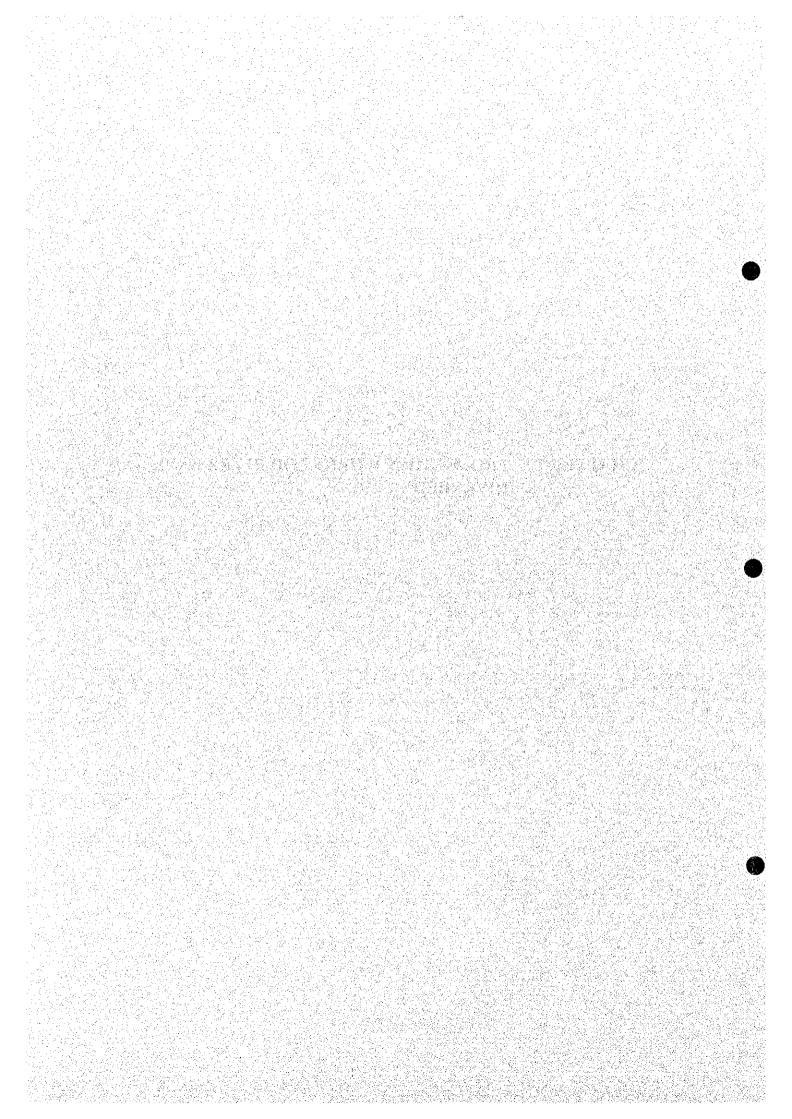
## CHAPTER 2 PROTECTION WORKS FOR RIVER BANK AND RIVERBED



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Z. ) Revetment for Channel Side Slope of 1:2.0 REVETMENT FOR SIDE SLOP OF 1:2.0 (WET STONE MASONRY) WF.13L+35.0~WF.15L+30.0

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	CALCULATION	• • •		RESULT
🗗 SRTR	UCTURAL EXCAVATION		n deter sign e	a anti-section
A <sub>1</sub> =	(1.10 + 2.50) x ½ x 0.60		1.080 m <sup>2</sup>	
<u> </u>	(1.10 + 2.50) x 72 x 0.00	····	1.000 m	
A <sub>2</sub> =	(4.60 + 6.10) x ½ x 0.50	=	2.675 m <sup>2</sup>	
	a second a second a second		Standard Standards	
A <sub>3</sub> =	(1.118 x 6.00 + 1.00) x 0.50	2	3.854 m <sup>2</sup>	
A —	(0.50 + 1.20) x ½ x 0.70		0.595 m <sup>2</sup>	
<u> </u>	$(0.30 + 1.20) \times 72 \times 0.70$	-	0.393 m	
	$\mathbf{A}$	<b>—</b>	8.204 m <sup>2</sup>	
			na an tao amin'	
V =	8.204 x (42.935 + 27.672 + 60.00)	= .	1071.50	1071.5 m
	la terre de la companya de la construcción de la construcción de la construcción de la construcción de la cons Construcción de la construcción de l	171. J. J.	Anton (2014), Second Control (2014) 	
BACK	FILL WITH SELECTED SOIL			
		i di		
		(a. ar		
A <sub>l</sub> =	(0.50 + 1.00) x ½ x 0.50 x 2	=	0.75 m <sup>2</sup>	
Λ	(0.50 + 1.10) x ½ x 0.60		0.48 m <sup>2</sup>	
<u> </u>			0.40 111	
A =	1.23 m <sup>2</sup>			
				5. 1985 S. 199
V =	1.23 x (42.935 + 27.672 + 60.00)	<b></b>	160.65	160.65 m <sup>-</sup>
<u> </u>				
		<u>an an</u> An an		
GRAV	EL BEDDING			
			lan ng sara biya biya. Din ng sara biya biya	A STATE OF
				signal de de
V =	(1.118 x 7.00 + 0.70) x 0.25 x 9.70		20.676 m <sup>3</sup> /10.00m	and a star
	20.676 m <sup>3</sup> /10.00 m x (42.935 + 27.672 + 60.00)		270.043	270.043 m
	<u></u>			
			a na cat <u>erada a</u> a	
<sup>라</sup> WET S	TONE MASONRY	e di se		
and an inclusion The second	n na seu ann an Anna Anna Anna Anna Anna Anna A			
	(1.118 x 7.00) x 0.25 x 9.70	-	20.676 m <sup>3</sup> /10.00 m	
V =	(LILLO A LIVO) A VIEV A JUV		20.070 III / 10.00 III	
<b>v</b> =		e graf stjer		and the state of the second
	20.676 m <sup>3</sup> /10.00 m x 130.607	- en frier =	270.043	270.043 m

## TYPE OF WORK:REVETMENT FOR SIDE SLOP OF 1:2.0 (WET STONE MASONRY)LOCATION:WF.13L+35.0~WF.15L+30.0

CEMENT MORTAR POINTTING $A = (1.118 + 6.00 + 0.70) \times 9.50$ = $A^{T} = 71.858 \text{ m}^{2}/10.00$ =         GABION MATTRESS $A = 0.50 \times 3.00$ = $V = 1.50 \times (60.00 + 39.531 + 48.694)$ =	71.858 m²/10.00 m 938.516 1.50 m² 222.338	938.516 m <sup>2</sup> 222.338 m <sup>3</sup>
$A = (1.118 + 6.00 + 0.70) \times 9.50 =$ $A^{T} = 71.858 \text{ m}^{2}/10.00 =$ $GABION MATTRESS$ $A = 0.50 \times 3.00 =$	938.516 1.50 m <sup>2</sup>	
$A^{T} = 71.858 \text{ m}^{2}/10.00 =$ <b>GABION MATTRESS</b> $A = 0.50 \times 3.00 =$	938.516 1.50 m <sup>2</sup>	
$GABION MATTRESS$ $A = 0.50 \times 3.00 = 0.000$	1.50 m <sup>2</sup>	
$GABION MATTRESS$ $A = 0.50 \times 3.00 = 0.000$	1.50 m <sup>2</sup>	
$A = 0.50 \times 3.00$ =		222.338 m <sup>-</sup>
$A = 0.50 \times 3.00$ =		222.338 m <sup>2</sup>
		222.338 m <sup>-</sup>
		222.338 m
$V = 1.50 \times (60.00 + 39.531 + 48.694) =$	222.338	222.338 m <sup>-</sup>
RUBBLE STONE FILLING	<u>a da ang kana ang kana ang kana</u> Ang kana ang	
	(a) A start of the second start of the seco	
$A = \frac{1}{2} \times 0.50 \times 1.00 =$	0.25 m <sup>2</sup>	
	26.074	25.974
$V = 0.25 \times (60.00 + 36.895 + 46.60) =$	35.874	35.874 m <sup>3</sup>
BASE CONCRETE		
• CONCRETE (TYPE-CI)		
$V = 2.20 \text{ m}^3/10.00 \text{ m} \times 145.889 =$	32.096	32.096 m <sup>3</sup>
GRAVEL BEDDING		
$V = 0.70 \text{ m}^3/10.00 \text{ m} \times 145.889 =$	10.212	10.212 m <sup>3</sup>
	10.412	10.212 11
• FORM (H < 4,0 m)		
		, , , , , , , , , , , , , , , , , , , ,
$A = 10.83 \text{ m}^2 / 10.00 \text{ m} \times 145.889 =$	157.998	157.998 m <sup>-</sup>
REINFORCING BAR		
$W = 0.10 \text{ tf} / 10.00 \text{ m} \times 145.889 =$	1.459	1.459 tf
JOINT FILLER		n <mark>e angli sa na Ali Agus s</mark> Ali Agus sa na Ali Agus sa na Mangli sa na Ali Agus
$A = 0.22 \text{ m}^2/10.00 \text{ m} \times 145.889 =$	3.210	3.210 m <sup>2</sup>
LOG PILE	an ing a ang pang ang pang pang pang pang pa	
$L = 10.00 \text{ m} / 10.00 \text{ m} \times 145.889 \cong$	146.000	146.000 m

