LONGITUD DE CUNETAS

CAMINO DE ACCESO: LOS CUYUYES

0+000 a 12+000 Km

•	UAMINO DE ACCESO.	700 00101E0	0.000 2 .	
٦١ <i>6</i> ٠	9 boin ABSCIBAS	(ZQUIEFDA	DERECHA	LONGITUD T
		, 		100000
11.5	0+0 @ 100-0+100.00	100.00	0.00	100.00 (
¥	0+120.00 - 0+160.00	0.00	40.00	م ^{40.00} م
v	v 0 + 185.00 - 0 + 230.00 -	0.00	45.00	45.00
120	0 ÷ 230000 - 0 + 320.00	90.00	0.00	90.00
12.0	6 ÷ 3 20 ,00 = 0 + 450.00	130.00	0.00	130.00 🖟 💪
· •	′∮ 0+500.00 - 0+530.00°′	0.00	30.60	50 00
8.0	0+60@00-0+800.00	200.00	0.00	200.00
10.5	0÷30 0 .00 - 0÷880.00	80.00	0.00	80.00 1
8.0	0+8 50 .00 - 1+100.00	30.00	0.00	30.00
15.5	1+100.00-1+300.00	200.00	0.00	200.00
17.0, 9.0	1+30 0 00 - 1+4 0 0.33	148.33	0.00	148.33
	√ 1+503.99 - 1+ 56 8.36 ·	0.00	64.37	64.37
20.0	√ 1+6 © 0.00 - 1+578.01	78.01	78.01	156.02
	1+678.01 - 1+750.00	71.99	0.00	71.99
	√ 1÷750.00 - 1÷800.00	50.00	50.00	100.00
10.5	1+800.00 - 1+8 20 00	20.00	0.00	20.00
12.0	1÷8 0 3.47 - 2÷010.74 -	112.27	0.00	112.27
13.5, 13.0	2÷0 @ .74 - 2÷1 Q .63	163.89	0.00	163.89
	2÷324.15 - 2÷450.00	125.35	0.00	125.85
11.5	2+4500002+490.00	40.00	0.00	40.00
9.0	2+49000-2+514.26	24.26	24.26	48.52
	2+514.26 - 2+590.00	75.74	0.00	75.74
24.5	2+65000-2+350.00	200.00	0.00	200.00
13	3÷042078-3÷140.00	95.22	0.00	95.22
14.0	√ 3+14 0 .00 - 3+177.45	37.45	37.45	74.90
	V 3+177.45 - 3+250.00	0.00	72.55	72.55
7.0	3+250.00-3+352.28	102.28	102.28	204.56
•	3+352.28 - 3+390.00	37.72	0.00	37.72
13 10.0	v 3+3\(\Omega\).00 - 3+405.58	15.58	15.58	31.16
· 3	3+405.53 - 3+440.00	34,42	0.00	34.42
28.5	√ 3+400.00-3+478.60	38.60	38,60	77.20
78	3+478,60 - 3+573,30	0.00	94.70	94.70
9.0	3+573.30 - 3+760.08	165.68	0.00	166.68
27.0	3+803.43 - 3+8€ 0 .00	76.57	0.00	76.57
	√ ∮ 3÷950.00 - 3+986.66	36.68	0.00	36,66
8.5	√ 3+985.65-4 +68 4.73	98.07	98.07	196.14
	4+180.00 - 4+287.99	107.99	0.00	107.99
>7.0	4+297.99 - 4+400.00	112.00	0.00	112.00
12.0	4+400.00 - 4+546.54	146.64	0.00	145.64
	√	0.00	59.16	59.16
10.0	√ 4+639.27 - 4+6 © .00	20.73	20.73	41.46
13.0	4+590.00 - 4+72000	30.00		30.00
0				

Total Length
15,399.38
addition
500 m
Colch bain
/81 mos.

1-17/

	AF	4-720.00-4+8\0000	153,00	0.00	150.00
•	/s.s.	4-910.00 - 54021.59	121.58	0.33	121.23
	13.0	- 5 - (7) 1,29 - 5 + 050,00	28 52	25.62	57,24
	13.0	5+050.00 - 5+200.00	151.20	0.00	150.00
	8.0	5 ÷ 20 0.00 • 5 ÷ 400.00	200.00	5,50	235.00
•	12.5	5 + 401.00 - 5 ÷ 540.00	-40,00	5.00	1,40,04
	13.0	5+5Q1.00 - 5+560.00	20.00	o.o⊝	2 0.00
	13.0 V	5÷5(S)).00 - 5÷580.00	20,00	20.00	40.00
	75.01	5+530.00 - 5+700.00	120.00	ე.00	120.00
	13.0	5÷7@.00-5+800.00	100.00	0.00	100.00
	6.0 V		100.00	100.00	200 00
	13.0	5÷9 69 .00 - 6÷100.00	200.00	0.00	200.00
	73.0	8÷100.00 - 8÷150.00	50.00	50.60 i	100.00
	295 V	8+1 6 0.00 - 8+2 5 0.00	100.00	0.00	100.00
	-/-0	8+250,00 - 8+300,00	50.00	50.00	100.00
	12.0	6+ © 0.00 - 6+540.00	240.00	0.00	240,00
	6.0 V	6+5(4)0.00 - 6+560.00	20.00	20.00	40.00
	υ.ν γ .	6+560.00 - 6+800.00	240.00	0.00	240.00
,	15 X	5÷5((2)),00 + 6 + 860,00	0.00	60.00	50.00
•	>8.5 ->8.5	8+2 9 .48 - 7+000.00	103.54	0.00	103.5
	20. <u>\$</u>	7+000.00 - 7+075.00	75.00	75.00	150.00
		7÷075.00 · 7÷100.00	25.00	0.00	25,00
	8.5	7÷1\2.00 - 7÷240.00	140.00	0.00	140.00
		7+24000-7+274.01	34.01	34.01	68.02
	21.0	7+274.01 - 7+280.00	15.99	0	15.99
	·. 🗸	7÷290.00 - 7+350.00	40	40	80.00
	12.0	7+26700-7+359.76	29.75	0 1	29.70
		7+3 59 .76 - 7+387.84	27.88	27 88	55.70
	15.0	7+3 67 .84 - 7+470.00	82.36	0	82.3
	35.0	7÷4\(\varphi\).00 - 7+700.00	230	0	230.0
	۵/٫۵	7+7 10 .00 - 7+900.00	200	0 ! -	200.0
	19.0	7+9 17 .45 - 8+000.00	52,55	0	52.5
	77.0	8+000.00 - 8+100.00	100	100	200.0
		8+100.00 - 8÷220.00	120	0	120.0
	15.0 V	<u> </u>	60	80	129.0
		8+280.00 - 8+340.00	60	o	60.0
f') ·		8+340.00 - 8+431.40	91.4	o	91.4
. '	8.0 V	8+4 (31) .40 - 8+540.00	0	108.6	108.6
	0.U V	8+530.00 - 8+640.00	80	5 0	120.0
	120	6+640.00-8+660.00	0	20	20.0
**		8+860.00-8+680.00	20	0	20.0
	/	8+680.00 - 8+730.00	50	50	100.0
> d.	11.0	8+760,00-8+800.00	70	0	70.0
* .	8.5	8+800.00-8+900.00	100	٥	100.0
	11.0 V	8+900,00-8+940,95	40.95	40.95	81.9
	,	8÷940.95 - 9÷000.00	59.05	0	59.0
		9+000.00-9+080.00	80	ao	160.0
	10.0	9+06000-9+120.00	40	0	40.0

•	2+120.00-9+250.00	130		260 00 🖔
8.5	9+ 259 .00 - 9+435.21	188.21	0	198,21
8.5	9+4 69 .21 - 9+549.91	110.7	3	110.70
•	9+650.00-9+670.00	20	्	20.00 ∤
9.0	∮ 9÷5 ⊘ .00 - 9÷900.00 ∫	230	<u>.</u> 0	230.00
12.0	9+9400-9+985.00	2 0	٥	80.00
6.0 V	9 + 9 6 0.00 - 10 + 150.00	170	170	1 S40.00
	10÷150.00 - 10÷250.00	: 00 i	. 0	100.00
6.0 V	10 ÷ (5) 0.00 - 10 - 400.00	150	150	300.00
	10+400.00 - 10+634.01	134.01	٥	134.01
6.0	10 - 3 4.01 - 10 ÷ 750.00	215.99	0	215.99
6.0 V	10+ 73 0.00 - 10+780.00	. 30	30	6 3.00
6.0	10+780.00 - 11÷000.00	220	0	220.00
	11+000.00 - 11+120.00	120		120.00
6.0 V	11+20,00 - 11+230.00	310	100	210.00
6.0 Y	ौ 11 ÷ Ω 0.00 - 11 +380.00 -	100	100	200.00
<i>D</i> .0	∜ :1 ÷380.00 - 11 +500.00	120	٥	120.00
6.0 V	11+1 9 0.00 - 11+720.00	80	80	1∂0.00 ∦
6.0	11+720.00 - 11+825.77	105	. 0	105.00
8 6.0 V	, 11+8 2 5.77 - 11+6 7 2.85	45	. 48	92.00
, ,	11+872.65 - 12+0000	127.35	ļ o	127.35
14 9.0		<u> </u>		
	ce enougher		LONG. TOTAL (12481.52

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Los C	uvi	PAVI

	ø600	Statio	on	Left	Right	Total
*	12.0	12+000.00 ~	12+160.00	160.00	100.00	260.00
-		12+474.00 ~	12+600.00	126.00	0.00	126.00
*		12+600.00 ~	12+700.00	0.00	100.00	100.00
	15.0	12+700.00 ~	12+860.00	160.00	0.00	160.00
		12+860.00 ~	12+880.00	20.00	0.00	20.00
*	9.5	12+899.00 ~	12+950.00	0.00	51.00	51.00
	21.0	12+950.00 ~	13+1000.00	0.00	150.00	150.00
	· _	13+100.00 ~	13+172.65	0.00	72.65	72.65
*		13+220.00 ~	13+294)07	0.00	74.07	74.07
	15.0	13+294.07 ~	13+435.90	141.83	0.00	141.83
		13+435/90 ~	13+539.13	103.23	0.00	103.23
*		13+539.13 ~	13+580.00	0.00	40.37	40.37
	17.0	13+613,65 ~	13+800.00	186.35	0.00	186.35
*	6.0	13+800.00 ~	13+883/72	83.72	74.59	158.31
*		13+883.72 ~	14+220.00	336.28	303.76	640.04
	10.0	l	14+250.95	36.95	0.00	36.95
*		14+256.95 ~	14+301/00	44.05	44.05	88.10
*		14+301.00 ~	14+860.00	59.00	59.00	118.00
	5.0	14+419.00 ~	14+453.00	33.46	0.00	33.46
		14+453.00 ~	14+479.00	26.00	0.00	26.00
*		14+479.00 ~	14+560.00	81.00	81.00	162.00
	9.0	14+560.00 ~	14+640.00	80.00	80.00	160.00
	119.5					2,908.36

Calculation Details Unit Quantity Open-cut excavation, all clauses (Gat laws) 2,35 x 2, 4 m = 3.4 m ³ 4,5 x 9,55 x 2,55 = 29.6 m ³ 4,5 x 9,55 x 2,55 = 29.6 m ³ 29,616 x 85 nea = 2512.36 29,616 x 85 nea = 2512.36 8 29,616 x 85 nea = 2512.36	Remarks .	200 200 200	22.50	P	A A A A A A A A A A A A A A A A A A A			3 1 1 1 1 1 1 1 1 1 1	TIPO-A ESCALA B		م المنال	000 v	0.09	300	80 22 02 02 03 08	SECCION A-A	SECTION A-A		
Calculation Details - c.d. excavalien, all classes - c.d. excavalien, all classes - c.d. excavalien, all classes - c.d. excavalien all classes - c.d.	uantity				pel (006	ω2 -	ŢI										 	 •••
Calculation Details cut excavality, all clauses 2, 5 x 2, 4 m = 3, 4 m ³ 4, 5 x 4,65m = 20,925 m ³ 4, 5 x 4,65m = 20,925 m ³ 9, 616 x 85 neg = 2\$17.36	1 1							m										 	
		cadien, all c	= 3.4 m3.	20.95 m	x / x 2.25= 29 416 m	* 85 nea = 2517.													

