Barr Engineering Co.

MEMORANDUM

To: Board of Managers: Nine Mile Creek Watershed District

From: Barr Engineering Company

Subject: International School of Minnesota Volume Banking: Eden Prairie

Date: March 11, 2019

The International School of Minnesota received approval of permit #2013-03 from the District for the construction of three residence buildings, a driveway access and parking lot at their site located at 6385 Beach Road in Eden Prairie. Because of the underlying clay soil conditions, a reuse system was proposed for stormwater management to comply with District requirements (2008 Rules). The permit approved was for construction activities that proposed 1.8 acres of new site impervious area. The reuse system proposed and constructed was to irrigate 2.3 acres of on-site green space. To retain 1.0-inches of runoff from the 1.8 acre impervious area (2008 Rules), a retention volume of 6570 cubic feet was required. The school has provided a plan indicating that the completed Phase 1 construction (one building driveway and parking) has added 0.59 acres of new impervious area. The school at this time has no immediate plans for constructing the remaining work permitted by Permit #2013-03 and is requesting that the additional retention volume that has been completed and available by the reuse system be banked for future projects on the school property under section 4.4 of the NMCWD Stormwater Management Rule.

Information dated March 5, 2019 documents that the work approved and constructed under Permit #2013-03 will provide sufficient credit to be used for the runoff retention of 678cubic-feet from the 7,405 square feet of impervious area (1.1-inch of runoff volume from the impervious area – 2018 Rules, Rule 4.3.2c) required for Permit #2018-121. An excess volume credit of 3,750 cubic feet available after Permit #2018-121 compliance can be banked and used on future projects.

The on-site basin and re-use system provides a total annual removal efficiency of 100% total phosphorus (3.56 lbs.) and an annual removal efficiency of 100% total suspended solids (646 lbs.) from the runoff from the area of Permit #2013-03, Permit #2018-121 and future projects. We are in agreement with this credit amount.

Importantly, banked volume credit can only be used (under the present rules) if an applicant demonstrates that stormwater management in accordance with the standard in subsection 4.3.1a in the NMCWD Stormwater Management Rule cannot be met in accordance with the sequence in subsection 4.3.2. Conversely, excess and available stormwater management

capacity can be used onsite by an applicant to meet – in whole or part – future stormwater management requirements in accordance with the rules then in effect and on demonstration of the remaining available capacity.

Permit Application Review

Permit No. 2018-121
Received complete: March 11, 2019

Applicant:	Mahdi Kansou; International School of Minnesota
Consultant:	John Harriss; Harriss Architects
Project:	Building Addition for the International School of Minnesota
Location:	6385 Beach Road: Eden Prairie
Rule(s):	4,5,11 and 12
Reviewer:	BCO

General Background & Comments

The project proposes the construction of a 3,390 square foot building addition and associated sidewalks and a small portion of a parking lot reconstruction at the International School of Minnesota located at 6385 Beach Road in Eden Prairie.

The District has approved two previous permits for activities on the school site since 2008, Permit #2009-56 for the construction of the athletic fields and track and Permit #2013-03 for the construction of 3 residence buildings, a driveway access and parking lot. Stormwater management for both permits was provided by two separate reuse systems to comply with District requirements. Both of the prior permits required retention of 1.0-inches of runoff from the impervious area within the project limits. For Permit #2013-03, only 0.59 acres of the approved 1.81 acres of impervious area was actually constructed. The school is requesting the additional retention volume available from the stormwater management system be banked and be available for future project on the school property.

The project site information and volume banking information is:

- Total Site Area: 58.3 acres
- Existing Total Site Impervious Area (pre-2008): 7.1 acres (309,276 square feet)
- Proposed New Site Impervious Area - #2009-56: 0.97 acres (42,253 square feet)
- Proposed New Site Impervious Area - #2013-03: 1.81 acres (78,844 square feet)
- Actual constructed increase in Site Impervious Area for Permit #2013-03 : 0.59 acres (25,700 square feet)
- 22% Actual constructed Increase in the Site Impervious Area under prior permits (67,953 square feet increase)

- Permit #2018-121 New Impervious Area: 0.11 acres (4,792 square feet)
- Total New Impervious Area: 72,745 square feet (67,953 + 4,792= 72,745)
- 23.5% increase in total site impervious area (Permits 2009-56, 2013-03(actual constructed) and 2018-121)
- Disturbed and Reconstructed Impervious Area (#2018-121): 0.06 acres (2,614 square feet)
- 0.8% of the existing site impervious area is to be disturbed and reconstructed
- Total Disturbed Area – Permit #2018-121: 8,550 square feet
- Volume Retention requested to be banked: 4,428 cubic feet

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 parcel or will increase the imperviousness of the parcel by more than 50%, storm water management will apply to the entire project parcel. Otherwise, the storm water requirements will apply only to the disturbed areas and additional impervious area on the parcel. Since the total increase in the site impervious area is 23.5% and the disturbed and reconstructed impervious area is 0.8%, stormwater management is therefore required of the 8,550 square feet of disturbed area that includes 7,406 square feet of new and disturbed and reconstructed impervious area.

The District's requirements for both storm water management and erosion and sediment control apply to the project because more than 50 cubic yards of material will be disturbed and 5000 square feet or more surface area disturbed, Rules 4.2.1a and b and 5.2.1a and b.

Volume retention, rate control and water quality management will be provided by a bank established with excess volume credits available within an on-site retention basin and reuse system that was constructed to comply with the stormwater requirements of Permit #2013-03.

Silt fence, inlet protection and a rock construction entrance are to be installed to provide erosion control.

Exhibits

1. Permit Application dated October 22, 2018.
2. Preliminary Plans dated August, 2018, prepared AE2S.
3. Storm Water Management Technical Memo and calculations dated October 30, 2018 prepared by AE2S.
4. Geotechnical Report dated March, 2011 prepared by American Engineering Testing.
5. E-mail correspondence dated October 30, 2018 outlining the amount of new site impervious area approved by the District in earlier permits and the fact that new additional impervious area proposed may exceed the 50% threshold requiring stormwater management required for the entire school campus.
6. Stormwater Volume Retention Credit Banking Application #91-1.

