

REC TRANSMISSION PROJECTS COMPANY LIMITED

PRELIMINARY SURVEY REPORT

Based on Walk over Survey, & Satellite images



CONSULTANT

M/S. GEOINFOSYS TECHNOLOGIES

Disclaimer to the Survey Report

Bidders may please note that the REC Transmission Projects Company Ltd. (Employer) has carried out a survey of the Transmission System associated with the Project. However, Bidders in their own interest should carry out required surveys and field investigation for submission of their Bid. For carrying out required survey, the address and coordinate of each location of sub-station has been provided by the Employer . The coordinate of location of the sub-station is only for the purpose of facilitating Bidders to locate the sub-station and the same should not be considered as the point of termination of transmission line. For exact point of termination of transmission line, the Bidder shall have to coordinate with the agency responsible for construction of sub-station / switchyard who shall provide the inter- connection facility. Bidders in their own interest should visit the project site to confirm the location of sub-stations and any apprehension in this regard should be brought to the notice of the Employer.

Failure to verify the location of sub-station, investigate the route of the Transmission Lines associated with the Project and to examine, inspect site or subsurface conditions fully shall not be grounds for a Bidder to alter its Bid after the Bid Deadline nor shall it relieve a Bidder from any responsibility for appropriately eliminating the difficulty or costs of successfully completing the Project.

The Employer, its authorized representative, any other agency, employees or advisors/consultants make any representation or warranty, express or implied, or accept any responsibility or liability, whatsoever, in respect of any statements or omissions made in the Survey Report, or the accuracy, completeness or reliability of information contained therein, and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of such Survey Report, even if any loss or damage is caused to the Bidders by any act or omission on their part.



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CHAPTER-1
SCOPE OF WORK

SCOPE OF WORK FOR ROUTE ALIGNMENT SURVEY

Identification of three alternative route alignments and selection of optimized route alignment for

1. 220 Transmission Line From Phayng (PGCIL) To Diskit (Nubra)S/C Line on DC Tower
2. 220 KV Transmission Line From Drass To Padum (Zanaskar) S/C Line on DC Tower

SELECTION CRITERIA FOR TRANSMISSION LINE ROUTE

- The alignment of the transmission line should be most economical from the point of view of construction and maintenance.
- The alignment of the transmission line selected should be the shortest possible one.
- Routing of transmission line through protected/reserved forest area should be avoided. In case it is not possible to avoid the forests or areas having large trees completely, and then keeping in view of the overall economy, the route should be aligned in such a way that cutting of trees is minimums.
- The route should have minimum crossings of Major rivers, Railway lines, National/State highways, overhead EHV power line and communication lines.
- The number of angle points shall be kept to a minimum.
- Marshy and low lying areas, river beds and earth slip zones shall be avoided to minimize risk to the foundations.
- It would be preferable to utilize level ground for the alignment.
- Crossing of power lines shall be minimums. Alignment will be kept at a minimum distance of 300 m from power lines to avoid induction problems on the lower voltage lines.
- Crossing of communication line shall be minimized and it shall be preferably at right angle. Proximity and parallelism with telecom lines shall be eliminated to avoid danger of induction to them.
- Areas subjected to flooding such as nalla shall be avoided.
- Restricted areas such as civil and military airfield shall be avoided. Care shall also be taken to avoid aircraft landing approaches.
- All alignment should be easily accessible both in dry and rainy seasons to enable maintenance throughout the year.

- Certain areas such as quarry sites, tea, tobacco and saffron fields and rich plantations, gardens & nurseries which will present the Owner problems in acquisition of right of way and way leave clearance during construction and maintenance should be avoided.
- Angle points should be selected such that shifting of the point within 100 m radius is possible at the time of construction of the line.
- The line routing should avoid large habitations, densely populated areas, Forest, Animal/Bird sanctuary, reserve coal belt areas, oil pipe line/underground inflammable pipe lines etc. to the extent possible.
- The areas requiring special foundations and those prone to flooding should be avoided.

Selecting the best possible land can drive the following benefits:

- Construction cost of substation can be brought to the minimum.
- Material estimation and procurement can be done fairly on realistic basis.
- Any possible delay/hindrance likely to come during the execution of the work can be avoided.
- Proper planning can be done for transmission of lines at switchyards keeping provisions of future lines etc.
- Approvals from PTCC, Railways, Civil Aviation, Forest authorities & Local Bodies etc. can be obtained faster.
- Preparation of master Network and fixing construction/ erection targets can be done on realistic basis, which will help in the judicious planning of material flow, cash flow manpower requirements.
- Appreciable time can be saved during construction of Substation

CHAPTER-2
GEOGRAPHICAL INFORMATION

General Information

Ladakh is the highest altitude plateau region in India (much of it being over 3,000 m), incorporating parts of the Himalayan and Karakoram mountain ranges and the upper Indus River valley.

The mountain ranges in this region were formed over a period of 45 million years by the folding of the Indian Plate into the stationary landmass of Asia. While the Himalayas were formed from the base material of the Indian plate, the Zaskar Range consists of layers of sediment from the ocean floor, and the Ladakh Range of granite was born of the immense heat generated by the friction between the two plates. In Ladakh, the suture zone between the continental masses runs a little to the south of the Indus Valley. The drift continues and is the cause of the frequent earthquakes in the Himalayan region. Crossing the Himalayas by the dip of the Zoji-la, the crest-line of the range remains at a relatively modest level, the highest peaks near the pass being little more than 5000-5500 m above sea level. South-east of Zoji-la the scale increases, reaching a climax in the mighty massif of Nun-Kun, with two summits over 7000 m.

The Suru and Zaskar valleys form a great trough at the foot of the northern, heavily glaciated flank of the Himalayas, while opposite rise the mountains of the Zaskar range. The Suru River forms the western and northern boundary of the Zaskar range. The Suru, after receiving the combined waters of the Dras and Shingo Rivers a short distance north of Drass, joins the Indus at Marol in Baltistan, which is now on the Pakistan side of the Line of Control. Rangdum Monastery and the attendant village of Julidok is the last inhabited region in the Suru valley; it is also the destination of the nomadic herdspeople called Bakarwals, who trek up every summer from the Jammu region. From Rangdum the valley rises to 4400 metres at the Pensi-la, the gateway into Zaskar. Drass, the only town in the Suru valley, was an important staging post on the routes of the trade caravans before 1947, being more or less equidistant, at about 230 kilometres from Srinagar, Leh, Skardo, and Padum. Rangdum, though on the northern side of the Pensi-la, is regarded as socially and culturally part of Zaskar rather than of Suru.

Zaskar consists of troughs of two rivers, the Stod (Doda) and the Lungnak (Tsarap Lingti). One of the Lungnak's main tributaries is the Tsarap, which drains portions of northeastern Himachal Pradesh and valleys just 20 kilometers northwest of Tso Moriri (lake). A little away north of Bara-lacha-la it is joined by the Lingti and another tributary; it then flows north-west before turning abruptly south through a gorge and past Phugtal Gompa to join the Kargyak river descending from Shingo-la, that goes into Himachal Pradesh. The Stod carries meltwater of the Drang-drung glacier below the Pensi-la, and flows down a broad open valley, approaching the Lungnak. As the Zaskar river, their united waters flow northwards through a gorge in the Zaskar range, to join the Indus at Nyemo in Central Ladakh. Zaskar suffers heavy snowfall, and the Pensi-la opens only in June and is blocked again in mid-October. The entire valley is virtually treeless.

The Indus River is the backbone of Ladakh; all the major places historically and currently such as Shey, Leh, Basgo, and Tingmosgang are situated close to the river.

The Ladakh Range has no major peaks; its average height is a little less than 6000 metres, and few of its passes are less than 5000 m. Within Ladakh it forms the northern boundary wall of the Indus valley, though when the river enters present-day Indian-controlled Ladakh at Demchok, some 250 km south-east of Leh, it is actually flowing along the foot of the northern flank of these granite mountains, which it crosses by a

great gorge close to its confluence with the Hanle River. The Panggong range runs parallel to the Ladakh range some 100 km northwest from Chushul, along the southern shore of the Panggong Lake. It is divided from the main range by the Tangtse river. Its highest range is 6700 m, and the northern slopes are heavily glaciated.

The Shyok River rises near the Karakoram Pass. The region comprising the valley of Shyok and Nubra Rivers is known as Nubra. The Karakoram Range in Ladakh is not as mighty as in Baltistan. The massifs to the north and east of the Nubra-Siachen valley include the Apsarasas group (highest point 7245 m), the Rimo group (highest point 7385 m) and the Teram Kangri group (highest point 7464 m), together with Mamostong Kangri (7526m) and Singhi Kangri (7202 m.) North of the Karakoram lie the Kun Lun Mountains. Thus, between Leh and eastern Central Asia, there is a triple barrier: the Ladakh Range, the Karakoram Range, and the Kun Lun. Nevertheless, a major trade route was established between Leh and Yarkand.

The enormous mass of the Himalayas creates a rain shadow, denying entry to the moisture-laden clouds of the Indian monsoon. Ladakh is thus, a high altitude desert. The main source of water is the winter snowfall on the mountains. The regions on the north flank of the Himalayas—Dras, the Suru valley and Zaskar—experience heavy snowfall and remain virtually cut off from the rest of the country for several months in the year. Summers are short, although long enough to grow crops. The proportion of oxygen is less than in many other places at a comparable altitude because of lack of vegetation. There is little moisture to temper the effects of rarefied air.

Naked barley (Urdu: grim), normal barley and wheat are the staple crops all over Ladakh, along with mustard (for oil), lentils and other pulses, and vegetables. The extreme limit of cultivation is at Korzok near Tso Moriri (lake), at 4560 m, said to be among the highest fields in the world.

Historic Ladakh consists of a number of distinct areas (mainly under Indian rule), including the fairly populous main Indus valley, the more remote Zaskar (in the south) and Nubra valleys (to the north over Khardung La in the Ladakh mountain range, a high motorable pass at 5,359 metres (17,582 ft)), the almost deserted Aksai Chin (under Chinese rule) and the predominantly Shi'iteMuslim Drass and Suru valley areas in the west (Drass being the second most important town in Ladakh).

The Baltistan and Skardu area, under Pakistani rule and entirely Muslim, used to be included in what is geographically referred to as Ladakh. Before partition, Baltistan was one of the districts of Ladakh. Skardo was the winter capital of Ladakh while Leh was the summer capital. People of Baltistan and Ladakh speak very similar languages closely related to Tibetan.

Climate of Leh Ladakh

The desert type of climate is typical of Leh Ladakh with dry winds blowing throughout the day and summers being hot and humid. On your visit to Leh, you will face the cold desert climate, especially from October to March. In winters the temperatures are extreme in Leh, dipping below freezing point. However, winter days are sunny and bright. The lowest winter temperature recorded in Leh is around minus 23 degree Celsius. Mountaineers and trekkers enjoy the climate of Leh Ladakh to the fullest! Considering the extremities that you face here, make sure to carry winter shields, woolen wear and snow boots. During the months of December and January the inflow of tourist is comparatively low.

In peak winters the temperature in Ladakh goes down to - 30 Degree Celsius in Leh and Drass and - 50 Degree Celsius in Dras. Temperatures remain in minus for almost 3 months from December to the month of February. But on clear sunny days it can become very hot and one can get sun burnt. Rainfall is very less due to the geographical location of Ladakh. The rainfall is around 50 mm annually. It is the melting snow which makes the survival of human and animals possible. In the desert like landscape one may come across the dunes or perhaps occasionally to the dust storms.

Over the past few years the climate has been changing, with much more rain and snow, creating problems for inhabitants of a traditionally desert region. Average summer and winter temperature-s are:

Agriculture

Leh is located at an average elevation of about 3500 metres, which means that only one crop a year can be grown there, while two can be grown at Khalatse. By the time crops are being shown at Leh in late May, they are already half-grown at Khalatse. The main crop is grim (naked barley - *Hordeum vulgare* L. var. *nudum* Hook. f., which is an ancient form of domesticated barley with an easier to remove hull) - from which tsampa, the staple food in Ladakh, is made. The water for agriculture of Ladakh comes from the Indus, which runs low in March and April when barley-fields have the greatest need for irrigation.

CHAPTER-3

220 KV Transmission Line from Drass to Padum S/C Line on D/C Tower

CHAPTER-3.1
SUBSTATION CO-ORDINATES

Co-ordinates of Substations

Drass Existing Substation

(Latitude 34° 25' 35.75" and Longitude 75° 43' 49.00")

&

Padum Proposed Substation

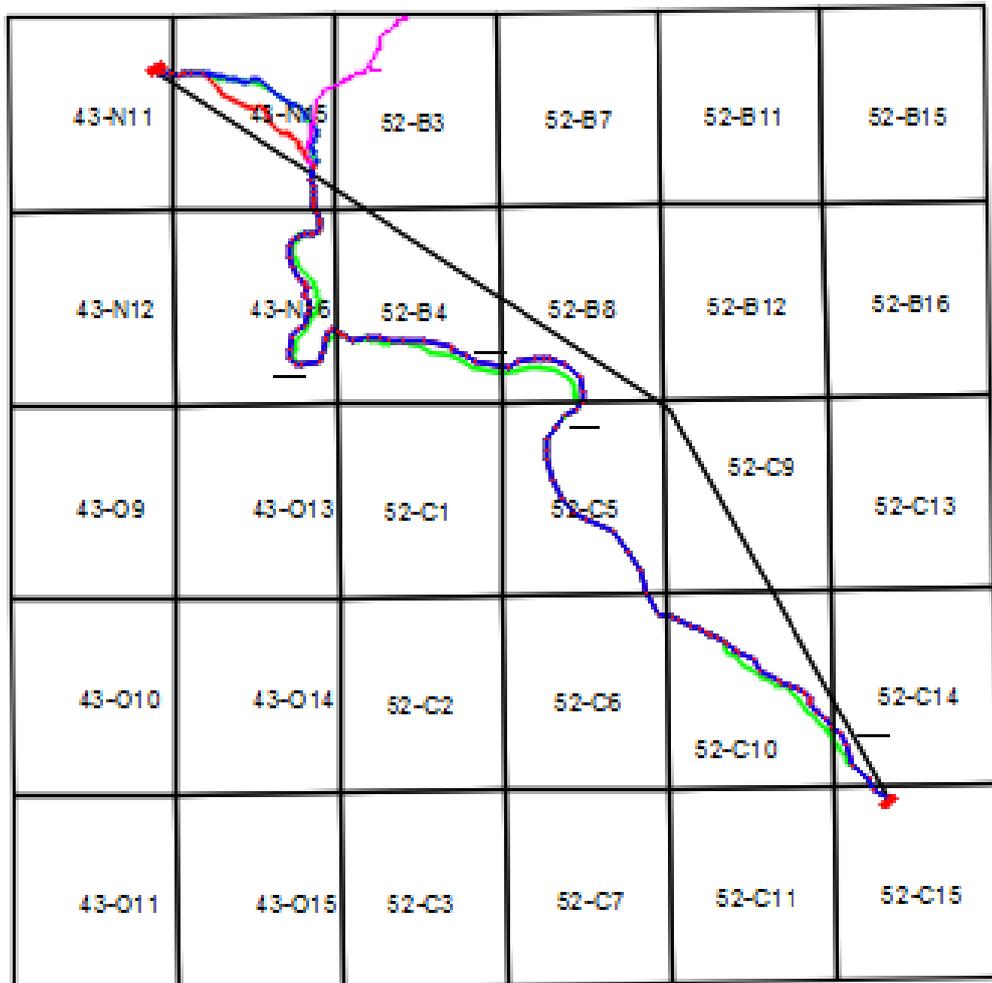
(Latitude 33° 28' 40.73" and Longitude 76° 49' 57.27")

CHAPTER-3.2
INDEX MAP OF SOI TOPOSHEETS

INDEX MAP OF SOI TOPOSHEETS

Route Selection

Survey of India Toposheet Index Map (1:50000 scale)



CHAPTER-3.3
COMPARATIVE STATEMENT FOR
THREE ALTERNATIVE ROUTES

Comparative Statement for Three Alternative Routes

Sr. No.	Description	Alt-I(Proposed) (Red)	Alt-II	Alt-III
1	Line Length	195.300 km	192.932 km	197.704 km
	a) Plain	10%	10%	5%
	b) Hilly	90%	90%	95%
	c) Wind Zone	2	2	2
	B-Line	150.217 km	150.217 km	150.217 km
2	a) Angle Points	148	166	159
3	Forest	Nil	Nil	Nil
	a) Reserve /Protected Forest	Record Not Available at Forest Office	Record Not Available at Forest Office	Record Not Available at Forest Office
4	Transportation & Maintenance	Available	Available	Available
5	Power Line crossings (66 KV & Above)	AP29 - AP30 (66 KV S/C)	AP20 -AP21 (66 KV S/C)	AP33 -AP34 (66 KV S/C)
		AP32 AP33(66 KV S/C)	AP33 -AP34 (66 KV S/C)	AP46 -AP47 (66 KV S/C)
6	Railway crossings	NILL	NILL	NILL
7	River crossings	AP2 -AP3	AP2 -AP3	AP2 -AP3
		AP43 -AP44	AP43 -AP44	AP35 -AP36
		AP48 -AP49	AP48 -AP49	AP43 -AP44
		AP49 -AP50	AP51 -AP52	AP48 -AP49
		AP53 -AP54	AP76 -AP77	AP84 -AP85
		AP78 -AP79	AP83 -AP84	AP56 -AP57
		AP110 -AP111	AP91 -AP92	AP50 -AP51
		AP71 -AP72	AP114 -AP115	AP98 -AP99
		AP116 -AP117	AP125 -AP126	AP99 -AP100
		AP142 -AP143	Ap126 -AP127	AP109 -AP110
			AP127 -AP128	AP113 -AP114
			AP129 -AP130	AP126 -AP127
			AP137 -AP138	AP127 -AP128
			AP145 -AP146	AP128 -AP129
		AP130 -AP131		
8	Air Ports	NIL	NIL	NIL

Sr. No.	Description	Alt-I(Proposed) (Red)	Alt-II	Alt-III
9	NH Crossings	NIL	NIL	NIL
10	SH Crossings	NIL	NIL	NIL
11	Approaches for construction	Sufficient approach is available	Sufficient approach is available	Sufficient approach is available

CHAPTER-3.4

TOWER SCHEDULE & COORDINATES OF THREE ALTERNATIVE ROUTES

**220 KV Transmission Line From Drass To Padum (Zanaskar) S/C Line on DC Tower
(TOWER SCHEDULE)**

ALTERNATIVE-1(PROPOSED)

AP NO.	EASTING	NORTHING	LONGITUDE			LATITUDE			ANGLE OF DEVIATION	SPAN IN MTR.	COMMU LENGTH (Mtr)
			DEG	MIN	SEC	DEG	MIN	SEC			
Gantry	567101.34	3809699.88	75	43	49.00	34	25	35.75	35.75419		0
										131.6874455	
D/E Tower	567233.00	3809697.18	75	43	54.16	34	25	35.64	35.63571		131.6874455
										190.3008729	
AP-1	567412.12	3809761.45	75	44	1.20	34	25	37.68	37.68008		321.9883184
										244.8652972	
AP-2	567656.33	3809743.49	75	44	10.76	34	25	37.04	37.03954		566.8536157
										901.6108314	
AP-3	568554.89	3809817.57	75	44	45.98	34	25	39.23	39.23105		1468.464447
										401.7860524	
AP-4	568913.94	3809637.25	75	44	60.00	34	25	33.29	33.29127		1870.250499
										903.1388366	
AP-5	569787.14	3809406.66	75	45	34.14	34	25	25.59	25.59451		2773.389336
										440.9117349	
AP-6	570196.65	3809570.09	75	45	50.23	34	25	30.80	30.80002		3214.301071
										526.2917443	
AP-7	570706.69	3809699.85	75	46	10.25	34	25	34.89	34.88714		3740.592815
										897.7546426	
AP-8	571596.24	3809578.72	75	46	45.06	34	25	30.73	30.73426		4638.347458
										1738.664946	
AP-9	573334.90	3809578.04	75	47	53.17	34	25	30.27	30.27296		6377.012404
										2810.966653	
AP-10	575382.55	3807652.24	75	49	12.78	34	24	27.23	27.22575		9187.979057
										1053.970591	
AP-11	575682.00	3806641.71	75	49	24.19	34	23	54.34	54.34251		10241.94965
										1753.629612	
AP-12	577313.03	3805997.54	75	50	27.86	34	23	33.00	32.99661		11995.57926
										2281.841214	
AP-13	579301.70	3804878.62	75	51	45.36	34	22	56.13	56.1316		14277.42047
										1084.485459	
AP-14	580378.78	3804752.10	75	52	27.49	34	22	51.73	51.72517		15361.90593
										834.9913925	
AP-15	581160.18	3805046.43	75	52	58.18	34	23	1.06	1.06012		16196.89733
										764.7802004	
AP-16	581895.11	3804834.85	75	53	26.89	34	22	53.98	53.98322		16961.67753
										269.1411822	
AP-17	582029.05	3804601.40	75	53	32.05	34	22	46.37	46.36673		17230.81871
										1283.323723	
AP-18	582430.38	3803382.45	75	53	47.34	34	22	6.68	6.68215		18514.14243
										1003.490949	
AP-19	582852.44	3802472.03	75	54	3.55	34	21	37.01	37.00662		19517.63338
										1306.429908	
AP-20	583737.69	3801511.25	75	54	37.86	34	21	5.56	5.56124		20824.06329
										719.885478	

AP-21	584419.20	3801279.36	75	55	4.46	34	20	57.83	57.8344		21543.94877
										592.0265922	
AP-22	585004.62	3801367.58	75	55	27.40	34	21	0.53	0.52581		22135.97536
										394.6788979	
AP-23	585359.57	3801195.00	75	55	41.23	34	20	54.82	54.81841		22530.65426
										507.5449842	
AP-24	585712.92	3800830.65	75	55	54.93	34	20	42.89	42.88583		23038.19924
										685.0474113	
AP-25	586336.10	3800546.17	75	56	19.22	34	20	33.46	33.46473		23723.24665
										606.6349739	
AP-26	586707.26	3800066.33	75	56	33.57	34	20	17.78	17.77661		24329.88163
										847.9951234	
AP-27	586861.46	3799232.47	75	56	39.30	34	19	50.66	50.66142		25177.87675
										358.5354006	
AP-28	587050.70	3798927.95	75	56	46.59	34	19	40.72	40.71895		25536.41215
										853.2045194	
AP-29	587784.79	3798493.13	75	57	15.16	34	19	26.38	26.38098		26389.61667
										81.50797955	
AP-30	587863.69	3798472.67	75	57	18.24	34	19	25.69	25.69274		26471.12465
										1086.819287	
AP-31	588222.13	3797446.66	75	57	31.88	34	18	52.28	52.27695		27557.94393
										1170.325962	
AP-32	588893.87	3796488.31	75	57	57.81	34	18	20.96	20.96062		28728.2699
										204.4166443	
AP-33	588870.99	3796285.18	75	57	56.84	34	18	14.37	14.3737		28932.68654
										1713.092755	
AP-34	588678.83	3794582.90	75	57	48.69	34	17	19.17	19.1736		30645.7793
										1145.582663	
AP-35	589075.00	3793508.00	75	58	3.78	34	16	44.16	44.15811		31791.36196
										794.0591886	
AP-36	589034.00	3792715.00	75	58	1.88	34	16	18.43	18.42839		32585.42115
										620.9428331	
AP-37	588935.00	3792102.00	75	57	57.79	34	15	58.56	58.55969		33206.36398
										611.153009	
AP-38	588997.00	3791494.00	75	57	59.98	34	15	38.80	38.80363		33817.51699
										289.3527244	
AP-39	589128.00	3791236.00	75	58	5.01	34	15	30.39	30.38798		34106.86971
										336.2038083	
AP-40	589075.00	3790904.00	75	58	2.81	34	15	19.63	19.62692		34443.07352
										303.4221463	
AP-41	588906.00	3790652.00	75	57	56.11	34	15	11.50	11.49856		34746.49567
										168.8793843	
AP-42	588841.31	3790496.00	75	57	53.53	34	15	6.45	6.45438		34915.37505
										842.9859898	
AP-43	589407.00	3789871.00	75	58	15.41	34	14	45.99	45.99093		35758.36104
										855.0953137	
AP-44	589795.00	3789109.00	75	58	30.29	34	14	21.13	21.13442		36613.45636
										550.5569962	
AP-45	589742.00	3788561.00	75	58	28.01	34	14	3.36	3.36163		37164.01335
										667.0202354	
AP-46	589988.00	3787941.00	75	58	37.40	34	13	43.16	43.15858		37831.03359
										774.8612758	

AP-47	589731.00	3787210.00	75	58	27.08	34	13	19.51	19.50862		38605.89486
										692.9566663	
AP-48	589107.45	3786907.72	75	58	2.60	34	13	9.89	9.88883		39298.85153
										734.4673704	
AP-49	588377.00	3786831.00	75	57	34.03	34	13	7.62	7.62256		40033.3189
										829.7095823	
AP-50	587550.00	3786898.00	75	57	1.73	34	13	10.05	10.0492		40863.02848
										759.7590995	
AP-51	586843.82	3786617.76	75	56	34.03	34	13	1.16	1.16491		41622.78758
										1118.862261	
AP-52	585975.84	3785911.73	75	55	59.86	34	12	38.50	38.50474		42741.64984
										705.8042572	
AP-53	585547.80	3785350.53	75	55	42.94	34	12	20.41	20.41361		43447.4541
										2109.030338	
AP-54	585502.00	3783242.00	75	55	40.40	34	11	11.98	11.97836		45556.48444
										1248.443029	
AP-55	585971.00	3782085.00	75	55	58.31	34	10	34.28	34.27993		46804.92747
										1742.641674	
AP-56	586891.00	3780605.00	75	56	33.71	34	9	45.96	45.96034		48547.56914
										988.8832035	
AP-57	587532.00	3779852.00	75	56	58.46	34	9	21.32	21.32287		49536.45235
										496.4878613	
AP-58	587805.75	3779437.80	75	57	9.00	34	9	7.79	7.79395		50032.94021
										348.070498	
AP-59	588039.40	3779179.80	75	57	18.03	34	8	59.35	59.34766		50381.01071
										833.3816321	
AP-60	587725.00	3778408.00	75	57	5.48	34	8	34.39	34.38817		51214.39234
										479.5205993	
AP-61	587667.00	3777932.00	75	57	3.04	34	8	18.95	18.95339		51693.91294
										742.959622	
AP-62	588125.00	3777347.00	75	57	20.70	34	7	59.82	59.82377		52436.87256
										1274.985772	
AP-63	588416.43	3776105.77	75	57	31.63	34	7	19.44	19.44117		53711.85833
										829.8935558	
AP-64	588191.57	3775306.92	75	57	22.56	34	6	53.58	53.57658		54541.75189
										1676.350475	
AP-65	587516.32	3773772.58	75	56	55.65	34	6	3.97	3.97161		56218.10236
										684.385434	
AP-66	586987.87	3773337.70	75	56	34.87	34	5	50.01	50.01283		56902.4878
										1549.774771	
AP-67	585848.42	3772287.24	75	55	50.03	34	5	16.25	16.2505		58452.26257
										1908.478977	
AP-68	585365.00	3770441.00	75	55	30.52	34	4	16.46	16.45766		60360.74154
										1536.703623	
AP-69	585727.73	3768947.72	75	55	44.14	34	3	27.87	27.87382		61897.44517
										826.5392894	
AP-70	586255.36	3768311.50	75	56	4.49	34	3	7.06	7.06389		62723.98446
										856.9101075	
AP-71	587106.43	3768211.64	75	56	37.65	34	3	3.57	3.56848		63580.89456
										2543.162387	
AP-72	589596.00	3768731.00	75	58	14.94	34	3	19.67	19.67239		66124.05695
										1475.024747	

