

Applicant: Michael Bauer
Consultant: Vladimir Sivriver; Engineering Design and Services
Project: Building Addition and Site Improvements – Bauer's Service Center
Location: 13118 Excelsior Boulevard: Minnetonka
Rule(s): 4 and 5
Reviewer(s): BCO

General Background & Comments

The project proposes the construction of a new service center building and site improvements on the Bauer Custom Hitches site located at 13118 Excelsior Boulevard in Minnetonka. Permit #2002-23 was issued for expansion work on the site and the construction of a stormwater basin to comply with the District's stormwater requirements at the time. The 2002 rules did not require volume retention nor the annual removal efficiency of 90% for total suspended solids and 60% for total

The project site information includes the following:

- Existing Site Area: 56,652 square feet
- Existing Site Impervious Area: 23,512 square feet
- Post-construction Site Impervious Area: 32,920 square feet
- A 40% increase in the site impervious area (9408 square feet)

The applicant's submittal assumed stormwater management for the entire proposed site impervious area, 32,920 square feet, used for the stormwater analysis.

The District's requirements for both stormwater management and erosion and sediment control apply to the project because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area is altered, Rules 4.2.1a and b and 5.2.1a and b.

Exhibits

1. Permit Application signed and dated March 3, 2021.
2. Plans dated March 24, 2021, prepared by EDS, Inc.
3. Stormwater Management Report dated March 24, 2021 prepared by EDS, Inc.
4. Geotechnical information, prepared for Enviroscience and dated April, 1995, associated with for an environmental assessment for the removal of underground fuel storage tanks on the site.

The application with the submittal items above is complete.

4.0 Stormwater Management

Stormwater management for compliance with Rule 4.3.1 will be provided by an on-site basin (Basin) constructed as part of the work proposed and approved for Permit #202-23.

The Basin provides rate control, volume retention and water quality management for the site runoff. Currently, the majority of stormwater runoff from the site drains to the Basin however two areas of the site drain off-site, 1) to the northeast and 2) to Excelsior Boulevard.

Rule 4.3.1b requires the 2-, 10-, and 100-year post development peak runoff rates be equal to or less than the existing discharge rates where stormwater leaves the site. The applicant used a HydroCAD hydrologic model to simulate runoff rates at all collection points where stormwater discharge leaves the site. The existing and proposed 2-, 10- and 100-year frequency discharges from the site are:

Existing Conditions			
Modeled Discharge Location	2 year (c.f.s.)	10 year (c.f.s.)	100 year (c.f.s.)
To the Northeast	<1.0	<1.0	1.4
Basin Outflow	<1.0	<1.0	13.9
To Excelsior Boulevard	<1.0	<1.0	1.3

Proposed Conditions			
Modeled Discharge Location	2 year (c.f.s.)	10 year (c.f.s.)	100 year (c.f.s.)
To the Northeast	<1.0	<1.0	1.2
Basin Outflow	<1	<1	8.3
To Excelsior Boulevard	<1.0	<1.0	1.3

Rule 4.3.1b is met.

As previous stated in the Exhibits, the geotechnical information provided was prepared for Enviroscience, dated April, 1995, and completed for an environmental assessment associated with the removal of underground storage tanks on the site. The evaluation identified the on-site underlying soil as sand (SW) with groundwater not encountered to a depth of 40+ feet, approximately elevation 938 M.S.L. A conservative design infiltration rate of 0.8 inches per hour has been assumed using the infiltration rates shown in the Minnesota Storm Water Manual.

An infiltration volume of 3,017 cubic feet is required from the proposed 32,920 square feet of site impervious area, Rule 4.3.1a. The Basin provides a volume of 3,308 cubic feet (3,017 cubic feet required) with an area of 1,661 square feet (943 square feet required) at a depth of 3.2 feet. This is the maximum depth of inundation allowable for the retention volume to be drawn down within 48 hours using an infiltration rate of 0.8 inches/hour. Rule 4.3.1a is met.

The District's water quality criterion requires 60% annual removal efficiency for total phosphorus and 90% annual removal efficiency for total suspended solids. The results from a MIDS model, rerun by the District as part of the review, shows the Basin will provide an annual removal efficiency of 93% for total phosphorus (1.6 lbs.) and 93% for total suspended solids (285 lbs.). We agree with the modeling results. Rule 4.3.1c is met.

Rule 4.5.4d (i) requires at least three feet of separation between the bottom of a stormwater management facility and groundwater. The geotechnical report identifies groundwater was not encountered to a depth of 40+ feet, approximately elevation 938 M.S.L. The bottom of the Basin is shown to be 968 M.S.L., providing a separation of 30.0 feet, complying with Rule 4.5.4d (i).

