OIL INDIA LIMITED

(A Government of India Enterprise)
P.O. Duliajan – 786602, Assam, India
Website: www.oil-india.com

Corrigendum No. 1 to IFB No. CPG2023P20

Engineering, Fabrication and Construction, Testing and Commissioning of Modular Field Gas Gathering Station at Baghjan, Assam

1. This Corrigendum is issued to notify the following:

a) Existing terms & conditions, specifications and schedules shall stand modified to the extent indicated here below under column "Modified Provisions" of **Annexure- I**

b) In view of queries received from bidders, the final EPMC/OIL's responses to the queries are generated. All the bidders are requested to refer to **Annexure- II** attached herewith.

c) Plot Plan for FGGS, Baghjan is attached herewith as **Attachment – 1**

d) Electrical Single Line Diagram is attached herewith as **Attachment – 2**

e) Electrical Load Summery is attached herewith as **Attachment – 3**

f) HP Flare KOD Pump Process Data Sheet is attached herewith as **Attachment – 4**

g) Architectural Drawings for Administration Building, Operator Accommodation & Security Barrack are attached as **Attachment – 5, 6 & 7 respectively.**

2. All other terms and conditions of the tender remain unaltered.

3. All the prospective bidders are requested to regularly visit OIL's Website: www.oil-india.com and e-procurement portal https://etender.srm.oilindia.in/irj/portal for further announcements/latest information related to this tender.

4. Bidder to submit this Corrigendum No. 01 along with **Annexure – I & II and Attachments 1-7** duly signed & stamped in all pages as token of acceptance and shall upload this document in the un-priced folder of the e- bid**.**

Annexure – I

Summary of modifications in existing terms & conditions, specifications and schedules

SL. NO	RFQ SECTION	CLAUSE	SUBJECT	TYPE	NEW CLAUSE / MODIFICATIONS/CHANGES/DELETIONS
1	Vol-II, Technical	Civil scope of work Clause 2.7 Page no.2097 of 2248	Storm water reservoir	Deletion	**Followings are deleted** 1. Weep holes of diameter 110mm UPVC pipe to be provided alongside wall of the storm water reservoir & at spacing 2.0 c/c m horizontally & 1.0 c/c m vertically. 2. Weep holes of diameter 110mm UPVC pipe to be provided along bottom brick lining of the reservoir& at spacing 2.0 c/c m in both direction.
2	Vol-II, Technical	Civil scope of work Clause 2.6 Page no.2097 of 2248	Storm water drain	Addition	**Following is added** Weep holes of diameter 110mm UPVC pipe to be provided alongside wall of the storm water drain& at suitable spacing.
3		Clause no. 2.2			Mobilization deemed to be completed after submission /mobilization of following documents, personnel and equipment: 1. Submission of Bank Guarantee. 2. Submission of Labour Licence. 3. Reporting of Site Supervision Team required at initial phase of construction (Initial Site Supervision Team members:

	Vol –I Commercial	Page no-58 0f 278	Mobilization Time	Modification	RCM, HSE Officer, Civil Engineer & Survey Team for Topographical Survey/soil investigation at OIL's Project Office-Duliajan. 4. Completion of mobilization of the survey related equipment to the project site.
4	Vol –I Commercial	Clause no 3.0 Sl. No. (xvii) of the table mentioned under Clause no. 3:: Duration of the contract Page no-2 of 278	Forwarding Letter	Modification	The existing Para "27 Months (24 Months from the Date of commencement of contract and additional 3 months for Pre–commissioning / commissioning and PGTR)" shall be read as "27 Months from the date of commencement of contract (24 months for civil+ mechanical completion and 3 months for Pre–commissioning / commissioning and PGTR)."
5	Vol –I Commercial, Part-3 SECTION-I GENERAL CONDITIONS OF CONTRACT	Clause no: 2.5 Page no-59 of 278	Duration of contract for supply , installation, commissioning & PGTR	Modification	**<u>The second line of the Para shall be read as</u>**: "The duration of the contract shall be for a period of 27 (Twenty Seven) months from the commencement date of the contract (civil + mechanical completion within 24 Months from the Date of commencement of contract and 3 months for Pre-commissioning/commissioning and PGTR).
6	VOL-I Commercial, Part-3 SECTION-II TERMS OF	Clause no: 3.0/Sub-Clause-E	4. PHASE-IV: Performance		**<u>The Para shall be read as:</u>** "Performance Guarantee Trial Run (PGTR) shall mean uninterrupted trouble free operation of the total system/ plant for minimum continuous 01 (One) month to attain the performance standards as mentioned in Schedule-I-Performance Schedule of this document with the commissioning assistance from the EPMC. In

	REFERENCE & TECHNICAL SPECIFICATIONS	: Page no-92 0f 278	Guarantee Trial Run	Modification	the event of any operational interruption attributable to the EPC contractor during the period of PGTR, the day of re-starting of operation will be considered as the zero date for PGTR and the plant has to run uninterruptedly for next one months. During the PGTR of the total system/ plant for a period of continuous one month, all the individual equipment including the stand-by shall run uninterruptedly for at least 72 Hrs. Additionally, OIL may put their personnel and O&M operators during the period of PGTR for necessary on-the-job training in order to take over future operation of the plant. It is a strict time bound work and shall require best efforts and deployment of best qualified, experienced personnel from the EPC Contractor."
7	Vol –I Commercial, Part-3 SECTION-II TERMS OF REFERENCE & TECHNICAL	Clause No.4 Page no-92 & 93 0f 278	SCOPE OF EPC	Modification	**<u>The last line of the first Para shall be read as:</u>** "All electrical and instrumentation items that will be installed in the hazardous area as per the approved hazardous area layout drawing must conform to DGMS & other statutory guidelines." The fourth Para shall be read as: "The brief scope of EPC is Pre-Engineering Survey, Basic Engineering document verification/validation, Detailed design/ engineering, Procurement, Manufacturing & Delivery, Fabrication and supply, transportation, site grading and levelling, Construction (Civil and Structural), Erection / Installation, Piping, Hook-up to the systems, Instrumentation, Electrical works, Testing, Painting, Insulation, Pre-commissioning and Commissioning and

	SPECIFICATIONS				Performance Guarantee Test Run (PGTR) of the total System to attain the performance standards as mentioned in Schedule- I - PERFORMANCE SCHEDULE of this document on Lumpsum Turn Key Basis (LSTK) including supply of spares."
8	Vol –I Commercial, Part-3 SECTION-II TERMS OF REFERENCE & TECHNICAL SPECIFICATIONS	Sub clause nos. 4.1.12 and 4.1.13 Page no-97 0f 278	SCOPE OF EPC	Modification	**<u>The Para 4.1.12 & 4.1.13 shall be read as:</u>** 4.1.12: Provide statutory approvals for the facility including individual equipment / instrument/electrics wherever applicable. 4.1.13 Ensure that all equipment / instruments / electrics meet DGMS and other statutory guidelines for installation in Hazardous area.
9	VOL-I, Commercial Part-3 SECTION-II TERMS OF REFERENCE & TECHNICAL SPECIFICATIONS	Clause 10.0 Page no-124 & 125 0f 278	WARRANTY AND PLANT COMMISSIONING	Modification	**<u>The clause 10.0 shall be read as:</u>** "The entire plant/system as well as each individual equipment, parts, components shall be new, of recent make, of the best quality and workmanship and shall have warranty for a period of twelve (12) months of reliable and trouble free regular working under the specified parameter and working condition from the date of commissioning of the plant i.e. after 1 months of trial run. Defective goods / materials or parts notified by OIL during the warranty period shall be replaced immediately at no extra cost to OIL. Commissioning of the plant will be deemed to be complete upon expiry of trial run/ pre-commissioning and commissioning activities including 1 months of uninterrupted trouble free PGTR of the total system/ plant to attain the performance schedule mention in

					Schedule- I of this document from the date of its being put into operation and all statutory approvals for the Plant and its equipment and facilities are obtained from Statutory Bodies. The trouble free operation will include operation of the plant, it's all equipment (including operation of the stand-by facilities), components, instrument, process and other by-pass systems in auto and / or manual mode (as per design) establishing all control/monitoring and shut-off systems. The above will be witnessed and recorded by OIL/EPMC as well as the CONTRACTOR`s competent personnel. In the event of malfunctioning / defects of any equipment (including operation of the stand-by facilities), components, instrument, process and other by-pass systems during the said one month of PGTR of the total system / plant, the date of completion shall be counted from the day of rectification of such malfunctioning/defects etc. and the commissioning of the plant shall be considered upon completion of one months of trouble-free operation, as stated above, from such day of rectification which shall be at no extra cost to OIL. The warranty period of 12 months would commence after completion of one month of PGTR."
	Vol –I Commercial, Part-3	Clause no2 Page no-200 0f	PREAMBLE TO SCHEDULE OF		**<u>The clause 2. shall be read as</u>**: Bidder's quoted prices shall be strictly as per various FORMS included under Schedule of Rates/ Prices. Bidder shall quote LUMPSUM PRICE for entire scope of work including Pre-Engineering Survey, Detailed design/ engineering based on Design Basis, Scope of work & Functional specification, Procurement, Manufacturing & Delivery, Fabrication and supply, site grading and levelling, Construction (Civil and Structural), Transportation,

10	SECTION - III ANNEXURE- IIA to Special Conditions of Contract	278	RATES/PRICE:	Modification	Erection / Installation, Piping, Hook-up to the systems, Painting, Instrumentation, Electrical works, Testing, Pre-commissioning and Commissioning after successful completion of 01 (one) month continuous Performance Guarantee Test Run (PGTR) of the total System/plant to attain the performance schedule mentioned in Schedule- I of this document and other works as indicated above. The quote shall be inclusive of all taxes, duties, Octroi, cess, etc except GST. This LUMPSUM PRICE may also be referred as Engineering, Procurement, Construction &Commissioning Basis (EPC) and EPC shall include supply of 2 years mandatory spares.
11	Vol –I Commercial, Part-3 SECTION - III ANNEXURE- IIA to Special Conditions of Contract	Sub-clause iii) d) under Clause no 8. Page no-202 0f 278	PREAMBLE TO SCHEDULE OF RATES/PRICE:	Modification	**<u>The Sub-clause iii) d) shall be read as:</u>** d) Successful completion of pre-commissioning and commissioning activities for 3 (three) months including 1 (one) months of uninterrupted trouble free Performance Guarantee test Run (PGTR) of the total system/ plant to attain the performance standard mentioned in Schedule- I- of this document.
12	Vol-I Commercial, Instruction to Bidders	From clause No. 12 to clause No. 19 Page No.26 to No.30 of 278		Modification	The Sub clause numbering of clauses from No. 12 to No. 19 is starting from 3; it shall be modified to start from 1.
	Vol-I Commercial, Instruction to	Clause No.11 to			The clause no. of " CONVERSION TO SINGLE CURRENCY " shall be read as clause no.20, the clause numbering of the clauses coming after clause no.20 till the clause "CONTACTING THE COMPANY"

13	Bidders	clause No.17 Page No.30 to 32 of 278		Modification	has also been considered changed accordingly.
14	Vol-I Commercial, Instruction to Bidders	Clause No. 38.11.4 Page No.41 of 278		Modification	The sub-clause numbering of "Determination of Local Content" is changed to 38.10.4.
15	Vol-I Commercial, General conditions of contract	Clause No. 3 Page No.59 of 278		Modification	The sub-clause numbering of clause "GENERAL OBLIGATIONS OF CONTRACTOR" is modified to start as 3.1.
16	Vol-I Commercial, Terms of reference	Scope of EPC: Sub clause No. 4.14 a Page No.116 of 278		Modification	**The clause 4.14 a shall be read as:** EPC Contractor shall submit a list of Operation and Maintenance spares required for Two Year Normal Operation (indicating the price against each spare) and supply a list of such spares for 10 (ten) years to OIL and with necessary specifications with details enabling OIL to procure directly in future.
17	Vol-I Commercial,	Clause No.5 Page No.201 of 278	Preamble to SOR/P	Modification	The clause referred in Para 5 as 6.5(d) should be changed to 5.6(c).

18	Vol-I Commercial	Para No.vii Page No.223 of 278	Annexure-B Vendor selection criteria	Modification	**<u>The Para No. vii shall be read as:</u>** Vendor List for Package / Equipment / system is NOT provided elsewhere in the Bid package. For any Package / Equipment / system, the offered model for the same must meet the specification and proven track record (PTR) requirement, as explained above. Any vendor who meets the above mentioned PTR requirement **OR** is enlisted with EIL shall be considered for this project. However, current validity and range of approval as per EIL enlistment letter, work load, stability and solvency need to be verified by the CONTRACTOR before placement of order.
19	Vol-II, Technical		SLD & Load list	Addition	Legible SLD & Load list will be attached along with the addendum as **Attachment – 2 & 3**
20	Vol-II, Technical		Architectural drawings	Addition	Legible Architectural drawings of 1.Administration building, 2.Operator building, and 3.Security Barracks is attached as **Attachment – 5,6 & 7.**
21	Vol-II, Technical		Overall Plot Plan	Addition	Legible Overall plot plan is attached along with the addendum as **Attachment – 1**

Annexure-II

OIL's/ EPMC's response to bidder's queries to various sections of tender documents.

Sl. No	File Name / Page No.	Tender Description	Tender Clause	Bidder's Queries	Consultant/OIL's Response
1	Vol-I Commercial, Page No. 35 of 278	Information to bidders	Clause No. 34, Mobilisation advance payment	We presume that M/s. OIL will not charge interest on the GST amount collected along with the mobilisation advance. Kindly confirm.	Interest will be on advance paid by the company **(OIL)** without GST.
2	Vol-I Commercial, Page No. 204 of 278	ANNEXURE-IIA to SCC SCHEDULE OF RATES/PRICES Form SOR		Requested to provide the Schedule of rates in excel format.	**Separate addendum/ corrigendum will be published**
3	Vol-I Commercial, Page No. 204 of 278	ANNEXURE-IIA to SCC SCHEDULE OF RATES/PRICES Form SOR/P	Note No. 4	It states that, "The bidder shall quote both in words and figure for all items as well as the total value" In view of the above as there is no provision for quoting the price in words, We understand that bidder is free to insert column or modify the price schedule. Please confirm.	**Separate addendum/ corrigendum will be published**
4	Vol-II Technical, Page No. 43 of 2248	FGGS-BJN-PRO-DBM-1001	No. 12	Supply of all chemicals, consumables etc. required for commissioning and initial charge only in the scope of bidder. No requirement of supply after commissioning and initial charge. Please confirm	Confirmed as below. Supply of all chemicals for commissioning and initial charge up to the completion of PGTR or six months, from commissioning, whichever is later is in the bidder scope.

5	Vol-II Technical, Page No. 58 of 2248	FGGS-BJN-PRO-PFD-1002		Water Bath Heater along with 1 no. of the production separator (V-1201C), Test manifold, production manifold, associated piping & instrument shall be considered in Phase-2. Please confirm.	Confirmed except for the following. Test manifold and Production manifold-A with associated piping & instrument as indicated in the P&IDs shall be considered in Phase -1.
6	Vol-II Technical, Page No. 28 of 2248	Process Scope of Work	No.2	Bidder request to provide 90 days for endorse and verify the basic engineering/any deviation after award of project instead during submission of bid in order to claim variations due to any changes from basic engineering.	Clarified. Bidder is requested to refer clause no. 6 of page no 172 of 278 SCC. The bidders are advised to be guided as per tender conditions.
7	Vol-II Technical, Page No. 58 of 2248	FGGS-BJN-PRO-PFD-1002		Bidder understand that, the Scope of work for the Phase-2 is start from the Tie-in point (as shown in PFD_1002) and all the piping & instrument are shown are to be considered in phase-2 . Please confirm.	Confirmed.
8	Vol-II Technical, Page No. 58 of 2248 Page No. 35 of 278	FGGS-BJN-PRO-PFD-3001		Bidder Understand that the supply of ground water is from existing bore well. Please confirm.	Boring of deep and shallow tube wells shall be under EPC scope. Bore well shall be made in the plant area.
9	Vol-II Technical, Page No. 1250 of 2248	FGGS-BJN-PIP-LAY-5000	Overall Plot Plan	The Overall plot plan given in the tender is in Non-readable format. Kindly provide legible Plot plan.	Legible document will be provided along with **addendum / corrigendum**.
10	Vol-II Technical, Page No. 1550 to 1555 of 2248	FGGS-BJN-ELC-DIA-6000	SLD	Single Line Diagram, Generator interlock and control is in non-readable format. Kindly provide legible Single Line Diagram.	Legible Single Line Diagram shall be provided as **Attachment – 2**

11	General	Process		Kindly provide standard specification for following Equipment/Packages: 1. Positive displacement pumps 2. Instrument Air Compressor	Preparation of specifications for equipment which are part of packages are in the scope of EPC Contractor.
12	General	Process		Kindly provide type of instrument air compressor.	Instrument air compressor shall be oil flooded screw type.
13	Vol-II Technical, Page No. 287 of 2248	FGGS-BJN-PRO-PHL-1001 Operating Control & Safeguarding Philosophy	4.2 Electric Heater	Bidder understands that, Spare electric heater elements is to be installed in every electric heaters. Kindly Confirm.	Confirmed
14	Vol-II Technical, Page No. 26 of 2248	Process Scope of Work	2.0 Scope of Work	It is mentioned that, Hydraulic network analysis of Firefighting system using the software PIPENET. Can we use Sprink CALC software for the same purpose as an optional?	Software PIPENET shall be used.
15	Vol-II Technical, Page No. 808 of 2248	Piping Scope of Work	2.1	Bidder understand that flow line hook up points will be made available up to flow line corridor battery limit. Please confirm.	All Flow line will be terminated inside FGGS by **OIL**, near boundary wall / fencing as indicated in the Overall Plot Plan. Further routing of flow lines from FGGS boundary to Electric / Water bath heaters shall be in the scope of the EPC Contractor. This shall be routed underground for road

					crossing which can either be via pipe culverts or using casing pipe.
16	Vol-II Technical, Page No. 808 of 2248	Piping Scope of Work	2.1	Please confirm the no. of hot tapping with details of existing sizes for hook up.	Number of hot tapping required at EPS shall be decided by the successful bidder during detailed Engineering in consultation with OIL/EPMC It was clarified that the Contractor will get a maximum of 4 hours to take the tie–in with the existing EPS which will be in operation. Tie-in of the Flow lines do not require shut down. Out of the 46 tie-ins in (including both the phases), bidders can consider up to 7 tie-ins as hot tapping, as a worst case scenario for bidding purpose.
17	Vol-II Technical, Page No. 126 of 2248	FGGS-BJN-PRO-SCH-1002 Tie in list		Bidder understands that no Shutdown is required for tie in works. If yes, Kindly provide the duration of Shut down and confirm whether only unit shutdown or the complete shutdown is provided.	Shut down may be required. Duration of shut down and details like unit shut down or plant shutdown shall be decided by OIL/EPMC.
18	Vol-II Technical, Page No. 43 of 2248	FGGS-BJN-PRO-DBM-1001 Process Design Basis	11.4 Power	Bidder understands that, Only four No. of Gas engine driven generating set is to be (3 W + 1 S). Please confirm.	Confirmed.

19	Vol-II Technical, Page No. 42 of 2248	FGGS-BJN-PRO-DBM-1001 Process Design Basis	8.0 Design Basis	Bidder understands that, Free water is not to be considered in the simulation and Heater design. Please confirm.	Confirmed that free water is not considered in the simulation study during Basic Engineering. However, Moisture content of 1000lbs/mmcft is considered as a worst case scenario for heater design. During detailed engineering, successful Bidder shall consider free water for the simulation study (as a check case) and design which will constitute a part of the detail engineering document.
20	Vol I Commercial, Page No.114 of 278		4.13 i) General	Kindly confirm that the cost of 2 years operational spares shall not to be included in lump sum price. Please confirm.	**Separate addendum/ corrigendum will be published**
21	General			Kindly provide preliminary Ring main layout for Firewater.	Shall be prepared by EPC Contractor.
22	General			Please provide Firewater distribution P&IDs and PFDs.	Fire water distribution P&IDs and PFDs are part of detailed engineering and shall be prepared and provided by EPC Contractor.

23	Vol –I Commercial, Part-3 Section : II, Page No. 89 of 278		3. Execution methodology	Clause states that, "The contractor has to arrange for site office for their officials as well as OIL/PMC representative in construction site along with accommodation for their personnel." Kindly provide number of OIL/PMC representative will be available at construction site.	10 personnel from OIL and EPMC
24	Vol-I Commercial, Part-3 Section: III, Page No. 170 of 278		4.0 Supply of water, power & other utilities	Whether contractor can use free land within plot, area at no extra cost for Fabrication/hot work/site office. Kindly Confirm.	Free land within plot can be used without extra cost. Minimum fabrication at site is envisaged.
25	Vol II Technical, Page No. 2095 of 2248	FGGS-BJN-CIV-SOW-8000 Scope of Work Civil	2.2 Site preparation	Please provide approximate distance of the disposal of surplus / excavated/ rejected earth & debris outside OIL campus.	Disposal of surplus/excavated/rejected earth & debris outside OIL campus shall be within a radius of 4km from the site.
26	Vol II Technical, Page No. 2096 of 2248	FGGS-BJN-CIV-SOW-8000 Scope of Work Civil	2.3 Earth filling, Site grading, Levelling	Kindly provide the existing well plinth level of LOC TP (BGN#2).	The existing well plinth level is 100.00m as mentioned in the topographical survey report enclosed in the tender.
27	Vol II Technical, Page No. 2096 of 2248	FGGS-BJN-CIV-SOW-8000 Scope of Work Civil	2.5 Diversion of canal	Please provide material of construction of natural canal & length outside ring road within the plot.	**RCC canal walls to be provided for stability on both sides. Please refer overall plot plan for length.**

28	Vol II Technical, Page No. 2099 of 2248	FGGS-BJN-CIV-SOW-8000 Scope of Work Civil	3.0 Building & Sheds	Tender state that," The compressor house will be a containerized room. Separate shed is not Required. Kindly confirm compressor house is containerized room or the shed is required.	Compressor house will be containerized. It will be within the same roof structure of other containers. Please refer Architectural / structural / civil design basis clause 4.1.2.1
29	Vol II Technical, Page No. 2097 of 2248	FGGS-BJN-CIV-SOW-8000 Scope of Work Civil	2.7 Storm water reservoir	Please provide material of construction for Storm water reservoir.	Storm water reservoir shall be excavated with sloping sides for self-stability. In addition bottom and sloping sides shall be provided with a layer of 100 mm thick rubble soling. A layer of PCC shall be laid above that. Top layer of 100 mm thick RCC (with minimum reinforcement) shall also be provided. The design shall be leak proof. Capacity of storm water reservoir shall be minimum 7000cu.m
30	Vol II Technical, Page No. 2099 of 2248	FGGS-BJN-CIV-SOW-8000 Scope of Work Civil	3.0 Building & Sheds	Please provide buildings general arrangement drawings for 1) Substation building 2) Compressor house 3) Gate cabin 4)Watch tower 5) Generator room 6) Control room.7) Storage & maintenance building.	General arrangement drawing for buildings shall be prepared by the EPC contractor. Also refer point 28 above. Substation building, Compressor house, Gate cabin, Generator room, control room, storage and maintenance room shall be containerized units. The watch tower shall be RCC construction of approx height of 6.5 m with necessary RCC stair case (zig-zag pattern). The cabin on the watch

					tower should brick walled construction with a door and windows on all sides. There shall be balcony on all sides of the cabin).
31	Vol II Technical, Page No. 2186 of 2248	FGGS-BJN-CIV-SOW-8000 Scope of Work Civil	Architectural Drawing	Please provide below architectural drawing along with dimension. 1. Administration building 2. Operator's room accommodation.	Already provided. Please refer civil architectural drawings annexure 2.1 & 2.3
32	Vol II Technical, Page No. 2186 of 2248	FGGS-BJN-CIV-SOW-8000 Scope of Work Civil	Drawings	Please provide below drawing along with dimension. 1.Site Plan 2.Operator's room accommodation.	Already provided. Please refer civil annexure 3.1& 2.3
33	Vol II Technical, Page No. 2186 of 2248	FGGS-BJN-CIV-SOW-8000 Scope of Work Civil	Geo technical report	Conceptual layout for footpath, road & drain mention FGL 120.25 M. Please confirm finish ground level.	Geotechnical report is provided for understanding the type of soil, recommended type of foundation, water table etc. This is a preliminary report to enable the contractor to estimate the cost of foundation etc. FGL shall be 500mm above existing well plinth level of LOC TP (BGN#2).
34	General	Civil		Please provide proposed plant layout along with all dimension.	Already provided. Please refer piping overall plot plan. Doc. No.: FGGS-BJN-PIP-LAY-5000 R1

35	General	Civil		Please provide specification for Container type Building , shed etc.	Containerized units shall be as per standard available sizes in the Indian market. Shed etc. shall be designed based on relevant Indian standards mentioned in the civil design basis.Doc. No. : FGGS-BJN-CIV-DBM-8000 R0. Sample specification is provided in the **addendum/ corrigendum.**
36	General	Civil		Please clarify plot indicating fencing scope of work.	Please refer clause 3.4 of design basis Doc. No. : FGGS-BJN-CIV-DBM-8000 R0 & piping overall plot plan. . Doc. No.: FGGS-BJN-PIP-LAY-5000 R1
37	General	Civil		Kindly provide material of construction of boundary wall.	Boundary wall is existing. Not in contractor's scope of work. New main entrance gate, emergency exit gate and associated civil works is in the scope of the EPC contractor.
38	General	Civil		Kindly provide ground water table for structural design.	Please refer geotechnical report for ground water table. Refer page No. 2194 onwards. EPC Contractor shall conduct soil investigation, site survey etc. before final design.
39	General	Civil		Please provide minimum foundation depth below FGL for light weight foundation that is 5 T/ Sq. m.	Depth of foundation, type of foundation etc. to be decided by EPC contractor based on geotechnical investigation report. Refer page No. 2194 onwards.

