



18681 Lake Drive East
Chanhassen, MN 55317
952-607-6512
www.rpbcwd.org

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2022-002

Considered at Board of Managers Meeting: April 6, 2022

Received complete: March 17, 2022

Applicant: Minnetonka Public Schools, Paul Bourgeois,

Representative: VAA Engineering, Andrew LaPalme, PE

Project: Minnetonka High School New Vantage/Momentum Building - The project proposes the redevelopment of an existing parcel into a new building with associated parking, utilities, and landscaping. The project includes an underground stormwater infiltration system to provide volume control, water quality, and rate control. There is an existing stormwater pond on the parcel that will remain on site after redevelopment.

Location: 5735 County Rd 101, Minnetonka, Minnesota 55345

Reviewer: Leslie DellAngelo, PE; and Scott Sobiech, PE; Barr Engineering Co.

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 April 6, 2022 meeting of the managers:

Resolved that the application for Permit 2022-002 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 of the permit have been affirmatively resolved, the RPBCWD president or administrator is authorized and directed to sign and deliver Permit 2022-002 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	
B	Floodplain Management and Drainage Alterations	Yes		
C	Erosion Control Plan	See comment.	See rule-specific permit condition C1 related to name of individual responsible for on-site erosion control.	
J	Stormwater Management	Rate	Yes	
		Volume	See Comment	See stipulation 4 related to verifying the infiltration capacity of the soils and that the volume control capacity is calculated using the measured infiltration rate
		Water Quality	Yes	
		Low Floor Elev.	Yes	
		Maintenance	See Comment	See rule-specific permit condition J1 related to revisions to the draft agreement (language and exhibit).
		Chloride Management	Yes	
		Wetland Protection	Yes	
L	Permit Fee Deposit	NA	Governmental entity	
M	Financial Assurance	NA	Governmental entity	

Background

Minnetonka Public Schools proposes construction of a new building with associated parking, utilities, and landscaping. The project includes an underground stormwater infiltration system to provide volume control, water quality, and rate control. There is an existing stormwater pond on the parcel that will remain on site after redevelopment. Because the property owner has undertaken two prior redevelopment projects triggering the RPBCWD stormwater requirements since January 1, 2015 (i.e., when RPBCWD reinstated a regulatory program) on the adjacent parcels under common ownership to the north, the presently proposed redevelopment will be considered in aggregate with prior changes under the common scheme of development provision of Rule J.

While there are no on-site or adjacent Wetland Conservation Act (WCA) protected wetlands for which wetland buffers would be required, the treated runoff leaving the site from the underground infiltration system is conveyed via storm sewer directly to an off-site protected wetland.

Two other permits have previously been issued for work at the Minnetonka School district property. Relevant project site information is provided below.

Project site information

Site Information	Permit 2015-005 ¹	Permit 2017-063	Permit 2022-002 (Current)	Site Aggregate Total (Includes Three Projects)
Total Site Area ³ (acres)	15.29	15.29	18.14 ²	18.14 ²
Existing Site Impervious Area (acres)	6.43	6.43	6.82	6.82
New (increase) in Site Impervious Area (acres)	0.3	0.19	0.76	1.25
Percent Increase in Impervious Surface	4.6	3.0	11.1	18.3 ⁴
Disturbed Site Impervious Area (acres)	0.96	0.13	0.39	1.48
Percent Disturbance of Existing Impervious Surface	14.9	2.0	5.7	21.7 ⁴
Total Disturbed Area (acres)	1.31	0.35	1.48	3.14

¹Permit 2015-005 was for work on Highway 101, city of Minnetonka street and on school district property. The information presented in the table only represents work on school district property.

²School district has acquired an adjacent parcel, adding 2.85 acres and 0.39 acres of existing imperviousness to the site

³Minnetonka School property now consists of four adjacent parcels under common or related ownership.

⁴Calculated based on pre-2015 project existing conditions (Common Scheme of Development Rule J, Subsection 2.5)

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

1. Permit application received on January 20, 2021 (Incomplete notice was sent on January 26, 2022; materials submitted to complete application on February 11, 2022)
2. New Vantage/Momentum Building Project Plan Set (15 sheets) dated January 19, 2022 (revised February 11, 2022, February 22, 2022, and March 16, 2022)
3. New Vantage/Momentum Building SWPPP dated January 20, 2022
4. New Vantage/Momentum Building Stormwater Report dated January 20, 2022 (revised February 11, 2022, February 22, 2022, and March 16, 2022)
5. Existing and Proposed HydroCAD models received January 20, 2022 (revised February 11, 2022, February 22, 2022, and March 16, 2022)
6. Geotechnical Report from Braun Intertec dated February 25, 2022
7. Draft Maintenance Agreement
8. Responses to review comments dated February 11, 2022
9. Responses to review comments submitted February 22, 2022
10. Responses to review comments submitted March 17, 2022.
11. Existing and Proposed P8 models (revised March 16, 2022)
12. Email from WSB Engineer, Earth Evans, who was the design of the existing storm pond on the site.
13. MnRAM for downstream wetland dated March 8, 2022.

Rule Specific Permit Conditions

Rule B: Floodplain Management and Drainage Alterations

Because the project will involve land-disturbing activities (placement of stormsewer inlets, flared end section, and riprap aprons) below the 100-year flood elevation of the existing storm water pond on the site, the project must conform to the requirements established in Rule B.

The proposed new structure must conform with low floor elevation requirements set forth by Rule B, Subsection 3.1, which states that it must be constructed in accordance with Rule J, subsection 3.6. Because the proposed new structure is in conformance with Rule J, Subsection 3.6a, as explained in later in this report, the new structure is also in conformance with Rule B, Subsection 3.1.

The project proposes to install two new stormsewer outlet pipes discharging runoff into the existing storm water pond on the site. The two outfalls will have flared-end-section (FES) end treatments and riprap aprons installed below the 100-year flood elevation of pond to prevent erosion. Because the construction plans show the existing and proposed grades match for the pipe and FES installation and riprap installation for the aprons will be below existing grade, the engineer concurs that the proposed project will not result in loss of flood storage below the 100-year flood elevation and the project conforms to Rule B, Subsection 3.2.

The engineer concurs with the applicant-provided runoff modeling results that demonstrate the proposed project will decrease the flow rates leaving the site relative to existing conditions (see the rate control analysis in Rule J below). Because the proposed flow rates leaving the site will be lower than existing flow rates the project is not reasonably likely to adversely impact off-site flood risk or channel stability. The applicant also provided pre- and post-project water quality modeling to demonstrate no adverse impact to water quality. The modeling results show the total suspended solids and total phosphorus load leaving the site after the project will be less than the existing load leaving the site. This also supports the engineer's determination that the project meets the requirements of Rule B, subsection 3.3. Because no watercourses exist on the site, the creekside restriction requirements set forth by Rule B, Subsection 3.4 do not impose requirements on the project. As detailed in the Rule C analysis below, the submitted erosion control plan conforms with Rule B, Subsection 3.5. A note on the plans indicates that activities must be conducted to minimize the potential transfer of aquatic invasive species conforming to Rule B, Subsection 3.6.

The proposed project conforms to the floodplain management and drainage alteration requirements of Rule B

Rule C: Erosion Prevention and Sediment Control

Because the project will involve 1.48 acres of land-disturbing activities, the project must conform to the erosion prevention and sediment control requirements established in Rule C.

The erosion control plan prepared by VAA Engineering. includes installation of perimeter control (silt fence), a stabilized rock construction entrance, inlet protection, daily inspection, 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. To conform to RPBCWD Rule C requirements, the following revisions are needed:

C1. The Applicant must provide the name, address and phone number of the individual who will remain liable to the District for performance under this rule and maintenance of erosion and sediment-control measures from the time the permitted activities commence until vegetative cover is established.

Rule J: Stormwater Management

Because the project will involve 1.48 acres of land-disturbing activity (i.e., more than 5,000 square feet), the project must meet the criteria of RPBCWD's Stormwater Management rule (Rule J). Under paragraph 2.5 of Rule J, Common Scheme of Development, activities subject to Rule J on a parcel or adjacent parcels under common or related ownership will be considered in the aggregate, and the requirements applicable to the activity under this rule will be determined with respect to all redevelopment that has occurred on the site and on adjacent sites under common or related ownership since the date this rule took effect (January 1, 2015). Because two projects have been permitted since the rules took effect (RPBCWD Permit 2015-005 and 2017-063), the current activities proposed must be considered in aggregate with the activities proposed under the prior applications.

