City of Portland, Oregon - Bureau of Development Services

1900 SW Fourth Avenue • Portland, Oregon 97201 • 503-823-7300 • www.portlandoregon.gov/bds

Permit Revision Application and Submittal Requirements

A Permit Revision is required when there are proposed changes to the project after the permit has been issued. This may arise due to discrepancies between the city-approved permit drawings and actual field conditions, or the customer has changed their mind about an aspect of the project. In all cases, a revision to the existing permit must be submitted, reviewed and approved.

Applicants will provide:

- ☒ A copy of this application
- ☒ Three (3) sets of plans that clearly reflect the proposed change(s).

  Drawings and calculations must be stamped and signed by the Architect and/or the Engineer of Record, if applicable.
- ☒ One (1) copy of the original city approved permit drawings. (NOTE: If your project has an assigned process manager please contact them regarding submittal of the revision).
- ☒ Two (2) sets of calculations, if applicable
- ☐ Inspector's correction notice, if revision is due to an inspection correction
- ☐ Revision fee (paid at time of submittal)

Contact Information:

Contact name Matthew McDermott

Address 1420 SE 44 Ave

City Portland **State** OR **Zip Code** 97215

Phone 503-380-1104 **Email**

Value of proposed revision $900 **Issued permit #** 12-113657-000-00-RS

Description of revision Replace 25' of 4x6 wood beam w/ W6"x#25 beam.

Fees:

The Permit Revisions are subject to fees associated with plan review, processing and any increase in project value. Additional fees may apply if adding plumbing fixtures.

The Bureau of Development Services fee schedule is available under the fees tab on the BDS web site at: *www.portlandoregon.gov/bds*. Fees are updated annually on July 1st.

Helpful Information:

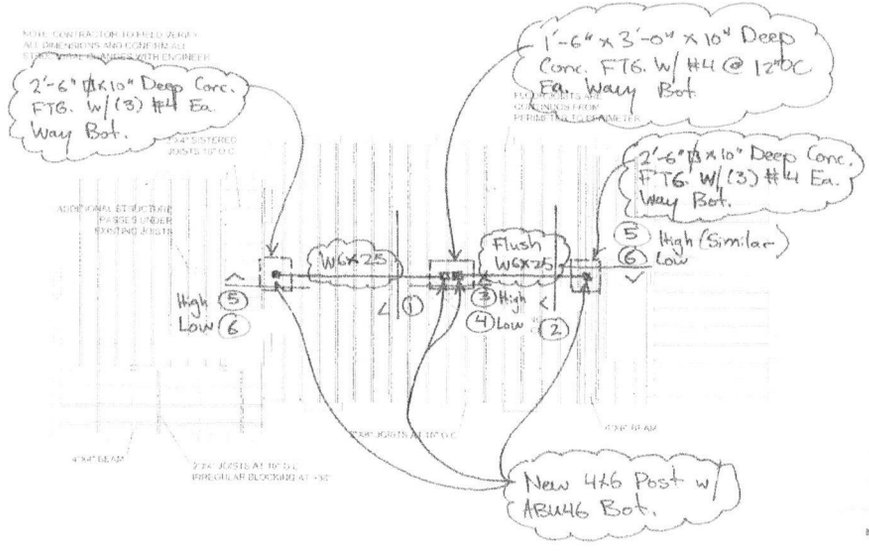
Bureau of Development Services
City of Portland, Oregon
1900 SW 4th Avenue, Portland, OR 97201
www.portlandoregon.gov/bds

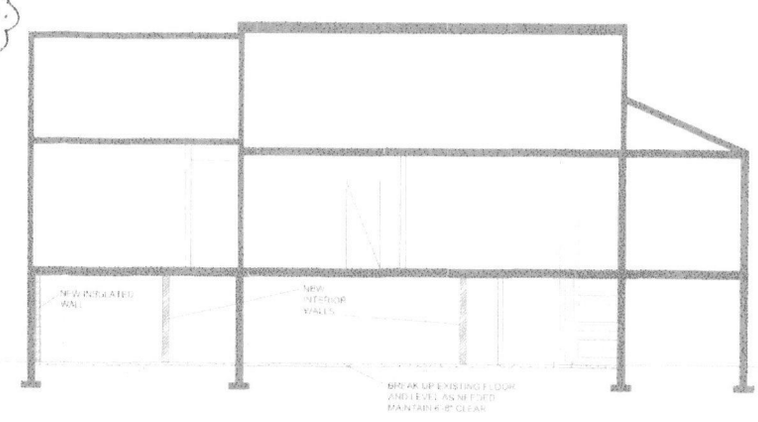
Submit your plans in person to:
Development Services Center (DSC), First Floor,
Tuesday - Friday:
7:30 am - 12:00 pm

