

EXCAVATION

Machine hour calculation:				Calculation of transport			
Excavation Sewer pipes		Take away		Choice of vehicle: Thwaites dumper 6 ton			
Number of m3 to be moved in solid measure		543,27 m ³		Max load pr vehicle:		0 kg	
Bucket size		1,50 m ³		Max number of m3		6,00 m ³	
Choice of Machine: Excavator Volvo ECR88 PLUS				Do not exceed the maximum payload		11.100	
Pos.nr:							
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		1,50	m ³	Max. Weigth		11.100	kg
		543,27	m ³	Distance to tip		0,06	km
Density		1850	kg/m ³	Speed		10	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	6,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	0,72	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	3,16	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
				Maneuвреtime		1,60	min
Production.	Bucketsize*(3600/cyclus time) *Efficiencie.*bucket	114,05	m ³ /time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	6,48	min
				Lorrys production	(60min/h/ circulationtime)*max.volume	55,59	m ³ /time
				Number off trucks		2,1	
Hours total		5 Hours		Hours total		10 Hours	

Machine hour calculation:				Calculation of transport			
Excavation Rainwater pipes		Take away		Choice of vehicle: Thwaites dumper 6 ton			
Number of m3 to be moved in solid measure		146,2 m ³		Max load pr vehicle:		0 kg	
Bucket size		1,50 m ³		Max number of m3		6,00 m ³	
Choice of Machine: Excavator Volvo ECR88 PLUS				Do not exceed the maximum payload		11.100	
Pos.nr:							
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		1,50	m ³	Max. Weigth		11.100	kg
		146,2	m ³	Distance to tip		0,06	km
Density		1850	kg/m ³	Speed		10	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	6,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	0,72	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	3,16	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
				Maneuвреtime		1,60	min
Production.	Bucketsize*(3600/cyclus time)	114,05	m ³ /time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	6,48	min
	*Efficiency.*bucket			Lorrys production	(60min/h/ circulationtime)*max.volume	55,59	m ³ /time
				Number off trucks		2,1	
Hours total		1 Hours		Hours total		3 Hours	

Machine hour calculation:				Calculation of transport			
Excavation Drainage pipes		Take away		Choice of vehicle: Scania R114CB			
Number of m3 to be moved in solid measure		264,5 m³		Max load pr vehicle:		0 kg	
Bucket size		1,50 m³		Max number of m3		6,00 m³	
Choice of Machine: Excavator Volvo ECR88 PLUS				Do not exceed the maximum payload		11.100	
Pos.nr:							
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		1,50	m³	Max. Weigth		11.100	kg
		264,5	m³	Distance to tip		0,06	km
Density		1850	kg/m³	Speed		10	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	6,00	m³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	0,72	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	3,16	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
				Maneuвреtime		1,60	min
Production.	Bucketsize*(3600/cyclus time)	114,05	m³/time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	6,48	min
	*Efficiencie.*bucket			Lorrys production	(60min/h/ circulationtime)*max.volume	55,59	m³/time
				Number off trucks		2,1	
Hours total		2 Hours		Hours total		5 Hours	

Machine hour calculation:									
Excavation Road drainage pipes		Take away		Calculation of transport					
Number of m3 to be moved in solid measure		58,59 m ³							
Bucket size		1,50 m ³							
				Max load pr vehicle: 0 kg					
				Max number of m3 6,00 m ³					
				Do not exceed the maximum payload 11.100					
Pos.nr:									
Text		Formel.	Quantity	Unit	Text		Formel.	Quantity	Unit
Bucket size			1,50	m ³	Max. Weigth			11.100	kg
			58,59	m ³	Distance to tip			0,06	km
Density			1850	kg/m ³	Speed			10	km/t
Efficiency			0,6	Faktor	Max volume.		(max weigth/soildensity)/loadingfactor	6,00	m ³
Cyclus time			25	Sek	Drivingtime total		2*(distance*60min/h)/avarage speed	0,72	min
Loadingtime					Loadingtime		Max volum/bucketsize*(cyklustime/60)	3,16	min
Loadind factor		0,8	0,8	Faktor	Unloading time			1,00	min
Bucket factor			1,1	Faktor	Maneuвреtime			1,60	min
Production.		Bucketsize*(3600/cyclus time)	114,05	m ³ /time	Circulationtime		Loadingtime+drivingtime+maneuvre+ unload	6,48	min
		*Efficiency.*bucket			Lorrys production		(60min/h/ circulationtime)*max.volume	55,59	m ³ /time
					Number off trucks			2,1	
Hours total			1	Hours	Hours total			1	Hours

