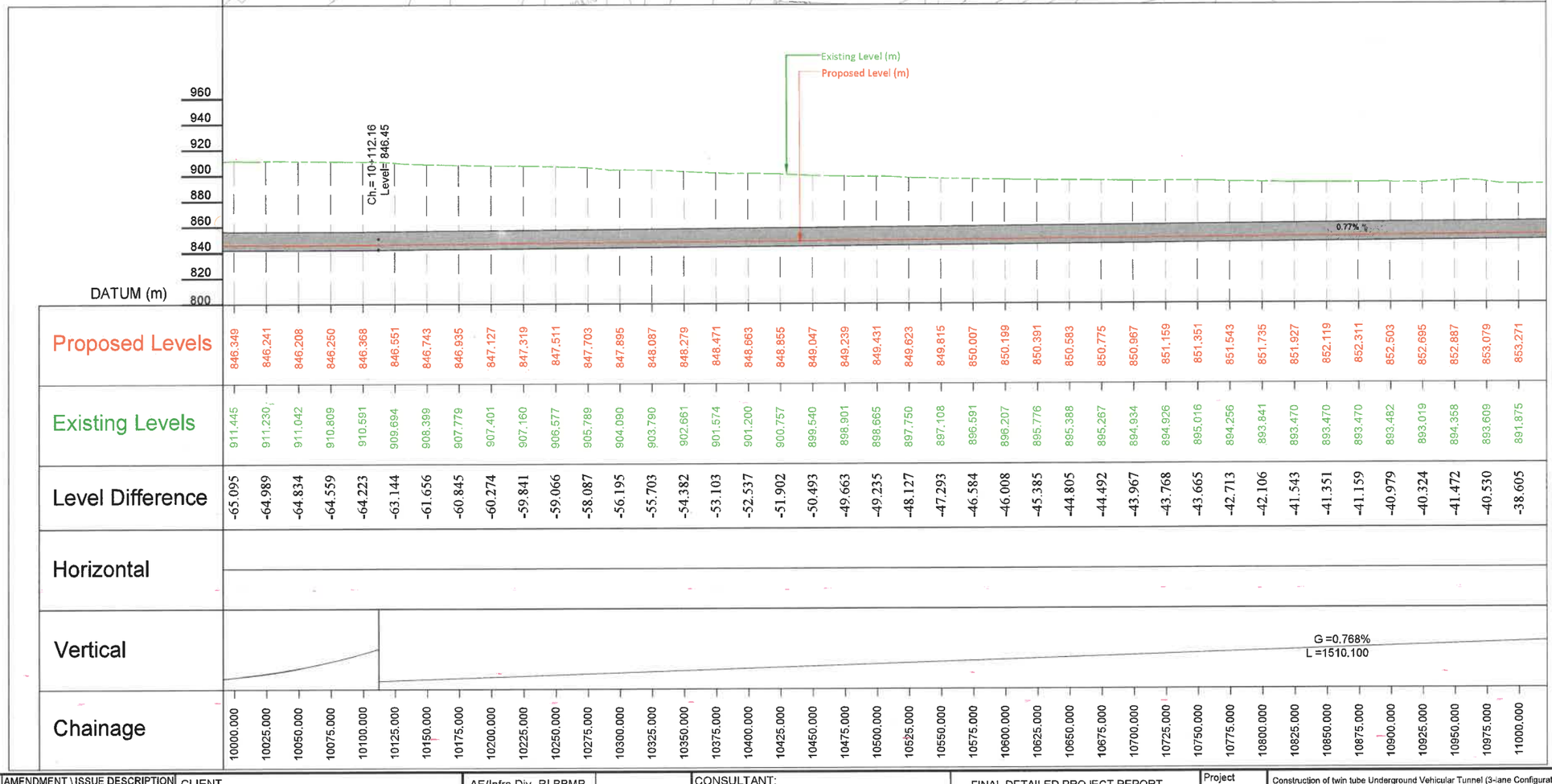
Drawing Title: PLAN & PROFILE (TUNNEL TUBE - I) (Km.8+748 to Km.10+000)

Drawing No.: RC/1640/HO/HBT/TU/DWG/P&P/01/R0

Hebbal Esteem mall junction

Silk Road





Proposed Levels	Existing Levels	Level Difference	Chainage
846.349	911.445	-65.095	10000.000
846.241	911.230	-64.989	10025.000
846.208	911.042	-64.834	10050.000
846.250	910.809	-64.559	10075.000
846.368	910.591	-64.223	10100.000
846.551	909.694	-63.144	10125.000
846.743	908.399	-61.656	10150.000
846.935	907.779	-60.845	10175.000
847.127	907.401	-60.274	10200.000
847.319	907.160	-59.841	10225.000
847.511	906.577	-59.066	10250.000
847.703	905.789	-58.087	10275.000
847.895	904.090	-56.195	10300.000
848.087	903.790	-55.703	10325.000
848.279	902.661	-54.382	10350.000
848.471	901.574	-53.103	10375.000
848.663	901.200	-52.537	10400.000
848.855	900.757	-51.902	10425.000
849.047	899.540	-50.493	10450.000
849.239	898.901	-49.663	10475.000
849.431	898.665	-49.235	10500.000
849.623	897.750	-48.127	10525.000
849.815	897.108	-47.293	10550.000
850.007	896.591	-46.584	10575.000
850.199	896.207	-46.008	10600.000
850.391	895.776	-45.385	10625.000
850.583	895.388	-44.805	10650.000
850.775	895.267	-44.492	10675.000
850.967	894.934	-43.967	10700.000
851.159	894.926	-43.768	10725.000
851.351	895.016	-43.665	10750.000
851.543	894.256	-42.713	10775.000
851.735	893.841	-42.106	10800.000
851.927	893.470	-41.543	10825.000
852.119	893.470	-41.351	10850.000
852.311	893.470	-41.159	10875.000
852.503	893.482	-40.979	10900.000
852.695	893.019	-40.324	10925.000
852.887	894.358	-41.472	10950.000
853.079	893.609	-40.530	10975.000
853.271	891.875	-38.605	11000.000

REVISION	DATE	AMENDMENT \ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

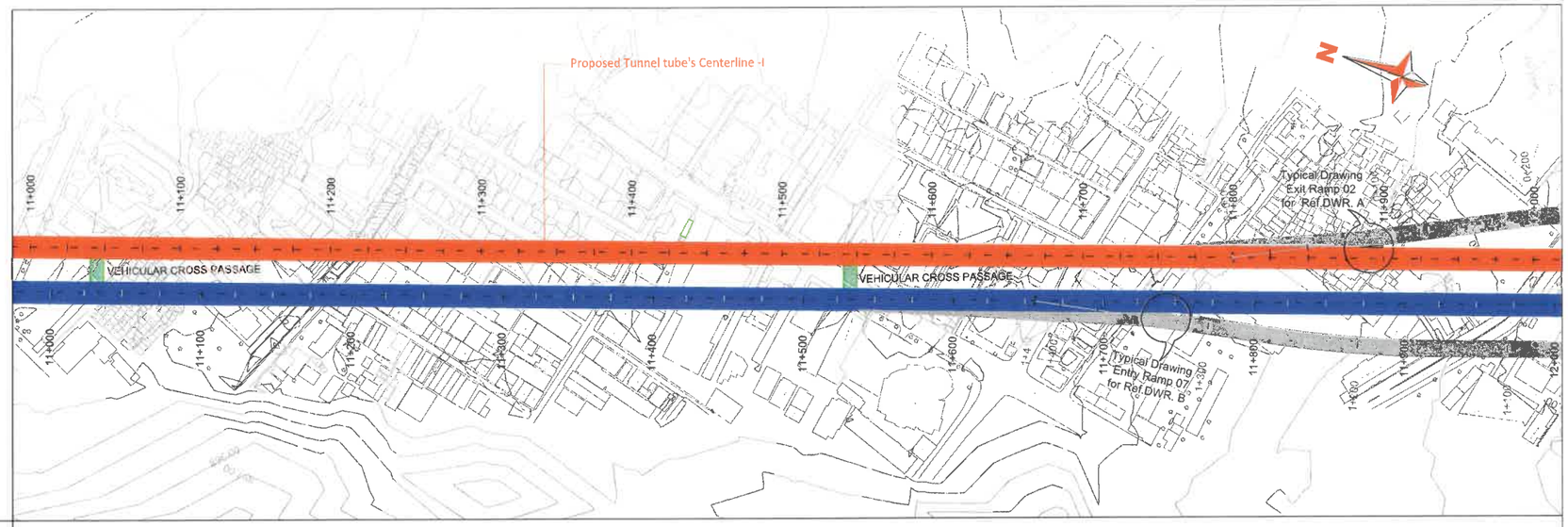
Designed:	RR	
Drawn	SS	
Checked:	AT	
Approved:	HRY	

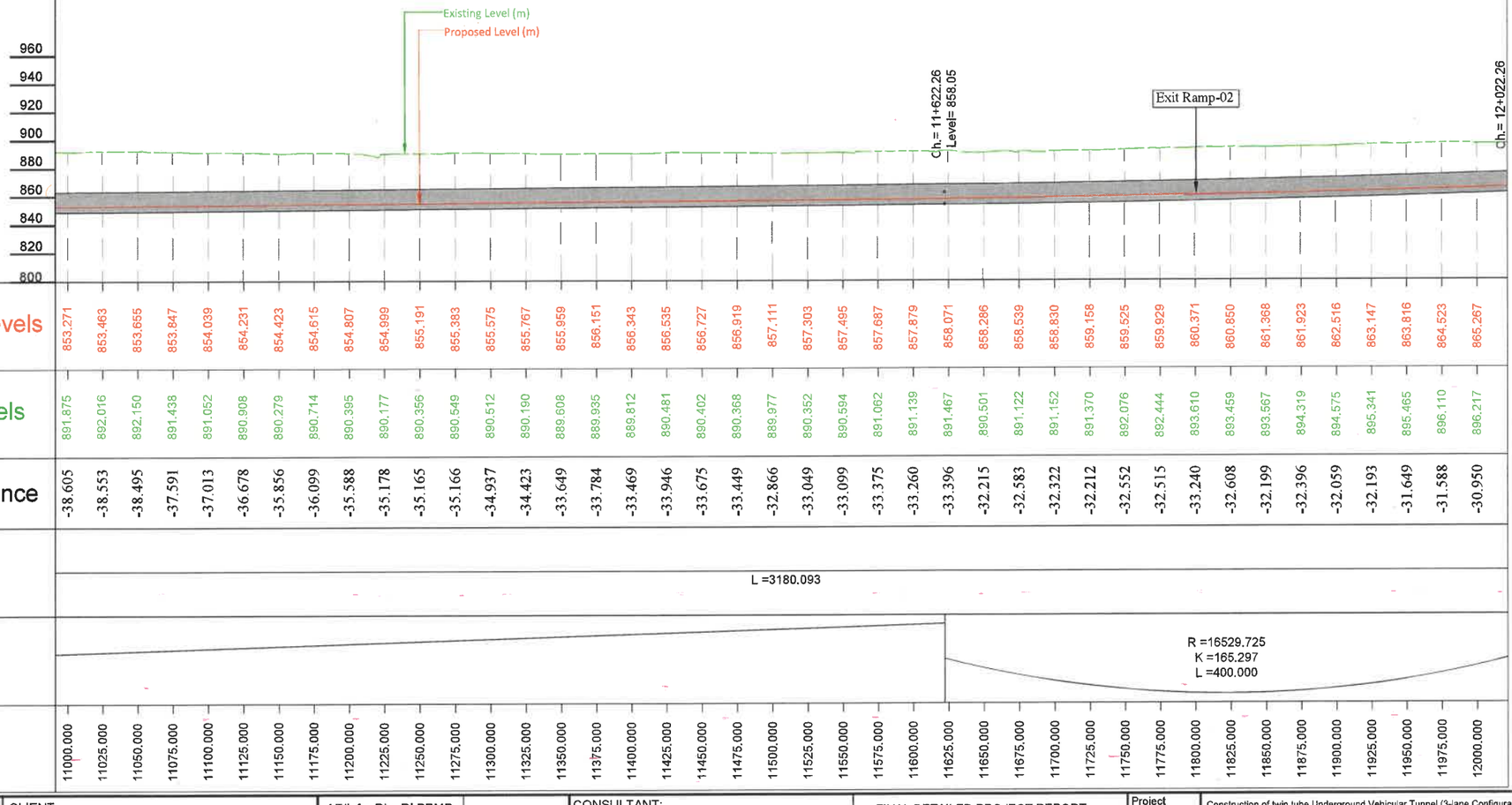
Scale :- H=:-1:2500
V=:-1:2500
Sheet size: A2

Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	PLAN & PROFILE (TUNNEL TUBE - I) (Km.10+000 to Km.11+000)
Drawing No.	RC/1640/HO/HBT/TU/DWG/P&P/02/R0

Hebbal Esteem mall junction

Silk Road

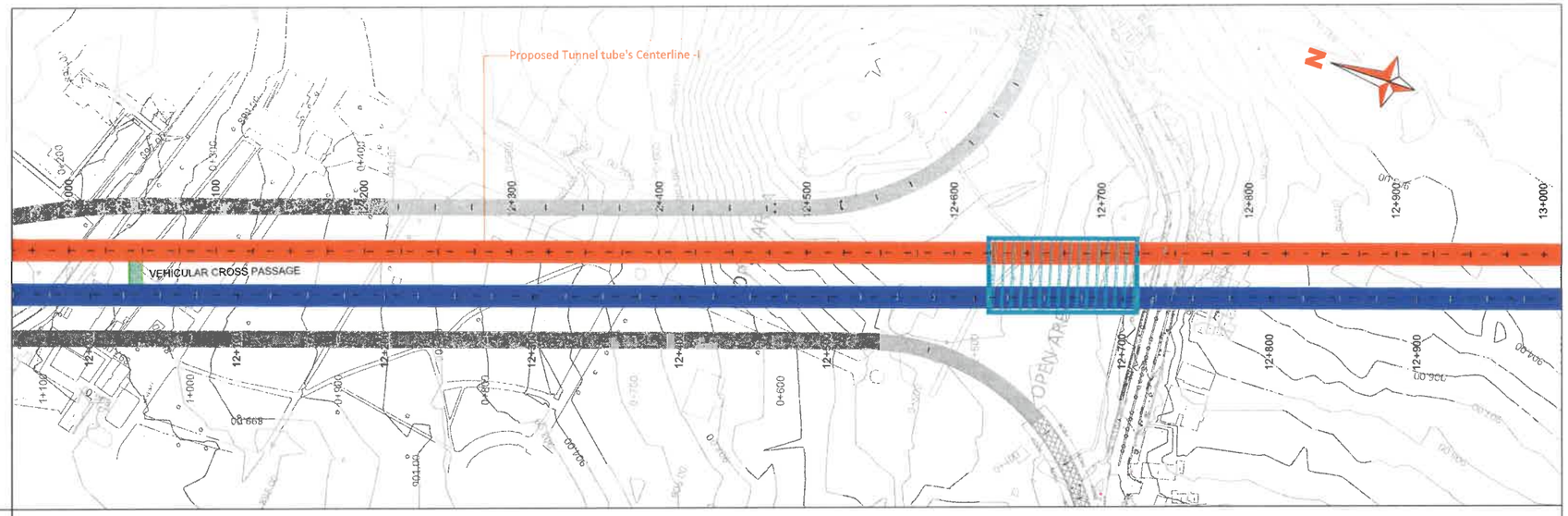


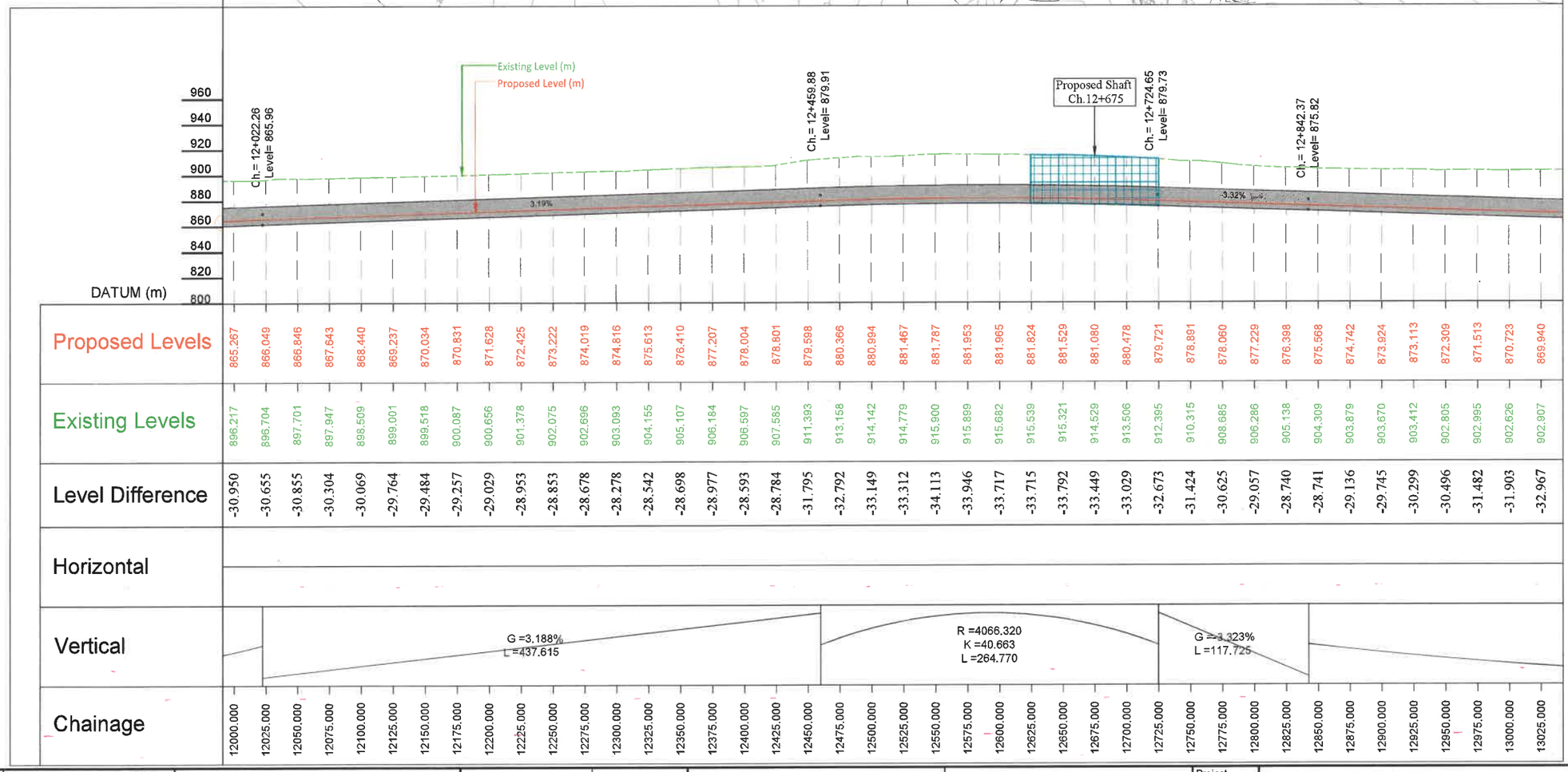


| | | |

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR
Drawn:	SS
Checked:	AT
Approved:	HRY

Scale :- H=:-1:2500
V=:-1:2500
Sheet size: A2

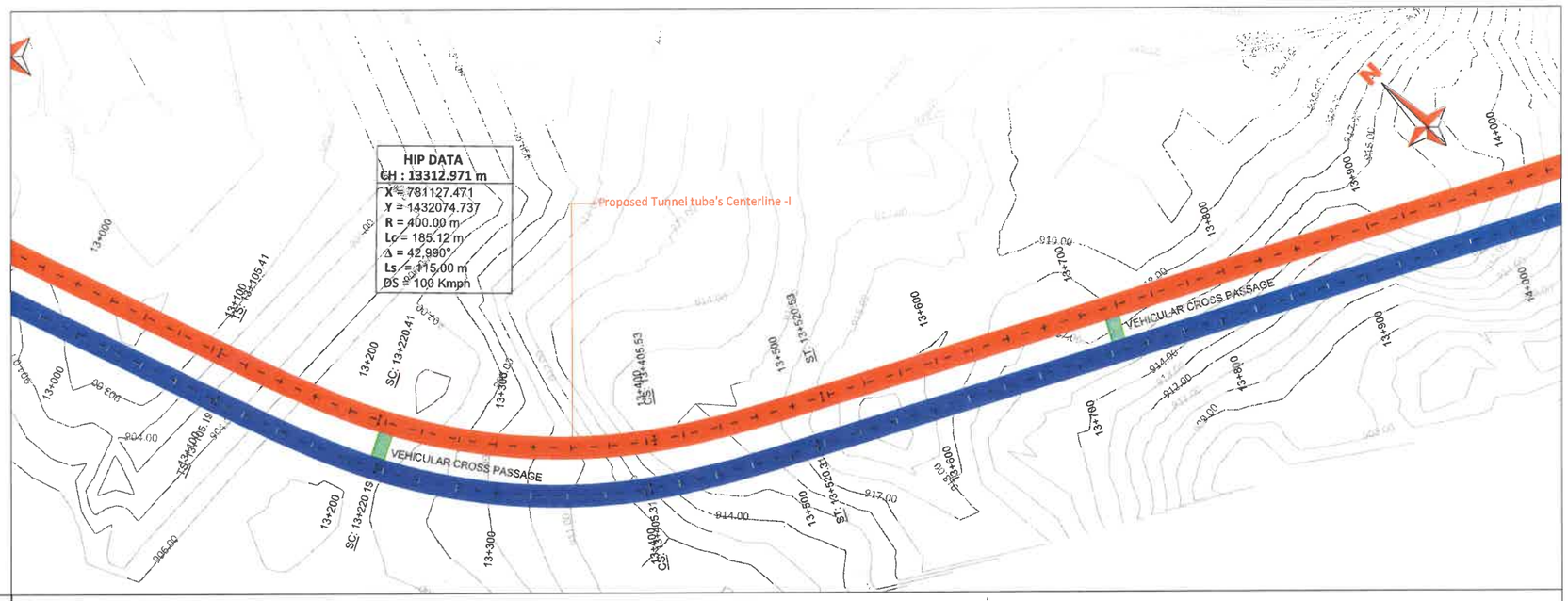
Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

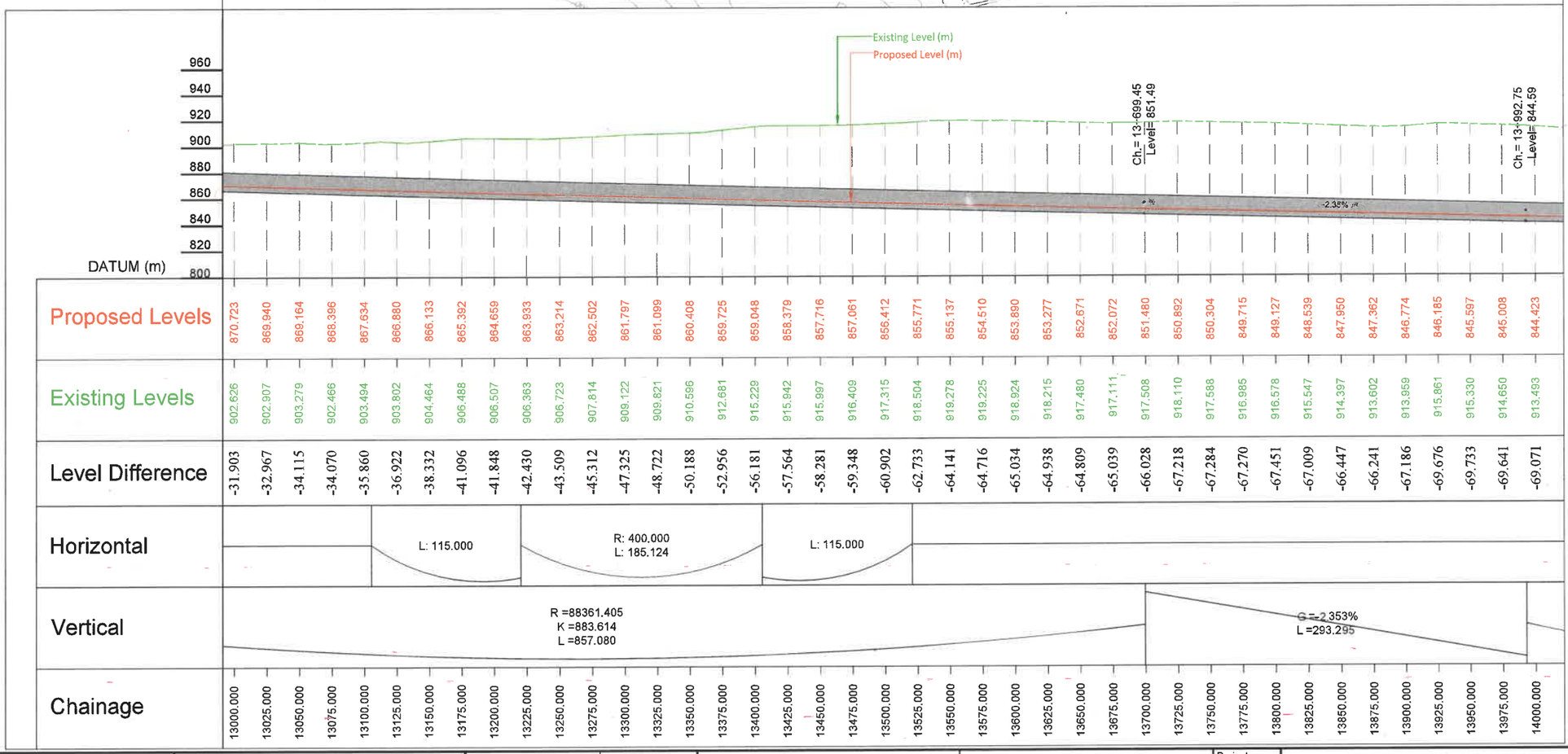
Drawing Title: PLAN & PROFILE (TUNNEL TUBE - I) (Km.12+000 to Km.13+000)

Drawing No. BC/1640/HO/HBT/TU/DWG/P&P/ 04/R0

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
9/B106 WeWork, Pinion Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- H=-1:2500
V=-1:2500
Sheet size: A2

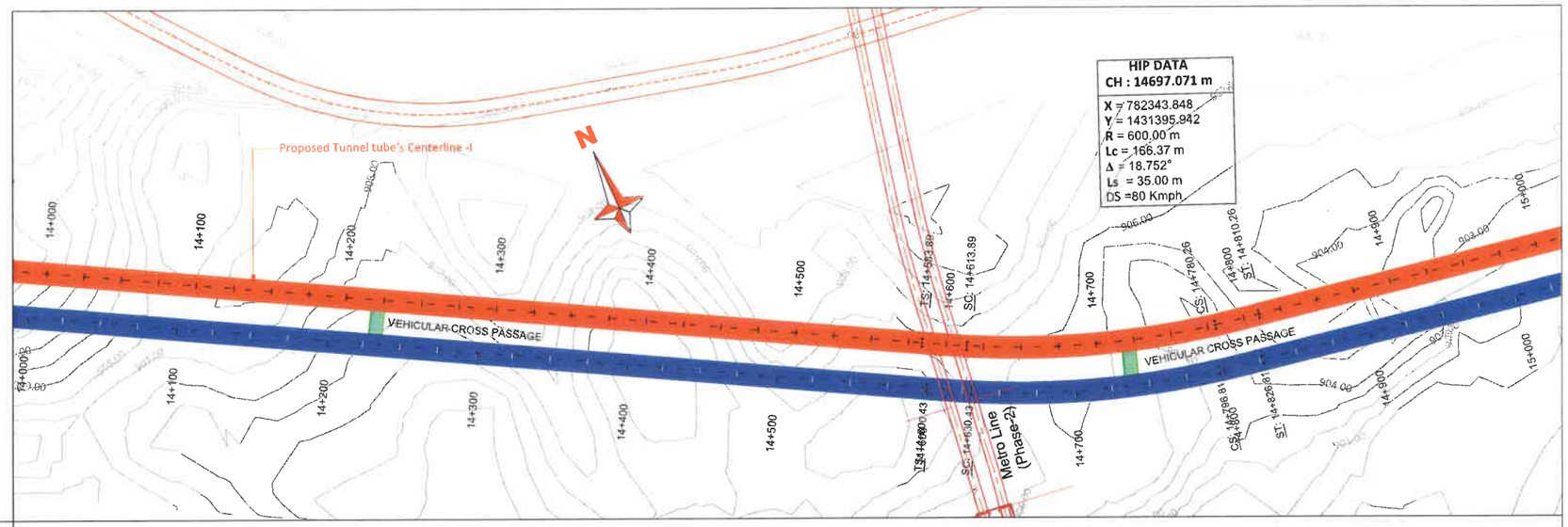
Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

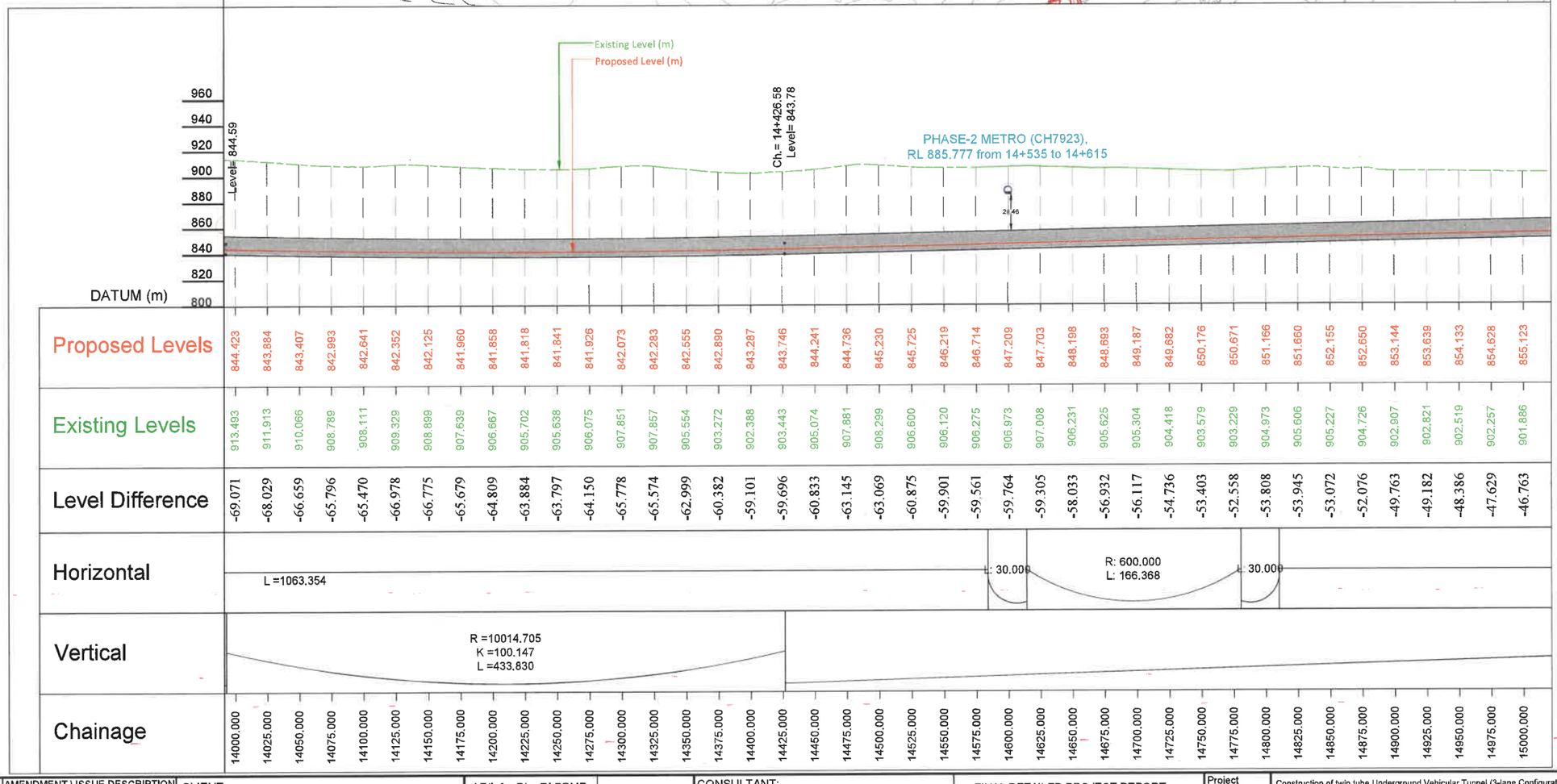
Drawing Title: PLAN & PROFILE (TUNNEL TUBE - I) (Km.13+000 to Km.14+000)

Drawing No.: BC/1640/HO/HBT/TU/DWG/P&P/ 05/R0

Hebbal Esteem mall junction

Silk Road

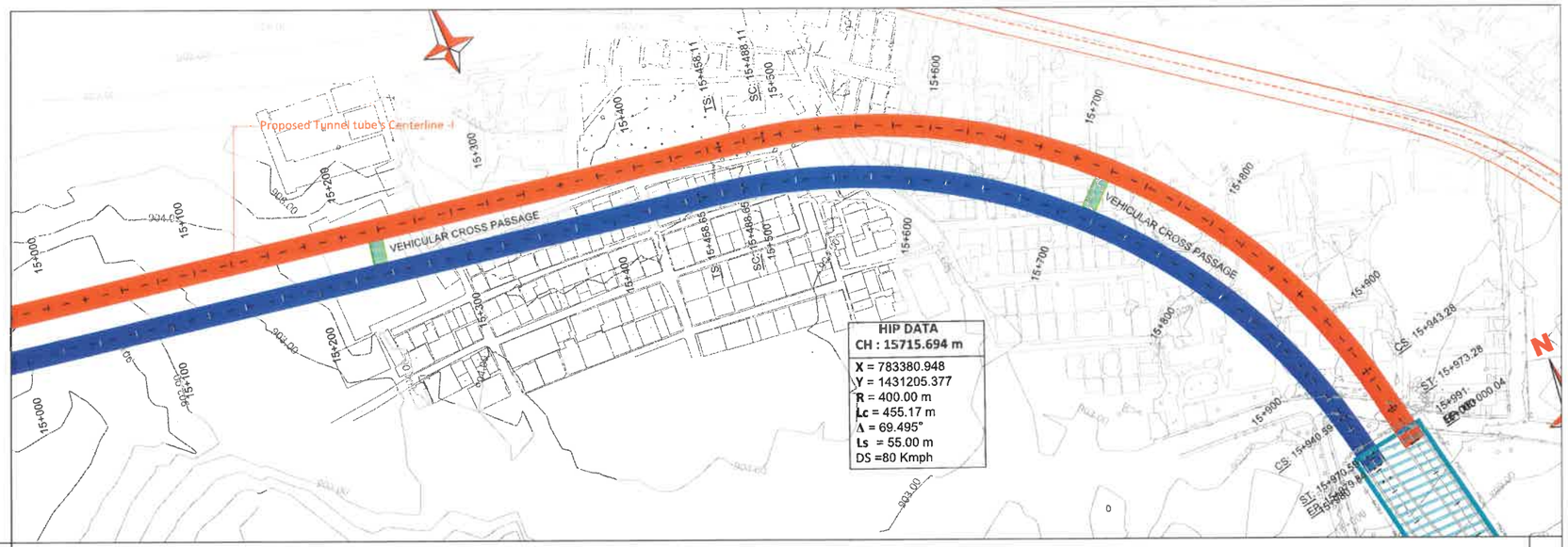


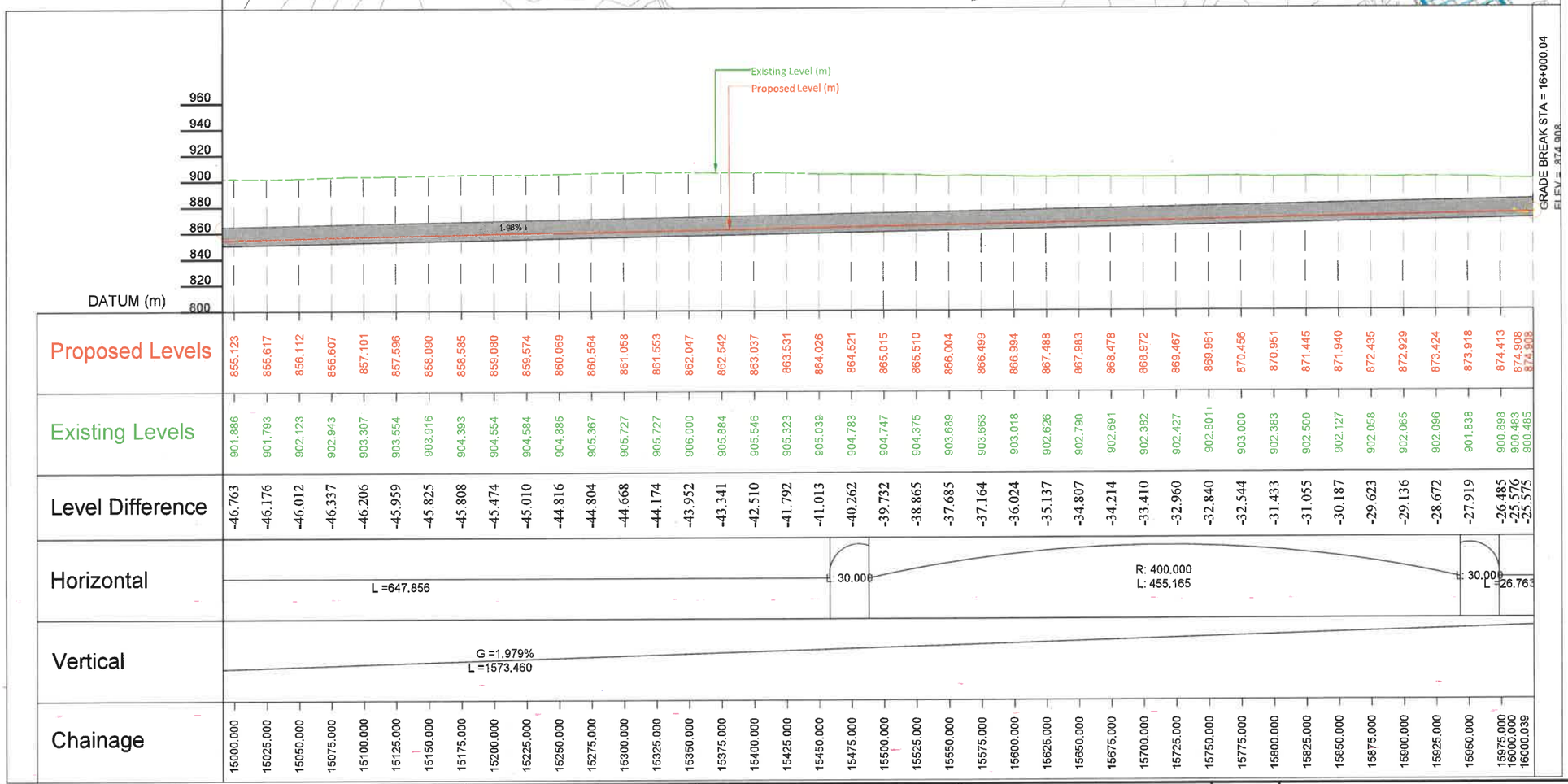


| | | |

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Plaxina Tower M.G. Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn	SS	
Checked:	AT	
Approved:	HRY	

Scale :- H=-1:2500
V=-1:1:2500
Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

Drawing Title: PLAN & PROFILE (TUNNEL TUBE - I) (Km.15+000 to Km.16+000)

Drawing No. RC/1640/HO/HBT/TU/DWG/P&P/07/R0

TUNNEL TUBE -II

Hebbal Esteem mall junction

Silk Road

Legend

Topographic Survey

Asphalt Edge		Flag Pole			Median		
Building		Foot Path			Palm Tree		
Bus Stop		Gate			Parking		
Bollard		Handrail			Pole		
Concrete		High Mast Light			Power Pole		
Closed Drain		Light Pole			Post		
Curb Top & Bottom		Lamp Post			Retaining Wall Top & Bottom		
Electrical Box	EB	Manhole	MH		Road Centreline		
Fence					Road Median		
Road Sign	SB	Sink			Transformer		
Roof Extension		Sky Walk Bridge			Tree		
Safety Barrier		Sports Field			Tunnel		
Security Room		Stairs			Tree Line		
Shed		Telecommunication Tower			Wall		
Shelter		Telephone Box	TPB		Water Body		
Side Walk		Temporary Barrier			Water Tank		
Sign Board	SB	Track			Zebra Crossing		
Single Post		Traffic Signal	ITS				

Legend

Plan		L Profile	
Proposed Tunnel Tube-I		Proposed Road Levels	
Proposed Tunnel Tube-II		Existing Levels	
Proposed Shaft		Proposed NATM	
Proposed Vehicular Cross Passage		Proposed Cut & Cover	
Proposed NATM (Entry Ramp)		Proposed Shaft	
Proposed NATM (Exit Ramp)		G - Gradient %	
Proposed Cut & Cover (Entry Ramp)		Lv - Length of Vertical Curve	
Proposed Cut & Cover (Exit Ramp)		L - Length of Grade(m)	
Proposed Open Cut (Exit Ramp)		K - Ratio Between vertical curve Length & Change of Gradient {Lc/(G2-G1)}	
Proposed Open Cut (Entry Ramp)		e - Superelevation (%)	
Proposed Rights of Way	PROW PROW PROW	D - Straight Length of Horizontal Alignment	
Existing Rights of Way		Lc - Length of Circular Curve	
Airport Metro Line			
Metro Line (Phase-1)			
Metro Line (Phase-2)			
Metro Line (Phase-3A)			
R - Radius of Curve			
Dc - Degree of Curvature			
Lc - Length of Circular Curve			
Ts - Tangent Length			
Es - Apex Distance			
LS - Length of Spiral Curve			
Δ - Deflection Angle			
DS - Design Speed Km/Hr			
PC - Point of Curvature			
PT - Point of Tangent			
HIP - Horizontal Intersection Point			

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station,Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- H=-1:2500
V=-1:2500
Sheet size: A2

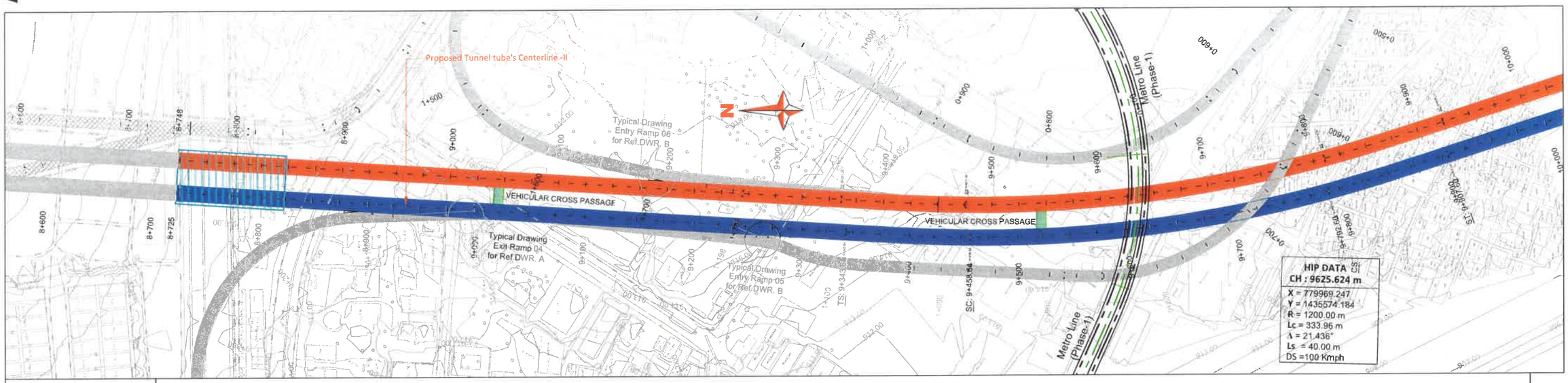
Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16,745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

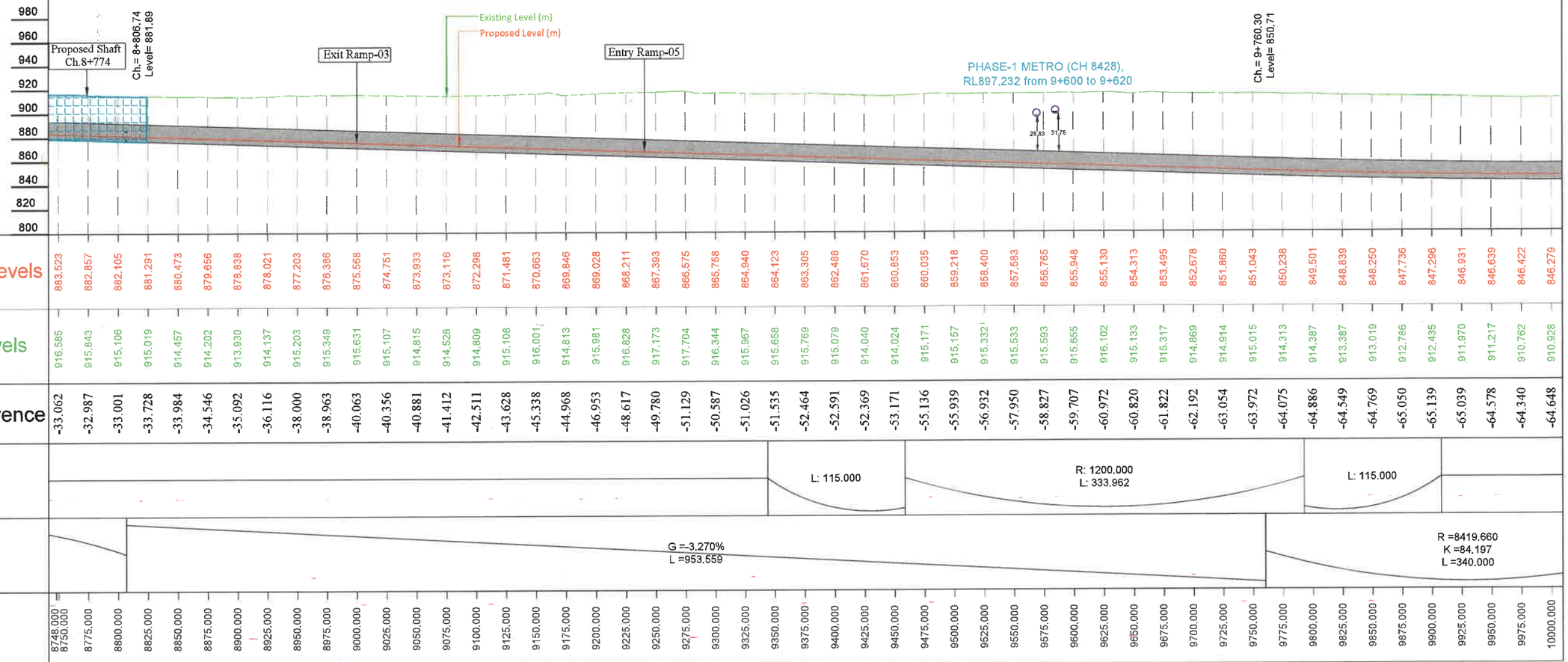
Drawing Title: PLAN & PROFILE (LEGEND)

Drawing No.: AC/1640/HO/HBT/TU/DWG/P&P/Legend /00/R0

Hebbal Esteem mall junction

Silk Road

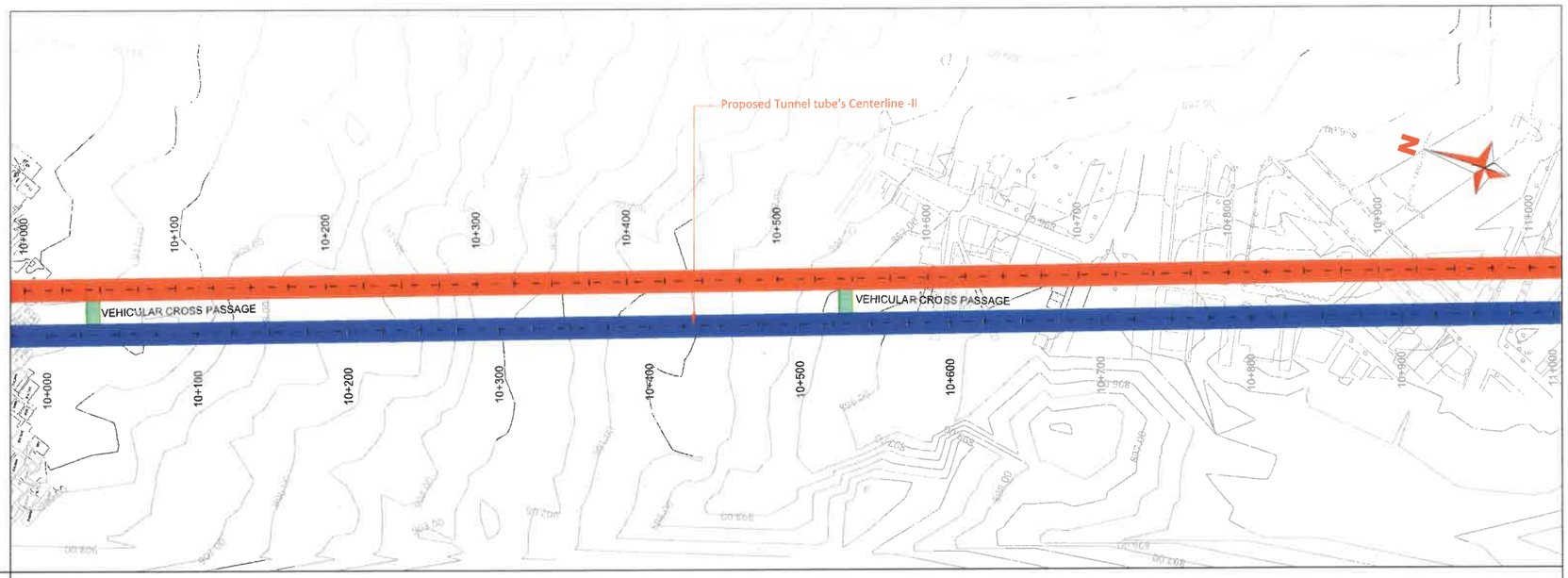


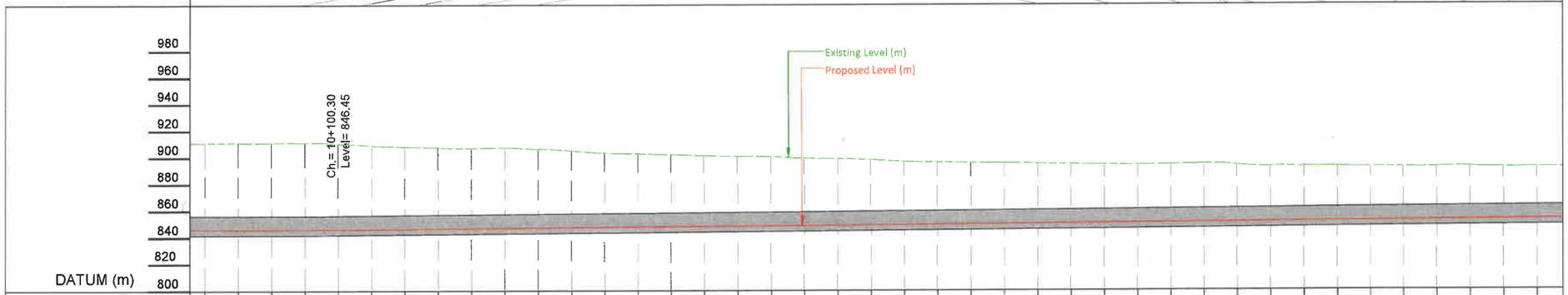


| | | |

Hebbal Esteem mall junction

Silk Road

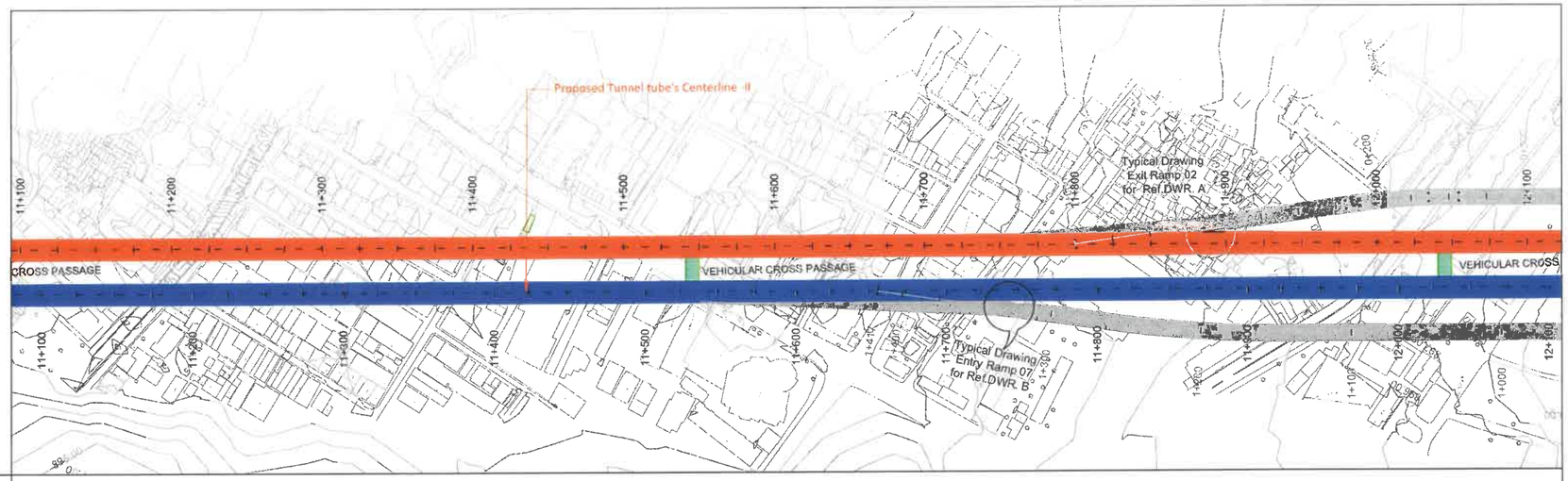


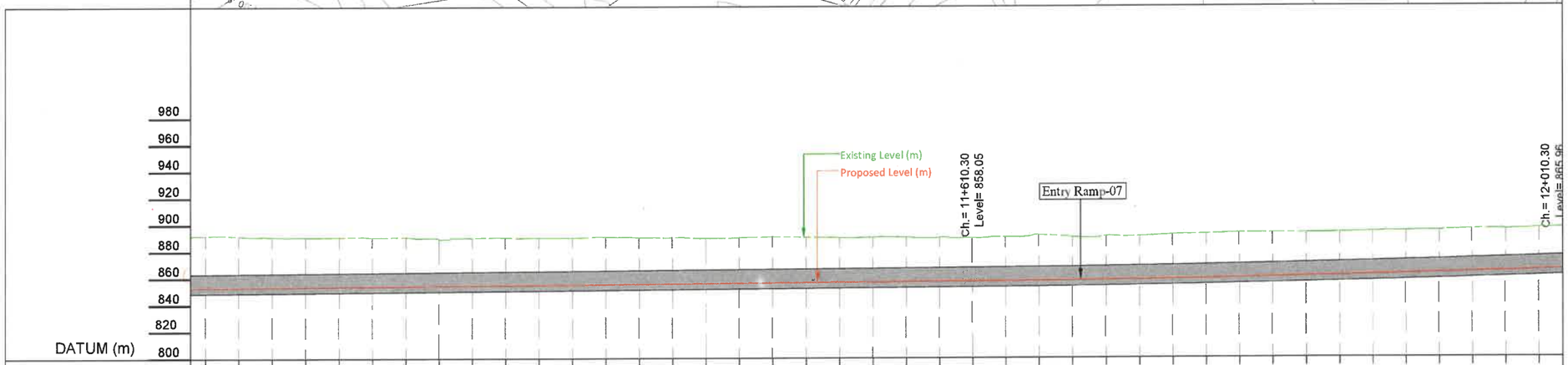


| | | |

Hebbal Esteem mall junction

Silk Road

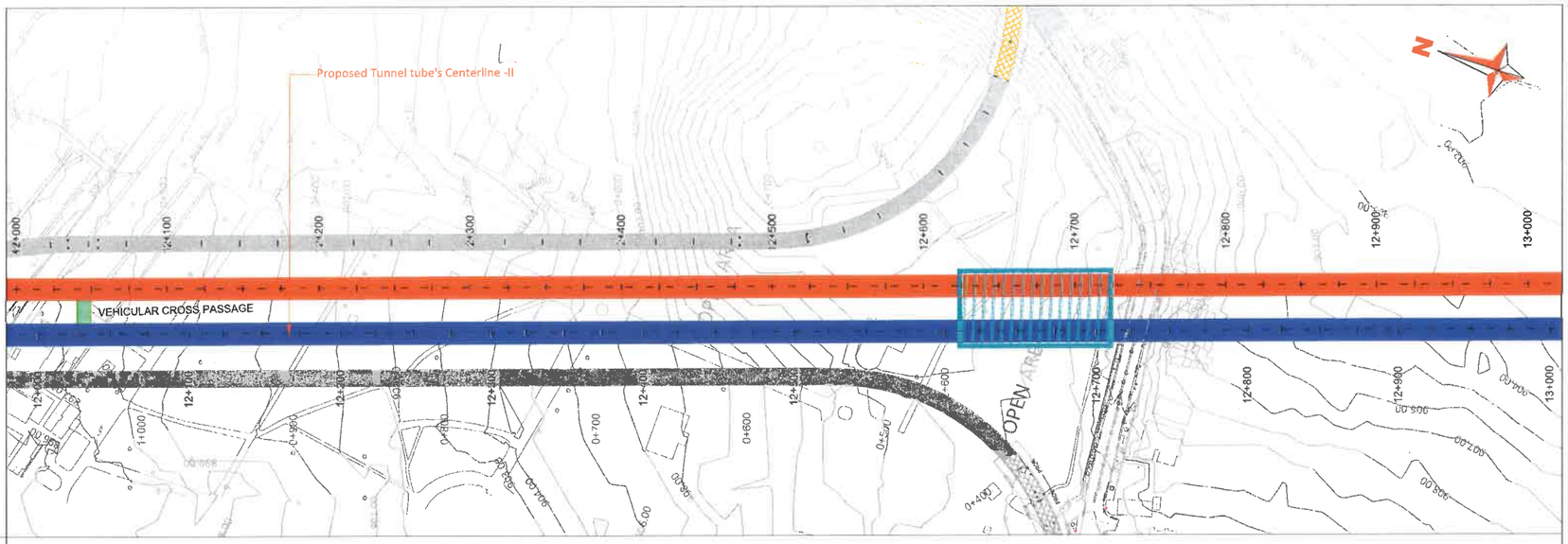


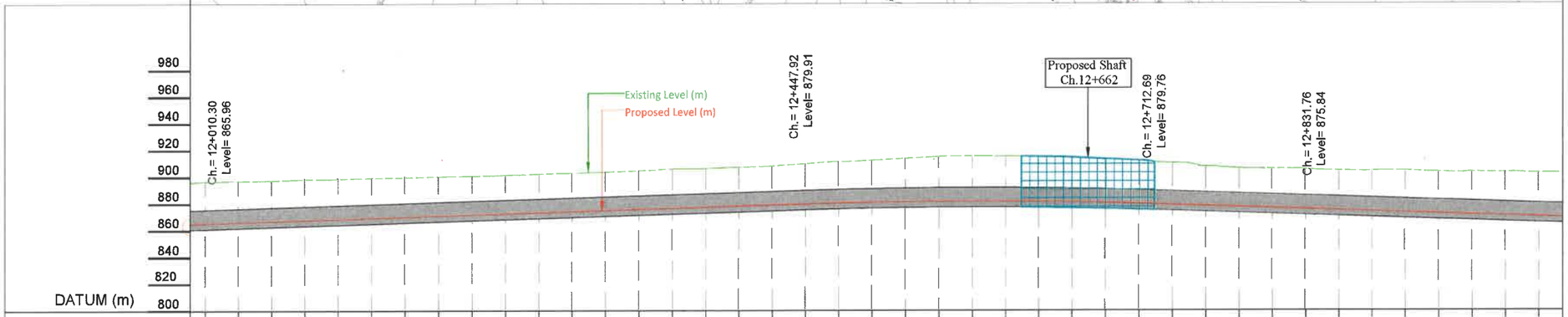


| | | |

Hebbal Esteem mall junction

Silk Road

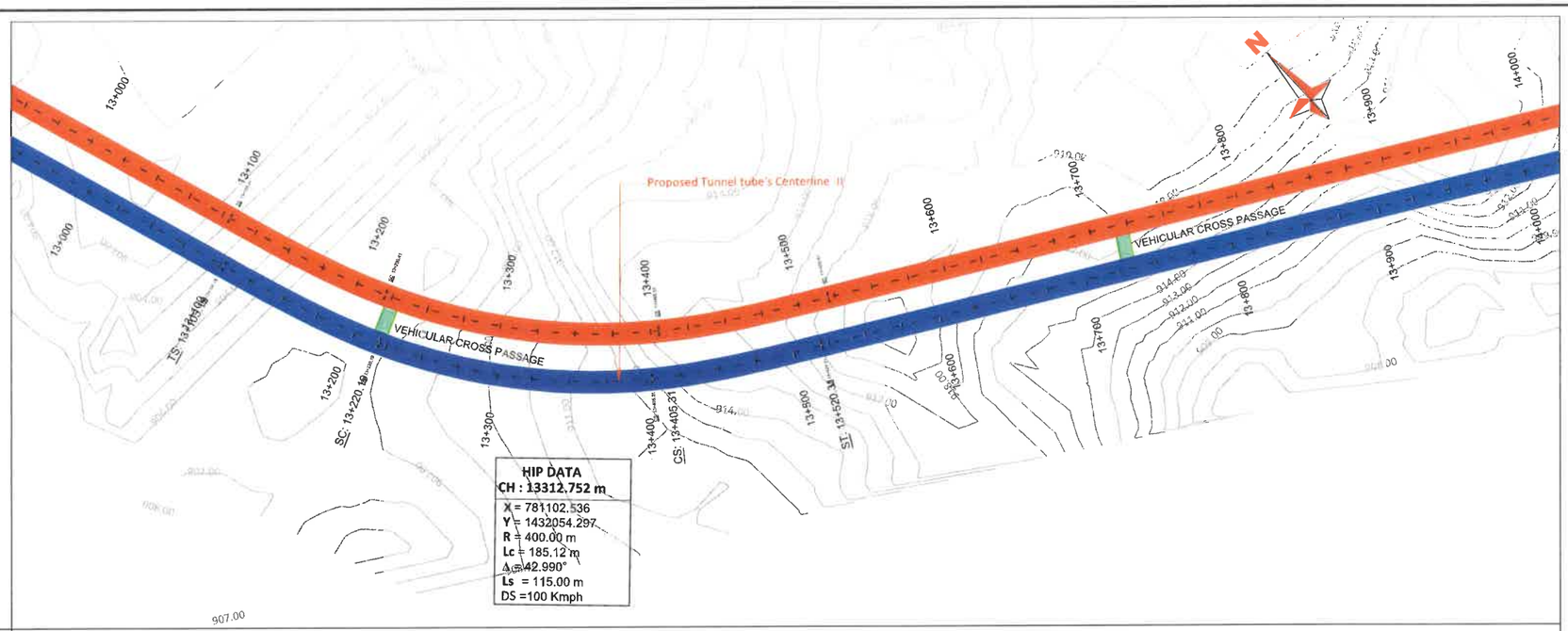


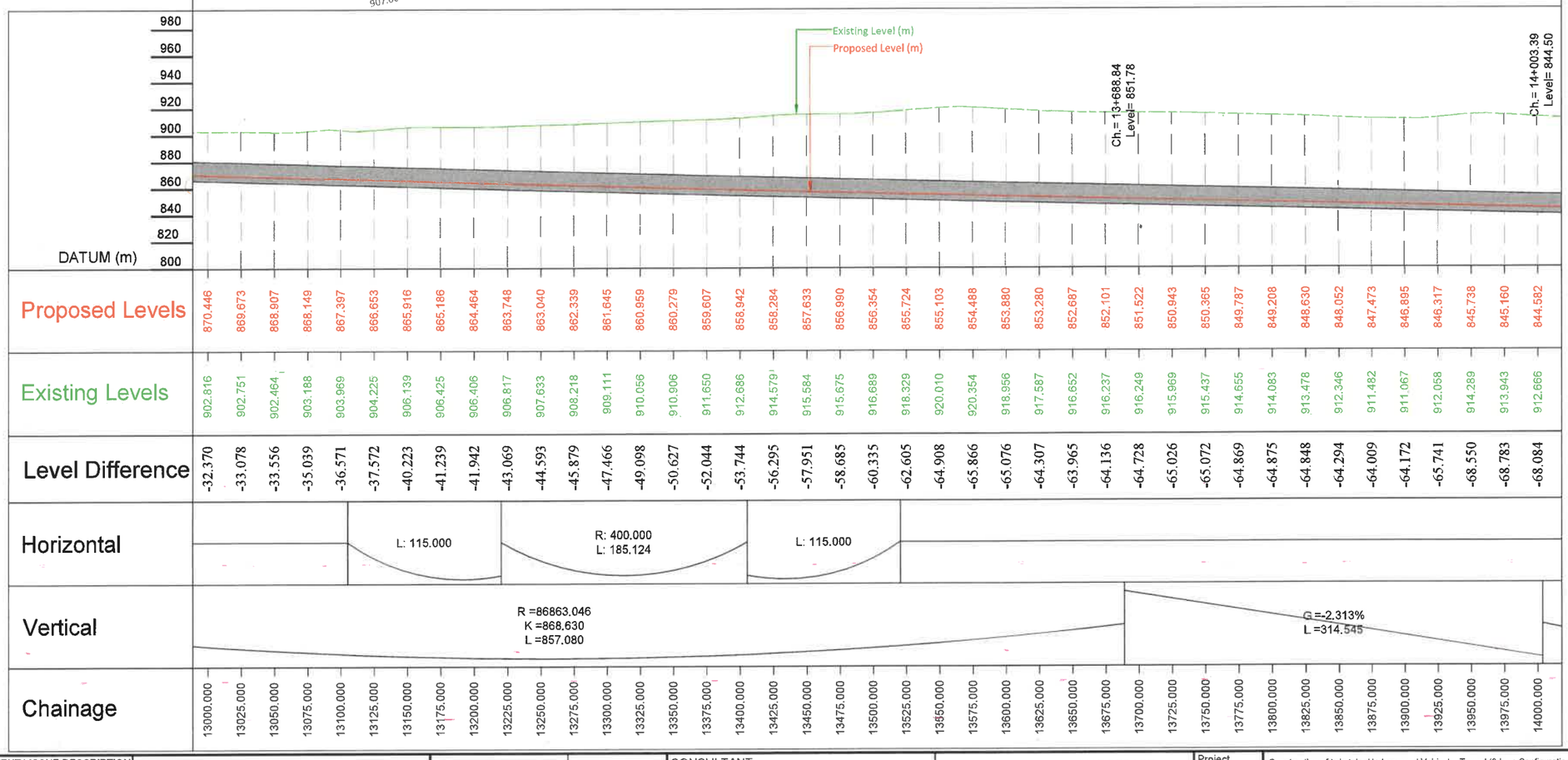


| | | |

Hebbal Esteem mall junction

Silk Road

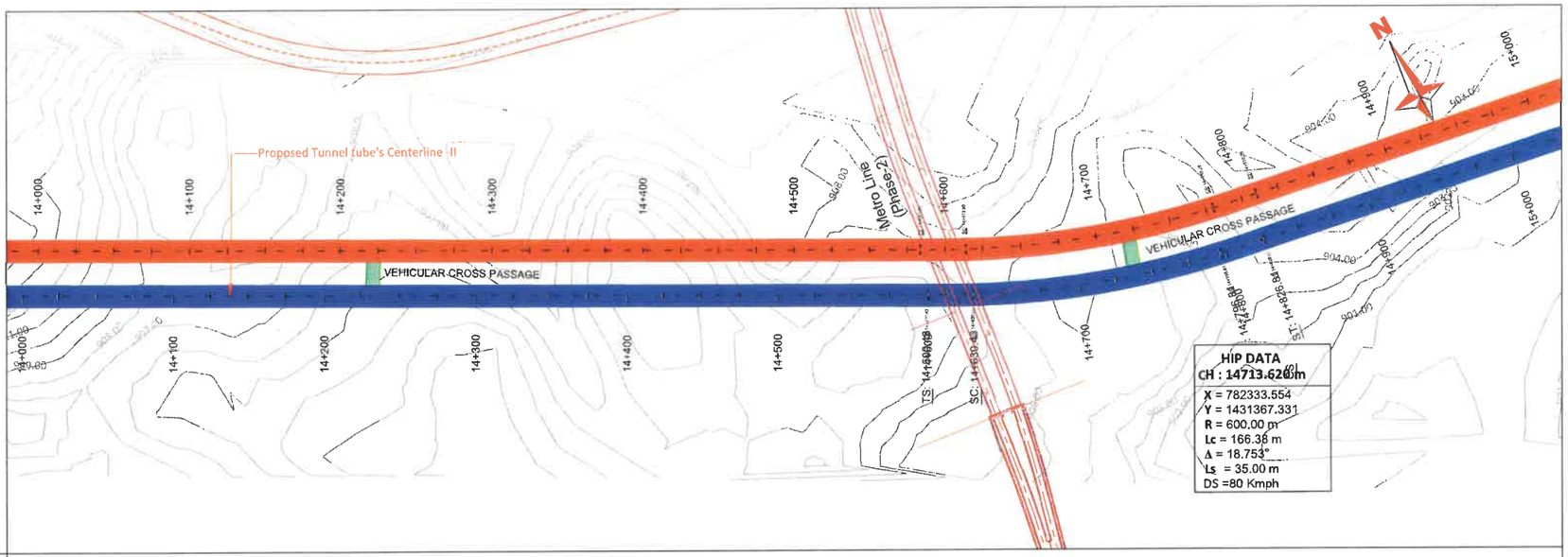


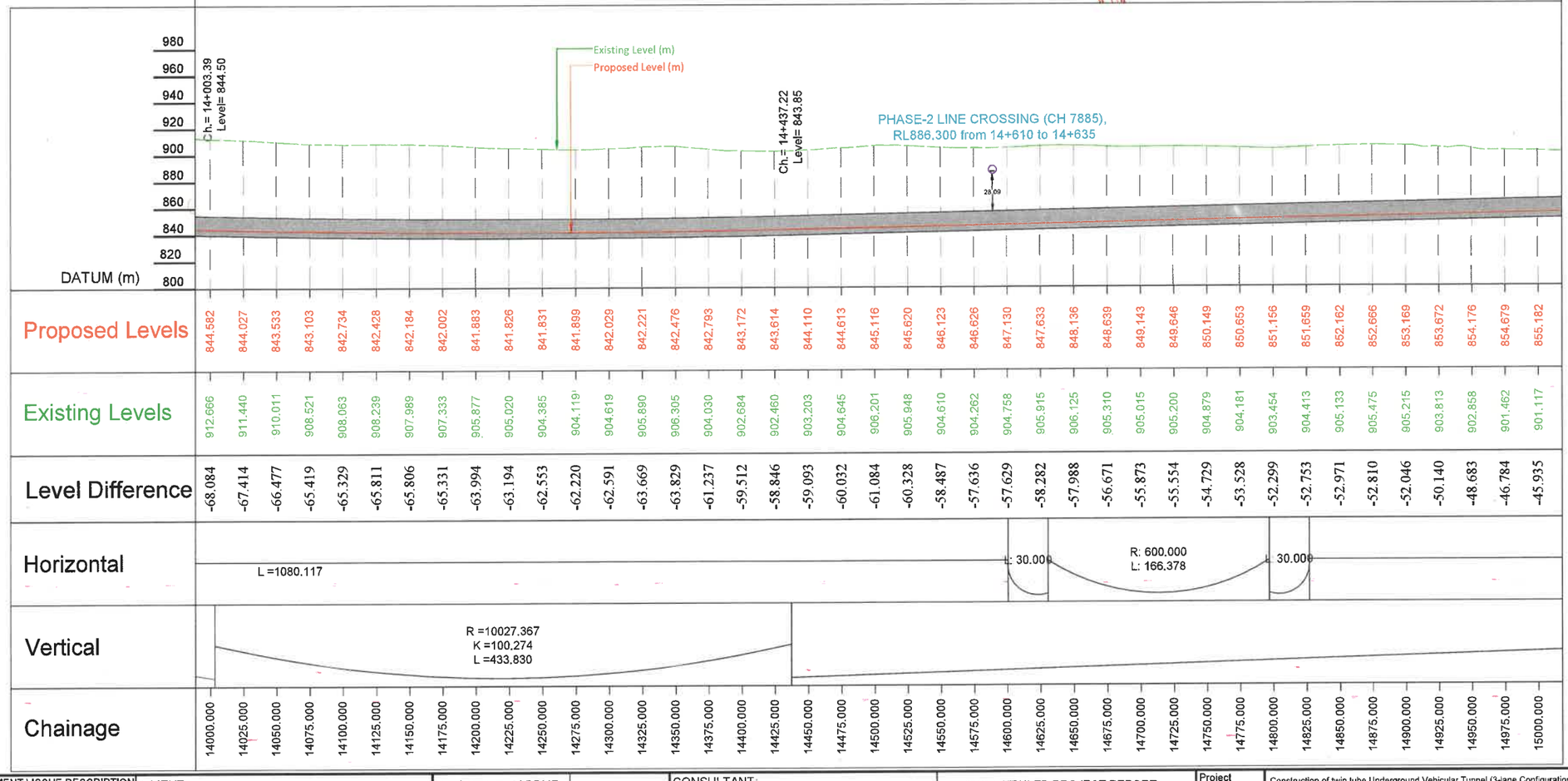


| | | |

Hebbal Esteem mall junction

Silk Road

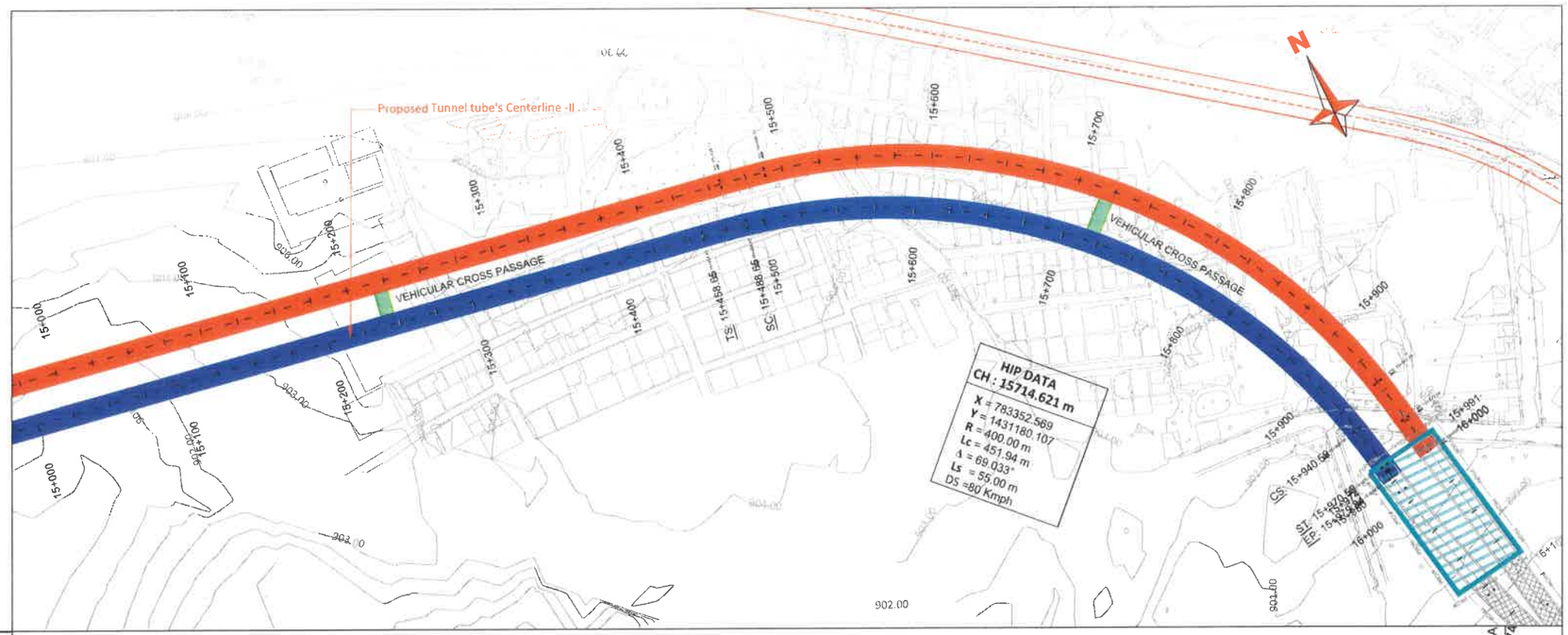


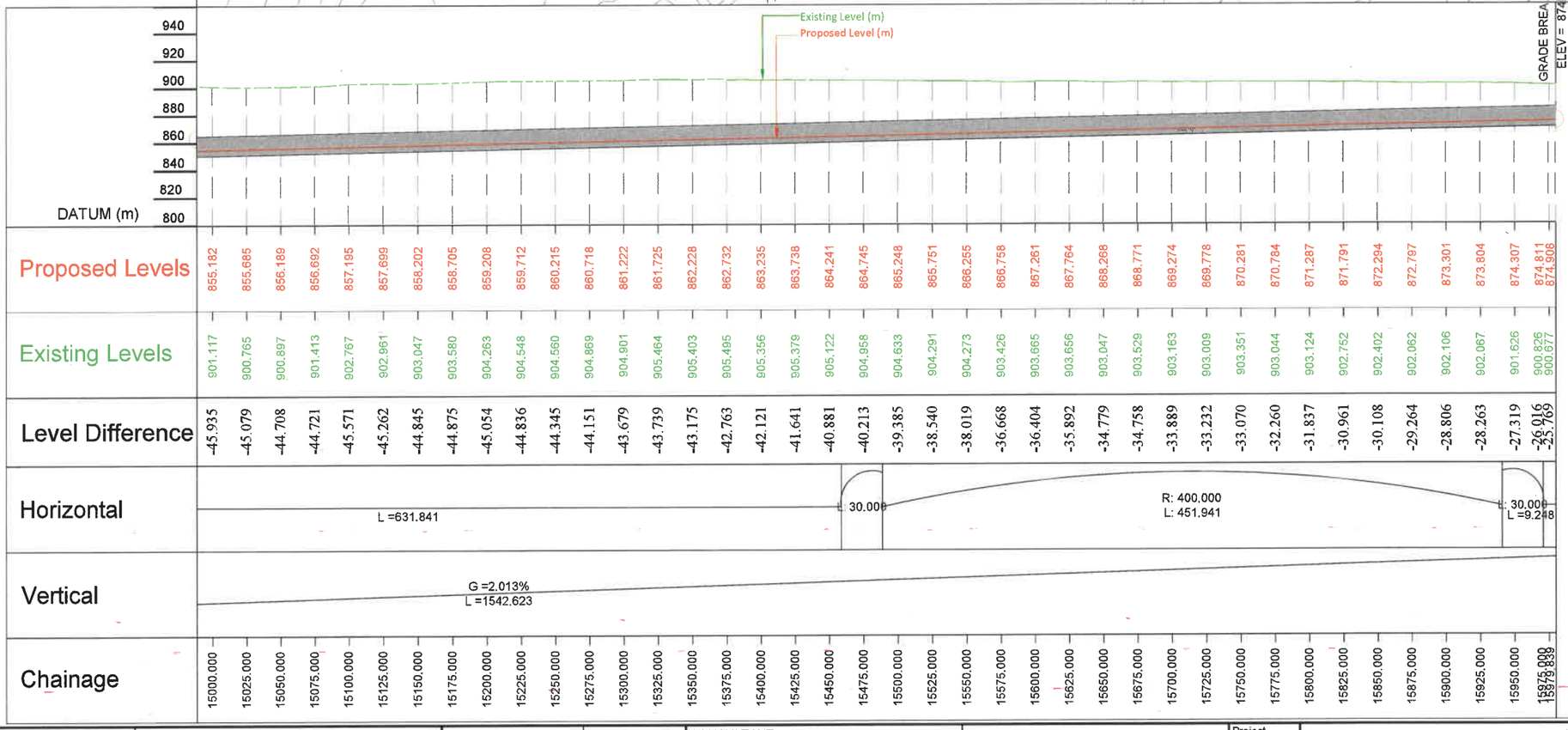


| | | |

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- H=:-1:2500
V=:-1:2500
Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

Drawing Title: PLAN & PROFILE (TUNNEL TUBE - II) (Km.10+000 to Km.15+979)

Drawing No. RC/A640/HO/HBT/TU/DWG/P&P/07/R0

PLAN & PROFILE

PACKAGE -2 (ENTRY & EXIT RAMP)

Hebbal Esteem mall junction

Silk Road

Legend

Topographic Survey

Asphalt Edge		Flag Pole		Median	
Building		Foot Path		Palm Tree	
Bus Stop		Gate		Parking	
Bollard		Handrail		Pole	
Concrete		High Mast Light		Power Pole	
Closed Drain		Light Pole		Post	
Curb Top & Bottom		Lamp Post		Retaining Wall Top & Bottom	
Electrical Box	EB	Manhole	MH	Road Centreline	
Fence				Road Median	
Road Sign	SB	Sink		Transformer	
Roof Extension		Sky Walk Bridge		Tree	
Safety Barrier		Sports Field		Tunnel	
Security Room		Stairs		Tree Line	
Shed		Telecommunication Tower		Wall	
Shelter		Telephone Box	TPB	Water Body	
Side Walk		Temporary Barrier		Water Tank	
Sign Board	SB	Track		Zebra Crossing	
Single Post		Traffic Signal	TS		

Legend

Plan		L Profile	
Proposed Tunnel Tube-I		Proposed Road Levels	
Proposed Tunnel Tube-II		Existing Levels	
Proposed Shaft		Proposed NATM	
Proposed Vehicular Cross Passage		Proposed Cut & Cover	
Proposed NATM (Entry Ramp)		Proposed Shaft	
Proposed NATM (Exit Ramp)		G - Gradient %	
Proposed Cut & Cover (Entry Ramp)		Lv - Length of Vertical Curve	
Proposed Cut & Cover (Exit Ramp)		L - Length of Grade(m)	
Proposed Open Cut (Exit Ramp)		K - Ratio Between vertical curve Length & Change of Gradient {Lc/(G2-G1)}	
Proposed Open Cut (Entry Ramp)		e - Superelevation (%)	
Proposed Rights of Way	PROW PROW PROW	D - Straight Length of Horizontal Alignment	
Existing Rights of Way		Lc - Length of Circular Curve	
Airport Metro Line			
Metro Line (Phase-1)			
Metro Line (Phase-2)			
Metro Line (Phase-3A)			
R - Radius of Curve			
Dc - Degree of Curvature			
Lc - Length of Circular Curve			
Ts - Tangent Length			
Es - Apex Distance			
LS - Length of Spiral Curve			
Δ - Deflection Angle			
DS - Design Speed Km/Hr			
PC - Point of Curvature			
PT - Point of Tangent			
HIP - Horizontal Intersection Point			

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- H=:-1:2500
V=:-1:2500
Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

Drawing Title: PLAN & PROFILE (LEGEND)

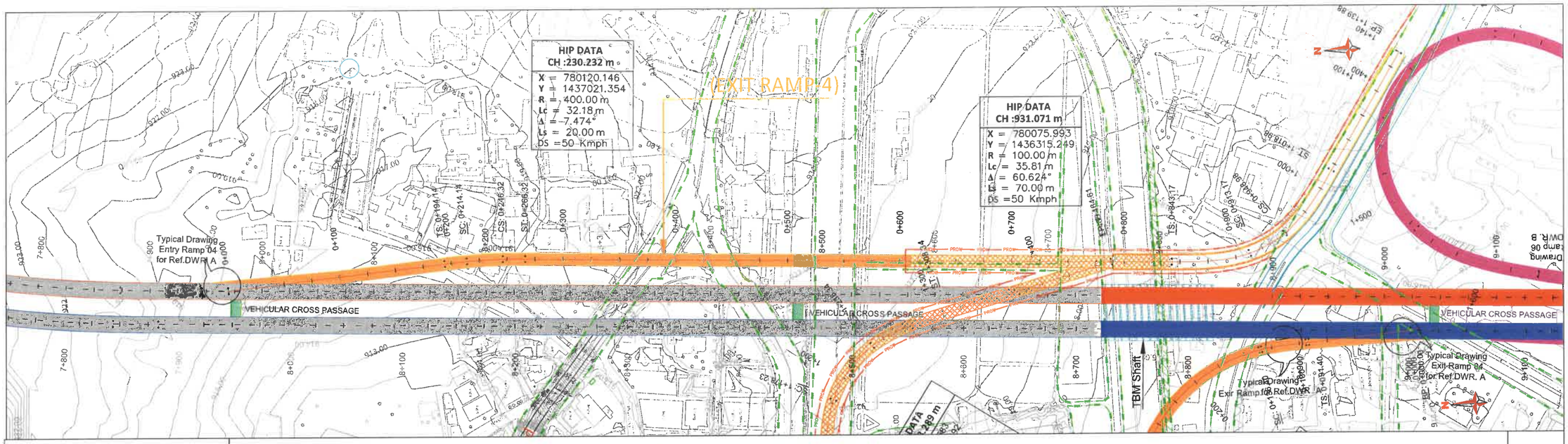
Drawing No.: BC/1640/HO/HBT/TU/DWG/P&P/Legend/00/R0

