Applicant: Eric Hamilton, Edina Public Schools
Consultant: David Rey, Anderson-Johnson Associates Inc.
Project: Edina High School 2020 Athletic Field Improvements
Location: 6754 Valley View Road: Edina
Rule(s): 4, 5
Reviewer(s): BCO/LLH

General Background & Comments
The project proposes athletic field improvements at Edina High School, 6754 Valley View Road in Edina, MN. Proposed athletic field improvements include replacement of the synthetic turf at the athletic field located on the west side of Edina High School. The existing athletic field footprint will be expanded to include synthetic turf at the rock mulch walking path surrounding the perimeter of the existing field. In addition to turf replacement, site improvements including construction of an ADA accessible path, retaining wall construction, seat wall improvements, utility improvements, landscaping, grading and stormwater infrastructure are proposed.

The 63.5-acre site includes adjoined parcels under common ownership with two schools on the property, Valley View Middle School (VVMS) and Edina High School (EHS). Two previous projects have been permitted on the site since Redevelopment Rule 4.2.3 became applicable - NMCWD Permits 2016-05 and 2020-18. The 2016 project was completed at Edina High School, 6754 Valley View Road. Work included construction of a building addition, parking area expansion, athletic field improvements and construction of a stormwater management facility. Proposed work for the permitted 2020 improvement project includes site and courtyard improvements at Valley View Middle School, 6750 Valley View Road. Proposed work includes replacement of an existing shed, loading dock improvements including replacement of concrete and asphalt pavement, interior courtyard renovations, and utility improvements.

Updated project site information based on the proposed 2020 EHS Athletic Field Improvements project is summarized below in conjunction with previous permit applications for the site. The project site information includes the following:
As previously stated, EHS conducted building additions and improvements at the project site in 2016. The 2016 project included construction of a 97,966 square foot building addition, expansion of the parking lot from 866 stalls to 931 stalls and reconstruction and construction of two artificial turf fields at the project site. Stormwater management was proposed and constructed as part of the 2016 EHS Renovations project and includes an underground infiltration system at the east side of the site beneath the constructed athletic fields. The constructed underground stormwater management facility (UGSWMF) provides rate control, volume retention and water quality management for the project site, including 26.6 acres of aggregate disturbed area resulting from the 2016 and two 2020 projects.

The Nine Mile Creek Watershed District’s Rule for Redevelopment, Rule 4.2.3, states, if a proposed activity will disturb more than 50% of the existing impervious surface on a site or will increase the imperviousness of the entire site by more than 50%, stormwater management criteria of Rule 4.3 will apply to the entire project site. Otherwise, the stormwater requirements will apply only to the disturbed, replaced and net additional impervious surface on the project site. Stormwater management is therefore required for the aggregate disturbed area of 26.6 acres, including 10.4 acres of disturbed and reconstructed impervious surface and 6.7 acres of net additional impervious surface.

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

The project does not propose to fill or impact the 100-year floodplain of the creek, 853 M.S.L. - Atlas 14 management elevation.

A wetland boundary determination and MnRAM Assessment for the wetland areas on the School property were completed for the Three Rivers Regional Trail project. This information was provided to the School District by Three Rivers Park District. The District approved the boundary determination, July 2014, and accepted the MnRAM Assessment in August 2014.
The onsite wetlands were determined to be high value wetlands requiring a minimum buffer of 30 feet and an average buffer of 60 feet, Rule 3.4.1a. In conjunction with the 2016 EHS Renovations project, the District approved the wetland boundary determination and accepted the high value wetland determination for the wetland on the School District property. Wetland buffer requirements were approved and met as part of the 2016 EHS Renovation project, and the wetland buffer was constructed thereafter. No wetland fill or impacts within the onsite wetlands are proposed for the EHS 2020 Athletic Field Renovations project, Permit 2020-45.

Silt fence and a rock construction are shown to be installed for erosion control, and sod is utilized for permanent stabilization.

