

## **Disclaimer**

This Report, including the data and information contained in this Report, is provided to you on an “as is” and “as available” basis at the sole discretion of the Government of Alberta and subject to the terms and conditions of use below (the “Terms and Conditions”). The Government of Alberta has not verified this Report for accuracy and does not warrant the accuracy of, or make any other warranties or representations regarding, this Report. Furthermore, updates to this Report may not be made available. Your use of any of this Report is at your sole and absolute risk.

This Report is provided to the Government of Alberta, and the Government of Alberta has obtained a license or other authorization for use of the Reports, from:

Shell Canada Energy, Chevron Canada Limited. and Marathon Oil Canada Corporation, for the Quest Project

(collectively the “Project”)

Each member of the Project expressly disclaims any representation or warranty, express or implied, as to the accuracy or completeness of the material and information contained herein, and none of them shall have any liability, regardless of any negligence or fault, for any statements contained in, or for any omissions from, this Report. Under no circumstances shall the Government of Alberta or the Project be liable for any damages, claims, causes of action, losses, legal fees or expenses, or any other cost whatsoever arising out of the use of this Report or any part thereof or the use of any other data or information on this website.

## **Terms and Conditions of Use**

Except as indicated in these Terms and Conditions, this Report and any part thereof shall not be copied, reproduced, distributed, republished, downloaded, displayed, posted or transmitted in any form or by any means, without the prior written consent of the Government of Alberta and the Project.

The Government of Alberta’s intent in posting this Report is to make them available to the public for personal and non-commercial (educational) use. You may not use this Report for any other purpose. You may reproduce data and information in this Report subject to the following conditions:

- any disclaimers that appear in this Report shall be retained in their original form and applied to the data and information reproduced from this Report
- the data and information shall not be modified from its original form
- the Project shall be identified as the original source of the data and information, while this website shall be identified as the reference source, and
- the reproduction shall not be represented as an official version of the materials reproduced, nor as having been made in affiliation with or with the endorsement of the Government of Alberta or the Project

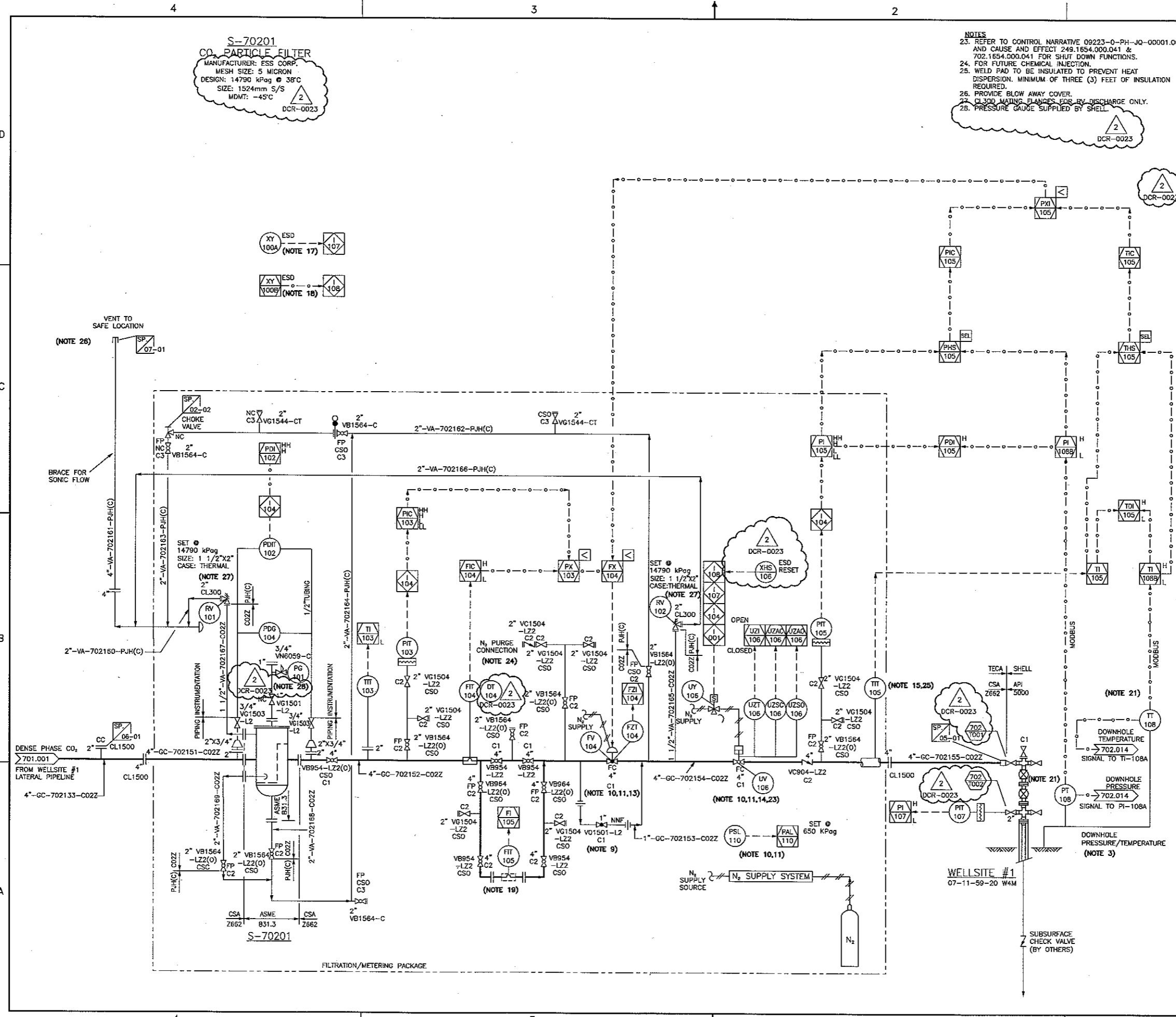
By accessing and using this Report, you agree to indemnify and hold the Government of Alberta and the Project, and their respective employees and agents, harmless from and against any and all claims, demands, actions and costs (including legal costs on a solicitor-client basis) arising out of any breach by you of these Terms and Conditions or otherwise arising out of your use or reproduction of the data and information in this Report.

