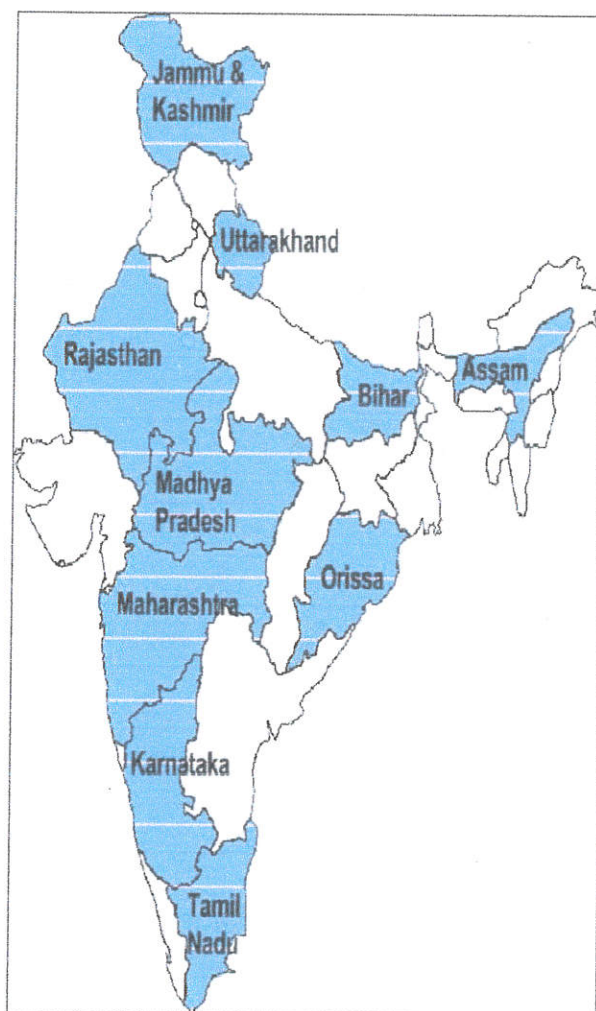
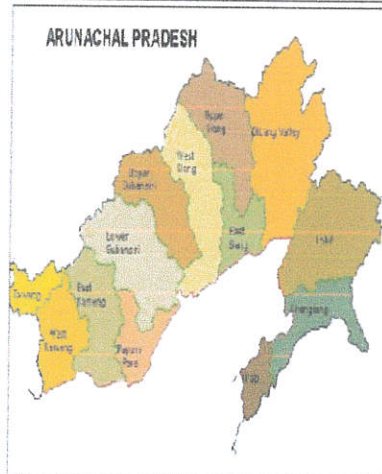
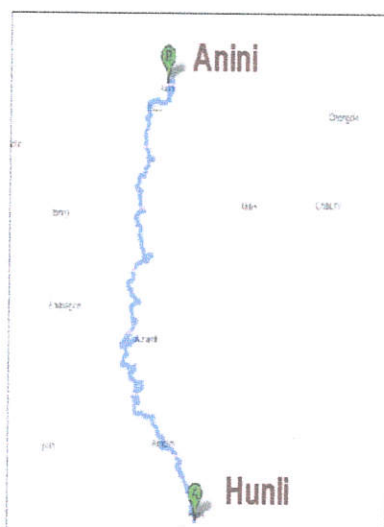


*Survey Investigation and Preparation for Detailed Project Report for  
Improvement of Road HUNLI-ANINI (138.000 KM) To NH Double lane  
Specification in Arunachal Pradesh*



