طرح نگهداشت و افزایش تولید ۲۷ مخزن

HAZOP REPORT FOR BINAK B/C MANIFOLD EXTENSION

نگهداشت و افزایش تولید میدان نفتی بینک

D00	JUL. 2021	IFI	A.Baghaei	M.Fakharian	M.Mehrshad	
Rev.	**Date**	**Purpose of Issue/Status**	**Prepared by:**	**Checked by:**	**Approved by:**	**CLIENT Approval**

Class: 3 | **CLIENT Doc. Number: F0Z-707340**

Status:

IDC: Inter-Discipline Check
IFC: Issued For Comment
IFA: Issued For Approval
AFD: Approved For Design
AFC: Approved For Construction
AFP: Approved For Purchase
AFQ: Approved For Quotation
IFI: Issued For Information
AB-R: As-Built for CLIENT Review
AB-A: As-Built –Approved

REVISION RECORD SHEET

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CONTENTS

1.0 INTRODUCTION

Binak oilfield in Bushehr province is a part of the southern oilfields of Iran, is located 20 km northwest of Genaveh city.

With the aim of increasing production of oil from Binak oilfield, an EPC/EPD Project has been defined by NIOC/NISOC and awarded to Petro Iran Development Company (PEDCO). Also, PEDCO (as General Contractor) has assigned the EPC-packages of the Project to "Hirgan Energy - Design and Inspection" JV.

As a part of the Project, construction of well location, access road, wellhead facilities (with electric power supply) for W007S shall be done. In addition, construction of new flowline from aforementioned well location to Binak B/C unit (with extension of relevant manifold) are in the Project scope of work.

GENERAL DEFINITION

The following terms shall be used in this document.

CLIENT:	National Iranian South Oilfields Company (NISOC)
PROJECT:	Binak Oilfield Development – Construction of Well Location, Wellhead Facilities, Electrification Facilities, Flowlines for W007S and Extension of Binak B/C Manifold
EPD/EPC CONTRACTOR (GC):	Petro Iran Development Company (PEDCO)
EPC CONTRACTOR:	Joint Venture of: Hirgan Energy – Design & Inspection(D&I) Companies
VENDOR:	The firm or person who will fabricate the equipment or material.
EXECUTOR:	Executor is the party which carries out all or part of construction and/or commissioning for the project.
THIRD PARTY INSPECTOR (TPI):	The firm appointed by EPD/EPC CONTRACTOR (GC) and approved by CLIENT (in writing) for the inspection of goods.
SHALL:	Is used where a provision is mandatory.
SHOULD:	Is used where a provision is advisory only.
WILL:	Is normally used in connection with the action by CLIENT rather than by an EPC/EPD CONTRACTOR, supplier or VENDOR.
MAY:	Is used where a provision is completely discretionary.

2.0 SCOPE

The scope of HAZOP study covers all P&IDs for Extension of Binak B/C Manifold. The list of

P&IDs is presented in appendix B.

3.0 NORMATIVE REFERENCES

3.1 INTERNATIONAL CODES AND STANDARDS

- IEC 61882:2016 Hazard and Operability studies (HAZOP Studies) – Application guide

3.2 THE PROJECT DOCUMENTS

- BK-GNRAL-HD-000-PR-DB-0001-D05 Process Basis of Design

4.0 PURPOSE

The purpose of this document is to provide the results of “HAZOP Study” for **Binak Oilfield Development – Extension of Binak B/C Manifold**.

The objective of HAZOP study is to perform and achieve the following tasks and goals as far as practicable given the latest piping and instrumentation diagrams (P&ID’s) to identify any potential hazards associated with the system and its utility systems:

- To identify any potential operating difficulties,
- Examine the effectiveness of those measures already incorporated in the design to mitigate the frequency and/or consequences of such hazards;
- To raise action items for addressing those hazards that the present design does not satisfactorily address.

5.0 HAZOP STUDY OVERVIEW

Meeting was conducted in one session at June 25, 2022 held in Neyshekar Hotel main meeting hall, Ahvaz.

A team comprising of experts from different disciplines of National Iranian South Oilfields Company (NISOC), Petro Iran Development Company (PEDCO) and Hirgan Energy Company conducted the study with a third-party HAZOP Chairman and Scribe. The list of team members is presented in appendix A.

6.0 PROCEDURE

The review methodology will be the "Guide Word" HAZOP technique and will be performed in accordance with the guidelines published by the Center for Chemical Process Safety (CCPS) of the American Institute of Chemical Engineers (AIChE) and also noted in IEC 61882.

The purpose of the review should not be only to resolve the action items but also to identify credible deviations from the design intent. The method identifies hazards and postulates possible accident sequences resulting from such hazards; Innovative thinking then identifies the consequences of these scenarios. The process demonstrates to the Owner/Management that prudent steps which have been taken to provide a safe installation and operation.

The scope of the HAZOP shall be therefore, on identifying potential process hazards or operability concerns, not on finding solutions to reduce or eliminate these concerns. Attempting to solve problems by the HAZOP team can result in a long and inefficient study process. At the same time, the HAZOP study cannot be intended as a review of Project Design Basis and Operating Philosophies, since these must be considered as resolved when the HAZOP study will be carried out.

Each system or equipment should be divided into subsystems by consensus of the review team. The selected system shall be identified by a study node numbers and for easy reference a color code can also be inserted on the related P&ID prior to the review and worksheet during the review.

List of possible parameters and guidewords

Deviations	Guide Word	Parameter
No/Less Flow	No/Less	Flow
More Flow	More	Flow
Reverse/Misdirected Flow	Reverse/Misdirected	Flow
High Temperature	High	Temperature
Low Temperature	Low	Temperature
High Pressure	High	Pressure
Low Pressure	Low	Pressure
High Level	High	Level
Low Level	Low	Level
Maintenance Hazards	Other than	Maintenance
Leakage	As well as	Flow
Corrosion	As well as	Operation
Composition	As well as	Composition
Start-up/Shutdown Hazards	Other than	Start-up/Shutdown
Loss of Utilities	Other than	Operation

Deviations	Guide Word	Parameter
Miscellaneous	As well as	Operation

7.0 HAZOP OUTCOMES

Only one node is considered for the study which is presented in appendix C. A total of 13 recommendations were obtained which are shown in appendix D. The recommendations are categorized in two groups, namely OPEN and CLOSED.

Closed recommendations are those that the team have arrived at a consensus that it is required to be done. A total of 12 closed recommendation were obtained in the meetings. Open recommendations are those that need more information from vendor for the final decision. One open recommendation was proposed during the meetings.

Appendix E consists of detailed HAZOP Worksheets of the study.