## TYPE OF WORK:REVETMENT FOR SIDE SLOP OF 1:2.0 (WET STONE MASONRY)LOCATION:WF. 13L+35.0~WF. 15L+30.0

5 A 1 7 1 1 A 1 7 A 1		
CALCULATION	a da anti-character de la composición d En la composición de l	RESUI
PARTITON WALL		
	in and water and in a second	
n = 12 places		
• CONCRETE (TYPE-C1)		
	n de la companya de La companya de la comp	
$V = 1.279 \text{ m}^3/\text{place x } 12$	= 15.348	15.348
		and a star of
GRAVEL BEDDING		
$V = 0.512 \text{ m}^3/\text{place} \times 12$	= 6.144	6.144 г
• FORM (H < 4.0 m)		
$A = 8.525 \text{ m}^2/\text{place x 12}$	= 102.300	102.300
		, CAISOO
REINFORCING BAR		
W = 0.077  tf/place  x 12	= 0.924	0.924
	an an an an an an tar tar tar.	
JOINT FILLER		
	- 25 572	05 670
$A = 2.131 \text{ m}^2/\text{place} \times 12$	= 25.572	25.572
	= 25.572	25.572
$A = 2.131 \text{ m}^2/\text{place} \times 12$	= 25.572	25.572
	= 25.572	25.572
A = 2.131 m <sup>2</sup> /place x 12 END WALL	= 25.572	25.572
$A = 2.131 \text{ m}^2/\text{place} \times 12$	= 25.572	25.572
$A = 2.131 \text{ m}^2/\text{place } \times 12$ END WALL $n = 4 \text{ places}$ • CONCRETE (TYPE-C1)		
A = 2.131 m <sup>2</sup> /place x 12 END WALL n = 4 places	= 25.572 = 6.140	
A = $2.131 \text{ m}^2/\text{place x } 12$ END WALL n = 4 places • CONCRETE (TYPE-C1) V = $1.535 \text{ m}^3/\text{place x } 4$		
$A = 2.131 \text{ m}^2/\text{place } \times 12$ END WALL $n = 4 \text{ places}$ • CONCRETE (TYPE-C1)		
A = $2.131 \text{ m}^2/\text{place} \times 12$ END WALL n = 4 places • CONCRETE (TYPE - C1) V = $1.535 \text{ m}^3/\text{place} \times 4$ • GRAVEL BEDDING	= 6.140	6.140 1
A = $2.131 \text{ m}^2/\text{place} \times 12$ END WALL n = 4 places • CONCRETE (TYPE-C1) V = $1.535 \text{ m}^3/\text{place} \times 4$ • GRAVEL BEDDING V = $0.682 \text{ m}^3/\text{place} \times 4$		6.140 1
$A = 2.131 \text{ m}^{2}/\text{place x } 12$ END WALL $n = 4 \text{ places}$ • CONCRETE (TYPE-C1) $V = 1.535 \text{ m}^{3}/\text{place x } 4$ • GRAVEL BEDDING $V = 0.682 \text{ m}^{3}/\text{place x } 4$	= 6.140	6.140 1
A = $2.131 \text{ m}^2/\text{place} \times 12$ END WALL n = 4 places • CONCRETE (TYPE-C1) V = $1.535 \text{ m}^3/\text{place} \times 4$ • GRAVEL BEDDING V = $0.682 \text{ m}^3/\text{place} \times 4$	= 6.140	6.140 r
A = 2.131 m <sup>2</sup> /place x 12 END WALL n = 4 places • CONCRETE (TYPE - C1) V = 1.535 m <sup>3</sup> /place x 4 • GRAVEL BEDDING V = 0.682 m <sup>3</sup> /place x 4 • FORM (H < 4.0 m)	= 6.140	6.140 r 2.728 r
$A = 2.131 \text{ m}^2/\text{place x } 12$ END WALL $n = 4 \text{ places}$ • CONCRETE (TYPE-C1) $V = 1.535 \text{ m}^3/\text{place x } 4$ • GRAVEL BEDDING $V = 0.682 \text{ m}^3/\text{place x } 4$ • FORM (H < 4.0 m) $A = 10.231 \text{ m}^2/\text{place x } 4$	= 6.140 = 2.728	6.140 r 2.728 r
A = 2.131 m <sup>2</sup> /place x 12 END WALL n = 4 places • CONCRETE (TYPE - C1) V = 1.535 m <sup>3</sup> /place x 4 • GRAVEL BEDDING V = 0.682 m <sup>3</sup> /place x 4 • FORM (H < 4.0 m)	= 6.140 = 2.728	6.140 r 2.728 r
A = $2.131 \text{ m}^2/\text{place} \times 12$ END WALL n = 4 places • CONCRETE (TYPE-C1) V = $1.535 \text{ m}^3/\text{place} \times 4$ • GRAVEL BEDDING V = $0.682 \text{ m}^3/\text{place} \times 4$ • FORM (H < 4.0 m) A = $10.231 \text{ m}^2/\text{place} \times 4$ • REINFORCING BAR	= 6.140 = 2.728 = 40.924	6.140 n 2.728 n 40.924
$A = 2.131 \text{ m}^2/\text{place x } 12$ END WALL $n = 4 \text{ places}$ • CONCRETE (TYPE-C1) $V = 1.535 \text{ m}^3/\text{place x } 4$ • GRAVEL BEDDING $V = 0.682 \text{ m}^3/\text{place x } 4$ • FORM (H < 4.0 m) $A = 10.231 \text{ m}^2/\text{place x } 4$	= 6.140 = 2.728	6.140 n 2.728 n 40.924
A = $2.131 \text{ m}^2/\text{place x } 12$ END WALL n = 4 places • CONCRETE (TYPE - C1) V = $1.535 \text{ m}^3/\text{place x } 4$ • GRAVEL BEDDING V = $0.682 \text{ m}^3/\text{place x } 4$ • FORM (H < 4.0 m) A = $10.231 \text{ m}^2/\text{place x } 4$ • REINFORCING BAR W = $0.08 \text{ tf}/\text{place x } 4$	= 6.140 = 2.728 = 40.924	6.140 n 2.728 n 40.924
A = $2.131 \text{ m}^2/\text{place} \times 12$ END WALL n = 4 places • CONCRETE (TYPE-C1) V = $1.535 \text{ m}^3/\text{place} \times 4$ • GRAVEL BEDDING V = $0.682 \text{ m}^3/\text{place} \times 4$ • FORM (H < 4.0 m) A = $10.231 \text{ m}^2/\text{place} \times 4$ • REINFORCING BAR	= 6.140 = 2.728 = 40.924	6.140 n 2.728 n 40.924
A = $2.131 \text{ m}^2/\text{place x } 12$ END WALL n = 4 places • CONCRETE (TYPE - C1) V = $1.535 \text{ m}^3/\text{place x } 4$ • GRAVEL BEDDING V = $0.682 \text{ m}^3/\text{place x } 4$ • FORM (H < 4.0 m) A = $10.231 \text{ m}^2/\text{place x } 4$ • REINFORCING BAR W = $0.08 \text{ tf}/\text{place x } 4$	= 6.140 = 2.728 = 40.924	25.572 6.140 r 2.728 r 40.924 0.320 t 8.524 t

## REVETMENT FOR SIDE SLOP OF 1:2.0 (WET STONE MASONRY) WF.13L + 35.0 ~ WF.15L + 30.0

CALCULATION		RESULT
GABION CYLINDER	an a	
CLINICUL DIDED (2500		
GABION CYLINDER Ø 500		
$V = \pi / 4 \times 0.50^2 \times 11.826 \times 6 \times 2 =$	= 27.864	27.864 m <sup>3</sup>
SOIL FILLING		
	7614	7.614 m <sup>3</sup>
$V = (11.826 \times 3.00 \times 0.50) \times 2 - 27.864 =$	= 7.614	7.014 III
	<u>ter an </u>	
	in the second	
	aan oo ah dhagaal ay noor iya. Taalaa	
WEEP HOLE		
$N = 510.00 \times 6 \text{ places} / 10.00 \text{ m}$	= 306 places	
	n de la companya de Esta de la companya d	an a
$PVC Pipe \emptyset 50  (L = 0.80 \text{ m / pipe})$		
$L = 306 \times 0.80$	= 244.800	244.800 m
		af lindered ber
	Andreas and a straight straigh	
FILTER CLOTH		1888년 1월 1988년 1월 19 1월 1988년 1월 1 1월 1988년 1월 1
A 044 th 1-4 204	- 261.036	261 936 m <sup>2</sup>
$A = 0.856 \text{ m}^2/\text{place x 306}$	= 261.936	261.936 m <sup>2</sup>
$A = 0.856 \mathrm{m^2/place} \times 306$		261.936 m <sup>2</sup>
$A = 0.856 \text{ m}^2/\text{place x 306}$	= 261.936	

OCATION : WF. 64R + 14.610 ~ WF.65R + 38.00 (LOWER C) CALCULATION	RESULT
STRUCTURAL EXCAVATION	
AREA OF STRUCTURAL EXCAVATION	
A = 8.763 m² (Refer to Package 1)	
$V = 8.763 \text{ m}^2 \times 61.00 \text{ m} = .534.543$	534,543 m
· BACKFILL WITH SELECTED SOIL	
AREA OF BACKFILL	
AREA OF PACKFILL $A = 1.230 \text{ m}^2 (\text{Refer to Package } 1)$	
$V = 1.230 \text{ m}^2 \times 61.00 \text{ ln} = 75.030$	7 <u>5,030 m</u> ³
GRAVEL BEDDING	
$V = 23.387 \frac{m^3}{10.00m}$	
v' = 23. 3817 m²/10.00 in x bl.00 m = 142.661	142.661 m
WET STONE MASONRY	<ul> <li>An and a second sec second second sec</li></ul>
$V = 23.387 \text{ m}^3/10.00 \text{ m}$	
$V' = 23.387 \text{ m}^3/10.00 \text{ m} \times 61.00 \text{ m} = 142.661$	142,661 m <sup>3</sup>
CEMENT MORTAR POINTING	
$A = \frac{82.702}{10.00} m^{2} / 0.00 m$	
$A' = 82.702 \frac{m^2}{10.00 \text{ m}} \times 61.00 \text{ m} = .504.483$	<u>504.483 m</u>
GABION MATTRESS	
$V = 0.50 \times 3.00 \times 1.00 = 1.50 \text{ m}^{3/m}$	
$V' = 1.50 \text{ m}^{2}/\text{m} \times 61.00 \text{ m} = 91.500$	91.500 m <sup>2</sup>
RUBBLE STONE FILLING	
$A = \frac{1}{2} \times 0.50 \times 1.00 = 0.25 \text{ m}^2$	
$V = 0.25 \text{ m}^2 \times 61.00 \text{ m} = 15.250$	15.250 m

and a

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	CALCULATION		ANNEL) RESULT
· BASE CONCRETE			
( CONCRETE : TYPE-CI)			
V = 2.20 m3/10.00 m	× 61.00 m	- 13.420	13.420
(GRAVEL BEDDING)			
$V = 0.170 \text{ m}^3/10.00 \text{ m} \times 1000 \text{ m}$	61.00 m	= 4.270	4.270
(FORM)			
A = 10.83 m3/10.00m	< 61.00 m	= 66.063	66.063
(REINFORCING BAR)			
W= D.10 +F/10.00m	x 61.00 m	= 0.610	D.610 t
(JOINT FILLER)			
A = 0.22 m2/10.00 m	x 61.00m	× 1.342	1.3421
(LOG PILE)	n in an		
L = 10.00 m/10.00 m x	61.00 m	= 61.000	61.000
· TOP CONCRETE			· · · · · · · · · · · · · · · · · · ·
(CONCRETE : TYPE - C	<u>Б</u>		
$V = 1.80  \text{m}^3 / 10.00  \text{m}$	x 61.00 m	= 10.980	10.980
(GRAVEL BEDDING)			
V = 0, 75 m3/10.00 m ×	61.00 m	= 4.575	4.5751
(FORM)			
$A = 12.18 \text{ m}^{2}/10.00 \text{m} \times$	61.00 m	= 74.298	74.298
(REINFORCING BAR)			
W = 0.094 tf/10.00m	× 61.00 m	<b>=</b> 0.573	0.573 tf
(JOINT FILLER)			
A = 2,605 m3/10,00m	x 61.00 m	= /5.89/	15.8914

