October 10th, 2023

Walker Custom Homes
Attn: Robert Lindsey

RE: Hook Farms 2nd Plat Lot 175 – 2611 SW Barley Field Dr., Lee's Summit, Missouri

Vista Structural Engineering, LLC was asked to address the following inspection items for the project located at above referenced address. Please see the following responses w/ attached partial plan mark up, calculations, and site photos for reference.

1) **Inspection comment:** Address rafter landing on multiple blocks throughout.

   Vista Structural's response: *GC to fasten double blocking and double top plate together with Simpson SDWC15600 screw, typ. between ceiling joists. GC to fasten double blocking to rafter with Simpson SDWC15600 screw, typ. @ each rafter. RE. detail 1/SK1 attached on pg. 5.*

2) **Inspection comment:** Address plumbing and electrical drilled closer than 2" above garage entry bathroom.

   Vista Structural's response: *GC to install Simpson CS16 fastened to bottom of joist centered under penetrations. Provide 13" end length each way and fasten (11) 8d into each end length. RE. partial plan on pg. 2 and calculation on pg. 6.*

3) **Inspection comment:** Address holes drilled closer than 2" to one another above master bed entry.

   Vista Structural's response: *GC to install Simpson CS16 fastened to bottom of joist centered under penetrations. Provide 13" end length each way and fasten (11) 8d into each end length. RE. partial plan on pg. 3 and calculation on pg. 7.*

4) **Inspection comment:** Plans call for (3) king studs each side of front entry.

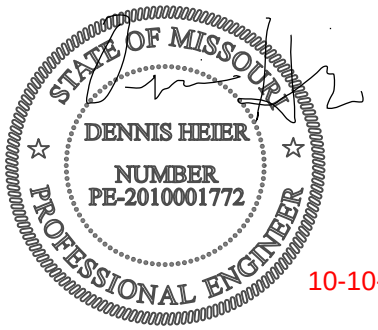
   Vista Structural's response: *Front entry header has (3) king studs on the left and (2) king studs on the right. There is return, interior wall at the right end to brace the opening for out-of-plane. (2) king studs and return wall are adequate for out-of-plane loading by inspection. RE. partial plan on pg. 4.* ***VSE recommends approval of the current framing with no upgrade.***

Our firm appreciates the opportunity to serve you. If you have any questions or if you need anything further, please feel free to contact us.

Sincerely,

Vista Structural Engineering, LLC

Dennis Heier, P.E.