40	General	Civil		Please provide standard drawing for following : 1.Paving 2. Main Gate 3.Culvert 4.Boundary wall 5.Ladder 6.stair case etc.	All detailed engineering drawings including standard drawings shall be in EPC contractor's scope of work.
41	VOLUME 1 commercial, Part-3 SECTION – III, Page No.170 of 278	SECTION - III SCC	1.0	Last part of Clause 1.0 states, "In the absence of any Specifications covering any material, design or work(s) the same shall be performed/ supplied/ executed in accordance with standard Engineering practice as per the instructions/directions of the Engineer-in-Charge, which will be binding on the CONTRACTOR." Bidder requests to add, "and for any change in scope of work or supply, the Owner will issue a Change Order."	Please refer change order clause No.10, Page No. 73 of 278
42	VOLUME 1 commercial, Part-3 SECTION – III, Page No.180 of 278	SECTION - III SCC	20.0	Part of Clause 20.0 states, "Any change/addition required to be made to meet the requirements of the statutory authorities shall be carried out by the Contractor free of charge." Bidder requests to delete "free of charge" and add, "and for any change in scope of work or supply, the Owner will issue a Change Order."	Tender conditions remain unchanged. The plant shall be designed and made as per guidelines of OISD, DGMS, PESO, PCB, Labour commissioner etc. Internal safety team of OIL will visit and guide the EPC from time to time during construction stage. Also, pre-commissioning audit will be done by OISD as per statutory guideline. All observations from OISD shall be complied, failing which the plant cannot be put into operation.

43	VOLUME 1 commercial, Part-3 SECTION – III, Page No.182 of 278	SECTION - III SCC	24.0	Part of Clause 24.0 states, "In case the CONTRACTOR fails to follow the instructions of Engineer-in-charge with respect to the above clauses, next payment due to him shall not be released unless and until CONTRACTOR complies with the instructions to, the full satisfaction of Engineer- in-charge." Bidder requests to delete "next payment due to him shall not be released unless and until CONTRACTOR complies with the instructions to, the full satisfaction of Engineer- in-charge." and rephrase, "payment for disputed portion of work shall be on hold till such dispute is resolved".	Tender conditions remain unchanged.
44	VOLUME 1 commercial, Part-3 SECTION – III, Page No.180 of 278	SECTION - III SCC	21.0	Part of Clause 21.0 states, “The Contractor shall carry out the various tests as enumerated in the technical specifications of this bid document and the technical documents that will be furnished to him during the performance of the work.” Bidder requests to rephrase above part as, “The Contractor shall carry out the various tests as enumerated in the technical specifications of this bid document” (any new requirements by the Owner during execution of works shall be considered as change in scope)	Tender conditions remain unchanged.
	VOLUME 1 commercial, Part-3 SECTION – III, Page No.180 of 278	SECTION - III SCC	21.0	Part of Clause 21.0 states, “The Contractor shall carry out all instructions given during inspection and shall ensure that the work is being carried out according to the technical specifications of this bid document, the technical documents and the relevant codes of practice will be furnished to him during the performance of the work.”	

45				Bidder requests to rephrase above part as, "The Contractor shall carry out all instructions given during inspection and shall ensure that the work is being carried out according to the technical specifications, technical documents and codes of practice provided along with this bid document." (any new requirements by the Owner during execution of works shall be considered as change in scope)	Tender conditions remain unchanged.
46	VOLUME 1 commercial, Part-3 SECTION – III, Page No.172 of 278	SECTION - III SCC	5.0	Part of Clause 5.0 states, "The extension of time shall be the sole remedy of the Contractor for any cause or event of delay and the Contractor shall not be entitled in addition to or in lieu of such extension, to claim any damages or compensation for extended stay or otherwise whether under the law governing contracts or quasi-contracts or any other relationship, and the Contractor hereby waives and disclaims any and all contrary rights." Bidder requests to rephrase this part as, "The extension of time shall be the remedy of the Contractor for any cause or event of delay."	Tender conditions remain unchanged.
47	VOLUME-1 Commercial, Part-3 SECTION-I GCC, Page No.75 of 278	SECTION-I GCC	13.1 - 4	Clause 13.1-4 states, "Parties agree that there will be no objection if the Arbitrator appointed holds equity shares of OIL and/or is a retired officer of OIL/any PSU. However, neither party shall appoint its serving employees as arbitrator." Bidder requests to delete this considering provisions in Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof.	Tender conditions remain unchanged.

48	VOLUME-1 Part-3 SECTION-I GCC	SECTION-I GCC	13.1 - 4	Bidder requests to remove provision of Sole Arbitrator since this is not in accordance with provisions in Arbitration and Conciliation Act, 1996 and any statutory modifications or re-enactment thereof.	Tender conditions remain unchanged.
49	VOLUME 1 Part-3 SECTION - III	SECTION - III SCC	44.0	Bidder requests to rephrase last part of Clause 44.0 as, "No extra payment shall be made on this account of works related with Underground and Overhead Structures, details of which are provided by the Owner at the time of signing of the Contract. Any changes in works due to Underground and Overhead Structures not detailed by the Owner at the time of signing of the Contract shall be considered as change in scope of the Contractor."	Tender conditions remain unchanged.
50	VOLUME 1 Part-3 SECTION - II	SECTION - II Terms of Reference & Technical Specifications	8.0	Clause 8 provides various milestones. Bidder requests OIL to provide significance of these milestones.	Clarified that it is for project progress review.
51	VOLUME 1 Part-3 SECTION - III	SECTION - III SCC	41.0	Clause 41.0 states, "The Final Report of Completion of Work shall be issued by the Company against the written application of the Contractor after completion of successful PGTR." Bidder requests to add, "If PGTR could not be performed as per requirements, for reasons, not attributable to the Contractor, then same shall be extended till suitable conditions for PGTR are available, without any time and cost implications to the Contractor."	Bidders understanding are correct. However, decision will be taken mutually by OIL and the contractor in the event of occurrence of such cases.

52	VOLUME-1 Part-3 SECTION-I GCC	SECTION-I GCC	18.0	Bidder requests for reduction of PBG to 5 % of Total Contract Price, from beginning of Defect Liability Period.	Tender conditions remain unchanged.
53	VOLUME-1		11.0 c)	The bidder request cap on reduction in scope of work for phase I limited to 5 percent of the contract price for phase I.	Tender conditions remain unchanged.
54	Vol 1, Part 1	Power of Attorney		Bidder understand, Person holding 'General Authority Letter' provided to him as per Board resolution by the Board of Directors of the company, would be treated as equivalent to Power of Attorney.	There is no change in the tender conditions. Issue clarified during prebid meeting.
55	Vol 1, Part 1	Unconditional discounts/rebates, if any, given in the bid will be considered for evaluation.	13.1	It's in contradiction of Cl 13.2. kindly Clarify	Clarified that only unconditional discounts shall be considered for evaluation.
56	Vol 1, Part 1	MOBILISATION ADVANCE PAYMENT:	34	Bidder would like to propose: 10% interest free Mobilisation Advance (of the contract Price) should be issued against BG in single go to maintain the Liquidity of the Project.	Tender conditions remain unchanged.
57	Vol 1, Part 1	RECOVERY OF MOBILISATION ADVANCE:	34.5	Bidder would like to propose: There should be 10% deduction from the R.A. Bills to recover interest free Advance.	Tender conditions remain unchanged.

58	Vol 1, Part 1	COMPLIANCE OF THE COMPETITION ACT, 2002:	35.4	Kindly provide the details/ summary of the Section-3 of the Act.	Available in Govt. of India portal.
59	Vol.1 Part-II	Financials c) Working Capital Requirement	Cl.2	Bidder understand, surplus Net worth (above the required Net worth) can be considered as Working capital in addition to actual working capital to work out the Working Capital requirement.	Tender conditions remain unchanged.
60	Vol.1 Part-II, Page No. 46	Project specific account	Cl.2	Given clause is not feasible and shall create the Negative cash flow resulting in to slow progress of the project. Bidder would like to discuss it in details to optimize it in favour of Project execution. Bidder would like to discuss it in detail.	**Separate addendum/ corrigendum will be published**
61	Vol.1 Part-II, Page No. 46	Project specific account	Cl.2	Bidder understands, this 10% deposit in Account is in lieu of 10% BG for the Security deposit.	**Separate addendum/ corrigendum will be published**
62	Vol.1 Part-III	TERMINATION	Cl.12	Bidder would suggest to add following clause: In case of Termination/ suspension of the work, Contractor shall be paid for the Cost incurred along with in transit and committed cost till date of termination.	Clarified. Tender conditions remain unchanged.
63	Vol.1 Part-III Sec-2, Page No.88	Variation claims due to changes from Basic engineering shall not be accepted after	Cl.2	Any change in Basic Engineering/ Input shall have Time and Cost impact. Basic Engineering shall be go by document for the Bidder	Clarified. Bidder is requested to refer clause no.6 of page no 172 of 278 SCC.

		award of Contract.			
64		Project Duration		Bidder understand given Project Duration of 27 Month is only for Phase-I of the project as Phase-II is optional	Project Duration of 27 months is for both Phase-1 and Phase – 2 of the project. **Intimation for Phase -2 will be issued by OIL if required by January 2021 as mentioned in the tender document.**
65		Schedule of Payment		Bidder would suggest following Payment Terms: Engineering : 10% (as given) Procurement: 55% (instead of given 45%) Construction: 30% (instead of given 40%) Pre Commissioning & Commissioning: 2.5% PGTR: 2.5%	Tender conditions remain unchanged.
66		Schedule of Payment		Bidder understand, all the Payments are on Pro-Rata basis against each activity	All payments shall be based on approved billing schedule as per the schedule of payment SOR/P.
67	Vol.II , Technical	General, Civil & structural		Provide legible Overall plot plan	Hard copy of Legible Plot plan already issued to bidders present during prebid meeting. Soft copy of the same will be issued along with **corrigendum/addendum.**
68	Vol.II, Technical	Watch Tower, Civil & Structural			Please refer civil scope of work clause 3.0(buildings and sheds) For numbers please refer overall plot plan. Doc. No.: FGGS-BJN-PIP-LAY-5000 R1.

				Provide Watch Tower Size and number of watch tower requited.	Watch towers – 7 Nos. The watch tower shall be RCC construction of approx height of 6.5 m with necessary RCC stair case (zig-zag pattern). The cabin on the watch tower should brick walled construction with a door and windows on all sides. There shall be balcony on all sides of the cabin).
69	Vol.II, Technical, Page No.163		Table 2	Provide Cover Shed Size and height for control room building / substation.	For approximate size of the sheds refer overall plot plan. Doc. No.: FGGS-BJN-PIP-LAY-5000 R1. Final size to be decided by the EPC contractor.
70	Vol.II, Technical	General, Civil & structural		Provide size, height & detail for all containerized building.	Please refer overall plot plan Doc. No.: FGGS-BJN-PIP-LAY-5000 R1 for approximate size. Final design to be done by the EPC contractor.
71	Vol.II, Technical, Pg No. 169		Clause 2.4.10 Parapet	Mention Type of parapet (Brick or RCC) for 900 mm high parapet.	Parapet shall be RCC.
72	Vol.II , Technical, Pg No. 171		Clause 3.1	Provide standard Gate Detail drawing.	Gate detail drawing to be prepared by contractor as per clause 3.1 of civil design basis. Doc. No.: FGGS-BJN-CIV-DBM-8000 R0

73	Vol.II, Technical	General, Civil & structural		Provide "Existing well plinth at location TP (BGN#2)".	The existing well plinth level at LOC TP (BGN#2) is 100.000m.
74	Vol.II, Technical	Architectural Drawings pg. 26 to 29		Provide legible Architectural drawings.	Will be provided along with addendum.
75	Vol.II , Technical, Pg No. 33	Grid map 5X5 M of EGL		Ground level varies in the range of 98.530 to 100.412. so, 1.882 m variation is there. So, provide FGL to finalized cutting and filling quantity.	FGL shall be 500mm above the existing well plinth level of Loc TP (BGN#2) .Please refer civil scope of work clause 2.3
76	Vol.II, Technical	Geotechnical Report		Please give soil type, SBC and pile capacity detail for Operator accommodation building and Administration Building.	Please refer geotechnical report for SBC & pile capacity. This is a preliminary report. EPC Contractor shall conduct geotechnical survey before final design.
77	Vol.II , Technical	FGGS-BJN-PRO-PFD-3501		Scope clarity is required for captive power plant package	The CPP package is shown in the PFD with Fuel Gas supply from the plant at one point at the battery limit of the CPP package (by the EPC contractor).
78	Vol.II, Technical	Water bath heater - E-1001 A01-A08 (6+2FUTURE) Equipment list		Out of 8 tags (E-1001 A01 to A08) Which 2 tags to be considered for future	Tags for future WBH are (E-1001 A07 and E-1001 A08).

79	Vol.II, Technical	Multi-phase flow meter skid (M-1202) Equipment list		Only Process data sheet is available, however specifications and mechanical data sheets are not available with the tender documents. Scope clarity is required regarding the same.	Specification for MPFM with the document numbers FGGS-BJN-INT-DST-7020 and FGGS-BJN-INT-SPC-7009 R0 are available (Volume II , Technical part V)
80	Vol.II, Technical	HP Separator (V-1203) Equipment list		Only Process data sheet is available, however specifications and mechanical data sheets are not available with the tender documents. Scope clarity is required regarding the same.	It is provided in page 764 of 2248 of technical documents. Bidders are requested to go through the same.
81	Vol.II, Technical	Fuel gas system (F-2301 A/B) Equipment list		Only Process data sheet is available, however specifications and mechanical data sheets are not available with the tender documents. Scope clarity is required regarding the same.	Bidders are requested to develop specifications on the basis of P &ID (FGGS-BJN-PRO-PID-2301 & FGGS-BJN-PRO-PID-2302) & Process data sheet for filters (FGGS-BJN-PRO-DST-2301)
82	Vol.II, Technical	Flare system (LP Flare KOD Pump and HP Flare KOD pump) Equipment list		The quantity mentioned for LP Flare KOD Pump and HP Flare KOD pump in the equipment list are 2 nos. (i.e. A/B), however in the P&ID only 1 quantity is shown. Client shall confirm the same.	LP Flare KOD Pump and HP Flare KOD pump in the equipment list are 2 no. as 1 pump is installed and working and the other is a store room spare for each duty. The nomenclature of A/B in the equipment list stands corrected.
83	Vol.II, Technical	Flare system (water seal drum V-2403 and V-2404) Equipment list		Specifications and data sheets for water seal drums (V-2403 and V-2404) are not available with the tender document.	It is a part of flare package and hence design shall be by flare package vendor.

84	Vol.II, Technical	Piping		There are 46 numbers of tie-ins varying from 4" to 30". Please furnish us the type of tie-ins such as flanged/welded/hot tapping (if any)	Ref. para 2.1 (page No.808 , Vol.2) of " Piping Scope of Work"
85	Vol.II, Technical	General		We understand that the entire area will be considered as green field and permit system will be operated as per green field.	Yes, the area identified for the FGGS is considered as green field. It is to be noted that adjacent to this area, there is an existing Early Production Station (EPS) with its flare which will be in operation. Adequate measures have to be taken during the whole construction period. Existing flare will be in operation till the new flare is in operation and existing systems are tied –in. Permit system is applicable.
86	Vol.I, Commercial, Page- 170 of 278		Commercial bid item no 4,	Client will provide temporary land for office, small store and small fabrication yard inside plot plan with internet connectivity on chargeable basis, whereas major fabrication if required shall be done outside of gate. please clarify	Tender conditions remain unchanged. Clarified. OIL will only provide land for setting up the project. Other facilities like store/ fabrication yard/internet connectivity is the EPC scope.
87	Vol.II, Technical Page-1550/ 2248, 1554/2248	Electrical		Equipment Rating Font Not Visible Generator ratings and other details are not visible in the received PDF document. Request to kindly provide drawings with legible text.	Legible Single Line Diagram will be provided along with addendum. Soft copy of the same will be issued along with corrigendum/addendum.

87	Vol.II, Technical Page-1270/ 2248	Electrical		Breaker Requirement In this clause, for all incoming & outgoing feeders of PMCC/MCC, MCCB is suggested as breaker. However, in SLD, both MCCB & ACB is considered based on the feeder rating. Bidder understand that, for all LV switchboard (MCC/PMCC), feeder rating equal to and above 630A shall be ACB controlled by microprocessor based LSIG trip devices. For feeder rating <630A, feeder shall be controlled by MCCB/MPCB/Fuse/Contactor depending on the feeder type. Request to kindly confirm bidder's understanding.	Bidder understanding is correct.
89	Vol.II, Technical Page-1270 of 2248	Electrical		UPS Backup Time Bidder understand that, UPS power shall be required for safe shutdown of the plant. For catering emergency load for longer time after plant shutdown DG Set will be in service. Hence, 12Hr backup time for UPS might not be required. The same can be reduced to lower duration (approx. 60min). Kindly clarify and provide back-up time required for UPS.	Noted & Confirmed. The UPS shall be designed for 1Hr backup time.
90	Vol.II, Technical, Page-1270 of 2248	Electrical		Black Start / Emergency Power DG Bidder understand that mentioned DG shall be capable of taking Gas Generator starting loads along during plant start up. Also, DG shall also be capable of supplying power to critical shutdown loads of the plant. Request to kindly confirm bidder's understanding.	Bidder understanding is correct.

91	Vol.II, Technical Page-1413 of 2248	Electrical		Electrical System Source As per this clause of tender, 415V +/-10%, 3 phase, 4 wire, neutral solidly earthed system is mentioned. However, according to SLD system is 415V +/-5%, 3 phase, 3 wire, neutral resistively earthed system. Kindly confirm the correct system parameters.	The electrical system source shall be 415V +/-5%, 3 phase, 3 wire, neutral resistively earthed system.
92	Vol.II, Technical Page-1422/ 2248	Electrical		Cable Construction Bidder understands that only for cables directly buried in ground require steel wire armoring. For cable laying inside substation building (from & to both side in substation) cable armoring is not required. Request to kindly confirm bidder's understanding.	Cable armouring is required for both cables underground and cables inside the substation.
93	Vol.II, Technical Page-1423/ 2248	Electrical		Cable Sizing Bidder understands that as per provided Key SLD and specification, voltage variation at 415V system is +/-5%. Hence, bidder propose to size the cable considering same voltage variation. Request to kindly confirm bidder's understanding.	Confirmed.
94	Vol.II, Technical Page-1431/ 2248 & 1433/2248			UPS Battery Backup time & Battery Type According to Cl. No. 5.1 UPS Battery shall be Pocket plate Ni-Cd type with capability of abnormal operation for two continuous hours in a day for 60°C. However, as per Cl. 5.3 Battery duty cycle is provided as 60 min (1 Hr) and battery type is mentioned as Ni-Cd or SMF VRLA type lead acid battery. Bidder understand that UPS battery shall be sized for 1 Hr time duration and bidder has option to	Bidder understanding is correct.

				select battery type from Ni-Cd & Lead Acid. Request to kindly confirm bidder's understanding.	
95	Vol.II, Technical Page- 1271/2248, 1512/2248 & 1518/2248	Electrical		Generator rated Power Factor Bidder observed that in Cl. No 8.3, generator power factor is considered as 0.9. However, as per datasheets, generator rated p.f. is mentioned as 0.8. Request to kindly confirm the final rated power factor of the generators.	The final generator rated power factor will be 0.9
96	Vol.II, Technical, Page- 1523/2248 & 1531/2248	Electrical		System Parameters As per Cable datasheet, system is solidly grounded with 40kA-1sec rating. However, Motor datasheet, system is solidly grounded with 50kA-1sec rating. Request to kindly confirm the final fault current rating for 415V system.	The final fault current rating shall be 50kA for 1sec.
97	Vol.II, Technical, Page- 1531/2248	Electrical		Motor Starting Current It is mentioned that for motor rated 37kW and below, starting current shall be 7 times FLC. Bidder want to know that 7 times is inclusive of tolerance or not. Request to kindly confirm the same.	Confirmed. The motor rated 37kW and below, starting current shall be 7 times FLC which includes tolerance.
98	Vol.II, Technical, Page- 1536/2248	Electrical		System Fault Rating For equipment continuous, symmetrical breaking, making current capacity it is mentioned to follow SLD. However, bidder proposes to select the equipment rating as per actual loading / system study data. Electrical Hence, bidder request Electrical confirmation on equipment continuous and short circuit parameters to be considered as	Noted and confirmed. The equipment continuous and short circuit parameters to be considered as per actual system study data. However, minimum short circuit defined in SLD and datasheet shall be complied.

				per actual system study data.	
99	Vol.II, Technical, Page-1520/2248, 1538/2248	Electrical		CT Details Bidder observed that many locations it is mentioned CT & protection details as per SLD. However, bidder is unable to find Relay & Metering SLD (Protection SLD) in the tender document. Request to Kindly provide same for bidder's reference.	All design engineering has been done as per basic engineering details and metering & relay will come under detailed engineering. However, all protective devices, including relays and CT shall be adequately rated to withstand the prospective short circuit current.
100	Vol.II, Technical, Page-1544/2248	Electrical		UPS SLD Bidder observed that many locations it is mentioned UPS details as per SLD. However, bidder is unable to find UPS SLD in the tender document. Request to Kindly provide preliminary AC & DC UPS SLD.	The AC & DC UPS SLD shall be prepared in detailed engineering and the basic engineering prepared with Key SLD only. For specific details bidder can follow the specifications and datasheet as well as UPS vendor calculations to finalize the values.
101	Vol.II, Technical, Page-1551/2248	Electrical		Sandwich Bus duct Bidder has observed Sandwich bus duct shown in SLD for PCC-6001A, 6002B & 6003C incomers. However, bidder could not find any specification / datasheet for the same in the tender documents. Request to kindly confirm requirement / scope of bus duct.	There is no separate datasheet/ specification has been prepared and for basic details refer clause 11.10 in electrical design basis. This shall be as per international codes and standards.
102	Vol.II, Technical, Page-1552/2248	Electrical		Motor Starter Bidder observed that for all lower rated motors and power feeder MCCB switching device has been shown in SLD. Bidder would like to propose MPCB for low rated motors instead of MCCB. Request to kindly provide conformation on same.	Confirmed.

