

TEST REPORT

Intertek

REPORT NUMBER: 3174887COQ-002B

ORIGINAL ISSUE DATE: April 6, 2009

EVALUATION CENTER

**INTERTEK TESTING SERVICES NA LTD.
1500 BRIGANTINE DRIVE
COQUITLAM, BC V3K 7C1**

RENDERED TO

**EXCELL RAILING SYSTEMS LTD.
#306 – 12886 ANVIL WAY
SURREY, BC V3W 8E7**

**PRODUCT EVALUATED: Excell Picket and Glass Railing Systems
EVALUATION PROPERTY: Load Requirements**

**Report of Excell Picket and Glass Railing Systems for
compliance with the applicable requirements of the following
criteria: 2006 International Building Code, Section 1607.7.1**

**THIS REPORT HAS BEEN EDITED BY EXCELL RAILING SYSTEMS. FOR A
COPY OF THE ORIGINAL REPORT CONTACT EXCELL RAILING SYSTEMS.**

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

1 Table of Contents

1	Table Of Contents.....	2
2	Introduction.....	3
3	Test Samples.....	3
3.1.	Sample Selection.....	3
3.2.	Sample And Assembly Description.....	3
4	Testing And Evaluation Methods.....	4
4.1.	General (Clause 1607.7.1).....	4
4.2.	In-Fill Load Test (Clause 1607.7.1.2).....	4
4.3.	Uniform Load Test (Clause 1607.7.1).....	4
4.4.	Concentrated Load Test (Clause 1607.7.1.1).....	4
5	Testing And Evaluation Results.....	5
5.1.	Results And Observations.....	5
6	Conclusion.....	6
Appendix A	Test Data.....	2 Pages
Appendix B	Excell Welded Picket Drawings.....	7 Pages
Appendix C	Excell Glass Drawings.....	6 Pages

2 Introduction

Intertek Testing Services NA Ltd. (Intertek) has conducted a test program for Excell Railing Systems Ltd. on two face mounted aluminum railing systems. The evaluation was carried out to determine whether the railing systems would meet the loads specified in the 2006 International Building Code (IBC), Section 1607.7. The evaluation was conducted in the month of March 2009.

3 Test Samples

3.1. SAMPLE SELECTION

The client submitted one (1) aluminum face mounted picket railing sample and one (1) aluminum face mounted glass in-fill railing sample to the Evaluation Center on March 16, 2009. Samples were not independently selected for testing and cannot be used for Intertek Certification.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The samples were identified as the following:

- 6 ft. Excell Welded Picket Railing System, which consists of the following:

Post: 1.72 in. x 1.72 in. 6061-T6 extruded aluminum post

Base Plate: 2 in. x 2 in. x 5 in. x 1/4 in. 6061-T6 fascia mounted angle bars (2) each with 2 mounting holes

Top Rails: 42 in. high, 6063-T5 aluminum rail (1-piece round profile)

Picket Insert: 5/8 in. x 5/8 in. 6063-T5 aluminum spaced 4-1/2 in. o/c

Connections: Connection details are provided in Appendix B.

- 5 ft. Excell Glass In-fill Railing System, which consists of the following:

Post: 1.72 in. x 1.72 in. 6061-T6 extruded aluminum post

Base Plate: 2 in. x 2 in. x 5 in. x 1/4 in. 6061-T6 fascia mounted angle bars (2) each with 2 mounting holes

Top Rails: 42 in. high, 6063-T5 aluminum rail (1-piece round profile)

Panel Insert: 6 mm, tempered glass panel measuring 54 in. wide x 38 in. high

Connections: Connection details are provided in Appendix C.

Note: Post to sub-structure fastener evaluation is beyond the scope of this report. Four 3/8 inch Grade 5 bolts were used to install deck mount posts.

4 Testing and Evaluation Methods

Each test specimen was loaded at a rate to achieve the specified loads between 10 seconds and 5 minutes. The specified test loads were held for one minute before the load was released. As per Section 1607.7.1 of the 2006 IBC, the following tests were conducted:

4.1. GENERAL (Clause 1607.7.1)

One complete railing system, consisting of two posts, was tested at maximum spacing and in the worst-case scenario.

4.2. IN-FILL LOAD TEST (Clause 1607.7.1.2)

A load consisting of 125 lbf was applied over 1 sq. ft. (0.0929 m²) normal to the in-fill in a worst-case scenario for the picket railing system. A load consisting of 200 lbf was applied over 1 sq. ft. (0.0929 m²) normal to the in-fill in a worst-case scenario for the glass railing system. As per Section 2407.1.1 of the 2006 IBC, a safety factor of 4 was used for glass panel.

4.3. UNIFORM LOAD TEST (Clause 1607.7.1)

A load consisting of 125 lbf/ft was applied across the top rail of each system in a 45° vectored direction.

