



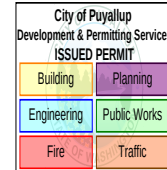
PRCTI20251325

These calculations must be on site and made available by the Permittee for all inspections.

Kaiser Permanente Puyallup

25-114-01

Gen Rad Replacement
1007 39th Ave SE
Puyallup, WA 98374



**City of Puyallup
Building
REVIEWED
FOR
COMPLIANCE**

BSnowden
10/14/2025
2:28:26 PM



October 2, 2025

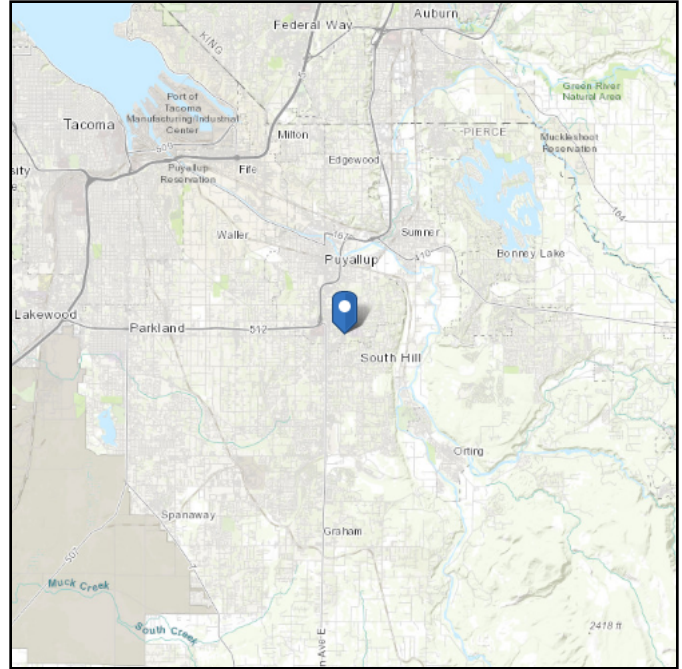
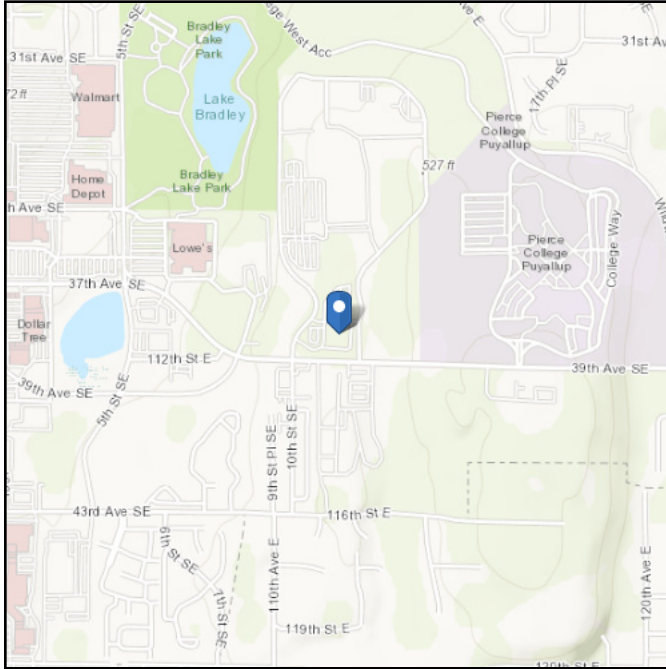


ASCE Hazards Report

Address:
1007 39th Ave SE
Puyallup, Washington
98374

Standard: ASCE/SEI 7-16
Risk Category: IV
Soil Class: D - Default (see
Section 11.4.3)

Latitude: 47.155421
Longitude: -122.280051
Elevation: 501.23311442856675 ft
(NAVD 88)



Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_S :	1.256	S_{D1} :	N/A
S_1 :	0.433	T_L :	6
F_a :	1.2	PGA :	0.5
F_v :	N/A	PGA _M :	0.6
S_{MS} :	1.507	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1.5
S_{DS} :	1.005	C_v :	1.351

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Thu Oct 02 2025

Date Source: [USGS Seismic Design Maps](#)



Project	KP PLP Gen Rad Replacement	Sheet
Subject	Equipment Weights	
Client	DLR Group	Page No.
Designer	TBM	Date 10/2/25

www.lundopsahl.com Tel: 206.402.5156

SDS	1.005 g
I	1.5
h	75.00

Equipment Weights (lb)

Description	Weight	ap	Rp	Ω	z	Fp, horiz	Fp,vert
3M YSIO XPREE Xray	803	1	1.5	1.5	33	464.8	161.4



