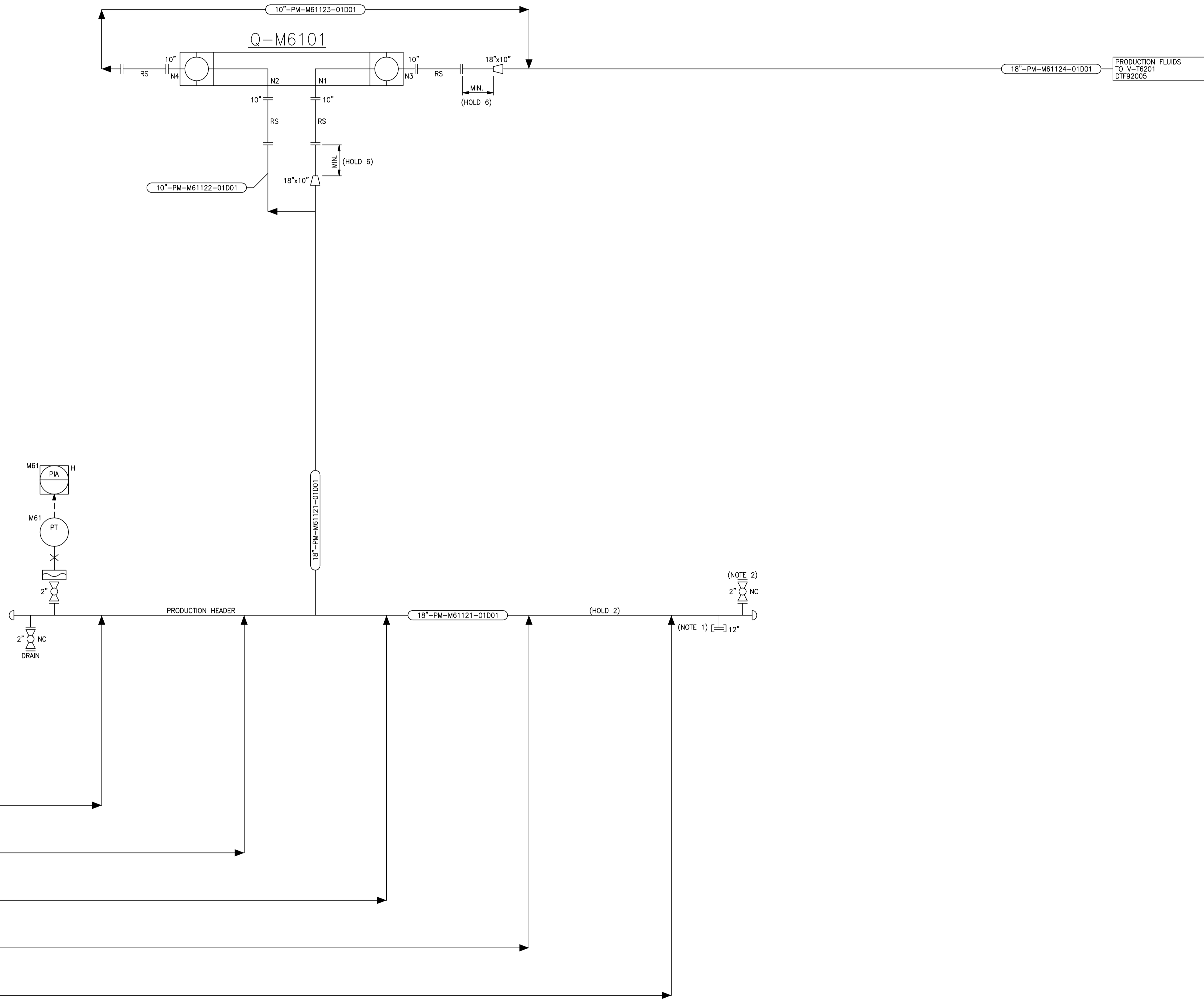


Q-M6101 PRODUCTION SWIVEL	
DESIGN PRESS.	FV/18 barg
DESIGN TEMP.	-20/70°C (HOLD 7)
MAX. OP. PRESS.	13 barg
MAX. OP. TEMP.	45°C
SIZE	2"x10"
MOC	(HOLD 1)

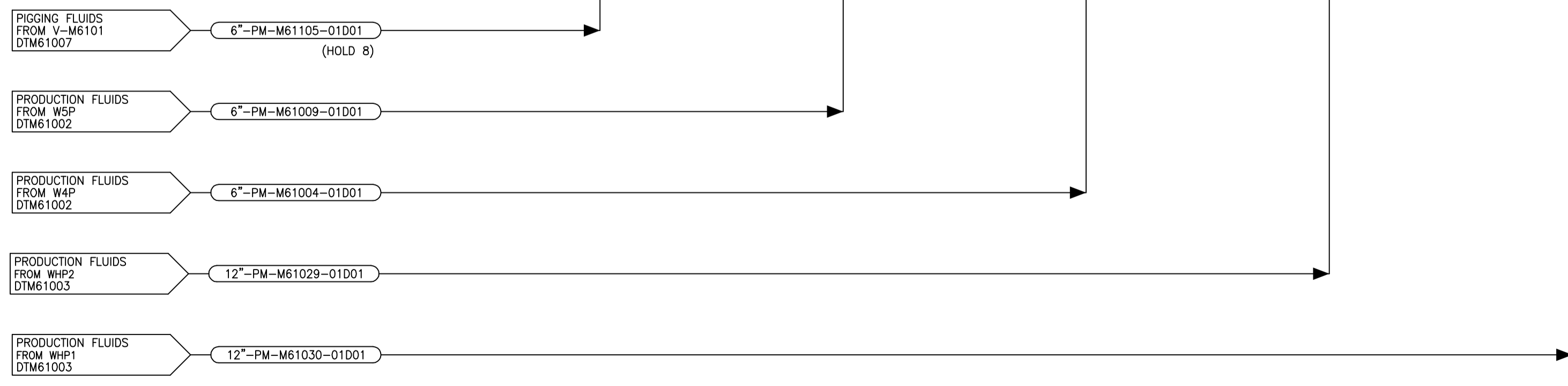


Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
1	1	INTERNAL DISPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011

NOTES:
 1. PROVIDE BLANKED OFF FLANGE FOR FUTURE.
 2. PURGE/VENT CONNECTION.


- REFERENCE DRAWINGS:**
- DTF92001 FPSO - EQUIPMENT LEGEND - P&ID
 - DTF92002 FPSO - INSTRUMENT LEGEND - P&ID
 - DTF92003 FPSO - PIPING IDENTIFICATION LEGEND - P&ID
 - DTF92004 FPSO - PIPING LEGEND - P&ID
 - DTF92005 FPSO - TURRET / TOPSIDES INTERFACES - P&ID
 - DTF92006 FPSO - TYPICAL DETAILS - P&ID

- HOLDS:**
- SWIVEL MATERIAL.
 - CONFIGURATION OF RISER TIE IN TO HEADER.
 - HIPPS DETAILS.
 - MINOR LINE SIZES.
 - VALVE TAGS & LINE NUMBERS.
 - DISTANCE BETWEEN REDUCER & SWIVEL.
 - SWIVEL MIN. DESIGN TEMPERATURE.
 - LINE SIZE.

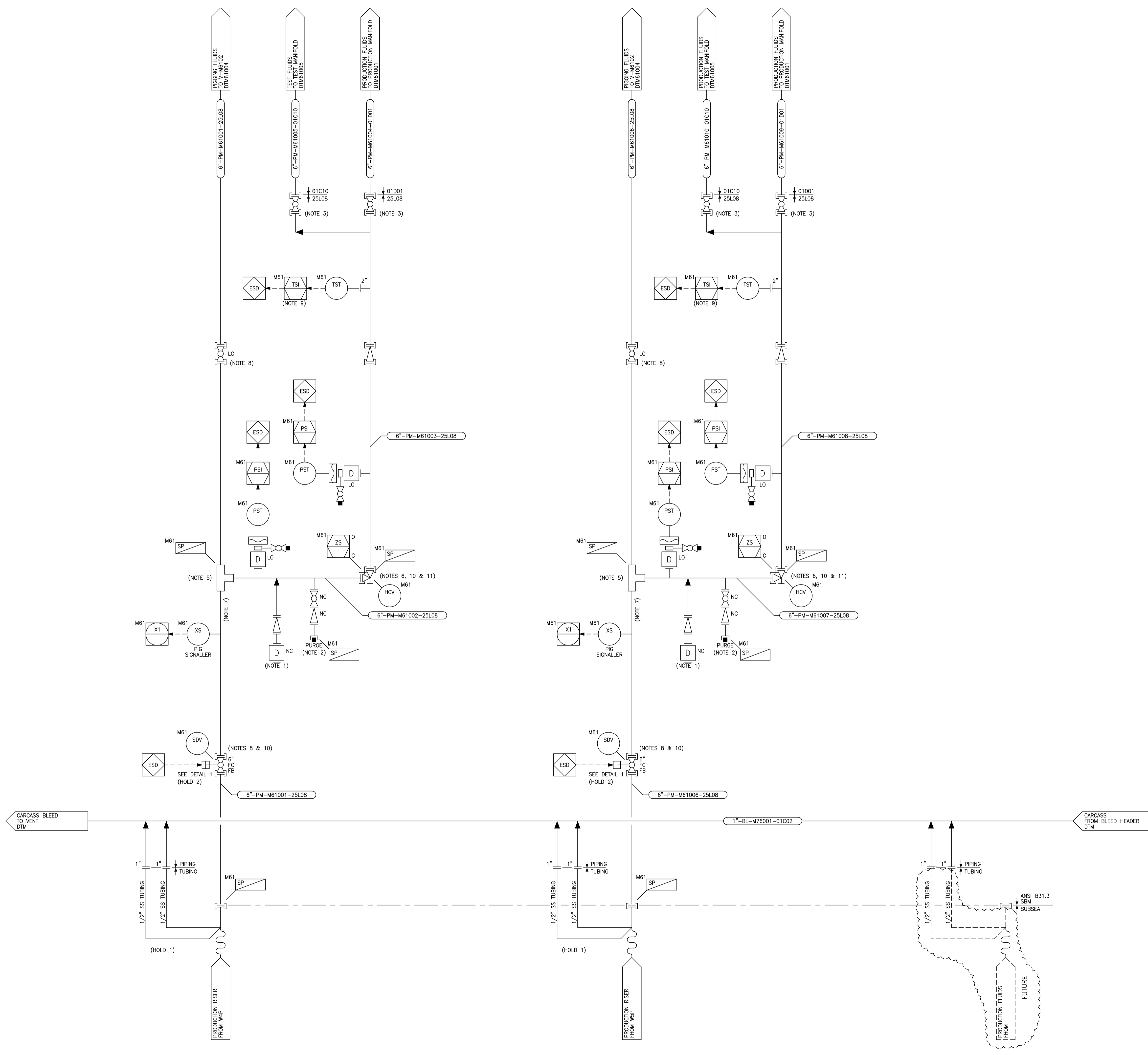


ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LININARY WEIGHT KG.	TOTAL WEIGHT KG.	REMARKS
01	XX			XXX	XX	/	


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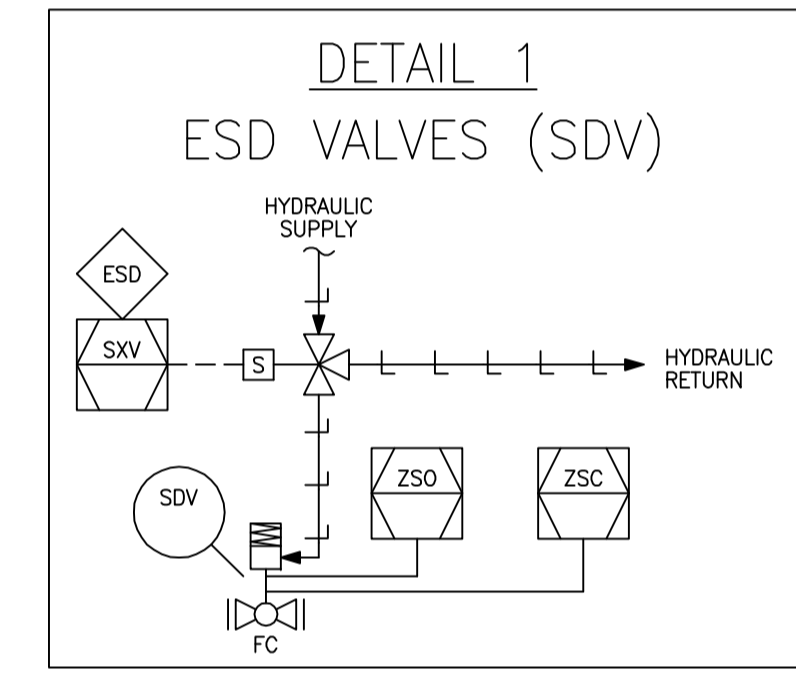
DRAWING ASSEMBLY: N/A		TOTAL WEIGHT: N/A	
 SINGLE BUOY MOORINGS INC. MARLY - SWITZERLAND ENGINEERING OFFICES MONACO P.O. BOX 199 Tel: +377 92 05 15 00 Website: www.sbmoffshore.com		© 2011 COPYRIGHT by SBM Offshore NV or its affiliates. This document and its contents are the confidential property of SBM Offshore NV or its affiliates and as such this document, or any part thereof, may not be made known, be copied, or be multiplied in any other way used without the express permission of SBM Offshore NV or its affiliates.	
Client Drawing Number: DE-OSX2-0061-PRO-SBM-001		Client Revision: 0	
Drawing Title: TURRET PRODUCTION MANIFOLD & SWIVEL P&ID		E.P.M: R.HOBSON	
Format: A1		Date: 06/13/11	
SBM Project Number: SO 18070	SBM Drawing Number: DTM61001	SBM Revision: 11	

Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
1	1	INTERNAL DISPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011



NOTES:

- TEMPORARY ETHANOL CONNECTION TO PRESSURIZE BETWEEN SDVs FOR START-UP.
- PURGE CONNECTION TO BE CONNECTED BY HOSE TO NEAREST UTILITY STATION.
- VALVES TO BE INTERLOCKED TO ALWAYS ALLOW AN OPEN FLOW PATH TO EITHER PRODUCTION OR TEST MANIFOLD.
- HIGH POINT VENTS AND LOW POINT DRAINS FOR COMMISSIONING TO BE INSTALLED WHERE REQUIRED.
- BARRED TEE.
- MANUAL PRODUCTION CHOKE FOR FLOW RATE CONTROL.
- MINIMUM 1.5D BENDS IN THIS LINE.
- VALVE TO BE PIGGABLE.
- TEMPERATURE SIGNAL FOR SHUT IN OF RISER SDVs TO BE LOCATED NEAR HCV.
- INTERLOCK TO BE PROVIDED FOR RISER SDV AND PRODUCTION CHOKE. RISER SDV CANNOT BE OPENED UNTIL CHOKE IS CLOSED TO PREVENT UNCONTROLLED DEPACKING.
- DEPRESSURIZATION OF RISER DONE WITH CHOKE VALVE THROUGH TEST MANIFOLD WHILE MONITORING TEMPERATURE ON M61-TST-XXX & XXX.




REFERENCE DRAWINGS:

- DTF92001 FPSO - EQUIPMENT LEGEND - P&ID
- DTF92002 FPSO - INSTRUMENT LEGEND - P&ID
- DTF92003 FPSO - PIPING IDENTIFICATION LEGEND - P&ID
- DTF92004 FPSO - PIPING LEGEND - P&ID
- DTF92005 FPSO - TURRET / TOPSIDES INTERFACES - P&ID
- DTF92006 FPSO - TYPICAL DETAILS - P&ID

HOLDS:

- CARCASS BLEED CONNECTION DETAILS AND HEADER SIZE.
- RISER SDV AND CHOKE VALVE CONFIGURATION REGARDING RISER DEPACKING.
- VALVE TAGS.
- PIPE MATERIAL FOR ALL FLOW LINES.


ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LINTRY WEIGHT KG.	TOTAL WEIGHT KG.	REMARKS
01	XX	XX	XXX XXX XXX	XX	XX	/	



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FPSO OSX-2

DRAWING ASSEMBLY: N/A TOTAL WEIGHT: N/A

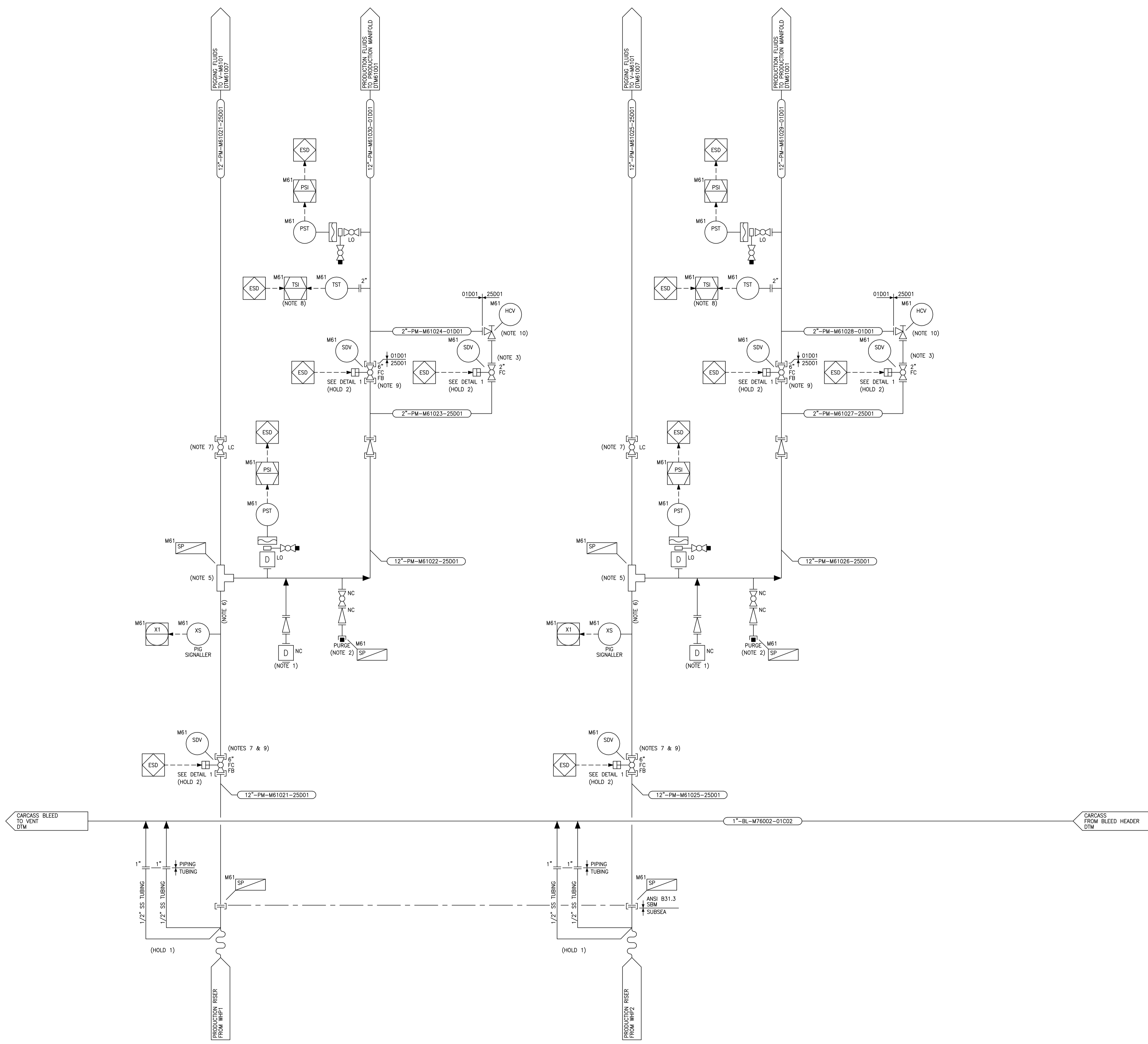


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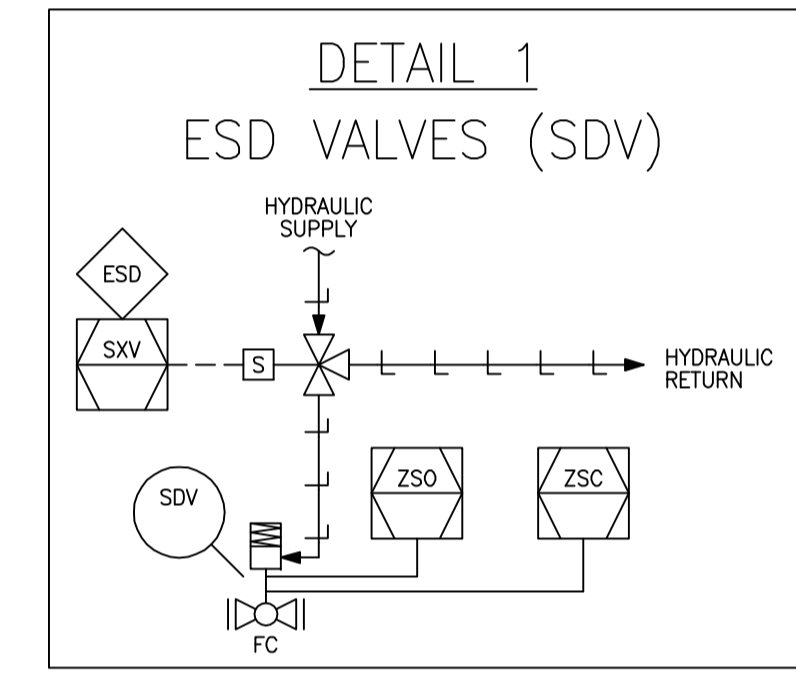
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Client Drawing Number	DE-OSX2-0061-PRO-SBM-002	Client Revision	0
Drawing Title	TURRET PRODUCTION RISERS (SATELLITE WELLS) P&ID	EPW	R.HOBSON
Format	A1	Date	06/13/11
SBM Project Number	SO 18070	SBM Drawing Number	DTM61002
		SBM Revision	11

Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
1	1	INTERNAL DISPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011




- NOTES:**
1. TEMPORARY ETHANOL CONNECTION TO PRESSURIZE BETWEEN SDVs FOR START-UP.
 2. PURGE CONNECTION TO BE CONNECTED BY HOSE TO NEAREST UTILITY STATION.
 3. BYPASS LINE FOR START-UP.
 4. HIGH POINT VENTS AND LOW POINT DRAINS FOR COMMISSIONING TO BE INSTALLED WHERE REQUIRED.
 5. BARRED TEE.
 6. MINIMUM 1.5D BENDS IN THIS LINE.
 7. VALVE TO BE PIGGABLE.
 8. TEMPERATURE SIGNAL FOR SHUT IN OF RISER SDVs TO BE LOCATED NEAR HCV.
 9. INTERLOCK PROVIDED FOR 1st & 2nd RISER SDVs. 1st RISER SDV CANNOT BE OPENED UNTIL 2nd RISER SDV IS CLOSED, TO PREVENT UNCONTROLLED RISER DEPACKING.
 10. DEPRESSURIZATION OF RISER DONE WITH START-UP CHOKE THROUGH PRODUCTION HESDER WHILE MONITORING M61-TST-XXX.



- REFERENCE DRAWINGS:**
1. DTF92001 FPSO - EQUIPMENT LEGEND - P&ID
 2. DTF92002 FPSO - INSTRUMENT LEGEND - P&ID
 3. DTF92003 FPSO - PIPING IDENTIFICATION LEGEND - P&ID
 4. DTF92004 FPSO - PIPING LEGEND - P&ID
 5. DTF92005 FPSO - TURRET / TOPSIDES INTERFACES - P&ID
 6. DTF92006 FPSO - TYPICAL DETAILS - P&ID

- HOLDS:**
1. CARCASS BLEED CONNECTION DETAILS AND HEADER SIZE.
 2. RISER SEV AND CHOKE VALVE CONFIGURATION REGARDING RISER DEPACKING.
 3. VALVE TAGS.
 4. PIPE MATERIAL FOR ALL FLOW LINES.


ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LINTRY WEIGHT KG.	TOTAL WEIGHT KG.	REMARKS
01	XX	XX	XXXX XXXX XXXX	XX	XX	/	



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FPSO OSX-2

DRAWING ASSEMBLY: N/A TOTAL WEIGHT: N/A



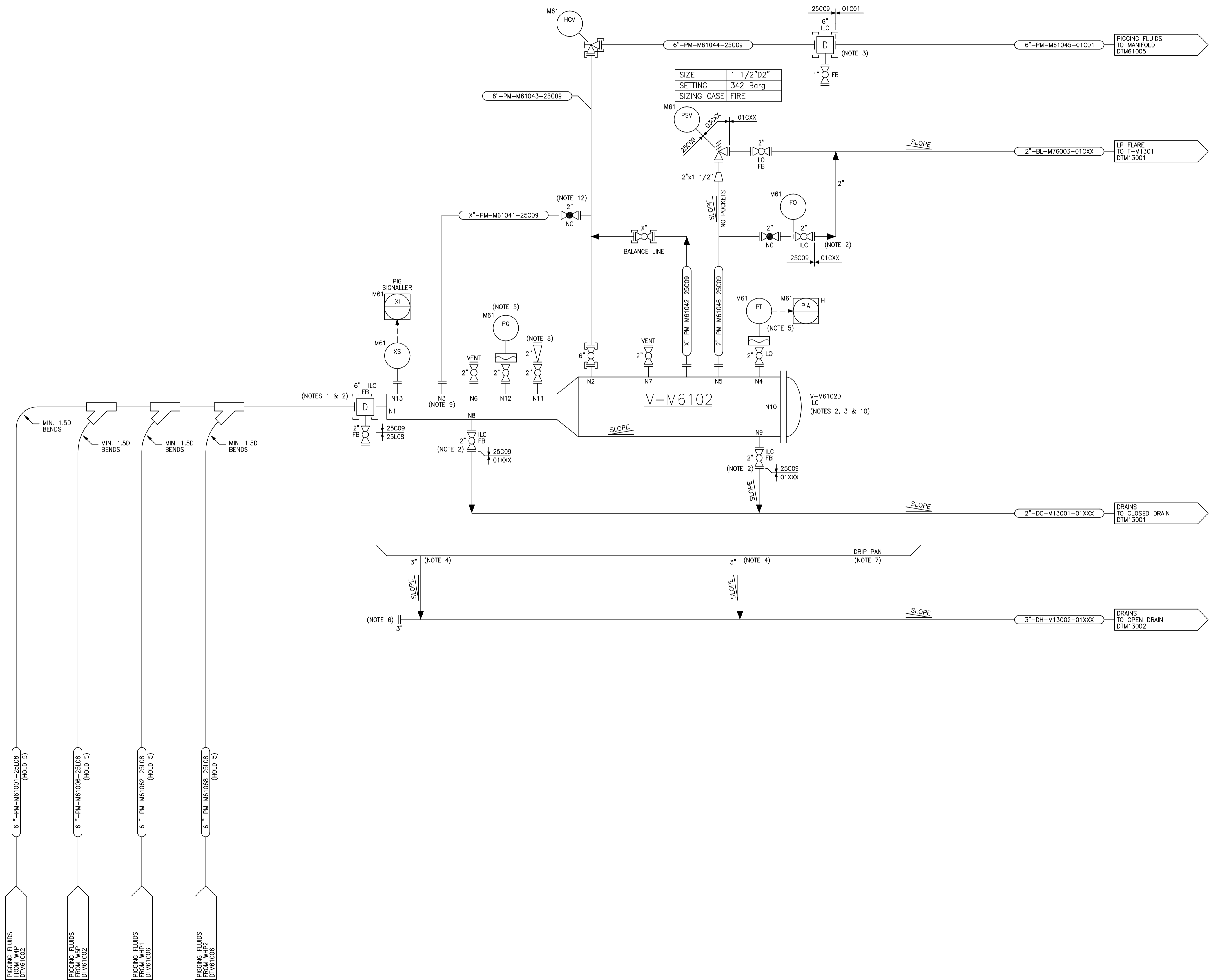
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Client Drawing Number	DE-OSX2-0061-PRO-SBM-003	Client Revision	0
Drawing Title	TURRET PRODUCTION RISERS (WHP) P&ID	EPW	R.HOBSON
Format	A1	Date	06/13/11
SBM Project Number	SO 18070	SBM Drawing Number	DTM61003
		SBM Revision	11

V-M6102 TEST/SATELLITE PIG RECEIVER	
DESIGN PRESS.	Fv/342 barg
DESIGN TEMP.	-20/70°C
SIZE	6"x12"
MOC	LTCS (HOLD 5)

Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
1	1	INTERNAL DISPLUMARY CHECK	GLJ	MS	AGM	MS	06/13/2011



NOTES:

1. VALVES TO BE PIGGABLE.
2. VALVES & PIG TRAP DOOR ARE KEY INTERLOCKED.
3. PIG TRAP DOOR TO BE EQUIPPED WITH MECHANICAL INTERLOCK TO PREVENT OPENING WHILE PRESSURISED.
4. DRIP PAN DRAINS LOCATED AT DIAGONALLY OPPOSITE CORNERS.
5. LOCAL INDICATION VISIBLE FROM LAUNCHER DOOR.
6. RODDING POINT.
7. DRIP PAN SIZED FOR 120% OF LAUNCHER VOLUME.
8. NITROGEN PURGE POINT.
9. NOZZLE TO BE LOCATED AS CLOSE AS POSSIBLE TO THE PIG TRAP ISOLATION VALVE.
10. ALLOW ACCESS BEHIND DOOR FOR PIG INSERTION.
11. NOZZLE LOCATED AS CLOSE AS POSSIBLE TO PIG LAUNCHER DOOR.
12. GLOBE VALVE FOR INITIAL TRAP PRESSURISATION.

