NIPPON KOEI CO.,LTD.

QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	Land Reclamation	**Pay Item No. (BOQ)**	2F-01
Quantity Item	Fill Material Supply	**Unit**	m^3

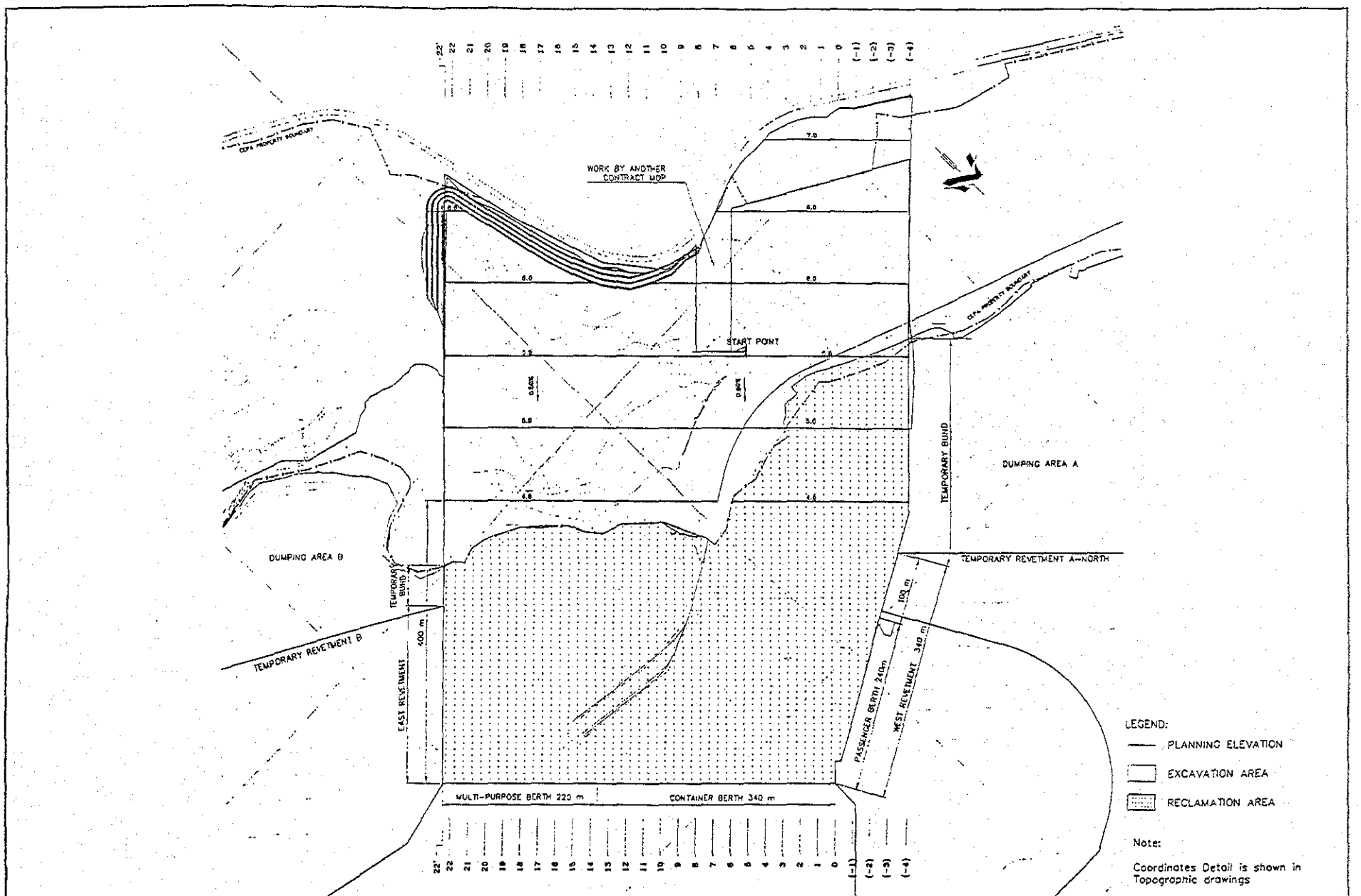
Calculation Procedure Applied

Surface soil (t=35cm) is not suitable for reclamation.
So, Excavation volume is needed to reduce Surface soil volume.

References, Calculation Base and Revisions

DW-DR-00-005

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			Mr. Inuma		Mr. Ando		
1								
2								
3								



JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	DESIGNED BY:	SECTION: DREGING AND RECLAMATION WORK	DATE: JULY/2002
Cepa COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	NIPPON KOEI CO., LTD.	CHECKED BY	SUB-SECTION: GENERAL	SCALE: 1 : 5,000
		APPROVED BY	TITLE: RECLAMATION AND EXCAVATION PLAN	DRAWING NO.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Land Reclamation	Calc. Index No.	
Subject	Fill Material Supply	Page No.	Rev.

References/ Notes

Excavation 1,557,000 m³

43,000 m³

Deduction

Surface soil 84,000 m³

1,516,000 m³

	Prepared by	Checked by
	/ /200	/ /200

QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	
Work Section Title	Excavation to be used for Reclamation	**Pay Item No. (BOQ)**	
Quantity Item		**Unit**	cubic meter

Calculation Procedure Applied

1. Calculation of area of sections (Excel)

2. Average Area of Sections (Excel)

3. Calculation of volume: Average of area of sections times distance between sections (Excel)

References, Calculation Base and Revisions

1. Area and Volume have been calculated starting from section -4 to section 22', in accordance with the General Plan of Reclamation No. DW-DR-00-005

2. The major Volume of Excavation was calculated up to the beginning of the area of slopes (see enclosed drawing).

3. The next Volume of Excavation calculated was in the area of slopes.

Rev	Prepared		No. of	Checked		Reviewed		Superseded
	by	Date	Pages	by	Date	by	Date	by Calc No.
0	jam	14 June 2002	62					
1								
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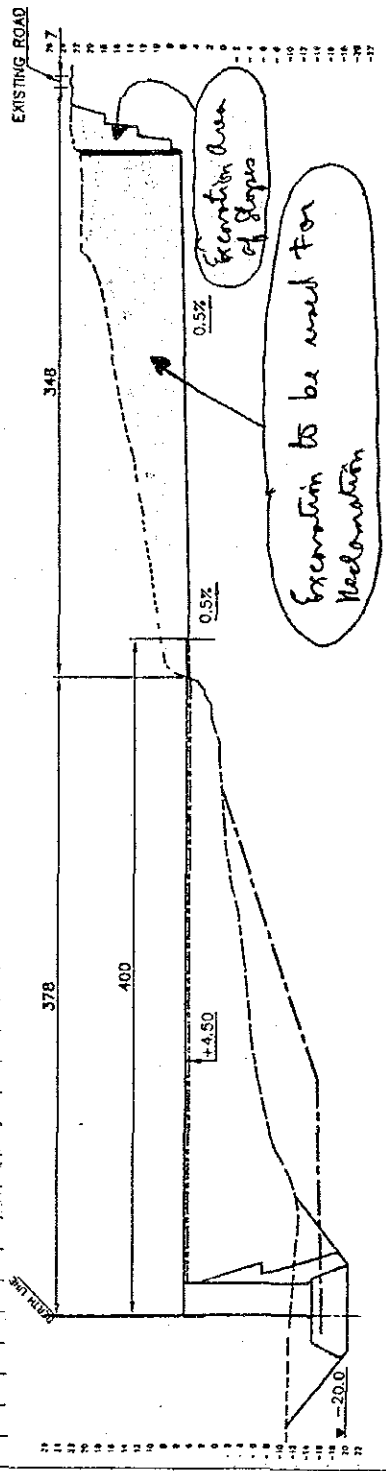
File in Calc. File

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Detail of excavation to be used for Reclamation	Calc. Index No.	
Subject		Page No.	Rev.

References/ Notes



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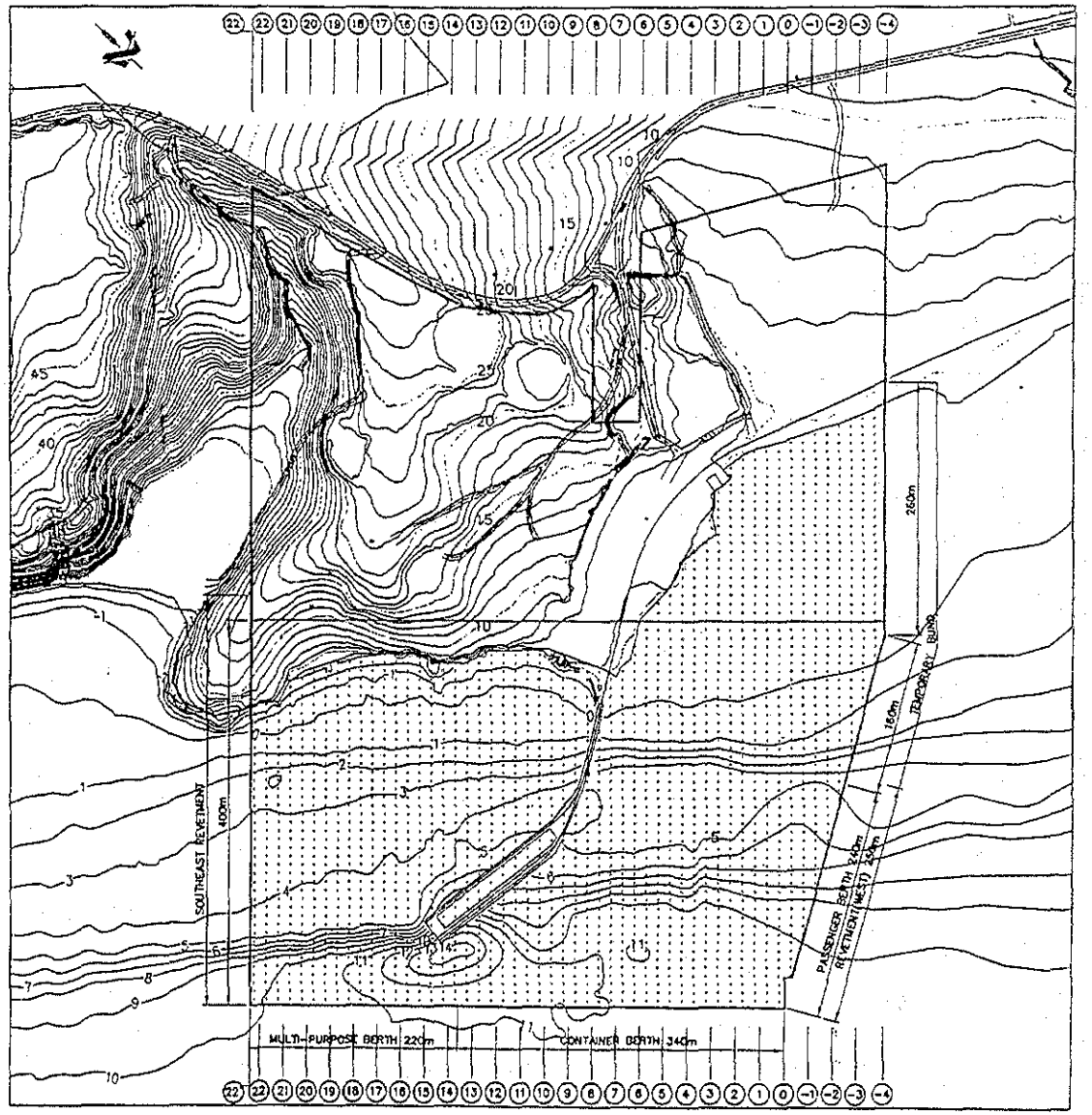

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR NIPPON KOEI CO., LTD.	DESIGNED BY : CHECKED BY : APPROVED BY :	SECTION : DREDGING AND RECLAMATION WORK SUB-SECTION : GENERAL TITLE : PLAN OF RECLAMATION	DATE : JUNE/2002 SCALE : 1 : 5,000 DRAWING NO. DW-DR-00-005

VOLUME OF EXCAVATION FOR RECLAMATION AREA WITHOUT THE LAND OF IRA
JULY 10/2002

SECTION N°	AREA	AVERAGE AREA OF 2 SECTIONS		DISTANCE BETWEEN SECTIONS	VOLUME
-4	215.21				
		204.40		28.78	5,883
-3	193.60				
		168.44		25.00	4,211
-2	143.29				
		119.43		25.00	2,986
-1	95.58				
		99.47		25.00	2,487
0	103.37				
		87.26		25.00	2,182
1	71.16				
		116.54		25.00	2,914
2	161.92				
		107.26		25.00	2,682
3	52.60				
		102.09		25.00	2,552
4	151.58				
		227.29		25.00	5,682
5	303.00				
		306.81		25.00	7,670
6	310.62				
		378.71		25.00	9,468
7	446.80				
		661.23		25.00	16,531
8	875.66				
		1,690.01		25.00	42,250
9	2,504.36				
		2,628.33		25.00	65,708
10	2,752.30				
		2,867.12		25.00	71,678
11	2,981.95				
		2,948.42		25.00	73,711
12	2,914.89				
		2,843.52		25.00	71,088
13	2,772.15				
		3,519.31		25.00	87,983
14	4,266.47				
		4,594.59		25.00	114,865
15	4,922.72				
		5,153.89		25.00	128,847
16	5,385.07				
		5,753.47		25.00	143,837
17	6,121.88				
		6,040.07		25.00	151,002
18	5,958.25				
		5,809.21		25.00	145,230
19	5,660.18				
		5,080.83		25.00	127,021
20	4,501.49				
		3,657.48		25.00	91,437
21	2,813.47				
		2,803.71		25.00	70,093
22	2,793.96				
		2,809.60		10.00	28,096
22'	2,825.24				

VOLUME OF EXCAVATION FOR RECLAMATION WITHOUT THE LAND OF IRA: 1,478,091 m3

PLUS VOLUME OF EXCAVATION IN AREA OF SLOPES: 80,464 m3

TOTAL: 1,558,555 m3

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
-4

distance	a	b	c	c'	d	e
647	5.74	5.74	0.00			
				-0.26	3.00	-0.78
650	5.75	5.23	-0.52			
				-0.41	25.00	-10.25
675	5.88	5.58	-0.30			
				-0.23	25.00	-5.63
700	6.00	5.85	-0.15			
				-0.08	25.00	-2.00
725	6.13	6.12	-0.01			
				0.06	25.00	1.50
750	6.25	6.38	0.13			
				0.49	25.00	12.13
775	6.38	7.22	0.84			
				1.05	25.00	26.25
800	6.50	7.76	1.26			
				1.50	25.00	37.38
825	6.63	8.36	1.73			
				1.88	25.00	47.00
850	6.75	8.78	2.03			
				2.26	25.00	56.38
875	6.88	9.36	2.48			
				2.54	21.00	53.24
896	6.99	9.58	2.59			