AP-73	590219.00	3770068.00	75	58	39.73	34	4	2.88	2.8829		67599.0817
										1698.283303	
AP-74	590586.52	3771726.04	75	58	54.69	34	4	56.59	56.59346		69297.365
										377.5366196	
AP-75	590535.45	3772100.11	75	58	52.84	34	5	8.75	8.75277		69674.90162
										1112.678225	
AP-76	591157.00	3773023.00	75	59	17.44	34	5	38.52	38.51799		70787.57985
										388.8920138	
AP-77	591511.00	3773184.00	75	59	31.31	34	5	43.63	43.63316		71176.47186
										882.7028021	
AP-78	592370.35	3772982.29	76	0	4.77	34	5	36.81	36.81306		72059.17466
										554.5782895	
AP-79	592731.00	3772561.00	76	0	18.68	34	5	23.02	23.02196		72613.75295
										474.4202511	
AP-80	593105.26	3772269.45	76	0	33.17	34	5	13.44	13.43777		73088.1732
										773.843233	
AP-81	593788.03	3771905.21	76	0	59.67	34	5	1.39	1.39399		73862.01643
										732.0858946	
AP-82	594504.56	3771755.11	76	1	27.56	34	4	56.29	56.28919		74594.10233
										2063.544155	
AP-83	596543.00	3772076.00	76	2	47.22	34	5	6.04	6.03583		76657.64648
										1562.633993	
AP-84	598083.00	3771811.00	76	3	47.19	34	4	56.92	56.91755		78220.28048
										1499.357858	
AP-85	599568.00	3771604.00	76	4	45.05	34	4	49.69	49.69284		79719.63833
										2130.952844	
AP-86	601692.00	3771776.00	76	6	7.98	34	4	54.54	54.54068		81850.59118
										3016.898572	
AP-87	604686.00	3771405.00	76	8	4.62	34	4	41.43	41.43427		84867.48975
										3808.01062	
AP-88	608393.51	3770535.89	76	10	28.87	34	4	11.86	11.86298		88675.50037
										233.3145537	
AP-89	608585.62	3770403.50	76	10	36.30	34	4	7.49	7.49378		88908.81492
										2206.583136	
AP-90	610645.70	3769612.88	76	11	56.30	34	3	41.05	41.05297		91115.39806
										1499.418267	
AP-91	611724.00	3768571.00	76	12	37.87	34	3	6.82	6.82069		92614.81633
										4740.016384	
AP-92	616393.63	3767757.20	76	15	39.59	34	2	38.57	38.57383		97354.83271
										1388.97843	
AP-93	617570.17	3768495.46	76	16	25.82	34	3	2.06	2.06461		98743.81114
										2746.909939	
AP-94	620226.36	3769195.58	76	18	9.75	34	3	23.70	23.70448		101490.7211
										1363.148883	
AP-95	621560.73	3768916.93	76	19	1.65	34	3	14.11	14.10508		102853.87
										1013.100023	
AP-96	622573.00	3768876.00	76	19	41.10	34	3	12.35	12.35173		103866.97
										1960.272685	
AP-97	624458.00	3768338.00	76	20	54.34	34	2	54.09	54.08846		105827.2427
										2952.623579	
AP-98	626813.00	3766557.00	76	22	25.24	34	1	55.26	55.26286		108779.8663
										2253.193286	

AP-99	627149.00	3764329.00	76	22	37.17	34	0	42.80	42.79856		111033.0595
										1423.673072	
AP-100	627080.00	3762907.00	76	22	33.73	33	59	56.67	56.67241		112456.7326
										1284.556348	
AP-101	626246.00	3761930.00	76	22	0.72	33	59	25.32	25.32252		113741.289
										1920.760522	
AP-102	624682.00	3760815.00	76	20	59.20	33	58	49.80	49.80357		115662.0495
										1897.000258	
AP-103	623309.00	3759506.00	76	20	5.04	33	58	7.90	7.89788		117559.0497
										2099.814265	
AP-104	622089.83	3757796.37	76	19	16.69	33	57	12.92	12.91653		119658.864
										1712.46827	
AP-105	622161.21	3756085.39	76	19	18.61	33	56	17.35	17.34873		121371.3323
										1499.575197	
AP-106	621878.25	3754612.75	76	19	6.85	33	55	29.67	29.66524		122870.9075
										3269.603564	
AP-107	622924.38	3751515.02	76	19	46.03	33	53	48.68	48.67542		126140.511
										2533.889645	
AP-108	624171.00	3749309.00	76	20	33.43	33	52	36.54	36.54214		128674.4007
										2850.309451	
AP-109	625641.00	3746867.00	76	21	29.38	33	51	16.65	16.64856		131524.7101
										2096.59963	
AP-110	627628.00	3746198.00	76	22	46.34	33	50	54.07	54.07458		133621.3098
										4084.231751	
AP-111	631246.00	3744303.00	76	25	6.07	33	49	50.97	50.96723		137705.5415
										3488.169493	
AP-112	633498.16	3741639.33	76	26	32.21	33	48	23.49	23.49147		141193.711
										3184.449072	
AP-113	634973.66	3738817.35	76	27	28.03	33	46	51.22	51.21917		144378.1601
										3255.383356	
AP-114	636145.00	3735780.00	76	28	11.88	33	45	12.09	12.09067		147633.5434
										3380.615921	
AP-115	637475.00	3732672.00	76	29	1.82	33	43	30.59	30.59094		151014.1594
										2183.37831	
AP-116	639612.27	3732225.66	76	30	24.59	33	43	15.10	15.09803		153197.5377
										1122.376791	
AP-117	640652.33	3731803.76	76	31	4.75	33	43	0.91	0.90911		154319.9145
										1896.172939	
AP-118	642351.85	3730962.87	76	32	10.27	33	42	32.80	32.79922		156216.0874
										1400.03564	
AP-119	643685.35	3730536.38	76	33	1.81	33	42	18.31	18.30912		157616.123
										633.0530257	
AP-120	644238.74	3730228.95	76	33	23.12	33	42	8.06	8.06034		158249.1761
										783.2920809	
AP-121	644914.00	3729832.00	76	33	49.11	33	41	54.85	54.8451		159032.4681
										589.1349695	
AP-122	645492.00	3729718.00	76	34	11.49	33	41	50.86	50.86024		159621.6031
										737.4618622	
AP-123	646127.00	3729343.00	76	34	35.93	33	41	38.37	38.37466		160359.065
										1013.78106	
AP-124	646883.20	3728667.78	76	35	4.89	33	41	16.08	16.0831		161372.846
										602.4756519	

AP-125	647455.00	3728478.00	76	35	26.97	33	41	9.64	9.63803		161975.3217
										1274.4845 62	
AP-126	648459.06	3727693.04	76	36	5.48	33	40	43.66	43.65684		163249.8062
										634.95596 7	
AP-127	648920.44	3727256.80	76	36	23.13	33	40	29.27	29.26525		163884.7622
										2426.1703 95	
AP-128	651144.77	3726287.95	76	37	48.89	33	39	56.69	56.68858		166310.9326
										2023.1191 18	
AP-129	652103.33	3724506.33	76	38	25.00	33	38	58.37	58.3709		168334.0517
										2820.1642 06	
AP-130	654645.94	3723286.30	76	40	2.91	33	38	17.45	17.45297		171154.2159
										563.72886 31	
AP-131	655029.85	3722873.51	76	40	17.55	33	38	3.85	3.8542		171717.9448
										1341.5139 34	
AP-132	656352.49	3722649.26	76	41	8.72	33	37	55.88	55.87912		173059.4587
										1343.5641 06	
AP-133	657524.79	3721992.83	76	41	53.79	33	37	33.95	33.95167		174403.0228
										941.05051 73	
AP-134	658265.90	3721412.90	76	42	22.17	33	37	14.73	14.7338		175344.0734
										1008.1213 09	
AP-135	659111.87	3720864.59	76	42	54.64	33	36	56.48	56.48407		176352.1947
										509.03759 64	
AP-136	659171.00	3720359.00	76	42	56.61	33	36	40.04	40.04305		176861.2323
										362.69271 48	
AP-137	659206.00	3719998.00	76	42	57.73	33	36	28.31	28.30775		177223.925
										1457.8463 58	
AP-138	660102.00	3718848.00	76	43	31.74	33	35	50.50	50.50042		178681.7713
										1858.0904 18	
AP-139	661524.00	3717652.00	76	44	26.11	33	35	10.91	10.91122		180539.8617
										1246.1532 79	
AP-140	662221.00	3716619.00	76	44	52.46	33	34	37.00	37.00394		181786.015
										1739.6198 97	
AP-141	663597.17	3715554.84	76	45	45.12	33	34	1.71	1.70968		183525.6349
										1740.6586 89	
AP-142	664300.07	3713962.41	76	46	11.32	33	33	9.64	9.63857		185266.2936
										2975.0094 93	
AP-143	665329.00	3711171.00	76	46	49.34	33	31	38.47	38.47182		188241.3031
										2908.8068 02	
AP-144	667515.00	3709252.00	76	48	12.76	33	30	34.97	34.96554		191150.1099
										1808.7114 32	

D/E Tower	668301.00	3707623.00	76	48	42.11	33	29	41.65	41.65275		192958.8213
										2341.9871 83	
Gantry	670311.00	3706421.00	76	49	59.14	33	29	1.50	0		195300.8085

ALTERNATIVE-2

AP NO.	EASTING	NOTHING	LONGITUDE			LATITUDE			ANGLE OF DEVIATION	SPAN IN MTR.	COMMU LENGTH (Mtr)
			DEG	MIN	SEC	DEG	MIN	SEC			
Gantry	567101.34	3809699.88	75	43	49.00	34	25	35.75			0.00
										131.69	
D/E Tower	567233.00	3809697.18	75	43	54.16	34	25	35.64	20°54'52"		131.69
										190.30	
AP-1	567412.12	3809761.45	75	44	1.20	34	25	37.68	23°56'38.9"		321.99
										244.87	
AP-2	567656.33	3809743.49	75	44	10.76	34	25	37.04	8°55'9.1"		566.85
										901.61	
AP-3	568554.89	3809817.57	75	44	45.98	34	25	39.23	31°22'49.3"		1468.46
										401.79	
AP-4	568913.94	3809637.25	75	44	60.00	34	25	33.29	11°52'27.9"		1870.25
										903.14	
AP-5	569787.14	3809406.66	75	45	34.14	34	25	25.59	36°32'56.5"		2773.39
										440.91	
AP-6	570196.65	3809570.09	75	45	50.23	34	25	30.80	7°28'55.3"		3214.30
										526.29	
AP-7	570706.69	3809699.85	75	46	10.25	34	25	34.89	22°1'42.8"		3740.59
										897.75	
AP-8	571596.24	3809578.72	75	46	45.06	34	25	30.73	7°43'53.7"		4638.35
										1738.66	
AP-9	573334.90	3809578.04	75	47	53.17	34	25	30.27	16°45'39.3"		6377.01
										2080.94	
AP-10	575327.20	3808977.15	75	49	11.03	34	25	10.25	10°54'9.1"		8457.95
										2062.78	
AP-11	577379.13	3808765.79	75	50	31.34	34	25	2.84	8°7'56.9"		10520.74
										1927.27	
AP-12	579249.03	3808299.10	75	51	44.43	34	24	47.18	12°36'19.7"		12448.00
										1015.69	
AP-13	580264.42	3808274.14	75	52	24.20	34	24	46.09	19°27'18.4"		13463.70
										2359.87	
AP-14	582469.56	3807433.70	75	53	50.28	34	24	18.18	9°47'16.1"		15823.57
										2302.77	
AP-15	584450.61	3806259.73	75	55	7.45	34	23	39.50	5°28'36.8"		18126.33
										1301.67	
AP-16	585501.97	3805492.28	75	55	48.35	34	23	14.27	16°21'6.8"		19428.00
										1387.98	
AP-17	586808.09	3805022.67	75	56	39.32	34	22	58.64	22°27'55.6"		20815.98
										1042.65	
AP-18	587579.98	3804321.74	75	57	9.28	34	22	35.65	21°29'28.7"		21858.63
										1329.25	
AP-19	588168.25	3803129.75	75	57	31.87	34	21	56.78	17°8'28"		23187.88
										800.17	
AP-20	588718.12	3802548.44	75	57	53.18	34	21	37.74	21°16'9.5"		23988.05
										121.74	
AP-21	588828.16	3802496.38	75	57	57.47	34	21	36.01	35°45'30.3"		24109.79
										397.81	
AP-22	589020.53	3802148.17	75	58	4.87	34	21	24.65	10°2'32.2"		24507.60

										587.03	
AP-23	589210.46	3801592.72	75	58	12.10	34	21	6.56	16°20'58.5"		25094.63
										715.29	
AP-24	589242.00	3800878.12	75	58	13.06	34	20	43.35	23°59'38.7"		25809.92
										529.56	
AP-25	589048.20	3800385.29	75	58	5.30	34	20	27.42	5°6'5.3"		26339.48
										516.19	
AP-26	588902.76	3799890.02	75	57	59.42	34	20	11.38	12°23'23.3"		26855.67
										548.76	
AP-27	588638.77	3799408.93	75	57	48.91	34	19	55.85	48°39'16.6"		27404.43
										548.93	
AP-28	588825.61	3798892.78	75	57	56.03	34	19	39.04	18°45'37.6"		27953.35
										389.60	
AP-29	588833.35	3798503.26	75	57	56.19	34	19	26.39	27°51'16.4"		28342.95
										559.43	
AP-30	589104.52	3798013.94	75	58	6.62	34	19	10.42	11°15'22.1"		28902.38
										641.16	
AP-31	589299.85	3797403.26	75	58	14.03	34	18	50.54	28°40'28.5"		29543.55
										385.98	
AP-32	589226.62	3797024.29	75	58	11.02	34	18	38.26	20°53'46.9"		29929.52
										630.87	
AP-33	588893.87	3796488.31	75	57	57.81	34	18	20.96	25°23'40.2"		30560.39
										1917.51	
AP-34	588678.83	3794582.90	75	57	48.69	34	17	19.17	26°40'15.6"		32477.90
										1145.58	
AP-35	589075.00	3793508.00	75	58	3.78	34	16	44.16	23°11'30.3"		33623.48
										794.06	
AP-36	589034.00	3792715.00	75	58	1.88	34	16	18.43	6°12'51.8"		34417.54
										620.94	
AP-37	588935.00	3792102.00	75	57	57.79	34	15	58.56	14°59'47.9"		35038.49
										611.15	
AP-38	588997.00	3791494.00	75	57	59.98	34	15	38.80	21°5'48.2"		35649.64
										289.35	
AP-39	589128.00	3791236.00	75	58	5.01	34	15	30.39	35°59'21.7"		35938.99
										336.20	
AP-40	589075.00	3790904.00	75	58	2.81	34	15	19.63	24°46'37.6"		36275.20
										303.42	
AP-41	588906.00	3790652.00	75	57	56.11	34	15	11.50	11°19'41.4"		36578.62
										168.90	
AP-42	588841.31	3790495.98	75	57	53.53	34	15	6.45	64°40'4.9"		36747.51
										842.97	
AP-43	589407.00	3789871.00	75	58	15.41	34	14	45.99	15°9'52"		37590.49
										855.10	
AP-44	589795.00	3789109.00	75	58	30.29	34	14	21.13	32°30'31.6"		38445.58
										550.56	
AP-45	589742.00	3788561.00	75	58	28.01	34	14	3.36	27°9'58"		38996.14
										667.02	
AP-46	589988.00	3787941.00	75	58	37.40	34	13	43.16	41°0'43.9"		39663.16
										774.86	
AP-47	589731.00	3787210.00	75	58	27.08	34	13	19.51	44°46'0.5"		40438.02
										692.96	
AP-48	589107.45	3786907.72	75	58	2.60	34	13	9.89	19°52'1.6"		41130.98
										734.47	
AP-49	588377.00	3786831.00	75	57	34.03	34	13	7.62	10°37'39.1"		41865.44
										829.71	
AP-50	587550.00	3786898.00	75	57	1.73	34	13	10.05	30°27'5.2"		42695.15

										604.60	
AP-51	587005.75	3786634.67	75	56	40.37	34	13	1.67	27°41'52.1"		43299.76
										538.94	
AP-52	586685.32	3786201.35	75	56	27.69	34	12	47.69	13°57'41.9"		43838.69
										640.51	
AP-53	586439.99	3785609.68	75	56	17.89	34	12	28.56	14°18'1"		44479.20
										559.11	
AP-54	586104.90	3785162.11	75	56	4.64	34	12	14.13	28°48'43.1"		45038.31
										536.59	
AP-55	586030.14	3784630.75	75	56	1.53	34	11	56.90	12°37'12.3"		45574.90
										785.22	
AP-56	586093.26	3783848.07	75	56	3.71	34	11	31.48	27°1'7"		46360.12
										659.52	
AP-57	586439.13	3783286.52	75	56	17.02	34	11	13.15	11°32'31"		47019.65
										1122.52	
AP-58	586824.67	3782232.28	75	56	31.70	34	10	38.81	26°26'20.1"		48142.17
										1140.38	
AP-59	587652.24	3781447.67	75	57	3.74	34	10	13.09	14°4'49.4"		49282.55
										1220.49	
AP-60	588307.04	3780417.71	75	57	28.94	34	9	39.45	32°56'23.7"		50503.04
										588.17	
AP-61	588841.76	3780172.73	75	57	49.73	34	9	31.34	43°27'2.2"		51091.21
										537.47	
AP-62	589042.54	3779674.18	75	57	57.38	34	9	15.09	8°22'56.1"		51628.68
										812.40	
AP-63	589232.92	3778884.40	75	58	4.53	34	8	49.39	15°41'13.9"		52441.07
										930.87	
AP-64	589198.26	3777954.18	75	58	2.83	34	8	19.21	40°15'46.9"		53371.94
										621.90	
AP-65	589582.24	3777464.98	75	58	17.64	34	8	3.21	41°29'56.3"		53993.84
										1080.25	
AP-66	589518.74	3776386.60	75	58	14.76	34	7	28.22	11°0'41.9"		55074.09
										818.09	
AP-67	589315.55	3775594.15	75	58	6.53	34	7	2.56	30°57'4.3"		55892.18
										516.50	
AP-68	588948.21	3775231.05	75	57	52.06	34	6	50.88	19°33'17.4"		56408.68
										631.27	
AP-69	588673.68	3774662.60	75	57	41.14	34	6	32.51	19°28'32.5"		57039.95
										1067.26	
AP-70	587915.68	3773911.28	75	57	11.28	34	6	8.35	26°44'31.2"		58107.21
										1162.18	
AP-71	587546.69	3772809.24	75	56	56.48	34	5	32.69	22°40'27.5"		59269.39
										1572.03	
AP-72	586511.50	3771626.16	75	56	15.67	34	4	54.59	28°18'23.4"		60841.42
										1279.61	
AP-73	586226.28	3770378.75	75	56	4.09	34	4	14.18	5°51'38.8"		62121.03
										973.16	
AP-74	586107.36	3769412.88	75	55	59.11	34	3	42.86	36°55'24.1"		63094.19
										843.48	
AP-75	586527.89	3768681.70	75	56	15.25	34	3	19.00	21°0'6.5"		63937.67
										745.43	
AP-76	587106.43	3768211.64	75	56	37.65	34	3	3.57	50°52'37.9"		64683.11
										2543.16	
AP-77	589596.00	3768731.00	75	58	14.94	34	3	19.67	53°15'14.8"		67226.27
										1478.55	
AP-78	590219.98	3770071.44	75	58	39.77	34	4	2.99	5°1'14.4"		68704.82

										608.43	
AP-79	590524.03	3770598.44	75	58	51.83	34	4	20.01	4°51'43"		69313.25
										615.56	
AP-80	590785.36	3771155.78	75	59	2.23	34	4	38.02	13°12'45.7"		69928.82
										259.63	
AP-81	590838.93	3771409.82	75	59	4.42	34	4	46.25	18°34'57.9"		70188.45
										282.83	
AP-82	590982.44	3771653.54	75	59	10.11	34	4	54.12	13°10'36.7"		70471.27
										212.92	
AP-83	591045.81	3771856.81	75	59	12.66	34	5	0.70	46°48'13.5"		70684.19
										533.76	
AP-84	591526.03	3772089.81	75	59	31.48	34	5	8.11	30°7'52.9"		71217.95
										479.67	
AP-85	591794.16	3772487.54	75	59	42.10	34	5	20.93	18°27'42.1"		71697.62
										320.99	
AP-86	592048.64	3772683.18	75	59	52.10	34	5	27.21	32°21'25.9"		72018.61
										311.38	
AP-87	592358.75	3772711.37	76	0	4.21	34	5	28.02	27°11'26.3"		72330.00
										401.47	
AP-88	592731.00	3772561.00	76	0	18.68	34	5	23.02	15°55'23.8"		72731.47
										474.42	
AP-89	593105.26	3772269.45	76	0	33.17	34	5	13.44	9°50'27.5"		73205.89
										773.84	
AP-90	593788.03	3771905.21	76	0	59.67	34	5	1.39	16°14'47.9"		73979.74
										732.09	
AP-91	594504.56	3771755.11	76	1	27.56	34	4	56.29	0°39'36.7"		74711.82
										711.91	
AP-92	595202.98	3771617.18	76	1	54.76	34	4	51.58	22°45'37.6"		75423.73
										968.01	
AP-93	596151.25	3771811.65	76	2	31.83	34	4	57.58	27°59'59.2"		76391.74
										1043.62	
AP-94	597152.36	3771516.80	76	3	10.77	34	4	47.68	14°37'0.5"		77435.36
										816.43	
AP-95	597968.39	3771491.24	76	3	42.59	34	4	46.58	24°21'23.6"		78251.79
										848.62	
AP-96	598730.15	3771117.23	76	4	12.16	34	4	34.18	40°54'10.2"		79100.41
										809.16	
AP-97	599512.63	3771323.27	76	4	42.77	34	4	40.60	10°34'7.8"		79909.57
										1697.57	
AP-98	601205.67	3771447.11	76	5	48.87	34	4	44.03	23°52'58.5"		81607.14
										1371.89	
AP-99	602497.27	3770984.67	76	6	39.06	34	4	28.57	11°16'51.7"		82979.03
										1692.94	
AP-100	604171.97	3770736.82	76	7	44.28	34	4	19.93	17°41'55.4"		84671.97
										1459.72	
AP-101	605482.64	3770094.24	76	8	35.13	34	3	58.60	15°46'35.1"		86131.68
										2996.65	
AP-102	608430.62	3769556.34	76	10	29.88	34	3	40.05	14°7'48.7"		89128.33
										2041.32	
AP-103	610288.58	3768710.76	76	11	41.96	34	3	11.91	10°44'31.1"		91169.66
										1491.39	
AP-104	611507.06	3767850.80	76	12	29.08	34	2	43.53	17°11'12.1"		92661.05
										1943.94	
AP-105	613355.59	3767249.25	76	13	40.88	34	2	23.28	12°12'6.8"		94604.99
										2355.70	
AP-106	615699.13	3767010.19	76	15	12.15	34	2	14.60	13°21'4.9"		96960.69

										2113.87	
AP-107	617794.79	3767287.10	76	16	33.99	34	2	22.75	13°8'7.7"		99074.56
										1794.26	
AP-108	619473.63	3767920.23	76	17	39.77	34	2	42.62	21°51'10.9"		100868.82
										1854.40	
AP-109	621327.63	3767881.70	76	18	52.04	34	2	40.60	11°33'6.9"		102723.23
										1793.38	
AP-110	623076.85	3767486.14	76	20	0.05	34	2	27.03	18°12'48.8"		104516.61
										2463.18	
AP-111	625189.17	3766219.13	76	21	21.75	34	1	45.00	29°49'37.4"		106979.78
										1299.88	
AP-112	625823.67	3765084.62	76	21	45.90	34	1	7.90	21°25'11.8"		108279.67
										1359.71	
AP-113	626008.14	3763737.48	76	21	52.39	34	0	24.09	22°2'47.7"		109639.38
										879.71	
AP-114	626445.91	3762974.44	76	22	9.06	33	59	59.14	40°40'45.6"		110519.08
										1063.40	
AP-115	626246.00	3761930.00	76	22	0.72	33	59	25.32	43°40'43.2"		111582.48
										1920.76	
AP-116	624682.00	3760815.00	76	20	59.20	33	58	49.80	8°8'50.5"		113503.24
										1897.00	
AP-117	623309.00	3759506.00	76	20	5.04	33	58	7.90	10°52'25.1"		115400.24
										2099.81	
AP-118	622089.83	3757796.37	76	19	16.69	33	57	12.92	37°52'56.5"		117500.06
										1712.47	
AP-119	622161.21	3756085.39	76	19	18.61	33	56	17.35	13°15'56.5"		119212.53
										1499.58	
AP-120	621878.25	3754612.75	76	19	6.85	33	55	29.67	29°32'13.1"		120712.10
										3269.60	
AP-121	622924.38	3751515.02	76	19	46.03	33	53	48.68	10°48'37.5"		123981.70
										2533.89	
AP-122	624171.00	3749309.00	76	20	33.43	33	52	36.54	1°34'32.8"		126515.59
										2850.31	
AP-123	625641.00	3746867.00	76	21	29.38	33	51	16.65	40°20'44.6"		129365.90
										2096.60	
AP-124	627628.00	3746198.00	76	22	46.34	33	50	54.07	9°2'11.1"		131462.50
										4084.23	
AP-125	631246.00	3744303.00	76	25	6.07	33	49	50.97	22°8'27.4"		135546.73
										3488.17	
AP-126	633498.16	3741639.33	76	26	32.21	33	48	23.49	12°36'41.6"		139034.90
										3184.45	
AP-127	634973.66	3738817.35	76	27	28.03	33	46	51.22	6°30'52"		142219.35
										3255.38	
AP-128	636145.00	3735780.00	76	28	11.88	33	45	12.09	2°4'42.8"		145474.74
										3380.62	
AP-129	637475.00	3732672.00	76	29	1.82	33	43	30.59	55°2'12.2"		148855.35
										2183.38	
AP-130	639612.27	3732225.66	76	30	24.59	33	43	15.10	10°17'2.9"		151038.73
										1122.38	
AP-131	640652.33	3731803.76	76	31	4.75	33	43	0.91	4°14'43.5"		152161.11
										1896.17	
AP-132	642351.85	3730962.87	76	32	10.27	33	42	32.80	8°35'23"		154057.28
										1400.04	
AP-133	643685.35	3730536.38	76	33	1.81	33	42	18.31	12°5'23.3"		155457.32
										1416.24	
AP-134	644914.00	3729832.00	76	33	49.11	33	41	54.85	18°40'5.2"		156873.56