The criteria listed in Subsection 3.1 only apply to the disturbed areas on the project site because the project, when considered in aggregate with the other permitted activities at the site, increases the imperviousness by 18.3 percent and disturbs a combined 21.7 percent of the existing impervious surface on the site (Rule J, Subsection 2.3) (see project site information table above). The aggregate extent of disturbance is less than 50 percent of the impervious area of the site, and the three projects, in aggregate, expand the impervious area of the site by less than 50 percent, therefore RPBCWD's stormwater management requirements apply only to the increased and disturbed and reconstructed impervious areas of the site proposed for this project.

The applicant is proposing construction of an underground infiltration system to provide the rate control, volume abstraction and water quality management. Pretreatment for runoff entering the underground infiltration system is being provided by a manhole with sump and an isolator row in the underground system.

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 site are summarized in the below table. The proposed project is in conformance with RPBCWD Rule J, Subsection 3.1.a.

Existing and Proposed Peak Runoff Rates

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
Storm Main on Covington Road (South/East)	1.4	1.1	2.0	2.0	8.3	7.2	0.4	0.4
Storm Main on County Road 101	1.6	0.9	3.2	1.9	6.5	4.0	0.2	0.1
Existing Stormwater Pond	0.4	0.4	2.0	1.7	5.5	5.3	0.3	0.3

Volume Abstraction

Subsection 3.1.b of Rule J requires the abstraction onsite of 1.1 inches of runoff from the regulated impervious surface of the site. An abstraction volume of 4,592 cubic feet is required from the 1.15 acres of regulated impervious area. Pretreatment for runoff entering the underground infiltration system is being provided by a manhole with sump and an isolator row in the underground system to conform to Rule J, Subsection 3.1.b.1.

The three soil borings (ST-14, ST-15, and ST-21) performed by Braun Intertec under the proposed underground infiltration system show that soils in the project area are primarily clayey sand and sandy lean clay. The Engineer concurs that the presence of clay soils, the observed normal water level in the existing stormwater pond, the city’s tree preservation ordinance, and steep slopes present on the site show that the abstraction standard in Subsection 3.1 of Rule J cannot practicably be met, the site is considered a restricted site and stormwater runoff volume must be managed in accordance with Subsection 3.3 of Rule J.

For restricted sites, subsection 3.3 of Rule J requires rate control in accordance with subsection 3.1.a and that abstraction and water-quality protection be provided in accordance with the following sequence: (a) Abstraction of 0.55 inches of runoff from site impervious surface determined in accordance with paragraphs 2.3, 3.1 or 3.2, as applicable, and treatment of all runoff to the standard in paragraph 3.1c; or (b) Abstraction of runoff onsite to the maximum extent practicable and treatment of all runoff to the standard in paragraph 3.1c; or (c) Off-site abstraction and treatment in the watershed to the standards in paragraph 3.1b and 3.1c. The engineer concurs that the 2,679 cubic feet of abstraction provided by the applicant’s proposed underground infiltration system is in accordance with subsection 3.3.a.

Groundwater was not observed at the soil borings under the proposed underground infiltration system. 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)
Underground Infiltration System	ST-21	Yes	No groundwater observed at boring bottom (approx. el 915.8)	926.4	10.6

The engineer concurs with the applicant’s design infiltration rates of 0.06 inches per hour for clayey sand and sandy lean clay based on the guidelines provided in the Mn Stormwater Manual. Based on the design infiltration rate, the engineer concurs that the underground infiltration system will draw down within 48 hours (Rule J, subsection 3.1b.3). Per Rule J, Subsection 3.1.b.2.c measured infiltration capacity of the soils at the bottom of the infiltration systems must be provided. However, the applicant has chosen to wait until construction to conduct infiltration testing. The applicant must submit documentation verifying the infiltration capacity of the soils and that the volume control capacity is calculated using the measured infiltration rate. If infiltration capacity is less than needed to conform with the volume abstraction requirement in subsection 3.3a or there is inadequate separation to groundwater, design modifications to achieve compliance with RPBCWD requirements will need to be submitted (in the form of an application for a permit modification or new permit).

The table below summarizes the volume abstraction for the site based on the design infiltration capacity of the underground infiltration system. With the conditions noted above regarding verification of subsurface conditions, the engineer concurs with the submitted information and finds that the proposed project will conform with Rule J, Subsection 3.3.a.

Volume Abstraction Summary

Required Abstraction Depth (inches)	Required Abstraction Volume (cubic feet)	Provided Abstraction Depth (inches)	Provided Abstraction Volume (cubic feet)
0.55	2,296	0.64	2,679

Water Quality Management

Subsection 3.1.c of Rule J requires the Applicant provide for at 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. The Applicant is proposing to use an underground infiltration system and the existing stormwater pond to achieve the required TP and TSS removals and submitted a P8 model to estimate the TP and TSS removals. The results of this modeling are summarized in tables below showing the annual TSS and TP removal requirements are achieved. The modeling also indicates and that there is no net increase in TSS and TP leaving the site. The Engineer concurs with the modeling and finds that the proposed project to be in conformance with Rule J, Subsection 3.1.c.

Annual TSS and TP removal summary

Pollutant of Interest	Regulated Site Loading (lbs/yr)	Required Load Removal (lbs/yr)	Provided Load Reduction (lbs/yr)
Total Suspended Solids (TSS)	1,423	1,280 (90%)	1,302 (91.5%)
Total Phosphorus (TP)	4.6	2.8 (60%)	3.4 (73.6%)

Summary of net change in TSS and TP leaving the site

Pollutant of Interest	Existing Site Loading (lbs/yr)	Proposed Site Load after Treatment (lbs/yr)	Change (lbs/yr)
Total Suspended Solids (TSS)	149.6	120.4	-29.2
Total Phosphorus (TP)	1.3	1.1	-0.2

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. The applicant is proposing to construct the building with a low floor elevation of 925.5 ft which will be above the 100-year flood elevation of the proposed stormwater management facilities by 1.91 feet. Because the separation between the proposed low floor elevation and the emergency overflow of the stormwater management facility is 3.12 feet, which is greater than the required 1 foot separation, the project is in conformance with Rule J, Subsection 3.6a.

Structure	Low Floor Elevation of Building (feet)	100-year Event Flood Elevation of Adjacent Stormwater Facility (feet)	Freeboard to 100-year (feet)	Emergency Overflow Elevation of Adjacent Stormwater Facility (feet)	Vertical Separation Distance to Emergency Overflow (feet)
Vantage-Momentum Building	925.5	922.38	1.91	922.38	3.12

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 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)
Clear Springs Elementary School	931.24	923.59	7.65
Clear Springs Elementary School Gymnasium Addition	929.82	923.59	6.23
Private Residence at 18154 Covington Road	932	923.59	8.41

Maintenance

Subsection 3.7 of Rule J requires the submission of 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. While the applicant provided a draft post construction maintenance agreement for review, the following revisions are needed:

- J1. The applicant must work with RPBCWD to revise the maintenance and inspection agreement as needed and the applicant must execute the revised agreement after approval by 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. A compliant chloride management plan was provided by the applicant on March 19, 2021.

Wetland Protection

Because the proposed activities discharge to a downstream WCA protected wetland and alter the discharge the wetland receives from the site, the project must conform to RPBCWD wetland protection criteria (Rule J, subsection 3.10). The applicant provided and the Engineer concurs with the below analysis of potential wetland impacts based on Table J1 of RPBCWD Rule J.

The downstream wetland has been assessed as medium value. The following tables summarize the allowable change in bounce and inundation duration from Table J1 of RPBCWD Rule J as well as the applicant’s analysis for wetland protection and the potential impacts on the wetland. The proposed project conforms to the wetland bounce and inundation requirements in Rule J, subsection 3.10a,.