AREA OF SECTION: **215.21 m^2**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
-3

distance	a	b	c	c'	d	e
640	5.70	5.70	0.00			
				-0.06	10.00	-0.65
650	5.75	5.62	-0.13			
				-0.11	25.00	-2.63
675	5.88	5.80	-0.08			
				-0.12	25.00	-3.00
700	6.00	5.84	-0.16			
				-0.07	25.00	-1.75
725	6.13	6.15	0.02			
				0.07	25.00	1.75
750	6.25	6.37	0.12			
				0.48	25.00	11.88
775	6.38	7.21	0.83			
				1.04	25.00	26.00
800	6.50	7.75	1.25			
				1.47	25.00	36.75
825	6.63	8.32	1.69			
				1.85	25.00	46.25
850	6.75	8.76	2.01			
				2.24	25.00	56.00
875	6.88	9.35	2.47			
				2.56	9.00	23.00
884	6.93	9.57	2.64			

AREA OF SECTION: 193.60 m^2

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
-2.00

distance	a	b	c	c'	d	e
627	5.64	5.64	0.00			
				-0.02	23.00	-0.57
650	5.75	5.70	-0.05			
				-0.06	25.00	-1.63
675	5.88	5.80	-0.08			
				-0.09	25.00	-2.25
700	6.00	5.90	-0.10			
				-0.04	25.00	-1.00
725	6.13	6.15	0.02			
				0.06	25.00	1.50
750	6.25	6.35	0.10			
				0.05	25.00	1.25
775	6.38	6.38	0.00			
				0.49	25.00	12.13
800	6.50	7.47	0.97			
				1.31	25.00	32.63
825	6.63	8.27	1.64			
				1.63	25.00	40.75
850	6.75	8.37	1.62			
				1.87	25.00	46.75
875	6.88	9.00	2.12			
				2.29	6.00	13.74
881	6.91	9.37	2.46			

AREA OF SECTION: **143.29 m²**

Section N°
-1

distance	Planned elevation a	Natural ground elevation b	Difference of elevation: c= b-a c	Average of elevations c'	Width: d d	area: e= c'd e
613	5.57	5.57	0.00			
				-0.09	12.00	-1.08
625	5.63	5.45	-0.18			
				-0.12	25.00	-2.87
650	5.75	5.70	-0.05			
				-0.18	25.00	-4.50
675	5.88	5.57	-0.31			
				-0.26	25.00	-6.38
700	6.00	5.80	-0.20			
				-0.09	25.00	-2.25
725	6.13	6.15	0.02			
				0.02	25.00	0.50
750	6.25	6.27	0.02			
				0.10	25.00	2.50
775	6.38	6.56	0.18			
				0.42	25.00	10.38
800	6.50	7.15	0.65			
				0.87	25.00	21.75
825	6.63	7.72	1.09			
				1.59	25.00	39.63
850	6.75	8.83	2.08			
				2.00	19.00	37.91
869	6.85	8.76	1.91			

AREA OF SECTION: 95.58 m^2

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
0

distance	a	b	c	c'	d	e
616	5.59	5.59	0.00			
				-0.06	9.00	-0.59
625	5.63	5.50	-0.13			
				-0.12	25.00	-2.87
650	5.75	5.65	-0.10			
				-0.04	25.00	-1.00
675	5.88	5.90	0.02			
				-0.01	25.00	-0.37
700	6.00	5.95	-0.05			
				-0.01	25.00	-0.37
725	6.13	6.15	0.02			
				0.04	25.00	1.00
750	6.25	6.31	0.06			
				0.26	25.00	6.50
775	6.38	6.84	0.46			
				0.62	25.00	15.50
800	6.50	7.28	0.78			
				0.92	25.00	22.88
825	6.63	7.68	1.05			
				1.28	25.00	32.00
850	6.75	8.26	1.51			
				1.54	20.00	30.70
870	6.85	8.41	1.56			

AREA OF SECTION: **103.37** m^2

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c'd

Section N°
1

distance	a	b	c	c'	d	e
601	5.51	5.51	0.00			
				-0.04	24.00	-0.96
625	5.63	5.55	-0.08			
				-0.09	25.00	-2.25
650	5.75	5.65	-0.10			
				-0.06	25.00	-1.63
675	5.88	5.85	-0.03			
				-0.02	25.00	-0.38
700	6.00	6.00	0.00			
				0.03	25.00	0.75
725	6.13	6.19	0.06			
				0.05	25.00	1.13
750	6.25	6.28	0.03			
				0.14	25.00	3.50
775	6.38	6.63	0.25			
				0.43	25.00	10.75
800	6.50	7.11	0.61			
				0.71	25.00	17.75
825	6.63	7.44	0.81			
				1.04	25.00	25.88
850	6.75	8.01	1.26			
				1.39	12.00	16.62
862	6.81	8.32	1.51			

AREA OF SECTION: 71.16 m^2

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
2

distance	a	b	c	c'	d	e
589	5.44	5.66	0.22			
				0.19	11.00	2.09
600	5.50	5.66	0.16			
				-0.09	25.00	-2.37
625	5.63	5.28	-0.35			
				0.04	25.00	0.88
650	5.75	6.17	0.42			
				0.17	25.00	4.25
675	5.88	5.80	-0.08			
				-0.09	25.00	-2.25
700	6.00	5.90	-0.10			
				-0.09	25.00	-2.25
725	6.13	6.05	-0.08			
				0.48	25.00	11.88
750	6.25	7.28	1.03			
				0.97	25.00	24.13
775	6.38	7.28	0.90			
				0.99	25.00	24.63
800	6.50	7.57	1.07			
				1.36	25.00	33.88
825	6.63	8.27	1.64			
				1.88	25.00	46.88
850	6.75	8.86	2.11			
				2.25	9.00	20.21
859	6.80	9.18	2.38			

AREA OF SECTION: **161.92 m^2**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N° 3

distance	a	b	c	c'	d	e
549	5.25	5.34	0.09			
				0.01	26.00	0.26
575	5.38	5.31	-0.07			
				0.53	25.00	13.13
600	5.50	6.62	1.12			
				1.39	25.00	34.63
625	5.63	7.28	1.65			
				1.45	25.00	36.25
650	5.75	7.00	1.25			
				-0.18	25.00	-4.38
675	5.88	4.28	-1.60			
				-1.16	25.00	-29.00
700	6.00	5.28	-0.72			
				-0.60	25.00	-15.00
725	6.13	5.65	-0.48			
				-0.42	25.00	-10.50
750	6.25	5.89	-0.36			
				-0.23	25.00	-5.75
775	6.38	6.28	-0.10			
				0.10	25.00	2.50
800	6.50	6.80	0.30			
				0.48	25.00	11.88
825	6.63	7.28	0.65			
				0.72	26.00	18.59
851	6.76	7.54	0.78			

AREA OF SECTION: **52.60 m^2**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N° 4

distance	a	b	c	c'	d	e
490	4.95	4.95	0.00			
				0.02	10.00	0.25
500	5.00	5.05	0.05			
				0.60	25.00	15.00
525	5.13	6.28	1.15			
				1.08	25.00	27.00
550	5.25	6.26	1.01			
				0.96	25.00	23.88
575	5.38	6.28	0.90			
				1.25	25.00	31.25
600	5.50	7.10	1.60			
				1.73	25.00	43.25
625	5.63	7.49	1.86			
				1.72	25.00	43.00
650	5.75	7.33	1.58			
				1.49	25.00	37.25
675	5.88	7.28	1.40			
				0.34	25.00	8.50
700	6.00	5.28	-0.72			
				-1.11	25.00	-27.75
725	6.13	4.63	-1.50			
				-1.19	25.00	-29.75
750	6.25	5.37	-0.88			
				-0.69	25.00	-17.25
775	6.38	5.88	-0.50			
				-0.36	25.00	-9.00
800	6.50	6.28	-0.22			
				-0.01	25.00	-0.25
825	6.63	6.83	0.20			
				0.37	17.00	6.21
842	6.72	7.25	0.53			

AREA OF SECTION: **151.58 m^2**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
5

distance	a	b	c	c'	d	e
445	4.73	4.73	0.00			
				0.02	5.00	0.13
450	4.75	4.80	0.05			
				0.73	25.00	18.13
475	4.88	6.28	1.40			
				1.34	25.00	33.50
500	5.00	6.28	1.28			
				1.22	25.00	30.38
525	5.13	6.28	1.15			
				1.09	25.00	27.25
550	5.25	6.28	1.03			
				1.31	25.00	32.75
575	5.38	6.97	1.59			
				1.96	25.00	48.88
600	5.50	7.82	2.32			
				2.32	25.00	58.00
625	5.63	7.95	2.32			
				2.12	25.00	52.88
650	5.75	7.66	1.91			
				1.78	25.00	44.38
675	5.88	7.52	1.64			
				0.68	25.00	17.00
700	6.00	5.72	-0.28			
				-0.22	25.00	-5.50
725	6.13	5.97	-0.16			
				-0.08	25.00	-2.00
750	6.25	6.25	0.00			
				-0.55	25.00	-13.75
775	6.38	5.28	-1.10			
				-1.02	25.00	-25.50
800	6.50	5.56	-0.94			
				-0.57	25.00	-14.25
825	6.63	6.43	-0.20			
				0.08	10.00	0.75
835	6.68	7.03	0.35			

AREA OF SECTION: **303.00 m^2**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
6

distance	a	b	c	c'	d	e
433	4.67	4.67	0.00			
				0.02	17.00	0.26
450	4.75	4.78	0.03			
				0.72	25.00	17.88
475	4.88	6.28	1.40			
				1.34	25.00	33.50
500	5.00	6.28	1.28			
				1.23	25.00	30.63
525	5.13	6.30	1.17			
				1.30	25.00	32.38
550	5.25	6.67	1.42			
				1.65	25.00	41.25
575	5.38	7.26	1.88			
				2.88	25.00	72.00
600	5.50	9.38	3.88			
				3.94	21.00	82.74
621	5.61	9.61	4.00			

AREA OF SECTION: **310.62 m²**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
7

distance	a	b	c	c'	d	e
391	4.50	4.50	0.00			
				0.01	9.00	0.09
400	4.50	4.52	0.02			
				0.02	25.00	0.50
425	4.63	4.65	0.02			
				0.76	25.00	19.00
450	4.75	6.25	1.50			
				1.45	25.00	36.25
475	4.88	6.28	1.40			
				1.43	25.00	35.75
500	5.00	6.46	1.46			
				1.52	25.00	37.88
525	5.13	6.70	1.57			
				1.65	25.00	41.25
550	5.25	6.98	1.73			
				2.98	25.00	74.38
575	5.38	9.60	4.22			
				4.49	25.00	112.13
600	5.50	10.25	4.75			
				4.72	19.00	89.59
619	5.60	10.28	4.68			

AREA OF SECTION: **446.80 m²**

Planned elevation	Natural ground *elevation*	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
8

distance	a	b	c	c'	d	e
351	4.50	4.50	0.00			
				0.02	24.00	0.36
375	4.50	4.53	0.03			
				0.93	25.00	23.25
400	4.50	6.33	1.83			
				1.82	25.00	45.50
425	4.63	6.44	1.81			
				1.81	25.00	45.25
450	4.75	6.56	1.81			
				1.82	25.00	45.50
475	4.88	6.71	1.83			
				1.86	25.00	46.50
500	5.00	6.89	1.89			
				1.94	25.00	48.50
525	5.13	7.12	1.99			
				4.69	25.00	117.13
550	5.25	12.63	7.38			
				8.70	25.00	217.38
575	5.38	15.39	10.01			
				10.23	28.00	286.30
603	5.52	15.96	10.44			

AREA OF SECTION: **875.66** m^2

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
9

distance	a	b	c	c'	d	e
356	4.50	4.50	0.00			
				0.00	19.00	0.00
375	4.50	4.50	0.00			
				1.09	25.00	27.25
400	4.50	6.68	2.18			
				2.26	25.00	56.38
425	4.63	6.96	2.33			
				2.31	25.00	57.63
450	4.75	7.03	2.28			
				2.29	25.00	57.13
475	4.88	7.17	2.29			
				4.20	25.00	104.88
500	5.00	11.10	6.10			
				6.91	25.00	172.63
525	5.13	12.84	7.71			
				8.28	25.00	206.88
550	5.25	14.09	8.84			
				9.53	25.00	238.25
575	5.38	15.60	10.22			
				11.33	25.00	283.13
600	5.50	17.93	12.43			
				13.04	25.00	326.00
625	5.63	19.28	13.65			
				12.88	25.00	321.88
650	5.75	17.85	12.10			
				11.18	25.00	279.38
675	5.88	16.13	10.25			
				9.87	25.00	246.75
700	6.00	15.49	9.49			
				4.86	26.00	126.23
726	6.13	6.35	0.22			

AREA OF SECTION: **2,504.36 m^2**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
10

distance	a	b	c	c'	d	e
371	4.50	4.50	0.00			
				1.21	29.00	34.95
400	4.50	6.91	2.41			
				2.97	25.00	74.13
425	4.63	8.15	3.52			
				4.48	25.00	112.00
450	4.75	10.19	5.44			
				5.95	25.00	148.75
475	4.88	11.34	6.46			
				6.86	25.00	171.50
500	5.00	12.26	7.26			
				7.83	25.00	195.63
525	5.13	13.52	8.39			
				8.83	25.00	220.63
550	5.25	14.51	9.26			
				9.79	25.00	244.63
575	5.38	15.69	10.31			
				11.17	25.00	279.13
600	5.50	17.52	12.02			
				13.10	25.00	327.50
625	5.63	19.81	14.18			
				14.60	25.00	364.88
650	5.75	20.76	15.01			
				14.99	25.00	374.75
675	5.88	20.85	14.97			
				7.55	27.00	203.85
702	6.02	6.15	0.13			

AREA OF SECTION: **2,752.30** m^2

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c'd

Section N°
11

distance	a	b	c	c'	d	e
375	4.50	4.50	0.00			
				1.86	25.00	46.38
400	4.50	8.21	3.71			
				4.15	25.00	103.75
425	4.63	9.22	4.59			
				5.13	25.00	128.13
450	4.75	10.41	5.66			
				6.10	25.00	152.38
475	4.88	11.41	6.53			
				7.11	25.00	177.75
500	5.00	12.69	7.69			
				8.30	25.00	207.50
525	5.13	14.04	8.91			
				9.39	25.00	234.75
550	5.25	15.12	9.87			
				10.30	25.00	257.38
575	5.38	16.10	10.72			
				11.27	25.00	281.75
600	5.50	17.32	11.82			
				13.61	25.00	340.13
625	5.63	21.02	15.39			
				15.19	25.00	379.63
650	5.75	20.73	14.98			
				14.81	25.00	370.25
675	5.88	20.52	14.64			
				15.11	20.00	302.20
695	5.98	21.56	15.58			

AREA OF SECTION: **2,981.95 m^2**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
12

distance	a	b	c	c'	d	e
378	4.50	4.50	0.00			
				0.02	22.00	0.55
400	4.50	4.55	0.05			
				2.76	25.00	69.00
425	4.63	10.10	5.47			
				5.91	25.00	147.63
450	4.75	11.09	6.34			
				6.70	25.00	167.38
475	4.88	11.93	7.05			
				7.56	25.00	189.00
500	5.00	13.07	8.07			
				8.74	25.00	218.50
525	5.13	14.54	9.41			
				9.98	25.00	249.38
550	5.25	15.79	10.54			
				10.99	25.00	274.63
575	5.38	16.81	11.43			
				11.94	25.00	298.38
600	5.50	17.94	12.44			
				13.54	25.00	338.38
625	5.63	20.26	14.63			
				15.04	25.00	375.88
650	5.75	21.19	15.44			
				15.36	25.00	384.00
675	5.88	21.16	15.28			
				15.56	13.00	202.22
688	5.95	21.78	15.83			