Your access to and use of this Report is subject exclusively to these Terms and Conditions and any terms and conditions contained within the Report itself, all of which you shall comply with. You will not use this Report for any purpose that is unlawful or prohibited by these Terms and Conditions. You agree that any other use of this Report means you agree to be bound by these Terms and Conditions. These Terms and Conditions are subject to modification, and you agree to review them periodically for changes. If you do not accept these Terms and Conditions you agree to immediately stop accessing this Report and destroy all copies in your possession or control.

These Terms and Conditions may change at any time, and your continued use and reproduction of this Report following any changes shall be deemed to be your acceptance of such change.

If any of these Terms and Conditions should be determined to be invalid, illegal or unenforceable for any reason by any court of competent jurisdiction then the applicable provision shall be severed and the remaining provisions of these Terms and Conditions shall survive and remain in full force and effect and continue to be binding and enforceable.

These Terms and Conditions shall: (i) be governed by and construed in accordance with the laws of the province of Alberta and you hereby submit to the exclusive jurisdiction of the Alberta courts, and (ii) ensure to the benefit of, and be binding upon, the Government of Alberta and your respective successors and assigns.



**S-70201**  
**CO<sub>2</sub> PARTICLE FILTER**  
 MANUFACTURER: ESS CORP.  
 MESH SIZE: 5 MICRON  
 DESIGN: 14790 kPag @ 38°C  
 SIZE: 1524mm S/S  
 MDMT: -45°C  
 DCR-0023

**NOTES**

23. REFER TO CONTROL NARRATIVE 09223-0-PH-JQ-00001.00 AND CAUSE AND EFFECT 249.1654.000.041 & 702.1654.000.041 FOR SHUT DOWN FUNCTIONS.
24. FOR FUTURE CHEMICAL INJECTION.
25. WELD PAD TO BE INSULATED TO PREVENT HEAT DISPERSION. MINIMUM OF THREE (3) FEET OF INSULATION REQUIRED.
26. PROVIDE BLOW AWAY COVER.
27. CL300 WELDING FLANGES FOR RV DISCHARGE ONLY.
28. PRESSURE GAUGE SUPPLIED BY SHELL.

**NOTES**

1. ALL INSTRUMENTATION NUMBERS ARE PREFIXED WITH UNIT NUMBER #702. (i.e. PSY-702101)
2. DELETED.
3. ALL PRIMARY INSTRUMENTATION IS REMOTELY TIED TO SCOTFORD VIA SCADA.
4. DELETED.
5. DELETED.
6. DELETED.
7. DELETED.
8. DELETED.
9. SMALL VALVE FOR START-UP.
10. INSTR. GAS SUPPLY PROVIDED BY BOTTLED GAS (NITROGEN).
11. LOW IG SUPPLY PRESSURE SWITCH (PSL-110).
12. DELETED.
13. REFER TO CONTROL NARRATIVE 09233-0-PH-JQ-00001.00 FOR FV-104 CONTROL FUNCTIONS.
14. NO PARTIAL STROKE REQUIRED.
15. WELDPAD TEMPERATURE ELEMENT.
16. DELETED.
17. LOCAL WELLSITE ESD BUTTON LOCATED AT ENTRANCE GATE. JAR-ESD FROM SCOTFORD.
19. TEMPORARY MASTER METER.
20. DELETED.
21. INSTRUMENTS AND CONTROL BY SCOTFORD (SUPPLIED BY OTHERS).
22. DELETED.

**KEY PLAN**

**REFERENCE DRAWINGS**

**TOYO ENGINEERING CANADA LTD.**

REV	ISSUED DATE	DESCRIPTION	DWN	CHKD	ENG	APP	APP	QMT
2	13 JUN 06	RE-ISSUED FOR CONSTR. DCR-0023						
1	13 MAR 22	RE-ISSUED FOR CONSTRUCTION						
0	12 NOV 09	ISSUED FOR CONSTRUCTION						
H	12 AUG 16	RE-ISSUED FOR HAZOP AUG 29/12						
G	12 JUL 23	RE-ISSUED FOR HAZOP AUG 03/12						