8.0 ATTACHMENTS

8.1 APPENDIX A –TEAM MEMBERS

First Name	Last Name	Company	Expertise
S.Mehdi	Ashrafian	NISOC	Project Manager
Shamsolah	Bahadori	NISOC	Construction Manager
Fatemeh	Ghodsi	NISOC	Head of I&C
Mohammad	Torfi	NISOC	Process
Sahar	Saba	NISOC	Process
Niloofar	Rezaei Baba ahmadi	NISOC	Process
Mohammad Reza	Cheraghchi	NISOC	Process
Fazel	Moafi	NISOC	Instrument
Behzad	Zandian	NISOC	Instrument
Peyman	Sarvarian	NISOC	Mechanic
Hojjat	Jafarpour	NISOC	Mechanical
Faride	Parvin	NISOC	Mechanical
Mohammad	Khamisi	NISOC	HSE
Mohammad	Shirali	NISOC	Commissioning
Ali	Hamidan	NISOC	Commissioning
Naji	Hamid	NISOC	Commissioning
Khodadad	Kavosi	NISOC	Commissioning
Reza	Gholgheysari	NISOC	Process Engineer
Mobin	Saeedi	NISOC	Instrument
Mohammad	Bakhshi Mohammadi	Gachsaran NISOC	Production Engineer
Shahram	Valizadeh	Gachsaran NISOC	Production Engineer
Vahid	Mussavi	Gachsaran NISOC	Production Engineer
Mohammad	Fakoor	PEDCO	Process Engineer
Farshid	Amiri	PEDCO	Piping Lead Engineer
Hadi	Mozaffari	PEDCO	Electrical Engineer
Mahdi	Karimi	PEDCO	Head of Electrical Department
Pouria	Bavarsad	PEDCO	Piping Engineering
Sadegh	Gharacheh	PEDCO	Process
Morteza	Taherkhani	PEDCO	Head of I&C
Sepideh	Akbari	PEDCO	I&C Engineer
Sasan	Faramarzpour	PEDCO	Head of Process and Safety Department
Pouya	Maleki	PEDCO	Process Engineer

First Name	Last Name	Company	Expertise
Mehdi	Sadeghian	PEDCO	Surface Manager
Vahid	Abdeshadi	PEDCO	Project Engineer Manager
Masoud	Asgharnejad	Hirgan Energy	Engineering Manager
Mohsen	Aryafar	Hirgan Energy	Process
Saeed	Ghanbari	Hirgan Energy	Process
Parisa	Hajisadeghi	Hirgan Energy	Head of I&C
Mohammad	Fakharian	Hirgan Energy	Project Manager
Ali	Baghaei	HAZOP Consultant	Process Safety
Firoozeh	Khosravi	HAZOP Consultant	Process Safety

8.1 APPENDIX B – DRAWINGS LIST

Drawing No.	Drawing Title	Place(s) Used
BK-W007S-PEDCO-110-PR-PI-0001_D01	Extension of Binak B/C Manifold (6 sheets)	Nodes: 1

8.1 APPENDIX C – NODES LIST

Nodes	Color	Type	Drawings	Equipment ID	Date
1. Extension of Binak B/C Manifold	Yellow	Line	BK-W007S-PEDCO-110-PR-PI-0001_D01	-	1. 06/25/2022

8.1 APPENDIX D – RECOMMENDATIONS LIST

Recommendations	Place(s) Used	Responsibility	Status
6. Recheck size of FCV-1701A~F.	Consequences: 1.1.5.1	Contractor	Open
1. Relocate class change from LN12 to FN05 at downstream flange of ESDV-1701A.	Consequences: 1.1.4.2	Contractor	Closed
2. Size of ESDV-1701A should be 4".	Consequences: 1.1.4.2	Contractor	Closed
3. Remove DCS solenoid valve on ESDV-1701A.	Consequences: 1.1.4.2	Contractor	Closed
4. General recommendation: Show on P&ID local HS of all ESDVs.	Consequences: 1.1.4.2	Contractor	Closed
5. Remove cascade level control signal on FIC-1701A.	Consequences: 1.1.5.1	Contractor	Closed
7. Relocate PRV-1701A to upstream of FCV-1701A with class 600#. Also provide procedure that always one manual valve of flow lines to manifolds A/B shall be open.	SIL determination: 1.1.5.1	Contractor	Closed
8. Type of LT-1701 should be changed to float type.	Consequences: 1.6.1.1	Contractor	Closed
9. Remove auto start of oil sump pump P-1701.	Consequences: 1.6.1.1	Contractor	Closed
10. Consider double block for PG-1701A, PG-1702A and inlet side of TRV-1701A.	Consequences: 1.8.1.1	Contractor	Closed
11. Remove connection of oil sump pump to drain header and also duplicated isolation valve and check valve at discharge of this pump.	Consequences: 1.12.1.1	Contractor	Closed
12. Piping class downstream of oil sump pump check valve to header A/B should be 300#.	Consequences: 1.12.1.1	Contractor	Closed
13. General recommendation: Proxy limit switch signal of ESDVs in BINAK manifold should be routed directly to DCS.	Consequences: 1.12.1.1	Contractor	Closed

8.1 APPENDIX E – HAZOP WORKSHEETS

Node: 1. Extension of Binak B/C Manifold

Deviation: 1. No/Less Flow

Causes	Consequences	Safeguards	Recommendations
1. Decreased flow from multiple wellheads due to any reason	1. No hazardous consequence		
2. Decreased flow from one wellhead due to any reason (The study is performed for flow line from W018S, the results are applicable for other flow lines)	1. Slight decreased production with no hazardous consequence for this node	1. FAL-1701A	
3. Upstream flow line rupture	1. Slight decreased production with no hazardous consequence for this node	1. FAL-1701A	
	2. Possibility of reverse flow from manifold and increased waste of product, severe environmental effect and possibility of fire	1. PALL-1701A that will activate ESD	
		2. Wellhead will be closed on flow line pressure loss	
		3. Check valve is considered	
		4. PALL on other flow lines will close regarding ESDV	
4. ESDV-1701A closed by failure or error	1. Slight decreased production	1. FAL-1701A	
	2. Increased pressure upstream of valve with possibility of damage	1. Position switch on valve	1. Relocate class change from LN12 to FN05 at downstream flange of ESDV-1701A.
			2. Size of ESDV-1701A should be 4".
			3. Remove DCS solenoid valve on ESDV-1701A.
			4. General recommendation:Show on P&ID local HS of all ESDVs.
5. FCV-1701A closed more by a failure in any elements of its control loop	1. Increased pressure upstream of valve with possibility of damage, fire and personnel injury	1. FAL-1701A (dependent)	5. Remove cascade level control signal on FIC-1701A.
		2. PAHH-1701A that will activate ESD	6. Recheck size of FCV-1701A~F.

