Site Information & Scope of Work

Site Information

Site Name : Meghna Gas Field
Site Code : 20-BKB-201

Site Address : To be provided later.

Coordinates : N 23° 50' 16.3 " : E 90° 47' 18.1 "
** Coordinates are surveyed by handy type GPS and might be inaccurate.*

Site Type

☐	Control Center	☐	Master Telemetry Station
☑	Gas Field	☐	Operating Company Terminal (OCT)
☐	CGS (City Gas Station)	☐	Power station/Fertilizer Factory
☐	Compressor Station	☐	TBS (Town Bordering Station)
☐	Pig Station	☐	DRS (District Regulating Station)
☐	MS (Metering Station)	☐	GMS (Gas Manifold Station)
☐	VS (Valve Station)		

Site Status
- ☑ Originally covered by The Existing System and shall be covered by The New System.
- ☐ Currently not covered by The Existing System but shall be covered by The New System.
- ☐ Upcoming site which will be covered by The New System after the completion of the Project.

Operating Company : BGFCL

Remarks : _____

Scope of Work

Works checked off hereinafter shall be carried out for the Project

1. SCADA System

■ : RTU

☑ RTU without display monitor
Design, supply and install a self-standing IP65 enclosure equipped with following items:
- RTU
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ RTU with display monitor
Design, supply and install a self-standing IP65 enclosure equipped with following items:
- RTU
- Display monitor
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ RTU (design & supply only)
Design and supply self-standing IP65 enclosure equipped with following items:
- RTU
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ Interface with flow computer
Make provision for:
- Installation of the flow computer which shall be prepared by GTCL in the enclosure
- Interface between RTU and the said flow computer

☐ Interface with receiver for turbine meter
Install the existing receiver for turbine meter(s) in the RTU enclosure and interface it (them) via communication (MODBUS) cable.

☐ Interface with other system
Provide the interface between RTU and other system such as PLC or PC operated by the operating company including all communication cables between RTU and other system.

☐ Cable between RTU and Master Telemetry Station
Design, supply and install the cable between RTU and Master Telemetry Station in case RTU and Master Telemetry Station are located in the same site.

■ : Instruments

☑ Existing instruments
Re-use the existing instruments and cables.

Note:
Existing instruments and cables shall be serviced by the Employer.

☐ New Instruments
Design, supply and install the following instruments.
Output signals from instruments are to be cabled via field junction box to the RTU.

■ : Pressure transmitters Q'ty

☐ Design, supply and intall:
- Pressure transmitter on the existing spare tapping point
- Tubing between tapping point and transmitter

☐ Prepare the tapping point for the pressure transmitter, and design, supply and install:
- Pressure transmitter on the prepared tapping point
- Tubing between tapping point and transmitter

■ : Differential pressure transmitters Q'ty

☐ Design, supply and install:
- Differential pressure transmitter on the existing spare tapping point
- Tubing between tapping point and transmitter

☐ Prepare the tapping point for the differential pressure transmitter, and design, supply and install:
- Differential pressure transmitter on the tapping point
- Tubing between tapping point and transmitter

■ : Temprature transmitters Q'ty

☐ Design, supply and install:
- Thermowell in the spare boss on the pipe
- Resistance temperature detector complete with a head mounted transmitter into the thermowell

■ : Limit switch Q'ty

☐ Design, supply and install the limit switch on the existing shutdown valve for valve position monitoring.

☐ Pick up Signal from the Existing Turbine Meter Q'ty
Supply and install a dual pulse output pickup head in place of the single pulse output pickup in the existing turbine flowmeter sensor head. The output signal from the existing turbine flowmeter to be cabled via junction box to RTU.

☐ Local Field Instrument Junction Box Q'ty
Design, supply and install an Intrinsic safety junction box. The junction box to be suitable for glanding appropriate cables.

☐ Instrument Cables
Design, supply, install the instrument cables from the field instruments to RTU via junction box including each cable termination with gland.

2. Communication System

■ : Slave Telemetry System

☑ Removal of existing slave telemetry equipment
Remove and dispose the existing slave telemetry system including antenna and cable.

☑ Slave Telemetry Equipment
Design, supply and install new slave telemetry equipment in the RTU enclosure, including cables and antenna.

☐ Slave Telemetry Equipment (design & supply only)
Design and supply new slave telemetry equipment in the RTU enclosure, including cables and antenna.

☑ Existing monopole
Re-use existing monople to mount new antenna.

☐ New monopole
Design, supply and install new monopole with foundation to mount new antenna.

☐ New monopole (design & supply only)
Design and supply new monopole to mount new antenna.

3. Electrical Works

■ : Power Supply to RTU

☑ Electrical power shall be supplied to RTU from existing PDB, and existing power cable shall be re-used.

☐ Design, supply and install MCB box for the power supply to RTU including all cables from existing PDB to MCB box and from MCB box to RTU.

☐ Design, supply and intall power controller and power cable to RTU at remote site where electrical power is supplied from existing solar panel.

☐ Design, supply and install new solar panel, power controller and power cable to RTU.

4. Civil Works

■ : Foundation & Sunshade for RTU

☑ Re-use existing foundation & sunshade for RTU
Examine the condition of existing foundation and sunshade for RTU and repair the defects, if any.

☐ Provide new foundation & sunshade for RTU
Design and construct the foundation and sunshade for new RTU at suitable location. The foundation and sunshade should be designed to suitably accommodate new RTU.

■ : Instrument Stand with Foundation & Sunshade

☑ Re-use existing Instrument stand(s) with foundation & sunshade
Examine the condition of existing Instrument stand(s) with foundation & sunshade and repair the defects, if any.

☐ Provide new Instrument stand(s) with foundation & sunshade
Design and construct the Instrument stand(s) with foundation & sunshade at suitable location. It should be designed to suitably accommodate the required number of instruments and explosion proof instrument field junction box.