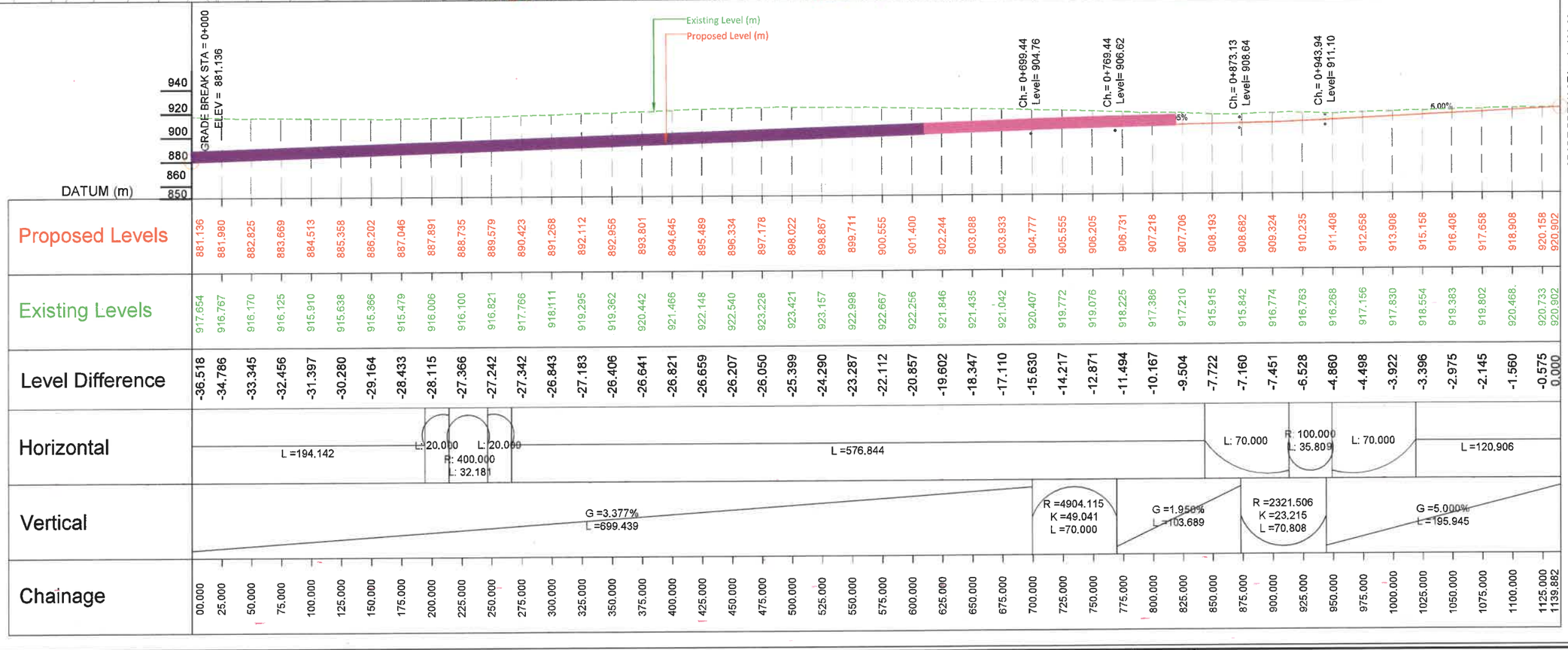
PLAN & PROFILE

(EXIT RAMP - 4)

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B166 WeWork, Plaina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=-1:2500 V=-1:2500
Drawn:	SS	
Checked:	AT	
Approved:	HRY	Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

Drawing Title: PLAN & PROFILE (EXIT RAMP-4) (Km.0+000 to Km.1+139)

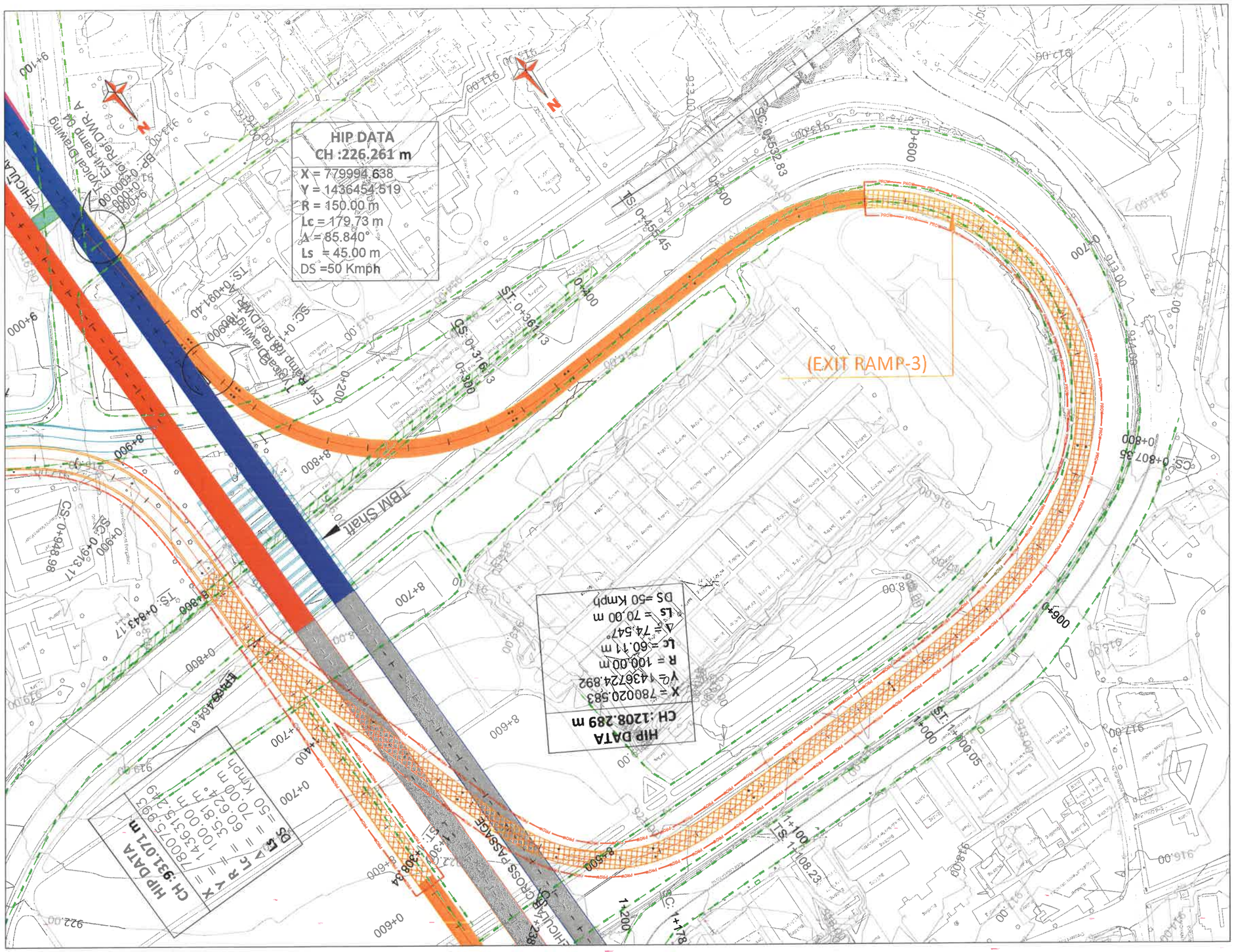
Drawing No.: RC/1640/HO/HBT/TU/DWG/P&P/01/R0

PLAN & PROFILE

(EXIT RAMP - 3)

Hebbal Esteem mall junction

Silk Road



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Pinkina Tower MG Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- H=:-1:2500
V=:-1:2500
Sheet size: A2

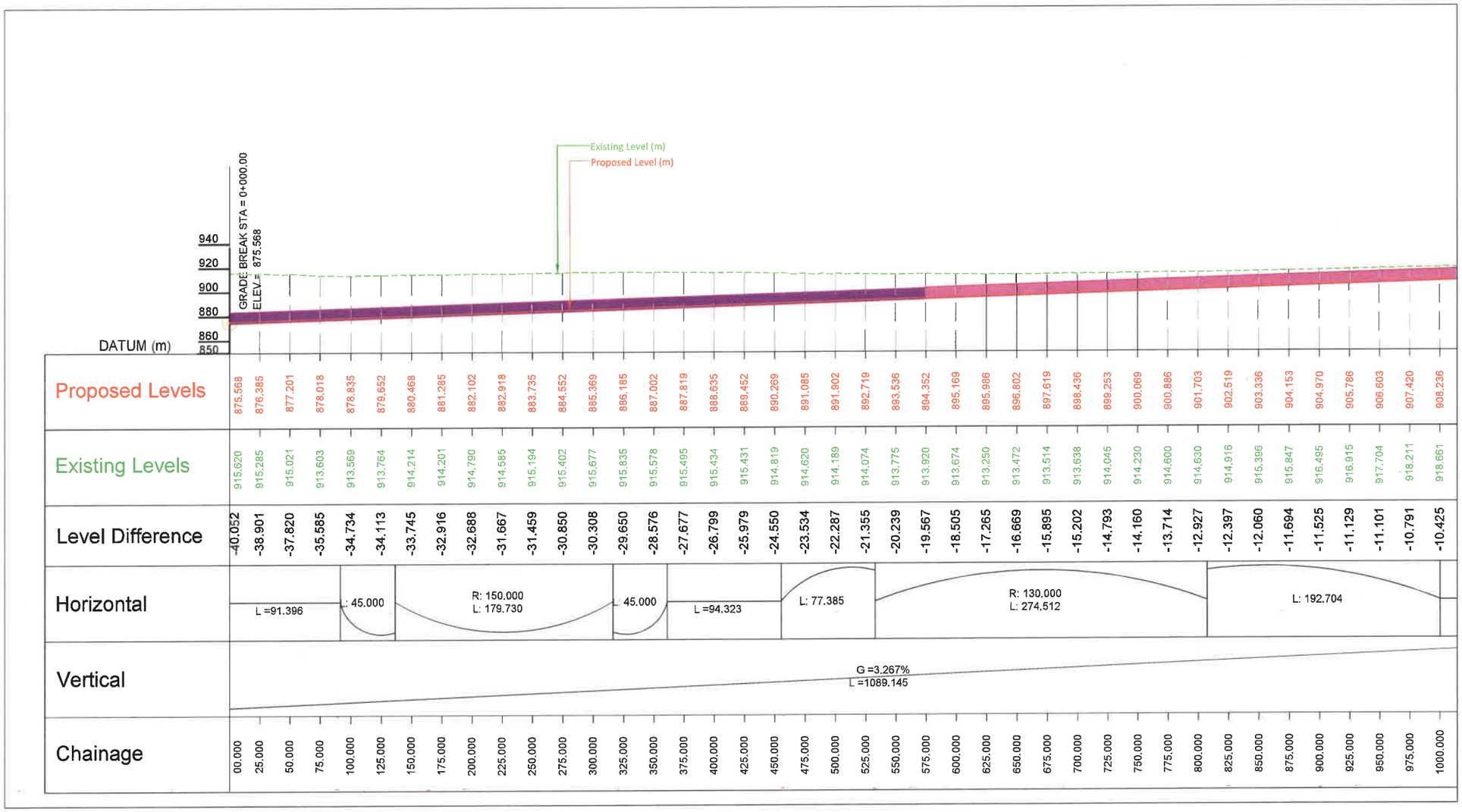
Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

Drawing Title: PLAN & PROFILE (EXIT RAMP-3) (Km.0+000 to Km.1+000)

Drawing No. BCTE/10/HO/HBT/TU/DWG/P&P/ 01/R0

Hebbal Esteem mall junction

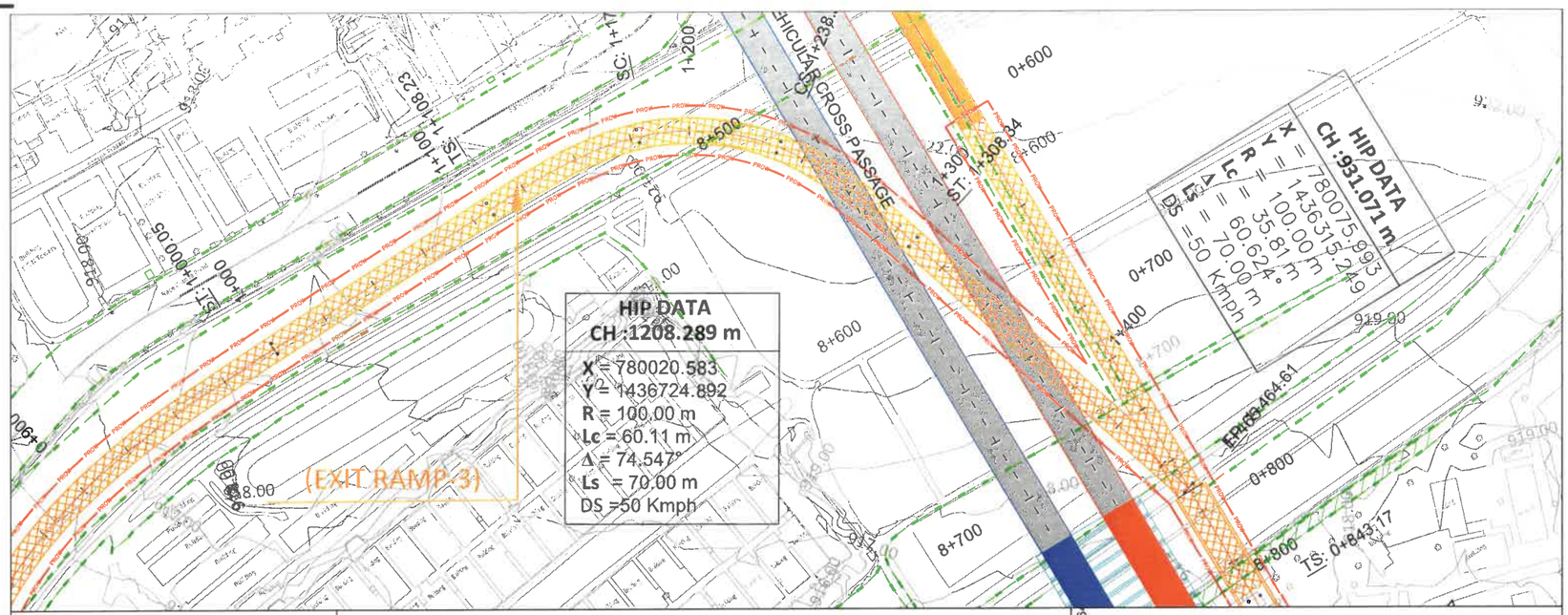
Silk Road



| | | |

Hebbal Esteem mall junction

Silk Road



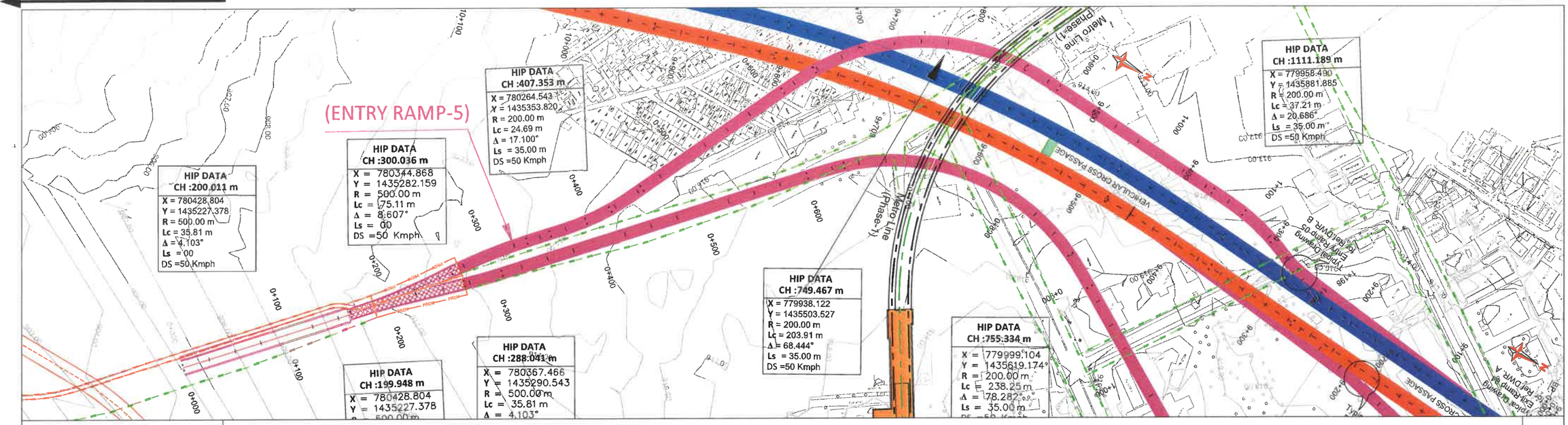
| | | |

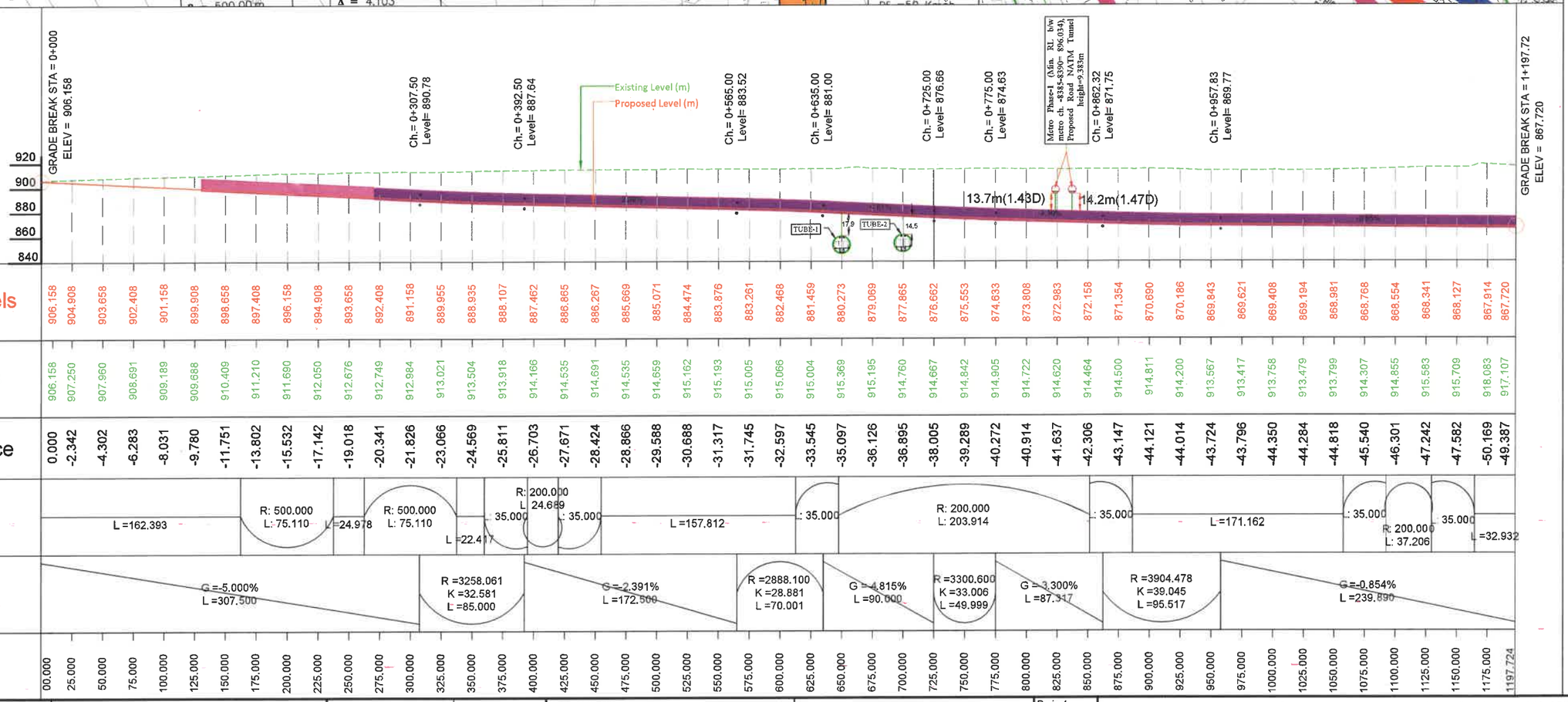
PLAN & PROFILE

(ENTRY RAMP - 5)

Hebbal Esteem mall junction

Silk Road





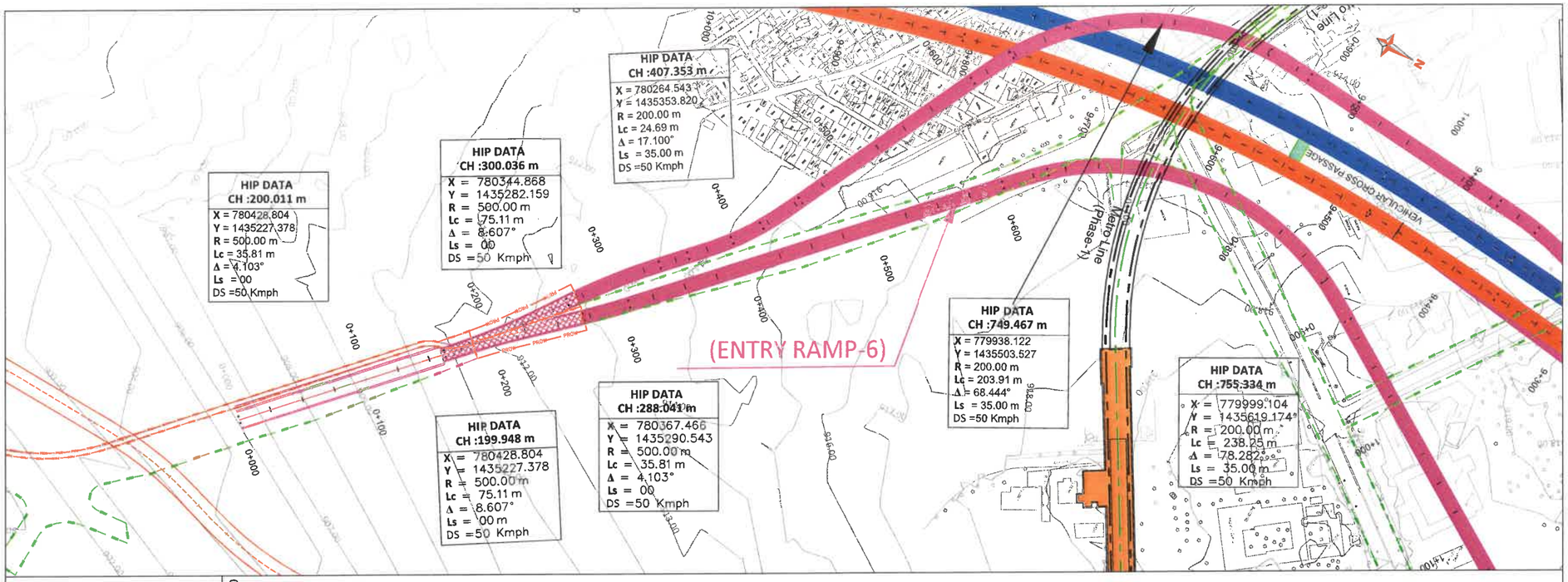
| | | |

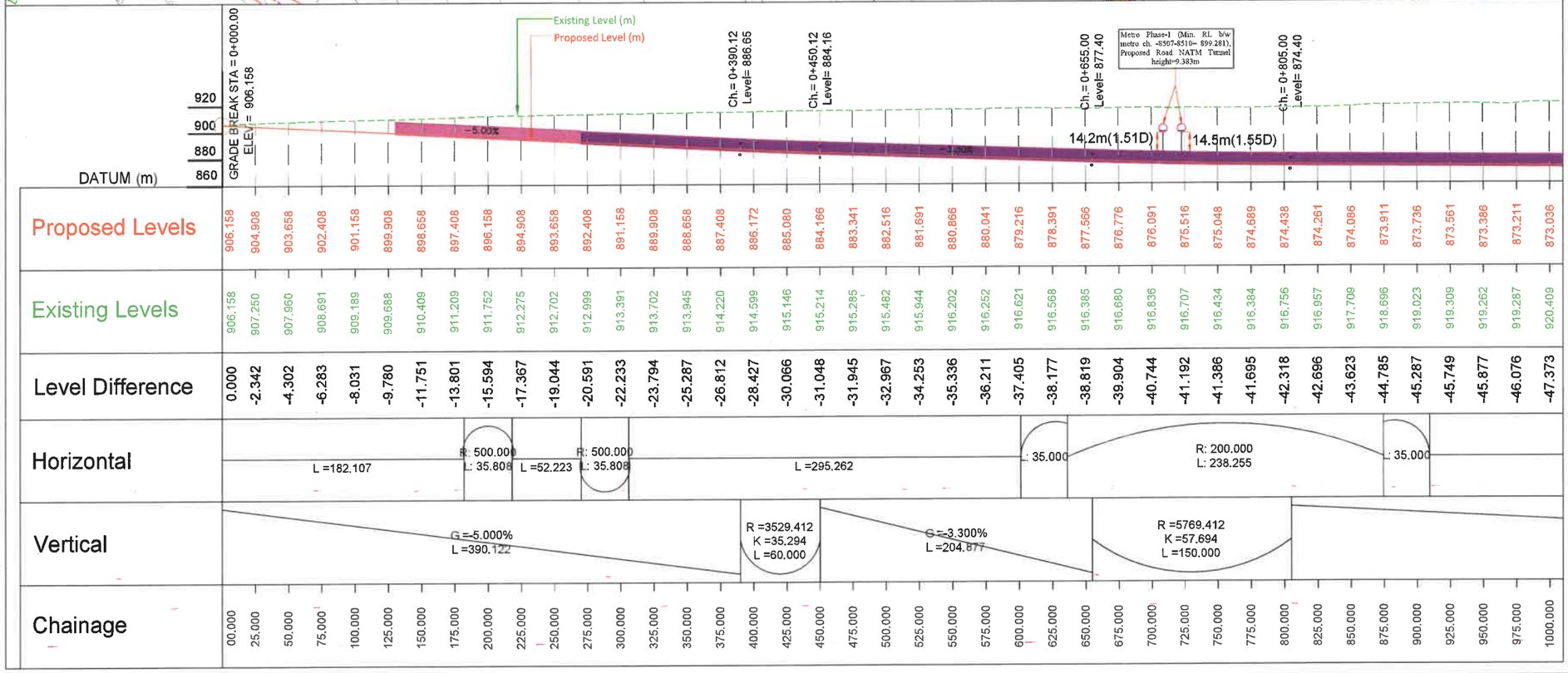
PLAN & PROFILE

(ENTRY RAMP - 6)

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=-1:2500 V=-1:2500
Drawn:	SS	
Checked:	AT	
Approved:	HRY	Sheet size: A2

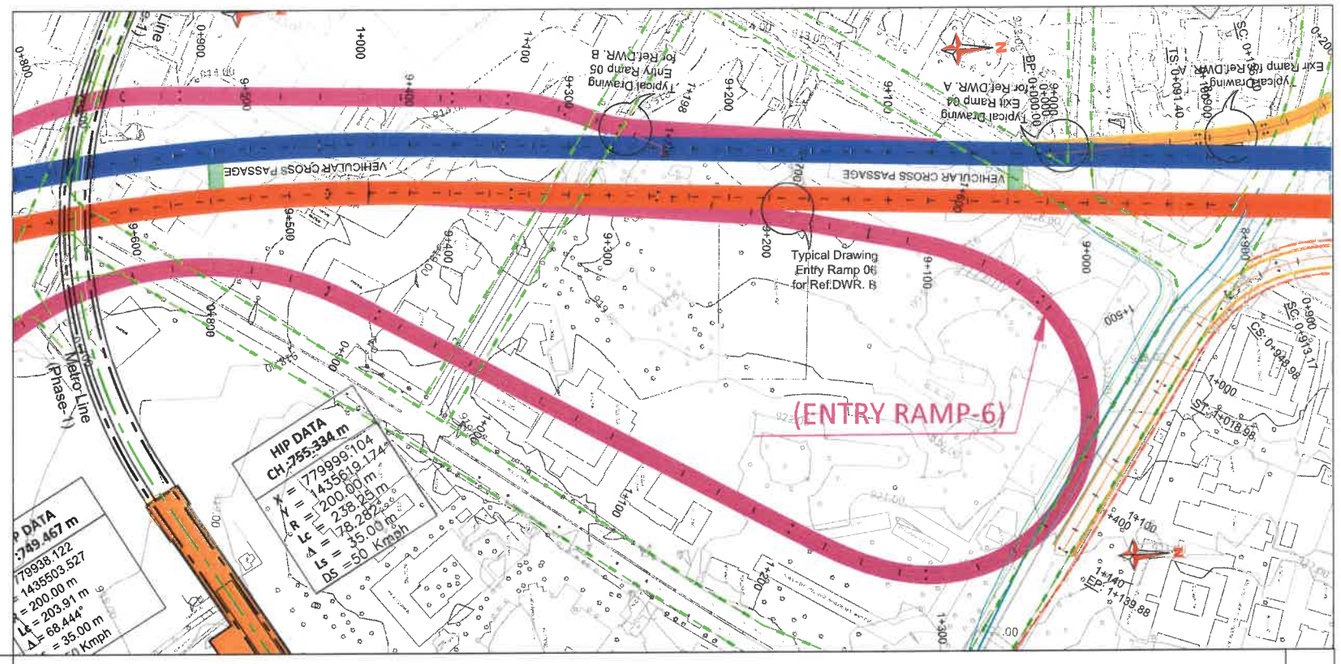
Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

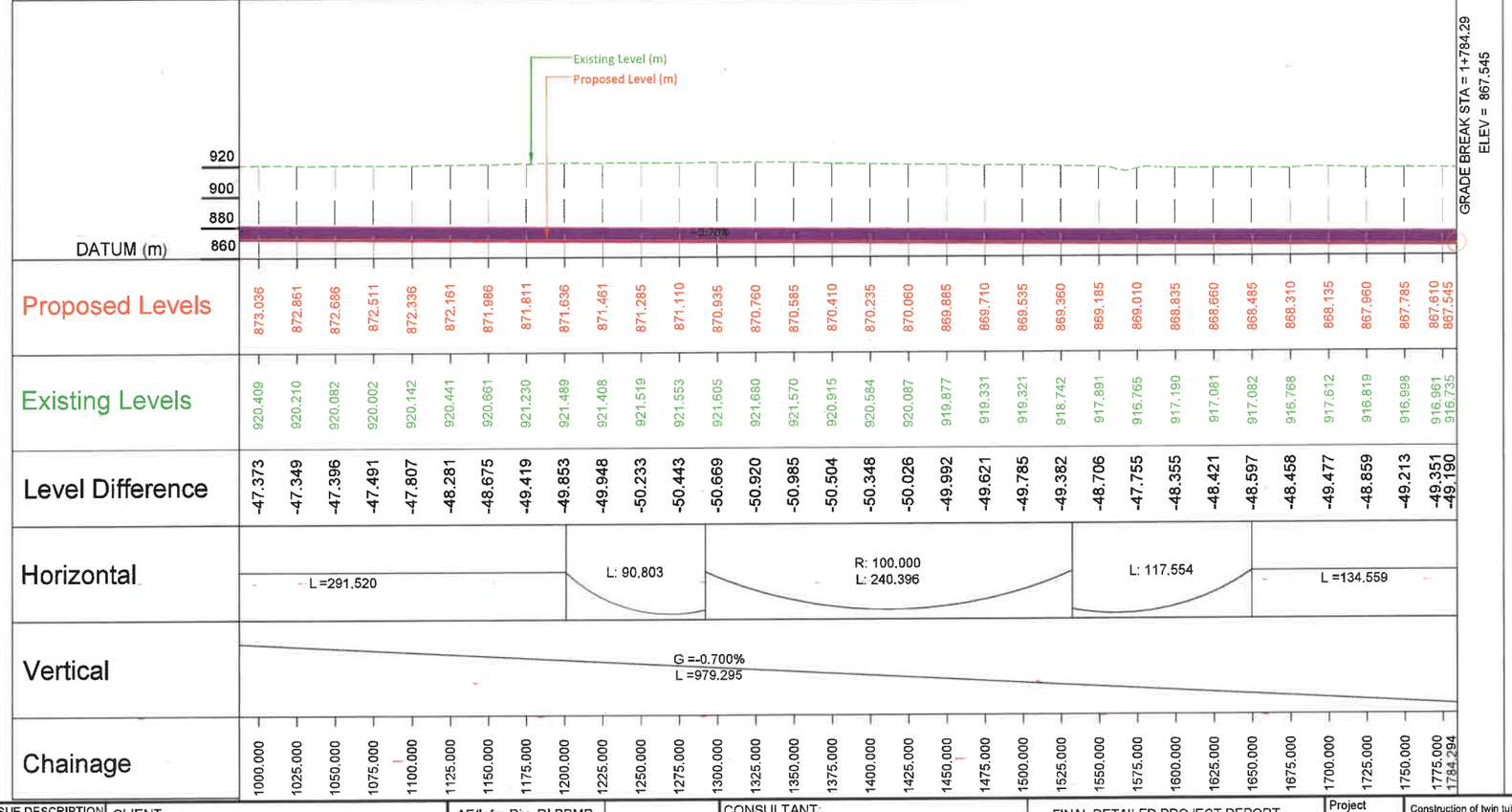
Drawing Title: PLAN & PROFILE (ENTRY RAMP-6) (Km.0+000 to Km.1+000)

Drawing No.: NC/1640/HO/HBT/TU/DWG/P&P/ 01/R0

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=-1:2500 V=-1:2500
Drawn:	SS	
Checked:	AT	
Approved	HRY	Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

Drawing Title: PLAN & PROFILE (ENTRY RAMP-6) (Km.0+000 to Km.1+784)

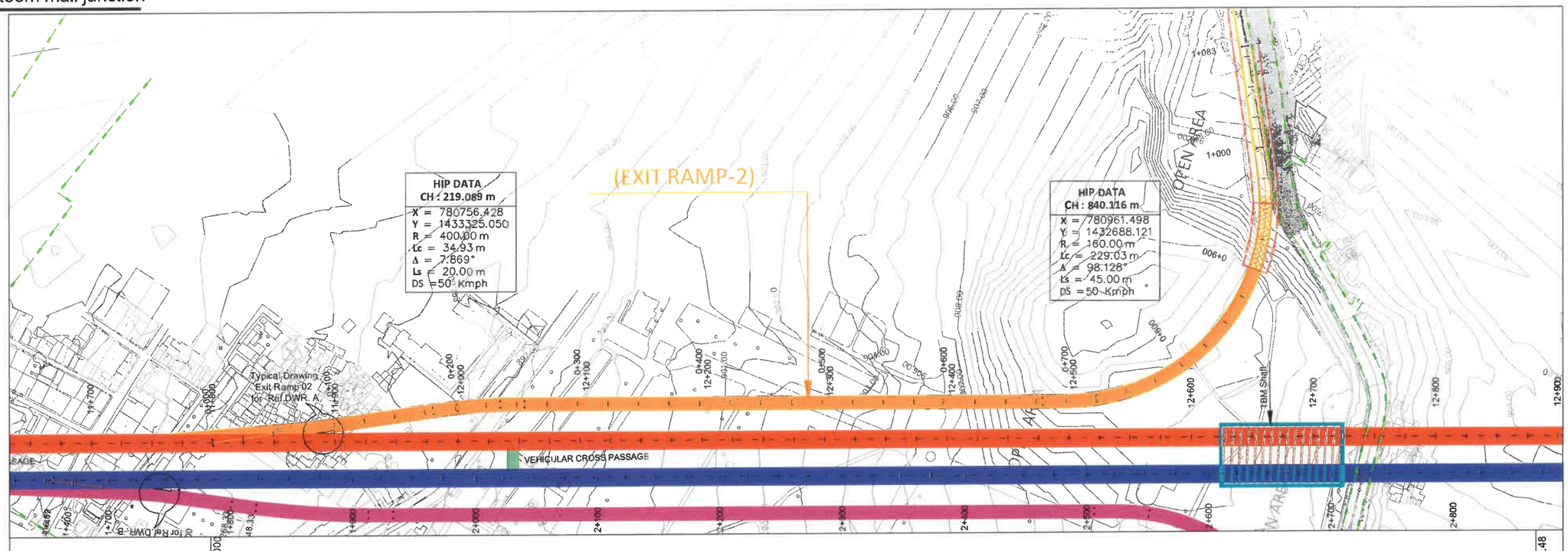
Drawing No.: RDC/1620/HO/HBT/TU/DWG/P&P/ 01A/R0

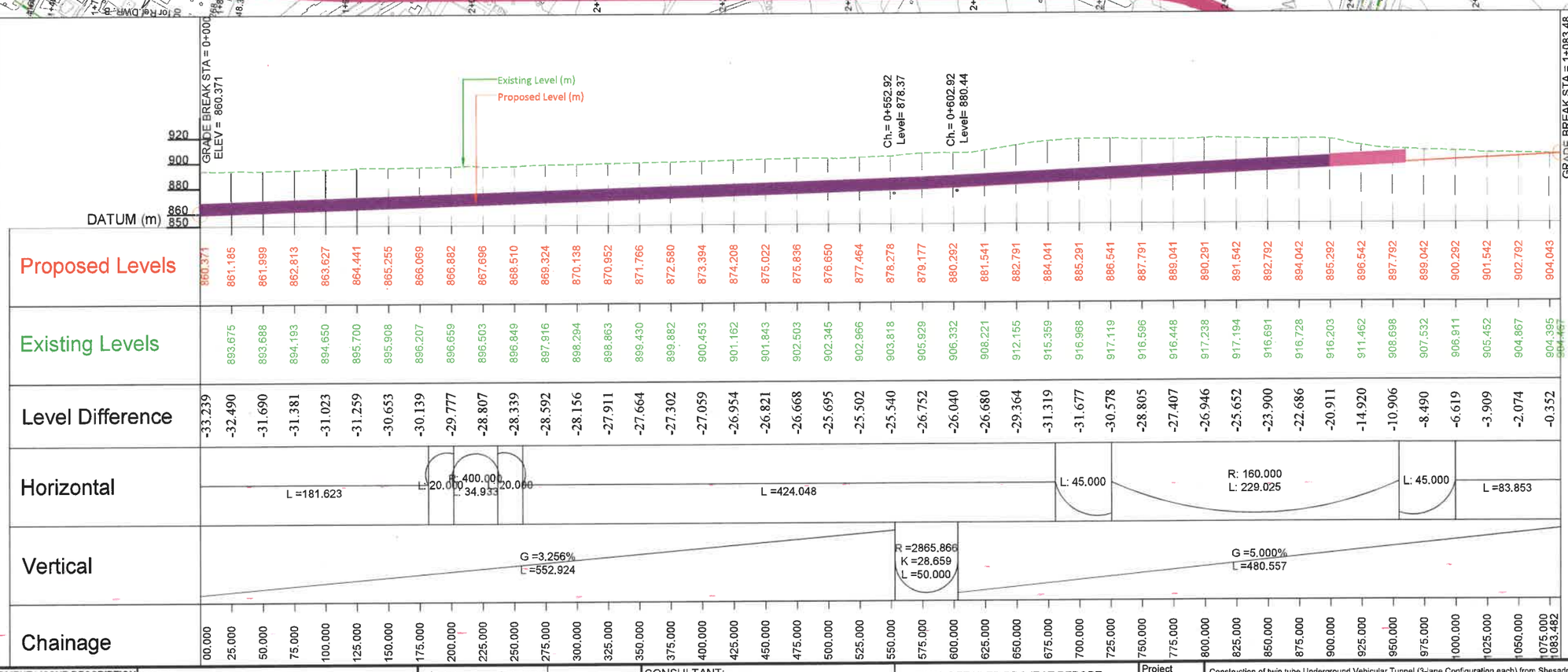
PLAN & PROFILE

(EXIT RAMP - 2)

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN,:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
6@166 WeWork, Phillin Tower M/S Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=:-1:2500 V=:-1:2500
Drawn:	SS	
Checked	AT	
Approved	HRY	Sheet size: A2

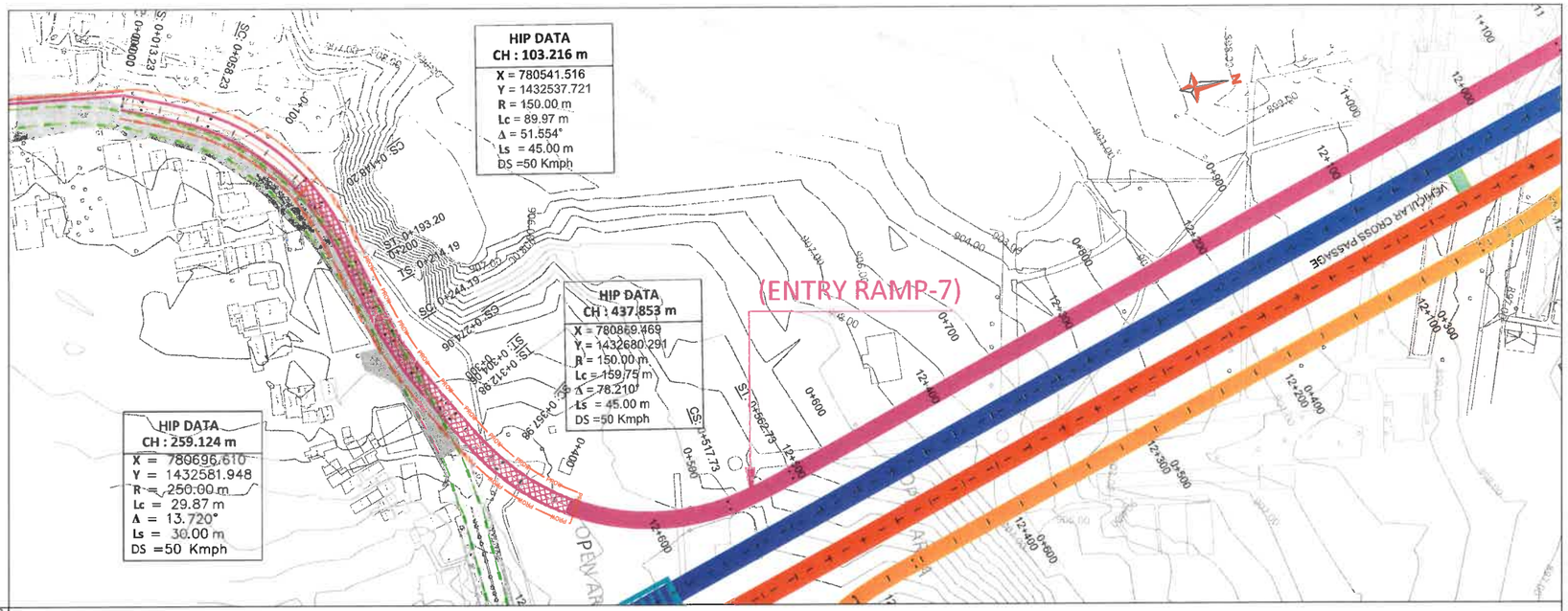
Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	PLAN & PROFILE (EXIT RAMP-2) (Km.0+000 to Km.1+083)
Drawing No.	BCIEB40/HO/HBT/TU/DWG/P&P 01/R0

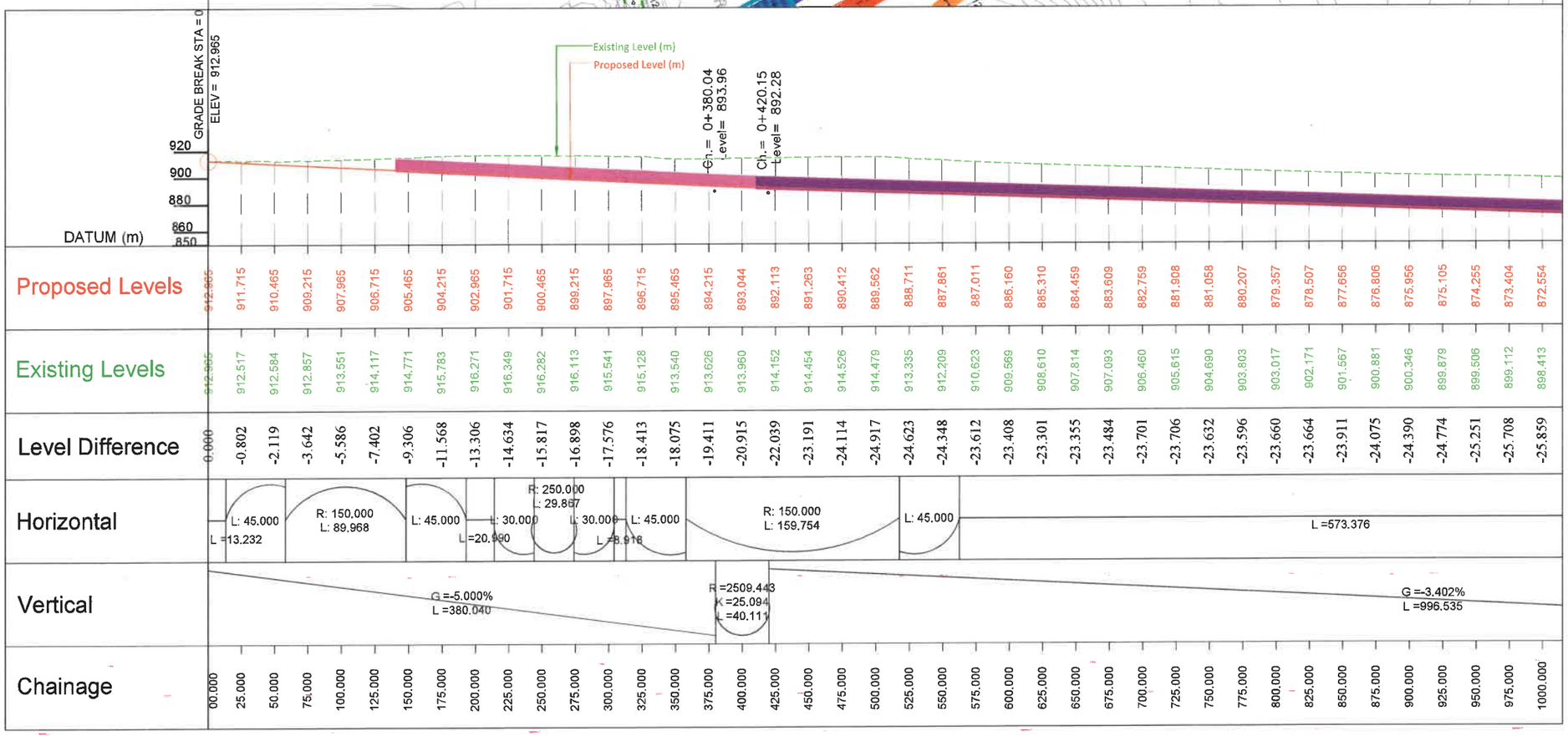
PLAN & PROFILE

(ENTRY RAMP - 7)

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

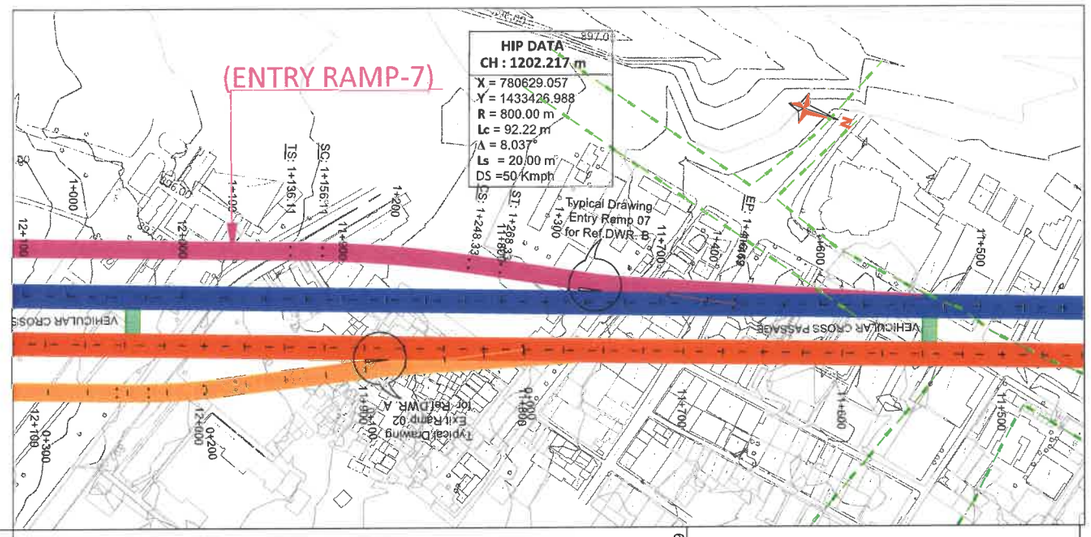
FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk card.)

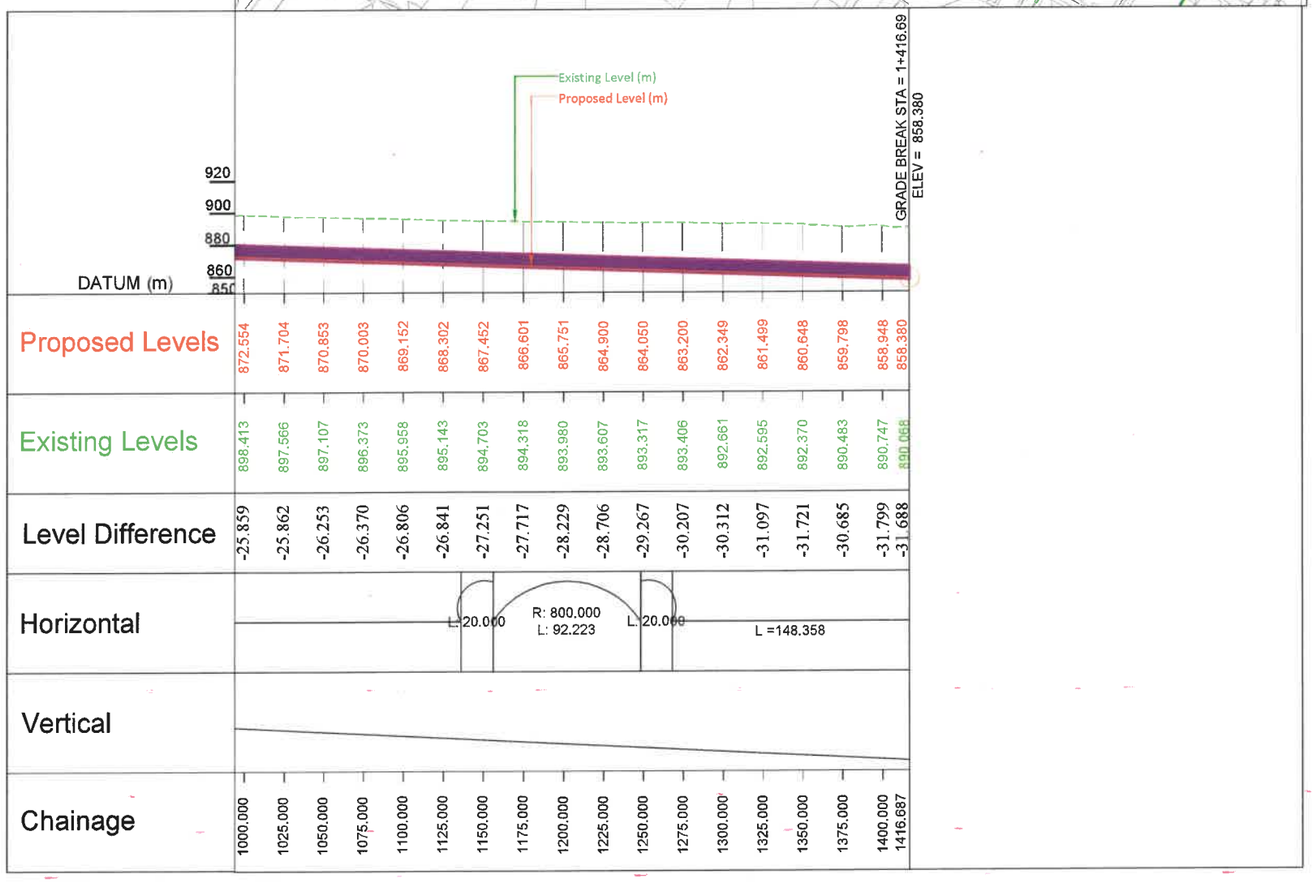
Designed:	RR	Scale :- H=:-1:2500	
Drawn:	SS	V=:-1:2500	
Checked:	AT		
Approved:	HRY	Sheet size: A2	

Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching end retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	PLAN & PROFILE (ENTRY RAMP-7) (Km.0+000 to Km.1+000)
Drawing No.	BC/1640/HO/HBT/TU/DWG/P&P/01/R0

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
9th106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :-	H=-1:2500
Drawn:	SS		V=-1:2500
Checked:	AT	Sheet size:	A2
Approved:	HRY		

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

Drawing Title: PLAN & PROFILE (ENTRY RAMP-7) (Km.1+000 to Km.1+416)

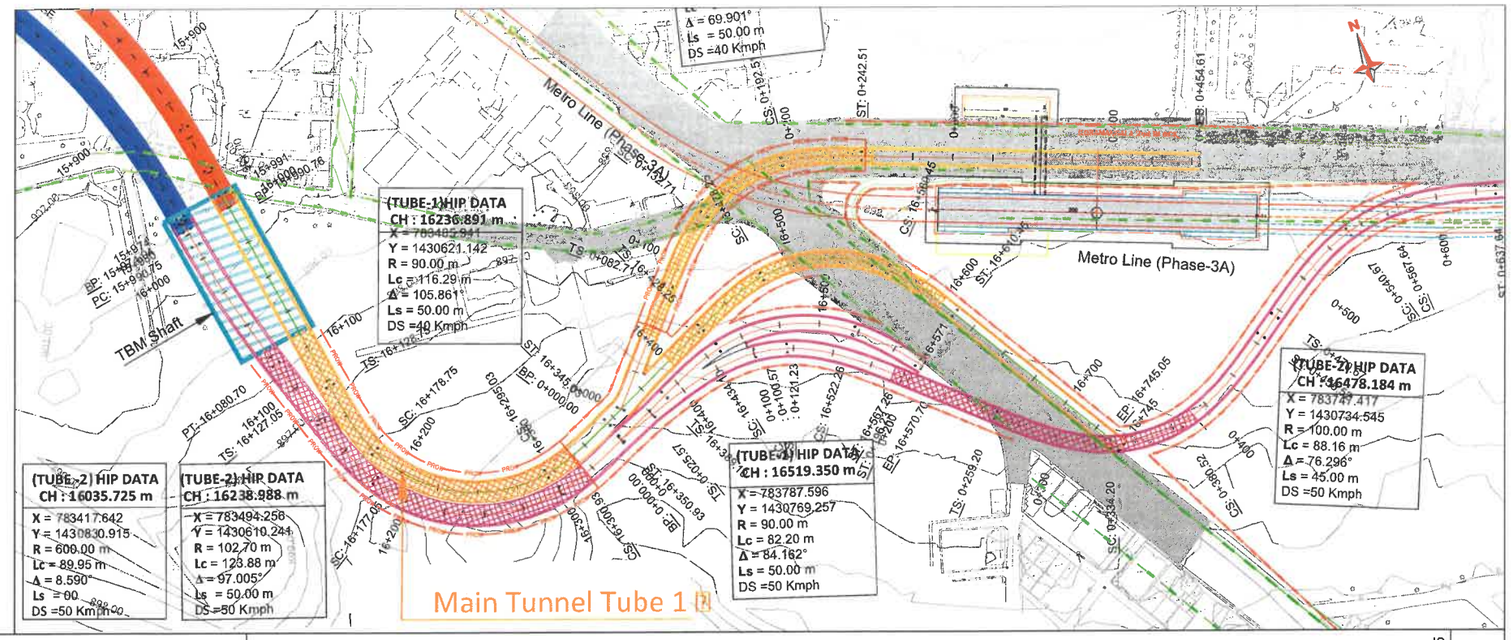
Drawing No: RC/1648/HQ/HBT/TU/DWG/P&P/01A/R0

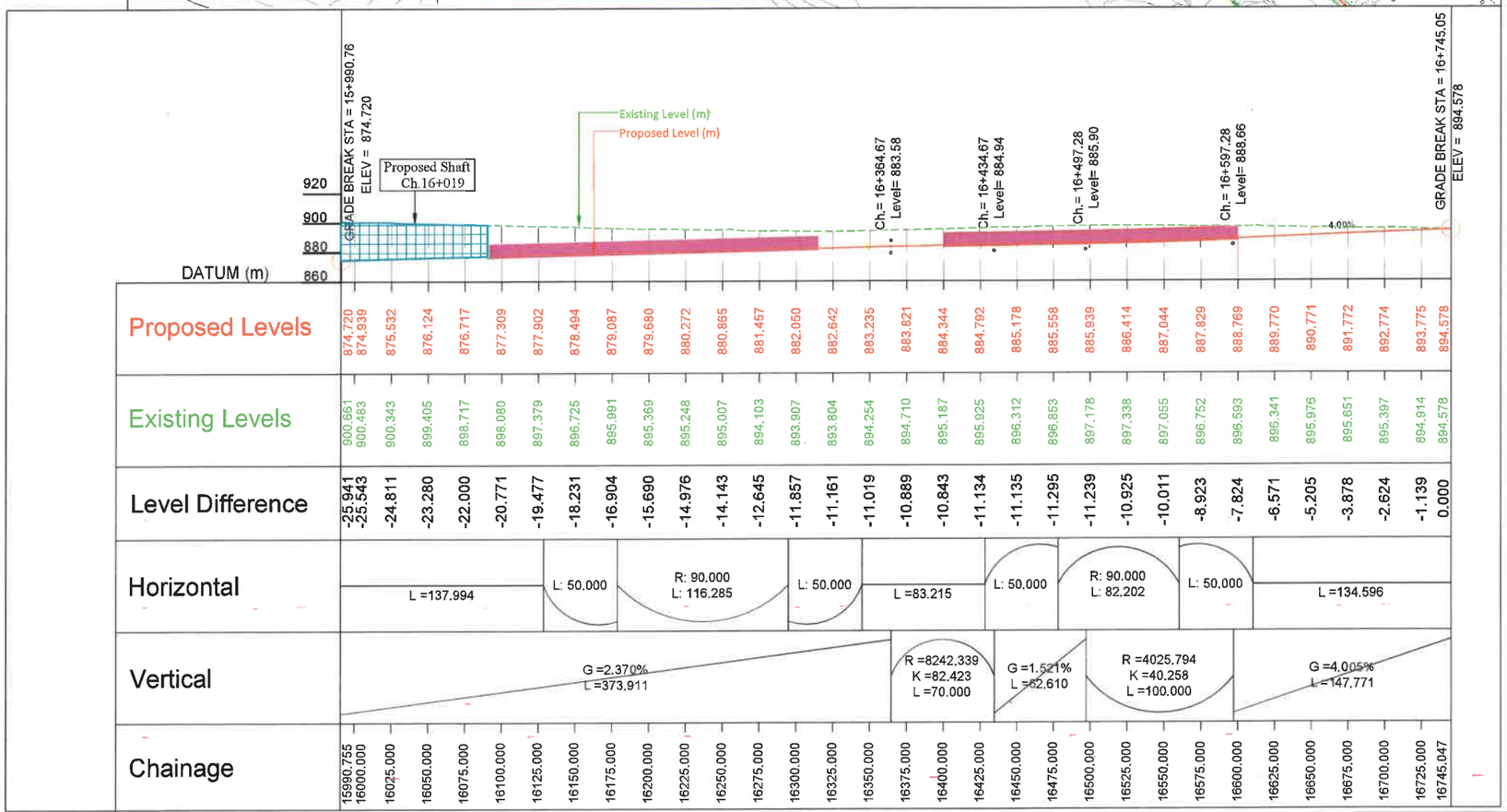
PLAN & PROFILE

(TUBE - I)

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=:-1:2500
Drawn:	SS	V=:-1:2500
Checked:	AT	Sheet size: A2
Approved:	HRY	

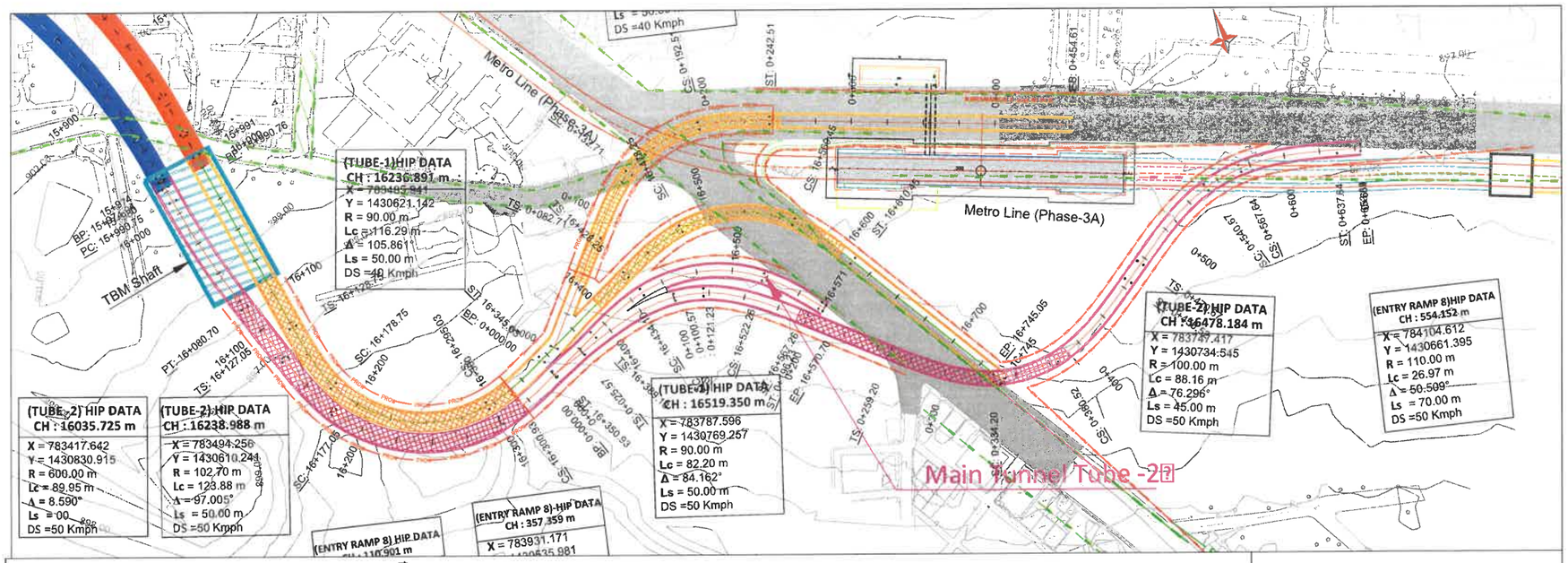
Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	PLAN & PROFILE (TUBE-1) (Km.15+990to Km.16+745)
Drawing No.	RC/1640/HQ/HBT/TU/DWG/P&P/01/R0

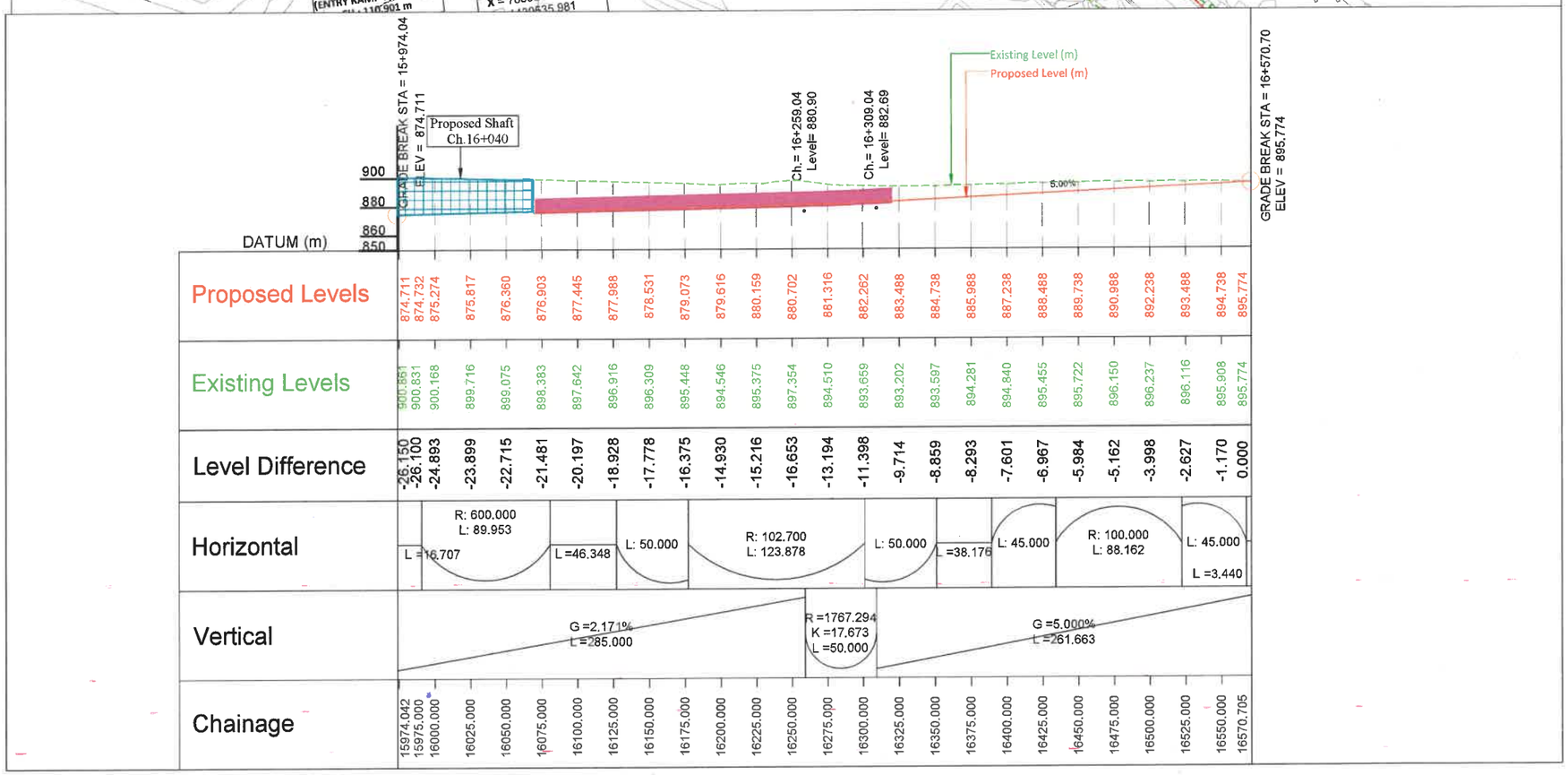
PLAN & PROFILE

(TUBE - II)

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
94B106 WeWork, Platina Tower M.G. Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=:-1:2500 V=:-1:2500
Drawn:	SS	
Checked:	AT	
Approved:	HRY	Sheet size: A2

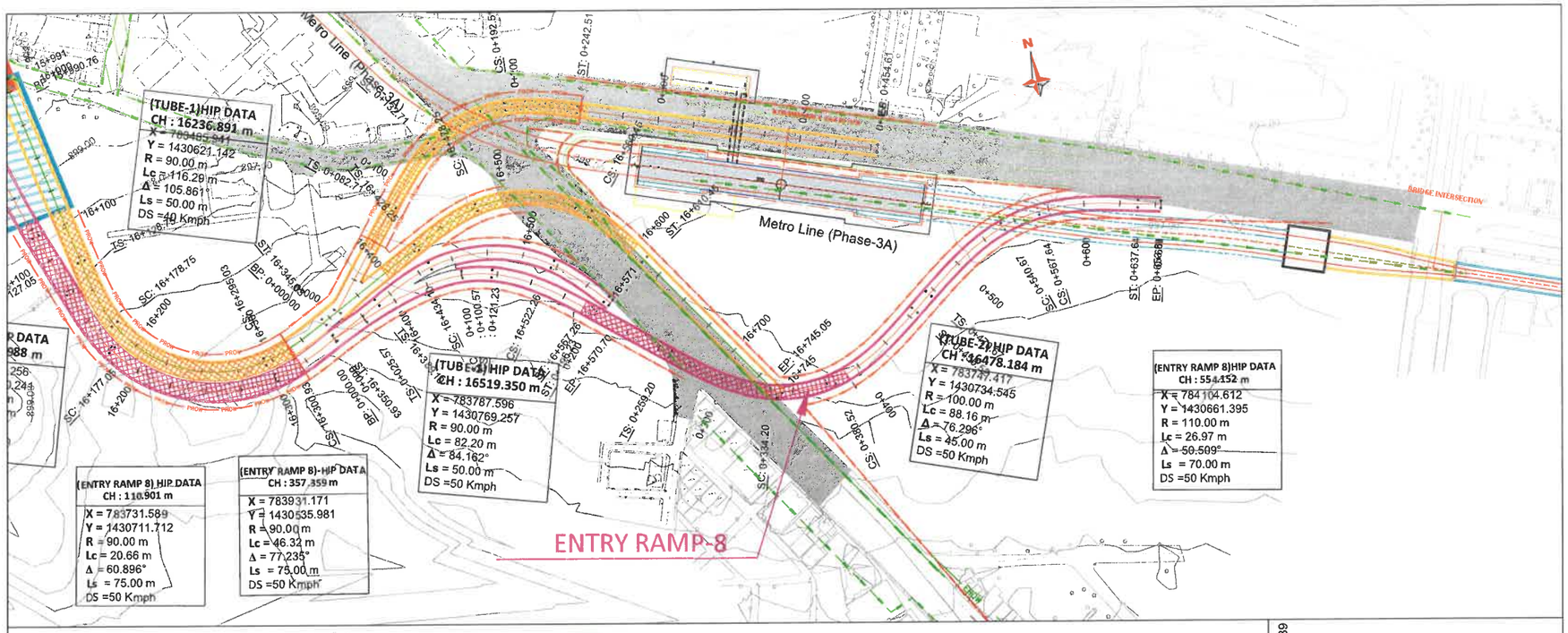
Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	PLAN & PROFILE (TUBE-2) (Km.15+970 to Km.16+745)
Drawing No.	AC/1940/HO/HBT/TU/DWG/P&P/01/R0

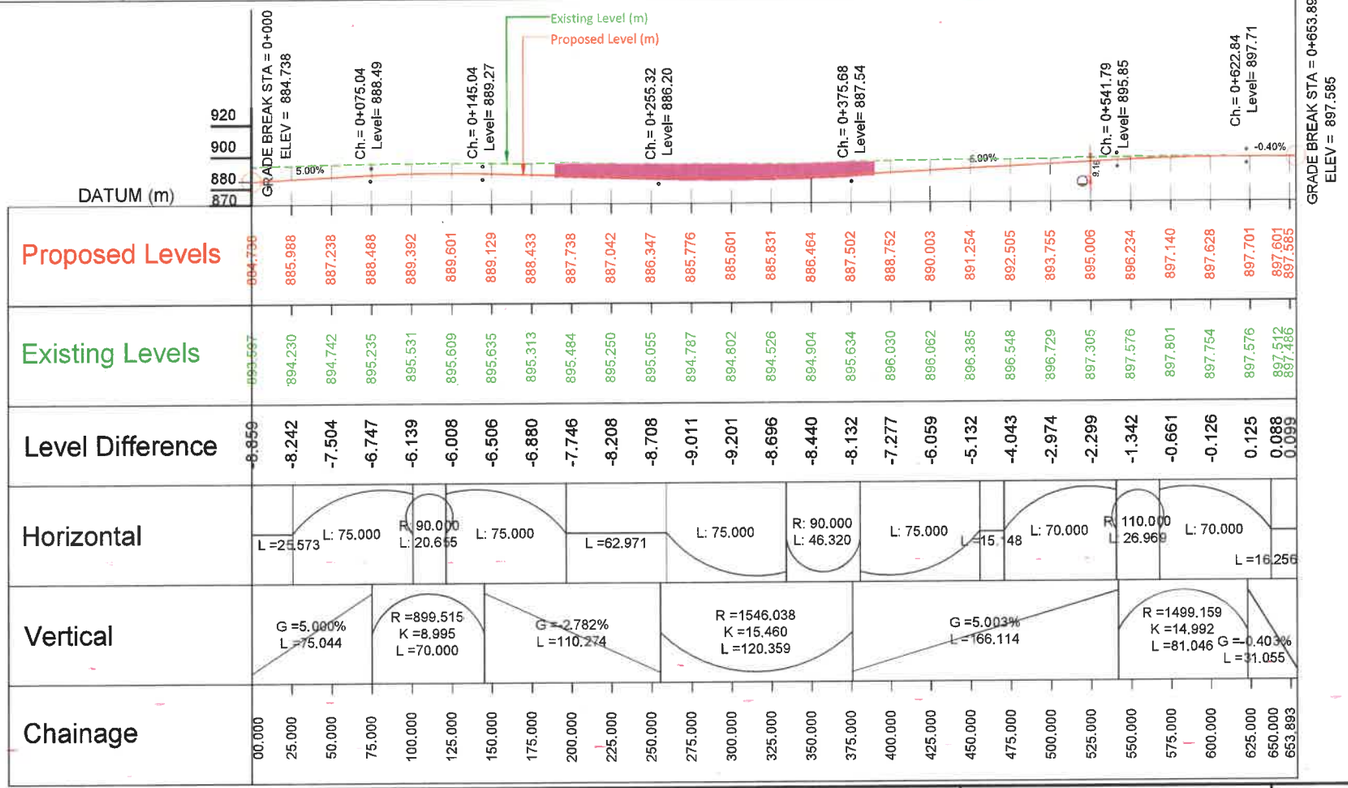
PLAN & PROFILE

(ENTRY RAMP-8)

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Pixina Tower MG Road Near Sikandapur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR
Drawn:	SS
Checked:	AT
Approved:	HRY

Scale :- H=:-1:2500
V=-1:2500
Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

Drawing Title: PLAN & PROFILE (ENTRY RAMP-8) (Km.0+000 to Km.0+654)

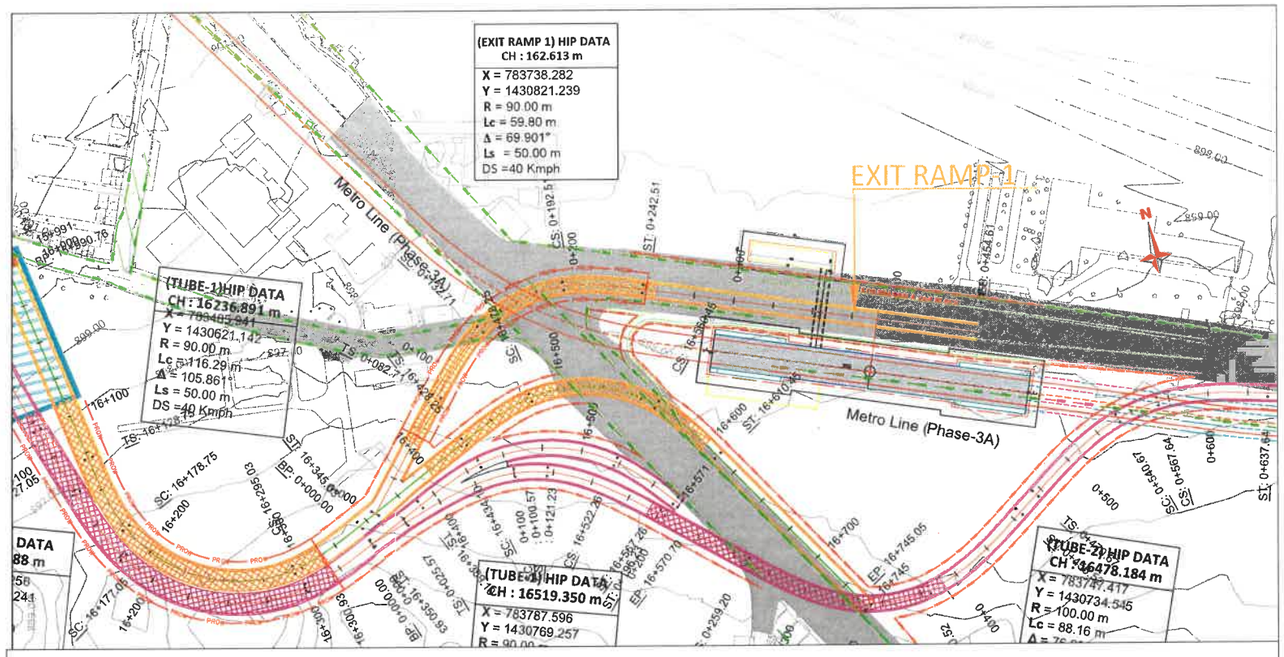
Drawing No.: BC/1640/HO/HBT/TU/DWG/P&P/ 01/R0

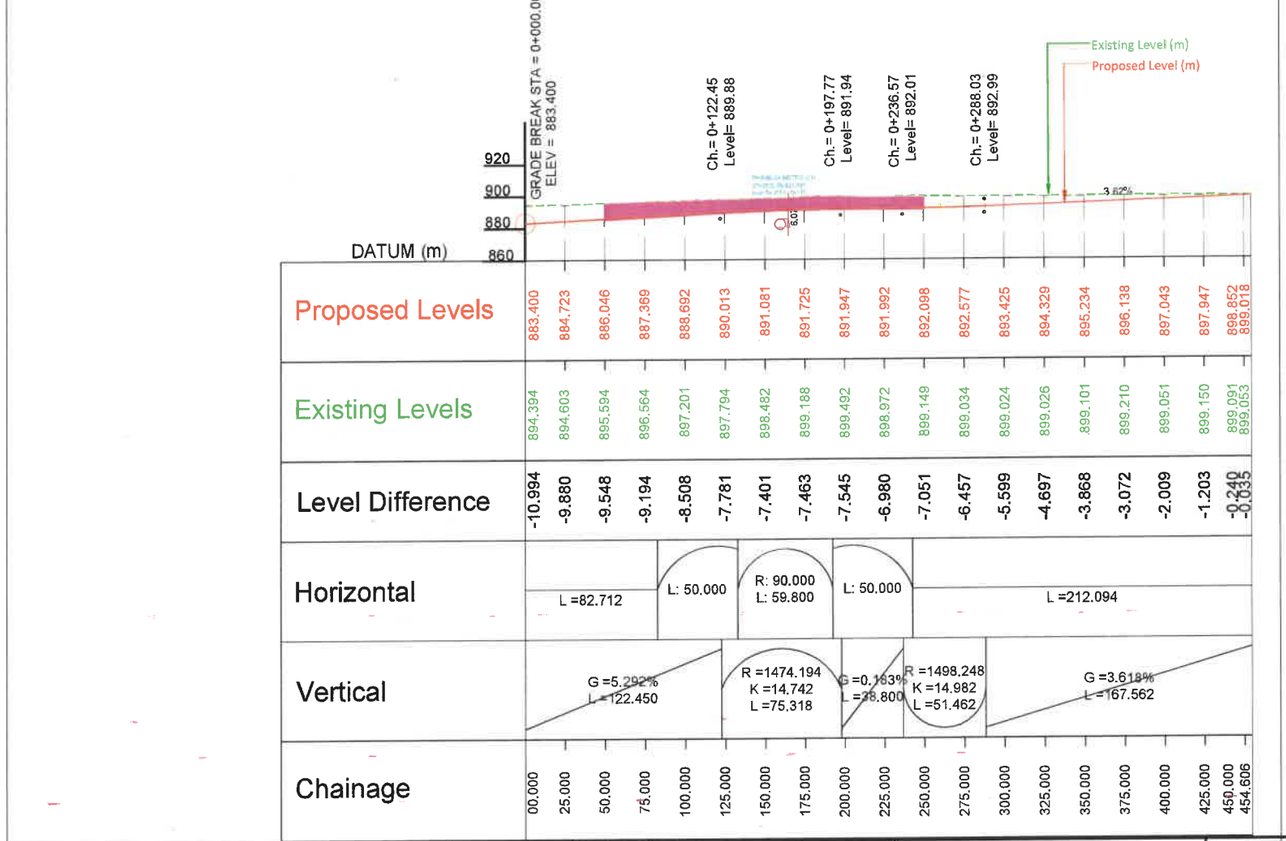
PLAN & PROFILE

(EXIT RAMP-1)

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Pinkna Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn	SS	
Checked:	AT	
Approved:	HRY	

Scale :- H=:-1:2500
V=:-1:2500
Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

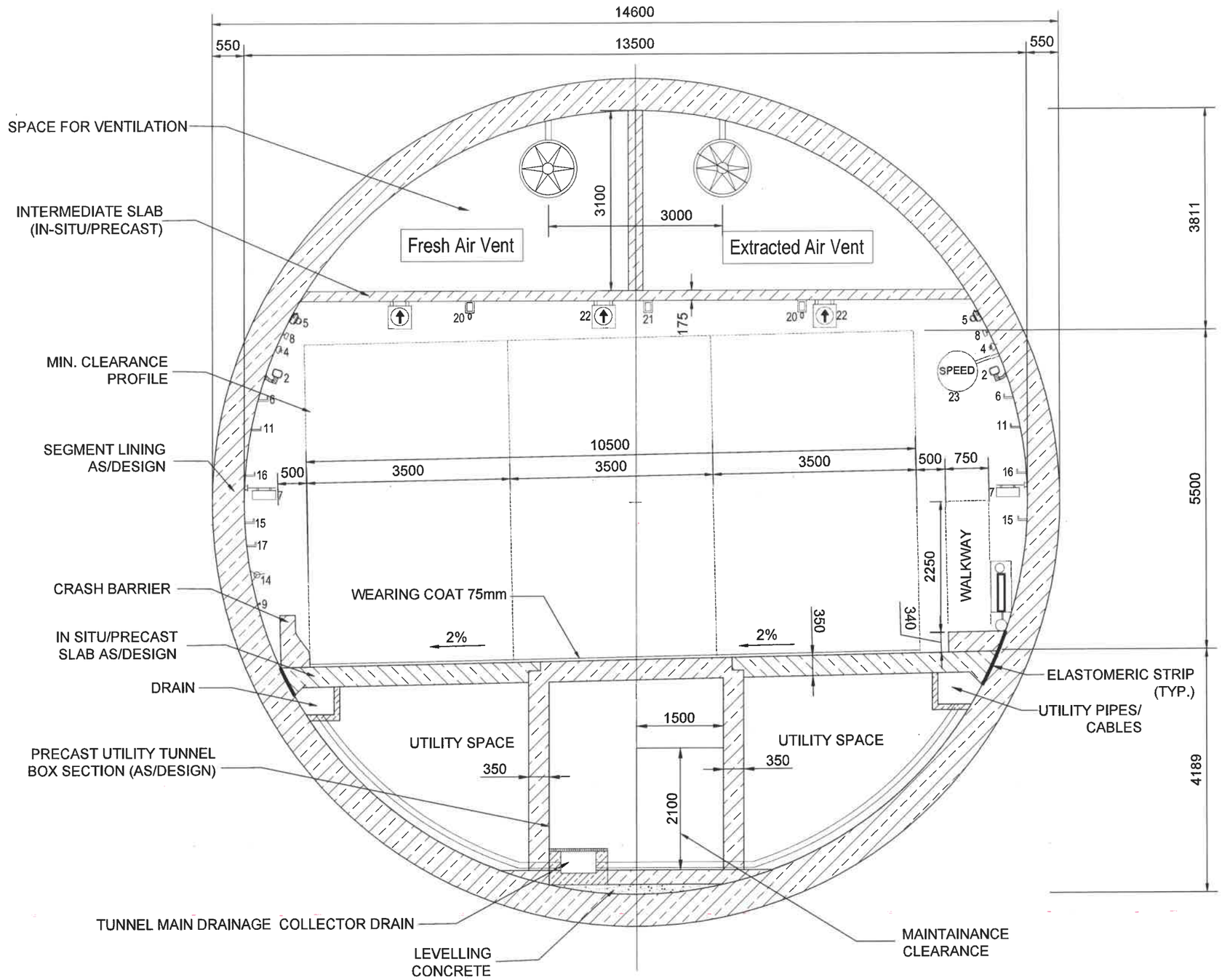
Drawing Title: PLAN & PROFILE (EXIT RAMP-1) (Km.0+000 to Km.0+454)

Drawing No. RCA/540/HO/HBT/TU/DWG/P&P/01/R0

Appendix-B-I

TYPICAL CROSS SECTION

PACKAGE -2



TYPICAL CROSS SECTION-01
MAIN TBM TUNNEL (3 LANES)
SCALE 1:50

LIST OF EQUIPMENT:	
L.No.	Description
1.	LINEAR HEAT DETECTION CABLE
2.	CCTV CAMERA
3.	JET FAN
4.	LIGHT
5.	VENTILATION SENSORS
6.	150MM.CABLE TRAY (LIGHTING,CCTV,SPEAKER & SENSORS)
7.	ILLUMINATED/NON ILLUMINATED EMERGENCY SIGN
8.	SPEAKER (PA)
9.	HANDRAIL
10.	RADIO (LEAKY FEEDER)
11.	150MM. CABLE TRAY (OFC)
12.	FIRE FIGHTING PIPE (150/125 NB)
14	MAINTENANCE POWER SOCKET (THREE PHASE & SINGLE PHASE)
15.	150MM. CABLE TRAY (UPS CABLES)
16.	150MM. CABLE TRAY (JET FANS DB TO JET FANS CABLES)
17.	150MM. CABLE TRAY (MAINTENANCE POWER SOCKET CABLES)
18.	250MM. CABLE TRAY (33KV.CABLES)
19.	250MM. CABLE TRAY (11KV.CABLES)
20.	SPRINKLER
21.	FIRE ALARM
22.	TRAFFIC LIGHT
22.	TRAFFIC SIGN BOARD

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF SEGMENTAL LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. ELASTOMERIC STRIPS TO BE INSTALLED AT THE JOINT OF PAVEMENT SLAB WITH TUNNELING SEGMENTAL LINING.

