iDesignOffice

Software for Instrumentation & Control Systems Design and Documentation

Example Documents produced with Instrumentation Design Office applications

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IDO Product Overview

Licensing

Instrumentation Design Office (IDO) is licensed per application (module) per workstation. Licenses can be purchased outright or rented on a monthly basis (conditions apply). IDO consists of three integrated application modules that share design and 'As built' data:

Instrument Engineer

Manages all tasks typically handled by an instrument engineer during a project lifecycle including instrument index data entry and reports. *Instrument Engineer* enables instrument datasheet (specification sheet) creation and document management (revision control, batch printing etc).

This module also includes process data import/entry which can be linked to user defined datasheets and Microsoft Excel import/export functionality. This is normally the only IDO module required by an engineer during a project.

IDO Engineer created the datasheet examples that follow and can generate Non-CAD 'instant' PDF 'loop check' reports.

Instrument Designer

Manages all tasks typically handled by an instrument designer during a project lifecycle including CAD drawing creation, drawing list management, updating of revisions and printing of CAD files for loop diagrams, termination diagrams, Hookups etc.

This module is used to generate CAD files from the IDO database by automating the drafting process and is normally only used by a designer during a project.

IDO Designer created the AutoCAD loop and termination diagrams that follow and can also generate Non-CAD 'instant' PDF reports ('loop check' and terminations) if an *IDO Wiring Manager* license is present on the users PC.

Wiring Manager

Handles all tasks typically carried out by an instrument designer related to detail cable, wiring and termination design. This includes definition of equipment terminal arrangements (field devices, junction boxes, marshalling cabinet and panel devices such as relays, IS barriers & I/O modules), cable creation and termination, cross-patch wiring etc., Generation of Cable Schedules and cable, cable gland and cable gland adapter report/Bill of Materials, cable drum schedules, cable block diagrams etc.

This module enables you to create termination reports without requiring CAD drawings as seen in the Non-CAD termination reports that follow.

DSS2050B

Instrument Datasheet — CONTROL VALVE

1	**Tag No.**	**80-PV-1305**			P&ID No.			A1-10389		
2	Service	FUEL GAS TO REBOILER 80-H190			Line Number			150-HC-11685-AC1		
3	**PROCESS CONDITIONS**									
4	Fluid Name		FUEL GAS		**Design Conditions**					
5	Fluid Nature	Fluid State	-	Vapour	Design Temp.	Min	Max	0 ºC	110 °C	
6	**Operating Conditions**		**Min Flow**	**Norm Flow** / **Max Flow**	Design Press.	Min	Max	0 kPag	3100 kPa-g	
7	Liquid Flow Rate		-	- / -	Critical Temp.	Critical Press.		-	-	
8	Vapour Flow Rate		6481 Sm3/hr	- / 17055 Sm3/hr	Vapour S.G @ 15 °C			-		
9	Inlet Pressure		2460 kPa-g	- / 2440 kPa-g	Flashing/Cavitation/Choked			-		
10	Pressure Drop		85 kPa	- / 45 kPa	delta P @ Shut Off			2500 kPa		
11	Inlet Temperature		85 °C	- / 85 °C	Hazardous Area Classification			Zone 1, Gr IIC, T3		
12	Liquid Vapour Pressure		-	- / -	Allowable Noise SPL			82dBA		
13	Liquid Density		-	- / -	Ingress Protection Rating			IP 65 for all Electronic Enclosures		
14	Liquid Viscosity		-	- / -	Test & Certification			Hydrotest		
15	Vapour Molecular Weight		8.22	- / 8.22	Sizing Considerations			-		
16	Vapour Compress. Factor, Z		1	- / 1	Material Selection			Materials to be suitable for Hydrogen		
17	Vapour Ratio of Specific Heats		1.29	- / 1.29	NACE Certification			Not Required		
18	Cv Calculated		34.472	- / 126.153	Serial Number					
19	Valve Opening		20 %	- / 75 %						
20	Noise: Calculated SPL		60.2 dBA	- / 64.6 dBA						
21	**VALVE BODY**									
22	Line Size & Sch	Inlet / Outlet	DN 150 Sch 40	DN 150 Sch 40	Bonnet Type			Plain		
23	Insulation/Jacket		None		Body Material			CS to ASTM A216 Gr WCC		
24	Valve Type		Globe		Bonnet Material			Same as Body		
25	Selected: Body Size	Rated Cv	DN 80	148	Packing Type & Material			ENVIRO PTFEC		
26	End Connections Type & Rating		ASME Cl 300 RF		Body Bolting	Bolts	Nuts	ASTM A193 Gr B7	ASTM A194Gr2H(Black)	
27	Flange Finish		3.2 to 6.3 µmRa		Lub & Isol Valve / Lube			Not Required		
28					Flow Direction			Flow Down		
29	**TRIM**									
30	Type	Size	Metal 1	3-7/16 Inch	Plug/Ball/Disk Material			416SS HD		
31	Characteristic	Rated Travel	Linear	1-1/2 Inch	Seat Material			416SS Metal		
32	Style (Balanced / Unbalanced)		Balanced		Material: Cage/Guide			17-4PH		
33	FL	XT	0.819	0.649	Material: Shaft/Stem			316 SS		
34	No. of Seats		1		Leakage Class			ANSI Class IV		
35										
36	**ACTUATOR**									
37	Type		Spring Diaphragm		Actuator Orientation			Standard		
38	Actuator	Size / Area	45	-	Handwheel			Not Required		
39	Valve Action on Air Supply Failure		Valve Closes on Air Failure		Volume Tank			Not Required		
40	Bench Range		14-30 psig		Other			-		
41	**ACCESSORIES**									
42	Positioner: Type		Smart Digital 4-20mA with HART		Air Set:	Model	Set Pr	Fisher FS67CFR-362	250 kPa-g	
43	Positioner:	Action / Charac'	Direct	-	Lock Up/Quick Exhaust			Not Required		
44	Positioner:	Gauges / Bypass	Supply, Output	Not Required	Solenoid Valve	Type	Voltage	Not Required	N/A	
45	Cable Entries		M20 for all Electronic Enclosures		Limit Switches: Type			Not Required		
46	I/P Transducer: Signal Input		Integral: 4-20mA from Control System		Limit Switches:	Open	Close	N/A	N/A	
47	Air Supply	Range / Conn	230 to 275 kPa-g	1/4"NPT F	Split Range Operation			Not Required		

MANUFACTURER & MODEL

Item	Tag	Manufacturer	Model	Ex Cert.	Ex Authority	Certificate No	CertExpiry	Local Approval
Valve	52PV344A	Fisher	3" ET					
Actuator	-	Fisher	667					
Positioner	-	Fisher	DVC6010,AD	Ex'ia, IIC, T4	SAA	Aus Ex 3725X	09/08/2011	Not Required
Solenoid Valve	None	-	-	-	-	-	-	-
Limit Switch	-	-	-	-	-	-	-	-

NOTES

1. VTA -Vendor to advise. Vendor to size valve & actuator for specified conditions. All pressure retaining components to be suitable for design conditions.
2. Wetted metals to be a minimum of 316SS. Wetted non-metals to be suitable for specified design conditions. Vendor to advise all wetted materials.
3. Non-wetted materials to be suitable for a petrochemical facility in a coastal environment. Vendor to advise nature of protective coating for all exposed metals.
4. Tube & fittings to be 316 Stainless Steel. Compression fittings shall be Bilok.
5. Vendor to provide a permanently fixed SS tag plate.