AREA OF SECTION: **2,914.89 m^2**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
13

distance	a	b	c	c'	d	e
373	4.50	4.50	0.00			
				1.21	27.00	32.54
400	4.50	6.91	2.41			
				2.97	25.00	74.13
425	4.63	8.15	3.52			
				4.48	25.00	112.00
450	4.75	10.19	5.44			
				5.96	25.00	148.88
475	4.88	11.35	6.47			
				6.81	25.00	170.25
500	5.00	12.15	7.15			
				7.77	25.00	194.25
525	5.13	13.52	8.39			
				8.77	25.00	219.25
550	5.25	14.40	9.15			
				9.73	25.00	243.25
575	5.38	15.69	10.31			
				11.17	25.00	279.13
600	5.50	17.52	12.02			
				12.91	25.00	322.63
625	5.63	19.42	13.79			
				14.40	25.00	360.00
650	5.75	20.76	15.01			
				14.99	25.00	374.75
675	5.88	20.85	14.97			
				13.40	18.00	241.11
693	5.97	17.79	11.82			

AREA OF SECTION: **2,772.15** m^2

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
14

distance	a	b	c	c'	d	e
363	4.50	4.50	0.00			
				2.13	12.00	25.56
375	4.50	8.76	4.26			
				5.38	25.00	134.38
400	4.50	10.99	6.49			
				7.66	25.00	191.50
425	4.63	13.46	8.83			
				9.00	25.00	225.00
450	4.75	13.92	9.17			
				9.56	25.00	239.00
475	4.88	14.83	9.95			
				11.18	25.00	279.50
500	5.00	17.41	12.41			
				12.93	25.00	323.13
525	5.13	18.57	13.44			
				13.38	25.00	334.50
550	5.25	18.57	13.32			
				13.47	25.00	336.63
575	5.38	18.99	13.61			
				14.03	25.00	350.63
600	5.50	19.94	14.44			
				15.55	25.00	388.63
625	5.63	22.28	16.65			
				17.64	25.00	440.88
650	5.75	24.37	18.62			
				19.01	25.00	475.25
675	5.88	25.28	19.40			
				19.33	27.00	521.91
702	6.02	25.28	19.26			

AREA OF SECTION: **4,266.47** m^2

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c'd

Section N°
15

distance	a	b	c	c'	d	e
358	4.50	4.50	0.00			
				2.66	17.00	45.14
375	4.50	9.81	5.31			
				6.48	25.00	161.88
400	4.50	12.14	7.64			
				8.98	25.00	224.50
425	4.63	14.95	10.32			
				10.81	25.00	270.25
450	4.75	16.05	11.30			
				11.52	25.00	288.00
475	4.88	16.62	11.74			
				13.04	25.00	326.00
500	5.00	19.34	14.34			
				15.01	25.00	375.25
525	5.13	20.81	15.68			
				15.56	25.00	389.00
550	5.25	20.69	15.44			
				15.17	25.00	379.25
575	5.38	20.28	14.90			
				15.64	25.00	391.00
600	5.50	21.88	16.38			
				16.52	25.00	412.88
625	5.63	22.28	16.65			
				18.09	25.00	452.25
650	5.75	25.28	19.53			
				19.83	25.00	495.75
675	5.88	26.01	20.13			
				19.71	25.00	492.63
700	6.00	25.28	19.28			
				19.91	11.00	218.96
711	6.06	26.59	20.53			

AREA OF SECTION: **4,922.72 m²**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
16

distance	a	b	c	c'	d	e
366	4.50	4.50	0			
				2.29	9.00	20.57
375	4.50	9.07	4.57			
				6.23	25.00	155.63
400	4.50	12.38	7.88			
				9.43	25.00	235.75
425	4.63	15.61	10.98			
				11.26	25.00	281.38
450	4.75	16.28	11.53			
				12.47	25.00	311.75
475	4.88	18.29	13.41			
				14.45	25.00	361.13
500	5.00	20.48	15.48			
				16.18	25.00	404.50
525	5.13	22.01	16.88			
				17.06	25.00	426.50
550	5.25	22.49	17.24			
				17.21	25.00	430.25
575	5.38	22.56	17.18			
				17.42	25.00	435.38
600	5.50	23.15	17.65			
				18.16	25.00	454.00
625	5.63	24.30	18.67			
				19.27	25.00	481.75
650	5.75	25.62	19.87			
				20.24	25.00	505.88
675	5.88	26.48	20.6			
				20.78	25.00	519.38
700	6.00	26.95	20.95			
				21.25	17.00	361.25
717	6.09	27.64	21.55			

AREA OF SECTION: **5,385.07 m^2**

Planned elevation	*Natural ground* elevation	*Difference of* elevation: c= b-a	*Average of* elevations	Width: d	area: e= c'd

Section N°
17

distance	a	b	c	c'	d	e
363	4.50	4.50	0.00			
				2.01	12.00	24.12
375	4.50	8.52	4.02			
				5.99	25.00	149.75
400	4.50	12.46	7.96			
				10.50	25.00	262.38
425	4.63	17.66	13.03			
				13.89	25.00	347.25
450	4.75	19.50	14.75			
				15.23	25.00	380.63
475	4.88	20.58	15.70			
				16.12	25.00	402.88
500	5.00	21.53	16.53			
				16.89	25.00	422.25
525	5.13	22.38	17.25			
				17.54	25.00	438.38
550	5.25	23.07	17.82			
				17.86	25.00	446.50
575	5.38	23.28	17.90			
				18.19	25.00	454.75
600	5.50	23.98	18.48			
				18.84	25.00	470.88
625	5.63	24.82	19.19			
				19.62	25.00	490.38
650	5.75	25.79	20.04			
				20.36	25.00	508.88
675	5.88	26.55	20.67			
				20.98	25.00	524.38
700	6.00	27.28	21.28			
				21.45	25.00	536.25
725	6.13	27.75	21.62			
				21.86	12.00	262.26
737	6.19	28.28	22.09			

AREA OF SECTION: **6,121.88 m²**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
18

distance	a	b	c	c'	d	e
375	4.50	4.50	0.00			
				2.50	25.00	62.38
400	4.50	9.49	4.99			
				7.34	25.00	183.38
425	4.63	14.31	9.68			
				11.88	25.00	297.00
450	4.75	18.83	14.08			
				14.91	25.00	372.75
475	4.88	20.62	15.74			
				16.01	25.00	400.25
500	5.00	21.28	16.28			
				16.47	25.00	411.75
525	5.13	21.79	16.66			
				16.87	25.00	421.75
550	5.25	22.33	17.08			
				17.34	25.00	433.38
575	5.38	22.97	17.59			
				17.44	25.00	436.00
600	5.50	22.79	17.29			
				17.97	25.00	449.25
625	5.63	24.28	18.65			
				18.76	25.00	469.00
650	5.75	24.62	18.87			
				19.21	25.00	480.13
675	5.88	25.42	19.54			
				19.92	25.00	498.00
700	6.00	26.30	20.30			
				20.59	25.00	514.75
725	6.13	27.01	20.88			
				21.14	25.00	528.50
750	6.26	27.66	21.40			

AREA OF SECTION: **5,958.25** m^2

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
19

distance	a	b	c	c'	d	e
370	4.50	4.50	0.00			
				0.48	5.00	2.38
375	4.50	5.45	0.95			
				3.10	25.00	77.38
400	4.50	9.74	5.24			
				7.48	25.00	186.88
425	4.63	14.34	9.71			
				11.32	25.00	283.00
450	4.75	17.68	12.93			
				13.88	25.00	347.00
475	4.88	19.71	14.83			
				15.06	25.00	376.38
500	5.00	20.28	15.28			
				15.08	25.00	376.88
525	5.13	20.00	14.87			
				15.95	25.00	398.75
550	5.25	22.28	17.03			
				16.47	25.00	411.63
575	5.38	21.28	15.90			
				15.84	25.00	396.00
600	5.50	21.28	15.78			
				15.45	25.00	386.13
625	5.63	20.74	15.11			
				15.13	25.00	378.13
650	5.75	20.89	15.14			
				15.05	25.00	376.13
675	5.88	20.83	14.95			
				15.59	25.00	389.75
700	6.01	22.24	16.23			
				16.70	25.00	417.38
725	6.14	23.30	17.16			
				18.13	25.00	453.13
750	6.27	25.36	19.09			
				20.17	20.00	403.30
770	6.37	27.61	21.24			

AREA OF SECTION: **5,660.18 m²**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c*d

Section N°
20

distance	a	b	c	c'	d	e
368	4.50	4.50	0.00			
				0.94	7.00	6.55
375	4.50	6.37	1.87			
				3.22	25.00	80.38
400	4.50	9.06	4.56			
				5.93	25.00	148.13
425	4.63	11.92	7.29			
				9.20	25.00	229.88
450	4.75	15.85	11.10			
				12.16	25.00	304.00
475	4.88	18.10	13.22			
				12.71	25.00	317.63
500	5.00	17.19	12.19			
				11.34	25.00	283.38
525	5.13	15.61	10.48			
				10.39	25.00	259.63
550	5.25	15.54	10.29			
				11.80	25.00	295.00
575	5.38	18.69	13.31			
				13.30	25.00	332.38
600	5.50	18.78	13.28			
				11.45	25.00	286.25
625	5.63	15.25	9.62			
				8.71	25.00	217.63
650	5.75	13.54	7.79			
				7.46	25.00	186.50
675	5.88	13.01	7.13			
				7.67	25.00	191.63
700	6.00	14.20	8.20			
				9.44	25.00	236.00
725	6.13	16.81	10.68			
				12.39	25.00	309.75
750	6.26	20.36	14.10			
				17.50	25.00	437.38
775	6.39	27.28	20.89			
				21.08	18.00	379.44
793	6.48	27.75	21.27			

AREA OF SECTION: **4,501.49 m^2**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c'd

Section N°
21

distance	a	b	c	c'	d	e
353	4.50	4.50	0.00			
				1.50	22.00	32.89
375	4.50	7.49	2.99			
				4.12	25.00	103.00
400	4.50	9.75	5.25			
				6.57	25.00	164.25
425	4.63	12.52	7.89			
				9.39	25.00	234.75
450	4.75	15.64	10.89			
				11.23	25.00	280.63
475	4.88	16.44	11.56			
				10.01	25.00	250.25
500	5.00	13.46	8.46			
				7.19	25.00	179.75
525	5.13	11.05	5.92			
				5.28	25.00	132.00
550	5.25	9.89	4.64			
				4.47	25.00	111.63
575	5.38	9.67	4.29			
				4.76	25.00	119.00
600	5.50	10.73	5.23			
				4.20	25.00	104.88
625	5.63	8.79	3.16			
				2.40	25.00	60.00
650	5.75	7.39	1.64			
				2.02	25.00	50.50
675	5.88	8.28	2.40			
				3.11	25.00	77.63
700	6.00	9.81	3.81			
				5.00	25.00	124.88
725	6.13	12.31	6.18			
				7.51	25.00	187.63
750	6.25	15.08	8.83			
				11.71	25.00	292.63
775	6.38	20.96	14.58			
				15.36	20.00	307.20
795	6.48	22.62	16.14			

AREA OF SECTION: 2,813.47 m²

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c'*d

Section N°
22

distance	a	b	c	c'	d	e
323	4.50	4.50	0.00			
				1.80	27.00	48.60
350	4.50	8.10	3.60			
				4.34	25.00	108.50
375	4.50	9.58	5.08			
				6.19	25.00	154.63
400	4.50	11.79	7.29			
				8.31	25.00	207.63
425	4.63	13.95	9.32			
				9.70	25.00	242.50
450	4.75	14.83	10.08			
				9.26	25.00	231.50
475	4.88	13.32	8.44			
				6.46	25.00	161.50
500	5.00	9.48	4.48			
				2.93	25.00	73.25
525	5.13	6.51	1.38			
				0.79	25.00	19.75
550	5.25	5.45	0.20			
				0.19	25.00	4.63
575	5.38	5.55	0.17			
				0.43	25.00	10.63
600	5.50	6.18	0.68			
				0.67	25.00	16.63
625	5.63	6.28	0.65			
				1.21	25.00	30.13
650	5.75	7.51	1.76			
				4.85	25.00	121.25
675	5.88	13.82	7.94			
				9.48	25.00	236.88
700	6.00	17.01	11.01			
				11.28	25.00	282.00
725	6.13	17.68	11.55			
				11.29	25.00	282.13
750	6.25	17.27	11.02			
				9.94	25.00	248.38
775	6.38	15.23	8.85			
				10.53	25.00	263.13
800	6.50	18.70	12.20			
				6.30	8.00	50.36
808	6.54	6.93	0.39			

AREA OF SECTION: **2,793.96 m²**

Planned elevation	Natural ground elevation	Difference of elevation: c= b-a	Average of elevations	Width: d	area: e= c'*d

Section N°
22'

distance	a	b	c	c'	d	e
323	4.50	4.50	0.00			
				1.80	27.00	48.60
350	4.50	8.10	3.60			
				4.34	25.00	108.50
375	4.50	9.58	5.08			
				6.19	25.00	154.63
400	4.50	11.79	7.29			
				8.31	25.00	207.63
425	4.63	13.95	9.32			
				9.70	25.00	242.50
450	4.75	14.83	10.08			
				9.26	25.00	231.50
475	4.88	13.32	8.44			
				6.46	25.00	161.50
500	5.00	9.48	4.48			
				2.93	25.00	73.25
525	5.13	6.51	1.38			
				0.79	25.00	19.75
550	5.25	5.45	0.20			
				0.19	25.00	4.63
575	5.38	5.55	0.17			
				0.43	25.00	10.63
600	5.50	6.18	0.68			
				0.67	25.00	16.63
625	5.63	6.28	0.65			
				1.21	25.00	30.13
650	5.75	7.51	1.76			
				4.85	25.00	121.25
675	5.88	13.82	7.94			
				9.48	25.00	236.88
700	6.00	17.01	11.01			
				11.28	25.00	282.00
725	6.13	17.68	11.55			
				11.29	25.00	282.13
750	6.25	17.27	11.02			
				9.94	25.00	248.38
775	6.38	15.23	8.85			
				10.53	25.00	263.13
800	6.50	18.70	12.20			
				6.28	13.00	81.64
813	6.57	6.93	0.36			

