1. **BOILER / BOILER PLANT DIGITAL DATA RECORDER**
   - Steam Flow Indicate, Record, Integrate [0-___ KG/S (LB/HR)]
   - Boiler Outlet Flue Gas Temperature: Record (0-500°C [0-900°F])
   - Flue Gas Oxygen Content: Record (0-10% Oxygen)
   - High Press Steam Dist. Record, Integrate [0-___ KG/S (LB/HR)]
   - Mid Press Steam Dist. Record, Integrate [0-___ KG/S (LB/HR)]
   - Low Press Steam Dist. Record, Integrate [0-___ KG/S (LB/HR)]
   - Boiler Plant Steam Record [0-___ KG/S (LB/HR)]
   - Steam Header Pressure: Record (0-2000 kPa [0-300 PSIG])
   - Boiler Feedwater Temp: Record (0-150°C [0-300°F])
   - Outside Air Temp: Record (−35°C [−30°F] to +55°C [120°F])

2. **BOILER CONTROL STATIONS (MANUAL/AUTOMATIC, RMS)**
   - These control stations may be located on the burner control panels instead of on the instrumentation panel.
   - A. Conduit Control Submaster
   - B. Draft Control (When Specified)
   - C. Oxygen Trim (When Specified)

3. **MASTER STEAM PRESSURE CONTROLLER**

4. **CLOCK**

5. **ALARM ANNUNCIATOR**
   - A. Condensate Storage Tank High Level
   - B. Condensate Storage Tank Low Level
   - C. Feedwater Heater High Level
   - D. Feedwater Heater Low Level
   - E. High Steam Heater Press
   - F. Emergency Gas Valve Closed
   - G. High Natural Gas Header Press (Set at 35 kPa [5 PSIG] Above Main Regulator Set Press)
   - H. LP Nitrogen Gas in Use (For Emergency Only) (Provide High Press Switch Set at 14 kPa [2 PSIG])
   - I. Low Excursion Air Boiler No. (Provide one point for each boiler, set at ___ % Oxygen)

6. **ANNUNCIATOR ACKNOWLEDGE BUTTON**

7. **ANNUNCIATOR TEST BUTTON**

8. **ANNUNCIATOR BELL / HORN**

9. **EMERGENCY GAS SAFETY SHUT OFF VALVE CONTROL**

10. **PRESSURE GAGES**
    - A. Steam Header (0-1500 kPa [0-200 PSIG])
    - B. Natural Gas Header (0-100 kPa [0-15 PSIG])
    - C. Fuel Oil Header (0-1500 kPa [0-200 PSIG])
    - D. Boiler Feedwater Header (0-2000 kPa [0-300 PSIG]) (When Header serving all boilers is provided)

11. **START-STOP BUTTONS AND PILOT LIGHTS FOR PUMPS**

12. **SMOKE DENSITY MONITOR (When Specified)**

13. **REMOTE REGISTER FOR GAS METER (When Specified)**

14. **FEEDWATER GENERATOR TANK AND CONDENSATE STORAGE TANK WATER LEVEL CONTROL STATION**

**DESIGNER NOTES:**

1. Panel approx. 3810mm [12'-6"] x 610mm [2'-0"] x 2438mm [8'-0'']. Show actual size on DWG.

2. Some recording & monitoring functions may be handled by a computer work station & therefore may be deleted from the panel.

3. On some projects, it may be desirable to locate emergency generator annunciators & meters on this panel.

4. Provide smoke density monitors only on plants burning heated oil or where required by local codes.

5. On plants where draft control systems are provided, consider locating the draft gages on this panel above the boiler operation recorders. The gages are normally located on the burner control panels.

6. **DELETE THE "ENGINEERING NOTES" FROM THE PROJECT DRAWINGS.**

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**BOILER PLANT INSTRUMENTATION PANEL**

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**NTS**