

Site Information & Scope of Work

Site Information

Site Name : VS5 BKB-Demra
Site Code : 30-DMR-104

Site Address : To be provided later.

Coordinates : N 23° 36' 01.8 " : E 90° 36' 52.7 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input checked="" type="checkbox"/> 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

- : 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 monopole 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 install 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.

Site Information & Scope of Work

Site Information

Site Name : Siddirganj 210MW PS
Site Code : 30-DMR-501

Site Address : To be provided later.

Coordinates : N 23° 40' 55.1 " : E 90° 31' 16.2 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input checked="" type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input type="checkbox"/> 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 : TGTDCCL

Remarks : Following additional site shall be covered by the RTU at this site.
- Siddirganj 2x120MW PS

Following future site will be covered by the RTU at this site in the future.
- Siddirganj 2x150MW PS

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 install:
- 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: [6]
- 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: [12]
- Differential pressure transmitter on the tapping point
- Tubing between tapping point and transmitter

■ : Temperature transmitters Q'ty

Design, supply and install: [6]
- 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 [3]
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)
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Re-use existing monopole to mount new antenna.
- New monopole
Design, supply and install new monopole with foundation to mount new antenna.
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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 install 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.

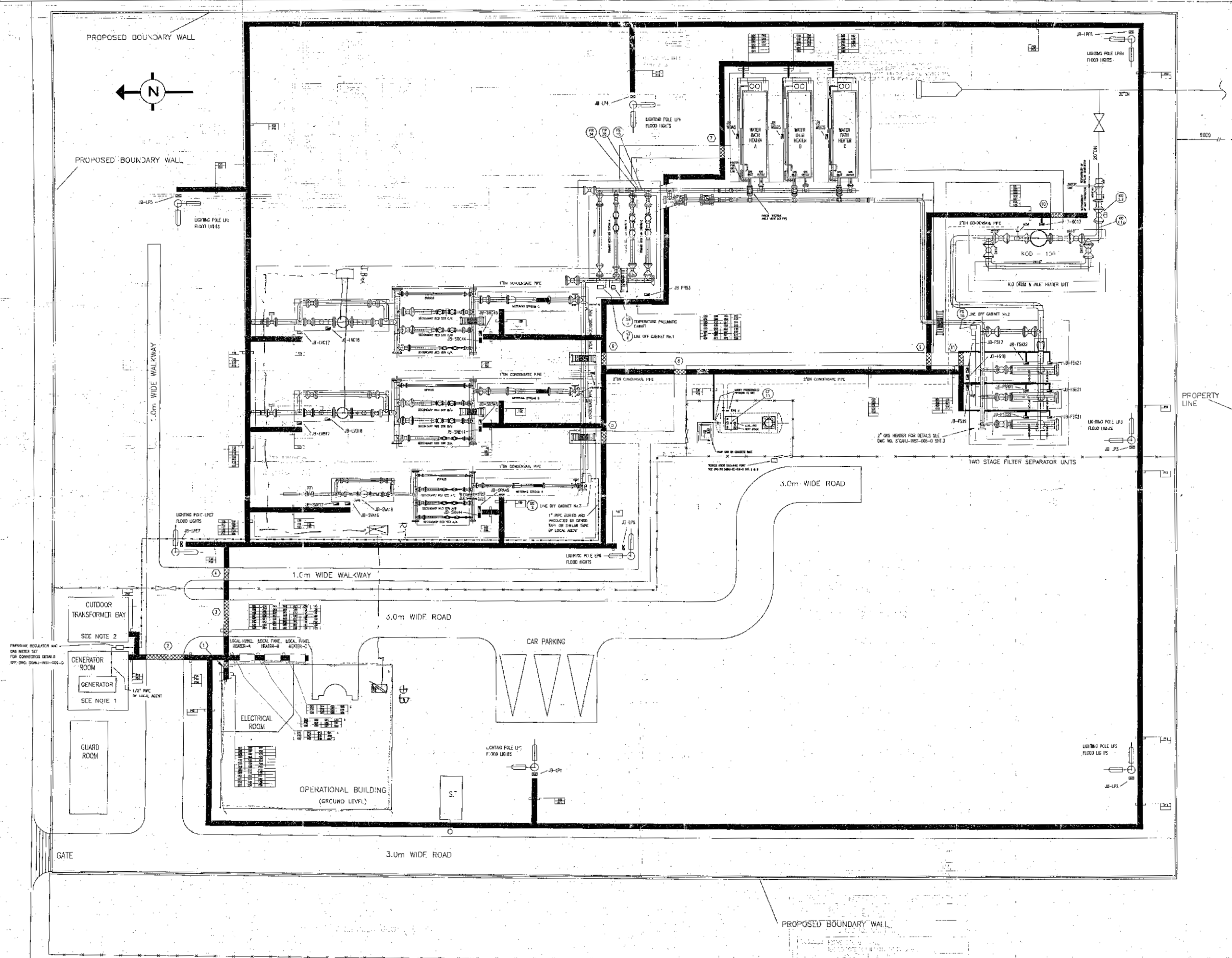
5. Site Photo