4.4. CONCENTRATED LOAD TEST (Clause 1607.7.1.1)

The top rail of the guardrail system was subjected to two separate tests where a concentrated load of 500 lbf was applied at the following locations:

- Horizontally at the centre of the guardrail.
- Horizontally at the top rail adjacent to the rail to post connection to verify the connection capacity.

5 Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS


The product test results are shown in Table 1 below and a copy of the test data sheets are located in Appendix A.

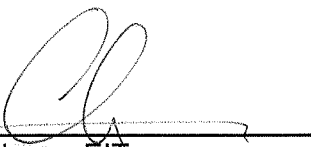
Table 1. Test Results				
System Description	System Height (inches)	Maximum Post to Post Center Spacing (inches)	Test	Compliance
6 ft. Excell Welded Picket Railing System	42	72	In-fill load	Complied
			Uniform Load	Complied
			Mid-span Concentrated Load	Complied
			Adjacent to Post Concentrated Load	Complied
5 ft. Excell Glass In-fill Railing System	42	60	In-fill load	Complied
			Uniform Load	Complied
			Mid-span Concentrated Load	Complied
			Adjacent to Post Concentrated Load	Complied


6 Conclusion

The Excell Welded Picket and Glass In-fill Railing Systems identified in this test report have complied with the loads specified in the 2006 International Building Code, Section 1607.7.1 as presented in Section 5 of this test report.

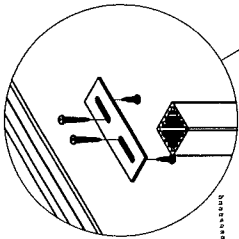
INTERTEK TESTING SERVICES NA LTD.

Tested by: 
Riccardo DeSantis
Project Coordinator / Test Technician, Construction Products

Reported by: 
Chris Chang, EIT
Project Leader / Test Engineer, Construction Products

Reviewed by: 
Heiko Neugebauer, ASCT
Manager, Fenestration / Construction Products Group

EXCELL WELDED PICKET SYSTEM WITH 1.72" FASCIA POSTS



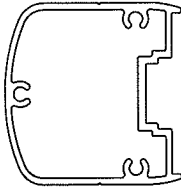
POST MOUNT PLATE FASTENED
TO 1.72" FASCIA POST WITH
2x #10x1 1/2" PH SS SCREWS
AND TO TOP RAIL WITH
2x #10x1 1/2" PH SS SCREWS
ETL SEMKO

DWG: 1 of 7

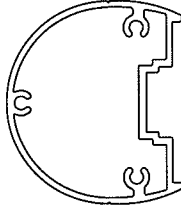
APR 06 2009

PROJECT #: 317487

REVIEWED BY: [Signature]