MATERIALS:-
GRADE OF CONCRETE - M60

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

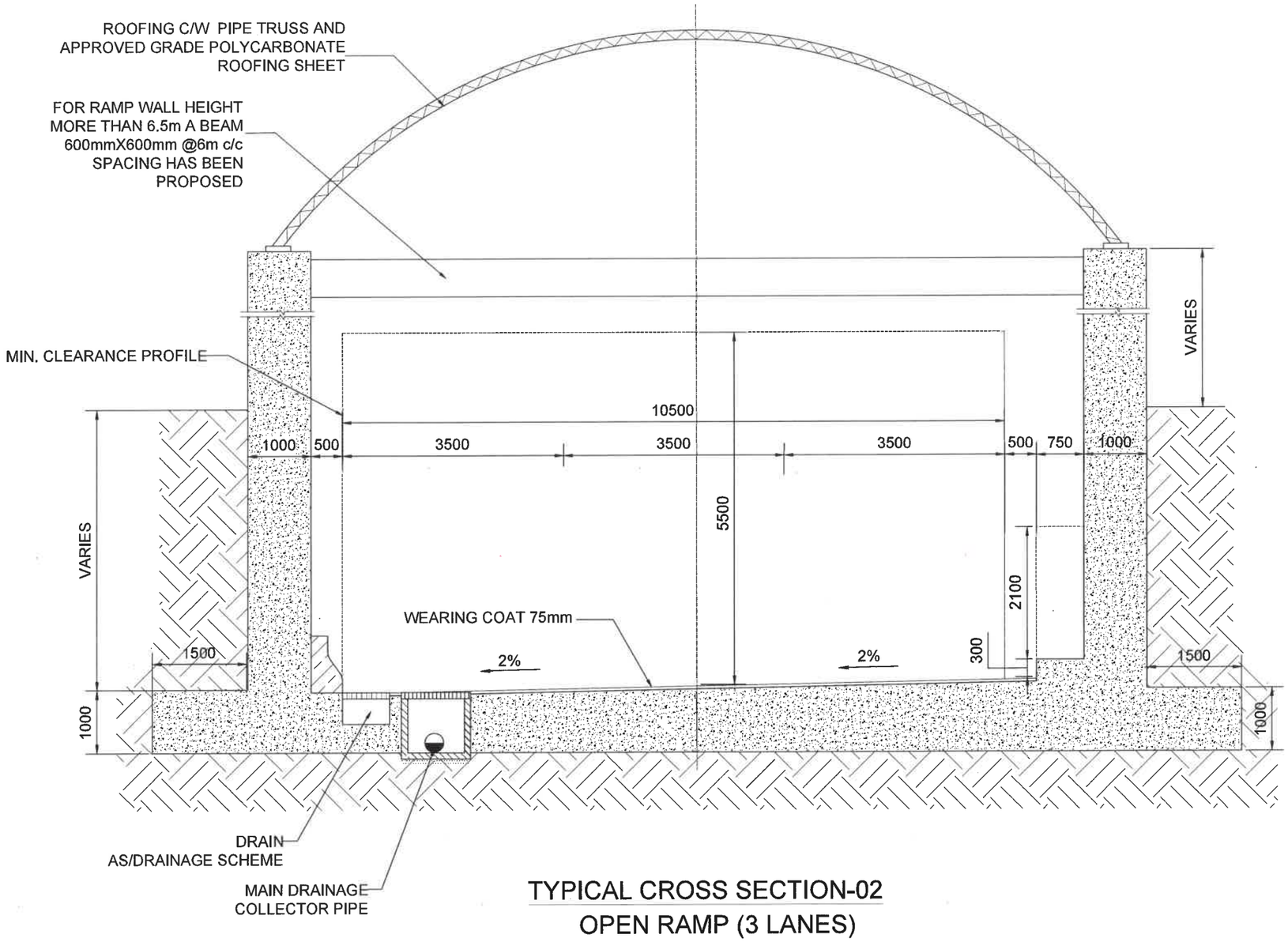
CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Pistina Tower MG Road Near Sikandepur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- AS SHOWN
Sheet size: A2

Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	TYPICAL CROSS SECTION-1 (TBM TUNNEL)
Drawing No.	RCL/640/HO/HBT/TU/DWG/TCS/ 01/R0



TYPICAL CROSS SECTION-02
OPEN RAMP (3 LANES)
SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

MATERIALS:

GRADE OF CONCRETE - M35
GRADE OF STEEL Fe550D

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

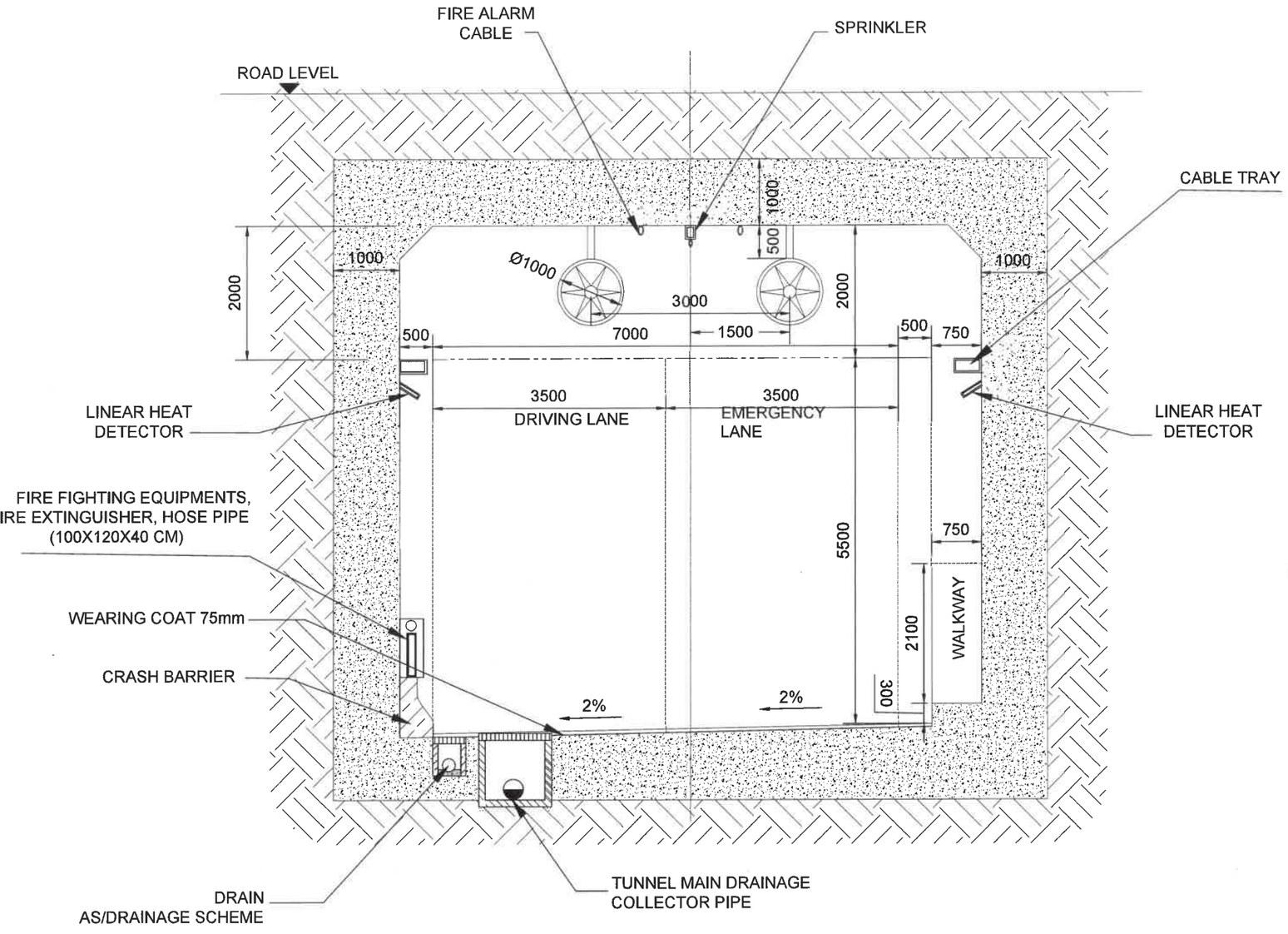
AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :-	AS SHOWN
Drawn:	SS		
Checked:	AT		
Approved:	HRY	Sheet size: A2	

Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	TYPICAL CROSS SECTION-2
Drawing No.	RC/1640/HO/HBT/TU/DWG/TCS/02/R0



TYPICAL CROSS SECTION-03

CUT AND COVER SECTION FOR ENTRY/EXIT (2 LANE)

SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

MATERIALS:
GRADE OF CONCRETE -M35 ,
STEEL GRADE Fe550D

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT: GOVERNMENT OF KARNATAKA — Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Pistiss Tower M3 Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

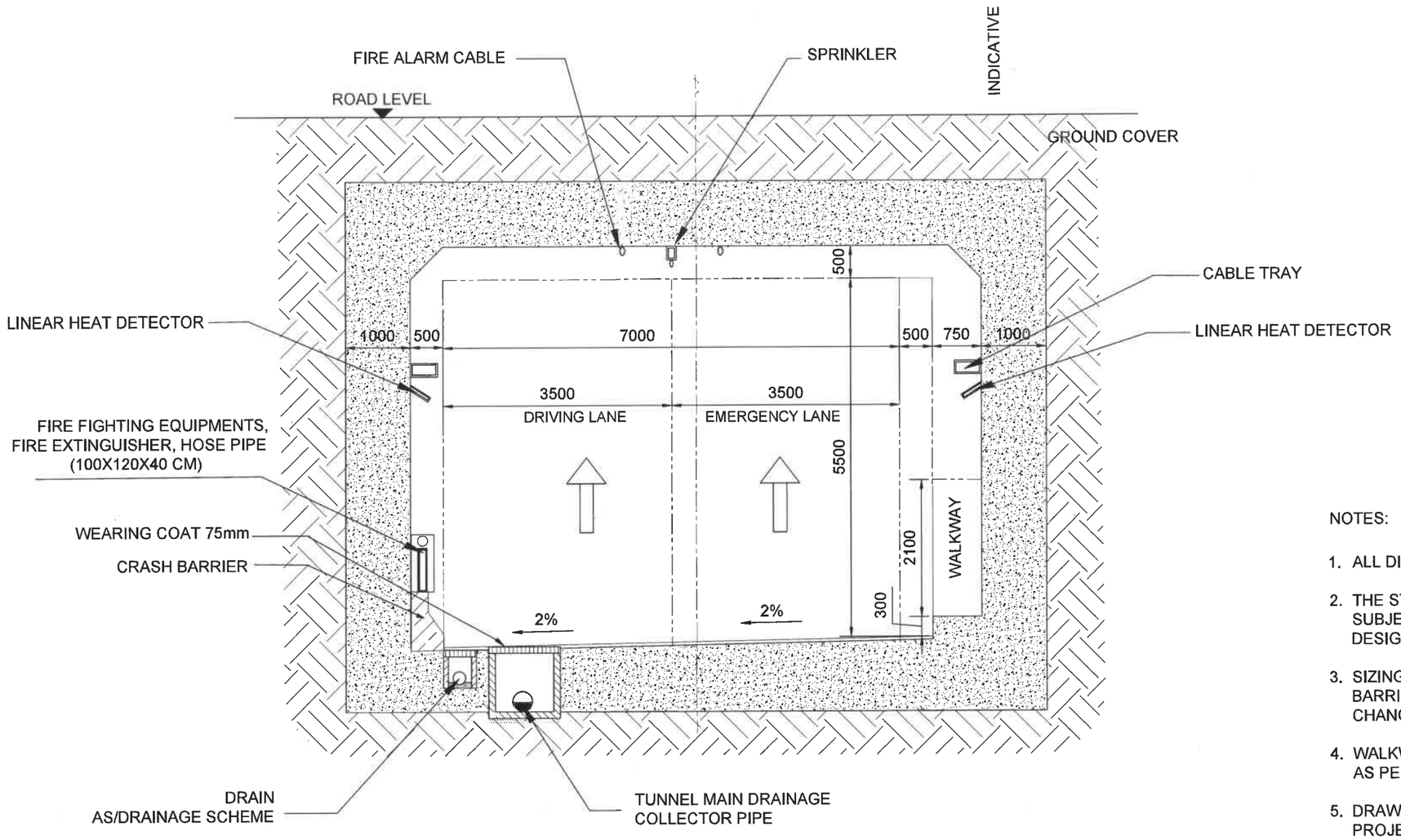
Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- AS SHOWN
Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

Drawing Title: TYPICAL CROSS SECTION-03

Drawing No: RC/1640/HQ/HBT/TU/DWG/TCS/ 03/R0



TYPICAL CROSS SECTION-03A
CUT AND COVER TYPICAL SECTION - 2 LANE

REGULAR CROSS SECTION
SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
3. SIZING AND DETAILS OF TYPICAL DETAILS OF CRASH BARRIER , UTILITY PIPE TRENCH , MAIN DRAINAGE ETC. MAY CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN .
5. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTION TO BE READ IN CONJUNCTION WITH TCS-3A.

MATERIALS:
GRADE OF CONCRETE -M35 ,
STEEL GRADE Fe550D

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

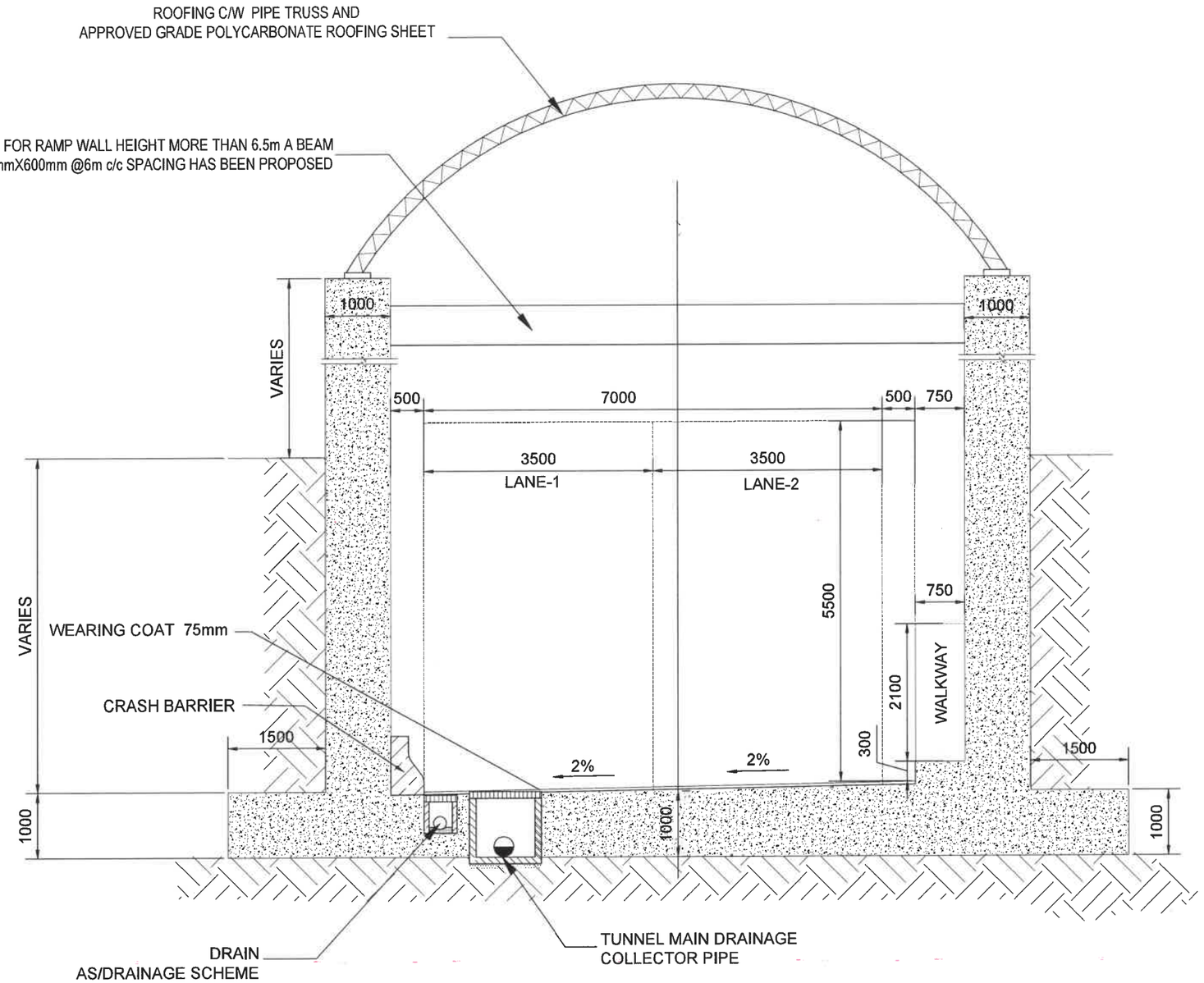
Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- AS SHOWN
Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

Drawing Title: TYPICAL CROSS SECTION-3A

Drawing No.: RC/1640/HO/HBT/TU/DWG/TCS/ 03A/R0



TYPICAL CROSS SECTION-04
OPEN RAMP SECTION FOR ENTRY/EXIT (2 LANE)

SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

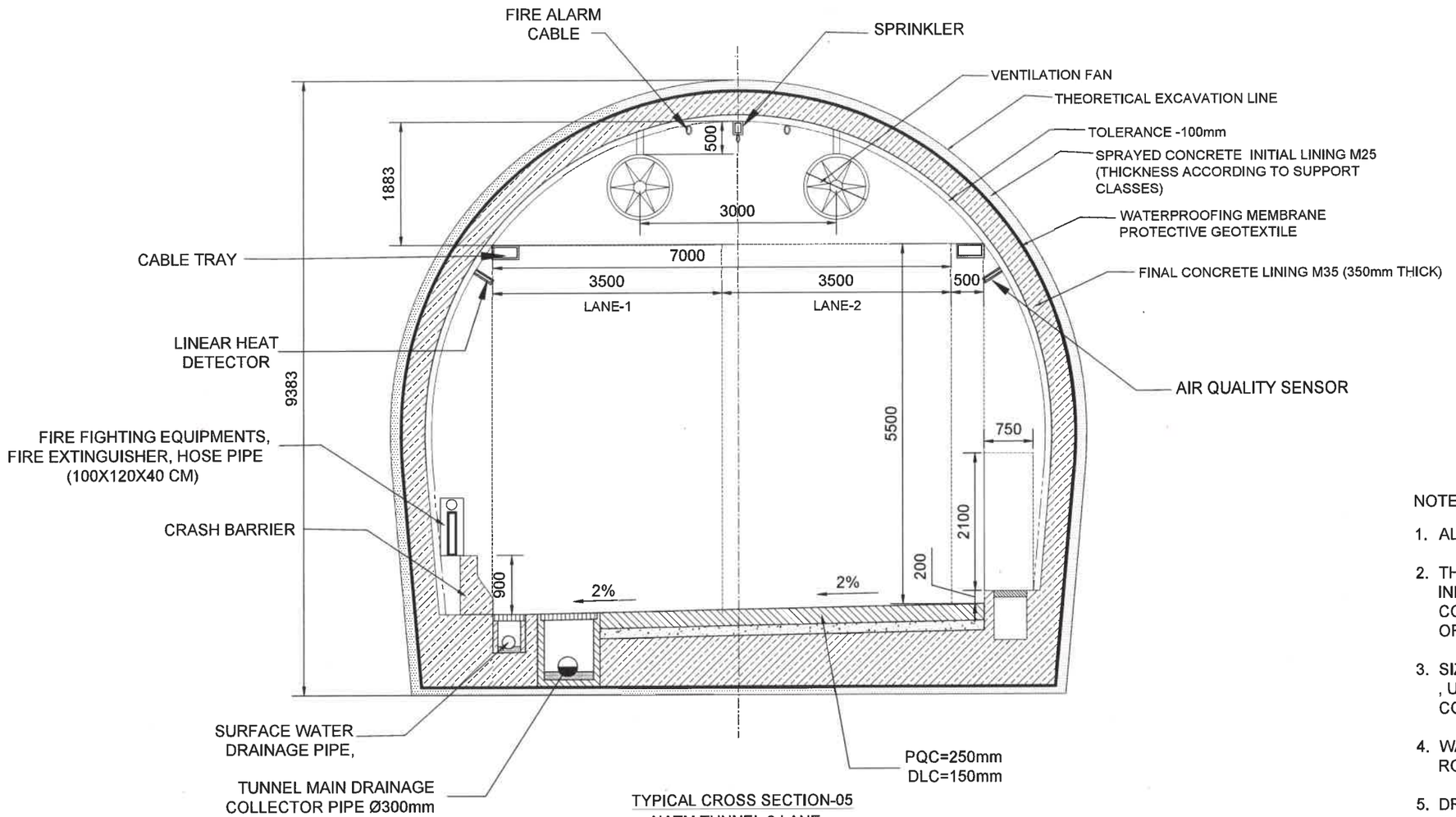
AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR		Scale :- AS SHOWN
Drawn:	SS		
Checked:	AT		
Approved:	HRY		Sheet size: A2

Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	TYPICAL CROSS SECTION-04
Drawing No.	RC/1640/HO/HBT/TU/DWG/TCS/ 04/R0



TYPICAL CROSS SECTION-05
NATM TUNNEL 2 LANE
REGULAR CROSS SECTION
SCALE 1:25

THEORETICAL EXCAVATION = 86.42 SQ. M

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

MATERIALS:

GRADE OF CONCRETE - M35

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

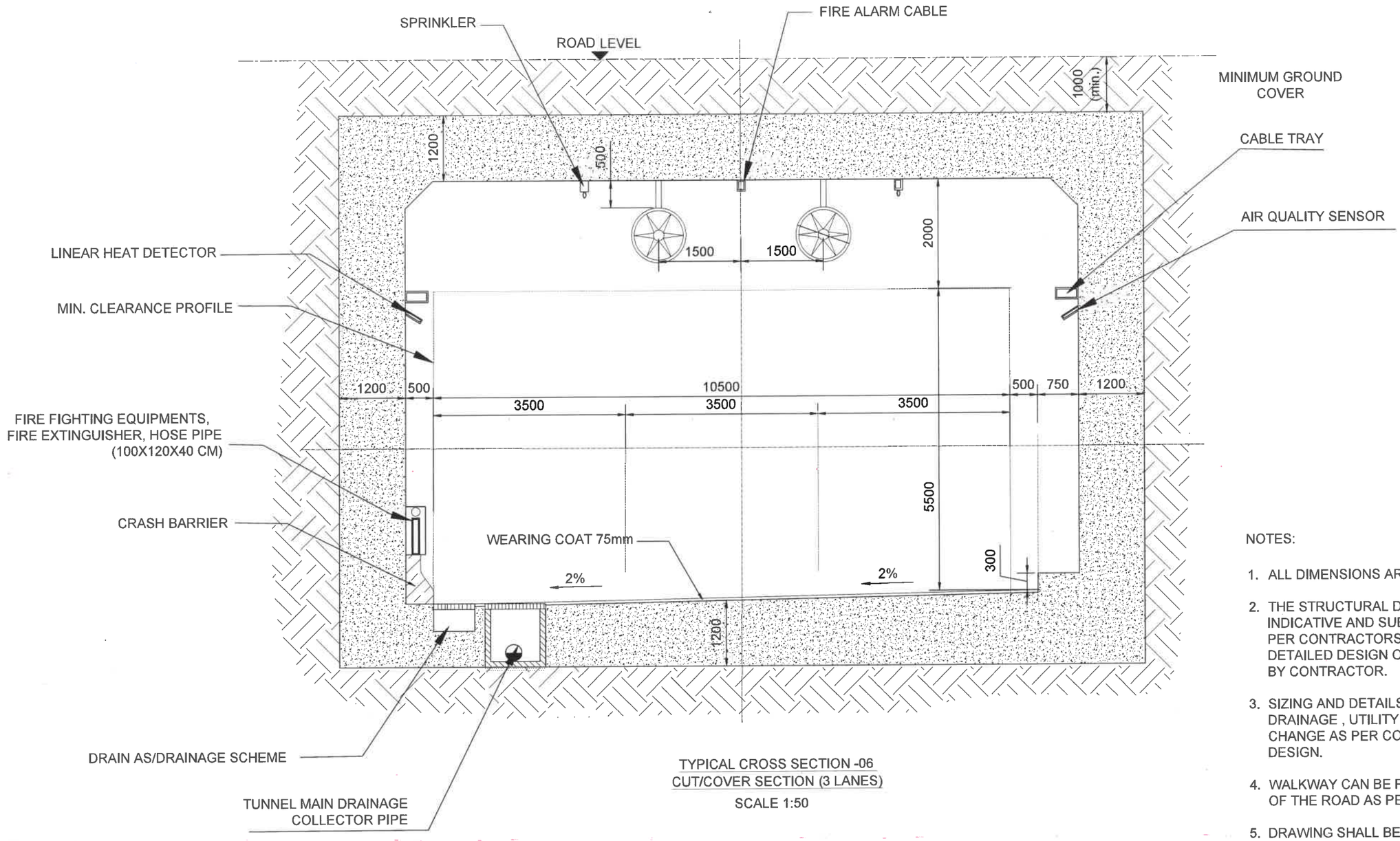
CONSULTANT
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower M3 Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- AS SHOWN
Sheet size: A2

Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launchIng and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	TYPICAL CROSS SECTION-05
Drawing No.	NC/1640/HO/HBT/TU/DWG/TCS/ 05/R0



TYPICAL CROSS SECTION -06
CUT/COVER SECTION (3 LANES)
SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

MATERIALS:
GRADE OF CONCRETE - M35
GRADE OF STEEL Fe550D

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

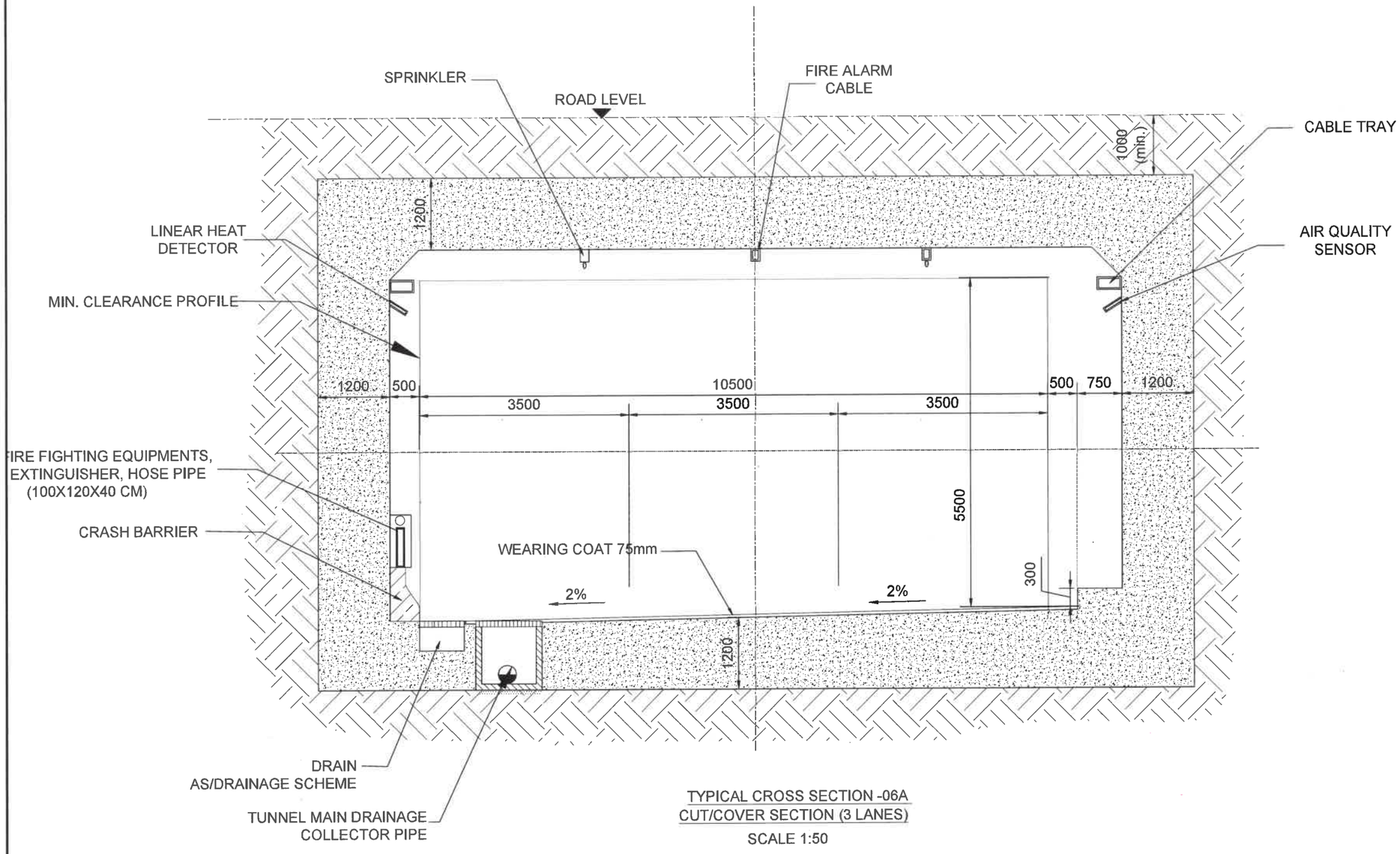
CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- AS SHOWN
Sheet size: A2

Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	TYPICAL CROSS SECTION-06
Drawing No.	ARCH/640/HO/HBT/TU/DWG/TCS/ 06/R0



TYPICAL CROSS SECTION -06A
CUT/COVER SECTION (3 LANES)
SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

MATERIALS:
GRADE OF CONCRETE - M35
GRADE OF STEEL Fe550D

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

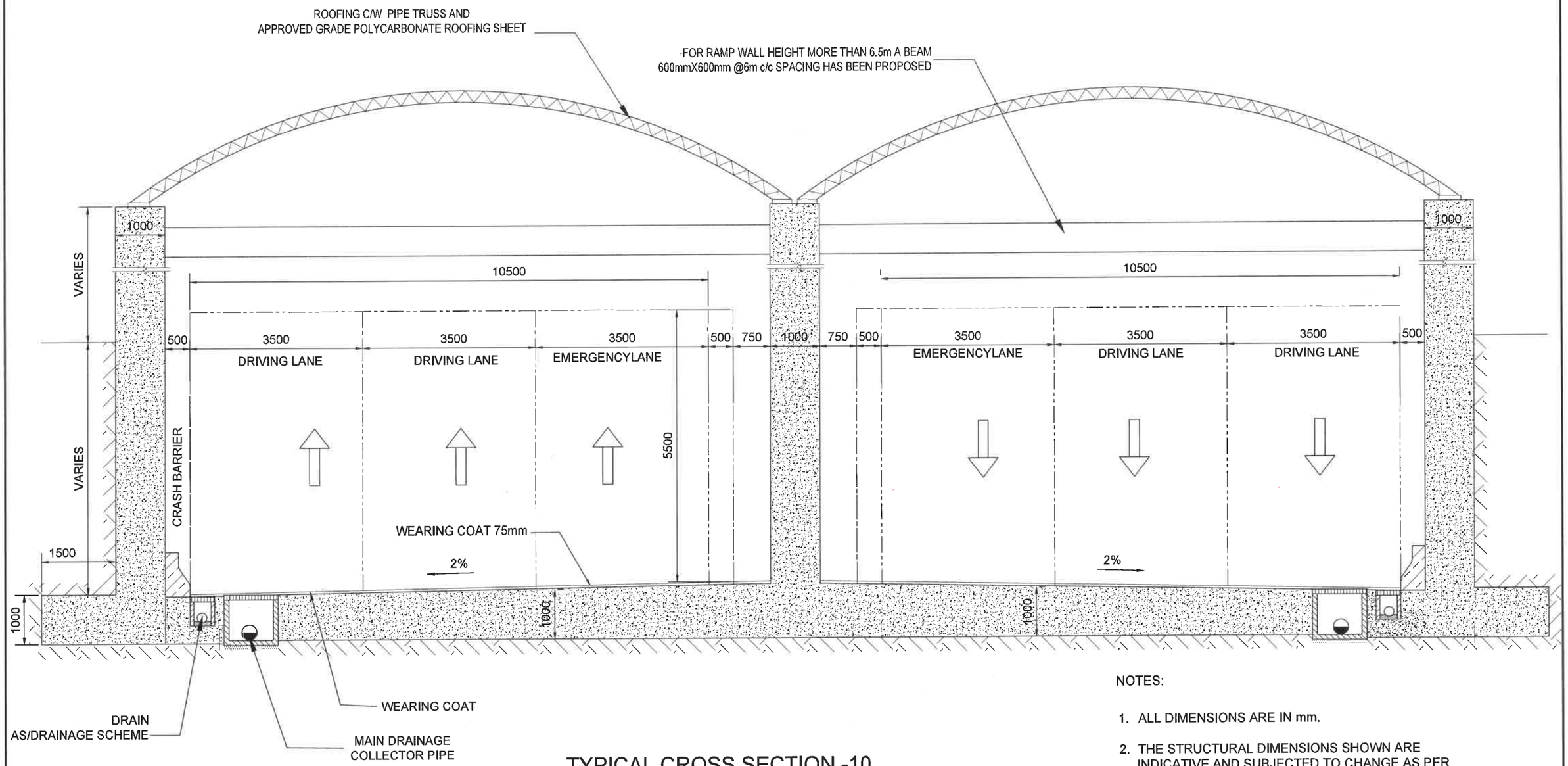
CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platius Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- AS SHOWN
Sheet size: A2

Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	TYPICAL CROSS SECTION-06A
Drawing No.	BCM1640/HO/HBT/TU/DWG/TCS/ 06A/R0



TYPICAL CROSS SECTION -10
OPEN RAMP SECTION
3LANE+MEDIAN WALL+3LANE
SCALE 1:50

MATERIALS: -
GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
3. SIZING AND DETAILS OF TYPICAL DETAILS OF CRASH BARRIER , UTILITY PIPE TRENCH , MAIN DRAINAGE ETC. MAY CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN .
5. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

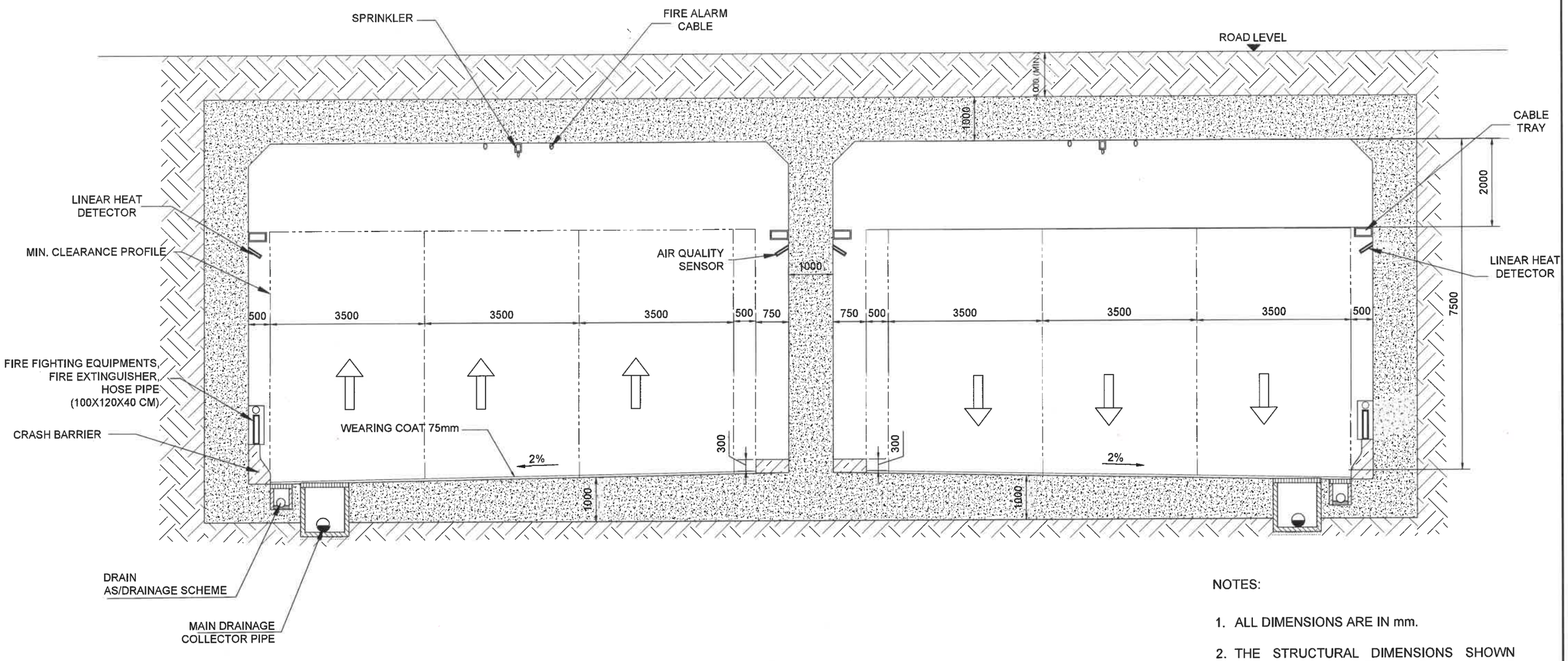
CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- AS SHOWN
Sheet size: A2

Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16,745) of North South Corridor including launching and retrieval sheft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	TYPICAL CROSS SECTION-10
Drawing No.	RC/1640/HO/HBT/TU/DWG/TCS/ 10/R0



TYPICAL CROSS SECTION-14
CUT AND COVER (3 LANE+MEDIAN WALL+ 3 LANE)
SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
3. SIZING AND DETAILS OF TYPICAL DETAILS OF CRASH BARRIER , UTILITY PIPE TRENCH , MAIN DRAINAGE ETC. MAY CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN .
5. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

MATERIALS: -

GRADE OF CONCRETE -M35 ,
STEEL GRADE Fe550D

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT
(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :-	AS SHOWN
Drawn:	SS		
Checked:	AT		
Approved:	HRY	Sheet size: A2	

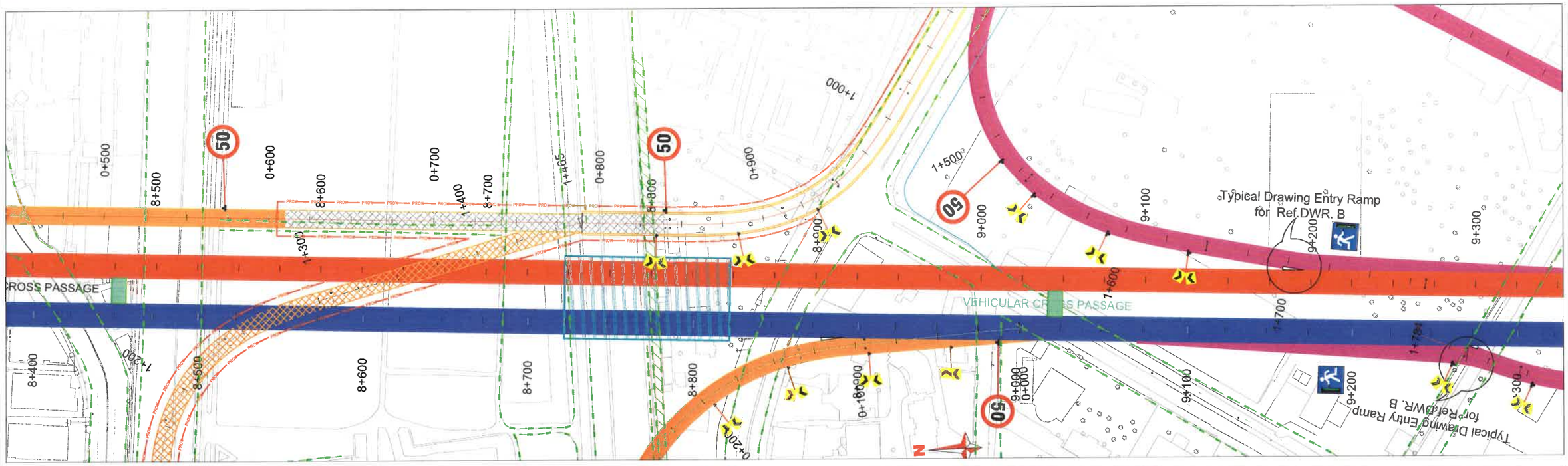
Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.
Drawing Title	TYPICAL CROSS SECTION-14
Drawing No.	BPC/A640/HO/HBT/TU/DWG/TCS/14/R0

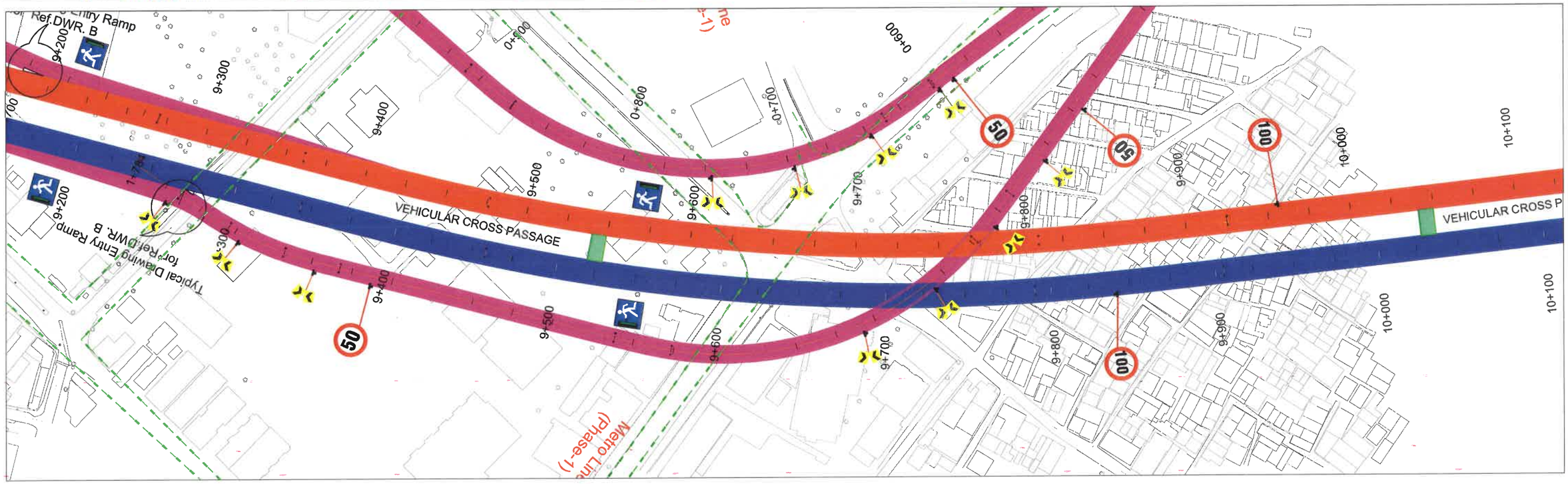
Appendix-B-V

TRAFFIC SIGNAGE PLAN

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=:-1:2500
Drawn:	NL	
Checked:	AT	
Approved:	HRY	Sheet size: A2

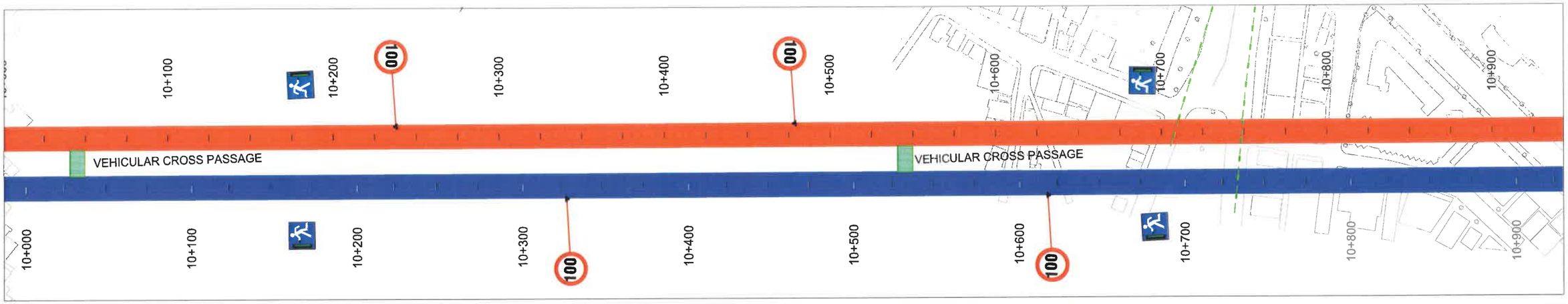
Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

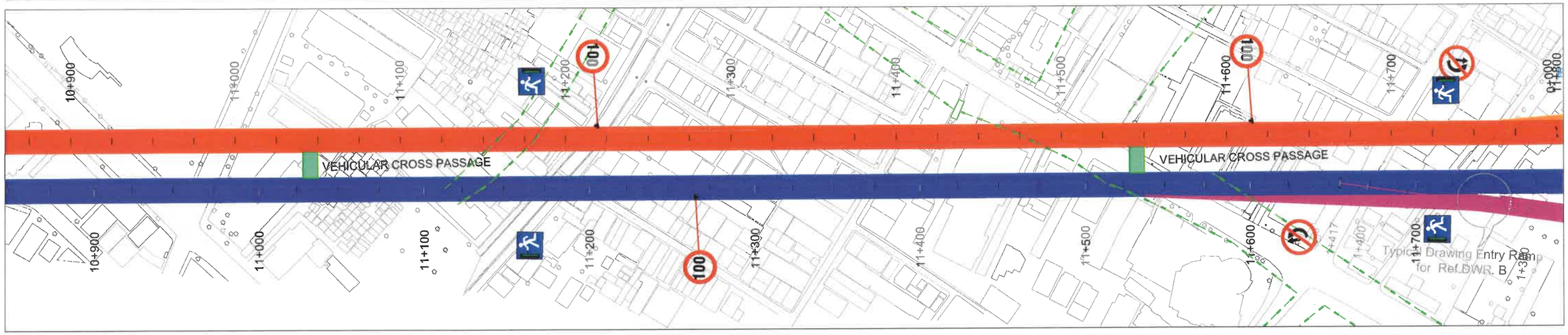
TRAFFIC PLAN

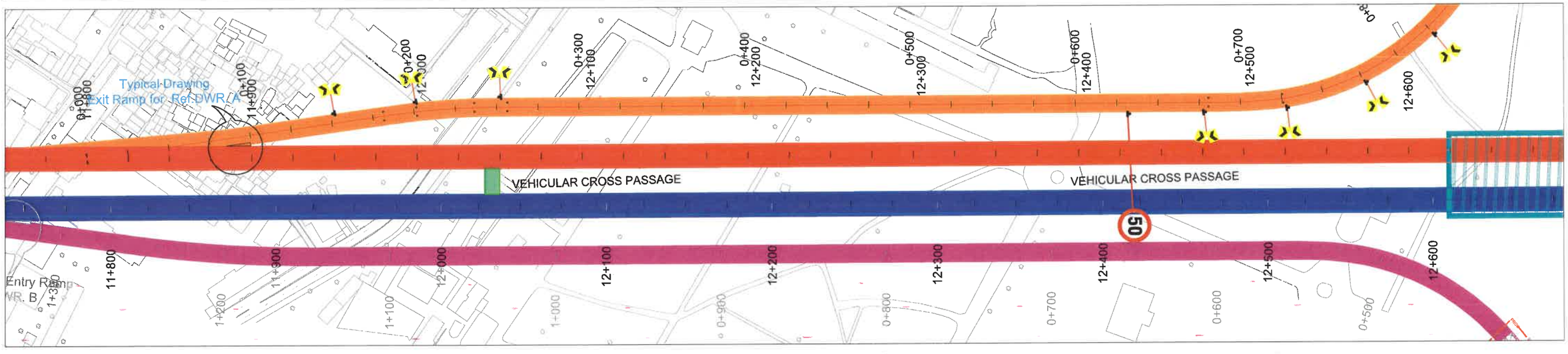
RC/1640/HO/HRT6U/DWG/TP01/R0

Hebbal Esteem mall junction

Silk Road







REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR
Drawn:	NL
Checked:	AT
Approved:	HRY

Scale :- H=:-1:2500

Sheet size: A2

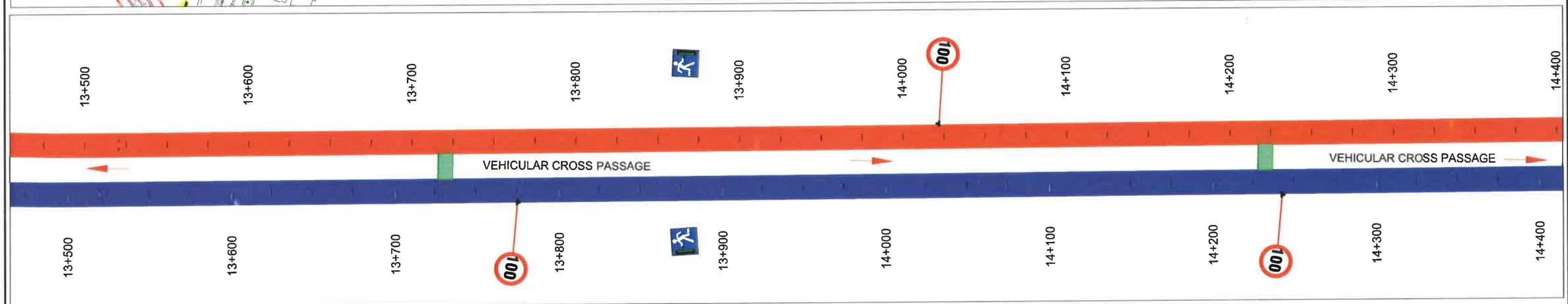
Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

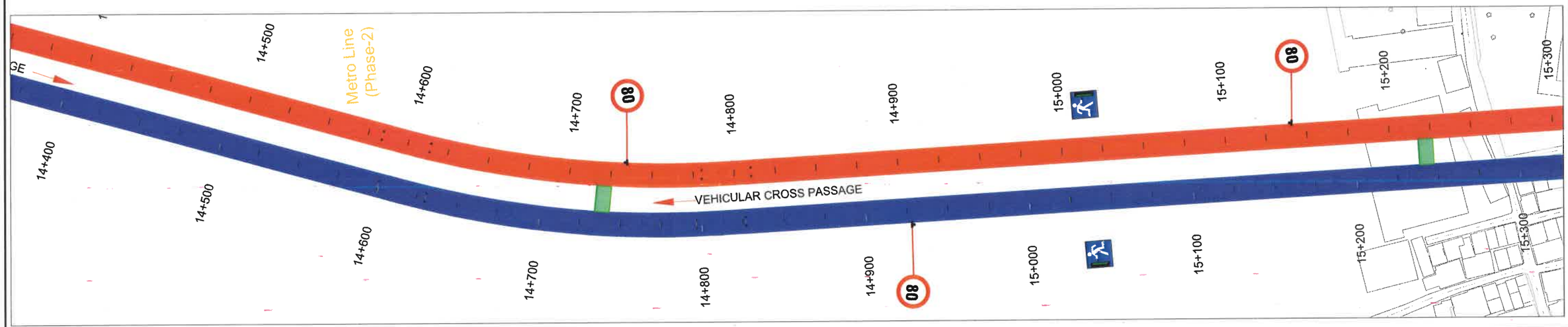
TRAFFIC PLAN

RC/1640/HC/HBT/U/DWG/TP01/R0

Hebbal Esteem mall junction

Silk Road





REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platinn Tower MG Road Near Sikandepur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=:-1:2500
Drawn:	NL	
Checked:	AT	
Approved:	HRY	Sheet size: A2

Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

TRAFFIC PLAN

RC/1640/HO/HBT/TU/DWG/TP01/R0

Hebbal Esteem mall junction

Silk Road

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Plaza Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=-1:2500
Drawn:	NL	
Checked:	AT	
Approved:	HRY	Sheet size: A2

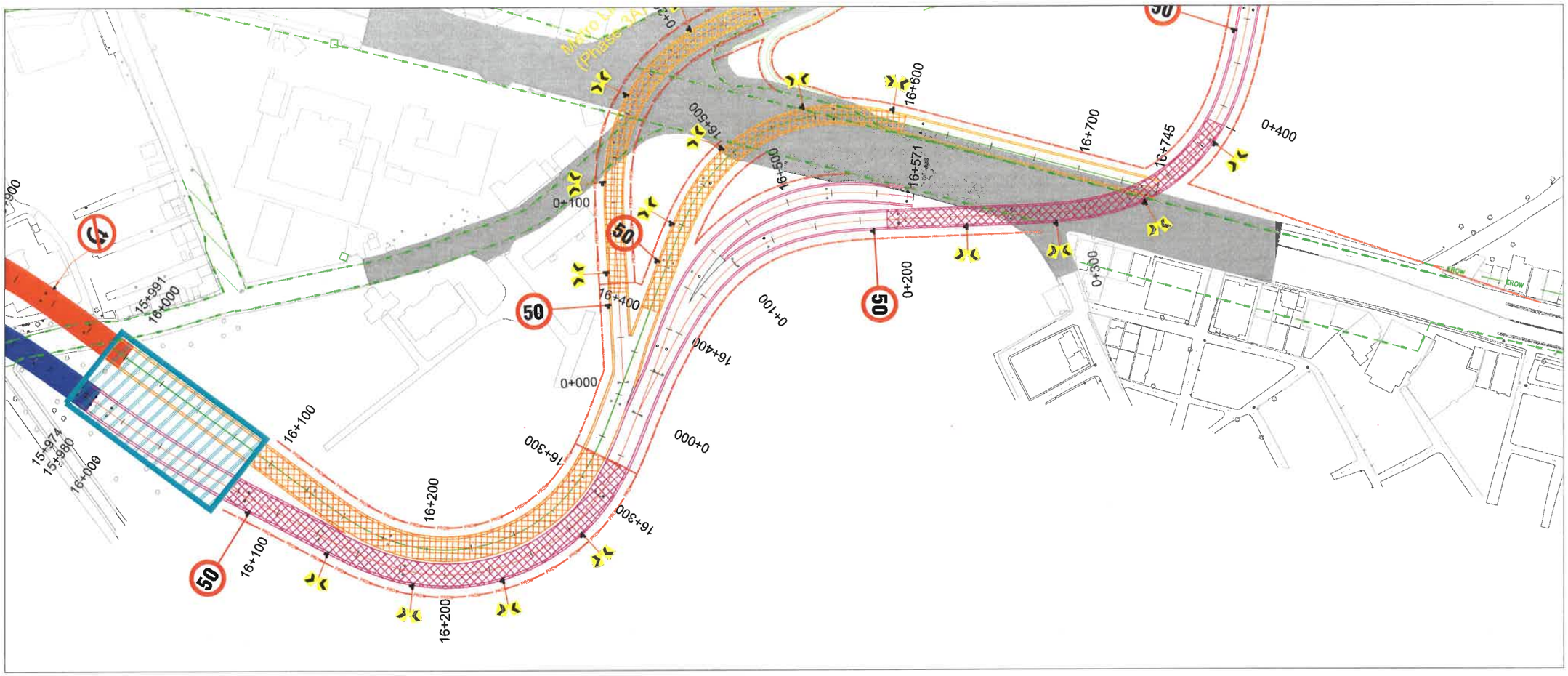
Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

TRAFFIC PLAN

RC/1640/HO/HBT/TU/DWG/TP01/R0

Hebbal Esteem mall junction

Silk Road



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
040106 WeWork, Pinnica Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=-1:2500
Drawn:	NL	
Checked:	AT	
Approved:	HRY	Sheet size: A2

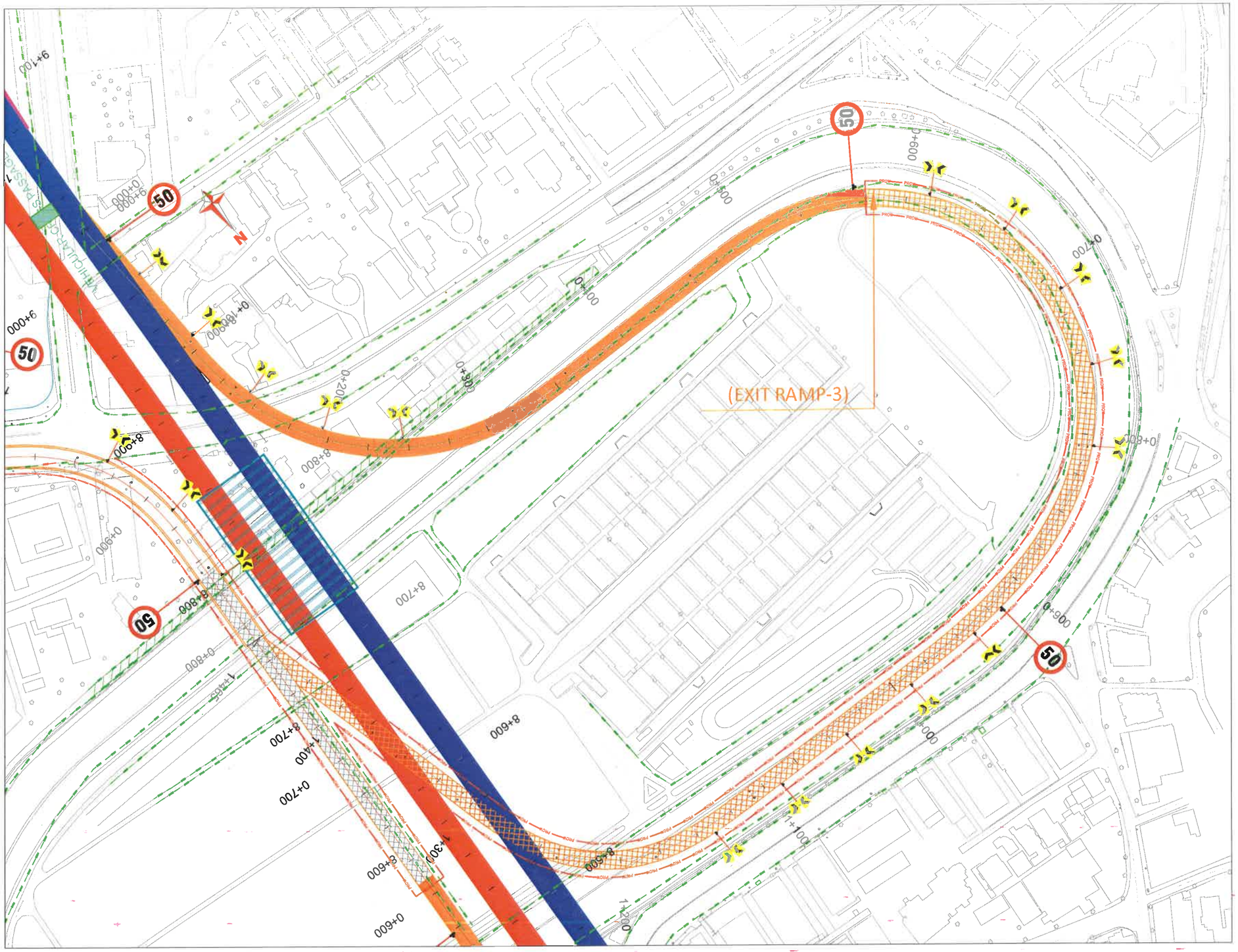
Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

TRAFFIC PLAN

RC/1640/HO/MBT/TU/DWG/TP01/R0

Hebbal Esteem mall junction

Silk Road



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Pinnina Tower,MG Road Near Sikanderpur Metro Station Sector 38, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR
Drawn:	NL
Checked:	AT
Approved:	HRY

Scale :- H=-1:2500

Sheet size: A2

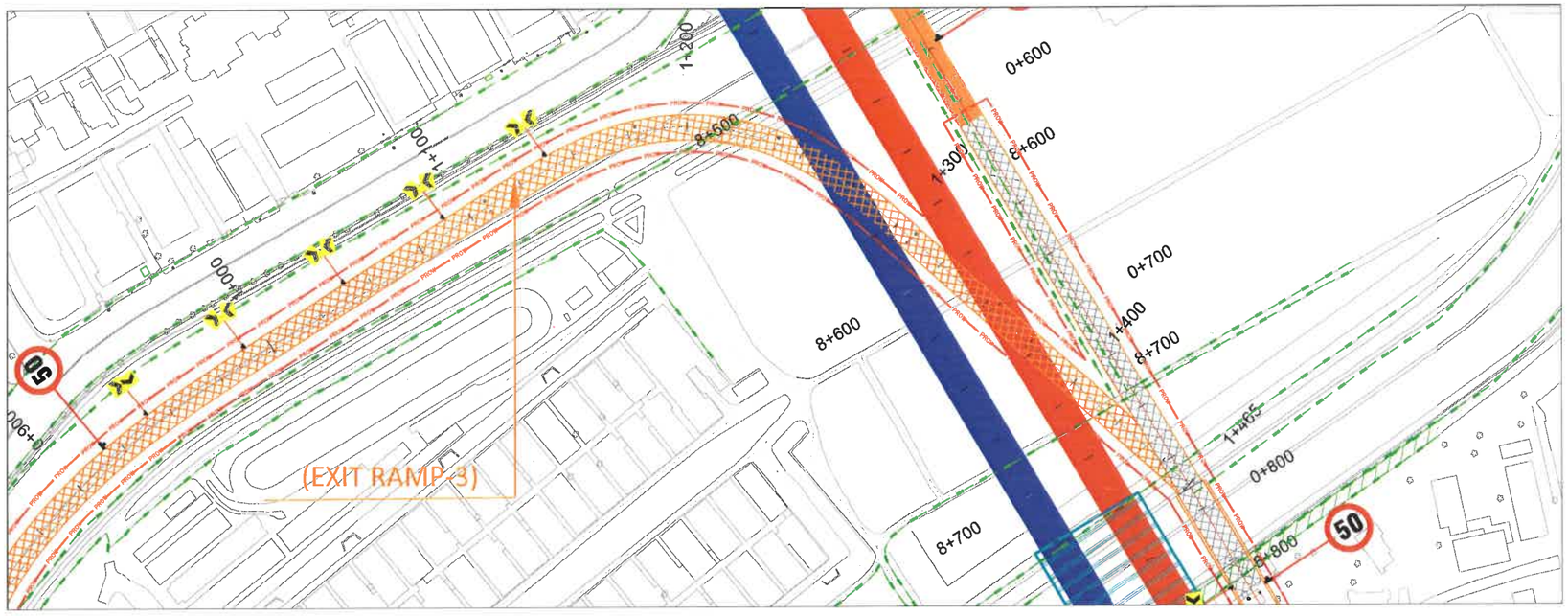
Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

TRAFFIC PLAN

RC/1640/HO/HBT/TI/DWG/TP01/R0

Hebbal Esteem mall junction

Silk Road



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA
CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B166 WeWork, Plaxina Tower MG Road Near
Sikanderpur Metro Station Sector 28, Gurugram
Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=:-1:2500
Drawn:	NL	
Checked:	AT	
Approved:	HRY	Sheet size: A2

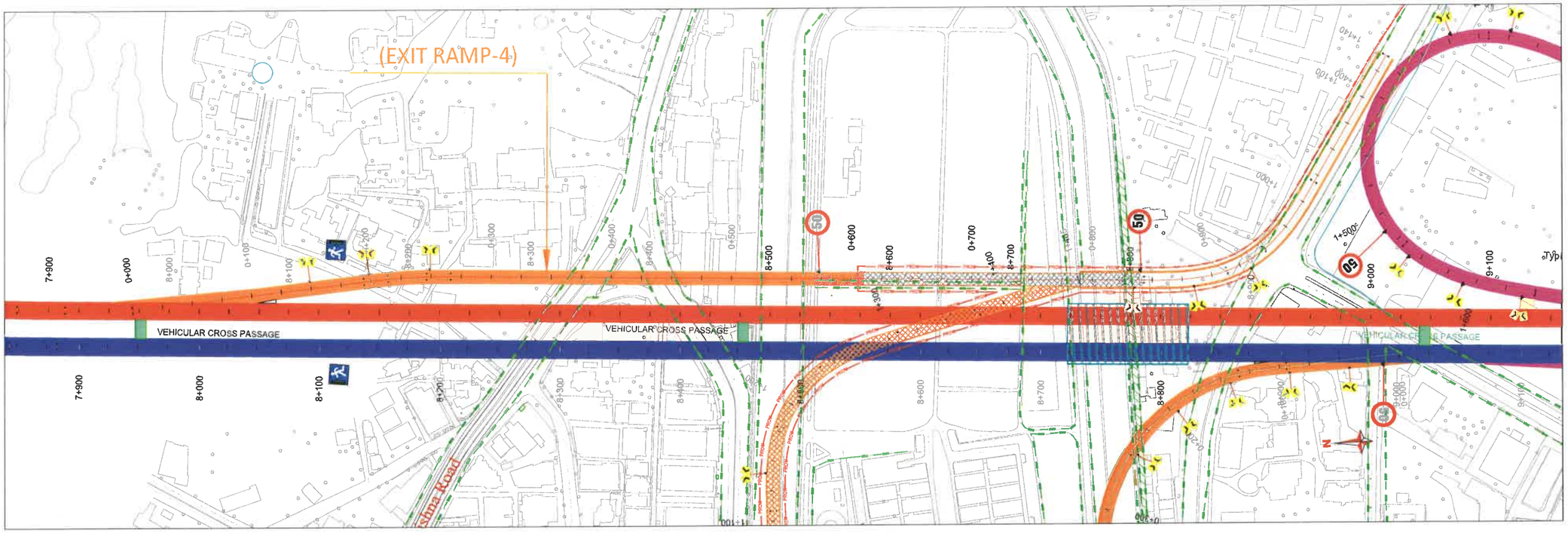
Construction of twin tube Underground Vehicular **Tunnel** (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

TRAFFIC PLAN

RC/1640/HO/HBT/TU/DWG/TP 01/R0

Hebbal Esteem mall junction

Silk Road



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=:-1:2500
Drawn:	NL	
Checked:	AT	
Approved:	HRY	Sheet size: A2

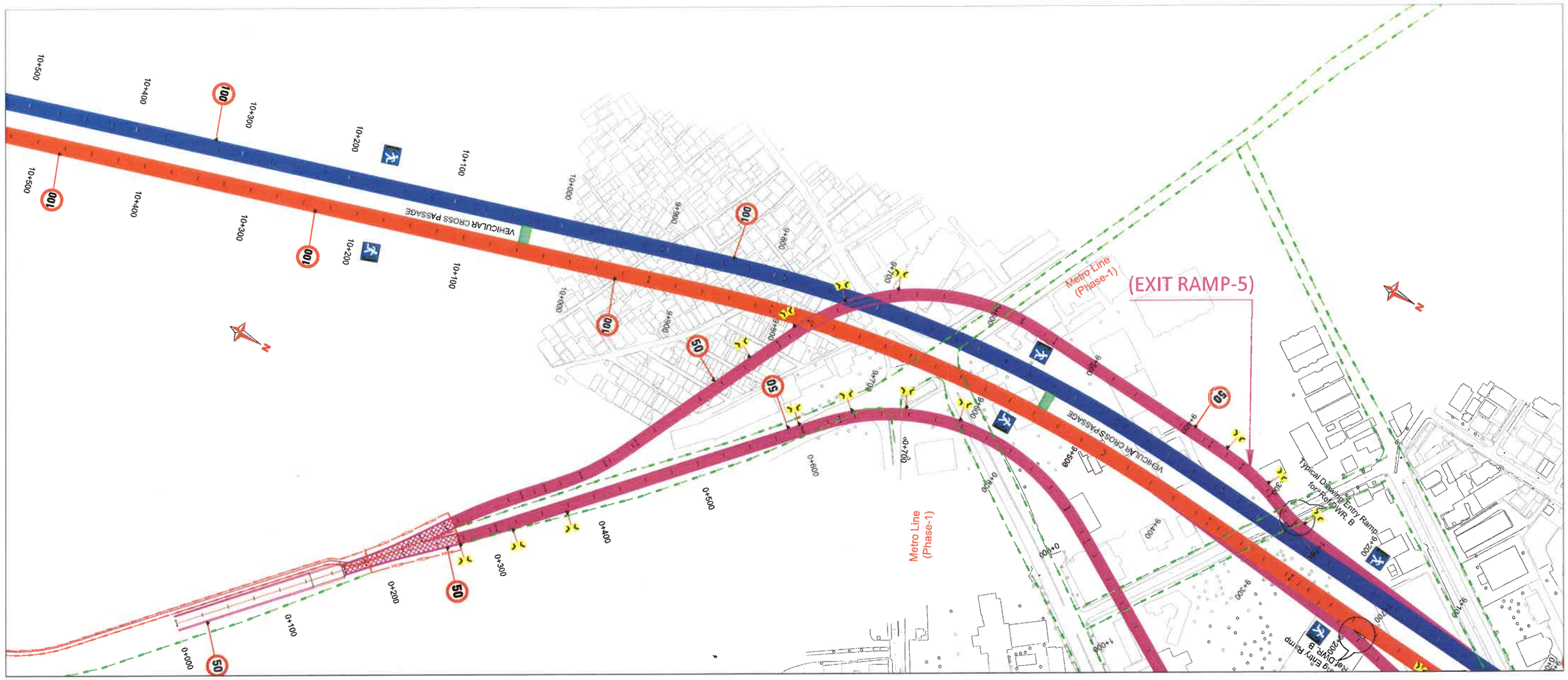
Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

TRAFFIC PLAN

RC/1640/HO/HBT/U/DWG/TP 01/R0

Hebbal Esteem mall junction

Silk Road



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WetWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR
Drawn:	NL
Checked:	AT
Approved:	HRY

Scale :- H=-1:2500

Sheet size: A2

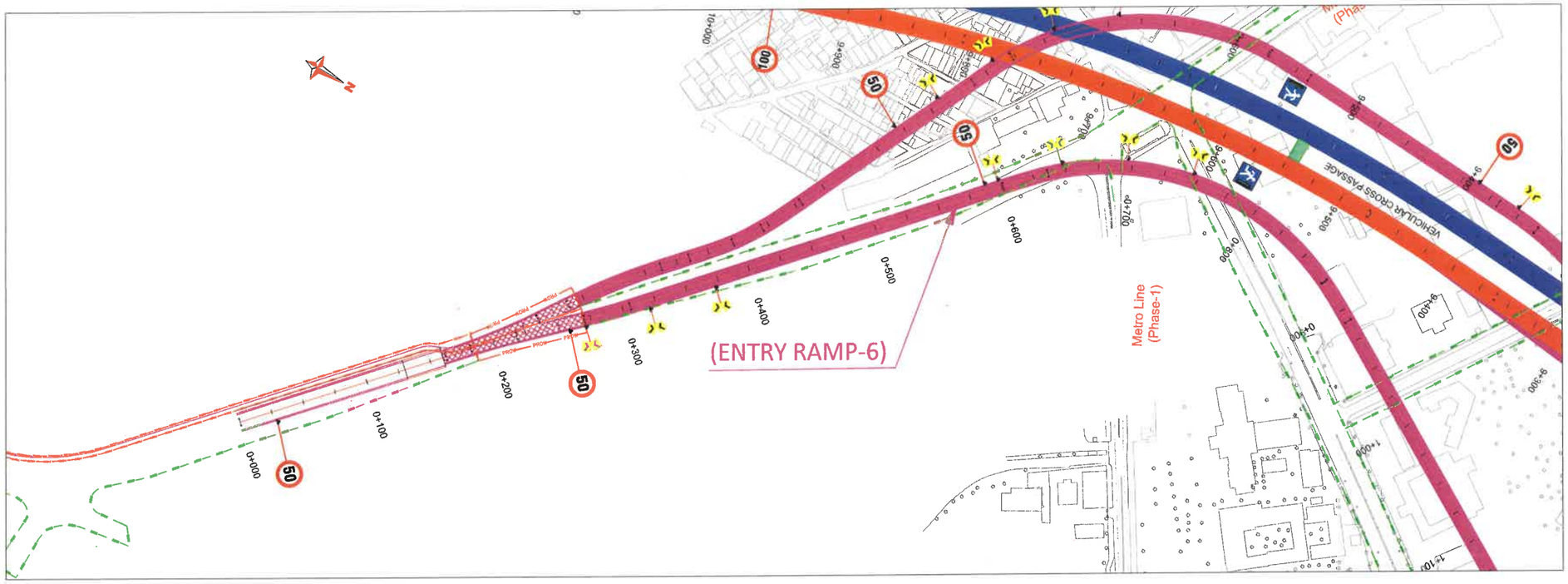
Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

TRAFFIC PLAN

RC/1640/HO/HBT/TU/DWG/TP 01/R0

Hebbal Esteem mall junction

Silk Road



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Plaxina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR	Scale :- H=:-1:2500
Drawn:	NL	
Checked:	AT	
Approved:	HRY	Sheet size: A2

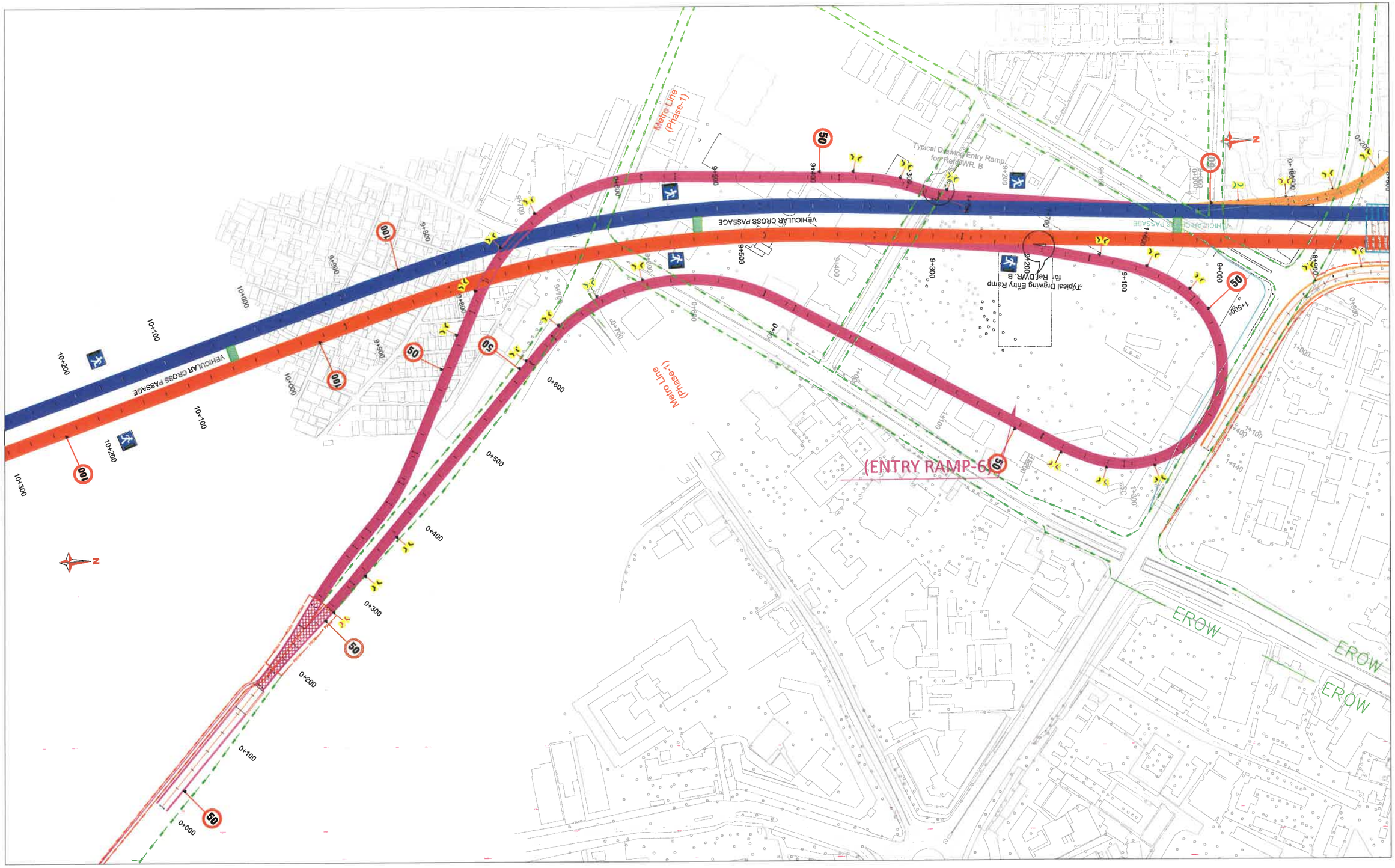
Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

TRAFFIC PLAN

RC/1640/HO/HBT/TU/DWG/TP01/R0

Hebbal Esteem mall junction

Silk Road



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B165 WeWork, Flotilla Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR
Drawn:	NL
Checked:	AT
Approved:	HRY

Scale :- H=:-1:2500

Sheet size: A2

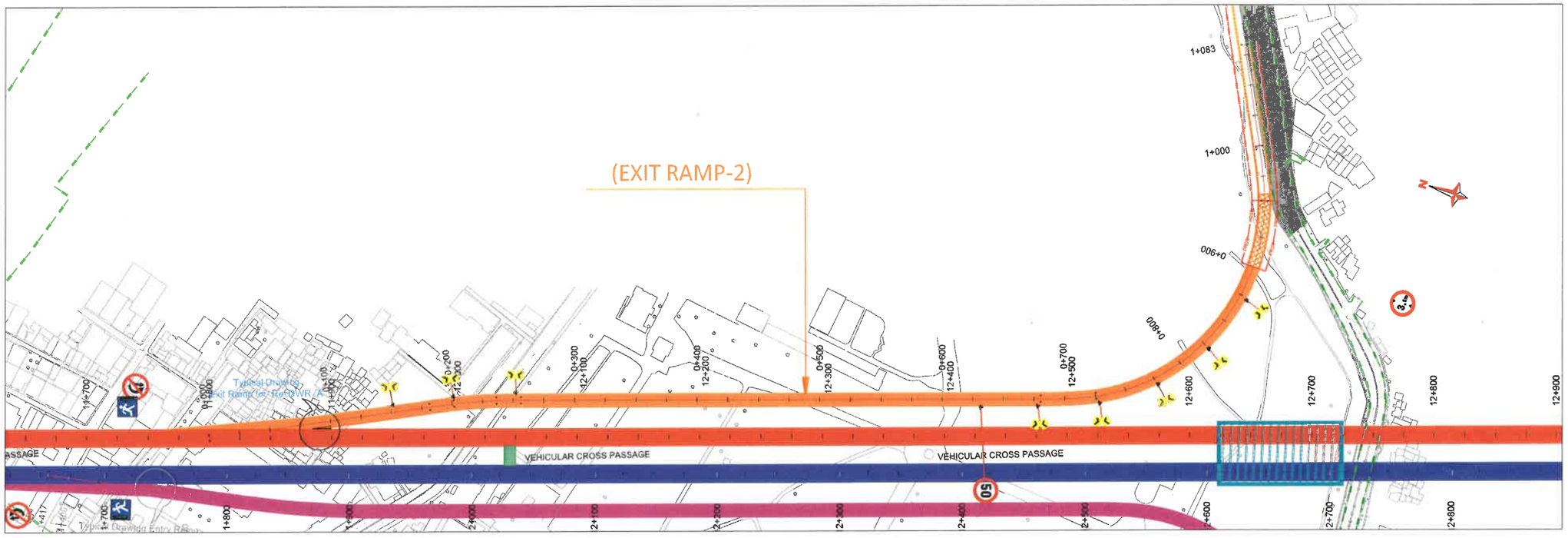
Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

TRAFFIC PLAN (ENTRY RAMP-6)
(Km.0+000 to Km.1+784)

RC/1640/HO/BBMP/U/DWG/TP01A/R0

Hebbal Esteem mall junction

Silk Road



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Pristna Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR
Drawn:	NL
Checked:	AT
Approved:	HRY

Scale :- H=:-1:2500

Sheet size: A2

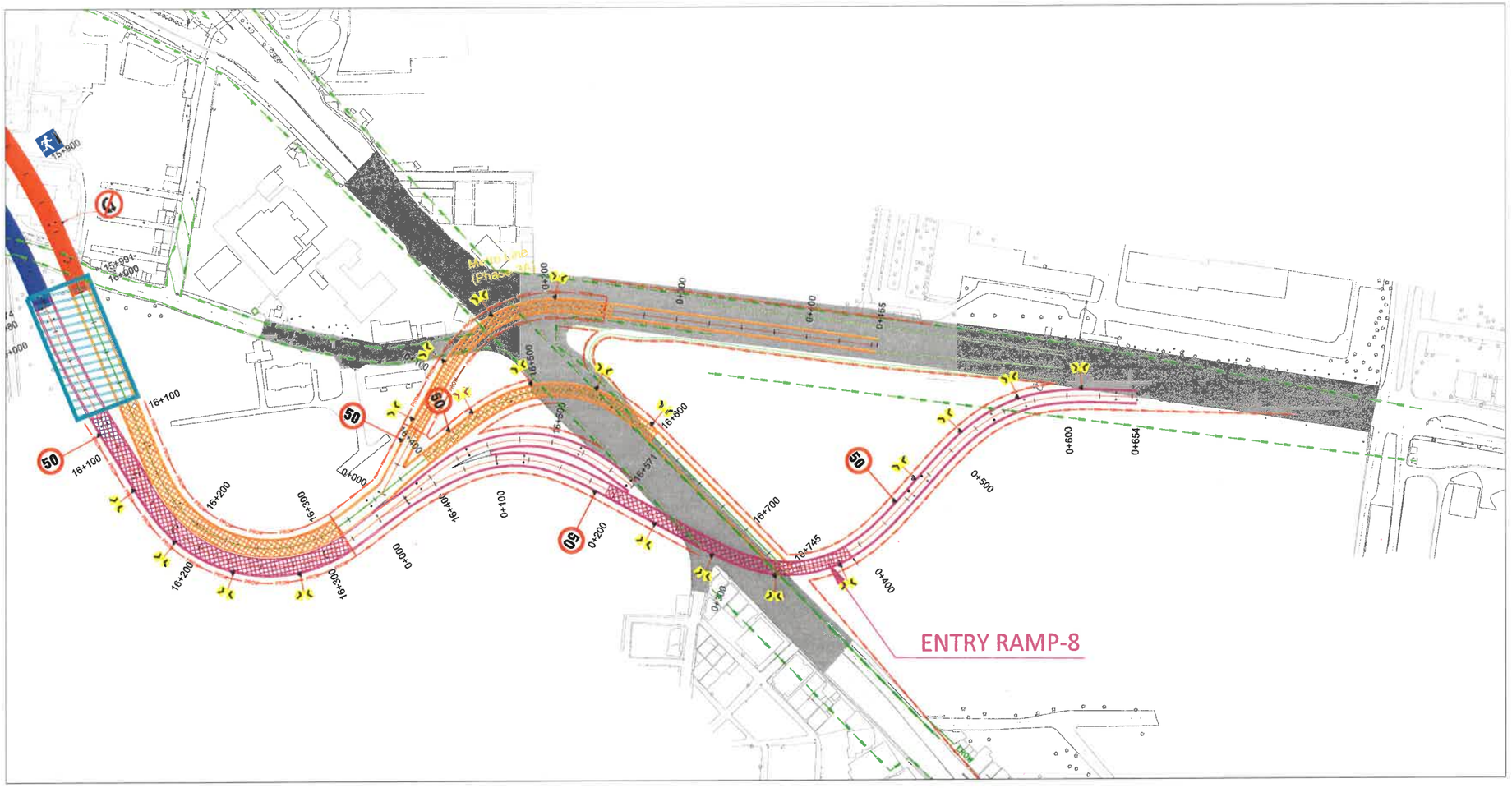
Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

TRAFFIC PLAN (EXIT RAMP-2)
(Km.0+000 to Km.1+083)

RC/1640/HO/HBT/TU/DWG/TP 01/R0

Hebbal Esteem mall junction

Silk Road



REVISION	DATE	AMENDMENT / ISSUE DESCRIPTION
R0	Jan.:- 2025	

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Pinnina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 2 : Km 8.748 to km 16.745 of North South Corridor connecting Hebbal to Silk oard.)