PROFESSIONAL ENGINEER  
**K. V. MAHMOUD ALBERICI**  
 TOYO ENGINEERING CANADA LTD.  
 APEGA PERMIT P2034

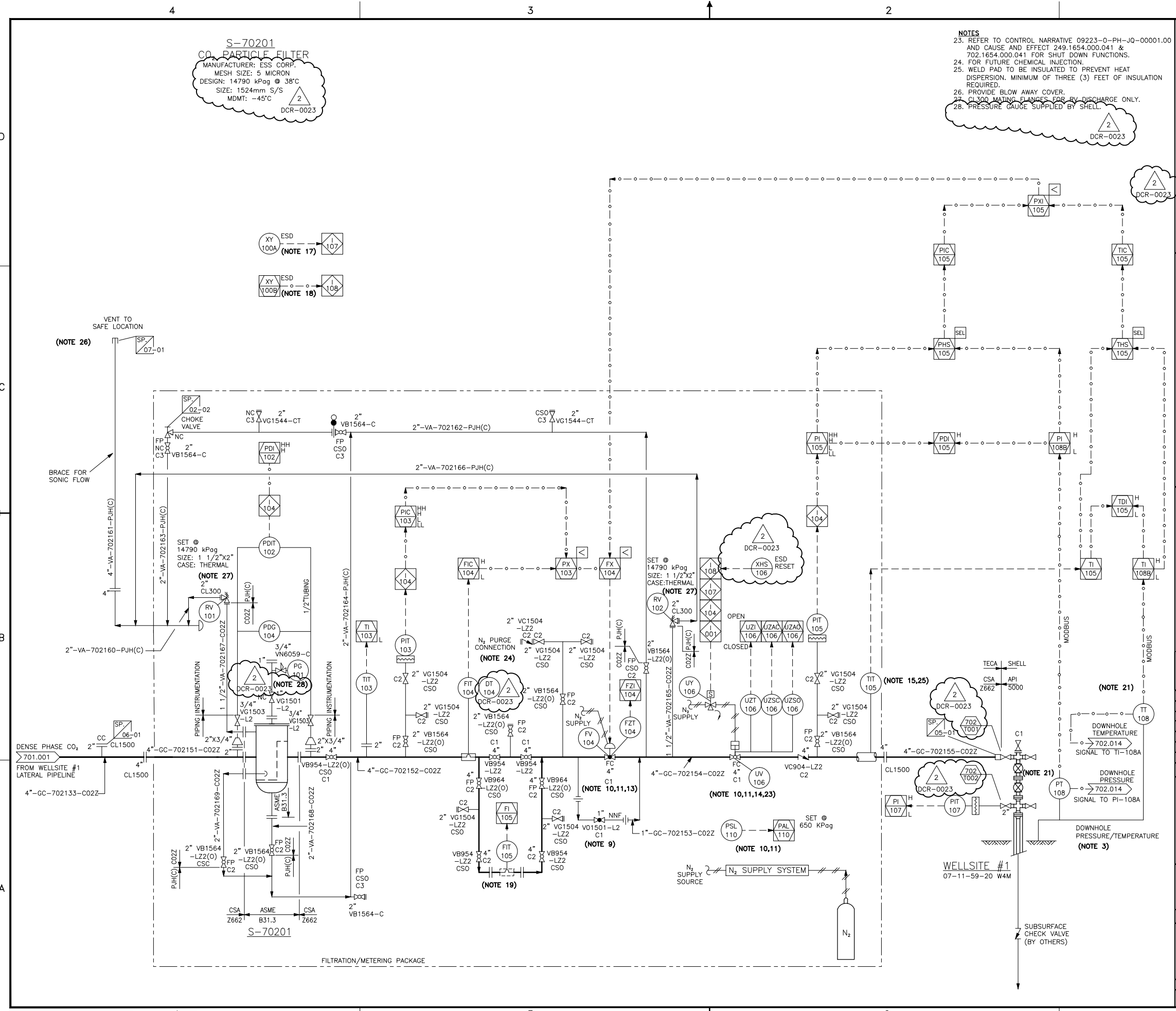
**SHELL CANADA**

ALBERTA - 07-11-59-20 W4M

QUEST CCS PROJECT  
 WELLSITE #1 FILTRATION AND CONTROL  
 PIPING & INSTRUMENTATION DIAGRAM (P&ID)

SCALE: NTS  
 SHELL DWG NO: 702.0000.000.041.001  
 REV: 2

UPDATED ON 06/04/13 AT 17:39 by dmerlin



**S-70201**  
**CO<sub>2</sub> PARTICLE FILTER**  
 MANUFACTURER: ESS CORP.  
 MESH SIZE: 5 MICRON  
 DESIGN: 14790 kPag @ 38°C  
 SIZE: 1524mm S/S  
 MDMT: -45°C  
 DCR-0023

**NOTES**  
 23. REFER TO CONTROL NARRATIVE 09223-0-PH-JQ-00001.00 AND CAUSE AND EFFECT 249.1654.000.041 & 702.1654.000.041 FOR SHUT DOWN FUNCTIONS.  
 24. FOR FUTURE CHEMICAL INJECTION.  
 25. WELD PAD TO BE INSULATED TO PREVENT HEAT DISPERSION. MINIMUM OF THREE (3) FEET OF INSULATION REQUIRED.  
 26. PROVIDE BLOW AWAY COVER.  
 27. CL300 MATING FLANGES FOR RV DISCHARGE ONLY.  
 28. PRESSURE GAUGE SUPPLIED BY SHELL.

**NOTES**  
 1. ALL INSTRUMENTATION NUMBERS ARE PREFIXED WITH UNIT NUMBER #702. (i.e. PSV-702101)  
 2. DELETED.  
 3. ALL PRIMARY INSTRUMENTATION IS REMOTELY TIED TO SCOTFORD VIA SCADA.  
 4. DELETED.  
 5. DELETED.  
 6. DELETED.  
 7. DELETED.  
 8. DELETED.  
 9. SMALL VALVE FOR START-UP.  
 10. INSTR. GAS SUPPLY PROVIDED BY BOTTLED GAS (NITROGEN).  
 11. LOW IG SUPPLY PRESSURE SWITCH (PSL-110).  
 12. DELETED.  
 13. REFER TO CONTROL NARRATIVE 09233-0-PH-JQ-00001.00 FOR FV-104 CONTROL FUNCTIONS.  
 14. NO PARTIAL STROKE REQUIRED.  
 15. WELDPAD TEMPERATURE ELEMENT.  
 16. ESD FROM SCOTFORD.  
 17. LOCAL WELLSITE ESD BUTTON LOCATED AT ENTRANCE GATE.  
 18. ESD FROM SCOTFORD.  
 19. TEMPORARY MASTER METER.  
 20. DELETED.  
 21. INSTRUMENTS AND CONTROL BY SCOTFORD (SUPPLIED BY OTHERS).  
 22. DELETED.