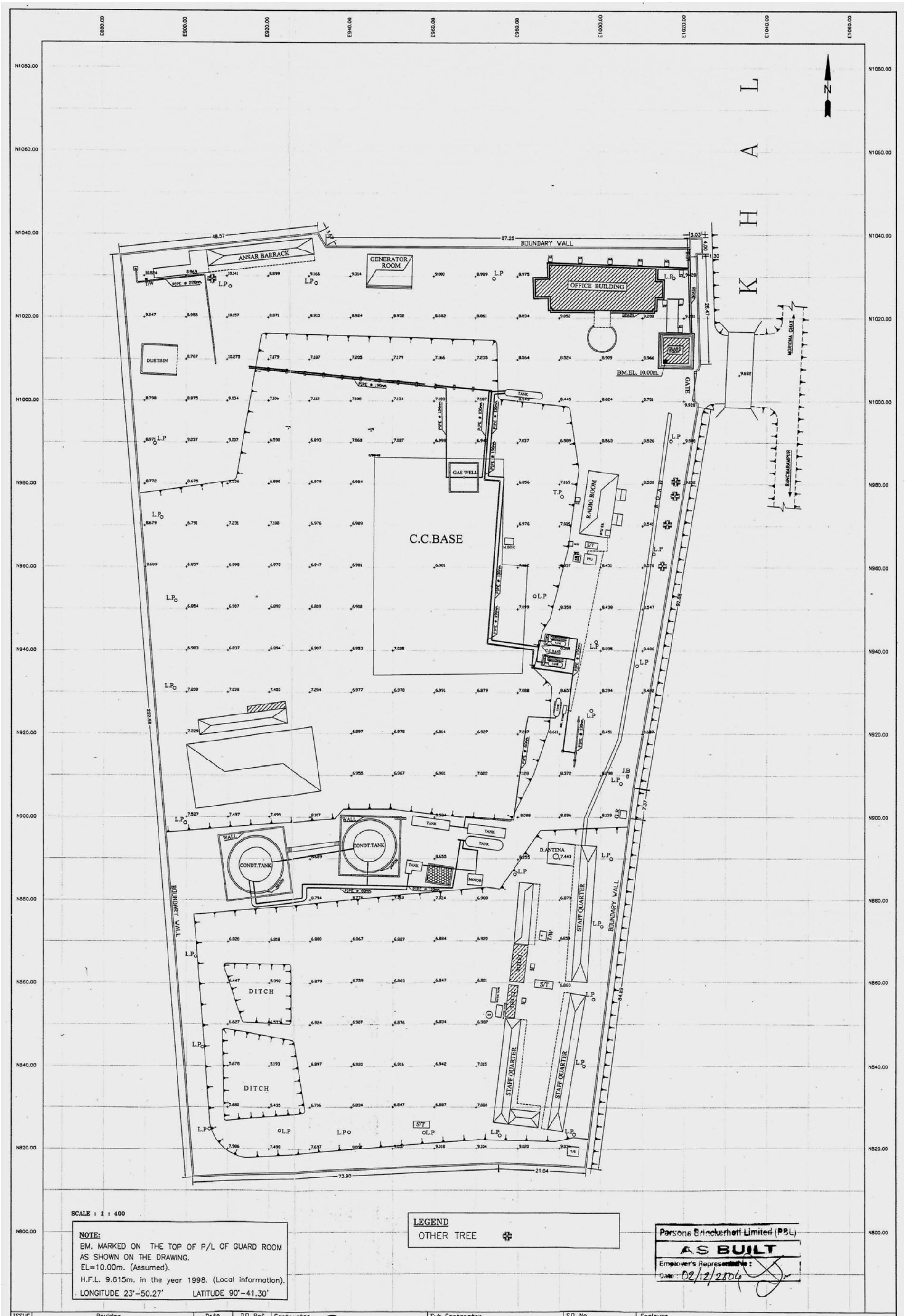
5. Site Photo

Existing RTU

Existing Instrument Stand

6. Site Layout

See attached Layout Plan.



SCALE : 1 : 400

NOTE:

BM. MARKED ON THE TOP OF P/L OF GUARD ROOM AS SHOWN ON THE DRAWING.
EL=10.00m. (Assumed).
H.F.L. 9.615m. in the year 1998. (Local information).
LONGITUDE 23°–50.27' LATITUDE 90°–41.30'

LEGEND

OTHER TREE

Parsons Brinckerhoff Limited (PBL)

AS BUILT

Employer's Representative :

Date : 02/12/2004

ISSUE	Revision	Date	D.C. Ref
A	ISSUED FOR DESIGN APPROVAL		-
B	ISSUED FOR DESIGN APPROVAL	25-09-04	-

Contractor SERCK CONTROLS Ltd

CONTRACT DRAWING APPROVAL

Drawing Status DESIGN APPROVAL

REDLINED CHANGES | APPROVED NO CHANGES

PRINT NAME:

SIGNED: DATE:

Sub Contractor SURVEY CORPORATION

S.C. No.

Employer GAS TRANSMISSION COMPANY Ltd (GTCL)

Drawing Title SITE CODE : 200
SITE NAME : MEGHNA GAS FIELD

THE BANGLADESH GAS INFRASTRUCTURE DEVELOPMENT PROJECT. SUPERVISORY CONTROL, DATA ACQUISITION AND TELECOMMUNICATIONS SYSTEMS.

Drawing No.	Rev	Sheet	Orig. Size
200-60-72	B		A1

	Drawn	Checked	Approved
BY	HASHEM	M. A. HAYAT	M. A. HADAYET
Date	17-03-99	20-03-99	20-03-99

Consultant PB Technologies Ltd.

Employer Contract No GTCL/RL-1109/C2

Site Information & Scope of Work

Site Information

Site Name : VS2 A-B
Site Code : 20-BKB-401

Site Address : To be provided later.

Coordinates : N 23° 45' 34.7 " : E 90° 59' 44.3 "
** Coordinates are surveyed by handy type GPS and might be inaccurate.*

Site Type

☐ Control Center	☐ Master Telemetry Station
☐ Gas Field	☐ Operating Company Terminal (OCT)
☐ CGS (City Gas Station)	☐ Power station/Fertilizer Factory
☐ Compressor Station	☐ TBS (Town Bordering Station)
☐ Pig Station	☐ DRS (District Regulating Station)
☐ MS (Metering Station)	☐ GMS (Gas Manifold Station)
☑ VS (Valve Station)	

Site Status
- ☑ Originally covered by The Existing System and shall be covered by The New System.
- ☐ Currently not covered by The Existing System but shall be covered by The New System.
- ☐ Upcoming site which will be covered by The New System after the completion of the Project.