103	Vol.II, Technical, Page-1269/2248	Electrical		Electrical Design Basis Bidder understands that generator neutral shall be NER grounded with current rating of 750mA. Request to kindly confirm bidder's understanding.	Bidder understanding is correct. The generator neutral shall be NER grounded with current rating of 750mA.
104	Vol.II, Technical	General, Electrical		Load List Bidder couldn't find any load list (showing Load factor, p.f., efficiency, working / standby) for the loads in the tender. Request to kindly share preliminary load list (if any) prepared during FEED for bidder's reference.	The preliminary load list is uploaded as **Attachment – 3.**
105	Vol.II, Technical, Page-1250/2248	Electrical		Text Not legible Drawing Text are not visible in the received PDF document. Request to kindly provide drawings with legible text.	Hard copy of Legible Drawings already issued to bidders present during prebid meeting. Soft copy of the same will be issued along with corrigendum / addendum.
106	Vol.II, Technical, Page No. 39 of 2248	DOC.NO.FGGS-BJN-PRO-DBM-1001 - Process Design Basis	Overdesign margin	With reference to the statements in Section 5.6 and Section 18, Bidder requests company to clarify, which among these two statements to be considered in design. Bidder requests Company to confirm whether Overdesign margin is to be considered or not.	Tender conditions remain unchanged.

107	VOLUME – II TENDER DOCUMENTS (TECHNICAL) Page No. 179 of 2248			Documents/drawings from sl.no 31 to Sl.no 68 (HP Flare KOD pump only page 3 of 3 is provided in Technical Tender_FINAL-2.pdf.) are missing in the Technical Tender documents. Bidder requests Company to provide the missing documents identified above.	The datasheet for HP flare KOD pump is provided as **Attachment – 4.**
108	Vol.II, Technical Page No.90 of 278	Scope for Phase 2		Bidder understands that only provisions for future tie-in's for the referred facilities identified for Phase 2, shall be part of Phase 1 scope. Company to confirm.	Confirmed.
109	Vol.II, Technical, Page No.668 of 2248		Doc.No. FGGS-BJN-MEQ-SPC-4017	With reference to application, Seal Vendors may propose single mechanical Seal suitable to the application. Company is requested to confirm whether double seal is requireed for all cases.	Type of mechanical seal shall be selected as per the vendor recommendation based on the application fluid.
110	Vol.II, Technical, Page No. 1448 of 2248		Doc. No. FGGS-BJN-ELC-SPC-6013	Bidder understands that the cathodic protection to be provided at tank bottoms; requirement based on soil investigation report. Company to confirm.	Cathodic protection (impressed current) is required only for the bottom plate of tanks.
111	Vol.II, Technical Page No. 1250 of 2248	Piping		Plot plan is not visible , please resubmit Plot plan	Hard copy of Legible Plot plan already issued to bidders present during prebid meeting. Soft copy of the same will be issued as **Attachment – 1.**

112	Vol.II, Technical Page No. 1595 of 2248	Design Basis – Instrumentation, SCADA Interface		Bidder understands that only provision to be considered in DCS System for SCADA interface. There is no scope of work at SCADA System in Dulaijan. Company to clarify/confirm	The design basis submitted to OIL clearly specifies in section 13.0 of the control philosophy that - "DCS/Main PLC shall have the provision for connectivity to upcoming Central SCADA system at BAGHJAN". There is nothing mentioned about the SCADA System at Duliajan in the design basis.
113	Vol.II, Technical Page No. 1596 of 2248	Design Basis – Instrumentation, 'Telecommunication Scope		Bidder understands that Telecom scope is limited to CCTV and Telephones. Radio Communication, RTU not applicable in Scope of work. Company to clarify/confirm	As per the Design basis, Telecom scope is limited to CCTV and Telephone system. Intrinsically safe wireless walkie-talkie sets with license will be provided by the EPC contractor for interplant communication. Intrinsically safe (DGMS approved) telephones will be provided for installation in hazardous area within the FGGS complex.
114	Vol.II, Technical, Page No. 133 of 180		7.0	As per Gas genset manufacturer / packagers standard, for power plant application, Centifugal pumps for water circulation are normally designed for safe area application. API pumps are not normally used for power plant pump application. Kindly accept non API pumps.	Agreeable only for power plant application and not for pumps handling hydrocarbon.
115	Vol.II, Technical, Page No. 7 of 180		7.2	Please note that Gas Genset and related auxiliaries should be located in safe area and all the equipment shall be designed based on safe area classification only. OIL has already procured many gas gensets for such type of applications designed	The generator and its auxiliaries should be located in safe area only and other electrical equipment shall be designed based on safe area classification layout drawing and

				for safe area only.	specification.
116	Vol.II, Technical, Page No. 1227 of 2248		9.8.27	Power reserve monitoring is not applicable for gas engines. Kindly delete the clause.	Noted and clause deleted.
117	Vol.II, Technical, Page No. 19 of 180			We request OIL to accept Alternator temp rise class F as standard configuration. This is applicable for all major genset suppliers. Kindly accept insulation class H and temp rise class F as per GG manufacturer's recommendation.	Insulation class shall be Class H and temperature rise shall be limited to Class B.
118	Vol.II, Technical, Page No. 27 of 180			Gas Genset control system operates on 24 V DC system. We understand 110 V DC system is not applicable for Gas Genset package. Hope our understanding is correct.	Bidder's understanding is correct.
119	Vol.II, Technical, Page No. 51 of 180		6.1 (a)	OK, however the Electrical Panel shall be located in a separate container / Enclosure. This extra container / enclosure would be required to synchronise the genset on same busbar and also from Genset easy maintenance point of view. Considering the same, OIL to accept and provide confirmation.	Noted and confirmed. The generator auxiliary panels can be located in separate containers within the plot plan area limited for CPP.

120	Vol.II, Technical, Page No. 51 of 180		6.1 (a)	We understand that The electrical efficiency of the Gas Engine Generator should not be less than 40 % at site rated condition without any tolerance. Hope our understanding is correct.	Bidder's understanding is correct.
121	Vol.II, Technical, Page No. 53 of 180		6.7 (e)	We understand Heat resistant aluminium paint to be applied on Gas Genset stack. OIL to confirm.	Bidder's understanding is correct. The nominal thickness of the paint coating shall be 0.18 mm (Minimum)
122	Vol.II, Technical, Page No. Page No. 1319 of 2248		10.3	The panels are normally manufactured confirming IP 44 protection to facilitate better heat dissipation. The generator control panel shall be located inside enclosures hence we understand IP 55 protection is not adequate in this situation. We request to accept IP 44 protection for control panel. OIL to confirm.	The generator control panel shall be located inside a container can be IP 44 is acceptable.
123	Vol.II, Technical, Page No. Page No. 1319 of 2248		10.3	The engine Jacket water circuit has only one electric heater connected to preheat the Jacket water. Radiator immersion heater relay is not applicable for gas gensets. OIL to confirm.	**Noted and updated.**
124	Vol.II, Technical, Page No. Page No. 1320 of 2248	1 Hand voltage adjustment trimmer.	10.3	This is not applicable for gas gensets. OIL to confirm.	**Noted and updated.**

125	Vol.II, Technical, Page No. Page No.1320 of 2248	1 Automatic protection oil/water shutdown unit with indicating lamps (2), Alarms and Trip Alarms.	10.3	This is not applicable for gas gensets. OIL to confirm.	**Noted and updated.**
126	Vol.II, Technical, Page No. 1327 of 2248		13	Standard tool set for routine maintenance shall be supplied along with the Genset as per OEM's standard. At the time of commissioning, tools required shall be carried by commissioning engineer along with him on returnable basis. OIL to confirm.	**Confirmed.**
127	Vol.II, Technical, Page No. Page No. 1329 of 2248		19	The warranty period shall be 1 year from date of commissioning and site acceptance test or 24 month from date of shipment whichever is earlier.	**Bidder to adhere to specification**
128	Vol.II, Technical, Page No. 1512 of 2248		6	Generator fault rating shall be 3 times nominal current of Genset. However the switchgear fault level shall be selected with 100 kA. OIL to confirm.	The fault rating shall be 80kA for 1 sec.

129	Vol.II, Technical, Page No. 1512 of 2248		28	Exhaust manifold may be dry or water cooled as per OEM design. OIL to confirm.	**Noted and updated.**
130	Vol.II, Technical, Page No. 1512 of 2248		37	The Lube oil filter are simplex type and there are no transfer valve as per OEM design. OIL to confirm.	**Noted and updated.**
131	Vol.II, Technical, Page No. 1513 of 2248		46	Engine Battery shall be heavy duty Lead Acid type as per OEM's recommendation. OIL to confirm.	As per tender requirement.
132	Vol.II, Technical, Page No. 1513 of 2248		54	Gas engine does not have inbuilt vibration switch as per OEM standard. However in case OIL requires, separate vibration switch can be attached externally on the base frame. OIL to accept the same.	Confirmed.
133	Vol.II, Technical, Page No. 1513 of 2248		60	Engine has inbuilt exhaust temperature sensor. There is no separate exhaust temperature switch	**Noted and updated.**
134	Vol.II, Technical, Page No. 1513 of 2248		67	As per SPECIFICATION FOR NATURAL GAS GENERATOR SETS, clause 5.1.1, Power: 415 volts ± 5%. Also as per clause 9.3, The generator shall be capable of operation over a range of ± 5% of the rated voltage. OIL to clarify which instruction to	The generator shall be capable of operation over a range of ± 5% of the rated voltage.

				follow.	
135	Vol.II, Technical, Page No. 1513 of 2248		80	OIL to note that terminal box is a part of alternator enclosure and no separate IP rating is mentioned by OEM for terminal box.	**Noted and updated.**
136	Vol.II, Technical, Page No. 1513 of 2248		81	The resistance and MOC of RTD shall be as per OEM standard only. OIL to accept.	Bidder to adhere to specification
137	Vol.II, Technical, Page No. 1513 of 2248		82	The resistance and MOC of RTD shall be as per OEM standard only. OIL to accept.	Bidder to adhere to specification
138	Vol.II, Technical, Page No. 1514 of 2248			The Generators are tested as per IEC standards only. Impulse or Power test are not applicable for routine test. OIL to accept.	All routine test as per IEC standard shall be conducted. For Type test latest type test of similar machine shall be submitted for Owners approval

139	Vol.II, Technical, Page No. 1514 of 2248			The excitation system shall be as per OEM standard only. PMG is not required. OIL to confirm.	Noted and updated.
140	Vol.II, Technical, Page No. 1514 of 2248			Shaft voltage is not applicable for this rating of genset.	Noted and updated.
141	Vol.II, Technical, Page No. 1515 of 2248			4-5 seconds time is impossible to acheive for gas engines of any renowned manufacturer. During normal starting sequence, when start command is given, the auxiliary pumps, heaters, prelube pumps etc. are started first and then genset is started. The time for attaining full speed shall be approx.. 3-4 min from starting command. OIL to make the desired changes in this clause.	The time for attaining full speed shall be approximately 3-4 min from starting command is acceptable.
142	Vol.II, Technical	Electrical Design basis FGGS-BJN-ELC-DBM-6000,REV 0, Page 13 of 44, Section 8.4		Bidder shall consider the power supply to the fire and gas detection system from 240V AC UPS power supply, further 24 V DC shall be derived by internally by the fire & gas detection system vendor. Bidder is not required to consider any separate 24V DC system. Company is requested to confirm the Bidders understanding.	Bidder's understanding is correct.

143	Vol.II , Technical	Electrical Design basis FGGS-BJN-ELC-DBM-6000,REV 0, Page 18 of 44, , Section 9.8.5		Bidder suggests that Capacitor Bank is not required for the FGSS plant, Since the FGSS is having only Capitive power plant and the plant is not connected with any EB network grid, moreover the plant power generator site rating is 1500 kW, 415V AC, 50 Hz, 3 Phase, 3 Wire at 0.9 PF, and majority of the plant loads are Linear load, so by incorporating the capacitor bank and improving the power factor to 0.95 is no way going to help the system including harmonics limitation. Company is requested to confirm the Bidders understanding.	Bidder's understanding is correct.
144	Vol.II , Technical	Electrical Design basis FGGS-BJN-ELC-DBM-6000,REV 0, Page 15 of 44, , Section 9.1		Load analysis and Load estimation is not available in the ITT document, Bidder requested company to provide the load analysis report, since it is part of basic design.	The preliminary electrical load list with gen set sizing will be shared.
145	Deleted				

146	Vol.II, Technical	Electrical Design basis FGGS-BJN-ELC-DBM-6000,REV 0, Page 19 of 44, Section 9.8.21		Bidder understands the System has common battery bank. Please confirm it	Bidder understanding is not correct. The 240V AC power supply system shall have separate battery bank.
147	Vol.II, Technical	Electrical Design basis FGGS-BJN-ELC-DBM-6000,REV 0, Page 19 of 44, Section 9.8.22		Bidder understands the System has common battery bank. Please confirm it	Bidder understanding is not correct. The 110V DC power supply system shall have separate battery bank.
148	Vol.II, Technical	FGGS-BJN-ELC-DBM-6000,REV 0, Page 19 of 44, Section 9.8.24		As per CEAR 2010m the remote starting facility for the motors are limited within 30V and more over LCS located in hazardous area are suitable for Ex'd', so ISB is not required.	Bidder to adhere to specification
149	Vol.II, Technical	Process Design Basis, Sec 11.4 DOC.NO.FGGS-BJN-PRO-DBM-1001		Configuration shall be 4 x 33% and not 4 x 100%. Presume it should be a typo error. Please confirm it	Four gas gen sets (3W+1S) are envisaged for the project. During outage of one of GG, the other all three GG are capable of feeding the full load. Thus there will be no interruption in power. The operating philosophy will be 3W+1S, the three units will run in

					parallel to cater the full load by load sharing philosophy.
150	Vol.II, Technical	Electrical Design basis FGGS-BJN-ELC-DBM-6000,REV 0, Page 19 of 44, , Section 9.8.24		Configuration shall be 4 x 33% and not 4 x 100%. Presume it should be a typo error. Further Bidder observed the Maximum generation capacity as 1500 kW x 3 W = 4500 kW, where as we observed from the Process data and Electrical heater data Sheet 10 nos of Electrical heater each capity of 491 kW on contionus operation, it means Electrical heater load itself becomes 4910 kW, then how the suggested Generation capacity suits for the FGSS operation which consists other process operation loads. Please provide the Load analysis report as already raised in the query 6.3	The preliminary electrical load list is attached herewith **Attachment – 3**.
151	Vol.II, Technical	Process Design Basis, Sec 11.4 DOC.NO.FGGS-BJN-PRO-DBM-1001		We presume that 100% running and 100% standy means 3 running and 1 standy. Standby gen capacity shall be equivalent to one of the running generator capacity. Please confirm the bidders understanding.	Bidder's understanding is correct.

152	Vol.II, Technical	SUBJECT - GEO TECHNICAL INVESTIGATIONS		Bidder understands that soil investigation report attached with tender document is for bidding purpose and fresh soil investigation will be carried out during detail engineering and foundation design will be performed according to new soil report. Kindly confirm.	Bidder's understanding is correct.
153	Vol.II, Technical			Bidder request to provide proposed FGL and Average NGL of plant to estimate volume of grading work.	As per tender.
154	Vol.I, Commercial	3. EXECUTION METHODOLOGY -PAGE 89		COULD YOU EXPLAIN THE PHILOSOPY ? HOW CAN WE PROVIDE ADDITIONAL DUCT FOR PROPOSED ONE ?	Tender conditions remain unchanged.
155	Vol.I, Commercial		CLA - 4.1.47, PAGE 101	HOW MUCH AREA TO BE COVERED WITH GRANITE.	To be finalized during detailed engineering to give an aesthetic look to the front wall near the entrance gate.
156	Vol.I, Commercial		CLA - 4.1.51, PAGE 101	Please provide the spec & dimension of this model	Tender conditions remain unchanged.

157	Vol.I, Commercial		CLA - 4.1.52, PAGE 101	ITS PURELY DEPNEDS UPON THE MODULAR SIZE, LOADS STRENGTH & SEREVICEABILITY CHECK. OIL to confirm the same again.	Tender conditions remain unchanged
158	Vol.I, Commercial		CLA - 9, TIME SCHEDULE , PAGE 124.	IF IT IS EXTEND DUE TO UNAVOIDABLE SUITUATION LIKE HEAVY RAIN & FLOOD, CONTRACT SHOULD HAVE CLAUSE FOR EXTENSSION OF TIME PERIOD OF THE PROJECT WHICH IS NOT ATRIBUTE TO EPC.	Tender conditions remain unchanged
159	Vol.I, Commercial		SPECIAL CLA - 12, PAGE 126.	IS IT APPLICABLE FOR ALL THE EQUIPMENT , PLEASE ELABORATE	Tender conditions remain unchanged..
160	Vol.II, Technical		CLA - 4.1.3.3.2 PAGE 8	WHERE AS IN CAL 4.10, PAGE 65, SBC GIVIN FOR ONLY 50 mm SETTLEMENT. WHAT ABOUT SBC FOR 25mm,40mm, 150mm & 25mm SETTLEMENT.	EPC Contractor to conduct Geotechnical investigation before final design.

161	Vol.I, Commercial			the Clause no. 1.3 of Technical Criteria of Bid Evaluation Criteria (BEC) is very restrictive and will restrict the competition of the tender. The clause 1.3 of BEC will allow only few bidders to participate. We sincerely request you to delete the clause 1.3 of BEC as Financial Criteria at clause 2 will be able to take care the bidder's financial capability to perform. In other option we request you to introduce Consortium Bids in line with the BEC of other public sector (for example ONGC tenders).	Tender conditions remain unchanged
162	Vol.II, Technical			Fuel gas can be used for operating media of heater instead electric heater. This is the economic way as gas genset capacity, switchgear & all other auxiliary will be reduced. This will also reduce the overall project cost. We request OIL to consider the same	Tender conditions remain unchanged.
163	Vol I Commercial, Page No. 180 of 278		20.0 Statutory approval	Requested to kindly provide the status of applied permission already by company and list of left over permission for which bidder to take permission for this project.	Environmental clearance and NBWL clearance have already been received. The bidder shall start with Consent to Establish, Consent to operate, & any other approval as deemed fit for this project.
164	Vol I Commercial, Page No. 172 of 278		6.0 Drawing and Documents	Bidder request to kindly reduce the duration for review and approval of drawing/documents within one weeks from the date of submission instead of two weeks.	Tender conditions remain unchanged

165	Vol II Technical, Page No. 44 of 2248	FGGS-BJN-PRO-DBM-1001 Process design basis	13 Flare system	Clause states that, "Existing flare for EPS, Baghjan shall be demolished after the FGGS Flare is on line." Kindly provide the complete demolition scope of work for this project including demolition of flare.	Demolition scope of work includes only the demolition of flare and the existing flare line downstream of the tie-in..
166	Vol II Technical, Page No. 2096 of 2248	Scope of work civil	2.5 Diversion of canal	Bidder understands that there is no statutory approval require for the Diversion of canal. If required request to provide the details of approval.	Not envisaged. However, any clearance/ permission required for the same shall be obtained by the EPC.
167	Vol II Technical, Page No. 44 of 2248	FGGS-BJN-PRO-DBM-1001 Process design basis	14.0 Effluent treatment system	Requested to kindly provide the applicable discharge conditions of Assam state pollution control board for Rainwater treatment.	The applicable discharge conditions of Assam state pollution control board for rain water treatment are to be collected by EPC Contractor.
168	Vol II Technical, Page No. 1311 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	6.1 a)	Bidder understands that, proposed GEG set shall be installed inside Acoustic Enclosure, which will be suitable for installation inside covered shed. Please confirm.	Bidder understanding is correct.
169	Vol II Technical, Page No. 1311 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	6.1 c)	Proposed GEG set is designed for Fuel gas with methane no. of 70 Mz. As such, stated output can be achieved upto 70 Mz and there shall be de-rated in output below 70 Mz methane no. Please confirm.	The gas gen set shall be designed for Continuous operation for the lowest methane number of the specified fuel GCV. The engine shall be capable of stable operation min 10% below the lowest methane number for the specified fuel lower range GCV. The gas composition of fuel gas has been already furnished in gas genset

					datasheet. Bidder to confirm compliance in the bid.
170	Vol II Technical, Page No. 1311 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	6.1 d)	We understand the container as 'Acoustic Enclosure'. Please confirm.	Bidder understanding is correct.
171	Vol II Technical, Page No. 1311 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	6.1 g)	Proposed GEG set shall be installed in 'Acoustic Enclosure', which shall be designed to maintain noise level below 85 dBA at one (1) meter distance from Enclosure surface. Please confirm.	Proposed GEG set shall be installed in 'Acoustic Enclosure', which shall be designed to maintain noise level below 75 dBA at one (1) meter distance from Enclosure surface.
172	Vol II Technical, Page No. 1311 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	6.1 i)	Block load that can be applied on GEG set depends upon nature of load, starting & running characteristics, motor efficiency etc. Same shall be as per 'TA 2108 0029' for block loading of Jenbacher GEG sets.	Bidder to adhere to specification
173	Vol II Technical, Page No. 1311 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	6.2 c)	Being part of imported scope, Sylomer strips shall be provided for GEG sets. Kindly confirm.	Confirmed

174	Vol II Technical, Page No. 1312 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	6.3 b)	6 starts shall be followed based on the following procedure in "AUTOMATIC" mode only: 3 start → 5 minutes pause for the starter to cool down → 3 starts. This is possible only if the engine is pre-hated and the start will follow the standard conditions provided by OEM. Kindly confirm.	Bidder to adhere to specification
175	Vol II Technical, Page No. 1312 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	6.6	Silencer is not required in the combustion air intake system and shall not be provided as per OEM standard. Kindly confirm.	Noted and Updated
176	Vol II Technical, Page No. 1313 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	6.7 e)	As per standard engineering practice, HR (heat resistant) paint suitable for 500°C shall be applied on outer surface of stack. Kindly confirm.	Heat resistant aluminium paint shall be applied on Gas Gen set stack.
177	Vol II Technical Page No. Page 1314 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	7.1	For optimization of space, genset panels (Junction box, Auxiliary panel & Control panel) shall be installed inside Acoustic Enclosure. Breaker panel can be installed inside substation building, provided max. Cable considered is 15 r-meters per GEG set. Kindly confirm.	Bidder understanding is correct. However, the cables considered for each genset shall be as per the detailed engineering cable schedule and 15 meter is not acceptable.
178	Vol II Technical Page No. Page 1314 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural	7.2	Document No. FGS-BJN-ELE-SPC-6005 is not available in tender. Kindly provide the same.	Refer page no.1399 of 2248

		gas generator set			
179	Vol II Technical Page No. Page 1314 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	7.2	The GEG Set and all Balance of Plant Equipment shall be suitable for installation in SAFE AREA only. As such, this clause is not applicable and will not be complied with. Kindly confirm.	The CPP should be located in safe area and all the equipment shall be designed based on safe area classification only. All equipment required to be certified for use in a hazardous area shall be IEC certified Ex 'd'. Where equipment approval is by others, it shall the responsibility of the VENDOR to prove that the Certification Authority is acceptable to IEC.
180	Vol II Technical Page No. Page 1314 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	7.3	Bidder understands that, the said clause (Auxiliary Piping & Valves) is applicable only for interconnecting piping and not applicable for imported / indigenous equipment internal piping. Kindly confirm.	Bidder understanding is correct.
181	Vol II Technical Page No. Page 1317 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	9.5 i)	Genset control panel' shall be provided to monitor & control GEG set parameters. Locally mounted instruments are not required and shall not be provided. Kindly confirm.	The instrument is not required if the genset control panel monitors the following parameters not limited to. 1. Pressure gauge for lube oil and fuel 2. Dial type thermometer for jacket water, lube oil etc. 3. Temperature regulator for jacket water temperature.