EQUIPMENT LEGEND								
NO	DESCRIPTION	SMS SYM	WEIGHT (LBS)	BTU/HR TO AIR	DIMENSIONS (INCHES)			REMARKS
					W	D	H	
①	CONTROL MODULE	Ⓢ	2	—	4 3/4	10	2 3/4	ON CUSTOMER'S COUNTER
②	LED TOUCHSCREEN MONITOR	Ⓢ	18	205	22 1/2	8 5/8	15 1/4	ON CUSTOMER'S COUNTER
③	IMAGING SYSTEM CONTAINER (UNDER COUNTER)	Ⓢ	15	1,468	8	21	15	UNDER CUSTOMER'S COUNTER
④	REMOTE CONTROL CHARGING STATION	Ⓢ	—	—	4 1/8	7 1/4	4	FOR AIM / AIM PLUS
⑤	CHARGING STATION FOR MAX DETECTORS	Ⓢ	4	—	12 1/2	6 3/4	2	ON CUSTOMER'S COUNTER
⑥	YSIO XPREE TABLE WITH MOBILE DETECTOR	Ⓢ	970	2,560	94 13/16	31 1/2	***	***20 1/4" TO 37 9/16"
⑦	FLAT TABLE TOP	Ⓢ	—	—	—	—	—	
⑧	POLYDOROS R80-2 (80 kW) GENERATOR CABINET	Ⓢ	944	2,048**	31 1/2	17 1/8	86 3/4	**DURING OPERATION, 1,195 IN STANDBY MODE
⑨	ACCESS POINT (TOP OF GENERATOR)	Ⓢ	1	—	5	6 3/8 *	1	* = INCLUDING ANTENNAE
⑩	YSIO XPREE WALL STAND WITH FIXED DETECTOR (RIGHT LOADING GRID)	Ⓢ	496	751	30	35*A	83	*A — MAX. IN HORIZONTAL POSITION
⑪	4.25M CEILING RAILS FOR X-RAY TUBE SUSPENSION	Ⓢ	59	—	167 3/8	3	4	SIZE AND WEIGHT PER RAIL
⑫	3M YSIO XPREE AIM PLUS BRIDGE & X-RAY TUBE STAND	Ⓢ	803	3,072	119 1/4	39	*33 1/2	*TUBE CARRIAGE IN PARK POSITION
⑬	GRID HOLDER (WALL MOUNTED)	Ⓢ	22	—	21 11/16	4	16 9/16	LOCATED AND INSTALLED BY CUSTOMER/CONTRACTOR
⑭	MOBILE DETECTOR HOLDER ON WHEELS	Ⓢ	121	—	24 1/2	40 3/16	70 1/2	ROLL AROUND LATERAL HOLDER
⑮	MULTIPURPOSE STAND (FOR ORTHO OPTION)	Ⓢ	200	—	27	36	78	FOR ORTHO OPTION
⑯	EMERGENCY MECHANICAL STOP SWITCH, QTY. 2	Ⓢ	—	—	3 3/8	3 3/8	4 1/4	FOR FULLY AUTOMATED SYSTEM ONLY
⑰	EATON UPS 5P 850G FOR IMAGING SYSTEM ONLY	Ⓢ	22	135	6	13 5/8	9 1/4	LOCATED WITH CONTROL EQUIPMENT
⑱	WIRELESS REMOTE CONTROL	Ⓢ	0.2	—	6 1/2	2 1/4	1	ON CUSTOMER'S COUNTER

3M VISIO XPREE ARM PLUS WEIGHT:
803#

$$\alpha_p = 1 \quad F_{p \text{ hor}} = 465\#$$

$$R_p = 1.5 \quad F_{p \text{ vr}} t = 161.4\#$$

$$\Omega = 1.5$$

$$D + 0.7E = 916\#$$

Treat load as being resolved by 2 point loads, each occurring on separate rails.
Treat strut as simply supported

$$M = PL/4 = (458\#)(96'')/4 = 10,992 \text{ in-lb}$$

< 14,360 OK

CHANNELS & COMBINATIONS IN DESCENDING ORDER OF STRENGTH

Channel	Area In ² (cm ²)	Weight lbs/ft (kg/m)	I In ⁴ (cm ⁴)	s In ³ (cm ³)	Allow. Moment In-lbs (N·m)
P5001	1.793 11.57	6.10 9.1	6 227 259.2	1 916 31.4	48,180 5,440
P1004A	1.965 12.68	6.68 9.9	4 068 169.3	1 669 27.4	41,980 4,740
P5501	1.452 9.37	4.94 7.3	2 805 116.8	1 151 18.9	28,940 3,270
P1001C41	2.221 14.33	7.55 11.2	1 856 77.2	1 142 18.7	28,720 3,250
P5000	0.897 5.78	3.05 4.5	1 098 45.7	0 627 10.3	15,770 1,780
P1001	1.111 7.16	3.78 5.6	0 928 38.6	0 571 9.4	14,360 1,620
P1101	0.835 5.39	2.84 4.2	0 733 30.5	0 451 7.4	11,340 1,280
P3001	1.000 6.45	3.40 5.1	0 591 24.6	0 430 7.0	10,810 1,220
P5500	0.726 4.68	2.47 3.7	0.522 21.7	0.390 6.4	9,820 1,110

Brace Capacity

Check P1000 brace

Unbraced length = 108" $\rightarrow F_{allow} = 1,810^{\#}$

Brace fittings P1354 $\rightarrow F_{allow} = 1,397^{\#}$) OK?

- Check Capacity of threaded rod
column supports (rail uplift case)

$F = 1,200^{\#}$ (ASD)

$A = 0.19635 \text{ in}^2$

$I = \pi (0.5)^4 / 64 = 0.003068 \text{ in}^4$

$r = \sqrt{I/A} = \sqrt{0.003068 \text{ in}^4 / 0.19635 \text{ in}^2} = 0.125 \text{ in}$

$\frac{L_c}{r} = \frac{18" (0.65)}{0.125"} = 93.6" \leq 4.71 \sqrt{\frac{29,000 \text{ ksi}}{36 \text{ ksi}}} = 133"$

$F_{cr} = [0.658^{(36 \text{ ksi} / 32.7 \text{ ksi})}] (36 \text{ ksi}) = 22.7 \text{ ksi}$

$F_c = \frac{\pi^2 (29,000 \text{ ksi})}{\left(\frac{18" (0.65)}{0.125"}\right)^2} = 32.7 \text{ ksi}$

$\underline{P_n} = 22.7 \text{ ksi} \times 0.19635 \text{ in}^2 / 1.67 = 2,670^{\#}$ OK
threaded rod
w/ stiffener capacity