The project submittal is complete.

3.0 Wetlands Management

The wetland buffer requirements for the site have been reviewed and completed as a requirement of both Permits #2009-56 and #2013-03 approved by the District. Copies of the review letters for both previously approved projects is attached for reference. The present proposed work does not trigger any new or additional buffer requirements under Rule 3.0.

4.0 Stormwater Management

Stormwater management, volume retention, rate control and water quality management will be provided by using excess available stormwater credits from the on-site basin and reuse system required and constructed as proposed by Permit #2013-03. The excess credits are being used because of existing site constraints within the proposed building addition area, the location and required relocation of existing utilities within the area and the underlying soil conditions (clay) limiting the infiltration capacity for volume retention thereby increasing the size of the basin required. Following the sequencing presented in Rule 4.3.2, the previous statement identifies the limitations for compliance with the retention of 0.55 inches of runoff volume, providing a system to the maximum extent practicable leads to using the excess stormwater credits available from Rule 4.3.2c states that the required volume retention and treatment to be used from a volume banking program as described in section 4.4 of the rules requires compliance with rate control and the standards of sections 4.3.1a and 4.3.1c.

Rate control is provided through modification of the inlet capacity, by reducing the opening area from 1.5 square feet to 1.0 square foot, of an existing catch basin adjacent to the project area.

	Existing – c.f.s.	Proposed – c.f.s.
2 year	2.2	1.5
10 year	3.8	2.6
100 year	7.4	4.8

Under 4.3.1a, an infiltration volume of 678 cubic feet would be required from the 7,406 square feet of new site impervious area using a runoff of 1.1-inches from the impervious area. The Stormwater Volume Retention Bank Account #19-has an available volume retention credit of 4,428 cubic feet that is requested to be used for complying with the 678 cubic feet of retention required by rule 4.3.1a. Once debited, the bank would have an excess credit of 3,750 cubic feet to be used for future projects on the school campus.

The District's water quality criterion requires a 60% annual removal efficiency for phosphorus and 90% annual removal efficiency for total suspended solids. The results from a MIDS calculator indicate that 100% of the annual removal efficiency for total suspended solids, 646.2 lbs., and 100% annual removal efficiency for total phosphorus, 3.56 lbs., is provided from the disturbed area of 8,550 square feet.

In accordance with Rule 4.3.1a (i), the pre-treatment of runoff upstream of the basin will be provided by a pretreatment fore bay that has been constructed within the basin.

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 submitted erosion and sediment control plan includes silt fence at the limits of construction, inlet construction and a rock construction entrance at the entryway onto the site. The project contact is John Harriss, Harriss Architects.

11.0 Fees

Fees for the project are:

Rules 2.0-6.0	$2,500

12.0 Financial Assurances

Financial Assurances for the project are:

Rule 4.0 Volume Retention: Basin and reuse system in-place and functional	$0
Chloride Management:	$5000
Rule 5: Silt fence: 255 L.F. x $2.50/L.F. = $638	
Inlet Protection: 4 x $100/each = $400	
Site restoration: 0.9 acres x $2500/ acre = $2,250	$3,288
Contingency and Administration	$1,412

Minimum Financial Assurance $5000

Findings

The proposed project includes the information necessary, plan sheets and erosion control plan, for review.

1. Rules 4 and 5 are met.

Recommendation

Approval, contingent upon:

1. General Conditions
2. Financial Assurance in the amount of $10,000 - $5,000 for erosion control and site restoration and $5,000 for compliance with the chloride management requirements.

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

1. 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.
2. For the release of the $5,000 financial assurance required in Recommendation #2, Rule 12.4.1a requires demonstration and confirmation that the site has been vegetated and

stabilized to prevent erosion and sedimentation per subsection 5.3.3 and that erosion and sediment controls have been removed.

Board Action

It was moved by Manager _____, seconded by Manager _____ to approve permit application No. 2018-121 with the conditions recommended by staff.

Permit #: 2018-121
Project Name: Building Addition – International School of Minnesota – 6385 Beach Road: Eden Prairie
Approval Date: March 20, 2019

General Provisions

1. All temporary erosion control measures shown on the erosion and sedimentation control plans must be installed prior to commencement of surface or vegetation alteration and be maintained until completion of construction and vegetation is established as determined by NMCWD.

   If silt fence is used, the bottom flap must be buried and the maximum allowable spacing between posts is 4-foot on center. All posts must be either 2-inch x 2-inch pine, hardwood, or steel fence posts. If hay bales are used, all bales must be staked in place and reinforced on the downstream side with snow fence.

2. All areas altered because of construction must be restored with seed and disced mulch, sod, wood fiber blanket, or be hard surfaced within two weeks after completion of land alteration and no later than the end of the permit period.

3. Upon final stabilization, the permit applicant is responsible for the removal of all erosion control measures installed throughout the project site.

4. At the entryway onto the site, a rock filter dike being a minimum of two feet in height and having maximum side slopes of 4:1 must be constructed. This rock filter dike will enable construction traffic to enter the site and also provide an erosion control facility.

5. If dewatering is required and sump pumps are used, all pumped water must be discharged through an erosion control facility prior to leaving the construction site. Proper energy dissipation must be provided at the outlet of the pump system.

6. The NMCWD must be notified a minimum of 48 hours prior to commencement of construction.

7. The NMCWD, its officers, employees and agents review, comment upon, and approve plans and specifications prepared by permit applicants and their consultants for the limited administrative purpose of determining whether there is reasonable assurance that the proposed project will comply with the regulations and criteria of the NMCWD. The determination of the NMCWD that issuance of this permit is appropriate was made in reliance on the information provided by the applicant.

