

Project No.: <u>79538 - C23</u>	-5	Date: <u>April 17, 2006</u>
Project Name: <u>Winnipeg Water Treatment Program</u>	Sent by: <u>Sandra Peters on behalf of Kristina Roberts</u>	

TO: <u>H. Fontaine Ltd</u> <u>1295 Sherbrooke</u> <u>Magog, Quebec J1X 2T2</u>	c.c. <u>UMA Engineering Ltd.</u> <u>1479 Buffalo Place</u> <u>Winnipeg, Manitoba R3T 1L7</u>
ATTN: <u>Mr. Hugues Turcotte</u>	<u>Mr. Bill Richert</u>

We are sending to you by: BUS MAIL COURIER HAND WAY BILL NUMBER:

<input checked="" type="checkbox"/> REVIEWED AS NOTED	<input type="checkbox"/> FOR APPROVAL	<input type="checkbox"/> CONTRACT DOCUMENTS
<input type="checkbox"/> FOR YOUR ATTENTION	<input type="checkbox"/> FOR INFORMATION	<input checked="" type="checkbox"/> SHOP DRAWINGS
<input type="checkbox"/> AS REQUESTED	<input type="checkbox"/> FOR REVIEW	<input type="checkbox"/>

QUANTITY	IDENTIFICATION NUMBER	DESCRIPTION
		The following document are for Sluice Gates and Water Control Equipment Bid Opportunity No. 561-2005
2		Sluice Gates and Water Control Equipment Shop Drawing Package (Submittal 3, Revision A)
1		Originator's Instructions Sheet

COMMENTS: 2 copies to Fontaine
1 copy to UMA

Received by: _____ Date Received: _____

Please sign and return one copy to sender.

TO:

<input type="checkbox"/> Head Office 105 Commerce Valley Dr. W., 7 th Floor Markham ON L3T 7W3 Ph: (905) 886-7022 Fax: (905) 886-9494	<input type="checkbox"/> Edmonton Office 17203 - 103 Avenue Edmonton AB T5S 1J4 Ph: (780) 488-6800 Fax: (780) 488-2121	<input type="checkbox"/> Regina Office 2629 - 29th Avenue Regina, SK S4S 2N9 Ph: (306) 584-8580 Fax: (306) 584-3822	<input type="checkbox"/> Victoria Office #203, 4430 Chatterton Way Victoria BC V8Z 5J2 Ph: (250) 744-2100 Fax: (250) 744-1700
<input type="checkbox"/> Calgary Office 300 - 340 Midpark Way S.E. Calgary AB T2X 1P1 Ph: (403) 254-3301 Fax: (403) 254-3333	<input type="checkbox"/> Kelowna Office #201, 3275 Lakeshore Road Kelowna BC V1W 3S9 Ph: (250) 762-3727 Fax: (250) 762-7789	<input type="checkbox"/> Vancouver Office 6 th Floor, 1901 Rosser St. Burnaby BC V5C 6S3 Ph: (604) 298-6181 Fax: (604) 294-8597	<input checked="" type="checkbox"/> Winnipeg Office 850 Pembina Highway Winnipeg, MB R3M 2M7 Ph: (204) 477-5381 Fax: (204) 284-2040



Reference Figure 2.8.1

Originator: Kristina Roberts

Date: April 17, 2006

Please Issue the following Documents:

<input type="checkbox"/> For Information	<input type="checkbox"/> For Review & Return By Date:	<input type="checkbox"/> For Quotation By Date:	<input type="checkbox"/> For Construction	<input checked="" type="checkbox"/> Other Shop Drawings
To: Mr. Hugues Turcotte		At: H. Fontaine Ltd		
Cc: Mr. Bill Richert		UMA Projects (CM) Ltd.		

Documents # (attach list if necessary)	Rev.	Date	Comments / Notes to Document
WWTP Sluice Gates and Water Control Equipment Bid Opportunity No. 561-2005			
Submittal Document	A	April 13, 2006	Reviewed as Modified
Table of Contents		April 12, 2006	Revise and Resubmit
Drawing No. F067465-011 – Series 20	A	April 5, 2006	Reviewed
Drawing No. F067465-011DET-A – Series 20	A	April 5, 2006	Reviewed
Drawing No. F067465-011DET-B – Series 20	A	April 5, 2006	Reviewed
Drawing No. F067465-013 – Lifting Stem	A	April 5, 2006	Reviewed
Drawing No. F067565-014 – Operator	A	April 5, 2006	Reviewed
Drawing No. F067465-015 – Electric Actuators		April 17, 2006	Reviewed as Modified
Drawing No. F067465-021 – Series 20	A	April 11, 2006	Reviewed as Modified
Drawing No. F067465-021-DET – Series 20	A	April 17, 2006	Reviewed
Drawing No. F067465-024 – Operator	A	April 17, 2006	Reviewed
Drawing No. F067465-031 – Series 20	A	April 11, 2006	Reviewed as Modified
Drawing No. F067465-031 DET – Series 20	A	April 17, 2006	Reviewed
Drawing No. F067465-034 – Operator	A	April 17, 2006	Reviewed as Modified
Drawing No. F067465-041 – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-041DET – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-043 – Series 20	A	April 13, 2006	Revise and Resubmit
Drawing No. F067465-044 – Operator	A	April 13, 2006	Reviewed as Modified
Drawing No. F067465-051 – Series 20	A	April 12, 2006	Revise and Resubmit



Drawing No. F067465-051-DET – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-053 – Lifting Stem	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-054 – Operator	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-061 – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-061-DET – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-063 – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-071 – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-071-DET – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-073 – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-074 – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-081 – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-081-DET – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-083 – Lifting Stem	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-084 – Operator	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-091 – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-091-DET – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-093 – Lifting Stem	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-094 – Operator	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-101 – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-101-DET A – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-103 – Series 20	A	April 12, 2006	Revise and Resubmit
Drawing No. F067465-104 – Operator	A	April 12, 2006	Revise and Resubmit
Drawing No. B-923207-01 – Rotork	01	April 6, 2006	Reviewed
Circuit Diagram 3000-000-08 (RWS300)		April 6, 2006	Reviewed
Drawing No. D1255100	0	April 6, 2006	Reviewed

Comments: to be added to Transmittal

2 copies to Fontaine
1 copy to UMA (CM)



Fontaine

Sluice Gates and Water Control Equipment

Official approval to proceed with manufacturing and purchasing

- Required - Please return a copy of this submittal stamped as approved
Not required - Manufacturing is proceeding.

CH2M HILL Canada Limited CONSULTING ENGINEERS SUBMITTAL DISPOSITION

Table with 2 columns: Status (REVIEWED, REVIEWED AS MODIFIED, REVISE AND RE-SUBMIT, NOT REVIEWED) and checkboxes.

JOB No. 321352 SUBMISSION No. 02

DATE PER April 12, 2006

SPEC: 11008 RES: DISTRIBUTION OFFICE 1
ITEM: CLIENT CONTR

LOCATION: Winnipeg WTP
SERVICE:

SUBMITTAL DOCUMENT

Project Name: WINNIPEG WTP #561-2005
Client: UMA PROJECTS (CM) LTD.

Fontaine Contract No.: 2067465

Table with 3 columns: REVISION, DATE, DESCRIPTION. Rows: 0 (2006-02-01), A (2006-03-27)

REFER TO CONTRACT SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS
CH2M HILL Canada Limited's review of this submittal does not relieve the manufacturer of complete and exclusive responsibility for the design and manufacture of this product in conformity with specifications of this project.

MANDATORY APPROVAL STAMP:

Please address comments from previous review.

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent. Responsibility for detailed design in the shop drawings rests with the Contractor.

Responsibility for verification and correlation of field dimensions, formation process, techniques of construction, installation and coordination of all parts of the work rests with the Contractor.

Approval checkboxes: REVIEWED, REVIEWED AS MODIFIED, REVISE AND RE-SUBMIT, NOT REVIEWED

Project No. 79538-C23-16

Date: April 14/06 By: SP for SM

April 13/06 SP for KAS.



IMPORTANT MESSAGE:

The contractor who will be installing equipment supplied by H. Fontaine Ltd. is responsible for ensuring that all dimensions shown herein are compatible with adjacent equipment and/or structures supplied by others. H. Fontaine Ltd. will not be held responsible in case of dimensional incompatibility with the installation environment.

TABLE OF CONTENTS

SLG-R020A JJP

ITEM	QTY.	MODEL ¹	IDENTIFICATION	PAGE	CONFIRMATION REQUIRED ²
011	1	204-2100X2100-K-WT	SLG-I000C	1	
021	4	203-1200X1200-K-CW	SLG-R100A, SLG-R200A SLG-R300A, SLG-R400A	7	
031	2	203-900X900-K-CW/FE	SLG-R010A, <u>SLG-R020A</u>	10	
041	1	202-2000X1500-K-CW-D	SLG-P970A	14	Revise & Resubmit
051	1	204-2200X2000-K-CW	SLG-F001A	17	
061	1	204-2400X1400-K-CW	SLG-F053A	21	
071	1	204-1500X1400-K-CW	SLG-F054A	25	
081	1	204-2100X2100-K-CW	SLG-F055A	29	
091	2	204-2000X1400-K-CW	SLG-0210A, SLG-0230A	33	
101	4	204-1800X900-K-CW	SLG-0210B, SLG-0210C SLG-0230B, SLG-0230C	37	

↓ Should be letter O, for Ozone area JJP

FOR INFORMATION CONCERNING THIS SUBMITTAL,
PLEASE CONTACT THE PROJECT MANAGER:

Hugues Turcotte at 819-843-3413, ext.234, fax 819-843-3894, E-mail: Hugues.Turcotte@hfontaine.com

Notes:

- ¹ Products presented herein are fabricated by qualified welders according to approved procedures conforming to the "ASME Boiler and Pressure Vessel Code, Section IX: Qualification Standard for Welding and Brazing Procedures, Welders, Brazers and Welding and Brazing Operators".
- ² These specific points of information require confirmation by the contractor. They have been identified as critical, uncertain or unknown, and they need to be officially confirmed before equipment can be released for production. The above specific list does not relieve the installing contractor from verifying all dimensions, as stated in the above "Important Message" paragraph. Refer to the notes starting on the pages listed above.

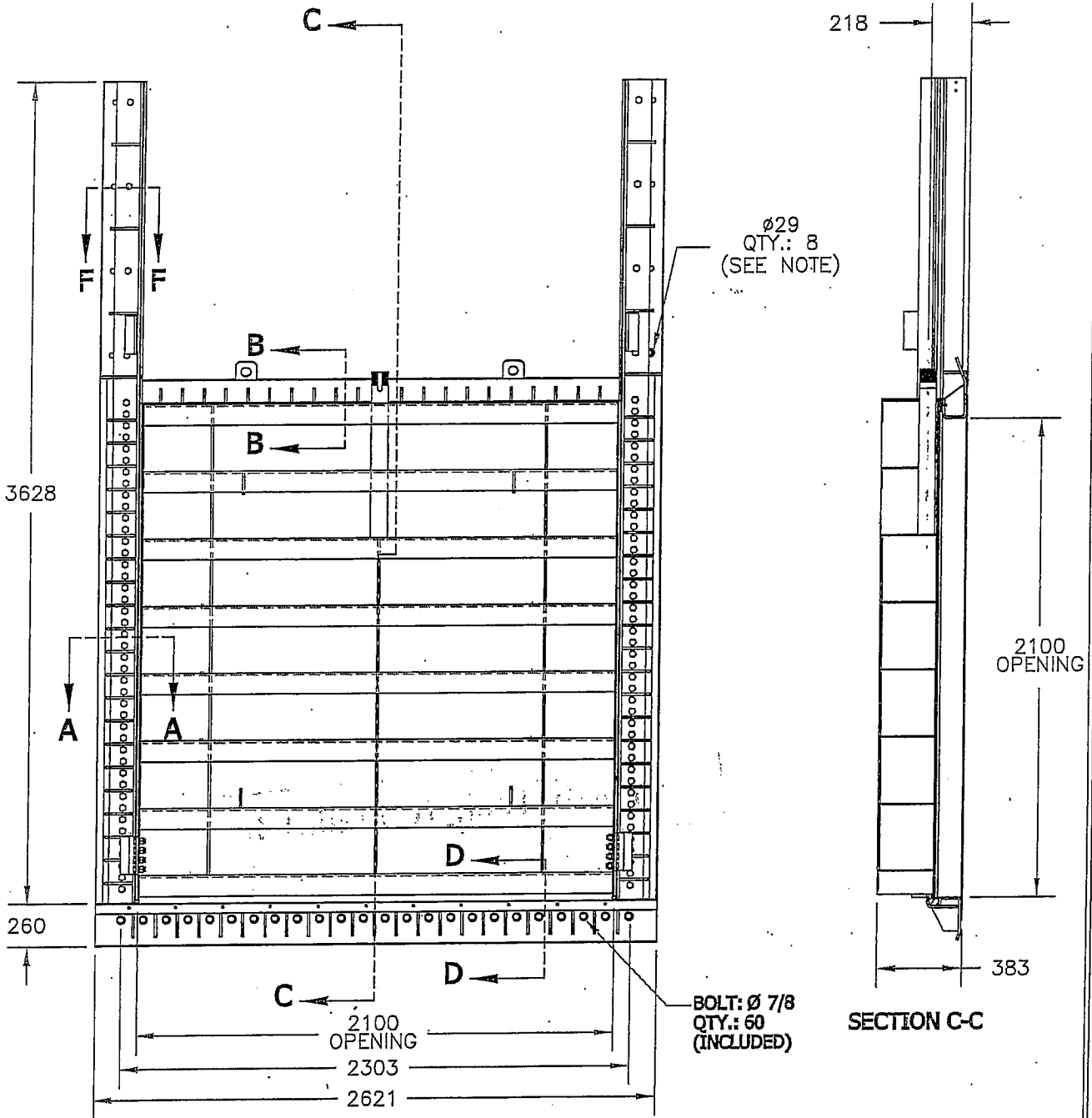
SERIES 20

STAINLESS STEEL SLUICE GATES FLOW CONTROL SLUICE GATES



MODEL: 204-2100x2100-K-WT
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG-1000C \triangle



NOTE: 316 S.S. CHEMICAL ANCHOR BOLTS (Ø19 X 216 LG.)
AND CARTRIDGES (168 LG.) ARE INCLUDED.

V204-114 114 K WT 35 XXX ST AG
2006-01-30
1 de 3

Drawing is not to scale
All dimensions are in millimeters.



Tolerance: ±0.3mm

011

REVISION: A	DATE: 2006/03/20
DRAWING No.: F067465-011	PAGE: 1

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
conditions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED

REVIEWED AS MODIFIED

REVISE AND RE-SUBMIT

NOT REVIEWED

Project No. 7953B-C23-16

Date: Apr. 5/06 By: [Signature]

SERIES 20

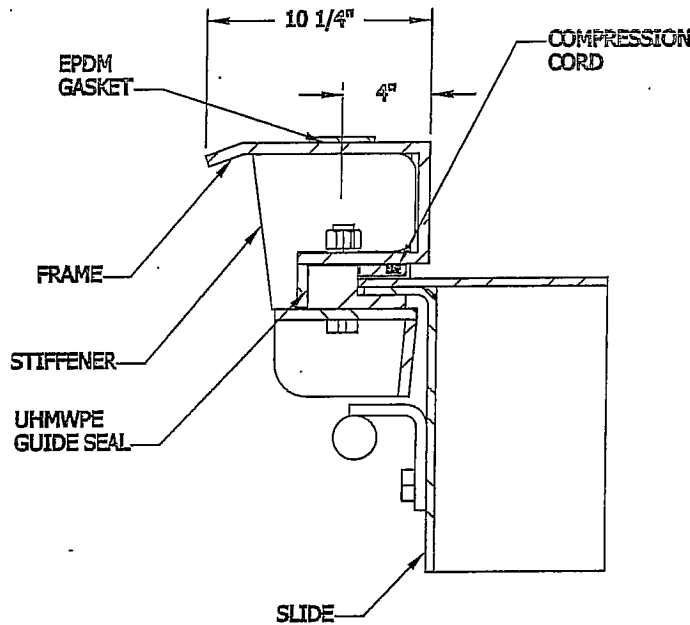
STAINLESS STEEL SLUICE GATES FLOW CONTROL SLUICE GATES



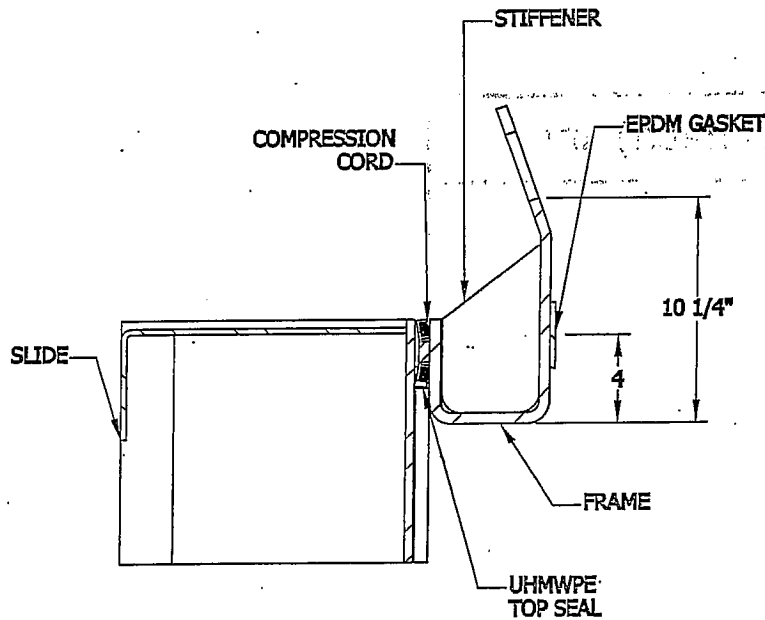
Fontaine

MODEL: 204-2100x2100-K-WT
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG-I000C



SECTION A-A



SECTION B-B

V204 2100 2100 K.WT 41.000 ST AG

2006-01-20

2 ds 3

F.P.

Drawing is not to scale
All dimensions are in millimeters.



Tolerance: ±0.1mm

011

REVISION: A	2006/03/20
DRAWING No.: F067465-011DET-A	PAGE: 2

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED

REVIEWED AS MODIFIED

REVISE AND RE-SUBMIT

NOT REVIEWED

Project No. 79538-123-16

Date: Apr. 5/06 By: [Signature]

SERIES 20

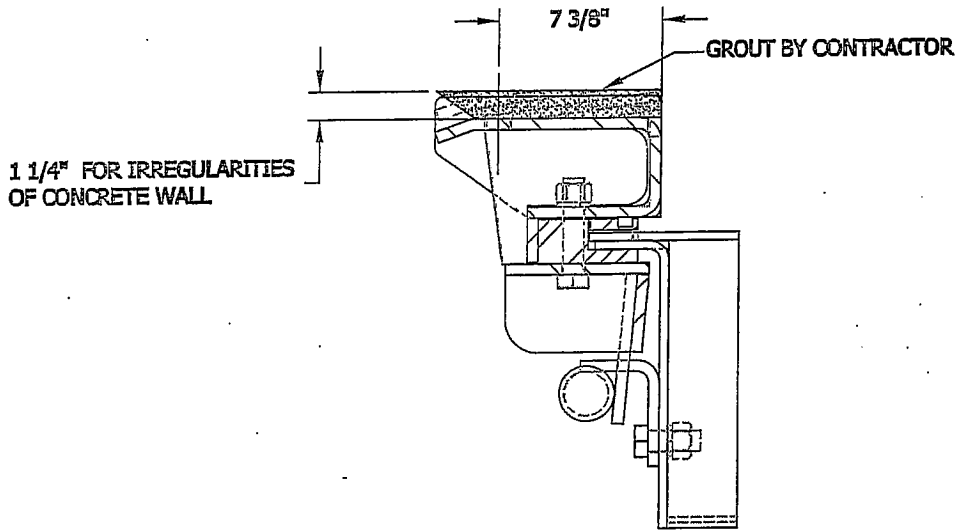
STAINLESS STEEL
SLUICE GATES
FLOW CONTROL SLUICE GATES



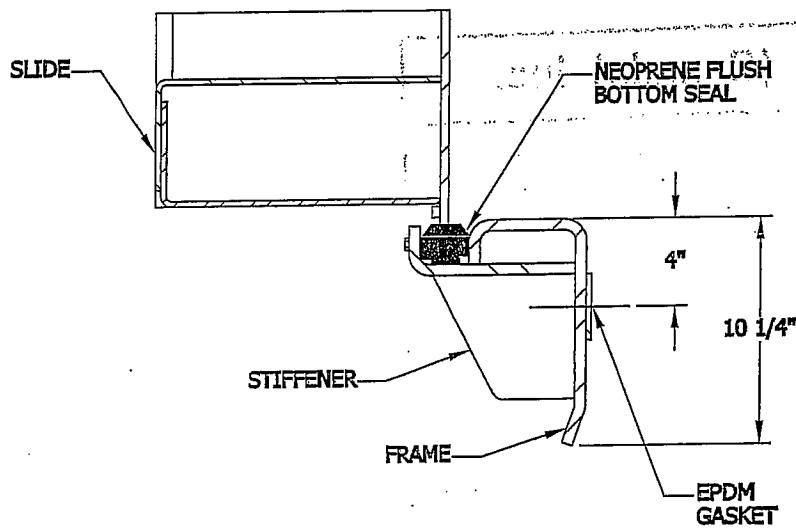
Fontaine

MODEL: 204-2100;2100-K-WT
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG-I000C



SECTION F-F



SECTION D-D

V204 2100 2100 K WT #1 XXX ST AG
2005-01-30
3 de 3
F.12

Drawing is not to scale
All dimensions are in millimeters.



Tolerances: ±3mm

011

REVISION: A
DRAWING No.: F067465-011DET-3

2006/03/20
PAGE: 3

Earth Tech (Canada) Inc. *

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED

REVIEWED AS MODIFIED

REVISE AND RE-SUBMIT

NOT REVIEWED

Project No. 72538 - C23-16

Date: Apr. 5/06 By: FW

LIFTING STEM

MODEL: 204-2100x2100-K-WT
 MATERIAL: 316L S.S.
 QTY: 1

IDENTIFICATION: SLG-1000C \triangle

**TYPE RS1
 RISING STEM**

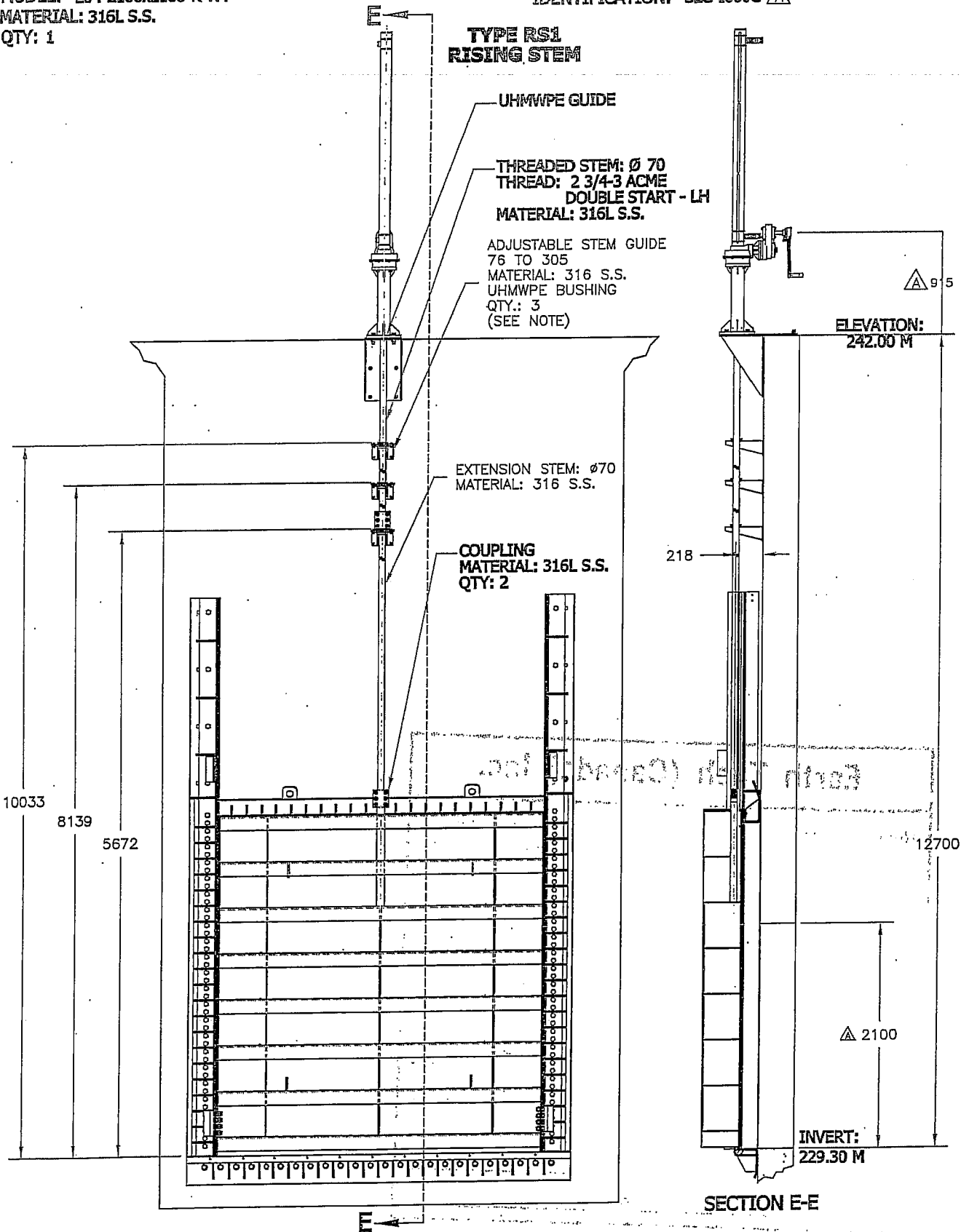
UHMWPE GUIDE

THREADED STEM: \varnothing 70
 THREAD: 2 3/4-3 ACME
 DOUBLE START - LH
 MATERIAL: 316L S.S.

ADJUSTABLE STEM GUIDE
 76 TO 305
 MATERIAL: 316 S.S.
 UHMWPE BUSHING
 QTY.: 3
 (SEE NOTE)

EXTENSION STEM: \varnothing 70
 MATERIAL: 316 S.S.

COUPLING
 MATERIAL: 316L S.S.
 QTY: 2



NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS (\varnothing 10 x 95 LG.) ARE INCLUDED.

REVISION: A	DATE: 2006/03/20
DRAWING No.: F067465-013	PAGE: 4

013

Drawing is not to scale
 All dimensions are in millimeters



Tolerances: \pm 3mm

APPROB: 1/204 2200 2000 K CW 20 XXX 50 AG

2006-01-31

1 of 1

E.P.

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED

REVIEWED AS MODIFIED

REVISE AND RE-SUBMIT

NOT REVIEWED

Project No. 79538-C23-16

Date: Apr 5/06 By: PAW

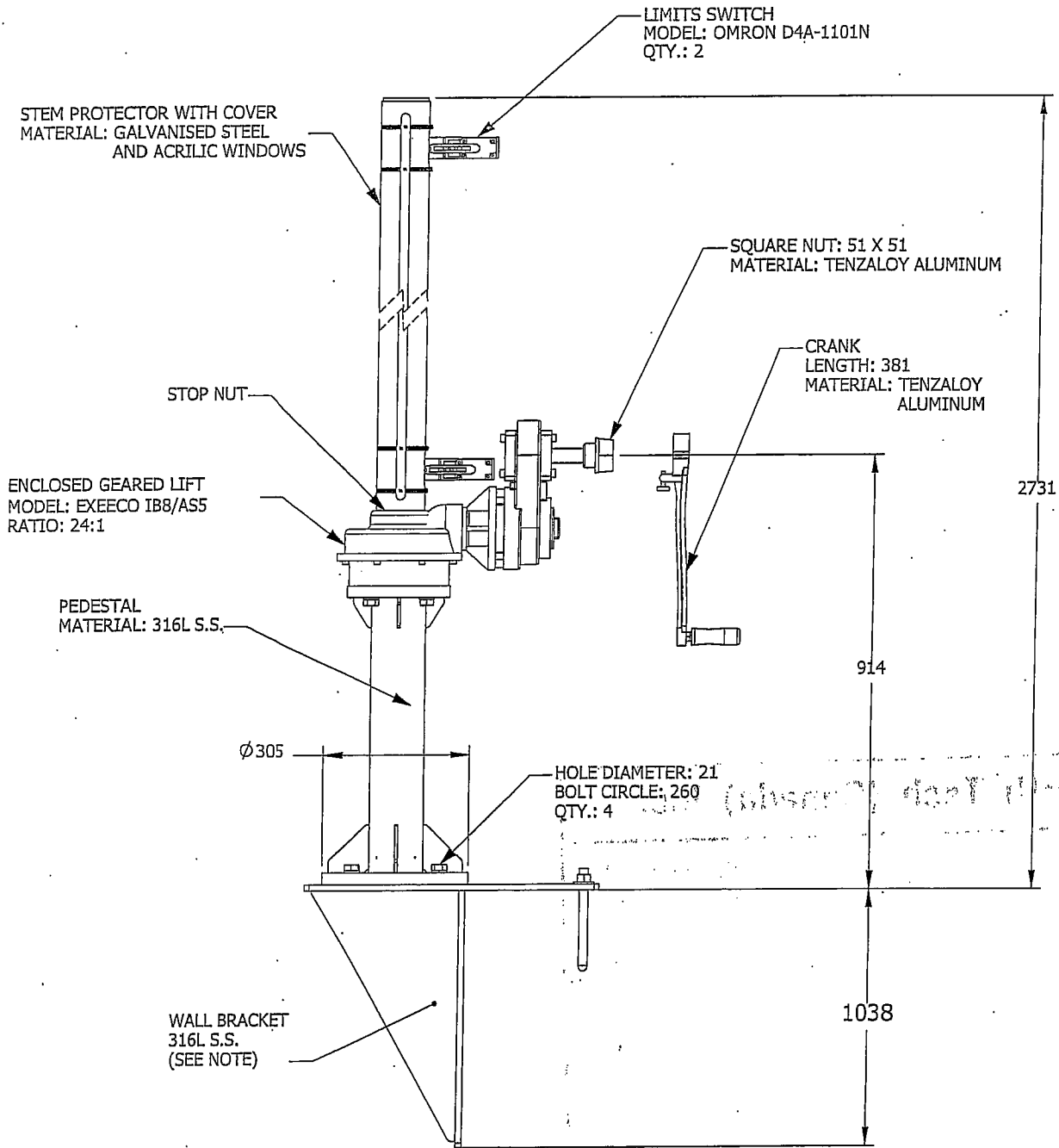


MODEL: 204-2100x2100-K-WT
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG-I000C



CRANK WITH ENCLOSED GEARED LIFT ON PEDESTAL (MNEPH)



NOTE: 316 S.S. CHEMICAL ANCHOR BOLTS ($\varnothing 19 \times 216$ LG.)
AND CARTRIDGES (168 LG.) ARE INCLUDED.