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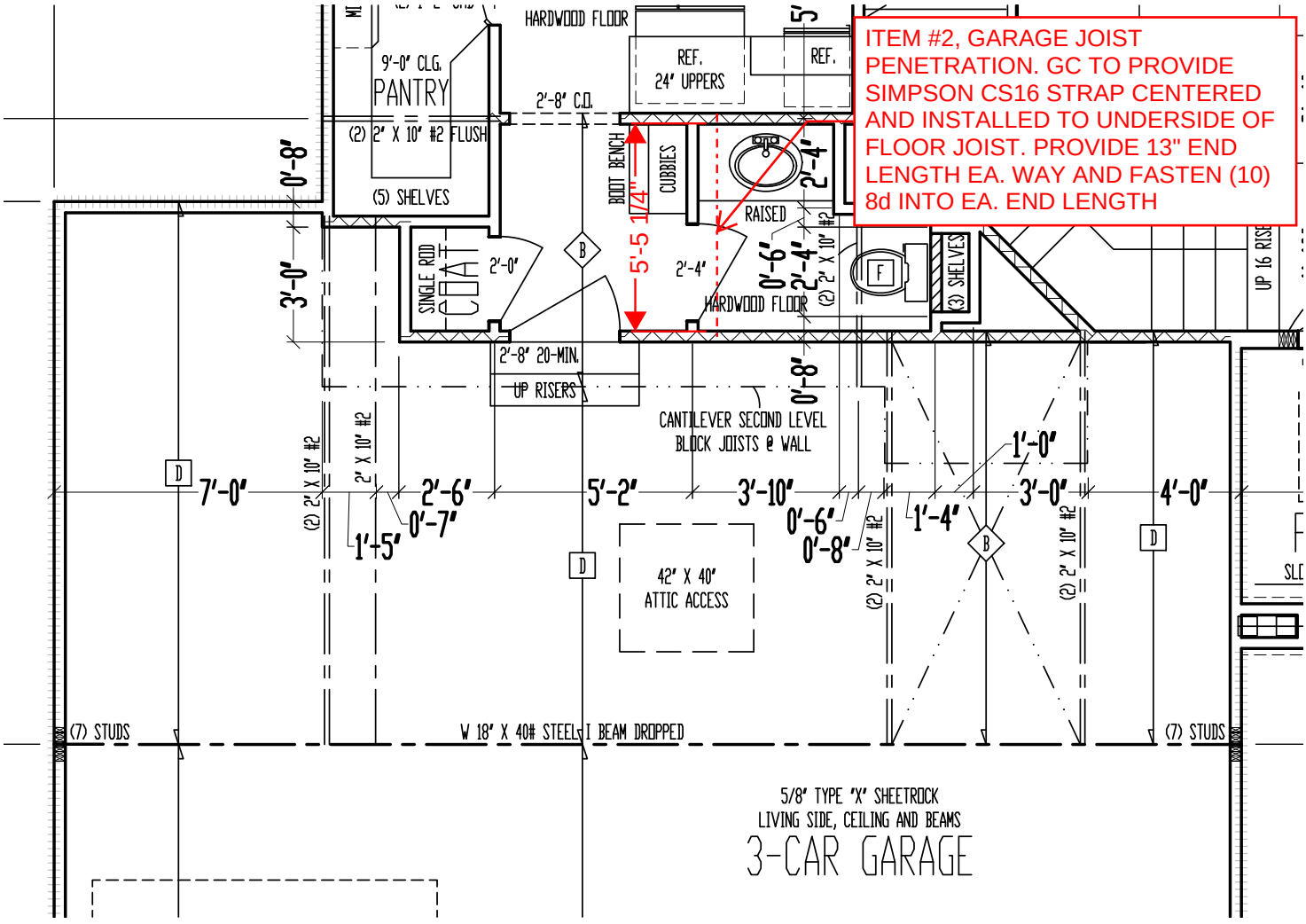