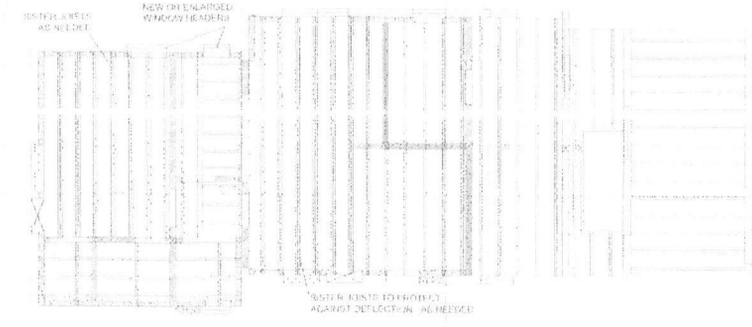
Closed Mondays

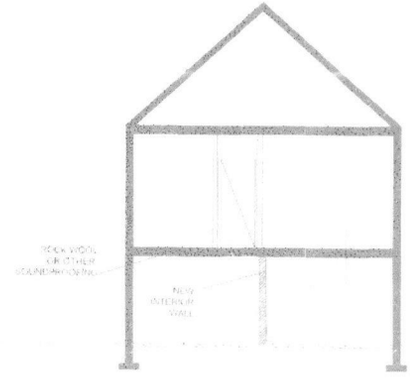
Important Telephone Numbers:

BDS main number	503-823-7300
DSC automated information line	503-823-7310
Building code information	503-823-1456
BDS 24 hour inspection request line	503-823-7000
Residential information for one and two family dwelling	503-823-7388
General Permit Processing and Fee Estimate info	503-823-7357
City of Portland TTY	503-823-6868









City of Portland
REVIEWED FOR CODE COMPLIANCE
JUL 05 2012
Permit Number

PRICING DOCUMENTS NOT FOR PERMIT SUBMITTAL

OREGON DRAFTING AND DESIGN SERVICES

Prepared For
HOME OWNER'S GENERAL USE IN PRICING

MCDERMOT RESIDENCE
.5 BASEMENT REMODEL
1420 SE 44TH AVE
PORTLAND, OR 97215

A8.0

12-113657-REV-02-RS

Structural Calculations For:

McDermott Basement Remodel

1420 SE 44th Ave
Portland, OR 97215

STRUCTURAL
REGISTERED PROFESSIONAL
ENGINEER
15834PE
OREGON
DAN J. SAY

EXPIRATION DATE: 6-30-12

Prepared for: Matt McDermott
Job # : 2222-2012-02-01

SWENSON SAY FAGÉT
A STRUCTURAL ENGINEERING CORPORATION

2124 Third Avenue • Suite 100 • Seattle • WA 98121
Office 206.443.6212 *Fax* 206.443.4870

Criteria Sheet IBC 2009 / ASCE-7

Dead Loads:

Floor:

Finish	1.0 PSF
3/4" Ply	2.3 PSF
Joists	2.0 PSF
Mech.	2.4 PSF
5/8" GWB	2.3 PSF
	10 PSF

Roof:

Roofing	2.5 PSF
1/2" Ply	1.5 PSF
Joists	2.0 PSF
Insul.	1.0 PSF
Mech.	4.0 PSF
5/8" GWB	2.3 PSF
	14.3 → 15 PSF

Live Loads:

25 PSF Snow Load
40 PSF Floor Live Load

Seismic Dead Loads:

Roof = 15psf + 10PSF/2 = 20 psf
Floor = 10psf + 10 PSF = 20 psf

Seismic: Site Class D, T < 1.5s

Equivalent Lateral Force Procedure

$S_S = 0.986$ $F_a = 1.106$ $S_{MS} = 1.091$ $S_{DS} = 0.727$

$S_1 = 0.337$ $F_V = 1.726$ $S_{M1} = 0.581$ $S_{D1} = 0.388$

$C_S = \frac{S_{DS}}{R/I}$ $R = 6.5$ (Wood Shear Walls) $I = 1.0$

$V = C_S \cdot W = 0.112 \cdot W$ (Ultimate)
$= 0.078 \cdot W$ (Working) ASD

City of Portland
RECEIVED FOR CODE COMPLIANCE
JUL 05 2012
Permit Number

Wind: – Analytical Procedure, V = 85 mph, Exp. B, I = 1.00

$K_d = 0.85$ $H \cong 22'$
$G = 0.85$ $\theta = 6:12$
$K_{zt} = 1.00$ $P = C_p \cdot q \cdot G$
$q_z = 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2 \cdot I = 15.72 K_z$
C_p → Windward = 0.8 / Roof = 0.2
Leeward = 0.5 / Roof = 0.6

Ht.	K_z	q_z	P_{WW}	P_{LW}	P_{Roof}
0-15	0.57	9.00	6.10		
15-20	0.62	9.70	6.60		
20-25	0.66	10.40	7.10		
25-30	0.70	11.00	7.50		
30-40	0.76	11.90	8.10	5.06	

SWENSON SAY FAGÉT
A STRUCTURAL ENGINEERING CORPORATION
2124 Third Avenue · Suite 100 · Seattle · WA 98121
Office: 206·443·6212 Fax: 206·443·4870

Project: McDermott Res., Portland, OR
Date: 7/2/12
Proj. No.: GFJ
Design: CR-1
Sheet

Conterminous 48 States
2009 International Building Code
Latitude = 45.51252
Longitude = -122.61682
Spectral Response Accelerations Ss and S1
Ss and S1 = Mapped Spectral Acceleration Values
Site Class B - Fa = 1.0 ,Fv = 1.0
Data are based on a 0.05 deg grid spacing