EXCELL SQUARE
WELDED PICKET
TOP RAIL



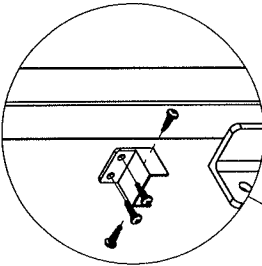
EXCELL ROUND
WELDED PICKET
TOP RAIL



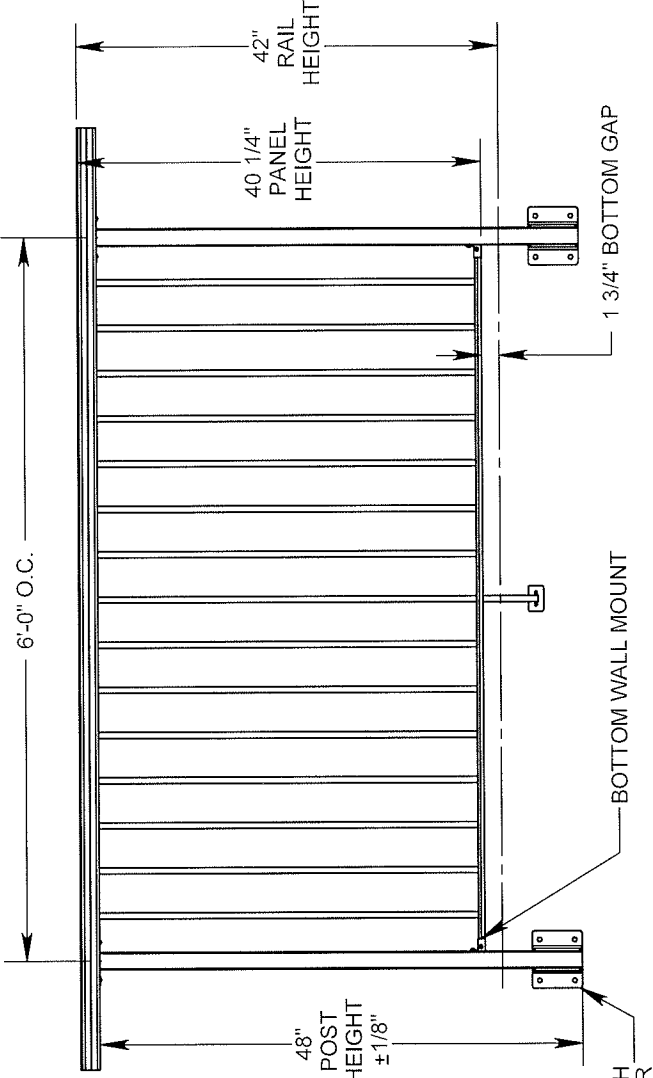
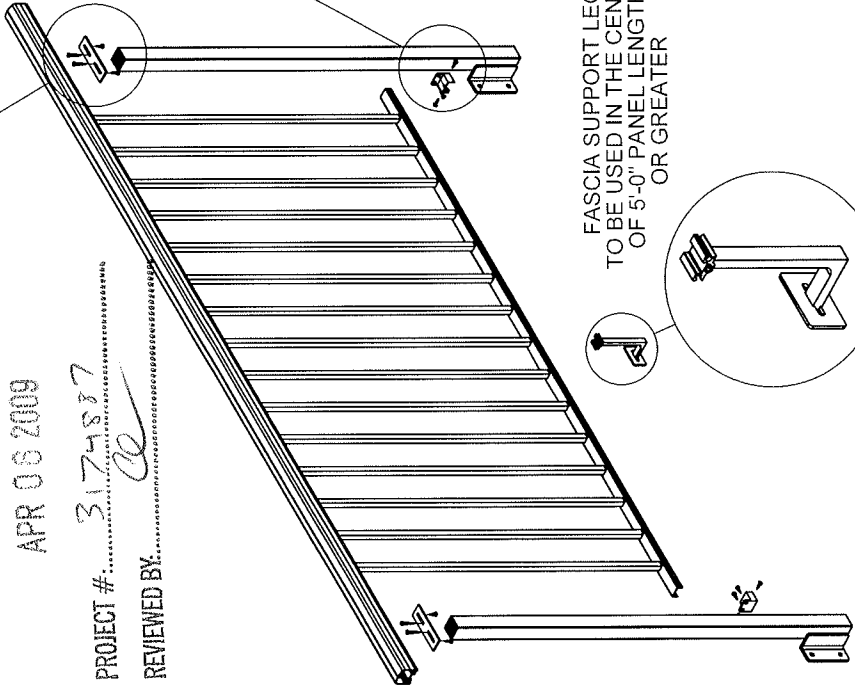
WELDED PICKET
BOTTOM RAIL