BACKFILLING SEWER PIPES

Machine hour calculation: Backfill				Calculation of transport			
Wheel Loader	SEWER	SAND		Choice of vehicle: Thwaites dumper 6 ton			
Number of m3 to be moved in solid measure		51,69	m ³	Max load pr vehicle:		0	kg
Bucket size		0,30	m ³	Max number of m3		6,00	m ³
Bobcat S-130/753 læsser (Wheel loader)				Do not exceed the maximum payload		11.100	
Sewer pipes							
Pos.nr:							
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,30	m ³	Max. Weigth		11.100	kg
		51,69	m ³	Distance to tip		0,06	km
Density		1850	kg/m ³	Speed		10	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	6,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	0,72	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	16,05	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
				Maneuвреtime		1,60	min
Production.	Bucketsize*(3600/cyclus time)	22,43	m ³ /time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	19,37	min
	*Efficiency.*bucket			Lorrys production	(60min/h/ circulationtime)*max.volume	18,59	m ³ /time
				Number off trucks		1,2	
Hours total		2	Hours	Hours total		5	Hours

<u>Machine hour calculation: Backfill</u>				<u>SAND</u>			
<u>Excavator</u>				<u>Calculation of transport</u>			
Number of m3 to be moved in solid measure				51,69 m³			
Bucket size				0,50 m³			
Choice of Machine: Excavator Volvo ECR28 graver							
Sewer pipes				Max load pr vehicle: 0 kg			
Pos.nr:				Max number of m3 0,00 m³			
Do not exceed the maximum payload 0							
Pos.nr:							
Text				Formel.			
Quantity				Unit			
Bucket size				0,50 m³			
				51,69 m³			
Density				1850 kg/m³			
Efficiency				0,6 Faktor			
Cyclus time				25 Sek			
Loadind factor				0,8 Faktor			
Bucket factor				1,1 Faktor			
Production.				38,02 m³/time			
Bucketsize*(3600/cyclus time)							
*Efficiency.*bucket							
Max. Weigth				0 kg			
Distance to tip				0 km			
Speed				0 km/t			
Max volume.				(max weigth/soildensity)/loadingfactor 0,00 m³			
Drivingtime total				2*(distance*60min/h)/avarage speed #;DIV/0! min			
Loadingtime				Max volum/bucketsize*(cyklustime/60) 0,00 min			
Unloading time				1,00 min			
Maneuвреtime				1,60 min			
Circulationtime				Loadingtime+drivingtime+maneuvre+ unload #;DIV/0! min			
Lorrys production				(60min/h/ circulationtime)*max.volume #;DIV/0! m³/time			
Number off trucks				#;DIV/0!			
Hours total				Hours total			
1 Hours				#;DIV/0! Hours			

