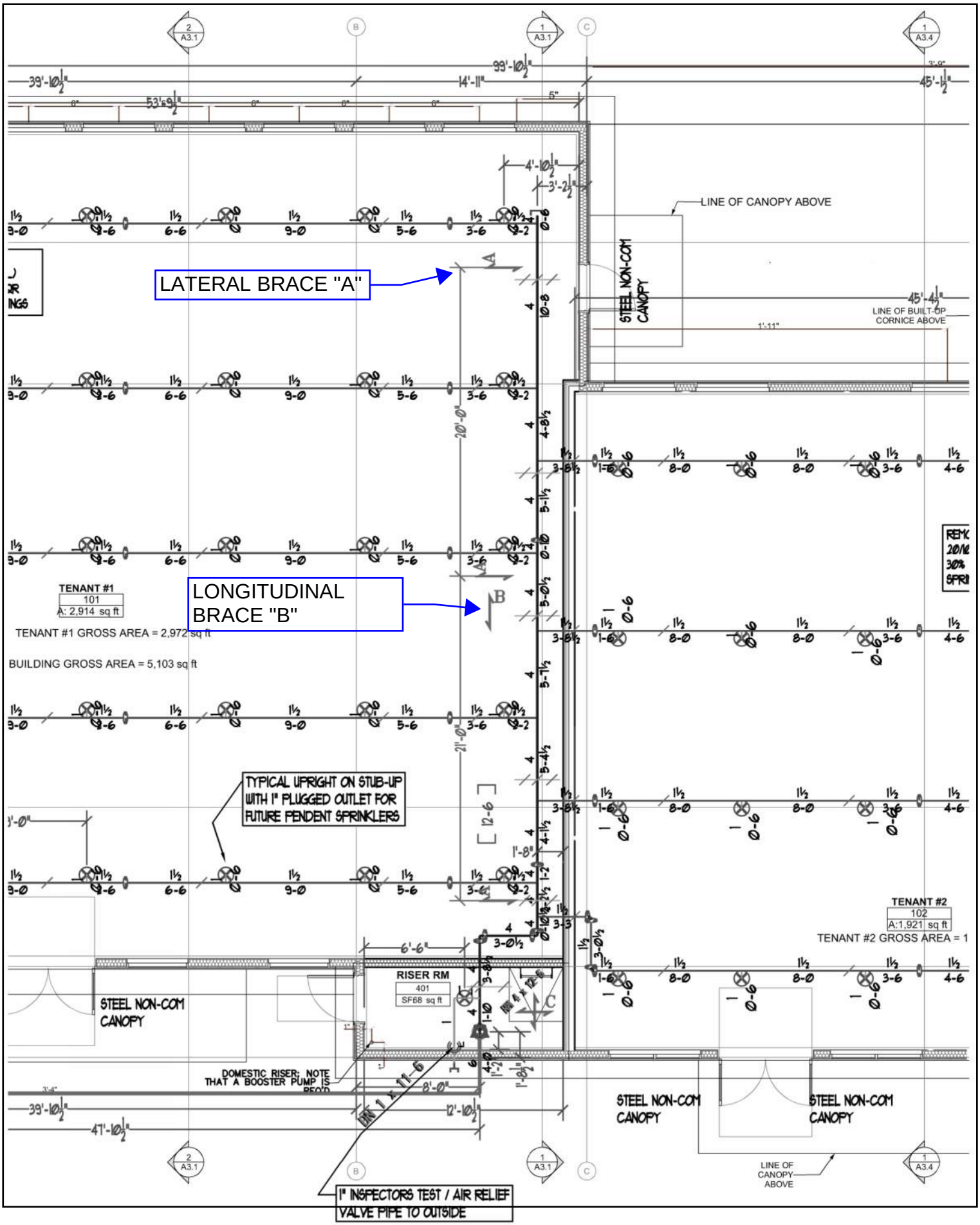
EAST TOWN CROSSING - COMMERCIAL LOT-1 - SEISMIC BRACING PLAN

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic



Expires DEC 31, 25

WASHINGTON STATE CERTIFICATE OF COMPETENCY FIRE SPRINKLER SYSTEMS

Joseph G. Faulkner
9491-0699-CEG Level 3
Sprinx Fire Protection, Inc.
SPRINFP011LS

Signature 12/04/2025 Date

To find the latitude and longitude of a point you can do any of the following...