WYA95511
2006-02-01
1 de 1
S.Bé.

Drawing is not to scale
All dimensions are in millimeters



Tolerances: ± 3 mm

014

REVISION: A	2006-03-20
DRAWING No.: FD67565-014	PAGE: 5

Earth Tech (Canada) Inc. *

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED

REVIEWED AS MODIFIED

REVISE AND RE-SUBMIT

NOT REVIEWED

Project No. 79538-C23-1A

Date: Apr 5/06 By: BA

ELECTRIC ACTUATORS



Fontaine

MODEL: EIBENSTOCK
 MATERIAL: 304L S.S.
 QTY: 1

IDENTIFICATION:

EIBENSTOCK ELECTRIC ACTUATOR WITH PORTABLE TELESCOPIC TRIPOD

TRIPOD DATA: OPERATING HEIGHT "A": MIN. 711
 MAX. 1016
 WEIGHT: 6.8 Kg

ENSURES MAX. HEIGHT IS IN ACCORDANCE WITH THE HEIGHT OF EACH OPERATOR FOR EACH GATE.

MOTOR DATA: AMPS : 15
 VOLTS : 110/120 - 60 HZ
 RPM 1st SPEED : 60-140 WITHOUT LOAD
 RPM 2nd SPEED : 200-470 WITHOUT LOAD
 WEIGHT : 6.4 Kg

BRACKET
 MATERIAL: 304 S.S.

TORQUE LIMITER
 TORQUE : 67.8 Nm
 MATERIAL: ALUMINUM

SQUARE NUT ADAPTOR
 MATERIAL: TENZALOY ALUMINUM

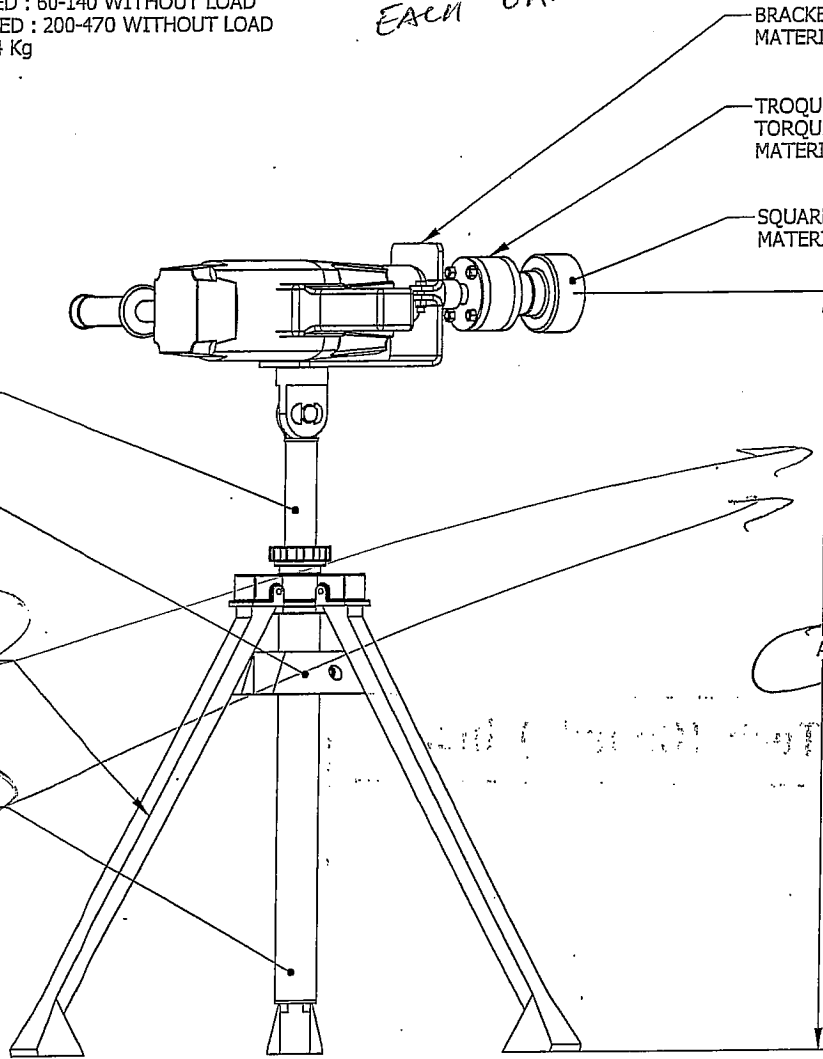
Material to be as per SPECIFICATION.

TELESCOPIC TUBE
 MATERIAL: 304 S.S.

TRIPOD STABILIZER
 MATERIAL: UHMWPE

TRIPOD
 MATERIAL: TENZALOY ALUMINUM

TUBE
 MATERIAL: TENZALOY ALUMINUM



SEE NOTE ABOVE

WYUX2010 - OE-TREP PORT (EHB) SANS EXTENSION AL 304

27/03/06

1 de 1

H.F.

Drawing is not to scale
 All dimensions are in millimeters



Tolerances: ± 3mm

015

DRAWING No.: F067465-015

PAGE:

6

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____ ✓

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-023-16

Date: APRIL 17/2006 By: SM

SERIES 20

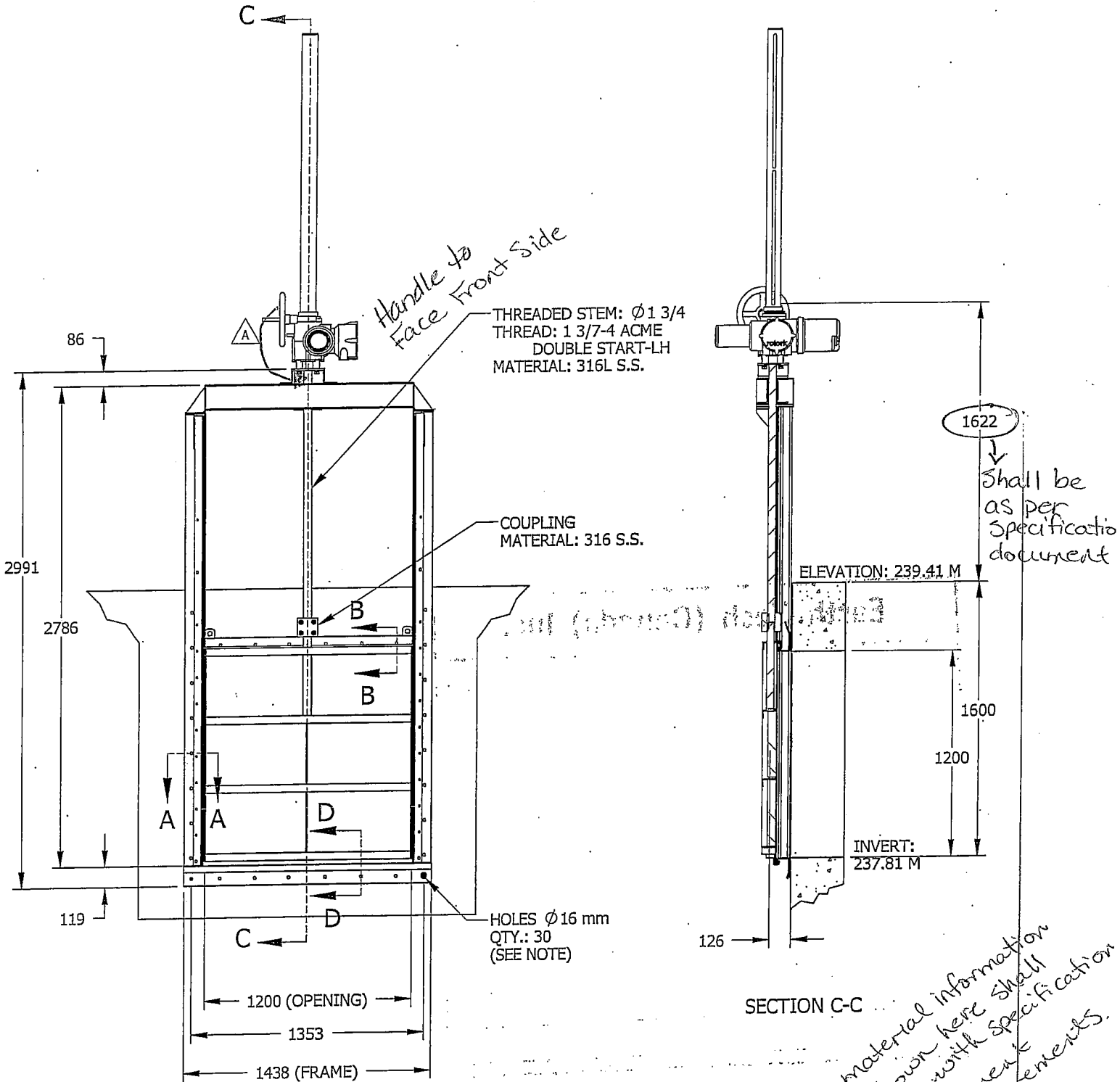
STAINLESS STEEL SLUICE GATES FLOW CONTROL SLUICE GATES



Fontaine

MODEL: 203-1200x1200-K-CW
MATERIAL: 316L S.S.
QTY: 4

IDENTIFICATION: SLG - R100A, SLG - R200A
SLG - R300A, SLG - R400A



1622
↓
Shall be as per Specification document

All material information not shown here shall comply with Specification requirements.

NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS (Ø 13 X 140 LG.) ARE INCLUDED.

Drawing is not to scale
All dimensions are in Inches.



Tolerances: ±1/8

021

REVISION: A	2006/03/23
DRAWING No.: F067465-021	PAGE: 7

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____ ✓ _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-023-16

Date: Apr 11/06 By: Spencer Sm

SERIES 20

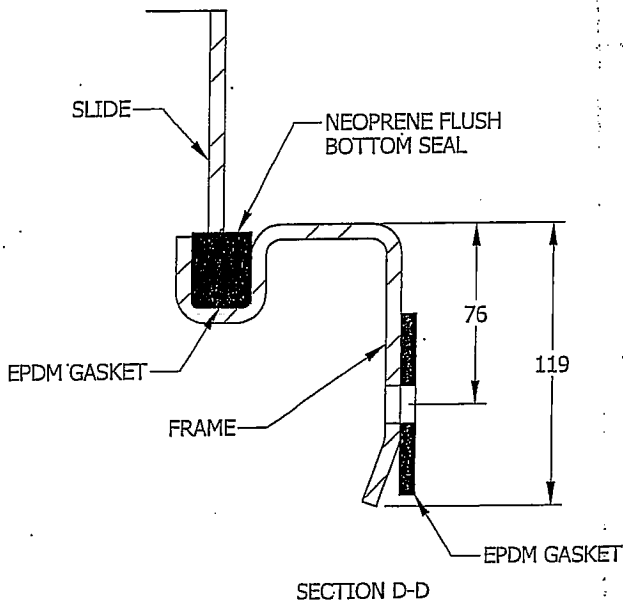
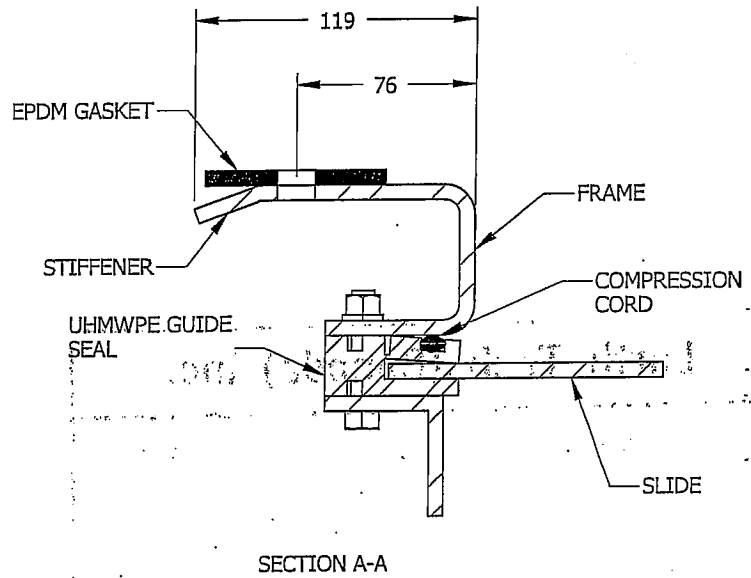
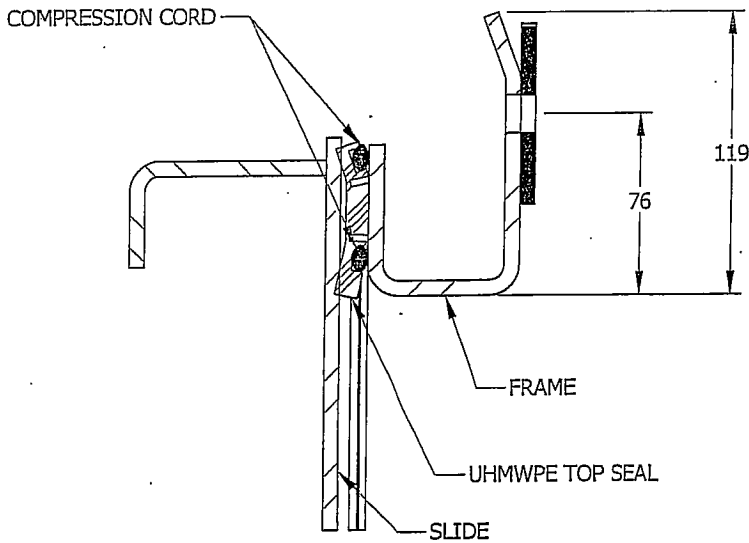
STAINLESS STEEL SLUICE GATES FLOW CONTROL SLUICE GATES



Fontaine

MODEL: 203-1200x1200-K-CW
MATERIAL: 316L S.S.
QTY: 4

IDENTIFICATION: SLG - R100A, SLG - R200A
SLG - R300A, SLG - R400A



Drawing is not to scale
All dimensions are in inches.



Tolerances: $\pm 1/8$

021

REVISION: A
DRAWING No.: F067465-021-DET

2006/03/23
PAGE: 8

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
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Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
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REVIEWED

REVIEWED AS MODIFIED

REVISE AND RE-SUBMIT

NOT REVIEWED

Project No. 79538-C23-16

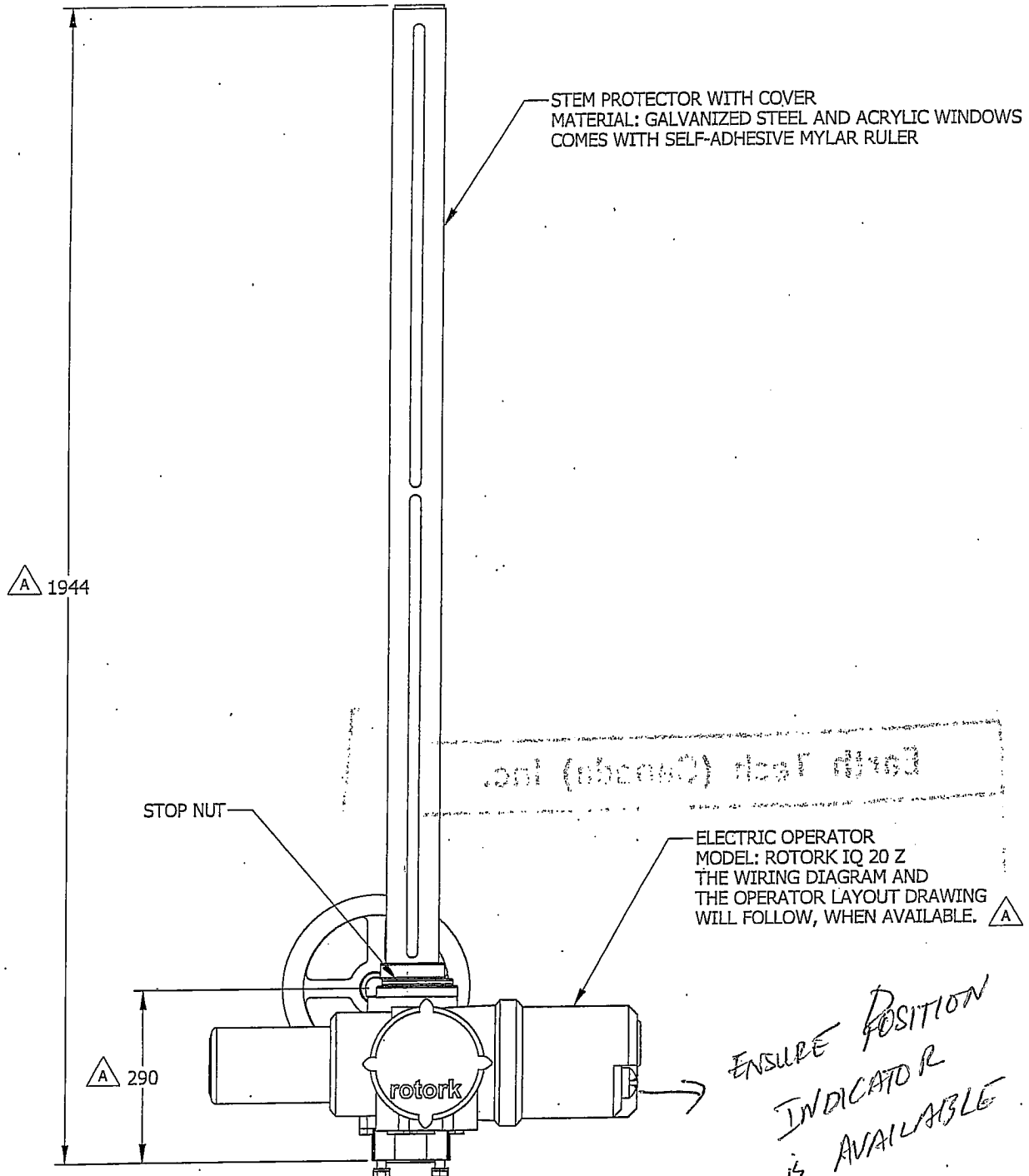
Date: APRIL 17/06 By: SM




MODEL: 203-1200x1200-K-CW
MATERIAL: 316L S.S.
QTY: 4

IDENTIFICATION: SLG - R100A, SLG - R200A
SLG - R300A, SLG - R400A

ELECTRIC OPERATOR (OE)



 Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
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parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C53-16

Date: APR 17/06 By: SM

SERIES 20

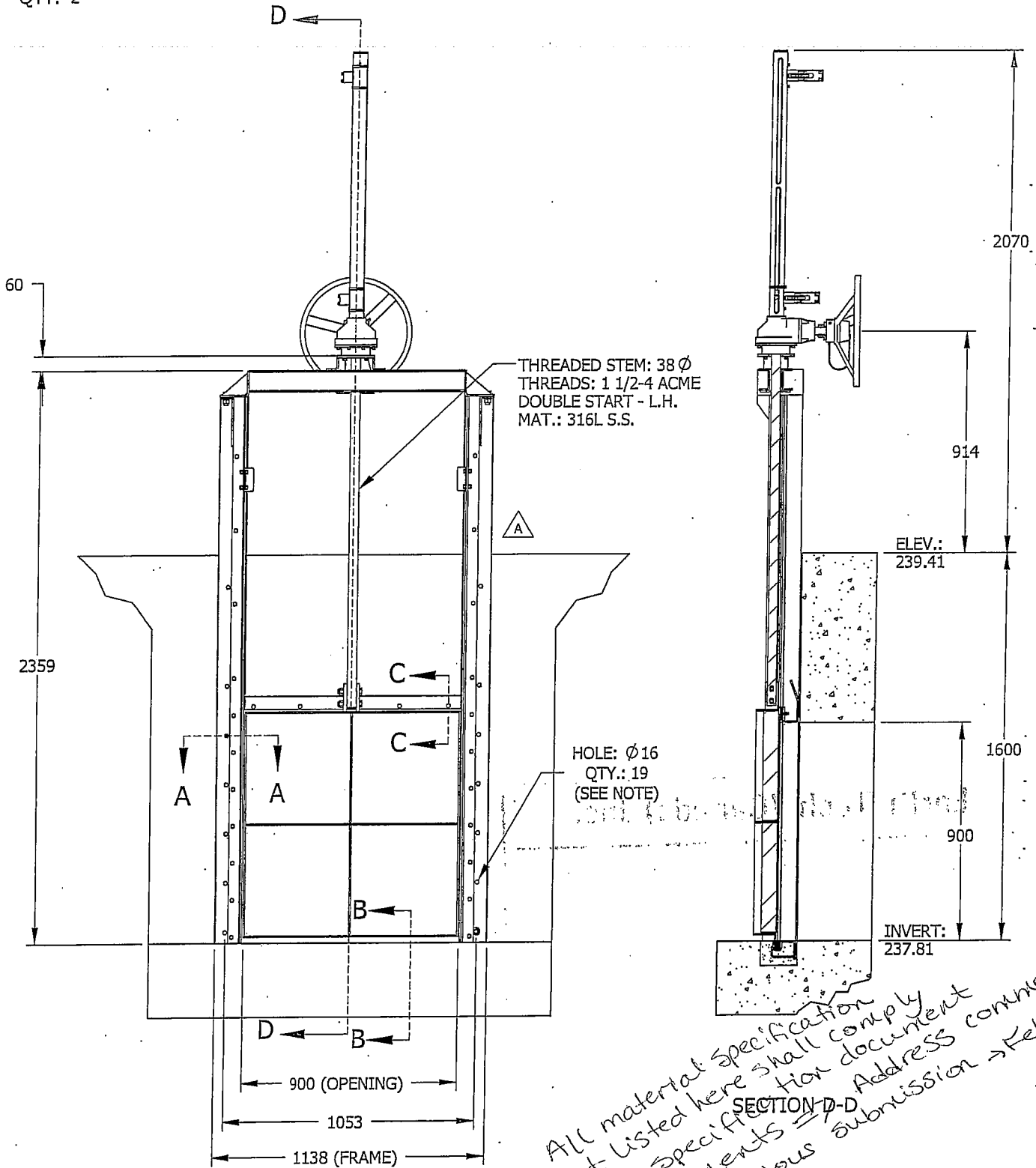
STAINLESS STEEL SLUICE GATES FLOW CONTROL SLUICE GATES



Fontaine

MODEL: 203-900x900-K-CW FE
MATERIAL: 316L S.S.
QTY: 2

IDENTIFICATION: SLG - R010A
SLG - R020A



NOTE: 316 S.S. CHEMICAL ANCHOR BOLTS (Ø 13 X 140 LG)
AND CARTRIDGES (108 LG) ARE INCLUDED.

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
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construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____ ✓

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538 - C23-16

Date: Apr. 11/06 By: SP4/RCM

SERIES 20

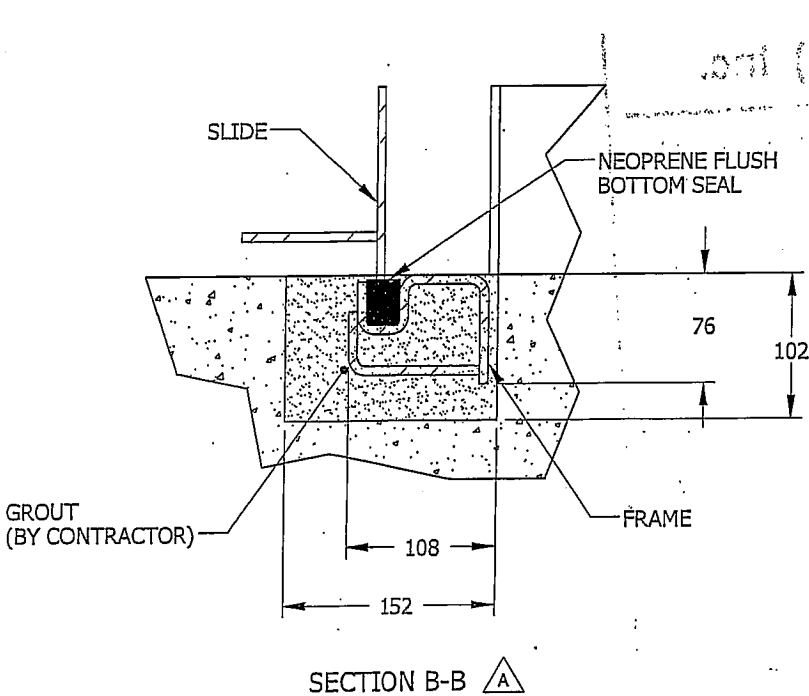
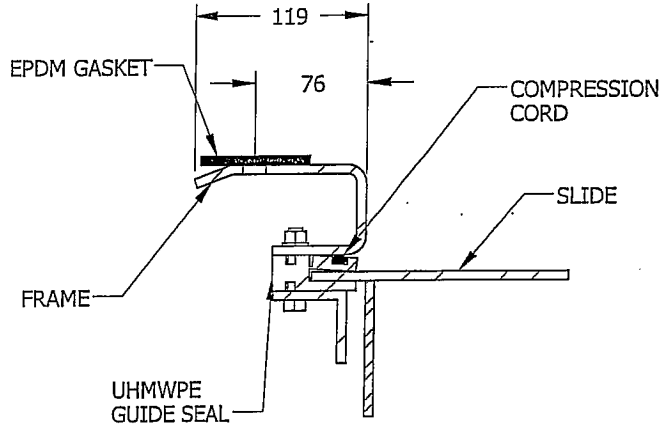
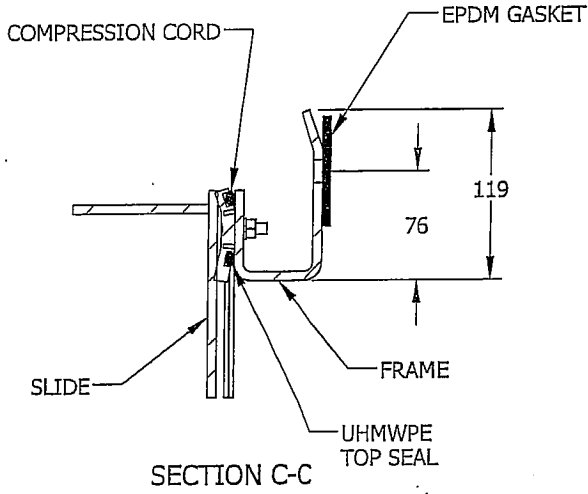
STAINLESS STEEL
SLUICE GATES
FLOW CONTROL SLUICE GATES



Fontaine


MODEL: 203-900x900-K-CW FE
MATERIAL: 316L S.S.
QTY: 2

IDENTIFICATION: SLG - R010A
SLG - R020A



SECTION A-A

SECTION B-B

Earth Tech (Canada) Inc. 