										589.13	
AP-135	645492.00	3729718.00	76	34	11.49	33	41	50.86	19°24'24.1"		157462.69
										737.46	
AP-136	646127.00	3729343.00	76	34	35.93	33	41	38.37	11°11'53.2"		158200.15
										1013.78	
AP-137	646883.20	3728667.78	76	35	4.89	33	41	16.08	27°43'36.7"		159213.94
										1568.03	
AP-138	647432.61	3727199.16	76	35	25.34	33	40	28.14	39°6'59"		160781.96
										1341.34	
AP-139	648589.87	3726520.95	76	36	9.86	33	40	5.55	20°19'5.6"		162123.31
										1501.30	
AP-140	649540.95	3725359.33	76	36	46.07	33	39	27.37	27°20'49.2"		163624.61
										1767.28	
AP-141	651163.56	3724659.05	76	37	48.62	33	39	3.81	21°28'18.6"		165391.88
										1425.93	
AP-142	652175.08	3723654.02	76	38	27.26	33	38	30.67	25°54'23.6"		166817.81
										1068.93	
AP-143	653186.33	3723307.61	76	39	6.28	33	38	18.90	25°23'36.5"		167886.74
										1283.74	
AP-144	654105.05	3722410.99	76	39	41.37	33	37	49.33	53°33'17.6"		169170.48
										863.81	
AP-145	654957.62	3722549.88	76	40	14.54	33	37	53.39	22°59'20"		170034.29
										749.15	
AP-146	655685.33	3722371.99	76	40	42.66	33	37	47.23	32°14'25.6"		170783.43
										1113.25	
AP-147	656458.99	3721571.49	76	41	12.17	33	37	20.84	3°40'4.4"		171896.68
										1377.13	
AP-148	657477.40	3720644.51	76	41	51.09	33	36	50.22	8°9'17.5"		173273.81
										846.91	
AP-149	658016.51	3719991.35	76	42	11.59	33	36	28.73	7°15'10"		174120.71
										812.33	
AP-150	658608.56	3719435.16	76	42	34.20	33	36	10.36	21°25'25.7"		174933.04
										911.95	
AP-151	658999.23	3718611.13	76	42	48.82	33	35	43.41	28°18'43.4"		175844.99
										957.22	
AP-152	659770.45	3718044.13	76	43	18.36	33	35	24.59	22°54'11.2"		176802.21
										1093.28	
AP-153	660329.83	3717104.80	76	43	39.45	33	34	53.80	17°15'57.4"		177895.49
										1697.83	
AP-154	661592.35	3715969.61	76	44	27.66	33	34	16.27	15°10'39.5"		179593.31
										1676.66	
AP-155	662502.15	3714561.25	76	45	2.02	33	33	30.07	11°31'51.6"		181269.97
										965.11	
AP-156	663177.32	3713871.63	76	45	27.74	33	33	7.31	8°14'48.4"		182235.09
										682.14	
AP-157	663579.68	3713320.79	76	45	42.97	33	32	49.21	6°57'53.2"		182917.23
										692.96	
AP-158	664053.26	3712814.91	76	46	0.99	33	32	32.53	28°15'30.7"		183610.19
										463.48	
AP-159	664172.07	3712366.91	76	46	5.30	33	32	17.93	7°21'53.1"		184073.67
										921.76	
AP-160	664520.61	3711513.59	76	46	18.24	33	31	50.04	44°48'55.9"		184995.43
										877.99	
AP-161	665329.00	3711171.00	76	46	49.34	33	31	38.47	18°18'41.8"		185873.42
										2908.81	
AP-162	667515.00	3709252.00	76	48	12.76	33	30	34.97	22°57'50"		188782.22

										1808.71	
D/E Tower	668301.00	3707623.00	76	48	42.11	33	29	41.65	33°21'45.5"		190590.94
										2341.99	
Gantry	670311.00	3706421.00	76	49	59.14	33	29	1.50	75°39'12.3"		192932.92

ALTERNATIVE-3

AP NO.	EASTING	NOTHING	LONGITUDE			LATITUDE			ANGLE OF DEVIATION	SPAN IN MTR.	COMMU LENGTH (Mtr)
			DEG	MIN	SEC	DEG	MIN	SEC			
Gantry	567101.34	3809699.88	75	43	49.00	34	25	35.75			0.00
										131.69	
D/E Tower	567233.00	3809697.18	75	43	54.16	34	25	35.64	20°54'52"		131.69
										190.30	
AP-1	567412.12	3809761.45	75	44	1.20	34	25	37.68	23°56'38.9"		321.99
										244.87	
AP-2	567656.33	3809743.49	75	44	10.76	34	25	37.04	8°55'9.1"		566.85
										901.61	
AP-3	568554.89	3809817.57	75	44	45.98	34	25	39.23	31°22'49.3"		1468.46
										401.79	
AP-4	568913.94	3809637.25	75	44	60.00	34	25	33.29	11°52'27.9"		1870.25
										903.14	
AP-5	569787.14	3809406.66	75	45	34.14	34	25	25.59	36°32'56.5"		2773.39
										440.91	
AP-6	570196.65	3809570.09	75	45	50.23	34	25	30.80	7°28'55.3"		3214.30
										526.29	
AP-7	570706.69	3809699.85	75	46	10.25	34	25	34.89	22°1'42.8"		3740.59
										897.75	
AP-8	571596.24	3809578.72	75	46	45.06	34	25	30.73	7°43'53.7"		4638.35
										1738.66	
AP-9	573334.90	3809578.04	75	47	53.17	34	25	30.27	4°11'54.9"		6377.01
										420.22	
AP-10	573753.98	3809547.10	75	48	9.58	34	25	29.16	0°17'52.9"		6797.23
										469.87	
AP-11	574222.39	3809510.08	75	48	27.92	34	25	27.84	9°52'36.9"		7267.10
										1003.50	
AP-12	575194.39	3809260.58	75	49	5.92	34	25	19.49	15°31'7.6"		8270.61
										708.84	
AP-13	575903.09	3809274.47	75	49	33.69	34	25	19.75	17°16'15.4"		8979.45
										351.66	
AP-14	576240.87	3809176.66	75	49	46.89	34	25	16.49	4°42'38.2"		9331.11
										469.47	
AP-15	576679.58	3809009.50	75	50	4.02	34	25	10.94	17°46'10.1"		9800.58
										633.98	
AP-16	577312.63	3808975.33	75	50	28.81	34	25	9.66	12°0'0.8"		10434.56
										399.89	
AP-17	577698.74	3808871.23	75	50	43.90	34	25	6.18	5°54'20.5"		10834.45
										304.96	
AP-18	577999.78	3808822.55	75	50	55.67	34	25	4.52	7°35'49.4"		11139.41
										625.51	
AP-19	578598.66	3808641.96	75	51	19.07	34	24	58.49	15°53'1.7"		11764.92
										551.92	
AP-20	579150.51	3808633.31	75	51	40.69	34	24	58.06	0°53'44.5"		12316.84
										517.66	
AP-21	579667.92	3808617.12	75	52	0.95	34	24	57.39	28°52'36.7"		12834.50
										516.32	
AP-22	580127.61	3808852.19	75	52	19.03	34	25	4.89	13°6'26.3"		13350.81

										408.35	
AP-23	580523.87	3808950.82	75	52	34.59	34	25	7.98	22°4'56.1"		13759.16
										481.71	
AP-24	581000.77	3808882.90	75	52	53.25	34	25	5.65	20°18'1.4"		14240.87
										353.58	
AP-25	581311.78	3808714.69	75	53	5.37	34	25	0.10	4°30'13.2"		14594.45
										582.53	
AP-26	581844.35	3808478.67	75	53	26.15	34	24	52.28	35°12'17.8"		15176.98
										1217.72	
AP-27	582469.56	3807433.70	75	53	50.28	34	24	18.18	28°31'17.5"		16394.70
										2303.52	
AP-28	584452.59	3806261.60	75	55	7.53	34	23	39.56	5°35'36.7"		18698.22
										1300.85	
AP-29	585502.60	3805493.69	75	55	48.37	34	23	14.32	16°34'10.9"		19999.07
										1385.57	
AP-30	586807.81	3805028.68	75	56	39.31	34	22	58.83	22°44'1.4"		21384.64
										1048.22	
AP-31	587582.57	3804322.63	75	57	9.39	34	22	35.68	21°34'59.4"		22432.86
										1326.58	
AP-32	588165.63	3803131.05	75	57	31.77	34	21	56.82	17°24'25.8"		23759.44
										802.92	
AP-33	588718.12	3802548.44	75	57	53.18	34	21	37.74	21°11'49.4"		24562.36
										121.74	
AP-34	588828.16	3802496.38	75	57	57.47	34	21	36.01	35°45'30.3"		24684.09
										397.81	
AP-35	589020.53	3802148.17	75	58	4.87	34	21	24.65	10°2'32.2"		25081.90
										587.03	
AP-36	589210.46	3801592.72	75	58	12.10	34	21	6.56	16°20'58.5"		25668.93
										715.29	
AP-37	589242.00	3800878.12	75	58	13.06	34	20	43.35	23°59'38.7"		26384.22
										529.56	
AP-38	589048.20	3800385.29	75	58	5.30	34	20	27.42	5°6'5.3"		26913.79
										516.19	
AP-39	588902.76	3799890.02	75	57	59.42	34	20	11.38	12°23'23.3"		27429.97
										548.76	
AP-40	588638.77	3799408.93	75	57	48.91	34	19	55.85	48°39'16.6"		27978.73
										548.93	
AP-41	588825.61	3798892.78	75	57	56.03	34	19	39.04	18°45'37.6"		28527.66
										389.60	
AP-42	588833.35	3798503.26	75	57	56.19	34	19	26.39	26°24'41.2"		28917.26
										588.44	
AP-43	589105.53	3797981.55	75	58	6.64	34	19	9.37	8°57'18.7"		29505.70
										599.69	
AP-44	589296.76	3797413.17	75	58	13.91	34	18	50.86	28°18'49.9"		30105.38
										389.98	
AP-45	589230.92	3797028.79	75	58	11.19	34	18	38.40	22°13'49.5"		30495.36
										636.96	
AP-46	588893.87	3796488.31	75	57	57.81	34	18	20.96	25°30'35.9"		31132.32
										1917.51	
AP-47	588678.83	3794582.90	75	57	48.69	34	17	19.17	26°40'15.6"		33049.83
										1145.58	
AP-48	589075.00	3793508.00	75	58	3.78	34	16	44.16	23°11'30.3"		34195.41
										794.06	
AP-49	589034.00	3792715.00	75	58	1.88	34	16	18.43	6°12'51.8"		34989.47
										620.94	
AP-50	588935.00	3792102.00	75	57	57.79	34	15	58.56	14°59'47.9"		35610.42

										611.15	
AP-51	588997.00	3791494.00	75	57	59.98	34	15	38.80	21°5'48.2"		36221.57
										289.35	
AP-52	589128.00	3791236.00	75	58	5.01	34	15	30.39	35°59'21.7"		36510.92
										336.20	
AP-53	589075.00	3790904.00	75	58	2.81	34	15	19.63	24°46'37.6"		36847.13
										303.42	
AP-54	588906.00	3790652.00	75	57	56.11	34	15	11.50	11°19'32.6"		37150.55
										168.88	
AP-55	588841.31	3790496.00	75	57	53.53	34	15	6.45	64°40'10.6"		37319.43
										842.99	
AP-56	589407.00	3789871.00	75	58	15.41	34	14	45.99	15°9'48.9"		38162.41
										855.10	
AP-57	589795.00	3789109.00	75	58	30.29	34	14	21.13	32°30'31.6"		39017.51
										550.56	
AP-58	589742.00	3788561.00	75	58	28.01	34	14	3.36	27°9'58"		39568.07
										667.02	
AP-59	589988.00	3787941.00	75	58	37.40	34	13	43.16	41°0'43.9"		40235.09
										774.86	
AP-60	589731.00	3787210.00	75	58	27.08	34	13	19.51	44°46'0.5"		41009.95
										692.96	
AP-61	589107.45	3786907.72	75	58	2.60	34	13	9.89	19°52'1.6"		41702.90
										734.47	
AP-62	588377.00	3786831.00	75	57	34.03	34	13	7.62	10°37'39.1"		42437.37
										829.71	
AP-63	587550.00	3786898.00	75	57	1.73	34	13	10.05	26°16'42"		43267.08
										759.62	
AP-64	586843.95	3786617.79	75	56	34.04	34	13	1.17	17°28'34"		44026.70
										1118.99	
AP-65	585975.84	3785911.73	75	55	59.86	34	12	38.50	13°32'35.9"		45145.69
										705.80	
AP-66	585547.80	3785350.53	75	55	42.94	34	12	20.41	36°5'22.7"		45851.49
										2109.03	
AP-67	585502.00	3783242.00	75	55	40.40	34	11	11.98	23°18'35.8"		47960.53
										1248.44	
AP-68	585971.00	3782085.00	75	55	58.31	34	10	34.28	9°48'1.4"		49208.97
										1742.64	
AP-69	586891.00	3780605.00	75	56	33.71	34	9	45.96	8°32'25.8"		50951.61
										988.88	
AP-70	587532.00	3779852.00	75	56	58.46	34	9	21.32	6°56'44.9"		51940.49
										496.49	
AP-71	587805.75	3779437.80	75	57	9.00	34	9	7.79	8°42'16.1"		52436.98
										348.07	
AP-72	588039.40	3779179.80	75	57	18.03	34	8	59.35	64°19'43.5"		52785.05
										833.38	
AP-73	587725.00	3778408.00	75	57	5.48	34	8	34.39	15°12'59.1"		53618.43
										479.52	
AP-74	587667.00	3777932.00	75	57	3.04	34	8	18.95	45°0'17.2"		54097.95
										742.96	
AP-75	588125.00	3777347.00	75	57	20.70	34	7	59.82	24°50'39.8"		54840.91
										1274.99	
AP-76	588416.43	3776105.77	75	57	31.63	34	7	19.44	28°56'2.3"		56115.90
										829.89	
AP-77	588191.57	3775306.92	75	57	22.56	34	6	53.58	8°1'59.7"		56945.79
										1676.35	
AP-78	587516.32	3773772.58	75	56	55.65	34	6	3.97	26°47'35.9"		58622.14

										684.39	
AP-79	586987.87	3773337.70	75	56	34.87	34	5	50.01	3°13'13.3"		59306.53
										1549.77	
AP-80	585848.42	3772287.24	75	55	50.03	34	5	16.25	32°39'14.2"		60856.30
										1908.48	
AP-81	585365.00	3770441.00	75	55	30.52	34	4	16.46	28°19'35"		62764.78
										1536.70	
AP-82	585727.73	3768947.72	75	55	44.14	34	3	27.87	26°0'58"		64301.49
										826.54	
AP-83	586255.36	3768311.50	75	56	4.49	34	3	7.06	43°38'17.9"		65128.03
										856.91	
AP-84	587106.43	3768211.64	75	56	37.65	34	3	3.57	18°28'33.5"		65984.94
										2543.16	
AP-85	589596.00	3768731.00	75	58	14.94	34	3	19.67	53°14'57.5"		68528.10
										1474.78	
AP-86	590218.50	3770067.96	75	58	39.71	34	4	2.88	12°27'9.3"		70002.88
										1698.43	
AP-87	590586.52	3771726.04	75	58	54.69	34	4	56.59	20°17'17.8"		71701.30
										377.54	
AP-88	590535.45	3772100.11	75	58	52.84	34	5	8.75	41°43'59.6"		72078.84
										1112.68	
AP-89	591157.00	3773023.00	75	59	17.44	34	5	38.52	31°35'4.3"		73191.52
										388.89	
AP-90	591511.00	3773184.00	75	59	31.31	34	5	43.63	37°39'56.3"		73580.41
										882.70	
AP-91	592370.35	3772982.29	76	0	4.77	34	5	36.81	36°13'29.6"		74463.11
										554.58	
AP-92	592731.00	3772561.00	76	0	18.68	34	5	23.02	11°30'54.5"		75017.69
										474.42	
AP-93	593105.26	3772269.45	76	0	33.17	34	5	13.44	9°50'27.5"		75492.11
										773.84	
AP-94	593788.03	3771905.21	76	0	59.67	34	5	1.39	16°14'47.9"		76265.96
										732.09	
AP-95	594504.56	3771755.11	76	1	27.56	34	4	56.29	20°46'39.4"		76998.04
										2063.54	
AP-96	596543.00	3772076.00	76	2	47.22	34	5	6.04	18°42'35"		79061.59
										1562.63	
AP-97	598083.00	3771811.00	76	3	47.19	34	4	56.92	1°49'41.4"		80624.22
										1499.36	
AP-98	599568.00	3771604.00	76	4	45.05	34	4	49.69	12°33'54.8"		82123.58
										2130.95	
AP-99	601692.00	3771776.00	76	6	7.98	34	4	54.54	11°41'36.4"		84254.53
										3016.90	
AP-100	604686.00	3771405.00	76	8	4.62	34	4	41.43	6°7'45"		87271.43
										3808.01	
AP-101	608393.51	3770535.89	76	10	28.87	34	4	11.86	21°22'52.2"		91079.44
										233.31	
AP-102	608585.62	3770403.50	76	10	36.30	34	4	7.49	13°34'42.5"		91312.75
										2206.58	
AP-103	610645.70	3769612.88	76	11	56.30	34	3	41.05	23°1'13.1"		93519.34
										1499.42	
AP-104	611724.00	3768571.00	76	12	37.87	34	3	6.82	34°7'48.2"		95018.76
										4740.02	
AP-105	616393.63	3767757.20	76	15	39.59	34	2	38.57	41°59'35.9"		99758.77
										1388.98	
AP-106	617570.17	3768495.46	76	16	25.82	34	3	2.06	17°20'28.1"		101147.75

										2746.91	
AP-107	620226.36	3769195.58	76	18	9.75	34	3	23.70	26°33'42.4"		103894.66
										1363.15	
AP-108	621560.73	3768916.93	76	19	1.65	34	3	14.11	9°28'49.1"		105257.81
										1013.10	
AP-109	622573.00	3768876.00	76	19	41.10	34	3	12.35	13°36'50.9"		106270.91
										1960.27	
AP-110	624458.00	3768338.00	76	20	54.34	34	2	54.09	21°10'10.3"		108231.18
										2952.62	
AP-111	626813.00	3766557.00	76	22	25.24	34	1	55.26	44°13'46"		111183.81
										2233.52	
AP-112	627149.75	3764349.01	76	22	37.21	34	0	43.45	11°26'27.7"		113417.33
										1443.70	
AP-113	627080.00	3762907.00	76	22	33.73	33	59	56.67	37°42'57"		114861.02
										1284.56	
AP-114	626246.00	3761930.00	76	22	0.72	33	59	25.32	14°1'44.9"		116145.58
										1920.76	
AP-115	624682.00	3760815.00	76	20	59.20	33	58	49.80	8°8'50.5"		118066.34
										1897.00	
AP-116	623309.00	3759506.00	76	20	5.04	33	58	7.90	10°52'25.1"		119963.34
										2099.81	
AP-117	622089.83	3757796.37	76	19	16.69	33	57	12.92	37°52'56.5"		122063.16
										1712.47	
AP-118	622161.21	3756085.39	76	19	18.61	33	56	17.35	13°15'56.5"		123775.62
										1499.58	
AP-119	621878.25	3754612.75	76	19	6.85	33	55	29.67	29°32'13.1"		125275.20
										3269.60	
AP-120	622924.38	3751515.02	76	19	46.03	33	53	48.68	10°48'37.5"		128544.80
										2533.89	
AP-121	624171.00	3749309.00	76	20	33.43	33	52	36.54	1°34'32.8"		131078.69
										2850.31	
AP-122	625641.00	3746867.00	76	21	29.38	33	51	16.65	40°20'44.6"		133929.00
										2096.60	
AP-123	627628.00	3746198.00	76	22	46.34	33	50	54.07	9°2'11.1"		136025.60
										4084.23	
AP-124	631246.00	3744303.00	76	25	6.07	33	49	50.97	22°8'27.4"		140109.83
										3488.17	
AP-125	633498.16	3741639.33	76	26	32.21	33	48	23.49	12°36'41.6"		143598.00
										3184.45	
AP-126	634973.66	3738817.35	76	27	28.03	33	46	51.22	6°30'52"		146782.45
										3255.38	
AP-127	636145.00	3735780.00	76	28	11.88	33	45	12.09	2°4'42.8"		150037.84
										3380.62	
AP-128	637475.00	3732672.00	76	29	1.82	33	43	30.59	55°2'12.2"		153418.45
										2183.38	
AP-129	639612.27	3732225.66	76	30	24.59	33	43	15.10	10°17'2.9"		155601.83
										1122.38	
AP-130	640652.33	3731803.76	76	31	4.75	33	43	0.91	4°14'43.5"		156724.21
										1896.17	
AP-131	642351.85	3730962.87	76	32	10.27	33	42	32.80	8°35'23"		158620.38
										1400.04	
AP-132	643685.35	3730536.38	76	33	1.81	33	42	18.31	12°5'23.3"		160020.41
										1416.24	
AP-133	644914.00	3729832.00	76	33	49.11	33	41	54.85	18°40'5.2"		161436.66
										589.13	
AP-134	645492.00	3729718.00	76	34	11.49	33	41	50.86	19°24'24.1"		162025.79

										737.46	
AP-135	646127.00	3729343.00	76	34	35.93	33	41	38.37	11°11'53.2"		162763.25
										1013.78	
AP-136	646883.20	3728667.78	76	35	4.89	33	41	16.08	23°24'4"		163777.03
										602.48	
AP-137	647455.00	3728478.00	76	35	26.97	33	41	9.64	19°39'24.4"		164379.51
										1274.48	
AP-138	648459.06	3727693.04	76	36	5.48	33	40	43.66	5°22'39.2"		165653.99
										634.96	
AP-139	648920.44	3727256.80	76	36	23.13	33	40	29.27	19°51'31.9"		166288.95
										2426.17	
AP-140	651144.77	3726287.95	76	37	48.89	33	39	56.69	38°10'55.4"		168715.12
										2023.12	
AP-141	652103.33	3724506.33	76	38	25.00	33	38	58.37	36°5'6.9"		170738.24
										2820.16	
AP-142	654645.94	3723286.30	76	40	2.91	33	38	17.45	21°26'33.3"		173558.40
										563.73	
AP-143	655029.85	3722873.51	76	40	17.55	33	38	3.85	37°27'10.2"		174122.13
										1341.51	
AP-144	656352.49	3722649.26	76	41	8.72	33	37	55.88	19°37'24.7"		175463.65
										1343.56	
AP-145	657524.79	3721992.83	76	41	53.79	33	37	33.95	8°48'28.2"		176807.21
										937.37	
AP-146	658262.89	3721415.03	76	42	22.06	33	37	14.80	5°5'48.8"		177744.58
										1011.81	
AP-147	659111.87	3720864.59	76	42	54.64	33	36	56.48	50°50'36.5"		178756.38
										871.69	
AP-148	659206.00	3719998.00	76	42	57.73	33	36	28.31	31°43'27.1"		179628.07
										1457.85	
AP-149	660102.00	3718848.00	76	43	31.74	33	35	50.50	12°0'38.2"		181085.92
										1858.09	
AP-150	661524.00	3717652.00	76	44	26.11	33	35	10.91	15°55'29.9"		182944.01
										1246.15	
AP-151	662221.00	3716619.00	76	44	52.46	33	34	37.00	18°16'37.6"		184190.16
										1739.62	
AP-152	663597.17	3715554.84	76	45	45.12	33	34	1.71	28°28'8.3"		185929.78
										1740.66	
AP-153	664300.07	3713962.41	76	46	11.32	33	33	9.64	3°34'58.6"		187670.44
										2975.01	
AP-154	665329.00	3711171.00	76	46	49.34	33	31	38.47	28°29'14.5"		190645.45
										2908.81	
AP-155	667515.00	3709252.00	76	48	12.76	33	30	34.97	22°57'50"		193554.26
										1808.71	
D/E Tower	668301.00	3707623.00	76	48	42.11	33	29	41.65	33°21'45.5"		195362.97
										2341.99	
Gantry	670311.00	3706421.00	76	49	59.14	33	29	1.50	75°54'41.5"		197704.96

CHAPTER-3.5

Crops, Water Table and Soil Type

(Tentative Soil Type & Wind Zone Details)
220KV S/C DRASS-PADUM T/L
ALTERNATIVE-1

Ap. No.	Easting	Northing	Soil	Wind Zone
Gantry	567101	3809700	HR	Zone-6
D/E Tower	567233	3809697	HR	Zone-6
AP-1	567412	3809761	HR	Zone-6
AP-2	567656	3809743	HR	Zone-6
AP-3	568555	3809818	HR	Zone-6
AP-4	568914	3809637	HR	Zone-6
AP-5	569787	3809407	HR	Zone-6
AP-6	570197	3809570	HR	Zone-6
AP-7	570707	3809700	HR	Zone-6
AP-8	571596	3809579	HR	Zone-6
AP-9	573335	3809578	HR	Zone-6
AP-10	575383	3807652	HR	Zone-6
AP-11	575682	3806642	HR	Zone-6
AP-12	577313	3805998	HR	Zone-6
AP-13	579302	3804879	HR	Zone-6
AP-14	580379	3804752	HR	Zone-6
AP-15	581160	3805046	HR	Zone-6
AP-16	581895	3804835	HR	Zone-6
AP-17	582029	3804601	DFR	Zone-6
AP-18	582430	3803382	DFR	Zone-6
AP-19	582852	3802472	DFR	Zone-6

AP-20	583738	3801511	DFR	Zone-6
AP-21	584419	3801279	DFR	Zone-6
AP-22	585005	3801368	HR	Zone-6
AP-23	585360	3801195	DFR	Zone-6
AP-24	585713	3800831	DFR	Zone-6
AP-25	586336	3800546	SFR	Zone-6
AP-26	586707	3800066	SFR	Zone-6
AP-27	586861	3799232	HR	Zone-6
AP-28	587051	3798928	HR	Zone-6
AP-29	587785	3798493	WFR	Zone-6
AP-30	587864	3798473	WFR	Zone-6
AP-31	588222	3797447	WFR	Zone-6
AP-32	588894	3796488	WFR	Zone-6
AP-33	588871	3796285	WFR	Zone-6
AP-34	588679	3794583	DFR	Zone-6
AP-35	589075	3793508	WFR	Zone-6
AP-36	589034	3792715	DRY	Zone-6
AP-37	588935	3792102	DRY	Zone-6
AP-38	588997	3791494	DRY	Zone-6
AP-39	589128	3791236	DRY	Zone-6
AP-40	589075	3790904	DRY	Zone-6
AP-41	588906	3790652	DRY	Zone-6
AP-42	588841	3790496	DFR	Zone-6
AP-43	589407	3789871	HR	Zone-6
AP-44	589795	3789109	DFR	Zone-6

AP-45	589742	3788561	DFR	Zone-6
AP-46	589988	3787941	DFR	Zone-6
AP-47	589731	3787210	DFR	Zone-6
AP-48	589107	3786908	HR	Zone-6
AP-49	588377	3786831	DFR	Zone-6
AP-50	587550	3786898	HR	Zone-6
AP-51	586844	3786618	DRY	Zone-6
AP-52	585976	3785912	DRY	Zone-6
AP-53	585548	3785351	DRY	Zone-6
AP-54	585502	3783242	DRY	Zone-6
AP-55	585971	3782085	DRY	Zone-6
AP-56	586891	3780605	DRY	Zone-6
AP-57	587532	3779852	DRY	Zone-6
AP-58	587806	3779438	DRY	Zone-6
AP-59	588039	3779180	DRY	Zone-6
AP-60	587725	3778408	DRY	Zone-6
AP-61	587667	3777932	DRY	Zone-6
AP-62	588125	3777347	DRY	Zone-6
AP-63	588416	3776106	DRY	Zone-6
AP-64	588192	3775307	DFR	Zone-6
AP-65	587516	3773773	SFR	Zone-6
AP-66	586988	3773338	SFR	Zone-6
AP-67	585848	3772287	SFR	Zone-6
AP-68	585365	3770441	SFR	Zone-6
AP-69	585728	3768948	HR	Zone-6