Site:	Tasmania	Control No:	N/A	Req:	REQ-6732-045	P.O.	N/A	OZ OIL COMPANY LTD

Rev	By	Date	Description	Chkd	Appd
A	GRH	10/09/05	For Client Review & Squad Check	SDH	MAC
B	GRH	30/09/05	Issued for Tender	SDH	MAC

Plant 80 — Train 2

INSTRUMENT DATA SHEET

80-PV-1305

Index	Size	Document No	Sht No	Rev
7	A4	780-3561	1	B

Instrument Datasheet

DIFFERENTIAL PRESSURE INSTRUMENT

1	**Tag No.**				**15-PT-110**		**15-PT-210**					
2	Service				P-1585A LUBE		P-1585B LUBE					
3	P&ID No:				15-1902		15-1903					
4	Line or Equipment				P-1585A		P-1585B					
5	Measurement Type				Differential Pressure		Differential Pressure					
6	Area Classification				Zone 2 & 22 , Gr IIA, T3		Zone 2 & 22, Gr IIA, T3					
7	**PROCESS CONDITIONS**											
8	Fluid		State		Lube Oil	Liquid	Lube Oil	Liquid				
9	Diff. Pressure (bar)		Oper	Max	2.5	10.0	2.5	10.0				
10	Temperature (ºC):		Oper	Max	50	100	50	100				
11	Oper. Spec Gravity		Oper. Viscosity									
12												
13	**TRANSMITTER**											
14	Instrument Range		Min.	Max.	0 Bar	7 Bar	0 Bar	7 Bar				
15	Calibration Range		Min.	Max.	0 Bar	2.5 Bar	0 Bar	2.5 Bar				
16	Elevation		Supression		N/A	N/A	N/A	N/A				
17	Element Type				Diaphragm		Diaphragm					
18	Element Material				316L SS		316L SS					
19	Body Material		Body Rating		316 SS	210 bar	316 SS	210 bar				
20	Process Flanges Material				316 SS		316 SS					
21	Wetted O-Rings Material				Glass Filled PTFE		Glass Filled PTFE					
22	Fill Fluid				Silicone DC 200 Oil		Silicone DC 200 Oil					
23	Bolts		Housing		A286 SS	Low Cu Alum.	A286 SS	Low Cu Alum.				
24	Paint				Epoxy or similar(Note 4)		Epoxy or similar(Note 4)					
25	Connection		Process	Elec.	1/4" NPTF	1/2" NPTF	1/4" NPTF	1/2" NPTF				
26	Ingression Prot.		Accuracy		IP 66	0.1% of span	IP 66	0.1% of span				
27	**DIAPHRAGM SEAL**											
28	Process Connection				N/A		N/A					
29	Rating											
30	Diaphragm Material											
31	Housing Material		Upper	Lower								
32	Fill Fluid											
33	Capillary Material											
34	Capillary Type		Capillary Length									
35	Flushing Connection											
36												
37	**OPTIONS**											
38	Integral LCD Meter				Required		Required					
39	Integral Meter Scale				0 - 2.5 Bar		0 - 2.5 Bar					
40	Hydrostatic Testing				Required		Required					
41	Cleaning				Not Required		Not Required					
42	Calibration				Required		Required					
43	Certification				Materials, Testing, Calibration		Materials, Testing, Calibration					
44	Power Supply/From			VDC	2 Wire 24V / DCS		2 Wire 24V / DCS					
45	Output Signal/SMART			mA	DE Output / Yes (Note 6)		DE Output / Yes (Note 6)					
46	Device Ex Rating				Ex ia (Note 1) (Note 3)		Ex ia (Note 1) (Note 3)					
47	Hazardous Area Certification				Compliant to AS2340		Compliant to AS2340					
48	Certification Agency				SAA (Note 1)		SAA (Note 1)					
49	Mounting				By Others (Note 5)		By Others (Note 5)					
50	Other				Note 2		Note 2					
51												
52	**MANUFACTURER & MODEL**											
53	Manufacturer				-00000-SM,CC,TC,CR,TG,F1,F3,		-00000-SM,CC,TC,CR,TG,F1,F3,I					
54	Model											
55												

NOTES:

1. Device has SAA Ex ia IIC T4 (Tamb=93Deg.C) IP66, Cert. No.: AUS Ex 1371X (Date of Expiry: 6/5/2012).
2. Provide a stainless steel tagplate permanently fixed to sensor and electronics module
3. SAA-Standards Australia, IEC-International Electrochemical Commission, LONO-Letter Of No Objection, OCEIV- Office of the Chief Electrical Inspector(VIC).
4. All painting and coating shall be suitable for use in a coastal environment for a petrochemical facility.
5. Mounting by Anderson & Greenwood Instrument Manifold, supplied by others.
6. Smart Tx required. Digitally Enhanced (DE) Output Protocol to be configured.