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED

REVIEWED AS MODIFIED

REVISE AND RE - SUBMIT

NOT REVIEWED

Project No. 79538-C23-16

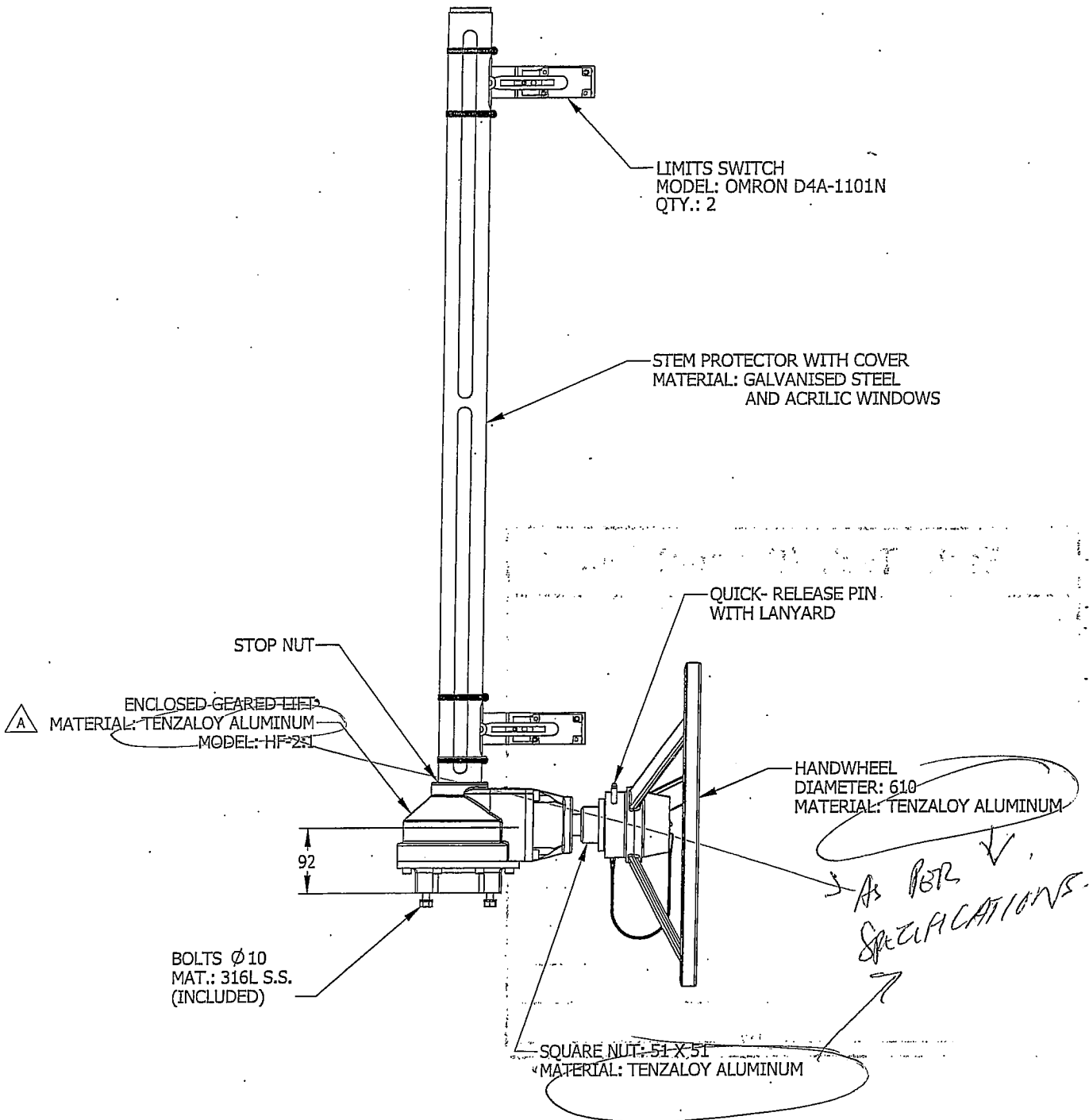
Date: April 17/06 By: SM



MODEL: 203-900x900-K-FE/CW
MATERIAL: 316L S.S.
QTY: 2

IDENTIFICATION: SLG-R010A
SLG-R020A

HANDWHEEL WITH ENCLOSED GEARED LIFT (VNE)



Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____ ✓

REVISE AND RE - SUBMIT _____

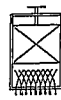
NOT REVIEWED _____

Project No. 79538-C23-16

Date: April 17/06 By: SM

SERIES 20

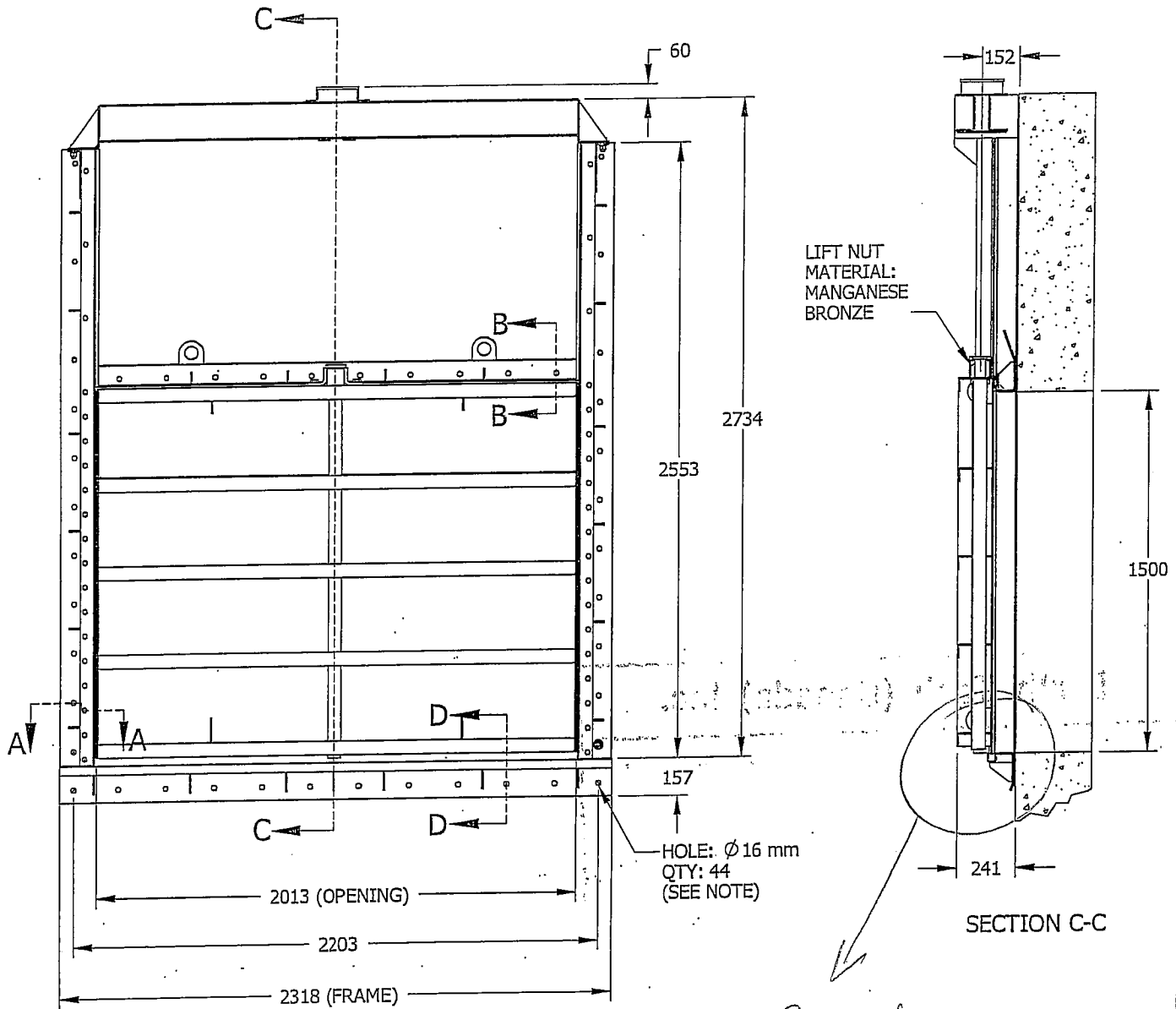
STAINLESS STEEL SLUICE GATES FLOW CONTROL SLUICE GATES



Fontaine

MODEL: 202-2000x1500-K-CW-D
 MATERIAL: 316L S.S.
 QTY: 1

IDENTIFICATION: SLG-P970A



*Should be same as
 Section D-D
 for SLG-R010A
 SLG-R020A
 Concrete block-out.*

NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS (Ø 1/2 X 5 1/2 LG.) ARE INCLUDED.

Earth Tech (Canada) Inc. *

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE - SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

Date: Apr 12/06 By: SP for JMF

SERIES 20

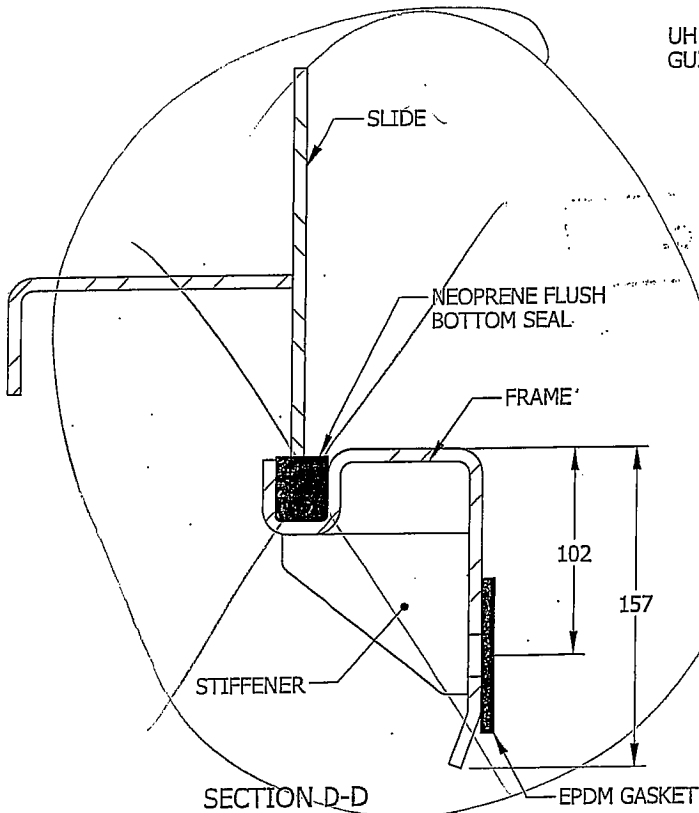
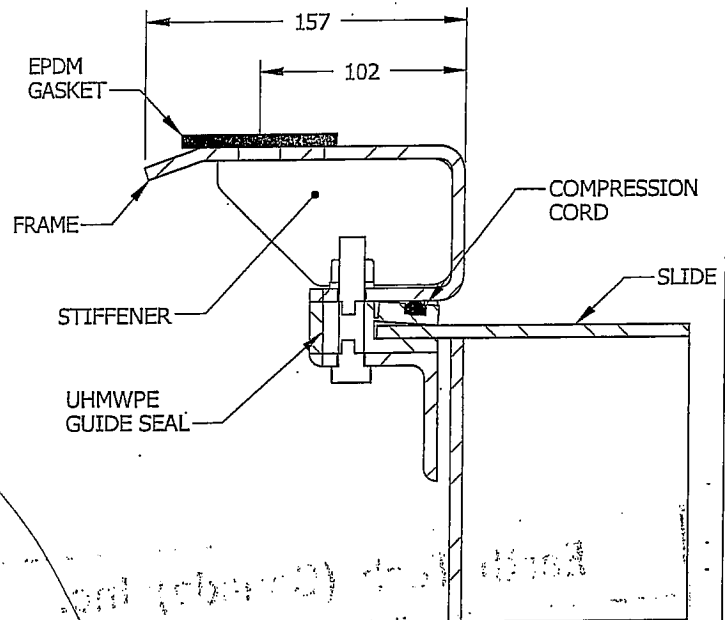
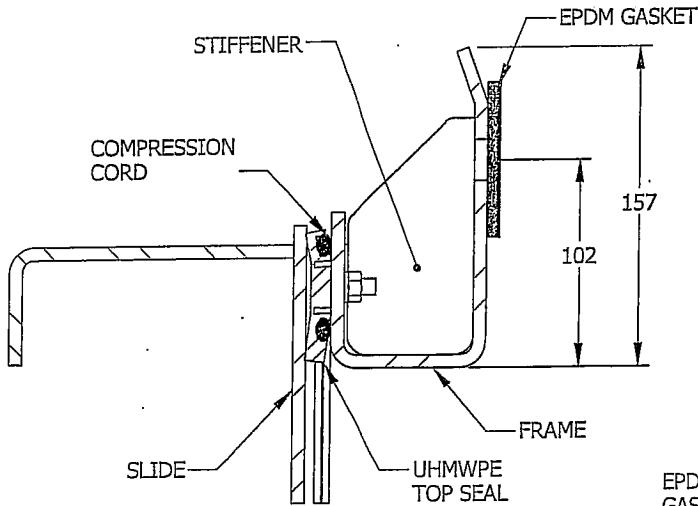
STAINLESS STEEL SLUICE GATES FLOW CONTROL SLUICE GATES



Fontaine

MODEL: 202-2000x1500-K-CW-D
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG-P970A



Should be same as
Section B-B
for SLG-R010A
SLG-R020A
Concrete block-out

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-023-16

Date: Apr 12/06 By: SR loc JMLP

SERIES 20

STAINLESS STEEL
SLUICE GATES
FLOW CONTROL SLUICE GATES

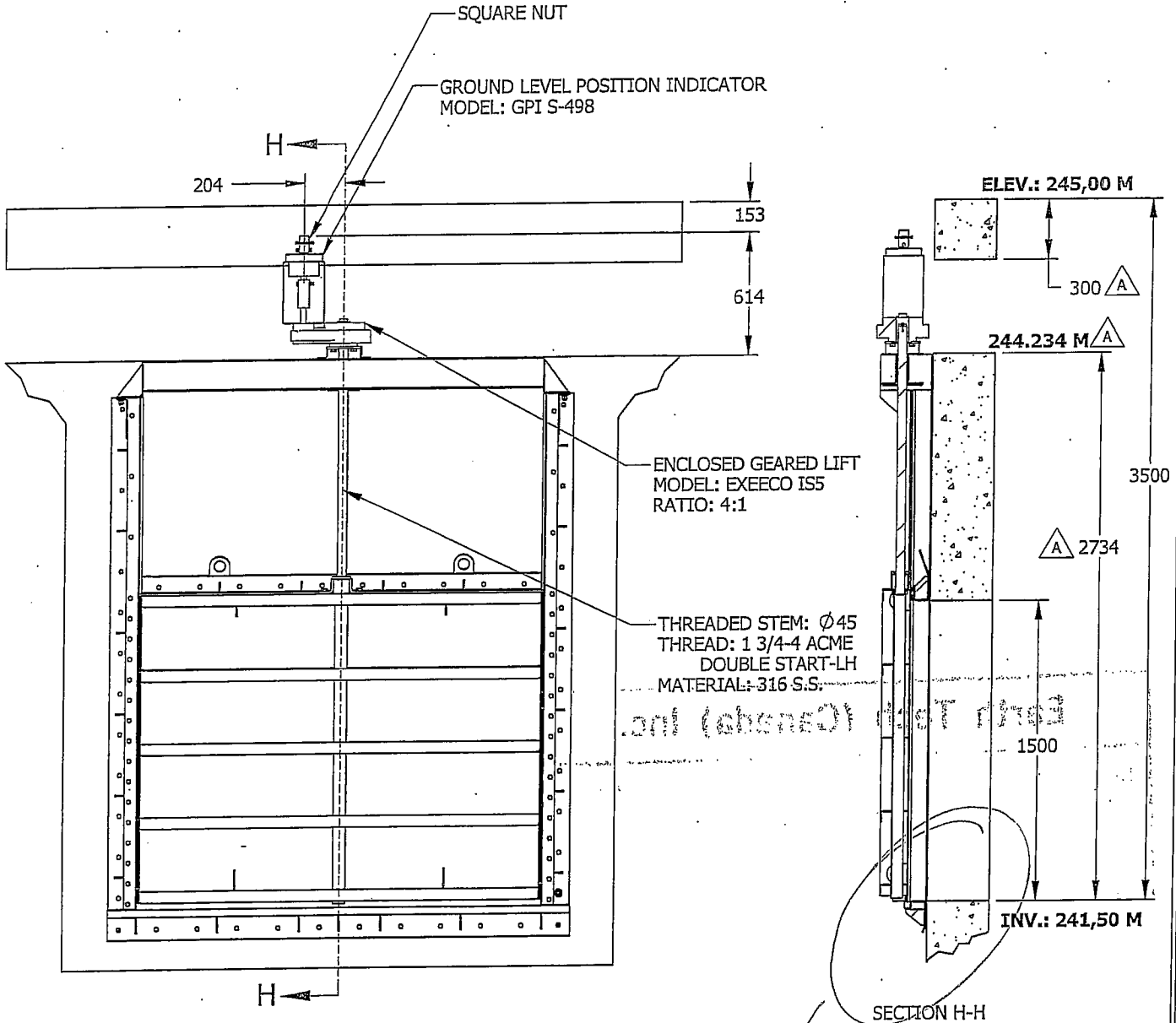


Fontaine

MODEL: 202-2000x1500-K-CW-D
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG-P970A

TYPE NR1 - NON-RISING STEM




Top of weir wall 243.900
Top of stubs to support frame: 244.2
Stubs are 300mm wide x wall thickness.

Concrete block-out.

TRAVEL: 929 MM

REVISION: A	2006/03/27
DRAWING No.: F067465-043	PAGE: 15

 Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings rests with the Contractor.

Responsibility for verification and correlation of field dimensions, fabrication process, techniques of construction, installation and coordination of all parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

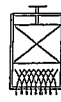
REVISE AND RE - SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

Date: April 13/06 By: SR for KAS

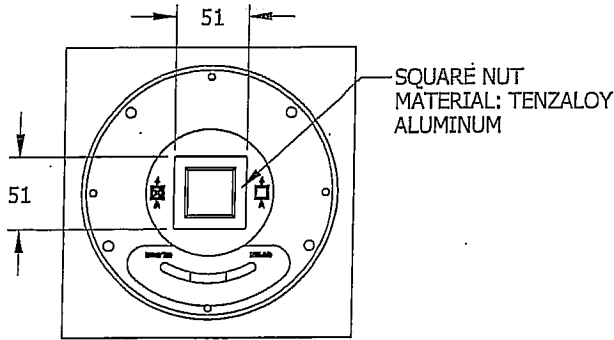
OPERATOR



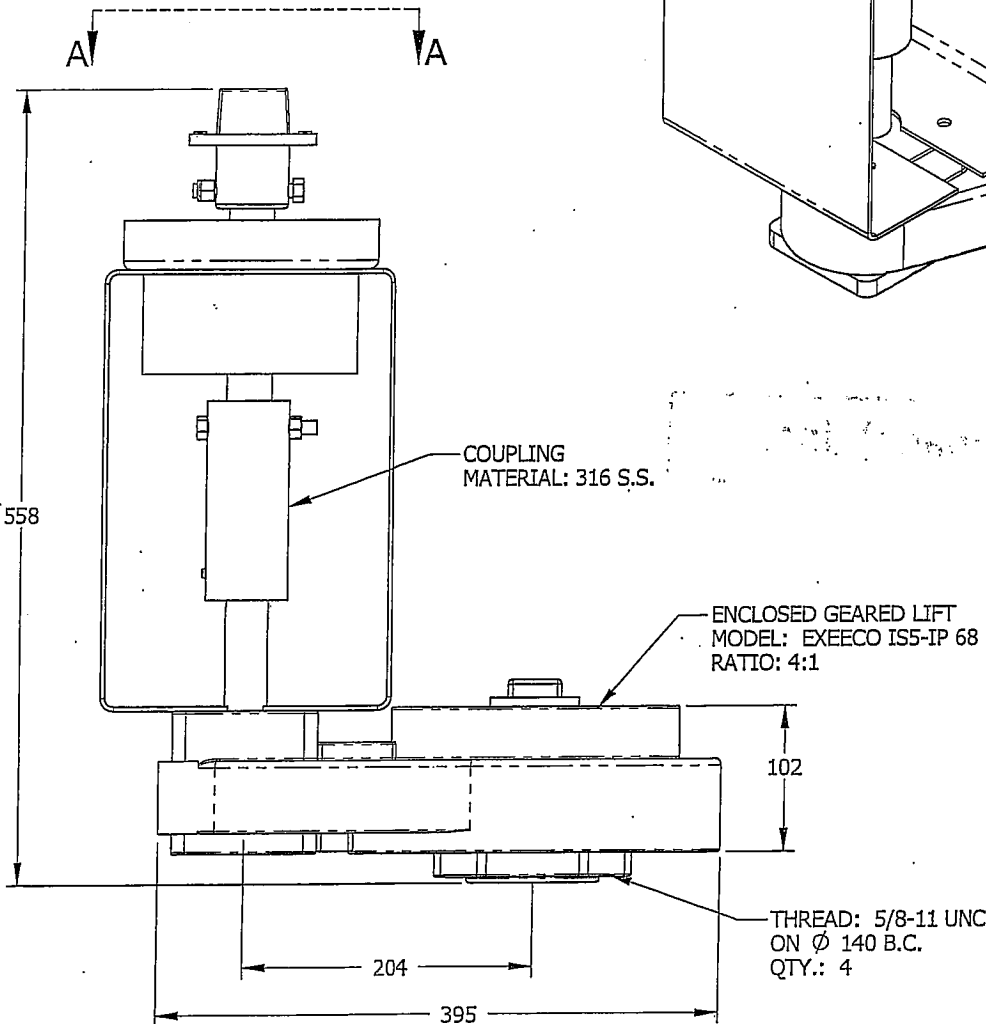
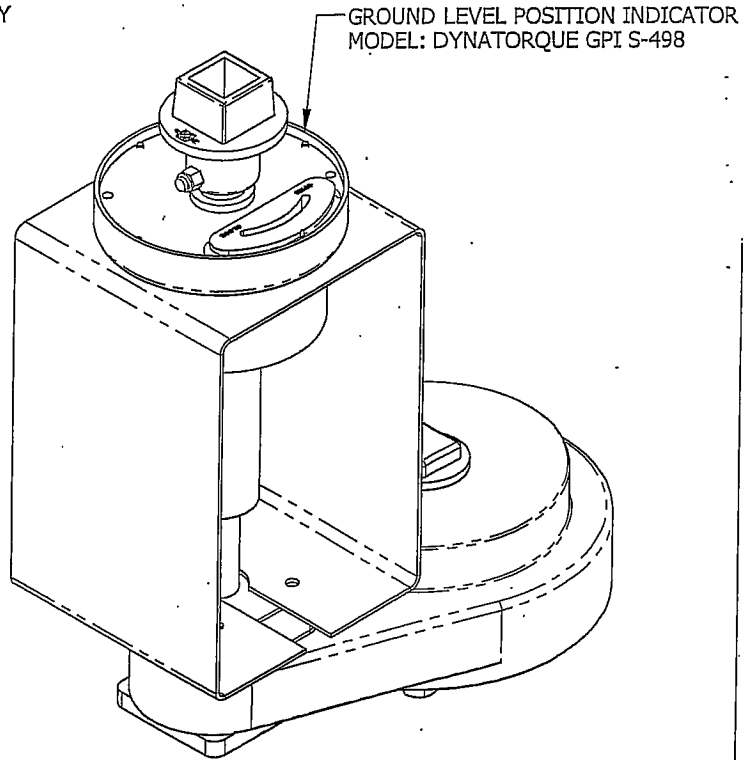
Fontaine

MODEL: 202-2000x1500-K-CW
MATERIAL: 316 S.S.
QTY: 1

IDENTIFICATION: SLG-P970A



SECTION A-A



See comments of previous page


Drawing is not to scale
All dimensions are in inches.



Tolerances: ±1/8

044

REVISION: A	2006/03/27
DRAWING No.: F067465-044	PAGE: 16

Earth Tech (Canada) Inc. 

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

Date: Apr. 13/06 By: SP for KAS

SERIES 20

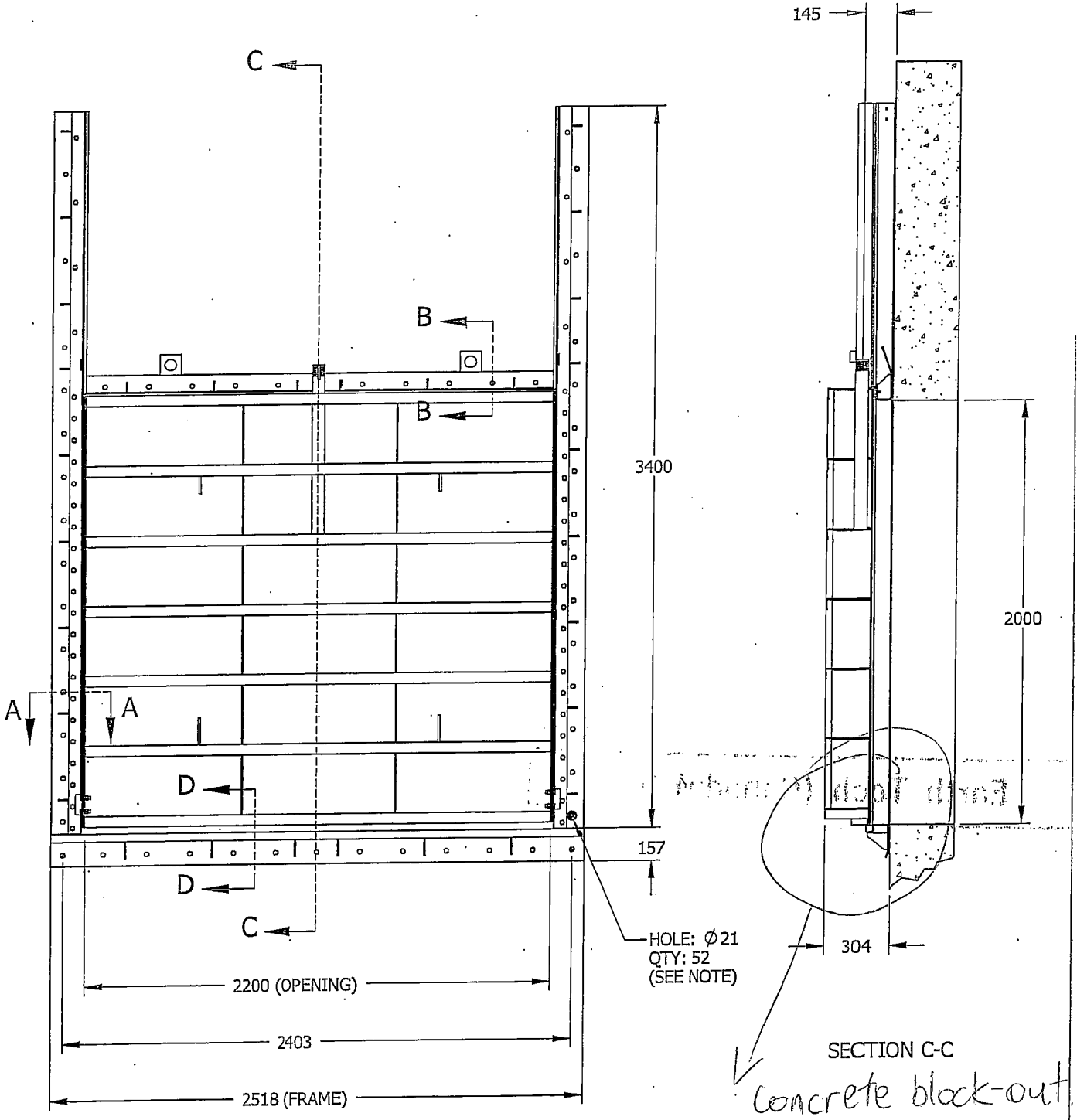
STAINLESS STEEL
SLUICE GATES
FLOW CONTROL SLUICE GATES



Fontaine

MODEL: 204-2200x2000-K-CW
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG-F001A



NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS ($\phi 16 \times 152$ LG.) ARE INCLUDED.

Drawing is not to scale
All dimensions are in millimeters



Tolerances: ± 3 mm

051

REVISION: A
DRAWING No.:
F067465-051

2006/03/21
PAGE:
17

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____ ✓

NOT REVIEWED _____

Project No. 79538-623-16

Date: Apr 12/06 By: SP for JNP

SERIES 20

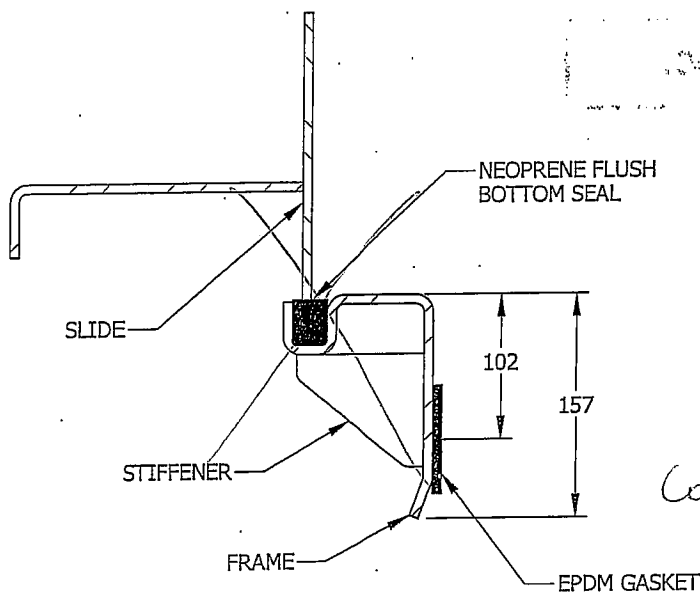
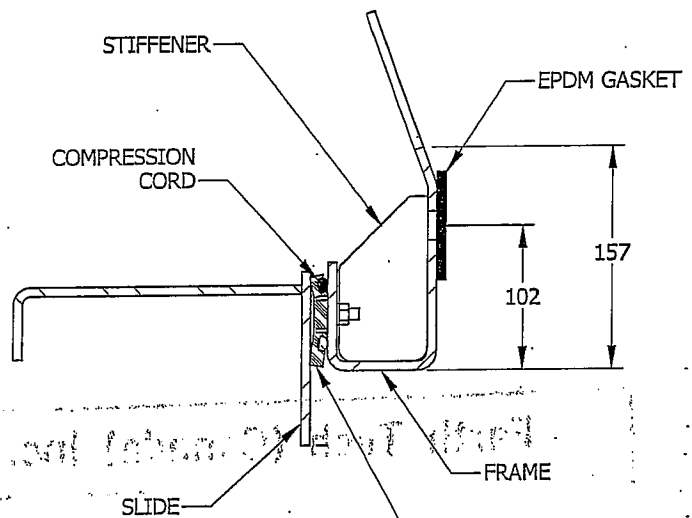
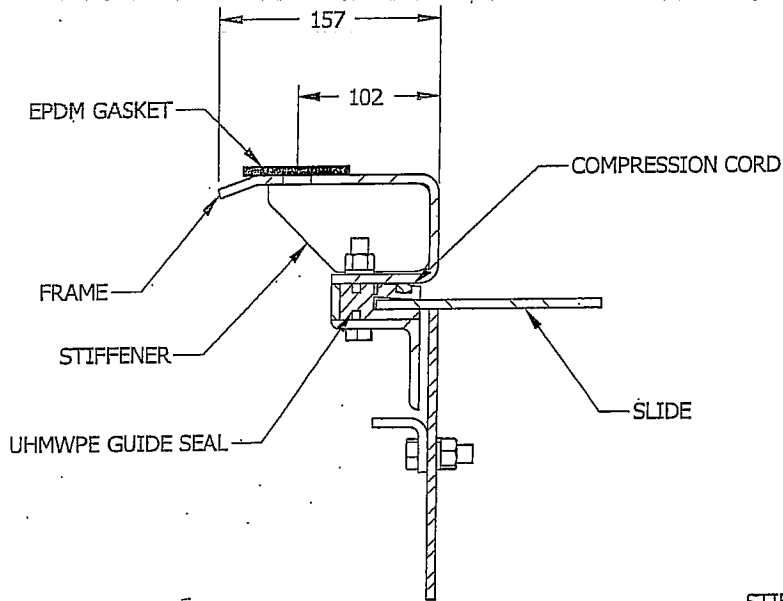
STAINLESS STEEL SLUICE GATES FLOW CONTROL SLUICE GATES



Fontaine

MODEL: 204-2200x2000-K-CW
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG-F001A



Concrete block-out.

