



Title: Permit 25-454: 7380 Minnewashta Parkway – Single-Family Home Construction

Applicant: Minnewashta LLC

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Recommendation:

Approval of Minnehaha Creek Watershed District (MCWD) permit application, with permit issuance conditioned on the following:

- Payment of permit fees for the cost of permit application, public notice mailing, engineering and legal review.
- Submission of financial assurance for Wetland Protection in the amount of \$5,243.73.
- Recording of a Maintenance Declaration after MCWD review and approval, for the establishment of a permanent wetland buffer.

Summary and Background:

Location and Project Scope:

Minnewashta LLC (Applicant) proposes to redevelop the 4.89 acre parcel at 7380 Minnewashta Parkway, in the City of Chanhassen. The proposed work consists of the demolition and reconstruction of one single-family home, as shown in Appendix A of Attachment A. The property lies between Lake Minnewashta to the east, and Minnewashta Parkway to the west, and falls within the Lake Virginia subwatershed. The eastern portion of the site, where the home is located, drains directly to the adjacent Lake Minnewashta, while the western portion drains to an on-site Manage 2 class wetland which drains south before draining to Lake Minnewashta.

Construction of the single-family home commenced in spring of 2025 without an MCWD permit, and the Applicant is therefore requesting an after-the-fact permit, as well as an Exception under the MCWD [Variances and Exceptions Rule](#).

MCWD Rule Triggers:

The Applicant proposes to construct a single-family home at the site at 7380 Minnewashta Parkway in the City of Chanhassen, and MCWD's Wetland Protection and Floodplain Alteration Rules are applicable. The Wetland Protection rule applies due to the construction of a new residential structure that increases the site's impervious surface. The Floodplain Alteration Rule applies as a result of the proposed excavation and fill within the floodplain of the on-site wetland. The Applicant requests an exception, pursuant to the MCWD Variances and Exceptions Rule, with respect to the Wetland Protection Rule section 5, which requires that a vegetated buffer 24 feet in average width be established adjacent to a wetland with a Manage 2 classification in all areas downgradient of the new or reconstructed impervious surface. Section 5(c) states that the buffer width may be reduced to no less than 50% of the base width of 24 feet, and due to setback requirements and the proposed driveway and retaining wall, the applicant asserts that it is not feasible to meet this minimum width along the northern edge of the wetland. The site constraints have been reviewed by MCWD staff and staff finds the exception request due to those constraints to be reasonable. To offset the loss to buffer performance, the Applicant proposes to increase total buffer area and enhance planting measures within the buffer to provide habitat and vegetative improvements to the wetland.

MCWD Rule Analysis:Erosion Control Rule:

MCWD's Erosion Control Rule applies to projects that propose to disturb more than 5,000 square feet or move 50 cubic yards or more of material. The project proposes to disturb approximately 30,000 square feet and excavate 360 cubic yards; therefore, the rule would apply. The Applicant proposes perimeter control at all construction limits and surrounding the wetland, with two rows of erosion control on the eastern limits towards the Lake. The City of Chanhassen has Erosion Control rule authority and is responsible for reviewing for compliance under the rule

Construction of the single-family home began in spring 2025 and is expected to continue through spring 2026. Most of the grading associated with house construction has been completed. Driveway construction, including the removal of the existing gravel driveway and construction of the new driveway to the north, has not yet begun. MCWD staff have conducted two site visits during the course of construction, during which erosion control measures were found to be acceptable.

Wetland Protection Rule:

MCWD's [Wetland Protection Rule](#) states in Section 4(a)(3) that if a new principal residential structure increases site impervious, a permanent vegetated buffer is required on the part of the wetland that is downgradient of the new or reconstructed impervious surface. The on-site wetland is classified as a Manage 2 wetland, requiring a 30-foot buffer. As referenced in section 5(a), a reduction in buffer width is permitted, due to an average buffer slope below 20 percent, and a predominant buffer soil class above a Type D hydric soil grade. This site allows for a 6-foot buffer width reduction due to both soil class and slope, resulting in a required 24-foot buffer width.

As referenced in the "Exception Request" section below, the Applicant has requested an exception to section 5 of the Wetland Protection Rule, which requires the 24-foot buffer, and specifically to section 5(c) which requires that the buffer width at any specific location be no less than 50% of the base width minimum of 24-feet. Under these conditions, a buffer area of 5,567 square feet is required. The applicant instead proposes a buffer that ranges from 0 to 24 feet, and has a total square footage of 10,617 square feet.

The Applicant has included adequate site plans showing property lines, delineation of the wetland, location of the wetland buffer area, location of buffer monuments, proposed grading areas within the buffer, and the proposed buffer Planting Plan, all in compliance with section 7 of the Wetland Protection Rule. The wetland boundary was determined by a delineation performed in June 2025 and that the City of Chanhassen approved in August 2025. The proposed Planting Plan describes that the Applicant intends to seed the wetland buffer area using the MnDOT 35-342 Mesic Prairie Native seed mix to achieve rule compliance, and to incorporate approximately 200 live plantings of native grasses and perennials, as described on page 7 of Attachment A, to exceed base rule requirements.

Section 4(d) of the rule requires, as a condition of permit issuance, that the property owner file a maintenance declaration on the deed establishing the perpetual buffer and maintenance of the buffer after establishment. This is recommended as a condition of permit issuance. Pursuant to section 6(e) of the rule, the applicant proposes to place perimeter control downgrade of work, preventing sediment movement into the wetland and buffer during the course of construction.

Floodplain Alteration Rule:

MCWD's [Floodplain Alteration Rule](#) applies to any filling, excavation, or grading within the floodplain of any waterbody. The Applicant has proposed to excavate 140 cubic yards below the on-site Manage 2 wetland 100-year floodplain elevation of 956.7 ft (NAVD88) for the purpose of removing the existing gravel driveway, and backfill with 140 cubic yards of soil at the same location to reach the existing elevation, resulting in 0 cubic yards of net fill. MCWD Staff and Engineer have reviewed the permit application and have found it to be complete and compliant with all Floodplain Alteration rule requirements.

Exception Request:

The Applicant seeks an exception to section 5 of the Wetland Protection rule, which requires a buffer adjacent to the wetland on any area that is downgradient of new or reconstructed impervious surface, not to be reduced by greater than 50% of the required 24-foot width. The Applicant instead proposes an enhanced wetland buffer through additional buffer area and plantings. As noted in the Variances and Exceptions rule, the Board of Managers may grant an exception from a particular water resources standard, specification, or management method in the MCWD rules, if it determines that an alternative approach proposed by the Applicant would achieve water resource outcomes of the type that the Board intends the standard, specification or method to achieve, and would do so to at least the same degree.

Section 5(c) states that buffer width at any point may be reduced to no less than 50% of the 24-foot Base Width, provided total buffer area is maintained. The proposed project conditions result in an area of 1,428 square feet not meeting the 12-foot minimum width, as depicted in Appendix A of Attachment A.

Wetland Buffer Proposal:

The Applicant proposes to enhance the buffer in two ways: (1) Extend the wetland buffer south, and into the western areas of the site, where the buffer is not required, and (2) Provide an enhanced wetland buffer habitat by planting native grasses and perennials into the wetland buffer area, rather than relying solely on a standard seed mix.

Extended Buffer

The Wetland Protection Rule requires that wetland buffers be established downgradient of the proposed impervious surface. However, the Applicant proposes to also extend the buffer area south to include the entire eastern and western sides of the wetland, as shown on page 13 of Attachment A. The expansion increases buffer area from 5,567 square feet to 10,617 square feet, equating to an increase of approximately 191%.

The extension of the wetland buffer along the eastern side of the wetland enhances the continuity and connectivity of vegetated areas surrounding the wetland, improving habitat quality, and filtration capacity, as well as resilience to disturbance along the vegetative edge.

The western edge of the wetland lies approximately 47-feet downslope of the adjacent Minnewashta Parkway. Although the runoff from the roadway's impervious surface is captured by curb and gutter, the proposed 15-foot buffer extension along this edge of the wetland provides benefits such as protection from future encroachment, disturbance, and indirect impacts attributed to land use and human activity.

Enhanced Planting Plan

Section 7 of the Wetland Protection Rule requires that a wetland buffer planting plan specify the seeding or planting method, but does not require a specific approach. As a result, a standard native seed mix planting plan meets rule requirements. The Applicant has proposed an enhanced planting plan which combines a base native seed mix with approximately 150-200 plugs of native grasses, and perennials. The incorporation of live plantings into a planting plan not only increases biodiversity but also leverages the presence of more mature plants to have earlier habitat and water quality benefits. The Applicant has developed a maintenance plan determined by MCWD to be suitable for the wetland buffer vegetation, with its incorporation into the maintenance declaration being a condition of permit approval.

Exception Analysis:

MCWD staff and Engineer have evaluated both the site constraints which prompt the exception request, and how the proposal compares with strict rule compliance in regard to two key functions of wetland buffers: improving water quality and providing habitat.

Site Constraints

The 4.89 acre parcel site measures approximately 266 feet in length from the northern to the southern lot line, with 10-foot setbacks required from each side. A Manage 2 wetland, with an area of approximately 21,140 square feet, extends along the western portion of the parcel, in a north-south orientation, spanning approximately 224 feet in length from its northernmost to southernmost point (as depicted in Appendix A of Attachment A). Under existing conditions, a gravel driveway runs along the southern parcel boundary, encroaching onto the neighboring property and failing to meet City

setback requirements and the geotechnical standards for bituminous substrate. To address these issues, the project proposes relocating the driveway to the upland area north of the wetland. The proposed driveway results in a de minimis amount of fill totaling 80 square feet at the north side of the Manage 2 wetland, minimized by the proposed construction of a retaining wall between the driveway and wetland.

The parcel, reduced in length by setback requirements, and the configuration of the wetland, has a significantly limited available buildable area. As a result, maintaining the 12-foot minimum wetland buffer width along all portions downgradient of the new and reconstructed impervious surface is infeasible while still abiding by City setback requirements. To maintain the required buffer would eliminate driveway access to the proposed residence, compromising the residential function of the parcel.

Water Quality:

A primary function of wetland buffers is the water quality benefits they provide by filtering pollutants, sediment, and excess nutrients from stormwater runoff before it enters the wetland. The Applicant's proposal has been evaluated against existing conditions and full Wetland Protection Rule compliance, which would require a minimum 12-foot and average 24-foot buffer adjacent to the wetland.

Under existing conditions, the gravel driveway directs untreated runoff from approximately 5,800 square feet of impervious surface into the wetland. The Applicant proposes to remove the existing gravel driveway and replace the area with turf grass and add a bituminous driveway north of the wetland. The proposed condition will reduce the impervious area draining to the wetland to 4,600 square feet, resulting in a 1,200 square foot, or 21%, decrease in impervious surface upslope of the wetland. As a result, the reduction in runoff volume, combined with the replacement of the existing driveway with turf grass, will improve infiltration and reduce sediment loads to the wetland.

In comparison, full rule compliance requiring a 12-foot minimum buffer would preclude driveway access that meets City requirements, therefore making the site functionally unsuitable for residential use. However, for the purpose of evaluating the exception, this analysis compares the proposed condition to the hypothetical, fully compliant condition with a 12-foot minimum buffer. Full compliance requires a buffer area of 5,567 square feet. The Applicant proposes to buffer 10,617 square feet, creating a 191% increase in buffer area. Although there is no impervious surface draining through the additional buffer area, its increased size will function to capture and slightly decrease pollutant loads to the wetland in the exception scenario, resulting in greater water-quality benefit than the fully compliant scenario.

Habitat:

Another key function of wetland buffers is to support wildlife habitat by providing shelter, food, and breeding grounds for various species; as well as through the provision and preservation of wildlife movement corridors and regional habitat connectivity. The existing condition of the wetland provides limited habitat value with historically mowed as part of the residential lawn, and consisting of non-native invasive, and moderate quality vegetation such as reed canary grass, Kentucky blue grass, crab grass, and yellow-nut sedge.

When comparing a typical planting plan to one which incorporates diverse plantings, the latter provides more benefits for wildlife. A diverse planting strategy also enhances habitat function as increased biodiversity provides a wider range of shelter and food sources for organisms with varying needs. The existing vegetation in the proposed buffer area is sparse and of low quality. The Applicant's proposed buffer area and planting plan will increase habitat value and function compared to full rule compliance. While the buffer width is reduced in localized areas, the increased buffer area, providing nearly 191% of the required square footage, provides a larger area for wildlife habitat.

Additionally, the inclusion of live grass and perennial plantings, including species with varying heights and rooting depths, will provide greater vertical structure, creating cover, foraging habitat, and nectar sources for pollinators and other small wildlife. Although the shortfall in buffer width may slightly constrain wildlife movement in some areas, the substantial net increase in vegetated area, plant diversity, and habitat structure will compensate for the localized narrowing. The proposed design achieves an improvement in habitat function compared to full-compliance conditions.

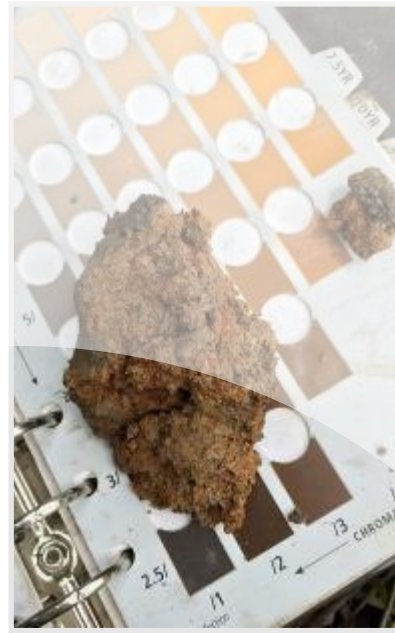
Summary:

The Applicant has applied for a Minnehaha Creek Watershed District permit under the Wetland Protection and Floodplain Alteration Rules, and an exception to the wetland buffer width requirement as outlined in section 5(c) of the Wetland Protection Rule requiring that buffer width may be reduced to no less than 50% of the minimum base width of 24-feet. The Applicant has proposed additional buffer area, expanding the buffer beyond the required area, as well as incorporating mature plantings to offset the shortfall in buffer width and area. MCWD staff and District Engineer have evaluated the request for an exception from the minimum 12-foot wetland buffer width in regard to habitat and wetland quality, and find that the Applicant has provided sufficient evidence that the proposed project will achieve water resource outcomes equivalent to or greater than full rule compliance in regard to section 5 of the Wetland Protection rule. Therefore, staff recommends approval of the requested exception, and the permit application, with the conditions listed at the beginning of this report.