1. **Press and Hold** the **Shift Key** then **Click** on the point on the map.
2. **Drag** the red marker (Press and Hold the mouse button until the marker pops up) .
3. Enter the **Address** 2902 E PIONEER PUYALLUP WA 98372 GO

Latitude and Longitude of a Point

Clear / Reset | Remove Last Blue Marker | Center Red Marker

Get the Latitude and Longitude of a Point

When you click on the map, move the marker or enter an address the latitude and longitude coordinates of the point are inserted in the boxes below.

Latitude:	47.184724
Longitude:	-122.255571
Combined:	47.184724,-122.255571

	Degrees	Minutes	Seconds
Latitude:	47	11	5.0064
Longitude:	-122	15	20.0556

Show Point from Latitude and Longitude

Use this if you know the latitude and longitude coordinates of where on the map the point is.
Use: + for *N* Lat or *E* Long **-** for *S* Lat or *W* Long.
Example: +40.689060 -74.044636
Note: Your entry should not have any embedded spaces.

Decimal Deg. Latitude:	
Decimal Deg. Longitude:	

Show Point

Example: **+34 40 50.12** for *34N 40' 50.12"*

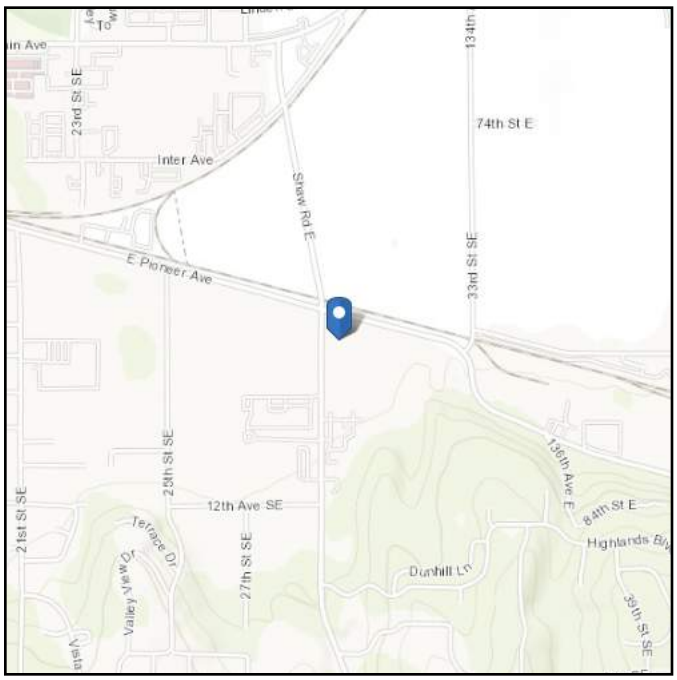
	Degrees	Minutes
Latitude:		
Longitude:		