182	Vol II Technical Page No. Page 1317 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	9.6	Being part of imported scope, design & construction of Alternator shall be as per OEM standard design. Kindly confirm.	Bidder to adhere to specification
183	Vol II Technical Page No. 1319 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	10.3	Generator control panel shall be imported panel and meant for monitoring and control of GEG set operating parameters. Indigenous PAP (Plant Auxiliary Panel) shall be provided for auxiliary motor control. Kindly confirm.	Confirmed.
184	Vol II Technical Page No. 1319 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	10.3	Test mode shall not be provided as per OEM standard design. However, GEG set can be checked keeping switch in MANUAL mode. Kindly confirm.	Confirmed
185	Vol II Technical Page No. 1319 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	10.3	The below listed parameters shall not be processed and provided as per OEM standard design. • 1 Hand voltage adjustment trimmer • 1 Speed control switch • 1 Low fuel alarm Please confirm.	Vendor shall provide alarms as per specification. Other switches/push buttons shall be proposed as per vendor design for trouble free operation
186	Vol II Technical Page No.1320 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural	10.3	As confirmed in Electrical Design Basis, Electrical equipment shall be suitable for 40°C ambient temperature. Please confirm.	Confirmed.

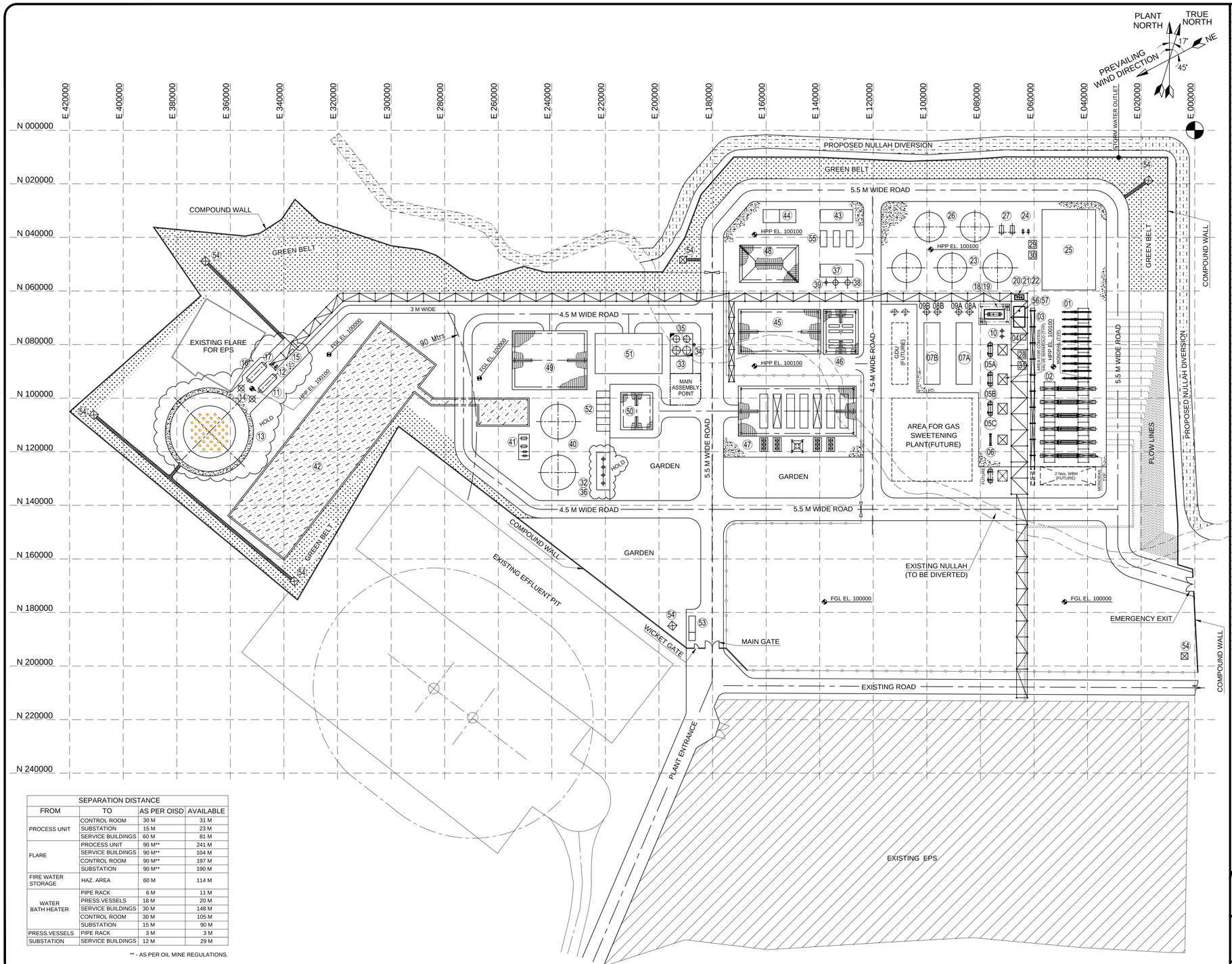
		gas generator set			
187	Vol II Technical Page No.1321 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	10.3	Wiring forming part of imported supply shall be as per OEM standard design. Kindly confirm.	Confirmed
188	Vol II Technical Page No.1323 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	10.7	GEG set working parameters shall be made available of MODBUS for monitoring only and control is not envisaged. Kindly confirm.	Necessary interconnection between control panel and GEG set including hard wiring and serial link shall be provided for necessary operation, control and alarm points
189	Vol II Technical Page No.1325 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	11.1	Please clarify below requirement of status display, as it is not clear. "Assuming that two engine-alternators were installed and available, if the load was such that two engine-alternators were sufficient to supply the entire load, the alternator status will be ..."	The four engine -alternators are to be installed and available, if the load is such that two engine-alternators are sufficient to supply the entire load then the status display shall be as below. 1. Two engine-alternators on-line. 2. Two engine-alternator stopped, standby.
190	Vol II Technical Page No.1325 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	11.4	Please correct the first sentence of first paragraph on page 23 as; Load shedding shall only occur when the engine kW of any engine has reached a set level, higher than that which would initiate adding another alternator unit and lower than that which would initiate a shutdown.	Noted and Updated

191	Vol II Technical Page No.1327 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	15.1 f)	Vibration test shall not be part of standard test plan. However, we confirm that the genset fulfils the limits for mechanical vibrations according to ISO 8528-9. Kindly confirm.	Confirmed.
192	Vol II Technical Page No. 1328 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	19.0	The service engineer shall be made available within 48 hours; however, OIL has to enter in Maintenance contract with Gas genset vendor.	Bidder to adhere to specification
193	Vol II Technical Page No. 1328 of 2248	FGGS-BJN-ELC-SPC-6000 Specification for natural gas generator set	20.2	Please correct first requirement as, - Piping, wiring, preliminary control system diagram and dimensional outline drawings.	Noted and Updated
194	Vol II Technical Page No 1512 of 2248	FGGS-BJN-ELC-DST-6001 Datasheet for gas generator	6	The fault rating of Bus shall be 80 kA for 1 sec, as marked in SLD. Please confirm.	Confirmed.
195	Vol II Technical Page No 1512 of 2248	FGGS-BJN-ELC-DST-6001 Datasheet for gas generator	16	Power rating of GEG set at given gas quality, with Radiator cooling and at ISO conditions (altitude <500 m and Inlet combustion air temp. as 30°C) shall be 1497 kWe at unity p.f & 415V. Kindly confirm.	Generator electrical output at site conditions. To be finalized based on vendor data. Bidder to adhere to specification

196	Vol II Technical Page No 1512 of 2248	FGGS-BJN-ELC-DST-6001 Datasheet for gas generator	17	Net power output at Alternator terminal at given gas quality, with Radiator cooling and at ISO conditions (altitude <500 m and Inlet combustion air temp. as 30°C) shall be 1851 kVA at 0.8 p.f & 415V. Please confirm.	The power factor should be 0.9.
197	Vol II Technical Page No 1513 of 2248	FGGS-BJN-ELC-DST-6001 Datasheet for gas generator	46	Battery shall be maintenance free AGM type as per OEM standard. Kindly confirm.	Bidder to adhere to specification
198	Vol II Technical Page No 1514 of 2248	FGGS-BJN-ELC-DST-6001 Datasheet for gas generator	3.	Excitation system shall be auxiliary winding or PMG type. Kindly confirm.	The excitation system shall be auxiliary winding or PMG type as per vendor's standard. However the excitation system shall be self excited, self regulated and brushless
199	Vol II Technical Page No 1514 of 2248	FGGS-BJN-ELC-DST-6001 Datasheet for gas generator	6	Permissible overspeed for Alternator shall be 1800 rpm. Kindly confirm.	Noted and updated.
200	Vol II Technical Page No 1514 of 2248	FGGS-BJN-ELC-DST-6001 Datasheet for gas generator	6	Short circuit withstand capacity shall be 3 times rated current for 5 seconds. Kindly confirm.	Bidder to adhere to specification
	Vol II Technical	FGGS-BJN-PRO-DBM-1001 Process Design Basis		It is written in process design basis that the proposed FGGS shall have Non Associated Gas (NAG) processing facility for 5.0 MMSCMD (2 trains x 2.5 MMSCMD) and provision to feed Associated Gas (AG) of 0.5 MSCMD along with the	Confirmed as below: The total capacity of the plant for phase I&II shall be 5.5 MMSCMD. However, about 1.5 MMSCMD gas shall be used as fuel gas from the

201				NAG to a Glycol based Dehydration facility (5.0 MMSCMD) for achieving water dew point less than or equal to (0) Zero Deg C. Does it mean that total 5.5 MMSCMD gas will be fed to glycol dehydrator for drying? If it is yes, then total capacity of the plant considering future capacity will become 8 MMSCMD (5+0.5+2.5) instead of 7.5 MMSCMD. Client to confirm the same.	production separators/gas dehydration system for the power generation system. The fuel gas capacity taken is preliminary only and needs to be confirmed by the contractor during detailed engineering. As per OIL requirement, the FGGS plant shall be designed for 5MMSCMD capacity. Considering 20% design margin ((5.5-1.5)*1.2), total capacity of the plant is taken as 5 MMSCMD. Hence, considering the future capacity 2.5 MMSCMD, the total plant capacity shall be taken as 7.5 MMSCMD.
202	Vol II Technical	FGGS-BJN-PRO-DBM-1001 Process Design Basis		Client has asked to consider future provision for 1 no. of gas train of 2.5 MMSCMD. Kindly confirm that all utility capacities mentioned by them in bid has considered this future gas train.	Confirmed. Utility capacity provided includes that for the future gas train also.
203	Vol II Technical	General		Line list is not provided in bid document. Client to provide the same.	Preparation of line list is part of detail engineering and is in the scope of the EPC Contractor.
204	Vol II Technical	FGGS-BJN-PRO-DBM-1001 Process Design Basis		The tank capacity of chemical injection package like Biocide tank, Oxygen scavenger tank, Methanol tank etc. is not mentioned. Kindly provide the tank capacities or storage time (hold-up time) of tanks.	The tank capacity of chemical injection package shall be decided by the EPC contractor during detail engineering.
205	Vol II Technical, Page No. 143 of 2248	FGGS-BJN-PRO-DST-1002 Datasheet for water bath		Bidder has the option to choose the type of Burner for water bath heater. i.e. Force or natural draft.	The type of Burner for water bath heater shall be chosen by the Package Vendor. However, generally natural draught flame proof burners are used in OIL.

		heater			
206	Vol II Technical	FGGS-BJN-PRO-DST-9201 Process Datasheet for Instrument air package	Clause 12	The given discharge pressure is 8.5 KSC. Bidder understand that the compressor design pressure 11KSC (g) is also acceptable instead of 12 KSC (g). Please confirm.	The given design pressure is preliminary only and the EPC contractor needs to confirm during detail engineering. However, design pressure 11KSC (g) is also acceptable.
207	Vol 1, Part 1	Correction to clause nos			Clause no 11 in page no 30 of 278 to be read as clause no 20. Clause no 12 in page no 31 of 278 to be read as clause no 21. Clause no 13, sub clause 13.1 & 13.2 in page no 31 of 278 to be read as 22, 22.1 & 22.2 Clause no 14 & 15 in page no 31 of 278 to be read as clause no 23 & 24 respectively. Clause no 16, 17 and sub clause 17.1, 17.2 in page no 32 of 278 to be read as clause no 25, 26 and sub clause 26.1, 26.2 respectively.



NO.	PACKAGE NO.	EQPT NO.	EQPT DESCRIPTION	SIZE
01		H - 1001 A01~A10	ELECTRIC HEATERS	-
02	PK - 1001	E - 1001 A01~A06	WATER BATH HEATERS	-
03	PK - 1101		PRODUCTION & TEST MANIFOLD	-
04		M - 1202	MULTI PHASE FLOW METER SKID	-
05A/B/C		V - 1201 A/B/C	PRODUCTION SEPARATORS	1550(ID) x 4580(T/T)
06		V - 1203	HP SEPARATOR	562(ID) x 3800(T/T)
07A/B	PK - 2201A/B		GAS DEHYDRATION PACKAGE (HOLD)	23000(L) x 6000(W)
08A/B		V - 2201A/B	INLET KOD (OFF SKID)	-
09A/B		T - 2201A/B	TEG CONTACTOR (OFF SKID)	-
		E - 2201A/B	GAS/TEG EXCHANGER	-
		V - 2202A/B	GLYCOL AFTER SCRUBBER	-
		M - 2201A/B	WATER DEW POINT UNIT	-
		V - 2203A/B	GLYCOL FLASH DRUM	-
		P - 2201A/B/C/D	LEAN GLYCOL CIRCULATION PUMPS	-
		V - 2204A/B	GLYCOL SURGE DRUM	-
		F - 2202A/B	CHARCOAL FILTER	-
		F - 2201A/B/C/D	PARTICULATE FILTER	-
		E - 2202A/B	LEAN/RICH GLYCOL EXCHANGER	-
		E - 2203A/B	GLYCOL STILL OVERHEAD CONDENSER	-
		T - 2203A/B	GLYCOL STILL COLUMN	-
		M - 2202A/B	GLYCOL REBOILER	-
		T - 2202A/B	STRIPPING COLUMN	-
10		F - 2301 A/B	FUEL GAS FILTERS	-
11		V - 2401	LP FLARE KNOCK OUT DRUM	2300(ID) x 7300(T/T)
12		P - 2401	LP FLARE KNOCK OUT PUMP	-
13	PK - 2401		GROUND FLARE PACKAGE	19500(OD) x 32000(H)
14		V-2403 / V-2404	WATER SEAL DRUM (2 Nos.)	-
15			HEI PANEL	-
16		V - 2402	HP FLARE KNOCK OUT DRUM	2700(ID) x 7800(T/T)
17		P - 2402	HP FLARE KNOCK OUT PUMP	-
18		V - 3201	CLOSED BLOW DOWN VESSEL	1300(ID) x 4600(T/T)
19		P - 3201 A/B	CBD OIL RECYCLE PUMP (NOTE - 3)	-
20		TK - 3202	OILY WATER DRAIN PIT	3200(L)x1600(W)x1000(D)
21		P - 3202 A/B	OILY WATER PUMP (NOTE - 3)	-
22		P - 3203 A/B	SKIMMED OIL RECYCLE PUMP (NOTE - 3)	-
23		TK - 3101 A/B/C	RAW EFFLUENT TANKS	11000(ID) x 9200(H)
24		P - 3101 A/B	EFFLUENT FEED PUMP	-
25	PK - 3101A/B		EFFLUENT TREATMENT PACKAGE	30000(L) x 20000(W)
		M - 3102 A/B	CPI SEPARATOR	-
		V - 3101 A/B	IGF VESSEL	-
		P - 3104 A/B/C/D	IGF SKIMMED OIL PUMPS	-
		P - 3105 A/B/C/D	IGF VESSEL RECIRC. PUMPS	-
		P - 3106 A/B	FILTER FEED PUMPS	-
		F - 3101 A/B	NUTSHELL FILTERS	-
		P - 3107 A/B	MEDIA SCRUB PUMPS	-
26		TK - 3104 A/B	TREATED WATER TANKS	11000(ID) x 9200(H)
27		P - 3108 A/B	TREATED WATER DISPOSAL PUMPS	-
28	PK - 9101		CORROSION INHIBITOR PACKAGE	3000(L) x 3000(W)
29	PK - 9102		BIOCIDE INJECTION SKID	3000(L) x 3000(W)
30	PK - 9103		OXYGEN SCAVENGER INJECTION SKID	3000(L) x 3000(W)
31	PK - 9104		METHANOL INJECTION SKID (HOLD)	3000(L) x 3000(W)
32		P - 3301 A/B	SHALLOW TUBE WELL PUMPS	-
33	PK - 3301		WATER TREATMENT PACKAGE-50 KLPD	15000(L) x 8400(W)
34		TK - 3301 A/B	SERVICE WATER TANK	3000(ID) x 4050(H)
35		TK - 3302 A/B	POTABLE WATER TANK	2548(ID) x 3551(H)
36		P - 3302 A/B	DEEP WATER TUBE WELL PUMPS	-
37	PK - 9201		INSTRUMENT AIR PACKAGE (HOLD)	12200(L) x 4900(W)
38		V - 9201 A/B	INSTRUMENT AIR RECEIVERS	2000(ID) x 6000(T/T)
39		V - 9203	UTILITY AIR RECEIVER	1000(ID) x 3000(T/T)
40			FIRE WATER TANKS (2 Nos.)	13000(ID) x 11000(H)
41			FIRE WATER PUMP HOUSE	9500(L) x 4000(W)
42			STORM WATER RESERVOIR	7000 CU. M
43			WARE HOUSE	12200(L) x 4900(W)
44			WORK SHOP	12200(L) x 4900(W)
45			SUBSTATION (HOLD)	28800(L) x 14750(W)
46			HEATER CONTROL PANELS	14750(L) x 11000(W)
47	PK - 3501		CAPTIVE POWER PLANT	42000(L) x 16700(W)
			GED GEN SET (4 Nos.)	-
			DED GEN SET (1 No.)	-
48			CONTROL ROOM	20000(L) x 12000(W)
49			SECURITY BARRACK	26000(L) x 20000(W)
50			OFFICE BUILDING	12000(L) x 10000(W)
51			OPERATORS REST ROOM	25000(L) x 15000(W)
52			CAR PARKING	15000(L) x 5000(W)
53			GATE CABIN	9158(L) x 2438(W)
54			WATCH TOWER	-
55			BUNKERS (MULTI PURPOSE)	6100(L) x 2500(W)
56		TK - 9501	CRWS PIT	7500(L)x4000(W)x2500(D)
57		P - 9501	CRWS WATER PUMP	-

LEGEND:-

- PIPE RACK
- CABLE RACK
- PAVED AREA
- CHAIN LINK FENCING
- 1 M WIDE WALKWAY

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED.
2. E 000000, N 000000 CORRESPONDS TO E 737427000, N 3055977000.
3. P-3201B,P-3202B & P-3203B ARE UNINSTALLED SPARE PUMPS & SHALL BE KEPT IN THE WARE HOUSE.