8. The grant of this permit shall not in any way relieve the permittee, its engineer, or other professional consultants of responsibility, nor shall it make the NMCWD responsible for the technical adequacy of the engineer's or consultant's work. The grant of this permit shall not relieve the permittee from complying with all conditions and requirements of the permit which shall be retained by the permittee with the permit.

9. The issue of this permit does not convey any property rights in 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.

10. This permit is permissive only. No liability shall be imposed upon the NMCWD or any of its officers, agents or employees, officially or personally, on account of the granting of this permit or on account of any damage to any person or property resulting from any act or omission of the permittee or any of its agents, employees, or contractors.

11. In all cases where the doing by the permittee of anything authorized by this permit shall involve 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, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all necessary property, rights, and interest.

12. The permit is transferable only with the approval of the NMCWD (see NMCWD Rule 1.0). The permittee shall make no changes, without written permission previously obtained from the NMCWD, in the dimensions, capacity, or location of any items of work authorized by this permit.

13. The permittee shall grant access to the site at all reasonable times during and after construction to authorized representatives of the NMCWD for inspection of the work authorized by this permit.

14. This permit may be terminated by the NMCWD at any time deemed necessary in the interest of public health and welfare, or for violation of any of the provisions of this permit.

15. Construction work authorized under this permit shall be completed on or before date specified above. The permittee may, in writing, request that the NMCWD extend the time to complete the project in accordance with NMCWD Rule 1.0.

Permit No.2018-121

Is hereby issued to Mahdi Kansov, International School of Minnesota, subject to the conditions specified in the attached form:

For the construction of a building addition (cafeteria) at the Internation School of Minnesota located at 6385 Beach Road in Eden Prairie.

Jodi Peterson, Chair
Nine Mile Creek Watershed District

This permit expires on: April 1, 2020

Layout: 2 SITE PLAN
File: W:\NH\Harriss\14481-2018-000\CAD Dwgs\01 Civil\Plan Sheets\SITE PLAN.dwg

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

SIGNATURE: _____

TYPED NAME: CHRISTOPHER MCKENZIE REG. NO. 48522

DATE: FEBRUARY 1, 2019

SYM	DATE	DESCRIPTION	APPR

NORTH

0 10
Scale in Feet

ORIGINAL PLAN SIZE - 22" X 34"
HALF SIZE PLAN SIZE - 11" X 17"

.SANITARY SEWER INSTALLATION NOTES:

1. INSTALL MANHOLE PER DETAIL 3/C7

CONSTRUCTION NOTES:

1. INSTALL CONCRETE SIDEWALK PER DETAIL 3/C7
2. INSTALL COLORED CONCRETE SIDEWALK PER DETAIL 3/C7
3. INSTALL TYPE B CURB PER DETAIL 4/C7
4. INSTALL ASPHALT PAVEMENT PER DETAIL 5/C7
5. INSTALL BOLLARD PER DETAIL 1/C6.