Romarks	Neillat Na	200 750 200		2230	r CO			2,400				9	TYPE-A SCALE B				\frac{\sigma_{\sigma_{\circ}}}{\sigma_{\circ}}		seo / loss	20 200 200 200 20 E	SECCION A-A	SECTION A-A		
	4 uantity						000 60 00 00 00 00 00 00 00 00 00 00 00		06	į	0				1:0	5 0	000	9	os .					
	Calculation Details Unit	Badfill with selected material	(latel ham)		29.616 - 1.15x 1.3x 2.2 - 1.25x1,4x0.05	075.95=		76.240x 85 = 2230.4																
Working Division:	Description	3 (02		And the second s																				and the state of t

1ype> (4, 6, 6, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,	₩ - (ost		150 150	D 100 600	D 500 700 700 700 700 800 800 900 900 900 0 500 1,100 0 900 1,100		7	(001 001 0
Calculation Details Unit Quantity (4. dess E for head) 19 pe) (4. 650 mm, h2 200 mm) (4. 975 mm, h2 200 mm) (5. 0 975 x 0.5 x 2 2 0.25 m 3 (6. 0 975 x 0.5 x 2 2 0.25 m 3 (7. 10 x 0.5 x 0.5 x 2 0.165 m 3 (8. 10 x 0.5 x 0.5 x 2 0.25 m 3 (9. 3x 0.4 x 1.1 m x 2 = 0.25 4 m 3 (9. 3x 0.4 x 1.1 m x 2 = 0.264 m 3 (9. 3x 0.4 x	E E	001	051	100 — A In let	V===}		(C)	ا _ن چ		
(4) dess E for the dess E for man be 200 man) 14 pe) (4) 6 for man, his 700 man) (4) x 0, 95 x 0, 15 x 12 x 2 2 0, 20 5 x 13 x				H=#(Dmn)				3		
	Calculation Details	(wing wall)	(h,= 650 mm b=	(L= 975 mm, h)= 200 mm) L)= 1 * 0. 95 x 0.15 m = 0.157 m 3 C , x 15 x 15 x 15 x 2 = 0.095 m 3	1,7 × 0 975 × 1.2 = 0.215 h	1,1 x 1,0 x 6.15 m² 0 165 m³ 1,05 x 0.7 x 1/2 x 0.15 x 2° 0.110 m 1,1 x 1,05 x 0.2 m² m³	0.3×0.4× 1.1m ×2=0.264 m3	1.337 m	x 4 in = 4.948 x 85 = 65.05	

Remarks	901	· · 1 + 17			2	0	D 100 D 100 D 200	00 500 00 700 00 800	006 0			Ţ.,		 ;/]
	(8)	6		(C) 100 (S. A) 100	1,10	<u> </u>		Ļ				B	- 1		(£) 1001 1001 1001 1001 1001
Unit Quantity										m ³ 14 000					
Calculation Details	2. \$ 500 hi = 0.866m Li = 1.299 m	H= e b m	(D) 0 866x 1.299 x 1/x 0.15x 2 = 0.169 m2	13×1299×02=	15 = 0.340 m3	Q: 0932x 1398 x 12 x 015x 2 = 0.175 m3 Q: 1,3 x 1,398 x 02 = 0.343 m3:	N X Y V X Y V		X.D. m.	2.0x 7= 14.0 m3	K)				
Working Division: Description	3 109														

		051	150	D 400 600 650 650 650 650 650 650 650 650 6	D 600 800 D 700 900 D 800 1,000 D 900 1,100		7		001
***	Kemarks	(A)	1150 150 150 100	77		®	8	9	100 1:00 1:00 Out let
	Quantity				49	11.756		- K2	9
	Unit					m ³			
)ivision:	Calculation Details	3. \$ 1,000 awy well be 1,2m hi = 1,082 m Li = 1,623 m b = 1,2m hs = 1,164 m Li = 1,746 m H = 0.8 m.	Q: LEX 1382 x 015 = 0.31/ m3 Q: LOR2 x L623 x /2 x 0.15 x 2 = 0.463 m3 Q: LEX L623 x 0.2 = 0.987 m3	(a) 15x 1,469 x 0/5 = 0.30 f m3 (b) 1,64 x 1,796 x /5 x 0.15 x 2 = 0.305 m3 (c) 5x 1,746 x 0.2 = 0.524 m3	3.0.3×08×1.5×2=0.720 m3.	2.939 x 4 mg = 11.756			
Working Division:	Description	3 109							

Remarks	7.35	70-1	2.05	1.05	3.3		. 50.0		5211		Lo	0;3 2:025	2.425				
Calculation Details Unit Quantity	iss E for pipe cu		wall)	1,2 m	(3.3+7.35) x 1.35 x 1/2 + 0.7 x 7.35	- 1,2×1,2 × 0.25 = 2.1/23 m ³		1,75 x 2,325 x 0,3 = 1,22/	1.75×0.7×0.3 = 0.348	4.3/2.m ³	1	4.312 x 6 = 25.872 m3 23.814					
Working Division:	Jescription 3 / 09 Concrets	Wilsong world	(Way wall)	1. 1.2 × 1.2 m	(wins)			(30/2)				4					

Remarks	16.35 1.63	3.45		2.3		6.9	3/8		
Unit Quantity				£ 64	m³ 53 632				
ivision: Calculation Details Concrete day E	(wing atall)	(0.7+3.45) x 1.75x /2 + 0.7x 8.7 -1.53 x 0.3 = 4.341.	(5/ab> 2.85 × 2./ × 0.3 = 1.796 0.3 × 0.9 × 2./ = 0.567	6.704	6.704 x 8 = 53.632				
Working Division: Description 3 / 09 (Ance									

Remarks		900 2000 900		2300	460	
Working Division: Description Calculation Details Unit Quantity	Cencrele clar	1 1	(5 lab) 2, 6 × 3, 675 × 0, 4 = 3, 822.	9, 1,00/x 4 = 44.00% m ³ 44.004		

Remarks		000//	2,700	025/2	05 p.c	825 2000 R24 3.675	2597			250		, ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	2.700	425	05"	00%	4036				
1.:+ Ounneity	Unit												m 26,000								 1
	Description Calculation Details	(laling un	5. 2.0 x 20 (III)	(11,0+3,65) x 2, 45 x 1/2 + 0.7 x 11,0	2.03 x Q.	= 7.576 m	() () ()	>7 x 3.70 x 0.45 = 4.426	3 x 1.15 x 2 70 =		13.00 K m3		13.004 x 2- 26.008								

	Kemarks	7	3,000	080	3,050	£00 A.23	400	900 2.500 1900	4.20				225		12630		3,375 30	1275				
- 1	Unit Quantity														m3 24 146							
Division:	n Calculation Details		caling would)	6 2.5 v 2.0 m (1)	(II) ins >		47	= 6.400		(slab)	3.1 x 3.675 x 0.4 = 4.557	*		12.073	12.073 x Z= 24.146							
Working Division:	Description	3 129																**				

			5,000		
Remarks 200 750 200	DZ 006	B B TIPO-A ESCALA B TYPE-A SCALE B	05 009	SECTION A-A	
it Quantity		m3 158 270 8			
Division: Calculation Details Converte clave F for such outch and catch line. Den / no.	1,15x 1,30 x 2,2 - 0,75 x 0,9 x 20 - 1,939 m ³ 1,939 - 0,35n x 0,2 = 1,862 m ³	1.862 x 85 = 158.270 m			
Working Div					

rks				1,220		\$6.7	2 8 PE									 			
Kemarks					220 600			00	Capa de rodadura	Paved Hoddway	-				-				
Quantity						1,862,175		,											
Unit						m ³										1			
Scription Calculation Details	Concorte dux	catch lace	(Side ditale) Rea / m	, 1/2	- 0.13 × 0.5 × 13 0.12 m	0.12/ × 15,389 88 = 1,862.175													
Description																			

SX	(IEIN) D 400 600 500 500 500 650 650 650 650 650 6		7	100
	100 100 100 100 100 100 100 100 100 100	4 001	\$ cy	100 100 100 100 100 100 100 100 100 100
Quantity	2.244	7 730		7 700
Unit	3	76		38
Division: Calculation Details Concrete class H for levelling concrete Local pape (wing wall) Link Lus x 0.1 = 0.124 m ³ Linx Lus x 0.1 = 0.132 m ³	0.256x dm= 1.024 2. 6800 pipe 0.132x 85= 11.23 1.3 x 1.449 x 0.1 = 0.189 m ³ . 1.3 x 1.598 x 0.1 = 0.20/ m ³	0390 × 7m= 2.730	3. \$1000 pipe. 1.5 x 1.773 x 0.1 = 0.266 m ³ 1.5 x 1.896 x 0.1 = 0.264 m ³ 0.550 m ³	6.550 × 4 km = 7.200
Working Division: Description 3 /// Conc				

	Remarks	0.7		2.0	55'E
	Concerte dave H. for leveling concert. (ausing will)	0,25 x(1434x2+33) x 0,/= 0,20% 1,75 x 2,325 x 0, = 0,407 1,75 x 2 3 5 x 0, = 0,407 1,1x2 x 3 = 3,666	4x2+3.45)x0.1=0.293 x0.1=0.599	4=7.136 m3 7,136	
Working Division:	Description 3 / 11 Coverete dans H (aung with)	(winy) 0.25 x/2.4 (state) 1.75 x 2.3 (state) 1.75 x 2.3	2, (5x1,5 m (wing) 0.3x (3.154x2+3 (s(sb) 2.1x 2.85x0.)=	0.892, 2,	

	Unit Quantity Kemarks			1-0.362 m3	2.6	3	\$6.1	3.3				368	300		m ³	m ³ 5 296	7.200	20%	3,975			
Division:	Calculation Details	Connecte class H for levelling converts	(Wasy 25th)	256x2+3.95) x C.	1	G / / /					4 20,20 (11)	x E.O 0.3x		ĺ		1.324 x 2 x 2 = 5.296						
Working Div	Description												The state of the s									

Remarks		OSF)			2,700	425	(1.50)	00%				300	-		0597			٠.	300 177 300	3175	-			
Imit Quantity	-								m ~ 6/6									3 044	-					
	Calculation Details		(living Wall)	1 20x20m(11) 1 1 2 2 2 2 0 1 1 1 2 1 3 4 5) x0 /= 0.437			1,436 113		1.436 x 2 x / = 2.872			ι	×	68,		, (1)	E P	-	1.522× 2×1= 3044					
Working Division:	Description	1																						

Calculation Details Grant Against Guar H. for Levelling concast Calculation Details Calculation Details As I have been been been been been been been be	Remarks .	250 750 250		ë l	٩٦	T	T C	TIPO-A ESCALA B	TYPE-A SCALE B	7				7		so pod 750 pod 50.	SECCION A-A	SECTION A-A		
Calculation Details Unit Quality Calculation Details Unit Quality Calculation Details Ca				li	009	į					•	os ·	. I	09	05					
Calculation Details Loss + fr fr levelling concute Loss + 85 = 748 Loss + 85 = 748	Quantity			7,480																
Calculation Details Ladar H. fra Levelling concate The favin of the concate So y y y 2005 - 0.088 m ³ D.088 x 85 = 7.48	Unit			₹																
		111 Concrete dars H. for levelling concrete	1 x 0.05 = 0.088 m	x 85 =																