MESC:	Oz Oil Company, Pacific Coast	**Project No:**	6790

Rev	By	Date	Description	Chkd	Appd
A	GRH	1/09/2004	FOR TENDER	ME	ABC
0	GRH	22/09/2004	FOR PURCHASE	ME	ABC

Datasheet No

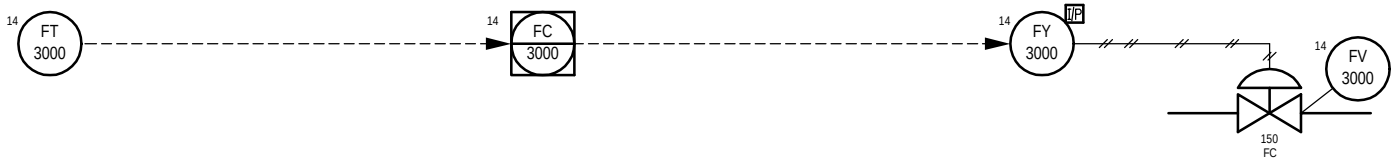
15-72-034

SHEET 1 Of 1

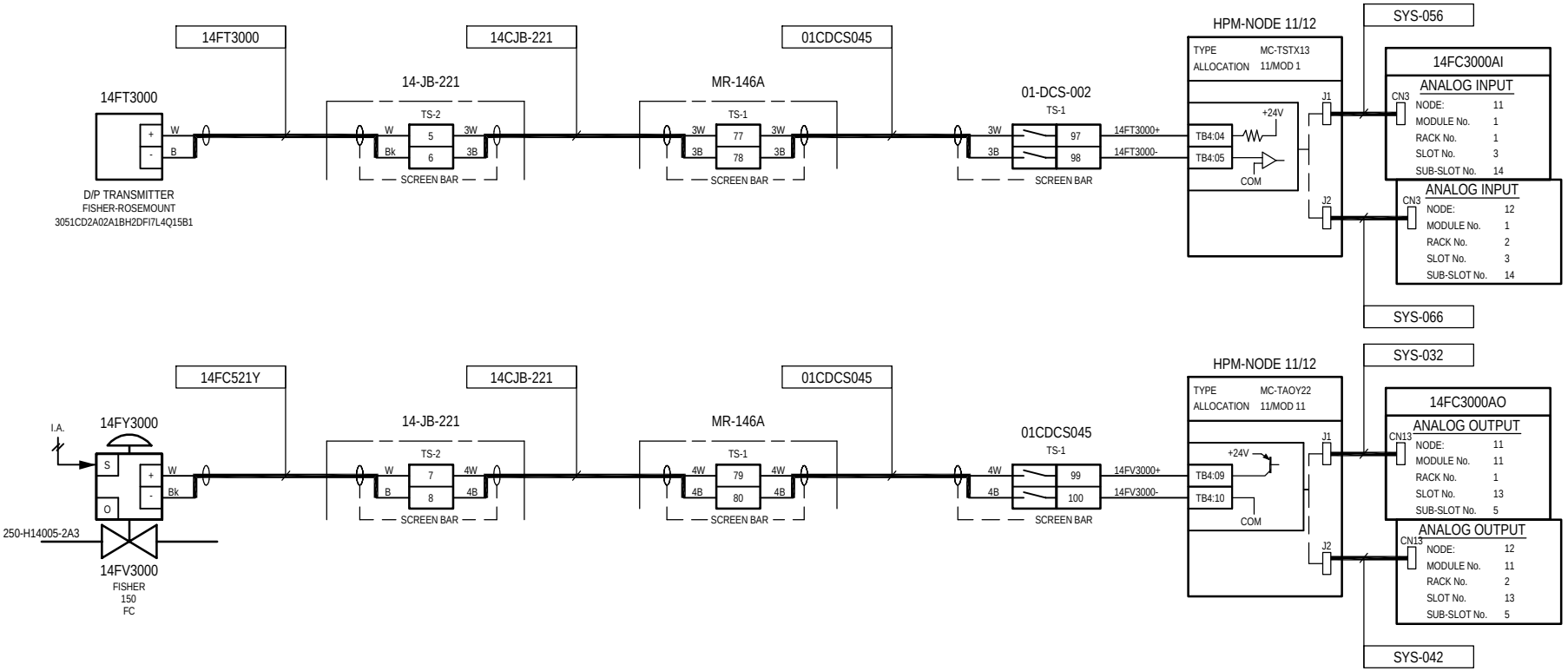
Rev 0

Instrument Index

Tag No	Description	P&ID	Plant Connection	Manufacturer	ModelNo	Location
Loop No: L-1023 Service: T-1020 SLUG CATCHER						
LIC-1023A	PCS CONTROLLER	DWG-01-BP-1003	*	*	*	PCS
LIC-1023B	PCS CONTROLLER	DWG-01-BP-1003	*	*	*	PCS
LT-1023	DP FB LVL TRANS. HP&LP SEALS	DWG-01-BP-1003	T-1020	YOKOGAWA	EJA110A-FMS5B-99DB/KS25/X1/N4/N5/M01/T12+Z911	Field
LV-1023A	CONTROL VALVE	DWG-01-BP-1003	150-PL-1020-EA3N	FLOWSERVE-VALTEK	Mark One	Field
LV-1023B	CONTROL VALVE	DWG-01-BP-1002	100-PF-1014-EA3X	FLOWSERVE-VALTEK	Mark One	Field
LY-1023A	I/P CONVERTER	DWG-01-BP-1003	150-PL-1020-EA3N	*	*	On valve
LY-1023B	I/P CONVERTER	DWG-01-BP-1002	100-PF-1014-EA3X	*	*	On valve
Loop No: L-1024 Service: T-1020 SLUG CATCHER						
LAHH-1024	SIS ALARM	DWG-01-BP-1003	*	*	*	SIS
LALL-1024	SIS ALARM	DWG-01-BP-1003	*	*	*	SIS
LG-1024	MAG FOLLOWER LEVEL GAUGE	DWG-01-BP-1003	T-1020	VTA	VTA	Field
LZT-1024	MAG ANA LVL TRANS.	DWG-01-BP-1003	T-1020	K-TEK	KM26S/SS6/W9F1F1D9/WJ215/WJ715/115/CM1A/C/ILT/ 5200 mm	Field
Loop No: L-1045 Service: C-1030 INLET SEPARATOR						
LAHH-1045	SIS ALARM	DWG-01-BP-1004	*	*	*	SIS
LALL-1045	SIS ALARM	DWG-01-BP-1004	*	*	*	SIS
LG-1045	MAG FOLLOWER LEVEL GAUGE	DWG-01-BP-1004	C-1030	VTA	VTA	Field
LZT-1045	MAG ANA LVL TRANS.	DWG-01-BP-1004	C-1030	K-TEK	KM26S/SS6/W9FEFED9/WR26/WR76/CM1A/C/IL1/ET/14 20 mm	Field
Loop No: L-1046 Service: C-1030 INLET SEPARATOR						
LIC-1046	PCS CONTROLLER	DWG-01-BP-1004	*	*	*	PCS
LT-1046	DP FB LVL TRANS. HP&LP SEALS	DWG-01-BP-1004	C-1030	YOKOGAWA	EJA110A-FMS5B-99DB/KS25/X1/N4/N5/M01/T12+Z911	Field
LV-1046	CONTROL VALVE	DWG-01-BP-1004	150-PL-1029-DA3N	FLOWSERVE-VALTEK	MaxFlo	Field
LY-1046	I/P CONVERTER	DWG-01-BP-1004	150-PL-1029-DA3N	*	*	On valve
Loop No: L-1061 Service: C-1040 STABILISER FEED SURGE DRUM DRAIN						
LG-1061	MAG FOLLOWER LEVEL GAUGE	DWG-01-BP-1005	C-1040	VTA	VTA	Field
LIC-1061	PCS CONTROLLER	DWG-01-BP-1005	*	*	*	PCS



