

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2022-060

Considered at Board of Managers Meeting: January 4, 2023

Received complete: November 11, 2022

Applicant: ISD #276, Paul Bourgeois

Consultant: Inspec, Inc., Cliff Buhman

Project: Groveland Elementary – The applicant proposes conversion of an existing trail into a drive lane to facilitate additional car stacking during school pick-up activities. Expansion of an existing subsurface stormwater management system will provide stormwater rate, volume and water quality control.

Location: 17310 Minnetonka Blvd., Minnetonka, MN

Reviewer: Scott Sobiech, P.E., Barr Engineering

Proposed Board Action

Manager _____ moved and Manager _____ seconded adoption of the following resolutions based on the permit report that follows and the presentation of the matter at the January 4, 2023 meeting of the managers:

Resolved that the application for Permit 2022-060 is approved, subject to the conditions and stipulations set forth in the Recommendations section of the attached report;

Resolved that on determination by the RPBCWD administrator that the conditions of approval have been affirmatively resolved, the RPBCWD president or administrator is authorized and directed to sign and deliver Permit 2022-060 to the applicant on behalf of RPBCWD.

Upon vote, the resolutions were adopted, _____ [VOTE TALLY].

Applicable Rule Conformance Summary

Rule	Issue	Conforms to RBPCWD Rules?	Comments	
C	Erosion Control Plan	See Comment.	See Rule Specific Permit Condition C1	
D	Wetland and Creek Buffers	Yes.		
J	Stormwater Management	Rate	Yes	
		Volume	Yes	
		Water Quality	Yes	
		Low Floor Elev.	Yes	
		Maintenance	See Comment	See Rule Specific Permit Condition J1
		Chloride Management	See Comment	See Stipulation #4
L	Permit Fee Deposit	NA	Governmental Agency.	
M	Financial Assurance	NA	Governmental Agency.	

Background

The proposed redevelopment includes the conversion of an existing trail into a drive lane to facilitate additional car stacking during school pick-up activities at Groveland Elementary School in Minnetonka, MN. Proposed work includes pavement rehabilitation of the existing bituminous trail along with the widening of the bituminous area to facilitate vehicular traffic, utility improvements, grading and restoration. Though the proposed work is a public transportation improvement, the work does not qualify as a linear project under the RBPCWD rules because it will be undertaken on the overall school property rather than a linear corridor (i.e., right-of-way).

Stormwater management will be provided by the expansion of an existing subsurface stormwater management facility on the site. The subsurface stormwater management system will provide stormwater rate, volume and water quality control. The proposed subsurface stormwater management system expansion consists of open-bottom corrugated wall stormwater collection chambers surrounded by free draining stone to promote infiltration below the facility outlet. The subsurface stormwater management system will accept runoff from the proposed new impervious surface and convey treated runoff from the regulated disturbed area to an existing storm sewer system tributary to a downstream pond.

Relevant project site information is provided below.

Site Information	Permit 2022-060
Total Site Area (acres)	11.054
Existing Site Impervious Area (acres)	5.975
Proposed Site Impervious Area (acres)	6.112
New (increase) in Site Impervious Area	0.137
Percent Increase in Impervious Surface	2.3
Disturbed/Rehabilitated Site Impervious Area (acres)	0.19
Percent Disturbance of Existing Impervious Surface	3.2
Total Disturbed Area (acres)	0.295

The materials reviewed for this permit application are summarized below:

1. Permit Application received August 6, 2022 (RPBCWD informed the applicant the submittal was incomplete on August 16, 2022, materials completing the application were received on November 11, 2022.)
2. Stormwater Management Report dated August 5, 2022 (revised September 9, 2022, and October 11, 2022).
3. Project Plan Set dated August 4, 2022 (revision received September 9, 2022, October 11, 2022, and November 29, 2022)
4. HydroCAD model received September 9, 2022 (revised October 13, 2022 and November 29, 2022)
5. Geotechnical Report dated January 2, 2011
6. Geotechnical Evaluation dated July 11, 2016
7. Double Ring Infiltrometer testing results dated October 31, 2022
8. MIDS water quality modeling received September 12, 2022 (revised October 11, 2022)
9. Draft maintenance agreement dated September 12, 2022