Period (sec)	Sa (g)
0.2	0.986 (Ss, Site Class B)
1.0	0.337 (S1, Site Class B)

Conterminous 48 States
2009 International Building Code
Latitude = 45.51252
Longitude = -122.61682
Spectral Response Accelerations SMs and SM1
SMs = Fa x Ss and SM1 = Fv x S1
Site Class D - Fa = 1.106 ,Fv = 1.726

Period (sec)	Sa (g)
0.2	1.091 (SMs, Site Class D)
1.0	0.581 (SM1, Site Class D)

Conterminous 48 States
2009 International Building Code
Latitude = 45.51252
Longitude = -122.61682
Design Spectral Response Accelerations SDs and SD1
SDs = 2/3 x SMs and SD1 = 2/3 x SM1
Site Class D - Fa = 1.106 ,Fv = 1.726

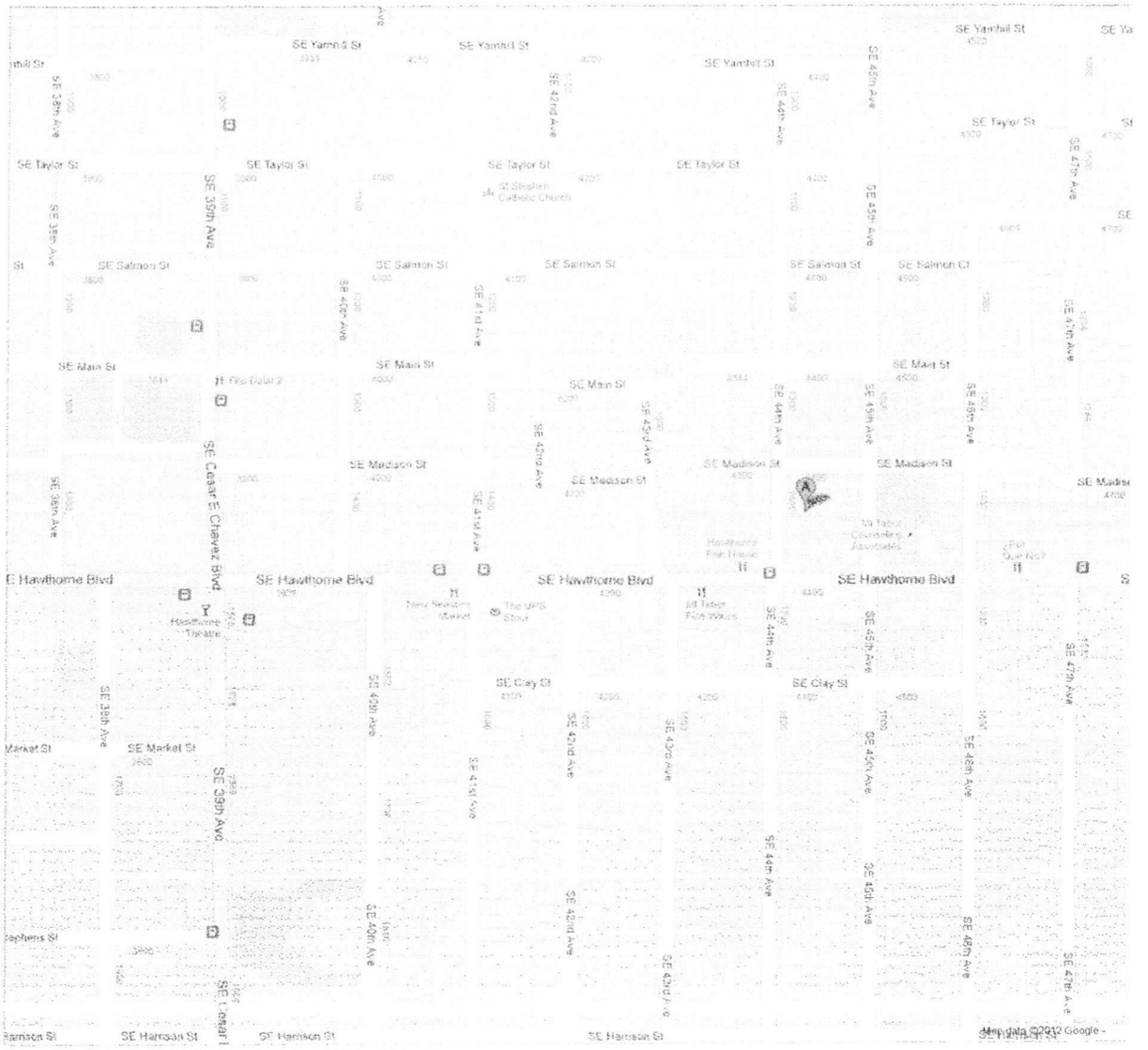
Period (sec)	Sa (g)
0.2	0.727 (SDs, Site Class D)
1.0	0.388 (SD1, Site Class D)

City of Portland
REVIEWED FOR CODE COMPLIANCE
JUL 0 5 2012
Permit Number

CR-2

To see all the details that are visible on the screen, use the "Print" link next to the map

Google



CR-3

Lateral Design + Analysis

There are no changes to the lateral loading or existing lateral resisting system. No new seismic or wind loading. No new design required.