Node: 1. Extension of Binak B/C Manifold

Deviation: 2. More Flow

Causes	Consequences	Safeguards	Recommendations
1. Increased flow/pressure from one wellhead due to any reason (The study is performed for flow line from W018S, the results are applicable for other flow lines)	1. Increased flow and pressure in flow line with no hazardous consequence for this node	1. FAH-1701A	
	2. Possible increased level in separator	1. Level controller and protection in separator	
2. FCV-1701A open more by a failure in any elements of its control loop	1. Possible increased level in separator	1. Level controller and protection in separator	
		2. FAH-1701A (dependent)	

Node: 1. Extension of Binak B/C Manifold

Deviation: 3. Reverse/Misdirected Flow

Causes	Consequences	Safeguards	Recommendations
1. Check valves are considered where required			
2. Rupture of flow line	1. Possibility of reverse flow from manifold to flow line	1. Check valve is considered on each flow line	
		2. PAHH-1701A that will activate ESD and closed ESDV-1701A	

Node: 1. Extension of Binak B/C Manifold

Deviation: 4. High Pressure

Causes	Consequences	Safeguards	Recommendations
1. Line box-in and thermal expansion for each line	1. Damage to line and loss of containment	1. TRV-1701A	

Node: 1. Extension of Binak B/C Manifold

Deviation: 5. Low Pressure

Causes	Consequences	Safeguards	Recommendations
1. No new issue was identified			

Node: 1. Extension of Binak B/C Manifold

Deviation: 6. High Level

Causes	Consequences	Safeguards	Recommendations
1. High level in existing oil sump due to accumulation of liquids during maintenance, upset, etc.	1. Over flow of oil from sump with environmental impact	1. LAH-1701 that will start pump	8. Type of LT-1701 should be changed to float type.
		2. Sump size is large compare to inlet flow	9. Remove auto start of oil sump pump P-1701.

Node: 1. Extension of Binak B/C Manifold

Deviation: 6. High Level

Causes	Consequences	Safeguards	Recommendations
		3. Intermittent operation	

Node: 1. Extension of Binak B/C Manifold

Deviation: 7. Low Level

Causes	Consequences	Safeguards	Recommendations
1. Pump of existing oil sump remained in service when not required	1. Possibility of damage to pump	1. LAL-1701 will stop pump	

Node: 1. Extension of Binak B/C Manifold

Deviation: 8. Maintenance Hazards

Causes	Consequences	Safeguards	Recommendations
1. Isolation	1. Possibility of leakage during maintenance		10. Consider double block for PG-1701A, PG-1702A and inlet side of TRV-1701A.

Node: 1. Extension of Binak B/C Manifold

Deviation: 9. Leakage

Causes	Consequences	Safeguards	Recommendations
1. Flange or fitting leakage in flow lines inside fence	1. Due to low H2S, no severe toxic effect		

Node: 1. Extension of Binak B/C Manifold

Deviation: 10. Corrosion

Causes	Consequences	Safeguards	Recommendations
1. Corrosion of flow line and piping due to sulphur	1. Damage to equipment and piping with possibility of damage	1. Material of construction (NACE) 2. Corrosion monitoring (CP/CC)	

Node: 1. Extension of Binak B/C Manifold

Deviation: 11. Composition

Causes	Consequences	Safeguards	Recommendations
1. Change in GOR	1. Increased pressure in system	1. design pressure is based on change in GOR	
2. Increased water cut	1. Increased corrosion and change in hydraulic	1. Increased water cut is considered in design	
3. Sand from upstream	1. Increased erosion of flow	1. Inspection & maintenance	

Node: 1. Extension of Binak B/C Manifold

Deviation: 11. Composition

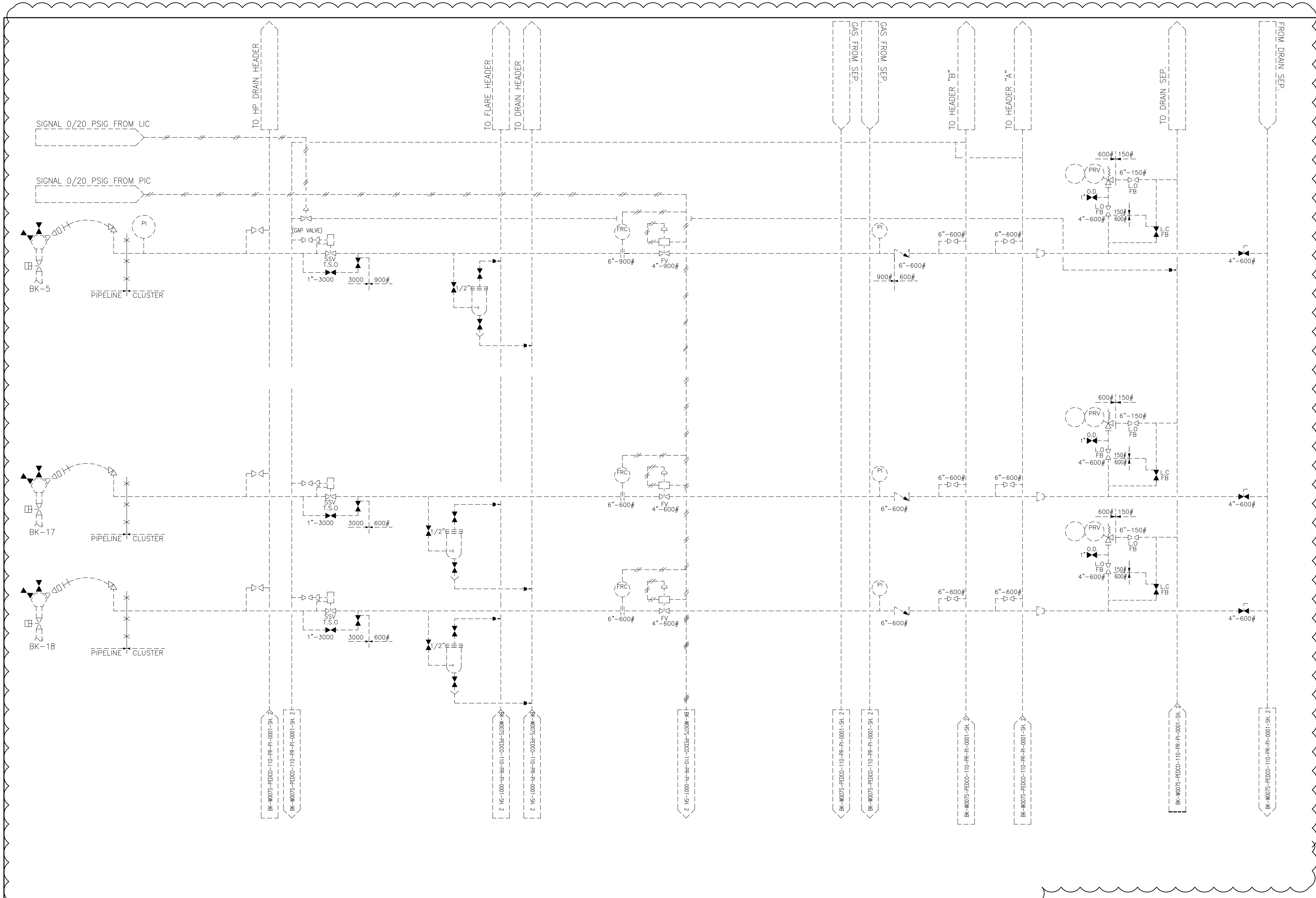
Causes	Consequences	Safeguards	Recommendations
	line and blockage of system	procedures	