Summary of allowable impacts on onsite wetland from Rule J, Table J1

Wetland Value/ Waterbody	Permitted Bounce for, 10-Year Event	Inundation Period for 1- and 2-Year Event	Inundation Period for 10-Year Event	Runout Control Elevation
Medium	Existing +/- 1.0 feet	Existing+2 days	Existing +14 days	0 to 1.0 ft above existing runout

Impacts of Project on Wetlands

Wetland	RPBCWD Wetland Value	Change in Bounce for, 10-Year Event (feet)	1-year change in Inundation Period (days)	2-year change in Inundation Period (days)	10-year change in Inundation Period (days)	Runout Control Elevation
Downstream Wetland	Medium	0.1	<-0.1	<-0.1	<-0.1	No change

Rule J, Subsection 3.10b requires that treatment of runoff to medium value wetlands archive 90 percent total suspended solids removal and 60 percent total phosphorus removal. The off-site wetland is a medium value wetland. P8 modeling results show the proposed underground infiltration system and existing stormwater pond provides 91.5% TSS and 73.6% TP removals, thus the engineer finds that the proposed project is in conformance with Rule J, Subsection 3.10b

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.

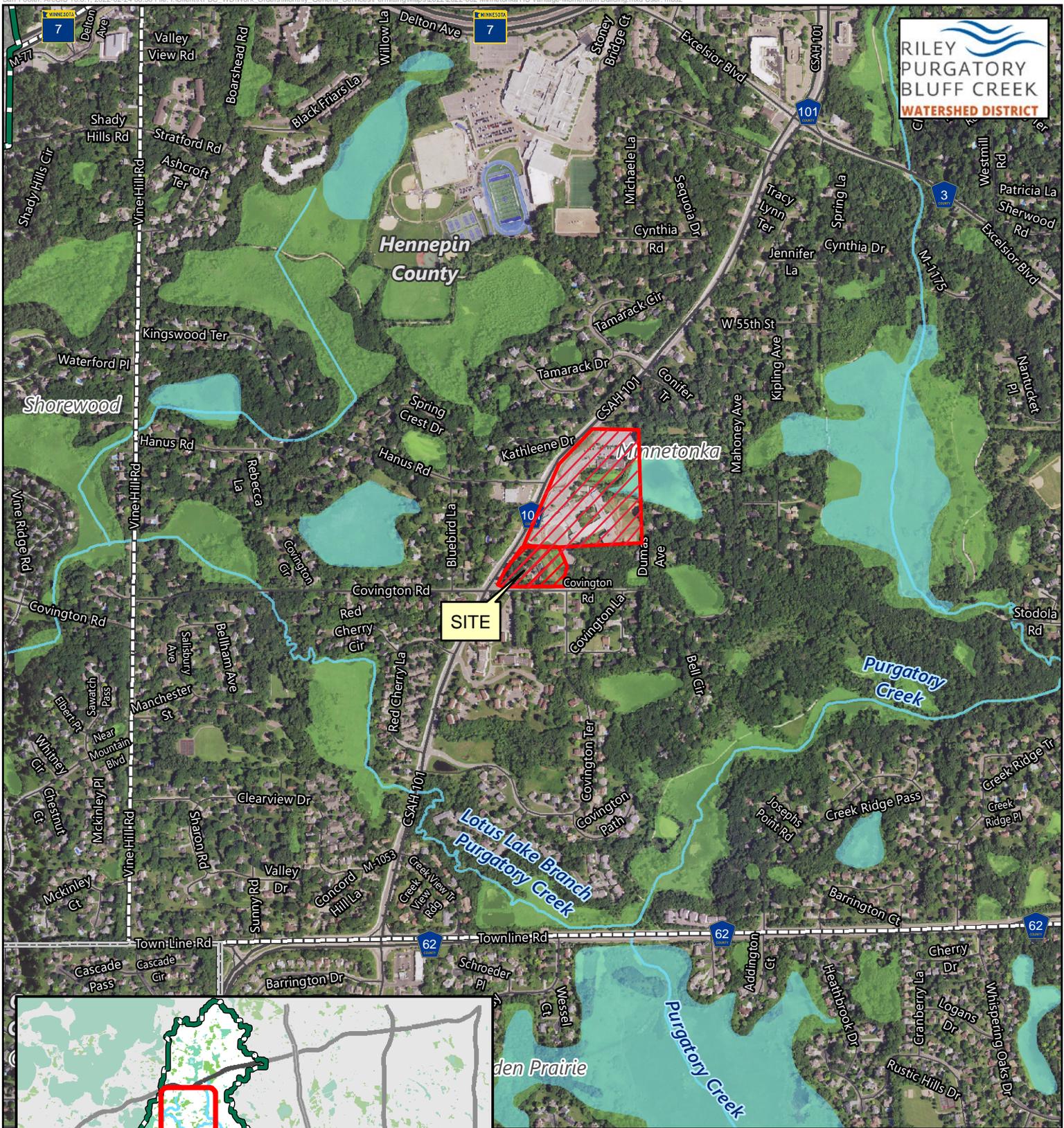
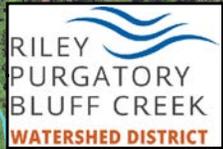
Recommendation:

Approval of the permit contingent upon:

1. Permit applicant must provide the name and contact information of the general contractor responsible for erosion and sediment control at the site. RPBCWD must be notified if the responsible party changes during the permit term.
2. The applicant must work with RPBCWD to revise the maintenance and inspection agreement as needed and the applicant must execute the revised agreement after 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 5.6, upon completion of the site work, the permittee must submit as-built drawings demonstrating that at the time of final stabilization the stormwater management facilities conform to design specifications and functions 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 stormwater 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 Subsection 3.2c criteria
4. Per Rule J, Subsection 3.1.b.ii measured infiltration capacity of the soils at the bottom of the underground infiltration system must be provided. The applicant must submit documentation verifying the infiltration capacity of the soils and that the volume control capacity is calculated using the measured infiltration rate. In addition, subsurface soil investigation is needed to verify adequate separation to groundwater (Rule J subsection 3.1.b.2). If infiltration capacity is less than needed to conform with the volume abstraction requirement in subsection 3.1b or there is inadequate separation to groundwater, design modifications to achieve compliance with RPBCWD requirements will need to be submitted (in the form of an application for a permit modification or new permit).



Permit Location Map

MINNETONKA HIGH SCHOOL NEW
VANTAGE-MOMENTUM BUILDING
Permit 2022-002
Riley Purgatory Bluff Creek
Watershed District



Feet





SITEWORK PACKAGE FOR THE PROPOSED NEW VANTAGE / MOMENTUM BUILDING TO SERVE MINNETONKA HIGH SCHOOL MINNETONKA, MN

REVISONS
 1 - Waterford Residential - 2/11/22
 2 - Waterford Residential - 2/11/22
 3 - Waterford Residential - 2/16/22

New Vantage / Momentum High School
 Independent School District No. 276
 5735 County Road 101
 Minnetonka, Minnesota 55345

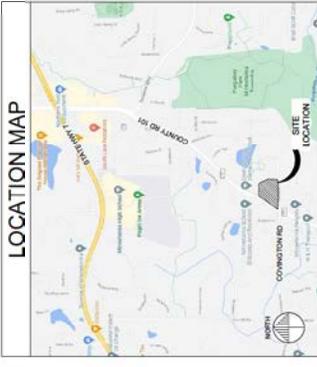
DESIGNED BY
 ARCHITECTURAL SERVICES
 1000 VALLEY VALLEY ROAD
 SUITE 200
 MINNETONKA, MN 55347
 DATE: 01/19/2022
 PROJECT NUMBER: 2022-001

