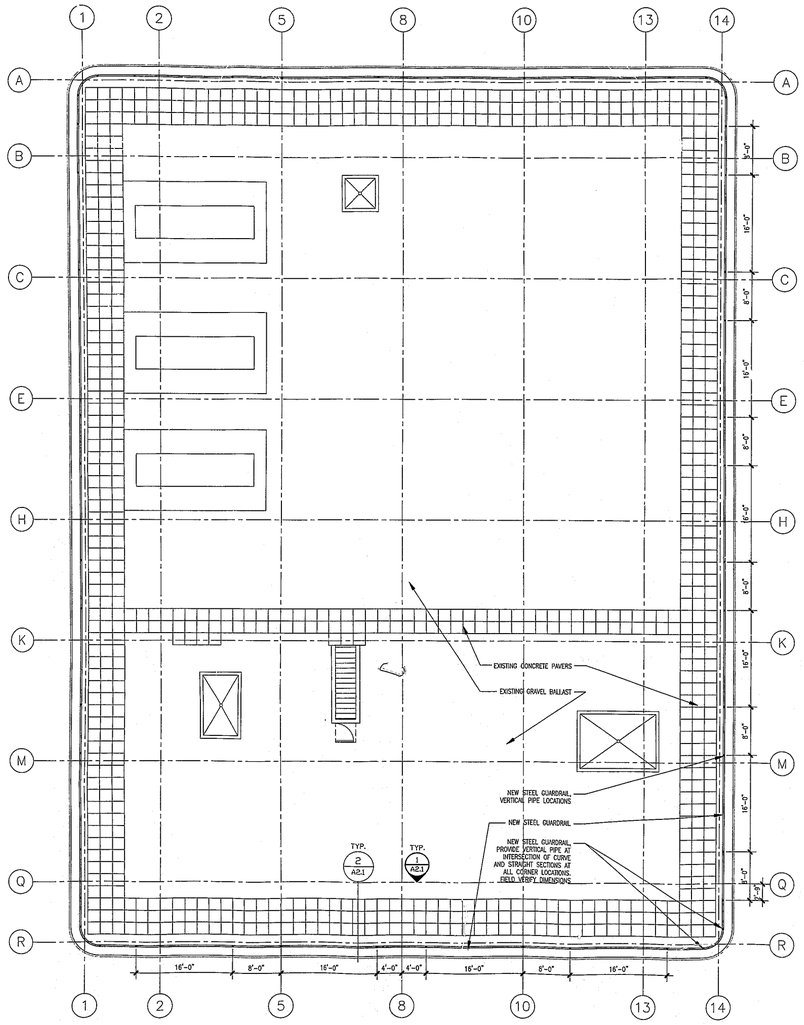


4 ROOF PLAN
1/8" = 1'-0"

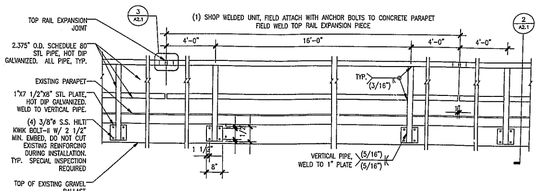
GENERAL NOTES:

1. FIELD TESTING AND/OR VERIFICATION OF EXISTING PARAPET CONDITIONS BY CONTRACTOR IS REQUIRED.

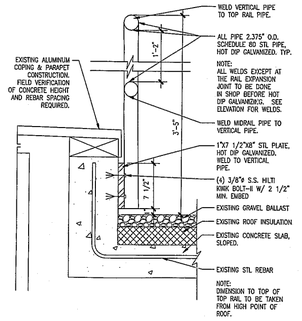
2. PLACEMENT OF EMBEDS TO BE COORDINATED BY CONTRACTOR WITH LOCATION OF EXISTING REBAR.