Site view

6. Site Layout

See attached Layout Plan.



NOTES

- FOR CORRECT RUNNING OF GENERATOR, THE GENERATOR ROOM MUST BE ADEQUATELY VENTILATED AS FOLLOWS:-
 (a) VENTILATED TO OUTDOORS VIA A LOUVERED CHIMNEY WITH A MINIMUM HEIGHT OF 500mm ABOVE ROOF.
 (b) THE EXHAUST FROM THE GENERATOR ENGINE MUST BE PIPED TO THE OUTSIDE USING AN APPROVED SHEET STEEL PIPE AND INSULATED TO PREVENT EXCESSIVE HEAT LOSS AND FITTED WITH THE WEIGHTED FLAPPER PIPE COVER SUPPLIED WITH THE GENERATOR TO PREVENT INGRESS OF WATER AND WIND.
- TRANSFORMERS TO BE LOCATED IN TRANSFORMER BAY AND FIXED IN POSITION TO BE CONCRETE FLOOR USING APPROPRIATE SIZE BIRM BOLTS.
- FOR ELECTRICAL ROOM LAYOUT SEE Dwg. NO. STW-INST-004-0 FOR ELECTRICAL ROOM LAYOUT SEE Dwg. NO. STW-INST-005-0 FOR CABLE TRAYS SEE CABLE SCHEDULE Dwg. NO. STW-INST-006-0

LEGEND

- INSTRUMENTS/TAG NUMBERS
- CABLE NUMBER ROUTING REFS.
- JUNCTION BOX ANALOG
- JUNCTION BOX DIGITAL
- JUNCTION BOX POWER
- CABLE TRENCH DUCT & NUMBER REFERENCE
- DIRECT BURIED CABLE TRENCH
- DIRECT BURIED CONDENSATE PIPE
- INSULATING JOINT

REV. NO.	DESCRIPTION	SIGNATURE	DATE
6	AS BUILT		22/02/01
5	RE-ISSUED FOR CONSTRUCTION		31/01/01
4	ISSUED FOR CONSTRUCTION		27/07/00
3	CONDENSATE PIPE ROUTE AMENDED		14/02/00
2	CABLE ROUTES & ROAD REVERSE		14/02/00
1	GENERAL REVISION		07/01/00
0	INITIAL ISSUE		

REV. NO.	DESCRIPTION	SIGNATURE	DATE
6	AS BUILT		22/02/01
5	RE-ISSUED FOR CONSTRUCTION		31/01/01
4	ISSUED FOR CONSTRUCTION		27/07/00
3	CONDENSATE PIPE ROUTE AMENDED		14/02/00
2	CABLE ROUTES & ROAD REVERSE		14/02/00
1	GENERAL REVISION		07/01/00
0	INITIAL ISSUE		

PROJECT: SIDDHIRANJ POWER STATION METERING & REGULATING STATION
 CLIENT: TITAN GAS T&O CO. LTD.
 CONSULTOR: FIORENTINI UK LTD.
 TECHNOLOGIES FOR THE UTILIZATION OF GAS
 DRAWN: [] CHECKED: [] APPROVED: []
 TITLE: INSTRUMENT BOX LAYOUT & CABLE ROUTING
 SCALE: 1:100
 DATE: 22/02/01

Site Information & Scope of Work

Site Information

Site Name : Horipur IPP 350MW PS
Site Code : 30-DMR-502

Site Address : To be provided later.