LOCATION : WF 64R + 14.610 ~ W CALCULATION		RESULT
· PARTITION WALL		
n = 6 places		
(CONCRETE : TYPE - CI)		<u></u>
V = 1.447 m <sup>3</sup> /place × b	= 8,682	8.682 m
(GRAVEL BEDDING)		land land land land land land land land
V = 0.579 m³/place × 6	= 3.474	3.474 m <sup>3</sup>
(FORM)		
$A = 9.644 \text{ m}^{2}/\text{place} \times 6$	= \$7.864	57.864 m
(REINFORCING BAR)		
$W = 0.087 \text{ tf/place} \times b$	= 0.522	0.522 tf
(JDINT FILLER)		
$A = 2.411 \text{ m}^2/\text{place } \times 6$	= <u>14.466</u>	<u>/4.466 m</u>
·END WALL		
n = 1 place		
(CONCRETE TYPE-CI)		
$V = 1.736 \text{ m}^{3}/\text{place} \times 1$	= 1.736	1.7.36 m <sup>3</sup>
(GRAVEL BEDDING)		
$V = 0.772 \text{ m}^{3}/\text{place} \times 1$	= D.772	0.772 m <sup>3</sup>
(FORM)	e a galeria da esta da Esta da esta da	
A = 11. 573 m²/place × 1	= 11.573	11.573 m
(REINFORCING BAR)	an de la composition de la composition En la composition de l	
$W = 0.091 t^{f}/place \times 1$	= 0.091	0.091 tf
(JOINT FILLER)		
A = 2.411 m²/place x 1	= 2.411	2,411 m <sup>2</sup>
der Franzeisen einen einen Erste Franzeisen einen		
	<u>i de la constante de la constan</u> En esta de la constante de la c	

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OCATION :WF. 64R + 14.61 ~ W CALCULATION	H. 65K + 38,00 (LOWE	RESULT
GABION CYLINDER		
(GABION CYLINDER)		
$V = \frac{\pi}{4} \times 0.50^2 \times 11.826 \times 6$	= 13,932	13 932 m <sup>3</sup>
(SOIL FILLING)		
V= (11.826 × 3.00 × 0.50) - 13.9	32 = 3.807	3 807 m <sup>3</sup>
·WEEP HOLE		
$N = b  \text{places}  / \text{ID.00m}  \times  b  l.00$	$m = 3^{17}$ places	
(PVC Pipe \$50 : 1=0.80 m/pipe	<b>)</b>	
L = 0.80 m/pipe × 37	= 29.600	29.600 m
CFILTER CLOTH)		(3) A statistical di anti-Maria (3) A statistical di anti-Maria (4) A statistical di anti-Maria (4) A statistical di anti-Maria (4) A statistical di anti-Maria
$A = 0.856  m^2/place \times 37$	= 31,672	31. 672 m²
		est sector a transf

OCATION : WF. 64L + 14. 61 ~ WF. 65L + 28.00 (LOWER CH) CALCULATION	RESULT
STRUCTURAL EXCAVATION	
AREA OF STRUCTURAL EXCAVATION	
A-8.763 m² (Refer to Package 1)	
$V = 8.763 \text{ m}^2 \times 51.00 \text{ m} = 446.913$	446,9/3 m <sup>2</sup>
BACKFIL WITH SELECTED SOIL	
$A = 1.230 \text{ m}^2 (\text{Refer to Package 1})$	
$V = 1.230 \text{ m}^2 \times 51.00 \text{ m} = 62.730$	62.730 m <sup>3</sup>
en en en el la sectión de la sectión de la presenta de la sectión de la constructión de la sectión de la secti A sectión de la sectión de l	
GRAVEL BEDDING	
$V = 23.387 \frac{m^3}{10.00 m}$	
$V' = 23.387 \frac{m^3}{10.00m} \times 51.00m = 119.279$	119.274 m
WET STONE MASONRY	
$V = 23.387 \frac{10.00}{10.00} m$	
$V' = 23.387 \frac{m^3}{10.00m} \times 51.00m = 119.274$	/19.274 m <sup>3</sup>
CEMENT MORTAR POINTING	
$A = 82.702  \frac{m^2}{10.00  m}$	
$A' = 82.702  m^2/10.00  m \times 51.00  m = 421.780$	<u>421, 780 m²</u>
GABION MATTRESS	
V = 0.50 × 3.00 × 1.00 = 1.50 m/m	
$V' = 1.50^{m^3/m} \times 51.00 m = 76.500$	76.500 m <sup>3</sup>
RUBBLE STONE FILLING	
$A = \frac{1}{2} \times 0.50 \times 1.00 = 0.250 \text{ m}^2$	
V = 0.250 × 51.00 = 12.75D	12.750 m <sup>3</sup>
BASE CONCRETE	
(CONCRETE : TYPE-CI)	
$V = 2.20  \text{m}^3 / 10.00  \text{m} \times .51.00  \text{m} = 11.220$	11.220 m <sup>3</sup>

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.OCATION :WF. 64L + 14,61 ~ WF. 6 CALCULATION		RESULT
(GRAVEL BEDDING)		
$V = 0.70 \frac{m^3}{10.00 m} \times 51.00 m$	= 3.570	3.570 m <sup>3</sup>
(FORM)		
A = 10.83 m²/10.00m x s/.00m	= \$5,233	55.233 m <sup>2</sup>
REINFORCING BAR)		
W= 0.10 tf/10.00 m × s1.00 m	= 0.510	0.510 tf
TOINT FILLER)		
$A = 0.22 \frac{m^2}{10.00 m} \times 51.00 m$	= 1122	1.122 m <sup>2</sup>
(LOG PILE)		
L= 10.00 m/10.00 m x S1.00 m	= \$1.00 !	\$1.00 m
TOP CONCRETE		31.00 m
CONCRETE : TYPE-CI)		
$V = 1.80 \text{ m}^3/10.00 \text{ m} \times 51.00 \text{ m}$	~ <u>9,180</u>	9.180 m <sup>3</sup>
(GRAVEL BEDDING)	- //00	<u>7.700 m<sup>2</sup></u>
$V = 0.75 \text{ m}^3/10.00 \text{ m} \times 5/.00 \text{ m}$	- 2905	3.825 m <sup>3</sup>
(FORM)	<u> </u>	<u>3.020 m²</u>
	- 1.5.118	12119 2
A = 12.18 M/10.00 m × 51.00 m REINFORCING BAR)	= 62.118	62,118 m <sup>2</sup>
and the first state of the stat		
$W = 0.094 t / 10.00 \text{ m} \times .51.00 \text{ m}$	<u>= 0.479</u>	<i>D</i> .479 tf
$\frac{1}{1} \frac{1}{1} \frac{1}$		
A = 2.605 m²/10.00m x \$1.00m	= 13.286	<u>13.286 m²</u>
<u>i ante en esta de la construcción d</u> En esta esta esta de la construcción		

OCATION : WF. 64L + 14.61 ~ WF.65L + 28.00 CALCULATION	RESULT
PARTITION WALL	
n = 5 places	······
(CONCRETE : TYPE-CI)	
V=1.447 m <sup>3</sup> /place x 5 = 7.2	235 7, 235 m <sup>3</sup>
(GRAVEL BEDDING)	
V = 0.579 m3/place × 5 = 2.8°	75 <u>2.895 m<sup>3</sup></u>
(FORM)	
$A = 9.644 \text{ m}^2/\text{place} \times S = 48.2$	20 48.220 m <sup>2</sup>
(REINFORCING BAR)	a service and the service of the ser
$w = 0.087 t^{f}/place \times 5 = 0.43$	5 0.435 tf
(JDINT FILLER)	and a state of the
A = Z.411 m²/place × 5 = 12.0.	55 12.055 m
· END WALL	
n=) place	
(CONCRETE : TYPE-CI)	
V = 1.736 m³/place x 1 = 1.736	. 1.736 m <sup>3</sup>
(GRAVEL BEDDING)	
$V = 0.772 \text{ m}^3/\text{place} \times 1 = 0.772$	D.772 m <sup>3</sup>
(FORM)	
A = 11.573 m²/place × 1 = 11.573	11.573 m²
(REINFORCING BAR)	
w = 0.091 tf/place ×1 = 0.091	0.091 tf
(JOINT FILLER)	
A = 2.411 m2/place x.1 = 2.411	<u>z.4.11 m²</u>
en production de la complete de la La complete de la comp	

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REVETMENT FOR SIDE SLOPE OF 1:20 (WET STONE MASONRY)

TYPE OF WORK : :WF, 64L + 14.61 ~ WF. 65L + 28.00 (LOWER CHANNEL) LOCATION CALCULATION RESULT ·GABION CYLINDER (GABION CYLINDER) V = T2/4 × 0.502 × 11.826 × 6 13.932 m3 13,932 **e** ' (SOIL FILLING) V = (11.826 × 3.00 × 0.50) - 13.932 = 3.807 3.807 m3 · WEEP HOLE N = b places / 10.00 m × 51.00 m = 31 places (PUC Pipe \$50 : L = 0.80 m/pipe) L = 0.80 m/pipe x 3) 24.800 24.800 m (FILTER CLOTH) A = 0.856 m²/place × 3) 26.536 26.536 m² 2

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LOCATION : WF. 64R + 14, 610 ~ WF. 65R + 38,00 (UPPER CHA CALCULATION	RESU
·STRUCTURAL EXCAVATION	
$A_1 = (1.10 + 2.50) \times \frac{1}{2} \times 0.60 = 1.080 \text{ m}^2$	
$A_2 = (4.60 + 6.10) \times \frac{1}{2} \times 0.50 = 2.675 \text{ m}^2$	-
$A_3 = (1.118 \times 2.716 + 1.00) \times 0.50 = 2.018 \text{ m}^2$	
$A_4 = (0.50 + 1.20) \times \frac{1}{2} \times 0.70 = 0.665 \text{ m}^2$	
<u>ZA = 6.438 m<sup>2</sup></u>	
$V = 6.438 \text{ m}^2 \times 43.50 \text{ m} = 280.053$	280.0.
· BACKFILL WITH SELECTED SOIL	_
AREA OF BACKFILL	
$A = 1.230 \text{ m}^2 (\text{Refer to } \text{Reckage } 1)$	
$V = 1.230 \text{ m}^2 \times 43.50 \text{m} = 53.505$	53.50
<u> </u>	
·GRAVEL BEDDING	
$V = (1.118 \times 3.716 + 0.70) \times 0.25 \times 9.70 \text{ m} = 11.772 \text{ m}^{3}/0.25 \times 9.70 \text{ m}$	
$V' = 11.772  {}^{m_{10}}  \infty m \times 43.50  m = 51.208$	51,20
·WET STONE MASONRY	
$V = (1.118 \times 3.716 + 0.70) \times 0.25 \times 9.70 \text{ m} = 11.772 \text{ m}^{3} 10.007$	<b>m</b>
V'= 11.772 <sup>m3</sup> /10.00m × 43.50m == 51.208	51.20
·CEMENT MORTAR POINTING	
A=(1.118 x 2.716 +0.70) x 9.70m = 36.244 m/10.00m	rez
A' = 36.244 "/10.00m x 43.50m = 157.661	157.66
DASE ANNOTE	
· BASE WNCRETE	
(CONCRETE : TYPE-CI)	0.570
$V = 2.20 \text{ m}^3/10.00 \text{ m} \times 43.50 \text{ m} = 9.570$	9.570
$\frac{(GRAVE)}{V = 0.70 \text{ m}^3/10.00 \text{ m}} \times 43.50 \text{ m} = 3.045$	3.045

