

P = PRESSURE
T = TEMPERATURE
H = ENTHALPY
M = MASS FLOW
S = SATURATION TEMPERATURE
X = MOISTURE CONTENT

bar
°C
kJ/kg
kg/s
°C
%

INDEX 1: CONDITION AT TURBINE FLANGE

$$ETA_{Gross} = \frac{P_{GT} + P_{ST}}{Q_{CH} + Q_{DF} + Q_{AUX}} * 100$$

$P_{Gross} = 249625 \text{ kW}$
 $ETA_{Gross} = 48.17 \%$

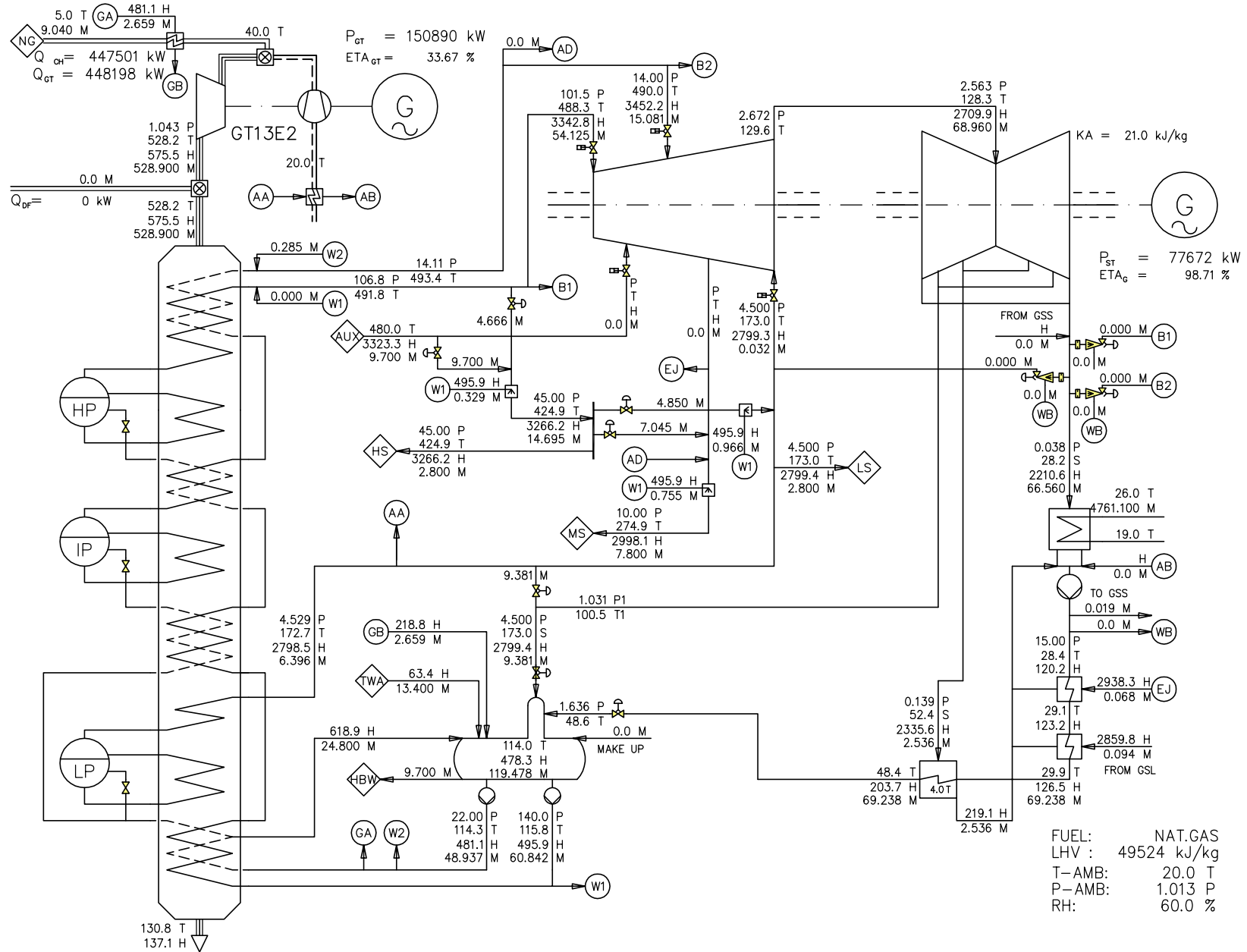
VERS: T09.04 COMBIX
REV: A)
ISSUED: 12-05-11 Cialfi
CHECKED:
APPR:

