Appendix 6-1-2　Quantity Calculation (S4)

MINISTRY OF PUBLIC WORKS AND HOUSING
DIRECTORATE GENERAL OF WATER RESOURCES
DIRECTORATE OF RIVER AND COAST
RIVER BASIN ORGANIZATION FOR BRANTAS

THE PROJECT FOR CAPACITY DEVELOPMENT OF MT. SEMERU VOLCANIC DISASTER MEASURES PLANNING

SUB-PROJECT PACKAGE S4 TANGGUL PENGARAH HULU LEPRAK, TANGGUL LEPRAK 26-22, TANGGUL LEPRAK II D, TANGGUL KEBONDELI XVII 2021, KD LEPRAK 3, DD LEPRAK 2, DD LEPRAK 3, EMERGENCY DIKE

DRAFT

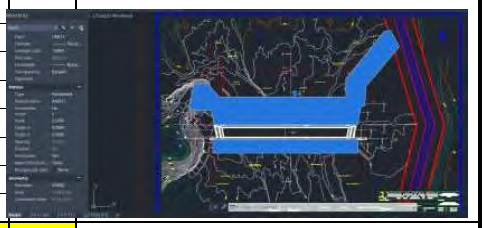
BILL OF QUANTITY

JICA Project Team

August 2024

SUMMARY OF QUANTITY KD LEPRAK 3			
No.	**Description**	**Unit**	**Volume**
1	Stake Out	m2	9,218.12
2	Bouwplank	m	749.82
3	Cross Profile	m	929.59
4	Mechanical Sand Excavation	m3	71,989.50
5	Backfill	m3	14,894.13
6	Cyclops Concrete 60% Concrete fc' 15 Mpa: 40% Split Stone, with Concrete Pump (CP)	m3	9,869.45
7	Concrete Making and Casting fc' = 20 Mpa (K 225) Mechanically Transported within a radius of 2000 m with a Concrete Pump (CP)	m3	3,056.33
8	Concrete Making and Casting fc' = 30 Mpa (K 350) Mechanically Transported within a radius of 2000 m with a Concrete Pump (CP)	m3	1,010.85
9	1 m2 Exposed Concrete Wall Formwork with 18 mm Multiflex	m2	6,796.17
10	1 m2 Regular Formwork for Concrete Walls with Multiflex 12 mm or 18 mm	m2	1,844.14
11	1 m2 Scaffolding / Supporting Formwork Rafters 5/7 for Concrete Walls Tm 2.50 m	m2	8,640.30
12	Carefully dismantle 1 m2 of Formwork and Scaffolding	m2	6,796.17
13	Dismantle 1 m2 of Formwork and Scaffolding in the Normal Way (and Clear Debris) for Non Expose	m2	1,844.14
14	Boulder Rip-Rap	m3	1,642.05
15	Joint filler	m3	6.10
16	Weep Hole	m	1,314.00
17	Geo Bag	pcs	140.00
18	Sand Fill	m3	87.00
19	Pump Operation Dewatering	hour	70.00

Name Structure : : KD LEPRAK 3
Type of work : Stake Out

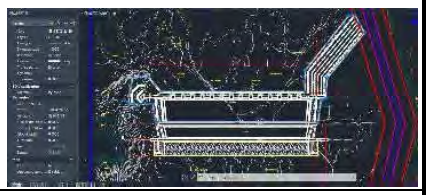
No.	Description	Calculation	Volume	Unit	Drawing Reference
1					
	Area =	9218.12	9,218.12	m^2	
					
		Stake Out Total Volume =	9,218.12	m^2	

Name Structure : : KD LEPRAK 3
Type of work : Cross Profile

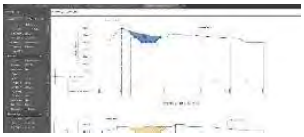
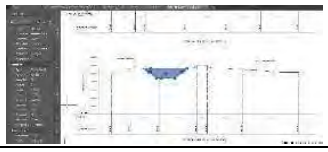
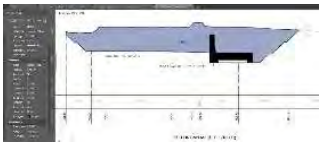
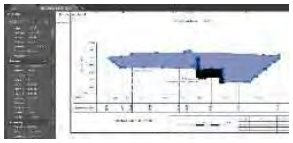
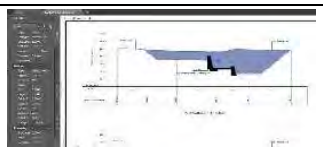
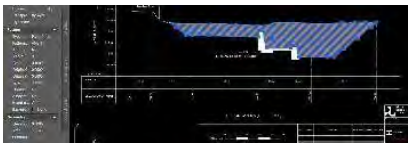
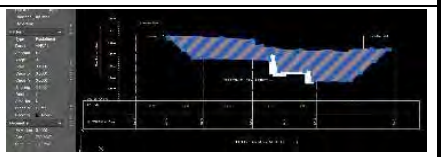
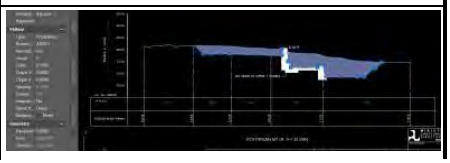
No.	Description	Calculation	Volume	Unit	Drawing reference
1					
	Cross Profile =	749.82	749.82	m	
			,		
					
	Total		749.82	m	

Name Structure : : KD LEPRAK 3
Type of work : Bouwplank

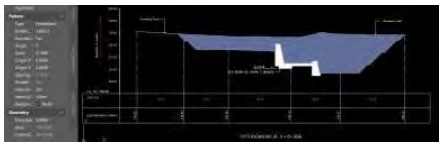
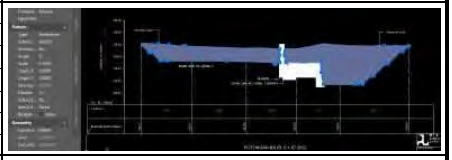
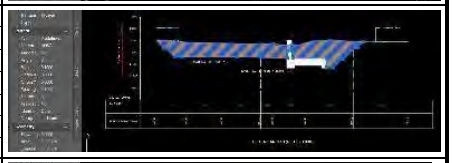
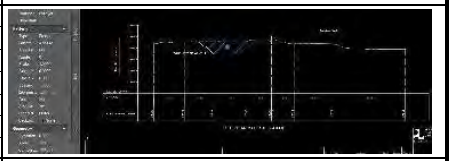
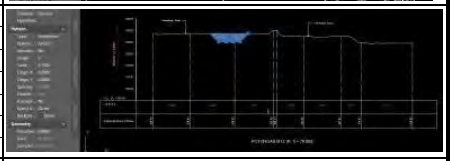
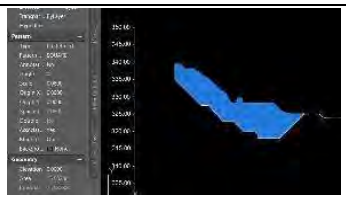
No.	Description	Calculation	Volume	Unit	Drawing reference
1					
	Volume	929.59	929.59	m'	
	Total		929.59	m'	



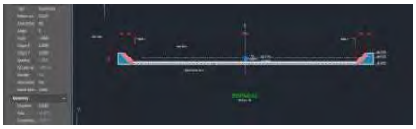
Name Structure : : KD LEPRAK 3
Type of work : Sand Excavation

No.	Description	Calculation		Volume	Unit	Drawing reference
1	M0					
	Area =	0.00	m^2			
	Length =	8.00	m'			
	V=	0.00	m^3			
	Total Volume =			-	m^2	
1	M1					
	Area =	72.12	m^2			
	Length =	8.00	m'			
	V=	288.49	m^3			
	Total Volume =			288.49	m^2	
2	M2					
	Area =	104.68	m^2			
	Length =	4.00	m'			
	V=	353.62	m^3			
	Total Volume =			353.62	m^3	
3	M3					
	Area =	843.96	m^2			
	Length =	2.75	m'			
	V=	1304.38	m^3			
	Total Volume =			1,304.38	m^3	
4	M4					
	Area =	1191.45	m^2			
	Length =	2.75	m'			
	V=	2798.69	m^3			
	Total Volume =			2,798.69	m^3	
5	M5					
	Area =	1143.73	m^2			
	Length =	8.13	m'			
	V=	9492.52	m^3			
	Total Volume =			9,492.52	m^3	
6	M6					
	Area =	752.41	m^2			
	Length =	8.13	m'			
	V=	7707.80	m^3			
	Total Volume =			7,707.80	m^3	
7	MC					
	Area =	780.39	m^2			
	Length =	8.13	m'			
	V=	6230.83	m^3			
	Total Volume =			6,230.83	m^3	
8	M7					
	Area =	328.03	m^2			
	Length =	8.13	m'			
	V=	4392.00	m^3			
	Total Volume =			4,392.00	m^3	

Name Structure : : KD LEPRAK 3
Type of work : Sand Excavation

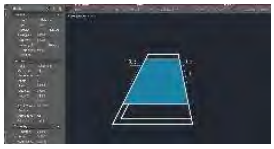
No.	Description	Calculation		Volume	Unit	Drawing reference
9	M8					
	Area =	783.32	m^2			
	Length =	2.75	m'			
	V=	2150.11	m^3			
	Total Volume =			2,150.11	m^3	
10	M9					
	Area =	828.83	m^2			
	Length =	2.75	m'			
	V=	2216.71	m^3			
	Total Volume =			2,216.71	m^3	
11	M10					
	Area =	518.91	m^2			
	Length =	3.93	m'			
	V=	2648.31	m^3			
	Total Volume =			2,648.31	m^3	
12	M11					
	Area =	100.64	m^2			
	Length =	5.00	m'			
	V=	1548.88	m^3			
	Total Volume =			1,548.88	m^3	
13	M12					
	Area =	41.65	m^2			
	Length =	3.30	m'			
	V=	234.78	m^3			
	Total Volume =			234.78	m^3	
14	Volume Galian Dinding Buffer Fill Kanan					
	Area =	251.83	m^2			
	Length =	34.00	m'			
	V=	8562.18	m^3			
	Total Volume =			8,562.18	m^3	
15	Volume Galian Dinding Buffer Fill Kiri					
	Area =	251.83	m^2			
	Length =	87.60	m'			
	V=	22060.20	m^3			
	Total Volume =			22,060.20	m^3	
			Sand Excavation Total Volume =			71,989.50 m^3

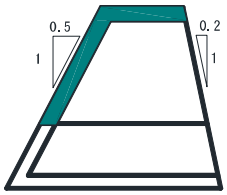
Name Structure : : KD LEPRAK 3
Type of work : Backfill

No.	Description	Calculation		Volume	Unit	Drawing reference
1	M5-M8					
	Area =	15.75	m^2			
	Length =	130.00	m'			
	V=	2047.50	m^3			
	Total Volume =			2,047.50	m^3	
2	Backfill Volume Section C-C					
	Area =	89.81	m^2			
	Length =	23.11	m'			
	V=	2075.51	m^3			
	Total Volume =			2,075.51	m^3	
3	Backfill Volume Section G-G					
	Area =	50.41	m^2			
	Length =	14.00	m'			
	V=	705.74	m^3			
	Total Volume =			705.74	m^3	
4	Backfill Left Side Maindam Total Volume =					
	Area =	89.69	m^2			
	Length =	112.23	m'			
	V=	10065.38	m^3			
	Total Volume =			10,065.38	m^3	
				Backfill Total Volume =		**14,894.13 m^3**

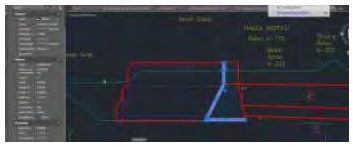
Name Structure : : KD LEPRAK 3
Type of work : Concrete K-350

No.	Description	Calculation		Volume	Unit	Drawing reference
1	M5-M8					
	Area =	8.80	m^2			
	Length =	130.00	m'			
	V=	1144.53	m^3			
	Total Volume =			1,144.53	m^3	
2	DRIP HOLE DINDING					
	Area =	22.16	m^2			
	Thickness =	0.50	m'			
	V=	22.16	m^3			
	Total Volume =			22.16	m^3	
	Area =	3.16	m^2			
	Width =	3.00	m'			
	V=	4.74	m^3			
	Total Volume =			4.74	m^3	
3	Reduced Drip Hole Volume					
	Drip Hole Area =	3.82	m^2			
	Drip Hole High =	3.00	m'			
	Numbers of Drip Hole =	14.00	pcs			
	Volume Drip Hole =	160.59	m^3			
	Total Volume =			160.59	m^3	
			Concrete K-350 Total Volume =		**1,010.85**	m^3

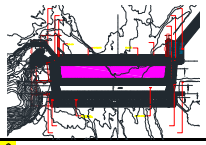




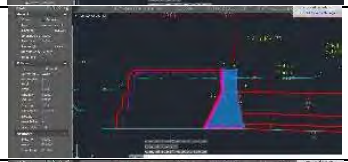
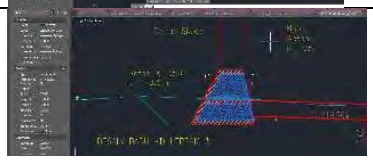
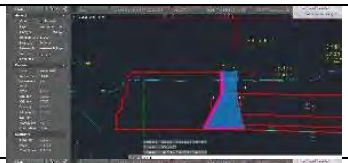
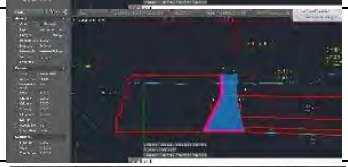
Name Structure : : KD LEPRAK 3
Type of work : K-225 Concrete

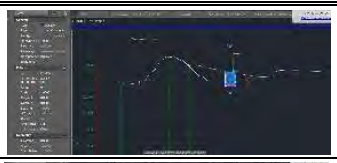
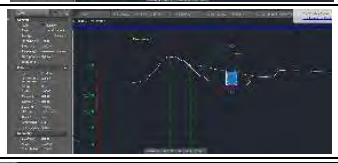
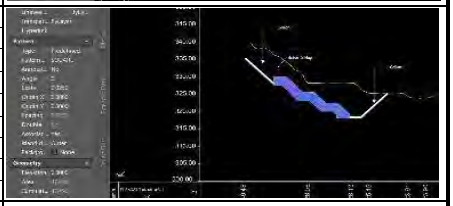
No.	Description	Calculation		Volume	Unit	Drawing reference
1	M0					
	Area =	3.50	m^2			
	Length =	3.50	m'			
	V=	6.13	m^2			
	Total Volume =			6.13	m^2	
1	M1					
	Area =	3.50	m^2			
	Length =	8.00	m'			
	V=	28.00	m^2			
	Total Volume =			28.00	m^2	
2	M2					
	Area =	6.11	m^2			
	Length =	4.00	m'			
	V=	19.21	m^3			
	Total Volume =			19.21	m^3	
3	M3					
	Area =	9.74	m^2			
	Length =	2.75	m'			
	V=	21.79	m^3			
	Total Volume =			21.79	m^3	
4	M4					
	Area =	9.74	m^2			
	Length =	2.25	m'			
	V=	21.92	m^3			
	Total Volume =			21.92	m^3	
5	M5-M8					
	Area =	0.00	m^2			
	Length =	130.00	m'			
	V=	0.00	m^3			
	Total Volume =			-	m^3	
6	M9					
	Area =	9.74	m^2			
	Length =	2.25	m'			
	V=	10.96	m^3			
	Total Volume =			10.96	m^3	
7	M10					
	Area =	6.11	m^2			
	Length =	2.75	m'			
	V=	21.79	m^3			
	Total Volume =			21.79	m^3	
8	M11					
	Area =	6.11	m^2			
	Length =	4.00	m'			
	V=	24.43	m^3			
	Total Volume =			24.43	m^3	

Name Structure : : KD LEPRAK 3
Type of work : K-225 Concrete

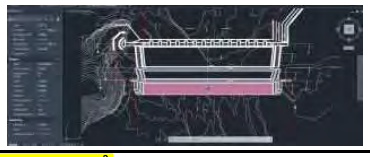
No.	Description	Calculation		Volume	Unit	Drawing reference
9	M12					
	Area =	3.50	m^2			
	Length =	5.00	m'			
	V=	24.02	m^3			
	Total Volume =			24.02	m^3	
10	M-					
	Area =	3.50	m^2			
	Length =	5.00	m'			
	V=	17.50	m^3			
	Total Volume =			17.50	m^3	
11	FLOOR APRON MAINDAM					
	Area =	2857.09	m^2			
	Thickness =	2.00	m'			
	V=	2860.59	m^3			
	Total Volume =			2,860.59	m^3	
			Concrete K-225 Total Volume =			**3,056.33** m^3

Name Structure : : KD LEPRAK 3
Type of work : Cyclops Concrete

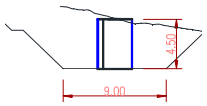
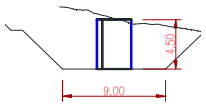
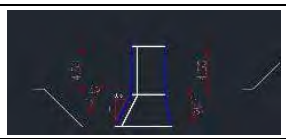
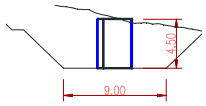
No.	Description	Calculation		Volume	Unit	Drawing reference
1	M0					
	Area =	10.00	m^2			
	Length =	3.50	m'			
	V=	17.50	m^3			
	Total Volume =			17.50	m^3	
2	M1					
	Area =	10.00	m^2			
	Length =	8.00	m'			
	V=	80.00	m^3			
	Total Volume =			80.00	m^3	
3	M2					
	Area =	19.54	m^2			
	Length =	4.00	m'			
	V=	59.09	m^3			
	Total Volume =			59.09	m^3	
4	M3					
	Area =	41.91	m^2			
	Length =	2.75	m'			
	V=	84.49	m^3			
	Total Volume =			84.49	m^3	
5	M4					
	Area =	41.91	m^2			
	Length =	2.25	m'			
	V=	94.29	m^3			
	Total Volume =			94.29	m^3	
6	M5-M8					
	Area =	26.57	m^2			
	Length =	130.00	m'			
	V=	3454.40	m^3			
	Total Volume =			3,454.40	m^3	
7	M9					
	Area =	41.91	m^2			
	Length =	2.25	m'			
	V=	77.04	m^3			
	Total Volume =			77.04	m^3	
8	M10					
	Area =	41.91	m^2			
	Length =	2.75	m'			
	V=	115.25	m^3			
	Total Volume =			115.25	m^3	
9	M11					
	Area =	19.54	m^2			
	Length =	4.00	m'			
	V=	122.90	m^3			
	Total Volume =			122.90	m^3	

No.	Description	Calculation		Volume	Unit	Drawing reference
10	M12					
	Area =	10.00	m^2			
	Length =	5.00	m'			
	V=	73.86	m^3			
	Total Volume =			73.86	m^3	
11	M-					
	Area =	10.00	m^2			
	Length =	5.00	m'			
	V=	50.00	m^3			
	Total Volume =			50.00	m^3	
12	Apron Wall Section. C-C					
	Area =	35.40	m^2			
	Length =	23.11	m'			
	V=	818.02	m^3			
	Total Volume =			818.02	m^3	
13	Apron Wall Section G-G					
	Area =	24.73	m^2			
	Length =	14.00	m'			
	V=	346.29	m^3			
	Total Volume =			346.29	m^3	
14	Right Buffer Fill Wall					
	Area =	47.50	m^2			
	Length =	34.00	m'			
	V=	1614.87	m^3			
	Total Volume =			1,614.87	m^3	
15	Left Buffer Fill Wall					
	Area =	47.50	m^2			
	Length =	87.60	m'			
	V=	4160.66	m^3			
	Total Volume =			4,160.66	m^3	
16	Reduced Drip Hole Volume					
	Drip Hole Area =	23.20	m^2			
	Drip Hole High =	4.00	m'			
	Numbers of Drip Hole =	14.00	pcs			
	Volume Drip Hole =	1299.20	m^3			
	Total Volume =			1,299.20	m^3	
				Cyclop Concrete Total Volume =		**9,869.45 m^3**

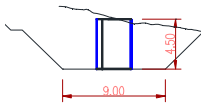
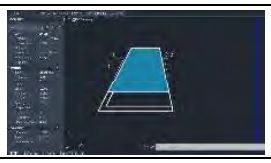
Name Structure : : KD LEPRAK 3
Type of work : Rip-Rap Boulder

No.	Description	Calculation		Volume	Unit	Drawing reference
1	MAINDAM APRON SLAB					
	Area =	1642.05	m^2			
	Thickness =	1.00	m'			
	V =	**1642.05**	m^3			
	Total Volume =			1,642.05	m^3	
			Rip-Rap Boulder Total Volume =			**1,642.05** m^3

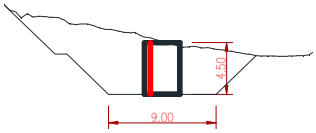
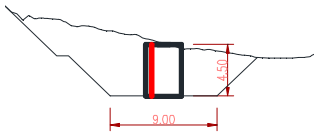
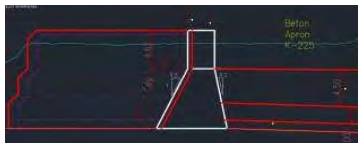
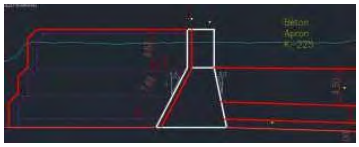
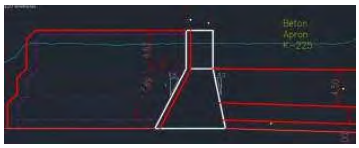
Name Structure : : KD LEPRAK 3
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing reference
1	M0					
	Formwork Legth =	9.00	m'			
	Length =	3.50	m'			
	V=	15.75	m^2			
	Total Volume =			15.75	m^2	
2	M1					
	Formwork Legth =	9.00	m'			
	Length =	8.00	m'			
	V=	72.00	m^2			
	Total Volume =			72.00	m^2	
3	M2					
	Formwork Legth =	15.41	m'			
	Length =	4.00	m'			
	V=	48.82	m^2			
	Total Volume =			48.82	m^2	
4	M3					
	Formwork Legth =	23.97	m'			
	Length =	2.75	m'			
	V=	54.15	m^2			
	Total Volume =			54.15	m^2	
5	M4					
	Formwork Legth =	23.97	m'			
	Length =	2.25	m'			
	V=	53.93	m^2			
	Total Volume =			53.93	m^2	
6	M5-M8					
	Formwork Legth =	14.96	m'			
	Length =	130.00	m'			
	V=	1944.80	m^2			
	Total Volume =			1,944.80	m^2	
7	M9					
	Formwork Legth =	23.97	m'			
	Length =	2.25	m'			
	V=	43.80	m^2			
	Total Volume =			43.80	m^2	
8	M10					
	Formwork Legth =	15.41	m'			
	Length =	2.75	m'			
	V=	54.15	m^2			
	Total Volume =			54.15	m^2	
9	M11					
	Formwork Legth =	15.41	m'			
	Length =	4.00	m'			
	V=	61.64	m^2			
	Total Volume =			61.64	m^2	
10	M12					
	Formwork Legth =	9.00	m'			
	Length =	5.00	m'			
	V=	61.03	m^2			
	Total Volume =			61.03	m^2	

