

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2021-085

Considered at Board of Managers Meeting: June 1, 2022

Project Procedural History: Permit application conditionally approved April 6, 2022.

Modification Request Received complete: May 20, 2022

Applicant: Lotus Holdings LLC, Mark Hedge

Consultant: Stark Engineering, LLC, Wayne Stark

Project: 7851 Park Drive Storage Expansion: Proposed addition of an approximately 8,100 SF outdoor gravel storage area and a one-way concrete drive entrance. Proposed stormwater feature includes an infiltration swale to provide stormwater rate, volume, and quality control. Because infiltration testing results indicate the infiltration capacity of the soils on the site are between 0.29-0.42 inches per hour (in/hr) which is higher than used in the design, the applicant has submitted this permit modification request to change the stormwater management facility from an iron enhanced sand filter with elevated drain tile to an infiltration swale.

Location: 7851 Park Drive, Chanhassen, MN 55317

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 June 1, 2022 meeting of the managers:

Resolved that the application for modification to Permit 2021-085 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 2021-085 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		Yes	
D	Wetland and Creek Buffers		See comment.	See rule-specific permit condition D1 related to recordation of buffer maintenance declaration.
J	Stormwater Management	Rate	Yes.	
		Volume	Yes	
		Water Quality	Yes.	
		Low Floor Elev.	Yes.	
		Maintenance	See comment.	See rule-specific permit condition J1 related to recordation of stormwater facility maintenance declaration.
		Chloride Management	Yes.	See stipulation 4 related to providing a chloride management plan prior to project close-out.
		Wetland Protection	Yes.	
L	Permit Fee		Yes.	\$3,000 received November 23, 2021. Permit deposit fee replenished on April 26, 2022
M	Financial Assurance		See comment.	The financial assurance is calculated at \$20,062

Background

The applicant is proposing an addition of an approximately 8,100 SF outdoor gravel storage area with a one-way concrete drive entrance. The project will also consist of new fencing along the entire perimeter of the proposed storage area and planting of new trees along Park Drive and the southern edge of the proposed storage area. The applicant proposes construction of an infiltration swale to provide stormwater rate, volume, and quality control. There is a wetland along the southern edge of the property and adjacent to Riley Creek. The wetland is downgradient from, but will not be directly disturbed by, the proposed land-disturbing activities.

The Board of Manager conditionally approved the permit application at the April 6, 2022 meeting for the proposed land-disturbing activities. The conditionally approved stormwater management system was an iron enhanced sand filter with elevated daintile to promote underground infiltration. Following the conditional approval, the applicant fulfilled the following permit conditions: 1) replenished the permit fee deposit, 2) provided a draft maintenance declaration for review and approval by RPBCWD, 3) provided updated drawings indicating all disturbed areas within the buffer will be revegetated using a native seed mix and buffer signs in material conformity with a design and text provided by the District. The applicant also performed two double ring infiltration tests as required by permit stipulation 4. Because the infiltration testing results indicate the infiltration capacity of the soils on the site are

between 0.29-0.42 inches per hour (in/hr) which is higher than used in the design, the applicant has submitted this permit modification request to change the stormwater management facility from an iron enhanced sand filter with elevated draintile to an infiltration swale.

The project site information (which has not changed from the original application) is summarized below:

Project Site Information	Area (acres)
Total Site Area	4.17
Existing Site Impervious	1.1
Post Construction Site Impervious	1.28
New (Increase) in Site Impervious Area	0.18 (16%)
Disturbed Impervious Surface	0
Total Disturbed Area	0.45

The following materials were reviewed in support of the permit modification request:

1. Permit application dated November 11, 2021 (Notified applicant on November 24, 2021 that submittal was incomplete, revised materials completing the application received March 18, 2022; further revisions (for modification received May 17, 2022)
2. Stormwater Management Plan dated November 10, 2021 (revised December 15, 2021, revised February 16, 2022, revised March 18, 2022, revised May 17, 2022)
3. Project Plan Set (6 sheets) received November 11, 2021 (revised December 15, 2021, revised February 16, 2022, revised March 18, 2022, revised May 17, 2022, revised May 19, 2022)
4. Electronic HydroCAD models received December 15, 2021 (revised February 16, 2022, revised May 17, 2022)
5. Engineer's Opinion of Probable Construction Costs received December 15, 2021 (revised May 19, 2022)
6. Double-Ring Infiltration Test Results dated May 4, 2022

Rule C: Erosion and Sediment Control

This requested permit modification does not impact the previously approved wetland buffers on the site. The analysis presented below is repeated from the prior review to provide a comprehensive summary of the permit analysis.