Coordinates : N 23° 41' 05.5 " : E 90° 31' 46.9 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

- Site Type
- | | |
|---|--|
| <input type="checkbox"/> Control Center | <input type="checkbox"/> Master Telemetry Station |
| <input type="checkbox"/> Gas Field | <input type="checkbox"/> Operating Company Terminal (OCT) |
| <input type="checkbox"/> CGS (City Gas Station) | <input checked="" type="checkbox"/> Power station/Fertilizer Factory |
| <input type="checkbox"/> Compressor Station | <input type="checkbox"/> TBS (Town Bordering Station) |
| <input type="checkbox"/> Pig Station | <input type="checkbox"/> DRS (District Regulating Station) |
| <input type="checkbox"/> MS (Metering Station) | <input type="checkbox"/> GMS (Gas Manifold Station) |
| <input type="checkbox"/> 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 : TGTDCCL

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 monopole 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 : Horipur IPP 360MW PS
Site Code : 30-DMR-503

Site Address : To be provided later.

Coordinates : N 23° 40' 44.8 " : E 90° 32' 05.6 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

- Site Type
- | | |
|---|--|
| <input type="checkbox"/> Control Center | <input type="checkbox"/> Master Telemetry Station |
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| <input type="checkbox"/> CGS (City Gas Station) | <input checked="" type="checkbox"/> Power station/Fertilizer Factory |
| <input type="checkbox"/> Compressor Station | <input type="checkbox"/> TBS (Town Bordering Station) |
| <input type="checkbox"/> Pig Station | <input type="checkbox"/> DRS (District Regulating Station) |
| <input type="checkbox"/> MS (Metering Station) | <input type="checkbox"/> GMS (Gas Manifold Station) |
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- 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 : TGTDCCL

Remarks : _____

Scope of Work

Works checked off hereinafter shall be carried out for the Project

1. SCADA System

■ : RTU

- RTU without display monitor
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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
 - Lighting
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Make provision for:
 - Installation of the flow computer which shall be prepared by GTCL in the enclosure
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*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 install:
- 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: [1]
- 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: [2]
- Differential pressure transmitter on the tapping point
- Tubing between tapping point and transmitter

■ : Temperature transmitters Q'ty

Design, supply and install: [1]
- 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 [1]
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

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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 install 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 : Horipur SBU 100MW PS
 Site Code : 30-DMR-504

Site Address : To be provided later.

Coordinates : N 23° 41' 04.1 " : E 90° 31' 54.1 "
 * Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
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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 : TGTDCCL

Remarks : Following additional site shall be covered by the RTU at this site.
 - NEPC 110MW PS

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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 - 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 install:
- 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: [3]
- 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: [4]
- Differential pressure transmitter on the tapping point
- Tubing between tapping point and transmitter

■ : Temperature transmitters Q'ty

Design, supply and install: [3]
- 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. [1]

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. [2]

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 monopole 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 install 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 : VS14 Madhabdi
Site Code : 30-DMR-505

Site Address : To be provided later.

Coordinates : N 23° 51' 23.0 " : E 90° 39' 20.4 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input checked="" type="checkbox"/> 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 : TGTDCCL

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 install:
- 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 [1]

■ : 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

■ : Temperature 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. [1]

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. [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 monopole 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 install 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 : VS15 Tarabo
Site Code : 30-DMR-506

Site Address : To be provided later.

Coordinates : N 23° 43' 03.9 " : E 90° 30' 26.9 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input checked="" type="checkbox"/> 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 : TGTDCCL

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 install:
- 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 [1]

■ : 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

■ : Temperature 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. [1]

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. [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 monopole 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 install 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 : VS Dighibarabo
Site Code : 30-DMR-507

Site Address : To be provided later.

Coordinates : N 23° 43' 25.7 " : E 90° 31' 00.9 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input checked="" type="checkbox"/> 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 : TGTDCCL

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 install:
- 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 [1]

■ : 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

■ : Temperature 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. [1]

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. [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 monopole 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 install 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 : VS Horipur
 Site Code : 30-DMR-508

Site Address : To be provided later.