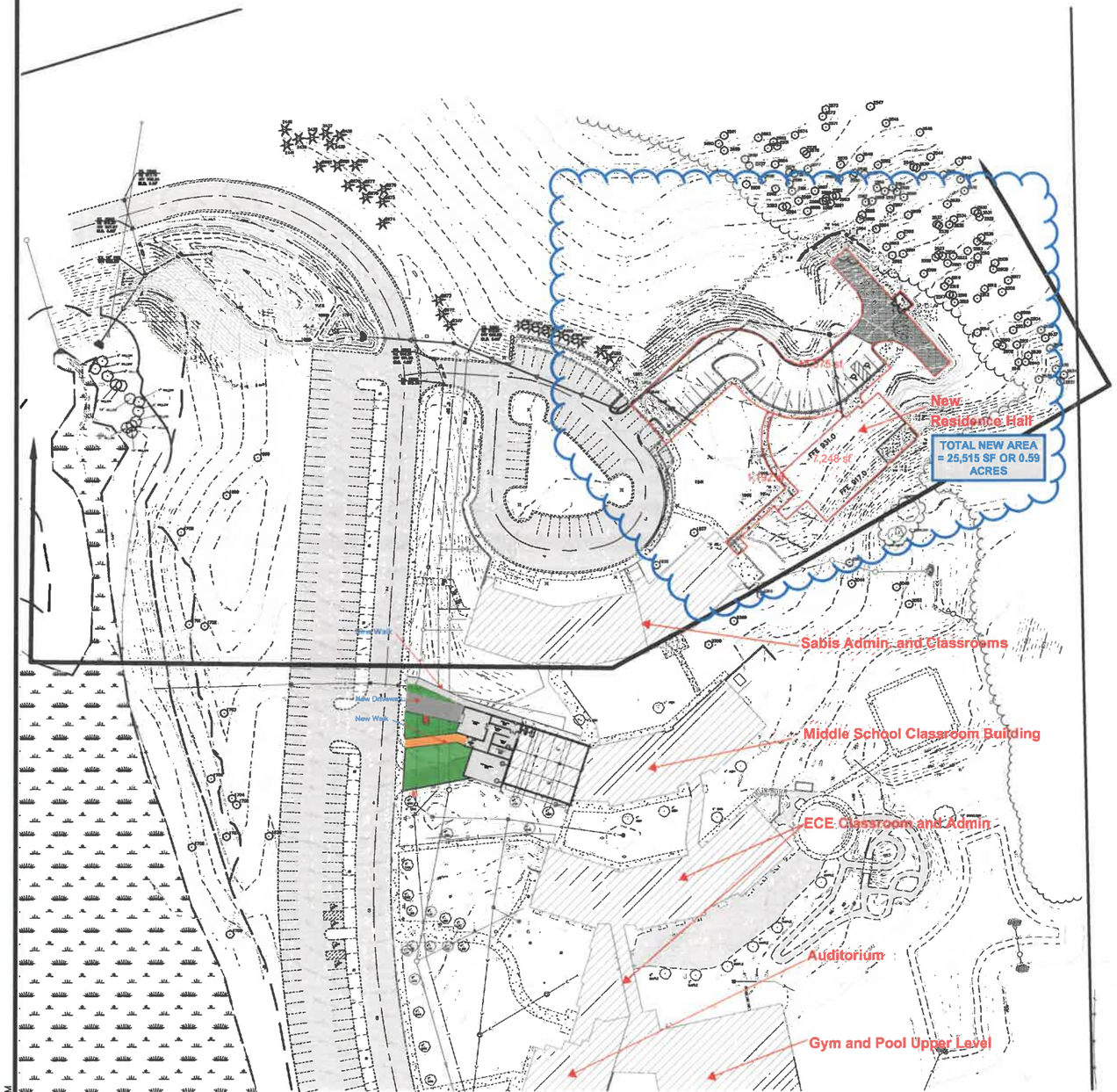
AE2S

INTERNATIONAL SCHOOL OF MINNESOTA - CAFETERIA BUILDING EXPANSION
HARRISS AND ASSOCIATES
EDEN PRAIRIE, MINNESOTA

SITE & UTILITY PLAN

DRAWING TYPE: BIDDING
PREPARED BY: EJ
CHECKED / APPROVED: CM / CM
DATE: FEB 2018
PROJECT NUMBER: 14481-2018-000
SHEET: 2 of 20
DRAWING: C2

Plotted By: AJ Soland Date: Friday, February 1, 2019
Last Saved By: AJ Soland Date: Friday, February 1, 2019 11:36:06 AM