3. ALL STEEL TO BE HOT DIPPED GALVANIZED. GALVANIZING TO OCCUR AFTER SHOP WELDING. WELD AT PIPE SLEEVE TO BE FIELD WELD.

4. GUARDRAIL IS REQUIRED TO MEET OSHA STANDARDS. CHS OSHA Approval VERIFICATION } Documentation REQ'D

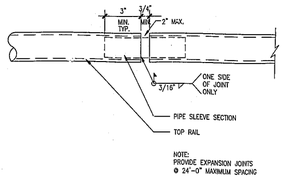


1 RAILING ELEVATION
1/2" = 1'-0"



2 GUARDRAIL SECTION
1 1/2" = 1'-0"

BUREAU OF BUILDINGS
CITY OF PORTLAND
THIS DRAWING IS APPROVED FOR CONSTRUCTION. ERRORS OR OMISSIONS DO NOT IMPLY APPROVAL TO VIOLATE ANY APPLICABLE CODE OR ORDINANCE.
FACILITY #
BLDG. PERMIT # 01-160336 FA
MECH PERMIT
DATE 10-19-01
REVIEWED BY Kathy Davis
THESE PLANS & SPECIFICATIONS SHALL BE ON JOB SITE FOR ALL INSPECTIONS.



NOTE:
PROVIDE EXPANSION JOINTS @ 24'-0" MAXIMUM SPACING

3 EXPANSION JOINT
3" = 1'-0"

REGISTERED ARCHITECT
NIELS P. HALL
PORTLAND, OREGON
STATE OF OREGON

1

Consultant

Architect
Grube Hall Architecture
1211 SW 5th Ave, Suite 2700
Portland, Oregon 97204
Tel 503.226.1050 Fax 503.295.0940

Owner
Pacwest Center
1200 Building Associates
c/o Cushman & Wakefield
1211 SW 5th Avenue, Suite 700
Portland, Oregon 97204

Project
Pacwest Center Building Upgrades
SW 6th & Oak
Portland, Oregon

Revisions

Sheet Title
GUARDRAIL DETAILS & ROOF PLAN

Drawing No.
A2.1

Scale AS NOTED
Date 09.11.01
Project No.

01-160336 FA

FA.01.160336

H

10

CITY OF PORTLAND
FACILITIES PERMIT PLAN INTAKE

APPLICANT INFORMATION

Applicant: 1200 BUILDING ASSOCIATES
Address: C/O CUSHMAN & WAKEFIELD
1211 SW 5TH AVE
Phone: 503.224.1193

Plans & Permits will be available for pick up on the 5th floor at 1900 SW 4th. . Please indicate who should be contacted:

Name: NICI GRIFFITH
Phone # 503.221.0150

Contractor Information: TO BID.

NAME:	CCB #:
Building:	
Plumbing:	
Electrical :	
Mechanical :	

Project Description:

Facility: PACWEST CENTER
Installation Address: 1211 SW 5TH AVE
Project Name: PACWEST CENTER BUILDING IMPROVEMENTS
Job Description: NEW GUARDRAIL AROUND ROOF
Bldg Valuation: $5,000 Project Ref. # 73735

Building Permit #: 01-160336 IA

Occup.y Group:	___	Const. Type:	___
No. Of Stories	___	Flood Plain	___
Erosion Control	___	Alarms Reqd	___
Sprinklers	___	Smoke Det	___

Special Inspection ___

Bin # ___
Building Registration Permit # 99-126192 FC
Scan Karl, Darrell

PLAN INTAKE:
Date: ___ Initials: ___

PERMIT INFORMATION:

Mechanical Permit #: N/A
A: Valuation: ___ *Job Description:* ___

Plumbing Permit #: N/A
Number of Fixtures: ___
Back Flow Devices: ___
Water Service (# of Feet): ___
Other: ___

Electrical Permit #: N/A
A: Feeders:
200 amps or less ___ *201 to 400 amps* ___
401 to 600 amps ___ *601 to 1,000 amps* ___
Over 1,000 amps or volts ___
B: Branch Circuits:
New, Alteration or Extension per Panel
Each branch circuit purchased
With a feeder ___
First branch circuit without Purchase of a feeder: ___
Each additional branch circuit ___
C: Miscellaneous:
Each pump or irrigation circle ___
Each sign or outline lighting ___
Limited energy panel alteration ___
Or extension; or signal circuits.
D: Plan Review:
___ *Feeders 400 amps or more*
___ [illegible]
___ *Occupant Load over 99 Persons*
___ *Building over 3 stories*
___ *Health Care Facility*
___ *Building over 10,000 sq. ft.*

