

BILL OF QUANTITY PROJECT SILO LINE 15 - 5 OPSI

- 1. Menambah 2 silo daily tank di area dekat dengan Ruang Jishuken.**
- 2. Memindah existing silo daily tank ke area line 10**
- 3. Piping untuk line 15 dengan menggunakan big autoloader**
- 4. Silo portable dengan menggunakan jalur pipa line 10 dan menggunakan vacuum hopper dan blower triple impeller.**
- 5. Penambahan receiver silo daily tank di area line 10 dan digunakan untuk supply line 10 dan 15**

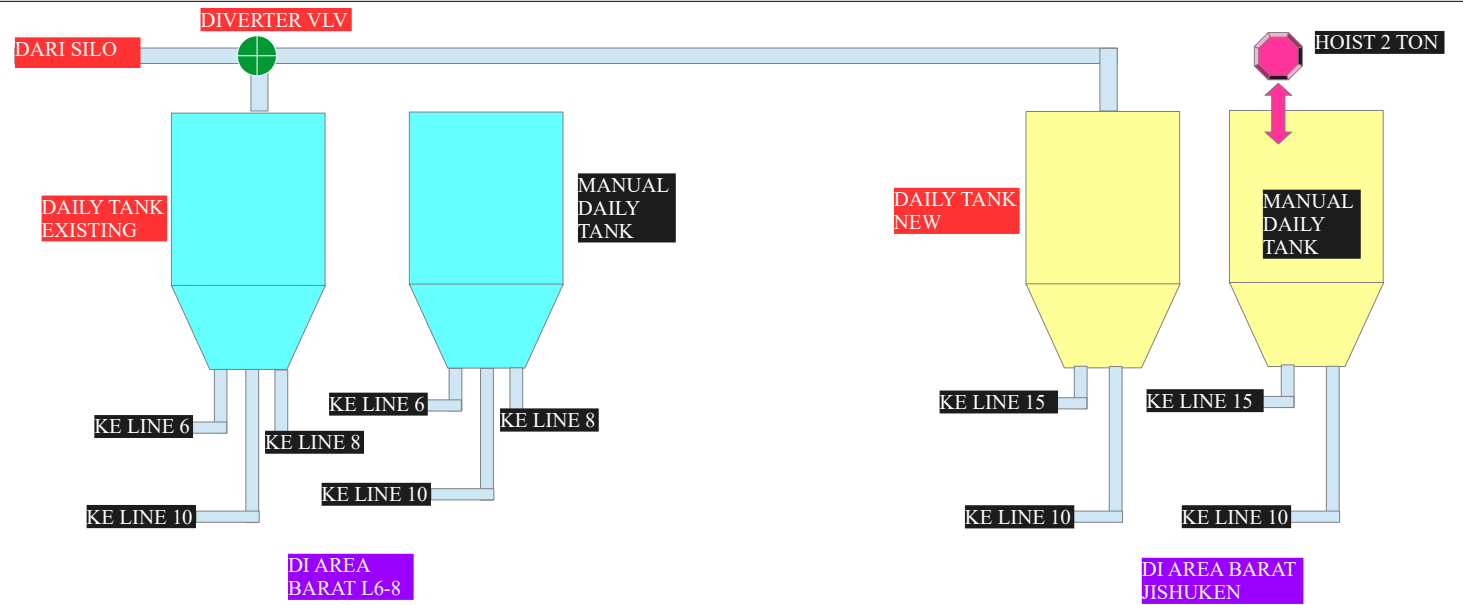
OPSI 1 PROJECT SILO LINE 15

Ops 1 adalah dengan menambah 2 silo daily tank di area dekat dengan Ruang Jishuken.

Konsep :

Menambahkan 1 buah diverter di pipa supply existing silo daily tank, percabangan diverter akan membagi supply material ke existing dan new daily tank.

Note : Perlu menguji kapasitas blower, apakah mampu terhadap jarak tersebut. Perlu pastikan ketersediaan area, terutama ketinggian atap.