REFERENCE DRAWINGS:

1. DTF92001 FFSO - EQUIPMENT LEGEND - P&ID
2. DTF92002 FFSO - INSTRUMENT LEGEND - P&ID
3. DTF92003 FFSO - PIPING IDENTIFICATION LEGEND - P&ID
4. DTF92004 FFSO - PIPING LEGEND - P&ID
5. DTF92005 FFSO - TURRET / TOPSIDES INTERFACES - P&ID
6. DTF92006 FFSO - TYPICAL DETAILS - P&ID

HOLDS:

1. MINOR LINE SIZES.
2. EQUIPMENT DETAILS.
3. PSV SIZING.
4. FLARE CONNECTION DETAILS.
5. MATERIAL SELECTION.

ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LINTRY WEIGHT KG.	TOTAL WEIGHT KG.	REMARKS
01	XX	XX	XXX	XX	XX	/	



FPSO OSX-2

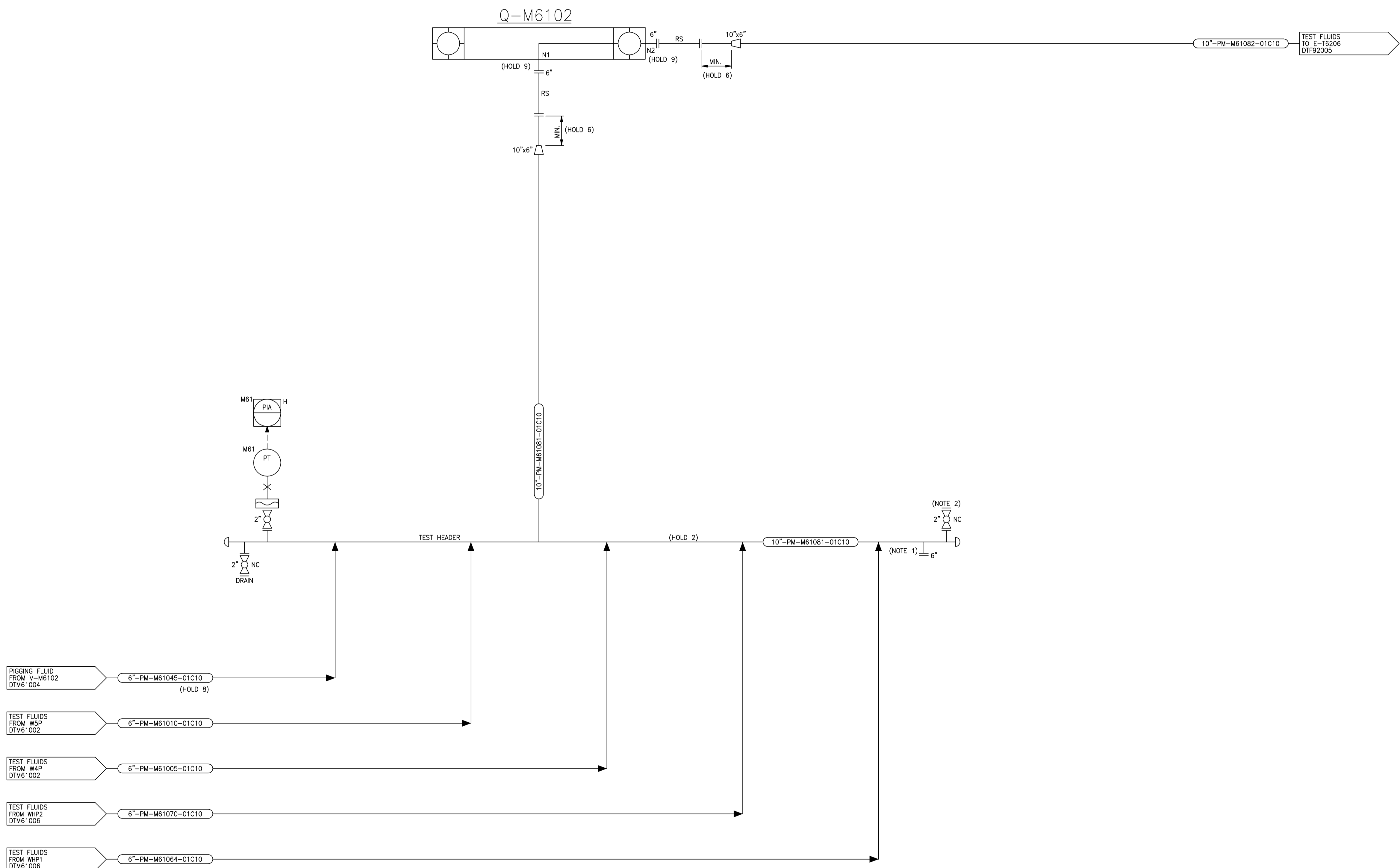
DRAWING ASSEMBLY: N/A		TOTAL WEIGHT: N/A	
SINGLE BUOY MOORINGS INC. MARLY - SWITZERLAND ENGINEERING OFFICES MONACO P.O. BOX 199 Tel: +377 92 05 15 00 Website: www.sbmoffshore.com			
Client Drawing Number		Client Revision	
DE-OSX2-0061-PRO-SBM-004		0	
Drawing Title		E.P.M	
TURRET		R.HOBSON	
TEST / SATELLITE PIG RECEIVER		Date	
P&ID		06/13/11	
Format	SBM Project Number	SBM Drawing Number	SBM Revision
A1	SO 18070	DTM61004	11

Q-M6102 TEST SWIVEL	
DESIGN PRESS.	FV/18 barg
DESIGN TEMP.	-20/70°C (HOLD 7)
MAX. OP. PRESS.	13 barg
MAX. OP. TEMP.	45°C
SIZE	6" (HOLD 9)
MOC	CARBON STEEL (HOLD 1)

Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
1	1	INTERNAL DISPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011


NOTES:
 1. PROVIDE BLANKED OFF FLANGE FOR FUTURE.
 2. PURGE/VENT CONNECTION.

- REFERENCE DRAWINGS:**
- DTF92001 FPSO - EQUIPMENT LEGEND - P&ID
 - DTF92002 FPSO - INSTRUMENT LEGEND - P&ID
 - DTF92003 FPSO - PIPING IDENTIFICATION LEGEND - P&ID
 - DTF92004 FPSO - PIPING LEGEND - P&ID
 - DTF92005 FPSO - TURRET / TOPSIDES INTERFACES - P&ID
 - DTF92006 FPSO - TYPICAL DETAILS - P&ID




- HOLDS:**
- SWIVEL MATERIAL.
 - CONFIGURATION OF RISER TIE IN TO HEADER.
 - HIPPS DETAILS.
 - MINOR LINE SIZES.
 - VALVE TAGS.
 - DISTANCE BETWEEN REDUCER & SWIVEL.
 - SWIVEL MIN. DESIGN TEMPERATURE.
 - LINE SIZE.
 - SWIVEL SIZE.
 - NEED FOR STRAINER FOR WELL CLEAN-UP.

ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LINTRY WEIGHT KG.	TOTAL WEIGHT KG.	REMARKS
01	XX	XX	XXXX XXXX XXXX	XX	XX	/	



FPSO OSX-2

DRAWING ASSEMBLY: N/A TOTAL WEIGHT: N/A

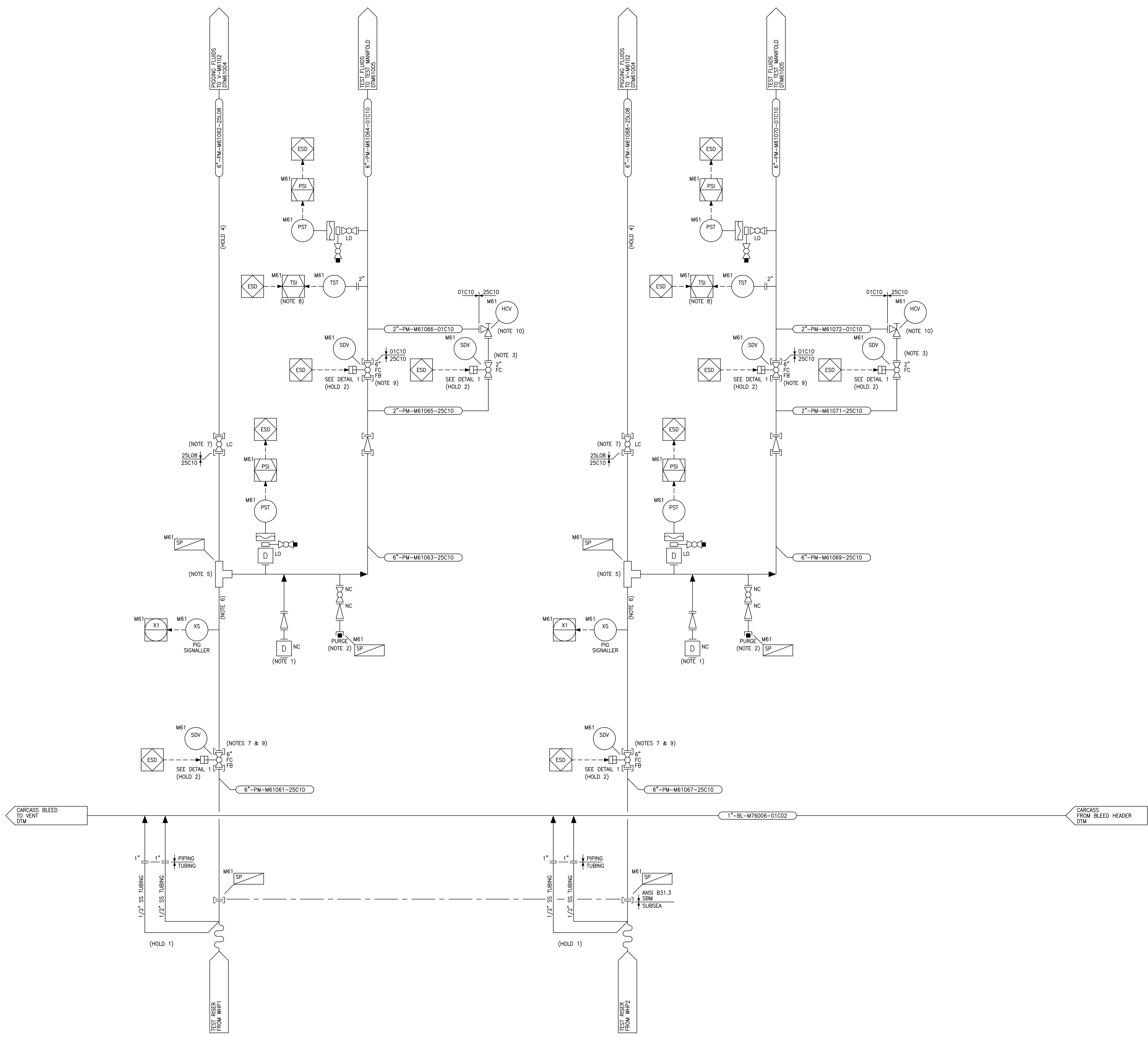


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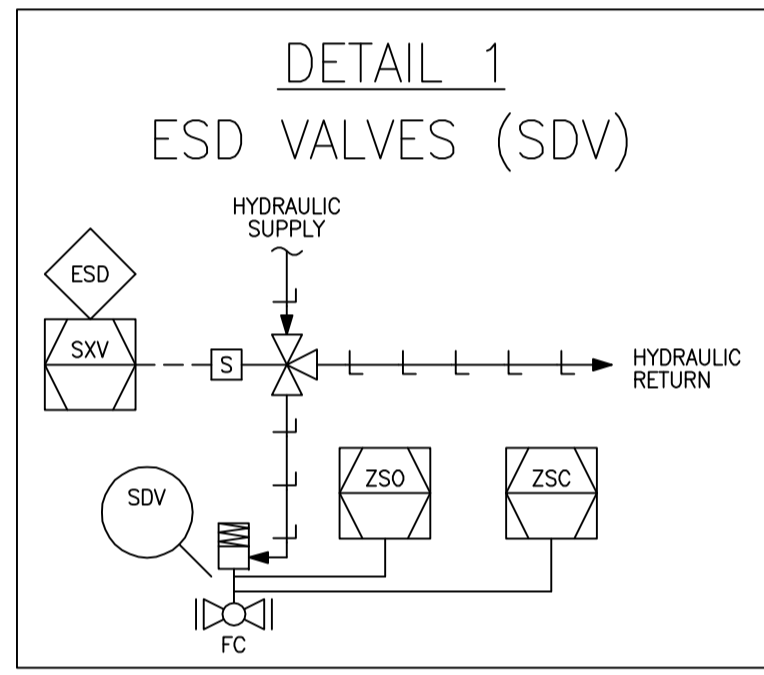
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Drawing Title		TURRET TEST MANIFOLD & SWIVEL P&ID		E.P.M		R.HOBSON	
Format		A1		Date		06/13/11	
SBM Project Number		SO 18070		SBM Drawing Number		DTM61005	
SBM Revision		11		SBM Revision		11	

Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
1	1	INTERNAL DISPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011



NOTES:

1. TEMPORARY ETHANOL CONNECTION TO PRESSURIZE BETWEEN SDVs FOR START-UP.
2. PURGE CONNECTION TO BE CONNECTED BY HOSE TO NEAREST UTILITY STATION.
3. BYPASS LINE FOR START-UP.
4. HIGH POINT VENTS AND LOW POINT DRAINS FOR COMMISSIONING TO BE INSTALLED WHERE REQUIRED.
5. BARRED TEE.
6. MINIMUM 1.5D BENDS IN THIS LINE.
7. VALVE TO BE PIGGABLE.
8. TEMPERATURE SIGNAL FOR SHUT IN OF RISER SDVs TO BE LOCATED NEAR HCV.
9. INTERLOCK PROVIDED FOR 1st & 2nd RISER SDVs. 1st RISER SDV CANNOT BE OPENED UNTIL 2nd RISER SDV IS CLOSED, TO PREVENT UNCONTROLLED RISER DEPACKING.
10. DEPRESSURIZATION OF RISER DONE WITH START-UP CHOKE THROUGH PRODUCTION HESDER WHILE MONITORING M61-TST-XXX.



REFERENCE DRAWINGS:

1. DTF92001 FPSO - EQUIPMENT LEGEND - P&ID
2. DTF92002 FPSO - INSTRUMENT LEGEND - P&ID
3. DTF92003 FPSO - PIPING IDENTIFICATION LEGEND - P&ID
4. DTF92004 FPSO - PIPING LEGEND - P&ID
5. DTF92005 FPSO - TURRET / TOPSIDES INTERFACES - P&ID
6. DTF92006 FPSO - TYPICAL DETAILS - P&ID

HOLDS:

1. CARCASS BLEED CONNECTION DETAILS AND HEADER SIZE.
2. RISER SEV AND CHOKE VALVE CONFIGURATION REGARDING RISER DEPACKING.
3. VALVE TAGS.
4. PIPE MATERIAL FOR ALL FLOW LINES.

