



Building/Fire Code Board Meeting Agenda

February 6, 2025

2:00 PM

[City Hall](#)

Aspen Room

415 W. 6th St

Vancouver, WA 98660

1. Call to Order and Roll Call

2:00 PM - Call to order

2. Review supplemental information submitted by the Owner

3. Owner/Proponent presentation in support of their case

a. Exhibits

4. Public comment

5. City presentation- Building Official's proposed findings and determination based on VMC Chapter 17 and Chapter 20.

a. October 2024 and Feb 2025 Staff Report

b. Exhibits

6. Communication/Deliberation and Recommendation/Action

Building/Fire Code Board

Members

David Aronson

Adrienne Linton

David Wulbers

Jason Olson

Matt Chalka

John Gentry

Jimmy Stewart

Community Development

415 W. 6th Street

Vancouver, WA 98660

TTY: 771

www.cityofvancouver.us

Community Forum Instructions

The public is invited to speak regarding any issue. Members of the public testifying are asked to limit testimony to three minutes. There are two ways to provide comments:

1. Writing: Public comments can be submitted in writing (name, address, contact information and comments) via email to sree.thirunagari@cityofvancouver.us by noon on the day of the meeting.
2. In Person: Pre-register by phone at 360-487-7837 or email sree.thirunagari@cityofvancouver.us by 5pm the day before the meeting or fill out a Public Comment form in person prior to the start of the Community Communications portion of the meeting.

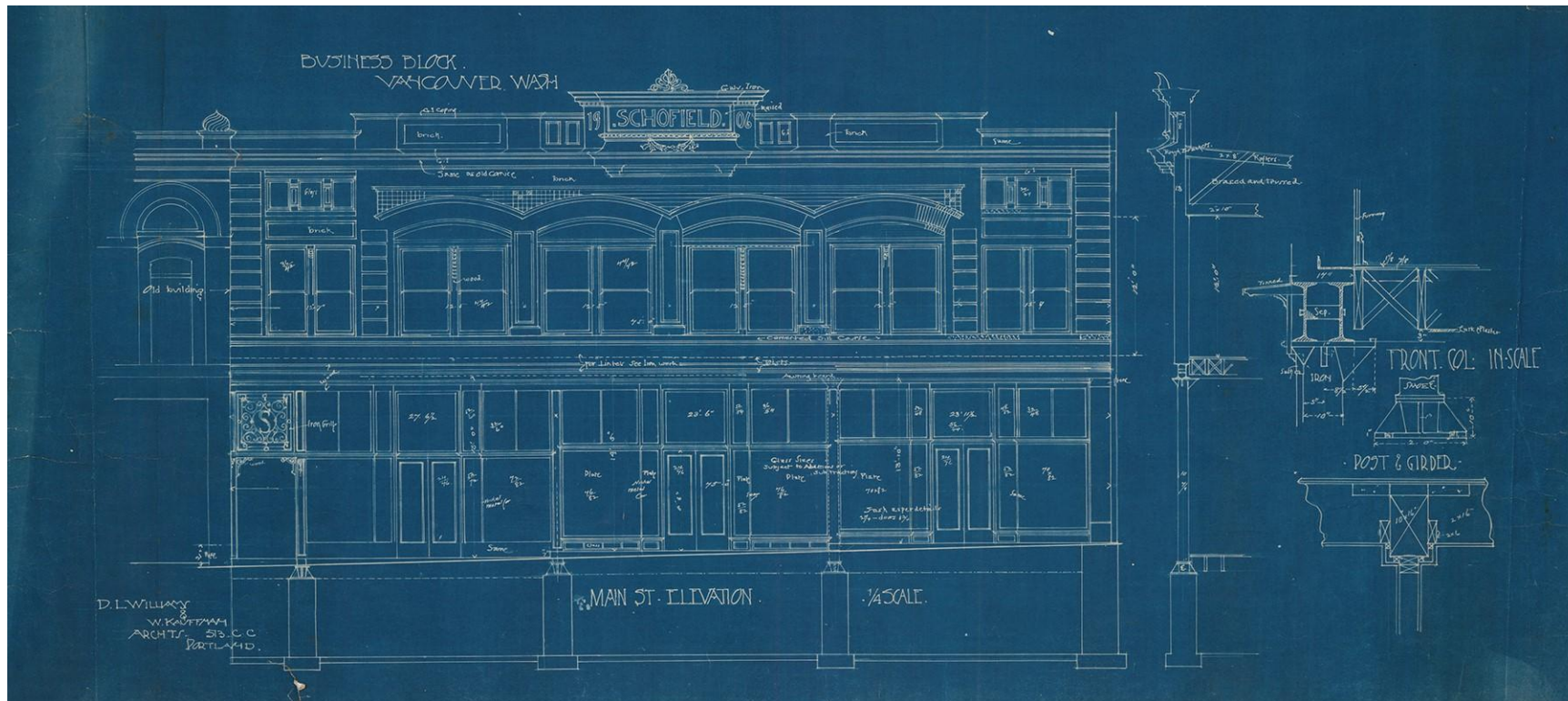
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Anyone needing language interpretation services or accommodations with a disability at a Vancouver City Council meeting may contact the City Manager's staff at (360) 487-8600 (RELAY: 711). Assistive listening devices and live Closed Captioning are available for the deaf, hard of hearing and general public use. Please notify a staff person if you wish to use one of the devices. Every attempt at reasonable accommodation will be made. To request this agenda in another format, please also contact the phone numbers listed above.

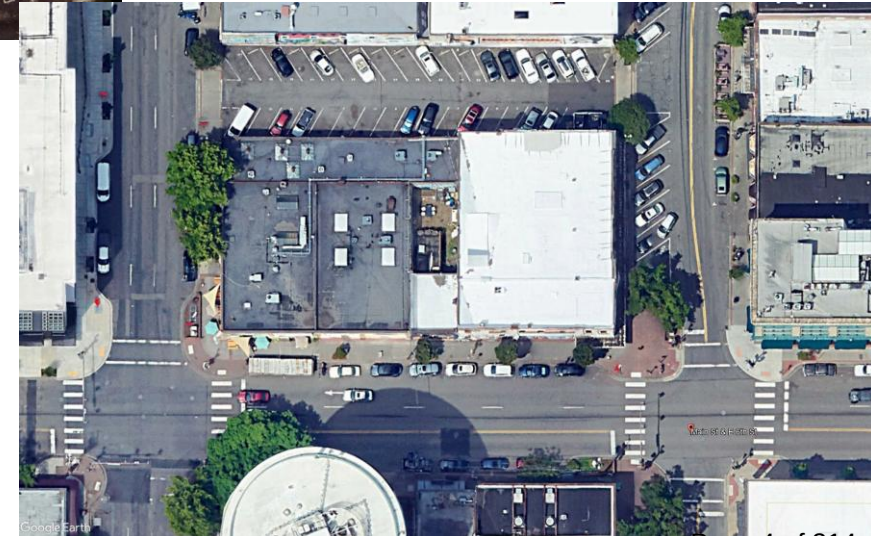


SCHOFIELD BLOCK

BUILDING AND FIRE CODE COMMISSION MEETING



HISTORICAL BACKGROUND

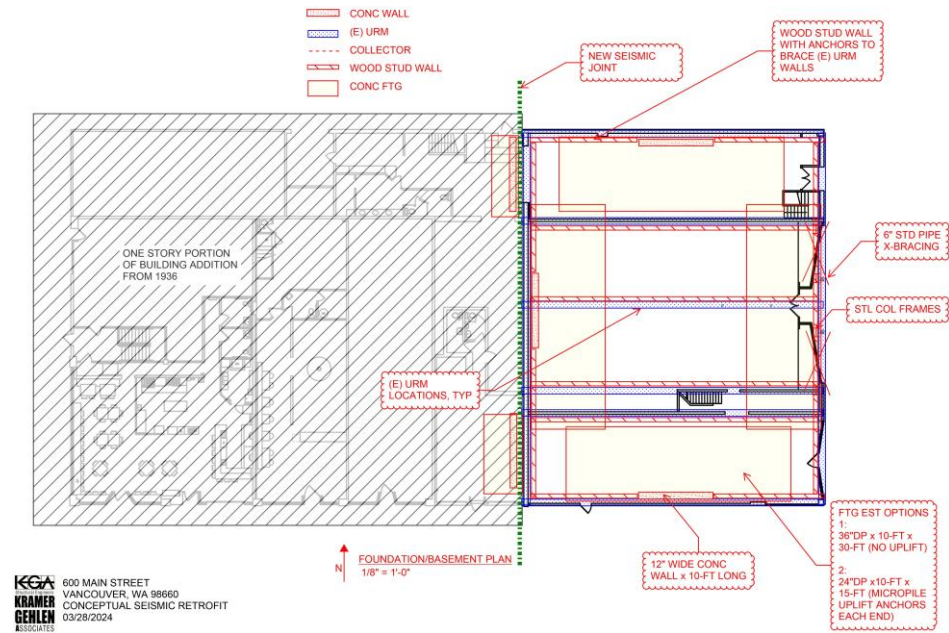


THE CURRENT PROCESS

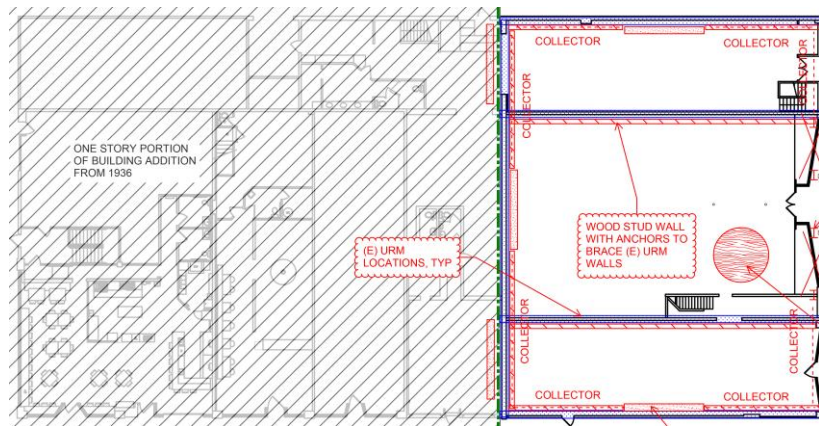


Based on the historical significance of this building, the City would also require a review meeting with the Building and Fire Code Commission (BFCC) prior to the HPC meeting. The building official may order an unfit dwelling, building, structure, or premises repaired, remediated, demolished or otherwise abated as follows: Section 17.32.060 Repair, vacation, or demolition - Standards - Measures pending abatement ([Ch. 17.32 Unfit Buildings and Premises Code | Vancouver Municipal Code](#)).

HISTORIC PRESERVATION



KGA
 600 MAIN STREET
 VANCOUVER, WA 98660
KRAMER
GERLEN
 ASSOCIATES
 CONCEPTUAL SEISMIC RETROFIT
 03/28/2024



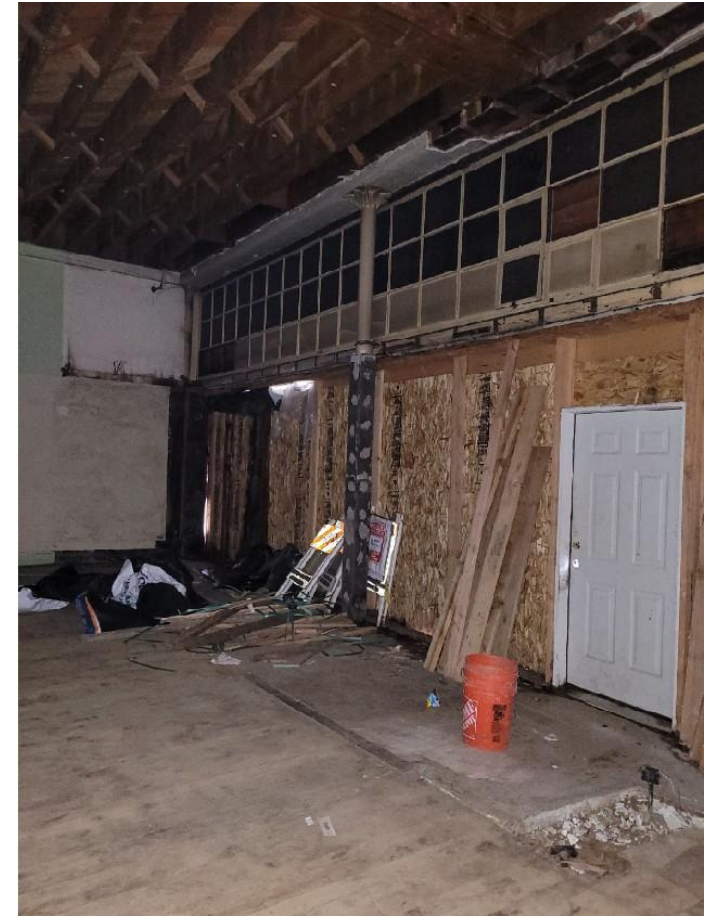
EAST ELEVATION - OPTION E



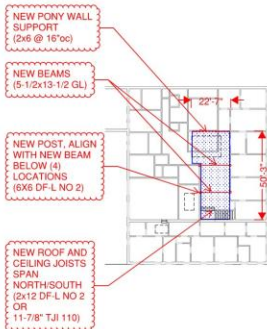
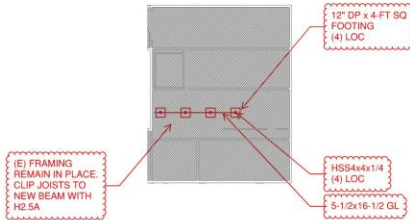
WILSONARCHITECTS PLLC
 404 E 15TH STREET #7
 VANCOUVER WA 98663
 360 696 4722

SCHOFIELD HOUSE
 BOUTIQUE HOTEL

UNFIT BUILDING REVIEW



SUMMARY BOARD

ITEM	CODE	SCOPE	FIX	COST																																																						
ROOF AND CEILING FRAMING CAPACITY	VMC 17.32.040 C (ITEM C.1 IN REPORT) VMC 17.32.040 I (ITEM I.1 IN REPORT)	 12% OF THE ROOF		\$295,920.00																																																						
GROUND FLOOR FRAMING CAPACITY	VMC 17.32.040 C (ITEM C.4 IN REPORT) <table><caption>Table 4.3-1. (Continued) Minimum Uniformly Distributed Live Loads, L_u, and Minimum Concentrated Live Loads</caption><tr><th>Occupancy or Use</th><th>Uniform, L_u, and (kN/m²)</th><th>Use Load Minimum Concentrated (Kip, No.)</th><th>Multiple Story Live Load Reduction Permitted? (Yes, No)</th><th>Commentary (b) (5)(c)</th><th>Area Size Square Feet</th></tr><tr><td>Shops</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td> Retail</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td> First floor</td><td>100 (4.79)</td><td>Yes (4.7.2)</td><td>Yes (4.7.2)</td><td>1,000 (4.45)</td><td></td></tr><tr><td> Upper floors</td><td>75 (3.58)</td><td>Yes (4.7.2)</td><td>Yes (4.7.2)</td><td>1,000 (4.45)</td><td></td></tr><tr><td> Wholesale, all floors</td><td>125 (6.00)</td><td>No (4.7.3)</td><td>Yes (4.7.3)</td><td>1,000 (4.45)</td><td></td></tr><tr><td>Vehicle service</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td> Walkways and elevated platforms (other than rail transit)</td><td>60 (2.87)</td><td>Yes (4.7.2)</td><td>Yes (4.7.2)</td><td>See Sec. 4.3.3</td><td></td></tr><tr><td>Yards and terraces, pedestrian</td><td>100 (4.79)</td><td>No (4.7.5)</td><td>No (4.7.5)</td><td></td><td></td></tr></table>	Occupancy or Use	Uniform, L_u , and (kN/m ²)	Use Load Minimum Concentrated (Kip, No.)	Multiple Story Live Load Reduction Permitted? (Yes, No)	Commentary (b) (5)(c)	Area Size Square Feet	Shops						Retail						First floor	100 (4.79)	Yes (4.7.2)	Yes (4.7.2)	1,000 (4.45)		Upper floors	75 (3.58)	Yes (4.7.2)	Yes (4.7.2)	1,000 (4.45)		Wholesale, all floors	125 (6.00)	No (4.7.3)	Yes (4.7.3)	1,000 (4.45)		Vehicle service						Walkways and elevated platforms (other than rail transit)	60 (2.87)	Yes (4.7.2)	Yes (4.7.2)	See Sec. 4.3.3		Yards and terraces, pedestrian	100 (4.79)	No (4.7.5)	No (4.7.5)			 18% OF THE GROUND FLOOR 100 PSF LIVE LOAD		\$375,304.00
Occupancy or Use	Uniform, L_u , and (kN/m ²)	Use Load Minimum Concentrated (Kip, No.)	Multiple Story Live Load Reduction Permitted? (Yes, No)	Commentary (b) (5)(c)	Area Size Square Feet																																																					
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KEGA

600 MAIN ST

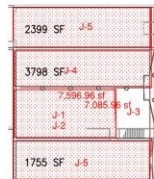
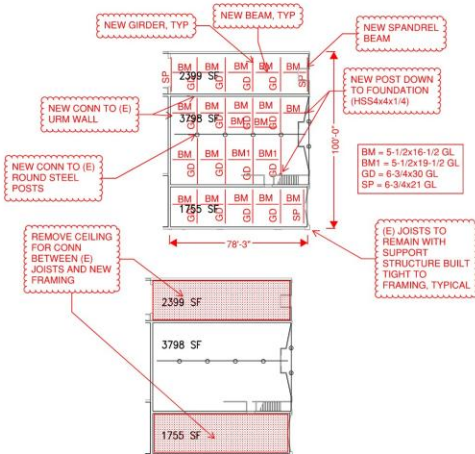
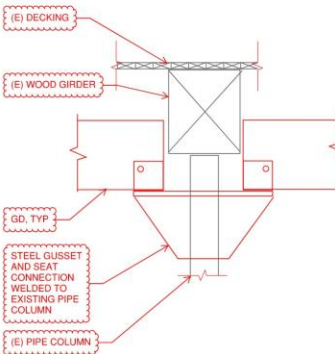
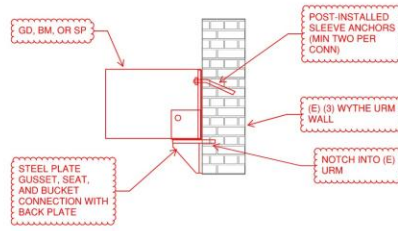
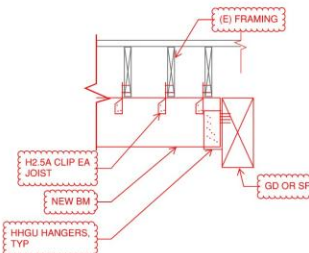
KRAMER VMC 17.32.040 REPORT

GEHLEN

12/10/2024

ASSOCIATES

SUMMARY BOARD

ITEM	CODE	SCOPE	FIX	COST
SECOND FLOOR FRAMING CAPACITY	VMC 17.32.040 C (ITEM C.2 IN REPORT) VMC 17.32.040 I (ITEM I.2 IN REPORT)	 93% FLOOR FRAMING 50PSF LIVE LOAD OFFICE OCCUPANCY		\$441,489.00
 TYP GIRDER TO (E) STEEL PIPE COLUMN  TYP BEAM, SPANREL, GIRDER TO (E) URM  TYP JOIST TO BEAM BEAM TO GIRDER/SPANREL				

KEGA

KRAMER

GEHLEN

RESOURCES

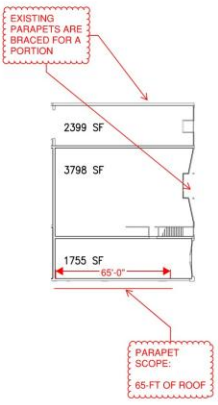
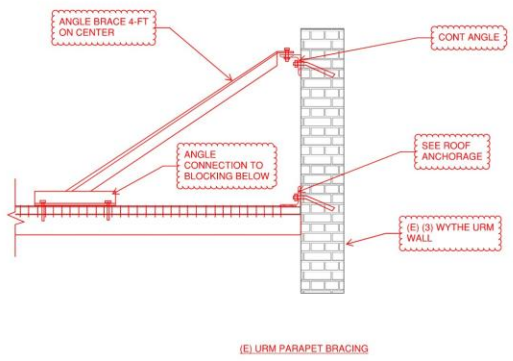
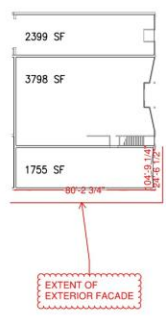
600 MAIN ST
KRAMER VMC 17.32.040 REPORT
12/10/2024



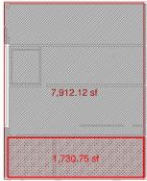
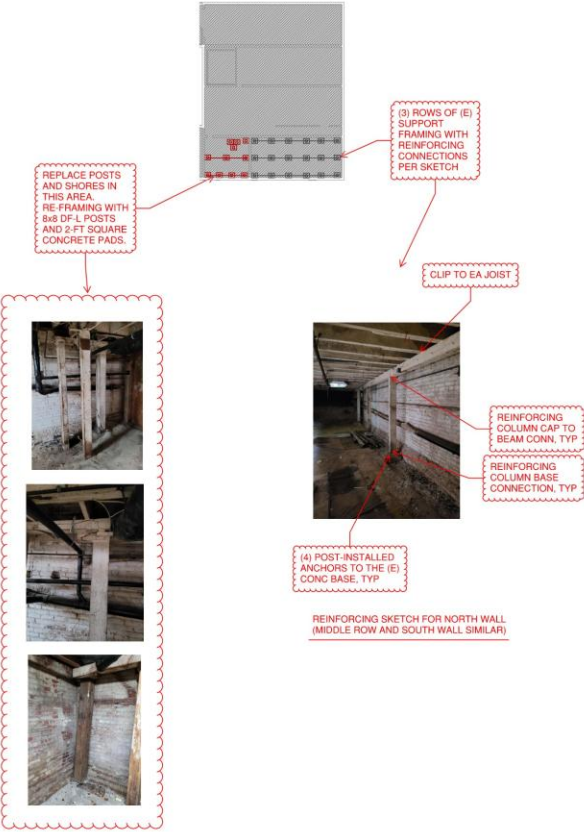
SUMMARY BOARD

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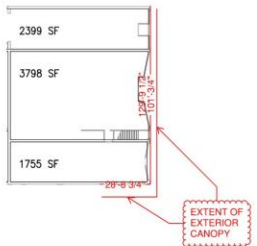
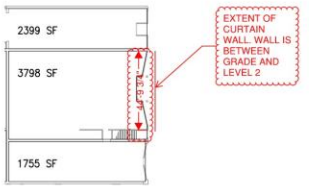
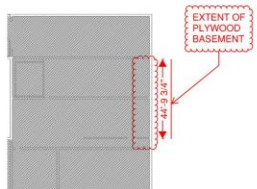
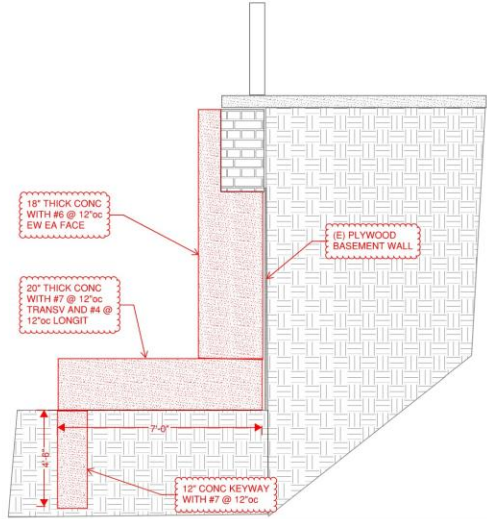
SUMMARY BOARD

ITEM	CODE	SCOPE	FIX	COST
UNREINFORCED MASONRY UNBRACED PARAPETS	VMC 17.32.040 F (ITEM F.2 IN REPORT) VMC 17.32.040 G (ITEM G.2 IN REPORT) 17.32.020	 EXISTING PARAPETS ARE BRACED FOR A PORTION 2399 SF 3798 SF 1755 SF 65'-0" PARAPET SCOPE: 65'-FT OF ROOF	 ANGLE BRACE 4-FT ON CENTER ANGLE CONNECTION TO BLOCKING BELOW SEE ROOF ANCHORAGE CONT ANGLE (E) (3) WYTHE URM WALL (E) URM PARAPET BRACING	\$375,535.00
ADHERED STUCCO FAILURE	VMC 17.32.040 F (ITEM F.3 IN REPORT) VMC 17.32.040 G (ITEM G.3 IN REPORT)	 2399 SF 3798 SF 1755 SF 80'-2 3/4" EXTENT OF EXTERIOR FACADE	REMOVE AND REPLACE	\$170,000.00

SUMMARY BOARD

ITEM	CODE	SCOPE	FIX	COST
GROUND FLOOR SUPPORT FRAMING	VMC 17.32.040 F (ITEM F.4 IN REPORT)	 23% OF THE GROUND FLOOR	 REPLACE POSTS AND SHORES IN THIS AREA. RE-FRAMING WITH 8x8 DF-L POSTS AND 2-FT SQUARE CONCRETE PADS. (3) ROWS OF (E) SUPPORT FRAMING WITH REINFORCING CONNECTIONS PER SKETCH CLIP TO EA JOIST REINFORCING COLUMN CAP TO BEAM CONN. TYP REINFORCING COLUMN BASE CONNECTION, TYP (4) POST-INSTALLED ANCHORS TO THE (E) CONC BASE, TYP REINFORCING SKETCH FOR NORTH WALL (MIDDLE ROW AND SOUTH WALL SIMILAR)	\$325,000.00

SUMMARY BOARD

ITEM	CODE	SCOPE	FIX	COST
EXTERIOR CANOPY	VMC 17.32.040 F (ITEM F.5 IN REPORT) VMC 17.32.040 G (ITEM G.4 IN REPORT)		REMOVE AND REPLACE	\$180,000.00
CURTAIN WALL ALONG MAIN STREET	VMC 17.32.040 F (ITEM F.6 IN REPORT) VMC 17.32.040 G (ITEM G.5 IN REPORT) VMC 17.32.040 I (ITEM I.3 IN REPORT) VMC 17.32.040 K (ITEM K IN REPORT)		REMOVE AND REPLACE	\$42,575.00
PLYWOOD BASEMENT WALLS	VMC 17.32.040 I (ITEM I.4 IN REPORT)			\$89,000.00



MATERIAL SALVAGE OPTION

PROJECT SCOPE INCLUDES:

- EXTERIOR
 - Demolition with an emphasis on salvaging building materials such as brick, wood, doors/frames, etc.
 - Re-use the building materials to re-create the original building as closely as possible.
- INTERIOR
 - Construct new building within the exterior shell.
- ADDITION
 - Add 2 new levels



WILSONARCHITECTS PLLC
404 E 15TH STREET #7
VANCOUVER WA 98663
360 696 4722

SCHOFIELD HOUSE
BOUTIQUE HOTEL



MATERIAL SALVAGE OPTION

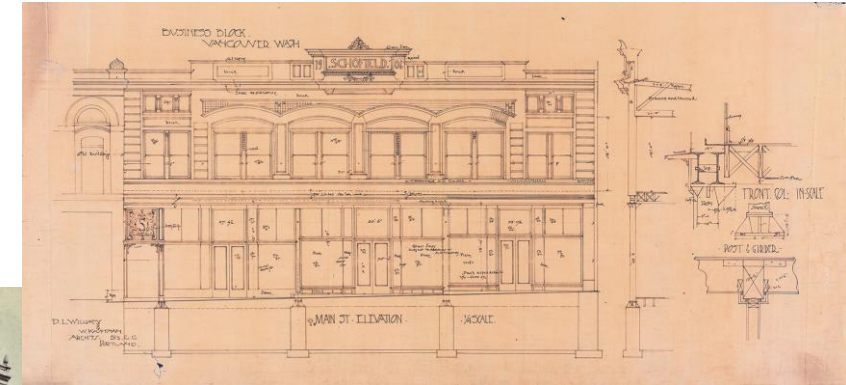
INTERPRETIVE DISPLAY

VANCOUVER radiator, fender and body shop for sale, excellent business opportunity, good money maker for party who understands the job; going concern. Apply James Farrell, Schofield bldg., 600 Main st., Vancouver Wash.



SALESMEN - INTANGIBLE EXPER.
(can use 4 men)
CAN YOU
1—Follow simple instructions?
2—deliver a 5 minute prepared sales presentation?
3—dress neatly and furnish your own transportation?
4—give 6 hours honest effort daily?
IF the answers are YES then
YOU CAN
1—earn \$150 up per week with us.
2—work fresh easy-to-close leads.
3—work for the fastest growing company of its kind in America.
4—have permanent security in a dignified selling job.
Between 5 and 7 pm Monday
10 SCHOFIELD BLDG., VANCOUVER

Schlagel Emanuel, lab, bds East D s e cor 15th.
Schlegel Christian, carp, res East E cor 13th.
Schofield Edward, real estate, bds Main n w cor 6th.
Schofield Nicholas, brick manfr 15th n w cor West M, genl mdse Main n w cor 6th, res same.
Schofield Richmond McA, 2d Lieut Troop E 4th Cavalry, res Reservation.
Schram Very Rev Louis de G V C, Rector St James Cathedral, Pres St James College, res n s 12th bet West B and West C.
Schuele David F, res West E s w cor 8th.
Schwartzner Frank, carp, res West D n w cor 18th.



Brick Mnfrs.
Hayden Gay S B, Vancouver.
Hidden L M, Vancouver.
Jeffery E J, Sandy rd at city limits.
Kern L E, 24 Washington, yard E P.
Leahy James, Oregon cor 24th, E P.
Piggott & Spencer, ft Morrison.
Portland Consolidated Brick Mnfgr Co, 134 Morrison.
Portland Pressed Brick Co, 88 1st.
Reed & Sayers, Fulton.
Schofield Nicholas, Vancouver.
Wills Jacob, Willaburg.
Brick Masons.
See Carpenters, Contractors and Builders.



New Schofield Block, Just About Completed.

ELECTRIC TURN SIGNALS and STOP SIGNAL PERFECTED

by men of Vancouver, Wash. Patent applied for. Persons interested may see James O. Blair, Schofield Building, Vancouver, Wash., attorney for inventors. Will consider any reasonable proposition.

SEE VANCOUVER WASH.,

the fast-growing city just across the Interstate bridge. Get in on the ground floor and buy inside business property or close-in acreage. We have them for sale and they're priced right.

THE PERCIVAL AGENCY.
ROOMS 4 and 5 SCHOFIELD BLDG.,
VANCOUVER, WASH.
SPRING IS HERE.

THESE ARE BARGAINS.

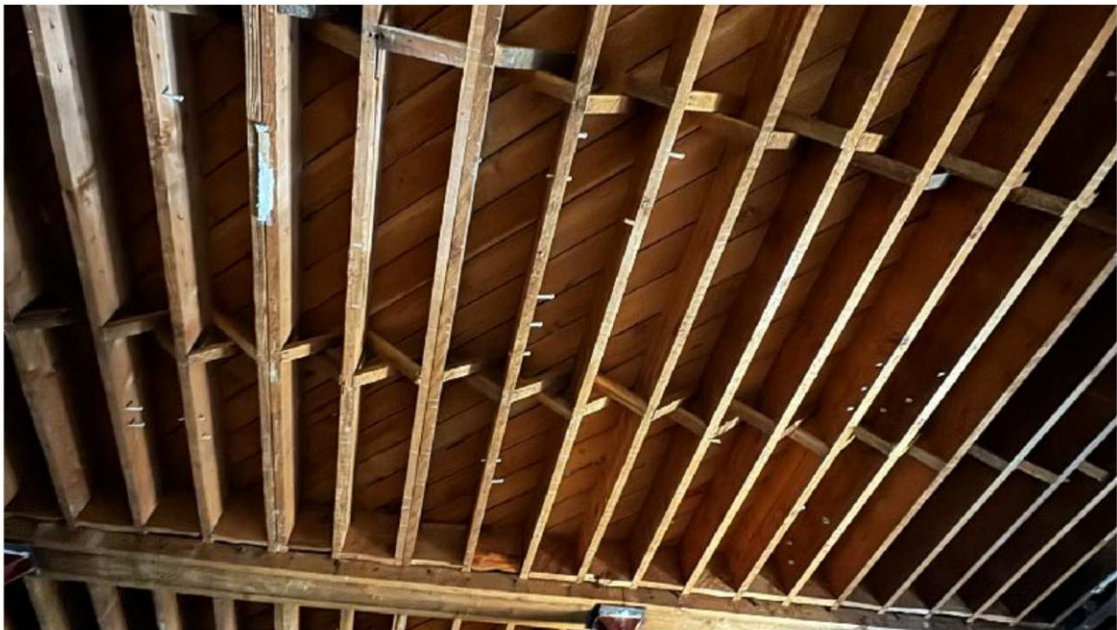
600 Main St

Salvageable Materials Presentation

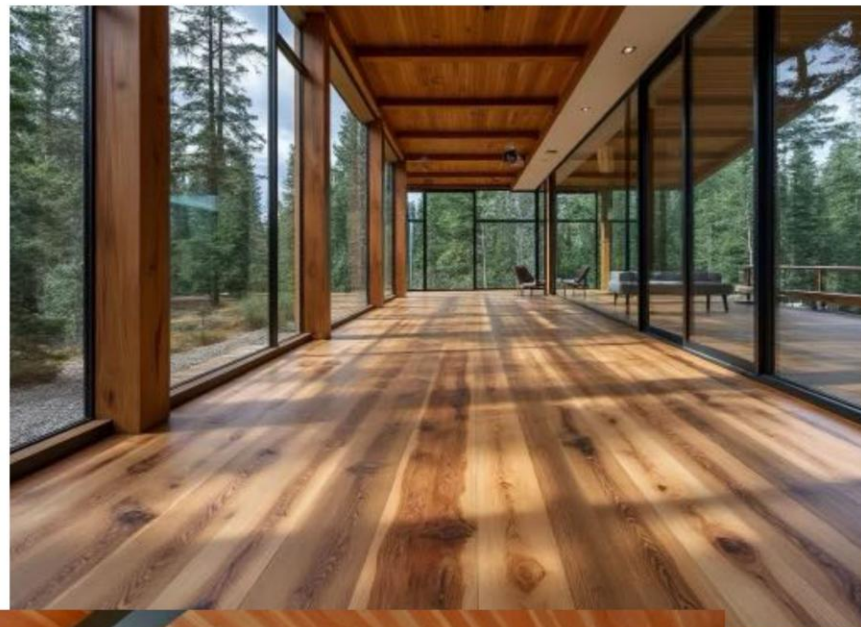


Schlecht Construction
Trusted Since 1965

Site pictures of salvageable materials



Wood re-use examples



- Timber beams
- Casework
- Flooring
- Trim

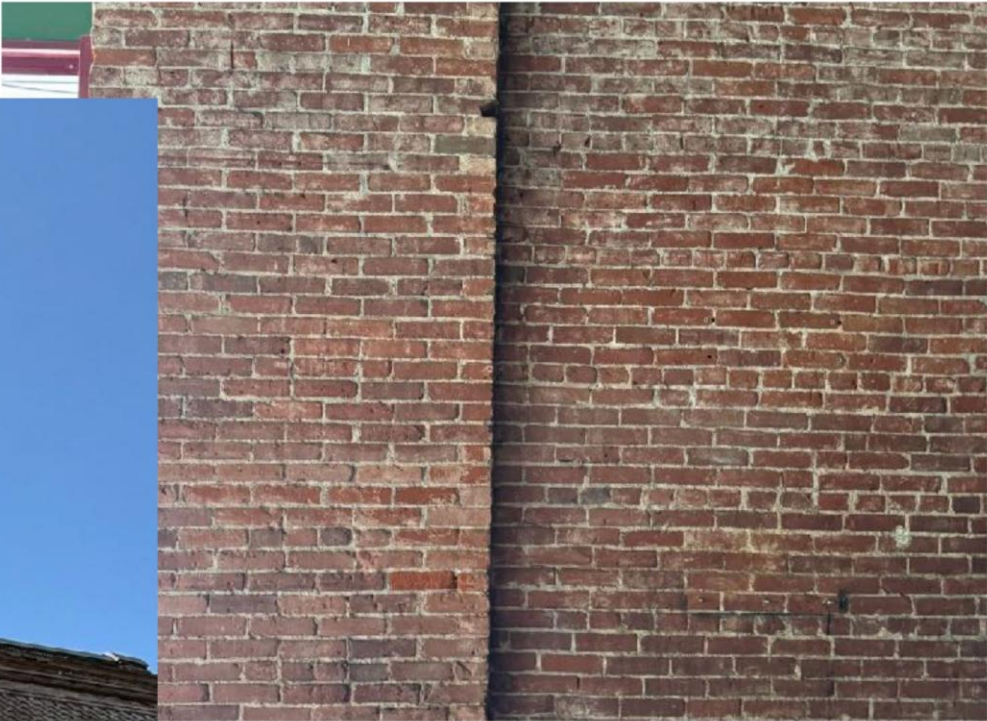


Wood re-use examples continued



- Timber beams
- Casework
- Flooring
- Trim





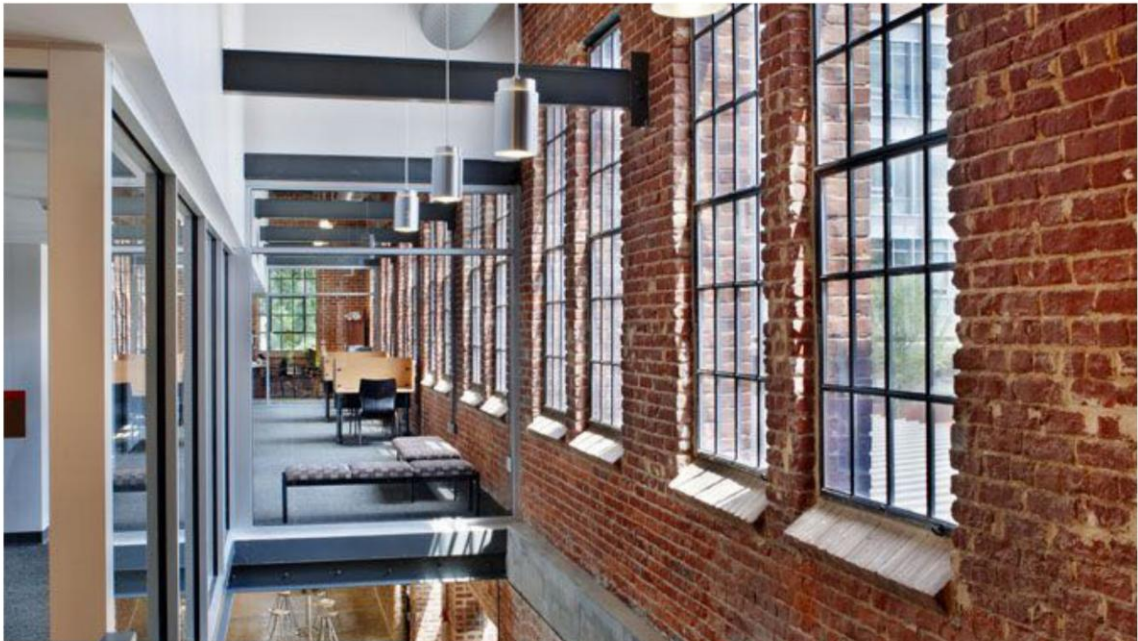
Salvageable brick and stone re-use examples



- Facade
- Interior
- Exterior



- Facade
- Interior
- Exterior





SCHOFIELD FAMILY – Serving Vancouver Since 1852

**Pictured: 4
Generations of
Schofield
Family**

**L-R: Mary
Schofield,
Edward Patrick
Schofield,
Patricia
Schofield
Aschieris,
Richard
Aschieris
(Michael's
father)**



**Pictured on the front steps of Mary and
E.R. Schofield's home at 200 W. 29th Street**

Since 1852, our family's commitment to the City of Vancouver has always been unwavering. And now, at the most transformational moment in downtown's history with the Main Street Promise project, our family's commitment remains the same

The same family that built the original Schofield Building that became the key economic and social center for downtown's first 70 years will build the new Schofield Building, which will become the key economic and social center for downtown's next era

What was, will be again

 APPENDIX

FINANCIAL ANALYSIS

Financial Scenario Analysis

Base Case Vs. Downside Case Vs. Upside Case

• Key Assumptions:

- The building is registered, which we will not pursue
 - Loan amount based on LTV (75%)
 - \$0 annual property tax, 20% historic tax credit

Description	Option 1: Base Case		Option 2: Downside Case		Option 3: Upside Case	
	Comments	Est. Amount	Comments	Est. Amount	Comments	Est. Amount
Rentable Space (SF):						
Main Level	Current	8,000	Current	8,000	Current	8,000
2nd Story	Configuration	8,000	Configuration	8,000	Configuration	8,000
Total SF Rentable		16,000		16,000		16,000
Development Costs:						
Seismic Upgrades	Median Est.	\$5,346,325	20% Higher	\$6,415,589	Same as Base	\$5,346,325
Interior-Build Out		5,181,675		\$5,181,675		\$5,181,675
Soft Costs	25% of Dev. Costs	2,632,000	25% of Dev. Costs	2,899,316	25% of Dev. Costs	2,632,000
Financing Cost	4% of Dev. Costs	526,400	4% of Dev. Costs	579,863	4% of Dev. Costs	526,400
Total Cost		\$13,686,400		\$15,076,444		\$13,686,400
Operating Income / Expense:						
Rental Income:						
Main Level (Retail / Restaurant)	Class-B (\$30 PSF)	\$240,000	Class-B (\$30 PSF)	\$240,000	Class-A (\$50 PSF)	\$400,320
2nd Story (Office Space)	Class-B (\$15 PSF)	\$120,000	Class-B (\$15 PSF)	\$120,000	Class-A (\$24 PSF)	\$192,000
Annual Gross Income:		\$360,000		\$360,000		\$592,320
Less Vacancy	10% Vacancy	(\$36,000)	10% Vacancy	(\$36,000)	10% Vacancy	(\$59,232)
Gross Operating Income		\$324,000		\$324,000		\$533,088
Less Expenses		(\$97,200)		(\$97,200)		(\$159,926)
Net Operating Income		\$226,800		\$226,800		\$373,162
Plus Property Taxes (Assumes No Prop. Tax)	Property Tax Offset	\$20,330	Property Tax Offset	\$20,330	Property Tax Offset	\$20,330
Adj. Net Operating Income:		\$247,130		\$247,130		\$393,492
Value on Completion:	6% Cap Rate	\$4,118,836	6% Cap Rate	\$4,118,836	6% Cap Rate	\$6,558,196
Valuation % of Cost	30%		27%		48%	
Valuation Minus Cost:		(\$9,567,564)		(\$10,957,609)		(\$7,128,204)
Financing:						
Loan Amount	75% LTV; 6.5% Int.	\$10,264,800	75% LTV; 6.5% Int.	\$11,307,333	75% LTV; 6.5% Int.	\$10,264,800
Net Equity	Assumes 20% HTC	3,421,600	Assumes 20% HTC	3,769,111	Assumes 20% HTC	3,421,600
Debt Service	6.5% Interest Rate	(\$778,566)	6.5% Interest Rate	(\$857,640)	5.5% Interest Rate	(\$699,389)
Net Income (Cash Flow):		(\$531,436)		(\$610,510)		(\$305,897)
Cash-on-Cash Return:		(16%)		(16%)		(9%)

The Schofield Building is uninvestable. A bank will not loan in this scenario as even in an upside scenario, assuming higher lease rates and lower interest rates, the property still loses ~\$305K per year

Note: Current estimates as of 10/27/2024, operating estimates validated by Cari Jones from the Philips Group (>20 years experience in leasing experience in downtown Vancouver), HTC sold upfront, price reflects discount net of capital gains taxes, for illustrative purposes only as we will not get the building registered.

FINANCIAL ANALYSIS

Financial Scenario Analysis

Base Case Vs. Downside Case Vs. Upside Case

• Key Assumptions:

- The building is registered, which we will not pursue
- Loan amount based on cash flow profile (DSCR)
- \$0 annual property tax, 20% historic tax credit

Description	Scenario 1: Base Case		Scenario 2: Downside Case		Scenario 3: Upside Case	
	Comments	Est. Amount	Comments	Est. Amount	Comments	Est. Amount
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<i>Rental Income:</i>						
Main Level (Retail / Restaurant)	Class-B (\$30 PSF)	\$240,000	Class-B (\$30 PSF)	\$240,000	Class-A (\$50 PSF)	\$400,320
2nd Story (Office Space)	Class-B (\$15 PSF)	\$120,000	Class-B (\$15 PSF)	\$120,000	Class-A (\$24 PSF)	\$192,000
Annual Gross Income:		\$360,000		\$360,000		\$592,320
<i>Less Vacancy</i>	10% Vacancy	(\$36,000)	10% Vacancy	(\$36,000)	10% Vacancy	(\$59,232)
Gross Operating Income:		\$324,000		\$324,000		\$533,088
<i>Less Expenses</i>		(\$97,200)		(\$97,200)		(\$159,926)
Net Operating Income:		\$226,800		\$226,800		\$373,162
<i>Plus Property Taxes (Assumes No Prop. Tax)</i>	Property Tax Offset	\$20,330	Property Tax Offset	\$20,330	Property Tax Offset	\$20,330
Adj. Net Operating Income:		\$247,130		\$247,130		\$393,492
Value on Completion:	6% Cap Rate	\$4,118,836	6% Cap Rate	\$4,118,836	6% Cap Rate	\$6,558,196
Valuation % of Cost	30%		27%		48%	
Valuation Minus Cost		(\$9,567,564)		(\$10,957,609)		(\$7,128,204)
Financing:						
Loan Amount	75% LTV; 1.2 DSCR	\$2,715,185	75% LTV; 1.2 DSCR	\$2,715,185	75% LTV; 1.2 DSCR	\$4,812,671
Historic Tax Credits (20% of Hard Costs)		\$1,347,584		\$1,484,450		\$1,347,584
Equity Investment Needed:		\$9,623,631		\$10,876,810		\$7,526,145
Debt Service	6.5% Interest Rate	(\$205,942)	6.5% Interest Rate	(\$205,942)	5.5% Interest Rate	(\$327,910)
Net Income (Cash Flow)		\$41,188		\$41,188		\$65,582
Cash-on-Cash Return		0.4%		0.4%		0.9%

The Schofield Building is uninvestable. An equity investor will not invest in this scenario as the building generates a low investment return (0.4% in our base case and 0.9% in the upside case)

Note: Current estimates as of 10/27/2024, operating estimates validated by Cari Jones from the Philips Group (>20 years experience in leasing experience in downtown Vancouver), HTC sold upfront, price reflects discount net of capital gains taxes, for illustrative purposes only as we will not get the building registered.



FINANCIAL ANALYSIS

Grant Program Name	Schofield Building Eligibility		Total Potential Funding (\$)	Commentary
	Yes	No		
Heritage Capital Projects Fund		X	-	Only non-profit organizations, tribes, and local government agencies may apply.
Valerie Sivinski Grant Program	X		\$3,000	Grant is for preserving/rehabilitating a historic or cultural place.
Building For the Arts		X	-	Only for performing arts, art museum, and cultural organizations.
Historic County Courthouse Rehabilitation Grant Program		X	-	Only for court houses.
Historic Cemetery Grant Program		X	-	Only for historic cemeteries.
Heritage Barn Rehabilitation Grants		X	-	Only for barn rehabilitation.
Historic Theater Grant Program		X	-	Only for prereserving historic theaters.
Building Communities Fund		X	-	To rehabilitate nonresidential community and social service centers.
Hart Family Fund for Small Towns		X	\$5,000-\$10,000	For city populations of 5,000 or less.
The Questers		X	-	Must be a member to apply.
The Getty Architectural Conservation Grants		X	-	Program was closed as of 2020.
Community Development Block Grants		X	-	Only eligible cities / counties may apply.
Eldridge Campbell Stockton Memorial Preserves Fund		X	\$2,500-\$5,000	Only for nonprofit organizations and public agencies.
M.J. Murdock Charitable Trust		X	-	Only for nonprofit organizations.
Paul G. Allen Family Foundation		X	-	No current program.
Norcliffe Foundation		X	-	Only for nonprofit organizations in the Puget Sound area.
1772 Foundation		X	\$15,000-\$50,000	Only for nonprofit organizations.
Lowe's Charitable and Education Foundation		X	-	Only for K-12 public schools and non-profit community-based organizations.
Kinsman Foundation	X		\$5,000+	Most of the projects funded involve buildings that are listed in the National Register of Historic Places.
National Trust Preservation Fund Grants		X	-	Eligible organizations include nonprofit organizations and public agencies that are members of the National Trust.
Clark County Historical Promotion Grants Program		X	-	Only for non-profit organizations or performs educative, interpretive, or similar activities.
National Trust Preservation Funds		X	\$2,500-\$5,000	Only for non-profit organizations or public agencies.
Cynthia Woods Mitchell Fund for Historic Interiors		X	\$2,500-\$15,000	Only for non-profit organizations or public agencies or the building needs to be registered as a historic place.
Johanna Favrot Fund for Historic Preservation		X	\$2,500-\$15,000	Only for non-profit organizations or public agencies or the building needs to be registered as a historic place.
Paul Bruhn Historic Revitalization Grants Program		X	-	Targets small towns with populations <50,000 people.
Total Eligible Grant Funding			\$8,000	-

Note: Only includes grants the building is eligible for.



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Staff Report to the Building Fire Code Commission
Schofield Building-600 Main Street
Owner's request for unfit determination and demolition per VMC 17.32

Report Date	October 28, 2024
Hearing Date	October 30, 2024
Buildings/Location	600-604 Main Street. Parcel ID 47950000
Property Owner	Schofield Properties 600 Main St LLC
Staff	Sree Thirunagari, Building Official Jeri Newbold, ABO/Code Compliance Manager Lauren DiPalma, Plan Review Supervisor/Staff Engineer
Applicable codes	VMC Chapter 17.32 Unfit Buildings and Premises Code VMC Chapter 20.510 Heritage Overlay District- demolition process and steps

BACKGROUND



Main Street elevation- Picture date 10/25/2024



Sixth Street Elevation-Picture date 10/25/2024

The south section of the two-story Schofield building is considered the original portion constructed around 1880.

The north portion fronting Main Street was constructed around 1907.

The building is mostly vacant at this time. The north end of the building currently has a retail tenant. Due to the structural concerns identified in the engineering reports, the tenant is scheduled to vacate the space in early 2025.

The middle section along Main Street was most recently used as a loan and pawn shop; the space has been vacant since 2018 and is currently boarded up.

The second floor of the building has been mostly vacant for several decades.

Over the past few years, city staff have met with several prospective tenants and the owner to assist with code requirements and the permitting process; none of these meetings have resulted in tenant improvement work or occupancy.

Timeline of Events- unfit conditions/structural safety concerns

- February 2023- Building official written notice issued to address failing plaster.
- July 2023- Property owner obtains City transportation department approval to install temporary netting over the failing plaster until additional options are evaluated.
- August 2023- Property owner responds to the city regarding structural concerns, indicating that demolition option is being considered.
- March 2024- Applicant submits structural report prepared by Kramer Gehlen Associates.
- April 2024: City receives a report of plaster from the building falling on the sidewalk along 6th Street.
- April 2024- City opens code compliance case to address safety concerns.
- July 2024- City requires additional analysis and clarifications relating to the KGA structural report.
- August 2024- Applicant/property owner submits updated structural engineering report.
- October 2024- Owner submits formal request for BO unfit building determination and demolition order.
- August-October 2024- Applicant submits additional documentation (included as Exhibits)

APPLICABLE CODE PROVISIONS-VMC

VMC Chapters 17.08 Administrative Code-BFCC hearing.

VMC Chapter 17.32.040 Unfit Buildings and Premises Code; Unfit building determination.

VMC Chapter 17.32.060 BO order to abate, demolish, remediate or repair.
VMC Chapter 20.510 Heritage Overlay District- demolition process and steps.

ANALYSIS

A review of code case information and engineering documents submitted to the city indicates that the building meets several of the unfit building criteria provided in VMC 17.32.040

BFCC RECOMMENDATION/INPUT

The Building Official requests the Building and Fire Code Commission's input and recommendation on the owner's request for Unfit determination and BO demolition order.

EXHIBITS

1. City code- Vancouver Municipal Code 17.08 Role of BFCC
2. City code- Vancouver Municipal Code 17.32
3. City code- Vancouver Municipal Code 20.510 demolition provision
4. Building official letter -safety concerns Feb 2023
5. Owner's response to BO- demolition proposal
6. KGA report March 2024
7. VDA falling plaster report April 2024
8. City Code Action April 2024
9. Updated KGA report August 2024
10. Grummel report received October 2024 (2023 report)
11. Schlecht Construction repair cost estimate
12. Hurley repair cost estimate
13. Colliers building appraisal.
14. GIS fact sheet
15. Demolition scope memo
16. Owner's demolition request
17. Financial scenarios document
18. Insurance document



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STAFF REPORT

DATE: February 6, 2025

TO: Building and Fire Codes Commission

FROM: Sree Thirunagari, Building Official

RE: **600 Main Street. Schofield Building-Unfit Building Determination Per VMC 17.32 CDE Case # 89087**
Parcel ID 47950000

CC: Heidi Scarpelli, Fire Marshal
Jason Nortz, Development Review Manager

Background

On October 4, 2024, Michael Aschieris of Schofield Properties (Property Owner) made an official request of the City of Vancouver/Building Official to determine the Schofield building located at 600 Main St. as unfit per the provisions of the Vancouver Municipal Code (VMC) Ch. 17.32 Unfit Buildings and Premises Code, and for the Building Official to issue an Order of Demolition per the provisions of VMC 17.32.060.

The Building and Fire Code Commission (Commission) held a public hearing on October 30th, 2024, to consider the request by the owner of 600 Main Street (Schofield Building) for the Building Official to deem the building Unfit per VMC 17.32.040 and to issue an Order of Demolition pursuant to VMC 17.32.060. During the deliberations, Commission members and the Building Official expressed a need for additional information and clarity on the scope of repairs required by code and the specific costs associated with the repairs. The commission voted to adjourn the meeting until additional requested information was submitted by the Property Owner.

Supplemental information: Since the adjournment of Commission hearing on October 28th, 2024, building owner have submitted the following supplemental documentation (included as Exhibits).

1. Updated property assessment by Clark County
2. Owners' Summary Board. A detailed list of required repairs and associated costs.
3. Non-insurability document.

Timeline of Events

- February 2023- Building official's written notice issued to address failing plaster.
- July 2023- Property owner obtains City Transportation division approval to install temporary netting over the failing plaster until additional options are evaluated.
- August 2023- Property owner responds to the city regarding structural concerns, indicating that demolition option is being considered.
- March 2024- Applicant submits structural report prepared by Kramer Gehlen Associates (KGA).
- April 2024- City receives a report of plaster from the building falling on the sidewalk along 6th Street.
- April 2024- City opens code compliance case to address safety concerns.
- July 2024- City requires additional analysis and clarifications relating to the KGA structural report.
- August 2024- Applicant/property owner submits updated structural engineering report.
- August-October 2024- Applicant submits additional documentation (included as Exhibits)
- October 30, 2024- Building and Fire Codes Commission hearing
- January 2025- Updated building valuation and demolition cost estimates submitted by the property owner.

VMC Section 17.08.085 Duties and Powers of Building Official, enforcement.

E. *Authority to condemn.* When the building official ascertains that building service equipment, building, structure or site, regulated in the technical codes has become hazardous to life, health or property, or has become unsanitary, the building official shall order in writing that such building service equipment, building, structure or site, either be removed or restored to a safe and/or sanitary condition as appropriate. Such notice shall be in conformance with VMC Title [22](#). The written notice shall fix a time limit for compliance with such order. The building official may prohibit and/or limit the use of the building service equipment, building, structure, or site until the required repairs are completed and the work has been inspected and approved by the city.

Project Summary

The primary purpose of the "Unfit Building and Premises Code" is to provide a just, equitable and practicable method, for determining if buildings, structures and/or premises are unfit for human habitation or other uses and are inimical to health and welfare of the general public and would be required to be repaired, vacated or demolished.

The Schofield building is located at the corner of Main St. and 6th St. The building is not on the local, state or national historic register but has been deemed potentially eligible. The building is located in the City's Heritage Overlay District #2 and is listed as a key building within this district. Because the property owner has requested the Building

Official determine if an unfit building determination can be made the City must follow the process outlined in VMC 17.32. More detail on this to follow in the *Applicable Regulations* section of this staff report.

Prior to the Property Owner's unfit building request, the City of Vancouver Building staff met with the owner on numerous occasions to address multiple building code and safety related concerns. Refer to Timeline of Events section of this report for additional details.

Applicable Regulations

The following VMC sections are applicable to the review of this project:

1. **VMC Chapter 17.32** Unfit Buildings and Premises Code.
2. **VMC Section 17.32.40** Unfit dwellings, buildings, or structures defined (Unfit building determination)
For the purposes of this chapter, any dwelling, building or structure which has any or all of the conditions or defects described in this section shall be deemed to be an unfit building, dwelling or structure, that such conditions or defects exist to the extent that the life, health, property or safety of the public is endangered. Each itemized defect listed in this chapter is considered a distinct code violation for the purposes of enforcement action under VMC Title 22.
3. **VMC Section 20.510.050** Preservation, restoration and reuse.
 - a. Demolition of unsafe buildings. If the Building Official has found the structure to be unsafe under the provisions of Chapter 17.32, Unfit Building and Premises Code, and has ordered that the structure(s) be demolished.
4. **VMC Section 17.32.060** Repair, vacation or demolition-standards. Measures pending abatement- Violations (Building Official order to abate, demolish, remediate, or repair).
 - A. The determination of whether a dwelling, building, structure, or premises should be repaired, or demolished, shall be based on:
 1. the degree of structural deterioration of the dwelling, building, structure, or premises, or
 2. the relationship that the estimated cost of repair bears to the value of the dwelling, building, structure, or premises.
 - B. If the unfit dwelling, building, structure or premises can reasonably be repaired or remedied so that it will no longer exist in violation of the terms of this chapter, it shall be ordered repaired or remedied by the building official.
 - C. If, in the judgment of the building official, the dwelling, building, structure or premises cannot be reasonably repaired or remedied, the building official may order its demolition, provided that the building official shall withdraw the order to demolish if the building owner repairs or remediates the condition within a reasonable time. The following standards shall be followed in substance in ordering repair, remediation, vacation or demolition of buildings, structures or premises:
 1. If the unfit dwelling, building, structure or premises is 40 percent or more damaged or decayed or deteriorated in value, it may be ordered demolished. "Value" as used herein shall be the valuation placed upon the building or structure for purposes of general taxation.
 2. If the cost of repair or remediation would exceed the value of the dwelling,

building, structure or premises, it may be ordered demolished.

3. If the dangerous or unfit building, structure or premises cannot be repaired or remedied so that it will no longer exist in violation of the terms of this chapter, it may be ordered demolished.

4. If the unfit building, structure or premises is a fire hazard, it may be ordered demolished or abated

Building Official Analysis

I have reviewed the request for the unfit building determination with all applicable regulations, code criteria, standards and supplemental documents. Based on the documentary evidence provided by the owners (provided as Exhibits), and the evidence recorded under the Code Enforcement Case CDE-89087, and my own field observations, I have determined the building to be Unfit and a hazard to public health and safety.

I have further determined that the owners have made a sufficient case that the projected cost of repairs will far exceed the County assessed value of the building (Exhibit 1).

Requested Action

I request the Building and Fire Codes Commission to consider the information submitted by the proponent, the City and the public; and provide input on the Property Owner's request and the Building Official's determination.

Exhibits

- 1 Updated property assessment by Clark County
- 2 Owners' Summary Board. A detailed list of required repairs and associated costs.
- 3 Non-insurability document.
- 4 Building Official's draft Unfit determination and Order of Demolition.

17.08.040 Building and fire codes commission.

A. In order to advise the city council regarding the technical codes and methods contained in VMC Title 16 and 17, and to provide for reasonable interpretations of the adopted technical codes, there shall be and is hereby created a Building and Fire Codes Commission consisting of members who are qualified by experience and training to rule upon matters pertaining to building construction, fire codes, building service equipment and related technical codes as adopted in VMC Title 16 and 17.

B. Duties. The Building and Fire Codes Commission shall:

1. Conduct public meetings to carry out the duties of the commission.
2. Investigate building code, fire code, and construction related issues.
3. Recommend construction and fire prevention regulations related to VMC Title 16 and 17.
4. Review and make recommendations to the council prior to its action on all proposed new codes and proposed changes to existing construction codes and regulations relating to building and fire.
5. Hear and resolve disputes concerning the building official's and the fire code official's interpretation and application related to permits, inspections, interpretation and application sought under the codes they administer, provided that the building official's or fire code official's interpretation or application of any code requirement may be reversed only if the Building and Fire Codes Commission finds that the interpretation of the building official or fire code official was arbitrary and capricious or clearly erroneous in the application or interpretation of the codes; and provided further that the Building and Fire Codes Commission shall not have jurisdiction to hear appeals of notice of civil violation and orders, orders to revoke permits, summary abatements and stop work orders related to an enforcement action under VMC Title 22.

C. Membership. The Building and Fire Codes Commission shall consist of five (or more) members appointed by the mayor and council from the following list: licensed architect, professional structural engineer, professional mechanical engineer, professional electrical engineer, general building contractor, residential contractor, mechanical contractor, fire systems contractor, fire code specialist, plumbing contractor, electrical contractor, building material supplier, construction industry union representative, person with substantial experience or expertise in codes or construction, and public at large. Not more than one representative from a category may serve at any one time. A majority of the appointed membership shall constitute a quorum.

D. Term of office. Each member of the Building and Fire Codes Commission shall be appointed to a six-year term. The first appointments shall be staggered so that not more than 1/6th of the board will be eligible for reappointment in any one year. A member may be appointed to succeed himself/herself in office.

E. Removal from office. A member can be removed from the Building and Fire Codes Commission by the mayor and council for malfeasance or neglect or, when so requested by the commission, for unexcused absences from three or more consecutive meetings.

F. Officers. The commission shall elect a chairperson and vice-chairperson who shall serve a term of one year. Officers may serve consecutive terms when elected by the commission.

G. Ex officio members. The building official and the fire code official shall be ex officio and non-voting members of the commission, with the building official acting as secretary to the commission.

H. Meetings. The commission shall meet at least once a year to elect officers. The chair, the building official or the fire code official may call additional meetings as required to conduct the commission's business.

I. Meeting notice. All meetings shall be public with the time, place, and agenda published at least seven days prior to the meeting.

J. Conduct of meeting. The commission shall use Robert's Rules of Order in the conduct of its business.

17.08.050 Change of board title.

All references in the VMC to the Building-Fire Codes Board of Appeals shall be deemed to refer to the Building and Fire Codes Commission established under VMC 17.08.040. The city clerk, with the approval of the city attorney, is authorized to change all references in the VMC from "Building-Fire Codes Board of Appeals" to "Building and Fire Codes Commission".

17.08.060 Procedure for review of code interpretations by the building or fire code official (appeal).

Procedures for requesting a review/appeal of the building official and/or the fire code official's application and/or interpretations by the Building and Fire Codes Commission shall be governed by the appeal and hearing procedures under VMC chapter 22.

VMC 17.32. Unfit Buildings and Premises Code

Section 17.32.010. Name

This chapter shall be known as the “Unfit Buildings and Premises Code.”

Section 17.32.020. Purpose.

It is the purpose of the “Unfit Buildings and Premises Code” to provide a just, equitable and practicable method, to be cumulative with and in addition to any other remedy provided by the International Building Codes Ordinance, International Existing Building Codes Ordinance, Minimum Property Maintenance Code or otherwise available at law, by which dwellings, or portions thereof which are unfit for human habitation, and buildings, structures, and premises or portions thereof which are unfit for other uses due to dilapidation, disrepair, structural defects, defects increasing the hazards of fire, accidents, or other calamities, inadequate ventilation and uncleanness, inadequate light or sanitary facilities, inadequate drainage, overcrowding, or due to other conditions which are inimical to health and welfare or which from any other cause endanger the life, limb, health, property, safety or welfare of the general public may be required to be repaired, vacated or demolished.

Section 17.32.030 Scope.

The provisions of the “Unfit Buildings and Premises Code” shall apply to all unfit dwellings, buildings, structures or premises, as defined in this chapter, which are now in existence or which may hereafter become unfit in this jurisdiction.

Section 17.32.035 Definitions.

Dangerous dwelling, building or structure: Is any dwelling, building or structure deemed unfit in accordance with Section 17.32.040

Dangerous premises: Is any premises deemed unfit in accordance with Section 17.32.050

Section 17.32.040 Unfit dwellings, buildings or structures defined.

For the purposes of this chapter, any dwelling, building or structure which has any or all of the conditions or defects described in this section shall be deemed to be an unfit dwelling, building or structure, provided that such conditions or defects exist to the extent that the life, health, property or safety of the public is endangered:

A. Whenever any door, aisle, passageway, stairway or other means of exit is not of sufficient width or size or is not so arranged as to provide safe and adequate means of exit in case of fire or panic.

B. Whenever the walking surface of any aisle, passageway, stairway or other means of exit is so warped, worn, loose, torn or otherwise unsafe as to not provide safe and adequate means of exit in case of fire or panic.

C. Whenever the stress in any materials, member or portion thereof, due to all dead and live loads, is more than one and one half times the working stress or stresses allowed in the Building Code for new dwellings, buildings or structures of similar structure, purpose or location.

D. Whenever any portion thereof has been damaged by fire, earthquake, wind, flood or by any other

cause, to such an extent that the structural strength or stability thereof is materially less than it was before such catastrophe and is less than the minimum requirements of the Building Code for new buildings of similar structure, purpose or location.

F. Whenever any portion or member or appurtenance thereof is likely to fail, or to become detached or dislodged, or to collapse and thereby injure persons or damage property.

G. Whenever any portion of a dwelling, building or structure, or any member, appurtenance or ornamentation on the exterior thereof is not of sufficient strength or stability, or is not so anchored, attached or fastened in place so as to be capable of resisting a wind pressure of one half of that specified in the Building Code for new dwellings, buildings or structures of similar structure, purpose or location without exceeding the working stresses permitted in the Building Code for such buildings.

H. Whenever any portion thereof has wracked, warped, buckled or settled to such an extent that walls or other structural portions have materially less resistance to winds or earthquakes than is required in the case of similar new construction.

I. Whenever the dwelling, building or structure, or any portion thereof, is likely to partially or completely collapse because of:

1. dilapidation, deterioration or decay;
2. faulty construction;
3. the removal, movement or instability of any portion of the ground necessary for the purpose of supporting such dwelling, building or structure;
4. the deterioration, decay or inadequacy of its foundation; or
5. any other cause.

J. Whenever, for any reason, the dwelling, building or structure, or any portion thereof, is manifestly unsafe for the purpose for which it is being used.

K. Whenever the exterior walls or other vertical structural members list, lean or buckle to such an extent that a plumb line passing through the center of gravity does not fall inside the middle one third of the base.

L. Whenever the dwelling, building or structure, exclusive of the foundation, shows 33 percent or more damage or deterioration of its supporting member or members, or 50 percent damage or deterioration of its non-supporting members, enclosing or outside walls or coverings.

M. Whenever the dwelling, building or structure has been so damaged by fire, wind, earthquake or flood, or has become so dilapidated or deteriorated as to become:

1. an attractive nuisance to children; or so as to
2. enable persons to resort thereto for the purpose of committing unlawful acts, including but not limited to, trespass or unlawful burning.

N. Whenever any dwelling, building or structure has been constructed, exists or is maintained in violation

of any specific requirement or prohibition applicable to such dwelling, building or structure provided by the Building Code, any other ordinance of the city or any laws of the state of Washington relating to the condition, location or structure of dwellings, buildings or structures.

O. Whenever any dwelling, building or structure which, whether or not erected in accordance with all applicable laws and ordinances, has in any non-supporting part, member or portion less than 50 percent, or in any supporting part, member or portion less than 66 percent of the:

1. strength;
2. fire-resisting qualities or characteristics, or
3. weather-resisting qualities or characteristics

required by law in the case of a newly constructed dwelling, building or structure of like area, height and occupancy in the same location.

P. Whenever a dwelling, building or structure, used or intended to be used for dwelling purposes, because of inadequate maintenance, dilapidation, decay, damage, faulty construction or arrangement, inadequate light, air or sanitation facilities, or otherwise, is determined by the health officer to be unsanitary, unfit for human habitation or in such a condition that is likely to cause sickness or disease.

Q. Whenever any dwelling, building or structure, because of obsolescence, dilapidated condition, deterioration, damage, inadequate exits, lack of sufficient fire-resistive construction, faulty electric wiring, gas connections or heating apparatus, or other cause, is determined by the fire marshal to be a fire hazard.

R. Whenever any portion of a dwelling, building or structure remains on a site after the demolition or destruction of the dwelling, building or structure or whenever any dwelling, building or structure is abandoned for a period in excess of six months so as to constitute such dwelling, building or structure or portion thereof an attractive nuisance to children or a hazard to the public.

S. Whenever any dwelling, building or structure is in such a condition as to constitute a public nuisance known to the common law or in equity jurisprudence.

Section 17.32.050 Unfit premises.

Premises which have any of the following conditions shall be deemed dangerous or unfit:

1. Premises that contain trash, garbage, junk, old wood, building materials, appliances, brush, tree limbs, or other items that may attract rats or other vermin due to a food source or rodent harborage;
2. Premises that have any number of unsecured vehicles, cars, trucks, bikes, farm equipment, construction equipment, boats, trailers, snowmobiles, jet skis or other machinery or implements that are unused and apparently inoperable that pose a hazard to the public or attractive nuisance to children;
3. Premises that are unsecured and unsafe due to conditions that pose a hazard to the public or attractive nuisance to children including but not limited to sink holes; unsecured swimming pools, exposed underground vaults, pipes or wires; trenches; unstable slopes; or hazardous materials; or
4. Premises that have dilapidated fences, sheds, carports or other such structures that pose a hazard to the public or attractive nuisance to children.

Section 17.32.060 Repair, vacation, or demolition - Standards - Measures pending abatement - Violation.

The building official may order an unfit dwelling, building, structure or premises repaired, remediated, demolished or otherwise abated as follows:

A. The determination of whether a dwelling, building, structure, or premises should be repaired, or demolished, shall be based on:

1. the degree of structural deterioration of the dwelling, building, structure, or premises, or
2. the relationship that the estimated cost of repair bears to the value of the dwelling, building, structure, or premises.

B. If the unfit dwelling, building, structure or premises can reasonably be repaired or remedied so that it will no longer exist in violation of the terms of this chapter, it shall be ordered repaired or remedied by the building official.

C. If, in the judgment of the building official, the dwelling, building, structure or premises cannot be reasonably repaired or remedied, the building official may order its demolition, provided that the building official shall withdraw the order to demolish if the building owner repairs or remediates the condition within a reasonable time. The following standards shall be followed in substance in ordering repair, remediation, vacation or demolition of buildings, structures or premises:

1. If the unfit dwelling, building, structure or premises is 40 percent or more damaged or decayed or deteriorated in value, it may be ordered demolished. "Value" as used herein shall be the valuation placed upon the building or structure for purposes of general taxation.

2. If the cost of repair or remediation would exceed the value of the dwelling, building, structure or premises, it may be ordered demolished.

3. If the dangerous or unfit building, structure or premises cannot be repaired or remedied so that it will no longer exist in violation of the terms of this chapter, it may be ordered demolished.

4. If the unfit building, structure or premises is a fire hazard, it may be ordered demolished or abated.

D. The building official may further order the owner to take effective steps to vacate, secure or take other remediation measures regarding a dwelling, building, structure or premises if deemed to be in the interest of public health and safety.

E. It shall be unlawful for any person to knowingly:

1. Occupy or allow to be occupied any unfit dwelling, building, structure or premises ordered vacated; or
2. Fail to comply with any order issued pursuant to this chapter.

VMC 20.510.050 Preservation, Restoration and Reuse

A. General provisions for registered structures. Any structure which has been included within a Historic Preservation Overlay District, and which is listed on the Clark County Heritage Register, State Heritage Register, or National Registers of Historic Places or identified as an “eligible building” for future listing on the Clark County Heritage Register, State Heritage Register or National Register of Historic Places in the Washington State Inventory of Historical Sites and Buildings, shall be subject to the following regulatory provisions hereby adopted to encourage preservation, restoration and reuse of historic structures:

1. Building Code Regulations applicable to the preservation, restoration and reuse of historic buildings and structures are contained in VMC 17. VMC 17.08 provides for the Building Official to approve alternate methods of construction and materials. Documents that the Building Official uses to make determinations on alternate methods and materials for the preservation, restoration and related reconstruction, rehabilitation, strengthening or relocation of buildings or structures designated as historic buildings include but are not limited to the State Building Code(s) designated in RCW 19.27, VMC 17, the Washington State Historic Building Code WAC 51-19, the International Existing Building Code and other technical resources related to historic buildings and structures.
2. Any developer may transfer the unused development potential of a historic building site to any other site in the same zoning district provided that such transfer would not create a hazard to low flying aircraft. The unused development potential shall be computed in terms of allowable floor area and building height for a site the same size as that on which the historic structure is located, minus the area in the historic building. This transfer of development potential is divisible and may be used only once. The owner of such property must have first recorded a covenant approved by City Council, being on all successor owners, heirs and assigns, that the historic building will be maintained in its historic condition in consideration of the special rights granted by this Section.
3. A structure as identified above shall not be demolished except in the following manner:
 - a. Demolition of Unsafe Buildings. If the City Building Official has found the structure to be unsafe under the provisions of Chapter 17.32 VMC, Unfit Buildings and Premises Code, and has ordered that the structure be demolished.



February 7, 2023

SCHOFIELD PROPERTIES 600 MAIN ST LLC
C/O ROBERT ASCHIERIS
1811 MAIN STREET #201
VANCOUVER WA , 98660

RE: Condition of exterior façade and canopy

To whom it may concern,

It has come to the attention of the Building Department that the exterior facade and canopy is in serious disrepair and poses a hazard from falling debris at the following property which, according to records, is owned by you:

600-606 MAIN ST, WEST VANCOUVER LOTS 7 & 8 BLK 7, 47950000

In accordance with Vancouver Municipal Code 17.14.060, exterior walls shall be free from holes, breaks, and loose or rotting materials; and maintained weatherproof and properly surface-coated where required to prevent deterioration.

City staff observed several areas of missing, cracked, and unstable surface-coating, particularly along 6th Street. The now-exposed brick wall also appears to have areas of missing mortar. This condition has been present for many years and is clearly worsening over time. Left unchecked the wall will continue to worsen and pose a greater hazard.

We request that repairs be made in the next 90 days and strongly recommend scaffolding be installed over the sidewalk until repairs can be made.

We are available to go over the hazardous areas with you and to answer questions related to the required permits.

Please feel free to call us at 360-487-7838 with any questions.

A handwritten signature in blue ink, reading "Sree Thirunagari", written over a horizontal line.

Date: February 7, 2023

Sree Thirunagari | Building Official



415 W. 6th St. (physical address) | 98660
P.O. Box 1995 | Vancouver, WA 98668-1995
Phone: 360-487-7838

From: Michael Aschieris <mikeaschieris@gmail.com>

Sent: Friday, August 11, 2023 11:48 AM

To: DiPalma, Lauren <Lauren.DiPalma@cityofvancouver.us>

Cc: Coleman Brown <coleman@ccpprop.com>; Turner, Greg <Greg.Turner@cityofvancouver.us>; Thirunagari, Sree <Sree.Thirunagari@cityofvancouver.us>; Nortz, Jason <Jason.Nortz@cityofvancouver.us>; Person, Mark <mark.person@cityofvancouver.us>; Newbold, Jeri <Jeri.Newbold@cityofvancouver.us>; April Velilla <april@ccpprop.com>; Erik Lawrence <elawrence@rdh.com>

Subject: Re: 600-606 Main Street

Hi all,

Hope all is well - I'm looking forward to our discussion in a few days and want to send a brief update.

After looking into the costs for the repairs that are needed for the building, they are much higher than we originally expected in comparison to the value of the building. Easily multiples of the value.

Our intent is to save the facade, demo the building behind, and build a new building, as they do for historical properties in Washington D.C., which will give us the opportunity to transform the building into a community, family-focused area.

On the first floor, we envision an upscale food hall / marketplace, the top community ask in the recent VDA market study.

I believe we are at a transformational moment in time - once finished, the Schofield Building will be a very popular venue in Vancouver, which will help the Downtown area significantly because of its location of being a critical intersection of connecting the waterfront to Main Street.

By activating it and making it a community space, we'll be able to get more people into the downtown corridor and increase foot traffic for many businesses in the area.

But to be clear, this is the first big project for our family in many years - we're not a large real estate company or developer. We are, have always been, and I hope will always be a family business and I'm going to need your help, support, and grace through navigating this transitional time.

Our family and the City of Vancouver have a special relationship - we've been here since before the City's founding and for almost ~170 years now. It's rare that a pioneer family is still here - to the best of my knowledge, our family's original friends and business partners, the Shorts, Hiddens, etc., aren't here anymore. We are.

My goal is to make the generations before me that have devoted their livelihoods to downtown Vancouver proud and to keep their memory alive. As well as to make the City proud.

It's clear the brightest days of downtown are in front of us and we're excited to be a part of it.

Looking forward to discussing and for the future!

Sincerely,

-Michael Aschieris

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To: DiPalma, Lauren <Lauren.DiPalma@cityofvancouver.us>

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Looking forward to discussing and for the future!

Sincerely,

-Michael Aschieris



KRAMER GEHLEN
& ASSOCIATES, INC.
805 Broadway Street
Suite 415
Vancouver, WA
98660-3310

360-693-1621
503-289-2661

March 28, 2024

Ryan Wilson
Wilson Architects
404 E 15th St #7
Vancouver, WA 98663

RE: Project Name: Schofield Building Evaluation
Location: 600 Main St., Vancouver, WA 98660
KGA Project No.: 24051.00

Dear Ryan:

This letter is to summarize our structural findings regarding the Schofield Building on 6th and Main Street. The structural findings are based on the criterion outlined in the Vancouver Municipal Code (VMC) Chapter 17.32 Unfit Buildings and Premises Code.

BACKGROUND

The Schofield Building is a two-story building with a basement that was constructed around 1860. The building construction is unreinforced brick masonry exterior walls with light-framed wood roof and floors. Around 1907 an addition was constructed to the south. This two-story addition with a basement is of similar construction with a distinguishing feature of stucco plaster on the exterior unreinforced brick masonry walls. In 1936 a one-story addition along 6th Street was constructed. The 1936 one-story portion of the property is outside the scope of this report.