Rule C: Erosion Prevention and Sediment Control

Because the applicant proposes 0.295 acres of land-disturbing activity, the project must conform to the requirements in the RPBCWD Erosion Prevention and Sediment Control rule (Rule C, Subsection 2.1). The erosion and sediment control plan prepared by Inspec, Inc. includes installation of bioroll, inlet protection for storm sewer catch basins, a stabilized rock construction entrance, decompaction of areas compacted during construction, six inches of topsoil, and retention of native topsoil onsite. To conform to RPBCWD Rule C requirements, the following revisions are needed:

- C1. The Applicant must provide the name and contact information of the general contractor responsible for erosion prevention and sediment control at the site. RPBCWD must be notified if the responsible party changes during the permit term.

Rule J: Stormwater Management

Because the applicant proposes to disturb 0.295 acres of land-surface area, the project must meet the criteria of RPBCWD’s Stormwater Management rule (Rule J, Subsection 2.1). The criteria listed in Subsection 3.1 apply only to the disturbed areas on the project site because the project increases the imperviousness by 2.3 percent and disturbs none of the existing impervious surface on the site (Rule J, Subsection 2.3) – well under the 50 percent disturbed or expanded impervious area threshold for applicability of stormwater management requirements to the entire project site.

The applicant is proposing the expansion of an existing subsurface stormwater management system to provide the rate control, volume abstraction and water quality management for the disturbed areas and additional impervious surface on the site resulting from activities permitted under the current project. Pretreatment is being provided by grass filter strips.

Rate Control

In order to meet the rate control criteria listed in Subsection 3.1.a, 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 using a nested rainfall distribution, and a 100-year frequency, 10-day snowmelt event. The existing and proposed discharges from the site are summarized in the table below. The proposed project is in conformance with RPBCWD Rule J, Subsection 3.1.a.

Modeled Discharge Location	2-Year Discharge (cfs)		10-Year Discharge (cfs)		100-Year Discharge (cfs)		10-Day Snowmelt (cfs)	
	Ex	Prop	Ex	Prop	Ex	Prop	Ex	Prop
East	2.4	2.1	4.1	3.3	8.2	5.4	0.4	0.2

Volume Abstraction

Subsection 3.1.b and 2.3 of Rule J require the abstraction onsite of 1.1 inches of runoff from all disturbed and additional impervious surface of the site. An abstraction volume of 547 cubic feet is required from the 0.137 acres of new impervious area on the project for volume retention.

Braun Intertec advanced two borings in the location of the proposed subsurface detention and infiltration practice. The soil borings performed by Braun on November 5, 2010 show that soils in located of the proposed subsurface stormwater management system are primarily silty sands (SM) overlaying poorly graded sands (SPC). Two double ring infiltrometer tests were performed by Braun on October 20, 2022 at the proposed location of the stormwater management facility expansion. The observed infiltration rates ranged from 2.5 to 19.4 inches per hour (in/hr). The engineer concurs with the applicant’s use of design infiltration rate of 1.63 in/hr beneath the subsurface stormwater facility

based on rates measured at the site. With these infiltration rates, the BMP will draw down within the required 48 hours.

The table below summarizes the volume abstraction for the site. The proposed project is in conformance with Rule J, Subsection 3.1.b.

Required Abstraction Depth (inches)	Required Abstraction Volume (cubic feet)	Provided Abstraction Depth (inches)	Provided Abstraction Volume (cubic feet)
1.1	547	1.6	800

Groundwater was observed at a depth of 14 feet below grade (elevation 943 feet). The bottom of the proposed subsurface stormwater management system is set at 949.16 feet, thus providing the required three feet of vertical separation (Rule J, subsection 3.1biiA). The engineer concurs with the modeling and finds that the proposed project conforms with Rule J, Subsection 3.1.b.

Water Quality Management

Subsection 3.1.c of Rule J requires the Applicant provide volume abstraction in accordance with 3.1b or least 60 percent annual removal efficiency for total phosphorus (TP), and at least 90 percent annual removal efficiency for total suspended solids (TSS) from site runoff, and no net increase in TSS or TP loading leaving the site from existing conditions. Because the BMPs proposed by the applicant provide more volume abstraction than is required by 3.1b, the engineer finds that the proposed project is in conformance with Rule J, Subsection 3.1.c.