01	XX	XXX	XX	XX	/	
ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LININARY TOTAL WEIGHT KG.	REMARKS

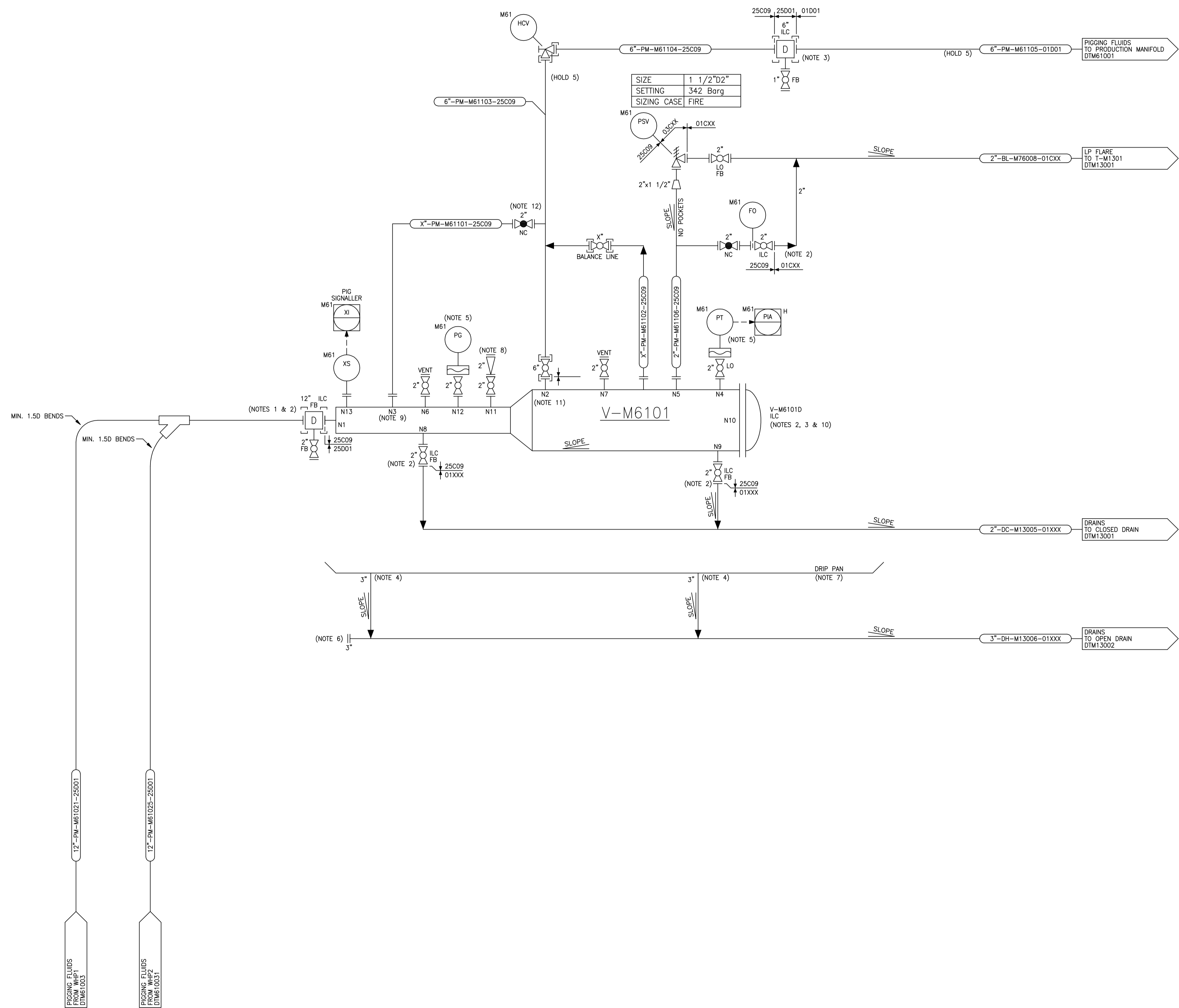


FPSO OSX-2

DRAWING ASSEMBLY: N/A TOTAL WEIGHT: N/A
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Client Drawing Number	DE-OSX2-0061-PRO-SBM-006	Client Revision	0
Drawing Title	TURRET TEST RISERS P&ID	EPM	R.HOBSON
Format	A1	Date	06/13/11
SBM Project Number	SO 18070	SBM Drawing Number	DTM61006
SBM Revision		SBM Revision	11

V-M6101 WHP PRODUCTION PIG RECEIVER	
DESIGN PRESS.	Fv/342 barg
DESIGN TEMP.	-20/70°C
SIZE	12"x18"
MOC	LTCS



Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
1	1	INTERNAL DISPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011

NOTES:

1. VALVES TO BE PIGGABLE.
2. VALVES & PIG TRAP DOOR ARE KEY INTERLOCKED.
3. PIG TRAP DOOR TO BE EQUIPPED WITH MECHANICAL INTERLOCK TO PREVENT OPENING WHILE PRESSURISED.
4. DRIP PAN DRAINS LOCATED AT DIAGONALLY OPPOSITE CORNERS.
5. LOCAL INDICATION VISIBLE FROM LAUNCHER DOOR.
6. RODDING POINT.
7. DRIP PAN SIZED FOR 120% OF LAUNCHER VOLUME.
8. NITROGEN PURGE POINT.
9. NOZZLE TO BE LOCATED AS CLOSE AS POSSIBLE TO THE PIG TRAP ISOLATION VALVE.
10. ALLOW ACCESS BEHIND DOOR FOR PIG INSERTION.
11. NOZZLE LOCATED AS CLOSE AS POSSIBLE TO PIG LAUNCHER DOOR.
12. GLOBE VALVE FOR INITIAL TRAP PRESSURISATION.

REFERENCE DRAWINGS:

1. DTF92001 FPSO - EQUIPMENT LEGEND - P&ID
2. DTF92002 FPSO - INSTRUMENT LEGEND - P&ID
3. DTF92003 FPSO - PIPING IDENTIFICATION LEGEND - P&ID
4. DTF92004 FPSO - PIPING LEGEND - P&ID
5. DTF92005 FPSO - TURRET / TOPSIDES INTERFACES - P&ID
6. DTF92006 FPSO - TYPICAL DETAILS - P&ID

HOLDS:

1. MINOR LINE SIZES.
2. EQUIPMENT DETAILS.
3. PSV SIZING.
4. DESIGN TEMPERATURES PENDING BLOWDOWN & START-UP CALCULATIONS.
5. LINE SIZE.
6. FLARE CONNECTION DETAILS.

ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LITRARY WEIGHT KG.	TOTAL WEIGHT KG.	REMARKS
01	XX			XX	XX	/	

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DRAWING ASSEMBLY: N/A TOTAL WEIGHT: N/A

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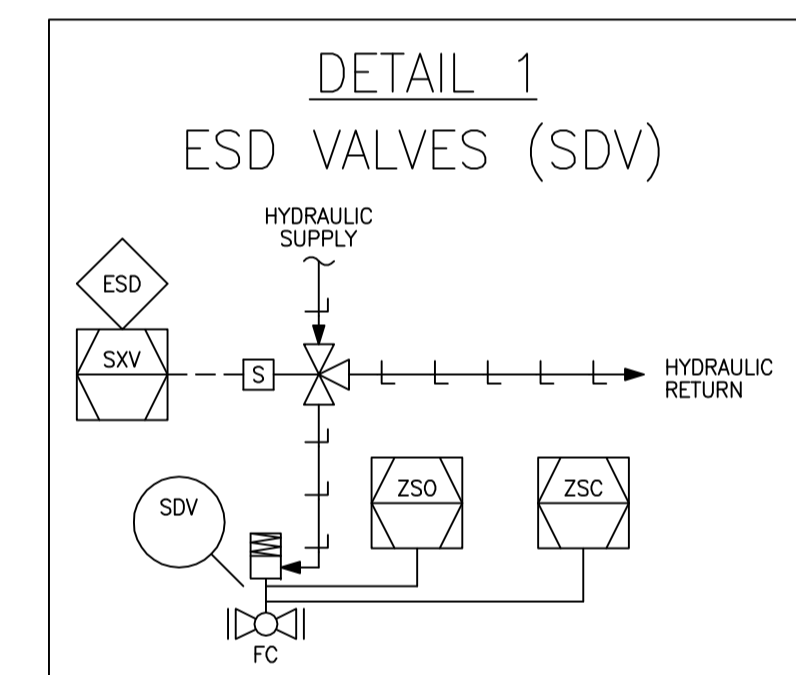
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Client Drawing Number	DE-OSX2-0061-PRO-SBM-007	Client Revision	0
Drawing Title	TURRET WHP PRODUCTION PIG RECEIVER P&ID	EPM	R.HOBSON
Format	A1	Date	06/13/11
SBM Project Number	SO 18070	SBM Drawing Number	DTM61007
SBM Revision	11		

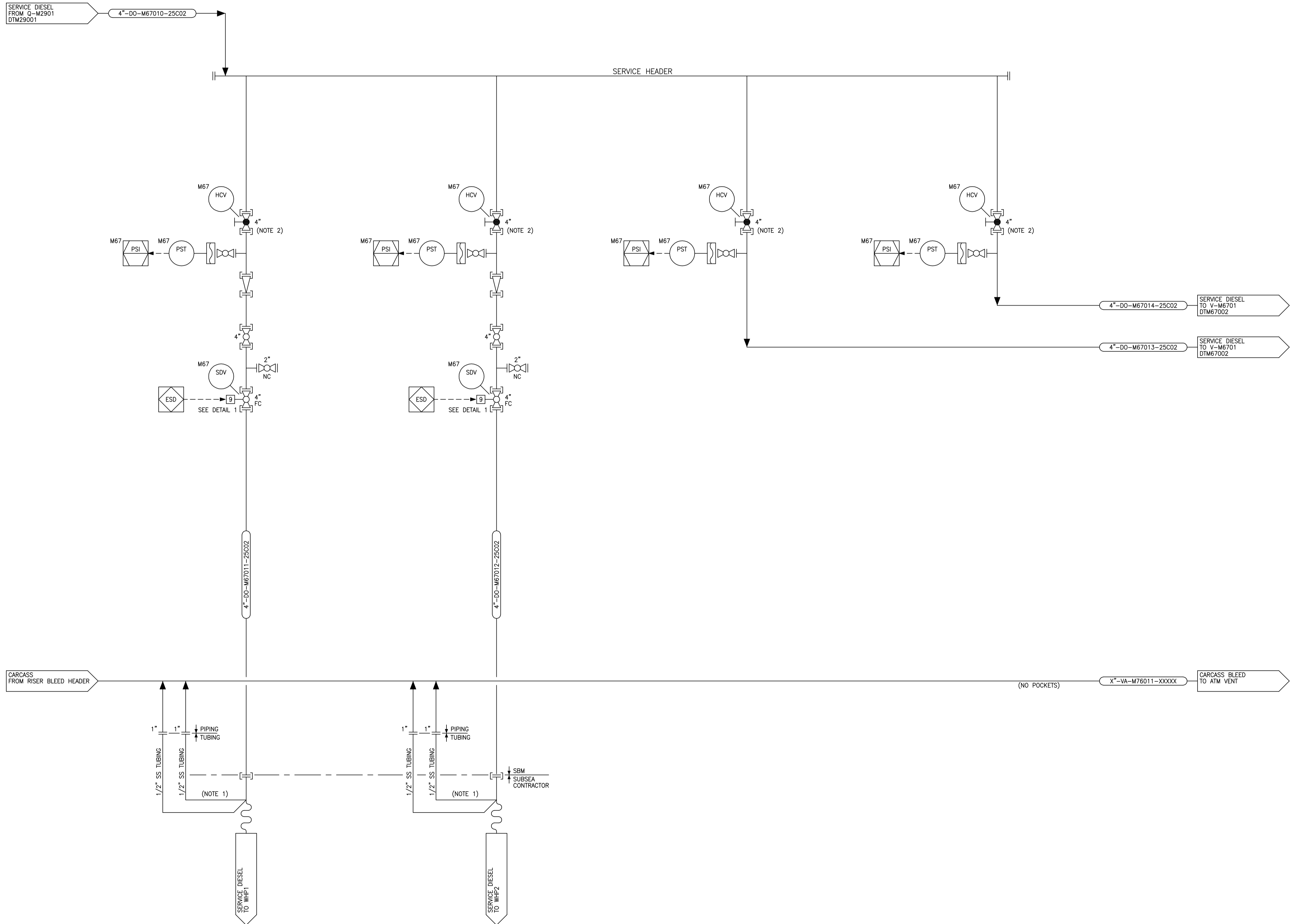
Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
1	1	INTERNAL DISPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011

NOTES:
 1. CARCASS BLEED TO RISER IS 1/2".
 2. MANUAL CHOKE VALVE.

- REFERENCE DRAWINGS:**
- DTF92001 FPSO - EQUIPMENT LEGEND - P&ID
 - DTF92002 FPSO - INSTRUMENT LEGEND - P&ID
 - DTF92003 FPSO - PIPING IDENTIFICATION LEGEND - P&ID
 - DTF92004 FPSO - PIPING LEGEND - P&ID
 - DTF92005 FPSO - TURRET / TOPSIDES INTERFACES - P&ID
 - DTF92006 FPSO - TYPICAL DETAILS - P&ID



HOLDS:
 1. MINOR LINE SIZES.
 2. VALVE TAGS.
 3. CARCASS BLEED CONNECTION DETAILS & HEADER SIZE.



ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LININARY WEIGHT KG.	TOTAL WEIGHT KG.	REMARKS
01	XX	XX	XXXX XXXX XXXX	XX	XX	/	

FPSO OSX-2

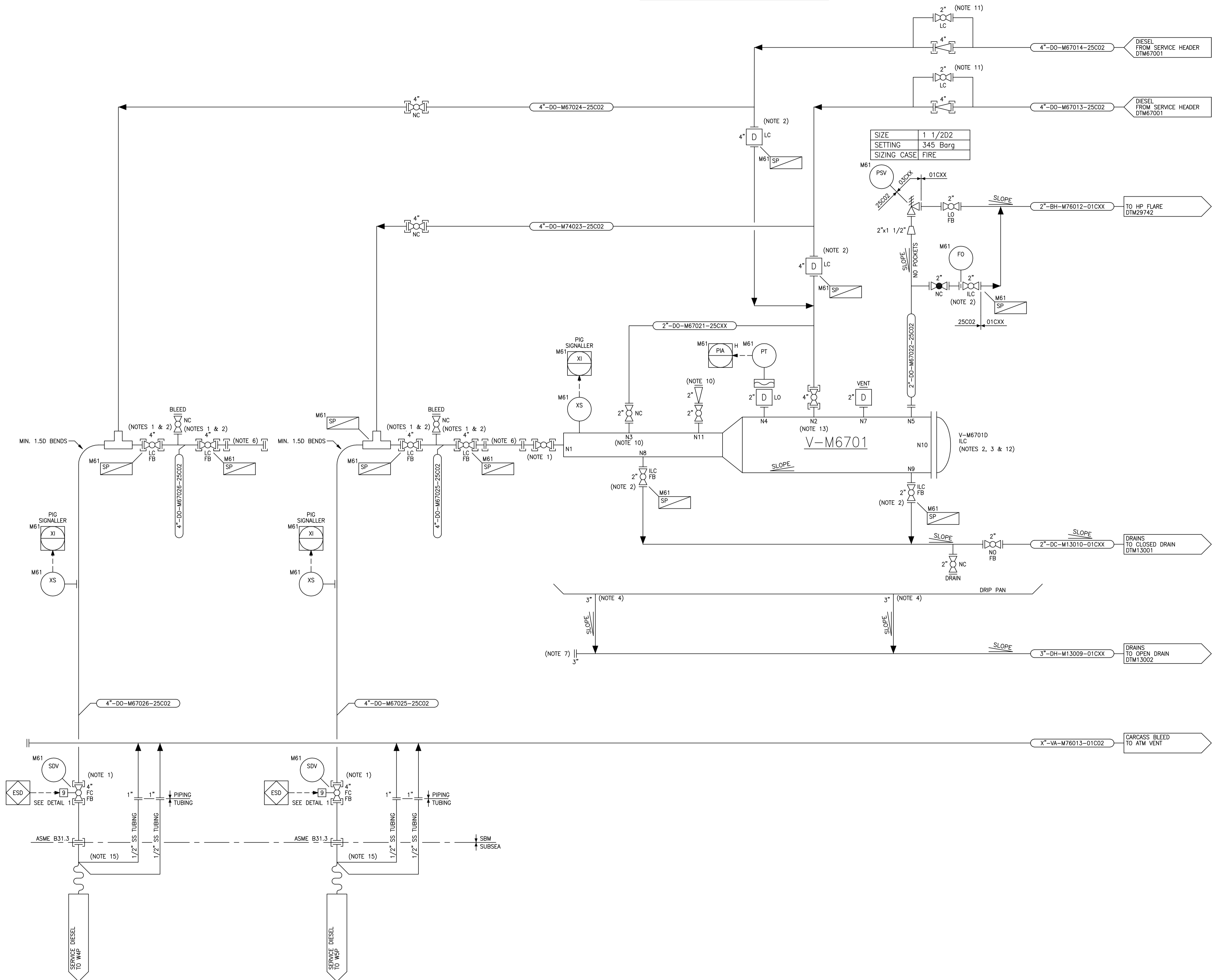
DRAWING ASSEMBLY: N/A TOTAL WEIGHT: N/A

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Client Drawing Number	DE-OSX2-0067-PRO-SBM-001	Client Revision	0
Drawing Title	TURRET SERVICE RISERS P&ID	EPM	R.HOBSON
Format	A1	Date	06/13/11
SBM Project Number	SO 18070	SBM Drawing Number	DTM67001
		SBM Revision	11