City of Portland
REVIEWED FOR CODE COMPLIANCE
JUL 0 5 2012
Permit Number

SWENSON SAY FAGÉT
A STRUCTURAL ENGINEERING CORPORATION
Seattle: 2124 Third Avenue · Suite 100 · Seattle · WA 98121
Tel: 206·443·6212 Fax: 206·443·4870
Tacoma: 934 Broadway · Suite 100 · Tacoma · WA 98042
Tel: 253·284·9470 Fax: 253·284·9471

Project: McDermott Res., Portland, OR

Date: 7/2/12

Proj. No.: GFJ

Design: L-1

Sheet

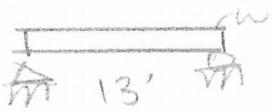
Gravity Design

Main Floor Framing:

West Central Girder

Span = 13'

$w = (10)(50) + (8)(10) + (10)(15) = 730$ plf



R = 4.74K f_b = 11.08 Ksi

M = 15.42K' f_v = 2.32 Ksi

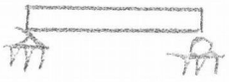
Δ = 0.30" // 515

Use W6x25

East Central Girder

Span = 10'

$w = (10)(50) + (8)(10) + (10)(15) = 730$ plf



R = 3.65K f_b = 11.26 Ksi

M = 9.12K' f_v = 2.64 Ksi

Δ = 0.195" // 617

Use W6x15

New Interior Support Post

P = 3.65K + 4.74K = 8.39K

Allowable Bearing = 2.00 Ksf

Area Req'd = 4.19 SF

Use 1'-6" x 3'-0" Footing w/ #4 @ 12" OC Ea Way Bot.

New Exterior Footing

P = 4.74K + (10'/2)(1000) = 9.74K

Allowable = 2.0 Ksf

Area Req'd = 4.87 SF

Use 2'-6" □ x 10" Deep Conc. Beam w/ (3) #4 Ea Way Bot.

City of Portland
REVIEWED FOR CODE COMPLIANCE
JUL 05 2012
Permit Number

SWENSON SAY FAGÉT
A STRUCTURAL ENGINEERING CORPORATION
Seattle: 2124 Third Avenue · Suite 100 · Seattle · WA 98121
Tel: 206·443·6212 Fax: 206·443·4870
Tacoma: 934 Broadway · Suite 100 · Tacoma · WA 98042
Tel: 253·284·9470 Fax: 253·284·9471

Project: McDermott Residence, Seattle, WA

Date: 7/2/12

Proj. No.: GFJ

Design: G-1

Sheet

Column Buckling Calculations

NDS 2005

Column Geometry Data

4X Posts Doug Fir - Larch #2	
b	3.5 in
d	3.5 in
Le_1	7.00 ft
Le_2	7.00 ft

Bracing

No Brace	
No Brace	

Column Stability Factor Calculation

Strong Axis		Weak Axis	
Fce_1	828 psi	Fce_2	828 psi
Fc^*_1	1785 psi	Fc^*_2	1785 psi
Fce_1/Fc^*_1	0.464	Fce_2/Fc^*_2	0.464
Cp_1	0.408	Cp_2	0.408

Column Design Values

F_b	900 psi
F_c	1350 psi
E'min	580 ksi
Fcperp	405 psi
cb	1.11

Bearing Area Increase
No

Beam Stability Factor Calculation

Strong Axis		Weak Axis	
Fbe_1	29000 psi	Fbe_2	29,000 psi
Fb'_1	1553 psi	Fb'_2	1553 psi
Fbe_1/Fb'_1	18.7	Fbe_2/Fb'_2	19
CL_1	1.00	CL_2	1.00

Column Loading

P	4740 lbs
W_1	0 plf
M_1	0 ft-lbs
W_2	0 plf
M_2	0 ft-lbs

Adjusted Allowable Stresses

Strong Axis		Weak Axis	
Fc'_1	728 psi	Fc'_2	728 psi
Fb'_1	1548 psi	Fb'_2	1548 psi

Flexural Stress Adjustment Factors

Roof/EQ / Wind - C_D	1.15
Size Factor - C_F	1.50
Repetitive - C_r	1.00

Imposed Column Stresses

Strong Axis		Weak Axis	
fc_1	387 psi	fc_2	387 psi
fb_1	0 psi	fb_2	0 psi

Compressive Adjustment Factors

Roof/EQ / Wind - C_D	1.15
Size Factor - C_F	1.15

Perpendicular to Grain Stress Check fcp/Fcp =	*387 / 448*	OK
Slenderness Check le/d	24	OK
Slenderness Check le/b	24	OK

Other Factors

Visually Graded Lumber	
c	0.8
Solid Column	
Kf	1
Ke	1

$$\left(\frac{f_c}{F_c'}\right)^2 + \frac{f_{b1}}{F_{b1}'\left[1-f_c/F_{cE}\right]} + \frac{f_{b2}}{F_{b2}'\left[1-f_c/F_{cE2}-\left(f_{b1}/F_{bE}\right)\right]} \le 1.0$$

