



Office of the Village
Fire & Rescue Chief
Doug McElmury

VILLAGE STAFF MEMORANDUM

TO: Jean Werbie-Harris, Community Development Director
FROM: Doug McElmury, Chief Fire and Rescue Department
CC: Lt. Thomas Clark, Fire & Rescue Department
Peggy Herrick, Assistant Planner, Community Development
SUBJECT: Review of the Site and Operational Plan for XYZ Company
DATE: December 22, 2012

This is a review of the Site and Operational Plan for the proposed addition of the XYZ Company Warehouse. The facility is Storage Group S-1(Moderate Hazard) and Business Group B building, the proposed addition will be 253,677 S.F. The facility is located on between at 1234 Main Street

The Fire & Rescue Department will be responsible for providing fire prevention inspections of this facility, twice annually. The concerns of the Fire & Rescue Department are as follows:

1. **Distribution of Comments:** *the person who obtains the building permit to all Contractors and Subcontractors affected by this document shall distribute Copies of these comments. This document outlines critical times and deadlines. All recipients of this document need to become familiar with the contents.*
2. **Compliance:** A letter shall be submitted to the Fire & Rescue Department prior to receiving a building permit, stating that the project will comply with all requirements addressed within this document.
3. In the event a conflict in code(s) is identified, or a conflict with the insurance carrier criteria occurs, the more stringent shall apply. In the event this conflicts with any codes adopted by the State of Wisconsin, the owner must petition the State directly for a variance. The Owner must demonstrate that they will provide materials or design equivalent to the code or that they will exceed the code when petitioning the State and or Village when applicable.

Upon review of the plans submitted, we have the following concerns:

- This is a review of the Final Site and Operational plan, however, it is understood, that typical and customary fire protection features have not been shown of the plans, dated: 12/7/12.
- AED. Because of the overall building size the owner shall install two or more public access Automatic External Defibrillator (AED) onsite for employee use in the event of a sudden cardiac arrest. The Fire & Rescue Department can provide the training necessary to perform CPR and to operate the AED. The AED's shall be placed in the welfare building and main building.
- Fire Alarm Control Panel: There is an existing main FACP located in the maintenance office. A remote annunciator panel will need to be installed in the fire pump room. The annunciator will need to have the same capability as the main FACP.
- Fire safety system plans, such as fire sprinkler and fire alarm plans, will need to be submitted to the State of Wisconsin Department of Safety and Professional Services and also to this fire department for review. No installation of any fire protection system is allowed until a satisfactory review is obtained from both departments.
[no comments-]
- Truck staging shall not decrease the width of the fire lanes.
 - Rack storage: If it is the intent to use rack storage, that rack storage configuration must be reviewed by the fire protection contractor to assure adequate fire sprinkler protection. Rack storage shall not adversely affect the maximum exit distance requirements. This process needs to begin immediately to assure no interruption in the construction timeline and to assure the opening date will be met.
 - There will need to be clearly defined and marked exit pathways which will need to include signs and floor markings approved by the owner along with the Fire and Rescue Department.
 - Emergency lights will need to comply with the current standard throughout the addition.
 - The Fire and Rescue Department will have access to the controls for the HVAC system. This will allow controlled smoke removal in a cold smoke environment.
 - Instructions will be posted on the high bay crane picking cages. The instructions will include safety information and emergency shutdown procedures.
 - Install emergency shutdown switches that can be used outside of the cage.
 - Fire standpipe locations will need to be determined prior to plan submittal. Standpipes will

be placed by all exterior doorways and also interior to meet the 150 foot requirement. The pre-construction meeting will need to be held to determine this. [No comments to date]

- Severe Weather Shelter: The architect shall identify the area within the building that can be used as a “severe weather shelter” or “safe haven” during severe weather such as a tornado. That area will be identified with signage.