SEPARATION DISTANCE

FROM	TO	AS PER OISD	AVAILABLE
PROCESS UNIT	CONTROL ROOM	30 M	31 M
	SUBSTATION	15 M	23 M
	SERVICE BUILDINGS	60 M	81 M
FLARE	PROCESS UNIT	90 M**	241 M
	SERVICE BUILDINGS	90 M**	104 M
	CONTROL ROOM	90 M**	197 M
	SUBSTATION	90 M**	190 M
FIRE WATER STORAGE	HAZ. AREA	60 M	114 M
WATER BATH HEATER	PIPE RACK	6 M	11 M
	PRESS.VESSELS	18 M	20 M
	SERVICE BUILDINGS	30 M	148 M
	CONTROL ROOM	30 M	105 M
	SUBSTATION	15 M	90 M
PRESS.VESSELS	PIPE RACK	3 M	3 M
SUBSTATION	SERVICE BUILDINGS	12 M	29 M

** - AS PER OIL MINE REGULATIONS.

CLIENT
OIL INDIA LIMITED

ENGINEERING
JAYATHE PETROTECH ENGINEERS AND CONSULTANTS PVT LTD

ENGINEERING & PROJECT MANAGEMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM

OVERALL PLOT PLAN

DRAWING No.	REFERENCE DRAWINGS
REL/GHY/00/01	TOPOGRAPHICAL SURVEY DRAWING OF FGGS BAGHJAN (RELIANT ENGINEERS)
FGGS-BJN-PRO-PID-001~9301	P & ID

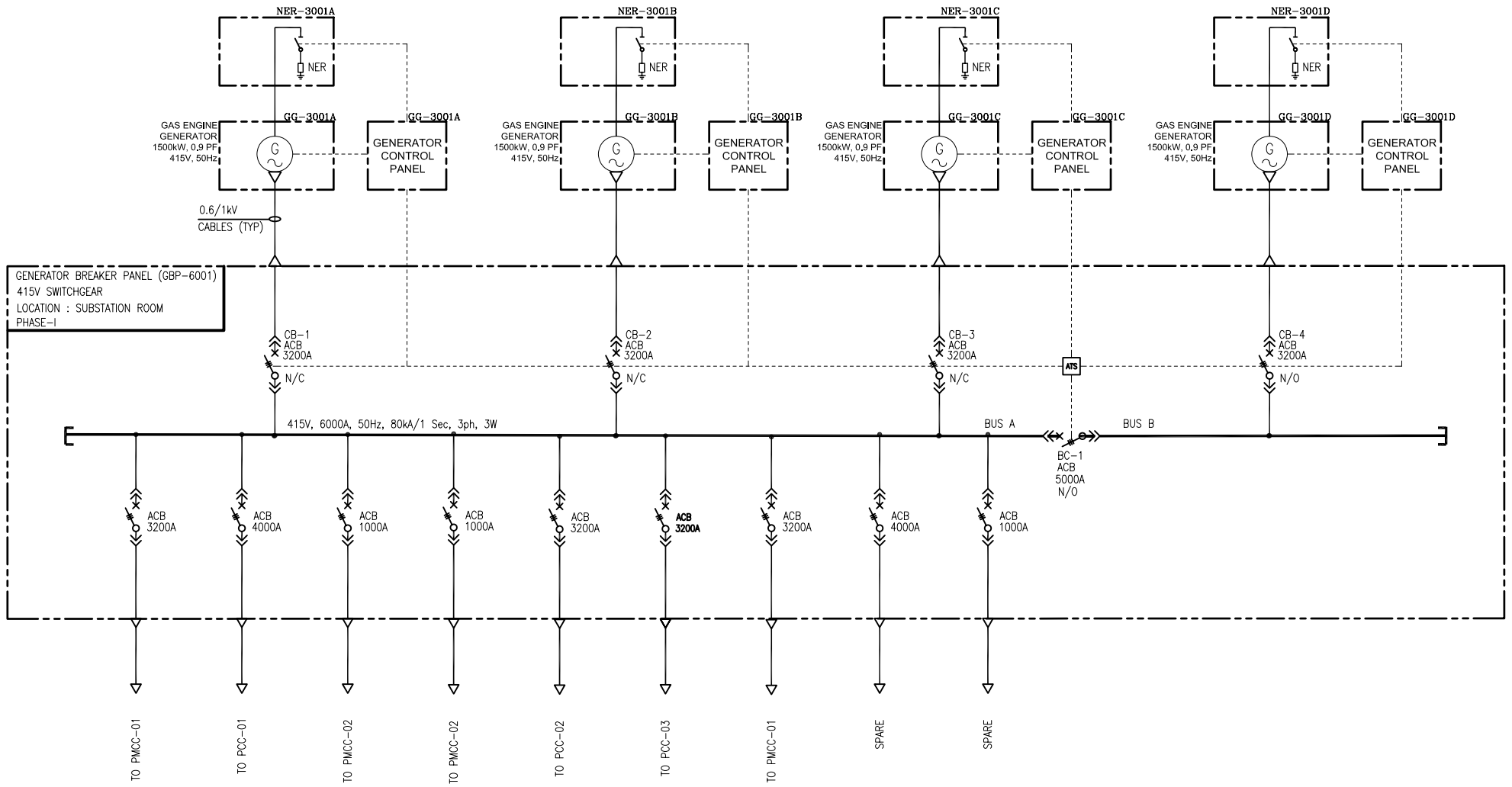
REV	DATE	DESCRIPTION	BY	CHK	APP	OWN
A	26.03.2019	ISSUED FOR REVIEW	DS	RDS	KPM	
B	03.04.2019	CLIENT COMMENTS INCORPORATED	DS	RDS	KPM	
C	10.05.2019	ISSUED FOR APPROVAL	DS	RDS	KPM	
D	31.05.2019	REVISED AS MARKED & ISSUED FOR APPROVAL	DS	RDS	KPM	
0	12.07.2019	DIESEL STORAGE DELETED, CPP & SUBSTATION RELOCATED. ISSUED FOR ITB	DS	RDS	KPM	
1	29.07.2019	QRA RECOMMENDATIONS INCORPORATED.	DS	RDS	KPM	

SCALE: 1: 750

DRAWN	DS	DATE: 26.03.19
CHECKED	RDS	DATE: 26.03.19
APPROVED	KPM	DATE: 26.03.19
OWNER		

CADD NUMBER	DRAWING NUMBER	SHT. No	REV
FGGSBJN500001.dwg	FGGS-BJN-PIP-LAY-5000	01/01	1

FORM A1. DGN



NOTES

1. NEUTRAL OF ONE GENERATOR SHALL ONLY BE EARTHED . SUITABLE CONTROL LOGIC WITH CONTACTORS SHALL BE DEVELOPOED
2. GEN BREAKER PANEL SHALL BE WITH SYNCHRONISING, LOAD SHARING FACILITY AS WELL AS PROTECTION,METERING AND ALARMS
3. GENERATORS ARE PLANNED WITH N+1 PHILOSOPHY
4. MORE THAN 3 GENERATORS NOT TO BE PARALLELED
5. EHAUST SYSTEMS SHALL BE DESIGNED AS PER CPCB NORMS
6. ALL DG SHALL BE WITH AQUISTIC ENCLOSURE
7. ALL ACBS TO BE WITH BUILT IN MICROPROCESSOR BASED RELAEASES
8. SLD SHALL BE REVIEWD DURING DETAILED DESIGN AND UPDATED BASED ON ACTUSL PROCESS CONDITIONS, EQUIPMENT SIZIND AS WELL AS VENDOR DATA
9. UTILITY CONNECTION IS NOT ENVISAGED
10. CABLE SIZING AND INSTRUMENTATION INTERFACE SHALL BE DEVELOPED DURING DETAILED DESIGN PHASE
11. ALL NATURAL GAS GENERATORS ARE OF PRIME DUTY TYPE
12. LOADS INDIACTED FOR PACKAGES ARE PRELIMINARY AND SHALL BE UPDATED BASED ON ACTUAL PACKAGE DATA
13. HSD YARD FOR GENERATORS TO BE CONSDIERED .DETAILS TO BE DEVELOPED DURING DETAILED DESIGN
14. THE SWITCHGEAR SHALL BE CAPABLE TO CONNECT WITH DCS SYSTEM THROUGH SERIAL LINK AND HARDWIRED (INCLUDES METERING & PROTECTION ELEMENTS).
15. SWITCHGEAR VENDOR SHALL PROVIDE FULL DETAILS RELATED TO INSTALLATION, FABRICATION, DIMENSION AND ARRANGEMENT.
16. SWITCHGEAR SHALL HAVE 20% SPARE FEEDERS AND 20% SPACE FEEDER.
17. CONNECTION FROM MOTOR FEEDER TO DCS NOT SHOWN .THIS SHALL BE DEVELOPED DURING DETAILED DESIGN.
18. THE PHASE-II WILL BE OPTIONAL FOR THE EPC CONTRACTOR AND OIL WILL CONFIRM.
19. THE ELECTRICAL & INSTRUMENTATION CONNECTIONS BETWEEN PCC AND ITS ASSOCIATED EQUIPMENTS SHALL BE CONTRACTOR SCOPE OF WORK FOR EFFECTIVE OPERATION OF THE SYSTEM.

OPERATIONS PHILOSOPHY				
CB-1	CB-2	CB-3	BC-1	CB-4
ON	ON	ON	OFF	OFF
ON	ON	OFF	ON	ON
ON	OFF	ON	ON	ON
OFF	ON	ON	ON	ON

DRAWING No.	REFERENCE DRAWINGS
FGGS-BJN-PRO-SCH-1003	EQUIPMENT LIST
FGGS-BJN-ELC-SCH-6000	ELECTRICAL LOAD SUMMARY

REV	DATE	DESCRIPTION	BY	CHK	APP	DWN
A	18.05.19	ISSUED FOR REVIEW AND APPROVAL	AS	KPS	MKV	
B	13.07.19	ISSUED FOR APPROVAL	AS	KPS	MKV	
0	16.07.19	ISSUED FOR ITB	AS	KPS	MKV	

SCALE: NTS

DRAWN	AS	DATE:	16.07.19
CHECKED	KPS	DATE:	16.07.19
APPROVED	MKV	DATE:	16.07.19
OWNER			

CLIENT: OIL INDIA LIMITED

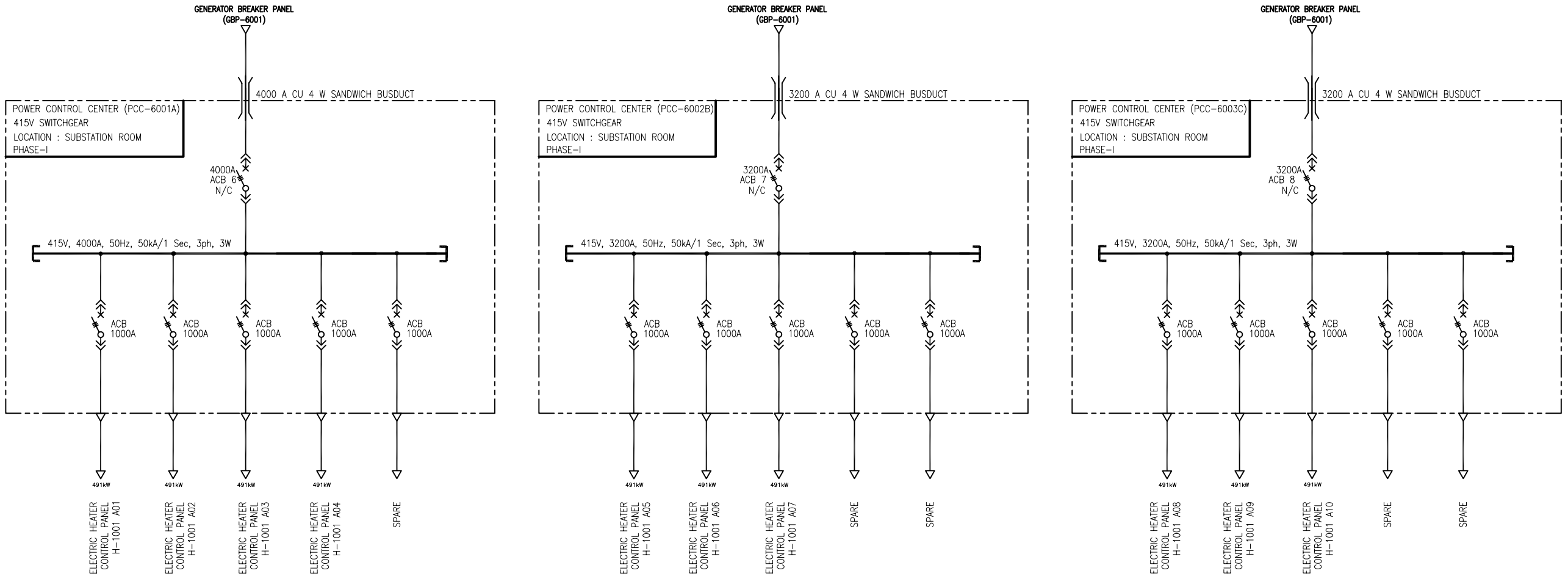
ENGINEERING: JAYATHE PETROTECH ENGINEERS AND CONSULTANTS PVT LTD

ENGINEERING & PROJECT MANAGMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM

SINGLE LINE DIAGRAM (PHASE-I)

CADD NUMBER	DRAWING NUMBER	SHT. No.	REV
FGGSBJN600001.dwg	FGGS-BJN-ELC-DIA-6000	01/06	0

FORM_A3.DGN



DRAWING No.	REFERENCE DRAWINGS
FGGS-BJN-PRO-SCH-1003	EQUIPMENT LIST
FGGS-BJN-ELC-SCH-6000	ELECTRICAL LOAD SUMMARY

REV	DATE	DESCRIPTION	BY	CHK	APP	DWN
A	18.05.19	ISSUED FOR REVIEW AND APPROVAL	AS	KPS	MKV	
B	13.07.19	ISSUED FOR REVIEW AND APPROVAL	AS	KPS	MKV	
0	16.07.19	ISSUED FOR ITB	AS	KPS	MKV	

SCALE: NTS

DRAWN	AS	DATE: 16.07.19
CHECKED	KPS	DATE: 16.07.19
APPROVED	MKV	DATE: 16.07.19
OWNER		

CLIENT: OIL INDIA LIMITED

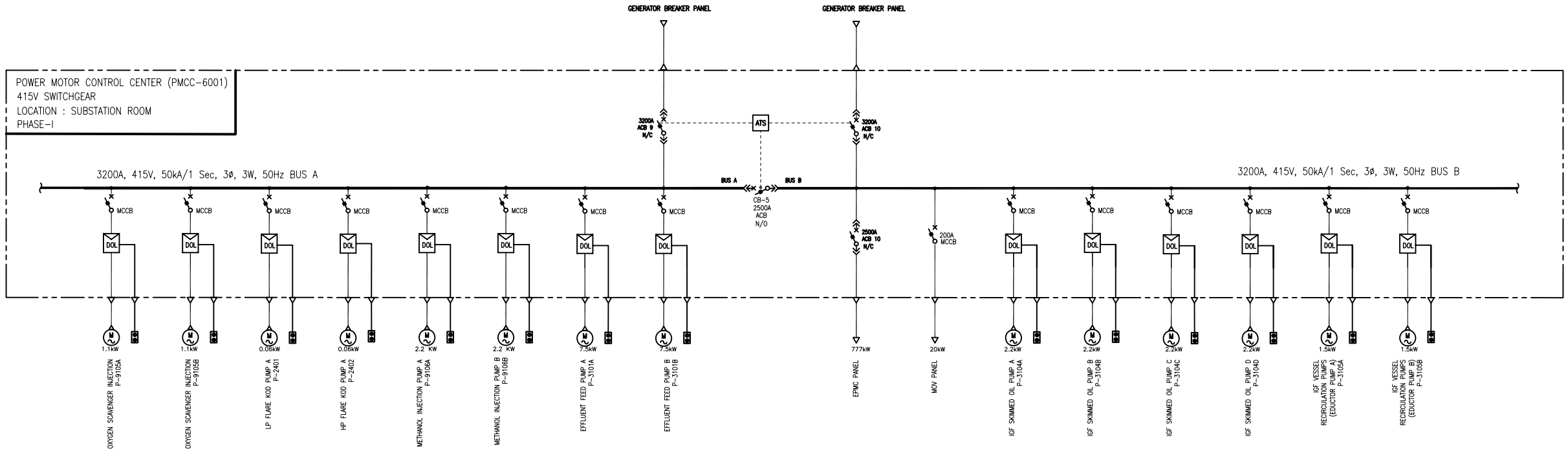
ENGINEERING: JAYATHE PETROTECH ENGINEERS AND CONSULTANTS PVT LTD

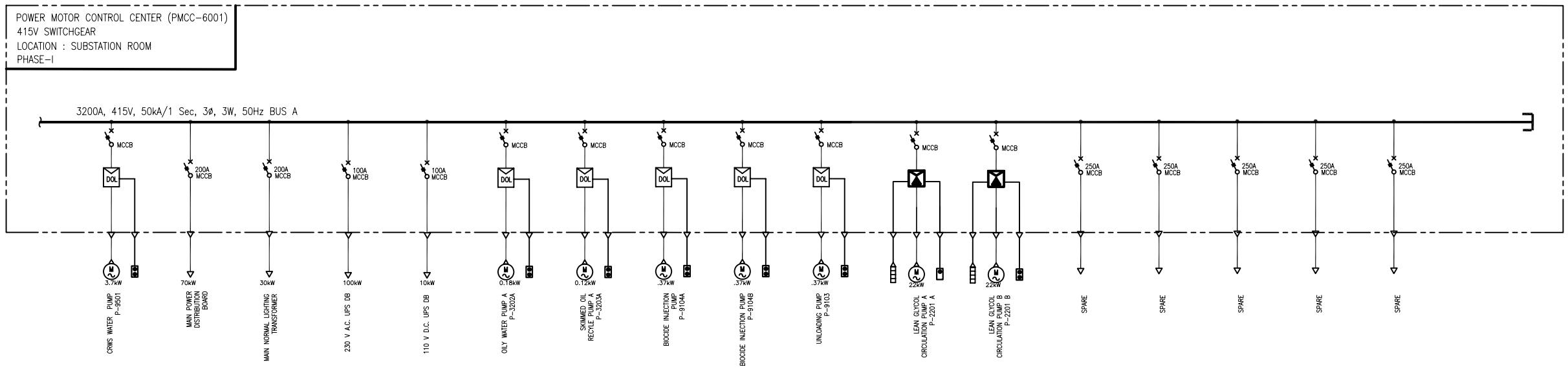
ENGINEERING & PROJECT MANAGMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM

SINGLE LINE DIAGRAM (PHASE-I)

CADD NUMBER	DRAWING NUMBER	SHT. No.	REV
FGGSBJN600002.dwg	FGGS-BJN-ELC-DIA-6000	02/06	0

FORM_A3.DGN





DRAWING No.	REFERENCE DRAWINGS
FGGS-BJN-PRO-SCH-1003	EQUIPMENT LIST
FGGS-BJN-ELC-SCH-6000	ELECTRICAL LOAD SUMMARY

REV	DATE	DESCRIPTION	BY	CHK	APP	DWN
A	18.05.19	ISSUED FOR REVIEW AND APPROVAL	AS	KPS	MKV	
B	13.07.19	ISSUED FOR REVIEW AND APPROVAL	AS	KPS	MKV	
0	16.07.19	ISSUED FOR ITB	AS	KPS	MKV	

SCALE: NTS

DRAWN	AS	DATE:	16.07.19
CHECKED	KPS	DATE:	16.07.19
APPROVED	MKV	DATE:	16.07.19
OWNER			

CLIENT: OIL INDIA LIMITED

ENGINEERING: JAYATHE PETROTECH ENGINEERS AND CONSULTANTS PVT LTD

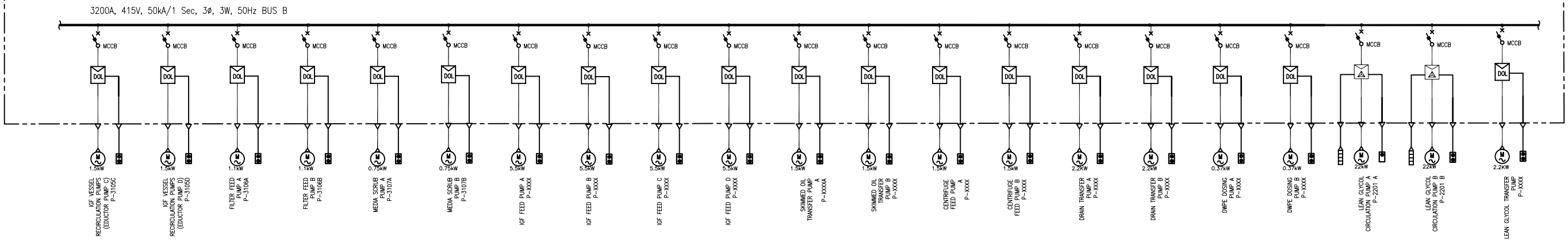
ENGINEERING & PROJECT MANAGMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM

SINGLE LINE DIAGRAM (PHASE-I)

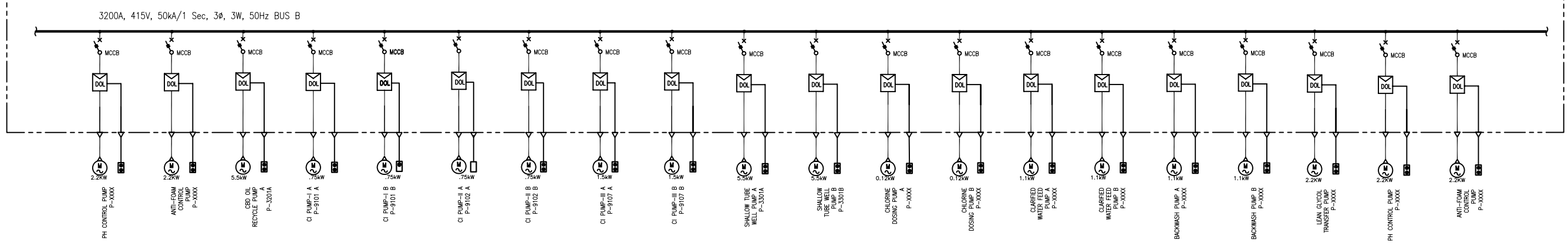
CADD NUMBER	DRAWING NUMBER	SHT. No.	REV
FGGSBJN600002.dwg	FGGS-BJN-ELC-DIA-6000	03/06	0

FORM_A3.DGN

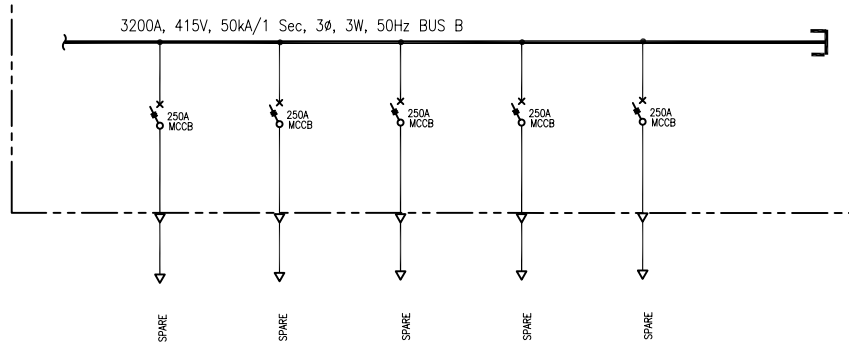
POWER MOTOR CONTROL CENTER (PMCC-6001)
415V SWITCHGEAR
LOCATION : SUBSTATION ROOM
PHASE-I



POWER MOTOR CONTROL CENTER (PMCC-6001)
415V SWITCHGEAR
LOCATION : SUBSTATION ROOM
PHASE-I



POWER MOTOR CONTROL CENTER (PMCC-6001)
415V SWITCHGEAR
LOCATION : SUBSTATION ROOM
PHASE-I



DRAWING No.	REFERENCE DRAWINGS
FGGS-BJN-PRO-SCH-1003	EQUIPMENT LIST
FGGS-BJN-ELC-SCH-6000	ELECTRICAL LOAD SUMMARY

REV	DATE	DESCRIPTION	BY	CHK	APP	DWN
A	18.05.19	ISSUED FOR REVIEW AND APPROVAL	AS	KPS	MKV	
B	13.07.19	ISSUED FOR REVIEW AND APPROVAL	AS	KPS	MKV	
0	16.07.19	ISSUED FOR ITB	AS	KPS	MKV	

SCALE: NTS

DRAWN	AS	DATE:	16.07.19
CHECKED	KPS	DATE:	16.07.19
APPROVED	MKV	DATE:	16.07.19
OWNER			

OIL INDIA LIMITED

JAYATHE PETROTECH ENGINEERS AND CONSULTANTS PVT LTD

ENGINEERING & PROJECT MANAGMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM

