

## **TERMS OF REFERENCE**

### **Introduction**

The proposed Polgahawela to Kurunegala Railway double line will be approximately 22 kms in length, travelling along with existing Kurunegala - Polgahawela Railway track. There are one crossing station, Pothuhera and 03 substations named Girabe, Thalawattegedera and Nailiya in between Polgawela and Kurunegala main stations. 08 Nos. single span bridges and 79 culverts are to be constructed parallel to existing bridges and culverts. There are 19 Nos. Level crossings and protection systems are to be provided for all 19 Level crossings. Land acquisition to be done some places along the track, if not enough land available within the Railway Reservation.

The consultant should provide the investigation details, preliminary design drawings, BOQ, cost estimate and bidding document.

### **Objectives**

The purpose of appointment of consultant is preparation of bidding document with design details of structures and drawings to enable SLR to call tenders for construction of double track from Polgahawela to Kurunegala.

Double tracking of Polgahawela to Kurunegala will help to address following problems.

1. Proposed double tracking is expected to enhance traffic handling capacity of Northern and Eastern lines.
2. Polgahawela - Kurunegala line is a bottle neck in connecting Colombo to Northern line.
3. Effective and High-speed Railway lines would encourage road users to actively use railway; which is expected to see an overall reduction in fuel usage, less emission of toxic gases polluting the environment, saving of time from traffic jams, less noise pollution etc.
4. The project would encourage the many employees/ commuters to travel to and fro daily which would ease urban housing difficulties.

## **Scope of work to be undertaken**

Following work to be carried out by the consultant under this contract.

1. Carried out a detail survey with longitudinal and cross sections to a suitable distance. Once this detail survey completed, quantities of earth works, compacted ABC layers etc. could be calculated in a realistic manners.
2. Borehole to be carried out for each formation / structure location to enable design of formation and structures.
3. Design of Bridges, Culverts, Internal and External Retaining structures, drainage etc.
4. Design of Track and modifications of yards to suit double tracking.
5. Design of signaling and Telecommunication system to suit existing systems. It should be Centralized Control System.
6. Design of station platforms, overhead bridges, and platform roof covers etc. to suit existing stations.
7. Design of overpasses for existing level crossing if necessary.
8. All drawings to be submitted relevant to the project with all necessary details.
9. Detail BOQ with relevant specifications for gravel, earth works, structures, tracks and Signaling & Telecommunications.
10. Cost estimate for construction of double tracking from Polgahawela to Kurunegala.
11. Draft bidding document.

### **Draft final document**

This will be submitted for three hard copies and one soft copy within 06 months of the commencement date. The report shall be inclusive of all the items mentioned under the scope of works to be undertaken.

### **Final report**

This will be submitted in three hard copies and a soft copy within one month for the receipt of comments on draft final report by Sri Lanka Railways and Ministry of Transport & Civil Aviation.

The final report shall comprise of

- Details of survey with longitudinal section and cross section details.
- Geotechnical details with foundation and Ground improvement proposals.
- Sub structure design of bridges
- Superstructure design of bridges
- Culvert designs
- Track designs
- Signal & Telecom design
- Platform O/H bridges and roof cover design for stations
- overpasses design and Level crossing designs
- Detail BOQQ with relevant specifications
- Cost estimate
- Final Bidding document