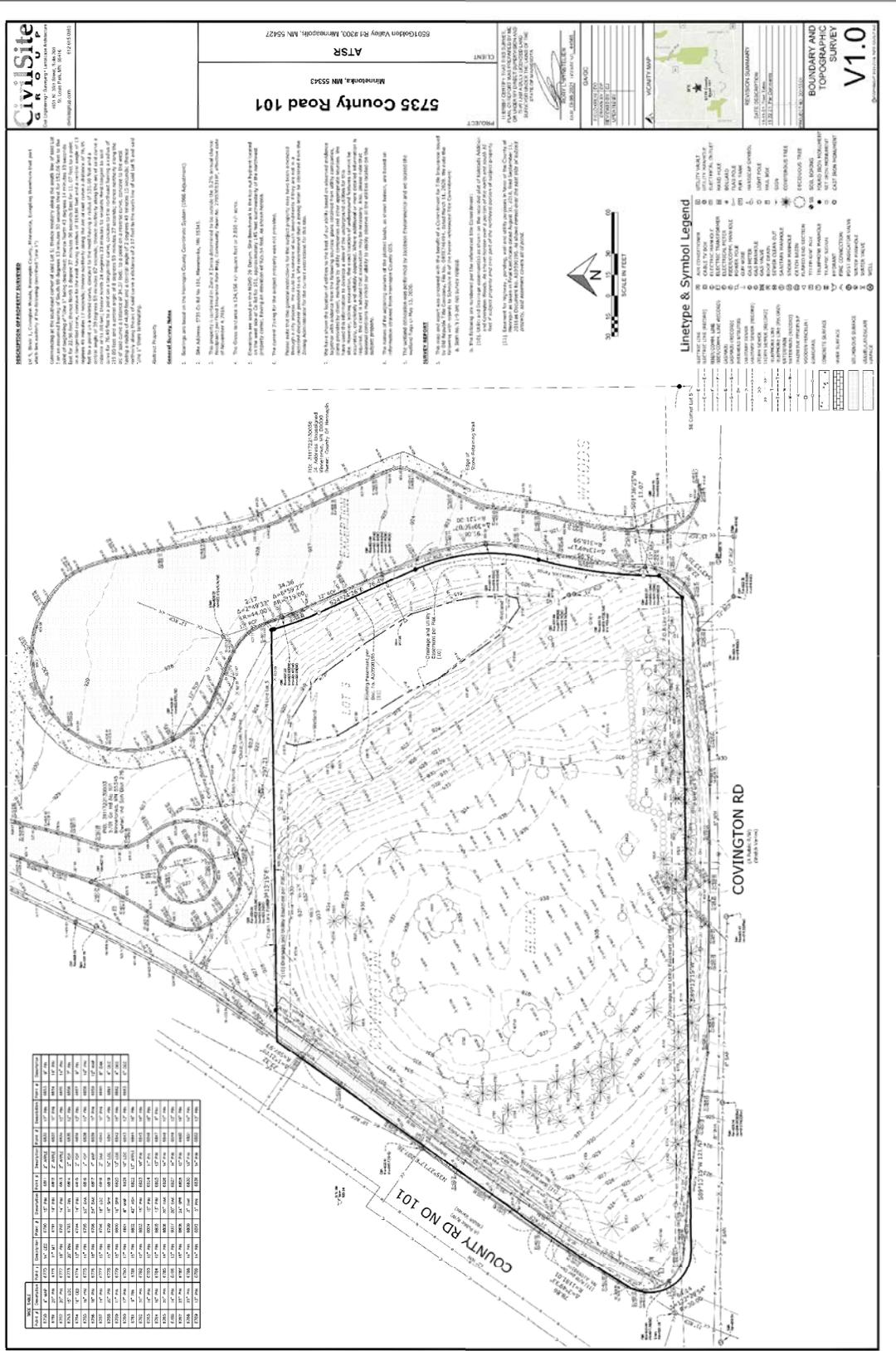
FOR REVIEW ONLY

NOT FOR CONSTRUCTION

DESIGNED BY: ARCHITECTURAL SERVICES
 CHECKED BY: ARL
 DRAWN BY: ARL
 PROJECT NUMBER: 2022-001
 SHEET NAME: TITLE SHEET AND DRAWING INDEX
 DATE: JANUARY 19, 2022
 PROJECT: NEW VANTAGE / MOMENTUM BUILDING
 PROJECT NUMBER: 2022-001
 SHEET NUMBER: C0.0

DRAWING INDEX		
SHEET NO.	TITLE SHEET AND DRAWING INDEX	REV. NO.
V10	SURVEY	A
C10	EXISTING CONDITIONS AND REMOVAL PLAN	A
C20	UTILITY PLAN	A
C30	SITE DEMO PLAN	A
C40	CONSTRUCTION MANAGEMENT PLAN	A
C50	EROSION AND SEDIMENT CONTROL PLAN	A
C60	QUAL DETAILS	A
C70	QUAL DETAILS	A
C80	QUAL DETAILS	A
C90	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)	A
L10	TREE REMOVAL AND PROTECTION PLAN	A
L20	SITE LANDSCAPE PLAN	A
L30	LANDSCAPE AND SITE DETAILS	A





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PROJECT
 5735 County Road 101
 Minnetonka, MN 55345

CLIENT
 ATSR
 8997 Journal Valley Rd #200, Minneapolis, MN 55427

REVISIONS

NO.	DATE	DESCRIPTION
1	01/18/22	ISSUED FOR REVIEW

BOUNDARY AND TOPOGRAPHIC SURVEY
V1.0

DATE: JANUARY 18, 2022

PROJECT: BOUNDARY AND TOPOGRAPHIC SURVEY

PROJECT NO.: 21082

SHEET NUMBER: V1.0

REVISION SUMMARY

NO.	DATE	DESCRIPTION
1	01/18/22	ISSUED FOR REVIEW

NEIGHBORHOOD MAP

CLIENT
 ATSR
 8997 Journal Valley Rd #200, Minneapolis, MN 55427

DISCLAIMER
 The information contained herein is for informational purposes only and does not constitute a contract. The user of this information is advised to consult with a professional engineer or architect before using the information contained herein. The user of this information is advised to consult with a professional engineer or architect before using the information contained herein.

General Survey Notes

- Survey was conducted on the 18th of January, 2022.
- Site Address: 5735 County Road 101, Minnetonka, MN 55345.
- The project is located on the 1/2 Section 27, Township 125N, Range 10W, 10th Principal Meridian, MN 55345.
- The survey was conducted by ATSR, a professional engineering and architecture firm.
- The survey was conducted in accordance with the Minnesota Surveying and Mapping Act, Chapter 327A, Minnesota Statutes.
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Survey Method

The survey was conducted using a total station and GPS receiver. The survey was conducted in accordance with the Minnesota Surveying and Mapping Act, Chapter 327A, Minnesota Statutes.

Survey Accuracy

The survey was conducted to a standard of 1/10,000. The survey was conducted in accordance with the Minnesota Surveying and Mapping Act, Chapter 327A, Minnesota Statutes.

Survey Data

The survey data is contained in the accompanying files. The survey data is contained in the accompanying files.

Survey Notes

The survey was conducted in accordance with the Minnesota Surveying and Mapping Act, Chapter 327A, Minnesota Statutes.

Survey Legend

The survey legend is contained in the accompanying files. The survey legend is contained in the accompanying files.

Spot	Height	Spot	Height	Spot	Height
1	120.15	11	120.15	21	120.15
2	120.15	12	120.15	22	120.15
3	120.15	13	120.15	23	120.15
4	120.15	14	120.15	24	120.15
5	120.15	15	120.15	25	120.15
6	120.15	16	120.15	26	120.15
7	120.15	17	120.15	27	120.15
8	120.15	18	120.15	28	120.15
9	120.15	19	120.15	29	120.15
10	120.15	20	120.15	30	120.15

Scale

1" = 100'

North Arrow

Legend

The legend is contained in the accompanying files. The legend is contained in the accompanying files.

Notes

The notes are contained in the accompanying files. The notes are contained in the accompanying files.

References

The references are contained in the accompanying files. The references are contained in the accompanying files.

Appendices

The appendices are contained in the accompanying files. The appendices are contained in the accompanying files.

Index

The index is contained in the accompanying files. The index is contained in the accompanying files.

Other

The other information is contained in the accompanying files. The other information is contained in the accompanying files.

Conclusion

The conclusion is contained in the accompanying files. The conclusion is contained in the accompanying files.

Final

The final information is contained in the accompanying files. The final information is contained in the accompanying files.