Earth Tech (Canada) Inc. 

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED BY: _____

DATE REVIEWED: _____

REVIEWED FOR: _____

PROJECT NO.: _____

Project ID: 79538-C23-16

Date: April 12/06 By: SR for JMP

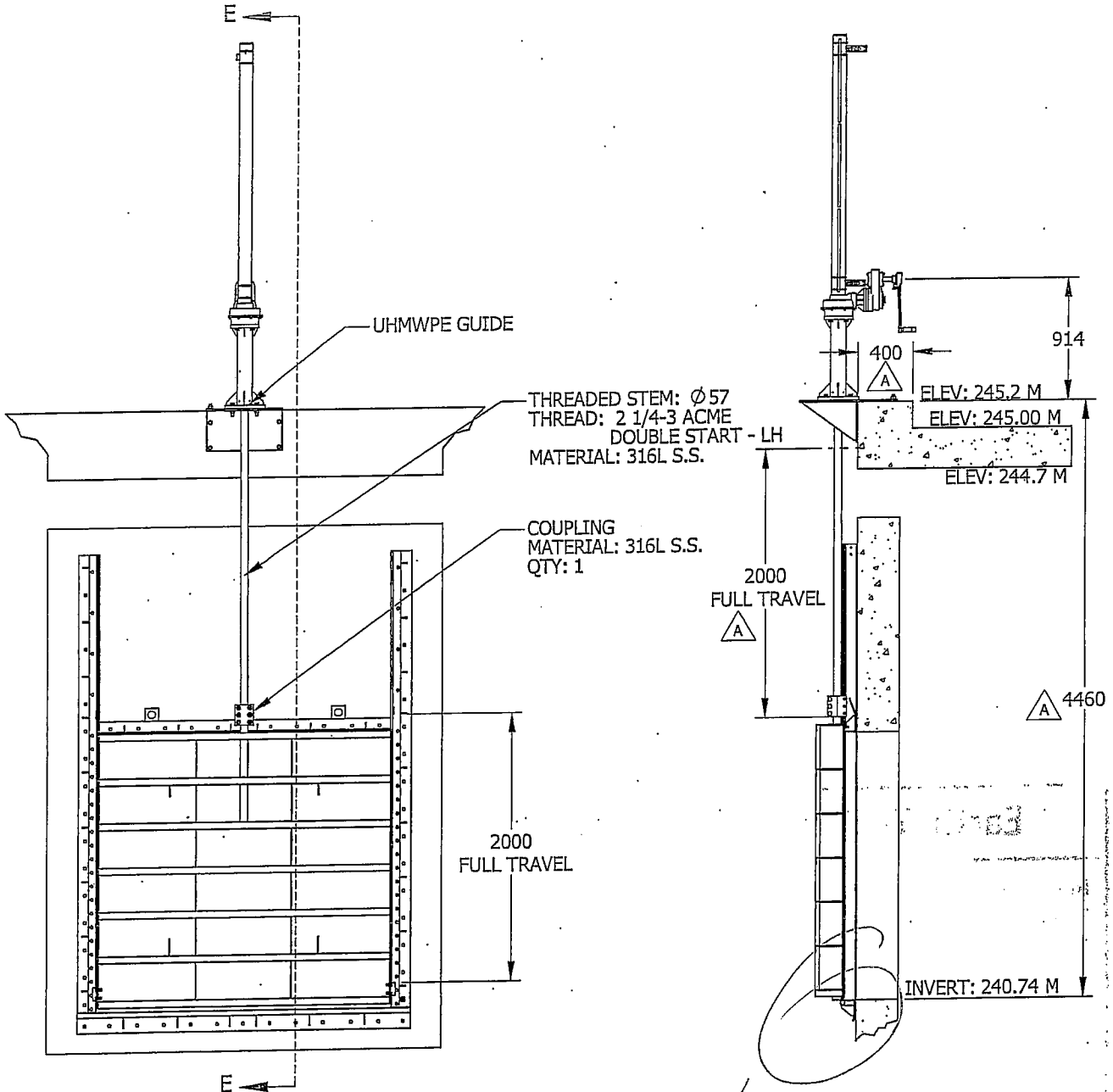
LIFTING STEM



MODEL: 204-2200x2000-K-CW
 MATERIAL: 316L S.S.
 QTY: 1

IDENTIFICATION: SLG-F001A

TYPE RS1 RISING STEM



APPROB-V204-2200-2000-K-CW-20-XXX-50-AG
 2006-03-22
 1 de 1
 S.Be.

Drawing is not to scale
 All dimensions are in millimeters



Tolerances: $\pm 3\text{mm}$

053

REVISION: A	2006/03/21
DRAWING No.: F067465-053	PAGE: 19

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

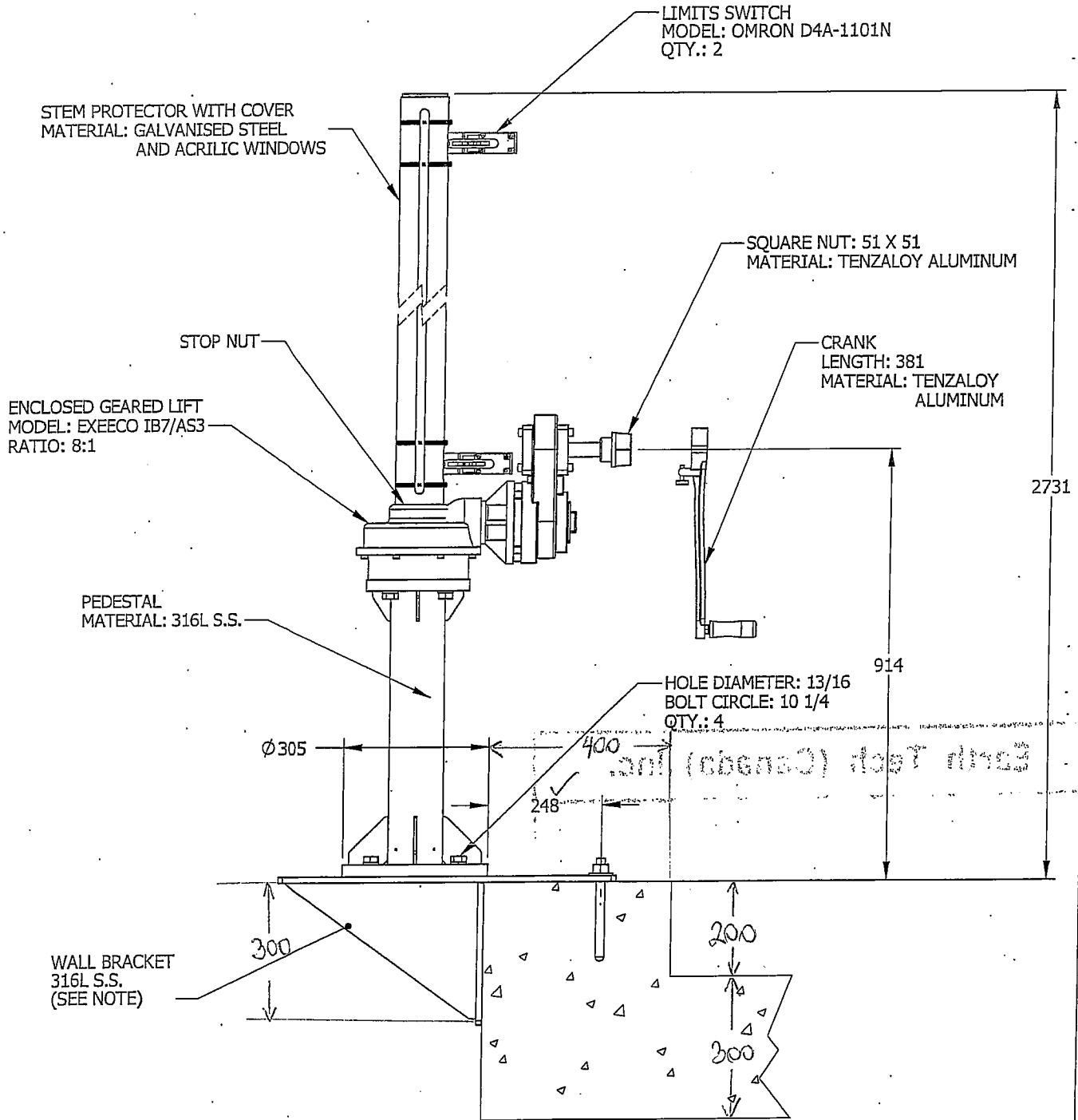
Date: April 12/06 by SP-lac JML



MODEL: 204-2200x2000-K-CW
 MATERIAL: 316L S.S.
 QTY: 1

IDENTIFICATION: SLG-F001A

CRANK WITH ENCLOSED GEARED LIFT ON PEDESTAL (MNEPH)



NOTE: 316 S.S. CHEMICAL ANCHOR BOLTS (ϕ 22 X 279 LG.)
 AND CARTRIDGES (168 LG.) ARE INCLUDED.

Earth Tech (Canada) Inc. *

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE - SUBMIT _____

NOT REVIEWED _____

Project No. 79538-023-16

Date: Apr 12/06 By: SP RAC TMLP

SERIES 20

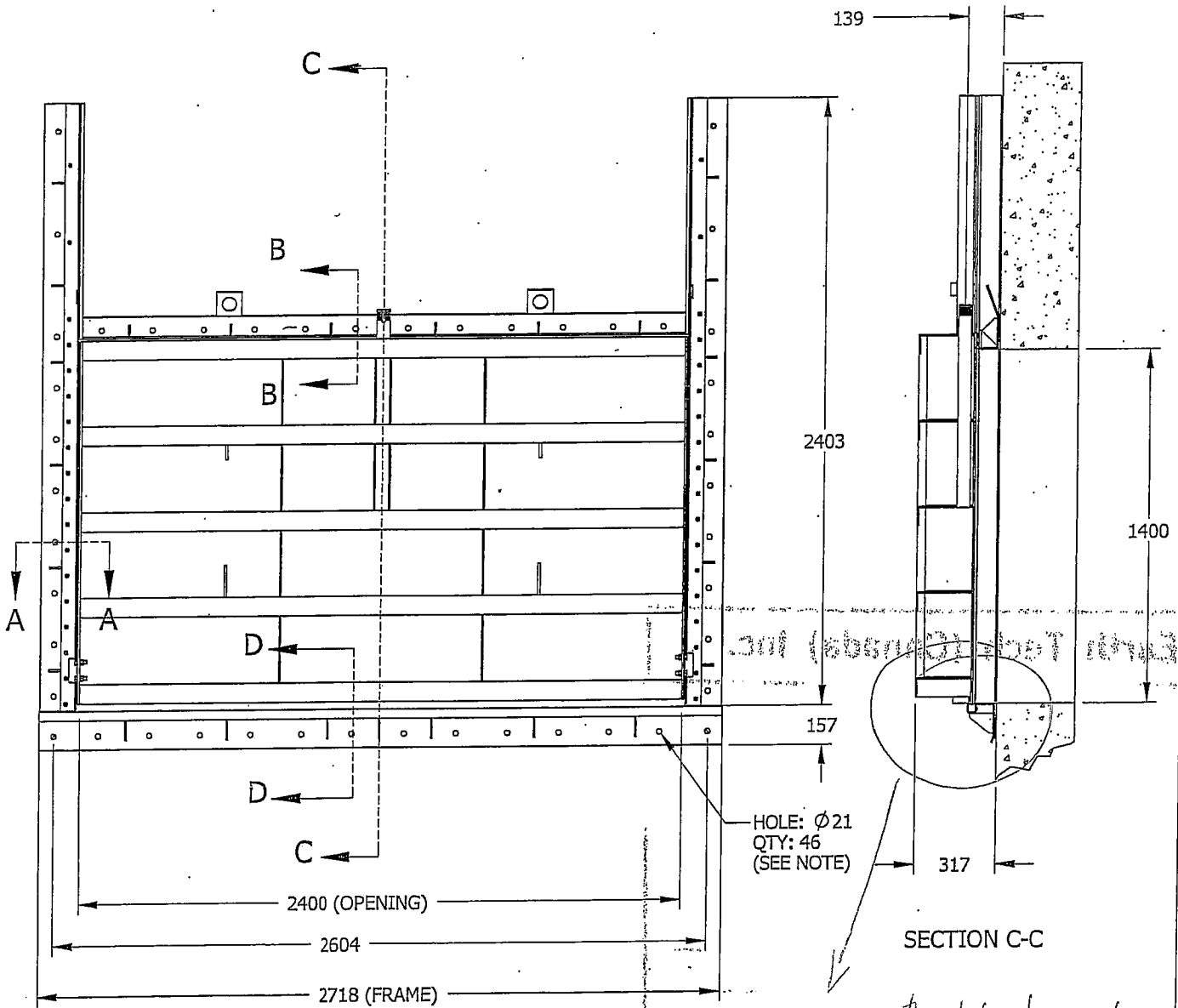
STAINLESS STEEL SLUICE GATES FLOW CONTROL SLUICE GATES



Fontaine

MODEL: 204-2400x1400-K-CW
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG - F053A



concrete block-out.

NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS (Ø 19 X 216 LG.) ARE INCLUDED.

Drawing is not to scale
All dimensions are in millimeters



Tolerances: ± 3mm

061

REVISION: A	2006/03/20
DRAWING No.: F067465-061	PAGE: 21

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

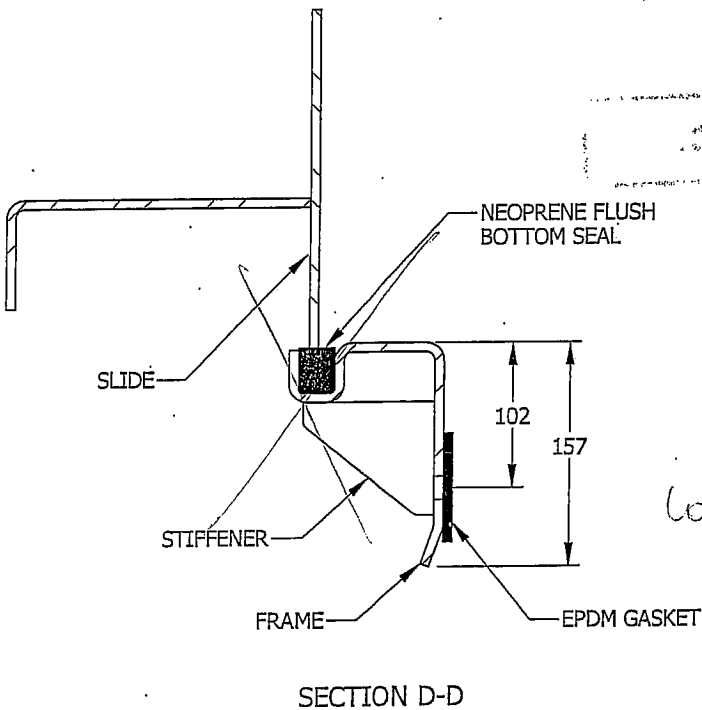
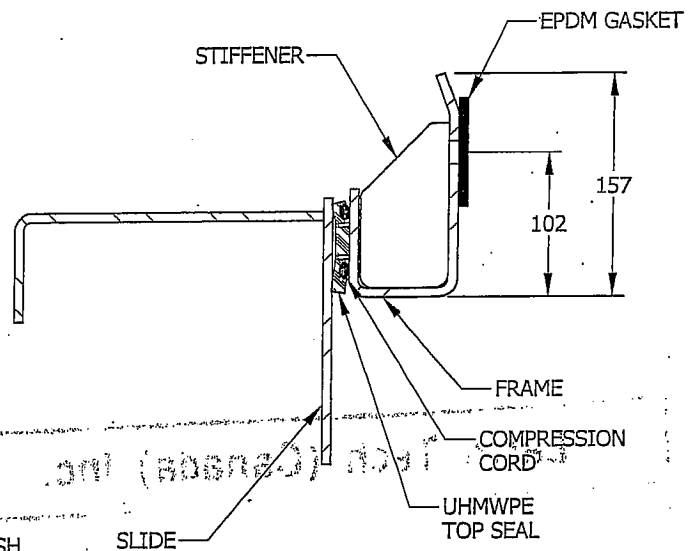
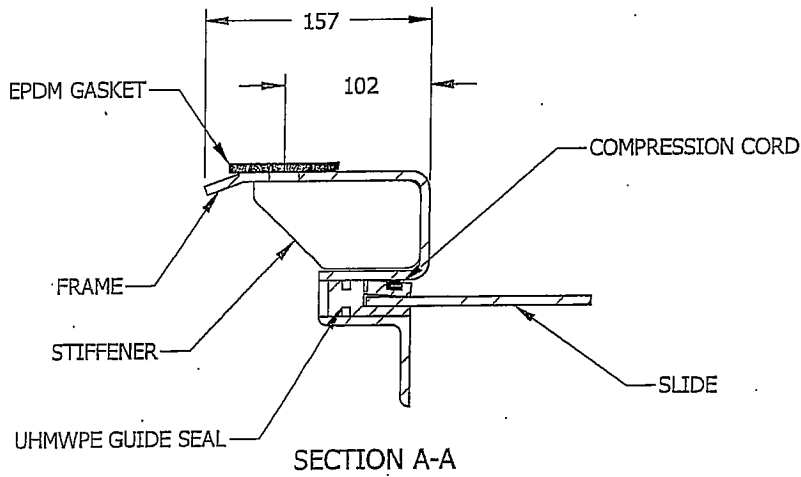
Project No. 79538-C23-16

Date: Apr 12/06 By: SP for JMC




MODEL: 204-2400x1400-K-CW
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG - F053A



Concrete block-out

 **Earth Tech (Canada) Inc.**

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and resolution of field
dimensions, fit and finish, and for the
construction and installation of all
parts of the work rests with the Contractor.

REVIEWED _____
REVIEWED _____
REVIEWED _____ ✓
NOT REVIEWED _____

Project No. 79538-C23-16
Date: Apr. 12/06 By: SP for JAY

SERIES 20

STAINLESS STEEL
SLUICE GATES
FLOW CONTROL SLUICE GATES

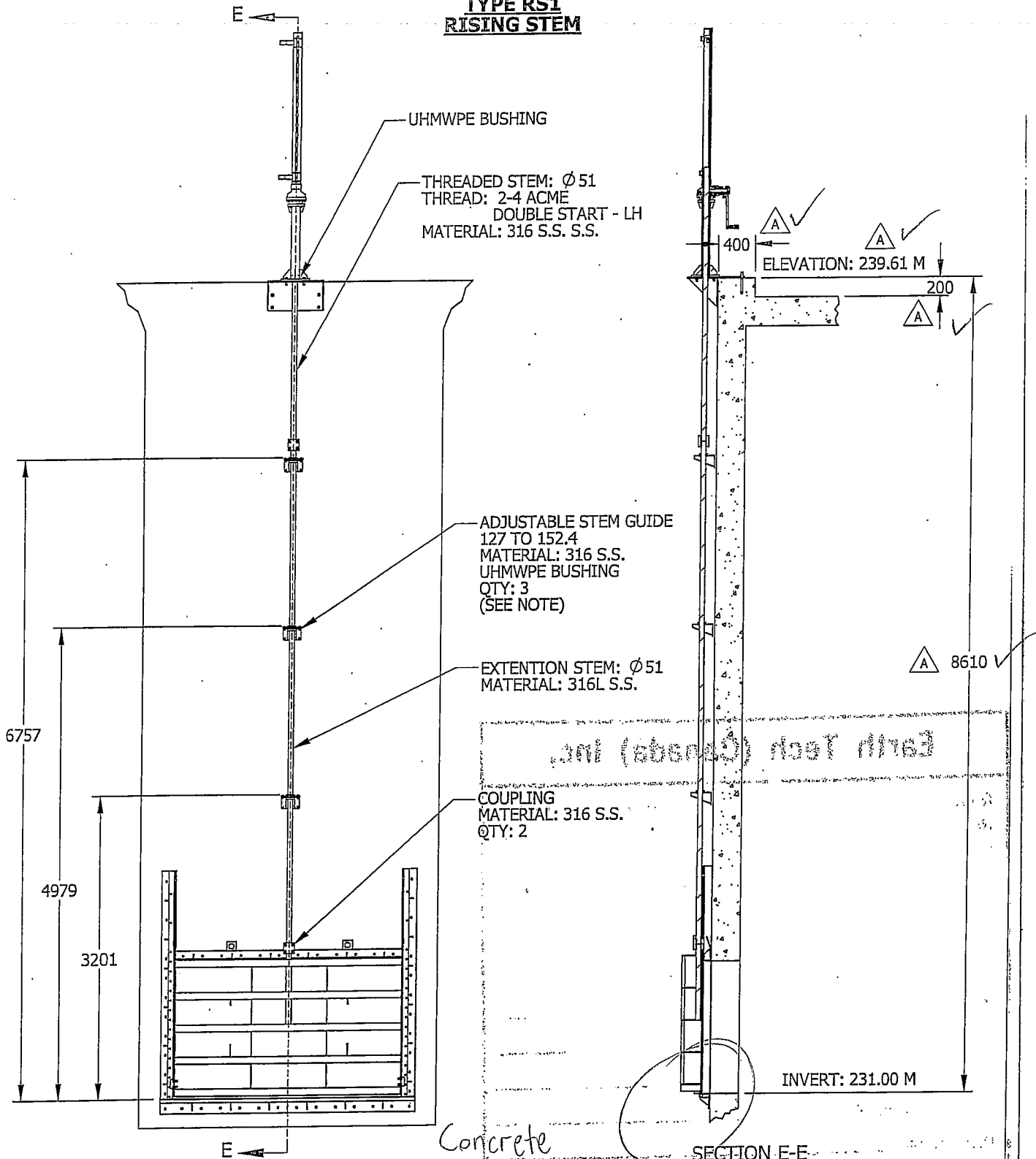


Fontaine

MODEL: 204-2400x1400-K-CW
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG - F053A

TYPE RS1 RISING STEM



NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS (Ø 10 X 95 LG.) ARE INCLUDED.

REVISION: A 2006/03/20

DRAWING No.: F067465-063

PAGE: 23

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

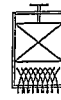
REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

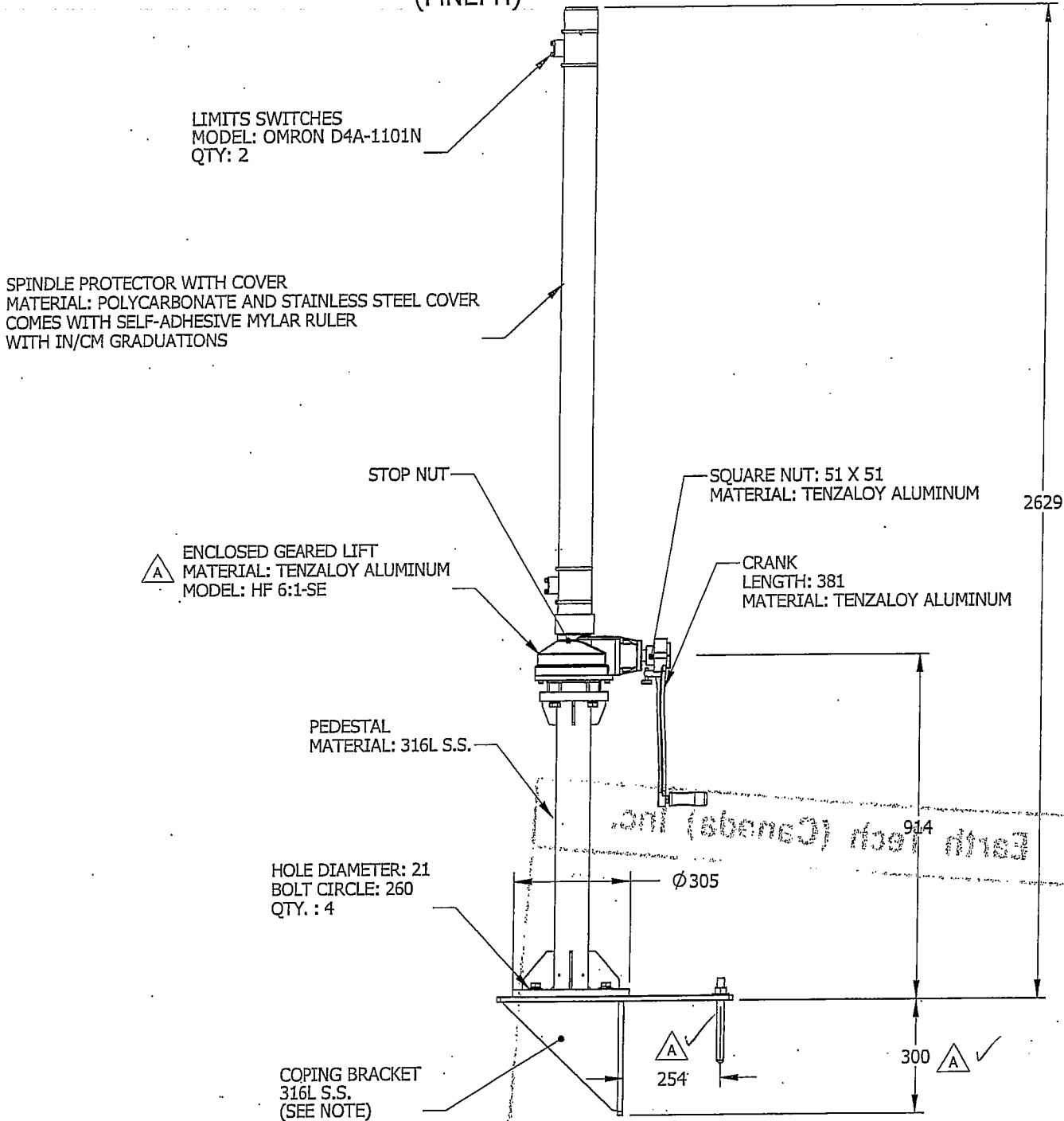
Date: Apr-12/06 By: SP for JWP



MODEL: 204-2400x1400-K-CW
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG - F053A

**CRANK WITH ENCLOSED
GEARED LIFT ON PEDESTAL
(MNEPH)**



NOTE: 316 S.S. CHEMICAL ANCHOR BOLTS (Ø 19 X 216 LG)
AND CARTRIDGES (168 LG) ARE INCLUDED.

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsible for verification and correlation of field
conditions with design and construction of
components and details. Verification of all
components and details with the contractor.

- REVIEWED _____
- REVIEWED AND APPROVED _____
- REVISED AND RE-SUBMIT _____
- NOT REVIEWED _____

Project No. 79538-023-16
Date: Apr. 12/06 By: SP for JMP

SERIES 20

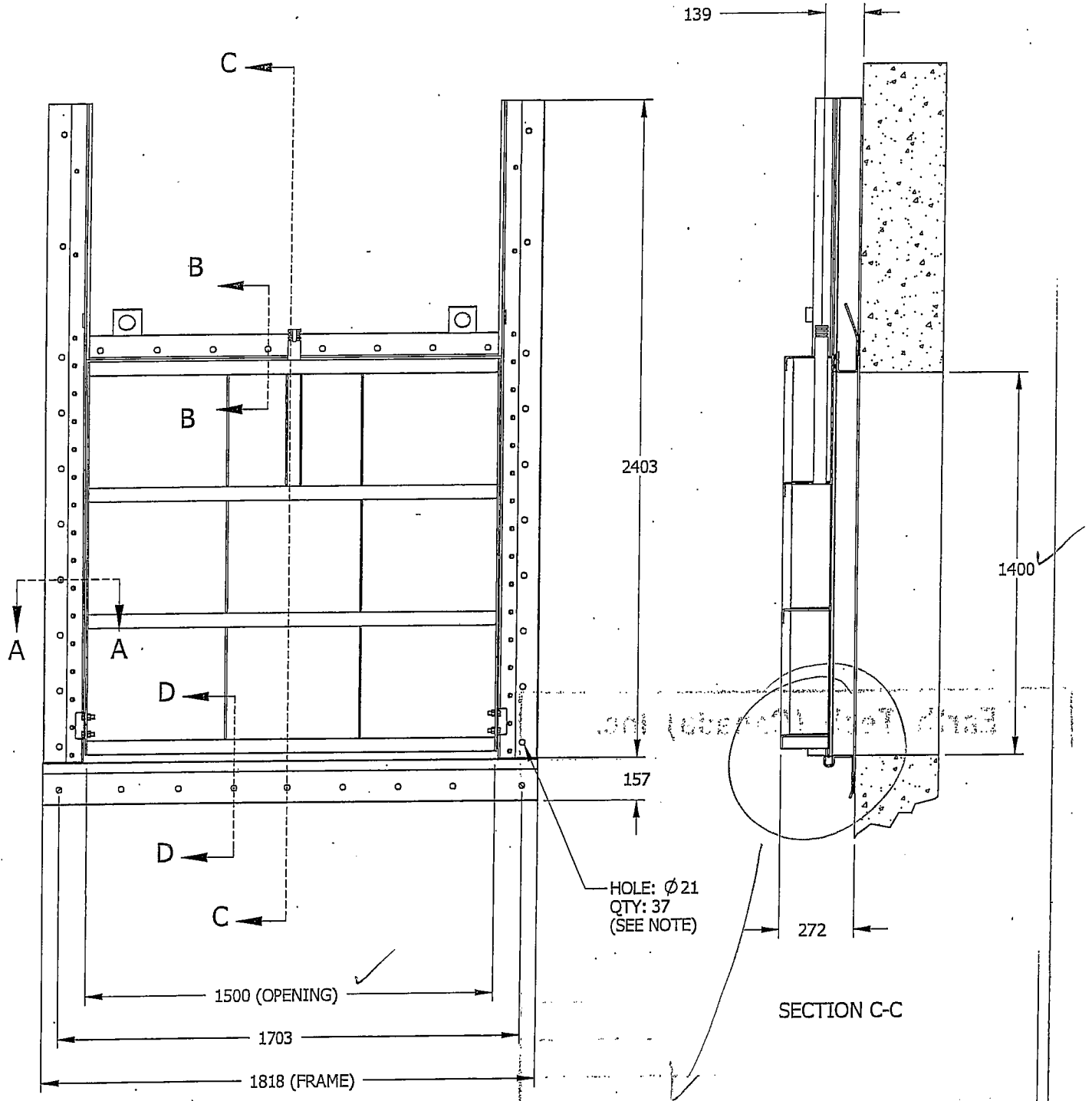
STAINLESS STEEL
SLUICE GATES
FLOW CONTROL SLUICE GATES



Fontaine

MODEL: 204-1500x1400-K-CW
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG - F054A



Concrete block-out

NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS (Ø 13 X 140 LG.) ARE INCLUDED.