SEISMIC RETROFIT

The building construction type is classified as an unreinforced masonry bearing wall building with an open front. This construction type has been identified by building codes, governments, and structural engineering profession as a hazard to public safety as it is highly susceptible to collapse during a code level seismic event. Seismic retrofit is outside the scope of this report. A conceptual design seismic retrofit is provided for reference.

STRUCTURAL OBSERVATIONS

On March 1, 2024, we performed a structural observation to determine general structural systems, signs of deterioration, decay, faulty construction, and dilapidation. The observation was based on structural elements that are visible without removing materials or any demolition.

The March 18, 2024 structural observation was used to estimate the size and spacing of the structural elements. The structural elements were limited to the ones accessible without demolition. The sizes were estimated using a tape measurer and handheld laser measuring tool.

DESIGN ASSUMPTIONS

Existing drawings and structural material information were not available for review. The wood used for the structural elements is of an era where clear grain wood was common for use in construction. The lumber was not graded by a licensed wood species and grading expert. The evaluation for the wood strength in this report was based on current design values for Douglas-Fir Larch Select Structural. This grade has the highest level of strength for use in the current design codes.

The unreinforced masonry and mortar were not tested for strength. The exterior walls are assumed to be three-wythe wide to match the observed thickness in the basement.

VMC 17.32.040

C. Whenever the stress in any materials, member or portion thereof, due to all dead and live loads, is more than one and one half times the working stress or stresses allowed in the Building Code for new dwellings, buildings or structures of similar structure, purpose or location.

Based on our engineering judgement for item C, we have identified the following structural elements that require repair/remediation or further material testing. See our commentary regarding the design assumptions regarding the wood strength.

- Roof joists and supporting ceiling joists at long spans identified.
- Second floor joists supporting the discontinuous wood bearing walls at long spans identified.
- Second floor girder (when occupancy dictates 100 pounds per square foot (psf) live loading)
- First floor joists at long spans identified.

F. Whenever any portion or member or appurtenance thereof is likely to fail, or to become detached or dislodged, or to collapse and thereby injure persons or damage property.

Based on our engineering judgement for item F, we have identified the following structural elements that require repair/remediation:

- Exterior unreinforced masonry walls.
- Unreinforced masonry parapets without bracing.
- Exterior unreinforced masonry walls with exterior adhered stucco.
- First floor joists have wood beams and posts in the basement that reduce the clear span between the unreinforced masonry wall foundations. These wood beams and posts are not secured with positive connections to the floor framing and are not

anchored to a foundation.

- The exterior canopy structure.
- The ground floor storefront on the eastside of the building along Main Street.

G. Whenever any portion of a dwelling, building or structure, or any member, appurtenance or ornamentation on the exterior thereof is not of sufficient strength or stability, or is not so anchored, attached or fastened in place so as to be capable of resisting a wind pressure of one half of that specified in the Building Code for new dwellings, buildings or structures of similar structure, purpose or location without exceeding the working stresses permitted in the Building Code for such buildings.

Based on our engineering judgement for item G, we have identified the following structural elements that require repair/remediation:

- Exterior unreinforced masonry walls.
- Unreinforced masonry parapets without bracing.
- Exterior unreinforced masonry walls with exterior adhered stucco.
- The exterior canopy structure.
- The ground floor storefront along Main Street.

H. Whenever any portion thereof has wracked, warped, buckled or settled to such an extent that walls or other structural portions have materially less resistance to winds or earthquakes than is required in the case of similar new construction.

In our engineering judgement for item H, the unreinforced masonry walls inherently have material less resistance to wind and earthquakes than is required for new construction.

I. Whenever the dwelling, building or structure, or any portion thereof, is likely to partially or completely collapse because of:

1. *dilapidation, deterioration or decay;*
2. *faulty construction;*
3. *the removal, movement or instability of any portion of the ground necessary for the purpose of supporting such dwelling, building or structure;*
4. *the deterioration, decay or inadequacy of its foundation; or*
5. *any other cause.*

Based on our engineering judgement for item I, we have identified the following structural elements that require repair/remediation:

- The long span roof and ceiling joists identified in item C.
- The first floor joist support beams and posts identified in item F.
- The eastern ground floor storefront identified in item G.
- The foundation is made up of unreinforced masonry walls that bear upon

unreinforced concrete that is approximately as wide as the wall (12-inches). The eastern portion of the foundation walls have arches that are covered with plywood to retain the soil under the sidewalk.

J. Whenever, for any reason, the dwelling, building or structure, or any portion thereof, is manifestly unsafe for the purpose for which it is being used.

Based on our engineering judgement for item J, we have identified the structural elements that require repair/remediation as noted for the items listed above. In addition, a change in occupancy will require a full seismic upgrade to meet the current building code or the existing building code at a minimum.

K. Whenever the exterior walls or other vertical structural members list, lean or buckle to such an extent that a plumb line passing through the center of gravity does not fall inside the middle one third of the base.

Based on our engineering judgement for item K, we have identified the ground floor east storefront in need of repair/remediation.

L. Whenever the dwelling, building or structure, exclusive of the foundation, shows 33 percent or more damage or deterioration of its supporting member or members, or 50 percent damage or deterioration of its non-supporting members, enclosing or outside walls or coverings.

Based on our engineering judgement for item L, we have identified the following structural elements that require repair/remediation:

- Exterior unreinforced masonry walls with exterior adhered stucco. The stucco is falling off the building.
- The ground floor storefront along Main Street.

N. Whenever any dwelling, building or structure has been constructed, exists or is maintained in violation of any specific requirement or prohibition applicable to such dwelling, building or structure provided by the Building Code, any other ordinance of the city or any laws of the state of Washington relating to the condition, location or structure of dwellings, buildings or structures.

A change in occupancy will trigger a seismic upgrade to meet the current building code or the existing building code at a minimum.

O. Whenever any dwelling, building or structure which, whether or not erected in accordance with all applicable laws and ordinances, has in any non-supporting part, member or portion less than 50 percent, or in any supporting part, member or portion less than 66 percent of the:

1. strength;

2. *fire-resisting qualities or characteristics, or*
3. *weather-resisting qualities or characteristics required by law in the case of a newly constructed dwelling, building or structure of like area, height and occupancy in the same location.*

Based on our engineering judgement for item O, the unreinforced masonry walls as the lateral resisting elements do not have the strength of a newly constructed structure.

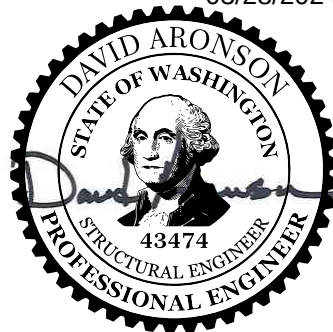
I trust that the above information is satisfactory for your needs. If you have any questions, please call our office.

Sincerely,



Zachary S. Davidson, PE, SE
Kramer Gehlen & Associates, Inc.

03/28/2024



EXP: 04/05/2026

From: VDA Ambassador <ambassador@vdausa.org>
Date: Wednesday, April 24, 2024 at 1:10 AM
To: Michael Walker <director@vdausa.org>
Subject: 600 Main

Attached: photos of debris and chimney.

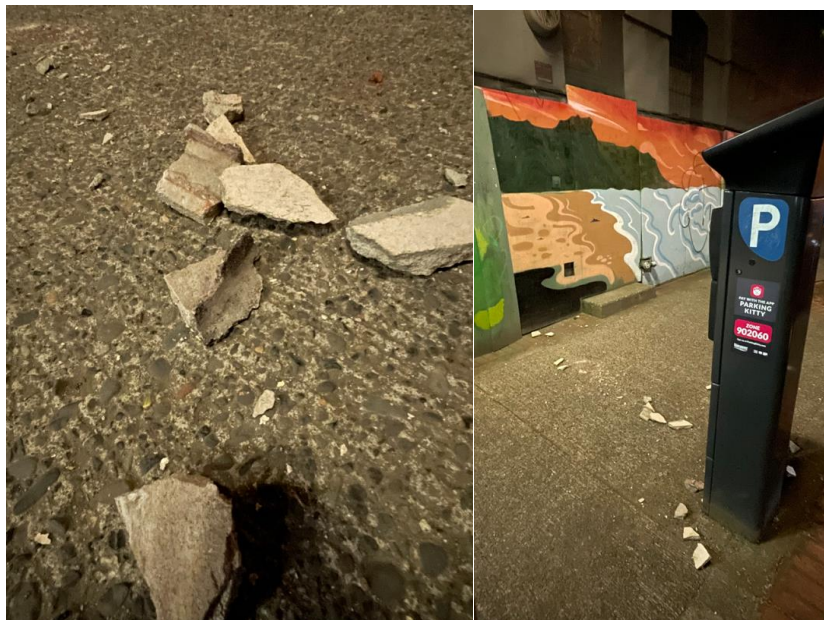
Tuesday night (4/23): A chunk of cement/plaster fell off the chimney of 600 Main, the old Top Shelf building. The debris landed next to the parking pay station. Had it hit someone, it could have caused serious injury or death.

The chimney is above the fall protection veil already on the building.

There was neither rain nor wind last night. I didn't see any signs of willful vandalism either, the building is just crumbling. Only observed debris from sidewalk.

This might be something that merits bringing to the attention of the City. There's a safety benefit to someone inspecting the roof and chimney.

-MG



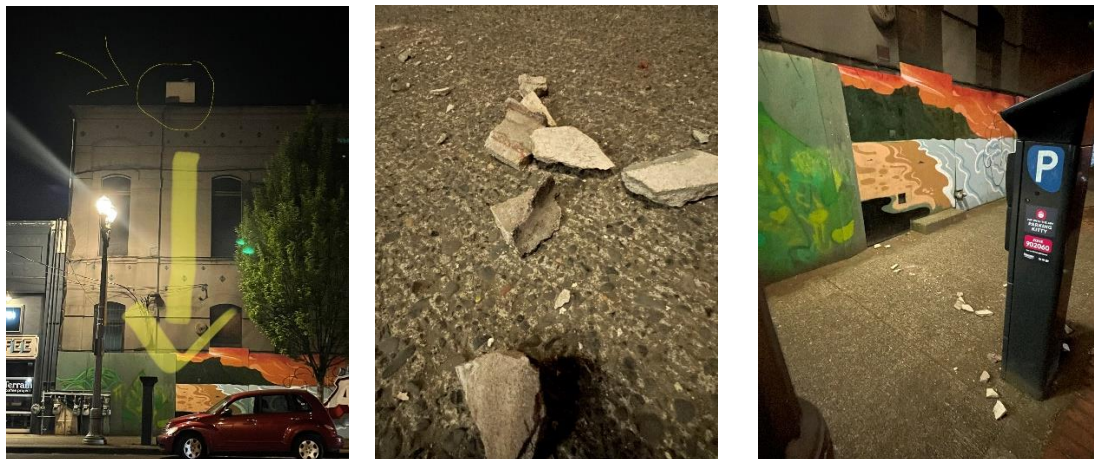
City of Vancouver Code Compliance was copied on an email from the Chief Building Official, Sree Thirunagari on Thursday 4/25/24 regarding the building located at 600 Main Street. Some loose plaster from the chimney had fallen on the sidewalk on 4/23/24 and was reported to the City of Vancouver.

A code case was opened (CDE-89087) but at this time the Chief Building Official had already contacted representatives for the building and instructed them to remove all loose plaster and install netting around the chimney to prevent any further incidents until a more detailed evaluation could be made.

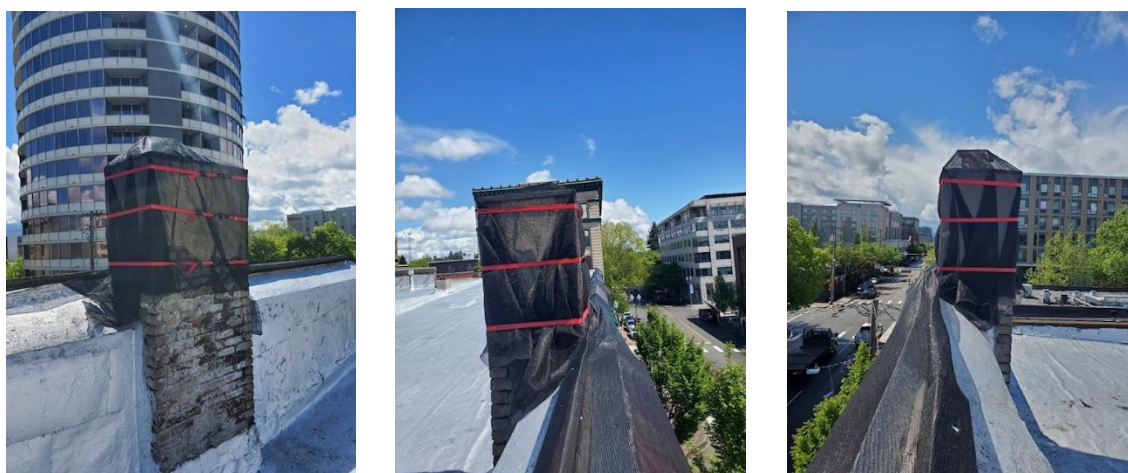
Michael Aschieris & April Velilla responded that they would get a crew on site the next day, Friday 4/26/24 to take the required action.

Code compliance received an email from April Velilla on Monday 4/29/24 indicating the work has been completed and photos were attached.

After reviewing the photos with the Chief Building Official, it was determined that the code case would be closed and the building owners would be meeting with city staff to determine the next steps.



(Photos from email on 4/25/24)



(Photos from email on 4/29/24)

August 16, 2024

Ryan Wilson
Wilson Architects
404 E 15th St #7
Vancouver, WA 98663

RE: Project Name: Schofield Building Evaluation Summary
Location: 600 Main St., Vancouver, WA 98660
KGA Project No.: 24051.00

Dear Ryan:

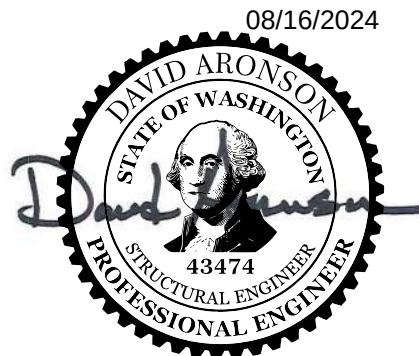
This letter is to summarize our structural findings¹ regarding the Schofield Building on 6th and Main Street and provide the requested additional information by the jurisdiction. The structural findings are based on the criterion outlined in the Vancouver Municipal Code (VMC) Chapter 17.32 Unfit Buildings and Premises Code with reference to the International Existing Building Code (IEBC) 2021 with Washington State Amendments.

SUMMARY

This summary and the evaluation and additional information letters have highlighted the observed deficiencies, the deficiencies at current code level loading with assumed occupancies, and the seismic resistance and resiliency of the entire structure. We recommend the building is repaired, remediated, demolished or otherwise abated based on the criteria outlined in the *VMC section 17.32.060 Repair, vacation, or demolition – Standards – Measures pending abatement – Violation* with the process implemented by the Building Official.



Zachary S. Davidson, P.E., S.E.
Kramer Gehlen & Associates, Inc.



EXP: 04/05/2026

¹ Evaluation letter dated March 20, 2024

Additional Information Letter dated June 17, 2024

FINDINGS

VMC 17.32.040

C. Whenever the stress in any materials, member or portion thereof, due to all dead and live loads, is more than one and one half times the working stress or stresses allowed in the Building Code for new dwellings, buildings or structures of similar structure, purpose or location.

Based on our engineering judgement for item C, we have identified the following structural elements that require repair/remediation or further material testing. See our commentary regarding the design assumptions regarding the wood strength.

- C.1: Roof joists and supporting ceiling joists at long spans identified.
 - See calculation package. The members are stressed more than one and one half times that allowed in the Building Code.
- C.2: Second floor joists supporting the discontinuous wood bearing walls at long spans identified.
 - See calculation package. The members are stressed more than one and one half times that allowed in the Building Code.
- C.3: Second floor girder (when occupancy dictates 100 pounds per square foot (psf) live loading)
 - See calculation package. The members are stressed more than one and one half times that allowed in the Building Code.
- C.4: First floor joists at long spans identified.
 - See calculation package. The members are stressed more than one and one half times that allowed in the Building Code.

F. Whenever any portion or member or appurtenance thereof is likely to fail, or to become detached or dislodged, or to collapse and thereby injure persons or damage property.

Based on our engineering judgement for item F, we have identified the following structural elements that require repair/remediation:

- F.1: Exterior unreinforced masonry walls.
 - The south, west, and portion of the west walls are not connected to the floor and roof.
 - We base this judgement on the minimum life safety requirements of the International Existing Building Code (IEBC) 2021 with Washington State Amendments, Appendix A: Guidelines for the Seismic Retrofit of Existing Buildings. Specific reference to Sections A113.1 and A113.5.
- F.2: Unreinforced masonry parapets without bracing.
 - The south, west, and portion of the west parapets are not braced.
 - IEBC 2021 Section A113.6.
- F.3: Exterior unreinforced masonry walls with exterior adhered stucco.
 - The adhered stucco is actively falling off the building. Falling stucco is a hazard that may injure persons or damage property. See corresponding photographs.
- F.4: First floor joists have wood beams and posts in the basement that reduce the clear span between the unreinforced masonry wall foundations. These wood beams

and posts are not secured with positive connections to the floor framing and are not anchored to a foundation.

- See corresponding photographs. The posts are not level, nor are they connected with positive attachment to the floor and foundation. These posts are likely to fail as a result and create a condition for structural failure of the floor joists.
- F.5: The exterior canopy structure.
 - See corresponding photographs. The canopy is anchored to the unreinforced masonry walls. The tension tie holding the outer edge of the canopy is only hooked to the eye bolt at the attachment to the building. This may become dislodged in a wind event and collapse.
- F.6: The ground floor storefront on the east side of the building along Main Street.
 - See corresponding photographs. East storefront at the unoccupied space is unsecured and unsupported and is currently covered with a temporary wall.

G. Whenever any portion of a dwelling, building or structure, or any member, appurtenance or ornamentation on the exterior thereof is not of sufficient strength or stability, or is not so anchored, attached or fastened in place so as to be capable of resisting a wind pressure of one half of that specified in the Building Code for new dwellings, buildings or structures of similar structure, purpose or location without exceeding the working stresses permitted in the Building Code for such buildings.

Based on our engineering judgement for item G, we have identified the following structural elements that require repair/remediation:

- G.1: Exterior unreinforced masonry walls.
 - The south, west, and portion of the west walls are not connected to the floor and roof.
- G.2: Unreinforced masonry parapets without bracing.
 - The south, west, and portion of the west parapets are not braced.
- G.3: Exterior unreinforced masonry walls with exterior adhered stucco.
 - The adhered stucco is actively falling off the building. See corresponding photographs.
- G.4: The exterior canopy structure.
 - See corresponding photographs. The canopy is anchored to the unreinforced masonry walls. The tension tie holding the outer edge of the canopy is only hooked to the eye bolt at the attachment to the building. This may become dislodged in a wind event and collapse
- G.5: The ground floor storefront along Main Street.
 - See corresponding photographs. East storefront at the unoccupied space is unsecured and unsupported and is currently covered with a temporary wall.

H. Whenever any portion thereof has wracked, warped, buckled or settled to such an extent that walls or other structural portions have materially less resistance to winds or earthquakes than is required in the case of similar new construction.

In our engineering judgement for item H, the unreinforced masonry walls inherently have material less resistance to wind and earthquakes than is required for new construction.

I. Whenever the dwelling, building or structure, or any portion thereof, is likely to partially or completely collapse because of:

- 1. dilapidation, deterioration or decay;*
- 2. faulty construction;*
- 3. the removal, movement or instability of any portion of the ground necessary for the purpose of supporting such dwelling, building or structure;*
- 4. the deterioration, decay or inadequacy of its foundation; or*
- 5. any other cause.*

Based on our engineering judgement for item I, we have identified the following structural elements that require repair/remediation:

- I.1: The long span roof and ceiling joists identified in item C.1.
 - See corresponding photographs and calculation package.
- I.2: The first-floor joist support beams and posts identified in item F.4.
 - See corresponding photographs.
- I.3: The eastern ground floor storefront identified in item F.6 and G.5.
 - See corresponding photographs.
- I.4: The foundation is made up of unreinforced masonry walls that bear upon unreinforced concrete that is approximately as wide as the wall (12-inches). The eastern portion of the foundation walls have arches that are covered with plywood to retain the soil under the sidewalk.
 - See corresponding photographs. The basement foundation walls are unreinforced masonry. Some of the walls have observed damage. The exterior basement walls are retaining soil and exterior sidewalks. The east basement walls have openings that are filled in with plywood to support retain the soil.

J. Whenever, for any reason, the dwelling, building or structure, or any portion thereof, is manifestly unsafe for the purpose for which it is being used.

Based on our engineering judgement for item J, we have identified the structural elements that require repair/remediation as noted for the items listed above. In addition, a change in occupancy will require a full seismic upgrade to meet the current building code or the existing building code at a minimum.

K. Whenever the exterior walls or other vertical structural members list, lean or buckle to such an extent that a plumb line passing through the center of gravity does not fall inside the middle one third of the base.

Based on our engineering judgement for item K, we have identified the ground floor east storefront in need of repair/remediation. See corresponding photographs. East storefront at the unoccupied space is unsecured and unsupported and is currently covered with a temporary wall.

L. Whenever the dwelling, building or structure, exclusive of the foundation, shows 33 percent or more damage or deterioration of its supporting member or members,

or 50 percent damage or deterioration of its non-supporting members, enclosing or outside walls or coverings.

Based on our engineering judgement for item L, we have identified the following structural elements that require repair/remediation:

- L.1: Exterior unreinforced masonry walls with exterior adhered stucco. The stucco is falling off the building.
 - See corresponding photographs. The adhered stucco is actively falling off the building. Falling stucco is a hazard that may injure persons or damage property.
- L.2: The ground floor storefront along Main Street.
 - See corresponding photographs. East storefront at the unoccupied space is unsecured and unsupported and is currently covered with a temporary wall.

N. Whenever any dwelling, building or structure has been constructed, exists or is maintained in violation of any specific requirement or prohibition applicable to such dwelling, building or structure provided by the Building Code, any other ordinance of the city or any laws of the state of Washington relating to the condition, location or structure of dwellings, buildings or structures.

A change in occupancy will trigger a seismic upgrade to meet the current building code or the existing building code at a minimum.

O. Whenever any dwelling, building or structure which, whether or not erected in accordance with all applicable laws and ordinances, has in any non-supporting part, member or portion less than 50 percent, or in any supporting part, member or portion less than 66 percent of the:

- 1. strength;*
- 2. fire-resisting qualities or characteristics, or*
- 3. weather-resisting qualities or characteristics required by law in the case of a newly constructed dwelling, building or structure of like area, height and occupancy in the same location.*

Based on our engineering judgement for item O, the unreinforced masonry walls as the lateral resisting elements do not have the strength of a newly constructed structure meeting the 66 percent threshold per the definition.

CURRENT OCCUPANCY at 606 Main St (Kindred Homestead Supply)

The building is currently occupied in the first level and basement of the at 606 Main St. The occupied space is a home supply shop at the first level and a record store in the basement level. This is in the northernmost portion of the building.

This portion of the building is not at risk due to its live load occupancy. See calculations "J-5" for the second floor and "1J-2" for the first floor. These calculations show that the criteria for VMC item C threshold is below the 150% stress ratio for these floor joists.

This portion of the building is at risk with its proximity to the unfit portion of the building identified in the findings portion of the letter. This is a similar risk associated with any building adjacent to the unfit portion of this building.

It is our opinion that their occupancy is tied to the timeline set forth by the City of Vancouver Building Department to comply with the unfit building code violations. The building should be unoccupied in a reasonable timeframe without extension that allows the unfit conditions to be demolished or remedied.

PHOTO APPENDIX

VMC items C.1, I.1, and J

The roof structure has excessive deflection with damage to the plaster. This occurs over unoccupied space and is susceptible to failure at a code level snow event.



Photo looking north.

VMC items F.3, F.5 G.3, G.4, and L.1

The exterior stucco of the building is losing adhesion to the unreinforced masonry exterior wall and is falling off the building. This condition currently has a netting to keep the stucco from falling onto the sidewalk. The exterior canopy and its attachment to structure is also pictured.



Photos of the south (left) and east (right) exterior.

VMC items F.6, G.5, I.3, K, and L.2

East storefront at the unoccupied space is currently unsecured and unsupported and is covered with a temporary wall.



Photo looking to the east.

VMC items F.4, I.2, and K

The post and beam structure supporting the first-floor framing is warped/leaning and does not have positive attachment to the framing or the foundation.



Photos in the basement. This is the southern most un-occupied space.

VMC item I.4

The basement foundation walls are unreinforced masonry. Some of the walls have observed damage. The exterior basement walls are retaining soil and exterior sidewalks. The east basement walls have openings that are filled in with plywood to support retain the soil.



Photo of damage looking to the east.



Photo looking to the east of basement walls with openings and plywood.

CALCULATIONS



STRUCTURAL CALCULATIONS

SCHOFIELD BUILDING

Evaluation

Vancouver, Washington

For

Wilson Architects

June 18, 2024

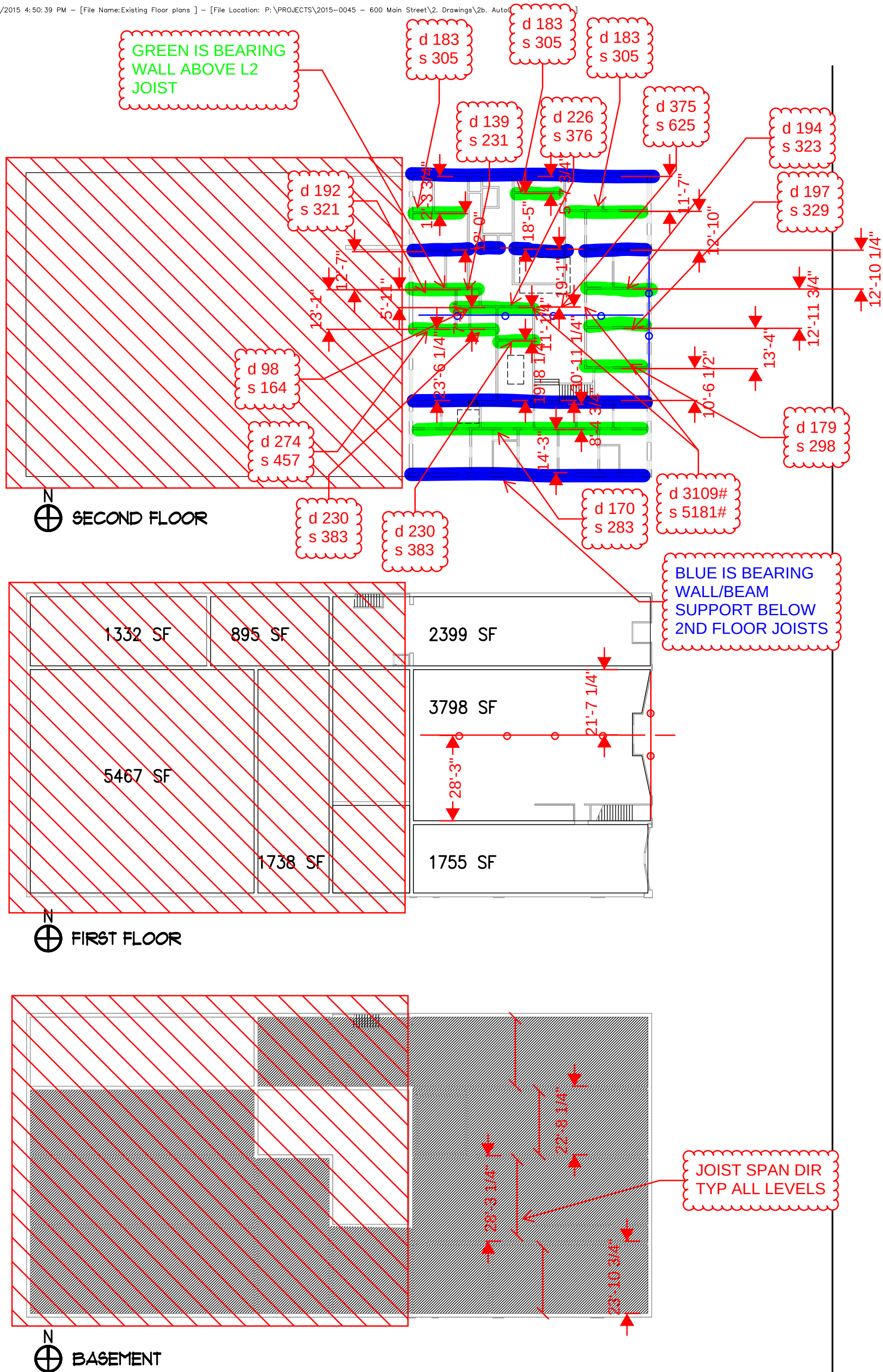
**ALL COMPUTATION AND STRUCTURAL ENGINEERING
FOR THIS PROJECT HAVE BEEN PERFORMED
BY MYSELF OR UNDER MY DIRECT SUPERVISION.**

06/18/2024



EXP: 03/04/2026

**KRAMER GEHLEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
805 Broadway Street, Suite 415
Vancouver, Washington 98660
(360) 693-1621 (503) 289-2661
Fax: (360) 360-5960**



□ ROOF : C.1
I.1

□ ROOF JOISTS = $1\frac{5}{8} \times 7\frac{1}{4}$ @ $16''$ oc $F_b = 1500 \text{ psi}$
ASSUMED
BASELINE

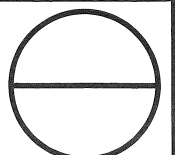
D = 15 PSF

S = 25 PSF

SPANS	I.E.
24 FT	1.36 FLEXURE
31 FT	2.27 FLEXURE

□ CEILING JOISTS = $1\frac{5}{8} \times 9\frac{1}{4}$ @ $16''$ oc $F_b = 1500 \text{ psi}$
↑ THESE SUPPORT ROOF JOISTS

SPAN	I.E.
24'	0.91 FLEXURE
31'	1.52 FLEXURE



Project: Schofield Evaluation

Location: ROOF JOIST

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 7.25 IN x 24.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 69.2%

Controlling Factor: Deflection / Depth Required 8.64 In.



The Vitruvius Project, Inc.

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StruCalc Version 11.1.8.0

6/18/2024 1:51:12 PM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 2.54 IN L/113

Dead Load 1.52 in

Total Load 4.06 IN L/71

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 400 lb 400 lb

Dead Load 240 lb 240 lb

Total Load 640 lb 640 lb

Bearing Length 0.63 in 0.63 in

SUPPORT LOADS

A

B

Live Load 300 plf 300 plf

Dead Load 180 plf 180 plf

Total Load 480 plf 480 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 2381 psi

Cd=1.15 CF=1.20 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 3840 ft-lb

12.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 640 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 19.36 in³ 14.24 in³

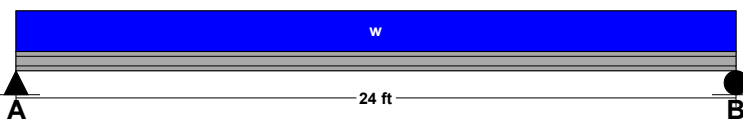
Area (Shear): 4.64 in² 11.78 in²

Moment of Inertia (deflection): 87.3 in⁴ 51.6 in⁴

Moment: 3840 ft-lb 2824 ft-lb

Shear: 640 lb 1626 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 24 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 25 psf

Dead Load DL = 15 psf

Total Load TL = 40 psf

TL Adj. For Joist Spacing wT = 53.3 plf

Project: Schofield Evaluation

Location: ROOF JOIST 31 FT

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 7.25 IN x 31.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 264.6%

Controlling Factor: Deflection / Depth Required 11.16 In.



The Vitruvius Project, Inc.

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6/18/2024 1:55:02 PM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

	Center
Live Load	7.06 IN L/53
Dead Load	4.24 in
Total Load	11.30 IN L/33
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120	

REACTIONS

	A	B
Live Load	517 lb	517 lb
Dead Load	310 lb	310 lb
Total Load	827 lb	827 lb
Bearing Length	0.81 in	0.81 in

SUPPORT LOADS

	A	B
Live Load	388 plf	388 plf
Dead Load	233 plf	233 plf
Total Load	620 plf	620 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi Cd=1.15 CF=1.20 Cr=1.15	Fb' = 2381 psi
Shear Stress:	Fv = 180 psi Cd=1.15	Fv' = 207 psi
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. $\perp$ to Grain:	Fc $\perp$ = 625 psi	Fc $\perp$ = 625 psi

Controlling Moment: 6407 ft-lb

15.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 827 lb

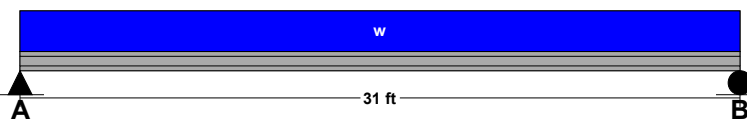
At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	32.3 in3	14.24 in3
Area (Shear):	5.99 in2	11.78 in2
Moment of Inertia (deflection):	188.12 in4	51.6 in4
Moment:	6407 ft-lb	2824 ft-lb
Shear:	827 lb	1626 lb

LOADING DIAGRAM



JOIST DATA

	Center
Span Length	31 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading	Center
Live Load	LL = 25 psf
Dead Load	DL = 15 psf
Total Load	TL = 40 psf
TL Adj. For Joist Spacing wT	= 53.3 plf

Project: Schofield Evaluation

Location: CEILING JOIST 24 FT

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 9.25 IN x 24.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Adequate By: 9.7%

Controlling Factor: Moment



The Vitruvius Project, Inc.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 1.22 IN L/236

Dead Load 0.73 in

Total Load 1.95 IN L/147

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 400 lb 400 lb

Dead Load 240 lb 240 lb

Total Load 640 lb 640 lb

Bearing Length 0.63 in 0.63 in

SUPPORT LOADS

A

B

Live Load 300 plf 300 plf

Dead Load 180 plf 180 plf

Total Load 480 plf 480 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 2182 psi

Cd=1.15 CF=1.10 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 3840 ft-lb

12.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 640 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 21.12 in³ 23.17 in³

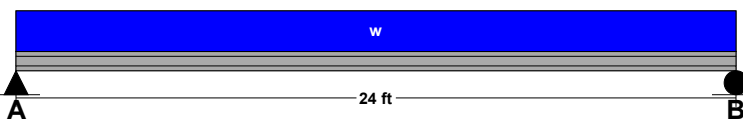
Area (Shear): 4.64 in² 15.03 in²

Moment of Inertia (deflection): 87.3 in⁴ 107.18 in⁴

Moment: 3840 ft-lb 4214 ft-lb

Shear: 640 lb 2074 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 24 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 25 psf

Dead Load DL = 15 psf

Total Load TL = 40 psf

TL Adj. For Joist Spacing wT = 53.3 plf

Project: Schofield Evaluation

Location: CEILING JOIST 31 FT

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 9.25 IN x 31.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 75.5%

Controlling Factor: Deflection / Depth Required 11.41 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 3.40 IN L/109

Dead Load 2.04 in

Total Load 5.44 IN L/68

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 517 lb 517 lb

Dead Load 310 lb 310 lb

Total Load 827 lb 827 lb

Bearing Length 0.81 in 0.81 in

SUPPORT LOADS

A

B

Live Load 388 plf 388 plf

Dead Load 233 plf 233 plf

Total Load 620 plf 620 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 2182 psi

Cd=1.15 CF=1.10 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 6407 ft-lb

15.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 827 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 35.23 in³ 23.17 in³

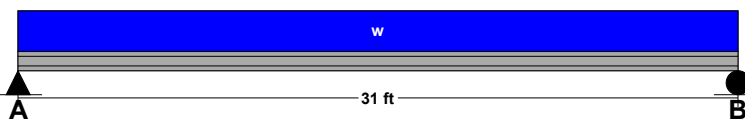
Area (Shear): 5.99 in² 15.03 in²

Moment of Inertia (deflection): 188.12 in⁴ 107.18 in⁴

Moment: 6407 ft-lb 4214 ft-lb

Shear: 827 lb 2074 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 31 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 25 psf

Dead Load DL = 15 psf

Total Load TL = 40 psf

TL Adj. For Joist Spacing wT = 53.3 plf

□ 2ND FLOOR C.2
I.1

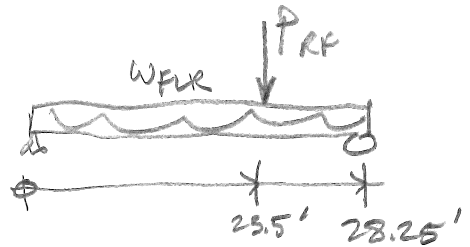
□ J-1 =

$l = 28'-3"$

$L = \text{VARIES @ FLOOR OCCUPANCY}$

$D = 20 \text{ PSF} + 10 \text{ PSF WALL PARTITIONS}$

$1\frac{5}{8} \times 11\frac{1}{2}$ JOISTS @ $16" \text{ oc}$ $F_b = 1500 \text{ psi}$ ASSUMED
BASELINE



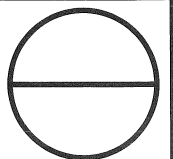
LL	I.E.	w/ $C_D = 1.0$
40 PSF	1.81	FLEXURE
50 PSF	2.07	F
80 PSF	2.84	F
0 PSF	OK (0.86)	

ROOF LOADING ON BEARING WALL (IN PLF)

$$P_D = (23.5 + 13.08) \frac{1}{2} (15 \text{ PSF}) = 274 \text{ plf}$$

$$P_S = 25 \text{ PSF} \rightarrow 457 \text{ plf}$$

	$0.75 (LL + SL)$	I.E.	w/ $C_D = 1.15$
40	30 PSF + 343 plf	1.70	F
50	37.5 PSF + 343 plf	1.86	F
80	60 PSF + 343 plf	2.36	F
0	0 + 457 plf	OK (1.12)	



Project: Schofield Evaluation

Location: J-1 40PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 80.8%

Controlling Factor: Moment / Depth Required 15.46 In.



The Vitruvius Project, Inc.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 1.95 IN L/174

Dead Load 1.46 in

Total Load 3.42 IN L/99

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 753 lb 753 lb

Dead Load 565 lb 565 lb

Total Load 1318 lb 1318 lb

Bearing Length 1.30 in 1.30 in

SUPPORT LOADS

A

B

Live Load 565 plf 565 plf

Dead Load 424 plf 424 plf

Total Load 989 plf 989 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1725 psi

Cd=1.00 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ = 625 psi

Controlling Moment: 9311 ft-lb

14.12 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1318 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 64.77 in³ 35.82 in³

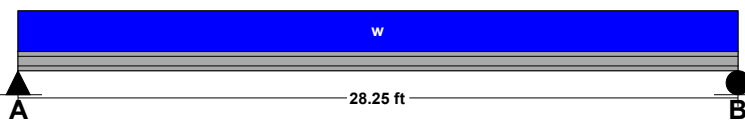
Area (Shear): 10.99 in² 18.69 in²

Moment of Inertia (deflection): 249.14 in⁴ 205.95 in⁴

Moment: 9311 ft-lb 5149 ft-lb

Shear: -1318 lb 2243 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 40 psf

Dead Load DL = 30 psf

Total Load TL = 70 psf

TL Adj. For Joist Spacing wT = 93.3 plf

Project: Schofield Evaluation

Location: J-1 50PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 106.7%

Controlling Factor: Moment / Depth Required 16.53 In.



The Vitruvius Project, Inc.

StruCalc Version 11.1.8.0

6/18/2024 9:14:36 AM

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS	Center	
Live Load	2.44	IN L/139
Dead Load	1.46	in
Total Load	3.91	IN L/87
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	942 lb	942 lb
Dead Load	565 lb	565 lb
Total Load	1507 lb	1507 lb
Bearing Length	1.48 in	1.48 in

SUPPORT LOADS	A	B
Live Load	707 plf	707 plf
Dead Load	424 plf	424 plf
Total Load	1130 plf	1130 plf

MATERIAL PROPERTIES	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1725 psi
	Cd=1.00 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	180 psi
	Cd=1.00			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
	Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 10641 ft-lb

14.12 Ft from left support of span 2 (Center Span)

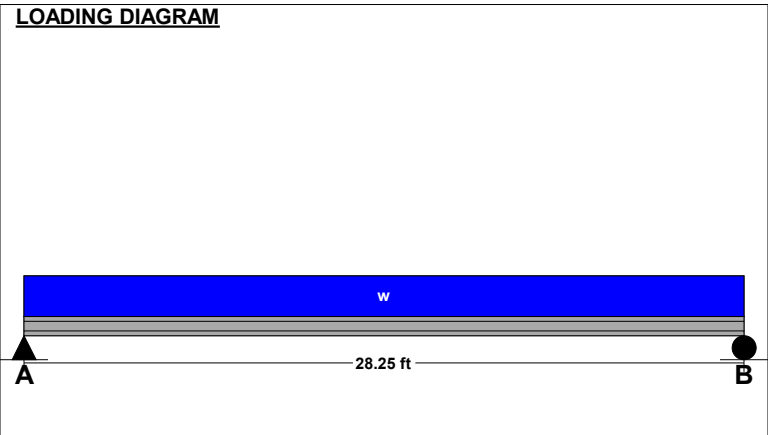
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1507 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	74.02 in3	35.82 in3
Area (Shear):	12.56 in2	18.69 in2
Moment of Inertia (deflection):	284.74 in4	205.95 in4
Moment:	10641 ft-lb	5149 ft-lb
Shear:	1507 lb	2243 lb



JOIST DATA	Center
Span Length	28.25 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.00

JOIST LOADING	Center
Uniform Floor Loading	
Live Load	LL = 50 psf
Dead Load	DL = 30 psf
Total Load	TL = 80 psf
TL Adj. For Joist Spacing wT =	106.7 plf

Project: Schofield Evaluation

Location: J-1 80PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 184.2%

Controlling Factor: Moment / Depth Required 19.39 In.



The Vitruvius Project, Inc.

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StruCalc Version 11.1.8.0

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 3.91 IN L/87

Dead Load 1.46 in

Total Load 5.37 IN L/63

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1507 lb 1507 lb

Dead Load 565 lb 565 lb

Total Load 2072 lb 2072 lb

Bearing Length 2.04 in 2.04 in

SUPPORT LOADS

A

B

Live Load 1130 plf 1130 plf

Dead Load 424 plf 424 plf

Total Load 1554 plf 1554 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1725 psi

Cd=1.00 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ = 625 psi

Controlling Moment: 14631 ft-lb

14.12 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -2072 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 101.78 in³ 35.82 in³

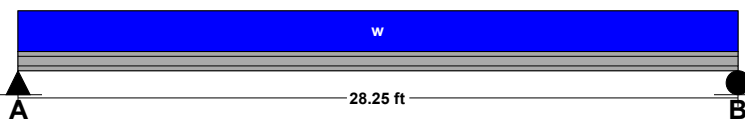
Area (Shear): 17.26 in² 18.69 in²

Moment of Inertia (deflection): 391.51 in⁴ 205.95 in⁴

Moment: 14631 ft-lb 5149 ft-lb

Shear: -2072 lb 2243 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 80 psf

Dead Load DL = 30 psf

Total Load TL = 110 psf

TL Adj. For Joist Spacing wT = 146.7 plf

Project: Schofield Evaluation

Location: J-1 0PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Adequate By: 16.1%

Controlling Factor: Moment



The Vitruvius Project, Inc.

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StruCalc Version 11.1.8.0

6/18/2024 9:16:34 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 0.00 IN L/∞

Dead Load 1.46 in

Total Load 1.46 IN L/231

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 0 lb 0 lb

Dead Load 565 lb 565 lb

Total Load 565 lb 565 lb

Bearing Length 0.56 in 0.56 in

SUPPORT LOADS

A

B

Live Load 0 plf 0 plf

Dead Load 424 plf 424 plf

Total Load 424 plf 424 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1553 psi

Cd=0.90 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 162 psi

Cd=0.90

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. ⊥ to Grain: Fc ⊥ = 625 psi Fc ⊥' = 625 psi

Controlling Moment: 3990 ft-lb

14.12 Ft from left support of span 2 (Center Span)

Created by dead loads only on all span(s).

Controlling Shear: 565 lb

At left support of span 2 (Center Span)

Created by dead loads only on all span(s).

Comparisons with required sections:

Req'd

Provided

Section Modulus: 30.84 in3 35.82 in3

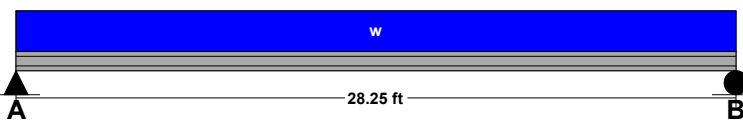
Area (Shear): 5.23 in2 18.69 in2

Moment of Inertia (deflection): 106.78 in4 205.95 in4

Moment: 3990 ft-lb 4634 ft-lb

Shear: 565 lb 2018 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 0 psf

Dead Load DL = 30 psf

Total Load TL = 30 psf

TL Adj. For Joist Spacing wT = 40 plf

Project: Schofield Evaluation

Location: J-1 40PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 69.8%

Controlling Factor: Moment / Depth Required 14.99 In.



The Vitruvius Project, Inc.

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StruCalc Version 11.1.8.0

6/18/2024 9:22:41 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 1.93 IN L/176

Dead Load 1.83 in

Total Load 3.76 IN L/90

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 642 lb 945 lb

Dead Load 626 lb 869 lb

Total Load 1268 lb 1814 lb

Bearing Length 1.25 in 1.79 in

SUPPORT LOADS

A

B

Live Load 482 plf 709 plf

Dead Load 470 plf 652 plf

Total Load 951 plf 1361 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 10054 ft-lb

15.82 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1814 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 60.82 in³ 35.82 in³

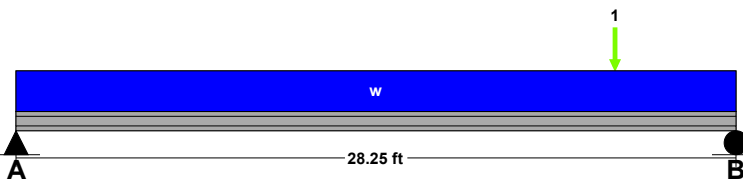
Area (Shear): 13.15 in² 18.69 in²

Moment of Inertia (deflection): 274.17 in⁴ 205.95 in⁴

Moment: 10054 ft-lb 5921 ft-lb

Shear: -1814 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 30 psf

Dead Load DL = 30 psf

Total Load TL = 60 psf

TL Adj. For Joist Spacing wT = 80 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 343 plf

Dead Load ($\perp$ to Joists): D1 = 274 plf

Load Location X1 = 23.5 ft

Project: Schofield Evaluation

Location: J-1 50PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 86.4%

Controlling Factor: Moment / Depth Required 15.7 In.



The Vitruvius Project, Inc.

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StruCalc Version 11.1.8.0

6/18/2024 9:23:47 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 2.29 IN L/148

Dead Load 1.83 in

Total Load 4.13 IN L/82

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 783 lb 1087 lb

Dead Load 626 lb 869 lb

Total Load 1409 lb 1956 lb

Bearing Length 1.39 in 1.93 in

SUPPORT LOADS

A

B

Live Load 587 plf 815 plf

Dead Load 470 plf 652 plf

Total Load 1057 plf 1467 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ = 625 psi

Controlling Moment: 11038 ft-lb

15.54 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1956 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 66.77 in³ 35.82 in³

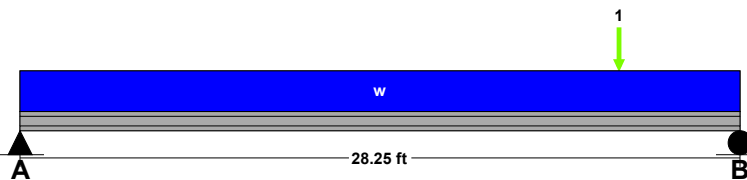
Area (Shear): 14.17 in² 18.69 in²

Moment of Inertia (deflection): 300.85 in⁴ 205.95 in⁴

Moment: 11038 ft-lb 5921 ft-lb

Shear: -1956 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 37.5 psf

Dead Load DL = 30 psf

Total Load TL = 67.5 psf

TL Adj. For Joist Spacing wT = 90 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 343 plf

Dead Load ($\perp$ to Joists): D1 = 274 plf

Load Location X1 = 23.5 ft

Project: Schofield Evaluation

Location: J-1 80PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 136.5%

Controlling Factor: Moment / Depth Required 17.69 In.



The Vitruvius Project, Inc.

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StruCalc Version 11.1.8.0

6/18/2024 9:24:30 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 3.39 IN L/100

Dead Load 1.83 in

Total Load 5.22 IN L/65

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1207 lb 1510 lb

Dead Load 626 lb 869 lb

Total Load 1833 lb 2379 lb

Bearing Length 1.81 in 2.34 in

SUPPORT LOADS

A

B

Live Load 905 plf 1133 plf

Dead Load 470 plf 652 plf

Total Load 1375 plf 1784 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ = 625 psi

Controlling Moment: 14004 ft-lb

15.26 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -2379 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 84.71 in3 35.82 in3

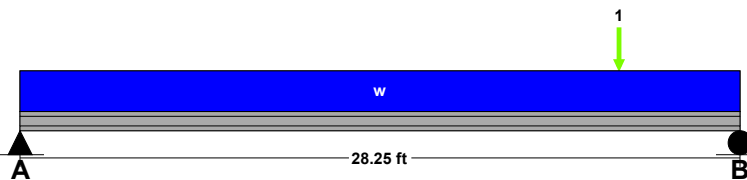
Area (Shear): 17.24 in2 18.69 in2

Moment of Inertia (deflection): 380.9 in4 205.95 in4

Moment: 14004 ft-lb 5921 ft-lb

Shear: -2379 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 60 psf

Dead Load DL = 30 psf

Total Load TL = 90 psf

TL Adj. For Joist Spacing wT = 120 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 343 plf

Dead Load ($\perp$ to Joists): D1 = 274 plf

Load Location X1 = 23.5 ft

Project: Schofield Evaluation

Location: J-1 0PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 12.1%

Controlling Factor: Moment / Depth Required 12.18 In.



The Vitruvius Project, Inc.

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6/18/2024 9:39:32 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 0.63 IN L/541

Dead Load 1.83 in

Total Load 2.45 IN L/138

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 102 lb 507 lb

Dead Load 626 lb 869 lb

Total Load 728 lb 1376 lb

Bearing Length 0.72 in 1.35 in

SUPPORT LOADS

A

B

Live Load 77 plf 380 plf

Dead Load 470 plf 652 plf

Total Load 546 plf 1032 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 6640 ft-lb

18.36 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1376 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 40.17 in³ 35.82 in³

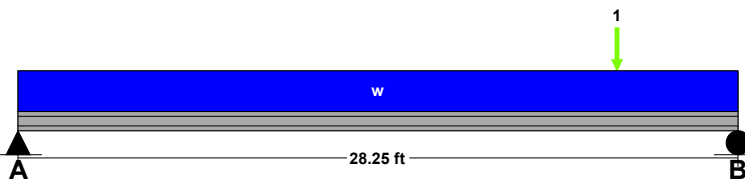
Area (Shear): 9.97 in² 18.69 in²

Moment of Inertia (deflection): 178.89 in⁴ 205.95 in⁴

Moment: 6640 ft-lb 5921 ft-lb

Shear: -1376 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 0 psf

Dead Load DL = 30 psf

Total Load TL = 30 psf

TL Adj. For Joist Spacing wT = 40 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 457 plf

Dead Load ($\perp$ to Joists): D1 = 274 plf

Load Location X1 = 23.5 ft

□ 2ND FLOOR C.2
I.1

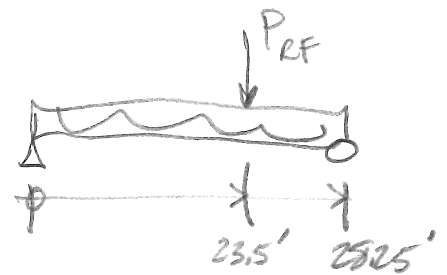
□ J-2 :

$l = 28'-3"$

$L = \text{VARIES}$

$D = 20\text{PSF} + 10\text{PSF PARTITION}$

$1\frac{5}{8} \times 11\frac{1}{2} @ 16"OC \quad F_b = 1500\text{ psi}$



LL	IE
40PSF	SEE J-1 ↓
50PSF	
80PSF	
0PSF	

ROOF LOADING

$P_D = 230\text{plf}$

$P_S = 383\text{plf}$

	$0.75(LL + SL)$	IE	$C_D = 1.15$
40	$30\text{PSF} + 287\text{plf}$	1.66	FLEXURE
50	$37.5 + 287$	1.83	F
80	$60 + 287$	2.33	F
0	$0 + 383$	OK (1.07)	



Project: Schofield Evaluation

Location: J-2 40PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 66.4%

Controlling Factor: Moment / Depth Required 14.84 In.



The Vitruvius Project, Inc.

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6/18/2024 10:04:57 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 1.85 IN L/183

Dead Load 1.83 in

Total Load 3.69 IN L/92

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 629 lb 883 lb

Dead Load 626 lb 869 lb

Total Load 1255 lb 1752 lb

Bearing Length 1.24 in 1.73 in

SUPPORT LOADS

A

B

Live Load 472 plf 662 plf

Dead Load 470 plf 652 plf

Total Load 941 plf 1314 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 9855 ft-lb

15.82 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1752 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 59.62 in3 35.82 in3

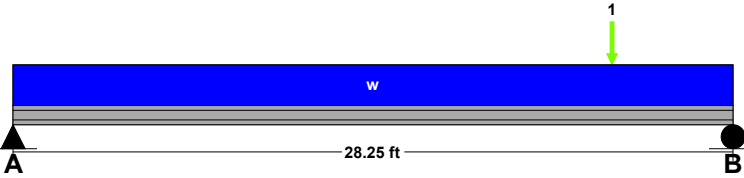
Area (Shear): 12.7 in2 18.69 in2

Moment of Inertia (deflection): 268.66 in4 205.95 in4

Moment: 9855 ft-lb 5921 ft-lb

Shear: -1752 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 30 psf

Dead Load DL = 30 psf

Total Load TL = 60 psf

TL Adj. For Joist Spacing wT = 80 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 287 plf

Dead Load ($\perp$ to Joists): D1 = 274 plf

Load Location X1 = 23.5 ft

Project: Schofield Evaluation

Location: J-2 50PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 83.1%

Controlling Factor: Moment / Depth Required 15.56 In.



The Vitruvius Project, Inc.

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StruCalc Version 11.1.8.0

6/18/2024 10:05:32 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 2.22 IN L/153

Dead Load 1.83 in

Total Load 4.05 IN L/84

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 771 lb 1025 lb

Dead Load 626 lb 869 lb

Total Load 1397 lb 1894 lb

Bearing Length 1.38 in 1.86 in

SUPPORT LOADS

A

B

Live Load 578 plf 769 plf

Dead Load 470 plf 652 plf

Total Load 1048 plf 1421 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 10843 ft-lb

15.54 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1893 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 65.59 in3 35.82 in3

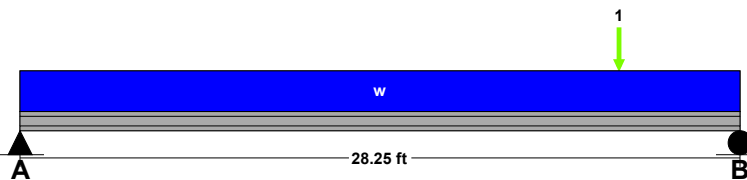
Area (Shear): 13.72 in2 18.69 in2

Moment of Inertia (deflection): 295.34 in4 205.95 in4

Moment: 10843 ft-lb 5921 ft-lb

Shear: -1893 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 37.5 psf

Dead Load DL = 30 psf

Total Load TL = 67.5 psf

TL Adj. For Joist Spacing wT = 90 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 287 plf

Dead Load ($\perp$ to Joists): D1 = 274 plf

Load Location X1 = 23.5 ft

Project: Schofield Evaluation

Location: J-2 80PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 133.3%

Controlling Factor: Moment / Depth Required 17.56 In.



The Vitruvius Project, Inc.

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StruCalc Version 11.1.8.0

6/18/2024 10:05:57 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS	<u>Center</u>	
Live Load	3.32	IN L/102
Dead Load	1.83	in
Total Load	5.15	IN L/66
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	<u>A</u>	<u>B</u>
Live Load	1194 lb	1448 lb
Dead Load	626 lb	869 lb
Total Load	1820 lb	2317 lb
Bearing Length	1.79 in	2.28 in

SUPPORT LOADS	<u>A</u>	<u>B</u>
Live Load	896 plf	1086 plf
Dead Load	470 plf	652 plf
Total Load	1365 plf	1738 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

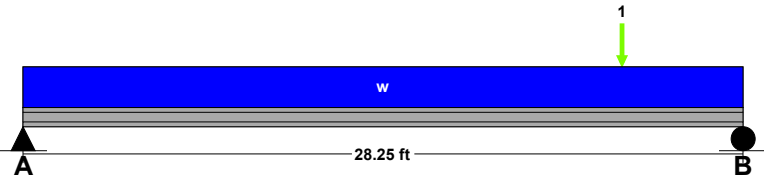
	<u>Base Values</u>		<u>Adjusted</u>	
Bending Stress:	Fb =	1500 psi	Fb' =	1984 psi
	Cd=1.15 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	207 psi
	Cd=1.15			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. $\perp$ to Grain:	Fc - $\perp$ =	625 psi	Fc - $\perp$ ' =	625 psi

Controlling Moment: 13813 ft-lb
15.26 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -2317 lb
28.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	<u>Req'd</u>	<u>Provided</u>
Section Modulus:	83.56 in3	35.82 in3
Area (Shear):	16.79 in2	18.69 in2
Moment of Inertia (deflection):	375.38 in4	205.95 in4
Moment:	13813 ft-lb	5921 ft-lb
Shear:	-2317 lb	2579 lb

LOADING DIAGRAM



JOIST DATA	<u>Center</u>
Span Length	28.25 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING	<u>Center</u>
Uniform Floor Loading	
Live Load	LL = 60 psf
Dead Load	DL = 30 psf
Total Load	TL = 90 psf
TL Adj. For Joist Spacing wT =	120 plf
Wall Loading	
Wall One	
Live Load ($\perp$ to Joists): L1 =	287 plf
Dead Load ($\perp$ to Joists):D1 =	274 plf
Load Location	X1 = 23.5 ft

□ 2ND FLOOR : C.2
I.1

□ J-3

$l = 23'$

$L = \text{VARIES}$

$D = 20 \text{ PSF} + 10 \text{ PSF PARTITION}$

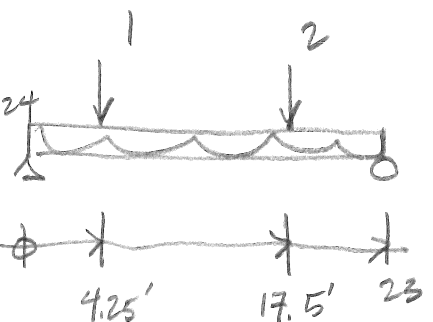
$P_{D1} = 197 \text{ pH}$

$P_{S1} = 329 \rightarrow 0.75 \text{ SL} = 247$

$P_{D2} = 179$

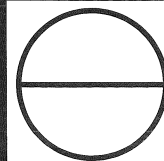
$P_{S2} = 298 \rightarrow 0.75 \text{ SL} = 224$

$1\frac{5}{8} \times 11\frac{1}{2} @ 16" \text{oc } F_b = 1500 \text{ psi}$



LL	I.E.
40	OK (1.20)
50	OK (1.37)
80	1.88 FLEXURE
0	OK (0.57)

0.75 (LL+SL)	I.E.
30 PSF	OK (1.36)
37.5	OK (1.47)
60	1.80 F
0	OK (1.00)



Project: Schofield Evaluation

Location: J-3 40 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 19.9%

Controlling Factor: Moment / Depth Required 12.59 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS		Center
Live Load	0.86	IN L/322
Dead Load	0.64	in
Total Load	1.50	IN L/184
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS		A	B
Live Load	613 lb	613 lb	
Dead Load	460 lb	460 lb	
Total Load	1073 lb	1073 lb	
Bearing Length	1.06 in	1.06 in	

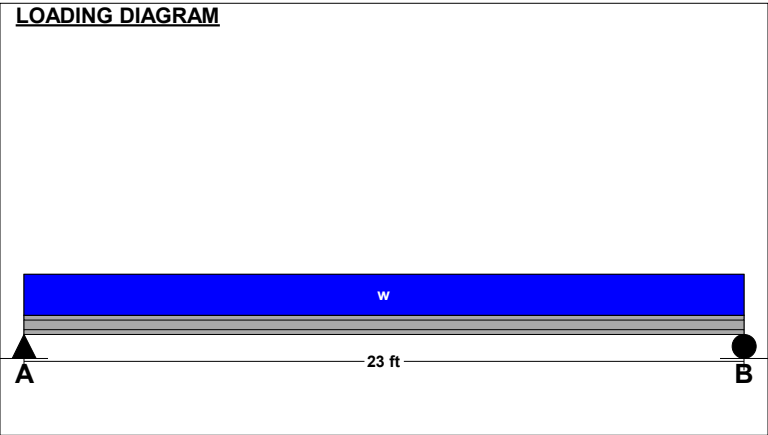
SUPPORT LOADS		A	B
Live Load	460 plf	460 plf	
Dead Load	345 plf	345 plf	
Total Load	805 plf	805 plf	

MATERIAL PROPERTIES		Select Structural - Douglas-Fir-Larch	
		Base Values	Adjusted
Bending Stress:	Fb =	1500 psi	Fb' = 1725 psi
	Cd=1.00 CF=1.00 Cr=1.15		
Shear Stress:	Fv =	180 psi	Fv' = 180 psi
	Cd=1.00		
Modulus of Elasticity:	E =	1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥ = 625 psi

Controlling Moment: 6172 ft-lb
11.5 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1073 lb
At right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	42.93 in3	35.82 in3
Area (Shear):	8.94 in2	18.69 in2
Moment of Inertia (deflection):	134.46 in4	205.95 in4
Moment:	6172 ft-lb	5149 ft-lb
Shear:	-1073 lb	2243 lb



JOIST DATA		Center
Span Length	23	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	0	ft
Floor sheathing applied to top of joists-top of joists fully braced.		
Floor Duration Factor	1.00	

JOIST LOADING		Center
Uniform Floor Loading		
Live Load	LL =	40 psf
Dead Load	DL =	30 psf
Total Load	TL =	70 psf
TL Adj. For Joist Spacing wT =	93.3	plf

Project: Schofield Evaluation

Location: J-3 50 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 37.0%

Controlling Factor: Moment / Depth Required 13.46 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS	Center	
Live Load	1.07	IN L/257
Dead Load	0.64	in
Total Load	1.72	IN L/161
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	767 lb	767 lb
Dead Load	460 lb	460 lb
Total Load	1227 lb	1227 lb
Bearing Length	1.21 in	1.21 in

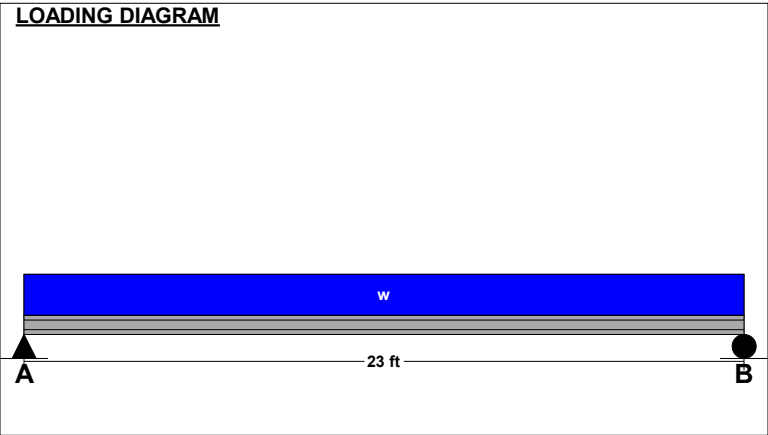
SUPPORT LOADS	A	B
Live Load	575 plf	575 plf
Dead Load	345 plf	345 plf
Total Load	920 plf	920 plf

MATERIAL PROPERTIES	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1725 psi
	Cd=1.00 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	180 psi
	Cd=1.00			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 7053 ft-lb
11.5 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1227 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	49.07 in3	35.82 in3
Area (Shear):	10.22 in2	18.69 in2
Moment of Inertia (deflection):	153.66 in4	205.95 in4
Moment:	7053 ft-lb	5149 ft-lb
Shear:	1227 lb	2243 lb



JOIST DATA	Center
Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.00

JOIST LOADING	Center
Uniform Floor Loading	
Live Load	LL = 50 psf
Dead Load	DL = 30 psf
Total Load	TL = 80 psf
TL Adj. For Joist Spacing wT =	106.7 plf

Project: Schofield Evaluation

Location: J-3 80 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 88.4%

Controlling Factor: Moment / Depth Required 15.78 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS	Center	
Live Load	1.72	IN L/161
Dead Load	0.64	in
Total Load	2.36	IN L/117
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	1227 lb	1227 lb
Dead Load	460 lb	460 lb
Total Load	1687 lb	1687 lb
Bearing Length	1.66 in	1.66 in

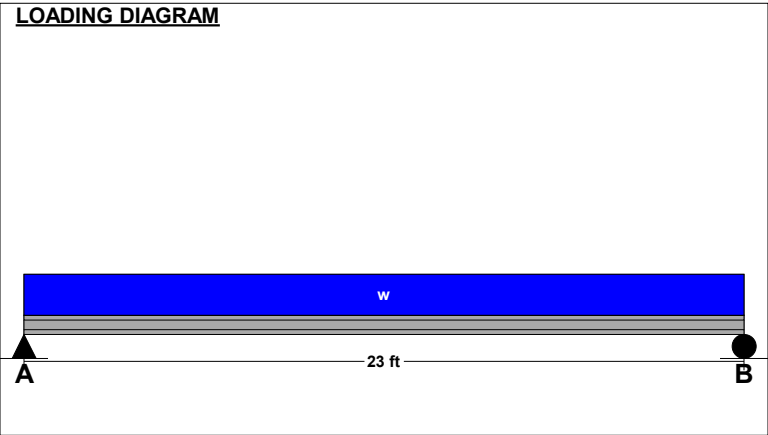
SUPPORT LOADS	A	B
Live Load	920 plf	920 plf
Dead Load	345 plf	345 plf
Total Load	1265 plf	1265 plf

MATERIAL PROPERTIES	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1725 psi
	Cd=1.00 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	180 psi
	Cd=1.00			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 9698 ft-lb
11.5 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1687 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	67.47 in3	35.82 in3
Area (Shear):	14.06 in2	18.69 in2
Moment of Inertia (deflection):	211.29 in4	205.95 in4
Moment:	9698 ft-lb	5149 ft-lb
Shear:	1687 lb	2243 lb



JOIST DATA	Center
Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.00

JOIST LOADING	Center
Uniform Floor Loading	
Live Load	LL = 80 psf
Dead Load	DL = 30 psf
Total Load	TL = 110 psf
TL Adj. For Joist Spacing wT =	146.7 plf

Project: Schofield Evaluation

Location: J-3 0 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Adequate By: 75.2%

Controlling Factor: Moment

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 0.00 IN L/∞

Dead Load 0.64 in

Total Load 0.64 IN L/429

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 0 lb 0 lb

Dead Load 460 lb 460 lb

Total Load 460 lb 460 lb

Bearing Length 0.45 in 0.45 in

SUPPORT LOADS

A

B

Live Load 0 plf 0 plf

Dead Load 345 plf 345 plf

Total Load 345 plf 345 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1553 psi
	Cd=0.90 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 162 psi
	Cd=0.90	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥ = 625 psi

Controlling Moment: 2645 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by dead loads only on all span(s).

Controlling Shear: -460 lb

At right support of span 2 (Center Span)

Created by dead loads only on all span(s).

Comparisons with required sections:

Req'd

Provided

Section Modulus: 20.44 in3 35.82 in3

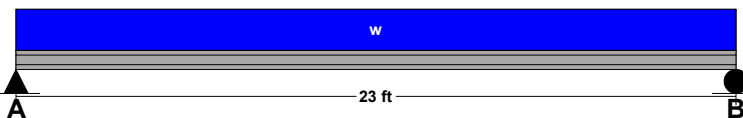
Area (Shear): 4.26 in2 18.69 in2

Moment of Inertia (deflection): 57.62 in4 205.95 in4

Moment: 2645 ft-lb 4634 ft-lb

Shear: -460 lb 2018 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 23 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 0 psf

Dead Load DL = 30 psf

Total Load TL = 30 psf

TL Adj. For Joist Spacing wT = 40 plf

Project: Schofield Evaluation

Location: J-3 40 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 35.6%

Controlling Factor: Moment / Depth Required 13.39 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 1.06 IN L/260

Dead Load 0.98 in

Total Load 2.04 IN L/136

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 800 lb 748 lb

Dead Load 731 lb 690 lb

Total Load 1531 lb 1438 lb

Bearing Length 1.51 in 1.42 in

SUPPORT LOADS

A

B

Live Load 600 plf 561 plf

Dead Load 548 plf 518 plf

Total Load 1148 plf 1079 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. $\perp$ to Grain:	Fc $\perp$ = 625 psi	Fc $\perp$ = 625 psi

Controlling Moment: 8028 ft-lb

11.73 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1531 lb

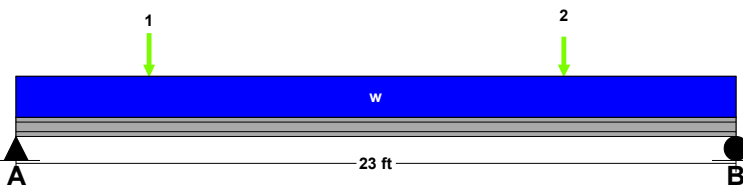
At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	48.56 in3	35.82 in3
Area (Shear):	11.09 in2	18.69 in2
Moment of Inertia (deflection):	182.33 in4	205.95 in4
Moment:	8028 ft-lb	5921 ft-lb
Shear:	1531 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 30 psf
Dead Load	DL = 30 psf
Total Load	TL = 60 psf
TL Adj. For Joist Spacing	wT = 80 plf

Wall Loading

Wall One	
Live Load ($\perp$ to Joists):	L1 = 247 plf
Dead Load ($\perp$ to Joists):	D1 = 197 plf
Load Location	X1 = 4.25 ft
Wall Two	
Live Load ($\perp$ to Joists):	L2 = 224 plf
Dead Load ($\perp$ to Joists):	D2 = 179 plf
Load Location	X2 = 17.5 ft

Project: Schofield Evaluation

Location: J-3 50 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 46.7%

Controlling Factor: Moment / Depth Required 13.93 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS	Center	
Live Load	1.22	IN L/226
Dead Load	0.98	in
Total Load	2.20	IN L/126
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	915 lb	863 lb
Dead Load	731 lb	690 lb
Total Load	1646 lb	1553 lb
Bearing Length	1.62 in	1.53 in

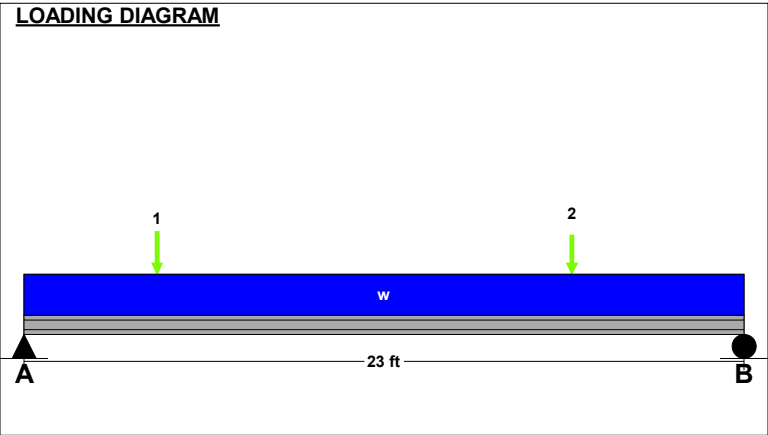
SUPPORT LOADS	A	B
Live Load	686 plf	647 plf
Dead Load	548 plf	518 plf
Total Load	1235 plf	1165 plf

MATERIAL PROPERTIES	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1984 psi
	Cd=1.15 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	207 psi
	Cd=1.15			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 8689 ft-lb
11.73 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1646 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	52.56 in3	35.82 in3
Area (Shear):	11.93 in2	18.69 in2
Moment of Inertia (deflection):	196.73 in4	205.95 in4
Moment:	8689 ft-lb	5921 ft-lb
Shear:	1646 lb	2579 lb



JOIST DATA	Center
Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

<u>JOIST LOADING</u>		
Uniform Floor Loading		<u>Center</u>
Live Load	LL =	37.5 psf
Dead Load	DL =	30 psf
Total Load	TL =	67.5 psf
TL Adj. For Joist Spacing	wT =	90 plf
Wall Loading		
Wall One		
Live Load ($\perp$ to Joists):	L1 =	247 plf
Dead Load ($\perp$ to Joists):	D1 =	197 plf
Load Location	X1 =	4.25 ft
Wall Two		
Live Load ($\perp$ to Joists):	L2 =	224 plf
Dead Load ($\perp$ to Joists):	D2 =	179 plf
Load Location	X2 =	17.5 ft

Project: Schofield Evaluation

Location: J-3 80 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 80.2%

Controlling Factor: Moment / Depth Required 15.44 In.



The Vitruvius Project, Inc.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 1.70 IN L/162

Dead Load 0.98 in

Total Load 2.68 IN L/103

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1260 lb 1208 lb

Dead Load 731 lb 690 lb

Total Load 1991 lb 1898 lb

Bearing Length 1.96 in 1.87 in

SUPPORT LOADS

A

B

Live Load 945 plf 906 plf

Dead Load 548 plf 518 plf

Total Load 1493 plf 1424 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥' = 625 psi

Controlling Moment: 10672 ft-lb

11.73 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1991 lb

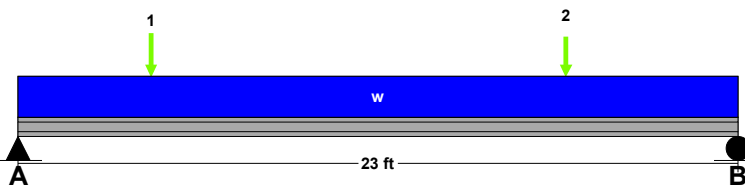
At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	64.56 in3	35.82 in3
Area (Shear):	14.43 in2	18.69 in2
Moment of Inertia (deflection):	239.95 in4	205.95 in4
Moment:	10672 ft-lb	5921 ft-lb
Shear:	1991 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 60 psf
Dead Load	DL = 30 psf
Total Load	TL = 90 psf
TL Adj. For Joist Spacing	wT = 120 plf

Wall Loading

Wall One	
Live Load (⊥ to Joists):	L1 = 247 plf
Dead Load (⊥ to Joists):	D1 = 197 plf
Load Location	X1 = 4.25 ft
Wall Two	
Live Load (⊥ to Joists):	L2 = 224 plf
Dead Load (⊥ to Joists):	D2 = 179 plf
Load Location	X2 = 17.5 ft

Project: Schofield Evaluation

Location: J-3 0 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Adequate By: 0.5%

Controlling Factor: Moment



The Vitruvius Project, Inc.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 0.55 IN L/498

Dead Load 0.98 in

Total Load 1.53 IN L/180

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 453 lb 383 lb

Dead Load 731 lb 690 lb

Total Load 1184 lb 1073 lb

Bearing Length 1.17 in 1.06 in

SUPPORT LOADS

A

B

Live Load 340 plf 287 plf

Dead Load 548 plf 518 plf

Total Load 888 plf 805 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥' = 625 psi

Controlling Moment: 5890 ft-lb

11.96 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1184 lb

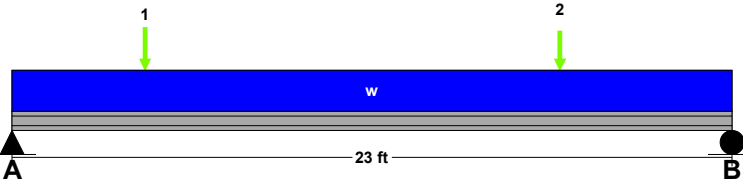
At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	35.63 in3	35.82 in3
Area (Shear):	8.58 in2	18.69 in2
Moment of Inertia (deflection):	137.05 in4	205.95 in4
Moment:	5890 ft-lb	5921 ft-lb
Shear:	1184 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 0 psf
Dead Load	DL = 30 psf
Total Load	TL = 30 psf
TL Adj. For Joist Spacing	wT = 40 plf

Wall Loading

Wall One	
Live Load (⊥ to Joists):	L1 = 329 plf
Dead Load (⊥ to Joists):	D1 = 197 plf
Load Location	X1 = 4.25 ft
Wall Two	
Live Load (⊥ to Joists):	L2 = 298 plf
Dead Load (⊥ to Joists):	D2 = 179 plf
Load Location	X2 = 17.5 ft

□ 2ND FLOOR C.2
I.1

□ J-4

15/8 x 11 1/2 @ 16" oc $F_b = 1500 \text{ psi}$

$l = 23'$

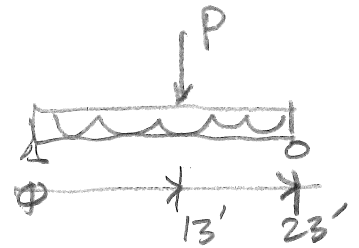
$L = \text{VARIES}$

$D = 20 \text{ PSF} + 10 \text{ PSF PARTITION}$

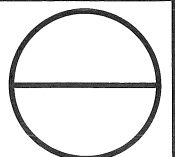
RF

$P_D = 194 \text{ plf}$

$P_S = 323 \text{ plf} \rightarrow 0.75 S = 242 \text{ plf}$



LL	IE	0.75 (LL + SL)	IE
40	SEE J-3	30	OK (1.43)
50		37.5	1.54 FLEXURE
80		60	1.87 F
0		0	OK (1.09)



Project: Schofield Evaluation

Location: J-4 40 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 43.0%

Controlling Factor: Moment / Depth Required 13.75 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 1.00 IN L/277

Dead Load 0.93 in

Total Load 1.92 IN L/144

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 600 lb 642 lb

Dead Load 572 lb 606 lb

Total Load 1172 lb 1248 lb

Bearing Length 1.15 in 1.23 in

SUPPORT LOADS

A

B

Live Load 450 plf 482 plf

Dead Load 429 plf 455 plf

Total Load 879 plf 936 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥ = 625 psi

Controlling Moment: 8469 ft-lb

12.88 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1249 lb

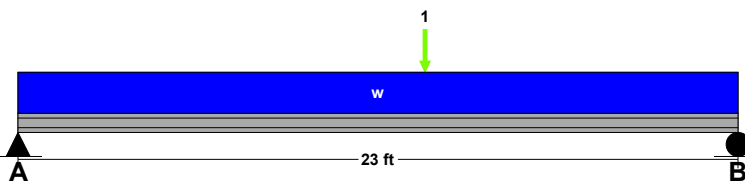
At right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	51.23 in3	35.82 in3
Area (Shear):	9.05 in2	18.69 in2
Moment of Inertia (deflection):	172.12 in4	205.95 in4
Moment:	8469 ft-lb	5921 ft-lb
Shear:	-1249 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 30 psf
Dead Load	DL = 30 psf
Total Load	TL = 60 psf
TL Adj. For Joist Spacing wT =	80 plf

Wall Loading

Wall One	
Live Load (⊥ to Joists): L1 =	242 plf
Dead Load (⊥ to Joists): D1 =	194 plf
Load Location	X1 = 13 ft

Project: Schofield Evaluation

Location: J-4 50 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 54.0%

Controlling Factor: Moment / Depth Required 14.27 In.

