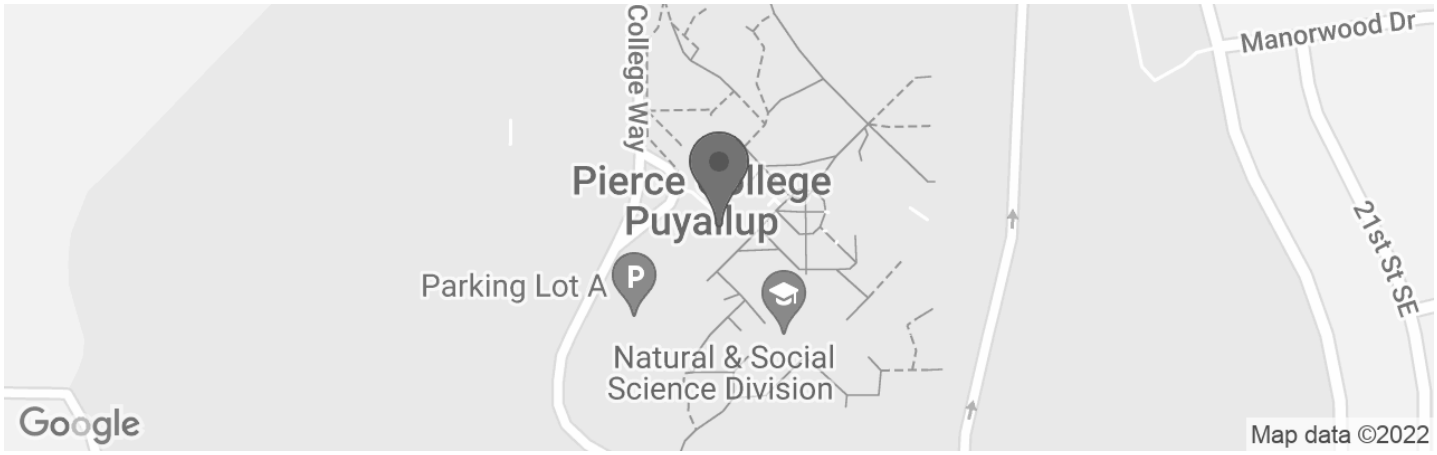
1601 39th Ave SE, Puyallup, WA 98374, USA

Latitude, Longitude: 47.1568032, -122.2731117



Date	7/26/2022, 6:33:37 AM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Default (See Section 11.4.3)

Type	Value	Description
S_S	1.254	MCE_R ground motion. (for 0.2 second period)
S_1	0.432	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.504	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1.003	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1.2	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second

Type	Value	Description
PGA	0.5	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	0.6	Site modified peak ground acceleration
T_L	6	Long-period transition period in seconds
SsRT	1.254	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.372	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.432	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.482	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.5	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.914	Mapped value of the risk coefficient at short periods
C_{R1}	0.898	Mapped value of the risk coefficient at a period of 1 s

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Seismic Brace Report

Project Name	Peirce CO. STEM Building
Date	07/26/2022
Address	1601 39th Ave SE puyallup, WA 98374
Contractor	Shinn Fire protection 425-203-9800
Engineer	Ben Bernard 425-204-3945

APPROVAL STAMP

- ☐ Approved
- ☐ Approved as Noted
- ☐ Not Approved

Remarks:

Standard NFPA 13-2016

BRACE SUMMARY

Brace Name	Drawing Reference	Seismic Design Load	Structure	Brace Description	Fastener	Attachments
SB-1	FP-2.0 - 2.3	409 lbf.	Horizontal Beam Flange	Lateral Orientation 45° - 90° 1 NPS Sch 40		AF772 Type B AF700 - 1/2" AF730 - 4 NPS
SB-2	FP-2.0 - 2.3	483 lbf.	Horizontal Beam Flange	Longitudinal Orientation 45° - 90° 1 NPS Sch 40		AF772 Type B AF700 - 1/2" AF730 - 4 NPS

NOTE: Per NFPA 13-2016, all load capacities listed for fasteners installed in cracked concrete have been reduced based on the prying factors listed for ASC's swivel attachments. Prying factors for NFPA fastener orientations "A" through "I" may be found in ASC's individual product submittal at asc-es.com

NFPA 13-2016 Product loads incorporate a minimum safety factor of 1.5. NFPA 13-2019 FM Product loads have been reduced to include a safety factor of 2.2 unless noted in the applicable product submittal.

SB-1 - SEISMIC BRACE CALCULATIONS

Seismic Project	SB-1	**Brace Name**	SB-1
Standard	NFPA 13-2016	**Drawing Reference**	FP-2.0 - 2.3
Brace Type	Lateral	**Approval Agency**	UL Listed

STRUCTURE INFORMATION

Structure	I-Beam/Joist
Substrate	Horizontal Beam Flange
Thickness	1.000 in.
Load Orientation	Perpendicular to Beam

BRACE INFORMATION

Brace Member	1 NPS Sch 40
Brace Length Max	3 ft 6 in
Brace Angle	45° - 90°
Least Radius of Gyration	0.421 in.
l/r Ratio Max	100
Max Horizontal Load	4,455 lbf.