Drawing is not to scale
All dimensions are in millimeters



Tolerances: ± 3mm

071

REVISION: A
DRAWING No.:
F067465-071

2006/03/23
PAGE:
25

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication errors, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

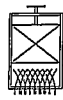
NOT REVIEWED _____

Project No. 79538-C23-16

Date: Apr. 12/06 By: SP for TMP

SERIES 20

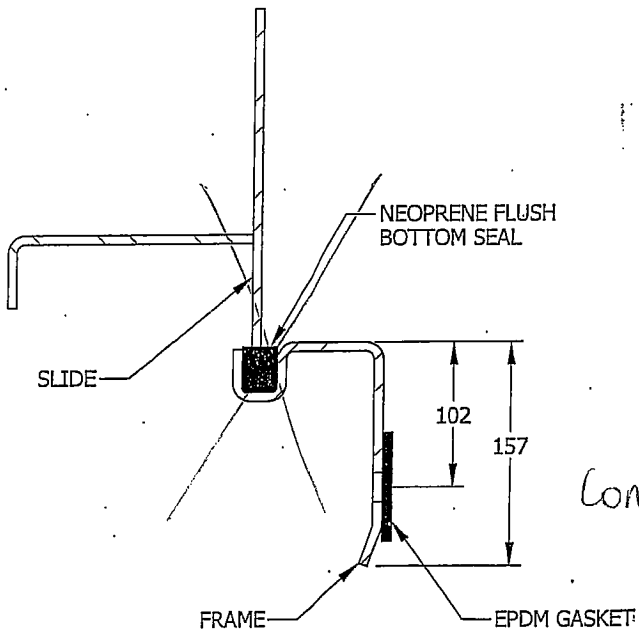
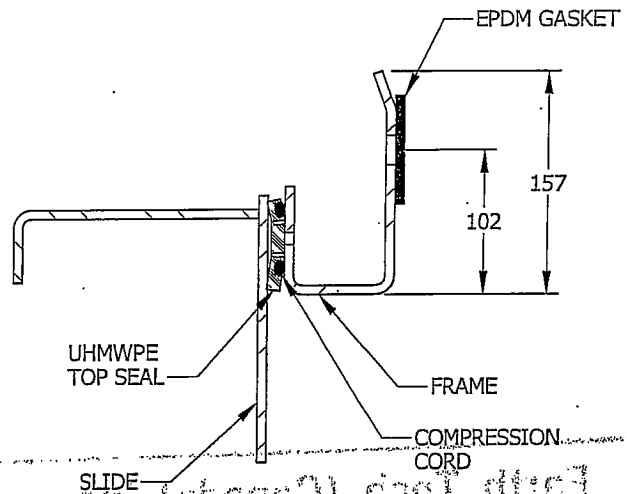
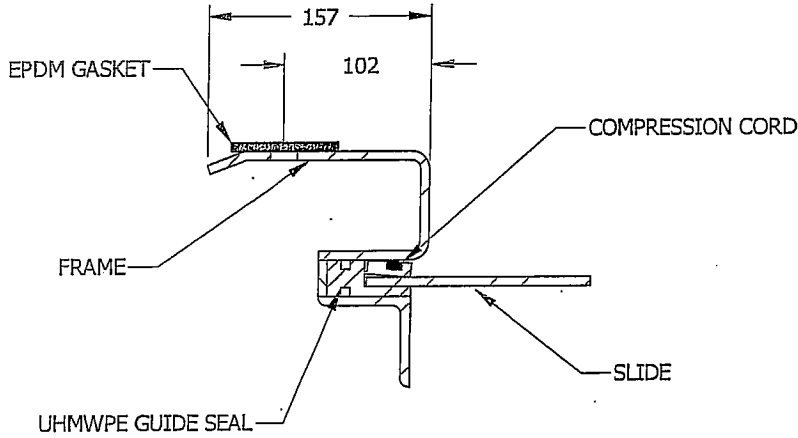
STAINLESS STEEL
SLUICE GATES
FLOW CONTROL SLUICE GATES



Fontaine

MODEL: 204-1500x1400-K-CW
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG - F054A



Concrete block-out

Earth Tech (Canada) Inc. ❁

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-023-16

Date: Apr. 12/06 By: SP for JNP

SERIES 20

STAINLESS STEEL
SLUICE GATES
FLOW CONTROL SLUICE GATES

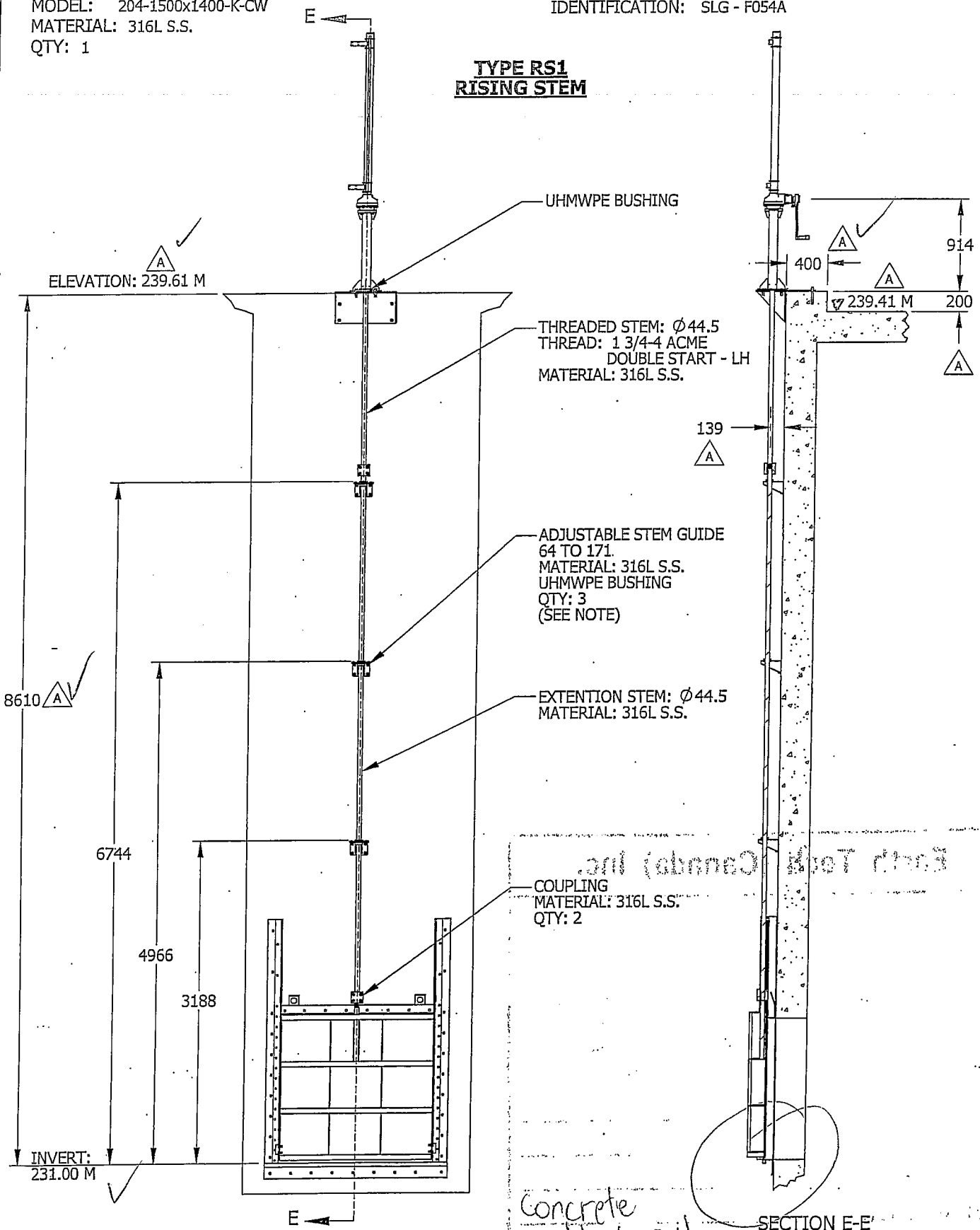


Fontaine

MODEL: 204-1500x1400-K-CW
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG - F054A

TYPE RS1 RISING STEM



NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS ($\phi 10$ X 95 LG.) ARE INCLUDED.

Drawing is not to scale
All dimensions are in millimeters



Tolerances: ± 3 mm

REVISION: A 2006/03/23

DRAWING No.: F067465-073
PAGE: 27

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

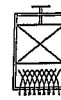
REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

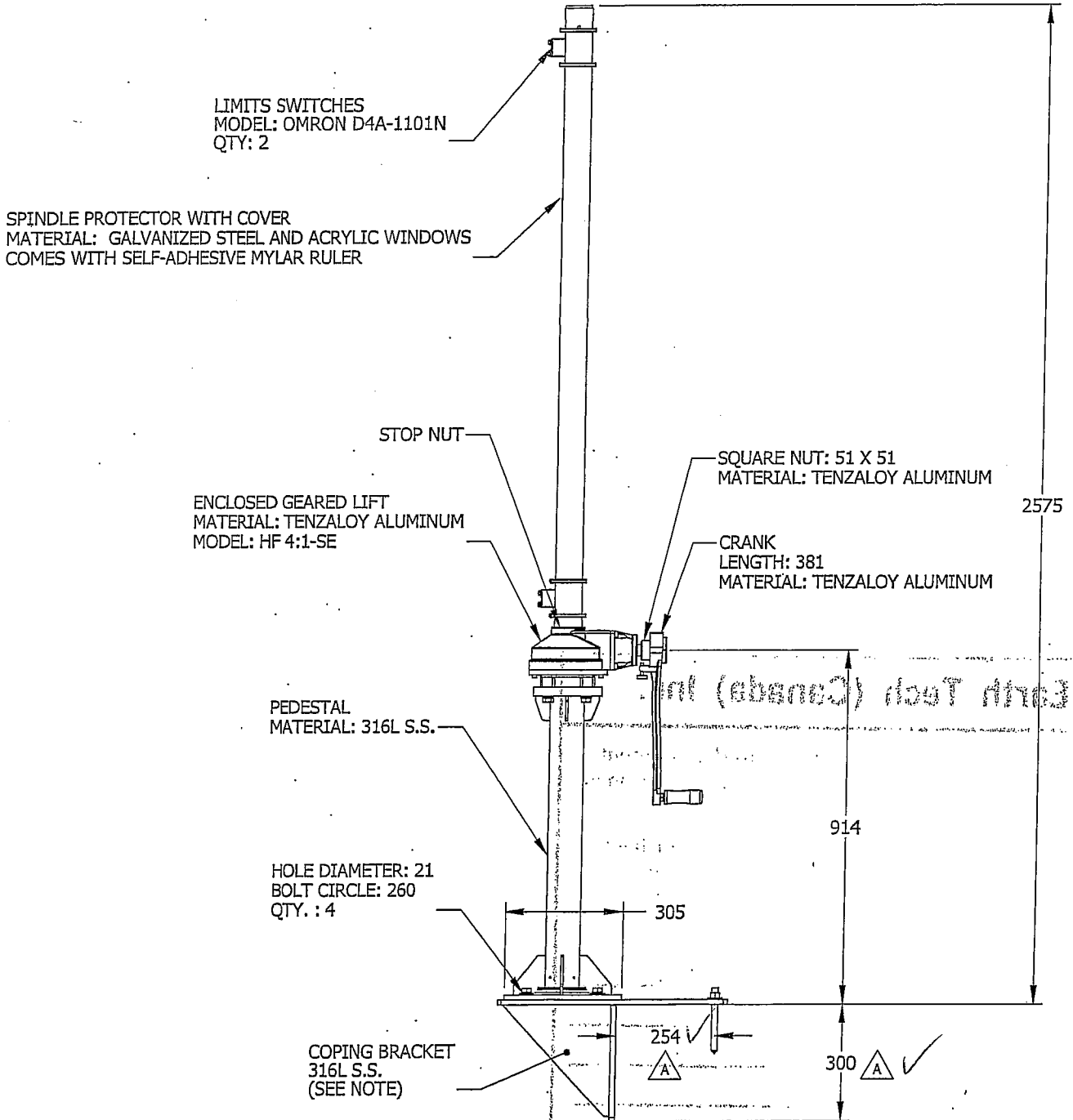
Date: Apr 12/06 By: SP/for Jnt



MODEL: 204-1500x1400-K-CW
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG - F054 *A*

CRANK WITH ENCLOSED GEARED LIFT ON PEDESTAL (MNEPH)



NOTE: 316 S.S. CHEMICAL ANCHOR BOLTS (ϕ 16 X 216 LG)
AND CARTRIDGES (168 LG) ARE INCLUDED.

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AND MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-023-16

Date: Apr 12/06 By: SPubrcJHP

SERIES 20

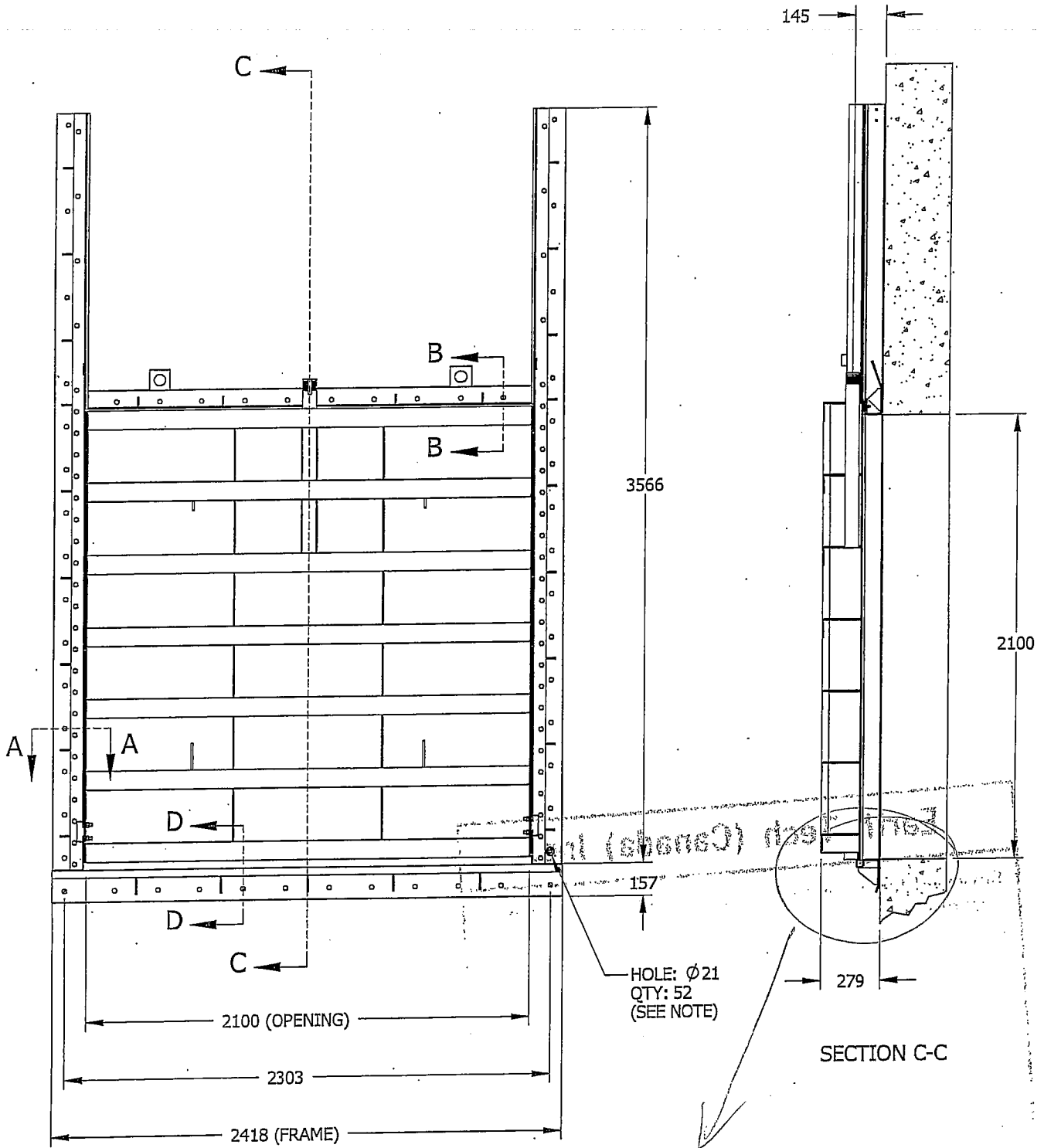
STAINLESS STEEL
SLUICE GATES
FLOW CONTROL SLUICE GATES



Fontaine

MODEL: 204-2100x2100-K-CW
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG-F055A



Concrete block-out.

NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS (Ø 16 X 152 LG.) ARE INCLUDED.

Drawing is not to scale
All dimensions are in millimeters



Tolerances: ± 3mm

081

REVISION: A	2006/03/23
DRAWING No.: F067465-081	PAGE: 29

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Responsibility for verification and correlation of field
dimensions, for the process, techniques of
construction, installation and coordination of all
parts of the work, rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

Date: Apr 12/06 By: SPJ for JNUP

SERIES 20

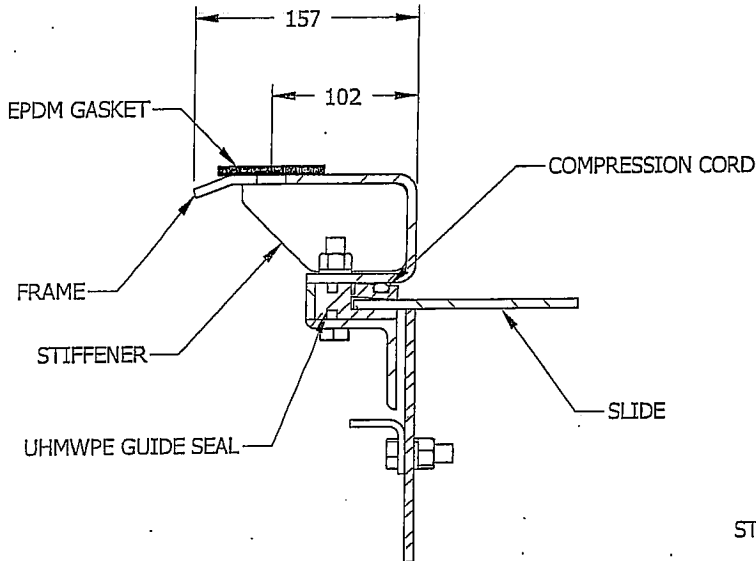
STAINLESS STEEL
SLUICE GATES
FLOW CONTROL SLUICE GATES



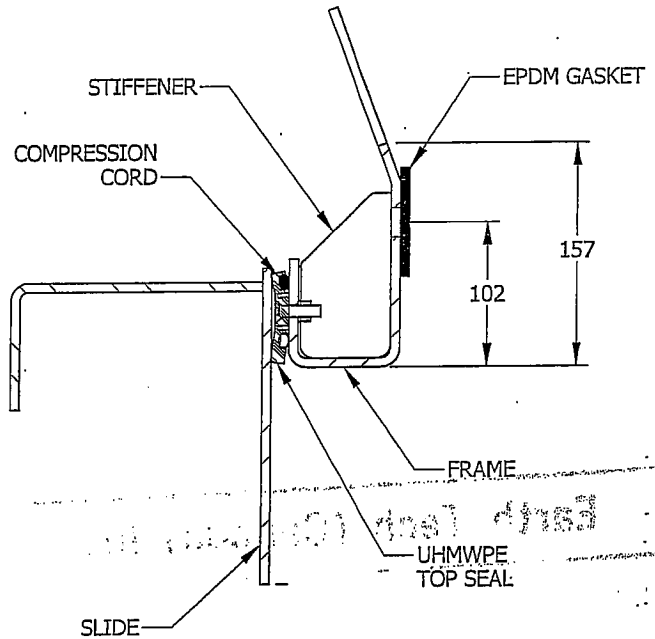
Fontaine

MODEL: 204-2100x2100-K-CW
MATERIAL: 316L S.S.
QTY: 1

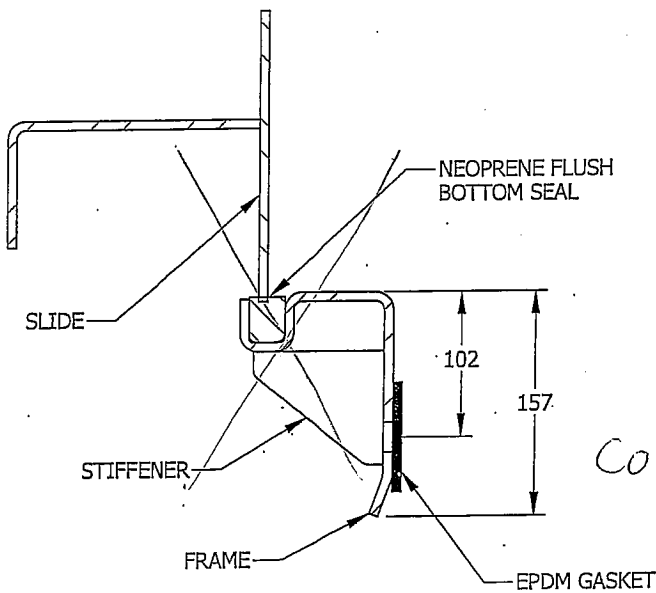
IDENTIFICATION: SLG-F055A



SECTION A-A



SECTION B-B



SECTION D-D

concrete block-out.

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
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dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

Date: Apr 12/06 By: SP for TNP

LIFTING STEM

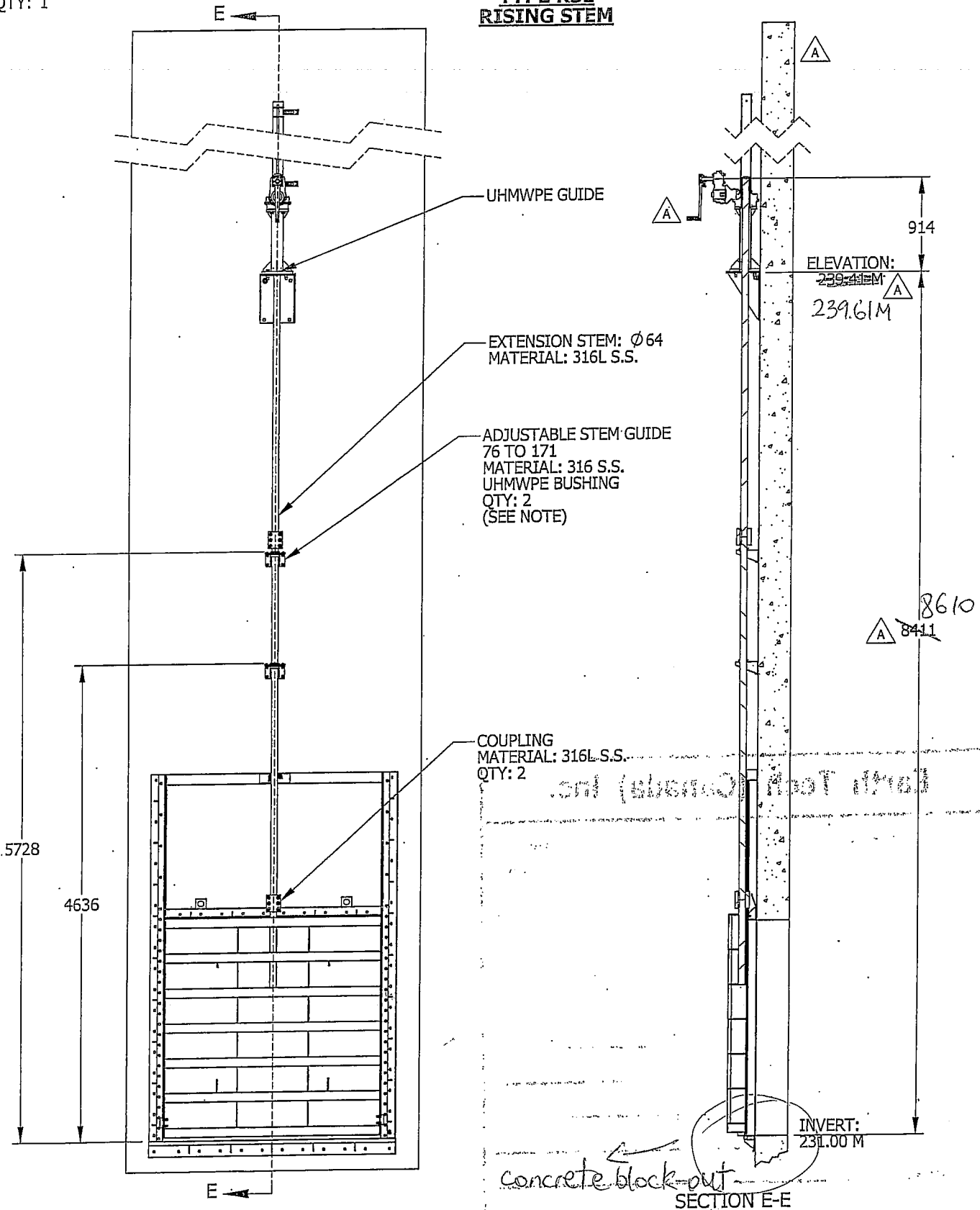


Fontaine

MODEL: 204-2100x2100-K-CW
 MATERIAL: 316L S.S.
 QTY: 1

IDENTIFICATION: SLG-F055A

TYPE RS1 RISING STEM



NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS ($\phi 10 \times 95$ LG.) ARE INCLUDED:

REVISION: A	2006/03/23
DRAWING No.: F067465-083	PAGE: 31

Drawing is not to scale
 All dimensions are in millimeters



Tolerances: ± 3 mm

083

APPROB-V2014 2200_K CW 20 XXX 50 AG

2006-03-23

1 de 1

S.Be.

Earth Tech (Canada) Inc.

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dimensions, fabrication process, techniques of
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parts of the work rests with the Contractor.

REVIEWED _____

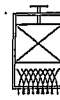
REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

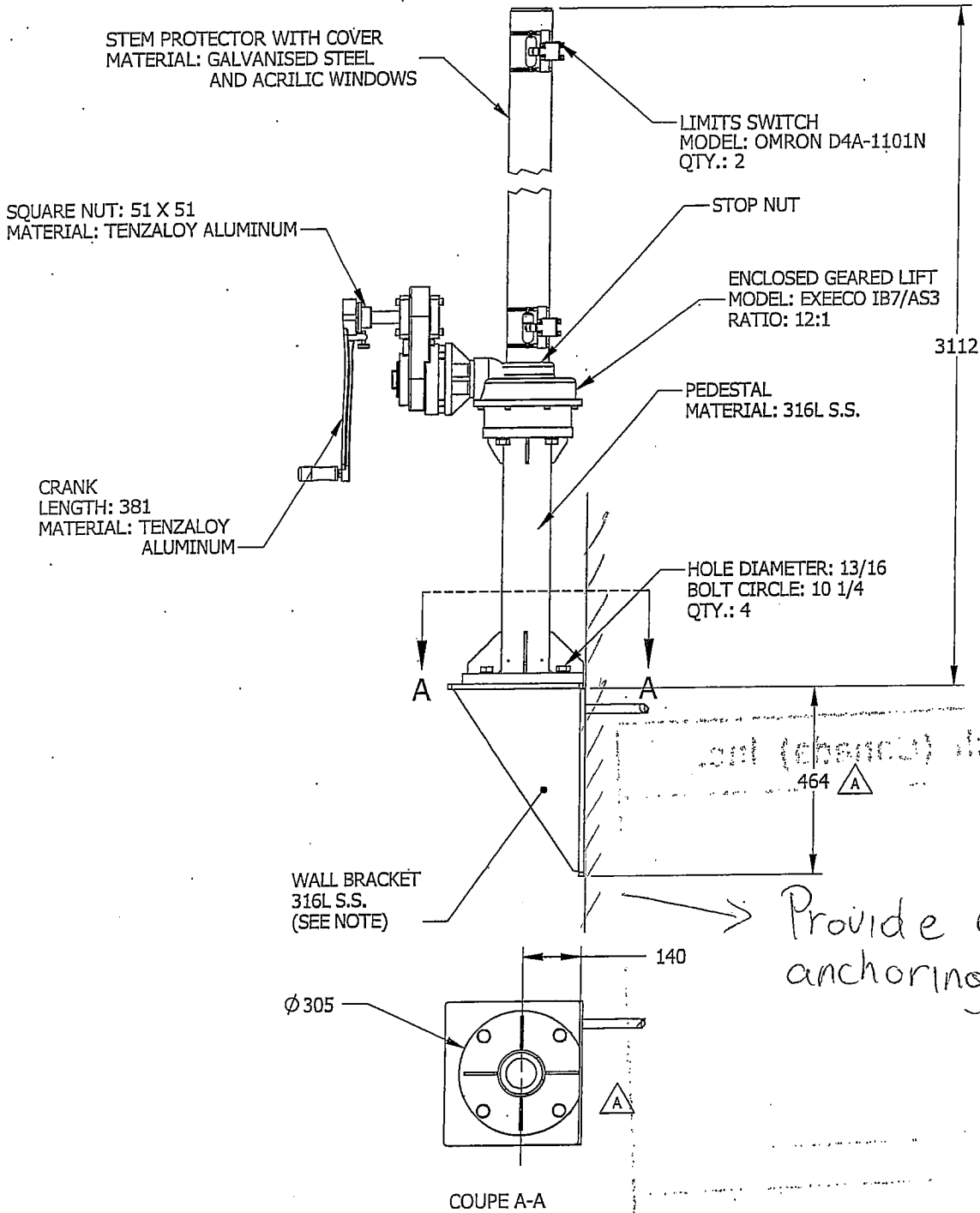
Date: Apr. 12/06 By: SP for JMLP



MODEL: 204-2100x2100-K-CW
MATERIAL: 316L S.S.
QTY: 1

IDENTIFICATION: SLG-F055A

CRANK WITH ENCLOSED GEARED LIFT ON PEDESTAL (MNEPH)



NOTE : 316 S.S. CHEMICAL ANCHOR BOLTS ($\phi 22$ X 279 LG)
AND CARTRIDGES (168 LG) ARE INCLUDED.