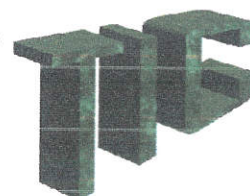
## COST ESTIMATES

### ANINI RE-ALIGNMENT



**MC CONSULTING ENGINEERS Pvt. Ltd.**  
WITH **TECHNOCRATS INFRASTRUCTURE CONSULTANTS**  
Pvt. Ltd.

2<sup>nd</sup> Floor, Office No. I & II,  
Indrapuram, Ghaziabad, UP - 100201





**ABSTRACT OF COST :: Hunli-Anini (Design Km 120 to Km 130.300)**  
**ANINI Re-alignment**

Bill No.	Description	Length in Kms	Amount (in RS)	Amount (in Crores)
	Design Length in Km	10.300		
1	Road Works (Sum of a to c)		758041241	75.80
a	TCS 1 (2 Lane with Both side Drain in Builtup Areas)	95502475		
b	TCS 3 (2 Lane New Construction over Existing Formation)	557415563		
c	TCS 4 (2 Lane New Construction in New Alignment)	105123203		
2	Bridges		162752081.30	16.28
3	Culverts		190761227.00	19.08
4	Junctions		19985239.00	2.00
5	Bus Bays		4903538.00	0.49
6	Traffic Signs, Marking and Appurtenances		6437327.00	0.64
7	Other Miscellaneous Works		27356900.00	2.74
8	For Plantation		11702375.53	1.17
A	<b>Civil Cost</b>		<b>1181939928</b>	<b>118.19</b>
	<b>Cost/KM at Civil Cost</b>		<b>114751449</b>	<b>11.48</b>
B	add Contingencies over Civil Cost @	2.80%	33094318	3.31
C	Subtotal	A + B	1215034246	121.50
D	Construction Supervision Charges on 'C' @	3.00%	36451027	3.65
E	Administrative Charges / Agency Charges on 'C' @	3.00%	36451027	3.65
F	add Quality Control on 'C' @	0.25%	3037586	0.30
G	Road Safety Cell Audit Charges on 'C' @	0.25%	3037586	0.30
H	<b>Total Civil Cost (C+D+E+F+G)</b>		<b>1294011472</b>	<b>129.40</b>
I	Maintenance Cost for 4 years on 'C' @	5.00%	60751712	6.08
J	Escalation on 'C' @	10.00%	121503425	12.15
K	<b>Total Cost (H+I+J)</b>		<b>1476266609</b>	<b>147.63</b>

*G. K. Anil*



## Itemized Cost Estimate :: Hunli-Anini (Km 120 to Km 131)

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Quantity	Rate	Rate with Diesel Transportation	Amount	Remarks
<b>Bill No. 1 a :</b>	<b>TCS I (2 Lane with Both side Drain in Builtup Areas)</b>			<b>1600.000</b>							
1.01	Dismantling of		1	8046.000	3.000	0.020	482.760	329.00	342.00	165103.92	
a)	Flexible Pavement	Cum	1	8046.000	3.000	0.700	16896.600	547.00	569.00	9614165.40	
b)	Granular Pavement	Cum	1	8046.000			6.000	232.00	241.00	1446.00	
c)	Km Stone	No	1	8046.000							
1.02	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.	Sqm	1	1600.000	3.000		4800.000	3.71	4.00	19200.00	
1.03	Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000m										
(i)	Ordinary Soil	Cum	1	1600.000	2.500	0.600	2400.000	207.00	215.00	516000.00	LS Qty
1.04	Compacting original ground supporting sub-grade/embankment	Cum	1	1600.000	10.000	0.150	2400.000	62.71	65.00	156000.00	
1.05	Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2.	Cum	1	1600.000	2.000	0.400	1280.000	221.00	230.00	294400.00	
1.06	Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.	Cum	1	1600.000			0.000	116.00	121.00	0.00	
1.07	Construction of sub-grade with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2.	Cum	1	1600.000	10.000	0.500	8000.000	264.00	275.00	2200000.00	
1.08	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401.	Cum	1	1600.000	10.000	0.200	3200.000	2321.00	2414.00	7724800.00	
1.09	Providing Shoulder with local available material	Cum	0	1600.000	1.500	0.325	0.000	264.00	275.00	0.00	
1.10	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub-base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.	Cum	1	1600.000	10.000	0.250	4000.000	3139.00	3265.00	13060000.00	
1.11	Providing and applying Prime coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying Prime at the rate of 0.60 kg/sqm using mechanical means.	Sqm	1	1600.000	10.000		16000.000	38.00	40.00	640000.00	
1.12	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.	Sqm	2	1600.000	10.000		32000.000	14.00	15.00	480000.00	
1.13	Providing and laying dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 507 complete in all respects.	Cum	1	1600.000	10.000	0.060	960.000	12457.00	12955.00	12436800.00	
1.14	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects	Cum	1	1600.000	10.000	0.040	640.000	14355.00	14929.00	9554560.00	
1.15	Providing RCC Drain at Both Side in Builtup Areas	Rm	2	1600.000			3200.000	11611.00	12075.00	38640000.00	
<b>Total of TCS 1</b>										<b>95502475.32</b>	