AREA OF SECTION: **2,825.24 m^2**

VOLUME OF EXCAVATION IN AREA OF SLOPES WITHOUT THE LAND OF IRA
July 13/2002

SECTION N°	AREA	AVERAGE AREA OF 2 SECTIONS	DISTANCE BETWEEN SECTIONS	VOLUME
-4	1.56			
		1.28	28.78	37
-3	1.00			
		1.00	25.00	25
-2	1.00			
		1.00	25.00	25
-1	1.00			
		0.78	25.00	20
0	0.56			
		0.56	25.00	14
1	0.56			
		0.41	25.00	10
2	0.25			
		0.25	25.00	6
3	0.25			
		0.13	25.00	3
4	0.00			
		0.00	25.00	0
5	0.00			
		2.00	25.00	50
6	4.00			
		5.13	25.00	128
7	6.25			
		57.50	25.00	1,438
8	108.75			
		85.63	25.00	2,141
9	62.50			
		95.50	25.00	2,388
10	128.50			
		133.25	25.00	3,331
11	138.00			
		178.25	25.00	4,456
12	218.50			
		235.75	25.00	5,894
13	253.00			
		264.50	25.00	6,613
14	276.00			
		294.25	25.00	7,356
15	312.50			
		366.25	25.00	9,156
16	420.00			
		393.75	25.00	9,844
17	367.50			
		378.75	25.00	9,469
18	390.00			
		329.00	25.00	8,225
19	268.00			
		334.25	25.00	8,356
20	400.50			
		284.00	25.00	7,100
21	167.50			
		190.75	25.00	4,769
22	214.00			
		199.25	10.00	1,993
22'	184.50			

VOLUME OF EXCAVATION IN AREA OF SLOPES WITHOUT LAND OF IRA: 92,845 m3

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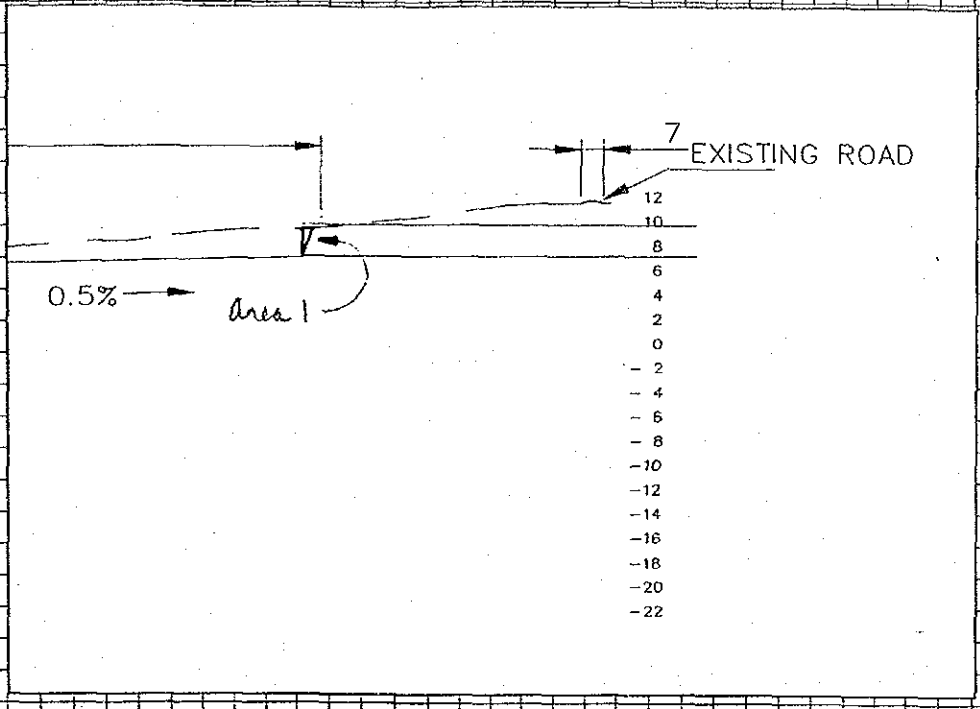
References/ Notes



SECCION -4

Area 1 : $\frac{1}{2} \times 1.25 \times 2.5 = 1.56\ m^2$

	Prepared by	Checked by
	JAM 26 / VI /2002	/ /200

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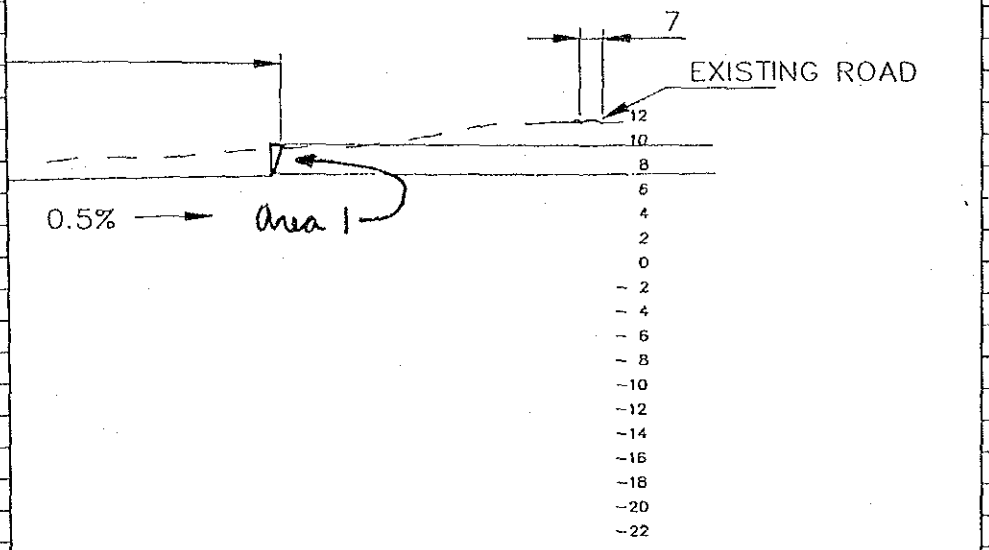
References/ Notes



SECCION -3

Area 1 : $\frac{1}{2} \times 1.00 \times 2.00 = 1.00\ m^2$

	Prepared by		Checked by	
	JAM	26 / VI /2002		/ /200

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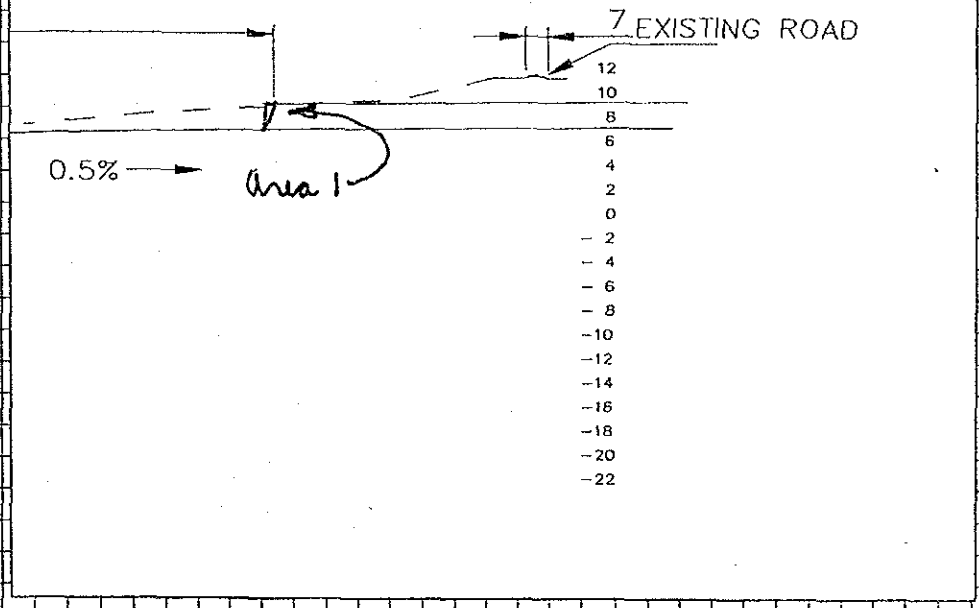

SECCION -2

Area 1: $\frac{1}{2} \times 1.00 \times 2.00 = 1.00\ m^2$

		Prepared by		Checked by	
		JAM	26 / XI /2002		/ /200

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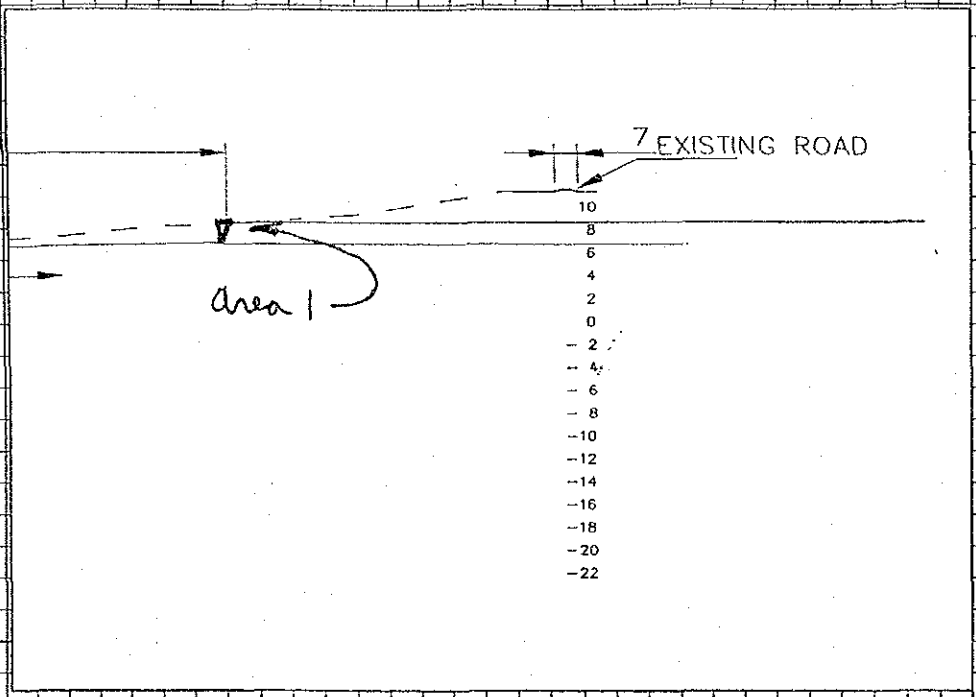
References/ Notes



SECCION -1

Area 1: $\frac{1}{2} \times 1.00 \times 2.00 = 1.00\ m^2$

	Prepared by		Checked by	
	JAM	26 / VI /200 2		/ /200

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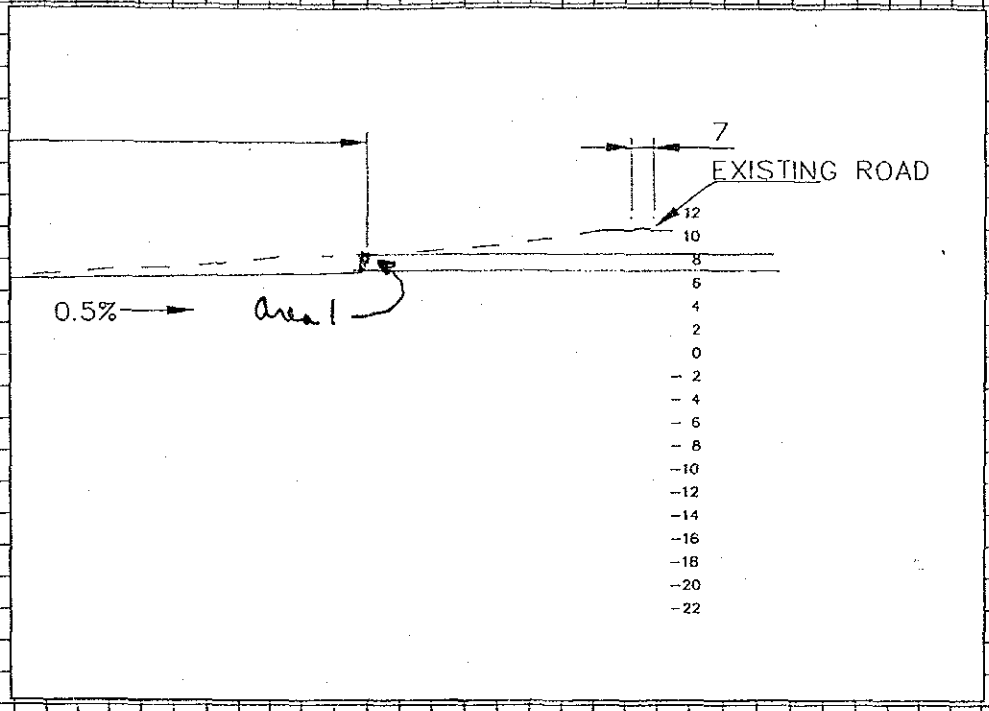

SECCION 0

Area 1: $\frac{1}{2} \times 0.75 \times 1.5 = 0.56\ m^2$

	Prepared by		Checked by	
	JAM	26 VII /2002		/ /200

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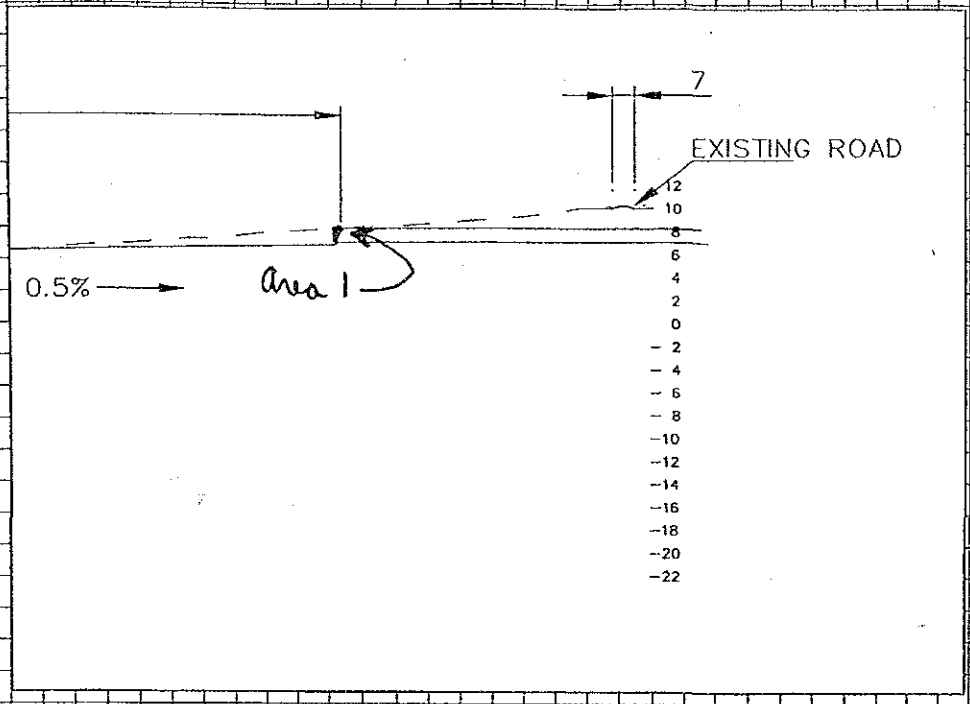