AP-70	586255	3768312	HR	Zone-6
AP-71	587106	3768212	HR	Zone-6
AP-72	589596	3768731	HR	Zone-6
AP-73	590219	3770068	DRY	Zone-6
AP-74	590587	3771726	DRY	Zone-6
AP-75	590535	3772100	DFR	Zone-6
AP-76	591157	3773023	DFR	Zone-6
AP-77	591511	3773184	DFR	Zone-6
AP-78	592370	3772982	HR	Zone-6
AP-79	592731	3772561	HR	Zone-6
AP-80	593105	3772269	HR	Zone-6
AP-81	593788	3771905	HR	Zone-6
AP-82	594505	3771755	HR	Zone-6
AP-83	596543	3772076	HR	Zone-6
AP-84	598083	3771811	HR	Zone-6
AP-85	599568	3771604	DFR	Zone-6
AP-86	601692	3771776	DFR	Zone-6
AP-87	604686	3771405	DRY	Zone-6
AP-88	608394	3770536	DRY	Zone-6
AP-89	608586	3770403	HR	Zone-6
AP-90	610646	3769613	DFR	Zone-6
AP-91	611724	3768571	DFR	Zone-6
AP-92	616394	3767757	DFR	Zone-6
AP-93	617570	3768495	DFR	Zone-6
AP-94	620226	3769196	DFR	Zone-6

AP-95	621561	3768917	DFR	Zone-6
AP-96	622573	3768876	DFR	Zone-6
AP-97	624458	3768338	DFR	Zone-6
AP-98	626813	3766557	DFR	Zone-6
AP-99	627149	3764329	HR	Zone-6
AP-100	627080	3762907	HR	Zone-6
AP-101	626246	3761930	DFR	Zone-6
AP-102	624682	3760815	DFR	Zone-6
AP-103	623309	3759506	DFR	Zone-6
AP-104	622090	3757796	HR	Zone-6
AP-105	622161	3756085	DFR	Zone-6
AP-106	621878	3754613	DFR	Zone-6
AP-107	622924	3751515	DFR	Zone-6
AP-108	624171	3749309	DFR	Zone-6
AP-109	625641	3746867	HR	Zone-6
AP-110	627628	3746198	DFR	Zone-6
AP-111	631246	3744303	HR	Zone-6
AP-112	633498	3741639	DFR	Zone-6
AP-113	634974	3738817	DFR	Zone-6
AP-114	636145	3735780	HR	Zone-6
AP-115	637475	3732672	DFR	Zone-6
AP-116	639612	3732226	HR	Zone-6
AP-117	640652	3731804	HR	Zone-6
AP-118	642352	3730963	HR	Zone-6
AP-119	643685	3730536	DFR	Zone-6

AP-120	644239	3730229	DFR	Zone-6
AP-121	644914	3729832	FS	Zone-6
AP-122	645492	3729718	HR	Zone-6
AP-123	646127	3729343	HR	Zone-6
AP-124	646883	3728668	FS	Zone-6
AP-125	647455	3728478	DFR	Zone-6
AP-126	648459	3727693	DRY	Zone-6
AP-127	648920	3727257	HR	Zone-6
AP-128	651145	3726288	WET	Zone-6
AP-129	652103	3724506	WET	Zone-6
AP-130	654646	3723286	FS	Zone-6
AP-131	655030	3722874	FS	Zone-6
AP-132	656352	3722649	HR	Zone-6
AP-133	657525	3721993	DFR	Zone-6
AP-134	658266	3721413	HR	Zone-6
AP-135	659112	3720865	HR	Zone-6
AP-136	659171	3720359	DFR	Zone-6
AP-137	659206	3719998	DFR	Zone-6
AP-138	660102	3718848	DFR	Zone-6
AP-139	661524	3717652	HR	Zone-6
AP-140	662221	3716619	HR	Zone-6
AP-141	663597	3715555	DFR	Zone-6
AP-142	664300	3713962	DFR	Zone-6
AP-143	665329	3711171	DFR	Zone-6
AP-144	667515	3709252	DFR	Zone-6

D/E Tower	668301	3707623	DFR	Zone-6
Gantry	670311	3706421	DFR	Zone-6

**220KV S/C DRASS-PADUM T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP1	604684.48	3824527.01	NILL	80 -100	Hard Rock
AP2	604650.60	3824558.48	NILL	80 -100	Soft & Hard Rock
AP3	604586.52	3824599.09	NILL	80 -100	Soft Rock
AP4	604490.47	3824678.02	NILL	80 -100	Hard Rock
AP5	604235.16	3824750.08	NILL	80 -100	Hard Rock
AP6	603958.95	3824768.34	NILL	50 -70	Hard Rock
AP7	603782.57	3824776.10	NILL	50 -70	Soft & Hard Rock
AP8	603650.08	3824678.62	NILL	50 -70	Soft Rock
AP9	603560.55	3824489.00	NILL	90 -120	Soft & Hard Rock

**220KV S/C DRASS-PADUM T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP10	603529.23	3824377.35	NILL	90 -120	Hard Rock
AP11	603501.38	3824158.78	NILL	70 -120	Soft Rock
AP12	603448.45	3823929.48	NILL	80 -160	Soft Rock
AP13	603512.42	3823600.81	NILL	60 -140	Hard Rock
AP14	603497.43	3823420.60	NILL	100 -170	Hard Rock
AP15	603349.25	3823160.78	NILL	80 -160	Hard Rock
AP16	603448.54	3822793.21	NILL	100 -170	Hard Rock
AP17	603647.31	3822360.44	NILL	100 -200	Hard Rock
AP18	603672.85	3821898.28	NILL	90 -160	Hard Rock
AP19	603707.84	3821385.44	NILL	80 -180	Hard Rock
AP20	603429.29	3820530.28	NILL	100 -190	Hard Rock
AP21	603419.27	3819368.50	NILL	80 -160	Hard Rock
AP22	603282.93	3818928.38	NILL	160	Hard Bolder
AP23	603107.62	3818532.16	NILL	140	Hard Rock
AP24	603121.95	3818412.07	NILL	150	Hard Rock
AP25	602929.71	3818099.95	NILL	120	Hard Rock
AP26	602520.23	3817894.53	NILL	160	Hard Rock
AP27	602281.62	3817753.52	NILL	140	Hard Rock
AP28	602184.37	3817745.76	NILL	90 -170	Hard Rock

**220KV S/C DRASS-PADUM T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP29	602031.90	3817625.52	NILL	100 -160	Hard Rock
AP30	601759.95	3817550.65	NILL	100 -170	Soft Rock
AP31	601695.68	3817564.68		70 150	Hard Rock
AP32	601418.88	3817421.06		80 -150	Hard Rock
AP33	601103.42	3817195.37		160	Soft Rock
AP34	600978.00	3817030.00		140	Soft Rock
AP35	600671.45	3816657.34		160	Soft Rock
AP36	600470.59	3816510.80		140	Soft Rock
AP37	600084.74	3815667.44	No	130	Red & Hard
AP38	599188.75	3815198.01	Wheat	80 -160	Soft Rock
AP39	598814.88	3815191.96	Wheat	70 -180	Soft Red
AP40	598461.45	3814902.84	Wheat	150	Soft
AP41	598366.00	3814602.00	Wheat	160	Soft
AP42	598362.94	3814233.98	Wheat	100 -170	Black Hard
AP43	598493.00	3813929.00	NILL	90 -150	Black Hard
AP44	598515.11	3813623.11	NILL	80 -150	Soft Red
AP45	598424.00	3813345.00	NILL	70 -160	Soft Red
AP46	598254.65	3813181.44	NILL	140	Soft Red
AP47	598035.45	3813029.74	Wheat	80 -150	Red Soft & Hard

**220KV S/C DRASS-PADUM T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP48	597697.05	3812204.69	NILL	70 -175	Soft Red
AP49	597329.00	3811757.00	Wheat	150 - 200	Soft
AP50	597032.15	3811225.41	Wheat	120 -180	Red Soft& Hard
AP51	596823.64	3810604.33	Wheat	130 -200	Black Soft
AP52	596357.35	3810077.20	Wheat	110 -180	Soft
AP53	596254.85	3809804.11	Wheat	100 -190	Soft
AP54	596120.97	3809601.99	Wheat	100 - 250	Black Soft
AP55	595799.00	3809450.00	Wheat	150 - 260 Fit	Soft Black Rock
AP56	595327.36	3809483.31	Wheat	100 - 180	Soft Black
AP57	594897.09	3809300.98	Wheat	120 - 170	Black Soft
AP58	594553.03	3809122.51	Wheat	100 - 250	Hard Rock
AP59	594497.21	3808972.27	Wheat	120 - 250	Soft Black
AP60	594223.26	3808763.49	Wheat	120 - 250	Soft Black
AP61	593984.35	3808410.44	Wheat	120 - 250	Soft Black
AP62	593823.62	3808138.28	Wheat	120 - 250	Soft Black
AP63	593886.49	3807940.03	Wheat	120 - 250	Soft Black
AP64	593727.61	3807681.03	Wheat	120 - 250	Soft Black
AP65	593549.90	3807542.99	Wheat	120 - 250	Soft Black
AP66	593246.49	3807140.20	Wheat	120 - 250	Soft Black
AP67	592294.46	3806211.13	NILL	150 - 200	Hard Rock

**220KV S/C DRASS-PADUM T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP68	591699.30	3805869.33	NILL	100 - 200	Soft & Hard ROCK
AP69	591352.83	3805341.36	NILL	100 - 200	Soft & Hard ROCK
AP70	590430.38	3804618.87	NILL	150 - 200	Hard Rock
AP71	590065.29	3804013.63	Wheat	90 - 120	Soft
AP72	589948.13	3803188.63	NILL	250	Hard Rock
AP73	589549.73	3802062.69	Wheat	150	Soft
AP74	589401.01	3801361.39	Wheat	130	Soft Black
AP75	589252.51	3800887.71	Wheat	100	Hard Rock
AP76	589048.20	3800416.54	Wheat	100	Soft
AP77	588935.26	3799946.97	Wheat	100	Soft
AP78	588632.75	3799400.27	Wheat	100	Hard Rock
AP79	588825.61	3798860.66	Wheat, Vegetables	100	Soft Black Rock
AP80	588833.35	3798474.44	Wheat, Vegetables	100	Soft Black Rock
AP81	589105.53	3797981.55	NILL	90	Soft & Hard
AP82	589296.76	3797413.17	NILL	100	Soft
AP83	589230.92	3797028.79	NILL	70 -110	Soft & Black Rock
AP84	588893.87	3796488.31	Wheat	60 -120	Soft & Black Rock
AP85	588678.83	3794582.90	Wheat	100	Soft Black

**220KV S/C DRASS-PADUM T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP86	589075.00	3793508.00	Wheat	70 -110	Soft Rock
AP87	589034.00	3792715.00	Wheat	80 -130	Soft & Hard
AP88	588935.00	3792102.00	Wheat	70 -110	Soft & Hard
AP89	588997.00	3791494.00	NILL	100	Hard Rock
AP90	589128.00	3791236.00	Wheat	80 -135	Hard Black Rock
AP91	589075.00	3790904.00	Wheat	70 -145	Hard Black Rock
AP92	588906.00	3790652.00	Wheat	110	Hard Rock
AP93	588841.00	3790496.00	Wheat	120	Hard Rock
AP94	589407.00	3789871.00	Wheat	100	Soft Black
AP95	589795.00	3789109.00	Wheat	100	Soft Black
AP96	589742.00	3788561.00	Wheat	100	Soft Black Rock
AP97	589988.00	3787941.00	Wheat	100	Soft Black
AP98	589731.00	3787210.00	Wheat	70 -110	Soft Black
AP99	589107.45	3786907.72	Wheat	100	Hard Rock Bolder
AP100	588377.00	3786831.00	Wheat	100	Hard Rock
AP101	587550.00	3786898.00	Wheat	250	Hard Rock
AP102	586843.95	3786617.79	Wheat	170	Hard Rock
AP103	585975.84	3785911.73	NILL	80 -150	Hard Rock
AP104	585547.80	3785350.53	NILL	70 -160	Hard Rock

**220KV S/C DRASS-PADUM T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP105	585502.00	3783242.00	Wheat	80 - 150	Black Hard & Soft
AP106	585971.00	3782085.00	Wheat	250 - 350	Soft Rock
AP107	586891.00	3780605.00	Wheat	100 - 250	Black & Soft Rock After 4 ft Stone
AP108	587532.00	3779852.00	Wheat	100 - 250	Black & Soft Rock
AP109	587805.75	3779437.80	Wheat	100 - 250	Black & Soft Rock
AP110	588039.40	3779179.80	Wheat	100 - 150	Hard Rock
AP111	587725.00	3778408.00	Wheat	50 - 75	Soft Rock
AP112	587667.00	3777932.00	Wheat	50 - 75	Soft Rock
AP113	588125.00	3777347.00	Wheat	50 - 75	Soft Rock
AP114	588416.43	3776105.77	Wheat	60 - 70	Hard Rock
AP115	588191.57	3775306.92	NILL	60 -80	Hard Rock
AP116	587516.32	3773772.58	Wheat	150 - 200	Soft Rock
AP117	586987.87	3773337.70	Wheat	150 - 200	Soft Rock
AP118	585848.42	3772287.24	Wheat	100 - 250	Hard Rock
AP119	585365.00	3770441.00	Wheat	80 - 150	Soft Rock
AP120	585727.73	3768947.72	Wheat	70 -140	Hard Rock
AP121	586255.36	3768311.50	NILL	60 -120	Hard Rock
AP122	587106.43	3768211.64	NILL	50 - 80	Soft & Hard Rock
AP123	589596.00	3768731.00	Wheat	30 - 50	Soft Rock

**220KV S/C DRASS-PADUM T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP124	590218.50	3770067.96	Wheat	70 - 100	Soft Rock
AP125	590586.52	3771726.04	Wheat	100 - 150	Hard Rock
AP126	590535.45	3772100.11	Wheat	30 - 60	Hard Rock
AP127	591157.00	3773023.00	Wheat	50 - 70	Soft Rock
AP128	591511.00	3773184.00	Wheat	50 - 120	Hard Rock
AP129	592370.35	3772982.29	NILL	40 - 60	Soft & Hard Rock
AP130	592731.00	3772561.00	NILL	40 - 100	Hard Rock
AP131	593105.26	3772269.45	NILL	90 - 150	Soft & Hard Rock
AP132	593788.03	3771905.21	NILL	70 -100	Soft & Hard Rock
AP133	594504.56	3771755.11	NILL	50 - 70	Hard Rock & Soft Rock
AP134	596543.00	3772076.00	NILL	50 - 60	Soft Rock
AP135	598083.00	3771811.00	NILL	60 - 70	Hard Rock
AP136	599568.00	3771604.00	NILL	30 -70	Soft Rock
AP137	601692.00	3771776.00	NILL	30 -50	Hard Rock
AP138	604686.00	3771405.00	NILL	30 60	Hard Rock
AP139	608393.51	3770535.89	NILL	30 -50	Soft Rock
AP140	608585.62	3770403.50	NILL	20 -50	Soft Rock
AP141	610645.70	3769612.88	NILL	30 -50	Soft Rock
AP142	611724.00	3768571.00	NILL	20 -40	Soft Black

**220KV S/C DRASS-PADUM T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP143	616393.63	3767757.20	NILL	20 - 50	Hard Rock
AP144	617570.17	3768495.46	NILL	30	Hard Rock
AP145	620226.36	3769195.58	NILL	20 - 50	Hard Rock
AP146	621560.73	3768916.93	NILL	40	Hard Rock
AP147	622573.00	3768876.00	NILL	30	Black Soft
AP148	624458.00	3768338.00	NILL	30	Hard Rock
AP149	626813.00	3766557.00	NILL	30 - 60	Soft Rock
AP150	627149.75	3764349.01	NILL	25 - 50	Soft Rock River Water Area
AP151	627080.00	3762907.00	NILL	30 - 50	Soft Black
AP152	626246.00	3761930.00	NILL	30 - 50	Soft After
AP153	624682.00	3760815.00	NILL	50 - 70	Bolder Stone Hard Rock
AP154	623309.00	3759506.00	NILL	80 - 100	Soft Rock
AP155	622089.83	3757796.37	NILL	100	Hard Rock
AP156	622161.21	3756085.39	NILL	100	Hard Rock
AP157	621878.25	3754612.75	NILL	120 - 200	Soft Rock
AP158	622924.38	3751515.02	NILL	100 - 120	Soft Rock
AP159	624171.00	3749309.00	NILL	150 - 200	Hard Rock
AP160	625641.00	3746867.00	NILL	200 - 250	Stone Hard Rock
AP161	627628.00	3746198.00	NILL	200 - 250	Soft Rock

**220KV S/C DRASS-PADUM T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP162	631246.00	3744303.00	NILL	90 - 120	Soft Rock After 7 ft Stone Start
AP163	633498.16	3741639.33	No	100	Soft & Hard Rock
AP164	634973.66	3738817.35		90	Soft & Hard Rock
AP165	636145.00	3735780.00	No	70 - 100	Soft Rock After 7 ft Stone Start
AP166	637475.00	3732672.00	NILL	70 - 100	Soft Rock After 5 ft Stone Start
AP167	639612.27	3732225.66	Wheat	100	Soft Rock
AP168	640652.33	3731803.76		60	Soft Rock
AP169	642351.85	3730962.87	Wheat	70	Soft Rock
AP170	643685.35	3730536.38	Wheat	80	Soft After 5 to 6 ft Stone
AP171	644914.00	3729832.00	Wheat, Green Peas	70 - 100	Soft Rock
AP172	645492.00	3729718.00	Wheat, Green Peas	50 - 60	Soft Rock
AP173	646127.00	3729343.00	Wheat, Green Peas	60 - 90	Soft Black Rock After 5 ft Stone
AP174	646883.20	3728667.78	Wheat, Green Peas	60 - 70	Soft Black Rock After 5 ft Stone
AP175	647455.00	3728478.00	NILL	50 - 70	Hard Stone
AP176	648459.06	3727693.04	NILL	60 - 80	Hard Rock Stone

**220KV S/C DRASS-PADUM T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP177	648920.44	3727256.80	NILL	70 -100	Hard Rock Stone
AP178	651144.77	3726287.95	NILL	50 - 70	Hard Stone
AP179	652103.33	3724506.33	Wheat, Green Peas	100 - 120	Hard Rock Stone
AP180	654645.94	3723286.30	Wheat	100	Hard Rock Stone
AP181	655029.85	3722873.51		70 -120	Hard Rock Stone
AP182	656352.49	3722649.26	Wheat, Green Peas	150 - 200	Hard Rock
AP183	657524.79	3721992.83		120 -180	Hard Rock
AP184	658262.89	3721415.03	Wheat, Green Peas	70 - 90	Hard Rock
AP185	659111.87	3720864.59		60 -110	Hard Rock
AP186	659206.00	3719998.00	NILL	100	Hard Rock
AP187	660102.00	3718848.00	NILL	100	Hard Rock
AP188	661524.00	3717652.00	NILL	50 - 100	Hard Rock
AP189	662221.00	3716619.00	NILL	100	Hard Stone
AP190	663597.17	3715554.84	Wheat, Green Peas	70 - 100	Hard Rock Stone
AP191	664300.07	3713962.41		80 -110	Hard Rock
AP192	665329.00	3711171.00	Wheat, Green Peas	70 - 90	Soft Black After 5 ft Stone Start
AP193	667515.00	3709252.00	Wheat, Green Peas	150 - 200	Hard Rock

**220KV S/C DRASS-PADUM T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP194	668301.00	3707623.00	NILL	70 - 90	Soft Rock
AP195	670311.00	3706421.00	NILL	70 - 90	Soft Rock

**220KV S/C DRASSE-PADUM T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP1	604684.39	3824527.11	NILL	80 -100	Hard Rock
AP2	604904.69	3824358.67	NILL	80 -100	Hard Rock
AP3	605565.28	3823541.82	NILL	70 -100	Hard Rock
AP4	605610.38	3823530.94	NILL	80 -100	Hard Rock
AP5	605718.06	3823524.91	NILL	60 -100	Hard Rock
AP6	605813.57	3823536.10	NILL	50 -70	Hard Rock
AP7	605897.98	3823609.58	NILL	50 -70	Hard Rock
AP8	606009.82	3823675.38	NILL	50 -70	Hard Rock

**220KV S/C DRASSE-PADUM T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP9	606086.46	3823683.45	NILL	90 -120	Hard Rock
AP10	606232.34	3823617.72	NILL	90 -120	Hard Rock
AP11	606395.56	3823486.14	NILL	90 - 120	Hard Rock
AP12	606459.49	3823227.76	NILL	90 - 120	Hard Rock
AP13	606555.21	3822954.52	NILL	150	Hard Rock
AP14	606499.60	3822623.86	NILL	120	Hard Rock
AP15	606619.52	3822202.87	NILL	100	Hard Rock
AP16	606658.32	3821586.94	NILL	100	Hard Rock
AP17	606979.93	3820858.06	NILL	100	Hard Rock
AP18	606976.56	3820118.95	NILL	110	Hard Rock
AP19	606471.73	3819406.30	NILL	120	Hard Rock
AP20	605992.68	3818996.67	NILL	80 -130	Hard Rock
AP21	605365.03	3818832.28	NILL	100	Hard Rock
AP22	604639.70	3818328.94	NILL	120	Hard Bolder
AP23	603882.13	3818198.72	NILL	70 -150	Hard Rock
AP24	603479.03	3818102.80	NILL	80 -150	Hard Rock
AP25	603197.12	3818044.97	NILL	100 -150	Hard Rock
AP26	602929.71	3818099.95	NILL	80 -150	Hard Rock
AP27	602520.23	3817894.53	NILL	70 -140	Hard Rock
AP28	602281.62	3817753.52	NILL	80 -160	Hard Rock
AP29	602184.37	3817745.76	NILL	70 -130	Hard Rock

**220KV S/C DRASSE-PADUM T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP30	602031.90	3817625.52	NILL	80 -150	Hard Rock
AP31	601759.95	3817550.65	NILL	60 -150	Soft Rock
AP32	601695.79	3817564.81	NILL	70 -140	Soft Rock
AP33	601418.88	3817421.06	NILL	80 -150	Soft Rock
AP34	601103.42	3817195.37	NILL	80 -150	Soft Rock
AP35	600978.00	3817030.00	NILL	70 -140	Soft Rock
AP36	600671.45	3816657.34	NILL	80 -160	Soft Rock
AP37	600470.59	3816510.80	NILL	70 -130	Soft Rock
AP38	600084.74	3815667.44	NILL	80 -120	Red & Hard
AP39	599846.61	3815161.37	Wheat	70 -110	Soft Rock
AP40	599375.50	3814948.97	Wheat	90 -120	Soft Red
AP41	598982.54	3814622.73	Wheat	100 - 250	Soft
AP42	598866.21	3814398.34	Wheat	70 -140	Soft
AP43	598835.17	3813934.61	NILL	80 -160	Soft
AP44	598852.83	3813508.98	NILL	70 -130	Soft Red
AP45	598627.41	3813072.02	NILL	80 -120	Soft Red
AP46	598242.78	3812856.67	Wheat	80 -120	Red Soft & Hard
AP47	598105.85	3812677.05	Wheat	70 -110	Red Soft & Hard
AP48	597938.79	3812317.10	NILL	90 -120	Soft Red
AP49	597907.41	3812095.93	NILL	80 -130	Soft Red
AP50	597739.89	3811978.11	NILL	70 -140	Soft Red

**220KV S/C DRASSE-PADUM T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP51	597625.89	3811712.25	Wheat	150 - 200	Soft
AP52	597584.71	3811377.40	Wheat	130 -190	Red Soft& Hard
AP53	597431.57	3811017.22	Wheat	110 -150	Red Soft& Hard
AP54	597204.60	3810647.73	Wheat	80 -120	Black Soft
AP55	597082.34	3810320.82	Wheat	70 -110	Black Soft
AP56	597083.90	3809845.04	Wheat	90 -120	Soft
AP57	597260.99	3809304.02	Wheat	100 - 250	Black Soft
AP58	597251.10	3808550.49	Wheat	150 - 260 Fit	Soft Black Rock
AP59	597063.69	3808281.91	Wheat	100 - 180	Soft Black
AP60	596586.22	3807976.70	Wheat	120 - 170	Black Soft
AP61	596072.45	3807602.70	Wheat	100 - 250	Hard Rock
AP62	595389.13	3807498.02	Wheat	120 - 250	Soft Black
AP63	594773.32	3807114.81	Wheat	120 - 250	Soft Black
AP64	593915.80	3807036.85	Wheat	120 - 250	Soft Black
AP65	592294.46	3806211.13	NILL	150 - 200	Hard Rock
AP66	591699.30	3805869.33	NILL	150 - 200	Hard Rock
AP67	591352.83	3805341.36	NILL	100 - 200	Soft & Hard ROCK
AP68	590430.38	3804618.87	NILL	150 - 200	Hard Rock
AP69	590065.29	3804013.63	Wheat	90 - 120	Soft
AP70	589948.13	3803188.63	Wheat	90 - 120	Soft
AP71	589549.73	3802062.69	Wheat	150	Soft

**220KV S/C DRASSE-PADUM T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP72	589401.01	3801361.39	Wheat	120	Soft Black
AP73	589252.51	3800887.71	Wheat	100	Soft
AP74	589048.20	3800416.54	Wheat	100	Soft Black
AP75	588935.26	3799946.97	Wheat	100	Soft Black
AP76	588632.75	3799400.27	Wheat	100	Soft Black
AP77	588543.04	3798654.26	Wheat, Vegetables	100	Soft Black Rock
AP78	588686.28	3797806.13	NILL	80	Soft Black Rock
AP79	588648.28	3797329.75	NILL	100	Hard Rock
AP80	588843.55	3796955.11		110	Hard Rock
AP81	588893.87	3796488.31	Wheat	50 -90	Soft & Black Rock
AP82	588678.83	3794582.90	Wheat	50 -100	Soft Black
AP83	589075.00	3793508.00	Wheat	100 - 150	Soft Rock
AP84	589034.00	3792715.00	Wheat	100 - 150	Soft & Hard
AP85	588935.00	3792102.00	Wheat	100 - 150	Soft & Hard
AP86	588997.00	3791494.00	NILL	80 -150	Hard Rock
AP87	589128.00	3791236.00	Wheat	70 -160	Hard Black Rock
AP88	589075.00	3790904.00	Wheat	70 -150	Hard Black Rock
AP89	588906.00	3790652.00	Wheat	80 -170	Hard Rock
AP90	588841.00	3790496.00	Wheat	70 140	Hard Rock
AP91	589407.00	3789871.00	Whaet	100	Soft
AP92	589795.00	3789109.00	Wheat	100	Soft

