Section - 6
Annexure 1
SLOPE STABILIZATION WORK AT NORTH PORTAL APPROACH OF CNTL TUNNEL
Micropiling + Soldier Pile wall

Sl No	Description	Unit	Qty.	Rate in Rs.	Amount in Rs.
A	**Micropile Wall**				
1	Drilling, installation and grouting (M30) of micropiles reinforced with steel pipe (ext dia. 141 mm and min. thickness 7mm, steel type Fe 500, N80 or P110 or equivalent), as per the design/designer using rotary / Odex method of drilling so that in case of collapse of hole the casing can be inserted. The drilling with heavy duty drilling rigs mounted with 600 cfm/equivalent dual compressor. Preparation of the bench mark, platform for the drilling rig, pathway for the workers and machinery, and arrangement of grouting pump, compressor, complete as per drawings and Specifications. Wastage shall be included in the rate and shall not be considered in the measurement . Yield strength of Pile should be 550 MP				
	Microlpiles at spacing as per drawing of 141 mm external dia in single layer as specified in drawing (total Micropiles approx 200 nos) - 2400 RMT				
1.01	Drilling hole of sufficient dia for erection of Pipe casing ext dia. 141 mm and thickness 7mm, steel type Fe 500, N80 or P110 or equivalent including supply of Pipe for micropile and grouting (M30) as per drawings and specifications (below ground- requires drilling)	RMT	2300		-
1.02	Supply, Installation of casing ext dia. 141 mm and thickness 7mm, steel type Fe 500, steel type Fe 500, N80 or P110 or equivalent, Concreting (M30) (above ground- no drilling needed)	RMT	100		-
2	Providing capping beam (300x300mm) for the micro piles above ground ,with M30 grade concrete including formwork to give proper support, excluding reinforcement, Concrete, staging and scaffolding complete in all respect along with base dressing at the place where micro-pile is coming out of ground level.	Cum	10		-
B	**Soldier Pile Wall**				
3	Drilling of sufficient dia with erection of ISMB 125, Fe 250 grade as per drawing (Size : 125 X 70 X 5 mm with 13.2 kg per RMT) as per drawing and grouting with M10 Concrete up to ground level as per the design/designer using rotary / Odex method of drilling so that in case of collapse of hole the casing can be inserted simultaneously and grouting with concrete. The drilling with heavy duty drilling rigs mounted with 600 cfm/equivalent dual compressor. Preparation of the bench mark, platform for the drilling rig, pathway for the workers and machinery, and arrangement of grouting pump, compressor, complete as per drawings and Specifications. Wastage shall be included in the rate and shall not be considered in the measurement.				
3.01	Drilling of sufficient dia for erection of specified ISMB and grouting with M10 Concrete up to ground level as per drawing and specifications. Rate is excluding ISMB 125 and rate for same shall be quoted in separate item no. 3.02	RMT	784.00		-
3.02	Supply and erection of ISMB 125, Fe 250 grade (Size : 125 X 70 X 5 mm with 13.2 kg per RMT) below and above ground level as per drawing and specifications	MT	16.26		-
4	Providing and casting of 75mm thick concrete lagging (150x450mm) as connectors of soldier piling above ground level ,with M30 grade concrete including formwork to give proper support, excluding reinforcement, staging and scaffolding complete in all respect as per the drawing and site conditions	Cum	12.375		-
5	Subsurface drain : Installation of perforated PVC pipe of 75mm dia, as per the approved drawing and surrounded by a geotextile filter fabric complete as per the technical specifications	RMT	167.00		-
6	Providing and laying M-20 Plain Cement Concrete excluding reinforcement but including formwork for drain /PCC Work as per drawings and Technical Secifications Clause 309 and Section 1500, 1700, 2100 and 2200. Item rate shall be inclusive of all material, duties, manpower, equipment cost, royalties, transportation, etc.	Cum	250.00		-
7	Providing, Supplying and fixing in position HYSD/TMT - Fe 500 D reinforcement including cutting , bending, binding etc complete as per drawing and Specifications. Laps, chairs and wastage shall be included in the rate and shall not be considered in the measurement.	MT	14.07		-
8	Providing and Fixing Geo Green Blanket for slope stabilization including dressing of slope, providing fertile soil, trenching, laying and fixing non woven GECB on Slope, seeding, watering (3 months), ward and watch etc. complete as per technical specifications	Sqm	3,500.00		-
				Total Excl. GST	-
				GST @ 12%	-
				Total Incl. GST	-

Note :

1. Item rate shall be inclusive of all material, manpower, equipment cost, royalties, transportation, etc.
2. Bill of Quantities with rates shall be submittted on letterhead of the Bidder with signature of Authorised signatory with stamp
3. Scope Matrix of work is provided separately vide attached Enclosure A. Pl refer Enclosure A before quoting the rate

Enclosure A

SCOPE MATRIX OF WORK (Micropiling + Soldier Piling work)

Sr. No.	Description	Scope	
1	Mobilization of the truck mounted drilling rigs with the dual 600 cfm compressor.	Contractor	
2	Drilling the holes of required dia with the odex method.	Contractor	
3	casing shoe, drill bits, odex system shall be provided by	Contractor	
4	Diesel for operation of the machine	Contractor	
5	Supply of coupler along with the casing pipe at site	Contractor	
6	welding the casing pipe with coupler and insertion into the hole .	Contractor	
7	Hydra for lifting the pipe	Contractor	
8	Supply of reinforcement	Contractor	
6	welding of the reinforcement as per the design with the casing pipe.	Contractor	
7	Grouting the hole with the concrete	Contractor	
8	Preparation of the bench mark, platform for the drilling rig, pathway for the workers and machinery shall be in the scope of the client		CNTL
9	Grouting with compressor and grouting pump	Contractor	
10	Water and electricity for welding and other purpose shall be in the scope of the client.		CNTL
11	Accommodation at site for the workers and labors shall be provided free of charge.		CNTL

TYPICAL DETAIL OF SOLDIER PILE (NTS)

TYPICAL DETAIL OF MICRO PILE (NTS)

DETAIL - B

NOTES-

1. ALL DIMENSIONS ARE IN mm AND LEVELS ARE IN m UNLESS OTHERWISE SPECIFIED. NO DIMENSIONS SHALL BE MEASURED FROM THE DRAWING.

TABLE - 1 DETAILS OF SOLDIER PILES

SR.N	PERAMETER	VALUE
1	OUTER DIAMETER OF PILE	150mm
2	SOLDIER PILE SECTION	ISMB 125
3	MODULUS OF ELASTICITY OF STEEL	210GPa
4	MODULUS OF ELASTICITY OF CONCRETE	11GPa
5	NO. OF PILES PER 'M' RUN	2.22
6	YIELD STRENGTH OF PILE	550MPa
7	CONCRETE GRADE	M10

DATE	NO	REVISION	BY
SEP-20	R1	AS PER COMMENTS	
AUG-20	R0	INITIAL DRAWING	

CLIENT : NATIONAL HIGHWAYS AUTHORITY OF INDIA (Ministry of Shipping, Road, Transport & Highways) Government of India G + 3 & 4, Sector - 10, Dwarka, New Delhi - 110075

DRAWING TITLE : ROAD WORK NORTH APPROACH ROAD SLOP PROTECTION GENERAL ARRANGEMENT

DRAWING NUMBER : [illegible]

DRAWN	DESIGNED	CHECKED	APPROVED

SCALE AS SHOWN

DATE SEP - 2020

REV. R1