Coordinates : N 23° 41' 11.6 " : E 90° 32' 10.3 "
 * Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
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<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input checked="" type="checkbox"/> 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 : TGTDCCL

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
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- 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 install:
 - 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[1]

■ : 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

■ : Temperature 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. [1]

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. [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 monopole 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 install 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 : VS Meghnaghat
Site Code : 30-DMR-509

Site Address : To be provided later.

Coordinates : N 23° 36' 49.2 " : E 90° 36' 19.6 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input checked="" type="checkbox"/> 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 : TGTDCCL

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 install:
 - 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[1]

■ : 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

■ : Temperature 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. [1]

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. [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 monopole 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 install 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 : Meghnaghat IPP 450MW PS
Site Code : 30-DMR-510

Site Address : To be provided later.

Coordinates : N 23° 36' 47.6 " : E 90° 36' 02.2 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input checked="" type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input type="checkbox"/> 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 : TGTDCCL

Remarks : Following future site will be covered by the RTU at this site in the future.
- Meghnaghat IPP 450MW PH2

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 install:
- 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: [1]
- 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: [2]
- Differential pressure transmitter on the tapping point
- Tubing between tapping point and transmitter

■ : Temperature transmitters Q'ty

Design, supply and install: [1]
- 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 [1]
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 monopole 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 install 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 : Moulavibazar, Bibiyana, and Jalalabad Gas Field
Site Code : 30-DMR-701, 702 & 703
- Site Address : Not Applicable
- Coordinates : Not applicable
- Site Type
- | | |
|---|--|
| <input type="checkbox"/> Control Center | <input type="checkbox"/> Master Telemetry Station |
| <input checked="" type="checkbox"/> Gas Field | <input type="checkbox"/> Operating Company Terminal (OCT) |
| <input type="checkbox"/> CGS (City Gas Station) | <input type="checkbox"/> Power station/Fertilizer Factory |
| <input type="checkbox"/> Compressor Station | <input type="checkbox"/> TBS (Town Bordering Station) |
| <input type="checkbox"/> Pig Station | <input type="checkbox"/> DRS (District Regulating Station) |
| <input type="checkbox"/> MS (Metering Station) | <input type="checkbox"/> GMS (Gas Manifold Station) |
| <input type="checkbox"/> 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 : Chevron
- Remarks : Process data of these gas fields shall be collected from the server
which shall be prepared by Chevron in their Dhaka office.

Scope of Work

Works checked off hereinafter shall be carried out for the Project

1. SCADA System

- : Collection of Process data from Chevron's server
 - Chevron has own SCADA system for their gas field operation. Chevron will prepare the web server to disclose their operation data to GTCL. The SCADA server at MCC and ACC shall have the function to collect the data from Chevron's web server through internet. The number and type of I/O is referred to IO List.

2. Communication System

- : No Communication System at this site.

3. Electrical Works

- : No electrical works at this site.

4. Civil Works

- : No civil works at this site.

5. Site Photo

Not Applicable.

6. Site Layout

Not Applicable.

Site Information & Scope of Work

Site Information

Site Name : Petrobangla Head Office
Site Code : 30-PBG-700M/700T

Site Address : To be provided later.

Coordinates : N 23° 44' 59.3 " : E 90° 23' 50.3 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input checked="" type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input checked="" type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input type="checkbox"/> 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 : Petrobangla

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.

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 Equipment Room located at 9F of commercial building

6. Site Layout

Site Layout Plan is not available.
Radio equipment room is located at 9F of Petrobangla head office building at Dhaka City.

Site Information & Scope of Work

Site Information

Site Name : CGS Aminbazar
Site Code : 30-PBG-401

Site Address : To be provided later.

Coordinates : N 23° 47' 18.8 " : E 90° 19' 04.6 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input checked="" type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input type="checkbox"/> 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: [3]
 - 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: [6]
 - Differential pressure transmitter on the tapping point
 - Tubing between tapping point and transmitter

■ : Temprature transmitters Q'ty

- Design, supply and install: [3]
 - Thermowell in the spare boss on the pipe
 - Resistance temperater 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. [2]

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 monopole 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 install 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 : CGS Ashulia
Site Code : 30-PBG-402

Site Address : To be provided later.