**220KV S/C DRASSE-PADUM T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP93	589742.00	3788561.00	Wheat	100	Soft Black Rock
AP94	589988.00	3787941.00	Wheat	100	Soft Black
AP95	589731.00	3787210.00	Wheat	70 -100	Soft Black
AP96	589107.45	3786907.72	Wheat	100	Hard Rock Bolder
AP97	588377.00	3786831.00	Wheat	100	Hard Rock
AP98	587550.00	3786898.00	Wheat	250	Hard Rock After 7 ft Bolder
AP99	587005.75	3786634.67	Wheat	200	Hard Rock Black After 8 ft
AP100	586685.32	3786201.35	Wheat	100 -200	Hard Rock Black After 8 ft
AP101	586439.99	3785609.68	NILL	80 -150	Hard Rock
AP102	586104.90	3785162.11	NILL	70 -140	Hard Rock
AP103	586030.14	3784630.75	NILL	70 -150	Hard Rock
AP104	586093.26	3783848.07	Wheat	80 - 150	Black Hard & Soft
AP105	586439.13	3783286.52	Wheat	80 - 150	Black Hard & Soft
AP106	586824.67	3782232.28	Wheat	250 - 350	Soft After 4 To 5 ft Stone
AP107	587652.24	3781447.67	Wheat	100 - 250	Black & Soft Rock After 4 ft Stone
AP108	588307.04	3780417.71	Wheat	100 - 250	Black & Soft Rock After 4 ft Stone
AP109	588841.76	3780172.73	Wheat	100 - 250	Black & Soft Rock After 4 ft Stone

**220KV S/C DRASSE-PADUM T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP110	589042.54	3779674.18	Wheat	100 - 150	Hard Rock
AP111	589232.92	3778884.40	Wheat	50 - 75	Soft Rock After 4 to 6 ft Stone
AP112	589198.26	3777954.18	Wheat	50 - 75	Soft Rock After 4 To 6 ft Stone
AP113	589582.24	3777464.98	Wheat	50 - 75	Soft Rock After 4 To 5 ft Stone
AP114	589518.74	3776386.60	Wheat	60 - 70	Hard Rock After 4 To 5 ft Stone
AP115	589315.55	3775594.15		60 -90	Hard Rock
AP116	588948.21	3775231.05	NILL	50 -80	Hard Rock
AP117	588673.68	3774662.60	NILL	80 -120	Hard Rock
AP118	587915.68	3773911.28	Wheat	150 - 200	Soft Rock After 5 To 8 ft Stone
AP119	587546.69	3772809.24	Wheat	150 - 200	Soft Rock After 5 To 8 ft Stone
AP120	586511.50	3771626.16	Wheat	100 - 250	Hard Rock
AP121	586226.28	3770378.75	Wheat	80 - 150	Soft After 10 To 15 ft Stone
AP122	586107.36	3769412.88	Wheat	70 -150	Hard Rock
AP123	586527.89	3768681.70		60 -100	Hard Rock
AP124	587106.43	3768211.64	NILL	50 - 80	Soft & Hard Rock
AP125	589596.00	3768731.00	Wheat	30 - 50	Soft After 4 ft Stone
AP126	590219.98	3770071.44	Wheat	70 - 100	Soft After 4 To 5 ft Stone

**220KV S/C DRASSE-PADUM T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP127	590524.03	3770598.44	Wheat	70 - 100	Soft After 4 To 5 ft Stone
AP128	590785.36	3771155.78	Wheat	100 - 150	Hard Rock
AP129	590838.93	3771409.82	Wheat	100 - 150	Hard Rock
AP130	590982.44	3771653.54	Wheat	100 - 150	Hard Rock
AP131	591045.81	3771856.81	Wheat	30 - 60	Hard Rock
AP132	591526.03	3772089.81	Wheat	30 - 60	Hard Rock
AP133	591794.16	3772487.54	Wheat	50 - 70	Soft After 4 ft To 8 ft No Stone
AP134	592048.64	3772683.18	NILL	40 - 60	Soft & Hard Rock
AP135	592358.75	3772711.37	NILL	40 - 60	Soft & Hard Rock
AP136	592731.00	3772561.00	NILL	40 - 100	Hard Rock
AP137	593105.26	3772269.45	NILL	90 - 150	Soft & Hard Rock
AP138	593788.03	3771905.21	NILL		Hard Rock
AP139	594504.56	3771755.11	NILL	50 - 70	Hard Rock & Soft Rock
AP140	595202.98	3771617.18	NILL	50 - 70	Hard Rock & Soft Rock
AP141	596151.25	3771811.65	NILL	50 - 60	Soft Rock After 4 ft To Stone Start
AP142	597152.36	3771516.80	NILL	60 - 70	Hard Rock
AP143	597968.39	3771491.24	NILL	60 - 70	Hard Rock
AP144	598730.15	3771117.23	NILL	60 - 70	Hard Rock

**220KV S/C DRASSE-PADUM T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP145	599512.63	3771323.27	NILL	60 -80	Soft After 4 To 6 ft Stone Start
AP146	601205.67	3771447.11	NILL	50 -90	Hard Rock
AP147	602497.27	3770984.67	NILL	50 -80	Hard Rock
AP148	604171.97	3770736.82	NILL	45 -90	Hard Rock
AP149	605482.64	3770094.24	NILL	70 -100	Hard Rock
AP150	608430.62	3769556.34	NILL	50 -110	Soft After 5 ft To Stone Start
AP151	610288.58	3768710.76	NILL	40 -80	Hard Rock
AP152	611507.06	3767850.80	NILL	30 -70	Soft Black
AP153	613355.59	3767249.25	NILL	30 -60	Soft Black
AP154	615699.13	3767010.19	NILL	30 -60	Hard 4 ft Stone
AP155	617794.79	3767287.10	NILL	20 -50	Hard Rock
AP156	619473.63	3767920.23	NILL	20 - 50	Soft
AP157	621327.63	3767881.70	NILL	30 -50	Black Soft
AP158	623076.85	3767486.14	NILL	30	Hard Rock
AP159	625189.17	3766219.13	NILL	30 - 60	Soft
AP160	625823.67	3765084.62	NILL	30 - 60	Soft
AP161	626008.14	3763737.48	NILL	25 - 50	Soft River Water Area
AP162	626445.91	3762974.44	NILL	20 -40	Soft Black After 5 ft Stone Start
AP163	626246.00	3761930.00	NILL	30 -70	Soft After 5 ft Stone Start

**220KV S/C DRASSE-PADUM T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP164	624682.00	3760815.00	NILL	50 - 70	Bolder Stone Hard Rock
AP165	623309.00	3759506.00	NILL	80 - 100	Soft
AP166	622089.83	3757796.37	NILL	100	Hard Rock
AP167	622161.21	3756085.39	NILL	70 -120	
AP168	621878.25	3754612.75	NILL	120 - 200	Soft Rock
AP169	622924.38	3751515.02	NILL	80 -120	Hard Rock
AP170	624171.00	3749309.00	NILL	150 - 200	Hard Rock
AP171	625641.00	3746867.00	NILL	200 - 250	Stone Hard Rock
AP172	627628.00	3746198.00	NILL	200 - 250	Soft After 5 ft Stone Start
AP173	631246.00	3744303.00	NILL	90 - 120	Soft Rock After 7 ft Stone Start
AP174	633498.16	3741639.33	NILL	100	Soft & Hard Rock
AP175	634973.66	3738817.35	NILL	90 -120	Hard Rock
AP176	636145.00	3735780.00	NILL	70 - 100	Soft Rock After 7 ft Stone Start
AP177	637475.00	3732672.00	NILL	70 - 100	Soft Rock After 5 ft Stone Start
AP178	639612.27	3732225.66	Wheat	100	Soft Rock
AP179	640652.33	3731803.76		80 -120	Hard Rock
AP180	642351.85	3730962.87	Wheat	70	Soft Rock
AP181	643685.35	3730536.38	Wheat	70 -120	Soft After 5 to 6 ft Stone

**220KV S/C DRASSE-PADUM T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP182	644914.00	3729832.00	Wheat, Green Peas	70 - 100	Soft Rock
AP183	645492.00	3729718.00	Wheat, Green Peas	50 - 60	Soft Rock
AP184	646127.00	3729343.00	Wheat, Green Peas	50 -80	Soft Black Rock After 5 ft Stone
AP185	646883.20	3728667.78	Wheat, Green Peas	50 -70	Soft Black Rock After 5 ft Stone
AP186	647432.61	3727199.16	NILL	60 - 80	Hard Rock Stone
AP187	648589.87	3726520.95	NILL	50 -80	Hard Rock
AP188	649540.95	3725359.33	NILL	50 - 70	Hard Stone
AP189	651163.56	3724659.05	Wheat, Green Peas	100 - 120	Hard Rock Stone
AP190	652175.08	3723654.02	Wheat, Green Peas	100 - 120	Hard Rock Stone
AP191	653186.33	3723307.61	Wheat	100	Hard Rock Stone
AP192	654105.05	3722410.99	Wheat	100	Hard Rock Stone
AP193	654957.62	3722549.88	Wheat, Green Peas	150 - 200	Hard Rock
AP194	655685.33	3722371.99	Wheat, Green Peas	150 - 200	Hard Rock
AP195	656458.99	3721571.49	NILL		Hard Rock
AP196	657477.40	3720644.51	Wheat, Green Peas	70 - 90	Hard Rock
AP197	658016.51	3719991.35	NILL	100	Hard Rock

**220KV S/C DRASSE-PADUM T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water Table	Soil
AP198	658608.56	3719435.16	NILL	100	Hard Rock
AP199	658999.23	3718611.13	NILL	100	Hard Rock
AP200	659770.45	3718044.13	NILL	100	Hard Rock
AP201	660329.83	3717104.80	NILL	50 - 100	Hard Rock
AP202	661592.35	3715969.61	NILL	100	Hard Stone
AP203	662502.15	3714561.25	Wheat, Green Peas	70 - 100	Hard Rock Stone
AP204	663177.32	3713871.63	NILL	75 120	Hard Rock
AP205	663579.68	3713320.79	NILL	60 -100	Hard Rock
AP206	664053.26	3712814.91	NILL	50 -100	Hard Rock
AP207	664172.07	3712366.91	NILL	60 -120	Hard Rock
AP208	664520.61	3711513.59	Wheat, Green Peas	70 - 90	Soft Black After 5 ft Stone Start
AP209	665329.00	3711171.00	Wheat, Green Peas	70 - 90	Soft Black After 5 ft Stone Start
AP210	667515.00	3709252.00	Wheat, Green Peas	150 - 200	Hard Rock
AP211	668301.00	3707623.00	NILL	70 - 90	Soft Rock
AP212	670311.00	3706421.00	NILL	70 - 90	Soft Rock

CHAPTER-3.6

Bill of Quantity with Extension

REC Transmission Projects Company Limited												
Tentative Bill of Quantity Based on Route Alignment survey												
220 KV Transmission Line From Drass To Padum (Zanaskar) S/C Line on DC Tower												
AP No.	DA+0	DA+3	DA+6	DC+0	DC+3	DC+6	DC+9	DD+0	DD+3	DD+6	DD+9	Grand Total
Gantry								1				1
D/E Tower								1				1
AP-1										1		1
AP-2	1			1					1			3
AP-3						1				1		2
AP-4				2				1				3
AP-5				1					1			2
AP-6						1				1		2
AP-7	1				1			1				3
AP-8				1	3	1			1			6
AP-9				4	2	2	1	1				10
AP-10					1	1	1	1				4
AP-11				2	1	2					1	6
AP-12				2	2	1	1	1		1		8
AP-13				1	2			1				4
AP-14				1			1			1		3
AP-15				2				1				3
AP-16								1				1
AP-17				1		2		1				4
AP-18				2						1		3
AP-19				2	1	1		1				5
AP-20					1			1				2
AP-21				1					1			2
AP-22										1		1
AP-23					1				1			2
AP-24					1			1				2
AP-25					1				1			2
AP-26					2				1			3
AP-27								1				1
AP-28				1		1		1				3
AP-29								1				1
AP-30				1		2			1			4
AP-31				1	2			1				4
AP-32								1				1
AP-33				3	1	1			1			6
AP-34	1			1	1			1				4
AP-35				2				1				3
AP-36				1					1			2
AP-37				1				1				2
AP-38								1				1
AP-39								1				1
AP-40									1			1
AP-41								1				1
AP-42						2			1			3
AP-43		1			1			1				3
AP-44				1				1				2
AP-45						1			1			2
AP-46						2					1	3
AP-47					1					1		2
AP-48		1		1						1		3
AP-49				1			1		1			3
AP-50				1		1		1				3
AP-51					1		2		1			4
AP-52					2			1				3
AP-53				2		3	1		1			7
AP-54				1			2	1				4
AP-55		1		2		2		1				6
AP-56				1	1					1		3
AP-57	1								1			2
AP-58									1			1
AP-59					2			1				3
AP-60		1						1				2
AP-61				1	1			1				3
AP-62						1	2		1			4
AP-63				2						1		3

AP-64				2		3		1				6
AP-65					1			1				2
AP-66				1	3			1				5
AP-67				2	3	1			1			7
AP-68				3	1			1				5
AP-69	1						1			1		3
AP-70				1		1		1				3
AP-71				4	2	2		1				9
AP-72				4					1			5
AP-73				2	1	2		1				6
AP-74									1			1
AP-75				2	1			1				4
AP-76								1				1
AP-77					2				1			3
AP-78		1						1				2
AP-79				1						1		2
AP-80				1			1		1			3
AP-81	1			1				1				3
AP-82				4		2		1				7
AP-83			1	2		1			1			5
AP-84				3	1			1				5
AP-85				1	2	3		1				7
AP-86				4	2	3			1			10
AP-87				5	5	2				1		13
AP-88								1				1
AP-89				3	1	3		1				8
AP-90				2			2	1				5
AP-91				6		3	2	3	1	2		17
AP-92	1		1	1					2			5
AP-93				2	3		2		1	2		10
AP-94				2				1	1		1	5
AP-95				2	1				1			4
AP-96				1	3				2	1		7
AP-97				6				3		1		10
AP-98				2	5			1				8
AP-99				2	1		1	1				5
AP-100				2		1			1			4
AP-101				4		2					1	7
AP-102				3	3			1				7
AP-103				3	2		1		1			7
AP-104				2	1			1	2			6
AP-105				4				1				5
AP-106				4	3	2		2				11
AP-107				5	2	1		1				9
AP-108	1			2	4	1			2			10
AP-109				3	2		1	1				7
AP-110				6	3	4		1				14
AP-111			1	6	3			1		1		12
AP-112				4		3	3		1			11
AP-113				7	3					1		11
AP-114				4	3	2		2		1		12
AP-115				3	2	2			1			8
AP-116					1	2		1				4
AP-117				1	2	2	1	1				7
AP-118				2	2			1				5
AP-119	1							1				2
AP-120				2				1				3
AP-121					1			1				2
AP-122				2						1		3
AP-123				2	1			1		1		5
AP-124				1					1			2
AP-125				1	2					1		4
AP-126			1					1				2
AP-127			1	6				1				8
AP-128				2	4				1			7
AP-129				3	3	2		1	1			10
AP-130					1			1				2
AP-131				3	1				1			5

AP-132				3	1			1				5
AP-133				2				1				3
AP-134				2				1				3
AP-135				1				1				2
AP-136								1				1
AP-137			1	1	2				1			5
AP-138				5				1				6
AP-139					1	2				1		4
AP-140				4	2				1			7
AP-141				2	2	1		1				6
AP-142				5	2	2		1				10
AP-143				2	2	4	1		1			10
AP-144				4	2				1			7
D/E Tower								1				1
Gantry								1				1
Grand Total	9	5	6	237	133	87	28	92	50	27	4	678

CHAPTER-4

**220KV Transmission Line from Phyang (PGCIL) To Diskit
(Nubra) S/C Line on DC Tower**

CHAPTER-4.1
SUBSTATION COORDINARE

Co-ordinates of Substations

Phyang Existing Substation

(Latitude 34°09'22.84" and Longitude 77°27'06.93")

&

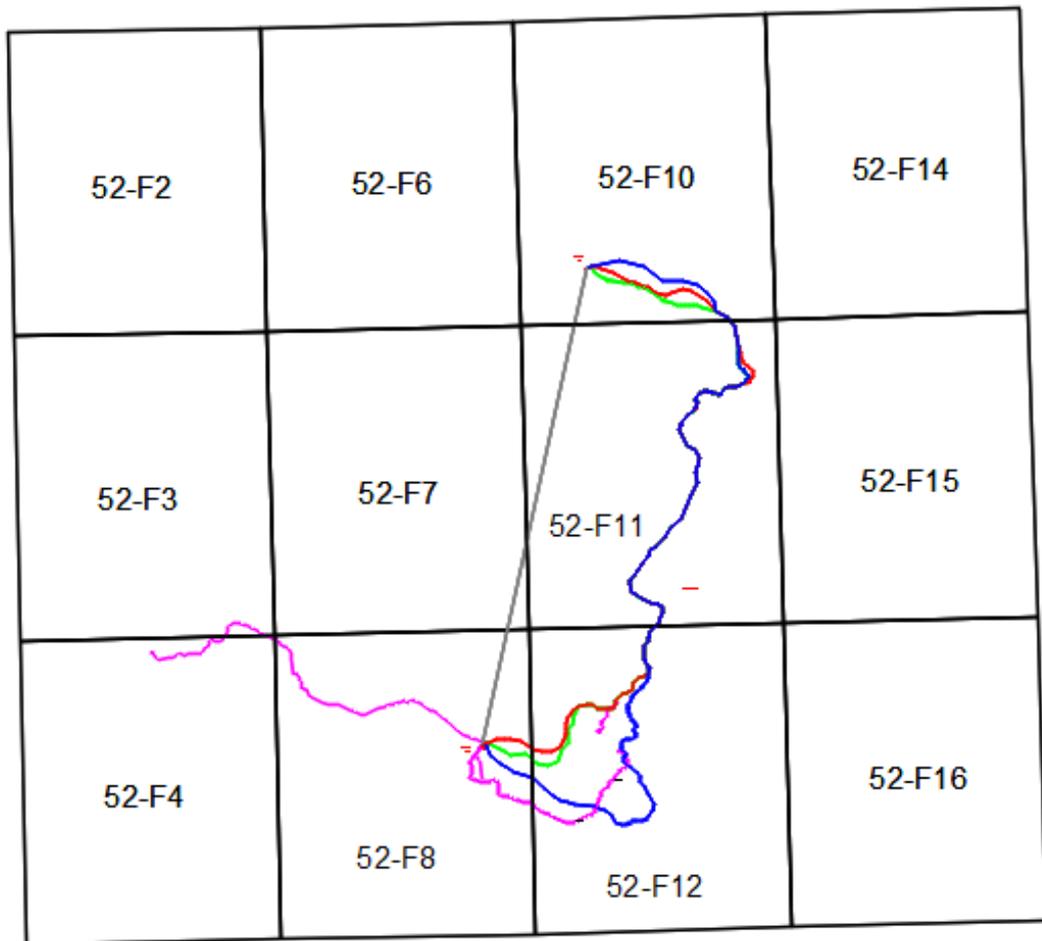
Diskit Proposed Substation

(Latitude 34°32'45.22" and Longitude 77°33'55.30")

CHAPTER-4.2
INDEX MAP OF SOI TOPOSHEETS

Route Selection

Survey of India Toposheet Index Map (1:50000 scale)



CHAPTER-4.3
COMPARATIVE STATEMENT FOR
THREE ALTERNATIVE ROUTES

Comparative Statement for Three Alternative Routes

Sr. No.	Description	Alt-I(Proposed) (Red)	Alt-II	Alt-III
1	Line Length	77.603 KM	77.931 KM	92.641 KM
	a) Plain	5%	5%	5%
	b) Hilly	95%	95%	95%
	c) Wind Zone	6	6	6
	B-Line	44.466 km.	44.466 km.	44.466 km.
2	a) Angle Points	129	131	186
3	Forest	Nil	Nil	Nil
	a) Reserve /Protected Forest	Record Not Available at Forest Office	Record Not Available at Forest Office	Record Not Available at Forest Office
4	Transportation & Maintenance	Available	Available	Available
5	Power Line crossings (132KV & Above)	AP22 -AP23 (66 KV S/C)	AP20 -AP21 (66 KV S/C)	AP13 -AP14 (66 KV S/C)
		AP24 -AP25 (66 KV S/C)	AP22 -AP23 (66 KV S/C)	AP40 -AP41 (66KV S/C)
				AP45 -AP46 (66 KV S/C)
6	Railway crossings	NILL	NILL	NILL
7	River crossings	AP4 -AP5	AP3 -AP4	AP178 -AP179
		Nil	Nil	AP181 -AP182
8	AirPorts	2.9 KM LEH	1.9 KM LEH	3.2 KM LEH
9	NH Crossings	NH-1D	NH-1D	NH-1D
10	SH Crossings	Nil	Nil	Nil
11	Approaches for construction	Sufficient approach is available	Sufficient approach is available	Sufficient approach is available

CHAPTER-4.4
COORDINATES OF THREE ALTERNATIVE ROUTES

220KV S/C PHYANG-DISKIT T/L on D/C Tower (TOWER SCHEDULE)

ALTERNATIVE-1

AP NO.	EASTING	NOTHING	LONGITUDE			LATITUDE			ANGLE OF DEVIATION	SPAN IN MTR.	COMMU LENGTH (Mtr)
			DEG	MIN	SEC	DEG	MIN	SEC			
GANTRY	726040.00	3782208.00	77	27	6.93	34	9	22.84		0.00	
									42.54		
D/E TOWER	726061.00	3782245.00	77	27	7.78	34	9	24.02	51°25'36.5"	42.54	
									262.23		
AP-1	726320.00	3782286.00	77	27	17.93	34	9	25.15	6°31'20.3"	304.77	
									301.28		
AP-2	726621.00	3782299.00	77	27	29.69	34	9	25.34	30°28'4.6"	606.05	
									784.79		
AP-3	727279.62	3782725.75	77	27	55.79	34	9	38.67	30°6'51.5"	1390.84	
									744.52		
AP-4	728023.24	3782762.47	77	28	24.84	34	9	39.27	12°1'42.2"	2135.37	
									654.37		
AP-5	728669.19	3782657.83	77	28	49.94	34	9	35.37	2°16'42.1"	2789.74	
									849.97		
AP-6	729502.16	3782488.66	77	29	22.29	34	9	29.22	17°23'2"	3639.71	
									1402.99		
AP-7	730730.85	3781811.39	77	30	9.58	34	9	6.28	18°51'41"	5042.70	
									752.32		
AP-8	731471.74	3781680.72	77	30	38.36	34	9	1.45	3°46'26.4"	5795.02	
									828.21		
AP-9	732295.06	3781590.86	77	31	10.39	34	8	57.88	36°35'34.7"	6623.23	
									861.39		
AP-10	733038.28	3782026.29	77	31	39.81	34	9	11.40	28°56'58.6"	7484.61	
									712.54		
AP-11	733401.92	3782639.05	77	31	54.59	34	9	30.99	4°15'21.1"	8197.15	
									611.14		
AP-12	733673.94	3783186.31	77	32	5.73	34	9	48.52	31°3'26.5"	8808.29	
									451.70		
AP-13	733637.50	3783636.54	77	32	4.75	34	10	3.15	0°30'15.8"	9259.98	
									548.42		
AP-14	733598.07	3784183.54	77	32	3.74	34	10	20.93	24°21'47.2"	9808.40	
									541.71		
AP-15	733785.48	3784691.80	77	32	11.55	34	10	37.26	28°38'8.5"	10350.12	
									356.90		
AP-16	734054.33	3784926.53	77	32	22.27	34	10	44.66	29°29'1.6"	10707.01	
									395.64		
AP-17	734185.69	3785299.72	77	32	27.76	34	10	56.65	35°12'24.7"	11102.65	
									642.00		
AP-18	734708.99	3785671.63	77	32	48.55	34	11	8.29	17°31'29.8"	11744.65	
									741.27		
AP-19	735414.47	3785899.16	77	33	16.30	34	11	15.10	25°34'44.8"	12485.91	
									696.10		
AP-20	736104.29	3785805.86	77	33	43.13	34	11	11.51	36°10'53.6"	13182.01	
									423.16		
AP-21	736409.28	3785512.52	77	33	54.75	34	11	1.75	44°9'8.5"	13605.18	

										860.03	
AP-22	737269.30	3785516.53	77	34	28.32	34	11	1.18	5°43'32.8"		14465.21
										279.60	
AP-23	737547.64	3785489.94	77	34	39.16	34	11	0.09	22°47'43"		14744.81
										318.93	
AP-24	737852.07	3785584.98	77	34	51.13	34	11	2.92	59°41'13.1"		15063.74
										119.64	
AP-25	737878.94	3785701.57	77	34	52.29	34	11	6.68	36°21'40.9"		15183.38
										242.68	
AP-26	738063.02	3785859.70	77	34	59.63	34	11	11.66	35°2'47.7"		15426.06
										360.46	
AP-27	738152.00	3786209.00	77	35	3.45	34	11	22.91	31°2'7.4"		15786.52
										772.56	
AP-28	738701.39	3786752.17	77	35	25.44	34	11	40.08	17°28'56.2"		16559.08
										637.53	
AP-29	739268.46	3787043.50	77	35	47.86	34	11	49.06	15°49'21.9"		17196.61
										299.95	
AP-30	739487.78	3787248.12	77	35	56.62	34	11	55.51	25°2'40.1"		17496.56
										712.49	
AP-31	739754.00	3787909.00	77	36	7.67	34	12	16.73	34°1'20"		18209.05
										550.27	
AP-32	740210.00	3788217.00	77	36	25.78	34	12	26.34	7°10'4.6"		18759.32
										590.78	
AP-33	740737.00	3788484.00	77	36	46.62	34	12	34.56	5°43'54"		19350.10
										306.25	
AP-34	740995.00	3788649.00	77	36	56.86	34	12	39.70	40°52'10.2"		19656.35
										551.81	
AP-35	741152.00	3789178.00	77	37	3.52	34	12	56.72	42°33'53.5"		20208.16
										889.77	
AP-36	740761.47	3789977.48	77	36	49.07	34	13	22.98	24°51'24.2"		21097.92
										1238.78	
AP-37	740736.00	3791216.00	77	36	49.32	34	14	3.17	30°15'55.6"		22336.70
										508.08	
AP-38	740983.00	3791660.00	77	36	59.41	34	14	17.36	4°26'20.2"		22844.78
										347.68	
AP-39	741128.00	3791976.00	77	37	5.39	34	14	27.49	21°44'22"		23192.46
										551.71	
AP-40	741156.00	3792527.00	77	37	7.04	34	14	45.34	40°59'21.2"		23744.17
										588.42	
AP-41	741564.00	3792951.00	77	37	23.40	34	14	58.75	12°59'37.8"		24332.60
										600.49	
AP-42	742067.00	3793279.00	77	37	43.38	34	15	8.96	48°37'52.9"		24933.09
										682.08	
AP-43	742165.00	3793954.00	77	37	47.89	34	15	30.77	24°32'56.6"		25615.17
										415.24	
AP-44	742390.00	3794303.00	77	37	57.03	34	15	41.90	36°10'58.4"		26030.41
										509.88	
AP-45	742360.00	3794812.00	77	37	56.37	34	15	58.44	53°4'42.7"		26540.29
										448.75	
AP-46	741986.00	3795060.00	77	37	42.01	34	16	6.79	20°35'29.6"		26989.05
										682.37	
AP-47	741321.00	3795213.00	77	37	16.19	34	16	12.31	8°16'43"		27671.42
										789.62	
AP-48	740585.00	3795499.00	77	36	47.72	34	16	22.20	17°7'22.8"		28461.03

