

SUPPLIER DOCUMENT COVER SHEET

MCDERMOTT

233124 PSC Modifications
Imperial Oil Resources Limited



Supplier Name:	PENTICTON FOUNDRY LTD.
Purchase Order Title:	MISC-K2 CWI PIPING
Equipment / Tag Number(s):	SP-K3492
Supplier Document No:	1397868-B91-0003

Supplier's Revision Record

0	Sept. 05, 2018	For Review	Penticton		
Rev.	Date	Issue	By	Checked	Approved

Project Document Number

Project No.	Purchase Order No.		Seq. No.
233124	1397868	- B91 -	0003

DOCUMENT TITLE: RFI – NPS 24X26 FROTH SPOOL REDUCER

SUPPLIER DOCUMENT REVIEW

Purchaser's review of Supplier's documents does not relieve Supplier of the responsibility for correctness under the Purchase Order. Permission to proceed does not constitute acceptance of design, detail and calculations, test methods or materials developed or selected by the Supplier and does not relieve the Supplier from full compliance with the Purchase Order or any other obligations, nor detract from any of the Purchaser's rights.

Purchaser's review status as per tick the appropriate box:		Purchasers review / reviewer	
<input type="checkbox"/>	CODE 1: No Comments	Sept 28/18	Date Signature
<input type="checkbox"/>	CODE 2: Reviewed with Minor Comments		
<input type="checkbox"/>	CODE 3: Reviewed with Comments		
<input type="checkbox"/>	CODE 4: Rejected		
<input type="checkbox"/>	CODE 5: Superseded		
<input type="checkbox"/>	CODE 6: Void		
<input type="checkbox"/>	CODE 7: For Information		

IMPORTANT

Should the Supplier consider that any comments made by the Purchaser change the Scope of Supply, the Supplier shall advise the price and delivery implications of such changes within five working days of receipt. The Supplier must not incorporate such changes without prior approval of the Purchaser of the revised price and/or delivery period. RETROSPECTIVE CLAIMS WILL NOT BE CONSIDERED.

Follow IOL response to RFI

Supplier - Purchaser Interface Data Freeze

MCDERMOTT Name:	Signature:	Date:
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The document consists of this front sheet plus 4 pages.



Request for Information

September 05, 2018

Subject: NPS 24X26 Froth Spool Reducer

SP-K3492

Drawing 074-2300-080-141-009 01 rev 0, (*Figure 1*), shows liner tapering down to 0 thickness. Supplier cannot achieve this taper depicted.

Supplier instead proposes another option:

See A1-18001 Spool SP-C3635 comparison sketch (*Figure 2*) spool depicted on the bottom of the drawing boxed in red (section B-B). One end has a 24" flange and the other ad 26" flange, while the pipe between the flanges is 26". The liner ID reduces from 22 5/8" to 21" as shown on the sketch, in order to match the ID on the inlet of the froth elbow spool it connects to. Please note that the centerline of this proposed option is not offset as shown on 074-2300-080-141-009 01 rev 0. Supplier requests if this option described above is acceptable.

Comments:

The Proposed solution as shown in Figure 2 (Section B-B shown in comparison sketch) is acceptable.

Please ensure the following changes are captured by all affected parties and are reflected in all engineering deliverables:

- 1) Eccentric reducer spool is changed to straight spool reducer with 22 5/8" x 21" liner ID as per Attachment - 4. One end of spool will have 24" CL 150 custom flange and other end as 26" CL 150 Flange.
- 2) TOS for the shoe needs to be lowered to account for the change from eccentric reducer to Modified 26 x 24 straight reducer as per Attachment - 1.
- 3) Pipe support loads at support locations have changed as per Sketch attached (Attachment - 2)