Coordinates : N 23° 53' 13.7 " : E 90° 19' 48.9 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input checked="" type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input type="checkbox"/> 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[2]

■ : 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[4]

■ : Temprature transmitters Q'ty

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

■ : 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. [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 monopole 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 install 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 : TITAS Head Office
Site Code : 30-PBG-500T

Site Address : To be provided later.

Coordinates : N 23° 45' 02.3 " : E 90° 23' 37.0 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input checked="" type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input type="checkbox"/> 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 : TGTDCCL

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

- : 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 [1]
Design, supply and install extension telephone set(s) with required cables.

- : Operating Company Terminal (OCT)
 - Radio equipment to connect OCT with Master Telemetry Station
Design, supply and install IP radio equipment at the building where OCT shall be installed to connect this OCT with Master Telemetry Station, including all necessary cables, accessories and the antenna with monopole.

3. Electrical Works

- : No electrical works at this site.

4. Civil Works

- : No civil works at this site.

5. Site Photo



Existing OCT to be replaced.

6. Site Layout

Site Layout Plan is not available.
The room where OCT to be installed is located in front of Petrobangla head office at Dhaka City.

Site Information & Scope of Work

Site Information

Site Name : Tongi 80MW PS
Site Code : 30-PBG-501

Site Address : To be provided later.

Coordinates : N 23° 53' 47.4 " : E 90° 24' 41.5 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input checked="" type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input type="checkbox"/> 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 : TGTDCCL

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[1]

■ : 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: [1]
 - Thermowell in the spare boss on the pipe
 - Resistance temperater 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. [1]

- 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 monopole 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 install 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 : Chevron Head Office
Site Code : 30-PBG-701T

Site Address : To be provided later.

Coordinates : N 00° 00' 00.0 " : E 00° 00' 00.0 "
* Coordinates are not available but this office is located in Gulshan, Dhaka.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input checked="" type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input type="checkbox"/> 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 : Chevron

Remarks : IP radio link between this office and MTS shall be used not only for OCT but also for interfacing with Chevron's server to collect their process data of following gas fields.
30-DMR-701: Moulavibazar gas field
30-DMR-702: Bibiyana gas field
30-DMR-703: Jalalabad gas field

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

- : Operating Company Terminal (OCT)
 - Radio equipment to connect OCT with Master Telemetry Station
Design, supply and install IP radio equipment at the building where OCT shall be installed to connect this OCT with Master Telemetry Station, including all necessary cables, accessories and the antenna with monopole.

3. Electrical Works

- : No electrical works at this site.

4. Civil Works

- : No civil works at this site.

5. Site Photo

Not available.

6. Site Layout

Site Layout Plan is not available.

Site Information & Scope of Work

Site Information

Site Name : Monohordi
Site Code : 40-MHD-500/500M

Site Address : To be provided later.

Coordinates : N 24° 07' 55.0 " : E 90° 42' 09.0 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input checked="" type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input checked="" type="checkbox"/> GMS (Gas Manifold Station)
<input type="checkbox"/> 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 : TGTDCCL

Remarks : Additional instruments are required at this site.

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, [1]
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, [2]
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: [1]
- Thermowell in the spare boss on the pipe
- Resistance temperatue 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 [1]
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

- : 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

- : 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 install 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.
- : 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 Emergency Generator
 - Remove and dispose existing emergency generator.
Supply & install new emergency generator suitable for power supply to related equipment and facilities.
- : Replacement of Air conditioner at Radio room of Master Station
 - Remove and dispose existing window type air conditioner at radio room, and Supply & install new air conditioner suitably selected to maintain the specified temperature and humidity of radio room.
- : Supply of Portable Engine Generator Q'ty
 - Supply of the petrol and/or diesel driven 1 kVA portable engine generator [1]
for the maintenance of remote site(s) without commercial power supply.

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.