										207.87	
AP-49	740422.00	3795628.00	77	36	41.48	34	16	26.52	16°35'8"		28668.90
										525.72	
AP-50	739933.78	3795823.01	77	36	22.60	34	16	33.25	26°55'15.4"		29194.63
										435.67	
AP-51	739646.20	3796150.28	77	36	11.70	34	16	44.11	13°55'7.8"		29630.30
										706.96	
AP-52	739321.00	3796778.00	77	35	59.62	34	17	4.74	38°17'24.9"		30337.26
										496.97	
AP-53	739415.00	3797266.00	77	36	3.78	34	17	20.49	37°23'10.7"		30834.23
										554.58	
AP-54	739829.00	3797635.00	77	36	20.33	34	17	32.11	21°27'18.7"		31388.81
										476.29	
AP-55	740044.00	3798060.00	77	36	29.15	34	17	45.71	9°27'28"		31865.09
										892.05	
AP-56	740572.00	3798779.00	77	36	50.51	34	18	8.59	1°56'54.3"		32757.14
										875.65	
AP-57	741066.00	3799502.00	77	37	10.54	34	18	31.63	11°24'56.2"		33632.79
										472.31	
AP-58	741250.00	3799937.00	77	37	18.17	34	18	45.58	33°58'23.2"		34105.10
										510.91	
AP-59	741678.00	3800216.00	77	37	35.19	34	18	54.27	15°2'19"		34616.01
										1227.26	
AP-60	742497.00	3801130.00	77	38	8.12	34	19	23.23	12°37'47.6"		35843.27
										1095.52	
AP-61	743032.00	3802086.00	77	38	30.01	34	19	53.78	23°6'12"		36938.79
										1168.51	
AP-62	743957.00	3802800.00	77	39	6.90	34	20	16.16	29°26'53.3"		38107.30
										2370.64	
AP-63	744879.00	3804984.00	77	39	45.19	34	21	26.20	6°11'0.2"		40477.94
										1360.38	
AP-64	745540.00	3806173.00	77	40	12.26	34	22	4.20	40°19'59.5"		41838.32
										942.14	
AP-65	745356.00	3807097.00	77	40	6.02	34	22	34.32	33°49'26.6"		42780.46
										531.69	
AP-66	745560.00	3807588.00	77	40	14.50	34	22	50.07	13°40'11.2"		43312.16
										776.33	
AP-67	745680.00	3808355.00	77	40	19.99	34	23	14.84	34°26'27.2"		44088.49
										403.45	
AP-68	745506.00	3808719.00	77	40	13.55	34	23	26.80	13°33'8.1"		44491.94
										385.29	
AP-69	745263.00	3809018.00	77	40	4.36	34	23	36.70	21°50'39.5"		44877.23
										803.06	
AP-70	744561.00	3809408.00	77	39	37.29	34	23	49.95	35°6'10.3"		45680.29
										1312.23	
AP-71	743989.00	3810589.00	77	39	16.12	34	24	28.74	15°55'37.3"		46992.52
										394.90	
AP-72	743921.00	3810978.00	77	39	13.86	34	24	41.41	22°56'5.8"		47387.42
										519.35	
AP-73	744038.00	3811484.00	77	39	18.96	34	24	57.72	26°16'11.9"		47906.77
										909.61	
AP-74	744614.00	3812188.00	77	39	42.22	34	25	20.06	12°48'11.2"		48816.38
										618.50	
AP-75	745102.00	3812568.00	77	40	1.71	34	25	31.97	13°59'5.8"		49434.88

										453.71	
AP-76	745382.00	3812925.00	77	40	13.04	34	25	43.31	25°56'33.2"		49888.59
										512.51	
AP-77	745490.00	3813426.00	77	40	17.78	34	25	59.46	34°5'54.7"		50401.09
										170.82	
AP-78	745426.19	3813584.46	77	40	15.45	34	26	4.66	9°15'54.8"		50571.92
										251.67	
AP-79	745371.00	3813830.00	77	40	13.54	34	26	12.67	48°25'24.1"		50823.58
										528.48	
AP-80	745679.80	3814258.87	77	40	26.07	34	26	26.31	34°19'50.9"		51352.06
										286.01	
AP-81	745948.71	3814356.29	77	40	36.70	34	26	29.24	6°8'46.1"		51638.07
										201.55	
AP-82	746144.47	3814404.26	77	40	44.41	34	26	30.63	12°48'6.8"		51839.62
										319.44	
AP-83	746463.86	3814409.64	77	40	56.92	34	26	30.53	6°47'37.4"		52159.06
										355.01	
AP-84	746817.03	3814373.60	77	41	10.71	34	26	29.05	16°25'52"		52514.07
										350.05	
AP-85	747141.00	3814241.00	77	41	23.25	34	26	24.47	2°11'6.7"		52864.12
										169.16	
AP-86	747295.00	3814171.00	77	41	29.21	34	26	22.07	17°37'55.3"		53033.28
										295.08	
AP-87	747588.00	3814136.00	77	41	40.64	34	26	20.68	49°52'13.6"		53328.37
										83.49	
AP-88	747649.00	3814193.00	77	41	43.09	34	26	22.48	24°7'47.3"		53411.85
										505.54	
AP-89	747845.00	3814659.00	77	41	51.24	34	26	37.42	31°53'54.4"		53917.39
										456.97	
AP-90	748218.00	3814923.00	77	42	6.12	34	26	45.66	43°14'23.6"		54374.37
										404.89	
AP-91	748619.00	3814867.00	77	42	21.76	34	26	43.50	21°31'38.9"		54779.26
										272.62	
AP-92	748884.00	3814931.00	77	42	32.20	34	26	45.34	12°25'37.6"		55051.88
										249.05	
AP-93	749133.00	3814936.00	77	42	41.95	34	26	45.29	33°15'29.2"		55300.93
										265.44	
AP-94	749352.00	3815086.00	77	42	50.68	34	26	49.96	16°41'20.3"		55566.37
										421.53	
AP-95	749753.53	3815214.29	77	43	6.54	34	26	53.77	5°42'29.2"		55987.90
										466.27	
AP-96	750209.59	3815311.33	77	43	24.49	34	26	56.52	41°37'1"		56454.17
										613.67	
AP-97	750573.51	3815805.45	77	43	39.26	34	27	12.23	45°55'48.4"		57067.84
										524.58	
AP-98	750486.40	3816322.75	77	43	36.39	34	27	29.08	34°40'24.6"		57592.43
										421.28	
AP-99	750192.54	3816624.60	77	43	25.21	34	27	39.13	12°24'40.3"		58013.70
										490.07	
AP-100	749783.20	3816894.07	77	43	9.46	34	27	48.22	12°3'28.6"		58503.78
										241.00	
AP-101	749614.02	3817065.71	77	43	3.02	34	27	53.94	40°38'1.7"		58744.77
										203.56	
AP-102	749600.00	3817268.79	77	43	2.68	34	28	0.53	14°58'22.6"		58948.34

										404.22	
AP-103	749468.90	3817651.16	77	42	57.95	34	28	13.05	8°12'10"		59352.55
										314.27	
AP-104	749410.44	3817959.94	77	42	55.99	34	28	23.11	7°21'55.3"		59666.82
										682.95	
AP-105	749198.41	3818609.15	77	42	48.37	34	28	44.35	6°42'44.8"		60349.77
										977.31	
AP-106	749005.66	3819567.26	77	42	41.83	34	29	15.59	0°31'40.4"		61327.09
										914.24	
AP-107	748817.10	3820461.85	77	42	35.38	34	29	44.76	26°19'56"		62241.32
										696.58	
AP-108	748386.00	3821009.00	77	42	19.07	34	30	2.88	11°11'59.5"		62937.91
										173.76	
AP-109	748254.00	3821122.00	77	42	14.02	34	30	6.66	13°47'25.1"		63111.67
										1292.66	
AP-110	747099.94	3821704.33	77	41	29.42	34	30	26.54	25°40'23.7"		64404.33
										1104.30	
AP-111	746426.90	3822579.83	77	41	3.96	34	30	55.52	20°25'28.1"		65508.63
										1787.92	
AP-112	744911.05	3823527.91	77	40	5.55	34	31	27.56	14°3'28.6"		67296.55
										750.49	
AP-113	744197.15	3823759.41	77	39	37.82	34	31	35.68	39°44'3.4"		68047.04
										1139.35	
AP-114	743139.04	3823336.87	77	38	55.92	34	31	22.88	3°27'9.8"		69186.40
										433.98	
AP-115	742746.43	3823151.95	77	38	40.35	34	31	17.22	24°43'47.1"		69620.37
										270.85	
AP-116	742475.60	3823149.63	77	38	29.74	34	31	17.37	22°12'10.6"		69891.22
										696.91	
AP-117	741828.13	3823407.44	77	38	4.63	34	31	26.28	15°51'32.5"		70588.13
										959.98	
AP-118	741067.25	3823992.78	77	37	35.41	34	31	45.91	39°58'42.3"		71548.11
										372.79	
AP-119	740694.79	3823977.12	77	37	20.80	34	31	45.71	34°9'27.5"		71920.89
										401.71	
AP-120	740353.19	3824188.50	77	37	7.63	34	31	52.86	11°29'56.5"		72322.61
										437.47	
AP-121	739942.77	3824339.93	77	36	51.70	34	31	58.11	5°55'33.8"		72760.08
										823.61	
AP-122	739144.77	3824543.70	77	36	20.63	34	32	5.39	17°25'9.5"		73583.68
										1431.77	
AP-123	737927.18	3825297.00	77	35	33.67	34	32	30.84	16°51'4.6"		75015.45
										1264.20	
AP-124	736705.45	3825621.91	77	34	46.11	34	32	42.39	4°19'11.3"		76279.65
										392.60	
AP-125	736334.72	3825751.11	77	34	31.71	34	32	46.89	20°59'19.7"		76672.25
										394.30	
D/E TOWER	735940.61	3825738.89	77	34	16.25	34	32	46.82	4°56'13.3"		77066.55
										536.59	
GANTRY	735407.70	3825676.16	77	33	55.30	34	32	45.22	0		77603.14

ALTERNATIVE-2

AP NO.	EASTING	NORTHING	LONGITUDE			LATITUDE			ANGLE OF DEVIATION	SPAN IN MTR.	COMMU LENGTH (Mtr)
			DEG	MIN	SEC	DEG	MIN	SEC			

GANTRY	726040.00	3782208.00	77	27	6.93	34	9	22.84			0.00
										42.54	
D/E TOWER	726061.00	3782245.00	77	27	7.78	34	9	24.02	51°25'36.5"		42.54
										262.23	
AP-1	726320.00	3782286.00	77	27	17.93	34	9	25.15	6°31'20.3"		304.77
										301.28	
AP-2	726621.00	3782299.00	77	27	29.69	34	9	25.34	31°1'11.7"		606.05
										1150.92	
AP-3	727632.00	3781749.00	77	28	8.61	34	9	6.71	8°32'33.3"		1756.97
										461.87	
AP-4	728066.00	3781591.00	77	28	25.40	34	9	1.24	7°15'51.4"		2218.84
										582.76	
AP-5	728584.00	3781324.00	77	28	45.35	34	8	52.17	28°53'57.1"		2801.60
										1370.56	
AP-6	729954.00	3781363.00	77	29	38.84	34	8	52.35	40°28'49.1"		4172.16
										1283.87	
AP-7	730953.87	3780557.65	77	30	17.08	34	8	25.44	26°37'0.8"		5456.03
										1030.65	
AP-8	731961.12	3780339.27	77	30	56.16	34	8	17.55	34°53'46.7"		6486.68
										973.07	
AP-9	732859.05	3780714.21	77	31	31.55	34	8	28.99	46°1'41.1"		7459.75
										1089.95	
AP-10	733255.13	3781729.65	77	31	47.98	34	9	1.61	18°52'19.5"		8549.70
										837.64	
AP-11	733795.57	3782369.62	77	32	9.69	34	9	21.93	36°33'6"		9387.33
										863.55	
AP-12	733850.23	3783231.43	77	32	12.66	34	9	49.84	5°10'8.6"		10250.88
										406.57	
AP-13	733839.30	3783637.86	77	32	12.63	34	10	3.03	38°18'56.9"		10657.46
										516.67	
AP-14	734148.62	3784051.71	77	32	25.10	34	10	16.21	28°32'4.7"		11174.13
										947.50	
AP-15	734284.43	3784989.43	77	32	31.31	34	10	46.51	23°39'16.9"		12121.63
										803.52	
AP-16	734708.99	3785671.63	77	32	48.55	34	11	8.29	40°13'42.2"		12925.15
										741.27	
AP-17	735414.47	3785899.16	77	33	16.30	34	11	15.10	25°34'44.8"		13666.42
										696.10	
AP-18	736104.29	3785805.86	77	33	43.13	34	11	11.51	36°10'53.6"		14362.52
										423.16	
AP-19	736409.28	3785512.52	77	33	54.75	34	11	1.75	43°53'16.2"		14785.68
										828.87	
AP-20	737238.15	3785512.56	77	34	27.10	34	11	1.07	2°19'41.6"		15614.55
										329.12	
AP-21	737566.99	3785499.21	77	34	39.92	34	11	0.37	19°4'7.9"		15943.66
										297.71	
AP-22	737852.07	3785584.98	77	34	51.13	34	11	2.92	60°16'49.3"		16241.37
										119.64	
AP-23	737878.94	3785701.57	77	34	52.29	34	11	6.68	36°21'40.9"		16361.01
										242.68	
AP-24	738063.02	3785859.70	77	34	59.63	34	11	11.66	35°2'47.7"		16603.69
										360.46	
AP-25	738152.00	3786209.00	77	35	3.45	34	11	22.91	31°2'7.4"		16964.15
										772.56	

AP-26	738701.39	3786752.17	77	35	25.44	34	11	40.08	17°28'56.2"		17736.71
										637.53	
AP-27	739268.46	3787043.50	77	35	47.86	34	11	49.06	15°49'21.9"		18374.24
										299.95	
AP-28	739487.78	3787248.12	77	35	56.62	34	11	55.51	25°2'40.1"		18674.19
										712.49	
AP-29	739754.00	3787909.00	77	36	7.67	34	12	16.73	34°1'20"		19386.68
										550.27	
AP-30	740210.00	3788217.00	77	36	25.78	34	12	26.34	7°10'4.6"		19936.95
										590.78	
AP-31	740737.00	3788484.00	77	36	46.62	34	12	34.56	5°43'54"		20527.73
										306.25	
AP-32	740995.00	3788649.00	77	36	56.86	34	12	39.70	40°52'10.2"		20833.98
										551.81	
AP-33	741152.00	3789178.00	77	37	3.52	34	12	56.72	42°33'53.5"		21385.79
										889.77	
AP-34	740761.47	3789977.48	77	36	49.07	34	13	22.98	24°51'24.2"		22275.56
										1238.78	
AP-35	740736.00	3791216.00	77	36	49.32	34	14	3.17	30°15'55.6"		23514.33
										508.08	
AP-36	740983.00	3791660.00	77	36	59.41	34	14	17.36	4°26'20.2"		24022.41
										347.68	
AP-37	741128.00	3791976.00	77	37	5.39	34	14	27.49	21°44'22"		24370.09
										551.71	
AP-38	741156.00	3792527.00	77	37	7.04	34	14	45.34	40°59'21.2"		24921.80
										588.42	
AP-39	741564.00	3792951.00	77	37	23.40	34	14	58.75	12°59'37.8"		25510.23
										600.49	
AP-40	742067.00	3793279.00	77	37	43.38	34	15	8.96	48°37'52.9"		26110.72
										682.08	
AP-41	742165.00	3793954.00	77	37	47.89	34	15	30.77	24°32'56.6"		26792.80
										415.24	
AP-42	742390.00	3794303.00	77	37	57.03	34	15	41.90	36°10'58.4"		27208.04
										509.88	
AP-43	742360.00	3794812.00	77	37	56.37	34	15	58.44	53°4'42.7"		27717.92
										448.75	
AP-44	741986.00	3795060.00	77	37	42.01	34	16	6.79	20°35'29.6"		28166.68
										682.37	
AP-45	741321.00	3795213.00	77	37	16.19	34	16	12.31	8°16'43"		28849.05
										789.62	
AP-46	740585.00	3795499.00	77	36	47.72	34	16	22.20	17°7'22.8"		29638.67
										207.87	
AP-47	740422.00	3795628.00	77	36	41.48	34	16	26.52	16°35'8"		29846.54
										525.72	
AP-48	739933.78	3795823.01	77	36	22.60	34	16	33.25	26°55'15.4"		30372.26
										435.67	
AP-49	739646.20	3796150.28	77	36	11.70	34	16	44.11	13°55'7.8"		30807.93
										706.96	
AP-50	739321.00	3796778.00	77	35	59.62	34	17	4.74	38°17'24.9"		31514.89
										496.97	
AP-51	739415.00	3797266.00	77	36	3.78	34	17	20.49	37°23'10.7"		32011.86
										554.58	
AP-52	739829.00	3797635.00	77	36	20.33	34	17	32.11	21°27'18.7"		32566.44
										476.29	

AP-53	740044.00	3798060.00	77	36	29.15	34	17	45.71	9°27'28"		33042.72
										892.05	
AP-54	740572.00	3798779.00	77	36	50.51	34	18	8.59	1°56'54.3"		33934.77
										875.65	
AP-55	741066.00	3799502.00	77	37	10.54	34	18	31.63	11°24'56.2"		34810.42
										472.31	
AP-56	741250.00	3799937.00	77	37	18.17	34	18	45.58	33°58'23.2"		35282.74
										510.91	
AP-57	741678.00	3800216.00	77	37	35.19	34	18	54.27	15°2'19"		35793.64
										1227.26	
AP-58	742497.00	3801130.00	77	38	8.12	34	19	23.23	12°37'47.6"		37020.90
										1095.52	
AP-59	743032.00	3802086.00	77	38	30.01	34	19	53.78	23°6'12"		38116.42
										1168.51	
AP-60	743957.00	3802800.00	77	39	6.90	34	20	16.16	29°26'53.3"		39284.93
										2370.64	
AP-61	744879.00	3804984.00	77	39	45.19	34	21	26.20	6°11'0.2"		41655.57
										1360.38	
AP-62	745540.00	3806173.00	77	40	12.26	34	22	4.20	40°19'59.5"		43015.95
										942.14	
AP-63	745356.00	3807097.00	77	40	6.02	34	22	34.32	33°49'26.6"		43958.10
										531.69	
AP-64	745560.00	3807588.00	77	40	14.50	34	22	50.07	13°40'11.2"		44489.79
										776.33	
AP-65	745680.00	3808355.00	77	40	19.99	34	23	14.84	34°26'27.2"		45266.12
										403.45	
AP-66	745506.00	3808719.00	77	40	13.55	34	23	26.80	13°33'8.1"		45669.57
										385.29	
AP-67	745263.00	3809018.00	77	40	4.36	34	23	36.70	21°50'39.5"		46054.86
										803.06	
AP-68	744561.00	3809408.00	77	39	37.29	34	23	49.95	35°6'10.3"		46857.92
										1312.23	
AP-69	743989.00	3810589.00	77	39	16.12	34	24	28.74	15°55'37.3"		48170.15
										394.90	
AP-70	743921.00	3810978.00	77	39	13.86	34	24	41.41	22°56'5.8"		48565.05
										519.35	
AP-71	744038.00	3811484.00	77	39	18.96	34	24	57.72	26°16'11.9"		49084.40
										909.61	
AP-72	744614.00	3812188.00	77	39	42.22	34	25	20.06	12°48'11.2"		49994.01
										618.50	
AP-73	745102.00	3812568.00	77	40	1.71	34	25	31.97	13°59'5.8"		50612.51
										453.71	
AP-74	745382.00	3812925.00	77	40	13.04	34	25	43.31	25°56'33.2"		51066.22
										512.51	
AP-75	745490.00	3813426.00	77	40	17.78	34	25	59.46	34°5'54.7"		51578.72
										170.82	
AP-76	745426.19	3813584.46	77	40	15.45	34	26	4.66	9°15'54.8"		51749.55
										251.67	
AP-77	745371.00	3813830.00	77	40	13.54	34	26	12.67	48°25'24.1"		52001.22
										528.48	
AP-78	745679.80	3814258.87	77	40	26.07	34	26	26.31	34°19'50.9"		52529.69
										286.01	
AP-79	745948.71	3814356.29	77	40	36.70	34	26	29.24	6°8'46.1"		52815.70
										201.55	

AP-80	746144.47	3814404.26	77	40	44.41	34	26	30.63	12°48'6.8"		53017.25
										319.44	
AP-81	746463.86	3814409.64	77	40	56.92	34	26	30.53	6°47'37.4"		53336.69
										355.01	
AP-82	746817.03	3814373.60	77	41	10.71	34	26	29.05	16°25'52"		53691.70
										350.05	
AP-83	747141.00	3814241.00	77	41	23.25	34	26	24.47	2°11'6.7"		54041.75
										169.16	
AP-84	747295.00	3814171.00	77	41	29.21	34	26	22.07	17°37'55.3"		54210.91
										295.08	
AP-85	747588.00	3814136.00	77	41	40.64	34	26	20.68	49°52'13.6"		54506.00
										83.49	
AP-86	747649.00	3814193.00	77	41	43.09	34	26	22.48	24°7'47.3"		54589.48
										505.54	
AP-87	747845.00	3814659.00	77	41	51.24	34	26	37.42	31°53'54.4"		55095.03
										456.97	
AP-88	748218.00	3814923.00	77	42	6.12	34	26	45.66	43°14'23.6"		55552.00
										404.89	
AP-89	748619.00	3814867.00	77	42	21.76	34	26	43.50	21°31'38.9"		55956.89
										272.62	
AP-90	748884.00	3814931.00	77	42	32.20	34	26	45.34	12°25'37.6"		56229.51
										249.05	
AP-91	749133.00	3814936.00	77	42	41.95	34	26	45.29	33°15'29.2"		56478.56
										265.44	
AP-92	749352.00	3815086.00	77	42	50.68	34	26	49.96	16°41'20.3"		56744.00
										421.53	
AP-93	749753.53	3815214.29	77	43	6.54	34	26	53.77	45°30'33.9"		57165.53
										527.22	
AP-94	749991.00	3815685.00	77	43	16.33	34	27	8.83	8°9'23.2"		57692.75
										218.33	
AP-95	750116.00	3815864.00	77	43	21.41	34	27	14.53	54°40'9.6"		57911.07
										145.58	
AP-96	750066.82	3816001.03	77	43	19.63	34	27	19.01	30°21'51.5"		58056.66
										308.67	
AP-97	749830.00	3816199.00	77	43	10.56	34	27	25.64	27°56'56.9"		58365.33
										209.47	
AP-98	749751.00	3816393.00	77	43	7.68	34	27	32.00	32°7'43.1"		58574.80
										376.88	
AP-99	749445.00	3816613.00	77	42	55.93	34	27	39.40	1°16'51.1"		58951.67
										365.60	
AP-100	749153.00	3816833.00	77	42	44.73	34	27	46.79	53°4'1.2"		59317.27
										920.00	
AP-101	749154.00	3817753.00	77	42	45.73	34	28	16.62	0°7'29.9"		60237.27
										306.00	
AP-102	749155.00	3818059.00	77	42	46.09	34	28	26.55	4°19'26.3"		60543.28
										551.86	
AP-103	749198.41	3818609.15	77	42	48.37	34	28	44.35	15°53'8.6"		61095.13
										977.31	
AP-104	749005.66	3819567.26	77	42	41.83	34	29	15.59	0°31'40.4"		62072.45
										914.24	
AP-105	748817.10	3820461.85	77	42	35.38	34	29	44.76	26°19'56"		62986.68
										696.58	
AP-106	748386.00	3821009.00	77	42	19.07	34	30	2.88	11°11'59.5"		63683.27
										173.76	

AP-107	748254.00	3821122.00	77	42	14.02	34	30	6.66	13°47'25.1"		63857.03
										1292.66	
AP-108	747099.94	3821704.33	77	41	29.42	34	30	26.54	6°44'45.8"		65149.69
										1382.10	
AP-109	745801.43	3822177.70	77	40	39.04	34	30	43.01	8°44'23"		66531.78
										376.34	
AP-110	745432.37	3822251.37	77	40	24.66	34	30	45.72	13°6'5.8"		66908.13
										282.35	
AP-111	745150.17	3822242.44	77	40	13.59	34	30	45.67	9°29'3.4"		67190.47
										366.50	
AP-112	744786.95	3822291.37	77	39	59.41	34	30	47.57	7°34'27.6"		67556.97
										332.21	
AP-113	744454.75	3822291.94	77	39	46.40	34	30	47.87	1°57'42.9"		67889.18
										503.79	
AP-114	743951.28	3822310.05	77	39	26.69	34	30	48.89	3°14'36.7"		68392.96
										324.85	
AP-115	743627.82	3822340.07	77	39	14.05	34	30	50.14	13°41'16.8"		68717.82
										395.84	
AP-116	743253.53	3822468.89	77	38	59.52	34	30	54.63	2°31'36"		69113.65
										1006.57	
AP-117	742288.24	3822754.17	77	38	21.99	34	31	4.71	31°34'29.3"		70120.22
										347.60	
AP-118	742055.83	3823012.64	77	38	13.15	34	31	13.29	9°9'14.3"		70467.82
										431.64	
AP-119	741719.84	3823283.61	77	38	0.26	34	31	22.36	2°55'51.1"		70899.46
										963.19	
AP-120	740940.15	3823849.14	77	37	30.29	34	31	41.36	27°11'8.6"		71862.65
										289.44	
AP-121	740654.09	3823893.27	77	37	19.12	34	31	43.03	1°1'37.9"		72152.09
										503.32	
AP-122	740158.12	3823978.90	77	36	59.77	34	31	46.22	16°27'51.2"		72655.40
										612.99	
AP-123	739608.39	3824250.12	77	36	38.51	34	31	55.48	16°16'53.5"		73268.40
										818.77	
AP-124	738802.00	3824392.00	77	36	7.05	34	32	0.76	1°24'26.8"		74087.17
										1469.41	
AP-125	737349.00	3824611.00	77	35	10.32	34	32	9.07	20°36'57.6"		75556.58
										1006.84	
AP-126	736470.00	3825102.00	77	34	36.37	34	32	25.72	24°13'26.8"		76563.42
										285.20	
AP-127	736300.00	3825331.00	77	34	29.93	34	32	33.29	4°47'40.9"		76848.62
										543.63	
D/E TOWER	735940.61	3825738.89	77	34	16.25	34	32	46.82	55°19'47.2"		77392.25
										536.59	
GANTRY	735407.70	3825676.16	77	33	55.30	34	32	45.22	0		77928.84

ALTERNATIVE-3

AP NO.	EASTING	NORTHING	LONGITUDE			LATITUDE			ANGLE OF DEVIATION	SPAN IN MTR.	COMMU LENGTH (Mtr)
			DEG	MIN	SEC	DEG	MIN	SEC			
GANTRY	726040.00	3782208.00	77	27	6.93	34	9	22.84		0.00	
										42.54	
D/E TOWER	726061.00	3782245.00	77	27	7.78	34	9	24.02	51°25'36.5"	42.54	
										262.23	

