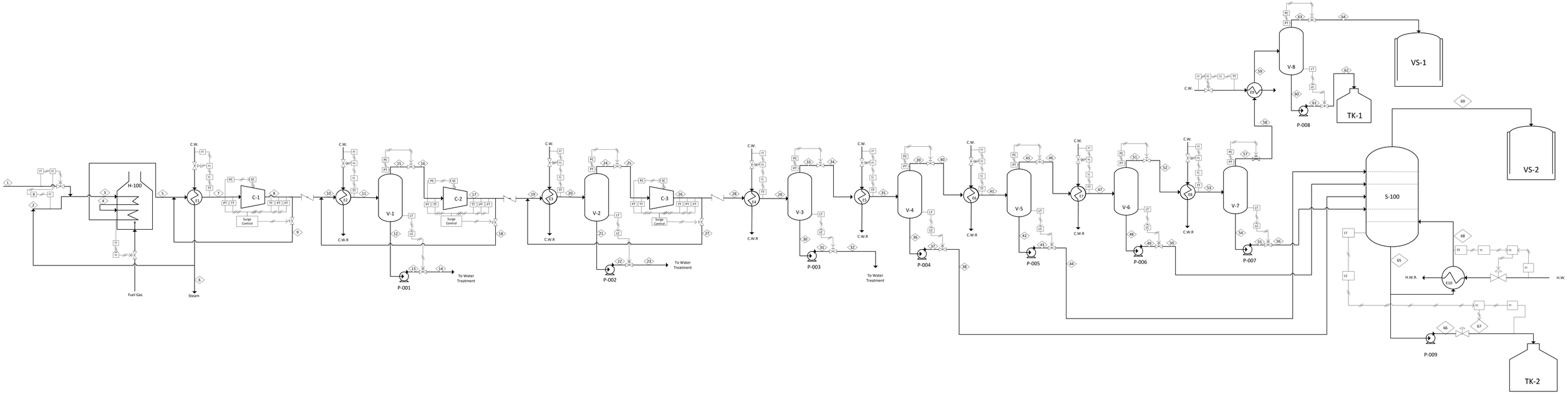
Process Flow Diagram (PFD)



Stream	Description	Temperature (°C)	Pressure (kPa)
1	Ethane and Propane Feed	40	400
2	Steam Recycle	188	1200
3	Convection Section Feed	344.5	400
4	Radiant Section Feed	600	380
5	Radiant Section Product	965	230
6	Excess Steam	188	1200
7	C-1 Inlet	140	230
8	C-1 Outlet	207	435
9	C-1 Surge Control Recycle	207	435
10	E-2 Inlet	207	435
11	V-1 Inlet	40	435
12	V-1 Bottoms	40	435
13	P-001 Outlet Before Valve	40	435
14	P-001 Outlet After Valve	40	435
15	V-1 Distillate	40	435
16	C-2 Inlet	40	435
17	C-2 Outlet	144	1523
18	C-2 Surge Control Recycle	144	1523
19	E-3 Inlet	144	1523
20	V-2 Inlet	40	1523
21	V-2 Bottoms	40	1523
22	P-002 Outlet Before Valve	40	1523
23	P-002 Outlet After Valve	40	1523
24	V-2 Distillate	40	1523
25	C-3 Inlet	40	1523
26	C-3 Outlet	114.2	3250
27	C-3 Surge Control Recycle	114.2	3250
28	E-4 Inlet	114.2	3250
29	V-3 Inlet	2.0	3250
30	V-3 Bottoms	2.0	3250
31	P-003 Outlet Before Valve	2.0	3250
32	P-003 Outlet After Valve	2.0	3250
33	V-3 Distillate	2.0	3250
34	E-5 Inlet	2.0	3250
35	V-4 Inlet	-70	3250
36	V-4 Bottoms	-70	3250