Node: 1. Extension of Binak B/C Manifold

Deviation: 12. Miscellaneous

Causes	Consequences	Safeguards	Recommendations
1. See Recommendation			11. Remove connection of oil sump pump to drain header and also duplicated isolation valve and check valve at discharge of this pump.
			12. Piping class downstream of oil sump pump check valve to header A/B should be 300#.
			13. General recommendation: Proxy limit switch signal of ESDVs in BINAK manifold should be routed directly to DCS.

8.1 APPENDIX F – MARKED-UP P&IDS



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KEY PLAN

EXISTING

NEW

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D01	FEB.2022	IFA	M.ARYAFAR	M.FAKHARIAN	M.MEHRSHAD	**.**
D00	OCT.2021	IFC	M.ARYAFAR	M.FAKHARIAN	M.MEHRSHAD	**.**

REV.	DESCRIPTION	CHECKED BY	CHECKED DATE	REV. APPR. BY	REV. APPR. DATE
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PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SUB-SURFACE WORK PACKAGES W007S WHF & EXTENSION OF BINAK B/C

1 OF 5

PROJECT NO.: 971020

EPC CONTRACTOR:

HIRGAN ENERGY

HIRGAN ENERGY - DESIGN & INSPECTION COMPANIES

EPD/EPC CONTRACTOR (GC):

PEDCO

PETROIRAN DEVELOPMENT COMPANY

BINAK OILFIELD DEVELOPMENT
SUB-SURFACE WORK PACKAGES
W007S WELLHEAD FACILITIES

DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.

(VENDOR TITLE BLOCK)**

DRAWING TITLE:

P&ID - Extension of Binak B/C Manifold

NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED

APPROVED FOR CONSTRUCTION BY: DATE:

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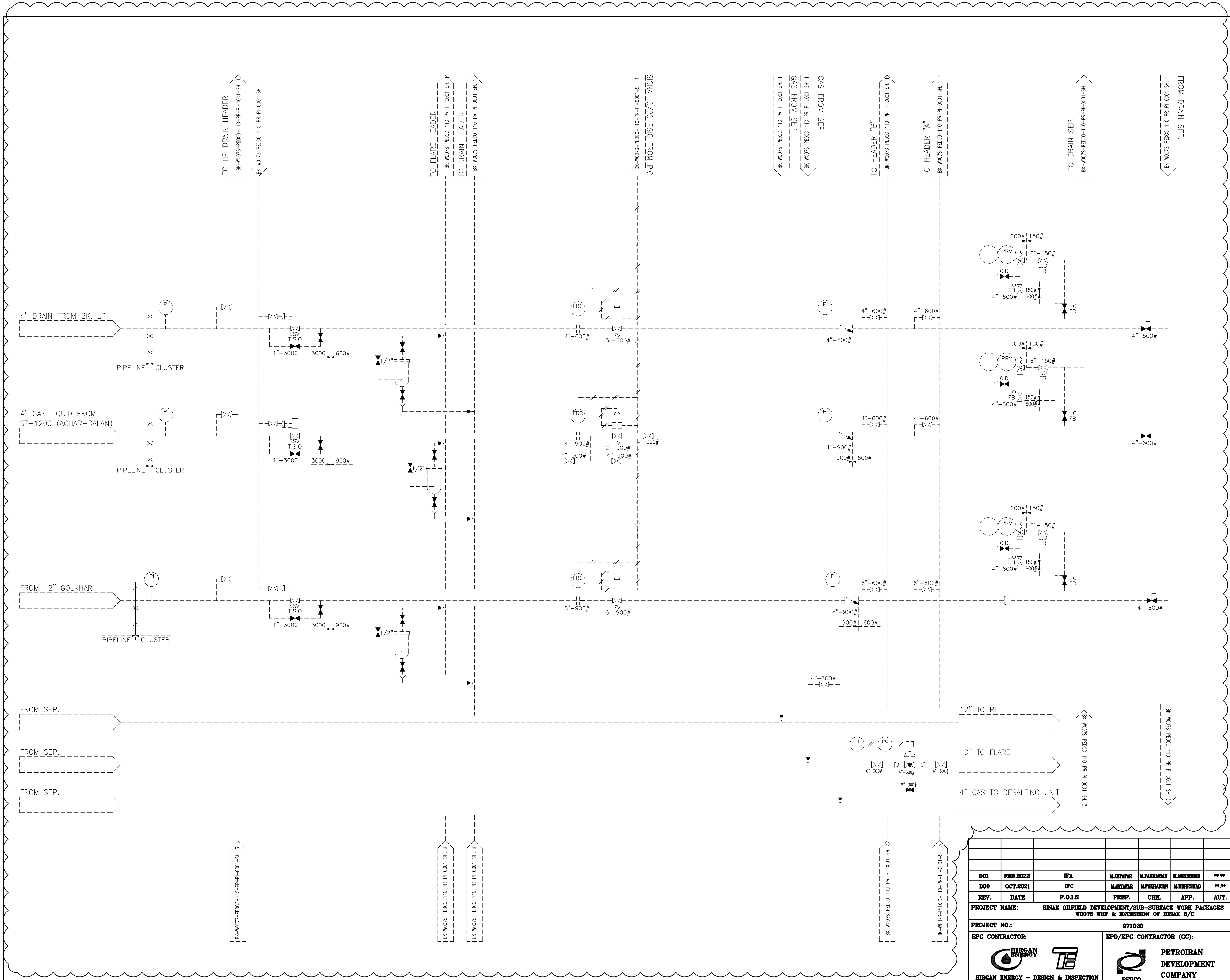

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REFERENCE DRAWING	DRG. No.