FIELD	FIELD JUNCTION BOX	AUX. ROOM MARSHALLING	AUXILIARY ROOM I/O	DCS SYSTEM



AutoCAD Loop Diagram Generated by IDO

DRAWING No.	REFERENCE DRAWINGS TITLE	REV	REVISION DESCRIPTION	BY	APP'D	DATE
014-10056	ENGINEERING FLOW DIAGRAM	1	ISSUED FOR CONSTRUCTION	GRH	CSW	26/09/2004

iDesignOffice

DRAWN/DATE	GRH	18/09/2004	PROJECT No: 601000
CHECKED/DATE			CLIENT No
APPROVED/DATE	CSW	24/03/2004	CAD NAME. 7031-044

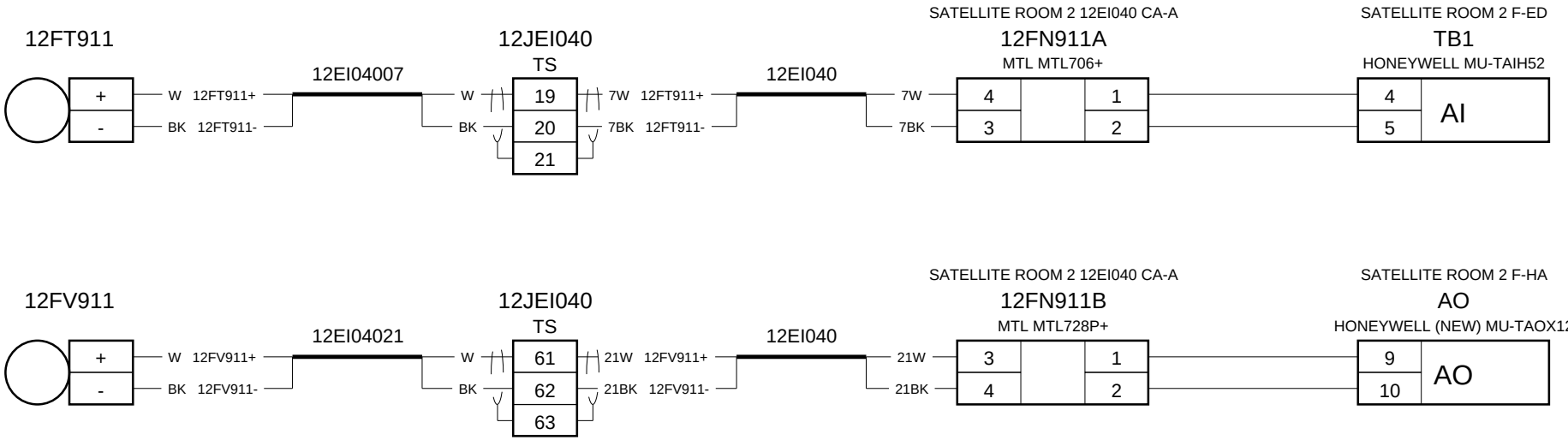
UNIT No. 14 UTILITIES

TITLE 14-F-3000
HOT OIL CIRCULATION

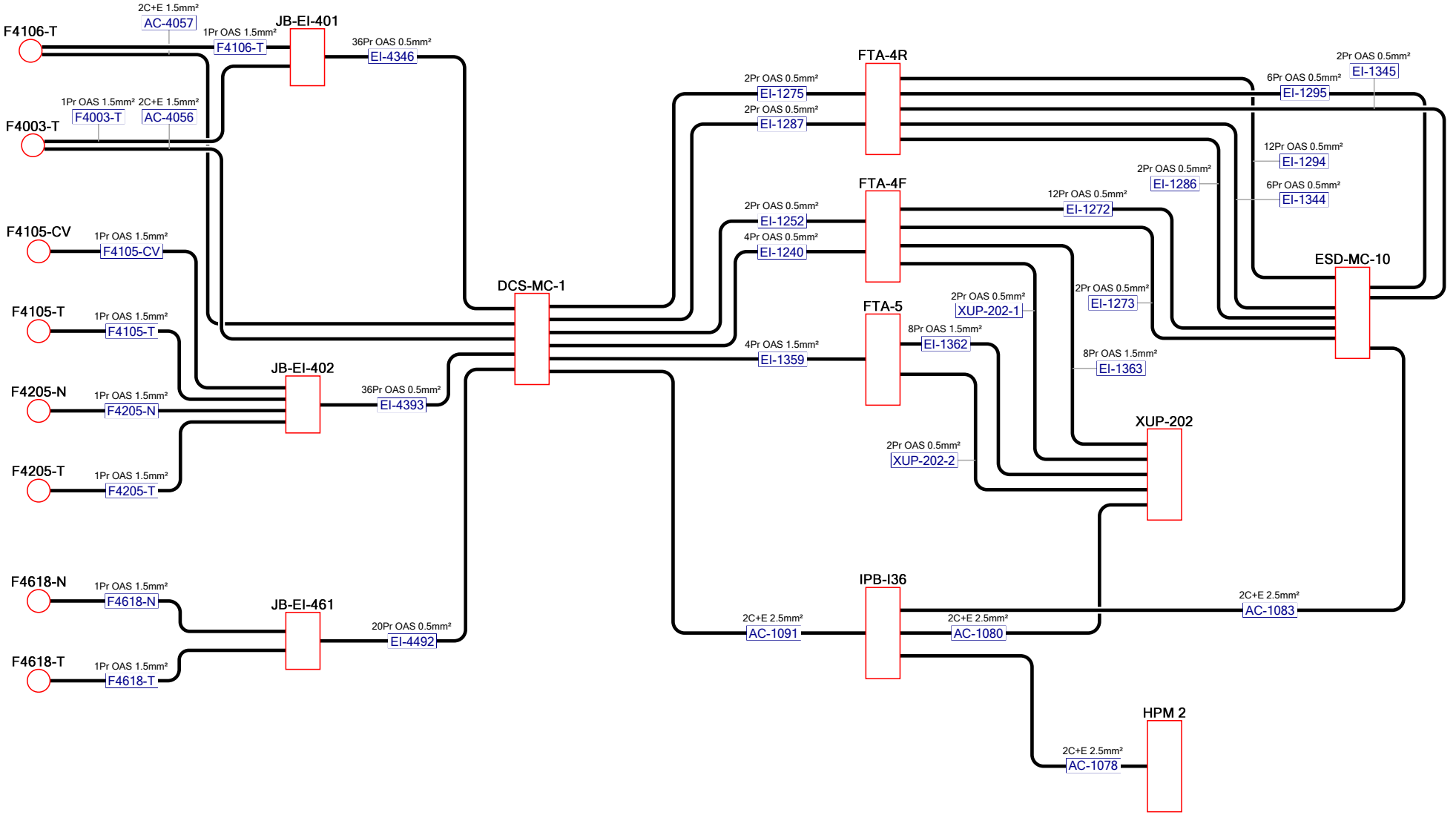
A3	SCALE NTS	DRAWING No. 7031–044	1 OF 1	REV: 1