Rule 4.3.3c states that all new and reconstructed buildings must be constructed such that the low floor is at least two feet above the 100-year high water elevation or one foot above the emergency overflow of a constructed facility. Additionally, a separation of at least two feet must be provided between the 100-year high-water elevation of the stormwater management facilities and the elevation where surface water could enter a structure. The finished-floor elevation of the proposed Service Center building, 978 M.S.L., is identified as the low floor and low opening elevation of the structure. For the existing C-Store, elevation 979.5 M.S.L. is identified as both the low floor and low opening elevation of the structure. The calculated 100-year high water elevation of the Basin is 974.6 M.S.L., providing 3.0 feet of separation with the proposed Service Center and 4.5 feet with the existing C-Store. The project conforms to NMCWD Rule 4.3.3.

In accordance with Rule 4.3.1a (i), where infiltration facilities, practices or systems are proposed, pre-treatment of runoff must be provided. A sump manhole in the existing on-site catch basin and a 10-foot pervious area from the back of the curb to the Basin will provide pretreatment for runoff entering the Basin. Rule 4.3.1a (i) is met.

In accordance with Rule 4.3.4, a post-project chloride management plan must be provided that will, 1) designate an individual authorized to implement the chloride-use plan and 2) designate a MPCA certified salt applicator engaged in the implementation of the chloride-use plan for the site.

5.0 Erosion and Sediment Control

The requirements of Rule 5.0 - Erosion and Sediment Control are applicable to the project since land-disturbing activities will involve excavation of more than 50 cubic yards of material and will disturb 5,000 square feet of more of surface area or vegetation, Rules 5.2.1a and b.

For temporary erosion control measures, silt fence will be installed at the limits of disturbance. A storm drain inlet protection will be provided onsite in the parking area downgradient from land-disturbing activities. A rock construction entrance will be provided at the entryway onto the site.

Michael Bauer is the project contact.

11.0 Fees

Fees for the project are:

Rules 4.0 and 5.0	\$1,500
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12.0 Financial Assurances

Financial Assurances for the project are:

Rule 4: Volume Retention: 943 sq. ft. x \$12/sq. ft. = \$11,316	\$11,316
Chloride Management:	\$5,000
Rule 5: Perimeter control: 3700 L.F. x \$2.50/L.F. = \$925	
Inlet Control: 1 x \$100/each = \$100	
Site restoration: 0.8 acres x \$2,500/acre = \$2,000	\$3,025
Contingency and Administration	\$6,259

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. Rules 4 and 5 are met.
3. The proposed stormwater management facility will provide volume retention, rate control and water quality management in accordance with Rules 4.3.1 a, b, and c, respectively. In accordance with NMCWD Rule 4.3.5, the applicant must provide a maintenance and inspection plan that identifies and protects the design, capacity and functionality of the stormwater management facility.

Recommendation

Approval, contingent upon:

1. General Conditions
2. Financial Assurance in the amount of \$25,500, including \$20,600 for stormwater management, erosion control, and site restoration, and \$5,000 for compliance with the chloride management requirements.
3. A receipt showing recordation of a maintenance declaration for the on-site stormwater management facility, Rule 4.3.5. A draft of the declaration must be approved by the District prior to recordation.

By accepting the permit, when issued, the applicant agrees to the following stipulations:

1. Per Rule 4.5.8, an as-built drawing of the stormwater facilities conforming to the design specifications, including a stage volume relationship in tabular form for the on-site stormwater basin.
2. Submission of a plan for post-project management of Chloride use on the site. The plan must include 1) the designation of an individual authorized to implement the chloride use plan and 2) the designation of a Minnesota Pollution Control Agency certified salt applicator engaged in the implementation of the chloride-use plan for the site. The release of the \$5,000 of the financial assurance required for the chloride-management plan requires that chloride-management plan has been provided and approved by the District's Administrator.

3. For the release of the \$20,600 financial assurance required, Rule 12.4.1b requires demonstration and confirmation that the stormwater management facility has been constructed or installed and is functioning as designed and permitted. Verification, through daily observation logs and photographs, must be provided showing the stormwater facilities used for volume retention have drawn down within 48 hours from the completion of two 1-inch (approximate) separate rainfall events.

EXHIBIT 4

PROPOSED DRAINAGE AREAS

Call 48 Hours before digging
GOPHER STATE ONE CALL
Twin Cities Area 651-454-0002
MN. Toll Free 1-800-252-1166

LEGAL DESCRIPTION

That part of Tract B, registered Land Survey No. 937, files of the Registrar of Titles, County Hennepin, State of Minnesota, lying southwesterly of a line and its northwesterly extension described as commencing at northwest corner of said Tract B; thence South 88 degrees 25 minutes 00 seconds East, assumed bearing along the north line of said Tract B a distance of 90.75 feet to an angle point in said north line; thence South 24 degrees 00 minutes 29 seconds East a distance of 112.47 feet; thence South 48 degrees 12 minutes 23 seconds East a distance of 130.16 feet to the southeasterly line of said Tract B and there terminating.