BILL OF QUANTITY					
No.	Material	Qty	Unit	Harga per satuan	Total Harga
1	Pipa SUS 304 sch 10 2 Inch	6	batang	Rp2,950,000.00	Rp17,700,000.00
2	Long Elbow 2 Inch	4	pcs	Rp300,000.00	Rp1,200,000.00
3	Clamp Join 2 Inch	20	pcs	Rp300,000.00	Rp6,000,000.00
4	Pipa SUS 304 sch 10 4 Inch	17	batang	Rp3,800,000.00	Rp64,600,000.00
5	Long Elbow 4 Inch	6	pcs	Rp450,000.00	Rp2,700,000.00
6	Flange 10k 4 Inch	35	pcs	Rp200,000.00	Rp7,000,000.00
7	Silo 5 T	2	unit	Rp130,000,000.00	Rp260,000,000.00
8	Dush Collector	1	unit	Rp50,000,000.00	Rp50,000,000.00
9	Hoist 2 T	1	unit	Rp50,000,000.00	Rp50,000,000.00
10	Rangka Baja Silo dan Hoist	1	lot	Rp30,000,000.00	Rp30,000,000.00
11	Blower Triple Impeler*	0			Rp0.00
12	Diverter 4 Inch	1	pcs	Rp20,000,000.00	Rp20,000,000.00
13	Support Pipa	1	lot	Rp4,000,000.00	Rp4,000,000.00
14	U clamp 4 Inch	15	pcs	Rp15,000.00	Rp225,000.00
15	U clamp 2 Inch	10	pcs	Rp15,000.00	Rp150,000.00
16	Sleeding Valve 2"	6	set	Rp500,000.00	Rp3,000,000.00
17	Actuator Ball Valve DN50 10K	6	pcs	Rp2,500,000.00	Rp15,000,000.00
18	Ball Valve 1,5 Inch	12	pcs	Rp800,000.00	Rp9,600,000.00
19	Reducer welded 2-1,5 Inch	6	pcs	Rp300,000.00	Rp1,800,000.00
20	Tee 2 Inch welded	6	pcs	Rp300,000.00	Rp1,800,000.00
21	Tee 2-1,5 Inch welded	6	pcs	Rp250,000.00	Rp1,500,000.00
22	Flexible Hose 2,5 Inch	30	meter	Rp850,000.00	Rp25,500,000.00
23	Connector Pipa to Flexible Hose	8	pcs	Rp250,000.00	Rp2,000,000.00
24	Clamp Flexible Hose	10	pcs	Rp15,000.00	Rp150,000.00
25	Kabel 8x0.75mm sensor LSH LSL LSHH + Jasa tarik	300	Meter	Rp45,000.00	Rp13,500,000.00
26	Kabel 5x0.75 untuk dust collector + Jasa tarik	300	Meter	Rp40,000.00	Rp12,000,000.00
27	Kabel 5x0.75mm untuk diverter + Jasa tarik	200	Meter	Rp40,000.00	Rp8,000,000.00
28	Kabel 8x0.75mm untuk kontrol actuator valve + Jasa tarik	60	Meter	Rp45,000.00	Rp2,700,000.00
29	Kabel 4x0.75mm untuk kontrol actuator valve + Jasa tarik	40	Meter	Rp25,000.00	Rp1,000,000.00
30	Program PLC integrasi silo	1	Unit	Rp40,000,000.00	Rp40,000,000.00
31	Kabel tray 10x10	20	Lonjor	Rp400,000.00	Rp8,000,000.00
32	Expansion modul IO plc CP1H	1	PCS	Rp4,500,000.00	Rp4,500,000.00
33	CP1H PLC	1	PCS	Rp7,500,000.00	Rp7,500,000.00
34	Sensor High low Tank	3	pcs	Rp700,000.00	Rp2,100,000.00

Total Perkiraan Biaya Material	Rp673,225,000.00
Total Perkiraan Biaya Jasa	Rp40,000,000.00
Total Perkiraan Biaya Jasa	Rp713,225,000.00