Attachments:

- A. Exception Package and Site Plans
- B. Floodplain Plan Set
- C. Floodplain Technical Memo

Attachment A: Exception Package and Site Plans



**MCWD
FLOODPLAIN ALTERATION,
WETLAND PROTECTION RULE
BUFFER EXCEPTION
AND
ESTABLISHMENT PLAN**

L Cramer Builders

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SEPTEMBER 30, 2025



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BACKGROUND

L Cramer Builders is proposing to demolish the existing home and reconstruct a new principal residential structure located at 7380 Minnewashta Parkway, Chanhassen, Carver County, Minnesota. Proposed work includes new principal residential structure, new bituminous driveway with retaining wall along north parcel boundary, and removal of existing gravel driveway along south parcel boundary.

The City of Chanhassen, acting as the Local Government Unit (LGU), responsible for implementing the Wetland Conservation Act, issued a Notice of Decision July 30, 2025 on approving a wetland delineation completed by Anderson Engineering identifying Wetland #1, a Type 2, Fresh Wet Meadow, Depressional wetland on the subject parcel. The wetland is identified in the Minnehaha Creek Watershed District's (MCWD) Functional Assessment of Wetlands as having a Manage 2 management class.

Additionally, the City issued NOD also approved WCA exemption for de minimis wetland fill of 80 square feet for the new driveway along the north parcel boundary. The existing gravel driveway along the south parcel boundary encroaches on neighboring south property, does meet setback requirements, and does not meet geotechnical requirements for suitable bituminous substrate. Proposed wetland impacts are minimized via proposed retaining wall between Wetland #1 and proposed driveway.

IMPERVIOUS ANALYSIS

In the existing condition there is 5,800 sf south gravel driveway upslope of the wetland. In the proposed condition there is 4,600 sf of north bituminous driveway upslope of the wetland. The proposed project would result in the net reduction of 1,200 sf of impervious area upslope of the wetland (see Figure 1)

MCWD WATERBODY CROSSINGS & STRUCTURES RULE

The MCWD Waterbody Crossings & Structures Rule states:

2. One may not place a roadway, bridge, boardwalk, utility, conveyance, or associated structure below the top of bank of a waterbody; place any such structure beneath a waterbody; or enclose any part of a waterbody within a pipe or culvert; without first securing a permit from the District.

The proposed project does NOT trigger the Waterbody Crossings & Structures Rule as the cross culvert beneath the proposed north driveway relocation does not encroach into the wetland basin.

MCWD FLOODPLAIN ALTERATION RULE

The MCWD Floodplain Alteration Rule applicability is:

(a) A permit is required to fill, excavate, or grade within the floodplain of a water body.

Fill, excavation, or grading must conform to the following standards:

(a) Any floodplain fill must be offset so there is no loss in flood storage between the ordinary high water and 100-year high water elevations. There may not be net positive fill at any time during the work, unless applicant has demonstrated it is impractical and has obtained District approval of a sequencing plan for which applicant's registered professional engineer has demonstrated that the No-Rise Standard is met.

(b) Offset for fill in a waterbody other than a watercourse is not required if the applicant demonstrates that fill on all riparian properties to the extent proposed by the applicant would meet the No-Rise Standard and not restrict flood flows.

(c) Fill in a watercourse must meet the following criteria:

- 1. No impervious surface may be placed within the 10-year floodplain or within 25 feet of the watercourse centerline, whichever greater, unless the surface is: (1) no more than 10% of the site 10-year floodplain area; or (2) a linear component of a public roadway or trail.*
- 2. Applicant must meet the No-Rise Standard.*

The 100-year high water elevation of Wetland #1 is calculated to be 956.7'.

The proposed 80-sf of wetland fill impact for the proposed north driveway is above the 956.7; outside of the 100-year high water elevation floodplain.

Thes proposed work to remove the gravel surface from the existing south driveway, replace with soil to same elevation, and seed to turf grass will result in 3,000 sf / 140 cy of balanced earthwork within the floodplain resulting in no net loss of flood volume storage

MCWD WETLAND PROTECTION

The proposed project triggers the MCWD Wetland Protection Rule:

4. VEGETATED BUFFER

A property owner must obtain a permit establishing a permanent vegetated buffer adjacent to wetland or public waters wetland in accordance with this section.

(a) A buffer is required as follows:

- 3. If a New Principal Residential Structure that increases site impervious surface is constructed, a buffer is required on that part of the wetland that is downgradient of the new or reconstructed impervious surface.*

Buffer width is based on the management class of the wetland, as established by the District's Functional Assessment of Wetlands, as updated. A Base Width is established and may be reduced on the basis of favorable slope or soil condition, but not below the Base Width Minimum, each as follows:

Management Class	Base Width	Base Width Minimum	Average Width Range 50% to 200%
Manage 2	30 feet	24 feet	12 to 48

Allowable buffer width reductions include:

1. *For each five percent by which the average buffer slope is below 20 percent, the Base Width may be reduced by two feet.*
2. *For each Hydrologic Soil Group grade above Type D by which the buffer soil is predominantly classified, the Base Width may be reduced by two feet.*

The average slope within the area of required buffer is approximately 7%. The buffer base width can be reduced by 4-feet.

The soils within the area of required buffer are predominantly “C”. The buffer base width can be reduced by an additional 2-feet.

BUFFER REQUIRED:

The project specific base buffer width is 24-feet on that part of the wetland that is downgradient of the new or reconstructed impervious surface. Buffer can be averaged from 50% to 200%; i.e.. 12-feet to 48-feet wide.

Attached Figure 2 depicts the **required 5,567 square feet**, 24-feet base width buffer width downslope of the new bituminous driveway.

BUFFER EXCEPTION

Due to proposed retaining wall and new bituminous driveway, the project has a buffer **deficiency of 1,428 square feet**, areas not meeting the 12-feet minimum average width requirement, as depicted on attached Figure 2.

The proposed driveway relocation to the north parcel boundary is needed because the existing gravel driveway along the south parcel boundary encroaches on neighboring south property, does meet setback requirements, and does not meet geotechnical requirements for suitable bituminous substrate. Proposed wetland impacts are minimized via proposed retaining wall between Wetland #1 and proposed driveway.

The MCWD wetland protection rule requires a 24-feet wide base buffer, that can be averaged from 12-feet to 48-feet wide, preserving the existing established herbaceous vegetation. The existing herbaceous vegetation in the buffer, and the entirety of the wetland, have historically been routinely mowed as part of the residential lawn. The existing buffer vegetation is of moderate quality consisting of Kentucky blue grass, crab grass, reed canary grass (non-native invasive), ground ivy, meadow foxtail, yellow-nut sedge (invasive), and fox sedge.

The project proposes a 24-feet wide buffer along the east and approximately 15-feet wide buffer along the west side of Wetland #1 totaling **10,617 square feet** as depicted on Figure 3 to be seeded with MnDOT Mesic Prairie Native Seed Mix 35-341 and augmented with individual plug seedlings.

The proposed buffer provides the required 24-feet wide buffer, not only where possible downslope of new constructed impervious, but also along the entirety of the east side of Wetland #1. Additionally, the project proposes 15-feet buffer along the entirety of the west side of Wetland #1. The total proposed buffer of 10,617

square feet, exceeds the 5,567 square feet of required buffer. Not only does the project propose providing nearly 191% of the required square footage, the 10,617 square feet will be seeded with MnDOT Mesic Prairie Native Seed Mix 35-341 and augmented with one tray each (typically 30 or 50 potted individual plants) of Big Bluestem, Blazing Star, Wild Bergamot, and Stiff Golden Rod throughout the buffer area providing increased vegetative diversity, deeper rooting native species providing enhanced infiltration, more resilient vegetative community, and more friendly wildlife/pollinator habitat.

The south side of Wetland #1 was evaluated for dedicated buffer, however underground utilities and desire to maintain unrestricted area led to not proposing for formal buffer. The area will however have the existing gravel driveway surface removed, replaced with soil to match elevations, and the area seeded to turf grass leading to reduced impervious area contributing to Wetland #1.

The wetland basin itself was evaluated for vegetative restoration, and dismissed since it is not dominated by non-native, invasives vegetation (~ 33% cover), small size leading to reduce resiliency and risk of any disturbance leading to increased colonization of undesirable, weedy species leading to increased herbicide and management.

PLANTING PLAN

BUFFER PREP AND SEEDING:

The following will generally be the approach to seeding the proposed buffer area with MnDOT Mesic Prairie General seed mix (35-241) as contained within Appendix B.

1. Mow buffer area.
2. Herbicide or mechanically till buffer area.
3. Ensure level, firm seed bed for seeding.
4. Purchase MnDOT seed mix 35-341 and keep the seed tag showing supplier and origin and specifications for project records.
5. Drill, broadcast, or hydromulch specified seed mix at recommended rate (see seed mix in Appendix B). For best results, the MnDOT Seeding Manual recommends applying seed during normal climatic conditions for spring seeding between April 15 to July 20 and fall seeding September 20 to October 20. Winter dormant seeding is best done with the soil temperature at a depth of one inch is at or below 40 degrees Fahrenheit.
6. Fertilizer shall NOT be applied in the wetland buffer.
7. Hand plant one tray each (typically 30 or 50 potted individual plants) randomly throughout the buffer:
 - a. Big Bluestem
 - b. Blazing Star
 - c. Wild Bergamot
 - d. Stiff Golden Rod
8. After seed has germinated, hand-seed the specified mix into any bare or disturbed areas that did not germinate and lightly rake the hand spread seed into the soil to ensure contact.

MAINTENANCE AND MONITORING PLAN

The seeded buffer areas will require maintenance and monitoring for up to five years to prevent growth of unwanted non-native/invasive species and to promote native species development. The site has been managed as residential turf grass for decades; however, nonnative and invasive species may include clover, common plantain, dandelion, crabgrass, barnyard grass, reed canary grass, and Canada thistle requiring adequate management and control via mechanical or chemical methods.

Eradication of non-native and invasive species will be conducted as necessary to minimize competition that could prevent the establishment of native species.

MOWING

To help establish wetland a wetland buffer plant community, buffer should be mowed at least twice during the first and second growing seasons and as needed thereafter. Mowing shall commence when weed species reach 6-10 inches, before the plants form flowering heads (weeds usually reach 12-14 inches). The mowing height shall be set so that the vegetation in the restoration area is left at minimum height of 5 inches after mowing is complete. Mowing height should be raised as native plants establish. Primary goals of mowing are to allow sufficient light to reach native plant seedlings and preventing weed seed production. Care should be taken to not mow desirable species in the planting if possible (the species listed in the seed mix). For example, if the weed species are 12 to 14 inches and the native species are 7 to 8 inches high, the mowing height should be set at 9 inches.

HERBICIDE

Non-native and invasive plants should be removed by hand or controlled with proper herbicides. Pesticides and herbicides may be selectively applied within a buffer in conformance with Minnesota Department of Agriculture rules and guidelines.

LANDSCAPING

Buffer may not be cultivated, cropped, pastured or otherwise be disturbed. No mulch, yard waste, fill, debris or other material may be placed within the wetland or buffer areas on a temporary or permanent basis.

MONITORING

The site will be visited at least once during the growing season by a biologist, landscape architect, or other qualified professional. The site visit should occur mid-June to early August. The inspector should make note of dominant species, including invasive species and bare ground, estimate their percent cover, compare the community to what is expected per the seed tag, note any needed corrective actions, and describe vegetation management strategies to make progress to the establishment criteria. Issues will be communicated to the owner along with recommended corrective actions. Representative photos should be collected from vantage points on the site plan.

BUFFER ESTABLISHMENT CRITERIA

The vegetation buffer is successfully established when the buffer meets final stabilization criteria consistent with any required stormwater permit or when 70% absolute cover is met.

ANNUAL INSPECTION REPORT

An annual inspection report shall be prepared and submitted to MCWD before January 1 of each year for five years after construction, unless vegetative cover criteria are met and with MCWD approval.

The annual inspection report shall include the following:

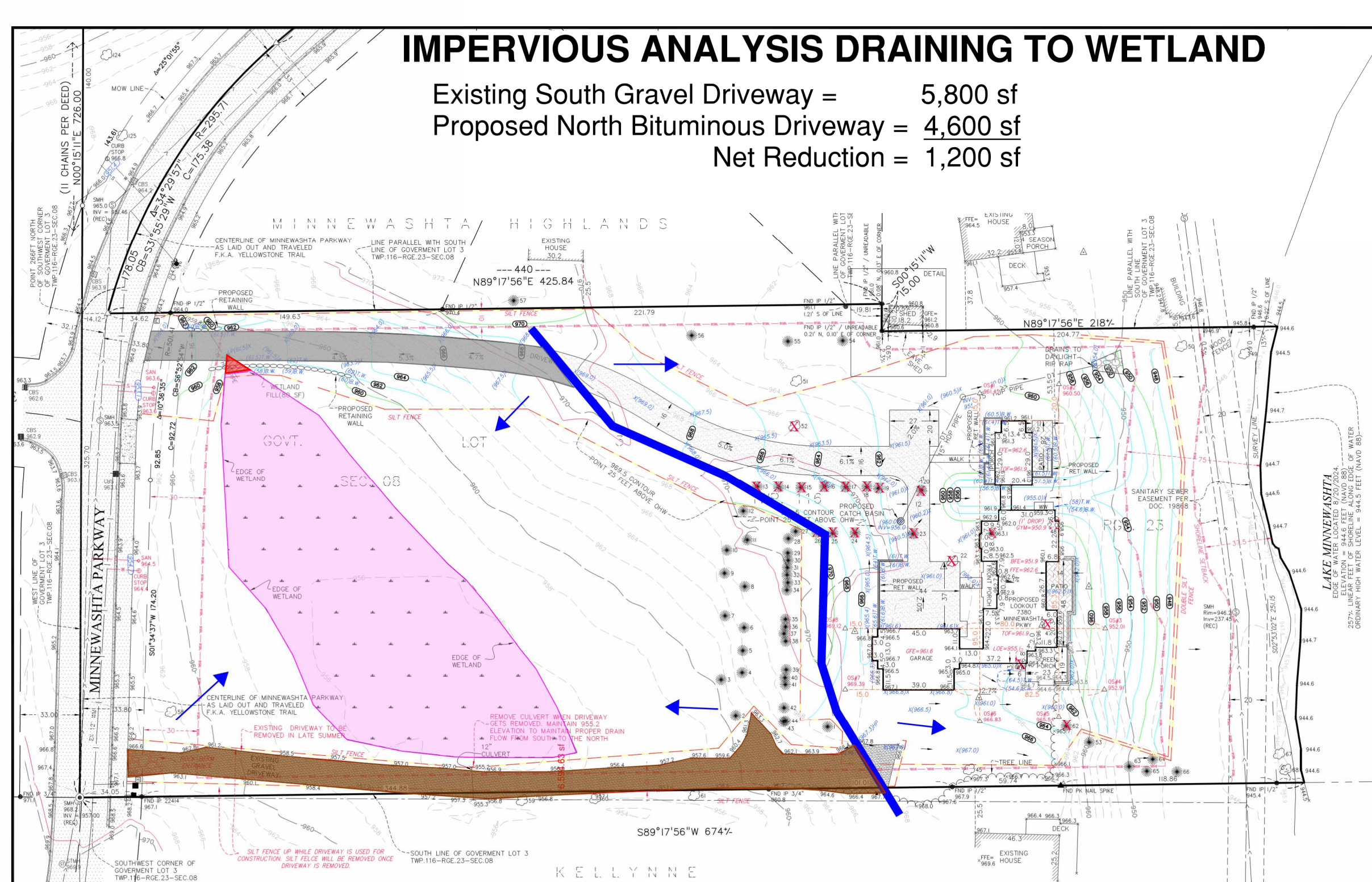
1. Describe dominant plant species within the buffer, estimate their percent cover, and compare to the seed tag associated with this approved planting/seeding plan;
2. Include a site plan that delineates the buffer and shows areas of bare soil, erosion, invasive vegetation, disturbed vegetation or encroachment;
3. Describe management strategies to be used in the next growing season to make progress toward the establishment goal;
4. Include color photographs taken during growing season, with vantage points indicated on the site plan.