Enk. Anini





## Itemized Cost Estimate :: Hunli-Anini (Km 120 to Km 131)

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Quantity	Rate	Rate with Diesel Transportation	Amount	Remarks
Bill No. 1 b	TCS 3 (2 Lane New Construction over Existing Formation)			6308.000							
1.01	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.	Sqm	1	6308.000	7.000		44156.000	3.71	4.00	176624.00	
1.02	Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000m										
	(i) Ordinary Soil	Cum	1	6308.000			323549.936	207.00	215.00	69563236.24	50% of Qty
	(ii) Ordinary Rock	Cum	1	6308.000			129419.974	295.00	307.00	39731932.14	20% of Qty
	(iii) Hard Rock without Blasting	Cum	1	6308.000			194129.962	726.00	755.00	146568121.01	30% of Qty
1.03	Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2	Cum	1	6308.000	0.500	0.400	1261.600	221.00	230.00	290168.00	
1.04	Compacting original ground supporting sub-grade	Cum	1	6308.000	10.000	0.150	9462.000	63.00	66.00	624492.00	
1.04	Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.	Cum	1	6308.000			6938.800	116.00	121.00	839594.80	As per MX Road
1.05	Construction of sub-grade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2										
	a) For Subgrade	Cum	1	6308.000			37848.000	264.00	275.00	10408200.00	As per MX Road
	g) For Earthen / Hard Shoulder	Cum	2	6308.000	1.500	0.350	6623.400	264.00	275.00	1821435.00	
	<b>Total of Subgrade</b>										
1.06	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401.	Cum	1	6308.000	10.900	0.200	13751.440	2321.00	2414.00	33195976.16	
1.07	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.	Cum	1	6308.000	7.500	0.250	11827.500	3139.00	3265.00	38616787.50	
1.08	Providing and applying Prime coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying Prime at the rate of 0.60 kg/sqm using mechanical means.	Sqm	1	6308.000	7.000		44156.000	38.00	40.00	1766240.00	
1.09	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.	Sqm	2	6308.000	7.000		88312.000	14.00	15.00	1324680.00	
1.10	Providing and laying dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 507 complete in all respects.	Cum	1	6308.000	7.000	0.060	2649.360	12457.00	12955.00	34322458.80	
1.11	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects	Cum	1	6308.000	7.000	0.040	1766.240	14355.00	14929.00	26368196.96	
1.12	Providing RR Masonry Open Drain at Hill Side	Rm	1	6308.000			6308.000	1682.00	1749.00	11032692.00	
1.13	Providing Gabion wall as per drawing	Rm	1	631.000			631.000	13294.00	13826.00	8724206.00	
1.14	Providing Retaining Wall as per drawing	Rm	1	2208.000			2208.000	27172.00	28259.00	62395872.00	
1.15	Providing Breast Wall as per drawing	Rm	1	2650.000			2650.000	25270.00	26281.00	69644650.00	
	<b>Total of TCS I C</b>									<b>557415562.61</b>	

E.K. Singh



## Itemized Cost Estimate :: Hunli-Anini (Km 120 to Km 131)

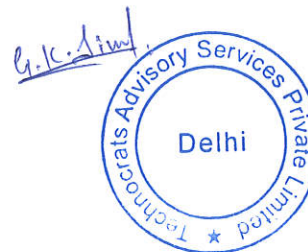
Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Quantity	Rate	Rate with Diesel Transportation	Amount	Remarks
Bill No. 1 c	TCS 4 (2 Lane New Construction in New Alignment)			2254.000							
1.01	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.	Sqm	1	2254.000	12.000		27048.000	3.71	4.00	108192.00	
1.02	Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000m										
	(i) Ordinary Soil	Cum	1	2254.000	10.000	3.500	78890.000	207.00	215.00	16961350.00	50% of Qty
	(ii) Ordinary Rock	Cum	1	2254.000	6.500	1.500	21976.500	295.00	307.00	6746785.50	20% of Qty
	(iii) Hard Rock without Blasting	Cum	1	2254.000	2.500	0.500	2817.500	726.00	755.00	2127212.50	30% of Qty
1.03	Construction of embankment with approved material obtained from borrow pits with all lifts and leads, transporting to site, spreading, grading to required slope and compacting to meet requirement of table 300-2.	Cum	0	2254.000	1.000	0.200	0.000	221.00	230.00	0.00	
1.04	Compacting original ground supporting sub-grade/embankment	Cum	1	2254.000	12.000	0.150	4057.200	63.00	66.00	267775.20	
1.05	Construction of embankment with approved materials deposited at site from roadway cutting and excavation from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.	Cum	1	2254.000	6.000	0.400	5409.600	116.00	121.00	654561.60	
1.06	Construction of sub-grade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2										
	a) For Subgrade	Cum	1	2254.000	6.000	0.500	6762.000	264.00	275.00	1859550.00	
	g) For Earthen / Hard Shoulder	Cum	2	2254.000	1.500	0.350	2366.700	264.00	275.00	650842.50	
	<b>Total of Subgrade</b>										
1.07	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by mix in place method with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401.	Cum	1	2254.000	11.000	0.200	4958.800	2321.00	2414.00	11970543.20	
1.08	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.	Cum	1	2254.000	7.500	0.250	4226.250	3139.00	3265.00	13798706.25	
1.09	Providing and applying Prime coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying Prime at the rate of 0.60 kg/sqm using mechanical means.	Sqm	1	2254.000	7.000		15778.000	38.00	40.00	631120.00	
1.10	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.	Sqm	2	2254.000	7.000		31556.000	14.00	15.00	473340.00	