Designed:	RR
Drawn:	NL
Checked:	AT
Approved:	HRY

Scale :- H=:-1:2500

Sheet size: A2

Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Shesadri Road, freedom park (Km 8.748) to Silk Board (Km 16.745) of North South Corridor including launching and retrieval shaft (At Km 8+785, Km 12+660 and Km 16+050), entry & exit ramp from KG road (from both tube), entry & exit on Seshadri Road (from both tube), entry & exit ramp on Siddapura Road (Ashoka Pillar & Wilson Garden, entry & exit ramps on Sarjapur Road.

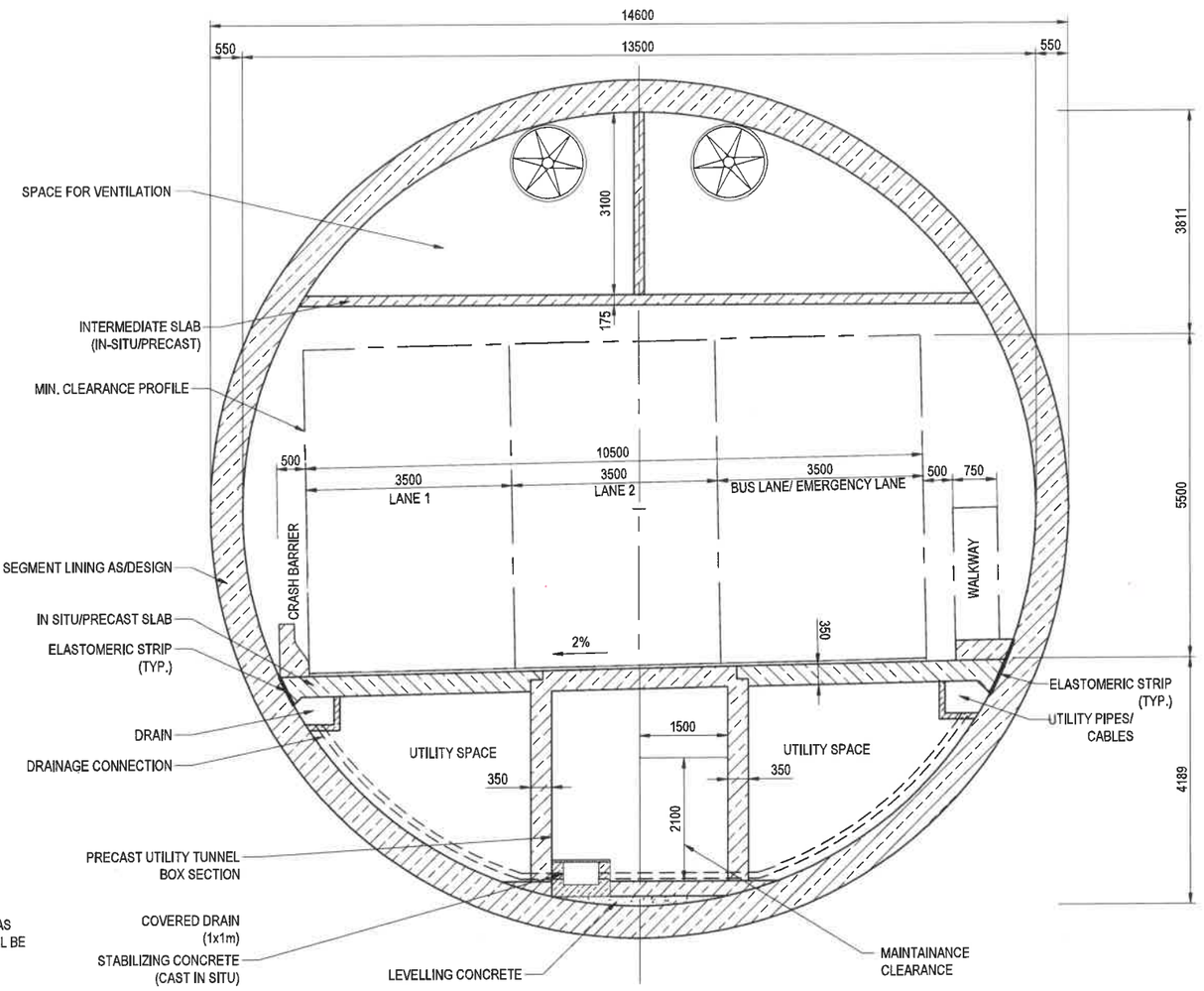
TRAFFIC PLAN (ENTRY RAMP-8)
(Km.0+000 to Km.0+654)

RC/1640/HO/HBT/TU/DWG/TP 01/R0

TUNNEL DRAWING

GENERAL ARRANGEMENT DRAWING

Original Drawing Size A1



TYPICAL CROSS SECTION
3 LANES TUNNEL (2 LANE + 1 EMERGENCY LANE)

SCALE 1:50

SEGMENT CONFIGURATION 9+1
SEGMENTS WIDTH= 2000mm

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF SEGMENTAL LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTION TO BE READ IN CONJUNCTION WITH TCS-1.
7. ELASTOMERIC STRIPS TO BE INSTALLED AT THE JOINT OF PAVEMENT SLAB WITH TUNNELING SEGMENTAL LINING.

MATERIALS:

GRADE OF CONCRETE - M60

FOR DPR SUBMISSION

SCALE 1 : 50

1m 0 1m 5m

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
0431106 WeWork, Flitiss Tower MG Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA

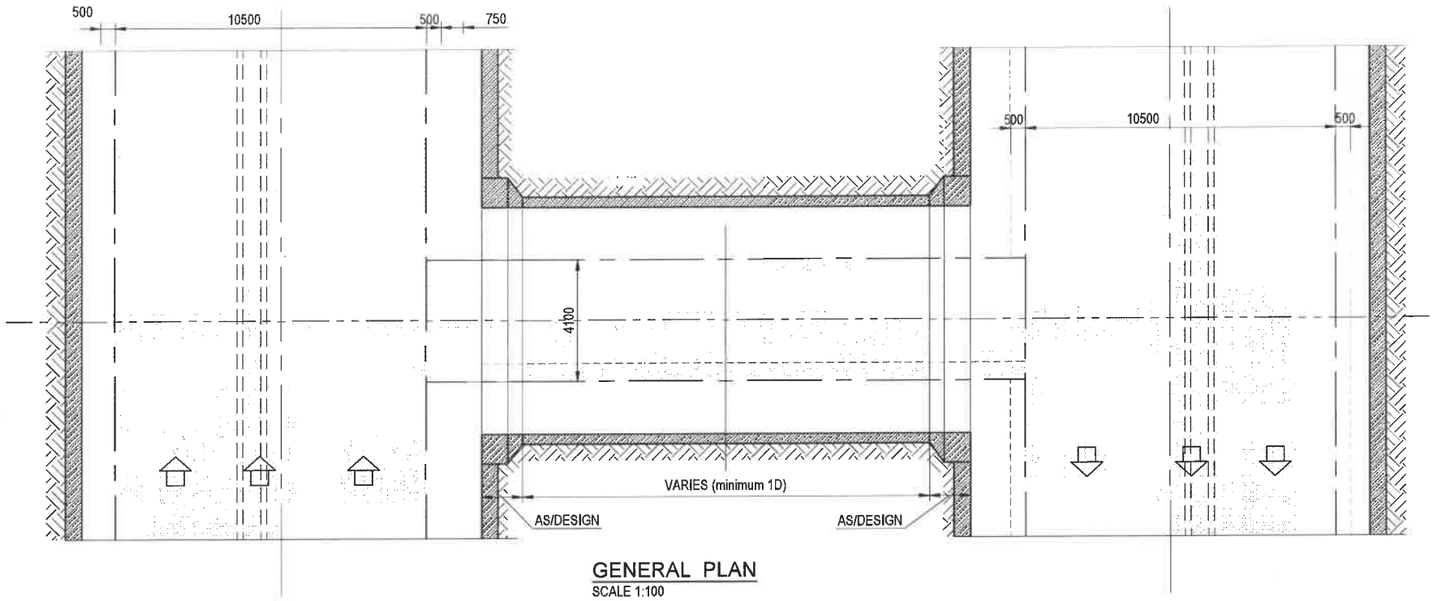
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

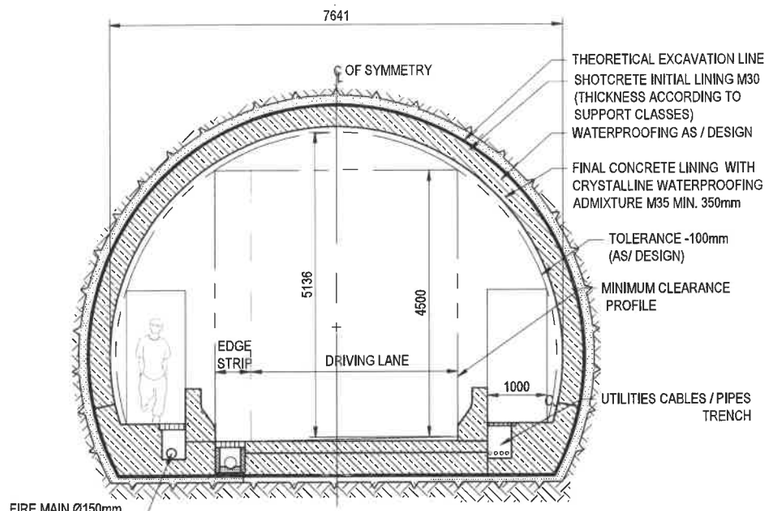
Designed:	CSA	Scale :- 1:50	
Drawn:	RMe		
Checked:	CSa		
Approved:	PSi	Sheet size: A1	

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	TBM TUNNEL, REGULAR CROSS SECTION, 3 LANES (2 LANES+ 1 EMERGENCY LANE)
Drawing No.	RC/1640/HO/HBT/TU/DWG/BT/RCS/301/A

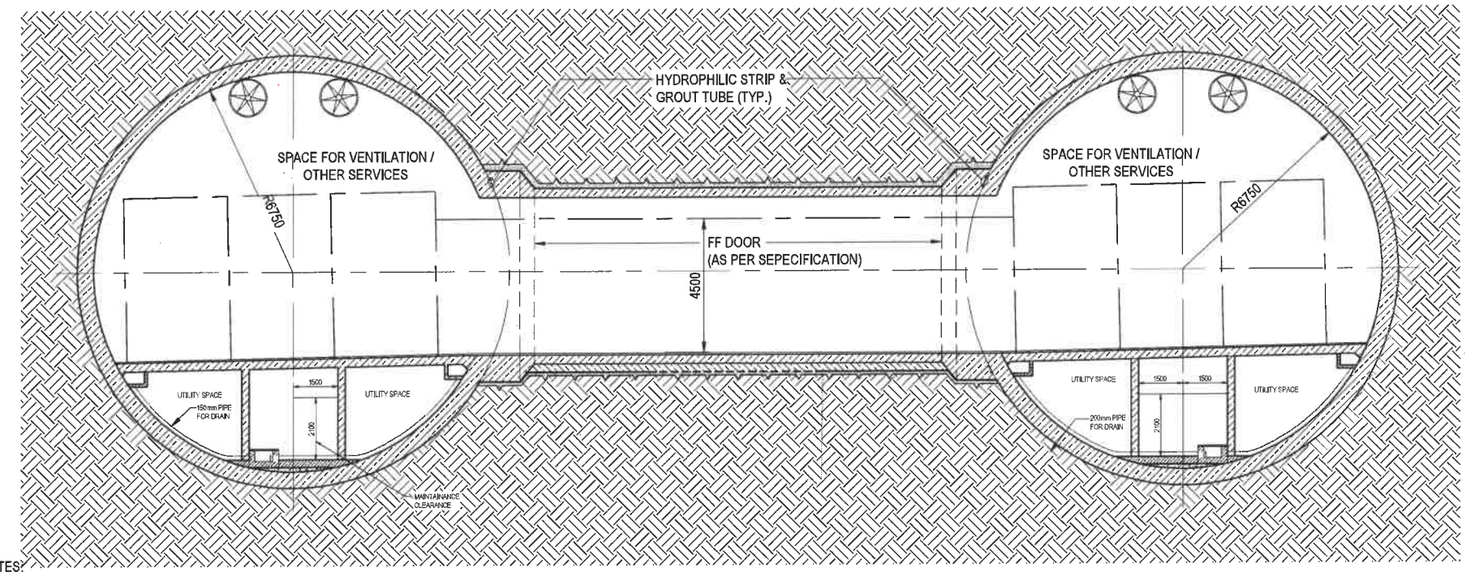
Original Drawing Size A1



GENERAL PLAN
SCALE 1:100



TYPICAL CROSS SECTION
SCALE 1:50



TYPICAL CROSS SECTION
AT CROSS PASSAGE WITHOUT SUMP
SCALE 1:100

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
5. ALL CPS TO BE INSTALLED WITH FIRE-FIGHTING DOOR AS PER SPECIFICATIONS.

SCALE 1 : 50
1m 0 1m 5m

SCALE 1 : 100
5000mm 0 5000mm 10000mm

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT
GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

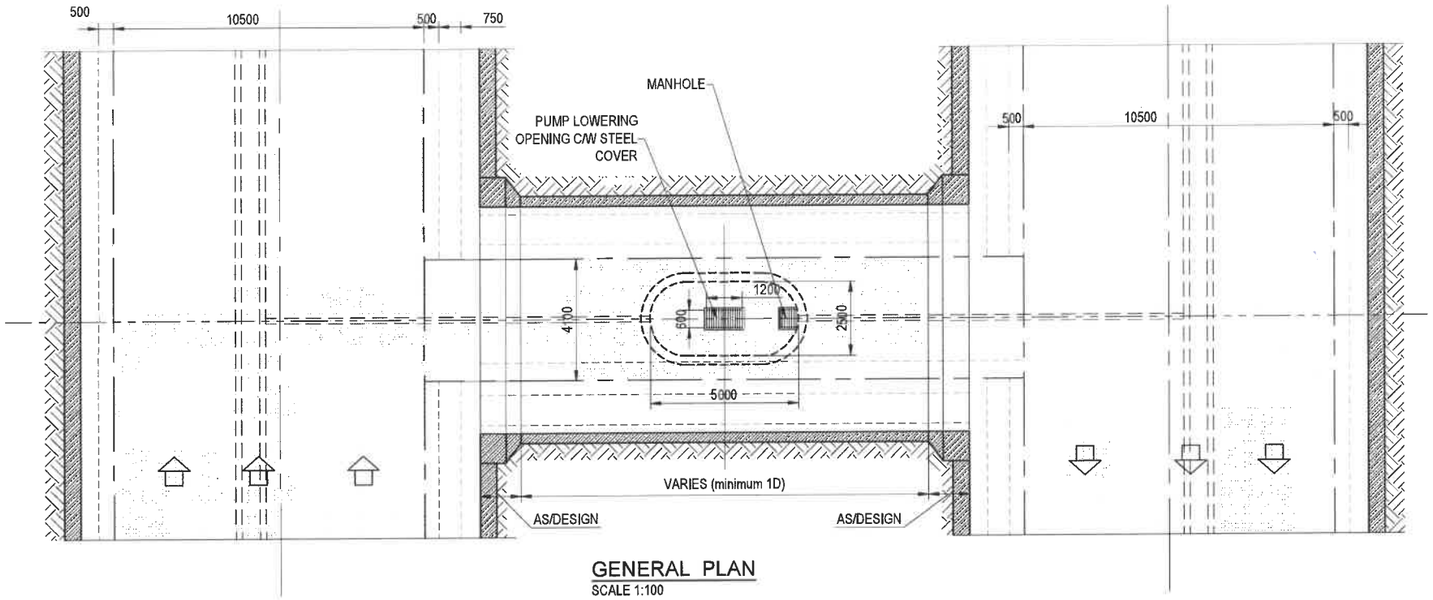
CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
64B106 WeWork, Flatius Tower MG Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA.
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

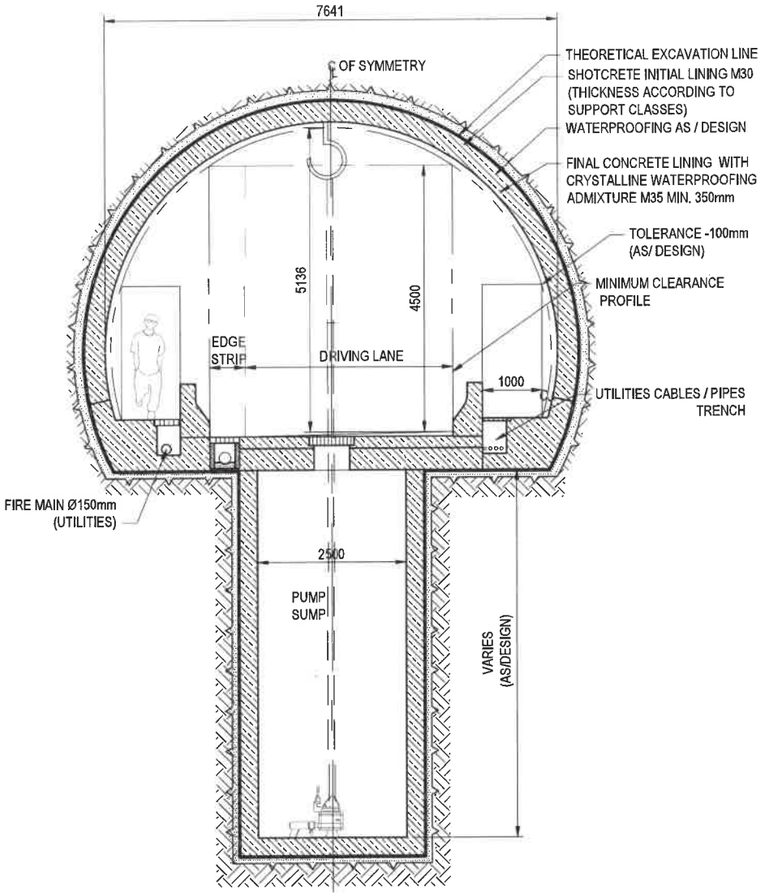
Designed:	CSA	Scale :- 1:50
Drawn:	RMe	
Checked:	CSa	
Approved:	PSJ	Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	VEHICULAR CROSS PASSAGE WITH TBM TUNNEL WITHOUT SUMP , GENERAL ARRANGEMENT
Drawing No.	RC/1640/HO/HBT/TUDWG/CP/RCS/302/A

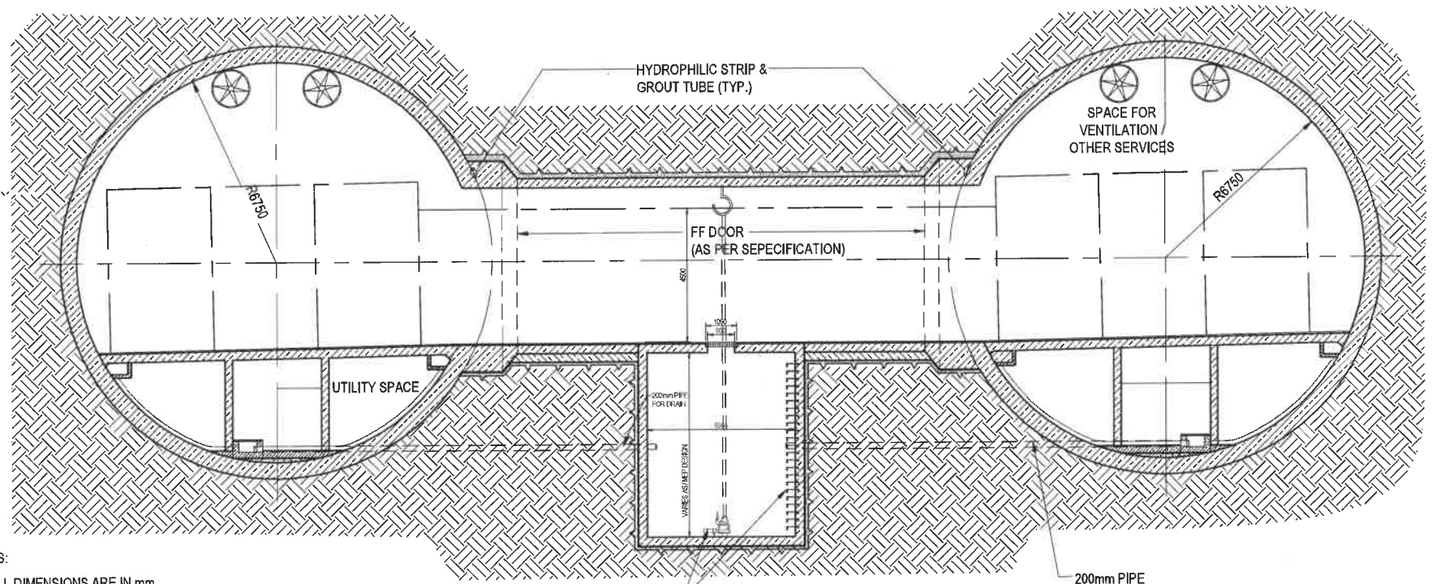
Original Drawing Size A1



GENERAL PLAN
SCALE 1:100



TYPICAL CROSS SECTION WITH SUMP
SCALE 1:50
(FOR REGULAR CROSS SECTION - REFER DRG, No. I40172-NT-RCS-402)



TYPICAL CROSS SECTION AT CROSS PASSAGE WITH SUMP
SCALE 1:100

(NOTE :FOR DETAILS OF TBM SECTION , REFER RELEVANT DRAWING)

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF SEGMENTAL LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
5. ALL CPS TO BE INSTALLED WITH FIRE-FIGHTING DOOR AS PER SPECIFICATIONS.

SCALE 1 : 50
1m 0 1m 5m

SCALE 1 : 100
5000mm 0 5000mm 10000mm

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT
GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

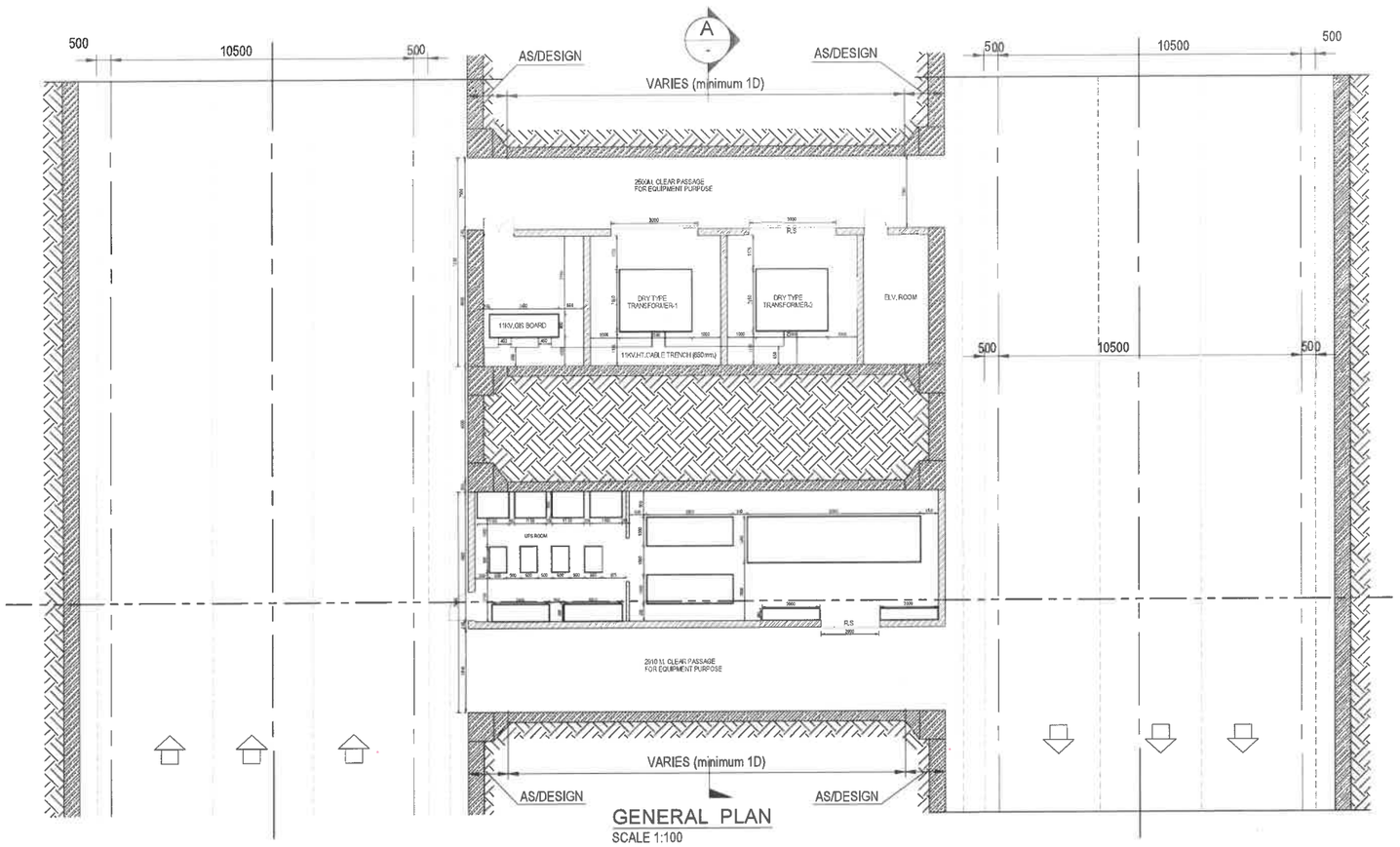
CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
64B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	CSA	Scale :- 1:50
Drawn:	RMe	
Checked:	CSa	
Approved:	PSj	Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	CROSS PASSAGE WITH TBM TUNNEL WITH SUMP , GENERAL ARRANGEMENT
Drawing No.	RC/1640/HO/HBT/TU/DWG/CP/RCS/303/A

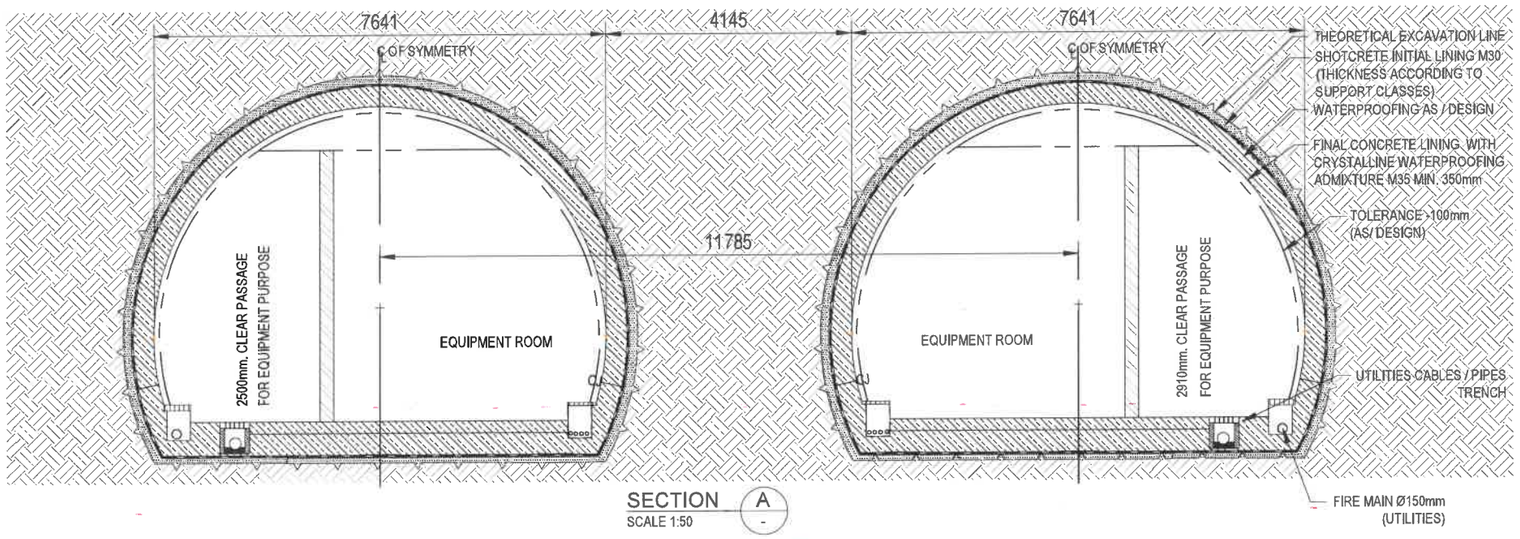
Original Drawing Size A1



GENERAL PLAN
SCALE 1:100

LOCATION DETAILS FOR CP-E :-

SUBSTATION IN CP -E	SUBSTATION NUMBER	PROPOSED CHAINAGE
CPE-1	S/SN-1	2331.5
CPE-2	S/SN-2	4110.5
CPE-3	S/SN-3	6006.25
CPE-4	S/SN-4	7818.75
CPE-5	S/SN-5	9775
CPE-6	S/SN-6	11675
CPE-7	S/SN-16	11725
CPE-8	S/SN-7	13541
CPE-9	S/SN-8	15114



SECTION A
SCALE 1:50

TYPICAL CROSS SECTION AT CROSS PASSAGE

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF MEP EQUIPMENTS MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
5. NUMBERS AND CHAINAGE OF CP-E ARE INDICATIVE AND TO BE DECIDED BASED ON DETAILED DESIGN OF CONTRACTOR.

SCALE 1 : 50
1m 0 1m 5m

SCALE 1 : 100
5m 0 5m 10m

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
A	31.01.25	FORMAL SUBMISSION

CLIENT
GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
06B196 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

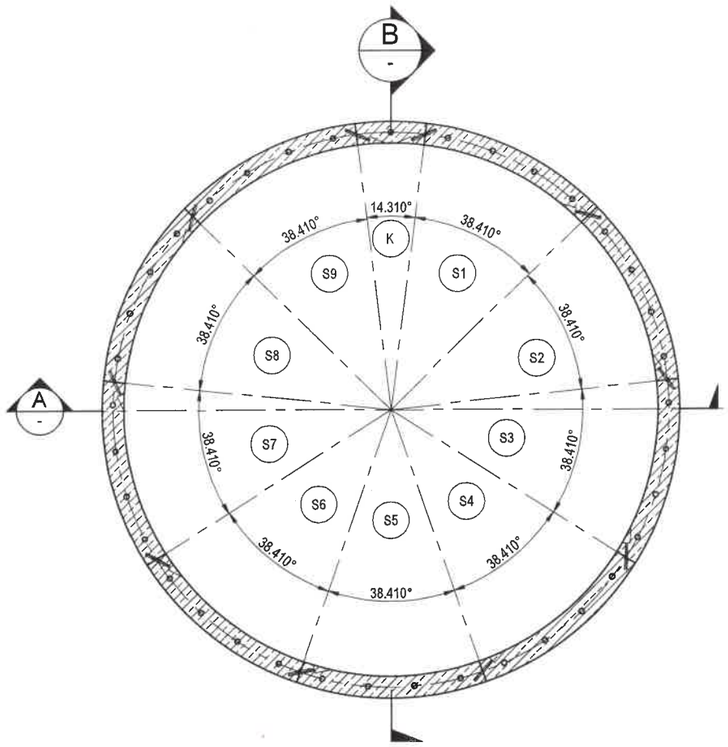
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

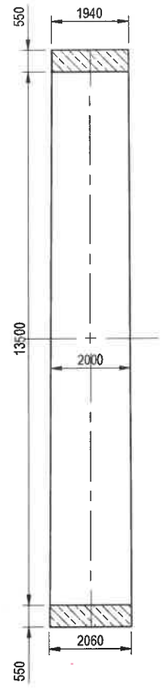
Designed:	SDh	Scale :- AS SHOWN	
Drawn:	MGs		
Checked:	SDh		
Approved:	PSI	Sheet size: A1	

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	GENERAL ARRANGEMENT DRAWING FOR ELECTRICAL CROSS PASSAGE
Drawing No.	RC/1640/HO/HBT/TU/DWG/CP/RCS/304/A

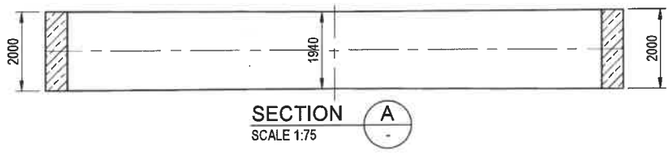
Original Drawing Size A1



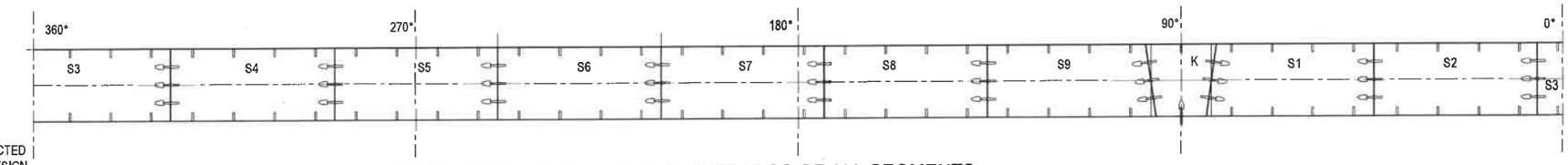
TYPICAL SEGMENTS ARRANGEMENT
SCALE 1:75



SECTION B
SCALE 1:75



SECTION A
SCALE 1:75



DEVELOPED VIEW OF RING LAYOUT ON INTRADOS OF ALL SEGMENTS
SCALE 1:75

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF SEGMENTAL LINING SHALL BE DONE BY CONTRACTOR.
3. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
4. DESIGN SHALL FULLFILL THE EMPLOYER REQUIREMENT OF FUNCTION AND DURABILITY.

MATERIALS:

CONCRETE : M60
STEEL REINFORCEMENT Fe550D

SCALE 1 : 75
2.5m 0 2.5m 5.0m 7.5m

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT
GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

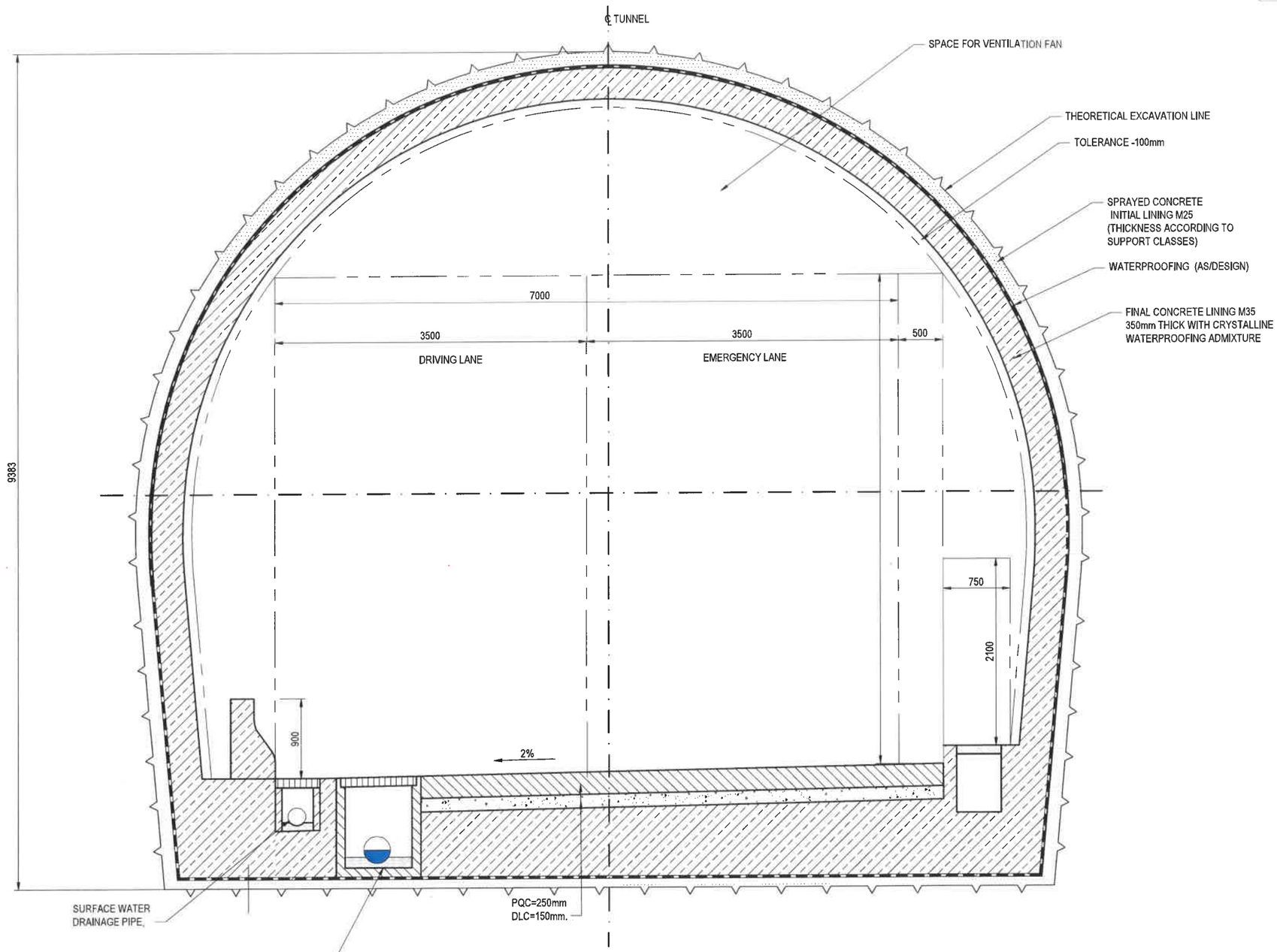
CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	CSA	Scale :- 1:75	
Drawn:	RMe		
Checked:	CSe		
Approved:	PSi	Sheet size: A1	

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title: BORED TUNNEL , GENERAL ARRANGEMENT OF PRECAST SEGMENTS
Drawing No.: RC/1640/HO/HBT/TU/DWG/BT/RCS/304/A

Original Drawing Size A1



NATM TUNNEL 2 LANE REGULAR CROSS SECTION

SCALE 1:25

THEORETICAL EXCAVATION = 86.42 SQ. M

SCALE 1 : 25

1m 0 1m 2m 2.5m

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTION TO BE READ IN CONJUNCTION WITH TCS-5.

MATERIALS:

GRADE OF CONCRETE - M35

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA
CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near
Sikanderpur Metro Station Sector 28, Gurugram
Haryana INDIA

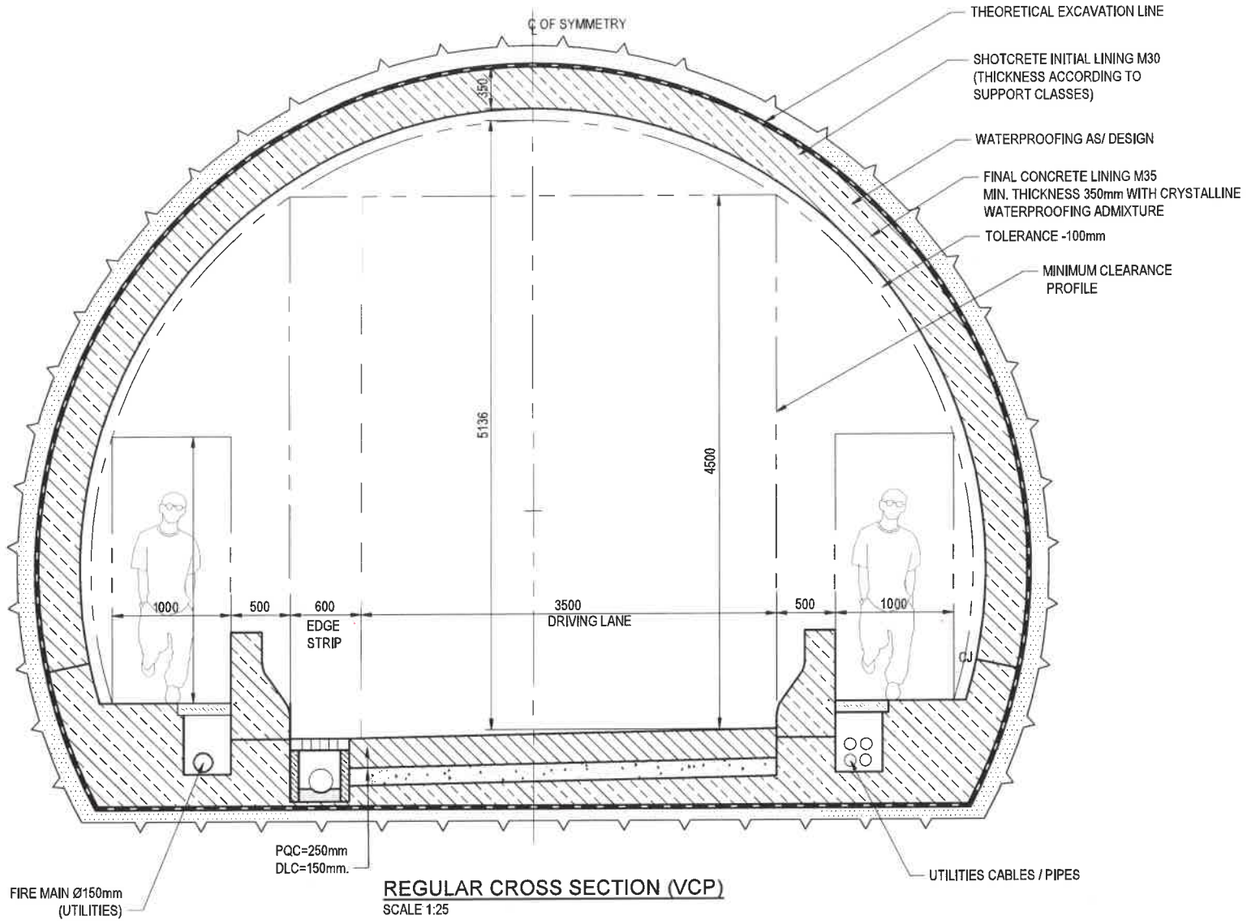
Fluidyn India
#15, 4th Floor, Outer Ring Road
JP Nagar 6th Phase Bengaluru,
Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	CSA	Scale :- 1:25	
Drawn:	RMe		
Checked:	CSa		
Approved:	PSi	Sheet size: A1	

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	NATM TUNNEL, REGULAR CROSS SECTION, 2 LANES ARRANGEMENT
Drawing No.	RC/1640/HO/HBT/TU/DWG/NT/RCS/401/A

Original Drawing Size A1



REGULAR CROSS SECTION (VCP)

SCALE 1:25

THEORETICAL EXCAVATION AREA: 47.84m²

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH WALKWAY ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

MATERIALS:

GRADE OF CONCRETE - M35

SCALE 1 : 25

1m 0 1m 2m 2.5m

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA
CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near
Sikanderpur Metro Station Sector 28, Gurugram
Haryana INDIA

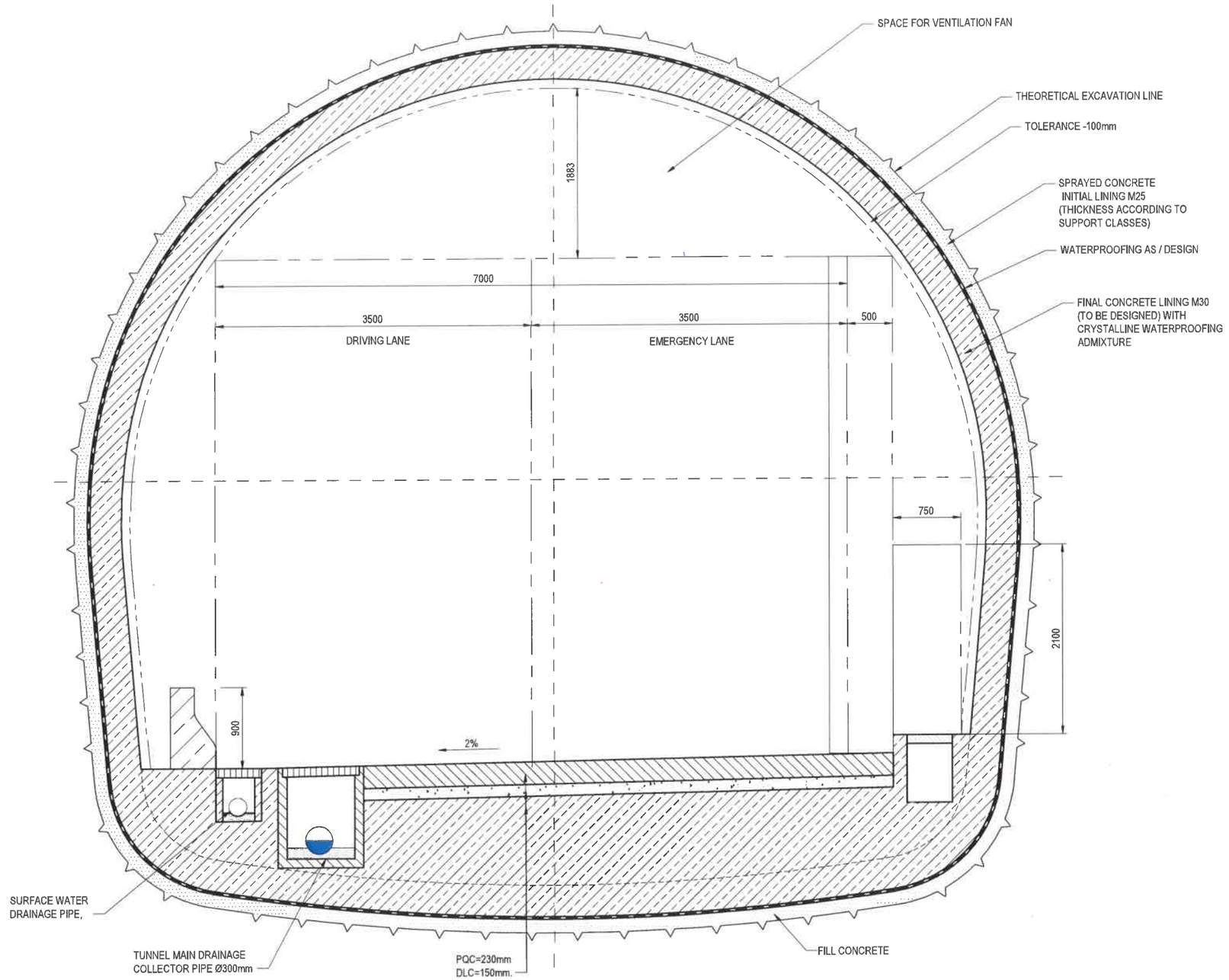
Fluidyn India
#15, 4th Floor, Outer Ring Road
JP Nagar 6th Phase Bengaluru,
Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	CSA	Scale :- 1:25	
Drawn:	RMe		
Checked:	CSa		
Approved:	PSj	Sheet size: A1	

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	VEHICULAR CROSS PASSAGE, REGULAR CROSS SECTION, SINGLE LANE
Drawing No.	RC/1640/HO/HBT/TU/DWG/NT/RCS/402/A

Original Drawing Size A1



NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH WALKWAY ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

NATM TUNNEL 2 LANE
REGULAR CROSS SECTION (ARCH INVERT)

SCALE 1:25

THEORETICAL EXCAVATION = 90.18 SQ. M

SCALE 1 : 25

1m 0 1m 2m 2.5m

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA
CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WelWark, Plaina Tower MG Road Near
Sikanderpur Metro Station Sector 28, Gurugram
Haryana INDIA

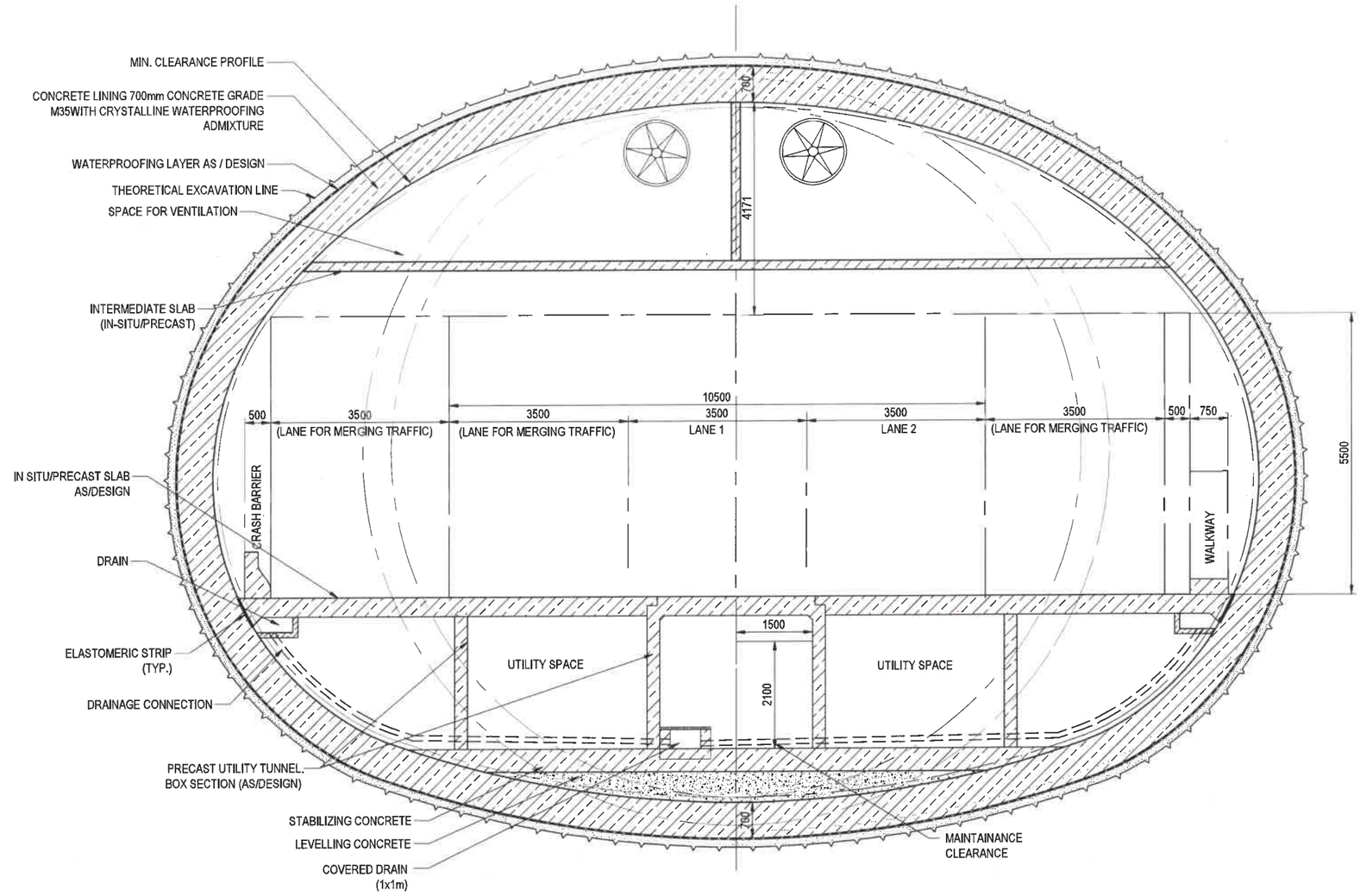
Fluidyn India
#15, 4th Floor, Outer Ring Road
JP Nagar 6th Phase Bengaluru,
Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	CSA	Scale :- 1:25
Drawn:	RMe	
Checked:		
Approved:	PSj	Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	NATM TUNNEL SECTION WITH ARCH INVERT, REGULAR CROSS SECTION - 2 LANES
Drawing No.	RC/1640/HO/HBT/TU/DWGNT/RCS/403/A

Original Drawing Size A1



TYPICAL CROSS SECTION
INTERSECTION OF MAIN TUNNEL WITH ENTRY/EXIT

SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH WALKWAY ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

SCALE 1 : 50

1m 0 1m 5m

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

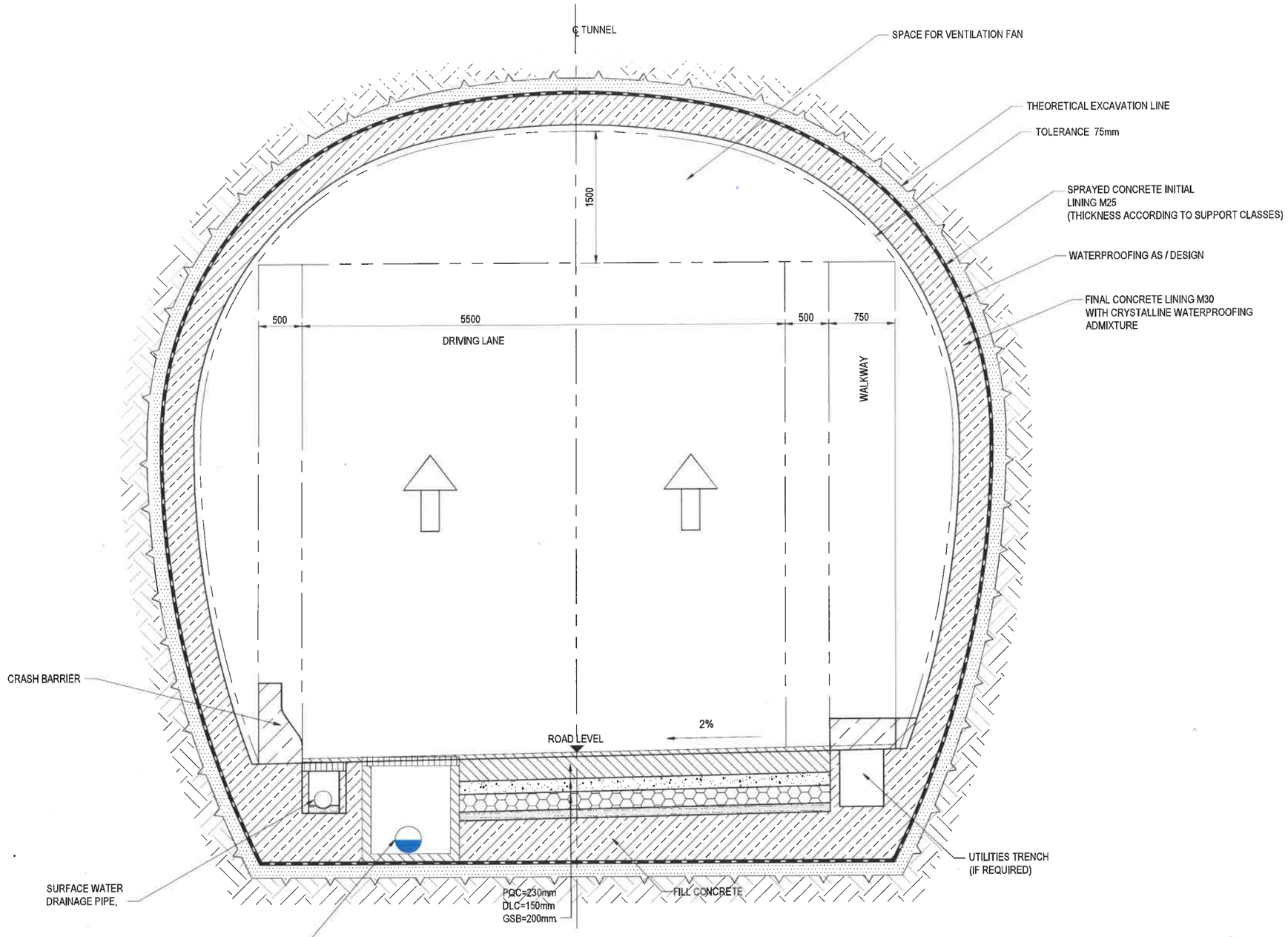
Designed:	CSA
Drawn:	RMe
Checked:	CSa
Approved:	PSi

Scale :- 1:50

Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	NATM TUNNEL , TYPICAL CROSS SECTION, INTERSECTION OF MAIN TUNNEL WITH ENTRY/EXIT
Drawing No.	RC/1640/HO/HBT/TU/DWGNT/RCS/404/A

Original Drawing Size A1



NATM TUNNEL 1.5 LANE REGULAR CROSS SECTION

SCALE 1:25

THEORETICAL EXCAVATION = 77.4 SQ. M

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTOR'S DETAILED DESIGN. DETAILED DESIGN OF LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF TYPICAL DETAILS OF CRASH BARRIER , UTILITY PIPE TRENCH , MAIN DRAINAGE ETC. ARE NOT SHOWN AND SAME SHALL BE MADE BY CONTRACTOR AS PER DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN .
5. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTION TO BE READ WITH TCS-15.

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	19.12.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Plaisia Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

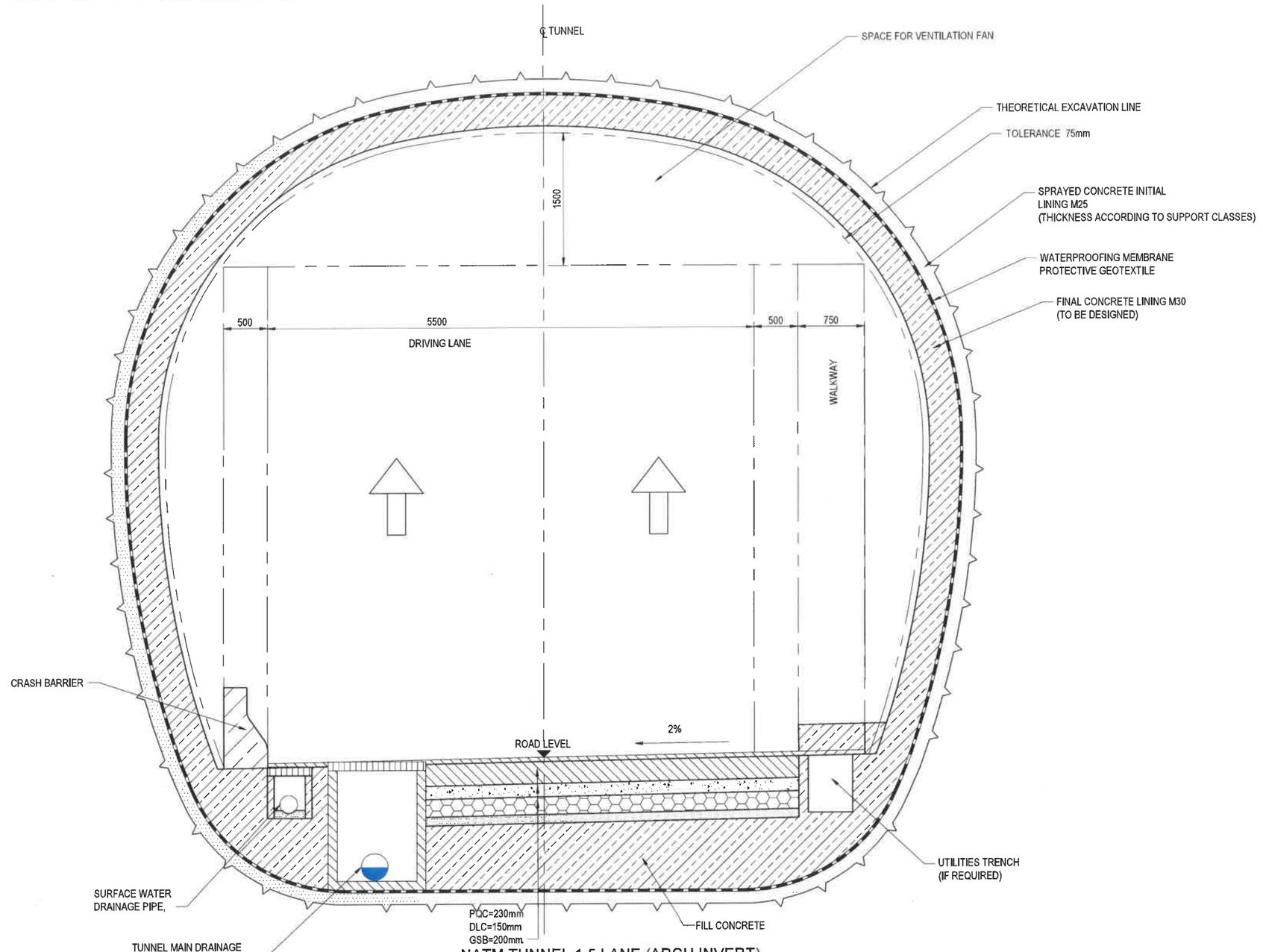
Designed	CSA
Drawn:	RMe
Checked:	NGo
Approved:	PSi

Scale :- 1:50

Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	NATM TUNNEL SECTION (TYPE NTBF3) - 1.5 LANES AT BIFURCATING SECTION
Drawing No.	RC/1640/HO/HBT/TU/DWG/NT/RCS/405/A

Original Drawing Size A1



NATM TUNNEL 1.5 LANE (ARCH INVERT) REGULAR CROSS SECTION

SCALE 1:25

THEORETICAL EXCAVATION = 78.4 SQ. M

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D

SCALE 1 : 25

1m 0 1m 2m 2.5m

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH WALKWAY ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	15.01.25	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Pinion Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

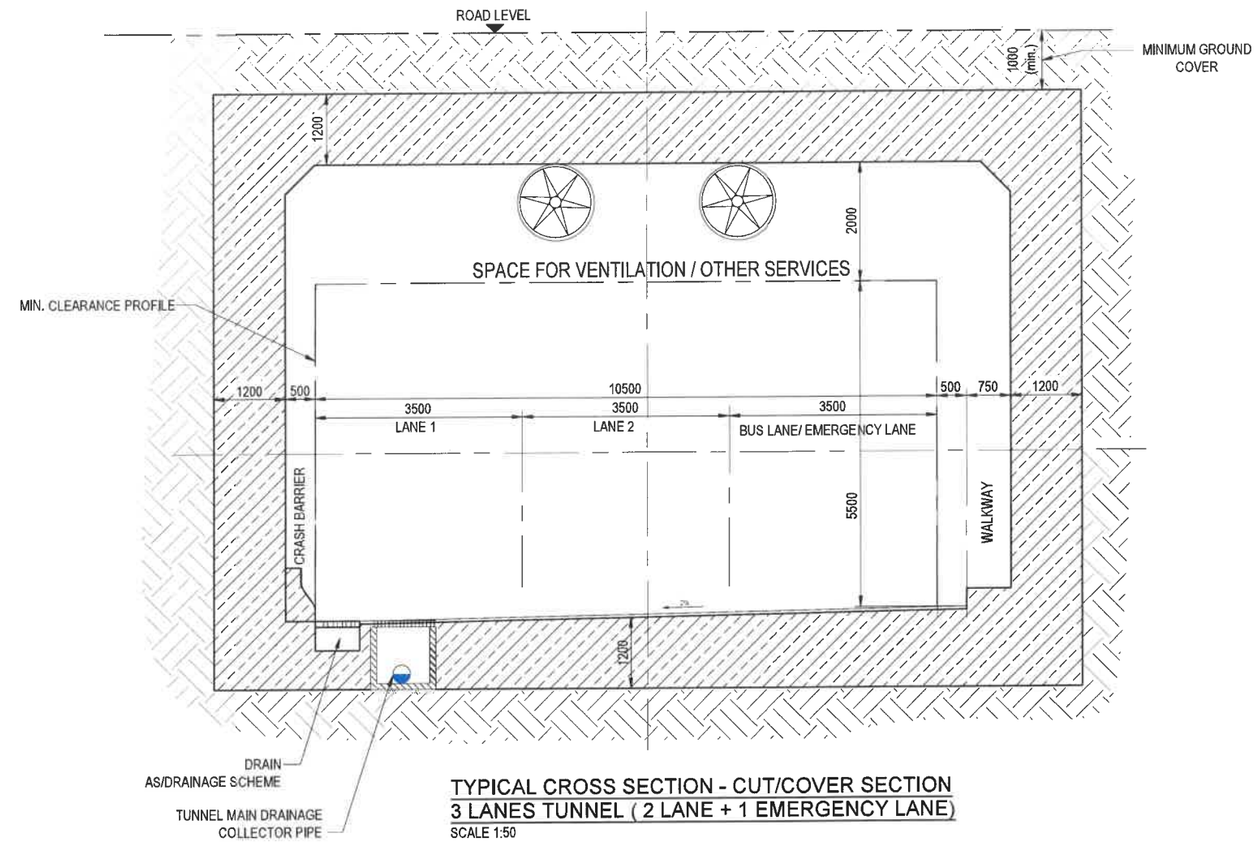
Designed:	CSA	Scale :- 1:25	
Drawn:	RMe /ZHU		
Checked:	CSA		
Approved:	PSI	Sheet size: A1	

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: NATM TUNNEL GENERAL ARRANGEMENT WITH ARCH INVERT, REGULAR CROSS SECTION - 1.5 LANES

Drawing No.: RC/1640/HO/HBT/TU/DWGNT/RCS/406/R0

Original Drawing Size A1



TYPICAL CROSS SECTION - CUT/COVER SECTION
3 LANES TUNNEL (2 LANE + 1 EMERGENCY LANE)
SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF BOX LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTION TO BE READ IN CONJUNCTION WITH TCS-6.

MATERIALS:

GRADE OF CONCRETE - M35
GRADE OF STEEL Fe550D

SCALE 1 : 50
1m 0 1m 5m

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT
GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GBOCONSULT INDIA PRIVATE LIMITED 04B106 WeWork, Platina Tower MG Road Near Silkunderpur Metro Station Sector 28, Gurugram Haryana INDIA
Fluidyn India #15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

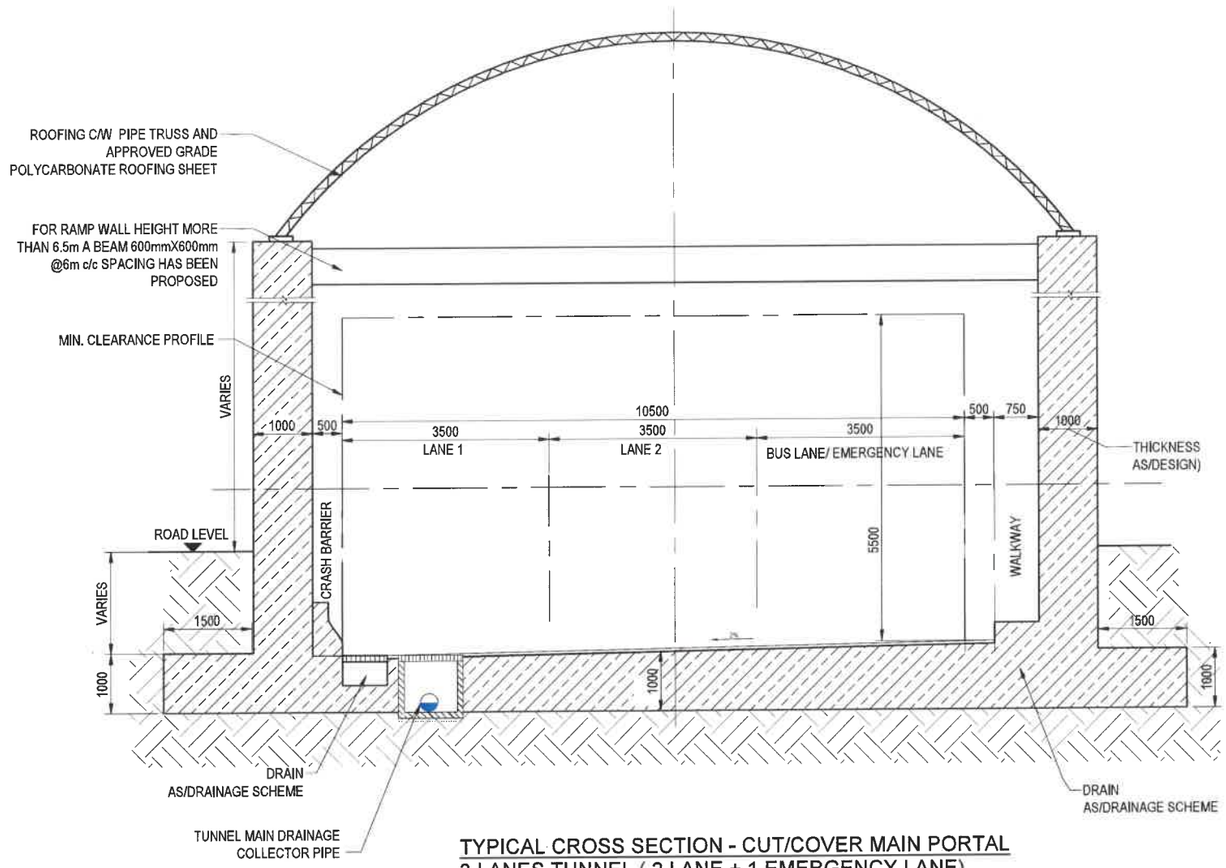
DRAFT PROJECT REPORT

Designed:	CSA
Drawn:	RMe
Checked	CSa
Approved:	PSI

Scale :- 1:50
Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	CUT AND COVER SECTION, REGULAR CROSS SECTION, 3 LANES (2LANES+1 EMERGENCY LANE)
Drawing No.	RC/1640/HO/HBT/TU/DWG/CC/RCS/501/A

Original Drawing Size A1



TYPICAL CROSS SECTION - CUT/COVER MAIN PORTAL
3 LANES TUNNEL (2 LANE + 1 EMERGENCY LANE)
SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF RAMP LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTION TO BE READ IN CONJUNCTION WITH TCS-2.

MATERIALS:

GRADE OF CONCRETE - M35
GRADE OF STEEL Fe550D

SCALE 1 : 50
1m 0 1m 5m

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT
GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

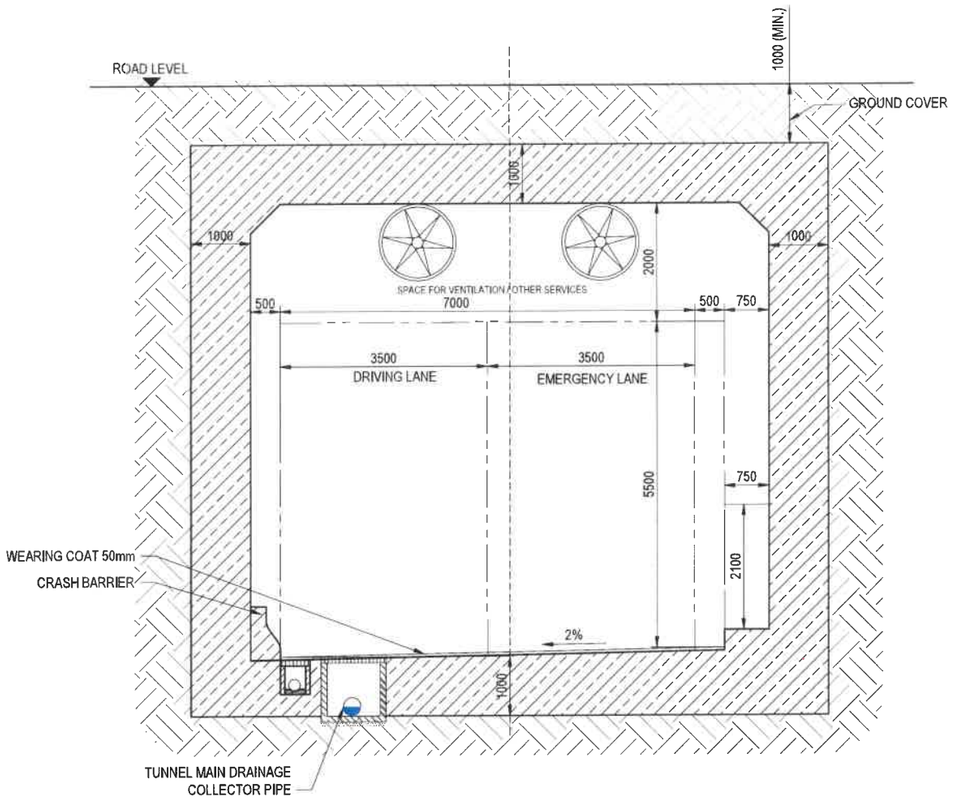
DRAFT PROJECT REPORT

Designed:	CSA
Drawn:	RMe
Checked:	CSa
Approved:	PSi

Scale :- 1:50
Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	CUT AND COVER / RAMP SECTION, AT MAIN PORTAL (2LANES+1 EMERGENCY LANE)
Drawing No.	RC/1640/HO/HBT/TU/DWG/CC/RCS/502/A

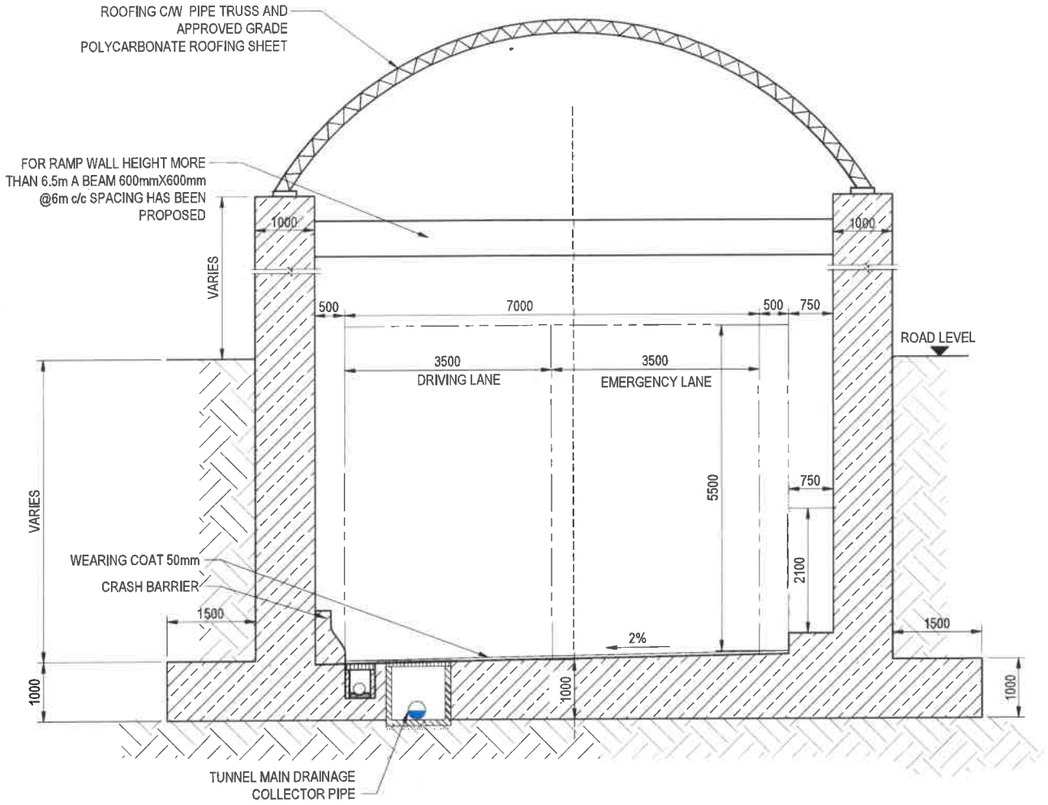
Original Drawing Size A1



CUT AND COVER SECTION FOR ENTRY/EXIT (2 LANE)
REGULAR CROSS SECTION

SCALE 1:50

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D



RAMP SECTION FOR ENTRY/EXIT (2 LANE)
REGULAR CROSS SECTION

SCALE 1:50

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. DETAILED DESIGN OF BOX / RAMP LINING SHALL BE DONE BY CONTRACTOR.
3. SIZING AND DETAILS OF CRASH BARRIER, DRAINAGE , UTILITY PIPE TRENCH ETC . MAY CHANGE AS PER CONTRACTORS DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN.
5. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTION TO BE READ IN CONJUNCTION WITH TCS-3 & TCS-4.

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA
CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road New
Sikandarpur Metro Station Sector 28, Gurugram
Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road
JP Nagar 6th Phase Bengaluru,
Karnataka 560078 India

DRAFT PROJECT REPORT

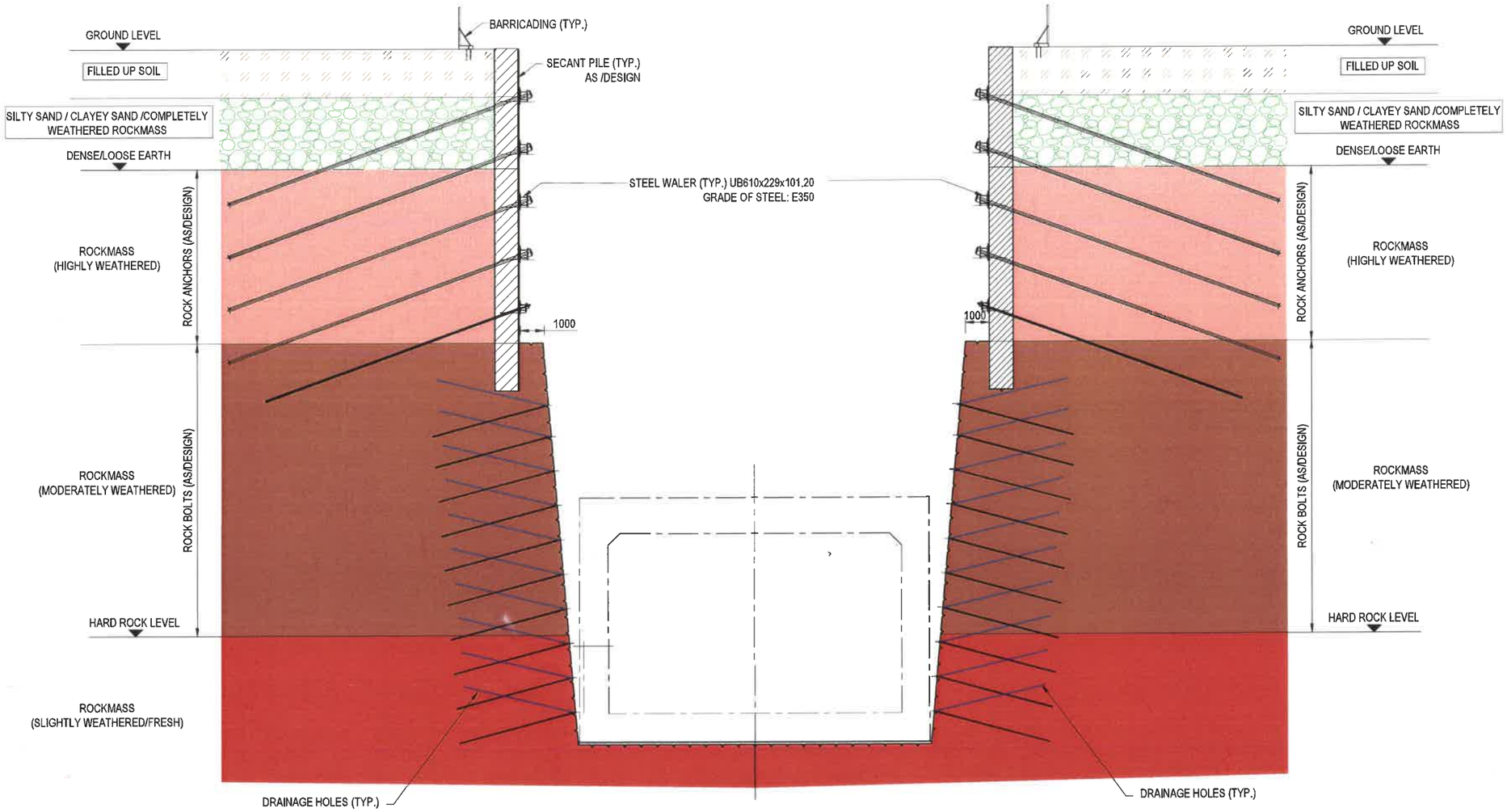
Designed:	CSA	Scale :- 1:50
Drawn:	RMe	
Checked:	CSa	Sheet size: A1
Approved	PSi	

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: RAMP/ C&C FOR ENTRY/EXIT, REGULAR CROSS SECTION, 2 LANES ARRANGEMENT

Drawing No: RC/1640/HO/HBT/TUDWG/CC/RCS/503/A

Original Drawing Size A1



TYPICAL CROSS SECTION AT CUT/COVER AND RAMP SECTION WITH SECANT PILES , ROCK ANCHORS, ROCK BOLTS AND WALER

SCALE 1:100

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND MAY CHANGE AFTER DETAILED DESIGN.
3. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

SCALE 1 : 100

5m 0 5m 10m

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

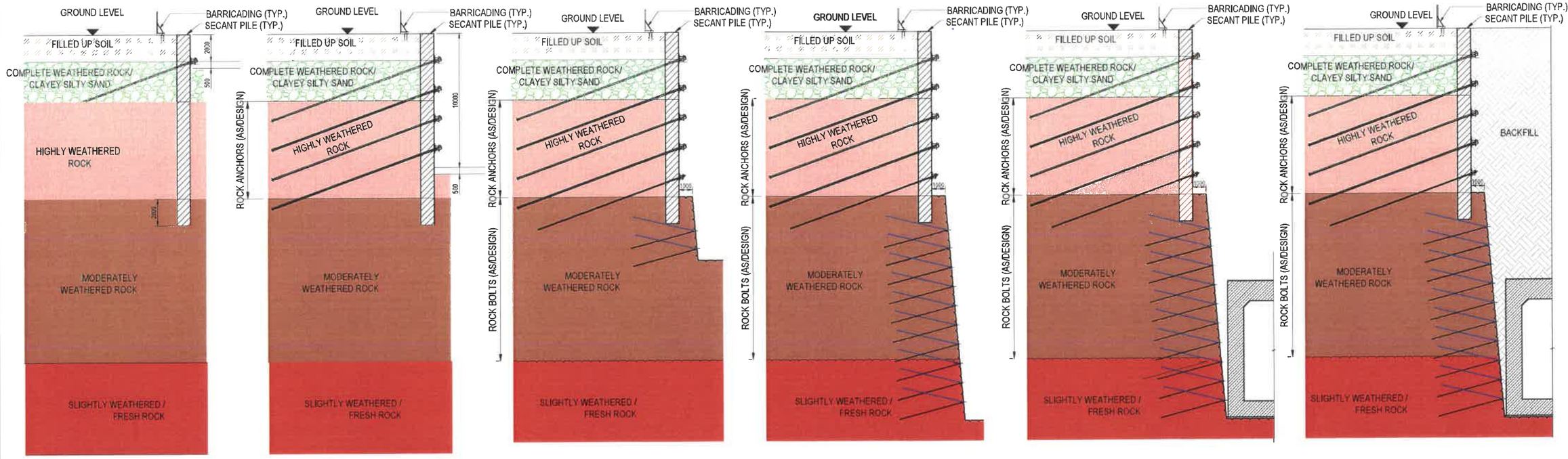
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	CSA /NGO	Scale :- 1:100
Drawn:	RMe	
Checked:		
Approved:	PSI	Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	CUT AND COVER/ RAMP SECTION , TEMPORARY WORKS WITH SECANT PILES AND ROCK SLOPE
Drawing No.	RC/1640/HO/HBT/TU/DWG/CC/SUP/504/A

Original Drawing Size A1



STAGE-1:

1. REINSTATE THE GROUND LEVEL AND BARRICADE ALONG THE EXCAVATION PERIMETER.
2. INSTALL SECANT PILES AS PER SECANT PILE INSTALLATION SEQUENCE.
3. MAXIMUM SURCHARGE SHALL BE LIMITED TO 20 kPa.
4. EXCAVATE 2.5m ON PASSIVE SIDE.
5. INSTALL ROCK ANCHORS & WALER AT 500 MM ABOVE EXCAVATED FACE.
6. PRE STRESS ROCK ANCHORS WHEN GROUT ATTAINS STRENGTH OF AT LEAST 7 DAYS.
7. MAXIMUM SURCHARGE CAN NOW BE UP TO 50 kPa.

STAGE-2:

1. EXCAVATE FURTHER TILL FINAL ROCK ANCHOR LEVEL ROCK LEVEL AND INSTALL ROCK ANCHORS SEQUENTIALLY.
2. INSTALL ROCK ANCHOR & WALER ABOVE 1m FROM EXCAVATION LEVEL.
3. PRE STRESS ROCK ANCHORS WHEN GROUT ATTAINS STRENGTH OF AT LEAST 7 DAYS.