Appendix A

FIGURES

IMPERVIOUS ANALYSIS DRAINING TO WETLAND

Existing South Gravel Driveway = 5,800 sf
Proposed North Bituminous Driveway = 4,600 sf
Net Reduction = 1,200 sf



DESCRIPTION OF PROPERTY SURVEYED

(Per Schedule A of the herein referenced Title Commitment)

That part of Government Lot 3, Section 8, Township 116 North, Range 23 West, Carver County, Minnesota, described as follows: Commencing at the SW corner of Lot 3 in Section 8, Township 116, Range 23; thence running N. 11 chains; thence East parallel with South line of said Lot 3, to Minnewashta Lake; thence Southwesterly along lake shore to the South line of said Lot 3; thence West along said line to the place of beginning, except that part thereof lying Easterly of the center line of County Road, also known as Yellowstone Trail, and Northerly of the following described line: Commencing on the West line of said Government Lot 3, 266 North of the Southwest Corner thereof, thence East parallel with the South line of said Government Lot 440 ft.; thence South parallel to the West line of said Government Lot 15 feet; thence East parallel to the South line of said Government Lot 3 to the shore of Lake Minnewashta (and the extension Easterly of said last described line), according to the United States Government Survey thereof.

STANDARD NOTES

- Site Address:** 7380 Minnewashta Pkwy, Excelsior, MN 55331
- Flood Zone Information:** This property appears to lie in Zone X (area determined to be outside of the 0.2% annual chance floodplain) and Zone AE (Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base Flood Elevations (BFEs) are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.) per Flood Insurance Rate Map, Community Panel No. 27019C0226D, effective date of 12/21/18.
- Parcel Area Information:**
 - Gross Area: 256,437± s.f. = 5.887± acres
 - R/W Area: 28,352 s.f. = 0.651 acres
 - Net Area: 1,768± s.f. = 0.041± acres
 - Net Area: 226,317± s.f. = 5.196± acres

*We do not affirmatively insure the quantity of acreage set forth in the description
- Benchmark:** Top of round concrete pipe culvert next to metal cage strap, left of trash guard bracket, at lakeside end of culvert between small pond and Minnewashta Lake, NE of 6541 Minnewashta Parkway, Excelsior = 946.61 (NAVD 88). Contours were derived from a combination of field observations and LIDAR data from the Minnesota Department of Natural Resources.
- Zoning Information:** The current Zoning for the subject property is RSF (Single Family Residential District) per the City of Chanhassen's zoning map dated 2/10/23. The setback, height, and floor space area restrictions for said zoning designation are as follows:

Principal Structure Setbacks -
Street(s): 30 feet (Minnewashta Pkwy)
Side: 10 feet
Lake: 75 feet (From Ordinary High Water Line)
Hardcover: 25 percent of lot area (up to 30% with the addition of City-approved shoreline vegetative buffer).

*Please note that the zoning information shown herein may have been amended through a city process. We recommend that a zoning letter be obtained from the Zoning Administrator for the current restrictions for this site. All setback information and hardcover data for planning and design must be verified by all parties involved in the design and planning process prior to any planning or construction.

We have not received the current zoning classification and building setback requirements from the insurer.

- Utilities:** We have shown the location of utilities on the surveyed property by observed evidence only. There may be underground utilities encumbering the subject property we are unaware. Please note that we have not placed a Gopher State One Call for this survey. There may or may not be underground utilities in the mapped area, therefore extreme caution must be exercised before any excavation takes place on or near this site. Also, please note that seasonal conditions may inhibit our ability to visually observe all the utilities located on the subject property. Before digging, you are required by law to notify Gopher State One Call at least 48 hours in advance at 651/454-0002.

SURVEY REPORT

This map and report was prepared with the benefit of a Commitment for Title Insurance issued by CHB Title LLC, as an issuing agent for Old Republic National Title Insurance Company, File No. 58382, dated May 7th, 2023.

- We note the following with regards to Schedule B of the herein referenced Title Commitment:
 - Item no. 1-8 are not survey related
 - Item no. 9 - Rights of the public and the State of Minnesota in and to that portion of the insured premises lying below the natural high water mark of Lake Minnewashta.
 - Item no. 10 - Riparian rights are neither guaranteed nor insured herein
 - Item no. 11 - Subject to Minnewashta Parkway as laid out and traveled over
 - Item no. 12 - Subject to the rights in the property for the following matters as evidenced on the survey prepared by Harry S. Johnson co, Inc., dated May 1, 2023
 - A portion of the building encroaches over the South Property line.
 - Underground Electric, Underground Telephone, Water, Gas, and Sanitary Sewer lines along Minnewashta Parkway.
 - Gas line runs over the North property line.
 - Fence on/over the North property line by Minnewashta Lake.
 - Gravel path extend over the South property line.
- Observations/Comments noted hereon per field survey such as (but not limited to): access, occupation, and easements and/or servitudes: There are discrepancies in the centerline of Minnewashta Parkway according to the adjacent plats and the centerline as traveled. We have created a best fit solution along the entire length of the subject property. Found monuments along the southerly portion of the subject property indicate a slightly wider right-of-way as shown on the survey.
- Wetland Delineation prepared by Anderson Environmental on June 9, 2025. LGU/TEP review pending.

SURVEY LEGEND

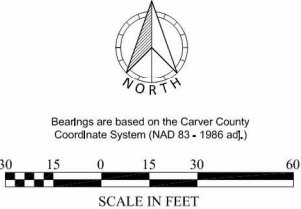
● CAST IRON MONUMENT	⊕ PIEZOMETER	WOE WALKOUT ELEVATION
○ IRON PIPE MONUMENT SET	⌋ POWER POLE	FFE FIRST FLOOR ELEVATION
● DRILL HOLE FOUND	⌋ GUY WIRE	GFE GARAGE FLOOR ELEVATION
✕ CHISELED "X" MONUMENT SET	⌋ ROOF DRAIN	TGF TOP OF FOUNDATION ELEV.
✕ CHISELED "X" MONUMENT FOUND	⌋ LIFT STATION	LOE LOWEST OPENING ELEV.
✕ REBAR MONUMENT FOUND	⌋ SANITARY MANHOLE	CONCRETE
✕ PK NAIL MONUMENT SET	⌋ SANITARY CLEANOUT	BITUMINOUS
✕ PK NAIL MONUMENT FOUND	⌋ STORM MANHOLE	BUILDING SETBACK LINE
✕ PK NAIL W/ ALUMINUM DISC	⌋ STORM DRAIN	CONCRETE CURB
⊕ SURVEY CONTROL POINT	⌋ WELL	CONTOUR EXISTING
⊕ A/C UNIT	⌋ TREE CONIFEROUS	CONTOUR PROPOSED
⊕ CABLE TV PEDESTAL	⌋ TREE DECIDUOUS	GUARD RAIL
⊕ ELECTRIC TRANSFORMER	⌋ TREE CONIFEROUS REMOVED	DT DRAIN TILE
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⊕ ELECTRIC METER	⌋ TELEPHONE MANHOLE	FO FIBER OPTIC UNDERGROUND
⊕ TELEPHONE PEDESTAL	⌋ UTILITY MANHOLE	FD GAS UNDERGROUND
⊕ YARD LIGHT	⌋ UTILITY PEDESTAL	OHU OVERHEAD UTILITY
⊕ LIGHT POLE	⌋ FIBER OPTIC VAULT	TR LINE TREE LINE
⊕ FIBER OPTIC MANHOLE	⌋ WATERMAIN MANHOLE	SS SANITARY SEWER
⊕ FIRE DEPT. HOOK UP	⌋ WATER METER	SSM STORM SEWER
⊕ FUEL PUMP	⌋ WATER SPIGOT	TU TELEPHONE UNDERGROUND
⊕ FUEL TANK	⌋ WELL	TEL RETAINING WALL
⊕ PROPANE TANK	⌋ MONITORING WELL	UTL UTILITY UNDERGROUND
⊕ GAS METER	⌋ CURB STOP	WM WATERMAIN
⊕ GAS MANHOLE	⌋ GATE VALVE	TS TRAFFIC SIGNAL
⊕ GUARD POST	⌋ HYDRANT	TRR RAILROAD TRACKS
⊕ HAND HOLE	⌋ IRRIGATION VALVE	TRR RAILROAD SIGNAL
⊕ MAIL BOX	⌋ POST INDICATOR VALVE	TRR RAILROAD SWITCH
	⌋ SIGN	SSS SATELLITE DISH
	⌋ SOIL BORING	WBW WETLAND BUFFER SIGN

Offset Irons
(elevations are to the top of pipe)
OS #1= 961.45 OS #2= 960.50
OS #4= 953.91 OS #5= 952.01
OS #5= 965.54 OS #6= 966.83
OS #8= 969.12 OS #7= 969.39

Proposed Elevations
Proposed Garage Floor Elevation = 961.6
Proposed Top of Foundation Elevation = 961.9
Proposed Basement Floor Elevation = 962.6
Proposed First Floor Elevation = 962.6

Proposed Hardcover
Lot Area = 256,438 S.F.
House Area = 4,488 S.F.
Prop. Driveway Area = 4,853 S.F.
Exit Driveway Area = 6,620 S.F.
Concrete Area = 204 S.F.
Pavers Area = 918 S.F.
Screen Porch Area = 436 S.F.
Retwall Area = 164 S.F.
Front Porch Area = 217 S.F.
Porch Area = 48 S.F.
Total Area = 23,710 S.F.
Coverage = 9.3 %

Boundary Line
Fence Line
Fence ties are shown on the side of the boundary line that the fence is located on.



FIELD CREW	NO.	BY	DATE	REVISION
DM ABE SO	1	EJ	9/5/2024	SLOPE ANALYSIS
DRAWN	2	EMW	1/9/2025	UPDATE DRIVEWAY, HARDCOVER CALC.
ABE	3	EMW	1/14/2025	UPDATE DRIVEWAY, CALCS. PER REQ.
CHECKED	4	EMW	1/20/2025	UPDATE PER CITY COMMENTS
CMT	5	EMW	1/23/2025	UPDATE PER COMMENTS
DATE	6	EMW	2/5/2025	HOUSE STAKED
08/29/24	7	DLS	7/17/2025	WETLAND DELINEATION

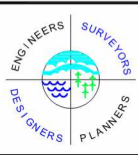
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I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Dated this 8th day of November, 2024.

Daniel L. Schmidt

Daniel L. Schmidt, PLS
schmidt@sathre.com Minnesota License No. 26147



SATHRE-BERGQUIST, INC.