CALCULATION	38,00 (UPPER CHAN	RESULT
(FORM)		ita ang ang ang ang ang ang ang ang ang an
A = 10, 83 m / 10.00m × 43.50m	= 47.111	47.11/m2
(REINFORCING BAR)		
$W = 0.10 \text{ tf}/10.00 \text{ m} \times 43.50 \text{ m}$	= 0.435	0.435tf
(JOINT FILLER)		
$A = 0.22 \text{ m}^{2}/10.00 \text{ m} \times 43.50 \text{ m}$	= 0.9517	0.957 m <sup>2</sup>
TOP CONCRETE		
(CONCRETE : TYPE-CI)		
$V = 1.80 \text{ m}^3/10.00 \text{ m} \times 43.50 \text{ m}$	<u>- 7.830</u>	7.830 m <sup>3</sup>
(GRAVEL BEDDING)		
$V = 0.75 \text{ m}^3/10.00 \text{ x} 43.50 \text{ m}$	<u>= 3,263</u>	<u>3.263 m<sup>3</sup></u>
(FORM)	AD 00 3	C 2 0 2 2
$A = 12.18 \text{ m}^{2}/10.00 \text{ m} \times 43.50 \text{ m}$ (REINFORCING BAR)	<u>= 52 983</u>	52.983 m²
化氯化乙酸化医乙酸医乙酸乙酸医乙酸医乙酸乙酸乙酸乙酸乙酸乙酯	= 0.409	0.409 tf
$\frac{W = 0.077 + 770.00 \text{m}}{(\text{JOINT FILLER})}$	= 0, r01	0.407 5
$A = 2.605 \text{ m}^2/10.00 \text{ m} \times 43.50 \text{ m}$	11 220	/1.332 m <sup>2</sup>
<u>A - 2.605 710.00 m x 43.50 m</u>	: //, 332	11.332 %-
PARTITION WALL		
n= 6 places		
(CONCRETE : TYPE - CI)		
$V = (0.50 \times 0.30) \times (1.118 \times 3.716 + 0.70)$	x 6places	
	= 4.369	4.369 m <sup>3</sup>
(GRAVEL BEDDING)		An <u>an an an an an</u> An <u>an an an an an an an an</u> An an an an an an an an an
V = (0.10 × 0.70) × (1.118 × 3.716 + 0.70) ×	6 places	
	= 2,039	2.039 m <sup>3</sup>

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	VNEL) RESULT
(FORM)	
A= 0.50 × (1.118 × 3.716 + 0.70) × 2 × 6 places - 29.127	29.127 m²
(REINFORCING BAR)	
ni= (1.118 x 3.716 + 0.70 - 0.05 x 2) + 0.30 = 15.8 = 16	
$\mu = (0.20 + 0.40) \times 2 + 0.01 \times 15 = 1.350 \text{ m/Bar}$	
w1 = 16 x 1.350 x 0.617 kg/m = 13.327 kg/place	
$n_z = b$	
$L_2 = (1.118 \times 3.716 + 0.70 - 0.05 \times 2) = 4.754 \text{ m} / \text{Bar}$	
$w_2 = 6 \times 4.754 \times 1.040 \text{ kg/m} = 29.665 \text{ kg/place}$	
$W = W_1 + W_2 = 42.992 \frac{13}{place}$	
w' = 42.992 kg/place x 6 places = 257.95	258 kg
(ποιντ Filler)	
$A = (1.118 \times 3.716 + 0.70) \times 0.25 = 1.214 m^2/place$	
A' = 1.214 m²/place × 6 places = 7.284	7.284 m <sup>2</sup>
- ENÐ WALL	
n = ) place.	
(CONCRETE : TYPE-CI)	
$V = (0.60 \times 0.30) \times (1.118 \times 3.716 + 0.70) = 0.874$	0.874 m <sup>3</sup>
GRAVEL BEDDING)	
$V = (0, 10 \times 0.70) \times (1, 118 \times 3.716 + 0.70) = 0.340$	0.340 m <sup>3</sup>
(FORM)	
A = (0.60) × (1.118 × 3.716 + 0.70) × 2 = 5.825 REINFORCING BAR)	<u>5.825 m<sup>2</sup></u>
$n_1 = (1.118 \times 3.716 + 0.70 - 0.05 \times 2) + 0.30 = 15.8 = 16$	
$\frac{1}{1} = (0.20 + 0.50) \times 2 + 0.01 \times 15 = 1.550 \text{ m/Bar}$	
$w_1 = 16 \times 1.550 \times 0.617 \frac{18}{m} = 15.302 \frac{kg}{place}$	

**)** 

REVETMENT FOR SIDE SLOPE OF 1:2.0 (WET STONE MASONRY)

	RESULT
n2 = b	λ. <sup>1</sup>
$L_2 = (1.118 \times 3.716 + 0.70 - 0.05 \times 2) = 4.754 \text{ m/Bar}$	
· · · · · · · · · · · · · · · · · · ·	
Nz = 6 × 4.754 × 1.04 kg/m = 29.665 kg/place	
$V = W_1 + W_2 = 44.967 k_{\rm P}/place$	45 kg
	<b>•</b>
JOINT FILLER)	
$A = (1.1)8 \times 3.716 + 0.70 \times 0.25 = 1.214$	1. 2/4 m <sup>2</sup>
<u>en an anna an t-anna an an anna an ann an t-anna an t-anna an ann an ann an ann an t-anna an ann an t-anna. An</u> Anna an an t-anna an t-anna.	
WEEP HOLE	
化化合物 化可加 建装饰的 化化合金 医原外 教授教师演员 网络小的 网络加拿大的复数形式 化分子的	
N = 6 places / 10.00m × 43.50m = 26 places	
$(PI/C)$ Pipe $\varphi SO = L = O(SO)^m/Dide)$	
(PUC Pipe \$50 : L = 0.80 m/pipe)	20.800 m
$L = 0.80 \times 26$ = 20.800	<i>20,80</i> 0 m
<u>L = 0.80 x 26</u> = <u>20.800</u> (FILTER CLDTH)	
$L = 0.80 \times 26$ = 20.800	20, 800 m 22, 256 m
<u>L = 0.80 x 26</u> = <u>20.800</u> (FILTER CLOTH)	
$L = 0.80 \times 26 = 20.800$ (FILTER CLOTH)	
<u>L = 0.80 x 26</u> = <u>20.800</u> (FILTER CLOTH)	
$L = 0.80 \times 26 = 20.800$ (FILTER CLOTH)	
$L = 0.80 \times 26 = 20.800$ (FILTER CLDTH) $A = 0.856 \text{ m}^{2}/\text{place} \times .26 = .22.256$	
$L = 0.80 \times 26 = 20.800$ (FILTER CLDTH) $A = 0.856 \text{ m}^{2}/\text{place} \times .26 = .22.256$	
$L = \rho.80 \times 26 = 20.800$ (FILTER CLOTH) $A = D.856 \text{ m}^{3}/\text{place} \times .26 = 22.256$	22,256 m
$L = 0.80 \times 26 = 20.800$ (FILTER CLDTH) $A = 0.856 \text{ m}^{2}/\text{place} \times 26 = 22.256$	22,256 m
$L = 2.50 \times 26 = 20.800$ (FILTER CLDTH) $A = 0.856 \text{ m}^{3}/\text{place} \times .26 = .22.256$	22,256 m
$L = 0.80 \times 26 = 20.800$ (FILTER CLOTH) $A = 0.856 \text{ m}^{2}/\text{place} \times 26 = 22.256$	22,256 m
$L = 2.80 \times 26 = 20.800$ CFILTER CLDTHD $A = 0.856 \text{ m}^3/\text{place} \times 26 = 22.256$	22,256 m
$L \approx 0.80 \times 26 = 20.800$ (FILTER CLOTH) $A = 0.856 \text{ m}^3/\text{place} \times 26 = 22.256$	22,256 m
$L \approx 0.80 \times 26 \qquad = 20.800$ (FILTER CLDTH) $A = 0.856 \text{ m}^2/\text{place} \times .26 \qquad = .22.256$	22,256 m
$L \approx 0.80 \times 26 = 20.800$ (FILTER CLOTH) $A = 0.856 \text{ m}^3/\text{place} \times 26 = 22.256$	22,256 m

OCATION : WF. 64L + 14, 61 ~ WF, 65L + 28,00 (UPPER CALCULATION	RESULT
STRUCTURAL EXCAVATION	
AREA DE EXCAVATION	
A = 6, 4.38 m² (Refer to Right Bank)	
<u>V = 6.438 x 44.55 = 286.813</u>	286. 813 m
BACKFILL WITH SELECTED SOIL	
AREA DF BACKFILL	
A = 1.230 m <sup>2</sup> (Refer to Right Bank)	
V = 1.230 × 44.55 = 54.797	54.797 m <sup>3</sup>
GRAVEL BEDDING	
V= 11.772 m3/10.00m (Refer to Right Bank)	
$V' = 11.772 \text{ m}^3/10.00 \text{ x} 44.55 = 52.444$	52,444 m <sup>3</sup>
WET STONE MASONRY	
V = 11. 77.2 m³/10 com (Refer to Right Bank)	
V'= 11. 772 m3/10.00m x 44.55 = 52.444	52,444 m3
CEMENT MORTAR POINTING	
A = 36.244 <sup>m2</sup> /10.00m (Refer to Right Bank)	
$A' = 36, 244 = \frac{m^2}{10.00} \times 44, 55 = 161, 467$	161.467 m²
BASE CONCRETE	
(CONCRETE : TYPE-CI)	
$V = 2.20 m^3 / 10.00 m \times 44.55 = 9.801$	9,801 m <sup>3</sup>
CGRAVEL BEDDING)	
$V = 0.70  \text{m}^3/10.00  \text{m} \times 44.55 = 3.119$	3.119 m <sup>3</sup>
(FORM)	
$A = 10.83 \text{ m}^{2}/10.00 \text{ m} \times 44.55 = 48.248$	48.248 m <sup>2</sup>
(REINFORCING BAR)	<u> </u>
W = 0.10 <sup>t1</sup> /10.00 m x 44.55 = 0.446	0.446 tr