■ : Refurbishment of Existing Radio Building/Radio Equipment Room

- Refurbishment of Radio Building
Examine 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



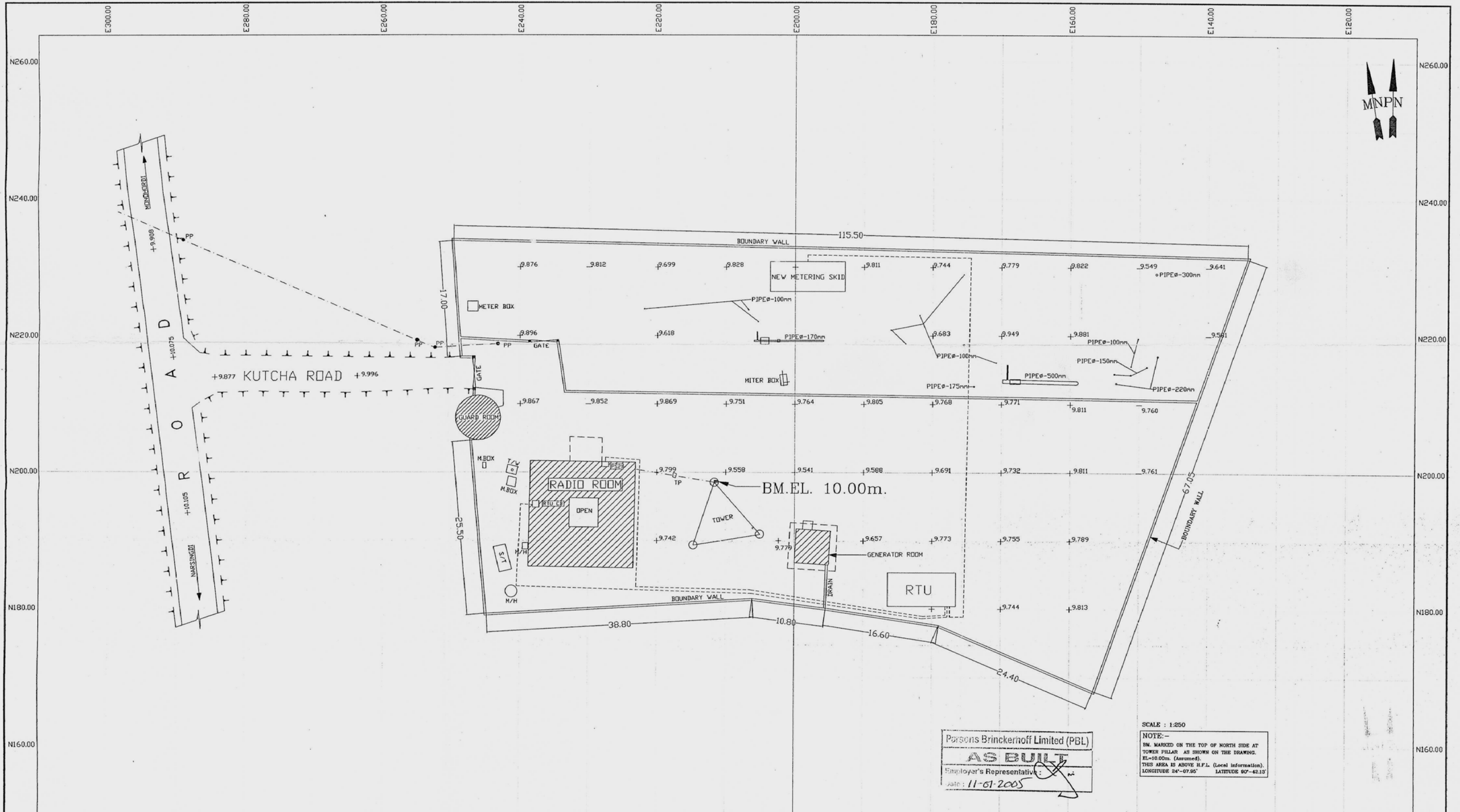
Existing Building where radio equipment room is located.



Existing RTU (cable link)

6. Site Layout

See attached Layout Plan.



Parsons Brinckernoff Limited (PBL)
AS BUILT
 Employer's Representative:
 Date: 11-01-2005

SCALE : 1:250
 NOTE:-
 BM. MARKED ON THE TOP OF NORTH SIDE AT
 TOWER PILLAR AS SHOWN ON THE DRAWING.
 EL.=10.00m. (Assumed).
 THIS AREA IS ABOVE H.F.L. (Local Information).
 LONGITUDE 24°-07'55" LATITUDE 90°-42'15"