Because the project will involve 0.45 acres of land-disturbing activity, the project must conform to the requirements in the RPBCWD Erosion and Sediment Control rule (Rule C, Subsection 2.1). The erosion control plan prepared by Quetica, LCC includes installation of double row of silt fence downgradient of the disturbance, a stabilized rock construction entrance, biolog perimeter protection, inlet protection, tree protection fencing, daily inspection, staging areas, placement of a minimum of 6 inches of topsoil (at 5% organic matter), decompaction of areas compacted during construction, and retention of native topsoil onsite to the greatest extent possible. The Erosion and Sediment Control plan sheet indicates that Jeff Searles, Lake Shore Equipment Company (952-474-3625) is responsible for erosion prevention and sediment control for the site.

The proposed project is in conformance with RPBCWD's Rule C.

Rule D: Wetland and Creek Buffers

This requested permit modification does not impact the previously approved wetland buffers on the site. The analysis presented below is repeated from the prior review to provide a comprehensive summary of the permit analysis.

Because the proposed work triggers a permit under RPBCWD Rules B and J, Subsections 2.1 and 3.1 require buffer adjacent to Riley Creek, a public water course, with an average width of 50 feet and a minimum width of 30 feet from the thalweg of the watercourse (subsection 3.2.b.v). In addition, a wetland protected by the state Wetland Conservation Act (WCA) borders the creek and is downgradient from (but not disturbed by) the proposed construction activities, Rule D, Subsections 2.1a and 3.1 require buffer on the edges of the wetland that are downgradient from the land-disturbing activities. The Wetland Delineation Report and Minnesota Routine Assessment Method (MnRAM) analysis submitted indicate that the wetland onsite is medium value. Rule D, Subsection 3.1.b.iii requires wetland buffer with an average of 40 feet from the delineated edge of the wetland, minimum 20 feet.

The proposed buffers intersect steep slopes, as defined in the rule. Per Rule D, subsection 3.2b, the buffer must encompass all or part of a slope averaging 18% or greater. Because the buffer area extends to the top of slopes that average steeper than 18% the project conforms to Rule B, subsection 3.2b. The buffer widths are summarized in the table below. As shown in the table below, the provided buffer widths are greater than the required buffer width to conform to Rule D, subsection 3.2.b.iii and 3.2.b.v; thus the width requirements are met.

Resource	RPBCWD Wetland Value	Required Minimum Width (ft)	Required Average Width (ft)	Required Area (sq ft)	Provided Area (sq ft)	Provided Minimum Width (ft)	Provided Average Width (ft)
Riley Creek	NA	30	50	4,670	13,950	50	N/A ¹
Wetland 1	Medium	20	40	18,728	36,836	52	N/A ¹

¹Buffer area extends to the top of slopes that average steeper than 18%, resulting in a width greater than the required average.

The engineer's review of plan sheets shows that buffer markers in conformity with a design and text provided by the district will be placed per District criteria (subsections 3.3 and 3.4). The Landscape Plan (C3-1) indicates all disturbed areas within the buffer will be revegetated using a native seed mix conforming to Rule D, Subsection 3.3. A note is included on the plan sheet (C4-1) indicating the project will be constructed so as to minimize the potential transfer of aquatic invasive species (e.g., zebra mussels, Eurasian watermilfoil, etc.) to the maximum extent possible conforming to Rule D, Subsection 3.6.

To conform to RPBCWD Rule D the following revisions are needed:

D1. Buffer areas and maintenance requirements must be documented in a declaration recorded after review and approval by RPBCWD in accordance with Rule D, Subsection 3.5.

Rule J: Stormwater Management

Because the project will disturb 0.45 acres of land-surface area, the project must meet the criteria of RPBCWD's Stormwater Management rule (Rule J, Subsection 2.1).

The applicant performed two double ring infiltration tests as required by permit stipulation 4. Because the infiltration testing results indicate the infiltration capacity of the soils on the site are between 0.29-0.42 inches per hour (in/hr) which is higher than used in the design, the applicant has submitted this permit modification request to change the stormwater management facility from an iron enhanced sand filter with elevated draitile to an infiltration swale. The applicant is proposing construction of an infiltration swale to provide rate control, volume abstraction and water quality management on the site.

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 2-, 10-, and 100-year frequency discharges from the disturbed site area 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
South	4.3	4.0	7.9	7.4	16.5	15.4	4.8	1.9

Volume Abstraction

Subsection 3.1.b of Rule J requires the abstraction onsite of 1.1 inches of runoff from all new or disturbed impervious surface of the parcel. An abstraction volume of 743 cubic feet is required from the 8,100 square feet of new impervious area on the site for abstraction.

Four soil borings, performed by ITCO Allied Engineering Company, show that soils in the project area are typically lean clay. A gradation test was done on the sample from boring B-1, which was located at the infiltration swale. American Engineering Testing performed two double ring infiltration tests as required by stipulation 4 on the original approval. Because the infiltration testing results indicate the infiltration capacity of the soils on the site are between 0.29-0.42 inches per hour (in/hr) which is higher than used in the original design, the site does not satisfy the conditions of a restricted site and the applicant proposes to change the iron enhanced sand filter with elevated draitile to an infiltration swale. Pretreatment of runoff prior to entering the infiltration swale is provided by a grass strip (Rule J,

Subsection 3.1b.1). The Engineer concurs that the site is not restricted, and with the applicant's use of a design infiltration rate of 0.29 in/hr based on the in-situ infiltration testing. This rate will result in the water level in the infiltration swale being drawn down within 48 hours (Rule J, subsection 3.1b.3).