Braun Intertec conducted a geotechnical evaluation and performed standard penetration test (SPT) borings onsite throughout February, July, August and November 2015. The soil borings indicate that groundwater was encountered at a depth of 15 feet in boring ST 51-15, elevation 847.4 M.S.L. This boring (of the approximate 20 borings taken in the area) appears to have the highest elevation that groundwater was encountered.

Exhibits
3. Stormwater Management Report dated April 10, 2020, revised May 13, 2020, prepared by Anderson-Johnson Associates, Inc. including the following supplemental items:
   - P8 water quality modeling output report dated April 9, 2020 prepared by Anderson-Johnson Associates, Inc.
   - Phase 1 Environmental Site Assessment dated June 30, 2015 prepared by Braun Intertec.
   - Soil borings dated throughout February, July, August and November 2015 provided by Braun Intertec.
4. As-builts dated April 28, 2016 prepared by Contech Engineered Solutions, LLC.
5. E-mail correspondence dated April 30, 2020 indicating requests that needed to be addressed for the submittal to be considered complete.

The applicant with the revised submittal has addressed the items identified in our April 30, 2020 e-mail. The submittal is complete.

4.0 Stormwater Management
The underground stormwater management facility (UGSWMF) constructed in 2016, following issuance of Permit 2016-05, includes 20 rows of 60-inch perforated CMP with each row being 442 feet in length. The underground infiltration system was installed beneath the two artificial turf athletic fields on the east side of EHS. Stormwater modeling for existing pre-2016 project
conditions was provided. Stormwater modeling for proposed conditions was updated and provided to reflect the post-2020 projects’ conditions.

The constructed UGSWMF was designed to meet stormwater management criteria for the 2016 project and two 2020 projects at the site under NMCWD Permits 2016-05, 2020-18 and 2020-45. The system will provide the rate control, volume retention and water quality management required to meet District Rule 4.3.1.

In order to meet the rate control criteria listed in Rule 4.3.1b, the 2-, 10-, and 100-year post development peak runoff rates must be equal to or less than the existing discharge rates at all locations where stormwater leaves the site. The applicant used a HydroCAD hydrologic model to simulate runoff rates for pre- and post-development conditions for the 2-, 10-, and 100-year frequency storm events.

The existing and proposed 2, 10 and 100 year frequency discharges from the site are:

<table>
<thead>
<tr>
<th>Modeled Discharge Location</th>
<th>2-Year Discharge (cfs)</th>
<th>10-Year Discharge (cfs)</th>
<th>100-Year Discharge (cfs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ex Prop</td>
<td>Ex Prop</td>
<td>Ex Prop</td>
</tr>
<tr>
<td>NMC Total</td>
<td>95.2 42.9</td>
<td>163.3  86.2</td>
<td>320.0 182.9</td>
</tr>
<tr>
<td>NMC West</td>
<td>36.3  27.4</td>
<td>60.7  44.4</td>
<td>115.8  82.6</td>
</tr>
<tr>
<td>NMC East (Constructed UGSWMF discharge)</td>
<td>43.3  4.0</td>
<td>70.6  16.5</td>
<td>132.4  38.1</td>
</tr>
</tbody>
</table>

The EHS Athletic Field 2020 Improvement project disturbed area is within NMC West modeled discharge location. Proposed discharge rates for the NMC Total modeled discharge location are based on the total post construction site impervious area of 31.86 acres, including 6.70 acres of net additional impervious surface and 10.37 acres of disturbed and reconstructed impervious surface as a result of the 2016 and two 2020 projects. Rule 4.3.1b is met.

In existing conditions, the majority of stormwater runoff from the EHS Athletic Field 2020 Improvement project disturbed area is conveyed to a pipe network via overland flow that eventually discharges to Nine Mile Creek. The project proposes construction of a subsurface drain tile system surrounding the perimeter of the proposed athletic field footprint. In proposed conditions, stormwater runoff from the athletic field drains to the 8-inch perforated drain tile system and is conveyed to the existing pipe network via two (2) existing catch basins located at southwest and northeast corners of the athletic field. The two (2) existing catch basins
connect to the existing pipe network on the west side of the property and convey runoff to Nine Mile Creek.