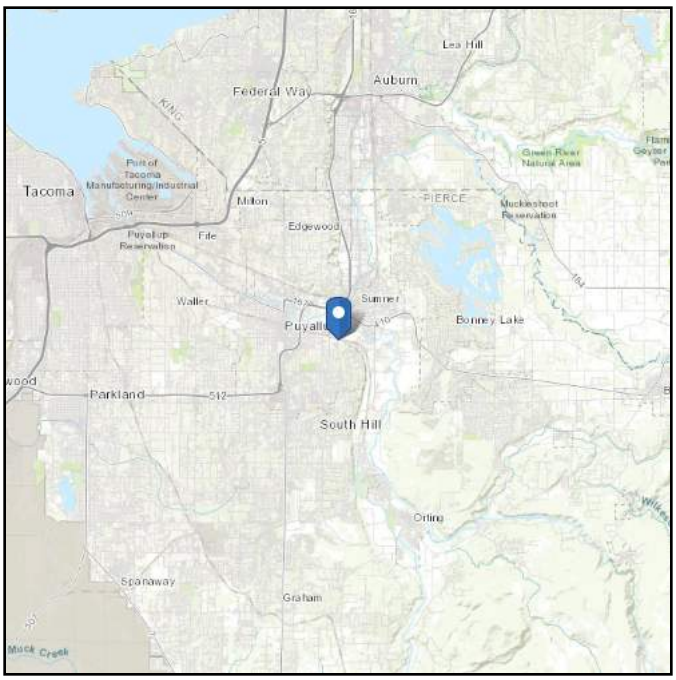
Show Point

ASCE Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-22	**Latitude:**	47.184724
Risk Category:	II	**Longitude:**	-122.255571
Soil Class:	Default	**Elevation:**	70.64448479999352 ft (NAVD 88)





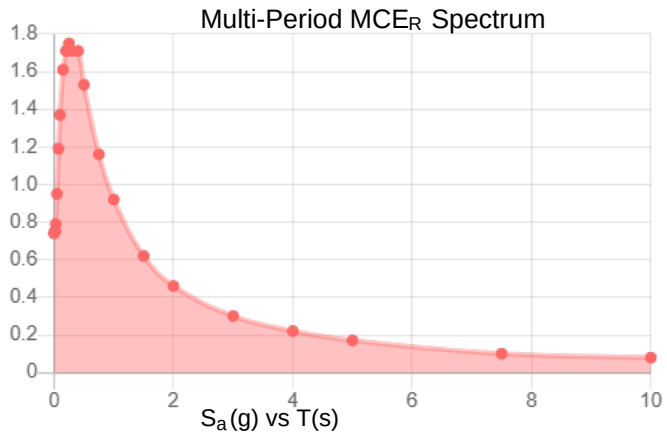
Seismic

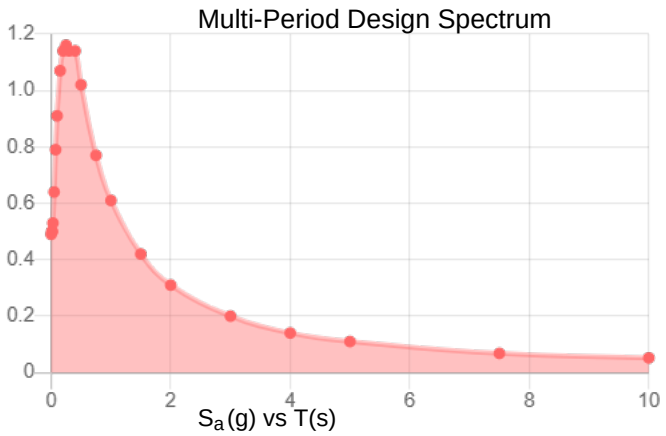
Site Soil Class: Default

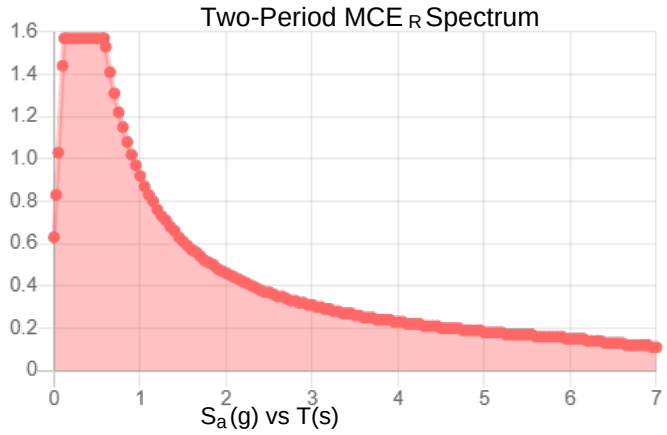
Results:

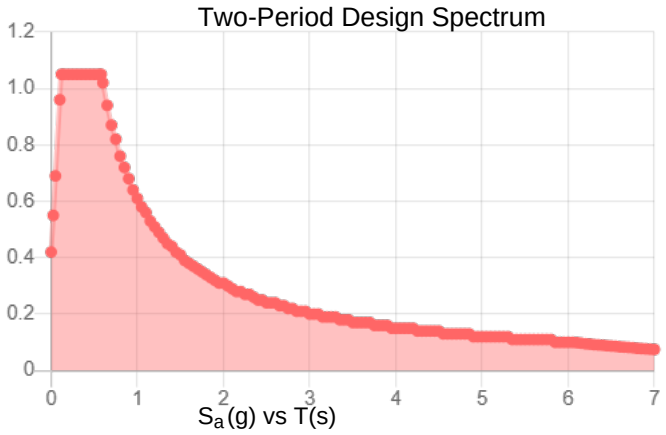
PGA_M :	0.56	T_L :	6
S_{MS} :	1.57	S_S :	1.42
S_{M1} :	0.92	S_1 :	0.43
S_{DS} :	1.05	V_{S30} :	260
S_{D1} :	0.61		

Seismic Design Category: D









MCE_R Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Design Vertical Response Spectrum

Vertical ground motion data has not yet been made available by USGS.

Data Accessed: Thu Dec 04 2025

Date Source:
USGS Seismic Design Maps based on ASCE/SEI 7-22 and ASCE/SEI 7-22 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-22 Ch. 21 are available from USGS.

The ASCE Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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TOLBrace™ Seismic Bracing Calculations

V8.8.144

Project Address: East Town Crossing Commercial Lot
2902 E Pioneer
Puyallup, WA 98372
Job # #24-093CM

Contractor: Sprinx Fire Protection, Inc.
Address: PO Box 152
Gig Harbor, WA 98335
Phone: (253)853-7780
License: SPRINFP011LS

Calculations based on 2019 NFPA Pamphlet #13

Brace Information

Maximum Brace Length	7' 0" (2.134 m)
Diameter of Brace	1"
Type of Brace	Sch.40
Angle of Brace	30° Min.
Least Rad. of Gyration	0.42" (11 mm)
L/R Value	200
Max Horizontal Load	926 lbs (420 kg)

Fastener Information

Orientation to Connecting Surface NFPA Type D

Fastener

Type	(2)1/2" THROUGH BOLT
Diameter	1/2
Length	4.5
Maximum Load	470 lbs (213 kg)

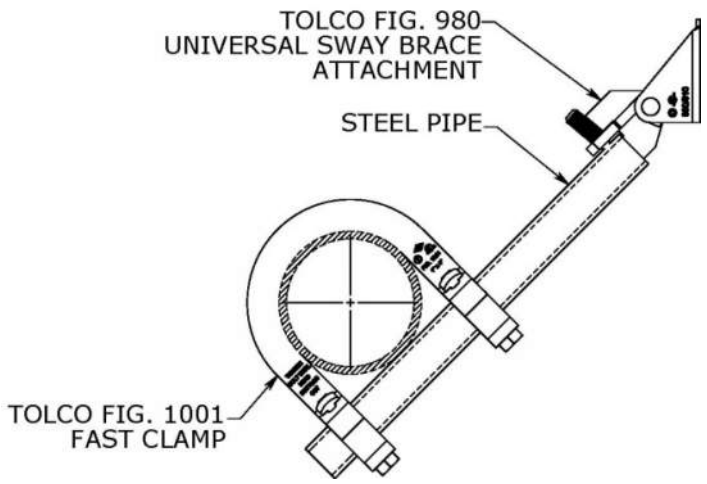
Prying Factor N/A

TOLCO™ Brace Components

TOLCO™ Component	Listed Load	Adjusted Load
Fig. 1001 Clamp	2000 lbs (907 kg)	1000 lbs (454 kg)
Fig.980 - 1/2" Universal Swivel	2100 lbs (953 kg)	1050 lbs (476 kg)
See Fastener Information		

*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.