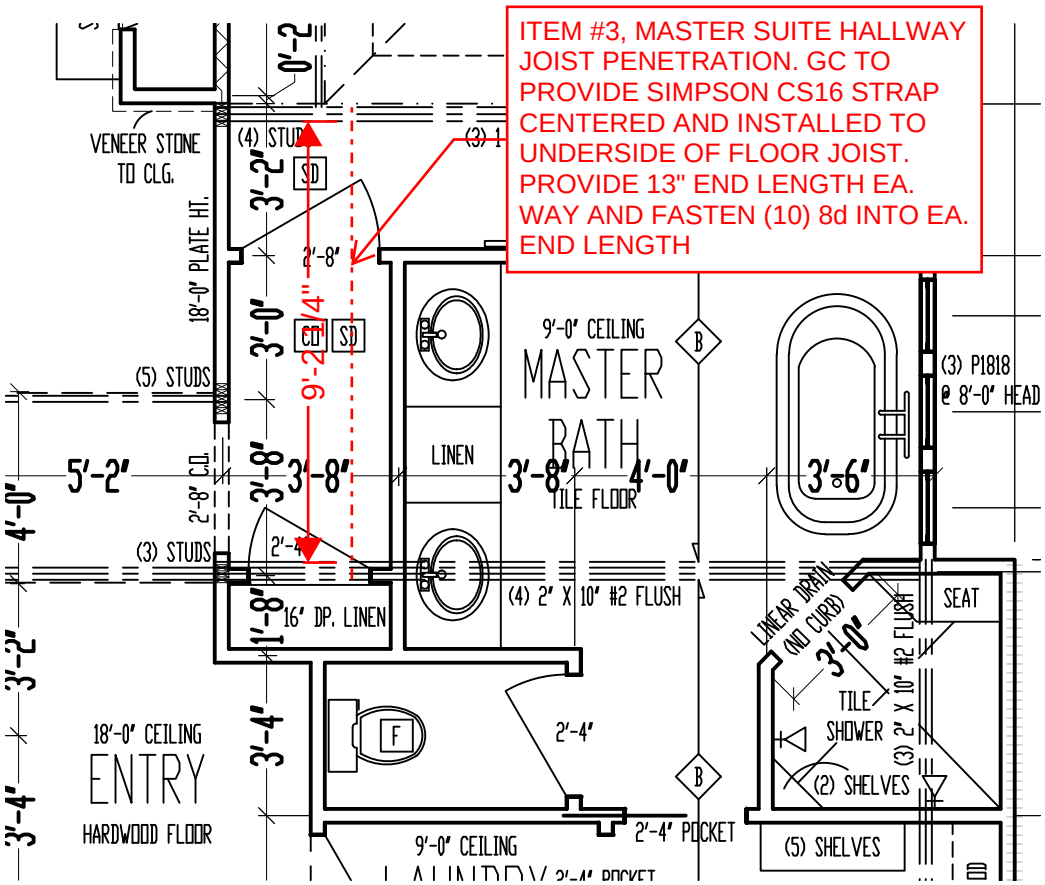
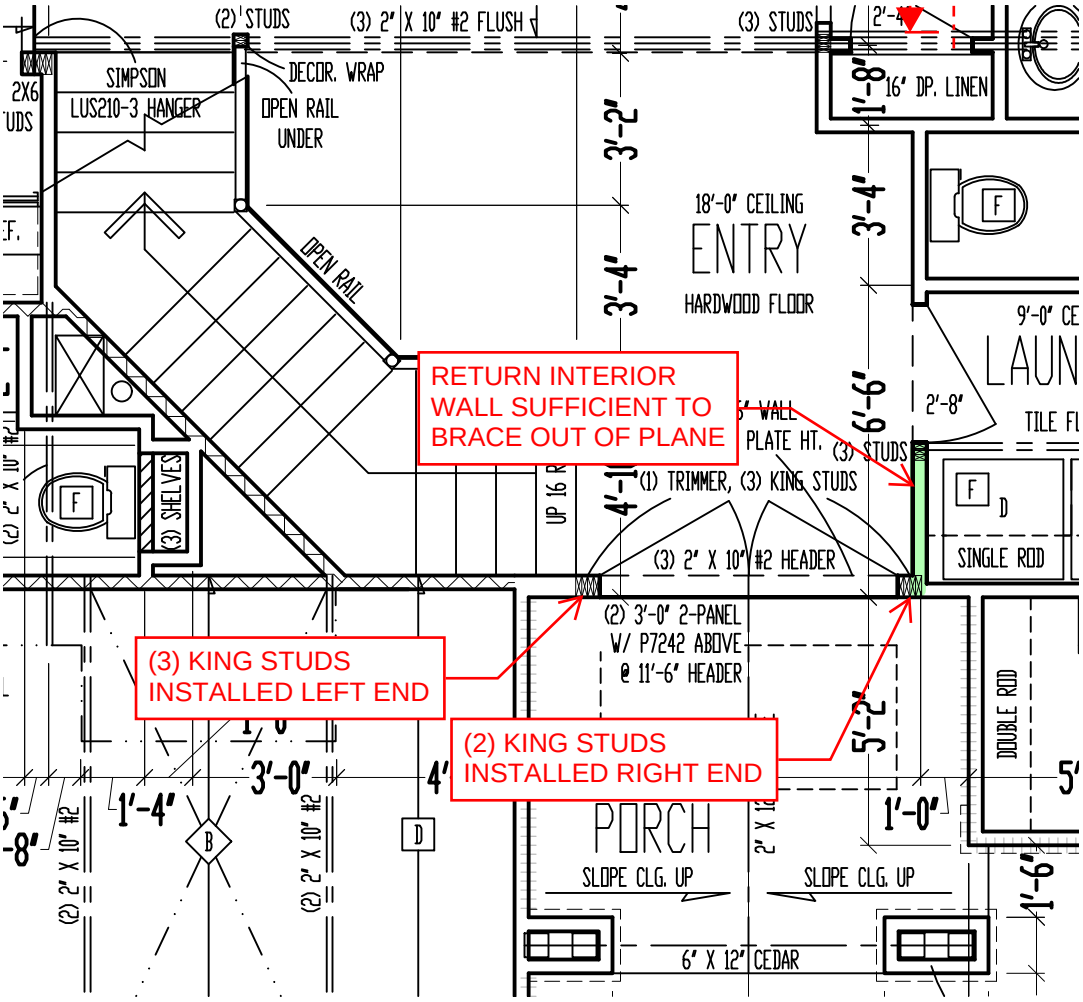