Low floor Elevation

All new buildings must be constructed such that the lowest floor is at least two feet above the 100-year high-water elevation or one foot above the emergency overflow of a stormwater-management facility according to Rule J, Subsection 3.6a. Because no new structures with low floors will be constructed as part of the proposed work, subsection 3.6a does not impose requirements on the project.

Stormwater management facilities must be constructed at an elevation and location that ensure no habitable structure will be brought into noncompliance with the low floor criteria according to Rule J, subsection 3.6b. The low floor elevation of the school building and the adjacent stormwater management features is summarized below. Because the separation between the existing low floor elevation and the 100-year flood elevation in the subsurface stormwater facility is 7.21 feet, which is greater than the required 2 foot separation, the location of the detention basin is in conformance with Rule J, Subsection 3.6b.

Structure	Low Floor Elevation of Building (feet)	100-year Event Flood Elevation of Adjacent Stormwater Facility (feet)	Freeboard to 100-year (feet)
School Building	960.75	953.54	7.21

Maintenance

Subsection 3.7 of Rule J requires the submission of a maintenance plan. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed. A draft maintenance was provided by the applicant on September 12, 2022 for review. To conform to the RPBCWD Rule J the following revisions are needed:

- J1. Permit applicant must work with district staff and engineer to revise the submitted maintenance and inspection agreement to incorporate the facilities proposed under this application, including the appropriate permit number, pre-treatment facilities and the subsurface stormwater management system. The draft declaration must be reviewed and approved by RPBCWD prior to execution as a condition.

Wetland Protection

Subsection 3.10 of Rule J requires that the proposed work may not alter a site in a manner that alters the bounce in water level, duration of inundation, or change the runout elevation in the subwatershed in which the site is located for any wetland receiving discharge directly from the site beyond the limits specified in Table J.1 and that discharge from regulated disturbed areas to a protected wetland must be treated. Because the project does not propose to discharge to a wetland, subsection 3.10 does not impose requirements on the proposed project.

Chloride Management

Subsection 3.8 of Rule J requires the submission of chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan. To close out the permit, the permit applicant must provide a chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan at the site.

Applicable General Requirements:

1. The RPBCWD Administrator and Engineer shall be notified at least three days prior to commencement of work.
2. Construction shall be consistent with the plans and specifications approved by the District as a part of the permitting process. The date of the approved plans and specifications is listed on the permit.

3. Construction must be consistent with the plans, specifications, and models that were submitted by the applicant that were the basis of permit approval. The date(s) of the approved plans, specifications, and modeling are listed on the permit. The grant of the permit does not in any way relieve the permittee, its engineer, or other professional consultants of responsibility for the permitted work.
4. The grant of the permit does not relieve the permittee of any responsibility to obtain approval of any other regulatory body with authority.
5. The issuance of this permit does not convey any rights to either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
6. In all cases where the doing by the permittee of anything authorized by this permit involves the taking, using or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements or interests, the permittee, before proceeding therewith, must acquire all necessary property rights and interest.
7. RPBCWD's determination to issue this permit was made in reliance on the information provided by the applicant. Any substantive change in the work affecting the nature and extent of applicability of RPBCWD regulatory requirements or substantive changes in the methods or means of compliance with RPBCWD regulatory requirements must be the subject of an application for a permit modification to the RPBCWD.
8. If the conditions herein are met and the permit is issued by RPBCWD, the applicant, by accepting the permit, grants access to the site of the work at all reasonable times during and after construction to authorized representatives of the RPBCWD for inspection of the work.

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. The proposed project will conform to Rules C and J if the Rule Specific Permit Conditions listed above are met.