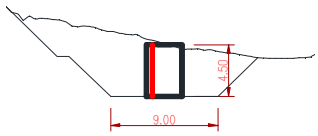
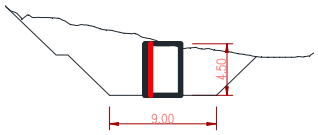
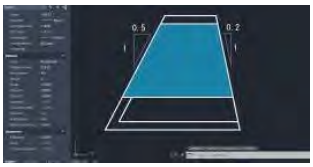
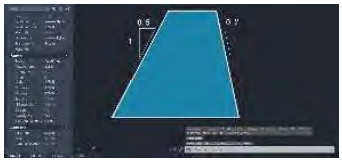
Name Structure : : KD LEPRAK 3
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing reference
11	M-					
	Formwork Legth =	9.00	m'			
	Length =	5.00	m'			
	V=	45.00	m^2			
	Total Volume =			45.00	m^2	
12	DRIP HOLE WALL					
	Area =	23.75	m^2			
	Volume =	23.75	m^2			
	Drip Hole's Numbers =	14.00	pcs			
	Volume =	665.00	m^2	665.00	m^2	
13	Apron Wall Section. C-C					
	Formwork Legth =	25.65	m'			
	Length =	23.11	m'			
	V=	592.87	m^2			
	Total Volume =			592.87	m^2	
14	Apron Wall Section G-G					
	Formwork Legth =	18.57	m'			
	Length =	14.00	m'			
	V=	260.01	m^2			
	Total Volume =			260.01	m^2	
15	Right Buffer Fill Wall					
	Formwork Legth =	26.54	m'			
	Length =	34.00	m'			
	V=	902.36	m^2			
	Total Volume =			902.36	m^2	
16	Left Buffer Fill Wall					
	Formwork Legth =	26.54	m'			
	Length =	87.60	m'			
	V=	2324.91	m^2			
	Total Volume =			2,324.91	m^2	
17	Reduced Drip Hole Volume					
	Drip Hole Area =	3.00	m			
	Drip Hole High =	9.62	m'			
	Numbers of Drip Hole =	14.00	pcs			
	Volume Drip Hole =	404.05	m^2			
	Total Volume =			404.05	m^2	
			Exposed Formwork Total Volume =			6,796.17 m^2

Name Structure : : KD LEPRAK 3
Type of work : Non Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing reference
1	M0					
	Formwork Legth =	4.50	m'			
	Length =	3.50	m'			
	V=	7.88	m^2			
	Total Volume =			7.88	m^2	
2	M1					
	Formwork Legth =	4.50	m'			
	Length =	8.00	m'			
	V=	36.00	m^2			
	Total Volume =			36.00	m^2	
3	M2					
	Formwork Legth =	7.84	m'			
	Length =	4.00	m'			
	V=	24.68	m^3			
	Total Volume =			24.68	m^2	
4	M3					
	Formwork Legth =	12.31	m'			
	Length =	2.75	m'			
	V=	27.71	m^3			
	Total Volume =			27.71	m^2	
5	M4					
	Formwork Legth =	12.31	m'			
	Length =	2.25	m'			
	V=	27.70	m^3			
	Total Volume =			27.70	m^2	
6	M5-M8					
	Formwork Legth =	7.83	m'			
	Length =	130.00	m'			
	V=	1017.41	m^3			
	Total Volume =			1,017.41	m^2	
7	M9					
	Formwork Legth =	12.31	m'			
	Length =	2.25	m'			
	V=	22.65	m^3			
	Total Volume =			22.65	m^2	
8	M10					
	Formwork Legth =	7.84	m'			
	Length =	2.75	m'			
	V=	27.71	m^3			
	Total Volume =			27.71	m^2	
9	M11					
	Formwork Legth =	7.84	m'			
	Length =	4.00	m'			
	V=	31.36	m^3			
	Total Volume =			31.36	m^2	

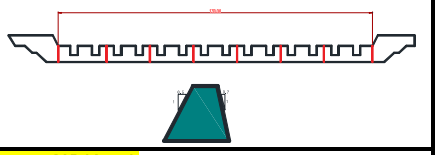
Name Structure : : KD LEPRAK 3
Type of work : Non Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing reference
10	M12					
	Formwork Legth =	4.50	m'			
	Length =	5.00	m'			
	V=	30.85	m^3			
	Total Volume =			30.85	m^2	
11	M-					
	Formwork Legth =	4.50	m'			
	Length =	5.00	m'			
	V=	22.50	m^3			
	Total Volume =			22.50	m^2	
12	DRIP HOLE WALL					
	Area =	22.16	m^2			
	Volume =	22.16	m^2			
	Drip Hole's Numbers =	14.00	pcs			
	Volume =	620.55	m^2	620.55	m^2	
13	JOINT					
	Area =	38.15	m^2			
	Numbers of formwork =	6.00	pcs			
	Volume =	228.90	m^2			
				228.90	m^2	
14	Reduced Drip Hole Volume					
	Drip Hole Width =	4.00	m			
	Drip Hole Length =	5.03	m'			
	Numbers of drip holes =	14.00	pcs			
	Drip Holes Volume =	281.75	m^2			
	Total Volume =			281.75	m^2	
		Non Exposed Formwork Total Volume =			**1,844.14**	m^3

Name Structure : : KD LEPRAK 3
Type of work : Weep Hole

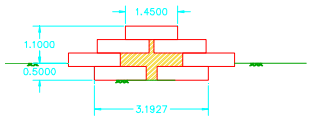
No.	Description	Calculation		Volume	Unit	Drawing reference
1	Apron Wall Section. C-C					The distance between pipes is 2 m, the number of 1 section is 4 pieces
	Numbers of pipe	46.00	pcs		Kanan Kiri	
	Length 1 Pipe =	3.00	m			
	Length =	23.11	m'			
	Volume =	138.00	m'			
	Total Volume =			138.00	m	
2	Apron Wall Section G-G					The distance between pipes is 2 m, the number of 1 section is 4 pieces
	Numbers of pipe	28.00	pcs			
	Length 1 Pipe =	3.00	m			
	Length =	14.00	m'			
	Volume =	84.00	m'			
	Total Volume =			84.00	m	
3	Right Buffer Fill Wall					The distance between pipes is 2 m, the number of 1 section is 6 pieces
	Numbers of pipe	102.00	pcs			
	Length 1 Pipe =	3.00	m			
	Length =	34.00	m'			
	Volume =	306.00	m'			
	Total Volume =			306.00	m	
4	Left Buffer Fill Wall					The distance between pipes is 2 m, the number of 1 section is 6 pieces
	Numbers of pipe	262.00	pcs			
	Length 1 Pipe =	3.00	m			
	Length =	87.60	m'			
	Volume =	786.00	m'			
	Total Volume =			786.00	m	
				Weep Hole Total Volume =		**1,314.00 m**

Name Structure : : KD LEPRAK 3
Type of work : Joint Filler

No.	Description	Calculation		Volume	Unit	Drawing reference
1	JOINT					
	Area =	38.15	m^2			
	Number of Joint =	8.00	pcs			
	Volume =	305.20	m^2			
	Total Volume =			305.20	m^2	

Joint Filler Total Area =	**305.20**	m2
Thickness =	**0.02**	m
Joint Filler Total Volume =	**6.10**	m^3

Name Structure : : KD LEPRAK 3
Type of work : Geo Bag, Sandfill & Pump Operation

No.	Description	Calculation		Volume	Unit	Drawing reference
						
1	Number of Geobag =	7.00	Pcs			
	Fill Length =	50.000	m			
	Geobag Length =	2.400	m			
	Number of Geobags Lengthwise =	20.000	Pcs			
		Geo Bag Total Volume =		140.00	Pcs	
2	Fill Area =	0.87	m^2			
	Length =	50	m			
	Fill Volume =	43.500	m3			
	Moving Times =	2.000	Times			
	Total Volume =	87.000	m3			
		Sand Fill Total Volume =		87.00	m^3	
	Pump Operation					
	Weekly =	2.000				
	Daily =	5.000				
	Hourly =	7.000				
	Total Volume =	Pump Operation Volume =		70.00	Hour	

SUMMARY QUANTITY DD LEPRAK 3			
No.	**Description**	**Unit**	**Volume**
1	Stake Out	m2	39,456.17
2	Cross Profile	m	187.00
3	Bowplank	m	1,656.50
4	Mechanical Sand Excavation	m3	288,176.25
5	Sand Backfill	m3	863.23
6	Concrete Making and Casting fc' = 20 Mpa (K 225) Mechanically Transported within a radius of 200	m3	18,246.83
7	1 m2 Exposed Concrete Wall Formwork with 18 mm Multiflex	m2	10,129.81
8	1 m2 Scaffolding / Supporting Formwork Rafters 5/7 for Concrete Walls Tm 2.50 m	m2	10,129.81
9	Carefully dismantle 1 m2 of Formwork and Scaffolding	m2	10,129.81
10	Joint Filler	m3	18.00
11	Weep Hole	m	945.00
12	Geo Bag	Pcs	1,015.00
13	sand Fill	m3	609.00
14	Pump Operation Dewatering	Hour	140.00

Name Structure : : DD Leprak 3
Type of work : Stake Out

No.	Description	Calculation	Volume	Unit	Drawing Reference
1	Area =				
		39456.17	39,456.17	m^2	
	Total Area Stake Out		39,456.17	m²	

Name Structure : : DD Leprak 3
Type of work : Cross Profile

No.	Description	Calculation	Volume	Unit	Drawing Reference
					
1					
	Numbers of Section =	34.00	187.00	m	
	Cross Length =	5.50	,		
	Total		187.00	m	

Name Structure : : DD Leprak 3
Type of work : Bowplank

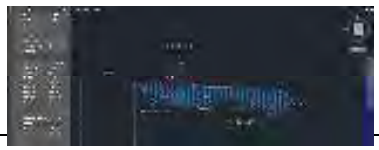
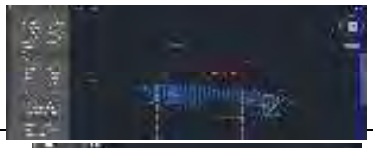
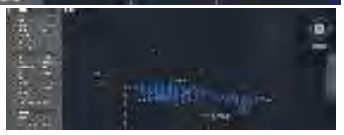
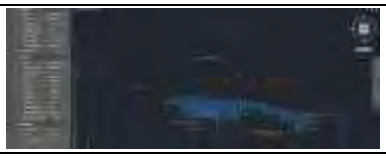
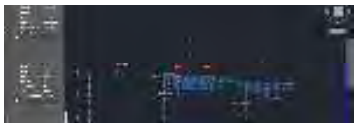
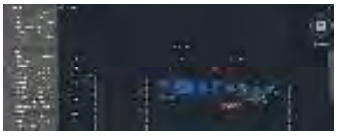
No.	Description	Calculation	Volume	Unit	Drawing Reference
1					
	Volume	1656.50	1,656.50	m'	
	Bowplank Total =		1,656.50	m'	

Name Structure : : DD Leprak 3

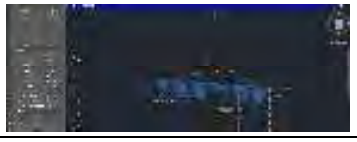
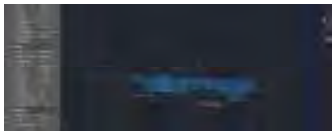
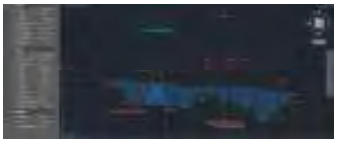
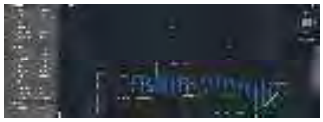
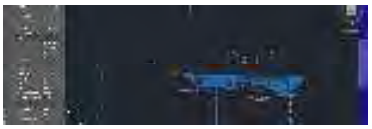
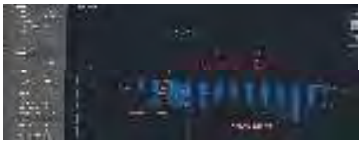
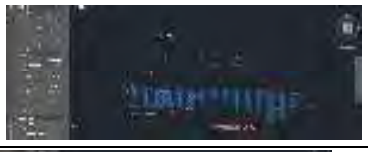
Type of work : Sand Excavation

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	STA 0+025					
	Area =	465.31	m^2			
	Length =	25.00	m'			
	Volume =	11632.75	m^3			
	Total Volume =			11,632.75	m^3	
2	STA 0+050					
	Area =	361.20	m^2			
	Length =	25.00	m'			
	Volume =	9030.00	m^3			
	Total Volume =			9,030.00	m^3	
3	STA 0+075					
	Area =	493.51	m^2			
	Length =	25.00	m'			
	Volume =	12337.75	m^3			
	Total Volume =			12,337.75	m^3	
4	STA 0+100					
	Area =	447.30	m^2			
	Length =	25.00	m'			
	Volume =	11182.50	m^3			
	Total Volume =			11,182.50	m^3	
5	STA 0+125					
	Area =	398.73	m^2			
	Length =	25.00	m'			
	Volume =	9968.25	m^3			
	Total Volume =			9,968.25	m^3	
6	STA 0+150					
	Area =	292.45	m^2			
	Length =	25.00	m'			
	Volume =	7311.25	m^3			
	Total Volume =			7,311.25	m^3	
7	STA 0+175					
	Area =	256.84	m^2			
	Length =	25.00	m'			
	Volume =	6421.00	m^3			
	Total Volume =			6,421.00	m^3	
8	STA 0+200					
	Area =	227.79	m^2			
	Length =	25.00	m'			
	Volume =	5694.75	m^3			
	Total Volume =			5,694.75	m^3	
9	STA 0+225					
	Area =	222.64	m^2			
	Length =	25.00	m'			
	Volume =	5566.00	m^3			
	Total Volume =			5,566.00	m^3	

Name Structure : : DD Leprak 3
Type of work : Sand Excavation

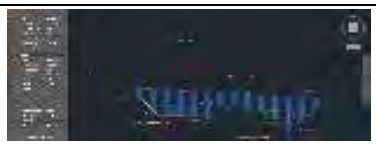
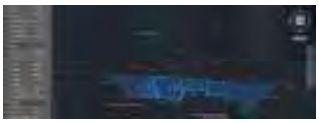
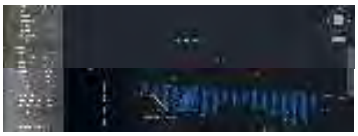
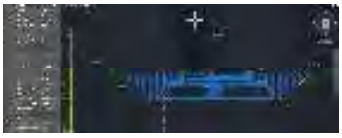
No.	Description	Calculation		Volume	Unit	Drawing Reference
10	STA 0+250					
	Area =	316.23	m^2			
	Length =	25.00	m'			
	Volume =	7905.75	m^3			
	Total Volume =			7,905.75	m^3	
11	STA 0+275					
	Area =	376.28	m^2			
	Length =	25.00	m'			
	Volume =	9407.00	m^3			
	Total Volume =			9,407.00	m^3	
12	STA 0+300					
	Area =	312.93	m^2			
	Length =	25.00	m'			
	Volume =	7823.25	m^3			
	Total Volume =			7,823.25	m^3	
13	STA 0+325					
	Area =	260.95	m^2			
	Length =	25.00	m'			
	Volume =	6523.75	m^3			
	Total Volume =			6,523.75	m^3	
14	STA 0+350					
	Area =	257.14	m^2			
	Length =	25.00	m'			
	Volume =	6428.50	m^3			
	Total Volume =			6,428.50	m^3	
15	STA 0+375					
	Area =	264.62	m^2			
	Length =	25.00	m'			
	Volume =	6615.50	m^3			
	Total Volume =			6,615.50	m^3	
16	STA 0+400					
	Area =	275.98	m^2			
	Length =	25.00	m'			
	Volume =	6899.50	m^3			
	Total Volume =			6,899.50	m^3	
17	STA 0+425					
	Area =	324.69	m^2			
	Length =	25.00	m'			
	Volume =	8117.25	m^3			
	Total Volume =			8,117.25	m^3	
18	STA 0+450					
	Area =	350.02	m^2			
	Length =	25.00	m'			
	Volume =	8750.50	m^3			
	Total Volume =			8,750.50	m^3	
19	STA 0+475					
	Area =	352.29	m^2			
	Length =	25.00	m'			
	Volume =	8807.25	m^3			
	Total Volume =			8,807.25	m^3	

Name Structure : : DD Leprak 3
Type of work : Sand Excavation

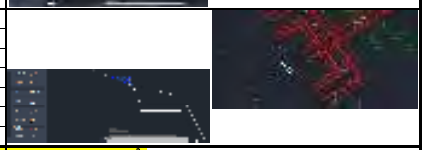
No.	Description	Calculation		Volume	Unit	Drawing Reference
20	STA 0+500					
	Area =	344.73	m^2			
	Length =	25.00	m'			
	Volume =	8618.25	m^3			
	Total Volume =			8,618.25	m^3	
21	STA 0+525					
	Area =	343.63	m^2			
	Length =	25.00	m'			
	Volume =	8590.75	m^3			
	Total Volume =			8,590.75	m^3	
22	STA 0+550					
	Area =	291.95	m^2			
	Length =	25.00	m'			
	Volume =	7298.75	m^3			
	Total Volume =			7,298.75	m^3	
23	STA 0+575					
	Area =	240.66	m^2			
	Length =	25.00	m'			
	Volume =	6016.50	m^3			
	Total Volume =			6,016.50	m^3	
24	STA 0+600					
	Area =	258.59	m^2			
	Length =	25.00	m'			
	Volume =	6464.75	m^3			
	Total Volume =			6,464.75	m^3	
25	STA 0+625					
	Area =	368.86	m^2			
	Length =	25.00	m'			
	Volume =	9221.50	m^3			
	Total Volume =			9,221.50	m^3	
26	STA 0+650					
	Area =	414.26	m^2			
	Length =	25.00	m'			
	Volume =	10356.50	m^3			
	Total Volume =			10,356.50	m^3	
27	STA 0+675					
	Area =	395.32	m^2			
	Length =	25.00	m'			
	Volume =	9883.00	m^3			
	Total Volume =			9,883.00	m^3	
28	STA 0+700					
	Area =	285.77	m^2			
	Length =	25.00	m'			
	Volume =	7144.25	m^3			
	Total Volume =			7,144.25	m^3	
29	STA 0+725					
	Area =	287.00	m^2			
	Length =	25.00	m'			
	Volume =	7175.00	m^3			
	Total Volume =			7,175.00	m^3	

Name Structure : : DD Leprak 3

Type of work : Sand Excavation

No.	Description	Calculation		Volume	Unit	Drawing Reference
30	STA 0+750					
	Area =	382.65	m^2			
	Length =	25.00	m'			
	Volume =	9566.25	m^3			
	Total Volume =			9,566.25	m^3	
31	STA 0+775					
	Area =	355.55	m^2			
	Length =	25.00	m'			
	Volume =	8888.75	m^3			
	Total Volume =			8,888.75	m^3	
32	STA 0+800					
	Area =	391.59	m^2			
	Length =	25.00	m'			
	Volume =	9789.75	m^3			
	Total Volume =			9,789.75	m^3	
33	STA 0+825					
	Area =	401.02	m^2			
	Length =	25.00	m'			
	Volume =	10025.50	m^3			
	Total Volume =			10,025.50	m^3	
34	STA 0+850					
	Area =	508.57	m^2			
	Length =	25.00	m'			
	Volume =	12714.25	m^3			
	Total Volume =			12,714.25	m^3	
				Sand Excavation Total Volume =		**288,176.25** m^3

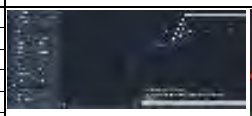
Name Structure : : DD Leprak 3
Type of work : Backfill

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	LEFT WING					
	Area =	35.78	m^2			
	Length =	23.00	m'			
	Volume =	822.96	m^3			
	Total Volume =			822.96	m^3	
4	RIGHT WING					
	Area =	1.75	m^2			
	Length =	23.00	m'			
	Volume =	40.27	m^3			
	Total Volume =			40.27	m^3	
				Backfill Total Volume =		**863.23** m^3

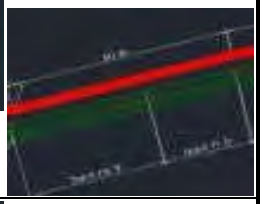
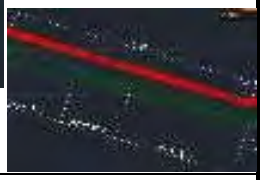
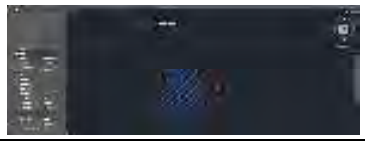
Name Structure : : DD Leprak 3
Type of work : K-225 Concrete

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	TYPE A (RIGHT WING)					
	Area =	14.36	m^2			
	Length =	44.00	m'			
	Volume =	631.94	m^3			
	Total Volume =			631.94	m^3	
2	TYPE A SABO DAM					
	Area =	22.50	m^2			
	Length =	316.62	m'			
	Volume =	7123.95	m^3			
	Reduced by Drip Hole Volume					
	Drip Holes Area =	7.20	m^2			
	Drip Holes Width =	3.00	m'			
	Numbers of Drip Hole =	27.00	pcs			
	Volume Drip Hole =	583.20	m^3			
	Total Volume =			6,540.75	m^3	
3	TYPE A SABO DAM					
	Area =	22.50	m^2			
	Length =	191.40	m'			
	Volume =	4306.50	m^3			
	Reduced by Drip Hole Volume					
	Drip Holes Area =	7.20	m^2			
	Drip Holes Width =	3.00	m'			
	Numbers of Drip Hole =	21.00	pcs			
	Volume Drip Hole =	453.60	m^3			
	Total Volume =			3,852.90	m^3	

4	TYPE ABC SABO DAM				
	Area =	22.50	m^2		
	Length =	265.26	m'		
	Volume =	5968.35	m^3		
	Reduced by Drip Hole Volume				
	Drip Holes Area =	7.20	m^2		
	Drip Holes Width =	3.00	m'		
	Numbers of Drip Hole =	28.00	pcs		
	Volume Drip Hole =	604.80	m^3		
	Total Volume =			5,363.55	m^3
5	BODY SABO DAM RIGHT BANK				
	Area =	22.50	m^2		
	Length =	54.88	m'		
	Volume =	1234.80	m^3		
	Total Volume =			1,234.80	m^3
6	TYPE A (LEFT WING)				
	Area =	14.36	m^2		
	Length =	43.37	m'		
	Volume =	622.89	m^3		
	Total Volume =			622.89	m^3
				K-225 Concrete Total Volume =	**18,246.83 m^3**



Name Structure : : DD Leprak 3
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	TYPE A (RIGHT WING)					 
	Formwork Length =	15.31	m'			
	Length =	44.00	m'			
	Volume =	673.64	m^2			
	Total Volume =			673.64	m^2	
2	TYPE A SABO DAM					 
	Formwork Length =	10.49	m'			
	Length =	316.62	m'			
	Volume =	3321.34	m^2			
	Reduced by Drip Hole Volume					
	Drip Holes Area =	3.00	m'			
	Drip Holes Height =	4.19	m'			
	Numbers of Drip Hole =	27.00	pcs			
	Volume Drip Hole =	339.39	m^2			
	Total Volume =			2,981.95	m^2	
3	TYPE A SABO DAM					 
	Formwork Length =	10.49	m'			
	Length =	191.40	m'			
	Volume =	2007.79	m^2			
	Reduced by Drip Hole Volume					
	Drip Holes Area =	3.00	m'			
	Drip Holes Height =	4.19	m'			
	Numbers of Drip Hole =	21.00	pcs			
	Volume Drip Hole =	263.97	m^2			
	Total Volume =			1,743.82	m^2	
4	TYPE ABC SABO DAM					 
	Formwork Length =	10.49	m'			
	Length =	265.26	m'			
	Volume =	2782.58	m^2			
	Reduced by Drip Hole Volume					
	Drip Holes Area =	3.00	m'			
	Drip Holes Height =	4.19	m'			
	Numbers of Drip Hole =	28.00	pcs			
	Volume Drip Hole =	351.96	m^2			
	Total Volume =			2,430.62	m^2	
5	BODY SABO DAM RIGHT BANK					
	Formwork Length =	10.49	m^2			
	Length =	54.88	m'			
	Volume =	575.69	m^3			
	Total Volume =			575.69	m^3	
6	DRIP HOLE					
	Formwork Area =	7.00	m^2			
	1 Drip Hole need =	2.00	side			
	Total drip hole =	76.00	pcs			
	Volume =	1064.00	m^2	1,064.00	m^2	
5	TYPE A (LEFT WING)					 
	Formwork Length =	15.22	m'			
	Length =	43.37	m'			
	Volume =	660.09	m^2			
	Total Volume =			660.09	m^2	
			Exposed Formwork Total Volume =			10,129.81 m^2