KEY PLAN

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NEW ————————

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D01	FEB.2022	IFA	M.ARYAFAR	M.FAKHARIAN	M.MEHRSHAD	**.**	REV.	DESCRIPTION	BY	DATE	BY	DATE
D00	OCT.2021	IFC	M.ARYAFAR	M.FAKHARIAN	M.MEHRSHAD	**.**			CHECKED		REV. APPR.	
REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.						

اصل و کلیه نسخ این نقشه و حق اقتباس متعلق به شرکت ملی مناطق نفت خیز جنوب میباشد.

PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SUB-SURFACE WORK PACKAGES W007S WHP & EXTENSION OF BINAK B/C

PROJECT NO.: 971020

EPC CONTRACTOR: HIRGAN ENERGY — HIRGAN ENERGY - DESIGN & INSPECTION COMPANIES

EPD/EPC CONTRACTOR (GC): PEDCO — PETROIRAN DEVELOPMENT COMPANY

BINAK OILFIELD DEVELOPMENT
SUB-SURFACE WORK PACKAGES
W007S WELLHEAD FACILITIES

DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.

(VENDOR TITLE BLOCK)**

DRAWING TITLE: P&ID - Extension of Binak B/C Manifold

NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED

APPROVED FOR CONSTRUCTION BY: DATE:

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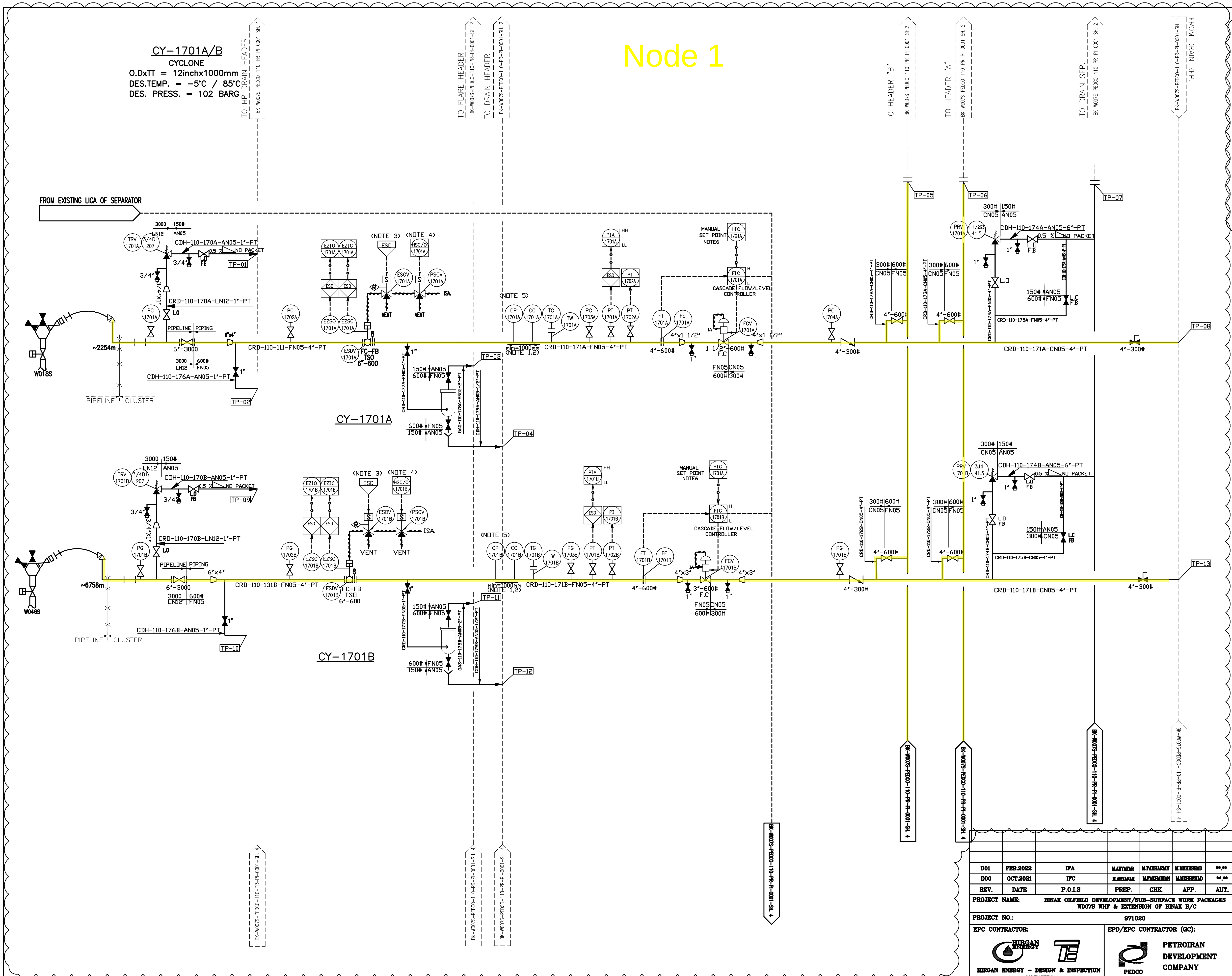

NOTES

1- THE MONITORING DEVICE SHOULD BE USED AT 12 O'CLOCK POSITION ON HORIZONTAL PIPE SECTION.
2- THE MINIMUM DISTANCE OF 7 PIPE DIAMETERS AT DOWNSTREAM AND 3 PIPE DIAMETERS AT UPSTREAM OF ANY CHANGES IN FLOW CAUSED BY BENDS, VALVES AND ETC. SHALL BE CONSIDERED.
3- TOTAL SHUTDOWN ESD COMMAND SHALL BE TRANSMITTED FROM EXISTING SYSTEM OF BINAK CLUSTER TO NEW ESD SYSTEM.
4- TSO ESD VALVE SHALL BE CONSIDERED.NORMAL OPEN/CLOSE SIGNAL SHALL BE CONSIDERED ONLY FOR START UP STAGE.
5- ONE PORTABLE METERING/MONITORING DEVICE PER PLANT TO BE PROVIDED BY VENDOR TO BE CONNECTED TO CPS.
6- SELECTION BETWEEN MANUAL SET POINT AND CASCADE CONTROL OF LEVEL AND FLOW WILL BE DONE BY OPERATOR THROUGH FIC CONTROL LOGIC.

LEGEND

REFERENCE DRAWING	DRG. No.