	05:		600 630 630 630 630 630 630 630 630 630	(a) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c	851
(1) (1)	I Cemarks	100 130 130	D 100		100 100 100 100 100 100 100 100 100 100
1	Unit Quantity	2		m ³ 282 846	28
ision:	Formwerk El finish for convole of ita.	\$ 600. \$ 600. \$ 1.045 - (0.3+0.05)^{2} \$ (0.15+1,125) × 0.65/2 × 2	(a) $a_1 S \times L X L = 0$ $a_2 m^2$ (b) $a_2 \times (L T + L 2S \times 2) + L X (GA + 0.2)$ (c) $L_{10} \times L_{10} m^2 + L D0 m^2$ (d) $L_{10} \times L_{10} \times $	5.899 x 4 = 23.5 3.05 x 85 = 259.2	
Working Division:	Description 13 //		6-199		

rks	€J -	ns -1						150		-		D 150	D 500 7.00		D 800 1.000	_	-		(B) + -1 · · ·	(a) /// (b)	十·十 大 、 一	_		051 (2) 001		
Remarks		99 K			007		1051 41 0511		3 7	0/ 17	8			@ 			<u>.</u>		•	V	-62		1921	100 L 100	Outlet	
Ilmit Quantity] .	-																m3 63.707								
	Calculation Details	frankrak t/ timsh	(4)-ing wall)	2 % 820	166 " 2516	1.516 - (a.466) Tr = 0.834 m3	Q (0.15+1449) x 0.866 x /2 x 2 = 1,385 m2		0000	2.140	6 13 x 1232 = 1.602.	1,602 - 0.466 TI = 0.920 m	(9 (0.15+1.548) x 0.932x 1/2 = 1.583 n2	[1,2x (1,3+ 1,548 x2) +6,3x	- 3:174	9.101. m	9 101 x 7 = 63.202								
Working Di	ription	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\												447												

₩ <u></u>	055	150	(mm, 9 0	D 450 650 500 D 500 D 500 D 500 D 500 500 D 500		(a) (-7) (b) (c) (c) (c) (c) (c) (c) (c) (c) (c) (c		
Remarks	001	100 100 100 100 100 100 100 100 100 100	0/17	A	W (8)	V C	\$\frac{1}{2}	100 4 100 001 / et
Quantity						84 924		
Unit		1 1		7 4		rw		
Description Calculation Details 3 /2 Farmwork FI finish	(wing earle).	15×1362 2.073-0.1	@ 0.15x0./x2=0.03 @ 0.2x (1.5+1.773x2)+1.5x(0.8+0.6)	(a) 1,5 × 1,464 = 2,194 m² 2,196 - 0.582° 1) = 1,132 m² (b) (a) 15 + 1.896) × 1,164 × 1/6 × 2 = 2,382	/) × (//	13.73) x 4 = 54.92d		
				6-20/				

, <u> </u>						<u> </u>			<u>,</u>	
Remarks	500		0.7	(d) old 2.025			2.10	0.9	37.5	
it Quantity					m3 85 944				m³ 154 288	
Unit					4				7	
Division:	El finish	(a) (7.35+33)×1.35×1/3 +0.7×2.35 - 1.80×1.25 = 2.184 m²	! 1 7	(4) 1,0×1,15 = 1,2×5 m ² (5) 0.7×1,75 = 1,2×5 m ²	14.324 x 2x 3= 85.944	Q (8.7x3.45)x1.25x1/2+0.7x8.7	0.7 x 0.3 x 2 = 6.42 m²	Q 12x2. 1 = 2.52 m. Q 0.9x2.1 = 1.89 m.	19.286x2x4 = 154.288	
Working Division:	Description									

Remarks			24	(4)		\$ 2.6		50		(i) 4.3 3.9						355	,		23/10	400	(2) (3) (7)	356 3.375	3,175	9	1		
}	r namery												1										7	710:010			Ì
1	i C									-		_		-		<u></u>		_	-			-	-	<u>u</u>	<u>!</u>		
	Calculation Details	Formwork Fl finish	0	(10.71	1	, ,	(3.6x1.60-3.3×1.25	ł	135 1 4 3.25		2 f. 18/ m	(20)		(I) W 20x20 m (II)	1, 8C+ 8 B	- 26 + 2.75 = 1		(3.675x 66-3.	1			27.014 m		29019 x 2 x 2= 116.076			
Working Division:	Description																										

1					
1	1.700 1.500 0 300 5.400		400	(a) 340 3375 320 (a) 340 3,375 320	
Quantity		59 772		881179	
Unit	7.	12°		*W	
Division: Calculation Details Fernwerk F/ firish 5 20 20 (M) 9 (11.0+365) 1245 x 1/2+0.7 x 11.0	u u	29 886×2×1= \$9.272 6 2.5×20(1) 6 2.5×20(1)	(g) (11.53 + 4.3) - 3 x 2 75 = 17.809 (g) 0.7 x 0.3 x 2 = 0.42 (g) (3.675 x 1.6 - 3.375 x 1.2) x 2 = 3.660 (g) 1.6 x 3 = 4.96 (g) 1.6 x 3 = 4.96	30.569 x 2x 1- 61.138	
Working Division: Description 3 / 12 Fermi					

		<u>∞∞</u> ,5	
Remarks	W165 000 00 00 00 00 00 00 00 00 00 00 00 0	TIPO-A ESCALA B TYPE-A SCALE B	SECTION A-A
Unit Quantity	27.55 E8.3 S. 27.52 S		
Calculation Details	((alch dain) 15 x 23 x 2 = 506 130 x 2.3 x 2 - 0.35 \(\vec{n} = 5.335\) 10.395 x 85 m = 683.575		
Working Division: Description 3 //2 Form		6-201	

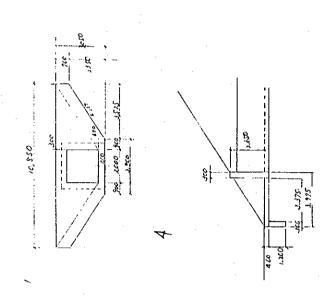
	Kemarks	₩	1,00		7	500		_ 8	0.51		,, o P mm)		0.450 650		0050	00000			to the second			(;; \)	1901	100	Outlet	
	Quantity		<				72	100 th	1, 161	7			c.	+		103 782	W	00/			- (L ₂)		1 051	1001	00	
	Unit															'n										
Jivision:	Calculation Details	Formwork F3 firsh		(Actor) wall		\overline{a}	1 7	2 = 3		(C) 0, 1 x 1, 1 + 0, 8 x 0.70		^	1,03 6	2.103 m		2,103 × 4 = 8.412	85 =									
Working Division:	Description	3 /13																								

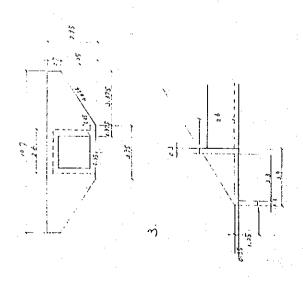
		&) _(2						150		(1111)		D 450 650		0.00 001 000 0	-		7		→ · · · · · · · · · · · · · · · · · · ·			<u></u>		
a	Kemarks	4	-<				1 500	1130 150	< -	2 6 7	, , , , , , , , , , , , , , , , , , ,		8	++ ->				ల	γ	k2 (0)		15001 11001	j	CHILL	
·	it Quantity														2 24 360								1 -		
	Unit														W										
	Calculation Details	I. J. M. F.	0,0	diens diens	7 0800	0 1 1 3 + 1 0 × 0 866		Q 1.399 x 0.866 x 2 x 2 = 1.125 m2		1,0 x 0,932	- 0.8-0 - 0.35 m	1398 x 0.732 x 12 x 2 x 2 = 1.303 m	25 00 0	202	3 180 x 7 = 24.360										
Working Division:	Description	2. /	1																						

6-207

Romarks	Ivelliains	w - (000	 -1-		0007	15.061 1.0611	100 L	•	7	(m:m) Q	 D 450 650.	 0.700 903				7			150 150 1	100	Outlet	
L	Unit Quantity												 202 00										
	Calculation Details	Famuel F3 finish	Jan 6 Wal	7 9 1 000	7 × 2 × 4 × 1 × 1 × 1 × 1	"	12.1.25		@ 01x1 C+1,2x 1,164	0 -	69 x 1/x 2 =	# C/C \\ \		5.2/2 x 4 = 20.898									
Working D		Description 3 / 43																					

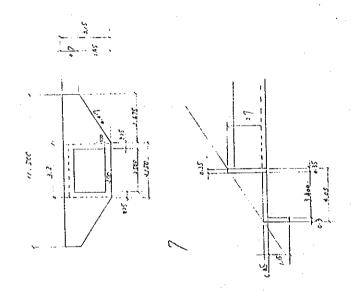
	Remarks	$\frac{-7.65}{-100} = \frac{1}{100} \left(\frac{1}{100} \right) \left$	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		201	422		2305		56.2 227	2017	- 777	`		+ 5	3,0	
			-7) 1		S			1,0	L	·			2:				60
	Quantity				65,364			115.768								29.476	
	Unit				מי			, cu								2	
ivision:	Calculation Details	Fernawork F3 finish	1. 1.2 x 1.2 m	(3.3+7.35) × 1.35/+ 0.7 × 7.35			12x1.75/2+0	89	!	1 0.7 4 10.7		m	(1).	(10.85+380)x235/2+0.7×10.85	- 20° = 19.869 m²	19.869 x 4 = 79.476	
Working Division:	Description	3 //3								9					, , , , , , , , , , , , , , , , , , ,		





	Remarks 1,050 200 200 200 200 200 200 200	400 2.500 300 300 300 300 300 300 300 300 300
•	Unit Quantity 2. 10. 10. 10. 10. 10. 10. 10.	27 77 - 47 788
	rking Division: Calculation Details (1/3	1.5
	Working Division: Description A //3 Form L. 2 L. 2 L. 2	

6-211



										•	'000 '	2	<u> </u>	-	xz o	<u>=</u>		-	 	
	Remarks		200 750 200	ů,	a contract of the contract of	0009	35 CO		TIPO-A ESCALA B	7			009	l los		<u>05 000 051 000 05</u>	SECCION A-A .	SECTION A-A		
	Unit Quantity				802	 m 536. 193 §														
ivision:	Calculation Details	Fernoverk F3 finish	(Catch Lasin)	0.75 x 2.0 x 2 = 3.0 0.75 x 2.0 x 2 = 3.07	, , , , , , , , , , , , , , , , , , ,	6.317 x &5 ms = 536.945					 									
Working Division:	Description	3 1/4		The second secon			44.00.00									App				

6-213

Remarks		600 150/10	\$ 10 mm 10 m	The Poor												
		220	4 4%	Capa de rodadura							•			-		
Quantity			615 2.9					 								-
			28621													
Unit												<u>.</u>				
			6/12													
S ,t	4	7	15.585'5													
Calculation Details	es_Cerne	1m														
culation	hish_j	her. 1.335 =	1 7													
Cal	F3 f	1 1 4	×													
-	3. 113 Ermwark, F3 finish for concard	(Side ditch).	1.006													
,	For	5				}				 					-	
iption	F77															
Description	7						-									

ity Remarks							9									-	0			
Unit Quantity							Im S.	7				tes					ta	4.41		
Calculation Details	Reinforcing	0	(Wing wall)	30 kg / m 4 convise worthand	, 4 /50	(, 237 m3 x 80 = 98.96 kg	98.96 × 4 = 395.84011)	30 x 85	2. \$ 800'	2000 m3x 80 = 160 kg	<i>b</i>	160 × 7 × 1.12		7	2		335,12× 4 = 940,48.			
Description	T																			

Remarks										•			
Unit Quantity			ton 2.0	7, 1, 3, 4, 3,					ton 35		Tm 2,/		
vision:	ang hare for cone	Doby m3 of amost and and	~ ~	5 * 15 m	536.32x 2x4 - 42/0.56	17	10242 x 80 = 517.38 Eg	11)	11.00/x80 = 880 08 kg 880.08 x 2 x 2 = 3520.32		13.004 x 80 = 1040.32 Kg	1040.32x2x /=	
Working Division:	Description 3												

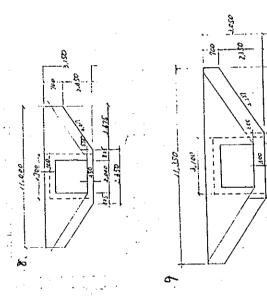
	Remarks											:								
			· -	· ·			-		-	 ļ	- 		-]	Ţ	 			
	Quantity		6	<i>-</i>																
	Unit		<u> </u>	- Chan																
)ivision:	Calculation Details	Reinfaciong bare for Con	C0122	6 25 x 20 m (1)	67 - 60 - 60 - 60 - 60 - 60 - 60 - 60 -	105.04 5 40.607	7 , 5 , 5 0 . (11)													
Working Division:	Description	1 1												and the second s						