Groundwater was not observed at the soil borings under the proposed infiltration swale. The subsurface investigation information summarized below shows that groundwater is at least 3 feet below the bottom of the proposed underground infiltration system (Rule J, Subsection 3.1.b.2.a).

Groundwater Separation Analysis

Proposed BMP	Nearest Subsurface Investigation	Boring is within footprint?	Groundwater Elevation (feet)	BMP Bottom Elevation (feet)	Separation (feet)
Filtration/infiltration Swale	B-1	Yes	No groundwater observed at boring bottom (approx. el 920.1)	930.6	10.5

The table below summarizes the volume abstraction for the site based on the in-situ infiltration capacity of the infiltration swale. The engineer concurs with the submitted information and finds that the proposed project will conform with Rule J, Subsection 3.1.b.

Volume Abstraction Summary

Required Abstraction Depth (inches)	Required Abstraction Volume (cubic feet)	Provided Abstraction Depth (inches)	Provided Abstraction Volume (cubic feet)
1.1	743	1.2	839

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

Because the proposed activities do not involve the construction or reconstruction of a building, subsection 3.6a does not impose requirements on the applicant. A stormwater-management facility must be constructed at an elevation that ensures that no adjacent habitable building will be brought into noncompliance with this requirement, according to Rule J, Subsection 3.6b. The following table summarizes the low floor analysis for the existing habitable structures adjacent to the proposed stormwater facilities. Because the provided freeboard is greater than 2 feet, the elevation and location

of the proposed stormwater facility meets the existing habitable structure requirement in Rule J, Subsection 3.6.b.

Adjacent Habitable Structure	Low Floor Elevation of Building (feet)	100-year Event Flood Elevation of Adjacent Stormwater Facility (feet)	Freeboard (feet)
Existing Structure	938.6	933.42	5.18

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. Maintenance of the infiltration swale must be documented in the declaration recorded after review and approval by RPBCWD. To conform to the RPBCWD Rule J the following revisions are needed:

- J1. Permit applicant must revise the previously submitted draft maintenance and inspection declaration to reflect the infiltration swale rather than an iron enhances sand filter facility. A draft of the revised declaration must be provided for District review and approval prior to recordation as a condition of issuance of the permit. Documentation of recordation must be submitted to RPBCWD.

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 and release the financial assurance held for the purpose of chloride management, 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.

Wetland Protection

Because the proposed activities discharge to a protected wetland on the site and alter the discharge the wetland receives from the site, the proposed activities must conform to RPBCWD wetland protection criteria (Rule J, subsection 3.10). The wetland on the southern border of the site is in the medium value category. Because the applicant's HydroCAD model results demonstrate, and the engineer concurs, that the proposed flow rate and volumes flowing towards the wetlands are less than the under existing conditions, the bounce and inundation will not increase, thus the project meets the Bounce and Inundation criterion.

Rule J, Subsection 3.10b requires that treatment of runoff to medium value wetlands meet the water quality treatment criteria in Rule J, subsection 3.1c. Because the proposed an infiltration swale provides the water quality treatment required in accordance with 3.1c.i, the engineer finds that the proposed project is in conformance with Rule J, Subsection 3.10b.

Rule L: Permit Fee Deposit:

The RPBCWD permit fee schedule adopted in February 2020 requires permit applicants to deposit \$3,000 to be held in escrow and applied to cover the \$10 permit-processing fee and reimburse RPBCWD for permit review and inspection-related costs and when a permit application is approved, the deposit must be replenished to the applicable deposit amount by the applicant before the permit will be issued to cover actual costs incurred to monitor compliance with permit conditions and the RPBCWD Rules. A permit fee deposit of \$3,000 was received on November 23, 2021. The permit deposit fee was replenished on April 26, 2022.

Rule M: Financial Assurance:

	Unit	Unit Cost	# of Units	Total
Rules C: Silt Fence	LF	\$2.50	900	\$2,250
Construction Entrance	EA	\$250	1	\$250
Restoration	AC	\$2,500	0.45	\$1,125
Rules D: Wetland and Creek Buffer	LS	\$5,000	1	\$5,000
Rules J: Stormwater Management Filtration/infiltration Swale: 125% of engineer's opinion of cost (\$3,690)	EA	125% OPC	1	\$4,613
Chloride Management Plan	EA	\$5,000	1	\$5,000
Contingency (10%)		10%		\$1,824
Total Financial Assurance				\$20,062

Applicable General Requirements:

1. The RPBCWD Administrator and Engineer shall be notified at least three days prior to commencement of work.
2. 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 above and on the permit. The granting of the permit does not in any way relieve the permittee, its engineer, or other professional consultants of responsibility for the permitted work.
3. The grant of the permit does not relieve the permittee of any responsibility to obtain approval of any other regulatory body with authority.
4. 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.