**BRIDGES AND CULVERTS IN EXISTING TRACK BETWEEN POLGAHAWELA - KURUNAGALA**

Sr. No.	Mileages		Culvert	Bridge	Span	Invert Level	Remarks
	M	Ch					
01	45	62	Hume Pipe	-	01' 00"	-	
02	45	71	Rail Top	-	02' 09"	04' 07"	
03	46	02	Cast Iron	-	01' 06" (Two span)	-	
04	46	10	Stone Masonry	-	02' 09" x 02	03' 08"	
05	46	19	Hume Pipe	-	00' 10"	-	
06	46	26	Brick Masonry arch	-	03' 00"	05' 00"	
07	46	43	Trough span	-	07' 06"	10' 08"	
08	46	52	Stone Masonry arch	-	01' 06"	04' 00"	
09	46	57	-	Open Through	24' 00"	07' 05"	
10	46	63	Rail Top	-	06' 00"	03' 06"	
11	46	71 ½	Rail Top	-	06' 00"	02' 09"	
12	46	79 ½	Rail Top	-	04' 00"	02' 02"	
13	47	06	Rail Top	-	06' 00"	01' 06"	
14	47	07	Cast Iron	-	01' 06"	-	
15	47	17	Rail Top	-	06' 00"	02' 00"	
16	47	23 ½	Rail Top	-	01' 09"	03' 09"	
17	47	38 ½	Rail Top	-	01' 06"	03' 09"	
18	47	50	Rail Top	-	06' 00"	01' 06"	
19	47	58	Rail Top	-	04' 00"	01' 06"	
20	47	63	Concrete arch	-	01' 10"	-	
21	47	66	Rail Top	-	04' 00"	02' 09"	
22	47	70	-	Semi Through	59' 09"	11' 00"	
23	47	79 ½	Cast Iron	-	01' 00"	-	

Sr. No.	Mileages		Culvert	Bridge	Span	Invert Level	Remarks
	M	Ch					
24	48	18	Rail Top	-	06' 00"	03' 09"	
25	48	28 ½	Rail Top	-	04' 00"	02' 00"	
26	48	36	Rail Top	-	04' 00"	02' 00"	
27	48	49	Rail Top	-	06' 00"	01' 06"	
28	48	55 ½	Rail Top	-	01' 06"	01' 09"	
29	48	67	-	Semi Through	29' 09"	11' 00"	
30	48	79	Rail Top	-	01' 09"	03' 06"	
31	49	2 ½	Cast Iron	-	01' 06"	-	
32	49	09	Rail Top	-	02' 00"	03' 00"	
33	49	12	Rail Top	-	06' 00"	03' 00"	
34	49	15	Rail Top	-	06' 00"	04' 09"	
35	49	26	Rail Top	-	06' 00"	02' 00"	
36	49	52	Rail Top	-	01' 09"	01' 00"	
37	49	65 ½	Rail Top	-	04' 00"	05' 06"	
38	50	00	Rail Top	-	04' 00"	04' 06"	
39	50	09	Rail Top	-	04' 00"	07' 00"	
40	50	22 ½	Rail Top	-	02' 08"	01' 06"	
41	50	32	-	Open Through	20' 00"	08' 10"	
42	50	49	Rail Top	-	01' 10"	01' 06"	
43	50	53 ½	Rail Top	-	04' 00"	02' 00"	
44	50	58 ½	Rail Top	-	06' 00"	02' 06"	
45	50	71 ½	Rail Top	-	06' 00" (02 spans)	06' 00"	
46	51	4 ½	Stone Masonry	-	02' 06" x 02	04' 04"	
47	51	25 ½	Rail Top	-	01' 09"	02' 06"	

Sr. No.	Mileages		Culvert	Bridge	Span	Invert Level	Remarks
	M	Ch					
48	51	38	Concrete arch	-	04' 02"	06' 07"	
49	51	42 ¼	Hume Pipe	-	02' 09"	-	
50	51	54 ½	Rail Top	-	06' 00"	03' 00"	
51	51	61 ½	Rail Top	-	04' 00"	04' 04"	
52	52	07	Rail Top	-	01' 09"	05' 06"	
53	52	17	-	Open Through	11' 09"	09' 09"	
54	52	65	-	Open Through	12' 00"	07' 00"	
55	53	1 ½	Rail Top	-	05' 10"	03' 06"	
56	53	23	Hume Pipe	-	01' 06"	-	
57	53	65 ½	Cast Iron	-	01' 06"	-	
58	53	73	-	Semi Through	39' 00"	17' 00"	
59	54	00	Rail Top	-	01' 08"	05' 00"	
60	54	12	Rail Top	-	06' 00"	02' 08"	
61	54	34 ½	Stone Masonry	-	02' 00"	02' 06"	
62	54	38	Cast Iron	-	01' 04"	-	
63	54	55	Rail Top	-	04' 00"	06' 00"	
64	54	64	-	Open Through	10' 00"	08' 00"	
65	54	78	Rail Top	-	04' 00"	02' 00"	
66	55	08	Rail Top	-	04' 00" (Two pipes)	05' 00"	
67	55	20 ½	Hume Pipe	-	07' x 07" x 2	-	
68	55	33	Rail Top	-	04' 00"	05' 06"	
69	55	36 ½	-	Open Through	11' 07"	06' 06"	
70	55	47	Rail Top	-	06' 00"	03' 03"	
71	55	52	Rail Top	-	06' 00"	03' 04"	

