



RECEIVED

DEC 17 2015

Planning & Codes Admin

December 14, 2015

Summit Custom Homes, LLC
120 SE 30th St
Lee's Summit, MO 64082

Re: 261 SW Coyle Dr
Lot 107 Mill Creek
Lee's Summit, MO

Apex Engineers, Inc. observed the house under construction at the above referenced address. For the purpose of this report, the house will be referred to as facing north. Our firm has been asked to address the following rough inspection comments:

1. The W8x13 steel beam in the basement that spans front to back of the house does not have adequate bearing at either side. Additionally, the W8x13 steel beam is not cantilevered out to support the bearing wall above. Engineer to address.
 - a. A 3" schedule 40 steel column shall be placed below both ends of the steel beam and above the footings below to give the steel beam adequate bearing. See attached for details.
 - b. A 1-3/4"x7" LVL shall be placed on both sides of the W8x13 steel and cantilevered out to support the bearing wall above.
 - i. The LVL's shall have a minimum 3'-0" back span.
 - ii. The LVL's shall be bolted to the steel beam with 1/2" thru bolts per the attached details.
 - iii. The LVL's shall have blocking between the cantilevered pieces.
 - iv. The LVL's shall have blocking between the LVL's and the subfloor above.
 - v. See attached for details.

Contingent on the aforementioned repairs, our firm recommends approval of these structural items.

LIMITATIONS

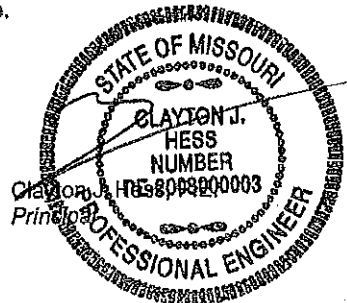
The scope of our services includes only those items specifically addressed herein. All other items are outside the scope of this report; including any environmental assessment (such as, but not limited to mold, mildew, or presence of any other toxic substance or environmental risks).

In addition, the scope our services does not include any evaluation of the building or site for job-site safety and/or hazardous conditions. All construction shall be performed in compliance with IRC and OSHA standards at all times. Our firm has not been retained to examine the site or building for any of these conditions. In addition, the contractor shall retain sole responsibility for the quality of work, for adhering to plans, specifications, appropriate codes, and, for repairing defects, deficiencies or omission, regardless of when they are found. By the use of this report it is understood the above conditions are agreed to.

Please call if Apex Engineers, Inc. can be of further assistance.