As previously stated, the constructed underground infiltration system was designed to meet stormwater management criteria for the 2016 project and two 2020 projects at the site under NMCWD Permits 2016-05, 2020-18 and 2020-45.

The table below summarizes the volume retention for the site. The proposed project is in conformance with Rule 4.3.1a.

<table>
<thead>
<tr>
<th>Site Information</th>
<th>Required Volume Retention Depth (inches)</th>
<th>Disturbed, Replaced and Net Additional Impervious Area (acres)</th>
<th>Required Abstraction Volume (cubic feet)</th>
<th>Provided Abstraction Volume (cubic feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit 2016-05</td>
<td>1.0</td>
<td>16.57</td>
<td>60172</td>
<td>81382</td>
</tr>
<tr>
<td>Permit 2020-18</td>
<td>1.1</td>
<td>0.13</td>
<td>535</td>
<td>-</td>
</tr>
<tr>
<td>Current Permit 2020-45</td>
<td>1.1</td>
<td>0.36</td>
<td>1438</td>
<td>-</td>
</tr>
<tr>
<td>Site Aggregate Total</td>
<td>-</td>
<td>17.06</td>
<td>62145</td>
<td>81382</td>
</tr>
</tbody>
</table>

Based on volume retention depth criteria outlined in the Nine Mile Creek Watershed District Rules in 2016 and 2020, the site aggregate volume required from the disturbed, replaced and net additional impervious surface as a result of the 2016 and two 2020 projects is 62,145 cubic feet. The constructed UGSWMF provides an available volume of 81,382 cubic feet (62,145 cubic feet required) to be drawn down within 48 hours over an area of 79,118 square feet for volume retention. The revised HydroCAD model dated May 13, 2020 identifies an infiltration area footprint adjusted from 71,177 square feet, permit 2020-18 submittal to 79,118 square feet, permit 2020-45 and 2016-05 submittals. We reviewed the submitted UGSWMF as-builts dated April 28, 2016 and concur with the revised HydroCAD model identifying a system outlet invert, 854 M.S.L. and footprint, 79,118 square feet. Rule 4.3.1a (ii) is met.

Soil borings were taken at the underground infiltration area on November 15, 2015 and indicate the underlying soils vary from silty sand (SM) to sandy lean clay (CL). Approximately 70% of the underground system is within the sandy soils and 30% within the clay soils. An infiltration rate of 0.45 inches/hour is used for the SM soil type material and 0.06 inches/hour for the CL soil type using design criteria outlined in the Minnesota Storm Water Manual.

In accordance with Rule 4.3.1a (i), where infiltration facilities, practices or systems are proposed, pretreatment of runoff must be provided. To comply with Rule 4.3.1a (i), 450 lineal feet of 84-inch CMP was constructed as a “clean-out” chamber (sump) for runoff prior to discharging to the infiltration area. This system was constructed as part of the 2016 EHS Renovation project. Rule 4.3.1a (i) is met.

As previously stated, the total disturbed, reconstructed and net additional impervious surface as a result of the 2016 project and two 2020 projects is 17.06 acres, including 6.70 acres of net additional impervious surface and 10.37 acres of disturbed and reconstructed impervious
The UGSWMF receives site runoff from 18.10 acres (17.06 acres required) of impervious surface, including site runoff from the 2016 EHS and 2020 VVMS project disturbed areas. The District’s water quality criterion requires a 60% annual removal efficiency for phosphorus and 90% annual removal efficiency for total suspended solids. A P8 model has been submitted showing that the constructed UGSWMF provides 99.6% (12,250 lbs.) annual removal for total suspended solids (TSS) and 95.2% (39 lbs.) annual removal efficiency of total phosphorus (TP) for water quality treatment. Water quality requirements identified in Rule 4.3.1c are met.

Rule 4.3.3.a 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 natural overflow of a waterbody. No new buildings will be constructed as part of the 2020 EHS Athletic Fields Renovation project. In addition, no new stormwater management facilities will be constructed; therefore, no adjacent habitable building will be brought into noncompliance with standards in Rule 4.3.3.