Sr. No.	Mileages		Culvert	Bridge	Span	Invert Level	Remarks
	M	Ch					
72	55	68	Rail Top	-	06' 00"	06' 03"	
73	56	69	Rail Top	-	06' 00"	02' 06"	
74	56	77	Rail Top	-	01' 09"	03' 00"	
75	57	15	Rail Top	-	05' 08"	05' 00"	
76	57	23 ½	Rail Top	-	01' 11"	04' 00"	
77	57	25	Rail Top	-	01' 10"	04' 08"	
78	57	40	Stone Masonry	-	02' 09"	03' 10"	
79	57	76	Cast Iron	-	01' 06"	-	
80	57	67 ½	Stone Masonry	-	02' 06"	02' 06"	
81	58	16	Hume Pipe	-	01' 00"	-	
82	58	09	-	Semi Through	29' 06"	12' 04"	
83	58	19 ½	Hume Pipe	-	00' 11"	-	
84	58	28 ½	Rail Top	-	03' 09"	07' 09"	
85	58	31	Cast Iron	-	01' 06" (Two pipes)	-	
86	58	39	Hume Pipe	-	01' 00" x 2	-	
87	59	21	Rail Top	-	06' 00"	04' 00"	

**LEVEL CROSSINGS IN EXISTING TRACK**

Sr. No.	IPW Section	Between Station	Mileages		Protected or Not	How Protected	Remarks
			M	Ch			
01	IPW / KRN	PLG-PTA	46	03	Not	Bamboo Gate	Manned by Civil Defense Committee members
02			46	33	Protected	Interlock Barriers	Manned by Way & Works Staff
03			46	41	Not	Bamboo Gate	Manned by Civil Defense Committee members
04			46	66	Not	Bamboo Gate	Manned by Way & Works Staff
05			47	18	Not	Bamboo Gate	Manned by Way & Works Staff
06			47	79	Protected	Interlock Barriers	Manned by Way & Works Staff
07			49	60	Not	Bamboo Gate	Manned by Way & Works Staff
08			50	54	Not	Bamboo Gate	Manned by Civil Defense Committee members
09			52	20	Not	Bamboo Gate	Manned by Civil Defense Committee members
10		PTA-KRN	53	08	Protected	Interlock Barriers	Manned by Station Staff
11			53	36	Protected	Interlock Barriers	Manned by Station Staff
12			53	61	Not	Bamboo Gate	Manned by Civil Defense Committee members
13			53	77	Not	Bamboo Gate	Manned by Civil Defense Committee members
14			54	43	Protected	Interlock Barriers	Manned by Way & Works Staff
15			55	31	Not	Bamboo Gate	Manned by Civil Defense Committee members
16			56	13	Not	Bamboo Gate	Manned by Civil Defense Committee members
17			56	41	Not	Bamboo Gate	Manned by Civil Defense Committee members
18			57	37	Not	Bamboo Gate	Manned by Civil Defense Committee members
19			57	71	Not	Bamboo Gate	Manned by Civil Defense Committee members

Considering the data of Existing Track followings recommended

1. Concrete Bridges for No. 22 (59' 00" of Length) & No. 58 (39'00" of length) and Box Culverts for the rest.
2. Interlocked barrier system for Major Level Crossings and Bell & Light for minor Level Crossings.