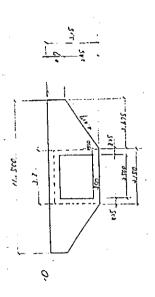
Remarks Quantity Unit 1.862 m3 x 80 kg/m3 = 148.96 - 1 ton 20 kg per Im 3 of concrete values 114 Rougercing bare for concrete rowh Calculation Details (Catel Barns) Working Division: Description

6-218

ks) 	1			150		(nem, Q O	D 500 700	D 700 900	0000		,	j j.	V				25
Remarks) (130 6, 150	100 A 1001	7) jour	.	V	-k,-		150 4, 150	100 1 100
it Quantity			18 750				m³ 45 500		m3 30:000			3 /25 75	155			195.160		
Unit			2 77 3 m3			84 7			123			~	42 m			24 395 m3 1		
Calculation Details	t = 500 mm			22.0	75×0.2×85 = 46.75	704 117 118	1		20 × 0.5 = 3.75	= 30.0			3.3 × 5.0 × 0.5 - 20.			5)x c o x o. 5 =	4= 195.16	
	Gabion matters	(Wing yall port)	_ _	(081031×3 275×2×4=		2. \$500	3.25 x 2 x 7 2 45.5	00016	1 1	375x2x4=30.0		1.2 x 1.2 m	(2.434×2+3.3)	1 1	7 /5 1.5 m	\\ \(\tau \)	24.295x 2x c	
Description	.3 //5	7	7			N		~				7						

Remarks	7.45	200%	5.	2007 244 1.05	6.	26 c 80 c 8	25.6	7.	0.00 C.00 C.00 C.00 C.00 C.00 C.00 C.00	900 5000 900 535	
Quantity			122.740		62 420		3 63 870				
Unit			m ₃		m³		78	1		η	
rivision:	Calten math	4 2.0 x 2.0 (1) (4 0 5 6 x 2 1 3.95) x 5.0 x 0.5 - 30. 155 m2	7 20420 (11) 7 20420 (11)		5, 2.0 x 20 (M)		70010	(A) (C) (C)	(h > 7 × > 0 (E)	15) x5.0x05= 37.46 m	
Working Division:	Description										





	Kemarks	2.		000 000 000 000 000 000 000 000 000 00			4	0002		Maria Dadi		35									
	Quantity	0011	9 2/0			325	<u>~</u>	602		000				630	1	8 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		2 4 6 kg	2		
	Unit		7.8			3.5								, W				1			_
ivision:	Calculation Details	Joint Filler to mas	· ''' (')	1.535 x 6= 9.21		2. 1.5×15m	1 1	- 1	3. 20x20 m (1)	26x > 65 - 2x2= 2.890 m	<i>₩</i> 1		4 2.0 x 2.0 h, (1)	2.6x2.75-2x2= 3.15m2	3.15 12 = 6.30		į.	1	3.6/3 m		
Working Division:	Description	.3 //6		-																	

	Kemarks		200			000				4.	002		my					4.A.43	2700				
	Unit Quantity	<u>'</u>	21		m ² 9 2/0	3 3			m 18 120	m			200	5			m3 12,600		45		7.390		
	Calculation Details	Bituminaus coating for contraction jours	// / / / / / / / / / / / / / / / / / / /	/ / / / / m	175 x 170 - 12x1.2 = 1.535 m3	1.535 x 6= 9.210		2. 15x 1,5 m		2.265 x 8 - 18.120		3. 2.0 x 2.0 m. (I)	26×2	011		4 > 0 x > 0 m (1)	2.6x275-2x2=315 m2	- 1		(=) (1)	2.7 x 2 x 2 x 2.7 x 2 x 2 x 2.7 x 2	2 7.390	
Working Division:	Description						-																

														· ·		_	- 154			 	·.	
	Remarks		911		A ZIOO	70			The state of the s	1200												
	Quantity		(0)/																			
	Unit	1	4																			•
vision:	Calculation Details		3.525 m	3.525 x 2 = 7.05		7 25.20 (1)	> 15	BA		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	A STATE OF THE STA		And the state of t									
Working Division:	Description	1			7.7																	

-1	Kemarks														
	Unit Quantity		£ &		m ³ 0	m 3 0	m ³ 0								
vision:/62. POZA HONDA	Calculation Details	Bax culverts	,	Open-cut excavalion	Backfill with selected material	Free draining backfill	108 Gravel bedding	<i>b</i>							
Working Division:/62.	Description			105	70/	[0]	80/	- 1						 	

Remarks													
		687			007/1				for				
Quantity		288 288			137 85				99 RC				
Unit	·	f W			m³				m ³				
Calculation Details	INAGE WORKS	all chases	135.37.	28.848 70tal 288.288	ed material	5) 63	18.720	13785	Ling			The state of the s	
76. Pt	CULVERT AND DRAINAGE	Open-cut excavations	1. Pipe culvert	3 Vraus pipe	Backfill with selected	1. Pipe culment			Coushed stone bedding	1. Pipe culivert			
Description		70/			107				[63]				

Division.	
	>
7	2
Wartein.	

Remarks														
		1 133			1267	- 56	-73		, .				9%-	
Quantity		132 200	0	0	266.710	\$5 636	22.897						25 610	7
Unit		m	113	B	m	EM	113						123	
Calculation Details	CULVERT AND DRAINAGE WORKS	Reinferced consiste pipe, D. 600 mm	Rein forced concrate pipe	bb Reinforced concrete pipe D. 1.000 mm	PVC. perforated drain pipe D. Loo mm	Free drainage malerial for subdrain	Concrete, class E for pipe culvest and	1. Dec 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	0	3 Wing wall for pipe tal veril 6.02/	4 Wing wall for box culvert 0	Total 75.891	Cencrele	Calch Barra.
Description	. ~	/44	105	901	707	108	109						(J.p.	

Working Division:

COLLVERT. AND PRAINAGE WORKS Concaste, chart H for levelling centrele. m3 1. 428 - 2. Concaste, chart H for levelling centrele. m3 1. 428 - 2. Collvert Collect Col		Colonlation Dataile	IInit Quantity	Remarks
(1) Concuste, duan H. for tevelling concrete, m3 (228) 1. Concuste, duan H. for tevelling concrete, m3 (228) 2. Wing wall 1.16% 3. Calch basin 6.26% 11ews (29 and 1.0 31.185 2. Wing wall 31.85/2 3. Calvert 31.186 4. Dean; and 10 0.0 1. Ving wall 9475 2. Wing wall 9475 3. Catch basin 18.95/1 3. Calvert 6.0 and 10 0.0 1. Ving wall 9475 4. Dean; ditah 77.29	Describnon	Calculation Details		
Concept, class H. for levelling concrete. m3 1. 428 1. Culvert 1.169 2. Wing wall 1.428 Total LADS 2. Wing wall 1.0 2. Wing wall 26.897 2. Wing wall 26.897 3. Catch basin 31.185 Total basin 18.897 Total Los 100 1. Culvert 2.185 3. Catch basin 18.85 4. Drain child, 19.844 4. Drain child, 19.844	m	CULVERT AND DRAINAGE WORKS		
Concaste, class, H. for levelling concrete. m3 1. 128 1. Calwert - 0 2. Wing wall 1.164 Scalch basin 1.264 1. Calwert Davish for concrete of m² 275.812 2. Wing wall 25.87 3. Catch basin 31.185 Total Law 100 Calvert Davish for concrete of m² 777.09 1. Wing wall 275.812 2. Wing wall 100 Calvert Basin 18.951 2. Wing wall 100 Calvert Basin 18.951 3. Catch Basin 18.951 4. Drain ditch 777.09	-			
1. Culvert	777	Concrete, down H. for lever	7	· ~ I
Culvert				
2 Wing wall. 1.189 3 Catch basin 6.280 4 Catch basin 6.280 Team work H finish for concrete of m² 275 812 7 Wing wall 26.897 3 Catch lawer 37.882 Teamwork E3 finish for concrete of m² 777 09-7 Teamwork E3 finish for concrete of m² 777 09-7 Teamwork E3 finish for concrete of m² 777 09-7 Teamwork E3 finish for concrete of m² 777 09-7 Teamwork E3 finish for concrete of m² 777 09-7 Teamwork E3 finish for concrete of m² 777 09-7 Teamwork E3 finish for concrete of m² 777 09-7 Teamwork E3 finish for concrete of m² 777 09-7 Teamwork E3 finish for concrete of m² 777 09-7 Teamwork E3 finish for concrete of m² 777 09-7 Teamwork for finish for concrete of m² 777 09-7 Teamwork for finish for concrete of m² 777 09-7 Teamwork for finish for concrete of m² 777 09-7 Teamwork for finish for concrete of m² 777 09-7 Teamwork for finish for concrete of m² 777 09-7 Teamwork for finish for concrete of m² 777 09-7 Teamwork for finish for		1. Culvert ". o		
3 Catch basin 6.26° Farm work H finish for concrete of m² 275 812 1 tense 109 and 110 2 tuing walk 26.897 2 tuing walk 26.897 1 calvert 31.185 Calvert 0.0 Calvert 0.0 Calvert 83 finish for concrete of m² 777 09-7 Term work E3 finish for concrete of m² 777 09-7 Term work E3 finish for concrete of m² 777 09-7 Total basin differ 18.951 2 Catch basin differ 18.951		1/1		
Earn work El finish for concrete of m² 375 812 Items 109 and 110 2. Wing walk 26.847 2. Wing walk 375.812 Total 375.812 Total basin 18.951 I Wing walk 9.00 1. Wing walk 9.875 2. Wing walk 9.875 I Draw ditch 748 464 4. Draw ditch 777.09				
Farm work H finish for concrete of m2 275.812 1 tenn work H finish for concrete of m2 275.812 2. turns walk 26.847 3. Catch kowin 375.812 Total 375.812 Calvert 0.0 Calvert 0.0 Calvert 0.0 Calvert 0.0 Calvert 0.0 Total 10 1. Ving walk 9.875 3. Catch basin 18.951 4. Drain ditch 748.464 4. Drain ditch 777.09		Total ,		
Farm work # finish for concrete of m² 275.812 1 tenne 109 and 110 2 tuing walk 26.847 2 tuing walk 26.842 2 tuing walk for centrele of m² 777.09 1 tana 109 and 110 1 culvert 0.0 2 total basin: 18.951 2 total basin: 18.951 2 total basin: 18.951 2 total basin: 19.544				
Terms work Junior for control of Sure 10 and 110 Culver 26.897 Satel basic 31.185 Formwork E3 finish for controle of m² 777.09 Culver 9.675 Wing wall 9.675 A Drain dileh 748.464 A Drain dileh 748.464 A Drain dileh 748.464 Total 777.09	,	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1		900
Terms (a) and 110. 2 wing walk 26.847 3 catch laws 31.185 Fermulark E3 finish for concrete of m2 777.09- Tend (a) and (10. 0.0 1 Wing walk bases 18.95/ 2 catch laws ditch 748.464 4 Draw ditch 777.09	77,	Form Work TI Jinesh for		
Lulver! 217.78 2. Wing walk 26.847 3. Catal basin 31.185 Formulark E3 finish for concrete of m² 777.09 [Lulver! 0.00 2. Wing wall 9.675 2. Wing wall 9.875 4. Draw ditch 748.464 4. Draw ditch 777.09		-		
Lalverd 217.78 2. Wing walk 26.897 3. Catch basin 31.185 Total 375.812 Total 375.812 Tema 109 and 110 Culverd basin 18.951 2. Wing walk 9875 4. Drain ditch 748.464 4. Drain ditch 777.09				
2. Wing walk 26.897 3. Catch law 31.185 Formwork 53 finish for concrete of m² 777 09- Team 609 and 110 000 Thing walk 9875 2 Wing walk 18.951 2 Wing walk 798.464 4. Drawi ditch 798.464 4. Drawi ditch 777.09				
3. Catch law 31.185 Formwork F3 finish for concrete of m² 777 09— [tema 109 and 110 0.0 [wing wall 9.875 2. Atch law is 18.95! 4. Draw dileh 748.44 4. Draw dileh 748.44				
Total 375.812 Formulark E3 finish for concrete of m² 777.09 I few 109 and 110 Culiver! 0.0 Ving wall 9.675 2 Catch bases 18.951 4 Draw ditch 748.444 4 Draw ditch 777.09				
Formwork E3 finish for concrete of m² 777 09 [Lalvert 0.0 0.0 [Ning wall 9.675] Catal basis 18.951 4. Draw ditch 748 464 Total 777.09		1 7 7		
Formwork E3 finish fer concrete of m2 777.09- Items 109 and 110. Culvert 0.0 Wing wall 9.675 A Draw ditch 748.064 Total 777.09				
Eprinuper L. E.3. finish for concrete of m² 777.09— Items 109 and 110 Culvert Culvert L. Wing wall 1.8.951 3. Catal law; 18.951 4. Draw; dital 748.464 Total 777.09				
tears 109 and 110. 0.0 1.0 9.675		Taring Ex first for concrete	777 09-	797
wall bass. diteh Total		T4. 1.9 . 1 1.0	\	
wall lain ditel				
wall basis ditel Total				
basis, di Joh Total		Mari		
, diteh Total		Posto		
Total		, ditch		
		Total		
			- 4	