## Itemized Cost Estimate :: Hunli-Anini (Km 120 to Km 131)

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Quantity	Rate	Rate with Diesel Transportation	Amount	Remarks
1.11	Providing and laying dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 507 complete in all respects.	Cum	1	2254.000	7.000	0.060	946.680	12457.00	12955.00	12264239.40	
1.12	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects.	Cum	1	2254.000	7.000	0.040	631.120	14355.00	14929.00	9421990.48	
1.13	Providing RR Masonry Open Drain at Hill Side	Rm	1	2254.000			2254.000	1682.00	1749.00	3942246.00	
1.14	Providing Gabion wall as per drawing	Rm	1	50.000			50.000	13294.00	13826.00	691300.00	
1.15	Providing Retaining Wall as per drawing	Rm	1	200.000			200.000	27172.00	28259.00	5651800.00	
1.16	Providing Breast Wall as per drawing	Rm	1	200.000			200.000	25270.00	26281.00	5256200.00	
1.17	Construction of Parapet wall on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond Parapet complete in all respect.	Rm	1	2254.000			1916.000	5844.00	6078.00	11645448.00	
<b>Total of TCS I D</b>										<b>105123202.63</b>	



## Itemized Cost Estimate :: Hunli-Anini (Km 120 to Km 131)

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Quantity	Rate	Rate with Diesel Transportation	Amount	Remarks
<b>Bill No. 2 : Bridges</b>											
i)	Bridge at Km 120+900	Sqm	1	92.000	As per measurement sheet attached					116466881.30	
ii)	Bridge at Km 126+650	Sqm	1	46.000	12.900		593.400	75000.00	76000.00	46285200.00	
<b>Total of Bridge</b>										<b>162752081.30</b>	
<b>Bill No. 3 : Culverts</b>											
3.01	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of side	Cum					9775.400	70.00	73.00	713604.00	
3.02	Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications. PCC M15 in foundation	Cum					673.400	10764.00	11195.00	7538713.00	
3.03	RR Masonry work in wing wall, Return wall	Cum					7857.524	6647.00	6913.00	54319060.00	
3.04	Plain/Reinforced cement concrete in sub-structure complete as per drawing and Technical Specifications. RCC M20 in Slab Culvert in Sub Structure	Cum					4459.536	13268.00	13799.00	61537137.00	
3.05	RCC M15 in Slab Culvert in Superstructure	Cum					1505.547	14319.00	14892.00	22420604.00	
3.06	Tar Paper Bearing	Sqm					310.600	90.00	94.00	29215.00	
3.07	Floor Apron	Cum					999.000	2238.00	2328.00	2325672.00	
3.08	Stone Pitching	Cum					906.182	2238.00	2328.00	2109591.00	
3.09	Filter Media	Cum					4284.600	3533.00	3674.00	15741620.00	
3.10	Weep Holes	Nos					6660.000	164.00	171.00	1138860.00	
3.11	HVSD	Tonne					289.870	76011.00	79051.00	22887151.00	
<b>TOTAL OF BILL NO. - 03</b>										<b>190761227.00</b>	