<u>Machine hour calculation: Backfill</u>				<u>SOIL</u>		<u>Calculation of transport</u>			
<u>Wheel Loader</u>						<u>Choice of vehicle: Thwaites dumper 6 ton</u>			
Number of m3 to be moved in solid measure				513,83 m³					
Bucket size				0,30 m³					
<u>Bobcat S-130/753 læsser (Wheel loader)</u>						Max load pr vehicle: 0 kg			
						Max number of m3 6,00 m³			
<u>Sewer pipes</u>						Do not exceed the maximum payload 11.100			
<u>Pos.nr:</u>									
<u>Text</u>	<u>Formel.</u>	<u>Quantity</u>	<u>Unit</u>	<u>Text</u>	<u>Formel.</u>	<u>Quantity</u>	<u>Unit</u>		
Bucket size		0,30	m³	Max. Weigth		11.100	kg		
		513,83	m³	Distance to tip		0,06	km		
Density		1850	kg/m³	Speed		10	km/t		
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	6,00	m³		
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	0,72	min		
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	15,78	min		
Bucket factor		1,1	Faktor	Unloading time		1,00	min		
				Maneuвреtime		1,60	min		
Production.	Bucketsize*(3600/cyclus time)	22,81	m³/time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	19,10	min		
	*Efficiencie.*bucket			Lorrys production	(60min/h/ circulationtime)*max.volume	18,85	m³/time		
				Number off trucks		1,2			
<u>Hours total</u>				<u>Hours total</u>		<u>45 Hours</u>			

Machine hour calculation: Backfill SOIL				Calculation of transport			
Excavator							
Number of m3 to be moved in solid measure		513,83	m ³				
Bucket size		0,50	m ³				
Choice of Machine: Excavator Volvo ECR28 graver				Max load pr vehicle:		0	kg
				Max number of m3		0,00	m ³
Sewer pipes				Do not exceed the maximum payload		0	
Pos.nr:							
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,50	m ³	Max. Weigth		0	kg
		513,83	m ³	Distance to tip		0	km
Density		1850	kg/m ³	Speed		0	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	0,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	#DIV/0!	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	0,00	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
				Maneuвреtime		1,60	min
Production.	Bucketsize*(3600/cyclus time) *Efficiencie.*bucket	38,02	m ³ /time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	#DIV/0!	min
				Lorrys production	(60min/h/ circulationtime)*max.volume	#DIV/0!	m ³ /time
				Number off trucks		#DIV/0!	
Hours total		14	Hours	Hours total		#DIV/0!	Hours

Machine hour calculation: Backfill				MSG			
Wheel Loader				Calculation of transport			
Number of m3 to be moved in solid measure				Choice of vehicle: Thwaites dumper 6 ton			
Bucket size				Max load pr vehicle:			
Bobcat S-130/753 læsser (Wheel loader)				Max number of m3			
Sewer pipes				Do not exceed the maximum payload			
Pos.nr:							
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,30	m ³	Max. Weigth		11.100	kg
		19,2	m ³	Distance to tip		0,06	km
Density		1850	kg/m ³	Speed		10	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	6,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	0,72	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	15,78	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
				Maneuвреtime		1,60	min
Production.	Bucketsize*(3600/cyclus time)	22,81	m ³ /time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	19,10	min
	*Efficiencie.*bucket			Lorrys production	(60min/h/ circulationtime)*max.volume	18,85	m ³ /time
				Number off trucks		1,2	
Hours total				Hours total			
1 Hours				2 Hours			

Machine hour calculation: Backfill				MSG			
Excavator				Calculation of transport			
Number of m3 to be moved in solid measure				19,2 m ³			
Bucket size				0,50 m ³			
Choice of Machine: Excavator Volvo ECR28 graver				Max load pr vehicle: 0 kg			
Sewer pipes				Max number of m3 0,00 m ³			
Pos.nr:				Do not exceed the maximum payload 0			
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,50	m ³	Max. Weigth		0	kg
		19,2	m ³	Distance to tip		0	km
Density		1850	kg/m ³	Speed		0	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	0,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	#jDIV/0!	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	0,00	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
Production.	Bucketsize*(3600/cyclus time) *Efficiency.*bucket	38,02	m ³ /time	Maneuвреtime		1,60	min
				Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	#jDIV/0!	min
				Lorrys production	(60min/h/ circulationtime)*max.volume	#jDIV/0!	m ³ /time
				Number off trucks		#jDIV/0!	
Hours total		1	Hours	Hours total		#jDIV/0!	Hours