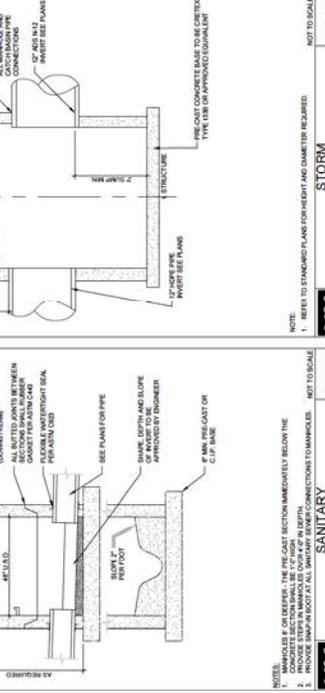
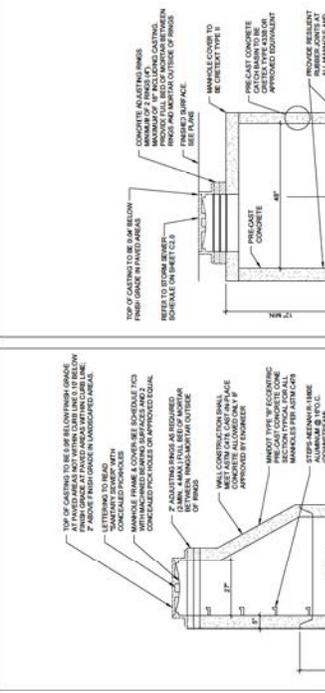
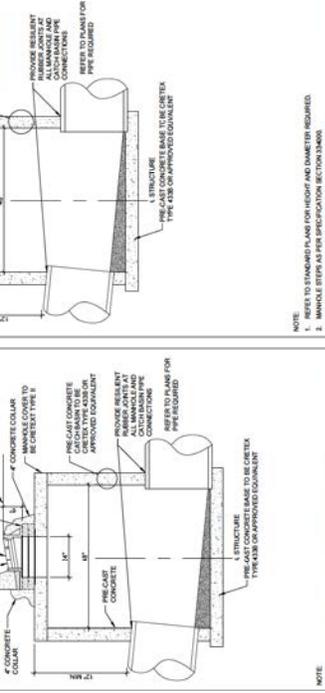
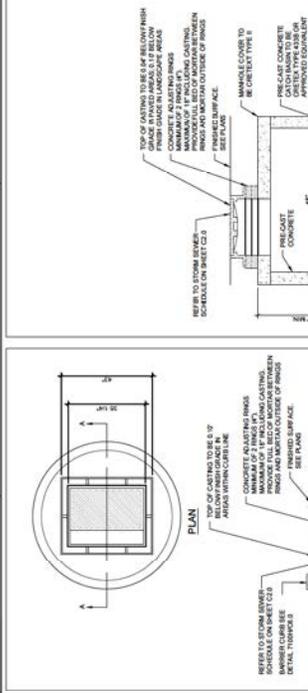
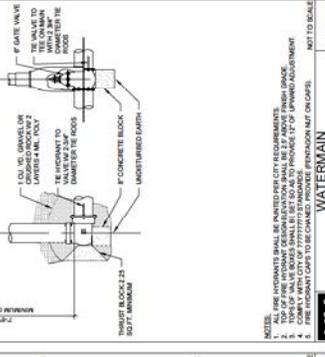
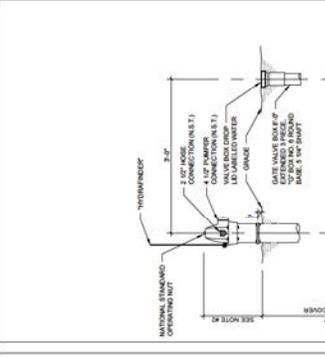
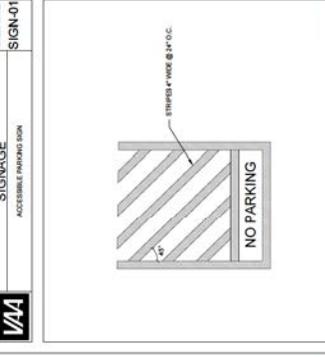
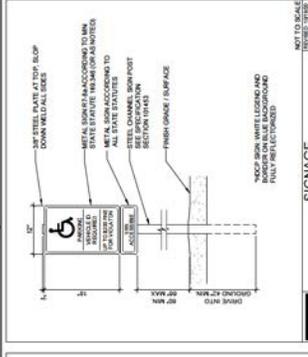
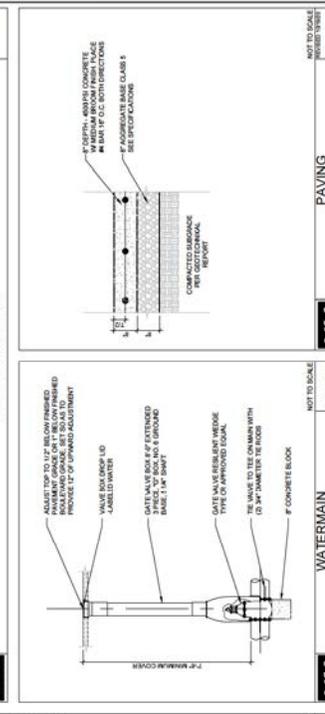
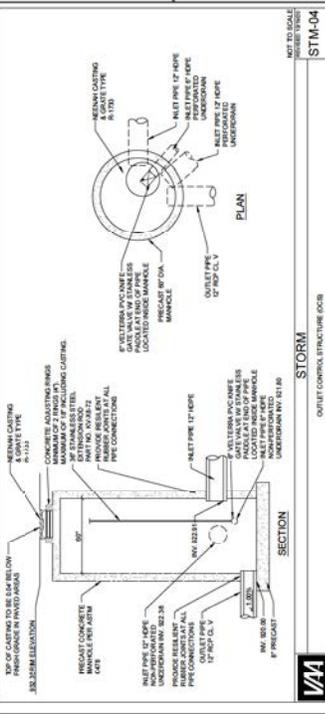
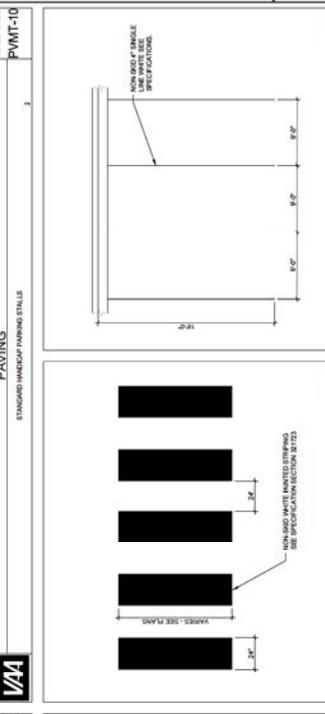
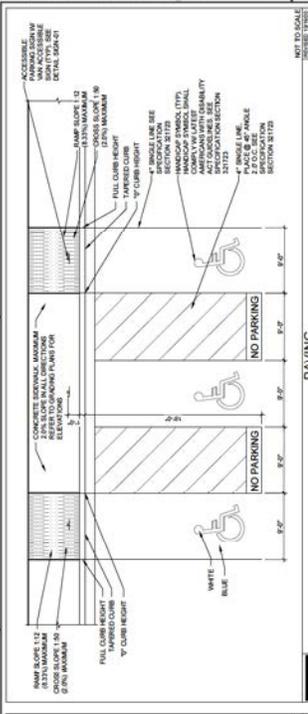
DATE: 12/15/2022
DRAWN BY: J. J. JENSEN
CHECKED BY: J. J. JENSEN
DATE: 12/15/2022
PROJECT NO.: 276-101-001
SHEET NO.: 101-001

FOR REVIEW ONLY
NOT FOR CONSTRUCTION

DESIGNED BY: J. J. JENSEN
CHECKED BY: J. J. JENSEN
DATE: 12/15/2022
PROJECT NO.: 276-101-001
SHEET NO.: 101-001

DATE: 12/15/2022
PROJECT NO.: 276-101-001
SHEET NO.: 101-001

DATE: 12/15/2022
PROJECT NO.: 276-101-001
SHEET NO.: 101-001



REVISIONS
 1 - Waterford Residential - 2/11/22
 2 - Waterford Residential - 2/11/22
 3 - Waterford Residential - 2/16/22

Independent School District No. 276
 575 County Road 101
 Minnetonka, Minnesota 55345