SECCION +1

Area 1: $\frac{1}{2} \times 0.75 \times 1.5 = 0.56\ m^2$

		Prepared by		Checked by	
		JAM	26/VI/2002		/200

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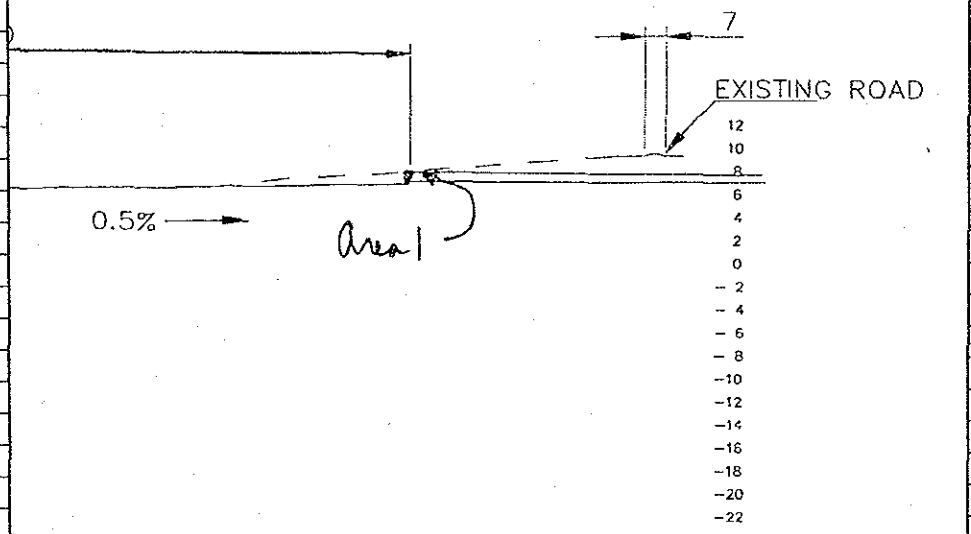

SECCION +2

Area 1: $\frac{1}{2} \times 0.50 \times 1.00 = 0.25\ m^2$

	Prepared by		Checked by	
	JAM	26 /VI /2002		/ /200

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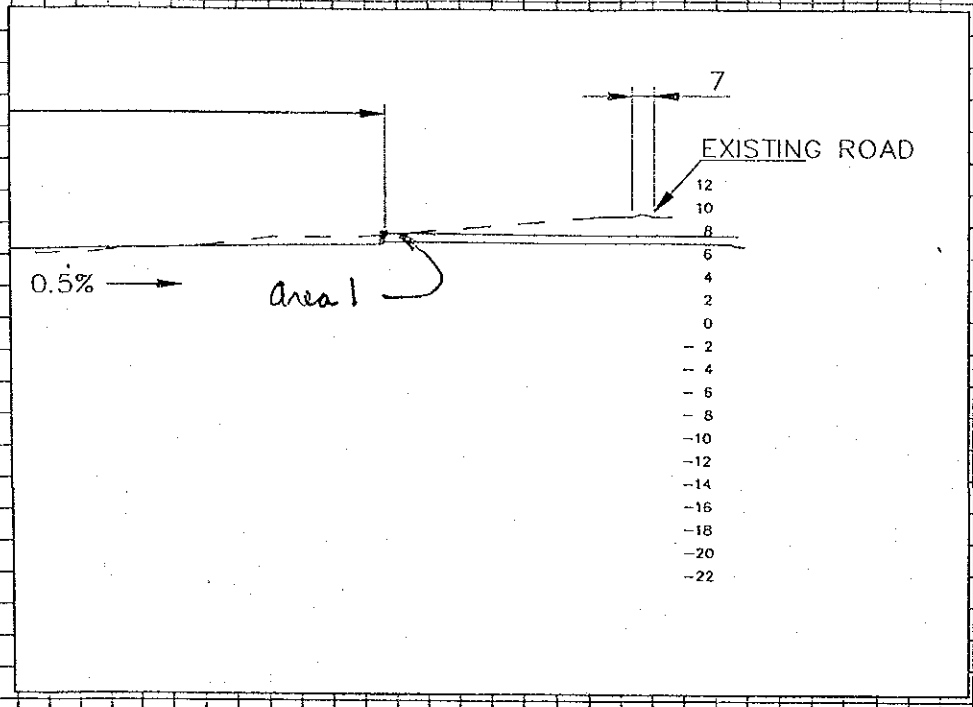

SECCION +3

Area 1: $\frac{1}{2} \times 0.5 \times 100 = 0.25\ m^2$

		Prepared by		Checked by	
		JAM	26 / VII /2002		/ /200

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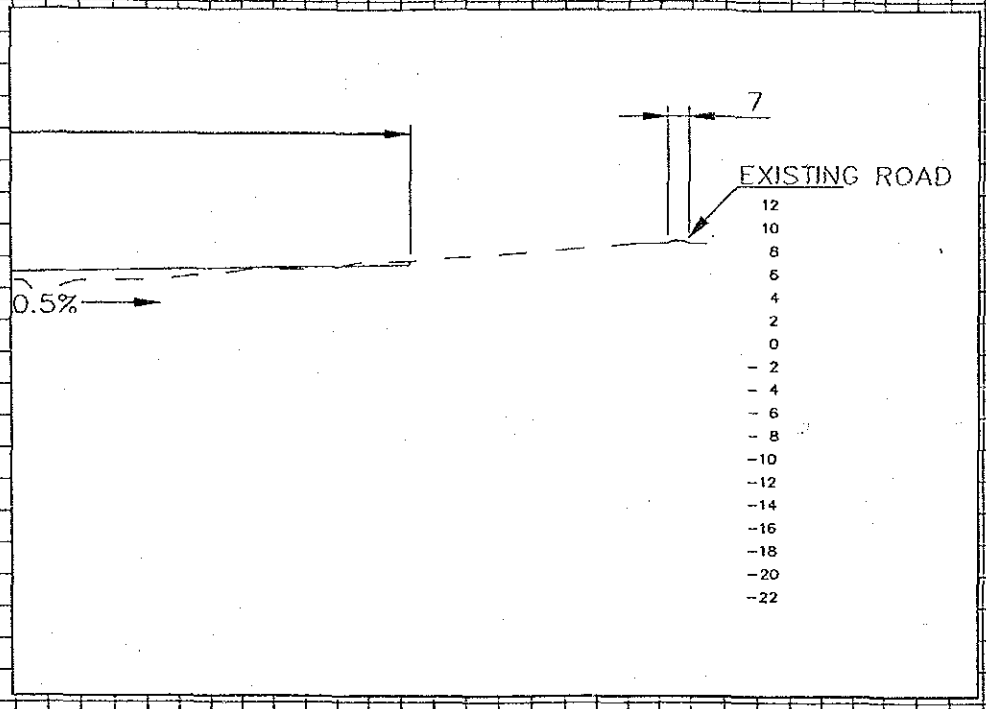

SECCION +4

Area : 0.00 m²

	Prepared by		Checked by	
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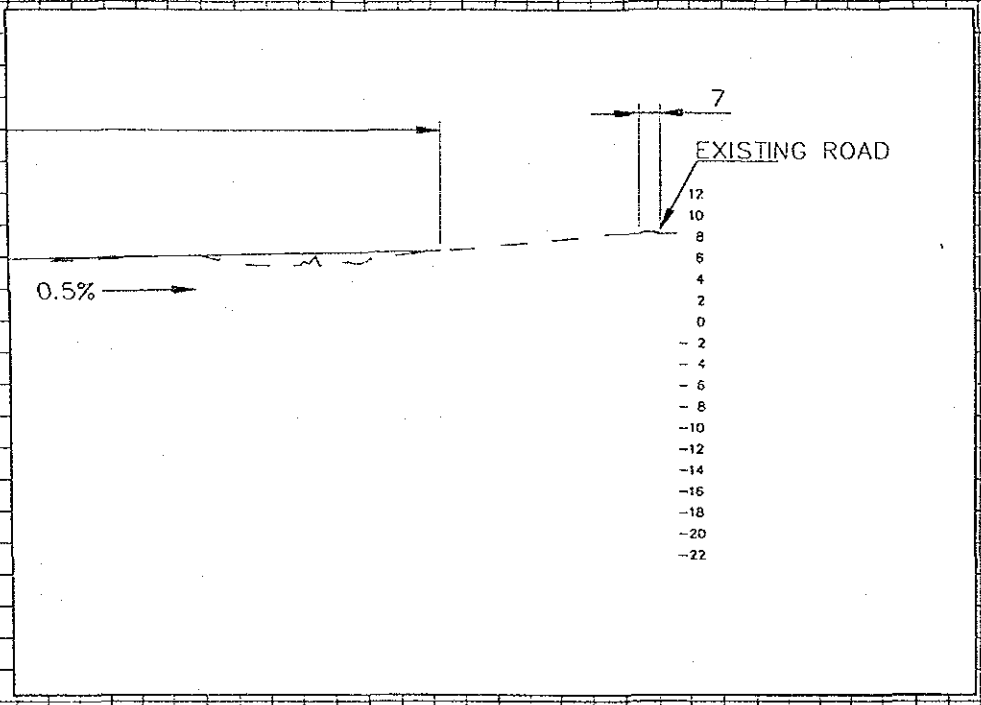

SECCION +5

area : 0.00 m^2

		Prepared by		Checked by	
		JAM	26 /VI /2002		/ /200

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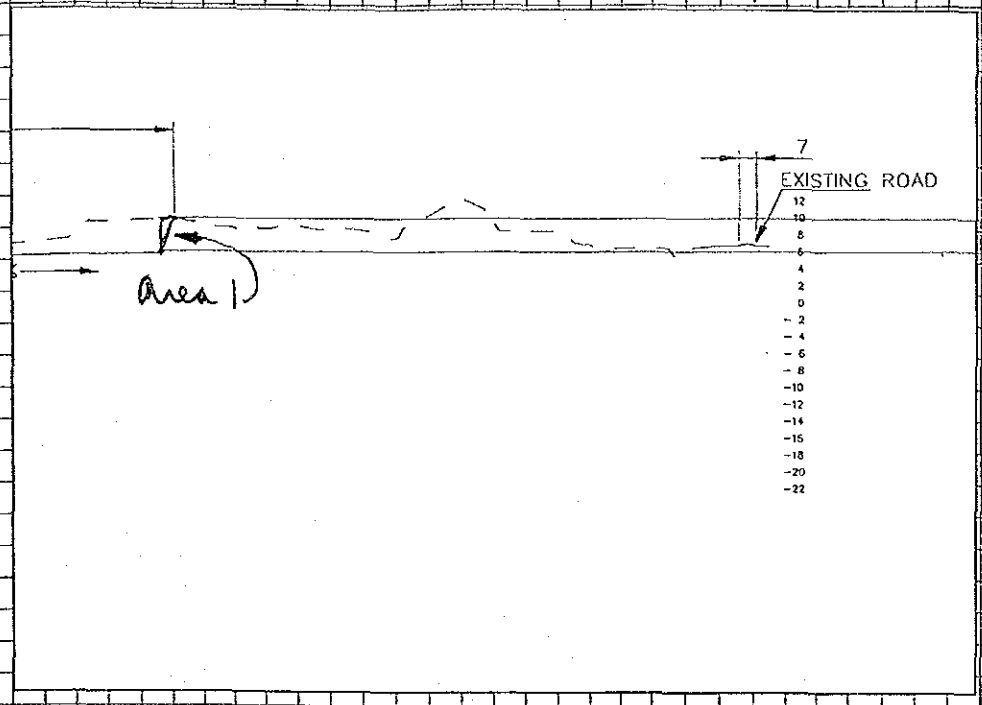

SECCION +6

Area 1: $\frac{1}{2} \times 2.00 \times 4.00 = 4.00\ m^2$

	Prepared by		Checked by	
	JAM	26 / VI /2002		/ /200

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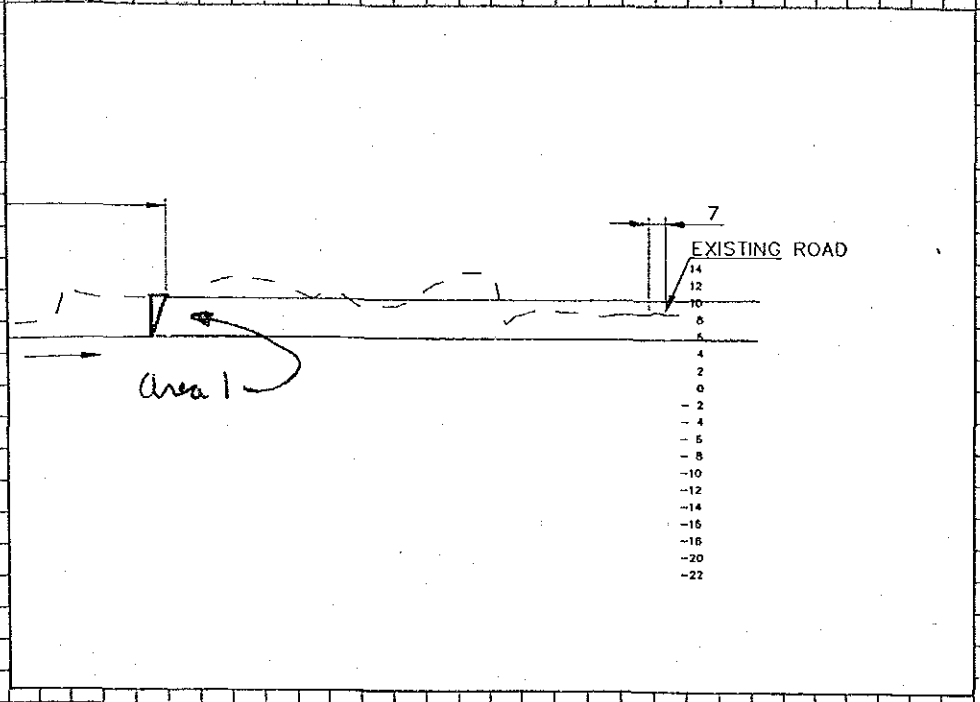

SECCION +7

Area 1: $\frac{1}{2} \times 2.5 \times 5.00 = 6.25\ m^2$

	Prepared by		Checked by	
	JAM	26/VI/2002		/200

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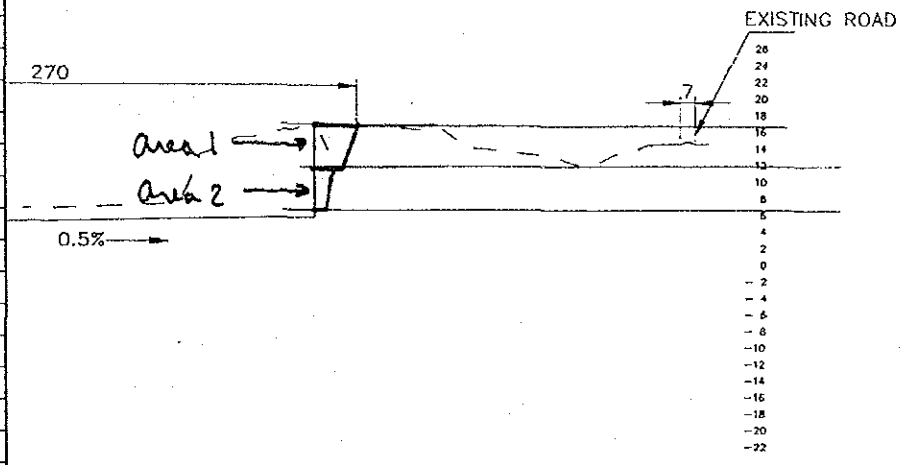