Request for Information

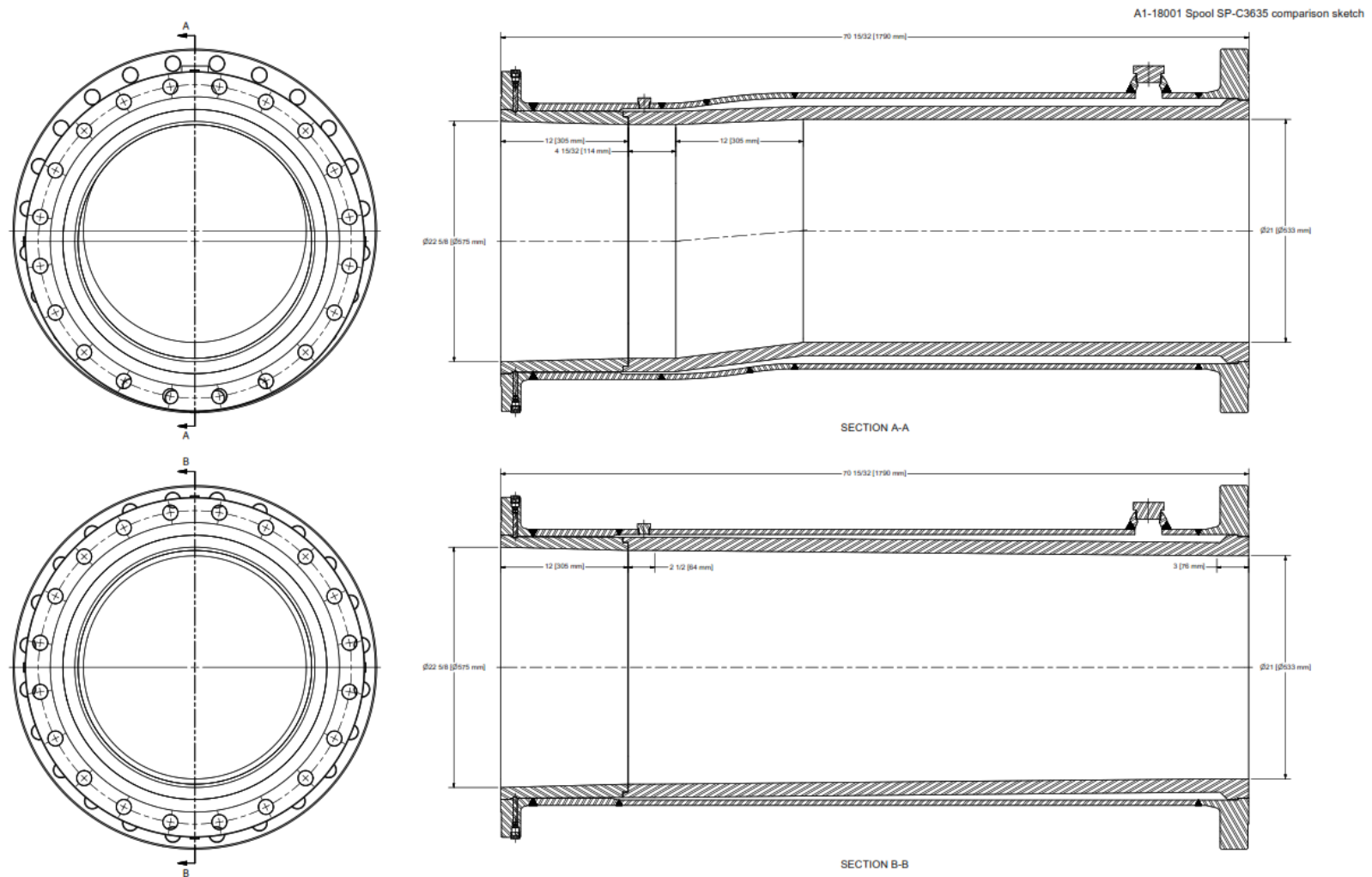


Figure 2: A1-18001 Spool SP-C3635 comparison sketch

Response to RFI 1397868-B91-003



WorleyParsons
resources & energy

MAIL TYPE
General Correspondence

MAIL NUMBER
WORLEYP-GNC-000232

REFERENCE NUMBER
IO-PP-GNC-002587

Re: KPIC-K2 PSC - Froth CWI Lined Pipe ID

From Mr Vijay Pathania - WorleyParsons

To Mr Narjeet Sindhu - ExxonMobil

Cc (8) Mrs Christina Comanescu - ExxonMobil
Mr Chris Marianayagam - ExxonMobil
Mr Paul Reid - ExxonMobil
Mr Patrick Sundry - ExxonMobil
Mr Vijay Pathania - WorleyParsons
Mr Jaerin Kim - WorleyParsons
Mr Manish Mundada - WorleyParsons
Rhett Read - WorleyParsons