Operating Company : GTCL

Remarks : _____

Scope of Work

Works checked off hereinafter shall be carried out for the Project

1. SCADA System

■ : RTU

☑ RTU without display monitor
Design, supply and install a self-standing IP65 enclosure equipped with following items:
- RTU
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ RTU with display monitor
Design, supply and install a self-standing IP65 enclosure equipped with following items:
- RTU
- Display monitor
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ RTU (design & supply only)
Design and supply self-standing IP65 enclosure equipped with following items:
- RTU
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ Interface with flow computer
Make provision for:
- Installation of the flow computer which shall be prepared by GTCL in the enclosure
- Interface between RTU and the said flow computer

☐ Interface with receiver for turbine meter
Install the existing receiver for turbine meter(s) in the RTU enclosure and interface it (them) via communication (MODBUS) cable.

☐ Interface with other system
Provide the interface between RTU and other system such as PLC or PC operated by the operating company including all communication cables between RTU and other system.

☐ Cable between RTU and Master Telemetry Station
Design, supply and install the cable between RTU and Master Telemetry Station in case RTU and Master Telemetry Station are located in the same site.

■ : Instruments

☑ Existing instruments
Re-use the existing instruments and cables.

Note:
Existing instruments and cables shall be serviced by the Employer.

☐ New Instruments
Design, supply and install the following instruments.
Output signals from instruments are to be cabled via field junction box to the RTU.

■ : Pressure transmitters Q'ty

☐ Design, supply and intall:
- Pressure transmitter on the existing spare tapping point
- Tubing between tapping point and transmitter

☐ Prepare the tapping point for the pressure transmitter, and design, supply and install:
- Pressure transmitter on the prepared tapping point
- Tubing between tapping point and transmitter

■ : Differential pressure transmitters Q'ty

☐ Design, supply and install:
- Differential pressure transmitter on the existing spare tapping point
- Tubing between tapping point and transmitter

☐ Prepare the tapping point for the differential pressure transmitter, and design, supply and install:
- Differential pressure transmitter on the tapping point
- Tubing between tapping point and transmitter

■ : Temprature transmitters Q'ty

☐ Design, supply and install:
- Thermowell in the spare boss on the pipe
- Resistance temperature detector complete with a head mounted transmitter into the thermowell

■ : Limit switch Q'ty

☐ Design, supply and install the limit switch on the existing shutdown valve for valve position monitoring.

☐ Pick up Signal from the Existing Turbine Meter Q'ty
Supply and install a dual pulse output pickup head in place of the single pulse output pickup in the existing turbine flowmeter sensor head. The output signal from the existing turbine flowmeter to be cabled via junction box to RTU.

☐ Local Field Instrument Junction Box Q'ty
Design, supply and install an Intrinsic safety junction box. The junction box to be suitable for glanding appropriate cables.

☐ Instrument Cables
Design, supply, install the instrument cables from the field instruments to RTU via junction box including each cable termination with gland.

2. Communication System

■ : Slave Telemetry System

☑ Removal of existing slave telemetry equipment
Remove and dispose the existing slave telemetry system including antenna and cable.

☑ Slave Telemetry Equipment
Design, supply and install new slave telemetry equipment in the RTU enclosure, including cables and antenna.

☐ Slave Telemetry Equipment (design & supply only)
Design and supply new slave telemetry equipment in the RTU enclosure, including cables and antenna.

☑ Existing monopole
Re-use existing monople to mount new antenna.

☐ New monopole
Design, supply and install new monopole with foundation to mount new antenna.

☐ New monopole (design & supply only)
Design and supply new monopole to mount new antenna.

3. Electrical Works

■ : Power Supply to RTU

☐ Electrical power shall be supplied to RTU from existing PDB, and existing power cable shall be re-used.

☐ Design, supply and install MCB box for the power supply to RTU including all cables from existing PDB to MCB box and from MCB box to RTU.

☑ Design, supply and intall power controller and power cable to RTU at remote site where electrical power is supplied from existing solar panel.

☐ Design, supply and install new solar panel, power controller and power cable to RTU.

4. Civil Works

■ : Foundation & Sunshade for RTU

☑ Re-use existing foundation & sunshade for RTU
Examine the condition of existing foundation and sunshade for RTU and repair the defects, if any.

☐ Provide new foundation & sunshade for RTU
Design and construct the foundation and sunshade for new RTU at suitable location. The foundation and sunshade should be designed to suitably accommodate new RTU.

■ : Instrument Stand with Foundation & Sunshade

☑ Re-use existing Instrument stand(s) with foundation & sunshade
Examine the condition of existing Instrument stand(s) with foundation & sunshade and repair the defects, if any.

☐ Provide new Instrument stand(s) with foundation & sunshade
Design and construct the Instrument stand(s) with foundation & sunshade at suitable location. It should be designed to suitably accommodate the required number of instruments and explosion proof instrument field junction box.