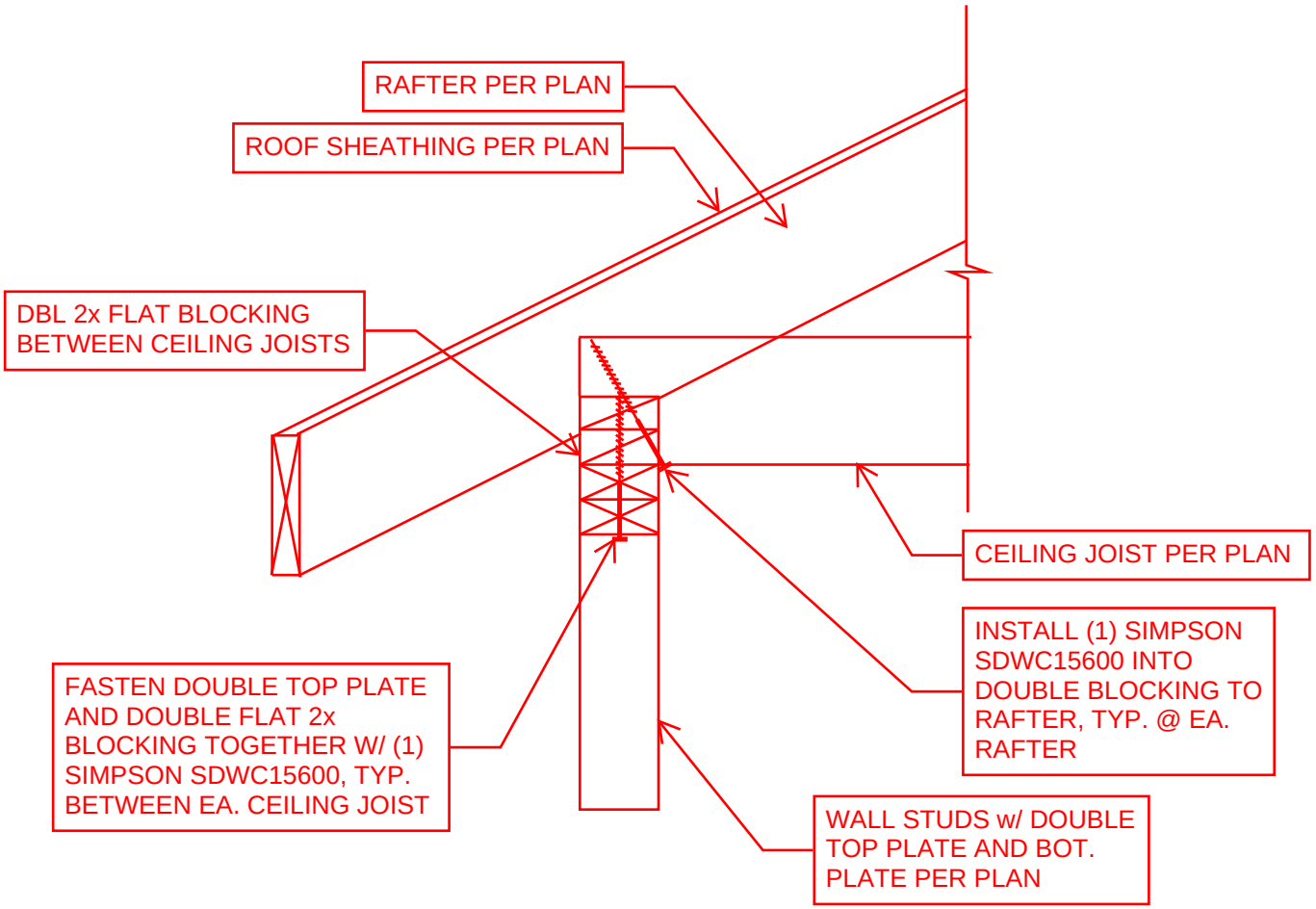
BATHROOM ADJACENT AT GARAGE (PARTIAL PLAN)