5/8" SQUARE
PICKET



BOTTOM MOUNT FASTENED
TO 1.72" FASCIA POST WITH
2x #10x3/4" TEK SCREWS
AND BOTTOM RAIL WITH
2x #10x3/4" TEK SCREWS

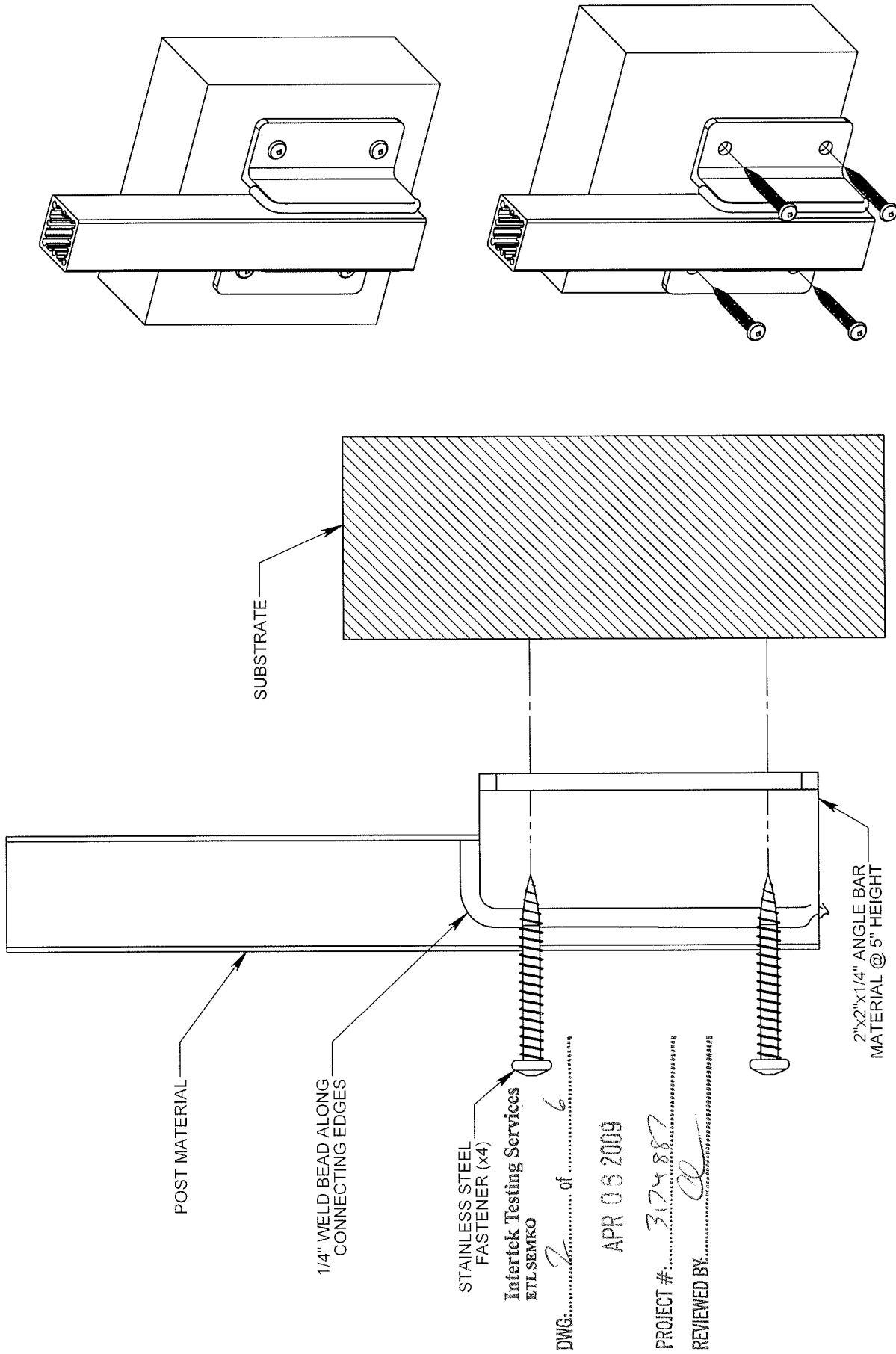


PLEASE SEE DRAWING
08-ERS-FPD1 FOR POST
ASSEMBLY DETAILS



ALL DIMENSIONS ARE SUBJECT TO SITE MEASUREMENTS AND ARE TO BE CONFIRMED BEFORE FABRICATION OF PRODUCT

Authorization Signature		Date of Authorization		Drawing Name		Customer	
Excell Railing Systems Ltd.		Durarail Kansas City Warehouse		09-ERSL-EWP1(FASENG1		Excell Railing Systems Ltd.	
#306 - 12886 Anvil Way		1722 Iron Street		Project Name		Excell WP Style 1 with 1.72 Fascia Posts (Engineer Report)	
Surrey, BC Canada V3W 8E7		North Kansas City, MO 64116		Drawn By		Csaba Bezzegh	
Phone: 604-501-0151		Toll Free: 1-800-338-3568		Revision No.		Scale	
Fax: 604-501-0155		Toll Free: 1-800-338-3568		NTS		Last Update	
Toll Free: 1-866-999-7245		www.durarail.com		Library(Engineering(Railing Assemblies\WP1.72 Posts\WP Style 1\Excell (Fascia)\			
www.excellrailing.com							

MANUFACTURER OF EXCELL &
DURARAIL PRODUCT LINES



ALL DIMENSIONS ARE SUBJECT TO SITE MEASUREMENTS AND ARE TO BE CONFIRMED BEFORE FABRICATION OF PRODUCT

		Authorization Signature		Date of Authorization		Drawing Name		08-ERS-FPD1											
MANUFACTURER OF EXCELL & DURARAIL PRODUCT LINES 		Excell Railing Systems Ltd. #306 - 12886 Anvil Way Surrey, BC Canada V3W 8E7 Phone: 604-501-0151 Fax: 604-501-0155 Toll Free: 1-866-999-7245 www.excellrailing.com		Durarail Kansas City Warehouse 1722 Iron Street North Kansas City, MO 64116 Toll Free: 1-800-338-3568 Fax: 1-816-421-2924 www.durarail.com		Customer		Durarail / Excell Railing Systems											
						Project Name		Fascia Post Design		Date Created		December 10, 2008							
						Drawn By		Csaba Bezzegh		Last Update		April 6, 2009							
						Revision No.		2		Scale		NTS							
						Revision No.		2		Scale		NTS		Last Update		April 6, 2009			
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	
								Revision No.		2		Scale		NTS		Last Update		April 6, 2009	