Seismic Brace Assembly Detail



Brace Identification on Plans LATERAL BRACE "A"

Brace Type Lateral [X] Longitudinal [ ] 4-Way [ ]

Sprinkler System Load Calculation (Fpw = CpWp)

Cp = 0.66

Diameter	Type	Length	Total Length	Weight Per Unit Length	Total Weight
4" (100 mm)	Eddy-Flow	20 ft (6.1 m)	20 ft (6.1 m)	11.29 lb/ft (16.8 kg/m)	226 lbs (103 kg)
1.5" (40 mm)	Eddy-Flow	135 ft (41.1 m)	135 ft (41.1 m)	2.86 lb/ft (4.26 kg/m)	386 lbs (175 kg)

Subtotal Weight	612 lbs (278 kg)
Wp (incl. 15%)	704 lbs (319 kg)
Total (Fpw)	465 lbs (211 kg)
Maximum Fpw per 18.5.5.2 (if applicable)	Contact Pipe Manufacturer

Main Size	Type/Sch.	Spacing (ft)
4"	Eddy-Flow	20

TOLBrace™ Seismic Calculation

East Town Crossing Commercial Lot-1 Job # #24-093CM

2902 E Pioneer

Brace Identification	LATERAL BRACE "A"
Brace Type (Per NFPA#13)	NFPA Type D
Braced Pipe (ft)	4" EddyFlow Pipe
Spacing of Brace	20' 0" (6.1 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	30°
Type of Fastener	(2)1/2" THROUGH BOLT
Length of Fastener	4.5

Summary of Pipe within Zone of Influence

4" EddyFlow Pipe (101.6 mm)	20 ft (6.1 m)
1.5" EddyFlow Pipe (38.1 mm)	135 ft (41.1 m)

G-Factor Used 0.66

Allowance for Heads and Fittings	15%

Conclusions

Total Adjusted Load of Pipe in Zone of Influence	464 lbs (210 kg)
Material Capacity	926 lbs (420 kg)
Fastener Capacity	470 lbs (213 kg)
Fig. 1001 Clamp	1000 lbs (454 kg)
Fig.980 - 1/2" Universal Swivel	1050 lbs (476 kg)
Structural Member	TOP CORD OF WOOD TRUSS- DOUBLE BACK TOP CORD WITH 2›

Calculations prepared by Joseph Faulkner

* The description of the Structural Member is for informational purposes only.
TOLBrace™ software calculates the brace assembly only, not the structure it is attached to.

TOLBrace™ Seismic Bracing Calculations

V8.8.144

Project Address: East Town Crossing Commercial Lot
2902 E Pioneer
Puyallup, WA 98372
Job # #24-093CM

Contractor: Sprinx Fire Protection, Inc.
Address: PO Box 152
Gig Harbor, WA 98335
Phone: (253)853-7780
License: SPRINFP011LS

Calculations based on 2019 NFPA Pamphlet #13

Brace Information

Maximum Brace Length	7' 0" (2.134 m)
Diameter of Brace	1"
Type of Brace	Sch.40
Angle of Brace	45° Min.
Least Rad. of Gyration	0.42" (11 mm)
L/R Value	200
Max Horizontal Load	1310 lbs (594 kg)