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
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dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

Date: April 12/06 By: SP Johnson

SERIES 20

STAINLESS STEEL SLUICE GATES FLOW CONTROL SLUICE GATES



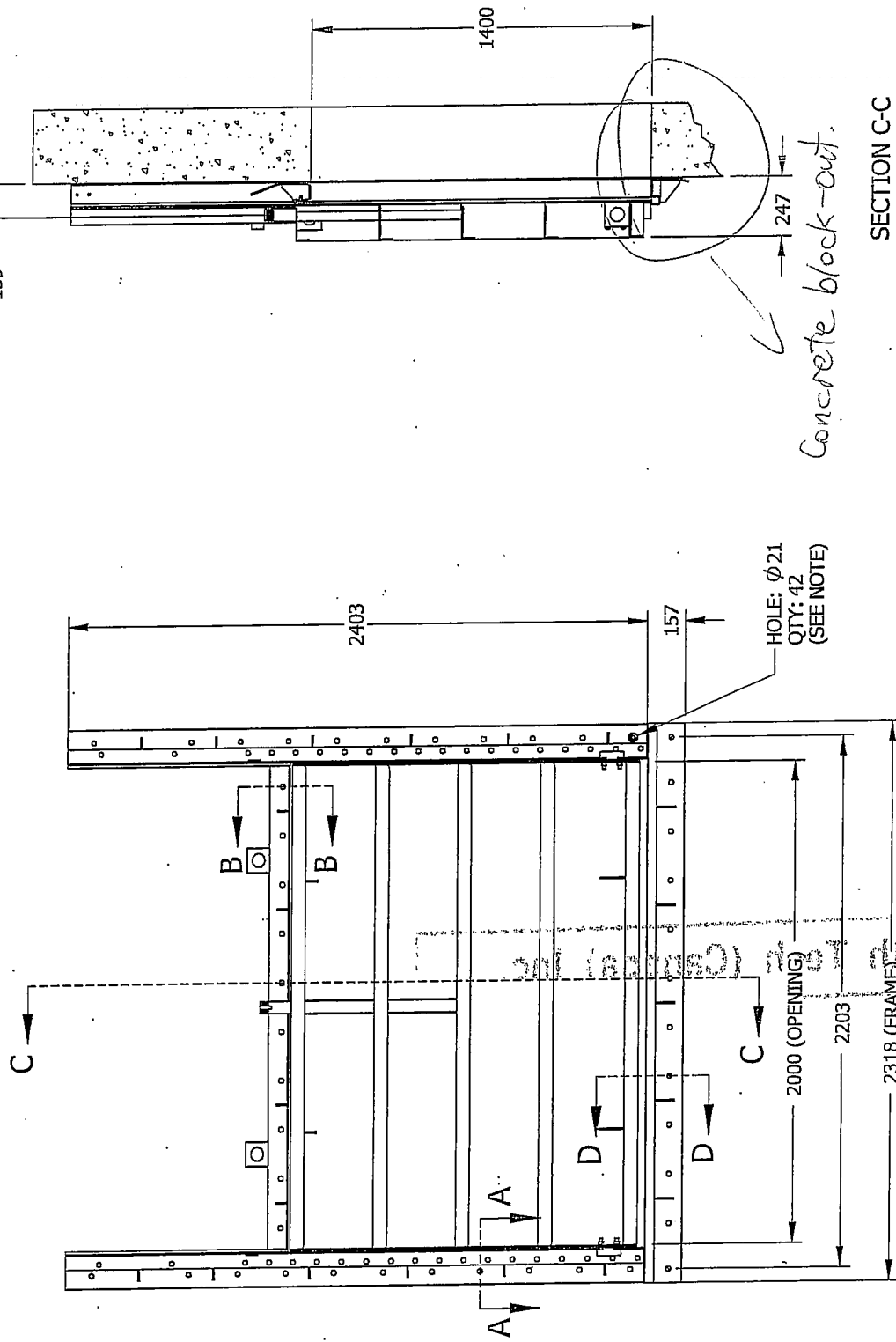
Fontaine

MODEL: 204-2000x1400-K-CW

MATERIAL: 316L S.S.

QTY: 2

IDENTIFICATION: SLG-0210A
SLG-0230A



NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS ($\phi 16 \times 152$ LG.) ARE INCLUDED.

Drawing is not to scale
All dimensions are in millimeters.



Projection

Tolerances: ± 3 mm.

091

DRAWING No.: F067465-091

PAGE:

REVISION: A 2006/03/21

33

Earth Tech (Canada) Inc. 

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rests with the Contractor.

Responsibility for verification and correlation of field
data, construction process, techniques of
construction, and coordination of all
work rests with the Contractor.

DATE REVIEWED _____

BY: PERMIT

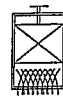
DATE REVIEWED _____

Project No. 79538-C23-16

Date: Apr 12/06 By: SPJ for JMC

SERIES 20

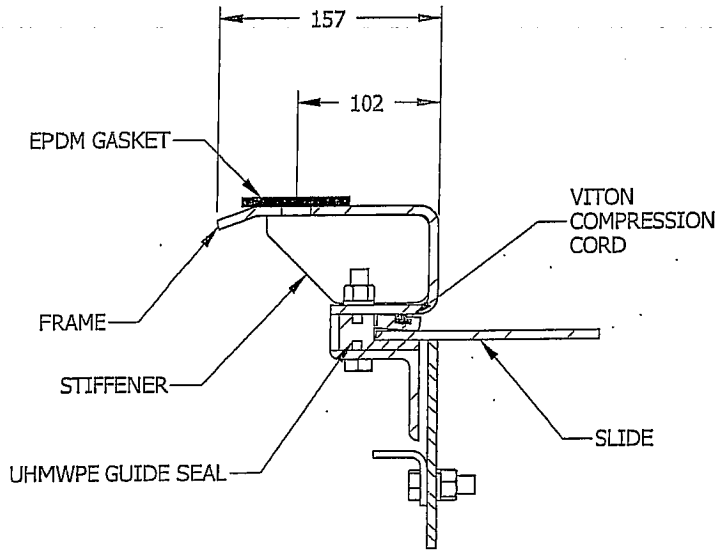
STAINLESS STEEL SLUICE GATES FLOW CONTROL SLUICE GATES



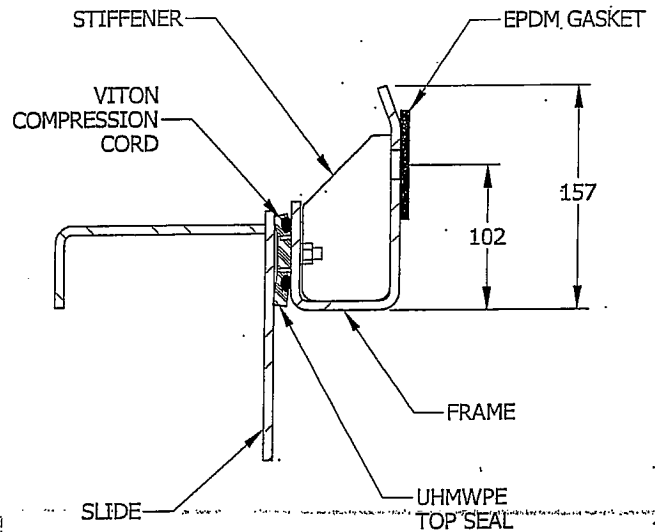
Fontaine

MODEL: 204-2000x1400-K-CW
 MATERIAL: 316L S.S.
 QTY: 2

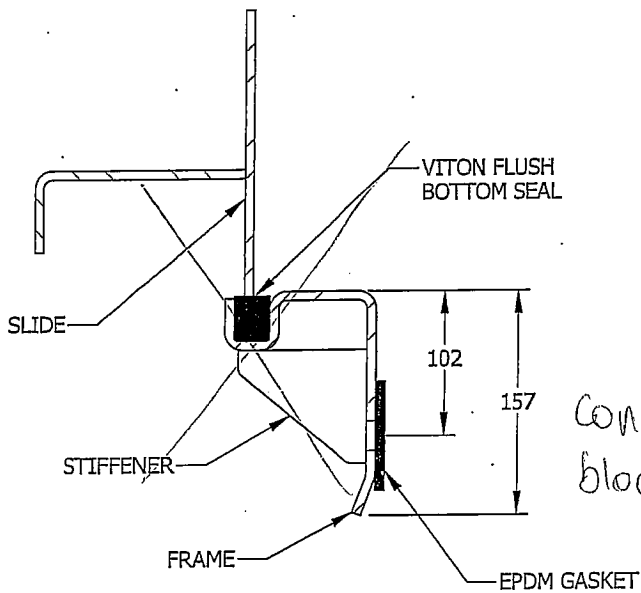
IDENTIFICATION: SLG-0210A
 SLG-0230A



SECTION A-A




SECTION B-B



SECTION D-D

*Concrete
block-out.*

 Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
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dimensions, fabrication process, techniques of
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parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED FOR MECHANICAL _____

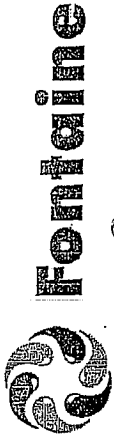
REVIEWED FOR ELECTRICAL _____ ✓

NOT REVIEWED _____

Project No. 79538-C23-16

Date: Apr 12/06 By: SP for JMK

LIFTING STEM

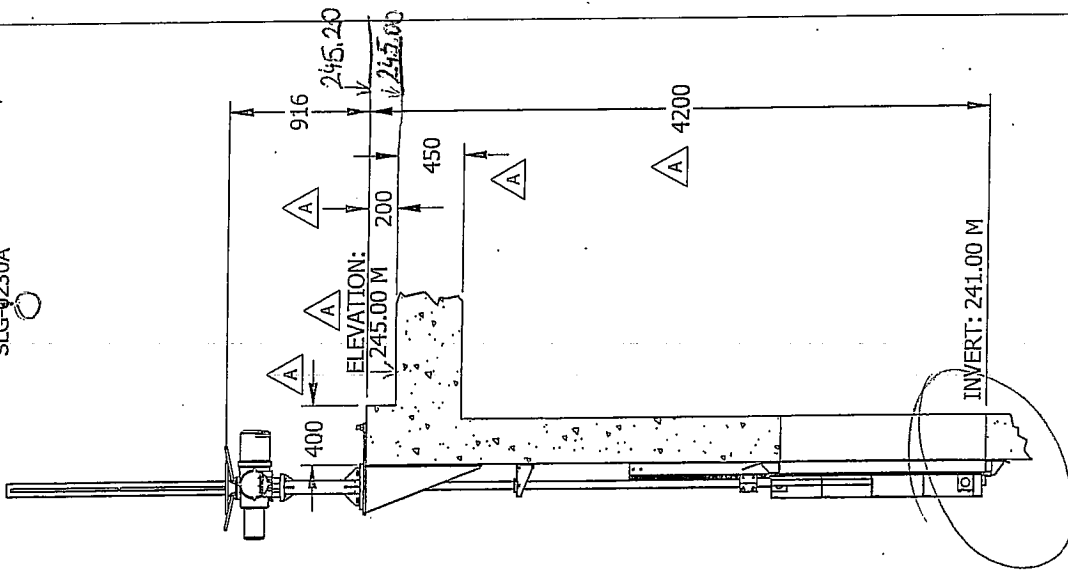


MODEL: 204-2000 x1400-K-CW
 MATERIAL: 316L S.S.
 QTY: 2

IDENTIFICATION: SLG-0210A
 SLG-0230A

TYPE RS1 RISING STEM

- UHMWPE GUIDE
- THREADED STEM: $\phi 51$
 THREAD: 2-4 ACME
 DOUBLE START - LH
 MATERIAL: 316L S.S.
- ADJUSTABLE STEM GUIDE
 76 TO 171
 MATERIAL: 316 S.S.
 UHMWPE BUSHING
 QTY: 1
 (SEE NOTE)
- COUPLING
 MATERIAL: 316L S.S.
 QTY: 1



SECTION E-E

NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS ($\phi 10 \times 95$ LG.) ARE INCLUDED.

Drawing is not to scale
 All dimensions are in millimeters.



Tolerances: ± 3 mm.

093

REVISION: A
 DRAWING NO.: F067465-093

2006/03/21

PAGE:

35

Earth Tech (Canada) Inc.

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rests with the Contractor.

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REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

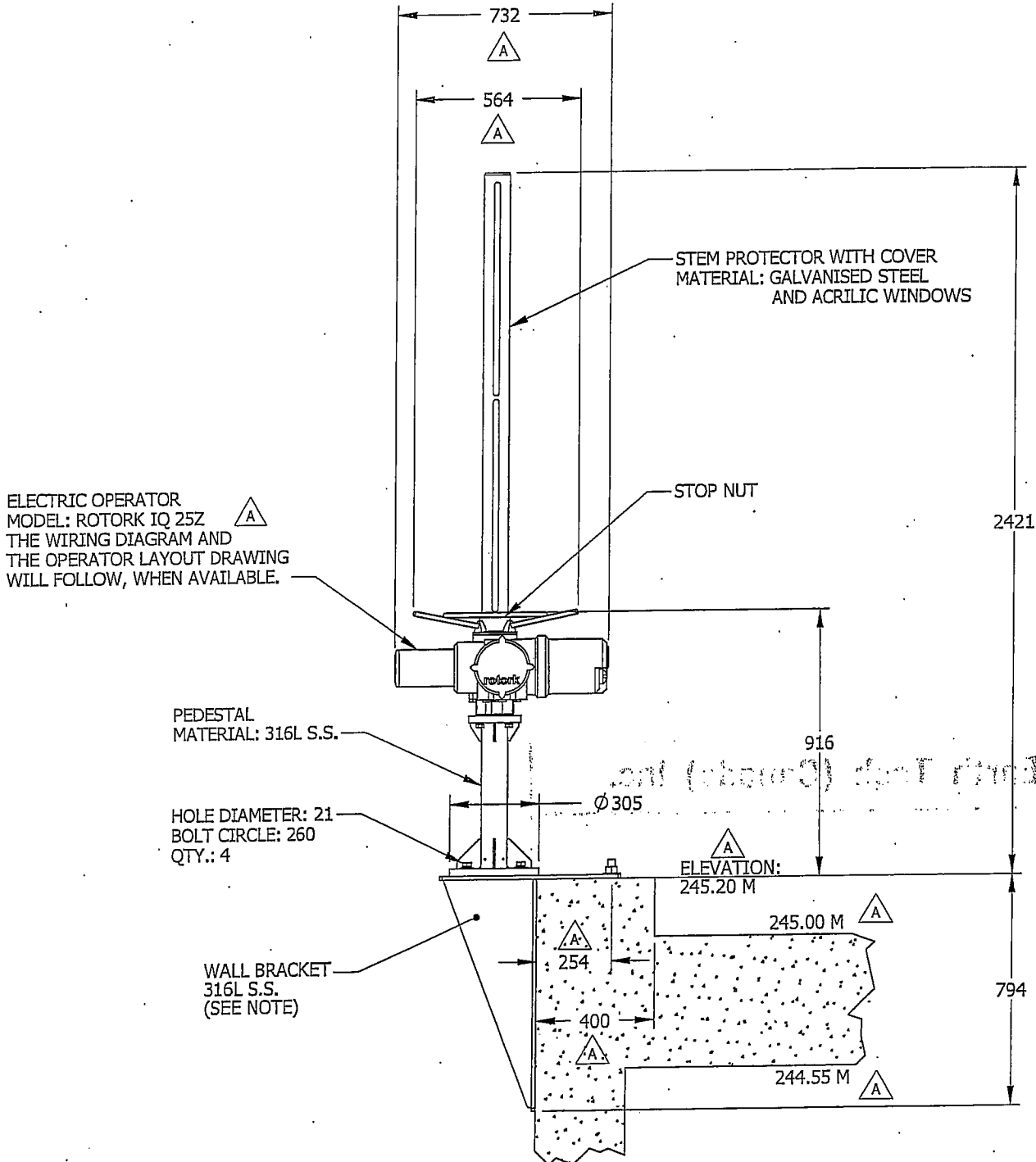
Date: Apr-12/06 By: SP for JMG



MODEL: 204-2000x1400-K-CW
 MATERIAL: 316L S.S.
 QTY: 2

IDENTIFICATION: SLG-0210A
 SLG-0230A

ELECTRIC OPERATOR ON PEDESTAL (OEPH)



NOTE: 316 S.S. CHEMICAL ANCHOR BOLTS (Ø 25 X 268 LG.)
 AND CARTRIDGES (210 LG.) ARE INCLUDED.

REVISION: A 2006/03/21

DRAWING No.: F067465-094

PAGE: 36

Earth Tech (Canada) Inc. 

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Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
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parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

Date: Apr 12/06 By: SP for JMC

SERIES 20

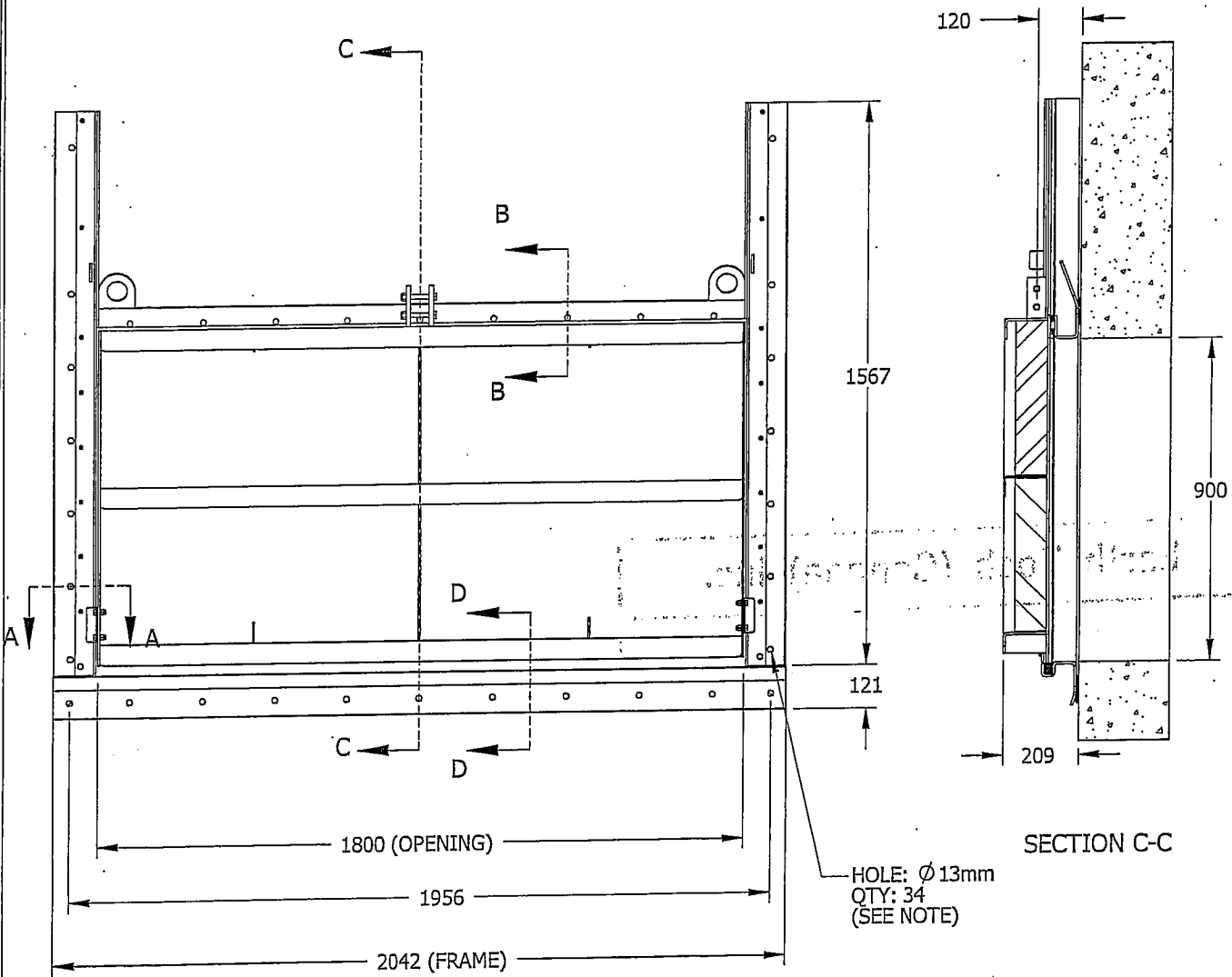
STAINLESS STEEL
SLUICE GATES
FLOW CONTROL SLUICE GATES



Fontaine

MODEL: 204-1800x900-K-CW
MATERIAL: 316L S.S.
QTY: 4

IDENTIFICATION: SLG - Ø210B, SLG - Ø210C
SLG - Ø230B, SLG - Ø230C



NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS (Ø 13 X 140 LG.) ARE INCLUDED.

Drawing is not to scale
All dimensions are in millimeters



Tolerances: ± 3mm

101

REVISION: A
DRAWING No.:
F067465-101

2006/03/27
PAGE:
37

Earth Tech (Canada) Inc. 

Reviewed for general conformance with design intent.
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REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

Date: Apr 12/06 By: SP for JntP

SERIES 20

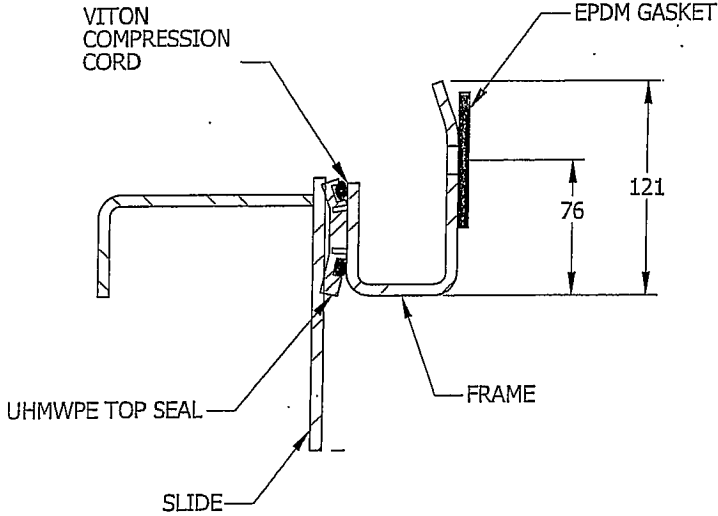
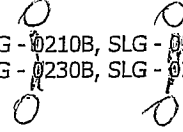
STAINLESS STEEL SLUICE GATES FLOW CONTROL SLUICE GATES



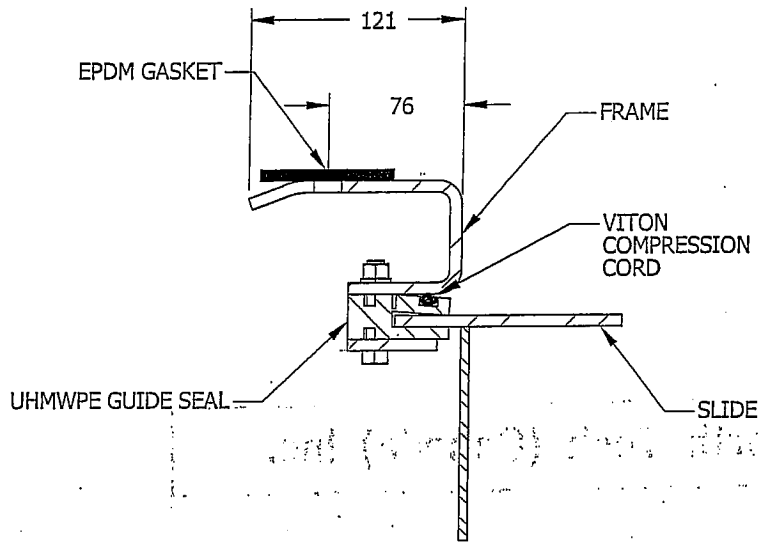
Fontaine

MODEL: 204-1800x900-K-CW
MATERIAL: 316L S.S.
QTY: 4

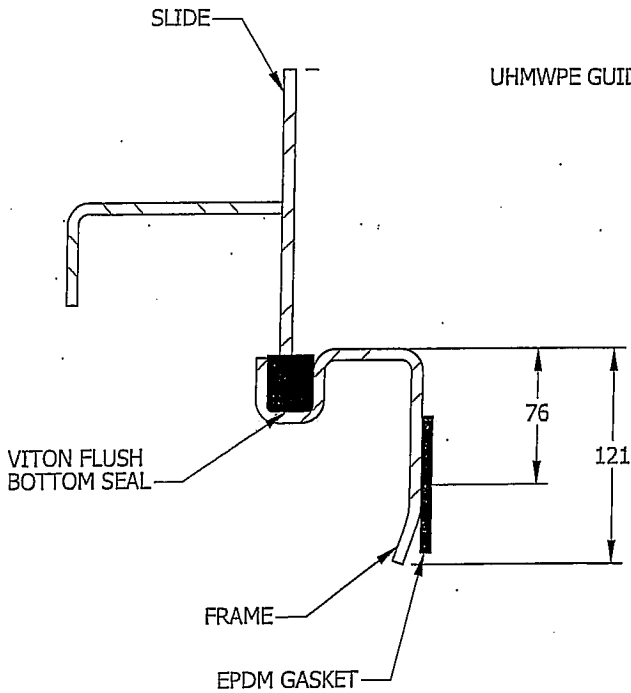
IDENTIFICATION: SLG - 0210B, SLG - 0210C
SLG - 0230B, SLG - 0230C



SECTION B-B



SECTION A-A



SECTION D-D

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings rests with the Contractor.

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REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

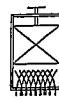
NOT REVIEWED _____

Project No. 79538-C23-16

Date: April 12/06 By: SP for JKP

SERIES 20

STAINLESS STEEL
SLUICE GATES
FLOW CONTROL SLUICE GATES

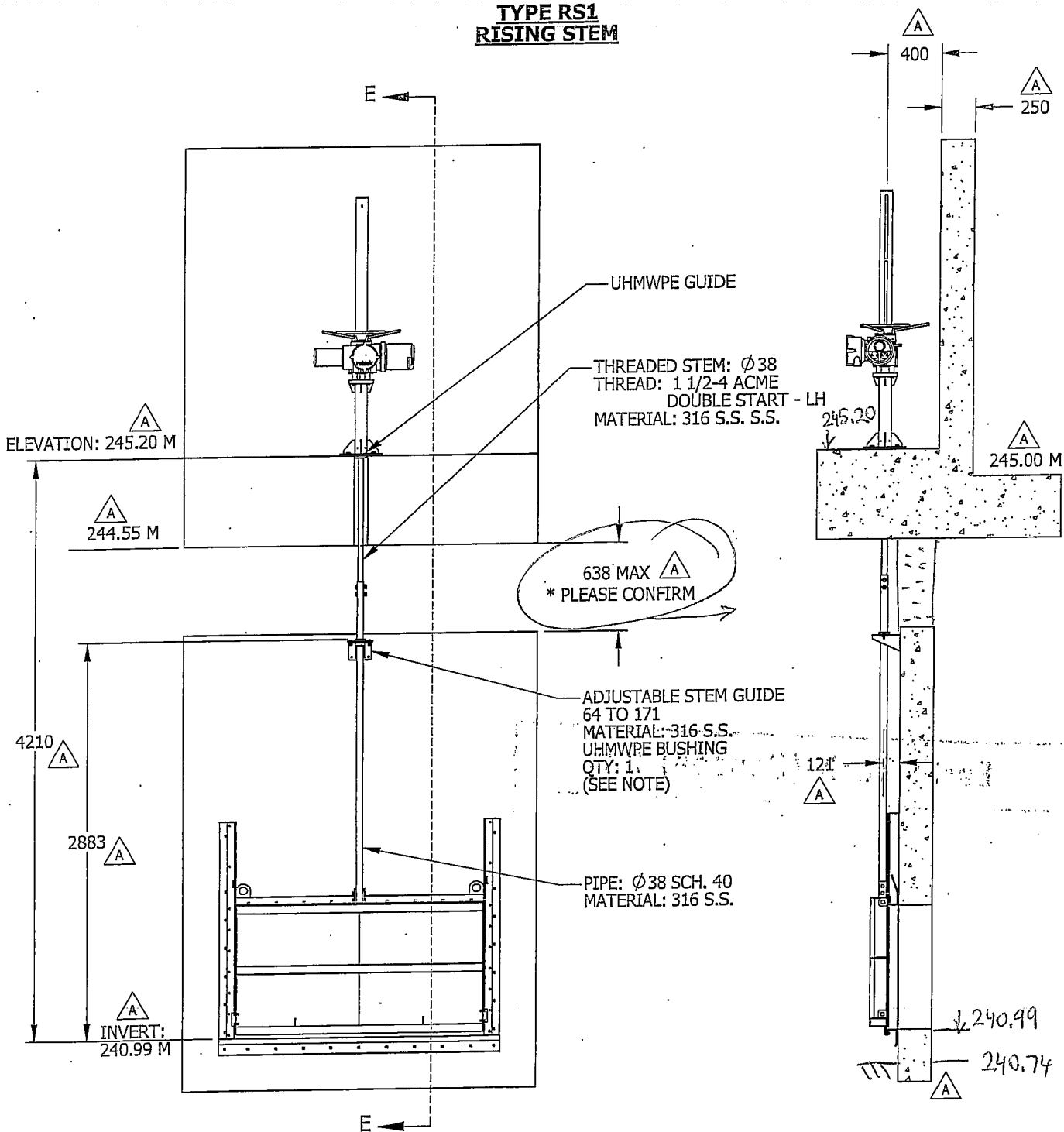


Fontaine

MODEL: 204-1800x900-K-CW
MATERIAL: 316L S.S.
QTY: 4

IDENTIFICATION: SLG - Ø210B, SLG - Ø210C
SLG - Ø230B, SLG - Ø230C


TYPE RS1 RISING STEM



SECTION E-E

NOTE: 316 S.S. MECHANICAL ANCHOR BOLTS (Ø 10 X 95 LG.) ARE INCLUDED.