**KEY PLAN**

**REFERENCE DRAWINGS**

**TOYO ENGINEERING CANADA LTD.**  
 TOYO-CA DWG. No. **09223-1-DG-BC-00001.01** CAD FILE 00101-12LI

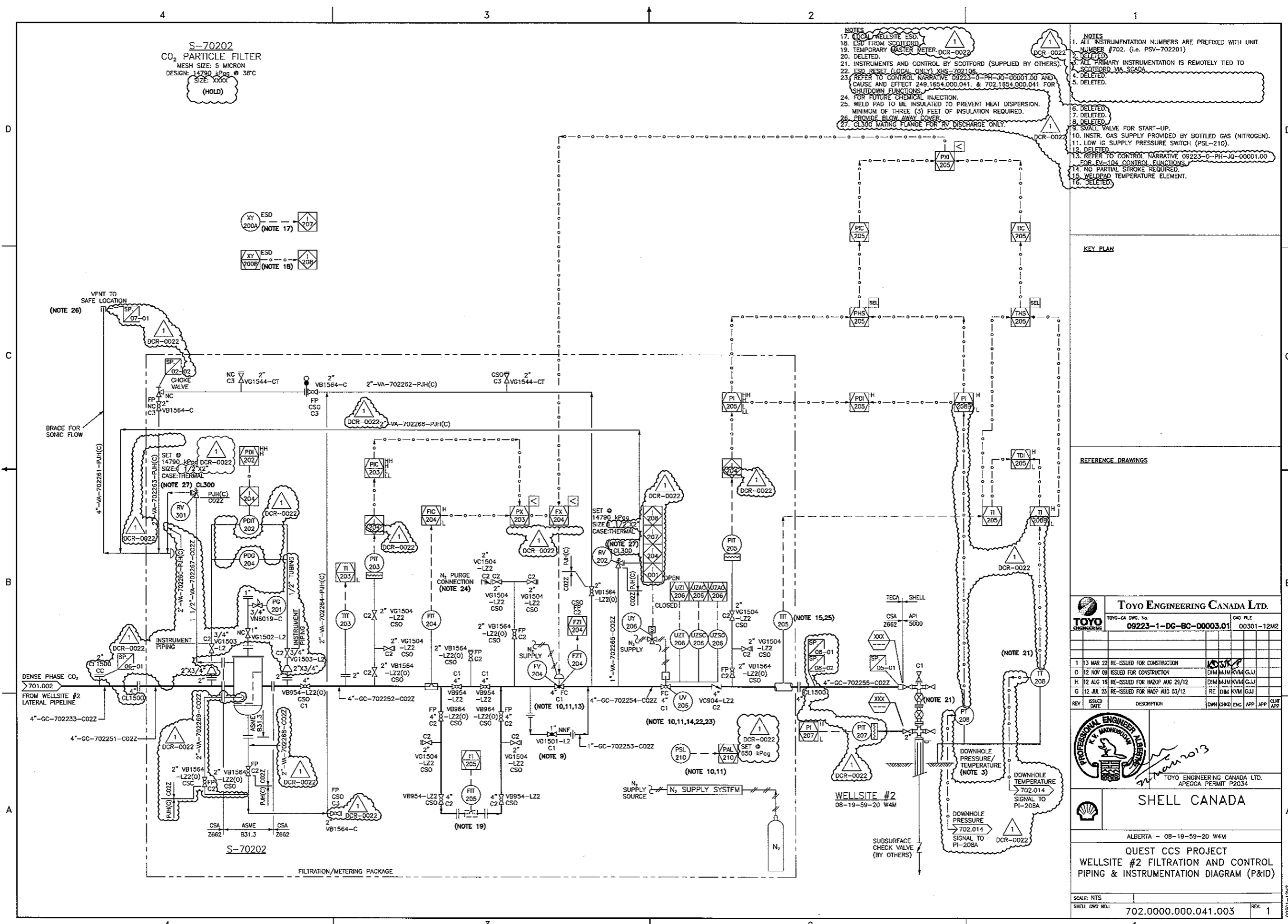
REV	ISSUED DATE	DESCRIPTION	DWN	CHKD	ENG	APP	APP	CLNT APP
2	13 JUN 05	RE-ISSUED FOR CONSTR. DCR-0023						
1	13 MAR 22	RE-ISSUED FOR CONSTRUCTION						
0	12 NOV 09	ISSUED FOR CONSTRUCTION						
H	12 AUG 16	RE-ISSUED FOR HAZOP AUG 29/12						
G	12 JUL 23	RE-ISSUED FOR HAZOP AUG 03/12						

TOYO ENGINEERING CANADA LTD.  
 APEGA PERMIT P2034

**SHELL CANADA**

ALBERTA - 07-11-59-20 W4M  
**QUEST CCS PROJECT**  
**WELLSITE #1 FILTRATION AND CONTROL**  
**PIPING & INSTRUMENTATION DIAGRAM (P&ID)**

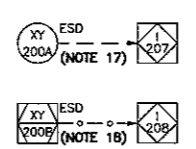
SCALE: NTS	702.0000.000.041.001	REV. 2
------------	----------------------	--------



S-70202  
CO<sub>2</sub> PARTICLE FILTER  
MESH SIZE: 5 MICRON  
DESIGN: 14790 kPag @ 38°C  
SIZE: XXXX  
(HOLD)

- NOTES
17. LOCAL WELLSITE ESD.
  18. ESD FROM SCOTFORD.
  19. TEMPORARY MASTER METER, DCR-0022.
  20. DELETED.
  21. INSTRUMENTS AND CONTROL BY SCOTFORD (SUPPLIED BY OTHERS).
  22. ESD RESET (LOCAL ONLY) YES-70202.
  23. REFER TO CONTROL NARRATIVE 09233-0-PR-10-00001.00 AND CAUSE AND EFFECT 249.1654.000.041, & 702.1654.000.041 FOR SHUTDOWN FUNCTIONS.
  24. FOR FUTURE CHEMICAL INJECTION.
  25. WELD PAD TO BE INSULATED TO PREVENT HEAT DISPERSION. MINIMUM OF THREE (3) FEET OF INSULATION REQUIRED.
  26. PROVIDE FLOW AWAY COVER.
  27. CLOSE MATING FLANGE FOR RV DISCHARGE ONLY.

- NOTES
1. ALL INSTRUMENTATION NUMBERS ARE PREFIXED WITH UNIT NUMBER #702. (i.e. PSV-702201)
  2. DELETED.
  3. ALL PRIMARY INSTRUMENTATION IS REMOTELY TIED TO SCOTFORD VIA SCADA.
  4. DELETED.
  5. DELETED.
  6. DELETED.
  7. DELETED.
  8. DELETED.
  9. SMALL VALVE FOR START-UP.
  10. INSTR. GAS SUPPLY PROVIDED BY BOTTLED GAS (NITROGEN).
  11. LOW IG SUPPLY PRESSURE SWITCH (PSL-210).
  12. DELETED.
  13. REFER TO CONTROL NARRATIVE 09233-0-PH-10-00001.00 FOR FV-104 CONTROL FUNCTIONS.
  14. NO PARTIAL STROKE REQUIRED.
  15. WELD PAD TEMPERATURE ELEMENT.
  16. DELETED.



KEY PLAN

REFERENCE DRAWINGS

<b>TOYO ENGINEERING CANADA LTD.</b>	
TOYO-CA DWG. No. <b>09223-1-DG-BC-00003.01</b>	CAO FILE 00301-12M2

REV	ISSUED DATE	DESCRIPTION	DWN	CHKD	ENC	APP	APP	CLMT	APP
1	13 MAR 22	RE-ISSUED FOR CONSTRUCTION							
0	12 NOV 09	ISSUED FOR CONSTRUCTION							
H	12 AUG 16	RE-ISSUED FOR HAZOP AUG 25/12							
G	12 JUL 23	RE-ISSUED FOR HAZOP AUG 03/12							



