[	T	OLBrace™ :	Seisn	nic Bra	cing Calcu	lation	S	
Project Addres	SS: UNITED N	UNITED MOVING		Contractor: Patriot Fire Protection Address: 2707 70th Ave E				
-	1740 FUSON ROAD			Tacoma, WA 98424				
	BREMER	TON, WA 98311		License: PATRIFP099CF				
	Job # 11-2	2193 Calo	culations ba	ased on 2013 NFPA Pamphlet #13				
E	Brace Info	rmation		TOLCO™ Brace Components				
Maximum Brac	:e Length <u>7'0" (</u>	(2.134 m)		TOLCO	™ Component	Listed	Load	Adjusted Load
Diameter of Bra				Fig. 1001 C	Clamp	2015 lbs	(914 kg)	1425 lbs (646 kg)
	Sch.	10			iversal Swivel	2015 lbs	(914 kg)	1425 lbs (646 kg)
Type of Brace				Fig.828 Act		2015 lbs		1425 lbs (646 kg)
Angle of Brace	45° M	1in.		*Calculation Based on CONCENTRIC Loading *Please Note: These calculations are for TOLCO™ components only. Use of any other components voids these calculations and the listing of the assembly.				
Least Rad. of G	yration <u>0.42</u> "	(11 mm)		_	Seismic Brace Assembly Detail			
L/R Value	200							Botan
Max Horizontal Load <u>1310 lbs (594 kg)</u>		lbs (594 kg)			TOLCO Fig 82	8		
Fa	astener Inf	ormation						
Orientation to (	Connecting Surf	ace <u>NFPA Type B</u>				~	10/	
Fastener							X)	
Туре	Fig.82	8 Across Beam				/ /	V	
Diameter	N/A			(		$\mathbf{X}$		
Length	N/A			TOLCO Fig 1001				
Maximum Load		bs (646 kg)						
Prying Factor	N/A			Brace Identification on Plans 4" LATERAL				
				Brace Ty	pe Lateral [X]	LON	jitudinal [ ]	4-Way[]
	_	Sprinkler Sy	vstem Lo Cp		tion (Fpw = CpW	/p)		
Diameter	Туре	Length	Г	l Length	Weight Per Unit	Length	1	Fotal Weight
4" (100 mm) S	Sch. 10	24.08 ft (7.3 m)	24.08 ft (	(7.3 m)	11.78 lb/ft (17.53 kg/	m)	284 lbs (12	9 kg)
2" (50 mm) \$	Sch. 10	183 ft (55.8 m)	183 ft (5	5.8 m)	4.22 lb/ft (6.28 kg/m)		772 lbs (35	0 kg)
							1056 lbs (4	= :

 Wp (incl. 15%)
 1214 lbs (551 kg)

 Main Size
 Type/Sch.
 Spacing (ft)
 Total (Fpw)
 795 lbs (361 kg)

 4"
 Sch. 10
 24.08
 Maximum Fpw per 9.3.5.5.2 (if applicable)
 1307 lb (592 kg)

{TOLB race ™ Version 8}

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# **TOLBrace<sup>™</sup> Seismic Calculations**

UNITED MOVING	Job # 11-2193
1740 FUSON ROAD	
Brace Identification	4" LATERAL
Brace Type (Per NFPA#13)	NFPA Type B
Braced Pipe (ft)	4" Sch.10 Steel Pipe
Spacing of Brace	24' 1.2" (7.34 m)
Orientation of Brace	Lateral
Bracing Material	1" Sch.40
Maximum Brace Length	7' 0" (2.13 m)
Slenderness Ratio used for Load Calculation	200
True Angle of Brace for Calculation	45°
Type of Fastener	Fig.828 Across Beam
Length of Fastener	N/A

Summary of Pipe within Zone of Influence

4" Sch.10 Steel Pipe (101.6 mm)	24.08 ft (7.3 m)
2" Sch.10 Steel Pipe (50.8 mm)	183 ft (55.8 m)

G-Factor Used 0.655	
Allowance for Heads and Fittings	15%
Conclusions	
Total Adjusted Load of Pipe in Zone of Influence	795 lbs (361 kg)
Material Capacity	1310 lbs (594 kg)
Fastener Capacity	1425  bs (646 kg)
Fig. 1001 Clamp	1425  bs (646 kg)
Fig.980 Universal Swivel	1425 lbs (646 kg)
Structural Member	STRUCTURAL MAIN FRAME

Calculations prepared by RON SHEARER

\* The description of the Structural Member is for informational purposes only.