REVISION: A	2006/03/27
DRAWING No.: F067465-103	PAGE: 39

Earth Tech (Canada) Inc. 

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Responsibility for verification and correlation of field
dimensions, fabrication process, techniques of
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parts of the work rests with the Contractor.

REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

Project No. 79538-C23-16

Date: April 12/06 By: SP for JNY

OPERATOR

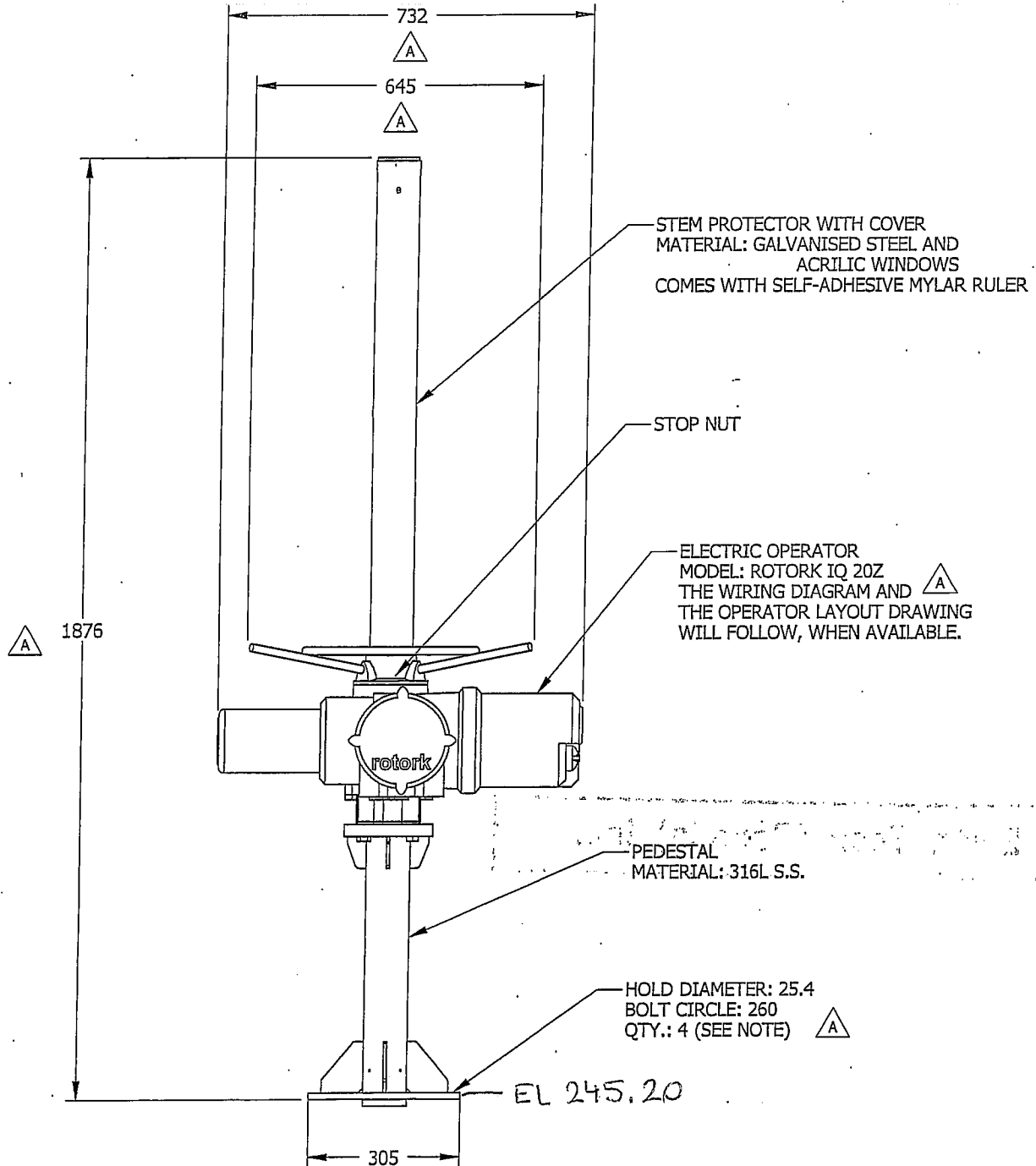


Fontaine

MODEL: 204-1800x900-K-CW
MATERIAL: 316L S.S.
QTY: 4

IDENTIFICATION: SLG - Ø210B, SLG - Ø210C
SLG - Ø230B, SLG - Ø230C

ELECTRIC OPERATOR ON PEDESTAL (OEP)



NOTE: 304 S.S. CHEMICAL ANCHOR BOLTS (Ø 19 X 216 LG.)
AND CARTRIDGES (168 LG.) ARE INCLUDED.

Earth Tech (Canada) Inc.

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REVIEWED _____

REVIEWED AS MODIFIED _____

REVISE AND RE-SUBMIT _____

NOT REVIEWED _____

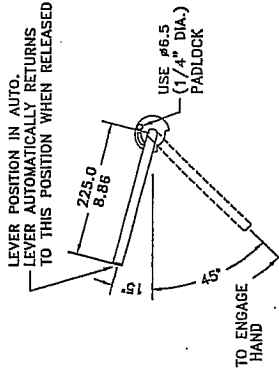
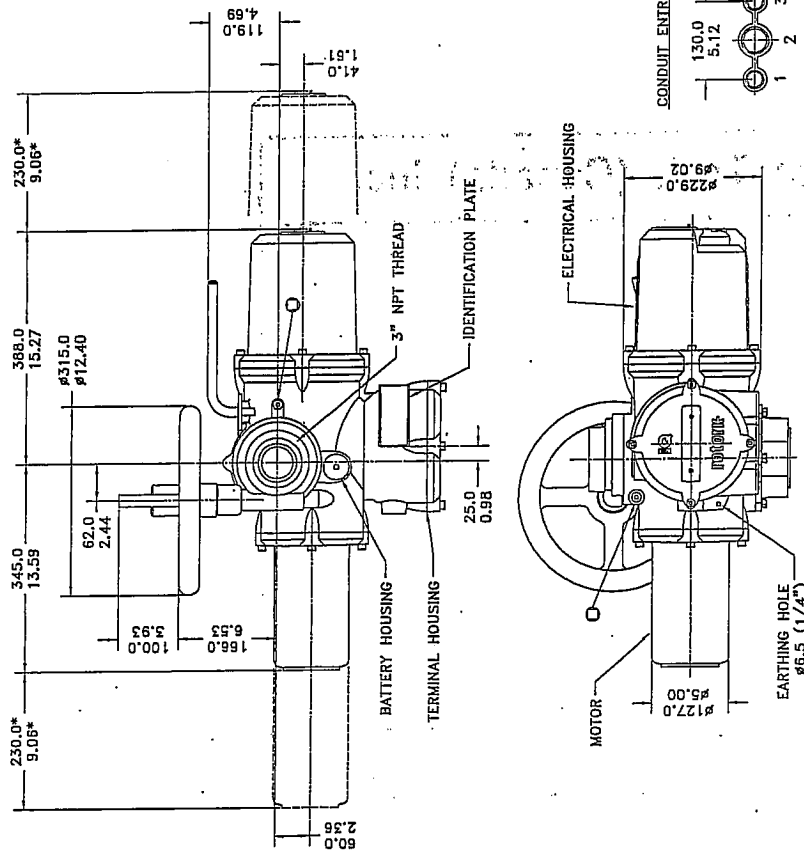
Project No. 79538-C23-16

Date: April 12/06 By: SP for JLP

SCALE: 1:8

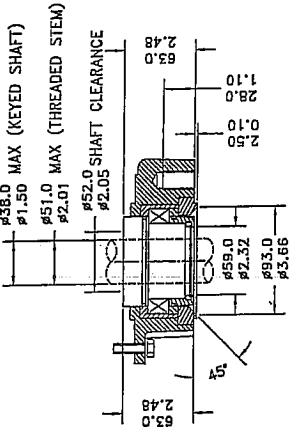
Notes:

- 1) All dimensions are in mm/inches.
- 2) Dimensions indicated by * are service entry allowances.
- 3) Actuator oil filler and drain plugs.
- 4) For project specific certified data, refer to certification sheet.
- 5) Actuator weight: 115lbs/52kg.
- 6) The interface provided for mounting the actuator or second stage gearbox onto the valve should conform to good engineering practices, ensuring adequately toleranced limits for parallelism, perpendicularity and concentricity.

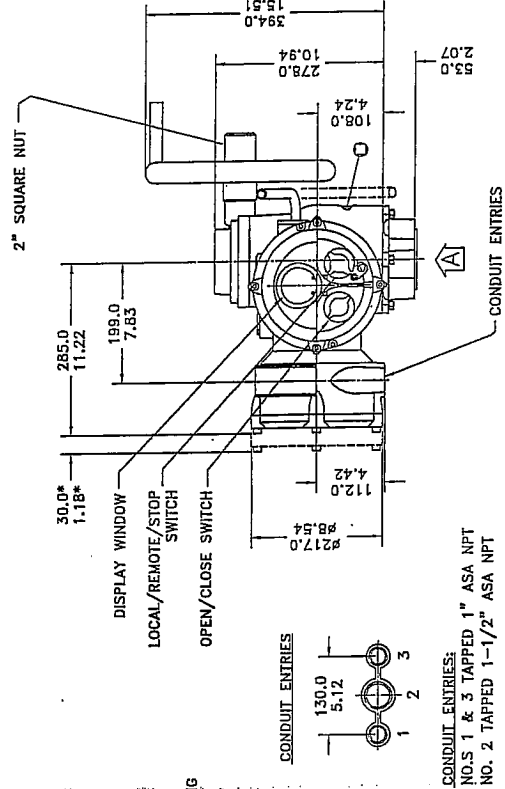
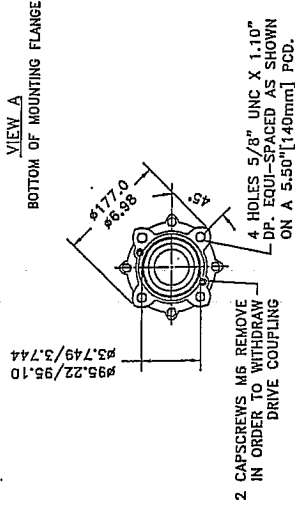


PADLOCKABLE HAND-AUTO LEVER

DRIVESLEEVE ORIENTATION



TYPE 'Z' COUPLING DETAILS



REV	FIRST ISSUE	DESCRIPTION	DATE	APVD
01	02/03/06			

REVISION HISTORY	
ROTOR	

Rotork Controls (Canada) Ltd. 2850, Avenue Road, Unit #4 Mississauga, Ontario Tel (905) 883-0913	Rotork Controls (Canada) Ltd. #5, 820-28th St Calgary, Alberta Tel (403) 569-9455
---	--

TITLE: Rotork Model IQ2025FA14Z MKII Electric Actuator with Side Handwheel and 2" Square Nut	THIRD ANGLE PROJECTION
--	------------------------

CERTIFIED	DATE: 02/03/06
DRAWN: Andrea Swan	CHECKED: John Fawcett
DATE: 02/03/06	

DWG. NO.: B-923207-01

41

Earth Tech (Canada) Inc.

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Responsibility for verification and correlation of field dimensions, fabrication process, techniques of construction, installation and coordination of all parts of the work rests with the Contractor.

REVIEWED

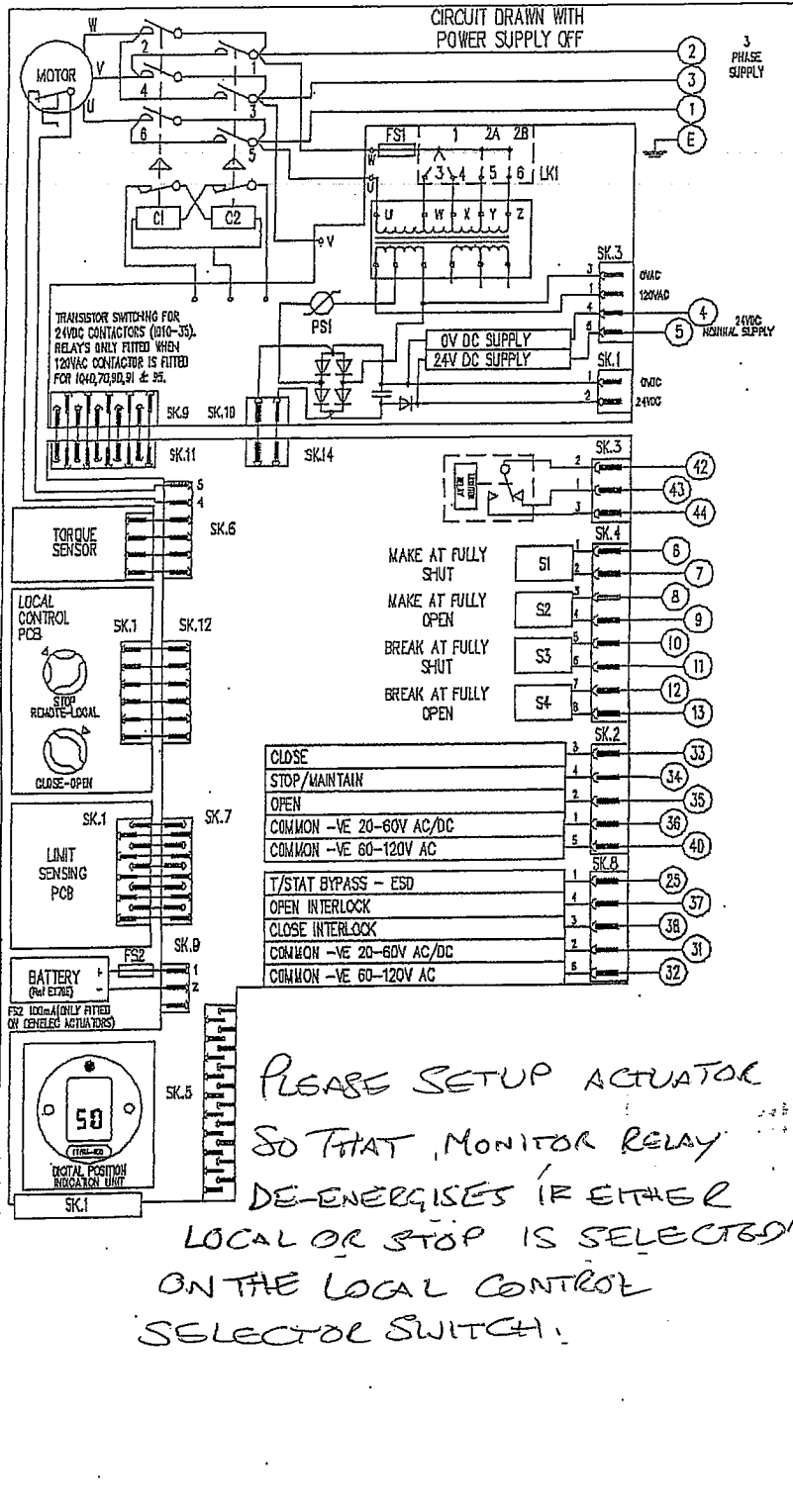
REVIEWED AS MODIFIED

REVISE AND RE - SUBMIT

NOT REVIEWED

Project No. 79538-C23-16

Date: 6/09/06 By: [Signature]



FOR TYPICAL REMOTE CONTROL
DETAILS SEE DOCUMENT
RWS300

TRANSFORMER TAPPING OPTIONS

TYPE 1

TAP	NCM 50/60HZ	50HZ	60HZ
W	220/230	176-242	198-259
X	380/400	304-418	342-446
Y	415/420	332-457	374-487
Z	440/460	352-484	386-517

FUSE FS1 - 250mA ANTI-SURGE

TYPE 2

TAP	NCM 50/60HZ	50HZ	60HZ
W	346/380	285-388	321-419
X	480/500	406-552	432-564
Y	240/240	192-261	216-282
Z	560/575	445-605	501-654

FUSE FS1 - 250mA ANTI-SURGE

TYPE 3

TAP	NCM 50/60HZ	50HZ	60HZ
X	660/680-690	534-726	600-726
Y	690/___	558-759	___

FUSE FS1 - 150mA ANTI-SURGE

ALL TRANSFORMER TYPES - PSI SELF

RESETTING
FUSE

NOTE

REFER TO PUBLICATION E170E FOR APPROVED FUSES FS1 AND FS2.

MAX EXTERNAL LOAD ON TERMINALS 4 & 5 TO BE 5W.

CONTROL SIGNAL THRESHOLD VOLTAGES TO BE MINIMUM 10V 20V AC/DC
MAXIMUM 'OFF' = 3V
MINIMUM CONTROL SIGNAL DURATION TO BE 300ms

CURRENT DRAWN FROM EACH REMOTE CONTROL SIGNAL IS 5mA ON 24V DC OR 12mA ON 120V AC

WIRES ARE IDENTIFIED AT EACH END BY TERMINAL No. OR TAG No.

INDICATION CONTACTS S1-S4 ARE SHOWN IN THEIR DEFAULT CONFIGURATION. CONTACTS MAY BE CONFIGURED FOR ANY OF THE FUNCTIONS DESCRIBED IN E170E

No 08	DATE 30/05/02 cmk	REVISION DETAILS DIAGRAM RE-FORMATTED TO SEPARATE REMOTE CONTROL CIRCUITRY (See 'RWS Rev')	www.rotork.com		CONFIG BY DATE - CHECKED BASE NO JOB No ILL No	PRE 2409D4 PJH	IQ BASIC
			ROTORK CONTROLS LTD BATH, BA1 3JQ ENGLAND Tel: 01225-733200	ROTORK CONTROLS INC ROCHESTER NY 14624, USA Tel: 585-328-1550			

Earth Tech (Canada) Inc.

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REVIEWED

REVIEWED AS INCORPORATED

REVISED PER COMMENTS

NOT REVIEWED

Project No. 79538-023-16

Date: 6/04/06 By: [Signature]



Rotork Controls (Canada) Ltd.
 2850 Argentia Road, Unit #4
 Mississauga, Ontario, Canada, L5N 8G4
 Telephone (905-363-0313) Facsimile (905-363-0320) <http://www.rotork.com>

Customer: H. Fontaine Ltee Customer P.O. Number: 20787 Engineer:
 Contract Number: Project Name: City of Winnipeg WT project 581-2005

ROTORK ITEM(S):	D125510101	D125510201	D125510301
Valve Type	N/A	N/A	N/A
Valve Size	N/A	N/A	N/A
Actuator Type and Size	IQ20FA14Z	IQ25FA14Z	IQ20FA14Z
Mounting Base Type	FA14Z	FA14Z	FA14Z
Enclosure Type	WTC	WTC	WTC
Unit Thrust # / Torque (Ft.Lb)	150	295	150
Control Voltage	24 VDC	24 VDC	24 VDC
Handwheel Diameter (in/mm)	12.40"/315mm	12.40"/315mm	12.40"/315mm
Handwheel Sga ratio	13.5:1	13.5:1	13.5:1
Gearbox Type	N/A	N/A	N/A
Gearbox Ratio	N/A	N/A	N/A
Seating Type	N/A	N/A	N/A
Seating Stroke Time (Sec.)	N/A	N/A	N/A
Outline Drawing	B-923207-01	B-923207-01	B-923207-01
Wiring Diagram	3000-000	3000-000	3000-000
Voltage/Phase/Frequency(Ac)	575/3/60	575/3/60	575/3/60
Output RPM	29	29	29
Locked Rotor Current (A)	8.32	15.50	8.32
Rated Torque Current (A)	2.85	3.80	2.85
Horse Power / Kilowatts	0.64 / 0.48	1.25 / 0.93	0.64 / 0.48
Quantity	4	2	4
Tag Number(s)	SLG-R100A SLG-R200A SLG-R300A SLG-R400A	SLG-0210A SLG-0230A	SLG-0210B SLG-0210C SLG-0230B SLG-0230C

Tagging and Information:

Name: J. Favaro	Signed: <i>John Favaro</i>	Date: February 3, 2006	Sheet: 1 of 1	Certification Sheet Drawing No.: D1255100	Rev: 0
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ROTORK Document No.: R3300
 ROTORK Document Revision No.: 002

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
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dimensions, fabrication process, techniques of
construction, installation and coordination of all
parts of the work rests with the Contractor.

REVIEWED

REVIEWED AS MODIFIED

REVISE AND RE-SUBMIT

NOT REVIEWED

Project No. 79538-C23-16

Date: 6/04/06

By: 

Project No.: <u>79538 - C23</u>	-5	Date: <u>April 17, 2006</u>
Project Name: <u>Winnipeg Water Treatment Program</u>	Sent by: <u>Sandra Peters on behalf of Kristina Roberts</u>	

TO: <u>H. Fontaine Ltd</u> <u>1295 Sherbrooke</u> <u>Magog, Quebec J1X 2T2</u>	c.c. <u>UMA Engineering Ltd.</u> <u>1479 Buffalo Place</u> <u>Winnipeg, Manitoba R3T 1L7</u>
ATTN: <u>Mr. Hugues Turcotte</u>	<u>Mr. Bill Richert</u>

We are sending to you by: BUS MAIL COURIER HAND WAY BILL NUMBER: _____

<input checked="" type="checkbox"/> REVIEWED AS NOTED	<input type="checkbox"/> FOR APPROVAL	<input type="checkbox"/> CONTRACT DOCUMENTS
<input type="checkbox"/> FOR YOUR ATTENTION	<input type="checkbox"/> FOR INFORMATION	<input checked="" type="checkbox"/> SHOP DRAWINGS
<input type="checkbox"/> AS REQUESTED	<input type="checkbox"/> FOR REVIEW	<input type="checkbox"/>

QUANTITY	IDENTIFICATION NUMBER	DESCRIPTION
		The following document are for Sluice Gates and Water Control Equipment Bid Opportunity No. 561-2005
2		Installation and Maintenance Manual Shop Drawings (Submittal 2)
1		Originator's Instructions Sheet

COMMENTS: 2 copies to H. Fontaine
 1 copy to UMA

Received by: _____ Date Received: _____

Please sign and return one copy to sender.

TO:

<input type="checkbox"/> Head Office 105 Commerce Valley Dr. W., 7 th Floor Markham ON L3T 7W3 Ph: (905) 886-7022 Fax: (905) 886-9494	<input type="checkbox"/> Edmonton Office 17203 - 103 Avenue Edmonton AB T5S 1J4 Ph: (780) 488-6800 Fax: (780) 488-2121	<input type="checkbox"/> Regina Office 2629 - 29th Avenue Regina, SK S4S 2N9 Ph: (306) 584-8580 Fax: (306) 584-3822	<input type="checkbox"/> Victoria Office #203, 4430 Chatterton Way Victoria BC V8Z 5J2 Ph: (250) 744-2100 Fax: (250) 744-1700
<input type="checkbox"/> Calgary Office 300 - 340 Midpark Way S.E. Calgary AB T2X 1P1 Ph: (403) 254-3301 Fax: (403) 254-3333	<input type="checkbox"/> Kelowna Office #201, 3275 Lakeshore Road Kelowna BC V1W 3S9 Ph: (250) 762-3727 Fax: (250) 762-7789	<input type="checkbox"/> Vancouver Office 6 th Floor, 1901 Rosser St. Burnaby BC V5C 6S3 Ph: (604) 298-6181 Fax: (604) 294-8597	<input checked="" type="checkbox"/> Winnipeg Office 850 Pembina Highway Winnipeg, MB R3M 2M7 Ph: (204) 477-5381 Fax: (204) 284-2040



Reference Figure 2.8.1

Originator: Kristina Roberts

Date: April 17, 2006

Please Issue the following Documents:

<input type="checkbox"/> For Information	<input type="checkbox"/> For Review & Return By Date:	<input type="checkbox"/> For Quotation By Date:	<input type="checkbox"/> For Construction	<input checked="" type="checkbox"/> Other Shop Drawings
--	---	---	---	---

To: Mr. Hugues Turcotte	At H. Fontaine Ltd
Cc: Mr. Bill Richert	UMA Projects (CM) Ltd.

Documents # (attach list if necessary)	Rev.	Date	Comments / Notes to Document
WWTP Sluice Gates and Water Control Equipment Bid Opportunity No. 561-2005			
Installation and Maintenance Manual Series 20 Stainless Steel Flow Control Sluice Gates		April 5, 2006	Reviewed
Drawing No. 2067682-011 Series 20		April 5, 2006	Reviewed
Drawing No. 2067682-011-DET A – Series 20		April 5, 2006	Reviewed
Drawing No. 2067682-013 Lifting Stem		Mar 26, 2006	Reviewed as Modified
Drawing No. 2067682-014 Operators		Mar 26, 2006	Reviewed as Modified

Comments: to be added to Transmittal	2 copies to Fontaine 1 copy to UMA (CM)
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Fontaine

INSTALLATION & MAINTENANCE MANUAL

SERIES 20

STAINLESS STEEL FLOW CONTROL SLUICE GATES

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INSTALLATION & MAINTENANCE MANUAL STAINLESS STEEL GATES

INTRODUCTION

The purpose of this manual is to provide the contractor with information required to properly install Fontaine gates. Carefully read all instructions prior to starting installation, and contact Fontaine if you have any questions.

RECEIVING AND STORAGE

Although caution has been taken during assembling, crating and loading, damages may have been caused during transportation or storage. We recommend the following procedure when you receive the material:

Visually check for possible damage caused during transportation. Also, note the condition of the packing. If there are any signs of damage such as: a broken skid or box, or warped parts or tubes, these are signs that the shipment may have been improperly handled and that more serious damage may have occurred.

NOTE ANY DAMAGE TO EQUIPMENT OR CRATING ON THE WAYBILL OTHERWISE YOUR CLAIM WILL NOT BE ACCEPTED.

- 1) Check the packing list to make sure all the equipment has been received (stem, stem guide, gearbox, gates, etc.). Also, verify all the equipment numbers. This should be done within three days of delivery.

No claim for missing parts will be accepted afterwards

- 2) Cover and protect all equipment that is not to be installed immediately:
 - Leave gates strapped to skid.
 - Cover with tarp.
 - Store on an even surface in a clean, dry area.
 - Do not stack the gates.
 - Support stem evenly and keep off the ground.
 - Put all remaining parts in a secure area.

INSTALLATION & MAINTENANCE MANUAL STAINLESS STEEL GATES

INSTALLATION ON A CONCRETE WALL

- 1) Never disassemble the gate without the manufacturer's authorization.
- 2) The wall should be even (see [figure 2](#)) and smooth. All imperfections should be removed by grinding or filled with epoxy grout.
- 3) Check for gate warping. Make sure the upper slide rails are parallel as shown in [figure 1](#). Length A should be equal or up to 3mm (1/8") longer than B.
- 4) Thoroughly clean the back of the gate and the wall surrounding the opening with paint cleaner.
- 5) Glue the seal on the gate with contact cement.
- 6) Line up the gate on the opening. On each side of the gate, drill and install an anchoring stud. When the alignment is perfect, drill and install the remaining anchoring studs. See [figure 4](#) for the most common anchoring methods.
- 7) Partially tighten the four corner nuts on the cover part of the slide. The upper part should not touch the wall. If it does, the wall is uneven and must be ground (see [figure 2](#)).

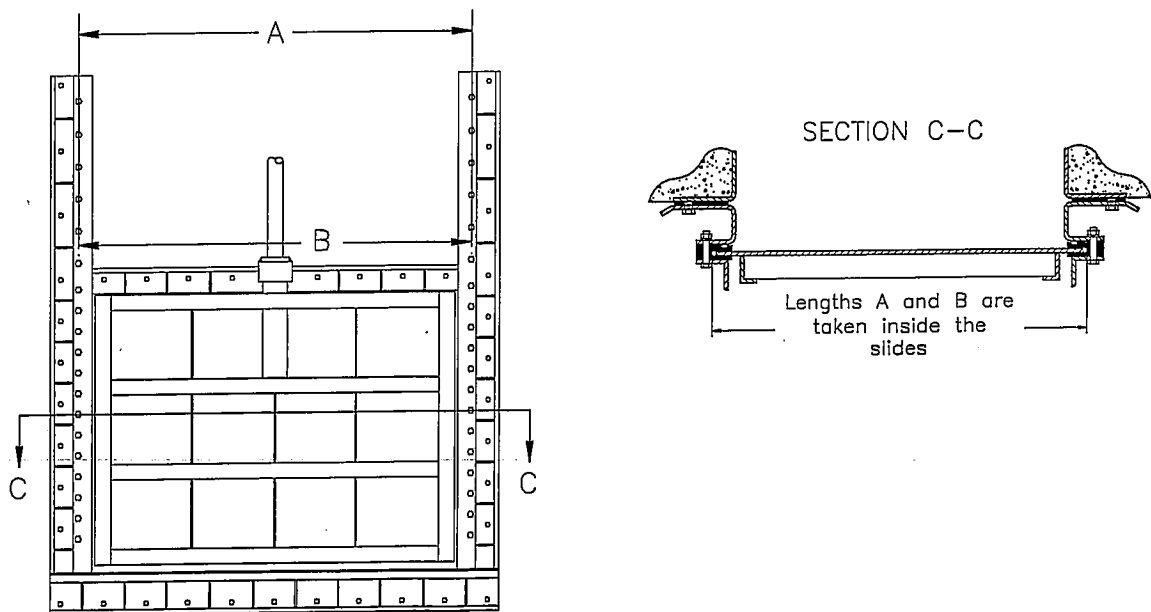


FIGURE 1

INSTALLATION & MAINTENANCE MANUAL STAINLESS STEEL GATES

- 8) Evenly tighten the nuts around the opening. Do not tighten nuts on the upper part of the slide immediately. Table 1 gives the torque values for standard fasteners. Figure 3 shows the tightening pattern. Apply equal torque to all nuts. Before completely tightening all the nuts, ensure the upper part of the slide is not touching the wall.