Name Structure : : DD Leprak 3
Type of work : Joint Filler

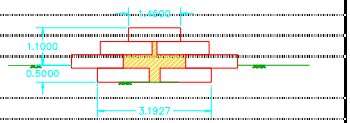
No.	Description	Calculation		Volume	Unit	Drawing Reference
1	JOINT					
	Area =	22.50	m^2			
	Number of joint =	40.00	pcs			
	Volume =	900.00	m^2			
	Total Volume =			900.00	m^2	

Joint Filler Total Volume =	**900.00**	**m2**
Thickness =	**0.02**	**m**
Total volume =	**18.00**	**m3**

Name Structure : : DD Leprak 3
Type of work : Weep Hole

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	**Left wing**					Distance between pipes 2 m, number of 1 section 2 pieces
	Numbers of pipe =	236.00	pcs		Left-Right	 
	Length 1 Pipe	3.00	m			
	Length =	236.66	m'			
	Volume =	708.00	m'			
	Total Volume =			708.00	m	
2	**Right Wing**					Distance between pipes 2 m, number of 1 section 2 pieces
	Numbers of pipe =	79.00	Buah			 
	Length 1 Pipe	3.00	m			
	Length =	79.10	m'			
	Volume =	237.00	m^3			
	Total Volume =			237.00	m	
				Weephole Total volume =		**945.00** m

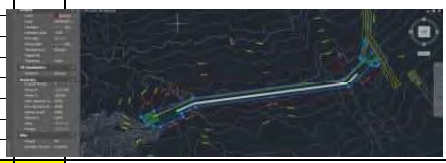
Name Structure : : DD LEPRAK 3
Type of work : Geo Bag, Sandfill & Pump Operation

No.	Description	Calculation		Volume	Unit	Drawing reference
1	Number of Geobag =	7.00	Pcs			
	Fill Length =	350.000	m			
	Geobag Length =	2.400	m			
	Number of Geobags Lengthwise =	145.000	Pcs			
		Geo Bag Total Volume =		1,015.00	Pcs	
2	Fill Area =	0.87	m^2			
	Length =	350	m			
	Fill Volume =	304.500	m3			
	Moving Times =	2.000	Times			
	Total Volume =	609.000	m3			
		Sand Fill Total Volume =		609.00	m^3	
	Pump Operation					
	Weekly =	4.000				
	Daily =	5.000				
	Hourly =	7.000				
	Total Volume =	Pump Operation Volume =		140.00	Hour	

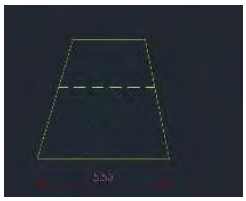
SUMMARY OF QUANTITY DD LEPRAK 2			
No.	**Description**	**Unit**	**Volume**
1	Stake Out	m2	38,958.53
2	Cross Profile	m	209.00
3	Bowplank	m	852.61
4	Mechanical Sand Excavation	m3	446,876.25
5	Sand Backfill	m3	20,106.86
6	Concrete Making and Casting fc' = 20 Mpa (K 225) Mechanically Transported within a radius of 2000 m with a Concrete Pump (CP)	m3	17,798.43
7	1 m2 Exposed Concrete Wall Formwork with 18 mm Multiflex	m2	18,328.23
8	1 m2 Scaffolding / Supporting Formwork Rafters 5/7 for Concrete Walls Tm 2.50 m	m2	18,328.23
9	Carefully dismantle 1 m2 of Formwork and Scaffolding	m2	18,328.23
10	Joint Filler	m3	14.45
11	Weep Hole	m	828.00
12	GeoBag		1,162.00
13	Sandfill		696.00
14	Pump Operation Dewatering		140.00

Name Structure : : DD Leprak 2
Type of work : Stake Out

No.	Description	Calculation	Volume	Unit	Drawing Reference
1	Area =				
		38958.53	38,958.53	m^2	
	Total Area Stake Out		38,958.53	m²	



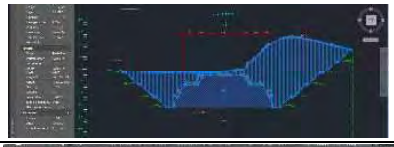
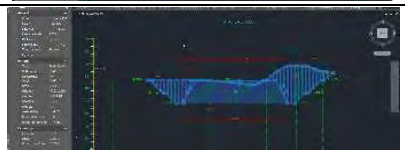
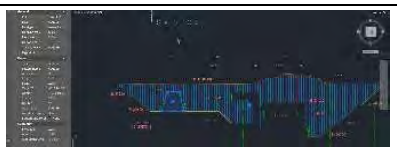
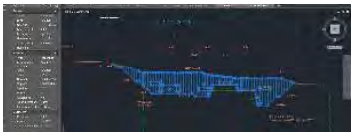
Name Structure : : DD Leprak 2
Type of work : Cross Profile

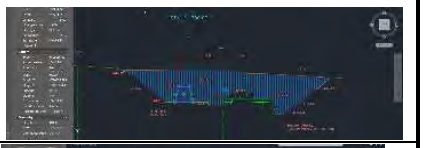
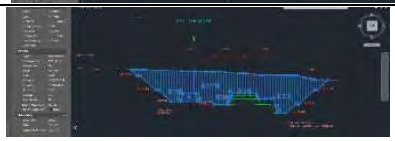
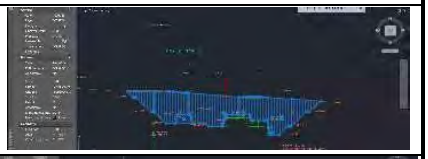
No.	Description	Calculation	Volume	Unit	Drawing Reference
					
1					
	Numbers of Section =	38.00	209.00	m	
	Cross Length =	5.50			
	Total		209.00	m	

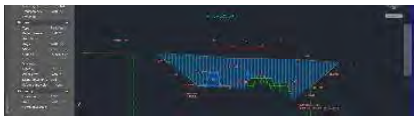
Name Structure : : DD Leprak 2
Type of work : Bowplank

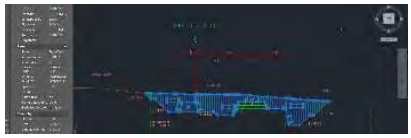
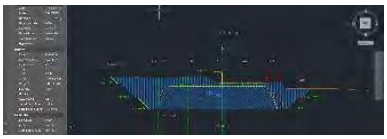
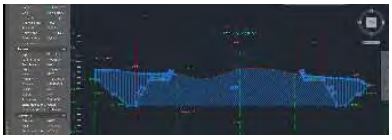
No.	Description	Calculation	Volume	Unit	Drawing Reference
1					
	Volume	852.61	852.61	m'	
	Bowplank Total =		852.61	m'	

Name Structure : : DD Leprak 2
Type of work : Sand Excavation

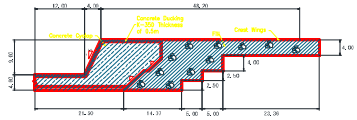
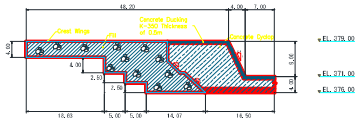
No.	Description	Calculation		Volume	Unit	Drawing Reference
1	STA 0+050					
	Luas =	1319.04	m^2			
	Panjang =	25.00	m'			
	Volume =	32976.00	m^2			
	Total Volume =			32,976.00	m^2	
2	STA 0+075					
	Luas =	617.56	m^2			
	Panjang =	25.00	m'			
	Volume =	15439.00	m^2			
	Total Volume =			15,439.00	m^2	
3	STA 0+100					
	Luas =	468.43	m^2			
	Panjang =	25.00	m'			
	Volume =	11710.80	m^3			
	Total Volume =			11,710.80	m^3	
4	STA 0+125					
	Luas =	304.15	m^2			
	Panjang =	25.00	m'			
	Volume =	7603.63	m^3			
	Total Volume =			7,603.63	m^3	
5	STA 0+150					
	Luas =	191.07	m^2			
	Panjang =	25.00	m'			
	Volume =	4776.70	m^3			
	Total Volume =			4,776.70	m^3	
6	STA 0+175					
	Luas =	157.07	m^2			
	Panjang =	25.00	m'			
	Volume =	3926.78	m^3			
	Total Volume =			3,926.78	m^3	
7	STA 0+200					
	Luas =	303.84	m^2			
	Panjang =	25.00	m'			
	Volume =	7596.05	m^3			
	Total Volume =			7,596.05	m^3	
8	STA 0+225					
	Luas =	441.32	m^2			
	Panjang =	25.00	m'			
	Volume =	11032.90	m^2			
	Total Volume =			11,032.90	m^2	
9	STA 0+250					
	Luas =	521.04	m^2			
	Panjang =	25.00	m'			
	Volume =	13025.88	m^2			
	Total Volume =			13,025.88	m^2	

10	STA 0+275					
	Luas =	536.70	m^2			
	Panjang =	25.00	m'			
	Volume =	13417.53	m^2			
	Total Volume =			13,417.53	m^2	
11	STA 0+300					
	Luas =	537.60	m^2			
	Panjang =	25.00	m'			
	Volume =	13440.10	m^2			
	Total Volume =			13,440.10	m^2	
12	STA 0+325					
	Luas =	521.12	m^2			
	Panjang =	25.00	m'			
	Volume =	13028.10	m^2			
	Total Volume =			13,028.10	m^2	
13	STA 0+350					
	Luas =	476.54	m^2			
	Panjang =	25.00	m'			
	Volume =	11913.40	m^3			
	Total Volume =			11,913.40	m^3	
14	STA 0+375					
	Luas =	514.28	m^2			
	Panjang =	25.00	m'			
	Volume =	12856.98	m^3			
	Total Volume =			12,856.98	m^3	
15	STA 0+400					
	Luas =	528.43	m^2			
	Panjang =	25.00	m'			
	Volume =	13210.78	m^3			
	Total Volume =			13,210.78	m^3	
16	STA 0+425					
	Luas =	553.35	m^2			
	Panjang =	25.00	m'			
	Volume =	13833.83	m^2			
	Total Volume =			13,833.83	m^2	
17	STA 0+450					
	Luas =	567.86	m^2			
	Panjang =	25.00	m'			
	Volume =	14196.53	m^2			
	Total Volume =			14,196.53	m^2	
18	STA 0+475					
	Luas =	576.06	m^2			
	Panjang =	25.00	m'			
	Volume =	14401.58	m^3			
	Total Volume =			14,401.58	m^3	
19	STA 0+500					
	Luas =	578.23	m^2			
	Panjang =	25.00	m'			
	Volume =	14455.80	m^3			
	Total Volume =			14,455.80	m^3	

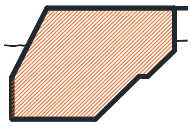
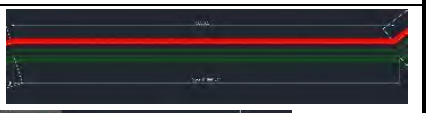
20	STA 0+525					
	Luas =	610.08	m^2			
	Panjang =	25.00	m'			
	Volume =	15251.95	m^3			
	Total Volume =			15,251.95	m^3	
21	STA 0+550					
	Luas =	569.81	m^2			
	Panjang =	25.00	m'			
	Volume =	14245.33	m^2			
	Total Volume =			14,245.33	m^2	
22	STA 0+575					
	Luas =	574.88	m^2			
	Panjang =	25.00	m'			
	Volume =	14372.08	m^2			
	Total Volume =			14,372.08	m^2	
23	STA 0+600					
	Luas =	551.99	m^2			
	Panjang =	25.00	m'			
	Volume =	13799.85	m^3			
	Total Volume =			13,799.85	m^3	
24	STA 0+625					
	Luas =	542.16	m^2			
	Panjang =	25.00	m'			
	Volume =	13554.00	m^3			
	Total Volume =			13,554.00	m^3	
25	STA 0+650					
	Luas =	502.32	m^2			
	Panjang =	25.00	m'			
	Volume =	12558.03	m^3			
	Total Volume =			12,558.03	m^3	
26	STA 0+675					
	Luas =	475.28	m^2			
	Panjang =	25.00	m'			
	Volume =	11882.08	m^3			
	Total Volume =			11,882.08	m^3	
27	STA 0+700					
	Luas =	472.05	m^2			
	Panjang =	25.00	m'			
	Volume =	11801.13	m^2			
	Total Volume =			11,801.13	m^2	
28	STA 0+725					
	Luas =	429.83	m^2			
	Panjang =	25.00	m'			
	Volume =	10745.80	m^2			
	Total Volume =			10,745.80	m^2	
29	STA 0+750					
	Luas =	347.60	m^2			
	Panjang =	25.00	m'			
	Volume =	8689.90	m^3			
	Total Volume =			8,689.90	m^3	

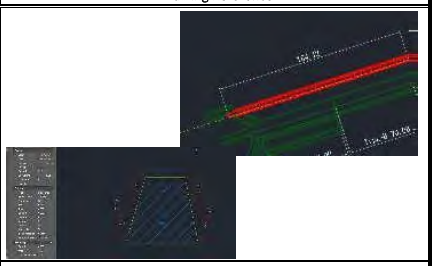
30	STA 0+775					
	Luas =	221.43	m^2			
	Panjang =	25.00	m'			
	Volume =	5535.65	m^3			
	Total Volume =			5,535.65	m^3	
31	STA 0+800					
	Luas =	260.56	m^2			
	Panjang =	25.00	m'			
	Volume =	6514.00	m^3			
	Total Volume =			6,514.00	m^3	
32	STA 0+825					
	Luas =	303.96	m^2			
	Panjang =	25.00	m'			
	Volume =	7599.10	m^2			
	Total Volume =			7,599.10	m^2	
33	STA 0+850					
	Luas =	362.23	m^2			
	Panjang =	25.00	m'			
	Volume =	9055.63	m^2			
	Total Volume =			9,055.63	m^2	
34	STA 0+875					
	Luas =	410.39	m^2			
	Panjang =	25.00	m'			
	Volume =	10259.78	m^3			
	Total Volume =			10,259.78	m^3	
35	STA 0+900					
	Luas =	559.17	m^2			
	Panjang =	25.00	m'			
	Volume =	13979.23	m^3			
	Total Volume =			13,979.23	m^3	
36	STA 0+925					
	Luas =	967.62	m^2			
	Panjang =	25.00	m'			
	Volume =	24190.43	m^3			
	Total Volume =			24,190.43	m^3	
37	STA 0+950					
	Luas =	0.00	m^2			
	Panjang =	25.00	m'			
	Volume =	0.00	m^3			
	Total Volume =			-	m^3	
38	STA 0+975					
	Luas =	0.00	m^2			
	Panjang =	25.00	m'			
	Volume =	0.00	m^3			
	Total Volume =			-	m^3	
				Sand Excavation Total Volume =		**446,876.25 m^3**

Name Structure : : DD Leprak 2
Type of work : Backfill

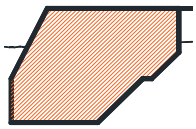
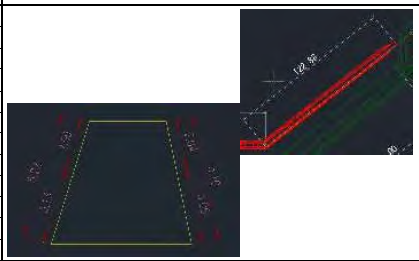
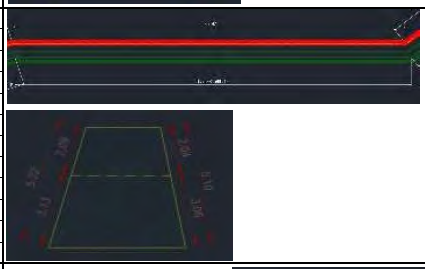
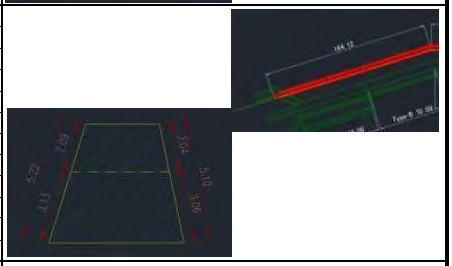
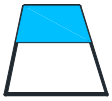
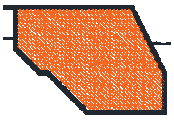
No.	Description	Calculation		Volume	Unit	Drawing Reference
1	LESFT WING					
	Area =	288.80	m^2			
	Length =	38.41	m'			
	Volume =	11092.87	m^3			
	Total Volume =			11,092.87	m^3	
4	RIGHT WING					
	Area =	269.88	m^2			
	Length =	33.40	m'			
	Volume =	9013.99	m^3			
	Total Volume =			9,013.99	m^3	
				Backfill Total Volume =		**20,106.86 m^3**

Name Structure : : DD Leprak 2
Type of work : K-225 Concrete

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	TYPE A (LEFT WING)					
	Area =	187.50	m^2			
	Sabo Dam Width =	5.50	m'			
	Volume =	1031.25	m^3			
	Total Volume =			1,031.25	m^3	
2	TYPE A SABO DAM					 
	Area =	21.25	m^2			
	Length =	104.38	m'			
	Volume =	2218.08	m^3			
	Reduced by Drip Hole Volume					
	Drip Holes Area =	7.00	m^2			
	Drip Holes Width =	3.00	m'			
	Numbers of Drip Hole =	5.00	pcs			
	Volume Drip Hole =	105.00	m^3			
	Total Volume =			2,113.08	m^3	
2	TYPE B SABO DAM					 
	Area =	21.25	m^2			
	Length =	565.62	m'			
	Volume =	12019.43	m^3			
	Reduced by Drip Hole Volume					
	Drip Holes Area =	7.00	m^2			
	Drip Holes Width =	3.00	m'			
	Numbers of Drip Hole =	55.00	pcs			
	Volume Drip Hole =	1155.00	m^3			
	Total Volume =			10,864.43	m^3	

No.	Description	Calculation		Volume	Unit	Drawing Reference
3	TYPE B SABO DAM					
	Area =	21.25	m^2			
	Length =	145.62	m'			
	Volume =	3094.43	m^3			
	Reduced by Drip Hole Volume					
	Drip Holes Area =	7.00	m^2			
	Drip Holes Width =	3.00	m'			
	Numbers of Drip Hole =	16.00	pcs			
	Volume Drip Hole =	336.00	m^3			
	Total Volume =			2,758.43	m^3	
4	TYPE A (RIGHT WING)					
	Area =	187.50	m^2			
	Sabo Dam Width =	5.50	m'			
	Volume =	1031.25	m^3			
	Total Volume =			1,031.25	m^3	
			K-225 Concrete Total Volume =			17,798.43 m^3

Name Structure : : DD Leprak 2
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	TYPE A (LEFT WING)					
	Area =	187.50	m'			
	Sabo Dam Width =	26.32	m'			
	Volume =	4934.81	m^2			
	Total Volume =			4,934.81	m^2	
2	TYPE A SABO DAM					
	Area =	10.32	m^2			
	Length =	96.56	m'			
	Volume =	996.41	m^2			
	Reduced by Drip Hole Volume					
	Drip Holes Area =	3.00	m'			
	Drip Holes Height =	4.13	m'			
	Numbers of Drip Hole =	5.00	pcs			
	Volume Drip Hole =	61.91	m^2			
	Total Volume =			934.50	m^2	
2	TYPE B SABO DAM					
	Area =	10.32	m^2			
	Length =	565.62	m'			
	Volume =	5836.63	m^2			
	Reduced by Drip Hole Volume					
	Drip Holes Area =	3.00	m'			
	Drip Holes Height =	4.13	m'			
	Numbers of Drip Hole =	55.00	pcs			
	Volume Drip Hole =	681.05	m^2			
	Total Volume =			5,155.58	m^2	
3	TYPE B SABO DAM					
	Area =	10.32	m^2			
	Length =	145.62	m'			
	Volume =	1502.65	m^3			
	Reduced by Drip Hole Volume					
	Drip Holes Area =	3.00	m'			
	Drip Holes Height =	4.13	m'			
	Numbers of Drip Hole =	16.00	pcs			
	Volume Drip Hole =	198.12	m^2			
	Total Volume =			1,304.53	m^2	
4	DRIP HOLE					
	Formwork Area =	7.00	m^2			
	1 Drip Hole need =	2.00	side			
	Total drip hole =	76.00	pcs			
	Volume =	1064.00	m^2	1,064.00	m^2	
5	TYPE A (RIGHT WING)					
	Area =	187.50	m^2			
	Sabo Dam Width =	26.32	m'			
	Volume =	4934.81	m^3			
	Total Volume =			4,934.81	m^2	
				Exposed Formwork Total Volume =		**18,328.23 m^2**

Name Structure : : DD Leprak 2
Type of work : Joint Filler

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	JOINT					
	Area =	21.25	m^2			
	Number of joint =	34.00	pcs			
	Volume =	722.50	m^2			
	Total Volume =			722.50	m^2	

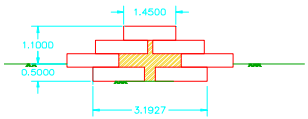
Joint Filler Total Volume =	**722.50**	m2
Thickness =	**0.02**	m
Total volume =	**14.45**	m3

Name Structure : : DD Leprak 2
Type of work : Weep Hole

No.	Uraian	Perhitungan		Volume	sat.	Gambar
1	Left wing					Distance between pipes 2 m, number of 1 section 2 pieces
	Numbers of pipe =	156.00	pcs		Left-Right	
	Length 1 Pipe	3.00	m			
	Length =	156.90	m'			
	Volume =	468.00	m'			
	Total Volume =			468.00	m	
2	Right Wing					Distance between pipes 2 m, number of 1 section 2 pieces
	Numbers of pipe =	120.00	Buah			
	Length 1 Pipe	3.00	m			
	Length =	120.82	m'			
	Volume =	360.00	m^3			
	Total Volume =			360.00	m	
				Weephole Total volume =		**828.00** m

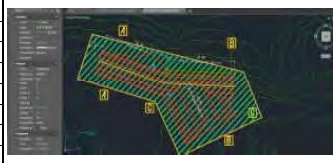
Name Structure : : DD LEPRAK 2
Type of work : Geo Bag, Sandfill & Pump Operation

No.	Description	Calculation		Volume	Unit	Drawing reference
1	Number of Geobag =	7.00	Pcs			
	Fill Length =	400.000	m			
	Geobag Length =	2.400	m			
	Number of Geobags Lengthwise =	166.000	Pcs			
		Geo Bag Total Volume =		1,162.00	Pcs	
2	Fill Area =	0.87	m^2			
	Length =	400	m			
	Fill Volume =	348.000	m3			
	Moving Times =	2.000	Times			
	Total Volume =	696.000	m3			
		Sand Fill Total Volume =		696.00	m^3	
	Pump Operation					
	Weekly =	4.000				
	Daily =	5.000				
	Hourly =	7.000				
	Total Volume =	Pump Operation Volume =		140.00	Hour	

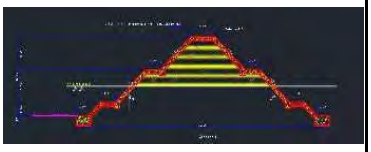


SUMMARY QUANTITY DIKE LEPRAK UPPER DIVERSION			
No.	**Description**	**Unit**	**Volume**
1	Stake Out Trace of New Infrastructure & Wooden Stakes (Raft 5/7) Length 1 m	m2	5,460.00
2	1 m Excavation Cross Profile	m	218.40
3	Bowplank	m	260.00
4	Mechanical Sand Excavation	m3	5,372.50
5	Concrete Making and Casting fc' = 20 Mpa (K 225) Mechanically Transported within a radius of 2000 m with a Concrete Pump (CP)	m3	3,481.80
6	Cyclops Concrete 60% Concrete fc' 15 Mpa: 40% Split Stone, with Concrete Pump (CP)	m3	9,435.29
7	1 m2 Exposed Concrete Wall Formwork with 18 mm Multiflex	m2	3,858.86
8	1 m2 Regular Formwork for Concrete Walls with Multiflex 12 mm or 18 mm	m2	3,079.13
9	1 m2 Scaffolding / Supporting Formwork Rafters 5/7 for Concrete Walls Tm 2.50 m	m2	6,937.99
10	Carefully dismantle 1 m2 of Formwork and Scaffolding	m2	3,858.86
11	Dismantle 1 m2 of Formwork and Scaffolding in the Normal Way (and Clear Debris) for Non Expose	m2	3,079.13
12	Joint Filler	m3	3.37