Fastener Information

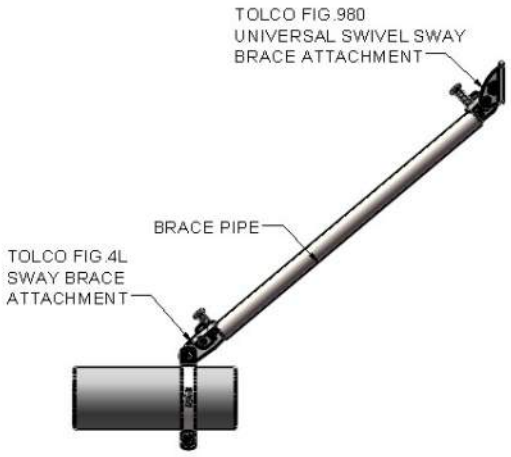
Orientation to Connecting Surface	NFPA Type E
Fastener Type	1/2 (13 mm) Dual Through-Bolts Perpendicular to Beam - TOLCO Fig 906
Diameter	1/2in. (13 mm)
Length	Minimum 4x Wood Member
Maximum Load	600 lbs (272 kg)
Prying Factor	N/A

TOLCO™ Brace Components

TOLCO™ Component	Listed Load	Adjusted Load
Fig. 4L Clamp	2000 lbs (907 kg)	1414 lbs (641 kg)
Fig.980 - 1/2" Universal Swivel	2100 lbs (953 kg)	1485 lbs (674 kg)
See Fastener Information		

*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.

Seismic Brace Assembly Detail



Brace Identification on Plans LONGITUDINAL BRACE "B"

Brace Type Lateral [ ] Longitudinal [X] 4-Way [ ]

Sprinkler System Load Calculation (Fpw = CpWp)

Cp = 0.66

Diameter	Type	Length	Total Length	Weight Per Unit Length	Total Weight
4" (100 mm)	Eddy-Flow	60 ft (18.3 m)	60 ft (18.3 m)	11.29 lb/ft (16.8 kg/m)	677 lbs (307 kg)

Subtotal Weight	677 lbs (307 kg)
Wp (incl. 15%)	779 lbs (353 kg)
Total (Fpw)	514 lbs (233 kg)
Maximum Fpw per 18.5.5.2 (if applicable)	N/A

Main Size	Type/Sch.	Spacing (ft)
4"	Eddy-Flow	60

TOLBrace™ Seismic Calculation

East Town Crossing Commercial Lot-1 Job # #24-093CM

2902 E Pioneer

Brace Identification	LONGITUDINAL BRACE "B"
Brace Type (Per NFPA#13)	NFPA Type E
Braced Pipe (ft)	4" EddyFlow Pipe
Spacing of Brace	60' 0" (18.29 m)
Orientation of Brace	Longitudinal
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	1/2 (13 mm) Dual Through-Bolts Perpendicular to Beam - TOLCO Fig 9
Length of Fastener	Minimum 4x Wood Member

Summary of Pipe within Zone of Influence

4" EddyFlow Pipe (101.6 mm)	60 ft (18.3 m)

G-Factor Used 0.66

Allowance for Heads and Fittings	15%

Conclusions

Total Adjusted Load of Pipe in Zone of Influence	514 lbs (233 kg)
Material Capacity	1310 lbs (594 kg)
Fastener Capacity	600 lbs (272 kg)
Fig. 4L Clamp	1414 lbs (641 kg)
Fig.980 - 1/2" Universal Swivel	1485 lbs (674 kg)
Structural Member	TOP CORD OF TRUSS DOUBLE BACK TRUSS WITH 2x

Calculations prepared by Joseph Faulkner

* The description of the Structural Member is for informational purposes only.
TOLBrace™ software calculates the brace assembly only, not the structure it is attached to.

NFPA-13 HANDBOOK

TABLE 18.5.12.2(m) *Maximum Load for Lag Screws and Lag Bolts in Wood*

Lag Screws and Lag Bolts in Wood (Load Perpendicular to Grain — Holes Predrilled Using Good Practice)

Length of Bolt in Timber (in.)		Lag Bolt Diameter (in.)																										
		1/2									5/8									3/4								
		A	B	C	D	E	F	G	H	I	A	B	C	D	E	F	G	H	I	A	B	C	D	E	F	G	H	I
	3½	165	190	200	170	220	310	80	120	170	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	4½	180	200	200	175	235	350	80	120	170	300	355	380	315	400	550	145	230	325	—	—	—	—	—	—	—	—	—
	5½	190	200	200	175	245	380	80	120	170	320	370	380	320	420	610	145	230	325	435	525	555	425	550	775	195	320	460
	6½	195	205	200	175	250	400	80	120	170	340	375	380	325	435	650	145	230	325	465	540	555	430	570	840	195	320	460

Note: Wood fastener maximum capacity values are based on the 2001 National Design Specifications (NDS) for wood with a specific gravity of 0.35. Values for other types of wood can be obtained by multiplying the above values by the factors in Table 18.5.12.2(n).