4. Fire and Rescue Department Review and Comments:

A. Site and Operational Permits

- Site accessibility
- Fire Pump Location
- Pumper Pad
- Fire hydrant spacing

B. Conditional Use and Operational

1. Standpipe outlet locations **Not shown at this time.**
 2. Fire alarm pull stations **Not shown at this time.**
 3. Emergency and Exit Lighting **Not shown at this time.**
 4. Fire extinguishers **Not shown at this time.**
5. **Plan Review, Permits and Fees:** The plans for the fire protection underground (if needed), aboveground and fire alarm system shall be submitted for review a minimum of four (4) weeks before installation is scheduled to begin. The Village will use an independent fire safety consultant for review of all fire protection plans submitted. A satisfactory review must be completed before any permits will be issued and before construction can begin.
6. **Insurance Carrier:** The Owner of this project shall submit to the insurance carrier for review the plans for both underground water distribution and fire protection prior to construction. The Fire & Rescue Department shall receive a copy of the comments when plans are submitted for review.
7. **Hazardous Occupancies:** The Fire & Rescue Department will need more than the typical four week time period to review proposed Hazardous Occupancies. The owner must contact the Fire & Rescue Department as soon as possible to begin the review process.

8. **The following information must be submitted with the sprinkler plans for review:**

Building height:

Number of stories/floors:

Mezzanines:

Clear space:

Elevators:

Hazard class:

Commodity:

Maximum storage height:

Square footage, office space:

Square footage, Manufacturing including maintenance and equipment:

Square footage, receiving space:

Square footage, shipping space:

Square footage, warehouse space:

Exterior storage:

Fire protection:

9. **The following Fees and Permits are generated directly from the Fire & Rescue Department.**

NOTE: Permits are required from the Fire & Rescue Department for the installation of water main in addition to any permits required by other Village of Pleasant Prairie Departments.

- Bulk Water
- Water Usage
- Fire Protection Plans for Underground and Aboveground
- Fire Alarm System Plans
- Kitchen Hood Systems Plans
- Special Fire Suppression Plans
- Occupancy Permit & Re-Inspection fees

An invoice for permit fees will be issued upon achieving a satisfactory review. Work cannot begin until all permits have been issued. A typical review turnaround is four weeks.

10. **Required Licenses:** A Wisconsin licensed fire protection contractor and Wisconsin licensed sprinkler fitters must install underground fire mains and aboveground fire protection. Periodic inspections of the job site will be made by fire inspectors to assure compliance.

11. **Pre-Construction Meeting:** A pre-construction meeting shall take place with the general contractor, the fire protection contractor, the Fire & Rescue Department and any other sub-contractor prior to the installation of any fire protection. The purpose of this meeting is to assure the requirements of the State of Wisconsin that only a Wisconsin licensed sprinkler fitter shall perform the installation of all devices, etc. All parties will be asked to initial this document and or permit. Any violation of the installing

requirements will be reported in writing to the State of Wisconsin Department of Safety and Professional Services.

12. **Site Access:** Access shall be provided around the perimeter of the site for all Fire Department apparatus, and must comply with the State of Wisconsin and the International Building Code, 2009 edition. A minimum wall-to-wall turning radius of 45'-0" shall be allowed for apparatus movement.
 - a. All entrances from public streets, as well as road and driveways around the proposed building must be a minimum of 30 feet wide.
 - b. All exterior exit pathways as well as access to the Fire Pump Room shall have a hard surface, leading to a hard surface.
 - c. An exterior personnel door shall be located in close proximity to each fire sprinkler riser.

13. **Sprinkler System:** The building shall be equipped with an "automatic fire sprinkler system". The systems shall be designed and constructed to the current printed edition of NFPA 13, Automatic Fire Sprinklers and the Village of Pleasant Prairie Ordinance 180-16, Automatic Fire Sprinklers.
 - **Storage:** The Owner and Tenant both need to be aware of the restrictions that apply to the storage of pallets, cardboard, finished products, etc. Maximum height, width and aisle ways must be maintained and will be enforced. The same concerns apply to the storage of large quantities of combustibles (plastics, plastic wrap and cardboard) such as those used in packaging and storage.

NOTE: Dependent upon storage configurations and the possible use of in rack storage; in rack sprinkler protection may be required.

14. **Water Service:** If it is determined that the building will require additional underground piping, that main must be sized by the fire protection (sprinkler) contractor. No main is allowed to travel underground, under the building.

15. **Plan Review (Underground):** A review of the underground drawings is required along with the fire protection drawings before a permit will be issued by the Fire & Rescue Department. Underground plans shall be submitted a minimum of four (4) weeks before installation begins.