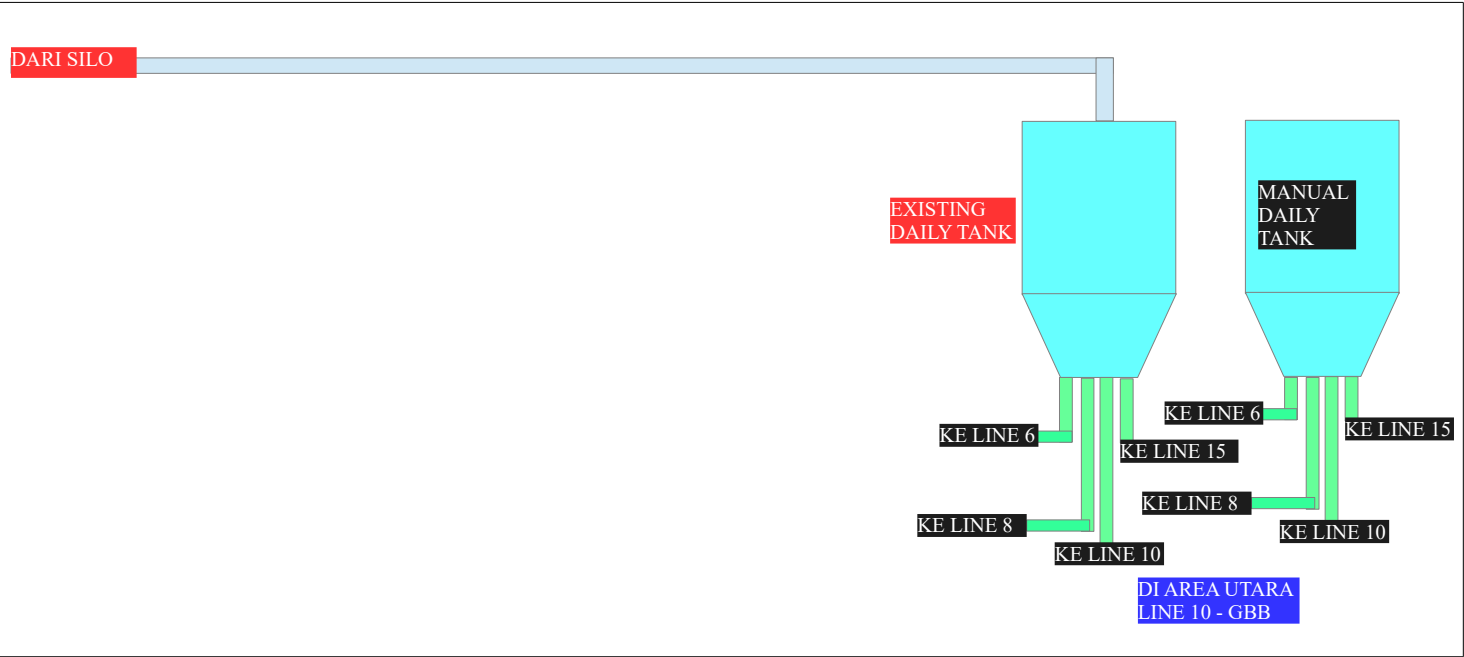
OPSI 2 PROJECT SILO LINE 15

Opsi 2 adalah dengan memindah existing silo daily tank ke area line 10

Konsep :

Reposisi silo daily tank dan menambah port untuk line 15 SB 1 dan SB 2

Note : Perlu menguji kapasitas blower, apakah mampu terhadap jarak tersebut. Perlu pastikan ketersediaan area, terutama ketinggian atap.