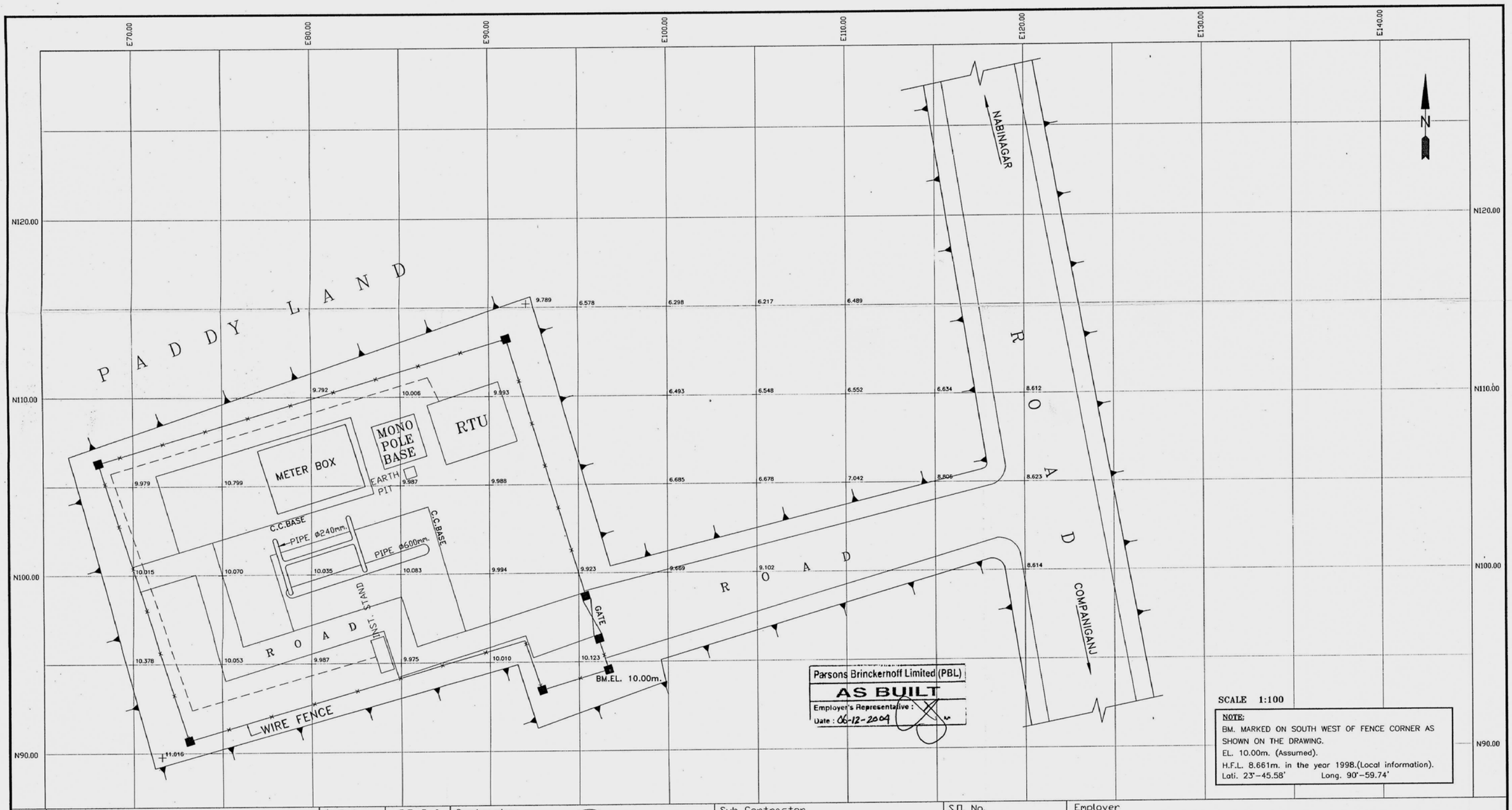
5. Site Photo

Site View

Existing RTU

6. Site Layout

See attached Layout Plan.



Parsons Brinckerhoff Limited (PBL)
AS BUILT
Employer's Representative :
Date : 06-12-2009

SCALE 1:100

NOTE:
BM. MARKED ON SOUTH WEST OF FENCE CORNER AS SHOWN ON THE DRAWING.
EL. 10.00m. (Assumed).
H.F.L. 8.661m. in the year 1998.(Local information).
Lati. 23°-45.58' Long. 90°-59.74'

ISSUE	Revision	Date	D.D. Ref
A	ISSUED FOR DESIGN APPROVAL		-
B	ISSUED FOR DESIGN APPROVAL	25-09-04	-

Contractor: SERCK CONTROLS Ltd

CONTRACT DRAWING APPROVAL
Drawing Status: DESIGN APPROVAL
REDLINED CHANGES | APPROVED NO CHANGES
PRINT NAME:.....
SIGNED:..... DATE: .....

Sub Contractor: SURVEY CORPORATION

S.O. No.

Employer: GAS TRANSMISSION COMPANY Ltd (GTCL)

Drawing Title:
SITE CODE : 418
SITE NAME : VS2 A-B

THE BANGLADESH GAS INFRASTRUCTURE DEVELOPMENT PROJECT. SUPERVISORY CONTROL, DATA ACQUISITION AND TELECOMMUNICATIONS SYSTEMS.

Drawing No.	Rev	Sheet	Orig. Size
418-60-72	B		A1

	Drawn	Checked	Approved
BY	M. A. ALIM	M. A. HAYAT	M. A. HADAYET
Date	04-04-99	05-04-99	05-04-99

Consultant: PB Technologies Ltd.

Employer Contract No: GTCL/RL-1109/C2

Site Information & Scope of Work

Site Information

Site Name : TBS Gazaria
Site Code : 20-BKB-501

Site Address : To be provided later.

Coordinates : N 23° 34' 32.2 " : E 90° 38' 32.9 "
** Coordinates are surveyed by handy type GPS and might be inaccurate.*

Site Type

☐	Control Center	☐	Master Telemetry Station
☐	Gas Field	☐	Operating Company Terminal (OCT)
☐	CGS (City Gas Station)	☐	Power station/Fertilizer Factory
☐	Compressor Station	☑	TBS (Town Bordering Station)
☐	Pig Station	☐	DRS (District Regulating Station)
☐	MS (Metering Station)	☐	GMS (Gas Manifold Station)
☐	VS (Valve Station)		

Site Status

- ☐ Originally covered by The Existing System and shall be covered by The New System.
- ☑ Currently not covered by The Existing System but shall be covered by The New System.
- ☐ Upcoming site which will be covered by The New System after the completion of the Project.