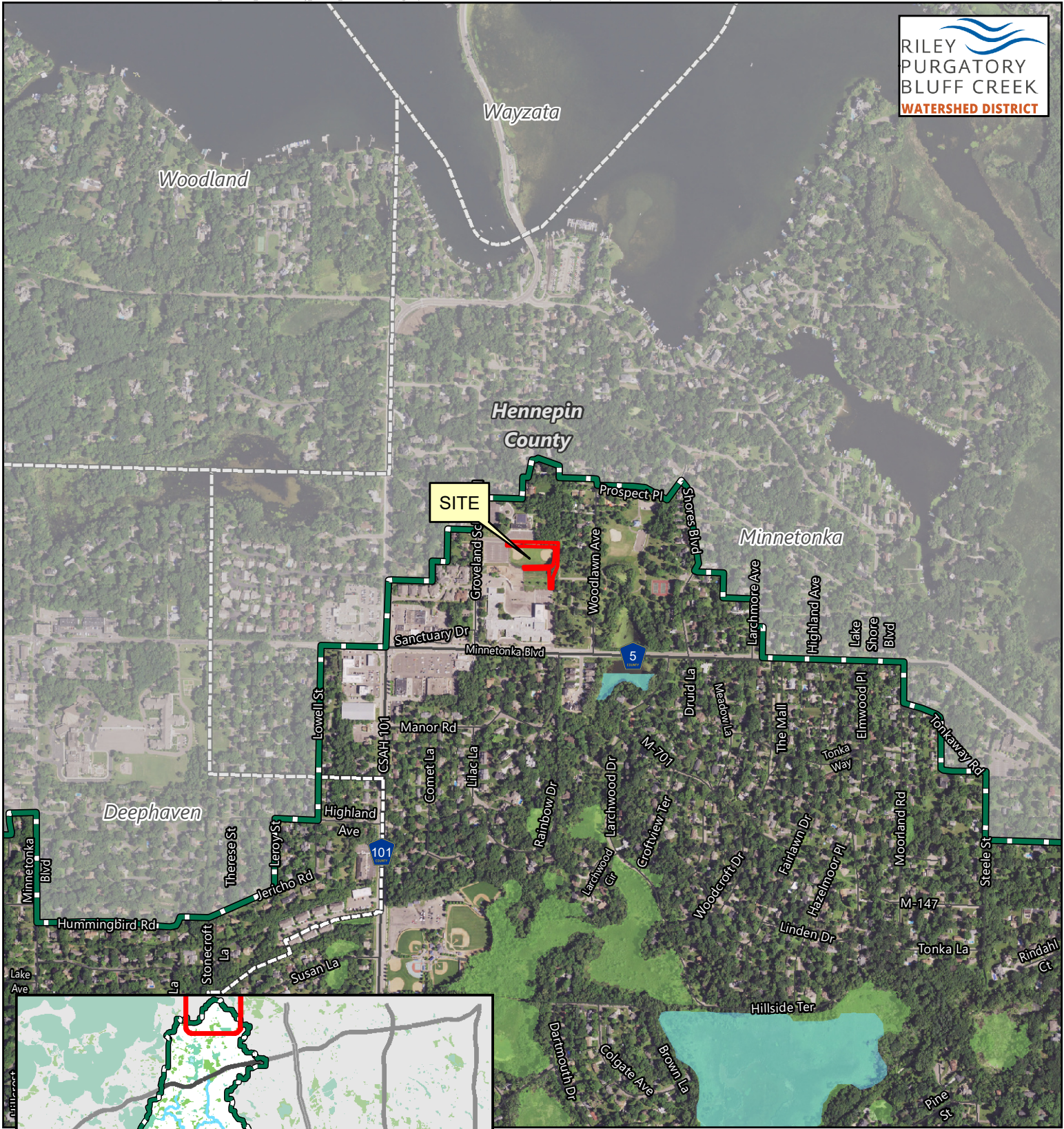
Recommendation:

Approval, contingent upon:

1. The applicant providing the name and contact information of the general contractor responsible for erosion prevention and sediment control at the site.
2. The applicant working with district staff and engineer to revise the maintenance and inspection agreement as needed and applicant must execute the revised agreement after review and approval by RPBCWD.

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

1. Continued compliance with General Requirements.
2. Per Rule J Subsection 4.5, upon completion of the site work, the permittee must submit as-built drawings demonstrating that at the time of final stabilization, the pretreatment manholes and subsurface stormwater facility conform to design specifications and function as intended and approved by the District. As-built/record drawings must be signed by a professional engineer licensed in Minnesota and include, but not limited to:
 - a) the surveyed bottom elevations, water levels, and general topography of all facilities;
 - b) the size, type, and surveyed invert elevations of all stormwater facility inlets and outlets;
 - c) the surveyed elevations of all emergency overflows including stormwater facility, street, and other;
 - d) other important features to show that the project was constructed as approved by the Managers and protects the public health, welfare, and safety.
3. Providing the following additional close-out materials:
 - a) Documentation that constructed infiltration and filtration facilities perform as designed. This may include infiltration testing, flood testing, or other with prior approval from RPBCWD
 - b) Documentation that disturbed pervious areas remaining pervious have been decompacted per Rule C.2c criteria
4. To close out the permit, the permit applicant must provide a chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan at the site.