14000 25TH AVENUE NORTH, SUITE 120
PLYMOUTH MN 55447 (952) 476-6000
WWW.SATHRE.COM

TWP. 116-RGE.23-SEC.08
Carver County
**CHANHASSEN,
MINNESOTA**

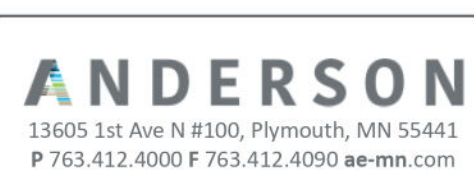
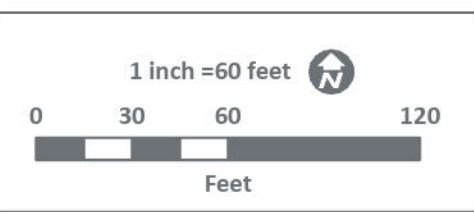
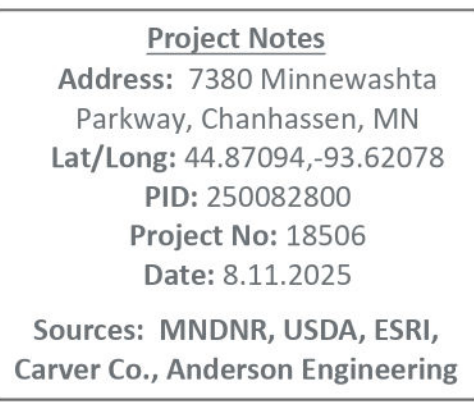
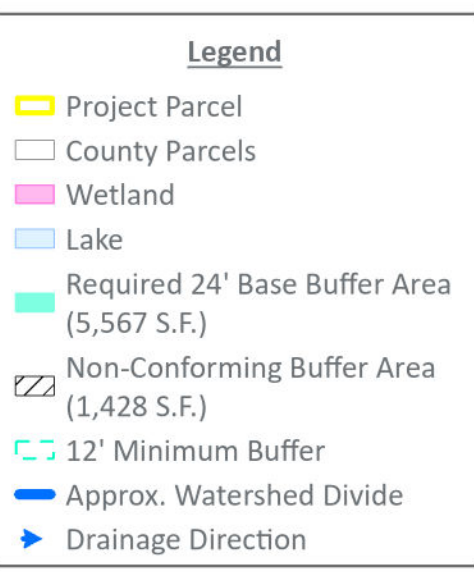
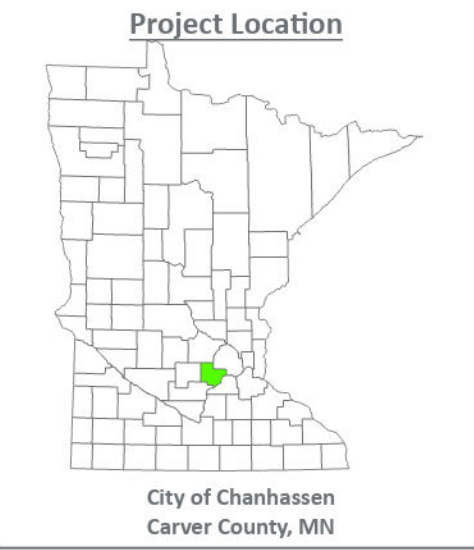
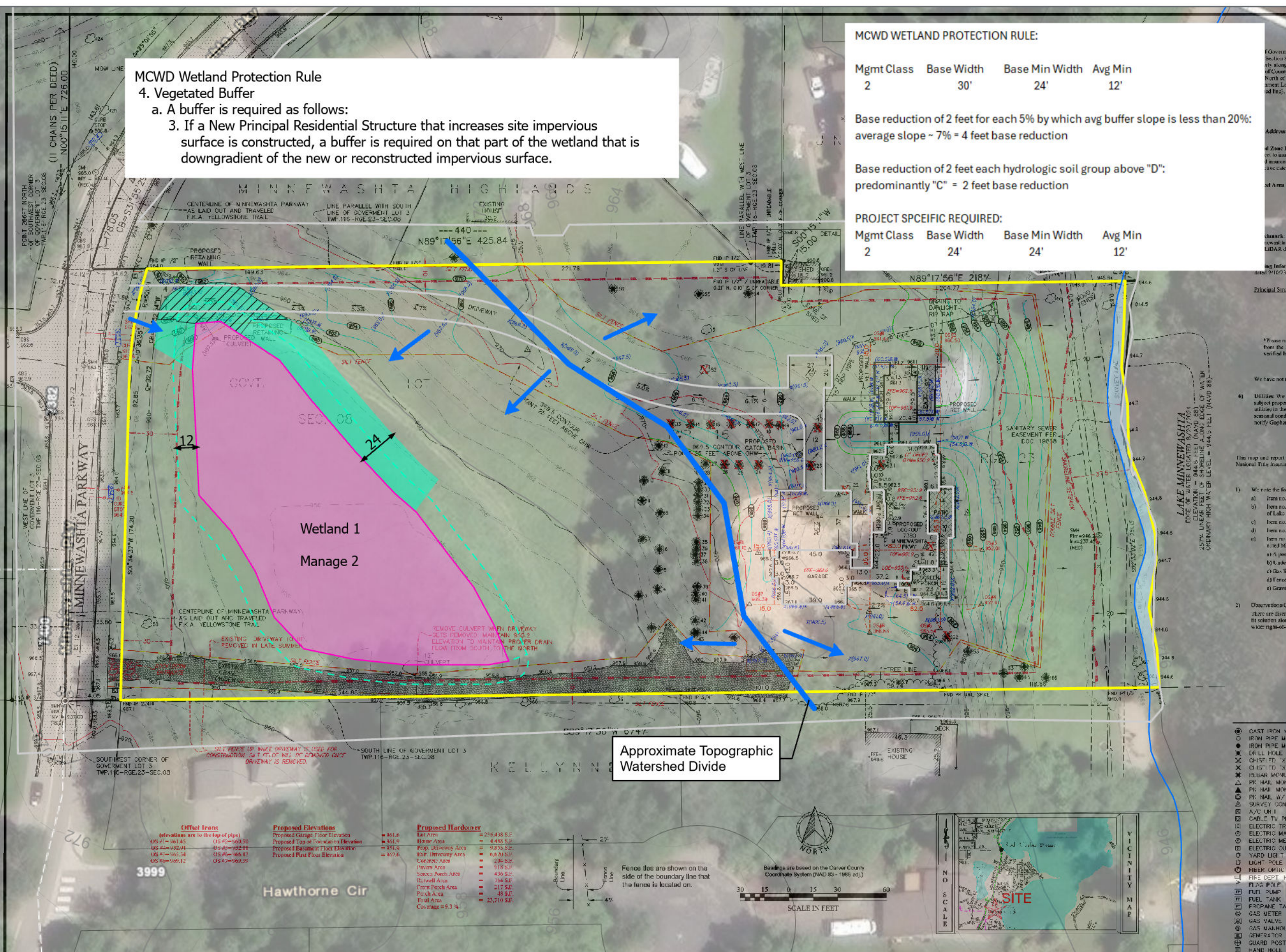
IMPERVIOUS AREA

FILE NO.
8790-033

1

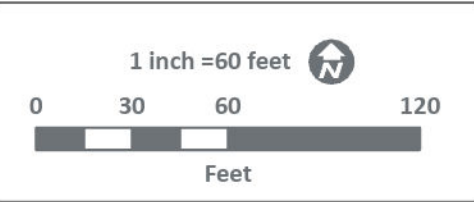
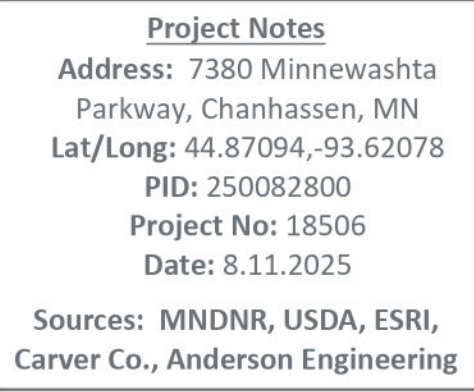
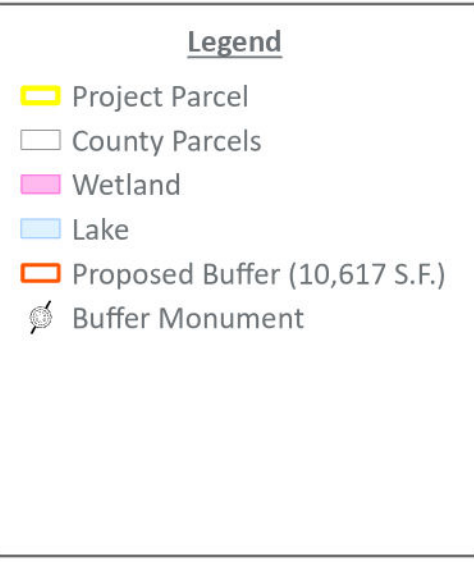
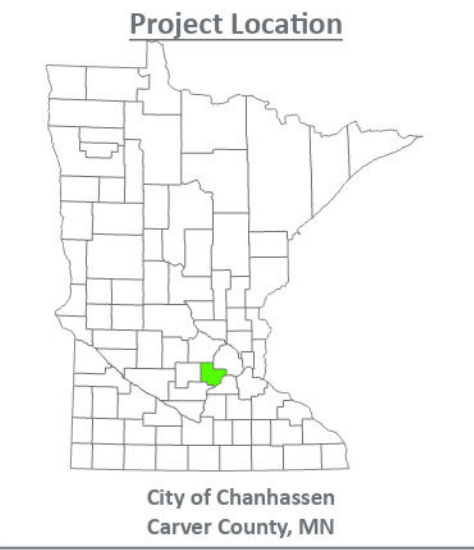
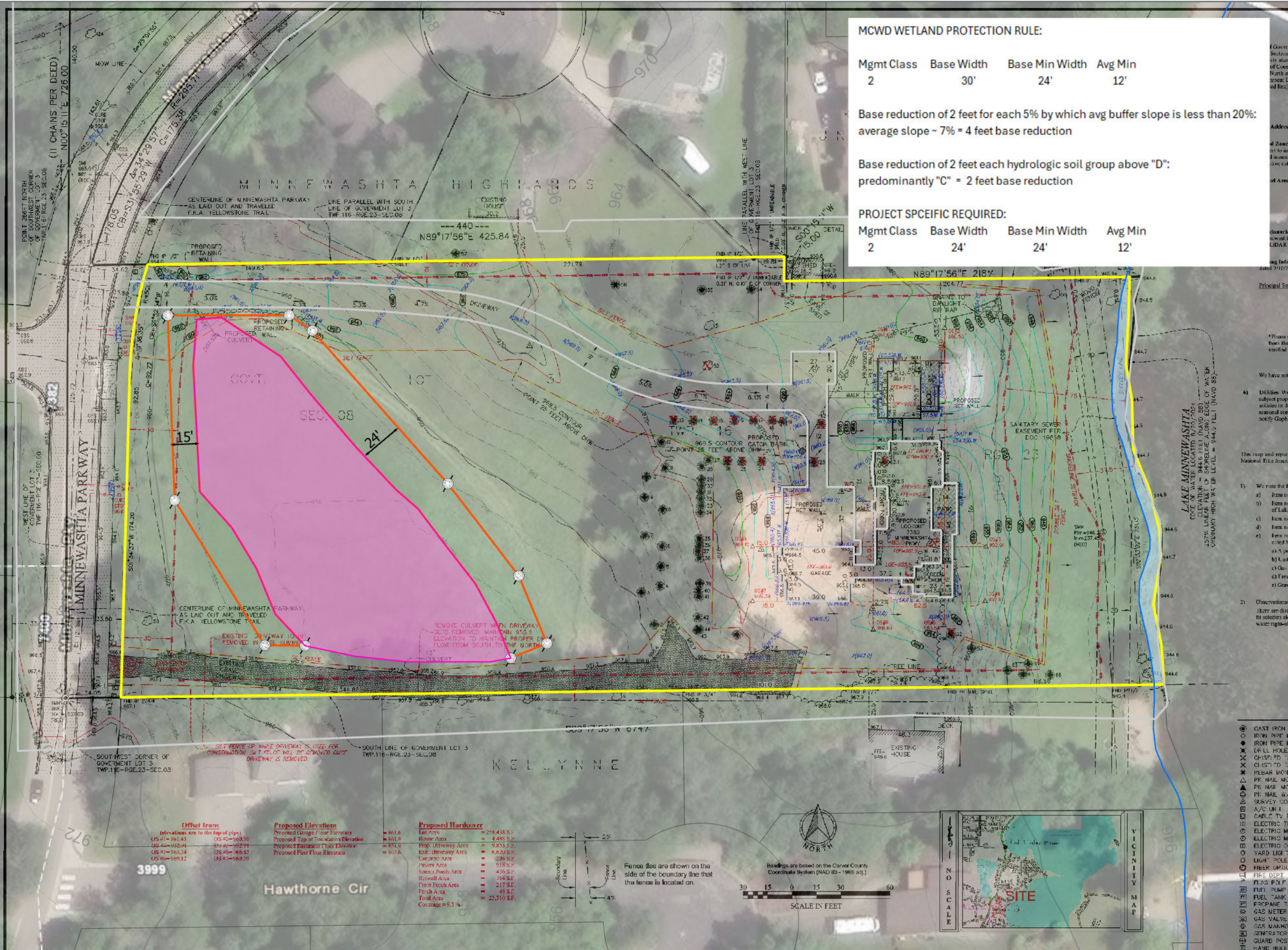
7380 Minnewashta Parkway
Chanhassen, Minnesota

FIGURE 2
Wetland Buffer Requirements



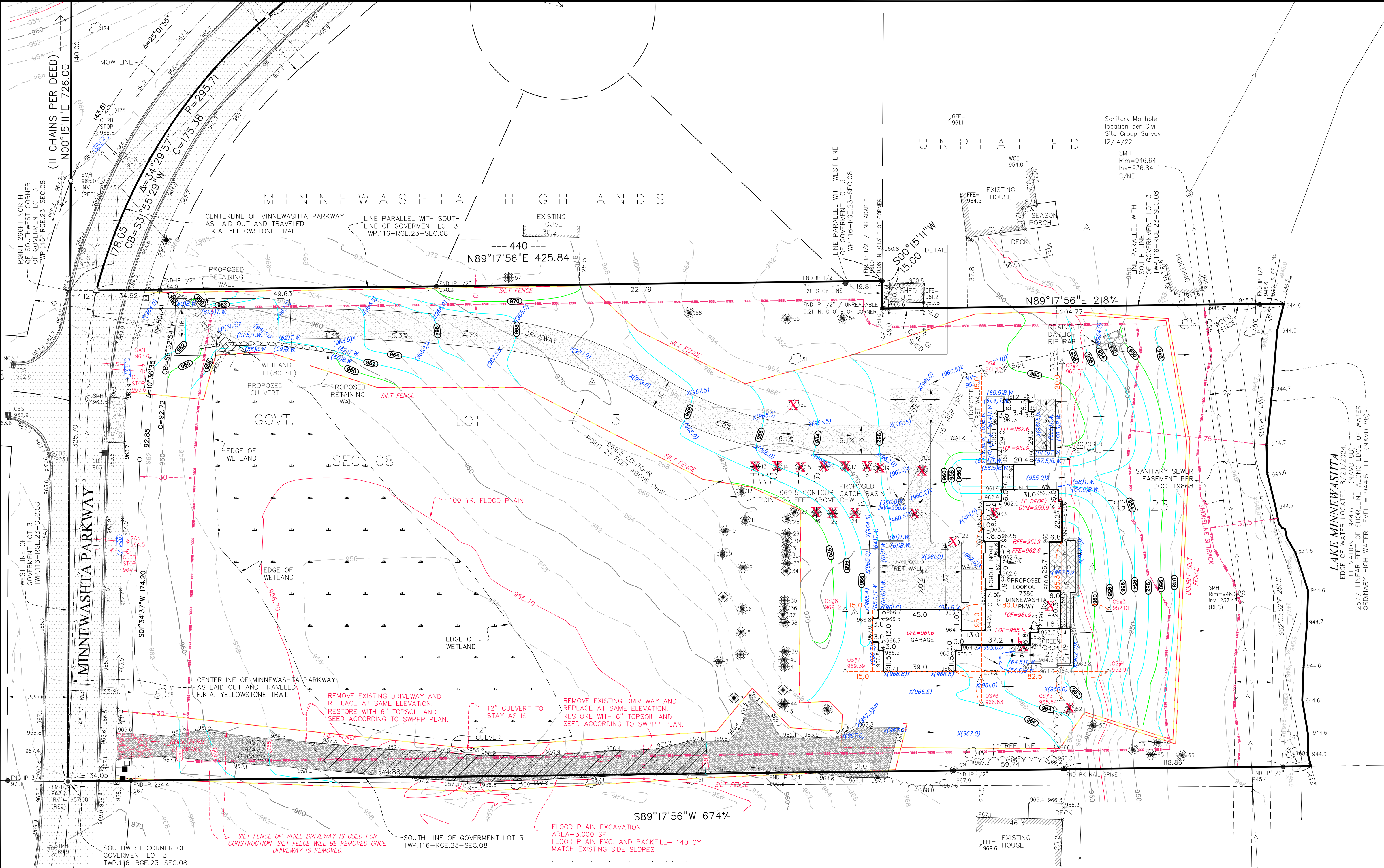
7380 Minnewashta Parkway
Chanhassen, Minnesota