STAGE-3:

1. EXCAVATE FURTHER OR UPTO GRADE III LEVEL WHICHEVER IS LESS.
2. INSTALL PASSIVE ROCK BOLT & WALER ABOVE 1m FROM EXCAVATION LEVEL.

STAGE-4:

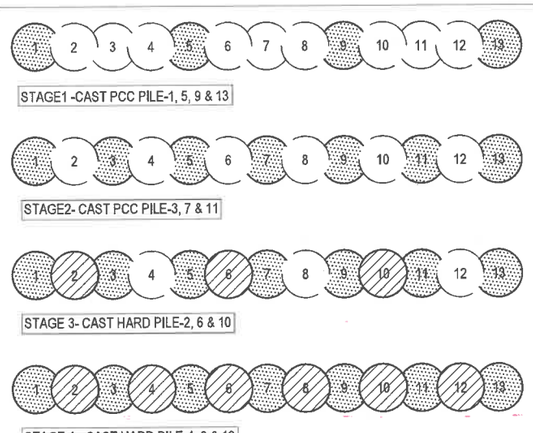
1. EXCAVATE TILL FINAL EXCAVATION LEVEL BY LEAVING MIN. 1000mm STRIP OF ROCK FROM SECANT PILE FACE AFTER REACHING GRADE III LEVEL.
2. ROCK BOLTS AND SHOTCRETING SHALL BE DONE TO STABILIZE ROCK CUT FACE

STAGE-5:

1. CONSTRUCT PERMANENT STRUCTURE BY BOTTOM-UP METHODOLOGY.

STAGE-6:

1. BACKFILL AND REMOVE THE WALER AND ROCK ANCHOR SEQUENTIALLY TILL FINAL REINSTATEMENT OF GROUND LEVEL.
2. HACK SECANT PILE UPTO 2m FROM G.L.



SECANT PILE INSTALLATION SEQUENCE

CONSTRUCTION SEQUENCE

A. PREPARE THE GROUND.

B. START BORING OPERATION FOR PCC PILE AND STABILISE SOIL WITH BENTONITE OR USING CASING WHILE BORING. INSTALL PCC PILE.

C. REPEAT THE PROCESS AND INSTALL PCC PILE AS PER THE INSTALLING SEQUENCE.

D. START BORING OF HARD PILE WITH CASING TO CUT THROUGH PCC PILE TO THE EMBEDMENT DEPTH BELOW THE PRESCRIBED ROCK LEVEL.

E. LOWER REINFORCEMENT CAGE AND CONCRETE.

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND MAY CHANGE AFTER DETAILED DESIGN.
3. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	10.09.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT: GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT: RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower M/G Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

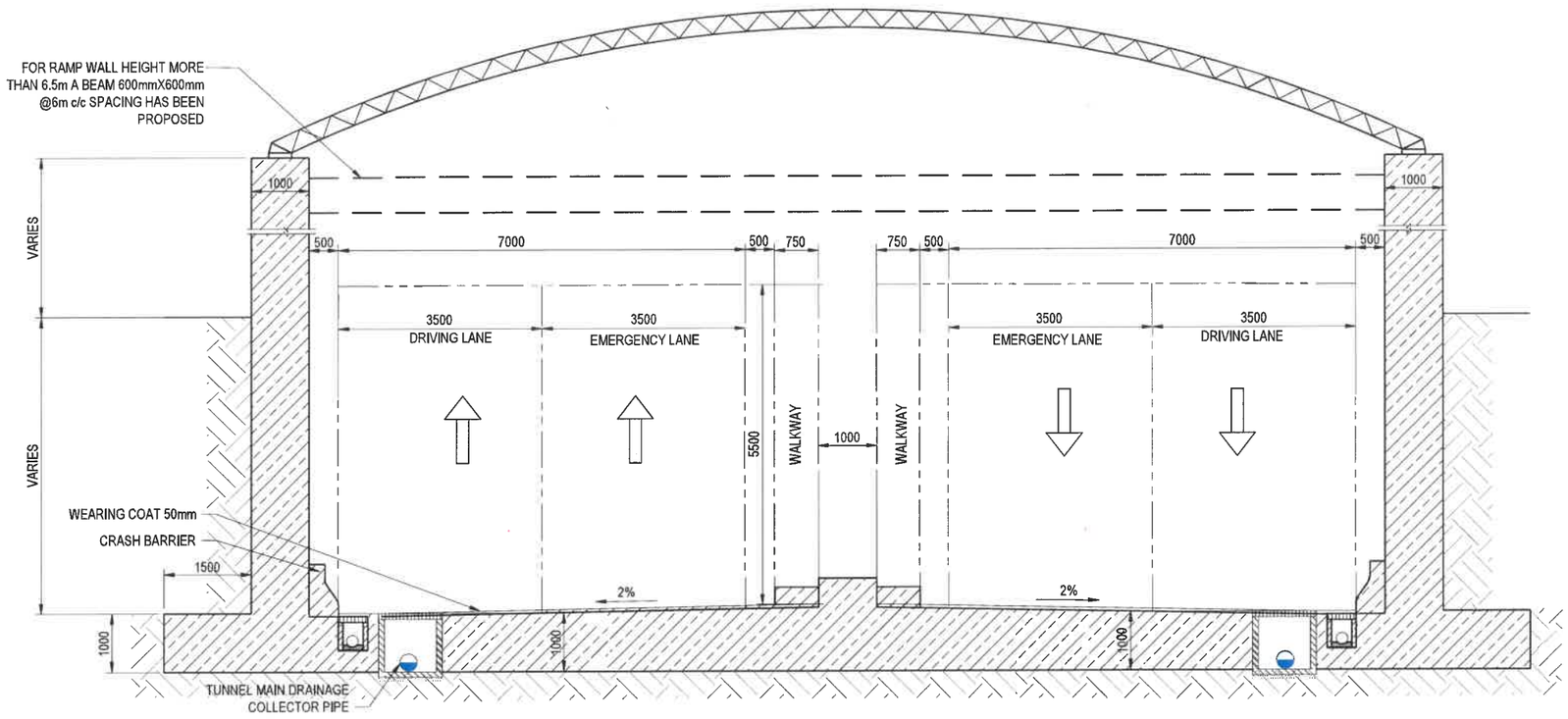
DRAFT PROJECT REPORT

Designed:	CSA/NGO
Drawn:	RMe
Checked:	
Approved:	PSI

Scale :- -
Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	CUT AND COVER/ RAMP SECTION, TYPICAL CONSTRUCTION SEQUENCE AND PILE INSTALLATION SEQUENCE
Drawing No.	RC/1640/HO/HBT/TU/DWG/CC/SUP/505/A

Original Drawing Size A1



RAMP SECTION
TYPE-RP2M2 (2 LANE+MEDIAN+2 LANE)
SCALE 1:50

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
3. SIZING AND DETAILS OF TYPICAL DETAILS OF CRASH BARRIER , UTILITY PIPE TRENCH , MAIN DRAINAGE ETC. MAY CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN .
5. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTION TO BE READ IN CONJUNCTION WITH TCS-07.

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	03.12.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
048106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

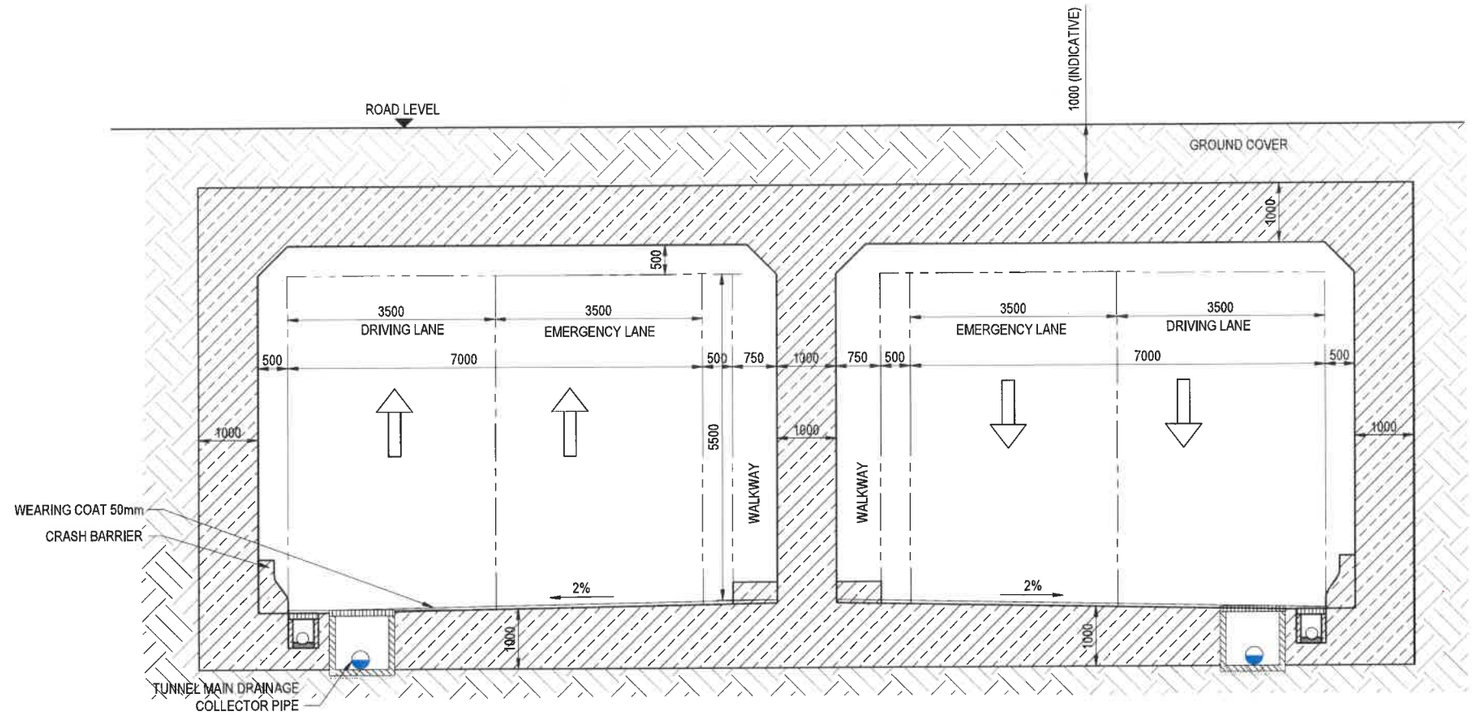
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	CSA	Scale :- 1:50	
Drawn:	RMe		
Checked:	CSa		
Approved:	PSi	Sheet size: A1	

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	OPEN RAMP (TYPE - RP2M2) - 2 LANES+1M MEDIAN+2 LANE
Drawing No.	RC/1640/HO/HBT/TU/DWG/RP/RCS/506/A

Original Drawing Size A1



CUT AND COVER SECTION
TYPE - CC2W2 (2 LANE+MEDIAN WALL+2 LANE)
SCALE 1:50

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
3. SIZING AND DETAILS OF TYPICAL DETAILS OF CRASH BARRIER , UTILITY PIPE TRENCH , MAIN DRAINAGE ETC. MAY CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN .
5. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTION SHALL BE READ IN CONJUNCTION WITH TCS-8.

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	03.12.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT
GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Plaina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

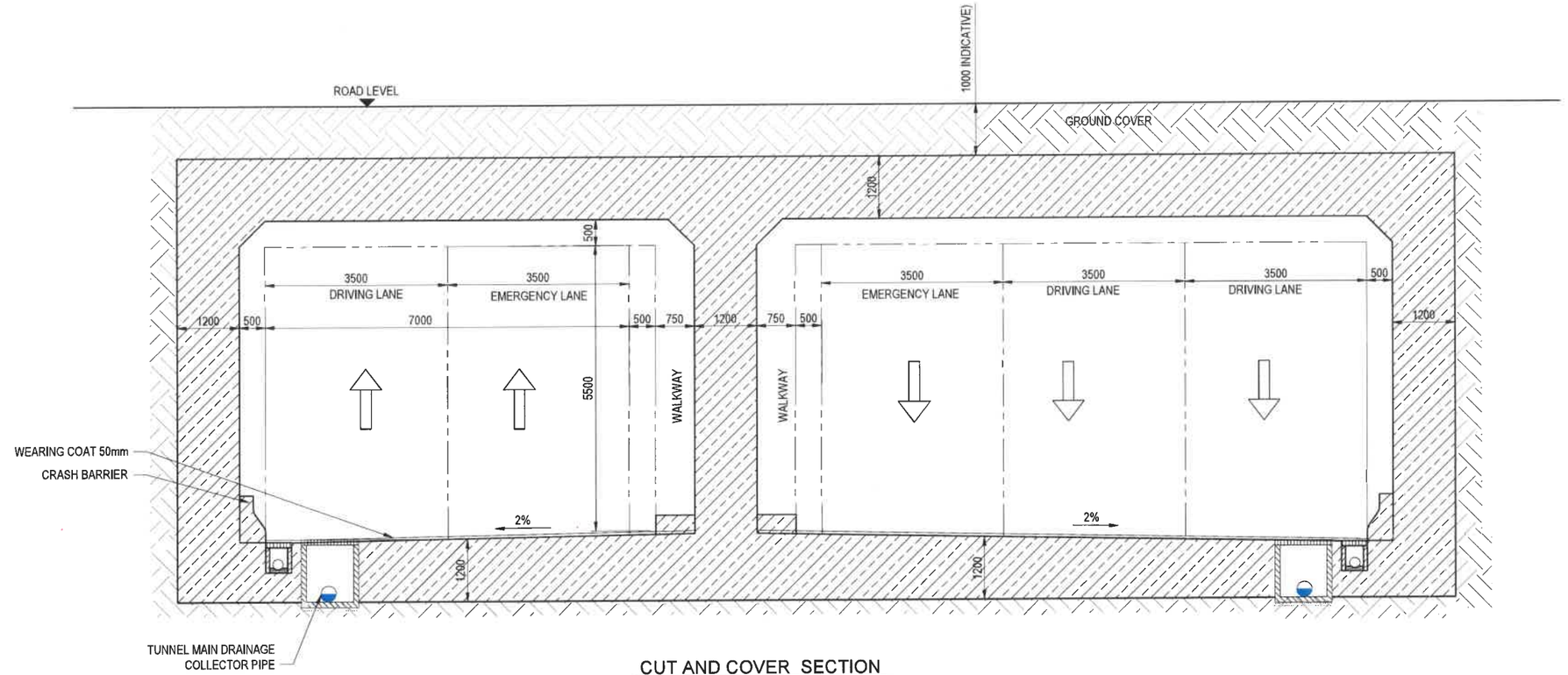
DRAFT PROJECT REPORT

Designed:	CSA
Drawn:	RMe
Checked:	CSa
Approved:	PSi

Scale :- 1:50
Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	CUT AND COVER SECTION (TYPE - CC2W2)- 2 LANES+1M WALL+2 LANE
Drawing No.	RC/1640/HO/HBT/TU/DWG/CC/RCS/507/A

Original Drawing Size A1



CUT AND COVER SECTION
TYPE - CC2W3 - 2 LANE+MEDIAN WALL+3LANE
SCALE 1:50

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
3. SIZING AND DETAILS OF TYPICAL DETAILS OF CRASH BARRIER , UTILITY PIPE TRENCH , MAIN DRAINAGE ETC. MAY CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN .
5. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTION SHALL BE READ IN CONJUNCTION WITH TCS-9.

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	03.12.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT: GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
815, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	CSA
Drawn:	RMe
Checked:	CSa
Approved:	PSi

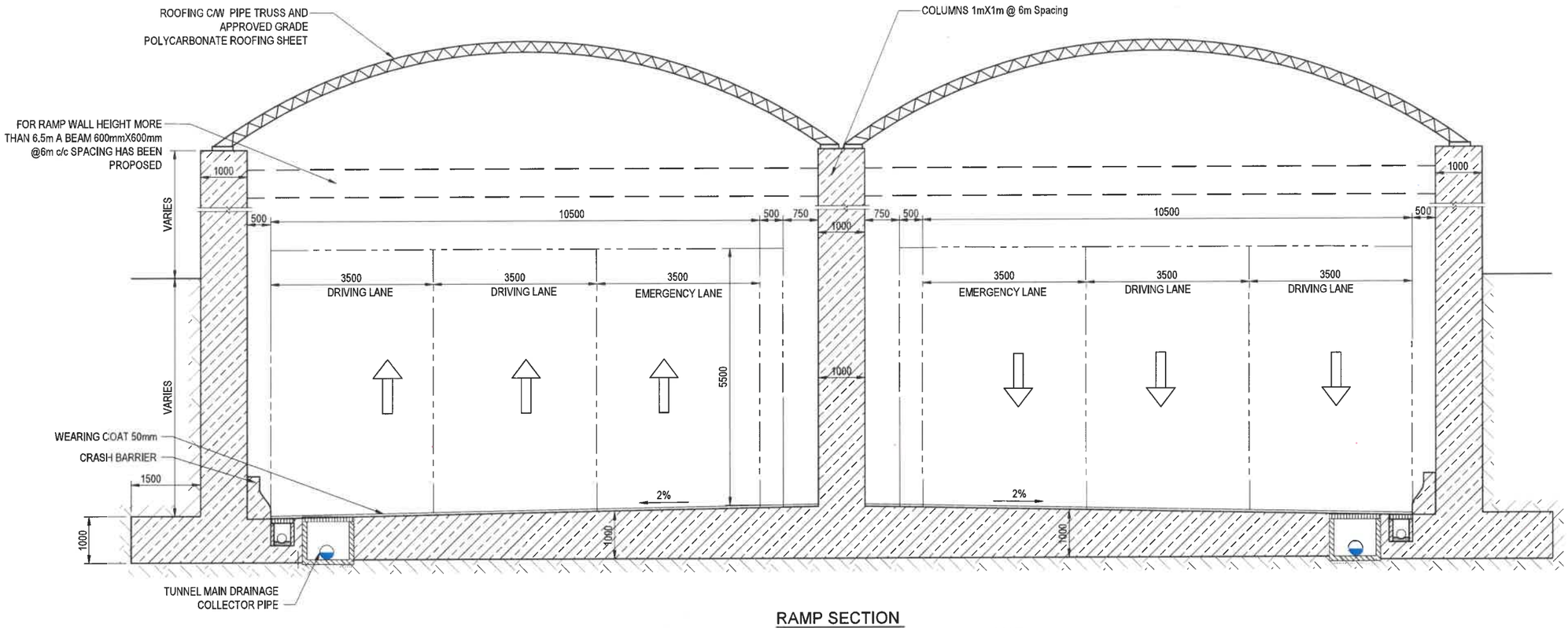
Scale :- 1:50
Sheet size: A1

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: CUT AND COVER SECTION (TYPE - CC2W3) 2 LANES+1M WALL+3LANE

Drawing No.: RC/1640/HO/HBT/TU/DWG/CC/RCS/508/A

Original Drawing Size A1



RAMP SECTION
(TYPE - RP3W3) 3LANE+MEDIAN WALL+3LANE
SCALE 1:50

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
3. SIZING AND DETAILS OF TYPICAL DETAILS OF CRASH BARRIER , UTILITY PIPE TRENCH , MAIN DRAINAGE ETC. MAY CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN .
5. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTIONS TO BE READ IN CONJUNCTION WITH TCS-10.

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	03.12.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT
GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED 04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA
Fluidyn India #15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

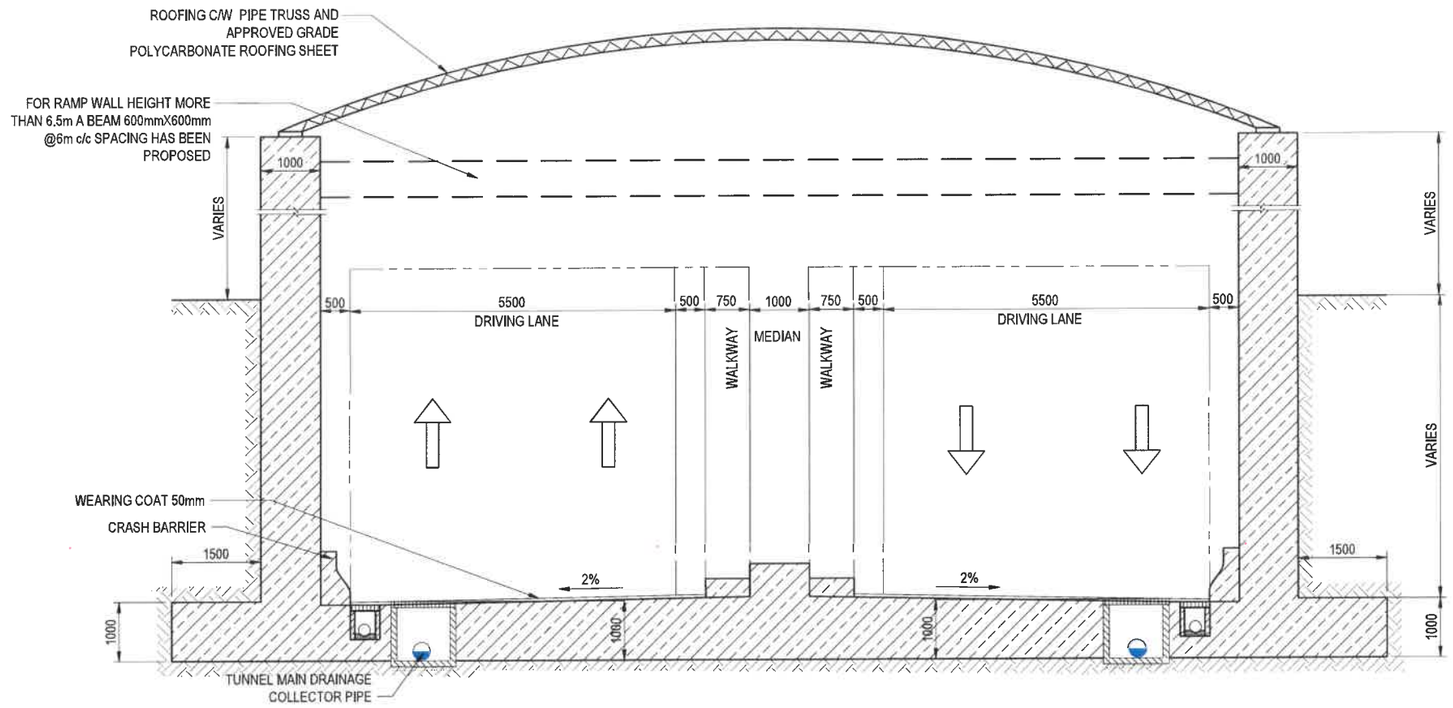
DRAFT PROJECT REPORT

Designed:	CSA	Scale :- 1:50	
Drawn:	RMe		
Checked:	CSa		
Approved:	PSi	Sheet size: A1	

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: OPEN RAMP (TYPE - RP3W3) 3 LANES+1M WALL+3 LANE

Drawing No.: RC/1640/HO/HBT/TU/DWG/RP/RCS/509/A



RAMP SECTION (TYPE - RPBD3) BIDIRECTIONAL - 1.5 LANE+MEDIAN+1.5 LANE (3 LANE) REGULAR CROSS SECTION

SCALE 1:50

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
3. SIZING AND DETAILS OF TYPICAL DETAILS OF CRASH BARRIER , UTILITY PIPE TRENCH , MAIN DRAINAGE ETC. MAY CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN .
5. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTION TO BE READ IN CONJUNCTION WITH TCS-11.

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	03.12.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT: GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED 04B106 WeWork, Platina Tower MG Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA
Fluidyn India #15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

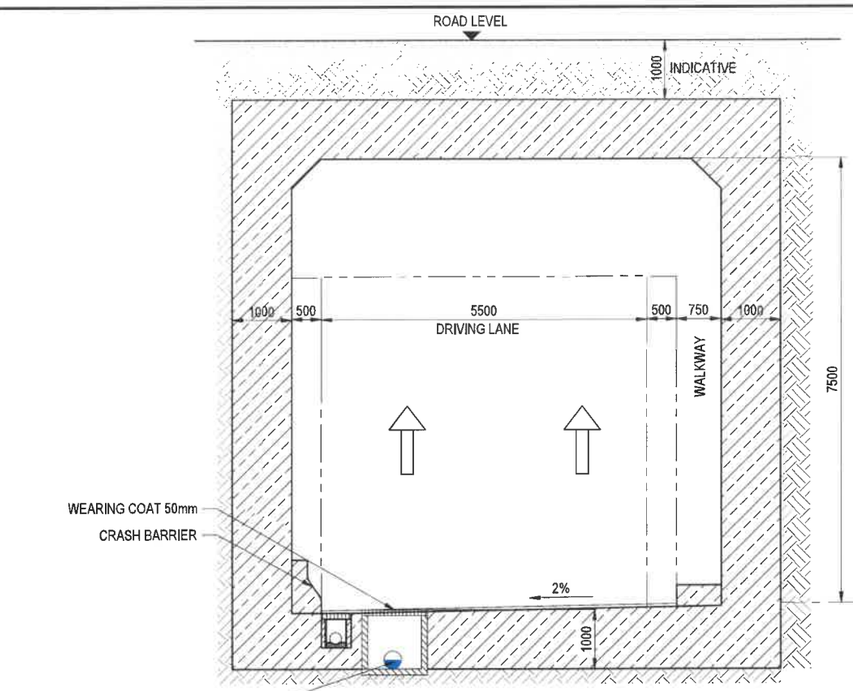
Designed:	CSA	Scale :-1:50	
Drawn:	RMe		
Checked:	CSa		
Approved:	PSi	Sheet size: A1	

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: BIDIRECTIONAL RAMP (TYPE- RPBD3) 3 LANES

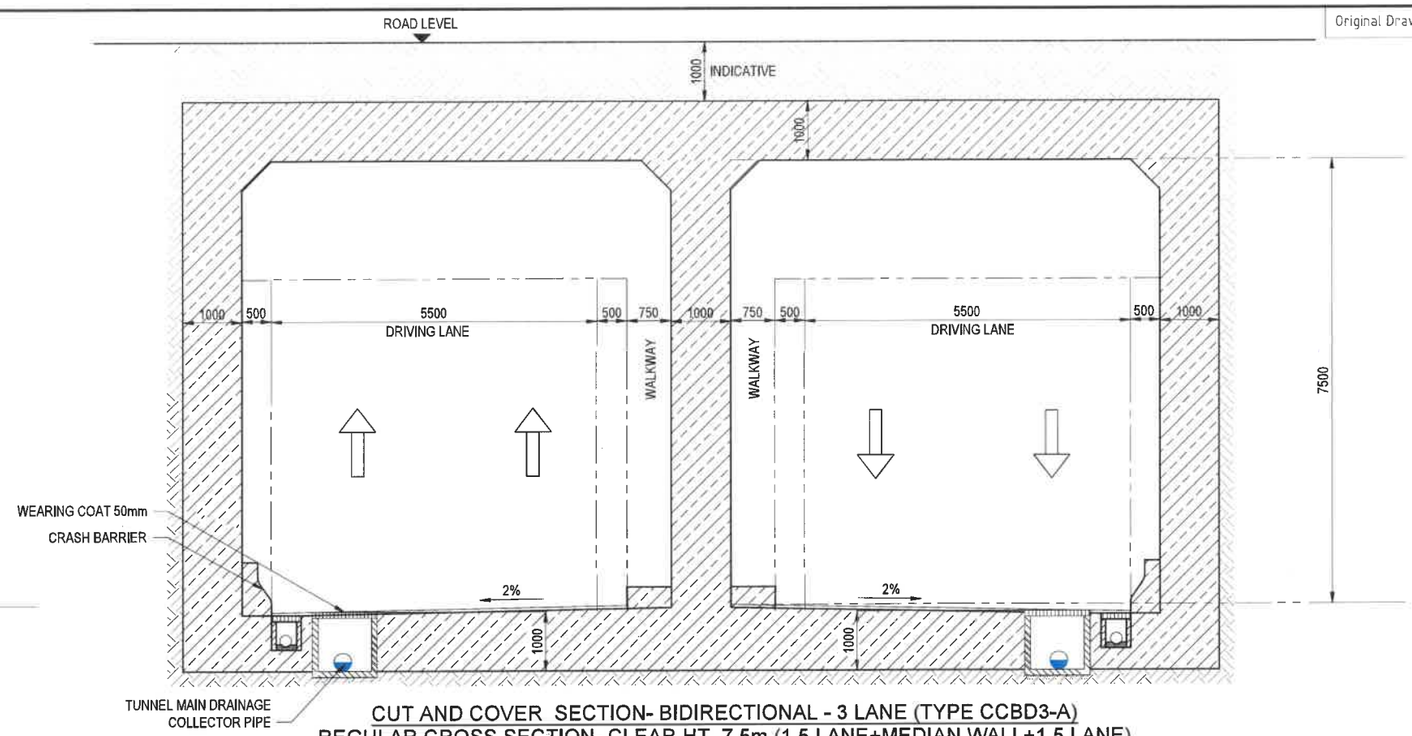
Drawing No.: RC/1640/HO/HBT/TU/DWG/RP/RCS/510/A

Original Drawing Size A1



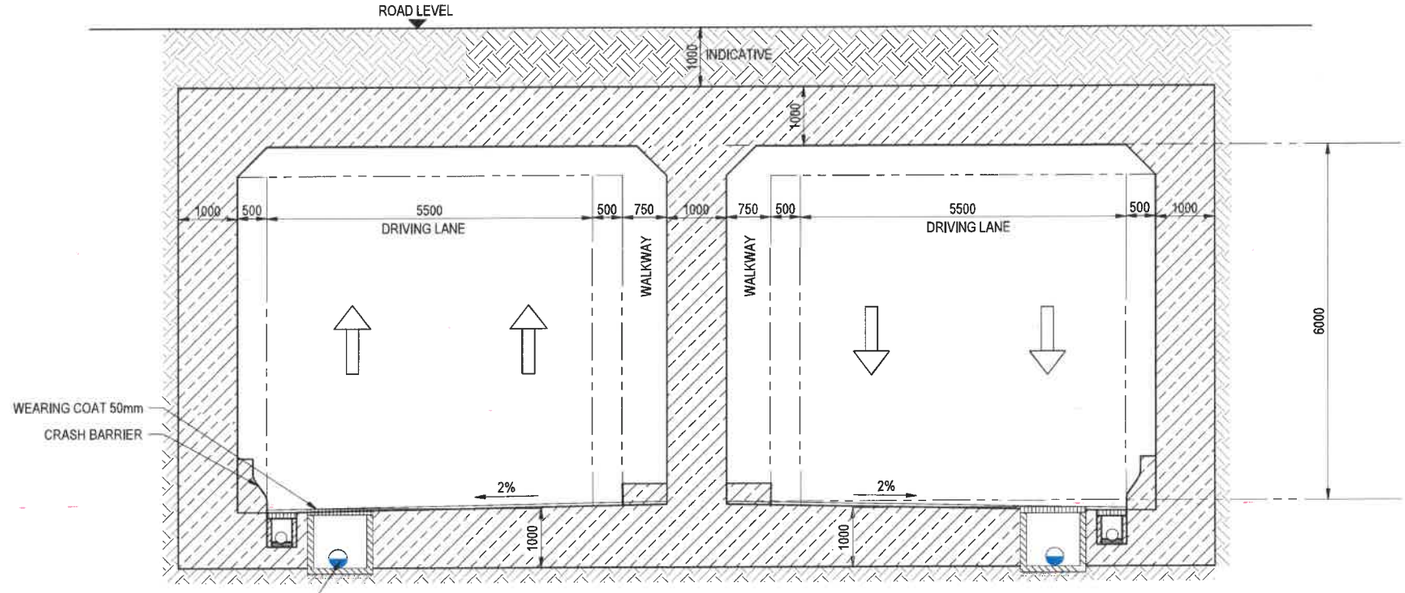
CUT AND COVER SECTION - 1.5 LANE (TYPE CCBD3-C)
REGULAR CROSS SECTION- CLEAR HT. 7.5m
SCALE 1:50

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D



CUT AND COVER SECTION- BIDIRECTIONAL - 3 LANE (TYPE CCBD3-A)
REGULAR CROSS SECTION- CLEAR HT. 7.5m (1.5 LANE+MEDIAN WALL+1.5 LANE)
SCALE 1:50

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D



CUT AND COVER SECTION- BIDIRECTIONAL - 3 LANE (TYPE CCBD3-B)
REGULAR CROSS SECTION- CLEAR HT. 6.0m (1.5 LANE+MEDIAN WALL+1.5 LANE)
SCALE 1:50

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
3. SIZING AND DETAILS OF TYPICAL DETAILS OF CRASH BARRIER , UTILITY PIPE TRENCH , MAIN DRAINAGE ETC. MAY CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN .
5. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTIONS TO BE READ IN CONJUNCTION WITH TCS-12, TCS-12A AND TCS-13

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	03.12.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04D106 WeWe5, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bangaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	CSA
Drawn:	RMe
Checked	CSa
Approved:	PSi

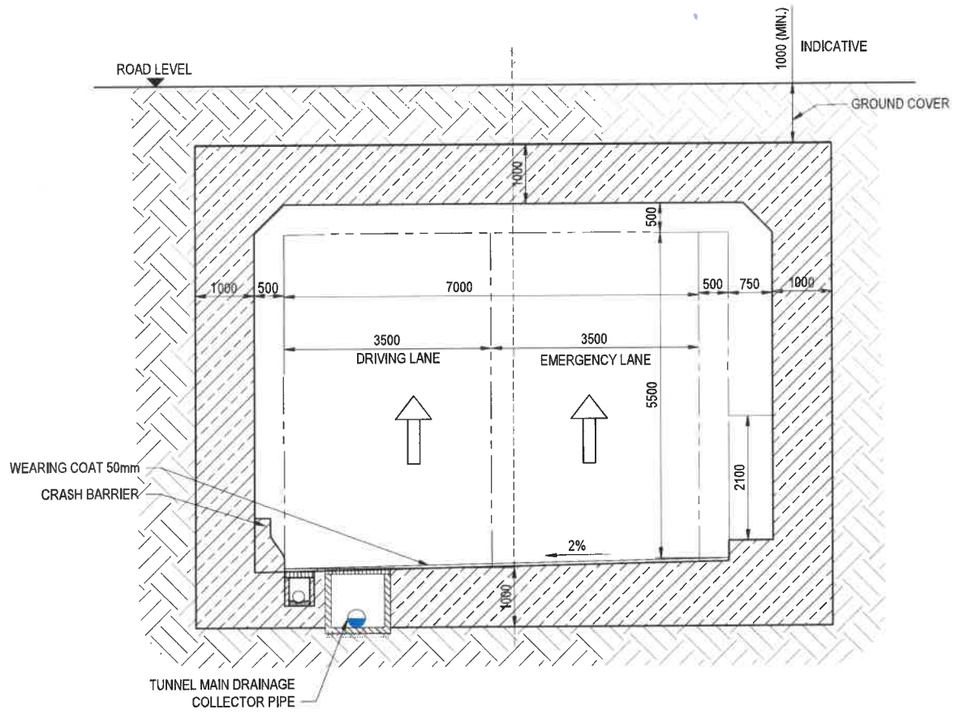
Scale :- 1:50
Sheet size: A1

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: BIDIRECTIONAL CUT AND COVER SECTIONS (TYPE CCBD3-A & TYPE CCBD3-B) - 3 LANES

Drawing No.: RC/1640/HO/HBT/TU/DWG/CC/RCS/511/A

Original Drawing Size A1



CUT AND COVER TYPICAL SECTION - 2 LANE CLEAR HEIGHT 6.0m (TYPE CC2L-A)

SCALE 1:50

MATERIALS: GRADE OF CONCRETE -M35 , STEEL GRADE Fe550D

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
3. SIZING AND DETAILS OF TYPICAL DETAILS OF CRASH BARRIER , UTILITY PIPE TRENCH , MAIN DRAINAGE ETC. MAY CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN .
5. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTION TO BE READ IN CONJUNCTION WITH TCS-3A.

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	04.12.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT: GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower M3 Road Nea Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

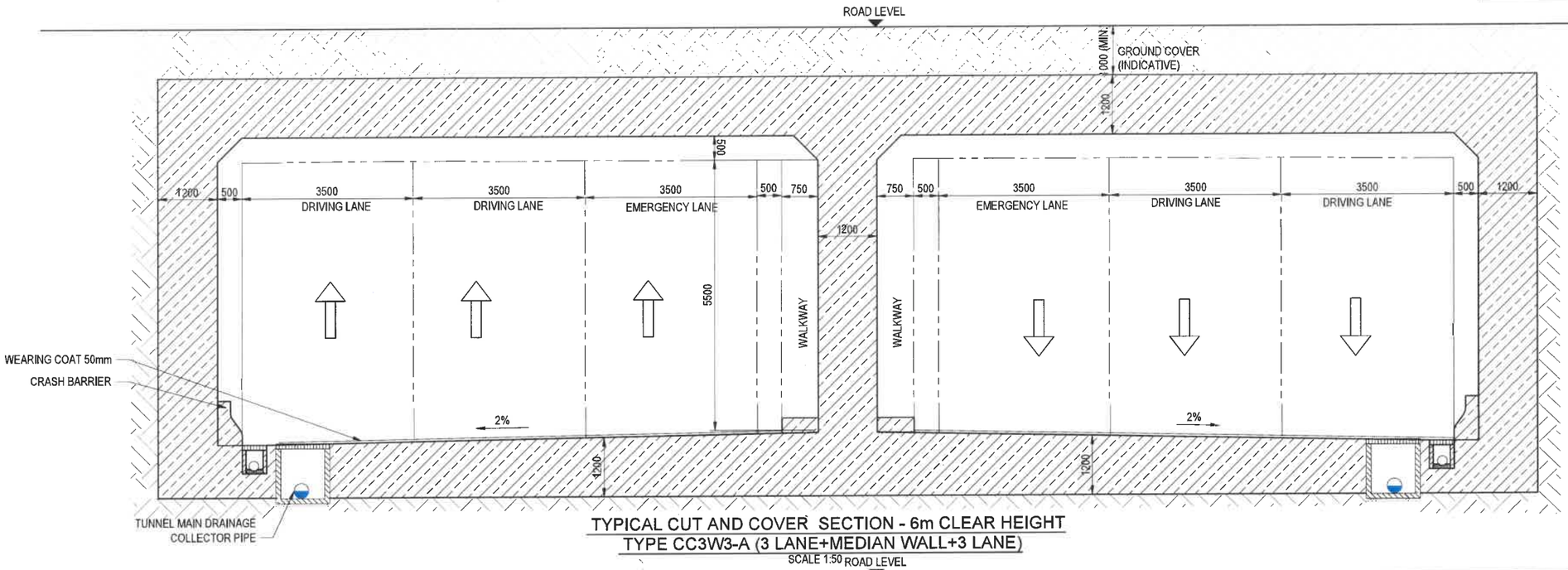
DRAFT PROJECT REPORT

Designed:	CSA
Drawn:	RMe
Checked:	CSa
Approved:	PSi

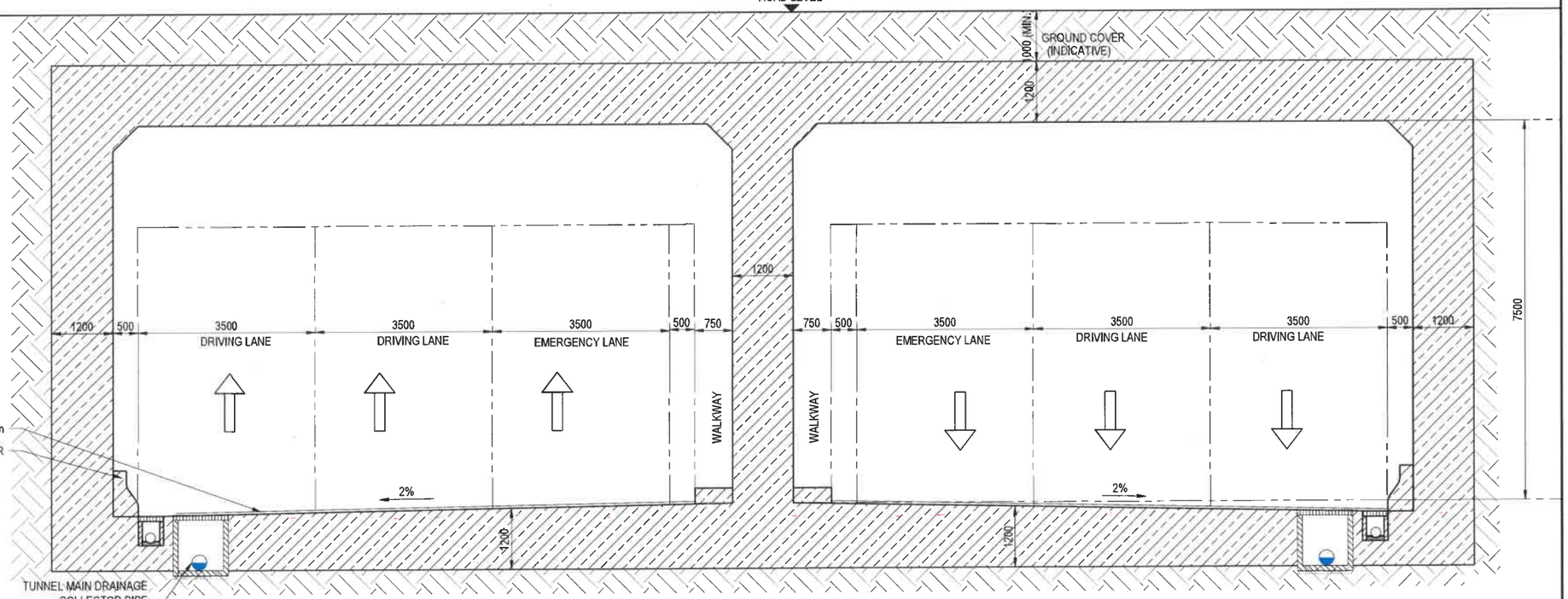
Scale :- 1:50
Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	CUT AND COVER SECTION (TYPE CC2L-A & TYPE CC2L-B) - 2 LANE TYPICAL
Drawing No.	RC/1640/HO/HBT/TU/DWG/CC/RCS/513/R3

Original Drawing Size A1



TYPICAL CUT AND COVER SECTION - 6m CLEAR HEIGHT
TYPE CC3W3-A (3 LANE+MEDIAN WALL+3 LANE)
SCALE 1:50



TYPICAL CUT AND COVER SECTION - 7.5m CLEAR HEIGHT
TYPE CC3W3-B (3 LANE+MEDIAN WALL+3 LANE)
SCALE 1:50

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
3. SIZING AND DETAILS OF TYPICAL DETAILS OF CRASH BARRIER , UTILITY PIPE TRENCH , MAIN DRAINAGE ETC. MAY CHANGE AS PER CONTRACTOR'S DETAILED DESIGN.
4. WALKWAY CAN BE PLANNED ON EITHER SIDE OF THE ROAD AS PER DETAILED DESIGN .
5. DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.
6. CROSS SECTIONS TO BE READ IN CONJUNCTION WITH TCS-14 & TCS-14A.

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	03.12.24	PRELIMINARY
A	30.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

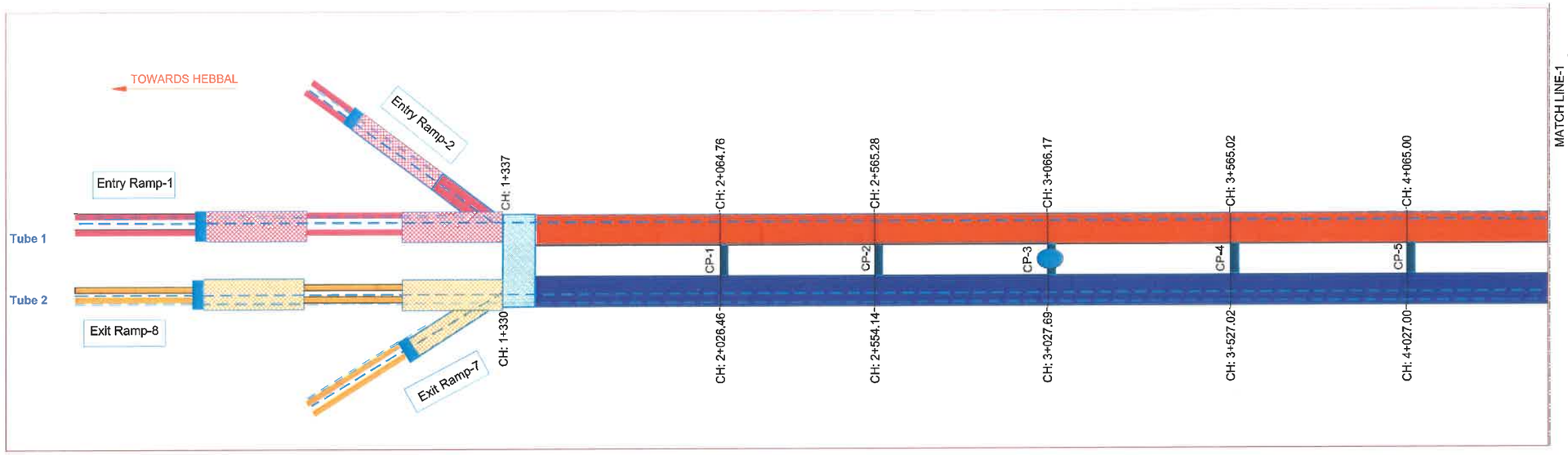
Designed:	CSA
Drawn:	RMe
Checked:	CSa
Approved:	PSI

Scale :-1:50
Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	CUT AND COVER SECTION (TYPE CC3W3-A AND CC3W3-B) 3 LANE+MEDIAN WALL+3LANE
Drawing No.	RC/1640/HO/HBT/TU/DWG/CC/RCS/514/A

Original Drawing Size A1

Appendix-B-III



TUNNEL DRAINAGE SCHEME - PACKAGE 1

LEGEND:

- TUBE-1
- TUBE-2
- SHAFT
- NATM ENTRY
- NATM EXIT
- C&C ENTRY
- C&C EXIT
- RAMP ENTRY
- RAMP EXIT
- RAMP SUMP
- CP SUMP
- CROSS PASSAGE
- SURFACE DRAINAGE
- CENTRAL DRAINAGE
- SUMP DISCHARGE

NOTE:

1. THE DRAWING IS INDICATIVE TO SHOW THE OVERALL DRAINAGE LAYOUT OF THE PACKAGE.
2. ALIGNMENT DRAWINGS SHALL SUPERSEDE THE DETAILS IN CASE OF ANY DISCREPANCY OF CHAINAGE/ LENGTH OR LOCATIONS ETC.
3. DRAWING IS NOT TO SCALE.

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
A	31.01.25	FORMAL SUBMISSION

CLIENT: GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT: RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Plaksa Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

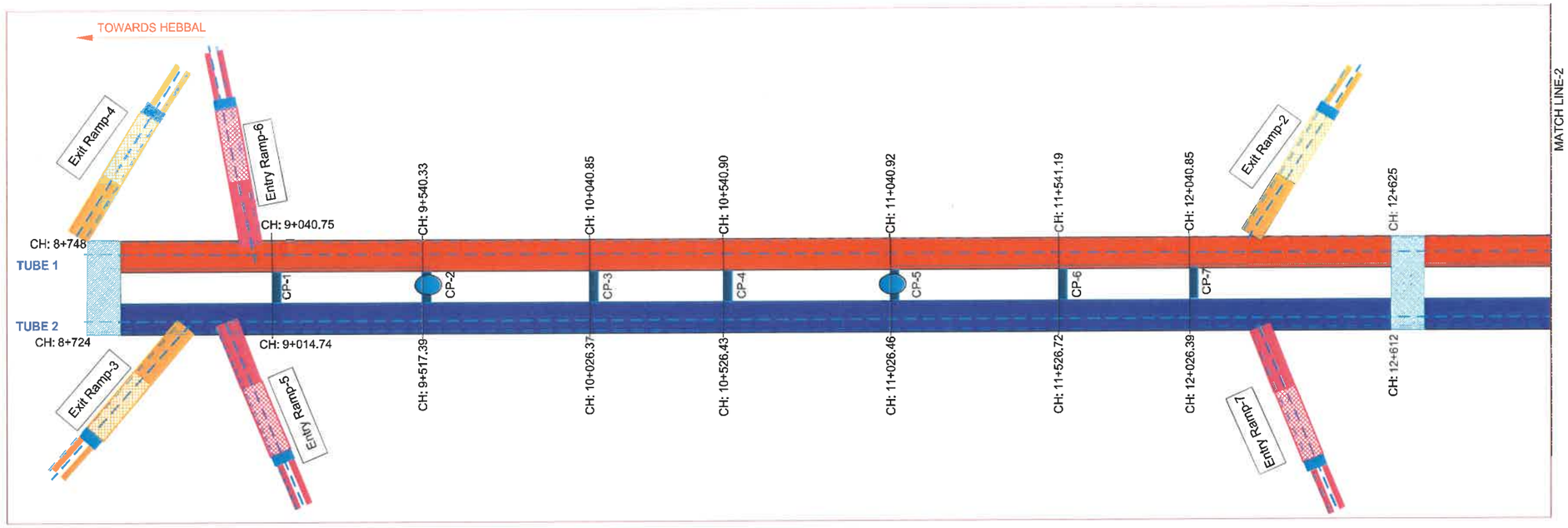
Designed:	SDh	Scale :- NTS
Drawn:	ZHu	
Checked:	PSI	
Approved:	PSI	Sheet size: A1

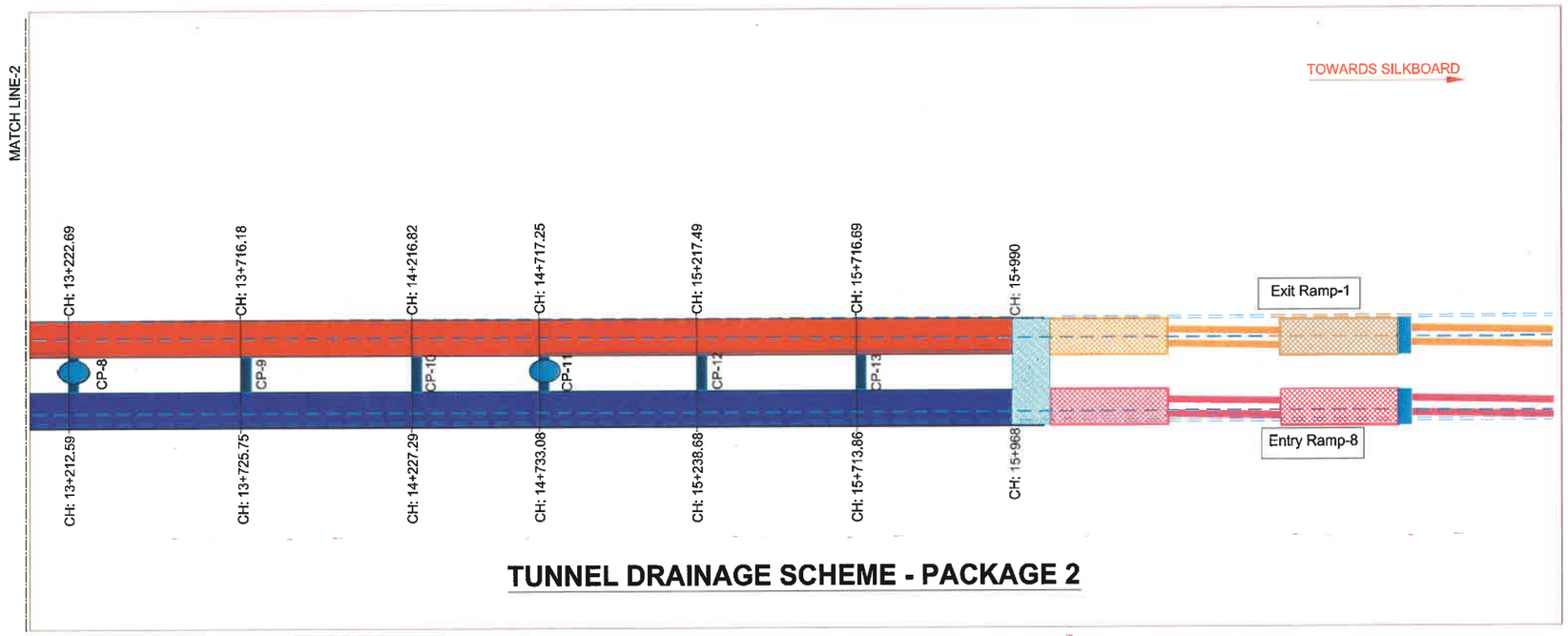
Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: TUNNEL DRAINAGE SCHEME PACKAGE-1 (HEBBAL TO RACE COURSE)

Drawing No.: RC/1640/HO/HBT/TU/DWG/GEN-ALG-111

Original Drawing Size A1





TUNNEL DRAINAGE SCHEME - PACKAGE 2

LEGEND:

- TUBE-1
- TUBE-2
- SHAFT
- NATM ENTRY
- NATM EXIT
- C&C ENTRY
- C&C EXIT
- RAMP ENTRY
- RAMP EXIT
- RAMP SUMP
- CP SUMP
- CROSS PASSAGE
- SURFACE DRAINAGE
- CENTRAL DRAINAGE
- SUMP DISCHARGE

FOR DPR SUBMISSION

NOTE:

1. THE DRAWING IS INDICATIVE TO SHOW THE OVERALL DRAINAGE LAYOUT OF THE PACKAGE.
2. ALIGNMENT DRAWINGS SHALL SUPERSEDE THE DETAILS IN CASE OF ANY DISCREPANCY OF CHAINAGE/ LENGTH OR LOCATIONS ETC.
3. DRAWING IS NOT TO SCALE.

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
A	31.01.25	FORMAL SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
045106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

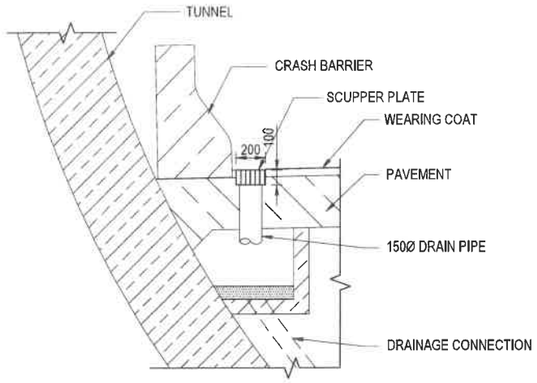
Designed:	SDh	Scale :- NTS	
Drawn:	ZHu		
Checked:	PSi		
Approved:	PSi	Sheet size: A1	

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

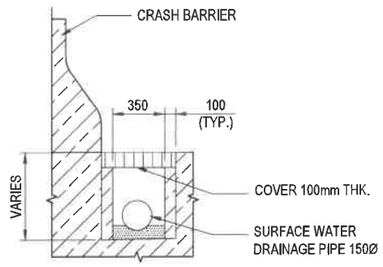
Drawing Title: TUNNEL DRAINAGE SCHEME PACKAGE-2 (RACE COURSE TO SILK BOARD JUNCTION)

Drawing No.: RC/1640/HO/HBT/TU/DWG/GEN-ALG-112

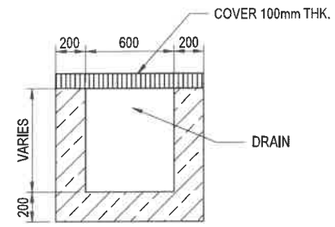
Original Drawing Size A1



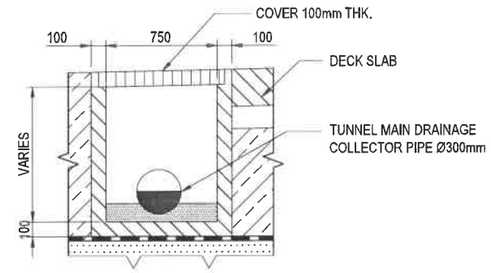
TYPICAL DETAILS OF
PAVEMENT DRAINAGE SPOUT
SCALE - NTS



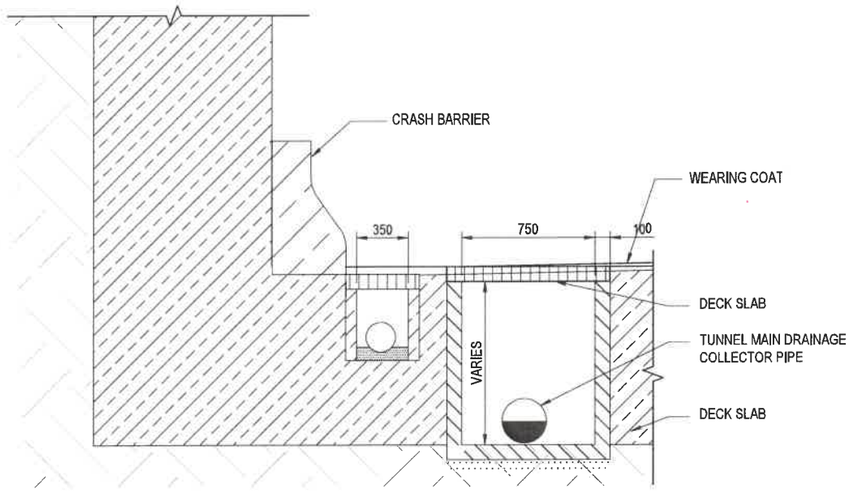
TYPICAL DETAILS OF SURFACE
DRAIN MAMHOLE (NATM AND C&C)
SCALE - NTS



TYPICAL DETAILS OF TUNNEL
CENTRAL COVERED DRAIN
SCALE - NTS



TYPICAL DETAILS OF TUNNEL
MAIN DRAIN MANHOLE (NATM)
SCALE - NTS



TYPICAL DETAILS OF MANHOLE IN CUT & COVER
TUNNEL AND RAMP
SCALE - NTS

NOTES:

1. DRAWING IS NOT TO SCALE. DIMENSIONS ARE NOT BE MEASURED.
2. THE DRAINAGE DETAILS SHOWN ARE INDICATIVE AND SUBJECTED TO CHANGE AS PER CONTRACTORS DETAILED DESIGN. CONTRACTOR SHALL REFER THE STANDARD REQUIREMENT OF SPOUT AND MANHOLES AS PER IRC STANDARD.
3. FOR RCS AND OTHER DESIGN DETAILS REFER SEPARATE DRAWINGS.
4. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

SCALE 1 : 20
1m 0 1m 2m

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
A	31.01.25	FORMAL SUBMISSION

CLIENT
GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

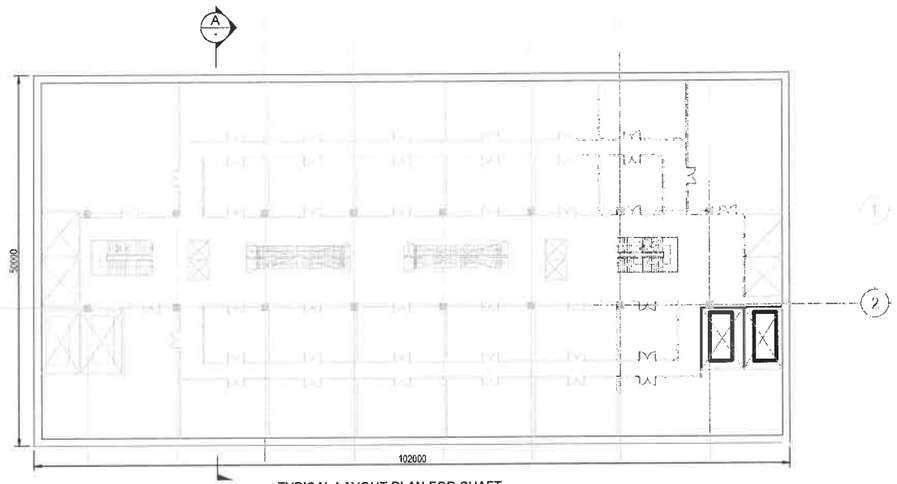
CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platasa Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurgram Haryana INDIA
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

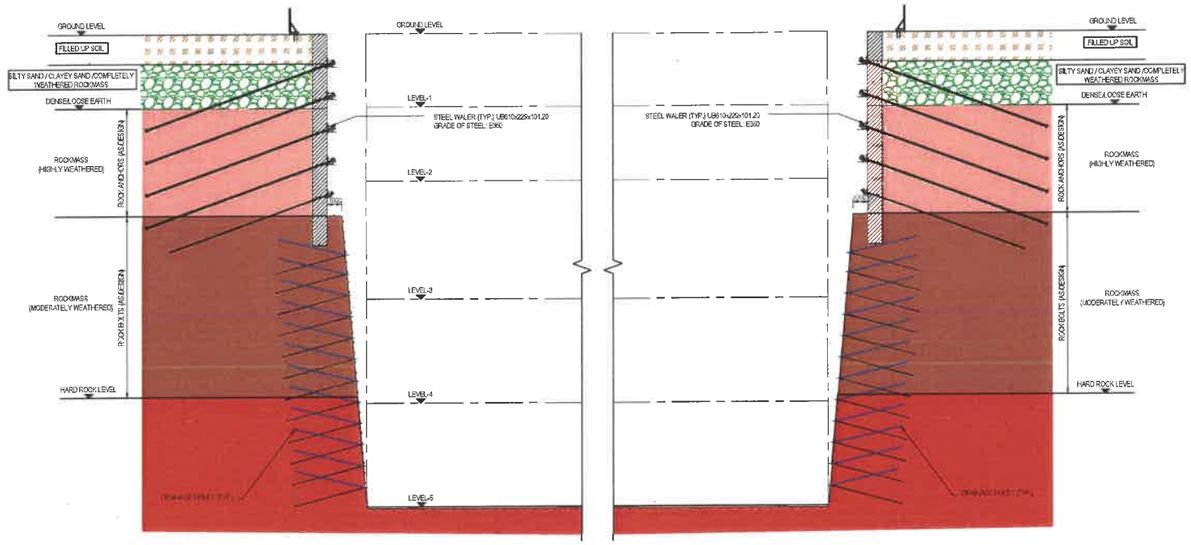
Designed:	SDh	Scale :- 1:50	
Drawn:	MGs		
Checked:	SDh		
Approved:	PSi	Sheet size: A1	

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	TYPICAL DETAILS OF DRAINS
Drawing No.	RC/1640/HO/HBT/TU/DWG/GEN/ALG/113/A

Original Drawing Size A1



TYPICAL LAYOUT PLAN FOR SHAFT
SCALE 1:100



TYPICAL CROSS SECTION AT CUT/COVER SHAFT
WITH SECANT PILES , ROCK ANCHORS, ROCK BOLTS AND WALER
SCALE 1:100

SECTION A
SCALE 1:100

NOTES:

1. ALL DIMENSIONS ARE IN mm.
2. THE STRUCTURAL DIMENSIONS SHOWN ARE INDICATIVE AND MAY CHANGE AFTER DETAILED DESIGN.
3. DRAWING SHALL BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND CONTRACT PROVISIONS.

SCALE 1 : 100
5m 0 5m 10m

FOR DPR SUBMISSION

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
A	30.01.25	FORMAL SUBMISSION

CLIENT
GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	SDh	Scale :- 1:100
Drawn:	MGs	
Checked	SDh	
Approved:	PSi	Sheet size: A1

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: CUT AND COVER SHAFT SECTION , TEMPORARY WORKS WITH SECANT PILES AND ROCK SLOPE

Drawing No.: RC/1640/HO/HBT/TU/DWG/CC/SUP/506/A

SUPPORT DESIGN AND MONITORING

Original Drawing Size A1

1. INSTRUMENTATION AND IT'S MONITORING TO ALL ADJACENT EXISTING BUILDING STRUCTURES (EBS), UTILITIES, SERVICES, PAVEMENT, ROAD FURNITURE SHALL BE START AT LEAST 15 DAYS BEFORE EXCAVATION WORK TO ESTABLISH STABLE BASE LINE TRENDS IN READING.

2. ALL INSTRUMENTATION TO BE MAINTAINED THROUGHOUT CONSTRUCTION PERIOD AND IMMEDIATELY REPLACED /REINSTATED IF DAMAGED/DEFECTIVE OR COVERED PERMANENTLY, DEEMED CRITICAL TO THE WORKS

3. THE FREQUENCY OF MONITORING WILL BE VARIED DEPENDING ON THE TYPE OF INSTRUMENT AND THE RELATIONSHIP BETWEEN THE INSTRUMENT AND AREAS OF CURRENT ACTIVITY.

4. VIBRATION MONITORING WITH INITIAL CALIBRATION WILL BE CARRIED OUT ON SELECTED STRUCTURES WHERE THE CONSTRUCTION ACTIVITY IS LIKELY TO RESULT IN VIBRATIONS. THE VIBRATION MONITORING REQUIREMENT WILL BE ESTABLISHED DURING INITIAL STAGES OF THE SPECIFIC CONSTRUCTION ACTIVITIES, WHICH MAY CAUSE VIBRATION TO EXCEED THE ACCEPTABLE LIMITS.

(a) THE VIBRATION WILL BE MONITORED FOR BUILDING NEAR TO CUT AND COVER STATION DURING DIAPHRAGM WALL OPERATION/PILING OPERATION /EXCAVATION ACTIVITY.

(b) THE VIBRATION WILL BE MONITORED FOR THE MODERATE / SEVERE / VERY SEVERE BUILDINGS OR BUILDINGS HIGHER THAN B+G+2 OR G+3 AND WITHIN 5mm CONTOUR OR LOCATED DIRECTLY ABOVE THE TBM TUNNEL.

(c) THE VIBRATION WILL BE MONITORED MIXED FACE CONDITION IS ENCOUNTERED DURING TBM TUNNELING.

5. VIBRATION MONITORING SHALL BE CARRIED OUT BY PLACING SENSORS ON THE GROUND FLOOR AND THE HIGHEST FLOOR OF THE BUILDING. IN ADDITION, IF A BUILDING HAS MORE THAN 4 FLOORS, VIBRATION SENSORS SHALL BE INSTALLED ON EVERY FOURTH FLOOR. VIBRATION MONITORING INSTRUMENTS SHALL MEET THE REQUIREMENTS SPECIFIED IN BS 5228-2 2009.

6. SUFFICIENT NUMBER OF DEEP LEVELING DATUM SHOULD BE INSTALLED BEFORE THE START OF ANY MONITORING WORKS. THE LOCATION OF THE DEEP LEVELING DATUM SHOULD BE OUTSIDE THE ZONE OF INFLUENCE OF THE WORKS AND MUST BE ACCEPTED BY THE DESIGNER.

7. PRIOR TO THE START OF ANY EXCAVATION WORKS ON SITE, A SATISFACTORY SET OF BASE READINGS COMPRISING THE MEAN OF AT LEAST THREE SEPARATE INDEPENDENT SURVEYS WILL BE OBTAINED FOR ALL MONITORING POINTS. EACH SURVEY SHALL BE TIED TO THE REFERENCE DEEP LEVELING DATUM.

8. AT LEAST 15% OF ALL STRUTS WILL BE MONITORED FOR LOAD USING STRAIN GAUGES. LOAD CELL SHALL BE APPLICABLE WHEREVER THERE IS A PRELOADING ON THE STRUTS. WHERE STRAIN GAUGES ARE USED, A MINIMUM OF TWO STRAIN GAUGES COUPLED WITH TEMPERATURE SENSOR WILL BE INSTALLED AT EACH MONITORING LOCATION.
AT LEAST 5% OF GROUND ANCHORS WILL BE MONITORED FOR LOAD USING LOAD CELL.
THE STRUT AND ANCHOR MONITORING LOCATION SHOULD BE SELECTED SO THAT;
   - STRUTS/ANCHOR OF ALL LEVELS AT THE SELECTED LOCATIONS IS MONITORED,
   - THE STRUT/ANCHOR MONITORING LOCATION COINCIDES APPROXIMATELY WITH MONITORING ARRAY.

9. MAJOR UTILITIES LIKE WATER PIPELINE OF MORE THAN 600MM DIAMETER OR SEWER LINE IN THE MONITORING ZONE WHETHER SUPPORTED OR NOT, WILL BE MONITORED USING SURFACE SETTLEMENT POINT PLACED ON OR IMMEDIATELY ABOVE THE UTILITY AT INTERVALS NOT MORE THAN 25M.

10. BUILDING SETTLEMENT POINT WILL BE PROVIDED ON HERITAGE STRUCTURES/HISTORIC BUILDINGS AT GROUND LEVEL AND EXTEND THROUGHOUT THE AREA WHERE PREDICTED MOVEMENTS ARE EXPECTED TO EXCEED 5 MILLIMETRES. SPECIAL ATTENTION NEEDS TO GIVE FOR EXISTING WELLS ON THE TUNNEL ALIGNMENT.

11. SURFACE SETTLEMENT POINT/PRECISE LEVELING STUDS (ROAD NAILS) WILL BE INSTALLED IN HIGHWAY AND PAVEMENT AREAS IN ARRAY AT 90 DEGREES TO THE TUNNEL ALIGNMENT, THESE ARRAYS WILL EXTEND TO THE OUTER EDGES OF THE 5 MILLIMETRES PREDICTED SETTLEMENT CONTOURS LINES. SUITABLE MONITORING POINTS WHICH CANNOT BE READILY DISTURBED WILL BE INSTALLED OVER OPEN/PARK AREAS. THE LOCATION AND TYPE OF SUCH MONITORING POINTS WILL BE AGREED WITH THE EMPLOYERS'S REPRESENTATIVE.

12. THE ARRAY CAN BE SUITABLY MODIFIED OR MORE INSTRUMENTS CAN BE INCLUDED AS PER SITE CONDITIONS NEAR THE STATION AND BORED TUNNEL SECTIONS, IF REQUIRED.

13. THE MINIMUM MONITORING ZONE FOR THE BUILDINGS WILL EXTEND TO THE OUTER EDGES OF THE 5MM PREDICTED CONTOUR LINE.

14. PRECISE TOTAL STATION WITH 1" ANGULAR ACCURACY AND 1MM + 1.5PPM DISTANCE ACCURACY SHALL BE USED TO SURVEY 3D MONITORING TARGETS.THESE TARGETS SHALL BE MONITORED REGULARLY TO CHECK STABILITY.

15. PRECISE LEVELING EQUIPMENT COMPRISING AUTOMATIC DIGITAL LEVELS AND INVAR STAFF SHALL BE USED TO SURVEY THE DEEP LEVELING DATUM. THESE DEEP LEVELING DATUM SHALL BE MONITORED REGULARLY TO CHECK THEIR STABILITY.

16. ALL THE DATA FROM MONITORING INSTRUMENTS SHALL BE PROCESSED WITHIN 24HOURS AND MADE AVAILABLE TO THE RELEVANT AUTHORITY AND / OR THE EMPLOYER'S REPRESENTATIVE.

17. ALL INSTRUMENT SHALL BE CONNECTED TO DATA LOGGING EQUIPMENT WHERE POSSIBLE SO THAT MEASUREMENTS CAN BE TAKEN ON A CONTINUOUS 24 HOURS BASIS. DATA SHALL BE ACCESSIBLE VIA COMPUTER IN THE ENGINEERS SITE OFFICE. AN ALARM SYSTEM SHALL BE INCORPORATED IN TO THE COMPUTER NETWORK, WITH THE ALARM BEING ACTIVATED IF GAUGE READING EXCEED ANY OF AGREED ALERT,ACTION AND ALARM LEVELS.

18. THE FREQUENCY OF MONITORING WILL BE REVISED DEPENDING ON THE CONSTRUCTION ACTIVITY AND THE PACE OF WORK.
THE FOLLOWING GUIDELINES WILL BE USED WHEN DECIDING ON THE FREQUENCY OF MONITORING:
   - MONITORING WILL BE REPEATED ON THE SAME DAY IF READINGS WERE CONSIDERED INCONSISTENT BY THE RELEVANT AUTHORITY.
   - IF THE READINGS SHOW SIGNIFICANT CHANGE, THE FREQUENCY OF MONITORING WILL BE INCREASED.
   - IF THERE IS AN UNDESIRABLE OCCURRENCE SUCH AS EXCESSIVE GROUND LOSS FOR BORED TUNNELS OR BASE HEAVE OR BASE BLOW OUT OR HIGH SEEPAGE IS DETECTED. THE FREQUENCY OF MONITORING WILL BE INCREASED.

19. MONITORING SHALL BEGIN PRIOR TO COMMENCEMENT OF WORK TO ENABLE INSTRUMENT BASE LINE VALUES TO BE DETERMINED ACCURATELY, AND SHALL CONTINUE UNTIL ALL MOVEMENTS AND DISTORTIONS TO THE GROUND AND EBS, AND CHANGES TO THE GROUNDWATER TABLE THAT MIGHT BE ATTRIBUTED TO THE WORKS, AS SHOWN BY THE MONITORING, HAVE EFFECTIVELY CEASED FOR A PERIOD OF THREE MONTHS.

20. DURING THE DETAIL DESIGN PHASE, IDENTIFYING OF STRUCTURES/SENSORS FOR REAL TIME MONITORING SHALL BE DONE BY CONTRACTOR WITH THE APPROVAL OF ENGINEER.

21. ALL INSTRUMENTATION AND MONITORING WORKS SHALL BE IN RIGOROUS ADHERENCE TO ACCEPTED FIELD WORKS PROCEDURES.

22. ALL EBS UNLESS NOTED OTHERWISE IF ANY PART OF A EBS FALLS WITH THE MONITORING ZONE THAT EBS SHALL BE MONITORED WITH.
-BUILDING SETTLEMENT POINTS, ONE EACH AT THE CORNERS OF THE EBS. TYPE OF POINTS TO BE INSTALLED
-ON THE STRUCTURES SHALL BE ACCEPTABLE TO THE RELEVANT AUTHORITY.
-3D OPTICAL TARGET IN COLUMNS
-TILT METRES
-CRACKMETRES TO MEASURE EXISTING OR NEW CRACKS

23. ALL EXISTING PEDESTRIAN BRIDGES (UNLESS NOTED OTHERWISE) / FOOT OVER BRIDGE PILLARS IN THE MONITORING ZONE SHALL BE MONITORED WITH:
- MOVEMENT MONITORING POINTS, TYPE OF POINTS TO BE INSTALLED ON THE STRUCTURES MUST BE ACCEPTABLE TO THE
- RELEVANT AUTHORITY
- 3D OPTICAL TARGET/TILT METER ON THE STRUCTURES.

24. ALL PRECISE LEVELING DATA SHALL BE CRITICALLY ANALYZED TO ELIMINATE SUPPLY OF INCORRECT, CONFUSED OR CONFLICTING INFORMATION.

25. PILE TOP/ DIAPHRAGM WALL TOP MOVEMENT SHALL BE MONITORED DURING EVERY EXCAVATION AND REFERENCE POINT SHALL BE NOTED BEFORE STARTING OF DEEP EXCAVATION.

26. ADDITIONAL DUMMY MS PIPE OF 150MM DIA SHALL BE EMBEDDED INSIDE CONCRETE AT EACH INCLINOMETER LOCATION, WHEN INSTALLING INSIDE THE D-WALL, IN CASE THE MAIN PIPE GET BLOCKED. PIPE SHOULD BE SEALED AT BOTH ENDS TO PREVENT CONCRETE ENTERING INSIDE.

27. CONTRACTOR SHALL :
- ADJUST INSTRUMENTATION MOUNTING DEVICES TO SUIT ACTUAL FIELD CONDITION WITH APPROVAL OF EMPLOYER/ENGINEER.
- VERIFY THE LOCATIONS OF THE EXISTING STRUCTURES PRIOR TO INSTALLATION OF INSTRUMENTS.
- HERITAGE AND SENSITIVE STRUCTURE TO BE MONITORED ON REAL TIME BASIS IF FOUND CRITICAL AS PER BUILDING DAMAGE ASSESSMENT CRITERIA.

CUT & COVER:

28. DURING SHAFT CONSTRUCTION, MONITORING METHOD OF EXISTING INDIAN RAILWAY LINE OR METRO LINE CROSSING SHALL BE USED WITH PRIOR APPROVAL OF CONCERNED AUTHORITY, WELL IN ADVANCE. INSTRUMENTS WITHIN OUTER EDGE OF 5mm SETTLEMENT CONTOUR LINE SHALL BE MONITORED DAILY UNTIL ONE WEEK. AFTER PERMANENT STRUCTURE IS CAST. WEEKLY MONITORING SHALL BE CARRIED OUT UNTIL 3 WEEKS CONSECUTIVE READINGS SHOW NO CHANGE.

BORED TUNNEL:

29. THE MONITORING FREQUENCY SHALL BE DOUBLED DURING THE TBM INITIAL DRIVE. THE INITIAL DRIVE DISTANCE IS FIRST 150 METERS OF TUNNELING.

30. THE FREQUENCY OF SURFACE MONITORING FOR THE BORED TUNNELS SHALL BE VARIED WITH RESPECT TO THE LOCATION OF THE TBM. THE FOLLOWING INDICATIVE FREQUENCY REPRESENTS THE MINIMUM REQUIRED.
   - FOUR TIMES A DAY MONITORING 25m CIRCLE OF TBM CUTTER HEAD, WHEN TBM PASSING BENEATH EBS SUBJECT TO PERMISSION FROM LOCAL AUTHORITY.
   - TWICE A DAY MONITORING WITHIN 100 METERS BEHIND THE TBM AND 50 METERS IN FRONT OF CUTTER HEAD
   - ONCE A DAY BETWEEN 100 TO 300 METERS BEHIND THE TBM.
   - TWICE A WEEK BETWEEN 300 TO 500 METERS BEHIND THE TBM.
   - WEEKLY MONITORING 500 METERS BEHIND THE TBM.

31. WHERE THE TBM TUNNEL WILL PASS BENEATH EBS, THE MONITORING OF THOSE EBS AND OTHER INSTRUMENTS IN THESE AREAS WILL BE CARRIED OUT ON 6 -HOURLY BASIS WHEN TBM CUTTER HEAD IS WITHIN 25 METRES OF THOSE EBS.

32. THE FREQUENCY OF MONITORING SHALL BE REVISED DEPENDING ON THE CONSTRUCTION ACTIVITY AND THE PACE OF WORK.
THE FOLLOWING GUIDELINES SHALL BE USED WHEN DECIDING ON THE FREQUENCY OF MONITORING:
   - MONITORING SHALL BE REPEATED ON THE SAME DAY IF READINGS WERE CONSIDERED INCONSISTENT BY THE RELEVANT AUTHORITY.
   - IF THE READINGS SHOW SIGNIFICANT CHANGE, THE FREQUENCY OF MONITORING SHALL BE INCREASED.
   - IF THERE IS AN UNDESIRABLE OCCURRENCE SUCH AS EXCESSIVE GROUND LOSS FOR BORED TUNNELS OR BASE HEAVE OR BASE BLOW OUT IS DETECTED. THE FREQUENCY OF MONITORING SHALL BE INCREASED.

33. IN NO CASE SHALL THE MONITORING BE STOPPED UNTIL AT LEAST 3 MONTHS AFTER THE WORKS HAVE BEEN COMPLETED OR TILL 3 CONSECUTIVE READING SHOW NO CHANGE WHICHEVER IS LONGER. DECISION OF ANY MONITORING SHALL BE AGREED WITH THE ENGINEER.

NATM TUNNEL:

34. 3D TARGETS, WITH THE HELP OF PRECISE TOTAL STATION (REF NOTE 14) AND OFFICE SOFTWARE, GIVES REALISTIC ASSESSMENT OF THE DISPLACEMENT BEHAVIOR IN 3D OF TUNNEL SURFACE.

35. MULTIPOINT BOREHOLE EXTENSOMETER SHALL BE USED, WHEN REQUIRED, FOR DETERMINATION OF GROUND MOVEMENTS OUTSIDE OF THE EXCAVATED STRUCTURE.

36. RADIAL PRESSURE CELLS SHALL BE USED FOR MEASURING THE DEVELOPMENT OF GROUND PRESSURE ACTING ON THE TUNNEL LINING. LARGE SIZE (300mmX300mm) PRESSURE CELL SHALL BE USED FOR BETTER RESULT. READING SHALL BE TAKEN IN A REMOTE CONTROLLED MANNER WITH ELECTRICAL TRANSDUCERS.

37. STRAIN METER SHALL BE USED FOR DETERMINATION OF THE STRESS DEVELOPMENT IN THE SPRAYED CONCRETE BY MEASURING STRAINS. THEY SHALL BE INSTALLED IN PAIRS TO ALLOW A DETERMINATION OF SECTIONAL FORCES SUCH AS NORMAL THRUST AND BENDING MOMENTS. STRAIN METERS SHALL BE TEMPERATURE COMPENSATED TO COMPENSATE FOR TEMPERATURE INCREASE OF THE SPRAYED CONCRETE DURING HARDENING PROCESS.

38. FREQUENCY OF MONITORING CAN BE ENVISAGED FOR EACH MONITORING SECTION AS FOLLOWS:
-1st WEEK: DAILY
-2nd WEEK: TWICE A WEEK
-3rd & 4th WEEK: ONCE PER WEEK
-LATER: MONTHLY AND BI-MONTHLY
-WHEN BENCH IS APPROACHING INSTRUMENTATION SECTION INSTALLED DURING TOP HEADING, READING FREQUENCIES SHALL BE INCREASED AGAIN
-ACTUAL FREQUENCY OF READING WILL HOWEVER BE INFLUENCED BY THE CONSTRUCTION STAGE, MONITORING RESULT MAY CHANGE DURING CONSTRUCTION ACCORDING TO OBSERVATION APPROACH.
-MONITORING FREQUENCY MAY INCREASE DEPENDING ON THE ACCESSIBILITY OF SITE.

39. DATA OF THE OPTICAL TARGETS DISPLACEMENT MONITORING SHALL BE PROCESSED ON THE SAME DAY AND PLOTS SHALL BE AVAILABLE AT LATE AFTERNOON FOR ASSESSMENT BY THE ENGINEER.

VIBRATION MONITORING:

MAXIMUM PERMISSIBLE PEAK PARTICLE VELOCITIES AT EXISTING BUILDING STRUCTURES

S.NO	TYPES OF EBS	MAXIMUM ALLOWABLE PEAK PARTICLE VELOCITIES (IN MM/SEC) AT EBS
1	MOST STRUCTURES IN GOOD CONDITION (NEGLIGIBLE & VERY SLIGHT)	25
2	MOST STRUCTURES IN FAIR CONDITION OCCUPANTS (SLIGHT & MODERATE)	12
3	MOST STRUCTURES IN POOR CONDITION (SEVERE & VERY SEVERE)	5
4	WATER SUPPLY STRUCTURES	5
5	HERITAGE STRUCTURES/BRIDGE STRUCTURES	5

ABOVE LIMITS ARE MAXIMUM PERMISSIBLE, HOWEVER THIS MAY HAVE TO RESTRICTED FURTHER IF REQUIRED TO AVOID DAMAGE TO THE ADJACENT EBS OR CAUSING DISCOMFORT TO THE OCCUPANTS. ALONG THE PROPOSED ALIGNMENT, OTHER LIMITATIONS MAY BE IMPOSED AT ADJECENT EBS, SUCH AS HOSPITALS, SHCOOL BUILDINGS, TELEPHONE-EXCHANGE STRUCTURES, SPECIAL WATER-SUPPLY STRUCTURES AND HERITAGE STRUCTURES ETC. IN ADDITION, WORKING HOURS FOR SUCH EQUIPMENT CAUSING VIBRATIONS MAY HAVE TO RESTRICTED, KEEPING THE CONVENIENCE AND COMFORT OF THE OCCUPANTS IN MIND.

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	SEPT 24	DRAFT SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GROCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Plazina Tower NH Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	SKC
Drawn:	ZHu
Checked:	PMu
Approved:	PSi

Scale :- AS SHOWN

Sheet size: A1

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: GENERAL NOTES-INSTRUMENTATION AND MONITORING

Drawing No.: RC/1640/HO/HBT/U/DWG/MON/GEN/801/R0

Original Drawing Size A1

REVIEW LEVELS

THERE ARE THREE REVIEW LEVELS AS PER CONTRACT.

1. ALERT LEVEL
2. ACTION LEVEL
3. ALARM LEVEL

THE ALERT LEVEL IS A READING AT A PREDETERMINED LEVEL PRIOR TO THE ACTION LEVEL AND ALARM LEVEL. THE ALERT LEVEL IS 50% OF THE PREDICTED SERVICEABILITY VALUE DEFINED FOR MONITORED EBS / INSTRUMENT

THE ACTION LEVEL IS A READING AT A PREDETERMINED LEVEL AFTER THE ALERT LEVEL AND PRIOR TO ALARM LEVEL. THE ALARM LEVEL IS 80% OF THE PREDICTED SERVICEABILITY VALUE DEFINED FOR MONITORED EBS/ INSTRUMENT.

THE ALARM LEVEL WILL BE SET AT THE 100% OF THE PREDICTED SERVICEABILITY VALUE DEFINED FOR MONITORED EBS / INSTRUMENT.