Operating Company : TGTDCL

Remarks :

Scope of Work

Works checked off hereinafter shall be carried out for the Project

1. SCADA System

■ : RTU

☑ RTU without display monitor
Design, supply and install a self-standing IP65 enclosure equipped with following items:
- RTU
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ RTU with display monitor
Design, supply and install a self-standing IP65 enclosure equipped with following items:
- RTU
- Display monitor
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ RTU (design & supply only)
Design and supply self-standing IP65 enclosure equipped with following items:
- RTU
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ Interface with flow computer
Make provision for:
- Installation of the flow computer which shall be prepared by GTCL in the enclosure
- Interface between RTU and the said flow computer

☐ Interface with receiver for turbine meter
Install the existing receiver for turbine meter(s) in the RTU enclosure and interface it (them) via communication (MODBUS) cable.

☐ Interface with other system
Provide the interface between RTU and other system such as PLC or PC operated by the operating company including all communication cables between RTU and other system.

☐ Cable between RTU and Master Telemetry Station
Design, supply and install the cable between RTU and Master Telemetry Station in case RTU and Master Telemetry Station are located in the same site.

■ : Instruments

☐ Existing instruments
Re-use the existing instruments and cables.

Note:
Existing instruments and cables shall be serviced by the Employer.

☑ New Instruments
Design, supply and install the following instruments.
Output signals from instruments are to be cabled via field junction box to the RTU.

■ : Pressure transmitters Q'ty

☐ Design, supply and intall:
- Pressure transmitter on the existing spare tapping point
- Tubing between tapping point and transmitter

☑ Prepare the tapping point for the pressure transmitter, and design, supply and install: [2]
- Pressure transmitter on the prepared tapping point
- Tubing between tapping point and transmitter

■ : Differential pressure transmitters Q'ty

☐ Design, supply and install:
- Differential pressure transmitter on the existing spare tapping point
- Tubing between tapping point and transmitter

☐ Prepare the tapping point for the differential pressure transmitter, and design, supply and install:
- Differential pressure transmitter on the tapping point
- Tubing between tapping point and transmitter

■ : Temprature transmitters Q'ty

☑ Design, supply and install: [2]
- Thermowell in the spare boss on the pipe
- Resistance temperature detector complete with a head mounted transmitter into the thermowell

■ : Limit switch Q'ty

☐ Design, supply and install the limit switch on the existing shutdown valve for valve position monitoring.

☑ Pick up Signal from the Existing Turbine Meter Q'ty
Supply and install a dual pulse output pickup head in place of the single pulse output pickup in the existing turbine flowmeter sensor head. The output signal from the existing turbine flowmeter to be cabled via junction box to RTU. [2]

☑ Local Field Instrument Junction Box Q'ty
Design, supply and install an Intrinsic safety junction box. The junction box to be suitable for glanding appropriate cables. [1]

☑ Instrument Cables
Design, supply, install the instrument cables from the field instruments to RTU via junction box including each cable termination with gland.

2. Communication System

■ : Slave Telemetry System

☐ Removal of existing slave telemetry equipment
Remove and dispose the existing slave telemetry system including antenna and cable.

☑ Slave Telemetry Equipment
Design, supply and install new slave telemetry equipment in the RTU enclosure, including cables and antenna.

☐ Slave Telemetry Equipment (design & supply only)
Design and supply new slave telemetry equipment in the RTU enclosure, including cables and antenna.

☐ Existing monopole
Re-use existing monople to mount new antenna.

☑ New monopole
Design, supply and install new monopole with foundation to mount new antenna.

☐ New monopole (design & supply only)
Design and supply new monopole to mount new antenna.

3. Electrical Works

■ : Power Supply to RTU

☐ Electrical power shall be supplied to RTU from existing PDB, and existing power cable shall be re-used.

☐ Design, supply and install MCB box for the power supply to RTU including all cables from existing PDB to MCB box and from MCB box to RTU.

☐ Design, supply and intall power controller and power cable to RTU at remote site where electrical power is supplied from existing solar panel.

☑ Design, supply and install new solar panel, power controller and power cable to RTU.

4. Civil Works

■ : Foundation & Sunshade for RTU

☐ Re-use existing foundation & sunshade for RTU
Examine the condition of existing foundation and sunshade for RTU and repair the defects, if any.

☑ Provide new foundation & sunshade for RTU
Design and construct the foundation and sunshade for new RTU at suitable location. The foundation and sunshade should be designed to suitably accommodate new RTU.

■ : Instrument Stand with Foundation & Sunshade

☐ Re-use existing Instrument stand(s) with foundation & sunshade
Examine the condition of existing Instrument stand(s) with foundation & sunshade and repair the defects, if any.

☑ Provide new Instrument stand(s) with foundation & sunshade
Design and construct the Instrument stand(s) with foundation & sunshade at suitable location. It should be designed to suitably accommodate the required number of instruments and explosion proof instrument field junction box.

5. Site Photo

Site view

6. Site Layout

Site layout shall be provided later.

Site Information & Scope of Work

Site Information

Site Name : Salda Nadi Gas Field
Site Code : 20-BKB-701

Site Address : To be provided later.

Coordinates : N 23° 40' 31.0 " : E 91° 10' 15.4 "
** Coordinates are surveyed by handy type GPS and might be inaccurate.*

Site Type

☐	Control Center	☐	Master Telemetry Station
☑	Gas Field	☐	Operating Company Terminal (OCT)
☐	CGS (City Gas Station)	☐	Power station/Fertilizer Factory
☐	Compressor Station	☐	TBS (Town Bordering Station)
☐	Pig Station	☐	DRS (District Regulating Station)
☐	MS (Metering Station)	☐	GMS (Gas Manifold Station)
☐	VS (Valve Station)		

Site Status
- ☑ Originally covered by The Existing System and shall be covered by The New System.
- ☐ Currently not covered by The Existing System but shall be covered by The New System.
- ☐ Upcoming site which will be covered by The New System after the completion of the Project.

Operating Company : BAPEX

Remarks : _____

Scope of Work

Works checked off hereinafter shall be carried out for the Project

1. SCADA System

■ : RTU

☑ RTU without display monitor
Design, supply and install a self-standing IP65 enclosure equipped with following items:
- RTU
- Instrumentation and communication equipment
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- Earthing and lightning protection
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Design, supply and install a self-standing IP65 enclosure equipped with following items:
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- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ RTU (design & supply only)
Design and supply self-standing IP65 enclosure equipped with following items:
- RTU
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
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- Anti-condensation heater
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Make provision for:
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Install the existing receiver for turbine meter(s) in the RTU enclosure and interface it (them) via communication (MODBUS) cable.