115 Gabion mattress, t=500 mm m² 00. 116 Joint filler, t=10 mm m² 00. 117 Bitumineus coating for contraction joint m² 0.	

					7		
Description	Calculation Details		& namery	-			
CONCRETE WORKS	E WORKS			.			
los Cencrete class E	class E for box culverts	, w	0				
log Concrete	class H for levelling concrete.	m ³	0				. •
106 Farmwork FI firsh	El firish for concrete item too los	m,	0				
10.8 Form work	10,8 Form work F3 firesh for consisted to. 103	2	0				
(09 Renjacing	trasa for concardo works	Tan	0		:	·	
110 Join feller for	litter for culous	2	0				
/12 Bitumur	Bituminary conting for contraction joint	m,	0				
					-		
		-		2			
					•		
		_					

ž	St No.	0	-	Entrance El	Exit El	Road El	Road El Culvert Length	Type		Soil Thickness
		m3/s		E	E	m	ш			ш
	0+049.50	0.48	8.0%	162.250	159.794	168.287	30.700		360	6.665
	0+402.00	0.72	5.0%		128.870	136.840	23		.09	6,655
	0+493.91	0.91	5.0%	119.300	117.230	129.398	41.400 D	1.400 D=600mm	00	10.533

(m) (me) D 600 360 100.7 3

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		[enoth	Pine eneth	Pix 1 meth Open Our Excavation		Backfill	<u>-</u>	Crushed Stone Bedding		Pipe D=600 Pipe D=800 Pipe D=1000 Concrete Class E	ipe D=800 Pi	pe D=100d(Concrete Cla		Form Work F		Kemiorcea bar	154
				1	_	000		(00) 6 6 6	_	1 (10) 2 (1)	(412 3/05) (12 3/06) (12 3/09)	123/06)	12.3/09)	<u></u>	(12,3/12)		(12.3/14)	
				(12.3/01)		(12.5/02)		(50/ 5.21)		15/2.7	170/007	1	-		- 			
		I Init (m)	Linit (m)	-	Total	Unit (m3)	Total	Unit (m3)	Total	Unit (m)	Unit (m) Unit (m)		Unit (m3)	Total	Unit (m2)	Total	Unit (kg)	Fotal
	8	(111)	122.3	280	1:	0.43	13.56	0.14	4.49				0.16	4.92	0.52	16.38	0.00	00:0
D=600mm	3 5	5.15			0000	0.42	8	0.17	00.0	-			0.26	00:0	1:00	0.00	0.00	0.00
	00	0.0		00.1	100.74	0.45	45 57	0 24	24.17				0.62	61.95	2.00	201.40	42.98	4,328.49
	FIX	100.7		60.1	00.00	650	2	0 17	80				0.26	00:0	89.0	0.00	0.00	0.00
D=800mm	3 8	0.0	0.0	07'1	3.6	0.00	00.0	0.21	000				0.46	0.00	1.34	0.00	0.00	00.00
	<u></u>	0.0		7 .	3 8	0.00	20:0	0.31	00				1.13	0.00	2.68	0.00	73.53	0.00
	Ϋ́Υ	0.0			30.0	0.00	200	0.00	000				0.35	0.0	0.76	0.00	00.0	0.00
D=1000mm	3	0.0	0.0		0.00	0.73	8	0.43	900				09:0	0.00	1.58	0.00	0.00	00:0
	⊋ i	0.0		21.2	3. 6	17.0	2000	0.36	000				1.43	00:0	3.16	0.00	84.55	0.00
	χĽ	0.0		77.7	30.0	7.7	2	2	27 00	122 20	8	Ö		28 99		217.78		4,328.49
Total		132.2			135.37		29.15		100.07	132.201	30:0	20.50		200				

			Oran Cut Evenuation Backfill	Contaction	Backfill		Concrete Class E		Concrete Class H		Form Work F1		Form Work F3		Reinforced Bar	Bar
		rengai	Cycli Citt	Acavallon	(10.000)		(Irem12.4/03)		(Item12.4/04)		(Item12.4/06)	•	(Item12.4/08)	<u>~</u>	(12.4/09)	
			(17.7/01)		(17.4/00)	1							1,000	1992	Train (lea)	Total
		Unit (m)	Unit (m) Unit (m3)	Total	Unit (m3)	Total	Unit (m3)	Total	Unit (m3)	Total	Unit (m2)	totai	Cmr (mz)	TOTAL	CHILL (AR)	TOTAL
1200mm x 1200mm	~9.25	0.0	2.42	00:0	7.00	0.00	1.63	0.00	0.19	000	3.60	000	3.70	0.00	162.91	0.00
1500mm × 1500mm	50~		•	00'0	96.0	0.00	2.31	0.00	0.22	0.00	4.30	0.00	4.45	0.00	193.31	0.00
2000mm × 2000mm	37.82	0.0	4 97	000		_	2.94	0.00	0.27	0.00	5.30	0.00		0.00	•	0.00
2000mm × 2000mm	37.6	00	× ×	000		0.00	3.20	000	0.27	0.00	5.50	0.00	5.95	0.00	236.02	0.00
2000mm x 2000mm	7.751		45.5	000		000	3.74	00:0	0.28	-	5.70	0.00	5.95	0.00	270.47	0.00
2500mm x 2000mm	275-575			000		0.00		0.00	0.32			_	6.43	0.00	317.29	00:0
2500mm × 2000mm	5.751~			000		0.00		0.00	0.32	0.00		0.00	6.43	0.00	331.62	0.0
Z. COLIMIE A Z. COLIMIE				0.00		000		000		0.00		0.00		0.00		0.00

LONGITUD DE CUNETAS

CAMINO DE ACCESO: ENTRADA A POZA HOND KMS: 0+000 a 0+592.00 Km

20.00 40.00	20.00	40.00
40.00		
	0.00	40.00
130.00	130.00	260.00
0.00	170.00	170.00
40.00	0.00	40.00
20.00	0.00	20.00
40.00	0.00	40.00
52.00	52.00	104.00
	0.00 40.00 20.00 40.00 52.00	0.00 170.00 40.00 0.00 20.00 0.00 40.00 0.00

Total Longili 714.00

Addition: 10×3=30 744.00

Catch bain 3 nov

Drain Pipe Quantities

	I among (m)	Evenuat	Excavation (m3)	P V C Pine D	P V C Pine D=200mm (m) Drainage Material (m3)	Drainage Mat	erial (m3)
Access Road Name	mgillari	דיירייי	(2111)	1		10000	Total
		Per meter	Total		Iotai	rer meter	Iotal
Conquillo	5.823.120	0.240	1,397.549		5,823.120	0.20	1,214.703
Conguino Severno Tramo	1,535.870	0.240			1,535.870	0.20	320.382
Severno Tramo?	2,472,920	0.240	593.501		2,472.920	0.209	515.851
Too Chambee	7 324 030	0,240	_		7,324.030	0.200	1,527.793
Los Cuyuscs	266 710				266.710	0.206	55.636
roza riolina	2 035 376		4		2,035.376	0.20	424.579
La Seca	786 460	,			786.460	0.200	164.056
Ei Cuasino Cana Dulce	1.200.560				1,200.560	0.20	250.437
Membrillo Outlet	30.000	0.240	7.200		30.000	0.206	6.258
Grand Total			5,154.011		21,475.046		4,479.695
Claird I otal							

=0.24 =0.21 Excavation V=(0.8+0.4)*0.4/2 Free Drainage Material V=0.24-3.14*0.1^2

2,400 TIPO-A ESCALA B TYPE-A SCALE B 500 SECCION A-A SECTION A-A Remarks ģ 썛 Quantity 8-8. 848 1 m Unit (54+20.9.5) x/x x 2.25=>9 416 m3 161. Open-ent-excendion, all classes 4.5x 8.65m= 20.925 m 2,25x2.4m= 1.4m3 Calculation Details 29.616 x 3 - 80.848 Working Division: Description

6-235

Working Division.		TInit	Quantity	-		Remarks	
Description	Calculation Decans			+			
3. 102	Backfill with selected material						
	(Catch haves)						
	29.616 - 1.15 x 1.3 x 2.2 - 1.25 x 1.4 x 0.05						
		į					
	26.240 x 3 = 78.72	m 3	28,720	170	-		
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ks	₩ -	05[150 b:150		(mm, q	-	D 450 650 D 500 700		00011 008 7	-				77	`\ Y	V	+:+ ~;		1	100	
Remarks	ان	001 Y		002	1150	001 V 100	13/61	77	- <u> </u>	6.	† <u>+</u> <u>-</u>					•	₩	(E) (d) - A		42		150 1,150	100 100 100 100 100 100 100 100 100 100	Circles
Quantity				2		42 mm												1 6.02/						
Unit						17 - KE								- [-			<u>a</u>	_	-	-			_
Calculation Details	Concrete des E for		(mans mark /	Kpipe 1ype>	1. \$ 600 (h= 650 mm b= 800 mm)	(4= 975 mm , hz=	11 x 0. 95 x 0.15 or = 0.157	0.975 x 0.65 x 0.15 x 7.2 x 2.7 x	X	(A) 1 × 10 × 1.15 m² 0.165 m³	10,5 × 0.7 × 1/2 × 0	1/x 1,05 x 0,2 x, 1		(g) 0.3x0.4x 1.1mx2=0.264 m3		8 m 7861		137 x 3= 3.71/	0.77 x 3 = 2.3/0					
Working Ulvision																								

Variation Calculation Details Unit Quantity Cancult Calculation Details Unit Quantity Cancult class for the clist for		Kemarks				1,220	220 600 150,110, 140	\$6.	_ {	Capa de rodadura	Paved Roadway								
Calculation Details 10 days E for well dield and 4 days 200 m 20		ntity						70 024						 					
Calculation Details for the day E for tick dild and dildd) Rea 122 / Rea 1 m Sa 432 x / S = 0.25 m Cabix 144 m = 90.024	İ	1						7							.				
Calculation Details Sailoh) Par 194 m = 90.024 C. B. Ix 144 m = 90.024						S		7											
	Working Division:	Calculation Details	day F for not dill	***************************************	1 2 3	0.75 x 0.3 x 1/5 =		244 m = 90.											