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REVETMENT FOR SIDE SLOPE OF 1:20 (WET	STONE MAPONRY)
TYPE OF WORK : LOCATION : WF. 64L + 14:61 $\sim$ WF. 65L + 28,00 CUPPE	ER CHANNEL)
	RESULT
(JOINT FILLER)	
$A = 0.22 \frac{m^2}{10.00 m} \times 44.55 = 0.980$	0.980 m <sup>2</sup>
· TOP CONCRETE	
(CONCRETE : TYPE-CI)	
$V = 1.80 \text{ m}^3/10.00 \text{ m} \times 44.55 = 8.019$	8.019 m <sup>3</sup>
(GRAVEL BEDDING)	<u>Alexani</u> <u>artici ng mga patrang ti</u> Maja panggan at aparta an
$V = 0.75 \text{ m}^3/10.00 \text{ m} \times 44.55 = 3.341$	3,34/m <sup>3</sup>
(FORM)	
$A = 12, 18 \frac{m^2}{10.00 m} \times 44.55 = 54.262$	54.262 m²
(REINFORCING BAR)	
$W = 0.094 \pm 1/10, 00  \text{m} \times 44.55 = 0.419$	0.419 th
(JOINT FILLER)	
$A = 2.60.5 \text{ m}^2/10.00 \text{ m} \times 44.55 = 11.605$	11.605 m²
· PARTITION WALL	
<u>n = 5 places</u>	
(CONCRETE : TYPE-CI)	
V = 0.728 m³/place (Refer to Right Bank)	
$V' = 0.728  \text{m}^3/\text{place} \times 5  \text{place} = 3.640$	<u>3.640 m<sup>3</sup></u>
(GRAVEL BEDDING)	
V = 0.340 m³/place x 5 places = 1.700	1.700 m <sup>3</sup>
(FORM)	
A = 4.855 m <sup>2</sup> /place × 5 places = 24.275	24.275 m²
(REINFORCING BAR)	
W= 42.992 kg/place × 5 places = 214.96	21.5 kg
(IDINT FILLER)	<b>0</b>
A = 1.214 m²/place x & places = 6.070	

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## BEVETMENT FOR SLEDE SLOPE OF 1:20 (WET FTONE MASONRY) TYPE OF WORK :

OCATION : WF, $64L + 14.61 \sim WF$ , $65L + 28.00 (UPPE) CALCULATION$	RESULT
END WALL	
n°   place	
CCONCRETE : TYPE-CI)	· · · · · · · · · · · · · · · · · · ·
V = 0.874 m³/place (Refer to Right Bank)	0.874 m <sup>3</sup>
GRAVEL BEDDING)	
V = D. 340 <sup>m3</sup> /place	0.340 m <sup>3</sup>
(FORM)	
A = 5.825 m/place.	5.825 m²
(REIN FORCING BAR)	
W = 44.9677 kg/place	45 kg
JOINT FILLER)	
$A = 1.214 \ m^2/place$	1.214 m <sup>2</sup>
<u>가 같은 것은 것은</u>	
WEEP HOLE	
early a server of the set of the set of the set of a state of the set of the set of the set of the set of the s	fan Alfania (h. 1997) 1997 - Alfania (h. 1997) 1997 - Alfania (h. 1997)
N = 6 places / 10.00m x 44.55 = 27 places	
N = 6 places / 10.00m x 94.55 = 27 places (PVC Pipe \$50 : L = 0.80 <sup>m</sup> /pipe)	1         2 <th2< th=""> <th2< th=""> <th2< th=""> <th2< th=""></th2<></th2<></th2<></th2<>
N = 6 places / 10.00m x 44.55 = 27 places	
N = 6 places / 10.00m x 94.55 = 27 places (PVC Pipe \$50 : L = 0.80 <sup>m</sup> /pipe)	<i>z1.60</i> 0 m
$N = 6 \text{ places } / 10.00\text{m} \times 94.55 = 27 \text{ places}$ $(PVC \ Pipe \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	
N = 6 places / 10.00m × 94.55 = 27 places (PVC Pipe \$50 : L = 0.80 <sup>m</sup> /pipe) L = 0.80 × 27 = 21.600 (FILTER CLOTH) A = 0.856 m²/place × 27 = 23.112	23. 112 m <sup>2</sup>
$N = 6 \text{ places } / 10.00\text{m} \times 94.55 = 27 \text{ places}$ $(PVC \ Pipe \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	23.112 m <sup>2</sup>
$N = 6 \text{ places } 10.00\text{m} \times 94.55 = 27 \text{ places}$ $(PVC \ Pipe \ $50 : L = 0.80^{\text{m}/\text{pipe}})$ $L = 0.80 \times 27 = 21.600$ $(FILTER \ CLOTH)$ $A = 0.856 \ \text{m}^2/\text{place} \times 27 = 23.112$	23. 112 m <sup>2</sup>
$AJ = 6 \text{ places } 10.00\text{m} \times 94.55 = 27 \text{ places}$ $(PVC \ Pipe \ $50 : L = 0.80^{\text{m}}/\text{pipe})$ $L = 0.80 \times 27 = 21.600$ (FILTER CLOTH) $A = 0.856 \ \text{m}^2/\text{place} \times 27 = 23.112$	23. 112 m <sup>2</sup>
$N = 6 \text{ places } 10.00\text{m} \times 94.55 = 27 \text{ places}$ $(PVC \ Pipe \ $50 : L = 0.80^{\text{m}/\text{pipe}})$ $L = 0.80 \times 27 = 21.600$ $(FILTER \ CLOTH)$ $A = 0.856 \ \text{m}^2/\text{place} \times 27 = 23.112$	23. 1/2 m <sup>2</sup>
$N = 6 \text{ places } 10.00\text{ x } 44.55 = 27 \text{ places}$ $(PVC \ Pipe \ $50 : L = 0.80^{\text{m}}/\text{pipe})$ $L = 0.80 \ $ 27 \qquad = 21.600$ $(FII/TER \ CLOTH)$ $A = 0.856 \ \text{m}^2/\text{place} \ $ $ 27 \qquad = 23.112$	23. ]/2 m <sup>2</sup>
$N = 6 \text{ places } 10.00\text{m} \times 94.55 = 27 \text{ places}$ $(PVC \ Pipe \ $50 : L = 0.80^{\text{m}}/\text{pipe})$ $L = 0.80 \times 27 = 21.600$ (FILTER CLOTH) $A = 0.856 \ \text{m}^2/\text{place} \times 27 = 23.112$	23. //2 m <sup>2</sup>
$N = 6 \text{ places} / 10.00\text{m} \times 44.55 = 27 \text{ places}$ $(PVC \ Pipe \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$	23. //2 m <sup>2</sup>
$N = 6 \text{ places } 10.00\text{m} \times 94.55 = 27 \text{ places}$ $(PVC \ Pipe \ $50 : L = 0.80^{\text{m}}/\text{pipe})$ $L = 0.80 \times 27 = 21.600$ (FILTER CLOTH) $A = 0.856 \ \text{m}^2/\text{place} \times 27 = 23.112$	23. //2 m <sup>2</sup>
$N = 6 \text{ places } / 10.00\text{m } \times 44.55 = 27 \text{ places}$ $(PVC P:pe $$50 : L = 0.80 \text{ m/pipe})$ $L = 0.80 \times 27 = 21.600$ $(FILTER CLOTH)$ $A = 0.856 \text{ m}^2/\text{place} \times 27 = 23.112$	23. //2 m <sup>2</sup>
$A) = 6 \text{ places } / 10.00 \text{ m x } 94.55 = 27 \text{ places}$ $(PVC \ Pipe \ $50 : L = 0.80^{\text{m}}/\text{pipe})$ $L = 0.80 \ x \ 27 \qquad = 21.600$ $(FIITER \ CLOTH)$ $A = 0.856 \ \text{m}^2/\text{place} \ x \ 27 \qquad = 23.112$	23. //2 m <sup>2</sup>
$N = 6 \text{ places } 10.00 \text{ x } 44.55 = 27 \text{ places}$ $(PVC \ P; pe \ $50 : L = 0.80^{\text{m}}/pipe)$ $L = 0.80 \ \times 27 \qquad = 21.600$ (FILTER CLOTH) $A = 0.856 \ \text{m}^{2}/place \qquad \times 27 \qquad = 23.112$	23. //2 m <sup>2</sup>
$N = 6 \text{ places } 10.00 \text{ x } 94.55 = 27 \text{ places}$ $(PVC \ P:pe \ $50 : L = 0.80^{\text{m}}/\text{pipe})$ $L = 0.80 \ \times 27 \qquad = 21.600$ (FILTER CLOTH) $A = 0.856 \ \text{m}^2/\text{place} \qquad \times 27 \qquad = 23.112$	23. //2 m <sup>2</sup>
$N = 6 places / 10.00m \times 94.55 = 27 places$ (PVC Pipe \$50 : L = 0.80 <sup>m</sup> /pipe) L = 0.80 × 27 = 21.600 (FIITER CLOTH) A = 0.856 <sup>m<sup>2</sup></sup> /place × 27 = 23.112	23. //2 m <sup>2</sup>
$N = 6 \text{ places } / 10.00\text{ m } \times 94.55 = 27 \text{ places}$ (PVC Pipe \$50 : L = 0.80 <sup>m</sup> /pipe) L = 0.80 × 27 = 21.600 (FILTER CLOTH) A = 0.856 m²/place × 27 = 23.112	-23. //2 m <sup>2</sup>

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**2 - 20**'

	4R + 14,61 ~ CALCULATION				RESUL
· PENETRATION MACA	DAM PAVEMEN	<u> </u>			
$A_1 = 38.75m \times 3.00m$	t in the second		116.250		<u>in staat v</u>
$A_2 = (7,690 + 3,00) >$	< <u>/z × 19.840</u>	<b>e</b>	106.095		<u></u>
	e da servici da servici Maria da servici da s	A = =	22,295		222.29
			en antes de la composición de la compos En activitada de la composición de la co		
(WF. 641 + 14,61 ~ W	IF. 651 + 28.0	0)			
$A_1 = 38.75 \text{ m x } 3.00 \text{ r}$			116.250		
$A_2 = (8, 837 + 3, 00)$			72.656		
		A =	188.900	5	188.96
					<u></u>
			and the second		
			terre de la companya		