CAUTION: Over tightening of the cross-frame can affect the gates sealing capacity.

- 9) The upper part of the slides over the opening must also be anchored to the concrete wall. If the wall is even and smooth, use the resilient shims at each anchor's position (see figure 3a). If it is uneven, you must shim the slides with appropriate stainless steel washers to ensure vertical alignment.
- 10) If the gate is installed with a flush bottom frame (see figure 5), you should conduct a sealing test before pouring the grout. If the gate has a frame embedded section, make sure the frame is square and level before pouring the grout.

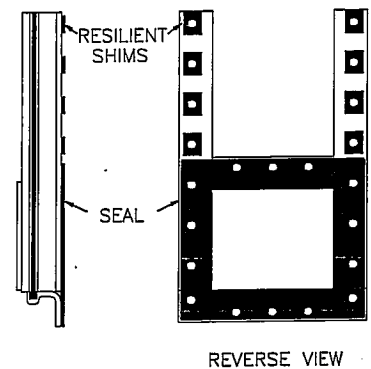
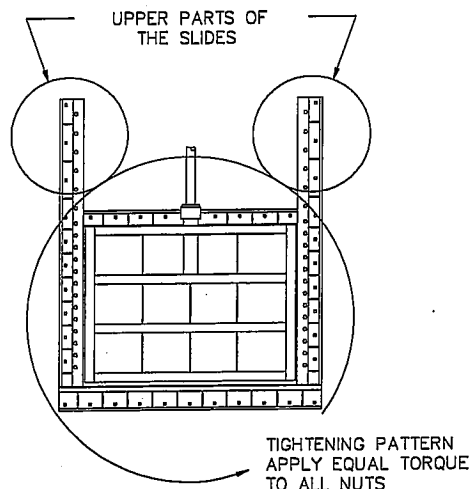
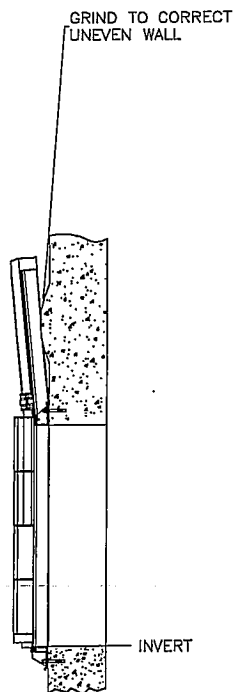


FIGURE 2

FIGURE 3

FIGURE 3a

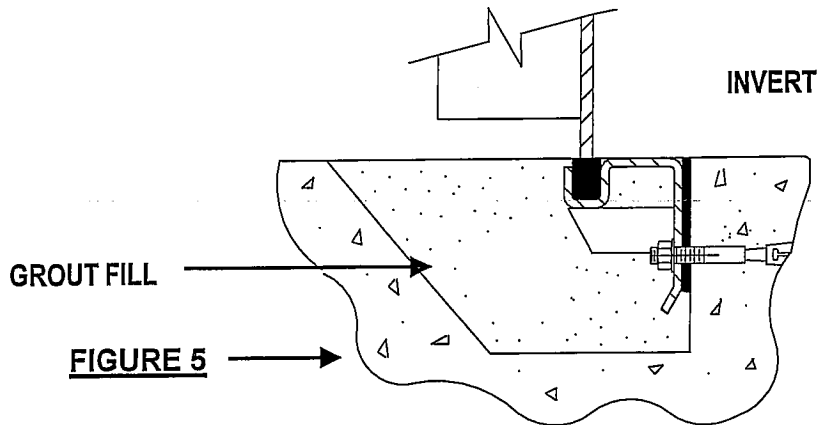
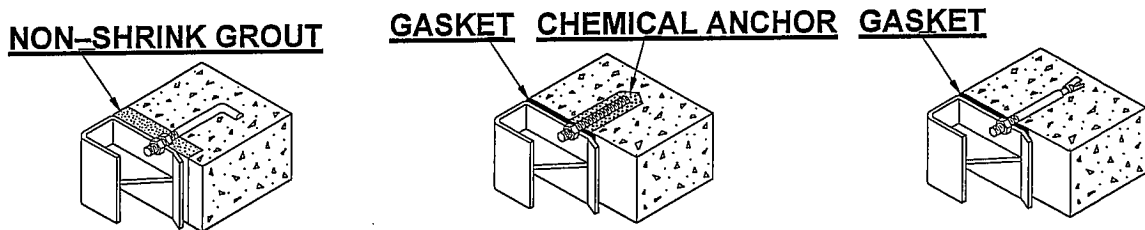
INSTALLATION & MAINTENANCE MANUAL STAINLESS STEEL GATES

- 11) It is very important to thoroughly clean the UHMWPE slides, upper and bottom seals, in order to eliminate any metal or concrete residues. You should clean around the gate to remove all residues that could be harmful to gate operation.
- 12) Install operator components (see section "Installation of Operator Components").

TABLE 1

STUD DIAMETER		TORQUE	
In	(mm)	ft-lb	(N-m)
1 / 2	12	35	47
5 / 8	16	75	102
3 / 4	20	100	136
7 / 8	22	150	203
1	25	200	271

FIGURE 4



INSTALLATION & MAINTENANCE MANUAL STAINLESS STEEL GATES

SURFACE CHECK FOR A CONCRETE WALL

Check the surface with a straight edge. The maximum permissible surface unevenness is 3mm (1/8").

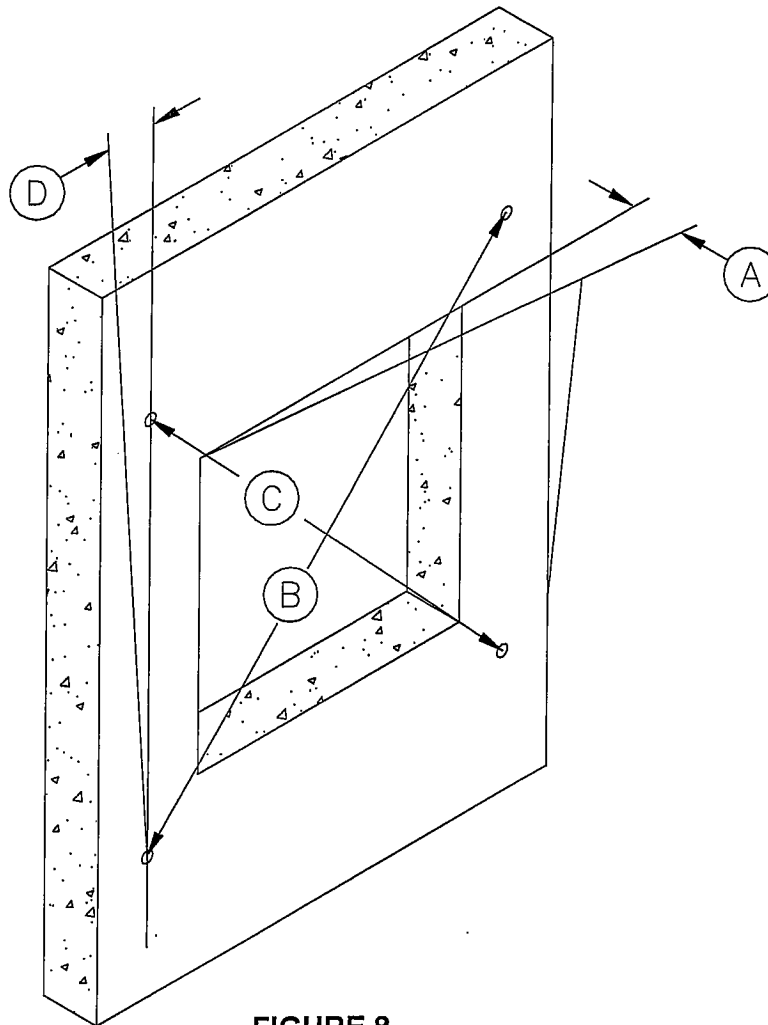


FIGURE 8

ACCEPTABLE TOLERANCES

- A Maximum allowable warping of 3mm (1/8") along the total length of each side.
- B - C Comparison of diagonals - Maximum difference of 3mm (1/8").
- D Maximum vertical alignment of 3mm (1/8") on the total length of side.

INSTALLATION ON A WALL THIMBLE

- 1) Never disassemble the gate without manufacturer authorization.
- 2) The wall thimble should be even (see figure 5). The concrete around the wall thimble should be even and have a smooth surface.
- 3) Check for gate warping. Make sure the upper slide rails are parallel as shown in figure 1. Length A should be equal or up to 3mm (1/8") longer than B.
- 4) Thoroughly clean the back of the gate and the wall surrounding the opening with paint cleaner.
- 5) Glue the seal on the gate with contact cement.
- 6) Line up the gate on the opening. Install anchoring studs on each side of the gate. When the alignment is perfect, screw the remaining anchoring studs in the wall thimble.
- 7) Partially tighten the four (4) corner nuts.
- 8) Evenly tighten the nuts on the sides, upper and lower parts of the gate according to the torque in Table 1. Proceed according to the tightening pattern (see figure 1) until an even torque is obtained.
- 9) If the gate is installed with a flush bottom frame (see figure 5), you should conduct a sealing test before pouring the grout.
- 10) **It is very important to thoroughly clean** the UHMWPE slides, upper and bottom seals, and the gate in order to eliminate any metal or concrete residues. Make sure the gate surrounding is well cleaned and that there are no residues (wooden boards metal stems, etc.), which could be harmful to the gate operation.
- 11) Install operator components (see "Installation of the gate operator stem and guide").

INSTALLATION & MAINTENANCE MANUAL STAINLESS STEEL GATES

SURFACE CHECK FOR A WALL THIMBLE

Check the surface with a straight edge. The maximum permissible surface unevenness is 3mm (1/8").

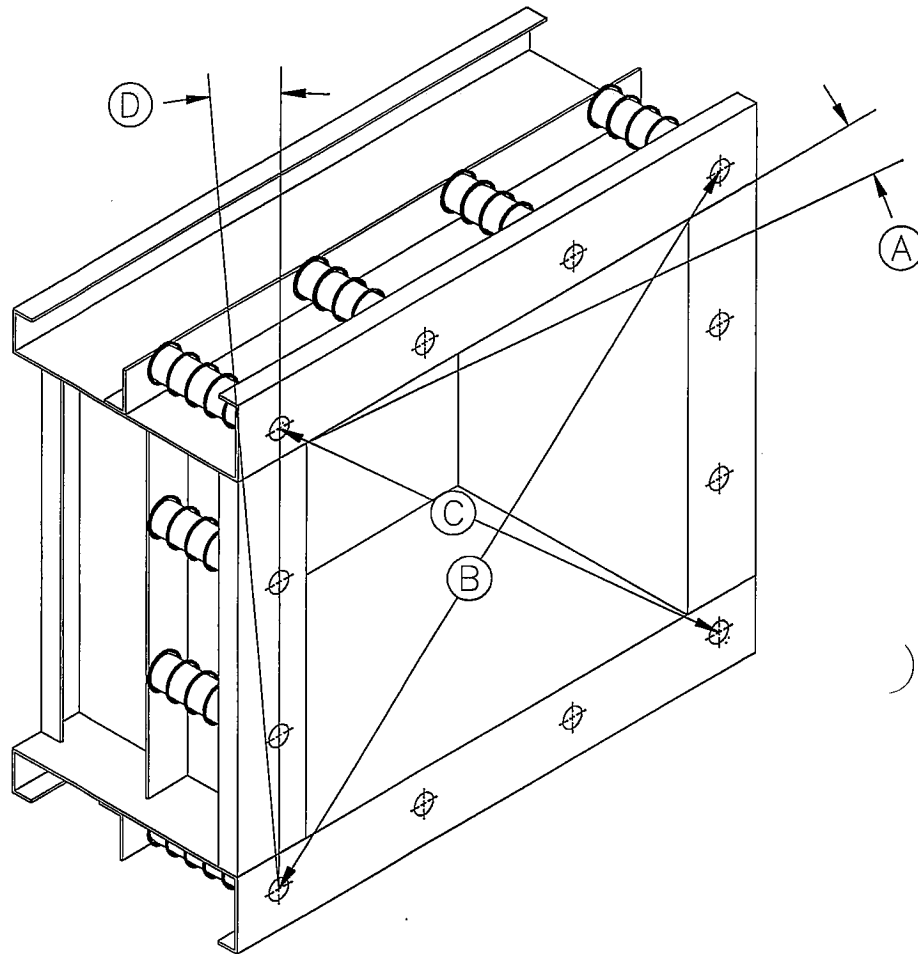


FIGURE 5

ACCEPTABLES TOLERANCES

- A Maximum allowable warping is 3mm (1/8") along the total length of each side.
- B - C Maximum difference between diagonals is 3mm (1/8").
- D Maximum vertical alignment is 3mm (1/8") along the length of each side.

INSTALLATION & MAINTENANCE MANUAL STAINLESS STEEL GATES

INSTALLATION ON A STANDARD FLANGE

- 1) Never disassemble the gate without manufacturer authorization.
- 2) The flange should be even and smooth. All imperfections should be corrected before work is continued.
- 3) Check for gate warping. Make sure the upper slide rails are parallel as shown in figure 1. Length A should be equal or up to 3mm (1/8") longer than B.
- 4) Thoroughly clean the back of the gate and the wall surrounding the opening with paint cleaner.
- 5) Glue the seal on the gate with contact cement.
- 6) Line up the gate on the opening. Install the anchoring bolts and nuts.
- 7) Evenly tighten the nuts around the flange. Table 1 gives the torque values for standard fasteners. Figure 3 shows the tightening pattern. Apply equal torque to all nuts.
- 8) It is very important to thoroughly clean the UHMWPE slides, upper and bottom seals, and gate in order to eliminate any metal or concrete residues. You should clean around the gate to remove all residues which could be harmful to gate operation.
- 9) Install operator components (see the relevant section).

INSTALLATION ON A ROUND MANHOLE

Follow the instructions under "Installation on a concrete wall". Be sure that anchoring studs will allow gate removal after installation if needed .

INSTALLATION OF A GATE OPERATOR, STEM AND GUIDE

Note: If the gate, yoke and operator stem are already assembled together, only steps 5, 7, and 8 apply.

- 1) Place and align the components in position as indicated in figure 9.
- 2) Install the extension tube or shaft to the top of slide or gate.
- 3) Insert the stem guide brackets (figure 9). Make sure to install them at the right location (see approval drawings).
- 4) Install the extension tube, if required, with bolts or with couplings if applicable.
- 5) Thoroughly clean the threaded part of the stem and the nut in the lifting device. Keep these elements clean and lubricated to prevent damage and hard operating.
- 6) Engage the stem in the lift nut with care to avoid damaging the thread. Hold stem and turn the operator to bring it to the desired position.
- 7) ***It is very important to*** carefully check the alignment of the lifting components. The maximum allowable deviation for misaligned stems is 3mm (1/8") on the length of the stem (see figure 9). Use anchor studs to fasten the stem guides in position. Shim with stainless-steel washers or plates if the wall is uneven.
- 8) Clean the gate and lifting mechanism thoroughly.

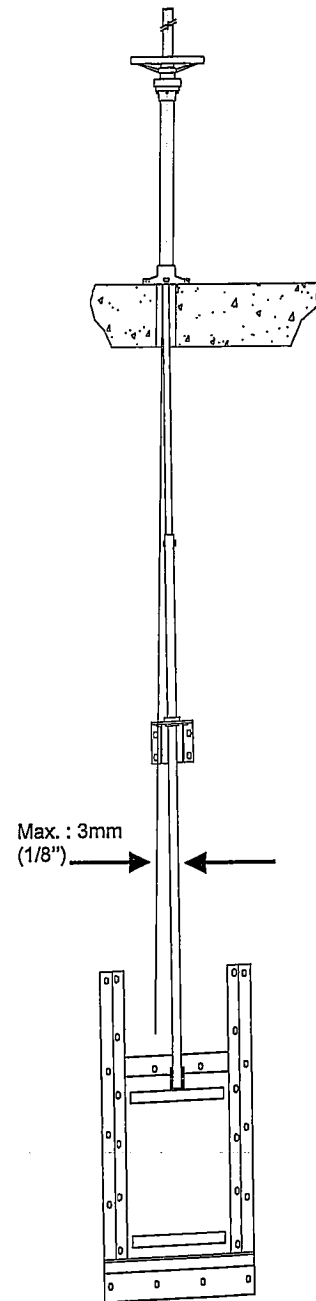
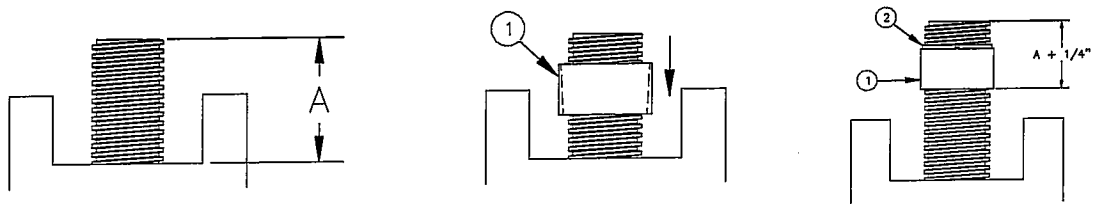


FIGURE 9

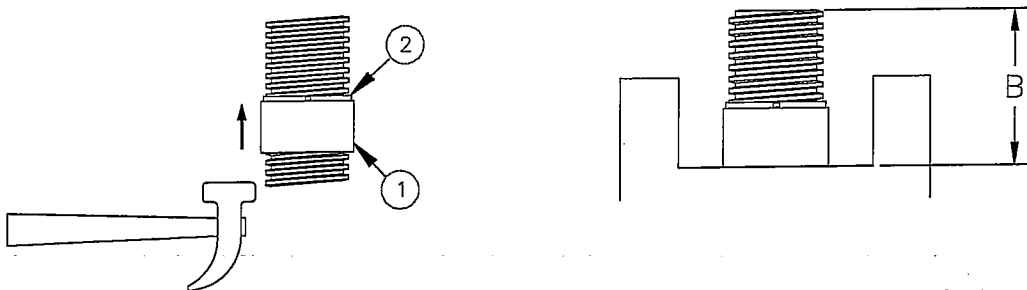
STOP NUT INSTALLATION & ADJUSTMENT

Note: The stop nut must be installed according to the following instructions in order to prevent damage to major components of the gate.

1. Lower the gate to its fully closed position.
2. Measure the distance between the stem's extremity and the top of the actuator's lift-nut (A).



3. Open the gate approximately 12 inches (30 cm).
4. Insert the tapered ring ① on the stem (the thickest section should be on the actuator side).
5. Screw the threaded ring ② on the stem and raise the tapered ring ① until both rings are positioned together. The bottom of the tapered ring ① should be at a distance (A) + 6mm (1/4") from the bottom of the actuator.
6. When accurately positioned, lock in place by carefully hitting the tapered ring ① upward in order to secure against the threaded ring ②.



7. Lower the gate to its fully closed position and measure the distance between the stem's extremity and the top of the actuator's lift-nut (B).

If distance (B) is not the same as (A), correct the position of the treaded ring ② until (A) and (B) are equal.

INSTALLATION & MAINTENANCE MANUAL STAINLESS STEEL GATES

TROUBLESHOOTING

**NEVER FORCE THE OPERATOR TO CLOSE THE GATE,
SINCE PERMANENT SEAL DAMAGE MAY OCCUR.**

<u>SYMPTOM</u>	<u>CAUSE</u>	<u>REMEDY</u>
LEAKAGE	Wood, concrete, or other foreign matter on seat facing.	Carefully remove the foreign matter. Check for permanent seal damage.
	Loose anchoring studs.	Tighten loose nuts according to table 1.
	Excessive tightening of cross-frame.	Partially loosen cross-frame anchoring nuts.
EXCESSIVE FORCE REQUIRED TO OPERATE	Misaligned stem, stem guide, and hoist.	Realign stem, stem guide, and hoist. Check and adjust the alignment.
	Improperly installed or warped frame.	Check frame for warping. Consult the manufacturer if warping is found.
	Nut and stem dirty or dry.	Clean and lubricate threads.

For problems that cannot be solved with the troubleshooting procedure, call H. Fontaine Ltd, Magog, Quebec, at (819) 843-3068, and ask for the Service Department. If a leak is involved, try to locate it before calling.

INSTALLATION & MAINTENANCE MANUAL STAINLESS STEEL GATES

ADJUSTMENTS

Series 20 sluice gates are shop-adjusted and tested, so they should normally require no adjustment after installation.

INSPECTION AND MAINTENANCE

To obtain maximum performance, H. Fontaine Ltd recommends the following procedures:

INSPECTION INTERVALS

- 1) Initial inspection after 25 operating cycles or 2 weeks of operation, whichever occurs first.
- 2) Second inspection after 50 operating cycles after the first inspection or six months after operating, whichever occurs first.
- 3) Subsequent inspections every 100 operating cycles or six months, whichever occurs first.

Gates subjected to heavy-duty use should be inspected every 3 months.

A gate cycle means opening, then closing the gate.

THE FOLLOWING OPERATIONS SHOULD BE DONE AT EACH INSPECTION:

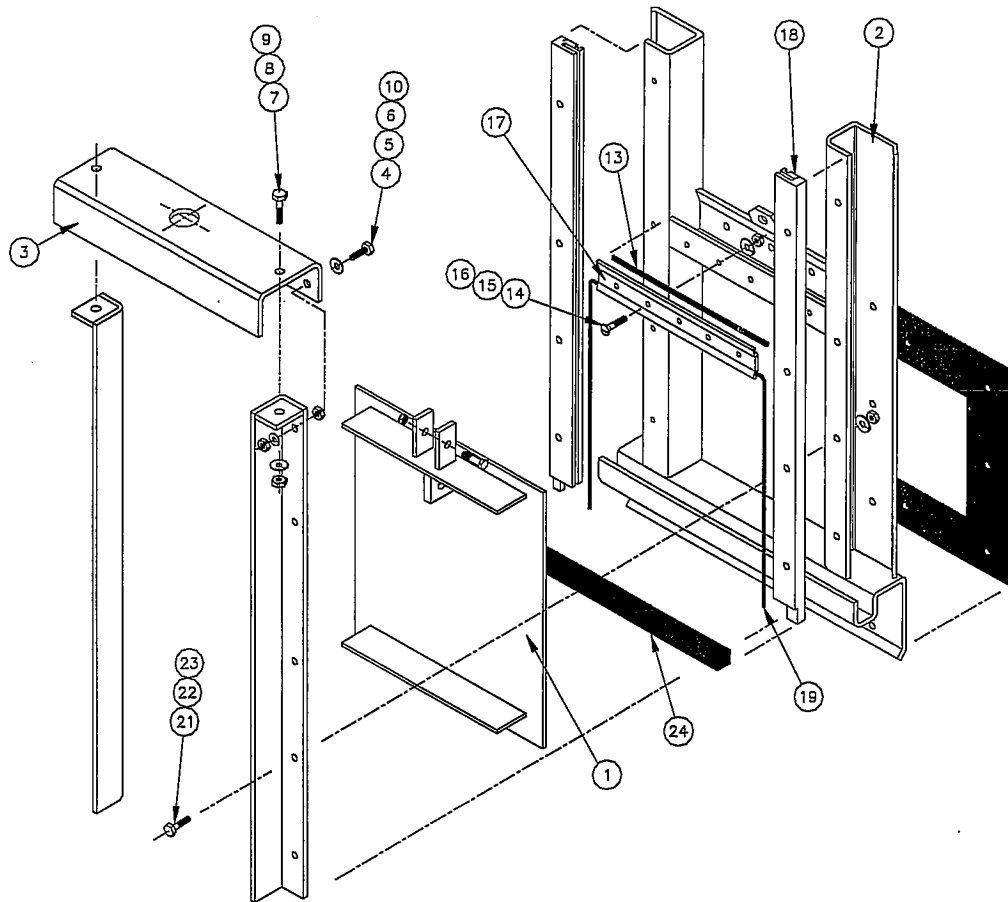
. GATE MAINTENANCE

- 1) Clean the gate with clear water to remove all deposits
- 2) Inspect the resilient seals and slides to make sure they are in good condition.

. STEM MAINTENANCE

- 1) Inspect stem threads and lift-nut threads for wear.
- 2) Clean and lubricate the stem.
- 3) All the fasteners should be checked for correct tightening.

PROCEDURE FOR SEAL REPLACEMENT



- 1) Remove items 4, 5, 6, 10 and 7, 8, 9 then remove yoke (3) [if equipped].
- 2) Lift the slide (item 1) out of the frame (2).
- 3) Remove items 21, 22, 23 and items 14, 15, 16 (retainer bolt).
- 4) Remove the UHMW seal retainer.
- 5) Remove items 18 (guide), 17 (upper seal) [if equipped], 24 (bottom seal) [if equipped], 13 and 19 (compression cord) and clean gate.
- 6) Install the bottom seal (item 24) [if equipped] using a 5 mm slalom cord of the Sikaflex glue in the frame channel.
- 7) Drill new UHMW seals using old seals as guides and install on gate.
- 8) For reassembly, do the steps 4 to 1.

The Sikaflex glue included, should be applied on all mating joints.

LUBRICANTS

The operating stem should always be well lubricated to ensure proper gate operation. Use one of the following lubricants:

- Esso "Unirex EP2"
- Shell "Darina XL EP"
- Texaco "Summit EPM2"
- Rocol "Tuflube Allweather" (European)
- Hydra Lube "TW 2 compound" (European)

In heavy duty application as modulating operation or frequently submerge threaded stem, use one of the following lubricants:

- Shell "SRS 2000"
- Petro-Canada "OG-2"
- Prolab "OG 700"
- Rocol "Tuflube Allweather" (European)
- Hydra Lube "TW 2 compound" (European)

If the gate is used in drinking water, use:

- Rocol "Sapphire Aqua-sil Hi-load" (European)

For food grade and non-toxic applications, use:

- Rocol "Foodlube multi paste" (European)
- Exxon "Foodrex FG 1"
- Shell "FM 2"
- Mineral oil

An equivalent is acceptable, according to condition of use's (contact your local Fontaine country office for further details and advice).

SPARE PARTS

H. Fontaine Ltd does not recommend that customers stock replacement parts, since the equipment has an excellent durability when properly maintained.

If a replacement part is necessary, contact our customer service department with the following information:

- Gate serial number
- Part description
- Description of damages and causes
- Approximate delivery requirements

This information will enable us to serve you in a quicker and better manner.

INSTALLATION & MAINTENANCE MANUAL STAINLESS STEEL GATES

LIMITED WARRANTY

H. Fontaine Ltd. warrants that the Equipment manufactured by it and delivered hereunder will be free of defects in material and workmanship for a period of twelve months from the date of placing the Equipment in operation or eighteen months from the date of shipment, whichever shall first occur. The Purchaser shall be obligated to promptly report any failure to conform to this warranty, in writing to *H. Fontaine Ltd.* within said period, whereupon *H. Fontaine Ltd.* shall, at its option correct such nonconformity, by suitable repair to such Equipment or, furnish a replacement part F.O.B. point of shipment, provided the Purchaser has stored, installed, maintained and operated such Equipment in accordance with good industry practices and has complied with specific recommendations of *H. Fontaine Ltd.* Accessories or equipment furnished by *H. Fontaine Ltd.*, but manufactured by others, shall carry whatever warranty the manufacturers have conveyed to *H. Fontaine Ltd.* and which can be passed on to the Purchaser. *H. Fontaine Ltd.* shall not be liable for any repairs, replacements, or adjustments to the Equipment or any costs of labor performed by the Purchaser or others without *H. Fontaine Ltd.* prior written approval. The effects of corrosion, erosion and normal wear and tear are specifically excluded. Performance warranties are limited to those specifically stated within *H. Fontaine Ltd.* proposal.

H. FONTAINE LTD MAKES NO OTHER WARRANTY OR REPRESENTATION OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED.

Correction by *H. Fontaine Ltd.* of nonconformity's: whether patent or latent, in the manner and for the period of time provided above, shall constitute fulfillment of all liabilities of *H. Fontaine Ltd.* for such nonconformity's, whether based on contract, warranty, negligence, indemnity, strict liability or otherwise with respect to or arising out of such Equipment. The Purchaser shall not operate Equipment which is considered to be defective, without first obtaining *H. Fontaine Ltd.* written consent to do so. Any such use of Equipment will be at the Purchaser's sole risk and liability.

Earth Tech (Canada) Inc.

Reviewed for general conformance with design intent.
Responsibility for detailed design in the shop drawings
rests with the Contractor.

Reviewed for the verification and distribution of field
drawings. The Contractor is responsible for the accuracy of
the field drawings. The Contractor is responsible for all
work in the field with the Contractor.

REVIEWED

NOT REVIEWED AS APPLICABLE

REVISE AND RE-COUNT

NOT REVIEWED

Project No. 3398-055-00 79538/23-16

Date: APR 5/66 By: [Signature]

PER UMA ENGINEERING.

* NOTE REVIEWED ONLY FOR 1-1520+1524
SERIES TO GATE - SUPPLIED FOR SEPARATE PROJECT