	Kemarks	65.		7 000	7			7/	,9	2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	009 009 0	007 Q	00111 0060	4		ĩ	, , , , , , , , , , , , , , , , , , ,				100 100 100 150	Outlet	
	Quantity					-	<i>591</i> /																
	Unit		1				3													1	.		
ivision:	Calculation Details	Concrete , class H for levelling concrete	3	$L/m \times L/DS \times 0.7 = 0.12 \times m^2$		1,356 m3	0.256 x 3= 0.768	2 & 500 pipe	1.2 x 1869 x 0,1 = 0.189 m3.	x , 598 x 01 = 0.201		6.390 m3				3. \$ 1,000 p.ye.	1,5×1,778×0.1 = 0.266 m3	15x 1896 x 0.1 = 0.364 m3	0.550 m ³				
Working Division:	Description	3 ///																					

Remarks	200 750 200		ě	4-			· ·	TYPE-A SCALE B	7		 	os		05/ 05/05	SECCION A-A	SECTION A-A	
Unit Quantity			202	j -	000	000							:				
Calculation Details	Lu Concrete class H for levelling concrete.	(catch basin) Nor I no 88 m3															
Description	3. [11											***					

	Kemarks	ا ا	001		1-	1 2000	051] 	T. 16!	-	(0) O O	<u> </u>	D 500 The state of	<u> </u>	0.600 (1.100)		<u> </u>			9				1051		Qui let	
	Unit Quantity		The same of the sa		7		051	100								4			T > 56.847					35-1	300		Little
Division:	Calculation Details	nwerk F	to 109, 110.00d 111	. 00	Curry wall !		1/(20.0+6.0)-	Q	03 2	0) x 17 + (2x		(a) 1/m x 1,0 m = 1,100 m	(20.0 + (0.3 + 0.05)	1.20)	P.15 × 0.1×2 = 0.0.	0,3×(1/+1,20x2)+1,1×(\$.899 m²	5.899 x 3 = 17.697	305 x 3 = 9.150	4 (4)						
Working Div	Description	13 (/2																									

Remarks			200			œ ·						(; <	TIPO-A ESCALA B	TYPE-A SCALE B	7							SECCIÓN A-A		
ty						-	X	185	00		000		-					759	009	-1103	<u></u>			:	
t Quantity								3/.																	
Calculation Details Unit	Fl finish			2 x 2 = 506	2.2 × 2 - 0.35 ft = 5.335			x 3= 3/.185 m		-															
	Formwork F		(Cold bain	(* 3/ /	130 x 2	,		10.395									Selection of the select								
Description	٤.				-			Analysis of the same of the sa																	

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	rks.	₩ - \ <u></u>	051					(69,9)	2.5	····			-				1 77		V		<u> </u>	·		1 22]	
	Remarks	انو	001		002	100 100 100	1,10	7	V			/===					•	YY					-	100 V 100	Out let	
	Unit Quantity			7						44			9.625		00/					ε.γ				H 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
sion:	Calculation Details	Formururk E3 firsh	(15tong wall)	\$ 600	0.1×1.1+0,8×0.65) 0.975 x 0.65 x 2 × 2 × 2 × 0.634 m²		10.1×1.1 + 0.6×0.0 -0.3 n = 0.387 m	1,05 x 0, 70 x / 3 2 - 0.73		2.703 m2		2,103 x3= 6.309	1103 ×3 = 3.366				The state of the s								
Working Division:	Description	 	7	1				3				-														

7 m 2 18 951	Calculation Details Unit Quantity ork F3 finish 25 x 2 0 x 2 = 3 0 28 x 2 0 x 2 = 0 3 \(\tilde{n} \) = 3 3 7 29 x 2 0 x 2 = 0 3 \(\tilde{n} \) = 3 3 7 29 x 3 7 x 3 = 18 95 / m² 6 3 7 x 3 = 18 95 / m² 7 2 2 2 2 3 7 m² 7 2 2 2 3 7 m² 8 3 7 x 3 = 18 95 / m² 9 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Remarks	200 750 200	B	4 1 A A A A A A A A A A A A A A A A A A	Ø5 00	 TIPO-A ESCALA B	TYPE-A SCALE B	<u> </u>	- COO''	7	DOS.	S	V NOIJUES		
	Calculation Details 1. Lasin.) 25 x 2 0 x 2 = 30 30 x 2 0 x 2 = 30 5.3/7 x 3 = 1895/ 6.3/7 m²	- 1			000 126 37	į										
	3.0 2.3.7 2.3.7	Uni		2 2	W											

		000	150.110, 140	\$0	(e) Jaga	305	7										
Remarks			220 600		%	2	(00)	Paved Roadway										
Quantity					7/7 6/4	196. 464					• • • •							
Unit					^	W W										_		
Calculation Details	F	109 and 110:	Side ditch). her Im	0.671 + 0.335 = 1,00 6 m2		1.00 6 × 744 m = 79 8. 454									Total Control of the			
Description	.3. /13. Enz	9/	(3)								 							

Remarks . Quantity Unit . 3 /14 Reinforcing bara for convole works 30 kg / 1 m3 4 correcte walend 2.939 m3 x 80 = 235.12 kg Calculation Details 1.237 m3 x 80 = 98.96 0.77 x 80 x 3 = 189.8 2000 m3 x 80 = 160 98.96 x 3 = 296.88 Caling wall 000/0 , Ø 600 2. \$ 800 Working Division: Description

Remarks Quantity Unit In of concrete value 862 m3 x 80 kg/m3= 148 96 114 Reinforcing bond for concrete works Calculation Details Working Division: Description

	€	SI .		130	9	D 450 650 D 500 700 D 600 800 D 700 900				0.51	
Romanke)0 (U	01	002 // 002	¥ 1	, , , , , , , , , , , , , , , , , , ,		7:			100 190	Cut let
	Omit Quantity		18, 150					02/	-6.3		
	Calculation Details Gabien matter 2= 500 mm	(wing well part)	1 \$ 600 (0 8 10 3) × 5 0 × 0, 5 = 2.75 m ³ 2.75 × 2 × 3 = 16.50	3 = 1,65	(1,c+0,3) x \$0 x 0,5 = 3,75 m3	3 \$1.000 (,2+0.3) × 5.0 × 0.5 € 3.75 113		4 12×12m (2,434x2+3.3x/5.0x0.5=20.42m3	5 15x 1.5m (3 154,2+ \$45) x 5.0 x0.5 = 24.395 w		
Working Division:	Description					6-20	4 9				

skr									-				
Remarks												. :	
	Lantity		206.60	\$1.82	82.912	5195							~
LA SECA	Calculation Details Unit	Box culverts	Open-cut excavation	Bockfill with selected material m3	Free draining backfill	Gravel bedeling m3							
Working Division: 14.2.	Description		105 09	/ob Bs	/07 E	6) 80/							

Division:
Working

Remarks																		
ity		520 - 522	30 46	0	376 - 2036	579 - 425	482							2063 - 522				
Unit Quantity		m 51	m 45.	a m	280c m	m ³ 424	113 E3							m³ \$22				
Description Calculation Details	3 CULVERT AND DRAINAGE WORKS	concrete pipe Di 600 mm	Los Reinferced concrete pipe, D. 800 mm	106 Reinforced concrete pipe D. LOOOmm	107 PV.C. perferaled drain pipe D. LOB mm	108 Free drainage material for subdrain	109 Concrete dara E. for pipe culvest and	weng waker	1. Pipe culised 33.83	3 Wing wall for wine culvered	14.16	4 Wing wall for box culvert	Total 83.482	In Coursele close F. Low Side dutch and	1. side dutch	507.	10/a/ 522, 200	
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Remarks				·					 					
Quantity		8 648			327 758				4373,275					
Unit		m ³			122				1117					
Division: Calculation Details	CULVERT AND DRAINAGE WORKS	Cancrete, dass H. for levelling concrete	1. Culvert 7 944	basin	T. 1 12 12 12 12 12 12 12 12 12 12 12 12 1	Items 109 and 110	7	3. Catch barn 53.160	1 0	Items 109 and 110	77	3 Catch Barn: 50.536	Draw ditch	Total 4373.275
Working Division:	9	"/												

Working Diyision:

																- 	:		
Remarks										,									
			**						754		9		14						
)	eg daniches						· \		453:522		 5.55 4		13.170						
1.1	1110		ton					1	m		m^{2}		1 m2				1.		:
	<u> </u>	CULVERT AND DRAINAGE WORKS	14 Reinforcing bars for concrete works	l'all l'all	2 Wing wall 4420.36	3 Colch basin 1191, 00	Total \$610.04		Gabion mattress t= 500 mm		Tring Liller t= 10 mm	, <u> </u>	Bituminous coating for contraction joint						
in Simulation	Description	£::	47						///5		4		4 47	12					

Remarks														
Unit Quantity		727	m ³ // 230	4 m 3 220 480	m 247 95	In 10.	m , 6 585	13 170						
Working Division: 4 Description Calculation Details	11.4 CONCRETE WORKS	Las Concrete class E for box culverts	Loy Concrete class H for levelling concrete	lab Farmwork Fl first for concrete item 103, 104	108 Formwork F3 finish for consentry the 103	(09 Renjacing hass for consists works	7. 110 Joint filler for culous	(12 Bituminan Coating for contraction joint						

Sr. No	Sr. No St No.	0	I	Entrance El	Exil El	Road El	Cuivert Length	Type	Soil Inickness	
		m3/s		E	ш	E C	m		E	
-	0144 50	2.00	5.0%	192.600	191.875	196.660	14.500	14.500 D=800mm /80	3.622	
1	2	200			100 300	194 785		15.400 2000mm x 2000mm I	4.166	
2-2	0+879.50	73.77	3.0%		100,00	201.17	•	# W. O.O.O		
.,	2+014 00	28.65	6.5%	180.110	178.407	191.160	•	ZOCOMINI A ZOCOMINI E		
	00 000 0	1 70	4 0%		185.454	188.125	006.6	9.900 D=800mm 90	1.6/3	
1 1	2.100.00	2000	%OUt		189.360	193.200	_	1.400 D=800mm 90	2.470	
2	3+100.00	77.7	20.01		100 300	103 200		0.100 D=800mm 20	1.505	
9-0	3+450.00	1.70	10.0%		0/0.0/1	224.0				
							87 500			$\widehat{\mathfrak{Z}}$
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								200d -		
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			Dian Langth	Bira I arath Onen Cut Excavation		Backfill		Crushed Stone Bedding	l	Pe D=600 P	ipe D=800 Pi	pe D=1000 C	Pipe D=600 Pipe D=800 Pipe D=1000 Concrete Class E		Form Work F1		Reinforced Bar	Bar
			mg man active	(10,5 3/01)		(12 3/02)		12.3 /03)		(12.3/04) (12.3/05) (12.3/06) (12.3/09)	12.3/05)	12.3/06)	12.3/09)		12.3/12)		(12.3/14)	
				11-1-1-1-1	Total	11mit (m.3)	Total	1 Init (m3)	Total	Unit (m)	Unit (m) Unit (m)	nit (m)	Unit (m3)	Total	Unit (m2)	Total	Unit (kg)	Total
	2	Š	Omit (m)	Omit (m3)			_∝	0.14	1 4			1	0.16	8.05	0.52	26.78	0.00	0.00
D=600mm	3 5	5.15					000	0.17	000				0.26	0.00	1.00	0.00	0.00	0.00
	Journal of the state of the sta			1.00			000	0.24	00.0		-		0.62	0.00	2.00	0.00	42.98	000
D-800mm	OB OB	-	45.9		ľ		18.15	0.17	5.42				0.26	8.12	0.68	21.35	0.00	00.00
	380						8.16	0.21	3.05				0.46	99.9	1.34	19.43	0.00	0.00
	×Ě			1.72			0.00	0.31	0.00				1:11	0.00	2.68	0.00	73.53	0.00
D=1000mm	6		0.0		00.0	0.73	00:0	0.28	0.00		•		0.35	0.00	0.76	0.00	00:0	0.00
	180						0.00	0.33	0.00				0.60	0.00	1.58	0.00	0.00	0.00
	E N	٠.		2.22		0.71	0.00	0.36	0.00				1.43	0.00	3.16	0.00	84.55	0.00
Total) ~			Ĭ		48.49		15.80	51.50	45.90	0.00		22.83		67.56		0.00
												į						
		Leneth	Open Cut	Open Cut Excavation	Backfill		Concrete Class E		Concrete Class H		Form Work F1		Form Work F3		Reinforced Bar	Bar		
			(12.2/07)		(12.2/06)		(Item12.4/C	03) (50	(Item12.4/04)		(ltem12:4/06)		(Item12.4/08)		(12.4/09)			
		Unit (m)		Total	Unit (m3)	Total	Unit (m3)	Total	Unit (m3)	Total	Unit (m2)	Total	Unit (m2)	Total	Unit (kg)	Total		
1200mm x 1200mm	~9.25			1		1	1.63	00:0	0.19	0.00	3.60	0.00	3.70	0.00	162.91	00.0		
1500mm x 1500mm							2.31	00:0	0.22	0.00	4.30	0.00	4.45	0.00	193.31	0.00		
2000mm x 2000mm		7		7		•,		(B)	0.27	11.23	5.30	220.48	5.95	247.45	232.36	9,666.34		
2000 mm v 2000							3.20	122.304	0.27	00.0	5.50	00.0		0.00	236.02	0.00		