BILL OF QUANTITY					
No.	Material	Qty	Unit	Harga per satuan	Total Harga
1	Pipa SUS 304 sch 10 2 Inch	70	batang	Rp2,950,000.00	Rp206,500,000.00
2	Long Elbow 2 Inch	40	pcs	Rp300,000.00	Rp12,000,000.00
3	Clamp Join 2 Inch	120	pcs	Rp300,000.00	Rp36,000,000.00
4	Pipa SUS 304 sch 10 4 Inch	14	batang	Rp3,800,000.00	Rp53,200,000.00
5	Long Elbow 4 Inch	6	pcs	Rp450,000.00	Rp2,700,000.00
6	Flange 10k 4 Inch	30	pcs	Rp200,000.00	Rp6,000,000.00
7	Silo 5 T	0	unit		Rp0.00
8	Dush Collector	0	unit		Rp0.00
9	Hoist 2 T	0	unit		Rp0.00
10	Rangka Baja Silo dan Hoist	0	lot		Rp0.00
11	Blower Triple Impeler*	0			Rp0.00
12	Diverter 4 Inch	0	pcs		Rp0.00
13	Support Pipa (unp 100)	1	lot	Rp4,000,000.00	Rp4,000,000.00
14	U clamp 4 Inch	15	pcs	Rp15,000.00	Rp225,000.00
15	U clamp 2 Inch	40	pcs	Rp15,000.00	Rp600,000.00
16	Flexible Hose 2,5 Inch	30	meter	Rp850,000.00	Rp25,500,000.00
17	Connector Pipa to Flexible Hose	8	pcs	Rp250,000.00	Rp2,000,000.00
18	Clamp Flexible Hose	10	pcs	Rp15,000.00	Rp150,000.00
19	Flexible Hose 2,5 Inch	30	meter		Rp0.00
20	Connector Pipa to Flexible Hose	8	pcs		Rp0.00
21	Clamp Flexible Hose	10	pcs		Rp0.00
22	Kabel 8x0.75mm sensor LSH LSL LSHH + Jasa tarik	100	Meter	Rp45,000.00	Rp4,500,000.00
23	Kabel 5x0.75 untuk dust collector + Jasa tarik	100	Meter	Rp40,000.00	Rp4,000,000.00
24	Kabel 8x0.75mm untuk kontrol actuator valve + Jasa tarik	60	Meter	Rp45,000.00	Rp2,700,000.00
25	Kabel 4x0.75mm untuk kontrol actuator valve + Jasa tarik	40	Meter	Rp25,000.00	Rp1,000,000.00
26	Kabel 4x0.75mm untuk alarm daily tank	60	meter	Rp25,000.00	Rp1,500,000.00
27	Box panel 60x40x20	2	Pcs	Rp1,500,000.00	Rp3,000,000.00

Total Perkiraan Biaya Material	Rp365,575,000.00
Total Perkiraan Biaya Jasa	Rp25,000,000.00
Total Perkiraan Biaya Keseluruhan	Rp390,575,000.00