ISSUE	Revision	Date	D.O. Ref	Contractor	Sub Contractor	S.O. No.	Employer	
A	ISSUED FOR DESIGN APPROVAL			CONTRACTS IM Zone One DIBER Red 16/20/03 411	SURVEY CORPORATION	8100	GAS TRANSMISSION COMPANY Ltd (GTCL)	
B	ISSUED FOR DESIGN APPROVAL	27-05-99						
C	ISSUED FOR DESIGN APPROVAL	09-11-04						
CONTRACT DRAWING APPROVAL Drawing Status DESIGN APPROVAL REDLINED CHANGES: <input type="checkbox"/> APPROVED NO CHANGES: <input type="checkbox"/> PRINT NAME: _____ SIGNED: _____ DATE: _____				Drawing Title: SITE S10 SITE NAME: MONOHORDI Drawing No. 510-60-72 Rev: _____ Sheet: _____ Orig. Size: A1 BY: _____ Drawn: NAZMUL KAVIR Checked: M. A. HADAYET Approved: _____ Date: _____			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 : Narsingdi Gas Field
Site Code : 40-MHD-201

Site Address : To be provided later.

Coordinates : N 24° 01' 23.2 " : E 90° 49' 00.5 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input checked="" type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input type="checkbox"/> 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 monopole 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 install 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

Site layout shall be provided later.

Site Information & Scope of Work

Site Information

Site Name : GUFF/PUFF
Site Code : 40-MHD-501

Site Address : To be provided later.

Coordinates : N 23° 59' 11.0 " : E 90° 38' 28.6 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input checked="" type="checkbox"/> Power station/Fertilizer Factory
<input type="checkbox"/> Compressor Station	<input type="checkbox"/> TBS (Town Bordering Station)
<input type="checkbox"/> Pig Station	<input type="checkbox"/> DRS (District Regulating Station)
<input type="checkbox"/> MS (Metering Station)	<input type="checkbox"/> GMS (Gas Manifold Station)
<input type="checkbox"/> 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 : TGTDCCL

Remarks : Pipelines at this site had been renewed after the installation of existing RTU and instrument. Therefore RTU and Instrument Stand need to be suitably relocated.

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[4]

■ : 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 temperater detector complete with a head mounted transmitter into the thermowell[4]

■ : 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. [4]

- 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.
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Design and supply new slave telemetry equipment in the RTU enclosure, including cables and antenna.
- Existing monopole
Re-use existing monopole to mount new antenna.
- New monopole
Design, supply and install new monopole with foundation to mount new antenna.
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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 install 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



Old site where gas pipeline and instruments were removed.



New gas pipelines to be monitored

6. Site Layout

Site layout shall be provided later.

Site Information & Scope of Work

Site Information

Site Name : Ghorasal PS
Site Code : 40-MHD-502

Site Address : To be provided later.

Coordinates : N 23° 58' 50.5 " : E 90° 38' 40.4 "
* Coordinates are surveyed by handy type GPS and might be inaccurate.

Site Type

<input type="checkbox"/> Control Center	<input type="checkbox"/> Master Telemetry Station
<input type="checkbox"/> Gas Field	<input type="checkbox"/> Operating Company Terminal (OCT)
<input type="checkbox"/> CGS (City Gas Station)	<input checked="" type="checkbox"/> Power station/Fertilizer Factory
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Site Status

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Operating Company : TGTDCCL

Remarks : _____

Scope of Work

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 - All internal wiring
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 - 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
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■ : 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
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5. Site Photo