The Vitruvius Project, Inc.



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StruCalc Version 11.1.8.0

6/18/2024 10:44:52 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 1.16 IN L/239

Dead Load 0.93 in

Total Load 2.08 IN L/133

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 715 lb 757 lb

Dead Load 572 lb 606 lb

Total Load 1287 lb 1363 lb

Bearing Length 1.27 in 1.34 in

SUPPORT LOADS

A

B

Live Load 536 plf 568 plf

Dead Load 429 plf 455 plf

Total Load 965 plf 1022 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥ = 625 psi

Controlling Moment: 9121 ft-lb

12.88 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1364 lb

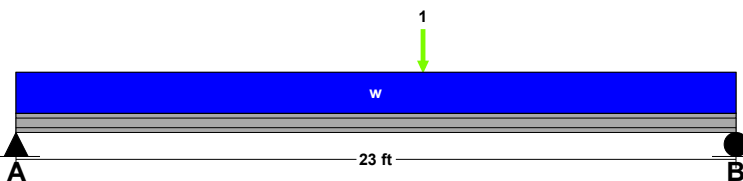
At right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	55.17 in ³	35.82 in ³
Area (Shear):	9.88 in ²	18.69 in ²
Moment of Inertia (deflection):	186.52 in ⁴	205.95 in ⁴
Moment:	9121 ft-lb	5921 ft-lb
Shear:	-1364 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 37.5 psf
Dead Load	DL = 30 psf
Total Load	TL = 67.5 psf
TL Adj. For Joist Spacing wT =	90 plf

Wall Loading

Wall One	
Live Load (⊥ to Joists): L1 =	242 plf
Dead Load (⊥ to Joists): D1 =	194 plf
Load Location X1 =	13 ft

Project: Schofield Evaluation

Location: J-4 80 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 87.1%

Controlling Factor: Moment / Depth Required 15.73 In.

The Vitruvius Project, Inc.



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StruCalc Version 11.1.8.0

6/18/2024 10:45:14 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 1.64 IN L/168

Dead Load 0.93 in

Total Load 2.57 IN L/108

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1060 lb 1102 lb

Dead Load 572 lb 606 lb

Total Load 1632 lb 1708 lb

Bearing Length 1.61 in 1.68 in

SUPPORT LOADS

A

B

Live Load 795 plf 827 plf

Dead Load 429 plf 455 plf

Total Load 1224 plf 1281 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. $\perp$ to Grain:	Fc $\perp$ = 625 psi	Fc $\perp$ = 625 psi

Controlling Moment: 11076 ft-lb

12.88 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1709 lb

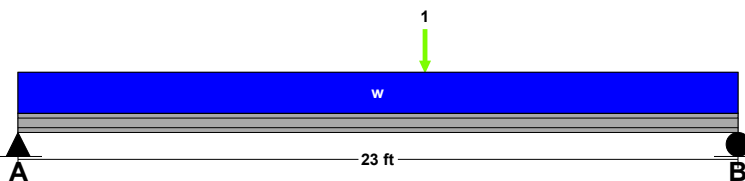
At right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	67 in ³	35.82 in ³
Area (Shear):	12.38 in ²	18.69 in ²
Moment of Inertia (deflection):	229.71 in ⁴	205.95 in ⁴
Moment:	11076 ft-lb	5921 ft-lb
Shear:	-1709 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 60 psf
Dead Load	DL = 30 psf
Total Load	TL = 90 psf
TL Adj. For Joist Spacing wT	= 120 plf

Wall Loading

Wall One	
Live Load ($\perp$ to Joists): L1	= 242 plf
Dead Load ($\perp$ to Joists): D1	= 194 plf
Load Location	X1 = 13 ft

Project: Schofield Evaluation

Location: J-4 0 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 9.2%

Controlling Factor: Moment / Depth Required 12.02 In.



The Vitruvius Project, Inc.

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StruCalc Version 11.1.8.0

6/18/2024 10:49:55 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load	0.47	IN L/586
Dead Load	0.93	in
Total Load	1.40	IN L/198
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS

A

B

Live Load	187	lb	243	lb
Dead Load	572	lb	606	lb
Total Load	759	lb	849	lb
Bearing Length	0.75	in	0.84	in

SUPPORT LOADS

A

B

Live Load	140	plf	182	plf
Dead Load	429	plf	455	plf
Total Load	569	plf	637	plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

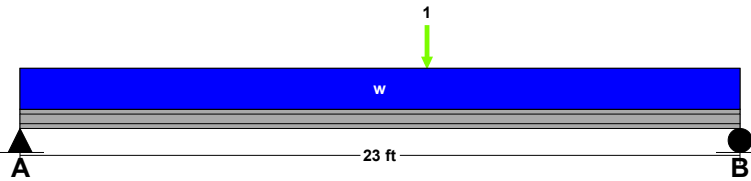
	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1984 psi
	Cd=1.15 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	207 psi
	Cd=1.15			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 6467 ft-lb
12.88 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -850 lb
At right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	39.12 in3	35.82 in3
Area (Shear):	6.16 in2	18.69 in2
Moment of Inertia (deflection):	125.1 in4	205.95 in4
Moment:	6467 ft-lb	5921 ft-lb
Shear:	-850 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	0	ft
Floor sheathing applied to top of joists-top of joists fully braced.		
Floor Duration Factor	1.15	

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL =	0	psf
Dead Load	DL =	30	psf
Total Load	TL =	30	psf
TL Adj. For Joist Spacing wT =	40	plf	

Wall Loading

Wall One			
Live Load (⊥ to Joists):	L1 =	323	plf
Dead Load (⊥ to Joists):	D1 =	194	plf
Load Location	X1 =	13	ft

□ 2ND FLOOR C.2
I.1

ΔJ-5 @ KINDREID

$1\frac{5}{8} \times 11\frac{1}{2} @ 16'' \phi_c \quad F_b = 1500 \text{ psi}$

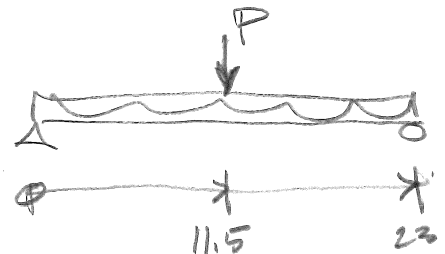
$l = 23'$

$L = \text{VARIES}$

$D = 20 \text{ PSF} + 10 \text{ PSF PARTITION}$

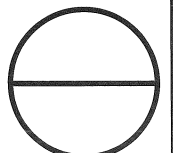
$P_D = 183 \text{ plf}$

$P_S = 305 \text{ plf} \rightarrow 0.75S = 229 \text{ plf}$



LL	IE
40	SEE J-3
50	
80	
0	

$0.75 (LL + SL)$	IE
30	OK (1.43)
37.5	1.54 FLEXURE
60	1.87 F
0	OK (1.08)



Project: Schofield Evaluation

Location: J-5 40 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 42.7%

Controlling Factor: Moment / Depth Required 13.74 In.

The Vitruvius Project, Inc.



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StruCalc Version 11.1.8.0

6/18/2024 10:51:12 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 0.99 IN L/280

Dead Load 0.92 in

Total Load 1.90 IN L/145

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 613 lb 613 lb

Dead Load 582 lb 582 lb

Total Load 1195 lb 1195 lb

Bearing Length 1.18 in 1.18 in

SUPPORT LOADS

A

B

Live Load 460 plf 460 plf

Dead Load 437 plf 437 plf

Total Load 896 plf 896 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. $\perp$ to Grain:	Fc $\perp$ = 625 psi	Fc $\perp$ = 625 psi

Controlling Moment: 8449 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1195 lb

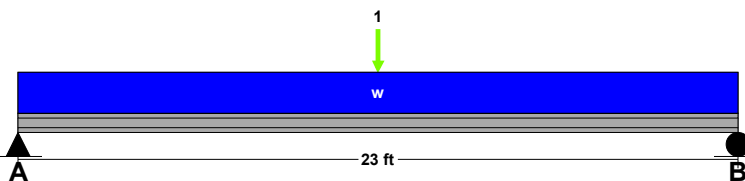
At right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	51.11 in ³	35.82 in ³
Area (Shear):	8.66 in ²	18.69 in ²
Moment of Inertia (deflection):	170.3 in ⁴	205.95 in ⁴
Moment:	8449 ft-lb	5921 ft-lb
Shear:	-1195 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 30 psf
Dead Load	DL = 30 psf
Total Load	TL = 60 psf
TL Adj. For Joist Spacing wT =	80 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 =	229 plf
Dead Load ($\perp$ to Joists): D1 =	183 plf
Load Location X1 =	11.5 ft

Project: Schofield Evaluation

Location: J-5 50 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 53.9%

Controlling Factor: Moment / Depth Required 14.26 In.

The Vitruvius Project, Inc.



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StruCalc Version 11.1.8.0

6/18/2024 10:51:45 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 1.15 IN L/241

Dead Load 0.92 in

Total Load 2.06 IN L/134

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 728 lb 728 lb

Dead Load 582 lb 582 lb

Total Load 1310 lb 1310 lb

Bearing Length 1.29 in 1.29 in

SUPPORT LOADS

A

B

Live Load 546 plf 546 plf

Dead Load 437 plf 437 plf

Total Load 983 plf 983 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. $\perp$ to Grain:	Fc $\perp$ = 625 psi	Fc $\perp$ = 625 psi

Controlling Moment: 9110 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1310 lb

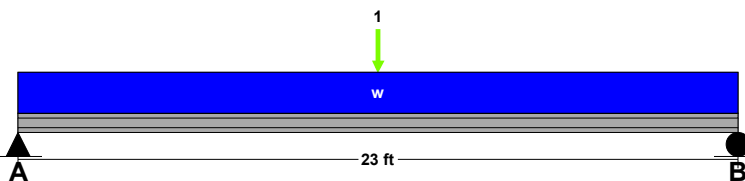
At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	55.11 in ³	35.82 in ³
Area (Shear):	9.49 in ²	18.69 in ²
Moment of Inertia (deflection):	184.71 in ⁴	205.95 in ⁴
Moment:	9110 ft-lb	5921 ft-lb
Shear:	1310 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 37.5 psf
Dead Load	DL = 30 psf
Total Load	TL = 67.5 psf
TL Adj. For Joist Spacing wT =	90 plf

Wall Loading

Wall One	
Live Load ($\perp$ to Joists): L1 =	229 plf
Dead Load ($\perp$ to Joists): D1 =	183 plf
Load Location	X1 = 11.5 ft

Project: Schofield Evaluation

Location: J-5 80 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 87.4%

Controlling Factor: Moment / Depth Required 15.74 In.

The Vitruvius Project, Inc.



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StruCalc Version 11.1.8.0

6/18/2024 10:52:21 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 1.63 IN L/169

Dead Load 0.92 in

Total Load 2.55 IN L/108

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1073 lb 1073 lb

Dead Load 582 lb 582 lb

Total Load 1655 lb 1655 lb

Bearing Length 1.63 in 1.63 in

SUPPORT LOADS

A

B

Live Load 805 plf 805 plf

Dead Load 437 plf 437 plf

Total Load 1241 plf 1241 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. $\perp$ to Grain:	Fc $\perp$ = 625 psi	Fc $\perp$ = 625 psi

Controlling Moment: 11094 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1655 lb

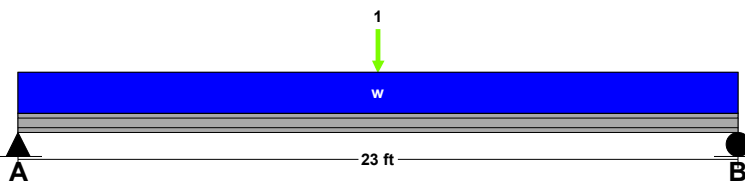
At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	67.11 in ³	35.82 in ³
Area (Shear):	11.99 in ²	18.69 in ²
Moment of Inertia (deflection):	227.93 in ⁴	205.95 in ⁴
Moment:	11094 ft-lb	5921 ft-lb
Shear:	1655 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 60 psf
Dead Load	DL = 30 psf
Total Load	TL = 90 psf
TL Adj. For Joist Spacing wT =	120 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 =	229 plf
Dead Load ($\perp$ to Joists): D1 =	183 plf
Load Location	X1 = 11.5 ft

Project: Schofield Evaluation

Location: J-5 0 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 7.9%

Controlling Factor: Moment / Depth Required 11.94 In.



The Vitruvius Project, Inc.

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StruCalc Version 11.1.8.0

6/18/2024 10:50:31 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 0.46 IN L/606

Dead Load 0.92 in

Total Load 1.37 IN L/201

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 203 lb 203 lb

Dead Load 582 lb 582 lb

Total Load 785 lb 785 lb

Bearing Length 0.77 in 0.77 in

SUPPORT LOADS

A

B

Live Load 152 plf 152 plf

Dead Load 437 plf 437 plf

Total Load 589 plf 589 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ = 625 psi

Controlling Moment: 6386 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -785 lb

At right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 38.63 in³ 35.82 in³

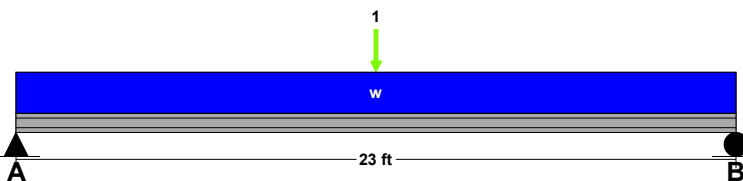
Area (Shear): 5.69 in² 18.69 in²

Moment of Inertia (deflection): 122.83 in⁴ 205.95 in⁴

Moment: 6386 ft-lb 5921 ft-lb

Shear: -785 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 23 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 0 psf

Dead Load DL = 30 psf

Total Load TL = 30 psf

TL Adj. For Joist Spacing wT = 40 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 305 plf

Dead Load ($\perp$ to Joists): D1 = 183 plf

Load Location X1 = 11.5 ft

□ GROUND FLOOR

C.4
I.1

□ 1J-1

$1\frac{5}{8} \times 15\frac{1}{4} @ 16"oc$

$F_b = 1500 \text{ psi}$
ASSUMED
BASE LINE

$l = 28'-3"$

D = 20PSF

L = VARIES

LL	I.E.	
40PSF	0.98	FLEXURE
65	1.39	✓
80	1.63	✓
100	1.94	✓

□ 1J-2

$1\frac{5}{8} \times 15\frac{1}{4} @ 16"oc$

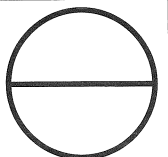
$F_b = 1500 \text{ psi}$

$l = 23'$

D = 20PSF

L = VARIES

LL	I.E.	
40		
65		
80	1.08	FLEXURE
100	1.30	FLEXURE



Project: Schofield Evaluation

Location: 1J-1 65 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 15.25 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 38.7%

Controlling Factor: Moment / Depth Required 17.96 In.



The Vitruvius Project, Inc.

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of

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 1.36 IN L/249

Dead Load 0.42 in

Total Load 1.78 IN L/190

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1224 lb 1224 lb

Dead Load 377 lb 377 lb

Total Load 1601 lb 1601 lb

Bearing Length 1.58 in 1.58 in

SUPPORT LOADS

A

B

Live Load 918 plf 918 plf

Dead Load 283 plf 283 plf

Total Load 1201 plf 1201 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1553 psi

Cd=1.00 CF=0.90 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ = 625 psi

Controlling Moment: 11306 ft-lb

14.12 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1601 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 87.39 in³ 62.99 in³

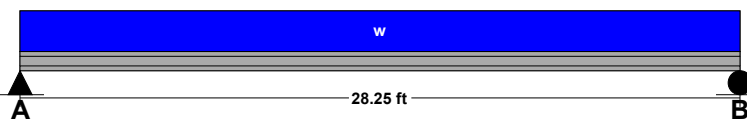
Area (Shear): 13.34 in² 24.78 in²

Moment of Inertia (deflection): 302.53 in⁴ 480.27 in⁴

Moment: 11306 ft-lb 8149 ft-lb

Shear: -1601 lb 2974 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 65 psf

Dead Load DL = 20 psf

Total Load TL = 85 psf

TL Adj. For Joist Spacing wT = 113.3 plf

Project: Schofield Evaluation

Location: 1J-1 80 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 15.25 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 63.2%

Controlling Factor: Moment / Depth Required 19.48 In.



The Vitruvius Project, Inc.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 1.67 IN L/202

Dead Load 0.42 in

Total Load 2.09 IN L/162

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1507 lb 1507 lb

Dead Load 377 lb 377 lb

Total Load 1884 lb 1884 lb

Bearing Length 1.85 in 1.85 in

SUPPORT LOADS

A

B

Live Load 1130 plf 1130 plf

Dead Load 283 plf 283 plf

Total Load 1413 plf 1413 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1553 psi

Cd=1.00 CF=0.90 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 13301 ft-lb

14.12 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1883 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 102.81 in³ 62.99 in³

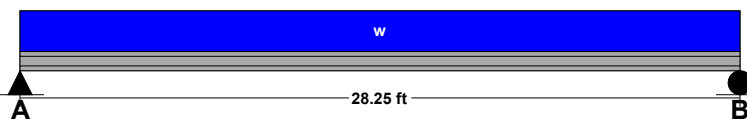
Area (Shear): 15.69 in² 24.78 in²

Moment of Inertia (deflection): 355.92 in⁴ 480.27 in⁴

Moment: 13301 ft-lb 8149 ft-lb

Shear: 1883 lb 2974 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 80 psf

Dead Load DL = 20 psf

Total Load TL = 100 psf

TL Adj. For Joist Spacing wT = 133.3 plf

Project: Schofield Evaluation

Location: 1J-1 100 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 15.25 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 95.9%

Controlling Factor: Moment / Depth Required 21.34 In.



The Vitruvius Project, Inc.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 2.09 IN L/162

Dead Load 0.42 in

Total Load 2.51 IN L/135

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1883 lb 1883 lb

Dead Load 377 lb 377 lb

Total Load 2260 lb 2260 lb

Bearing Length 2.23 in 2.23 in

SUPPORT LOADS

A

B

Live Load 1412 plf 1412 plf

Dead Load 283 plf 283 plf

Total Load 1695 plf 1695 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1553 psi

Cd=1.00 CF=0.90 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ = 625 psi

Controlling Moment: 15961 ft-lb

14.12 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 2260 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 123.37 in³ 62.99 in³

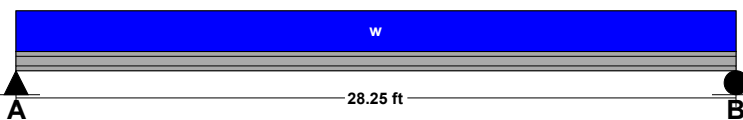
Area (Shear): 18.83 in² 24.78 in²

Moment of Inertia (deflection): 427.11 in⁴ 480.27 in⁴

Moment: 15961 ft-lb 8149 ft-lb

Shear: 2260 lb 2974 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 100 psf

Dead Load DL = 20 psf

Total Load TL = 120 psf

TL Adj. For Joist Spacing wT = 160 plf

Project: Schofield Evaluation

Location: 1J-2 80 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 15.25 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 8.2%

Controlling Factor: Moment / Depth Required 15.86 In.



The Vitruvius Project, Inc.

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DEFLECTIONS

Center

Live Load 0.74 IN L/375

Dead Load 0.18 in

Total Load 0.92 IN L/300

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1227 lb 1227 lb

Dead Load 307 lb 307 lb

Total Load 1534 lb 1534 lb

Bearing Length 1.51 in 1.51 in

SUPPORT LOADS

A

B

Live Load 920 plf 920 plf

Dead Load 230 plf 230 plf

Total Load 1151 plf 1151 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1553 psi

Cd=1.00 CF=0.90 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc - $\perp$ = 625 psi Fc - $\perp$ ' = 625 psi

Controlling Moment: 8817 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1533 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 68.15 in³ 62.99 in³

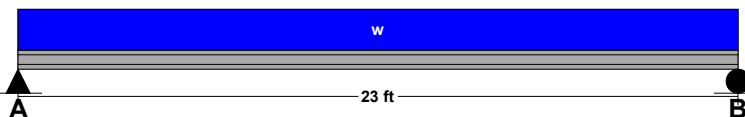
Area (Shear): 12.78 in² 24.78 in²

Moment of Inertia (deflection): 192.08 in⁴ 480.27 in⁴

Moment: 8817 ft-lb 8149 ft-lb

Shear: 1533 lb 2974 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 23 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 80 psf

Dead Load DL = 20 psf

Total Load TL = 100 psf

TL Adj. For Joist Spacing wT = 133.3 plf

Project: Schofield Evaluation

Location: 1J-2 100 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 15.25 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 29.8%

Controlling Factor: Moment / Depth Required 17.38 In.



The Vitruvius Project, Inc.

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DEFLECTIONS

Center

Live Load 0.92 IN L/300

Dead Load 0.18 in

Total Load 1.10 IN L/250

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1533 lb 1533 lb

Dead Load 307 lb 307 lb

Total Load 1840 lb 1840 lb

Bearing Length 1.81 in 1.81 in

SUPPORT LOADS

A

B

Live Load 1150 plf 1150 plf

Dead Load 230 plf 230 plf

Total Load 1380 plf 1380 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1553 psi

Cd=1.00 CF=0.90 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc - $\perp$ = 625 psi Fc - $\perp$ ' = 625 psi

Controlling Moment: 10580 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1840 lb

At right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 81.78 in³ 62.99 in³

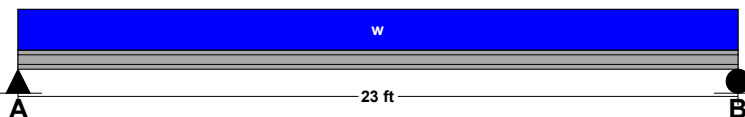
Area (Shear): 15.33 in² 24.78 in²

Moment of Inertia (deflection): 230.5 in⁴ 480.27 in⁴

Moment: 10580 ft-lb 8149 ft-lb

Shear: -1840 lb 2974 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 23 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 100 psf

Dead Load DL = 20 psf

Total Load TL = 120 psf

TL Adj. For Joist Spacing wT = 160 plf

August 16, 2024

Ryan Wilson
Wilson Architects
404 E 15th St #7
Vancouver, WA 98663

RE: Project Name: Schofield Building Evaluation Summary
Location: 600 Main St., Vancouver, WA 98660
KGA Project No.: 24051.00

Dear Ryan:

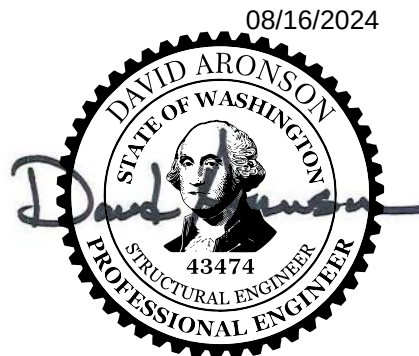
This letter is to summarize our structural findings¹ regarding the Schofield Building on 6th and Main Street and provide the requested additional information by the jurisdiction. The structural findings are based on the criterion outlined in the Vancouver Municipal Code (VMC) Chapter 17.32 Unfit Buildings and Premises Code with reference to the International Existing Building Code (IEBC) 2021 with Washington State Amendments.

SUMMARY

This summary and the evaluation and additional information letters have highlighted the observed deficiencies, the deficiencies at current code level loading with assumed occupancies, and the seismic resistance and resiliency of the entire structure. We recommend the building is repaired, remediated, demolished or otherwise abated based on the criteria outlined in the *VMC section 17.32.060 Repair, vacation, or demolition – Standards – Measures pending abatement – Violation* with the process implemented by the Building Official.



Zachary S. Davidson, P.E., S.E.
Kramer Gehlen & Associates, Inc.



EXP: 04/05/2026

¹ Evaluation letter dated March 20, 2024

Additional Information Letter dated June 17, 2024

FINDINGS

VMC 17.32.040

C. Whenever the stress in any materials, member or portion thereof, due to all dead and live loads, is more than one and one half times the working stress or stresses allowed in the Building Code for new dwellings, buildings or structures of similar structure, purpose or location.

Based on our engineering judgement for item C, we have identified the following structural elements that require repair/remediation or further material testing. See our commentary regarding the design assumptions regarding the wood strength.

- C.1: Roof joists and supporting ceiling joists at long spans identified.
 - See calculation package. The members are stressed more than one and one half times that allowed in the Building Code.
- C.2: Second floor joists supporting the discontinuous wood bearing walls at long spans identified.
 - See calculation package. The members are stressed more than one and one half times that allowed in the Building Code.
- C.3: Second floor girder (when occupancy dictates 100 pounds per square foot (psf) live loading)
 - See calculation package. The members are stressed more than one and one half times that allowed in the Building Code.
- C.4: First floor joists at long spans identified.
 - See calculation package. The members are stressed more than one and one half times that allowed in the Building Code.

F. Whenever any portion or member or appurtenance thereof is likely to fail, or to become detached or dislodged, or to collapse and thereby injure persons or damage property.

Based on our engineering judgement for item F, we have identified the following structural elements that require repair/remediation:

- F.1: Exterior unreinforced masonry walls.
 - The south, west, and portion of the west walls are not connected to the floor and roof.
 - We base this judgement on the minimum life safety requirements of the International Existing Building Code (IEBC) 2021 with Washington State Amendments, Appendix A: Guidelines for the Seismic Retrofit of Existing Buildings. Specific reference to Sections A113.1 and A113.5.
- F.2: Unreinforced masonry parapets without bracing.
 - The south, west, and portion of the west parapets are not braced.
 - IEBC 2021 Section A113.6.
- F.3: Exterior unreinforced masonry walls with exterior adhered stucco.
 - The adhered stucco is actively falling off the building. Falling stucco is a hazard that may injure persons or damage property. See corresponding photographs.
- F.4: First floor joists have wood beams and posts in the basement that reduce the clear span between the unreinforced masonry wall foundations. These wood beams

and posts are not secured with positive connections to the floor framing and are not anchored to a foundation.

- See corresponding photographs. The posts are not level, nor are they connected with positive attachment to the floor and foundation. These posts are likely to fail as a result and create a condition for structural failure of the floor joists.
- F.5: The exterior canopy structure.
 - See corresponding photographs. The canopy is anchored to the unreinforced masonry walls. The tension tie holding the outer edge of the canopy is only hooked to the eye bolt at the attachment to the building. This may become dislodged in a wind event and collapse.
- F.6: The ground floor storefront on the east side of the building along Main Street.
 - See corresponding photographs. East storefront at the unoccupied space is unsecured and unsupported and is currently covered with a temporary wall.

G. Whenever any portion of a dwelling, building or structure, or any member, appurtenance or ornamentation on the exterior thereof is not of sufficient strength or stability, or is not so anchored, attached or fastened in place so as to be capable of resisting a wind pressure of one half of that specified in the Building Code for new dwellings, buildings or structures of similar structure, purpose or location without exceeding the working stresses permitted in the Building Code for such buildings.

Based on our engineering judgement for item G, we have identified the following structural elements that require repair/remediation:

- G.1: Exterior unreinforced masonry walls.
 - The south, west, and portion of the west walls are not connected to the floor and roof.
- G.2: Unreinforced masonry parapets without bracing.
 - The south, west, and portion of the west parapets are not braced.
- G.3: Exterior unreinforced masonry walls with exterior adhered stucco.
 - The adhered stucco is actively falling off the building. See corresponding photographs.
- G.4: The exterior canopy structure.
 - See corresponding photographs. The canopy is anchored to the unreinforced masonry walls. The tension tie holding the outer edge of the canopy is only hooked to the eye bolt at the attachment to the building. This may become dislodged in a wind event and collapse
- G.5: The ground floor storefront along Main Street.
 - See corresponding photographs. East storefront at the unoccupied space is unsecured and unsupported and is currently covered with a temporary wall.

H. Whenever any portion thereof has wracked, warped, buckled or settled to such an extent that walls or other structural portions have materially less resistance to winds or earthquakes than is required in the case of similar new construction.

In our engineering judgement for item H, the unreinforced masonry walls inherently have material less resistance to wind and earthquakes than is required for new construction.

I. Whenever the dwelling, building or structure, or any portion thereof, is likely to partially or completely collapse because of:

- 1. dilapidation, deterioration or decay;*
- 2. faulty construction;*
- 3. the removal, movement or instability of any portion of the ground necessary for the purpose of supporting such dwelling, building or structure;*
- 4. the deterioration, decay or inadequacy of its foundation; or*
- 5. any other cause.*

Based on our engineering judgement for item I, we have identified the following structural elements that require repair/remediation:

- I.1: The long span roof and ceiling joists identified in item C.1.
 - See corresponding photographs and calculation package.
- I.2: The first-floor joist support beams and posts identified in item F.4.
 - See corresponding photographs.
- I.3: The eastern ground floor storefront identified in item F.6 and G.5.
 - See corresponding photographs.
- I.4: The foundation is made up of unreinforced masonry walls that bear upon unreinforced concrete that is approximately as wide as the wall (12-inches). The eastern portion of the foundation walls have arches that are covered with plywood to retain the soil under the sidewalk.
 - See corresponding photographs. The basement foundation walls are unreinforced masonry. Some of the walls have observed damage. The exterior basement walls are retaining soil and exterior sidewalks. The east basement walls have openings that are filled in with plywood to support retain the soil.

J. Whenever, for any reason, the dwelling, building or structure, or any portion thereof, is manifestly unsafe for the purpose for which it is being used.

Based on our engineering judgement for item J, we have identified the structural elements that require repair/remediation as noted for the items listed above. In addition, a change in occupancy will require a full seismic upgrade to meet the current building code or the existing building code at a minimum.

K. Whenever the exterior walls or other vertical structural members list, lean or buckle to such an extent that a plumb line passing through the center of gravity does not fall inside the middle one third of the base.

Based on our engineering judgement for item K, we have identified the ground floor east storefront in need of repair/remediation. See corresponding photographs. East storefront at the unoccupied space is unsecured and unsupported and is currently covered with a temporary wall.

L. Whenever the dwelling, building or structure, exclusive of the foundation, shows 33 percent or more damage or deterioration of its supporting member or members,

or 50 percent damage or deterioration of its non-supporting members, enclosing or outside walls or coverings.

Based on our engineering judgement for item L, we have identified the following structural elements that require repair/remediation:

- L.1: Exterior unreinforced masonry walls with exterior adhered stucco. The stucco is falling off the building.
 - See corresponding photographs. The adhered stucco is actively falling off the building. Falling stucco is a hazard that may injure persons or damage property.
- L.2: The ground floor storefront along Main Street.
 - See corresponding photographs. East storefront at the unoccupied space is unsecured and unsupported and is currently covered with a temporary wall.

N. Whenever any dwelling, building or structure has been constructed, exists or is maintained in violation of any specific requirement or prohibition applicable to such dwelling, building or structure provided by the Building Code, any other ordinance of the city or any laws of the state of Washington relating to the condition, location or structure of dwellings, buildings or structures.

A change in occupancy will trigger a seismic upgrade to meet the current building code or the existing building code at a minimum.

O. Whenever any dwelling, building or structure which, whether or not erected in accordance with all applicable laws and ordinances, has in any non-supporting part, member or portion less than 50 percent, or in any supporting part, member or portion less than 66 percent of the:

- 1. strength;*
- 2. fire-resisting qualities or characteristics, or*
- 3. weather-resisting qualities or characteristics required by law in the case of a newly constructed dwelling, building or structure of like area, height and occupancy in the same location.*

Based on our engineering judgement for item O, the unreinforced masonry walls as the lateral resisting elements do not have the strength of a newly constructed structure meeting the 66 percent threshold per the definition.

CURRENT OCCUPANCY at 606 Main St (Kindred Homestead Supply)

The building is currently occupied in the first level and basement of the at 606 Main St. The occupied space is a home supply shop at the first level and a record store in the basement level. This is in the northernmost portion of the building.

This portion of the building is not at risk due to its live load occupancy. See calculations "J-5" for the second floor and "1J-2" for the first floor. These calculations show that the criteria for VMC item C threshold is below the 150% stress ratio for these floor joists.

This portion of the building is at risk with its proximity to the unfit portion of the building identified in the findings portion of the letter. This is a similar risk associated with any building adjacent to the unfit portion of this building.

It is our opinion that their occupancy is tied to the timeline set forth by the City of Vancouver Building Department to comply with the unfit building code violations. The building should be unoccupied in a reasonable timeframe without extension that allows the unfit conditions to be demolished or remedied.

PHOTO APPENDIX

VMC items C.1, I.1, and J

The roof structure has excessive deflection with damage to the plaster. This occurs over unoccupied space and is susceptible to failure at a code level snow event.



Photo looking north.

VMC items F.3, F.5 G.3, G.4, and L.1

The exterior stucco of the building is losing adhesion to the unreinforced masonry exterior wall and is falling off the building. This condition currently has a netting to keep the stucco from falling onto the sidewalk. The exterior canopy and its attachment to structure is also pictured.



Photos of the south (left) and east (right) exterior.

VMC items F.6, G.5, I.3, K, and L.2

East storefront at the unoccupied space is currently unsecured and unsupported and is covered with a temporary wall.



Photo looking to the east.

VMC items F.4, I.2, and K

The post and beam structure supporting the first-floor framing is warped/leaning and does not have positive attachment to the framing or the foundation.



Photos in the basement. This is the southern most un-occupied space.

VMC item I.4

The basement foundation walls are unreinforced masonry. Some of the walls have observed damage. The exterior basement walls are retaining soil and exterior sidewalks. The east basement walls have openings that are filled in with plywood to support retain the soil.



Photo of damage looking to the east.



Photo looking to the east of basement walls with openings and plywood.

CALCULATIONS



STRUCTURAL CALCULATIONS

SCHOFIELD BUILDING

Evaluation

Vancouver, Washington

For

Wilson Architects

June 18, 2024

**ALL COMPUTATION AND STRUCTURAL ENGINEERING
FOR THIS PROJECT HAVE BEEN PERFORMED
BY MYSELF OR UNDER MY DIRECT SUPERVISION.**

06/18/2024



EXP: 03/04/2026

**KRAMER GEHLEN & ASSOCIATES, INC.
CONSULTING ENGINEERS
805 Broadway Street, Suite 415
Vancouver, Washington 98660
(360) 693-1621 (503) 289-2661
Fax: (360) 360-5960**

□ ROOF : C.1
I.1

□ ROOF JOISTS = $1\frac{5}{8} \times 7\frac{1}{4}$ @ $16''$ oc $F_b = 1500 \text{ psi}$
ASSUMED
BASELINE

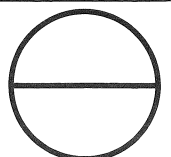
D = 15 PSF

S = 25 PSF

SPANS	I.E.
24 FT	1.36 FLEXURE
31 FT	2.27 FLEXURE

□ CEILING JOISTS = $1\frac{5}{8} \times 9\frac{1}{4}$ @ $16''$ oc $F_b = 1500 \text{ psi}$
↑ THESE SUPPORT ROOF JOISTS

SPAN	I.E.
24'	0.91 FLEXURE
31'	1.52 FLEXURE



Project: Schofield Evaluation

Location: ROOF JOIST

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 7.25 IN x 24.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 69.2%

Controlling Factor: Deflection / Depth Required 8.64 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 2.54 IN L/113

Dead Load 1.52 in

Total Load 4.06 IN L/71

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 400 lb 400 lb

Dead Load 240 lb 240 lb

Total Load 640 lb 640 lb

Bearing Length 0.63 in 0.63 in

SUPPORT LOADS

A

B

Live Load 300 plf 300 plf

Dead Load 180 plf 180 plf

Total Load 480 plf 480 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 2381 psi

Cd=1.15 CF=1.20 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 3840 ft-lb

12.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 640 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 19.36 in³ 14.24 in³

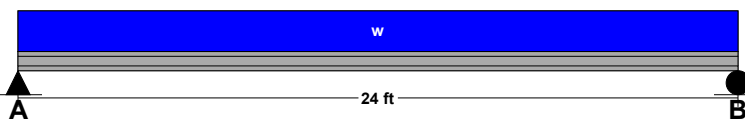
Area (Shear): 4.64 in² 11.78 in²

Moment of Inertia (deflection): 87.3 in⁴ 51.6 in⁴

Moment: 3840 ft-lb 2824 ft-lb

Shear: 640 lb 1626 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 24 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 25 psf

Dead Load DL = 15 psf

Total Load TL = 40 psf

TL Adj. For Joist Spacing wT = 53.3 plf

Project: Schofield Evaluation

Location: ROOF JOIST 31 FT

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 7.25 IN x 31.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 264.6%

Controlling Factor: Deflection / Depth Required 11.16 In.



The Vitruvius Project, Inc.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 7.06 IN L/53

Dead Load 4.24 in

Total Load 11.30 IN L/33

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 517 lb 517 lb

Dead Load 310 lb 310 lb

Total Load 827 lb 827 lb

Bearing Length 0.81 in 0.81 in

SUPPORT LOADS

A

B

Live Load 388 plf 388 plf

Dead Load 233 plf 233 plf

Total Load 620 plf 620 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 2381 psi

Cd=1.15 CF=1.20 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 6407 ft-lb

15.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 827 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 32.3 in³ 14.24 in³

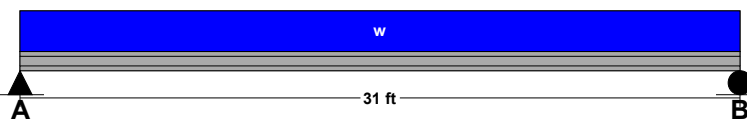
Area (Shear): 5.99 in² 11.78 in²

Moment of Inertia (deflection): 188.12 in⁴ 51.6 in⁴

Moment: 6407 ft-lb 2824 ft-lb

Shear: 827 lb 1626 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 31 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 25 psf

Dead Load DL = 15 psf

Total Load TL = 40 psf

TL Adj. For Joist Spacing wT = 53.3 plf

Project: Schofield Evaluation

Location: CEILING JOIST 24 FT

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 9.25 IN x 24.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Adequate By: 9.7%

Controlling Factor: Moment



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 1.22 IN L/236

Dead Load 0.73 in

Total Load 1.95 IN L/147

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 400 lb 400 lb

Dead Load 240 lb 240 lb

Total Load 640 lb 640 lb

Bearing Length 0.63 in 0.63 in

SUPPORT LOADS

A

B

Live Load 300 plf 300 plf

Dead Load 180 plf 180 plf

Total Load 480 plf 480 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 2182 psi

Cd=1.15 CF=1.10 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 3840 ft-lb

12.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 640 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 21.12 in³ 23.17 in³

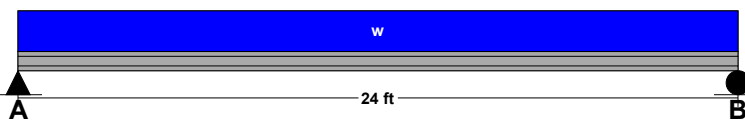
Area (Shear): 4.64 in² 15.03 in²

Moment of Inertia (deflection): 87.3 in⁴ 107.18 in⁴

Moment: 3840 ft-lb 4214 ft-lb

Shear: 640 lb 2074 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 24 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 25 psf

Dead Load DL = 15 psf

Total Load TL = 40 psf

TL Adj. For Joist Spacing wT = 53.3 plf

Project: Schofield Evaluation

Location: CEILING JOIST 31 FT

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 9.25 IN x 31.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 75.5%

Controlling Factor: Deflection / Depth Required 11.41 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 3.40 IN L/109

Dead Load 2.04 in

Total Load 5.44 IN L/68

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 517 lb 517 lb

Dead Load 310 lb 310 lb

Total Load 827 lb 827 lb

Bearing Length 0.81 in 0.81 in

SUPPORT LOADS

A

B

Live Load 388 plf 388 plf

Dead Load 233 plf 233 plf

Total Load 620 plf 620 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 2182 psi

Cd=1.15 CF=1.10 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 6407 ft-lb

15.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 827 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 35.23 in3 23.17 in3

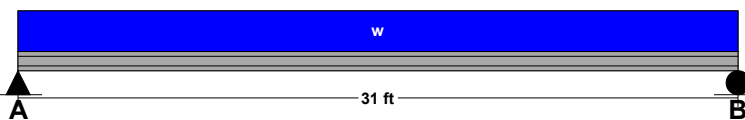
Area (Shear): 5.99 in2 15.03 in2

Moment of Inertia (deflection): 188.12 in4 107.18 in4

Moment: 6407 ft-lb 4214 ft-lb

Shear: 827 lb 2074 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 31 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 25 psf

Dead Load DL = 15 psf

Total Load TL = 40 psf

TL Adj. For Joist Spacing wT = 53.3 plf

□ 2ND FLOOR C.2
I.1

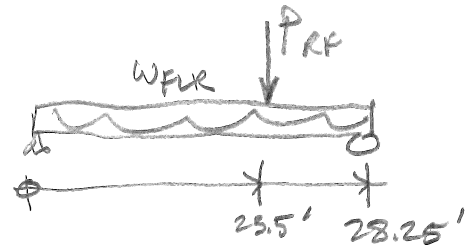
□ J-1 =

$l = 28'-3"$

$L = \text{VARIES @ FLOOR OCCUPANCY}$

$D = 20 \text{ PSF} + 10 \text{ PSF WALL PARTITIONS}$

$1\frac{5}{8} \times 11\frac{1}{2}$ Joists @ $16" \text{ oc}$ $F_b = 1500 \text{ psi}$ ASSUMED
BASELINE



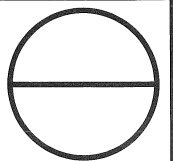
LL	I.E.	w/ $C_D = 1.0$
40 PSF	1.81	FLEXURE
50 PSF	2.07	F
80 PSF	2.84	F
0 PSF	OK (0.86)	

ROOF LOADING ON BEARING WALL (IN PLF)

$$P_D = (23.5 + 13.08) \frac{1}{2} (15 \text{ PSF}) = 274 \text{ plf}$$

$$P_S = 25 \text{ PSF} \rightarrow 457 \text{ plf}$$

	$0.75 (LL + SL)$	I.E.	w/ $C_D = 1.15$
40	30 PSF + 343 plf	1.70	F
50	37.5 PSF + 343 plf	1.86	F
80	60 PSF + 343 plf	2.36	F
0	0 + 457 plf	OK (1.12)	



Project: Schofield Evaluation

Location: J-1 40PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 80.8%

Controlling Factor: Moment / Depth Required 15.46 In.



The Vitruvius Project, Inc.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 1.95 IN L/174

Dead Load 1.46 in

Total Load 3.42 IN L/99

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 753 lb 753 lb

Dead Load 565 lb 565 lb

Total Load 1318 lb 1318 lb

Bearing Length 1.30 in 1.30 in

SUPPORT LOADS

A

B

Live Load 565 plf 565 plf

Dead Load 424 plf 424 plf

Total Load 989 plf 989 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1725 psi

Cd=1.00 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ = 625 psi

Controlling Moment: 9311 ft-lb

14.12 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1318 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 64.77 in³ 35.82 in³

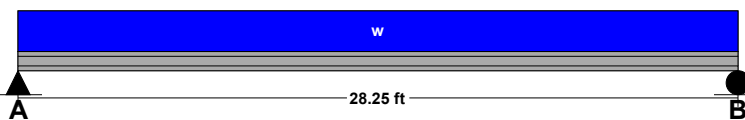
Area (Shear): 10.99 in² 18.69 in²

Moment of Inertia (deflection): 249.14 in⁴ 205.95 in⁴

Moment: 9311 ft-lb 5149 ft-lb

Shear: -1318 lb 2243 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 40 psf

Dead Load DL = 30 psf

Total Load TL = 70 psf

TL Adj. For Joist Spacing wT = 93.3 plf

Project: Schofield Evaluation

Location: J-1 50PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 106.7%

Controlling Factor: Moment / Depth Required 16.53 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS	Center	
Live Load	2.44	IN L/139
Dead Load	1.46	in
Total Load	3.91	IN L/87
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	942 lb	942 lb
Dead Load	565 lb	565 lb
Total Load	1507 lb	1507 lb
Bearing Length	1.48 in	1.48 in

SUPPORT LOADS	A	B
Live Load	707 plf	707 plf
Dead Load	424 plf	424 plf
Total Load	1130 plf	1130 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1725 psi
	Cd=1.00 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 180 psi
	Cd=1.00	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥' = 625 psi

Controlling Moment: 10641 ft-lb

14.12 Ft from left support of span 2 (Center Span)

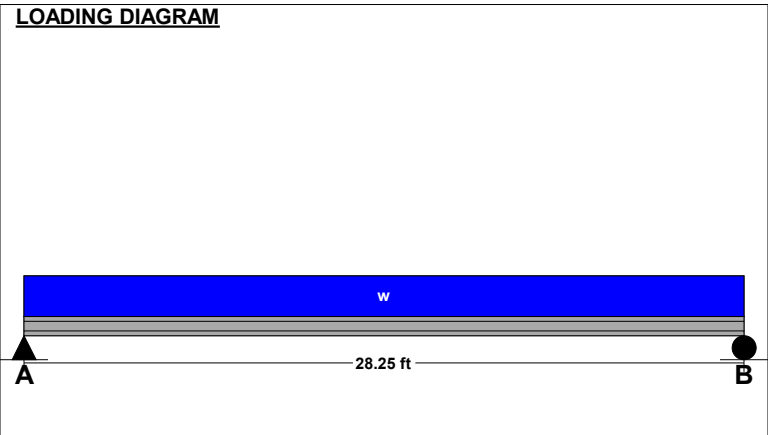
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1507 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	74.02 in3	35.82 in3
Area (Shear):	12.56 in2	18.69 in2
Moment of Inertia (deflection):	284.74 in4	205.95 in4
Moment:	10641 ft-lb	5149 ft-lb
Shear:	1507 lb	2243 lb



JOIST DATA	Center
Span Length	28.25 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.00

JOIST LOADING	Center
Uniform Floor Loading	
Live Load	LL = 50 psf
Dead Load	DL = 30 psf
Total Load	TL = 80 psf
TL Adj. For Joist Spacing wT	= 106.7 plf

Project: Schofield Evaluation

Location: J-1 80PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 184.2%

Controlling Factor: Moment / Depth Required 19.39 In.



The Vitruvius Project, Inc.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 3.91 IN L/87

Dead Load 1.46 in

Total Load 5.37 IN L/63

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1507 lb 1507 lb

Dead Load 565 lb 565 lb

Total Load 2072 lb 2072 lb

Bearing Length 2.04 in 2.04 in

SUPPORT LOADS

A

B

Live Load 1130 plf 1130 plf

Dead Load 424 plf 424 plf

Total Load 1554 plf 1554 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1725 psi

Cd=1.00 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ = 625 psi

Controlling Moment: 14631 ft-lb

14.12 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -2072 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 101.78 in³ 35.82 in³

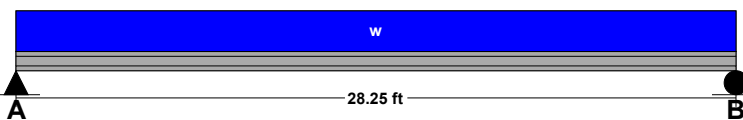
Area (Shear): 17.26 in² 18.69 in²

Moment of Inertia (deflection): 391.51 in⁴ 205.95 in⁴

Moment: 14631 ft-lb 5149 ft-lb

Shear: -2072 lb 2243 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 80 psf

Dead Load DL = 30 psf

Total Load TL = 110 psf

TL Adj. For Joist Spacing wT = 146.7 plf

Project: Schofield Evaluation

Location: J-1 0PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Adequate By: 16.1%

Controlling Factor: Moment



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 0.00 IN L/∞

Dead Load 1.46 in

Total Load 1.46 IN L/231

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 0 lb 0 lb

Dead Load 565 lb 565 lb

Total Load 565 lb 565 lb

Bearing Length 0.56 in 0.56 in

SUPPORT LOADS

A

B

Live Load 0 plf 0 plf

Dead Load 424 plf 424 plf

Total Load 424 plf 424 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1553 psi

Cd=0.90 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 162 psi

Cd=0.90

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. ⊥ to Grain: Fc - ⊥ = 625 psi Fc - ⊥' = 625 psi

Controlling Moment: 3990 ft-lb

14.12 Ft from left support of span 2 (Center Span)

Created by dead loads only on all span(s).

Controlling Shear: 565 lb

At left support of span 2 (Center Span)

Created by dead loads only on all span(s).

Comparisons with required sections:

Req'd

Provided

Section Modulus: 30.84 in3 35.82 in3

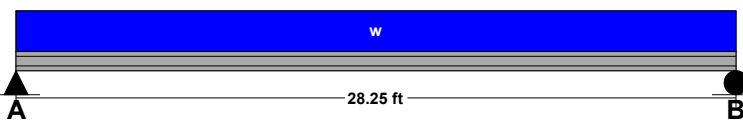
Area (Shear): 5.23 in2 18.69 in2

Moment of Inertia (deflection): 106.78 in4 205.95 in4

Moment: 3990 ft-lb 4634 ft-lb

Shear: 565 lb 2018 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 0 psf

Dead Load DL = 30 psf

Total Load TL = 30 psf

TL Adj. For Joist Spacing wT = 40 plf

Project: Schofield Evaluation

Location: J-1 40PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 69.8%

Controlling Factor: Moment / Depth Required 14.99 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 1.93 IN L/176

Dead Load 1.83 in

Total Load 3.76 IN L/90

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 642 lb 945 lb

Dead Load 626 lb 869 lb

Total Load 1268 lb 1814 lb

Bearing Length 1.25 in 1.79 in

SUPPORT LOADS

A

B

Live Load 482 plf 709 plf

Dead Load 470 plf 652 plf

Total Load 951 plf 1361 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 10054 ft-lb

15.82 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1814 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 60.82 in3 35.82 in3

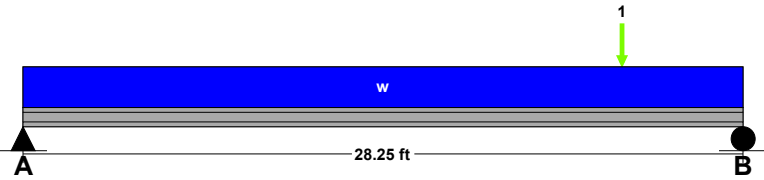
Area (Shear): 13.15 in2 18.69 in2

Moment of Inertia (deflection): 274.17 in4 205.95 in4

Moment: 10054 ft-lb 5921 ft-lb

Shear: -1814 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 30 psf

Dead Load DL = 30 psf

Total Load TL = 60 psf

TL Adj. For Joist Spacing wT = 80 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 343 plf

Dead Load ($\perp$ to Joists): D1 = 274 plf

Load Location X1 = 23.5 ft

Project: Schofield Evaluation

Location: J-1 50PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 86.4%

Controlling Factor: Moment / Depth Required 15.7 In.



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6/18/2024 9:23:47 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 2.29 IN L/148

Dead Load 1.83 in

Total Load 4.13 IN L/82

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 783 lb 1087 lb

Dead Load 626 lb 869 lb

Total Load 1409 lb 1956 lb

Bearing Length 1.39 in 1.93 in

SUPPORT LOADS

A

B

Live Load 587 plf 815 plf

Dead Load 470 plf 652 plf

Total Load 1057 plf 1467 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ = 625 psi

Controlling Moment: 11038 ft-lb

15.54 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1956 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 66.77 in³ 35.82 in³

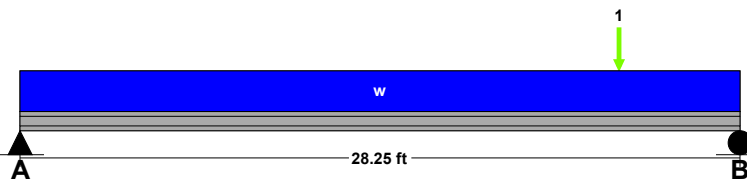
Area (Shear): 14.17 in² 18.69 in²

Moment of Inertia (deflection): 300.85 in⁴ 205.95 in⁴

Moment: 11038 ft-lb 5921 ft-lb

Shear: -1956 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 37.5 psf

Dead Load DL = 30 psf

Total Load TL = 67.5 psf

TL Adj. For Joist Spacing wT = 90 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 343 plf

Dead Load ($\perp$ to Joists): D1 = 274 plf

Load Location X1 = 23.5 ft

Project: Schofield Evaluation

Location: J-1 80PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 136.5%

Controlling Factor: Moment / Depth Required 17.69 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 3.39 IN L/100

Dead Load 1.83 in

Total Load 5.22 IN L/65

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1207 lb 1510 lb

Dead Load 626 lb 869 lb

Total Load 1833 lb 2379 lb

Bearing Length 1.81 in 2.34 in

SUPPORT LOADS

A

B

Live Load 905 plf 1133 plf

Dead Load 470 plf 652 plf

Total Load 1375 plf 1784 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ = 625 psi

Controlling Moment: 14004 ft-lb

15.26 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -2379 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 84.71 in3 35.82 in3

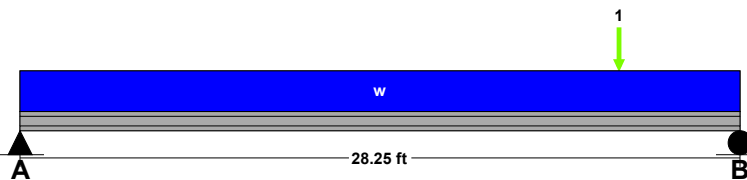
Area (Shear): 17.24 in2 18.69 in2

Moment of Inertia (deflection): 380.9 in4 205.95 in4

Moment: 14004 ft-lb 5921 ft-lb

Shear: -2379 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 60 psf

Dead Load DL = 30 psf

Total Load TL = 90 psf

TL Adj. For Joist Spacing wT = 120 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 343 plf

Dead Load ($\perp$ to Joists): D1 = 274 plf

Load Location X1 = 23.5 ft

Project: Schofield Evaluation

Location: J-1 0PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 12.1%

Controlling Factor: Moment / Depth Required 12.18 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS		Center
Live Load	0.63	IN L/541
Dead Load	1.83	in
Total Load	2.45	IN L/138
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS		A	B
Live Load	102	lb	507
Dead Load	626	lb	869
Total Load	728	lb	1376
Bearing Length	0.72	in	1.35

SUPPORT LOADS		A	B
Live Load	77	plf	380
Dead Load	470	plf	652
Total Load	546	plf	1032

MATERIAL PROPERTIES		Select Structural - Douglas-Fir-Larch	
		Base Values	Adjusted
Bending Stress:	Fb =	1500 psi	Fb' = 1984 psi
		Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv =	180 psi	Fv' = 207 psi
		Cd=1.15	
Modulus of Elasticity:	E =	1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' = 625 psi

Controlling Moment: 6640 ft-lb

18.36 Ft from left support of span 2 (Center Span)

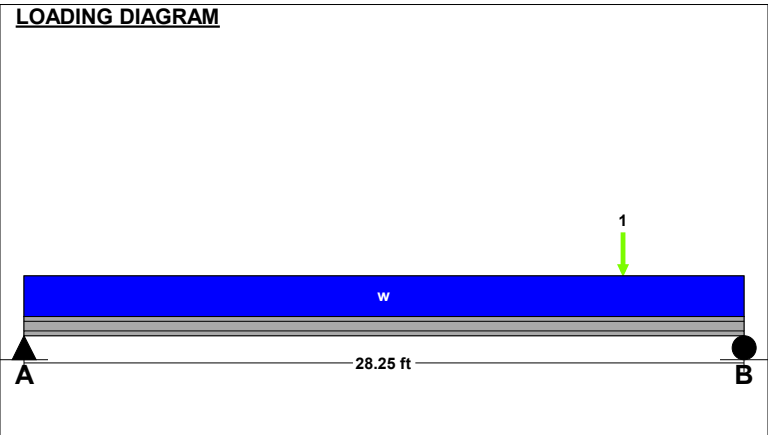
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1376 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	40.17 in3	35.82 in3
Area (Shear):	9.97 in2	18.69 in2
Moment of Inertia (deflection):	178.89 in4	205.95 in4
Moment:	6640 ft-lb	5921 ft-lb
Shear:	-1376 lb	2579 lb



JOIST DATA		Center
Span Length	28.25	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	0	ft
Floor sheathing applied to top of joists-top of joists fully braced.		
Floor Duration Factor	1.15	

JOIST LOADING		Center
Uniform Floor Loading		
Live Load	LL =	0 psf
Dead Load	DL =	30 psf
Total Load	TL =	30 psf
TL Adj. For Joist Spacing	wT =	40 plf
Wall Loading		
Wall One		
Live Load (⊥ to Joists):	L1 =	457 plf
Dead Load (⊥ to Joists):	D1 =	274 plf
Load Location	X1 =	23.5 ft

□ 2ND FLOOR C.2
I.1

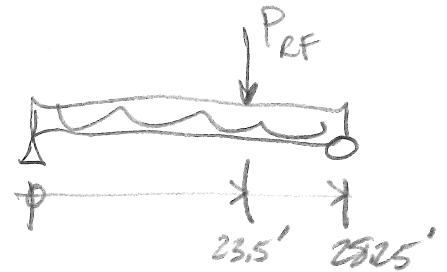
□ J-2 :

$l = 28'-3"$

$L = \text{VARIES}$

$D = 20 \text{ PSF} + 10 \text{ PSF PARTITION}$

$1\frac{5}{8} \times 11\frac{1}{2} @ 16" \text{ OC } F_b = 1500 \text{ psi}$



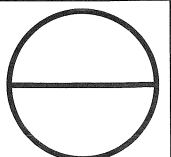
LL	IE
40 PSF	SEE J-1 ↓
50 PSF	
80 PSF	
0 PSF	

ROOF LOADING

$P_D = 230 \text{ plf}$

$P_S = 383 \text{ plf}$

	$0.75(LL + SL)$	IE	$C_D = 1.15$
40	$30 \text{ PSF} + 287 \text{ plf}$	1.66	FLEXURE
50	$37.5 + 287$	1.83	F
80	$60 + 287$	2.33	F
0	$0 + 383$	OK (1.07)	



Project: Schofield Evaluation

Location: J-2 40PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 66.4%

Controlling Factor: Moment / Depth Required 14.84 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS	Center	
Live Load	1.85	IN L/183
Dead Load	1.83	in
Total Load	3.69	IN L/92
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	629 lb	883 lb
Dead Load	626 lb	869 lb
Total Load	1255 lb	1752 lb
Bearing Length	1.24 in	1.73 in

SUPPORT LOADS	A	B
Live Load	472 plf	662 plf
Dead Load	470 plf	652 plf
Total Load	941 plf	1314 plf

MATERIAL PROPERTIES	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1984 psi
	Cd=1.15 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	207 psi
	Cd=1.15			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 9855 ft-lb

15.82 Ft from left support of span 2 (Center Span)

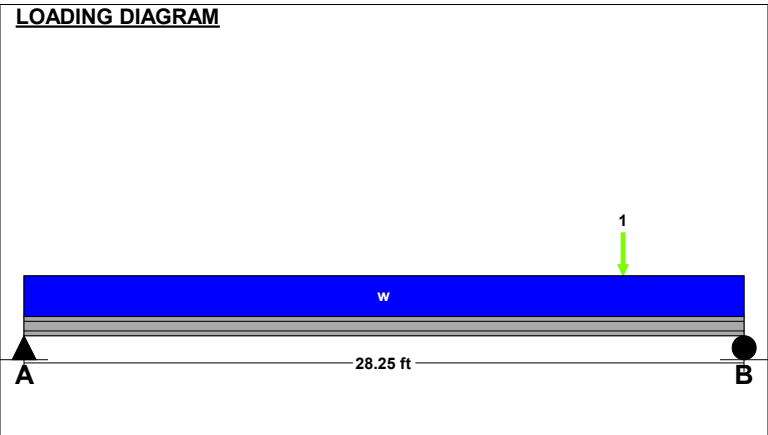
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1752 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	59.62 in3	35.82 in3
Area (Shear):	12.7 in2	18.69 in2
Moment of Inertia (deflection):	268.66 in4	205.95 in4
Moment:	9855 ft-lb	5921 ft-lb
Shear:	-1752 lb	2579 lb



JOIST DATA	Center
Span Length	28.25 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

<u>JOIST LOADING</u>			
Uniform Floor Loading		<u>Center</u>	
Live Load	LL =	30	psf
Dead Load	DL =	30	psf
Total Load	TL =	60	psf
TL Adj. For Joist Spacing wT =	80	plf	
Wall Loading			
Wall One			
Live Load (⊥ to Joists):	L1 =	287	plf
Dead Load (⊥ to Joists):	D1 =	274	plf
Load Location	X1 =	23.5	ft

Project: Schofield Evaluation

Location: J-2 50PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 83.1%

Controlling Factor: Moment / Depth Required 15.56 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 2.22 IN L/153

Dead Load 1.83 in

Total Load 4.05 IN L/84

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 771 lb 1025 lb

Dead Load 626 lb 869 lb

Total Load 1397 lb 1894 lb

Bearing Length 1.38 in 1.86 in

SUPPORT LOADS

A

B

Live Load 578 plf 769 plf

Dead Load 470 plf 652 plf

Total Load 1048 plf 1421 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 10843 ft-lb

15.54 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1893 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 65.59 in³ 35.82 in³

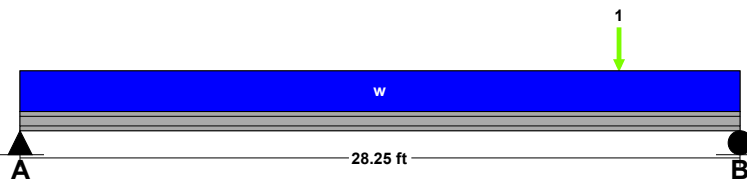
Area (Shear): 13.72 in² 18.69 in²

Moment of Inertia (deflection): 295.34 in⁴ 205.95 in⁴

Moment: 10843 ft-lb 5921 ft-lb

Shear: -1893 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 37.5 psf

Dead Load DL = 30 psf

Total Load TL = 67.5 psf

TL Adj. For Joist Spacing wT = 90 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 287 plf

Dead Load ($\perp$ to Joists): D1 = 274 plf

Load Location X1 = 23.5 ft

Project: Schofield Evaluation

Location: J-2 80PSF & SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 133.3%

Controlling Factor: Moment / Depth Required 17.56 In.



The Vitruvius Project, Inc.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 3.32 IN L/102

Dead Load 1.83 in

Total Load 5.15 IN L/66

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1194 lb 1448 lb

Dead Load 626 lb 869 lb

Total Load 1820 lb 2317 lb

Bearing Length 1.79 in 2.28 in

SUPPORT LOADS

A

B

Live Load 896 plf 1086 plf

Dead Load 470 plf 652 plf

Total Load 1365 plf 1738 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 13813 ft-lb

15.26 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -2317 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 83.56 in3 35.82 in3

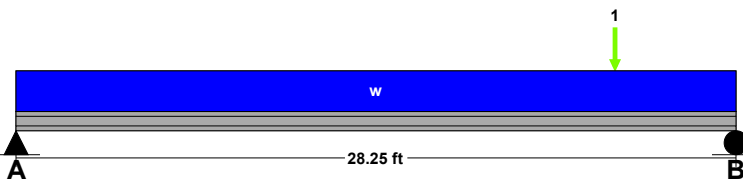
Area (Shear): 16.79 in2 18.69 in2

Moment of Inertia (deflection): 375.38 in4 205.95 in4

Moment: 13813 ft-lb 5921 ft-lb

Shear: -2317 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 60 psf

Dead Load DL = 30 psf

Total Load TL = 90 psf

TL Adj. For Joist Spacing wT = 120 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 287 plf

Dead Load ($\perp$ to Joists): D1 = 274 plf

Load Location X1 = 23.5 ft

□ 2ND FLOOR : C.2
I.1

□ J-3

$l = 23'$

$L = \text{VARIES}$

$D = 20 \text{ PSF} + 10 \text{ PSF PARTITION}$

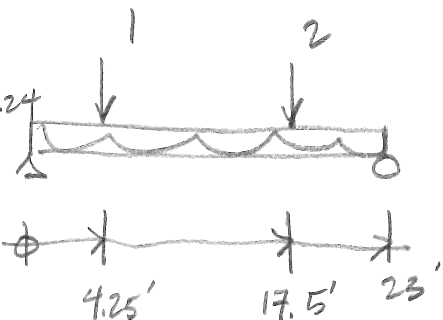
$P_{D1} = 197 \text{ pH}$

$P_{S1} = 329 \rightarrow 0.75 \text{ SL} = 247$

$P_{D2} = 179$

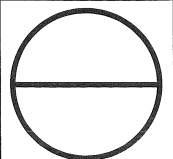
$P_{S2} = 298 \rightarrow 0.75 \text{ SL} = 224$

$1\frac{5}{8} \times 11\frac{1}{2} @ 16" \text{oc } F_b = 1500 \text{ psi}$



LL	I.E.
40	OK (1.20)
50	OK (1.37)
80	1.88 FLEXURE
0	OK (0.57)

0.75 (LL+SL)	I.E.
30 PSF	OK (1.36)
37.5	OK (1.47)
60	1.80 F
0	OK (1.00)



Project: Schofield Evaluation

Location: J-3 40 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 19.9%

Controlling Factor: Moment / Depth Required 12.59 In.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 0.86 IN L/322

Dead Load 0.64 in

Total Load 1.50 IN L/184

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 613 lb 613 lb

Dead Load 460 lb 460 lb

Total Load 1073 lb 1073 lb

Bearing Length 1.06 in 1.06 in

SUPPORT LOADS

A

B

Live Load 460 plf 460 plf

Dead Load 345 plf 345 plf

Total Load 805 plf 805 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1725 psi
	Cd=1.00 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 180 psi
	Cd=1.00	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. $\perp$ to Grain:	Fc - $\perp$ = 625 psi	Fc - $\perp$ = 625 psi

Controlling Moment: 6172 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1073 lb

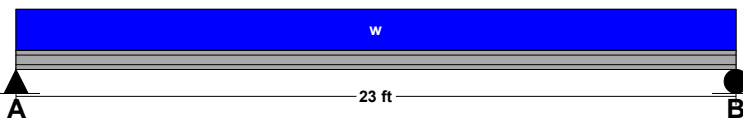
At right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	42.93 in3	35.82 in3
Area (Shear):	8.94 in2	18.69 in2
Moment of Inertia (deflection):	134.46 in4	205.95 in4
Moment:	6172 ft-lb	5149 ft-lb
Shear:	-1073 lb	2243 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 40 psf
Dead Load	DL = 30 psf
Total Load	TL = 70 psf
TL Adj. For Joist Spacing wT =	93.3 plf

Project: Schofield Evaluation

Location: J-3 50 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 37.0%

Controlling Factor: Moment / Depth Required 13.46 In.



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6/18/2024 10:14:46 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

	Center	
Live Load	1.07	IN L/257
Dead Load	0.64	in
Total Load	1.72	IN L/161
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS

	A	B
Live Load	767 lb	767 lb
Dead Load	460 lb	460 lb
Total Load	1227 lb	1227 lb
Bearing Length	1.21 in	1.21 in

SUPPORT LOADS

	A	B
Live Load	575 plf	575 plf
Dead Load	345 plf	345 plf
Total Load	920 plf	920 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

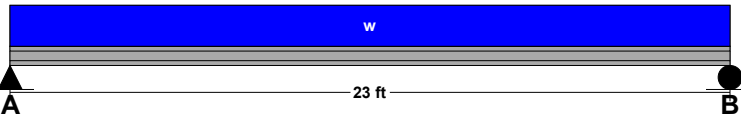
	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1725 psi
	Cd=1.00 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	180 psi
	Cd=1.00			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 7053 ft-lb
11.5 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1227 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	49.07 in3	35.82 in3
Area (Shear):	10.22 in2	18.69 in2
Moment of Inertia (deflection):	153.66 in4	205.95 in4
Moment:	7053 ft-lb	5149 ft-lb
Shear:	1227 lb	2243 lb

LOADING DIAGRAM



JOIST DATA

	Center
Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.00

JOIST LOADING

Uniform Floor Loading	Center
Live Load	LL = 50 psf
Dead Load	DL = 30 psf
Total Load	TL = 80 psf
TL Adj. For Joist Spacing wT =	106.7 plf

Project: Schofield Evaluation

Location: J-3 80 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 88.4%

Controlling Factor: Moment / Depth Required 15.78 In.

The Vitruvius Project, Inc.



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6/18/2024 10:15:28 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 1.72 IN L/161

Dead Load 0.64 in

Total Load 2.36 IN L/117

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1227 lb 1227 lb

Dead Load 460 lb 460 lb

Total Load 1687 lb 1687 lb

Bearing Length 1.66 in 1.66 in

SUPPORT LOADS

A

B

Live Load 920 plf 920 plf

Dead Load 345 plf 345 plf

Total Load 1265 plf 1265 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1725 psi
	Cd=1.00 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 180 psi
	Cd=1.00	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥ = 625 psi

Controlling Moment: 9698 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1687 lb

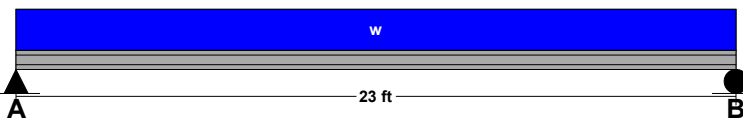
At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	67.47 in3	35.82 in3
Area (Shear):	14.06 in2	18.69 in2
Moment of Inertia (deflection):	211.29 in4	205.95 in4
Moment:	9698 ft-lb	5149 ft-lb
Shear:	1687 lb	2243 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 80 psf
Dead Load	DL = 30 psf
Total Load	TL = 110 psf
TL Adj. For Joist Spacing wT =	146.7 plf

Project: Schofield Evaluation

Location: J-3 0 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Adequate By: 75.2%

Controlling Factor: Moment

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6/18/2024 10:16:08 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 0.00 IN L/∞

Dead Load 0.64 in

Total Load 0.64 IN L/429

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 0 lb 0 lb

Dead Load 460 lb 460 lb

Total Load 460 lb 460 lb

Bearing Length 0.45 in 0.45 in

SUPPORT LOADS

A

B

Live Load 0 plf 0 plf

Dead Load 345 plf 345 plf

Total Load 345 plf 345 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1553 psi
	Cd=0.90 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 162 psi
	Cd=0.90	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥ = 625 psi

Controlling Moment: 2645 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by dead loads only on all span(s).

Controlling Shear: -460 lb

At right support of span 2 (Center Span)

Created by dead loads only on all span(s).

Comparisons with required sections:

Req'd

Provided

Section Modulus: 20.44 in3 35.82 in3

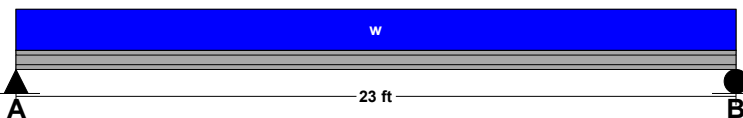
Area (Shear): 4.26 in2 18.69 in2

Moment of Inertia (deflection): 57.62 in4 205.95 in4

Moment: 2645 ft-lb 4634 ft-lb

Shear: -460 lb 2018 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 23 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 0 psf

Dead Load DL = 30 psf

Total Load TL = 30 psf

TL Adj. For Joist Spacing wT = 40 plf

Project: Schofield Evaluation

Location: J-3 40 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 35.6%

Controlling Factor: Moment / Depth Required 13.39 In.



The Vitruvius Project, Inc.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 1.06 IN L/260

Dead Load 0.98 in

Total Load 2.04 IN L/136

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 800 lb 748 lb

Dead Load 731 lb 690 lb

Total Load 1531 lb 1438 lb

Bearing Length 1.51 in 1.42 in

SUPPORT LOADS

A

B

Live Load 600 plf 561 plf

Dead Load 548 plf 518 plf

Total Load 1148 plf 1079 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. $\perp$ to Grain:	Fc - $\perp$ = 625 psi	Fc - $\perp$ = 625 psi

Controlling Moment: 8028 ft-lb

11.73 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1531 lb

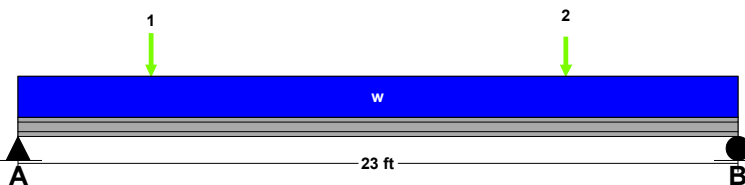
At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	48.56 in ³	35.82 in ³
Area (Shear):	11.09 in ²	18.69 in ²
Moment of Inertia (deflection):	182.33 in ⁴	205.95 in ⁴
Moment:	8028 ft-lb	5921 ft-lb
Shear:	1531 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 30 psf
Dead Load	DL = 30 psf
Total Load	TL = 60 psf
TL Adj. For Joist Spacing	wT = 80 plf

Wall Loading

Wall One	
Live Load ($\perp$ to Joists):	L1 = 247 plf
Dead Load ($\perp$ to Joists):	D1 = 197 plf
Load Location	X1 = 4.25 ft
Wall Two	
Live Load ($\perp$ to Joists):	L2 = 224 plf
Dead Load ($\perp$ to Joists):	D2 = 179 plf
Load Location	X2 = 17.5 ft

Project: Schofield Evaluation

Location: J-3 50 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 46.7%

Controlling Factor: Moment / Depth Required 13.93 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS	Center	
Live Load	1.22	IN L/226
Dead Load	0.98	in
Total Load	2.20	IN L/126
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	915 lb	863 lb
Dead Load	731 lb	690 lb
Total Load	1646 lb	1553 lb
Bearing Length	1.62 in	1.53 in

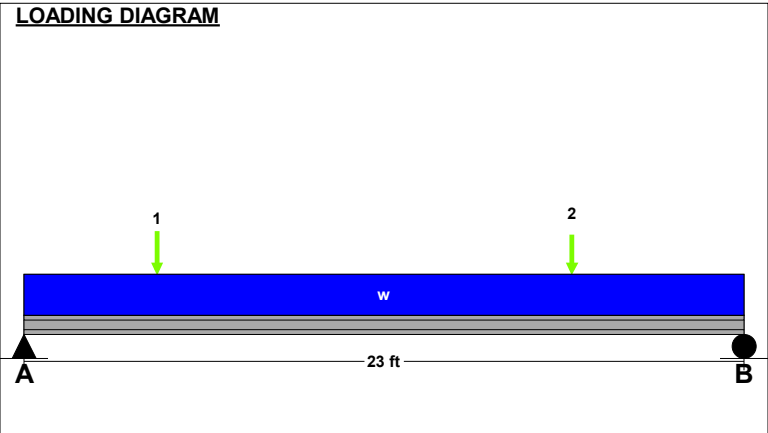
SUPPORT LOADS	A	B
Live Load	686 plf	647 plf
Dead Load	548 plf	518 plf
Total Load	1235 plf	1165 plf

MATERIAL PROPERTIES	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1984 psi
	Cd=1.15 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	207 psi
	Cd=1.15			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 8689 ft-lb
11.73 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1646 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	52.56 in3	35.82 in3
Area (Shear):	11.93 in2	18.69 in2
Moment of Inertia (deflection):	196.73 in4	205.95 in4
Moment:	8689 ft-lb	5921 ft-lb
Shear:	1646 lb	2579 lb



JOIST DATA	Center
Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING	Center
Uniform Floor Loading	
Live Load	LL = 37.5 psf
Dead Load	DL = 30 psf
Total Load	TL = 67.5 psf
TL Adj. For Joist Spacing	wT = 90 plf
Wall Loading	
Wall One	
Live Load (⊥ to Joists):	L1 = 247 plf
Dead Load (⊥ to Joists):	D1 = 197 plf
Load Location	X1 = 4.25 ft
Wall Two	
Live Load (⊥ to Joists):	L2 = 224 plf
Dead Load (⊥ to Joists):	D2 = 179 plf
Load Location	X2 = 17.5 ft

Project: Schofield Evaluation

Location: J-3 80 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 80.2%

Controlling Factor: Moment / Depth Required 15.44 In.



The Vitruvius Project, Inc.

