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February 19, 2025

Ms. Jean Kao
Cornerstone Architects, LLC
8117 Roberts Road
Weatherby Lake, MO 64152

Re: Dragon J – 214 NW Oldham Parkway, Lees Summit, MO

Ms. Kao,

At your request, I have inspected the existing roof structure at the above referenced site. The inspection was requested to evaluate the existing framing for installation of new roof top fans.

The roof consists of metal decking supported on 12" deep open web steel joists at 48" on center with a length of 19'-6". The joists are supported on bearing walls on either side of the space. The dimensions of the elements of the joists do not conform to standard criteria but, in the absence of a joist tag, it is my conclusion that the joists most resemble 12J2's. Using the attached load table, the allowable safe load at a length of 19'-6" feet is 150 plf (interpolating between 19 and 20 feet). 150 plf converts to 37.5 psf at 48" joist spacing. The design dead (10 psf) and live (20 psf live, 5 psf rain on snow) loads add up to 35 psf which leaves little cushion for extra loading.

The new fans, two exhaust (KEF) at 125 pounds each and one make up air (MUA) at 350 pounds, and the new hood will not be supported by the roof joists. The hood will attach to the demising wall at the rear and to wing walls at the sides. The KEF's will be supported on the demising wall with an angle brace frame. The MUA will be supported on tube steel rails bearing on wing walls adjacent to the wait station. No additional load will be placed on the roof joists.

If there are any questions, please let me know.

Yours truly,

Albert Hermans, P.E.





STANDARD LOAD TABLE

OPEN WEB STEEL JOISTS, J-SERIES

Allowable Total Safe Loads in Pounds Per Linear Foot of J-SERIES Steel Joists — *For Joist Depths 8" to 14".

The following table gives the TOTAL safe uniformly-distributed load-carrying capacities, in pounds per linear foot, of J-Series Open Web Steel Joists adopted by the Steel Joist Institute. The weight of DEAD loads, including the joists, must in all cases be deducted to determine the LIVE load-carrying capacities of the joists.

Joist Designation	8J2	10J2	10J3	10J4	12J2	12J3	12J4	12J5	12J6	14J3	14J4	14J5	14J6	14J7
*Depth in Inches	8	10	10	10	12	12	12	12	12	14	14	14	14	14
Resisting Moment In Inch Pounds	6,000	70,000	89,000	111,000	85,000	108,000	135,000	161,000	196,000	127,000	159,000	190,000	230,000	276,000
Max. End Reaction In Pounds	1900	2000	2200	2400	2200	2300	2500	2700	3000	2400	2800	3100	3400	3700
†Approx. Joist Wgt. Pounds Per Foot	4.2	4.2	4.8	6.0	4.5	5.1	6.0	7.0	8.1	5.2	6.4	7.3	8.4	9.7
Span In Feet	8	10	10	10	12	12	12	12	12	14	14	14	14	14
9														
10														
11														
12														
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*Indicates Nominal Depth of Steel Joists only.

†Approximate Weights per Linear Foot of Steel Joists only. Accessories and nailer strip not included.