TOLBrace<sup>™</sup> software calculates the brace assembly only, not the structure it is attached to. Calculated with TOLBrace<sup>™</sup> 8

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# Powering Business Worldwide

		тс	DLBrace™	Seisn	nic Bra	cing Calcu	lations	\$	
Project Addres	174 BR		ON ROAD ON, WA 98311	lculations ba	Address: Phone: License:	Patriot Fire Prote 2707 70th Ave E Tacoma, WA 9842 253.926.2290 PATRIFP099CF PA Pamphlet #13		E	Powering Business Worldwide
Brace Information				TOLCO™ Brace Components					
Maximum Brac	e Length	7' 0" (2	2.134 m)		TOLCO	<sup>™</sup> Component	Listed	Load	Adjusted Load
Diameter of Bra	ace	1" Sch	.40		Fig. 4L Cla	np	2015 lbs (	914 kg)	1425 lbs (646 kg)
Type of Brace		Sch. 1	0			iversal Swivel	2015 lbs (		1425 lbs (646 kg)
					Fig.828 Ac	oss Beam *Calculation Based	2015 lbs ( on CONCEN	0,	1425 lbs (646 kg) ing
Angle of Brace		45° Mi	n.			e: These calculations a nponents voids these c	re for TOLCC	o™ compoi	nents only. Use of any
Least Rad. of G	Least Rad. of Gyration 0.42" (11 mm)			Seismic Brace Assembly Detail					
L/R Value		200							PA
Max Horizontal Load 1310 lbs (594 kg)									
					-	TOLCO Fig	980		hmm
Fastener Information						~			
Orientation to (	Connecti	ng Surfa	ce NFPA Type B					$\mathbf{i}$	
Fastener									
Туре	Type Fig.828 Across Beam								
Diameter		N/A			TOLCO Fig 4L				
Length		N/A							
Maximum Load	1	1425 lb	s (646 kg)						
					Brace Ide	entification on F	Plans 4"	LONGITU	IDINAL
Prying Factor		N/A			Brace Ty	<b>pe</b> Lateral []	Longi	tudinal [X]	4-Way[]
			Sprinkler S	ystem Lo Cp		tion (Fpw = CpW	/p)		
Diameter	Тур	e	Length		l Length	Weight Per Unit	Length		Total Weight
4" (100 mm) \$	Sch. 10		72.25 ft (22 m)	72.25 ft	(22 m)	11.78 lb/ft (17.53 kg/	m)	851 lbs (3	86 kg)

				Subtotal Weight	851 lbs (386 kg)
				Wp (incl. 15%)	979 lbs (444 kg)
Main Size	Type/Sch.	Spacing (ft)		Total (Fpw)	641 lbs (291 kg)
4"	Sch. 10	72.25	Maximum F	pw per 9.3.5.5.2 (if applicable)	N/A

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## **TOLBrace<sup>™</sup> Seismic Calculations**

UNITED MOVING	Job # 11-2193	
1740 FUSON ROAD		FATON
Brace   dentification	4" LONGITUDINAL	Powering Business Worldwide
Brace Type (Per NFPA#13)	NFPA Туре В	
Braced Pipe (ft)	4" Sch.10 Steel Pipe	
Spacing of Brace	72' 2.4" (22.02 m)	
Orientation of Brace	Longitudinal	Poviowed for Code Compliance
Bracing Material	1" Sch.40	Reviewed for Code Compliance Kitsap County Building/ Fire Marshals
Maximum Brace Length	7' 0" (2.13 m)	11/17/20202:29:26 PM kwlodarchak
Slenderness Ratio used for Load Calculation	200	
True Angle of Brace for Calculation	45°	
Type of Fastener	Fig.828 Across Beam	
Length of Fastener	N/A	
Summary of Pipe within Zone	e of Influence	

4" Sch.10 Steel Pipe (101.6 mm)	72.25 ft (22 m)

G-Factor Used 0.655			
Allowance for Heads and Fittings	15%		
Conclusions			
Total Adjusted Load of Pipe in Zone of Influence	641 lbs (291 kg)		
Material Capacity	1310 lbs (594 kg)		
Fastener Capacity	1425 lbs (646 kg)		
Fig. 4L Clamp	1425 lbs (646 kg)		
Fig.980 Universal Swivel	1425 lbs (646 kg)		
Structural Member	STRUCTURAL MAIN FRAME		

Calculations prepared by RON SHEARER

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