Office of Planning and Development Review

City of Portland Special Inspections 1900 SW 4th Avenue, Suite 5000 Portland, OR 97201

Structural Special Inspection and Observation Program Checksheet

The architect or engineer of record shall prepare and submit a special inspection and structural observation program in accordance with UBC Section 106.3.5. The architect or engineer of record shall confirm that the special inspection and structural observations noted below are indicated on the plans. Major projects may require that a more complete program be prepared.

~ Please Note that a separate Soils Inspection Form may also be required ~

Instructions -- This Checksheet must be fully completed to obtain your permits

⇒ **Part B and Part C** (if indicated) must be completed by the Owner, Architect or Engineer.

⇒ **Part D** must be signed by the Owner, or Architect or Engineer acting as the owner's agent.

When complete, return to Document Services, attn: Special Inspections, or fax to (503) 823-5434.
The information on this form must be provided before your building permit can be issued.

Application #	01-160336-000-00-FA	Date:	October 4, 2001
Project Name:	ROOF GUARDRAIL-PAC WEST BUILDING		
Site Address:	1211 SW 5TH AVE		
Architect of Record (Firm)		Phone #	
Engineer of Record (Firm)	KPFF Consulting Engineers	Phone #	(503) 227-3251

The following special inspections and structural observations shall be performed according to the State Building Code and City of Portland Administrative Rules unless a program of inspections is submitted by the Engineer of Record and approved by the Plan Review Division.

PART A

☐ Anchors - Adhesive	☐ Reinforced Concrete	☒ Structural Steel	☐ Wood 5-Story Construction
☐ Anchors - Cast-in-place	☐ Prestressed Concrete	☐ Str. Silicone Glazing	☐ Fireproofing
☒ Anchors - Expansion	☐ Shotcrete	☐ Masonry fm =	
☐ Special Cases:			

PART B Mandatory – If any box in PART A is checked, PART B must be completed
Indicate the City approved inspection agency to perform the special inspections noted in PART A above.

_____

PART C If box below is checked, PART C must also be completed
☐ Structural Observation by Engineer of Record. Indicate stages at which structural observation is to occur:

PART D This Checksheet must be signed by the Owner, Architect or Engineer of Record
The owner hereby agrees to employ the special inspector, approved testing agency and/or engineer for the above noted special inspections and/or structural observation.

_____ Date _____
Signature of Owner or the Architect or Engineer acting as the Owner's Agent
(Please Note: Contractors are NOT authorized to sign)

Print Name _____ Phone _____

Firm _____ Plans Examiner: Mike Walklewicz

APPLICANT – COMPLETE PARTS B, C & D

Yost Grube Hall
Architecture

1211 SW 5th Ave.
Suite 2700
Portland, Oregon
97204-3782 USA
Tel 503.221.0150
Fax 503.295.0840
Email info@ygh.com

Fax Transmittal

To KARL PHEIFER
CITY OF PORTLAND
PLANNING

Fax No 503.823.6983

Date 10.01.01

No. of pages 7
(including cover sheet)

Project PACWEST BIKE UPGRADES – NEW GUARDRAIL

Project No. 13735

From NICK GRIFFITH

Sent via Fax

Description

2 PGS. TELEPHONE MEMO & COVER SHT. TO M. SEWARD
4 PGS STRUCTURAL CALCS FOR GUARDRAIL

Comments

CALL IF YOU HAVE ANY QUESTIONS.
THANKS!
NICK

Yost Grube Hall
Architecture

1211 SW 5th Ave.
Suite 2700
Portland, Oregon
97204-3782 USA
Tel 503.221.0150
Fax 503.295.0840
Email info@ygh.com

Telephone Memorandum

Call Initiator	Michelle L. Seward
	City Planner, Land Use Review Division
	City of Portland
Call Participants	Nici Griffith
	Yost Grube Hall Architecture
Project	Pacwest Center Building Upgrades
Subject	Land Use Review (LUR) Application
Date/Time	July 31, 2001
Distribution	Michelle Seward
	Tom Shimota, Property Manager Pacwest Center