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Provide the interface between RTU and other system such as PLC or PC operated by the operating company including all communication cables between RTU and other system.

☐ Cable between RTU and Master Telemetry Station
Design, supply and install the cable between RTU and Master Telemetry Station in case RTU and Master Telemetry Station are located in the same site.

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Re-use the existing instruments and cables.

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■ : Pressure transmitters Q'ty

☐ Design, supply and intall:
- Pressure transmitter on the existing spare tapping point
- Tubing between tapping point and transmitter

☐ Prepare the tapping point for the pressure transmitter, and design, supply and install:
- Pressure transmitter on the prepared tapping point
- Tubing between tapping point and transmitter

■ : Differential pressure transmitters Q'ty

☐ Design, supply and install:
- Differential pressure transmitter on the existing spare tapping point
- Tubing between tapping point and transmitter

☐ Prepare the tapping point for the differential pressure transmitter, and design, supply and install:
- Differential pressure transmitter on the tapping point
- Tubing between tapping point and transmitter

■ : Temprature transmitters Q'ty

☐ Design, supply and install:
- Thermowell in the spare boss on the pipe
- Resistance temperature detector complete with a head mounted transmitter into the thermowell

■ : Limit switch Q'ty

☐ Design, supply and install the limit switch on the existing shutdown valve for valve position monitoring.

☐ Pick up Signal from the Existing Turbine Meter Q'ty
Supply and install a dual pulse output pickup head in place of the single pulse output pickup in the existing turbine flowmeter sensor head. The output signal from the existing turbine flowmeter to be cabled via junction box to RTU.

☐ Local Field Instrument Junction Box Q'ty
Design, supply and install an Intrinsic safety junction box. The junction box to be suitable for glanding appropriate cables.

☐ Instrument Cables
Design, supply, install the instrument cables from the field instruments to RTU via junction box including each cable termination with gland.

2. Communication System

■ : Slave Telemetry System

☑ Removal of existing slave telemetry equipment
Remove and dispose the existing slave telemetry system including antenna and cable.

☑ Slave Telemetry Equipment
Design, supply and install new slave telemetry equipment in the RTU enclosure, including cables and antenna.

☐ Slave Telemetry Equipment (design & supply only)
Design and supply new slave telemetry equipment in the RTU enclosure, including cables and antenna.

☑ Existing monopole
Re-use existing monople to mount new antenna.

☐ New monopole
Design, supply and install new monopole with foundation to mount new antenna.

☐ New monopole (design & supply only)
Design and supply new monopole to mount new antenna.

3. Electrical Works

■ : Power Supply to RTU

☑ Electrical power shall be supplied to RTU from existing PDB, and existing power cable shall be re-used.

☐ Design, supply and install MCB box for the power supply to RTU including all cables from existing PDB to MCB box and from MCB box to RTU.

☐ Design, supply and intall power controller and power cable to RTU at remote site where electrical power is supplied from existing solar panel.

☐ Design, supply and install new solar panel, power controller and power cable to RTU.

4. Civil Works

■ : Foundation & Sunshade for RTU

☑ Re-use existing foundation & sunshade for RTU
Examine the condition of existing foundation and sunshade for RTU and repair the defects, if any.

☐ Provide new foundation & sunshade for RTU
Design and construct the foundation and sunshade for new RTU at suitable location. The foundation and sunshade should be designed to suitably accommodate new RTU.

■ : Instrument Stand with Foundation & Sunshade

☑ Re-use existing Instrument stand(s) with foundation & sunshade
Examine the condition of existing Instrument stand(s) with foundation & sunshade and repair the defects, if any.

☐ Provide new Instrument stand(s) with foundation & sunshade
Design and construct the Instrument stand(s) with foundation & sunshade at suitable location. It should be designed to suitably accommodate the required number of instruments and explosion proof instrument field junction box.

5. Site Photo

Existing RTU

Existing Instrument Stand

6. Site Layout

See attached Layout Plan.

E920.00 E940.00 E960.00 E980.00 E1000.00 E1020.00 E1040.00 E1060.00 E1080.00

N1010.00 N990.00 N970.00 N950.00

G. ROOM

NAYAN PUR

GATE

H. B. B. ROAD

PADDY LAND

WIRE FENCE

GATE

GATE

9.615

9.651 9.568 9.454 9.432 9.477 9.674 9.583 9.583

9.546

12.353 9.599 9.534 9.564 9.521 9.567 9.529 9.630 9.653

F.TANK

F.TANK

TANK

S/P

Pipe ø104mm

BITTS

RE-BOILAR

9.578

MADLA BAZAR

GATE

R.T.U. CB

V/T

WORKER UNION OFFICE

12.354 12.481 9.602 9.588 9.465 9.478 9.553 9.674

PIPE*320mm.

INST. STAND

9.552 9.534 9.589 9.489 9.446 9.324 9.505 9.568

PIPE*100mm.

TOWER

BM. EL=10.00

SEPERATOR

PLUS SEPERATOR

9.676

EARTH PIT

MONO POLE BASE

RTU

8.811 9.575. 9.656 9.430 9.388 9.651 9.503 9.313

9.897 B. B. ROAD 9.895 8.914 8.896

N

SCALE 1 : 200

NOTE:

BM. MARKED ON THE TOP OF TOWER CONCRETE BASE. AS SHOWN ON THE DRWING.

EL=10.00m (Assumed)

THE AREA IS ABOVE H.F.L. (Local information)

LATITUDE 23°40.51' LONGITUDE 91°10.28'

Parsons Brinckerhoff Limited (PBL)

AS BUILT

Employer's Representative :

Date : 06-12-2004

ISSUE	Revision	Date	D.D. Ref
A	ISSUED FOR DESIGN APPROVAL		
B	ISSUED FOR DESIGN APPROVAL	27-05-99	-
C	ISSUED FOR DESIGN APPROVAL	25-09-04	-

Contractor: SERCK CONTROLS Ltd

CONTRACT DRAWING APPROVAL

Drawing Status: DESIGN APPROVAL

REDLINED CHANGES | APPROVED NO CHANGES

PRINT NAME: SIGNED: DATE:

Sub Contractor: SURVEY CORPORATION

S.O. No.