SECCION +8

area 1: $\frac{18.5 + 12.5}{2} \times 5.00 = 77.50\ m^2$

area 2: $\frac{7.5 + 5}{2} \times 5.00 = 31.25\ m^2$

total : $108.75\ m^2$

	Prepared by	Checked by	
	JAM 26/VI/2002		/200

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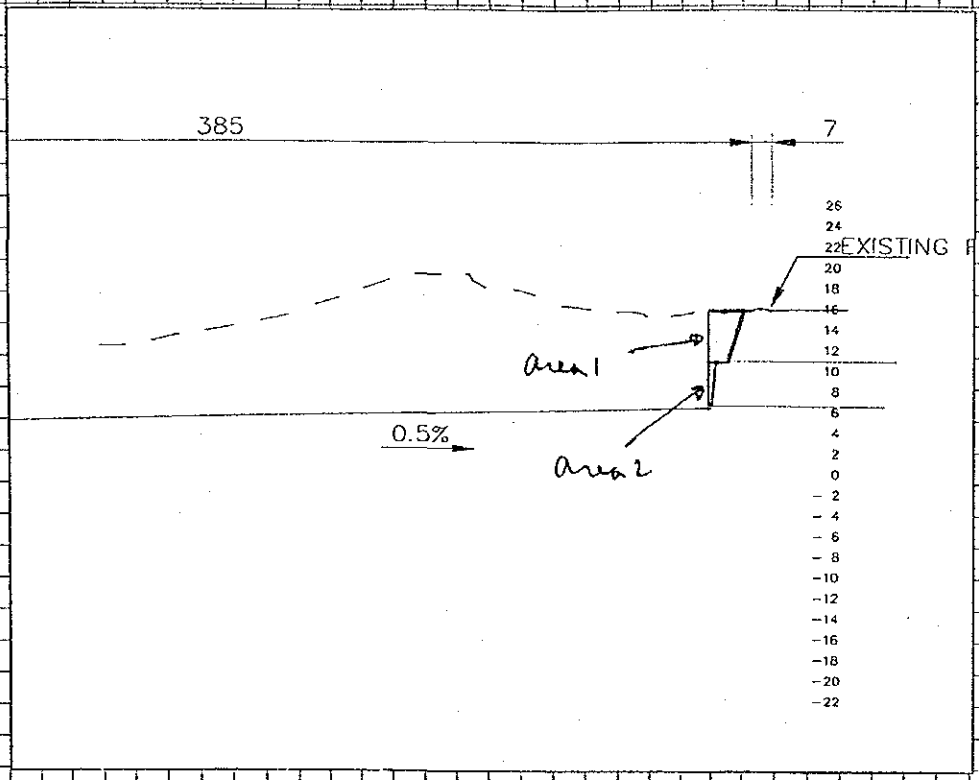

SECCION +9

Area 1: $\frac{10.00 + 8.00}{2} \times 5.00 = 55.00\ m^2$

Area 2: $\frac{3.00 \times 5.00}{2} = 7.5 \rightarrow 7.50\ m^2$

total: $62.50\ m^2$

		Prepared by		Checked by	
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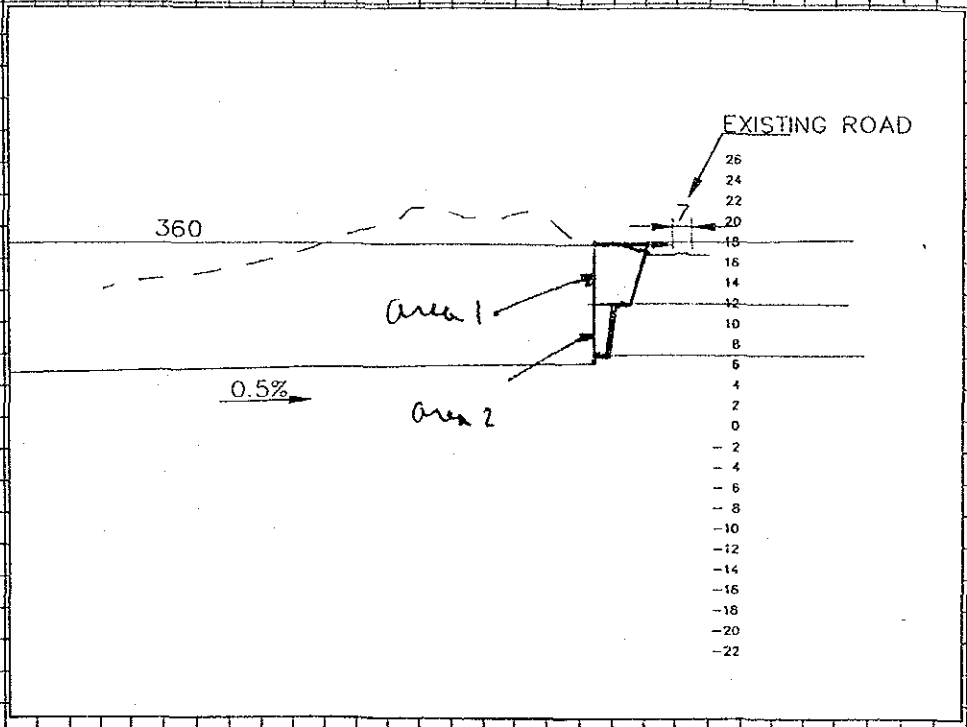

SECCION +10

Area 1: $\frac{18.00+14.00}{2} \times 6.00 = 96.00\ m^2$

Area 2: $\frac{8.00+5.00}{2} \times 5.00 = 32.50\ m^2$

Total : $128.50\ m^2$

	Prepared by		Checked by	
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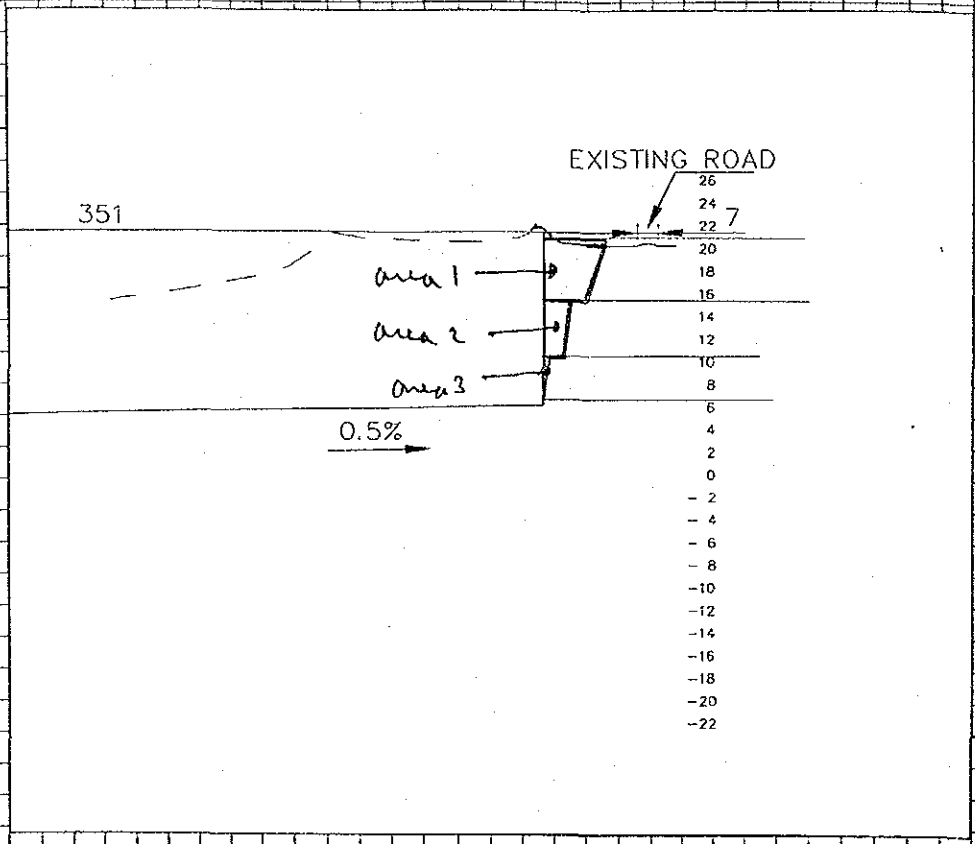

SECCION +11

Area 1: $\frac{22.00 + 14.00}{2} \times 5.00 = 90.00\ m^2$

Area 2: $\frac{10.00 + 8.00}{2} \times 5.00 = 45.00\ m^2$

Area 3: $\frac{2.00 \times 3.00}{2} = 3.00\ m^2$

Total: $138.00\ m^2$

		Prepared by		Checked by	
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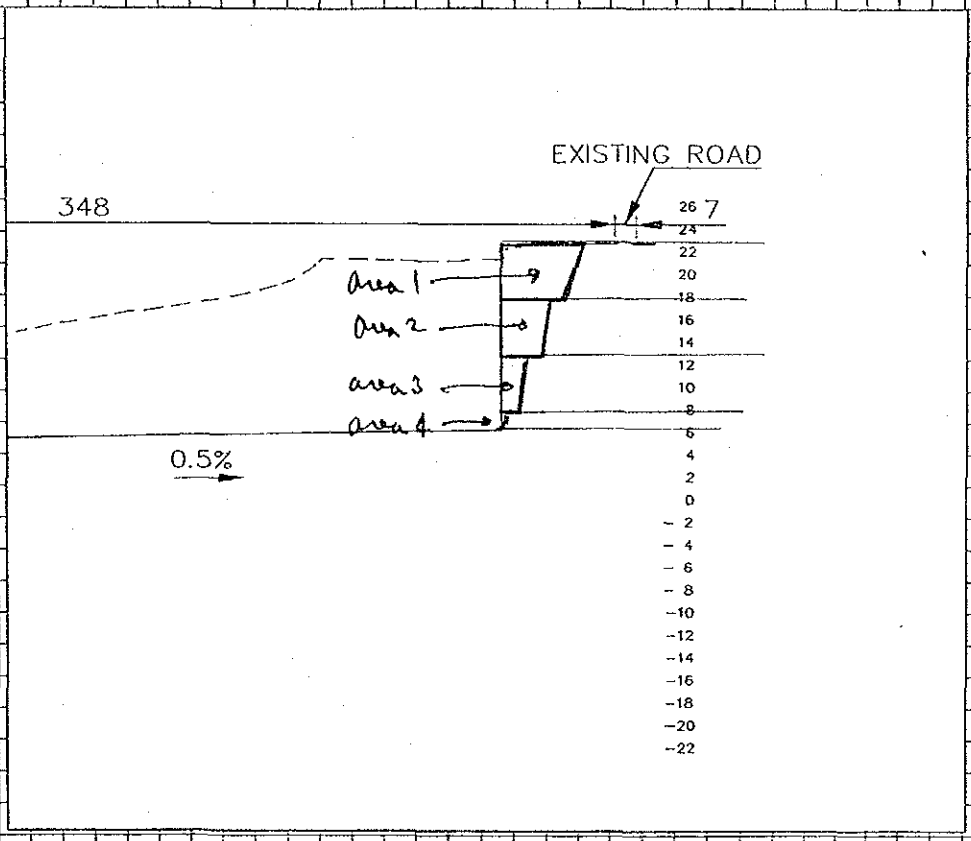

SECCION +12

Area 1: $\frac{28.00 + 22.00}{2} \times 5.00 = 125.00\ m^2$

Area 2: $\frac{16.00 + 14.00}{2} \times 5.00 = 75.00\ m^2$

Area 3: $\frac{4.00 + 3.00}{2} \times 5.00 = 17.50\ m^2$

Area 4: $\frac{1.00 \times 2.00}{2} = 1.00\ m^2$

Total: $218.50\ m^2$

	Prepared by	Checked by
	JAM 8 /XII /2002	/ /200

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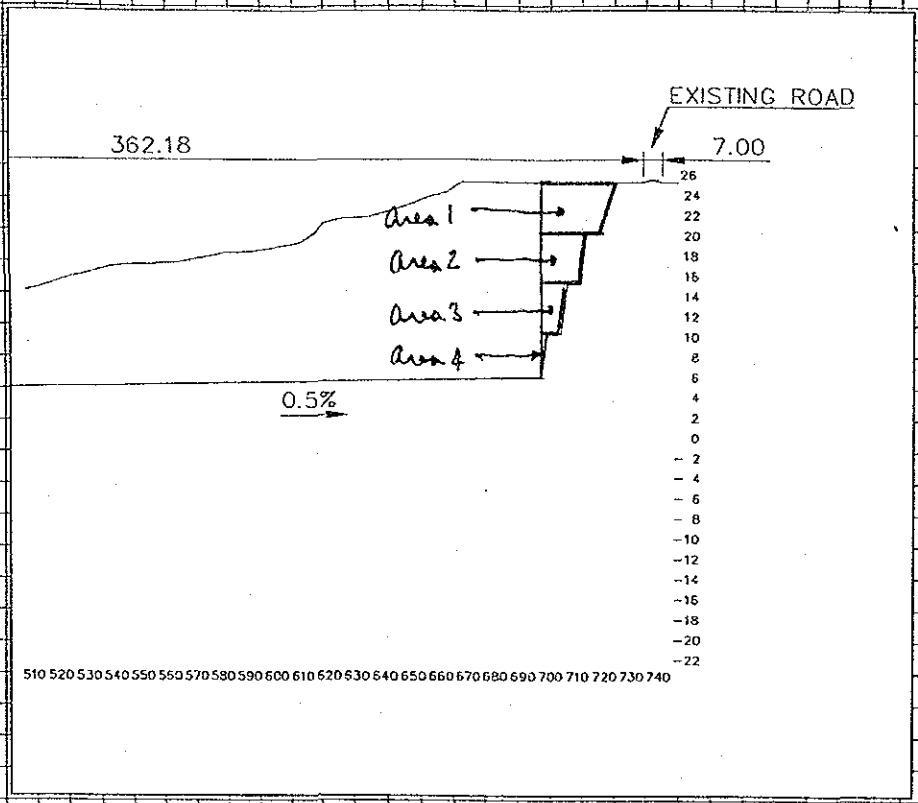