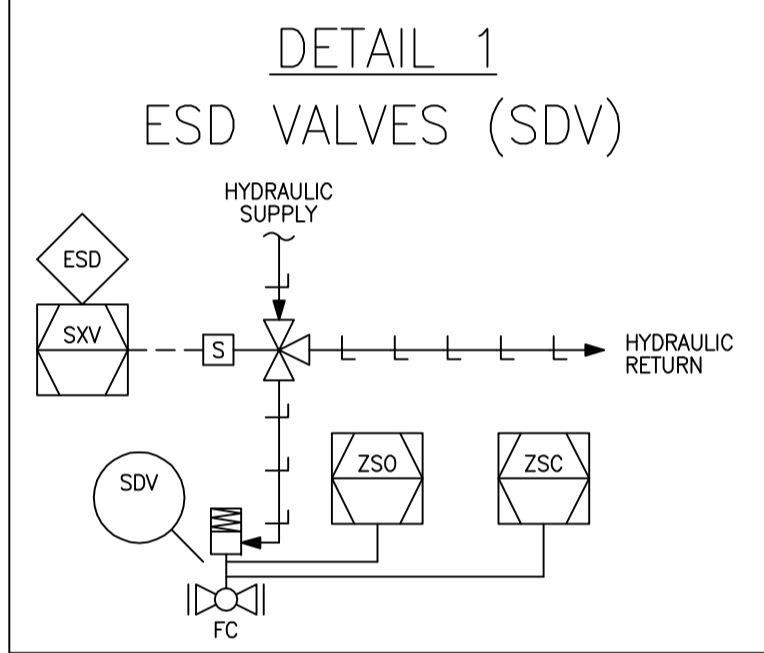
V-M6701 W4P/W5P SERVICE LINE PIG LAUNCHER	
DESIGN PRESS.	Fv/345 barg
DESIGN TEMP.	0/65°C
SIZE	4"x10"
MOC	CARBON STEEL



Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
1	1	INTERNAL DISPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011

NOTES:

1. VALVES TO BE PIGGABLE.
2. VALVES & PIG TRAP DOOR ARE KEY INTERLOCKED.
3. PIG TRAP DOOR TO BE EQUIPPED WITH MECHANICAL INTERLOCK TO PREVENT OPENING WHILE PRESSURIZED.
4. DRIP PAN DRAINS LOCATED AT DIAGONALLY OPPOSITE CORNERS.
5. LOCAL INDICATION VISIBLE FROM LAUNCHER DOOR.
6. REMOVABLE SPOOL TO ALLOW SWITCHING OF THE LAUNCHER BETWEEN W4P & W5P RISERS.
7. RODDING POINT.
8. DRIP PAN SIZED FOR 120% OF LAUNCHER VOLUME.
9. NITROGEN PURGE POINT.
10. NOZZLE TO BE LOCATED AS CLOSE AS POSSIBLE TO THE PIG TRAP ISOLATION VALVE.
11. BYPASS FOR FLOW LINE DEPRESSURIZATION.
12. ALLOW ACCESS BEHIND DOOR FOR PIG INSERTION.
13. NOZZLE LOCATED AS CLOSE AS POSSIBLE TO PIG LAUNCHER DOOR.
14. PIG LAUNCHER BYPASS TO DRIVE THE PIG AFTER IT HAS PASSED THE PIG SIGNALLER, ALLOWING THE LAUNCHER TO BE ISOLATED AND DEPRESSURIZED IMMEDIATELY.
15. CARCASS BLEED TO RISER IS 1/2".



REFERENCE DRAWINGS:

1. DTF92001 FPSO - EQUIPMENT LEGEND - P&ID
2. DTF92002 FPSO - INSTRUMENT LEGEND - P&ID
3. DTF92003 FPSO - PIPING IDENTIFICATION LEGEND - P&ID
4. DTF92004 FPSO - PIPING LEGEND - P&ID
5. DTF92005 FPSO - TURRET / TOPSIDES INTERFACES - P&ID
6. DTF92006 FPSO - TYPICAL DETAILS - P&ID

HOLDS:

1. MINOR LINE SIZES.
2. EQUIPMENT DETAILS.
3. PSV SIZING.
4. VALVE TAGS.
5. CARCASS BLEED CONNECTION DETAILS & HEADER SIZE.
6. FLARE CONNECTION DETAILS.

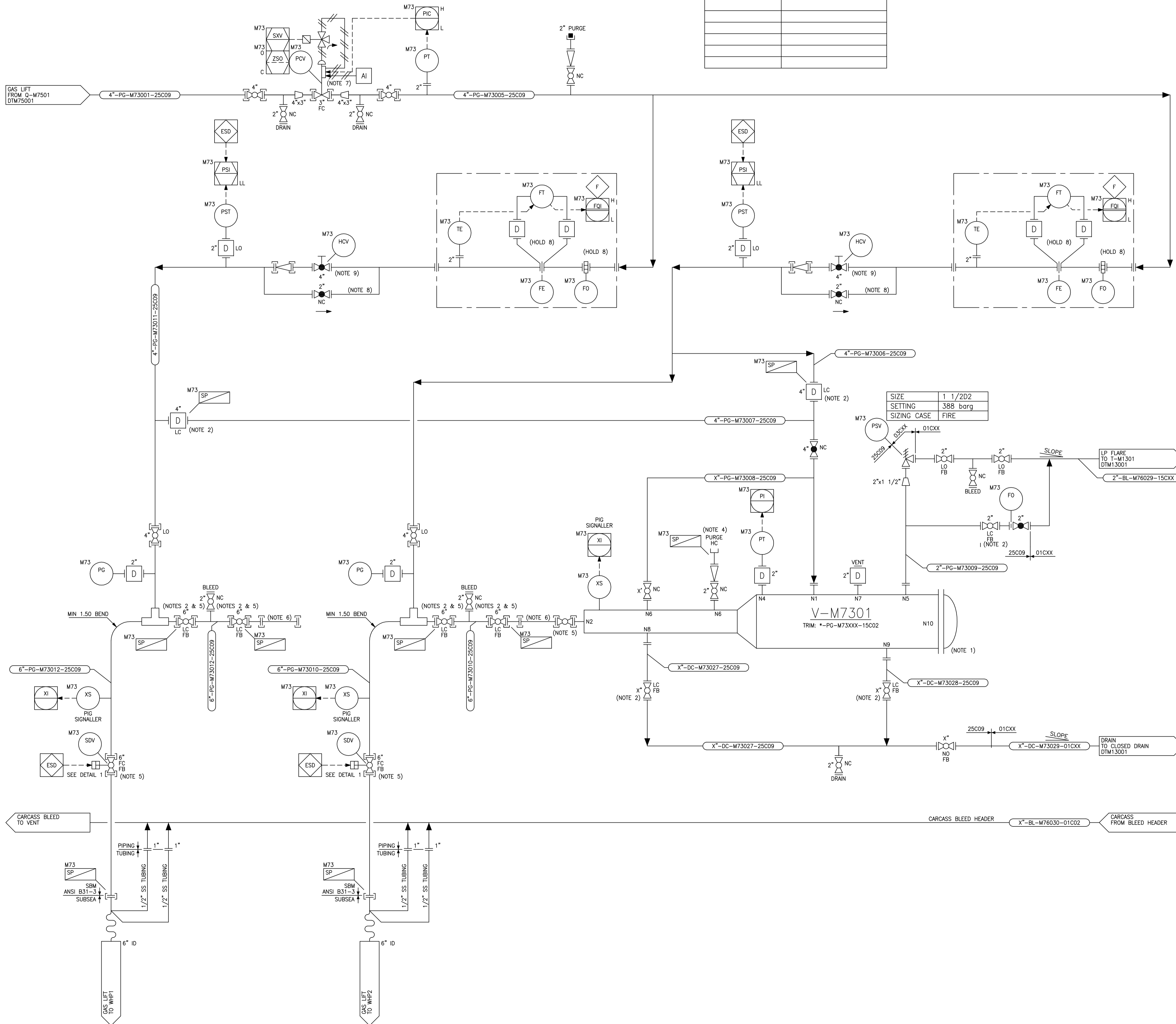
ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LITRARY WEIGHT KG.	TOTAL WEIGHT KG.	REMARKS
01	XX	XX	XXX XXX XXX	XX	XX	/	



FPSO OSX-2

DRAWING ASSEMBLY: N/A		TOTAL WEIGHT: N/A	
SINGLE BUOY MOORINGS INC. MARLY - SWITZERLAND ENGINEERING OFFICES MONACO P.O. BOX 199 Tel: +377 92 05 15 00 Website: www.sbmoffshore.com			
Client Drawing Number		Client Revision	
DE-OSX2-0067-PRO-SBM-002		0	
Drawing Title		E.P.M	
TURRET		R.HOBSON	
W4P & W5P SERVICE RISERS & PIG LAUNCHER		Date	
P&ID		06/13/11	
Format	SBM Project Number	SBM Drawing Number	SBM Revision
A1	SO 18070	DTM67002	11

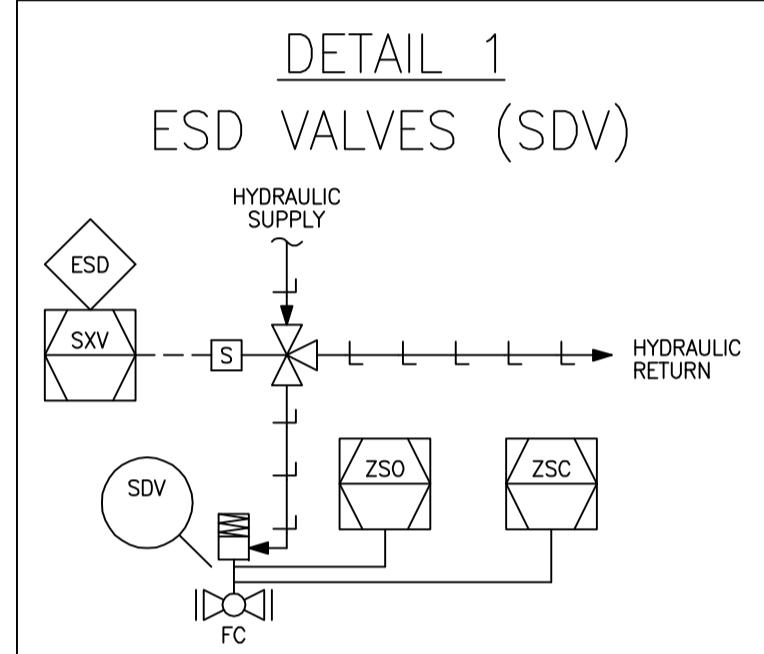
V-M7301 GAS LIFT PIG LAUNCHER	
DESIGN PRESS.	388 barg
DESIGN TEMP.	-46/80°C
SIZE	6"x12"
MOC	LTCS



Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
1	1	INTERNAL DISPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011

NOTES:

1. PIG LAUNCHER TO BE EQUIPPED WITH MECHANICAL KEY INTERLOCK TO PREVENT OPENING WHILE PRESSURIZED.
2. VALVES ARE INTERLOCKED TO SAFE GUARD ISOLATION OF VESSEL DURING LOADING OPERATION.
3. CARCASS BLEED CONNECTION TO RISER IS 1/2".
4. PURGE CONNECTION TO BE CONNECTED BY HOSE TO NEAREST UTILITY STATION.
5. VALVE TO BE PIGGABLE.
6. SPOOL PIECE FOR SWITCHING THE COMMON LAUNCHER BETWEEN THE TWO RISERS.
7. VALVE USED TO REDUCE PRESSURE FROM 350 BARA TO DELIVERY PRESSURE OF 200 BARA.
8. BY-PASS LINE FOR FLOW LINE DEPRESSURIZATION.
9. MANUAL CHOKE VALVE. (HOLD 9)




REFERENCE DRAWINGS:

1. DTF92001 FPSO - EQUIPMENT LEGEND - P&ID
2. DTF92002 FPSO - INSTRUMENT LEGEND - P&ID
3. DTF92003 FPSO - PIPING IDENTIFICATION LEGEND - P&ID
4. DTF92004 FPSO - PIPING LEGEND - P&ID
5. DTF92005 FPSO - TURRET / TOPSIDES INTERFACES - P&ID
6. DTF92006 FPSO - TYPICAL DETAILS - P&ID

HOLDS:

1. LOW TEMPERATURE CARBON STEEL REQUIREMENT.
2. EQUIPMENT DETAILS.
3. MINOR LINE SIZES.
4. PSV SIZING.
5. CONTROL VALVE SIZING.
6. CARCASS BLEED CONNECTION DETAILS & HEADER SIZE.
7. FLARE CONNECTION DETAILS.
8. TYPE OF FLOW METER.
9. REQUIREMENTS FOR FLOW CONTROL.

ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LITRARY WEIGHT KG.	TOTAL	REMARKS
01	XX	XX	XXXX	XX	XX	/	




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FPSO OSX-2

DRAWING ASSEMBLY: N/A

TOTAL WEIGHT: N/A

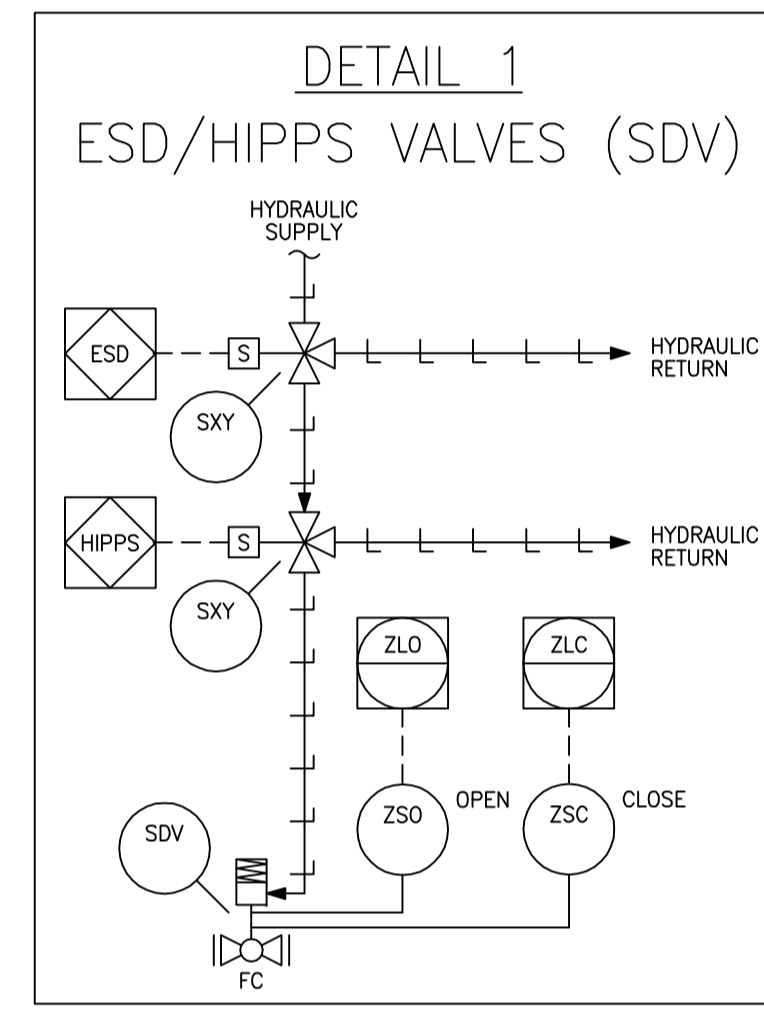
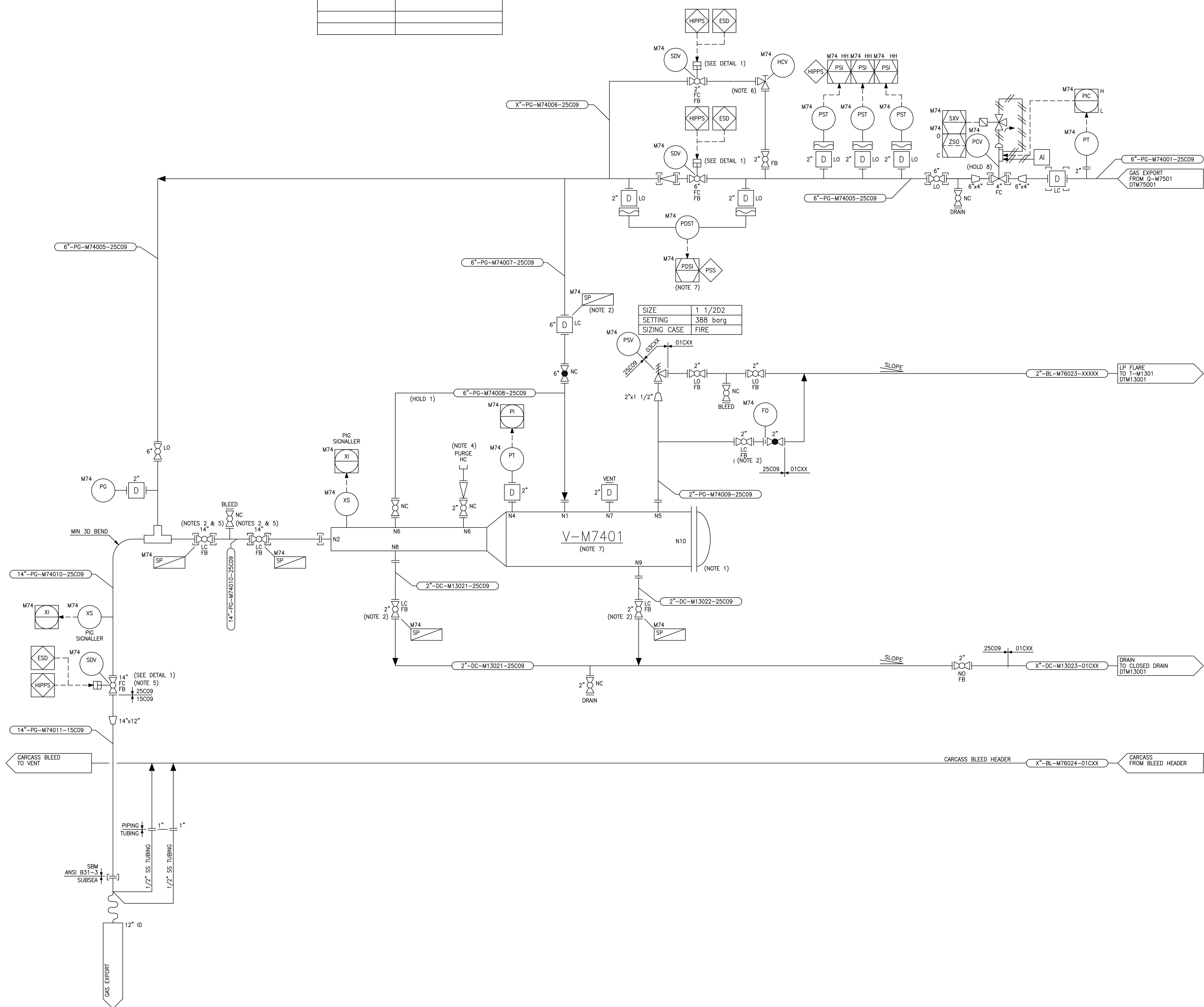


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Client Drawing Number	DE-OSX2-0073-PRO-SBM-001	Client Revision	0
Drawing Title	TURRET GAS LIFT RISERS P&ID	EPW	R.HOBSON
Format	A1	Date	06/13/11
SBM Project Number	SO 18070	SBM Drawing Number	DTM73001
SBM Revision		SBM Revision	11

V-M7401 GAS EXPORT PIG LAUNCHER	
DESIGN PRESS.	388 barg
DESIGN TEMP.	-46/80°C
SIZE	14"x18"
MOC	LTCS



NOTES:

1. PIG LAUNCHER TO BE EQUIPPED WITH MECHANICAL KEY INTERLOCK TO PREVENT OPENING WHILE PRESSURIZED.
2. VALVES ARE INTERLOCKED TO SAFE GUARD ISOLATION OF VESSEL DURING LOADING OPERATION.
3. CARCASS BLEED CONNECTION TO RISER IS 1/2".
4. PURGE CONNECTION TO BE CONNECTED BY HOSE TO NEAREST UTILITY STATION.
5. VALVE TO BE PIGGABLE.
6. CHOKE VALVE FOR MANUAL FLOW LINE DEPRESSURIZATION.
7. GAS EXPORT PIG LAUNCHER TO HANDLE INSTRUMENTED PIGS.

REFERENCE DRAWINGS:

1. DTF92001 FPSO - EQUIPMENT LEGEND - P&ID
2. DTF92002 FPSO - INSTRUMENT LEGEND - P&ID
3. DTF92003 FPSO - PIPING IDENTIFICATION LEGEND - P&ID
4. DTF92004 FPSO - PIPING LEGEND - P&ID
5. DTF92005 FPSO - TURRET / TOPSIDES INTERFACES - P&ID
6. DTF92006 FPSO - TYPICAL DETAILS - P&ID

HOLDS:

1. MINOR LINE SIZES.
2. EQUIPMENT DETAILS.
3. PSV SIZING.
4. LOW TEMPERATURE CARBON STEEL REQUIRED.
5. VALVE TAGS.
6. CARCASS BLEED CONNECTION DETAILS & HEADER SIZE.
7. FLARE CONNECTION DETAILS.
8. CONTROL VALVE SIZING.

01	XX	XXX	XX	XX	/	
ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LITRARY TOTAL WEIGHT KG.	REMARKS



FPSO OSX-2

DRAWING ASSEMBLY: N/A		TOTAL WEIGHT: N/A	
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Client Drawing Number: DE-OSX2-0074-PRO-SBM-001			
Drawing Title:		Client Revision: 0	
TURRET GAS EXPORT RISER & PIG LAUNCHER P&ID		EPM R.HOBSON Date: 06/13/11	
Format: A1	SBM Project Number: SO 18070	SBM Drawing Number: DTM74001	SBM Revision: 11

Q-M7501 GAS INJECTION/EXPORT/LIFT SWIVEL	
DESIGN PRESS.	FV/388 barg
DESIGN TEMP.	-46/80°C (HOLD 4)
OPERATING PRESS.	352 bara (HOLD 5)
OPERATING TEMP.	50°C
SIZE	4"
MOC	CARBON STEEL (NACE)

Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
1	1	INTERNAL DISPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011

NOTES:

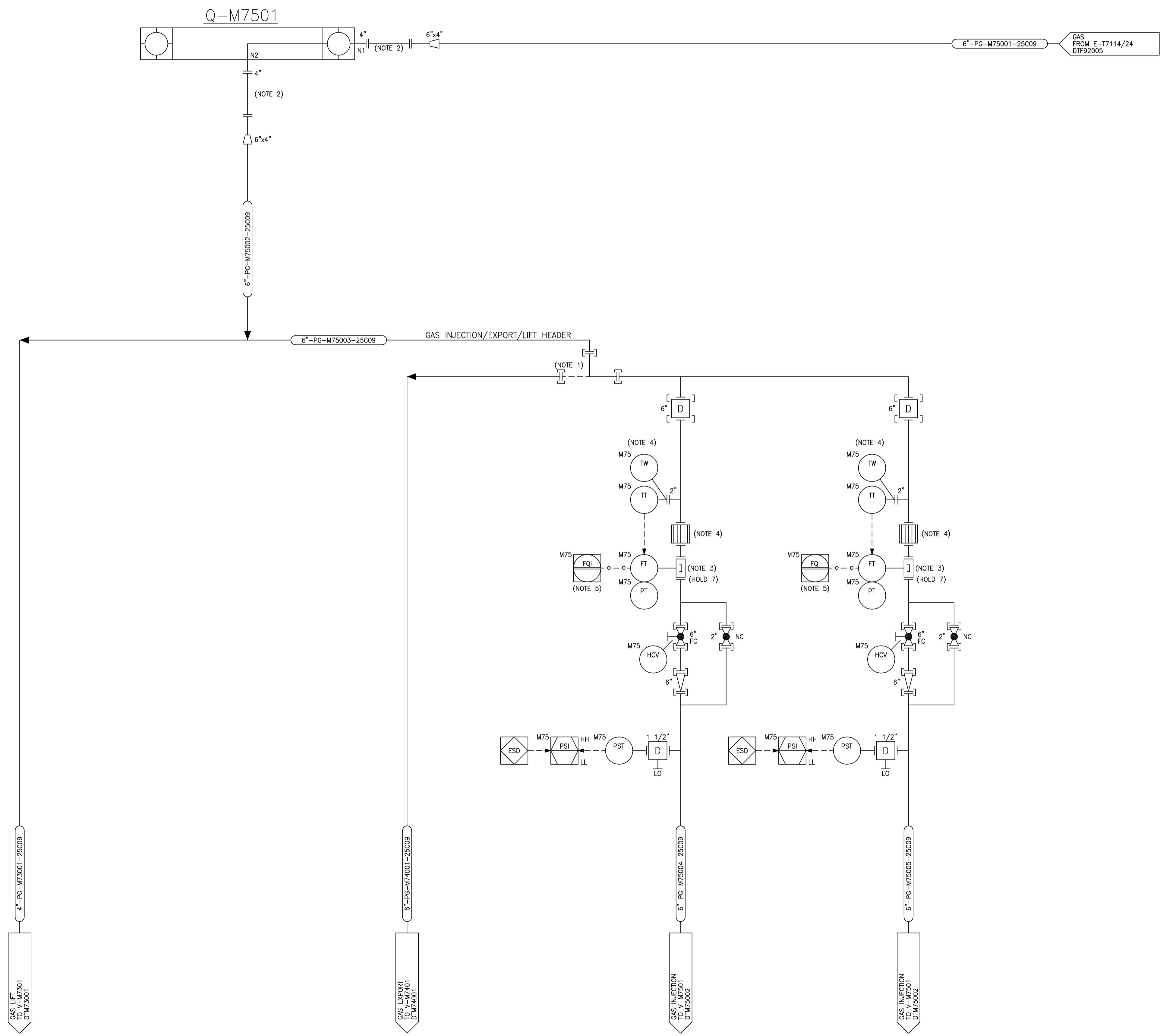
1. REMOVABLE SPOOL TO POSITIVELY ISOLATE HP/LP INTERFACE. SPOOL TO BE ROTATED WHEN GAS EXPORT IS AVAILABLE.
2. REMOVABLE SPOOL FOR SWIVEL MAINTENANCE AND TURRET INSTALLATION.
3. ULTRA SONIC FLOWMETER(IN-LINE) STRAIGHT LENGTH REQUIREMENTS: 5D UPSTREAM AND 3D DOWNSTREAM. (HOLD 6)
4. FLOW STRAIGHTENING VALVES AND TEMPERATURE TRANSMITTER TO BE LOOSE SUPPLIED BY FLOWMETER VENDOR.
5. FLOW MEASUREMENT WILL BE INTEGRATED IN THE ICSS TO PROVIDE A TOTALISED FLOW QUALITY.

REFERENCE DRAWINGS:


1. DTF92001 FPSO - EQUIPMENT LEGEND - P&ID
2. DTF92002 FPSO - INSTRUMENT LEGEND - P&ID
3. DTF92003 FPSO - PIPING IDENTIFICATION LEGEND - P&ID
4. DTF92004 FPSO - PIPING LEGEND - P&ID
5. DTF92005 FPSO - TURRET / TOPSIDES INTERFACES - P&ID
6. DTF92006 FPSO - TYPICAL DETAILS - P&ID

HOLDS:

1. LOW TEMP CARBON STEEL.
2. MINOR LINE SIZES.
3. VALVE TAGS.
4. MIN. DESIGN TEMPERATURE.
5. OPERATING PRESSURE.
6. FLOW METER STRAIGHT LENGTH REQUIREMENTS.
7. TYPE OF FLOW METER.




01	XX	XX	XXX	XX	XX	/	
ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LININARY	TOTAL	REMARKS
					WEIGHT KG.		



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FPSO OSX-2

DRAWING ASSEMBLY: N/A TOTAL WEIGHT: N/A



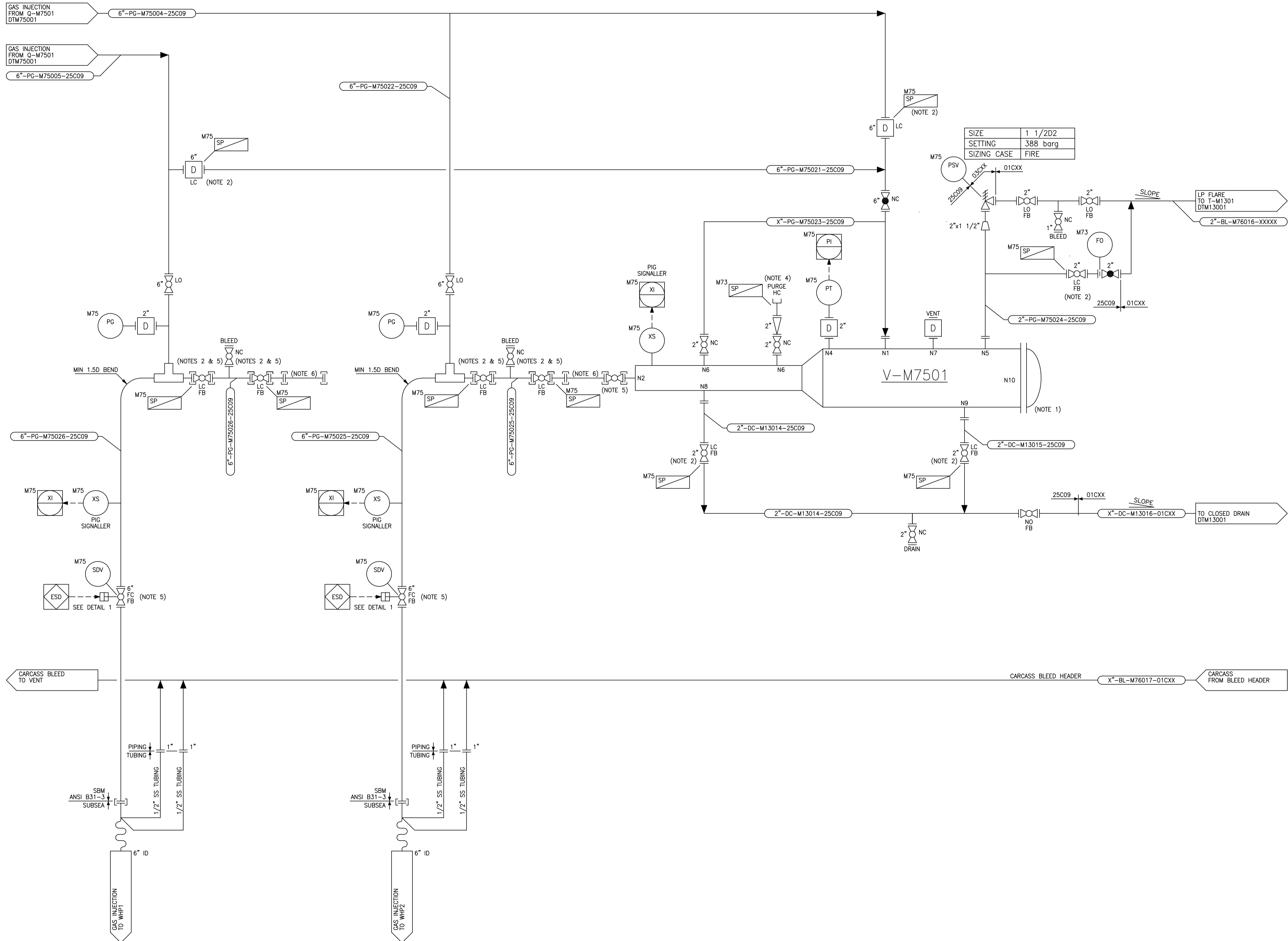
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MARLY - SWITZERLAND
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Tel: +377 92 05 15 00 Website: www.sbmoffshore.com