Drawing Title: SITE CODE : 703 SITE NAME : SALDA NADI GAS FIELD

Drawing No.	Rev	Sheet	Orig. Size
703-60-72			A1

	Drawn	Checked	Approved
BY	HASHEM	M. A. HAYAT	M. A. HADAYET
Date	27-05-99	27-05-99	27-05-99

Employer: GAS TRANSMISSION COMPANY Ltd (GTCL)

THE BANGLADESH GAS INFRASTRUCTURE DEVELOPMENT PROJECT. SUPERVISORY CONTROL, DATA ACQUISITION AND TELECOMMUNICATIONS SYSTEMS.

Consultant: PB Technologies Ltd.

Employer Contract No: GTCL/RL-1109/C2

Site Information & Scope of Work

Site Information

Site Name : Bangura Gas Field
Site Code : 20-BKB-702

Site Address : To be provided later.

Coordinates : N 23° 42' 38.6 " : E 90° 58' 59.3 "
** Coordinates are surveyed by handy type GPS and might be inaccurate.*

Site Type

☐	Control Center	☐	Master Telemetry Station
☑	Gas Field	☐	Operating Company Terminal (OCT)
☐	CGS (City Gas Station)	☐	Power station/Fertilizer Factory
☐	Compressor Station	☐	TBS (Town Bordering Station)
☐	Pig Station	☐	DRS (District Regulating Station)
☐	MS (Metering Station)	☐	GMS (Gas Manifold Station)
☐	VS (Valve Station)		

Site Status
- ☐ Originally covered by The Existing System and shall be covered by The New System.
- ☑ Currently not covered by The Existing System but shall be covered by The New System.
- ☐ Upcoming site which will be covered by The New System after the completion of the Project.

Operating Company : Tullow

Remarks : Process data shall be collected from Tullow's PLC.

Scope of Work

Works checked off hereinafter shall be carried out for the Project

1. SCADA System

■ : RTU

☑ RTU without display monitor
Design, supply and install a self-standing IP65 enclosure equipped with following items:
- RTU
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ RTU with display monitor
Design, supply and install a self-standing IP65 enclosure equipped with following items:
- RTU
- Display monitor
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ RTU (design & supply only)
Design and supply self-standing IP65 enclosure equipped with following items:
- RTU
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ Interface with flow computer
Make provision for:
- Installation of the flow computer which shall be prepared by GTCL in the enclosure
- Interface between RTU and the said flow computer

☐ Interface with receiver for turbine meter
Install the existing receiver for turbine meter(s) in the RTU enclosure and interface it (them) via communication (MODBUS) cable.

☑ Interface with other system
Provide the interface between RTU and other system such as PLC or PC operated by the operating company including all communication cables between RTU and other system.

☐ Cable between RTU and Master Telemetry Station
Design, supply and install the cable between RTU and Master Telemetry Station in case RTU and Master Telemetry Station are located in the same site.

2. Communication System

■ : Slave Telemetry System

☐ Removal of existing slave telemetry equipment
Remove and dispose the existing slave telemetry system including antenna and cable.

☑ Slave Telemetry Equipment
Design, supply and install new slave telemetry equipment in the RTU enclosure, including cables and antenna.

☐ Slave Telemetry Equipment (design & supply only)
Design and supply new slave telemetry equipment in the RTU enclosure, including cables and antenna.

☐ Existing monopole
Re-use existing monople to mount new antenna.

☑ New monopole
Design, supply and install new monopole with foundation to mount new antenna.

☐ New monopole (design & supply only)
Design and supply new monopole to mount new antenna.

3. Electrical Works

■ : Power Supply to RTU

- ☐ Electrical power shall be supplied to RTU from existing PDB, and existing power cable shall be re-used.

- ☑ Design, supply and install MCB box for the power supply to RTU including all cables from existing PDB to MCB box and from MCB box to RTU.

- ☐ Design, supply and intall power controller and power cable to RTU at remote site where electrical power is supplied from existing solar panel.

- ☐ Design, supply and install new solar panel, power controller and power cable to RTU.

4. Civil Works

■ : Foundation & Sunshade for RTU

- ☐ Re-use existing foundation & sunshade for RTU
  Examine the condition of existing foundation and sunshade for RTU and repair the defects, if any.

- ☑ Provide new foundation & sunshade for RTU
  Design and construct the foundation and sunshade for new RTU at suitable location. The foundation and sunshade should be designed to suitably accommodate new RTU.

5. Site Photo

Tullow's PLC

6. Site Layout

Site layout shall be provided later.

Site Information & Scope of Work

Site Information

Site Name : Srikail Gas Field
Site Code : 20-BKB-703

Site Address : To be provided later.

Coordinates : N 23° 45' 14.6 " : E 90° 58' 13.4 "
** Coordinates are surveyed by handy type GPS and might be inaccurate.*

Site Type

☐	Control Center	☐	Master Telemetry Station
☑	Gas Field	☐	Operating Company Terminal (OCT)
☐	CGS (City Gas Station)	☐	Power station/Fertilizer Factory
☐	Compressor Station	☐	TBS (Town Bordering Station)
☐	Pig Station	☐	DRS (District Regulating Station)
☐	MS (Metering Station)	☐	GMS (Gas Manifold Station)
☐	VS (Valve Station)		

Site Status
- ☐ Originally covered by The Existing System and shall be covered by The New System.
- ☐ Currently not covered by The Existing System but shall be covered by The New System.
- ☑ Upcoming site which will be covered by The New System after the completion of the Project.