BACKFILLING RAINWATER PIPES

Machine hour calculation: Backfill				Calculation of transport			
Wheel Loader		SAND		Choice of vehicle: Thwaites dumper 6 ton			
Number of m3 to be moved in solid measure		23 m ³		Max load pr vehicle:		0 kg	
Bucket size		0,30 m ³		Max number of m3		6,00 m ³	
Bobcat S-130/753 læsser (Wheel loader)				Do not exceed the maximum payload		11.100	
Rainwater pipes							
Pos.nr:							
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,30	m ³	Max. Weigth		11.100	kg
		23	m ³	Distance to tip		0,06	km
Density		1850	kg/m ³	Speed		10	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	6,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	0,72	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	15,78	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
				Maneuвреtime		1,60	min
Production.	Bucketsize*(3600/cyclus time)	22,81	m ³ /time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	19,10	min
	*Efficiency.*bucket			Lorrys production	(60min/h/ circulationtime)*max.volume	18,85	m ³ /time
				Number off trucks		1,2	
Hours total		1 Hours		Hours total		2 Hours	

Machine hour calculation: Backfill				SAND			
Excavator				Calculation of transport			
Number of m3 to be moved in solid measure				23 m ³			
Bucket size				0,50 m ³			
Choice of Machine: Excavator Volvo ECR28 graver				Max load pr vehicle:			
				0 kg			
				Max number of m3			
				0,00 m ³			
Rainwater pipes				Do not exceed the maximum payload			
Pos.nr:				0			
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,50	m ³	Max. Weigth		0	kg
		23	m ³	Distance to tip		0	km
Density		1850	kg/m ³	Speed		0	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	0,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	#;DIV/0!	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	0,00	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
				Maneuvretime		1,60	min
Production.	Bucketsize*(3600/cyclus time)	38,02	m ³ /time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	#;DIV/0!	min
	*Efficiencie.*bucket			Lorrys production	(60min/h/ circulationtime)*max.volume	#;DIV/0!	m ³ /time
				Number off trucks		#;DIV/0!	
Hours total		1	Hours	Hours total		#;DIV/0!	Hours

<u>Machine hour calculation: Backfill</u>				<u>SOIL</u>		<u>Calculation of transport</u>			
<u>Wheel Loader</u>				<u>Choice of vehicle: Thwaites dumper 6 ton</u>					
Number of m3 to be moved in solid measure				132,55 m³		Max load pr vehicle: 0 kg			
Bucket size				0,30 m³		Max number of m3 6,00 m³			
<u>Bobcat S-130/753 læsser (Wheel loader)</u>				Do not exceed the maximum payload 11.100					
<u>Rainwater pipes</u>									
<u>Pos.nr:</u>									
<u>Text</u>		<u>Formel.</u>	<u>Quantity</u>	<u>Unit</u>	<u>Text</u>		<u>Formel.</u>	<u>Quantity</u>	<u>Unit</u>
Bucket size			0,30	m³	Max. Weigth			11.100	kg
			132,55	m³	Distance to tip			0,06	km
Density			1850	kg/m³	Speed			10	km/t
Efficiency			0,6	Faktor	Max volume.		(max weigth/soildensity)/loadingfactor	6,00	m³
Cyclus time			25	Sek	Drivingtime total		2*(distance*60min/h)/avarage speed	0,72	min
Loadind factor		0,8	0,8	Faktor	Loadingtime		Max volum/bucketsize*(cyklustime/60)	15,78	min
					Unloading time			1,00	min
Bucket factor			1,1	Faktor	Maneuвреtime			1,60	min
Production.		Bucketsize*(3600/cyclus time) *Efficiencie.*bucket	22,81	m³/time	Circulationtime		Loadingtime+drivingtime+maneuvre+ unload	19,10	min
					Lorrys production		(60min/h/ circulationtime)*max.volume	18,85	m³/time
					Number off trucks			1,2	
<u>Hours total</u>			6 Hours		<u>Hours total</u>			12 Hours	