Name Structure : : Dike Leprak Upper Diversion
Type of work : Stake Out

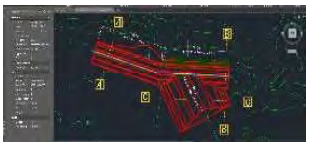
No.	Description	Calculation	Volume	Unit	Drawing Reference
1					
	Area =	5,460.00	5,460.00	m^2	
	Total Area Stake Out		5,460.00	m²	

Name Structure : : Dike Leprak Upper Diversion
Type of work : Cross Profile

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	Dike span =	43.68	*m*			
	Measure each section =	5.00	section	218.40	m	
				,		
	Total			218.40	m	

Name Structure : : Dike Leprak Upper Diversion
Type of work : Bowplank

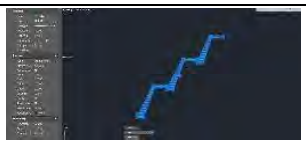
No.	Description	Calculation	Volume	Unit	Drawing Reference
1					
	Around Area =	260.00	260.00	m	
	Total Area Bowplank		260.00	m'	



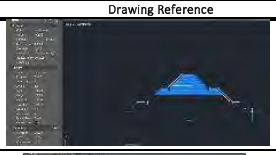
Name Structure : : Dike Leprak Upper Diversion
Type of work : Sand Excavation

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	No. 0					
	Area =	100.75	m^2			
	Length =	30.00	m'			
	Volume =	**3022.50**	m^2			
	Total Volume =			3,022.50	m^3	
2	No. 1					
	Area =	23.50	m^2			
	Length =	50.00	m'			
	Volume =	**1175.00**	m^3			
	Total Volume =			1,175.00	m^3	
3	No. 2					
	Area =	23.50	m^2			
	Length =	50.00	m'			
	Volume =	**1175.00**	m^3			
	Total Volume =			1,175.00	m^3	
			Excavation Total Volume =			**5,372.50** m^3

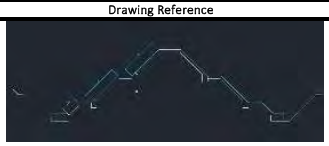
Name Structure : : Dike Leprak Upper Diversion
Type of work : Concrete K-225

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	No. 0					
	Area =	33.96	m^2			
	Length =	30.00	m'			
	Volume =	1018.70	m^2			
	Total Volume =			1,018.70	m^3	
2	No. 1					
	Area =	24.63	m^2			
	Length =	50.00	m'			
	Volume =	1231.55	m^3			
	Total Volume =			1,231.55	m^3	
3	No. 2					
	Area =	24.63	m^2			
	Length =	50.00	m'			
	Volume =	1231.55	m^3			
	Total Volume =			1,231.55	m^3	
				K-225 Concrete Total Volume =		**3,481.80 m^3**

Name Structure : : Dike Leprak Upper Diversion
Type of work : Cyclop Concrete

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	No. 0					
	Area =	82.47	m^2			
	Length =	30.00	m'			
	Volume =	2474.15	m^2			
	Total Volume =			2,474.15	m^3	
2	No. 1					
	Area =	84.13	m^2			
	Length =	50.00	m'			
	Volume =	4206.40	m^3			
	Total Volume =			4,206.40	m^3	
3	No. 2					
	Area =	55.09	m^2			
	Length =	50.00	m'			
	Volume =	2754.74	m^3			
	Total Volume =			2,754.74	m^3	
				Cyclop Concrete Total Volume =		**9,435.29 m^3**

Name Structure : : Dike Leprak Upper Diversion
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	No. 0					
	Formwork Length =	36.94	m			
	Length =	30.00	m'			
	Volume =	1108.20	m^2			
	Total Volume =			1,108.20	m^2	
2	No. 1					
	Formwork Length =	27.51	m			
	Length =	50.00	m'			
	Volume =	1375.33	m^3			
	Total Volume =			1,375.33	m^2	
3	No. 2					
	Formwork Length =	27.51	m^2			
	Length =	50.00	m'			
	Volume =	1375.33	m^3			
	Total Volume =			1,375.33	m^2	
				Exposed Formwork Total Volume =		**3,858.86 m^2**

Name Structure : : Dike Leprak Upper Diversion
Type of work : Non Exposed Formwork

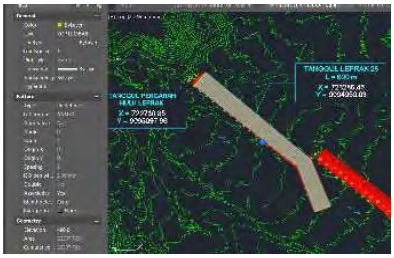
No.	Description	Calculation		Volume	Unit	Drawing Reference
1	No. 0					
	Formwork Length =	31.31	m			
	Length =	30.00	m'			
	Volume =	939.41	m^2			
	Total Volume =			939.41	m^2	
2	No. 1					 
	Formwork Length =	21.40	m			
	Length =	50.00	m'			
	Volume =	1069.86	m^3			
	Total Volume =			1,069.86	m^2	
3	No. 2					 
	Formwork Length =	21.40	m^2			
	Length =	50.00	m'			
	Volume =	1069.86	m^3			
	Total Volume =			1,069.86	m^2	
			Non Exposed Formwork Total Volume =			3,079.13 m^2

Name Structure : : Dike Leprak Upper Diversion
Type of work : Joint Filler

No.	Description	Calculation	Volume	Unit	Drawing Reference
1	Bekisting Joint No. 1				Asumsi Joint per 25 m an
	Area =	84.13 m^2			
	Volume =	**84.13** m^3			
	Total Volume =		84.13	m^2	
2	Bekisting Joint No. 2				Asumsi Joint per 25 m an
	Area =	84.13 m^2			
	Volume =	**84.13** m^3			
	Total Volume =		84.13	m^2	
			Joint Filler Total Volume =	**168.26**	m^3
			Joitn Filler Thickness =	**0.02**	m
			Joint Filler Total Volume =	**3.37**	m^2

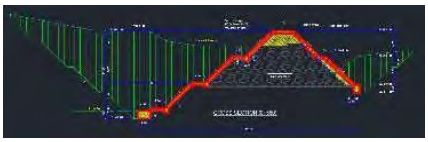
LEPRAK 26 DIKE QUANTITY SUMMARY			
No.	**Description**	**Unit**	**Volume**
1	Stake Out Trace of New Infrastructure & Wooden Stakes (Raft 5/7) Length 1 m	m2	26,307.77
2	1 m Excavation Cross Profile	m	916.80
3	Bowplank	m	1,200
4	Concrete Making and Casting fc' = 20 Mpa (K 225) Mechanically Transported within a radius of 2000 m with a Concrete Pump (CP)	m3	19,075.48
5	Cyclops Concrete 60% Concrete fc' 15 Mpa: 40% Split Stone, with Concrete Pump (CP)	m3	9,395.16
6	1 m2 Exposed Concrete Wall Formwork with 18 mm Multiflex	m2	24,327.28
7	1 m2 Scaffolding / Supporting Formwork Rafters 5/7 for Concrete Walls Tm 2.50 m	m2	31,676.78
8	Carefully dismantle 1 m2 of Formwork and Scaffolding	m2	24,327.28
9	1 m2 Regular Formwork for Concrete Walls with Multiflex 12 mm or 18 mm	m2	7,349.50
10	Dismantle 1 m2 of Formwork and Scaffolding in the Normal Way (and Clear Debris) for Non Expose	m2	7,349.50
11	Mechanical Sand Excavation	m3	230,439.15
12	Geotextile	m2	11,100.00

Name Structure : : Dike Leprak 26
Type of work : Stake Out

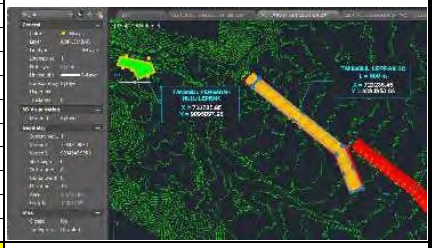
No.	Description	Calculation	Volume	Unit	Drawing Reference
					
1	Area =				
		26307.77	26,307.77	m^2	
		Stake Out Total Volume =	26,307.77	m²	

Name Structure : : Dike Leprak 26
Type of work : Cross Profile

No.	Description	Calculation	Volume	Unit	Drawing Reference
1	Dike span =	38.20			
	Measure each section =	24.00	916.80	m	
			,		
		Cross Profile Total Volume =	916.80	m	



Name Structure : : Dike Leprak 26
Type of work : Bowplank

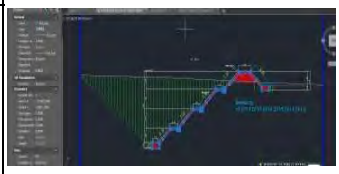
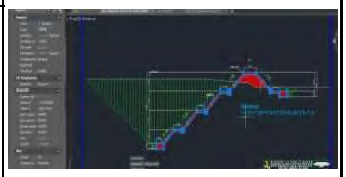
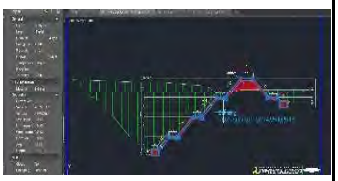
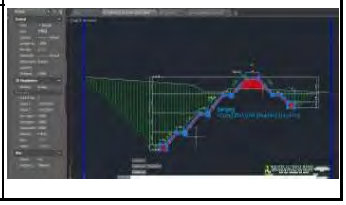
No.	Description	Calculation	Volume	Unit	Drawing Reference
1					
	Profile Length =	1156.00	1,200.00	m	
	Cross Section Length =	44.00			
		Bowplank Total Volume =	1,200.00	m'	

Name Structure : : Dike Leprak 26
Type of work : Sand Excavation

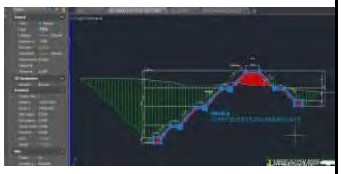
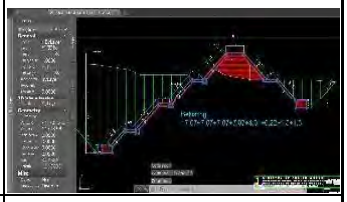
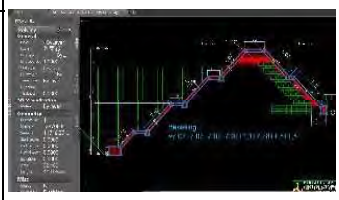
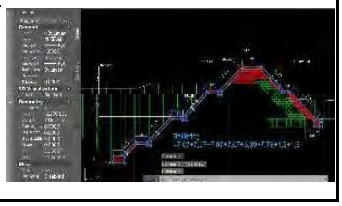
No.	Description	Calculation	Volume	Unit	Drawing Reference
0					
	Area =	470.42			
	Length =	25.000			
	V=	(470,42) / 2 x 25,00	5,880.25	m^3	
1					
	Area =	459.19			
	Length =	25.000			
	V=	(470,42 + 459,19) / 2 x 25,00	11,620.13	m^3	
2					
	Area =	497.81			
	Length =	25.00			
	V=	(497,81 + 497,81) / 2 x 25,00	12,445.25	m^3	
3					
	Area =	476.24			
	Length =	25.00			
	V=	(497,81 + 476,24) / 2 x 25,00	12,175.63	m^3	
4					
	Area =	401.73			
	Length =	25.00			
	V=	(476,24 + 401,73) / 2 x 25,00	10,974.63	m^3	
5					
	Area =	419.55			
	Length =	25.00			
	V=	(401,73 + 419,55) / 2 x 25,00	10,266.00	m^3	
6					
	Area =	365.50			
	Length =	25.00			
	V=	(419,55 + 365,50) / 2 x 25,00	9,813.11	m^3	
7					
	Area =	343.68			
	Length =	25.00			
	V=	(365,50 + 343,68) / 2 x 25,00	8,864.73	m^3	
8					
	Area =	358.17			
	Length =	25.00			
	V=	(343,68 + 358,17) / 2 x 25,00	8,773.13	m^3	
9					
	Area =	344.10			
	Length =	25.00			
	V=	(358,17 + 344,10) / 2 x 25,00	8,778.38	m^3	
10					
	Area =	335.77			
	Length =	25.00			
	V=	(344,10 + 335,77) / 2 x 25,00	8,498.38	m^3	
11					
	Area =	344.25			
	Length =	25.00			
	V=	(335,77 + 344,25) / 2 x 25,00	8,500.25	m^3	
12					
	Area =	370.00			
	Length =	25.00			
	V=	(344,25 + 370,00) / 2 x 25,00	8,928.13	m^3	
13					
	Area =	389.10			
	Length =	25.00			
	V=	(370,00 + 389,10) / 2 x 25,00	9,488.75	m^3	
14					
	Area =	412.62			
	Length =	25.00			
	V=	(389,10 + 412,62) / 2 x 25,00	10,021.50	m^3	

15					
	Area =	414.36			
	Length =	25.00			
	V=	(412,62 + 414,36) / 2 x 25,00	10,337.25	m^3	
16					
	Area =	445.84			
	Length =	25.00			
	V=	(414,36 + 445,84) / 2 x 25,00	10,752.50	m^3	
17					
	Area =	486.93			
	Length =	25.00			
	V=	(445,84 + 486,93) / 2 x 25,00	11,659.63	m^3	
18					
	Area =	478.54			
	Length =	25.00			
	V=	(486,93 + 478,54) / 2 x 25,00	12,068.38	m^3	
19					
	Area =	431.52			
	Length =	25.00			
	V=	(478,54 + 431,52) / 2 x 25,00	11,375.75	m^3	
20					
	Area =	342.73			
	Length =	25.00			
	V=	(431,52 + 342,73) / 2 x 25,00	9,678.13	m^3	
21					
	Area =	341.51			
	Length =	25.00			
	V=	(342,73 + 341,51) / 2 x 25,00	8,553.00	m^3	
22					
	Area =	428.61			
	Length =	25.00			
	V=	(341,51 + 428,61) / 2 x 25,00	9,626.50	m^3	
23					
	Area =	395.10			
	Length =	25.00			
	V=	(428,61 + 395,10) / 2 x 25,00	10,296.38	m^3	
		Sand Excavation Total Volume =	230,439.15	m^3	

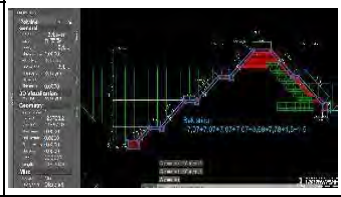
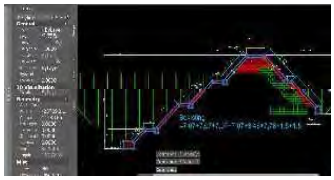
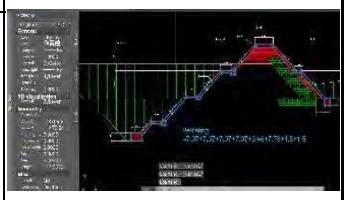
Name Structure : : Dike Leprak 26
Type of work : Concrete K-225

No.	Description	Calculation	Volume	Unit	Drawing Reference
0					
	Area =	29.62 m2			
	Length =	25.00 m^1			
	Volume =	740.60 m^3			
	Total Volume =		740.60	m3	
					
1					
	Area =	31.84 m^2			
	Length =	25.00 m^1			
	Volume =	795.93 m^3			
	Total Volume =		795.93	m3	
					
2					
	Area =	32.34 m^2			
	Length =	25.00 m^1			
	Volume =	808.58 m^3			
	Total Volume =		808.58	m3	
					
3					
	Area =	33.02 m^2			
	Length =	25.00 m^1			
	Volume =	825.38 m^3			
	Total Volume =		825.38	m3	
					

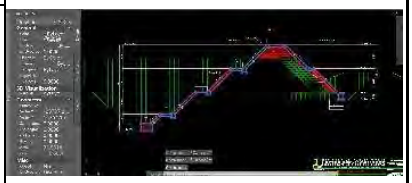
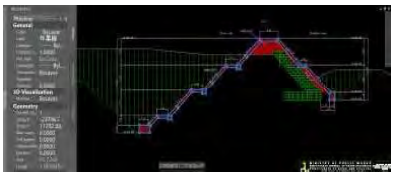
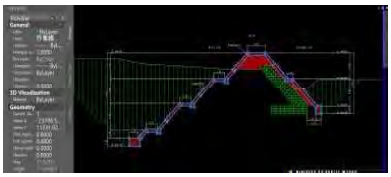
Name Structure : : Dike Leprak 26
Type of work : Concrete K-225

No.	Description	Calculation		Volume	Unit	Drawing Reference
4						
	Area =	33.69	m^2			
	Length =	25.00	m^1			
	Volume =	842.15	m^3			
				842.15	m3	
						
5						
	Area =	34.36	m^2			
	Length =	25.00	m^1			
	Volume =	858.95	m^3			
	Total Volume =			858.95	m3	
						
6						
	Area =	32.47	m^2			
	Length =	25.00	m^1			
	Volume =	811.73	m^3			
	Total Volume =			811.73	m3	
						
7						
	Area =	32.36	m^2			
	Length =	25.00	m^1			
	Volume =	809.05	m^3			
	Total Volume =			809.05	m3	
						

Name Structure : : Dike Leprak 26
Type of work : Concrete K-225

No.	Description	Calculation	Volume	Unit	Drawing Reference
8					
	Area =	32.26 m^2			
	Length =	25.00 m^1			
	Volume =	806.38 m^3			
	Total Volume =		806.38	m3	
					
9					
	Area =	32.15 m^2			
	Length =	25.00 m^1			
	Volume =	803.75 m^3			
	Total Volume =		803.75	m3	
					
10					
	Area =	32.04 m^2			
	Length =	25.00 m^1			
	Volume =	801.10 m^3			
			801.10	m3	
					
11					
	Area =	31.94 m^2			
	Length =	25.00 m^1			
	Volume =	798.45 m^3			
	Total Volume =		798.45	m3	
					
		Concrete K-225 Sub Total Volume =			9,702.03 m^3

Name Structure : : Dike Leprak 26
Type of work : Concrete K-225

No.	Description	Calculation	Volume	Unit	Drawing Reference
12					
	Area =	31.83 m^2			
	Length =	25.00 m'			
	Volume =	795.78 m^3			
	Total Volume =		795.78	m3	
					
13					
	Area =	31.73 m^2			
	Length =	25.00 m'			
	Volume =	793.15 m^3			
	Total Volume =		793.15	m3	
					
14					
	Area =	31.62 m^2			
	Length =	25.00 m'			
	Volume =	790.50 m^3			
	Total Volume =		790.50	m3	
					
15					
	Area =	31.51 m^2			
	Length =	25.00 m'			
	Volume =	787.75 m^3			
	Total Volume =		787.75	m3	
					

Name Structure : : Dike Leprak 26
Type of work : Concrete K-225

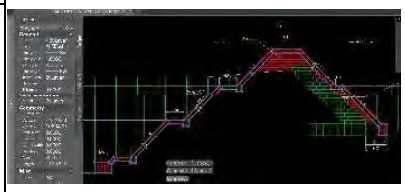
No.	Description	Calculation	Volume	Unit	Drawing Reference
16					
	Area =	31.40 m^2			
	Length =	25.00 m'			
	Volume =	785.08 m^3			
			785.08	m3	

17					
	Area =	31.30 m^2			
	Length =	25.00 m'			
	Volume =	782.50 m^3			
	Total Volume =		782.50	m3	

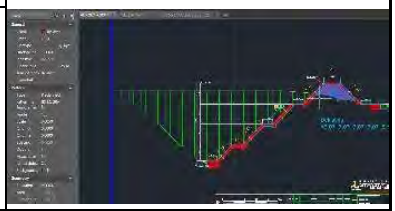
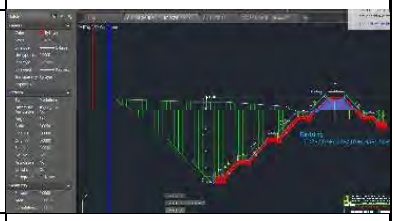
18					
	Area =	31.19 m^2			
	Length =	25.00 m'			
	Volume =	779.75 m^3			
	Total Volume =		779.75	m3	

19					
	Area =	31.08 m^2			
	Length =	25.00 m'			
	Volume =	777.00 m^3			
	Total Volume =		777.00	m3	

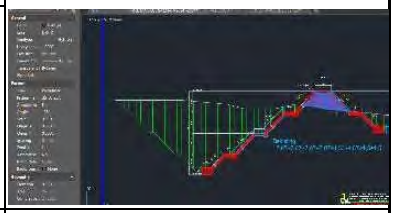
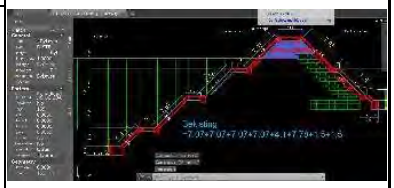
Name Structure : : Dike Leprak 26
Type of work : Concrete K-225

No.	Description	Calculation	Volume	Unit	Drawing Reference
20					
	Area =	30.98 m^2			
	Length =	25.00 m'			
	Volume =	774.45 m^3			
	Total Volume =		774.45	m3	
					
21					
	Area =	30.87 m^2			
	Length =	25.00 m'			
	Volume =	771.75 m^3			
			771.75	m3	
					
22					
	Area =	30.77 m^2			
	Length =	25.00 m'			
	Volume =	769.25 m^3			
	Total Volume =		769.25	m3	
					
23					
	Area =	30.66 m^2			
	Length =	25.00 m'			
	Volume =	766.50 m^3			
	Total Volume =		766.50	m3	
					
		Concrete K-225 Total Volume =	19,075.48	m^3	

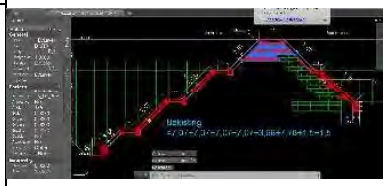
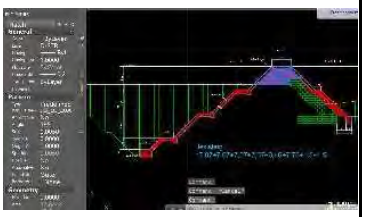
Name Structure : : 26 Dike Leprak
Type of work : Cyclop Concrete

No.	Description	Calculation		Volume	Unit	Drawing Reference
0						
	Area =	12.57	m^2			
	Length =	25.00	m			
	Volume =	**314.36**	m^3			
	Total Volume =			314.36	m3	
						
1						
	Area =	16.76	m^2			
	Length =	25.00	m			
	Volume =	**419.03**	m^3			
	Total Volume =			419.03	m3	
						
2						
	Area =	15.06	m^2			
	Length =	25.00	m			
	Volume =	**376.53**	m^3			
	Total Volume =			376.53	m3	
						
3						
	Area =	15.58	m^2			
	Length =	25.00	m			
	Volume =	**389.50**	m^3			
	Total Volume =			389.50	m3	
						

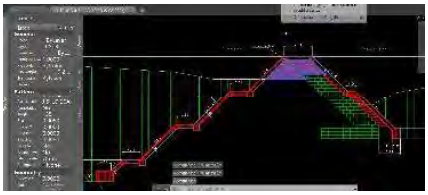
Name Structure : : 26 Dike Leprak
Type of work : Cyclop Concrete

No.	Description	Calculation		Volume	Unit	Drawing Reference
4						
	Area =	24.35	m^2			
	Length =	25.00	m			
	Volume =	608.75	m^3			
				608.75	m3	
						
5						
	Area =	30.29	m^2			
	Length =	25.00	m			
	Volume =	757.25	m^3			
	Total Volume =			757.25	m3	
						
6						
	Area =	15.31	m^2			
	Length =	25.00	m			
	Volume =	382.75	m^3			
	Total Volume =			382.75	m3	
						
7						
	Area =	15.90	m^2			
	Length =	25.00	m			
	Volume =	397.50	m^3			
	Total Volume =			397.50	m3	
						

Name Structure : : 26 Dike Leprak
Type of work : Cyclop Concrete

No.	Description	Calculation		Volume	Unit	Drawing Reference
8						
	Area =	16.50	m^2			
	Length =	25.00	m			
	Volume =	412.50	m^3			
	Total Volume =			412.50	m3	
						