This is a memorandum confirming the phone conversation between Michelle Seward and Nici Griffith regarding building upgrades to the Pacwest Center. Per Michelle, the City of Portland is exempting the proposed rooftop guardrail from design review. The exemption is allowed because the guardrail installation is required to upgrade the building to meet OSHA, Oregon Occupational Safety and Health, standards. Michelle noted that Jeff Joslin, City of Portland Design Division, could be contacted regarding this issue if any questions are to arise.

Please contact me if there are any discrepancies noted in this memo.

Yost Grube Hall
Architecture

1211 SW 5th Ave.
Suite 2700
Portland, Oregon
97204-3782 USA
Tel 503.221.0150
Fax 503.295.0840
Email info@ygh.com

Fax Transmittal

To MICHELLE SEWARD
LAND USE REVIEW DIVISION
CITY OF PORTLAND

Fax No 503.823.7919

Date 00.02.01

No. of pages 2
(Including cover sheet)

Project PACWEST CENTER

Project No. 73703

From NICI GRIFFITH

Sent via Fax

Description

1 pg. TELEPHONE MEMO

Comments

MICHELLE—

THIS IS JUST TO DOCUMENT OUR CONVERSATION.
THANKS FOR YOUR HELP.

NICI

kpff Consulting Engineers

September 17, 2001

Ms. Nici Griffith
Yost Grube Hall Architecture
1211 SW Fifth Avenue, Suite 2700
Portland, Oregon 97204

RE: PacWest Center Building Upgrades – Roof Guardrail

Dear Nici:

Attached please find calculations, sheets 1through 3, dated August 2001, which verify the structural adequacy of the roof guardrail at the PacWest Center, as shown on drawing A2.1, dated September 11, 2001. Design is based on the requirements of the 1997 Uniform Building Code, as amended by the State of Oregon.

If you have any questions or need further information, please call me.

Sincerely,

Craig Totten, P.E., S.E.
Associate

CJT/jkd

201318\cole letter – 09-17-01.doc

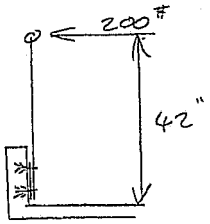
STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 14332 OREGON JULY 17, 1981 GAAFAR H. GAAFAR
EXPIRES: 06-30-03

koff Consulting Engineers Portland, Oregon	Project PACWEST GUARDRAIL	By CJT	Sheet No. 1
	Location	Date 8/01	
	Client	Revised	Job No.
		Date	

OSHA RAIL

PER YGH RAILS ≤ 2 3/8" O.D.

WT PER SECTION ≤ 350#



$M_{PANEL} = 200^{\#} \times \frac{42}{12} = 0.7^{1K}$

$M_u = 0.7 \times 1.7 = 1.2^{1K}$

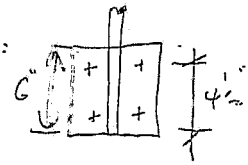
$A_{s\ REQ'D} = \frac{1.2}{4 \times 1.25} = 0.238\ in^2 \Rightarrow$ 6x6-W1.4xW1.4

$\frac{0.238}{0.028} = 8.5'$

(1/2 TOPPING SLAB)

$\Rightarrow$ SAY O.K. CONS. ANALYSIS

END PL:



$\Rightarrow T_{BOLTS} = 0.2^{K} \times \frac{42}{4} = 2.1^{K}$

$\Rightarrow T = \frac{2.1}{2} = 1.05^{K}/BOLT$

INCREASE PL HEIGHT TO 7 1/2"

$\Rightarrow T_{/BOLT} = 0.2^{K} \times \frac{42"}{(5.5 \times 2)} = 0.76^{K}/BOLT$

$\Rightarrow$ SAY 3/8" Ø SS BOLTS W/ 2 1/2" EMBED

$T_{ALLOW} = 1.025^{K}$ (W/ SPECIAL INSP.)