Machine hour calculation: Backfill				SOIL			
Excavator				Calculation of transport			
Number of m3 to be moved in solid measure				132,55 m ³			
Bucket size				0,50 m ³			
Choice of Machine: Excavator Volvo ECR28 graver				Max load pr vehicle: 0 kg			
Rainwater pipes				Max number of m3 0,00 m ³			
Pos.nr:				Do not exceed the maximum payload 0			
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,50	m ³	Max. Weigth		0	kg
		132,55	m ³	Distance to tip		0	km
Density		1850	kg/m ³	Speed		0	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	0,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	#DIV/0!	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	0,00	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
Production.		38,02	m ³ /time	Maneuвреtime		1,60	min
	Bucketsize*(3600/cyclus time)			Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	#DIV/0!	min
	*Efficiencie.*bucket			Lorrys production	(60min/h/ circulationtime)*max.volume	#DIV/0!	m ³ /time
				Number off trucks		#DIV/0!	
Hours total		3	Hours	Hours total		#DIV/0!	Hours

BACKFILLING DRAINAGE PIPES

Machine hour calculation: Backfill				Calculation of transport			
Wheel Loader		SAND		Choice of vehicle: Thwaites dumper 6 ton			
Number of m3 to be moved in solid measure		34,29	m ³	Max load pr vehicle:			
Bucket size		0,30	m ³	Max number of m3			
Bobcat S-130/753 læsser (Wheel loader)				Do not exceed the maximum payload			
Drainage pipes				11.100			
Pos.nr:							
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,30	m ³	Max. Weigth		11.100	kg
		34,29	m ³	Distance to tip		0,06	km
Density		1850	kg/m ³	Speed		10	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	6,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	0,72	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	15,78	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
Production.	Bucketsize*(3600/cyclus time) *Efficiencie.*bucket	22,81	m ³ /time	Maneuвреtime		1,60	min
				Circulationtime	Loadingtime+drivingtime+maneuвре+ unload	19,10	min
				Lorrys production	(60min/h/ circulationtime)*max.volume	18,85	m ³ /time
				Number off trucks		1,2	
Hours total		2 Hours		Hours total		3 Hours	

Machine hour calculation: Backfill				SAND			
Excavator				Calculation of transport			
Number of m3 to be moved in solid measure				34,29 m ³			
Bucket size				0,50 m ³			
Choice of Machine: Excavator Volvo ECR28 graver				Max load pr vehicle: 0 kg			
Drainage pipes				Max number of m3 0,00 m ³			
Pos.nr:				Do not exceed the maximum payload 0			
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,50	m ³	Max. Weigth		0	kg
		34,29	m ³	Distance to tip		0	km
Density		1850	kg/m ³	Speed		0	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	0,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	#;DIV/0!	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	0,00	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
Production.	Bucketsize*(3600/cyclus time) *Efficiencie.*bucket	38,02	m ³ /time	Maneuвреtime		1,60	min
				Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	#;DIV/0!	min
				Lorrys production	(60min/h/ circulationtime)*max.volume	#;DIV/0!	m ³ /time
				Number off trucks		#;DIV/0!	
Hours total		1	Hours	Hours total		#;DIV/0!	Hours