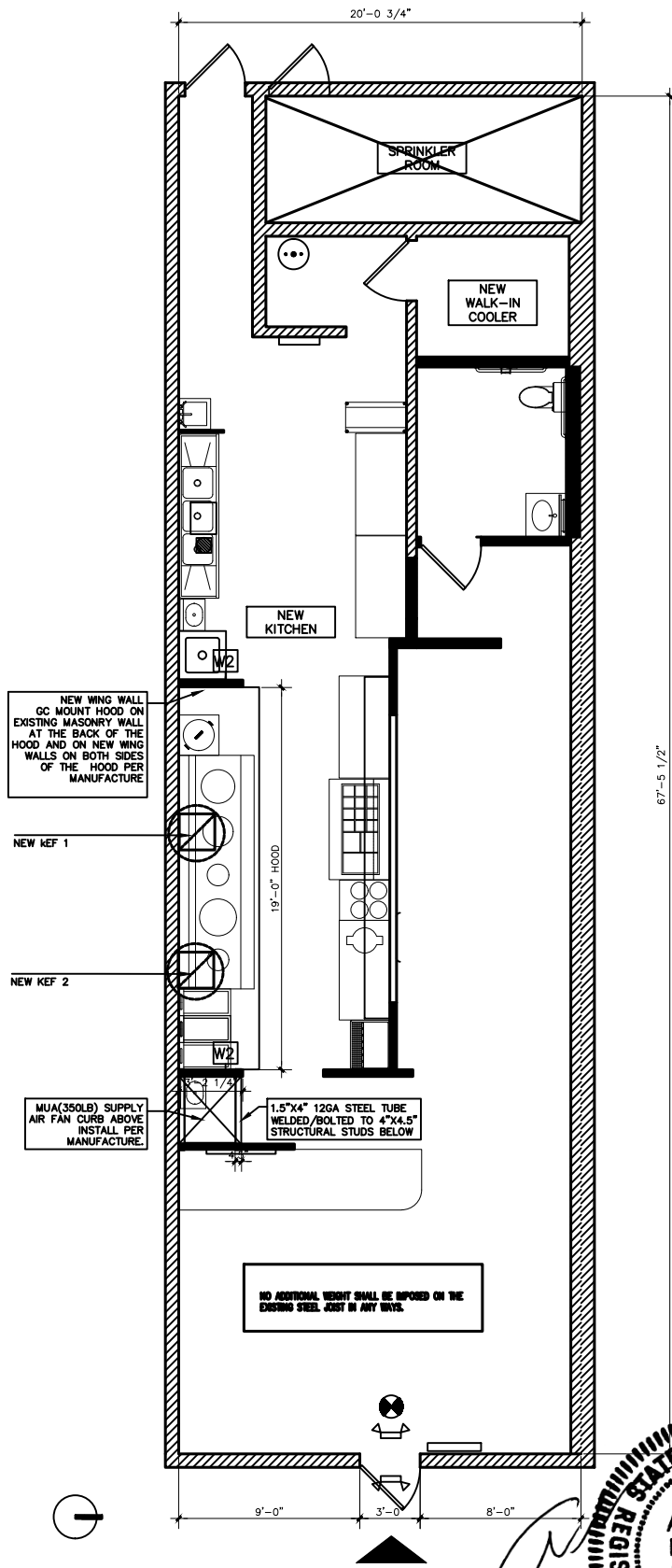
‡See Manufacturers' Catalog for detailed information on specific joist types.

LOADS ABOVE COLORED LINES ARE GOVERNED BY SHEAR.

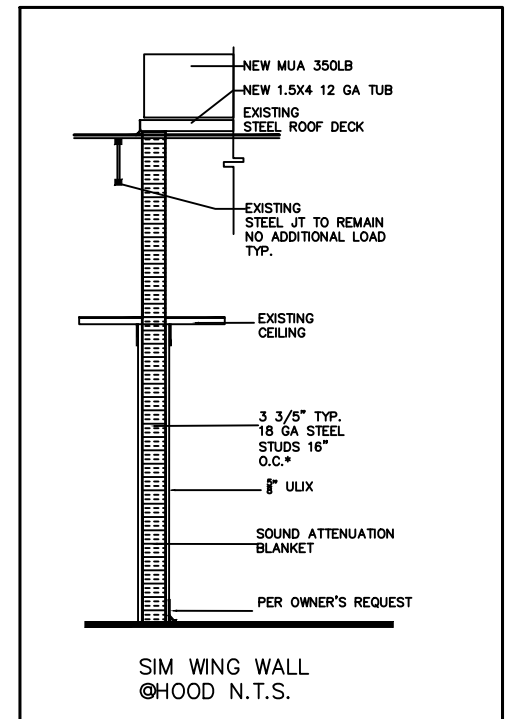
Tests on steel joists designed in accordance with the Steel Joist Institute Standard Specifications have demonstrated that the Steel Joist Institute Load Tables are applicable for concentrated top chord loadings (such as are developed in bulb-tee roof construction) when the sum of the equal concentrated top chord loadings does not exceed the allowable uniform loading for the joist type and span and the loads are placed at spacings not exceeding 33" along the top chord.

Adopted by the Steel Joist Institute May 30, 1961.

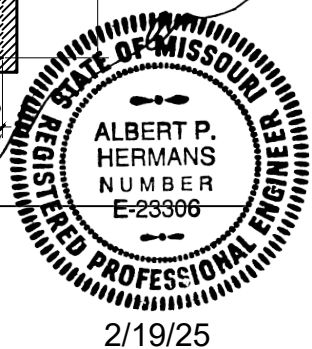
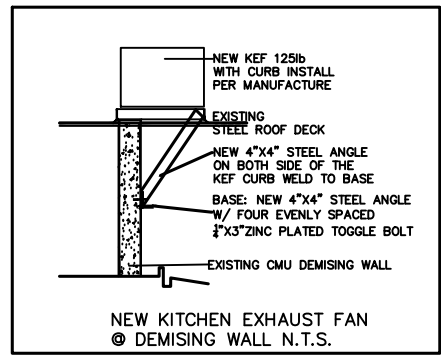
This Table in accordance with Simplified Practice Recommendation filed with the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce.



02 PROPOSED FLOOR PLAN
SCALE: N.T.S.



04 W2 WALL ASSEMBLY



PROJECT:
DRAGON J
 214 NW OLDHAM
 PWKY LEE SUMMIT,
 MO
 64081
 2/14/25