9						
	Area =	17.17	m^2			
	Length =	25.00	m			
	Volume =	429.25	m^3			
	Total Volume =			429.25	m3	
						
10						
	Area =	17.84	m^2			
	Length =	25.00	m			
	Volume =	446.00	m^3			
				446.00	m3	
						
11						
	Area =	12.59	m^2			
	Length =	25.00	m			
	Volume =	314.75	m^3			
	Total Volume =			314.75	m3	
						
				Cyclop Concrete Sub Total Volume =		5,248.16 m^3

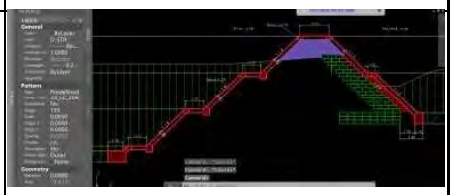
Name Structure : : Leprak 26 Dike
Type of work : Cyclop Concrete

No.	Description	Calculation		Volume	Unit	awing Reference
12						
	Area =	13.08	m^2			
	Length =	25.00	m			
	Volume =	327.00	m^3			
	Total Volume =			327.00	m3	
						
13						
	Area =	13.58	m^2			
	Length =	25.00	m			
	Volume =	339.50	m^3			
	Total Volume =			339.50	m3	
						
14						
	Area =	14.15	m^2			
	Length =	25.00	m			
	Volume =	353.75	m^3			
	Total Volume =			353.75	m3	
						
15						
	Area =	14.73	m^2			
	Length =	25.00	m			
	Volume =	368.25	m^3			
	Total Volume =			368.25	m3	
						

Name Structure : : Leprak 26 Dike
Type of work : Cyclop Concrete

No.	Description	Calculation		Volume	Unit	awing Reference
16						
	Area =	15.16	m^2			
	Length =	25.00	m			
	Volume =	379.00	m^3			
				379.00	m3	
						
17						
	Area =	15.62	m^2			
	Length =	25.00	m			
	Volume =	390.50	m^3			
	Total Volume =			390.50	m3	
						
18						
	Area =	11.17	m^2			
	Length =	25.00	m			
	Volume =	279.25	m^3			
	Total Volume =			279.25	m3	
						
19						
	Area =	11.63	m^2			
	Length =	25.00	m			
	Volume =	290.75	m^3			
	Total Volume =			290.75	m3	
						

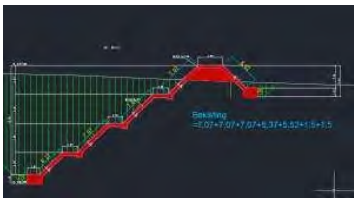
Name Structure : : Leprak 26 Dike
Type of work : Cyclop Concrete

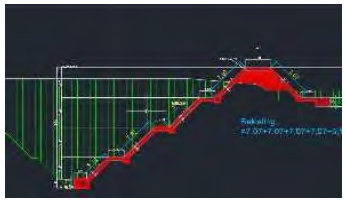
No.	Description	Calculation		Volume	Unit	awing Reference
20						
	Area =	12.11	m^2			
	Length =	25.00	m			
	Volume =	302.75	m^3			
	Total Volume =			302.75	m3	
						
21						
	Area =	13.81	m^2			
	Length =	25.00	m			
	Volume =	345.25	m^3			
				345.25	m3	
						
22						
	Area =	13.08	m^2			
	Length =	25.00	m			
	Volume =	327.00	m^3			
	Total Volume =			327.00	m3	
						
23						
	Area =	17.76	m^2			
	Length =	25.00	m			
	Volume =	444.00	m^3			
				444.00	m3	
	Total Volume =					
						

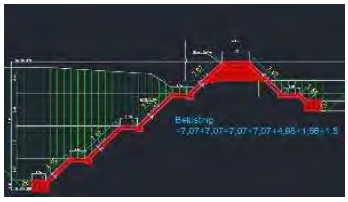
Cyclop Concrete Total Volume = 9,395.16

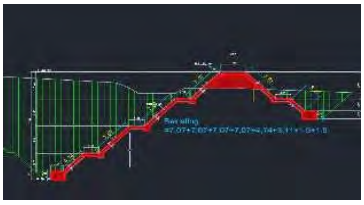
Name Structure : : Dike Leprak 26
Type of work : Exposed Formwork

No.	Description	Calculation			Volume	Unit	Drawing Reference
0							
	Formwork Length =	35.10	m'				
	Length =	25.00	m'				
	Volume =	877.50	m2				
	Total Volume =				877.50	m2	
1							
	Formwork Length =	36.44	m'				
	Panjang =	25.00	m'				
	Volume =	911.00	m2				
	Total Volume =				911.00	m2	
2							
	Formwork Length =	36.29	m'				
	Panjang =	25.00	m'				
	Volume =	907.25	m2				
	Total Volume =				907.25	m2	
3							
	Formwork Length =	39.13	m'	39.13			
	Panjang =	25.00	m'				
	Volume =	978.25	m2				
	Total Volume =				978.25	m2	

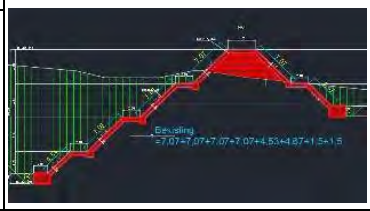








Name Structure : : Dike Leprak 26
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing Reference
4						
	Formwork Length =	40.48	m'			
	Panjang =	25.00	m'			
	Volume =	1012.00	m2			
				1,012.00	m2	
						
5						
	Formwork Length =	41.81	m'			
	Panjang =	25.00	m'			
	Volume =	1045.28	m2			
	Total Volume =			1,045.28	m2	
						
6						
	Formwork Length =	43.16	m'			
	Panjang =	25.00	m'			
	Volume =	1079.00	m2			
	Total Volume =			1,079.00	m2	
						
7						
	Formwork Length =	42.95	m'			
	Panjang =	25.00	m'			
	Volume =	1073.75	m2			
	Total Volume =			1,073.75	m2	
						

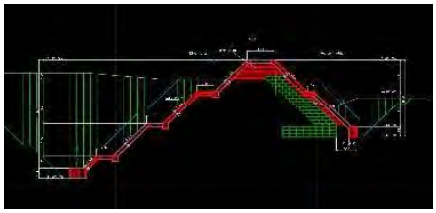
Name Structure : : Dike Leprak 26
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing Reference
8						
	Formwork Length =	42.74	m'			
	Panjang =	25.00	m'			
	Volume =	1068.50	m2			
	Total Volume =			1,068.50	m2	
9						
	Formwork Length =	42.52	m'			
	Panjang =	25.00	m'			
	Volume =	1063.00	m2			
	Total Volume =			1,063.00	m2	
10						
	Formwork Length =	42.31	m'			
	Panjang =	25.00	m'			
	Volume =	1057.75	m2			
	Total Volume =			1,057.75	m2	
11						
	Formwork Length =	42.10	m'			
	Panjang =	25.00	m'			
	Volume =	1052.50	m2			
	Total Volume =			1,052.50	m2	
	Exposed Formwork Sub Total Volume =			**12,125.78**	m2	

Name Structure : : Dike Leprak 26
Type of work : Exposed Formwork

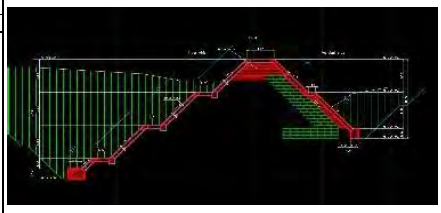
No.	Description	Calculation		Volume	Unit	awing Reference
12						
	Formwork Length =	41.89	m'			
	Panjang =	25.00	m'			
	Volume =	**1047.25**	m2			
	Total Volume =			1,047.25	m2	

13						
	Formwork Length =	41.68	m'			
	Panjang =	25.00	m'			
	Volume =	**1042.00**	m2			
	Total Volume =			1,042.00	m2	



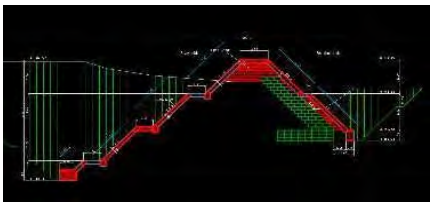
14						
	Formwork Length =	41.46	m'			
	Panjang =	25.00	m'			
	Volume =	**1036.50**	m2			
	Total Volume =			1,036.50	m2	

15						
	Formwork Length =	41.25	m'			
	Panjang =	25.00	m'			
	Volume =	**1031.25**	m2			
	Total Volume =			1,031.25	m2	



Name Structure : : Dike Leprak 26
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	awing Reference
16						
	Formwork Length =	41.04	m'			
	Panjang =	25.00	m'			
	Volume =	**1026.00**	m2			
				1,026.00	m2	



17						
	Formwork Length =	40.83	m'			
	Panjang =	25.00	m'			
	Volume =	**1020.75**	m2			
	Total Volume =			1,020.75	m2	

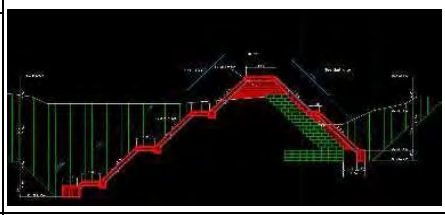
18						
	Formwork Length =	40.62	m'			
	Panjang =	25.00	m'			
	Volume =	**1015.50**	m2			
	Total Volume =			1,015.50	m2	

19						
	Formwork Length =	40.40	m'			
	Panjang =	25.00	m'			
	Volume =	**1010.00**	m2			
	Total Volume =			1,010.00	m2	

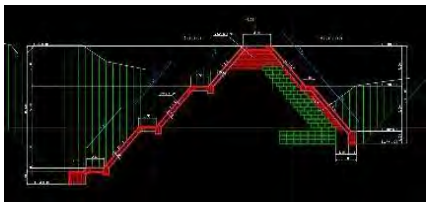
Name Structure : : Dike Leprak 26
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	awing Reference
20						
	Formwork Length =	40.19	m'			
	Panjang =	25.00	m'			
	Volume =	1004.75	m2			
	Total Volume =			1,004.75	m2	

21						
	Formwork Length =	39.38	m'			
	Panjang =	25.00	m'			
	Volume =	984.50	m2			
				984.50	m2	



22						
	Formwork Length =	39.77	m'			
	Panjang =	25.00	m'			
	Volume =	994.25	m2			
	Total Volume =			994.25	m2	

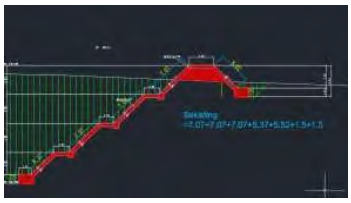


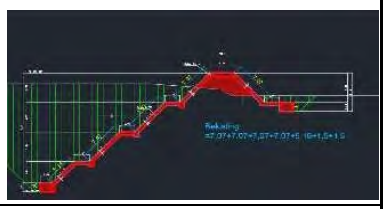
23						
	Formwork Length =	39.55	m'			
	Panjang =	25.00	m'			
	Volume =	988.75	m2			
	Total Volume =			988.75	m2	

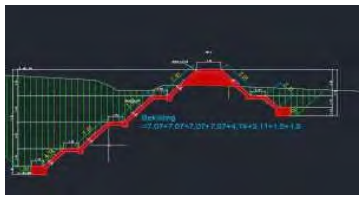
	Exposed Formwork Total Volume =	**24,327.28**	m2

Name Structure : : Dike Leprak 26
Type of work : Non Exposed Formwork

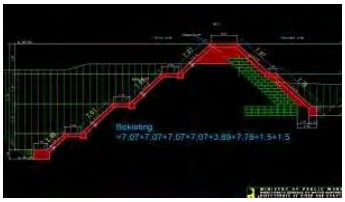
No.	Description	Calculation		Volume	Unit	Drawing Reference
0						
	Formwork Length =	6.15	m'			
	Length =	25.00	m'			
	Volume =	153.75	m2			
	Total Volume =			153.75	m2	
1						
	Formwork Length =	7.68	m'			
	Panjang =	25.00	m'			
	Volume =	192.00	m2			
	Total Volume =			192.00	m2	
2						
	Formwork Length =	7.71	m'			
	Panjang =	25.00	m'			
	Volume =	192.75	m2			
	Total Volume =			192.75	m2	
3						
	Formwork Length =	7.33	m'			
	Panjang =	25.00	m'			
	Volume =	183.25	m2			
	Total Volume =			183.25	m2	







Name Structure : : Dike Leprak 26
Type of work : Non Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing Reference
4						
	Formwork Length =	9.71	m'			
	Panjang =	25.00	m'			
	Volume =	242.75	m2			
				242.75	m2	
						
5						
	Formwork Length =	10.33	m'			
	Panjang =	25.00	m'			
	Volume =	258.25	m2			
	Total Volume =			258.25	m2	
						
6						
	Formwork Length =	13.86	m'			
	Panjang =	25.00	m'			
	Volume =	346.50	m2			
	Total Volume =			346.50	m2	
						
7						
	Formwork Length =	14.00	m'			
	Panjang =	25.00	m'			
	Volume =	350.00	m2			
	Total Volume =			350.00	m2	
						

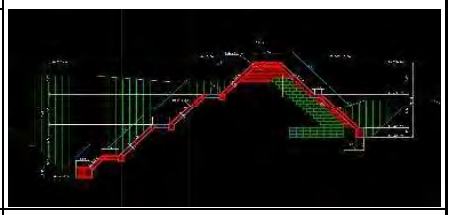
Name Structure : : Dike Leprak 26
Type of work : Non Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing Reference
8						
	Formwork Length =	14.14	m'			
	Panjang =	25.00	m'			
	Volume =	353.50	m2			
	Total Volume =			353.50	m2	
9						
	Formwork Length =	14.28	m'			
	Panjang =	25.00	m'			
	Volume =	357.00	m2			
	Total Volume =			357.00	m2	
10						
	Formwork Length =	14.43	m'			
	Panjang =	25.00	m'			
	Volume =	360.75	m2			
				360.75	m2	
11						
	Formwork Length =	13.15	m'			
	Panjang =	25.00	m'			
	Volume =	328.75	m2			
	Total Volume =			328.75	m2	
		Non Exposed Formwork Sub Total Volume =		3,319.25	m2	

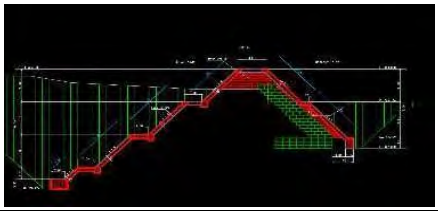
Name Structure : : Dike Leprak 26
Type of work : Non Exposed Formwork

No.	Description	Calculation		Volume	Unit	awing Reference
12						
	Formwork Length =	13.29	m'			
	Panjang =	25.00	m'			
	Volume =	332.25	m2			
	Total Volume =			332.25	m2	

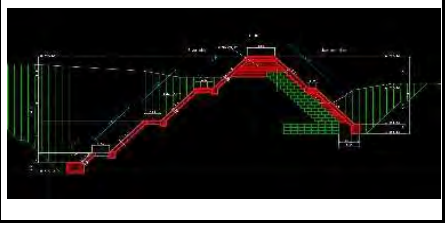
13						
	Formwork Length =	13.44	m'			
	Panjang =	25.00	m'			
	Volume =	336.00	m2			
	Total Volume =			336.00	m2	



14						
	Formwork Length =	13.58	m'			
	Panjang =	25.00	m'			
	Volume =	339.50	m2			
	Total Volume =			339.50	m2	



15						
	Formwork Length =	13.72	m'			
	Panjang =	25.00	m'			
	Volume =	343.00	m2			
	Total Volume =			343.00	m2	



Name Structure : : Dike Leprak 26
Type of work : Non Exposed Formwork

No.	Description	Calculation		Volume	Unit	awing Reference
16						
	Formwork Length =	13.65	m'			
	Panjang =	25.00	m'			
	Volume =	**341.25**	m2			
				341.25	m2	

17						
	Formwork Length =	13.68	m'			
	Panjang =	25.00	m'			
	Volume =	**342.00**	m2			
	Total Volume =			342.00	m2	

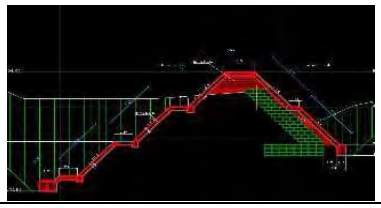
18						
	Formwork Length =	12.73	m'			
	Panjang =	25.00	m'			
	Volume =	**318.25**	m2			
	Total Volume =			318.25	m2	

19						
	Formwork Length =	12.87	m'			
	Panjang =	25.00	m'			
	Volume =	**321.75**	m2			
	Total Volume =			321.75	m2	

Name Structure : : Dike Leprak 26
Type of work : Non Exposed Formwork

No.	Description	Calculation		Volume	Unit	awing Reference
20						
	Formwork Length =	13.01	m'			
	Panjang =	25.00	m'			
	Volume =	325.25	m2			
	Total Volume =			325.25	m2	

21						
	Formwork Length =	13.81	m'			
	Panjang =	25.00	m'			
	Volume =	345.25	m2			
				345.25	m2	



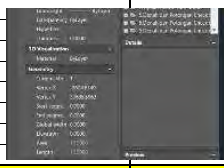
22						
	Formwork Length =	13.29	m'			
	Panjang =	25.00	m'			
	Volume =	332.25	m2			
	Total Volume =			332.25	m2	

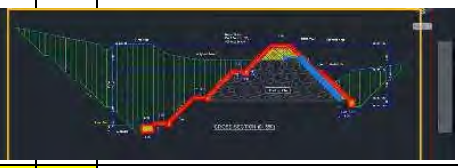
23						
	Formwork Length =	14.14	m'			
	Panjang =	25.00	m'			
	Volume =	353.50	m2			
	Total Volume =			353.50	m2	

Non Exposed Formwork Total Volume =	7,349.50	m2	

Name Structure : : Dike Leprak 26
Type of work : Geotextile

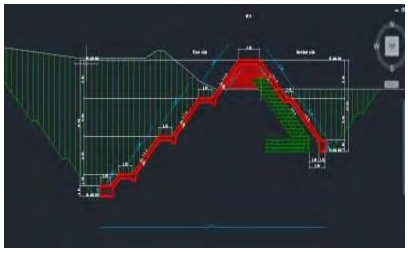
No.	Description	Calculation	Volume	Unit	Drawing Reference
1	Dike Span =	600.00 m			
	Geotextile Length =	18.50 m	11,100.00	m2	
		Geotextile Total Volume =	11,100.00	m2	



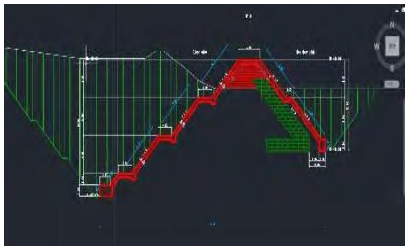


SUMMARY OF QUANTITY DIKE LEPRAK 25			
No.	**Description**	**Unit**	**Volume**
1	Stake Out Trace of New Infrastructure & Wooden Stakes (Raft 5/7) Length 1 m	m2	19,030.50
2	Excavation Cross Profile	m	676.64
3	Bowplank	m	996.58
4	Concrete Making and Casting fc' = 20 Mpa (K 225) Mechanical Transported radius 2000 m	m3	14,432.62
5	Cyclops Concrete 60% Concrete fc' 15 Mpa: 40% Stone	m3	9,388.90
6	1 m2 Exposed Concrete Wall Formwork with 18 mm Multiflex	m2	18,655.50
7	1 m2 Scaffolding / Supporting Formwork Rafters 5/7 for Concrete Walls Tm 2.50 m	m2	22,293.00
8	Carefully dismantle 1 m2 of Formwork and Scaffolding	m2	18,655.50
9	1 m2 Regular Formwork for Concrete Walls with Multiflex 12 mm or 18 mm	m2	3,637.50
10	Dismantle 1 m2 of Formwork and Scaffolding in the Normal Way (and Clear Debris) for Non Expose	m2	3,637.50
11	Mechanical Sand Excavation (excavated material is dumped nearby)	m3	108,308.58
12	Geotextile	m2	5,795.00

Name Structure : : Dike Leprak 25
Type of work : Stake Out

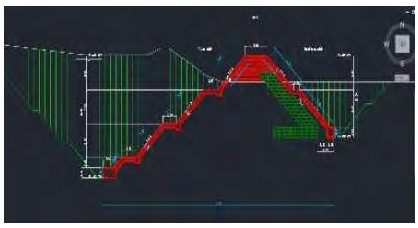
No.	Description	Calculation	Volume	Unit	Drawing Reference
					
1	Area =				
		19030.50	19,030.50	m^2	
		Stake Out Total Volume =	19,030.50	m²	

Name Structure : : Dike Leprak 25
Type of work : Cross Profile

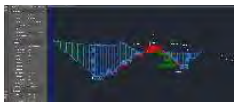
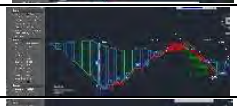
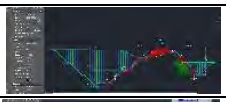
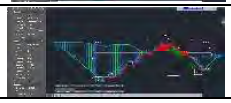
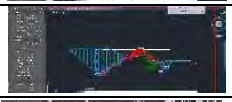
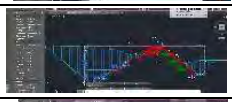
No.	Description	Calculation	Volume	Unit	Drawing Reference
					
1					
	Profile Length =	925.00	676.64	m	
	Cross Length =	676.640	,		
		Cross Profile Total Volume =	676.64	m	

Name Structure : : Dike Leprak 25
Type of work : Bowplank

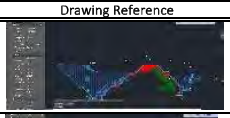
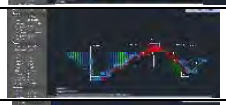
No.	Description	Calculation	Volume	Unit	Drawing Reference
1					
	Profile Length =	906.00	996.58	m	
	Cross Section Length =	90.58			
		Bowplank Total Volume =	996.58	m'	



Name Structure : : Dike Leprak 25
Type of work : Sand Excavation

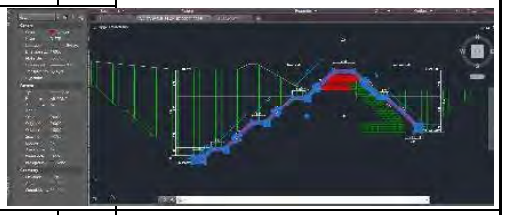
No.	Description	Calculation	Volume	Unit	Drawing Reference
0					
	Area =	524.99			
	Length =	25.000			
	V=	(524,99) / 2 x 25,00	6,562.38	m³	
1					
	Area =	412.36			
	Length =	25.000			
	V=	(524,99 + 412,36) / 2 x 25,00	11,716.88	m³	
2					
	Area =	371.52			
	Length =	25.00			
	V=	(371,52 + 371,52) / 2 x 25,00	9,288.00	m³	
3					
	Area =	397.65			
	Length =	25.00			
	V=	(371,52 + 397,65) / 2 x 25,00	9,614.63	m³	
4					
	Area =	371.92			
	Length =	25.00			
	V=	(397,65 + 371,92) / 2 x 25,00	9,619.63	m³	
5					
	Area =	315.20			
	Length =	25.00			
	V=	(371,92 + 315,20) / 2 x 25,00	8,589.00	m³	
6					
	Area =	323.35			
	Length =	25.00			
	V=	(315,20 + 323,35) / 2 x 25,00	7,981.88	m³	
7					
	Area =	351.24			
	Length =	25.00			
	V=	(323,35 + 351,24) / 2 x 25,00	8,432.38	m³	
8					
	Area =	351.41			
	Length =	25.00			
	V=	(351,24 + 351,41) / 2 x 25,00	8,783.13	m³	
9					
	Area =	380.60			
	Length =	25.00			
	V=	(351,41 + 380,60) / 2 x 25,00	9,150.13	m³	
10					
	Area =	335.83			
	Length =	25.00			
	V=	(380,60 + 335,83) / 2 x 25,00	8,955.38	m³	
11					
	Area =	318.48			
	Length =	25.00			
	V=	(335,83 + 318,48) / 2 x 25,00	8,178.88	m³	
12					
	Area =	339.89			
	Length =	25.00			
	V=	(318,48 + 339,89) / 2 x 25,00	8,229.63	m³	
13					
	Area =	313.38			
	Length =	25.00			
	V=	(339,89 + 313,38) / 2 x 25,00	8,165.88	m³	
14		312.14			
	Area =	206.55			
	Length =	25.00			
	V=	(313,38 + 206,55) / 2 x 25,00	6,499.13	m³	