AP-1	726320.00	3782286.00	77	27	17.93	34	9	25.15	66°34'18.7"		304.77
										205.64	
AP-2	726430.26	3782112.42	77	27	22.07	34	9	19.44	13°9'59.6"		510.41
										884.93	
AP-3	726722.12	3781276.99	77	27	32.67	34	8	52.11	30°24'7.1"		1395.35
										1280.74	
AP-4	727698.30	3780447.92	77	28	9.97	34	8	24.45	14°54'14.6"		2676.09
										1003.14	
AP-5	728604.19	3780017.05	77	28	44.90	34	8	9.76	25°19'8"		3679.23
										439.97	
AP-6	728882.53	3779676.32	77	28	55.44	34	7	58.49	34°8'24.1"		4119.20
										1785.55	
AP-7	730593.52	3779165.73	77	30	1.69	34	7	40.57	27°11'15.9"		5904.75
										1322.87	
AP-8	731548.26	3778250.05	77	30	38.05	34	7	10.11	8°47'42.2"		7227.62
										1229.01	
AP-9	732554.90	3777544.97	77	31	16.63	34	6	46.44	1°4'10"		8456.63
										636.28	
AP-10	733069.15	3777170.27	77	31	36.32	34	6	33.87	21°4'14.7"		9092.91
										692.55	
AP-11	733738.08	3776990.94	77	32	2.23	34	6	27.52	2°25'11.9"		9785.46
										729.71	
AP-12	734434.30	3776772.40	77	32	29.17	34	6	19.87	14°5'34.7"		10515.17
										1751.26	
AP-13	736182.59	3776670.54	77	33	37.24	34	6	15.15	25°10'30.1"		12266.43
										416.05	
AP-14	736548.19	3776471.96	77	33	51.30	34	6	8.41	8°44'30.8"		12682.48
										583.26	
AP-15	737097.08	3776274.70	77	34	12.51	34	6	1.56	12°20'34.4"		13265.74
										785.72	
AP-16	737762.61	3775857.05	77	34	38.05	34	5	47.47	31°54'45.1"		14051.46
										794.24	
AP-17	738110.49	3775143.05	77	34	50.91	34	5	24.03	48°1'52.1"		14845.70
										493.86	
AP-18	738585.24	3775006.99	77	35	9.28	34	5	19.23	8°32'15.1"		15339.56
										386.43	
AP-19	738936.79	3774846.56	77	35	22.83	34	5	13.73	49°42'41.2"		15725.99
										397.03	
AP-20	739296.09	3775015.50	77	35	37.00	34	5	18.92	20°20'0.4"		16123.02
										144.06	
AP-21	739397.03	3775118.28	77	35	41.04	34	5	22.17	5°38'25.6"		16267.07
										189.69	
AP-22	739542.61	3775239.89	77	35	46.83	34	5	25.99	35°6'53.3"		16456.76
										142.99	
AP-23	739685.10	3775251.75	77	35	52.40	34	5	26.26	5°58'20.2"		16599.75
										110.46	
AP-24	739795.53	3775249.42	77	35	56.70	34	5	26.09	14°43'30.8"		16710.21
										216.03	
AP-25	740005.58	3775299.90	77	36	4.94	34	5	27.56	16°53'37.2"		16926.24
										453.44	
AP-26	740458.23	3775273.16	77	36	22.56	34	5	26.32	19°43'53.4"		17379.68
										116.93	
AP-27	740570.43	3775306.08	77	36	26.97	34	5	27.29	0°28'16.3"		17496.60
										267.66	

AP-28	740826.63	3775383.54	77	36	37.03	34	5	29.59	29°11'47.4"		17764.26
										89.43	
AP-29	740888.74	3775447.89	77	36	39.52	34	5	31.63	28°30'39.8"		17853.69
										311.91	
AP-30	740971.93	3775748.51	77	36	43.06	34	5	41.31	30°1'56"		18165.61
										737.39	
AP-31	741497.90	3776265.33	77	37	4.08	34	5	57.63	40°5'25"		18903.00
										532.37	
AP-32	741548.11	3776795.32	77	37	6.57	34	6	14.78	35°49'43.3"		19435.36
										981.47	
AP-33	741051.21	3777641.71	77	36	48.04	34	6	42.65	9°22'7.6"		20416.83
										892.78	
AP-34	740730.57	3778474.92	77	36	36.37	34	7	9.94	23°3'31.3"		21309.61
										477.63	
AP-35	740398.14	3778817.89	77	36	23.75	34	7	21.34	39°33'24.2"		21787.25
										318.19	
AP-36	740372.89	3779135.08	77	36	23.08	34	7	31.64	8°31'0.3"		22105.44
										309.09	
AP-37	740303.01	3779436.16	77	36	20.65	34	7	41.47	27°32'16"		22414.53
										449.76	
AP-38	740010.30	3779777.63	77	36	9.58	34	7	52.78	10°46'13.1"		22864.29
										531.52	
AP-39	739595.05	3780109.42	77	35	53.71	34	8	3.89	11°19'29"		23395.81
										438.19	
AP-40	739205.67	3780310.40	77	35	38.72	34	8	10.73	2°4'54.6"		23833.99
										81.82	
AP-41	739131.65	3780345.26	77	35	35.87	34	8	11.92	17°53'32.2"		23915.82
										197.15	
AP-42	738987.72	3780479.99	77	35	30.39	34	8	16.41	13°48'14.9"		24112.97
										233.66	
AP-43	738860.17	3780675.77	77	35	25.61	34	8	22.86	30°35'32.2"		24346.63
										297.58	
AP-44	738847.23	3780973.07	77	35	25.40	34	8	32.52	18°6'41.9"		24644.21
										188.64	
AP-45	738898.02	3781154.75	77	35	27.56	34	8	38.37	34°20'14.7"		24832.86
										105.97	
AP-46	738979.15	3781222.93	77	35	30.79	34	8	40.51	36°18'55.7"		24938.83
										94.49	
AP-47	739001.43	3781314.75	77	35	31.75	34	8	43.47	22°28'47.5"		25033.32
										94.43	
AP-48	738986.92	3781408.06	77	35	31.28	34	8	46.51	2°19'40.2"		25127.74
										79.36	
AP-49	738971.55	3781485.91	77	35	30.75	34	8	49.05	30°36'1.4"		25207.10
										214.60	
AP-50	738828.61	3781645.97	77	35	25.34	34	8	54.36	6°19'38.6"		25421.70
										134.48	
AP-51	738728.52	3781735.79	77	35	21.52	34	8	57.35	22°29'26.5"		25556.18
										218.81	
AP-52	738633.96	3781933.11	77	35	18.03	34	9	3.83	2°28'31.2"		25774.99
										129.63	
AP-53	738572.95	3782047.49	77	35	15.76	34	9	7.59	39°47'36.7"		25904.62
										192.31	
AP-54	738611.99	3782235.79	77	35	17.47	34	9	13.67	21°33'14"		26096.93
										184.53	

AP-55	738580.46	3782417.61	77	35	16.42	34	9	19.59	54°26'34.5"		26281.46
										222.00	
AP-56	738736.35	3782575.67	77	35	22.66	34	9	24.59	24°11'28"		26503.46
										232.01	
AP-57	738952.64	3782659.59	77	35	31.18	34	9	27.13	9°6'39.7"		26735.47
										252.34	
AP-58	739199.38	3782712.46	77	35	40.86	34	9	28.64	5°23'57.2"		26987.80
										259.55	
AP-59	739457.16	3782742.72	77	35	50.95	34	9	29.41	16°23'12"		27247.35
										158.95	
AP-60	739603.38	3782805.03	77	35	56.71	34	9	31.31	3°1'55.9"		27406.30
										116.05	
AP-61	739712.40	3782844.82	77	36	1.01	34	9	32.51	4°36'14.2"		27522.35
										205.93	
AP-62	739899.56	3782930.72	77	36	8.39	34	9	35.14	50°34'18.4"		27728.28
										157.34	
AP-63	739939.69	3783082.86	77	36	10.11	34	9	40.04	29°0'54.7"		27885.63
										220.25	
AP-64	739885.51	3783296.34	77	36	8.21	34	9	47.01	37°4'13.4"		28105.88
										148.72	
AP-65	739769.42	3783389.31	77	36	3.77	34	9	50.12	58°59'55.4"		28254.60
										85.76	
AP-66	739780.89	3783474.30	77	36	4.30	34	9	52.87	5°0'2.3"		28340.36
										185.97	
AP-67	739821.74	3783655.73	77	36	6.08	34	9	58.72	29°31'34.1"		28526.33
										173.78	
AP-68	739938.51	3783784.44	77	36	10.76	34	10	2.80	18°10'42.5"		28700.12
										141.94	
AP-69	739996.32	3783914.07	77	36	13.15	34	10	6.96	38°48'3.4"		28842.05
										108.27	
AP-70	739968.73	3784018.76	77	36	12.18	34	10	10.37	21°47'33.5"		28950.32
										64.15	
AP-71	739930.52	3784070.30	77	36	10.74	34	10	12.08	5°35'35.9"		29014.47
										118.44	
AP-72	739869.58	3784171.86	77	36	8.46	34	10	15.42	18°19'25"		29132.91
										161.61	
AP-73	739747.08	3784277.27	77	36	3.78	34	10	18.94	13°5'49"		29294.53
										203.24	
AP-74	739627.07	3784441.29	77	35	59.27	34	10	24.36	7°46'23.5"		29497.76
										72.29	
AP-75	739576.89	3784493.33	77	35	57.36	34	10	26.09	8°48'15.2"		29570.05
										279.09	
AP-76	739416.17	3784721.50	77	35	51.31	34	10	33.62	22°15'3.9"		29849.15
										210.32	
AP-77	739369.19	3784926.50	77	35	49.68	34	10	40.31	2°31'17.6"		30059.46
										191.75	
AP-78	739334.61	3785115.10	77	35	48.52	34	10	46.46	36°2'46.1"		30251.21
										110.69	
AP-79	739254.41	3785191.39	77	35	45.47	34	10	49.00	45°22'34.8"		30361.90
										274.88	
AP-80	739249.34	3785466.22	77	35	45.54	34	10	57.92	7°1'2.3"		30636.78
										134.61	
AP-81	739263.32	3785600.11	77	35	46.22	34	11	2.25	9°14'10.6"		30771.39
										156.75	

AP-82	739254.36	3785756.60	77	35	46.03	34	11	7.33	1°48'39.7"		30928.14
										185.68	
AP-83	739237.90	3785941.54	77	35	45.57	34	11	13.34	33°44'18.4"		31113.82
										152.57	
AP-84	739311.06	3786075.43	77	35	48.56	34	11	17.62	6°15'54.5"		31266.39
										371.24	
AP-85	739523.55	3786379.85	77	35	57.16	34	11	27.32	9°41'37.7"		31637.63
										222.13	
AP-86	739618.21	3786580.80	77	36	1.05	34	11	33.76	1°44'50.2"		31859.76
										161.45	
AP-87	739682.52	3786728.88	77	36	3.71	34	11	38.51	14°32'20.8"		32021.21
										202.50	
AP-88	739807.23	3786888.43	77	36	8.73	34	11	43.58	14°28'15.4"		32223.71
										249.50	
AP-89	740005.14	3787040.36	77	36	16.61	34	11	48.35	1°4'55.2"		32473.21
										226.18	
AP-90	740181.91	3787181.46	77	36	23.65	34	11	52.77	4°35'45.1"		32699.39
										247.57	
AP-91	740387.15	3787319.90	77	36	31.80	34	11	57.09	5°26'54.1"		32946.96
										195.65	
AP-92	740538.23	3787444.22	77	36	37.82	34	12	1.00	32°50'29.6"		33142.61
										153.82	
AP-93	740585.03	3787590.75	77	36	39.80	34	12	5.71	3°27'28"		33296.43
										181.64	
AP-94	740650.61	3787760.13	77	36	42.53	34	12	11.15	18°28'36.2"		33478.07
										300.92	
AP-95	740842.61	3787991.85	77	36	50.25	34	12	18.51	7°36'54.1"		33778.99
										257.71	
AP-96	740979.29	3788210.34	77	36	55.81	34	12	25.48	20°30'58"		34036.71
										79.82	
AP-97	740995.22	3788288.55	77	36	56.51	34	12	28.01	6°49'59.8"		34116.52
										164.43	
AP-98	741008.63	3788452.42	77	36	57.20	34	12	33.31	8°38'45.8"		34280.95
										197.05	
AP-99	740995.00	3788649.00	77	36	56.86	34	12	39.70	20°29'47.9"		34478.00
										551.81	
AP-100	741152.00	3789178.00	77	37	3.52	34	12	56.72	42°33'53.5"		35029.81
										889.77	
AP-101	740761.47	3789977.48	77	36	49.07	34	13	22.98	24°51'24.2"		35919.57
										1238.78	
AP-102	740736.00	3791216.00	77	36	49.32	34	14	3.17	30°15'55.6"		37158.35
										508.08	
AP-103	740983.00	3791660.00	77	36	59.41	34	14	17.36	4°26'20.2"		37666.43
										347.68	
AP-104	741128.00	3791976.00	77	37	5.39	34	14	27.49	21°44'22"		38014.11
										551.71	
AP-105	741156.00	3792527.00	77	37	7.04	34	14	45.34	40°59'21.2"		38565.82
										588.42	
AP-106	741564.00	3792951.00	77	37	23.40	34	14	58.75	12°59'37.8"		39154.25
										600.49	
AP-107	742067.00	3793279.00	77	37	43.38	34	15	8.96	48°37'52.9"		39754.74
										682.08	
AP-108	742165.00	3793954.00	77	37	47.89	34	15	30.77	24°32'56.6"		40436.82
										415.24	

AP-109	742390.00	3794303.00	77	37	57.03	34	15	41.90	36°10'58.4"		40852.06
										509.88	
AP-110	742360.00	3794812.00	77	37	56.37	34	15	58.44	53°4'42.7"		41361.94
										448.75	
AP-111	741986.00	3795060.00	77	37	42.01	34	16	6.79	20°35'29.6"		41810.70
										682.37	
AP-112	741321.00	3795213.00	77	37	16.19	34	16	12.31	8°16'43"		42493.07
										789.62	
AP-113	740585.00	3795499.00	77	36	47.72	34	16	22.20	17°7'22.8"		43282.68
										207.87	
AP-114	740422.00	3795628.00	77	36	41.48	34	16	26.52	16°35'8"		43490.55
										525.72	
AP-115	739933.78	3795823.01	77	36	22.60	34	16	33.25	26°55'15.4"		44016.28
										435.67	
AP-116	739646.20	3796150.28	77	36	11.70	34	16	44.11	13°55'7.8"		44451.95
										706.96	
AP-117	739321.00	3796778.00	77	35	59.62	34	17	4.74	38°17'24.9"		45158.91
										496.97	
AP-118	739415.00	3797266.00	77	36	3.78	34	17	20.49	37°23'10.7"		45655.88
										554.58	
AP-119	739829.00	3797635.00	77	36	20.33	34	17	32.11	21°27'18.7"		46210.46
										476.29	
AP-120	740044.00	3798060.00	77	36	29.15	34	17	45.71	9°27'28"		46686.74
										892.05	
AP-121	740572.00	3798779.00	77	36	50.51	34	18	8.59	1°56'54.3"		47578.79
										875.65	
AP-122	741066.00	3799502.00	77	37	10.54	34	18	31.63	11°24'56.2"		48454.44
										472.31	
AP-123	741250.00	3799937.00	77	37	18.17	34	18	45.58	33°58'23.2"		48926.75
										510.91	
AP-124	741678.00	3800216.00	77	37	35.19	34	18	54.27	15°2'19"		49437.66
										1227.26	
AP-125	742497.00	3801130.00	77	38	8.12	34	19	23.23	12°37'47.6"		50664.92
										1095.52	
AP-126	743032.00	3802086.00	77	38	30.01	34	19	53.78	23°6'12"		51760.44
										1168.51	
AP-127	743957.00	3802800.00	77	39	6.90	34	20	16.16	29°26'53.3"		52928.95
										2370.64	
AP-128	744879.00	3804984.00	77	39	45.19	34	21	26.20	6°11'0.2"		55299.59
										1360.38	
AP-129	745540.00	3806173.00	77	40	12.26	34	22	4.20	40°19'59.5"		56659.97
										942.14	
AP-130	745356.00	3807097.00	77	40	6.02	34	22	34.32	33°49'26.6"		57602.11
										531.69	
AP-131	745560.00	3807588.00	77	40	14.50	34	22	50.07	13°40'11.2"		58133.81
										776.33	
AP-132	745680.00	3808355.00	77	40	19.99	34	23	14.84	34°26'27.2"		58910.14
										403.45	
AP-133	745506.00	3808719.00	77	40	13.55	34	23	26.80	13°33'8.1"		59313.59
										385.29	
AP-134	745263.00	3809018.00	77	40	4.36	34	23	36.70	21°50'39.5"		59698.88
										803.06	
AP-135	744561.00	3809408.00	77	39	37.29	34	23	49.95	35°6'10.3"		60501.94
										1312.23	

AP-136	743989.00	3810589.00	77	39	16.12	34	24	28.74	15°55'37.3"		61814.17
										394.90	
AP-137	743921.00	3810978.00	77	39	13.86	34	24	41.41	22°56'5.8"		62209.07
										519.35	
AP-138	744038.00	3811484.00	77	39	18.96	34	24	57.72	26°16'11.9"		62728.42
										909.61	
AP-139	744614.00	3812188.00	77	39	42.22	34	25	20.06	12°48'11.2"		63638.03
										618.50	
AP-140	745102.00	3812568.00	77	40	1.71	34	25	31.97	13°59'5.8"		64256.53
										453.71	
AP-141	745382.00	3812925.00	77	40	13.04	34	25	43.31	25°56'33.2"		64710.23
										512.51	
AP-142	745490.00	3813426.00	77	40	17.78	34	25	59.46	34°5'54.7"		65222.74
										170.82	
AP-143	745426.19	3813584.46	77	40	15.45	34	26	4.66	9°15'54.8"		65393.57
										251.67	
AP-144	745371.00	3813830.00	77	40	13.54	34	26	12.67	48°25'24.1"		65645.23
										528.48	
AP-145	745679.80	3814258.87	77	40	26.07	34	26	26.31	34°19'50.9"		66173.71
										286.01	
AP-146	745948.71	3814356.29	77	40	36.70	34	26	29.24	6°8'46.1"		66459.72
										201.55	
AP-147	746144.47	3814404.26	77	40	44.41	34	26	30.63	12°48'6.8"		66661.27
										319.44	
AP-148	746463.86	3814409.64	77	40	56.92	34	26	30.53	6°47'37.4"		66980.71
										355.01	
AP-149	746817.03	3814373.60	77	41	10.71	34	26	29.05	16°25'52"		67335.72
										350.05	
AP-150	747141.00	3814241.00	77	41	23.25	34	26	24.47	2°11'6.7"		67685.77
										169.16	
AP-151	747295.00	3814171.00	77	41	29.21	34	26	22.07	17°37'55.3"		67854.93
										295.08	
AP-152	747588.00	3814136.00	77	41	40.64	34	26	20.68	49°52'13.6"		68150.02
										83.49	
AP-153	747649.00	3814193.00	77	41	43.09	34	26	22.48	24°7'47.3"		68233.50
										505.54	
AP-154	747845.00	3814659.00	77	41	51.24	34	26	37.42	31°53'54.4"		68739.04
										456.97	
AP-155	748218.00	3814923.00	77	42	6.12	34	26	45.66	43°14'23.6"		69196.02
										404.89	
AP-156	748619.00	3814867.00	77	42	21.76	34	26	43.50	21°31'38.9"		69600.91
										272.62	
AP-157	748884.00	3814931.00	77	42	32.20	34	26	45.34	12°25'37.6"		69873.53
										249.05	
AP-158	749133.00	3814936.00	77	42	41.95	34	26	45.29	33°15'29.2"		70122.58
										265.44	
AP-159	749352.00	3815086.00	77	42	50.68	34	26	49.96	16°41'20.3"		70388.02
										421.53	
AP-160	749753.53	3815214.29	77	43	6.54	34	26	53.77	45°13'19.4"		70809.55
										535.57	
AP-161	749997.16	3815691.24	77	43	16.57	34	27	9.03	7°27'57.6"		71345.12
										209.69	
AP-162	750116.00	3815864.00	77	43	21.41	34	27	14.53	54°15'58.6"		71554.81
										145.58	

AP-163	750066.82	3816001.03	77	43	19.63	34	27	19.01	30°21'51.5"		71700.39
										308.67	
AP-164	749830.00	3816199.00	77	43	10.56	34	27	25.64	27°56'56.9"		72009.06
										209.47	
AP-165	749751.00	3816393.00	77	43	7.68	34	27	32.00	32°7'43.1"		72218.53
										376.88	
AP-166	749445.00	3816613.00	77	42	55.93	34	27	39.40	1°16'51.1"		72595.41
										365.60	
AP-167	749153.00	3816833.00	77	42	44.73	34	27	46.79	53°4'1.2"		72961.01
										920.00	
AP-168	749154.00	3817753.00	77	42	45.73	34	28	16.62	0°7'29.9"		73881.01
										306.00	
AP-169	749155.00	3818059.00	77	42	46.09	34	28	26.55	4°19'26.3"		74187.01
										551.86	
AP-170	749198.41	3818609.15	77	42	48.37	34	28	44.35	15°53'8.6"		74738.87
										977.31	
AP-171	749005.66	3819567.26	77	42	41.83	34	29	15.59	0°31'40.4"		75716.18
										914.24	
AP-172	748817.10	3820461.85	77	42	35.38	34	29	44.76	26°19'56"		76630.42
										696.58	
AP-173	748386.00	3821009.00	77	42	19.07	34	30	2.88	11°11'59.5"		77327.00
										173.76	
AP-174	748254.00	3821122.00	77	42	14.02	34	30	6.66	13°47'25.1"		77500.76
										1292.66	
AP-175	747099.94	3821704.33	77	41	29.42	34	30	26.54	54°23'49.5"		78793.42
										1019.83	
AP-176	746943.43	3822712.08	77	41	24.34	34	30	59.36	27°16'35.6"		79813.25
										933.14	
AP-177	746393.57	3823466.00	77	41	3.58	34	31	24.28	15°19'28.1"		80746.39
										1155.46	
AP-178	745490.20	3824186.41	77	40	28.93	34	31	48.42	24°15'31.3"		81901.84
										1313.11	
AP-179	744217.85	3824511.03	77	39	39.41	34	32	0.04	14°53'32.2"		83214.95
										1882.88	
AP-180	742335.06	3824491.98	77	38	25.61	34	32	1.02	40°33'36.2"		85097.83
										2081.61	
AP-181	740740.00	3825829.46	77	37	24.46	34	32	45.75	27°34'20.5"		87179.44
										2363.52	
AP-182	738431.68	3826337.32	77	35	54.50	34	33	4.16	25°54'58.2"		89542.96
										2561.94	
D/E TOWER	735940.61	3825738.89	77	34	16.25	34	32	46.82	6°47'42.2"		92104.91
										536.59	
GANTRY	735407.70	3825676.16	77	33	55.30	34	32	45.22	0		92641.50

CHAPTER-4.5
CROPS WATER TABLE AND SOIL TYPE

220KV S/C PHYANG-DISKIT T/L

SOIL DETAILS AND WIND ZONE

ALTERNATIVE-1 (PROPOSED ROUTE)

Ap. No.	Easting	Northing	Soil	WIND ZONE
GANTRY	726040	3782208	DFR	Zone-6
D/E TOWER	726061	3782245	DFR	Zone-6
AP-1	726320	3782286	DFR	Zone-6
AP-2	726621	3782299	DFR	Zone-6
AP-3	727280	3782726	DFR	Zone-6
AP-4	728023	3782762	HR	Zone-6
AP-5	728669	3782658	HR	Zone-6
AP-6	729502	3782489	HR	Zone-6
AP-7	730731	3781811	HR	Zone-6
AP-8	731472	3781681	HR	Zone-6
AP-9	732295	3781591	HR	Zone-6
AP-10	733038	3782026	HR	Zone-6
AP-11	733402	3782639	HR	Zone-6
AP-12	733674	3783186	HR	Zone-6
AP-13	733637	3783637	HR	Zone-6
AP-14	733598	3784184	HR	Zone-6
AP-15	733785	3784692	HR	Zone-6
AP-16	734054	3784927	HR	Zone-6
AP-17	734186	3785300	HR	Zone-6
AP-18	734709	3785672	HR	Zone-6
AP-19	735414	3785899	HR	Zone-6
AP-20	736104	3785806	HR	Zone-6

AP-21	736409	3785513	HR	Zone-6
AP-22	737269	3785517	HR	Zone-6
AP-23	737548	3785490	HR	Zone-6
AP-24	737852	3785585	HR	Zone-6
AP-25	737879	3785702	HR	Zone-6
AP-26	738063	3785860	HR	Zone-6
AP-27	738152	3786209	HR	Zone-6
AP-28	738701	3786752	HR	Zone-6
AP-29	739268	3787043	HR	Zone-6
AP-30	739488	3787248	HR	Zone-6
AP-31	739754	3787909	HR	Zone-6
AP-32	740210	3788217	HR	Zone-6
AP-33	740737	3788484	HR	Zone-6
AP-34	740995	3788649	HR	Zone-6
AP-35	741152	3789178	HR	Zone-6
AP-36	740761	3789977	HR	Zone-6
AP-37	740736	3791216	HR	Zone-6
AP-38	740983	3791660	HR	Zone-6
AP-39	741128	3791976	HR	Zone-6
AP-40	741156	3792527	HR	Zone-6
AP-41	741564	3792951	HR	Zone-6
AP-42	742067	3793279	HR	Zone-6
AP-43	742165	3793954	HR	Zone-6
AP-44	742390	3794303	HR	Zone-6
AP-45	742360	3794812	HR	Zone-6

AP-46	741986	3795060	HR	Zone-6
AP-47	741321	3795213	HR	Zone-6
AP-48	740585	3795499	HR	Zone-6
AP-49	740422	3795628	HR	Zone-6
AP-50	739934	3795823	HR	Zone-6
AP-51	739646	3796150	HR	Zone-6
AP-52	739321	3796778	HR	Zone-6
AP-53	739415	3797266	HR	Zone-6
AP-54	739829	3797635	HR	Zone-6
AP-55	740044	3798060	HR	Zone-6
AP-56	740572	3798779	HR	Zone-6
AP-57	741066	3799502	HR	Zone-6
AP-58	741250	3799937	HR	Zone-6
AP-59	741678	3800216	HR	Zone-6
AP-60	742497	3801130	HR	Zone-6
AP-61	743032	3802086	HR	Zone-6
AP-62	743957	3802800	HR	Zone-6
AP-63	744879	3804984	HR	Zone-6
AP-64	745540	3806173	HR	Zone-6
AP-65	745356	3807097	HR	Zone-6
AP-66	745560	3807588	HR	Zone-6
AP-67	745680	3808355	HR	Zone-6
AP-68	745506	3808719	HR	Zone-6
AP-69	745263	3809018	DFR	Zone-6
AP-70	744561	3809408	HR	Zone-6