5. 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.
6. 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.
7. 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 conforms to Rules C.
3. The proposed project will conform to Rules D and J if the Rule Specific Permit Conditions listed above are met.

Recommendation:

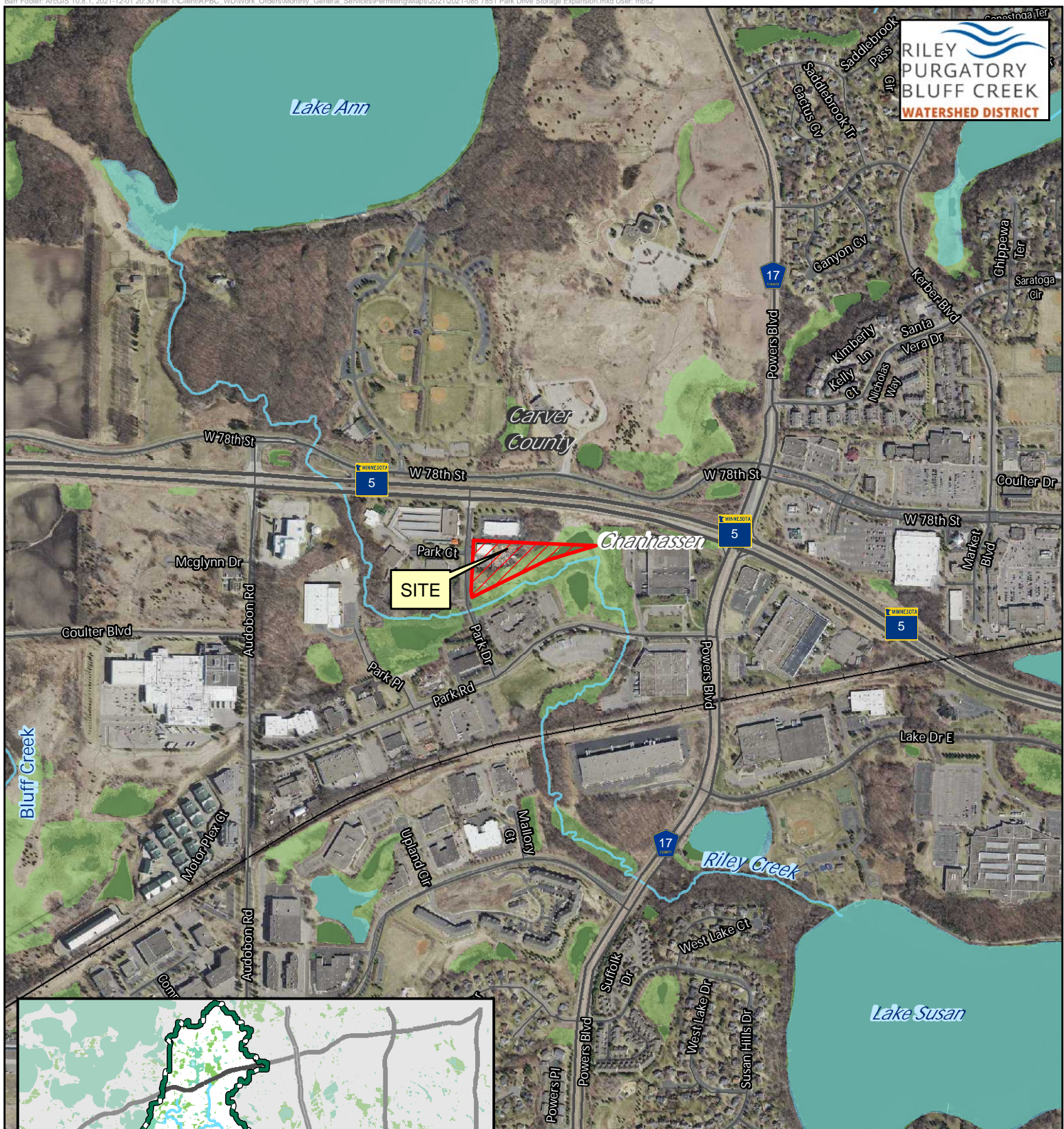
Approval of the permit modification contingent upon:

1. Financial Assurance in the amount of \$20,062.
2. Submission of documentation of recordation of a revised draft maintenance declaration for the stormwater management facilities and buffers after approval of the revised draft by the District. Permit applicant must provide a proof of recordation as a condition of issuance of the permit.