(2) 1/2" LAG BOLTS IN WOOD 235LBS x2 470LBS LOAD
USE TOLCO FIG 906 FOR CONNECTION TO TOP CORD OF TRUSS
ADD 2x BACKER BOARD x 24" TO TOP CORD OF TRUSS

Fig. 906 - Sway Brace Multi-Fastener Adapter

Component of State of California OSHPD Approved Seismic Restraints System

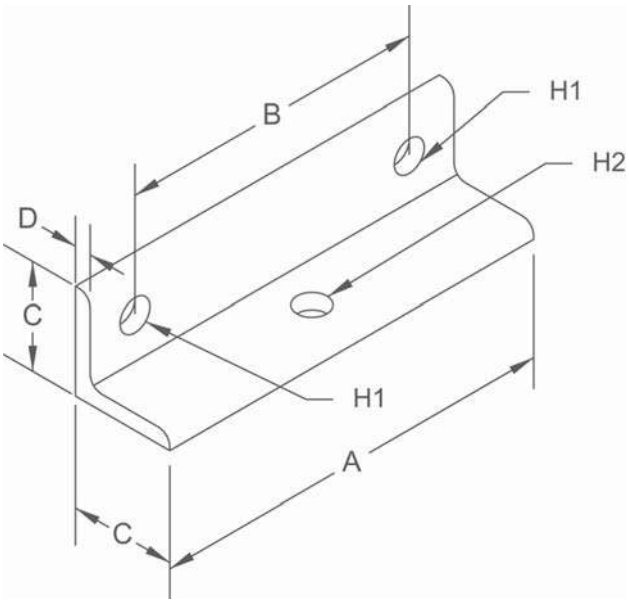
c UL US LISTED

Size Range — Use with 1" and 1¼" TOLCO UL listed Fig. 900 Series Earthquake Brace Attachments.

Material — Carbon Steel

Application — Allows sway brace fittings to develop greater load carrying ability by providing multiple fastener attachments. The National Fire Protection (NFPA) provides information on fastener loads to various structures. Refer to NFPA 13 (2010) 9.3.5.9.1.

Approvals — Underwriters Laboratories Listed in the USA **(UL)** and Canada **(cUL)** only when used with TOLCO 900 Series Earthquake Brace Attachments. Included in our Seismic Restraints Catalog approved by the State of California Office of Statewide Health Planning and Development **(OSHPD)**. For additional load, spacing and placement information relating to OSHPD projects, please refer to the TOLCO Seismic Restraint Systems Guidelines.



Installation Instructions — The Fig. 906 is a multiple fastener structural attachment component of a longitudinal or lateral sway brace assembly. It is intended to be combined with a TOLCO transitional attachment, "bracing pipe" and a TOLCO "braced pipe" attachment to form a complete bracing assembly. NFPA 13 and/or OSHPD guidelines should be followed.

T**o Install** — Attach the Fig. 906 to the structural surface as per fastener design guidelines. Attach other TOLCO transitional attachment fitting Fig. 909, 910, 980 or 986. Transitional fitting attachment can pivot for adjustment to proper brace angle.

Finish — Plain

Note — Available in Electro-Galvanized and HDG finish or Stainless Steel materials.

Order By — Figure number and specify dimensions H1 and H2.

Dimensions • Weights

A	B	C	D	H1	H2	Approx. Wt./100
12	9	2	1/4	Specify	Specify	Varies