SECCION +13

Area 1: $\frac{28.00 + 22.00}{2} \times 5.00 = 125\ m^2$

Area 2: $\frac{18.00 + 14.00}{2} \times 5.00 = 80.00\ m^2$

Area 3: $\frac{10.00 + 8.00}{2} \times 5.00 = 45.00\ m^2$

Area 4: $\frac{2.00 \times 3.00}{2} = 3.00\ m^2$

Total: $253\ m^2$

	Prepared by	Checked by
	JAM 13 /VII/200 2	/ /200

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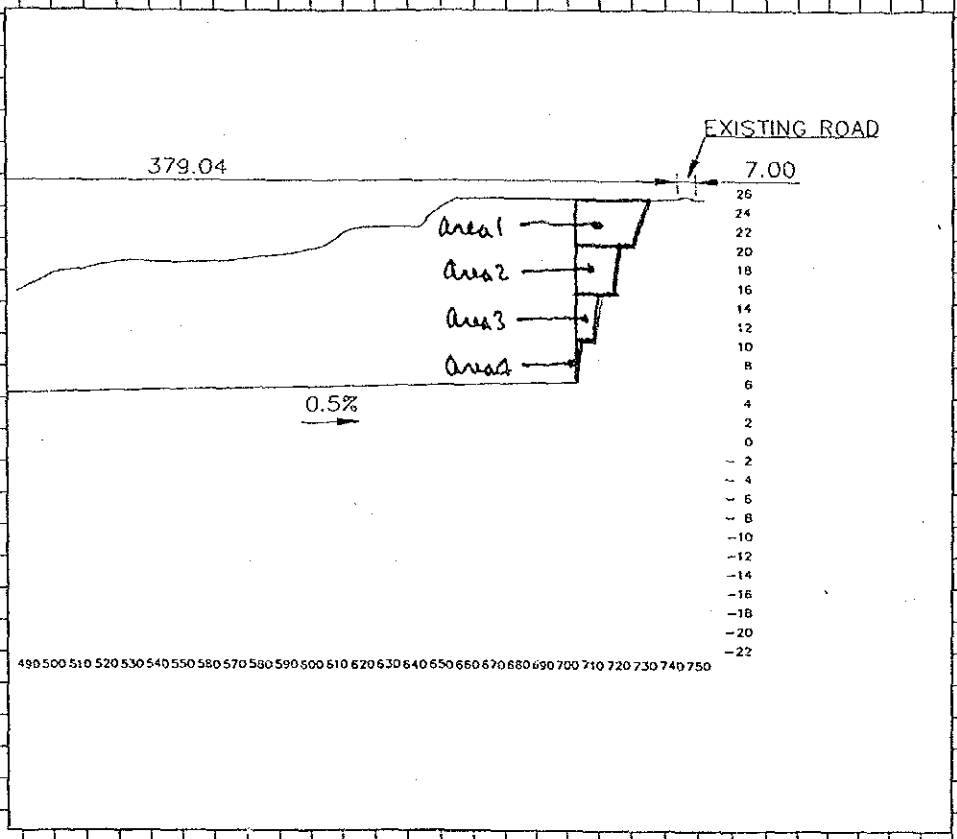

SECCION +14

Area 1: $\frac{28 + 26.00}{2} \times 5.00 = 135.00\ m^2$

Area 2: $\frac{18.00 + 17.00}{2} \times 5.00 = 87.50\ m^2$

Area 3: $\frac{11.00 + 8.00}{2} \times 5.00 = 47.50\ m^2$

Area 4: $\frac{3.00 \times 4.00}{2} = 6.00\ m^2$

Total: $276.00\ m^2$

		Prepared by		Checked by	
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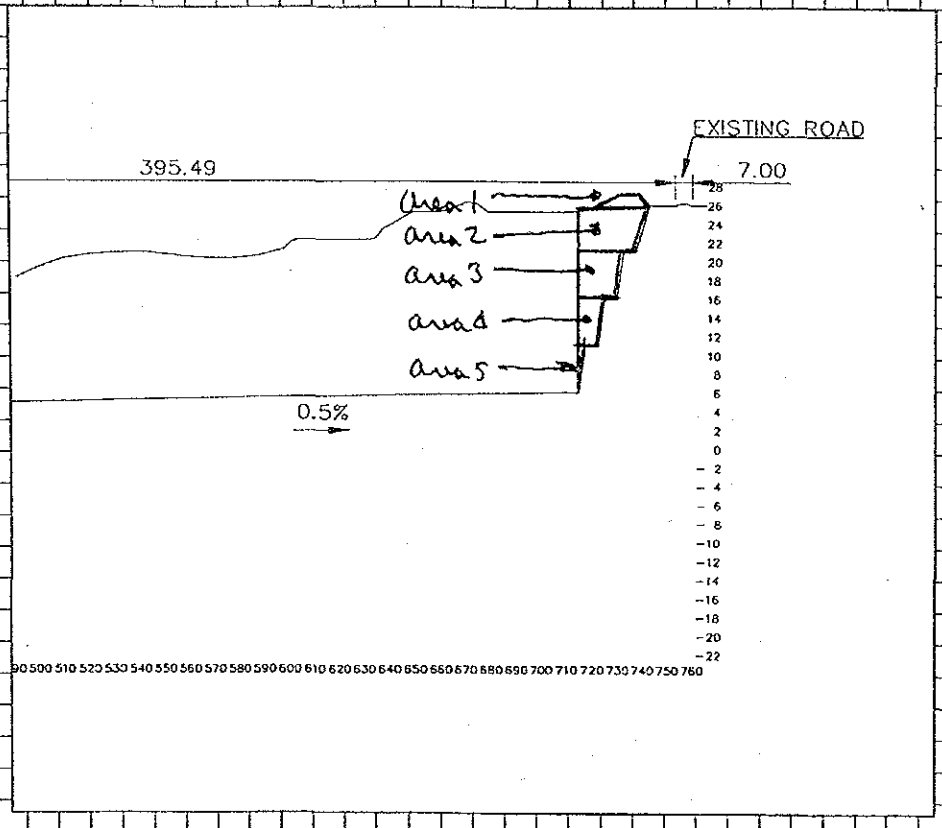

SECCION +15

Area 1: $\frac{8.00 + 1.600}{2} \times 2.5 = 32.5\ m^2$

Area 2: $\frac{28.00 + 24.00}{2} \times 5.00 = 130.00\ m^2$

Area 3: $\frac{20.00 + 18.00}{2} \times 5.00 = 95.00\ m^2$

Area 4: $\frac{10.00 + 8.00}{2} \times 5.00 = 45.00\ m^2$

Area 5: $\frac{4.00 \times 5.00}{2} = 10.00\ m^2$

Total : $312.50\ m^2$

		Prepared by		Checked by	
		JAM	13 /VII/2002		/ /200

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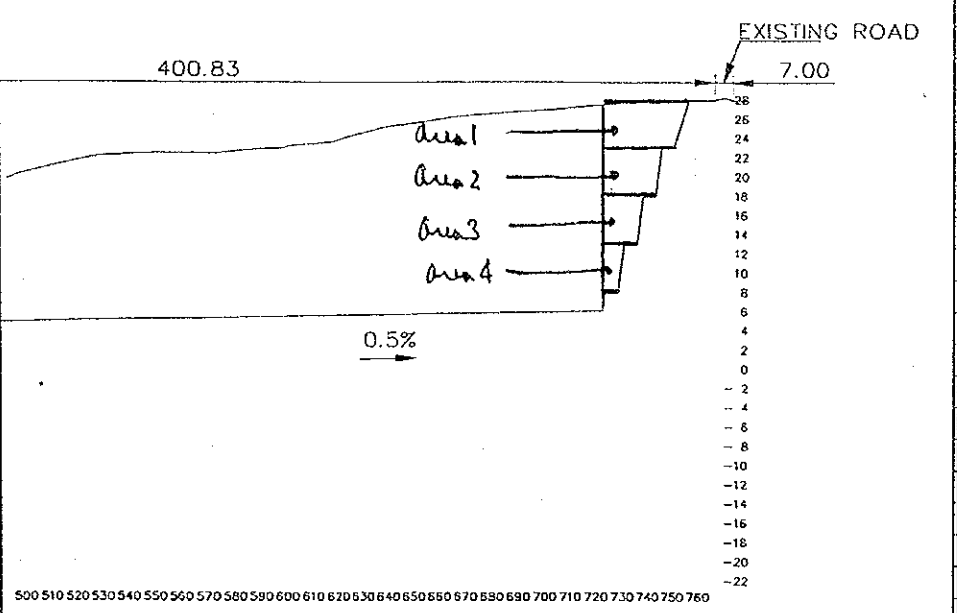

SECCION +16

Area 1: $\frac{38.00 + 32.00}{2} \times 5.00 = 175.00\ m^2$

Area 2: $\frac{26.00 + 24.00}{2} \times 5.00 = 125.00\ m^2$

Area 3: $\frac{18.00 + 16.00}{2} \times 5.00 = 85.00\ m^2$

Area 4: $\frac{8.00 + 6.00}{2} \times 5.00 = 35.00\ m^2$

Total : $420.00\ m^2$

		Prepared by		Checked by	
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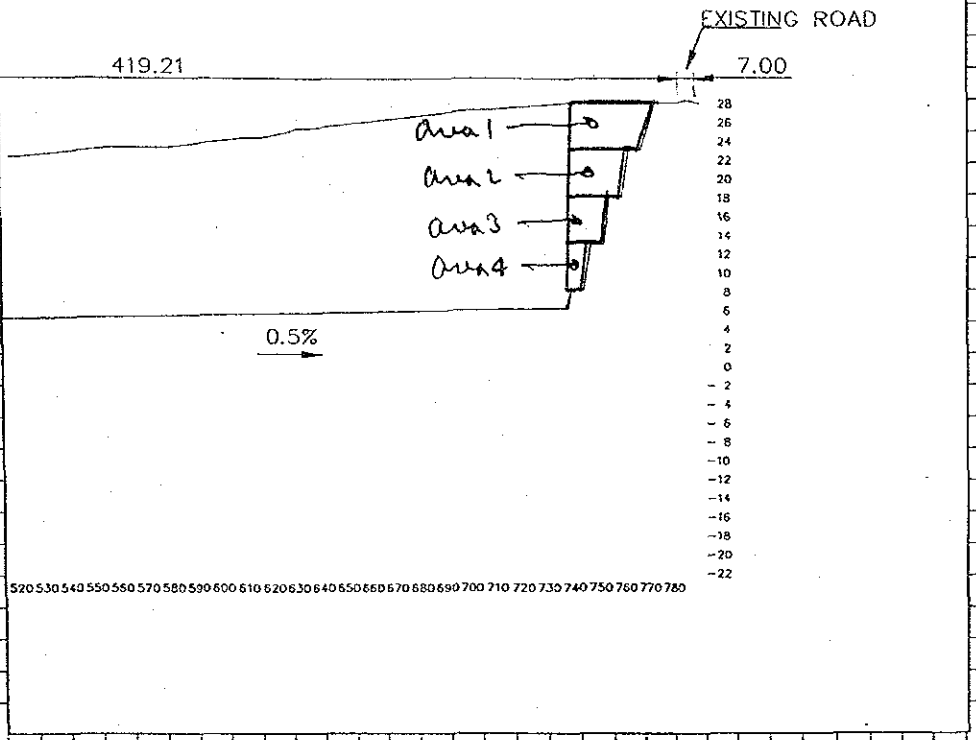

SECCION +17

Area 1: $\frac{33.00 + 28.00}{2} \times 5.00 = 152.50\ m^2$

Area 2: $\frac{22.00 + 20.00}{2} \times 5.00 = 105.00\ m^2$

Area 3: $\frac{16.00 + 14.00}{2} \times 5.00 = 75.00\ m^2$

Area 4: $\frac{8.00 + 6.00}{2} \times 5.00 = 35.00\ m^2$

total = $367.50\ m^2$

		Prepared by		Checked by	
		JAM	13/VII/2002		/200

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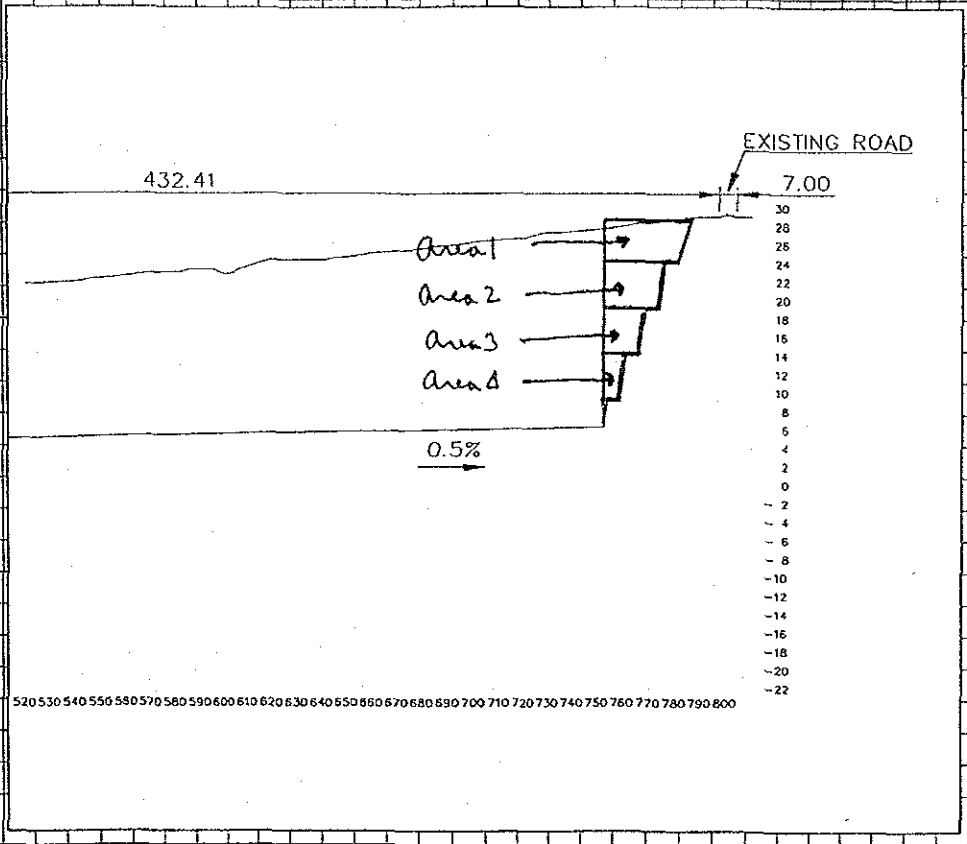

SECCION +18

Area 1: $\frac{36.00 + 30.00}{2} \times 5.00 = 165.00\ m^2$

Area 2: $\frac{24.00 + 22.00}{2} \times 5.00 = 115.00\ m^2$

Area 3: $\frac{16.00 + 14.00}{2} \times 5.00 = 75.00\ m^2$

Area 4: $\frac{8.00 + 6.00}{2} \times 5.00 = 35.00\ m^2$

total : $390\ m^2$

	Prepared by	Checked by
	JAM 13 / VII /2002	/ /200

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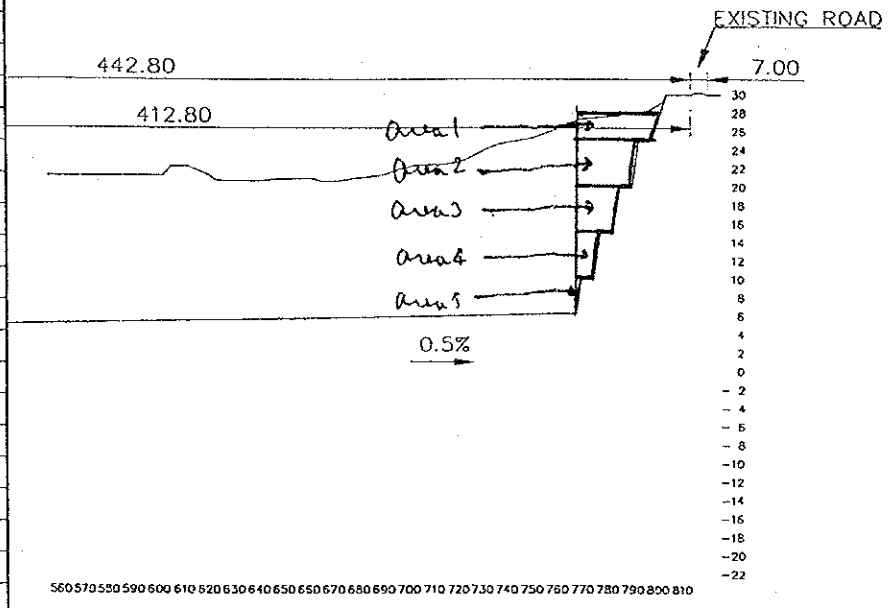