LEGEND

- EXISTING TREE SAVED
- EXISTING TREE REMOVED
- EXISTING TREE TO BE RELOCATED

INTERNATIONAL SCHOOL OF MINNESOTA
TREE INVENTORY
1/20/2012

PT. NO.	TREE TYPE	ELEV	SIZE	SIZE	SIZE	SIZE	SIZE	SAVE	REMOVE	RELOCATE			
1892	SPRUCE	917.28	7							X	0	0	7
1893	SPRUCE	917.81	7							X	0	0	7
1894	SPRUCE	918.44	8							X	0	0	8
1895	SPRUCE	917.65	8							X	0	0	8
1896	SPRUCE	916.5	7							X	0	0	7
1897	MAPLE	902.52	4							X	0	0	4
1898	MAPLE	908.3	9					X			9	0	0
1899	RUSSIAN OLIVE	911.3	4	5	4			X			13	0	0
1700	RUSSIAN OLIVE	904.8	7	4				X			11	0	0
1701	RUSSIAN OLIVE	905.8	5	8	7	8	8	X			30	0	0
1702	RUSSIAN OLIVE	908.1	5	7	7	6		X			25	0	0
1835	MAPLE	908.3	3					X			3	0	0
1837	MAPLE	908.4	3					X			3	0	0
1841	OAK	927.81	3							X	0	0	3
1847	PINE	927.81	4							X	0	0	4
1848	PINE	927.44	4							X	0	0	4
1849	PINE	926.66	4							X	0	0	4
1850	PINE	926.66	4							X	0	0	4
1851	PINE	926.74	4							X	0	0	4
1856	PINE	931.7	4					X			4	0	0
1886	PINE	932.0	4					X			4	0	0
1887	PINE	932.0	4					X			4	0	0
1888	PINE	931.8	4					X			4	0	0
1889	PINE	931.35	4					X			4	0	0
1900	PINE	931.1	4					X			4	0	0
1901	PINE	930.9	3					X			3	0	0
1902	PINE	930.4	3					X			3	0	0
1903	PINE	930.2	3					X			3	0	0
1967	SPRUCE	929.60	8							X	0	0	8
1968	SPRUCE	929.44	8							X	0	0	8
1969	SPRUCE	928.75	8							X	0	0	8
1970	SPRUCE	928.66	8							X	0	0	8
2347	SPRUCE	0.0	0					X			10	0	0
2435	SPRUCE	927.7	3					X			3	0	0
2436	SPRUCE	930.9	3					X			3	0	0
2437	SPRUCE	929.9	3					X			3	0	0
2438	SPRUCE	927.8	3					X			3	0	0
2439	SPRUCE	926.1	3					X			3	0	0
2440	SPRUCE	925.4	3					X			3	0	0
2441	SPRUCE	923.3	3					X			3	0	0
2300	CHERRY	925.0	18					X			18	0	0
2501	ASH	921.1	8					X			8	0	0
2502	ASH	924.2	8					X			8	0	0
2503	CHERRY	922.9	13	12				X			25	0	0
2504	ASH	923.7	8					X			8	0	0
2505	ASH	924.9	11					X			11	0	0
2506	BOXELDER	926.5	7					X			7	0	0
2507	CHERRY	927.2	7					X			7	0	0
2508	BOXELDER	927.7	6					X			6	0	0
2509	ASH	928.3	11					X			11	0	0
2510	ASH	928.7	8					X			8	0	0
2511	ASH	928.9	8					X			8	0	0
2512	OAK	927.1	18					X			19	0	0
2513	BOXELDER	926.7	12	10	11			X			33	0	0
2514	BOXELDER	927.0	12	10				X			25	0	0
2515	ELM	927.6	8					X			8	0	0
2516	BOXELDER	928.1	10					X			10	0	0
2517	BOXELDER	928.3	8					X			8	0	0
2518	BOXELDER	928.6	12					X			12	0	0
2519	ELM	928.7	7					X			7	0	0
2520	ASH	931.9	11	5	11			X			27	0	0
2521	ASH	931.2	8					X			8	0	0
2522	ASH	931.4	7					X			7	0	0
2523	ASH	931.0	8					X			8	0	0
2524	ASH	931.4	7					X			7	0	0
2525	ELM	931.5	10					X			10	0	0
2526	CHERRY	932.1	7	5				X			12	0	0
2527	HACKBERRY	931.8	11					X			11	0	0
2528	ASH	932.3	6					X			6	0	0
2529	ASH	934.0	8					X			8	0	0
2530	ASH	935.1	7					X			7	0	0
2531	ELM	934.7	8					X			8	0	0
2532	ASH	936.3	6					X			6	0	0
2533	CHERRY	936.0	9					X			9	0	0
2534	ELM	936.4	15					X			15	0	0
2535	ASH	936.0	6					X			6	0	0
2536	ASH	936.1	6					X			6	0	0
2537	ASH	936.9	6					X			6	0	0
2538	ASH	944.7	6					X			6	0	0
2539	ELM	947.1	7					X			7	0	0
2540	OAK	947.7	15					X			15	0	0
2541	OAK	944.4	20					X			20	0	0
2542	ASH	941.7	6					X			6	0	0
2543	ASH	944.8	6					X			6	0	0
2544	CHERRY	948.5	6					X			6	0	0
2545	CHERRY	953.8	7					X			7	0	0
2546	CHERRY	956.2	11					X			11	0	0
2547	ASH	956.4	13					X			13	0	0
2548	OAK	953.5	17	16	17			X			50	0	0
2549	OAK	952.5	19							X			19
2550	OAK	952.4	23							X			23
2551	ELM	950.3	12							X			12
2552	OAK	950.0	19							X			19
2553	OAK	948.1	11							X			11
2554	ELM (1/2 DEAD)	948.4	11							X			11
2555	CHERRY	944.0	8							X			8
2556	CHERRY	943.1	9							X			9
2557	ELM	942.0	8							X			8
2558	ELM	940.9	9							X			9
2559	ELM	940.3	9							X			9
2560	ASH	937.4	6							X			6
2561	BOXELDER	934.4	7							X			7
2562	BOXELDER	934.1	10							X			10
2563	ELM	936.6	11							X			11
2564	ELM	940.4	10							X			10
2565	ELM	944.3	13							X			13
2566	CHERRY	944.8	8							X			8
2567	OAK	946.1	14							X			14
2568	OAK	946.4	8							X			8
2569	OAK	954.0	6							X			6
2570	ELM	956.0	9							X			9
2571	POPLAR	963.2	15							X			15
2572	OAK	954.8	18							X			18
2573	ELM	954.6	13	5	9					X			27
2574	OAK	954.4	11							X			11
2575	OAK	961.9	8							X			8
2576	OAK	962.7	17	17						X			34
2577	OAK	960.0	8							X			8
2578	IRONWOOD	960.1	6							X			6
2579	ASH	960.2	8							X			8
2580	ASH	958.0	8							X			8
2581	ASH	956.4	7							X			7
2582	ASH	957.9	8							X			8
2583	ASH	953.1	11							X			11
2584	CHERRY	953.3	13							X			13
2585	ASH	951.5	8							X			8
2586	ASH	954.0	8							X			8
2587	OAK	955.4	11							X			11
2588	OAK	952.3	10							X			10
2589	OAK	952.1	8							X			8
2590	OAK	952.9	11							X			11
2591	OAK	951.1	14							X			14
2592	OAK	952.4	7							X			7
2593	OAK	952.0	10							X			10
2594	ASH	942.8	8								X		0
2595	OAK	941.6	38								X		0
2632	CHERRY	915.9	7							X			7
2633	BOXELDER	911.7	10							X			10
2634	BOXELDER 1/2D	911.5	16							X			16
2635	ASH	912.7	8							X			8
2636	ASH	917.0	10							X			10
2637	ASH	919.8	8							X			8
2638	ASH	921.5	8							X			8
2639	ASH	922.6	7							X			7
2640	ASH	923.7	8							X			8
2641	BOXELDER	920.9	12							X			12
2642	ELM	942.8	7							X			7
2643	ASH	945.6	7							X			7
2644	BOXELDER	941.1	7							X			7
2645	ASH	958.8	8							X			8
2646	ASH	957.6	8							X			8
2647	ASH	961.5	8							X			8
2648	ASH	962.8	7							X			7
2649	ASH	963.4	8							X			8
2650	ELM	964.6	12							X			12
2651	ASH	963.7	8							X			8
2652	ELM	964.6	6							X			6
10000	WILLOW	0.0	9								X		0
10001	WILLOW	0.0	9							X			9
10002	WILLOW	0.0	15								X		0
10003	WILLOW	0.0	8								X		0
10004	WILLOW	0.0	8								X		0
10005	WILLOW	0.0	14								X		0
10006	WILLOW	0.0	7								X		0
10007	WILLOW	0.0	8								X		0
10008	WILLOW	0.0	14								X		0
10009	WILLOW	0.0	8								X		0
10010	WILLOW	0.0	12								X		0
10011	WILLOW	0.0	14								X		0
											TOTAL	1500	148

James R. Hill, Inc.
PLANNERS / ENGINEERS / SURVEYORS
2500 W. Cty. Rd. 42, Suite 120, Burnsville, MN 55337
PHONE: (952)890-6044 FAX: (952)890-6244

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
JOEL G. COOPER, P.E.
Date: 09/14/12 Reg. No. 18405

INTERNATIONAL SCHOOL OF MINNESOTA
EDEN PRAIRIE, MINNESOTA
TREE INVENTORY PLAN
FOR
HARRISS ARCHITECTS
3207 CENTRAL AVENUE NE, MINNEAPOLIS, MN 55418

N

SCALE IN FEET
0 60 120 180
1 Inch = 60 feet

DRAWN BY
CMR

DATE
09/14/12

REVISIONS
01/03/12 REV SITE PLAN
01/15/13-Updated per Watershed
04/24/13-Revised Building Layout

CAD FILE
9510-06G

PROJECT NO.
22856

5.1

9510-06TP.dwg — 5/14/2013 11:31AM

Permit Application Review

Permit No. 2009-56
Received complete: November 4, 2009

Applicant:	Mahdi Kansov: International School of Minnesota
Consultant:	Jay Pomeroy: Anderson-Johnson Associates
Project:	Athletic Facility
Location:	International School of Minnesota: T.H. 62 and I-494
Rule(s):	3,4,5,10,11,12
Reviewer:	BCO