Template: DCS-AI-Red-TxAndIP Generation Date: Time:

Loop No: 12F911 Service: CDHYDRO O'HEAD TO FCC



Non-CAD Loop Check Report Generated by IDO



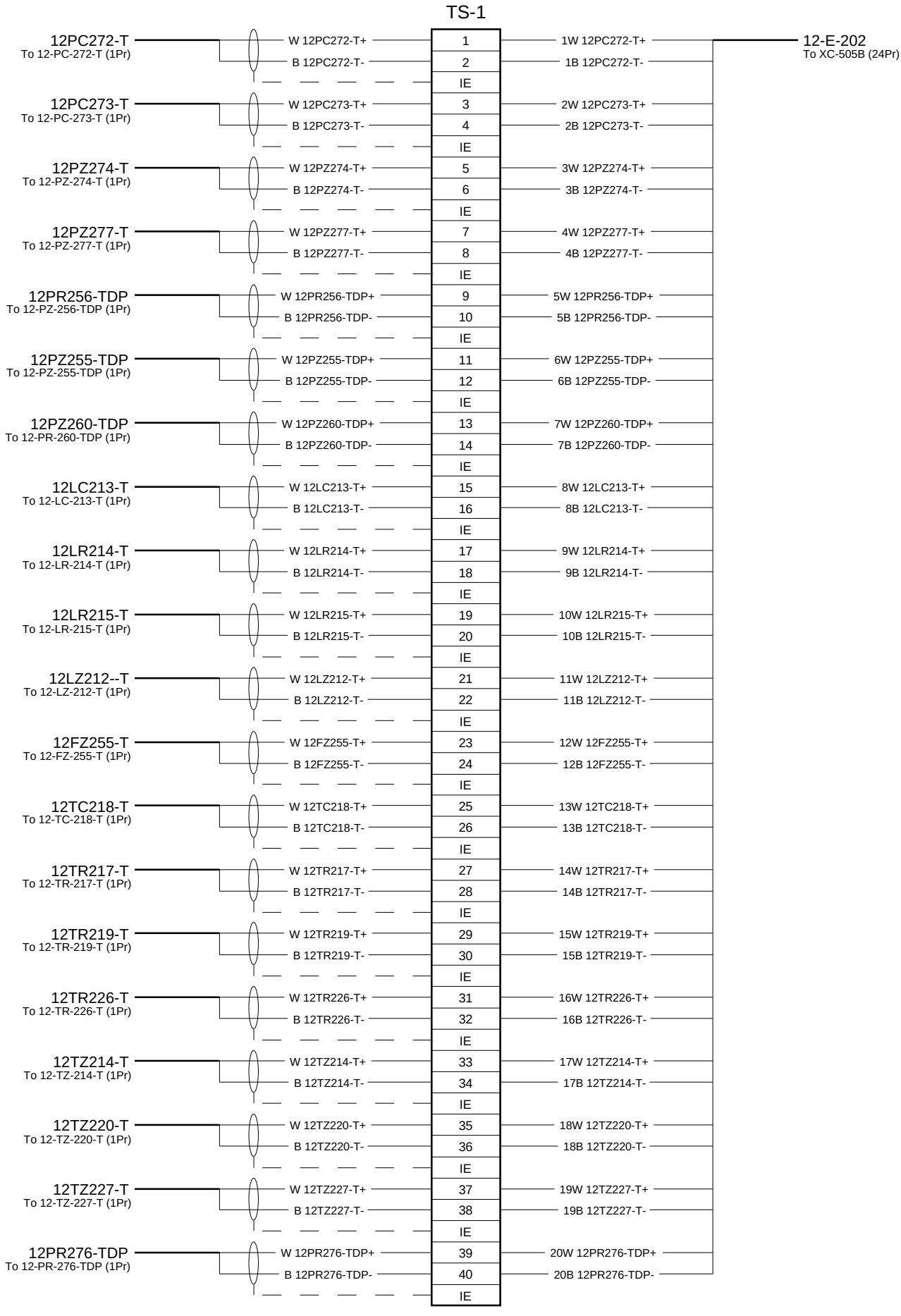
Non-CAD Cable Block Diagram created with IDO