CHANGES MAY BE PROPOSED TO THE INITIAL VALUES SELECTED BASED ON THE SITE CONDITIONS AND REQUIREMENTS. CHANGES TO ALERT AND ALARM LEVELS WILL BE JUSTIFIED ON THE BASIS OF OBSERVED PERFORMANCE AND WILL BE SUBMITTED FOR THE ACCEPTANCE OF THE EMPLOYER.

ON REACHING AN "ALERT LEVEL" AT ANY LOCATION, A REPORT WILL BE PREPARED AND SUBMITTED TO THE EMPLOYER, REVIEWING ALL TOTAL AND DIFFERENTIAL MOVEMENTS / DISTORTIONS TO DATE. ASSESSMENT OF THE EFFECTS OF THE MOVEMENTS / DISTORTIONS ON THE MONITORING ELEMENTS AND PREDICTING FURTHER MOVEMENTS AND THEIR EFFECT ON MONITORED ELEMENTS BASED ON THE TREND TO DATE.IF THE MOVEMENT TREND INDICATES THAT " ACTION LEVEL " MAY BE REACHED DURING THE COURSE OF THE WORKS, THE REMEDIAL MEASURES TO LIMIT FURTHER MOVEMENTS WILL BE PROPOSED.

ON REACHING AN "ACTION LEVEL " AT ANY LOCATION. AN UPDATED REPORT WILL BE PREPARED AND SUBMITTED TO THE EMPLOYER, REVIEWING THE MOVEMENTS INCLUDING DIFFERENTIAL MOVEMENT AND DISPERSIONS THE REPORT WILL ASSESS THE EFFECTS ON MONITORED ELEMENTS AND PREDICT FURTHER MOVEMENTS AND THEIR SUBSEQUENT EFFECT ON MONITORED ELEMENTS. THE REPORT WILL ALLOW FOR REMEDIAL WORKS THAT HAVE BEEN IMPLEMENTED AND SHOWN TO BE EFFECTIVE. IN ADDITION REVISED "ALERT LEVEL" AND "ACTION LEVEL " VALUES WHICH TAKE INTO ACCOUNT THE IMPLEMENTED REMEDIAL WORKS. THE REPORT DETAILING THE FULL HISTORY OF MOVEMENTS AND REMEDIAL MEASURES ADOPTED IN RELATION TO THE ACTUAL CONSTRUCTION SEQUENCE.

ON REACHING AN "ALARM LEVEL" ALL WORK WILL BE SUSPENDED WITHIN 30 METERS OF THE INSTRUMENT . A REPORT WILL BE PROVIDED TO THE EMPLOYER DETAILING THE FULL HISTORY OF MOVEMENTS AND AN INTERPRETATION OF EVENTS.

MONITORING DIFFERENTIAL SETTLEMENT FOR EBS AND TRIG ACTIONS ACCORDING TO FOLLOWING :-

ANGULAR DISTORTION	ACTION
1 IN 1000	ALERT
1 IN 625	ACTION
1 IN 500	ALARM WORK SUSPENSION AND REASSESSMENT

AAA LEVEL VALUE APPROVAL SHALL BE TAKEN FROM CONCERNED AUTHORITY WHEN CROSSING EXISTING INDIAN RAILWAY LINE OR METRO LINE

PROPOSED MONITORING FREQUENCY FOR DIFFERENT INSTRUMENTS

SL. NO.	TYPE OF INSTRUMENT	SYMBOL	15 DAYS PRIOR TO EXCAVATION	DURING EXCAVATION	COMPLETION OF PERMANENT WORKS	SHALL CONTINUE UNTIL ALL SETTLEMENTS HAS EFFECTIVELY STOPPED FOR A PERIOD OF THREE MONTHS
1	INCLINOMETER	I	WEEKLY	DAILY	WEEKLY	MONTHLY
2	STAND PIPE	SP	WEEKLY	DAILY	WEEKLY	MONTHLY
3	VIBRATING WIRE (VW) PIEZOMETER	SP_{VW}	WEEKLY	DAILY	WEEKLY	MONTHLY
4	SURFACE SETTLEMENT POINT		WEEKLY	DAILY	WEEKLY	MONTHLY
5	BUILDING SETTLEMENT POINT		WEEKLY	DAILY	WEEKLY	MONTHLY
6	3D OPTICAL TARGET		WEEKLY	DAILY	WEEKLY	MONTHLY
7	TILT PLATE/METER		WEEKLY	DAILY	WEEKLY	MONTHLY
8	CRACK METER		WEEKLY	DAILY	WEEKLY	MONTHLY
9	EXTENSOMETER MPBX-3POINT	E	WEEKLY (IF FROM OUTSIDE)	DAILY	WEEKLY	MONTHLY
10	LOAD CELL (STRUTS)	LC	WEEKLY	DAILY	WEEKLY	MONTHLY
11	LOAD CELL (ROCKBOLT/ANCHOR)		WEEKLY	DAILY	WEEKLY	MONTHLY
12	STRAIN GAUGE (STRUTS)	SG	-	DAILY	WEEKLY	MONTHLY
13	STRAIN GAUGE (SPRAYED CONCRETE)		-	DAILY	WEEKLY	MONTHLY
14	RADIAL PRESSURE CELL		-	DAILY	WEEKLY	MONTHLY
15	VIBRATION SENSOR	VM	-	DAILY	-	MONTHLY
16	HEAVE STAKE	S	-	DAILY	WEEKLY	-

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	SEPT 24	DRAFT SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B105 WeWork, Plaxia Tower MG Road Near Sikandergpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	SKC
Drawn:	ZHu
Checked:	PMu
Approved:	PSI

Scale :- AS SHOWN

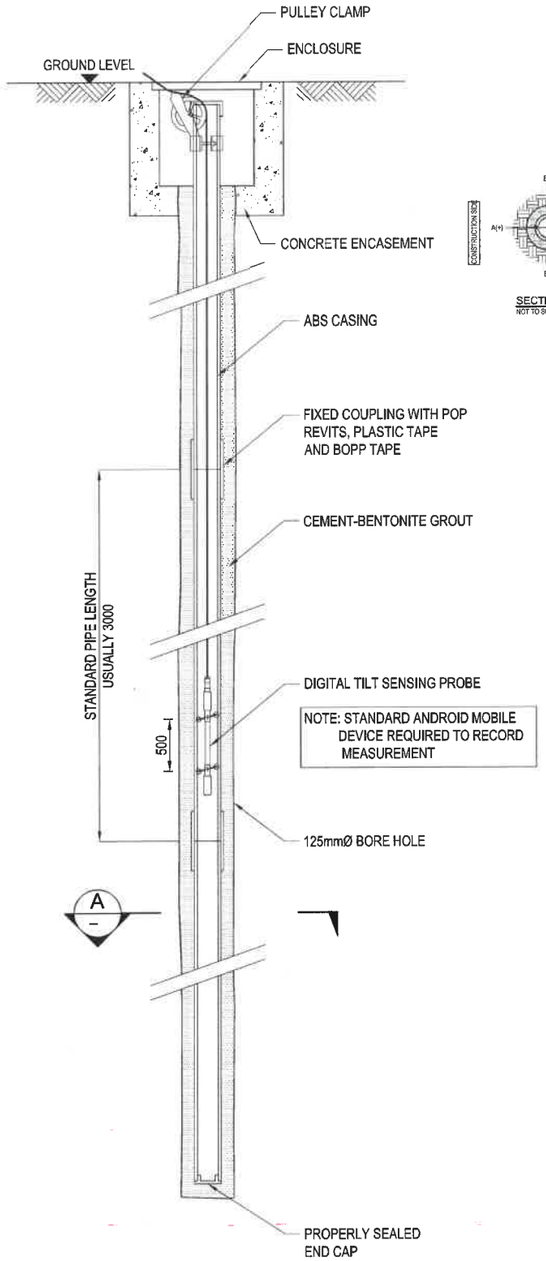
Sheet size: A1

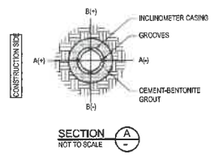
Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: GENERAL NOTES-INSTRUMENTATION AND MONITORING

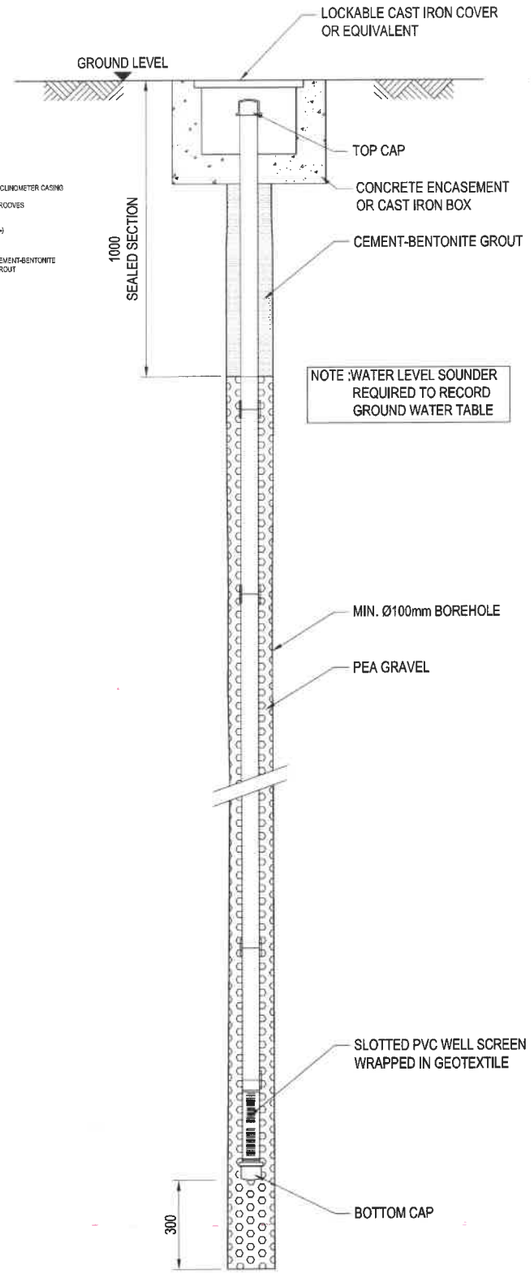
Drawing No.: RC/1640/HO/HBT/TU/DWG/MON/GEN/802/R0

Original Drawing Size A1

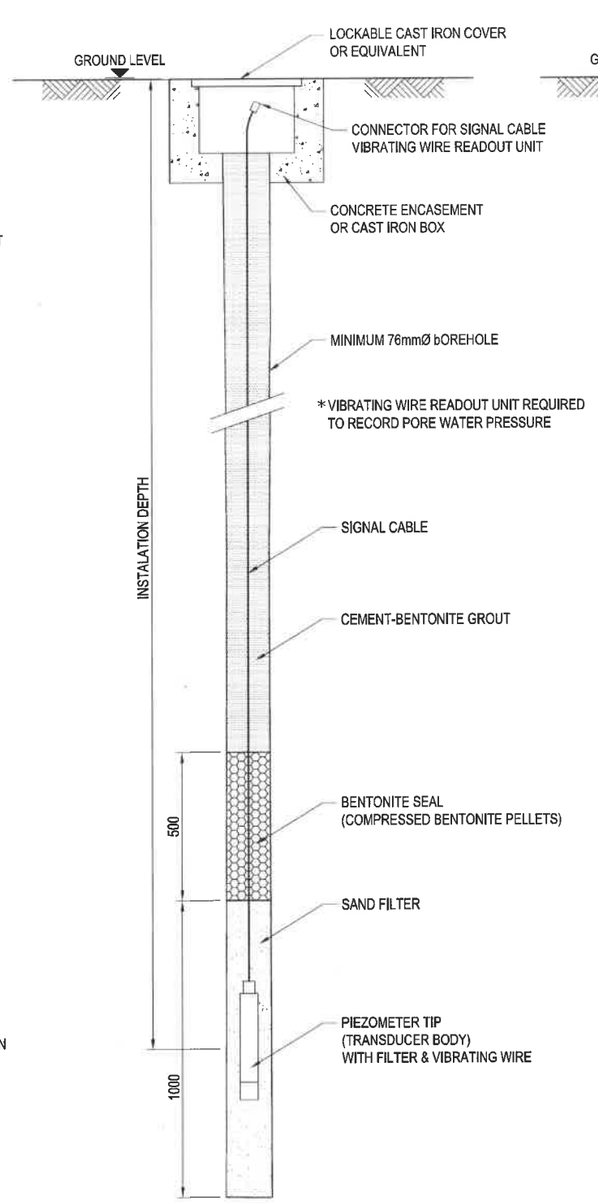




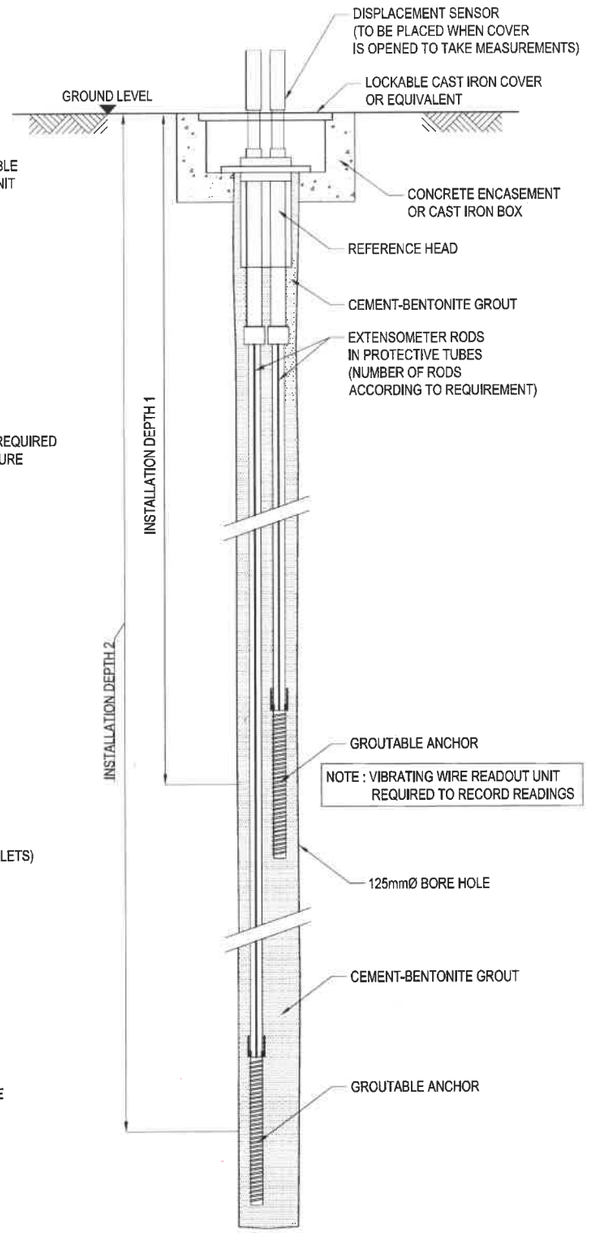
INCLINOMETER
NOT TO SCALE



STANDPIPE
NOT TO SCALE



VIBRATING WIRE PIEZOMETER
NOT TO SCALE
SINGLE-LEVEL INSTALLATION
WITH SAND FILTER



BOREHOLE EXTENSOMETER
NOT TO SCALE
WITH GROUTABLE ANCHORS

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	SEPT 24	DRAFT SUBMISSION

CLIENT
GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Plaina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 5th Phase Bengaluru, Karnataka 560078 India

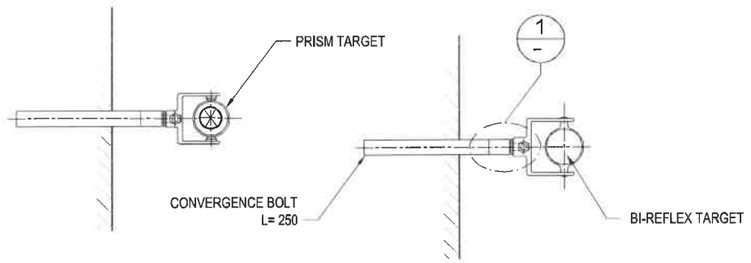
DRAFT PROJECT REPORT

Designed:	SKC	Scale :- AS SHOWN
Drawn:	ZHu	
Checked:	PMu	
Approved:	PSI	Sheet size: A1

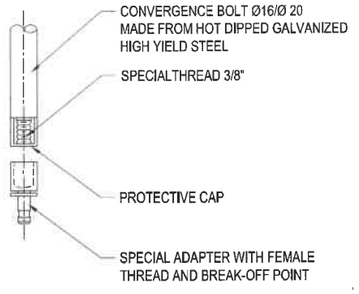
Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: GENERAL -INSTRUMENTATION AND MONITORING - TYPICAL DETAILS

Drawing No.: RC/1640/HO/HBT/TU/DWG/MON/GEN/803/R0

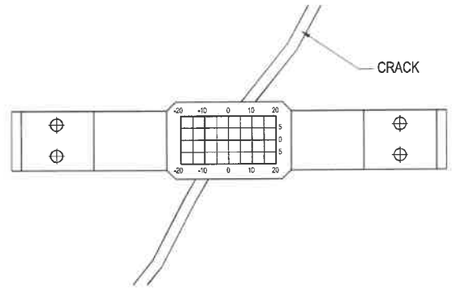


3D OPTICAL MONITORING
NOT TO SCALE

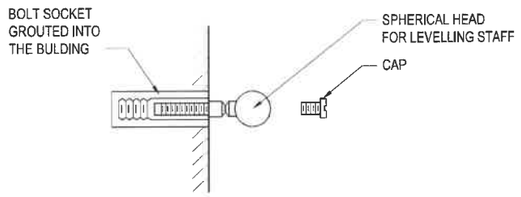


DETAIL 1 –
NOT TO SCALE

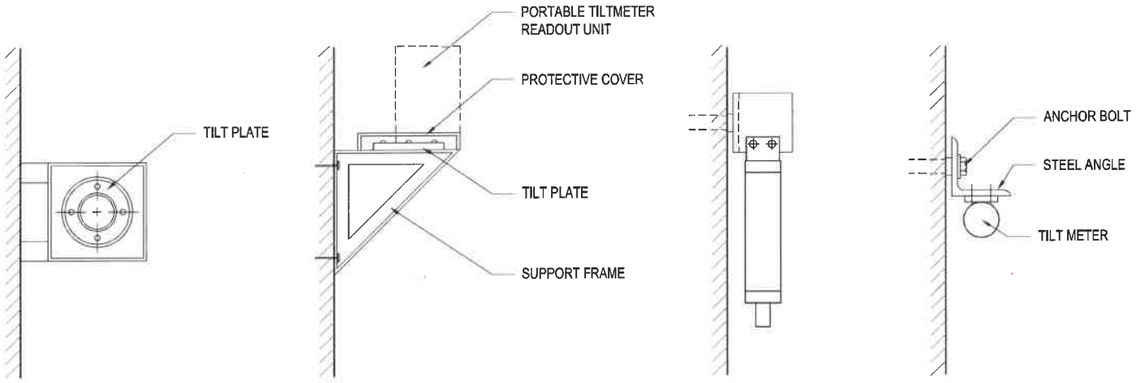
CONVERGENCE BOLT



CRACK METER
NOT TO SCALE

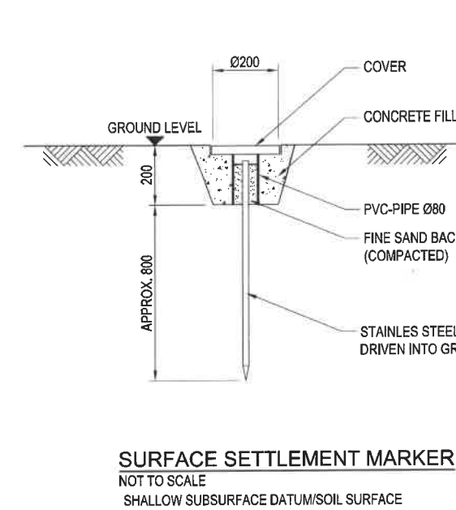


REMOVABLE MEASURING POINT
NOT TO SCALE



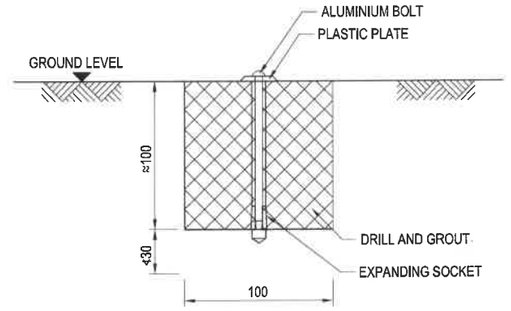
ELECTRONIC TILTMETER
NOT TO SCALE

PORTABLE TILTMETER
NOT TO SCALE



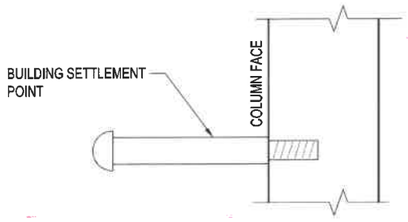
SURFACE SETTLEMENT MARKER
NOT TO SCALE

SHALLOW SUBSURFACE DATUM/SOIL SURFACE

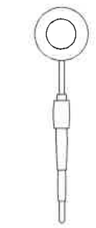


SURFACE SETTLEMENT MARKER
NOT TO SCALE

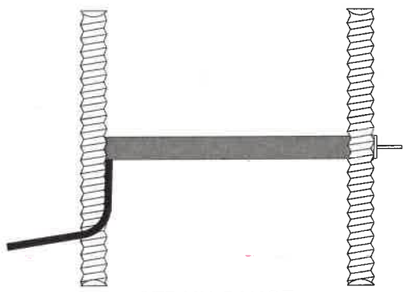
PAVED/CONCRETE SURFACE



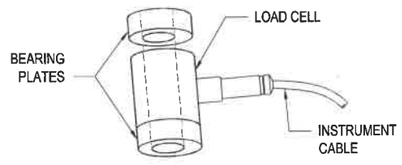
BUILDING SETTLEMENT POINT
NOT TO SCALE



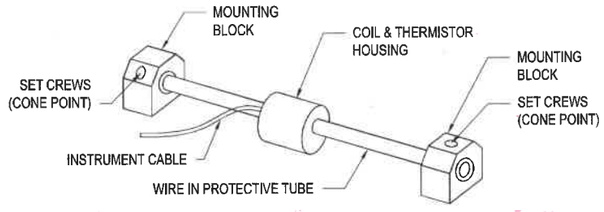
LOAD CELL
NOT TO SCALE



STRAIN GAUGE
NOT TO SCALE



CENTRE HOLE LOAD CELL
NOT TO SCALE



SPOT WELDABLE STRAIN GAUGE (VW) STRUTS
NOT TO SCALE

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	SEPT 24	DRAFT SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA
CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near
Sikanderpur Metro Station Sector 28, Gurugram
Haryana INDIA

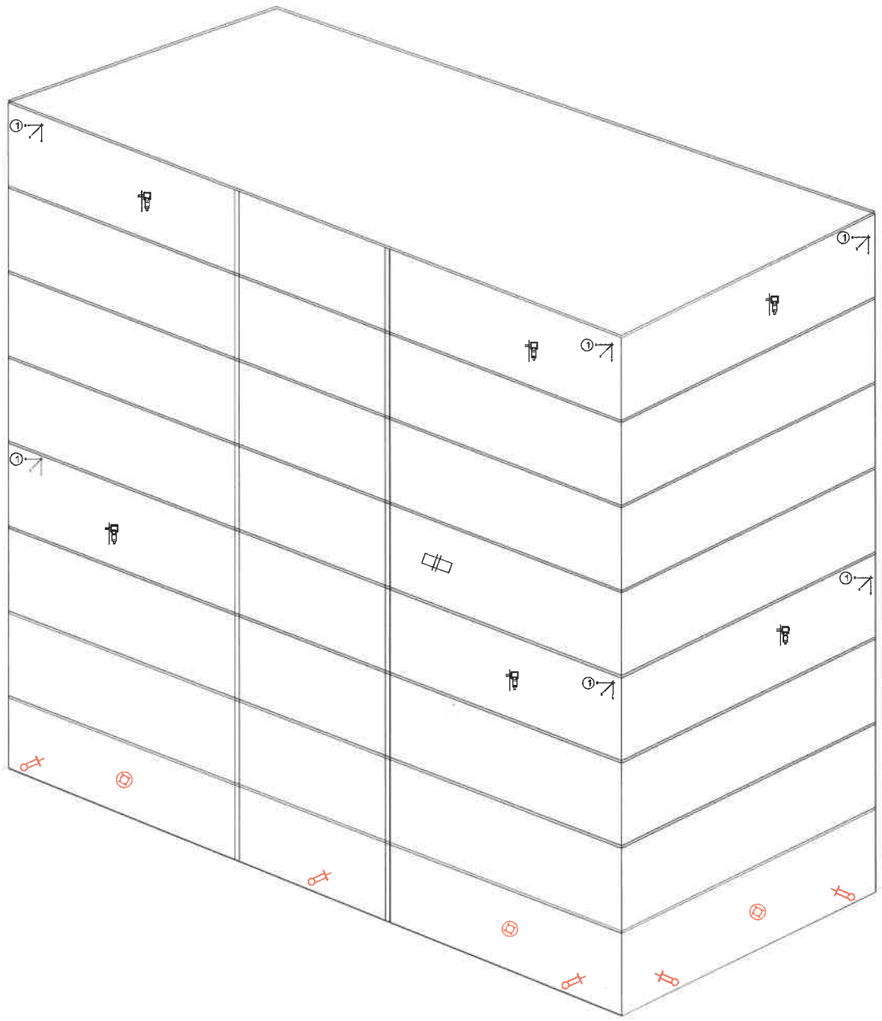
Fluidyn India
#15, 4th Floor, Outer Ring Road
JP Nagar 6th Phase Bengaluru,
Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	SKC	Scale :- AS SHOWN
Drawn:	ZHu	
Checked:	PMu	
Approved:	PSI	Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	GENERAL -INSTRUMENTATION AND MONITORING - TYPICAL DETAILS
Drawing No.	RC/1640/HO/HBT/TU/DWG/MON/GEN/804/R0

Original Drawing Size A1



MINIMUM NUMBER OF MONITORING INSTRUMENTS FOR EBS (EXISTING BUILDINGS AND STRUCTURES)

MINIMUM NUMBERS OF INSTRUMENTS FOR EBS*						
STRUCTURE TYPE IDENTIFICATION	DESCRIPTION	BUILDING SETTLEMENT POINT	TILT PLATE / METER	CRACK METER	VIBRATION SENSOR	3D OPTICAL TARGET
S3	EBS IS IN POOR / FAIR CONDITION	8	4	AS REQ	AS REQUIRED	6
S4	EBS IS IN GOOD CONDITION	4	2	AS REQ		2

* THE NUMBERS OF INSTRUMENTS INDICATED ON THE ABOVE TABLE IS ONLY INDICATIVE AND THE ACTUAL NUMBER OF INSTRUMENTS SHOULD BE DECIDED BASED ON THE SIZE AND CONDITION OF THE BUILDINGS PRIOR TO EXCAVATION WORK.

LEGEND:

SYMBOL	DESCRIPTION / INSTRUMENTS TYPE
	BUILDING SETTLEMENT POINT
	TILT-PLATES
	TILT METERS
	3D OPTICAL TARGET
	CRACK METER

NOTES:

1. BUILDING FOOTPRINT SHOWN IN THE DRAWING IS TENTATIVE ONLY AND SHALL NOT BE MEASURED. ACTUAL DIMENSION SHALL BE AS PER SITE ASSESMENT.
2. THE TOTAL NO. OF CRACK METERS TO BE INSTALLED AND ITS LOCATION SHALL BE DECIDED AT SITE.
3. BUILDING SETTLEMENT POINT, 3D OPTICAL TARGET AND TILT PLATE/METER ARE TO BE INSTALLED INTO BUILDING STRUCTURAL ELEMENTS.
4. POSITION OF 3D OPTICAL TARGET CAN BE ADJUSTED ACCORDING TO THE PREFERRED LOCATION OF TOTAL STATION.
5. EBS / UTILITY INSTRUMENTS CAN BE INCREASED AS PER MONITORING RESULTS / TREND, AS REQUIRED.

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	SEPT 24	DRAFT SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA
CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B105 WeWork, Platina Tower MG Road Near
Sikanderpur Metro Station Sector 28, Gurugram
Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road
JP Nagar 6th Phase Bengaluru,
Karnataka 560078 India

DRAFT PROJECT REPORT

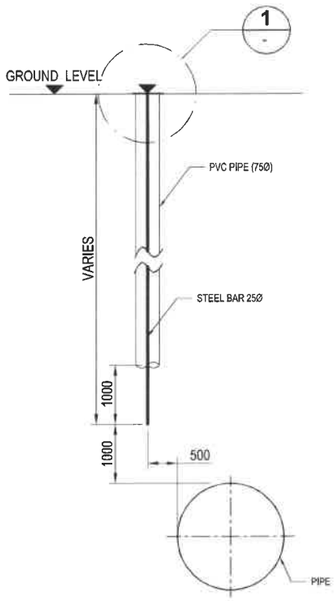
Designed:	SKC
Drawn:	ZHu
Checked:	PMu
Approved:	PSI

Scale :- AS SHOWN

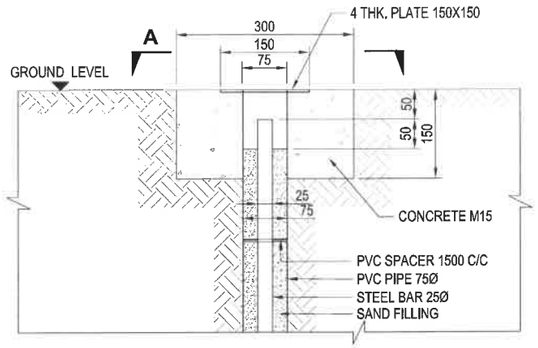
Sheet size: A1

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	GENERAL -INSTRUMENTATION AND MONITORING - TYPICAL EBS INSTRUMENTATION
Drawing No.	RC/1640/HO/HBTT/UDWG/MON/GEN/805/R0

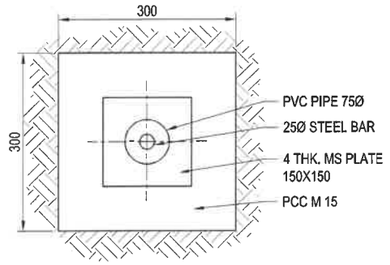
Original Drawing Size A1



TYPICAL SECTIONAL VIEW
SCALE N.T.S.



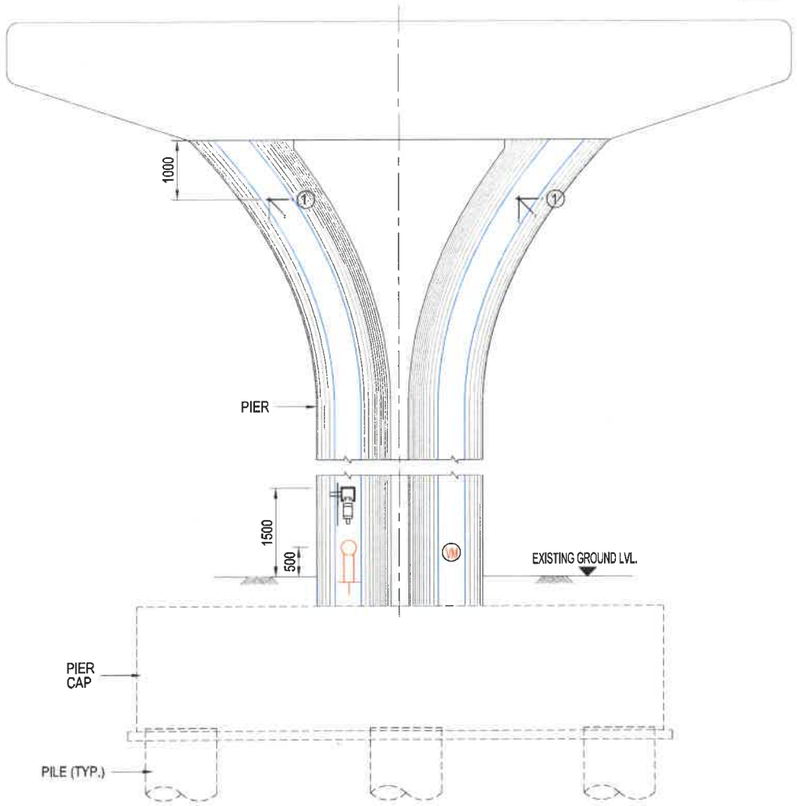
DETAIL 1
SCALE 1:5



VIEW A
SCALE 1:5

INSTALLATION SEQUENCE OF UTILITY SETTLEMENT MARKER

1. MARK THE LOCATION AND DEPTH OF UTLITY.
2. DRILL 75Ø BORE HOLES AT MONITORING LOCATION. INSTATLL PVC PIPE CASING.
3. INSTALL 25Ø STEEL BAR DRIVEN 1.00m BELOW THE DRILL HOLE AND USING PVC SPACER @ 1.5m OR LESS BAR TOP SHALL BE ABOUT 50mm BELOW THE SURFACE.
4. BACKFILL THE PIPE WITH SAND.
5. INSTALL PCC BLOCK OF 300mmX300mmX150mm AT TOP.
6. INSTALL 4mm THICK PLATE FOR COVER AROUND THE CASING PIPE.



TYPICAL ARRANGEMENT
SCALE N.T.S

LEGEND:	
SYMBOL	DESCRIPTION / INSTRUMENTS TYPE
	BUILDING SETTLEMENT POINT
	TILT METERS
VM	VIBRATION METER
1	3D OPTICAL TARGET

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS UNLESS UNTIL SPECIFIED.
2. SEWER LINE UTILITY SETTLEMENT MARKER TO BE INSTALLED CLOSED TO MANHOLE COVER.
3. UTILITY SETTLEMENT MARKER AS SHOWN IN THE DRAWING CAN BE SHIFTED ALONG THE UTILITY TO MATCH WITH SITE CONDITION.
4. EBS / UTILITY INSTRUMENTS CAN BE INCREASED AS PER MONITORING RESULTS / TREND, AS REQUIRED.

SCALE 1 : 5
100mm 0 500mm

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	SEPT 24	DRAFT SUBMISSION

CLIENT
GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

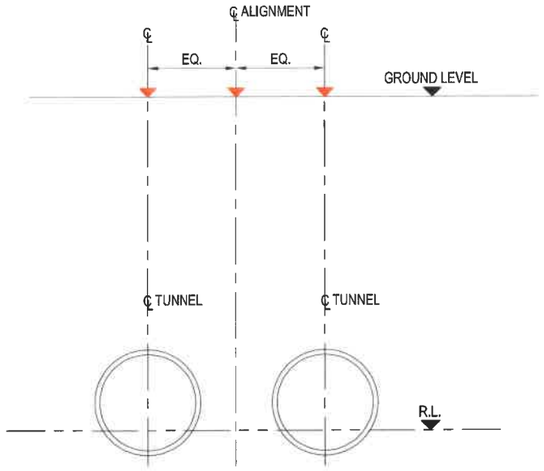
DRAFT PROJECT REPORT

Designed:	SKC
Drawn:	ZHu
Checked:	PMu
Approved:	PSI

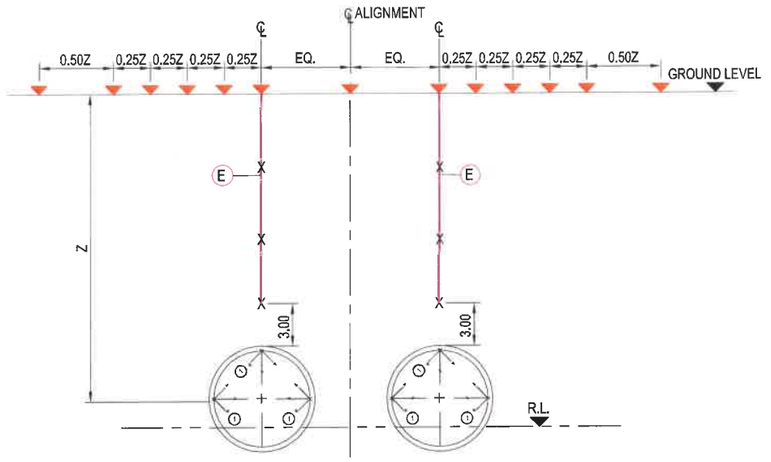
Scale :- AS SHOWN
Sheet size: A1

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title: GENERAL -INSTRUMENTATION AND MONITORING - TYPICAL ARRANGEMENT OF UTILITY AND PIER
Drawing No.: RC/1640/HO/HBT/TUDWG/MON/GEN/806/R0

Original Drawing Size A1



MONITORING ARRAY FOR TUNNEL: TYPE - D
SCALE N.T.S



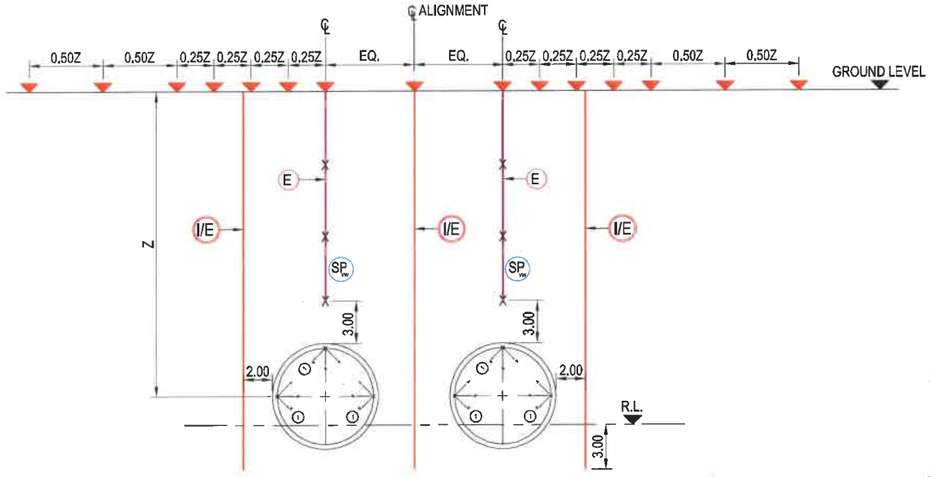
MONITORING ARRAY FOR TUNNEL: TYPE - E
SCALE N.T.S

LEGEND:		
SL.	TYPE OF INSTRUMENT	SYMBOL
1.	DEPTH TO TUNNEL CENTRE AXIS	Z
2.	SURFACE SETTLEMENT POINT	
3.	3D OPTICAL TARGET	
4.	INCLINOMETER / EXTENSOMETER	I/E
5.	EXTENSOMETER MPBX-3POINT	E
6.	VIBRATING WIRE (VW) PIEZOMETER	SP VW

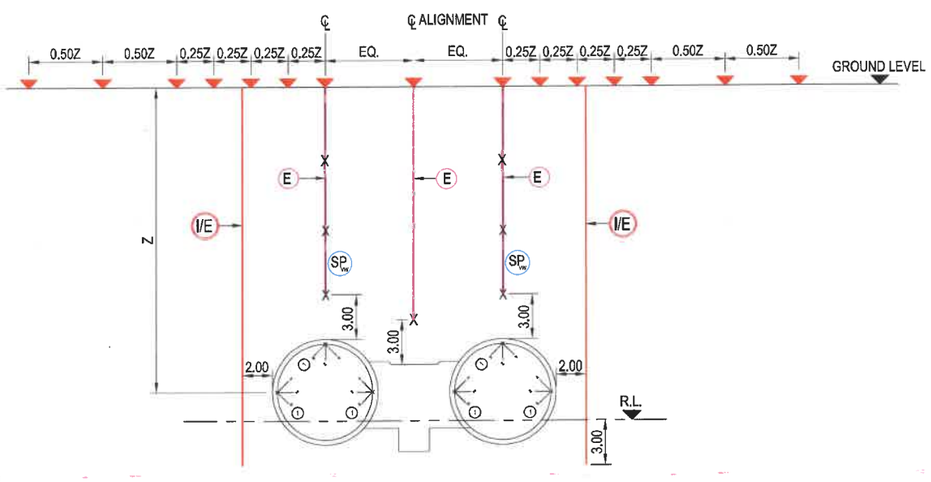
MONITORING AND INSTRUMENTATION SCHEME AT TBM TUNNEL AND CROSS PASSAGES- MINIMUM REQUIREMENT

NOTE:

1. ALL DIMENSIONS ARE IN METRES; UNLESS NOTED OTHERWISE.
2. BORE HOLE FOR EXTENSOMETER SHOULD BE TERMINATED ABOUT 3m ABOVE THE TUNNEL CROWN.
3. `D' ARRAY FOR EVERY 25m.
4. `E' ARRAY FOR EVERY 250m.
5. `F' ARRAY FOR EVERY 1000m.
6. ARRAY `G' CORRESPOND TO CROSS PASSAGE MONITORING.
7. ACTUAL REQUIREMENT OF CERTAIN INSTRUMENTS SUCH AS PEIZOMETER, INCLINOMETER / EXTENSOMETER AND MPBX EXTENSOMETER WILL BE ESTABLISHED DURING INITIAL STAGES OF CONSTRUCTION ACTIVITY.



MONITORING ARRAY FOR TUNNEL: TYPE - F
SCALE N.T.S



MONITORING ARRAY FOR CROSS PASSAGE: TYPE-G
SCALE N.T.S

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	SEPT 24	DRAFT SUBMISSION

CLIENT: GOVERNMENT OF KARNATAKA
GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Plaina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA
Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

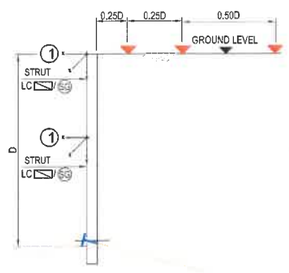
DRAFT PROJECT REPORT

Designed:	SKC
Drawn:	ZHu
Checked:	PMu
Approved:	PSI

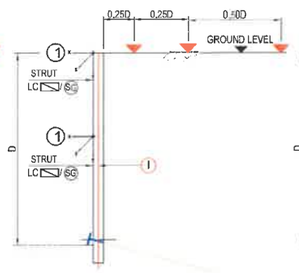
Scale :- AS SHOWN
Sheet size: A1

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title: GENERAL -INSTRUMENTATION AND MONITORING - SECTIONS
Drawing No.: RC/1640/HO/HBT/TU/DWG/ MON/GEN/807/R0

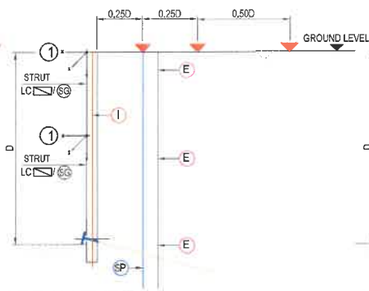
Original Drawing Size A1



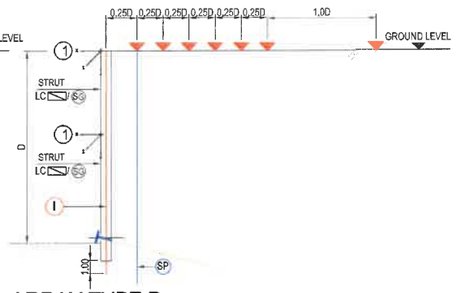
ARRAY TYPE A



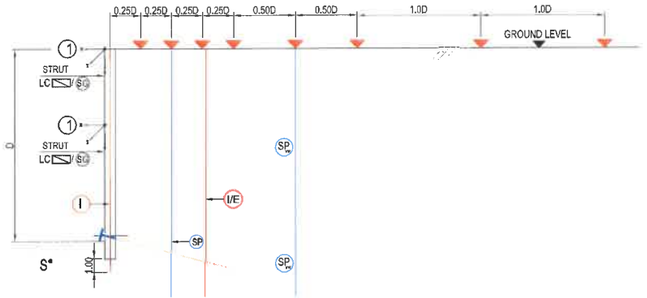
ARRAY TYPE A1



ARRAY TYPE A2



ARRAY TYPE B

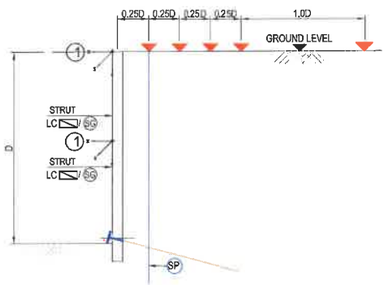


ARRAY TYPE C

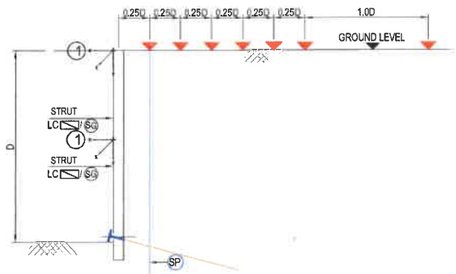
MONITORING & INSTRUMENTATION SCHEME AT CUT AND COVER SECTION - MINIMUM REQUIREMENT (FOR SECANT PILE WALL / DIAPHRAGM WALL)

NOTE:

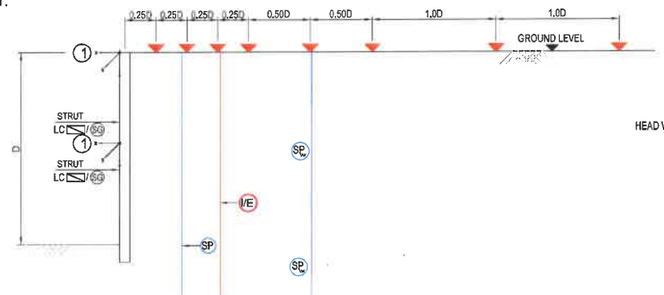
1. ONE OF EACH ARRAY TYPE A OR A1 OR A2 SHALL BE SPACED EVERY 25m OF PERIMETER WALL OF CUT AND COVER SECTION.
2. AN AVERAGE OF ONE TYPE B ARRAY FOR EVERY 100m PERIMETER WALL OF CUT AND COVER SECTION.
3. AN AVERAGE OF ONE TYPE C ARRAY FOR EVERY 300m PERIMETER WALL OF CUT AND COVER SECTION.
4. TYPE 'B' AND TYPE 'C' ARRAY SHALL BE ADOPTED IN AREAS OF PERICULAR CONCERN CONSIDERING NATURE AND SEQUENCE OF CONSTRUCTION AND ADJACENT EBS.
5. STRAIN GAUGE /LOAD CELL FOR STRUS AND LOAD CELL FOR ROCK BOLT/ANCHOR, AS APPLICABLE, ACCORDING TO CONSTRUCTION METHODOLOGY.



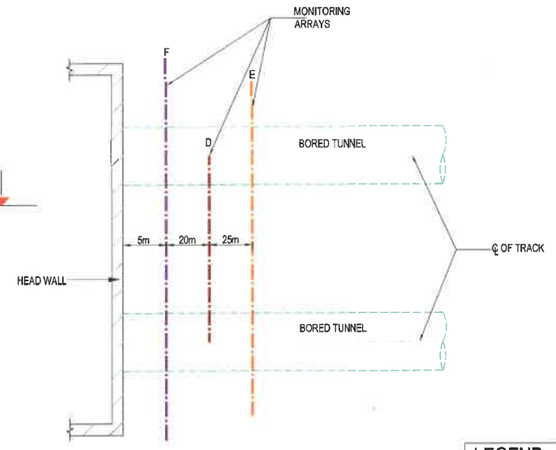
ARRAY TYPE A'



ARRAY TYPE B'



ARRAY TYPE C'



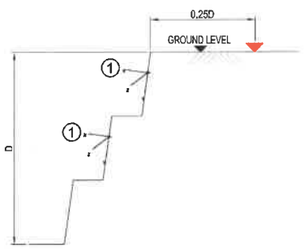
MONITORING ZONE AT EACH TBM LAUNCH SHAFT / HEAD WALL

(REFER DRAWING NO. MON/GEN/807 FOR ARRAY TYPES D, E AND F)

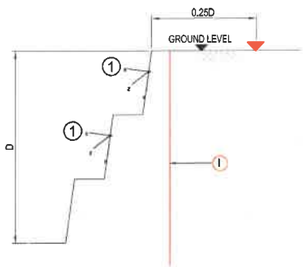
MONITORING & INSTRUMENTATION SCHEME AT CUT AND COVER SECTION - MINIMUM REQUIREMENT (FOR SOLDIER PILE)

NOTE:

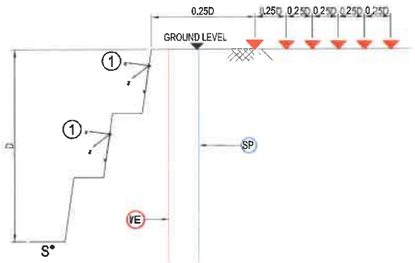
1. ONE OF EACH ARRAY TYPE A' SHALL BE SPACED EVERY 25m OF PERIMETER WALL OF CUT AND COVER SECTION.
2. AN AVERAGE OF ONE TYPE B' ARRAY FOR EVERY 100m PERIMETER WALL OF CUT AND COVER SECTION.
3. AN AVERAGE OF ONE TYPE C' ARRAY FOR EVERY 300m PERIMETER WALL OF CUT AND COVER SECTION.
4. TYPE B' AND TYPE C' ARRAY SHALL BE ADOPTED IN AREAS OF PERICULAR CONCERN CONSIDERING NATURE AND SEQUENCE OF CONSTRUCTION AND ADJACENT EBS.
5. STRAIN GAUGE /LOAD CELL FOR STRUS AND LOAD CELL FOR ROCK BOLT/ANCHOR, AS APPLICABLE, ACCORDING TO CONSTRUCTION METHODOLOGY.



ARRAY TYPE A"



ARRAY TYPE B"



ARRAY TYPE C"

NOTES:

1. ALL DIMENSION ARE IN MILLIMETER; UNLESS OTHERWISE SPECIFIED.
2. OPTICAL TARGET AT TOP OF THE DIAPHRAGM WALL / SECANT PILE / SOLDIER PILE IS PROVIDED FOR REFERENCE POINT READING TO BASE LEVEL EXCAVATION FOR DEFORMATION MONITORING PURPOSE

MONITORING & INSTRUMENTATION SCHEME AT SLOPE - MINIMUM REQUIREMENT

NOTE:

1. ONE OF EACH ARRAY TYPE A" SHALL BE SPACED EVERY 25m OF PERIMETER WALL OF SLOPE.
2. AN AVERAGE OF ONE TYPE B" ARRAY FOR EVERY 100 PERIMETER WALL OF SLOPE.
3. AN AVERAGE OF ONE TYPE C" ARRAY FOR EVERY 300m PERIMETER WALL OF SLOPE.
4. TYPE B" AND TYPE C" ARRAY SHALL BE ADOPTED IN AREAS OF PERICULAR CONCERN CONSIDERING NATURE AND SEQUENCE OF CONSTRUCTION AND ADJACENT EBS.
5. MONITORING OF INSTRUMENTS TO BE DONE WHERE EXCAVATION DEPTH OF SLOPE IS 4m OR DEEPER FROM COMMENCING LEVEL.

LEGEND:

SL.	TYPE OF INSTRUMENT	SYMBOL
1.	DEPTH OF EXCAVATION	D
2.	SURFACE SETTLEMENT POINT	× ▼
3.	3D OPTICAL TARGET	①
4.	INCLINOMETER / EXTENSOMETER	I/E
5.	EXTENSOMETER MPBX-3POINT	E
6.	VIBRATING WIRE (VW) PIEZOMETRE	SP$_{vw}$
7.	LOAD CELL (STRUTS)	LC
8.	STRAIN GAUGE (STRUTS)	SG
9.	HEAVE STAKE	S*
10.	STAND PIPE	SP
11.	INCLINOMETER	I
12.	LOAD CELL (ROCK BOLT/ANCHOR)	⊣

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	SEPT 24	DRAFT SUBMISSION

CLIENT

GOVERNMENT OF KARNATAKA

GOVERNMENT OF KARANATAKA
Bruhat Bangalore Mahanagara Palike

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Plazina Tower MG Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA

Fluidyn India
#15, 4th Floor, Outer Ring Road JP Nagar 6th Phase Bengaluru, Karnataka 560078 India

DRAFT PROJECT REPORT

Designed:	SKC
Drawn:	ZHu
Checked:	PMu
Approved:	PSI

Scale :- AS SHOWN

Sheet size: A1

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: RAMP AND CUT AND COVER -INSTRUMENTATION AND MONITORING - ARRAYS

Drawing No.: RC/1640/HO/HBT/TU/DWG/MON/GEN/808/R0

Appendix-B-IV

MECHANICAL ELECTRICAL & PLUMBING ENGINEERING

Original Drawing Size A1

ELECTRICAL & MECHANICAL DRAWINGS

S.Nr.	DRAWING NUMBER	REV.	DRAWING NAME
1		A	COVER PAGE_00
2	BBMP-EM-000	A	DRAWINGS LIST ELECTRICAL & MECHANICALWORKS
3	BBMP-EM-001	A	BBMP-ALIGNMENT LAYOUT WITH S/Sn
4	BBMP-EM-002	A	MAIN ELECTRICAL SCHEMATIC
5	BBMP-EM-003	A	ELECTRICAL SCHEMATIC FOR SUB-STATION-1,2,7,& 8 (1695m.)
6	BBMP-EM-004	A	ELECTRICAL SCHEMATIC FOR SUB-STATION-3,4,5,& 6 (1895m.)
7	BBMP-EM-005	A	ELECTRICAL SCHEMATIC FOR SUB-STATION- 9,& 10
8	BBMP-EM-006	A	ELECTRICAL SCHEMATIC FOR SUB-STATION-11,13, & 15 (PG.EXIT RG.EXIT-1,RC EXIT-2)(1600m.)
9	BBMP-EM-007	A	ELECTRICAL SCHEMATIC FOR SUB-STATION-14 (RC ENTRY)
10	BBMP-EM-008	A	ELECTRICAL SCHEMATIC FOR SUB-STATION-16 (LB ENTRY & LB EXIT)(2196m.)
11	BBMP-EM-009	A	ELECTRICAL SCHEMATIC FOR SUB-STATION-12 (PG ENTRY) (1085m.)
12	BBMP-EM-010	B	MAIN TUNNEL LAYOUT OF 11/.433KV. SUB-STATION
13	BBMP-EM-011	A	MAIN TUNNEL LAYOUT OF 11/.433KV. NITCH SUB-STATION
14	BBMP-EM-012	A	33KV.SUB-STATION BUILDING VENTILATION SUB-STATION LAYOUT- 1,2,3,4 & 5
15	BBMP-EM-013	A	DG. BUILDING TYPE-1 & 2 VENTILATION SUB-STATION LAYOUT- 1,2,3,4 & 5
16	BBMP-EM-014	A	MAIN TUNNEL LIGHTING LAYOUT (Sheet-1/2)
17	BBMP-EM-015	A	TUNNEL AUTOMATION SYSTEM SCADA, SYSTEM ARCHITECTURE
18	BBMP-EM-016	A	MAIN TUNNEL GENERAL SCHEMATIC DIAGRAM FOR CCTV. SURVEILLIANCE SYSTEM
19	BBMP-EM-017	A	TYPICAL IP TELEPHONE,SOS & PUBLIC ADDRESS SYSTEM
20	BBMP-EM-018	A	TYPICAL CROSS SETION (Sheet-1/4)
21	BBMP-EM-019	A	SOS STATIONS EQUIPMENT (Sheet-1/2)
22	BBMP-EM-020	A	MAIN TUNNEL SIGNAGE LOCATION (Sheet-1/2)
23	BBMP-EM-021	A	MAIN TUNNEL CCTV. LOCATION (Sheet-1/2)
24	BBMP-EM-022	A	MAIN TUNNEL P.A.SPEAKER LOCATION (Sheet-1/2)

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS:-

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	03.01.25	FIRST SUBMISSION DPR	MKa	MKr	ANa

QUALITY ASSURANCE

Date	03.01.25	03.01.25	03.01.25
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commisioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

H:\GEOCONSULT_PROJECTS_DATA\BANGALORE\Bangalore Metro Rail Corporation Ltd (BMRCL)\I40172 Hebbal Tunnel DPR\BBMP - Support for RODIC - Documents\01-CAD\WORKING\EM\ELECTRICAL\BBMP-EM-000.dwg, 2025-01-29

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

CLIENT

Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE

DRAWINGS LIST
ELECTRICAL & MECHANICAL WORKS

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-000	A

SCALE	DATE (Initial Issue)	STATUS
NTS	JAN-2025	DPR

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

TUNNELS (E&M DESIGN)

DRAWINGS

DRAFT DPR SUBMISSION - JANUARY-2025

CLIENT:

BRUHAT BENGALURU MAHANAGRA PALIKE

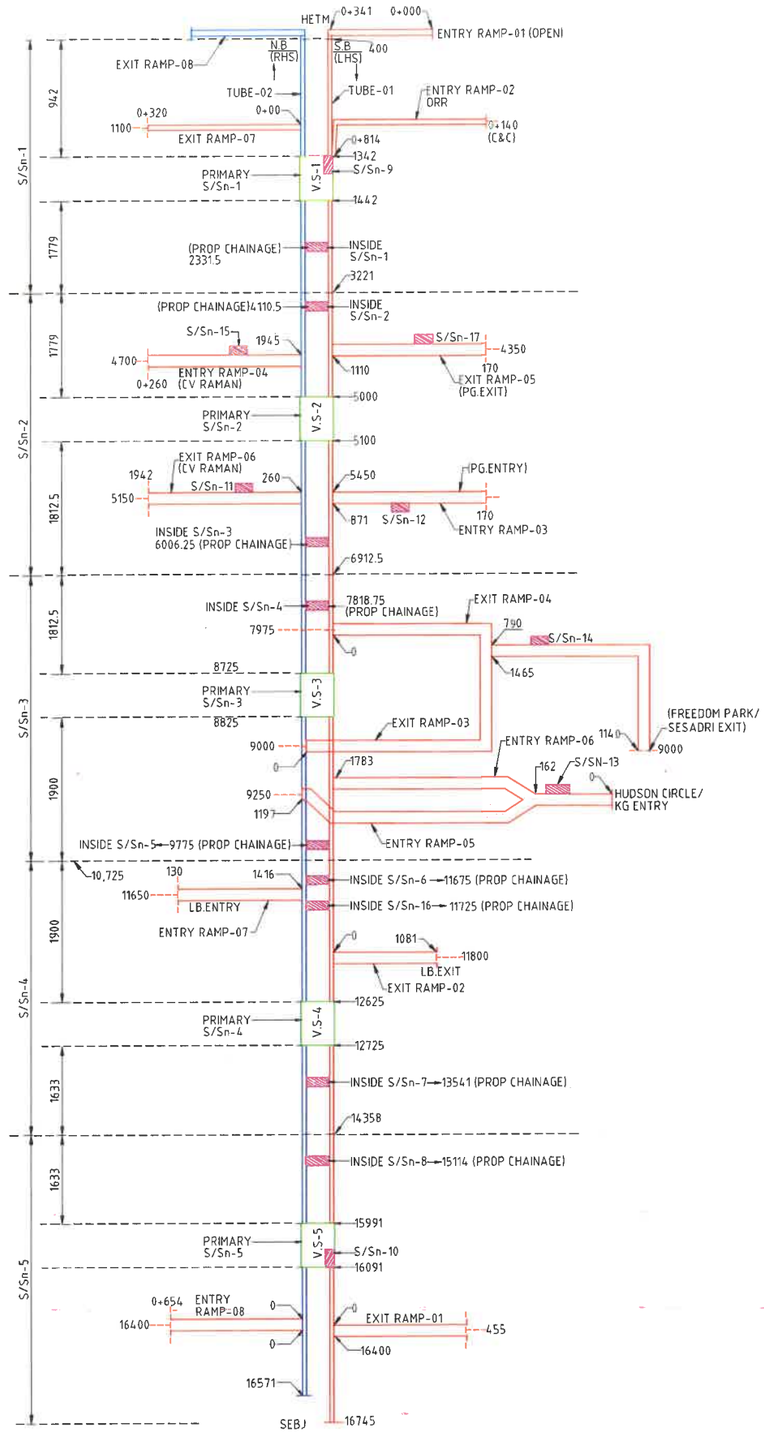
DPR CONSULTANT :

RODIC CONSULTANT PVT.LTD.

DESIGN CONSULTANTS :

GEOCONSULT India Pvt. Ltd. -Rites Ltd.(JV)

Original Drawing Size A1



FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS:-

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	16.01.25	REVISED DRAWING	MKa	MKr	ANa
0	23.09.24	FIRST SUBMISSION DPR	MKa	MKr	ANa

QUALITY ASSURANCE

Date	23.09.24	23.09.24	23.09.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

CLIENT

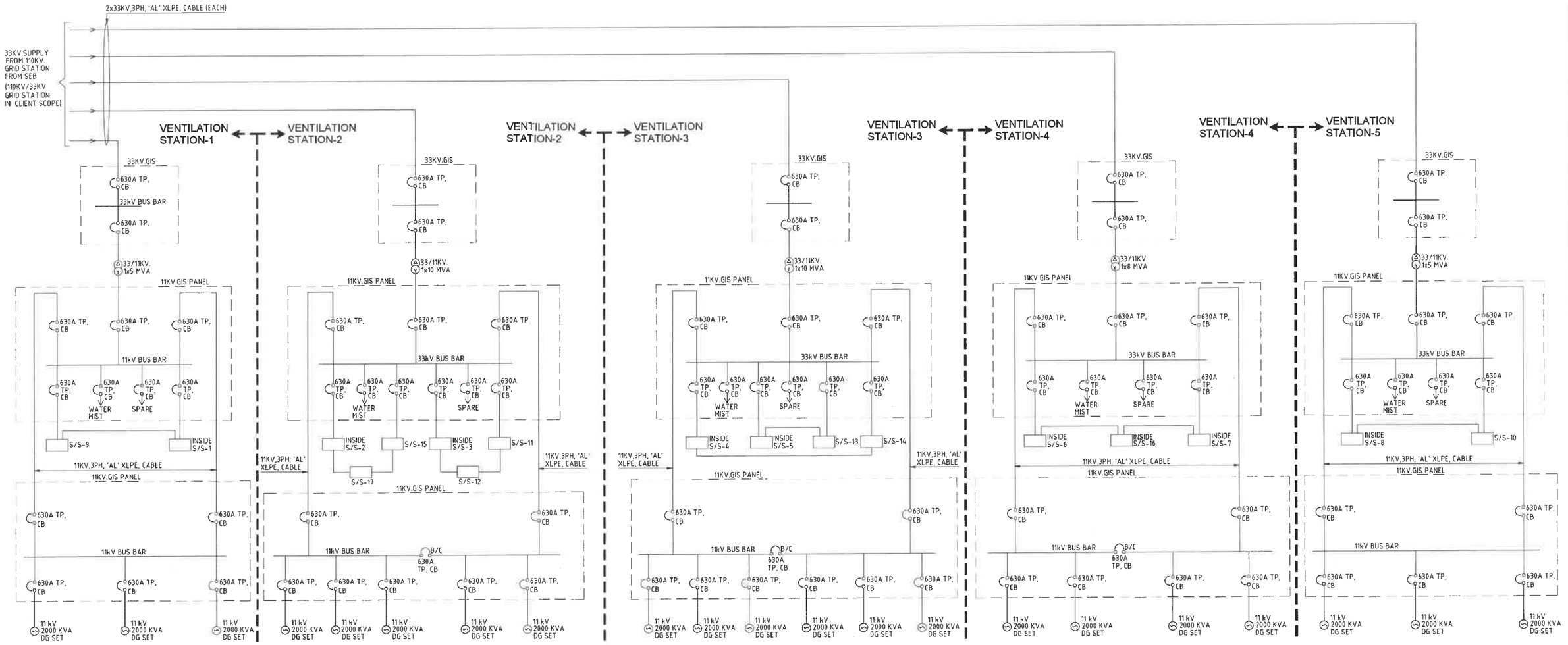
Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE

BBMP-ALIGNMENT LAYOUT WITH S/Sn

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-001	A
SCALE N.T.S.	DATE (Initial Issue) STATUS 16.01.25 DPR	

Original Drawing Size A1



FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS
THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS:-

REVISIONS					
REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	16.01.25	REVISED DRAWING	MKa	MKr	ANa
0	20.09.24	FIRST SUBMISSION DPR	MKa	MKr	ANa

QUALITY ASSURANCE

Date	20.09.24	20.09.24	20.09.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commisioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commisioned.

M:\GEOCONSULT\ Hebbal\ D:\MKa\GEOCONSULT India Pvt Ltd\BBMP\02 Road Tunnel DPR BBMP - Support For RSDC - Documents\AUTOCAD\DRAWINGS\ELECTRICAL\BBMP-EM-002 A-0.dwg, 2025-09-29

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax: 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

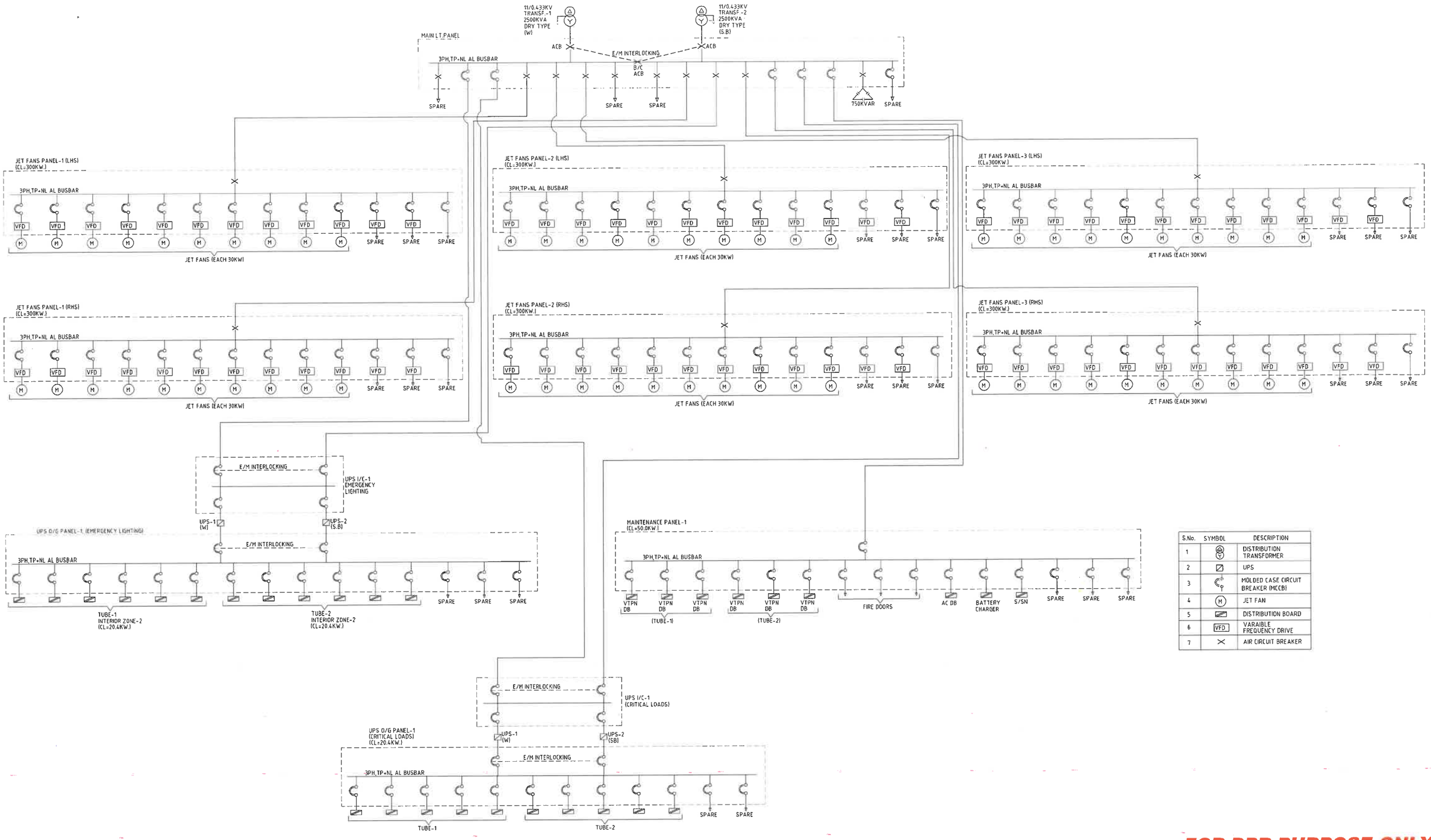
CLIENT: Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE

MAIN ELECTRICAL SCHEMATIC

PROJECT ID:	DRAWING NUMBER	REV
I 40172	BBMP-EM-002	A
SCALE: NTS	DATE (Initial Issue): JAN. 2025	STATUS: DPR

Original Drawing Size A1



S.No.	SYMBOL	DESCRIPTION
1		DISTRIBUTION TRANSFORMER
2		UPS
3		MOLDED CASE CIRCUIT BREAKER (MCCB)
4	M	JET FAN
5		DISTRIBUTION BOARD
6	VFD	VARAIBLE FREQUENCY DRIVE
7		AIR CIRCUIT BREAKER

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS..

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	16.01.25	REVISED DRAWING	MKa	MKr	ANa
0	18.10.24	FIRST SUBMISSION DPR	MKa	MKr	ANa

QUALITY ASSURANCE

Date	18.10.24	18.10.24	18.10.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commisioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commisioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

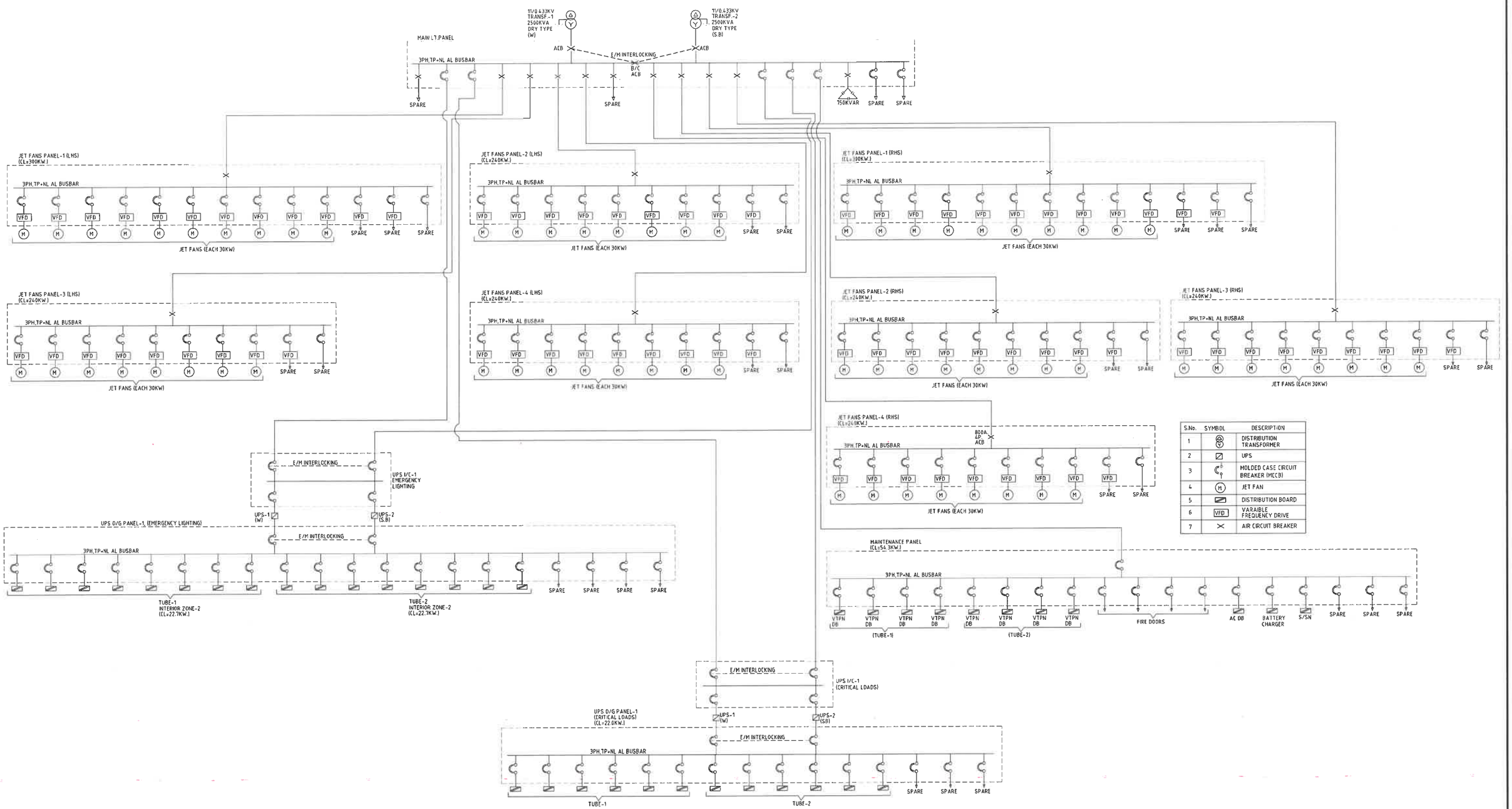
CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

CLIENT: Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE: ELECTRICAL SCHEMATIC FOR SUB-STATION-1,2,7 & 8 (1779m.)

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-003	A
SCALE: NTS	DATE (Initial issue): JAN. 2025	STATUS: DPR

Original Drawing Size A1



S.No.	SYMBOL	DESCRIPTION
1		DISTRIBUTION TRANSFORMER
2		UPS
3		MOLDED CASE CIRCUIT BREAKER (MCCB)
4	M	JET FAN
5		DISTRIBUTION BOARD
6	VFD	VARAIBLE FREQUENCY DRIVE
7		AIR CIRCUIT BREAKER

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS...

REVISIONS

REV.	DATE	PARTKULARS	Drawn	Checked	Approved
A	16.01.25	REVISED DRAWING	MKa	MKr	ANa
0	18.10.24	FIRST SUBMISSION DPR	MKa	MKr	ANa

QUALITY ASSURANCE

Date	18.10.24	18.10.24	18.10.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram, Haryana 122001 INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor) Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

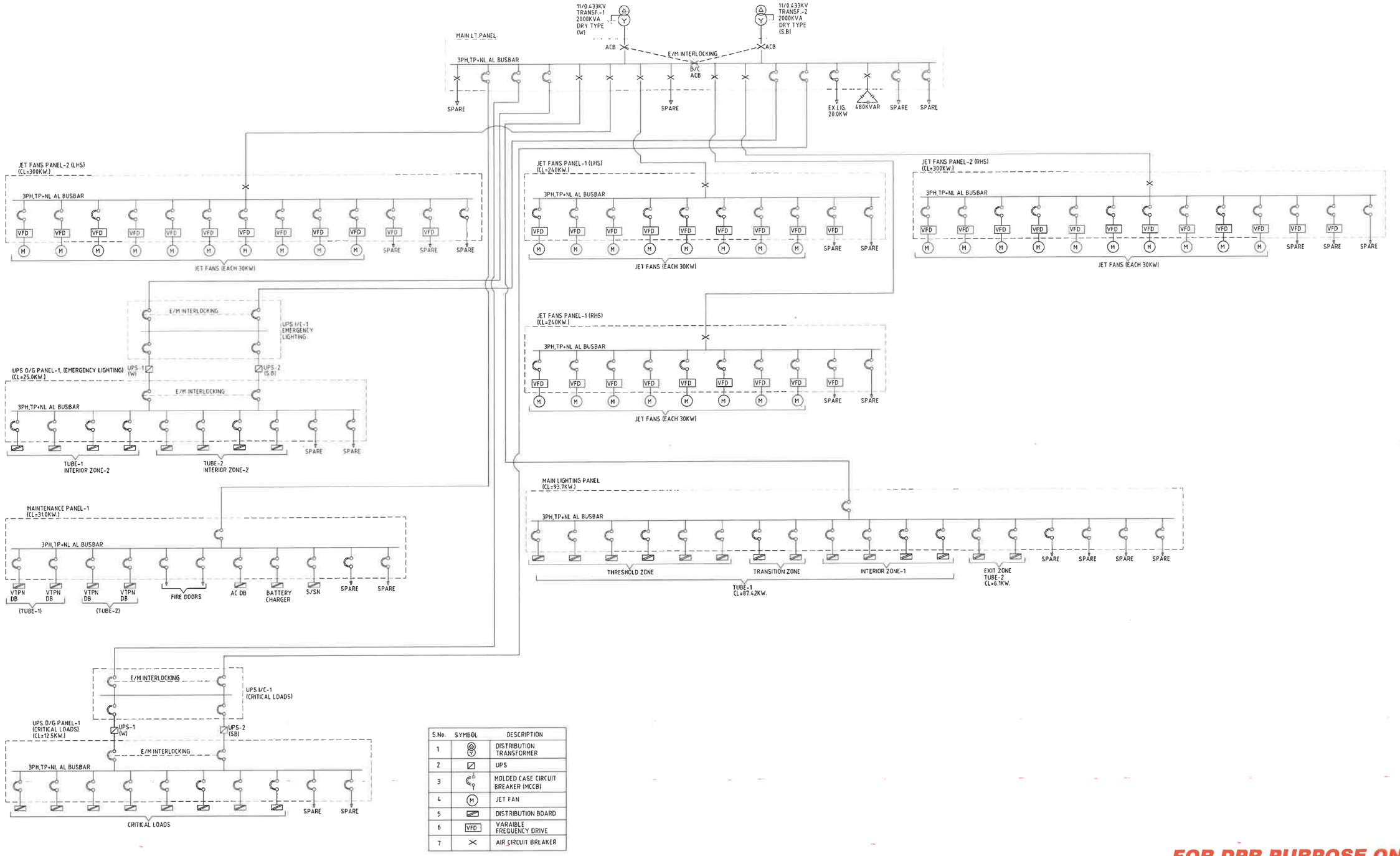
CLIENT: Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE: ELECTRICAL SCHEMATIC FOR SUB-STATION-3,4,5 & 6 (1900m.)

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-004	A

SCALE	DATE (Initial issue)	STATUS
NTS	JAN. 2025	DPR

Original Drawing Size A1



S.No.	SYMBOL	DESCRIPTION
1		DISTRIBUTION TRANSFORMER
2		UPS
3		MOLDED CASE CIRCUIT BREAKER (MCCB)
4	M	JET FAN
5		DISTRIBUTION BOARD
6	VFD	VARAIBLE FREQUENCY DRIVE
7		AIR CIRCUIT BREAKER

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS...

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	16.01.25	REVISED DRAWING	MKa	MKr	ANa
0	18.10.24	FIRST SUBMISSION DPR	MKa	MKr	ANa

QUALITY ASSURANCE

Date	18.10.24	18.10.24	18.10.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commisioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commisioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001 INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor) Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

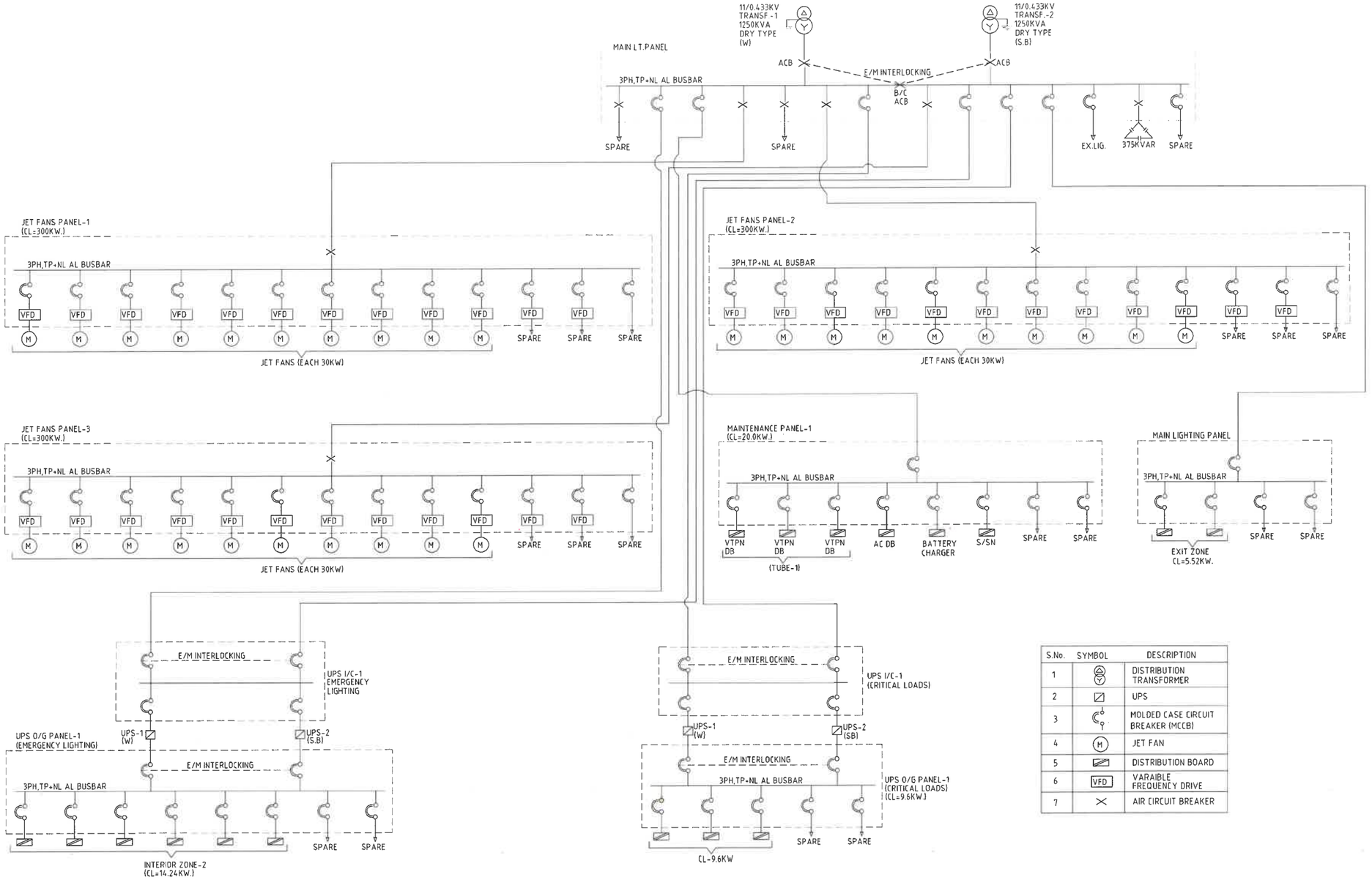
CLIENT: Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE: ELECTRICAL SCHEMATIC FOR SUB-STATION-9 & 10

PROJECT TITLE: CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-005	A
SCALE: NTS	DATE (Final issue): JAN. 2025	STATUS: DPR

Original Drawing Size A1



S.No.	SYMBOL	DESCRIPTION
1		DISTRIBUTION TRANSFORMER
2		UPS
3		MOLDED CASE CIRCUIT BREAKER (MCCB)
4	M	JET FAN
5		DISTRIBUTION BOARD
6	VFD	VARAIBLE FREQUENCY DRIVE
7		AIR CIRCUIT BREAKER

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS:-

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	16.01.25	REVISED DRAWING	MKa	MKr	ANa
O	18.10.24	FIRST SUBMISSION DPR	MKa	MKr	ANa

QUALITY ASSURANCE

Date	18.10.24	18.10.24	18.10.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

CLIENT: Bruhat Bengaluru Mahanagra Palike

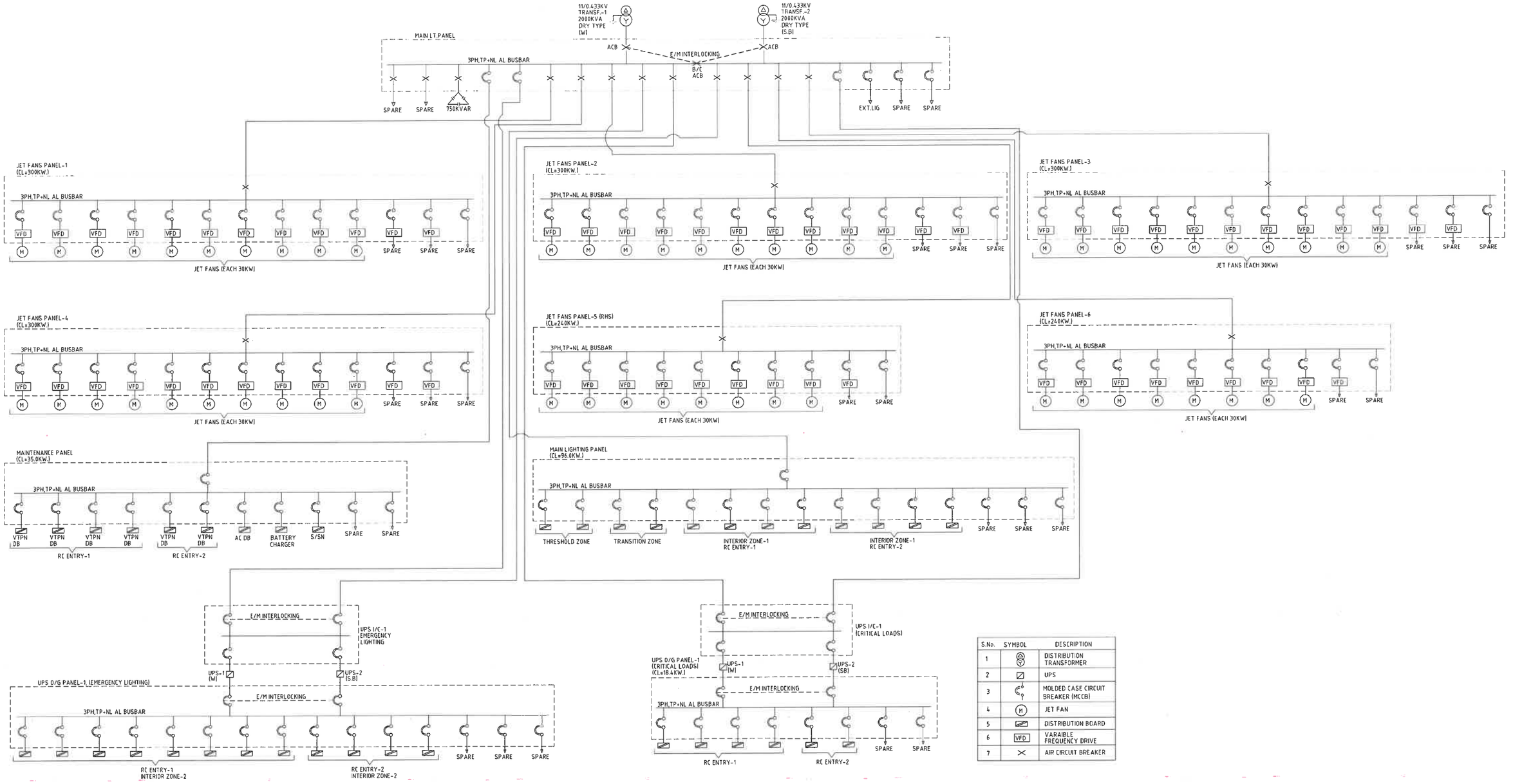
DRAWING TITLE: ELECTRICAL SCHEMATIC FOR SUB-STATION-11&15 (1685M)

PROJECT TITLE: CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-006	A

SCALE	DATE (Initial Issue)	STATUS
NTS	JAN. 2025	DPR

Original Drawing Size A1



S.No.	SYMBOL	DESCRIPTION
1		DISTRIBUTION TRANSFORMER
2		UPS
3		MOLDED CASE CIRCUIT BREAKER (MCCB)
4	M	JET FAN
5		DISTRIBUTION BOARD
6	VFD	VARAIBLE FREQUENCY DRIVE
7		AIR CIRCUIT BREAKER

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS...