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, all stormwater management facilities 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.
 - e) photographic evidence of buffer marker locations indicated by permanent, free-standing markers in accordance with Rule D, Subsection 3.4 criteria.
- 3. Providing the following additional close-out materials:
 - a) Documentation that the constructed stormwater facility performs 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 and release the financial assurance held for the purpose of the chloride management, 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

7851 PARK DRIVE
STORAGE EXPANSION

Permit 2021-085
Riley Purgatory Bluff Creek
Watershed District



Feet

0 1,000



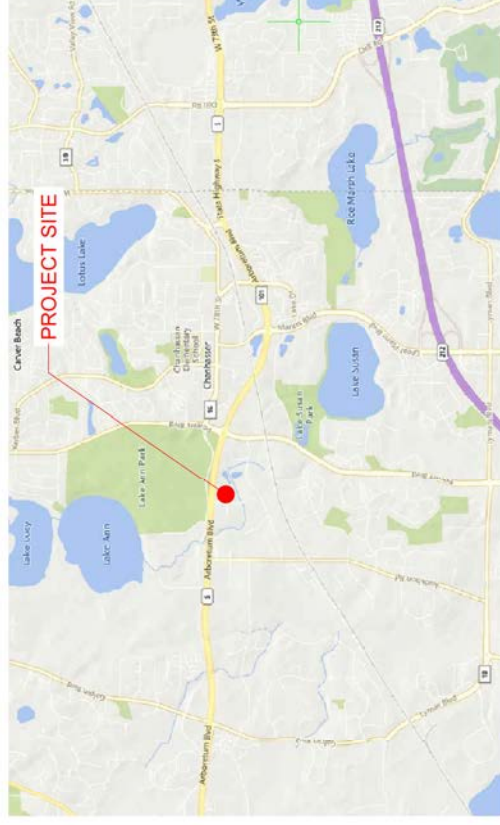
CO-1	COVER SHEET
C1-1	REMOVALS & EROSION CONTROL PLAN
C2-1	SITE AND GRADING PLAN
C3-1	LANDSCAPING PLAN
C4-1	NOTES
C5-1	DETAILS

20220504
C1-1 REMOVE EXISTING TREE
C3-1 ADD ADDITIONAL TREE TO REPLACE EXISTING

20220517
C2-1 MODIFIED INFILTRATION SWALE AND RISER
C5-1 MODIFIED INFILTRATION SWALE DETAIL

Minnesota

CIVIL ENGINEERING PLANS FOR
SITE DEMOLITION, SITE PLAN, GRADING, EROSION CONTROL AND UTILITIES



WARNING: THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GORMER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WHEN CONSTRUCTION OF ANY NEW OR EXISTING UTILITY IS REQUIRED. LOCATIONS MUST BE OBTAINED BEFORE DIGGER. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

EXTREME CAUTION MUST BE EXERCISED BEFORE AN EXCAVATION TAKES PLACE ON OR NEAR THIS SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF NES.

CIVIL ENGINEER
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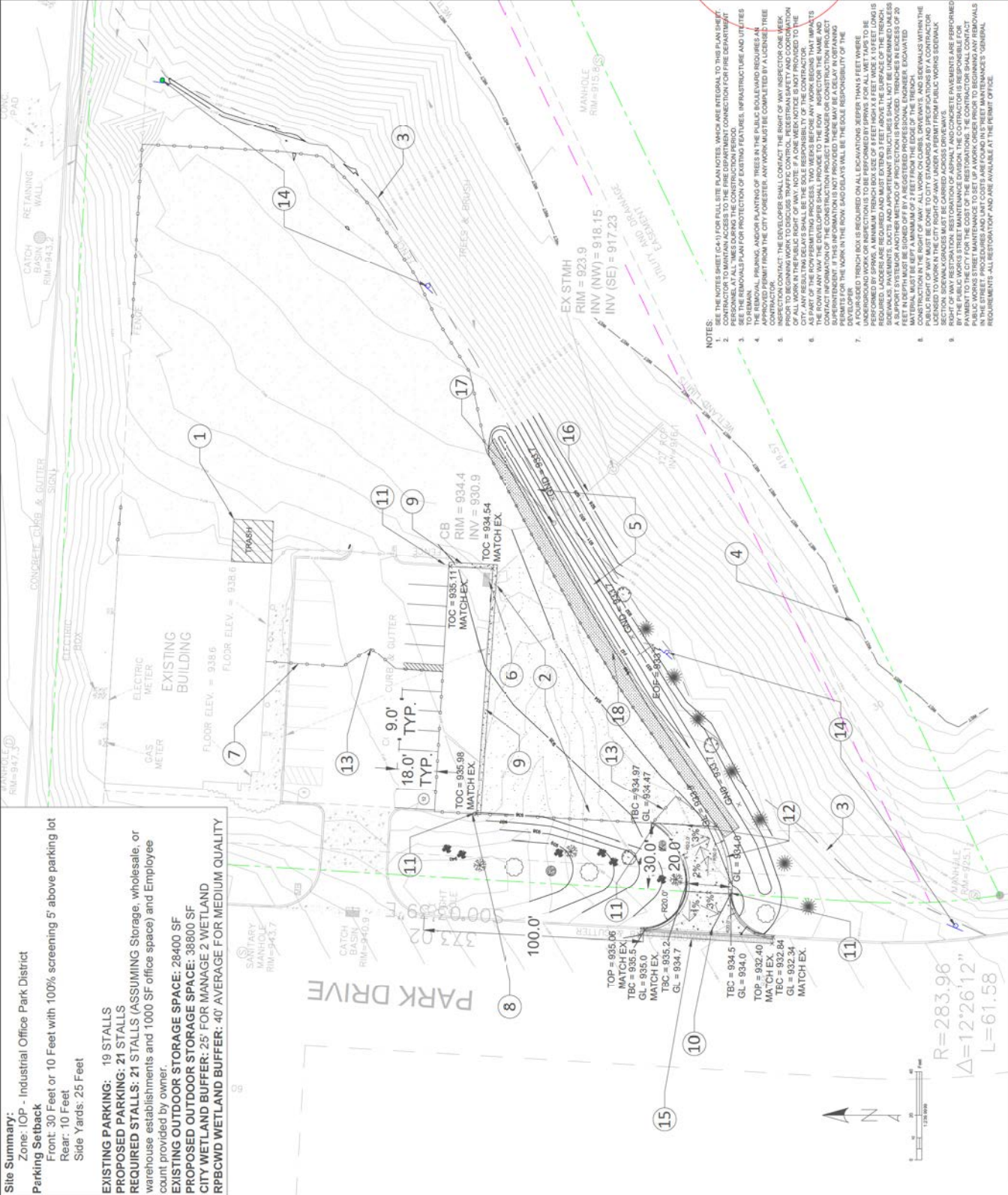
COVER