General Background & Comments

The project Proposes an 8 lane running track, a grasses football/soccer field and 2 tennis courts on the International School of Minnesota campus. An existing ditch with wetland characteristics is located on the east side of the proposed athletic facility. The project proposes to eliminate the ditch. The schools consultant is claiming that this area is a non-jurisdictional wetland. The Technical Evaluation Panel has reviewed the site and the information submitted and has determined the area to be a historic wetland and under the jurisdiction of the Wetland Conservation Act. The plans have been revised to re-orientate the football/soccer and eliminate the tennis courts to eliminate wetland impacts. The MnRam Assessment submitted indicated that the on-site wetlands are of medium value. We along with the TEP agree with the assessment. Rule 3.4.1b requires an average buffer width of 40 feet and a minimum buffer width of 20 from the edge of a medium value wetland. The revised plans show a section of approximately 70 feet having a buffer width of as little as 5 feet adjacent to the ditch/wetland area. The encroachment into the minimum buffer width will require a variance and/or exception, Rule 10, from the Buffer width requirement, Rule 3.4.1b. The buffer width requirements are met for other on-site wetlands. The buffer width area that is being encroached upon is being compensated adjacent to other on-site wetlands.

The site is currently turf. The project proposes approximately 42,539 square feet, 0.97 acres, of new imperviousness, the 8 lane running track. Storm water management for the project involves the use of an underground storage tank and sand sub-base of the running track. The underground storage tank is 12 foot diameter and 100 feet in length and will be used for irrigation of the proposed grass athletic field. Storm water from the track will be handled by a 15-inch perforated storm sewer. The storm sewer will allow the sand base to drain to the storage tank during non-storm events and will be used to back-up runoff into the sand filter

when the tank is full. This "closed" system provides volume retention, rate control and water quality management.

Exhibits

1. Permit application dated November 3, 2009.
2. Plan sheets dated January 6, 2010
3. Hydrologic calculations prepared by Anderson-Johnson Associates dated January 6, 2010.
4. Correspondence dated January 14, 2010 outlining plan revisions and variance request from the District Wetland buffer requirements.

2.0 Floodplain

The requirements of Rule 2 are not applicable for the project.

3.0 Wetlands Management

The project has been redesigned to eliminate on-site wetland impacts. The MnRam Assessment submitted indicates that on-site wetland areas are of medium value. We along with the TEP agree with the assessment. Rule 3.4.1b requires an average wetland buffer width of 40 feet and a minimum buffer width of 20 feet from the edge of a medium value wetland. The revised plans show a section of approximately 70 feet having a buffer width of as little as 5 feet adjacent to the ditch/wetland area. The encroachment into the minimum buffer width requires a variance and/or exception, Rule 10, from the buffer width requirement, Rule 3.4.1b. The buffer width requirements are met for other on-site wetlands. The buffer width area that is being encroached upon, 1125 square feet, is being compensated for adjacent to other on-site wetlands. A total on-site buffer area of 223,500 square feet is being provided and meets the 223.500 square feet required. The plans show the location of buffer markers in accordance with Rule 3.4.4

4.0 Stormwater Management

The site is currently turf. The project proposes approximately 42,539 square feet, 0.97 acres, of new imperviousness. The existing site has approximately 7.1acres of imperviousness. In accordance with Rule 4.2.3, since the increase in Imperviousness is less than 50%, storm water management, volume reduction and rate control, is required for the new imperviousness. Water quality treatment is required for the runoff from the 2.5 inch rain storm event with a 60% annual removal efficiency for phosphorus and 90% annual removal efficiency for total suspended solids.

Storm water management for the project involves the use of an underground storage tank and sand subbase of the running track. The underground storage tank is 12 foot diameter and 100 feet in length and will be used for irrigation of the proposed grass athletic field. Storm water from the track will be handled by a 15-inch perforated storm sewer. The storm sewer will allow the sand base to drain to the storage tank during and will be used to back-up runoff into the sand filter when the tank is full. The "closed" system provides volume retention, rate control and water quality management.

To meet Rule 4.3.1a, volume reduction, 3545 cubic feet of retention volume is required. The underground storage tank provides 11,300 cubic feet of volume therefore Rule 4.3.1a is met. To meet Rule 4.3.1c water quality treatment to provide an annual removal efficiency of 90% total suspended solids and 60% phosphorus removal, 24,765 cubic feet of volume storage is required. The underground storage tank and sand subbase provides a volume of 95,212 cubic feet, therefore Rule 4.3.1b is met. Since the system is a "closed" system that limits peak runoff rates for the 2,10 and 100 year frequency storm events to predevelopment conditions, Rule 4.3.1b is met.

5.0 Erosion and Sediment Control

Erosion control, silt fence, is shown to be installed at the limits of construction. The project contact is Jonathan Duesman, Anderson-Johnson Associates.

10. Variance and Exceptions

The project has been redesigned, tennis courts eliminated and athletic field re-orientated, the eliminate wetland impacts. The project however indicates that the minimum buffer width in accordance with Rule 3.4.1b is not being provided for a section, length of 70 feet. The buffer width area being encroached upon, 1125 square feet, is being compensated for adjacent to other on-site wetlands. Correspondence dated January 14, 2010 from Anderson-Johnson outlines that the athletic field was orientated in an east-west direction to minimize impacts to the existing parking lot and wooded area west of the school thereby encroaching into the wetland buffer. In addition, the proposed tennis courts were eliminated from the project to minimize wetland impacts. A variance is being requested in the January 14, 2010 correspondence. A "no-build" alternative would not allow the International School of Minnesota to be competitive from an athletic standpoint with other public and private schools.