Cable Schedule

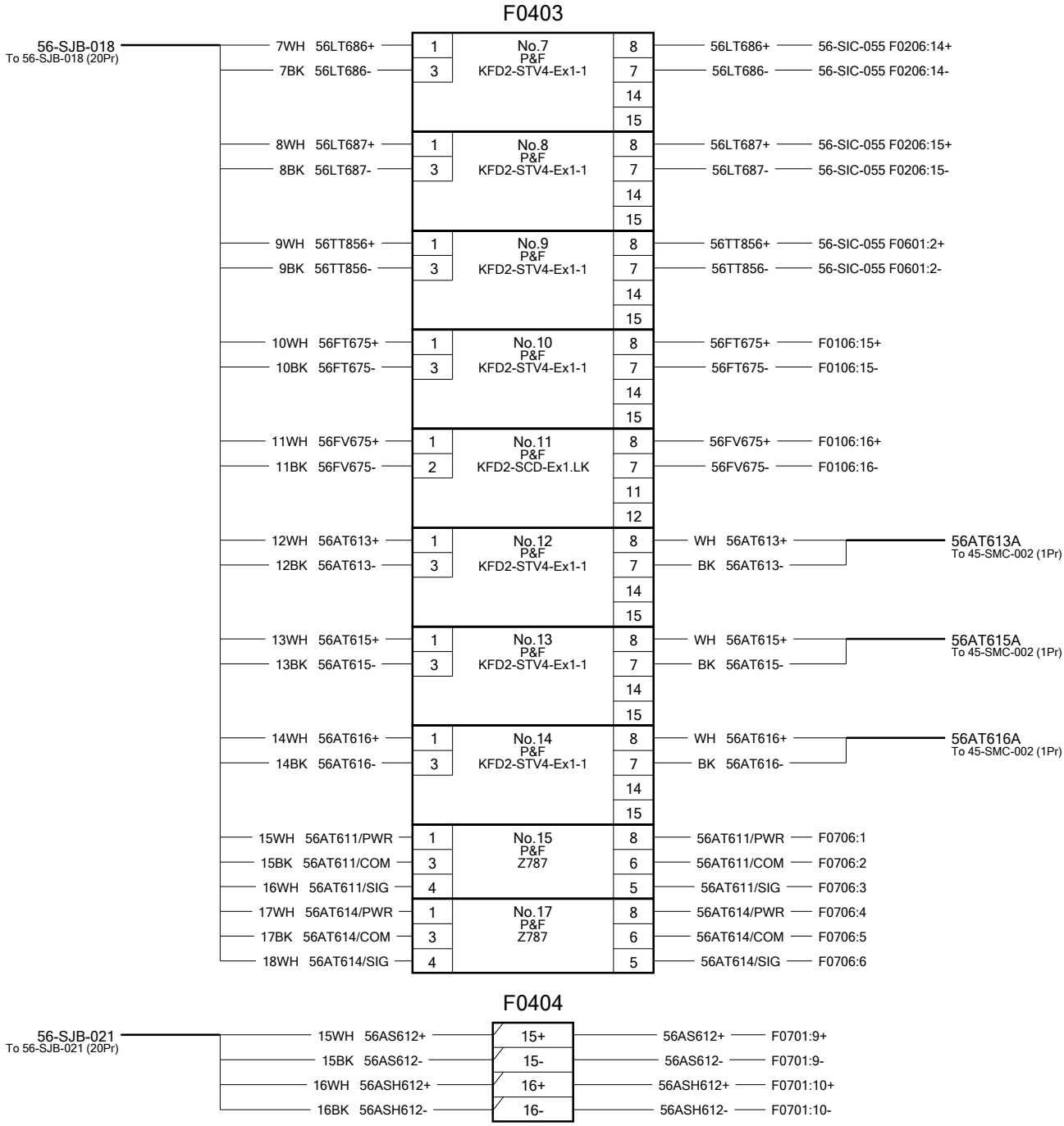
Instrumentation Design Office

Cable No	From	To	Length	Cores	Size	OAS	GS	Description	Status
09-SJB-024	09-SJB-024	09-SIC-67	110	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-IRB-02/1	56-IRB-02	56-SIC-156	150	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-IRB-02/2	56-IRB-02	56-SIC-156	150	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-IRB-02/3	56-IRB-02	56-SIC-157	150	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-IRB-03	56-IRB-03	56-SIC-157	150	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-LCP-600AX/1	56-LCP-600AX	56-SIC-157	150	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-LCP-600AX/2	56-LCP-600AX	56-SIC-157	150	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-LCP-600BX/1	56-LCP-600BX	56-SIC-157	150	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-LCP-600BX/2	56-LCP-600BX	56-SIC-157	150	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-LCP-600CX/1	56-LCP-600CX	56-SIC-157	150	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-LCP-600CX/2	56-LCP-600CX	56-SIC-157	150	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-SJB-002	56-SJB-002	56-SIC-055	130	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	Existing
56-SJB-003	56-SJB-003	56-SIC-055	100	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	Existing
56-SJB-004	56-SJB-004	56-SIC-055	100	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	Existing
56-SJB-005	56-SJB-005	56-SIC-055	120	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	Existing
56-SJB-006	56-SJB-006	56-SIC-055	120	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	Existing
56-SJB-007	56-SJB-007	56-SIC-055	130	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	Existing
56-SJB-018	56-SJB-018	56-SIC-056	80	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	Existing
56-SJB-021	56-SJB-021	56-SIC-056	130	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	Existing
56-SJB-023	56-SJB-023	56-SIC-156	150	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-SJB-024	56-SJB-024	56-SIC-156	180	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-SJB-025	56-SJB-025	56-SIC-156	150	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-SJB-026	56-SJB-026	56-SIC-156	170	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-SJB-031	56-SJB-031	56-AIC-01	110	20Tr	0.5mm²	☑	☑	PE/IOASCN/LAS/SWA/PVC-Blue	New
56-SJB-032	56-SJB-032	56-SIC-157	100	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New
56-SJB-033	56-SJB-033	56-SIC-156	130	20Pr	0.5mm²	☑	☐	PE/OASCN/LAS/SWA/PVC-Blue	New