## Itemized Cost Estimate :: Hunli-Anini (Km 120 to Km 131)

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Quantity	Rate	Rate with Diesel Transportation	Amount	Remarks
<b>Bill No. 4 : Junctions</b>											
4.01	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.	Sqm	1	7150.000			4290.000	3.71	4.00	17160.00	60% of Qty
4.02	Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000m to match link road profile	Cum	1	7150.000		0.200	715.000	207.00	215.00	153725.00	
4.03	Construction of embankment with approved materials deposited at site <u>from roadway cutting and excavation</u> from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.	Cum	0	7150.000		0.200	0.000	116.00	121.00	0.00	
4.04	Construction of sub-grade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2	Cum	1	7150.000		0.200	715.000	264.00	275.00	196625.00	50% of Qty
4.05	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by <u>mix in place method</u> with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401.	Cum	1	7150.000		0.200	1430.000	2321.00	2414.00	3452020.00	
4.06	Providing, laying, spreading and compacting graded stone aggregate to <u>wet mix macadam</u> specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.	Cum	1	7150.000		0.250	1788.000	3139.00	3265.00	5837820.00	
4.07	Providing and applying Prime coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying Prime at the rate of 0.60 kg/sqm using mechanical means.	Sqm	1	7150.000			7150.000	38.00	40.00	286000.00	
4.08	Providing and applying <u>tack coat</u> with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.	Sqm	2	7150.000			14300.000	14.00	15.00	214500.00	
4.09	Providing and laying dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 507 complete in all respects.	Cum	1	7150.000		0.060	429.000	12457.00	12955.00	5557695.00	
4.10	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 509 complete in all respects.	Cum	1	7150.000		0.040	286.000	14355.00	14929.00	4269694.00	
<b>TOTAL OF BILL NO. - 4</b>										<b>19985239.00</b>	





## Itemized Cost Estimate :: Hunli-Anini (Km 120 to Km 131)

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Quantity	Rate	Rate with Diesel Transportation	Amount	Remarks
<b>Bill No. 5 : Bus Bays</b>											
5.01	Clearing and grubbing road land including uprooting rank vegetation, grass, bushes, shrubs, saplings and trees girth up to 300 mm, removal of stumps of trees cut earlier and disposal of unserviceable materials and stacking of serviceable material to be used or auctioned, up to a lead of 1000 metres including removal and disposal of top organic soil not exceeding 150 mm in thickness.	Sqm	4	240.000			960.000	3.71	4.00	3840.00	
5.02	Excavation for roadwork in soil with hydraulic excavator of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location within all lifts and lead upto 1000m to match link road profile	Cum	4	240.000		0.000	0.000	207.00	215.00	0.00	
5.03	Construction of embankment with approved materials deposited at site <u>from roadway cutting and excavation</u> from drain and foundation of other structures graded and compacted to meet requirement of table 300-2.	Cum	4	240.000		0.200	192.000	116.00	121.00	23232.00	
5.04	Construction of sub-grade and earthen shoulders with approved material obtained from borrow pits with all lifts & leads, transporting to site, spreading, grading to required slope and compacted to meet requirement of table No. 300-2	Cum	4	240.000		0.200	192.000	264.00	275.00	52800.00	
5.05	Construction of granular sub-base by providing coarse graded material, spreading in uniform layers with motor grader on prepared surface, mixing by <u>mix in place method</u> with rotavator at OMC, and compacting with vibratory roller to achieve the desired density, complete as per clause 401.	Cum	4	240.000		0.200	192.000	2321.00	2414.00	463488.00	
	For Ramp	Cum	4	76.000	2.000	0.200	122.000	2321.00	2414.00	294508.00	
5.06	Providing, laying, spreading and compacting graded stone aggregate to <u>wet mix macadam</u> specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density.	Cum	4	240.000		0.250	240.000	3139.00	3265.00	783600.00	
	For Ramp	Cum	4	76.000	2.000	0.250	152.000	3139.00	3265.00	496280.00	
5.07	Providing and applying Prime coat with bitumen emulsion on prepared surface of granular Base including clearing of road surface and spraying Prime at the rate of 0.60 kg/sqm using mechanical means.	Sqm	4	240.000			960.000	38.00	40.00	38400.00	
5.08	Providing and applying <u>tack coat</u> with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per sqm on the prepared bituminous/granular surface cleaned with mechanical broom.	Sqm	8	240.000			1920.000	14.00	15.00	28800.00	
5.09	Providing and laying dense graded bituminous macadam with 100-120 TPH batch type HMP producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 4.0 to 4.5 per cent by weight of total mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRTH specification clause No. 507 complete in all respects.	Cum	4	240.000		0.060	57.600	12457.00	12955.00	746208.00	
5.10	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.6 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH specification clause No. 509 complete in all respects	Cum	4	240.000		0.040	38.400	14355.00	14929.00	573273.60	
5.11	Bus Shelters	Nos	4				4.000	100000.00	104000.00	416000.00	
5.12	Chequered Tiles	Sqm	4	76.000	1.500		456.000	575.00	598.00	272688.00	
5.13	Construction of cement concrete kerb with top and bottom width 115 and 165 mm respectively, 250 mm high in M 20 grade PCC on M-10 grade foundation 150 mm thick, foundation having 50 mm projection beyond kerb stone, kerb stone laid with kerb laying machine	Rm	8	76.000			608.000	1120.00	1165.00	708320.00	
5.14	Enamel Paint	Sqm					50.000	40.00	42.00	2100.00	
<b>TOTAL OF BILL NO. - 5</b>										<b>4903538.00</b>	