Sent Wednesday, September 19, 2018

DETAILS

Facility Kearl

Project XY.2017.70588 - KPIC - K1 PSC Availability

MESSAGE

Narjeet,
Response is attached. Please note there is a slight increase in the loads at support 3900.
Regards
Vijay

From: N Sindhu
Sent: 9/12/18 10:40:00 AM PDT (GMT -07:00)
To: Rhett Read
Cc: Christina Comanescu, Chris Marianayagam, Paul Reid, Patrick Sundry, Manish Mundada, Vijay Pathania
Mail Number: IO-PP-GNC-002594
Subject: Re: KPIC-K2 PSC - Froth CWI Lined Pipe ID

Facility:	Kearl
Project:	XY.2017.70588 - KPIC - K1 PSC Availability

Attached RFI separately with this mail.

Regards
Narjeet

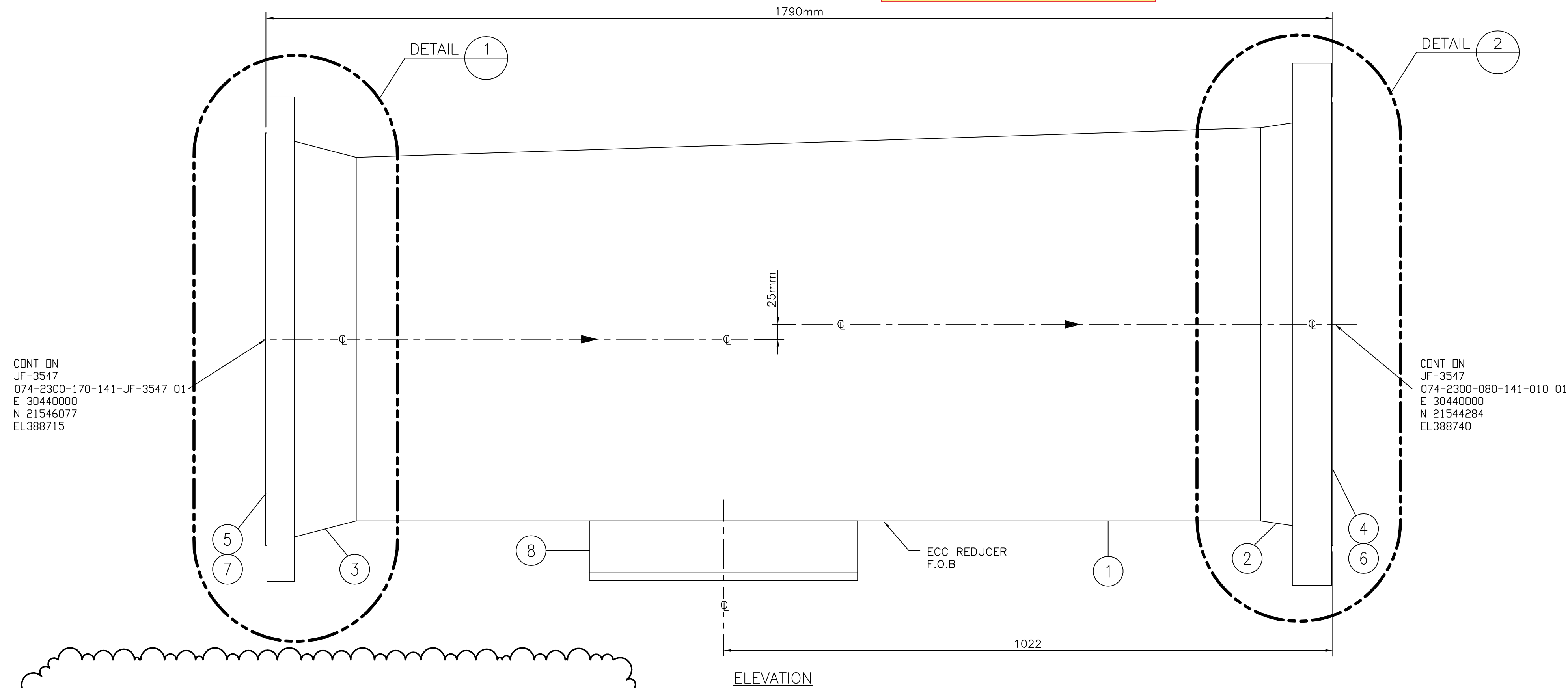
From: N Sindhu
Sent: 9/11/18 8:48:05 AM MDT (GMT -06:00)
To: Rhett Read
Cc: Christina Comanescu, Chris Marianayagam, Paul Reid, Patrick Sundy, Manish Mundada, Vijay Pathania
Mail Number: IO-PP-GNC-002587
Subject: KPIC-K2 PSC - Froth CWI Lined Pipe ID