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS	Center	
Live Load	1.70	IN L/162
Dead Load	0.98	in
Total Load	2.68	IN L/103
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	1260 lb	1208 lb
Dead Load	731 lb	690 lb
Total Load	1991 lb	1898 lb
Bearing Length	1.96 in	1.87 in

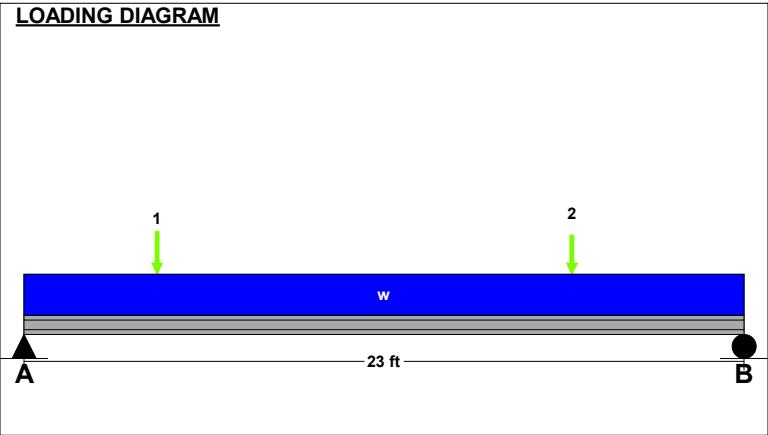
SUPPORT LOADS	A	B
Live Load	945 plf	906 plf
Dead Load	548 plf	518 plf
Total Load	1493 plf	1424 plf

MATERIAL PROPERTIES	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1984 psi
	Cd=1.15 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	207 psi
	Cd=1.15			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 10672 ft-lb
11.73 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1991 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	64.56 in3	35.82 in3
Area (Shear):	14.43 in2	18.69 in2
Moment of Inertia (deflection):	239.95 in4	205.95 in4
Moment:	10672 ft-lb	5921 ft-lb
Shear:	1991 lb	2579 lb



JOIST DATA	Center
Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

<u>JOIST LOADING</u>		
Uniform Floor Loading		<u>Center</u>
Live Load	LL =	60 psf
Dead Load	DL =	30 psf
Total Load	TL =	90 psf
TL Adj. For Joist Spacing	wT =	120 plf
Wall Loading		
Wall One		
Live Load ($\perp$ to Joists):	L1 =	247 plf
Dead Load ($\perp$ to Joists):	D1 =	197 plf
Load Location	X1 =	4.25 ft
Wall Two		
Live Load ($\perp$ to Joists):	L2 =	224 plf
Dead Load ($\perp$ to Joists):	D2 =	179 plf
Load Location	X2 =	17.5 ft

Project: Schofield Evaluation

Location: J-3 0 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Adequate By: 0.5%

Controlling Factor: Moment



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6/18/2024 10:22:39 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 0.55 IN L/498

Dead Load 0.98 in

Total Load 1.53 IN L/180

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 453 lb 383 lb

Dead Load 731 lb 690 lb

Total Load 1184 lb 1073 lb

Bearing Length 1.17 in 1.06 in

SUPPORT LOADS

A

B

Live Load 340 plf 287 plf

Dead Load 548 plf 518 plf

Total Load 888 plf 805 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥' = 625 psi

Controlling Moment: 5890 ft-lb

11.96 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1184 lb

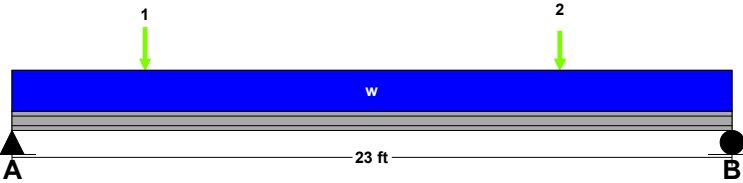
At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	35.63 in3	35.82 in3
Area (Shear):	8.58 in2	18.69 in2
Moment of Inertia (deflection):	137.05 in4	205.95 in4
Moment:	5890 ft-lb	5921 ft-lb
Shear:	1184 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 0 psf
Dead Load	DL = 30 psf
Total Load	TL = 30 psf
TL Adj. For Joist Spacing	wT = 40 plf

Wall Loading

Wall One	
Live Load (⊥ to Joists):	L1 = 329 plf
Dead Load (⊥ to Joists):	D1 = 197 plf
Load Location	X1 = 4.25 ft
Wall Two	
Live Load (⊥ to Joists):	L2 = 298 plf
Dead Load (⊥ to Joists):	D2 = 179 plf
Load Location	X2 = 17.5 ft

□ 2ND FLOOR C.2
I.1

□ J-4

15/8 x 11 1/2 @ 16" oc $F_b = 1500 \text{ psi}$

$l = 23'$

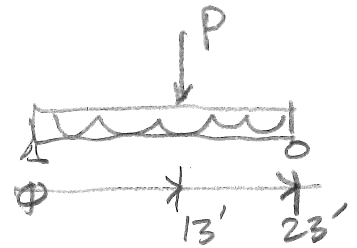
$L = \text{VARIES}$

$D = 20 \text{ PSF} + 10 \text{ PSF PARTITION}$

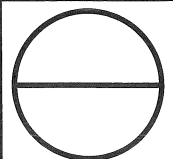
RF

$P_D = 194 \text{ plf}$

$P_S = 323 \text{ plf} \rightarrow 0.75 S = 242 \text{ plf}$



LL	IE	0.75 (LL + SL)	IE
40	SEE J-3	30	OK (1.43)
50		37.5	1.54 FLEXURE
80		60	1.87 F
0		0	OK (1.09)



Project: Schofield Evaluation

Location: J-4 40 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 43.0%

Controlling Factor: Moment / Depth Required 13.75 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 1.00 IN L/277

Dead Load 0.93 in

Total Load 1.92 IN L/144

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 600 lb 642 lb

Dead Load 572 lb 606 lb

Total Load 1172 lb 1248 lb

Bearing Length 1.15 in 1.23 in

SUPPORT LOADS

A

B

Live Load 450 plf 482 plf

Dead Load 429 plf 455 plf

Total Load 879 plf 936 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥ = 625 psi

Controlling Moment: 8469 ft-lb

12.88 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1249 lb

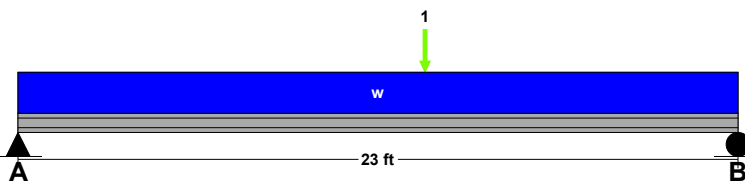
At right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	51.23 in3	35.82 in3
Area (Shear):	9.05 in2	18.69 in2
Moment of Inertia (deflection):	172.12 in4	205.95 in4
Moment:	8469 ft-lb	5921 ft-lb
Shear:	-1249 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 30 psf
Dead Load	DL = 30 psf
Total Load	TL = 60 psf
TL Adj. For Joist Spacing wT =	80 plf

Wall Loading

Wall One	
Live Load (⊥ to Joists): L1 =	242 plf
Dead Load (⊥ to Joists): D1 =	194 plf
Load Location	X1 = 13 ft

Project: Schofield Evaluation

Location: J-4 50 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 54.0%

Controlling Factor: Moment / Depth Required 14.27 In.



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StruCalc Version 11.1.8.0

6/18/2024 10:44:52 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS	Center	
Live Load	1.16	IN L/239
Dead Load	0.93	in
Total Load	2.08	IN L/133
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	715 lb	757 lb
Dead Load	572 lb	606 lb
Total Load	1287 lb	1363 lb
Bearing Length	1.27 in	1.34 in

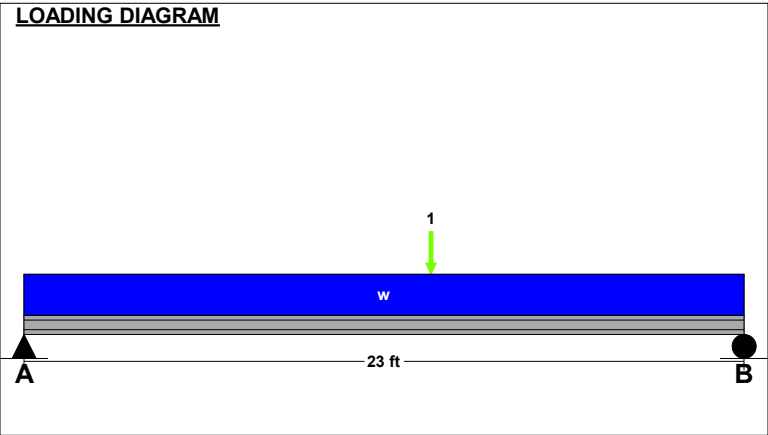
SUPPORT LOADS	A	B
Live Load	536 plf	568 plf
Dead Load	429 plf	455 plf
Total Load	965 plf	1022 plf

MATERIAL PROPERTIES	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1984 psi
	Cd=1.15 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	207 psi
	Cd=1.15			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 9121 ft-lb
12.88 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1364 lb
At right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	55.17 in3	35.82 in3
Area (Shear):	9.88 in2	18.69 in2
Moment of Inertia (deflection):	186.52 in4	205.95 in4
Moment:	9121 ft-lb	5921 ft-lb
Shear:	-1364 lb	2579 lb



JOIST DATA	Center
Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

<u>JOIST LOADING</u>			
Uniform Floor Loading		<u>Center</u>	
Live Load	LL =	37.5	psf
Dead Load	DL =	30	psf
Total Load	TL =	67.5	psf
TL Adj. For Joist Spacing wT =	90	plf	
Wall Loading			
Wall One			
Live Load (⊥ to Joists):	L1 =	242	plf
Dead Load (⊥ to Joists):	D1 =	194	plf
Load Location	X1 =	13	ft

Project: Schofield Evaluation

Location: J-4 80 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 87.1%

Controlling Factor: Moment / Depth Required 15.73 In.

The Vitruvius Project, Inc.



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StruCalc Version 11.1.8.0

6/18/2024 10:45:14 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 1.64 IN L/168

Dead Load 0.93 in

Total Load 2.57 IN L/108

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1060 lb 1102 lb

Dead Load 572 lb 606 lb

Total Load 1632 lb 1708 lb

Bearing Length 1.61 in 1.68 in

SUPPORT LOADS

A

B

Live Load 795 plf 827 plf

Dead Load 429 plf 455 plf

Total Load 1224 plf 1281 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi	Fb' = 1984 psi
	Cd=1.15 CF=1.00 Cr=1.15	
Shear Stress:	Fv = 180 psi	Fv' = 207 psi
	Cd=1.15	
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. $\perp$ to Grain:	Fc $\perp$ = 625 psi	Fc $\perp$ = 625 psi

Controlling Moment: 11076 ft-lb

12.88 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1709 lb

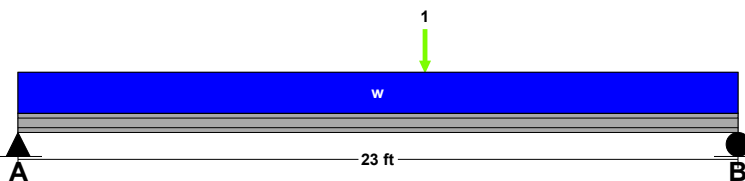
At right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

	Req'd	Provided
Section Modulus:	67 in ³	35.82 in ³
Area (Shear):	12.38 in ²	18.69 in ²
Moment of Inertia (deflection):	229.71 in ⁴	205.95 in ⁴
Moment:	11076 ft-lb	5921 ft-lb
Shear:	-1709 lb	2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load	LL = 60 psf
Dead Load	DL = 30 psf
Total Load	TL = 90 psf
TL Adj. For Joist Spacing wT	= 120 plf

Wall Loading

Wall One	
Live Load ($\perp$ to Joists): L1	= 242 plf
Dead Load ($\perp$ to Joists): D1	= 194 plf
Load Location	X1 = 13 ft

Project: Schofield Evaluation

Location: J-4 0 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 9.2%

Controlling Factor: Moment / Depth Required 12.02 In.



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StruCalc Version 11.1.8.0

6/18/2024 10:49:55 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS	Center	
Live Load	0.47	IN L/586
Dead Load	0.93	in
Total Load	1.40	IN L/198
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	187 lb	243 lb
Dead Load	572 lb	606 lb
Total Load	759 lb	849 lb
Bearing Length	0.75 in	0.84 in

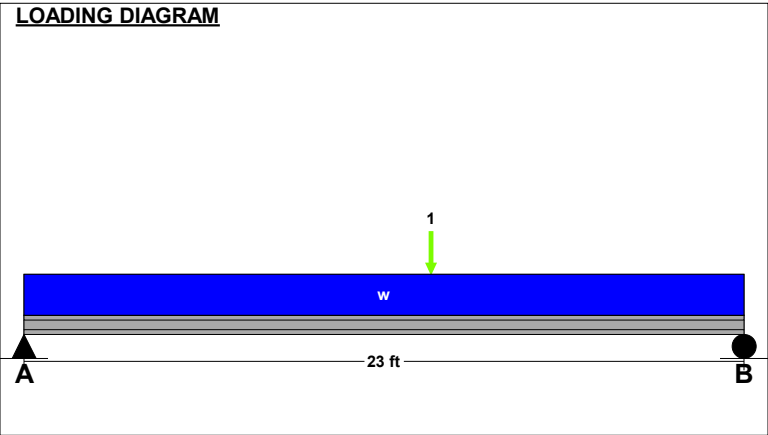
SUPPORT LOADS	A	B
Live Load	140 plf	182 plf
Dead Load	429 plf	455 plf
Total Load	569 plf	637 plf

MATERIAL PROPERTIES	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1984 psi
	Cd=1.15 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	207 psi
	Cd=1.15			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 6467 ft-lb
12.88 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -850 lb
At right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	39.12 in3	35.82 in3
Area (Shear):	6.16 in2	18.69 in2
Moment of Inertia (deflection):	125.1 in4	205.95 in4
Moment:	6467 ft-lb	5921 ft-lb
Shear:	-850 lb	2579 lb



JOIST DATA	Center
Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING	Center
Uniform Floor Loading	
Live Load	LL = 0 psf
Dead Load	DL = 30 psf
Total Load	TL = 30 psf
TL Adj. For Joist Spacing wT =	40 plf
Wall Loading	
Wall One	
Live Load (⊥ to Joists): L1 =	323 plf
Dead Load (⊥ to Joists): D1 =	194 plf
Load Location	X1 = 13 ft

□ 2ND FLOOR C.2
I.1

ΔJ-5 @ KINDREID

$1\frac{5}{8} \times 11\frac{1}{2}$ @ $16'' \phi$ $F_b = 1500 \text{ psi}$

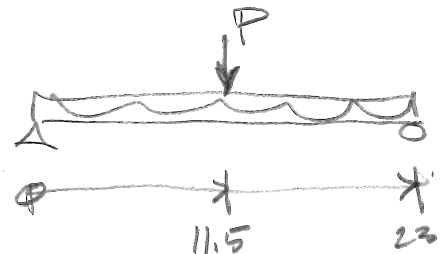
$l = 23'$

$L = \text{VARIES}$

$D = 20 \text{ PSF} + 10 \text{ PSF PARTITION}$

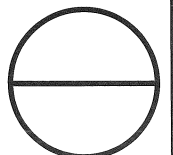
$P_D = 183 \text{ plf}$

$P_S = 305 \text{ plf} \rightarrow 0.75S = 229 \text{ plf}$



LL	IE
40	SEE I J-3
50	
80	
0	

$0.75 (LL + SL)$	IE
30	OK (1.43)
37.5	1.54 FLEXURE
60	1.87 F
0	OK (1.08)



Project: Schofield Evaluation

Location: J-5 40 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 42.7%

Controlling Factor: Moment / Depth Required 13.74 In.

The Vitruvius Project, Inc.



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6/18/2024 10:51:12 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS

Center

Live Load 0.99 IN L/280

Dead Load 0.92 in

Total Load 1.90 IN L/145

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 613 lb 613 lb

Dead Load 582 lb 582 lb

Total Load 1195 lb 1195 lb

Bearing Length 1.18 in 1.18 in

SUPPORT LOADS

A

B

Live Load 460 plf 460 plf

Dead Load 437 plf 437 plf

Total Load 896 plf 896 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1984 psi

Cd=1.15 CF=1.00 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 207 psi

Cd=1.15

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ = 625 psi

Controlling Moment: 8449 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1195 lb

At right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 51.11 in³ 35.82 in³

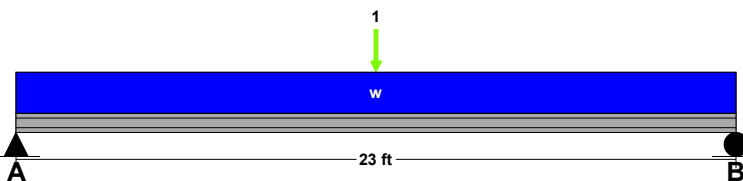
Area (Shear): 8.66 in² 18.69 in²

Moment of Inertia (deflection): 170.3 in⁴ 205.95 in⁴

Moment: 8449 ft-lb 5921 ft-lb

Shear: -1195 lb 2579 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 23 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.15

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 30 psf

Dead Load DL = 30 psf

Total Load TL = 60 psf

TL Adj. For Joist Spacing wT = 80 plf

Wall Loading

Wall One

Live Load ($\perp$ to Joists): L1 = 229 plf

Dead Load ($\perp$ to Joists): D1 = 183 plf

Load Location X1 = 11.5 ft

Project: Schofield Evaluation

Location: J-5 50 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 53.9%

Controlling Factor: Moment / Depth Required 14.26 In.



The Vitruvius Project, Inc.

StruCalc Version 11.1.8.0

6/18/2024 10:51:45 AM

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS	Center	
Live Load	1.15	IN L/241
Dead Load	0.92	in
Total Load	2.06	IN L/134
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	728 lb	728 lb
Dead Load	582 lb	582 lb
Total Load	1310 lb	1310 lb
Bearing Length	1.29 in	1.29 in

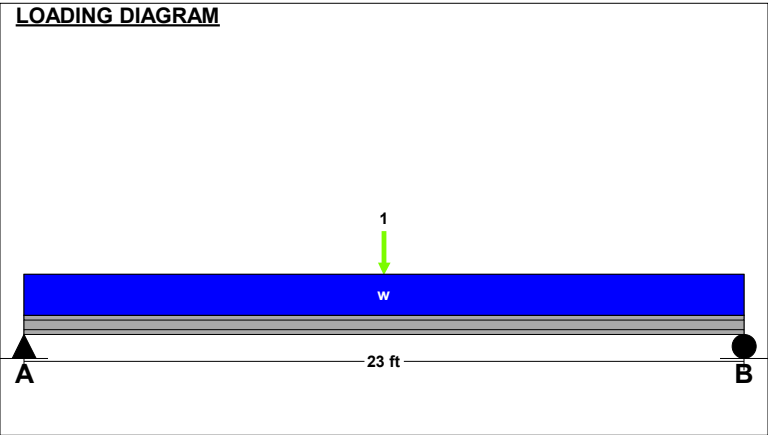
SUPPORT LOADS	A	B
Live Load	546 plf	546 plf
Dead Load	437 plf	437 plf
Total Load	983 plf	983 plf

MATERIAL PROPERTIES	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1984 psi
	Cd=1.15 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	207 psi
	Cd=1.15			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 9110 ft-lb
11.5 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1310 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	55.11 in3	35.82 in3
Area (Shear):	9.49 in2	18.69 in2
Moment of Inertia (deflection):	184.71 in4	205.95 in4
Moment:	9110 ft-lb	5921 ft-lb
Shear:	1310 lb	2579 lb



JOIST DATA	Center
Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING	Center
Uniform Floor Loading	
Live Load	LL = 37.5 psf
Dead Load	DL = 30 psf
Total Load	TL = 67.5 psf
TL Adj. For Joist Spacing wT =	90 plf
Wall Loading	
Wall One	
Live Load (⊥ to Joists): L1 =	229 plf
Dead Load (⊥ to Joists): D1 =	183 plf
Load Location	X1 = 11.5 ft

Project: Schofield Evaluation

Location: J-5 80 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 87.4%

Controlling Factor: Moment / Depth Required 15.74 In.



The Vitruvius Project, Inc.

StruCalc Version 11.1.8.0

6/18/2024 10:52:21 AM

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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS	Center	
Live Load	1.63	IN L/169
Dead Load	0.92	in
Total Load	2.55	IN L/108
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	1073 lb	1073 lb
Dead Load	582 lb	582 lb
Total Load	1655 lb	1655 lb
Bearing Length	1.63 in	1.63 in

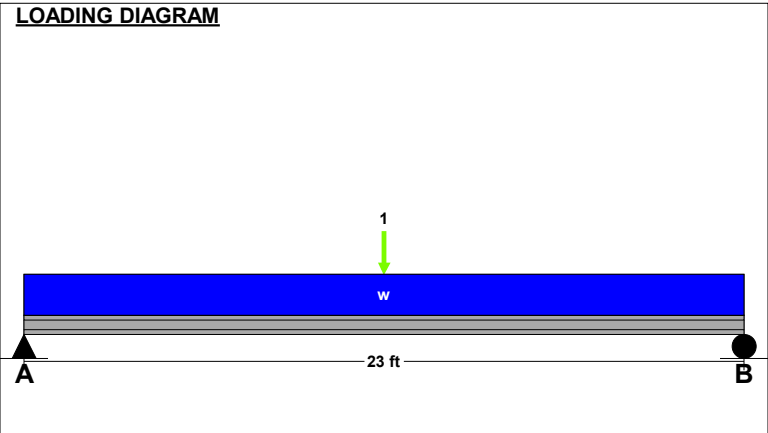
SUPPORT LOADS	A	B
Live Load	805 plf	805 plf
Dead Load	437 plf	437 plf
Total Load	1241 plf	1241 plf

MATERIAL PROPERTIES	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1984 psi
	Cd=1.15 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	207 psi
	Cd=1.15			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 11094 ft-lb
11.5 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1655 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	67.11 in3	35.82 in3
Area (Shear):	11.99 in2	18.69 in2
Moment of Inertia (deflection):	227.93 in4	205.95 in4
Moment:	11094 ft-lb	5921 ft-lb
Shear:	1655 lb	2579 lb



JOIST DATA	Center
Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

<u>JOIST LOADING</u>			
Uniform Floor Loading		<u>Center</u>	
Live Load	LL =	60	psf
Dead Load	DL =	30	psf
Total Load	TL =	90	psf
TL Adj. For Joist Spacing wT =	120	plf	
Wall Loading			
Wall One			
Live Load (⊥ to Joists):	L1 =	229	plf
Dead Load (⊥ to Joists):	D1 =	183	plf
Load Location	X1 =	11.5	ft

Project: Schofield Evaluation

Location: J-5 0 PSF AND SNOW

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 11.5 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 7.9%

Controlling Factor: Moment / Depth Required 11.94 In.



The Vitruvius Project, Inc.

StruCalc Version 11.1.8.0

6/18/2024 10:50:31 AM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

DEFLECTIONS	Center	
Live Load	0.46	IN L/606
Dead Load	0.92	in
Total Load	1.37	IN L/201
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS	A	B
Live Load	203 lb	203 lb
Dead Load	582 lb	582 lb
Total Load	785 lb	785 lb
Bearing Length	0.77 in	0.77 in

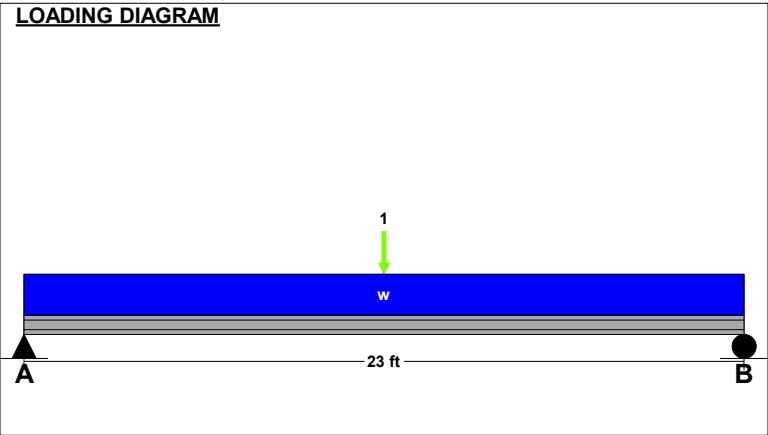
SUPPORT LOADS	A	B
Live Load	152 plf	152 plf
Dead Load	437 plf	437 plf
Total Load	589 plf	589 plf

MATERIAL PROPERTIES	Base Values		Adjusted	
Bending Stress:	Fb =	1500 psi	Fb' =	1984 psi
	Cd=1.15 CF=1.00 Cr=1.15			
Shear Stress:	Fv =	180 psi	Fv' =	207 psi
	Cd=1.15			
Modulus of Elasticity:	E =	1900 ksi	E' =	1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 6386 ft-lb
11.5 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -785 lb
At right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	38.63 in3	35.82 in3
Area (Shear):	5.69 in2	18.69 in2
Moment of Inertia (deflection):	122.83 in4	205.95 in4
Moment:	6386 ft-lb	5921 ft-lb
Shear:	-785 lb	2579 lb



JOIST DATA	Center
Span Length	23 ft
Unbraced Length-Top	0 ft
Unbraced Length-Bottom	0 ft
Floor sheathing applied to top of joists-top of joists fully braced.	
Floor Duration Factor	1.15

JOIST LOADING	Center
Uniform Floor Loading	
Live Load	LL = 0 psf
Dead Load	DL = 30 psf
Total Load	TL = 30 psf
TL Adj. For Joist Spacing wT =	40 plf
Wall Loading	
Wall One	
Live Load (⊥ to Joists): L1 =	305 plf
Dead Load (⊥ to Joists): D1 =	183 plf
Load Location	X1 = 11.5 ft

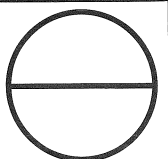
□ GROUND FLOOR C.4
I.1

□ 1J-1 $1\frac{5}{8} \times 15\frac{1}{4} @ 16"oc$ $F_b = 1500 \text{ psi}$
 $l = 28'-3"$ ASSUMED
 D = 20PSF BASE LINE
 L = VARIES

LL	I.E.	
40PSF	0.98	FLEXURE
65	1.39	✓
80	1.63	✓
100	1.94	✓

□ 1J-2 $1\frac{5}{8} \times 15\frac{1}{4} @ 16"oc$ $F_b = 1500 \text{ psi}$
 $l = 23'$
 D = 20PSF
 L = VARIES

LL	I.E.	
40		
65		
80	1.08	FLEXURE
100	1.30	FLEXURE



Project: Schofield Evaluation

Location: 1J-1 65 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 15.25 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 38.7%

Controlling Factor: Moment / Depth Required 17.96 In.



The Vitruvius Project, Inc.

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StruCalc Version 11.1.8.0

6/18/2024 2:06:52 PM

CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS

Center

Live Load 1.36 IN L/249

Dead Load 0.42 in

Total Load 1.78 IN L/190

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1224 lb 1224 lb

Dead Load 377 lb 377 lb

Total Load 1601 lb 1601 lb

Bearing Length 1.58 in 1.58 in

SUPPORT LOADS

A

B

Live Load 918 plf 918 plf

Dead Load 283 plf 283 plf

Total Load 1201 plf 1201 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1553 psi

Cd=1.00 CF=0.90 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc $\perp$ = 625 psi Fc $\perp$ ' = 625 psi

Controlling Moment: 11306 ft-lb

14.12 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1601 lb

28.0 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 87.39 in³ 62.99 in³

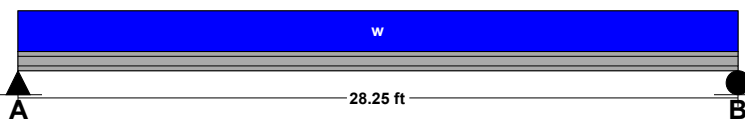
Area (Shear): 13.34 in² 24.78 in²

Moment of Inertia (deflection): 302.53 in⁴ 480.27 in⁴

Moment: 11306 ft-lb 8149 ft-lb

Shear: -1601 lb 2974 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 28.25 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 65 psf

Dead Load DL = 20 psf

Total Load TL = 85 psf

TL Adj. For Joist Spacing wT = 113.3 plf

Project: Schofield Evaluation

Location: 1J-1 80 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 15.25 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 63.2%

Controlling Factor: Moment / Depth Required 19.48 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS		Center
Live Load	1.67	IN L/202
Dead Load	0.42	in
Total Load	2.09	IN L/162
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS		A	B
Live Load	1507 lb	1507 lb	
Dead Load	377 lb	377 lb	
Total Load	1884 lb	1884 lb	
Bearing Length	1.85 in	1.85 in	

SUPPORT LOADS		A	B
Live Load	1130 plf	1130 plf	
Dead Load	283 plf	283 plf	
Total Load	1413 plf	1413 plf	

MATERIAL PROPERTIES

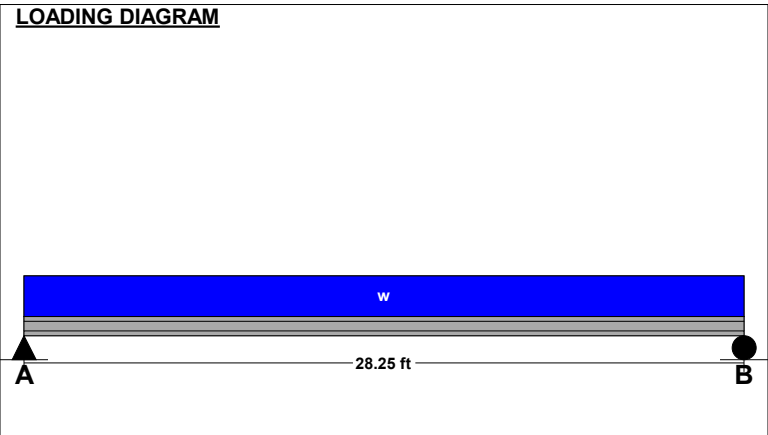
Select Structural - Douglas-Fir-Larch

	Base Values	Adjusted
Bending Stress:	Fb = 1500 psi Cd=1.00 CF=0.90 Cr=1.15	Fb' = 1553 psi
Shear Stress:	Fv = 180 psi Cd=1.00	Fv' = 180 psi
Modulus of Elasticity:	E = 1900 ksi	E' = 1900 ksi
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥' = 625 psi

Controlling Moment: 13301 ft-lb
14.12 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1883 lb
At left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	102.81 in3	62.99 in3
Area (Shear):	15.69 in2	24.78 in2
Moment of Inertia (deflection):	355.92 in4	480.27 in4
Moment:	13301 ft-lb	8149 ft-lb
Shear:	1883 lb	2974 lb



JOIST DATA		Center
Span Length	28.25	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	0	ft
Floor sheathing applied to top of joists-top of joists fully braced.		
Floor Duration Factor	1.00	

JOIST LOADING		Center
Uniform Floor Loading		
Live Load	LL =	80 psf
Dead Load	DL =	20 psf
Total Load	TL =	100 psf
TL Adj. For Joist Spacing wT =	133.3	plf

Project: Schofield Evaluation

Location: 1J-1 100 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 15.25 IN x 28.25 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 95.9%

Controlling Factor: Moment / Depth Required 21.34 In.



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CAUTIONS

The design dead load deflection exceeds the default maximum of 1/4" on spans (2).

Solid Sawn Dimensional Lumber in lengths of greater than 24 feet are not available without a special order.

DEFLECTIONS		Center
Live Load	2.09	IN L/162
Dead Load	0.42	in
Total Load	2.51	IN L/135
Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120		

REACTIONS		A	B
Live Load	1883	lb	1883 lb
Dead Load	377	lb	377 lb
Total Load	2260	lb	2260 lb
Bearing Length	2.23	in	2.23 in

SUPPORT LOADS		A	B
Live Load	1412	plf	1412 plf
Dead Load	283	plf	283 plf
Total Load	1695	plf	1695 plf

MATERIAL PROPERTIES		Base Values	Adjusted
Bending Stress:	Fb =	1500 psi	Fb' = 1553 psi
	Cd=1.00 CF=0.90 Cr=1.15		
Shear Stress:	Fv =	180 psi	Fv' = 180 psi
	Cd=1.00		
Modulus of Elasticity:	E =	1900 ksi	E' = 1900 ksi
	Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi	Fc - ⊥' = 625 psi

Controlling Moment: 15961 ft-lb

14.12 Ft from left support of span 2 (Center Span)

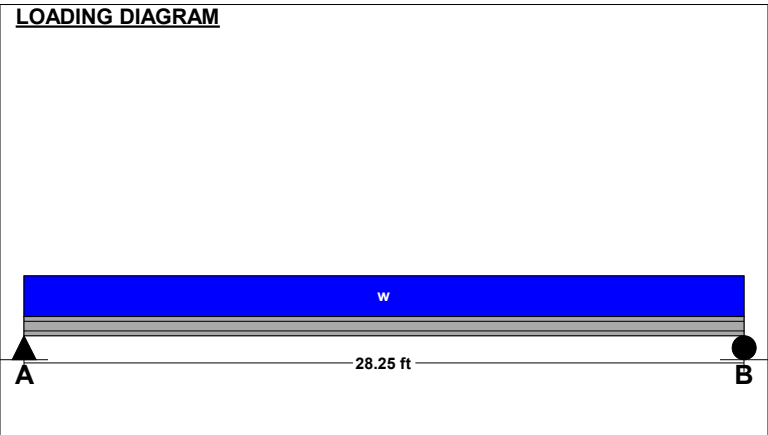
Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 2260 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:	Req'd	Provided
Section Modulus:	123.37 in3	62.99 in3
Area (Shear):	18.83 in2	24.78 in2
Moment of Inertia (deflection):	427.11 in4	480.27 in4
Moment:	15961 ft-lb	8149 ft-lb
Shear:	2260 lb	2974 lb



JOIST DATA		Center
Span Length	28.25	ft
Unbraced Length-Top	0	ft
Unbraced Length-Bottom	0	ft
Floor sheathing applied to top of joists-top of joists fully braced.		
Floor Duration Factor	1.00	

JOIST LOADING		Center
Uniform Floor Loading		
Live Load	LL =	100 psf
Dead Load	DL =	20 psf
Total Load	TL =	120 psf
TL Adj. For Joist Spacing	wT =	160 plf

Project: Schofield Evaluation

Location: 1J-2 80 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 15.25 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 8.2%

Controlling Factor: Moment / Depth Required 15.86 In.



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DEFLECTIONS

Center

Live Load 0.74 IN L/375

Dead Load 0.18 in

Total Load 0.92 IN L/300

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1227 lb 1227 lb

Dead Load 307 lb 307 lb

Total Load 1534 lb 1534 lb

Bearing Length 1.51 in 1.51 in

SUPPORT LOADS

A

B

Live Load 920 plf 920 plf

Dead Load 230 plf 230 plf

Total Load 1151 plf 1151 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1553 psi

Cd=1.00 CF=0.90 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc - $\perp$ = 625 psi Fc - $\perp$ ' = 625 psi

Controlling Moment: 8817 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: 1533 lb

At left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 68.15 in³ 62.99 in³

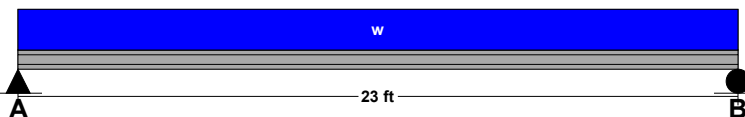
Area (Shear): 12.78 in² 24.78 in²

Moment of Inertia (deflection): 192.08 in⁴ 480.27 in⁴

Moment: 8817 ft-lb 8149 ft-lb

Shear: 1533 lb 2974 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 23 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 80 psf

Dead Load DL = 20 psf

Total Load TL = 100 psf

TL Adj. For Joist Spacing wT = 133.3 plf

Project: Schofield Evaluation

Location: 1J-2 100 PSF

Floor Joist

Floor Joist [2021 International Building Code(2018 NDS)

1.625 IN x 15.25 IN x 23.0 FT @ 16 O.C.

Select Structural - Douglas-Fir-Larch - Dry Use

Section Inadequate By: 29.8%

Controlling Factor: Moment / Depth Required 17.38 In.



The Vitruvius Project, Inc.

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DEFLECTIONS

Center

Live Load 0.92 IN L/300

Dead Load 0.18 in

Total Load 1.10 IN L/250

Live Load Deflection Criteria: L/120 Total Load Deflection Criteria: L/120

REACTIONS

A

B

Live Load 1533 lb 1533 lb

Dead Load 307 lb 307 lb

Total Load 1840 lb 1840 lb

Bearing Length 1.81 in 1.81 in

SUPPORT LOADS

A

B

Live Load 1150 plf 1150 plf

Dead Load 230 plf 230 plf

Total Load 1380 plf 1380 plf

MATERIAL PROPERTIES

Select Structural - Douglas-Fir-Larch

Base Values

Adjusted

Bending Stress: Fb = 1500 psi Fb' = 1553 psi

Cd=1.00 CF=0.90 Cr=1.15

Shear Stress: Fv = 180 psi Fv' = 180 psi

Cd=1.00

Modulus of Elasticity: E = 1900 ksi E' = 1900 ksi

Comp. $\perp$ to Grain: Fc - $\perp$ = 625 psi Fc - $\perp$ ' = 625 psi

Controlling Moment: 10580 ft-lb

11.5 Ft from left support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Controlling Shear: -1840 lb

At right support of span 2 (Center Span)

Created by combining all dead loads and live loads on span(s) 2

Comparisons with required sections:

Req'd

Provided

Section Modulus: 81.78 in³ 62.99 in³

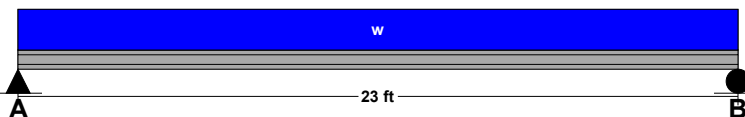
Area (Shear): 15.33 in² 24.78 in²

Moment of Inertia (deflection): 230.5 in⁴ 480.27 in⁴

Moment: 10580 ft-lb 8149 ft-lb

Shear: -1840 lb 2974 lb

LOADING DIAGRAM



JOIST DATA

Center

Span Length 23 ft

Unbraced Length-Top 0 ft

Unbraced Length-Bottom 0 ft

Floor sheathing applied to top of joists-top of joists fully braced.

Floor Duration Factor 1.00

JOIST LOADING

Uniform Floor Loading

Center

Live Load LL = 100 psf

Dead Load DL = 20 psf

Total Load TL = 120 psf

TL Adj. For Joist Spacing wT = 160 plf

Brandon Rush
LOUDWAR STUDIOS

May 23, 2023

RE: 3 Howls Theater
Project Number: 222578

Dear Brandon:

Unreinforced masonry (URM) buildings have a documented history of performing poorly in seismic events. Walls may separate from roof and floors, and buildings with a soft story (ground floor glass storefront) are susceptible to partial building failures or collapse. Post earthquake repairs are often costly if not cost prohibitive. Consequently, building codes and jurisdictions have developed methods to mitigate these issues. Insurance companies offer incentives for timely upgrades and repairs that meet these standards. These upgrades are attractive to knowledgeable tenants and increase the value of a given property in future sales.

This letter is a brief explanation of the attached conceptual seismic upgrade plans (S1.1 through S1.4) and Tier 1 building assessment checklists. The plans identify the scope of upgrades typically required for this building type due to a change of occupancy or structural alteration supporting more than 30 percent of the floor area.

Changes of occupancy, alterations, and additions to an existing building are required to meet the standards of the adopted building codes of the governing jurisdiction.

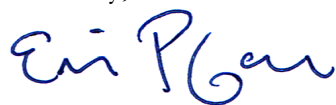
The attached plans adhere to the requirement of the IEBC (International Existing Building Code). Within the IEBC, a building may be upgraded to one of two seismic evaluation and design procedures: IBC or ASCE 41.

For an existing URM building, upgrading to the IBC can be a difficult standard to meet given the low ductility of existing materials and connections. The ASCE 41 standard provides a path that better leverages the strength of the existing materials. The attached plans reflect the ASCE 41 upgrade path.

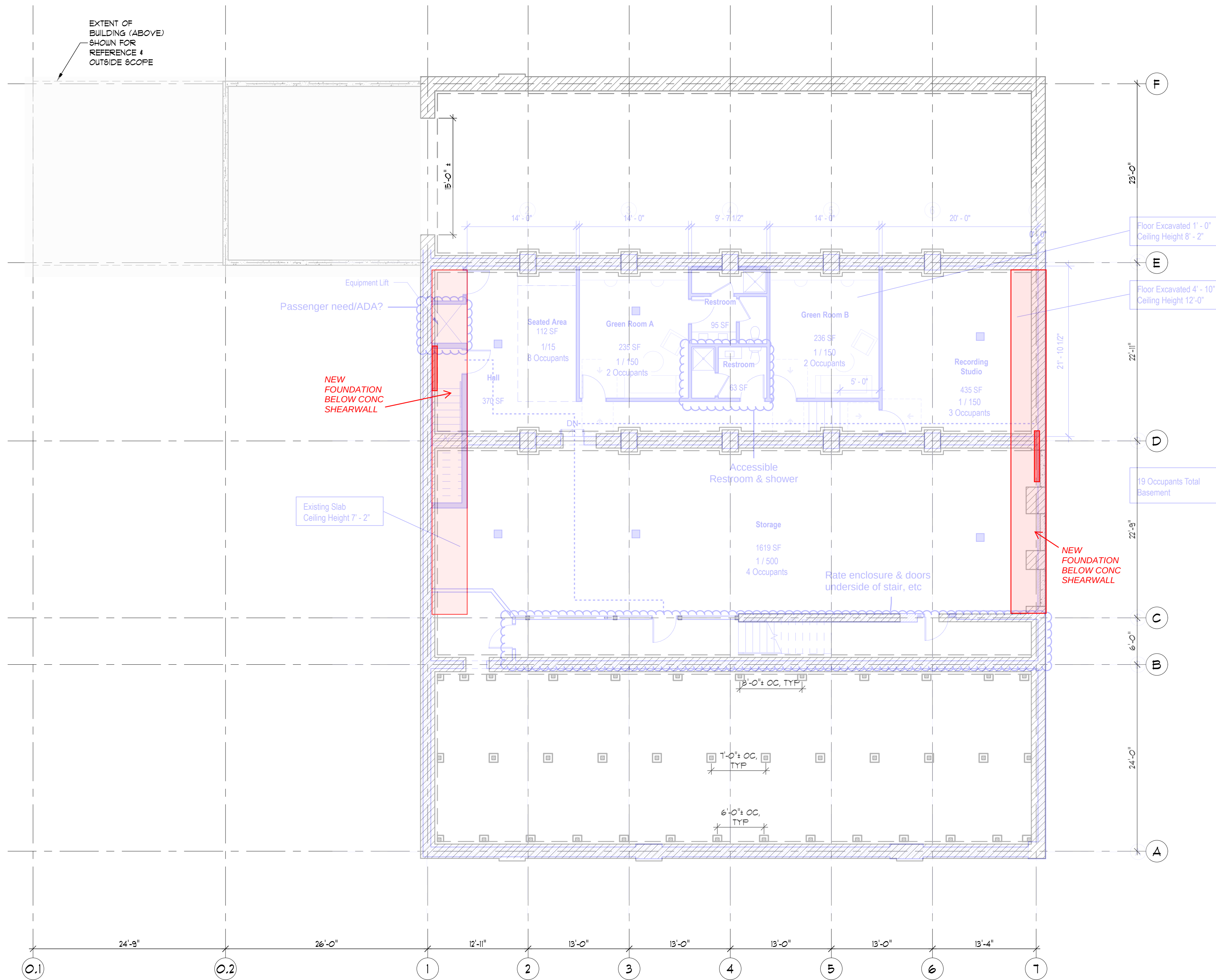
The ASCE 41 methodology includes an assessment of the building using a series of Tier 1 Checklists (see attached). The checklists identify building elements that are deemed non-compliant. Non-compliant items must be analyzed and retrofitted to meet the ASCE 41 standard (S1.1 through S1.4).

Please call me at 503-244-7014 if you have any questions regarding the information in this review.

Sincerely,



Eric J. Pfau P.E.
Grummel Engineering, LLC



1 BASEMENT FRAMING PLAN
SCALE: 1/8" = 1'-0"
S1.1

REVIEW SET
NOT FOR
CONSTRUCTION

GRUMMEL ENGINEERING, LLC

920 SW 3rd Ave Suite 200
Portland, OR 97204 - (503) 244-7014
www.grummeengineering.com

Wolf Den
600 Main Street
Vancouver, WA 98660

04/21/23

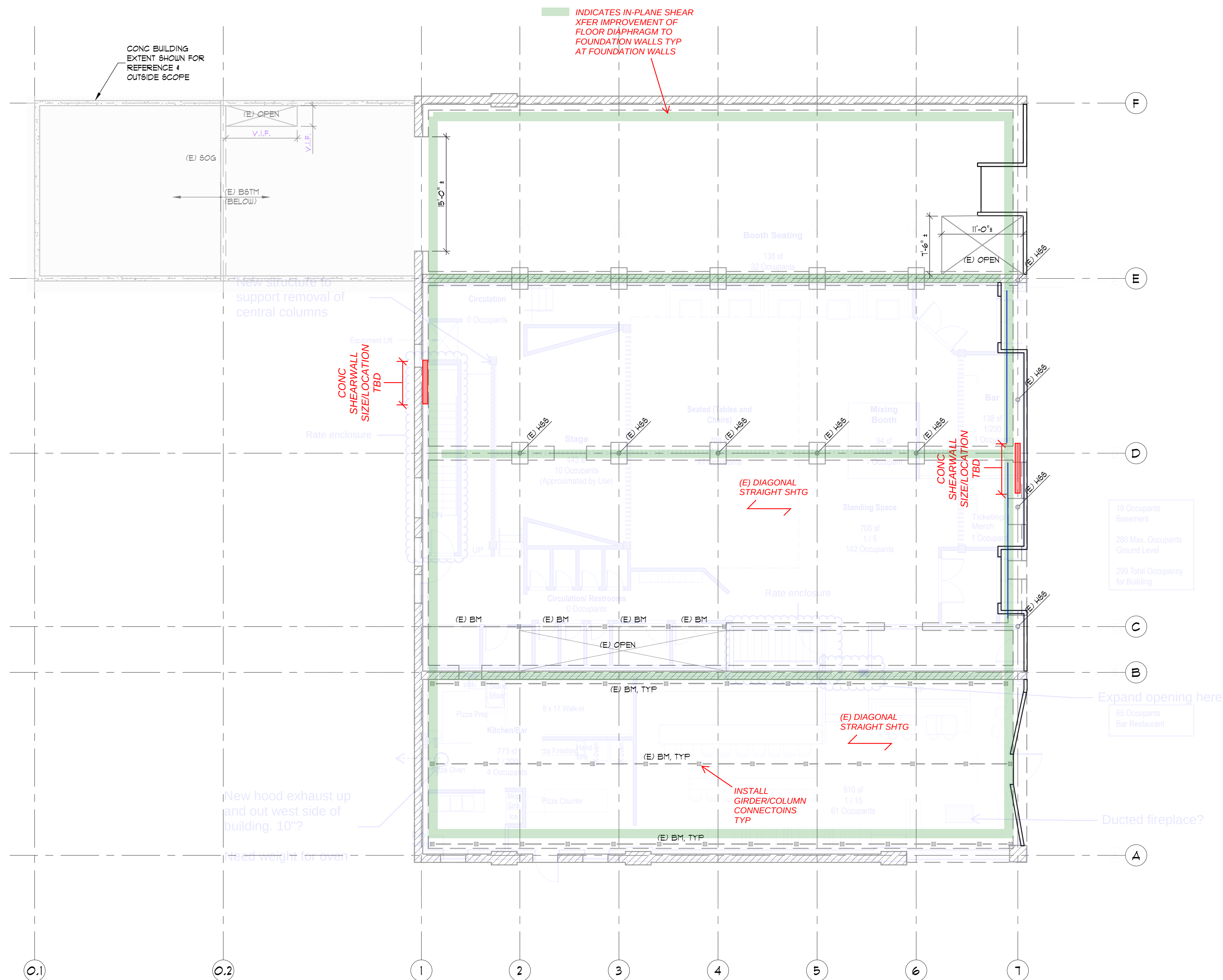
PROJECT NUMBER:
222578

ENGINEER: TOC

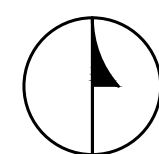
DRAWN BY: TOC

BASEMENT FRAMING

S1.1



1
S1.2
MAIN FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"



REVIEW SET
NOT FOR
CONSTRUCTION

GRUMMEL ENGINEERING, LLC

920 SW 3rd Ave Suite 200
Portland, OR 97204 - (503) 244-7014
www.grummelengineering.com

Wolf Den
600 Main Street
Vancouver, WA 98660

04/21/23

PROJECT NUMBER:
222578

ENGINEER: TOC

DRAWN BY: TOC

MAIN FLOOR FRAMING

S1.2

Wolf Den
600 Main Street
Vancouver, WA 98660

04/21/23

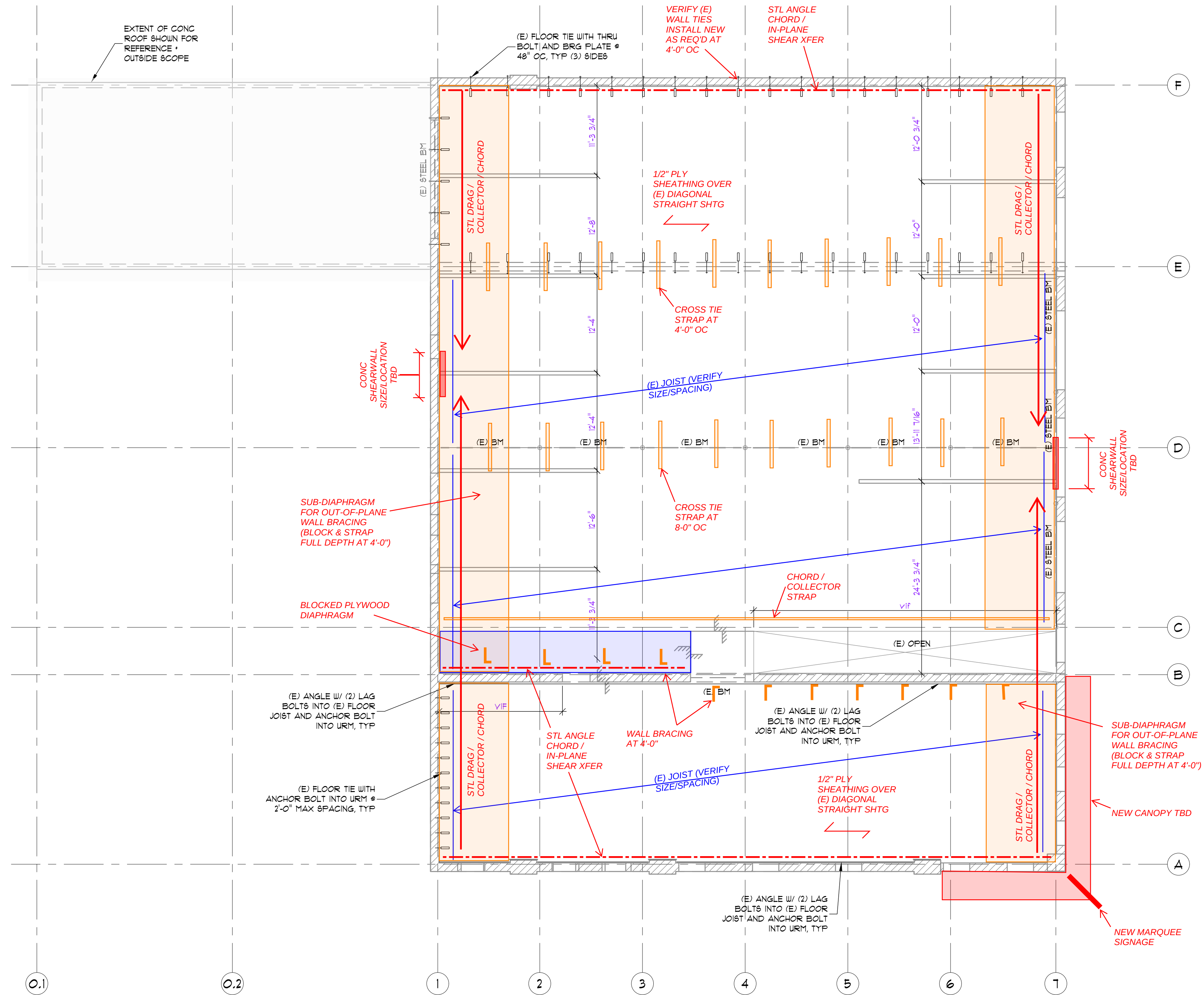
PROJECT NUMBER:
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ENGINEER: TOC

DRAWN BY: TOC

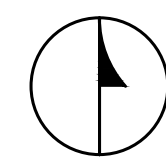
SECOND FLOOR FRAMING

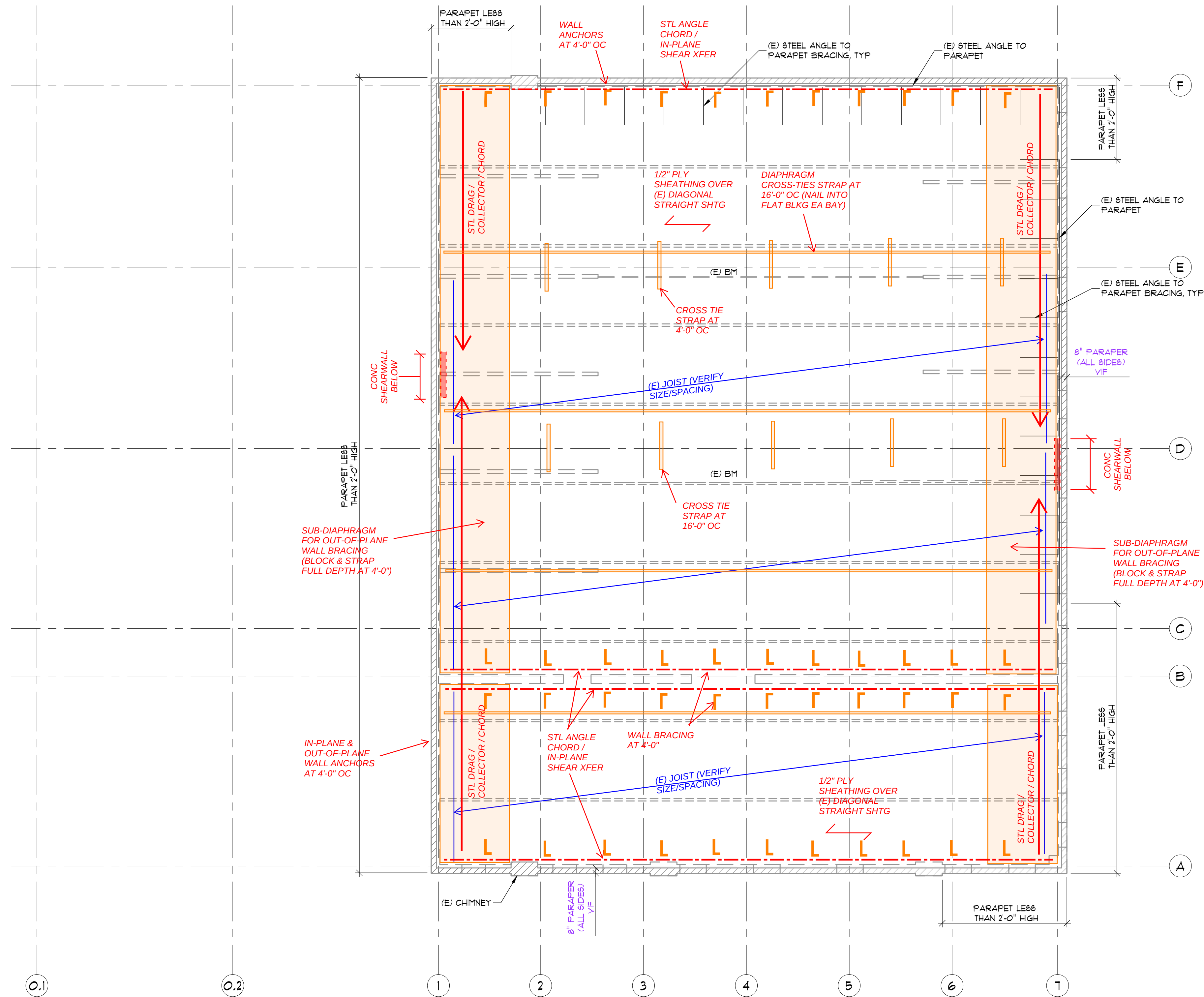
S1.3



NOTE:
FLOOR FRAMING NOT REVIEWED FOR LIVE LOAD CAPACITY.

1
S1.3 SECOND FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"





1
S1.4 ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"

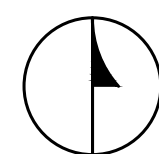


Table 17-1. Very Low Seismicity Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Structural Components			
C NC N/A U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1
C NC N/A U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.1.1	A.5.1.1

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

600 MAIN STREET, VANCOUVER, WA

Table 17-2. Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low Seismicity			
Building System—General			
C NC N/A U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1
C NC N/A U	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 0.25% of the height of the shorter building in low seismicity, 0.5% in moderate seismicity, and 1.5% in high seismicity.	5.4.1.2	A.2.1.2
C NC N/A U	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure.	5.4.1.3	A.2.1.3
Building System—Building Configuration			
C NC N/A U	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above.	5.4.2.1	A.2.2.2
C NC N/A U	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above.	5.4.2.2	A.2.2.3
C NC N/A U	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation.	5.4.2.3	A.2.2.4
C NC N/A U	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines.	5.4.2.4	A.2.2.5
C NC N/A U	MASS: There is no change in effective mass of more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered.	5.4.2.5	A.2.2.6
C NC N/A U	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension.	5.4.2.6	A.2.2.7

continues

Table 17-2 (Continued). Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Moderate Seismicity (Complete the Following Items in Addition to the Items for Low Seismicity)			
Geologic Site Hazards			
C NC N/A U	LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance do not exist in the foundation soils at depths within 50 ft (15.2 m) under the building.	5.4.3.1	A.6.1.1
C NC N/A U	SLOPE FAILURE: The building site is located away from potential earthquake-induced slope failures or rockfalls so that it is unaffected by such failures or is capable of accommodating any predicted movements without failure.	5.4.3.1	A.6.1.2
C NC N/A U	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated.	5.4.3.1	A.6.1.3
High Seismicity (Complete the Following Items in Addition to the Items for Moderate Seismicity)			
Foundation Configuration			
C NC N/A U	OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$.	5.4.3.3	A.6.2.1
C NC N/A U	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C.	5.4.3.4	A.6.2.2

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

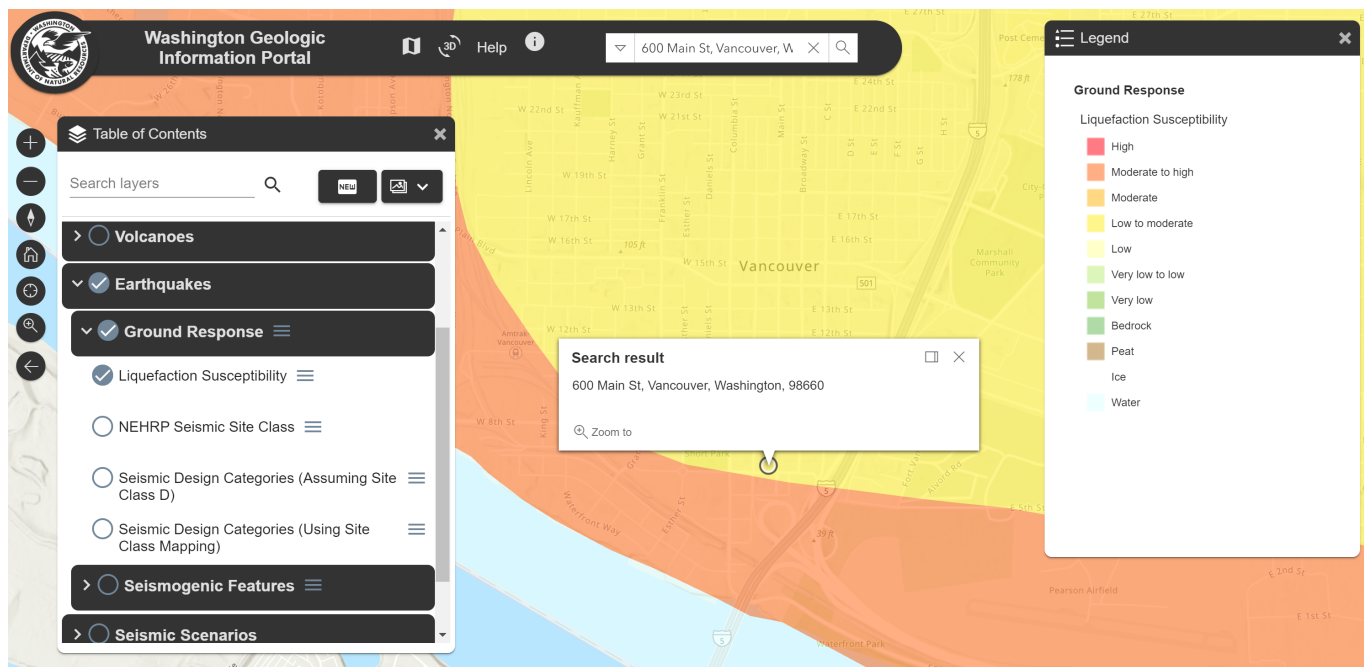


Table 17-1. Very Low Seismicity Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Structural Components			
C NC N/A U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1
C NC N/A U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have adequate strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.1.1	A.5.1.1

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

604 MAIN STREET, VANCOUVER, WA

Table 17-2. Collapse Prevention Basic Configuration Checklist

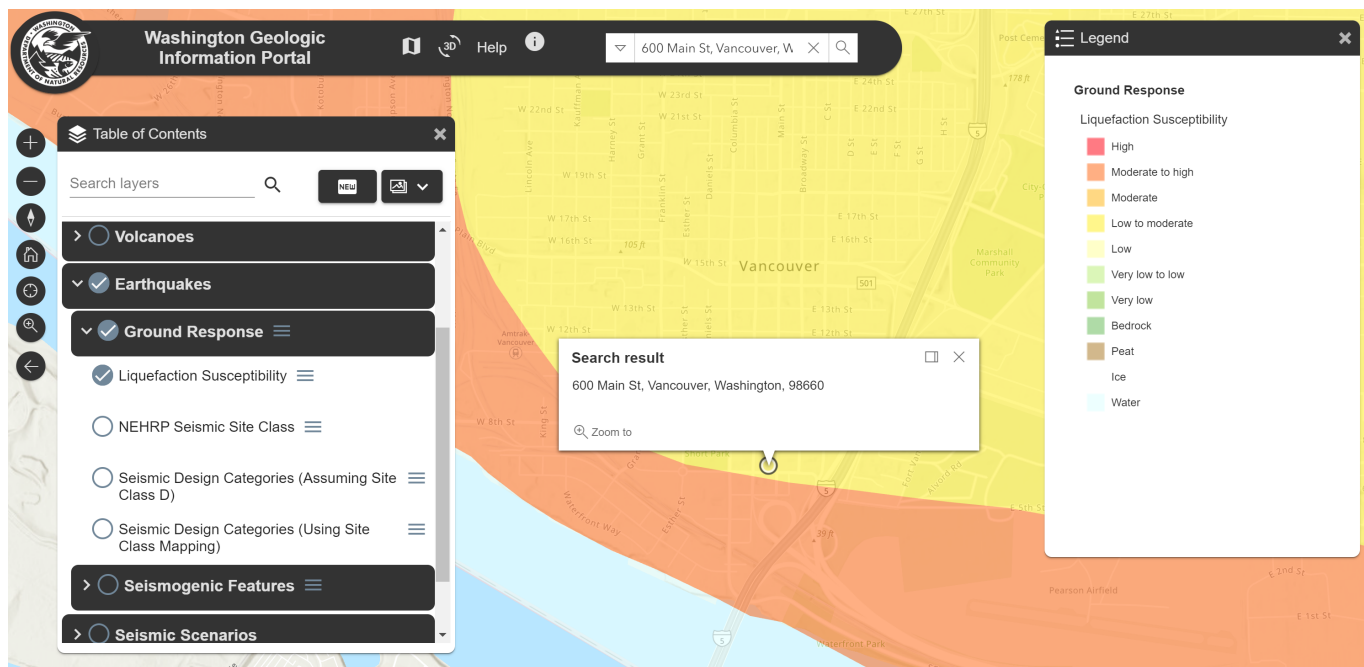
Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low Seismicity			
Building System—General			
C NC N/A U	LOAD PATH: The structure contains a complete, well-defined load path, including structural elements and connections, that serves to transfer the inertial forces associated with the mass of all elements of the building to the foundation.	5.4.1.1	A.2.1.1
C NC N/A U	ADJACENT BUILDINGS: The clear distance between the building being evaluated and any adjacent building is greater than 0.25% of the height of the shorter building in low seismicity, 0.5% in moderate seismicity, and 1.5% in high seismicity.	5.4.1.2	A.2.1.2
C NC N/A U	MEZZANINES: Interior mezzanine levels are braced independently from the main structure or are anchored to the seismic-force-resisting elements of the main structure.	5.4.1.3	A.2.1.3
Building System—Building Configuration			
C NC N/A U	WEAK STORY: The sum of the shear strengths of the seismic-force-resisting system in any story in each direction is not less than 80% of the strength in the adjacent story above.	5.4.2.1	A.2.2.2
C NC N/A U	SOFT STORY: The stiffness of the seismic-force-resisting system in any story is not less than 70% of the seismic-force-resisting system stiffness in an adjacent story above or less than 80% of the average seismic-force-resisting system stiffness of the three stories above.	5.4.2.2	A.2.2.3
C NC N/A U	VERTICAL IRREGULARITIES: All vertical elements in the seismic-force-resisting system are continuous to the foundation.	5.4.2.3	A.2.2.4
C NC N/A U	GEOMETRY: There are no changes in the net horizontal dimension of the seismic-force-resisting system of more than 30% in a story relative to adjacent stories, excluding one-story penthouses and mezzanines.	5.4.2.4	A.2.2.5
C NC N/A U	MASS: There is no change in effective mass of more than 50% from one story to the next. Light roofs, penthouses, and mezzanines need not be considered.	5.4.2.5	A.2.2.6
C NC N/A U	TORSION: The estimated distance between the story center of mass and the story center of rigidity is less than 20% of the building width in either plan dimension.	5.4.2.6	A.2.2.7

continues

Table 17-2 (Continued). Collapse Prevention Basic Configuration Checklist

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Moderate Seismicity (Complete the Following Items in Addition to the Items for Low Seismicity)			
Geologic Site Hazards			
C NC N/A U	LIQUEFACTION: Liquefaction-susceptible, saturated, loose granular soils that could jeopardize the building's seismic performance do not exist in the foundation soils at depths within 50 ft (15.2 m) under the building.	5.4.3.1	A.6.1.1
C NC N/A U	SLOPE FAILURE: The building site is located away from potential earthquake-induced slope failures or rockfalls so that it is unaffected by such failures or is capable of accommodating any predicted movements without failure.	5.4.3.1	A.6.1.2
C NC N/A U	SURFACE FAULT RUPTURE: Surface fault rupture and surface displacement at the building site are not anticipated.	5.4.3.1	A.6.1.3
High Seismicity (Complete the Following Items in Addition to the Items for Moderate Seismicity)			
Foundation Configuration			
C NC N/A U	OVERTURNING: The ratio of the least horizontal dimension of the seismic-force-resisting system at the foundation level to the building height (base/height) is greater than $0.6S_a$.	5.4.3.3	A.6.2.1
C NC N/A U	TIES BETWEEN FOUNDATION ELEMENTS: The foundation has ties adequate to resist seismic forces where footings, piles, and piers are not restrained by beams, slabs, or soils classified as Site Class A, B, or C.	5.4.3.4	A.6.2.2

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.



investigation using the corresponding Tier 2 evaluation procedure listed next to each evaluation statement.

17.18 STRUCTURAL CHECKLISTS FOR BUILDING TYPES URM: UNREINFORCED MASONRY BEARING WALLS WITH FLEXIBLE DIAPHRAGMS AND URMA: UNREINFORCED MASONRY BEARING WALLS WITH STIFF DIAPHRAGMS

For building systems and configurations that comply with the URM or URMA building type description in Table 3-1, the Collapse Prevention Structural Checklist in Table 17-36 shall be completed where required by Table 4-6 for Collapse

Prevention Structural Performance, and the Immediate Occupancy Structural Checklist in Table 17-37 shall be completed where required by Table 4-6 for Immediate Occupancy Structural Performance. Tier 1 screening shall include on-site investigation and condition assessment as required by Section 4.2.1.

Where applicable, each of the evaluation statements listed in this checklist shall be marked Compliant (C), Noncompliant (NC), Not Applicable (N/A), or Unknown (U) for a Tier 1 screening. Items that are deemed acceptable to the design professional in accordance with the evaluation statement shall be categorized as Compliant, whereas items that are determined by the design professional to require further investigation shall be categorized as Noncompliant or Unknown. For evaluation statements classified as Noncompliant or Unknown, the design professional is permitted to choose to

600 MAIN STREET, VANCOUVER, WA

Table 17-36. Collapse Prevention Structural Checklist for Building Types URM and URMA

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low and Moderate Seismicity			
Seismic-Force-Resisting System			
C NC N/A U	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1
C NC N/A U	SHEAR STRESS CHECK: The shear stress in the unreinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than 30 lb/in. ² (0.21 MPa) for clay units and 70 lb/in. ² (0.48 MPa) for concrete units.	5.5.3.1.1	A.3.2.5.1
Connections			
C NC N/A U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.1.1	A.5.1.1
C NC N/A U	WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers.	5.7.1.3	A.5.1.2
C NC N/A U	TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls.	5.7.2	A.5.2.1
C NC N/A U	GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1
High Seismicity (Complete the Following Items in Addition to the Items for Low and Moderate Seismicity)			
Seismic-Force-Resisting System			
C NC N/A U	PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than the following:	5.5.3.1.2	A.3.2.5.2
	Top story of multi-story building	9	
	First story of multi-story building	15	
	All other conditions	13	
C NC N/A U	MASONRY LAYUP: Filled collar joints of multi-wythe masonry walls have negligible voids.	5.5.3.4.1	A.3.2.5.3
Diaphragms (Stiff or Flexible)			
C NC N/A U	OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length.	5.6.1.3	A.4.1.4
C NC N/A U	OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft (2.4 m) long.	5.6.1.3	A.4.1.6
Flexible Diaphragms			
C NC N/A U	CROSS TIES: There are continuous cross ties between diaphragm chords.	5.6.1.2	A.4.1.2

continues

Table 17-36 (Continued). Collapse Prevention Structural Checklist for Building Types URM and URMa

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
4:1 N/S	C NC N/A U STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered.	5.6.2	A.4.2.1
CONCEALED	C NC N/A U SPANS: All wood diaphragms with spans greater than 24 ft (7.3 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2
	C NC N/A U DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft (12.2 m) and aspect ratios less than or equal to 4-to-1.	5.6.2	A.4.2.3
	C NC N/A U OTHER DIAPHRAGMS: The diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1
Connections			
	C NC N/A U STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors.	5.7.1.2	A.5.1.4
	C NC N/A U BEAM, GIRDER, AND TRUSS SUPPORTS: Beams, girders, and trusses supported by unreinforced masonry walls or pilasters have independent secondary columns for support of vertical loads.	5.7.4.4	A.5.4.5

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.

investigation using the corresponding Tier 2 evaluation procedure listed next to each evaluation statement.

17.18 STRUCTURAL CHECKLISTS FOR BUILDING TYPES URM: UNREINFORCED MASONRY BEARING WALLS WITH FLEXIBLE DIAPHRAGMS AND URMA: UNREINFORCED MASONRY BEARING WALLS WITH STIFF DIAPHRAGMS

For building systems and configurations that comply with the URM or URMA building type description in Table 3-1, the Collapse Prevention Structural Checklist in Table 17-36 shall be completed where required by Table 4-6 for Collapse

Prevention Structural Performance, and the Immediate Occupancy Structural Checklist in Table 17-37 shall be completed where required by Table 4-6 for Immediate Occupancy Structural Performance. Tier 1 screening shall include on-site investigation and condition assessment as required by Section 4.2.1.

Where applicable, each of the evaluation statements listed in this checklist shall be marked Compliant (C), Noncompliant (NC), Not Applicable (N/A), or Unknown (U) for a Tier 1 screening. Items that are deemed acceptable to the design professional in accordance with the evaluation statement shall be categorized as Compliant, whereas items that are determined by the design professional to require further investigation shall be categorized as Noncompliant or Unknown. For evaluation statements classified as Noncompliant or Unknown, the design professional is permitted to choose to

604 MAIN STREET, VANCOUVER, WA

Table 17-36. Collapse Prevention Structural Checklist for Building Types URM and URMA

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
Low and Moderate Seismicity			
Seismic-Force-Resisting System			
C NC N/A U	REDUNDANCY: The number of lines of shear walls in each principal direction is greater than or equal to 2.	5.5.1.1	A.3.2.1.1
C NC N/A U	SHEAR STRESS CHECK: The shear stress in the unreinforced masonry shear walls, calculated using the Quick Check procedure of Section 4.4.3.3, is less than 30 lb/in. ² (0.21 MPa) for clay units and 70 lb/in. ² (0.48 MPa) for concrete units.	5.5.3.1.1	A.3.2.5.1
Connections			
C NC N/A U	WALL ANCHORAGE: Exterior concrete or masonry walls that are dependent on the diaphragm for lateral support are anchored for out-of-plane forces at each diaphragm level with steel anchors, reinforcing dowels, or straps that are developed into the diaphragm. Connections have strength to resist the connection force calculated in the Quick Check procedure of Section 4.4.3.7.	5.7.1.1	A.5.1.1
C NC N/A U	WOOD LEDGERS: The connection between the wall panels and the diaphragm does not induce cross-grain bending or tension in the wood ledgers.	5.7.1.3	A.5.1.2
C NC N/A U	TRANSFER TO SHEAR WALLS: Diaphragms are connected for transfer of seismic forces to the shear walls.	5.7.2	A.5.2.1
C NC N/A U	GIRDER-COLUMN CONNECTION: There is a positive connection using plates, connection hardware, or straps between the girder and the column support.	5.7.4.1	A.5.4.1
High Seismicity (Complete the Following Items in Addition to the Items for Low and Moderate Seismicity)			
Seismic-Force-Resisting System			
C NC N/A U	PROPORTIONS: The height-to-thickness ratio of the shear walls at each story is less than the following:	5.5.3.1.2	A.3.2.5.2
	Top story of multi-story building	9	
	First story of multi-story building	15	
	All other conditions	13	
C NC N/A U	MASONRY LAYUP: Filled collar joints of multi-wythe masonry walls have negligible voids.	5.5.3.4.1	A.3.2.5.3
Diaphragms (Stiff or Flexible)			
C NC N/A U	OPENINGS AT SHEAR WALLS: Diaphragm openings immediately adjacent to the shear walls are less than 25% of the wall length.	5.6.1.3	A.4.1.4
C NC N/A U	OPENINGS AT EXTERIOR MASONRY SHEAR WALLS: Diaphragm openings immediately adjacent to exterior masonry shear walls are not greater than 8 ft (2.4 m) long.	5.6.1.3	A.4.1.6
Flexible Diaphragms			
C NC N/A U	CROSS TIES: There are continuous cross ties between diaphragm chords.	5.6.1.2	A.4.1.2

continues

Table 17-36 (Continued). Collapse Prevention Structural Checklist for Building Types URM and URMa

Status	Evaluation Statement	Tier 2 Reference	Commentary Reference
C NC N/A U	STRAIGHT SHEATHING: All straight-sheathed diaphragms have aspect ratios less than 2-to-1 in the direction being considered.	5.6.2	A.4.2.1
C NC N/A U	SPANS: All wood diaphragms with spans greater than 24 ft (7.3 m) consist of wood structural panels or diagonal sheathing.	5.6.2	A.4.2.2
C NC N/A U	DIAGONALLY SHEATHED AND UNBLOCKED DIAPHRAGMS: All diagonally sheathed or unblocked wood structural panel diaphragms have horizontal spans less than 40 ft (12.2 m) and aspect ratios less than or equal to 4-to-1.	5.6.2	A.4.2.3
C NC N/A U	OTHER DIAPHRAGMS: The diaphragms do not consist of a system other than wood, metal deck, concrete, or horizontal bracing.	5.6.5	A.4.7.1
Connections			
C NC N/A U	STIFFNESS OF WALL ANCHORS: Anchors of concrete or masonry walls to wood structural elements are installed taut and are stiff enough to limit the relative movement between the wall and the diaphragm to no greater than 1/8 in. before engagement of the anchors.	5.7.1.2	A.5.1.4
C NC N/A U	BEAM, GIRDER, AND TRUSS SUPPORTS: Beams, girders, and trusses supported by unreinforced masonry walls or pilasters have independent secondary columns for support of vertical loads.	5.7.4.4	A.5.4.5

Note: C = Compliant, NC = Noncompliant, N/A = Not Applicable, and U = Unknown.



Schlecht Construction, Inc.