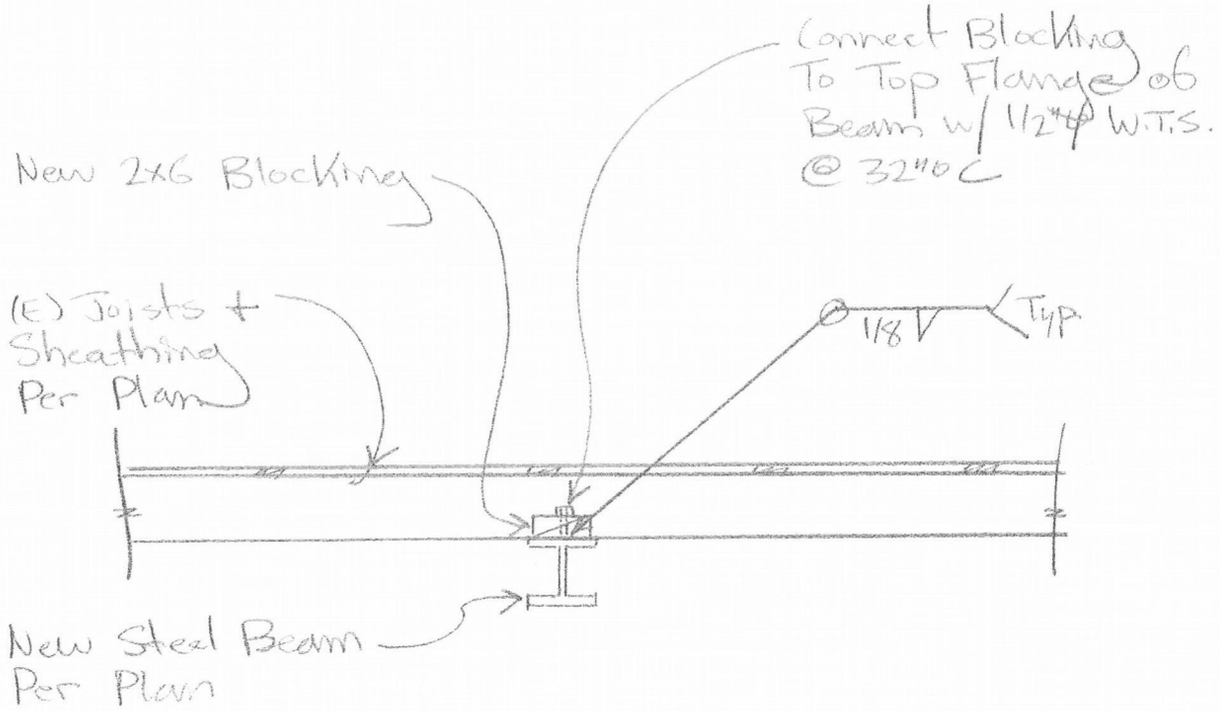
Allowable Stress Interaction Formula	**0.28**	**OK**

City of Portland
REVIEWED FOR CODE COMPLIANCE
JUL 0 5 2012
Permit Number

McDermott Residence — 7/2/2012 Date

Portland, OR — Proj. No. GFJ

SWENSON SAY FAGÉT
A STRUCTURAL ENGINEERING CORPORATION
Seattle: 2124 Third Avenue · Suite 100 · Seattle · WA 98121
Tel: 206·443·6212 Fax: 206·443·4870
Tacoma: 934 Broadway · Suite 100 · Tacoma · WA 98402
Tel: 253·284·9470 Fax: 253·284·9471



City of Portland
REVIEWED FOR CODE COMPLIANCE
JUL 05 2012
Permit Number

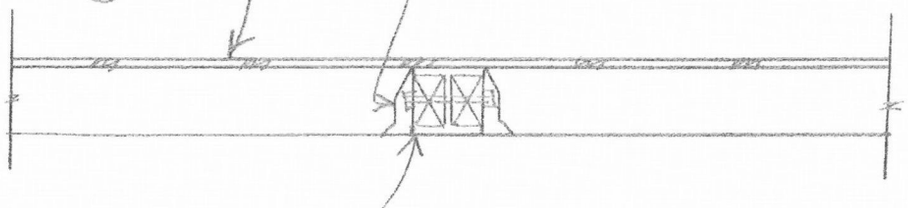
1

SWENSON SAY FAGÉT
A STRUCTURAL ENGINEERING CORPORATION
Seattle: 2124 Third Avenue · Suite 100 · Seattle · WA 98121
Tel: 206·443·6212 Fax: 206·443·4870
Tacoma: 934 Broadway · Suite 100 · Tacoma · WA 98042
Tel: 253·284·9470 Fax: 253·284·9471