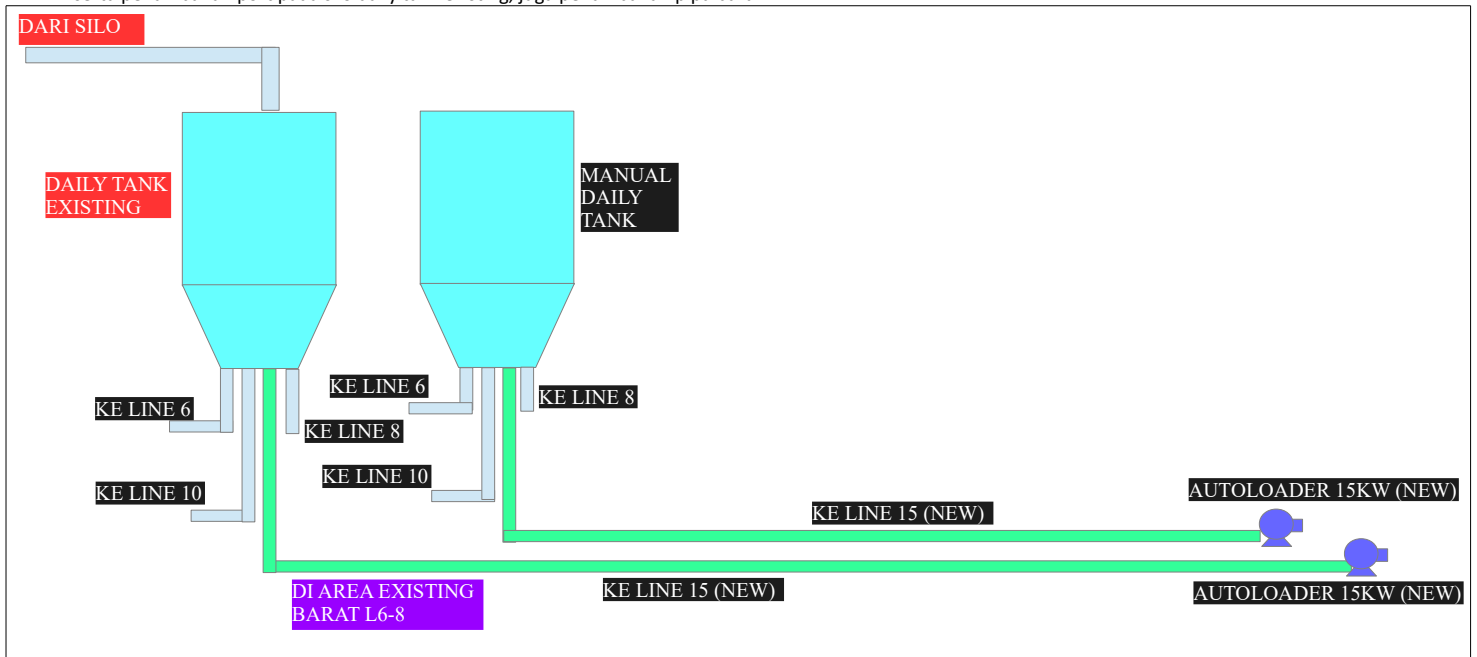
OPSI 3 PROJECT SILO LINE 15

Opsi 3 adalah Piping untuk line 15 dengan menggunakan big autoloader

Konsep :

Tranfer material ke Line 15 dengan menggunakan blower auto loader besar dan install pipa baru untuk jalur material line 15 dari silo daily tank existing.

Note : Perlu dilakukan perhitungan daya dan kapasitas blower autoloader by supplier blower autoloader, serta penambahan port pada silo daily tank existing, juga penambahan pipa baru.



BILL OF QUANTITY					
No.	Material	Qty	Unit	Harga per satuan	Total Harga
1	Pipa SUS 304 sch 10 2 Inch	100	batang	Rp2,950,000.00	Rp295,000,000.00
2	Long Elbow 2 Inch	12	pcs	Rp300,000.00	Rp3,600,000.00
3	Clamp Join 2 Inch	150	pcs	Rp300,000.00	Rp45,000,000.00
4	Pipa SUS 304 sch 10 4 Inch	0	batang		Rp0.00
5	Long Elbow 4 Inch	0	pcs		Rp0.00
6	Flange 10k 4 Inch	0	pcs		Rp0.00
7	Silo 5 T	0	unit		Rp0.00
8	Dush Collector	0	unit		Rp0.00
9	Hoist 2 T	0	unit		Rp0.00
10	Rangka Baja Silo dan Hoist	0	lot		Rp0.00
11	Blower Kapasitas besar	2	unit	Rp60,000,000.00	Rp120,000,000.00
12	Diverter 4 Inch	0	pcs		Rp0.00
13	Support Pipa (unp 100)	1	lot	Rp5,000,000.00	Rp5,000,000.00
14	U clamp 4 Inch	0	pcs		Rp0.00
15	U clamp 2 Inch	40	pcs	Rp15,000.00	Rp600,000.00
16	Flexible Hose 2,5 Inch	30	meter	Rp850,000.00	Rp25,500,000.00
17	Connector Pipa to Flexible Hose	8	pcs	Rp250,000.00	Rp2,000,000.00
18	Clamp Flexible Hose	10	pcs	Rp15,000.00	Rp150,000.00
19	Kabel 8x0.75mm untuk kontrol actuator valve + Jasa tarik	100	Meter	Rp45,000.00	Rp4,500,000.00
20	Kabel 4x0.75mm untuk kontrol actuator valve + Jasa tarik	40	Meter	Rp25,000.00	Rp1,000,000.00
21	Conduit cable + Clamp	25	batang	Rp50,000.00	Rp1,250,000.00
22	Sensor High low Tank	3	pcs	Rp700,000.00	Rp2,100,000.00
23	Box panel 60x40x20	2	pcs	Rp1,500,000.00	Rp3,000,000.00