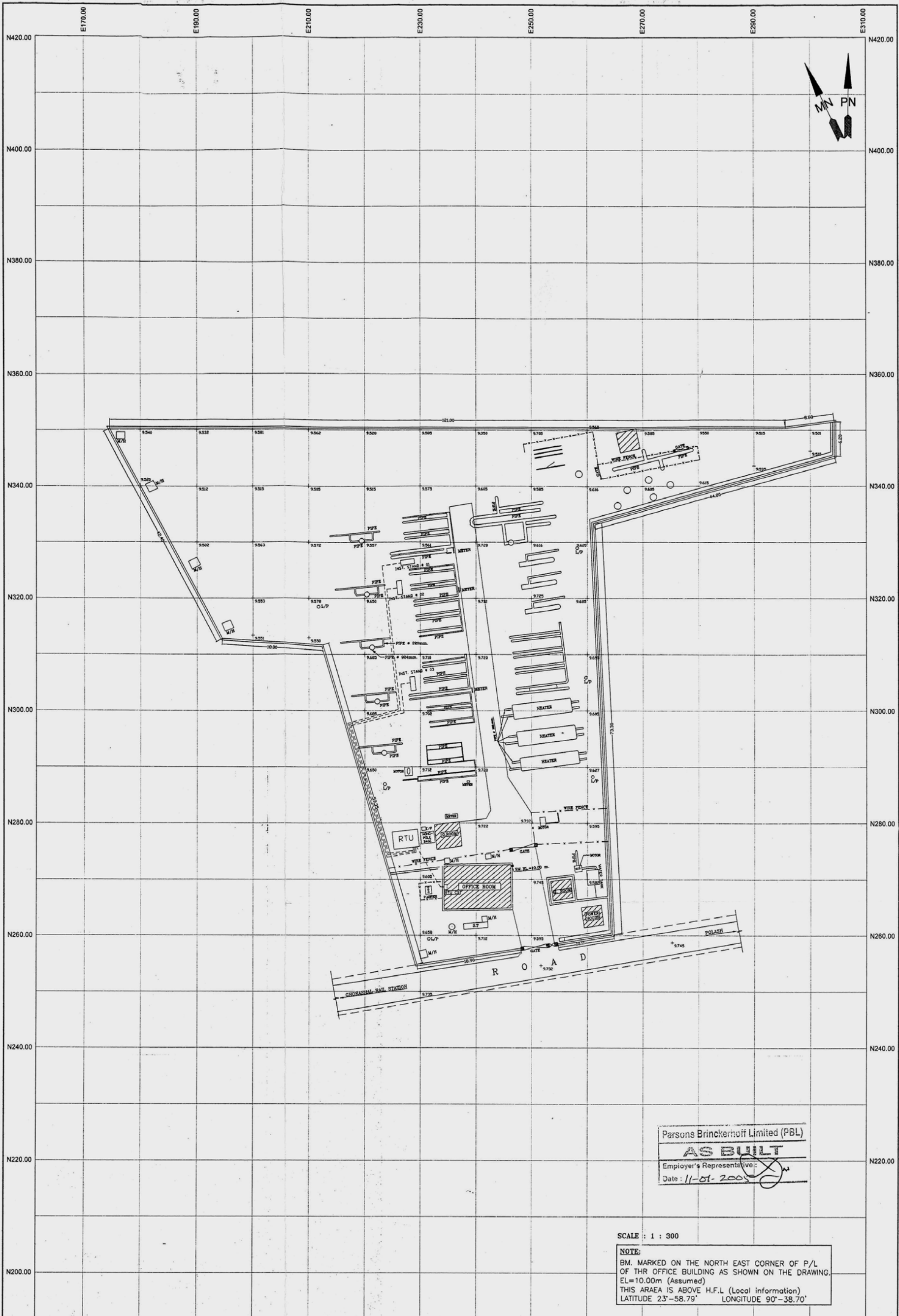
Site view



Existing RTU

6. Site Layout

See attached Layout Plan.



ISSUE	Revision	Date	D.O. Ref
A	ISSUED FOR DESIGN APPROVAL	-	-
B	ISSUED FOR DESIGN APPROVAL	11-11-04	-

Contractor: **CONTRLS Ltd**
 Sub Contractor: **SURVEY CORPORATION**
CONTRACT DRAWING APPROVAL
 Drawing Status: **DESIGN APPROVAL**
 REDLINED CHANGES APPROVED NO CHANGES
 PRINT NAME: _____ DATE: _____

S.D. No. _____
 Drawing Title: _____
 SITE CODE : 504
 SITE NAME : GHORASHAL PS
 Drawing No. 504-60-72 Rev Sheet Orig. Size
 A1
 BY: _____ Drawn _____ Checked _____ Approved _____
 Date: _____

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**

SCALE : 1 : 300
 NOTE:
 BM. MARKED ON THE NORTH EAST CORNER OF P/L OF THR OFFICE BUILDING AS SHOWN ON THE DRAWING.
 EL=10.00m (Assumed)
 THIS AREA IS ABOVE H.F.L (Local information)
 LATITUDE 23°-58.79' LONGITUDE 90°-38.70'