FIGURE 3
Proposed Buffer



ANDERSON

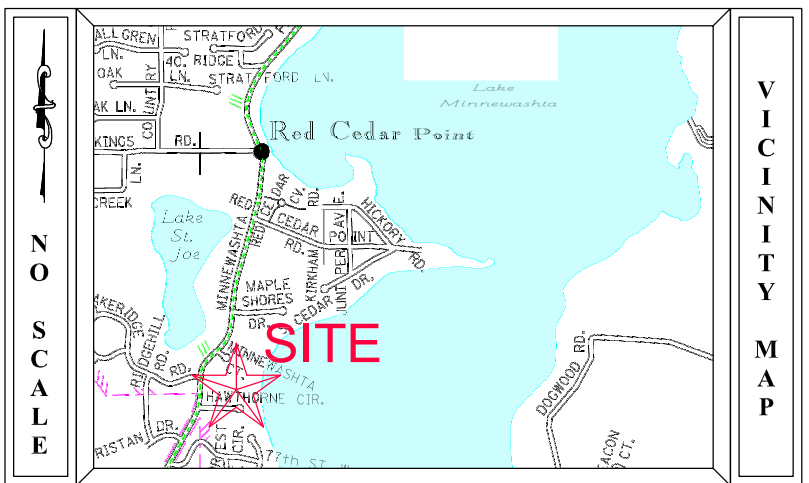
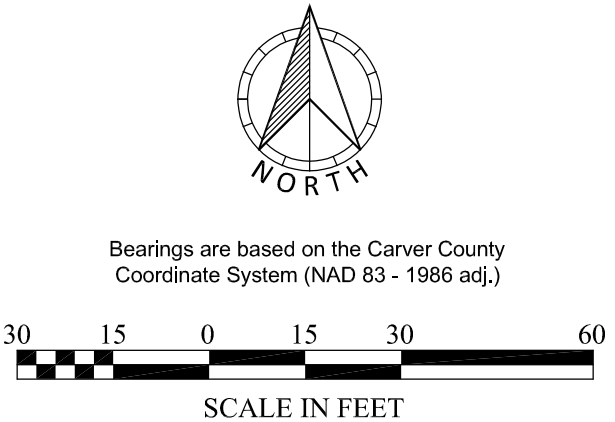
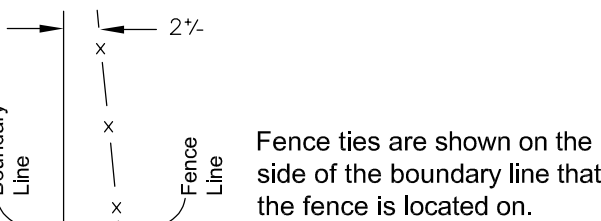
13605 1st Ave N #100, Plymouth, MN 55441
P 763.412.4000 F 763.412.4090 ae-mn.com



Offset Irons (elevations are to the top of pipe)			
OS #1=961.45	OS #2=960.50		
OS #4=953.91	OS #5=952.01		
OS #5=965.54	OS #6=966.83		
OS #8=969.12	OS #7=969.39		

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Prop. Driveway Area	= 9,853 S.F.
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Porch Area	= 48 S.F.
Total Area	= 23,710 S.F.
Coverage = 9.3 %	



SURVEY LEGEND		
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○ IRON PIPE MONUMENT SET	⊗ POWER POLE	FFE FIRST FLOOR ELEVATION
● IRON PIPE MONUMENT FOUND	< GUY WIRE	GFE GARAGE FLOOR ELEVATION
⊗ DRILL HOLE FOUND	⊗ ROOF DRAIN	TOP TOP OF FOUNDATION ELEV.
⊗ CHISELED "X" MONUMENT SET	⊗ LIFT STATION	LOE LOWEST OPENING ELEV.
⊗ CHISELED "X" MONUMENT FOUND	⊗ SANITARY MANHOLE	CONCRETE
⊗ REBAR MONUMENT FOUND	⊗ SANITARY CLEANOUT	BITUMINOUS
⊗ PK NAIL MONUMENT SET	⊗ STORM MANHOLE	BUILDING SETBACK LINE
⊗ PK NAIL MONUMENT FOUND	⊗ STORM DRAIN	CTV CABLE TV
⊗ PK NAIL W/ ALUMINUM DISC	⊗ FLARED END SECTION	CONCRETE CURB
⊗ SURVEY CONTROL POINT	⊗ TREE CONIFEROUS	CONTOUR EXISTING
⊗ A/C UNIT	⊗ TREE DECIDUOUS	CONTOUR PROPOSED
⊗ CABLE TV PEDESTAL	⊗ TREE CONIFEROUS REMOVED	GUARD RAIL
⊗ ELECTRIC TRANSFORMER	⊗ TREE DECIDUOUS REMOVED	DT DRAIN TILE
⊗ ELECTRIC MANHOLE	⊗ TELEPHONE MANHOLE	ELC ELECTRIC UNDERGROUND
⊗ ELECTRIC METER	⊗ TELEPHONE PEDESTAL	FENCE
⊗ ELECTRIC OUTLET	⊗ UTILITY MANHOLE	FIBER OPTIC UNDERGROUND
⊗ YARD LIGHT	⊗ UTILITY PEDESTAL	GAS GAS UNDERGROUND
⊗ LIGHT POLE	⊗ UTILITY VAULT	OHU OVERHEAD UTILITY
⊗ FIBER OPTIC MANHOLE	⊗ WATERMAIN MANHOLE	TREE LINE
⊗ FIRE DEPT. HOOK UP	⊗ WATER METER	SANITARY SEWER
⊗ FUEL PUMP	⊗ WATER SPIGOT	STORM SEWER
⊗ FUEL TANK	⊗ WELL	TELEPHONE UNDERGROUND
⊗ PROPANE TANK	⊗ MONITORING WELL	RETAINING WALL
⊗ GAS METER	⊗ CURB STOP	UTILITY UNDERGROUND
⊗ GAS MANHOLE	⊗ GATE VALVE	WATERMAIN
⊗ GUARD POST	⊗ HYDRANT	TRAFFIC SIGNAL
⊗ MAIL BOX	⊗ IRRIGATION VALVE	RAILROAD TRACKS
	⊗ POST INDICATOR VALVE	RAILROAD SIGNAL
	⊗ SIGN	RAILROAD SWITCH
	⊗ SOIL BORING	SATELLITE DISH
		WETLAND BUFFER SIGN

DESCRIPTION OF PROPERTY SURVEYED	
(Per Schedule A of the herein referenced Title Commitment)	
That part of Government Lot 3, Section 8, Township 116 North, Range 23 West, Carver County, Minnesota, described as follows: Commencing at the SW corner of Lot 3 in Section 8, Township 116, Range 23, thence running N. 11 chains, thence East parallel with South line of said Lot 3, to Minnewashta Lake, thence Southwesterly along lake shore to the South line of said Lot 3, thence West along said line to the place of beginning, except that part thereof lying Easterly of the center line of County Road, also known as Yellowstone Trail, and Northerly of the following described line: Commencing on the West line of said Government Lot 3, 266 North of the Southwest Corner thereof, thence East parallel with the South line of said Government Lot 440 ft.; thence South parallel to the West line of said Government Lot 15 feet; thence East parallel to the South line of said Government Lot 3 to the shore of Lake Minnewashta (and the extension Easterly of said last described line), according to the United States Government Survey thereof.	
STANDARD NOTES	
1) Site Address: 7380 Minnewashta Pkwy, Excelsior, MN 55331	
2) Flood Zone Information: This property appears to lie in Zone X (area determined to be outside of the 0.2% annual chance floodplain) and Zone AE (Areas subject to inundation by the 1-percent-annual-chance flood event determined by detailed methods. Base Flood Elevations (BFEs) are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.) per Flood Insurance Rate Map, Community Panel No. 27019C0226D, effective date of 12/21/18.	
3) Parcel Area Information:	Gross Area: 256,437± s.f. = 5.887± acres R/W Area: 28,352 s.f. = 0.651 acres Wet Area: 1,768± s.f. = 0.041± acres Net Area: 226,317± s.f. = 5.196± acres *We do not affirmatively insure the quantity of acreage set forth in the description
4) Benchmark: Top of round concrete pipe culvert next to metal cage strap, left of trash guard bracket, at lakeside end of culvert between small pond and Minnewashta Lake, NE of 6541 Minnewashta Parkway, Excelsior = 946.61 (NAVD 88). Contours were derived from a combination of field observations and LIDAR data from the Minnesota Department of Natural Resources.	
5) Zoning Information: The current Zoning for the subject property is RSF (Single Family Residential District) per the City of Chanhassen's zoning map dated 2/10/23. The setback, height, and floor space area restrictions for said zoning designation are as follows: Principal Structure Setbacks - Street(s): 30 feet (Minnewashta Pkwy) Side: 10 feet Lake: 75 feet (From Ordinary High Water Line) Hardcover: 25 percent of lot area (up to 30% with the addition of City-approved shoreline vegetative buffer).	
*Please note that the zoning information shown hereon may have been amended through a city process. We recommend that a zoning letter be obtained from the Zoning Administrator for the current restrictions for this site. All setback information and hardcover data for planning and design must be verified by all parties involved in the design and planning process prior to any planning or construction.	
We have not received the current zoning classification and building setback requirements from the insurer.	
6) Utilities: We have shown the location of utilities on the surveyed property by observed evidence only. There may be underground utilities encumbering the subject property we are unaware. Please note that we have not placed a Gopher State One Call for this survey. There may or may not be underground utilities in the mapped area, therefore extreme caution must be exercised before any excavation takes place on or near this site. Also, please note that seasonal conditions may inhibit our ability to visibly observe all the utilities located on the subject property. Before digging, you are required by law to notify Gopher State One Call at least 48 hours in advance at 651-454-0002.	

SURVEY REPORT	
This map and report was prepared with the benefit of a Commitment for Title Insurance issued by CHB Title LLC, as an issuing agent for Old Republic National Title Insurance Company, File No. 58382, dated May 7th, 2023.	
1) We note the following with regards to Schedule B of the herein referenced Title Commitment:	
a) Item no. 1-8 are not survey related	
b) Item no. 9 - Rights of the public and the State of Minnesota in and to that portion of the insured premises lying below the natural high water mark of Lake Minnewashta.	
c) Item no. 10 - Riparian rights are neither guaranteed nor insured herein	
d) Item no. 11 - Subject to Minnewashta Parkway as laid out and traveled over	
e) Item no. 12 - Subject to the rights in the property for the following matters as evidenced on the survey prepared by Harry S. Johnson co, Inc., dated May 1, 2023	
a) A portion of the building encroaches over the South Property line.	
b) Underground Electric, Underground Telephone, Water, Gas, and Sanitary Sewer lines along Minnewashta Parkway.	
c) Gas line runs over the North property line.	
d) Fence on/over the North property line by Minnewashta Lake.	
e) Gravel path extend over the South property line.	
2) Observations/Comments noted hereon per field survey such as (but not limited to): access, occupation, and easements and/or servitudes: There are discrepancies in the centerline of Minnewashta Parkway according to the adjacent plats and the centerline as traveled. We have created a best fit solution along the entire length of the subject property. Found monuments along the southerly portion of the subject property indicate a slightly wider right-of-way as shown on the survey.	
3) Wetland Delineation prepared by Anderson Environmental on June 9, 2025. LGU/TEP review pending.	

FIELD CREW	NO.	BY	DATE	REVISION
DM ABE SO	4	EMW	1/20/2025	UPDATE PER CITY COMMENTS
DRAWN	5	EMW	1/23/2025	UPDATE PER COMMENTS
ABE	6	EMW	2/5/2025	HOUSE STAKED
CHECKED	7	DLS	7/17/2025	WETLAND DELINEATION
CMT	8	DLS	9/16/2025	ADDED CUT FILL
DATE	9	DLS	9/29/2025	ADDED FLOOD PLAIN ELEVATION, REVISIONS
08/29/24				

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I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Dated this 8th day of November, 2024.

Daniel L. Schmidt
Daniel L. Schmidt, PLS
schmidt@sathre.com

Minnesota License No. 26147

SATHRE-BERGQUIST, INC.
14000 25TH AVENUE NORTH, SUITE 120
PLYMOUTH MN 55447 (952) 476-6000
WWW.SATHRE.COM

ENGINEERS
SURVEYORS
DESIGNERS
PLANNERS

TWP. 116-RGE-23-SEC.08
Carver County

**CHANHASSEN,
MINNESOTA**

CERTIFICATE OF SURVEY

PREPARED FOR:
L. CRAEMER

FILE NO.
8790-033

1

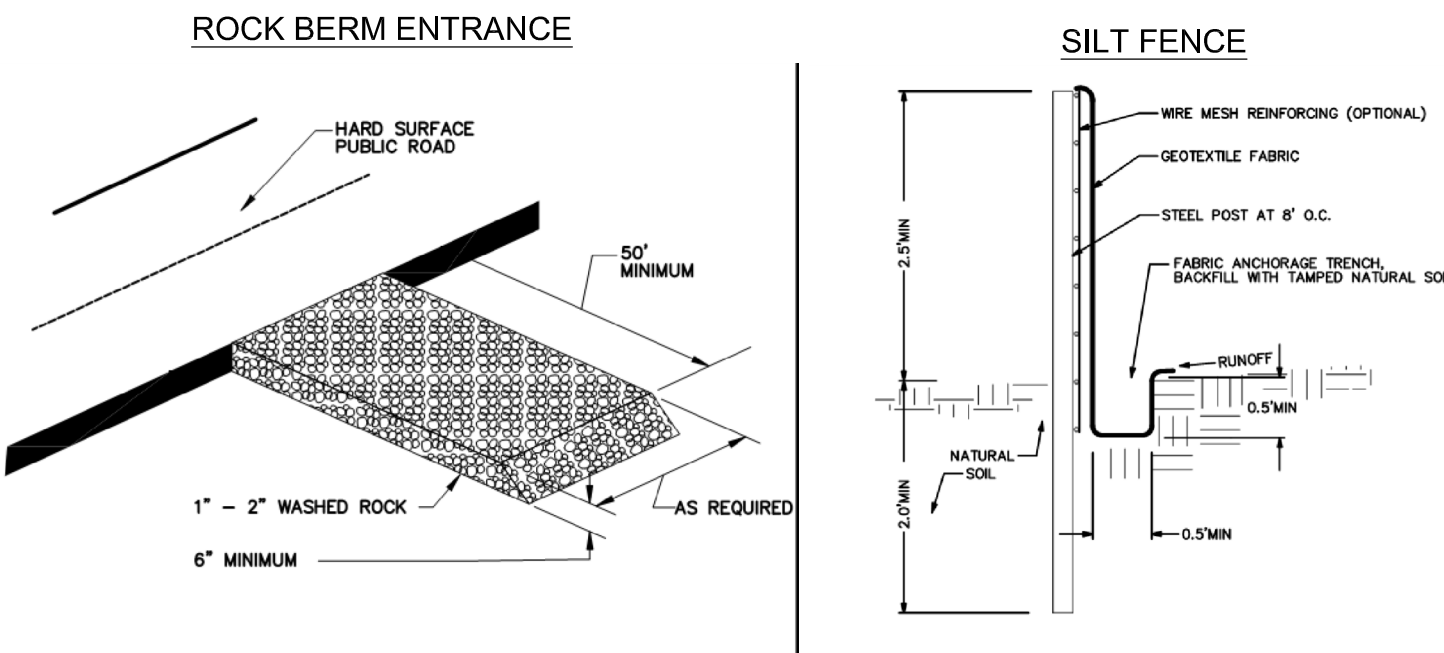
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Greg Jurvakainen
L.Cramer Builders and Remodelers