11.0 Fees

Fees for the project are:

Rules 2.0-6.0 ..... $1000

12.0 Sureties

Sureties for the project are:

Rule 4.0: Volume Reduction (runoff retained in underground storage tank and pump) $133,125 $133,125

Rule 5.0: Site Restoration and erosion control: 4.6 acres x $2500/acre + 2210 L.F. x $2.50/LF = $17025 $17,025

Contingency and Administrative $64,850

Findings

1. The proposed project includes the information necessary, site plan, storm water management plan and calculations, for review.
2. Rule 4.3.1a, Rule 4.3.1b and 4.3.1c is met because runoff from the site is retained in the underground storage tank and sand filter and used for irrigation. To meet Rule 4.3.1a, volume reduction, 3545 cubic feet of retention volume is required and the underground storage tank provides 11,300 cubic feet of volume. To meet Rule 4.3.1c, water quality treatment to provide an annual removal efficiency of 90% total suspended solids and 60% phosphorus removal, 24,765 cubic feet of volume storage is required. The underground storage tank and sand subbase provides a volume of 95,212 cubic feet, therefore Rule 4.3.1b is met. Since the system is a "closed" system that limits peak rates of runoff for the 2, 10 and 100-year frequency events to predevelopment conditions, Rule 4.3.1b is met.
3. Correspondence date January 14, 2010 form Anderson-Johnson Associates provides sufficient documentation for the approval of a variance, Rule 10, of the required buffer width of a medium value wetland, Rule 3.4.1b.

Recommendation

Approval, contingent upon:

1. General Conditions
2. Receipt in recordation a maintenance declaration. A draft declaration must be approved by the District prior to recordation.
3. Surety in the amount of $215,000.
4. Buffer markers being installed in accordance with Rule 3.4.4
5. A buffer documented by a declaration or other document approved by the District and approved by the District and recorded in the office of the county recorder or registrar before the permit is issued, in accordance with Rule 3.4.6.
6. Per Rule 4.5.6, an as-built drawing of the storm water facilities conforming to the design specifications as approved by the District must be submitted.
7. Approved variance for wetland buffer.

Board Action

It was moved by Manager _____, seconded by Manager _____ to approve permit application modification No. 09-56 with the conditions recommended by staff.

Permit Application Review

Permit No. 2013-03
Received complete: January 29, 2013

Applicant:	Trent Mahr: International School of Minnesota
Consultant:	Joel Cooper: James R. Hill, Inc.
Project:	Residence Hall
Location:	6385 Beach Road: Eden Prairie
Rule(s):	3,4,5,11
Reviewer:	BCO

General Background & Comments

A permit application and plans have been submitted for Phase 1 construction of a residence building, driveway access and parking lot for the International School of Minnesota located at 6385 Beach Road in Eden Prairie. The information submitted includes a build-out of the storm water management infrastructure construction for Phase 1 and a subsequent Phase 2 of the project with a request for banking of storm water management credits for Phase 2 of the project.

The total project, Phases 1 and 2, proposes the construction of 3 resident buildings, approximately 22,215 square feet, a driveway access and parking for the resident hall. The overall International School property is 58.3 acres with the existing imperviousness totaling 8.1 acres. The total project area, Phases 1 and 2, is 2.53 acres with 1.81 acres of imperviousness proposed. Because the proposed activity will disturb less than 50% of the existing impervious surface on the parcel or does not increase the imperviousness of the parcel by more than 50% (22.3% increase), the District's storm water management criteria, Rule 4.3, applies only to the disturbed areas and the additional impervious surface on the project parcel, Rule 4.2.3. The Phase 1 project area is 1.3 acres with a building footprint of 7,076 square feet (0.16 acres) and 17,410 square feet (0.40 acres) of sidewalk, driveway and parking. Phase 1 proposes a 16% increase in impervious area.

On-site wetland determinations, delineations and buffer requirements were completed and required for previous additions on the parcel that have been approved by the District. To meet the District's storm water management requirements for this addition, an impact into an established wetland buffer of 3586 square feet is proposed for the construction of a storm water management basin. The buffer impact is to be off-set by the creation of an additional 3979 square feet of wetland buffer.

Rate control for the 2, 10 and 100 year frequency storm events and water quality management is to be provided within the proposed ponding basin along the western limits of the site.

Volume reduction is also to be provided within the basin by utilizing the runoff retained for irrigation of the site. Eden Prairie has and even/odd day watering requirement including watering from private systems. The proposal is to water every other day utilizing 25,440 gallons/day for irrigation. A minimum green space area of 1.9 acres is required for irrigation to provide the volume reduction required by Rule 4.3.1a. The Phase 1 area is 1.3 acres as previously described. The storm water management facilities will be constructed for the entire Phase 1 and 2 area, 2.53 acres. The additional volume to be constructed for water quality and irrigation area for volume reduction is being requested to be banked for the development of the remaining 1.23 acres (2.53 acres-1.3 acres).

Silt fence is to be installed at the limits of construction and a rock filter installed at the entryway onto the site.

Exhibits

1. Permit Application dated January 2, 2013.
2. Plan sheets dated September 14, 2012 and revised January 16, 2013.
3. Storm water management computation dated January 9, 2011prepared by James R. Hill, Inc. and revised January 28, 2013.
4. Storm Water Pollution Prevention Plan January 16, 2013.
5. Irrigation Plan and supplemental information dated January 21, 2013 and January 28, 2013.
6. Geotechnical Report dated December 28, 2012 prepared by American Engineering Testing.

3.0 Wetlands Management

On-site wetland determinations, delineations and buffer requirements were completed and required for previous additions on the parcel that have been approved by the District. To meet the District's storm water management requirements for this addition, an impact into an established wetland buffer of 3586 square feet for the construction of a storm water management basin is proposed. The buffer impact is to be off-set by the creation of an additional 3979 square feet of wetland buffer. The re-establishment of the wetland buffer to off-set the impacts of the buffer limits that have been recorded, must be redefined and re-recorded on the title to the property.

4.0 Stormwater Management

A permit application and plans have been submitted for Phase 1 construction of a residence building, driveway access and parking lot for the International School of Minnesota located at 6385 Beach Road in Eden Prairie. The information submitted includes a build-out of the storm water management infrastructure for Phase 1 and a subsequent Phase 2 of the project with a request for banking of storm water management credits for Phase 2 of the project.