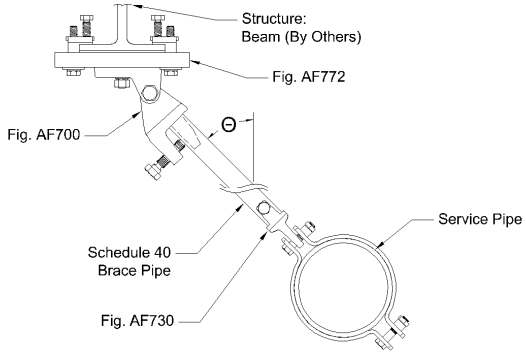
FASTENER INFORMATION

Fastener Name	N/A

SEISMIC BRACE ATTACHMENTS

	Model	Size	Load Rating
Structural Att.	AF772	Type B	707 lbf.
Swivel Att.	AF700	1/2"	1,333 lbf.
Pipe Att.	AF730	4 NPS	1,333 lbf.

See Appendix A for alternate seismic brace attachments.
All seismic brace attachments manufactured by ASC Engineered Solutions.



Net Vertical Reaction Forces do not need to be addressed per NFPA 13-2016.

SPRINKLER SYSTEM LOAD CALCULATION ($F_{PW} = C_P * W_P$)
$C_P = 0.594$

Qty	Line	Description	Pipe Diameter/Type	Length	Weight per ft	Weight
1	Main	Braced Pipe	4 NPS Steel Sch 10	30.00 ft.	11.78 lb/ft.	353.40 lb.
4	Branch 1	Segment A	1 1/2 NPS Steel Sch 10	20.00 ft.	3.04 lb/ft.	60.80 lb.

Weakest Main Size	Spacing	Max Fpw
4 NPS Steel Sch 10	30 ft.	1,071 lbf.

Total System Weight	596.60 lb.
System Design Weight (W_p)	687 lb.
Horizontal Seismic Load (Fpw)	409 lbf.

FPET NICET #106245 LEVEL IV,MSME

WASHINGTON STATE
CERTIFICATE OF COMPETENCY
FIRE PROTECTION SPRINKLER SYSTEMS

Hussein A. A. Huballa
8321-1119-C Level 3
Shinn Mechanical, Inc.
SHINNMI060QP

Signature

Date 05/16/2023

Expires DEC 31, 23

SB-2 - SEISMIC BRACE CALCULATIONS

Seismic Project	SB-1	**Brace Name**	SB-2
Standard	NFPA 13-2016	**Drawing Reference**	FP-2.0 - 2.3
Brace Type	Longitudinal	**Approval Agency**	UL Listed

STRUCTURE INFORMATION

Structure	I-Beam/Joist
Substrate	Horizontal Beam Flange
Thickness	1.000 in.
Load Orientation	Parallel to Beam

BRACE INFORMATION

Brace Member	1 NPS Sch 40
Brace Length Max	3 ft 6 in
Brace Angle	45° - 90°
Least Radius of Gyration	0.421 in.
l/r Ratio Max	100
Max Horizontal Load	4,455 lbf.

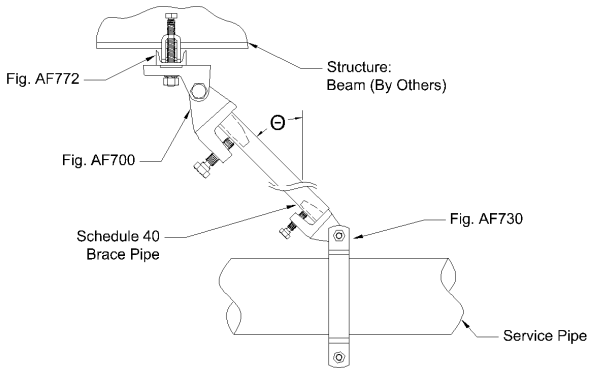
FASTENER INFORMATION

Fastener Name	N/A

SEISMIC BRACE ATTACHMENTS

	Model	Size	Load Rating
Structural Att.	AF772	Type B	707 lbf.
Swivel Att.	AF700	1/2"	1,333 lbf.
Pipe Att.	AF730	4 NPS	1,333 lbf.

See Appendix A for alternate seismic brace attachments.
All seismic brace attachments manufactured by ASC Engineered Solutions.



Net Vertical Reaction Forces do not need to be addressed per NFPA 13-2016.

SPRINKLER SYSTEM LOAD CALCULATION ($F_{PW} = C_p * W_p$)
$C_p = 0.594$

Qty	Line	Description	Pipe Diameter/Type	Length	Weight per ft	Weight
1	Main	Braced Pipe	4 NPS Steel Sch 10	60.00 ft.	11.78 lb/ft.	706.80 lb.

Total System Weight	706.80 lb.
System Design Weight (W_p)	813 lb.
Horizontal Seismic Load (Fpw)	483 lbf.

FPET NICET #106245 LEVEL IV,MSME

WASHINGTON STATE
CERTIFICATE OF COMPETENCY
FIRE PROTECTION SPRINKLER SYSTEMS

Hussein A. A. Huballa
8321-1119-C Level 3
Shinn Mechanical, Inc.
SHINNMI060QP

Signature

05/16/2023
Date

Expires
DEC 31, 23