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.

Rule 4.5.4d (i) requires no evidence of groundwater or redoximorphic soil conditions within three (3) feet of the bottom of a stormwater management facility. The previously submitted soil borings dated November 15, 2015 indicate that groundwater was encountered at a depth of 15 feet in boring ST 51-15, elevation 847.4 M.S.L. This boring (of the approximate 20 borings taken in the area) appears to have the highest elevation that groundwater was encountered. The bottom of the constructed UGSWMF is 852 M.S.L., providing 4.6 feet of separation. Rule 4.5.4d (i) is met.

5.0 Erosion and Sediment Control
Silt fence and a rock construction is shown to be installed for erosion control, and sod is utilized for permanent stabilization.

The project contact is David Rey, Anderson-Johnson.

11.0 Fees
Because the property owner is a public entity, no fees are charged.

Rules 4.0 and 5.0 $0

12.0 Financial Assurances
Because the property owner is a public entity, the District’s financial assurance requirements do not apply.

Sureties for the project are: $0

Findings
The proposed project includes the information necessary, plan sheets and erosion control plan for review. Rules 4 and 5 are met.
**Recommendation**

Approval, contingent upon:

1. **General Conditions**

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 project conforming to the design specifications as approved by the District must be submitted. (Also required as a condition of Permits 2016-05 and 2020-18).

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. It is required that the chloride-management plan has been provided and approved by the District’s Administrator.

3. Per Rule 4.2.1, the requirements of the Rule 4 – Stormwater Management apply to land-disturbing activities that will disturb 5,000 square feet or more of surface area. For future development at the site, the applicant is required to evaluate compliance with stormwater management criteria based on land-disturbing activities in aggregate, with respect to all development and redevelopment that has occurred on the site or on adjacent sites under common or related ownership (Rule 4.2.5). Future redevelopment activities will be considered in aggregate and apply to disturbed, replaced and net additional impervious surface for the project site (Rule 4.2.3).
1. All construction must comply with applicable state and local ordinances.
2. The contractor will be responsible for and shall pay for all construction staging / layout.
3. The contractor shall ensure, at his own expense, that a copy of all permits to the landscape architect and school.
4. Install control fencing and barricading as necessary to protect the public.
5. Inspect site to determine extent of work and nature of materials to be handled.
6. Refer to specifications for submittals requirements.
7. Check all plan and detail dimensions and verify same before final layout.
8. Maintainadjacent property and public streets clean from construction caused dirt and debris on a daily basis. Protect drainage systems from sedimentation as a result of construction related dirt and debris.
9. Maintain dust control during grading operations.
10. All broom control methods shall comply with MPCA and local regulations.
11. The contractor shall ensure that berms are protected by silt fences, and erosion control measures are in place.
12. Silt fences shall be constructed and maintained according to the specifications.
13. Proposed contours and spot elevations are shown to finish grade unless otherwise noted.
14. All disturbed areas which are not designated to receive synthetic turf or pavement shall receive at least 6" of topsoil and shall be sodded.
15. All existing utilities, verify location, size and elevation of all existing utilities. Verify locations, sizes and elevations of same before beginning construction.
NOTES:

1. REFER TO SHEET C1.0: TITLE SHEET FOR GENERAL NOTES.

2. MINIMIZE DISTURBANCE TO SITE AND PROTECT EXISTING VEGETATION AND SITE FEATURES;
   OWNER IS TO REMAIN.

3. REFER TO SHEET C1.0: TITLE SHEET FOR ADDITIONAL INFORMATION.

4. VISIT THE SITE PRIOR TO BIDDING; BE FAMILIAR WITH ACTUAL CONDITIONS IN THE FIELD;
   EXTRA COMPENSATION WILL NOT BE ALLOWED FOR CONDITIONS WHICH COULD HAVE BEEN
   DETERMINED OR ANTICIPATED BY EXAMINATION OF THE SITE, THE CONTRACT DRAWINGS AND
   THE INFORMATION AVAILABLE PERTAINING TO EXISTING SOILS, UTILITIES AND OTHER SITE
   CHARACTERISTICS.