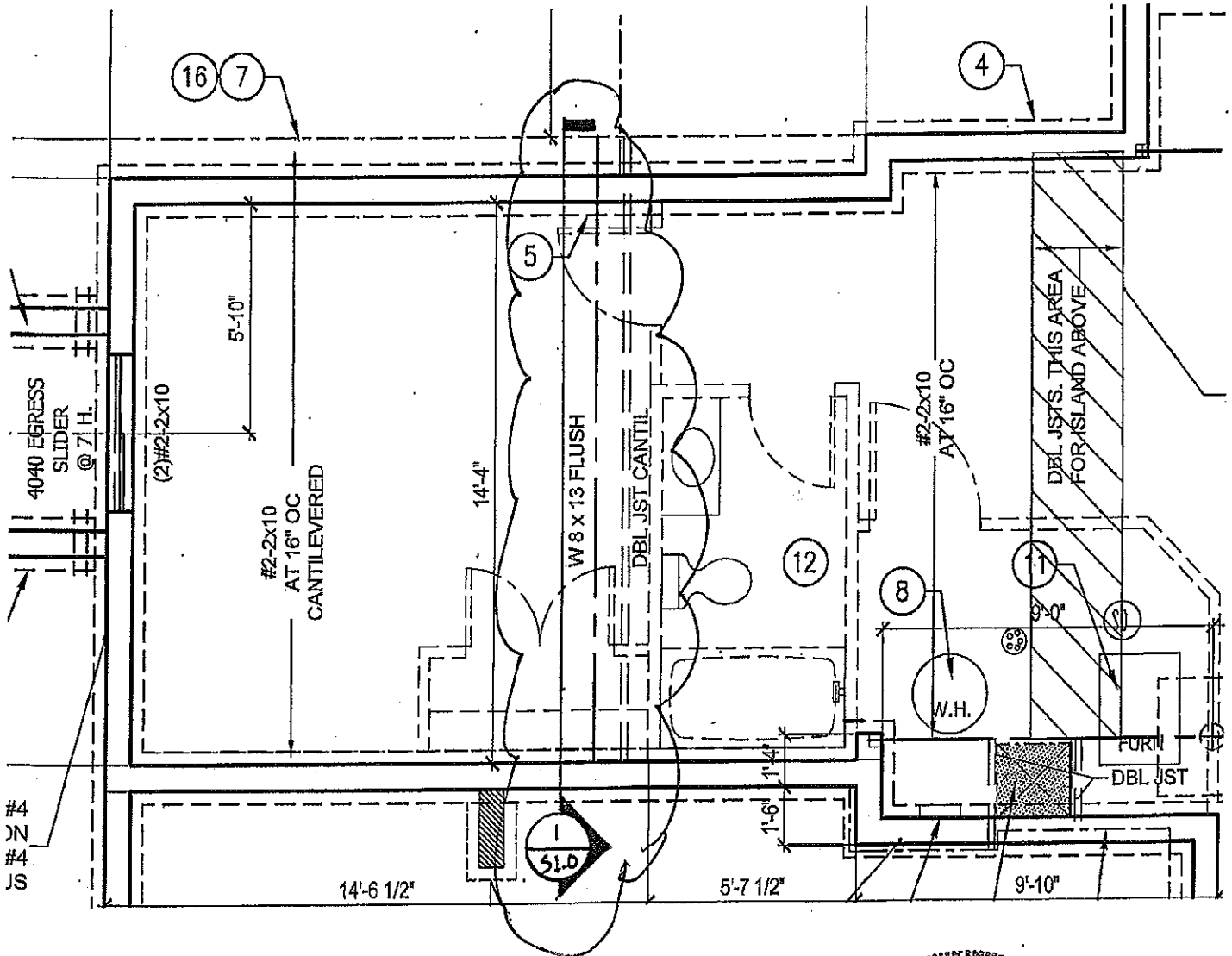
Best Regards,
Apex Engineers, Inc.

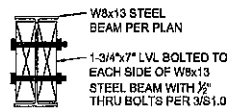
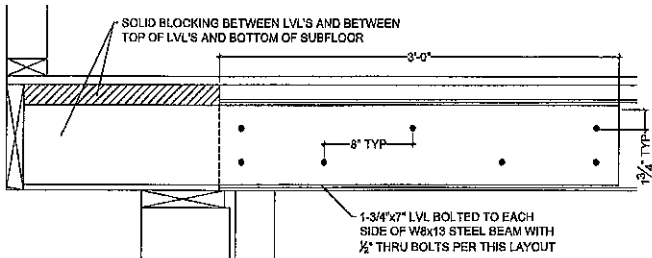
Blake O. Hollingshead
Project Engineer