 $\bigcirc$ 

### : REVETMENT FOR SIDE SLOP OF 1:2.0 (WET STONE MASONRY) : WF.64R + 26.0 ~ WF.75R - 16.0

CALCULATION		RESULT
➡ SRTRUCTURAL EXCAVATION		de caval acce
A = (110 + 250) - 14 - 050	= 1.080 m <sup>2</sup>	
$A_1 = (1.10 + 2.50) \times \frac{1}{2} \times 0.60$	= 1.080 m <sup>2</sup>	
$A_2 = (4.60 + 6.10) \times \frac{1}{2} \times 0.50$	= 2.675 m <sup>2</sup>	
$A_3 = (1.118 \times 7.00 + 1.00) \times 0.50$	= 4.413 m <sup>2</sup>	A STREET,
$A_4 = (0.50 + 1.20) \times \frac{1}{2} \times 0.70$	= 0.595 m <sup>2</sup>	te de energy
	0.7622	
n de la travén de la seconda de la productiva de la seconda de la seconda de la seconda de la seconda de la se La seconda de la seconda de	= 8.763 m <sup>2</sup>	
$V = 8.763 \times 510.00 = 4469.13$		4469.1 m <sup>3</sup>
ny en state i skriver af det predakter se state prise		and the second
母 BACKFILL WITH SELECTED SOIL		
<u>n de la construir de la constru La construir de la construir de</u>		
$A_1 = (0.50 + 1.00) \times \frac{1}{2} \times 0.50 \times 2$	= 0.75 m <sup>2</sup>	
$A_2 = (0.50 + 1.10) \times \frac{1}{2} \times 0.60$	= 0.48 m <sup>2</sup>	
	an an the second se	
<u>A</u>	= 1.23 m <sup>2</sup>	
n en	an an Arraha (Arrana) an an Arraha Tanàna mandritra dia kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia kaominina dia kaomini	
$V = 1.23 \times 510.00$	= 627.30	627.3 m <sup>3</sup>
$Y = 1.25 \times 310.00$	- 027.50	027.5 11
en beneren er en er en		
	e en la lenne el contra de la el	
<u>n de la sector de la constante de la constante</u> En general de la constante de la		
<u>이상 사용 영국 방법이 있는 것이 가지가 많은 방법이 가지 않는 것이 있다.</u> 문화 2010년 1월 17일 : 일상 1911년 1월 14일 : 1		
그는 것은 사람이 가지 않는 것은 것을 하는 것을 하는 것이 가지 않는 것이 있는 것이 가지 않는 것이 없는 것이 없다.		

1	CALCULATION	RESULT
67		
	GRAVEL BEDDING	
;		
	$V = (1.118 \times 8.00 + 0.70) \times 0.25 \times 9.70 = 23.387 \text{ m}^3/10.00 \text{m}$	
	$V^1 = 23.387 \text{ m}^3/10.00 \text{ m} \text{ x } 510.00 = 1192.737$	1192.737 m
	en en el ser en el propositio de la companya de la Carlo de la companya de la presenta de la presenta de la com La companya de la comp	alayan ar san Tana ar
F	WET STONE MASONRY	
·····		
	$V = (1.118 \times 8.00) \times 0.25 \times 9.70 = 23.387 \text{ m}^3/10.00 \text{ m}$	
	$V^1 = 23.387 \text{ m}^3/10.00 \text{ m x } 510.000 = 1192.737$	1192.737 m
	이 가지 않는 것 같은 것 같	
B	CEMENT MORTAR POINTTING	
<u>}</u>		. <u></u>
<u> </u>	$A = (1.118 + 7.00 + 0.70) \times 9.70 = 82.702 \text{ m}^2/10.00 \text{ m}$	
1	신화 사람이 물 방법 이 것 같아요. 이 것 것 같아. 영화 문화을 알았어요. 영화	
	$A^1 = 82.702 \text{ m}^2/10.00 = 4217.802$	4217.802 m
		242. St. 1
6	GABION MATTRESS	
	in an Anna an Anna ann an Anna an an Anna an Anna Anna Anna Anna Anna an an an Anna Anna anna a	
	$A = 0.50 \times 3.00$ = 1.50 m <sup>2</sup>	
ر 	$V = 1.50 \times 510$ = 765.000	765.000 m <sup>-</sup>
-		
<u>8</u>	RUBBLE STONE FILLING	
	$A = \frac{1}{2} \times 0.50 \times 1.00 = 0.25 \text{ m}^2$	
	$V = 0.25 \times 510.00 = 127.500$	127.500 m <sup>3</sup>
	<u> </u>	127.300 III
	<u>en en en en el contra la contra de la contra d</u> En este en el contra de la contra	

#### REVETMENT FOR SIDE SLOP OF 1:2.0 (WET STONE MASONRY) WF.64R + 26.0 ~ WF.75R - 16.0 TYPE OF WORK : :

LOCATION

## TYPE OF WORK:REVETMENT FOR SIDE SLOP OF 1:2.0 (WET STONE MASONRY)LOCATION:WF.64R + 26.0 ~ WF.75R - 16.0

	CALCULATION	RESULT
	CALCOLATION	100000
& BASE	CONCRETE	the second second
• C	ONCRETE (TYPE - C1)	
<u> </u>	$Y = 2.20 \text{ m}^3/10.00 \text{ m} \text{ x} 510.00 = 112.200$	112.200 m <sup>3</sup>
• C	RAVEL BEDDING	a di peri di seri dan
	$V = 0.70 \text{ m}^3/10.00 \text{ m} \text{ x } 510.00 = 35.700$	35.700 m <sup>3</sup>
ligini Tanan aya	$r = 0.70 \text{ m}^3/10.00 \text{ m} \times 510.00 = 35.700$	<u> </u>
• F	ORM (H < 4.0 m)	er en
<u> </u>	$x = 10.83 \text{ m}^2/10.00 \text{ m} \text{ x } 510.00 = 552.330$	552.330 m <sup>2</sup>
• 8	EINFORCING BAR	
y	$V = 0.10 \text{ tf} / 10.00 \text{ m} \times 510.00 = 5.100$	5.100 tf
• ]	OINT FILTER	
A	$\Lambda = 0.22 \text{ m}^2/10.00 \text{ m} \text{ x } 510.00 = 11.220$	11.220 m <sup>2</sup>
• <u> </u>	OGPILE	
Ť	$r = 10.00 \text{ m} / 10.00 \text{ m} \times 510.00 = 510.000$	510.00 m
🗗 ТОР	CONCRETE	ellaren gieratua.
	ONCRETE (TYPE-C1)	
• <u>• • • • •</u>	ONCRETE (TYPE – C1)	
1	$7 = 1.80 \text{ m}^3 / 10.00 \text{ m} \times 510.00 = 91.800$	91.800 m <sup>3</sup>
• (	<b>JRAVEL BEDDING</b>	
	$V = 0.75 \text{ m}^3/10.00 \text{ m} \text{ x } 510,00 = 38.250$	38.250 m <sup>3</sup>
• 1	ORM $(H < 4.0 \text{ m})$	
	$A = 12.18 \text{ m}^2/10.00 \text{ m} \text{ x } 510.00 = 621.180$	621.180 m <sup>2</sup>
	Y = 12.18  m/ 10.00  m/ X - 021.160	021.100 m
• 1	REINFORCING BAR	
		1.501.5
<u> </u>	$W = 0.094 \text{ tf} / 10.00 \text{ m} \times 510.00 = 4.794$	4.794 tf
- <u> </u>	OINT FILTER	
a da ser a	$A = 2.605 \text{ m}^2/10.00 \text{ m} \text{ x } 510.00 = 132.855$	132.855 m <sup>2</sup>

## : REVETMENT FOR SIDE SLOP OF 1:2.0 (WET STONE MASONRY) : WF.64R + 26.0 ~ WF.75R - 16.0

CALCULATION		RESULT
5 PARTITION WALL		
n = 50  places		
• CONCRETE (TYPE-C1)	72.350	72.350 m <sup>3</sup>
$V = 1.447 \text{ m}^3/\text{place x 50}$	: 72.330	/2.000
GRAVEL BEDDING	- 28.950	28.950 m <sup>3</sup>
$V = 0.579 \text{ m}^3/\text{place x } 50 =$	20.930	
• FORM (H < 4.0 m)	- 482.200	482.200 m <sup>2</sup>
$A = 9.644 \text{ m}^2/\text{place x 50}$	- +02:200	
REINFORCING BAR	= 4.350	4.350 tf
W = 0.087 if /prace x 50	<b></b>	
JOINT FILTER	= 120.550	120.550 tf
$A = 2.411 \text{ m}^2/\text{place x 50}$		
F END WALL		
n = 2 places		
CONCRETE (TYPE – C1)		
$V = 1.736 \text{ m}^3/\text{place x } 2$	= 3.472	3.472 m <sup>3</sup>
GRAVEL BEDDING		
	= 1.544	1.544 m <sup>3</sup>
• FORM (H < 4.0 m)		
$A = 11.573 \text{ m}^2/\text{place x } 2$	= 23.146	23.146 m <sup>2</sup>
REINFORCING BAR		0.190.46
W = 0.091  tf /place  x 2	= 0.182	0/182 tf
JOINT FILTER	<u></u>	4.822 m <sup>2</sup>
$A = 2.411 \text{ m}^2/\text{place x } 2$	= 4.822	4.022 11
<b>GABION CYLINDER</b>		
	n Reisel (Tarres) (Constructions) The second se	<u>na sejate na na s</u> Manakari kata
GABION CYLINDER Ø 500	07.044	27.864 m <sup>3</sup>
$V = \pi / 4 \times 0.50^2 \times 11.826 \times 6 \times 2$	= 27.864	27.804 11
SOIL FILLING	<u> </u>	7.614 m <sup>3</sup>
$V = (11.826 \times 3.00 \times 0.50) \times 2 - 27.864$	= 7.614	1.014 1
	general and an element of the second states of the second states of the second states of the second states of t	
➡ WEEP HOLE		
	= 306 places	
$N = 510.00 \times 0$ places 7 10.00 m	= 500 places	
PVC Pipe $\emptyset$ 50 (L = 0.80 m / pipe)	= 244.800	244.800 m
$L = 306 \times 0.80$	<u> </u>	
		المراجعة ال
FILTER CLOTH	= 261.936	261.936 m
$A = 0.856 \text{ m}^2/\text{place x } 306$		

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### REVETMENT FOR SIDE SLOP OF 1:2.0 (WET STONE MASONRY) WF.64L + 27.0 ~ WF.75L – 17.0

	RESULT
a de la companya de l	e a construction de la construction
<b>日</b> SRTRUCTURAL EXCAVATION	
an an tha an 1986 an	and a start of the second start of the
	and the second second
$A_1 = (1.10 + 2.50) \times \frac{1}{2} \times 0.60 = 1.080 \text{ m}$	12
	a da anti-arte da anti- na anti-arte da anti-arte da anti-arte da anti-arte da anti- na anti-arte da anti-
$A_2 = (4.60 + 6.10) \times \frac{1}{2} \times 0.50 = 2.675 \text{ m}$	1 <sup>2</sup>
n na sense na sense Na sense na s	
$A_3 = (1.118 \times 7.00 + 1.00) \times 0.50 = 4.413 m$	1 <sup>2</sup>
n an an ann an ann an ann an ann ann an	
$A_4 = (0.50 + 1.20) \times \frac{1}{2} \times 0.70 = 0.595 \text{ m}$	1 <sup>2</sup>
	a Alaman anns innte
A = 8.763 m	12
$V = 8.763 \times 510.00 = 4469.13$	4469.1 m <sup>3</sup>
	rastration is subjection
➡ BACKFILL WITH SELECTED SOIL	
<u>na da serie de la casa da serie de la construcción de la casa de la construcción de la construcción de la cons</u> El se da construcción de la definida	
$A_1 = (0.50 + 1.00) \times \frac{1}{2} \times 0.50 \times 2 = 0.75 \text{ m}^2$	n an
$A_2 = (0.50 + 1.10) \times \frac{1}{2} \times 0.60 = 0.48 \text{ m}^2$	
$A = 1.23 \text{ m}^2$	
$V = 1.23 \times 510.00 = 627.30$	627.3 m <sup>3</sup>
	027.5 11
	02/.3 m
	11. 12. 12. 11. 12. 12. 12. 12. 12. 12.