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	16.01.25	REVISED DRAWING	MKa	MKr	ANa
0	18.10.24	FIRST SUBMISSION DPR	MKa	MKr	ANa

QUALITY ASSURANCE

Date	18.10.24	18.10.24	18.10.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram, Haryana 122001 INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor) Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

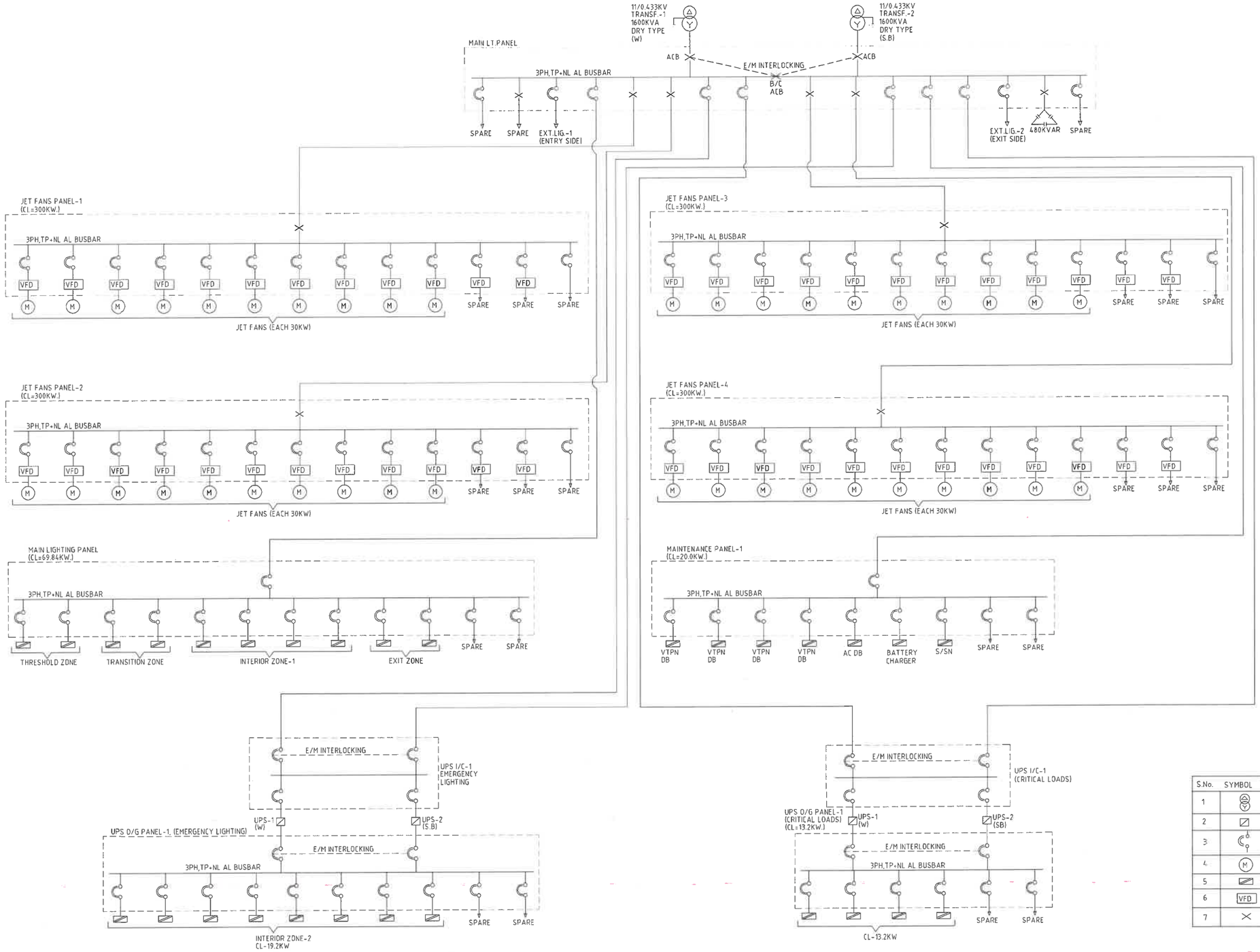
CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

CLIENT: Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE: ELECTRICAL SCHEMATIC FOR SUB-STATION-13 & 14 (FREEDOM PARK & HUDSON CIRCLE)

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-007	A
SCALE: NTS	DATE (Initial issue): JAN. 2025	STATUS: DPR

Original Drawing Size A1



S.No.	SYMBOL	DESCRIPTION
1		DISTRIBUTION TRANSFORMER
2		UPS
3		MOLDED CASE CIRCUIT BREAKER (MCCB)
4	M	JET FAN
5		DISTRIBUTION BOARD
6	VFD	VARAIBLE FREQUENCY DRIVE
7		AIR CIRCUIT BREAKER

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS...

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	16.01.25	REVISED DRAWING	MKa	MKr	ANa
0	18.10.24	FIRST SUBMISSION DPR	MKa	MKr	ANa

QUALITY ASSURANCE

Date	18.10.24	18.10.24	18.10.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned

"H:\GEOCONSULT_PROJECTS_D-DRIVE\GEOCONSULT India Pvt Ltd\BMTP Road Tunnel DPR BBMP - Support for RODIC - Documents\04-CAD\WORKING\EE-PLD\ELECTRICAL\BBMP-EM-008.dwg, 2025-01-31

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram, Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

CLIENT: Bruhat Bengaluru Mahanagra Palike

PROJECT TITLE

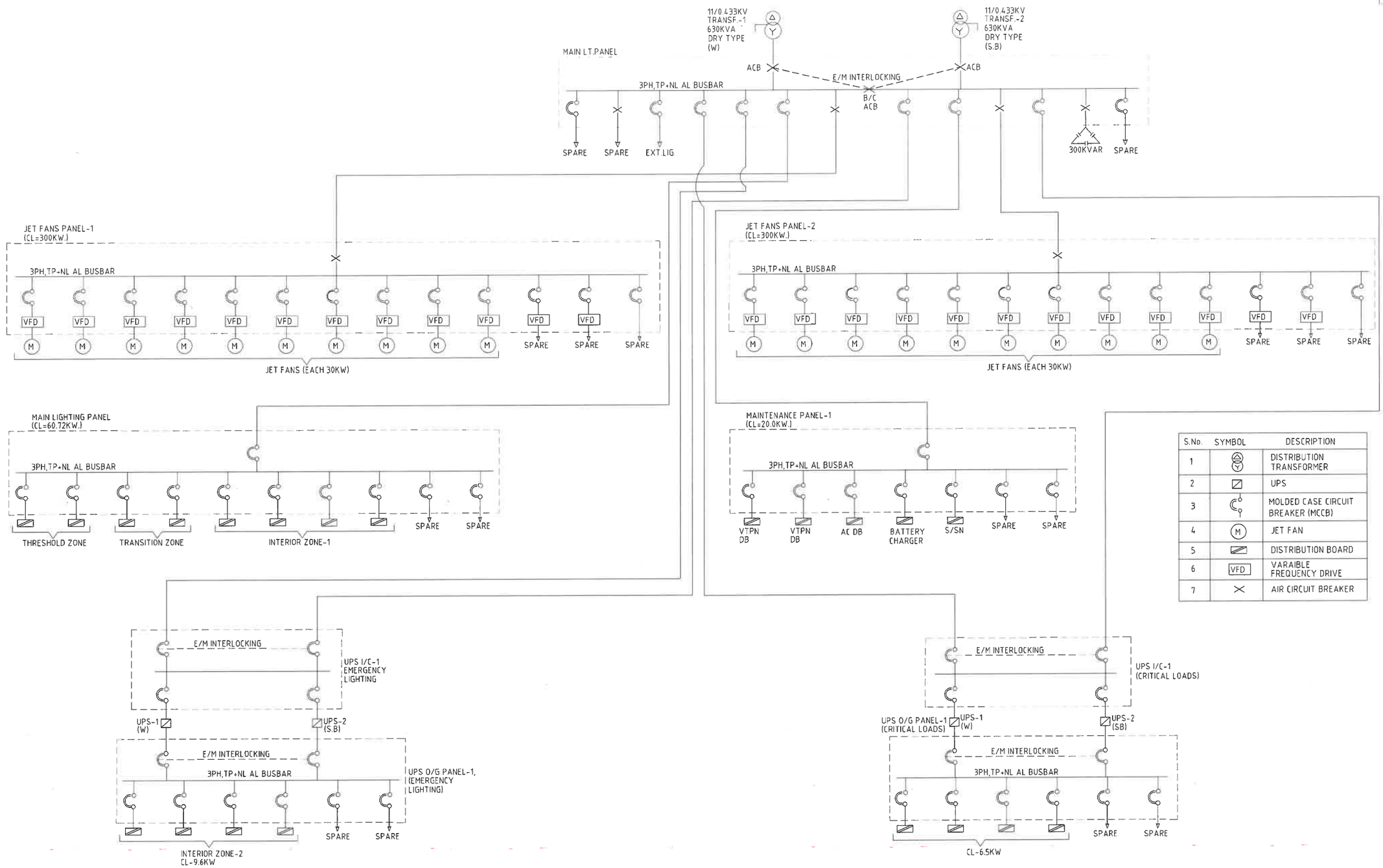
CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

DRAWING TITLE: ELECTRICAL SCHEMATIC FOR SUB-STATION-16 (LB ENTRY & LB EXIT)

PROJECT ID:	DRAWING NUMBER	REV
I 40172	BBMP-EM-008	A

SCALE: NTS | DATE (Initial issue): JAN. 2025 | STATUS: DPR

Original Drawing Size A1



S.No.	SYMBOL	DESCRIPTION
1		DISTRIBUTION TRANSFORMER
2		UPS
3		MOLDED CASE CIRCUIT BREAKER (MCCB)
4	M	JET FAN
5		DISTRIBUTION BOARD
6	VFD	VARAIBLE FREQUENCY DRIVE
7		AIR CIRCUIT BREAKER

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS:-

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	16.01.25	REVISED DRAWING	MKa	MKr	ANa
0	18.10.24	FIRST SUBMISSION DPR	MKa	MKr	ANa

QUALITY ASSURANCE

Date	18.10.24	18.10.24	18.10.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

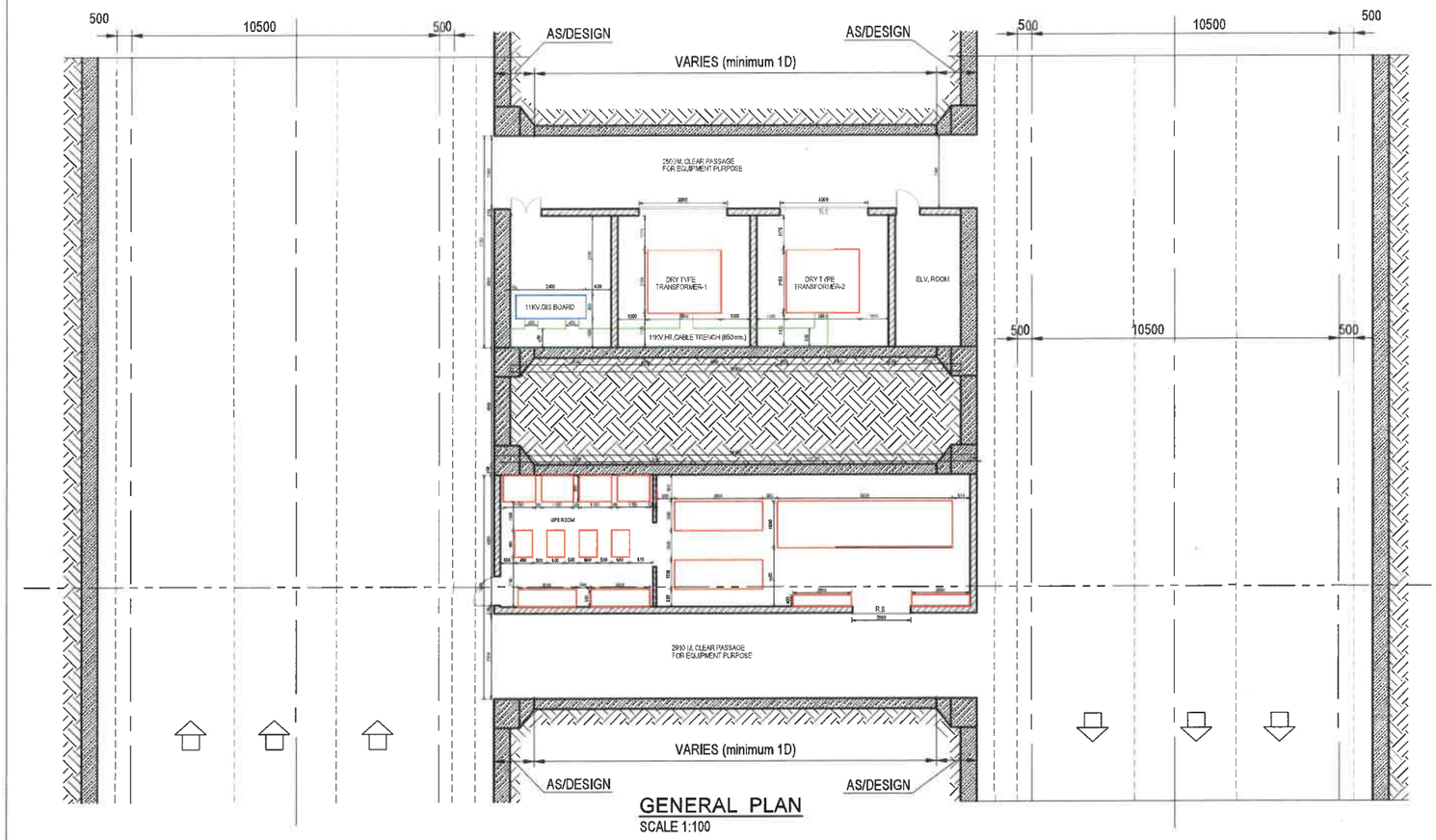
CLIENT: Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE: ELECTRICAL SCHEMATIC FOR SUB-STATION-12 &17 (940M.)

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-009	A

SCALE: NTS | DATE (Initial Issue): JAN. 2025 | STATUS: DPR

Original Drawing Size A1



GENERAL PLAN
SCALE 1:100

SCALE 1 : 100

5m 0 5m 10m

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS...

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
B	24.12.24	CROSS PASSAGE WIDTH INCREASE	MKa	MKr	ANa
A	20.11.24	FIRST SUBMISSION	MKa	MKr	ANa

QUALITY ASSURANCE

Date	20.11.24	20.11.24	20.11.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party, other than the person by whom it was commissioned.

#GEOCONSULT, Haharia, D:\Mr-GEOCONSULT India Pvt Ltd\40172 Road Tunnel DPR BBMP - Support for RODIC - Documents\8-CAD\WORKING\EM\ELECTRICAL\BBMP-EM-010_B.dwg, 2025-11-28

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

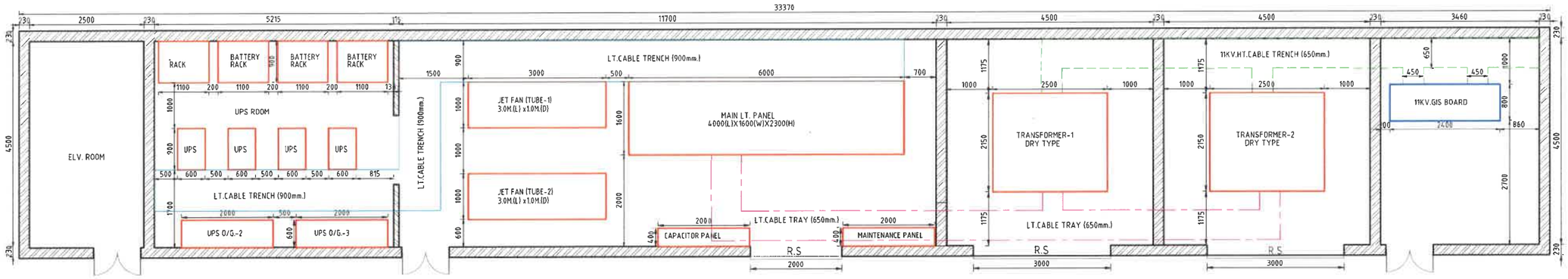
CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

CLIENT: Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE: MAIN TUNNEL LAYOUT OF 11/433KV. SUB-STATION

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-010	B
SCALE 1:100	DATE (Initial Issue) DEC. 2024	STATUS DPR

Original Drawing Size A1



SCALE 1 40

2m 1m 0 1m 2m 4m

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS...

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	24.12.24	FIRST SUBMISSION	MKa	MKr	ANa

QUALITY ASSURANCE

Date	24.12.24	24.12.24	24.12.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commisioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commisioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

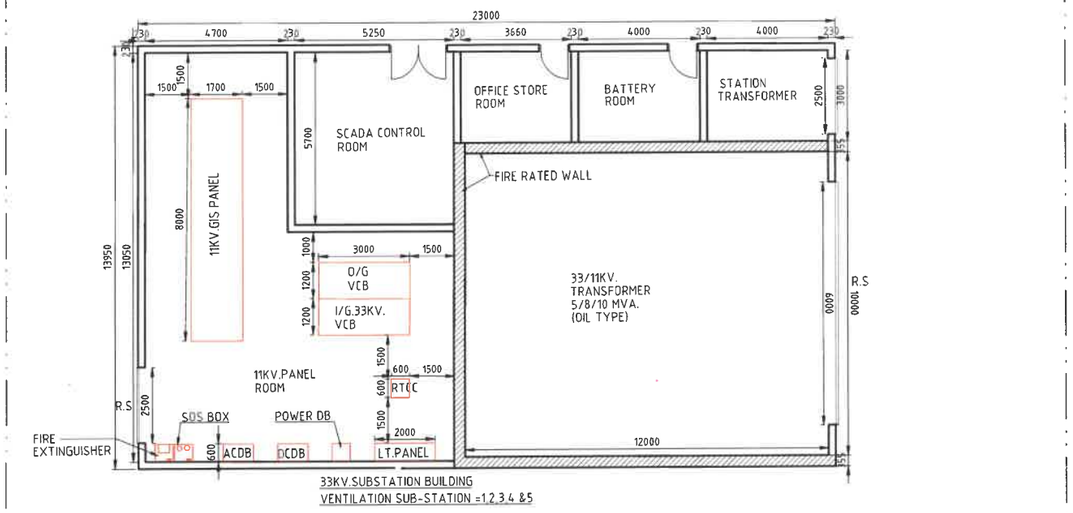
CLIENT: Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE: MAIN TUNNEL LAYOUT OF 11/.433KV. NITCH SUBSTATION

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-011	A

SCALE	DATE (Initial issue)	STATUS
1:40	DEC. 2024	DPR

Original Drawing Size A1



SCALE 1 : 100

5m 0 5m 10m

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS..

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	27.12.24	FIRST SUBMISSION DPR	MKa	MKr	ANa

QUALITY ASSURANCE

Date	27.12.24	27.12.24	27.12.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor) Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

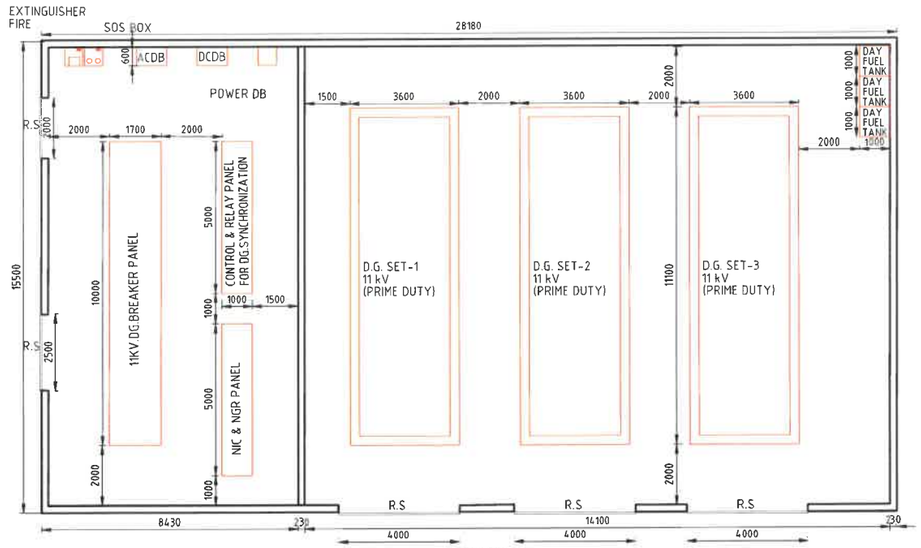
CLIENT: Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE: 33KV.SUB-STATION BUILDING VENTILATION SUB-STATION LAYOUT -1,2,3,4 & 5

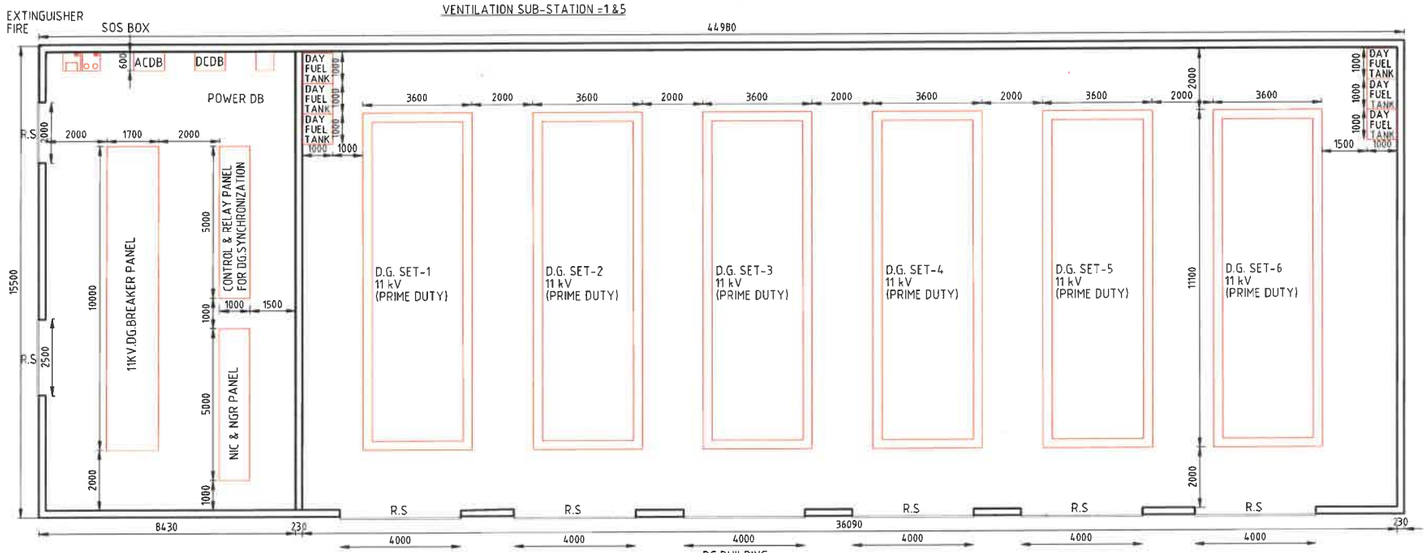
PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-012	A

SCALE	DATE (Initial Issue)	STATUS
1:100	DEC. 2024	DPR

Original Drawing Size A1



DG.BUILDING
TYPE -1
VENTILATION SUB-STATION =1 & 5



DG.BUILDING
TYPE -2
VENTILATION SUB-STATION =2,3 & 4

SCALE 1 : 100

5m 0 5m 10m

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS..

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	27.12.24	FIRST SUBMISSION DPR	MKa	MKr	ANa

QUALITY ASSURANCE

Date	27.12.24	27.12.24	27.12.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commisioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commisioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

CLIENT

Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE

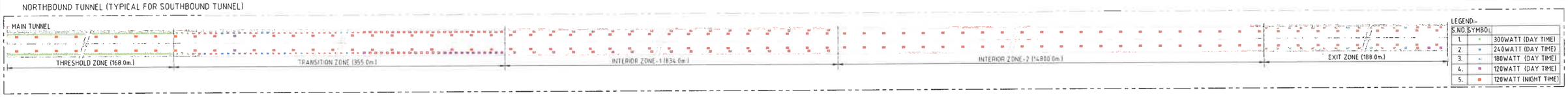
DG.BUILDING TYPE- 1&2
VENTILATION SUB-STATION
LAYOUT -1,2,3,4 & 5

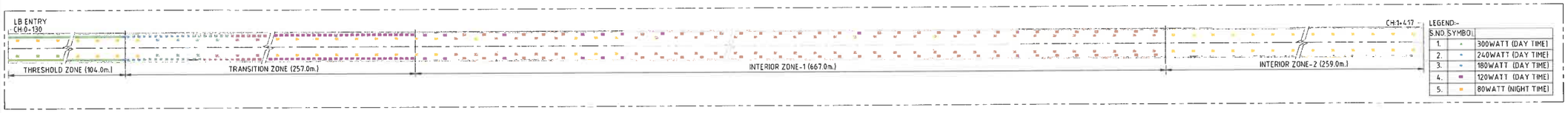
PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-013	A

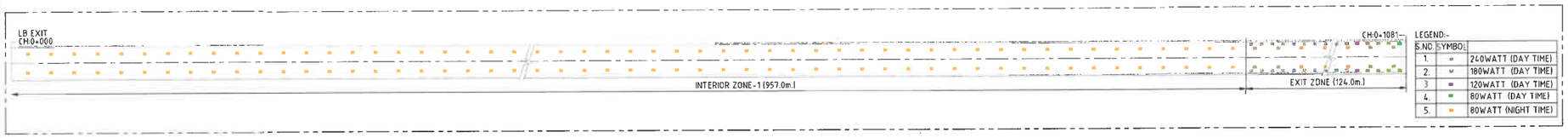
SCALE	DATE (Initial Issue)	STATUS
1:100	DEC. 2024	DPR

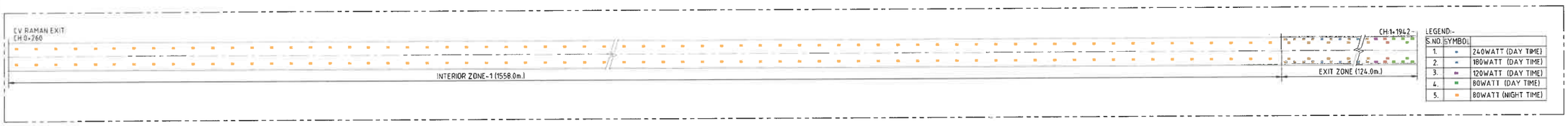
Original Drawing Size A1

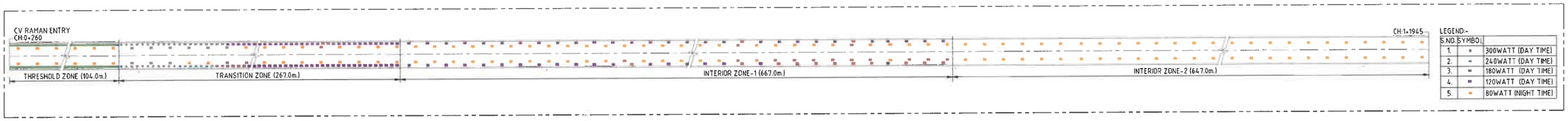
NORTHBOUND TUNNEL (TYPICAL FOR SOUTHBOUND TUNNEL)

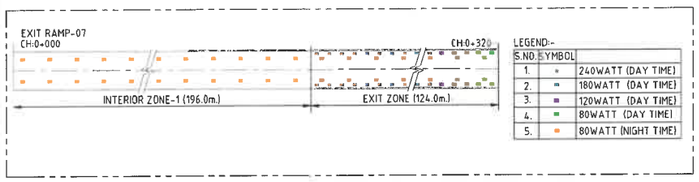


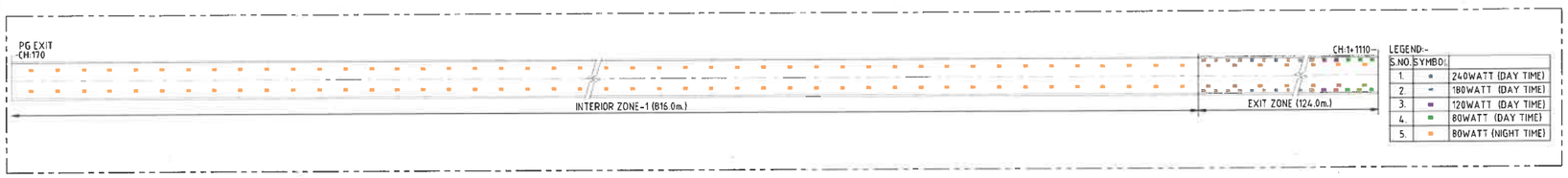


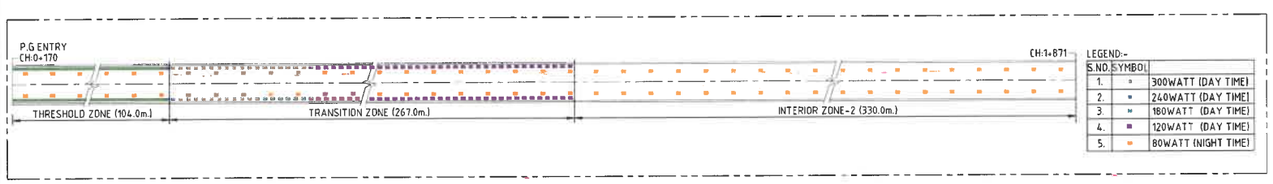












SCALE 1 : 1000

50m 0 50m 100m

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS...

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	17.01.25	REVISED DRAWING	MKa	MKr	ANa
0	15.10.24	FIRST SUBMISSION	MKa	MKr	ANa

QUALITY ASSURANCE

Date	15.10.24	15.10.24	15.10.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

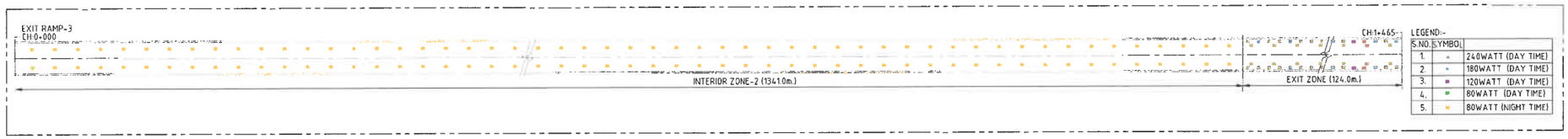
CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

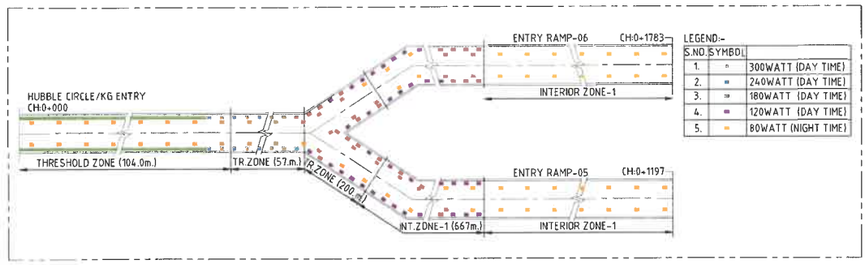
CLIENT: Bruhat Bengaluru Mahanagra Palike

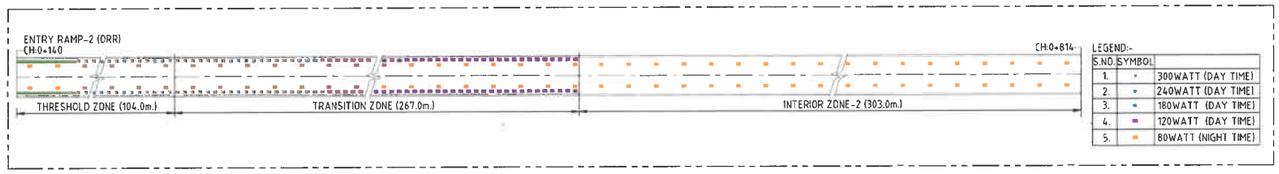
DRAWING TITLE: MAIN TUNNEL LIGHTING LAYOUT (Sheet-1/2)

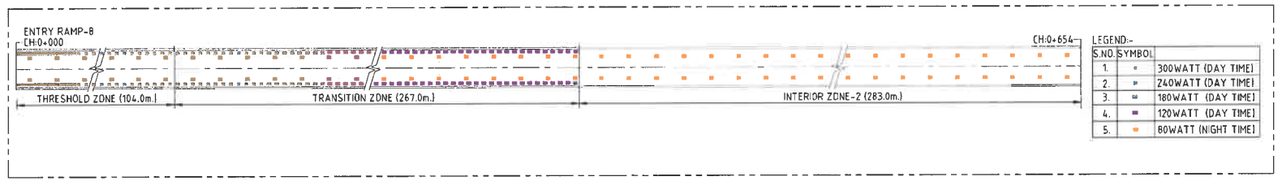
PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-E014	A
SCALE 1000	DATE (Initial Issue) 17.01.2025	STATUS DPR

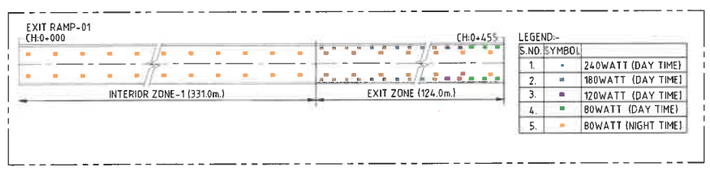
Original Drawing Size A1











SCALE 1 : 1000

50m 0 50m 100m

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS...

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	17.01.25	REVISED DRAWING	MKa	MKr	ANa
0	15.10.24	FIRST SUBMISSION	MKa	MKr	ANa

QUALITY ASSURANCE

Date	15.10.24	15.10.24	15.10.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

M:\GEOCONSULT, Haryana, (I:\HARYANA\GEOCONSULT India Pvt Ltd\I40172 Road Tunnel DPR BBMP - Support for RODIC - Documents\5-CAD\WORKING\ELECTRICAL\BBMP-E&M-E14_0.dwg, 2025-01-29

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

CLIENT

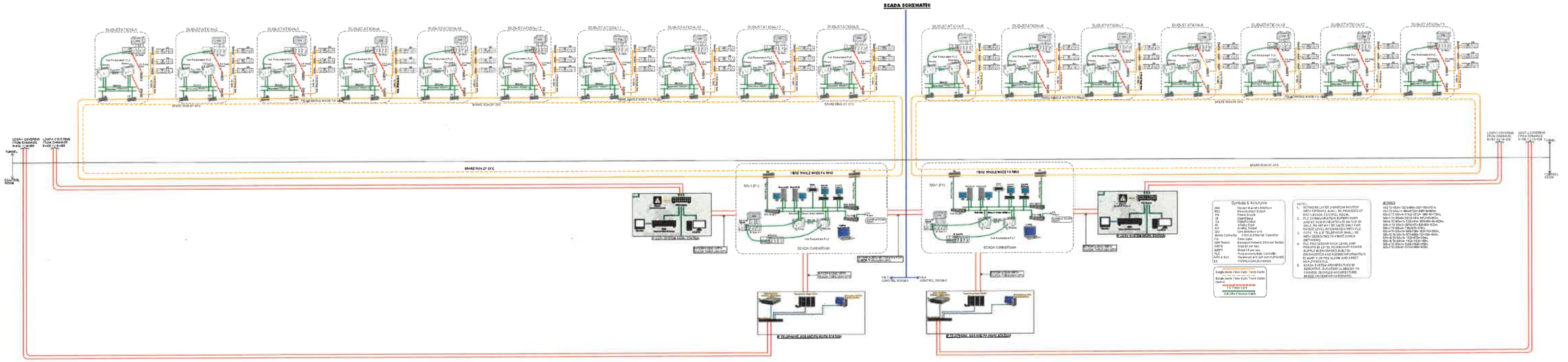
Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE

MAIN TUNNEL LIGHTING LAYOUT (Sheet-2/2)

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-E&M-E014	A
SCALE 1000	DATE (Issue/Revise) 17.01.2025	STATUS DPR

Original Drawing Size A1



FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS	REVISIONS						QUALITY ASSURANCE			
THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS..							Date	22.10.24	22.10.24	22.10.24
							Name	MKa	MKr	ANa
								Drawn	Designed	Approved
	A	24.01.25	REVISED SCHEME	MKa	MKr	ANa	Document Originators (First Issue)			
	0	22.10.24	FIRST SUBMISSION DPR	MKa	MKr	ANa	This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commisioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commisioned.			
	REV	DATE	PARTICULARS	Drawn	Checked	Approved				

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

CLIENT: Bruhat Bengaluru Mahanagra Palike

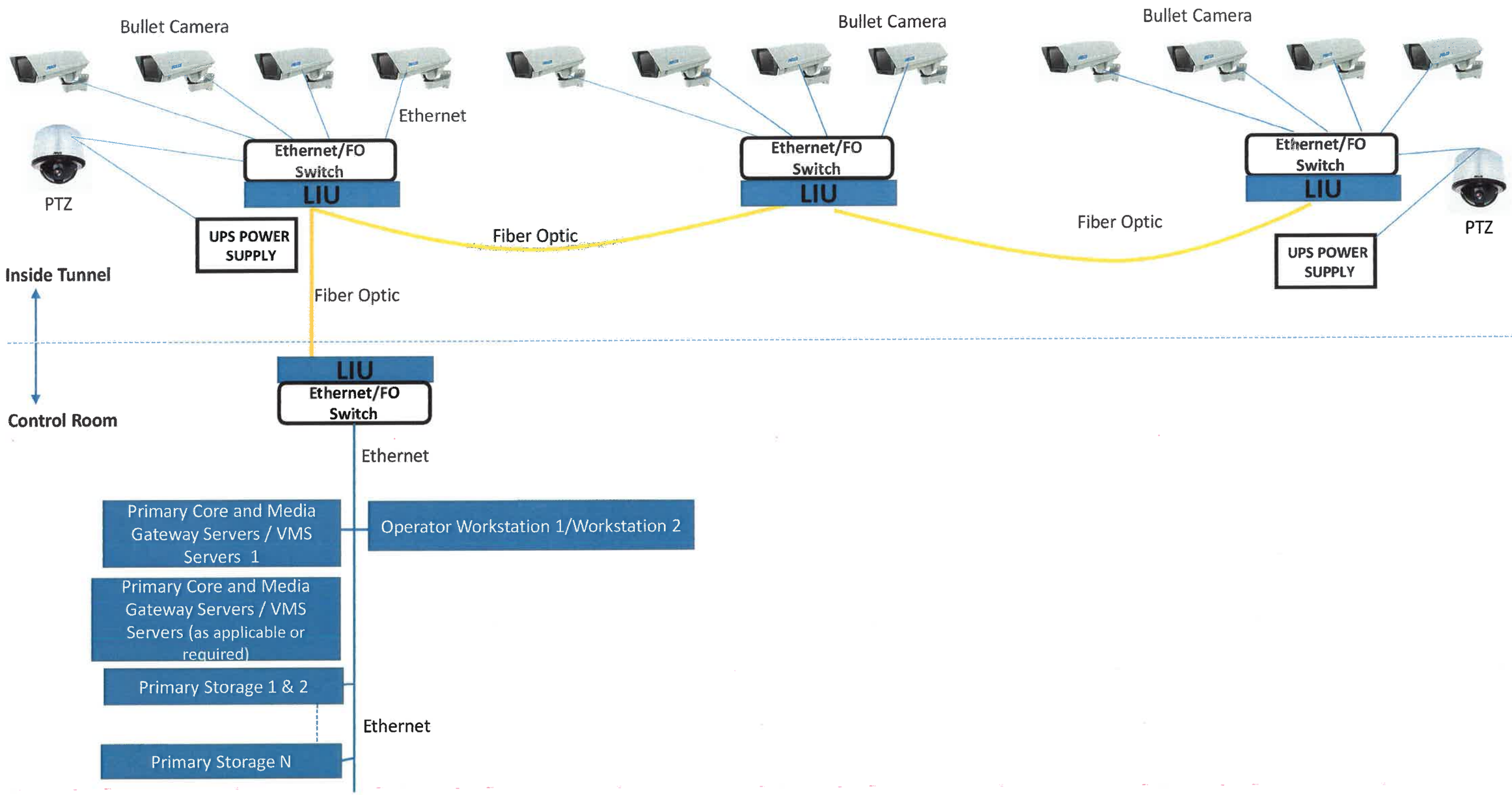
DRAWING TITLE: TUNNEL AUTOMATION SYSTEM SCADA SYSTEM ARCHITECTURE

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-015	A

SCALE	DATE (Initial Issue)	STATUS
NTS	JAN. 2025	DPR

Original Drawing Size A1

CCTV Surveillance Schematic Diagram



LEGENDS:-

LIU	LINE INTER PHASE UNIT
	PAN TILT ZOOM CAMERA (PTZ)
	BULLET CAMERA

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS	REVISIONS						
THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS:-							
	A	22.10.24		MKa	MKr	ANa	
	REV.	DATE	PARTICULARS	Drawn	Checked	Approved	

QUALITY ASSURANCE			
Date	22.10.24	22.10.24	22.10.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

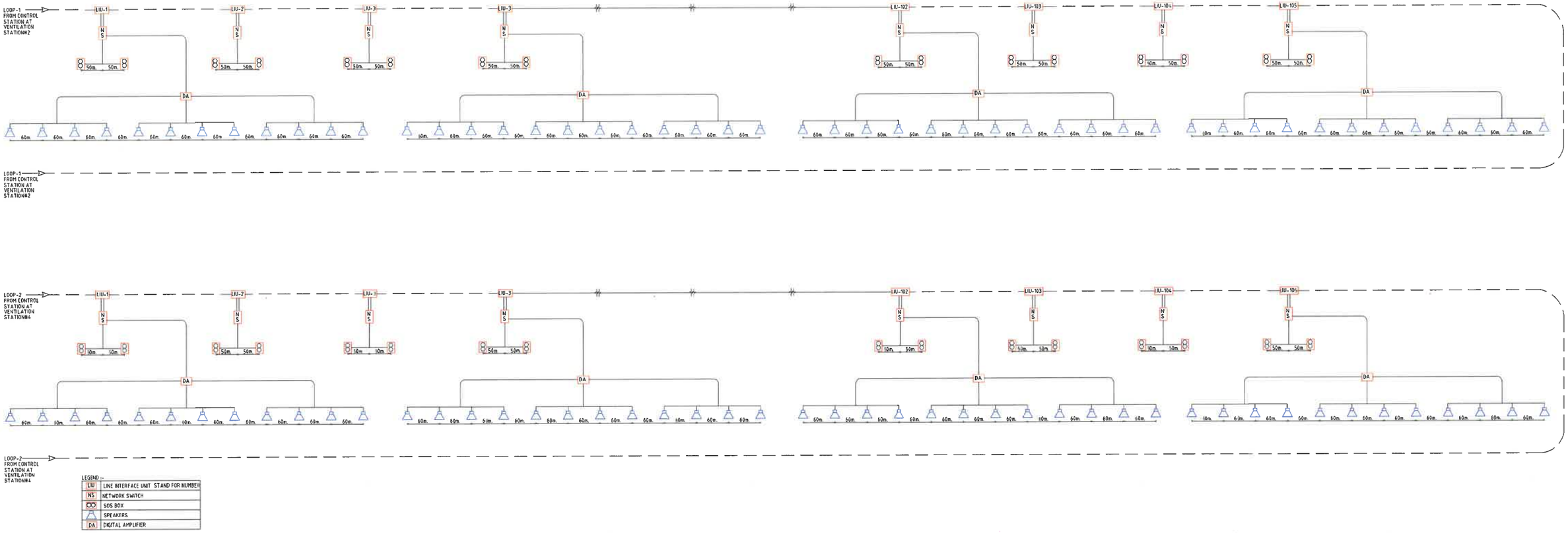
CLIENT: Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE: MAIN TUNNEL GENERAL SCHEMATIC DIAGRAM FOR CCTV.SURVEILLIANCE SYSTEM

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-016	A

SCALE	DATE (Initial issue)	STATUS
N.T.S	OCT 2024	DPR

Original Drawing Size A1



LEGEND :-

LIU	LINE INTERFACE UNIT STAND FOR NUMBER
NS	NETWORK SWITCH
	SOS BOX
	SPEAKERS
DA	DIGITAL AMPLIFIER

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS..

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	24.10.24		MKa	MKr	ANa

QUALITY ASSURANCE

Date	24.10.24	24.10.24	24.10.24
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commisioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commisioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

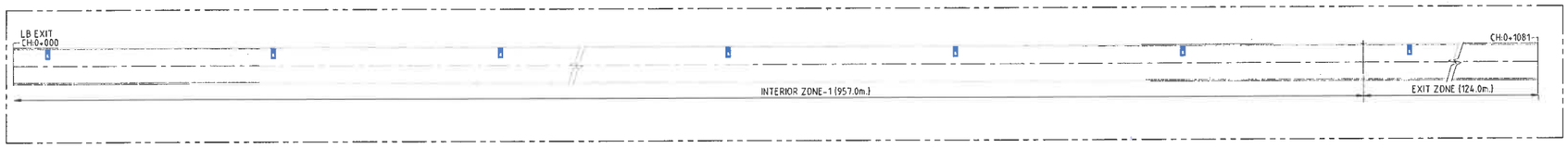
CLIENT: Bruhat Bengaluru Mahanagra Palike

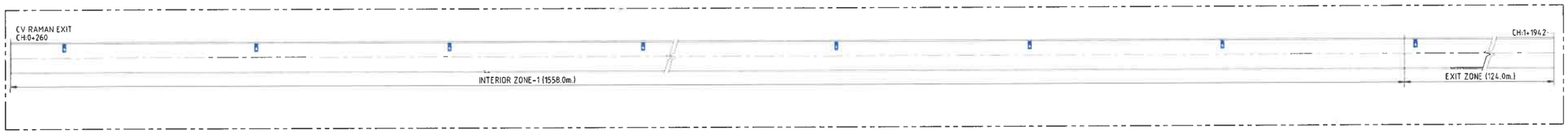
DRAWING TITLE: TYPICAL IP TELEPHONE,SOS & PUBLIC ADDRESS SYSTEM

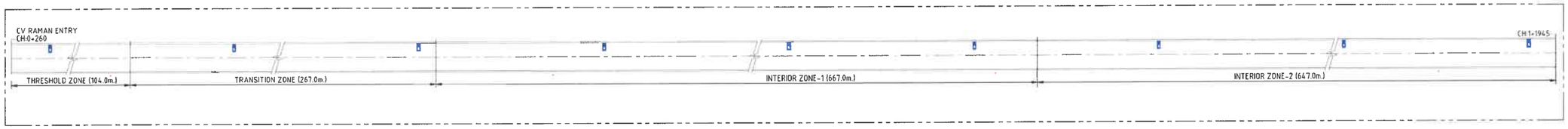
PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-017	A
SCALE: N.T.S	DATE (Initial issue): OCT. 2024	STATUS: DPR

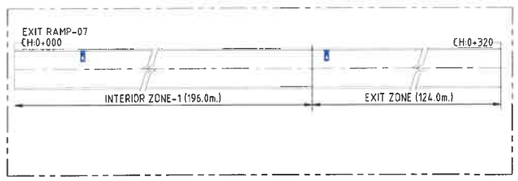
Original Drawing Size A1

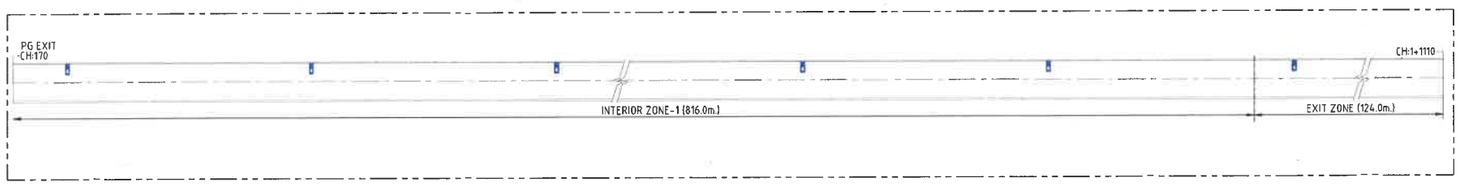
NORTHBOUND TUNNEL (TYPICAL FOR SOUTHBOUND TUNNEL)

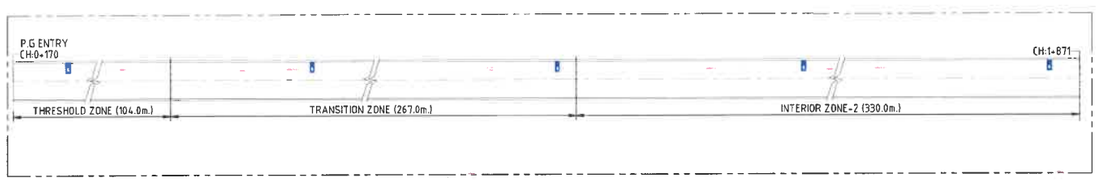












LEGEND:-

S.NO.	SYMBOL	
1.		1-EMERGENCY PHONE (SOS) @ 100m.C/C 2-EMERGENCY PUSH BUTTON @ 100m.C/C

SCALE 1 : 1000

50m 0 50m 100m

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS..

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	24.01.25	REVISED DRAWING	MKa	MKr	ANa
0	21.01.25	FIRST SUBMISSION	MKa	MKr	ANa

QUALITY ASSURANCE

Date	21.01.25	21.01.25	21.01.25
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

CLIENT: Bruhat Bengaluru Mahanagra Palike

PROJECT TITLE

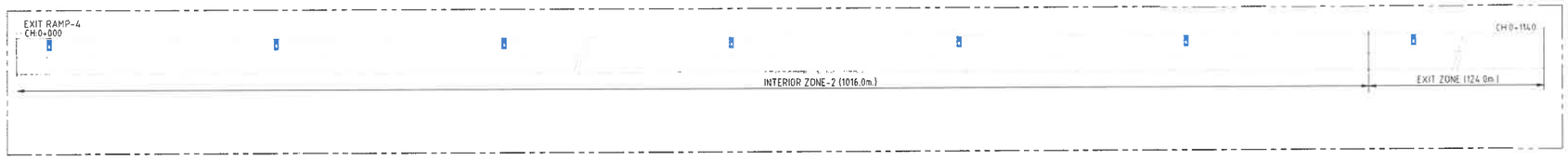
CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

DRAWING TITLE: SOS STATIONS EQUIPMENT (Sheet-1/2)

PROJECT ID:	DRAWING NUMBER	REV
I 40172	BBMP-EM-E019	A

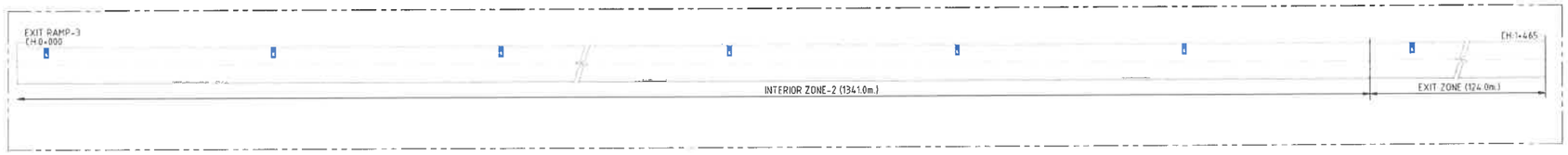
SCALE	DATE (Initial issue)	STATUS
1000	24.01.2025	DPR

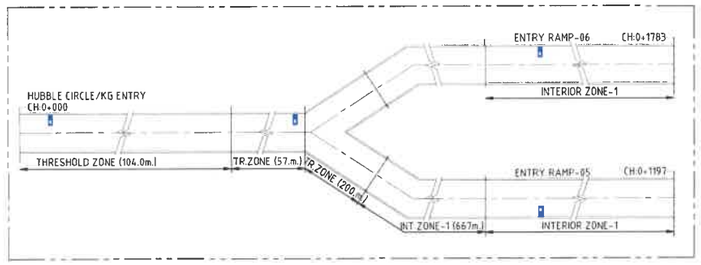
Original Drawing Size A1

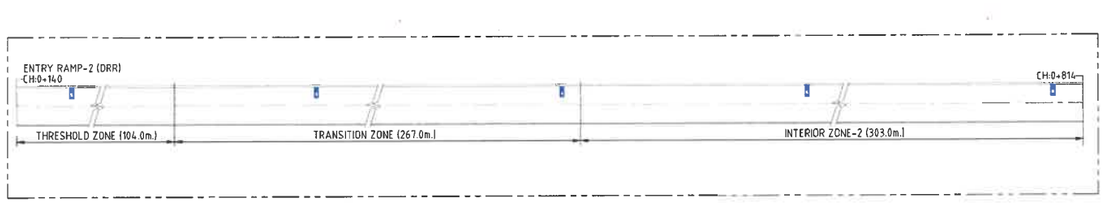


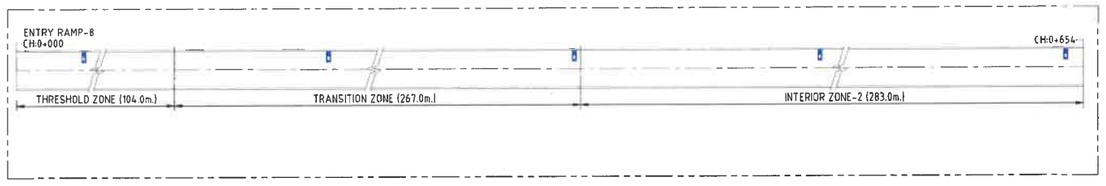
LEGEND :-

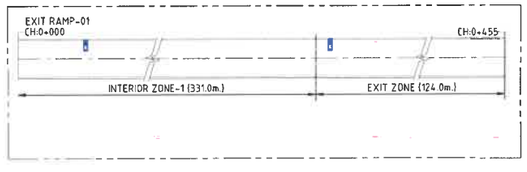
S.NO	SYMBOL	
1		1-EMERGENCY PHONE (SOS) @ 100m.C/C 2-EMERGENCY PUSH BUTTON @ 100m.C/C











SCALE 1: 1000

50m 0 50m 100m

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS:-

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	24.01.25	REVISED DRAWING	MKa	MKr	ANa
0	21.01.25	FIRST SUBMISSION	MKa	MKr	ANa

QUALITY ASSURANCE

Date	21.01.25	21.01.25	21.01.25
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

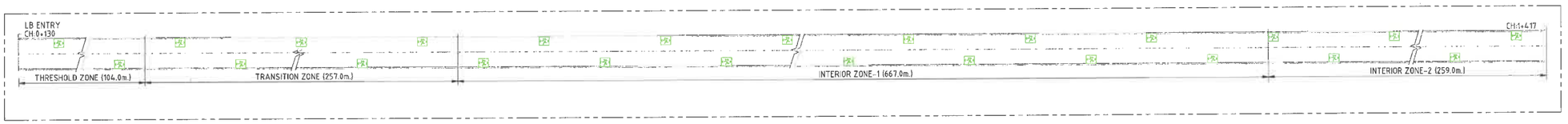
CLIENT : Bruhat Bengaluru Mahanagra Palike

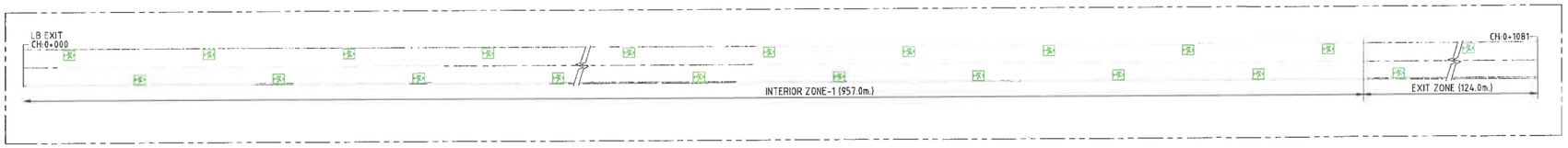
DRAWING TITLE : SOS STATIONS EQUIPMENT (Sheet-2/2)

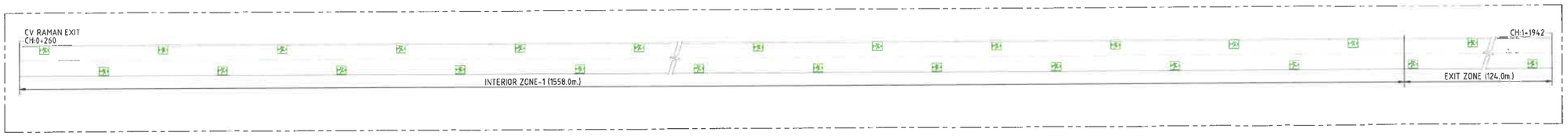
PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-E019	A
SCALE 1000	DATE (Initial Issue) 24.01.2025	STATUS DPR

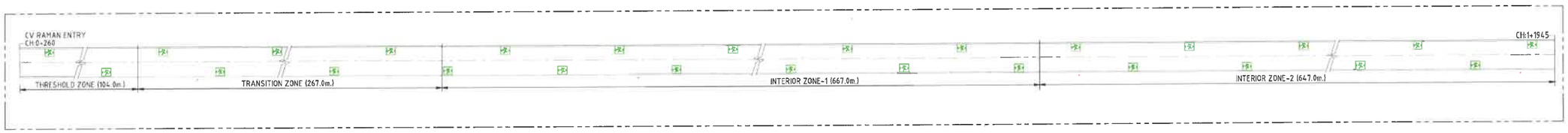
Original Drawing Size A1

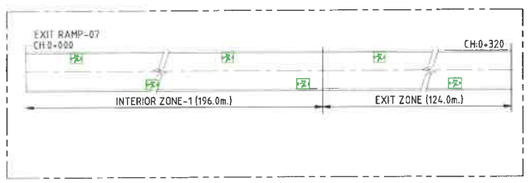
NORTHBOUND TUNNEL (TYPICAL FOR SOUTHBOUND TUNNEL)

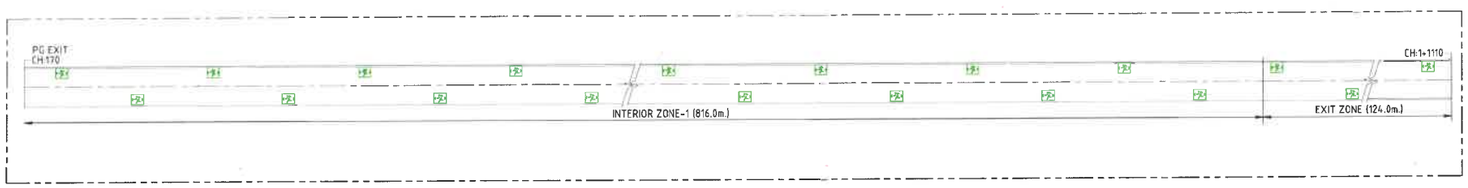






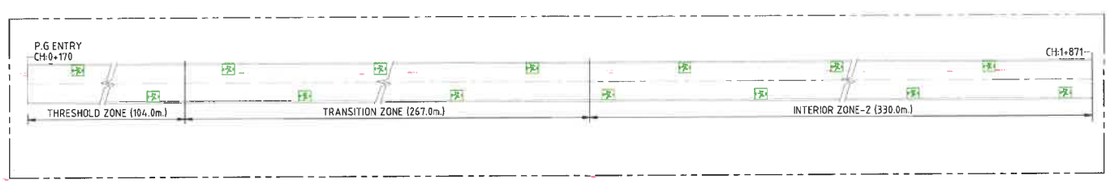






LEGEND:-

S.NO.	SYMBOL	
1.		EMERGENCY WAY FINDER (PSI.EWF.550D)



SCALE 1 : 1000

50m 0 50m 100m

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS:-

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	27.01.25	REVISED DRAWING	MKa	MKr	ANa
0	22.01.25	FIRST SUBMISSION	MKa	MKr	ANa

QUALITY ASSURANCE

Date	22.01.25	22.01.25	22.01.25
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001 INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor) Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

CLIENT: Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE: MAIN TUNNEL SIGNAGE LOCATION (Sheet-1/2)

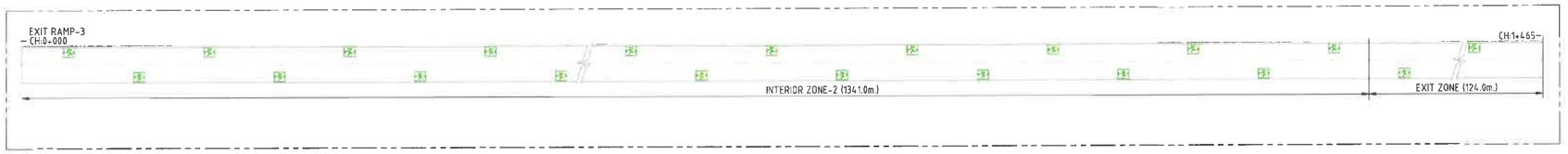
PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-E020	A

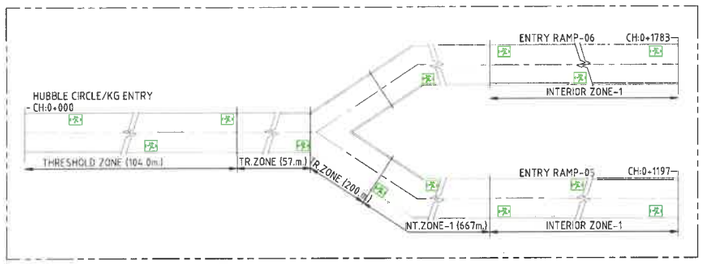
SCALE	DATE (Initial issue)	STATUS
1000	27.01.2025	DPR

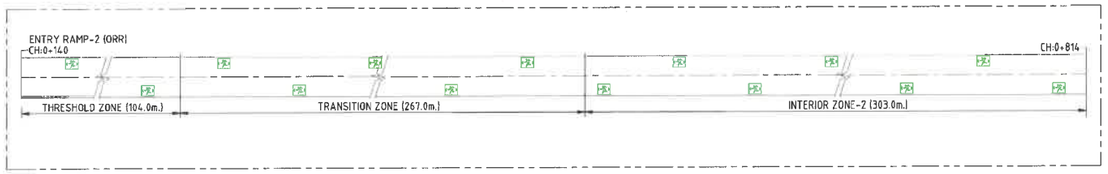
Original Drawing Size A1

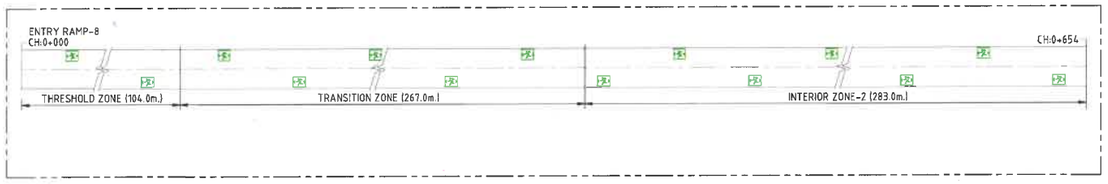
LEGEND:-

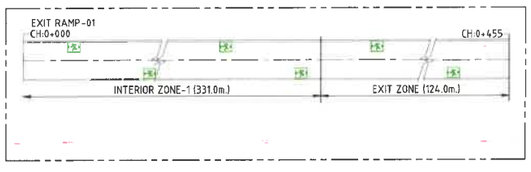
S.NO.	SYMBOL	
1.		EMERGENCY WAY FINDER (PSI,EWF.550D)











SCALE 1 : 1000

50m 0 50m 100m

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS:-

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	27.01.25	REVISED DRAWING	MKa	MKr	ANa
0	22.01.25	FIRST SUBMISSION	MKa	MKr	ANa

QUALITY ASSURANCE

Date	22.01.25	22.01.25	22.01.25
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commisioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

CLIENT: Bruhat Bengaluru Mahanagra Palike

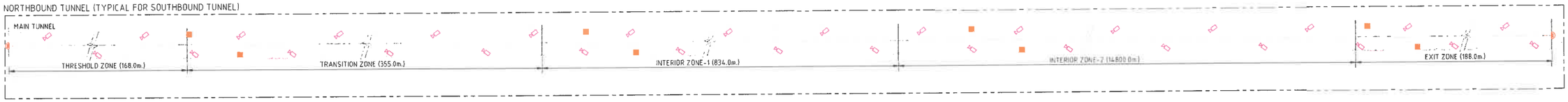
DRAWING TITLE: MAIN TUNNEL SIGNAGE LOCATION (Sheet-2/2)

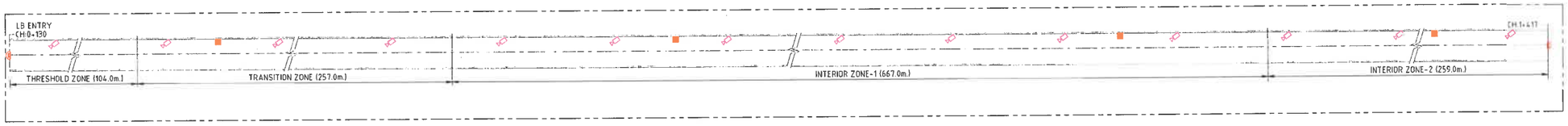
PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-E020	A

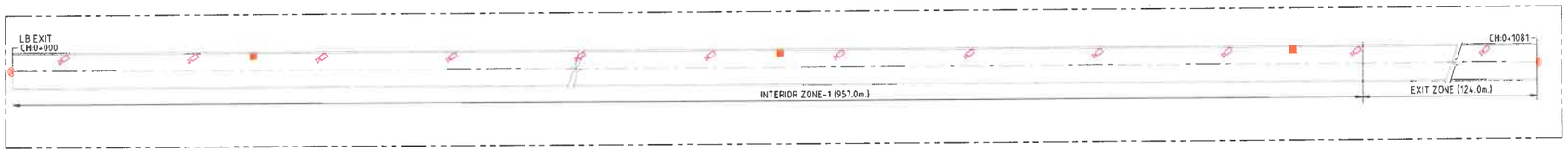
SCALE	DATE (Initial issue)	STATUS
1000	27.01.2025	DPR

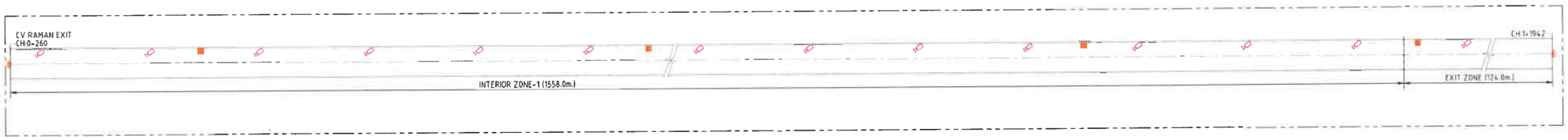
Original Drawing Size A1

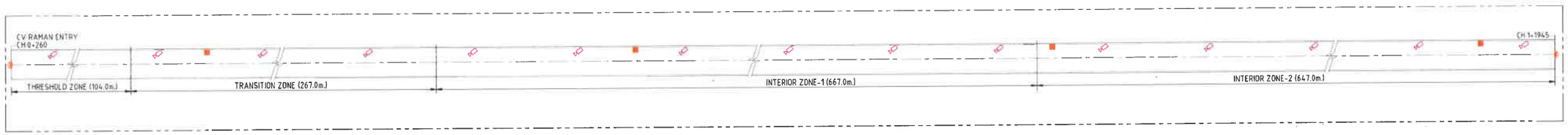
NORTHBOUND TUNNEL (TYPICAL FOR SOUTHBOUND TUNNEL)

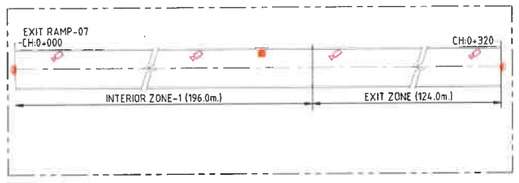


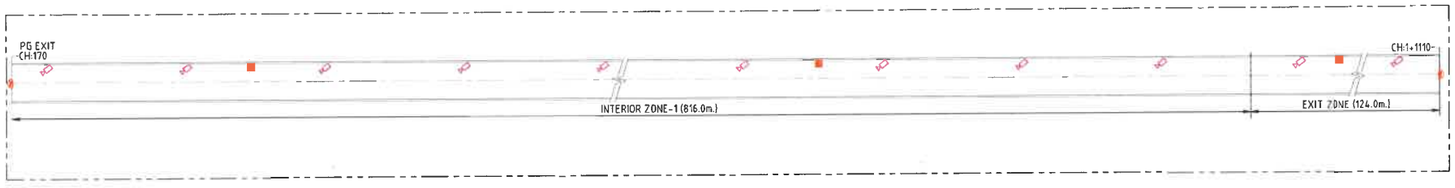


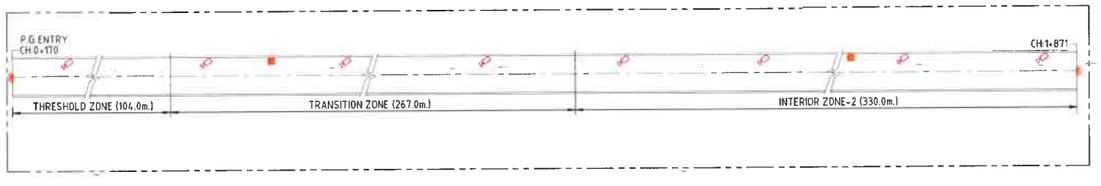












LEGEND:-

S.NO.	SYMBOL	
1.		CCTV CAMERA @ 80m.C/C.HIGHT =5.0m.
2.		CCTV PTZ CAMERA AT PORTAL HIGHT =5.0m.
3.		NETWORK PANEL FOR CCTV. SYSTEM

SCALE 1 : 1000

50m 0 50m 100m

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS:-

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	24.01.25	REVISED DRAWING	MKa	MKr	ANa
0	21.01.25	FIRST SUBMISSION	MKa	MKr	ANa

QUALITY ASSURANCE

Date	21.01.25	21.01.25	21.01.25
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commisioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commisioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

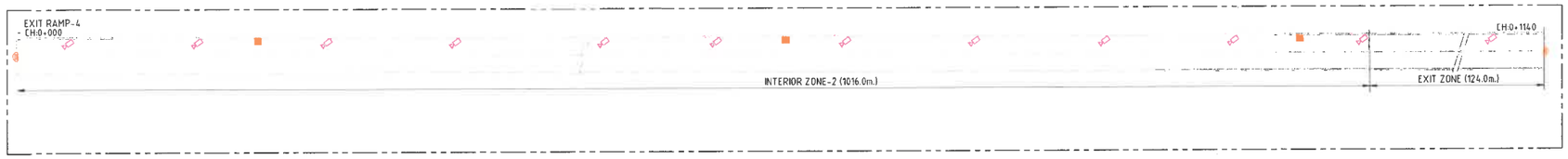
CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

CLIENT: Bruhat Bengaluru Mahanagra Palike

DRAWING TITLE: MAIN TUNNEL CCTV. CAMERA LOCATION (Sheet-1/2)

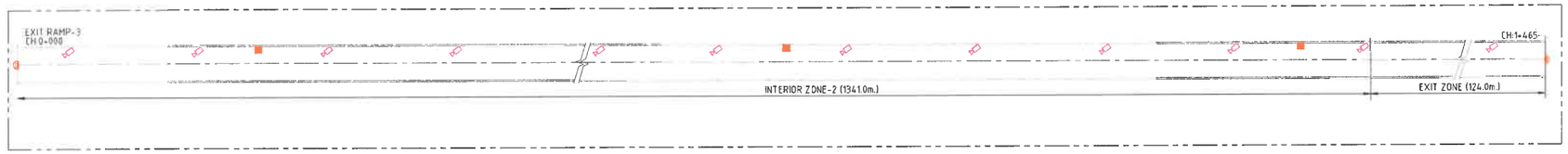
PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-E021	A
SCALE 1000	DATE (Initial Issue) 24.01.2025	STATUS DPR

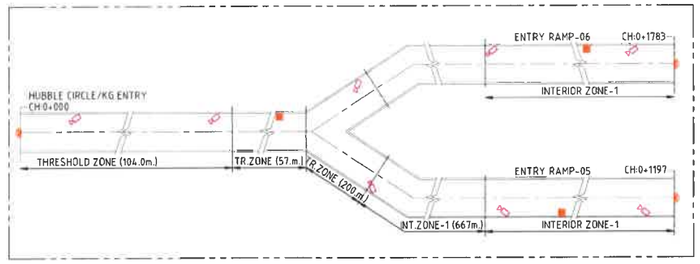
Original Drawing Size A1

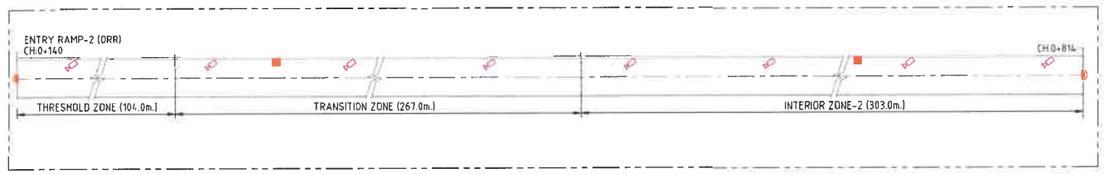


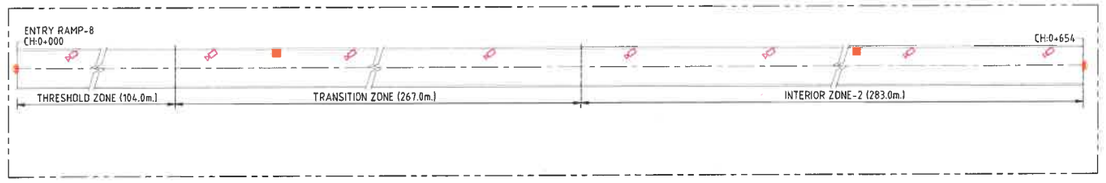
LEGEND:-

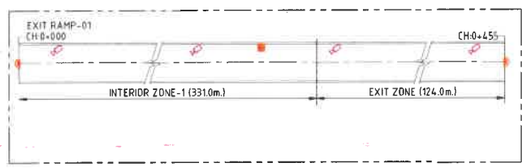
S.NO.	SYMBOL	
1.		CCTV.CAMERA @ 80m.C/C.HIGHT =5.0m.
2.		CCTV.PTZ CAMERA AT PORTAL HIGHT =5.0m.
3.		NETWORK PANEL FOR CCTV. SYSTEM











SCALE 1 : 1000

50m 0 50m 100m

FOR DPR PURPOSE ONLY

REFERENCE DRAWINGS

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH THE LATEST REVISIONS OF THE FOLLOWING DRAWINGS...

REVISIONS

REV.	DATE	PARTICULARS	Drawn	Checked	Approved
A	24.01.25	REVIESD DRAWING	MKa	MKr	ANa
0	21.01.25	FIRST SUBMISSION	MKa	MKr	ANa

QUALITY ASSURANCE

Date	21.01.25	21.01.25	21.01.25
Name	MKa	MKr	ANa
	Drawn	Designed	Approved

Document Originators (First Issue)

This document should not be relied on or used in circumstances other than those for which it was originally prepared and for which Geoconsult was commissioned. Geoconsult accepts no responsibility for this document to any other party other than the person by whom it was commissioned.

TUNNEL DESIGN CONSULTANTS :

GEOCONSULT INDIA PVT. LIMITED
04b106, WeWork Platina Tower, MG Road Near Sikandarpur Metro Station, Sector 28, Gurugram , Haryana 122001
INDIA
www.geoconsult.co.in

DPR CONSULTANT :

Rodic Consultant Pvt. Ltd.
6, SAROJINI HOUSE, Agha Khan Hall (1st Floor)
Bhagwan Dass Road, New Delhi-110001 (India)
Ph: 011 69217900 , Fax : 011 49434500

PROJECT TITLE

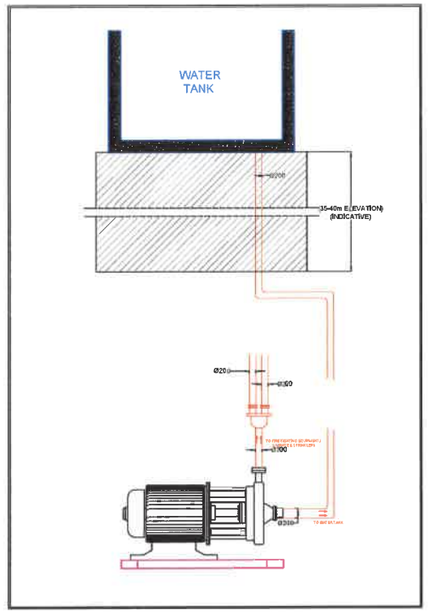
CONSULTANCY SERVICES FOR PREPRATION OF DPR FOR THE WORK OF CONSTRUCTION OF UNDERGROUND VEHICULAR TUNNEL FROM HEBBAL ESTEEM MALL JUNCTION TO SILK BOARD KSRP JUNCTION

CLIENT: Bruhat Bengaluru Mahanagra Palike

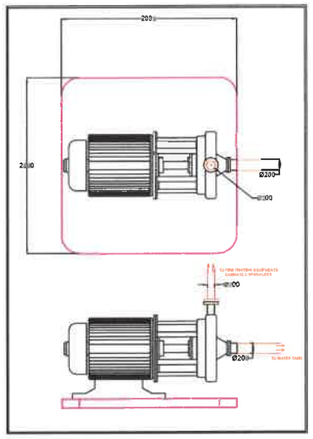
DRAWING TITLE: MAIN TUNNEL CCTV. CAMERA LOCATION (Sheet-2/2)

PROJECT ID :	DRAWING NUMBER	REV
I 40172	BBMP-EM-E021	A
SCALE 1000	DATE (Initial Issue) 24.01.2025	STATUS DPR

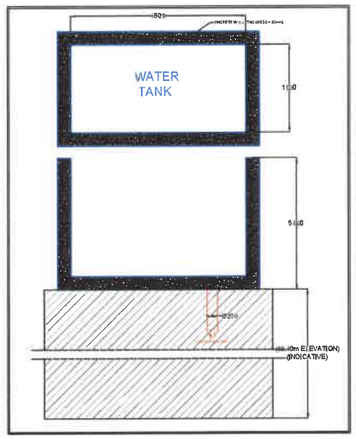
FIRE FIGHTING & VENTILATION
VENTILATION ARRANGEMENT



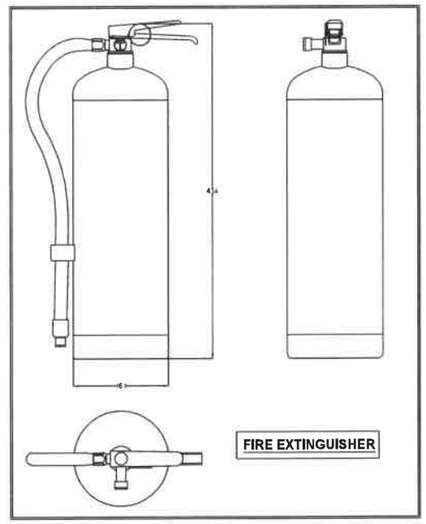
PIPELINE ARRANGEMENT

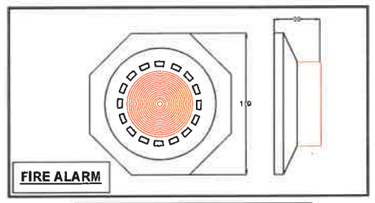


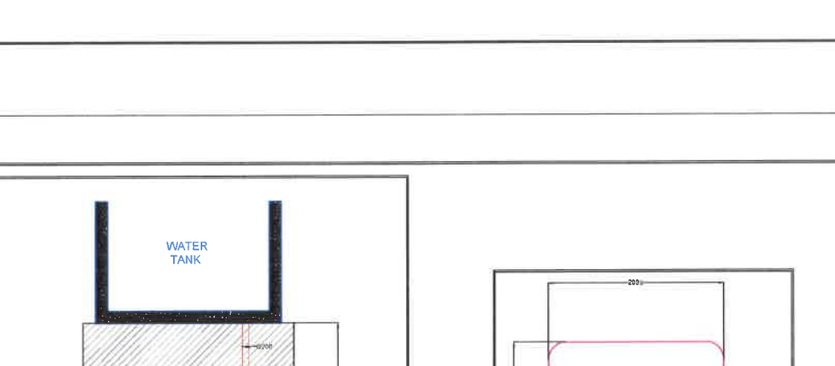
PUMP STATION

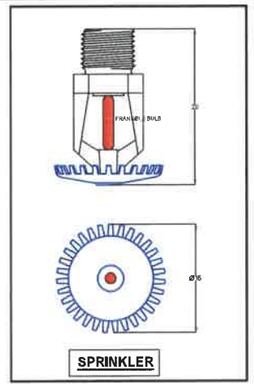


WATER TANK









NOTE:

1. ALL THE DIMENSTIONS ARE SCALED & ARE IN MM.
2. WATER TANK AND PUMP STATION ALIGNMENT IS GIVEN IN SHEET 1B.
3. PIPE CONNECTIONS IN DETAIL GIVEN IN SHEET 1B.
4. FIRE ALARM AND SPRINKLER ARRANGEMENT ALIGNMENT ARE GIVEN IN SHEET 1A.

