

# 33 01 Operation and Maintenance of Utilities

## 33 01 30 – Operation and Maintenance of Sewer Utilities

33 01 30.75 Cured-In-place Pipe Lining		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Base Costs		Total	Total Incl O&P
							Labor	Equipment		
2413	24", 12mm, Epoxy, 250k, 20ft	C-17E	40	2	L.F.	218	119	.94	337.94	420
2414	24", 12mm, Epoxy, 250k, 50ft		100	.800		218	47.50	.38	265.88	310
2415	24", 12mm, Epoxy, 250k, 100ft		200	.400		218	23.50	.19	241.69	276
2416	24", 12mm, Epoxy, 250k, 300ft		600	.133		218	7.90	.06	225.96	252
2417	24", 12mm, Epoxy, 250k, 328ft	↓	656	.122		218	7.25	.06	225.31	251
2418	24", 12mm, Epoxy, 250k, Transitions, add					20%				
2419	24", 12mm, Epoxy, 250k, 45 and 90 deg, add					50%				
2430	24", 10.5mm, Epoxy, 400k, 2ft	C-17E	4	20		191	1,175	9.40	1,375.40	2,000
2431	24", 10.5mm, Epoxy, 400k, 4ft		8	10		191	595	4.70	790.70	1,100
2432	24", 10.5mm, Epoxy, 400k, 10ft		20	4		191	237	1.88	429.88	565
2433	24", 10.5mm, Epoxy, 400k, 20ft		40	2		191	119	.94	310.94	390
2434	24", 10.5mm, Epoxy, 400k, 50ft	↓	100	.800	↓	191	47.50	.38	238.88	282
2435	24", 10.5mm, Epoxy, 400k, 100ft	C-17E	200	.400	L.F.	191	23.50	.19	214.69	246
2436	24", 10.5mm, Epoxy, 400k, 300ft		600	.133		191	7.90	.06	198.96	222
2437	24", 10.5mm, Epoxy, 400k, 328ft	↓	656	.122		191	7.25	.06	198.31	221
2438	24", 10.5mm, Epoxy, 400k, Transitions, add					20%				
2439	24", 10.5mm, Epoxy, 400k, 45 and 90 deg, add				↓	50%				

# 33 05 Common Work Results for Utilities

## 33 05 07 – Trenchless Installation of Utility Piping

### 33 05 07.23 Utility Boring and Jacking

0010	UTILITY BORING AND JACKING									
0011	Casing only, 100' minimum,									
0020	not incl. jacking pits or dewatering									
0100	Roadwork, 1/2" thick wall, 24" diameter casing	B-42	20	3.200	L.F.	154	164	135	453	560
0200	36" diameter		16	4		238	205	168	611	750
0300	48" diameter		15	4.267		330	218	179	727	885
0500	Railroad work, 24" diameter		15	4.267		154	218	179	551	690
0600	36" diameter		14	4.571		238	234	192	664	820
0700	48" diameter	↓	12	5.333		330	273	224	827	1,025
0900	For ledge, add				↓				20%	20%

### 33 05 07.36 Microtunneling

0010	MICROTUNNELING									
0011	Not including excavation, backfill, shoring,									
0020	or dewatering, average 50' /day, slurry method									
0100	24" to 48" outside diameter, minimum				L.F.				965	965
0110	Adverse conditions, add				"				500	500
1000	Rent microtunneling machine, average monthly lease				Month				97,500	107,000
1010	Operating technician				Day				630	705
1100	Mobilization and demobilization, minimum				Job				41,200	45,900
1110	Maximum				"				445,500	490,500

## 33 05 61 – Concrete Manholes

### 33 05 61.10 Storm Drainage Manholes, Frames and Covers

0010	STORM DRAINAGE MANHOLES, FRAMES & COVERS									
0020	Excludes footing, excavation, backfill (See line items for frame & cover)									
0050	Brick, 4' inside diameter, 4' deep	D-1	1	16	Ea.	995	800		1,795	2,300
0100	6' deep		.70	22.857		1,425	1,150		2,575	3,300
0150	8' deep		.50	32	↓	1,850	1,600		3,450	4,450
0200	Add for 1' depth increase		4	4	V.L.F.	250	201		451	575
0400	Concrete blocks (radial), 4' ID, 4' deep	↓	1.50	10.667	Ea.	455	535		990	1,300