Permit Location Map

GROVELAND ELEMENTARY SCHOOL
2023 PROPOSED PATH WIDENING
Permit 2022-060
Riley Purgatory Bluff Creek
Watershed District



Feet



GENERAL NOTES:

1. LOCATIONS AND SIZES OF ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY. VERIFY ALL UTILITIES, CONTRACTOR AND UTILITIES INCLUDING BUT NOT LIMITED TO: LUMBER, IRON, COPPER, AND STEEL PIPE.
2. CONTRACTOR RESPONSIBLE FOR LOCATING AND PROTECTING ALL SITE UTILITIES. CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES TO AVOID DAMAGE TO EXISTING UTILITIES. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS.
3. ALL CONSTRUCTION MUST COMPLY WITH APPLICABLE ORDINANCES.
4. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS.
5. PROTECT EXISTING FACILITIES AND VEGETATION WHICH ARE TO REMAIN. RESTORE ALL DISTURBED AREAS, INCLUDING BUT NOT LIMITED TO: EROSION CONTROL, SEEDING, GRASS, AND LANDSCAPING. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY PERMITS.
6. CONTRACTOR TO SUEVE SITE PAVEMENTS AND ADJACENT STREETS AT CONSTRUCTION VEHICLE ACCESS POINTS EACH WORK DAY WITH PICK UP SWEEPER OR EQUAL, TO REMOVE ANY DEBRIS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION CONTROL THROUGHOUT PROJECT, INCLUDING BUT NOT LIMITED TO: STORM WATER STRUCTURES, SLOPE PROTECTION.
8. ALL DIMENSIONS AND QUANTITIES ARE APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING.
9. CONTRACTOR TO PROVIDE ALL CONSTRUCTION STAKING.

KEYED NOTES:

1. NEW BITUMINOUS PAVEMENT, APPROX. 870 SQ. YDS. SEE DETAIL 1004.
2. EXISTING BITUMINOUS PAVEMENT TO REMAIN.
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- CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES.
- APPROXIMATE
DISTURBED GRASS AREA
DRAINAGE DIRECTION
AND SURFACE SLOPE
VEHICLE STAGING DIRECTION
ARROW STAGING DIRECTION
- SPOT ELEVATION
*656.71 N
- INDICATES NEW TOP OF GRADE ELEVATION
ALL OTHER ELEVATIONS ARE EXISTING UNLESS NOTED OTHERWISE

CATCH BASIN/MANHOLE SCHEDULE

NO.	TYPE	MANHOLE SIZE	INVERT ELEVATION	TOP OF STRUCTURE ELEVATION	CONCRETE	PAVEMENT
1	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
2	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
3	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
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51	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
52	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
53	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
54	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
55	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
56	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
57	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
58	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
59	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
60	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
61	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
62	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
63	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
64	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
65	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
66	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
67	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
68	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
69	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
70	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
71	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
72	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
73	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
74	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
75	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
76	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
77	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
78	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
79	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
80	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
81	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
82	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
83	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
84	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
85	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
86	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
87	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
88	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
89	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
90	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
91	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
92	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
93	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
94	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
95	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
96	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
97	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
98	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
99	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY
100	18" DIA. CONC.	18" DIA.	656.71	656.71	CONCRETE	ASPH/FLY



INSPEC

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55425
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MINNETONKA ELEMENTARY

PRELIMINARY NOT FOR CONSTRUCTION

DATE: 7/26/22
CLIENT PROJECT NO.: 21849
INSPEC PROJECT NO.: CB
PROJECT MGR: BT
DRAWN BY: BT
CHECKED BY: BS

MINNETONKA PUBLIC SCHOOLS
5621 COUNTY ROAD 101
MINNETONKA, MINNESOTA 55345

GROVELAND ELEMENTARY
17310 MINNETONKA BLVD
MINNETONKA, MINNESOTA 55345

GROVELAND ELEMENTARY SCHOOL
GRADING AND DRAINAGE PLAN

C3