SHEET 1B MOUNTING SPECIFICATIONS

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

DRAFT DETAILED PROJECT REPORT

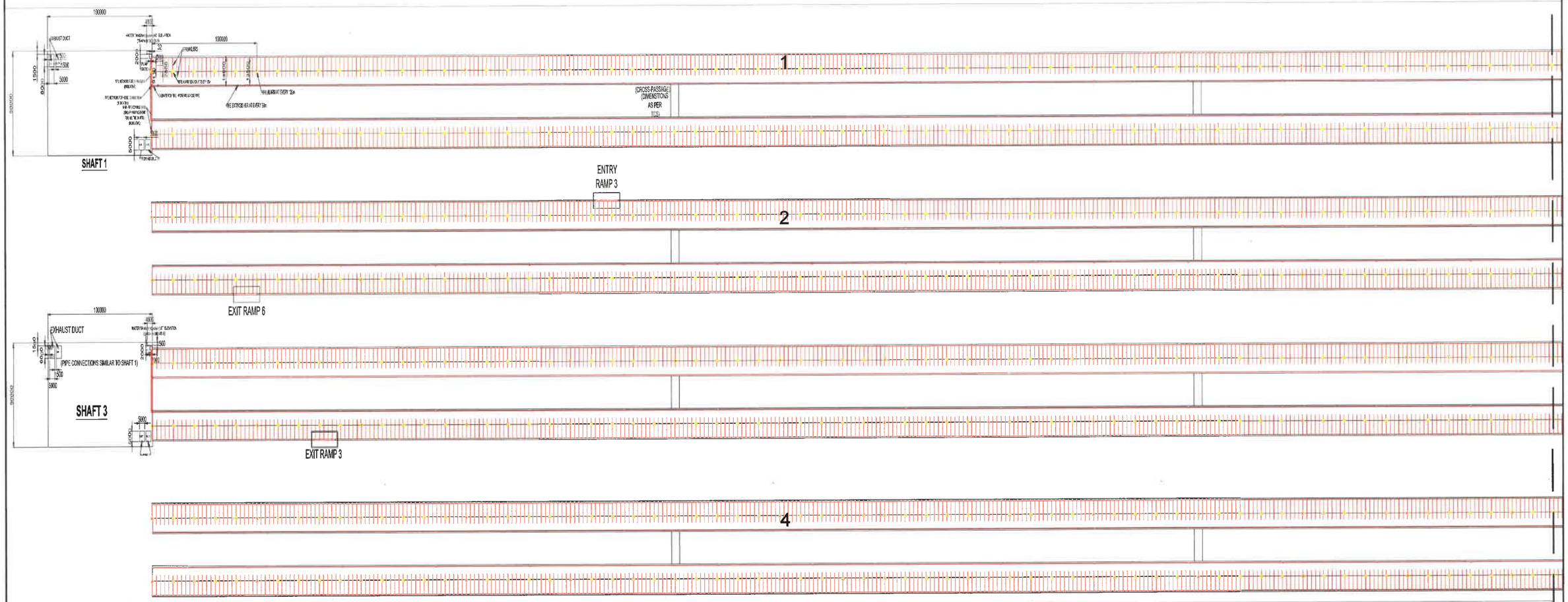
Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- H=:-1:2500
V=:-1:250
Sheet size: A2

Project	"Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title	FIRE FIGHTING SYSTEM SPECIFICATIONS
Drawing No.	RC/1640/HO/HBT/TU/DWG/01/R0

Hebbal Esteem mall junction

Silk Road



DISTANCE BETWEEN TWO SHAFT

SHAFT 1-2	3700
SHAFT 2-3	3700
SHAFT 3-4	3900
SHAFT 4-5	3300
TOTAL	14600

DENOTION SYMBOLS WITH COLOUR CODES & DIMENSTIONS

S. NO.	SYMBOLS	NAMES	DIMENSTIONS(in mm)	POSITIONS
1.		SPRINKLER	Ø15	EVERY 4000 mm
2.		FIRE ALARM SENSOR		EVERY 20000 mm
3.		FIRE ALARM		EVERY 100000 mm
4.		WATER TANK	4800X1500X5000	REFERENCE IN DRAWING
5.		PUMP STATION	2000X2000	REFERENCE IN DRAWING
6.		SHAFT	100000X50000	REFERENCE IN DRAWING
7.		ENTRY/EXIT RAMP	-	REFERENCE IN DRAWING
8.		EXHAUST DUCT	5000X6000	REFERENCE IN DRAWING
9.				
10.		PIPES	Ø32mm(B), Ø100mm(C), Ø200mm(A)	Ø32mm(B) AT EVERY 4000 mm
11.		CABINATE FOR FIRE FIGHTING EQUIPMENTS, FIRE EXTINGUISHER, HOSE PIPE	1000X1400X400	EVERY 90000mm
12		FIRE EXTINGUISHER	Ø 161,H=343	EVERY 90000mm

NOTE: ALL THE DIMENSTIONS ARE IN MM

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.- 2025	-

CLIENT: GOVERNMENT OF KARNATAKA; Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT: RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED

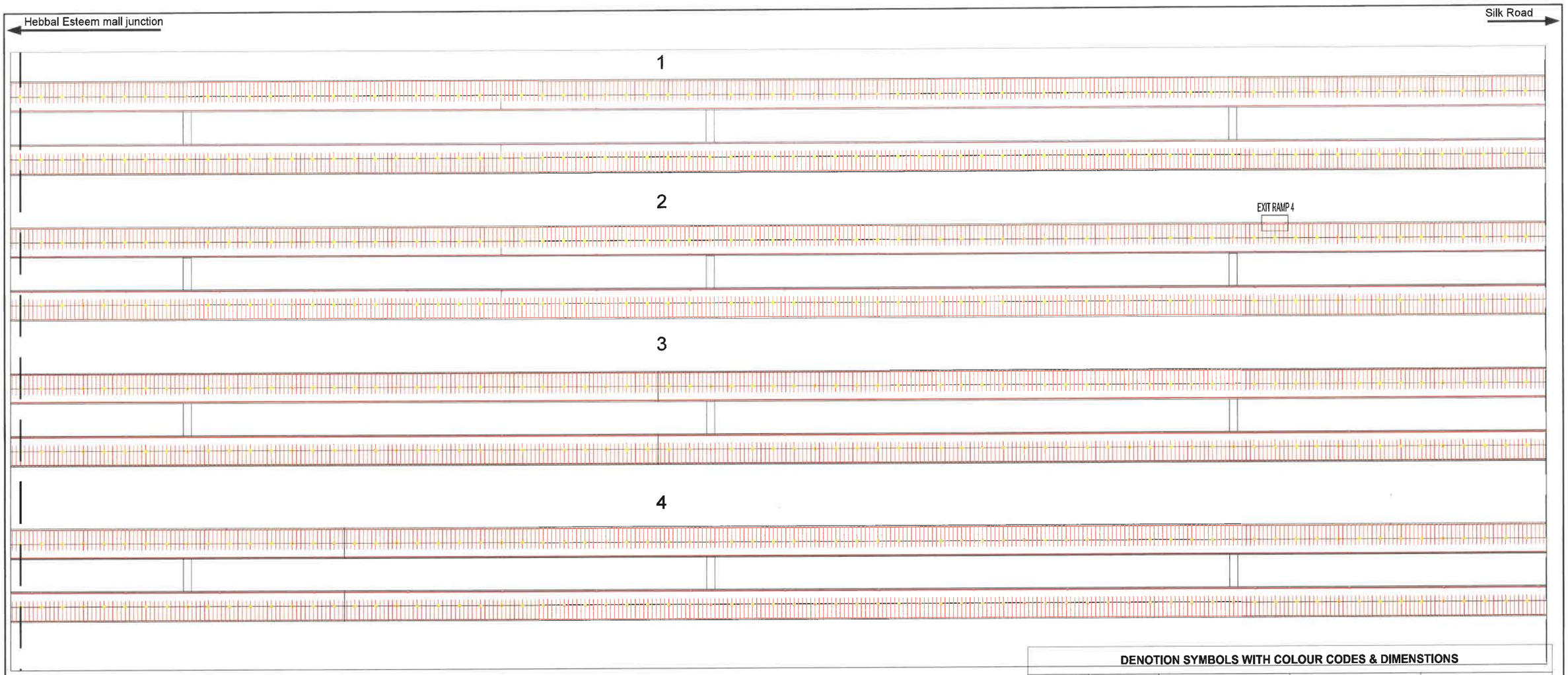
FINAL DETAILED PROJECT REPORT

Designed:	RR	Scale :- AS SHOWN	
Drawn:	SS		
Checked:	AT		
Approved:	HRV	Sheet size: A0	

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: TUNNEL LINE DIAGRAM PIPE

Drawing No.: RC/1640/HQ/HBT/TU/DWGD/01/R0



DISTANCE BETWEEN TWO SHAFT

SHAFT 1-2	3700
SHAFT 2-3	3700
SHAFT 3-4	3900
SHAFT 4-5	3300
TOTAL	14600

DENOTION SYMBOLS WITH COLOUR CODES & DIMENSTIONS

S. NO.	SYMBOLS	NAMES	DIMENSTIONS(in mm)	POSITIONS
1.		SPRINKLER	Ø15	EVERY 4000 mm
2.		FIRE ALARM SENSOR		EVERY 20000 mm
3.		FIRE ALARM		EVERY 100000 mm
4.		WATER TANK	4800X1500X5000	REFERENCE IN DRAWING
5.		PUMP STATION	2000X2000	REFERENCE IN DRAWING
6.		SHAFT	100000X50000	REFERENCE IN DRAWING
7.		ENTRY/EXIT RAMP		REFERENCE IN DRAWING
8.		EXHAUST DUCT	5000X6000	REFERENCE IN DRAWING
9.				
10.		PIPES	Ø32mm(B), Ø100mm(C), Ø200mm(A)	Ø32mm(B) AT EVERY 4000 mm
11.		CABINATE FOR FIRE FIGHTING EQUIPMENTS, FIRE EXTINGUISHER, HOSE PIPE	1000X1400X400	EVERY 90000mm
12		FIRE EXTINGUISHER	Ø 161,H=343	EVERY 90000mm

NOTE: ALL THE DIMENSTIONS ARE IN MM

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.- 2025	-

CLIENT: GOVERNMENT OF KARNATAKA; Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT: RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED

FINAL DETAILED PROJECT REPORT

Designed:	RR		Scale :- AS SHOWN
Drawn:	SS		
Checked:	AT		
Approved:	HRY		Sheet size: A0

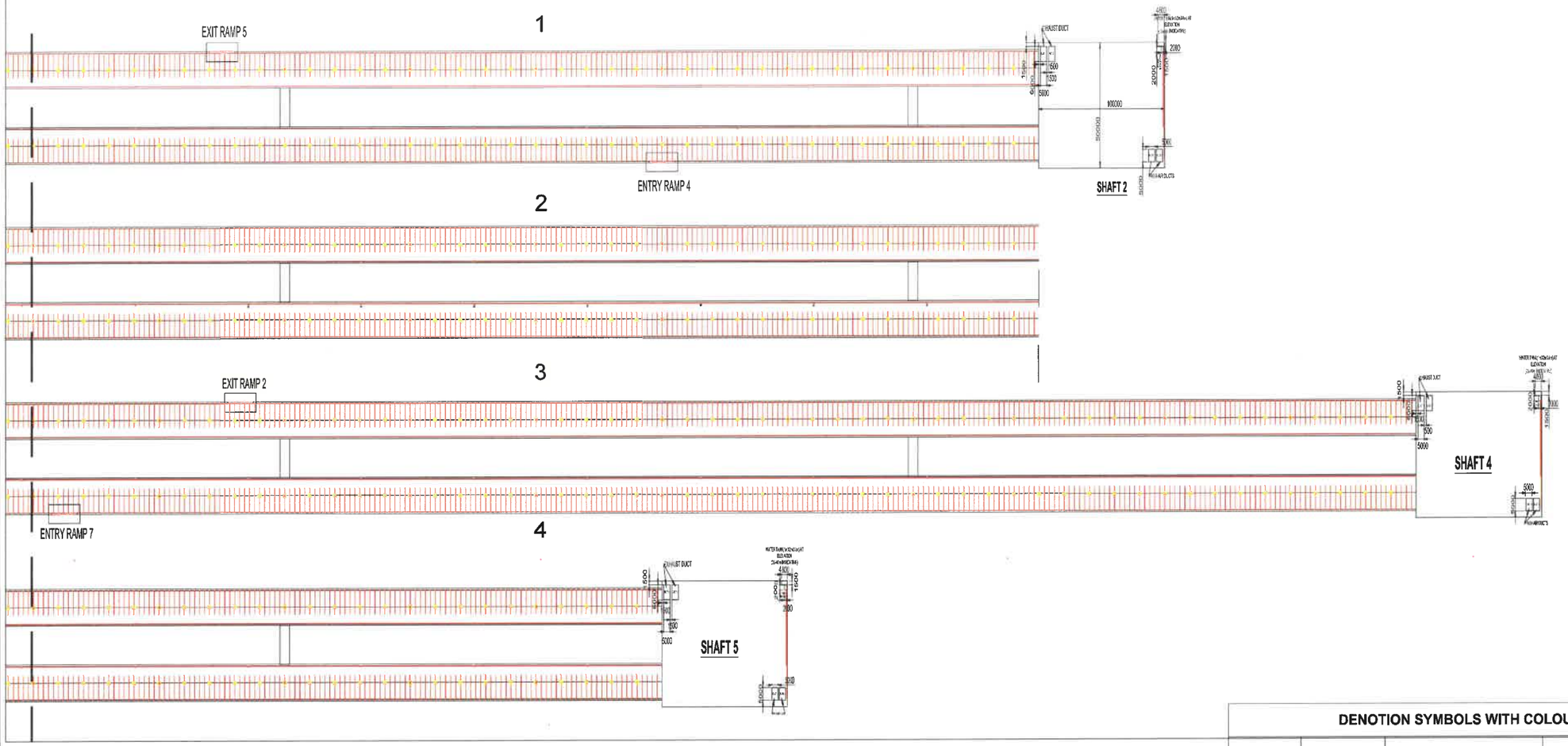
Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: TUNNEL LINE DIAGRAM PIPE

Drawing No.: RC/1640/HO/HBT/TU/DWGD/02/R0

Hebbal Esteem mall junction

Silk Road



DISTANCE BETWEEN TWO SHAFT

SHAFT 1-2	3700
SHAFT 2-3	3700
SHAFT 3-4	3900
SHAFT 4-5	3300
TOTAL	14600

DENOTION SYMBOLS WITH COLOUR CODES & DIMENSTIONS

S. NO.	SYMBOLS	NAMES	DIMENSTIONS(in mm)	POSITIONS
1.		SPRINKLER	Ø15	EVERY 4000 mm
2.		FIRE ALARM SENSOR		EVERY 20000 mm
3.		FIRE ALARM		EVERY 100000 mm
4.		WATER TANK	4800X1500X5000	REFERENCE IN DRAWING
5.		PUMP STATION	2000X2000	REFERENCE IN DRAWING
6.		SHAFT	100000X50000	REFERENCE IN DRAWING
7.		ENTRY/EXIT RAMP		REFERENCE IN DRAWING
8.		EXHAUST DUCT	5000X6000	REFERENCE IN DRAWING
9.				
10.		PIPES	Ø32mm(B), Ø100mm(C), Ø200mm(A)	Ø32mm(B) AT EVERY 4000 mm
11.		CABINATE FOR FIRE FIGHTING EQUIPMENTS, FIRE EXTINGUISHER, HOSE PIPE	1000X1400X400	EVERY 90000mm
12		FIRE EXTINGUISHER	ø 161,H=343	EVERY 90000mm

NOTE: ALL THE DIMENSTIONS ARE IN MM

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN,- 2025	-

CLIENT: GOVERNMENT OF KARNATAKA; Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP
AEE/Infra Div.-RI,BBMP
EE/Infra Div.-RI,BBMP
EIC- BBMP

CONSULTANT: RODIC CONSULTANTS PVT. LTD. 1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA)
EEODC/EGLT INDIA PRIVATE LIMITED

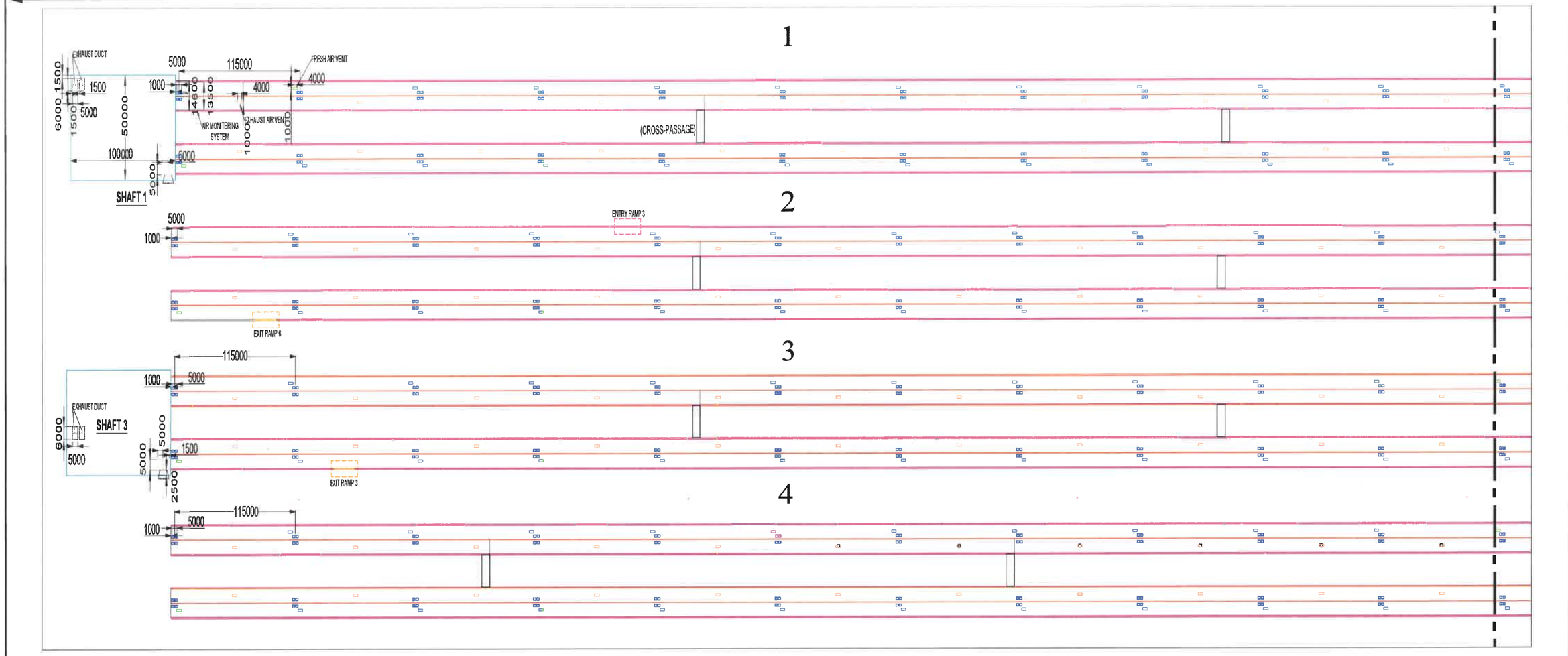
FINAL DETAILED PROJECT REPORT

Designed:	RR	Scale :- AS SHOWN
Drawn:	SS	
Checked:	AT	
Approved:	HKV	Sheet size: A0

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: TUNNEL LINE DIAGRAM PIPE

Drawing No.: RC/1640/HO/HBT/TU/DWGD/02/R0



DISTANCE BETWEEN TWO SHAFT

SHAFT 1-2	3700
SHAFT 2-3	3700
SHAFT 3-4	3900
SHAFT 4-5	3300
TOTAL	14600

DENOTION SYMBOLS WITH COLOUR CODES & DIMENSTIONS

S. NO.	SYMBOLS	NAMES	DIMENSTIONS(in mm)	POSITION
1.		JET-FAN	Ø1000, Ø=800, LENGTH=5000	AT EVERY 115000mm
2.		EXHAUST AIR VENT	2000X1200	AT EVERY 115000 mm
3.		FRESH AIR VENT	2000X1200	AT EVERY 115000 mm
4.		WATER TANK	2000X1000X4000	ELEVATION 35-40 m (INDICATIVE)
5.		PUMP STATION	2000X2000	REFERENCE IN DRAWING
6.		SHAFT	100000X50000	REFERENCE IN DRAWING
7.		ENTRY/EXIT RAMP	-	REFERENCE IN DRAWING
8.		EXHAUST DUCT	5000X6000	REFERENCE IN DRAWING
9.				
10.		AIR QUALITY SENSOR	950X50	REFERENCE IN DRAWING

NOTE: ALL THE DIMENSTIONS ARE IN MM

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN,- 2025	-

CLIENT: GOVERNMENT OF KARNATAKA; Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT: RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA)
GEOENGILT INDIA PRIVATE LIMITED
3rd Floor, Wing A, Pavilion Tower, M.G. Road, New Township near Metro Station Sector 21, Gurugram Haryana, INDIA

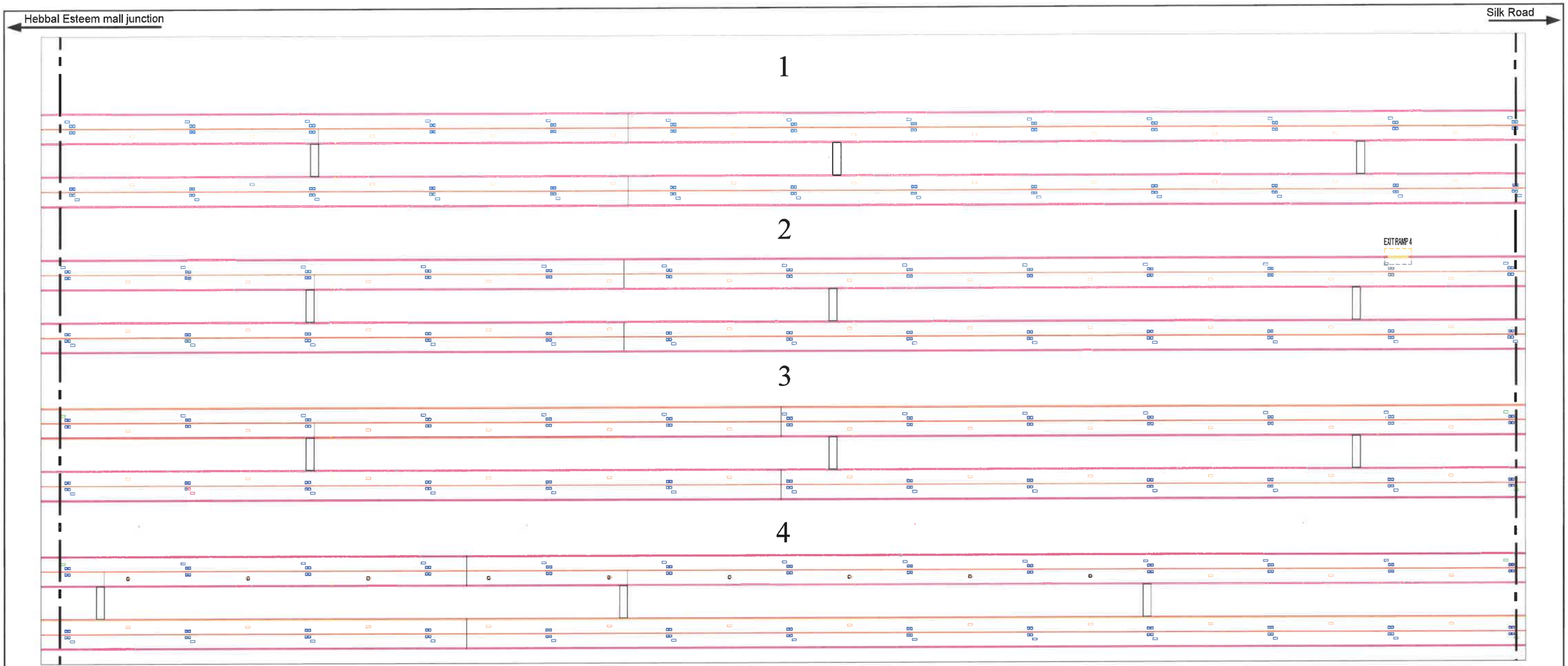
FINAL DETAILED PROJECT REPORT

Designed:	RR	Scale :- N.T.S
Drawn:	SS	
Checked:	AT	
Approved:	HAV	Sheet size: A0

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: TUNNEL LINE DIAGRAM

Drawing No.: RC/1640/HO/HBT/TU/DWGD/01/R0



DISTANCE BETWEEN TWO SHAFT

SHAFT 1-2	3700
SHAFT 2-3	3700
SHAFT 3-4	3900
SHAFT 4-5	3300
TOTAL	14600

DENOTION SYMBOLS WITH COLOUR CODES & DIMENSTIONS

S. NO.	SYMBOLS	NAMES	DIMENSTIONS(in mm)	POSITION
1.		JET-FAN	Ø1000, Ø=800, LENGTH=5000	AT EVERY 115000mm
2.		EXHAUST AIR VENT	2000X1200	AT EVERY 115000 mm
3.		FRESH AIR VENT	2000X1200	AT EVERY 115000 mm
4.		WATER TANK	2000X1000X4000	ELEVATION 35-40 m (INDICATIVE)
5.		PUMP STATION	2000X2000	REFERENCE IN DRAWING
6.		SHAFT	100000X50000	REFERENCE IN DRAWING
7.		ENTRY/EXIT RAMP		REFERENCE IN DRAWING
8.		EXHAUST DUCT	5000X6000	REFERENCE IN DRAWING
9.				
10.		AIR QUALITY SENSOR	60 mm	AT EVERY 115000mm

NOTE: ALL THE DIMENSTIONS ARE IN MM

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN.- 2025	-

CLIENT: GOVERNMENT OF KARNATAKA; Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT: RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED

FINAL DETAILED PROJECT REPORT

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRV	

Scale :- N.T.S
Sheet size: A0

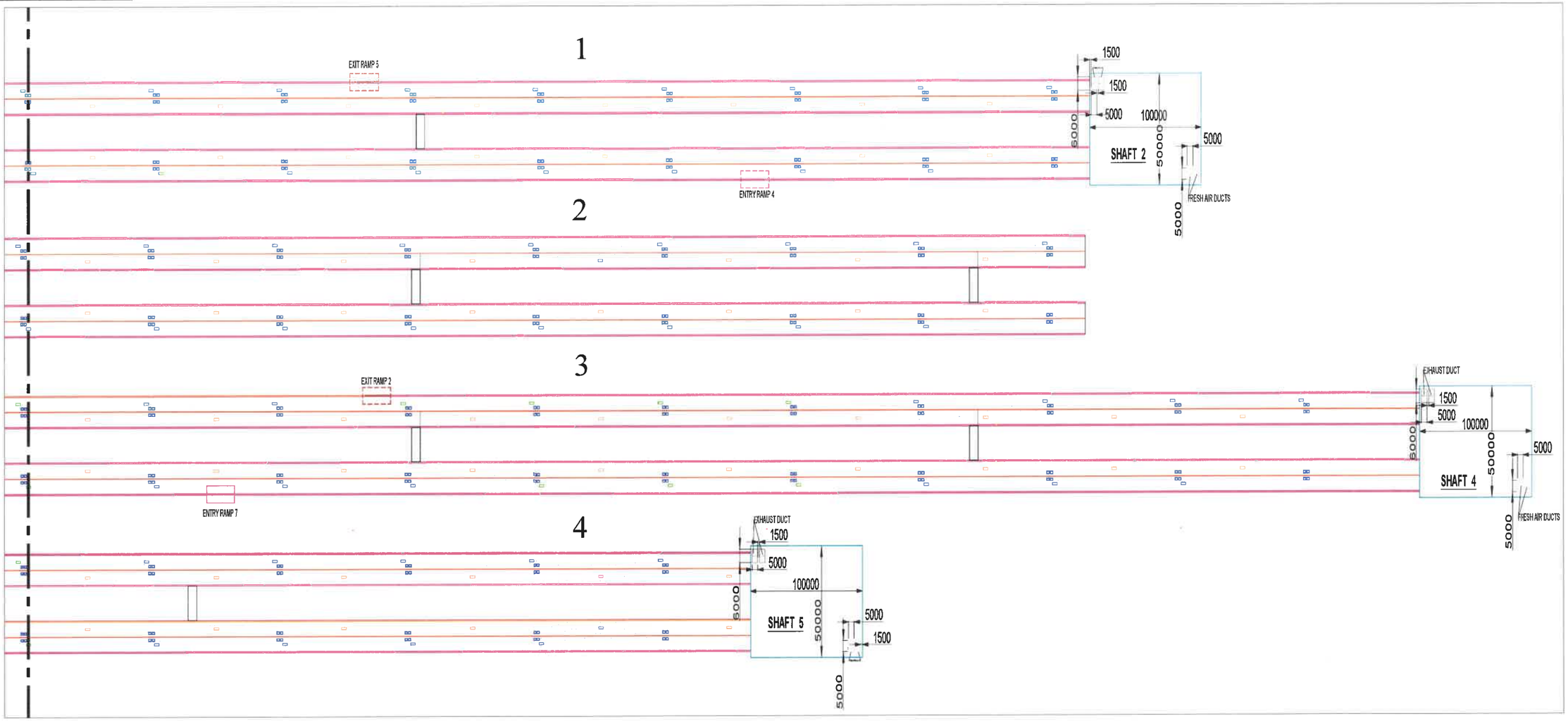
Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

Drawing Title: TUNNEL LINE DIAGRAM

Drawing No.: RC/1640/HOM/BTT/TU/DWGD/02/R0

Hebbal Esteem mall junction

Silk Road



DISTANCE BETWEEN TWO SHAFT

SHAFT 1-2	3700
SHAFT 2-3	3700
SHAFT 3-4	3900
SHAFT 4-5	3300
TOTAL	14600

DENOTION SYMBOLS WITH COLOUR CODES & DIMENSTIONS

S. NO.	SYMBOLS	NAMES	DIMENSTIONS(in mm)	POSITION
1.		JET-FAN	Ø1000, Ø=800, LENGTH=5000	AT EVERY 115000mm
2.		EXHAUST AIR VENT	2000X1200	AT EVERY 115000 mm
3.		FRESH AIR VENT	2000X1200	AT EVERY 115000 mm
4.		WATER TANK	2000X1000X4000	ELEVATION 35-40 m (INDICATIVE)
5.		PUMP STATION	2000X2000	REFERENCE IN DRAWING
6.		SHAFT	100000X50000	REFERENCE IN DRAWING
7.		ENTRY/EXIT RAMP	-	REFERENCE IN DRAWING
8.		EXHAUST DUCT	5000X6000	REFERENCE IN DRAWING
9.				
10.		AIR QUALITY SENSOR	900X60	AT EVERY [illegible] mm

NOTE: ALL THE DIMENSTIONS ARE IN MM

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	JAN,- 2025	-

CLIENT: GOVERNMENT OF KARNATAKA; Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT: RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING NEW DELHI - 110001 (INDIA)
RODIC CONSULT INDIA PRIVATE LIMITED
SB186 Wahida, Palam Town MG Road New Silandimpur Metro Station Sector 21, Gurugram Haryana 122016

FINAL DETAILED PROJECT REPORT

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRV	

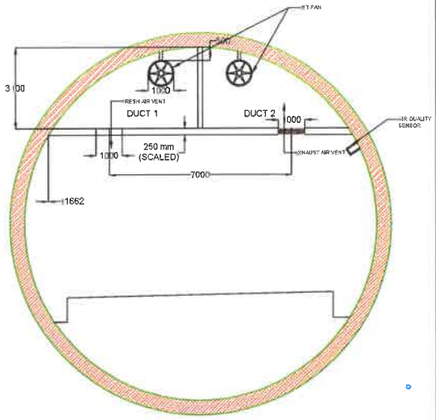
Scale :- N.T.S

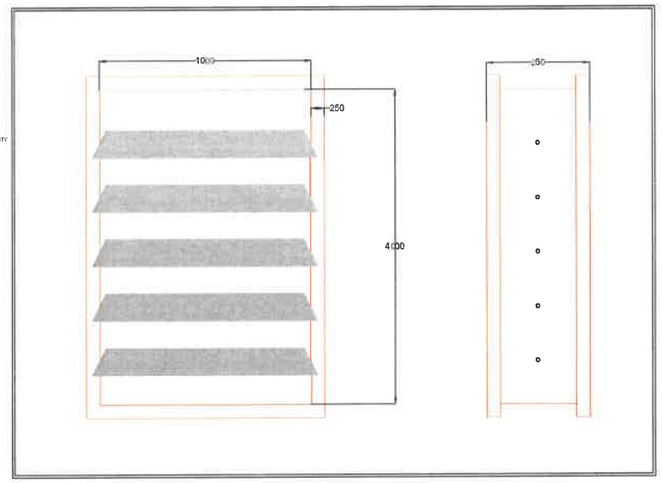
Sheet size: A0

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"

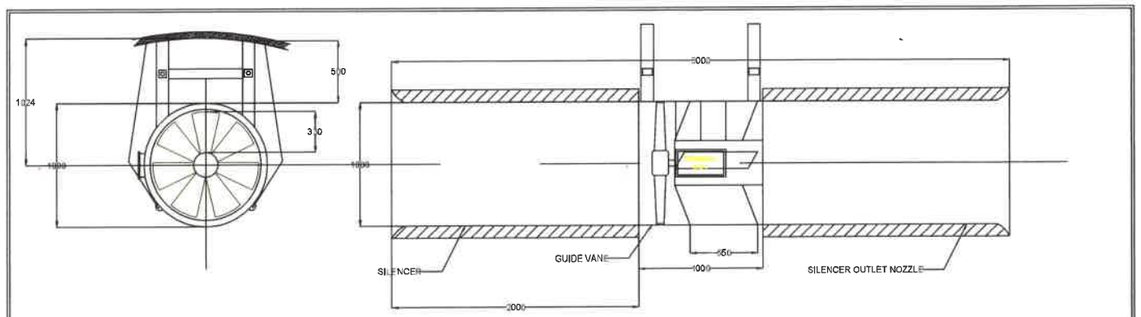
Drawing Title: TUNNEL LINE DIAGRAM

Drawing No.: RC/1640/HO/HBT/TU/DWGD/03/R0

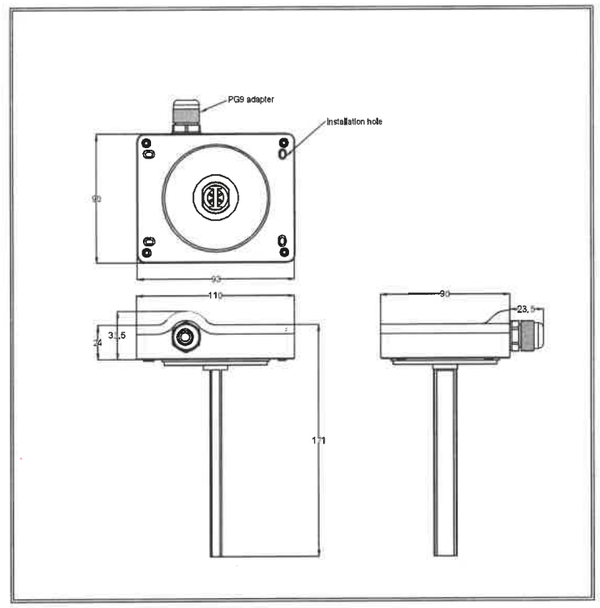




AIR VENT OPENING WITH DAMPER



TRADITIONAL JET FAN



AIR QUALITY SENSOR

NOTE: 1. ALL THE DIMENSTIONS ARE SCALED & ARE IN MM.
2. DUCT ALIGNMENT IS GIVEN IN SHEET 1A.

TRADITIONAL JET FAN SPECIFICATIONS	
DIAMETER	1000 mm
LENGTH	5000 mm
SILENCERS	BOTH END

FRESH AIR & EXHAUST AIR VENT	
FRESH AIR VENT DIMENTION	1000X3000
EXHAUST AIR VENT DIMENTION	1000X3000
DISTANCE BETWEEN 2 VENTS	11500
AIR VENT OPENING SIZE WITH DAMPER	1000X4000
DAMPER THICKNESS	3

SHEET 1A MOUNTING SPECIFICATIONS

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT
GOVERNMENT OF KARNATAKA
Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:
RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)
GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Fintips Tower M3 Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- As Shown
Sheet size: A2

Project: "Consultancy services for preparation of DPR for the work of Construction of Underground Vehicular Tunnel from Hebbal Esteem mall junction to Silk Board KSRP junction"
Drawing Title: VENTILATION SYSTEM SPECIFICATIONS.
Drawing No: RC/1640/HO/HBT/TU/DWG/01/R0

Appendix-B-VI

SHAFT PLAN

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower M3 Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 1 : Km 0.000 to km 8.748 of North South Corridor connecting Hebbal to Silk Board.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- AS SHOWN

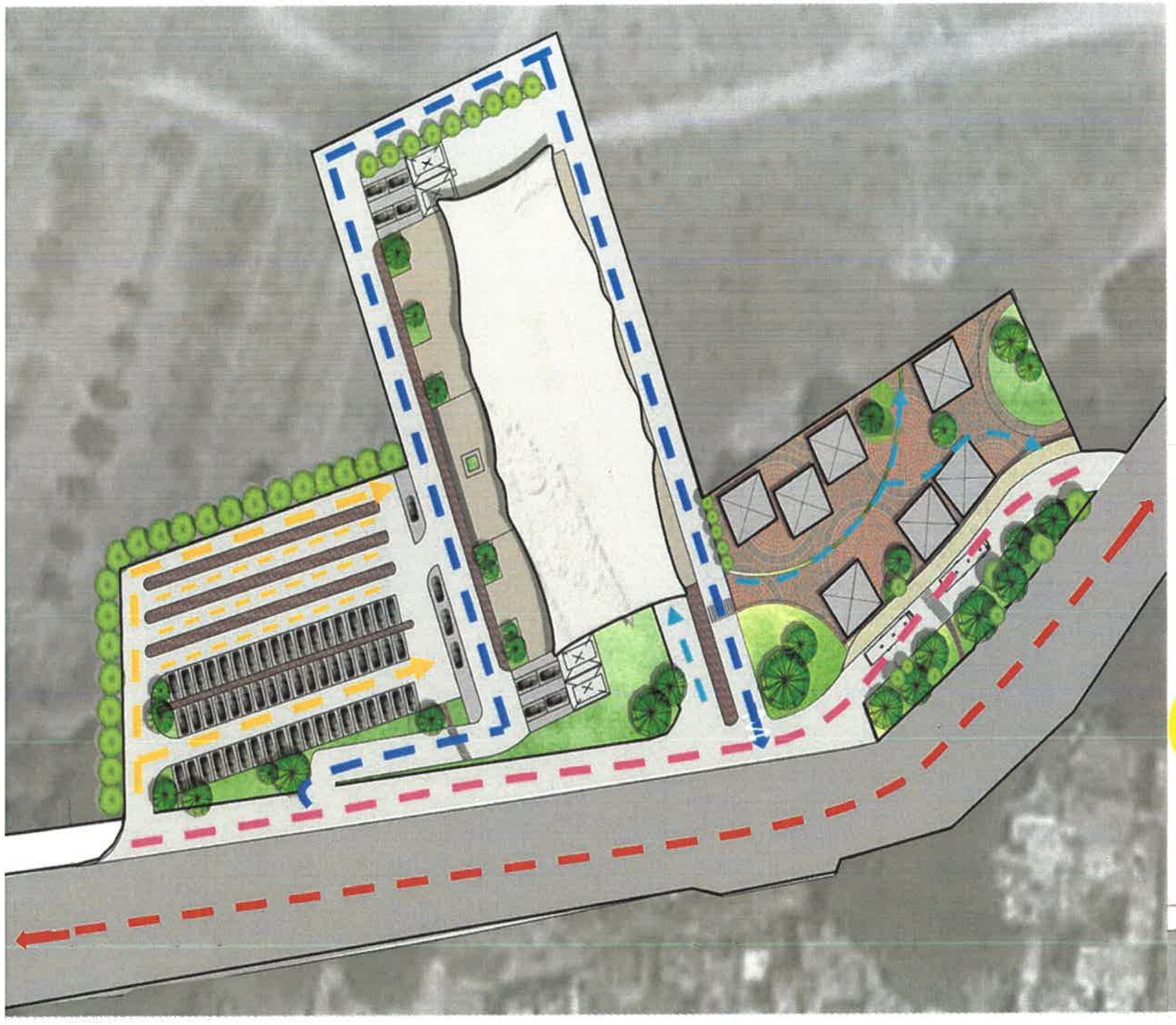
Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Hebbal near Esteem Mall junction (Km. 0+000) to Shesadri Road, freedom park (Km 8.748) of North South Corridor including launching and retrieval shaft (at Km 1+375 and Km 5+050), entry exit ramps at Hebbal (Km 0+000) and ORR, entry and Entry & exit ramps at CV Raman Road and Jaymahal road.

Drawing Title: **SHAFT-4 LALBAGH – SITE PLAN**

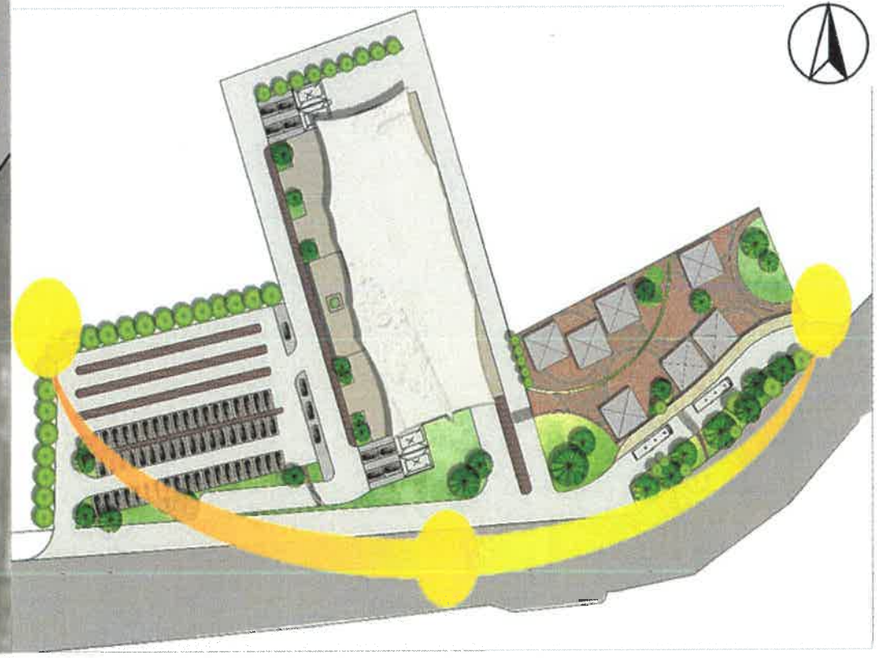
Drawing No.

SHAFT 4– CIRCULATION PLAN



LALBAGH

- PRIMARY VEHICULAR MOVEMENT
- SECONDARY VEHICULAR MOVEMENT
- BUS DROP OFF LOOP
- AUTO/TAXI DROP OFF LOOP
- PEDESTRAIN CONNECTION MOVEMENT
- SERVICE ROAD



SUNPATH DIAGRAM

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

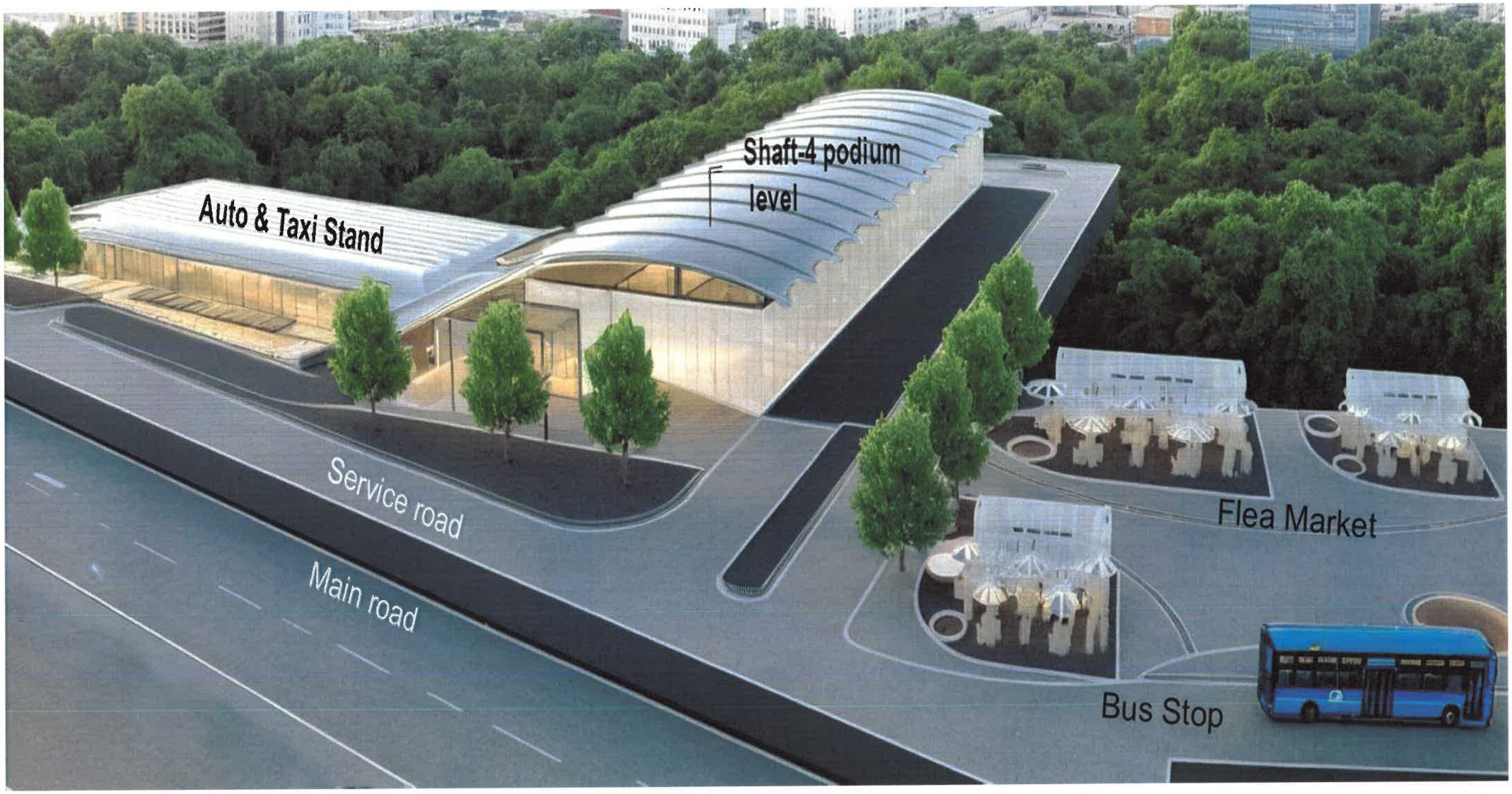
GEOCONSULT INDIA PRIVATE LIMITED
043166 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 1 : Km 0.000 to km 8.748 of North South Corridor connecting Hebbal to Silk Board.)

Designed:	RR	Scale :- AS SHOWN
Drawn:	SS	
Checked:	AT	
Approved:	HRY	Sheet size: A2

Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Hebbal near Esteem Mall junction (Km. 0+000) to Shesadri Road, freedom park (Km 8.748) of North South Corridor including launching and retrieval shaft (at Km 1+375 and Km 5+050), entry exit ramps at Hebbal (Km 0+000) and ORR, entry and Entry & exit ramps at CV Raman Road and Jaymahal road.
Drawing Title	SHAFT-4 LALBAGH – CIRCULATION PLAN AND SUNPATH
Drawing No.	



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 1 : Km 0.000 to km 8.748 of North South Corridor connecting Hebbal to Silk Board.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- AS SHOWN

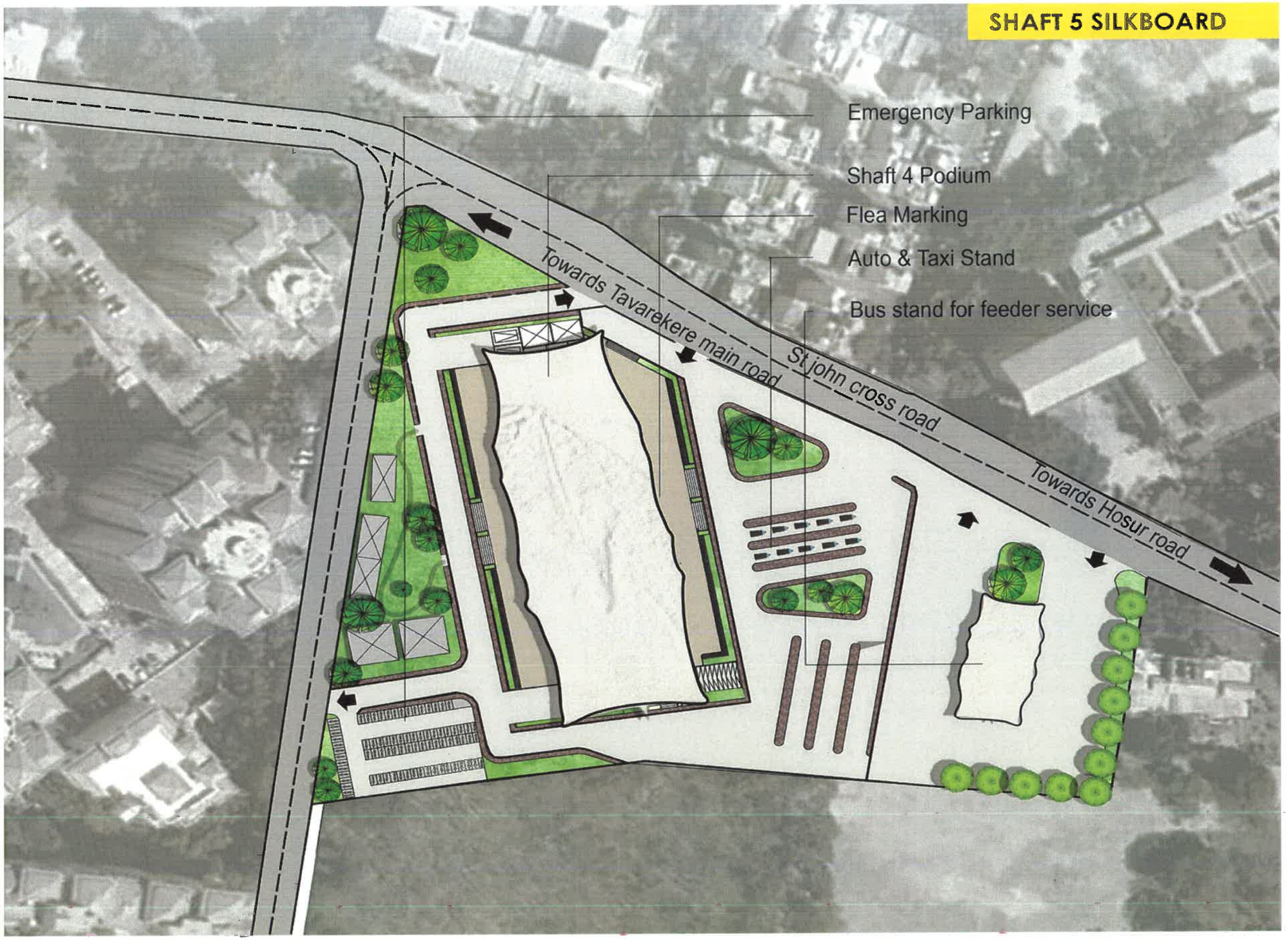
Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Hebbal near Esteem Mall junction (Km. 0+000) to Shesadri Road, freedom park (Km 8.748) of North South Corridor including launching and retrieval shaft (at Km 1+375 and Km 5+050), entry exit ramps at Hebbal (Km 0+000) and ORR, entry and Entry & exit ramps at CV Raman Road and Jaymahal road.

Drawing Title: **SHAFT-4 LALBAGH – CONCEPTUAL 3D MASSING**

Drawing No.

SHAFT 5 SILKBOARD



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

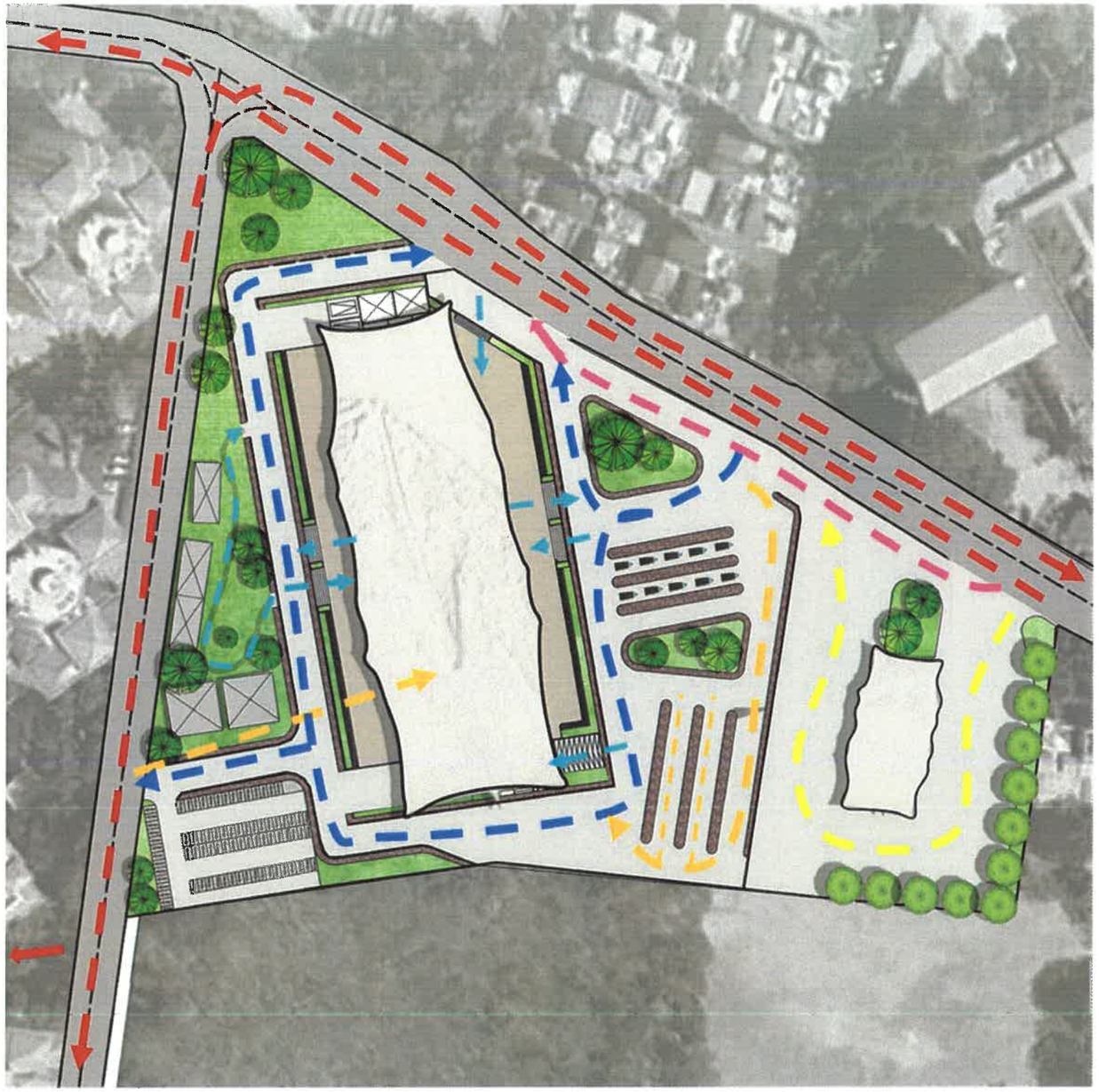
(Package 1 : Km 0.000 to km 8.748 of North South Corridor connecting Hebbal to Silk Board.)

Designed:	RR	Scale :- AS SHOWN
Drawn:	SS	
Checked:	AT	
Approved:	HRY	Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Hebbal near Esteem Mall junction (Km. 0+000) to Shesadri Road, freedom park (Km 8.748) of North South Corridor including launching and retrieval shaft (at Km 1+375 and Km 5+050), entry exit ramps at Hebbal (Km 0+000) and ORR, entry and Entry & exit ramps at CV Raman Road and Jaymahal road.

Drawing Title: **SHAFT-5 SILK BOARD – SITE PLAN**

Drawing No.



SHAFT 5 – CIRCULATION PLAN

SILK BOARD

PRIMARY VEHICULAR MOVEMENT

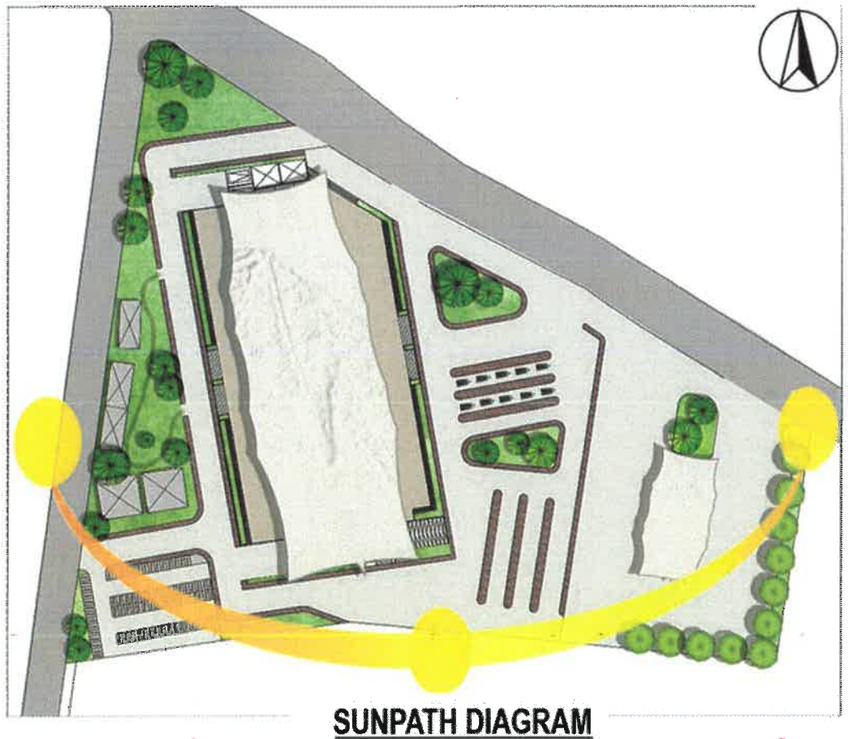
SECONDARY VEHICULAR MOVEMENT

BUS DROP OFF LOOP

AUTO/TAXI DROP OFF LOOP

PEDESTRAIN CONNECTION MOVEMENT

SERVICE ROAD



SUNPATH DIAGRAM

REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
043106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 1 : Km 0.000 to km 8.748 of North South Corridor connecting Hebbal to Silk Board.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRT	

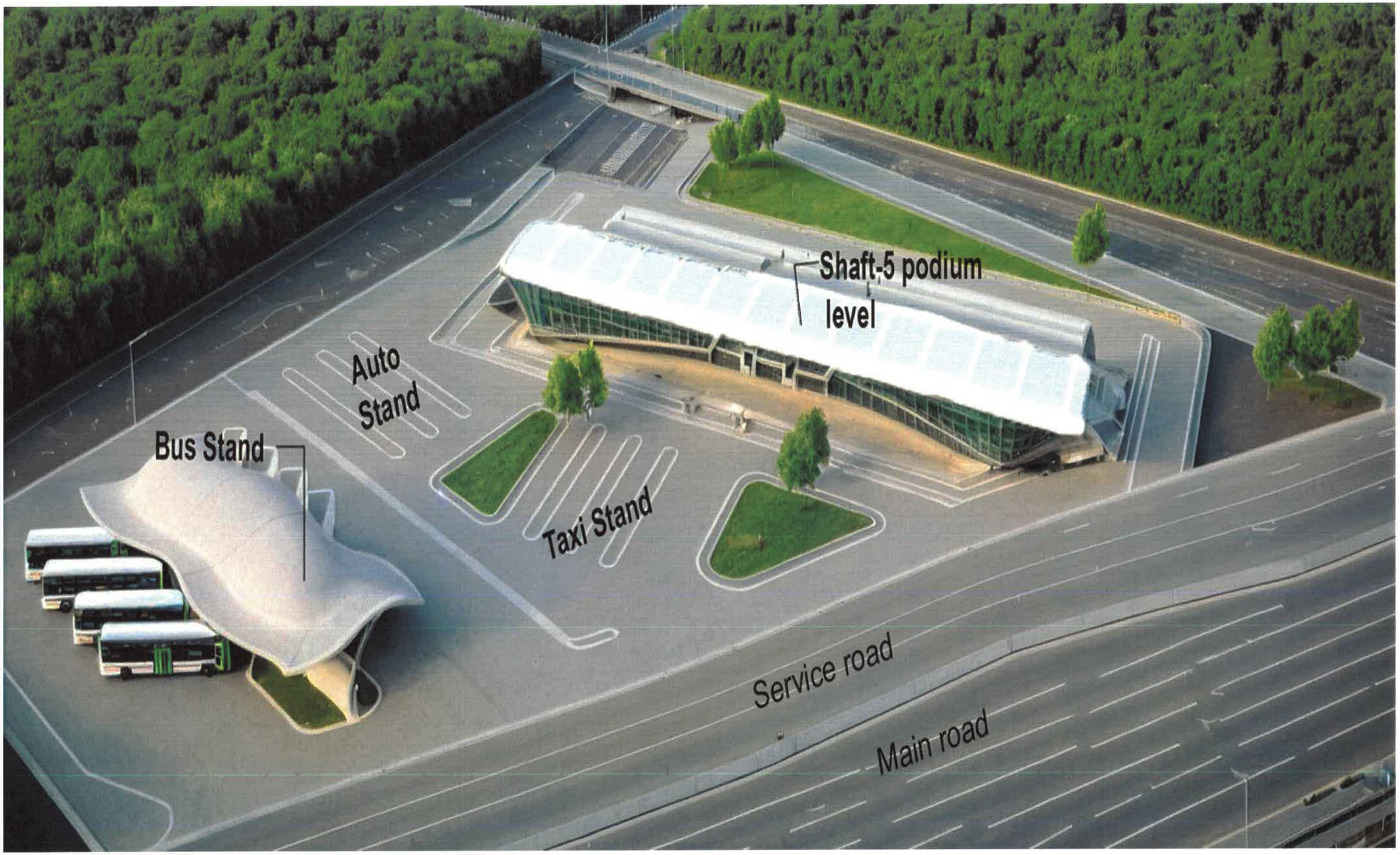
Scale :- AS SHOWN

Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Hebbal near Esteem Mall junction (Km. 0+000) to Shesadri Road, freedom park (Km 8.748) of North South Corridor including launching and retrieval shaft (at Km 1+375 and Km 5+050), entry exit ramps at Hebbal (Km 0+000) and ORR, entry and Entry & exit ramps at CV Raman Road and Jaymahal road.

Drawing Title: **SHAFT-5 SILKBOARD – CIRCULATION PLAN AND SUNPATH**

Drawing No.



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Plains Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

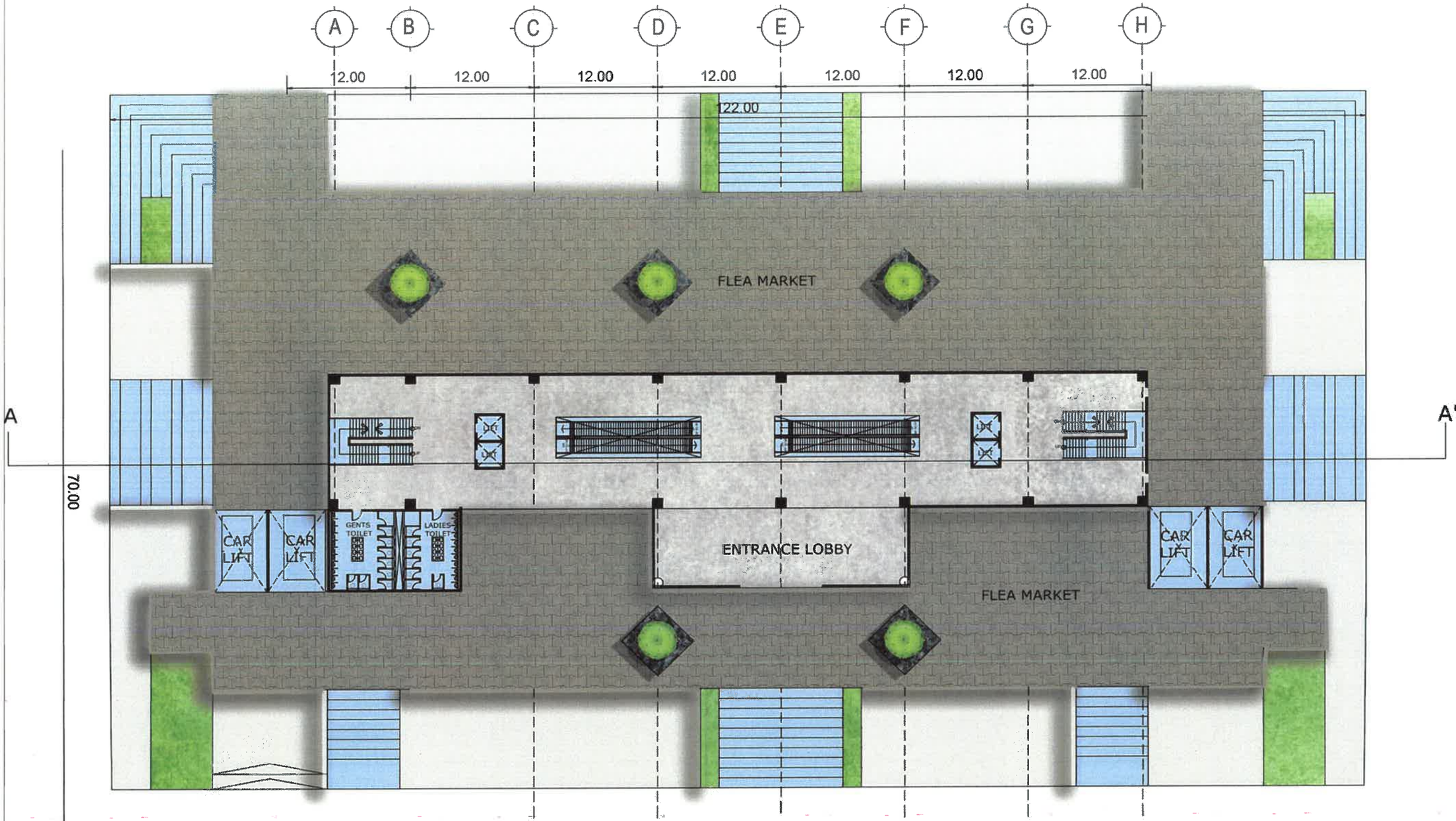
(Package 1 : Km 0.000 to km 8.748 of North South Corridor connecting Hebbal to Silk Board.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- AS SHOWN

Sheet size: A2

Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Hebbal near Esteem Mall junction (Km. 0+000) to Shesadri Road, freedom park (Km 8.748) of North South Corridor including launching and retrieval shaft (at Km 1+375 and Km 5+050), entry exit ramps at Hebbal (Km 0+000) and ORR, entry and Entry & exit ramps at CV Raman Road and Jaymahal road.
Drawing Title	**SHAFT-5 SILK BOARD – CONCEPTUAL 3D MASSING**
Drawing No.	



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
84B166 WellWork, Pinkies Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 1 : Km 0.000 to km 8.748 of North South Corridor connecting Hebbal to Silk Board.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

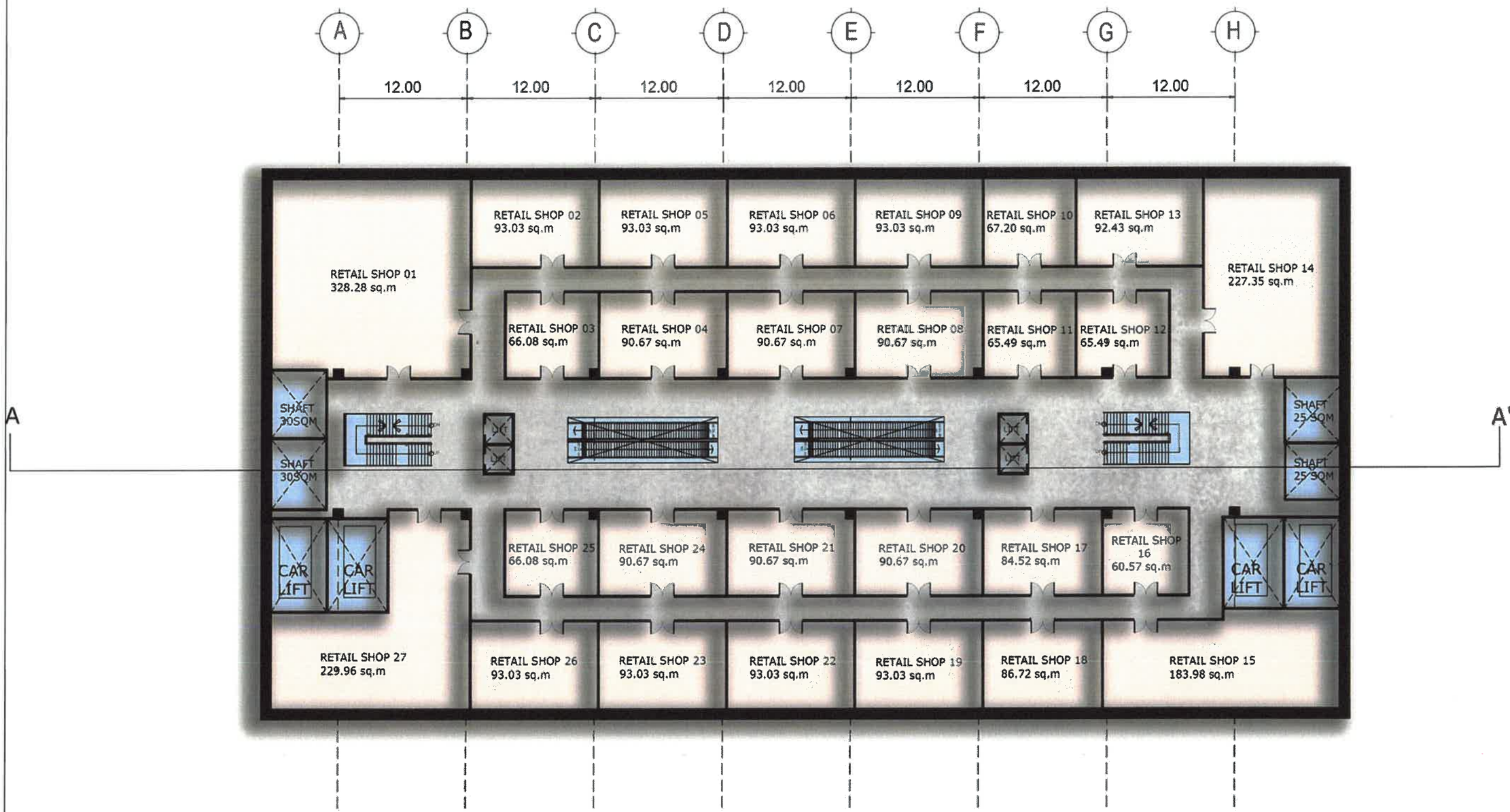
Scale :- AS SHOWN

Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Hebbal near Esteem Mall junction (Km. 0+000) to Shesadri Road, freedom park (Km 8.748) of North South Corridor including launching and retrieval shaft (at Km 1+375 and Km 5+050), entry exit ramps at Hebbal (Km 0+000) and ORR, entry and Entry & exit ramps at CV Raman Road and Jaymahal road.

Drawing Title: **SHAFT TYPICAL FLOOR PLANS – PODIUM GROUND LEVEL FLOOR PLAN**

Drawing No.



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
64B106 WeWork; Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

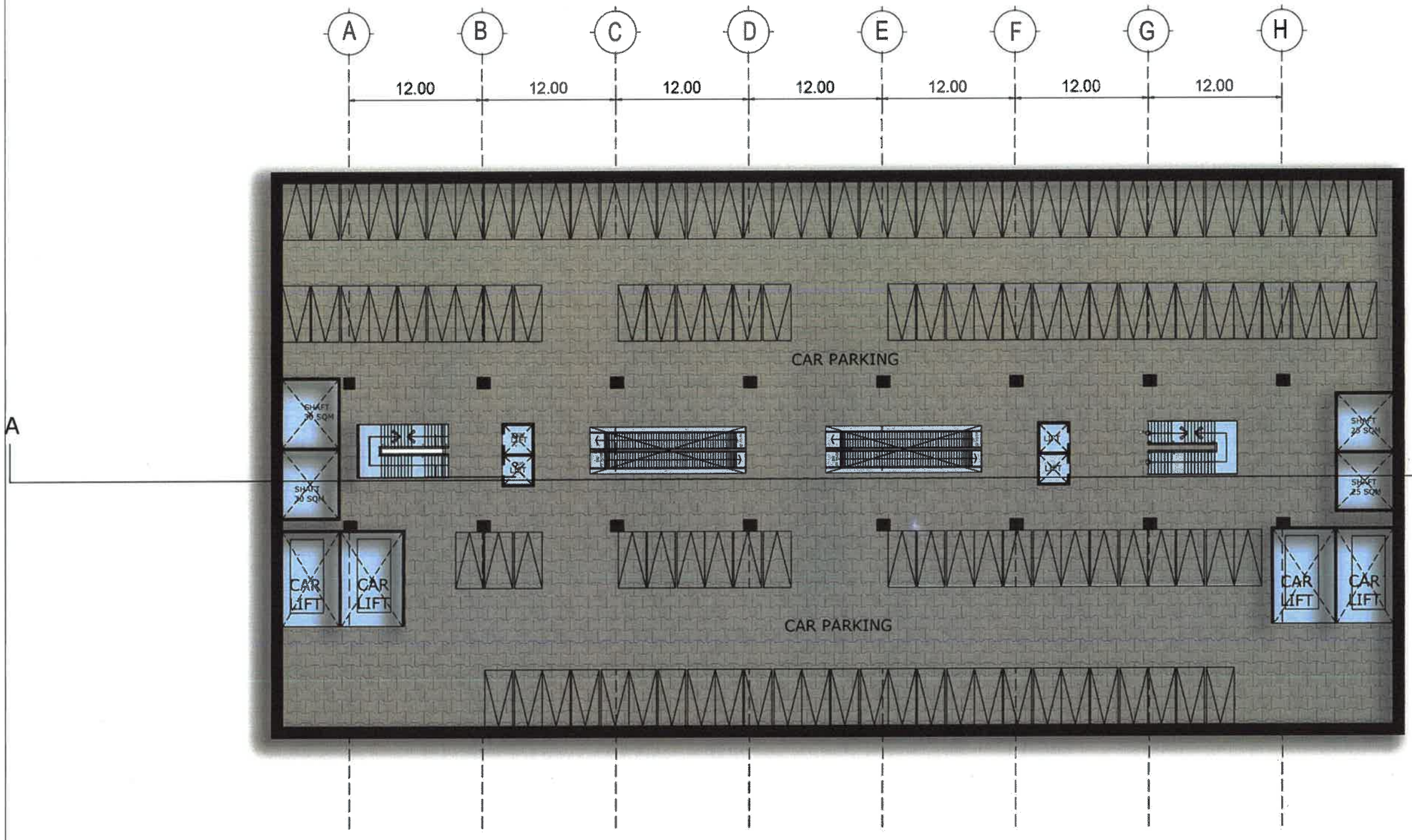
(Package 1 : Km 0.000 to km 8.748 of North South Corridor connecting Hebbal to Silk Board.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- AS SHOWN

Sheet size: A2

Project	Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Hebbal near Esteem Mall junction (Km. 0+000) to Shesedri Road, freedom park (Km 8.748) of North South Corridor including launching and retrieval shaft (at Km 1+375 and Km 5+050), entry exit ramps at Hebbal (Km 0+000) and ORR, entry and Entry & exit ramps at CV Raman Road and Jaymahal road.
Drawing Title	**SHAFT TYPICAL FLOOR PLANS – LEVEL 1 AND 2 FLOOR PLANS – RETAIL SHOPS**
Drawing No.	



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B106 WeWork, Platina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 1 : Km 0.000 to km 8.748 of North South Corridor connecting Hebbal to Silk Board.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

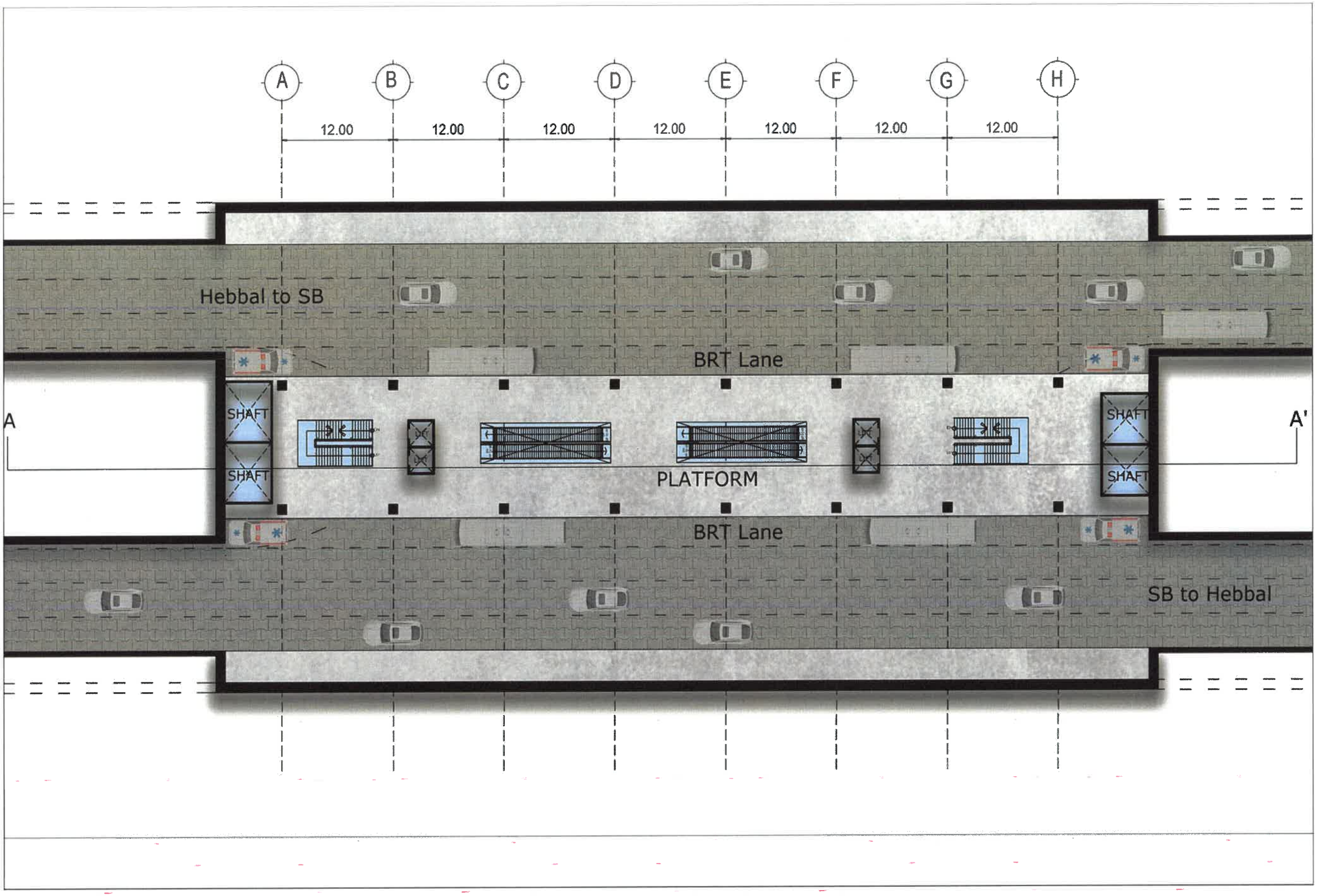
Scale :- AS SHOWN

Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Hebbal near Esteem Mall junction (Km. 0+000) to Shesadri Road, freedom park (Km 8.748) of North South Corridor including launching and retrieval shaft (at Km 1+375 and Km 5+050), entry exit ramps at Hebbal (Km 0+000) and ORR, entry and Entry & exit ramps at CV Raman Road and Jaymahal road.

Drawing Title: **SHAFT TYPICAL FLOOR PLANS – LEVEL 3 FLOOR PLAN – MLCP (PARKING)**

Drawing No.



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
04B166 WeWork, Plaina Tower M3 Road Near Sikandarpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 1 : Km 0.000 to km 8.748 of North South Corridor connecting Hebbal to Silk Board.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

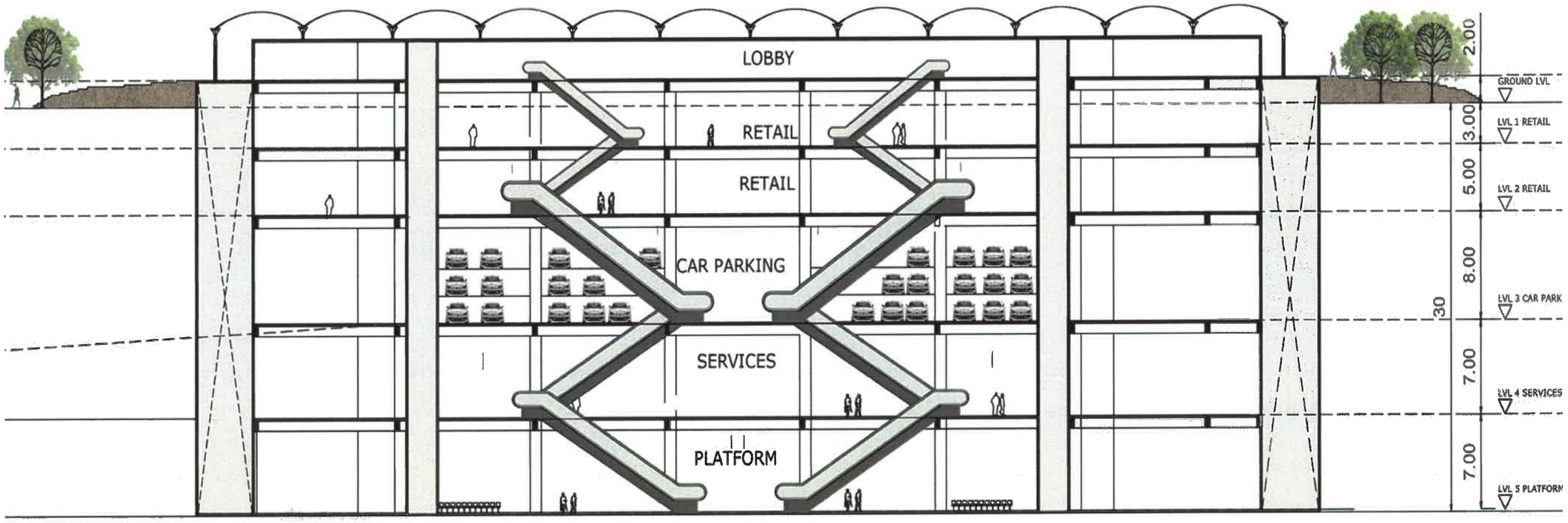
Scale :- AS SHOWN

Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Hebbal near Esteem Mall junction (Km. 0+000) to Shesadri Road, freedom park (Km 8.748) of North South Corridor including launching and retrieval shaft (at Km 1+375 and Km 5+050), entry exit ramps at Hebbal (Km 0+000) and ORR, entry and Entry & exit ramps at CV Raman Road and Jaymahal road.

Drawing Title: **SHAFT TYPICAL FLOOR PLANS – LEVEL 5 FLOOR PLAN – TUNNEL PLATFORM**

Drawing No.



REVISION	DATE	AMENDMENT \ ISSUE DESCRIPTION
R0	Jan.:- 2025	-

CLIENT

GOVERNMENT OF KARNATAKA

Bruhat Bangalore Mahanagara Palike

AE/Infra Div.-RI,BBMP	
AEE/Infra Div.-RI,BBMP	
EE/Infra Div.-RI,BBMP	
EIC- BBMP	

CONSULTANT:

RODIC CONSULTANTS PVT. LTD.
1, JAI SINGH MARG (FIRST FLOOR), YMCA CULTURAL CENTRE BUILDING
NEW DELHI - 110001 (INDIA)

GEOCONSULT INDIA PRIVATE LIMITED
643/16 WeWork, Plaina Tower MG Road Near Sikanderpur Metro Station Sector 28, Gurugram Haryana INDIA

FINAL DETAILED PROJECT REPORT

(Package 1 : Km 0.000 to km 8.748 of North South Corridor connecting Hebbal to Silk Board.)

Designed:	RR	
Drawn:	SS	
Checked:	AT	
Approved:	HRY	

Scale :- AS SHOWN

Sheet size: A2

Project: Construction of twin tube Underground Vehicular Tunnel (3-lane Configuration each) from Hebbal near Esteem Mall Junction (Km. 0+000) to Shesadri Road, freedom park (Km 8.748) of North South Corridor including launching and retrieval shaft (at Km 1+375 and Km 5+050), entry exit ramps at Hebbal (Km 0+000) and ORR, entry and Entry & exit ramps at CV Raman Road and Jaymahal road.

Drawing Title: **SHAFT TYPICAL SECTION**

Drawing No.

RODIC CONSULTANTS PRIVATE LIMITED
1st floor, Sarojini House 6,
Bhagwan Das Road, Mandi House,
New Delhi - 110001(INDIA)
e-mail: contact@rodicconsultants.com