KEY PLAN

REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.
D01	FEB.2022	IFA	M.ARYAFAR	M.FAKHARIAN	M.MEHRSHAD	**.**
D00	OCT.2021	IFC	M.ARYAFAR	M.FAKHARIAN	M.MEHRSHAD	**.**

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PROJECT NO.: 971020

EPC CONTRACTOR: HIRGAN ENERGY – DESIGN & INSPECTION COMPANIES

EPD/EPC CONTRACTOR (GC): PETROIRAN DEVELOPMENT COMPANY (PEDCO)

BINAK OILFIELD DEVELOPMENT
SUB-SURFACE WORK PACKAGES
W007S WELLHEAD FACILITIES

DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.

(VENDOR TITLE BLOCK)**

DRAWING TITLE: P&ID – Extension of Binak B/C Manifold

NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED

APPROVED FOR CONSTRUCTION BY: DATE:

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NS	A3	BK-W007S-PEDCO-110-PR-PI-0001	3 OF 6	D01	F2A-707921	F	2	A	707921	6	D01

CY-1701C/D

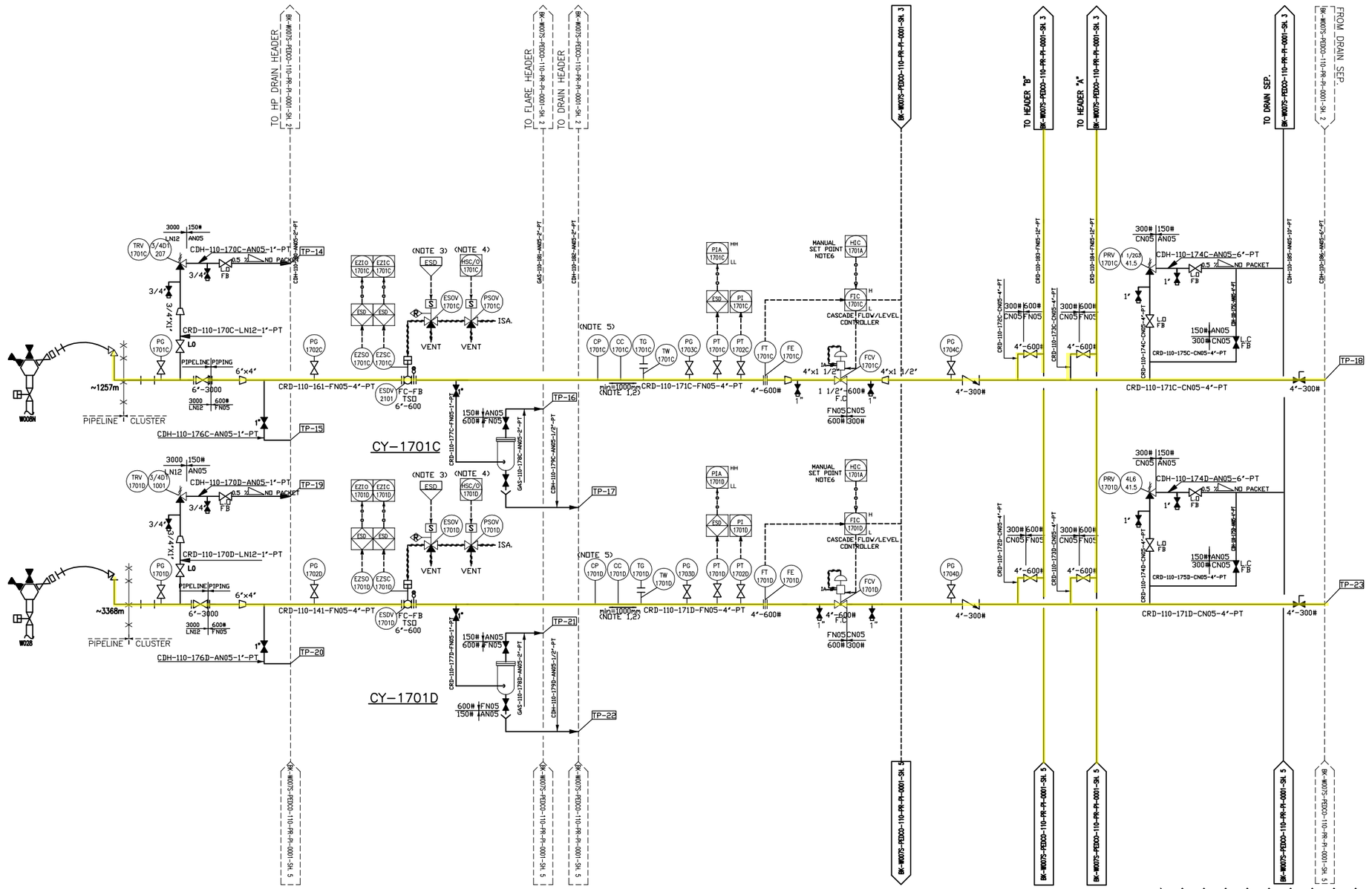
CYCLONE

O.DxTT = 12inchx1000mm

DES.TEMP. = -5°C / 85°C

DES. PRESS. = 102 BARG

Node 1



NOTES

1-THE MONITORING DEVICE SHOULD BE USED AT 12 O'CLOCK POSITION ON HORIZONTAL PIPE SECTION.

2-THE MINIMUM DISTANCE OF 7 PIPE DIAMETERS AT DOWNSTREAM AND 3 PIPE DIAMETERS AT UPSTREAM OF ANY CHANGES IN FLOW CAUSED BY BENDS, VALVES AND ETC. SHALL BE CONSIDERED.

3-TOTAL SHUTDOWN ESD COMMAND SHALL BE TRANSMITTED FROM EXISTING SYSTEM OF BINAK CLUSTER TO NEW ESD SYSTEM.

4-TSO ESD VALVE SHALL BE CONSIDERED.NORMAL OPEN/CLOSE SIGNAL SHALL BE CONSIDERED ONLY FOR START UP STAGE.

5-ONE PORTABLE METERING/MONITORING DEVICE PER PLANT TO BE PROVIDED BY VENDOR TO BE CONNECTED TO CPS.

6-SELECTION BETWEEN MANUAL SET POINT AND CASCADE CONTROL OF LEVEL AND FLOW WILL BE DONE BY OPERATOR THROUGH FIC CONTROL LOGIC.

LEGEND

REFERENCE DRAWING	DRG. No.

KEY PLAN

EXISTING ----------

NEW ——————

REV.	DESCRIPTION	BY	DATE	BY	DATE
		CHECKED		REV. APPR.	
D01	FEB.2022	IFA	M.ARYAFAR	M.FAKHARIAN	M.MEHRSHAD
D00	OCT.2021	IFC	M.ARYAFAR	M.FAKHARIAN	M.MEHRSHAD
REV.	DATE	P.O.I.S	PREP.	CHK.	APP.

PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SUB-SURFACE WORK PACKAGES W007S WHP & EXTENSION OF BINAK B/C

PROJECT NO.: 971020

EPC CONTRACTOR: HIRGAN ENERGY – DESIGN & INSPECTION COMPANIES

EPD/EPC CONTRACTOR (GC): PETROIRAN DEVELOPMENT COMPANY — PEDCO

BINAK OILFIELD DEVELOPMENT
SUB-SURFACE WORK PACKAGES
W007S WELLHEAD FACILITIES

DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.

NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED

APPROVED FOR CONSTRUCTION | BY: | DATE:

(VENDOR TITLE BLOCK)**

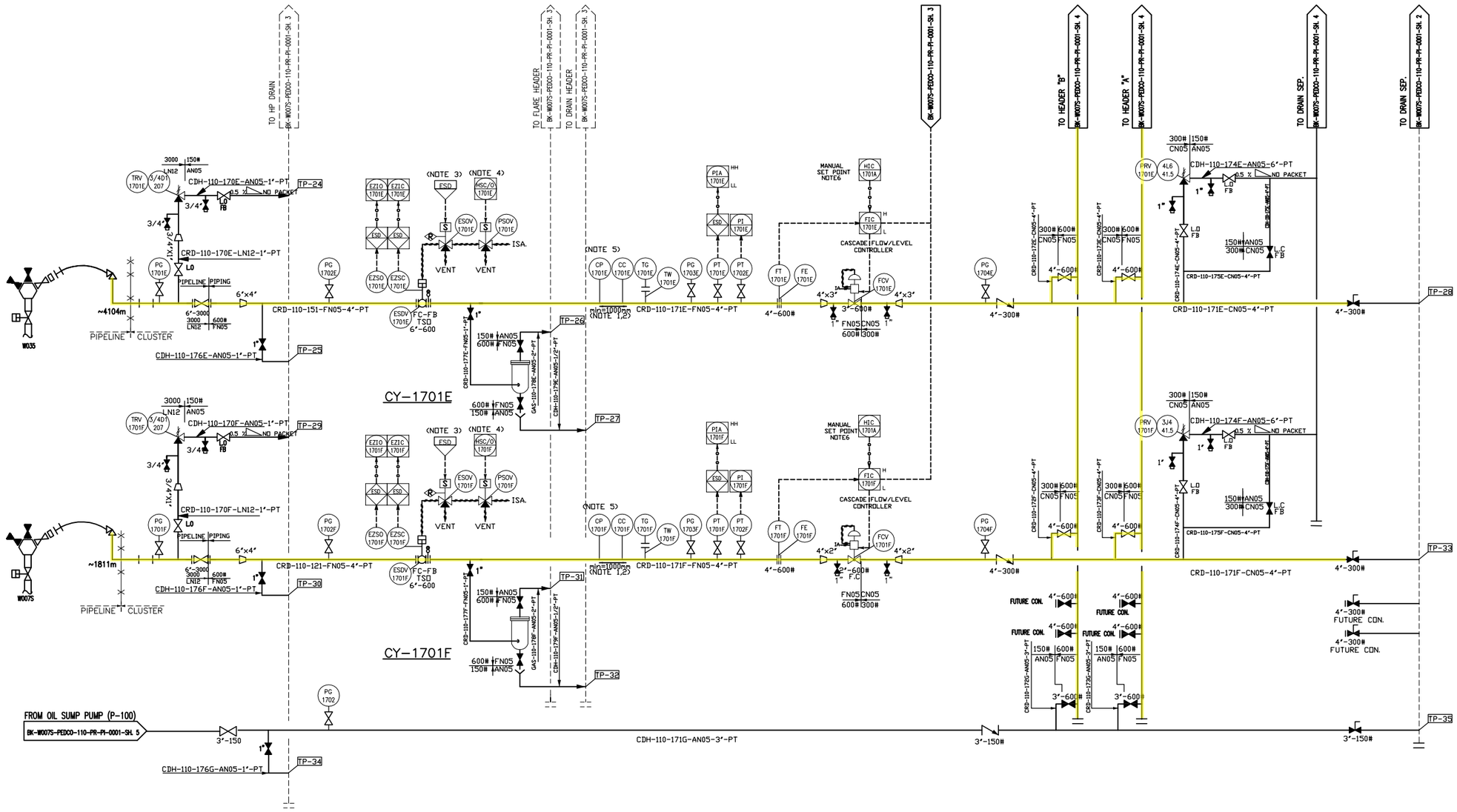
DRAWING TITLE: P&ID – Extension of Binak B/C Manifold

SCALE	SIZE	DRAWING NO.	SHEET NO.	REV.
NS	A3	BK-W007S-PEDCO-110-PR-PI-0001	4 OF 6	D01

BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION
F2A-707921	F	2	A	707921	6	D01

Node 1

CY-1701E/F
CYCLONE
O.DxTT = 12inchx1000mm
DES.TEMP. = -5°C / 85°C
DES. PRESS. = 102 BARG



NOTES

1-THE MONITORING DEVICE SHOULD BE USED AT 12 O'CLOCK POSITION ON HORIZONTAL PIPE SECTION.
2-THE MINIMUM DISTANCE OF 7 PIPE DIAMETERS AT DOWNSTREAM AND 3 PIPE DIAMETERS AT UPSTREAM OF ANY CHANGES IN FLOW CAUSED BY BENDS, VALVES AND ETC. SHALL BE CONSIDERED.
3-TOTAL SHUTDOWN ESD COMMAND SHALL BE TRANSMITTED FROM EXISTING SYSTEM OF BINAK CLUSTER TO NEW ESD SYSTEM.
4-TSO ESD VALVE SHALL BE CONSIDERED.NORMAL OPEN/CLOSE SIGNAL SHALL BE CONSIDERED ONLY FOR START UP STAGE.
5-ONE PORTABLE METERING/MONITORING DEVICE PER PLANT TO BE PROVIDED BY VENDOR TO BE CONNECTED TO CPS.
6-SELECTION BETWEEN MANUAL SET POINT AND CASCADE CONTROL OF LEVEL AND FLOW WILL BE DONE BY OPERATOR THROUGH FIC CONTROL LOGIC.

LEGEND

REFERENCE DRAWING	DRG. No.

KEY PLAN

EXISTING ----------
NEW ———

REV.	DESCRIPTION	BY	DATE	BY	DATE
		CHECKED		REV. APPR.	
•••	••••••••••	••.••	•••.••••	••.••	•••.••••
D01	FEB.2022	IFA	M.ARYAFAR	M.FAKHARIAN	M.MEHRSHAD	••.••
D00	OCT.2021	IFC	M.ARYAFAR	M.FAKHARIAN	M.MEHRSHAD	••.••
REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.

PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SUB-SURFACE WORK PACKAGES W007S WHP & EXTENSION OF BINAK B/C
PROJECT NO.: 971020

EPC CONTRACTOR: HIRGAN ENERGY - DESIGN & INSPECTION COMPANIES
EPD/EPC CONTRACTOR (GC): PETROIRAN DEVELOPMENT COMPANY — PEDCO

BINAK OILFIELD DEVELOPMENT
SUB-SURFACE WORK PACKAGES
W007S WELLHEAD FACILITIES

DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.

(VENDOR TITLE BLOCK)••

DRAWING TITLE: P&ID - Extension of Binak B/C Manifold

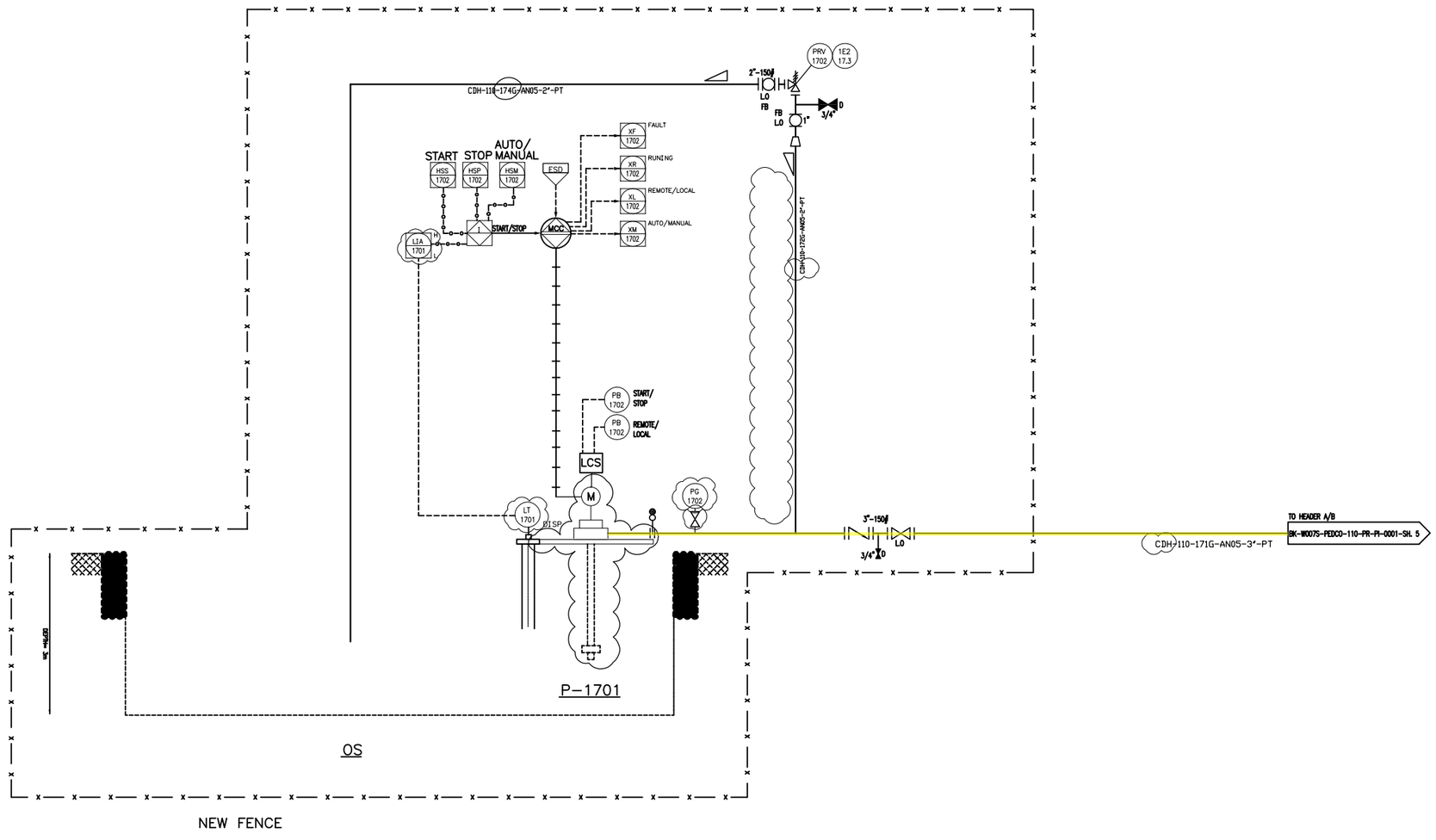
NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED
APPROVED FOR CONSTRUCTION | BY: | DATE:

SCALE	SIZE	DRAWING NO.	SHEET NO.	REV.
NS	A3	BK-W007S-PEDCO-110-PR-PI-0001	5 OF 6	D01

BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION
F2A-707921	F	2	A	707921	6	D01

OS
EXISTING OIL SUMP

Node 1



P-1701
OIL SUMP PUMP
RATED CAPACITY : 15 m^3/hr
Δ P : 13.5 BAR

NOTES

1- SHALL BE EQUIPPED WITH FOOT VALVE AT THE END OF LINE.

LEGEND

REFERENCE DRAWING	DRG. No.

KEY PLAN

EXISTING ----------
NEW ——————

REV.	DESCRIPTION	BY	DATE	BY	DATE
		CHECKED		REV. APPR.	
***	**********	**.**	***.****	**.**	***.****
D01	FEB.2022	IFA	M.ARYAFAR	M.FAKHAHAN	M.MEHRSHAD	**.**
D00	OCT.2021	IFC	M.ARYAFAR	M.FAKHAHAN	M.MEHRSHAD	**.**
REV.	DATE	P.O.I.S	PREP.	CHK.	APP.	AUT.

PROJECT NAME: BINAK OILFIELD DEVELOPMENT/SUB-SURFACE WORK PACKAGES W007S WHP & EXTENSION OF BINAK B/C
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BINAK OILFIELD DEVELOPMENT
SUB-SURFACE WORK PACKAGES
W007S WELLHEAD FACILITIES

DATE	SCALE	DRAWING BY	CHECKED BY	PROJECT ENG.

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DRAWING TITLE: P&ID – Extension of Binak B/C Manifold

NO CONSTRUCTION PERMITTED UNLESS DRAWING APPROVED
APPROVED FOR CONSTRUCTION BY: DATE:

SCALE	SIZE	DRAWING NO.	SHEET NO.	REV.
NS	A3	BK-W007S-PEDCO-110-PR-PI-0001	6 OF 6	D01

BUDGET REF.	LOCATION	SIZE	CLASS	SERIAL NO.	SHEET	REVISION
F2A-707921	F	2	A	707921	6	D01