HALLWAY AT MASTER SUITE (PARTIAL PLAN)



FRONT ENTRY (PARTIAL PLAN)

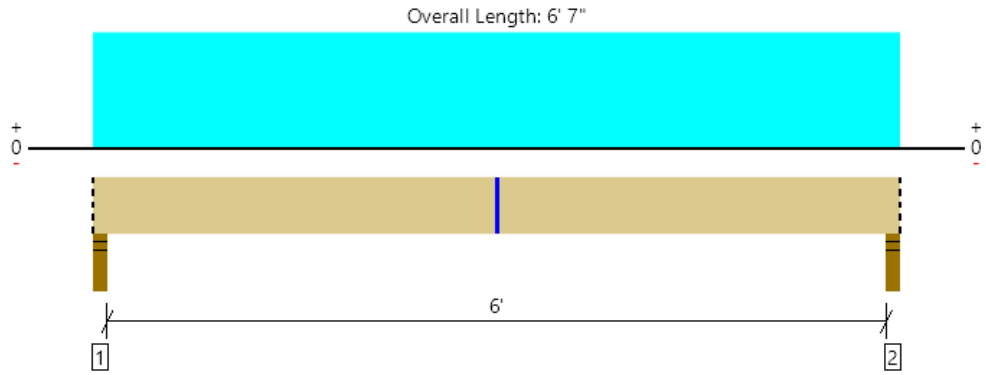


1
SK1

RAFTER BEARING W/ DOUBLE FLAT BLOCKING BETWEEN CEILING JOISTS

N.T.S.

FLOOR JOIST, GARAGE JOISTS
1 piece(s) 2 x 10 DF No.2 @ 16" OC



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	228 @ 2 1/2"	3281 (3.50")	Passed (7%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	155 @ 1' 3/4"	1665	Passed (9%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	330 @ 3' 3 1/2"	2029	Passed (16%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.011 @ 3' 3 1/2"	0.154	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.014 @ 3' 3 1/2"	0.308	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	N/A	N/A	N/A	--	N/A

System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.
- No composite action between deck and joist was considered in analysis.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Factored	
1 - Stud wall - DF	3.50"	3.50"	1.50"	53	176	228	Blocking
2 - Stud wall - DF	3.50"	3.50"	1.50"	53	176	228	Blocking

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	6' 7" o/c	
Bottom Edge (Lu)	6' 7" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Load	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 6' 7"	16"	12.0	40.0	FLOOR

Location Analysis	Shear (lbs)			Moment (Ft-lbs)			Deflection (in)		Comments
	Actual	Allowed	LDF	Actual	Allowed	LDF	Live Load	Total	
1 - 3' 3 1/2"	0	1499	0.90	330	2029	1.00	0.011	0.014	