Project
Date
Proj. No.
Design
Sheet

Hang (E) Joists from New Blocking w/ U36 Series Hangers

(E) Joists + Sheathing



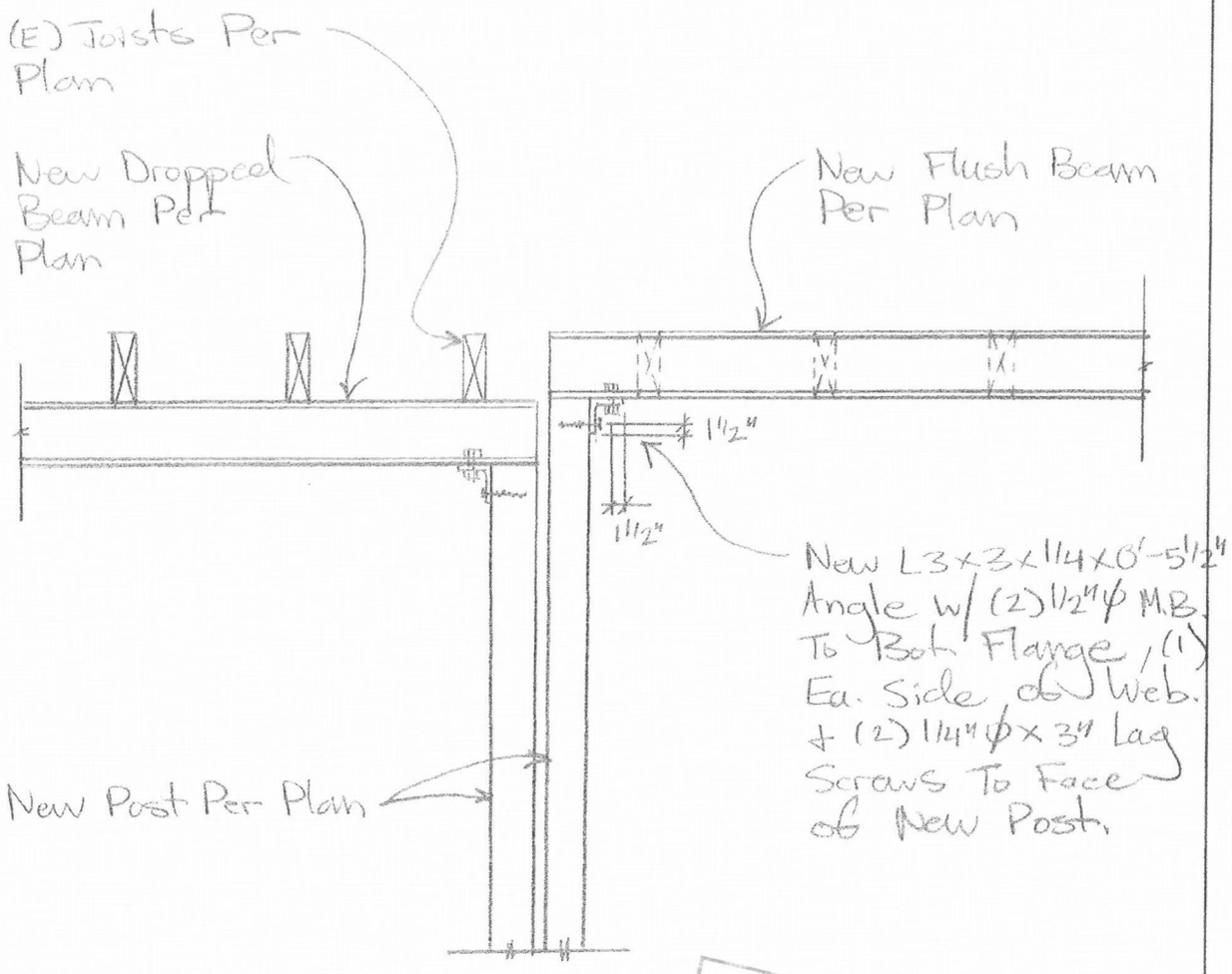
New Steel Beam Per Plan w/ Continuous Solid Web Blocking Ea. Side of Web + 1/2"ϕ THRU Bolts @ 32" OC

City of Portland
REVIEWED FOR CODE COMPLIANCE
JUL 05 2012
Permit Number

2

SWENSON SAY FAGÉT
A STRUCTURAL ENGINEERING CORPORATION
Seattle: 2124 Third Avenue · Suite 100 · Seattle · WA 98121
Tel: 206·443·6212 Fax: 206·443·4870
Tacoma: 934 Broadway · Suite 100 · Tacoma · WA 98042
Tel: 253·284·9470 Fax: 253·284·9471