261 SW COYLE DR
LOT 107 MILL CREEK

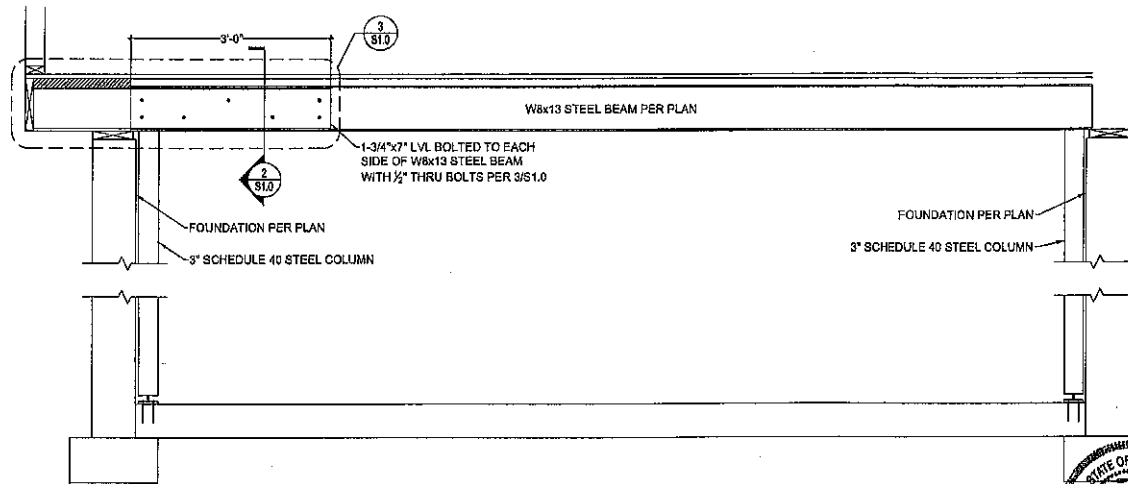
1 of 3





1 CANTILEVERED STEEL BEAM FIX
S1.0 SCALE 3/4" = 1'-0"

1 SECTION CUT
S1.0 SCALE 1-1/2" = 1'-0"



1 CANTILEVERED STEEL BEAM FIX
S1.0 SCALE 3/4" = 1'-0"



APEX ENGINEERS
1000 BALTIMORE AVE. SUITE 102
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www.apex-engineers.com

STRUCTURAL DESIGN REVIEW
KANSAS ENGINEERING LICENSE: 003
MISSOURI ENGINEERING LICENSE: 000306493

PROJECT: PRO CANTELEVERED STEEL BEAM FIX FOR ABIL CREEK LEES SUMMIT, MO
CLIENT: SUMMIT CUSTOM HOMES, LLC
LEES SUMMIT, MO 64082

PROJECT #
DRAWING NAME
DATE: COMMENTS:
DRAWN BY: APEX
CHECKED BY:

SHEET #
S1.0



Apex Engineers, Inc.
 1600 Baltimore Ave, Suite 102
 Kansas City, MO 64108
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 Fax 816.421.1050
 www.apex-engineers.com

Project Title:
 Engineer: 261 SW Conkle Dr
 Project Descr:
 Project ID:

LOT 107 MILL CREEK 3 of 3

Printed: 15 DEC 2015, 3:37PM

Wood Beam

resLot 107 MC - Preston Ridge 4 Farmhouse Inspections (2015.12.14 - Structural #1) Engineering\beam calcs.ecd
 ENERCALC, INC. | 1983-2015, Build 6.15.12.9, Ver 6.15.12.9
 Licensee: APEX ENGINEERS, INC