SECCION +19

Area 1: $\frac{2.8+2.2}{2} \times 2.50 = 57.50\ m^2$

Area 2: $\frac{2.0+1.8.00}{2} \times 5.00 = 95.00\ m^2$

Area 3: $\frac{1.6+1.4}{2} \times 5.00 = 75.00\ m^2$

Area 4: $\frac{8+7}{2} \times 5.00 = 37.50\ m^2$

Area 5: $\frac{2 \times 3}{2} = 3.00\ m^2$

Total: $248.00\ m^2$

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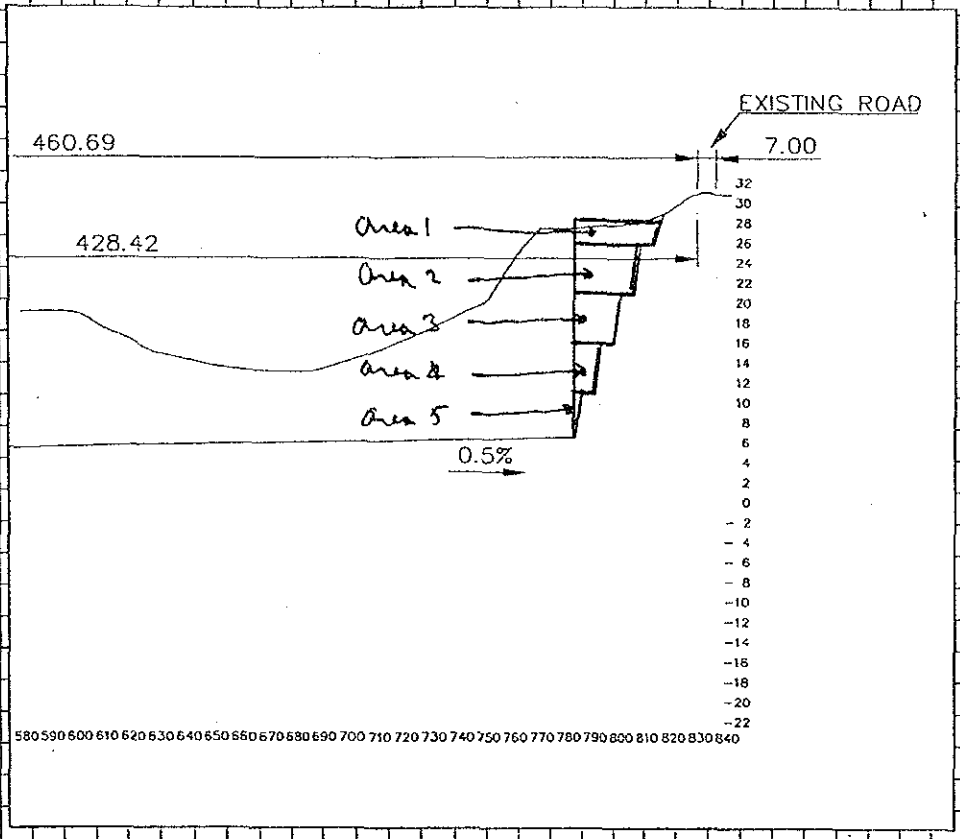

SECCION +20

Area 1: $\frac{38 + 34.00}{2} \times 2.5 = 90.00\ m^2$

Area 2: $\frac{28 + 27.00}{2} \times 5.0 = 137.50\ m^2$

Area 3: $\frac{22.00 + 20.00}{2} \times 5.00 = 105\ m^2$

Area 4: $\frac{14.00 + 12.00}{2} \times 5.00 = 65.00\ m^2$

Area 5: $\frac{2 \times 3.00}{2} = 3.00\ m^2$

Total: $400.5\ m^2$

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SAM	13 / VII /2002		/ /200

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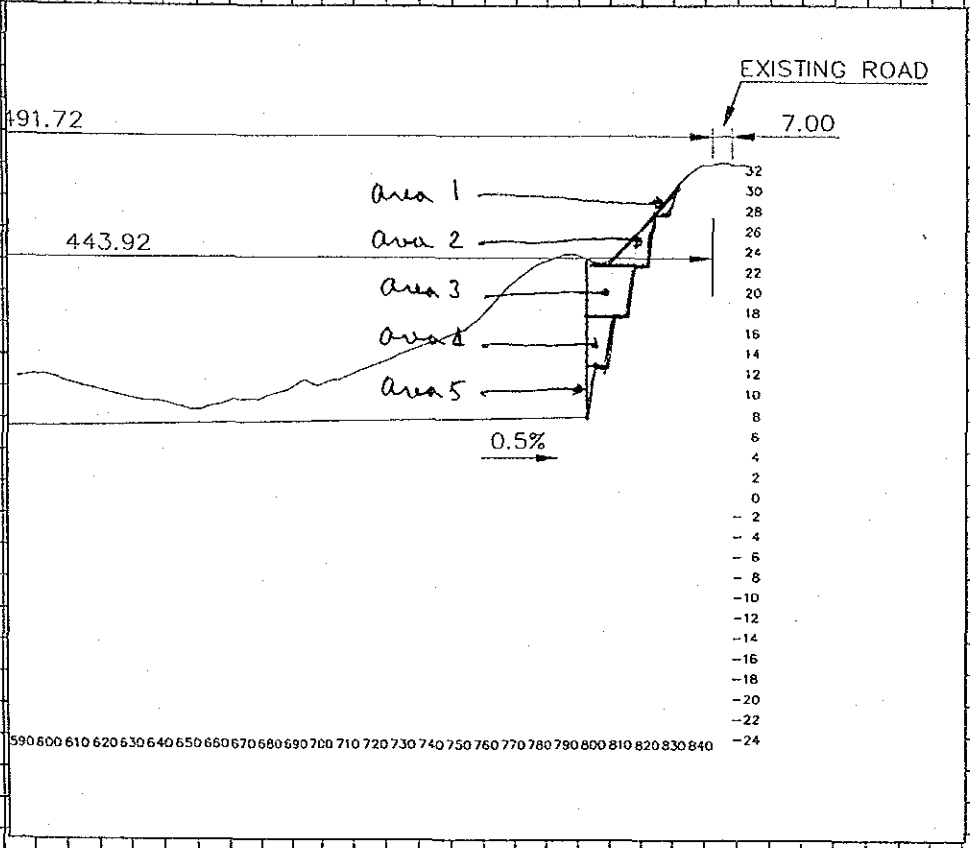

SECCION +21

Area 1: $\frac{3.00 \times 5.00}{2} = 7.5\ m^2$

Area 2: $\frac{12 \times 5.00}{2} = 30.00\ m^2$

Area 3: $\frac{17.00 + 16.00}{2} \times 5 = 82.50\ m^2$

Area 4: $\frac{10.00 + 7.00}{2} \times 5 = 42.50\ m^2$

Area 5: $\frac{2.00 \times 5.00}{2} = 5.00\ m^2$

total: $167.50\ m^2$

		Prepared by		Checked by	
		JAM	13 / VII /2002		/ /200

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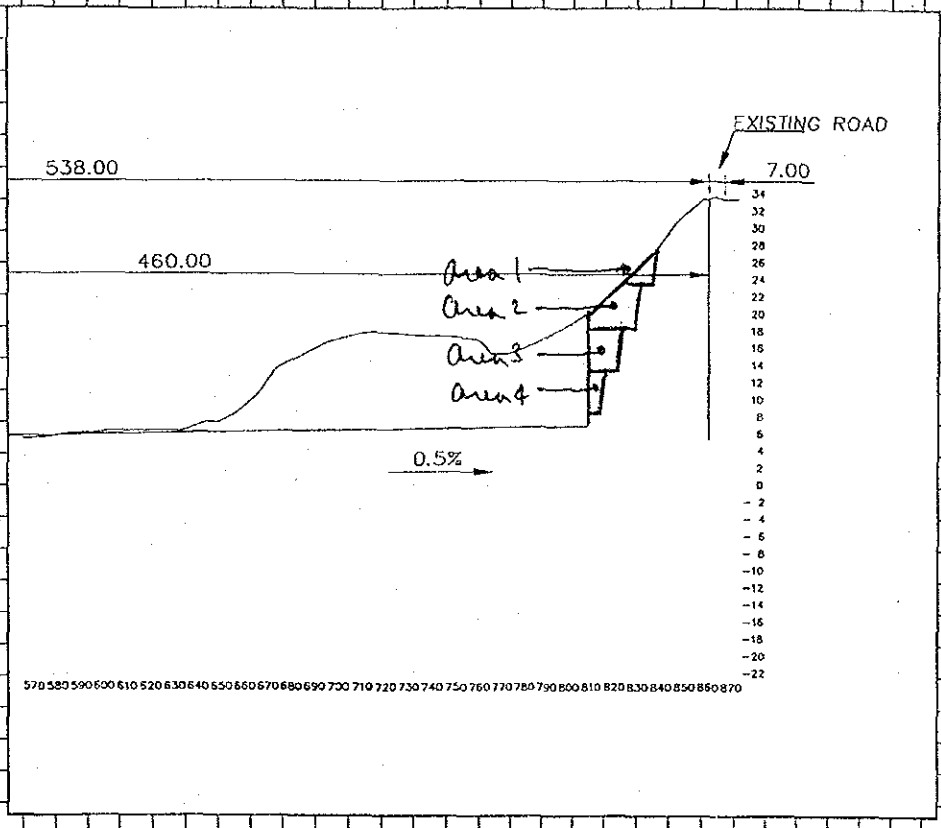

SECCION +22

Area 1: $\frac{12.00 \times 4.00}{2} = 24.00\ m^2$

Area 2: $\frac{8.00 + 24.00}{2} \times 5 = 80.00\ m^2$

Area 3: $\frac{16.00 + 14.00}{2} \times 5 = 75.00\ m^2$

Area 4: $\frac{8.00 + 6.00}{2} \times 5 = 35.00\ m^2$

total : 214 m^2

		Prepared by		Checked by	
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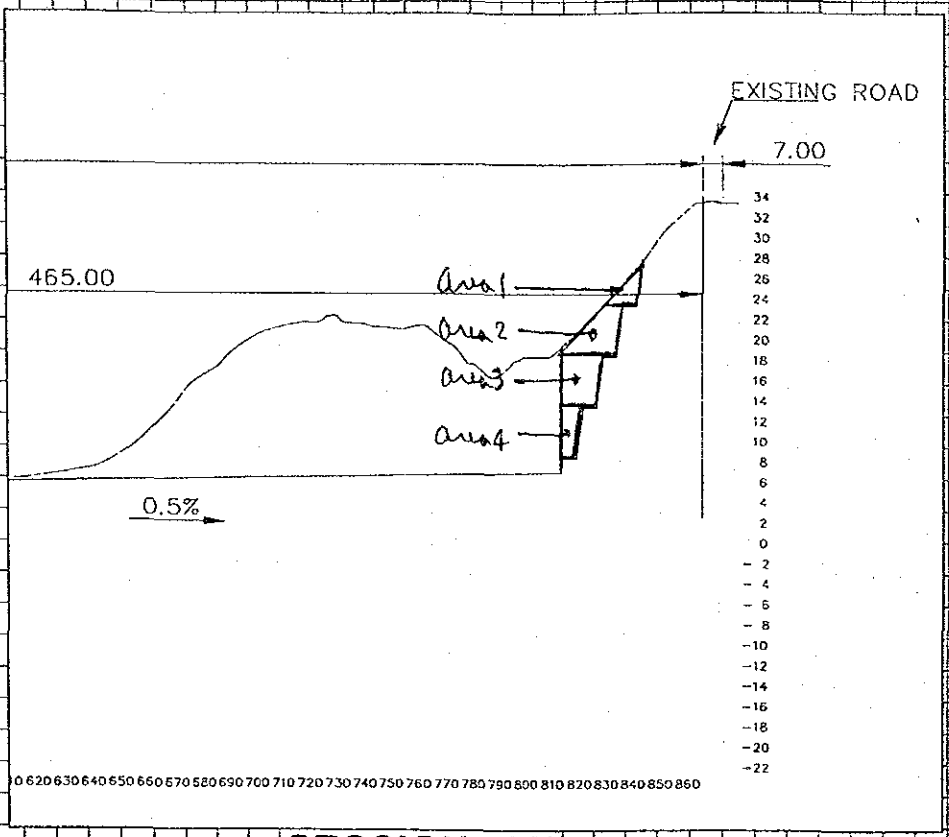

SECCION +22'

Area 1: $\frac{4.00 \times 2.25}{2} = 4.50\ m^2$

Area 2: $\frac{12.00 \times 5.00}{2} = 30.00\ m^2$

Area 3: $\frac{8.00 + 20.00}{2} \times 5.00 = 70.00\ m^2$

Area 4: $\frac{12.00 + 10.00}{2} \times 5.00 = 55.00\ m^2$

Area 5: $\frac{6.00 + 4.00}{2} \times 5.00 = 25.00\ m^2$

Total : 184.50 m^2

		Prepared by		Checked by	
		JAM	13 /SEP /2002		/ /200

AREA OF EXCAVATION PER SECTION WITHOUT THE LAND OF IRA

13 July 2002

1 AREA OF EXCAVATION UP TO SLOPES

2 AREA OF EXCAVATIONS OF SLOPES

SECTION N°	1	2	3	TOTAL
-4	215.21	1.56		217
-3	193.60	1.00		195
-2	143.29	1.00		144
-1	95.58	1.00		97
0	103.37	0.56		104
1	71.16	0.56		72
2	161.92	0.25		162
3	52.60	0.25		53
4	151.58	0.00		152
5	303.00	0.00		303
6	310.62	4.00		315
7	446.80	6.25		453
8	875.66	108.75		984
9	2,504.36	62.50		2,567
10	2,752.30	128.50		2,881
11	2,981.95	138.00		3,120
12	2,914.89	218.50		3,133
13	2,772.15	253.00		3,025
14	4,266.47	276.00		4,542
15	4,922.72	312.50		5,235
16	5,385.07	420.00		5,805
17	6,121.88	367.50		6,489
18	5,958.25	390.00		6,348
19	5,660.18	268.00		5,928
20	4,501.49	400.50		4,902
21	2,813.47	167.50		2,981
22	2,793.96	214.00		3,008
22'	2,825.24	184.50		3,010
			TOTAL:	66,225