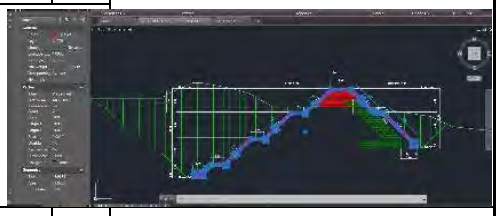
Name Structure : : Dike Leprak 25
Type of work : Sand Excavation

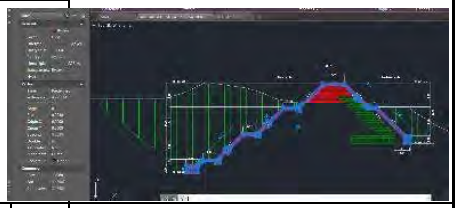
No.	Description	Calculation	Volume	Unit	Drawing Reference
15					
	Area =	245.19			
	Length =	25.00			
	V=	(206,55 + 245,19) / 2 x 25,00	5,646.76	m³	
16					
	Area =	217.41			
	Length =	25.00			
	V=	(245,19 + 217,41) / 2 x 25,00	5,782.50	m³	
17					
	Area =	235.90			
	Length =	25.00			
	V=	(217,41 + 235,90) / 2 x 25,00	5,666.38	m³	
18					
	Area =	226.96			
	Length =	25.00			
	V=	(235,90 + 226,96) / 2 x 25,00	5,785.75	m³	
		Sand Excavation Total Volume =	108,308.58	m³	

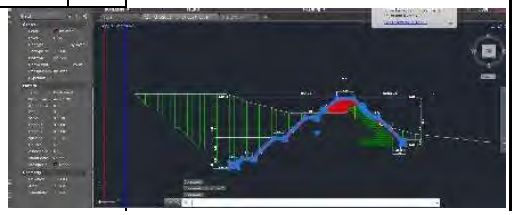
Name Structure : : Dike Leprak 25
Type of work : Concrete K-225

No.	Description	Calculation	Volume	Unit	Drawing Reference
0					
	Area =	32.10 m^2			
	Length =	25.00 m^1			
	Volume =	802.55 m^3			
	Total Volume =		802.55	m3	
1					
	Area =	32.00 m^2			
	Length =	25.00 m^1			
	Volume =	799.92 m^3			
	Total Volume =		799.92	m3	
2					
	Area =	31.89 m^2			
	Length =	25.00 m^1			
	Volume =	797.27 m^3			
	Total Volume =		797.27	m3	
3					
	Area =	31.78 m^2			
	Length =	25.00 m^1			
	Volume =	794.62 m^3			
	Total Volume =		794.62	m3	



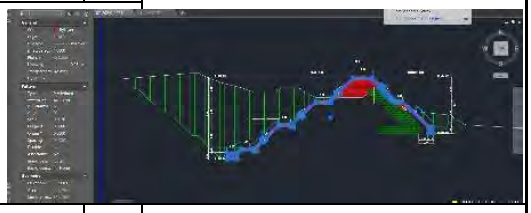




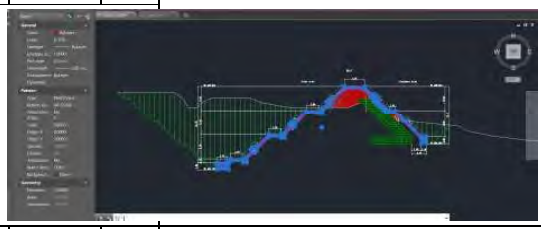


Name Structure : : Dike Leprak 25
Type of work : Concrete K-225

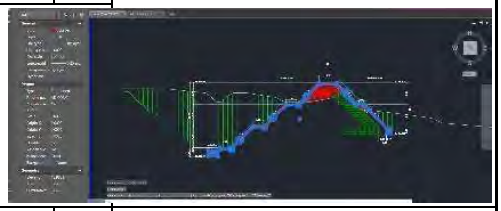
No.	Description	Calculation		Volume	Unit	Drawing Reference
4						
	Area =	31.68	m^2			
	Length =	25.00	m'			
	Volume =	791.97	m^3			
				791.97	m3	



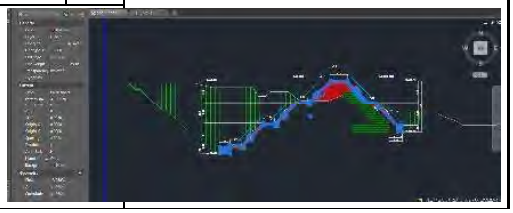
5						
	Area =	31.57	m^2			
	Length =	25.00	m'			
	Volume =	789.31	m^3			
	Total Volume =			789.31	m3	



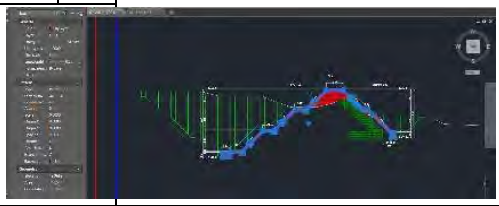
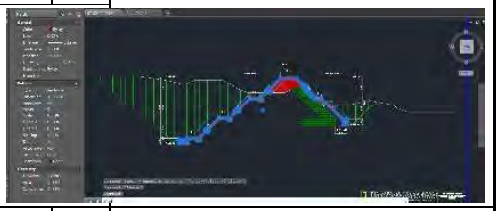
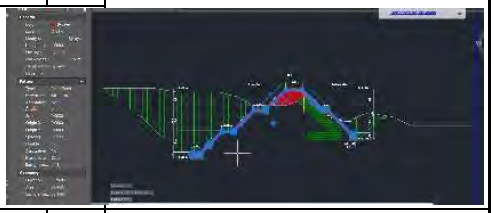
6						
	Area =	31.47	m^2			
	Length =	25.00	m'			
	Volume =	786.66	m^3			
	Total Volume =			786.66	m3	



7						
	Area =	31.36	m^2			
	Length =	25.00	m'			
	Volume =	784.01	m^3			
	Total Volume =			784.01	m3	

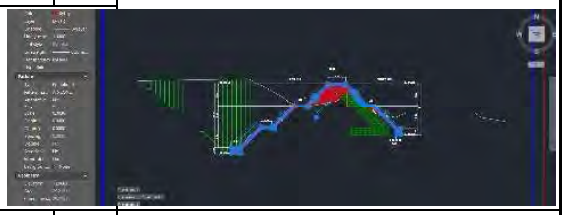


Name Structure : : Dike Leprak 25
Type of work : Concrete K-225

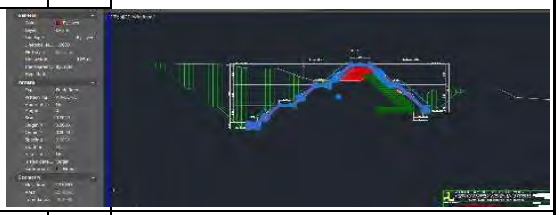
No.	Description	Calculation	Volume	Unit	Drawing Reference
8					
	Area =	31.25 m^2			
	Length =	25.00 m'			
	Volume =	781.36 m^3			
	Total Volume =		781.36	m3	
					
9					
	Area =	31.15 m^2			
	Length =	25.00 m'			
	Volume =	778.71 m^3			
	Total Volume =		778.71	m3	
					
10					
	Area =	29.45 m^2			
	Length =	25.00 m'			
	Volume =	736.24 m^3			
			736.24	m3	
					
11					
	Area =	29.32 m^2			
	Length =	25.00 m'			
	Volume =	733.03 m^3			
	Total Volume =		733.03	m3	
					
		Concrete K-225 Sub Total Volume =			9,375.64 m^3

Name Structure : : Dike Leprak 25
Type of work : Concrete K-225

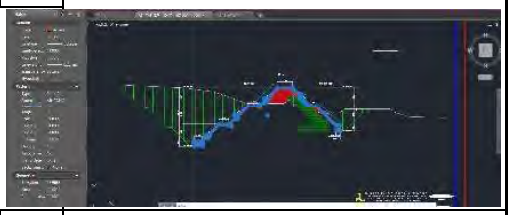
No.	Description	Calculation		Volume	Unit	awing Reference
12						
	Area =	29.22	m^2			
	Length =	25.00	m^1			
	Volume =	730.38	m^3			
	Total Volume =			730.38	m3	



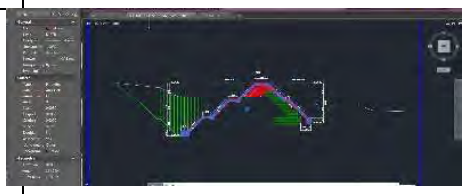
13						
	Area =	29.11	m^2			
	Length =	25.00	m^1			
	Volume =	727.73	m^3			
	Total Volume =			727.73	m3	



14						
	Area =	29.00	m^2			
	Length =	25.00	m^1			
	Volume =	725.07	m^3			
	Total Volume =			725.07	m3	

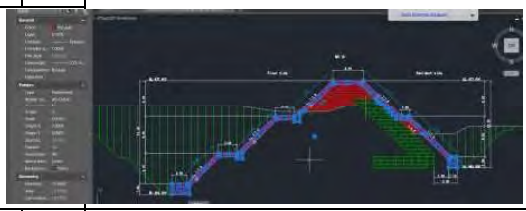


15						
	Area =	28.90	m^2			
	Length =	25.00	m^1			
	Volume =	722.45	m^3			
	Total Volume =			722.45	m3	

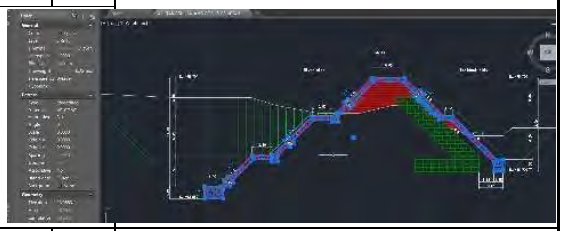


Name Structure : : Dike Leprak 25
Type of work : Concrete K-225

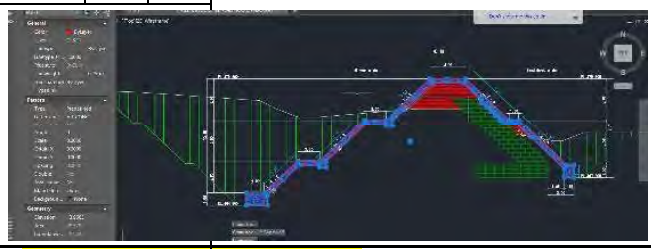
No.	Description	Calculation		Volume	Unit	awing Reference
16						
	Area =	28.79	m^2			
	Length =	25.00	m'			
	Volume =	719.77	m^3			
				719.77	m3	



17						
	Area =	28.68	m^2			
	Length =	25.00	m'			
	Volume =	717.12	m^3			
	Total Volume =			717.12	m3	

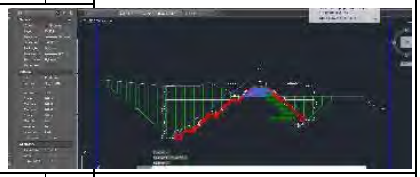
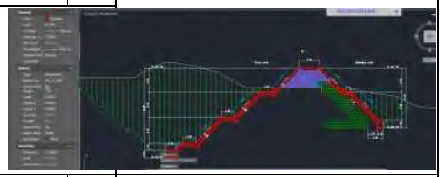
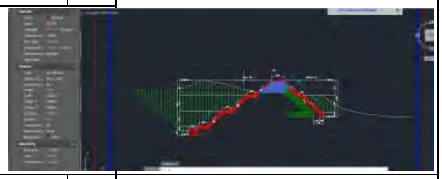
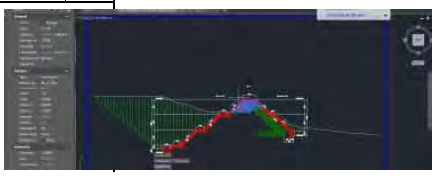


18						
	Area =	28.58	m^2			
	Length =	25.00	m'			
	Volume =	714.47	m^3			
	Total Volume =			714.47	m3	

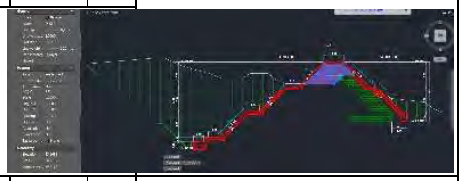
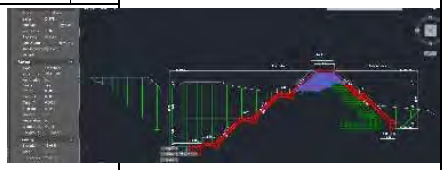
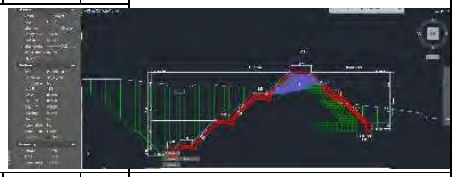
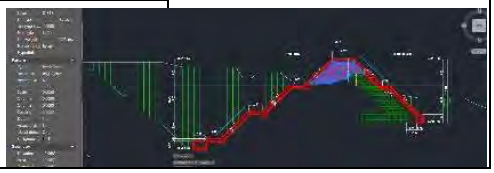


	Concrete K-225 Total Volume =	**14,432.62 m^3**

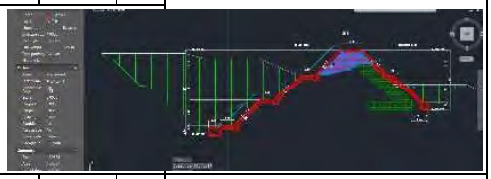
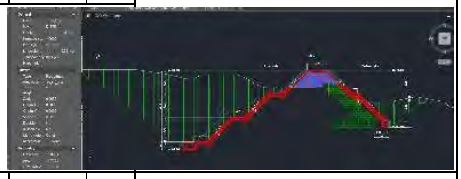
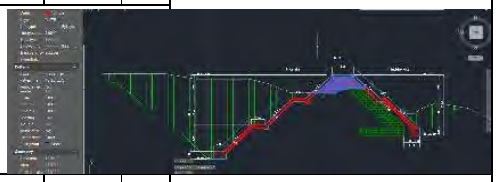
Name Structure : : DikeLeprak 25
Type of work : Cyclop Concrete

No.	Description	Calculation	Volume	Unit	Drawing Reference
0	Area =	18.53 m^2			
	Length =	25.00 m^1			
	Volume =	463.25 m^3			
	Total Volume =		463.25	m3	
					
1	Area =	19.22 m^2			
	Length =	25.00 m^1			
	Volume =	480.50 m^3			
	Total Volume =		480.50	m3	
					
2	Area =	19.93 m^2			
	Length =	25.00 m^1			
	Volume =	498.25 m^3			
	Total Volume =		498.25	m3	
					
3	Area =	19.76 m^2			
	Length =	25.00 m^1			
	Volume =	494.00 m^3			
	Total Volume =		494.00	m3	
					

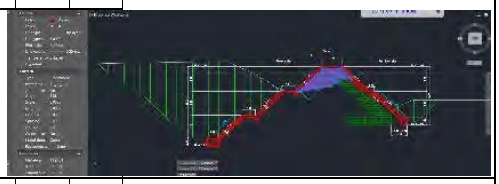
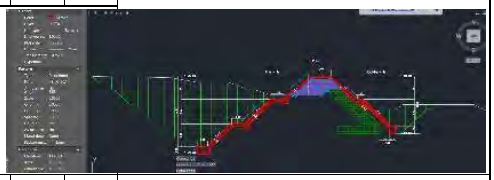
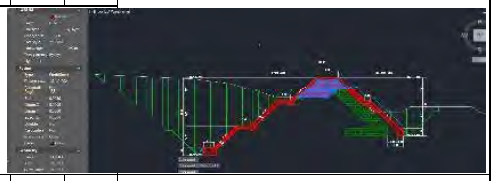
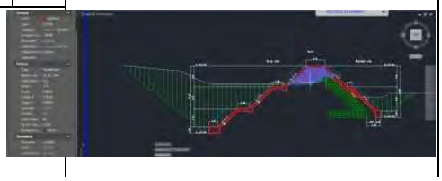
Name Structure : : DikeLeprak 25
Type of work : Cyclop Concrete

No.	Description	Calculation	Volume	Unit	Drawing Reference
4	Area =	20.42 m^2			
	Length =	25.00 m^1			
	Volume =	510.50 m^3			
			510.50	m3	
					
5	Area =	20.41 m^2			
	Length =	25.00 m^1			
	Volume =	510.25 m^3			
	Total Volume =		510.25	m3	
					
6	Area =	19.94 m^2			
	Length =	25.00 m^1			
	Volume =	498.58 m^3			
	Total Volume =		498.58	m3	
					
7	Area =	20.56 m^2			
	Length =	25.00 m^1			
	Volume =	514.00 m^3			
	Total Volume =		514.00	m3	
					

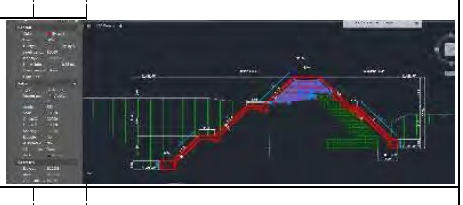
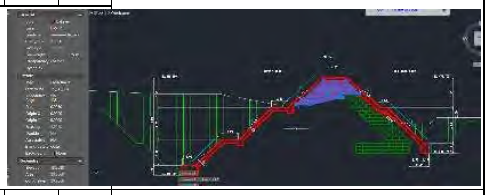
Name Structure : : DikeLeprak 25
Type of work : Cyclop Concrete

No.	Description	Calculation	Volume	Unit	Drawing Reference
8	Area =	19.60 m^2			
	Length =	25.00 m^1			
	Volume =	490.07 m^3			
	Total Volume =		490.07	m3	
					
9	Area =	16.77 m^2			
	Length =	25.00 m^1			
	Volume =	419.25 m^3			
	Total Volume =		419.25	m3	
					
10	Area =	16.90 m^2			
	Length =	25.00 m^1			
	Volume =	422.50 m^3			
			422.50	m3	
					
11	Area =	23.98 m^2			
	Length =	25.00 m^1			
	Volume =	599.50 m^3			
	Total Volume =		599.50	m3	
					
		Cyclop Concrete Sub Total Volume =			5,900.65 m^3

Name Structure : : Dike Leprak 25
Type of work : Cyclop Concrete

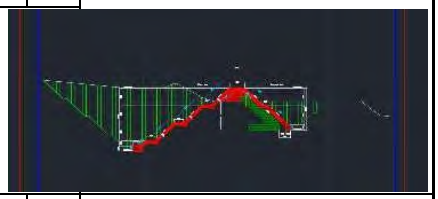
No.	Description	Calculation	Volume	Unit	awing Reference
12					
	Area =	21.70 m^2			
	Length =	25.00 m^1			
	Volume =	542.50 m^3			
	Total Volume =		542.50	m3	
					
13					
	Area =	19.83 m^2			
	Length =	25.00 m^1			
	Volume =	495.75 m^3			
	Total Volume =		495.75	m3	
					
14					
	Area =	20.29 m^2			
	Length =	25.00 m^1			
	Volume =	507.25 m^3			
	Total Volume =		507.25	m3	
					
15					
	Area =	20.26 m^2			
	Length =	25.00 m^1			
	Volume =	506.50 m^3			
	Total Volume =		506.50	m3	
					

Name Structure : : Dike Leprak 25
Type of work : Cyclop Concrete

No.	Description	Calculation	Volume	Unit	Drawing Reference
16	Area =	19.93 m^2			
	Length =	25.00 m^1			
	Volume =	498.25 m^3			
			498.25	m3	
					
17	Area =	20.27 m^2			
	Length =	25.00 m^1			
	Volume =	506.75 m^3			
	Total Volume =		506.75	m3	
					
18	Area =	17.25 m^2			
	Length =	25.00 m^1			
	Volume =	431.25 m^3			
	Total Volume =		431.25	m3	
					
		Cyclop Concrete Total Volume =	9,388.90		

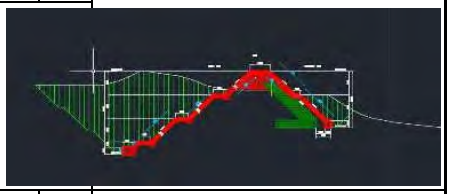
Name Structure : : Dike Leprak 25
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing Reference
0						
	Formwork Length =	41.18	m'			
	Length =	25.00	m'			
	Volume =	1029.50	m2			
	Total Volume =			1,029.50	m2	

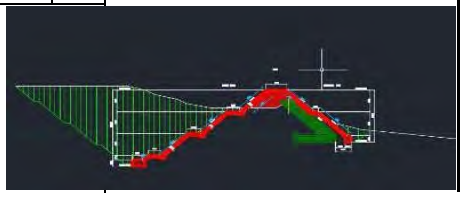


1						
	Formwork Length =	40.97	m'			
	Length =	25.00	m'			
	Volume =	1024.25	m2			
	Total Volume =			1,024.25	m2	

2						
	Formwork Length =	40.76	m'			
	Length =	25.00	m'			
	Volume =	1019.00	m2			
	Total Volume =			1,019.00	m2	

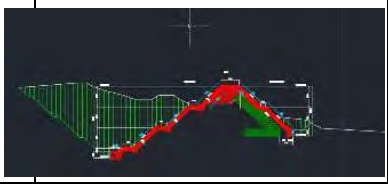


3						
	Formwork Length =	40.54	m'			
	Length =	25.00	m'			
	Volume =	1013.50	m2			
	Total Volume =			1,013.50	m2	



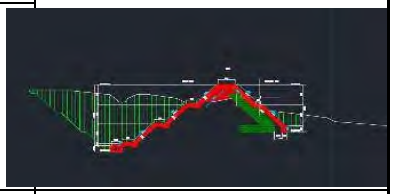
Name Structure : : Dike Leprak 25
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing Reference
4						
	Formwork Length =	40.33	m'			
	Length =	25.00	m'			
	Volume =	1008.25	m2			
				1,008.25	m2	

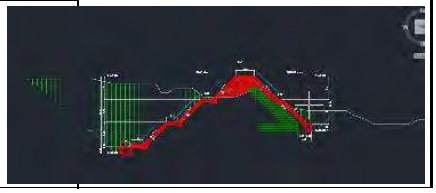


5						
	Formwork Length =	40.12	m'			
	Length =	25.00	m'			
	Volume =	1003.00	m2			
	Total Volume =			1,003.00	m2	

6						
	Formwork Length =	39.91	m'			
	Length =	25.00	m'			
	Volume =	997.75	m2			
	Total Volume =			997.75	m2	

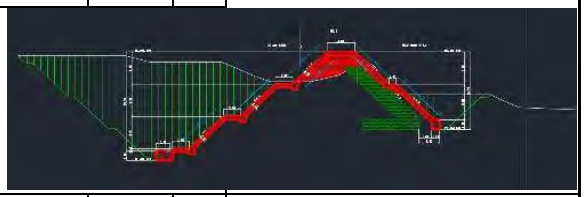


7						
	Formwork Length =	39.70	m'			
	Length =	25.00	m'			
	Volume =	992.50	m2			
	Total Volume =			992.50	m2	

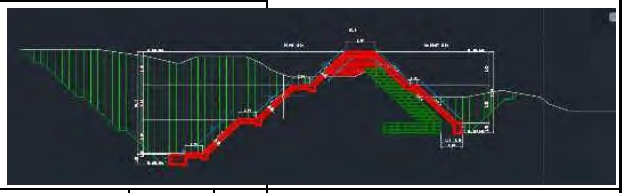


Name Structure : : Dike Leprak 25
Type of work : Exposed Formwork

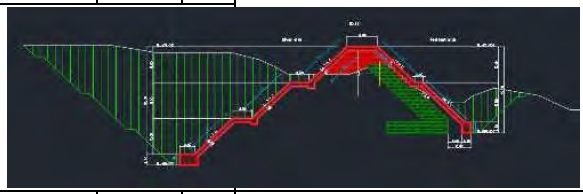
No.	Description	Calculation		Volume	Unit	Drawing Reference
8						
	Formwork Length =	39.48	m'			
	Length =	25.00	m'			
	Volume =	**987.00**	m2			
	Total Volume =			987.00	m2	