<u>Machine hour calculation: Backfill</u>				<u>SOIL</u>		<u>Calculation of transport</u>			
<u>Wheel Loader</u>						<u>Choice of vehicle: Thwaites dumper 6 ton</u>			
Number of m3 to be moved in solid measure				246,63 m³					
Bucket size				0,30 m³					
<u>Bobcat S-130/753 læsser (Wheel loader)</u>						Max load pr vehicle: 0 kg			
						Max number of m3 6,00 m³			
<u>Drainage pipes</u>						Do not exceed the maximum payload 11.100			
<u>Pos.nr:</u>									
<u>Text</u>		<u>Formel.</u>	<u>Quantity</u>	<u>Unit</u>	<u>Text</u>		<u>Formel.</u>	<u>Quantity</u>	<u>Unit</u>
Bucket size			0,30	m³	Max. Weigth			11.100	kg
			246,63	m³	Distance to tip			0,06	km
Density			1850	kg/m³	Speed			10	km/t
Efficiency			0,6	Faktor	Max volume.		(max weigth/soildensity)/loadingfactor	6,00	m³
Cyclus time			25	Sek	Drivingtime total		2*(distance*60min/h)/avarage speed	0,72	min
Loadind factor		0,8	0,8	Faktor	Loadingtime		Max volum/bucketsize*(cyklustime/60)	15,78	min
					Unloading time			1,00	min
Bucket factor			1,1	Faktor	Maneuвреtime			1,60	min
Production.		Bucketsize*(3600/cyclus time)	22,81	m³/time	Circulationtime		Loadingtime+drivingtime+maneuvre+ unload	19,10	min
		*Efficiencie.*bucket			Lorrys production		(60min/h/ circulationtime)*max.volume	18,85	m³/time
					Number off trucks			1,2	
<u>Hours total</u>			11	Hours	<u>Hours total</u>			22	Hours

Machine hour calculation: Backfill				SOIL			
Excavator				Calculation of transport			
Number of m3 to be moved in solid measure				246,63 m ³			
Bucket size				0,50 m ³			
Choice of Machine: Excavator Volvo ECR28 graver				Max load pr vehicle: 0 kg			
Drainage pipes				Max number of m3 0,00 m ³			
Pos.nr:				Do not exceed the maximum payload 0			
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,50	m ³	Max. Weigth		0	kg
		246,63	m ³	Distance to tip		0	km
Density		1850	kg/m ³	Speed		0	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	0,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	#DIV/0!	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	0,00	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
				Maneuвреtime		1,60	min
Production.	Bucketsize*(3600/cyclus time)	38,02	m ³ /time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	#DIV/0!	min
	*Efficiencie.*bucket			Lorrys production	(60min/h/ circulationtime)*max.volume	#DIV/0!	m ³ /time
				Number off trucks		#DIV/0!	
Hours total		6	Hours	Hours total		#DIV/0!	Hours

BACKFILLING ROAD DRAINAGE PIPES

Machine hour calculation: Backfill				Calculation of transport			
Wheel Loader		SAND		Choice of vehicle: Thwaites dumper 6 ton			
Number of m3 to be moved in solid measure		12,04	m ³	Max load pr vehicle:			
Bucket size		0,30	m ³	Max number of m3			
Bobcat S-130/753 læsser (Wheel loader)				Do not exceed the maximum payload			
Road drainage pipes							
Pos.nr:							
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,30	m ³	Max. Weigth		11.100	kg
		12,04	m ³	Distance to tip		0,06	km
Density		1850	kg/m ³	Speed		10	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	6,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	0,72	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	15,78	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
Production.	Bucketsize*(3600/cyclus time) *Efficiencie.*bucket	22,81	m ³ /time	Maneuвреtime		1,60	min
				Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	19,10	min
				Lorrys production	(60min/h/ circulationtime)*max.volume	18,85	m ³ /time
				Number off trucks		1,2	
Hours total		1	Hours	Hours total		1	Hours

Machine hour calculation: Backfill				SAND			
Excavator				Calculation of transport			
Number of m3 to be moved in solid measure				12,04 m ³			
Bucket size				0,50 m ³			
Choice of Machine: Excavator Volvo ECR28 graver				Max load pr vehicle:			
				0 kg			
				Max number of m3			
				0,00 m ³			
Road drainage pipes				Do not exceed the maximum payload			
Pos.nr:				0			
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,50	m ³	Max. Weigth		0	kg
		12,04	m ³	Distance to tip		0	km
Density		1850	kg/m ³	Speed		0	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	0,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	#;DIV/0!	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	0,00	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
				Maneuвреtime		1,60	min
Production.	Bucketsize*(3600/cyclus time)	38,02	m ³ /time	Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	#;DIV/0!	min
	*Efficiencie.*bucket			Lorrys production	(60min/h/ circulationtime)*max.volume	#;DIV/0!	m ³ /time
				Number off trucks		#;DIV/0!	
Hours total		0	Hours	Hours total		#;DIV/0!	Hours