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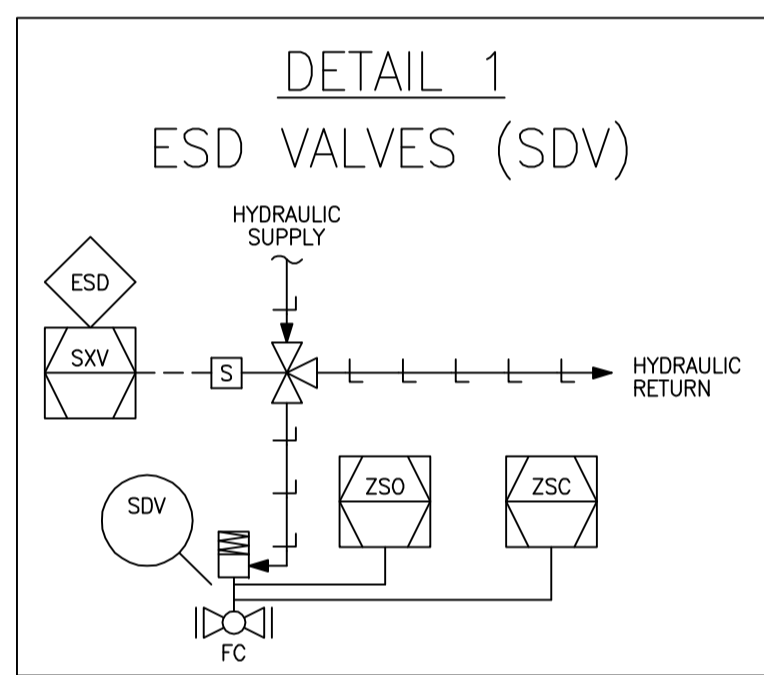
Client Drawing Number	DE-OSX2-0075-PRO-SBM-001	Client Revision	0
Drawing Title	TURRET GAS EXPORT / INJECTION / LIFT SWIVEL P&ID	EPM	R.HOBSON
Format	A1	Date	06/13/11
SBM Project Number	SO 18070	SBM Drawing Number	DTM75001
SBM Revision			11

V-M7501 GAS INJECTION PIG LAUNCHER	
DESIGN PRESS.	388 barg
DESIGN TEMP.	-46/80°C
SIZE	6"x12"
MOC	LTCS

Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
	1	INTERNAL DISPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011




- NOTES:**
1. PIG LAUNCHER TO BE EQUIPPED WITH MECHANICAL KEY INTERLOCK TO PREVENT OPENING WHILE PRESSURIZED.
 2. VALVES ARE INTERLOCKED TO SAFE GUARD ISOLATION OF VESSEL DURING LOADING OPERATION.
 3. CARCASS BLEED CONNECTION TO RISER IS 1/2".
 4. PURGE CONNECTION TO BE CONNECTED BY HOSE TO NEAREST UTILITY STATION.
 5. VALVE TO BE PIGGABLE.
 6. SPOOL PIECE FOR SWITCHING THE COMMON LAUNCHER BETWEEN THE RISERS.



- REFERENCE DRAWINGS:**
1. DTF92001 FPSO - EQUIPMENT LEGEND - P&ID
 2. DTF92002 FPSO - INSTRUMENT LEGEND - P&ID
 3. DTF92003 FPSO - PIPING IDENTIFICATION LEGEND - P&ID
 4. DTF92004 FPSO - PIPING LEGEND - P&ID
 5. DTF92005 FPSO - TURRET / TOPSIDES INTERFACES - P&ID
 6. DTF92006 FPSO - TYPICAL DETAILS - P&ID

- HOLDS:**
1. LOW TEMPERATURE CARBON STEEL REQUIREMENT.
 2. EQUIPMENT DETAILS.
 3. MINOR LINE SIZES.
 4. PSV SIZING.
 5. FLARE LINE MATERIAL & CONNECTION DETAILS.
 6. CARCASS BLEED CONNECTION DETAILS & HEADER SIZES.


01	XX	XXX	XX	XX	/	
ITEM N°	QTY	EXTRA	DESCRIPTION	MATERIAL	LITRARY TOTAL WEIGHT KG.	REMARKS



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FPSO OSX-2

DRAWING ASSEMBLY: N/A TOTAL WEIGHT: N/A



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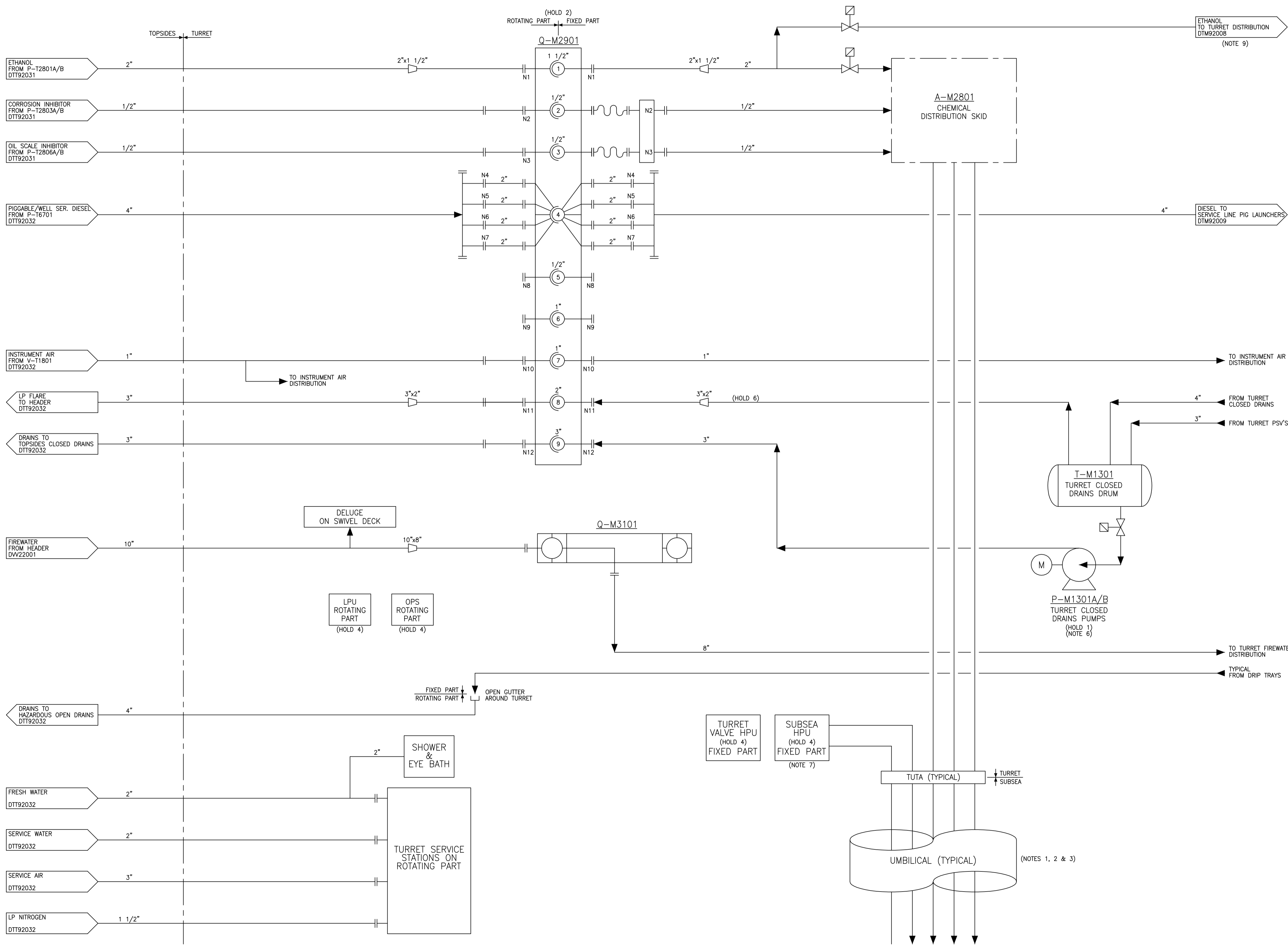
Client Drawing Number	DE-OSX2-0075-PRO-SBM-002	Client Revision	0
Drawing Title	TURRET GAS INJECTION RISERS P&ID	EPM	R.HOBSON
Format	A1	Date	06/13/11
SBM Project Number	SO 18070	SBM Drawing Number	DTM75002
		SBM Revision	11

TAG NUMBER	DESCRIPTION	DESIGN		SIZE	MATERIAL
		PRESS. (Barg)	TEMP. (°C)		
Q-M3101	FIREWATER SWIVEL	16	0/65	8"	22Cr DUPLEX

UTILITY SWIVEL Q-M2901	DESCRIPTION	DESIGN		SIZE	MATERIAL
		PRESS. (Barg)	TEMP. (°C)		
PATH 1	ETHANOL	400	0/65	1 1/2"	SS
PATH 2	CORROSION INHIBITOR	400	0/65	1/2"	SS
PATH 3	OIL SCALE INHIBITOR	400	0/65	1/2"	SS
PATH 4	PIGGING/WELL SERVICE	345	0/65	2"	SS
PATH 5	SPARE	400	0/65	1/2"	SS

(NOTE 8)

UTILITY SWIVEL Q-M2901	DESCRIPTION	DESIGN		SIZE	MATERIAL
		PRESS. (Barg)	TEMP. (°C)		
PATH 6	SPARE	14	-13/65	1"	SS
PATH 7	INSTRUMENT AIR	14	0/65	1"	SS
PATH 8	LP FLARE	10	-13/65	2"	SS
PATH 9	CLOSED DRAINS	10	-13/65	3"	SS



Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
	1	INTER DISCIPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011

NOTES:

- ONE UMBILICAL SHOWN FOR CLARITY, THERE ARE 2 UMBILICALS (ONE FOR EACH SATELLITE WELL). ONE ADDITIONAL UMBILICAL REQUIRED FOR HYDRAULICS TO GAS EXPORT SSDVS.
- NUMBER AND SIZE OF LINES TO AND FROM THE CHEMICAL DISTRIBUTION RACK ARE NOT SHOWN (FOR CLARITY).
- NUMBER AND SIZE OF LINES TO EACH UMBILICAL VARY DEPENDING ON THE UMBILICAL SERVICE.
- ETHANOL USED FOR ANNULUS LEAK MONITORING AT SUBSEA WELLS. (HOLD 5)
- MIXING VALVE FOR DISPERSING WASH WATER PRESSURE DROP + 2.0 bar (MAX.).
- SCREW TYPE PUMP (PROGRESSIVE CAVITY) SUITABLE FOR LOW NPSH/SOLIDS SERVICE. (HOLD 1)
- SUBSEA HPU FREE-ISSUE BY CLIENT.
- 4x 2" PIPE ROUTINGS PROVIDED WITHIN SINGLE UTILITY PATH.
- DTM92008 SHOWS THIS LINE AS INJECTION POINTS AT VARIOUS LOCATIONS.

ABBREVIATIONS

- TUTA TOPSIDES UMBILICAL TERMINATION ASSEMBLY
- LRU LEAK RECUPERATION UNIT
- OPS OIL PRESSURISATION SYSTEM
- HPU HYDRAULIC POWER UNIT
- PSV PRESSURE SAFETY VALVE

HOLDS:

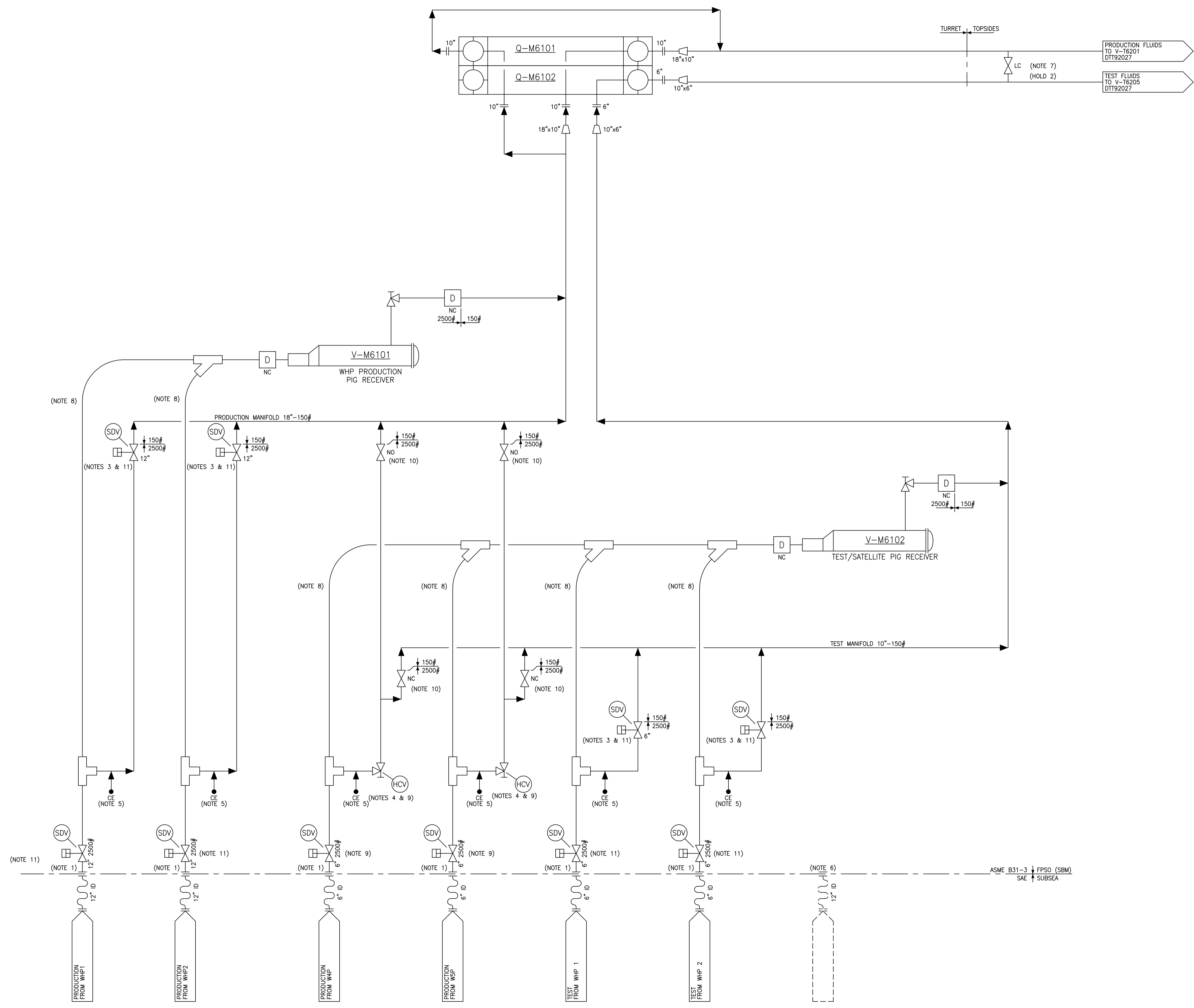
- CLOSED DRAINS PUMP TYPE.
- UTILITY SWIVEL ORDER/LAYOUT, PENDING PIPING DESIGN.
- LINE/SWIVEL SIZES.
- PACKAGE TAG NUMBERS.
- ANNULUS LEAK MONITORING REQUIREMENTS.
- RISER CARCASS VENTS VIA LP FLARE OR DEDICATED SWIVEL PATH, OR LOCATED ON FIXED PART.
- SWIVEL MATERIALS.