Phone#
O. 952-935-8482
C. 612-968-5886
Email: greg@lcramer.com

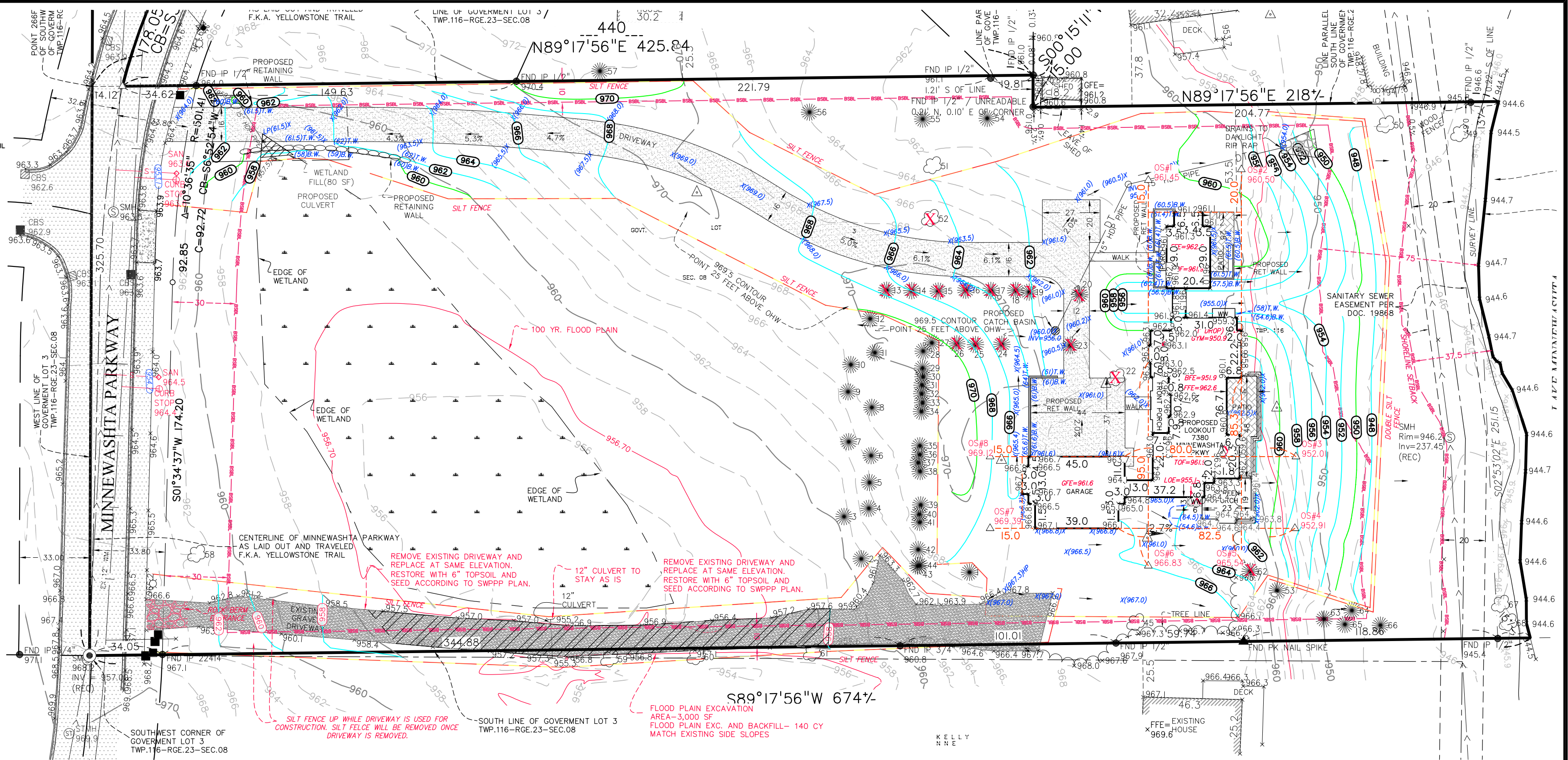
1. Delineate the location of areas not to be disturbed before work begins.

2. Establish sediment control practices on all down gradient perimeters before any up gradient land disturbing activities begin. These practices shall remain in place until final stabilization has been established.
3. Install all perimeter sediment control devices and construction entrances. The timing of installation of sediment control practices may be adjusted in order to accommodate short-term activities, but sediment control practices must be installed before the next precipitation event even if the short-term activity is not complete.
4. Contact the City for approval of the sediment control devices.
5. Rough grade the site.
6. Install utilities.
7. Install pavements.
8. Install lawn and landscape.
9. Restore all disturbed areas.
10. Clean all storm sewer and conveyance systems.
 1. After all disturbed areas are stabilized, obtain approval from the City and/or Watershed District.
 2. Remove all temporary sediment control devices.



Proposed Elevations		Proposed Hardcover	
Proposed Garage Floor Elevation	= 961.6	Lot Area	= 256,438 S.F.
Proposed Top of Foundation Elevation	= 961.9	House Area	= 4,488 S.F.
Proposed Basement Floor Elevation	= 951.9	Prop. Driveway Area	= 9,853 S.F.
Proposed First Floor Elevation	= 962.6	Exit. Driveway Area	= 6,620 S.F.

Area of Disturbance: 73,351 SF



perimeter to the top of the block barrier before the rock is placed. The screen acts to prevent the rocks from being washed through the blocks. Place rock against the wire mesh to the top of the blocks. Use 25 mm (1 inch) to 50 mm (2 inch) diameter rock, MDOT Standard Specification 3137 CA-1, CA-2, CA-3, or equal Coarse Aggregate. Install two courses of 8" blocks in order to form a barrier height of 16".

Health requirements.

10. **Biodegradable Erosion Control Blankets:** In accordance with MNDOT Standard Specification 3885, E-2s N, Euro-Guard-II winter conditions are not suitable for biodegradable erosion control blanket, silt fence shall be substituted with silt fence.
11. **Erosion Control Matting:** LandLog TRM 450 Turf Reinforcement Mat manufactured by Propex, Inc. (www.geoextile.com), or approved equal soil erosion control matting.
12. **Staples:** Staples used to anchor erosion control blankets shall be U-shaped, 3 mm diameter or heavier steel wire. The span width at the crown shall be a minimum of 25 mm (1 inch). Staples shall have a length of 250 mm (10 inches) or more from top to bottom after bending.

Erosion Prevention Practices:

1. Delineate the location of areas not to be disturbed (e.g. with flags, stakes, signs, silt fence, etc.) on the development site before work begins.
2. Avoid removal of trees and surface vegetation wherever possible. Schedule construction in order to expose the smallest practical area of soil at any given time. Implement appropriate construction phasing, vegetative buffer strips, horizontal slope grading, and other construction practices that minimize erosion.
3. Following initial soil disturbance or redistribution, complete permanent or temporary stabilization against erosion due to rain, wind, and running water as soon as possible, but in no case later than 14 calendar days, on all disturbed or graded areas including stormwater management pond sidelands. This requirement does not apply to those areas that are currently being used for material storage or for those areas on which grading, site building, or other construction activities are actively underway or will be underway at the discretion of the Contractor.
4. Provide temporary grass seed cover on all topsoil stockpiles and other areas of stockpiled excavated material in order to prevent soil erosion and rapid runoff during the construction period. Prolonged periods of open, bare earth without grass cover will not be permitted unless there are or will be construction activities at the discretion of the Contractor. Stabilize all disturbed greenspace areas with a minimum of 4" topsoil immediately after final subgrade completion. Seed and mulch, or sod and stake these areas within 48 hours after completion of final grading work (weather permitting).

Pollution Prevention Measures:

1. **Solid Waste:** Dispose of collected cement, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris, and other wastes properly off-site in compliance with Minnesota Pollution Control Agency requirements.
2. **Hazardous Materials:** Properly store oil, gasoline, paint and any other hazardous substances in order to prevent spills, leaks or other discharge. Include secondary containment. Restrict access to storage areas in order to prevent vandalism. Storage and disposal of hazardous materials must be in compliance with MPCA regulations.
3. **Other Materials:** Dispose of unused building materials, garbage, trash, cleaning wastes, toxic materials, and wastewater properly off-site and in compliance with Minnesota Pollution Control Agency disposal requirements.
4. Furnish suitable trash containers and regularly remove the accumulate trash from the premises.
5. Do not allow solid waste, hazardous materials, and other materials shall to be carried by runoff into a receiving water or storm sewer system.

7. **Concrete Washout Operations:** Contain all liquid and solid wastes generated by concrete washout operations in a leak-proof containment facility or impermeable liner. Do not allow the liquid and solid wastes to contact the ground. Prevent runoff from the concrete washout operations or areas. Dispose of liquid and solid wastes properly in compliance with Minnesota Pollution Control Agency regulations. Install a sign adjacent to each washout facility in order to inform concrete equipment operators to utilize the proper facilities.

8. Sanitary and Septic Waste: Furnish and install detached portable toilet facilities at the construction site. The portable toilets shall be conveniently located for the use of all workers on the project. Maintain the facilities in a clean, dry, sanitary condition in accordance with Minnesota Department of

depth of more than one-third of the height of the erosion and sediment control devices. Repair, replace, or supplement deteriorated, damaged, rotted, or missing erosion control devices within 24 hours of discovery, or as soon as field conditions allow access.

6. Repair, replace, or supplement all silt fences when they become nonfunctional or the sediment reaches 1/3 of the height of the fence. These repairs must be made within 24 hours of discovery, or as soon as field conditions allow access.
7. Clean sedimentation basins, storm sewer catch basins, ditches, and other drainage facilities as required in order to maintain their effectiveness. Temporary and permanent sedimentation basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches 2/3 of the storage volume. Drainage and removal must be completed within 72 hours, or as soon as field conditions allow access.
8. Inspect surface waters (including drainage ditches and conveyance systems) evidence of erosion and sediment deposition. Remove all deltas and sediment deposited. Stabilize areas where sediment removal results in exposed soil. Removal and stabilization must be completed within 7 days of discovery unless precluded by legal, regulatory, or physical access constraints. If precluded, removal and stabilization must take place within 7 days of obtaining access.
9. Inspect construction site vehicle exit locations for evidence of off-site sediment tracking onto paved surfaces. Remove all soils and sediments tracked or otherwise deposited onto adjacent property, pavement areas, sidewalks, streets, and alleys. Removal shall be on a daily basis throughout the duration of the construction. Clean paved roadways by shoveling or wet-sweeping. Do not dry sweep. If necessary, scrape paved surfaces in order to loosen compacted sediment material prior to sweeping. Haul sediment material to a suitable disposal area. Street washing is allowed only after sediment has been roved by shoveling or sweeping.
10. Perform any corrective measures ordered by the City or Watershed District within 24 hours of notification. Install any additional erosion protection or sediment control measures deemed necessary by the City or Watershed District within 24 hours of notification.

Materials:

- Storm Sewer Inlet Protection:** The following are approved inlet sediment control devices:
- a. Road Drain Top Slab Model RD 23 (fits rough opening for a 2'x3' inlet), Road Drain Top Slab Model RD 27 (fits rough opening for a 2'7" inlet), or Road Drain Top Slab Model CG 3067 (fits Neenah Casting with 35-1/4"x13-3/4" dimensions) manufactured by WIMCO, 799 Theis Drive, Shakopee, MN 55379, Phone (952) 233-3055.
 - b. Silt Sack: Regular flow (40 gal./min./sq. ft). Average width strength equal to 165.0 lbs/in, ASTM D-4884. Rectangular siltsock on rectangular inlets. Round siltsock on round inlets. Use ACF Environmental, Inc., 2831 Cardwell Road, Richmond, VA 23234, Phone (800) 448-3636, or approved equal.
 - c. IntraSafe Sediment Control Barrier. Install geotextile sock on the outside of the barrier in order to trap additional fines. Standard frames are available to fit 24" to 30" diameter and 2'x3' openings. Distributed by ROYAL ENTERPRISES AMERICA, 30622 Forest Boulevard, Stacy, MN, 55073, Phone (651) 462-2130.
2. Topsoil: Topsoil used for final grading areas to be turfed or planted shall meet the requirements of MNDOT Standard Specification 3877 for topsoil borrow modified to contain no more than 35% sand. Topsoil shall be reasonably free of silt, clay, heavy clay, coarse sand, stones, and other objects over 51 mm (2 inches) in diameter; and without plants, roots, sticks, and other objectionable material.
3. Geotextile Fabric for Subgrade Stabilization (if required): MNDOT Standard Specification 3733 Type V permeable geotextile material.
4. Supporting Posts for Siltfence: 51 mm (2 inch) square or larger hardwood, pine, or standard T- or U-section steel posts. T- or U-section steel posts shall weigh not less than 1.8602 kg per meter (1.25 lb per linear foot). Posts shall have a minimum length of 1524 mm (5 feet). Posts shall have projections to facilitate fastening the fabric and prevent slippage.
5. Siltfence Fabric: MNDOT Standard Specification 3886 self-supporting silt fence. Furnish in a continuous roll in order to avoid splices. Geotextile fabric shall be uniform in texture and appearance and have no defects, flaws, or tears. The fabric shall contain sufficient ultraviolet (UV) ray inhibitor and stabilizers to provide a minimum two-year service life outdoors. Fabric shall be international orange.
6. Aggregate for Temporary Rock Construction Entrance: 25 mm (1 inch) to 50 mm (2 inch) diameter rock, MDOT Standard Specification 3137 CA-1, CA-2, or CA-3 Coarse Aggregate, or equal.
7. Geotextile Fabric for Temporary Rock Construction Entrance: MNDOT Standard Specification 3733 Type V permeable geotextile fabric material.
8. Aggregate for Block and Rock Sediment Filter: 25 mm (1 inch) to 50 mm (2 inch) diameter rock, MNDOT Standard Specification 3137 CA-1, CA-2, or CA-3 Coarse Aggregate, or equal.
9. Block and Rock Inlet Filters: Block and Rock Inlet Filters consist of open-core concrete masonry blocks, wire screen with 12 mm (0.5 inch) openings, and washed rock. Place open-core concrete masonry blocks lengthwise on their sides around the catchbasin inlet. Place wire screen around the