Office
8500 NE 13th Ave.
Vancouver, WA 98665

P: (360) 218-7004
F: (360) 998-3099
WA#SCHLEC115004

Bid for: Schofield Building
Location: 600 Main Street, Vancouver, WA 98660
Type: Restoration of Existing Building
Building Sq Ft: 20,023
Lot Sq Ft: 15,675
Floors: 2

Division Totals	\$4,783,311.00
Overhead of 1.50%	\$71,749.67
Construction Fee of 3.50%	\$167,415.89
Bonding of 2.00%	\$95,666.22
Contingency/Waste of 2.50%	\$119,582.78
Subtotal	\$5,237,725.55
Sales Tax	\$455,682.12

Grand Total \$5,693,407.67

Division	Cost Code	Line Item Total	Div. Total
	Division 01 - General Requirements		\$1,023,160.00
01 00 00	General Requirements	\$87,703.00	
01 10 45	Project Management & Coordination	\$323,700.00	
01 11 01	Field Offices & Sheds	\$14,450.00	
01 12 01	Chemical Toilets	\$3,600.00	
01 12 11	Temporary Electrical Utilities	\$22,750.00	
01 13 02	Jobsite Security	\$1,987.00	
01 13 03	Traffic Control (Temp Street & Sidewalk Closures)	\$98,765.00	
01 13 22	Waste Management & Disposal	\$29,000.00	
01 13 41	Temporary Scaffolding & Platforms	\$99,675.00	
01 13 55	Street Sweeping & Dust Control	\$685.00	
01 13 65	Plan Documentation	\$400.00	
01 13 90	Jobsite Cleaning	\$13,980.00	
01 14 10	Temporary Project Signage	\$800.00	
01 15 03	Engineering Consultants	\$112,500.00	
01 16 20	Testing & Inspecting Services	\$1,500.00	
01 17 20	Safety/PPE Supplies	\$30,200.00	
01 17 30	Temporary Barriers & Enclosures	\$64,500.00	
00 17 40	Construction Fencing	\$1,965.00	
00 19 00	Tools & Equipment (owned and rented)	\$115,000.00	
	Division 02 - Existing Conditions		\$401,765.00
02 40 00	Demolition & Salvage of Existing Materials	\$203,000.00	
02 82 00	Hazardous Material Remediation	\$198,765.00	
	Division 03 - Concrete		\$737,250.00
03 20 00	Foundation	\$218,765.00	
03 23 00	Slab on Grade	\$165,765.00	
03 30 00	Cast-in-Place Concrete	\$165,000.00	
03 30 50	Concrete Sheer Walls	\$73,020.00	
03 41 00	Structural Concrete	\$107,500.00	
03 60 00	Grouting	\$7,200.00	
	Division 04 - Masonry		\$542,000.00
04 00 00	Masonry Anchors & Ties	\$21,000.00	
04 01 00	Masonry Restoration	\$521,000.00	
Division	Cost Code	Total	Div. Total
	Division 05 - Metals		\$430,015.00
05 10 00	Structural Metal Framing	\$73,900.00	
05 12 00	Structural Steel Fabrication	\$113,265.00	
05 40 00	Steel intallation	\$123,000.00	
05 50 00	Metal Fabrications	\$98,250.00	
05 51 00	Metal Stairs	\$21,600.00	
	Division 06 - Wood, Plastics, Composites		\$591,450.00
06 10 00	Rough Carpentry	\$365,000.00	
06 20 00	Finish Carpentry	\$130,000.00	
06 40 00	Prefabricated Structural Wood	\$76,000.00	
06 50 00	Fasteners & Adhesives	\$20,450.00	

Division	Cost Code	Line Item Total	Div. Total
	Division 07 - Thermal & Moisture Protection		\$427,100.00
07 10 00	Dampproofing & Waterproofing	\$26,100.00	
07 24 00	Weather Barriers	\$68,300.00	
07 40 00	Roofing & Siding Materials	\$206,700.00	
07 60 00	Flashing & Sheet Metal	\$43,900.00	
07 72 00	Roof Accessories	\$3,300.00	
07 84 00	Firestopping	\$16,500.00	
07 92 00	Joint Sealants	\$62,300.00	
Division	Cost Code	Total	Div. Total
	Division 08 - Openings		\$169,576.00
08 10 00	Doors, Frames & Hardware	\$16,325.00	
08 30 00	Special Function Doors	\$1,875.00	
08 40 00	Entrances, Storefronts & Curtain Walls	\$77,120.00	
08 50 00	Windows	\$74,256.00	?
	Division 09 - Finishes		\$5,345.00
09 90 00	Paintint & Coating	\$5,345.00	
Division	Cost Code	Line Item Total	Div. Total
	Division 21 - Fire Suppression		\$126,050.00
21 10 00	Water Based Fire Suppression Systems	\$126,050.00	
	Division 31 - Earthwork		\$329,600.00
31 00 00	Earthwork	\$287,650.00	
31 10 00	Field Engineering & Surveying	\$12,350.00	
31 40 00	Shoring & Underpinning	\$29,600.00	

Estimated Total Costs:	\$4,783,311.00
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Not Included in Scope of Work:

Compaction & Special Testing
Permits & Fees
Costs Associated with any Utilities other than Water & Electricity
Striping/Signage
Substantial Groundwater
Landscaping/Irrigation
Dewatering
Overexcavation of unsuitable materials
Asphalt Paving

Notes:

***Schlecht Construction, Inc. is pleased to present this bid for the existing structure as requested.
As a contractor that has restored historical buildings in the past we recommend tearing down and
rebuilding this structure rather than trying to restore it. We can reuse much of the existing building brick &
Lumber in any new construction project.***



Hurley Construction
275 W. 3rd Street, Suite 200
Vancouver, WA 98660

Bid Date: 8-Aug-24
Bid Version: 1.00
Created by: Nathan LacQuaye

Schofield Bld 600 Main Option Repair ROM

Plan date: N/A
Const. Schedule wks 48
Building footage 20,023
Site footage 15,675
Landscape footage N/A
Number of units 18
Number of Floors 2
Building type Existing URM

Building Cost	\$4,114,904	
Site Costs	\$ 335,451	
Subtotal	\$4,450,355	
Overhead	\$ 66,755	1.50%
Construction Fee	\$ 158,099	3.50%
Subtotal	\$ 4,675,209	\$233.49
General Liability Insurance	\$ 51,427	1.10%
Bond	\$ -	0.00%
Builders Risk Insurance	\$ -	0.00%
B&O Taxes	\$ 22,688	0.48%
State Sales Tax	\$ 308,706	6.50%
City Sales Tax	\$ 111,277	2.20%
Contingency	\$ 111,259	2.50%
Total	\$ 5,280,566	\$263.73

CODE	INC	NIC	DESCRIPTION	UOM	Units	Total	Grand Total	Notes
01000			Division - 1 - General Requirements					
	x		<u>Building Permit</u>	LS 0	\$	-	\$ -	By Owner
	x		<u>Special Inspections & Testing</u>	SSF 0	\$	-	\$ -	By Owner
	x		<u>Supervision</u>	WEEKS 48	\$	-	\$ 459,648	
	x		Superintendent	WEEKS 48	\$	215,040		
	x		Project Manager	WEEKS 48	\$	136,320		
	x		Project Engineer	WEEKS 48	\$	108,288		
	x		<u>Safety Coordination</u>	WEEKS 48	\$	-	\$ 32,880	
	x		Safety Coordinator	WEEKS 48	\$	25,920		
	x		PP&E	WEEKS 48	\$	6,960		
	x		<u>Construction Software & IT Hardware</u>	LS 0	\$	-	\$ 17,640	
	x		Site Management Software	% 9,800,000	\$	17,640		
	x		<u>Quality Control</u>	WEEKS 48	\$	-	\$ 18,410	
	x		Mock-Ups	EACH 1	\$	7,850		
	x		Contractor's Quality Control	WEEKS 48	\$	10,560		
	x		<u>Mobilization</u>	LS 1	\$	8,850	\$ 8,850	
	x		<u>Temporary Utilities</u>	WEEKS 48	\$	-	\$ 22,704	
	x		Temporary Fire Protection	WEEKS 0	\$	-		
	x		Temp Power / Lighting	WEEKS 48	\$	19,920		
	x		Temp Heat / Dehumidify	WEEKS -41	\$	-		
	x		Temp water Service	WEEKS 48	\$	2,784		
	x		<u>Temp Toilets</u>	WEEKS 48	\$	-	\$ 18,480	
	x		Chemical Toilet	WEEKS 48	\$	18,480		
	x		<u>Construction Aids</u>	WEEKS 48	\$	-	\$ 169,650	
	x		Construction Elevators	WEEKS 0	\$	-		
	x		Trash Chutes Erect and Dismantel	LS 1	\$	5,850		
	x		Trash Chutes Rental	WEEKS 36	\$	34,200		
	x		Scaffolding and Platforms	WEEKS 36	\$	66,600		
	x		Temporary Enclosures	WEEKS 36	\$	45,000		
	x		Pedestrian Tunnels	EACH 4	\$	18,000		
	x		Swing Staging	WEEKS 0	\$	-		
	x		<u>Barriers and Enclosures</u>	LS 0	\$	-	\$ 1,906	
	x		Security Fences	LF 305	\$	1,906		
	x		<u>Security</u>	WEEKS 0	\$	-	\$ -	
	x		24hr Security & Fire Watch	WEEKS 0	\$	-		
	x		<u>Temporary Controls / Cleaning</u>	WEEKS 48	\$	-	\$ 14,654	
	x		Final Construction Cleaning	BSF 20,023	\$	9,010		

CODE	INC	NIC	DESCRIPTION	UOM	Units	Total	Grand Total	Notes
	x		Window Cleaning	BSF	20,023	\$ 3,003		
	x		Dust Control	WEEKS	48	\$ 2,640		
	x		Print / Docs / Ads	WEEKS	48	\$ 2,640	\$ 2,640	
	x		Project Identification and Signs	LS	1	\$ -	\$ 950	
	x		Job Signs	LS	1	\$ 950		
	x		Field Offices and Sheds	WEEKS	48	\$ -	\$ 13,690	
	x		Job Trailer	WEEKS	48	\$ 8,880		
	x		Trailer Mobilization & Demobilization	LS	1	\$ 1,800		
	x		Office Supplies	WEEKS	48	\$ 2,160		
	x		Office Equipment	LS	1	\$ 850		
	x		Misc. Purchase	WEEKS	48	\$ 4,080	\$ 4,080	
	x		Material, Equipment and Vehicles	WEEKS	48	\$ -	\$ 114,820	
	x		Forklift Rentals	WEEKS	36	\$ 20,916		
	x		Mobile Cranes	WEEKS	4	\$ 58,000		
	x		Misc. Rentals	WEEKS	48	\$ 8,400		
	x		Vehicles, Gas & Maintenance	WEEKS	48	\$ 12,144		
	x		Parking	WEEKS	48	\$ 6,720		
	x		Delivery, Storage, and Handling	WEEKS	48	\$ 8,640		
	x		Waste Management	LS	0	\$ -	\$ 27,600	
	x		Dump Boxes	UNITS	48	\$ 16,800		
	x		Sorting / Handling	WEEKS	48	\$ 10,800		
	x		Temp Street / Sidewalk Closures	LS	0	\$ -	\$ 100,419	
	x		Temp Street Closed Signage Required By City	LS	1	\$ 3,850		
	x		Sidewalk Rental	ASF/WK	3,230	\$ 34,109		
	x		Street Rental	ASF/WK	2,023	\$ 28,160		
	x		Parking Meter Hoods	EACH/WK	8	\$ 28,800		
	x		Flagging & Traffic Control	LS	1	\$ 5,500		
	x		Tower Crane	WEEKS	0	\$ -	\$ -	
			Totals Division 01			\$ 1,029,021	\$ 1,029,021	
020000			Division 2 Existing Conditions	BSF				
	x		Demolition	ASF	0	\$ -	\$ 193,937	
	x		Building Demolition	ASF	0	\$ -		
	x		Stucco Removal	ASF	3,750	\$ 21,038		
	x		Demolition at New Structural Steel Frames	ASF	1,200	\$ 12,240		
	x		Storefront Demolition	ASF	608	\$ 2,481		
	x		Awning Demolition	ASF	900	\$ 2,525		
	x		Roofing Material Demolition	ASF	10,484	\$ 16,041		
	x		Roof Structure Demolition	ASF	10,484	\$ 29,408		
	x		Ground Floor Structure Demolition	ASF	10,000	\$ 25,500		
	x		Selective Structural Demolition	BSF	20,023	\$ 23,487		
	x		Demo & Salvage Existing Interior Finishes	ASF	21,530	\$ 38,431		
	x		Demo Lath and Plaster	ASF	11,100	\$ 8,492		
	x		Remove Existing Plumbing & Fixtures	BSF	20,023	\$ 5,106		
	x		Remove Existing Electrical Wiring & Fixtures	BSF	20,023	\$ 9,191		
	x		Concrete Removal	ASF	0	\$ -		
	x		Sawcut @ AC	LF	0	\$ -		
	x		Hazardous Material Abatement	LS	0	\$ -		
	x		Contaminated Soils	TONS	0	\$ -		
			Totals Division 02			\$ 193,937	\$ 193,937	
030000			Division 3 Concrete	BSF				
	x		Cast-in-Place Concrete	ASF	0	\$ -	\$ 562,941	
	x		Structural Concrete_Pad Footings @ Steel	CY	180	\$ 105,570		
	x		Slab on Grade	ASF	10,484	\$ 163,079		
	x		Foundations - Continuous	ASF	10,484	\$ 219,220		
	x		Concrete Sheer Walls	CY	46	\$ 75,072		
	x		Post-Tension Concrete	ASF	0	\$ -		
	x		Precast Concrete	LS	0	\$ -	\$ -	
	x		Cementitious Decks and Toppings	LS	0	\$ -	\$ -	
	x		Pan Deck_Concrete Floors	ASF	30,000	\$ -		
	x		Gypsum Concrete	ASF	0	\$ -	\$ -	
	x		Gypsum Concrete Floor Underlayment	ASF	10,000	\$ -		
	x		Gypsum Concrete Floor Sealer	ASF	10,000	\$ -		
	x		Grout	ASF	0	\$ -	\$ 6,765	
	x		Epoxy Grout_Columns	EACH	24	\$ 6,765		

CODE	INC	NIC	DESCRIPTION	UOM	Units	Total	Grand Total	Notes
		x	<u>Concrete Restoration and Cleaning</u>	ASF	0	\$ -	\$ -	
			<u>Totals Division 03</u>			\$ 569,706	\$ 569,706	
040000			<u>Division 4 Masonry</u>	BSF				
		x	<u>Masonry Accessories</u>	LS	1	\$ -	\$ 22,236	
		x	<u> Anchors and Tie Systems</u>	ASF	11,125	\$ 22,236		
		x	<u>Unit masonry</u>	ASF	0	\$ -	\$ -	
		x	<u> Concrete Unit Masonry Trash Enclosures</u>	EACH	0	\$ -		
		x	<u> Concrete Unit Masonry</u>	ASF	0	\$ -		
		x	<u> Brick Masonry Systems</u>	ASF	0	\$ -		
		x	<u>Stone</u>	ASF	0	\$ -	\$ -	
		x	<u>Masonry Restoration and Cleaning</u>	LS	1	\$ -	\$ 516,562	
		x	<u> Masonry Cleaning</u>	ASF	11,125	\$ 51,314		
		x	<u> Tuck pointing</u>	ASF	11,125	\$ 456,125		
		x	<u> Sealer</u>	ASF	11,125	\$ 9,123		
			<u>Totals Division 04</u>			\$ 538,798	\$ 538,798	
050000			<u>Division 5 Metals</u>	BSF				
		x	<u>Misc. Structural Steel</u>	BSF	20,023	\$ -	\$ 308,321	
		x	<u> Misc. Structural Steel</u>	BSF	20,023	\$ 112,329		
		x	<u> Shop Drawings</u>	LS	1	\$ 4,743		
		x	<u> Beam Support Assemblies</u>	EACH	28	\$ 41,412		
		x	<u> Angles</u>	LF	5,328	\$ 32,607		
		x	<u> Structural Steel Installation</u>	LS	1	\$ 109,562		
		x	<u> Layout/Set Embeds</u>	HRS	8	\$ 697		
		x	<u> Bolting</u>	HRS	32	\$ 5,576		
		x	<u> Set Anchor Bolts/Templates</u>	HRS	16	\$ 1,394		
		x	<u>Metal Joists & Decking</u>	LS	0	\$ -	\$ -	
		x	<u> Joists and Decking_Supply</u>	ASF	30,000	\$ -		
		x	<u> Install</u>	ASF	30,000	\$ -		
		x	<u> Layout/Set Embeds</u>	ASF	30,000	\$ -		
		x	<u>Metal Fabrications</u>	LS	1	\$ -	\$ 119,360	
		x	<u> Metal Stairs</u>	LIFTS	4	\$ -		
		x	<u> Elevator Pit Ladder</u>	EACH	1	\$ 969		
		x	<u> Roof Access Ladder</u>	EACH	1	\$ 1,683		
		x	<u> Handrails and Railings</u>	LF	0	\$ -		
		x	<u> Steel Grabrails at Back Stairs</u>	LF	120	\$ 20,196		
		x	<u> Awnings / Canopies</u>	ASF	996	\$ 96,512		
		x	<u> Unit decks</u>	EACH	0	\$ -		
		x	<u>Ornamental Metal</u>	LS	0	\$ -	\$ -	
			<u>Totals Division 05</u>			\$ 427,681	\$ 427,681	
060000			<u>Division 6 Wood and Plastics</u>	BSF				
		x	<u>General Carpentry</u>	WEEKS	48	\$ -	\$ 207,480	
		x	<u> General Labor and Site Clean Up</u>	WEEKS	38	\$ 104,970		
		x	<u> Carpentry Foreman</u>	WEEKS	24	\$ 68,544		
		x	<u> Misc Sheathing and Framing Materials For Safe Off</u>	LS	1	\$ 33,966		
		x	<u>Fasteners and Adhesives</u>	LS	1	\$ -	\$ 21,240	
		x	<u> Hangers / Nails</u>	BSF	20,023	\$ 3,676		
		x	<u> Hardware</u>	BSF	20,023	\$ 5,719		
		x	<u> Seismic Hardware</u>	BSF	20,023	\$ 11,846		
		x	<u>Rough Carpentry</u>	BSF	20,023	\$ -	\$ 295,250	
		x	<u> Misc. Wood Framing Labor _Shear Walls</u>	LF	520	\$ 76,908		
		x	<u> Misc. Dimensional Lumber _Shear Walls</u>	LF	520	\$ 92,820		
		x	<u> Sheathing _Shear Walls</u>	ASF	15,600	\$ 71,604		
		x	<u> Sheathing _Roof</u>	ASF	11,747	\$ 53,918		
		x	<u> Interior Wall Faming _Upper Floor</u>	ASF	9,866	\$ -		
		x	<u> Underlayment</u>	ASF	0	\$ -		
		x	<u>Heavy Timber Construction</u>	LS	0	\$ -	\$ -	
		x	<u>Prefabricated Structural Wood</u>	LS	1	\$ -	\$ 74,469	
		x	<u> Glued-Laminated Structural Units</u>	ASF	9,866	\$ 31,699		
		x	<u> Prefabricated Wood Beams and Joists</u>	ASF	9,866	\$ 42,769		
		x	<u> Prefabricated Wood Trusses</u>	ASF	9,866	\$ -		
		x	<u>Finish Carpentry</u>	UNITS	0	\$ -	\$ -	
		x	<u>Millwork</u>	UNITS	0	\$ -	\$ -	
		x	<u>Laminates</u>		0	\$ -	\$ -	

CODE	INC	NIC	DESCRIPTION	UOM	Units	Total	Grand Total	Notes
		x	<u>Manufactured Casework</u>	UNITS	0	\$ -	\$ -	
		x	<u>Architectural Woodworking</u>	LS	0	\$ -	\$ -	
		x	<u>Plastic Fabrications</u>	LS	0	\$ -	\$ -	
			<u>Totals Division 06</u>			\$ 598,439	\$ 598,439	
070000			<u>Division 7 Thermal and Moisture Protection</u>	BSF				
		x	<u>Waterproofing</u>	ASF	0	\$ -	\$ 24,602	
		x	Foundation Waterproofing	ASF	1,776	\$ 19,655		
		x	Bentonite Waterproofing at Elevator	LS	1	\$ 4,947		
		x	<u>Weather Barriers</u>	ASF	0	\$ -	\$ 69,245	
		x	Water Reistant Barriers	ASF	11,910	\$ 41,911		
		x	Rainscreen	ASF	11,910	\$ 27,333		
		x	<u>Insulation</u>	BSF	0	\$ -	\$ -	
		x	<u>Exterior Insulation and Finish Systems</u>	LS	0	\$ -	\$ -	
		x	<u>Fireproofing</u>	LS	1	\$ -	\$ -	
		x	Spray Applied Fireproofing	ASF	0	\$ -		
		x	<u>Firestopping</u>	LS	1	\$ -	\$ 17,360	
		x	Fire Penetration Sealants	BSF	20,023	\$ 17,360		
		x	<u>Shingles and Roofing Tiles</u>	LS	0	\$ -	\$ -	
		x	<u>Cladding</u>	ASF	0	\$ -	\$ -	
		x	Composite Panels	ASF	4,293	\$ -		
		x	Mineral Fiber Cement Siding	ASF	11,910	\$ -		
		x	Stucco	ASF	3,750	\$ -		
		x	Stucco Caulking	ASF	3,750	\$ -		
		x	Soffits	ASF	0	\$ -		
		x	<u>Roofing</u>	ASF	23,494	\$ -	\$ 203,690	
		x	Asphalt Shingles	ASF	0	\$ -		
		x	Single Ply Membrane Roofing	ASF	11,747	\$ 125,808		
		x	Roof Board Insulation	ASF	11,747	\$ 77,881		
		x	<u>Flashing and Sheet Metal</u>	LS	1	\$ -	\$ 45,859	
		x	Scuppers for Rain Drains	EACH	8	\$ 8,038		
		x	Sheet Metal Flashing and Trim	ASF	11,910	\$ 30,371		
		x	Copings	LF	457	\$ 7,451		
		x	<u>Roof Specialties and Accessories</u>	LS	1	\$ -	\$ 3,264	
		x	Roof Top Pavers	ASF	0	\$ -		
		x	Roof Hatches	EACH	1	\$ 3,264		
		x	<u>Skylights</u>	LS	0	\$ -	\$ -	
		x	<u>Joint Sealers</u>	LS	1	\$ -	\$ 61,538	
		x	Air Barrier Caulking	UNITS	18	\$ 8,262		
		x	Caulking and Sealants	BSF	20,023	\$ 17,360		
		x	Exterior Building Joints	BSF	20,023	\$ 35,916		
			<u>Totals Division 07</u>			\$ 425,557	\$ 425,557	
080000			<u>Division 8 - Doors and Windows</u>	BSF				
		x	<u>Doors, Frames & Hardware</u>	UNITS	18	\$ -	\$ 15,147	
		x	HM Doors and Frames	EACH	11	\$ 15,147		
		x	Unit Entry Doors	UNITS	0	\$ -		
		x	Unit Int Passage Doors	EACH	36	\$ -		
		x	Common Area Int Doors	EACH	8	\$ -		
		x	Double Bi-Pass	EACH	36	\$ -		
		x	Door Hardware	UNITS	0	\$ -		
		x	Electro-Mechanical Hardware	UNITS	0	\$ -		
		x	<u>Special Doors</u>	LS	1	\$ -	\$ 1,760	
		x	Access Panels	EACH	15	\$ 1,760		
		x	Sectional Overhead Door_Trash Room	EACH	1	\$ -		
		x	<u>Entrances and Storefronts</u>	ASF	640	\$ -	\$ 78,458	
		x	Aluminum Entrances and Storefronts_Ground Floor	ASF	640	\$ 50,918		
		x	Storefront Hardware	LS	6	\$ 27,540		
		x	Aluminum Storefronts_Curtain Wall	ASF	11,910	\$ -		
		x	<u>Windows</u>	UNITS	18	\$ -	\$ 74,256	
		x	Vinyl Windows	UNITS	0	\$ -		
		x	Wood Windows_Refurbish Existing	EACH	28	\$ 74,256		
		x	<u>Special Windows</u>	LS	0	\$ -	\$ -	
			<u>Totals Division 08</u>			\$ 169,621	\$ 169,621	
090000			<u>Division 9 - Finishes</u>	BSF				

CODE	INC	NIC	DESCRIPTION	UOM	Units	Total	Grand Total	Notes
		x	<u>Metal Support Systems</u>	ASF	10,484	\$ -	\$ -	
		x	Non-load Bearing Mtl Wall Framing_ Ground Floor	ASF	10,484	\$ -		
		x	Non-load Bearing Mtl Wall Framing_ Upper Floors	ASF	30,000	\$ -		
		x	Ceiling Suspension Systems		0	\$ -		
		x	<u>Lath and Plaster</u>	LS	0	\$ -	\$ -	
		x	Furring and Lathing	ASF	0	\$ -		
		x	Veneer Plaster	ASF	0	\$ -		
		x	<u>Gypsum Board</u>	ASF	0	\$ -	\$ -	
		x	Finished Drywall	BSF	0	\$ -		
		x	Unfinished Drywall_ Retail Spaces	ASF	7,698	\$ -		
		x	Interior Soffit Framing	UNITS	0	\$ -		
		x	Elevator Shaft Wall	LIFTS	4	\$ -		
		x	Mechanical Shafts	LIFTS	8	\$ -		
		x	Drywall Heat / Patch	BSF	0	\$ -		
		x	<u>Tile</u>	LS	0	\$ -	\$ -	
		x	Ceramic Tile Backsplashes	ASF	0	\$ -		
		x	Ceramic Tile at Units Entries	ASF	0	\$ -		
		x	Ceramic Tile Floors at Lobby	ASF	1,102	\$ -		
		x	Ceramic Tile Floors at Sitting Area	ASF	1,310	\$ -		
		x	Ceramic Tile Unit Showers	ASF	0	\$ -		
		x	<u>Stone Facing</u>	LS	0	\$ -	\$ -	
		x	<u>Acoustical Treatment</u>	ASF	0	\$ -	\$ -	
		x	Acoustical Tile Ceilings	ASF	0	\$ -		
		x	<u>Special Wall Surfaces</u>	LS	0	\$ -	\$ -	
		x	Fiber Reinforced Plastic Coated Panels	ASF	656	\$ -		
		x	<u>Special Ceiling Surfaces</u>	LS	0	\$ -	\$ -	
		x	Linear Metal Ceilings	ASF	0	\$ -		
		x	Linear Wood Ceilings_ Lobby	ASF	1,102	\$ -		
		x	Suspended Decorative Grids	ASF	0	\$ -		
		x	<u>Wood Flooring</u>	LS	0	\$ -	\$ -	
		x	Sleeper System	ASF	0	\$ -		
		x	Wood Strip Flooring_ Units & Corridors	ASF	7,556	\$ -		
		x	<u>Resilient Flooring</u>	ASF	6,866	\$ -	\$ -	
		x	Resilient LVT Flooring_ Units	ASF	6,232	\$ -		
		x	Resilient LVT Flooring_ Commons	ASF	634	\$ -		
		x	Resilient Base and Accessories	LF	605	\$ -		
		x	<u>Carpet</u>	ASF	1,324	\$ -	\$ -	
		x	Floor Prep	BSF	0	\$ -		
		x	Protection	ASF	0	\$ -		
		x	Walk Off Mats at Entries	ASF	96	\$ -		
		x	Sheet Carpet at Bedrooms	ASF	0	\$ -		
		x	Carpet Tile at Corridors	ASF	1,324	\$ -		
		x	<u>Special Flooring</u>	LS	0	\$ -	\$ -	
		x	Resinous Flooring	ASF	0	\$ -		
		x	Rubber Flooring at Exercise and Yoga	ASF	655	\$ -		
		x	<u>Floor Treatment</u>	LS	0	\$ -	\$ -	
	x		<u>Special Coatings</u>	LS	1	\$ -	\$ 5,106	
		x	Elastomeric Coatings	ASF	0	\$ -		
		x	Fire Resistant Paints	ASF	0	\$ -		
		x	Intumescent Paints	ASF	0	\$ -		
	x		Graffiti Resistant Coatings	ASF	11,125	\$ 5,106		
		x	Coating Systems for Steel	ASF	0	\$ -		
		x	<u>Painting</u>	BSF	0	\$ -	\$ -	
		x	Exterior Painting	ASF	11,910	\$ -		
		x	Painting-Wall/Ceiling Surface	BSF	0	\$ -		
		x	Finish Millwork	LF	8,276	\$ -		
		x	Final Touch-UP	BSF	0	\$ -		
		x	<u>Wall Coverings</u>	ASF	0	\$ -	\$ -	
		x	Vinyl Wall Coverings	ASF	0	\$ -		
	x		<u>Clean-Up</u>	BSF	20,023	\$ -	\$ 31,223	
	x		Continuous Clean-Up	WEEKS	48	\$ 22,032		
	x		Final Cleaning--Building	BSF	20,023	\$ 9,191		
			Totals Division 09			\$ 36,329	\$ 36,329	
100000			Division 10 - Specialties	BSF				
	x		<u>Visual Display Boards</u>	LS	0	\$ -	\$ -	

CODE	INC	NIC	DESCRIPTION	UOM	Units	Total	Grand Total	Notes
		x	<u>Compartments and Cubicles</u>	LS	0	\$ -	\$ -	
		x	<u>Wall and Corner Guards</u>	LS	0	\$ -	\$ -	
		x	Corner Guards	EACH	41	\$ -		
		x	<u>Fireplaces and Stoves</u>	LS	0	\$ -	\$ -	
		x	<u>Manufactured Exterior Specialties</u>	LS	0	\$ -	\$ -	
		x	<u>Flagpoles</u>	LS	0	\$ -	\$ -	
		x	<u>Identifying Devices / Signage</u>	LS	0	\$ -	\$ -	
		x	Electronic Directories	EACH	0	\$ -		
		x	Bulletin Boards	EACH	0	\$ -		
		x	Plaques	EACH	0	\$ -		
		x	Exterior Signs	EACH	0	\$ -		
		x	Unit Signs_Code Signage	UNITS	0	\$ -		
		x	Marketing Signage	EACH	0	\$ -		
		x	<u>Pedestrian Control Devices</u>	LS	0	\$ -	\$ -	
		x	<u>Lockers</u>	LS	0	\$ -	\$ -	
		x	<u>Fire Protection Specialties</u>	LS	0	\$ -	\$ -	
		x	Fire Extinguishers, Cabinets, and Accessories	EACH	6	\$ -		
		x	Knox Box	EACH	1	\$ -		
		x	Installation	EACH	6	\$ -		
		x	<u>Protective Covers</u>	LS	0	\$ -	\$ -	
		x	<u>Postal Specialties</u>	UNITS	0	\$ -	\$ -	
		x	<u>Partitions</u>	LS	0	\$ -	\$ -	
		x	<u>Storage Shelving</u>	LS	0	\$ -	\$ -	
		x	<u>Toilet and Bath Accessories</u>	EACH	0	\$ -	\$ -	
		x	Toilet Partitions	EACH	0	\$ -		
		x	Mirrors - Units	EACH	36	\$ -		
		x	Medicine Cabinet	UNITS	0	\$ -		
		x	Toilet Paper Dispenser	EACH	21	\$ -		
		x	Toilet Seat Cover Dispenser	EACH	3	\$ -		
		x	Sanitary Napkin Disposer	EACH	3	\$ -		
		x	Soap Dispenser	EACH	3	\$ -		
		x	Paper Towel Dispenser	EACH	0	\$ -		
		x	Waste Receptacle	UNITS	0	\$ -		
		x	Soap Dish	UNITS	0	\$ -		
		x	Grab Bars	UNITS	3	\$ -		
		x	Towel Bars	UNITS	0	\$ -		
		x	Hand Towel Bars	UNITS	0	\$ -		
		x	Robe Hooks	UNITS	0	\$ -		
		x	Shower and Tub Doors	EACH	18	\$ -		
		x	Shower Curtain Rod	UNITS	0	\$ -		
		x	Shower Curtain	UNITS	0	\$ -		
		x	Splash Guards	UNITS	0	\$ -		
		x	Install Bath Accessories	EACH	0	\$ -		
			<u>Totals Division 10</u>			\$ -	\$ -	
110000			<u>Division 11 - Equipment</u>		BSF			
		x	<u>Maintenance Equipment</u>	LS	0	\$ -	\$ -	
		x	<u>Teller and Service Equipment</u>	LS	0	\$ -	\$ -	
		x	<u>Registration Equipment</u>	LS	0	\$ -	\$ -	
		x	<u>Commercial Laundry and Dry Cleaning Equipment</u>	LS	0	\$ -	\$ -	
		x	<u>Vending Equipment</u>	LS	0	\$ -	\$ -	
		x	<u>Audio-Visual Equipment</u>	LS	0	\$ -	\$ -	
		x	<u>Solid Waste Handling Equipment /Trash Compactors</u>	LS	0	\$ -	\$ -	
		x	<u>Water Supply and Treatment Equipment</u>	LS	0	\$ -	\$ -	
		x	<u>Fluid Waste Treatment and Disposal Equipment</u>	LS	0	\$ -	\$ -	
		x	<u>Food Service Equipment</u>	ASF	0	\$ -	\$ -	
		x	<u>Residential Equipment / Appliances</u>	UNITS	0	\$ -	\$ -	
		x	<u>Athletic, Recreational, and, Therapeutic Equipment</u>	LS	0	\$ -	\$ -	
		x	<u>Office Equipment</u>	LS	0	\$ -	\$ -	
			<u>Totals Division 11</u>			\$ -	\$ -	
120000			<u>Division 12 - Furnishings</u>		BSF			
		x	<u>Fabrics</u>	LS	0	\$ -	\$ -	
		x	<u>Artwork</u>	LS	0	\$ -	\$ -	
		x	<u>Window Treatment</u>	LS	0	\$ -	\$ -	
		x	<u>Furniture and Accessories</u>	LS	0	\$ -	\$ -	

CODE	INC	NIC	DESCRIPTION	UOM	Units	Total	Grand Total	Notes
		x	<u>Rugs and Mats</u>	LS	0	\$ -	\$ -	
		x	<u>Interior Plants and Planters</u>	LS	0	\$ -	\$ -	
		x	<u>Bicycle Racks</u>	LS	0	\$ -	\$ -	
		x	Bicycle Racks (Staples)	EACH	6	\$ -		
		x	Bicycle Racks (Stackers)	EACH	0	\$ -		
		x	Bicycle Racks (Wall Hangers)	EACH	18	\$ -		
		x	Bicycle Rack Installations	EACH	24	\$ -		
			<u>Totals Division 12</u>			\$ -	\$ -	
13000			<u>Division 13 - Special Construction</u>	BSF				
		x	<u>Solar Energy Systems</u>	LS	0	\$ -	\$ -	
		x	<u>Wind Energy Systems</u>	LS	0	\$ -	\$ -	
		x	<u>Building Automation Systems</u>	LS	0	\$ -	\$ -	
			<u>Totals Division 13</u>			\$ -	\$ -	
140000			<u>Division 14 - Conveying Systems</u>	BSF				
		x	<u>Dumbwaiters</u>	LS	0	\$ -	\$ -	
		x	<u>Elevators</u>	LIFTS	0	\$ -	\$ -	
		x	Smoke doors/gasket	EACH	2	\$ -		
		x	Electric Traction Elevators	LIFTS	2	\$ -		
		x	<u>Material Handling Systems / Linen Chutes</u>	LIFTS	0	\$ -	\$ -	
		x	Laundry and Linen Chutes	0	\$ -			
		x	Trash Chutes	0	\$ -			
			<u>Totals Division 14</u>			\$ -	\$ -	
210000			<u>Division 21 - Fire Suppression</u>	BSF				
		x	<u>Fire Protection</u>	BSF	20,023	\$ -	\$ 125,815	
		x	Design & Permitting	BSF	20,023	\$ 22,057		
		x	Fire Sprinklers Finished Area	BSF	20,023	\$ 74,546		
		x	Fire Sprinklers Crawl Space	BSF	0	\$ -		
		x	Underground in Building	ASF	10,484	\$ -		
		x	Riser_Modifications to Existing	LS	1	\$ 29,213		
		x	Vault	EACH	0	\$ -		
		x	Fire Pumps	EACH	0	\$ -		
			<u>Totals Division 21</u>			\$ 125,815	\$ 125,815	
220000			<u>Division 22 - Plumbing</u>	BSF				
		x	<u>Plumbing</u>	UNITS	0	\$ -	\$ -	
		x	Permitting	BSF	0	\$ -		
		x	Trenching / backfill	ASF	10,484	\$ -		
		x	Plumbing Basic Requirements	UNITS	0	\$ -		
		x	Plumbing Fixtures	UNITS	0	\$ -		
		x	Plumbing Piping	UNITS	0	\$ -		
		x	Booster Pumps	EACH	0	\$ -		
		x	Storage Tanks	GAL	0	\$ -		
		x	Central Recirc Water Heater System	UNITS	0	\$ -		
		x	Natural Gas Systems_Units	BSF	0	\$ -		
		x	Natural Gas Systems_Retail Spaces	BSF	0	\$ -		
			<u>Totals Division 22</u>			\$ -	\$ -	
230000			<u>Division 23 - Heating, Ventilating, and Air Conditioning</u>	BSF				
		x	<u>Heating, Ventilating, and Air Conditioning</u>	BSF	0	\$ -	\$ -	
		x	Permits	BSF	0	\$ -		
		x	Heating & Ventilating Basic Requirements	BSF	0	\$ -		
		x	RTU 1	EACH	0	\$ -		
		x	HPs	EACH	28	\$ -		
		x	ERVs	EACH	28	\$ -		
		x	PTACs	EACH	0	\$ -		
		x	Testing Adjusting & Balancing for HVAC	UNITS	10	\$ -		
		x	<u>Air Handling</u>	LS	0	\$ -	\$ -	
		x	Garage Exhaust System	ASF	0	\$ -		
		x	Air Distribution	ASF	11,234	\$ -		
			<u>Totals Division 23</u>			\$ -	\$ -	
260000			<u>Division 26 - Electrical</u>	BSF				
		x	<u>Basic Electrical Materials and Methods</u>	BSF	0	\$ -	\$ -	

CODE	INC	NIC	DESCRIPTION	UOM	Units	Total	Grand Total	Notes
		x	Permits	BSF	0	\$ -		
		x	Electrical Basic Requirements	BSF	0	\$ -		
		x	<u>Power Generation - Built-Up Systems</u>	LS	0	\$ -	\$ -	
		x	Generators	LS	1	\$ -		
		x	<u>Service and Distribution</u>	BSF	0	\$ -	\$ -	
		x	Transformers	EACH	0	\$ -		
		x	Trenching / Backfill - Secondary	LF	0	\$ -		
		x	600amp Building Service & Hotel Panels	EACH	1	\$ -		
		x	200amp Services For Retail Spaces_Reuse Existing	EACH	5	\$ -		
		x	<u>Lighting</u>	UNITS	0	\$ -	\$ -	
		x	Interior Luminaries	BSF	0	\$ -		
		x	Exterior Luminaries_Sconce Lighting	EACH	10	\$ -		
		x	Light Poles	EACH	0	\$ -		
		x	<u>Special Systems</u>	LS	0	\$ -	\$ -	
		x	<u>Temporary Electrical</u>	WEEKS	0	\$ -	\$ -	
		x	Temporary Electrical / Balogne cords / Labor	WEEKS	0	\$ -		
		x	Temporary Power Pole and Connection	LS	2	\$ -		
		x	Charge by Utility Company	LS	0	\$ -		
			<u>Totals Division 26</u>			\$ -	\$ -	
270000			<u>Division 27 - Fire Alarm Systems</u>	BSF				
		x	<u>Alarm and Detection Systems</u>	LS	0	\$ -	\$ -	
		x	Permits	BSF	0	\$ -		
		x	Fire Alarm Systems	BSF	0	\$ -		
		x	Digital antanna systems (DAS)	BSF	0	\$ -		
		x	Area of Refuge 2 way Communication	LS	1	\$ -		
			<u>Totals Division 27</u>			\$ -	\$ -	
280000			<u>Division 28 - Communicatons</u>	BSF				
		x	<u>Communications / Low Voltage</u>	LS	0	\$ -	\$ -	
		x	Call Systems	BSF	0	\$ -		
		x	Data Systems	BSF	0	\$ -		
		x	Local Area Network Systems	BSF	0	\$ -		
		x	Door Answering Systems at Units	BSF	0	\$ -		
		x	Door Answering Systems at Commons	LS	1	\$ -		
		x	Master Antenna Systems / CATV	BSF	0	\$ -		
		x	Video Surveillance Systems	BSF	0	\$ -		
			<u>Totals Division 26</u>			\$ -	\$ -	
310000			<u>Division 31 - Earthwork</u>	BSF				
		x	<u>Field Engineering / Surveying</u>	SSF	15,675	\$ -	\$ 11,192	
		x	Survey_Building Corners and Floors	SSF	15,675	\$ 11,192		
		x	Testing	LS	0	\$ -		
		x	Special Inspections	LS	0	\$ -		
		x	<u>Dewatering</u>	LS	0	\$ -	\$ -	
		x	<u>Shoring and Underpinning</u>	ASF	0	\$ -	\$ 28,305	
		x	Temporary Basement Shoring	ASF	1,110	\$ 28,305		
		x	Soldier Pile Permanent Shoring	ASF	0	\$ -		
		x	<u>Earthwork</u>	SSF	15,675	\$ -	\$ 295,954	
		x	Excavating Footings	ASF	10,484	\$ 34,754		
		x	Fill Basement w/ CONFOAM	CY	2,412	\$ 246,024		
		x	SOG Prep	ASF	10,484	\$ 12,298		
		x	Slope Protection and Erosion Control	SSF	15,675	\$ 2,878		
		x	<u>Off-Site</u>	ASF	0	\$ -	\$ -	
		x	Street Restoration	ASF	0	\$ -		
		x	Sidewalk Restoration	ASF	0	\$ -		
		x	Curb Restoration	LF	0	\$ -		
		x	<u>Tunneling</u>	LF	0	\$ -	\$ -	
		x	<u>Piles and Caissons</u>	EACH	0	\$ -	\$ -	
			<u>Totals Division 31</u>			\$ 335,451	\$ 335,451	
320000			<u>Division 32 - Exterior Improvements</u>	BSF				
		x	<u>Paving and Surfacing</u>	ASF	0	\$ -	\$ -	
		x	Asphaltic Concrete Paving 3"	ASF	0	\$ -		
		x	Unit Pavers	ASF	0	\$ -		
		x	Exterior Flatwork	ASF	0	\$ -		

CODE	INC	NIC	DESCRIPTION	UOM	Units	Total	Grand Total	Notes
		x	Cast-in-Place Curbs	LF	0	\$ -		
		x	Pavement Repair	ASF	0	\$ -		
		x	Pavement Resurfacing	ASF	0	\$ -		
		x	Pavement Marking	STALLS	0	\$ -		
		x	Site Improvements	SSF	0	\$ -	\$ -	
		x	Fences and Gates	LF	0	\$ -		
		x	Recreational Facilities	EACH	0	\$ -		
		x	Prefabricated Shelters	EACH	0	\$ -		
		x	Seating / Benches	EACH	0	\$ -		
		x	Landscaping	LSF	0	\$ -	\$ -	
		x	Green Roofs	ASF	0	\$ -		
		x	Landscape & Irrigation Systems	LSF	0	\$ -		
			Totals Division 32			\$ -	\$ -	
330000			Division 33 - Utilities	BSF				
		x	Connection fees	EACH	0	\$ -	\$ -	
		x	Water Distribution	SSF	0	\$ -	\$ -	
		x	Fuel and Steam Distribution	LF	0	\$ -	\$ -	
		x	Sewerage and Drainage	SSF	0	\$ -	\$ -	
		x	Restoration of Underground Pipe	LF	0	\$ -	\$ -	
		x	Power and Communications	LF	0	\$ -	\$ -	
			Totals Division 33			\$ -	\$ -	
Sub Totals						\$4,450,355	\$4,450,355	
			SUB TOTAL 2-16	222.26		\$ 4,450,355		
x			Overhead	1.50%		\$ 66,755		
x			Fee	3.50%		\$ 158,099		
			TOTAL	233.49		\$ 4,675,209		
x			Liability Insurance	1.10%		\$ 51,427		
	x		Bond	0.90%		\$ -		
	x		Builder Risk	0.40%		\$ -		
x			B&O Taxes	0.480%		\$ 22,688		
x			State Sales Tax	6.50%		\$ 308,706		
x			City Sales Tax	2.20%		\$ 111,277		
x			Contingency	2.50%		\$ 111,259		
			Grand Total	263.73		\$ 5,280,566		

DOWNTOWN MULTI-TENANT COMMERCIAL BUILDING

600 Main Street
Vancouver, Washington 98660

APPRAISAL REPORT

Date of Report: July 8, 2022
Colliers File #: VAN220046



PREPARED FOR
Rob Aschieris
Patricia Aschieris Trust
1811 Main Street, Suite 201
Vancouver, WA 98660

PREPARED BY
COLLIERS INTERNATIONAL
VALUATION & ADVISORY SERVICES

LETTER OF TRANSMITTAL

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July 8, 2022

Rob Aschieris
Patricia Aschieris Trust
1811 Main Street, Suite 201
Vancouver, WA 98660

RE: Downtown Multi-Tenant Commercial Building

600 Main Street
Vancouver, Washington 98660

Colliers File #: VAN220046

Mr. Aschieris:

This appraisal report satisfies the scope of work and requirements agreed upon by Patricia Aschieris Trust and Colliers International Valuation & Advisory Services. At the request of the client, this appraisal is presented in an Appraisal Report format as defined by *USPAP* Standards Rule 2-2(a). My appraisal format provides a summary description of the appraisal process, subject and market data and valuation analyses.

The purpose of this appraisal is to develop an opinion of the Retrospective Market Value of the subject property's leased fee interest. The following table conveys the final opinions of market value of the subject property that are developed within this appraisal report:

VALUE TYPE	INTEREST APPRAISED	DATE OF VALUE	VALUE
Retrospective Value	Leased Fee	December 17, 2021	\$1,400,000

The subject is a Downtown Retail / Commercial (Other Retail/Commercial) property totaling 9,380 SF of NRA located on a 0.23-acre site at 600 Main Street in Vancouver, Washington. The improvements are in average condition and have a remaining economic life of approximately 25 years based on my estimate. The subject property building totals 9,380 SF of building area. The building includes a 2nd floor which is unfinished with some wall partitions. However, based on its condition, the 2nd floor area is not included as part of the building area. There is also a basement area in a portion of the subject building which is leased to Kindred Homestead Supply and sub-leased to other sub-tenants. However, the basement area is not included in the building square footage. The market typically only assigns value to above-ground area, so the subject's 1st floor will only be valued.

The subject property has a multi-tenant design that has an occupancy level of 100.0%, which is above the stabilized occupancy level estimate of 95.0% that was developed in this appraisal. However, leases were signed in 7/21 for two vacant spaces, and as of the effective date of value (12/17/21), the tenants will receive free rent until March 2022, when they will begin paying rent. Therefore, there will be some deductions for some remaining rent loss/absorption costs necessary in order to reflect the Retrospective Market Value as of 12/17/21.

The analyses, opinions and conclusions communicated within this appraisal report were developed based upon the requirements and guidelines of the current Uniform Standards of Professional Appraisal Practice (USPAP), the requirements of the Code of Professional Ethics and the Standards of Professional Appraisal Practice of the Appraisal Institute.

It is prudent to note that the COVID-19 virus (aka coronavirus) is a serious illness that has affected the world and more specifically the United States. We have reported on these discussions in the market analysis section of this report. However, with the strength of the retail/service market and the continued recovery from the COVID-19 pandemic, we have not assigned a discount for rents and improved sales which took place prior to March 2020, noting there have been many recent transactions which reflect current market conditions.

The report, in its entirety, including all assumptions and limiting conditions, is an integral part of, and inseparable from, this letter. *USPAP* defines an Extraordinary Assumption as, “an assumption, directly related to a specific assignment, as of the effective date of the assignment results, which, if found to be false, could alter the appraiser’s opinions or conclusions”. *USPAP* defines a Hypothetical Condition as, “that which is contrary to what is known by the appraiser to exist on the effective date of the assignment results, but is used for the purpose of analysis”.

The Extraordinary Assumptions and/or Hypothetical Conditions that were made during the appraisal process to arrive at my opinion of value are fully discussed below. I advise the client to consider these issues carefully given the intended use of this appraisal, as their use might have affected the assignment results.

EXTRAORDINARY ASSUMPTIONS

The Retrospective Date of Value is December 17, 2021, the Date of Death of Patricia Aschieris. The appraiser completed an interior and exterior property inspection of the subject property on June 17, 2022. This appraisal reasonably assumes that between the two dates, no significant changes occurred to the subject building.

This appraisal reasonably assumes that income information provided by the client is accurate.

The subject property building has a tenant split between the subject building and the adjoining building to the west, referred to as the 114 West 6th Street Building (Same Owner). This tenant is Kindred Homestead Supply, which has its entrance from east end of the subject building. This space continues through some doors/openings into the adjoining building to the 114 West 6th Street Building. The owner/client indicated that this northern space in both buildings was previously a hardware store which extended all the way from Main Street to Washington Street, but more recently has been partitioned. This appraisal reasonably assumes that the portion of the Kindred Homestead Supply space in the subject building is a separately marketable space, and that if the subject property building were to be sold off separately, a partition could be installed, separating this space in the subject building from the remainder of the space in the adjacent 114 West 6th Street Building.

This appraisal reasonably assumes our renovation cost estimates are accurate.

No other Extraordinary Assumptions were made for this assignment.

HYPOTHETICAL CONDITIONS

No Hypothetical Conditions were made for this assignment.

RELIANCE LANGUAGE

My opinion of value reflects current conditions and the likely actions of market participants as of the date of value. It is based on the available information gathered and provided to us, as presented in this report, and does not predict future performance. Changing market or property conditions can and likely will have an effect on the subject's value.

The signature below indicates my assurance to the client that the development process and extent of analysis for this assignment adhere to the scope requirements and intended use of the appraisal. If you have any specific questions or concerns regarding the attached appraisal report, or if Colliers International Valuation & Advisory Services can be of additional assistance, please contact the individuals listed below.

Sincerely,

**COLLIERS INTERNATIONAL
VALUATION & ADVISORY SERVICES**



Dean Meyer, MAI
Senior Valuation Services Director
Certified General Real Estate Appraiser
State of Washington License #1100795
+1 360 823 5263
dean.meyer@colliers.com

REPORT ORGANIZATION**PROPERTY AND ASSIGNMENT OVERVIEW**

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CERTIFICATION OF APPRAISAL**ASSUMPTIONS & LIMITING CONDITIONS****ADDENDA**

Professional Service Agreement (PSA)
Rent Roll
Income/Expense Summary
Valuation Glossary
Qualifications of Appraiser
Qualifications of Colliers International Valuation & Advisory Services

GENERAL INFORMATION

Property Name	Downtown Multi-Tenant Commercial Building
Property Type	Retail / Commercial - Other Retail/Commercial
Address	600 Main Street
City	Vancouver
State	Washington
Zip Code	98660
County	Clark
Core Based Statistical Area (CBSA)	Portland-Vancouver-Hillsboro, OR-WA
Market	Portland-Vancouver Metro Area
Submarket	Clark County
Latitude	45.625825
Longitude	-122.671948
Number Of Parcels	1
Assessor Parcel	047950-000
Total Taxable Value	\$1,484,250
Census Tract Number	424.00

SITE INFORMATION

Land Area	Acres	Square Feet
Usable	0.23	10,050
Unusable	0.00	0
Excess	0.00	0
Surplus	0.00	0
Total	0.23	10,050
Topography	Generally Level at street grade	
Shape	Square	
Access	Average/Good	
Exposure	Average	
Current Zoning	City Center (CX)	
Flood Zone	Zone X (Unshaded)	
Seismic Zone	High Risk	

IMPROVEMENT INFORMATION

Net Rentable Area (NRA)	9,380 SF
Gross Building Area SF (GBA)	9,380 SF
Floor Plate SF	9,380 SF
Total Number Of Buildings	1
Total Number Of Stories	1
Year Built	1922
Quality	Average
Condition	Average
Building Class	C
Type Of Construction	Masonry, brick and stucco
Land To Building Ratio	1.1 : 1
Site Coverage Ratio	93.3%
Parking Type	Surface
Number of Parking Spaces	-
Parking Ratio (Spaces/1,000SF NRA)	0.0/1,000 SF NRA

HIGHEST & BEST USE**As Vacant**

Commercial

As Improved

Continued Use As A Multi-Tenant Commercial Building

EXPOSURE TIME & MARKETING PERIOD**Exposure Time**

12 Months

Marketing Period

12 Months

VALUATION SUMMARY**VALUATION INDICES****RETROSPECTIVE
VALUE****INTEREST APPRAISED****LEASED FEE****DATE OF VALUE****DECEMBER 17, 2021****INCOME CAPITALIZATION APPROACH****Direct Capitalization**

\$1,430,000

Direct Capitalization \$/SF

\$152/SF

NOI Proforma

\$101,543

NOI \$/SF

\$10.83/SF

Capitalization Rate

6.75%

INCOME CONCLUSION**\$1,430,000**

Income Conclusion \$/SF

\$152/SF

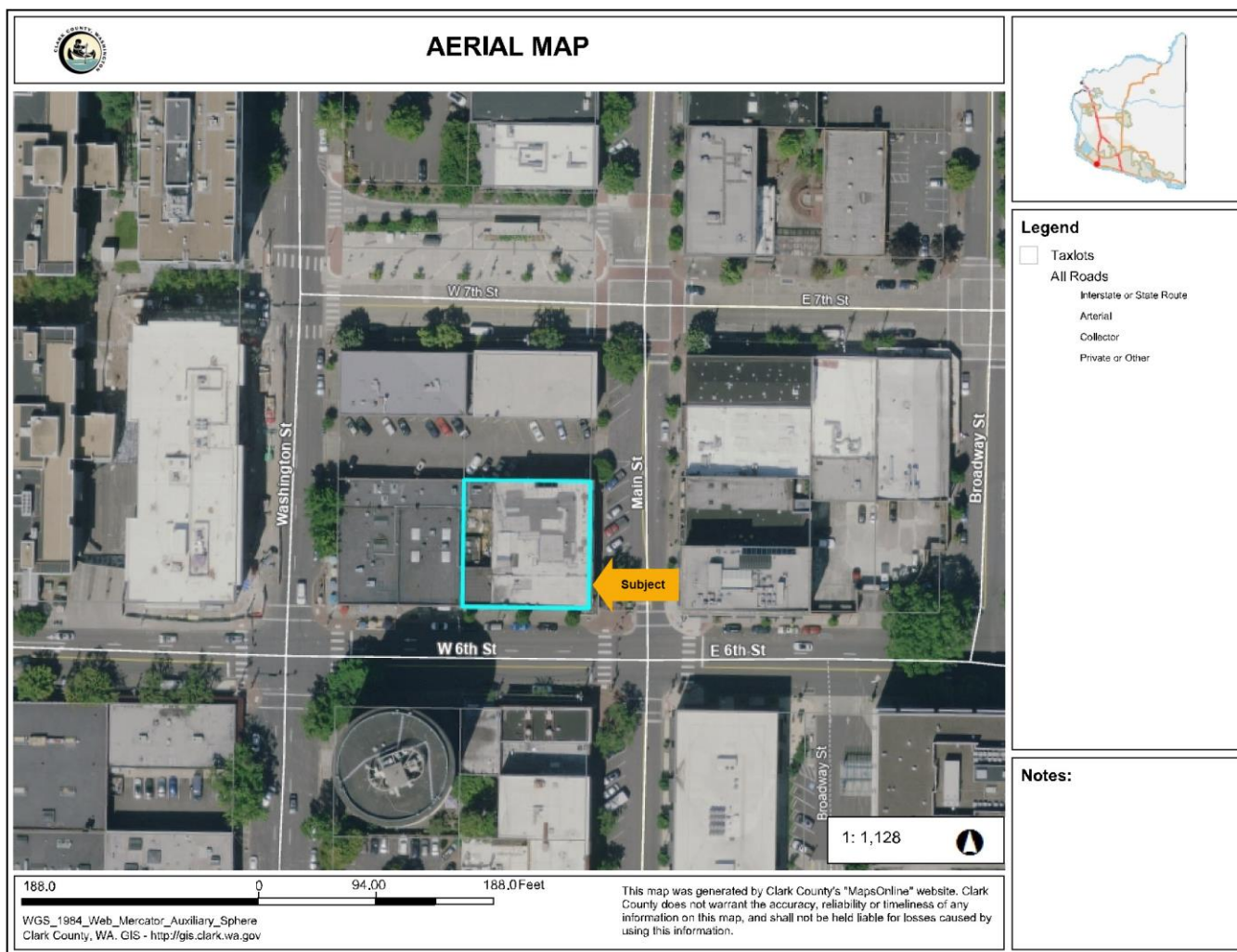
SALES COMPARISON APPROACH**SALES CONCLUSION****\$1,340,000**

Sales Conclusion \$/SF

\$143/SF

FINAL VALUE CONCLUSION**RETROSPECTIVE MARKET VALUE****\$1,400,000**

AERIAL PHOTOGRAPH



SUBJECT PHOTOGRAPHS



STREET SCENE: FACING NORTH ALONG MAIN STREET; SUBJECT AT LEFT



STREET SCENE: FACING SOUTH ALONG MAIN STREET; SUBJECT AT RIGHT



STREET SCENE: FACING EAST ALONG WEST 6TH STREET; SUBJECT AT LEFT



STREET SCENE: FACING WEST ALONG WEST 6TH STREET; SUBJECT AT RIGHT



OVERVIEW OF SUBJECT PROPERTY, FACING NW FROM MAIN STREET



FACING SW TOWARD NORTH AND EAST SIDES OF SUBJECT BUILDING



INTERIOR OF FUTURE BACKBEAT DISTILLERY SPACE (600 MAIN)



INTERIOR OF FUTURE BACKBEAT DISTILLERY SPACE (600 MAIN)



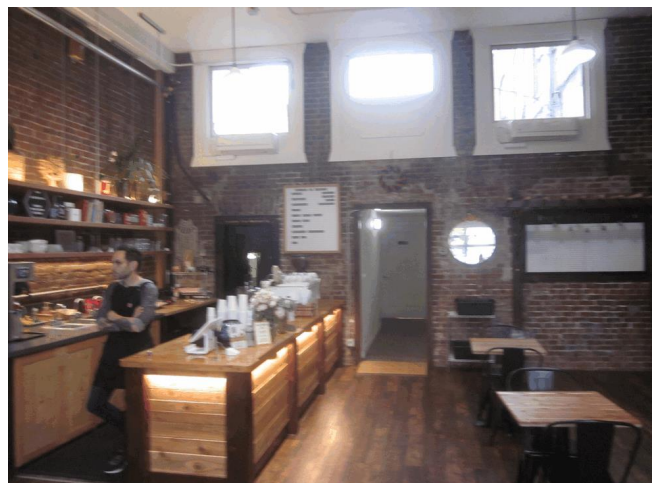
INTERIOR OF FUTURE BACKBEAT DISTILLERY SPACE ALONG MAIN STREET (604)



KINDRED HOMESTEAD SUPPLY SPACE ALONG MAIN STREET



OVERVIEW OF COURTYARD AREA



INTERIOR OF TERRAIN COFFEE SPACE

PROPERTY IDENTIFICATION

The subject is a Retail / Commercial (Other Retail/Commercial) property totaling 9,380 SF NRA located on a 0.23-acre site at 600 Main Street in Vancouver, Clark County, Washington. The assessor's parcel number is: 047950-000.

A detailed legal description was not provided.

SCOPE OF WORK

The scope of work for this appraisal assignment is outlined below:

- The appraiser analyzed the regional and local area economic profiles including employment, population, household income, and real estate trends.
- The appraiser confirmed and analyzed legal and physical features of the subject, and how they impact the functionality and overall competitive position of the property.
- The appraiser completed a retail supply/demand market analysis of the Portland-Vancouver Metro Area market and Clark County sub-market. Conclusions were drawn regarding the subject property's competitive position given its physical and locational characteristics, the prevailing economic conditions and external influences.
- The appraiser conducted Highest and Best Use analysis and conclusions were drawn for the highest and best use of the subject property As-Vacant and As-Improved.
- The appraiser confirmed and analyzed financial features of the subject property. This information, as well as trends established by confirmed market indicators, was used to forecast performance of the subject property.
- Selection of the valuation methods was based on the identifications required in USPAP relating to the intended use, intended users, definition and date of value, relevant property characteristics and assignment conditions. This appraisal developed the Income (Direct Capitalization) and Sales Comparison approaches to value, which were adjusted and reconciled as appropriate.
- Reporting of this appraisal is in an Appraisal Report format as required in USPAP Standard 2. The appraiser's analysis and conclusions are summarized within this document.
- I understand the Competency Rule of USPAP and the author of this report meets the standards.
- No one provided significant real property appraisal assistance to appraiser signing this certification.

SOURCES OF INFORMATION

The following sources were contacted to obtain relevant information:

SOURCES OF INFORMATION	
ITEM	SOURCE
Tax Information	Clark County Tax Assessor
Zoning Information	City of Vancouver Zoning Code
Site Size Information	Clark County Tax Assessor
Building Size Information	Rent Roll & Floor Plans
New Construction	City of Vancouver / Clark County
Flood Map	InterFlood
Demographics	Pitney Bowes/Gadberry Group - GroundView®
Comparable Information	See Comparable Charts and Photo Pages for details
Rent Roll	Client
Income/Expense Statements	Client

SUBJECT PROPERTY INSPECTION

The following table illustrates the Colliers International professionals involved with this appraisal report and their status related to the property inspection.

SUBJECT PROPERTY INSPECTION			
APPRAISER	INSPECTED	EXTENT	DATE OF INSPECTION
Dean Meyer, MAI	Yes	Interior/Exterior	June 17, 2022

CLIENT IDENTIFICATION

The client of this specific assignment is Patricia Aschieris Trust.

PURPOSE

The purpose of this appraisal is to develop an opinion of the Retrospective Market Value of the subject property's leased fee interest.

INTENDED USE

The intended use of this appraisal is to assist the client with an estate tax filing.

INTENDED USERS

Intended users of this report include the client and the client's family members. Additional intended users include any taxing authorities. No other users are intended. Use of this report by Third-Parties and other unintended users is not permitted. This report must be used in its entirety. Reliance on any portion of the report independent of others, may lead the reader to erroneous conclusions regarding the property values. Unless approval is provided by the authors no portion of the report stands alone.

ASSIGNMENT DATES

Date of Report	July 8, 2022
Date of Inspection	June 17, 2022
Valuation Date - Retrospective	December 17, 2021

PERSONAL AND INTANGIBLE PROPERTY

No personal property or intangible items are included in this valuation.

PROPERTY AND SALES HISTORY

Current Owner

The subject property is currently owned by Schofield Properties 600 Main Street, LLC, according to the Clark County Assessor's Office.

Three-Year Sales History

The Subject has not sold or been listed for sale in the last three years, and no offers have been made on the subject property in the last three years. The subject property has historically been utilized for a variety of commercial uses over the years. The 2nd floor has been utilized as a hotel numerous decades ago and is currently in a state of disrepair, with no value assigned to the 2nd floor. In more recent years, the building has been re-partitioned into smaller tenant spaces and much of it has been re-leased to various commercial retail/service tenants, although there still remains some vacancy.

Subject Sale Status

The subject property is not currently listed for sale.

DEFINITIONS OF VALUE

Given the scope and intended use of this assignment, the definition of Market Value is applicable. The definition of Market Value, along with all other applicable definitions for this assignment, is located in the Valuation Glossary section of the Addenda.

PROPERTY RIGHTS APPRAISED

The property rights appraised constitute the leased fee interest.

VALUE SCENARIOS

The valuation scenarios developed in this appraisal report include the Retrospective Market Value of the subject property's leased fee interest.

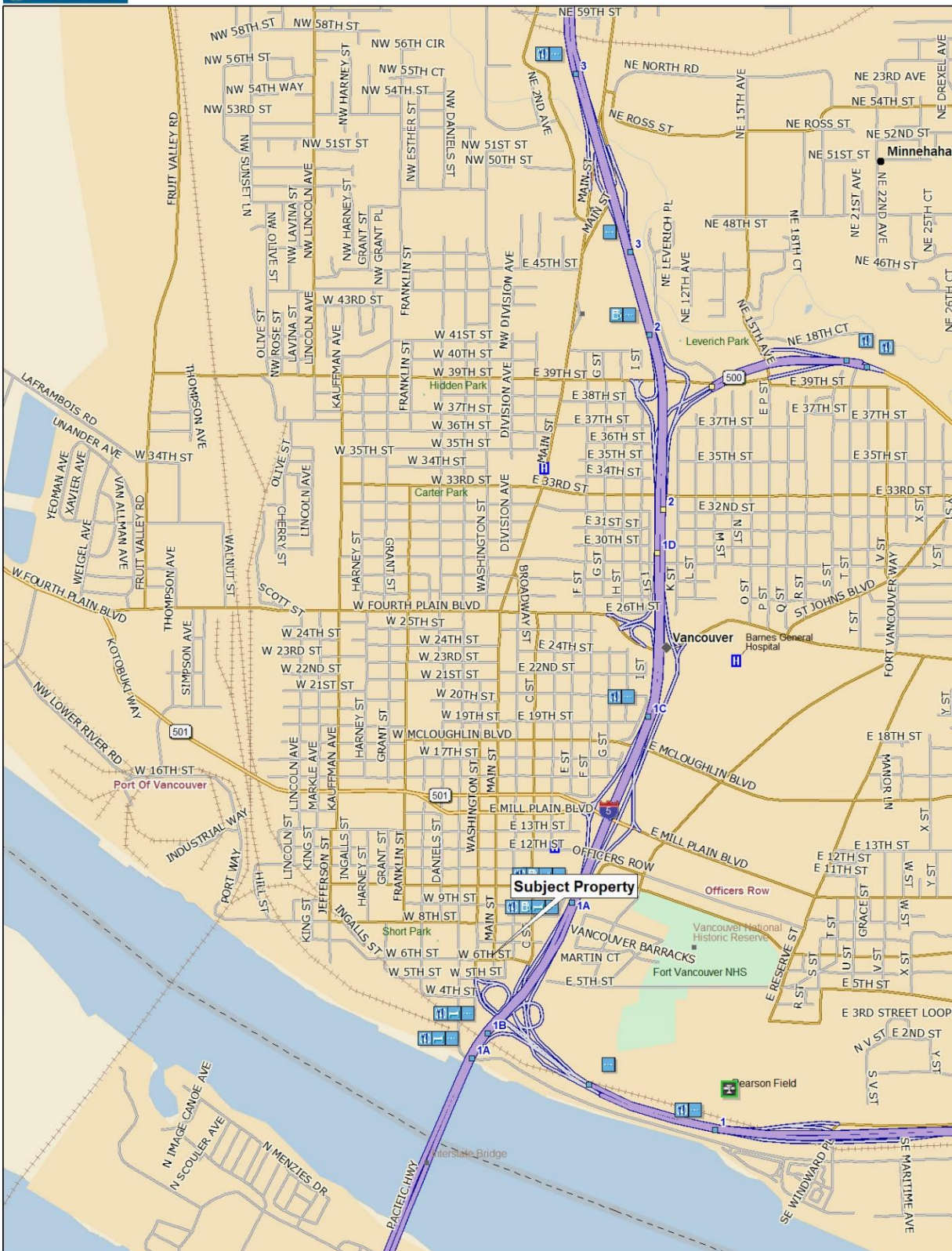
REGIONAL MAP



LOCAL AREA MAP



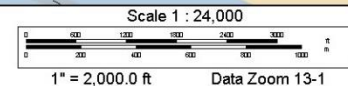
DeLorme Street Atlas USA® 2014



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INTRODUCTION

The Portland – Vancouver - Hillsboro Metropolitan Statistical Area (MSA) is located in the northwestern section of Oregon along the banks of the Willamette River and its confluence with the Columbia River. Numerous Freeway systems intersect near Portland including Interstates 5, 84, and 205. The Portland MSA consists of Clackamas, Columbia, Multnomah, Washington, and Yamhill Counties in Oregon; as well as Clark and Skamania Counties in Washington. Portland is the state's largest city and its two main counties (Multnomah & Washington) account for one-third of the state's population.



DEMOGRAPHIC ANALYSIS

Based on regional data provided by Pitney Bowes/Gadberry Group – Groundview ®,¹ the Portland MSA comprises over half of the total population and households for the state and is projected to continue grow at a faster rate than the rest of Oregon. Supported by a growing younger population, the Portland MSA is the most densely populated region in the state with a large proportion of renter-occupied units. The larger renter population is also a product of comparatively high home values in the region; however, the median household income is much higher in the Portland region in comparison to the rest of the state and is slightly higher than the national average. Overall, the area has a growing population achieving higher than average wages.

LOCAL AREA DEMOGRAPHICS							
DESCRIPTION	1 MILE	3 MILES	5 MILES	DESCRIPTION	1 MILE	3 MILES	5 MILES
POPULATION				AVERAGE HOUSEHOLD INCOME			
2000 Population	12,191	71,040	141,108	2020	\$76,209	\$96,854	\$88,354
2010 Population	14,356	83,265	168,235	2025	\$92,654	\$116,682	\$107,635
2020 Population	17,180	97,014	194,052	Change 2020-2025	21.58%	20.47%	21.82%
2025 Population	18,472	103,915	207,180	MEDIAN HOUSEHOLD INCOME			
Change 2000-2010	17.76%	17.21%	19.22%	2020	\$59,025	\$75,792	\$66,788
Change 2010-2020	19.67%	16.51%	15.35%	2025	\$71,922	\$90,274	\$80,013
Change 2020-2025	7.52%	7.11%	6.77%	Change 2020-2025	21.85%	19.11%	19.80%
POPULATION 65+				PER CAPITA INCOME			
2010 Population	1,649	10,426	20,319	2020	\$29,616	\$36,111	\$33,928
2020 Population	2,626	16,082	31,349	2025	\$35,584	\$43,030	\$40,873
2025 Population	3,185	19,476	37,626	Change 2020-2025	20.15%	19.16%	20.47%
Change 2010-2020	59.25%	54.25%	54.28%	2020 HOUSEHOLDS BY INCOME			
Change 2020-2025	21.29%	21.10%	20.02%	<\$15,000	7.8%	5.6%	7.8%
NUMBER OF HOUSEHOLDS				\$15,000-\$24,999	11.3%	6.9%	8.7%
2000 Households	4,980	27,171	54,494	\$25,000-\$34,999	10.5%	6.5%	7.7%
2010 Households	5,872	31,921	65,811	\$35,000-\$49,999	13.2%	12.0%	13.1%
2020 Households	6,763	36,077	73,837	\$50,000-\$74,999	18.6%	18.5%	18.3%
2025 Households	7,188	38,229	77,993	\$75,000-\$99,999	13.6%	15.7%	14.1%
Change 2000-2010	17.91%	17.48%	20.77%	\$100,000-\$149,999	15.3%	19.5%	17.3%
Change 2010-2020	15.17%	13.02%	12.20%	\$150,000-\$199,999	6.8%	8.5%	6.8%
Change 2020-2025	6.28%	5.97%	5.63%	\$200,000 or greater	2.9%	6.8%	6.1%
HOUSING UNITS (2020)				MEDIAN HOME VALUE			
Owner Occupied	3,440	24,930	43,918	AVERAGE HOME VALUE			
Renter Occupied	3,380	11,160	29,929	\$261,678	\$291,703	\$282,304	\$318,669

Source: Pitney Bowes/Gadberry Group - GroundView ®

Our demographics provider sets forth income projections in constant dollars which, by definition, reflect projections after adjustment for inflation. We are aware of other prominent demographic data providers that project income in current dollars, which do not account for inflation. A simple comparison of projections for a similar market area made under the constant and current dollar methodologies can and likely will produce data points that vary, in some cases, widely. Further, all forecasts, regardless of demographer methodology(ies), are subjective in the sense that the reliability of the forecast is subject to modeling and definitional assumptions and procedures.

ECONOMY

The Portland region benefits from a diversified economy that historically has been less dependent upon the lumber and wood products industry and more so reflects national business trends. Numerous large corporations, universities, hospitals, and public sector (government) employers are located in Portland and are an integral part of the state and regional economies. Strategically in its favor are the Ports of Portland and Vancouver serving as a West Coast hub for trade, commerce, and travel. Also, under the authority of the Port of Portland is the Portland International Airport (PDX), which accounts for most of the passenger travel and air cargo in the state.

The Portland region serves as headquarters for two Fortune 500 companies including Nike (sportswear and equipment supplier) and Precision Castparts (manufacturer of cast metal parts) not shown on the chart below. The chart below shows the top ten employers by size. The Manufacturing and Healthcare sectors are all integral parts of the regional economy.

TOP EMPLOYERS		
EMPLOYER NAME	EMPLOYEES	INDUSTRY
Intel	14,890	Communications
Providence Health & Services	13,496	Healthcare
Oregon Health & Science University	11,400	Healthcare
Fred Meyer Stores	10,500	Retail
Legacy Health System	7,972	Healthcare
Kaiser Foundation	6,731	Healthcare
Safeway Inc	6,000	Retail
Nike Inc	5,742	Retail
Albertson's Food Centers	5,600	Retail
U.S. Bank	4,138	Financial Services

Source: State of Oregon- Oregon Prospector Sept 2020

*Chart above is the most recently available and accurate data.

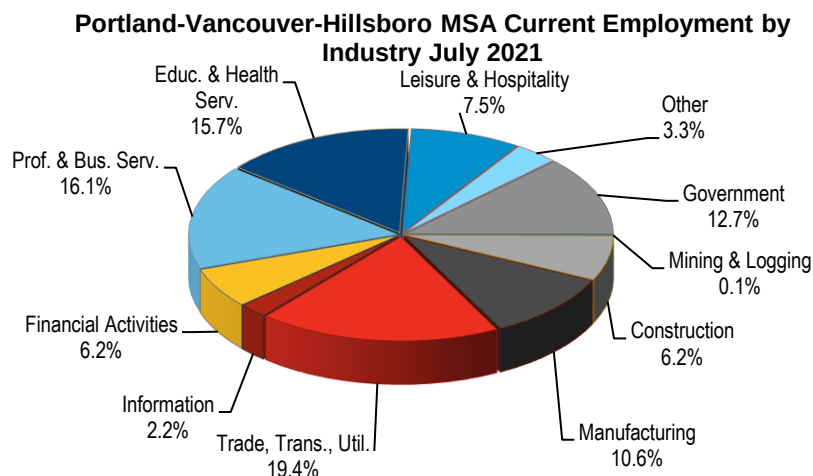
Prior to the current pandemic, Intel, the world's largest semiconductor chip maker, employed 107,400 people worldwide and locally had employed over 20,000 people in the region. However, layoffs occurred previously in 2020 and continued at Intel. As with many other companies within Oregon, employee downsizing occurred in 2020 at both Intel and Nike. Many larger employers such as Precision Castparts, Oregon Clinic, and Airbnb, furloughed or laid off staff. Overall, the impact of local layoffs and furloughs were evident in the increased Oregon unemployment rate in 2020.

Government and education-related industries comprise a large proportion of the regional employment base. Oregon State University (OSU) is the largest school in Oregon with a total enrollment of over 30,000 students. Portland State University (PSU) is listed as the second largest school in the Oregon University System boasting an enrollment of over 25,000 students. Another of the largest post-secondary institutions in Oregon, is Portland Community College with 75,000 student head-count as of (2021).

LABOR

Industry employment information from the Oregon Employment Department's (OED) Current Employment Statistics (CES) program provides one of the best measures of state and local economic trends. Over the last year (June 2020 to June 2021), the Portland MSA gained 66,400 total jobs (all sectors). Furthermore, 8 out of 10 private sectors experienced gains with flat growth in Mining/Logging and Construction. The gains in all other sectors are as follows: Leisure and Hospitality 22,000, Trade, Transportation and Utilities 13,500, Professional and Business Services 11,400, Education and Health Services 8,000, Manufacturing 1,100, Other Services 5,200, Financial Activities 1,400, and Information 1,300. In the public sector, Government also gained 2,500 jobs.

The following chart displays the current sector employment for the Portland MSA as of July 2021:



EMPLOYMENT

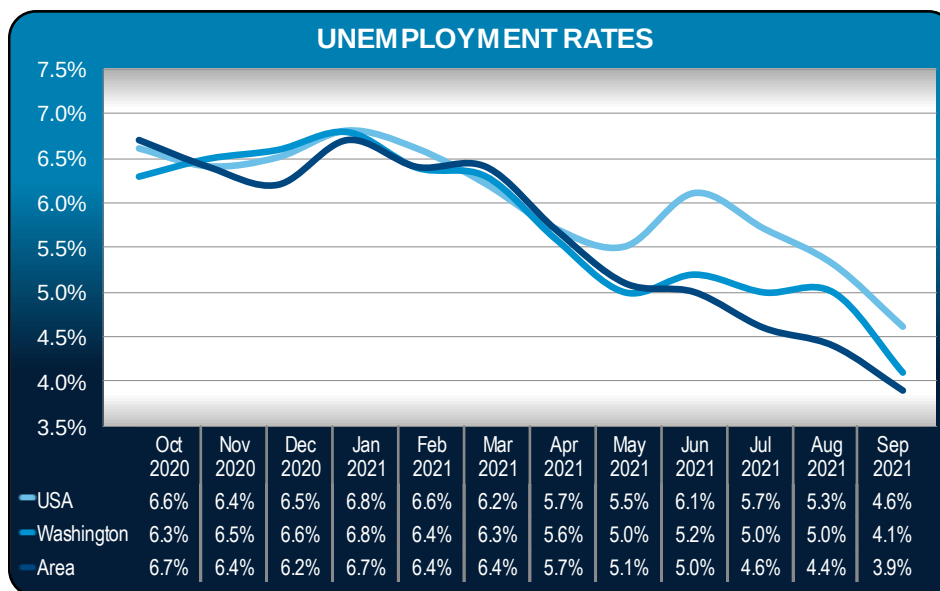
Until spring 2020, the unemployment rate was at the lowest it has been in the last 10 years. The decreasing unemployment rate coupled with a relatively high total number of employed, demonstrated stable to improving employment conditions through early 2020; however, the COVID-19 pandemic had significant negative impact on employment. April 2020 unemployment figures showed a dramatic increase over the historical figures. However, since then the unemployment rate has seen marked improvement and a dropping rate in most of the past 12 months. Nonetheless, they are still above pre-COVID levels as shown below.

EMPLOYMENT & UNEMPLOYMENT STATISTICS 2011 - 2020

TOTAL EMPLOYMENT					UNEMPLOYMENT RATE		
Year	Washington		Portland-Vancouver-Hillsboro, OR-WA Metropolitan Statistical Area		United States*	Washington	Portland-Vancouver-Hillsboro, OR-WA Metropolitan Statistical Area
	Total	% Δ Yr Ago	Total	% Δ Yr Ago			
2011	3,144,459	0.1%	1,105,965	2.0%	8.9%	8.5%	8.8%
2012	3,203,294	1.9%	1,109,299	0.3%	8.1%	7.7%	7.8%
2013	3,230,947	0.9%	1,104,507	(0.4%)	7.4%	6.6%	7.0%
2014	3,287,904	1.8%	1,133,532	2.6%	6.2%	5.9%	6.0%
2015	3,361,249	2.2%	1,167,534	3.0%	5.3%	5.4%	5.1%
2016	3,459,527	2.9%	1,212,930	3.9%	4.9%	5.2%	4.5%
2017	3,552,578	2.7%	1,248,664	2.9%	4.4%	4.6%	3.8%
2018	3,645,260	2.6%	1,256,512	0.6%	3.9%	4.4%	3.8%
2019	3,747,162	2.8%	1,281,542	2.0%	3.7%	4.1%	3.5%
2020	3,585,782	(4.3%)	1,220,667	(4.8%)	8.1%	8.4%	7.8%
CAGR	1.5%	-	1.1%	-	-	-	-

Source: U.S. Bureau of Labor Statistics *Unadjusted Non-Seasonal Rate

As detailed in the forthcoming month-to-month chart, the Portland MSA's experienced gains in each month leading up to the beginning of 2021. There was a slight retraction in January 2021 but unemployment improved through May 2021 and held steady in June. Since the peak unemployment in April 2020, re-openings have occurred, and a generally steady improvement in unemployment have occurred thus far in 20201.



SUMMARY

As with the entire nation, Oregon is currently still experiencing higher than usual unemployment due to COVID-19. However, notable employment gains have occurred across a broad sector of employment categories and unemployment has been falling month-to-month. While uncertainties remain, the continued rollout of the vaccine for COVID-19 is a positive factor that is expected to help with the ongoing improving market conditions. However, the Delta Variant has caused some minor economic/employment issues which should hopefully be resolved in the near term.

LOCAL AREA ANALYSIS

The subject property is located in the southern portion of the downtown “core” area of the city of Vancouver, in Clark County. The subject property is located at the NW corner of Main Street and West 6th Street, in the downtown area of Vancouver. The subject's immediate market is characterized as a mixed-use area, with office, multi-family, County-related buildings, and residential uses all in the area, and industrial uses at the extreme west end of the neighborhood. The following paragraphs summarize factors pertinent to the social, economic, and physical development of the market. The following paragraphs summarize factors pertinent to the social, economic, and physical development of the market area.