REFERENCE BENCHMARK

ELEVATION = 984.94 @ NE COR. TOP OF STOOP, HOUSE
#4656 BAKER RD. (CITY OF MINNETONKA DATUM)

PROPOSED HARDCOVER

EXISTING C-STORE BUILDING	1,796 SQ. FT.
PROPOSED SERVICE CENTER	3,780 SQ. FT.
PROPOSED CONCRETE	426 SQ. FT.
PROPOSED BITUMINOUS	5,202 SQ. FT.
EXISTING CANOPY	2,275 SQ. FT.
EXISTING CONCRETE SURFACE	6,937 SQ. FT.
EXISTING BITUMINOUS SURFACE	12,504 SQ. FT.
TOTAL IMPERVIOUS AREA	32,920 SQ. FT.
TOTAL LOT AREA	56,652 SQ. FT.
PROPOSED HARDCOVER	58.2 %

LEGEND

- DENOTES FOUND PROPERTY IRON
- DENOTES SET 1/2" X 18" REBAR WITH PLASTIC CAP "PLS 25105"
- DENOTES BOUNDARY LINE
- DENOTES LOT LINE
- DENOTES SETBACK LINE
- DENOTES EASEMENT LINE
- 999.9 DENOTES EXISTING CONTOUR LINE
- FFE DENOTES FINISH FLOOR ELEVATION
- FO DENOTES FIBER OPTIC
- DENOTES DECIDUOUS TREE
- DENOTES CONIFEROUS TREE
- DENOTES ELECTRIC POWER POLE
- DENOTES ELECTRIC PEDESTAL
- DENOTES TELEPHONE PEDESTAL
- DENOTES GAS MANHOLE
- DENOTES GAS FILL CAP
- DENOTES GAS VENT
- DENOTES STORM CATCH BASIN (RECTANGLE)
- DENOTES CONCRETE SURFACE
- FFE DENOTES FINISH FLOOR ELEVATION
- DENOTES MANHOLE (UNKNOWN UTILITY)
- DENOTES STORM SEWER MANHOLE
- DENOTES ELECTRIC HAND HOLE
- DENOTES SIGN/POST
- DENOTES BITUMINOUS SURFACE
- DENOTES PROTECTION PIPE
- DENOTES LIGHT POLE
- DENOTES WATER VALVE
- DENOTES WATER CURB STOP
- DENOTES GAS PUMP
- DENOTES FIRE HYDRANT
- DENOTES PROPOSED ELEVATION
- DENOTES RETAINING WALL
- DENOTES GRASS AREA
- DENOTES BITUMINOUS ROAD AREA
- DENOTES POND AREA
- DENOTES BUILDING AREA
- DENOTES CONCRETE SURFACE AREA

NOTES

1. NO TITLE INFORMATION WAS PROVIDED FOR THIS SURVEY. THIS SURVEY DOES NOT PURPORT TO SHOW ALL EASEMENTS OF RECORD.
2. NO COMPLETE TOPOGRAPHICAL SURVEY WAS PERFORMED IN THE PREPARATION OF THIS SURVEY.
3. AREA OF PROPERTY = 56,156 SQ. FT OR 1.29 ACRES.
4. EXISTING UTILITIES AND SERVICES SHOWN HEREON OWNER LOCATED EITHER PHYSICALLY ON THE GROUND DURING THE SURVEY OR FROM EXISTING RECORDS MADE AVAILABLE TO US OR BY RESIDENT TESTIMONY. OTHER UTILITIES AND SERVICES MAY BE PRESENT. VERIFICATION AND LOCATION OF UTILITIES AND SERVICES SHOULD BE OBTAIN FROM THE OWNERS OF RESPECTIVE UTILITIES BY CONTACTING GOPHER STATE ONE CALL AT (651) 454-0002 PRIOR TO ANY DESIGN, PLANNING OR EXCAVATION.

NO.	DATE	DESCRIPTION	BY



ENGINEERING DESIGN & SURVEYING
6480 Wayzata Blvd. Minneapolis, MN 55426
OFFICE: (763) 545-2800 FAX: (763) 545-2801
EMAIL: info@edsmn.com WEBSITE: http://edsmn.com

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED SURVEYOR UNDER THE LAWS OF THE STATE OF MINNESOTA.

Vlad Sivriker
VLADIMIR SIVRIKER P.E. NO. 25105

DATED: 03/24/21

Proposed Drainage Areas

JOB NAME: BAUER'S CUSTOM HITCHES

LOCATION: 13118 EXCELSIOR BLVD.
MINNETONKA, MN 55343

DRAWN BY: IS

CHECKED BY: VS

PROJ. NO. 13-001

SHEET NO. 2 of 2