FPSO OSX-2

DRAWING ASSEMBLY: N/A		TOTAL WEIGHT: N/A	
		SINGLE BUOY MOORINGS INC. MARLY - SWITZERLAND ENGINEERING OFFICES MONACO P.O. BOX 199 Tel: +377 92 05 15 00 Website: www.sbmoffshore.com	
Client Drawing Number: DE-OSX2-0092-PRO-SBM-012		Client Revision: 0	
Drawing Title: TURRET TURRET UTILITIES PFD		EPM: R.HOBSON	
Format: A1		Date: 06/13/11	
SBM Project Number: SO 18070	SBM Drawing Number: DTM92007	SBM Revision: 11	

TAG NUMBER	SIZE	DESIGN PRESSURE	DESIGN TEMP. (°C)	DESCRIPTION
Q-M6101	2x10"	18 barg	-20/70°C	PRODUCTION SWIVEL
Q-M6102	6"	18 barg	-20/70°C	TEST SWIVEL



Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
	1	INTER DISCIPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011

NOTES:

- CARCASS BLEEDS TO BE MANIFOLD AND RUN TO SAFE LOCATION.
- UNCONTROLLED RISER DEPACKING THROUGH THE PIG RECEIVERS IS NOT CONSIDERED BECAUSE THIS IS NOT A NORMAL START-UP SITUATION.
- BYPASS LINE INCLUDED AROUND SDV FOR START-UP, RISER DEPACKING AND FLOW LINE DEPRESSURIZATION.
- MANUAL CONTROLLED ANGLE CHOKE VALVE.
- TEMPORARY ETHANOL INJECTION CONNECTION TO PRESSURIZE BETWEEN SDVs FOR START-UP.
- SPARE SLOT FOR FUTURE RISER.
- CROSSOVER TO ALLOW ROUTING OF PRODUCTION FLUIDS TO TEST SEPARATOR FOR START-UP HEATING IF REQUIRED.
- LINE TO BE PIGGABLE. MINIMUM BEND RADIUS 1.5 D.
- KEY INTERLOCK SYSTEM BETWEEN THE CHOKE VALVE & THE RISER SDV.
- ROUTING VALVES ARE INTERLOCKED TO ALWAYS ENSURE OPEN PATH TO PRODUCTION OR TEST SEPARATOR.
- KEY INTERLOCK SYSTEM BETWEEN THE 1st AND 2nd RISER SDVs FOR RISER DEPACKING.

D = DOUBLE BLOCK AND BLEED VALVES.

ABBREVIATIONS

AI INSTRUMENT AIR / SERVICE AIR	IF INTERFACE
AS STARTING AIR	IL INTERLOCKED
BH HP FLARE (BLOWDOWN AND RELIEF)	LC LIQUID LEVEL CONTROLLER
BL LP FLARE	LRU LEAK RECUPERATION UNIT
CA FOAM INHIBITOR	M ELECTRIC MOTOR
CB BIOCIDE, MARINE GROWTH PREVENTER	MC COOLING MEDIUM
CC CORROSION INHIBITOR	MCR COOLING MEDIUM RETURN
CD DEMULSIFIER	MCS COOLING MEDIUM SUPPLY
CE ETHANOL	MDO MARINE DIESEL OIL
CG GLYCOL	MGO MARINE GAS OIL
CH SODIUM HYPOCHLORIDE	MH HEATING MEDIUM
CI WATER CLARIFIER	MHR HEATING MEDIUM RETURN
CL OXYGEN SCAVENGER	MHS HEATING MEDIUM SUPPLY
CM METHANOL (HYDRATE INHIBITOR)	NC NORMALLY CLOSED
CN KEROSENE	NO NORMALLY OPEN
CR POUR POINT DEPRESSANT	OH HYDRAULIC OIL
CS SCALE INHIBITOR	OPS OIL PRESSURIZATION SYSTEM
CT NITRATE	P&F PLATE & FRAME HEAT EXCHANGER
CW WAX INHIBITOR (PARAFFIN INHIBITOR)	PC PRESSURE CONTROLLER
CY FILTER AID	PCH PRINTED CIRCUIT HEAT EXCHANGER
DC CLOSED DRAIN	PD POSITIVE DISPLACEMENT PUMP/COMPRESSOR
DH OPEN DRAIN - HAZARDOUS	PDC PRESSURE DIFFERENTIAL CONTROLLER
DN OPEN DRAIN - NON HAZARDOUS	PDT PRESSURE DIFFERENTIAL TRANSMITTER
DO DIESEL OIL	RP RECIPROCATING PUMP/COMPRESSOR
FC FLOW CONTROLLER	RS REMOVABLE SPOOL
FE FLOW ELEMENT	S&T SHELL & TUBE HEAT EXCHANGER
FG FUEL GAS	SP SET POINT
FGH HIGH PRESSURE FUEL GAS	TC TEMPERATURE CONTROLLER
FGL LOW PRESSURE FUEL GAS	VA ATMOSPHERIC VENT
GB GEAR BOX	WF FIREWATER
GI INERT GAS	WI INJECTION WATER
GN NITROGEN GAS	WP WELDED PLATE HEAT EXCHANGER
HOU HEAVY OIL UNIT	WS SEA WATER
HP HAIR PIN HEAT EXCHANGER	WSD SEA WATER DISCHARGE (OVERBOARD)
HPU HYDRAULIC POWER UNIT	WSS SEA WATER SUPPLY
HS H2S SCAVENGER	WZ FRESH WATER

HOLDS:

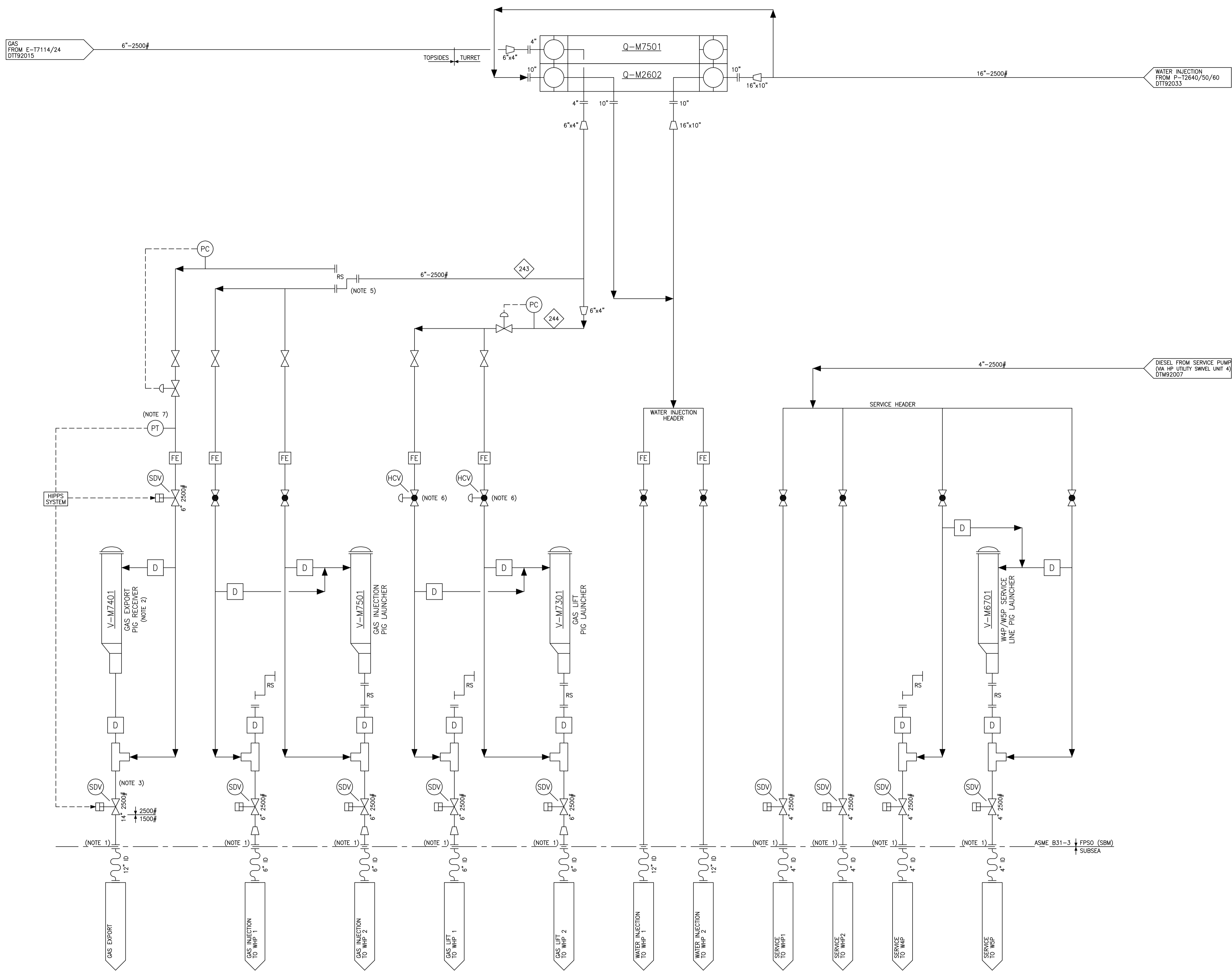
- DEPACKING PROTECTION DETAILS (FOR ALL PRODUCTION RISERS).
- CONFIRM PROPER SAFE GUARDS ARE IN PLACE ON TEST SEPARATOR.



FPSO OSX-2

DRAWING ASSEMBLY: N/A	TOTAL WEIGHT: N/A
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Client Drawing Number DE-OSX2-0092-PRO-SBM-013	Client Revision 0
Drawing Title TURRET PRODUCTION & TEST PFD	EPM R.HOBSON
Format A1	Date 06/13/11
SBM Project Number SO 18070	SBM Drawing Number DTM92008
	SBM Revision 11

TAG NUMBER	SIZE	DESIGN PRESSURE	DESIGN TEMP. (°C)	DESCRIPTION
Q-M2601	2x10"	330 barg (HOLD 1)	0/65°C	WATER INJECTION SWIVEL
Q-M7501	4"	388 barg (HOLD 2)	-46/80°C	GAS INJECTION/EXPORT/LIFT SWIVEL



Status	Rev.	Description	Author	Checker	Discipline Engineer	Disc. Lead Engineer	Date
	1	INTER DISCIPLINARY CHECK	GLJ	MS	AGM	MS	06/13/2011

NOTES:

- CARCASS BLEEDS TO BE MANIFOLD AND RUN TO SAFE LOCATION.
- GAS EXPORT PIG LAUNCHER AND DOWNSTREAM PIPING TO BE SUITABLE FOR INTELLIGENT PIGS.
- PIPING IS 14" FROM GAS EXPORT PIG LAUNCHER TO ALLOW INSTRUMENT PIG, BUT THE RISER SIZE IS 12".
- HIGH PRESSURE TRIPS UPSTREAM COMPRESSION SYSTEM.
- REMOVABLE SPOOLS TO POSITIVELY ISOLATE HP/LP INTERFACE FOR GAS EXPORT.
- VALVE USED TO THROTTLE PRESSURE FROM 350 BARA TO DELIVERY PRESSURE OF 200 BARA.
- TWO OUT OF THREE VOTING HIGH PRESSURE TRIP TRANSMITTERS (HIPPS).

D = DOUBLE BLOCK AND BLEED VALVES.

ABBREVIATIONS

AI INSTRUMENT AIR / SERVICE AIR	IF INTERFACE
AS STARTING AIR	IL INTERLOCKED
BH HP FLARE (BLOWDOWN AND RELIEF)	LC LIQUID LEVEL CONTROLLER
BL LP FLARE	LRU LEAK RECUPERATION UNIT
CA FOAM INHIBITOR	M ELECTRIC MOTOR
CB BIOCIDES, MARINE GROWTH PREVENTER	MC COOLING MEDIUM
CC CORROSION INHIBITOR	MCR COOLING MEDIUM RETURN
CD DEMULSIFIER	MCS COOLING MEDIUM SUPPLY
CE ETHANOL	MDO MARINE DIESEL OIL
CG GLYCOL	MGO MARINE GAS OIL
CH SODIUM HYPOCHLORIDE	MH HEATING MEDIUM
CI WATER CLARIFIER	MHR HEATING MEDIUM RETURN
CL OXYGEN SCAVENGER	MHS HEATING MEDIUM SUPPLY
CM METHANOL (HYDRATE INHIBITOR)	NC NORMALLY CLOSED
CN KEROSENE	NO NORMALLY OPEN
CR POUR POINT DEPRESSANT	OH HYDRAULIC OIL
CS SCALE INHIBITOR	OPS OIL PRESSURIZATION SYSTEM
CT NITRATE	P&F PLATE & FRAME HEAT EXCHANGER
CW WAX INHIBITOR (PARAFFIN INHIBITOR)	PC PRESSURE CONTROLLER
CY FILTER AID	PCHE PRINTED CIRCUIT HEAT EXCHANGER
CZ ASPHALTENE INHIBITOR	PD POSITIVE DISPLACEMENT PUMP/COMPRESSOR
DC CLOSED DRAIN	PDC PRESSURE DIFFERENTIAL CONTROLLER
DH OPEN DRAIN - HAZARDOUS	PDT PRESSURE DIFFERENTIAL TRANSMITTER
DN OPEN DRAIN - NON HAZARDOUS	RP RECIPROCATING PUMP/COMPRESSOR
DO DIESEL OIL	RS REMOVABLE SPOOL
FC FLOW CONTROLLER	S&T SHELL & TUBE HEAT EXCHANGER
FE FLOW ELEMENT	SP SET POINT
FG FUEL GAS	TC TEMPERATURE CONTROLLER
FGH HIGH PRESSURE FUEL GAS	VA ATMOSPHERIC VENT
FGL LOW PRESSURE FUEL GAS	WF FIREWATER
GB GEAR BOX	WI INJECTION WATER
GI INERT GAS	WP WELDED PLATE HEAT EXCHANGER
GN NITROGEN GAS	WS SEA WATER
HOU HEAVY OIL UNIT	WSD SEA WATER DISCHARGE (OVERBOARD)
HP HAIR PIN HEAT EXCHANGER	WSS SEA WATER SUPPLY
HPU HYDRAULIC POWER UNIT	WZ FRESH WATER
HS H2S SCAVENGER	

HOLDS:

- WATER INJECTION SWIVEL DESIGN PRESSURE PENDING MECHANICAL DESIGN.
- GAS SWIVEL DESIGN PRESSURE.



FPSO OSX-2

DRAWING ASSEMBLY: N/A		TOTAL WEIGHT: N/A	
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