FIELD CREW	NO.	BY	DATE	REVISION	USE (INCLUDING COPYING, DISTRIBUTION, AND/OR CONVEYANCE OF INFORMATION) OF THIS PRODUCT IS STRICTLY PROHIBITED WITHOUT SATHRE-BERGQUIST, INC.'S EXPRESS WRITTEN AUTHORIZATION. USE WITHOUT SAID AUTHORIZATION CONSTITUTES AN ILLEGITIMATE USE AND SHALL THEREBY INDEMNIFY SATHRE-BERGQUIST, INC. OF ALL RESPONSIBILITY. SATHRE-BERGQUIST, INC. RESERVES THE RIGHT TO HOLD ANY ILLEGITIMATE USER OR PARTY LEGALLY RESPONSIBLE FOR DAMAGES OR LOSSES RESULTING FROM ILLEGITIMATE USE.	I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. _____ Charles A. Wiemerslage, P.E. Date: 02/03/25 Lic. No. 96180	 SATHRE-BERGQUIST, INC. 14000 25TH AVENUE NORTH, SUITE 120 PLYMOUTH MN 55447 (952) 476-6000 WWW.SATHRE.COM	TWP. 116-RGE 23-SEC.08 Carver County	CERTIFICATE OF SURVEY	FILE NO. 8790-033
DRAWN								CHANHASSEN MINNESOTA	PREPARED FOR: L. CRAEMER	3 3

CERTIFICATE OF SURVEY

PREPARED FOR:
L. CRAEMER

FILE NO.
8790-033

3

Appendix B
SEED MIX

MnDOT Standard Native Seed Mixture Designations

35-241

Mesic Prairie General

Common Name	Scientific Name	Rate (kg/ha)	Rate (lb/ac)	% of Mix (% by wt)	Seeds/ sq ft
big bluestem	<i>Andropogon gerardii</i>	2.24	2.00	5.48%	7.35
side-oats grama	<i>Bouteloua curtipendula</i>	1.79	1.60	4.39%	3.53
kalm's brome	<i>Bromus kalmii</i>	0.56	0.50	1.37%	1.47
nodding wild rye	<i>Elymus canadensis</i>	1.31	1.17	3.20%	2.23
slender wheatgrass	<i>Elymus trachycaulus</i>	1.12	1.00	2.73%	2.53
switchgrass	<i>Panicum virgatum</i>	0.07	0.06	0.17%	0.32
little bluestem	<i>Schizachyrium scoparium</i>	1.79	1.60	4.39%	8.82
Indian grass	<i>Sorghastrum nutans</i>	2.24	2.00	5.48%	8.82
prairie dropseed	<i>Sporobolus heterolepis</i>	0.08	0.07	0.18%	0.39
	Total Grasses	11.21	10.00	27.39%	35.46
blue giant hyssop	<i>Agastache foeniculum</i>	0.07	0.06	0.15%	1.82
lead plant	<i>Amorpha canescens</i>	0.07	0.06	0.15%	0.25
common milkweed	<i>Asclepias syriaca</i>	0.04	0.04	0.10%	0.06
butterfly milkweed	<i>Asclepias tuberosa</i>	0.04	0.04	0.10%	0.06
Canada milk vetch	<i>Astragalus canadensis</i>	0.07	0.06	0.17%	0.39
white prairie clover	<i>Dalea candida</i>	0.07	0.06	0.17%	0.44
purple prairie clover	<i>Dalea purpurea</i>	0.21	0.19	0.51%	1.03
Canada tick trefoil	<i>Desmodium canadense</i>	0.07	0.06	0.18%	0.13
stiff sunflower	<i>Helianthus pauciflorus</i>	0.07	0.06	0.17%	0.09
ox-eye	<i>Heliopsis helianthoides</i>	0.15	0.13	0.34%	0.29
rough blazing star	<i>Liatris aspera</i>	0.03	0.03	0.08%	0.18
great blazing star	<i>Liatris pycnostachya</i>	0.03	0.03	0.09%	0.13
wild bergamot	<i>Monarda fistulosa</i>	0.07	0.06	0.17%	1.61
stiff goldenrod	<i>Oligoneuron rigidum</i>	0.07	0.06	0.17%	0.94
black-eyed susan	<i>Rudbeckia hirta</i>	0.35	0.31	0.86%	10.56
heath aster	<i>Symphyotrichum ericoides</i>	0.03	0.03	0.09%	2.30
smooth aster	<i>Symphyotrichum laeve</i>	0.07	0.06	0.17%	1.26
blue vervain	<i>Verbena hastata</i>	0.04	0.04	0.12%	1.50
hoary vervain	<i>Verbena stricta</i>	0.07	0.06	0.17%	0.64
golden alexanders	<i>Zizia aurea</i>	0.07	0.06	0.15%	0.23
	Total Forbs	1.68	1.50	4.11%	23.89
Oats	<i>Avena sativa</i>	28.02	25.00	68.50%	11.14
	Total Cover Crop	28.02	25.00	68.50%	11.14
	Totals:	40.91	36.50	100.00%	70.49
Purpose:	General mesic prairie mix for native roadsides, ecological restoration, or conservation program plantings.				
Planting Area:	Tallgrass Aspen Parklands, Prairie Parkland, and Eastern Broadleaf Forest Provinces. Mn/DOT Districts 2(west), 3B, 4, Metro, 6, 7 & 8.				

Individual Plugs (typically 30-50 per tray):

Big Bluestem:	One Tray
Blazing Star:	One Tray
Wild Bergamot:	One Tray
Stiff Golden Rod:	One Tray

Appendix C

DECLARATION AND MAINTENANCE AGREEMENT TEMPLATES

DECLARATION INSTRUCTIONS

1. The highlighted text in the declaration template is guidance information. The highlight text either:
 - a. provides instructions or guidance on how to complete the declaration – [TEXT IN ALL CAPITAL LETTERS AND BRACKETS] – or
 - b. describes the information to be inserted into the blank immediately prior – (*italicized and in parentheses*)
2. All highlighted text should be removed once the declaration is correctly completed.
3. All property owners must execute the declaration and their signatures must be notarized. Notary services are available at the MCWD office at most times. Call to confirm notary will be available before coming to the office.
4. The Consent & Subordination form must be completed by any party other than fee title owner holding an ownership interest in the property. (Most common is a bank holding a mortgage.) In cases where there are no additional interests, the consent and subordination section of the document may be deleted.
5. The following attachments are required:
 - a. A site plan showing the location of the features regulated by the Declaration (e.g. Attachment A)
 - b. Additional attachments can be used as needed, such as for lengthy legal descriptions.
6. Create two original documents.

The template and guidance information are provided solely as a convenience for permittees. Each permittee should consult his or her own legal counsel with specific questions and prior to executing any document that may affect legal rights.

Please return a final draft to the MCWD (hard copy or via e-mail) for review & approval before recording.

Following approval, the applicant is responsible for recording any required documents with the county. When you take the document for recording, please ensure you take TWO original copies. One copy will receive a barcode stamp and be handed back to you; this is your proof of recording. Proof of recording must be submitted to MCWD via fax, email, mail or in person before the permit can be issued.

HENNEPIN	CARVER
County Recorder/Registrar of Titles Hennepin County Government Center, A-500 300 South Sixth Street Minneapolis, MN 55487 612-348-5139	Property Records Government Center, Administration Building 600 East 4 th Street Chaska, MN 55318 952-361-1930

MAINTENANCE AGREEMENT
[List Applicable Rules]
Between the Minnehaha Creek Watershed District
and the City of [NAME OF CITY]

This Maintenance Agreement (Agreement) is made by and between the Minnehaha Creek Watershed District, a watershed district with purposes and powers set forth at Minnesota Statutes chapters 103B and 103D (MCWD), and the City of [NAME OF CITY], a Minnesota municipal corporation and political subdivision of the State of Minnesota (CITY).

Recitals and Statement of Purpose
[Delete those not applicable]

WHEREAS pursuant to Minnesota Statutes § 103D.345, the MCWD has adopted and implements the Stormwater Management Rule, Wetland Protection Rule and the Waterbody Crossings & Structures Rule;

WHEREAS under the Stormwater Management Rule, certain land development activity triggers the requirement that the landowner record a declaration establishing the landowner's perpetual obligation to inspect and maintain stormwater-management facilities;

WHEREAS, under the Waterbody Crossings & Structures Rule, certain land development activity requires the landowner to record a declaration establishing the landowner's perpetual obligation to inspect and maintain waterbody crossings and structures to ensure that the hydraulic and navigational capacity of the associated waterbody are maintained in accordance with approved plans;

WHEREAS under the Wetland Protection Rule, certain land development activity triggers the requirement that the landowner record a declaration establishing the landowner's perpetual obligation to protect undisturbed buffer adjacent to wetland;

WHEREAS in each case, a public landowner, as an alternative to a recorded instrument, may meet the maintenance requirement by documenting its obligations in an unrecorded written agreement with the MCWD;

WHEREAS in accordance with the MCWD rules and as a condition of Permit [REDACTED], the City's obligation to maintain wetland buffer, waterbody crossings, and stormwater facilities [INAPPLICABLE TEXT SHOULD BE DELETED] must be memorialized by a recorded maintenance declaration or, alternatively, a maintenance agreement establishing the City's perpetual maintenance obligation;

WHEREAS CITY and the MCWD execute this Agreement to fulfill the condition of Permit [REDACTED], and concur that it is binding and rests on mutual valuable consideration;

THEREFORE CITY and MCWD agree as follows:

1. CITY, at its cost, will inspect and maintain the wetland buffer, waterbody crossings, and stormwater facilities [INAPPLICABLE TEXT SHOULD BE DELETED] as shown in the site plan attached to and incorporated into this Agreement as Exhibit A in perpetuity as follows:

[DELETE INAPPLICABLE SECTIONS BELOW]

A. WETLAND BUFFER AREAS

- i. Buffer vegetation will not be cultivated, cropped, pastured, mowed, fertilized, subject to the placement of mulch or yard waste, or otherwise disturbed, except for periodic cutting or burning that promotes the health of the buffer, actions to address disease or invasive species, mowing for purposes of public safety, temporary disturbance for placement or repair of buried utilities, or other actions to maintain or improve buffer quality. Pesticides and herbicides may be used in accordance with Minnesota Department of Agriculture rules and guidelines. No new structure or hard surface will be placed within a buffer, except that construction of a trail or path of no more than 4 feet in width to provide riparian access through the buffer is acceptable. No fill, debris or other material will be excavated from or placed within a buffer.
- ii. Permanent wetland buffer markers will be maintained in the locations shown on the approved site plan. Language shall indicate the purpose of the buffer, restrictions, and the name and phone number of the Minnehaha Creek Watershed District.

B. WATERBODY CROSSINGS & STRUCTURES

Crossings and structures in contact with the bed or bank of a waterbody will be inspected at least once a year and maintained in good repair in perpetuity to ensure continuing adequate hydraulic and navigational capacity is retained in accordance with approved plans, to ensure no net increase in the flood stage beyond that achieved by the approved plans, to prevent adverse effects on water quality, changes to the existing flowline/gradient and increased scour, erosion or sedimentation, and to minimize the potential for obstruction of the waterbody.

2. STORMWATER FACILITIES

[DELETE INAPPLICABLE SUBSECTIONS BELOW]

- i. **Stormwater retention and treatment basin(s).** Stormwater retention and treatment basin(s) must be inspected at least once a year to determine if the basin's retention and treatment characteristics are adequate and continue to perform per design. Culverts and outfall structures must be inspected at least annually and kept clear of any obstructions or sediment accumulation. Sediment accumulation must be measured by a method accurate to within one vertical foot. A storage treatment basin will be considered inadequate if sediment has decreased the wet storage volume by 50 percent of its original design volume. Based on this inspection, if the stormwater basin(s) is identified for sediment cleanout, the basin(s) will be restored to its original design contours and vegetation in disturbed areas restored within one year of the inspection date.
- ii. **Raingardens, infiltration basins and filtration basins.** Raingardens, infiltration basins and filtration basins will be inspected annually to ensure continued live storage capacity

at or above the design volume. Invasive vegetation, excess sediment and debris will be removed as needed and healthy plant growth will be maintained to ensure that the facilities continue to perform per design.

- iii. **Iron-enhanced sand filters.** Iron-enhanced sand media must be inspected every three years to determine if the iron's binding capacity has been reached. The phosphorus binding capacity of the iron-sand bed is exhausted and must be replaced to the original specifications when the total-phosphorus-to-total-iron ratio exceeds 5 milligrams of phosphorus per 1 gram of elemental iron or when the total phosphorus at the outlet of the iron-sand filter consistently exceeds 60 to 70 micrograms per liter.
- iv. **Vegetated swales.** Vegetated swales may mowed for public safety, but otherwise must remain free from vegetative disturbance, fertilizer application, yard or other waste disposal, the placement of structures unless approved within the permit, or any other alteration that impedes function.
- v. **Pervious pavement and permeable pavers.** Pervious pavement or pavers will be inspected at least one per year after a major storm event and otherwise annually to ensure continuing performance per design. Surface openings will be vacuumed at least annually at the end of winter in dry weather to remove dry, encrusted sediment as necessary. Broken units that impair the structural integrity of the surface will be replaced. If water stands for an extended period of time, the base materials will be removed and replaced.
- vi. **Underground storage facilities.** Underground storage facilities will be inspected at least annually to ensure continuing performance per design. Capacity will be considered inadequate if sediment has decreased the storage volume by 50 percent of the original design volume. Accumulated debris and sediment will be removed, and inlet and outlet structures will be kept clear of any flow impediments.
- vii. **Grit chambers, sump catch basins and sump manholes.** Grit chambers, sump catch basins and sump manholes will be inspected in the spring, summer and fall of each year. All sediment and debris will be removed as needed such that the stormwater facilities operate as designed and permitted.
- viii. **Reuse systems.** Runoff-management systems relying on capture and reuse of stormwater (e.g., for irrigation) must be operated and maintained in accordance with terms of permit approval and the manufacturer's or installer's specifications for any proprietary equipment.
- ix. **Proprietary stormwater facilities.** Proprietary stormwater facilities will be inspected at least annually and maintained as specified or recommended by the manufacturer and/or installer as described in Attachment X [FOR DECLARATIONS--ATTACH MAINTENANCE SPECIFICATIONS FROM MANUFACTURER AS ATTACHMENT X. FOR AGREEMENTS, DELETE UNDERLINED SECTION AND SAVE SPECIFIC MAINTNENACE LANGUAGE PROVIDED BY APPLICANT IN PERMIT FILE].
- x. **Reporting.** The Declarant will submit to the MCWD annually a brief written report that describes stormwater facility maintenance activities performed under this declaration, including dates, locations of inspections and the maintenance activities performed.