CO-1

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATION OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES AND OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

Site Summary:
 Zone: IOP - Industrial Office Park District
Parking Setback
 Front: 30 Feet or 10 Feet with 100% screening 5' above parking lot
 Rear: 10 Feet
 Side Yards: 25 Feet

EXISTING PARKING: 19 STALLS
PROPOSED PARKING: 21 STALLS
REQUIRED STALLS: 21 STALLS (ASSUMING Storage, wholesale, or warehouse establishments and 1000 SF office space) and Employee count provided by owner.
EXISTING OUTDOOR STORAGE SPACE: 28400 SF
PROPOSED OUTDOOR STORAGE SPACE: 38800 SF
CITY WETLAND BUFFER: 25' FOR MAGAGE 2 WETLAND
RPCWD WETLAND BUFFER: 40' AVERAGE FOR MEDIUM QUALITY

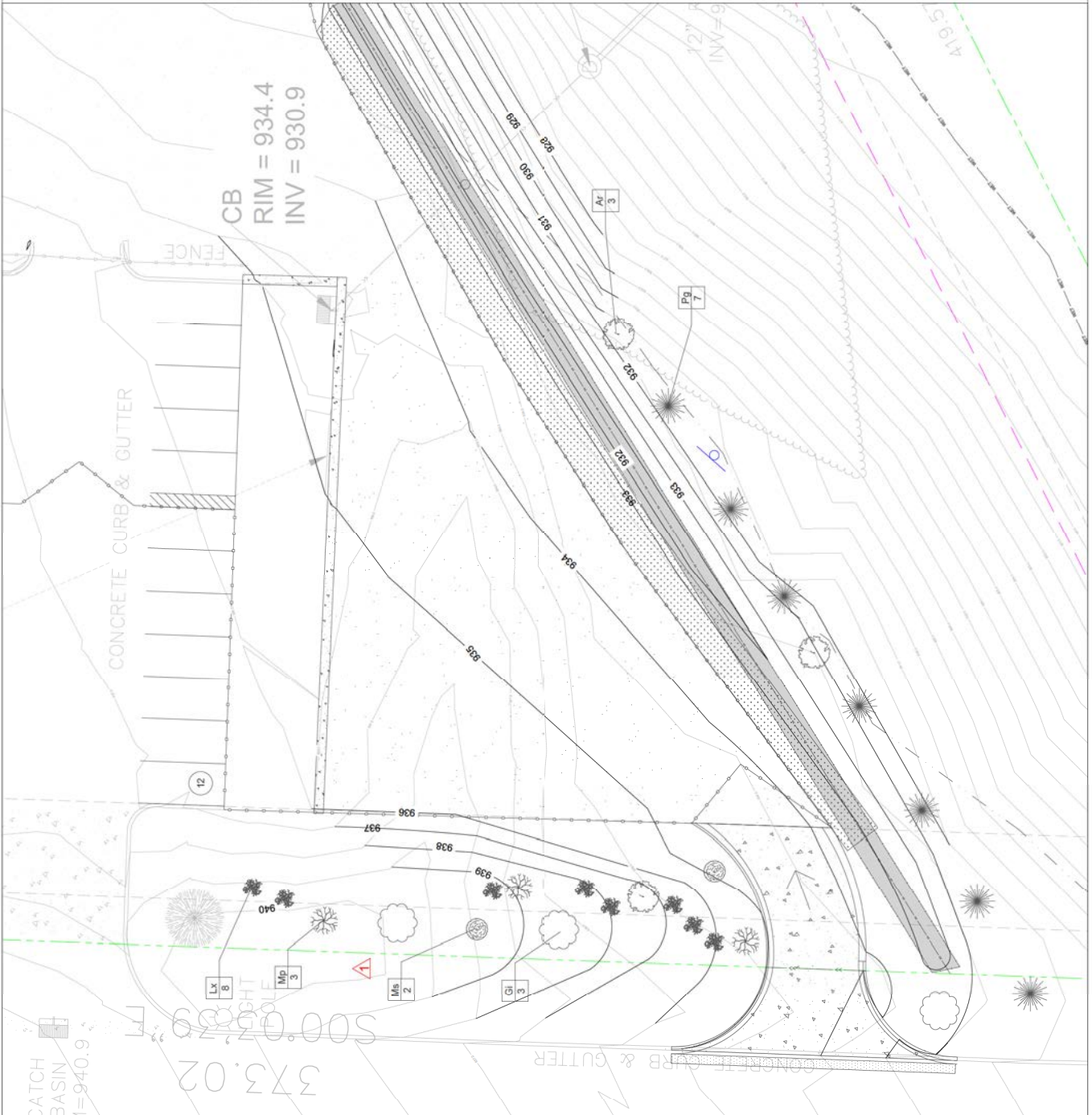





- NOTES:**
- SEE THE NOTES SHEET (C4-1) FOR FULL SITE PLAN NOTES, WHICH ARE INTEGRAL TO THIS PLAN SHEET.
 - CONTRACTOR TO MAINTAIN ACCESS TO THE FIRE DEPARTMENT CONNECTION FOR FIRE DEPARTMENT.
 - SEE THE REMOVALS PLAN FOR PROTECTION OF EXISTING FEATURES, INFRASTRUCTURE AND UTILITIES TO REMAIN. PRUNING AND/OR PLANTING OF TREES IN THE PUBLIC ROW REQUIRES AN APPROVED PERMIT FROM THE CITY FORESTER. ANY WORK MUST BE COMPLETED BY A LICENSED TREE INSPECTION CONTACT. THE DEVELOPER SHALL CONTACT THE RIGHT OF WAY INSPECTOR ONE WEEK PRIOR TO BEGINNING WORK TO DISCUSS TRAFFIC CONTROL, PEDESTRIAN SAFETY AND COORDINATION WITH THE CITY. ANY DELAYS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