5. THE CONTRACTOR SHALL HIRE THE SERVICES OF A UTILITY LOCATOR COMPANY TO LOCATE
   ALL PRIVATELY OWNED UTILITIES THAT MAY BE DISTURBED BY CONSTRUCTION OPERATIONS.
SYNTHETIC TURF FIELD AREA (86,300 SF)
- Existing: ~75,950 SF
- Expansion Area: ~10,350 SF

NOTES:
1. REFER TO SHEET C1.0 - TITLE SHEET FOR GENERAL NOTES.
2. CHECK ALL PLAN AND DETAIL DIMENSIONS AND VERIFY SAME BEFORE FIELD LAYOUT.
3. ALL DIMENSIONS ARE NOT DESIGNATED TO BE FUSED OR REFERENCED. SYNTHETIC TURF SHALL BE REFINED AT LEAST 6" OF TOPSOIL, AND SHALL BE EDGED WITH A 6" WIDE CONCRETE CURB.
4. WHERE NEW AGGREGATE MEETS EXISTING, THE CONTRACTOR SHALL REMOVE TOPSOIL AT JOINT BETWEEN EXISTING AND NEW AS REQUIRED TO ALLOW NEW SURFACE TO BE BLAND WITH EXISTING.
5. PROVIDE RECYCLED ROCK MULCH OVER WEED BARRIER.
6. PROVIDE FINISH GRADING OF EXISTING AGGREGATE.

LEGEND
- PROPERTY LINE
- LAYER LIGHT PULL WITH CONCRETE
- EXISTING LIGHT PULL REFERENCE
- PROPOSED LIGHT PULL REFERENCE
- PROPOSED SYNTHETIC TURF (EXISTING AREA)
- PROPOSED SYNTHETIC TURF (EXPANSION AREA)
- PROPOSED CONCRETE WALL
- PROPOSED CONCRETE SLAB
- PROPOSED CONCRETE CURB
- PROPOSED SOFT LANDSCAPE REFERENCE
- PROPOSED CONCRETE FLOOR REFERENCE
- PROPOSED ASSOCIATED ROCK MULCH OVER WEED BARRIER

REFERENCES ARE TO SHEET C2.1 DETAIL SHEET NUMBER (TOP) DETAIL I.D NUMBER (BOTTOM) REFERENCE KEY TO SITE DETAILS

FIELD IMPROVEMENTS
EDINA HIGH SCHOOL
JRP ASSOCIATES, INC.
ADD #1 4/3/20

7575 GOLDEN VALLEY ROAD                            SUITE 200                           MINNEAPOLIS, MN 55427
Edina, MN 55424
FAX (763) 544-0531                                                                                                         PH (763) 544-7129
RETAINING WALL PLAN

SYNTHETIC TURF FIELD AREA (86,300 SF)
Existing: ~75,950 SF
Expansion Area: ~10,350 SF

RETAINING WALL AND FENCE NOTES:
1. WALL BLOCKS: RETAINING WALL SHOULD BE CONSTRUCTED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND WALL DESIGN ENGINEER'S REQUIREMENTS.
2. USE "RETAINING" WALL BLOCKS FOR BASE OF THE WALL AND WHERE ONE-SIDE OF MANUFACTURER'S INSTRUCTIONS AND WALL DESIGN ENGINEER'S REQUIREMENTS.
3. PROVIDE 4' (TYPICAL) STEPS OF WALL HEIGHT IN ORDER TO MATCH GRADE OF CONCRETE.
4. "STEPDOWN" BLOCK (2-SIDED AND 3-SIDED) AS REQUIRED.
5. CORE DRILL CAP AND UNDERLYING BLOCK TO RECEIVE FENCE POST. GROUT POST IN-PLACE.

LEGEND

NOTES:
1. REF. SHEET C1.4: TITLE SHEET FOR GENERAL NOTES.

SCALE: 1" = 20'