SINGLE LINE DIAGRAM (PHASE-I)

CADD NUMBER	DRAWING NUMBER	SHT. No.	REV
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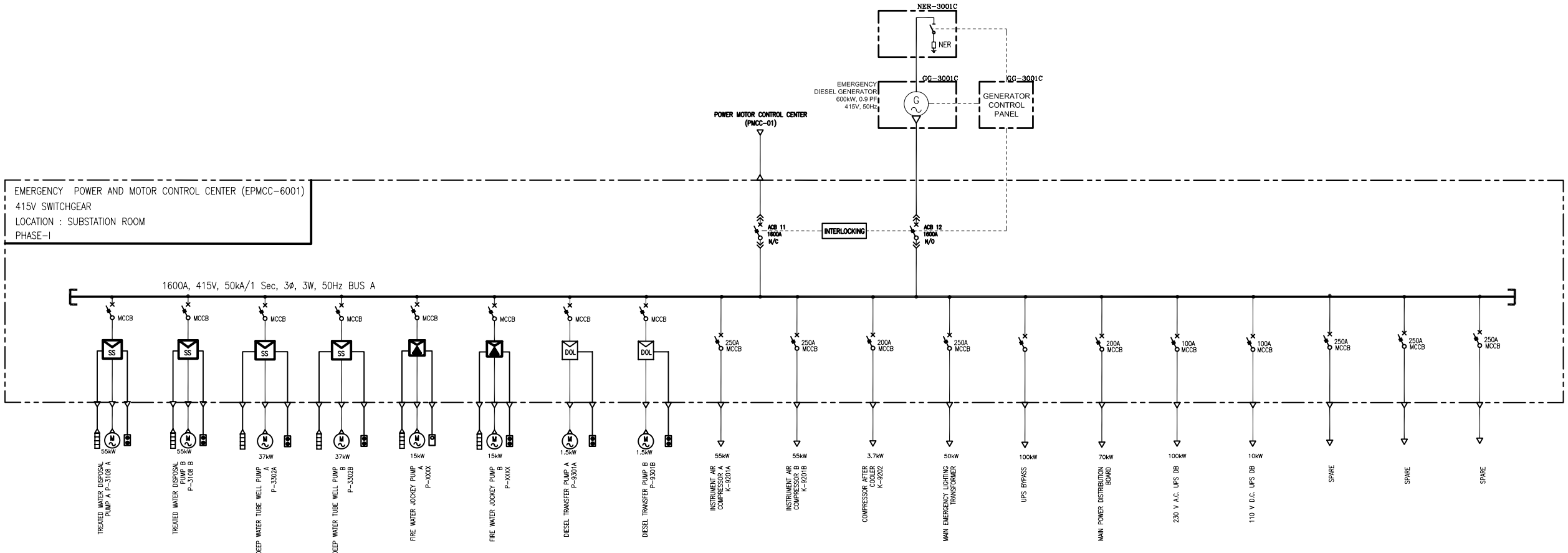
FORM_A3.DGN



DRAWING No.	REFERENCE DRAWINGS
FGGS-BJN-PRO-SCH-1003	EQUIPMENT LIST
FGGS-BJN-ELC-SCH-6000	ELECTRICAL LOAD SUMMARY

REV	DATE	DESCRIPTION	BY	CHK	APP	DWN
A	18.05.19	ISSUED FOR REVIEW AND APPROVAL	AS	KPS	MKV	
B	13.07.19	ISSUED FOR REVIEW AND APPROVAL	AS	KPS	MKV	
0	16.07.19	ISSUED FOR ITB	AS	KPS	MKV	

SCALE: NTS

DRAWN	AS	DATE:	16.07.19
CHECKED	KPS	DATE:	16.07.19
APPROVED	MKV	DATE:	16.07.19
OWNER			

CLIENT: OIL INDIA LIMITED

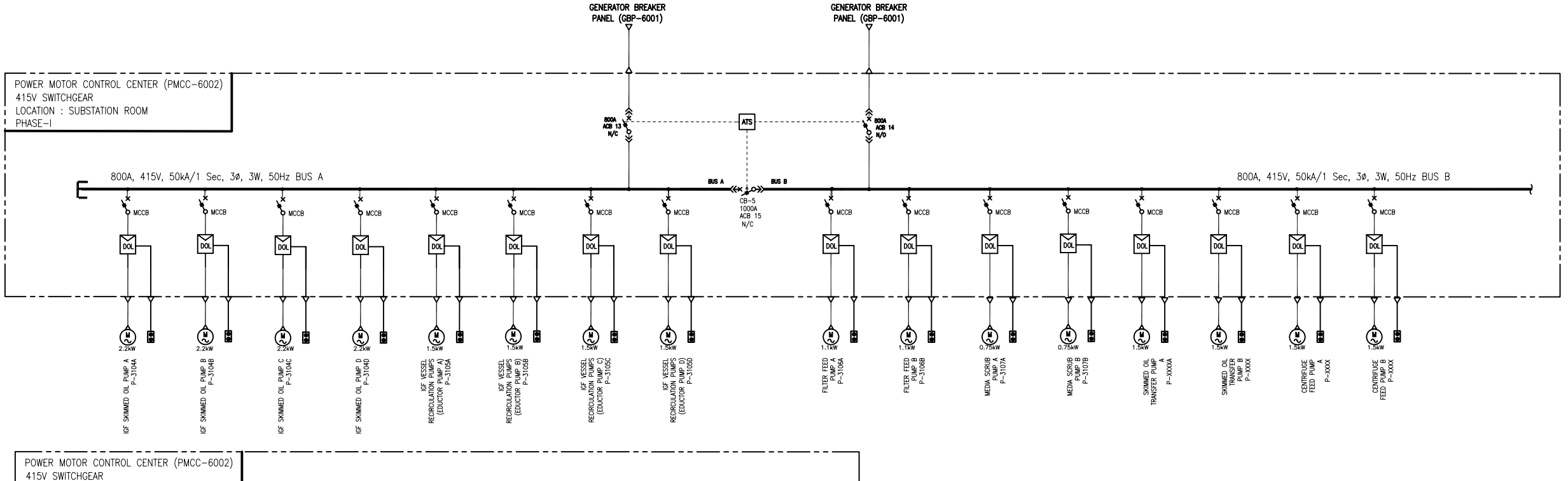
ENGINEERING: JAYATHE PETROTECH ENGINEERS AND CONSULTANTS PVT LTD

ENGINEERING & PROJECT MANAGMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM

SINGLE LINE DIAGRAM (PHASE-I)

CADD NUMBER	DRAWING NUMBER	SHT. No.	REV
FGGSBJN600002.dwg	FGGS-BJN-ELC-DIA-6000	05/06	0

FORM_A3_TGN



DRAWING No.	REFERENCE DRAWINGS
FGGS-BJN-PRO-SCH-1003	EQUIPMENT LIST
FGGS-BJN-ELC-SCH-6000	ELECTRICAL LOAD SUMMARY

REV	DATE	DESCRIPTION	BY	CHK	APP	OWN
A	18.05.19	ISSUED FOR REVIEW AND APPROVAL	AS	KPS	MKV	
B	13.07.19	ISSUED FOR REVIEW AND APPROVAL	AS	KPS	MKV	
0	16.07.19	ISSUED FOR ITB	AS	KPS	MKV	

SCALE: NTS

DRAWN	AS	DATE:	16.07.19
CHECKED	KPS	DATE:	16.07.19
APPROVED	MKV	DATE:	16.07.19
OWNER			

CLIENT: OIL INDIA LIMITED

JAYATHE PETROTECH ENGINEERS AND CONSULTANTS PVT LTD

ENGINEERING & PROJECT MANAGMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM

SINGLE LINE DIAGRAM (PHASE-I)

CADD NUMBER	DRAWING NUMBER	SHT. No.	REV
FGGSBJN600002.dwg	FGGS-BJN-ELC-DIA-6000	06/06	0

FORM_A3.DGN

ELECTRICAL LOAD SUMMARY

REV	DESCRIPTION	DATE	BY	CHECKED	APPROVED	CLIENT
0	Issued for ITB	8/14/2019	AS	KPS	MKV	
B	Issued for Approval	7/13/2019	AS	KPS	MKV	
A	Issued for Review/Approval	5/21/2019	AS	KPS	MKV	

1. SCOPE

This document is intended to prepare electrical load list of FGGS Loads. This data will provide reference to estimate the rating of generators.

2. REFERENCES

1. Process Equipment List : FGGS-BJN-PRO-SCH-1003

2. P&ID : FGGS-BJN-PRO-PID-1001 to 1002, FGGS-BJN-PRO-PID-1101 to 1102
FGGS-BJN-PRO-PID-1201 to 1205, FGGS-BJN-PRO-PID-2201
FGGS-BJN-PRO-PID-2301 to 2302, FGGS-BJN-PRO-PID-2401 to 2402
FGGS-BJN-PRO-PID-3101 to 3102, FGGS-BJN-PRO-PID-3201 to 3202
FGGS-BJN-PRO-PID-3103 to 3104, FGGS-BJN-PRO-PID-3301 to 3303
FGGS-BJN-PRO-PID-9201 to 9202, FGGS-BJN-PRO-PID-9101 to 9104
FGGS-BJN-PRO-PID-9301

3. BASIS AND ASSUMPTIONS

1. The load schedule shall be updated based on vendor data.
2. The value of absorbed power are estimated. Final value shall be finalized with various Vendors.
3. The efficiency and power factor shall be finalized with various Vendors.
4. Motor rating shall be updated after issuing of Order.

4. NOTES

1. Electrical loads shall be classified as performing a service which is 'vital', 'essential', or 'non-essential', as defined below:

1.1 Vital Service: A service which, if it fails in operation or when called upon, can cause an unsafe condition of the process and/or electrical installation, jeopardise life, or cause major damage to the installation.

1.2 Essential service: A service which, if it fails in operation or when called upon, will affect the continuity, quality or quantity of the product.

1.3 Non-essential service : A service that is neither vital nor essential.

2 Duty Type : "C" Continuous; "I" Intermittent; "S" Stand-by, "E" - Emergency; " M "- Maintenance

3 Absorbed Load is considered on the following basis:

3.1 For pumps, shaft load on duty point;

3.2 For instrumentation, computers, communication, air conditioning, the required load during full operation of plant;

3.3 For lighting during dark hours;

3.4 For workshops, the average total load in normal full operation.

4 Consumed Loads are indicated on the following basis:

4.1 E - "Continuous"; all loads that may continuously be required for normal operation including lighting.

4.2 F - "Intermittent ; the load required for intermediate pumping, storage, loading, etc. and all electrical spare of electrically driven units.

4.3 G - "Stand-by"; loads required in emergencies only, such as fire-water pumps or those of normally not running electrically driven units stand by for normally running steam-driven ones (e.g. charge pumps, boiler feed pumps.)

5 The following coincidence factors are assumed for the maximum and peak load calculation::

5.1 Continuous x = 1

5.2 Intermittent I = 0.3

5.3 Spare/stand by s = 0.1

6 Load List Explanatory Notes:

6.1 Item : Item no of the equipment

6.2 Tag Number : Actual or proposed facility equipment tag number

6.3 Description : Equipment description

6.4 Rated volts : Equipment nominal voltage supply

6.5 Absorbed load : Process/Mechanical power requirement.

6.6 Equipment Rating : IEC standard rating for required power value

6.7 Units : Load rating units, e.g..:- kW / kVA /A

7 The Load factor, efficiency and power factor are taken based on the following assumption.However the same will be updated / verified by the equipment vendor.

Rating (kW)	Load Factor	Efficiency	Power Factor
x<15	0.7	0.85	0.73
15 ≤ x < 45	0.75	0.91	0.78
45 ≤ x ≤ 150	0.83	0.93	0.82
>150	0.85	0.94	0.91

8 For Heater loads power factor is taken as 1.

9 The following equations are used in computing the maximum load demand:

Absorbed Load = Equipment Rating x Load Factor

Consumed Load in Kw = Absorbed Load / Efficiency

Consumed Load in kVAr = Absorbed Load / Efficiency x sinΦ

The consumed Load is classified as Continuous , Intermittent and Standby as per the load duty.

Maximum Normal running Plant Load in kW = Total continuous load (kW) + Total intermittent load (kW)x 0.3

Maximum Normal running Plant Load in kVAr = Total continuous load (kVAr) + Total intermittent load (kVAr)x 0.3

Maximum Normal running Plant Load in kVA = $\sqrt{(kW^2 + kVAr^2)}$

Peak Load in kW = Total continuous load (kW) + Total intermittent load (kW)x 0.3 + Total Standby Load(kW) x 0.1

Peak Load in kVAr = Total continuous load (kVAr) + Total intermittent load (kVAr)x 0.3 + Total Standby Load(kVAr) x 0.1

Peak Load in kVA = $\sqrt{(kW^2 + kVAr^2)}$

Generator Design size(considering 20% margin) = Running load in kVA *1.2

Suitable generator sizes are selected based on the available standard ratings.

GENERAL NOTE:

1. Detailed load summary will be developed during Detail Engineering by EPCC contractor during EPCC phase of design.
2. As per OIL INDIA request load summary has been divided in to Phase-I & Phase-II. However, the common facilitie load details included in Phase-I.
3. The kW rating of equipment which is included in a package shall be subject to confirmation by pump vendor/package vendor. The ratings shall be updated by EPCC contractor during EPCC phase of design.
4. The basic engineering load details are to be verified and correct by EPCC contractor in detailed engineering.
5. The total plant load requirment is = **4196** kW

ELECTRICAL LOAD SUMMARY

PROJECT	**ENGINEERING & PROJECT MANAGEMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM**	**DOCUMENT NO.**	**FGGS-BJN-ELC-SCH-6000**			
		REV.:	**0**	**REV.DATE**	**18-07-19**	
CLIENT	**OIL INDIA LIMITED**	**PAGE:**	**4 OF 7**			

Sr. No.	Equipment No.	Description	Load Type	kW Status	Name Plate Rating	Load Factor	Absorbed Load, kW	P.F. (LAG) at absorbed load	Efficiency at absorbed load	Input Power						REMARKS
										Continuous (A)		Stand by (B)		Intermittent (C)		
										kW	Kvar	kW	Kvar	kW	Kvar	
					a	**b**	**c**=a*b	d	e	f=c/e		h=c/e		j=c/e		
ELECTRIC HEATER AREA																
1	H-1001 A01-A10	ELECTRIC HEATER	**C**		**4910**	**0.70**	**3437**	1	0.94	3656.38	0.00	0.00	0.00	0.00	0.00	**NOTE:4**
GAS DEHYDRATION TRAIN-1																
2	P-2201A	LEAN GLYCOL RECIRCULATING PUMP A	**C**		**22**	**0.75**	**16.5**	0.75	0.91	18.13	15.99	0.00	0.00	0.00	0.00	**NOTE:3**
3	P-2201B	LEAN GLYCOL RECIRCULATING PUMP B	**S**		**22**	**0.75**	**16.5**	0.75	0.91	0.00	0.00	18.13	15.99	0.00	0.00	**NOTE:3**
4	P-XXXX	LEAN GLYCOL TRANFER PUMP	**C**		**2.2**	**0.75**	**1.65**	0.75	0.91	1.81	1.60	0.00	0.00	0.00	0.00	**NOTE:3**
5	P-XXXX	PH CONTROL PUMP	**C**		**2.2**	**0.75**	**1.65**	0.75	0.91	1.81	1.60	0.00	0.00	0.00	0.00	**NOTE:3**
6	P-XXXX	ANTI-FOAM CONTROL PUMP	**C**		**2.2**	**0.75**	**1.65**	0.75	0.91	1.81	1.60	0.00	0.00	0.00	0.00	**NOTE:3**
GAS DEHYDRATION TRAIN-2																
7	P-2201A	LEAN GLYCOL RECIRCULATING PUMP A	**C**		**22**	**0.75**	**16.5**	0.75	0.91	18.13	15.99	0.00	0.00	0.00	0.00	**NOTE:3**
8	P-2201B	LEAN GLYCOL RECIRCULATING PUMP B	**S**		**22**	**0.75**	**16.5**	0.75	0.91	0.00	0.00	18.13	15.99	0.00	0.00	**NOTE:3**
9	P-XXXX	LEAN GLYCOL TRANFER PUMP	**C**		**2.2**	**0.75**	**1.65**	0.75	0.91	1.81	1.60	0.00	0.00	0.00	0.00	
10	P-XXXX	PH CONTROL PUMP	**C**		**2.2**	**0.75**	**1.65**	0.75	0.91	1.81	1.60	0.00	0.00	0.00	0.00	
11	P-XXXX	ANTI-FOAM CONTROL PUMP	**C**		**2.2**	**0.75**	**1.65**	0.75	0.91	1.81	1.60	0.00	0.00	0.00	0.00	**NOTE:2**
FLARE SYSTEM																
12	P-2401A	LP FLARE KOD PUMP A	**C**		**0.06**	**0.70**	**0.042**	0.73	0.85	0.05	0.05	0.00	0.00	0.00	0.00	**PUMP B IS STORE ROOM STANDBY**
13	P-2402A	HP FLARE KOD PUMP A	**C**		**0.06**	**0.70**	**0.042**	0.73	0.85	0.05	0.05	0.00	0.00	0.00	0.00	
CLOSED BLOW DOWN SYSTEM'																
14	P-3201A	CBD OIL RECYCLE PUMP A	**I**		**5.5**	**0.75**	**4.125**	0.73	0.85	0.00	0.00	0.00	0.00	4.85	4.54	**PUMP B IS WAREHOUSE STANDBY**
OILY WATER DRAIN SYSTEM																
15	P-3202A	OILY WATER PUMP A	**I**		**0.18**	**0.70**	**0.126**	0.73	0.85	0.00	0.00	0.00	0.00	0.15	0.14	**PUMP B IS WAREHOUSE STANDBY**
16	P-3203A	SKIMMED OIL RECYCLE PUMP A	**I**		**0.12**	**0.70**	**0.084**	0.73	0.85	0.00	0.00	0.00	0.00	0.10	0.09	
RAW EEFLUENT STORAGE SYSTEM																
17	P-3101A	EFFLUENT FEED PUMP A	**C**		**7.5**	**0.70**	**5.25**	0.73	0.85	6.18	5.78	0.00	0.00	0.00	0.00	
18	P-3101B	EFFLUENT FEED PUMP B	**S**		**7.5**	**0.70**	**5.25**	0.73	0.85	0.00	0.00	6.18	5.78	0.00	0.00	
EFFLUENT TREATMENT PLANT TRAIN -1																
19	P-3104A	IGF SKIMMED OIL PUMP A	**C**		**2.2**	**0.70**	**1.54**	0.73	0.85	1.81	1.70	0.00	0.00	0.00	0.00	**NOTE:3**
20	P-3104B	IGF SKIMMED OIL PUMP B	**S**		**2.2**	**0.70**	**1.54**	0.73	0.85	0.00	0.00	1.81	1.70	0.00	0.00	**NOTE:3**
21	P-3104C	IGF SKIMMED OIL PUMP C	**C**		**2.2**	**0.70**	**1.54**	0.73	0.85	1.81	1.70	0.00	0.00	0.00	0.00	**NOTE:3**
22	P-3104D	IGF SKIMMED OIL PUMP D	**S**		**2.2**	**0.70**	**1.54**	0.73	0.85	0.00	0.00	1.81	1.70	0.00	0.00	**NOTE:3**
23	P-3105A	IGF VESSEL RECIRCULATION PUMPS (EDUCTOR PUMP A)	**C**		**1.5**	**0.70**	**1.05**	0.73	0.85	1.24	1.16	0.00	0.00	0.00	0.00	**NOTE:3**
24	P-3105B	IGF VESSEL RECIRCULATION PUMPS (EDUCTOR PUMP B)	**S**		**1.5**	**0.70**	**1.05**	0.73	0.85	0.00	0.00	1.24	1.16	0.00	0.00	**NOTE:3**
25	P-3105C	IGF VESSEL RECIRCULATION PUMPS (EDUCTOR PUMP C)	**C**		**1.5**	**0.70**	**1.05**	0.73	0.85	1.24	1.16	0.00	0.00	0.00	0.00	**NOTE:3**
26	P-3105D	IGF VESSEL RECIRCULATION PUMPS (EDUCTOR PUMP D)	**S**		**1.5**	**0.70**	**1.05**	0.73	0.85	0.00	0.00	1.24	1.16	0.00	0.00	**NOTE:3**
27	P-3106A	FILTER FEED PUMP A	**C**		**1.1**	**0.70**	**0.77**	0.73	0.85	0.91	0.85	0.00	0.00	0.00	0.00	**NOTE:3**
28	P-3106B	FILTER FEED PUMP B	**S**		**1.1**	**0.70**	**0.77**	0.73	0.85	0.00	0.00	0.91	0.85	0.00	0.00	**NOTE:3**
29	P-3107A	MEDIA SCRUB PUMP A	**C**		**0.75**	**0.70**	**0.525**	0.73	0.85	0.62	0.58	0.00	0.00	0.00	0.00	**NOTE:3**
30	P-3107B	MEDIA SCRUB PUMP B	**S**		**0.75**	**0.70**	**0.525**	0.73	0.85	0.00	0.00	0.62	0.58	0.00	0.00	**NOTE:3**
31	P-XXXX	IGF FEED PUMP A	**C**		**5.5**	**0.70**	**3.85**	0.73	0.85	4.53	4.24	0.00	0.00	0.00	0.00	**NOTE:3**
32	P-XXXX	IGF FEED PUMP B	**S**		**5.5**	**0.70**	**3.85**	0.73	0.85	0.00	0.00	0.00	0.00	0.00	0.00	**NOTE:3**
33	P-XXXX	IGF FEED PUMP C	**C**		**5.5**	**0.70**	**3.85**	0.73	0.85	4.53	4.24	0.00	0.00	0.00	0.00	**NOTE:3**
34	P-XXXX	IGF FEED PUMP D	**S**		**5.5**	**0.70**	**3.85**	0.73	0.85	0.00	0.00	4.53	4.24	0.00	0.00	**NOTE:3**
35	P-XXXX	SKIMMED OIL TRANSFER PUMP	**C**		**1.5**	**0.70**	**1.05**	0.73	0.85	1.24	1.16	0.00	0.00	0.00	0.00	**NOTE:3**

ELECTRICAL LOAD SUMMARY

PROJECT	**ENGINEERING & PROJECT MANAGEMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM**	**DOCUMENT NO.**	**FGGS-BJN-ELC-SCH-6000**
		REV.:	**0** **REV.DATE** **18-07-19**
CLIENT	**OIL INDIA LIMITED**	**PAGE:**	**4 OF 7**