330*12 = 3960 IN-LB

T/C = 3960 / 9.25 = 428#

USE CS16

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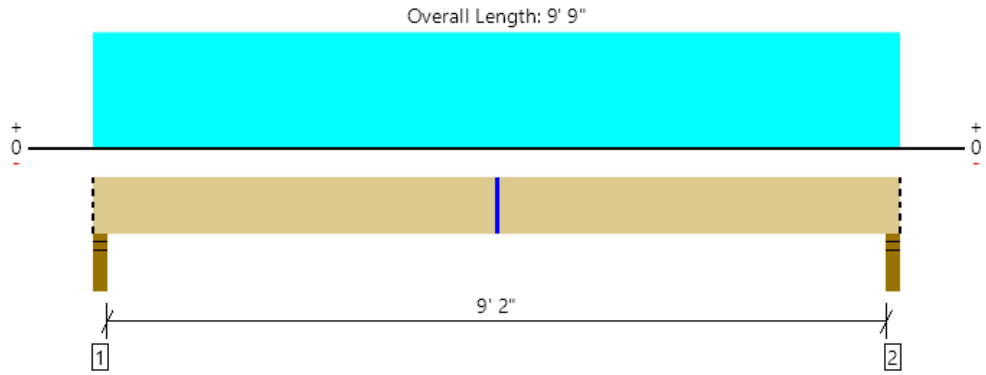
The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

FLOOR JOIST, MASTER SUITE JOISTS
1 piece(s) 2 x 10 DF No.2 @ 16" OC



All locations are measured from the outside face of left support (or left cantilever end). All dimensions are horizontal.

Design Results	Actual @ Location	Allowed	Result	LDF	Load: Combination (Pattern)
Member Reaction (lbs)	338 @ 2 1/2"	3281 (3.50")	Passed (10%)	--	1.0 D + 1.0 L (All Spans)
Shear (lbs)	264 @ 1' 3/4"	1665	Passed (16%)	1.00	1.0 D + 1.0 L (All Spans)
Moment (Ft-lbs)	755 @ 4' 10 1/2"	2029	Passed (37%)	1.00	1.0 D + 1.0 L (All Spans)
Live Load Defl. (in)	0.058 @ 4' 10 1/2"	0.233	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
Total Load Defl. (in)	0.075 @ 4' 10 1/2"	0.467	Passed (L/999+)	--	1.0 D + 1.0 L (All Spans)
TJ-Pro™ Rating	N/A	N/A	N/A	--	N/A

System : Floor
Member Type : Joist
Building Use : Residential
Building Code : IBC 2018
Design Methodology : ASD

- Deflection criteria: LL (L/480) and TL (L/240).
- Allowed moment does not reflect the adjustment for the beam stability factor.
- A 15% increase in the moment capacity has been added to account for repetitive member usage.
- Applicable calculations are based on NDS.
- No composite action between deck and joist was considered in analysis.

Supports	Bearing Length			Loads to Supports (lbs)			Accessories
	Total	Available	Required	Dead	Floor Live	Factored	
1 - Stud wall - DF	3.50"	3.50"	1.50"	78	260	338	Blocking
2 - Stud wall - DF	3.50"	3.50"	1.50"	78	260	338	Blocking

• Blocking Panels are assumed to carry no loads applied directly above them and the full load is applied to the member being designed.

Lateral Bracing	Bracing Intervals	Comments
Top Edge (Lu)	9' 9" o/c	
Bottom Edge (Lu)	9' 9" o/c	

•Maximum allowable bracing intervals based on applied load.

Vertical Load	Location (Side)	Spacing	Dead (0.90)	Floor Live (1.00)	Comments
1 - Uniform (PSF)	0 to 9' 9"	16"	12.0	40.0	FLOOR

Location Analysis	Shear (lbs)			Moment (Ft-lbs)			Deflection (in)		Comments
	Actual	Allowed	LDF	Actual	Allowed	LDF	Live Load	Total	
1 - 4' 10 1/2"	0	1499	0.90	755	2029	1.00	0.058	0.075	

755*12 = 9060 IN-LB

T/C = 9060 / 9.25 = 980#

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The product application, input design loads, dimensions and support information have been provided by ForteWEB Software Operator

ForteWEB Software Operator	Job Notes
Dennis Nguyen Vista Structural Engineering LLC (503) 515-1124 dn@vistastructural.com	

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