## Itemized Cost Estimate :: Hunli-Anini (Km 120 to Km 131)

Item	Description	Unit	No	Length (m)	Breadth (m)	Height (m)	Quantity	Rate	Rate with Diesel Transportation	Amount	Remarks
<b>Bill No -6</b>	<b>Traffic Signages, Road Marking and other appurtenances</b>			10300.000							
6.01	Road Marking: - Lane, Centre Line, Pedestrian crossing										
	Centre line on straight portion	Sqm	0.33	8240.000	0.150	-	407.880				
	Centre line on curve portion	Sqm	0.5	2060.000	0.150	-	154.500				
	Edge Line at Paved Shoulder	Sqm	2	10300.000	0.100	-	2060.000				
	Add 15% for Misc. including Pedestrian X-ings etc						393.357				
	<b>Total</b>						3016.000	842.00	876.00	2642016.00	
6.02	Directional Arrows, letter marking etc	Nos.					25.000	542.65	564.00	14100.00	
6.03	Advance Direction signs size 1800X1200 mm	Nos.					15.000	17103.00	17787.00	266805.00	
6.04	Village name boards size 600X900 mm	Nos.					18.000	2174.00	2281.00	40698.00	
6.05	Place Identification signs size 1200X900 mm	Nos.					20.000	8551.00	8893.00	177860.00	
6.06	90 cm Triangle	Nos.					20.000	3523.00	3664.00	73280.00	
6.07	90 cm Octagon	Nos.					20.000	3586.00	3729.00	74580.00	
6.08	Hazard plate 300X900 mm	Nos.					40.000	1087.00	1130.00	45200.00	
6.09	800 x 600 mm Size	Nos.					15.000	3548.00	3690.00	55350.00	
6.10	60 Cm circular	Nos.					15.000	3510.00	3650.00	54750.00	
6.11	Supply and fixing of Micro Prismatic type Retro-Reflective sign plate which is to be fixed on Overhead/ Cantilever structures with the help of G.I. nut bolts	Sqm					74.900	713.00	742.00	55576.00	
6.12	Over Head Sign Truss	MT					8.500	231880.00	241155.00	2049818.00	
6.13	Boundary Stone	Nos.	1	10300.000	0.005		52.000	350.00	364.00	18928.00	
6.14	5th Km Stone -New	Nos.	1	10300.000			1.000	5891.00	6127.00	6127.00	
6.15	Ordinary Km Stone	Nos.	1	10300.000			9.000	3700.00	3848.00	34632.00	
6.16	Hectometer Stone	Nos.	1	10300.000			42.000	903.00	939.00	39438.00	
6.17	Delinator	Nos.					105.000	725.00	754.00	79170.00	
6.18	Bollards	Nos.					105.000	4437.56	4615.00	484149.00	
6.19	RCC Guard Post	Nos.					60.000	3587.00	3730.00	223800.00	
6.20	Enamel Paint	Sqm					25.000	40.00	42.00	1050.00	
	<b>TOTAL OF BILL NO. -6</b>									6437327.00	
<b>Bill No. 6 :</b>	<b>Other Miscellaneous Works</b>										
6.01	Catch Pit (2 x 2 mtrs)	Nos.	10				10.000	27165.00	28252.00	282520.00	
6.02	Catch Pit above 2 x 2 mtrs.	Nos.	10				10.000	44842.00	46636.00	466360.00	
6.03	Traffic Aid Post	LS	1				1.000	250000.00	260000.00	260000.00	
6.04	W Type metal Crash Barrier	LM	1	6016.000			6016.000	4130.00	4295.00	25838720.00	
6.05	Providing half perforated PVC pipe under drainage layer as per drawing	Lm	1	1100			1100.000	445.00	463.00	509300.00	
	<b>TOTAL OF BILL NO. -06</b>									27356900.00	





