Bowman

November 17, 2023

Jason Tuggle
Urban Erosion Control Analyst – Water Resource Engineering Division
County of Dane
608-516-2274

Project Name: **Equipment Share Cottage Grove WI**
Project Location: **N Star Rd, Cottage Grove, WI 53527**

Dear Mr. Tuggle:

This letter is in response to your email dated November 2, 2023.

Engineering – Comment Response

Comment 1: The erosion control plan must be designed to prevent gully and bank erosion, limit total off-site annual sediment yield from sheet and rill erosion to less than 5.0 tons/acre and provide a stable outlet capable of carry the design flow. The prescriptive requirements of §14.11(3)(d) must also be incorporated into the erosion control plan.

Response: Comment noted, the plans will be designed per County standards.

Comment 2: The proposed development results in the cumulative addition of more than 20,000 SF of impervious surfaces and therefore is subject to new development stormwater management standards. The stormwater management plan must be designed to provide rate control for the 1, 2, 10, 100 and 200-year, 24 hour storm events; achieve 80% TSS reduction for the 1-year, 24 hour storm event compared to no controls; achieve 90% average annual predevelopment stay- on; provide oil and grease control from parking and traffic areas; and provide a stable outlet. This site is not in a thermally sensitive watershed and is no longer within a closed watershed, therefore those standards will not apply to this development.

Response: This is a proposed swale that will convey site runoff to the existing detention pond.

Comment 3: Lot 3 CSM 16140 is part of a previously permitted commercial plat known as Cottage Grove Rural Business Lots (Permit SM2022-0366). The approved stormwater management plan addresses rate control and sediment control for Lot 3 CSM 16140 assuming a maximum of 85% lot coverage split 30% roof and 70% parking. Gravel is considered an impervious surface. The proposed development appears to exceed the parking area assumptions of

the previously approved stormwater management plan. You will need to demonstrate that rate and sediment control requirements are met with the existing regional wet detention basin. A copy of the full stormwater management report for SM2022-0366 is available upon request.

Response: Upon calculating the total impervious area while considering gravel to be impervious, we found our impervious lot coverage to be 4.02 acres of the 5.25-acre lot, or 76.5%, less than the maximum 85% allowed.

Comment 4: It appears there are no on-site stormwater BMP's proposed for this development. At a minimum, infiltration (90% predevelopment stay-on) and oil and grease control will need to be addressed on-site. A site evaluation for infiltration per WDNR Technical Standard 1002 will be required.

Response: From pre-development conditions, runoff is 6.47 cfs, which requires a minimum of 5.82 cfs for infiltration.

Per our Geotechnical report dated July 31, 2023, boring logs P-2 and P-8 are near the proposed swales. At a depth of 5', boring P-2 yielded poorly graded sand (SP), with an infiltration rate of 3.60 inches/hour. Meanwhile, boring P-8 yielded clayey sand with gravel (SC) at 5', with an infiltration rate of 3.60 inches/hour.

Open flow calculations have been done for the two proposed swales to the north and south of the property based on a 24-hr, 1-yr event. These swales are sloped at 0.5% at depths of approximately 18 inches.

Comment 5: Stormwater modeling and calculations must be done using NRCS TR-55 methodology and the design storms and rainfall distribution described in ordinance. Rational method is not an acceptable methodology for site design.

Response: Noted, SWM data used in for the regional detention facility has been used for our calculations.

Comment 6: Swales will need to be designed for capacity and stability for a 10-year, 24 hour storm event. Disturbed slopes 3:1 or greater will need to be erosion matted during site stabilization.

Response: Noted, swales have been designed for a 10-year, 24-hour event.

Comment 7: The stable outlet standard will need to be addressed. It appears swales will direct runoff to the southeast corner of the site. You will need to demonstrate the outlet is stable for a 10-year, 24 hour storm event. From

Response: Outlet control structures have been designed based on the results of a 10-year, 24-hour event.

Comment 8: All erosion control and stormwater management practices will need to be designed to meet applicable WDNR and Dane County Technical Standards.

Response: Comment noted.

If you have any questions or require additional information, please reach out to either me at asharma@bowman.com or Pranavi Koka at to pkoka@bowman.com.

Thank you,

Ajay Sharma
Civil Engineer II
Bowman