<u>Machine hour calculation: Backfill</u>				<u>SOIL</u>		<u>Calculation of transport</u>									
<u>Wheel Loader</u>				<u>Choice of vehicle: Thwaites dumper 6 ton</u>											
Number of m3 to be moved in solid measure				51,19 m³		Max load pr vehicle: 0 kg									
Bucket size				0,30 m³		Max number of m3 6,00 m³									
<u>Bobcat S-130/753 læsser (Wheel loader)</u>				Do not exceed the maximum payload 11.100											
<u>Road drainage pipes</u>															
<u>Pos.nr:</u>															
<u>Text</u>		<u>Formel.</u>		<u>Quantity</u>		<u>Unit</u>		<u>Text</u>		<u>Formel.</u>		<u>Quantity</u>		<u>Unit</u>	
Bucket size				0,30 m³				Max. Weigth				11.100 kg			
				51,19 m³				Distance to tip				0,06 km			
Density				1850 kg/m³				Speed				10 km/t			
Efficiency				0,6 Faktor				Max volume.		(max weigth/soildensity)/loadingfactor		6,00 m³			
Cyclus time				25 Sek				Drivingtime total		2*(distance*60min/h)/avarage speed		0,72 min			
Loadind factor		0,8		0,8 Faktor				Loadingtime		Max volum/bucketsize*(cyklustime/60)		15,78 min			
								Unloading time				1,00 min			
Bucket factor				1,1 Faktor				Maneuвреtime				1,60 min			
Production.		Bucketsize*(3600/cyclus time)		22,81 m³/time				Circulationtime		Loadingtime+drivingtime+maneuvre+ unload		19,10 min			
		*Efficiencie.*bucket						Lorrys production		(60min/h/ circulationtime)*max.volume		18,85 m³/time			
								Number off trucks				1,2			
<u>Hours total</u>				2 Hours				<u>Hours total</u>				4 Hours			

Machine hour calculation: Backfill				SOIL			
Excavator				Calculation of transport			
Number of m3 to be moved in solid measure				51,19 m ³			
Bucket size				0,50 m ³			
Choice of Machine: Excavator Volvo ECR28 graver				Max load pr vehicle: 0 kg			
Road drainage pipes				Max number of m3 0,00 m ³			
Pos.nr:				Do not exceed the maximum payload 0			
Text	Formel.	Quantity	Unit	Text	Formel.	Quantity	Unit
Bucket size		0,50	m ³	Max. Weigth		0	kg
		51,19	m ³	Distance to tip		0	km
Density		1850	kg/m ³	Speed		0	km/t
Efficiency		0,6	Faktor	Max volume.	(max weigth/soildensity)/loadingfactor	0,00	m ³
Cyclus time		25	Sek	Drivingtime total	2*(distance*60min/h)/avarage speed	#DIV/0!	min
Loadind factor	0,8	0,8	Faktor	Loadingtime	Max volum/bucketsize*(cyklustime/60)	0,00	min
Bucket factor		1,1	Faktor	Unloading time		1,00	min
Production.	Bucketsize*(3600/cyclus time) *Efficiencie.*bucket	38,02	m ³ /time	Maneuвреtime		1,60	min
				Circulationtime	Loadingtime+drivingtime+maneuvre+ unload	#DIV/0!	min
				Lorrys production	(60min/h/ circulationtime)*max.volume	#DIV/0!	m ³ /time
				Number off trucks		#DIV/0!	
Hours total		1	Hours	Hours total		#DIV/0!	Hours