 - AS PART OF THE ROW PERMITTING PROCESS, TWO WEEKS BEFORE ANY WORK BEGINS THAT IMPACTS THE PUBLIC ROW, THE DEVELOPER SHALL SUBMIT A LETTER TO THE CITY MANAGER AND THE CITY SUPERINTENDENT. IF THIS INFORMATION IS NOT PROVIDED THERE MAY BE A DELAY IN OBTAINING THE PERMIT. THE WORK IN THE ROW AND DELAYS WILL BE THE SOLE RESPONSIBILITY OF THE DEVELOPER.
 - A FOUR-FOOT TRENCH BOX IS REQUIRED ON ALL EXCAVATIONS DEEPER THAN 3 FEET WHERE REQUIRED LADDERS ARE REQUIRED AND MUST EXTEND 3 FEET ABOVE THE SURFACE OF THE TRENCH. A SUPPORT SYSTEM AND/OR METHOD OF PROTECTION IS PROVIDED. TRENCHES IN EXCESS OF 20 FEET DEPTH MUST BE EXCAVATED BY A LICENSED EXCAVATOR. EXCAVATED MATERIAL MUST BE LEFT A MINIMUM OF 7 FEET FROM THE EDGE OF THE TRENCH.
 - CONSTRUCTION IN THE RIGHT OF WAY, ALL WORK ON CURBS, DRIVEWAYS, AND SIDEWALKS WITHIN THE CITY WETLAND BUFFER SHALL BE COMPLETED UNDER A PERMIT FROM PUBLIC WORKS DEPARTMENT. SIDEWALK GRADINGS MUST BE CARRIED ACROSS DRIVEWAYS.
 - ALL WORK IN THE CITY WETLAND BUFFER SHALL BE COMPLETED UNDER A PERMIT FROM THE PUBLIC WORKS STREET MAINTENANCE DIVISION. THE CONTRACTOR IS RESPONSIBLE FOR PAYMENT TO THE CITY FOR THE COST OF THE RESTORATIONS. THE CONTRACTOR SHALL CONTACT THE CITY FOR THE COST OF THE RESTORATIONS. THE CONTRACTOR SHALL CONTACT THE CITY FOR THE COST OF THE RESTORATIONS. THE CONTRACTOR SHALL CONTACT THE CITY FOR THE COST OF THE RESTORATIONS.