Operating Company : BAPEX

Remarks : _____

Scope of Work

Works checked off hereinafter shall be carried out for the Project

1. SCADA System

■ : RTU

☐ RTU without display monitor
Design, supply and install a self-standing IP65 enclosure equipped with following items:
- RTU
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ RTU with display monitor
Design, supply and install a self-standing IP65 enclosure equipped with following items:
- RTU
- Display monitor
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☑ RTU (design & supply only)
Design and supply self-standing IP65 enclosure equipped with following items:
- RTU
- Instrumentation and communication equipment
- Backup battery system with charger for 24 hours
- Lighting
- Anti-condensation heater
- Earthing and lightning protection
- All internal wiring
- Other equipment to satisfy the functional requirements

☐ Interface with flow computer
Make provision for:
- Installation of the flow computer which shall be prepared by GTCL in the enclosure
- Interface between RTU and the said flow computer

☐ Interface with receiver for turbine meter
Install the existing receiver for turbine meter(s) in the RTU enclosure and interface it (them) via communication (MODBUS) cable.

☐ Interface with other system
Provide the interface between RTU and other system such as PLC or PC operated by the operating company including all communication cables between RTU and other system.

☐ Cable between RTU and Master Telemetry Station
Design, supply and install the cable between RTU and Master Telemetry Station in case RTU and Master Telemetry Station are located in the same site.

2. Communication System

■ : Slave Telemetry System

☐ Removal of existing slave telemetry equipment
Remove and dispose the existing slave telemetry system including antenna and cable.

☐ Slave Telemetry Equipment
Design, supply and install new slave telemetry equipment in the RTU enclosure, including cables and antenna.

☑ Slave Telemetry Equipment (design & supply only)
Design and supply new slave telemetry equipment in the RTU enclosure, including cables and antenna.

☐ Existing monopole
Re-use existing monople to mount new antenna.

☐ New monopole
Design, supply and install new monopole with foundation to mount new antenna.

☑ New monopole (design & supply only)
Design and supply new monopole to mount new antenna.

3. Electrical Works

■ : No electrical works at this site.

4. Civil Works

■ : No civil works at this site.

5. Site Photo

Site view

6. Site Layout

Not Available

Site Information & Scope of Work

Site Information

Site Name : Comilla Head Office
Site Code : 20-CML-100M/100T

Site Address : To be provided later.

Coordinates : N 23° 26' 53.2 " : E 91° 12' 49.5 "
** Coordinates are surveyed by handy type GPS and might be inaccurate.*

Site Type

☐	Control Center	☑	Master Telemetry Station
☐	Gas Field	☑	Operating Company Terminal (OCT)
☐	CGS (City Gas Station)	☐	Power station/Fertilizer Factory
☐	Compressor Station	☐	TBS (Town Bordering Station)
☐	Pig Station	☐	DRS (District Regulating Station)
☐	MS (Metering Station)	☐	GMS (Gas Manifold Station)
☐	VS (Valve Station)		

Site Status

☑ Originally covered by The Existing System and shall be covered by The New System.
☐ Currently not covered by The Existing System but shall be covered by The New System.
☐ Upcoming site which will be covered by The New System after the completion of the Project.

Operating Company : BGSL

Remarks : _____

Scope of Work

Works checked off hereinafter shall be carried out for the Project

1. SCADA System

■ : OCT (Operating Company Terminal)

☑ Design, supply and install a HMI, a color printer and UPS as minimum configuration to monitor the operating condition of GTCL pipeline.

2. Communication System

■ : Master Telemetry Station (Former Microwave Radio Station)

☑ Removal of existing communication system
Remove and dispose following existing items used for microwave transmission system:
- Microwave equipment/facilities in the radio equipment room
- Antenna mounted on the existing tower
- Cables between radio equipment room and existing tower

☑ Radio equipment to connect Master Telemetry Station with Provider's Access Point
Design, supply and install IP radio equipment at existing radio equipment room to connect Master Telemetry Station with nearest Provider's Access Point (BTCL's AP), including all necessary cables, accessories and the antenna to be mounted on the existing tower.

☑ Master telemetry equipment
Design, supply and install master telemetry equipment at existing radio equipment room to connect with slave telemetry equipment, including all necessary cables, accessories and the antenna to be mounted on the existing tower.

☐ Radio equipment to connect Master Telemetry Station with OCT
Design, supply and install IP radio equipment at radio equipment room to connect Master Telemetry Station with Operating Company Terminal (OCT) at another site, including all necessary cables, accessories and the antenna to be mounted on the existing tower.

☑ Radio equipment to connect Provider's Access Point with Master Telemetry Station
Design, supply and install IP radio equipment at nearest BTCL's access point to connect BTCL's AP with Master Telemetry Station, including all necessary cables, accessories and the antenna with monopole.

☑ Network equipment
Design, supply and install all necessary Network equipment at radio equipment room of Master telemetry station as well as at nearest BTCL's access point.

☑ Network cable to OCT
Design, supply and install network cable between Master Telemetry Station and OCT which shall be installed within the same site.

■ : IP PBX System

☐ IP PBX main unit
Design, supply and install IP PBX main unit with necessary accessories and spare parts.

☑ Extension telephone set Q'ty
Design, supply and install extension telephone set(s) with required cables. [2]

3. Electrical Works

■ : Backup Batteries for Radio Equipment at Master Station

☑ Remove and dispose existing backup batteries for radio equipment.
Supply & install new backup batteries with charger suitable to backup new radio equipment for 48 hours.

■ : Replacement of Air conditioner at Radio room of Master Station

☑ Remove and dispose existing window type air conditioner at raido room, and Supply & install new air conditioner suitably selected to maintain the specified temperature and humidity of radio room.

4. Civil Works

■ : Refurbishment of Existing Radio Building/Radio Equipment Room

☑ Refurbishment of Radio Building
Examin the condition of the whole existing radio building and repair the defects if any.
Clean and touch-up the external and internal finish of the whole existing radio building.

☐ Refurbishment of Radio Equipment Room
Examine the condition of existing rooms where radio equipment and backup batteries are installed and repair the defects if any.
Clean and touch-up the internal finish of the said rooms.

☐ Cleaning of Radio Equipment Room
Clean and tidy up the existing rooms where radio equipment and backup batteries are installed.

5. Site Photo

Existing Radio Building

Comilla BGSL head office where new OCT shall be installed

6. Site Layout

Site layout shall be provided later.