API Natural Gas
1xKA13E2-1
100% GT LOAD; NOC
 $T_{amb} = 0.0^{\circ}C$

ALSTOM

DOC L E SHEET 01 NR.SH -

HCSZ 601'159



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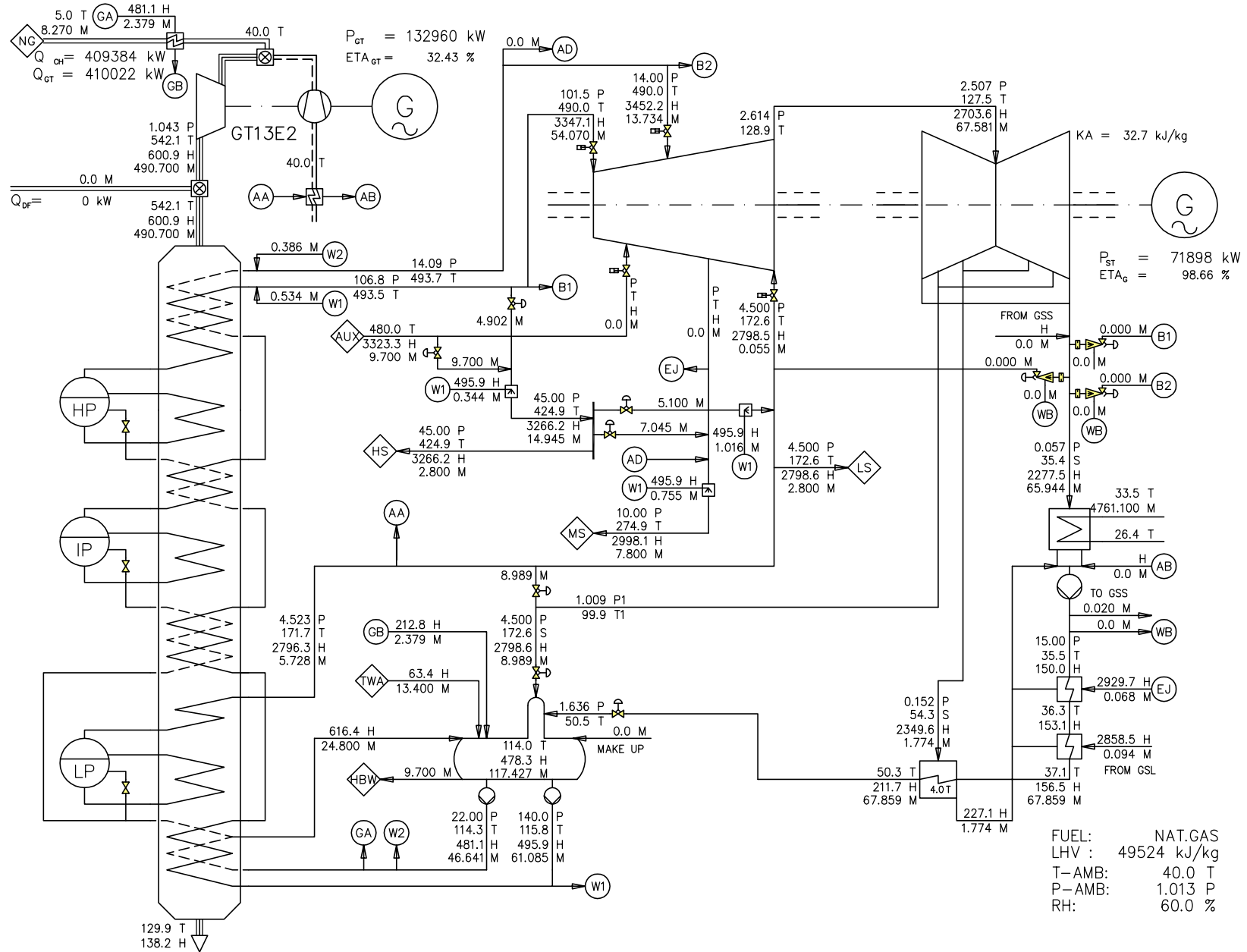
INDEX 1: CONDITION AT TURBINE FLANGE