Project
Date
Proj. No.
Design
Sheet

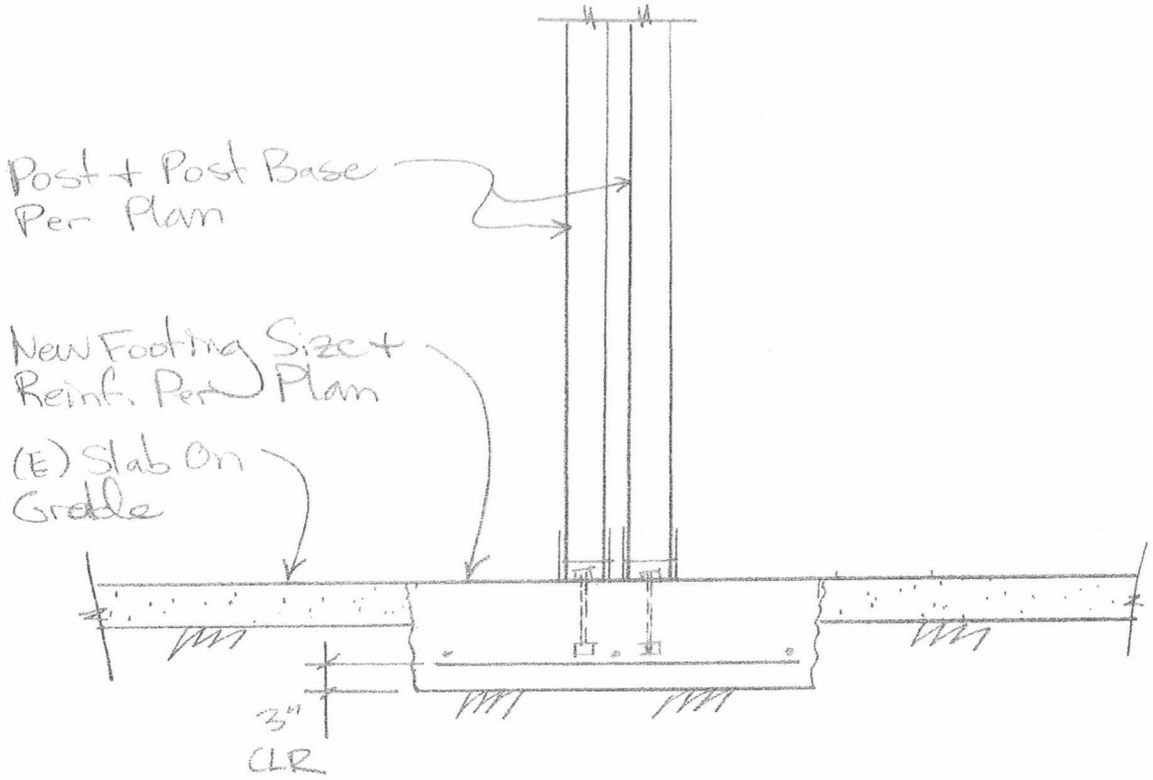


City of Portland
REVIEWED FOR CODE COMPLIANCE
JUL 05 2012
Permit Number

3

SWENSON SAY FAGÉT
A STRUCTURAL ENGINEERING CORPORATION
Seattle: 2124 Third Avenue · Suite 100 · Seattle · WA 98121
Tel: 206·443·6212 Fax: 206·443·4870
Tacoma: 934 Broadway · Suite 100 · Tacoma · WA 98042
Tel: 253·284·9470 Fax: 253·284·9471

Project
Date
Proj. No.
Design
Sheet



City of Portland
REVIEWED FOR CODE
COMPLIANCE
JUL 05 2012
Permit Number

4

SWENSON SAY FAGÉT
A STRUCTURAL ENGINEERING CORPORATION
Seattle: 2124 Third Avenue · Suite 100 · Seattle · WA 98121
Tel: 206·443·6212 Fax: 206·443·4870
Tacoma: 934 Broadway · Suite 100 · Tacoma · WA 98042
Tel: 253·284·9470 Fax: 253·284·9471