## : REVETMENT FOR SIDE SLOP OF 1:2.0 (WET STONE MASONRY) : WF.64L + 27.0 ~ WF.75L - 17.0

CALCULATIO	${f N}$ to the field of the two sectors of the sector of the two sectors are the sector of the two sectors are the sector of the two sectors are the sectors	RESULT
<b>GRAVEL BEDDING</b>		
GRAVEL DEDUING		
$V = (1.118 \times 8.00 + 0.70) \times 0.25 \times 9.70$	$= 23.387 \text{ m}^3/10.00 \text{m}$	
	= 1192.737	1192.737 m <sup>3</sup>
$V^1 = 23.387  \text{m}^3 / 10.00  \text{m} \times 510.00$	- 1192.731	11/2.757 11
D WET STONE MASONRY		
$\mathbf{V} = (1.118 \times 8.00) \times 0.25 \times 9.70$	= 23.387 m <sup>3</sup> /10.00 m	
$V^1 = 23.387  \text{m}^3 / 10.00  \text{m} \times 510.000$	= 1192.737	1192.737 m <sup>3</sup>
	an an an thair an ann an thair a Thair ann an thair a Thair ann an thair a	
<b>B</b> CEMENT MORTAR POINTTING		
$A = (1.118 + 7.00 + 0.70) \times 9.70$	= 82.702 m <sup>2</sup> /10.00 m	
$A^1 = 82.702 \text{ m}^2/10.00$	= 4217.802	4217.802 m <sup>2</sup>
GABION MATTRESS		
A = 0.50 x 3.00	= 1.50 m <sup>2</sup>	
$V = 1.50 \times 510$	= 765.000	765.000 m <sup>3</sup>
<u>in terretari di seconda di se Seconda di seconda di se</u>		
RUBBLE STONE FILLING		
	a service and the service of the ser The service of the ser The service of the ser	
$A = \frac{1}{2} \times 0.50 \times 1.00$	= 0.25 m <sup>2</sup>	
$V = 0.25 \times 510.00$	= 127.500	127.500 m <sup>3</sup>
n general and a second the second		





2 - 27

## TYPE OF WORK:REVETMENT FOR SIDE SLOP OF 1:2.0 (WET STONE MASONRY)LOCATION:WF.64L + 27.0 ~ WF.75L - 17.0

1

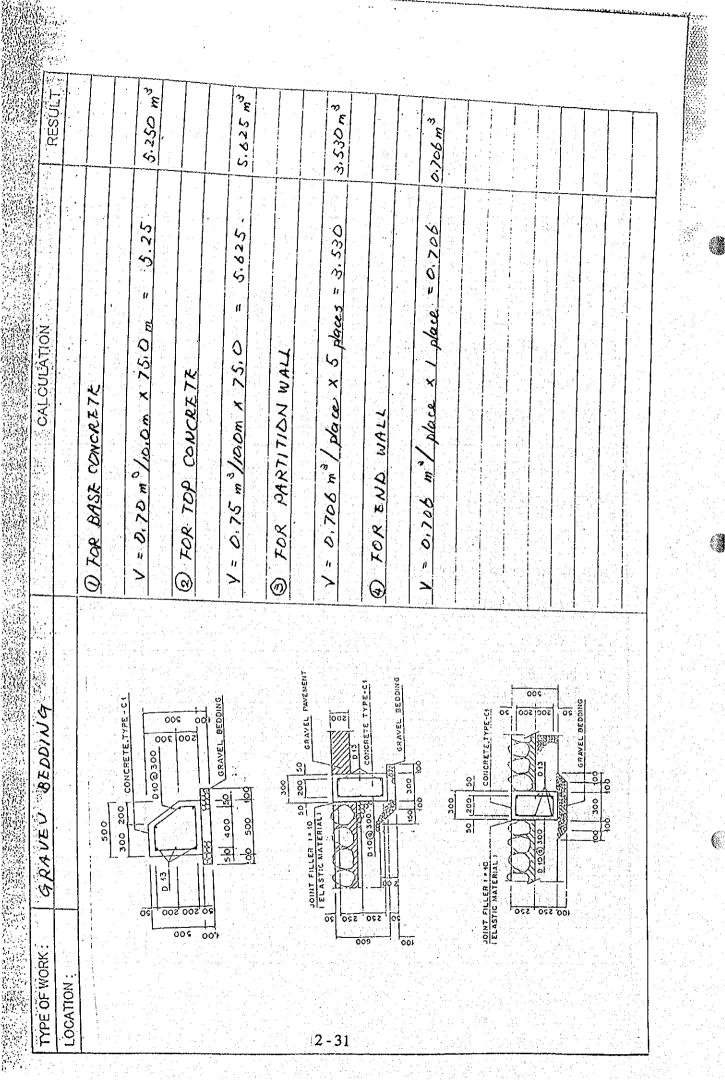
	CALCULATION		RESULT
BASE CONCRETE			
CONCRETE	TYPE – CI)		
$V = 2.20 \mathrm{m^3/l}$	0.00 m x 510.00	= 112.200	112.200 m <sup>3</sup>
GRAVEL BEDDI	NG	ne o se service de la company de la comp Na fonda de la company de la	
$V = 0.70 \mathrm{m^3/l}$	0.00 m x 510.00	= 35.700	35.700 m <sup>3</sup>
• FORM (H < 4.0	m)		
		to ny kaodim-paositra dia mampina dia m	
$A = 10.83 \text{ m}^2$	/10.00 m x 510.00	= 552.330	552.330 m <sup>2</sup>
REINFORCING E	BAR states and the second s	<u>.                                     </u>	
W = 0.10  tf/	10.00 m x 510.00	= 5.100	5.100 tf
JOINT FILTER			
	0.00 m x 510.00	11 000	11.000 4
$A = 0.22 \text{ m}^{-71}$	0.00 m x 510.00	= 11.220	11.220 m <sup>2</sup>
LOG PILE			
	10.00 m x 510.00	<b>=</b> 510.000	510.00 m
L - 10.00 III 7	10.00 III X 510.00		510.00 m
<b>F</b> TOP CONCRETE			
CONCRETE	<u>(</u> ΤΥΡΕ – C1)		
$V = 1.80 \text{ m}^3/1$	0.00 m x 510.00	= 91.800	91.800 m <sup>3</sup>
GRAVEL BEDDI	NG		
		and an	
$V = 0.75 \mathrm{m^3/J}$	0.00 m x 510.00	= 38.250	38.250 m <sup>3</sup>
• FORM (H < 4.0	<u>ni) - Anno Anno Anno Anno Anno Anno Anno An</u>	<u>ada na da de la casa de la competencia.</u> An esta de la casa de la competencia en	
$A = 12.18 \text{ m}^2$	/10.00 m x 510.00	= 621.180	621.180 m <sup>2</sup>
REINFORCING I	BAR	n an teor anna an teor ann an teor ann 1999 - Anna ann an teor ann 1999 - Anna ann an teor ann	
W = 0.094 tf	/10.00 m x 510.00	= 4.794	4.794 tf
JOINT FILTER			
and a second			
$A = 2.605 \text{ m}^2$	/10.00 m x 510.00	i = 132.855	132.855 m <sup>2</sup>

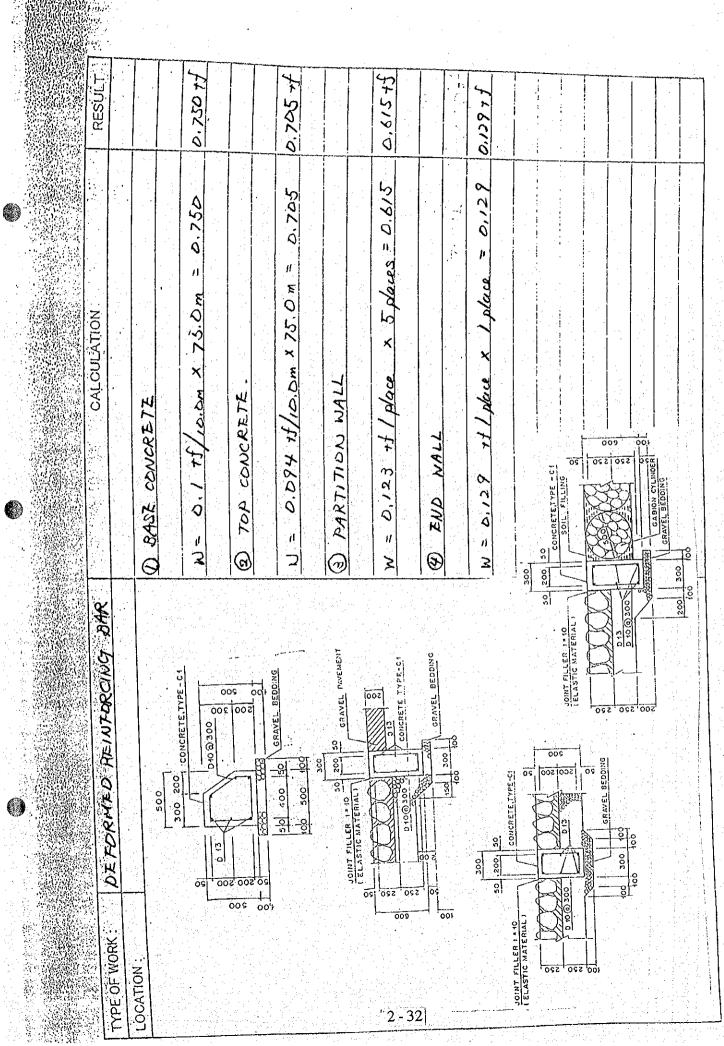
### RK : REVETMENT FOR SIDE SLOP OF 1:2.0 (WET STONE MASONRY) : WF.64L + 27.00 ~ WF.75L - 17.0