DATE: 10/11/22
 DRAWN BY: J. J. JENSEN
 CHECKED BY: J. J. JENSEN
 APPROVED BY: J. J. JENSEN
 PROJECT NO.: 2022-001

FOR REVIEW ONLY

NOT FOR CONSTRUCTION

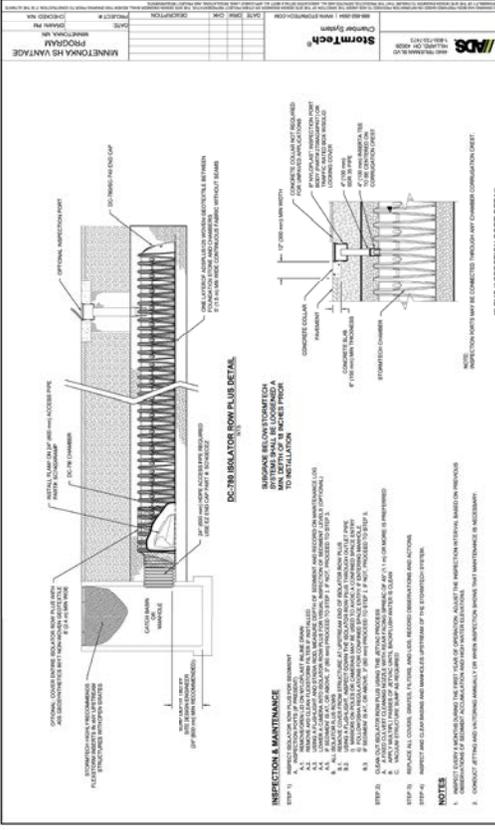
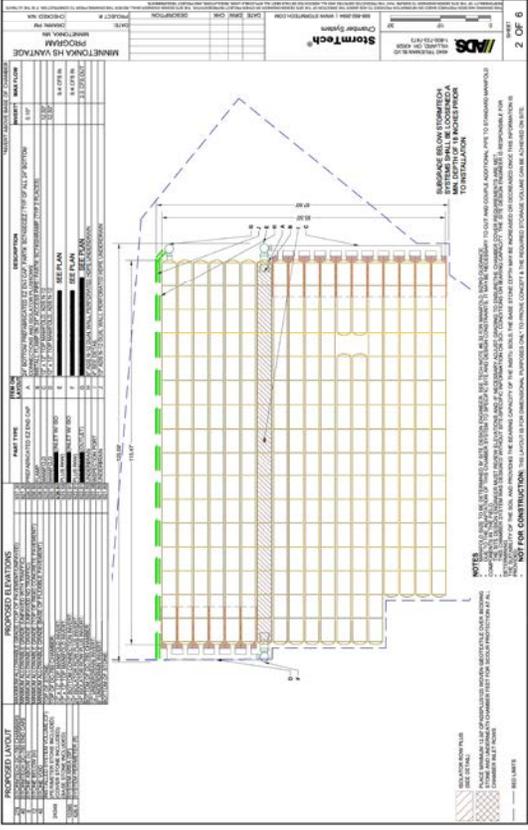
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 DRAWN BY: J. J. JENSEN
 CHECKED BY: J. J. JENSEN
 APPROVED BY: J. J. JENSEN
 PROJECT NO.: 2022-001

DATE: 10/11/22
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 APPROVED BY: J. J. JENSEN
 PROJECT NO.: 2022-001

C6.2



DC-236 STORMTECH CHAMBER SPECIFICATIONS

PROJECT INFORMATION

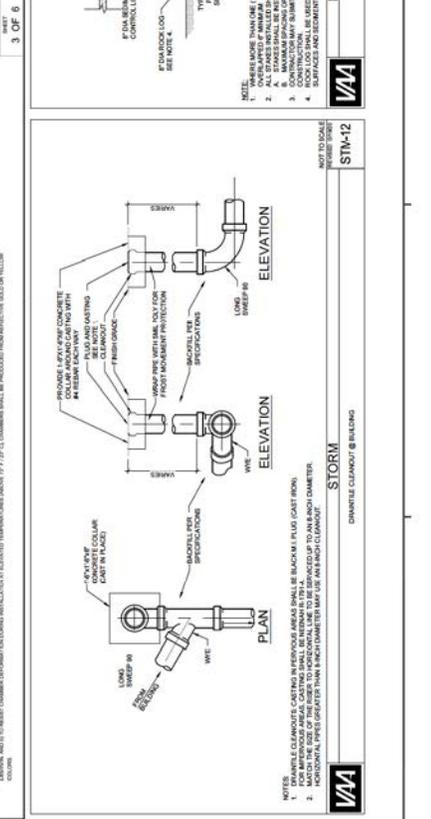
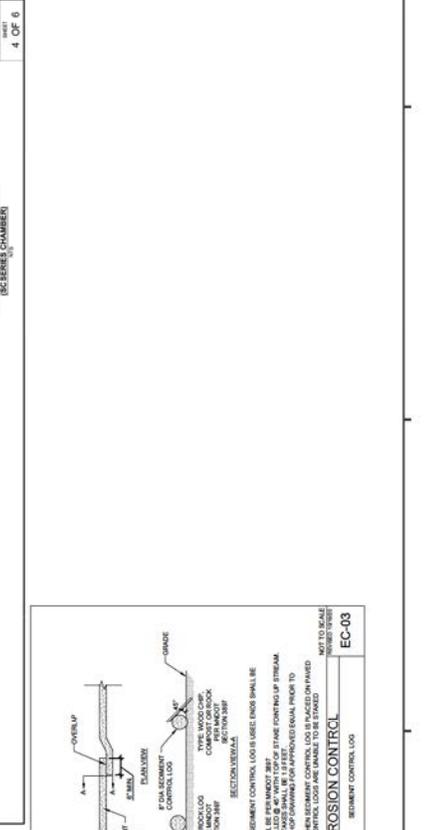
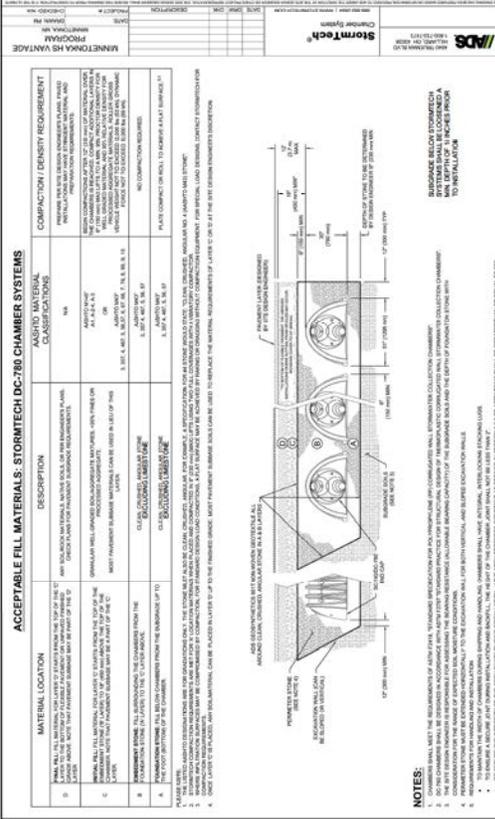
PROJECT NO.: 2022-001
 PROJECT NAME: MINNETONKA HS VANTAGE PROGRAM
 PROJECT LOCATION: MINNETONKA, MN

ACCEPTABLE FILL MATERIALS: STORMTECH DC-236 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	MAKING MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
1. CHAMBER WALLS	CONCRETE	CONCRETE	MINIMUM 90% COMPACTED TO FINISH GRADE
2. CHAMBER FLOOR	CONCRETE	CONCRETE	MINIMUM 90% COMPACTED TO FINISH GRADE
3. CHAMBER CURBS	CONCRETE	CONCRETE	MINIMUM 90% COMPACTED TO FINISH GRADE
4. CHAMBER FILL	CONCRETE	CONCRETE	MINIMUM 90% COMPACTED TO FINISH GRADE
5. CHAMBER FLOOR	CONCRETE	CONCRETE	MINIMUM 90% COMPACTED TO FINISH GRADE
6. CHAMBER CURBS	CONCRETE	CONCRETE	MINIMUM 90% COMPACTED TO FINISH GRADE
7. CHAMBER FILL	CONCRETE	CONCRETE	MINIMUM 90% COMPACTED TO FINISH GRADE
8. CHAMBER FLOOR	CONCRETE	CONCRETE	MINIMUM 90% COMPACTED TO FINISH GRADE
9. CHAMBER CURBS	CONCRETE	CONCRETE	MINIMUM 90% COMPACTED TO FINISH GRADE
10. CHAMBER FILL	CONCRETE	CONCRETE	MINIMUM 90% COMPACTED TO FINISH GRADE