Sl. No.	DESIGN CHAINAGE (Km)		Length (m)	Bridge deduction	Length (m)	TCS TYPE	Land use Pattern	Shoulder
	FROM	TO						
1	120000	120350	350		350	TCS II	Widening in Open areas	1.0 m Hard Shoulder on hill side and 2.0 m on Valley side
2	120350	120650	300		300	TCS I	Built-up Area	1.5 m Hard Shoulder with 1.0 m RCC Drain on either side.
3	120650	126700	6050	92	5958	TCS II	Widening in Open areas	1.0 m Hard Shoulder on hill side and 2.0 m on Valley side
4	126700	129000	2300	46	2254	TCS III	New 2 lane in open area	1.0 m Hard Shoulder on hill side and 2.0 m on Valley side
5	129000	130300	1300		1300	TCS I	Built-up Area	1.5 m Hard Shoulder with 1.0 m RCC Drain on either side.
			10300	138	10162			

1600	TCS I	Built-up Area
6308	TCS II	Widening in Open areas
2254	TCS III	New 2 lane in open area

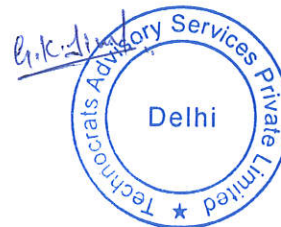


## Title

Bridge No. : steel girder bridge

SPAN : 45.925 exp/exp

Bill No. 2 : Bridges										
SL. No.	Discription	Units	No	L (m)	B (m)	H (m)	Area (sqm)	Quantity	Rate (Rs) / Unit	Amount (Rs)
1	Site Clearances	sqm	1	56.93	14.00		796.95		3.71	2955.41
2	Excavation for structures									
	A) Ordinary soil ( Mechanical means )	Cum								
	1) Abutments	Cum	2	13.00	15.00	3.00		1170.00		
	2) Piers	Cum	0	0.00	0.00	0.00		0.00		
	3) Return wall & Median wall	Cum	4	11.00	13.00	3.00		1716.00		
							Sub Total	2886.00	70.00	202020.00
	B) Ordinary rock ( Not requiring blassting ) Mechanical means	Cum								
	1) Abutments		0	13.00	15.00	1.50		0.00		
	2) Piers		0	0.00	0.00	1.50		0.00		
	3) Return wall/Wing wall/retaining Walls		0	11.00	13.00	1.50		0.00		
							Sub Total	0.00		
							TOTAL	2886.00	89.00	256854.00
3	Providing Back filling behind abutments, wing walls and return walls with selected imported granular material of approved quality including all leads and lifts complete as per Technical Specification Clause 305.	Cum	2	8.00	9.80	12.00		1881.60	2055.00	3866688.00
4	Providing and laying of filter media	Cum								
	a) Behind Abutment		2	0.60	11.20	7.00		94.08		
	b) Behind Return wall		4	8.00	0.60	7.00		134.40		
							Sub Total	228.48	3533.00	807219.84
5	Plain cement concrete (PCC) M15 leveling course	Cum								
	a) Below Approach Slab		2	13.50	12.00	0.10		32.40	10351.00	335372.40
	b) Below Abutment base		2	3.50	12.00	0.15		12.60	10764.00	135626.40
	c) Below Pier base		0	0.00	0.00	0.10		0.00	10764.00	0.00
	d) Below retaining / wing wall base		2	8.00	3.50	0.10		5.60	10764.00	60278.40
							Sub Total	50.60		
6	Providing Reinforced Cement Concrete M 30 grade in approach slabs	Cum	2	3.50	12.00	0.30	42.00	25.20	17790.00	448308.00
7	Structural Cement concrete for Reinforced Cement Concrete M35 Grade in Open foundations									
	a) Abut. Foundation	Cum	2					441.00		
							Sub Total	441.00	15862.00	6995142.00
8	Structural Cement Concrete for Reinforced Cement Concrete M35 Grade Conc for Sub structure	Cum								
	a) Abutment Bracket							3.24		
	b) Abutment Cap							48.00		
	c) Dirt wall							23.51		
	d) Abutment Stem							334.99		
	e) Counterfort Walls							0.00		
	f) Front counterfort							0.00		
	g) Chamfer (300 x 300 ) b/w abt & Ret wall							0.00		
	h) Pedestals ( Piers and Abut)							3.24		
	i) Pier cap							0.00		
	j) Pier Wall flared portion							0.00		
	k) Pier wall/pier							0.00		
							Sub Total	412.98	15862.00	6550688.76