Demographics

The demographics for the subject's local area are provided by (Pitney Bowes/Gadberry Group - GroundView On-line), an on-line resource center that provides information used to analyze and compare the past, present, and future trends of properties and geographical areas.

LOCAL AREA DEMOGRAPHICS							
DESCRIPTION	1 MILE	3 MILES	5 MILES	DESCRIPTION	1 MILE	3 MILES	5 MILES
POPULATION				AVERAGE HOUSEHOLD INCOME			
2000 Population	6,371	52,672	191,552	2021	\$73,418	\$81,297	\$91,959
2010 Population	7,164	55,690	208,108	2026	\$95,915	\$101,922	\$111,987
2021 Population	9,095	62,562	237,934	Change 2021-2026	30.64%	25.37%	21.78%
2026 Population	9,975	65,747	251,139	MEDIAN HOUSEHOLD INCOME			
Change 2000-2010	12.45%	5.73%	8.64%	2021	\$46,032	\$57,853	\$69,004
Change 2010-2021	26.95%	12.34%	14.33%	2026	\$64,992	\$71,872	\$82,378
Change 2021-2026	9.68%	5.09%	5.55%	Change 2021-2026	41.19%	24.23%	19.38%
POPULATION 65+				PER CAPITA INCOME			
2010 Population	1,099	6,731	23,082	2021	\$39,573	\$35,068	\$36,884
2021 Population	2,016	10,562	34,641	2026	\$51,108	\$43,689	\$44,424
2026 Population	2,448	12,638	40,855	Change 2021-2026	29.15%	24.58%	20.44%
Change 2010-2021	83.44%	56.92%	50.08%	2021 HOUSEHOLDS BY INCOME			
Change 2021-2026	21.43%	19.66%	17.94%	<\$15,000	17.1%	9.5%	8.2%
NUMBER OF HOUSEHOLDS				\$15,000-\$24,999	14.5%	10.2%	8.2%
2000 Households	2,812	21,918	75,155	\$25,000-\$34,999	8.3%	8.8%	7.7%
2010 Households	3,447	23,798	84,599	\$35,000-\$49,999	13.2%	14.2%	12.0%
2021 Households	4,311	26,059	93,262	\$50,000-\$74,999	12.9%	19.0%	17.7%
2026 Households	4,721	27,252	97,480	\$75,000-\$99,999	10.9%	13.5%	15.1%
Change 2000-2010	22.58%	8.58%	12.57%	\$100,000-\$149,999	10.6%	12.9%	16.8%
Change 2010-2021	25.07%	9.50%	10.24%	\$150,000-\$199,999	7.6%	6.4%	7.3%
Change 2021-2026	9.51%	4.58%	4.52%	\$200,000 or greater	4.9%	5.4%	7.0%
HOUSING UNITS (2021)				MEDIAN HOME VALUE			
Owner Occupied	1,537	12,484	50,924		\$296,893	\$280,072	\$329,760
Renter Occupied	2,753	13,546	42,338	AVERAGE HOME VALUE			
HOUSING UNITS BY YEAR BUILT					\$286,398	\$304,641	\$360,912
Built 2010 or later	274	1,279	5,461	HOUSING UNITS BY UNITS IN STRUCTURE			
Built 2000 to 2009	885	2,883	11,218	1, detached	1,344	12,495	55,698
Built 1990 to 1999	275	2,902	10,525	1, attached	135	1,390	5,360
Built 1980 to 1989	246	2,034	7,822	2	265	2,519	5,209
Built 1970 to 1979	628	4,891	13,370	3 or 4	156	1,297	4,735
Built 1960 to 1969	451	3,087	8,908	5 to 9	165	1,300	5,162
Built 1950 to 1959	188	2,437	9,528	10 to 19	85	1,491	4,638
Built 1940 to 1949	310	3,238	8,508	20 to 49	495	1,520	3,779
Built 1939 or earlier	1,055	3,310	17,922	50 or more	1,380	2,895	6,334
				Mobile home	249	958	2,098
				Boat, RV, van, etc.	17	167	249

Source: Pitney Bowes/Gadberry Group - GroundView®

As noted in the table above, moderate population growth is anticipated to occur in the subject's market area (3-miles radius) over the next few years. This reflects the built-up character of the downtown area.

Residential Development

There is a considerable amount of residential development located in the subject's market area. Residential uses in the downtown area are primarily single-family residences located along the northern portion of downtown, primarily north of Mill Plain Boulevard and just west of the Interstate-5 freeway, with some older single-family residences on CX- and IL-zoned land further northwest of the subject property. High-end apartment and condominium developments also exist along the Columbia River in the Tidewater Cove and Columbia Shores developments, and in the downtown "core" area. Residential uses in the downtown "core" area consist primarily of new condominiums constructed on the upper levels of the Columbia Bank, VancouverCenter, and Heritage Place mixed-use projects. The Uptown Village, further north of the downtown "core" area, consists of townhomes along Main Street, with some live-work units. And, as will be described below, the Vancouver Waterfront has added new multi-family units to the market in 2019 and more development is taking place.

The residences in the area are commonly in average to good condition and were typically built in the 1960s and earlier. The average home price for single-family residences within a 3-mile radius of the subject property is \$304,641 (Pitney Bowes/Gadberry Group – GroundView Online). Homes are generally older and on small lots, as is typical of downtown residential areas. Many of the single-family homes along major thoroughfares and/or located around the "core" of downtown Vancouver have since been converted to commercial office uses, especially attorney's offices in the areas east and south of the Clark County Courthouse.

Multi-family developments within close proximity to the subject were generally built in the 2000's and earlier and consist of mid-rise style facilities. There have been numerous new multi-family developments throughout the "core" area of the subject neighborhood, including Heritage Place and the Vancouver Center, both located near Esther Short Park. This is increasing the "critical mass" in downtown Vancouver. The Esther Short Commons project, located on the west end of the Esther Short Park, includes "for rent" apartments for residents at certain reduced income levels. There have also been scattered condominium conversions of older apartment buildings in the neighborhood. New development in downtown Vancouver includes The Vista Court Senior Housing apartment complex at West 14th and Esther Streets, completed in early 2012. Also, the Kirkland Union Plaza multi-family development for retired citizens is located along Mill Plain Boulevard and the Tinnakorn Loft units were recently completed next to Kirkland Union Plaza. In the downtown "core" area, some apartments are now under construction on the western portion of the Academy Site (Phase 1), along C Street, north of Evergreen Boulevard, with an additional Phase 2 also planned. This development will be a positive impact on downtown Vancouver, particularly on the east side of the downtown "core".

Prestige Plaza, a mixed-use project with 96 apartment units and ground floor commercial, was one of the first projects completed in recent years in downtown Vancouver. The same developer recently completed Our Heroes Place, comprised of two adjacent projects (Ed Tower and Dollie Tower) totaling 51 units. Construction was completed on a 6-story full-block apartment project called the Uptown (167 units), located on the full block bounded by Main Street, McLoughlin Boulevard, Washington Street, and West 17th Street, at the south end of Uptown Village. This project is located at the south end of the Uptown Village corridor of downtown Vancouver and will transform this area, bringing more residents downtown and enhancing the "critical mass" that is being sought for downtown Vancouver. This project was purchased in 2019 by an apartment investor, reflecting the attractiveness of downtown Vancouver for apartment investors. The West 15 Apartments (120 units), a subsidized apartment project was completed in 2016 between Mill Plain Boulevard and 15th Streets, west of Columbia Street. The West 13 Apartments (96 units) were completed in 2017 at Columbia and West 13th Streets. Another mixed-use project is proposed at the block bounded by Washington, Main, 15th and 16th Streets, and a smaller project was recently completed (48 units) at the NE corner of 15th Street and E Street. The Midtown Apartments have been completed just north of Mill Plain Boulevard and just west of Interstate-5, and additional units are under construction approximately two blocks west of the Midtown Apartments. Additional apartments have been constructed along East McLoughlin Boulevard and Broadway Streets.

Additional units are also under construction near Esther Short Park, showing a large concentration of new apartments being developed in the downtown “core” area of Vancouver. Also, the Holland Partnership is constructing a mixed-use project on Block 10, immediately NE of Esther Short Park. This project will include a mix of commercial retail/service space, office space, and multi-family units with a parking structure. Construction was recently completed on The Aria Apartments, along West 6th Street, just west of Esther Street. It has 122 market rate apartment units and 5 townhome units in 6 floors, with a parking structure. The 4th building in the Vancouver Center project, after several delays, was completed in Fall 2020. It includes 6 stories and 116 multi-family residential units and continues to add to the “critical mass” in downtown Vancouver.

Waterfront Development

Columbia Waterfront LLC (a group of investors formed by Gramor Development, a local/regional developer), is now in the process of developing vertical buildings along the Waterfront neighborhood of Vancouver. This 35 acre area is just south of the downtown core and follows the Columbia River. The Vancouver Waterfront project has a long term tentative plan to be improved with an estimated 3,300 residential units (a mix of for-sale condos and apartments, as market conditions dictate), 1,000,000 SF of office space, and 250,000 SF of retail space. There is also a 7 acre park which was opened to the public in 2018, with a water feature which opened to the public in Summer 2019. With the current strong market conditions (prior to COVID-19) in the Portland region, as well as the recent successful absorption of at least one new, luxury property in Downtown Vancouver, the developer has now constructed vertical apartment units in the first phase of the master plan. Phase 1 includes a pair of 2-story restaurant buildings which are now open and in the lease-up stage (intended to hold 2+ tenants each), a 7-story (55 to 60-Unit) apartment tower with ground floor retail (recently completed), a 7-story office building with about 60,000 SF of office space (anchored by the MJ Murdock Charitable Trust) and about 17,000 SF of ground floor retail space, and another 7-story (250-unit) apartment project on Block 8. Another developer has an upscale hotel and condominiums now nearing completion on one of the adjacent blocks.

More apartments are proposed for the area and The Springs Retirement Community, a 12-story structure, is proposed on Block 18 towards the west end of the Vancouver Waterfront, showing a significant amount of new development to kickstart this major project in downtown Vancouver. There are now six (6) apartment projects which have either been proposed, under construction, or completed, including the completed Riverwest and Rediviva apartment/mixed-use projects, the nearly completed Columbia Apartments, a proposed 180-unit apartment project planned for Block 19, the Broadstone Claro building on Block 17, and the Summit Development building on Block 3. The Waterfront development is expected to have a positive impact on the appeal of Downtown Vancouver and the developer is planning to make the area very upscale, with ambitious planned retail, office, and apartment rent levels. About ½ of the 21 blocks in the Vancouver Waterfront are now either built-out, under construction, or have proposed projects in the development/pre-application stage.

Also proposed nearby is a re-development project by the Port of Vancouver, to include a mix of hotels, public space, and commercial space. Construction continues on a hotel, to be the 1st building constructed in the Port's Terminal 1 project, also proposed to have a public market. More commercial development is proposed on the north end of the Terminal 1 project.

Commercial Development

Commercial development in the area is concentrated in the downtown “core” area, and along major thoroughfares, including Main and Broadway Streets, as well as Fourth Plain Boulevard and Mill Plain Boulevard. Other major transportation routes in the area include SR-14, which is an east/west freeway connecting downtown Vancouver with the Columbia River Gorge; and I-5, which is a major north/south freeway that connects downtown Vancouver to downtown Portland to the south and Seattle to the far north. The Downtown area was predominantly residential at one time with retail storefronts along Main and Broadway. Since then, the city has expanded and the demand for commercial products has led to numerous single-family conversions. Historical buildings exist throughout the area. The southern portion of town has since been redeveloped with newer, more intense, commercial development including: various mixed-use Class A office high-rises and civil and

government buildings centered around the Courthouse and Citizens Service Center. Retail is scattered throughout downtown Vancouver, and consists of antique stores and consignment stores, with few retailers still operating. Former retail buildings such as Sparks Furnishings (Furniture Store) and Koplan's Furniture have been purchased and renovated/converted to office/service uses.

In the downtown "core" area, there have been and are some additional planned developments and upgrades around the downtown "core" of Vancouver. The former Vancouver City Hall was purchased by members of the Firstenberg family for use as office space and a parking garage. It has now been renovated and Berger Abam and Stewart Title Company are main tenants in the "Block 56" building which provides some creative office space. In the southern portion of the downtown "core" area, Killian-Pacific has constructed the Hudson Building, a 3-story, 44,000 SF wood-frame and brick office building, with several banks and some other professional office tenants in the building. This building is now 100% leased as one of the newest office buildings in downtown Vancouver, with creative office space, exposed vaulted ceilings, and a considerable amount of natural lighting. Pacific Energy Concepts purchased a commercial building at 210 West 3rd Street and has completely renovated this building for their own occupancy as creative office space for their business. Ryan Hurley has developed the Hurley Building, a 6-level, 33,185 SF office condominium project just south of this property, with ground level parking for this property. An apartment project is also planned by Hurley Development along Columbia Street in this area. In the Interstate-5/Mill Plain Boulevard interchange area, The Angelo Tower, located west of the Al Angelo's 400 Mill Plain Building, is a Class A mixed-use (office/commercial/apartment) building with parking garage which was recently completed.

With all of this development activity in the downtown "core" area and an increase in the "critical mass" in downtown Vancouver, it was announced in 2021 that New Seasons plans to anchor the ground floor of a proposed mixed-use project bounded by Washington Street, Main Street, West 15th Street, and West 16th Street. This will have a significant impact on the downtown "core" area, which has developed enough "critical mass" to trigger a new grocery retailer locating in downtown Vancouver.

Light and heavy industrial uses exist in the Columbia Business Center and the area west of the defined boundaries, in the Port of Vancouver neighborhood. In summary, the Downtown area consists mostly of older single-family residences to the north that transition to more intense commercial development to the south and industrial uses along east/west boundary lines. South of SR-14 is the 248-acre Columbia Business Center, one of the largest industrial developments in the Portland area. This industrial park includes 26 buildings comprising roughly 2.3 million square feet of industrial space. Columbia Shores is another mixed-use development which resides west of the Columbia Business Center and includes various office/retail buildings, Homewood Suites, Beaches and McMenamin's restaurant.

Also in the eastern portion of the downtown "core" area, the Academy property is a historical landmark property, founded by the Sisters of Providence in the 1800's. The primary building has been converted to a multi-tenant office building. A majority of the property is currently utilized as surface parking for tenants in downtown Vancouver but is proposed for re-development with apartments along C Street. The subject's immediate area is the downtown "core" area of Vancouver, which has a mix of restaurant, service-oriented uses, and professional offices, in the southern portion of downtown Vancouver. The entire block at West Evergreen Boulevard and Esther Street was purchased in June 2020 by the Ed & Dollie Lynch Estate, and subsequently the former New Heights West Church was demolished on this full block because of seismic issues relating to the age and structural integrity. An office building was also demolished on this full block, which has not announced plans, but it will possibly be re-developed with some type of future community use.

Community Services/Transportation

Community services and facilities are readily available in the area. These include public services such as fire stations, hospitals, police stations, and schools (all ages). The city also operates two police precincts with the Police Administration Building located next to Officer's Row. The Clark County Sheriff's Station, Jail, and Correction Facility also exist in the subject's neighborhood, next to the Courthouse. Many of the buildings surrounding the Clark County Courthouse are considered suitable to professional office uses, especially attorneys, as the Clark County Courthouse is within walking distance of these buildings.

The Mill Plain Extension facilitates industrial flow, linking the Port of Vancouver with Interstate-5 via Mill Plain Boulevard. Fourth Plain Boulevard has been reduced to two lanes (plus a center/third turn lane) east of the Burlington Northern Railroad Tracks in an attempt to focus industrial traffic onto the Mill Plain Boulevard extension and West 39th Street.

One road improvement/change is the extension of West 8th Street to Jefferson Street, where Jefferson Street extends north from West 8th Street. As the Vancouver Waterfront becomes more built-out and traffic increases, the City of Vancouver eventually plans to extend and realign Jefferson Street to Mill Plain Boulevard, near Markle Avenue to better facilitate traffic flow. This will be a positive for the western portion of the subject neighborhood with respect to exposure.

Public transportation, both bus and train, is available throughout and readily accessible from major freeways and thoroughfares. In addition, there are a number of parks in the area which adequately serve the subject's neighborhood. The primary focal point of downtown Vancouver is Esther Short Park, which has been completely renovated and improved with a Bell Tower, a brick plaza and water feature/stream designed for children, a playground, restroom facilities, and a rose garden, as well as a performing arts stage and grass lawn. The area is now an attractive setting for public gatherings and family-oriented/leisure activities.

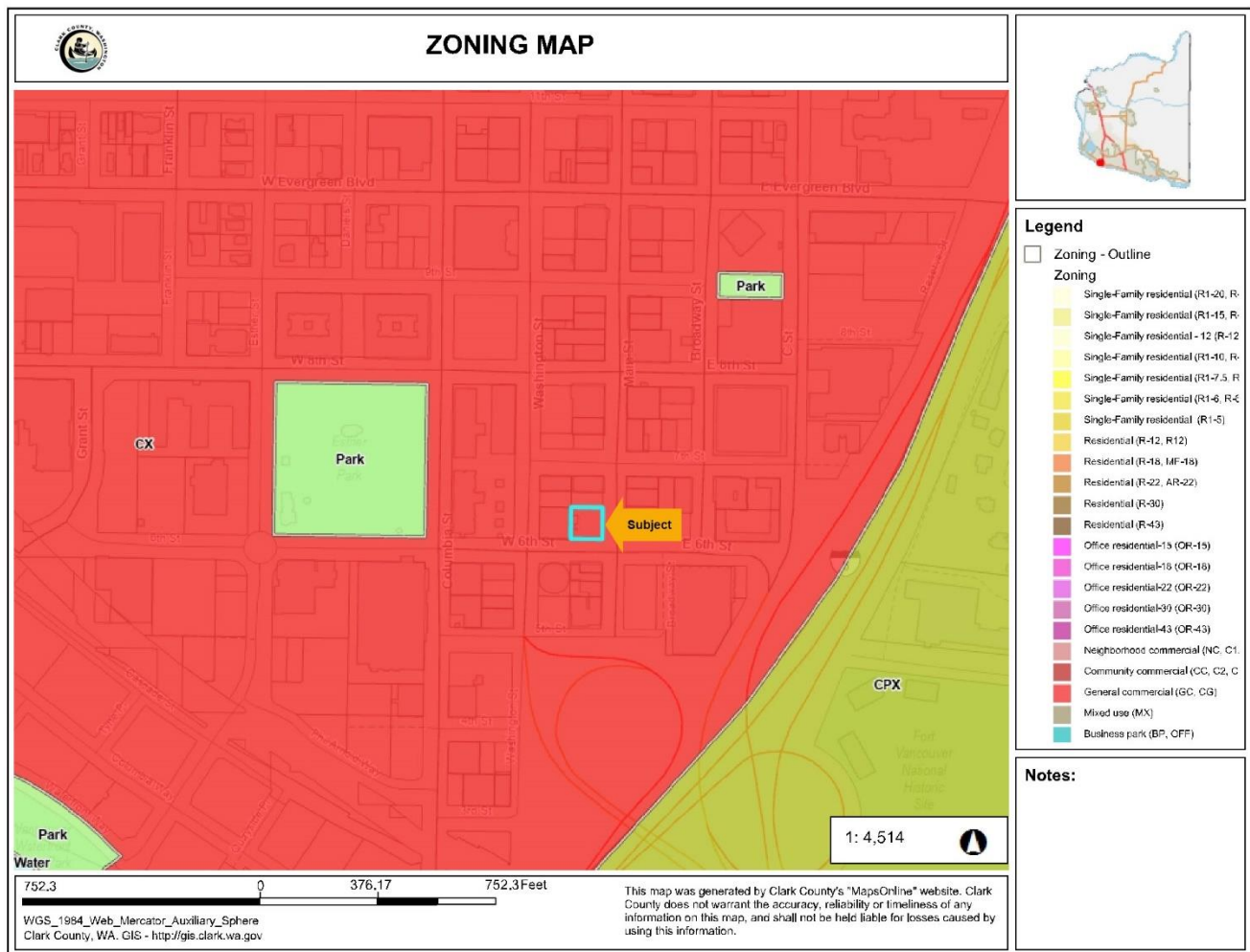
SUMMARY

The subject is in an established area of Vancouver. Residential uses include older single-family development off the main thoroughfares and a significant amount of newer multi-family development in the downtown Vancouver area. The subject has a good location with respect to commercial services, thoroughfares, public transportation, and community services. Condition and appeal of the area is generally good. The area is anticipated to experience moderate growth in the foreseeable future. The growth in the immediate area is expected to be focused specifically on the Vancouver Waterfront property over time, which is located in close proximity to the tunnels at Esther and Grant Streets, connecting the Esther Short Park area with the Vancouver Waterfront property.

PLAT MAP



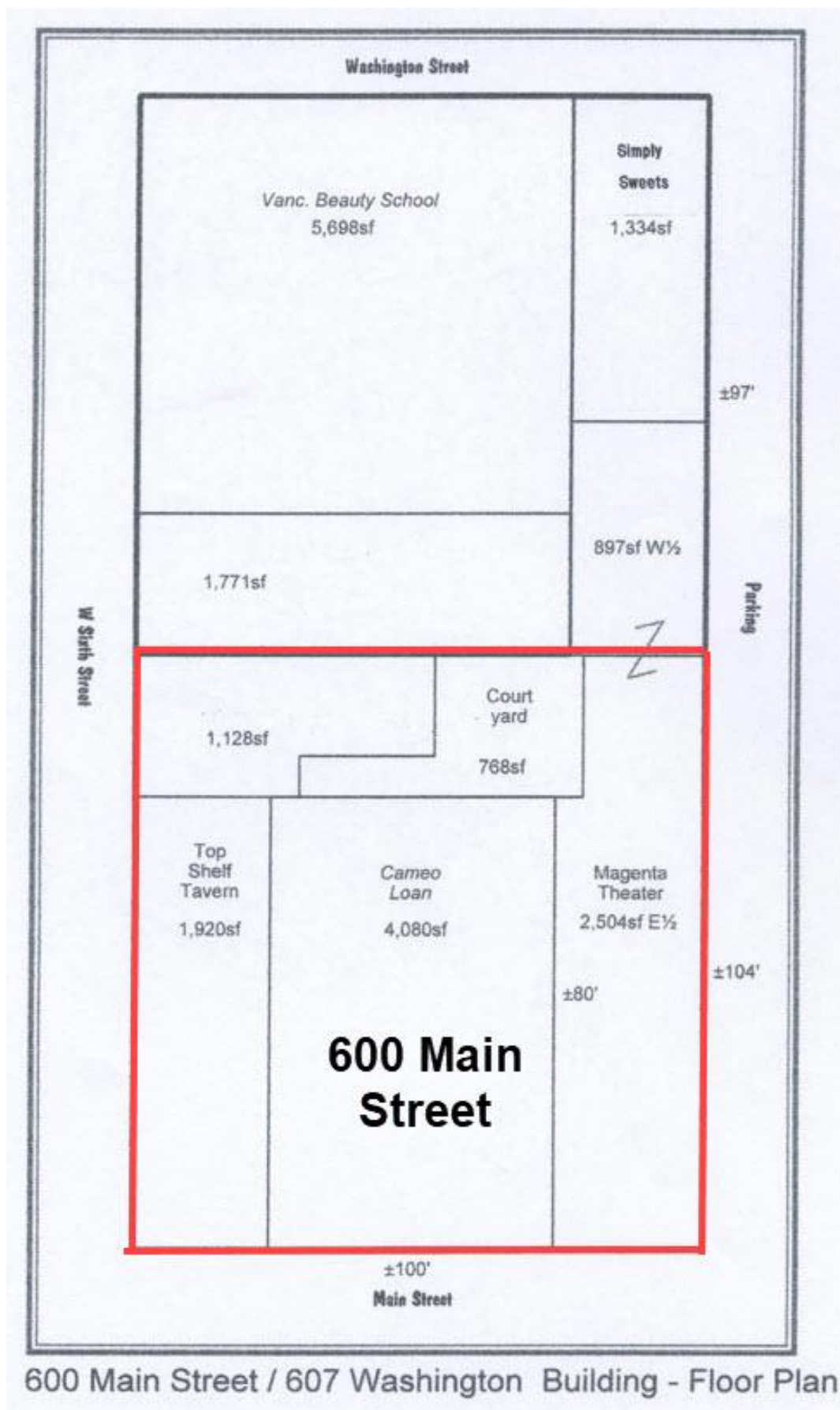
ZONING MAP



FLOOD MAP



FLOOR PLAN



SITE DESCRIPTION

General Description

The subject site consists of one (1) tax parcel which totals 10,050 SF in size. As noted below, these figures are based on the Clark County Assessor's Office. The area is considered to be an accurate indication of the subject's site size. Going forward, our valuation analyses will utilize the usable site area indicated by the assessor's office. The following discussion summarizes the subject site size and characteristics.

Assessor Parcel 047950-000

Number Of Parcels 1

Land Area	Acres	Square Feet
Usable Land	0.23	10,050
Unusable Land	0.00	0
Excess Land	0.00	0
<u>Surplus Land</u>	<u>0.00</u>	<u>0</u>
Total Land Area	0.23	10,050

Shape Square

Topography Generally Level at street grade

Drainage Assumed Adequate

Utilities All available to the site

Street Improvements

	Street	Direction	No. Lanes	Street Type	Curbs	Sidewalks	Streetlights	Center Lane	Gutters
Main Street	Primary Street	two-way	two-lane	minor arterial	✓	✓	✓	✓	
West 6th Street	Secondary Street	two-way	two-lane	connector street	✓	✓	✓	✓	

Frontage The subject property has approximately 100 lineal feet of frontage along Main Street and approximately 100 lineal feet of frontage along West 6th Street.

Accessibility Average/Good - The subject has average to good access from the above-mentioned thoroughfares.

Exposure Average - The subject site is located in the southern portion of the downtown "core" area, with some new apartments (Coen & Columbia) recently completed just west of the subject, and a mixed-use development is under construction on Block 10 (The Upland). The downtown "core", particularly the Vancouver Waterfront, is experiencing a tremendous amount of multi-family development activity.

Seismic High Risk. This is common for properties in SW Washington.

Flood Zone Zone X (Unshaded). This is referenced by Community Number 0027, Panel Number 53011-C0368-D, dated September 05, 2012. Zone X (unshaded) is a moderate and minimal risk area. Areas of moderate or minimal hazard are studied based upon the principal source of flood in the area. However, buildings in these zones could be flooded by severe, concentrated rainfall coupled with inadequate local drainage systems. Local stormwater drainage systems are not normally

considered in a community's flood insurance study. The failure of a local drainage system can create areas of high flood risk within these zones. Flood insurance is available in participating communities, but is not required by regulation in these zones. Nearly 25-percent of all flood claims filed are for structures located within these zones. Minimal risk areas outside the 1-percent and .2-percent-annual-chance floodplains. No BFEs or base flood depths are shown within these zones. (Zone X (unshaded) is used on new and revised maps in place of Zone C.)

Site Rating

Overall, the subject site is considered a good commercial site in terms of its location, exposure, and access to employment, education, commercial services, and a residential population base, recognizing its location in downtown Vancouver, with exposure to traffic at the "blinking red" signalized intersection at the NW corner of Main Street and West 6th Street.

Easements

A preliminary title report was not available for review. During the on-site inspection, no negative easements or encumbrances were noted. If questions arise regarding easements, encroachments, or other encumbrances, further research is advised.

Soils

A detailed soils analysis was not available for review. Based on the development of the subject, it appears the soils are stable and suitable for the existing improvements.

Hazardous Waste

We have not conducted an independent investigation to determine the presence or absence of toxins on the subject property. If questions arise, the reader is strongly cautioned to seek qualified professional assistance in this matter. Please see the Assumptions and Limiting Conditions for a full disclaimer.

IMPROVEMENT DESCRIPTION

The information presented below is a basic description of the existing improvements using sources deemed dependable for this analysis. It is assumed that there are no hidden defects, and that all structural components are functional and operational, unless otherwise noted.

The subject property consists of a multi-tenant commercial retail/service building, with a corner location in downtown Vancouver at the “blinking red” signalized NW corner of Main Street and West 6th Street. The subject property has a building area of 9,380 SF, with a 93% site coverage ratio for the subject’s 1st floor footprint. There is a small courtyard area (670 SF) in an interior portion of the subject property, with access from the Kindred Homestead Supply space and the Terrain Coffee space. There is an additional 2nd floor area which is currently vacant and under-utilized, with the potential for more build-out. However, at this point, this area is not considered as part of the subject’s building area. There is also a basement area in a portion of the subject building which is leased to Kindred Homestead Supply and sub-leased to other sub-tenants, as well as a basement area under the 604 Main Street area. However, the basement area is not included in the building square footage. The market typically only assigns value to above-ground area, so the subject’s 1st floor will only be valued. The contribution and amenity of the basement area will be factored into our rent/value conclusion in the valuation section.

It is noted that Kindred Homestead Supply currently leases space in both the subject building and the adjacent building to the west, referred to as the 114 West 6th Street Building (Same Owner). Kindred Homestead Supply has its entrance from the subject building along Main Street. The owner/client indicated that this northern space in both buildings was previously a hardware store which extended all the way from Main Street to Washington Street, but more recently has been partitioned into multiple tenants. This appraisal reasonably assumes that the portion of the Kindred Homestead Supply space in the subject building is a separately marketable space, and that if the subject property building were to be sold off separately, a partition could be installed, separating this space in the subject building from the remainder of the space in the adjacent 114 West 6th Street Building.

The corner space at 600 Main Street was previously leased to Top Shelf as a bar/lounge. However, the COVID-19 pandemic forced this business to close. However, in July 2021, the owner leased 600 and 604 Main Street to Backbeat Distillery, owned and operated by the owners of Cascadia Brewing, who plan to open a “3 Howls” bar/tasting room and distillery in the subject building. The tenant will be doing virtually all of the interior build-out and is receiving free rent through March 2022 while they prepare the space for opening. According to the leases, the landlord is responsible for finishing the common area that leads to the basement. This includes installing drywall and installing four (4) one-hour interior doors and removing the construction debris. Therefore, these spaces are considered leased – however, in the valuation section, we will make appropriate deductions for things such as free rent/rent loss, as of the effective date of value (12/17/21).

Based on the total building area of 9,380 SF and the total site size of 10,050 SF, the indicated site coverage ratio for the subject property is 93%, with a high site coverage in downtown Vancouver and no parking. This is typical for properties in downtown Vancouver. The subject’s lack of on-site parking in relation to other comparable properties will be factored into our valuation analysis in the approaches to value. Therefore, there is no surplus or excess land.

Property Type	Retail / Commercial - Other Retail/Commercial
Design	Multi-Tenant Occupied By Third-Party Tenants - 4 Tenant Spaces
Number of Buildings	1
Number of Stories	1
Net Rentable Area (NRA)	9,380 SF
Gross Building Area (GBA)	9,380 SF
Floor Plate	9,380 SF
Percent Air Conditioned	100%
Building Class	C
Site Coverage Ratio	93.3%
Land to Building Ratio	1.1 : 1
Parking	0 (Surface) 0.0/1,000 SF NRA
Year Built	1922
Age/Life Analysis	
Actual Age	100 Years
Effective Age	25 Years
Economic Life	50 Years
Remaining Life	25 Years
Quality	Average
Condition	Average
Basic Construction	Masonry, brick and stucco
Foundation	Poured concrete slab
Framing	Masonry, brick and stucco
Exterior Walls	Masonry, brick and stucco
Roof	Built-up roof cover. The owner's current leasing agent pointed out some areas of roof leakage on the 2nd floor. The owner will need to spend some money to repair portions of the roof cover. This will be deducted as a deferred maintenance item in the valuation section.
Insulation	Assumed to be standard and to code for both walls and ceilings
Heating	Roof-mounted HVAC units provide heating and air conditioning throughout the building.
Air Conditioning	Please see above.
Lighting	Light fixtures vary between suspended LED and fluorescent fixtures, with some surface-mounted fluorescent lighting. Lighting in the restrooms is a mix of recessed canned lighting and LED lighting.
Interior Walls	Painted sheetrock on wood-frame. There are portions of the 2nd floor with lath-and-plaster. However, no value contribution is given to the 2nd floor at this point, since there is no utility to this portion of the building. No adjustment is made for any work to be done on the 2nd floor.

Electrical	Assumed to be adequate for a variety of commercial uses
Ceilings	Ceiling finishes range from a vaulted sheetrock ceiling to an exposed wood ceiling in the former/future restaurant and coffee shop, to a painted sheetrock ceiling in the restrooms.
Windows	Single-pane windows in metal frame along the south and east sides of the building.
Doors	Wood storefront doors with wood-frame.
Flooring	Flooring varies between a laminate floor in the Kindred Homestead Supply and the Terrain Coffee Shop spaces to an exposed concrete floor in the restaurant and Backbeat Distillery spaces. Restrooms typically have laminate flooring.
Plumbing	There is a set of men's and women's restrooms in the Terrain Coffee Shop space, each with a sink and toilet. The Kindred Homestead Supply space also has a set of unisex restrooms, each with a sink and toilet. The restaurants are also plumbed for kitchen/dishwashing uses associated with a restaurant.
Fire Protection	The subject does not have a fire sprinkler system.
Security	Standard locks and security alarms
Elevators	None
Landscaping	None. The subject has full coverage on the subject tax parcel with the exception of a courtyard area (approximately 670 SF) just north of the Terrain Coffee Shop and also accessed from an exterior door on the south side of the Kindred Homestead Supply space. This has some grass and minimal landscaping.
Signage	The tenants have signage along the building along Main and West 6 th Streets.
Parking	The subject property has a 93% site coverage ratio, with no on-site parking. This is considered fairly typical for the downtown "core" area of Vancouver. The subject's parking in relation to other comparable properties will be factored into our valuation analysis in the approaches to value.
Deferred Maintenance	Other than some roof repairs necessary, there is not considered to be any deferred maintenance.
Functional Design	The subject improvements offer good utility to the tenants as a multi-tenant commercial building. Therefore, the subject property building is considered marketable to a variety of commercial retail/service uses. The site coverage and parking ratios are within market standards.

ASSESSMENT & TAXATION

The subject property is located within the City of Vancouver municipality within the Clark County jurisdiction. The assessed value and property tax for the current year are summarized in the following table.

ASSESSMENT & TAXES						
Tax Year	2021			Tax Rate	\$9.9831	
Tax Rate Area	37000			Taxes Current	Yes	
Taxes SF Basis	Total Land Area					
APN	LAND	IMPV	TOTAL	EXEMPTIONS	TAXABLE	BASE TAX
047950-000	\$502,500	\$981,750	\$1,484,250	\$0	\$1,484,250	\$14,817
Totals	\$502,500	\$981,750	\$1,484,250	\$0	\$1,484,250	\$14,817
Total/SF	\$50.00	\$97.69	\$147.69	\$0.00	\$147.69	\$1.47
Total Base Tax						\$14,817
Total Base Tax Per SF						\$1.47

Source: Clark County Assessment & Taxation

Assessment & Taxation Description

Taxes in the State of Washington are paid twice a year, on the 30th of April and the 31st of October. The assessed values typically are approximately 70 to 90 percent of market value. In the case of the subject property, the assessed value for the subject property represents approximately 106 percent of our concluded market value, which indicates that the subject property's assessed value is considered slightly high. No adjustments are considered necessary in this analysis.

ZONING ANALYSIS

The zoning characteristics for the subject property are summarized below:

ZONING SUMMARY	
Municipality Governing Zoning	City of Vancouver Planning & Zoning Department
Current Zoning	City Center (CX)
Permitted Uses	Multi-Family, Retail, Office, Residential, Light Industrial, Medical
Current Use	Multi-tenant commercial building
Is Current Use Legally Permitted?	Yes
Zoning Change	Not Likely
ZONING REQUIREMENTS	
Conforming Use	There are a variety of commercial and residential uses which represent a conforming use within this zone.
Minimum Site Area (SF)	None
Minimum Yard Setbacks	
Front (Feet)	None
Rear (Feet)	None
Side (Feet)	None
Maximum Site Coverage	100%
Maximum Building Height	45 - 150 Feet

Source: City of Vancouver Planning & Zoning Department

Zoning Conclusions

Based on the interpretation of the zoning ordinance, a wide variety of commercial and mixed-uses are outright permitted uses for the subject site that could be rebuilt if unintentionally destroyed.

MARKET ANALYSIS

This section, market conditions which influence the subject property are analyzed. The major factors requiring analysis are the supply and demand conditions in the subject market and submarket. Since the subject property is a commercial building, we will present a section which will focus on the retail market, both the market in the Portland-Vancouver Metropolitan Area and the sub-market in Clark County.

RETAIL

PORTLAND-VANCOUVER METRO AREA RETAIL MARKET

The following is an analysis of supply/demand trends in the Portland-Vancouver Metro Area Retail Market using information provided by CoStar, widely recognized as a credible source for tracking market statistics. The table below presents historical data for key market indicators.

PORTLAND-VANCOUVER METRO AREA HISTORICAL STATISTICS (LAST FIVE YEARS)					
PERIOD	SUPPLY	NEW CONSTRUCTION	NET ABSORPTION	VACANCY	ASKING RENT
2017	120,964,611 SF	468,768 SF	843,032 SF	3.7%	\$18.18/SF
2018	121,481,297 SF	507,865 SF	1,019,730 SF	3.1%	\$18.58/SF
2019	121,848,295 SF	361,718 SF	84,670 SF	3.0%	\$19.43/SF
2020	122,043,011 SF	192,464 SF	(889,135) SF	3.7%	\$19.74/SF
2021	122,339,395 SF	296,384 SF	189,558 SF	4.2%	\$19.97/SF
CAGR	0.2%	-	-	-	1.9%

*Supply numbers based on information which is amended/updated on an on-going basis by Costar.

Source: Costar®

PORTLAND-VANCOUVER METRO AREA TRAILING FOUR QUARTER PERFORMANCE					
PERIOD	SUPPLY	NEW CONSTRUCTION	NET ABSORPTION	VACANCY	ASKING RENT
2021 Q1	122,119,677 SF	76,666 SF	(99,333) SF	4.2%	\$19.90/SF
2021 Q2	122,185,433 SF	65,756 SF	(86,239) SF	4.3%	\$20.04/SF
2021 Q3	122,245,508 SF	60,075 SF	298,056 SF	4.1%	\$19.94/SF
2021 Q4	122,339,395 SF	93,887 SF	77,074 SF	4.1%	\$19.99/SF

Source: Costar®

PORTLAND-VANCOUVER METRO AREA MARKET TREND ANALYSIS			
	Q4 2021	2021	Last 5
Total SF	122,339,395	122,339,395	121,735,322
Vacant SF	5,008,467	5,113,787	4,287,518
Market Vacancy	4.1%	4.2%	3.5%
Construction Growth Rate	0.1%	0.2%	0.2%
Absorption Rate	0.1%	0.2%	0.2%
Average Asking Rent/SF	\$19.99	\$19.97	\$19.18

Source: Costar®

Portland-Vancouver Metro Area Market Conclusion

The Portland-Vancouver Metropolitan Area Retail Market demonstrates stable and improving fundamentals, with relatively low vacancies. The market has maintained similar vacancies and asking rents have tightened in the past 24 months, with only a slightly increased inventory during this time. In addition, asking rents have increased slightly over the past five years with the current rental rate at \$19.99/SF, which is significantly higher than 2016 and the last 5 years, and higher than previous quarters. There has been a steady amount of new construction over the past five years, and with diminished vacancies, steady new construction, and an improving economy, there has been upward pressure on rents. However, in 2020, the COVID-19 pandemic significantly impacted the retail market, with negative absorption of retail space during this time period. Also, the Portland-Vancouver Metro Area experienced negative absorption in the Q1 2021 and Q2 2021 quarters, although absorption has been

positive during Q3 2021 and Q4 2021. Overall, vacancies have remained low and are currently at 4.1%. Rental rates and vacancy levels have generally remained steady over the last 4 quarters. Sit-down restaurants have been hit the hardest since March 2020 because of the “social distancing” requirements and limited seating capacity have placed severe constraints on the ability of restaurant owner’s to be profitable but relaxed social distancing measures after vaccine distribution in 2021 have allowed restaurants to have more seating capacity.

CLARK COUNTY RETAIL SUBMARKET OVERVIEW

The following is an analysis of supply/demand trends in the Clark County Retail Submarket using information provided by CoStar. The table below presents historical data for key market indicators.

CLARK COUNTY HISTORICAL STATISTICS (LAST FIVE YEARS)					
PERIOD	SUPPLY	NEW CONSTRUCTION	NET ABSORPTION	VACANCY	ASKING RENT
2017	19,984,299 SF	77,654 SF	131,228 SF	4.5%	\$17.78/SF
2018	20,137,435 SF	153,136 SF	264,043 SF	3.5%	\$17.69/SF
2019	20,262,256 SF	124,821 SF	159,105 SF	3.4%	\$18.55/SF
2020	20,337,906 SF	75,650 SF	(203,254) SF	4.3%	\$20.04/SF
2021	20,436,886 SF	98,980 SF	165,079 SF	4.2%	\$21.53/SF
CAGR	0.4%	-	-	-	3.9%

*Supply numbers based on information which is amended/updated on an on-going basis by Costar.

Source: Costar®

CLARK COUNTY TRAILING FOUR QUARTER PERFORMANCE					
PERIOD	SUPPLY	NEW CONSTRUCTION	NET ABSORPTION	VACANCY	ASKING RENT
2021 Q1	20,373,372 SF	35,466 SF	26,213 SF	4.6%	\$20.88/SF
2021 Q2	20,381,560 SF	8,188 SF	52,959 SF	4.4%	\$21.81/SF
2021 Q3	20,400,619 SF	19,059 SF	167,052 SF	3.7%	\$21.72/SF
2021 Q4	20,436,886 SF	36,267 SF	(81,145) SF	4.2%	\$21.72/SF

Source: Costar®

CLARK COUNTY MARKET TREND ANALYSIS			
	Q4 2021	2021	Last 5
Total SF	20,436,886	20,436,886	20,231,756
Vacant SF	868,321	864,480	805,629
Market Vacancy	4.2%	4.2%	4.0%
Construction Growth Rate	0.2%	0.5%	0.4%
Absorption Rate	(0.4%)	0.8%	0.5%
Average Asking Rent/SF	\$21.72	\$21.53	\$19.12

Source: Costar®

Clark County Submarket Conclusion

The Clark County Retail Sub Market has demonstrated stable and slowly improving fundamentals, up until March 2020, when the COVID-19 pandemic began. Similar to the Portland-Vancouver Metro Area market, 2020 showed negative absorption and a bump up in vacancies in the retail submarket in Clark County. However, in the 1st three quarters of 2021, Clark County has seen positive net absorption, with some negative net absorption in Q4 2021. The submarket has seen generally level vacancies and steady asking rents in the past 24 months, coupled with some new construction and a slightly larger inventory during this time. The above figures indicate a current 4Q 2021 vacancy rate for Clark County of 4.2%, considered a very healthy vacancy rate, with the potential for new construction/development on projects which are feasible and rents high enough to justify new construction in certain areas. In addition, rents have fluctuated somewhat over the past five years, with the current rental rate at \$21.72/SF, which is similar to the last quarter and higher than most previous quarters and higher than the past 5-year average, showing improvement like the greater Portland-Vancouver Metropolitan Area.

The 2020 figures show challenging statistics for Clark County and reflects the impact of the COVID-19 pandemic on Clark County, as retailers, including restaurants with no drive-through, have struggled with their gross sales figures to support continued operation. Many retail/service tenants/businesses which have continued to operate with social distancing have been able to withstand the pandemic, but retail/service tenants which typically have higher concentrations of customers have faced more challenging constraints as the County tries to move forward with increased indoor capacity. With the distribution of vaccines in 2021, restaurants have had increased seating capacity, but additional challenges facing retailers include short staffing, limiting dining capacity for some restaurants without enough servers/staff. More discussion of COVID-19 will be presented below.

With respect to commercial market conditions, there continues to be a limited supply of good quality retail space in the market and retail demand has been growing in the past few years, especially as the single-family and multi-family residential market have grown. And as 2021 has progressed, with the distribution of the COVID-19 vaccines, there has been more of an opening up in the retail sector, with positive net absorption, decreasing vacancy rates, and increasing rental rates.

Overall, the primary adverse market conditions are caused by the current COVID-19 pandemic and the delta variant, and, more recently, the omicron variant, strains in various areas of the population, and the uncertainty it has created throughout the country and world regarding the length of the impact. However, with the continued distribution of vaccines from three providers, there is continued optimism for 2022 for improvement in the real estate market. Historically, the local area has experienced a tremendous amount of population growth in Clark County and the suburban areas, which drives the demand for necessary supporting services. Since approximately 2012, there has been improvement and growth in the retail market.

With respect to the single-tenant retail market in Clark County, there have been developers in Clark County which have constructed, leased and sold their Triple Net leased investments. One purchaser, MAJ Development Corporation (Mike Jenkins) has consistently been tying up land, dividing or short-platting the property into smaller commercial lots, signing leases with Triple Net tenants such as Starbucks, 7-Eleven, Sherwin-Williams, and Chipotle, to name the most common tenants. Then, during the construction period for these buildings, he puts them on the market and often attracts buyers/investors who close on the properties within a month or two of the buildings being completed and the tenants paying rent. This development pattern capitalizes on the market and strong demand for Triple Net-leased investment properties. Ryan Hurley of Hurley Development has also been actively doing this in the Evergreen Crossing Buildings at NE Fourth Plain Boulevard and NE 143rd Avenue, in a center anchored by Wal-Mart SuperCenter, marketing properties leased to Jiffy Lube and Starbucks, among other tenants, knowing the depth of the buyer/investor pool will place high demand on these properties with long-term, stable income streams.

CORONAVIRUS IMPACT

As mentioned in the cover letter, the impact of the global coronavirus pandemic has been felt in Clark County in terms of school closures, restaurant closures, and business closings in mid-2020, with the majority of the population staying home or working from home after federal and state mandates for social distancing as a means to curb the spread of the virus. The impact was felt mostly in the hospitality and retail (food service) industry, as Governor Inslee initially ordered restrictions on public gatherings to aid in curbing the spread of the virus. In late fall 2020, there were more “spikes” in COVID-19 cases in Clark County, continuing the fear and uncertainty to the general public, and prompting restrictions of dine-in seating in restaurants and the temporary closing of gyms/fitness centers. However, with the introduction of three different vaccines and diminishing levels of COVID-19 in the local population, there have been improvements as 2021 has progressed so far.

Most recently, on June 30, 2021, per Governor Inslee's plan and approval, the State of Washington entered into Phase 4 of the recovery plan, opening up all restaurant and public gatherings, after a strong attempt to maximize up until that point the number of vaccinated residents of the State of Washington. This is a significant step in the overall economy and real estate market. Further, according to local sources, many government institutions are planning for some type of return by employees to the workplace, possibly on some type of a staggered basis, for Fall 2021. Upon until this point, employees were working and coordinating services from home. This is considered another positive step in the real estate market. In Fall 2021, due to the "delta variant", Oregon and Washington have fallen back to a "mask mandate" for indoor public areas, and in schools for Fall 2021. This has created some additional short-term insecurity in public areas, but at this point, there is no measurable impact on local real estate. The "omicron variant" is the most recent strain of COVID-19 which has spread in late 2021/early 2022. However, there still does not appear to be a significant impact on the real estate market.

Overall, from an investment standpoint, due to the limited supply of available product like the subject for sale, investors are still expected to proceed with purchases/investments. There are still many buyers/investors in the market place and a limited supply of good quality product available for sale. Also, in downtown Vancouver, there has been continued development of mixed-use commercial/multi-family projects throughout the COVID-19 pandemic. Therefore, we will not make any adjustments to the older land sales because of the continued growth in downtown Vancouver throughout the years of the COVID-19 pandemic.

SUBJECT PROPERTY ANALYSIS

The subject consists of a multi-tenant Retail/Service building totaling 9,380 SF of NRA in Vancouver, Washington. Based on the subject property's location in downtown Vancouver, where there has been a significant amount of new multi-family construction and additional "critical mass" added and continuing to be added to downtown Vancouver, there is strong demand for commercial space. Overall, based on the subject's location in downtown Vancouver, the subject building would support a wide variety of commercial uses which could provide goods and services to the growing residential population in downtown Vancouver but also the employment base in downtown Vancouver during the weekdays. Based on its physical/location characteristics, the subject represents a project with good appeal and marketability.

EXPOSURE TIME & MARKETING PERIOD

Exposure time is best established based the recent history of marketing periods for comparable sales, discussions with market participants and information from published surveys. The following table summarizes the information that was taken into consideration to develop an estimate of exposure time and marketing period for the subject property:

EXPOSURE TIME & MARKETING PERIOD						
SOURCE	QUARTER	RANGE		AVG	LAST Q	LAST YR
PriceWaterhouse Coopers						
National Strip Shopping Center	4Q 21	2.0	to 18.0	7.3	6.9	7.9
National Net Lease	4Q 21	2.0	to 18.0	6.2	6.3	5.8
Comparable Sales Dataset		6.0	to 12.0	9.0		
AVERAGE		3.3	to 16.0	7.5	6.6	6.9

The preceding information generally supports an exposure time range from 3 to 16 months for Retail / Commercial (Other Retail/Commercial) properties. The availability of acquisition financing also factors into exposure time and marketing period. My review of the local capital market indicate that adequate financing options would have been available to consummate a sale of the subject on the date of value. The subject presents appealing characteristics based on its quality/condition, size, income characteristics and location in a well-developed commercial area. Based on the above factors, an exposure time and market period in the range of 9 to 12 months is concluded for the subject property.

Exposure Time Conclusion

12 Months

Marketing Period Conclusion

12 Months

HIGHEST AND BEST USE ANALYSIS

This section develops the highest and best use of the subject property as-vacant and as-improved. The highest and best use, or most probable use, must be legally permissible, physically possible, financially feasible, and maximally productive.

As-Vacant Analysis

Permitted uses of the subject's City Center (CX) zoning were listed in the Zoning Analysis section. Regarding physical characteristics, the subject property is square in shape, with a corner location and level topography at the street grade of Main and West 6th Streets, with average/good access and average exposure at the NW corner of the "blinking red" signalized intersection of Main Street and West 6th Street. The subject property has frontage on two streets.

Based on my observations of land development trends for sites with similar zoning and physical characteristics as the subject and analysis of current supply/demand trends, the highest and best use of the subject parcel "as-vacant" is a commercial use.

As-Improved Analysis

The subject's Retail / Commercial (Other Retail/Commercial) use (as-improved) is permitted outright by the CX zoning. The legal factors influencing the highest and best use of the subject property support the existing use. The subject's building improvements were originally built in 1922, with renovations to the building over time since then. The building has a remaining economic life of approximately 25 years based on my estimate. The physical and locational characteristics of the property have been previously discussed in this report. The project is of average quality construction and is in average condition, with adequate service amenities. Legal, physical, locational and marketability factors support the existing use as the highest and best use of the subject site.

In addition to legal, physical and locational considerations, analysis of the subject property as-improved requires the treatment of alternative uses for the property. The five possible alternative treatments of the property are demolition, expansion, renovation, conversion, and the subject's use "as-improved". Among the five alternative uses, the continued use as a multi-tenant commercial building is the Highest and Best Use of the subject property as-improved.

VALUATION METHODS

The following presentation of the appraisal process deals directly with the valuation of the subject property. The paragraphs below describe the standard approaches to value that were considered for this analysis.

Income Approach

The two fundamental methods of this valuation technique include Discounted Cash Flow and Direct Capitalization.

Characteristics specific to the subject property warrant that this valuation technique is developed. Development of the Income Approach is a specific scope requirement of this assignment. The subject is an investment property; therefore, the Income Approach represents the decision making process of knowledgeable buyers and sellers of this property type. The Direct Capitalization method is used in this analysis. Discounted Cash Flow analysis does not contribute substantially to estimating value beyond the direct capitalization method and is not used in this analysis.

Sales Comparison Approach

Characteristics specific to the subject property warrant that this valuation technique to be developed. Development of the Sales Comparison Approach is a specific scope requirement of this assignment. Sufficient sales data is available to provide a credible value estimate by the Sales Comparison Approach. Based on this reasoning, the Sales Comparison Approach is presented within this appraisal.

Land Valuation

Characteristics specific to the subject property do not warrant that a site value is developed. Development of the subject site value is not a specific scope requirement of this assignment.

Cost Approach

Characteristics specific to the subject property do not warrant that this valuation technique is developed. Development of the Cost Approach is not a specific scope requirement of this assignment. The Cost Approach has limited applicability due to the age of the improvements and lack of market based data to support an estimate of accrued depreciation. Based on the preceding information, the Cost Approach will not be presented.

Reconciliation of Value Conclusions

The Income (Direct Capitalization) and Sales Comparison approaches are used to value the subject property, which will be reconciled into the final opinion of market value in the Analysis of Value Conclusions section.

INCOME APPROACH

As previously discussed within the Valuation Methods section, the Direct Capitalization method is used in this analysis, and Discounted Cash Flow analysis is not developed.

DIRECT CAPITALIZATION

The first step in the direct capitalization method is to estimate the subject's durable rental income through reconciliation of the subject's in-place lease terms and market rent analysis. Next, I analyze other income items including reimbursements and miscellaneous revenue. Then, vacancy allowance and operating expenses are estimated based on analysis of the subject and market indicators. Finally, the resulting net operating income is capitalized at an appropriate supported rate. The implied value may be adjusted to account for non-stabilized conditions or required capital expenditures to reflect an as is value.

RENTAL INCOME ANALYSIS

In this section, I developed an opinion of the subject's rental income through examination of subject lease terms and market rent analysis. The rental income conclusion was reconciled taking into account such items as durability of in-place contract rents, lease escalations and market terms as measured by rent comparables.

Rent Roll

The following Rent Roll Summary reflects a breakdown of the individual tenant spaces and a snapshot of in-place contract rents including lease term, expense structure and base rent.

RENT ROLL SUMMARY										AS OF DECEMBER 2021		
SUITE	TENANT NAME	TOTAL	% OF	TENANT	LEASE TERMS			EXPENSE	CURRENT BASE RENT			YEARLY
		NRA (SF)	NRA	GROUP	START	END	YEARS	STRUCTURE	\$/SF(MO.)	\$/SF(YR.)	ANNUAL	ESC.
600	Bar Tasting/Brandon Rush	1,920	20.5%	Inline	8/21	7/31	10.0	Modified Gross	\$1.30	\$15.63	\$30,000	Step-Ups
604	Backbeat Distillery/Brandon Rush	4,080	43.5%	Inline	8/21	7/31	10.0	Modified Gross	\$1.03	\$12.35	\$50,400	Step-Ups
606	Kindred Homestead Supply	2,252	24.0%	Inline	3/21	2/24	3.0	Modified Gross	\$0.61	\$7.36	\$16,572	Step-Ups
106	Terrain Coffee	1,128	12.0%	Inline	8/17	5/26	8.8	Modified Gross	\$1.77	\$21.28	\$24,000	Step-Ups
OCCUPIED SUBTOTALS		9,380	100.0%						\$1.07	\$12.90	\$120,972	
VACANT SUBTOTALS		0	0.0%									
TOTAL NRA		9,380	100.0%						\$1.07	\$12.90	\$120,972	

As indicated in the preceding table, the subject property contains 9,380 SF of NRA, and is 100% leased to multiple tenants. However, two of the spaces, 600 and 604 Main (Backbeat Distillery/Brandon Rush), are still essentially vacant while the tenant prepares to build-out these spaces. The owner/client indicated that the tenant began paying rent for these spaces in March 2022. The leases for the tenants are based on a modified gross expense structure, with the tenant responsible for their own real estate taxes, utilities, interior maintenance, and some common area maintenance, and the owner responsible for building insurance and exterior building maintenance. The owner pays the real estate taxes and common area maintenance and then the tenants reimburse the owner for the real estate tax and CAM expenses.

As indicated above, the Backbeat Distillery bar/tasting room will be operated by Cascadia Brothers, with a hamburger operation also within this corner space. The tenant was in the process of building out their space and had 6 months free rent, and the tenant started paying rent in March 2022, according to the owner/client. The above rent is the rent level they will begin paying in March 2022, effective to the date of value (12/17/21). Therefore, at the end of the valuation section, we will make an adjustment for some free rent and other absorption costs between the effective/retrospective date of value and March 2022.

MARKET RENT ANALYSIS

This section examines competitive comparable properties within the marketplace to establish our opinion of market rent for the subject property. This allows for a comparison of the subject property's contract to what is attainable in the current market.

Adjustment Process

Quantitative adjustments are made to the comparable leases. The following adjustments or general market trends were considered for the basis of market rent analysis.

Transactional Adjustments	If warranted, the comparable leases were adjusted for varying lease structures, atypical concessions and market conditions. The expense structure used in this analysis is a Modified Gross expense structure, with the owner responsible for building insurance, building repairs and maintenance, management, and reserves for replacement, and the tenant responsible for all other operating expenses.
Property Adjustments	Quantitative percentage adjustments were made for location and physical characteristics such as size, age, condition, exposure and parking ratio. It should be stressed that the adjustments are subjective in nature and are meant to illustrate our logic in deriving a value opinion for the subject site.
Tenant Space Adjustments	The lease comparables were further adjusted to the subject to account for tenant space specific characteristics such as size and space functionality.

The following table summarizes the market conditions adjustment applied in this analysis.

MARKET CONDITIONS ADJUSTMENT		
Per Year As Of	December 2021 (Retrospective)	3%

The analysis applies an upward market conditions adjustment of 3% annually reflecting the conditions between the oldest comparable lease date up through the period preceding the effective date of value.

COVID-19 Impact Adjustment

We have not applied an adjustment for any of the comparables uses in this analysis. The leases are mostly current and are considered to reflect the current retail/service market conditions.

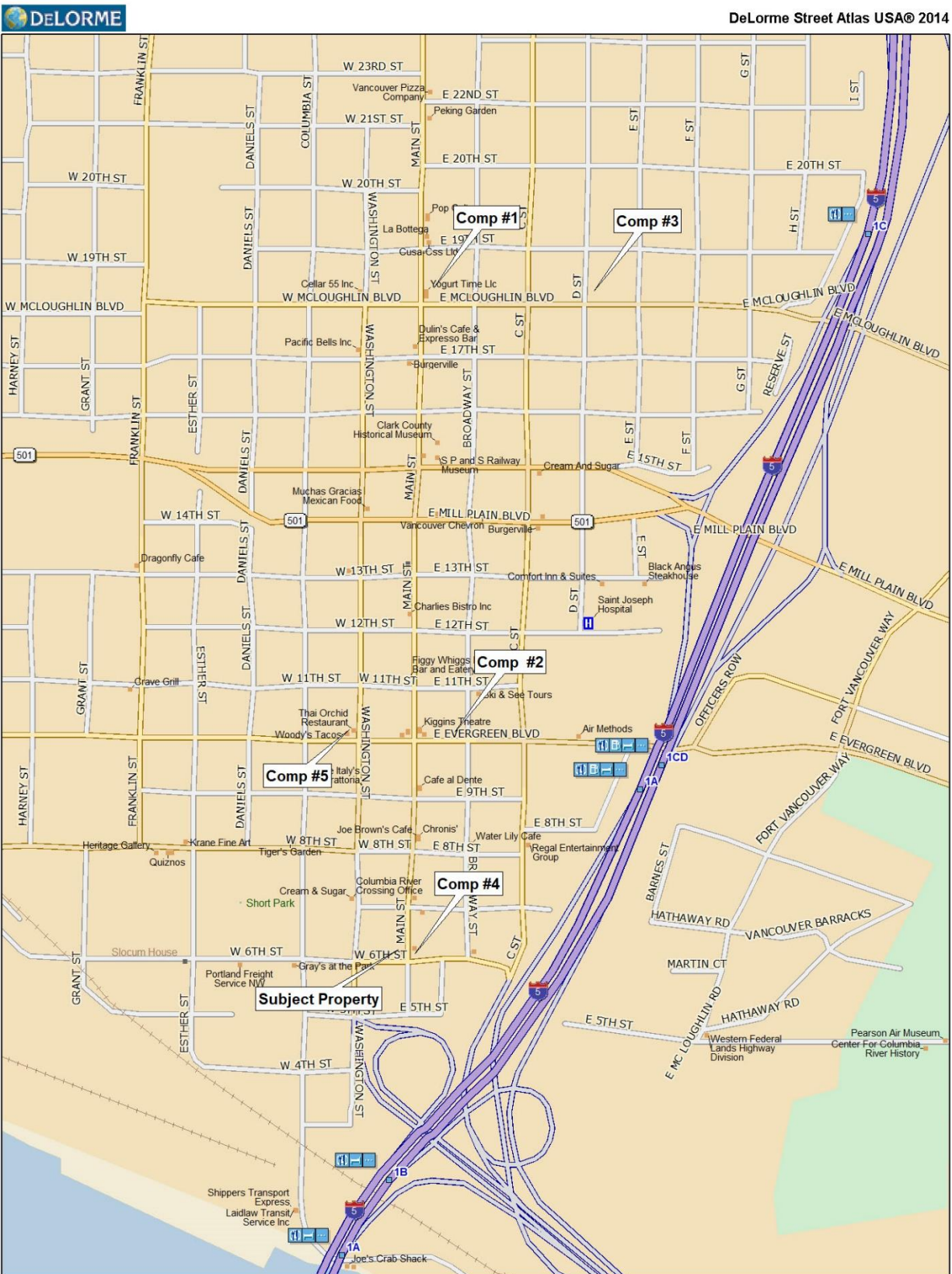
ANALYSIS OF COMPARABLE COMMERCIAL LEASES

The following pages present a summation table of the comparables selected for this analysis, a location map and comparable photo pages, the lease comparable adjustment process and my market rent conclusion.

COMMERCIAL LEASE SUMMATION TABLE

COMPARABLE	SUBJECT	LEASE 1	LEASE 2	LEASE 3	LEASE 4	LEASE 5
Name	Downtown Multi-Tenant Commercial Building	Schofield Corner	Dale Don Commercial Building	Angelo Plaza	Heritage Building	Jorge's Tequila Factory
Address	600 Main Street	1813 Main Street	108-116 E Evergreen Blvd	1801 D Street	601 Main St, Ste 305	1004 Washington Street
City	Vancouver	Vancouver	Vancouver	Vancouver	Vancouver	Vancouver
State	WA	WA	WA	WA	WA	WA
Zip	98660	98660	98660	98663	98660	98660
PHYSICAL INFORMATION						
Property Type	Retail / Commercial	Retail	Retail	Office	Office	Retail
NRA	9,380	18,103	10,579	7,840	22,890	5,000
Occupancy	100%	100%	100%	80%	82%	100%
Location	Good	Average/Good	Good	Average/Good	Good	Good
Quality	Average	Average/Good	Average/Good	Good	Good	Average/Good
Condition	Average	Average/Good	Good	Average/Good	Good	Good
Exposure	Average	Average/Good	Good	Good	Average	Good
Access	Average/Good	Average/Good	Good	Good	Average/Good	Average/Good
Appeal	Average/Good	Average/Good	Good	Good	-	Average/Good
Year Built	1922	1959	1938	1977	1912	1980
Year Renovated	-	1975	-	-	-	-
LEASE INFORMATION						
Tenant Name		Artwear Embroidery	Retail Tenant	Office Tenant	Bellos, Inc.	Jorge's Tequila Factory
Commencement Date		12/1/2020	9/1/2018	8/1/2018	3/1/2020	7/2/2018
Lease Type		New	New	New	New	Renewal
Lease Status		Signed	Signed	Signed	Signed	Signed
Rate Type		NNN	NNN	MG	FSG	NNN
Size (SF)		1,440	2,300	1,500	1,080	5,000
Term (Yrs)		5	6	5	3	5
Rent (\$/SF/Yr.)		\$10.68	\$13.00	\$17.50	\$22.00	\$13.94
Avg. Escalation/Yr		3.0%	3.0%	3.0%	3.0%	2.0%
Concessions		-	-	2 Mos.	1 Mos.	-
TI's (\$/SF)		-	\$30	\$4	-	-

COMPARABLE COMMERCIAL LEASE MAP



Data use subject to license.

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COMPARABLE COMMERCIAL RENT PHOTOGRAPHS

**COMPARABLE 1****COMPARABLE 2****COMPARABLE 3****COMPARABLE 4****COMPARABLE 5**

COMMERCIAL LEASE ADJUSTMENT TABLE

COMPARABLE	SUBJECT	LEASE 1	LEASE 2	LEASE 3	LEASE 4	LEASE 5
Name	Downtown Multi-Tenant Commercial Building	Schofield Corner	Dale Don Commercial Building	Angelo Plaza	Heritage Building	Jorge's Tequila Factory
Address	600 Main Street	1813 Main Street	108-116 E Evergreen Blvd	1801 D Street	601 Main St, Ste 305	1004 Washington Street
City	Vancouver	Vancouver	Vancouver	Vancouver	Vancouver	Vancouver
NRA	9,380	18,103	10,579	7,840	22,890	5,000
Occupancy	100.0%	100.0%	100.0%	80.0%	82.0%	100.0%
Location	Good	Average/Good	Good	Average/Good	Good	Good
Quality	Average	Average/Good	Average/Good	Good	Good	Average/Good
Condition	Average	Average/Good	Good	Average/Good	Good	Good
Exposure	Average	Average/Good	Good	Good	Average	Good
Access	Average/Good	Average/Good	Good	Good	Average/Good	Average/Good
Parking Ratio	0.0	1.38	0.0	2.68	0.0	0.0
Year Built	1922	1959	1938	1977	1912	1980
Year Renovated	-	1975	-	-	-	-

LEASE INFORMATION

Tenant Name	Artwear Embroidery	Retail Tenant	Office Tenant	Bellos, Inc.	Jorge's Tequila Factory
Commencement Date	12/1/2020	9/1/2018	8/1/2018	3/1/2020	7/2/2018
Lease Type	New	New	New	New	Renewal
Lease Status	Signed	Signed	Signed	Signed	Signed
Rate Type	NNN	NNN	MG	FSG	NNN
Size (SF)	1,440	2,300	1,500	1,080	5,000
Term (Yrs)	5.0	6.0	5.0	3.1	5.0
Rent (\$/SF/Yr.)	\$10.68	\$13.00	\$17.50	\$22.00	\$13.94
Rent (\$/SF/Yr.)	\$10.68	\$13.00	\$17.50	\$22.00	\$13.94
Avg. Escalation/Yr	3.0%	3.0%	3.0%	3.0%	2.0%
Concessions	-	-	2 Mos.	1 Mos.	-
TI's (\$/SF)	-	\$30	\$4	-	-

TRANSACTIONAL ADJUSTMENTS

Lease Type	\$1.00	\$1.00	(\$3.00)	(\$6.00)	\$1.00
Concessions	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Market Conditions¹	3%	10%	11%	5%	11%
Subtotal Eff Rent	\$12.03	\$15.40	\$16.10	\$16.80	\$16.58

PROPERTY ADJUSTMENTS

Location	5%	0%	5%	0%	0%
Size (Space)	0%	0%	0%	0%	0%
Quality	-5%	-5%	-10%	-10%	-5%
Condition	-5%	-10%	-5%	-10%	-10%
Exposure	-5%	-10%	-10%	0%	-10%
Access	0%	-5%	-5%	0%	0%
Parking Ratio	-5%	0%	-10%	0%	0%
Subtotal Property Adj	-15%	-30%	-35%	-20%	-25%

TOTAL ADJUSTED RENT	\$10.23	\$10.78	\$10.47	\$13.44	\$12.44
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STATISTICS	UNADJUSTED	ADJUSTED	MARKET CONCESSIONS ¹	
LOW	\$10.68	\$10.23	Lease Type	Modified Gross
HIGH	\$22.00	\$13.44	Free Rent	0 Mos.
MEDIAN	\$13.94	\$10.78	TI's	\$0/SF
AVERAGE	\$15.42	\$11.47		

¹ Market Conditions Adjustment - Compound annual change in market conditions: 3%

Date of Value (for adjustment calculations): 12/17/21

Commercial Lease Analysis

In this analysis, the comparables will be analyzed in relation to the subject's retail/service space. An attempt was made to find comparable retail/service spaces in similar commercial buildings similar to the subject's design, location, market appeal, and size. The comparables indicated a range of rents, after adjustments, of between \$10.23 and \$13.44 per square foot per year, with all of the comparables adjusted to a modified gross expense structure, with the owner responsible for building insurance, building repairs and maintenance, management and reserves for replacement, and the tenant responsible for all other operating expenses. The comparables will be discussed in general, and then specific market rent conclusions will be made for the subject space.

Comparable 1 (\$10.23/SF, adjusted) is the lease of a commercial space in the Schofield Corner property at the corner of Main Street and McLoughlin Boulevard. Downward adjustments were made to this comparable for its superior quality and parking ratio. An upward adjustment was made for its inferior location.

Comparable 2 (\$10.78/SF, adjusted) is a lease of a commercial space in a multi-tenant building along East Evergreen Boulevard. Downward adjustments were made for its superior quality, condition, exposure, and access.

Comparable 3 (\$10.47/SF, adjusted) is the lease of a commercial space in the Angelo Plaza, just north of the downtown "core" area. Downward adjustments were made for its superior quality, exposure, access, and its parking ratio. An upward adjustment was made for its inferior location.

Comparable 4 (\$13.44/SF, adjusted) is the lease of a commercial space in the Heritage Building, located in the southern portion of the downtown Vancouver "core" area. Downward adjustments were made for its slightly superior quality and condition. An upward adjustment was made for its slightly inferior exposure.

Comparable 5 (\$12.44/SF, adjusted) is the lease of a commercial space at 1004 Washington Street, at the signalized corner of Washington Street and West Evergreen Boulevard. Downward adjustments were made for its superior quality, condition, and exposure.

Primary weight is given to Comparables 1 (\$10.23/SF/year adjusted), 2 (\$10.78/SF/year adjusted), 3 (\$10.47/SF/year adjusted), 4 (\$13.44/SF/year adjusted), and 5 (\$12.44/SF/year adjusted). Overall, based on the above analysis, a market rent in the range of \$11.00 to \$13.00/SF/year would be considered appropriate for the subject property, with the mid-range of \$12.00/SF/year concluded for the spaces along Main Street. This includes the Kindred Homestead Supply space and the 604 space which has been leased for use as a distillery/tasting room.

A premium rent of \$15.00/SF/year is assigned to the 1,920 SF Backbeat Distillery space at 600 Main because of its corner location at a signalized intersection. Also, a premium rent of \$16.00/SF/year is assigned to the Terrain Coffee space, based on its location/orientation along West 6th Street and its smaller, more marketable size.

These market rents are generally consistent with the contract rents currently being paid by the tenants in the building, with some variations. With the renovation of the building immediately north at 614 Main Street, with new tenants going into this building, including a wine tasting room, and the new tenants opening in 2022 along Main Street in the subject building, the appeal of commercial spaces along Main Street will improve. However, the leases at 614 Main Street are not directly comparable to the subject property because the landlord provided these tenants with a complete "vanilla shell" build-out, along with an additional \$25/SF TI allowance, in achieving lease rates in the range of \$25/SF/year, Triple Net, clearly superior to the subject property. This type of build-out and TI allowance is more than the subject tenants received. These leases/new tenants will continue to improve the appeal of the immediate area. Overall, the contract rents are considered to be well-supported. We will utilize

the contract rents in this leased fee analysis, as a typical purchaser would capitalize the contract rents indicated by the existing leases into perpetuity, in analyzing the income-producing ability of the subject property.

COMMERCIAL SPACE MARKET RENT CONCLUSION

The following table summarizes the analysis of the comparable leases and the Commercial market rent conclusion.

COMMERCIAL LEASE CONCLUSION TABLE								
	LEASE	ADJUSTMENT				NET	GROSS	OVERALL
LEASE	RATE	TRANSACTIONAL ¹	ADJUSTED	PROPERTY ²	FINAL	ADJ %	ADJ %	COMPARISON
1	\$10.68	\$1.35	\$12.03	-15%	\$10.23	-4%	37%	PRIMARY
2	\$13.00	\$2.40	\$15.40	-30%	\$10.78	-17%	48%	PRIMARY
3	\$17.50	(\$1.40)	\$16.10	-35%	\$10.47	-40%	73%	PRIMARY
4	\$22.00	(\$5.20)	\$16.80	-20%	\$13.44	-39%	52%	PRIMARY
5	\$13.94	\$2.64	\$16.58	-25%	\$12.44	-11%	43%	PRIMARY
LOW	\$10.23						AVERAGE	\$11.47
HIGH	\$13.44						MEDIAN	\$10.78
AVERAGE CONTRACT			ASKING	ACHIEVABLE MRKT RANGE				CONCLUSION
\$12.90			-	\$11.00 - \$13.00				\$12.00

¹Cumulative ²Additive (Includes Tenant Adjustments)

POTENTIAL GROSS RENT

My analysis and conclusions of the subject's potential gross rent are detailed as follows:

POTENTIAL GROSS RENT SUMMARY								AS OF DECEMBER 2021		
OCCUPIED SPACE										
TENANT	TOTAL SPACES	% OF NRA	TENANT CATEGORY	CONTRACT RENT	MARKET RENT	CONTRACT V MARKET	BASIS FOR PROFORMA	RENT FORECAST		
								\$/MO.	\$/YR.	ANNUAL
Bar Tasting/Brandon Rush	1,920	20.5%	Inline	\$15.63	\$15.00	104%	Contract	\$1.30	\$15.63	\$30,000
Backbeat Distillery/Brandon Rush	4,080	43.5%	Inline	\$12.35	\$12.00	103%	Contract	\$12.35	\$12.35	\$50,400
Kindred Homestead Supply	2,252	24.0%	Inline	\$7.36	\$12.00	61%	Contract	\$0.61	\$7.36	\$16,572
Terrain Coffee	1,128	12.0%	Inline	\$21.28	\$16.00	133%	Contract	\$1.77	\$21.28	\$24,000
OCCUPIED SUBTOTALS	9,380	100.0%	-			-	-	\$1.07	\$12.90	\$120,972
VACANT SPACE								MARKET POTENTIAL RENT (1)		
VACANT SUBTOTALS	0	0.0%						-	-	\$0
TOTAL	9,380	100.0%						\$1.07	\$12.90	\$120,972

(1) Potential rent at current market levels, reflected on an annual basis.

INCOME & EXPENSE ANALYSIS

In this section, I estimate additional revenue sources, vacancy and credit loss, and applicable operating expenses. The client provided the 2019-2021 full-year historical income/expense operating information. The following table summarizes the historical operations of the subject property, along with my estimate of income and expenses on a stabilized basis.

SUBJECT OPERATING HISTORICALS							
							COLLIERS FORECAST
YEAR	2019		2020		2021		PROFORMA
INCOME ITEMS	TOTAL	\$/SF	TOTAL	\$/SF	TOTAL	\$/SF	TOTAL \$/SF
Base Contract Income	\$89,827	\$9.58	\$57,914	\$6.17	\$37,700	\$4.02	\$120,972 \$12.90
Market Rent Vacant Space	\$0	-	\$0	-	\$0	-	- -
TOTAL RENTAL INCOME	\$89,827	\$9.58	\$57,914	\$6.17	\$37,700	\$4.02	\$120,972 \$12.90
REIMBURSEMENTS							
Real Estate Taxes	\$8,920	\$0.95	\$4,675	\$0.50	\$4,005	\$0.43	\$14,817 \$1.58
CAM Expenses	\$3,174	\$0.34	\$2,536	\$0.27	\$1,723	\$0.18	\$4,000 \$0.43
TOTAL REIMBURSEMENTS	\$12,094	\$1.29	\$7,211	\$0.77	\$5,727	\$0.61	\$18,817 \$2.01
TOTAL GROSS INCOME	\$101,921	\$10.87	\$65,125	\$6.94	\$43,427	\$4.63	\$139,789 \$14.90
General Vacancy & Credit Loss	-	-	-	-	-	-	(\$6,049) (\$0.64)
Other Vacancy & Credit Loss	-	-	-	-	-	-	(\$941) (\$0.10)
EFFECTIVE GROSS INCOME	\$101,921	\$10.87	\$65,125	\$6.94	\$43,427	\$4.63	\$132,800 \$14.16
EXPENSE ITEMS							
Real Estate Taxes	(\$11,935)	(\$1.27)	(\$15,188)	(\$1.62)	(\$15,735)	(\$1.68)	(\$14,817) (\$1.58)
Property Insurance	(\$3,658)	(\$0.39)	(\$4,034)	(\$0.43)	(\$3,917)	(\$0.42)	(\$3,940) (\$0.42)
Repairs and Maintenance	(\$16,990)	(\$1.81)	(\$175)	(\$0.02)	(\$2,243)	(\$0.24)	(\$5,312) (\$0.57)
Management Fees	\$0	-	\$0	-	\$0	-	(\$5,312) (\$0.57)
Reserves	\$0	-	\$0	-	\$0	-	(\$1,876) (\$0.20)
TOTAL EXPENSES	(\$32,583)	(\$3.47)	(\$19,397)	(\$2.07)	(\$21,895)	(\$2.33)	(\$31,257) (\$3.33)
NET OPERATING INCOME	\$69,338	\$7.39	\$45,728	\$4.88	\$21,532	\$2.30	\$101,543 \$10.83

Expense Reimbursements - Under the terms of the subject's lease, the tenant reimburses the landlord for real estate taxes and some common area maintenance expenses (cleaning leaves, trash from sidewalks in front of the building, cleaning graffiti, etc.), and pays for their own utilities and interior maintenance. The owner/landlord pays for building insurance, exterior building repairs and maintenance, management, and reserves for replacement. The real estate tax and CAM reimbursements are based on the operating expenses that are concluded later in the Income Approach.

VACANCY AND CREDIT LOSS

General vacancy was discussed in depth in the market analysis section of this report. This category accounts for the time period between occupants, as well as possible prolonged vacancies under slow market conditions. This assignment reflects the probable stabilized vacancy during the economic life of the property and not necessarily the current or short-term vacancy. The Portland-Vancouver Metro Area Retail market vacancy is currently 4.1% (4Q 2021) and the Clark County submarket is currently 4.2% (4Q 2021). With consideration given to the overall subject appeal, and anticipated long-term occupancy, a vacancy and credit loss of 5% is concluded for the property.

VACANCY & CREDIT LOSS

General Vacancy Rate	5.0%
Credit Loss Conclusion	0.0%
Total	5.0%

ANALYSIS OF OPERATING EXPENSES

The following chart summarizes comparable Triple Net expenses used in this analysis to support our operating expense estimates.