Facility:	Kearl
Project:	XY.2017.70588 - KPIC - K1 PSC Availability

Rhett
Please find attached Penticton vendor RFI regarding Froth transfer CWI lined pipe spool. Could you please confirm if the proposed solution is acceptable. Also include in your response the velocity impact due to smaller pipe ID.

Regards
Narjeet

ATTACHMENT - 1



NO ECC REDUCER
REPLACE WITH CUSTOM 26" TO 24" FLANGE
CHANGE FOR BOLTS, WASHERS AND NUTS
CHANGE FOR GASKET

BILL OF MATERIAL							
Pipe							
Num	Length	Size	Sch.	Description	Material		S/F
	152"	26" X 24"	XS	26" X 24" ECC REDUCER F.O.B	API 5L Gr. B (PSL 2)		S
Flanges							
Num	Qty	Size	Rating	Sch.	Description	Material	S/F
2	1	26"	CL 150	XS	WN REASME B16.47 SERIES A	A105N	S
3	1	24"	CL 150	XS	WN FR ASME B16.5	A105N	S
4	1	26"	CL 150		GASKET RF SPWIND ASME B16.47 SERIES A LST SSIR CSOR 1/8" THK B16.20	316LSS/GRAPHITE FILLED	F
5	1	24"	CL 150		GASKET RF SPWIND ASME B16.5 LST SSIR CSOR 1/8" THK B16.20	316LSS/GRAPHITE FILLED	F
6	24	26"			1/4" X 9" STUD BOLT FULL THRS W/2 EA A194 GR 2H HVY HEX NUTS	ASTM A193-B7	F
7	20	24"			1/4" X 8 7/12" STUD BOLT FULL THRS W/2 EA A194 GR 2H HVY HEX NUTS	ASTM A193-B7	F
Supports							
Num	Qty	Size	Description			Material	S/F
8	1	26	SHOE S4 100 HIGH (CS) AS PER 0174-0000-220-000-026 01			S4-A-1-36	S

NEW CUSTOM FLANGE SAME CENTERLINE ELEVATION

ID of this end is 574.7 mm

EL388715

- NEW CENTERLINE ELEVATION

EL388715

ID of this end is 533.4 mm

TOP OF STEEL FOR THE SHOE WILL BE 25mm LOWER.
SHIM WILL BE REQUIRED FOR BITUMEN RECYCLE.

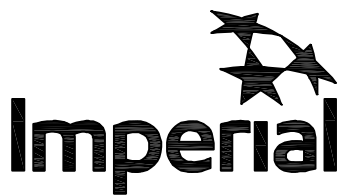
SERVICE: BITUMEN FROTH	
PIPE SPEC: A61K	
CODE: ASME B31.3 ADDENDUM 2016 EDITION	
DESIGN PRESSURE: 1580 kPag	DESIGN TEMPERATURE: 93°C
PRESSURE TEST: 3000 kPag	DMDT: -29°C
PAINT: NONE	STRESS RELIEVE: NONE

SPECIALTY ITEM NUMBER	IORL ITEM NUMBER
SP-K3492	141-3015-49

P&ID: 074-2300-020-141-101 01
LINE #: 26-JF-141-3547-A61K-38H

NOTES:

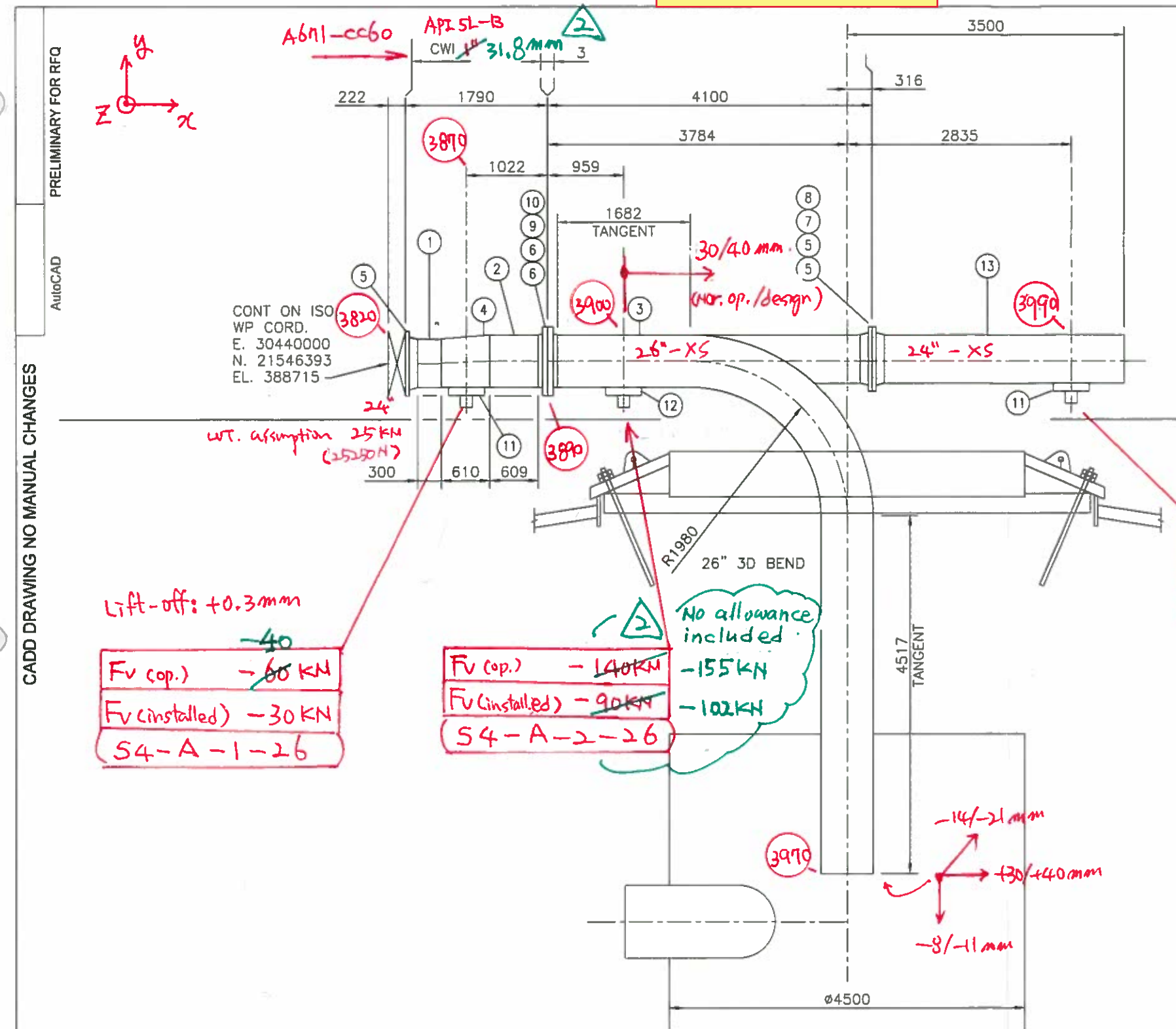
1. ALL WELDING AND NDT SHALL BE IN ACCORDANCE WITH ASME B31.3 AND SPECIFICATIONS GP-29-03-02 & GP-29-03-02 SKP, KP03-74-050
2. ALL SHARP EDGES ARE TO BE REMOVED.
3. BOLT HOLES TO STRADDLE CENTERLINE, UNLESS OTHERWISE NOTED.
4. PIPE I.D. TOLERANCE AT INSERT SHALL BE $\pm 1.5\text{mm}$.
5. SPOOL LINEAR DIMENSION TOLERANCE SHALL BE -3mm TO 0mm .
6. SUPPLIER TO CONFIRM I.D. AND GAP DIMENSIONS.
7. CWI LINER AS PER SPEC KP 03-74-180.
8. PERMANENTLY TAGGED IDENTIFICATION WITH A STAINLESS STEEL NAME PLATE WITH FOLLOWING INFORMATION:
 - CWI THICKNESS
 - DIRECTION OF FLOW ARROW
 - PIPE MATERIAL TYPE AND GRADE
 - PIPE MATERIAL HEAT NUMBER
 - PURCHASE ORDER NUMBER
 - SPOOL SPECIALITY ITEM NUMBER
 - VENDOR REQUESTED IOR DRAWING NUMBER
 - MANUFACTURE'S NAME