TOYO ENGINEERING CANADA LTD.  
APEGGA PERMIT P2034

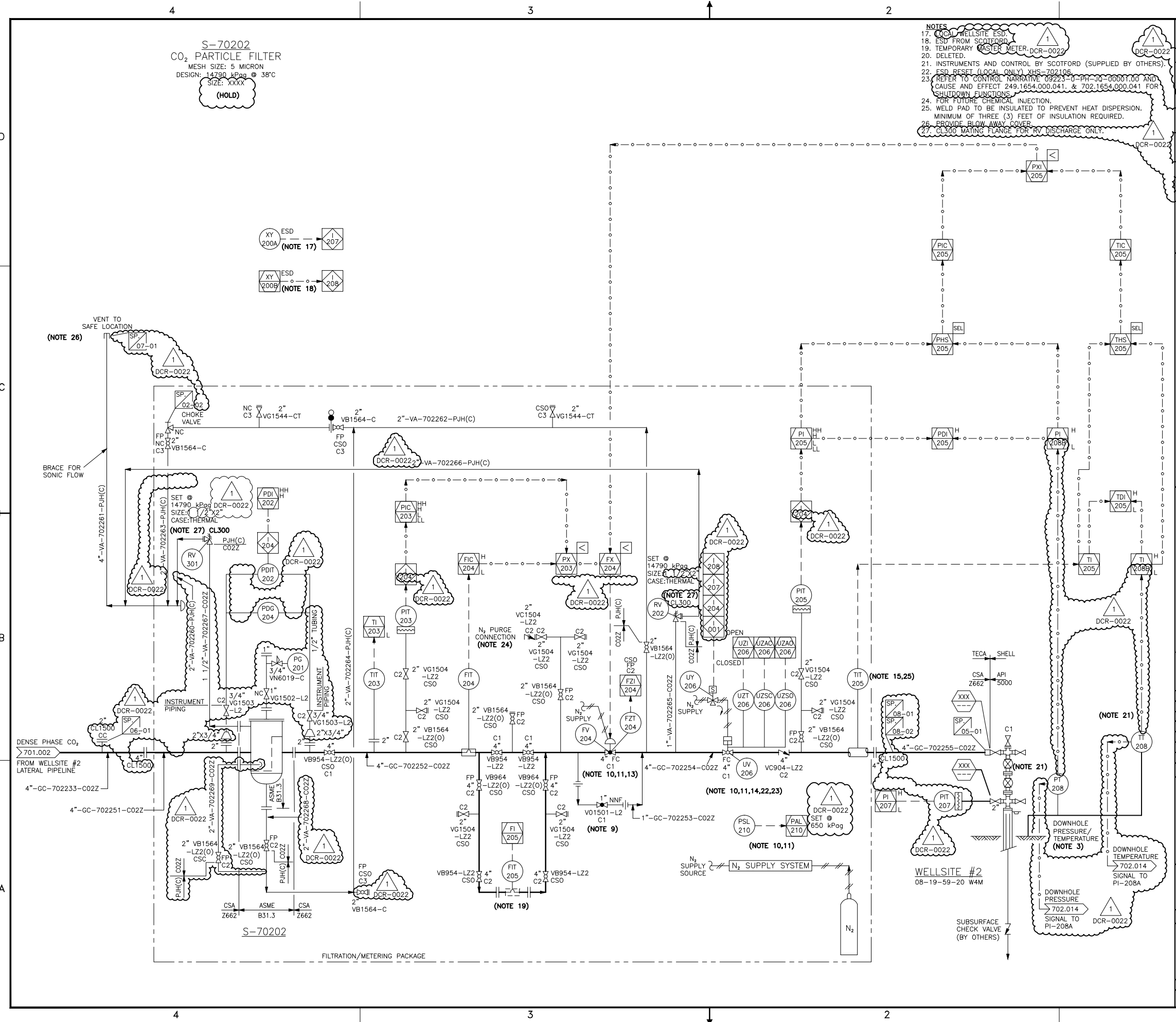
**SHELL CANADA**

ALBERTA - 08-19-59-20 W4M

QUEST CCS PROJECT  
WELLSITE #2 FILTRATION AND CONTROL  
PIPING & INSTRUMENTATION DIAGRAM (P&ID)

SCALE: NTS	REV. 1
SHELL DWG NO.: 702.0000.000.041.003	

00301-12M2



- NOTES**
17. LOCAL WELLSITE ESD.
  18. ESD FROM SCOTFORD.
  19. TEMPORARY MASTER METER, DCR-0022.
  20. DELETED.
  21. INSTRUMENTS AND CONTROL BY SCOTFORD (SUPPLIED BY OTHERS).
  22. ESD RESET (LOCAL ONLY) XHS-702106.
  23. REFER TO CONTROL NARRATIVE 09223-0-PH-JQ-00001.00 AND CAUSE AND EFFECT 249.1654.000.041. & 702.1654.000.041 FOR SHUTDOWN FUNCTIONS.
  24. FOR FUTURE CHEMICAL INJECTION.
  25. WELD PAD TO BE INSULATED TO PREVENT HEAT DISPERSION. MINIMUM OF THREE (3) FEET OF INSULATION REQUIRED.
  26. PROVIDE BLOW AWAY COVER.
  27. CL300 MATING FLANGE FOR RV DISCHARGE ONLY.

- NOTES**
1. ALL INSTRUMENTATION NUMBERS ARE PREFIXED WITH UNIT NUMBER #702. (i.e. PSV-702201)
  2. DELETED.
  3. ALL PRIMARY INSTRUMENTATION IS REMOTELY TIED TO SCOTFORD VIA SCADA.
  4. DELETED.
  5. DELETED.
  6. DELETED.
  7. DELETED.
  8. DELETED.
  9. SMALL VALVE FOR START-UP.
  10. INSTR. GAS SUPPLY PROVIDED BY BOTTLED GAS (NITROGEN).
  11. LOW IG SUPPLY PRESSURE SWITCH (PSL-210).
  12. DELETED.
  13. REFER TO CONTROL NARRATIVE 09223-0-PH-JQ-00001.00 FOR FV-104 CONTROL FUNCTIONS.
  14. NO PARTIAL STROKE REQUIRED.
  15. WELD DEAD TEMPERATURE ELEMENT.
  16. DELETED.