Junction Box: JB-12-E-202



Non-CAD Termination Report Generated by IDO



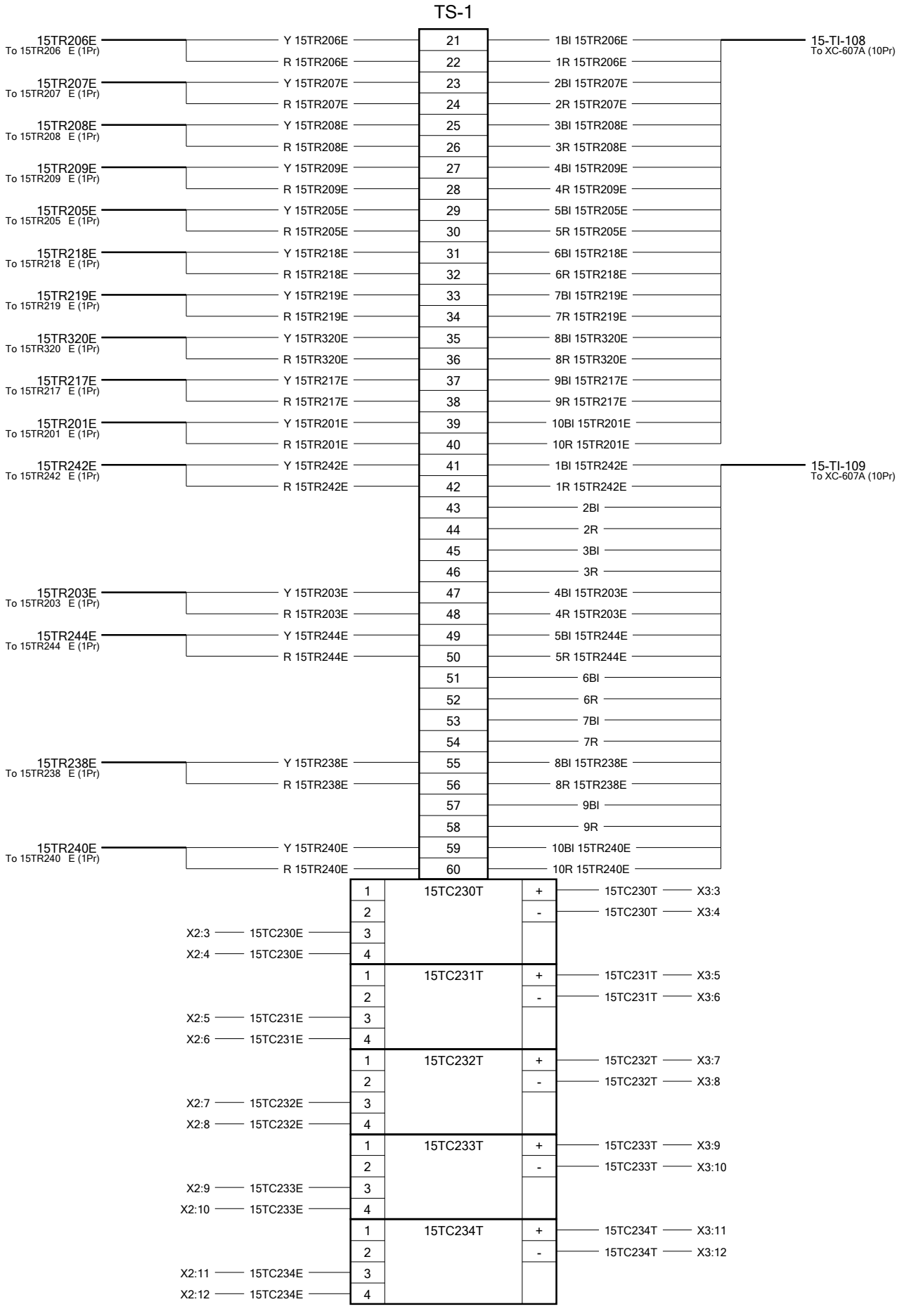
Non-CAD Termination Report Generated by IDO

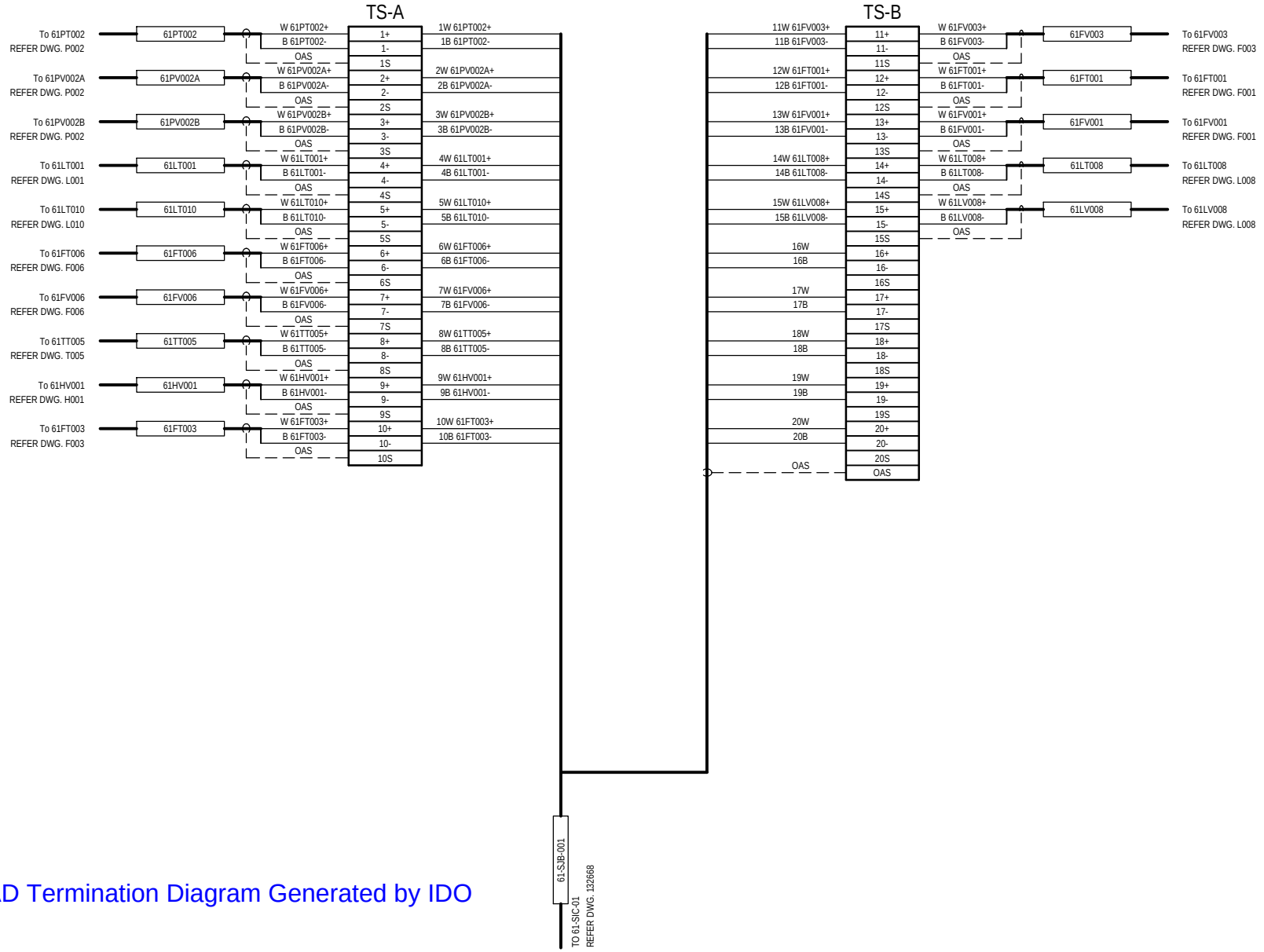
REV	DATE	DESCRIPTION	BY	CHKD	APPD	ENGR
A	9/06/2005	Issued For Construction	GRH	MAC	WS	