AP-71	743989	3810589	HR	Zone-6
AP-72	743921	3810978	HR	Zone-6
AP-73	744038	3811484	HR	Zone-6
AP-74	744614	3812188	HR	Zone-6
AP-75	745102	3812568	DFR	Zone-6
AP-76	745382	3812925	DFR	Zone-6
AP-77	745490	3813426	HR	Zone-6
AP-78	745426	3813584	HR	Zone-6
AP-79	745371	3813830	HR	Zone-6
AP-80	745680	3814259	HR	Zone-6
AP-81	745949	3814356	HR	Zone-6
AP-82	746144	3814404	HR	Zone-6
AP-83	746464	3814410	HR	Zone-6
AP-84	746817	3814374	HR	Zone-6
AP-85	747141	3814241	HR	Zone-6
AP-86	747295	3814171	HR	Zone-6
AP-87	747588	3814136	HR	Zone-6
AP-88	747649	3814193	HR	Zone-6
AP-89	747845	3814659	HR	Zone-6
AP-90	748218	3814923	DFR	Zone-6
AP-91	748619	3814867	DFR	Zone-6
AP-92	748884	3814931	SANDY	Zone-6
AP-93	749133	3814936	SANDY	Zone-6
AP-94	749352	3815086	HR	Zone-6
AP-95	749754	3815214	HR	Zone-6

AP-96	750210	3815311	HR	Zone-6
AP-97	750574	3815805	HR	Zone-6
AP-98	750486	3816323	HR	Zone-6
AP-99	750193	3816625	HR	Zone-6
AP-100	749783	3816894	HR	Zone-6
AP-101	749614	3817066	DFR	Zone-6
AP-102	749600	3817269	DFR	Zone-6
AP-103	749469	3817651	DFR	Zone-6
AP-104	749410	3817960	DFR	Zone-6
AP-105	749198	3818609	DFR	Zone-6
AP-106	749006	3819567	DFR	Zone-6
AP-107	748817	3820462	DFR	Zone-6
AP-108	748386	3821009	DFR	Zone-6
AP-109	748254	3821122	DFR	Zone-6
AP-110	747100	3821704	DFR	Zone-6
AP-111	746427	3822580	DFR	Zone-6
AP-112	744911	3823528	DFR	Zone-6
AP-113	744197	3823759	DFR	Zone-6
AP-114	743139	3823337	DFR	Zone-6
AP-115	742746	3823152	DFR	Zone-6
AP-116	742476	3823150	DFR	Zone-6
AP-117	741828	3823407	DFR	Zone-6
AP-118	741067	3823993	DFR	Zone-6
AP-119	740695	3823977	DFR	Zone-6
AP-120	740353	3824189	DFR	Zone-6

AP-121	739943	3824340	DFR	Zone-6
AP-122	739145	3824544	DFR	Zone-6
AP-123	737927	3825297	HR	Zone-6
AP-124	736705	3825622	HR	Zone-6
AP-125	736335	3825751	HR	Zone-6
D/E TOWER	735941	3825739	DFR	Zone-6
GANTRY	735408	3825676	DFR	Zone-6

**220KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP1	726040.0001	3782208	No	100	Soft Rock
AP2	726061.0001	3782245	No	100	Soft Rock
AP3	726320.0001	3782286	No	100 to 150	Soft Rock
AP4	726621.0001	3782299	No	100_135	Soft Rock
AP5	727279.6235	3782725.75			
AP6	728023.2399	3782762.47	No	150_200	Soft Rock & Hard Rock
AP7	728669.1889	3782657.83	No	150_220	Soft Rock & Hard Rock
AP8	729502.1551	3782488.66	No	150_220	Hard Rock
AP9	730730.8488	3781811.39	No	130_126	Hard Rock
AP10	731471.7359	3781680.72	No	170	Hard Rock
AP11	732295.0566	3781590.86	No	150_250	Soft Rock & Hard Rock
AP12	733247.0455	3781727.22	No	150_220	Hard Rock
AP13	733794.8118	3782357.19	No	150_220	Hard Rock
AP14	733914.2071	3783012.45	No	150_220	Hard Rock
AP15	733941.1468	3783536.78	No	150_220	Hard Rock
AP16	734155.8169	3783779.09	No	150_220	Hard Rock
AP17	734405.0128	3784134.36	No	150_220	Hard Rock

**220KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP18	734423.382	3784569.98	No	150_220	Hard Rock
AP19	734449.3289	3784965.12	No	150_220	Hard Rock
AP20	734892.3586	3785552.3	No	150_220	Hard Rock
AP21	735443.8688	3785608.78	No	150_220	Hard Rock
AP22	736113.6913	3785595.24	No	150_220	Hard Rock
AP23	736425.4304	3785509.01	No	150_220	Hard Rock
AP24	737269.3037	3785516.53	Wheat	150	Hard Rock
AP25	737547.6388	3785489.94	Wheat	150	Hard Rock
AP26	737852.0744	3785584.98	Wheat	150	Hard Rock
AP27	737878.9395	3785701.57	Wheat	150	Hard Rock
AP28	738063.0241	3785859.7	Wheat	150	Hard Rock
AP29	738152.0001	3786209	No	150_200	Hard Rock
AP30	738701.3854	3786752.17	Wheat	80_150	Hard Rock
AP31	739268.4597	3787043.5	Wheat	70_150	Soft & Hard Rock
AP32	739487.7754	3787248.12	Wheat	60_100	Soft Rock
AP33	739754.0001	3787909	Wheat	100	Hard Rock
AP34	740210.0001	3788217	Wheat,Potato	130	Soft After 4 ft Stone Start
AP35	740737.0001	3788484	Wheat	150	Hard Rock
AP36	740995.0001	3788649	No	200_300	Hard Rock Stone
AP37	741152.0001	3789178	No	180_200	Hard Rock Stone

**220KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP38	740761.467	3789977.48	No	200	Hard Rock Stone
AP39	740736.0001	3791216	No	200	Hard Rock Stone
AP40	740983.0001	3791660	No	220	Hard Rock Stone
AP41	741128.0001	3791976	No	170	Hard Rock Stone
AP42	741156.0001	3792527	No	190	Hard Rock Stone
AP43	741564.0001	3792951	No	250	Hard Rock Stone
AP44	742067.0001	3793279	No	250	Hard Rock Stone
AP45	742165.0001	3793954	No	250	Hard Rock Stone
AP46	742390.0001	3794303	No	120_250	Hard Rock Stone
AP47	742360.0001	3794812	No	120_250	Hard Rock Stone
AP48	741986.0001	3795060	No	120_250	Hard Rock Stone
AP49	741321.0001	3795213	No	150_270	Hard Rock Stone
AP50	740585.0001	3795499	No	150_270	Hard Rock Stone
AP51	740422.0001	3795628	No	150_270	Hard Rock Stone
AP52	739933.7828	3795823.01	No	150_250	Hard Rock
AP53	739646.2027	3796150.28	No	150_250	Hard Rock
AP54	739321.0001	3796778	No	150_250	Hard Rock
AP55	739415.0001	3797266	No	150_250	Hard Rock
AP56	739829.0001	3797635	No	150_250	Hard Rock
AP57	740044.0001	3798060	No	150_250	Hard Rock

**220KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP58	740572.0001	3798779	No	150_250	Hard Rock
AP59	741066.0001	3799502	No	150_250	Hard Rock
AP60	741250.0001	3799937	No	150_250	Hard Rock
AP61	741678.0001	3800216	No	150_250	Hard Rock
AP62	742497.0001	3801130	No	150_250	Hard Rock
AP63	743032.0001	3802086	No	150_250	Hard Rock
AP64	743957.0001	3802800	No	150_250	Hard Rock
AP65	744879.0001	3804984	No	150_250	Hard Rock
AP66	745540.0001	3806173	Wheat	100_180	Hard Rock
AP67	745356.0001	3807097	No	150_250	Hard Rock
AP68	745560.0001	3807588	No	120_250	Hard Rock
AP69	745680.0001	3808355	No	120_250	Hard Rock
AP70	745506.0001	3808719	No	120_250	Hard Rock
AP71	745263.0001	3809018	No	200	Hard Rock
AP72	744561.0001	3809408	Wheat	230	Soft & Hard Rock
AP73	743989.0001	3810589	No	240	Hard Rock Stone
AP74	743921.0001	3810978	No	250	Hard Rock
AP75	744038.0001	3811484	No	240	Hard Rock
AP76	744614.0001	3812188	No	260	Hard Rock
AP77	745102.0001	3812568	No	250	Hard Rock

**220KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP78	745382.0001	3812925	No	230	Soft & Hard Rock
AP79	745490.0001	3813426	No	260	Soft & Hard Rock
AP80	745426.1924	3813584.46	No	506	Hard Rock Stone After 4 ft
AP81	745371.0001	3813830	No	230	Hard Rock Stone After 4 ft
AP82	745679.8016	3814258.87	No	250	Hard Rock Stone After 4 ft
AP83	745948.7064	3814356.29	No	270	Hard Rock Stone
AP84	746144.4684	3814404.26	No	280	Hard Rock Stone
AP85	746463.8582	3814409.64	No	260	Hard Rock Stone
AP86	746817.0322	3814373.6	No	270	Hard Rock Stone
AP87	747141.0001	3814241	No	260	Hard Rock Stone
AP88	747295.0001	3814171	No	270	Hard Rock Stone
AP89	747588.0001	3814136	No	250	Hard Rock Stone
AP90	747649.0001	3814193	No	270	Hard Rock Stone
AP91	747845.0002	3814659	No	260	Hard Rock Stone
AP92	748218.0001	3814923	No	280	Hard Rock Stone
AP93	748619.0001	3814867	No	250	Soft (Soil with Stone Mixing Hill)
AP94	748884.0002	3814931	No	240	Soft (Soil with Stone Mixing Hill)

**220KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP95	749133.0002	3814936	No	250	Soft Rock (Sand Type Stone)
AP96	749352.0002	3815086	No	220	Soft Rock (Sand Type Stone)
AP97	749753.5277	3815214.29	No	270	Hard Rock
AP98	750209.5906	3815311.33	No	250	Hard Rock Stone
AP99	750573.5121	3815805.45	No	270	Hard Rock Stone
AP100	750486.4035	3816322.75	No	270	Soft & Hard Rock
AP101	750192.5358	3816624.6	No	220	Soft Rock
AP102	749783.1952	3816894.07	No	230	Soft Rock
AP103	749614.0242	3817065.71	No	260	Soft Rock
AP104	749599.9965	3817268.79	No	260	Soft Rock
AP105	749468.901	3817651.16	No	230	Soft Rock
AP106	749410.4359	3817959.94	No	200	Soft Rock
AP107	749198.4062	3818609.15	No	200	Soft Rock
AP108	749005.6599	3819567.26	No	150	Soft Rock
AP109	748817.103	3820461.85	No	170	Soft Rock
AP110	748386.0002	3821009	No	200	Soft Rock
AP111	748254.0001	3821122	No	200	Soft Rock
AP112	747099.9377	3821704.33	No	200	Soft Rock
AP113	746426.8957	3822579.83	No	200	Soft Rock

**220KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-2**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP114	744911.0482	3823527.91	No	200	Soft Rock
AP115	744197.1489	3823759.41	No	200	Soft Rock
AP116	743139.0396	3823336.87	No	200	Soft Rock
AP117	742746.4343	3823151.95	No	200	Soft Rock
AP118	742475.5977	3823149.63	No	200	Soft Rock
AP119	741828.1312	3823407.44	No	200	Soft Rock
AP120	741067.2492	3823992.78	No	No	Hard & Soft Rock
AP121	740694.7914	3823977.12	No	30_50	Hard Rock
AP122	740353.1942	3824188.5	No	30_50	Hard Rock
AP123	739942.767	3824339.93	No	25_45	Sand & Stone Soft & Hard Rock
AP124	739144.7672	3824543.7	No	20_30	Soft & Hard Rock
AP125	737927.1808	3825297	No	20_30	Soft & Hard Rock
AP126	736705.4525	3825621.91	No	10_20	Soft & Sand Rock
AP127	736334.723	3825751.11	No	20_30	Soft & Hard Rock
AP128	735940.6099	3825738.89	No	20_30	Soft & Hard Rock
AP129	735407.7002	3825676.16	No	20_30	Soft & Hard Rock

**220 KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP1	726040.0001	3782208	No	100	Soft Rock
AP2	726061.0001	3782245	No	100	Soft Rock
AP3	726320.0001	3782286	No	100 to 150	Soft Rock
AP4	726430.2597	3782112.42	No	100_135	Soft Rock
AP5	726722.1154	3781276.99	No	150_200	Soft Rock & Hard Rock
AP6	727698.3042	3780447.92	No	150_220	Soft Rock & Hard Rock
AP7	728604.1936	3780017.05	No	150_220	Hard Rock
AP8	728882.5305	3779676.32	No	130_126	Hard Rock
AP9	730593.5232	3779165.73	No	150 Above	Hard Rock
AP10	731548.2598	3778250.05	No	150_250	Soft Rock & Hard Rock
AP11	732554.9004	3777544.97	No	150_220	Hard Rock
AP12	733069.1488	3777170.27	No	150_220	Hard Rock
AP13	733738.0824	3776990.94	No	150_220	Hard Rock
AP14	734434.295	3776772.4	No	150_220	Hard Rock
AP15	736182.5912	3776670.54	No	150_220	Hard Rock
AP16	736548.1902	3776471.96	No	150_220	Hard Rock
AP17	737097.0811	3776274.7	No	150_220	Hard Rock
AP18	737762.6077	3775857.05	No	150_220	Hard Rock
AP19	738110.4939	3775143.05	No	150_220	Hard Rock
AP20	738585.2379	3775006.99	No	150_220	Hard Rock

**220 KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP21	738936.7931	3774846.56	No	150_220	Hard Rock
AP22	739296.0877	3775015.5	No	150_220	Hard Rock
AP23	739397.0306	3775118.28	No	150_220	Hard Rock
AP24	739542.6065	3775239.89	No	150_220	Hard Rock
AP25	739685.0992	3775251.75	No	150_220	Hard Rock
AP26	739795.5308	3775249.42	No	150_220	Hard Rock
AP27	740005.5804	3775299.9	No	150_220	Hard Rock
AP28	740458.232	3775273.16	No	150_220	Hard Rock
AP29	740570.4282	3775306.08	No	150_220	Hard Rock
AP30	740826.6336	3775383.54	No	150_220	Hard Rock
AP31	740888.7362	3775447.89	No	150_220	Hard Rock
AP32	740971.9348	3775748.51	No	150_220	Hard Rock
AP33	741497.8996	3776265.33	No	150_220	Hard Rock
AP34	741548.1109	3776795.32	No	150_220	Hard Rock
AP35	741051.2081	3777641.71	No	150_220	Hard Rock
AP36	740730.567	3778474.92	No	150_220	Hard Rock
AP37	740398.1352	3778817.89	No	150_220	Hard Rock
AP38	740372.8939	3779135.08	No	150_220	Hard Rock
AP39	740303.0143	3779436.16	No	150_220	Hard Rock
AP40	740010.2949	3779777.63	No	150_220	Hard Rock
AP41	739595.0488	3780109.42	No	150_220	Hard Rock
AP42	739205.6718	3780310.4	No	150_220	Hard Rock

**220 KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP43	739131.6468	3780345.26	No	150_220	Hard Rock
AP44	738987.722	3780479.99	No	150_220	Hard Rock
AP45	738860.1691	3780675.77	No	150_220	Hard Rock
AP46	738847.2274	3780973.07	No	150_220	Hard Rock
AP47	738898.0182	3781154.75	No	150_220	Hard Rock
AP48	738979.1455	3781222.93	No	150_220	Hard Rock
AP49	739001.4299	3781314.75	No	150_220	Hard Rock
AP50	738986.9208	3781408.06	No	150_220	Hard Rock
AP51	738971.5521	3781485.91	No	150_220	Hard Rock
AP52	738828.605	3781645.97	No	150_220	Hard Rock
AP53	738728.5187	3781735.79	No	150_220	Hard Rock
AP54	738633.9625	3781933.11	No	150_220	Hard Rock
AP55	738572.9476	3782047.49	No	150_220	Hard Rock
AP56	738611.9926	3782235.79	No	150_220	Hard Rock
AP57	738580.4578	3782417.61	No	150_220	Hard Rock
AP58	738736.3452	3782575.67	No	150_220	Hard Rock
AP59	738952.6445	3782659.59	No	150_220	Hard Rock
AP60	739199.3798	3782712.46	No	150_220	Hard Rock
AP61	739457.1604	3782742.72	No	150_220	Hard Rock
AP62	739603.3819	3782805.03	No	150_220	Hard Rock
AP63	739712.3992	3782844.82	No	150_220	Hard Rock
AP64	739899.5605	3782930.72	No	150_220	Hard Rock
AP65	739939.6861	3783082.86	No	150_220	Hard Rock

**220 KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP66	739885.5068	3783296.34	No	150_220	Hard Rock
AP67	739769.4214	3783389.31	No	150_220	Hard Rock
AP68	739780.8944	3783474.3	No	150_220	Hard Rock
AP69	739821.7427	3783655.73	No	150_220	Hard Rock
AP70	739938.5094	3783784.44	No	150_220	Hard Rock
AP71	739996.3219	3783914.07	No	150_220	Hard Rock
AP72	739968.7292	3784018.76	No	150_220	Hard Rock
AP73	739930.5185	3784070.3	No	150_220	Hard Rock
AP74	739869.581	3784171.86	No	150_220	Hard Rock
AP75	739747.0807	3784277.27	No	150_220	Hard Rock
AP76	739627.0731	3784441.29	Wheat	150	Hard Rock
AP77	739576.8887	3784493.33	Wheat	150	Hard Rock
AP78	739416.1702	3784721.5	Wheat	150	Hard Rock
AP79	739369.1856	3784926.5	Wheat	150	Hard Rock
AP80	739334.6139	3785115.1	Wheat	150	Hard Rock
AP81	739254.414	3785191.39	Wheat	150	Hard Rock
AP82	739249.3431	3785466.22	Wheat	150	Hard Rock
AP83	739263.3213	3785600.11	Wheat	150	Hard Rock
AP84	739254.3641	3785756.6	Wheat	150	Hard Rock
AP85	739237.9005	3785941.54	No	150_200	Hard Rock
AP86	739311.0553	3786075.43	No	150_200	Hard Rock
AP87	739523.5496	3786379.85	Wheat	80_150	Hard Rock

**220 KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP88	739618.206	3786580.8	Wheat	80_150	Hard Rock
AP89	739682.5213	3786728.88	Wheat	70_150	Soft & Hard Rock
AP90	739807.2342	3786888.43	Wheat	70_150	Soft & Hard Rock
AP91	740005.1382	3787040.36	Wheat	60_100	Soft Rock
AP92	740181.9106	3787181.46	Wheat	60_100	Soft Rock
AP93	740387.1531	3787319.9	Wheat	60_100	Soft Rock
AP94	740538.2338	3787444.22	Wheat	100	Hard Rock
AP95	740585.0258	3787590.75	Wheat	100	Hard Rock
AP96	740650.6141	3787760.13	Wheat	100	Hard Rock
AP97	740842.6076	3787991.85	Wheat, Potato	110	Soft After 4 ft Stone Start
AP98	740979.2857	3788210.34	Wheat, Potato	120	Soft After 4 ft Stone Start
AP99	740995.216	3788288.55	Wheat	150	Hard Rock
AP100	741008.6305	3788452.42	Wheat	150	Hard Rock
AP101	740995.0001	3788649	No	200_300	Hard Rock Stone
AP102	741152.0001	3789178	No	180_200	Hard Rock Stone
AP103	740761.467	3789977.48	No	200	Hard Rock Stone
AP104	740736.0001	3791216	No	200	Hard Rock Stone
AP105	740983.0001	3791660	No	200	Hard Rock Stone
AP106	741128.0001	3791976	No	160	Hard Rock Stone
AP107	741156.0001	3792527	No	150	Hard Rock Stone
AP108	741564.0001	3792951	No	250	Hard Rock Stone

**220 KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP109	742067.0001	3793279	No	270	Hard Rock Stone
AP110	742165.0001	3793954	No	250	Hard Rock Stone
AP111	742390.0001	3794303	No	120_250	Hard Rock Stone
AP112	742360.0001	3794812	No	120_250	Hard Rock Stone
AP113	741986.0001	3795060	No	120_250	Hard Rock Stone
AP114	741321.0001	3795213	No	150_270	Hard Rock Stone
AP115	740585.0001	3795499	No	150_270	Hard Rock Stone
AP116	740422.0001	3795628	No	150_270	Hard Rock Stone
AP117	739933.7828	3795823.01	No	150_250	Hard Rock
AP118	739646.2027	3796150.28	No	150_250	Hard Rock
AP119	739321.0001	3796778	No	150_250	Hard Rock
AP120	739415.0001	3797266	No	150_250	Hard Rock
AP121	739829.0001	3797635	No	150_250	Hard Rock
AP122	740044.0001	3798060	No	150_250	Hard Rock
AP123	740572.0001	3798779	No	150_250	Hard Rock
AP124	741066.0001	3799502	No	150_250	Hard Rock
AP125	741250.0001	3799937	No	150_250	Hard Rock
AP126	741678.0001	3800216	No	150_250	Hard Rock
AP127	742497.0001	3801130	No	150_250	Hard Rock
AP128	743032.0001	3802086	No	150_250	Hard Rock
AP129	743957.0001	3802800	No	150_250	Hard Rock
AP130	744879.0001	3804984	No	150_250	Hard Rock

**220 KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP131	745540.0001	3806173	Wheat	100_180	Hard Rock
AP132	745356.0001	3807097	No	150_250	Hard Rock
AP133	745560.0001	3807588	No	120_250	Hard Rock
AP134	745680.0001	3808355	No	120_250	Hard Rock
AP135	745506.0001	3808719	No	120_250	Hard Rock
AP136	745263.0001	3809018	No	200	Hard Rock
AP137	744561.0001	3809408	Wheat	200	Soft & Hard Rock
AP138	743989.0001	3810589	No	210	Hard Rock Stone
AP139	743921.0001	3810978	No	240	Hard Rock
AP140	744038.0001	3811484	No	240	Hard Rock
AP141	744614.0001	3812188	No	230	Hard Rock
AP142	745102.0001	3812568	No	250	Hard Rock
AP143	745382.0001	3812925	No	250	Soft & Hard Rock
AP144	745490.0001	3813426	No	230	Soft & Hard Rock
AP145	745426.1924	3813584.46	No	230	Hard Rock Stone
AP146	745371.0001	3813830	No	250	Hard Rock Stone
AP147	745679.8016	3814258.87	No	235	Hard Rock Stone
AP148	745948.7064	3814356.29	No	250	Hard Rock Stone
AP149	746144.4684	3814404.26	No	250	Hard Rock Stone
AP150	746463.8582	3814409.64	No	250	Hard Rock Stone
AP151	746817.0322	3814373.6	No	250	Hard Rock Stone

**220 KV S/C PHYANG-DISKIT T/L
ALTERNATIVE-3**

Ap. No.	Easting	Northing	Crop	Water	Soil
AP152	747141.0001	3814241	No	250	Hard Rock Stone
AP153	747295.0001	3814171	No	250	Hard Rock Stone
AP154	747588.0001	3814136	No	250	Hard Rock Stone
AP155	747649.0001	3814193	No	250	Hard Rock Stone
AP156	747845.0002	3814659	No	250	Hard Rock Stone
AP157	748218.0001	3814923	No	250	Hard Rock Stone
AP158	748619.0001	3814867	No	220	Soft (Soil with Stone Mixing Hill)
AP159	748884.0002	3814931	No	230	Soft (Soil with Stone Mixing Hill)
AP160	749133.0002	3814936	No	250	Soft Rock (Sand Type Stone)
AP161	749352.0002	3815086	No	250	Soft Rock (Sand Type Stone)
AP162	749753.5277	3815214.29	No	250	Hard Rock
AP163	749997.1567	3815691.24	No	230	Hard Rock Stone
AP164	750116.0002	3815864	No	230	Hard Rock Stone
AP165	750066.8245	3816001.03	No	250	Soft & Hard Rock
AP166	749830.0002	3816199	No	250	Soft & Hard Rock
AP167	749751.0002	3816393	No	250	Soft Rock
AP168	749445.0002	3816613	No	230	Soft Rock
AP169	749153.0002	3816833	No	230	Soft Rock
AP170	749154.0002	3817753	No	250	Soft Rock

220 KV S/C PHYANG-DISKIT T/L ALTERNATIVE-3					
Ap. No.	Easting	Northing	Crop	Water	Soil
AP171	749155.0002	3818059	No	200	Soft Rock
AP172	749198.4062	3818609.15	No	200	Soft Rock
AP173	749005.6599	3819567.26	No	200	Soft Rock
AP174	748817.103	3820461.85	No	180	Soft Rock
AP175	748386.0002	3821009	No	200	Soft Rock
AP176	748254.0001	3821122	No	200	Soft Rock
AP177	747099.9377	3821704.33	No	200	Soft Rock
AP178	746943.4316	3822712.08	No	200	Soft Rock
AP179	746393.5734	3823466	No	200	Soft Rock
AP180	745490.1999	3824186.41	No	200	Soft Rock
AP181	744217.8476	3824511.03	No	200	Soft Rock
AP182	742335.0618	3824491.98	No	200	Soft Rock
AP183	740739.9976	3825829.46	No	30_50	Hard Rock
AP184	738431.6826	3826337.32	No	20_30	Soft & Hard Rock
AP185	736516.3885	3825990.77	No	10_20	Soft & Sand Rock
AP186	735407.7002	3825676.16	No	20_30	Soft & Hard Rock

CHAPTER-4.7
BILL OF QUANTITY WITH EXTENSION

REC Transmission Projects Company Limited

220KV S/C PHYANG-DISKIT T/L on D/C Tower

Tentative Bill of Quantity Based on Route Alignment survey

Angle Point	0	DA+	3	DA+	6	DA+	DB+0	DB+3	DB+6	DB+9	DC+0	DC+3	DC+6	DC+9	DD+0	3	DD+	6	DD+	9	Grand Total	
Gantry							1															1
D/E Tower															1							1
AP-1								1														1
AP-2		3					1												1			5
AP-3							2															2
AP-4		1					1															2
AP-5							1	2			1											4
AP-6		2					1								2	1						6
AP-7							2			1	1											4
AP-8							2				1											3
AP-9							1	1	1													3
AP-10							1				1											2
AP-11							2				1											3
AP-12							1															1
AP-13															1							1
AP-14															1	2				2		5
AP-15										1	1											2
AP-16							1				1											2
AP-17							1				3											4
AP-18							2															2
AP-19									1		1											2
AP-20							2								1							3
AP-21											1											1
AP-22							1								1							2
AP-23															2							2
AP-24															2					1		3
AP-25										1	1											2
AP-26							1															1
AP-27							2				1											3
AP-28															2							2
AP-29							3															3
AP-30							1															1
AP-31							1								1					1		3
AP-32							3								1							4
AP-33							2			1	1											4
AP-34										1					1							2
AP-35							1															1
AP-36									1		1											2
AP-37							1								1							2
AP-38							3															3
AP-39							1			1					1							3
AP-40							1				1											2
AP-41							1								1							2
AP-42							2															2
AP-43							2		1													3
AP-44							2			1												3
AP-45										1												1
AP-46							2															2
AP-47							2															2
AP-48							1			2												3
AP-49							1															1
AP-50							2															2
AP-51							2															2
AP-52							2		1													3
AP-53							1	1		1												3
AP-54							1															1

AP-117				1												1
AP-118				2						1						3
AP-119				1												1
AP-120				1	1											2
AP-121				1				2								3
AP-122				1				1				1				3
AP-123	4			1												5
AP-124	3							1								4
AP-125								1								1
D/E Tower								1								1
Gantry	1															1
Grand Total	15			151	14	10	20	35		1		34	4	1	6	289

Thank You