Stream	Description	Temperature (°C)	Pressure (kPa)
37	P-004 Outlet Before Valve	-70	3250
38	P-004 Outlet After Valve / Feed into Demethanizer (Tray 18)	-70	3250
39	V-4 Distillate	-70	3250
40	E-6 Inlet	-70	3250
41	V-5 Inlet	-105	3250
42	V-5 Bottoms	-105	3250
43	P-005 Outlet Before Valve	-105	3250
44	P-005 Outlet After Valve / Feed into Demethanizer (Tray 4)	-105	3250
45	V-4 Distillate	-105	3250
46	E-7 Inlet	-105	3250
47	V-6 Inlet	-120	3250
48	V-6 Bottoms	-120	3250
49	P-006 Outlet Before Valve	-120	3250
50	P-006 Outlet After Valve / Feed into Demethanizer (Tray 6)	-120	3250
51	V-6 Distillate	-120	3250
52	E-8 Inlet	-120	3250
53	V-7 Inlet	-140	3250
54	V-7 Bottoms	-140	3250
55	P-007 Outlet Before Valve	-140	3250
56	P-007 Outlet After Valve / Feed into Demethanizer (Tray 22)	-140	3250
57	V-7 Distillate	-140	3250
58	E-9 Inlet	-140	3250
59	V-8 Inlet	-160	3250
60	V-8 Bottoms	-160	3250
61	P-008 Outlet Before Valve	-160	3250
62	Methane by-product stream	-160	3250
63	V-8 Distillate	-160	3250
64	Hydrogen by-product stream	3.5	3300
65	Demethanizer Bottoms	3.5	3300
66	P-009 Outlet Before Valve	3.5	3300
67	Demethanizer Liquid Products	3.5	3300
68	Boil Up	-	-
69	Demethanizer Vapour Products	-52.4	2950

Vessels			
Name	Equipment	Temperature (°C)	Pressure (kPa)
V-1	Flash Drum #1	40	435
V-2	Flash Drum #2	40	1523
V-3	Flash Drum #3	2	3520
V-4	Flash Drum #4	-70	3520
V-5	Flash Drum #5	-105	3520
V-6	Flash Drum #6	-120	3520
V-7	Flash Drum #7	-140	3520
V-8	Flash Drum #8	-160	3520

Heaters and Heat Exchangers			
Name	Equipment	Outlet Temperature (°C)	Outlet Pressure (kPa)
H-100	Heater 1 – Convection Section	600	380
	Heater 2 – Radiant Section	965	129
E1	Cooler #1 - Transfer Line Exchanger	140	230
E2	Cooler #2	40	435
E3	Cooler #3	40	1523
E4	Cooler #4	2	3284
E5	Cooler #5	-70	3250
E6	Cooler #6	-105	3250
E7	Cooler #7	-120	3250
E8	Cooler #8	-140	3250
E9	Cooler #9	-160	3250
E10	Reboiler	-	-

Compressors			
Name	Equipment	Outlet Temperature (°C)	Outlet Pressure (kPa)
C-1	Compressor stage #1	91.2	435
C-2	Compressor stage #2	143.7	1523
C-3	Compressor stage #3	114.2	3250

Distillation Columns/Towers			
Name	Equipment	Temperature (°C)	Pressure (kPa)
S-100	Tower 1 - Top	-52.4	2950
	Tower 1 – Bottom	3.5	3300
Pumps			
Name	Equipment	Temperature (°C)	Pressure (kPa)
P-001	Pump #1	-	-
P-002	Pump #2	-	-
P-003	Pump #3	-	-
P-004	Pump #4	-	-
P-005	Pump #5	-	-
P-006	Pump #6	-	-
P-007	Pump #7	-	-
P-008	Pump #8	-	-
P-009	Pump #9	-	-
Storage Tanks			
Name	Equipment	Temperature (°C)	Pressure (kPa)
VS-1	Hydrogen Storage Tank	-	-
VS-2	Demethanizer Vapour Products Storage	-	-
TK-1	Methane Storage tank	-	-
TK-2	Demethanizer Liquid Products Storage	-	-