56-SIC-056
TERMINATION REPORT

PROJECT No:	DOCUMENT No	REV
25405	45-70123	A

Temperature Junction Box (1501-2): JB-15-EI-202





DRAWING No.	REFERENCE DRAWINGS TITLE	REV	REVISION DESCRIPTION	BY	APP'D	DATE
	ENGINEERING FLOW DIAGRAM	0	ISSUED FOR CONSTRUCTION	GRH	CSW	01/10/04

DRAWN/DATE	TR	12/08/2004	PROJECT No: 63091
CHECKED/DATE			CLIENT No
APPROVED/DATE			CAD NAME. 61-650-1.dwg

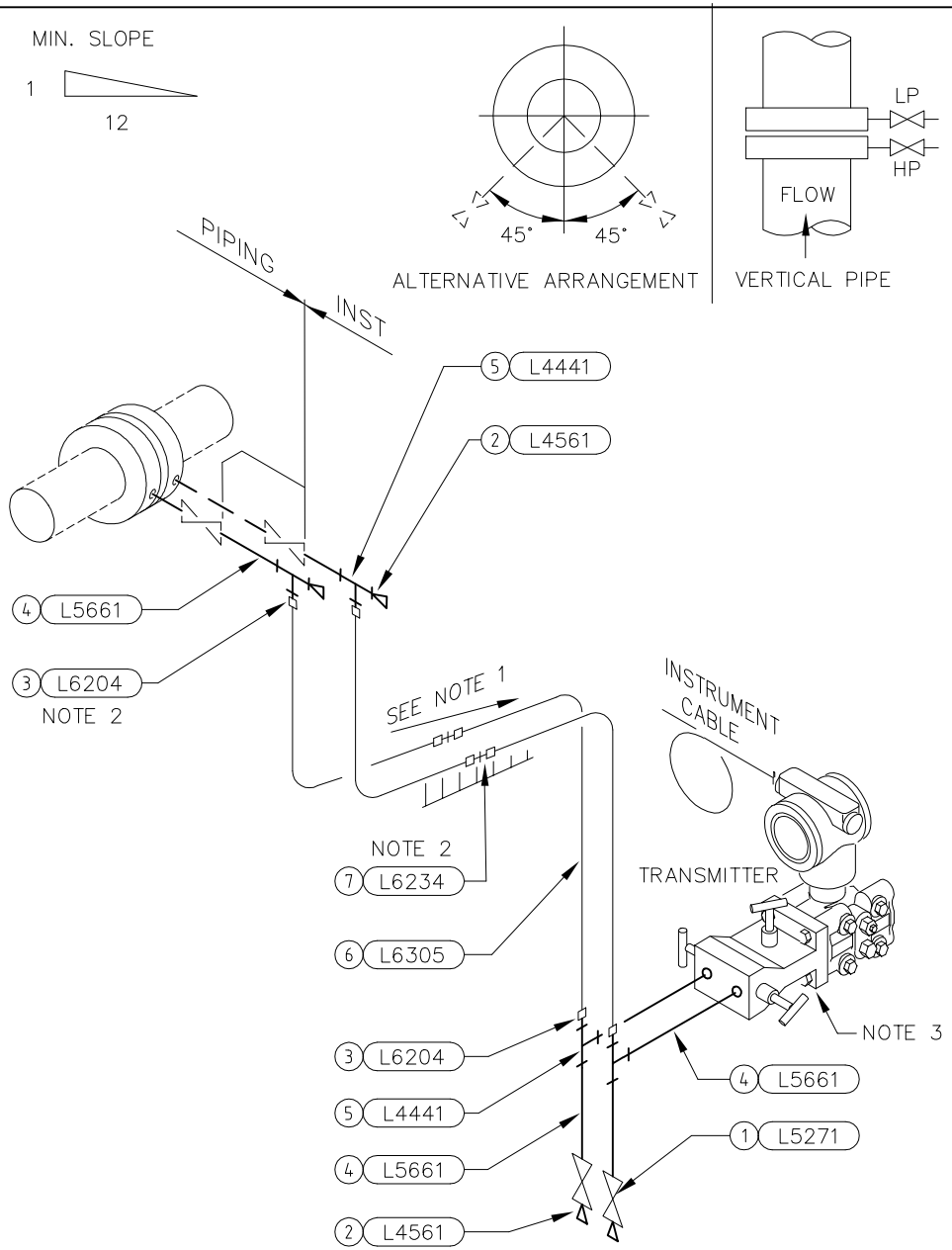
UNIT No. 61 Benzene Saturation Unit

TITLE JUNCTION BOX 61-JB-001 TERMINATION DIAGRAM

A3	SCALE NTS	DRAWING No. 61-650	1 OF 1	REV: 0

Generation Date: Time:

TAG No.
02FTHOLD
56FIT601
56FT670
56FT673
56FT676
56FT677
56FT680
56FT686
61FT001
61FT002
61FT003
61FT004
61FT005
61FT006
61FT010
61FT018
61FT020
61FT021
61FT024
61FT026
61FT036
61FT037
61FT041
56FT672



S.U. No.	ITEM No.	DESCRIPTION	MFR	CAT No.	QTY
14	L5271	VALVE GATE 1/2"NPTF CS 12Cr 800#			2EA
2	L4561	PLUG 1/2"NPT CS A105 3000#RD HD			4EA
3	L6204	MALE CONNECTOR 1/2"ODx1/2"NPT 316SS	BI-LOK	DCT-8-8-SS	4EA
4	L5661	NIPPLE PIPE TBE SCH80 1/2"NPTx75Lng CS A106-B			6EA
5	L4441	TEE EQUAL 1/2"NPTF CS A105 3000#			4EA
6	L6305	TUBE 1/2"OD 18SWG 316SS			8m
7	L6234	UNION 1/2"OD 316SS	BI-LOK	DUA-8-SS	2EA

NOTES:

1 PROCESS TUBING TO SLOPE CONTINUOUSLY DOWN FROM PROCESS PIPE TAPPINGS, MINIMUM SLOPE 1 : 12

2 USE ELBOW WHERE STRAIGHT CONNECTOR & TUBE BENDING IS IMPRACTICAL

3 3 VALVE MANIFOLD SUPPLIED FREE ISSUE WITH TRANSMITTER

4 ONLY USE TUBE UNIONS WHERE LENGTH OF TUBE RUN REQUIRES THEM

AutoCAD Hookup Drawing Generated by IDO

TEMPLATE: TEMP_606

ISSUED FOR REVIEW

28/05/2004 LK LK

01 General

PROCESS HOOKUP
(DP) FLOW TRANSMITTER BELOW LINE
LIQUID SERVICE

X A3 132750 2 0