NOTES:

- CHAMBER WALLS SHALL BE CONCRETE WITH A MINIMUM OF 4" REINFORCING BARS PER FOOT.
- CHAMBER FLOOR SHALL BE CONCRETE WITH A MINIMUM OF 4" REINFORCING BARS PER FOOT.
- CHAMBER CURBS SHALL BE CONCRETE WITH A MINIMUM OF 4" REINFORCING BARS PER FOOT.
- CHAMBER FILL SHALL BE CONCRETE WITH A MINIMUM OF 4" REINFORCING BARS PER FOOT.
- CHAMBER FLOOR SHALL BE CONCRETE WITH A MINIMUM OF 4" REINFORCING BARS PER FOOT.
- CHAMBER CURBS SHALL BE CONCRETE WITH A MINIMUM OF 4" REINFORCING BARS PER FOOT.
- CHAMBER FILL SHALL BE CONCRETE WITH A MINIMUM OF 4" REINFORCING BARS PER FOOT.
- CHAMBER FLOOR SHALL BE CONCRETE WITH A MINIMUM OF 4" REINFORCING BARS PER FOOT.
- CHAMBER CURBS SHALL BE CONCRETE WITH A MINIMUM OF 4" REINFORCING BARS PER FOOT.
- CHAMBER FILL SHALL BE CONCRETE WITH A MINIMUM OF 4" REINFORCING BARS PER FOOT.

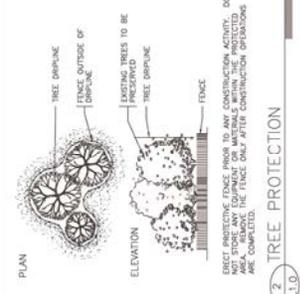
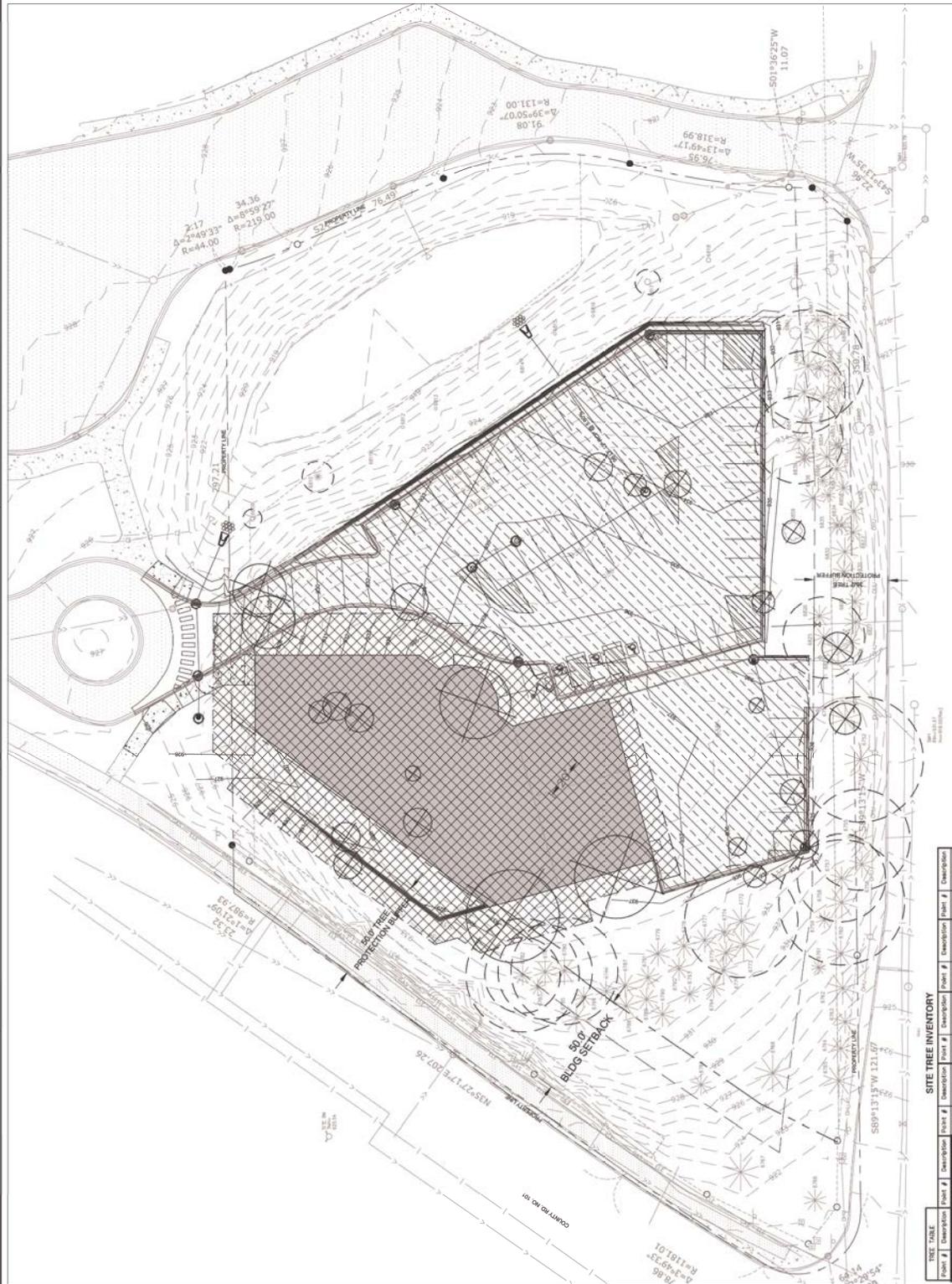


EC-03
 EROSION CONTROL

STM-12
 STORM

IAA
 INDEPENDENT ASSOCIATION OF ARCHITECTS

DATE: 10/11/22
 DRAWN BY: J. J. JENSEN
 CHECKED BY: J. J. JENSEN
 APPROVED BY: J. J. JENSEN
 PROJECT NO.: 2022-001



TREE PROTECTION PLAN
 SCALE: 1" = 20'

LEGEND

- EXISTING TREE CRITICAL ROOT ZONE
- TREE TO BE REMOVED
- IMGC BITE TREE REMOVAL AFFECTED AREA
- PROPOSED BUILDING

GENERAL NOTES

- 10 DECIDUOUS (10'+)
- 14 DECIDUOUS (15'+)
- 14 DECIDUOUS (15'+)
- 77 CONIFEROUS (15'+)
- 64 PRESERVE (10'+)
- 64 PRESERVE (15'+)
- SOMEONE TREES
- 6 DECIDUOUS (4'+)
- 10 CONIFEROUS (10'+)
- 10 CONIFEROUS (10'+)
- 10 CONIFEROUS (10'+)
- 5 PRESERVE (15'+)
- 5 (10' MAX REMOVAL)