EXPENSE COMPARABLES

COMPARABLE	COMP 1	COMP 2	COMP 3	COMP 4	LOW	HIGH	AVG
City	Vancouver	Vancouver	Vancouver	Vancouver	-	-	-
State	WA	WA	WA	WA	-	-	-
Expense Year	2019	2020	2020	2020	2019	2020	-
Actual/Budget	Actual	Actual	Actual	Actual	-	-	-
Net Rentable Area	37,332	12,029	10,600	12,201	10,600	37,332	18,041
EXPENSE ITEMS	\$/SF	\$/SF	\$/SF	\$/SF	LOW	HIGH	AVG
Real Estate Taxes	\$2.04	\$2.71	\$1.58	\$1.35	\$1.35	\$2.71	\$1.92
Property Insurance	\$0.27	\$0.26	\$0.49	\$0.17	\$0.17	\$0.49	\$0.30
Common Area Maintenance	\$3.95	\$0.92	\$2.38	\$0.36	\$0.36	\$3.95	\$1.90
Utilities	-	-	-	\$0.95	\$0.95	\$0.95	\$0.95
Management Fees	\$1.05	\$1.03	\$0.65	\$0.80	\$0.65	\$1.05	\$0.88
%EGI	3.5%	4.0%	3.0%	3.0%	3.0%	4.0%	3.4%
Reserves	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
TOTAL EXPENSES (\$/SF)	\$7.31	\$4.92	\$5.10	\$3.63	\$3.63	\$7.31	\$5.24

CONCLUSION OF OPERATING EXPENSES

In the following section I discuss the individual expense conclusions for the subject property.

EXPENSE CONCLUSIONS

EXPENSE	%EGI	\$/SF	TOTAL	COMMENT
Real Estate Taxes	11.2%	\$1.58	\$14,817	This is based on the current assessed value and real estate taxes for the subject property.
Property Insurance	3.0%	\$0.42	\$3,940	The concluded amount is based within the historical expense.
Repairs and Maintenance	4.0%	\$0.75	\$5,312	The concluded amount is based within the historical expense.
Management Fees	4.0%	\$0.57	\$5,312	The concluded amount is based on 4.0% of the concluded Effective Gross Income.
Reserves	1.4%	\$0.20	\$1,876	The concluded amount is based on \$0.20/SF of the subject's building area.
TOTAL EXPENSES	23.5%	\$3.33	\$31,257	The total projected operating expenses are \$3.33/SF/year, which is at the low end of the range indicated by other comparable commercial properties. However, based on the subject's location in downtown Vancouver, with only a nominal amount of landscaping and no parking lot maintenance, and with the tenants responsible for their own utilities, the project operating expenses are considered reasonable and will be utilized in this analysis.

DEVELOPMENT OF CAPITALIZATION RATE

In developing my opinion of the capitalization rate, also known as overall rate (OAR), the following techniques were used:

- Comparable Sales
- Investor Surveys
- Band of Investment Technique

Comparable Sales

The following table presents a summary of the comparable sales used ahead in the Sales Comparison Approach, and the capitalization rates from each of those sales. We have included some supplemental sales to help estimate a capitalization rate for the subject property, as some of the sales in the Sales Comparison Approach did not indicate a capitalization rate. These sales are used to help estimate an appropriate capitalization rate for the subject property.

CAPITALIZATION RATE COMPARABLES (OAR)										
NAME	CITY	ST	SALE DATE	YR BLT	NRA	\$/SF	SALE PRICE	NOI	NOI/SF	CAP RATE
1 Vancouver Storefront Retail Building	Vancouver	WA	August 29, 2019	1938	10,000	\$238	\$2,375,000	\$145,156	\$14.52	6.11%
2 Downtown Newberg Retail	Newberg	OR	December 15, 2020	1940	3,950	\$177	\$700,000	\$43,273	\$10.96	6.18%
3 Amity Streetside Retail	Amity	OR	July 8, 2020	1913	2,700	\$161	\$435,000	\$31,016	\$11.49	7.13%
4 Troutdale Retail Bldg	Troutdale	OR	June 22, 2018	1998	2,972	\$162	\$480,000	\$30,336	\$10.21	6.32%
5 Highway 99 Center	Vancouver	WA	July 6, 2021	1975	12,201	\$305	\$3,725,000	\$257,973	\$21.14	6.93%
6 88th Street Square	Vancouver	WA	March 30, 2020	2008	11,836	\$266	\$3,150,000	\$224,283	\$18.95	7.12%
LOW										6.11%
HIGH										7.13%
AVERAGE										6.63%
MEDIAN										6.63%
CONCLUDED CAPITALIZATION RATE (OAR)										6.75%

Interviews with real estate sales brokers that are familiar with both local and national real estate investment properties indicate that capitalization rates in the local market have generally been coming down for good quality properties. The general trend is a limited supply of good quality investment properties and a significant number of investors in the market. In 2019, 2020, and 2021, interest rates have been held down to help grow the economy and avoid a recession, so this has helped hold capitalization rates down.

The outlook for the near future for early 2022 is for a minimal expected changes in interest rates, which typically would be expected to hold down capitalization rates. Those sales in 2020 and 2021 which have occurred appear to be motivated by 1031 tax exchange investors looking to place their money into new investments. Real estate brokers have indicated that there is a "flight to safety", with investors desiring single-tenant and 2-tenant properties, and a continued compression of capitalization rates, due to low interest rates and strong demand for single-tenant properties on long-term leases. Those properties with the longer remaining lease terms are considered to reflect lower capitalization rates, all other things being equal. Those which have occurred appear to be motivated by 1031 tax exchange investors looking to place their money into new investments.

In this analysis, the above comparables indicated a relatively narrow range of capitalization rates between 6.11% and 7.13%. The low end of the range is indicated by Comparable 1 (6.11%), the Dale Don Commercial Building, located in downtown Vancouver along East Evergreen Boulevard. It is superior to the subject property with respect to its location, quality, and condition. Overall, it is considered to be a good, but slightly low capitalization rate indicator for the subject property.

The upper end of the range is indicated by Comparable 3 (7.13%), a small commercial building in Amity, OR. Overall, with a location in a smaller community, it is considered to be a good, but slightly high capitalization rate indicator for the subject property.

The other comparables indicate a range of capitalization rates between 6.18% to 7.12%. Comparable 2 (6.18%) is a commercial building in downtown Newberg, OR, which includes ground floor commercial and an upper level apartment unit. It is considered to have slightly less risk as an investment property than the subject, as it includes a multi-family unit. Overall, it is considered to be a good, but slightly low capitalization rate indicator for the subject property.

Comparable 4 (6.32%) is a commercial building in the small downtown area of Troutdale, OR. It is slightly superior with respect to quality and is overall considered to be a good, but slightly low capitalization rate indicator for the subject property.

Comparable 5 (6.93%) is the sale of the Highway 99 Center, a suburban retail strip center located near Interstate-5 and NE 99th Street. It is considered to be a reasonable capitalization rate indicator for the subject property. Comparable 6 (7.12%) is an older sale of the 88th Street Square, a center which took a long time to absorb its space and is considered a secondary center. Therefore, it is considered to be a slightly high capitalization rate indicator for the subject property.

Overall, based on the above analysis, a capitalization rate in the range of 6.50% to 7.00% would be considered appropriate for the subject property, with the mid-range of 6.75% concluded. This is considered reasonable, based on the above analysis. This reflects the subject property with tenants having approximately 3 to 10 years remaining on the leases, but with only local tenants in place.

Investor Surveys

The following table provides capitalization rate statistics as surveyed by investors that I considered to be relevant to the subject property and my independent market participant interview.

CAPITALIZATION RATE SURVEYS (OAR)						
SOURCE	QUARTER	RANGE		AVG	LAST Q	LAST YR
PriceWaterhouse Coopers						
National Strip Shopping Center	4Q 21	5.00%	to 10.00%	7.17%	7.29%	7.30%
National Net Lease	4Q 21	5.00%	to 7.50%	6.22%	6.23%	6.22%
AVERAGE		5.00%	to 8.75%	6.70%	6.76%	6.76%

As indicated in the table above, capitalization rates have been trending at various rates and directions, but generally leveling off. Pinpointing the applicable capitalization rate for the subject using national survey data is somewhat subjective.

Band of Investment Technique

Most properties are purchased with debt and equity capital; therefore, the overall capitalization rate must satisfy the market return requirements of both investment positions. Available financing information from lenders and the sales comparables indicates the following terms:

BAND OF INVESTMENT ASSUMPTIONS	
Loan Amortization Period	25 Years
Interest Rate	5.00%
Loan-to-Value (LTV) Ratio	70%
Mortgage Constant	7.02%

Equity dividend rates vary depending upon motivations of buyers and financing terms. The previous terms and an appropriate equity dividend rate are used in the Band of Investments calculations, which are presented on the following chart.

BAND OF INVESTMENT CALCULATION					
Mortgage Component	70%	x	7.02%	=	4.911%
Equity Component	30%	x	7.00%	=	2.100%
Indicated Capitalization Rate					7.011%
INDICATED CAPITALIZATION RATE					7.01%

Capitalization Rate Conclusion

For investments of the subject's general size and price, and when sales activity is brisk with relative market stability, the Market Extraction Method is most often relied upon by buyers and sellers to develop capitalization rate decisions. In this analysis, sufficient recent sales data was available indicating moderate support for the capitalization rate developed by the Market Extraction Method. National Survey data has limited direct application for the subject property; however, it helps establish general macro trends for this type of investment property. The Band of Investments Technique has limitations, but generally supports the capitalization rate concluded by the Market Extraction Method. Taking all these factors into consideration, the following table summarizes the various capitalization rate indicators and provides the final capitalization rate conclusion.

CAPITALIZATION RATE CONCLUSION (OAR)						
SOURCE	QUARTER	RANGE		AVG	LAST Q	LAST YR
Comparable Sales		6.11%	to 7.13%	6.63%	-	-
Investor Surveys	4Q 21	5.00%	to 8.75%	6.70%	6.76%	6.76%
Band of Investment Technique				7.01%	-	-
AVERAGE		5.56%	to 7.94%	6.78%	6.76%	6.76%
CAPITALIZATION CONCLUSION (LEASED FEE)				6.75%		

DIRECT CAPITALIZATION CONCLUSION

The table below summarizes the direct capitalization method and the Income Approach Value conclusion.

DIRECT CAPITALIZATION SUMMATION TABLE					
INCOME ITEMS	%PGI	%EGI	\$/SF/Month	\$/SF/Year	TOTAL
Base Income (Market Rent)			\$1.07	\$12.90	\$120,972
TOTAL RENTAL INCOME			\$1.07	\$12.90	\$120,972
REIMBURSEMENTS					
Real Estate Taxes			\$0.13	\$1.58	\$14,817
CAM Expenses			\$0.04	\$0.43	\$4,000
TOTAL REIMBURSEMENTS			\$0.17	\$2.01	\$18,817
POTENTIAL GROSS INCOME (PGI)			\$1.24	\$14.90	\$139,789
VACANCY & CREDIT LOSS					
Rental Income		(5.0%)	(\$0.05)	(\$0.64)	(\$6,049)
Other Income		(5.0%)	(\$0.01)	(\$0.10)	(\$941)
TOTAL VACANCY & CREDIT LOSS		(5.0%)			(\$6,989)
EFFECTIVE GROSS INCOME (EGI)	95.0%	100.0%	\$1.18	\$14.16	\$132,800
EXPENSE ITEMS					
Real Estate Taxes	(10.6%)	(11.2%)	(\$0.13)	(\$1.58)	(\$14,817)
Property Insurance	(2.8%)	(3.0%)	(\$0.04)	(\$0.42)	(\$3,940)
Repairs and Maintenance	(3.8%)	(4.0%)	(\$0.05)	(\$0.57)	(\$5,312)
Management Fees	(3.8%)	(4.0%)	(\$0.05)	(\$0.57)	(\$5,312)
Reserves	(1.3%)	(1.4%)	(\$0.02)	(\$0.20)	(\$1,876)
TOTAL EXPENSES	(22.4%)	(23.5%)	(\$0.28)	(\$3.33)	(\$31,257)
NET OPERATING INCOME (NOI)	72.6%	76.5%	\$0.90	\$10.83	\$101,543
Capitalization Rate					6.75%
Capitalized Value					\$1,504,341
INDICATED RETROSPECTIVE VALUE (With Lease-Up Costs Completed)				\$149/SF	\$1,500,000
Lease- Up Costs				From Lease-Up Analysis	
Rent Loss	(14.3%)	(15.1%)	(\$0.18)	(\$2.13)	(\$20,000)
Tenant Improvements	(21.5%)	(22.6%)	(\$0.27)	(\$3.20)	(\$30,000)
Leasing Commissions	(14.3%)	(15.1%)	(\$0.18)	(\$2.13)	(\$20,000)
Total Lease-Up Costs	(50.1%)	(52.7%)	(\$0.62)	(\$7.46)	(\$70,000)
Entrepreneurial Profit	0.0%	0.0%	-	-	\$0
TOTAL LEASE-UP COSTS	(50.1%)	(52.7%)	(\$0.62)	(\$7.46)	(\$70,000)
INDICATED RETROSPECTIVE VALUE				\$152/SF	\$1,430,000

Rounded to nearest \$10,000

ADJUSTMENTS TO VALUE

To reflect conditions in effect at the subject property as the date of value, adjustments to the capitalized value were necessary for lease up costs in order to reflect the Retrospective Market Value. Overall, in this scenario, even at 100% occupancy, two spaces have not been built-out with TI's, with some free rent remaining, so there will be some deductions necessary for remaining absorption costs in order to reflect the Retrospective Market Value. The following discussion summarizes my support of the value adjustments.

Lease-Up Analysis

Regarding lease-up costs, the subject property is fully leased but the tenants in the 600 and 604 spaces are still receiving free rent until March 2022, according to the owner/client. Therefore, based on the rent levels for these tenants, we will make deductions for approximately 3 more months of free rent for these two spaces. Based on the rent levels for another approximately 3 months, this indicates a rent loss of **\$20,000** (Rounded).

According to these leases, the owner will need to install some drywall in the common area stairs, as well as install four (4) interior fire-rated doors, along with cleaning up some debris. This is estimated to cost approximately \$15,000. In addition, there are some repairs necessary for the roof cover, based on some areas of roof leakage evident on the 2nd floor. This is estimated at \$15,000 for some roof patching/repair. This equates to a total build-out and renovation cost of **\$30,000** (Rounded).

Leasing commissions for these two spaces are expected to be paid out once the tenants start paying rent, and are based on 5-year leases, with 5% leasing commissions. This equates to a leasing commission of **\$20,000** (Rounded).

When warranted, an additional provision for entrepreneurial profit is used to mirror investor behavior related to risks of investing in a property with vacancy. Plus, the profit for an investor purchasing the subject property building at an 100% occupancy and, in the case of the subject, completing the necessary build-out costs and realizing the opening of these two tenant spaces. In this analysis, with the leases signed, no deductions will be made for entrepreneurial profit and overhead.

Therefore, total deductions for the vacant space to be built-out in the subject property building are **\$70,000**, rounded (\$20,000 + \$30,000 + \$20,000). This is deducted from the Retrospective Value With Lease-Up Costs Completed in order to reflect the Retrospective Market Value.

SALES APPROACH

The Sales Comparison Approach analyzes comparable sales by applying transactional and property adjustments to bracket the subject property within an appropriate unit value comparison. The most relevant unit of comparison is the price per square foot of NRA, as it best reflects the analysis used by buyers and sellers in this market for improved properties with similar design and utility. I completed a thorough search for similar improved sales in terms of property type, location, physical characteristics, and date of sale. Overall, the sales selected represent the best comparables available for this analysis.

Adjustment Process

The following adjustments or general market trends were considered for the basis of valuation.

Transactional Adjustments

Dollar adjustments to the comparable sales were considered and made when warranted for transactional adjustments including property rights transferred, financing terms, conditions of sale, expenditures after purchase and market conditions. The following table summarizes the market conditions adjustment applied in this analysis.

MARKET CONDITIONS ADJUSTMENT		
Per Year As Of	December 2021 (Retrospective)	3%

The analysis applies an upward market conditions adjustment of 3% annually reflecting the conditions between the oldest comparable sale date up through the effective valuation date.

COVID-19 Impact Adjustment

We have not applied an adjustment for any of the comparables uses in this analysis. The improved sales are current sales and are considered to reflect the current retail/service market conditions.

Property Adjustments

Quantitative percentage adjustments are also made for location and physical characteristics such as size, age, site and parking ratios, access, exposure, quality and condition, as well as other applicable elements of comparison. Where possible the adjustments applied are based on paired data or other statistical analysis. It should be stressed that the adjustments are subjective in nature and are meant to illustrate my logic in deriving a value opinion for the subject site.

Presentation

The following Sales Summation Table, Location Map and photo pages summarize the improved sales data. Following these items, the comparable sales are adjusted for applicable elements of comparison and the opinion of value by the Sales Comparison Approach is concluded.

IMPROVED SALES SUMMATION TABLE

COMPARABLE	SUBJECT	COMPARABLE 1	COMPARABLE 2	COMPARABLE 3	COMPARABLE 4	COMPARABLE 5	COMPARABLE 6
Name	Downtown Multi-Tenant Commercial Building	Vancouver Storefront Retail Building	Vancouver Office Building	Downtown Newberg Retail	Amity Streetside Retail	Troutdale Retail Bldg	The Lucky Building
Address	600 Main Street	108 East Evergreen Boulevard	208 West 13th Street	621 E 1st Street	510 S Trade St	161-167 E Historic Columbia River Hwy	614 Main Street
City	Vancouver	Vancouver	Vancouver	Newberg	Amity	Troutdale	Vancouver
State	WA	WA	WA	OR	OR	OR	WA
Zip	98660	98660	98660	97132	97101	97060	98660
County	Clark	Clark	Clark	Yamhill	Yamhill	Multnomah	Clark
APN	047950-000	039320000	51910-000	48736	-	-	047900-000
PHYSICAL INFORMATION							
Property Type	Retail / Commercial	Retail	Office	Retail	Retail	Retail	Retail
GBA (SF)	9,380	10,000	3,750	3,950	2,700	2,972	9,668
NRA (SF)	9,380	10,000	3,750	3,950	2,700	2,972	9,668
Land Area (AC)	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Land Area (SF)	10,050	10,454	2,550	2,574	3,668	2,280	5,025
L:B Ratio	1.1	1.0	0.7	0.7	1.4	0.8	0.5
Location	Good	Good	Good	Average/Good	Average/Good	Average/Good	Good
Quality	Average	Good	Good	Good	Good	Average/Good	Average
Condition	Average	Good	Good	Good	Good	Average/Good	Average
Exposure	Average	Good	Good	Average/Good	Average/Good	Average	Average
Access	Average/Good	Good	Good	Average/Good	Average/Good	Average/Good	Average/Good
Year Built	1922	1938	1946	1940	1913	1998	1910
Year Renovated	-	-	-	-	-	-	1990
SALE INFORMATION							
Date		8/29/2019	10/27/2020	12/15/2020	7/8/2020	6/22/2018	6/16/2021
Status		Recorded	Recorded	Recorded	Recorded	Recorded	Recorded
Recording Number		5642552	830884	-	-	-	846030
Marketing Period		-	1 Mos.	-	4 Mos.	4 Mos.	-
Rights Transferred		Leased Fee	Fee Simple	Leased Fee	Leased Fee	Leased Fee	Fee Simple
Transaction Price		\$2,375,000	\$840,000	\$700,000	\$435,000	\$480,000	\$1,300,000
Analysis Price		\$2,375,000	\$840,000	\$700,000	\$435,000	\$480,000	\$1,300,000
\$/SF NRA		\$238	\$224	\$177	\$161	\$162	\$134
NOI/SF NRA	\$10.83	\$14.52	-	\$10.96	\$11.49	\$10.21	-
Occupancy	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	50.0%
Capitalization Rate		6.11%	-	6.18%	7.13%	6.32%	-

DeLorme Street Atlas USA© 2014

Scale 1 : 400,000

1" = 6.31 mi Data Zoom 9-0

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www.delorme.com

COMPARABLE SALES PHOTOGRAPHS



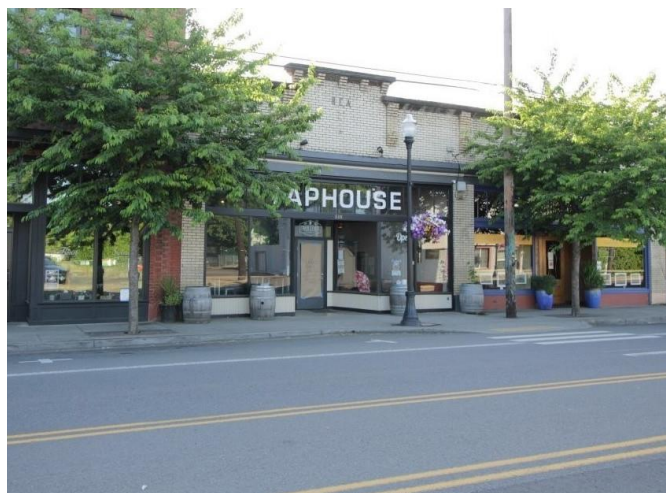
COMPARABLE 1



COMPARABLE 2



COMPARABLE 3



COMPARABLE 4



COMPARABLE 5



COMPARABLE 6

IMPROVED SALES ADJUSTMENT TABLE

COMPARABLE	SUBJECT	COMPARABLE 1	COMPARABLE 2	COMPARABLE 3	COMPARABLE 4	COMPARABLE 5	COMPARABLE 6
Name	Downtown Multi-Tenant Commercial Building	Vancouver Storefront Retail Building	Vancouver Office Building	Downtown Newberg Retail	Amity Streetside Retail	Troutdale Retail Bldg	The Lucky Building
Address	600 Main Street	108 East Evergreen Boulevard	208 West 13th Street	621 E 1st Street	510 S Trade St	161-167 E Historic Columbia River Hwy	614 Main Street
City, State	Vancouver, WA	Vancouver, WA	Vancouver, WA	Newberg, OR	Amity, OR	Troutdale, OR	Vancouver, WA
Zip	98660	98660	98660	97132	97101	97060	98660
APN	047950-000	039320000	51910-000	48736	-	-	047900-000
GBA	9,380	10,000	3,750	3,950	2,700	2,972	9,668
NRA (SF)	9,380	10,000	3,750	3,950	2,700	2,972	9,668
Land Area (AC)	0.2	0.2	0.1	0.1	0.1	0.1	0.1
Land Area (SF)	10,050	10,454	2,550	2,574	3,668	2,280	5,025
Location	Good	Good	Good	Average/Good	Average/Good	Average/Good	Good
Quality	Average	Good	Good	Good	Good	Average/Good	Average
Condition	Average	Good	Good	Good	Good	Average/Good	Average
Exposure	Average	Good	Good	Average/Good	Average/Good	Average	Average
Access	Average/Good	Good	Good	Average/Good	Average/Good	Average/Good	Average/Good
Parking Ratio	0.0	0.0	0.0	0.0	1.1	0.0	0.0
Year Built	1922	1938	1946	1940	1913	1998	1910
Year Renovated	-	-	-	-	-	-	1990

SALE INFORMATION

Date	8/29/2019	10/27/2020	12/15/2020	7/8/2020	6/22/2018	6/16/2021
Status	Recorded	Recorded	Recorded	Recorded	Recorded	Recorded
Rights Transferred	Leased Fee	Fee Simple	Leased Fee	Leased Fee	Leased Fee	Fee Simple
Analysis Price	\$2,375,000	\$840,000	\$700,000	\$435,000	\$480,000	\$1,300,000
\$/SF NRA	\$238	\$224	\$177	\$161	\$162	\$134
NOI/SF NRA	\$10.83	\$14.52	-	\$10.96	\$11.49	\$10.21
Occupancy	100.0%	100.0%	100.0%	100.0%	100.0%	50.0%

TRANSACTIONAL ADJUSTMENTS

Property Rights	0%	0%	0%	0%	0%	0%
Conditions of Sale	0%	0%	0%	0%	0%	0%
Financing	0%	0%	0%	0%	0%	0%
Expenditures After the Sale	0%	0%	0%	0%	0%	0%
Market Conditions¹	7%	3%	3%	4%	11%	2%
Subtotal Transactional Adj Price	\$255	\$231	\$182	\$167	\$180	\$137

PROPERTY ADJUSTMENTS

Location	0%	0%	5%	5%	5%	0%
Size	0%	0%	0%	0%	0%	0%
Quality	-10%	-10%	-10%	-10%	-5%	0%
Condition	-10%	-10%	-10%	-10%	-5%	0%
Exposure	-10%	-10%	-5%	-5%	0%	0%
Access	-5%	-5%	0%	0%	0%	0%
Parking Ratio	0%	0%	0%	-5%	0%	0%
Subtotal Property Adjustment	-35%	-35%	-20%	-25%	-5%	0%
TOTAL ADJUSTED PRICE	\$166	\$150	\$146	\$125	\$171	\$137

STATISTICS	UNADJUSTED	ADJUSTED
LOW	\$134	\$125
HIGH	\$238	\$171
MEDIAN	\$170	\$148
AVERAGE	\$183	\$149

¹ Market Conditions Adjustment: 3%

Date of Value (for adjustment calculations): 12/17/21

SALES COMPARABLE ANALYSIS

An attempt was made to find comparable retail/service investment properties, similar to the subject property. An attempt was made to find the most directly comparable improved sales in downtown Vancouver. However, there were a limited number of directly comparable improved sales. Therefore, we have included sales from outlying smaller urban locations around the Portland-Vancouver Metro Area. The comparables included are considered to be the best comparables available for analysis.

After making adjustments to the comparables, the above comparables indicate an adjusted range of value between \$125/SF and \$171/SF. There have not been a significant number of directly comparable improved sales, as owners are hesitant to sell since there are a limited number of replacement properties to transfer/exchange into, and most buyers of properties like the subject are 1031 tax exchange investors. This is considered to make the Sales Comparison Approach a secondary indicator of value. Therefore, we have presented the most directly comparable improved sales available for analysis, as we focused our research on the most pertinent (current) sales available.

Comparable 1 (\$166/SF adjusted) is the sale of the Dale Don Commercial Building, a multi-tenant commercial building located in downtown Vancouver along East Evergreen Boulevard. Downward adjustments were made for its superior quality, condition, exposure, and access.

Comparable 2 (\$150/SF adjusted) is the sale of an office building owned and sold for owner-occupancy. Downward adjustments were made for its superior quality, condition, exposure, and access.

Comparable 3 (\$146/SF adjusted) is the sale of a commercial building in downtown Newberg, OR, a suburban community located outside of the immediate Portland area. Downward adjustments were made for its superior quality, condition, and exposure. An upward adjustment was made for its inferior location.

Comparable 4 (\$125/SF adjusted) is the sale of a commercial building in downtown Amity, OR, another smaller community outside of Portland, OR. Downward adjustments were made for its superior quality, condition, exposure, and parking ratio. An upward adjustment was made for its inferior location.

Comparable 5 (\$171/SF adjusted) is the sale of a commercial building in the small downtown Troutdale, OR area, along the Historic Columbia River Highway. Downward adjustments were made for its superior quality and condition. An upward adjustment was made for its inferior location.

Comparable 6 (\$137/SF adjusted) is the sale of the Lucky Building, a commercial 2-story building in downtown Vancouver formerly primarily occupied by the Lucky Loan Pawn Shop and located just north of the subject property. No quantitative adjustments were made to this comparable, other than for time/inflation, noting the buyer has since invested a considerable amount of money into the building to renovate it and attract several tenants at considerable rents for the area.

Overall, based on the above analysis, primary weight is given to Comparables 1 (\$166/SF adjusted), 2 (\$150/SF adjusted), 3 (\$146/SF adjusted), 4 (\$125/SF adjusted), 5 (\$171/SF adjusted), and 6 (\$137/SF adjusted), as they generally required a low amount of gross adjustments.

Taking into consideration the subject's location, size, overall condition, physical characteristics, and appeal to a variety of commercial retail/service tenants, along with the tenant quality and remaining lease terms, a market value in the range of \$145 to \$155/SF would be considered appropriate for the subject property, with the mid-range of **\$150/SF** concluded.

SALES COMPARISON APPROACH CONCLUSION

The following table summarizes the analysis of the comparables, reports the reconciled price per NRA value conclusion, and presents the concluded value of the subject property. The same adjustments for the remaining lease-up/absorption costs which were made in the Income Approach are also made in the Sales Comparison Approach.

SALES COMPARISON APPROACH CONCLUSION (NRA)								
ANALYSIS		ADJUSTMENT				NET	GROSS	OVERALL
COMP	PRICE	TRANSACTIONAL ¹	ADJUSTED	PROPERTY ²	FINAL	ADJ %	ADJ %	COMPARISON
1	\$238	7%	\$255	-35%	\$166	-30%	42%	PRIMARY
2	\$224	3%	\$231	-35%	\$150	-33%	38%	PRIMARY
3	\$177	3%	\$182	-20%	\$146	-18%	33%	PRIMARY
4	\$161	4%	\$167	-25%	\$125	-22%	39%	PRIMARY
5	\$162	11%	\$180	-5%	\$171	6%	26%	PRIMARY
6	\$134	2%	\$137	0%	\$137	2%	2%	PRIMARY
LOW	\$125					AVERAGE		\$149
HIGH	\$171					MEDIAN		\$148
			SUBJECT SF	\$/SF CONCLUSION			VALUE	
INDICATED VALUE (Lease-Up Costs Completed)			9,380	x	\$150/SF	=	\$1,410,000	
Lease- Up Costs						From Lease-Up Analysis		
Rent Loss						(\$20,000)		
Tenant Improvements						(\$30,000)		
Leasing Commissions						(\$20,000)		
Total Lease-Up Costs						(\$70,000)		
Entrepreneurial Profit						\$0		
TOTAL LEASE-UP COSTS						(\$70,000)		
INDICATED RETROSPECTIVE VALUE					\$143/SF	\$1,340,000		

¹Cumulative ²Additive

Rounded to nearest \$10,000

RECONCILIATION OF VALUE CONCLUSIONS

The Analysis of Value Conclusions is the final step in the appraisal process and involves the weighing of the individual valuation techniques in relationship to their substantiation by market data, and the reliability and applicability of each valuation technique to the subject property. The following table summarizes the opinions of the Retrospective Market Value of the subject property's leased fee interest. Based on the overall quality of the data and analyses, and considering the decision-making process of the typical buyer profile of the subject asset, primary emphasis was placed on the Income Approach, as it best reflects an investor's decision-making process for an income-producing property. There have been an adequate number of comparable sales of similar properties, although the subject does have unique physical and locational characteristics in downtown Vancouver. Overall, the Sales Comparison Approach is also given considerable weight, which is reflected in my final opinion of market value below.

My opinion of value reflects current conditions and the likely actions of market participants as of the date of value. It is based on the available information gathered and provided to us, as presented in this report, and does not predict future performance. Changing market or property conditions can and likely will have an effect on the subject's value.

ANALYSIS OF VALUE CONCLUSIONS	
VALUATION INDICES	RETROSPECTIVE VALUE
INTEREST APPRAISED	LEASED FEE
DATE OF VALUE	DECEMBER 17, 2021
Sales Comparison Approach	\$1,340,000
Income Approach	\$1,430,000
FINAL VALUE CONCLUSION	\$1,400,000
\$/SF	\$149/SF
Implied Capitalization Rate	-
Exposure Time	12 Months
Marketing Period	12 Months

I certify that, to the best of my knowledge and belief:

- The statements of fact contained in this report are true and correct.
- The reported analyses, opinions, and conclusions of the signer are limited only by the reported assumptions and limiting conditions, and are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
- The signer of this report has no present or prospective interest in the property that is the subject of this report, and no personal interest with respect to the parties involved.
- Dean Meyer, MAI has performed no services, as an appraiser or in any other capacity regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.
- The signer is not biased with respect to the property that is the subject of this report or to the parties involved with this assignment.
- The engagement in this assignment was not contingent upon developing or reporting predetermined results.
- The compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of this appraisal.
- The reported analysis, opinions, and conclusions were developed, and this report has been prepared, in conformity with the *Uniform Standards of Professional Appraisal Practice* and the *Code of Professional Ethics and Standards of Professional Appraisal Practice* of the Appraisal Institute.
- Dean Meyer, MAI inspected the property that is the subject of this report.
- No one provided significant real property appraisal assistance to appraiser signing this certification.

The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

As of the date of this report Dean Meyer, MAI completed the continuing education program for Designated Members of the Appraisal Institute.



July 8, 2022

Date

Dean Meyer, MAI
Senior Valuation Services Director
Certified General Real Estate Appraiser
State of Washington License #1100795
+1 360 823 5263
dean.meyer@colliers.com

This appraisal is subject to the following assumptions and limiting conditions:

- The appraiser may or may not have been provided with a survey of the subject property. If further verification is required, a survey by a registered surveyor is advised.
- We assume no responsibility for matters legal in character, nor do we render any opinion as to title, which is assumed to be marketable. All existing liens, encumbrances, and assessments have been disregarded, unless otherwise noted, and the property is appraised as though free and clear, under responsible ownership, and competent management.
- The exhibits in this report are included to assist the reader in visualizing the property. We have made no survey of the property and assume no responsibility in connection with such matters.
- Unless otherwise noted herein, it is assumed that there are no encroachments, zoning, or restrictive violations existing in the subject property.
- The appraiser assumes no responsibility for determining if the property requires environmental approval by the appropriate governing agencies, nor if it is in violation thereof, unless otherwise noted herein.
- Information presented in this report has been obtained from reliable sources, and it is assumed that the information is accurate.
- This report shall be used for its intended purpose only, and by the party to whom it is addressed. Possession of this report does not include the right of publication.
- The appraiser may not be required to give testimony or to appear in court by reason of this appraisal, with reference to the property in question, unless prior arrangements have been made therefore.
- The statements of value and all conclusions shall apply as of the dates shown herein.
- There is no present or contemplated future interest in the property by the appraiser which is not specifically disclosed in this report.
- Without the written consent or approval of the author neither all, nor any part of, the contents of this report shall be conveyed to the public through advertising, public relations, news, sales, or other media. This applies particularly to value conclusions and to the identity of the appraiser and the firm with which the appraiser is connected.
- This report must be used in its entirety. Reliance on any portion of the report independent of others, may lead the reader to erroneous conclusions regarding the property values. Unless approval is provided by the author no portion of the report stands alone.
- The valuation stated herein assumes professional management and operation of the buildings throughout the lifetime of the improvements, with an adequate maintenance and repair program.
- The liability of Colliers International Valuation & Advisory Services, its principals, agents, and employees is limited to the client. Further, there is no accountability, obligation, or liability to any third party. If this report is placed in the hands of anyone other than the client, the client shall make such party aware of all limiting conditions and assumptions of the assignment and related discussions. The appraiser is in no way responsible for any costs incurred to discover or correct any deficiency in the property.
- The appraiser is not qualified to detect the presence of toxic or hazardous substances or materials which may influence or be associated with the property or any adjacent properties, has made no investigation or analysis as to the presence of such materials, and expressly disclaims any duty to note the degree of fault. Colliers International Valuation & Advisory Services and its principals, agents, employees, shall not be liable for any costs, expenses, assessments, or penalties, or diminution in value, property damage, or personal

injury (including death) resulting from or otherwise attributable to toxic or hazardous substances or materials, including without limitation hazardous waste, asbestos material, formaldehyde, or any smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids, solids or gasses, waste materials or other irritants, contaminants or pollutants.

- The appraiser assumes no responsibility for determining if the subject property complies with the *Americans with Disabilities Act (ADA)*. Colliers International Valuation & Advisory Services, its principals, agents, and employees, shall not be liable for any costs, expenses, assessments, penalties or diminution in value resulting from non-compliance. This appraisal assumes that the subject meets an acceptable level of compliance with *ADA* standards; if the subject is not in compliance, the eventual renovation costs and/or penalties would negatively impact the present value of the subject. If the magnitude and time of the cost were known today, they would be reduced from the reported value conclusion.
- An on-site inspection of the subject property was conducted. No evidence of asbestos materials on-site was noted. A Phase 1 Environmental Assessment was not provided for this analysis. This analysis assumes that no asbestos or other hazardous materials are stored or found in or on the subject property. If evidence of hazardous materials of any kind occurs, the reader should seek qualified professional assistance. If hazardous materials are discovered and if future market conditions indicate an impact on value and increased perceived risk, a revision of the concluded values may be necessary.
- A detailed soils study was not provided for this analysis. The subject's soils and sub-soil conditions are assumed to be suitable based upon a visual inspection, which did not indicate evidence of excessive settling or unstable soils. No certification is made regarding the stability or suitability of the soil or sub-soil conditions.
- This analysis assumes that the financial information provided for this appraisal, including rent rolls and historical income and expense statements; accurately reflect the current and historical operations of the subject property.

Professional Service Agreement (PSA)

Rent Roll

Income/Expense Summary

Valuation Glossary

Qualifications of Appraiser

Qualifications of Colliers International Valuation & Advisory Services

Professional Service Agreement

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May 17, 2022

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Rob Aschieris
Patricia Aschieris Trust
 1811 Main Street, Suite 201
 Vancouver, WA 98660
 360.518.0455
aschirs@gmail.com

RE: Appraisal of Five (5) Properties in Vancouver, Washington

Dear Mr. Aschieris:

Thank you for considering Colliers International Valuation & Advisory Services, LLC for the assignment identified in the below stated Professional Service Agreement. Please sign one copy of the agreement and return it to me, thereby indicating your authorization for us to proceed with this assignment and your acceptance of the attached Terms and Conditions.

PROFESSIONAL SERVICE AGREEMENT (“Agreement”)	
Project	Patricia Aschieris Properties (“Property”)
Location	See Attached List of Properties Located in Vancouver, Washington
Project Description	Aschieris Properties in the State of Washington (See Attached List of Properties)
Parties	Colliers International Valuation & Advisory Services, LLC (“CIVAS”) and Rob Aschieris, with the Patricia Aschieris Trust (herein at times referred to as “Client”)
Intended User	The appraisals will be prepared for Rob Aschieris with the Patricia Aschieris Trust. Intended users include the Client and client’s family members. Additional intended users include any taxing authorities. No other users are intended.
Intended Use	The reports to be performed under this Agreement (“Appraisal”) are intended only for use in estate planning purposes. The reports are not intended for any other use.
Purpose	Estimate Retrospective Market Value in conformity with USPAP
Type of Appraisal	CIVAS will produce Appraisal Reports in which the appraiser’s analysis and conclusions will be summarized within these documents.
Rights Appraised	Fee Simple and Leased Fee Interest, as applicable
Date of Value	Retrospective Date (December 17, 2021 - Date of Death)

Professional Service Agreement

Continued

Scope of Work	CIVAS and/or its designated affiliate will provide the Appraisals in accordance with USPAP, and the Code of Ethics and Certifications Standards of the Appraisal Institute and State Licensing Laws. CIVAS will research relevant market data and perform analysis to the extent necessary to produce credible appraisal results. Based on our discussions with the Client, the Client has requested the following valuation scenarios: Retrospective Market Value, as of December 17, 2021, of each of the individual properties identified on the attached list of properties. Each of the five properties will be valued in a separate appraisal report. Any partial interest valuation is outside the scope of this appraisal assignment. We plan to research factors impacting the anticipated highest and best use of the subject properties, as of the date of value. CIVAS anticipates developing the following valuation approaches. Based on our discussions with the Client, the Client has requested the following valuation scenarios: - Retrospective Market Value (12/17/21 – Date of Death) CIVAS anticipates developing the following valuation approaches: - Land Value (Sales Comparison Approach) for land components of certain properties - Income Approach (Direct Capitalization Method), as applicable to each property - Sales Comparison Approach, as applicable to each property An interior and exterior observation of each of the subject properties will be performed. The scope of work will be included in the appraisals. The fee for this assignment is for the appraisal of the subject property, and some follow-up time of up to approximately one (1) hour, spent clarifying any questions arising from the appraisals. A copy of the Assumptions and Limiting Conditions, which appear in each of the Appraisals, is available upon request.
Delivery	Delivered approximately June 30, 2022 or sooner, upon receipt of the Signed Professional Service Agreement (PSA) and Retainer and receipt of property specific information.
Professional Fee	\$15,800 Total. Please see attached fee schedule.
Expenses	Fees include all associated expenses.
No. of Reports	One (1) Electronic Final Appraisal. No printed copies will be delivered to the client. If the client requests printed (hard) copies, the additional charge will be \$100 per report copy.
Retainer	A 50% (\$7,900) retainer is required prior to the beginning of the appraisal assignment.
Payment Terms	CIVAS will invoice Client for the Appraisal in its entirety at the delivery of the appraisal. Final payment is due and payable within five (5) business days upon delivery of the electronic copy of the Appraisal or within thirty (30) days of your receipt of our Appraisal, whichever is sooner.
Acceptance Date	These specifications are subject to modification if this Agreement is not accepted within three (3) business days from the date of this letter.

Terms and Conditions

The attached Terms and Conditions and Specific Property Data Request are deemed a part of this Agreement as though set forth in full herein. The following is a list of information needed to begin and complete our analysis. The Client signing this Agreement or the party sending the specific property data certifies that all the information provided is accurate and complete as of the date of this request, and that any updates, revisions or additional relevant information that comes into control or possession of the Client prior to the date on which the Appraisal is delivered shall be provided to CIVAS immediately. Please forward with the Agreement or as soon as possible.

- | | |
|---|---|
| <ul style="list-style-type: none"> Detailed Rent Roll for Each Property Detailed Historical Income/Expense Information (2019-2021) Ground Lease (LaFarge) Site Plan/Floor Plans, as applicable Details on any Sale, Offer, Contract, or listing of the property in the last 3 years Any other information pertinent to the appraisals | <ul style="list-style-type: none"> Name and telephone number of property contact for physical inspection and additional information needed during the appraisal process Property Contact <u>Coleman Brown</u>
<u>503-740-0094</u> |
|---|---|

In addition to the items requested above, please forward any additional materials you would consider relevant in the analysis of the subject property.

Professional Service Agreement

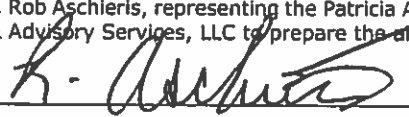
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Reliance Language – Non-Lender Client

The Appraisal is for the sole use of the Client; however, Client may provide only complete, final copies of the Appraisal report in its entirety (but not component parts) to third parties who shall review such reports in connection with the stated Intended Use. CIVAS is not required to explain or testify as to appraisal results other than to respond to the Client for routine and customary questions. Please note that our consent to allow the Appraisal prepared by CIVAS or portions of such Appraisal, to become part of or be referenced in any public offering, the granting of such consent will be at our sole and absolute discretion and, if given, will be on condition that CIVAS will be provided with an Indemnification Agreement and/or Non-Reliance letter, in a form and content satisfactory to CIVAS, by a party satisfactory to CIVAS. CIVAS hereby expressly grants to client the right to copy the Appraisal and distribute it to employees of client and to your accountants/auditors in its entirety (but not component parts) without the need to provide CIVAS with an Indemnification Agreement and/or Non-Reliance letter.

If you have questions regarding the enclosed, please feel free to contact me. CIVAS appreciates this opportunity to be of service to you on this assignment and looks forward to serving you. If you have additional questions, please contact us.

I, Rob Aschieris, representing the Patricia Aschieris Trust, agree to the above stated terms and authorize Colliers International Valuation & Advisory Services, LLC to prepare the above referenced appraisals.

 Date: 5-18-22

Rob Aschieris
Patricia Aschieris Trust

Respectfully,

Colliers International Valuation & Advisory Services, LLC



Dean M. Meyer, MAI
Senior Valuation Services Director
Direct +1 360.823.5263
Mobile: +1 360.513.2155
dean.meyer@colliers.com

Professional Service Agreement

Continued

Terms and Conditions

"T&C"

- 1) The Appraisal will be subject to Colliers International Valuation & Advisory Services, LLC's ("CIVAS") Assumptions and Limiting Conditions that are incorporated into each appraisal, and any Extraordinary Assumptions and Hypothetical Conditions that may be incorporated into each appraisal.
- 2) Any capitalized, non-defined words shall have the same meaning as defined in the Agreement to which these T&Cs are attached.
- 3) Client is defined as the party signing the Agreement and shall be responsible for payment of the fees stipulated in the Agreement. Payment of the fee for the Appraisal is not contingent on the appraised value(s) or the outcome of the report(s). Additional fees will be charged on an hourly basis for any work that may exceed the scope of this proposal, including performing additional valuation scenarios, additional research, and conference calls, meetings, deposition preparation, deposition, trial testimony or travel that may exceed the time allotted by CIVAS for an assignment of this nature. If CIVAS is requested to cease working on the Appraisal for any reason prior to the completion of the appraisal(s), CIVAS will be entitled to bill the Client for the time spent to date at CIVAS' hourly rates for the personnel involved. The Client will be billed a minimum \$500 or at a rate of \$250 per hour for associate time, \$300 per hour for valuation services director, \$400 per hour for managing director, and \$450 per hour for executive managing director. If the Client delays completion of the assignment beyond ninety (90) days, the fee may be renegotiated. This may result in the total fee exceeding the original agreed fee agreed upon cost.
- 4) Client agrees to pay all fees and expenses, including attorney's fees, incurred by CIVAS in connection with the collection or attempted collection of the fees and expenses. In the event Client fails to make payments when due and payable, the amount due shall bear interest at 1.5% per month or the maximum rate permitted in the state in which the CIVAS office executing the Agreement is located, whichever is lesser.
- 5) The fee is due upon delivery of the final report or within thirty (30) days of your receipt of the draft report, whichever is sooner. If a draft is requested, the fee is considered earned upon delivery of our draft report.
- 6) In the event that either party commences any legal action relating to the provisions of the Agreement, including collection, the prevailing party shall be entitled to its actual attorneys' fees and costs. The Agreement shall be governed by and construed in accordance with the laws of the state where the CIVAS office executing the Agreement is located. The venue of any action arising out of the Agreement shall be the county where the CIVAS office executing the Agreement is located. Client will have up to thirty (30) days from receipt of the Draft Appraisal to review and communicate its review to CIVAS. CIVAS reserves the right to bill Client for additional appraisal efforts that may arise from the Client not responding within this time period.
- 7) CIVAS does not make any representation or warranty, express or implied, as to the accuracy or completeness of the information or the state of affairs of the Property furnished to CIVAS by Client. In the event that any such information is inaccurate, misleading or incomplete, CIVAS shall have no responsibility or liability for any matters relating thereto (whether to the Client or to any third party).
- 8) CIVAS shall have no responsibility for legal matters, questions of survey or title, soil or subsoil conditions, engineering, or other similar technical matters. The Appraisal will not constitute a survey of the Property analyzed.
- 9) Client shall provide CIVAS with such materials with respect to the Appraisal as requested by CIVAS and which are in the possession or under the control of Client. Client shall provide CIVAS with sufficient access to the Property to be analyzed and hereby grants permission for entry, unless discussed in advance to the contrary.
- 10) The data gathered in the course of the Appraisal (except data furnished by Client) and the Appraisal prepared pursuant to the Agreement are, and will remain, the property of CIVAS. With respect to data provided by Client, such data shall be confidential, and CIVAS shall not disclose any information identified as confidential furnished to CIVAS. Notwithstanding the foregoing, CIVAS is authorized by Client to disclose all or any portion of the Appraisal and the related data to appropriate representatives of the Appraisal Institute if such disclosure is required to enable CIVAS to comply with the Bylaws and Regulations of such Institute as now or hereafter in effect.
- 11) Unless specifically noted, CIVAS does not assume any duty to analyze or examine the Property or adjacent property for the possible presence of toxic and/or hazardous substances or materials (including but not exclusive to asbestos, PCB transformers, or other toxic, hazardous, or contaminated substances and/or underground storage tanks (hazardous material), or the cost of encapsulation or removal thereof) and accepts no liability regarding the issue. If such materials exist, CIVAS defers to the expertise of professionals specifically trained in analyzing the cost to remediate, which will not be a part of the appraisal fee proposal. The Appraisal will contain a comprehensive disclaimer to this effect.
- 12) CIVAS understands that there is no major or significant deferred maintenance in the Property which would require the expertise of a professional cost estimator or contractor. If such repairs are needed, the estimates are to be prepared by others, and are not a part of the fee contemplated in the Agreement.
- 13) Client acknowledges that CIVAS is being retained hereunder as an independent contractor to perform the services described herein and nothing in the Agreement shall be deemed to create any other relationship between Client and CIVAS. The Agreement shall be deemed concluded and the services hereunder completed upon delivery to Client of the Appraisal discussed herein.
- 14) Client agrees that its only remedy for losses or damages relating to the Agreement shall be limited to the amount of the appraisal fee paid by the Client and in no circumstances shall CIVAS be liable for any losses or damages in excess of this amount. Should the Client, or any other entitled party, make a claim against CIVAS, its directors, officers, employees and other affiliates and shareholders, relating to this engagement or the appraisal(s), the maximum damages recoverable from CIVAS, its directors, officers, employees and other affiliates and shareholders, shall be the amount of funds actually collected by CIVAS under the Agreement, and no claim shall be made for any consequential or punitive damages.

Professional Service Agreement

Continued

- 15) If CIVAS or any of its employees receives a subpoena or other judicial notification to produce documents or provide testimony involving the Appraisal in connection with a lawsuit or related proceeding, CIVAS will notify the Client of receipt of the subpoena or notification. However, if CIVAS is not part of the lawsuit or proceedings, Client agrees to compensate CIVAS for the professional time required and to reimburse CIVAS for the expenses incurred in responding to any such subpoena or judicial notification, including any attorneys' fees, as they are incurred. CIVAS is to be compensated at the prevailing hourly rates of the personnel responding to the subpoena or command for testimony.
- 16) If expert witness testimony is required in connection with the Appraisal, the following hourly rates will apply. The Client will be billed at the rate of \$250 per hour for associate time, \$350 per hour for valuation services director, \$400 per hour for managing director, and \$450 per hour for executive managing director. The hourly billings pertain to court preparation, waiting and travel time, document review and preparation (excludes appraisal report) and all meetings related to court testimony.
- 17) Client shall indemnify and hold CIVAS, its parent, subsidiaries, affiliates, its officers, directors, employees and agents ("CIVAS Indemnities"), fully harmless against all losses, damages, claims, and expenses of any kind whatsoever (including costs and reasonable attorneys' fees), sustained or incurred by a third party as a result of the negligence or intentional acts or omissions of Client (including any failure to perform any duty imposed by law), any misrepresentation, distortion or if Client fails to provide complete and accurate information to CIVAS, for which recovery is sought against the CIVAS Indemnities; however, such obligation to defend and indemnify shall not apply to the extent caused by the negligent act or willful misconduct of CIVAS. Client shall indemnify and hold CIVAS Indemnities harmless from any claims, expenses, judgments or other items or costs arising as a result of the Client's failure or the failure of any of the Client's agents to provide a complete copy of the Appraisal to any third party.
LIMITATION OF LIABILITY. EXCEPT FOR THE INDEMNIFICATION PROVISION ABOVE, ANYTHING IN THE AGREEMENT TO THE CONTRARY NOTWITHSTANDING, UNDER NO CIRCUMSTANCES WHATSOEVER SHALL EITHER PARTY BE LIABLE TO THE OTHER FOR ANY SPECIAL, CONSEQUENTIAL, PUNITIVE, OR INCIDENTAL DAMAGES OF ANY KIND WHATSOEVER.
- 18) CIVAS agrees to maintain Professional Liability Insurance in the amount of \$1,000,000 and General Liability Insurance in the amount of \$2,000,000, as well as Workers Compensation per local regulatory requirements. CIVAS will endeavor to provide Client with written notice regarding any cancellation of any such insurance. CIVAS will provide Client with certificates of insurance naming Client as an additional insured on the General Liability policy upon request.
- 19) The Appraisal and the name Colliers International Valuation & Advisory Services may not be used in any marketing or investment material or offering memoranda without CIVAS' prior written consent. CIVAS, its employees and appraisers have no liability to any recipients of any prepared material and disclaim all liability to any party other than the Client.
- 20) Unless CIVAS consents in writing, the Appraisal cannot be used by any party or for any purpose other than the Client for the purposes specified in the Agreement. Should the Client provide a copy of this Appraisal to any person or entity not authorized by CIVAS in writing, Client hereby agrees to hold CIVAS, its directors, officers, employees and other affiliates and shareholders, harmless from all damages, expenses, claims and costs, including any attorney's fees. The Client acknowledges that any opinions and conclusions expressed by the professionals of CIVAS pursuant to the Agreement are made as employees and not as individuals. CIVAS' responsibility is limited to the Client, and the use of the Appraisal or related product by third parties shall be solely at the risk of the Client and/or third parties.
- 21) The use of this appraisal shall be used only for the purpose as set forth in the Intended Use section of the Agreement. In the event that the client wishes to use this report or portions of this report for any other purpose such as, to become part of or be referenced in, any offering or other material intended for the review of others, or to be submitted to others, will be at the Client's sole and absolute discretion and, if given, will be on condition that CIVAS will be provided with an Indemnification Agreement and/or Non-Reliance letter, in a form and content satisfactory to CIVAS and the Client, by a party satisfactory to CIVAS and the Client. CIVAS does consent to Client submission of the complete Appraisal to rating agencies, loan participants or your accountants/auditors without the need to provide us with an Indemnification Agreement and/or Non-Reliance letter.

Professional Service Agreement

Continued

<u>Property</u>	<u>Appraisal Fee</u>
1) Commercial Building (600 Main Street)	\$3,000
2) Commercial Building (114 West 6 th Street)	\$3,000
3) 610 Main Street Parking Lot Parcels	\$2,700
4) 1108 Main Street Building	\$3,200
5) 1217 West 8 th Street Industrial	<u>\$3,900</u>
TOTAL FEE	\$15,800

Schofield Properties

Rent Roll
12/17/2021

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600 Main Street LLC

Address	Business Name	Tenant Name	Use of Space	Phone	Sq. Ft.	Lease Start	Lease Expires	Rent Cam/Util	\$ Sq. Ft.	Cam/Util	T/I	Comments
Waterfront Property, Account # 58760 & 502150												
1217 W. 8th St.	LafargeHolcim Lafarge PNW Inc. Attn: Land Manager, Cement Properties #300, 115 Quarry Park Road SE Calgary, AB T2C 5G9 403-225-5400 jennifer.weslowski@lafargeholcim.com Nick Stevens nicholas.stevens@lafargeholcim.com		Cement Co.	360-695-9208	136,777 3.14 acres	4/22/1958	4/30/2057	\$31,838	n/a	n/a	X	Paid Annually. Next increase mail Jan 2025. Increase's to \$38,206.00
								<u>\$2,653</u>				

Schofield Block, Account # 47940, 47950, 47910, 47920, (30,150 sq ft)

600 Main St.	WHMaschmeir, LLC	Brandon Rush	Bar/Tasting Room		1,920	8/1/2021	7/31/2031	\$2,550	1.33	\$50	X	3000 on 8-1-22, 3500 on 8-1-23, 4000 on 8-1-24, 4500 on 8-1-25, 4680 on 8-1-26, 4867 on 8-1-27, 5062 on 8-1-28, 5264 on 8-1-29, 5475 on 8-1-30 0.00 on
602 Main St.	2nd Floor	8,000 Sq Ft										
604 Main St.	WHMaschmeir, LLC	Brandon Rush	Bar/Tasting Room		2,040	8/1/2021	7/31/2031	\$0		\$100	X	0.00 on 8-1-21, 0.00 on 8-1-22, 4200 on 8-1-23, 4368 on 8-1-24, 4543 on 8-1-25, 4725 on 8-1-26, 4914 on 8-1-27, 5111 on 8-1-28, 5315 on 8-1-29, 5528, on 8-1-30
606 Main St.	Kindred Homestead Supply	Alexandra Luna alex@kindredhomesteadsupply.com	Home Décor 503-298-8683		5,401	3/1/2021	2/28/2024	\$2,085	0.39	\$85	X	3-1-22 \$3,000, 3-1-23 \$3500 1 option for 36 months
610 Main St.	H G Industriess	Dean Irvin tammy_gladson@msn.com deanirvin@yahoo.com	Parking	310-737-8929 310-737-8293	10,050	2/1/2018	Mth to Mth	\$1,900		n/a	n/a	
106 W. 6th St.	Alberta Company LLC	Martin Lopes martylopes85@gmail.com	Coffee	503-548-3698	1,128 922	8/1/2017	7/31/2020 Patio not rented	\$2,050	1.82	\$50	X	11-1-21 \$2000, 6-1-23 \$2060, 6-1-24 \$2122, 6-1-25 \$2185 two 60 mth options

114 W. 6th Street LLC

108 W. 6th St.	Believe Boutique	Courtney Rivera infobelieveboutique@gmail.com	Dress Shop	503-593-0023	1,771	4/1/2019	3/31/2021	\$2,150	1.21	\$50	X	Moved Out 12-31-21
110 W. 6th St.	Nonovo Pizza Peas & Carrots LLC	Joey Chmiko & Alder Suttles joeychmiko@gmail.com	Restaurant Space	415-238-2744	1,771	4/1/2021	3/31/2026	\$1,375	0.78	\$40	X	1822 on 4-1-21, 1860 on 4-1-22, 1898 on 4-1-23, 1938 on 4-1-24, 1978 on 4-1-25, 5 Year Option
112-114 W. 6th St.	Little Conejo (LIEBRE LLC)	Mychal Dynes & Mark Wooten dynesmychal@gmail.com	Restaurant Space	360-513-9042	2,085	8/1/2017	7/31/2022	\$3,570	1.71	\$50	X	two 5 year options \$50 Cam
605 Washington St.	Little Conejo Bar				1,417							
607 Washington St.	Lyon & Pearl LLC	Casey Wyckoff (LSW)	Kids Clothes	360-281-0988	1,334	7/1/2020	6/30/2022	\$1,419	1.06	\$85	X	Option
								<u>\$17,099</u>				

Schofield Properties

Rent Roll
12/17/2021

Page 3

1108 Main Street LLC, Account # 51500 (5,000 sq ft)

<u>Address</u>	<u>Business Name</u>	<u>Tenant Name</u>	<u>Use of Space</u>	<u>Phone</u>	<u>Sq. Ft.</u>	<u>Lease Start</u>	<u>Lease Expires</u>	<u>Rent Cam/Util</u>	<u>\$ Sq. Ft.</u>	<u>Cam/Util</u>	<u>T/I</u>	<u>Comments</u>
1108 Main St.	Magenta Theater 6400 NE Hwy 99 Ste G 98665 www.magentatheater.com	Tim Neill - Board President tim.neill@magentatheater.com , 503-329-4126	Theater Box Office	360-606-0033 360-635-4358	4,400 600	1/1/2016 (patio)	12/31/2023	\$3,316 \$1,469	0.75		X	Rent = 2016 \$2860, 2017 \$2946, 2018 \$3034, 2019 \$3125, 2020 \$3219, 2021 3316, 2022 \$3415, 2023 \$3517 Rent & Loan = 2016 \$4328.90, 2017 \$4414.90, 2018 \$4502.90, 2019 \$4593.90, 2020 \$4687.90, 2021 4784.90, 2022 \$4883.90, 2023 4985.90
								\$4,784.90				

Schofield Properties
Profit & Loss 2019
By Location

	600 Main	114 W. Sixth Street	610 Main	1801 Main	1815 Main	LaFarge	Total
INCOME							
Rental Income	89,827.00	80,138.00	22,800.00	89,452.00	28,844.00	26,532.00	337,593.00
Property Tax Reimbursements	8,919.97	7,957.84		8,882.73	2,864.26		28,624.80
Cam Fees	3,173.82	2,831.48		3,160.57	1,019.13		10,184.99
Rental Fees	279.52	249.37		278.35	89.76		897.00
Total Income	102,200.31	91,176.69	22,800.00	101,773.65	32,817.14	26,532.00	377,299.79
EXPENSES							
Commission Expense		3,034.00		1,894.84	6,963.77		11,892.61
Depreciation Expense	10,297.06	9,186.39		10,254.07	3,306.45		33,043.96
Insurance Expense	3,658.00	4,378.00		2,105.00	2,797.00		12,938.00
Repairs	16,990.17	1,000.54		9,818.62	8,313.50		36,122.83
Property Taxes	11,934.71	11,931.74	2,936.40	8,052.57	11,242.41		46,097.83
Other Expenses	28,326.05	25,270.72	7,189.75	28,207.80	9,095.67		98,090.00
Total Expenses	71,205.99	54,801.39	10,126.15	60,332.90	41,718.80		238,185.23
Net Ordinary Income	30,994.32	36,375.30	12,673.85	41,440.75	(8,901.65)	26,532.00	139,114.56
Other Income				12.79			12.79
Other Expenses					6,637.00		6,637.00
Net other Income							(6,624.21)
Net income	30,994.32	36,375.30	12,673.85	41,453.54	(15,538.65)	26,532.00	132,490.35

Schofield Properties
Profit & Loss 2020
By Location

	600 Main	114 W. Sixth Street	610 Main	1801 Main	1815 Main	LaFarge	Total
INCOME							
Rental Income	57,914.25	81,237.25	22,800.00	94,808.25	45,413.25	31,838.00	334,011.00
Property Tax Reimbursements	4,674.93	6,557.60		7,653.07	3,665.83		22,551.42
Cam Fees	2,536.12	3,557.45		4,151.74	1,988.69		12,234.00
Rental Fees	634.34	889.80		1,038.44	497.42		3,060.00
Total Income	65,759.64	92,242.10	22,800.00	107,651.50	51,565.18	31,838.00	371,856.42
EXPENSES							
Commission Expense		2,054.36			12,584.60		14,638.96
Depreciation Expense	6,596.54	9,253.08		10,798.84	5,172.66		31,821.11
Insurance Expense	4,034.00	4,546.00		2,188.00	2,911.00		13,679.00
Repairs	175.00	4,273.00		230.00	1,314.00		5,992.00
Property Taxes	15,188.11	14,675.05	5,240.60	8,337.45	11,793.21		55,234.42
Other Expenses	15,014.91	21,061.66	5,911.15	24,580.09	11,773.89		78,341.71
Total Expenses	41,008.57	55,863.15	11,151.75	46,134.38	45,549.36		199,707.20
Net Ordinary Income	24,751.07	36,378.95	11,648.25	61,517.12	6,015.83	31,838.00	172,149.22
Other Income				7.70			7.70
Other Expenses					2,447.00		2,447.00
Net other Income							(2,439.30)
Net income	24,751.07	36,378.95	11,648.25	61,524.82	3,568.83	31,838.00	169,709.92

Schofield Properties
Profit & Loss 2021
By Location

	600	114 W.	610	1801	1815		
INCOME	Main	Sixth Street	Main	Main	Main	LaFarge	Total
Rental Income	37,700.00	103,017.00	22,800.00	105,436.00	64,035.00	31,838.00	364,826.00
By Percentage	0.12	0.33		0.34	0.21		
Property Tax Reimbursements	4,004.50	10,942.49		11,199.43	6,801.81		32,948.23
Cam Fees	1,722.53	4,706.88		4,817.41	2,925.78		14,172.60
Total Income	43,427.03	118,666.37	22,800.00	121,452.84	73,762.59	31,838.00	411,946.83
EXPENSES							
Commission Expense	24,024.00				14,819.22		38,843.22
Depreciation Expense							
Insurance Expense	3,916.85	4,546.00		2,188.00	2,911.00		13,561.85
Repairs	2,242.72	15,020.24		2,297.66	475.00		20,035.62
Property Taxes	15,735.23	15,203.74	5,430.86	8,638.19	12,218.23		57,226.25
Other Expenses	10,022.18	27,386.07	6,061.16	28,029.14	17,023.09		88,521.64
Total Expenses	55,940.98	62,156.05	11,492.02	41,152.99	47,446.54		218,188.58
Net Ordinary Income	(12,513.95)	56,510.32	11,307.98	80,299.85	26,316.06	31,838.00	193,758.25
Insurance Proceeds		4,255.78					4,255.78
Interest Income				1.93			1.93
Net income	(12,513.95)	60,766.10	11,307.98	80,299.85	26,316.06	31,838.00	198,015.96

Unless specified otherwise, these definitions were extracted from the following sources or publications:

The Dictionary of Real Estate Appraisal, Seventh Edition, Appraisal Institute, Chicago, Illinois, 2022 (Dictionary).

Uniform Standards of Professional Appraisal Practice, 2020-2022 Edition (USPAP).

The Appraisal of Real Estate, Fifteenth Edition, Appraisal Institute, Chicago, Illinois, 2020 (15th Edition).

Absolute Net Lease

A lease in which the tenant pays all expenses including structural maintenance, building reserves, and management; often a long-term lease to a credit tenant. *(Dictionary)*

Ad Valorem Tax

A real estate tax based on the assessed value of the property, which is not necessarily equivalent to its market value. *(15th Edition)*

Arm's-length Transaction

A transaction between unrelated parties who are each acting in his or her own best interest. *(Dictionary)*

As-Is Market Value

The estimate of the market value of real property in its current physical condition, use, and zoning as of the appraisal date. *(Dictionary)*

Assessed Value

The value of a property according to the tax rolls in ad valorem taxation; may be higher or lower than market value, or based on an assessment ratio that is a percentage of market value. *(Dictionary)*

Average Daily Room Rate (ADR)

In the lodging industry, the net rooms revenue derived from the sale of guest rooms divided by the number of paid occupied rooms. *(Dictionary)*

Band of Investment

A technique in which the capitalization rates attributable to components of an investment are weighted and combined to derive a weighted-average rate attributable to the total investment. *(Dictionary)*

Cash-Equivalent Price

The sale price of a property that is equivalent to what a cash buyer would pay. *(Dictionary)*

Common Area

The total area within a property that is not designed for sale or rental but is available for common use by all owners, tenants, or their invitees, e.g., parking and its appurtenances, malls, sidewalks, landscaped areas, recreation areas, public toilets, truck and service facilities. *(Dictionary)*

Contract Rent

The actual rental income specified in a lease. *(15th Edition)*

Cost Approach

A set of procedures through which a value indication is derived for the fee simple estate by estimating the cost new as of the effective date of the appraisal to construct a reproduction of (or replacement for) the existing structure, including an entrepreneurial incentive; deducting depreciation from the total cost; and adding the estimated land value. The contributory value of any site improvements that have not already been considered in the total cost can be added on a depreciated-cost basis. Adjustments may then be made to the indicated value of the fee simple estate in the subject property to reflect the value of the property rights being appraised. *(Dictionary)*

Curable Functional Obsolescence

An element of depreciation; a curable defect caused by a flaw involving the structure, materials, or design, which can be practically and economically corrected. *(Dictionary)*

Debt Coverage Ratio (DCR)

The ratio of net operating income to annual debt service, which measures the relative ability of a property to meet its debt service out of net operating income; also called *debt service coverage ratio (DSCR)*. *(Dictionary)*

Deferred Maintenance

Items of wear and tear on a property that should be fixed now to protect the value or income-producing ability of a property. *(Dictionary)*

Depreciation

In appraisal, a loss in the value of improvements from any cause; the difference between the cost of an improvement on the effective date of the appraisal and the value of the improvement on the same date. *(Dictionary)*

Direct Costs

Expenditures for the labor and materials used in the construction of improvements; also called *hard costs*. *(Dictionary)*

Discounted Cash Flow (DCF) Analysis

The procedure in which a discount rate is applied to a set of projected income streams and a reversion. The analyst specifies the quantity, variability, timing, and duration of the income streams and the quantity and timing of the reversion, and discounts each to its present value at a specified yield rate. *(Dictionary)*

Discount Rate

A rate of return on capital used to convert future payments or receipts into present value. *(Dictionary)*

Disposition Value

The most probable price that a specified interest in property should bring under the following conditions:

1. Consummation of a sale within a specified time, which is shorter than the typical exposure time for such a property in that market.
2. The property is subjected to market conditions prevailing as of the date of valuation.
3. Both the buyer and seller are acting prudently and knowledgeably.
4. The seller is under compulsion to sell.
5. The buyer is typically motivated.
6. Both parties are acting in what they consider their best interests.
7. An adequate marketing effort will be made during the exposure time.
8. Payment will be made in cash in U.S. dollars (or the local currency) or in terms of financial arrangements comparable thereto.
9. The price represents the normal consideration for the property sold, unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

This definition can also be modified to provide for valuation with specified financing terms. *(Dictionary)*

Easement

The right to use another's land for a stated purpose. Access or right-of-way easements may be acquired by private parties or public utilities. Governments may be the beneficiaries of easements placed on privately owned land that is dedicated to conservation, open space, or preservation. *(15th Edition)*

Economic Life

The period over which improvements to real estate contribute to property value. *(Dictionary)*

Effective Age

The age of property that is based on the amount of observed deterioration and obsolescence it has sustained, which may be different from its chronological age. *(Dictionary)*

Effective Date

The date on which the appraisal or review opinion applies (SVP) *(Dictionary)*

Effective Gross Income (EGI)

The anticipated income from all operations of the real estate after an allowance is made for vacancy and collection losses and an addition is made for any other income. *(Dictionary)*

Effective Gross Income Multiplier (EGIM)

The ratio between the sale price (or value) of a property and its effective gross income. *(Dictionary)*

Effective Rent

The total base rent, or minimum rent stipulated in a lease, over the specified lease term minus rent concessions - e.g. free rent, excessive tenant improvements, moving allowances, lease buyouts, cash allowances, and other lease incentives. *(15th Edition)*

Eminent Domain

The right of government to take private property for public use upon the payment of just compensation. The Fifth Amendment of the U.S. Constitution, also known as the *takings clause*, guarantees payment of just compensation upon appropriation of private property. *(Dictionary)*

Entrepreneurial Incentive

The amount an entrepreneur expects or wants to receive as compensation for providing coordination and expertise and assuming the risks associated with the development of a project. Entrepreneurial incentive is the expectation of future reward as opposed to the profit actually earned on the project. *(Dictionary)*

Entrepreneurial Profit

A market-derived figure that represents the amount an entrepreneur received for his or her contribution to a past project to compensate for his or her time, effort, knowledge, and risk; the difference between the total cost of a property (cost of development) and its market value (property value after completion), which represents the entrepreneur's compensation for the risk and expertise associated with development. An entrepreneur is motivated by the prospect of future value enhancement (i.e., the entrepreneurial incentive). An entrepreneur who successfully creates value through new development, expansion, renovation, or an innovative change of use is rewarded by entrepreneurial profit. Entrepreneurs may also fail and suffer losses. *(Dictionary)*

Excess Land

Land that is not needed to serve or support the existing use. The highest and best use of the excess land may or may not be the same as the highest and best use of the improved parcel. Excess land has the potential to be sold separately and is valued separately. *(Dictionary)*

Excess Rent

The amount by which contract rent exceeds market rent at the time of the appraisal; created by a lease favorable to the lessor and may reflect superior management, a lease execution in an earlier, stronger rental market, or an agreement of the parties. Due to the higher risk inherent in the receipt of excess rent, it may be calculated separately and capitalized or discounted at a higher rate in the income capitalization approach. *(15th Edition)*

Expense Stop

A clause in a lease that limits the landlord's expense obligation, which results in the lessee paying any operating expenses above a stated level or amount. *(Dictionary)*

Exposure Time

An opinion, based on supporting market data, of the length of time that the property interest being appraised would have been offered on the market prior to the hypothetical consummation of a sale at market value on the effective date of the appraisal. *(USPAP)*

Extraordinary Assumption

An assignment-specific assumption as of the effective date regarding uncertain information used in an analysis which, if found to be false, could alter the appraiser's opinions or conclusions. Uncertain information might include physical, legal, or economic characteristics of the subject property; or conditions external to the property, such as market conditions or trends; or the integrity of data used in an analysis. An extraordinary assumption may be used in an assignment only if:

- It is required to properly develop credible opinions and conclusions;
- The appraiser has a reasonable basis for the extraordinary assumption;
- Use of the extraordinary assumption results in a credible analysis; and
- The appraiser complies with the disclosure requirements set forth in USPAP for extraordinary assumptions. *(USPAP)*

External Obsolescence

A type of depreciation; a diminution in value caused by negative external influences and generally incurable on the part of the owner, landlord, or tenant. The external influence may be either temporary or permanent. There are two forms of external obsolescence: economic and locational. *(Dictionary)*

Fair Market Value

In nontechnical usage, a term that is equivalent to the contemporary usage of *market value*.

As used in condemnation, litigation, income tax, and property tax situations, a term that is similar in concept to market value but may be defined explicitly by the relevant agency or interpreted differently by court precedent. *(Dictionary)*

Feasibility Analysis

A study of the cost-benefit relationship of an economic endeavor. *(USPAP)*

Fee Simple Estate

Absolute ownership unencumbered by any other interest or estate, subject only to the limitations imposed by the governmental powers of taxation, eminent domain, police power and escheat. *(Dictionary)*

Floor Area Ratio (FAR)

The relationship between the above-ground floor area of a building, as described by the zoning or building code, and the area of the plot on which it stands; in planning and zoning, often expressed as a decimal, e.g., a ratio of 2.0 indicates that the permissible floor area of a building is twice the total land area. *(Dictionary)*

Functional Obsolescence

The impairment of functional capacity of improvements according to market tastes and standards. *(Dictionary)*

Functional Utility

The ability of a property or building to be useful and to perform the function for which it is intended according to current market tastes and standards; the efficiency of a building's use in terms of architectural style, design and layout, traffic patterns, and the size and type of rooms. *(Dictionary)*

Furniture, Fixtures, and Equipment (FF&E)

Business trade fixtures and personal property, exclusive of inventory. *(Dictionary)*

Going-concern

An established and operating business having an indefinite future life. *(Dictionary)*

Going-concern Value

An outdated label for the market value of all the tangible and intangible assets of an established and operating business with an indefinite life, as if sold in aggregate; more accurately termed the *market value of the going concern* or *market value of the total assets of the business*. *(Dictionary)*

Gross Building Area (GBA)

Total floor area of a building, excluding unenclosed areas, measured from the exterior of the walls of the above-grade area. This includes mezzanines and basements if and when typically included in the market area of the type of property involved. *(Dictionary)*

Gross Leasable Area (GLA)

Total floor area designed for the occupancy and exclusive use of tenants, including basements and mezzanines; measured from the center of joint partitioning to the outside wall surfaces. *(Dictionary)*

Gross Living Area (GLA)

Total area of finished, above-grade residential space area; calculated by measuring the outside perimeter of the structure and includes only finished, habitable, above-grade living space. (Finished basements and attic areas are not generally included in total gross living area. Local practices, however, may differ.) *(Dictionary)*

Highest & Best Use

The reasonably probable use of property that results in the highest value. The four criteria that the highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum productivity. The use of an asset that maximizes its potential and that is possible, legally permissible, and financially feasible. The highest and best use may be for continuation of an asset's existing use or for some alternative use. This is determined by the use that a market participant would have in mind for the asset when formulating the price that it would be willing to bid (IVS). *(Dictionary)*

Hypothetical Condition

A condition, directly related to a specific assignment, which is contrary to what is known by the appraiser to exist on the effective date of the assignment results, but is used for the purpose of analysis. Hypothetical conditions are contrary to known facts about physical, legal, or economic characteristics of the subject property; or about conditions external to the property, such as market conditions or trends; or about the integrity of data used in an analysis. *(USPAP)*

Income Capitalization Approach

In the income capitalization approach, an appraiser analyzes a property's capacity to generate future benefits and capitalizes the income into an indication of present value. The principle of anticipation is fundamental to this approach. Techniques and procedures from this approach are used to analyze comparable sales data and to measure obsolescence in the cost approach. *(15th Edition)*

Incurable Functional Obsolescence

An element of depreciation; a defect caused by a deficiency or superadequacy involving the structure, materials, or design that cannot be practically or economically corrected as of the effective date of the appraisal. *(Dictionary)*

Indirect Costs

Expenditures or allowances for items other than labor and materials that are necessary for construction, but are not typically part of the construction contract. Indirect costs may include administrative costs, professional fees, financing

costs and the interest paid on construction loans, taxes and the builder's or developer's all-risk insurance during construction, and marketing, sales, and lease-up costs incurred to achieve occupancy or sale. Also called *soft costs*. *(Dictionary)*

Interim Use

The use contemplated by the market participants that the subject real estate can be put to while waiting for certain subsequent factors to occur. *(Dictionary)*

Investment Value

The value of a property to a particular investor or class of investors based on the investor's specific requirements. Investment value may be different from market value because it depends on a set of investment criteria that are not necessarily typical of the market. *(Dictionary)*

Leased Fee Interest

The ownership interest held by the lessor, which includes the right to receive the contract rent specified in the lease plus the reversion right when the lease expires. *(Dictionary)*

Leasehold Estate

The right held by the lessee to use and occupy real estate for a stated term and under the conditions specified in the lease. *(Dictionary)*

Legal Nonconforming Use

A use that was lawfully established and maintained, but no longer conforms to the use regulations of its current zoning; sometimes known as a legally nonconforming use. *(Dictionary)*

Liquidation Value

The most probable price that a specified interest in property should bring under the following conditions:

1. Consummation of a sale within a short time period.
2. The property is subjected to market conditions prevailing as of the date of valuation.
3. Both the buyer and seller are acting prudently and knowledgeably.
4. The seller is under extreme compulsion to sell.
5. The buyer is typically motivated.
6. Both parties are acting in what they consider to be their best interests.
7. A normal marketing effort is not possible due to the brief exposure time.
8. Payment will be made in cash in U.S. dollars (or the local currency) or in terms of financial arrangements comparable thereto.
9. The price represents the normal consideration for the property sold, unaffected by special or creative financing or sales concessions granted by anyone associated with the sale.