$$ETA_{Gross} = \frac{P_{GT} + P_{ST}}{Q_{CH} + Q_{DF} + Q_{AUX}} * 100$$

$P_{Gross} = 228562 \text{ kW}$
 $ETA_{Gross} = 47.57 \%$

VERS: T09.04
 REV: A)
 ISSUED: 12-05-11 Cialfi
 CHECKED:
 APPR:

COMBIX
 API Natural Gas
 1xKA13E2-1
 100% GT LOAD; NOC
 Tamb =20.0°C



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bar
°C
kJ/kg
kg/s
°C
%

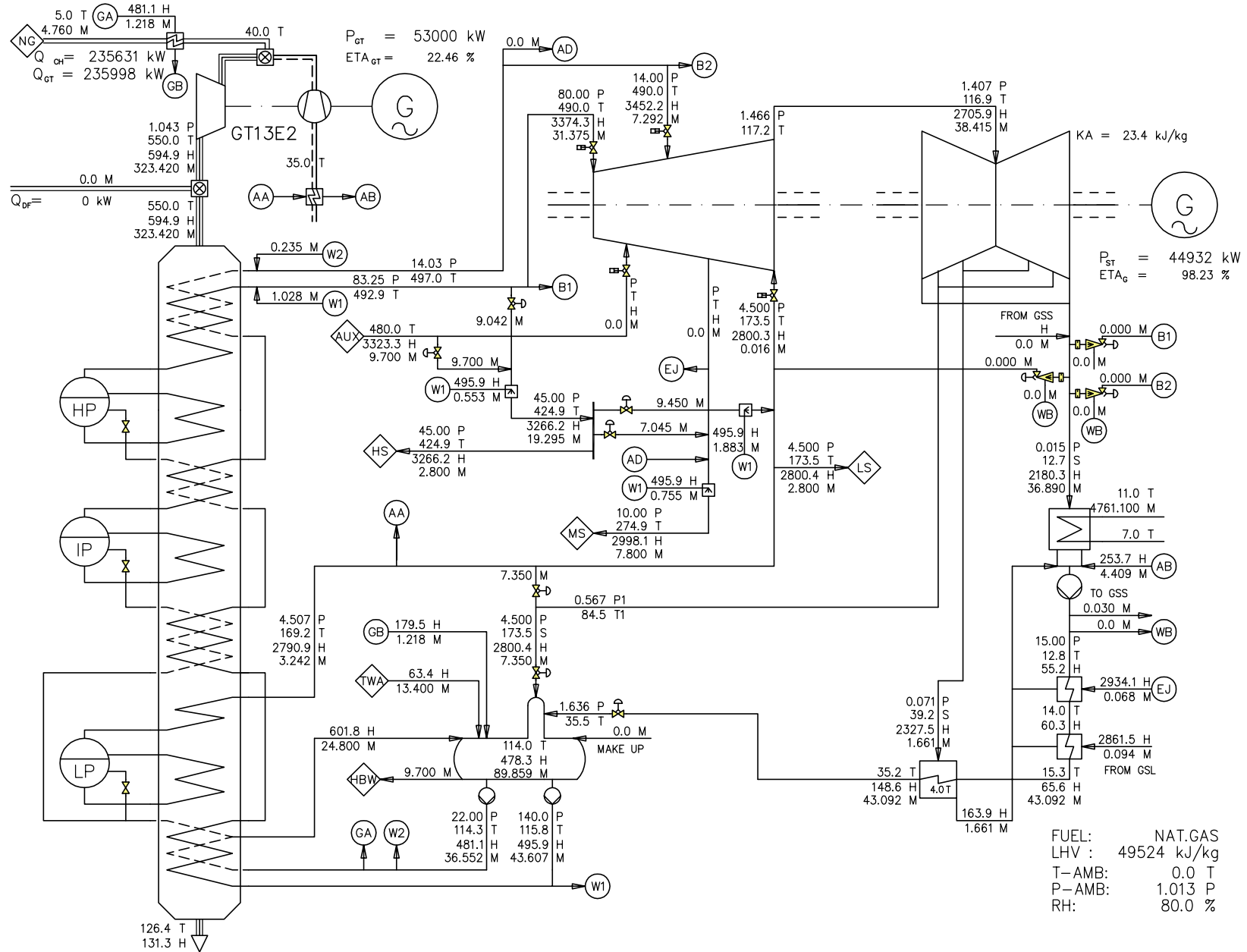
INDEX 1: CONDITION AT TURBINE FLANGE

$$\text{ETA}_{\text{Gross}} = \frac{P_{GT} + P_{ST}}{Q_{CH} + Q_{DF} + Q_{AUX}} * 100$$

$P_{\text{Gross}} = 204861 \text{ kW}$
 $\text{ETA}_{\text{Gross}} = 46.31 \%$

VERS: T09.04 COMBIX
REV: A)
ISSUED: 12-05-11 Cialfi
CHECKED:
APPR:

API Natural Gas
1xKA13E2-1
100% GT LOAD; NOC
 $T_{amb} = 40.0^\circ\text{C}$



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bar
 °C
 kJ/kg
 kg/s
 °C
 %

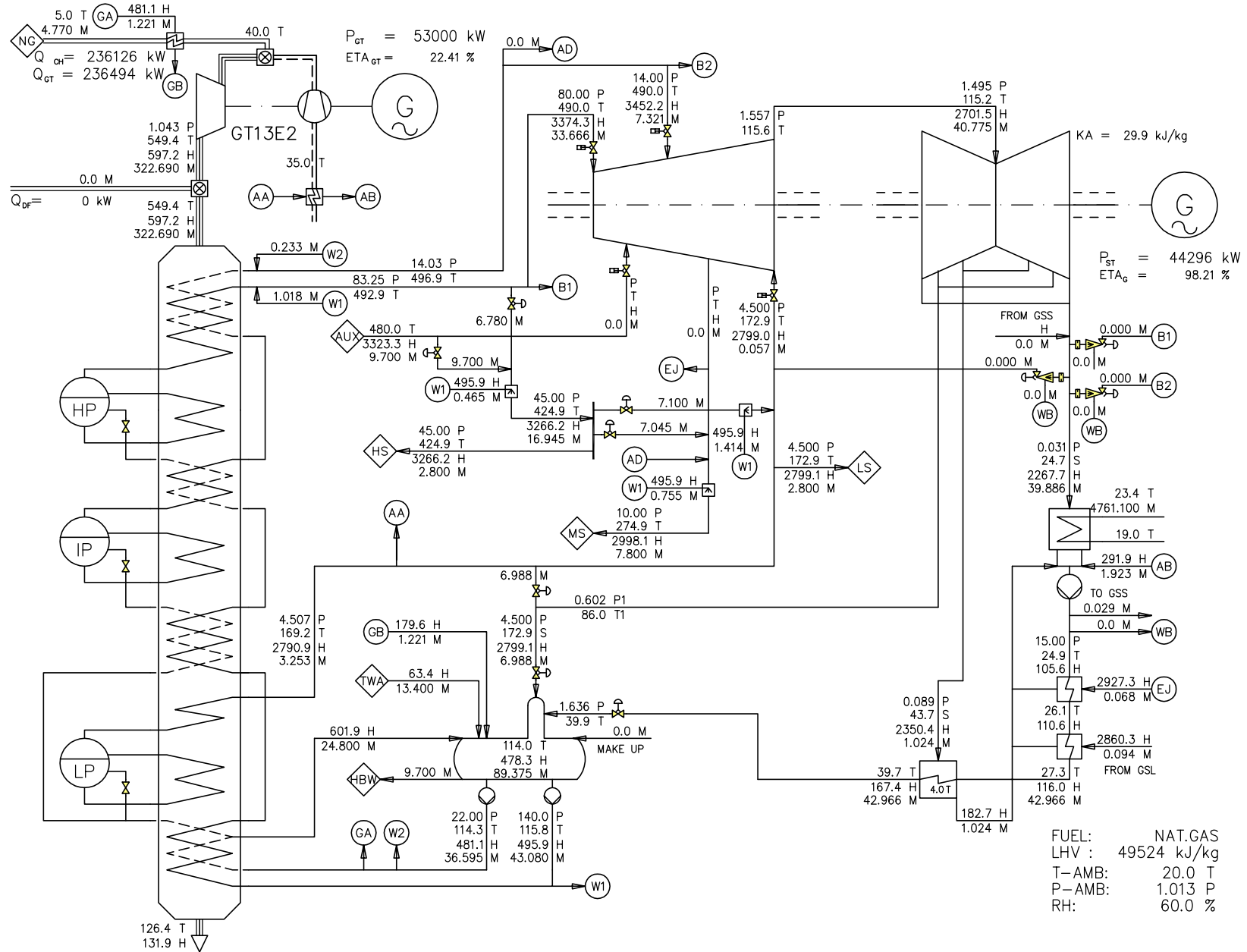
INDEX 1: CONDITION AT TURBINE FLANGE

$$ETA_{Gross} = \frac{P_{GT} + P_{ST}}{Q_{CH} + Q_{DF} + Q_{AUX}} * 100$$

$P_{Gross} = 97933 \text{ kW}$
 $ETA_{Gross} = 36.55 \%$

VERS: T09.04
 REV: A)
 ISSUED: 12-05-11 Cialfi
 CHECKED:
 APPR:

API Natural Gas
 1xKA13E2-1
 53MW GT LOAD; NOC
 APH ON



FUEL: NAT.GAS
LHV : 49524 kJ/kg
T-AMB: 20.0 T
P-AMB: 1.013 P
RH: 60.0 %

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bar
°C
kJ/kg
kg/s
°C
%

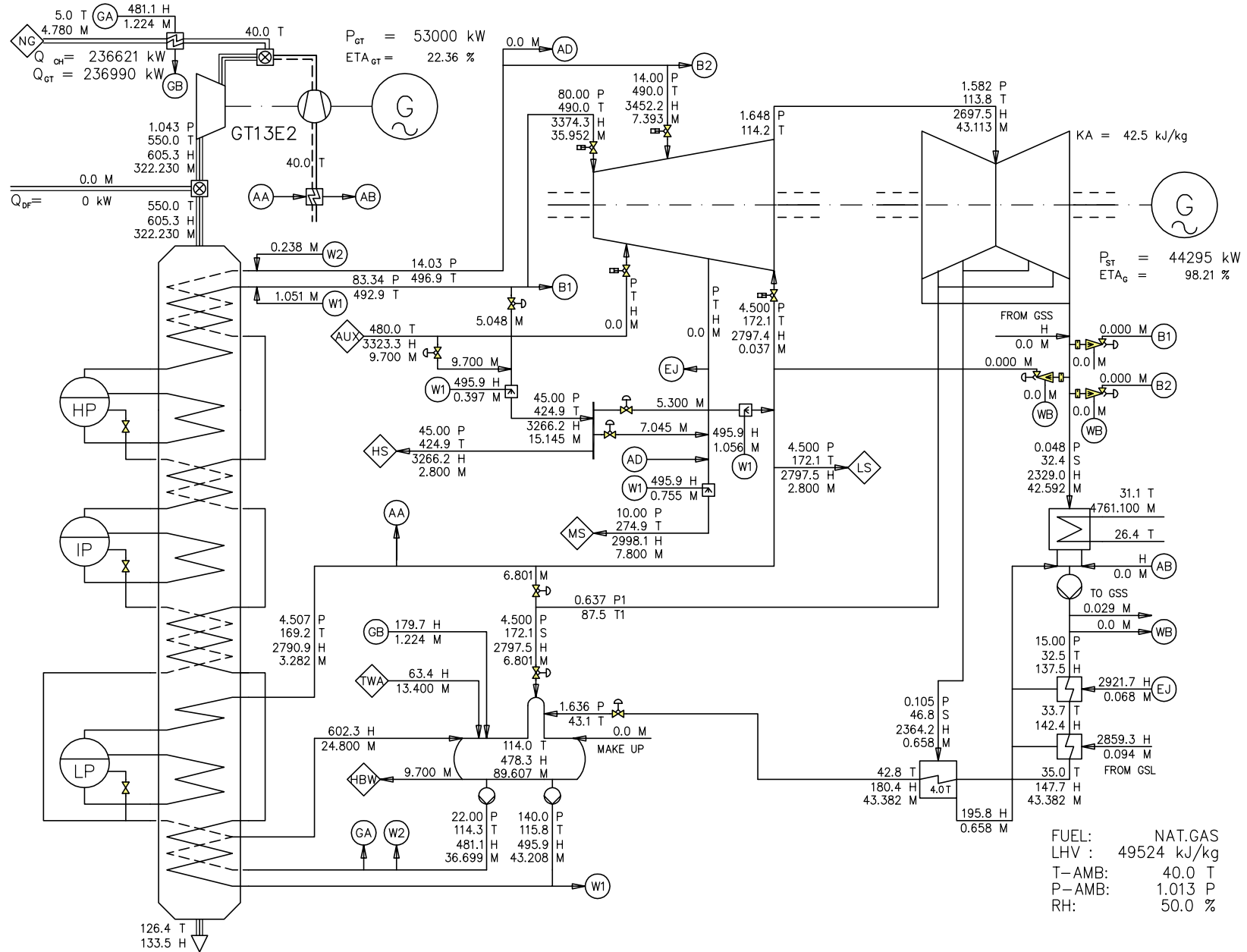
INDEX 1: CONDITION AT TURBINE FLANGE

$$ETA_{Gross} = \frac{P_{Gt} + P_{St}}{Q_{Ch} + Q_{Df} + Q_{Aux}} * 100$$

P_{Gross} = 97296 kW
ETA_{Gross} = 36.25 %

VERS: T09.04 COMBIX
REV: A)
ISSUED: 12-05-11 Ciaffi
CHECKED:
APPR:

API Natural Gas
1xKA13E2-1
53MW GT LOAD; NOC
APH ON



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bar
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kg/s
°C
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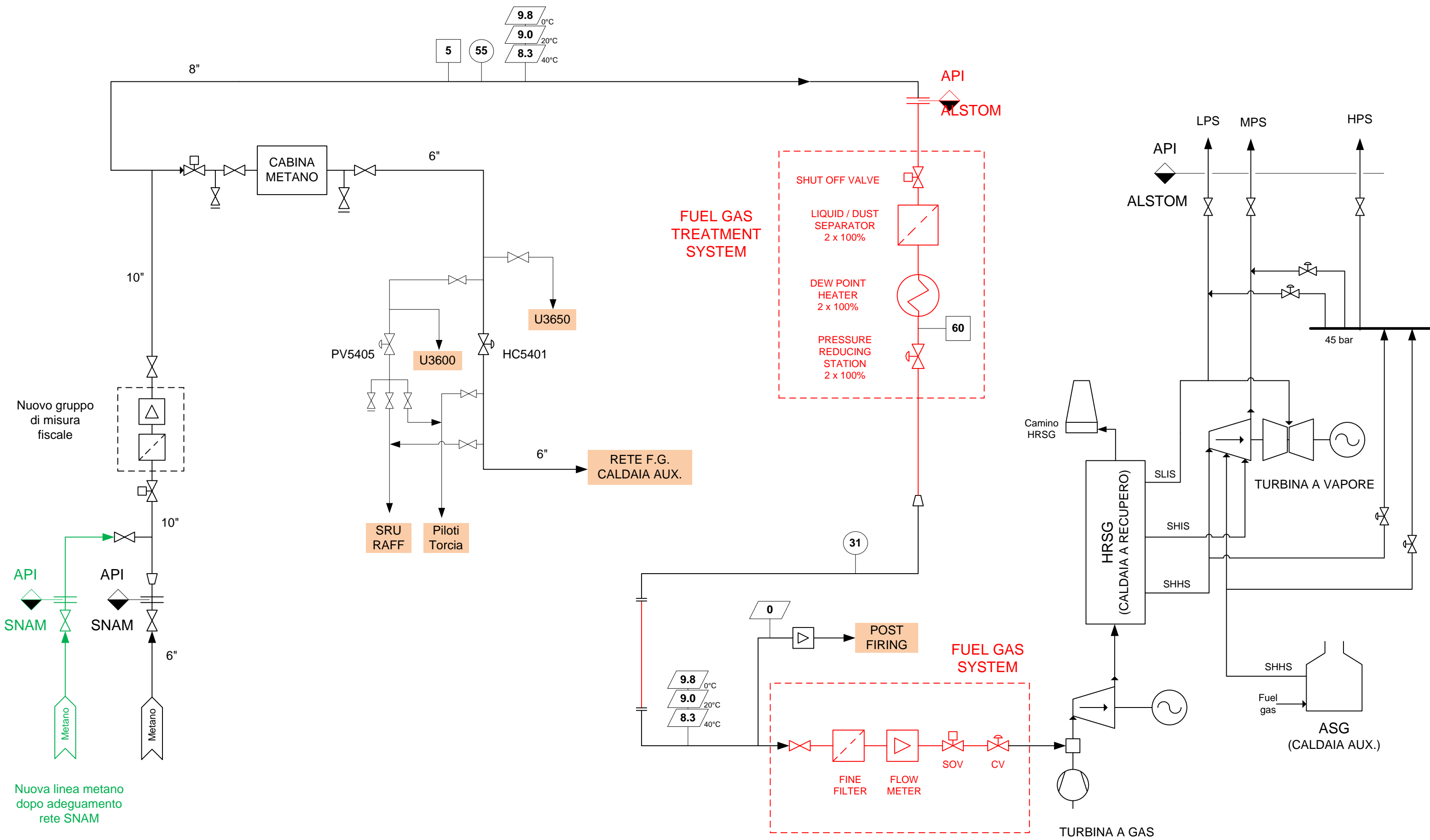
INDEX 1: CONDITION AT TURBINE FLANGE

$$ETA_{Gross} = \frac{P_{Gt} + P_{St}}{Q_{Ch} + Q_{Df} + Q_{Aux}} * 100$$

$P_{Gross} = 97295 \text{ kW}$
 $ETA_{Gross} = 36.18 \%$

VERS: T09.04 COMBIX
REV: A)
ISSUED: 12-05-11 Ciaffi
CHECKED:
APPR:

API Natural Gas
1xKA13E2-1
53MW GT LOAD; NOC
APH OFF



Nuovo gruppo di misura fiscale

API
SNAM
Metano

Nuova linea metano dopo adeguamento rete SNAM

FUEL GAS TREATMENT SYSTEM

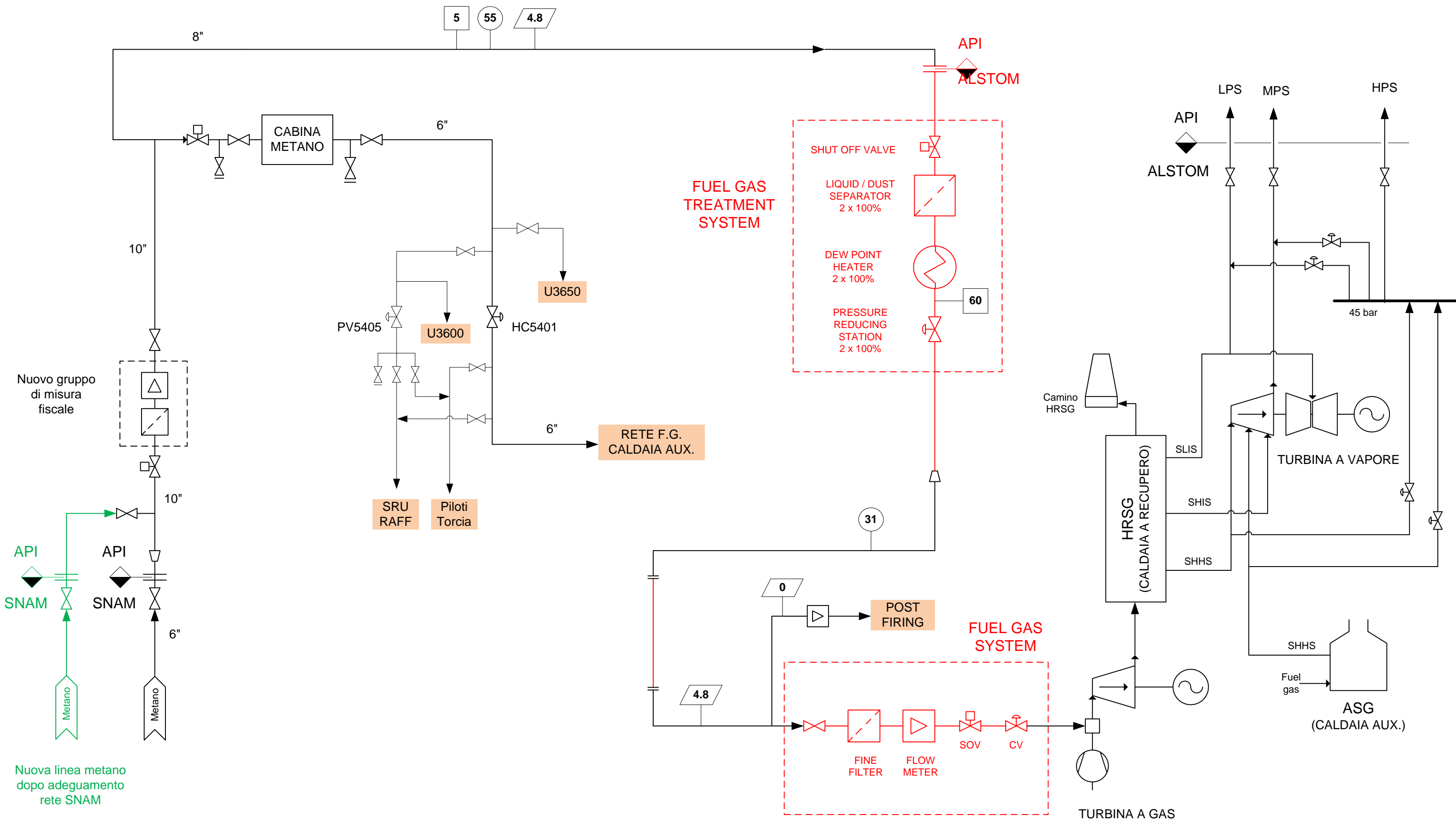
FUEL GAS SYSTEM

LEGENDA

□	Temperatura [°C]
○	Pressione op. [Bar(g)]
▤	Portata [kg/s]

IGCC Fuel gas conversion
Schema di flusso
100% GT LOAD

— Nuove apparecchiature o adeguamento esistenti (Fase 1)
 — Nuova linea metano (Fase 2)



Nuovo gruppo di misura fiscale

API
SNAM
Metano

Nuova linea metano dopo adeguamento rete SNAM

FUEL GAS TREATMENT SYSTEM

FUEL GAS SYSTEM

LEGENDA

□	Temperatura [°C]
○	Pressione op. [Bar(g)]
▱	Portata [kg/s]

IGCC Fuel gas conversion
Schema di flusso
53MW GT LOAD

— Nuove apparecchiature o adeguamento esistenti (Fase 1)
 — Nuova linea metano (Fase 2)