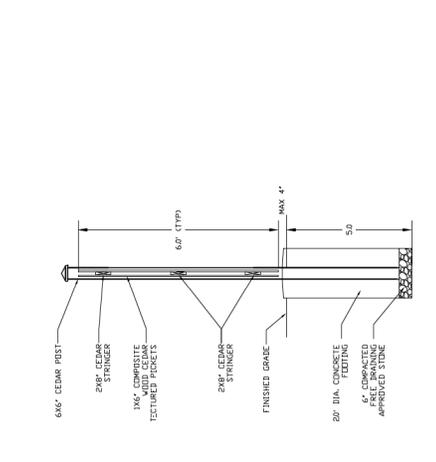
TREE PROTECTION

1.10

SITE TREE INVENTORY

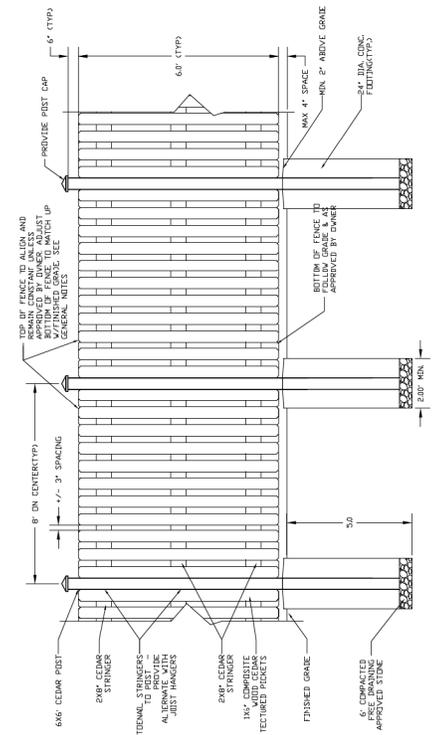
Point #	Description								
8750	3" MAP	8751	14" CED	8752	1" APRLE	8753	17" PIN		
8754	14" PIN	8755	14" PIN	8756	2" APRLE	8757	17" PIN	8758	14" PIN
8759	14" PIN	8760	14" PIN	8761	2" APRLE	8762	17" PIN	8763	14" PIN
8764	14" PIN	8765	14" PIN	8766	2" APRLE	8767	17" PIN	8768	14" PIN
8769	14" PIN	8770	14" PIN	8771	2" APRLE	8772	17" PIN	8773	14" PIN
8774	14" PIN	8775	14" PIN	8776	2" APRLE	8777	17" PIN	8778	14" PIN
8779	14" PIN	8780	14" PIN	8781	2" APRLE	8782	17" PIN	8783	14" PIN
8784	14" PIN	8785	14" PIN	8786	2" APRLE	8787	17" PIN	8788	14" PIN
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8794	14" PIN	8795	14" PIN	8796	2" APRLE	8797	17" PIN	8798	14" PIN
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8804	14" PIN	8805	14" PIN	8806	2" APRLE	8807	17" PIN	8808	14" PIN
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8814	14" PIN	8815	14" PIN	8816	2" APRLE	8817	17" PIN	8818	14" PIN
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8829	14" PIN	8830	14" PIN	8831	2" APRLE	8832	17" PIN	8833	14" PIN
8834	14" PIN	8835	14" PIN	8836	2" APRLE	8837	17" PIN	8838	14" PIN
8839	14" PIN	8840	14" PIN	8841	2" APRLE	8842	17" PIN	8843	14" PIN
8844	14" PIN	8845	14" PIN	8846	2" APRLE	8847	17" PIN	8848	14" PIN
8849	14" PIN	8850	14" PIN	8851	2" APRLE	8852	17" PIN	8853	14" PIN
8854	14" PIN	8855	14" PIN	8856	2" APRLE	8857	17" PIN	8858	14" PIN
8859	14" PIN	8860	14" PIN	8861	2" APRLE	8862	17" PIN	8863	14" PIN
8864	14" PIN	8865	14" PIN	8866	2" APRLE	8867	17" PIN	8868	14" PIN
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8874	14" PIN	8875	14" PIN	8876	2" APRLE	8877	17" PIN	8878	14" PIN
8879	14" PIN	8880	14" PIN	8881	2" APRLE	8882	17" PIN	8883	14" PIN
8884	14" PIN	8885	14" PIN	8886	2" APRLE	8887	17" PIN	8888	14" PIN
8889	14" PIN	8890	14" PIN	8891	2" APRLE	8892	17" PIN	8893	14" PIN
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25 TOTAL TREES TO BE REMOVED

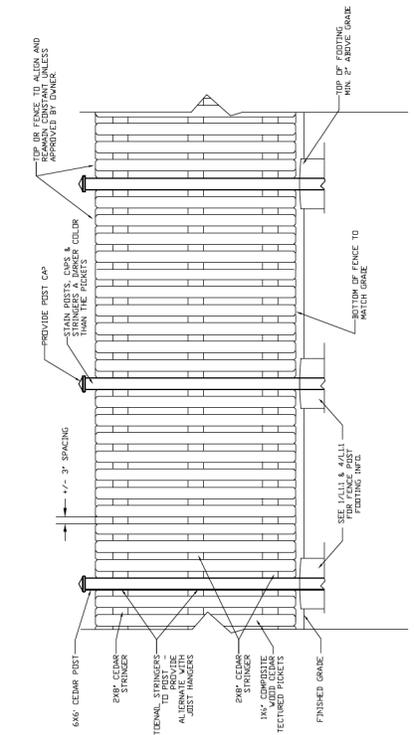


1. FENCE SECTION
 L2.1 SCALE: 1" = 2"

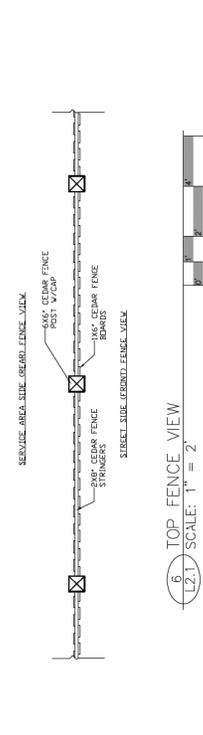
- SITE FENCE GENERAL NOTES**
- CONTRACTOR SHALL MAINTAIN THE EXISTING FENCE LINE UNLESS OTHERWISE APPROVED BY OWNER OR IN WRITING. CONTRACTOR SHALL MAINTAIN THE EXISTING FENCE LINE UNLESS OTHERWISE APPROVED BY OWNER OR IN WRITING.
 - CONTRACTOR SHALL ADJUST FENCE POST HEIGHT AND BOTTOM OF FENCE PICKETS TO MATCH FINISHED GRADE. WHERE FINISHED GRADE VARIES BY 18 INCHES OR MORE, CONTRACTOR SHALL MAINTAIN THE EXISTING FENCE LINE UNLESS OTHERWISE APPROVED BY OWNER OR IN WRITING.
 - FENCE SHALL HAVE ALL EXPOSED SURFACES STAINED AND/OR SEALED TO PROTECT THE FENCE FROM THE WEATHER. FENCE POST AND STRINGERS SHALL BE STAINED AND/OR SEALED PRIOR TO FENCE PICKETS BEING ATTACHED.
 - WOOD TO BE CEDAR #2 GRADE OR BETTER FOR POST AND STRINGERS. FENCE PICKETS SHALL BE OF COMPOSITE WOOD MATERIAL. SEE SPECIFICATIONS FOR TEXTURE AND COLOR.
 - CONCRETE 3000 PSI COMPRESSIVE STRENGTH AT 28 DAYS.



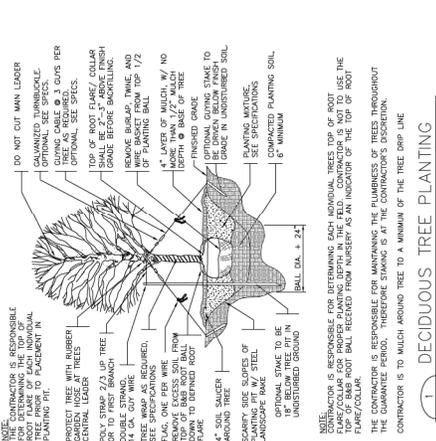
2. STREET SIDE (FRONT) VIEW FENCE
 L2.1 SCALE: 1" = 2"



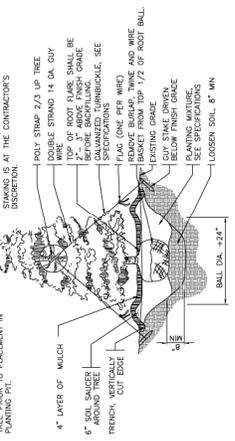
3. SERVICE AREA SIDE (REAR) FENCE VIEW
 L2.1 SCALE: 1" = 2"



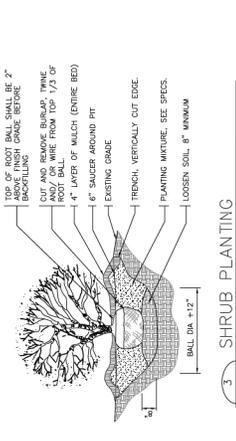
4. TOP FENCE VIEW
 L2.1 SCALE: 1" = 2"



5. DECIDUOUS TREE PLANTING
 L2.1 SCALE: 1" = 2"



6. EVERGREEN TREE PLANTING
 L2.1 SCALE: 1" = 2"



7. SHRUB PLANTING
 L2.1 SCALE: 1" = 2"