Total Perkiraan Biaya Material

Rp508,700,000.00

Total Perkiraan Biaya Jasa

Rp30,000,000.00

Total Perkiraan Biaya Keseluruhan

Rp538,700,000.00

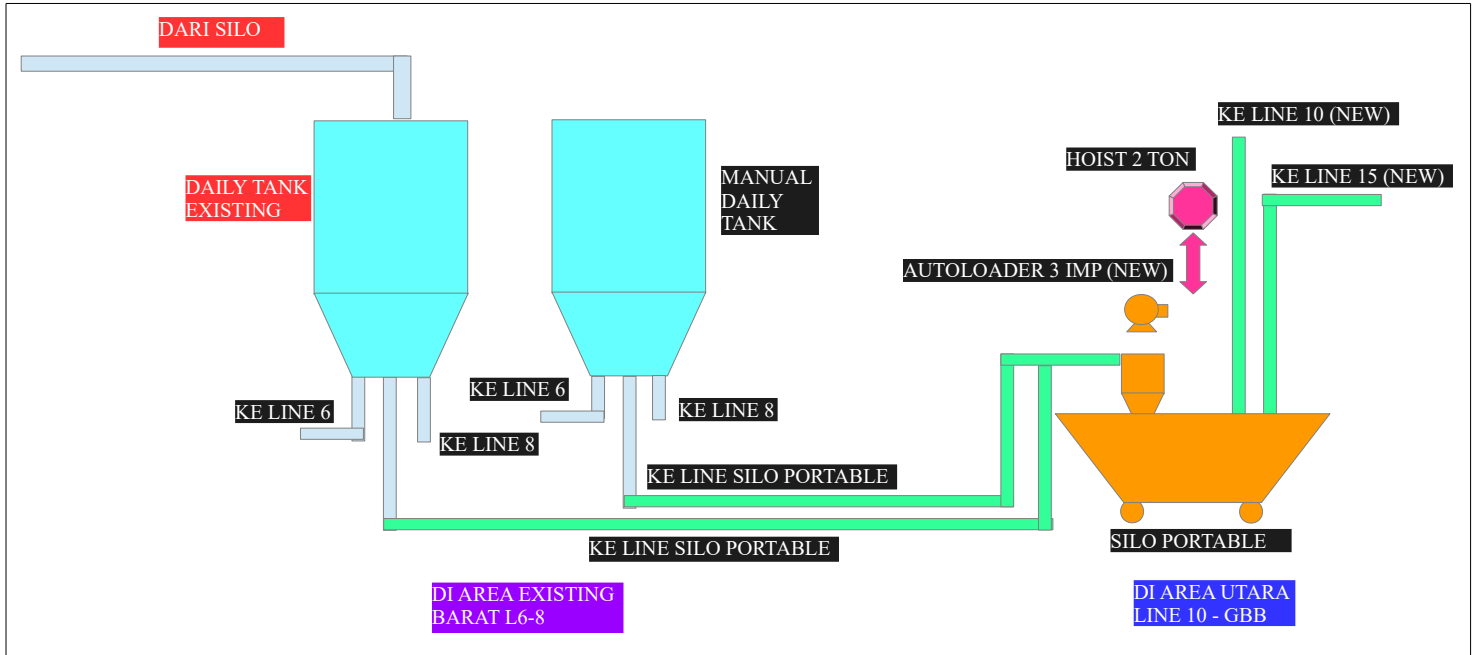
OPSI 4 PROJECT SILO LINE 15

Opsi 4 adalah Silo portable dengan menggunakan jalur pipa material line 10 dan dengan menggunakan vacuum hoper dan blower triple impeller.

Konsep :

Tranfer material ke portable silo dengan menggunakan jalur line 10 dg blower triple impeller. Material silo portable untuk supply Line 10 dan 15.

Note :