**KEY PLAN**

**REFERENCE DRAWINGS**

**TOYO ENGINEERING CANADA LTD.**  
 TOYO-CA DWG. No. 09223-1-DG-BC-00003.01 CAD FILE 00301-12M2

REV	ISSUED DATE	DESCRIPTION	DWN	CHKD	ENG	APP	APP	CLNT APP
1	13 MAR 22	RE-ISSUED FOR CONSTRUCTION						
0	12 NOV 09	ISSUED FOR CONSTRUCTION						
H	12 AUG 16	RE-ISSUED FOR HAZOP AUG 29/12						
G	12 JUL 23	RE-ISSUED FOR HAZOP AUG 03/12						

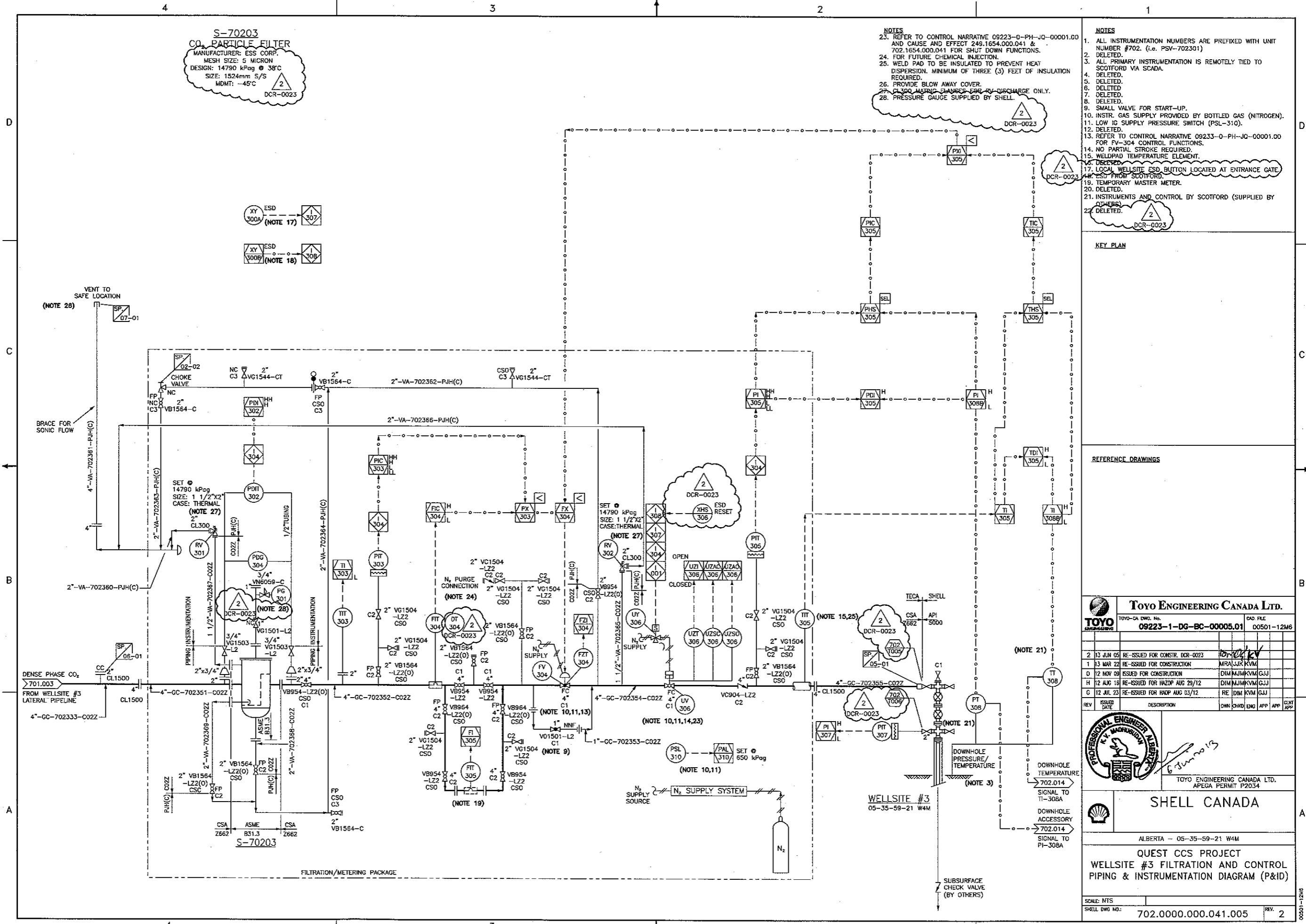
TOYO ENGINEERING CANADA LTD.  
 APEGGA PERMIT P2034

**SHELL CANADA**

ALBERTA - 08-19-59-20 W4M  
**QUEST CCS PROJECT**  
**WELLSITE #2 FILTRATION AND CONTROL PIPING & INSTRUMENTATION DIAGRAM (P&ID)**

SCALE: NTS  
 SHELL DWG NO.: 702.0000.000.041.003 REV. 1

00301-12M2



**S-70203**  
**CO<sub>2</sub> PARTICLE FILTER**  
 MANUFACTURER: ESS CORP.  
 MESH SIZE: 5 MICRON  
 DESIGN: 14790 kPag @ 38°C  
 SIZE: 1524mm S/S  
 MDMT: -45°C  
 DCR-0023

- NOTES**
- REFER TO CONTROL NARRATIVE 09223-0-PH-JQ-00001.00 AND CAUSE AND EFFECT 249.1654.000.041 & 702.1654.000.041 FOR SHUT DOWN FUNCTIONS.
  - FOR FUTURE CHEMICAL INJECTION.
  - WELD PAD TO BE INSULATED TO PREVENT HEAT DISPERSION. MINIMUM OF THREE (3) FEET OF INSULATION REQUIRED.
  - PROVIDE BLOW AWAY COVER.
  - LOW PURGE DRAINAGE FOR DISCHARGE ONLY.
  - PRESSURE GAUGE SUPPLIED BY SHELL.

- NOTES**
- ALL INSTRUMENTATION NUMBERS ARE PREFIXED WITH UNIT NUMBER #702. (i.e. PSV-702301)
  - DELETED.
  - ALL PRIMARY INSTRUMENTATION IS REMOTELY TIED TO SCOTFORD VIA SCADA.
  - DELETED.
  - DELETED.
  - DELETED.
  - DELETED.
  - DELETED.
  - SMALL VALVE FOR START-UP.
  - INSTR. GAS SUPPLY PROVIDED BY BOTTLED GAS (NITROGEN).
  - LOW IG SUPPLY PRESSURE SWITCH (PSL-310).
  - DELETED.
  - REFER TO CONTROL NARRATIVE 09233-0-PH-JQ-00001.00 FOR FV-304 CONTROL FUNCTIONS.
  - NO PARTIAL STROKE REQUIRED.
  - WELDPAD TEMPERATURE ELEMENT.
  - DELETED.
  - LOCAL WELLSITE ESD BUTTON LOCATED AT ENTRANCE GATE AREA FROM SCOTFORD.
  - TEMPORARY MASTER METER.
  - DELETED.
  - INSTRUMENTS AND CONTROL BY SCOTFORD (SUPPLIED BY OTHERS)
  - DELETED.