16. **Standpipes:** In lieu of 1.5 inch hose stations, the building shall be equipped with standpipes that shall consist of 2-1/2 inch NST valve, capable of delivering 250 GPM, at 75 PSI measured at the standpipe valve, when supplied by the fire department pumper, in the event no fire pump is needed. The standpipes shall be wet and placed adjacent to all exterior exit doors, same side as the door handle/knob. Village Ordinance 180.16

17. **Fire Hydrants:** Fire hydrants shall be spaced no more than 350 feet apart around the perimeter of the building, per Village Ordinance 180-16. The insurance carrier must

agree in writing to the hydrant spacing. As many hydrants as possible shall be supplied directly by municipal water. The distance from the finished grade line to the lowest discharge shall be no less than 18 inches and no more than 23 inches. The Fire Department connections shall be located, and of sufficient height where typical snow fall or snow removal operations will not obstruct access.

18. **Fire Hydrant Acceptance:** This project may include the installation of water mains for domestic and fire protection use. Prior to the fire sprinkler system connection to any new water mains (including water mains, fire hydrants, laterals leading to the building and risers) must be hydrostatically tested flushed according to National Fire Protection Association (NFPA–National Fire Code) Standard 24 and witnessed by the Fire Chief and or the Chief’s representative, the installing contractor and the fire sprinkler contractor at a minimum.
19. Fire hydrant and water main flushing can be disruptive to the job site and requires significant coordination of all sub-contractors by the General Contractor. Nonetheless flushing is an essential part of assuring public safety.
20. The General Contractor is highly encouraged to coordinate the flushing of all new water mains, fire hydrants, laterals leading to the building and risers with both the sub-contractors responsible, the Village of Pleasant Prairie Engineering Department, Fire & Rescue Department and the Water Utility Department, prior to seeking a ‘clean water sample’ on this site.

NOTE: The Fire Protection Designer must meet with the Fire & Rescue Department before the underground drawings are submitted for review to finalize the placement of the hydrants.

21. **Pumper Pad:** Already exists. There shall be dedicated space for a fire engine to have unobstructed access to the Pumper Pad. The requirements needed to meet the requirements stated are in Village Ordinance 180-16.

NOTE: *The Fire Department Connection riser shall include a single five (5) inch Storz fitting.*

22. **Bollards:** Shall be placed near fire hydrants, remote post indicator valves (PIV) and Fire Department connection(s) to prevent damage. Bollards shall be 6 inches in diameter. Bollards shall not obstruct charged fire hoses. It is recommended that the Fire Department approve the location of the bollard(s) before final placement is made. [Bollard color; Gray, Yellow, or Red. Size 6” diameter with plastic covers. Reference Ord. 180-16(K).
23. **Strobe Light:** A strobe light shall be provided for each riser and installed vertically above each sprinkler water flow bell. The strobe light shall operate for a sprinkler water flow. The lens color shall be RED. The strobe light shall meet Village specifications as found in section 180-16 K of the Sprinkler Ordinance. This requirement will apply to the new addition.

24. **Fire Alarm System:** The system shall be fully addressable so that detailed information will be received about the device in alarm. Utilizing a fire pull station, sprinkler water flow, or any other fire detection device that maybe installed in this building shall activate the internal fire alarm system.

- a. **Manual Fire Alarm Pull Stations:** Shall be located at a minimum, immediately adjacent to each exterior door. Any additional exterior doors will be required to meet this requirement. The pull station shall not be placed in the area of the door, but immediately adjacent to the door jamb.
- b. **Pull Stations and Audiovisual Alarms:** Shall be installed per ADA requirements.
- c. **Smoke and Heat Detection:** Shall be installed as required.
- d. **Tamper Switches:** Tamper switches shall be placed on all sprinkler valves and be identified on the annunciator panel.
- e. **Fire Alarm Control Panel: Shall be addressable.** The annunciator panel type shall be approved by the Fire & Rescue Department. The Fire Alarm Control Panel shall be located within the Fire Pump Room. The panel shall identify a fire sprinkler water flow by riser, and the specific locations of the fire alarm pull stations and any other fire detection devices that may be installed in this building.
- f. **Annunciator Panel: Shall be addressable.** The annunciator panel type shall be approved by the Fire and Rescue Department. The panel shall identify a fire sprinkler water flow by riser, and the specific locations of the fire alarm pull stations and any other fire detection devices that may be installed in this building.
- g. **Central Station:** The Fire Alarm Control Panel shall transmit all fire alarm, tamper, trouble and supervisory signals to a central station that is certified by Underwriters Laboratories (UL) and/or Factory Mutual (FM) and approved by the Fire & Rescue Department. The owner shall provide such documentation for approval. It is recommended that the owner consult with the Fire & Rescue Department prior to signing any contracts with the Central station.
 - 1) The central station shall be provided with this information regarding the geographical location of this alarm:

Village of Pleasant Prairie, County of Kenosha, State of Wisconsin

Fire: Pleasant Prairie Fire & Rescue
Medical: Pleasant Prairie Fire & Rescue

Phone numbers:
Emergency: (262) 694-1402
Non-emergency: (262) 694-7105
Business: (262) 694-8027

[Currently under review. Must UL or FM Approved]

25. **Knox Box:** Knox Boxes shall be provided for the building. The Knox Boxes shall be Model 4400. Two sets of all keys (Master, fire alarm pull station, annunciator, elevator, etc.) shall be placed within the box, as well as a copy of the pre-fire plan. The number

and location of Knox Boxes will need to be determined at the pre-construction meeting.

26. **MSDS Knox Box:** A minimum of One (1) Knox Box(s) designed for Material Safety Data Sheet storage shall be provided for each tenant to contain the data sheets on all products that are considered hazardous within the facility. The MSDS Box(s) shall be installed within the Fire Pump Room.
27. **Fire Extinguishers:** Shall meet NFPA 10 (Portable Fire Extinguishers) for the specific use of the building and be in sufficient number. Final approval, of fire extinguisher locations and quantity, will not be given until occupancy is taken, to see how a tenant furnishes the space. The company providing the fire extinguishers shall submit a letter to the Fire & Rescue Department stating the locations and size of the extinguishers are in compliance with NFPA 10.
28. **Emergency and Exit Lighting:** Exit and Emergency Lighting shall be provided and shall have battery backup. Combination units are acceptable and recommended. An Emergency Generator eliminates the need for battery backup. Exit and Emergency Lighting shall not be placed on electrical circuits that cannot be disturbed or interrupted, this is for test purposes. These circuits shall be clearly labeled. The Fire & Rescue Department will evaluate this lighting prior to occupancy during the evening hours after sunset. An Emergency light shall be placed within the fire pump room. Emergency and Exit lighting will be inspected after sunset to assure it is adequate and meets the Code.
29. **Final Inspection:** The General Contractor shall provide the following documentation at the time the Final Inspection takes place and before a building occupancy certificate will be issued.
 - a. The fire protection contractor shall provide the owner with a letter (upon completion of the sprinkler work) stating the sprinkler system, or portion thereof, is "100% operational and built according to the design", Village Ordinance, 180-16 N.
 - b. Copy of contract with fire alarm central monitoring station.
 - c. Copy of UL and/or FM certificate(s) for the fire alarm central monitoring station.
 - d. Copies of the fire protection underground flushing documents.
 - e. Copies of the underground and fire sprinkler hydrostatic test certificates.
 - f. Copies of the fire sprinkler operational test certificates.
 - g. Copies of the fire alarm test documents.
 - h. Copies of other test documents such as, hood/ duct, smoke, etc...
 - i. The Pleasant Prairie Fire and Rescue Department shall have all information needed for our pre-fire plan prior to occupancy.
 - j. Provide two- (2) CD's, one for the property owner and one for the Fire & Rescue Department. The disks shall include all Floor plans and fire protection plans for the building in an as-built condition.
 - k. Severe Weather Shelter: The architect shall provide for both the Owner and the Fire & Rescue Department the area within the building that can be used as a "severe weather shelter" or "safe haven" during severe weather such as a tornado.
 - l. Maps of the fire alarm and fire sprinkler system shall be placed in the fire pump room, near the fire alarm control panel; the maps shall be hung on the wall, with a waterproof

- covering and accessible to firefighters wearing bulky clothes and equipment.
- m. AED, in place at such time occupancy takes place.
 - n. A copy of the tenants Emergency Plan must be submitted to the Fire & Rescue Department before occupancy.
 - o. Occupancy inspection fee and re-inspection fee will be assessed at the final inspection in accordance with ordinance 180-17.
30. **Occupancy:** All fire and life safety requirements must be in place prior to any building being occupied.

EXAMPLE