BILL OF QUANTITY					
No.	Material	Qty	Unit	Harga per satuan	Total Harga
1	Pipa SUS 304 sch 10 2 Inch	15	batang	Rp2,950,000.00	Rp44,250,000.00
2	Long Elbow 2 Inch	10	pcs	Rp300,000.00	Rp3,000,000.00
3	Clamp Join 2 Inch	35	pcs	Rp300,000.00	Rp10,500,000.00
4	Pipa SUS 304 sch 10 4 Inch	0	batang	Rp3,800,000.00	Rp0.00
5	Long Elbow 4 Inch	0	pcs		Rp0.00
6	Flange 10k 4 Inch	0	pcs		Rp0.00
7	Silo 5 T	0	unit		Rp0.00
8	Dush Collector	0	unit		Rp0.00
9	Hoist 2 T	1	unit	Rp50,000,000.00	Rp50,000,000.00
10	Rangka Baja Silo dan Hoist	0	lot		Rp0.00
11	Blower Kapasitas besar	2	unit	Rp60,000,000.00	Rp120,000,000.00
12	Diverter 4 Inch	0	pcs		Rp0.00
13	Support Pipa (unp 100)	1	lot	Rp5,000,000.00	Rp5,000,000.00
14	U clamp 4 Inch	0	pcs		Rp0.00
15	U clamp 2 Inch	40	pcs	Rp15,000.00	Rp600,000.00
16	Silo Portable 3 T	1	pcs		Rp0.00
17	Vacuum Hoper	1	pcs	Rp2,000,000.00	Rp2,000,000.00
18	Flexible Hose 2,5 Inch	30	meter	Rp850,000.00	Rp25,500,000.00
19	Connector Pipa to Flexible Hose	8	pcs	Rp250,000.00	Rp2,000,000.00
20	Clamp Flexible Hose	10	pcs	Rp15,000.00	Rp150,000.00
21	Kabel 8x0.75mm untuk kontrol actuator valve + Jasa tarik	60	Meter	Rp45,000.00	Rp2,700,000.00
22	Kabel 4x0.75mm untuk kontrol actuator valve + Jasa tarik	40	Meter	Rp25,000.00	Rp1,000,000.00
23	Sensor High low Tank	3	pcs	Rp700,000.00	Rp2,100,000.00
24	Kabel 4x10mm untuk power dari It 3 ke It 1	30	Meter	Rp120,000.00	Rp3,600,000.00
25	Kabel 6x0.75mm untuk kontrol blower	30	Meter	Rp40,000.00	Rp1,200,000.00
26	Box panel 60x40x20	2	Pcs	Rp1,500,000.00	Rp3,000,000.00