**KEY PLAN**

**REFERENCE DRAWINGS**

**TOYO ENGINEERING CANADA LTD.**  
 TOYO-CA DWD No. **09223-1-DG-BC-00005.01** CAD FILE 00501-12M6

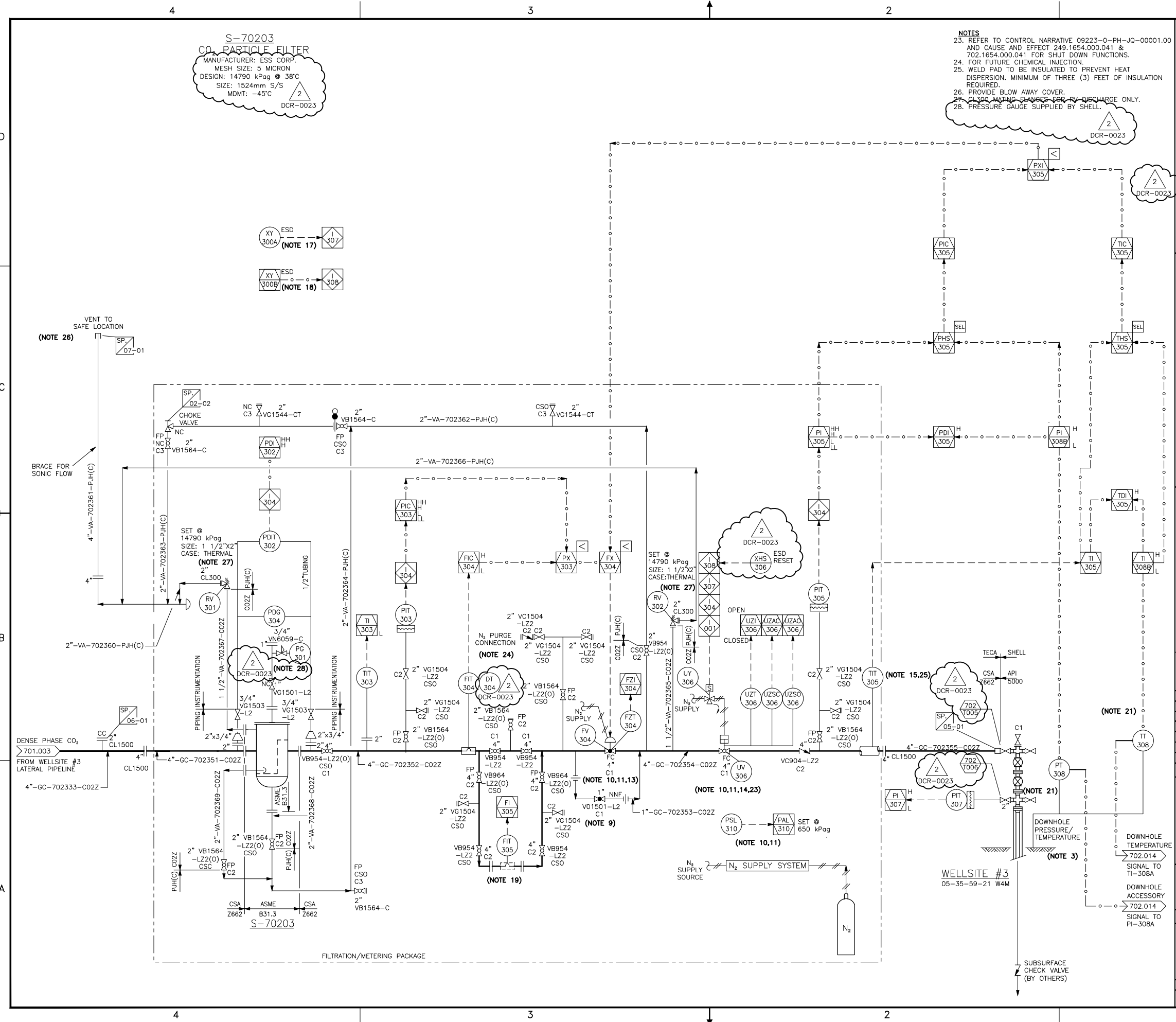
REV	ISSUED DATE	DESCRIPTION	DWN	CHKD	ENG	APP	APP	CLRT	APP
2	13 JUN 05	RE-ISSUED FOR CONSTR. DCR-0023							
1	13 MAR 22	RE-ISSUED FOR CONSTRUCTION							
D	12 NOV 09	ISSUED FOR CONSTRUCTION							
H	12 AUG 15	RE-ISSUED FOR HAZOP AUG 29/12							
G	12 JUL 23	RE-ISSUED FOR HAZOP AUG 03/12							

**PROFESSIONAL ENGINEER**  
 K. MADHURAM  
 TOYO ENGINEERING CANADA LTD.  
 APEGA PERMIT P2034

**SHELL CANADA**  
 ALBERTA -- 05-35-59-21 W4M

**QUEST CCS PROJECT**  
**WELLSITE #3 FILTRATION AND CONTROL**  
**PIPING & INSTRUMENTATION DIAGRAM (P&ID)**

SCALE: NTS  
 SHELL DWD NO: 702.0000.000.041.005  
 REV: 2



REV	ISSUED DATE	DESCRIPTION	DWN	CHKD	ENG	APP	APP	CLNT APP
2	13 JUN 05	RE-ISSUED FOR CONSTR. DCR-0023						
1	13 MAR 22	RE-ISSUED FOR CONSTRUCTION						
0	12 NOV 09	ISSUED FOR CONSTRUCTION						
H	12 AUG 16	RE-ISSUED FOR HAZOP AUG 29/12						
G	12 JUL 23	RE-ISSUED FOR HADOP AUG 03/12						