SPACING = 5" MIN.

$M_{PL} = 2.5 \times 0.76^{K} = 1.9^{1IK}$

$f_b = \frac{1.9}{3 \times \frac{1^2}{6}} = 3.8^{1KSI} \Rightarrow$ OK

kpff Consulting Engineers
Portland, Oregon

Project OSHA Rail	By CJT	Sheet No. 2
Location	Date	
Client	Revised	Job No.
	Date	

HORIZ. RAIL : TRY 12' SPACING

$$M = 0.2 \times \frac{12}{4} = 0.6^{IK}$$
$$+ 0.005 \times \frac{12^2}{8} = 0.09^{IK}$$
$$0.7^{IK}$$

$$S_{REQ'D} > \frac{0.7 \times 12}{0.66 \times 36} = 0.35 \Rightarrow 1\tfrac{1}{2}\text{" SCH. 80}$$
$$S = 0.412$$
$$I = 0.39$$

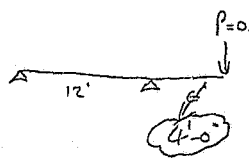
$$\Delta = \frac{0.2 \times (12 \times 12)^3}{48 \times 29000 \times 0.39}$$
$$= 1.09"$$

$$D/\ell = \frac{1.9}{0.2} = 9.5 \quad \frac{3300}{F_y} = 91 \Rightarrow \text{O.K.}$$

FOR 6'-0" OVERHANG : $M = 6 \times 0.2 = 1.2^{IK}$
$$+ 0.005 \times \frac{6^2}{2} = 0.09^{IK}$$
$$1.3^{IK}$$

$$S_{REQ'D} > \frac{1.3 \times 12}{0.66 \times 36} = 0.66 \text{ in}^3$$

$\Rightarrow$ 2"Ø SCHEDULE 80 : $S = 0.731$
$I = 0868$



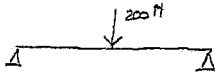
$$\Delta = \frac{Pa^2}{3EI}(L + a)$$
$$= \frac{0.2 \times (6 \times 12)^2}{3 \times 29000 \times 0.868}(12 + 6)(12)$$
$$= 3" \Rightarrow \text{TOO MUCH !}$$

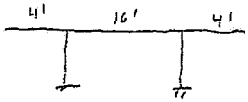
4' OVERHANG :
$$\Delta = \frac{0.2 \times 48^2}{3 \times 29000 \times 0.868}(12 + 4)(12)$$
$$= 1.17" \Rightarrow \text{SAY O.K.}$$

kpff Consulting Engineers
Portland, Oregon

Project	By	Sheet No.
Location	Date	3
Client	Revised	Job No.
	Date	

CHECK HORIZONTAL RAIL FOR 41-16'-41 SPACING





$M = \frac{PL}{4} = \frac{0.2^k(16')}{4} = 0.8^{k-1}$

$M = \frac{wL^2}{8} = \frac{0.005^k(16)^2}{8} = 0.16^{k-1}$

$= 0.96^{k-1}$.

$S_{REQ'D} = \frac{M}{F_b} = \frac{0.96^{k-1}(12''/1')}{0.66(36ksi)} = 0.486\,in^3 \Rightarrow 2\tfrac{1}{2}$" SCH 80

$S = 0.73\,in^3$

$I = 0.868\,in^4$

$\Delta = \frac{0.2(16'\times 12''/1')^3}{48(29000)(0.868)} = 1.17'' < 3'' \Rightarrow OK$

$\frac{D}{t} = \frac{1.9''}{0.2''} = 9.5 \qquad \frac{3300}{F_y} = 91 > 9.5 \Rightarrow$ COMPACT $\Rightarrow OK$

4'-0" OVERHANG → SEE PREVIOUS CALCS