Sr. No.	Equipment No.	Description	Load Type	kW Status	Name Plate Rating	Load Factor	Absorbed Load, kW	P.F. (LAG) at absorbed load	Efficiency at absorbed load	Input Power						REMARKS
										Continuous (A)		Stand by (B)		Intermittent (C)		
										kW	Kvar	kW	Kvar	kW	Kvar	
					a	**b**	**c**=a*b	d	e	f=c/e		h=c/e		j=c/e		
36	P-XXXX	SKIMMED OIL TRANSFER PUMP	**S**		**1.5**	**0.70**	**1.05**	0.73	0.85	0.00	0.00	1.24	1.16	0.00	0.00	**NOTE:3**
37	P-XXXX	CENTRIFUGE FEED PUMP	**C**		**1.5**	**0.70**	**1.05**	0.73	0.85	1.24	1.16	0.00	0.00	0.00	0.00	**NOTE:3**
38	P-XXXX	CENTRIFUGE FEED PUMP	**S**		**1.5**	**0.70**	**1.05**	0.73	0.85	0.00	0.00	1.24	1.16	0.00	0.00	**NOTE:3**
39	P-XXXX	DRAIN TRANSFER PUMP	**C**		**2.2**	**0.70**	**1.54**	0.73	0.85	1.81	1.70	0.00	0.00	0.00	0.00	**NOTE:3**
40	P-XXXX	DRAIN TRANSFER PUMP	**S**		**2.2**	**0.70**	**1.54**	0.73	0.85	0.00	0.00	1.81	1.70	0.00	0.00	**NOTE:3**
41	P-XXXX	DWPE DOSING PUMP	**C**		**0.37**	**0.70**	**0.259**	0.73	0.85	0.30	0.29	0.00	0.00	0.00	0.00	**NOTE:3**
42	P-XXXX	DWPE DOSING PUMP	**S**		**0.37**	**0.70**	**0.259**	0.73	0.85	0.00	0.00	0.30	0.29	0.00	0.00	**NOTE:3**
EFFLUENT TREATMENT PLANT TRAIN -2																
43	P-3104A	IGF SKIMMED OIL PUMP A	**C**		**2.2**	**0.70**	**1.54**	0.73	0.85	1.81	1.70	0.00	0.00	0.00	0.00	**NOTE:3**
44	P-3104B	IGF SKIMMED OIL PUMP B	**S**		**2.2**	**0.70**	**1.54**	0.73	0.85	0.00	0.00	1.81	1.70	0.00	0.00	**NOTE:3**
45	P-3104C	IGF SKIMMED OIL PUMP C	**C**		**2.2**	**0.70**	**1.54**	0.73	0.85	1.81	1.70	0.00	0.00	0.00	0.00	**NOTE:3**
46	P-3104D	IGF SKIMMED OIL PUMP D	**S**		**2.2**	**0.70**	**1.54**	0.73	0.85	0.00	0.00	1.81	1.70	0.00	0.00	**NOTE:3**
47	P-3105A	IGF VESSEL RECIRCULATION PUMPS (EDUCTOR PUMP A)	**C**		**1.5**	**0.70**	**1.05**	0.73	0.85	1.24	1.16	0.00	0.00	0.00	0.00	**NOTE:3**
48	P-3105B	IGF VESSEL RECIRCULATION PUMPS (EDUCTOR PUMP B)	**S**		**1.5**	**0.70**	**1.05**	0.73	0.85	0.00	0.00	1.24	1.16	0.00	0.00	**NOTE:3**
49	P-3105C	IGF VESSEL RECIRCULATION PUMPS (EDUCTOR PUMP C)	**C**		**1.5**	**0.70**	**1.05**	0.73	0.85	1.24	1.16	0.00	0.00	0.00	0.00	**NOTE:3**
50	P-3105D	IGF VESSEL RECIRCULATION PUMPS (EDUCTOR PUMP D)	**S**		**1.5**	**0.70**	**1.05**	0.73	0.85	0.00	0.00	1.24	1.16	0.00	0.00	**NOTE:3**
51	P-3106A	FILTER FEED PUMP A	**C**		**1.1**	**0.70**	**0.77**	0.73	0.85	0.91	0.85	0.00	0.00	0.00	0.00	**NOTE:3**
52	P-3106B	FILTER FEED PUMP B	**S**		**1.1**	**0.70**	**0.77**	0.73	0.85	0.00	0.00	0.91	0.85	0.00	0.00	**NOTE:3**
53	P-3107A	MEDIA SCRUB PUMP A	**C**		**0.75**	**0.70**	**0.525**	0.73	0.85	0.62	0.58	0.00	0.00	0.00	0.00	**NOTE:3**
54	P-3107B	MEDIA SCRUB PUMP B	**S**		**0.75**	**0.70**	**0.525**	0.73	0.85	0.00	0.00	0.62	0.58	0.00	0.00	**NOTE:3**
55	P-XXXX	IGF FEED PUMP A	**C**		**5.5**	**0.70**	**3.85**	0.73	0.85	4.53	4.24	0.00	0.00	0.00	0.00	**NOTE:3**
56	P-XXXX	IGF FEED PUMP B	**S**		**5.5**	**0.70**	**3.85**	0.73	0.85	0.00	0.00	0.00	0.00	0.00	0.00	**NOTE:3**
57	P-XXXX	IGF FEED PUMP C	**C**		**5.5**	**0.70**	**3.85**	0.73	0.85	4.53	4.24	0.00	0.00	0.00	0.00	**NOTE:3**
58	P-XXXX	IGF FEED PUMP D	**S**		**5.5**	**0.70**	**3.85**	0.73	0.85	0.00	0.00	4.53	4.24	0.00	0.00	**NOTE:3**
59	P-XXXX	SKIMMED OIL TRANSFER PUMP	**S**		**1.5**	**0.70**	**1.05**	0.73	0.85	0.00	0.00	1.24	1.16	0.00	0.00	**NOTE:3**
60	P-XXXX	CENTRIFUGE FEED PUMP	**C**		**1.5**	**0.70**	**1.05**	0.73	0.85	1.24	1.16	0.00	0.00	0.00	0.00	**NOTE:3**
61	P-XXXX	CENTRIFUGE FEED PUMP	**S**		**1.5**	**0.70**	**1.05**	0.73	0.85	0.00	0.00	1.24	1.16	0.00	0.00	**NOTE:3**
62	P-XXXX	DRAIN TRANSFER PUMP	**C**		**2.2**	**0.70**	**1.54**	0.73	0.85	1.81	1.70	0.00	0.00	0.00	0.00	**NOTE:3**
63	P-XXXX	DRAIN TRANSFER PUMP	**S**		**2.2**	**0.70**	**1.54**	0.73	0.85	0.00	0.00	1.81	1.70	0.00	0.00	**NOTE:3**
64	P-XXXX	DWPE DOSING PUMP	**C**		**0.37**	**0.70**	**0.259**	0.73	0.85	0.30	0.29	0.00	0.00	0.00	0.00	**NOTE:3**
65	P-XXXX	DWPE DOSING PUMP	**S**		**0.37**	**0.70**	**0.259**	0.73	0.85	0.00	0.00	0.30	0.29	0.00	0.00	**NOTE:3**
TREATED WATER STORAGE SYSTEM																
66	P-3108A	TREATED WATER DISPOSAL PUMP A	**C**		**55**	**0.83**	**45.65**	0.82	0.93	49.09	34.26	0.00	0.00	0.00	0.00	
67	P-3108B	TREATED WATER DISPOSAL PUMP B	**S**		**55**	**0.83**	**45.65**	0.82	0.93	0.00	0.00	49.09	34.26	0.00	0.00	
WATER TREATMENT SYSTEM																
68	P-3301A	SHALLOW TUBE WELL PUMP A	**I**		**5.5**	**0.70**	**3.85**	0.73	0.85	0.00	0.00	0.00	0.00	4.53	4.24	
69	P-3301B	SHALLOW TUBE WELL PUMP B	**S**		**5.5**	**0.70**	**3.85**	0.73	0.85	0.00	0.00	4.53	4.24	0.00	0.00	
70	P-3302A	DEEP WATER TUBE WELL PUMP A	**I**		**37**	**0.75**	**27.75**	0.78	0.91	0.00	0.00	0.00	0.00	30.49	24.47	
71	P-3302B	DEEP WATER TUBE WELL PUMP B	**S**		**37**	**0.75**	**27.75**	0.78	0.91	0.00	0.00	30.49	24.47	0.00	0.00	
72	P-XXXX	CHLORINE DOSING PUMP A	**C**		**0.12**	**0.75**	**0.09**	0.78	0.91	0.10	0.08	0.00	0.00	0.00	0.00	**NOTE:3**
73	P-XXXX	CHLORINE DOSING PUMP B	**S**		**0.12**	**0.75**	**0.09**	0.78	0.91	0.00	0.00	0.10	0.08	0.00	0.00	**NOTE:3**
74	P-XXXX	CLARIFIED WATER FEED PUMP A	**C**		**1.1**	**0.75**	**0.825**	0.78	0.91	0.91	0.73	0.00	0.00	0.00	0.00	**NOTE:3**
75	P-XXXX	CLARIFIED WATER FEED PUMP B	**S**		**1.1**	**0.75**	**0.825**	0.78	0.91	0.00	0.00	0.91	0.73	0.00	0.00	**NOTE:3**
76	P-XXXX	BACKWASH PUMP A	**C**		**1.1**	**0.75**	**0.825**	0.78	0.91	0.91	0.73	0.00	0.00	0.00	0.00	**NOTE:3**
77	P-XXXX	BACKWASH PUMP B	**S**		**1.1**	**0.75**	**0.825**	0.78	0.91	0.00	0.00	0.91	0.73	0.00	0.00	**NOTE:3**

ELECTRICAL LOAD SUMMARY

PROJECT	**ENGINEERING & PROJECT MANAGEMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM**	**DOCUMENT NO.**	**FGGS-BJN-ELC-SCH-6000**	
		REV.:	**0** **REV.DATE**	**18-07-19**
CLIENT	**OIL INDIA LIMITED**	**PAGE:**	**4 OF 7**	

Sr. No.	Equipment No.	Description	Load Type	kW Status	Name Plate Rating	Load Factor	Absorbed Load, kW	P.F. (LAG) at absorbed load	Efficiency at absorbed load	Input Power						REMARKS
										Continuous (A)		Stand by (B)		Intermittent (C)		
										kW	Kvar	kW	Kvar	kW	Kvar	
					a	**b**	**c**=a*b	d	e	f=c/e		h=c/e		j=c/e		
INSTRUMENT AIR PACKAGE																
78	K-9201A	INST. AIR COMPRESSOR A	**C**		**5.5**	**0.70**	**3.85**	0.73	0.85	4.53	4.24	0.00	0.00	0.00	0.00	**BLACK START / EMERGENCY NOTE:3**
79	K-9201B	INST. AIR COMPRESSOR B	**S**		**5.5**	**0.70**	**3.85**	0.73	0.85	0.00	0.00	4.53	4.24	0.00	0.00	**BLACK START / EMERGENCY NOTE:3**
80	K-9202	COMPRESSOR AFTER COOLER	**C**		**3.7**	**0.70**	**2.59**	0.73	0.85	3.05	2.85	0.00	0.00	0.00	0.00	**BLACK START / EMERGENCY NOTE:3**
CORROSION INHIBITOR INJECTION																
81	P-9101A	CI PUMPS-I A	**C**		**0.37**	**0.70**	**0.259**	0.73	0.85	0.30	0.29	0.00	0.00	0.00	0.00	**NOTE:3**
82	P-9101B	CI PUMPS-I B	**S**		**0.37**	**0.70**	**0.259**	0.73	0.85	0.00	0.00	0.30	0.29	0.00	0.00	**NOTE:3**
83	P-9102A	CI PUMPS-II A	**C**		**0.75**	**0.70**	**0.525**	0.73	0.85	0.62	0.58	0.00	0.00	0.00	0.00	**NOTE:3**
84	P-9102B	CI PUMPS-II B	**S**		**0.75**	**0.70**	**0.525**	0.73	0.85	0.00	0.00	0.62	0.58	0.00	0.00	**NOTE:3**
85	P-9107A	CI PUMPS-III A	**C**		**1.5**	**0.70**	**1.05**	0.73	0.85	1.24	1.16	0.00	0.00	0.00	0.00	**NOTE:3**
86	P-9107B	CI PUMPS-III B	**S**		**1.5**	**0.70**	**1.05**	0.73	0.85	0.00	0.00	1.24	1.16	0.00	0.00	**NOTE:3**
BIOCIDE INJECTION																
87	P-9103	UNLOADING PUMP	**C**		**0.37**	**0.70**	**0.259**	0.73	0.85	0.30	0.29	0.00	0.00	0.00	0.00	**NOTE:3**
88	P-9104A	BIOCIDE INJECTION PUMP A	**C**		**0.37**	**0.70**	**0.259**	0.73	0.85	0.30	0.29	0.00	0.00	0.00	0.00	**NOTE:3**
89	P-9104B	BIOCIDE INJECTION PUMP B	**S**		**0.37**	**0.70**	**0.259**	0.73	0.85	0.00	0.00	0.30	0.29	0.00	0.00	**NOTE:3**
OXYGEN SCAVENGER INJECTION																
90	P-9105A	OXYGEN SCAVENGER INJECTION PUMP A	**C**		**0.37**	**0.70**	**0.259**	0.73	0.85	0.30	0.29	0.00	0.00	0.00	0.00	**NOTE:3**
91	P-9105B	OXYGEN SCAVENGER INJECTION PUMP B	**S**		**0.37**	**0.70**	**0.259**	0.73	0.85	0.00	0.00	0.30	0.29	0.00	0.00	**NOTE:3**
METHANOL INJECTION																
92	P-9106A	METHANOL INJECTION PUMP A	**C**		**2.2**	**0.70**	**1.54**	0.73	0.85	1.81	1.70	0.00	0.00	0.00	0.00	**NOTE:3**
93	P-9106B	METHANOL INJECTION PUMP B	**S**		**2.2**	**0.70**	**1.54**	0.73	0.85	0.00	0.00	1.81	1.70	0.00	0.00	**NOTE:3**
FIRE WATER SYSTEM																
94	P-3402A	FIRE WATER JOCKEY PUMP A	**I**		**15**	**0.70**	**10.5**	0.78	0.91	0.00	0.00	0.00	0.00	11.54	9.26	**BLACK START / EMERGENCY**
95	P-3402B	FIRE WATER JOCKEY PUMP B	**S**		**15**	**0.70**	**10.5**	0.78	0.91	0.00	0.00	11.54	9.26	0.00	0.00	**BLACK START / EMERGENCY**
CONTAMINATED RAIN WATER SYSTEM																
96	P-9501	CRWS WATER PUMP	**C**		**3.7**	**0.70**	**2.59**	0.78	0.91	2.85	2.28	0.00	0.00	0.00	0.00	

ELECTRICAL LOAD SUMMARY

PROJECT	**ENGINEERING & PROJECT MANAGEMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM**	**DOCUMENT NO.**	**FGGS-BJN-ELC-SCH-6000**
		REV.:	**0** **REV.DATE** **18-07-19**
CLIENT	**OIL INDIA LIMITED**	**PAGE:**	**4 OF 7**

Sr. No.	Equipment No.	Description	Load Type	kW Status	Name Plate Rating	Load Factor	Absorbed Load, kW	P.F. (LAG) at absorbed load	Efficiency at absorbed load	Input Power						REMARKS
										Continuous (A)		Stand by (B)		Intermittent (C)		
										kW	Kvar	kW	Kvar	kW	Kvar	
					a	**b**	**c**=a*b	d	e	f=c/e		h=c/e		j=c/e		
MISCELLANEOUS																
97	DCDB	110 V D.C.DB	**C**		**10**	**1.00**	**10**	1.00	1.00	10.00	0.00	0.00	0.00	0.00	0.00	
98	ACDB	230 V A.C. UPS DB	**C**		**100**	**0.85**	**85**	0.91	0.94	90.43	41.20	0.00	0.00	0.00	0.00	
99	MPDB	MAIN POWER DISTRIBUTION BOARD	**C**		**70**	**0.85**	**59.5**	0.91	0.94	63.30	28.84	0.00	0.00	0.00	0.00	
100	MNLDB	MAIN NORMAL LIGHTING DISTRIBUTION BOARD	**C**		**100**	**0.83**	**83**	0.82	0.93	89.25	62.30	0.00	0.00	0.00	0.00	
101	MELDB	MAIN EMERGENCY LIGHTING DISTRIBUTION BOARD	**C**		**50**	**0.83**	**41.5**	0.82	0.93	44.62	31.15	0.00	0.00	0.00	0.00	**BLACK START / EMERGENCY**
102	MOV-PL	MOV PANEL	**C**		**20**	**0.75**	**15**	0.78	0.91	16.48	13.22	0.00	0.00	0.00	0.00	
		Total Load								**4131.48**	**312.56**	**182.58**	**151.38**	**51.66**	**42.74**	

MAXIMUM DEMAND IN KW = **4196** (Cont. load A + 30% of total Intermittent Load + 10% sum of all stand-by loads or the largest standby load whichever is higher)

MAXIMUM DEMAND IN kVAR = **360** (Cont. load A + 30% of total Intermittent Load + 10% sum of all stand-by loads or the largest standby load whichever is higher)

MAXIMUM DEMAND IN kVA = **4211**

NOTES :-

1. Load Type is as defined below: "C" - Continuous load ; "S" - Standby load ; "I" - Intermittent load.
2. Power factor correction capacitors not considered as grid supply is not utilized
3. For Pumps, the rating of motors shall be subject to confirmation by pump vendor/package vendor.
4. 10 Nos. of electric heater has been considered for phase-I.
5. Future load excluded.

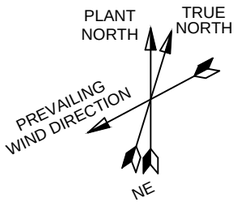
MAX DEMAND IN PHASE I (kW)	**4196**	kW	
MINIMUM RATING OF GAS GENERATOR	**4196**	kW	**1500kW each; Total 4 Nos.The working philosophy will be (3W + 1S).**
GAS GENERATOR RATING SELECTED	**4500**	kW	**Generators to be suitable for 100% loading**

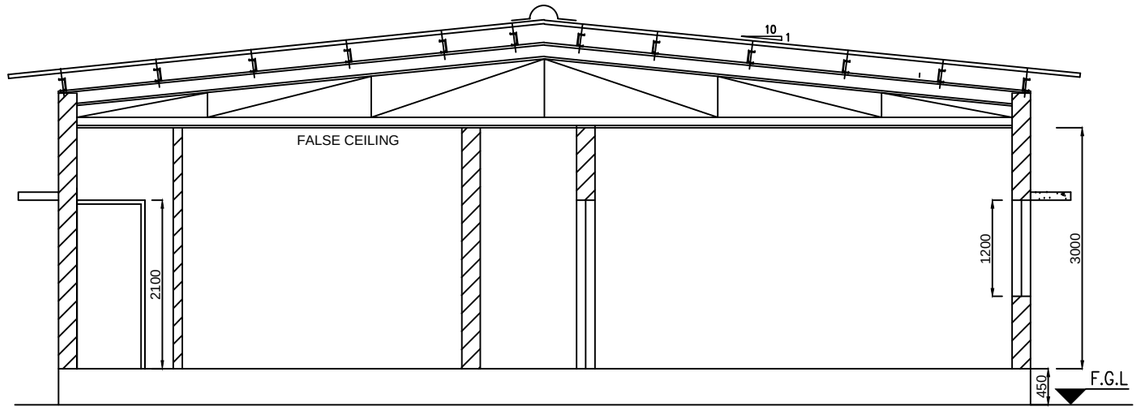
PROCESS DATA SHEET- HP FLARE KOD PUMP (P-2402)

REV.	DESCRIPTION	DATE	BY	CHECKED	APPROVED	CLIENT
0	Issued for ITB	28-06-19	AOV	LG	CK	
A	Issued for Review	28-05-19	AOV	LG	CK	

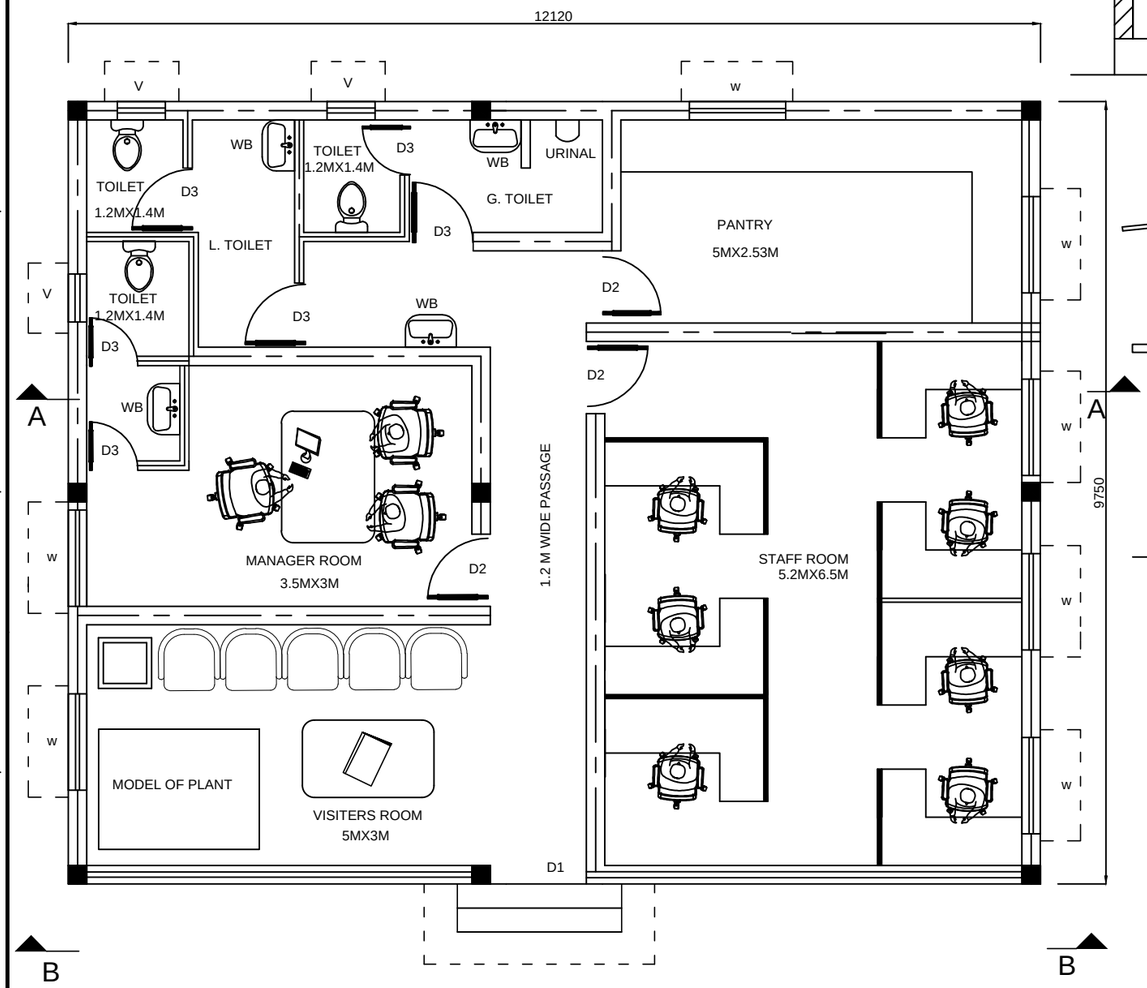
SR. NO	DESCRIPTION	UNIT	VALUE
1	Tag Number		P-2402
2	Service		Condensate
3	Type		Horizontal, centrifugal Pump
4	Number Required: Operating		1 +1 Store room spare Note-7
5	Pumping Temperature	^{0}C	15
6	Viscosity At Pumping Temperature	cP	1.137
7	Vapor Pressure At Pumping Temp.	kPa (a)	23.1
8	Liquid Density At Pumping Temp.	kg/m^3	1015
9	Presence Of Corrosive material		Yes
11	Presence Of Toxic Component		No
12	Solids In Suspension		No
	OPERATING CONDITIONS:		
13	Flow rate	m^3/hr	0.5, Note-2
14	Suction Pressure	kPa (a)	101
15	Discharge Pressure	kPa (a)	297
16	Rated Differential Pressure	kPa	195
17	NPSH Available, Liquid column	m	7.8 , Note-3
18	Estimated Efficiency	%	70
19	Motor duty	KW	0.06
20	Design Code		ISO 5199/ANSI/ASME B73.1
	MECHANICAL DATA		
21	Casing Pressure, Max.	kPa (a)	VTA
22	Design Temperature Min/Max	^{0}C	(-)20/ 70
23	Material Of Construction (Casing/Impeller)		CS with SS 316
24	Seal Type		VTA
25	Seal Flushing , Inboard/Outboard		VTA
26	Line Rating , In/Out		150# /150#
27	Line Size, In/Out	Inch.	2 / 1
28	Driver		Electric motor, Note-5