	CALCULATION		RESULT
PARTITION W	ALL		
n = 50 place	<b>S</b>		
CONCRETE	(TYPE – C1)		
	7 m <sup>3</sup> /place x 50	= 72.350	72.350 m <sup>3</sup>
GRAVEL B			
V = 0.5	79 m <sup>3</sup> /place x 50	= 28.950	28.950 m <sup>3</sup>
• FORM (H	< 4.0 m)	· 建筑和市场的 化合金合金	
A = 9.64	14 m <sup>2</sup> /place x 50	= 482.200	482.200 m <sup>2</sup>
<ul> <li>REINFORC</li> </ul>	ING BAR		
	37 tf/place x 50	<b>= 4.350</b>	4.350 tf
JOINT FILT		的人名法尔 發展的 人名法法	
	$11 \text{ m}^2/\text{place} \times 50$	= 120.550	120.550 tf
		an an an an an an that the factor of	st alwaysette ü
F END WALL			
	<u>i ne na serie de la composición de la c</u> Esta forma de la composición de la comp	建建模 人名法法 电路线 法实际法	
n = 2 place	s the second		
			승규 관련한 그 전문으로
CONCRETE	E (TYPE-Cl)		
		= 3.472	3.472 m <sup>3</sup>
GRAVEL B			
	72 m <sup>3</sup> /place x 2	= 1.544	1.544 m <sup>3</sup>
• FORM (H			
	573 m <sup>2</sup> /place x 2	= 23.146	23.146 m <sup>2</sup>
REINFORC			
	91 tf/place x 2	= 0.182	0.182 tf
JOINT FILT			
	$\frac{11 \text{ m}^2}{11 \text{ m}^2}$	= 4.822	4.822 m <sup>2</sup>
A - 2.4			
<b>5</b> GABION CY	LINDER		
	YLINDER Ø 500	가 있는 것은 것을 가지 않는 것을 가 같은 것은 것은 것은 것은 것은 것은 것을 하는 것을 하는 것을 가지 않는 것을 가지 않는 것을 수 있는 것을 수 있는 것을 수 있는 것을 가지 않는 것을 가지 않는 것을 가지 않는 것을 가지 않는 것	
$V = \pi$	$/4 \times 0.50^2 \times 11.826 \times 6 \times 2$	= 27.864	27.864 m <sup>3</sup>
SOIL FILL	NG		
	.826 x 3.00 x 0.50) x 2 - 27.864	= 7.614	7.614 m <sup>3</sup>
an a			
S WEEP HOLE			
		≓ 306 places	
	x 6 places / 10.00 m	- ovo places	<u>even biologica (n. 1965).</u> 1917 - Antonio Antonio (n. 1967).
	(L = 0.80  m / pipe)	044.000	044 000
L = 306 x	0.80	= 244.800	244.800 m
and the second	na katalog a sina katalog ang katalog a		
<ul> <li>FILTER CI</li> </ul>			
A = 0.	356 m <sup>2</sup> /place x 306	= 261.936	261.936 m

# TYPE OF WORK: REVETMENT FOR SLOPE OF 1:2.0 (WET STONE MASONRY TYPE)LOCATION: WF.104L ~ WF.105L + 15.0 m: WF.104R ~ WF.104R + 17.0 m

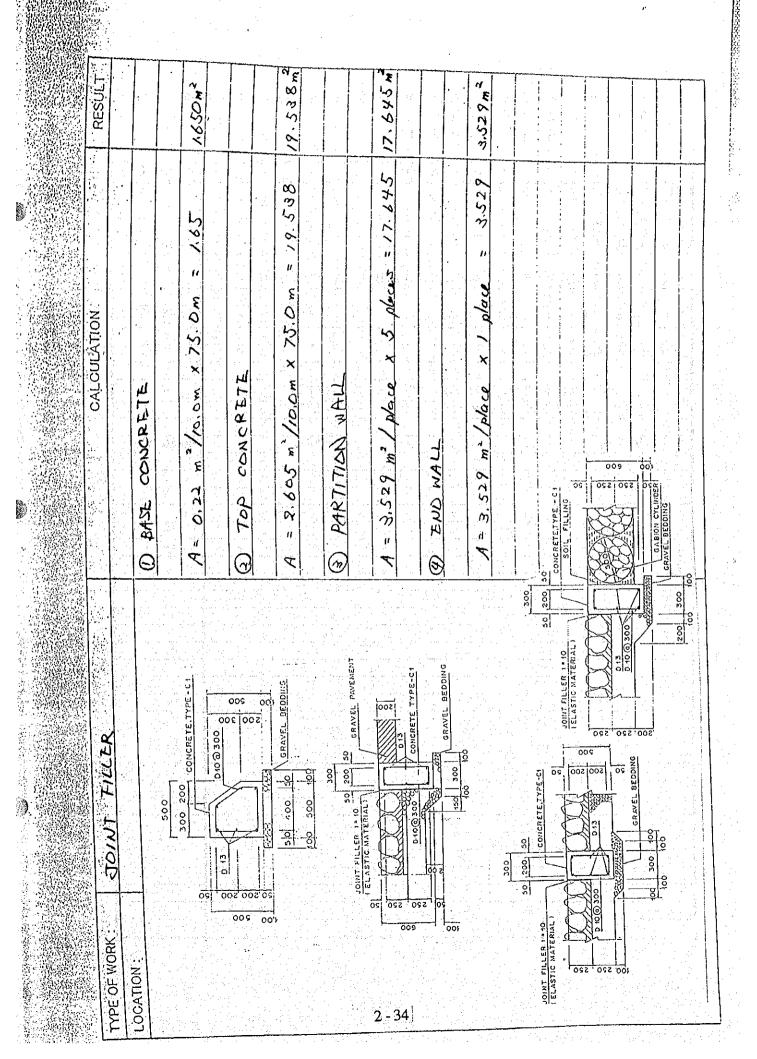
CALCULATION		RESULT
STRUCTURAL EXCAVATION		100011
SIRUCTURAL EXCAVATION		
I = 150  m (PIGUT PANK)		
$L_1 = 15.0 \text{ m} \qquad \text{(RIGHT BANK)}$		
$L_1 = 15.0 \times 4 = 60.0$ (LEFT BANK)	- 76.000	
$L = L_1 + L_2 = 15.00 + 60.00$	= 75.000	001.050
$V = 180.390 \text{ m}^3 / 15.0 \text{ m x} 75.00$	= 901.950	901.950 m <sup>3</sup>
	and a second	
BACKFILL WITH SELECTED SOIL		
$V = 20.640 \text{ m}^3 / 15.0 \text{ m x } 75.00$	= 103.200	103.200 m <sup>3</sup>
GRAVEL BEDDING		
REVETMENT		
$V = 51.876 \text{ m}^3 / 15.0 \text{ m} \times 75.00$	= 259.380	259.380 m <sup>3</sup>
WET STONE MASONRY		
$V = 51.656 \text{ m}^3 / 15.0 \text{ m} \times 75.00$	= 258.280	258.280 m <sup>3</sup>
	나라 중남 한국 바이 다니	and and the factor
CEMENT MORTAR POINTING		
$A = 174.636 \text{ m}^2 / 15.0 \text{ m x} 75.00$	= 873.180	873.180 m <sup>2</sup>
WEEP HOLE		
PVC PIPE Ø 50		
n = 9/ place x 5 places	= 45	
$L = 45 \times 0.80$	= 36.000	36.000 m
n en		
FILTER CLOTH		
$A = 0.640 \text{ m}^2/\text{place x } 45$	= 28.800	28.800 m <sup>2</sup>
	20.000	20.000 m
GABION MATTRESS		
t = 500  mm	n an an an an an an ann an an an an an a	n an
	- 112 500	a series and a series of the s
$V_1 = 0.50 \times 3.0 \times 75.00$	= 112.500	
N 0.00 1.0 70 00	<u> </u>	
$V_2 = 0.50 \times 1.5 \times 75.00$	= 56.250	
	1/0 770	160.750
TOTAL V	= 168.750	168.750 m <sup>3</sup>
1. 人民主义的公式 医内容性 机合成化合成 化合成		





16.50 mg RESULT 81.225 m 13.500 m 91.350m2 10.385m<sup>3</sup> 2541m3 70,585m 8470 M 8.470 81.225 4 - 12, 180 m / 10,0 m × 75,0 m = 91.35 place × 5 daces = 10.385 A=14.116 mº / place X 5 daws = 70,58 12541 ちゃく 10.0m × 75.0m= 13.5 n ø Þ Parce 1 place (10.0m × 75.0m V = 2.20 m / 10.0m x 75.0m CALCULATION × place × 1 1 1 1 V=2.541 m3/2/00 TUP CONCRETE BASE CONCRETE PARTITION WALL V = 2.117 m3/ m 2 A = 10,830 m3 V = 1.80 m3 · CONCRE7E CONCRETE · CONCRETE CONCRETE END WALL 4 = 8.470 · FORM · FORM . FORH FORM Θ  $\odot$  $\odot$ (m) CONCRETE, TOPH SMAYEL PRODUCT GRAVEL SEDDING CONCRETE TYPELC CONCRETE. TYPE - 6.1 002 GRAVEL DEDDI CONCRETE, TYPE-CI CERAVIL, DEPDR 005 5001 100 00200 8 02 02 000 ş 0 00 10 300 200 005 00 200 JOINT FILL CR. 1-10 ile. CLASTIC MATERI 22 200 200 TYPE OF WORK : LOCATION : 2 - 33

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## LOCATION

## TYPE OF WORK : REVETMENT FOR SLOPE OF 1:2.0 (WET STONE MASONRY TYPE) : WF.104L ~ WF.105L + 15.0 m : WF.104R ~ WF.104R + 17.0 m

CALCULATION	RESULT
RUBBLE STONE FILLING	
$A = \frac{1}{2} \times 1.00 \times 0.50 \times 2 = 0.500$	
$V = 0.50 \times 75.00 = 37.500$	37.500 m <sup>3</sup>
GABION CYLINDER Ø 500 (GALVANIZED AND COATED WITH PVC)	
$V = \pi/4 \ge 0.50^2 \ge (3.00 + 11.18 + 1.00) \ge 6.00 = 17.884$	17.884 m <sup>3</sup>
	145 <sup>2</sup>
SOIL FILLING	
$V_1 = \frac{\pi}{4} \times 0.50^2 \times (3.00 + 11.18 + 1.00) \times 6.00 = 17.884$	
$V_2 = (3.00 + 11.18 + 1.00) \times 3.00 \times 0.50 = 22.770$	
$V = V_2 - V_1 = 4.886$	4.886 m <sup>3</sup>
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