GAR Engineering
where life safety starts at the drawing board

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July 13, 2020

Project: The Building Center – Holtech Saw Upfit
10201 Industrial Drive
Pineville N.C 28134

Based on information provided to GAR Engineering, Inc. of the new Saw Shed approximately 64' long and 24' wide containing an industrial saw processing raw lumber, located at 10201 Industrial Drive in Pineville NC using a Holtech saw GAR has the following recommendations

1. Being that the shed has one side opening of 16' x 47'6" there is sufficient natural ventilation. However, due to the construction of the saw where the chips are being moved by conveyor into a non-combustible receptacle we have found that an exhaust fan capable of moving 3,000 CFM will be adequate to provide 6 air changes per hour eliminating the possibility of any dust accumulation. The location of the fan discharge shall comply with 2018 NCMC 501.3.1 and all wiring shall be 4X type.

2. In the absence of a collector by the manufacturer and the large size of the dust chips being produced, in combination with the exhaust fan to be installed, GAR Engineering has found that per 2018 NCFC 2203.2 "Accumulation of combustible dust shall be kept to a minimum in the interior of buildings. Accumulated combustible dust shall be collected by vacuum cleaning or other means that will not place combustible dust into suspension in air. Forced air or similar methods shall not be used to remove dust from surfaces."

3. According to the Wood Dust Material Safety Data Sheet the collection of dust by Housekeeping (vacuuming) will ensure that the concentration for the Lower Explosive Limit (LEL) of 40g/m^3 will not be achieved at any time. The visual description for wood dust Lower Explosion Limit per 2013 NFPA 499, Annex A 6.3.2 states that "from a practical point of view, a room with a concentration of dust that is above the minimum explosive concentration , results in an atmosphere so dense that visibility beyond 3-5 feet is impossible"

In conclusion, based on all the information provided to GAR Engineering, Inc., the installation of a 3000 CFM exhaust fan, as well as the implementation of Housekeeping as per 2018 NCFC, GAR Engineering has found that the conditions for wood dust to accumulate to a concentration of 40 g/m^3 have been nullified and all the above implementations deem it to be a safe working environment. If you have any questions or concerns, please do not hesitate to reach out to us.

Sincerely,

Gregory A. Riffe, P.E.
President

7-13-2020

NORTH CAROLINA PROFESSIONAL SEAL 16396 ENGINEER GREGORY A RIFFE