The total project, Phases 1 and 2, proposes the construction of 3 resident buildings, being approximately 22,215 square feet, a driveway access and parking for the resident hall. The

overall International School property is 58.3 acres with the existing imperviousness totaling 8.1 acres. The total project area, Phases 1 and 2, is 2.53 acres with 1.81 acres of imperviousness proposed. Because the proposed activity will disturb less than 50% of the existing impervious surface on the parcel or does not increase the imperviousness of the parcel by more than 50% (22.3% increase), the District's storm water management criteria, Rules 4.3, applies only to the disturbed areas and the additional impervious surface on the project parcel, Rule 4.2.3. The Phase 1 project area is 1.3 acres in area with a building footprint of 7076 square feet (0.16 acres) and 17,410 square feet (0.40 acres) of sidewalk, driveway and parking. Phase 1 proposes a 16% increase in impervious area.

The proposed storm water basin to be constructed along the western limits of the site will provide rate control, volume reduction and water quality management. The existing rates of runoff for the 2, 10 and 100 year frequency events are 2.8 c.f.s., 8.2 c.f.s. and 16.2 c.f.s., respectively. The proposed rates of runoff for the 2, 10, and 100 year frequency events are 0.6 c.f.s., 2.8 c.f.s., and 10.5 c.f.s., respectively.

For the total project area, a volume reduction of 6,570 cubic feet, 0.15 acre-feet, is required from the 1.81 acres of imperviousness. The on-site soils are clay. A dual ring infiltrometer test has determined an infiltration rate of 0.02 inches/hour. This would result in an area of 54,450 square feet, 1.25 acres, for infiltration with a drawdown period of 72 hours being required.

Because of the size of the infiltration area needed for volume reduction and also to meet the District's water quality requirements, volume reduction and water quality treatment is to be provided within a storm water basin by providing "dead-storage" volume and utilizing the runoff retained for irrigation of the site. The area to be irrigated for the total project is 2.3 acres. A figure showing the areas to be irrigated is included in the Attachment. The city of Eden Prairie has and even/odd day watering requirement, including watering from private irrigation sources. Phase 1 is 1.3 acres as previously described. The storm water management facilities for the Phases 1 and 2 be constructed at this time. The additional volume and irrigation system to be constructed for volume reduction is being requested to be banked for the development of the remaining 1.23 acres (2.53 acres-1.3 acres).

The proposal is to irrigate every other day utilizing 25,440 gallons/day over the 2.3 acres of green space. With the irrigation rate a minimum area 1.9 acres for irrigation is required to provide the volume reduction to comply with Rule 4.3.1a. The irrigation rate, volume, and area to be irrigated have been calculated to not result in runoff leaving areas irrigated. To meet the District's volume reduction requirements for the Phase 1 area using the proposed 25,440 gallons/day irrigation rate, an area of 0.6 acres of green space is required to be irrigated. With the irrigation system for both Phases of the project being constructed as part of Phase 1, the additional 1.3 acres, (1.9 acres - 0.6 acres) of area that will be irrigated is requested to be banked for Phase 2 of the project. An Operation Plan and Maintenance Plan for the irrigation system are outlined in the Attachment.

To provide a 60% annual removal efficiency for phosphorus and 90% annual removal efficiency for total suspended solids, 0.29 acre-feet, 12,632 cubic feet, of "dead-storage" volume is required for Phases 1 and 2 (2.53 acres). The storage volume between 908.0 M.S.L., the normal level of the basin, and 914.0 M.S.L provides 0.52 acre-feet, 22,651 cubic feet of retention. For the Phase 1 area (1.3 acres) 0.11 acre-feet of "dead-storage" volume is

required. With the entire basin being constructed in Phase 1, a volume of 0.18 acre-feet, (0.29 AF – 0.11 AF), is being requested to be banked for Phase 2 of the project.

In summary, the retention basin and irrigation system are to be constructed in Phase 1 that will meet the District's storm water management requirements, Rule 4.3.1, for the entire project build-out. An area of 1.3 acres that will be irrigated for volume reduction and 0.18 acre-feet of volume for water quality are requested to be banked for the future build-out area of 2.3 acres.

5.0 Erosion and Sediment Control

The submitted erosion and sediment control plan includes silt fence at the limits of construction and a rock construction entrance into the project area. The project contact is Joel Cooper, James R. Hill, Inc.

11.0 Fees

Fees for the project are:

Rules 2.0-6.0 ..... $750

12.0 Sureties

Sureties for the project are:

Rule 4.0 Infiltration: 54,450 sq. ft. x $6/sq. ft. = $326,700	$326,700
Rule 5: 938 L.F. x $2.50/L.F. + 2.53 acres x $2500/acre = $8670	$8,670
Contingency and Administration	$144,630

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan, for review.
2. Rules 3, 4 and 5 are met for Phase 1 of the project.

Recommendation

Approval, contingent upon:

1. General Conditions
2. Surety in the amount of $480,000. The surety may be reduced if 125% of the cost to construct the ponding basin and pumping system plus 10% contingencies and 30% administration is less than $467,181 for the construction of an infiltration basin.
3. Receipt in recordation a maintenance declaration. A draft must be approved by the District prior to recordation.
4. Per Rule 4.5.6, an as-built drawing of the storm water facilities conforming to the design specifications as approved by the District must be submitted upon completion of the project.
5. A Phase 1 assessment or other documentation showing that the soils on the site where the infiltration area is to be constructed are not contaminated must be submitted to the District.

6. The buffer declarations that have been recorded for previous phases of site development must be modified based on the submitted plan.
7. The excess volume created, 0.18 acre-feet, and an area of 1.3 acres to be irrigated for volume reduction is banked and can be used for subsequent phases of the site improvements.
8. The permit be issued for Phase 1 of the project including the build-out of the Phase 1 and Phase 2 storm water infrastructure. Permits for subsequent Phases of the project are required.

Board Action

It was moved by Manager _____, seconded by Manager _____ to approve permit application No. 13-03 with the conditions recommended by staff.