- ROW EASEMENT**
 PROPERTY LINE
 WETLAND DELINEATION LIMIT
 WETLAND BUFFER LIMIT
- EXISTING GRAVEL SURFACE**
PROPOSED GRAVEL SURFACE
PROPOSED DITCH

- PROPOSED TRASH CONTAINER AREA
- PROPOSED GRAVEL STORAGE AREA
- WETLAND BUFFER ZONE LIMIT - WATERSHED REQUIRES AVERAGE OF 40' MIN. 20' FOR MEDIUM QUALITY WETLAND PER RPCWD WATERSHED REQUIREMENT. AND MINIMUM DATED NOV. 15, 2020
- WETLAND DELINEATION LIMIT
- PROPOSED STORM WATER SWALE @ 3% WITH IRON ENRICHED SAND LAYER
- EXISTING CB CHANGE TO FLAT GRATE CASTING
- PROPOSED FENCE LOCATION PER MANUFACTURER SPECIFICATIONS
- 8' FENCE ALONG PARK DRIVE SETBACK
- 2' RIBBON CURB
- PROPOSED ONE WAY ENTRY DRIVEWAY (PER CITY STANDARDS)
- 2' NOSE DOWN CURB
- 1' CONCRETE RIBBON CURB
- PROPOSED SECURITY GATE
- WETLAND BUFFER MONUMENT PER CITY STANDARDS EVERY 200' MINIMUM
- PATCH BITUMINOUS PER CITY STANDARDS
- EXISTING 12" RCP PIPE
- 12" HDPE PERFORATED RISER TEE INTO EXISTING 12" RCP PIPE
RIM = 932.95
INV (NW) = 924.44
INV (SE) = 924.27
- 8' VEGETATED FILTER STRIP USE MIN PF CP21 Filter Strip (NATIVE) GRASS SEED OR APPROVED EQUAL

**MODIFIED RISER STRUCTURE
 REMOVED DRAINAGE IN FILTRATION SWALE**



PLANTING SCHEDULE						
TREES	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY
	Ar	Acer rubrum	Red Maple	2.5"	B&B	3
	Gl	Gladiolus insularis (ornamental, spp.)	Honeylocust	2.5"	B&B	3
	Pg	Picea canadensis	Spruce, White	8"	B&B	7
	Lx	Lonicera xylosteum	Emerald Mound Honeysuckle	#2	Potted	8
	Mp	Malus 'Prairifire'	Prairifire Crabapple	2.5"	B&B	3
	Ms	Malus 'Spring Snow'	Spring Snow Crabapple	2.5"	B&B	2
						
						
						
						
						
						

LANDSCAPING NOTES:

1. SEE C5-1 FOR LANDSCAPING DETAILS AND NOTES.
2. RESEED DISTURBED AREAS WITH TWIN CITY SEED COMPANY "TUFF TURF" SEED MIX (OR APPROVED EQUIVALENT), PER MNDOT SEEDING STANDARDS.
3. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN TREES IN A PLUMB POSITION THROUGHOUT THE MAINTENANCE PERIOD.
4. RESEED TREATMENT SWALE AND FILTER STRIP WITH MndOT 33-282 DRY SWALE/POND MIX 44LB/ACRE
5. ALL DISTURBED AREAS WITHIN BUFFER TO BE RE-SEEDDED USING NATIVE SEED MIX MNDOT 350 AT 36.5 LB/ACRE OR APPROVED EQUIVALENT.

ADD ADDITIONAL TREE TO REPLACE EXISTING

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 631-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATION OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES AND OTHER BURIED STRUCTURES BEFORE DIGGING. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

CONCRETE RIBBON AND LAY DOWN CURB
not to scale

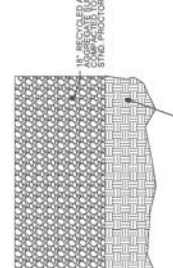
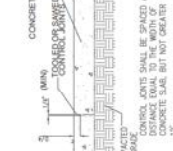
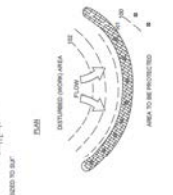
BIOLOG/SEDIMENT SOCK
NOT TO SCALE

2. MODIFIED FILTRATION DETAIL

(TYP)
NOT TO SCALE

NOT TO SCALE

AGGREGATE SURFACING
not to scale



EXPANSION JOINT
NOT TO SCALE

RETE VALLEY GUTTER
NOT TO SCALE

OUTLET STANDPIPE DETAIL
NOT TO SCALE

VEGETATED SWALE WITH UNDERDRAIN TYP.
NOT TO SCALE

CITY OF SAN ANTONIO	SUB-SURFACE PVC GRANULE CLEANOUTS FOR INLINE AND END OF RUN CLEANOUTS	ENGINEERING DEPARTMENT	DRAWING NO.
			52.34

CITY OF CHICAGO
 ENGINEERING DEPARTMENT
 PART NO. 5-2022A

COMMERCIAL/INDUSTRIAL
CONCRETE DRIVEWAY APRON