NOTES:	
1	Reference PID : FGGS-BJN-PRO-PID-2401
2	Rated capacity to be provided by pump vendor. Generally a 10% design margin should be considered on the rated capacity over the expected normal flow rate.
3	Deleted.
4	Margin between NPSHa and NPSHr shall be minimum 1.0m.
5	Electric motor shall be DGMS approved.
6	Equipment noise level (Driver + Driven equipment train) at 100% operating condition shall not exceed 85 dBA when measured at 1m distance from the equipment surface in any direction
7	Store room for spare KOD pump shall be provided.
8	VTA-Vendor To Advice

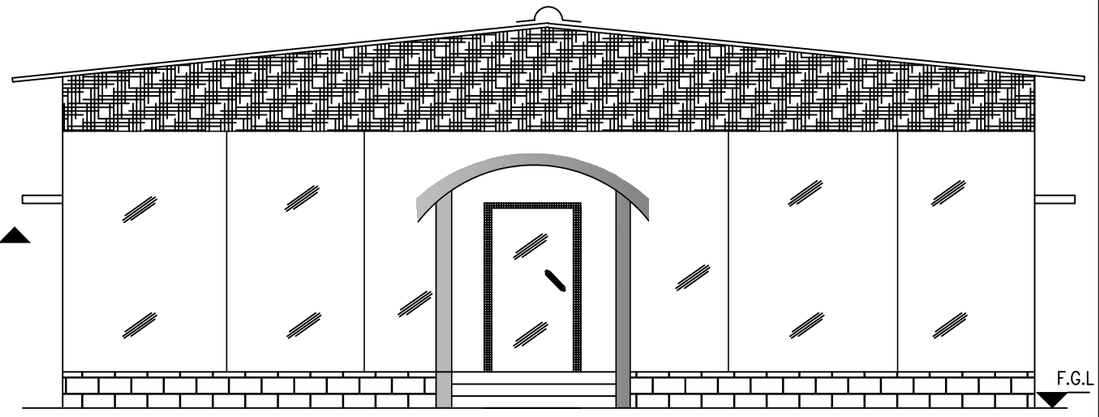




SECTION A - A



PLAN



ELEVATION B - B

SCHEDULE OF DOOR/WINDOWS			
S.NO.	SIZE (mm)	QTY.	DESCRIPTION
D1	1200x2100	1	GLAZED ANODIZED ALUMINIUM DOOR
D2	900x2100	3	SINGLE SHUTTER PVC PANELLED DOOR WITH ALUMINIUM FRAME
D3	800x2100	6	GLAZED ANODIZED ALUMINIUM DOORS
W	1200X1200	7	GLAZED ANODIZED ALUMINIUM WINDOWS
V	600X600	3	GLAZED ANODIZED ALUMINIUM WINDOWS

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. ANODIZED WINDOWS/VENTILATORS WITH 5.5 MM THICK TOUGHENED GLASS.
3. DETAILED ARCHITECTURAL WORKING DRAWING SHALL BE PREPARED BY LSTK CONTRACTOR.
4. FRONT FACIA OF ADMINISTRATION BUILDING SHALL BE PROVIDED WITH 12MM THICK TOUGHENED TINTED GLASS.

DRAWING No.	REFERENCE DRAWINGS
FGGS-BJN-PIP-LAY-5000	OVERALL PLOT PLAN

REV	DATE	DESCRIPTION	BY	CHK	APP	DWN
A	11-07-2019	ISSUED FOR REVIEW /APPROVAL	RJ	RV	RV	
0	17-07-2019	ISSUED FOR ITB	RJ	RV	RV	

SCALE: 1:70

DRAWN	RJ	DATE: 17-07-2019
CHECKED	RV	DATE: 17-07-2019
APPROVED	RV	DATE: 17-07-2019
OWNER		

CLIENT: OIL INDIA LIMITED

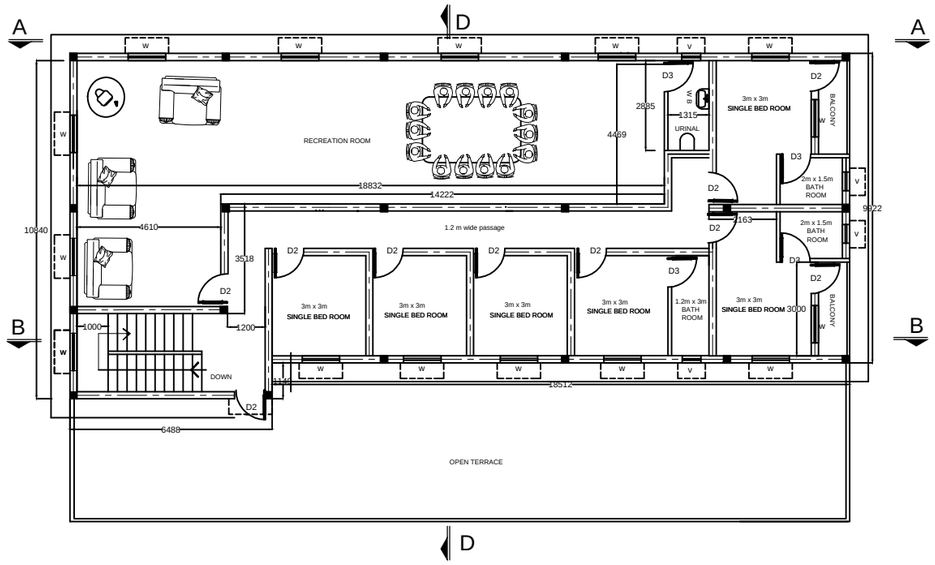
ENGINEERING: JAYATHE PETROTECH ENGINEERS AND CONSULTANTS PVT LTD

ENGINEERING & PROJECT MANAGMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM

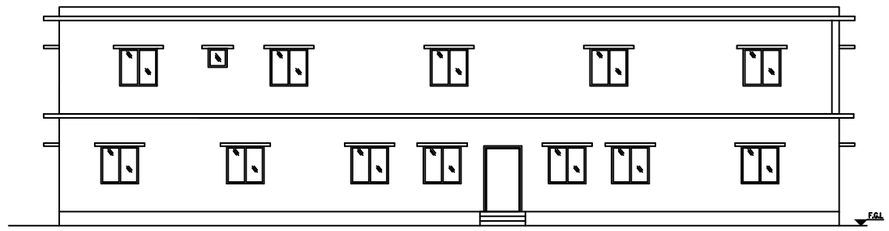
ARCHITECTURAL DRAWING FOR ADMINISTRATION BUILDING

CADD NUMBER	DRAWING NUMBER	SHT. No.	REV
FGGSBJN800101.dwg	FGGS-BJN-CIV-ARC-8001	01/01	0

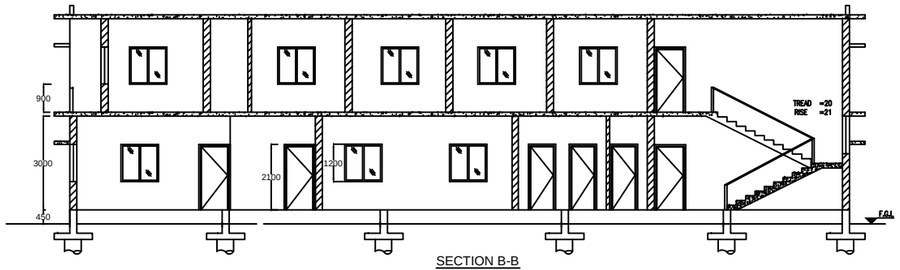
FORM_A3.DGN



FIRST FLOOR PLAN

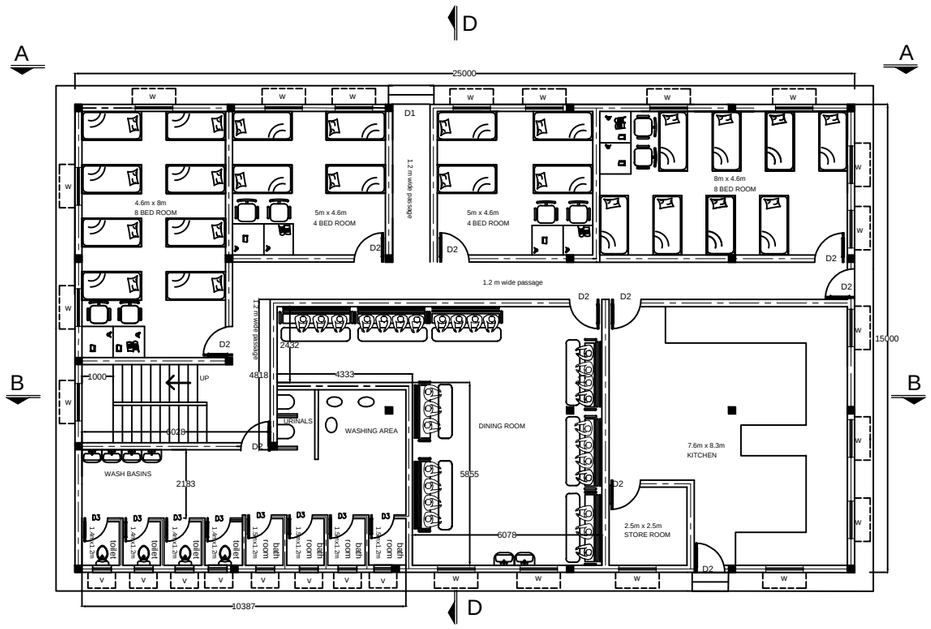


ELEVATION (VIEW A A)

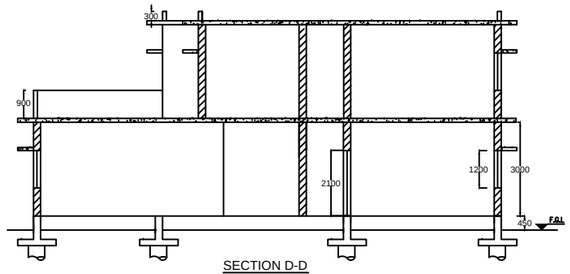


SECTION B-B

PLANT NORTH
TRUE NORTH



GROUND FLOOR PLAN



SECTION D-D

SCHEDULE OF DOOR/WINDOWS			
S.NO.	SIZE (mm)	QTY.	DESCRIPTION
D1	1200x2100	1	COLLAPSIBLE STEEL GATE
D2	900x2100	20	SINGLE SHUTTER PVC PANELLED DOOR WITH ALUMINIUM FRAME.
D3	800x2100	12	SINGLE SHUTTER PVC PANELLED DOOR WITH ALUMINIUM FRAME.
W	1200X1200	34	GLAZED ANODIZED ALUMINIUM WINDOWS
V	600X600	12	GLAZED ANODIZED ALUMINIUM WINDOWS

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. ANODIZED ALUMINIUM WINDOWS/VENTILATORS WITH 5.5MM THICK TOUGHENED GLASS.
3. FLY MESH SHUTTERS SHALL BE PROVIDED FOR KITCHEN, DINING HALL WINDOWS.
4. DETAILED ARCHITECTURAL WORKING DRAWING SHALL BE PREPARED BY LSTK CONTRACTOR

CLIENT: OIL INDIA LIMITED

ENGINEERING: JAYATHE PETROTECH ENGINEERS AND CONSULTANTS PVT LTD

ENGINEERING & PROJECT MANAGEMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM

ARCHITECTURAL DRAWING FOR OPERATING STAFF ACCOMMODATION

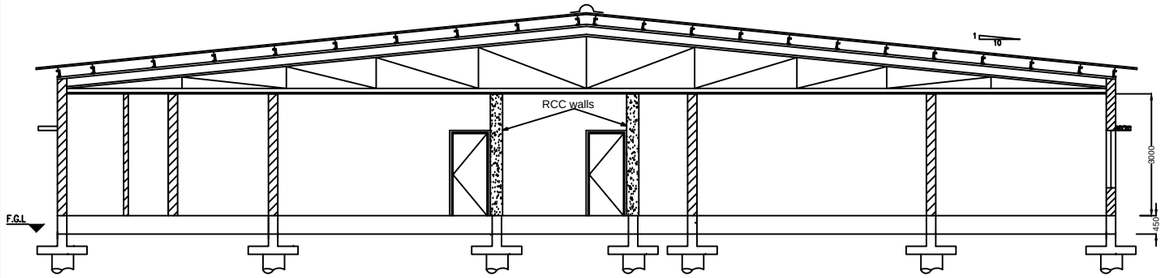
REFERENCE DRAWINGS	REV	DATE	DESCRIPTION	BY	CHK	APP	DWN
	A	08-04-2019	ISSUED FOR REVIEW	RJ	RV	RV	
	B	09-05-2019	ISSUED FOR APPROVAL	RJ	RV	RV	
	0	17-07-2019	ISSUED FOR ITB	RJ	RV	RV	

SCALE: 1:200

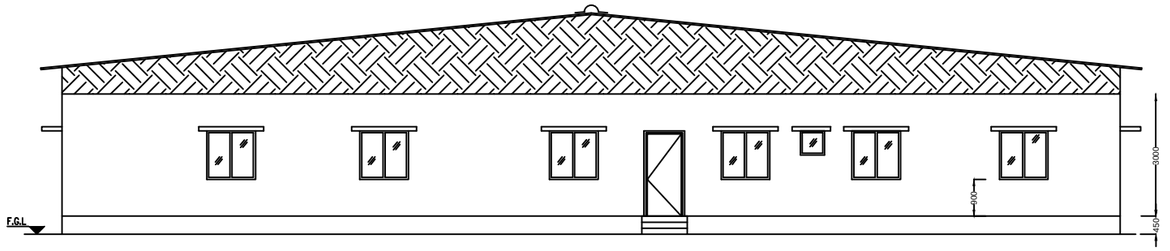
DRAWN	RJ	DATE: 17-07-2019
CHECKED	RV	DATE: 17-07-2019
APPROVED	RV	DATE: 17-07-2019
OWNER		

CADD NUMBER	DRAWING NUMBER	SHT. No.	REV
FGGSBJN800301.dwg	FGGS-BJN-CIV-ARC-8003	01/01	0

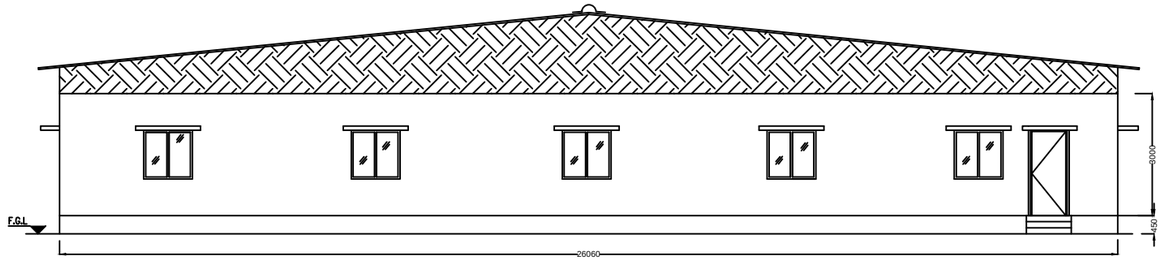
FORM_A3.DGN



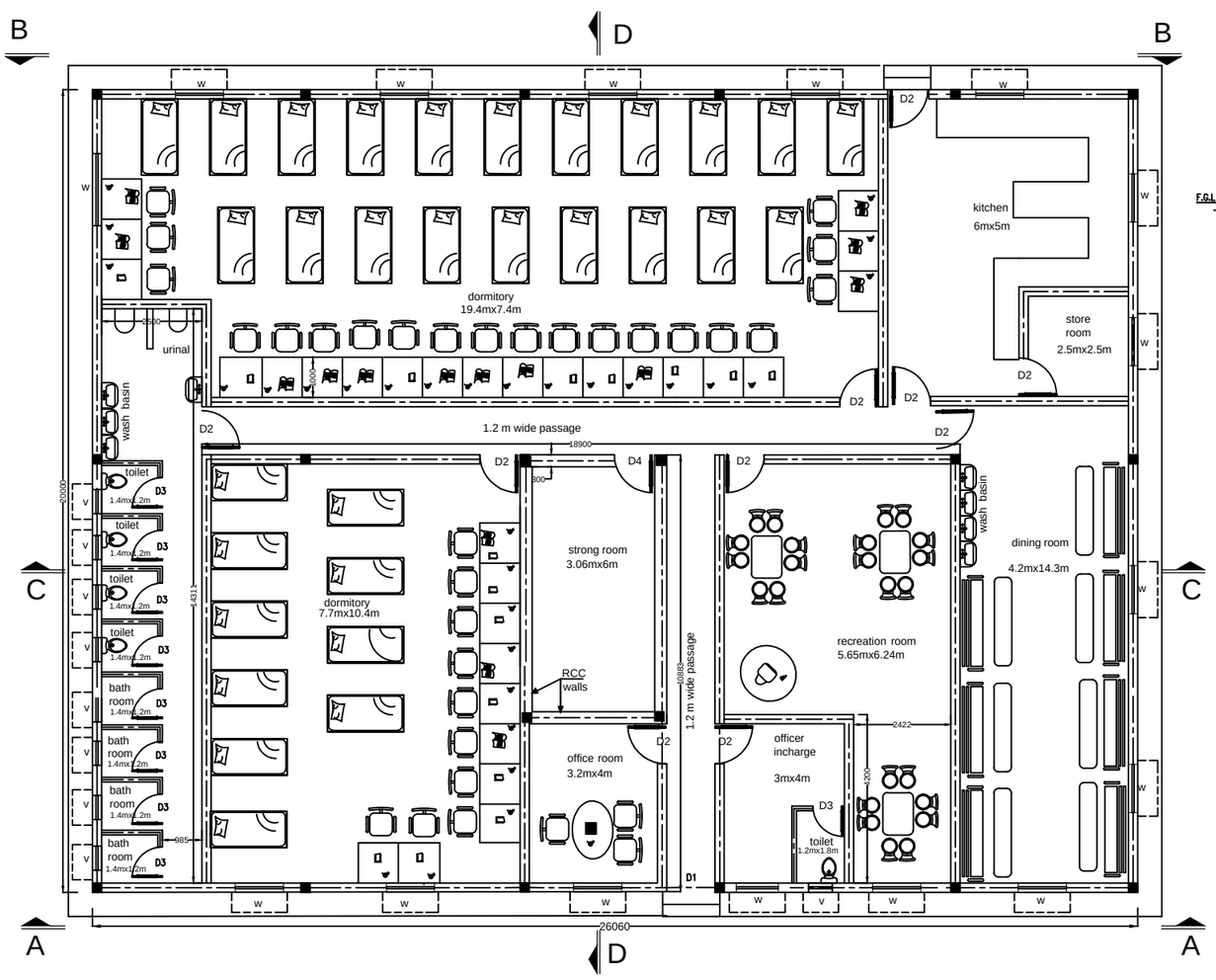
SECTION C-C



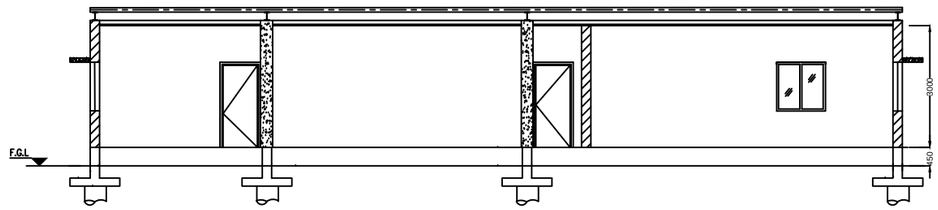
VIEW A-A



VIEW B-B



SECURITY BARRACK PLAN



SECTION D-D

SCHEDULE OF DOOR/WINDOWS				
S.NO.	SIZE (mm)	QTY.	DESCRIPTION	REMARKS
D1	1000x2100	1	COLLAPSIBLE STEEL GATE	
D2	900x2100	10	SINGLE SHUTTER PVC PANELLED DOOR WITH ALUMINIUM FRAME	
D3	800x2100	9	SINGLE SHUTTER PVC PANELLED DOOR WITH ALUMINIUM FRAME	
D4	900x2100	1	STEEL DOOR	
W	1200X1200	15	GLAZED ANODIZED ALUMINIUM WINDOWS	WITH IRON GRILLS
V	600X600	9	GLAZED ANODIZED ALUMINIUM WINDOWS	WITH IRON GRILLS

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. ANODIZED ALUMINIUM WINDOWS/VENTILATORS WITH 5.5MM THICK TOUGHENED GLASS.
3. FLY MESH SHUTTERS SHALL BE PROVIDED FOR KITCHEN,DINING HALL WINDOWS.
4. DETAILED ARCHITECTURAL WORKING DRAWING SHALL BE PREPARED BY LSTK CONTRACTOR

CLIENT: OIL INDIA LIMITED

ENGINEERING: JAYATHE PETROTECH ENGINEERS AND CONSULTANTS PVT LTD

ENGINEERING & PROJECT MANAGMENT CONSULTANCY FOR CREATION OF FIELD GAS GATHERING STATION (FGGS) AT BAGHJAN IN UPPER ASSAM

ARCHITECTURAL DRAWING FOR SECURITY BARRACK

DRAWING No.	REFERENCE DRAWINGS

REV	DATE	DESCRIPTION	BY	CHK	APP	DWN
A	01-04-2019	ISSUED FOR REVIEW	RJ	RV	RV	
0	17-07-2019	ISSUED FOR ITB	RJ	RV	RV	

SCALE: 1:150

DRAWN	RJ	DATE:17-07-2019
CHECKED	RV	DATE:17-07-2019
APPROVED	RV	DATE:17-07-2019
OWNER		

CADD NUMBER	DRAWING NUMBER	SHT. No.	REV
FGGSBJN800201.dwg	FGGS-BJN-CIV-ARC-8002	01/01	0

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