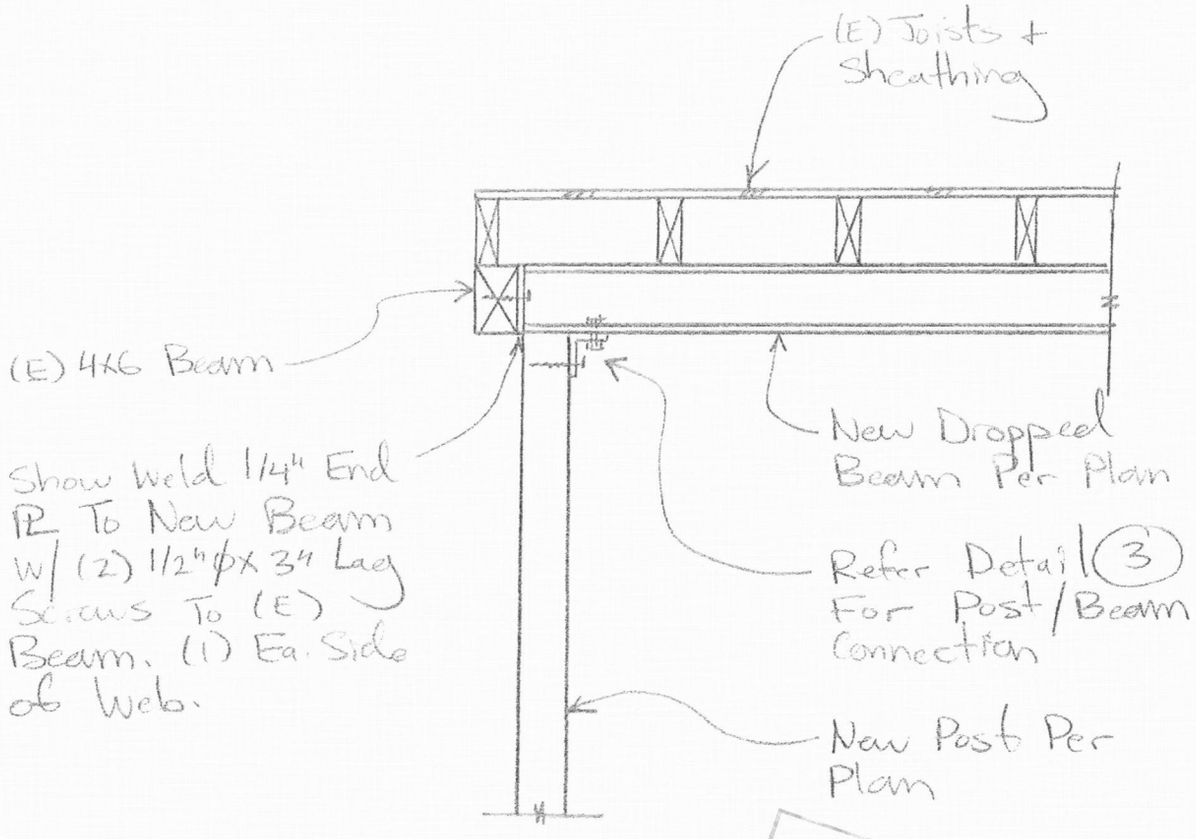
Project

Date

Proj. No.

Design

Sheet

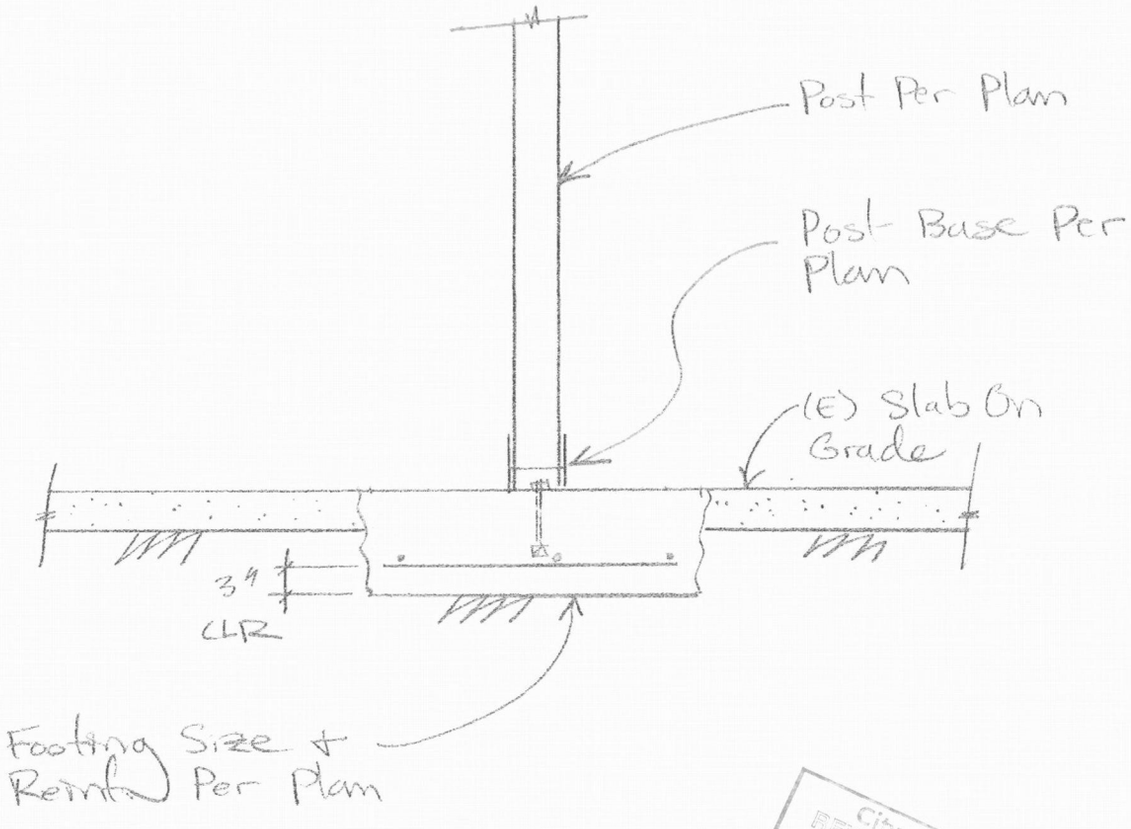


City of Portland
REVIEWED FOR CODE COMPLIANCE
JUL 05 2012
Permit Number

5

SWENSON SAY FAGÉT
A STRUCTURAL ENGINEERING CORPORATION
Seattle: 2124 Third Avenue · Suite 100 · Seattle · WA 98121
Tel: 206·443·6212 Fax: 206·443·4870
Tacoma: 934 Broadway · Suite 100 · Tacoma · WA 98042
Tel: 253·284·9470 Fax: 253·284·9471

Project
Date
Proj. No.
Design
Sheet



City of Portland
REVIEWED FOR CODE COMPLIANCE
JUL 05 2012
Permit Number

6

SWENSON SAY FAGÉT
A STRUCTURAL ENGINEERING CORPORATION
Seattle: 2124 Third Avenue · Suite 100 · Seattle · WA 98121
Tel: 206·443·6212 Fax: 206·443·4870
Tacoma: 934 Broadway · Suite 100 · Tacoma · WA 98042
Tel: 253·284·9470 Fax: 253·284·9471

Project
Date
Proj. No.
Design
Sheet