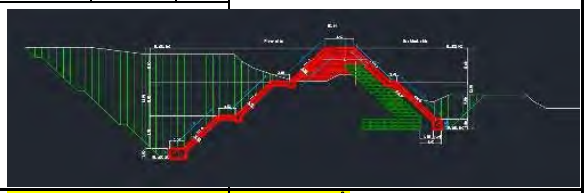
9						
	Formwork Length =	39.27	m'			
	Length =	25.00	m'			
	Volume =	**981.75**	m2			
	Total Volume =			981.75	m2	



10						
	Formwork Length =	39.06	m'			
	Length =	25.00	m'			
	Volume =	**976.50**	m2			
				976.50	m2	



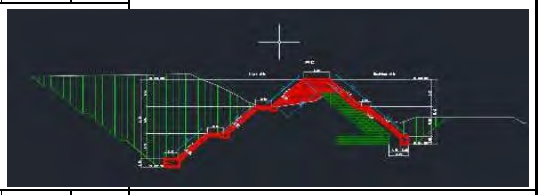
11						
	Formwork Length =	38.85	m'			
	Length =	25.00	m'			
	Volume =	**971.25**	m2			
	Total Volume =			971.25	m2	



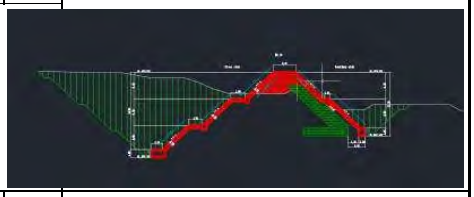
Exposed Formwork Sub Total Volume = 12,004.25 m^2

Name Structure : : Dike Leprak 25
Type of work : Exposed Formwork

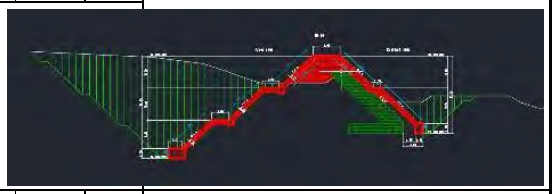
No.	Description	Calculation	Volume	Unit	Drawing Reference
12					
	Formwork Length =	38.64 m'			
	Length =	25.00 m'			
	Volume =	966.00 m2			
	Total Volume =		966.00	m2	



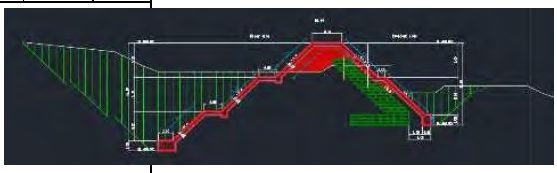
13					
	Formwork Length =	38.42 m'			
	Length =	25.00 m'			
	Volume =	960.50 m2			
	Total Volume =		960.50	m2	



14					
	Formwork Length =	38.21 m'			
	Length =	25.00 m'			
	Volume =	955.25 m2			
	Total Volume =		955.25	m2	

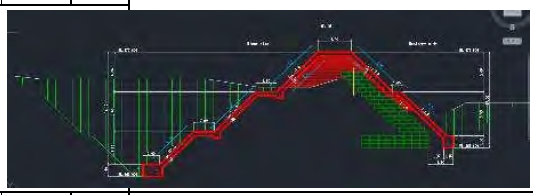


15					
	Formwork Length =	38.00 m'			
	Length =	25.00 m'			
	Volume =	950.00 m2			
	Total Volume =		950.00	m2	



Name Structure : : Dike Leprak 25
Type of work : Exposed Formwork

No.	Description	Calculation	Volume	Unit	Drawing Reference
16					
	Formwork Length =	37.84 m'			
	Length =	25.00 m'			
	Volume =	946.00 m2			
			946.00	m2	



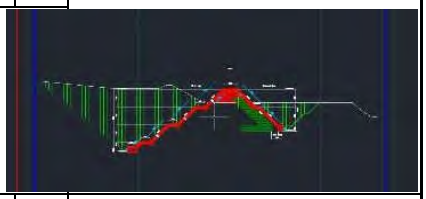
17					
	Formwork Length =	37.58 m'			
	Length =	25.00 m'			
	Volume =	939.50 m2			
	Total Volume =		939.50	m2	

18					
	Formwork Length =	37.36 m'			
	Length =	25.00 m'			
	Volume =	934.00 m2			
	Total Volume =		934.00	m2	

	Exposed Formwork Total Volume =	18,655.50 m2

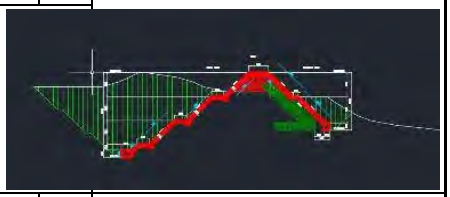
Name Structure : : Dike Leprak 25
Type of work : Non Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing Reference
0						
	Formwork Length =	7.50	m'			
	Length =	25.00	m'			
	Volume =	**187.50**	m2			
	Total Volume =			187.50	m2	

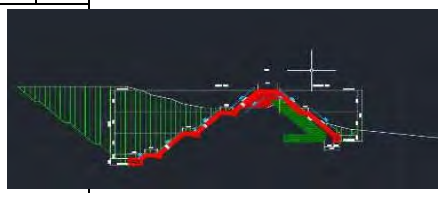


1						
	Formwork Length =	7.64	m'			
	Length =	25.00	m'			
	Volume =	**191.00**	m2			
	Total Volume =			191.00	m2	

2						
	Formwork Length =	7.78	m'			
	Length =	25.00	m'			
	Volume =	**194.50**	m2			
	Total Volume =			194.50	m2	



3						
	Formwork Length =	7.83	m'			
	Length =	25.00	m'			
	Volume =	**195.75**	m2			
	Total Volume =			195.75	m2	

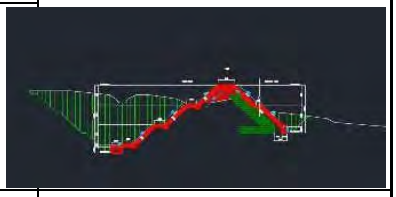


Name Structure : : Dike Leprak 25
Type of work : Non Exposed Formwork

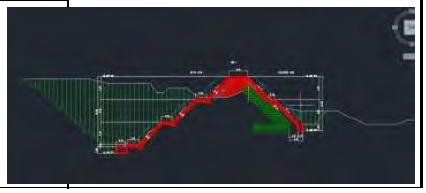
No.	Description	Calculation		Volume	Unit	Drawing Reference
4						
	Formwork Length =	8.06	m'			
	Length =	25.00	m'			
	Volume =	**201.50**	m2			
				201.50	m2	

5						
	Formwork Length =	8.20	m'			
	Length =	25.00	m'			
	Volume =	**205.00**	m2			
	Total Volume =			205.00	m2	

6						
	Formwork Length =	8.35	m'			
	Length =	25.00	m'			
	Volume =	**208.75**	m2			
	Total Volume =			208.75	m2	

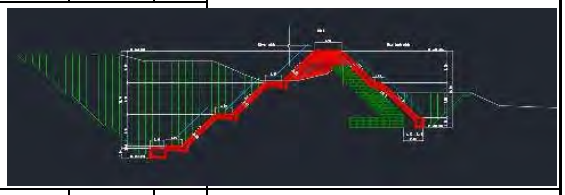


7						
	Formwork Length =	8.49	m'			
	Length =	25.00	m'			
	Volume =	**212.25**	m2			
	Total Volume =			212.25	m2	

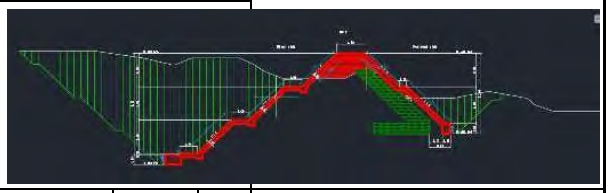


Name Structure : : Dike Leprak 25
Type of work : Non Exposed Formwork

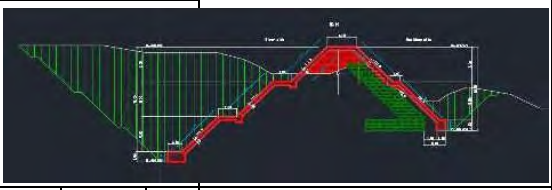
No.	Description	Calculation		Volume	Unit	Drawing Reference
8						
	Formwork Length =	8.63	m'			
	Length =	25.00	m'			
	Volume =	215.75	m2			
	Total Volume =			215.75	m2	



9						
	Formwork Length =	7.36	m'			
	Length =	25.00	m'			
	Volume =	184.00	m2			
	Total Volume =			184.00	m2	



10						
	Formwork Length =	7.50	m'			
	Length =	25.00	m'			
	Volume =	187.50	m2			
				187.50	m2	

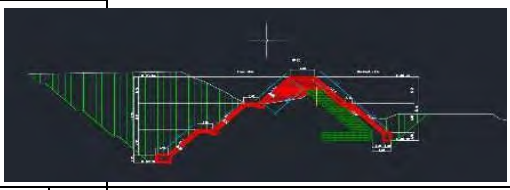


11						
	Formwork Length =	9.05	m'			
	Length =	25.00	m'			
	Volume =	226.25	m2			
	Total Volume =			226.25	m2	

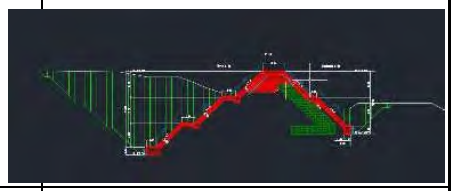
Non Exposed Formwork Sub Total Volume =	2,409.75	m^2

Name Structure : : Leprak 25 Dike
Type of work : Non Exposed Formwork

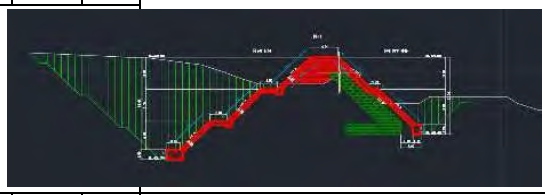
No.	Description	Calculation		Volume	Unit	awing Reference
12						
	Formwork Length =	9.19	m'			
	Length =	25.00	m'			
	Volume =	229.75	m2			
	Total Volume =			229.75	m2	



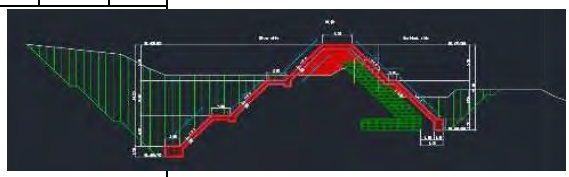
13						
	Formwork Length =	7.92	m'			
	Length =	25.00	m'			
	Volume =	198.00	m2			
	Total Volume =			198.00	m2	



14						
	Formwork Length =	8.06	m'			
	Length =	25.00	m'			
	Volume =	201.50	m2			
	Total Volume =			201.50	m2	

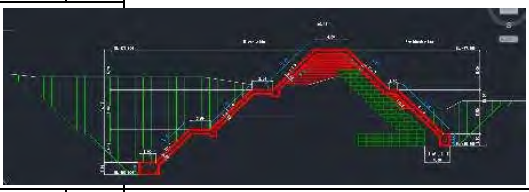


15						
	Formwork Length =	8.20	m'			
	Length =	25.00	m'			
	Volume =	205.00	m2			
	Total Volume =			205.00	m2	



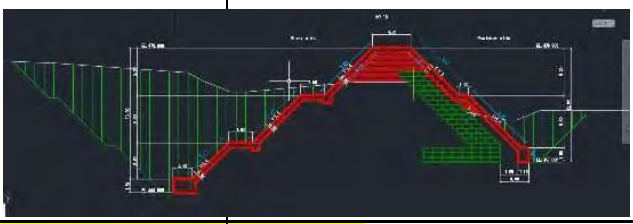
Name Structure : : Leprak 25 Dike
Type of work : Non Exposed Formwork

No.	Description	Calculation		Volume	Unit	awing Reference
16						
	Formwork Length =	8.35	m'			
	Length =	25.00	m'			
	Volume =	208.75	m2			
				208.75	m2	



17						
	Formwork Length =	8.49	m'			
	Length =	25.00	m'			
	Volume =	212.25	m2			
	Total Volume =			-	m2	

18						
	Formwork Length =	7.39	m'			
	Length =	25.00	m'			
	Volume =	184.75	m2			
	Total Volume =			184.75	m2	



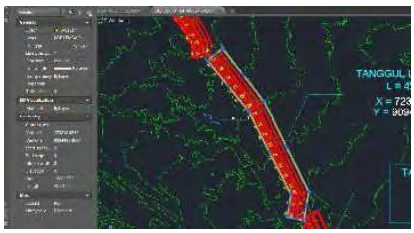
Non Exposed Formwork Total Volume = 3,637.50 m2

Name Structure : : Dike Leprak 25
Type of work : Geotextile

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	Dike Span =	475.00	m			
	Geotextile Length =	12.20	m	5,795.00	m2	
						
		Geotextile Total Volume =		5,795.00	m2	

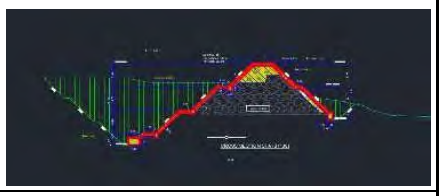
SUMMARY OF QUANTITY DIKE LEPRAK 24			
No.	**Description**	**Unit**	**Volume**
1	Stake Out Trace of New Infrastructure & Wooden Stakes (Raft 5/7) Length 1 m	m2	16,002.00
2	1 m Excavation Cross Profile	m	708.90
3	Bowplank	m	945.40
4	Concrete Making and Casting fc' = 20 Mpa (K 225) Mechanically Transported within a radius of 2000 m with a Concrete Pump (CP)	m3	12,336.72
5	Cyclops Concrete 60% Concrete fc' 15 Mpa: 40% Split Stone, with Concrete Pump (CP)	m3	9,993.40
6	1 m2 Exposed Concrete Wall Formwork with 18 mm Multiflex	m2	15,948.00
7	1 m2 Scaffolding / Supporting Formwork Rafters 5/7 for Concrete Walls Tm 2.50 m	m2	23,147.74
8	Carefully dismantle 1 m2 of Formwork and Scaffolding	m2	15,948.00
9	1 m2 Regular Formwork for Concrete Walls with Multiflex 12 mm or 18 mm	m2	7,199.74
10	Dismantle 1 m2 of Formwork and Scaffolding in the Normal Way (and Clear Debris) for Non Expose	m2	7,199.74
11	Mechanical Sand Excavation	m3	87,223.68
12	Geotextile	m2	7,862.50

Name Structure : : Dike Leprak 24
Type of work : Stake Out

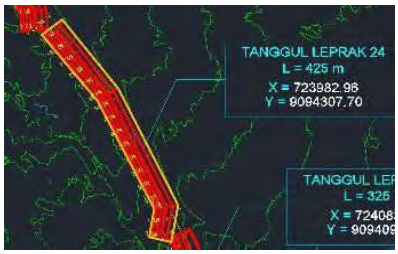
No.	Description	Calculation	Volume	Unit	Drawing Reference
1	Area =				
		16002.00	16,002.00	m^2	
		Stake Out Total Volume =	16,002.00	m²	

Name Structure : : Dike Leprak 24
Type of work : Cross Profile

No.	Description	Calculation	Volume	Unit	Drawing Reference
1	Dike span =	41.70			
	Measure each section =	17.00	708.90	m^2	
			,		
		Cross Profile Total Volume =	708.90	m	



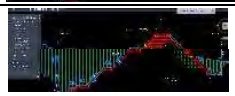
Name Structure : : Dike Leprak 24
Type of work : Bowplank

No.	Description	Calculation	Volume	Unit	Drawing Reference
					
1					
	Profile Length =	856.00	945.40	m	
	Cross Section Length =	89.40			
		Bowplank Total Volume =	945.40	m'	

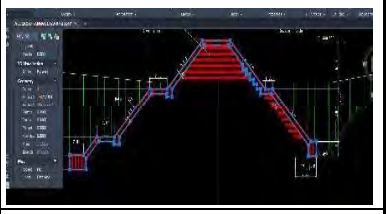
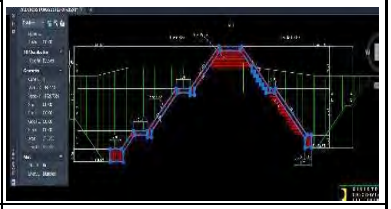
Name Structure : : Dike Leprak 24
Type of work : Sand Excavation

No.	Description	Calculation	Volume	Unit	Drawing Reference
0					
	Area =	209.64			
	Length =	25.000			
	V=	(209,64) / 2 x 25,00	2,620.52	m³	
1					
	Area =	242.28			
	Length =	25.000			
	V=	(209,64 + 242,28) / 2 x 25,00	5,649.03	m³	
2					
	Area =	212.76			
	Length =	25.00			
	V=	(212,76 + 212,76) / 2 x 25,00	5,319.04	m³	
3					
	Area =	167.74			
	Length =	25.00			
	V=	(212,76 + 167,74) / 2 x 25,00	4,756.33	m³	
4					
	Area =	181.87			
	Length =	25.00			
	V=	(167,74 + 181,87) / 2 x 25,00	4,370.23	m³	
5					
	Area =	181.40			
	Length =	25.00			
	V=	(181,87 + 181,40) / 2 x 25,00	4,540.88	m³	
6					
	Area =	199.84			
	Length =	25.00			
	V=	(181,40 + 199,84) / 2 x 25,00	4,765.44	m³	
7					
	Area =	192.71			
	Length =	25.00			
	V=	(199,84 + 192,71) / 2 x 25,00	4,906.84	m³	
8					
	Area =	180.71			
	Length =	25.00			
	V=	(192,71 + 180,71) / 2 x 25,00	4,667.72	m³	
9					
	Area =	203.87			
	Length =	25.00			
	V=	(180,71 + 203,87) / 2 x 25,00	4,807.30	m³	
10					
	Area =	204.89			
	Length =	25.00			
	V=	(203,87 + 204,89) / 2 x 25,00	5,109.59	m³	
11					
	Area =	225.56			
	Length =	25.00			
	V=	(204,89 + 225,56) / 2 x 25,00	5,380.64	m³	
12					
	Area =	191.33			
	Length =	25.00			
	V=	(225,56 + 191,33) / 2 x 25,00	5,211.14	m³	
13					
	Area =	254.82			
	Length =	25.00			
	V=	(191,33 + 254,82) / 2 x 25,00	5,576.89	m³	

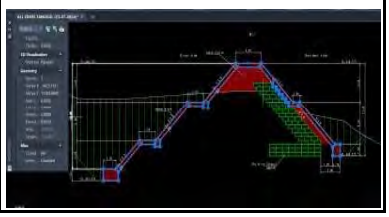
Name Structure : : Dike Leprak 24
Type of work : Sand Excavation

No.	Description	Calculation	Volume	Unit	Drawing Reference
14					
	Area =	242.32			
	Length =	25.00			
	V=	(254,82 + 242,32) / 2 x 25,00	6,214.23	m^3	
15					
	Area =	268.26			
	Length =	25.00			
	V=	(242,32 + 268,26) / 2 x 25,00	6,382.25	m^3	
16					
	Area =	287.39			
	Length =	25.00			
	V=	(268,26 + 287,39) / 2 x 25,00	6,945.63	m^3	
		Sand Excavation Total Volume =	87,223.68	m^3	

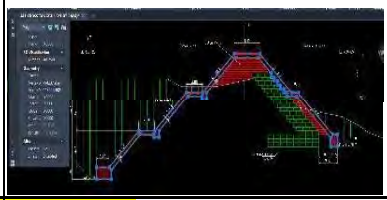
Name Structure : : Dike Leprak 24
Type of work : Concrete K-225

No.	Description	Calculation		Volume	Unit	Drawing Reference
0						
	Area =	27.24	m^2			
	Length =	25.00	m^1			
	Volume =	680.88	m^3			
	Total Volume =			680.88	m3	
						
1						
	Area =	27.40	m^2			
	Length =	25.00	m^1			
	Volume =	684.88	m^3			
	Total Volume =			684.88	m3	
						
2						
	Area =	27.59	m^2			
	Length =	25.00	m^1			
	Volume =	689.75	m^3			
	Total Volume =			689.75	m3	
						
3						
	Area =	27.76	m^2			
	Length =	25.00	m^1			
	Volume =	693.94	m^3			
	Total Volume =			693.94	m3	
						

Name Structure : : Dike Leprak 24
Type of work : Concrete K-225

No.	Description	Calculation		Volume	Unit	Drawing Reference
4						
	Area =	27.94	m^2			
	Length =	25.00	m^1			
	Volume =	698.59	m^3			
				698.59	m3	
						
5						
	Area =	28.11	m^2			
	Length =	25.00	m^1			
	Volume =	702.78	m^3			
	Total Volume =			702.78	m3	
						
6						
	Area =	28.30	m^2			
	Length =	25.00	m^1			
	Volume =	707.40	m^3			
	Total Volume =			707.40	m3	
						
7						
	Area =	28.47	m^2			
	Length =	25.00	m^1			
	Volume =	711.82	m^3			
	Total Volume =			711.82	m3	
						

Name Structure : : Dike Leprak 24
Type of work : Concrete K-225

No.	Description	Calculation	Volume	Unit	Drawing Reference
8					
	Area =	28.65 m^2			
	Length =	25.00 m^1			
	Volume =	716.24 m^3			
	Total Volume =		716.24	m3	
					
9					
	Area =	28.83 m^2			
	Length =	25.00 m^1			
	Volume =	720.66 m^3			
	Total Volume =		720.66	m3	
					
10					
	Area =	29.01 m^2			
	Length =	25.00 m^1			
	Volume =	725.14 m^3			
			725.14	m3	
					
11					
	Area =	29.18 m^2			
	Length =	25.00 m^1			
	Volume =	729.56 m^3			
	Total Volume =		729.56	m3	
					
		Concrete K-225 Sub Total Volume =			**8,461.61 m^3**

Name Structure : : Dike Leprak 24
Type of work : Concrete K-225

No.	Description	Calculation	Volume	Unit	Drawing Reference
12					
	Area =	29.35 m^2			
	Length =	25.00 m'			
	Volume =	**733.72** m^3			
	Total Volume =		733.72	m3	
13					
	Area =	31.15 m^2			
	Length =	25.00 m'			
	Volume =	**778.71** m^3			
	Total Volume =		778.71	m3	
14					
	Area =	31.33 m^2			
	Length =	25.00 m'			
	Volume =	**783.16** m^3			
	Total Volume =		783.16	m3	
15					
	Area =	31.50 m^2			
	Length =	25.00 m'			
	Volume =	**787.50** m^3			
	Total Volume =		787.50	m3	

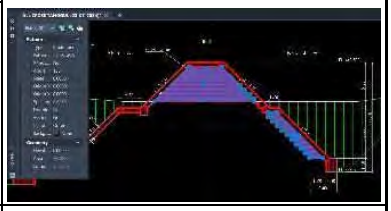
Name Structure : : Dike Leprak 24
Type of work : Concrete K-225