This definition can also be modified to provide for valuation with specified financing terms. *(Dictionary)*

Market Area

The geographic region from which a majority of demand comes and in which the majority of competition is located. Depending on the market, a market area may be further subdivided into components such as primary, secondary, and tertiary market areas, or the competitive market area may be distinguished from the general market area. *(Dictionary)*

Market Rent

The most probable rent that a property should bring in a competitive and open market under all conditions requisite to a fair lease transaction, the lessee and lessor each acting prudently and knowledgeably, and assuming the rent is not affected by undue stimulus. *(Dictionary)*

Market Study

An analysis of the market conditions of supply, demand, and pricing for a specific property type in a specific area. *(Dictionary)*

Market Value (Most Common Non-FRT)

The most probable price, as of a specific date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue distress. *(Dictionary)*

Market Value (Interagency Guidelines)

The most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby:

1. buyer and seller are typically motivated;
2. both parties are well informed or well advised, and acting in what they consider their own best interests;
3. a reasonable time is allowed for exposure in the open market;
4. payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable thereto; and
5. the price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions granted by anyone associated with the sale. (Interagency Appraisal and Evaluation Guidelines, December 10, 2010, Federal Register, Volume 75 Number 237, Page 77472)

Marketability Analysis

The study of how a specific property is expected to perform in a specific market. A marketability analysis expands on a market analysis by addressing a specific property. *(Dictionary)*

Neighborhood Analysis

The objective analysis of observable or quantifiable data indicating discernible patterns of urban growth, structure, and change that may detract from or enhance property values; focuses on four sets of considerations that influence value: social, economic, governmental, and environmental factors. *(Dictionary)*

Net Net Net Lease

An alternative term for a type of net lease. In some markets, a net net net lease is defined as a lease in which the tenant assumes all expenses (fixed and variable) of operating a property except that the landlord is responsible for structural maintenance, building reserves, and management. Also called *NNN lease, triple net lease, or fully net lease*. *(Dictionary)*

Net Operating Income (NOI)

The actual or anticipated net income that remains after all operating expenses are deducted from effective gross income but before mortgage debt service and book depreciation are deducted. Note: This definition mirrors the convention used in corporate finance and business valuation for EBITDA (earnings before interest, taxes, depreciation, and amortization). *(15th Edition)*

Obsolescence

One cause of depreciation; an impairment of desirability and usefulness caused by new inventions, changes in design, improved processes for production, or external factors that make a property less desirable and valuable for a continued use; may be either functional or external. *(Dictionary)*

Off-site Costs

Costs incurred in the development of a project excluding on-site costs such as grading and construction of the building and other improvements; also called *common costs* or *off-site improvement costs*. *(Dictionary)*

On-site Costs

Costs incurred for the actual construction of buildings and improvements on a particular site. *(Dictionary)*

Overage Rent

The percentage rent paid over and above the guaranteed minimum rent or base rent; calculated as a percentage of sales in excess of a specified breakeven sales volume. *(15th Edition)*

Overall Capitalization Rate (OAR)

The relationship between a single year's net operating income expectancy and the total property price or value. *(Dictionary)*

Parking Ratio

The ratio of parking area or parking spaces to an economic or physical unit of comparison. Minimum required parking ratios for various land uses are often stated in zoning ordinances. *(Dictionary)*

Potential Gross Income (PGI)

The total income attributable to property at full occupancy before vacancy and operating expenses are deducted. *(Dictionary)*

Potential Gross Income Multiplier (PGIM)

The ratio between the sale price (or value) of a property and its annual potential gross income. *(Dictionary)*

Present Value (PV)

The value of a future payment or series of future payments discounted to the current date or to time period zero. *(Dictionary)*

Prospective Opinion of Value

A value opinion effective as of a specified future date. The term does not define a type of value. Instead, it identifies a value opinion as effective at some specific future date. An opinion of value as of a prospective date is frequently sought in connection with projects that are proposed, under construction, or under conversion to a new use, or those that have not achieved sellout or a stabilized level of long-term occupancy. *(Dictionary)*

Qualitative Adjustment

An indication that one property is superior, inferior, or similar to another property. Note that the common usage of the term is a misnomer in that an adjustment to the sale price of a comparable property is not made. Rather, the indication of a property's superiority or inferiority to another is used in relative comparison analysis, bracketing, and other forms of qualitative analysis. *(Dictionary)*

Quantitative Adjustment

In the application of the sales comparison and income capitalization approaches, a numerical (dollar or percentage) adjustment to the sale price, rent, or expense amount of a comparable property to account for the effect on value of a difference between each comparable property and the subject property. *(Dictionary)*

Rentable Area

The amount of space on which the rent is based; calculated according to local practice. *(Dictionary)*

Replacement Cost

The estimated cost to construct, at current prices as of a specific date, a substitute for a building or other improvements, using modern materials and current standards, design, and layout. *(Dictionary)*

Replacement Cost for Insurance Purposes

The estimated cost, at current prices as of the effective date of valuation, of a substitute for the building being valued, using modern materials and current standards, design and layout for insurance coverage purposes guaranteeing that damaged property is replaced with a new property (i.e., depreciation is not deducted). *(Dictionary)*

Reproduction Cost

The estimated cost to construct, at current prices as of the effective date of the appraisal, an exact duplicate or replica of the building being appraised, using the same or similar materials, construction standards, design, layout, and quality of workmanship and embodying all the deficiencies, superadequacies, and obsolescence of the subject building. *(Dictionary)*

Retrospective Value Opinion

A value opinion effective as of a specified historical date. The term *retrospective* does not define a type of value. Instead, it identifies a value opinion as being effective at some specific prior date. Value as of a historical date is frequently sought in connection with property tax appeals, damage models, lease renegotiation, deficiency judgments, estate tax, and condemnation. Inclusion of the type of value with this term is appropriate, e.g., "retrospective market value opinion." *(Dictionary)*

Sales Comparison Approach

The process of deriving a value indication for the subject property by comparing sales of similar properties to the property being appraised, identifying appropriate units of comparison, and making adjustments to the sale prices (or unit prices, as appropriate) of the comparable properties based on relevant, market-derived elements of comparison. The sales comparison approach may be used to value improved properties, vacant land, or land being considered vacant when an adequate supply of comparable sales is available. *(Dictionary)*

Scope of Work

The type and extent of research and analysis in an appraisal or appraisal review assignment. Scope of work includes, but is not limited to:

The extent to which the property is identified;

The extent to which tangible property is inspected;

The type and extent of data researched; and

The type and extent of analysis applied to arrive at opinions or conclusions. *(USPAP)*

Shopping Center Types

Neighborhood Shopping Center: The smallest type of shopping center, generally with a gross leasable area of between 30,000 and 100,000 square feet. Typical anchors include supermarkets. Neighborhood shopping centers offer convenience goods and personal services and usually depend on a market population support of 3,000 to 40,000 people.

Community Shopping Center: A shopping center of 100,000 to 400,000 square feet that usually contains one junior department store, a variety store, discount or department store. A community shopping center generally has between 20 and 70 retail tenants and a market population support of 40,000 to 150,000 people.

Regional Shopping Center: A shopping center of 300,000 to 900,000 square feet that is built around one or two full-line department stores of approximately 200,000 square feet each plus small tenant spaces. This type of center is typically supported by a minimum population of 150,000 people.

Super-Regional Center: A large center of 600,000 to 2.0 million square feet anchored by three or more full-line department stores. This type of center is typically supported by a population area of 300,000 people. *(15th Edition)*

Sum of the Retail Values

The sum of the separate and distinct market value opinions for each of the units in a condominium; subdivision development, or portfolio of properties, as of the date of valuation. The aggregate of retail values does not represent the value of all the units as sold together in a single transaction; it is simply the total of the individual market value conclusions. An appraisal has an effective date, but summing the sales prices of multiple units over an extended period of time will not be the value on that one day unless the prices are discounted to make the value equivalent to what another developer or investor would pay for the bulk purchase of the units. Also called the *aggregate of the retail values* or *aggregate retail selling price*. *(Dictionary)*

Superadequacy

An excess in the capacity or quality of a structure or structural component; determined by market standards. *(Dictionary)*

Surplus Land

Land that is not currently needed to support the existing use but cannot be separated from the property and sold off for another use. Surplus land does not have an independent highest and best use and may or may not contribute value to the improved parcel. *(Dictionary)*

Tenant Improvements (TIs)

1. Fixed improvements to the land or structures installed for use by a lessee.
2. The original installation of finished tenant space in a construction project; subject to periodic change for succeeding tenants. *(Dictionary)*

Usable Area

The area that is actually used by the tenants measured from the inside of the exterior walls to the inside of walls separating the space from hallways and common areas. *(Dictionary)*

Useful Life

The period of time over which a structure or a component of a property may reasonably be expected to perform the function for which it was designed. *(Dictionary)*

Vacancy and Collection Loss

A deduction from potential gross income (PGI) made to reflect income deductions due to vacancies, tenant turnover, and nonpayment of rent; also called *vacancy and credit loss* or *vacancy and contingency loss*. *(Dictionary)*

Yield Capitalization

A method used to convert future benefits into present value by (1) discounting each future benefit at an appropriate yield rate, or (2) developing an overall rate that explicitly reflects the investment's income pattern, holding period, value change, and yield rate. *(Dictionary)*



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Area of Expertise

Dean M. Meyer, MAI, has spent the last 30 years developing local commercial real estate expertise in the Vancouver office of Colliers International Valuation & Advisory Services, specializing geographically in Southwest Washington. His primary local expertise is in Clark County, with a vast range of experience in appraising commercial office, retail, industrial and special-use properties, along with commercial and industrial land. Various clients, including lenders, brokers, developers, attorneys, private owners, and governmental agencies, have turned to Dean for his expertise and service in the local Southwest Washington market. Dean cares about the relationships he has built with these clients in providing valuable real estate services for a variety of property types. Dean received his MAI (Member of the Appraisal Institute) designation in 1999, and continues to provide various real estate appraisal services to an extensive array of clients for various intended uses, including lending, right-of-way acquisition, estate planning, decision-making, tax appeal, divorce and arbitration. Dean has over 15 years of eminent domain experience involving various right-of-way acquisition assignments.

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Senior Valuation Services Director, 2006-present, Colliers International Valuation & Advisory Services. Specialty is primarily in office, retail, and industrial properties. Geographic area of specialty is in Southwest Washington.

Manager, 1999-2009, Colliers International Valuation & Advisory Services

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DEPARTMENT OF LICENSING – BUSINESS AND PROFESSIONS DIVISION

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Real estate valuations play a pivotal role in today's business climate. An accurate and well supported opinion of property value can mean the difference between reaching a critical goal—securing a loan, closing a sale, reporting to investors, choosing the best asset—or failing to achieve it altogether.

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Self-Storage

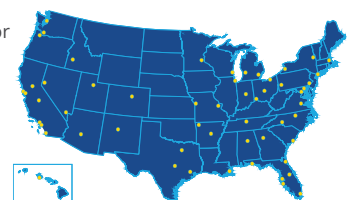
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Property Fact Sheet for Account 47950000

October 24, 2024

General Information

Property Account	47950000
Site Address	600 MAIN ST, VANCOUVER, WA 98660
Legal Desc	WEST VANCOUVER LOTS 7 & 8 BLK 7
Owner	SCHOFIELD PROPERTIES 600 MAIN ST LLC
Mail Address	C/O ROBERT ASCHIERIS 1811 MAIN STREET #201 VANCOUVER WA , 98660 US
Tax Status	Regular
Property Status	Active
Area (approx.)	10,050 sq. ft. / 0.23 acres
Section-Township-Range	SE 1/4,S27,T2N,R1E

Assessment (2024 Values for 2025 Taxes)

Land Value	\$552,800.00
Building Value	\$1,625,100.00
Total Property Value	\$2,177,900.00
Total Taxable Value	\$2,177,900.00

Most Recent Sale

Sale Date	10/21/2010
Document Type	D-B&S
Sale Number	659260
Sale Amount	\$0.00

Administrative

Jurisdiction	Vancouver
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Land Use Planning

Comprehensive Plan Designation	COM
Comprehensive Plan Overlay(s)	none
Urban Growth Area	Vancouver
Zoning Designation - Codes	City Center (CX)
Zoning Overlay(s)	Building Lines 20.630 Blank Walls 20.630 Rain Protection 20.630 Transit Overlay Tier One 20.550 Central City Plan District 20.265 Floor Area Ratio 1:1 20.550 Heritage Overlay District 20.510 Noise Impact Overlay District 20.520 Max Bldg Height (45-150) 20.630 Structural Parking Limited Access 20.630

Miscellaneous

Census Tract	424.00
Drainage District	n/a
Neighborhood	Esther Short
Park District	A

Public Safety

Burning Allowed	No
EMS Response Area	AMR
Fire District	Vancouver
Increased Wildfire Danger Area	No
Police Jurisdiction	VPD West District 1



Environmental Public Health

Public Health Food Inspector District	District 7
Public Health Food Plan Review Area	District C
Public Health WRAP Inspector District	District 1

Wetlands and Soil Types

Critical Aquifer Recharge Area	Critical Aquifer Recharge Area (Vancouver)
FEMA Map / FIRM Panel	53011C0368D
Flood Hazard Area	Outside Flood Area
Shoreline Designation	none
Soil Types / Class	Non-Hydric / LgB
Water Resource Inventory Area	Name: SALMON-WASHOUGAL Sub-Basin: Burnt Bridge
Watershed	Columbia Slope
Sub Watershed	Columbia Slope
Wetland Class	
Wetland Inventory	No Mapping Indicators

Geological Hazards

Geological Hazard	
Liquefaction	Very Low
NEHRP Class	C
Slope Stability	

Development Moratorium

none

Cultural Resources

Archaeological Probability	High
Archaeological Site Buffer	Yes
Historic Site	INV -

Schools	
School District Name	Vancouver
Elementary School Attendance Area	Hough
Middle School Attendance Area	Discovery
High School Attendance Area	Hudsons Bay
Transportation	
C-TRAN Public Transportation Benefit Area	Yes
Traffic Impact Fee (TIF) District	Columbia
Transportation Analysis Zone	1485
Utilities	
CPU Lighting Utility District	n/a
Last Street Sweeping	n/a
Sewer District	Vancouver
Waste Collection Provider	n/a
Water District	Vancouver

Habitat and Species Resources	
Habitat and Species Impacts	No Mapping Indicators

Disclaimer: Clark County does not warrant the accuracy, reliability or timeliness of any information in this system, and shall not be held liable for losses caused by using this information. Portions of this information may not be current or accurate. Any person or entity who relies on any information obtained from this system, does so at their own risk. **RCW 42.56.070(8)** prohibits releasing and/or using lists of individuals gathered from this site for commercial purposes.



October 16, 2024

TO: CITY OF VANCOUVER
BUILDING DEPARTMENT

FR: WILSON ARCHITECTS

RE: 6th AND MAIN
BUILDING AND FIRE CODE COMMISSION MEETING

To Whom it May Concern;

This memo is to confirm that the scope of the structural evaluation dated July 24, 2024 and associated request for Unfit Building Determination and order for Demolition from the Building and Fire Code Commission, is limited to the two 2-story buildings located along Main Street and does not encompass the 1-story building currently occupied by Terrain Coffee on 6th Street or the 1-story building along the north-west section of the property. Upon acceptance of our request, the applicant will submit a building permit application related to the demolition of the two buildings along Main Street, including structural calculations and details necessary to avoid damaging adjacent buildings.

Respectfully;

Ryan Wilson
Wilson Architects

Attachments:

- 1) Aerial Image showing scope of demolition



ADJACENT BUILDING
TO BE PROTECTED

The image is an aerial photograph of a large, light-colored rectangular building. A large portion of the building is covered with red diagonal hatching, indicating the area to be demolished. Two labels with arrows point to the left side of the building, identifying adjacent structures to be protected. The surrounding area includes parking lots with several cars and some trees.

AREA OF
DEMOLITION

ADJACENT
BUILDING TO BE
PROTECTED

To Sree Thirunagari, Building Official, City of Vancouver;

The Ownership of the two buildings located at 600 Main Street, known as the Schofield Block, recently hired Kramer Gehlen and Associates, Inc, a Vancouver based structural engineering firm, to conduct a review of the property with respect to City of Vancouver Municipal Code Chapter 17.32 Unfit Buildings and Premises Code. The report identified multiple deficiencies which meet the criteria outlined in that section. The structural engineer's recommendation is that the building be vacated and either repaired or demolished.

We then sought cost estimates from three local general contractors to establish a budget for building repairs. The cost estimates ranged from \$5.1M to \$5.7M. This estimate was for repair work associated with the unfit building determination only, and did not include associated upgrades that would be required for future occupancy. A 2022 appraisal of the building determined the market value to be \$1.4M. Given that the repair costs associated with the unfit building are between 3x and 4x the building valuation, we have decided that repairing the building is not financially feasible.

We respectfully request that you concur with our engineer's finding that the building meets the City of Vancouver's definition of an unfit building, and that you issue an order for demolition based on the unfeasibility of repair.

Thank you very much for your time.

Sincerely,

Michael Aschieris

Schofield Properties

Serving Vancouver Since 1852

Schofield Building

Investment Sensitivity Analysis

October 2024

Financial Scenario Analysis

Base Case Vs. Downside Case Vs. Upside Case

• Key Assumptions:

- The building is registered, which we will not pursue
 - Loan amount based on LTV (75%)
- \$0 annual property tax, 20% historic tax credit

	Option 1: Base Case		Option 2: Downside Case		Option 3: Upside Case	
Description	Comments	Est. Amount	Comments	Est. Amount	Comments	Est. Amount
Rentable Space (SF):						
Main Level	Current	8,000	Current	8,000	Current	8,000
2nd Story	Configuration	8,000	Configuration	8,000	Configuration	8,000
Total SF Rentable		16,000		16,000		16,000
Development Costs:						
Seismic Upgrades	Median Est.	\$5,346,325	20% Higher	\$6,415,589	Same as Base	\$5,346,325
Interior-Build Out		5,181,675		\$5,181,675		\$5,181,675
Soft Costs	25% of Dev. Costs	2,632,000	25% of Dev. Costs	2,899,316	25% of Dev. Costs	2,632,000
Financing Cost	4% of Dev. Costs	526,400	4% of Dev. Costs	579,863	4% of Dev. Costs	526,400
Total Cost		\$13,686,400		\$15,076,444		\$13,686,400
Operating Income / Expense:						
<i>Rental Income:</i>						
Main Level (Retail / Restaurant)	Class-B (\$30 PSF)	\$240,000	Class-B (\$30 PSF)	\$240,000	Class-A (\$50 PSF)	\$400,320
2nd Story (Office Space)	Class-B (\$15 PSF)	\$120,000	Class-B (\$15 PSF)	\$120,000	Class-A (\$24 PSF)	\$192,000
Annual Gross Income:		\$360,000		\$360,000		\$592,320
<i>Less Vacancy</i>	10% Vacancy	(36,000)	10% Vacancy	(\$36,000)	10% Vacancy	(\$59,232)
Gross Operating Income		\$324,000		\$324,000		\$533,088
<i>Less Expenses</i>		(\$97,200)		(\$97,200)		(\$159,926)
Net Operating Income		\$226,800		\$226,800		\$373,162
<i>Plus Property Taxes (Assumes No Prop. Tax)</i>	Property Tax Offset	\$20,330	Property Tax Offset	\$20,330	Property Tax Offset	\$20,330
Adj. Net Operating Income:		\$247,130		\$247,130		\$393,492
Value on Completion:	6% Cap Rate	\$4,118,836	6% Cap Rate	\$4,118,836	6% Cap Rate	\$6,558,196
Valuation % of Cost	30%		27%		48%	
Valuation Minus Cost:		(\$9,567,564)		(\$10,957,609)		(\$7,128,204)
Financing:						
Loan Amount	75% LTV; 6.5% Int.	\$10,264,800	75% LTV; 6.5% Int.	\$11,307,333	75% LTV; 6.5% Int.	\$10,264,800
Net Equity	Assumes 20% HTC	3,421,600	Assumes 20% HTC	3,769,111	Assumes 20% HTC	3,421,600
Debt Service	6.5% Interest Rate	(\$778,566)	6.5% Interest Rate	(\$857,640)	5.5% Interest Rate	(\$699,389)
Net Income (Cash Flow):		(\$531,436)		(\$610,510)		(\$305,897)
Cash-on-Cash Return:		(16%)		(16%)		(9%)

The Schofield Building is uninvestable. A bank will not loan in this scenario as even in an upside scenario, assuming higher lease rates and lower interest rates, the property still loses ~\$305K per year

Note: Current estimates as of 10/27/2024, operating estimates validated by Cari Jones from the Philips Group (>20 years experience in leasing experience in downtown Vancouver), HTC sold upfront, price reflects discount net of capital gains taxes, for illustrative purposes only as we will not get the building registered.

Financial Scenario Analysis

Base Case Vs. Downside Case Vs. Upside Case

• Key Assumptions:

- The building is registered, which we will not pursue
- Loan amount based on cash flow profile (DSCR)
- \$0 annual property tax, 20% historic tax credit

	Scenario 1: Base Case		Scenario 2: Downside Case		Scenario 3: Upside Case	
Description	Comments	Est. Amount	Comments	Est. Amount	Comments	Est. Amount
Rentable Space (SF):						
Main Level	Current	8,000	Current	8,000	Current	8,000
2nd Story	Configuration	8,000	Configuration	8,000	Configuration	8,000
Total SF Rentable		16,000		16,000		16,000
Development Costs:						
Seismic Upgrades	Median Est.	\$5,346,325	20% Higher	\$6,415,589	Same as Base	\$5,346,325
Interior-Build Out		5,181,675		\$5,181,675		\$5,181,675
Soft Costs	25% of Dev. Costs	2,632,000	25% of Dev. Costs	2,899,316	25% of Dev. Costs	2,632,000
Financing Cost	4% of Dev. Costs	526,400	4% of Dev. Costs	579,863	4% of Dev. Costs	526,400
Total Cost		\$13,686,400		\$15,076,444		\$13,686,400
Operating Income / Expense:						
<i>Rental Income:</i>						
Main Level (Retail / Restaurant)	Class-B (\$30 PSF)	\$240,000	Class-B (\$30 PSF)	\$240,000	Class-A (\$50 PSF)	\$400,320
2nd Story (Office Space)	Class-B (\$15 PSF)	\$120,000	Class-B (\$15 PSF)	\$120,000	Class-A (\$24 PSF)	\$192,000
Annual Gross Income:		\$360,000		\$360,000		\$592,320
<i>Less Vacancy</i>	10% Vacancy	(36,000)	10% Vacancy	(\$36,000)	10% Vacancy	(\$59,232)
Gross Operating Income:		\$324,000		\$324,000		\$533,088
<i>Less Expenses</i>		(\$97,200)		(\$97,200)		(\$159,926)
Net Operating Income:		\$226,800		\$226,800		\$373,162
<i>Plus Property Taxes (Assumes No Prop. Tax)</i>	Property Tax Offset	\$20,330	Property Tax Offset	\$20,330	Property Tax Offset	\$20,330
Adj. Net Operating Income:		\$247,130		\$247,130		\$393,492
Value on Completion:	6% Cap Rate	\$4,118,836	6% Cap Rate	\$4,118,836	6% Cap Rate	\$6,558,196
Valuation % of Cost	30%		27%		48%	
Valuation Minus Cost		(\$9,567,564)		(\$10,957,609)		(\$7,128,204)
Financing:						
Loan Amount	75% LTV; 1.2 DSCR	\$2,715,185	75% LTV; 1.2 DSCR	\$2,715,185	75% LTV; 1.2 DSCR	\$4,812,671
Historic Tax Credits (20% of Hard Costs)		\$1,347,584		\$1,484,450		\$1,347,584
Equity Investment Needed:		\$9,623,631		\$10,876,810		\$7,526,145
Debt Service	6.5% Interest Rate	(\$205,942)	6.5% Interest Rate	(\$205,942)	5.5% Interest Rate	(\$327,910)
Net Income (Cash Flow)		\$41,188		\$41,188		\$65,582
Cash-on-Cash Return		0.4%		0.4%		0.9%

The Schofield Building is uninvestable. An equity investor will not invest in this scenario as the building generates a low investment return (0.4% in our base case and 0.9% in the upside case)

Note: Current estimates as of 10/27/2024, operating estimates validated by Cari Jones from the Philips Group (>20 years experience in leasing experience in downtown Vancouver), HTC sold upfront, price reflects discount net of capital gains taxes, for illustrative purposes only as we will not get the building registered

Insurance Memo

October 16th, 2024

"To whom it may concern:

I am the insurance agent for the building located at 600 Main Street Vancouver, WA 98660

Due to unprecedented losses, Insurance carriers are scrutinizing what property they insure. One of the categories that is being looked at very closely are older buildings.

A recent inspection of this building showed vacancy in a higher percentage than acceptable, and many issues with the condition. If these issues are not rectified, the insurance carrier will issue a cancellation for the insurance on this building.

Thank you,

Sacha Amundson
Sacha Amundson Insurance Agency, Inc.
1811 Main Street Suite 203
Vancouver, WA 98660
360.213.2010 phone/text
360.213.2011 fax"



BFCC hearing

600 Main Street-Schofield Building

February 6th, 2025

Unfit Building and Demolition request

Sree Thirunagari
Building Official

Heidi Scarpelli
Fire Marshal

Jason Nortz

Philip Gigler

Dev. Services Manager Assistant City Attorney

Demolition application review under VMC

Path-1

- **Registered Buildings:**
 - HPC will review the application and associated reports and recommend approval or denial of the permit

Path-2

- **Eligible Buildings:**
 - City Planning Official makes decision with consultation from HPC.

Path-3

- **Unfit Buildings:**
 - Building Official's Unfit determination and Order of Demolition.



Demolition process under VMC

A Historical Overlay District structure as identified by VMC 20.510.050 can only be demolished as follows:

- Demolition of *Unfit Buildings* per the provisions of VMC 17.32
- Demolition of *Other Buildings in a Historic Preservation Overlay District* per the provisions of VMC 20.510.050.





Owners' requests:

- Building Official's Unfit Building determination per VMC 17.32.040
- Building Official's Order of Demolition per VMC 17.32.060



VMC 17.32 Unfit Building Criteria

- 18 different unfit criteria provided in the City code
- Engineering reports identify 10 of the 18 deficiencies

BO's Order of Demolition. VMC 17.32.060 Criteria

- The following standards shall be followed in substance in ordering repair, remediation, vacation or demolition of buildings, structures or premises:
 - 40% or more damaged or deteriorated in value
 - If the cost of repair or remediation would exceed the value of the building
 - If it's a fire hazard
- If the building cannot be *reasonably* repaired, the Building Official may order its demolition. Financial standards (noted above) must be followed.



Building Official's determination

- Schofield building meets several Unfit Building criteria established in VMC 17.32.040. Minimum of one is required by code.
- Schofield building meets the financial criteria established in VMC 17.32.060 for issuance of Building Official's Order of Demolition. Projected cost of repairs far exceeds the assessed value of the building.
- Building Official's draft order of demolition is submitted for BFCC review.



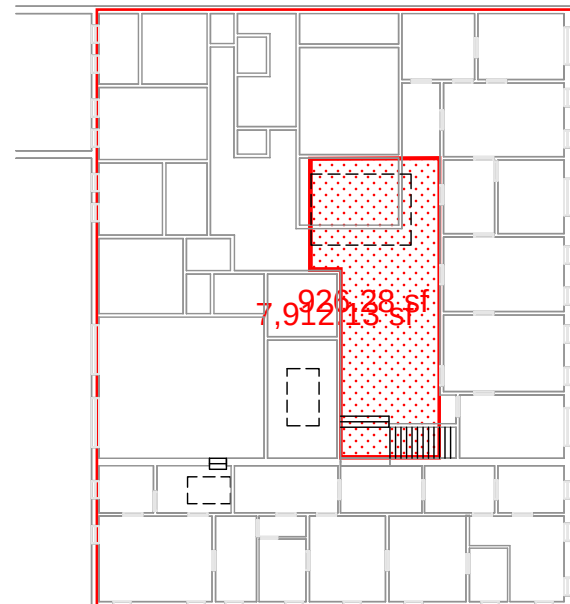
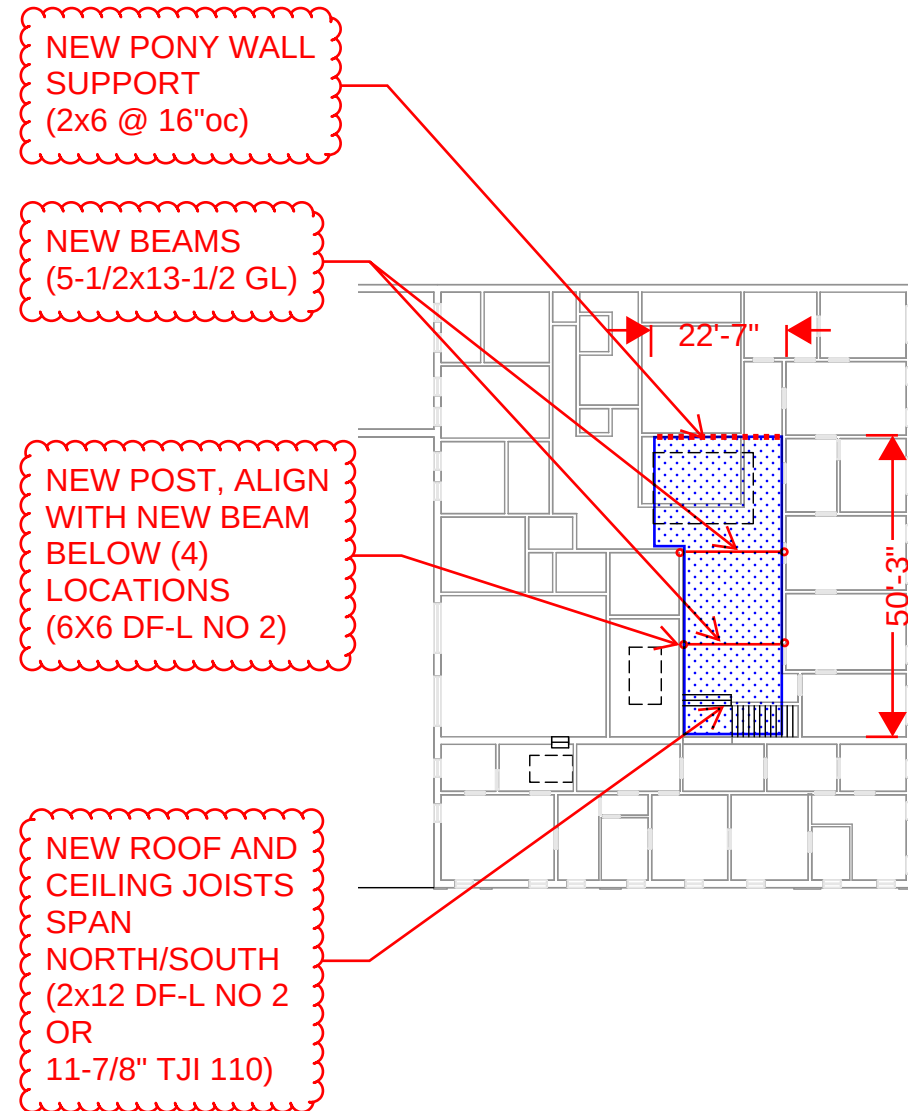
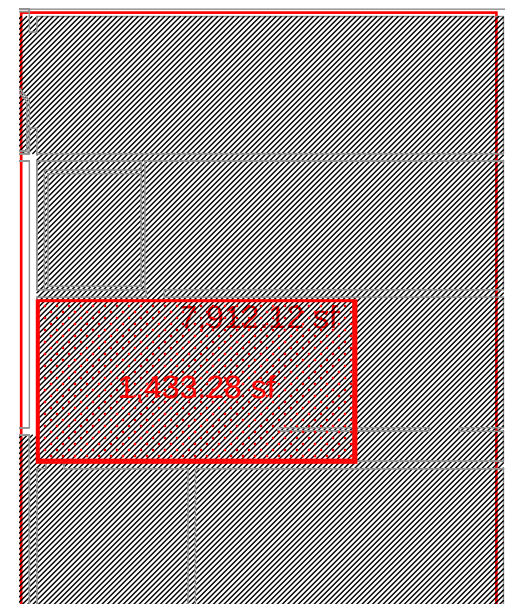
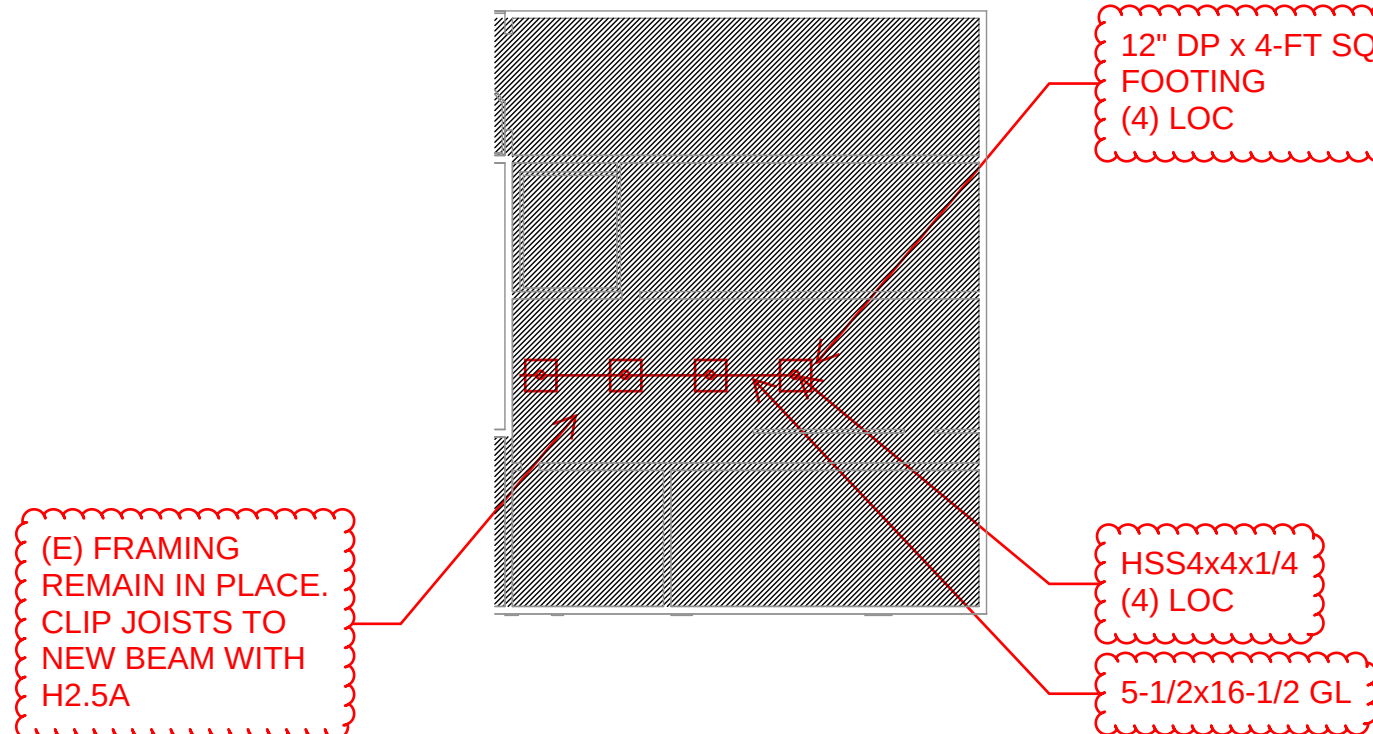
Appeal Process

- **Registered Buildings:**
 - City Council hears appeals of decisions made by HPC.
 - Only party of record can appeal the decision.
- **Eligible Buildings:**
 - Hearings
Examiner hears appeals of decisions made by Planning Official.
 - Any affected party may appeal the decision.
- **Unfit Buildings:**
 - Hearings
Examiner hears appeals of decisions made by Building Official.
 - Only the party of record/Property Owner can appeal the decision.



Discussion



ITEM	CODE	SCOPE	FIX	COST																																																						
ROOF AND CEILING FRAMING CAPACITY	VMC 17.32.040 C (ITEM C.1 IN REPORT) VMC 17.32.040 I (ITEM I.1 IN REPORT)	 12% OF THE ROOF	 NEW PONY WALL SUPPORT (2x6 @ 16"oc) NEW BEAMS (5-1/2x13-1/2 GL) NEW POST, ALIGN WITH NEW BEAM BELOW (4) LOCATIONS (6X6 DF-L NO 2) NEW ROOF AND CEILING JOISTS SPAN NORTH/SOUTH (2x12 DF-L NO 2 OR 11-7/8" TJI 110)	\$295,920.00																																																						
GROUND FLOOR FRAMING CAPACITY	VMC 17.32.040 C (ITEM C.4 IN REPORT) <table><caption>Table 4.3-1. (Continued) Minimum Uniformly Distributed Live Loads, L_u, and Minimum Concentrated Live Loads</caption><tr><th>Occupancy or Use</th><th>Uniform, L_u, psf (kN/m²)</th><th>Live Load Reduction Permitted? (Sec. No.)</th><th>Multiple-Story Live Load Reduction Permitted? (Sec. No.)</th><th>Concentrated P_b (kN)</th><th>Also See Section</th></tr><tr><td colspan="6">Stores</td></tr><tr><td>Retail</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>First floor</td><td>100 (4.79)</td><td>Yes (4.7.2)</td><td>Yes (4.7.2)</td><td>1,000 (4.45)</td><td></td></tr><tr><td>Upper floors</td><td>75 (3.59)</td><td>Yes (4.7.2)</td><td>Yes (4.7.2)</td><td>1,000 (4.45)</td><td></td></tr><tr><td>Wholesale, all floors</td><td>125 (6.00)</td><td>No (4.7.3)</td><td>Yes (4.7.3)</td><td>1,000 (4.45)</td><td></td></tr><tr><td>Vehicle barriers</td><td></td><td></td><td></td><td></td><td>See Sec. 4.5.3</td></tr><tr><td>Walkways and elevated platforms (other than exit ways)</td><td>60 (2.87)</td><td>Yes (4.7.2)</td><td>Yes (4.7.2)</td><td></td><td></td></tr><tr><td>Yards and terraces, pedestrian</td><td>100 (4.79)</td><td>No (4.7.5)</td><td>No (4.7.5)</td><td></td><td></td></tr></table>	Occupancy or Use	Uniform, L_u , psf (kN/m ²)	Live Load Reduction Permitted? (Sec. No.)	Multiple-Story Live Load Reduction Permitted? (Sec. No.)	Concentrated P_b (kN)	Also See Section	Stores						Retail						First floor	100 (4.79)	Yes (4.7.2)	Yes (4.7.2)	1,000 (4.45)		Upper floors	75 (3.59)	Yes (4.7.2)	Yes (4.7.2)	1,000 (4.45)		Wholesale, all floors	125 (6.00)	No (4.7.3)	Yes (4.7.3)	1,000 (4.45)		Vehicle barriers					See Sec. 4.5.3	Walkways and elevated platforms (other than exit ways)	60 (2.87)	Yes (4.7.2)	Yes (4.7.2)			Yards and terraces, pedestrian	100 (4.79)	No (4.7.5)	No (4.7.5)			 18% OF THE GROUND FLOOR 100 PSF LIVE LOAD	 12" DP x 4-FT SQ FOOTING (4) LOC HSS4x4x1/4 (4) LOC 5-1/2x16-1/2 GL (E) FRAMING REMAIN IN PLACE. CLIP JOISTS TO NEW BEAM WITH H2.5A	\$375,304.00
Occupancy or Use	Uniform, L_u , psf (kN/m ²)	Live Load Reduction Permitted? (Sec. No.)	Multiple-Story Live Load Reduction Permitted? (Sec. No.)	Concentrated P_b (kN)	Also See Section																																																					
Stores																																																										
Retail																																																										
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Upper floors	75 (3.59)	Yes (4.7.2)	Yes (4.7.2)	1,000 (4.45)																																																						
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Vehicle barriers					See Sec. 4.5.3																																																					
Walkways and elevated platforms (other than exit ways)	60 (2.87)	Yes (4.7.2)	Yes (4.7.2)																																																							
Yards and terraces, pedestrian	100 (4.79)	No (4.7.5)	No (4.7.5)																																																							

KGA

Structural Engineers

KRAMER

GEHLEN

ASSOCIATES

600 MAIN ST
VMC 17.32.040 REPORT
12/10/2024

ITEM	CODE	SCOPE	FIX	COST																																										
SECOND FLOOR FRAMING CAPACITY	VMC 17.32.040 C (ITEM C.2 IN REPORT) VMC 17.32.040 I (ITEM I.2 IN REPORT) <table><tr><th colspan="6">Table 4.3-1 Minimum Uniformly Distributed Live Loads, L_u, and Minimum Concentrated Live Loads</th></tr><tr><th>Occupancy or Use</th><th>Uniform, L_u, psf (kN/m²)</th><th>Live Load Reduction Permitted? (Sec. No.)</th><th>Multiple-Story Live Load Reduction Permitted? (Sec. No.)</th><th>Concentrated lb (kN)</th><th>Also See Section</th></tr><tr><td colspan="6">Office buildings</td></tr><tr><td colspan="6">File and computer rooms shall be designed for heavier loads based on anticipated occupancy</td></tr><tr><td>Lobbies and first-floor corridors</td><td>100 (4.79)</td><td>Yes (4.7.2)</td><td>Yes (4.7.2)</td><td>2,000 (8.90)</td><td></td></tr><tr><td>Offices</td><td>50 (2.40)</td><td>Yes (4.7.2)</td><td>Yes (4.7.2)</td><td>2,000 (8.90)</td><td></td></tr><tr><td>Corridors above first floor</td><td>80 (3.83)</td><td>Yes (4.7.2)</td><td>Yes (4.7.2)</td><td>2,000 (8.90)</td><td></td></tr></table> 14 STANDARD ASCE/SEI 7-16	Table 4.3-1 Minimum Uniformly Distributed Live Loads, L_u , and Minimum Concentrated Live Loads						Occupancy or Use	Uniform, L_u , psf (kN/m ²)	Live Load Reduction Permitted? (Sec. No.)	Multiple-Story Live Load Reduction Permitted? (Sec. No.)	Concentrated lb (kN)	Also See Section	Office buildings						File and computer rooms shall be designed for heavier loads based on anticipated occupancy						Lobbies and first-floor corridors	100 (4.79)	Yes (4.7.2)	Yes (4.7.2)	2,000 (8.90)		Offices	50 (2.40)	Yes (4.7.2)	Yes (4.7.2)	2,000 (8.90)		Corridors above first floor	80 (3.83)	Yes (4.7.2)	Yes (4.7.2)	2,000 (8.90)		93% FLOOR FRAMING 50PSF LIVE LOAD OFFICE OCCUPANCY	2399 SF 3798 SF 1755 SF	\$441,489.00
Table 4.3-1 Minimum Uniformly Distributed Live Loads, L_u , and Minimum Concentrated Live Loads																																														
Occupancy or Use	Uniform, L_u , psf (kN/m ²)	Live Load Reduction Permitted? (Sec. No.)	Multiple-Story Live Load Reduction Permitted? (Sec. No.)	Concentrated lb (kN)	Also See Section																																									
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Offices	50 (2.40)	Yes (4.7.2)	Yes (4.7.2)	2,000 (8.90)																																										
Corridors above first floor	80 (3.83)	Yes (4.7.2)	Yes (4.7.2)	2,000 (8.90)																																										
TYP GIRDER TO (E) STEEL PIPE COLUMN TYP BEAM, SPANDREL, GIRDER TO (E) URM TYP JOIST TO BEAM BEAM TO GIRDER/SPANDREL																																														

ITEM	CODE	SCOPE	FIX	COST
UNREINFORCED MASONRY WALL ANCHORAGE TO FLOOR AND ROOF	VMC 17.32.040 F (ITEM F.1 IN REPORT) VMC 17.32.040 G (ITEM G.1 IN REPORT) 17.32.020 Section 17.32.020. Purpose. It is the purpose of the “Unfit Buildings and Premises Code” to provide a just, equitable and practicable method, to be cumulative with and in addition to any other remedy provided by the International Building Codes Ordinance, International Existing Building Codes Ordinance, Minimum Property Maintenance Code or otherwise available at law, by which dwellings, or portions thereof which are unfit for human habitation, and buildings, structures, and premises or portions thereof which are unfit for other uses due to dilapidation, disrepair, structural defects, defects increasing the hazards of fire, accidents, or other calamities, inadequate ventilation and uncleanness, inadequate light or sanitary facilities, inadequate drainage, overcrowding, or due to other conditions which are inimical to health and welfare or which from any other cause endanger the life, limb, health, property, safety or welfare of the general public may be required to be repaired, vacated or demolished. Codes / Washington / 2021 Washington State Existing Building Code Chapter 2 Definitions [M] ADDITION. An extension or increase in floor area, number of stories, or height of a building or structure. ADULT FAMILY HOME. A dwelling, licensed by the Washington State Department of Social and Health Services, in which a person or persons provide personal care, special care, room and board to more than one but not more than six adults who are not related by blood or marriage to the person or persons providing the services. An existing adult family home may provide services to up to eight adults upon approval from the Department of Social and Health Services in accordance with RCW 70.128.066. [M] ALTERATION. Any construction or renovation to an existing structure other than a repair or addition. [M] APPROVED. Acceptable to the code official. [M] BUILDING. Any structure utilized or intended for supporting or sheltering any occupancy. [M] CHANGE OF OCCUPANCY. Any of the following shall be considered as a change of occupancy where the current International Building Code requires a greater degree of safety, accessibility, structural strength, fire protection, means of egress, ventilation or sanitation than is existing in the current building or structure: 1. Any change in the occupancy classification of a building or structure. 2. Any change in the purpose of, or a change in the level of activity within, a building or structure. 3. A change of use. [M] CHANGE OF USE. A change in the use of a building or a portion of a building, within the same group classification, for which there is a change in application of the code requirements. Codes / Washington / 2021 Washington State Existing Building Code Chapter 2 Definitions transported to different building sites. [M] REPAIR. The reconstruction, replacement or renewal of any part of an existing building for the purpose of its maintenance or to correct damage. [BIS] REROOFING. The process of recovering or replacing an existing roof covering. See “Roof recover” and “Roof replacement.” [BIS] RISK CATEGORY. A categorization of buildings and other structures for determination of flood, wind, snow, ice and earthquake loads based on the risk associated with unacceptable performance, as provided in Section 1604.5 of the International Building Code. [BIS] ROOF COATING. A fluid-applied adhered coating used for roof maintenance, roof repair or as a component of a roof covering system or roof assembly. [BIS] ROOF RECOVER. The process of installing an additional roof covering over a prepared existing roof covering without removing the existing roof covering. [BIS] ROOF REPAIR. Reconstruction or renewal of any part of an existing roof for the purpose of correcting damage or restoring the predamage condition. Codes / Washington / 2021 Washington State Existing Building Code Chapter 6 Classification of Work SECTION 602 ALTERATION—LEVEL 1 602.1 Scope. Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment or fixtures using new materials, elements, equipment or fixtures that serve the same purpose. 602.2 Application. Level 1 alterations shall comply with the provisions of Chapter 7. SECTION 603 ALTERATION—LEVEL 2 603.1 Scope. Level 2 alterations include the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment, and shall apply where the work is below the threshold of a Level 3 alteration. Exception: The movement or addition of nonfixed and movable fixtures, cases, racks, counters and partitions not over 5 feet 9 inches (1753 mm) in height shall not be considered a Level 2 alteration. Codes / Washington / 2021 Washington State Existing Building Code Chapter 6 Classification of Work SECTION 604 ALTERATION—LEVEL 3 604.1 Scope. Level 3 alterations apply where one of the following criteria is exceeded: 1. The work meets or exceeds the threshold of either substantial improvement or substantial damage. 2. The alteration area exceeds 50 percent of the building area. 604.2 Application. Level 3 alterations shall comply with the provisions of Chapters 7 and 8 for Level 1 and 2 alterations, respectively, as well as the provisions of Chapter 9. Codes / Washington / 2021 Washington State Existing Building Code Chapter 9 Alterations—Level 3 [BIS] 906.5 Anchorage for unreinforced masonry walls. For any building assigned to Seismic Design Category C, D, E or F with a structural system that includes unreinforced masonry bearing walls, the alteration work shall include installation of wall anchors at the roof line, unless an evaluation demonstrates compliance of existing wall anchorage. Reduced seismic forces shall be permitted. [BIS] 906.6 Bracing for unreinforced masonry parapets. Parapets constructed of unreinforced masonry in buildings assigned to Seismic Design Category C, D, E or F shall have bracing installed as needed to resist the reduced International Building Code-level seismic forces in accordance with Section 304.3, unless an evaluation demonstrates compliance of such items. Use of reduced seismic forces shall be permitted. [BIS] 906.7 Anchorage of unreinforced masonry partitions. Where the building is assigned to Seismic Design Category C, D, E or F, unreinforced masonry partitions and nonstructural walls within the work area and adjacent to egress paths from the work area shall be anchored, removed, or altered to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. Use of reduced seismic forces shall be permitted.	2399 SF 3798 SF 1755 SF 78'-7 1/8" 78'-4 3/4" 229'-1 1/4" 229'-1 1/4" 75'-1 1/4" 75'-1 1/4" EXISTING WALLS ARE ANCHORED AT ROOF AND L2 EXTERIOR WALL SCOPE: 229-FT OF ROOF 229-FT OF FLOOR CONT ANGLE (E) FLOOR NEW WOOD BLOCKING ALIGNED WITH HOLDOWN WITH CONTINUOUS CROSS-TIES POST-INSTALLED SLEEVE ANCHORS AND HORIZONTAL HOLDOWNS AT 4FT ON CENTER (E) (3) WYTHE URM WALL (E) URM WALL ANCHORAGE TO FLOOR/ROOF	\$551,862.00	

KGAA

Structural Engineers

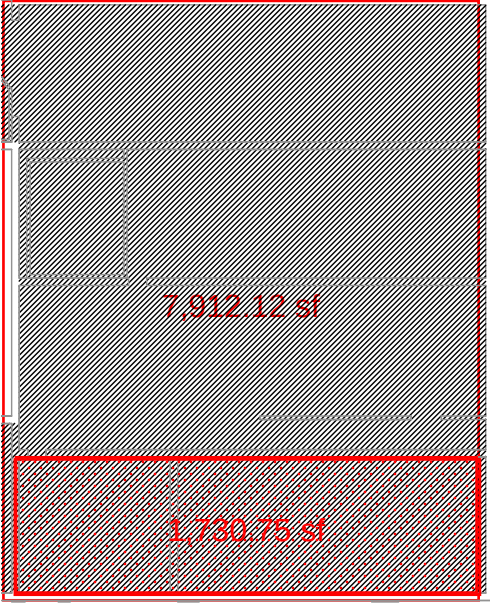
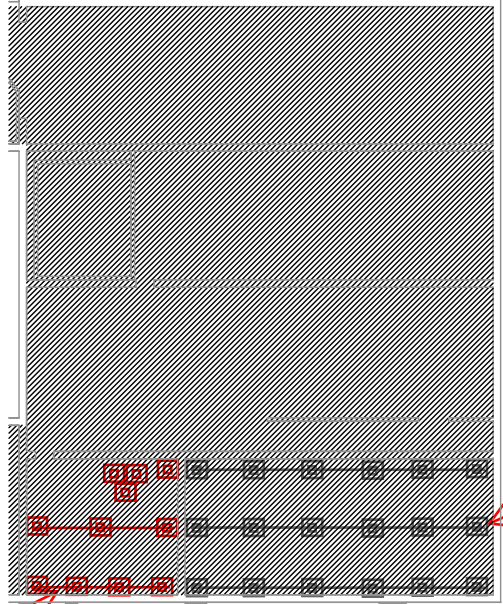
KRAMER

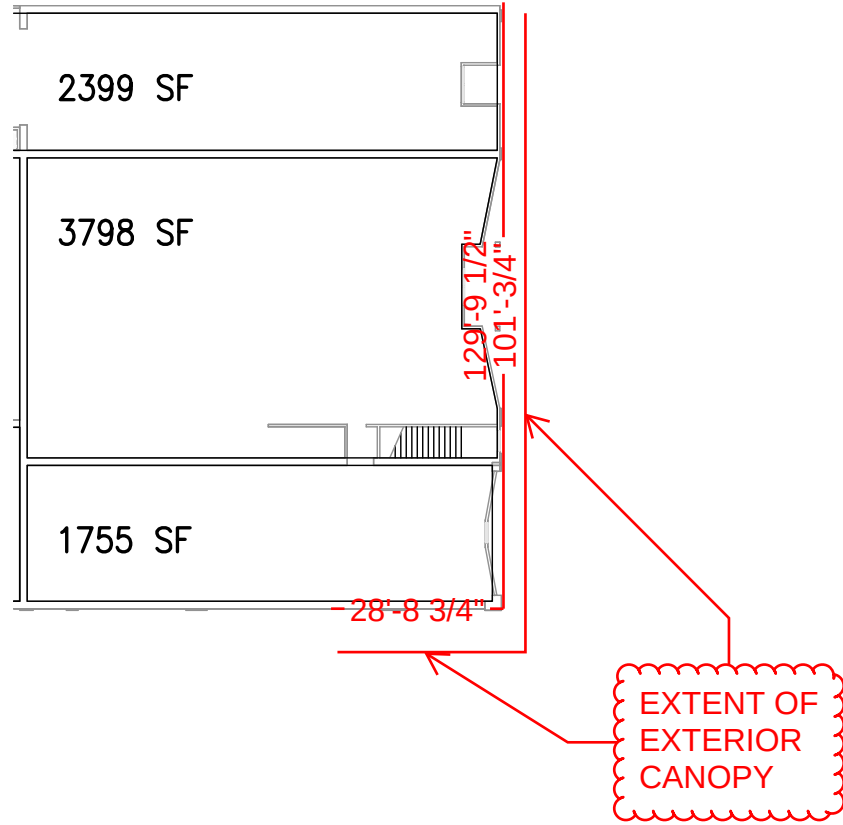
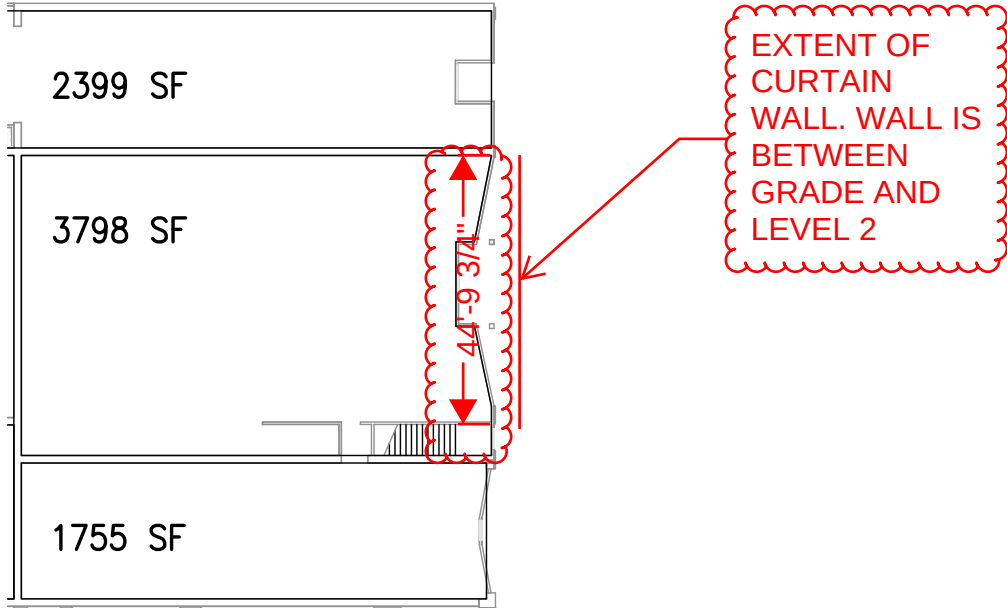
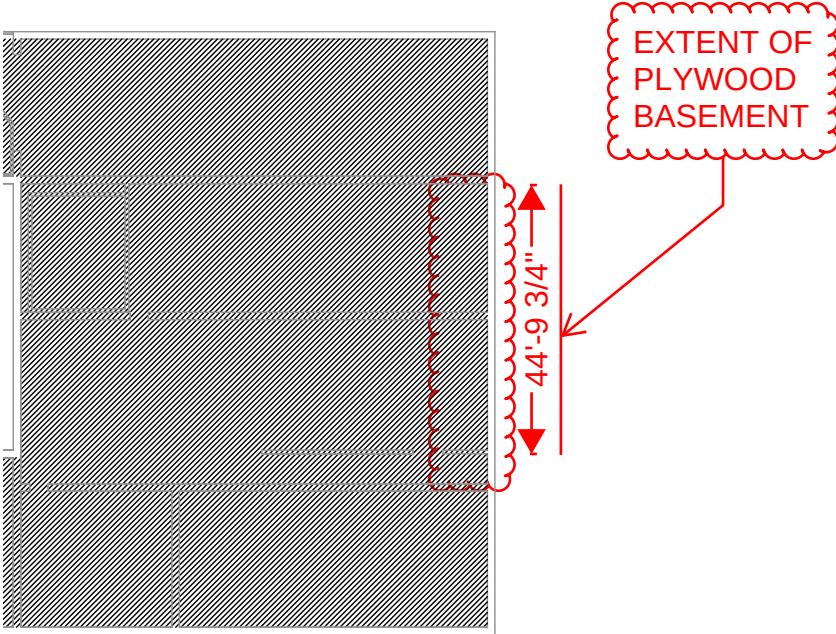
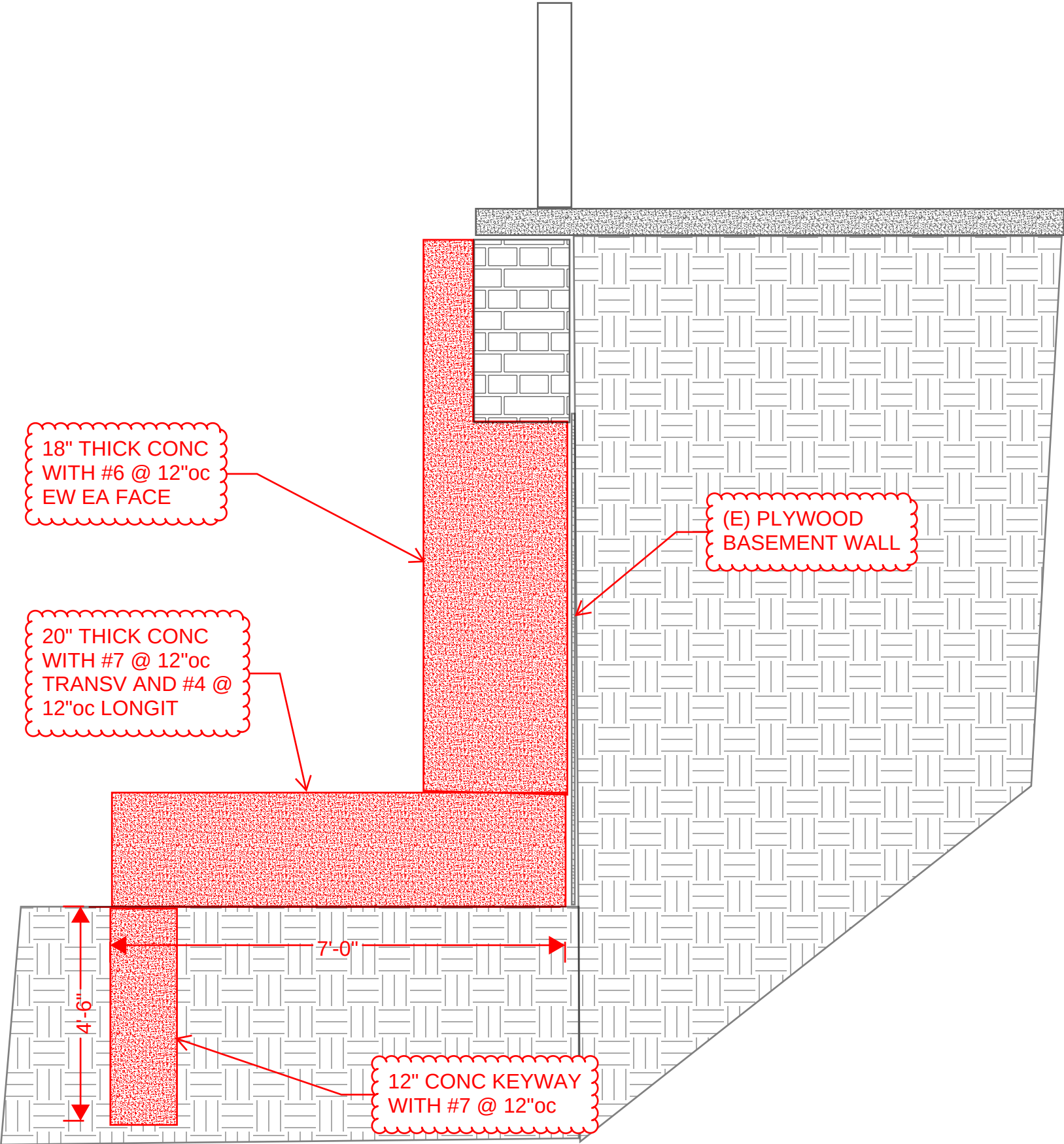
GEHLEN

ASSOCIATES

600 MAIN ST
VMC 17.32.040 REPORT
12/10/2024

ITEM	CODE	SCOPE	FIX	COST
UNREINFORCED MASONRY UNBRACED PARAPETS	VMC 17.32.040 F (ITEM F.2 IN REPORT) VMC 17.32.040 G (ITEM G.2 IN REPORT) 17.32.020 Codes / Washington / 2021 Washington State Existing Building Code Chapter 9 Alterations—Level 3 Iss[906.5 Anchorage for unreinforced masonry walls. For any building assigned to Seismic Design Category C, D, E or F with a structural system that includes unreinforced masonry bearing walls, the alteration work shall include installation of wall anchors at the roof line, unless an evaluation demonstrates compliance of existing wall anchorage. Reduced seismic forces shall be permitted. Iss[906.6 Bracing for unreinforced masonry parapets. Parapets constructed of unreinforced masonry in buildings assigned to Seismic Design Category C, D, E or F shall have bracing installed as needed to resist the reduced International Building Code-level seismic forces in accordance with Section 304.3, unless an evaluation demonstrates compliance of such items. Use of reduced seismic forces shall be permitted. Iss[906.7 Anchorage of unreinforced masonry partitions. Where the building is assigned to Seismic Design Category C, D, E or F, unreinforced masonry partitions and nonstructural walls within the work area and adjacent to egress paths from the work area shall be anchored, removed, or altered to resist out-of-plane seismic forces, unless an evaluation demonstrates compliance of such items. Use of reduced seismic forces shall be permitted.	EXISTING PARAPETS ARE BRACED FOR A PORTION 2399 SF 3798 SF 1755 SF 65'-0" PARAPET SCOPE: 65'-FT OF ROOF	ANGLE BRACE 4-FT ON CENTER CONT ANGLE SEE ROOF ANCHORAGE ANGLE CONNECTION TO BLOCKING BELOW (E) (3) WYTHE URM WALL (E) URM PARAPET BRACING	\$375,535.00
ADHERED STUCCO FAILURE	VMC 17.32.040 F (ITEM F.3 IN REPORT) VMC 17.32.040 G (ITEM G.3 IN REPORT)	2399 SF 3798 SF 1755 SF 80'-2 3/4" 104'-9 1/4" 24'-6 1/2" EXTENT OF EXTERIOR FACADE	REMOVE AND REPLACE	\$170,000.00

ITEM	CODE	SCOPE	FIX	COST
GROUND FLOOR SUPPORT FRAMING	VMC 17.32.040 F (ITEM F.4 IN REPORT)	 23% OF THE GROUND FLOOR	 REPLACE POSTS AND SHORES IN THIS AREA. RE-FRAMING WITH 8x8 DF-L POSTS AND 2-FT SQUARE CONCRETE PADS. (3) ROWS OF (E) SUPPORT FRAMING WITH REINFORCING CONNECTIONS PER SKETCH CLIP TO EA JOIST REINFORCING COLUMN CAP TO BEAM CONN, TYP REINFORCING COLUMN BASE CONNECTION, TYP (4) POST-INSTALLED ANCHORS TO THE (E) CONC BASE, TYP REINFORCING SKETCH FOR NORTH WALL (MIDDLE ROW AND SOUTH WALL SIMILAR)  	\$325,000.00

ITEM	CODE	SCOPE	FIX	COST
EXTERIOR CANOPY	VMC 17.32.040 F (ITEM F.5 IN REPORT) VMC 17.32.040 G (ITEM G.4 IN REPORT)		REMOVE AND REPLACE	\$180,000.00
CURTAIN WALL ALONG MAIN STREET	VMC 17.32.040 F (ITEM F.6 IN REPORT) VMC 17.32.040 G (ITEM G.5 IN REPORT) VMC 17.32.040 I (ITEM I.3 IN REPORT) VMC 17.32.040 K (ITEM K IN REPORT)		REMOVE AND REPLACE	\$42,575.00
PLYWOOD BASEMENT WALLS	VMC 17.32.040 I (ITEM I.4 IN REPORT)			\$89,000.00



January 13, 2025

SCHOFIELD PROPERTIES HOLDINGS
800 NE TENNEY RD STE 110 PMB 227
VANCOUVER, WA 98685

Regarding: Policy Number 606219365

Dear Valued Customer:

Thank you for giving Farmers® the opportunity to serve your business insurance needs. We are committed to offering the best possible products and services at competitive prices. This includes making necessary changes to coverage and/or premium when changes in risk or other factors compel us to do so.

Unfortunately, the property coverage at location 600 Main St Vancouver, WA 98660 you previously carried could not be continued on your policy because per a recent inspection, the building and premises do not meet the company's underwriting guidelines for acceptable maintenance and condition expectations due to the majority of the building is vacant and unoccupiable due to the deferred maintenance.

The property coverage at location 600 Main St Vancouver, WA 98660 temporarily provided to you will cease at 12:01 A.M. on March 7, 2025.

If you have any questions concerning this change, please contact your Farmers Insurance agent who will be glad to assist you.

Very truly yours,

Truck Insurance Exchange
Portland Business Insurance Center

cc: 79064H, Sacha Amundson

CHANGE OF VALUE NOTICE (In Progress)

MAIL DATE: 11/5/2024

This value supersedes any prior notification.

Assessment Year: 2024 Tax Year: 2025

PROPERTY IDENTIFICATION #	47950000
Brief Legal Description:	WEST VANCOUVER LOTS 7 & 8 BLK 7
Property Address	600 MAIN ST VANCOUVER, WA 98660 (Please notify us if your property or mailing address is incorrect)
Reason for Change	Engineering report and bids for repair. G Peterson.

SCHOFIELD PROPERTIES 600 MAIN ST LLC
C/O ROBERT ASCHIERIS
1811 MAIN STREET #201
VANCOUVER, WA 98660



CLARK COUNTY ASSESSOR
PO BOX 5000
Vancouver, WA 98666-5000

WWW.CLARK.WA.GOV/ASSESSOR

Description	Previous Information		New Information	
1. Tax Code Area		037000		037000
2. Change in Acres		0.00		0.00
3. Market Valuation of Real Property. Real Property is land and/or any improvements valued as "Structures", such as buildings, manufactured homes, houseboats, boat houses, and site improvements.	Land	\$552,800	Land	\$552,800
	Structures	\$1,625,100	Structures	\$665,100
	Total	\$2,177,900	Total	\$1,217,900
4. Valuation of Real Property in the Current Use or Designated Forest Land Program. As an owner of approved Current Use (farm and agriculture, open space, or timber land) or Designated Forest Land, you have signed an agreement with the County whereby a portion of your property tax is deferred in exchange for having the use of the property remain as agreed.	Land		Land	
	In Program	\$0	In Program	\$0
	Non-Program	\$0	Non-Program	\$0
	Structures	\$0	Structures	\$0
	Total	\$0	Total	\$0
5. Valuation of Real Property in the Senior Citizens and Disabled Person's Exemption Program. The value of your residence and up to one acre of land (and up to five acres if zoning requires it) has been frozen as of January 1 of the application year. We will continue to establish the market value of your property.	Frozen	\$0	Frozen	\$0
	Non-Exempt	\$0	Non-Exempt	\$0
6. Senior or Disabled Person's Qualifying Income Indicating Reduction of Frozen. * 35% or \$50,000, whichever is greater not to exceed \$70,000; ** 60% or \$60,000, whichever is greater Reduction of Frozen Frozen Taxable	0% ☐ *35% ☐ **60% ☐	\$0 \$0	0% ☐ *35% ☐ **60% ☐	\$0 \$0
Total Base for Real Property Taxes		\$2,177,900		\$1,217,900
7. Personal Property		\$0		\$0
8. Personal Property Late Filing Percent		0%		0%

Cancel: \$ 960,000
Supplement: \$ 0

Prorate Date:

Prepared by: Greg Peterson

If you believe that the new value is substantially incorrect, please call the Assessor's Office for information between 9:00 AM and 4:30 PM at (564) 397-2391. Appeal Process: To preserve your appeal rights or appeal your value, a petition MUST be filed with the Board of Equalization within 60 days after the date this notice was mailed. Call the BOE at (564) 397-2337 for further information or to have the form mailed to you.



City of Vancouver • P.O. Box 1995 • Vancouver, WA 98668-1995
www.cityofvancouver.us

DRAFT

Unfit Building Determination Order of Demolition

Date: February 6th, 2025

To,

Schofield Properties 600 Main Street LLC
Attn: Michael Aschieris
1811 Main Street #201
Vancouver
WA 98660

CDE Case # 89097
Legal Parcel Number: 47950000
Current County assessed building value: \$665,100

Timeline of Events

- February 2023- Building official's written notice issued to address failing plaster.
- July 2023- Property owner obtains City Transportation division approval to install temporary netting over the failing plaster until additional options are evaluated.
- August 2023- Property owner responds to the city regarding structural concerns, indicating that demolition option is being considered.
- March 2024- Applicant submits structural report prepared by Kramer Gehlen Associates (KGA).
- April 2024- City receives a report of plaster from the building falling on the sidewalk along 6th Street.
- April 2024- City opens code enforcement case to address safety concerns.

- July 2024- City requires additional analysis and clarifications relating to the KGA structural report.
- August 2024- Applicant/property owner submits updated structural engineering report.
- August-October 2024- Applicant submits additional documentation (included as Exhibits)
- October 30, 2024- Building and Fire Codes Commission hearing
- January 2025- Updated building valuation and demolition cost estimates submitted by the property owner.

Background

On October 4, 2024, Michael Aschieris of Schofield Properties (Property Owner) made an official request of the City of Vancouver/Building Official to determine the Schofield building located at 600 Main St. as unfit per the provisions of the Vancouver Municipal Code (VMC) Ch. 17.32 Unfit Buildings and Premises Code, and for the Building Official to issue an Order of Demolition per the provisions of VMC 17.32.060.

The primary purpose of the “Unfit Building and Premises Code” is to provide a just, equitable and practicable method, for determining if buildings, structures and/or premises are unfit for human habitation or other uses and are inimical to health and welfare of the general public and would be required to be repaired, vacated or demolished.

The Schofield building is located at the corner of Main St. and 6th St. The building is not on the local, state or national historic register but has been deemed potentially eligible. The building is located in the City’s Heritage Overlay District #2 and is listed as a key building within this district. Because the property owner has requested the Building Official determine if an unfit building determination can be made the City must follow the process outlined in VMC 17.32. More detail on this to follow in the *Applicable Regulations* section of this staff report.

Prior to the Property Owner’s unfit building request, the City of Vancouver Building staff met with the owner on numerous occasions to address multiple building code and safety related concerns. Refer to Timeline of Events section of this report for additional details.

VMC Section 17.08.085 Duties and Powers of Building Official, enforcement.

E. *Authority to condemn.* When the building official ascertains that building service equipment, building, structure or site, regulated in the technical codes has become hazardous to life, health or property, or has become unsanitary, the building official shall order in writing that such building service equipment, building, structure or site, either be removed or restored to a safe and/or sanitary condition as appropriate. Such notice shall be in conformance with VMC Title [22](#). The written notice shall fix a time limit for compliance with such order. The building official may prohibit and/or limit the use of the building service equipment, building, structure, or site until the

required repairs are completed and the work has been inspected and approved by the city.

Applicable Regulations

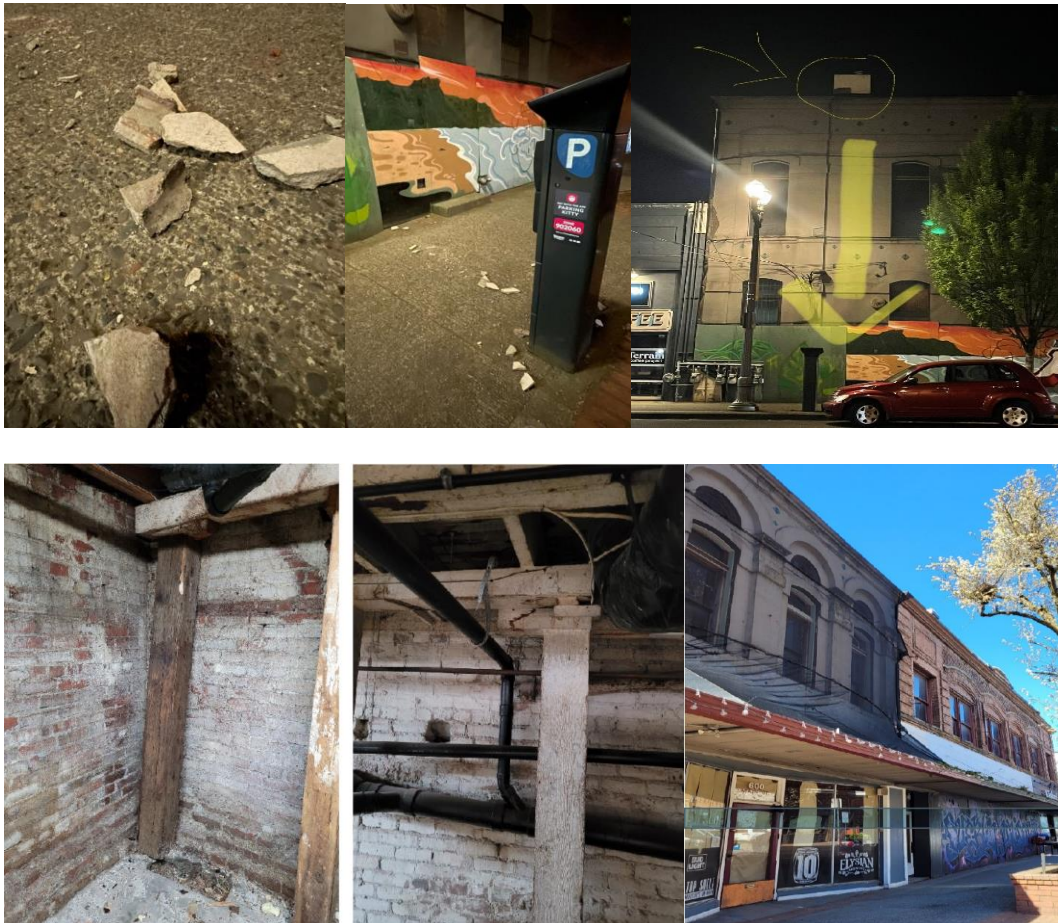
The following VMC sections are applicable to the review of this project:

1. **VMC Chapter 17.32** Unfit Buildings and Premises Code.
2. **VMC Section 17.32.40** Unfit dwellings, buildings, or structures defined (Unfit building determination)
For the purposes of this chapter, any dwelling, building or structure which has any or all of the conditions or defects described in this section shall be deemed to be an unfit building, dwelling or structure, that such conditions or defects exist to the extent that the life, health, property or safety of the public is endangered. Each itemized defect listed in this chapter is considered a distinct code violation for the purposes of enforcement action under VMC Title 22.
3. **VMC Section 20.510.050** Preservation, restoration and reuse.
 - a. Demolition of unsafe buildings. If the Building Official has found the structure to be unsafe under the provisions of Chapter 17.32, Unfit Building and Premises Code, and has ordered that the structure(s) be demolished.
4. **VMC Section 17.32.060** Repair, vacation or demolition-standards. Measures pending abatement- Violations (Building Official order to abate, demolish, remediate, or repair).
 - A. The determination of whether a dwelling, building, structure, or premises should be repaired, or demolished, shall be based on:
 1. the degree of structural deterioration of the dwelling, building, structure, or premises, or
 2. the relationship that the estimated cost of repair bears to the value of the dwelling, building, structure, or premises.
 - B. If the unfit dwelling, building, structure or premises can reasonably be repaired or remedied so that it will no longer exist in violation of the terms of this chapter, it shall be ordered repaired or remedied by the building official.
 - C. If, in the judgment of the building official, the dwelling, building, structure or premises cannot be reasonably repaired or remedied, the building official may order its demolition, provided that the building official shall withdraw the order to demolish if the building owner repairs or remediates the condition within a reasonable time. The following standards shall be followed in substance in ordering repair, remediation, vacation or demolition of buildings, structures or premises:
 1. If the unfit dwelling, building, structure or premises is 40 percent or more damaged or decayed or deteriorated in value, it may be ordered demolished. "Value" as used herein shall be the valuation placed upon the building or structure for purposes of general taxation.

2. If the cost of repair or remediation would exceed the value of the dwelling, building, structure or premises, it may be ordered demolished.
3. If the dangerous or unfit building, structure or premises cannot be repaired or remedied so that it will no longer exist in violation of the terms of this chapter, it may be ordered demolished.
4. If the unfit building, structure or premises is a fire hazard, it may be ordered demolished or abated

SUMMARY OF UNFIT CONDITIONS, RISKS TO PUBLIC HEALTH AND SAFETY

I have reviewed the request for the unfit building determination with all applicable regulations, code criteria, standards and supplemental documents. Based on the documentary evidence provided by the owners, the evidence recorded under the Code Enforcement Case CDE-89087, and my own field observations, I have determined the building to be Unfit and a hazard to public health and safety.



CORRECTIVE ACTION REQUIRED

Upon careful consideration of the building's current physical condition, structural evaluation reports prepared by Kramer Gehlen Associates, public health and safety risks posed by the building, applicable provisions of the Vancouver Municipal Code, and input received during the BFCC hearing on 10/30/2024, and the relevant code provisions,

I hereby **Order the Demolition of the Unfit building located at 600 Main Street.**

Before and during demolition, necessary care must be taken to ensure public safety and the structural safety of adjoining structures. Before the start of demolition work, an engineer's demolition and phasing plan must be submitted for the Building Official's review and approval.

SEPA and City demolition permit applications must be filed by 2/28/2025.

Demolition work must be completed by 7/30/2025.

Sree Thirunagari CBO. LEED AP| Chief Building Official
Community Development Department
City of Vancouver. Washington
Cell: 360-518-5197 | **Desk:** 360-487-7838
www.cityofvancouver.us



APPEAL

VMC 22.03.020

A. Standing to appeal. The person cited in the notice of civil violation and order or order to revoke permit or any person having any record title or legal interest in the building, structure, premise, personal property, or land where the violation is alleged to exist may appeal a notice of civil violation and order or order to revoke permit as provided in VMC [22.03.020](#).

B. Filing an appeal. An appeal of a notice of civil violation and order or order to revoke permit shall be in writing, signed by the person appealing, and shall be filed with the City Clerk no more than ten (10) calendar days from the date the city personally serves the notice of civil violation and order or order to revoke permit on all cited parties or, if not served personally, no more than thirteen (13) calendar days after the city deposits the notice of civil violation and order or order to revoke permit in the U.S. mail as provided in VMC [22.02.040\(B\)](#).

The written appeal shall state the name and address of the appellant and shall explain how the appellant is authorized by VMC 22.03.020(A) to file the appeal and shall list grounds for the appeal, including any alleged error of fact or law in the Notice of Civil Violation and Order. Failure to appeal a Notice of Civil Violation and Order as provided in this subsection constitutes a waiver of all right to an administrative hearing and determination of the matter.

Appeals are required to the City Clerk at the following address:
CITY OF VANCOUVER FINANCIAL SERVICES
415 W 6TH STREET
PO BOX 1995
VANCOUVER, WA 98668-1995