Total Perkiraan Biaya Material

Rp276,600,000.00

Total Perkiraan Biaya Jasa

Rp20,000,000.00

Total Perkiraan Biaya Keseluruhan

Rp296,600,000.00

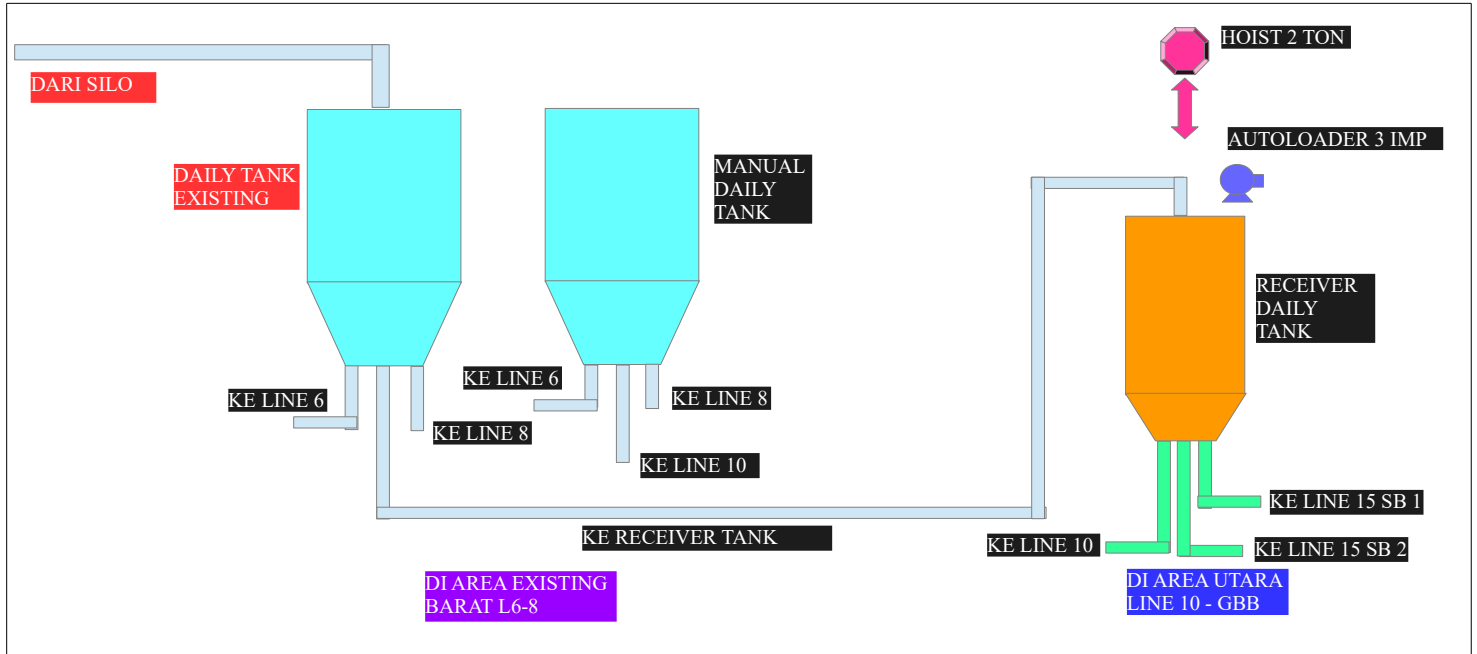
OPSI 5 PROJECT SILO LINE 15

Opsi 5 adalah Penambahan silo daily tank di area line 10 dan digunakan untuk supplay line 10 dan 15

Konsep :

Tranfer material menggunakan blower triple impeller dari daily tank existing ke daily tank di area line 10 dengan menggunakan jalur pipa material line 10.

Note :



BILL OF QUANTITY

No.	Material	Qty	Unit	Harga per satuan	Total Harga
1	Pipa SUS 304 sch 10 2 Inch	14	batang	Rp2,950,000.00	Rp41,300,000.00
2	Long Elbow 2 Inch	12	pcs	Rp300,000.00	Rp3,600,000.00
3	Clamp Join 2 Inch	30	pcs	Rp300,000.00	Rp9,000,000.00
4	Pipa SUS 304 sch 10 4 Inch	0	batang		Rp0.00
5	Long Elbow 4 Inch	0	pcs		Rp0.00
6	Flange 10k 4 Inch	0	pcs		Rp0.00
7	Silo 5 T	1	unit	Rp130,000,000.00	Rp130,000,000.00
8	Dush Collector	0	unit		Rp0.00
9	Hoist 2 T	0	unit		Rp0.00
10	Rangka Baja Silo dan Hoist	0	lot		Rp0.00
11	Blower Triple Impeller	2	unit	Rp60,000,000.00	Rp120,000,000.00
12	Diverter 4 Inch	0	pcs		Rp0.00
13	Support Pipa (unp 100)	1	lot	Rp5,000,000.00	Rp5,000,000.00
14	U clamp 4 Inch	0	pcs		Rp0.00
15	U clamp 2 Inch	20	pcs	Rp15,000.00	Rp300,000.00
16	Sleeding Valve	6	set	Rp500,000.00	Rp3,000,000.00
17	Actuator Ball Valve DN50 10K	6	pcs	Rp2,500,000.00	Rp15,000,000.00
18	Ball Valve 1,5 Inch	12	pcs	Rp800,000.00	Rp9,600,000.00
19	Reducer welded 2-1,5 Inch	6	pcs	Rp300,000.00	Rp1,800,000.00
20	Tee 2 Inch welded	6	pcs	Rp300,000.00	Rp1,800,000.00
21	Tee 2-1,5 Inch welded	6	pcs	Rp250,000.00	Rp1,500,000.00
22	Flexible Hose 2,5 Inch	30	meter	Rp850,000.00	Rp25,500,000.00
23	Connector Pipa to Flexible Hose	8	pcs	Rp250,000.00	Rp2,000,000.00
24	Clamp Flexible Hose	10	pcs	Rp15,000.00	Rp150,000.00
25	Kabel 8x0.75mm untuk kontrol actuator valve + Jasa tarik	60	Meter	Rp45,000.00	Rp2,700,000.00
26	Kabel 4x0.75mm untuk kontrol actuator valve + Jasa tarik	40	Meter	Rp25,000.00	Rp1,000,000.00
27	Kabel 6x0.75mm untuk kontrol blower	30	Meter	Rp45,000.00	Rp1,350,000.00
28	Sensor High low Tank	3	pcs	Rp700,000.00	Rp2,100,000.00
29	Kabel 4x10mm untuk power dari L15 ke area GBJ	50	Meter	Rp120,000.00	Rp6,000,000.00
30	Box panel 60x40x20	2	Pcs	Rp1,500,000.00	Rp3,000,000.00

Total Perkiraan Biaya Material

Rp385,700,000.00

Total Perkiraan Biaya Jasa

Rp20,000,000.00

Total Perkiraan Biaya Keseluruhan

Rp405,700,000.00