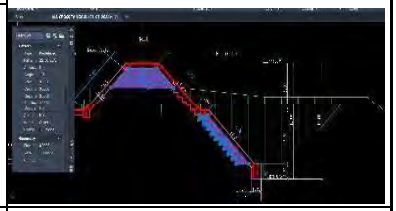
No.	Description	Calculation	Volume	Unit	Drawing Reference
16					
	Area =	31.68 m^2			
	Length =	25.00 m^1			
	Volume =	792.03 m^3			
			792.03	m3	

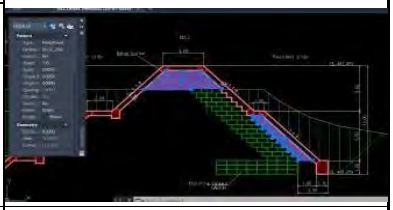
	Concrete K-225 Total Volume =	12,336.72 m3

Name Structure : : Dike Leprak 24
Type of work : Cyclop Concrete

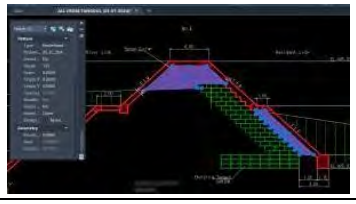
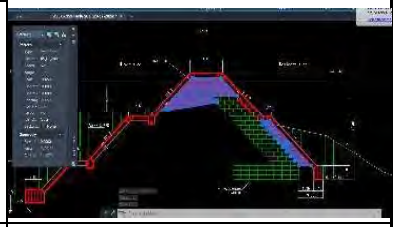
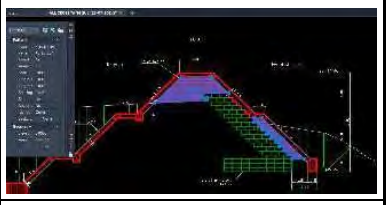
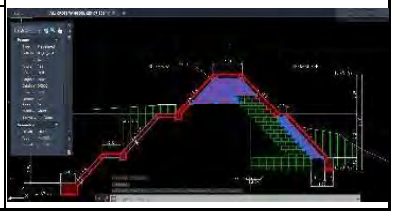
No.	Description	Calculation		Volume	Unit	Drawing Reference
0						
	Area =	33.90	m^2			
	Length =	25.00	m^1			
	Volume =	847.40	m^3			
	Total Volume =			847.40	m3	
1						
	Area =	17.31	m^2			
	Length =	25.00	m^1			
	Volume =	432.75	m^3			
	Total Volume =			432.75	m3	
2						
	Area =	18.12	m^2			
	Length =	25.00	m^1			
	Volume =	453.00	m^3			
	Total Volume =			453.00	m3	
3						
	Area =	19.90	m^2			
	Length =	25.00	m^1			
	Volume =	497.50	m^3			
	Total Volume =			497.50	m3	



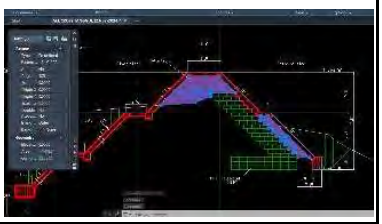
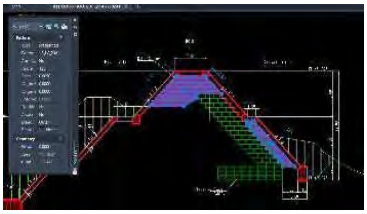
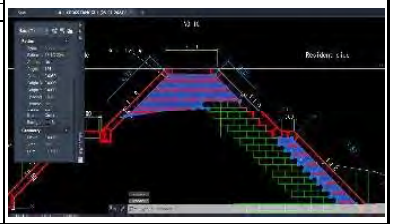
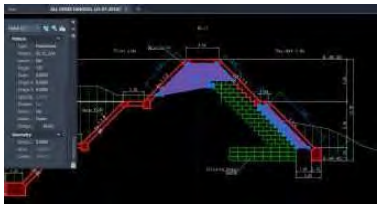




Name Structure : : Dike Leprak 24
Type of work : Cyclop Concrete

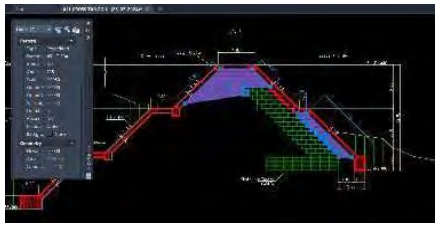
No.	Description	Calculation		Volume	Unit	Drawing Reference
4						
	Area =	20.44	m^2			
	Length =	25.00	m'			
	Volume =	511.00	m^3			
				511.00	m3	
						
5						
	Area =	24.36	m^2			
	Length =	25.00	m'			
	Volume =	609.00	m^3			
	Total Volume =			609.00	m3	
						
6						
	Area =	22.75	m^2			
	Length =	25.00	m'			
	Volume =	568.75	m^3			
	Total Volume =			568.75	m3	
						
7						
	Area =	23.23	m^2			
	Length =	25.00	m'			
	Volume =	580.75	m^3			
	Total Volume =			580.75	m3	
						

Name Structure : : Dike Leprak 24
Type of work : Cyclop Concrete

No.	Description	Calculation	Volume	Unit	Drawing Reference
8					
	Area =	23.52 m^2			
	Length =	25.00 m^1			
	Volume =	588.00 m^3			
	Total Volume =		588.00	m3	
					
9					
	Area =	23.94 m^2			
	Length =	25.00 m^1			
	Volume =	598.50 m^3			
	Total Volume =		598.50	m3	
					
10					
	Area =	21.98 m^2			
	Length =	25.00 m^1			
	Volume =	549.50 m^3			
			549.50	m3	
					
11					
	Area =	24.09 m^2			
	Length =	25.00 m^1			
	Volume =	602.25 m^3			
	Total Volume =		602.25	m3	
					
		Cyclop Concrete Sub Total Volume =			**6,838.40 m^3**

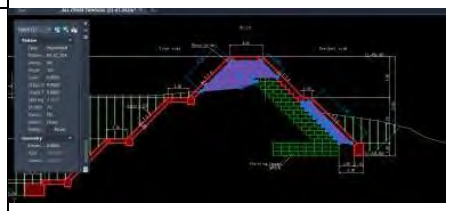
Name Structure : : Dike Leprak 24
Type of work : Cyclop Concrete

No.	Description	Calculation		Volume	Unit	awing Reference
12						
	Area =	24.91	m^2			
	Length =	25.00	m'			
	Volume =	622.75	m^3			
	Total Volume =			622.75	m3	

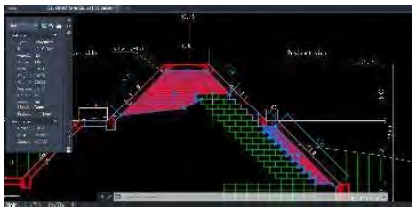


13						
	Area =	24.07	m^2			
	Length =	25.00	m'			
	Volume =	601.75	m^3			
	Total Volume =			601.75	m3	

14						
	Area =	24.64	m^2			
	Length =	25.00	m'			
	Volume =	616.00	m^3			
	Total Volume =			616.00	m3	

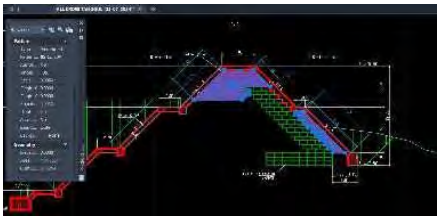


15						
	Area =	26.25	m^2			
	Length =	25.00	m'			
	Volume =	656.25	m^3			
	Total Volume =			656.25	m3	



Name Structure : : Dike Leprak 24
Type of work : Cyclop Concrete

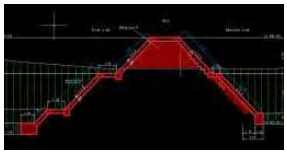
No.	Description	Calculation	Volume	Unit	awing Reference
16					
	Area =	26.33 m^2			
	Length =	25.00 m^1			
	Volume =	658.25 m^3			
			658.25	m3	

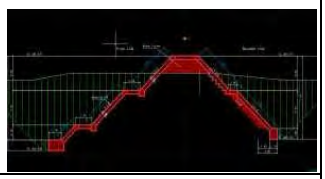


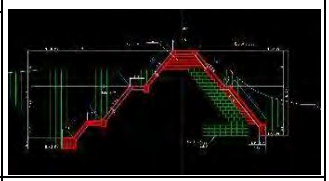
Cyclop Concrete Total Volume = 9,993.40 m^3

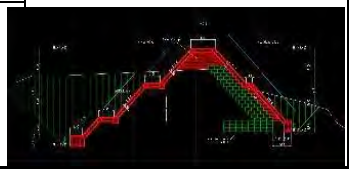
Name Structure : : Dike Leprak 24
Type of work : Exposed Formwork

No.	Description	Calculation	Volume	Unit	Drawing Reference
0	Formwork Length =	34.68 m'			
	Length =	25.00 m'			
	Volume =	867.00 m2			
	Total Volume =		867.00	m2	
1	Formwork Length =	35.03 m'			
	Length =	25.00 m'			
	Volume =	875.75 m2			
	Total Volume =		875.75	m2	
2	Formwork Length =	35.38 m'			
	Length =	25.00 m'			
	Volume =	884.50 m2			
	Total Volume =		884.50	m2	
3	Formwork Length =	35.75 m'			
	Length =	25.00 m'			
	Volume =	893.75 m2			
	Total Volume =		893.75	m2	

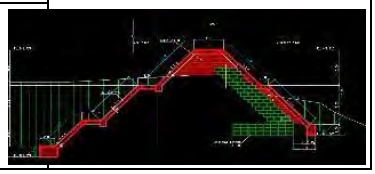




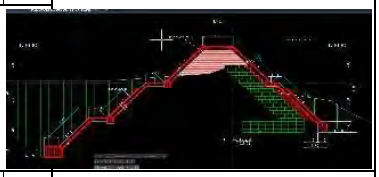
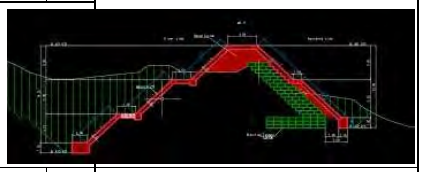




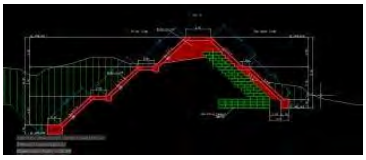
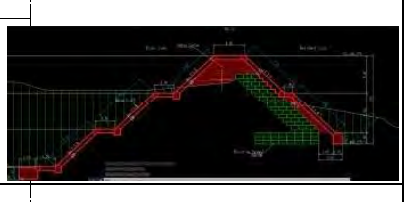
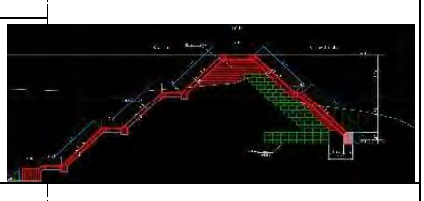
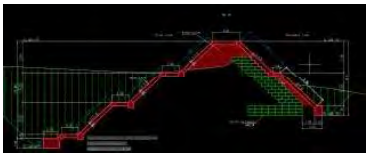
Name Structure : : Dike Leprak 24
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing Reference
4	Formwork Length =	36.23	m'			
	Length =	25.00	m'			
	Volume =	905.75	m2			
				905.75	m2	
						
5	Formwork Length =	36.45	m'			
	Length =	25.00	m'			
	Volume =	911.25	m2			
	Total Volume =			911.25	m2	
						
6	Formwork Length =	36.94	m'			
	Length =	25.00	m'			
	Volume =	923.50	m2			
	Total Volume =			923.50	m2	
						
7	Formwork Length =	37.15	m'			
	Length =	25.00	m'			
	Volume =	928.75	m2			
	Total Volume =			928.75	m2	
						

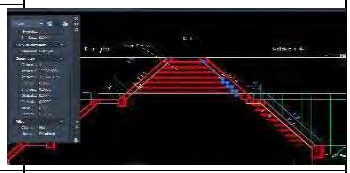
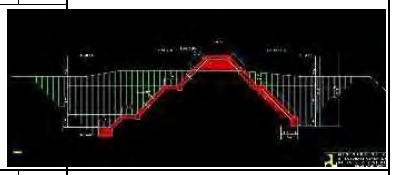
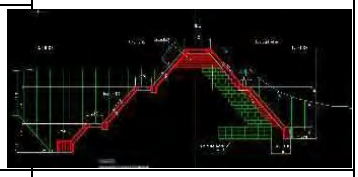
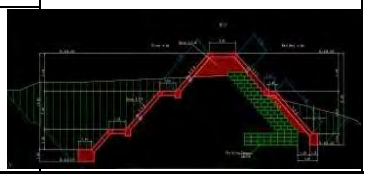
Name Structure : : Dike Leprak 24
Type of work : Exposed Formwork

No.	Description	Calculation		Volume	Unit	Drawing Reference
8	Formwork Length =	37.51	m'			
	Length =	25.00	m'			
	Volume =	937.75	m2			
	Total Volume =			937.75	m2	
						
9	Formwork Length =	37.86	m'			
	Length =	25.00	m'			
	Volume =	946.50	m2			
	Total Volume =			946.50	m2	
						
10	Formwork Length =	38.21	m'			
	Length =	25.00	m'			
	Volume =	955.25	m2			
				955.25	m2	
						
11	Formwork Length =	38.57	m'			
	Length =	25.00	m'			
	Volume =	964.25	m2			
	Total Volume =			964.25	m2	
						
		Exposed Formwork Sub Total Volume =		10,994.00	m^3	

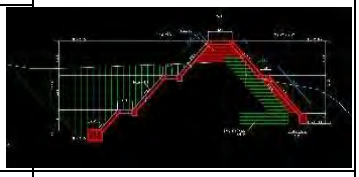
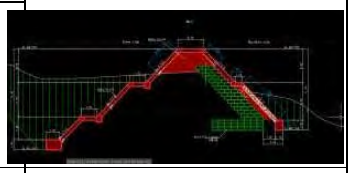
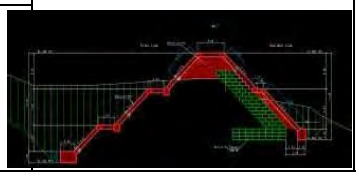
Name Structure : : Dike Leprak 24
Type of work : Exposed Formwork

No.	Description	Calculation	Volume	Unit	Drawing Reference
12	Formwork Length = 38.95 m' Length = 25.00 m' Volume = 973.75 m2 Total Volume =		973.75	m2	
13	Formwork Length = 39.27 m' Length = 25.00 m' Volume = 981.75 m2 Total Volume =		981.75	m2	
14	Formwork Length = 39.63 m' Length = 25.00 m' Volume = 990.75 m2 Total Volume =		990.75	m2	
15	Formwork Length = 39.98 m' Length = 25.00 m' Volume = 999.50 m2 Total Volume =		999.50	m2	
16	Formwork Length = 40.33 m' Length = 25.00 m' Volume = 1008.25 m2		1,008.25	m2	
		Exposed Formwork Total Volume =	15,948.00	m2	

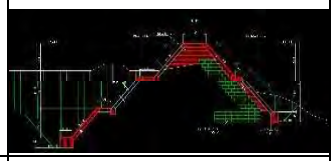
Name Structure : : Dike Leprak 24
Type of work : Non Exposed Formwork

No.	Description	Calculation	Volume	Unit	Drawing Reference
0	Formwork Length =	20.77 m'			
	Length =	25.00 m'			
	Volume =	519.34 m2			
	Total Volume =		519.34	m2	
					
1	Formwork Length =	14.69 m'			
	Length =	25.00 m'			
	Volume =	367.32 m2			
	Total Volume =		367.32	m2	
					
2	Formwork Length =	14.94 m'			
	Length =	25.00 m'			
	Volume =	373.50 m2			
	Total Volume =		373.50	m2	
					
3	Formwork Length =	14.97 m'			
	Length =	25.00 m'			
	Volume =	374.27 m2			
	Total Volume =		374.27	m2	
					

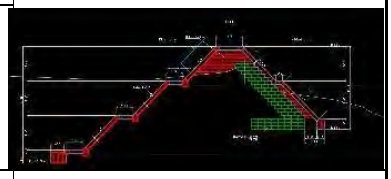
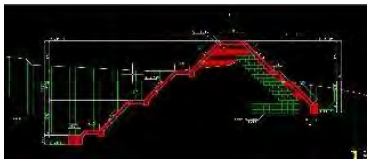
Name Structure : : Dike Leprak 24
Type of work : Non Exposed Formwork

No.	Description	Calculation	Volume	Unit	Drawing Reference
4	Formwork Length =	15.71 m'			
	Length =	25.00 m'			
	Volume =	392.76 m2			
			392.76	m2	
					
5	Formwork Length =	17.10 m'			
	Length =	25.00 m'			
	Volume =	427.42 m2			
	Total Volume =		427.42	m2	
					
6	Formwork Length =	16.39 m'			
	Length =	25.00 m'			
	Volume =	409.65 m2			
	Total Volume =		409.65	m2	
					
7	Formwork Length =	16.45 m'			
	Length =	25.00 m'			
	Volume =	411.34 m2			
	Total Volume =		411.34	m2	
					

Name Structure : : Dike Leprak 24
Type of work : Non Exposed Formwork

No.	Description	Calculation	Volume	Unit	Drawing Reference
8	Formwork Length = 16.88 m' Length = 25.00 m' Volume = **422.07** m2 Total Volume =		422.07	m2	
9	Formwork Length = 16.71 m' Length = 25.00 m' Volume = **417.75** m2 Total Volume =		417.75	m2	
10	Formwork Length = 16.67 m' Length = 25.00 m' Volume = **416.75** m2		416.75	m2	
11	Formwork Length = 17.21 m' Length = 25.00 m' Volume = **430.25** m2 Total Volume =		430.25	m2	
		Non Exposed Formwork Sub Total Volume =			**4,962.41 m^3**

Name Structure : : Dike Leprak 24
Type of work : Non Exposed Formwork

No.	Description	Calculation	Volume	Unit	Drawing Reference
12	Formwork Length = 17.46 m' Length = 25.00 m' Volume = 436.50 m2 Total Volume =		519.34	m2	
					
13	Formwork Length = 17.02 m' Length = 25.00 m' Volume = 425.50 m2 Total Volume =		425.50	m2	
					
14	Formwork Length = 17.12 m' Length = 25.00 m' Volume = 428.00 m2 Total Volume =		428.00	m2	
					
15	Formwork Length = 17.61 m' Length = 25.00 m' Volume = 440.25 m2 Total Volume =		440.25	m2	
					
16	Formwork Length = 16.97 m' Length = 25.00 m' Volume = 424.25 m2		424.25	m2	
					
		Non Exposed Formwork total Volume =			7,199.74 m2

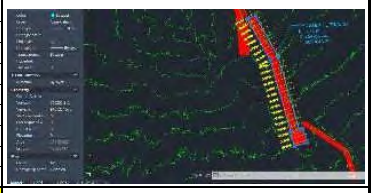
Name Structure : : Leprak 24 Dike
Type of work : Geotextile

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	Dike Span =	425.00	m			
	Geotextile Length =	18.50	m	7,862.50	m2	
		Geotextile Total Volume =		7,862.50	m2	

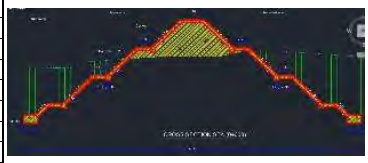
SUMMARY OF QUANTITY DIKE LEPRAK 22

No.	Description	Unit	Volume
1	Stake Out	m2	21,410.29
2	Cross Profile	m	1,368.00
3	Bowplank	m	632.00
4	Mechanical Sand Excavation	m3	147,475.41
5	Sand Backfill	m3	1,673.44
6	Concrete Making and Casting fc' = 20 Mpa (K 225) Mechanically Transported within a radius of 2000 m with a Concrete Pump (CP)	m3	9,039.27
7	Cyclops Concrete 60% Concrete fc' 15 Mpa: 40% Split Stone, with Concrete Pump (CP)	m3	2,406.89
8	1 m2 Exposed Concrete Wall Formwork with 18 mm Multiflex	m2	14,205.39
9	1 m2 Regular Formwork for Concrete Walls with Multiflex 12 mm or 18 mm	m2	1,193.85
10	1 m2 Scaffolding / Supporting Formwork Rafters 5/7 for Concrete Walls Tm 2.50 m	m2	15,399.24
11	Carefully dismantle 1 m2 of Formwork and Scaffolding	m2	14,205.39
12	Dismantle 1 m2 of Formwork and Scaffolding in the Normal Way (and Clear Debris) for Non Expose	m2	1,193.85
13	Joint Filler	m3	2.51

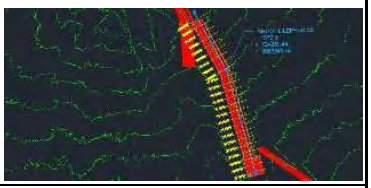
Name Structure : : Dike Leprak 22
Type of work : Stake Out

No.	Description	Calculation	Volume	Unit	Drawing Reference
1	Area =				
		21410.29	21,410.29	m^2	
		Stake Out Total Volume =	21,410.29	m²	

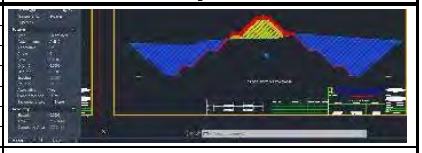
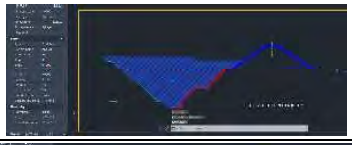
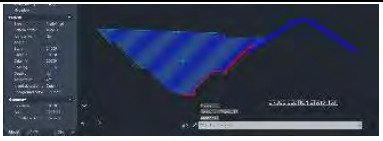
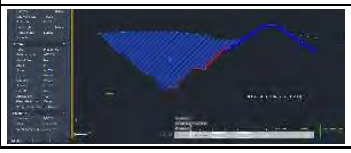
Name Structure : : Dike Leprak 22
Type of work : Cross Profile

No.	Description	Calculation	Volume	Unit	Drawing Reference
					
1					
	Numbers of Section =	24.00	1,368.00	m	
	Cross Length =	57.000	,		
		Cross Profile Total Volume =	1,368.00	m	

Name Structure : : Dike Leprak 22
Type of work : Bowplank

No.	Description	Calculation	Volume	Unit	Drawing Reference
1					
	Profile Length =	575.00	632.00	m	
	Cross Section Length =	57.00			
		Bowplank Total	632.00	m'	

Name Structure : : Dike Leprak 22
Type of work : Sand Excavation

No.	Description	Calculation		Volume	Unit	Drawing Reference
1	No. 0					
	Area =	377.34	m^2			
	Length =	25.00	m'			
	Volume =	4716.75	m^3			
	Total Volume =			4,716.75	m^3	
2	No. 1					
	Area =	410.65	m^2			
	Length =	25.00	m'			
	Volume =	9849.85	m^3			
	Total Volume =			9,849.85	m^3	
3	No. 2					
	Area =	298.46	m^2			
	Length =	25.00	m'			
	Volume =	8863.90	m^3			
	Total Volume =			8,863.90	m^3	
4	No. 3					
	Area =	339.51	m^2			
	Length =	25.00	m'			
	Volume =	7974.70	m^3			
	Total Volume =			7,974.70	m^3	
5	No. 4					
	Area =	197.79	m^2			
	Length =	25.00	m'			
	Volume =	6716.32	m^3			
	Total Volume =			6,716.32	m^3	
6	No. 5					
	Area =	217.44	m^2			
	Length =	25.00	m'			
	Volume =	5190.40	m^3			
	Total Volume =			5,190.40	m^3	
7	No. 6					
	Area =	234.55	m^2			
	Length =	25.00	m'			
	Volume =	5649.81	m^3			
	Total Volume =			5,649.81	m^3	
8	No. 7					
	Area =	230.70	m^2			
	Length =	25.00	m'			
	Volume =	5601.75	m^3			
	Total Volume =			5,601.75	m^3	
9	No. 8					
	Area =	242.29	m^2			
	Length =	25.00	m'			
	Volume =	5960.50	m^3			
	Total Volume =			5,960.50	m^3	