IMPERIAL OIL RESOURCES

[illegible]

ATTACHMENT - 2



BILL OF MATERIAL					
Num	Qty	Size	Description	Material Code	S/F
PIPE					
1	0.5 M	24	PIPE BE SCH XS EFW API 5L Gr. B (PSL2) ASME B36.10		5
2	0.5 M	26	PIPE BE SCH XS EFW API 5L Gr. B (PSL2) ASME B36.10		5
3	1 M	26	PIPE BE SCH XS 90 DEG. 3D EFW API 5L Gr. B (PSL2) ASME B36.10 1682MM TANGENT X 4517 TANGENT		5
FITTINGS					
4	1	26X24	REDUCER ECC, BW SCH 30 X SCH XS WLD A234 Gr. WPB-W ASME B16.9		5
FLANGES					
5	3	24	FLANGE WN RF BORE TO MATCH PIPE CL150 A105N ASME B16.5		5
6	4	26	FLANGE WN RF BORE TO MATCH PIPE CL150 A105N ASME B16.5 <i>series-A</i>	<i>B16.47</i>	5
GASKETS AND BOLTS					
7	1	24	GASKET 4.5MM THK. SPIRAL WOUND, 316L SS/GRAPHITE CL150 A105N ASME B16.5		5
8	XX	24	STUDBOLT, THREADED FULL LENGTH, C/W TWO HEAVY HEX NUTS ASME B18.2.1, ASME B18.2.2		5
9	2	26	GASKET 4.5MM THK. SPIRAL WOUND, 316L SS/GRAPHITE CL150 A105N ASME B16.47 SERIES A		5
10	XX	26	STUDBOLT, THREADED FULL LENGTH, C/W TWO HEAVY HEX NUTS ASME B18.2.1, ASME B18.2.2		5
SHOES/SUPPORTS					
11	2	24	S4-A-2-24		5
12	1	26	S4-A-2-26		5
13	0.5M	24	TRUNNION		5

Note 1. F_v = vertical load operation)
 F_g = Lateral load operation)

$F_V = -30 \text{ kN}$
 $F_G = \pm 10 \text{ kN}$
 U1-L-24

Lift-off: +0.3mm

F_v (op.)	$-\overset{40}{60}$ kN
F_v (installed)	-30 kN
S4-A-1-26	

$F_v(\text{op.})$	-140 kN	-155 kN
$F_v(\text{installed})$	-90 kN	-102 kN
54-A-2-26		

No allowance included

- 155 kN
- 102 kN

WorleyParsons Calgary
STRESS ANALYSIS STATUS

1. ☐ Approved
2. ☒ Approved, with Noted Changes
3. ☐ Not Approved, Revise and Resubmit

By: JK Date: 15 Mar. '18

Chkd _____ Date: _____

File/Rev: K2-Froth-rn

CKPIC-K2-CH-003-rn

note

1. Design Pressure = ATM
(after valve to open-end)

MAR 12 2018

STRESS COPY

14 Sep '18

1. PERMANENTLY TAGGED IDENTIFICATION WITH STAINLESS STEEL NAME PLATE IN ACCORDANCE WITH SPECIATION KP-03-74-046. STAMPING SHALL ALSO INCLUDE SPECIALTY ITEM NUMBER AND DRAWING NUMBERS.

FOR ALL LINE CONDITIONS SEE THE MASTER LDT

 **Imperia**

IMPERIAL OIL RESOURCES

KEARL PLANT 1
24"/26" FROTH RECYCLE LINE PSC-3015
PSC AVAILABILITY CWM SPOOLS

CONTRACTOR NAME	SCALE	FOR DRAWING NUMBER	REV
WORLEYPARSONS CANADA SERVICES LTD	1:100	SPOOL DWG #3	D
CONTRACTOR DWG NUMBER			

[illegible]

Filename	N:\WOR_ALLIANCE\AP Kearl\PROJ\KIP PSIC\AD08 PIPING\AD PIPING LAYOUT PLAN-SECTION CHECKING\GROTH RECYCLE SPOOL DWG	User ID	JAMES HANNAM	Plot date/time	March 12, 2018 - 8:21am	XREF drawings	ISAGE attachments
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