Ltr. #: KW-06005244

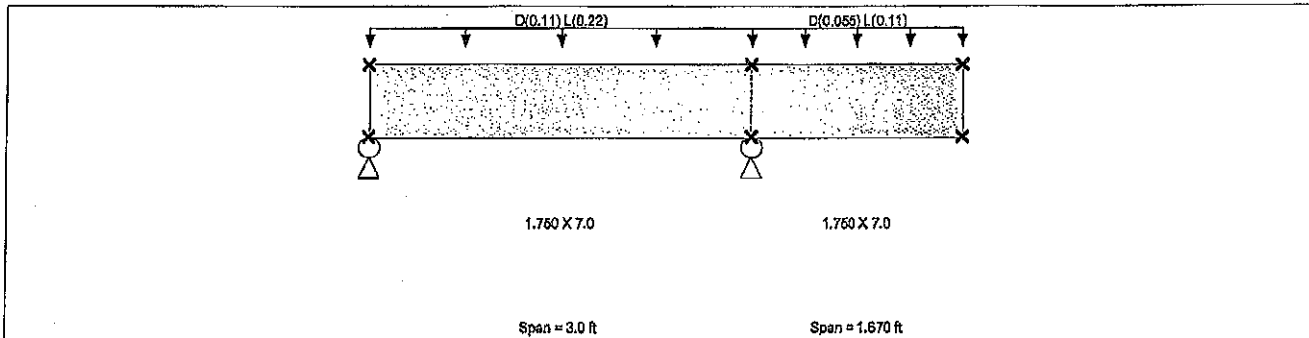
Description: Cantilevered Channel

CODE REFERENCES

Calculations per NDS 2012, IBC 2012, CBC 2013, ASCE 7-10
 Load Combination Set : ASCE7-10

Material Properties

Analysis Method : Load Resistance Factor D Load Combination ASCE7-10	Fb - Tension 2600 psi Fb - Compr 2600 psi Fc - Prll 2510 psi Fc - Perp 750 psi Fv 285 psi Fl 1555 psi	E : Modulus of Elasticity Ebend-xx 1900 ksi Eminbend-xx 965.71 ksi Density 42pcf
Wood Species : LLevel Truss Joist Wood Grade : MicroLam LVL 1.9 E		
Beam Bracing : Completely Unbraced		



Applied Loads

Service loads entered. Load Factors will be applied for calculations.

Beam self weight calculated and added to loads
 Load for Span Number 1
 Uniform Load : D = 0.110, L = 0.220 , Tributary Width = 1.0 ft
 Load for Span Number 2
 Uniform Load : D = 0.0550, L = 0.110 , Tributary Width = 1.0 ft

DESIGN SUMMARY

Design OK

Maximum Bending Stress Ratio = 0.051 : 1	Maximum Shear Stress Ratio = 0.077 : 1
Section used for this span = 1.750 X 7.0	Section used for this span = 1.750 X 7.0
fb : Actual = 281.73psi	f _v : Actual = 47.59 psi
FB : Allowable = 5,574.47psi	F _v : Allowable = 615.60 psi
Load Combination +D+L+H, LL Comb Run (L*)	Load Combination +D+L+H, LL Comb Run (LL)
Location of maximum on span = 1.425ft	Location of maximum on span = 2.430ft
Span # where maximum occurs = Span # 1	Span # where maximum occurs = Span # 1
Maximum Deflection	
Max Downward Transient Deflection 0.007 in Ratio = 6076	
Max Upward Transient Deflection -0.008 in Ratio = 5332	
Max Downward Total Deflection 0.006 in Ratio = 6411	
Max Upward Total Deflection -0.008 in Ratio = 5084	

Maximum Forces & Stresses for Load Combinations

Load Combination	Segment Length	Span #	Max Stress Ratios								Moment Values						
			M	V	λ	C _{FV}	C _i	C _r	C _m	C _t	C _L	Mu	f _b	F _b			
+D+H																	
	Length = 3.0 ft	1	0.015	0.029	0.90	1.000	1.00	1.00	1.00	1.00	0.99	0.09	75.73	5017.02	0.00	0.00	0.00
	Length = 1.670 ft	2	0.014	0.029	0.90	1.000	1.00	1.00	1.00	1.00	1.00	0.08	68.58	5033.77	0.13	554.94	554.94
+D+L+H, LL Comb Run (L*)																	
	Length = 3.0 ft	1	0.035	0.037	1.00	1.000	1.00	1.00	1.00	1.00	0.99	0.24	197.37	5574.47	0.00	0.00	0.00
	Length = 1.670 ft	2	0.035	0.037	1.00	1.000	1.00	1.00	1.00	1.00	1.00	0.24	197.37	5592.85	0.00	0.00	0.00
+D+L+H, LL Comb Run (L*)																	
	Length = 3.0 ft	1	0.051	0.067	1.00	1.000	1.00	1.00	1.00	1.00	0.99	0.34	281.73	5574.47	0.34	615.60	615.60