_	7	Length	Open Cut Excavation		Backfill		Concrete Class E		Concrete Class H		Form Work FI		Form Work F3	<u> </u>	Reinforced Bar	Bar
			(17 2/07)		(12,2/06)		(Item12.4/03)		(Item12.4/04)		(ltem12:4/06)		(Item12.4/08)		(12.4/09)	
	Τ_	(Init (m)	11nit (m3)	Total	Unit (m3)	Total	Unit (m3)	Total	Unit (m3)	Total	Unit (m2)	[otal	Unit (m2)	Total	Unit (kg)	Total
1200mm x 1200mm	~9.25		2.42	8		0.00		00:0	0.19	0.00	3.60	0.00	3.70	00:00	162.91	0.00
	20.	000	3.36	0.00	96.0	0.00	2.31	0.00	0.22	0.00	4.30	0.00	4.45	0.00	193.31	0.00
	27.5~	41.6	4 97	206.60	1.25	51.82	2.94	99.98 87.	0.27	11.23	5.30	220.48	5.95	247.45	232.36	9,666.34
	27.75	0.0	5.18	0.00	1.31	0.00	3.20	00:0	0.27	0.00	5.50	0.00		0.00	236.02	0.00
	7.751~	0.0	5.54	0.00	1.37	0.00	3.74	00.0	0.28	00.0	5.70	00:0	5.95	00.0	270.47	00.00
	378-878	C		00:00	1.31	0.00	3.61	00.0	0.32	0.00	5.50	0.00	6,43	0.00	317.29	0.00
	5.751~	00		000	1.37	0.00	4.20	0.00	0.32	0.00	5.70	0.00	6.43	0.00	331.62	0.00
+-	+	41.6		206.60		51.82		09:907		11.23		220.48		247.45		9,666.34

LONGITUD DE CUNETAS

CAMINO DE ACCESO: LA SECA

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8.0	0÷300.00 - 0÷5∰.0 0	0.00	240.00	240.00
6.5	0+540.00-0+3 ⊙ 00	0.00	270.00	270.00
<i>3.5</i>	0+3 €9 00 - 1+100.00	0.00	210.00	210.00
6.0	1+10000 - 1+330.00	0.00	230.00	230.00
8.0	1+360)00 - 1+400.00	0.00	70.00	70.00
	1 + 400.00 - 1 + 440.41	40.41	40.41	90.82
	1+440,41 - 1+490.00	0.00	49.59	49,59
1.5	1+460,00 - 1+720.00	0.00	230.00	230.00
	1 + 720.00 - 1 + 780.00	∂ 0.00	60.00	120.00
5.5	1 + 780.00 - 1.+@0.00	0.00	120.00	120.00
	1+800,00-2+000.00	0.00	100.00	100.00
	2+084.10 - 2+115.13	VV 51.03	51.03	102.05
	2+115.13-2+240.00	0.00	124.87	124.87
	; 2+240.00 - 2+ 27 4.39	34.38	34. 3 8	68.76
	2+274.38 - 2+340.00	0.00	55.62	65.62
	2+440.00 - 2+490.00	VV 50.00	50,00	100.00
	2+580.00 - 2+694.57	v 0.00	114.67	114.67
	2+740.00 - 2+760.00	VV 120.00	.0.00	20.00
	2+760.00 - 2+837.58	77.58	77.58	155.16
	2+850.00 - 2+920.00	0.00	40.00	40.00
	12+920.00 - 3+050.00	160.00	150.00	320.00
	3+080.00 - 3+163.53	0.00	83.53	83.53
	ใ3+163.53- 3+2 00.00	VV 36.47	36.47	72.94
	3+220.00 - 3+240.00	0.00	20.00	20.00
	3+240.00 - 3+350.00	110.00	110.00	220.00
	3+350.00 - 3+514.48	0.00	164.48	164.48
	3+514.48 - 3+600.00	85.52	85.52	171.04
	3+600.00 - 3+714.29	0.00	114.29	114.29
	3+714.29 - 3+720.00	5.71	5.71	11.42
	3+720.00 - 3+740.00	0.00	20.00	20.00
-	3+740.00 - 3+750.00	10:00	10.00	20.00
	3+750.00 - 3+760.00	10.00	10.00	20.00
	3+760.00-3+824.03	0.00	64.03	64.03
				1
			LONG. TOTAL:	4091.46

Total dangthe addition

4091.46

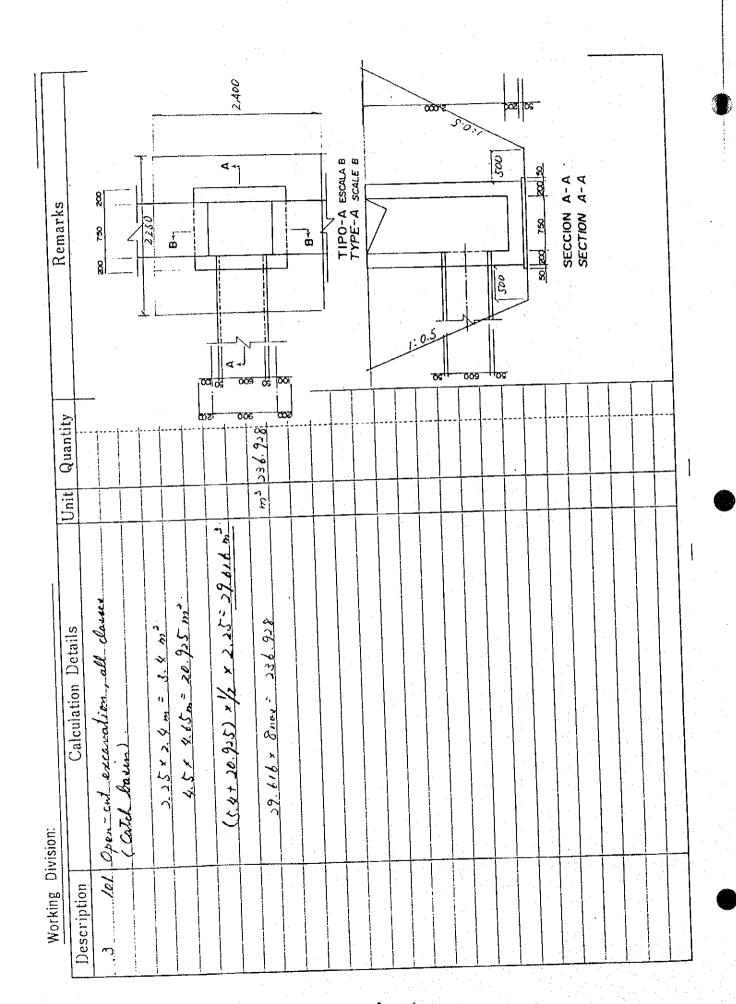
10×10=100

Catch basin \$ 600

Drain Pipe Quantities

		,	6	T	n v C Bing D 200mm (m) Orainage Material (m3)	Drainage Mat	erial (m3)
Access Road Name	Length (m)	Excavat	Excavation (m3)	P. V.C. Pipe D	(III) IIIIII007=1	Diamago mu	(1.1.2)
))	Per meter	Total		Total	Per meter	Total
Conguillo	5.823.120		1,397.549		5,823.120	0.200	1,214.703
Severno Tramol	1.535.870	0.240			1,535.870	0.20	320.382
Severno Tramo?	2,472.920	0.240	593.501		2,472.920	0.20	515.851
Tos Cusuives	7.324.030	0.240	1,757.767	·	7,324.030	0.20	1,527.793
Doza Honda	266.710	0.240	64.010		266.710	0.206	55.636
I a Seca	2.035.376	0.240	488.490		2,035.376	0.20	424.579
Ea Seca	786.460		188.750		786.460	0.20	164.056
Cana Dulce	1,200.560	0.240	288.134		1,200.560	0.200	250.437
Membrillo Outlet	30.000	0.240	7.200		30.000	0.209	
Grand Total			5,154.011		21,475.046		4,479.695

Excavation V=(0.8+0.4)*0.4/2 = Free Drainage Material V=0.24-3.14*0.1^2 =



	Kemarks																
	tity					 920			 		 	 	.		 		
	duantity	1				309							ļ				
	Unit					ma				-							
)ivision:	Calculation Details	Backfill with selected	(catch havin)	1911-11813×13-125×14×005	٠٠ (٥ (١ م م	26.24 x R= 209.92	1.000										
Working Division:	Description	3 (02															

															· "	 		
(\$	₩	151		150		6,1	D 450 630 D 500 700 D 600 800	0 000 1.000 0 0.000 0 0 0 0 0 0 0 0 0 0					K-1-1-1-	* + /*, -		1 001 1 001		
Remarks	(A) (B)	0011	007	100 F A 100	In let							£ (c)		a) 100 1/100 1/100 1000 1000 1000 1000 10	Outlet	
Quantity			2	(C)					4	001		2		4				-
111111				1 2 /CE M	2 3 = = = = = = = = = = = = = = = = =	۴	77		•		m 3		<u> </u>					
	Calculation Details			(4,= 650 mm b= 200 mes)	11 x 0. 95 x 6.15 m = 0.157 1.3 0 975 x 0. 65 x 0.15 x 13 x 2 = 0.05	17 0 975 × 0.2 = 0.215	1,1 × 1,0 × 6.15 m² 0.165 m3	1,05 × 0, × 12 × 0, 13 × 6 2 × 12 × 11 × 11 × 11 × 12 × 0 2 × 0, 23/ m ³	\ \ \ \ \ \		1,237		x 8 not = 6.16					
Jivision:	Concrete dass E	(wing wall)	Kpipe 1ype>	1. \$ 600	× 5'26' 0	0 174		(x / y (b) (x / x / y (b) (x / y	6				C.77 x 8					
Working Division:	Description																	

Remarks		Ð	001.		9	> >	200	1150 150	(C) 100 150 150	Lulei	L_I	(wm)			000 0000 0000	 	0.500	(0)		De C	*	- 42 @ (o) o - 1				Ouriel	
Onsortity																	80.										-
1 12.4			+				-	_	1	-		_					8			-					_		
	Calculation Details	4 - 1 - 1 - 2 9 m	b=1,0m h= 0.932 1,2 = 1.3 = 1338 m	H=06m		10: 13×1.166×0.15 = 0.227 m3		. [Q: 13 x 1,332 x 0,15 = 0.240 m3:	10. 1937× 1398 × 1/2015× 2 = 0.195 m3	1		(9) 0 3x 1 6 x 1.3 x 2 = 0.468 m3		20 m3	2,0 x 4 = 8.0										
Working Division:	Description	3 109																									

che , claud E che , claud E co , 2.0 m (1) co , 2.0 m (1) 3.6 x 2.6 x 0.35 = 3.26 0.3 x 1.25 x 2.6 = 0.725 0.242 x 2.x / = 20.484 0.242 x 2.x / = 20.484 0.342 x 2.x / = 20.484	Remarks	2.95 2.95 2.95 2.95 2.95	395		14/	3.3		
Calculation Details e.fe , clace E ox 20 m (1) ox 20 m (1) 2.5 x 2.6 x 0.35 = 3.276 o.3 x 1.25 x 26 = 0.975 o.3 x 1.25 x 26 = 0.975 o.3 x 2 x / = 20.489					16			
60,	Calculation Detail	20 x 2.0 m	10.7+3.95) ×2.35/2+0.7×10	25 = 3.6 × 0.35 = 3.2 0.3 × 1.25 × 26 = 0.9	10.242	242 X 2 X / = 20.		