TOYO ENGINEERING CANADA LTD.	
TOYO-CA DWG. No.	CAD FILE
<b>09223-1-DG-BC-00005.01</b>	00501-12M6

TOYO ENGINEERING CANADA LTD.	
TOYO-CA DWG. No.	CAD FILE
<b>09223-1-DG-BC-00005.01</b>	00501-12M6

TOYO ENGINEERING CANADA LTD.	
TOYO-CA DWG. No.	CAD FILE
<b>09223-1-DG-BC-00005.01</b>	00501-12M6

TOYO ENGINEERING CANADA LTD.	
TOYO-CA DWG. No.	CAD FILE
<b>09223-1-DG-BC-00005.01</b>	00501-12M6

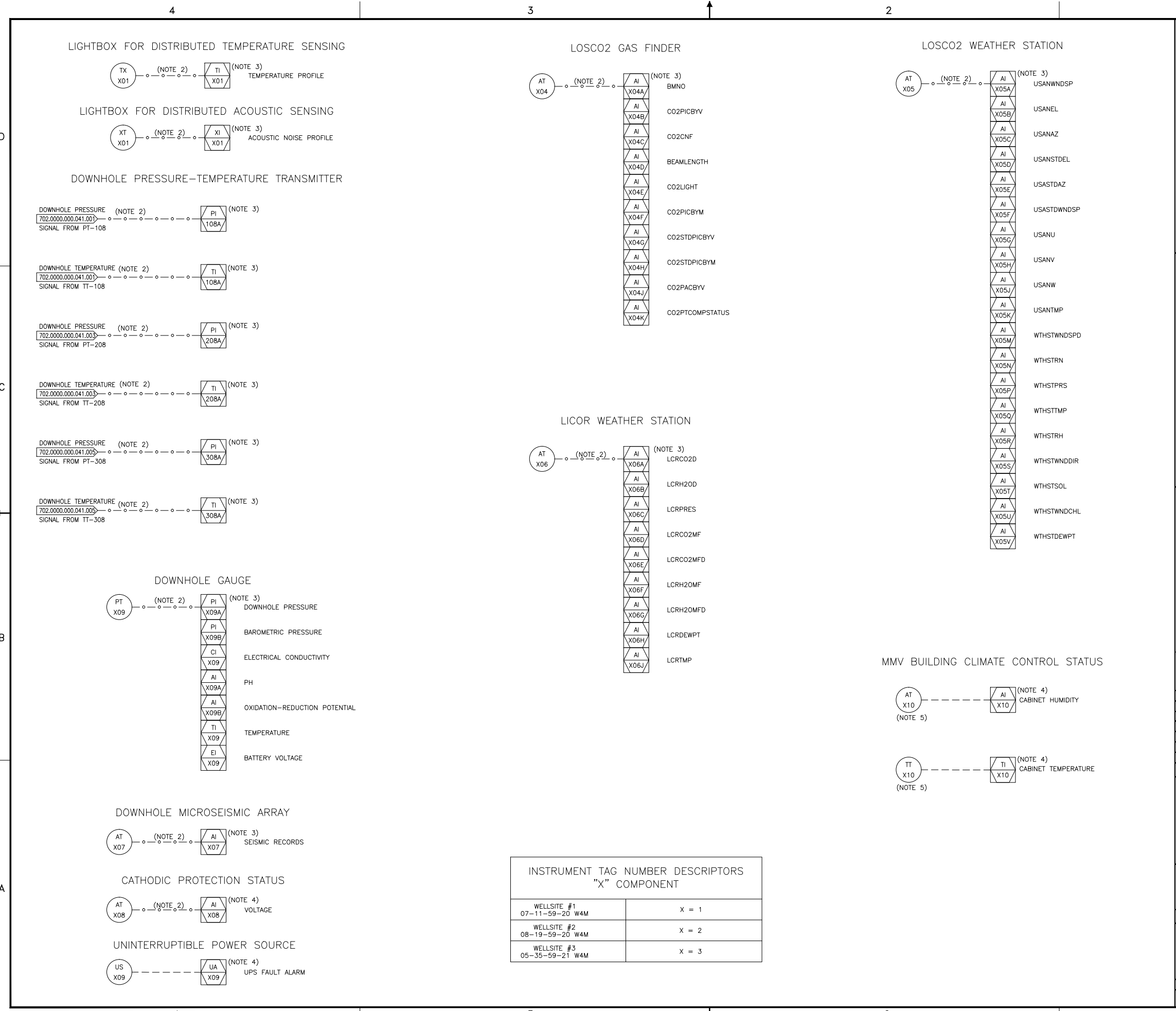
**SHELL CANADA**

ALBERTA - 05-35-59-21 W4M

**QUEST CCS PROJECT**  
**WELLSITE #3 FILTRATION AND CONTROL**  
**PIPING & INSTRUMENTATION DIAGRAM (P&ID)**

SCALE: NTS	
SHELL DWG NO.:	702.0000.000.041.005
REV:	2





**NOTES**

1. ALL INSTRUMENTATION NUMBERS ARE PREFIXED WITH UNIT NUMBER #702. (i.e. DTS-70201)
2. MODBUS SIGNAL.
3. LOCATED AT SHELL CENTER.
4. LOCATED AT SCOTFORD CONTROL ROOM.
5. SUPPLIED AND INSTALLED BY MMV BUILDING VENDOR.

**KEY PLAN**

**REFERENCE DRAWINGS**

		<b>TOYO ENGINEERING CANADA LTD.</b>	
TOYO-CA DWG. No.	09223-1-DG-JP-00001.01	CAD FILE	00101-17NP
REV	ISSUED DATE	DESCRIPTION	DWN CHKD ENG APP APP CLNT APP
1	13 MAR 20	RE-ISSUED FOR USE	
0	12 NOV 19	ISSUED FOR USE	DIM M/JM/DWCI
A	12 OCT 04	ISSUED FOR CLIENT REVIEW	DIM M/JM/DWCI



ALBERTA

**QUEST CCS PROJECT  
 MONITORING, MEASUREMENT  
 & VALIDATION (MMV) INSTRUMENT DIAGRAM**

SCALE: NTS	
SHELL DWG NO.:	702.0000.000.041.014
REV.	1

**INSTRUMENT TAG NUMBER DESCRIPTORS  
 "X" COMPONENT**

WELLSITE #1 07-11-59-20 W4M	X = 1
WELLSITE #2 08-19-59-20 W4M	X = 2
WELLSITE #3 05-35-59-21 W4M	X = 3