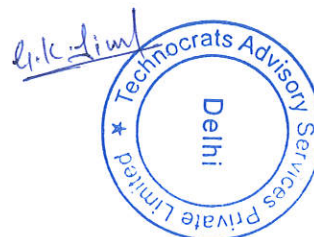


## Title

Bridge No. : steel girder bridge

SPAN : 45.925 exp/exp

Bill No. 2 : Bridges										
SL. No.	Discription	Units	No	L (m)	B (m)	H (m)	Area (sqm)	Quantity	Rate (Rs) / Unit	Amount (Rs)
9	Return wall RCC M 30 Grade Conc.									
	a) Wall	Cum	4	6.00	1.00	9.00		216.00		
								<b>Sub Total</b>	<b>216.00</b>	<b>15434.00</b>
10	Bearings									
	a) Providing and fixing in position Tar Paper Bearing for slabs	Sqm	4	0.20	12.00		2.40	9.60	250.00	2400.00
	c) Supplying, fitting and fixing in position true to line and level Pot PTFE bearings confirming to IRC : 83 (part-III)	Nos	8					8.00	89750.00	718000.00
11	Structural Cement Concrete of Super Structure	Cum								
	a) Deck Slab M 35 Grade Conc		1					126.75	16704.00	2117282.11
								<b>Sub total</b>	<b>126.75</b>	
12	Construction of Reinforced cement concrete Crash barrier of M 40 grade	Cum	2	52.93			0.32	33.87	6193.00	209769.30
	Footpath Slab of M 35 grade in situ.	Cum	1	45.93	1.25	0.30		17.22	16158.00	278271.06
	Kerb of M 20 grade in situ.		2	52.93			0.12	12.70	14162.85	179896.52
13	Expansion Joints									
	b) Providing and laying of Strip seal Expansion Joint	Rm	2	12.00				24.00	18536.00	444864.00
14	Bituminous Concrete Wearing Course of total 65 mm thick comprising two layers of 40 mm thick Bituminous Concrete laid over a coat of 25 mm thick Mastic asphalt as per Technical Specification Clauses 509, 515, 521, & 2702.	Sqm	2.00	52.93	9.50		502.79	1005.58	1513.89	1522329.94
15	Providing AC Weep holes in Abutments and Return walls / Wing walls with 100mm dia pipes	Rm								
	a) For Abutment (@ 3 Nos per sqm)		100					80		
	b) For Return / Retaining / wing walls		100					40		
								<b>Sub Total</b>	<b>120</b>	<b>164.00</b>
16	Providing and fixing drainage spouts	Nos	12					12.00	1221.00	14652.00
17	HYSD reinforcement									
	a) Superstructure @ 100kg/cum	tons	13					12.68	77416.00	981271.02
	b) Substructure @ 110kg/cum	tons	45					45.43	76011.00	3453012.51
	c) Return wall @ 120kg/cum	tons	26					25.92	76011.00	1970205.12
	d) Footing @ 120kg/cum	tons	53					52.92	75855.00	4014246.60
18	High tensile steel	tons	139.00					139.00	134459.00	18689801.00
19	Filter material underneath stone pitching on slopes	Cum	2	11.708	17.916	0.12	209.76	50.34	3533	177858.93
20	a) Stone Pitching 300 mm thick on slopes	Cum	2	11.708	17.916	0.3	209.76	125.86	3533	444647.33
21	Painting of Bridge marking	Nos	4					4.00	89.00	356.00
								<b>Amount per Bridge</b>		<b>58233440.65</b>
	Single Span		0					<b>Total Amount</b>		<b>0.00</b>
	Double Span		2							<b>116466881.30</b>
	<b>Total Span</b>									<b>116466881.30</b>



Major Junctions					
S.No.	Junction Type	Nos	Per Junction Area (Sqm)	Total Area	Remarks
	Y Junctions	26	275	7150	
Total				7150	.....1

*[Handwritten Signature]*