	Remarks		000''	7.200	02/6	2,450	450	25 3.606 826 3.675			250		2,700	 054	007 6 00	4050	-			
liwieion.	Calculation Details Unit Quantity	Concrete days E	The state of the s	5.2.0 x 20 (M)	(110+365)x>,45x 1/2-11.0	• 1	= 7.576 m ³		2.7 x 3.70 x 0.45 = 4.476	7 7 7 7 7 7	13,004 m3		13.004 x 2x1 = 26.008 m3 36.000							
Warking Division:	Description	3 /09								<u> </u>	2	6.+								

3 //o Conval, class E for such wilch and Unit Quantity (catch brain)	Remarks .	B A -		8	TIPO-A ESCALA B TYPE-A SCALE B	· · · · · · · · · · · · · · · · · · ·		- 			50 200 150 200 20	SECTION A-A		
Calculation Details Unit Quant Law. Ly Aur. E for Anti-clich, and Law. Sav. E for Anti-clich, and Ls x .30 x 2.2 - 255 x 0.7	-		00 00 00				os:	→))	os				
Calculation Details Later E for wish child and Low 20 x 2.2 15 x 130 x 2.2 - 075 x 0.9 x 2.2 939 - 035 n x 0.2 = 18 896 1860 x 3 = 14 896	Quantity		1 7 7				 							
Calculation Details Laur F for Auticular and Laur F for Auticular and Laur F for Auticular and 15x 130 x 2.2 15x 130 x 2.	Umit		7 E		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					.				
	Calculation Details Le clare E for such outch-	0 x 2.2 0 x 2.2 0,5 x 0,9 x 20 = 1,939 m 5n x 0.2 = 1,862 m ³	1.862 x 3 = 14.896											

Calculation Details	Chit	et ualitity	Nelliai Ko
110 Concrete days Enformiote delet and			
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
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- 0.75 x 0.3 x /s - 0.12/ m			220 600 150,110, 140
0.131 x 4191.46 m : 407.167	32	to/ Las	\$6.7
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			Capa de rodadura
			Poved Roadway
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S	D 100 (500) D 100 (500) D 100 (500) D 500 (500) D 500 (500) D 700 (1,000) D 800 (1,000) D 900 (1,100)		
Remarks 1000	11 16 100 100 100 100 100 100 100 100 10	100 100 0ut/et/	
it Quantity	7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	4 001	
Calcul Sco Pipe Cure	0.189 m ³ 0.22/ m ³ 0.390 m ³	1,000 p.pe. 1,5 x 1,773 x 0.1 = 0.266 m ³ 1,5 x 1,896 x 0.1 = 0.084 m ³ 0,550 m ³	
Working Division: Description 3 /// Conc.	8 7		

Remarks			50	1			0,7		54:0		3.3	3.6						005	<u></u>		E	7,650	7,200	366 6.368			
	Unit Auantity									m 2 936													 -				
	Calculation Details	Connote da	100	3 2 0 20 (1)	1 3x (4.056x 2+3.95) x C./x 0.362 m3	ļ		1	(, 22 6 m	1,358 × 2 × 1 = 2.956					1		(wing) 0.3x (4.337x2+3.80) x0./= 0.368	!		1, 324 m³	į						
Working	Description	/// *															·										

43/1		7:		
Unit Quantity				
Working Division: Calculation Details 3	6 25 x 20 m (1) (Using) 030x (4.237x2+43)x0/= 6.383			

rks	88 22 2	COI	000 0		TIPO-A ESCALA B TYPE-A SCALE B		0S	009	28 20 20 20 20 20 20 20 20 20 20 20 20 20	SECCION A-A SECTION A-A	
Unit Quantity		m³ 1.400									
Calculation Details L. class H. fr. Levelling cancut	(catch barin) ren / no.	46									
Working Division: Description 3 /// Cencre											

Remarks	001	1130 14 130 100 100 100 100 100 100 100 100 100	1. led 130 L1. Q Q 6 m ²	6	0,000 1,000 1,000 1,000	∌	(B)		150	100 100 100 100 100 100 100 100 100 100	
Working Division: Scription Calculation Details Unit Quantity	77	n 2	(b) (0.15+1.125) × 0.(5/2 × 2 = 0.829 m² (c) 0.5× (1.1 × 2 = 0.03 m² m² (d) 0.2 × (1.1 + 1.125 × 2) + 1.1 × (0.4+0.2)	100-10 = 1,100 x (1) 1 = 1,100 x	(f) (0.15+1.20) × 0.7 × 12 × 2 = 0.1945 (g) 0.15 × 0.1 × 2 = 0.03 p ³ (g) 0.2 × (1.1+1.30×2) + 1.1 × (0.4+0.2) (g) 0.2 × (1.1+1.30×2) + 1.1 × (0.4+0.2)	\$.899.m²	3.05 x 8 mx 2 24.4 m2 24.400				

Calculation Details	Unit	Quantity	Remarks	rks.
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63×(0.6+0.9)			C====	D 900 1.100
10/ m²		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	4	
	3.5	36.404	٠.	
				(B)
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			100 100	
	_		Outlet	}
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6-29/

Remarks	34	97.6	0) 0 (55.1	(D 13 39					\$	(b) 2,630	1,200	36 337	D 3,975			
Quantity					295 95					-						
Unit					2											
Calculation Details	20+20 m (1) (107+395) *>>5 x 1/2 + 0.7 x 10.7	= 17.08/	(3.6×		28.181 x 2 x 1 = 56.362		(10.85+3.81 × 2.35	(1) (1) 1, 1, 2, 1 . 1, 42 m²	(3.6752,6-3.3	1.6x2.6 = 4.	7	29.019 m ³				
Working Division:	3 //2															

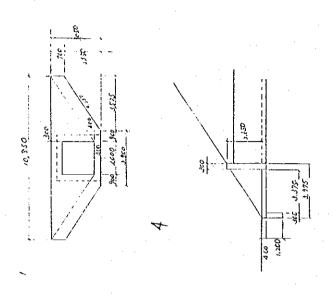
Romarke	Nellat Na	\	035	9	2700		@ 05"		47.50			:		300			7,920			@ 300 375 300	3975			
- 1	Unit Quantity										m ² 59.772													
	Calculation Details U1	Formwork Fl firesh	206	365) 1745× 12+07×110	Q0.7×0.35×2 = 0.49	l	16x	֡֟֝֟֝֟֟֝ <i>֟</i>		29.886 m²	>9.886 x 2 x 1= 59.772.		4 7. 4 × 2.0 (1)	_	/ E -	(G) 0.7 × 0.3 × 2 = 0.42.	(C) (3675 x 1, 6 - 3.375 + 1.2) x 2 = 3.660	B. 6,31 = 4,96	1 1	30.569 m2				
Working Division:	Description	3//																						

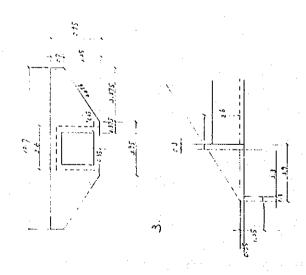
			os os		
Remarks 200 750 200	4	TIPO-A ESCALA B TYPE-A SCALE B	1 11 1	SECCION A-A SECTION A-A	
	000 000 000	os l	009 005		
it Quantity	77 23 780				
Unit Unit	6				
Calculation Details El finish (x) 2.3 x 2 = 5.06 2.3 x 2 - 0.35 ff = 6.00	x & = 83.16				
Division: (1) (2) (1) (2) (2) (3) (3)	(395.0)				
Working Division: Description 3 // Ferm (Cale					
		8-294			

Working Division: Calculation Details	Unit Que	Quantity	Remarks	ks	
Formwerk F3 finish) ب انه		
(Way wall)			001	5(
1. \$ 600		5	7 000		
0.8 x 0.65		-			
(B) 0.975 x 0. 65 x 2 x 2 = 0.634 m²			100	150	
i I			J., [e]		
70			1 / - / - / - / / / / / / / /	-	·
l.			`` <u>`</u> `È	O 6 mm	
Q 1.05 x 0,70 x 12 x 2 - 0.735 m		-	2		
> 103 m2			++ 1	D 500 (500)	
1.13 × 8 = 8.976	3.00	926 2		0.000 1,000	
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Remarks	100 100 100 100 100 100 100 100 100 100	5.		100
Unit Quantity		2 de la companya de l	\$	
Details	2 = 4.43 m² 2 = 4.125 m² 32 4.559 m²	2 = 1,303 m² 3,460 m²		
Calculation Esmurale, F3 finish Curving wall	2 & 800 (a) 0/x/3+1.0x 0.866 (b) 1.393 x 0.866 x 2 x 2 = 0 (c) 0.1x63+1.0 x 0.932	3 480 × 4 - 13.920		
Working Division: Description 3 / / A Form		8		
		6-296		

	Kemarks	7.55	2527	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	26.96	`	30	C	327	 2.7	245	. 7.6		87	2211 40 5 2411	2012 3012	25.6		3 =-	 0/7	o	35* [7]	7.7.
	Unit Quantity															m2 39,942							ļ
ivision:	Calculation Details	Ferrawark F3 finish	(Wing wall)		1. 1. 2. 1. 2. 1. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	-134/2 = 10894 m3			2. 1.5 x 1.5 m	- 15 × 14.47/ m			3 2000 m (1)	(107+395) x 2.25/2+0.7x10.7	6	9 971 x 5 x /= 31,942	\ \	4. 2.0 m , 2.0 m (1).	- 2.0° = 1.9.869. m2				
Working Division:	Description						And the state of t																





Remarks	1,000	Color State Color	105 265 135 2435	ام دو		2700	CONTRACT		700	1,000	300 2.200 900	31	Fr annual property of the second	 <u>.</u>	35,82	
Unit Quantity			6 m ² 43 292			2/ {34			4.7	8 30 m2						
ivision: Calculation Details	Formwork F3, finish	エンOx20m (用)		>) (46×4×/-4>	6 25×20(I)	(11.35+43) × 2.35 × /2 + 0.7 × L			7 25x 20 (1)	-25×20=>						
Working Division:	m															

				<u>cco,s</u>	poz	ं	
Remarks	4-1	· · · · · · · · · · · · · · · · · · ·	TIPO-A ESCALA B TYPE-A SCALE B			→	SECTION A-A
	00 00 00 00 00 00			og!	009 05		
Quantity	\$15 OS						
Unit	, z , Q						
Calculation Details finish	x2-031 -3317 6317 4	1 ! 1 !					
ark F3	0.75 x 2.0 x 2 0.90 x 2.0 x 2						
Description 3 / /3 Ferma							

Remarks		220 600 150,110 HO	4% 5 8 8 5 8 8 5 8 5 8 5 8 5 8 5 8 5 8 5	Capa de rodadura								
t Quantity			m2 4216 609						-			
ils Unit	Lan	\$ /	6									
Sion:		her	0.671 + 0.335 = 1.006 1,006 × 4,91.46 = 921									
Working Division:	Description 3 //3 E)										

Remarks																			
III.it Oughtity																			
	Calculation Details	114 Reinforcing bone for concrete souths	(Winig wall)	7 - 1 - 8	30 kg / m 4 cosoure a remain	7. 6600	7m3 x 80 =	0.77 × 80° 616 kg		\$ 4 0 R	M × 80 - 1	64 97° 4 8991		 3 61000	ĺ				
Working Division:	Description	1. 3 /14							-										

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Remarks			
Unit Quantity			
Calculation Details	Reinfacing Bo (aling wall) 20 kg/m ³ 4312 x 84 215x15 6704 x 80	10.242 x 80 = 819.36 kg 519.36 x 2x 1 = 1638.72 4. 2.0 x 2.0 n, (1) 11.001 x 80 = 88 kg	5 20× 2.0m (里) 13.004 × 80 = 1040.32 kg 1040.32× 2× 1= 2080.64
Description		-,3°6-3	

Working Division:				1)	
Description	Calculation Details	Unit	Quantity	Remarks	
	in Do law in land In concrete works				
	(Cata layer)		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		•
	80 kg/ 1m3 of concerto value	13	1.2.		
	10 3 1 5 1 1 5 1 1 8 3 7 m 3				
	1 com x 00 com				
	74.191. F = 1,91. 6P				
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ks		51			150		-	0.500 7.00 0.500 7.00		00000			7	V	\-\-\-\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			0.2	
Remarks		61	7 000	1,150	: 1	L	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	7			W				43		1,150	100	La Cino
Quantity				44		76.0													
Unit				3		m m													
Calculation Details	Gabien matters t= 500 mm	(wing well part)		(08103) × 50 × 05 = 2.15 m3	`	(1x+0,3) x 3.0 x 0,5 = 3,25 m3	3.25x2x 4 = 26.0	3 \$1000	(1,2+0.3) × 5.0 × 0.5 = 3.75 m²			4 13 4 12 m	1 1		(15 1.5 m	1 1			
Working Division:	.3 //5																		