2. If CITY conveys into private ownership a fee interest in the property that is the subject of this Agreement, it shall require as a condition of sale, and enforce: (a) that the purchaser record a declaration on the property incorporating the maintenance requirements of this Agreement; and (b) that recordation occur either before any other encumbrance is recorded on the property or, if after, only as accompanied by a subordination and consent executed by the encumbrance holder ensuring that the declaration will run with the land in perpetuity. If CITY conveys into public ownership a fee interest in any property that has become subject to this Agreement, it shall require as a condition of the purchase and sale agreement that the purchaser accept an assignment of all obligations vested under this Agreement.
3. This Agreement may be amended only in a writing signed by the parties.
4. The recitals are incorporated as a part of this Agreement.

(SIGNATURE PAGE FOLLOWS)

IN WITNESS WHEREOF, the parties hereto have executed this Agreement.

MINNEHAHA CREEK WATERSHED DISTRICT

By _____
Administrator

Date:

CITY OF [Name of City]

By: _____
Its Mayor

Date:

By: _____
Its Administrator

Date:

[MAINTAIN 4" MARGIN]

DECLARATION

THIS DECLARATION (Declaration) is made this _____ day of _____, 201_, by and [INSERT NAME OF PERMITTEE], a(n) [INSERT DESCRIPTION OF PERMITTEE (e.g. "a Minnesota limited liability company" or "individual")] (Declarant) in favor of the Minnehaha Creek Watershed District (MCWD), a special purpose local unit of government with purposes and powers pursuant to Minnesota Statutes Chapters 103B and 103D.

RECITALS

WHEREAS Declarant owns real property within the City of [NAME OF CITY], [CARVER/HENNEPIN] County, Minnesota, platted and legally described as:

[INSERT LEGAL DESCRIPTION]

(the Property) and no one other than Declarant, [NAME HERE] ANY PARTY OTHER THAN DECLARANT (FEE TITLE OWNER) HOLDING AN OWNERSHIP INTEREST IN THE PROPERTY AND ATTACH A COMPLETED CONSENT AND SUBORDINATION FROM EACH], has any right, title or interest in the Property; and

WHEREAS, the Property constitutes the entirety of the land to which MCWD Permit # _____ applies; and

WHEREAS, the Declarant desires to subject the Property to certain conditions and restrictions imposed by the MCWD as a condition to issuance of Permit # _____ for the mutual benefit of the MCWD and the owners of the Property.

NOW, THEREFORE, Declarant makes this Declaration and hereby declares that this Declaration shall constitute covenants to run with the Property in perpetuity, and further declares that the Property shall be owned, used, occupied and conveyed subject to the covenants, restrictions, easements, charges and liens set forth in this Declaration, all of which shall be binding on all persons owning or acquiring any right, title or interest in the Property, and their heirs, successors, personal representatives and assigns. All features requiring maintenance identified on the scaled site plan for the Property attached hereto and incorporated herein as Attachment A will be maintained in perpetuity in accordance with as follows:

[DELETE INAPPLICABLE SECTIONS BELOW]

1. WETLAND BUFFER AREAS

- a. Buffer vegetation will not be cultivated, cropped, pastured, mowed, fertilized, subject to the placement of mulch or yard waste, or otherwise disturbed, except for periodic cutting or burning that promotes the health of the buffer, actions to address disease or invasive species, mowing for purposes of public safety, temporary disturbance for placement or repair of buried utilities, or other actions to maintain or improve buffer quality, each as approved by MCWD staff in writing. Pesticides and herbicides may be used in accordance with Minnesota Department of Agriculture rules and guidelines. No new structure or hard surface will be placed within a buffer, except that construction of a trail or path of no more than 4 feet in width to provide riparian access through the buffer is acceptable. No fill, debris or other material will be excavated from or placed within a buffer.
- b. Permanent wetland buffer monuments will be maintained in the locations shown on the approved site plan. Language shall indicate the purpose of the buffer, restrictions, and the name and phone number of the Minnehaha Creek Watershed District.

2. WATERBODY CROSSINGS & STRUCTURES

- a. Crossings and structures in contact with the bed or bank of a waterbody will be inspected at least once a year and maintained in good repair in perpetuity to ensure continuing adequate hydraulic and navigational capacity is retained in accordance with approved plans, to ensure no net increase in the flood stage beyond that achieved by the approved plans, to prevent adverse effects on water quality, changes to the existing flowline/gradient and increased scour, erosion or sedimentation, and to minimize the potential for obstruction of the waterbody.

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[DELETE INAPPLICABLE SUBSECTIONS BELOW]

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- b. **Raingardens, infiltration basins and filtration basins.** Raingardens, infiltration basins and filtration basins will be inspected annually to ensure continued live storage capacity at or above the design volume. Invasive vegetation, excess sediment and debris will be removed as needed and healthy plant growth will be maintained to ensure that the facilities continue to perform per design.
- c. **Iron-enhanced sand filters.** Iron-enhanced sand media must be inspected every three years to determine if the iron's binding capacity has been reached. The phosphorus binding capacity of the iron-sand bed is exhausted and must be replaced to the original specifications when the total-phosphorus-to-total-iron ratio exceeds 5 milligrams of phosphorus per 1 gram of elemental iron or when the total phosphorus at the outlet of the iron-sand filter consistently exceeds 60 to 70 micrograms per liter.
- d. **Vegetated swales.** Vegetated swales may mowed for public safety, but otherwise must remain free from vegetative disturbance, fertilizer application, yard or other waste disposal, the placement of structures unless approved within the permit, or any other alteration that impedes function.
- e. **Pervious pavement and permeable pavers.** Pervious pavement or pavers will be inspected at least one per year after a major storm event and otherwise annually to ensure continuing performance per design. Surface openings will be vacuumed at least annually at the end of winter in dry weather to remove dry, encrusted sediment as necessary. Broken units that impair the structural integrity of the surface will be replaced. If water stands for an extended period of time, the base materials will be removed and replaced.
- f. **Underground storage facilities.** Underground storage facilities will be inspected at least annually to ensure continuing performance per design. Capacity will be considered inadequate if sediment has decreased the storage volume by 50 percent of the original design volume. Accumulated debris and sediment will be removed, and inlet and outlet structures will be kept clear of any flow impediments.

- g. **Grit chambers, sump catch basins and sump manholes.** Grit chambers, sump catch basins and sump manholes will be inspected in the spring, summer and fall of each year. All sediment and debris will be removed as needed such that the stormwater facilities operate as designed and permitted.
- h. **Reuse systems.** Runoff-management systems relying on capture and reuse of stormwater (e.g., for irrigation) must be operated and maintained in accordance with terms of permit approval and the manufacturer's or installer's specifications for any proprietary equipment.
- i. **Proprietary stormwater facilities.** Proprietary stormwater facilities will be inspected at least annually and maintained as specified or recommended by the manufacturer and/or installer as described in Attachment X [FOR DECLARATIONS--ATTACH MAINTENANCE SPECIFICATIONS FROM MANUFACTURER AS ATTACHMENT X. FOR AGREEMENTS, DELETE UNDERLINED SECTION AND SAVE SPECIFIC MAINTNENACE LANGUAGE PROVIDED BY APPLICANT IN PERMIT FILE].
- j. **Reporting.** The Declarant will submit to the MCWD annually a brief written report that describes stormwater facility maintenance activities performed under this declaration, including dates, locations of inspections and the maintenance activities performed.

- 1. **Violation.** Both the Declarant and a subsequent property owner are liable to the MCWD for performance under this Declaration, and the MCWD may seek any remedy in law or equity against the Declarant as long as the declarant owns the Property and thereafter against the property owner to enforce the Declaration.
- 2. **"Property owner"** as used in this Declaration means the owner of the property on which is located the facilities to which the obligations herein apply.
- 3. **Recitals.** The recitals set forth above are expressly incorporated herein.

IN WITNESS WHEREOF, the undersigned has executed this instrument the day and year first set forth.

DECLARANT:

_____ (signature)

By: _____ (print name)
_____ (title) of
_____ (company or
organization) [DELETE SECTION HIGHLIGHTED IN
BLUE IF SIGNING IN AN INDIVIDUAL CAPACITY;
INCLUDE COMPLETED SECTION IN BLUE FOR
ACKNOWLEDGEMENT IN A REPRESENTATIVE
CAPACITY, E.G., AS AN OFFICER OF A COMPANY]]

State of _____

County of _____

This instrument was acknowledged before me on _____ (date) by
_____ (name(s) of person(s)) as _____ (type of
authority, e.g., officer, trustee, etc.) of _____ (name
of party on behalf of whom the instrument was executed). (DELETE SECTION
HIGHLIGHTED IN BLUE FOR ACKNOWLEDGEMENT IN AN INDIVIDUAL
CAPACITY; INCLUDE COMPLETED SECTION IN BLUE FOR
ACKNOWLEDGEMENT IN A REPRESENTATIVE CAPACITY, E.G., AS AN
OFFICER OF A COMPANY)

_____ (Signature of notarial officer)

(Stamp)

_____ Title (and Rank)

My commission expires:

This Instrument Was Drafted By:

[INSERT NAME AND ADDRESS OF WHOEVER FILLED OUT THE TEMPLATE]

CONSENT and NON-DISTURBANCE

Legal description of Subject Property:

[insert]

County, Minnesota

is the current holder and owner of a Mortgage, made and subscribed by and filed for record on [insert date], as Document No. , in the Office of the County Recorder, County, Minnesota.

hereby consents to the attached Declaration executed by to the Minnehaha Creek Watershed District, and joins in the execution hereof solely as lien holder and hereby agrees that in the event of the foreclosure of the Mortgage, or other sale of the Subject Property described in said Mortgage under judicial or non-judicial proceedings, the same shall be sold subject to said Declaration.

Signed and executed this day of , 20.

By:

[insert name and title]

STATE OF

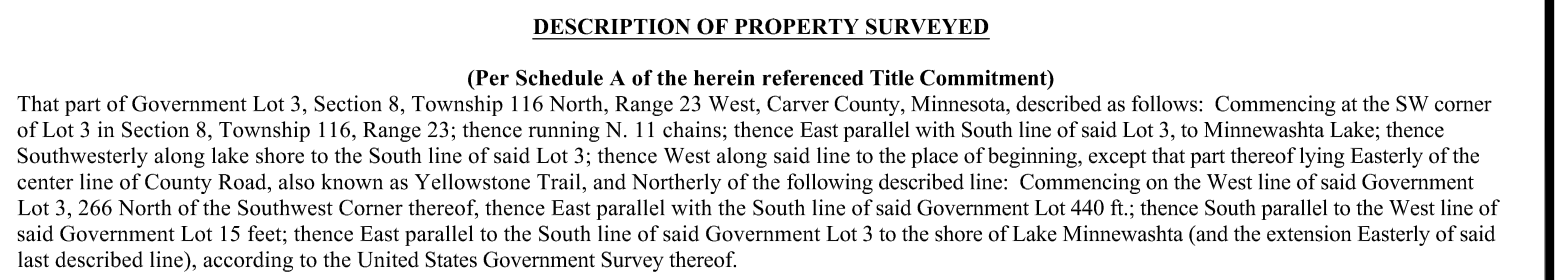
COUNTY OF

BEFORE ME, the undersigned authority, on this day personally appeared , [insert title] of , known to me to be the person and officer whose name is subscribed to the foregoing instrument and who acknowledged to me that (s)he executed the same for the purposes and consideration therein expressed, in the capacity therein stated, as the act and deed of .

GIVEN UNDER MY HAND AND SEAL OF OFFICE THIS day of , 20.

Notary Public

Attachment B: Floodplain Plan Set



Site Address: 7380 Minnewasha Pkwy, Excelsior, MN 55311

2) **Flood Zone Information:** This property appears to lie in Zone X (area determined to be outside of the 0.2% annual chance floodplain) and Zone AE (Areas subject to inundation by the 1-percent annual-chance flood event determined by detailed methods. Base Flood Elevations (BFEs) are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.) per Flood Insurance Rate Map, Community Panel No. 27019C0226D, effective date of 12/21/18.

3) **Parcel Area Information:**

Gross Area:	256,437± s.f. ~ 5.887± acres
R/W Area:	28,352 s.f. ~ 0.651 acres
Wet Area:	1,768± s.f. ~ 0.041± acres
Net Area:	226,317± s.f. ~ 5.196± acres

*We do not affirmatively insure the quantity of acreage set forth in the description

4) **Benchmark:** Top of round concrete pipe culvert next to metal cage trap, left of trash gund bracket, at lakeside end of culvert between small pond and Minnewasha Lake, NE of 6541 Minnewasha Parkway, Excelsior = 946.61 (NAVD 88). Contours were derived from a combination of field observations and LiDAR data from the Minnesota Department of Natural Resources.

5) **Zoning Information:** The current Zoning for the subject property is RSF (Single Family Residential District) per the City of Chanhassen's zoning map dated 2/10/23. The setback, height, and floor space area restrictions for said zoning designation are as follows:

*Please note that the zoning information shown hereon may have been amended through a city process. We recommend that a zoning letter be obtained from the Zoning Administrator for the current restrictions for this site. All setback information and hardcover data for planning and design must be verified by all parties involved in the design and planning process prior to any planning or construction.

6) **Utilities:** We have shown the location of utilities on the surveyed property by observed evidence only. There may be underground utilities encumbering the subject property we are unaware. Please note that we have not placed a Gopher State One Call for this survey. There may or may not be underground utilities in the mapped area, therefore extreme caution must be exercised before any excavation takes place on or near this site. Also, please note that seasonal conditions may inhibit our ability to visually observe all the utilities located on the subject property. Before digging, you are required by law to notify Gopher State One Call at least 48 hours in advance at 651/454-0002.

This map and report was prepared with the benefit of a Commitment for Title Insurance issued by CHB Title LLC, as an issuing agent for Old Republic National Title Insurance Company, File No. 58382, dated May 7th, 2023.

- 1) We note the following with regards to Schedule B of the herein referenced Title Commitment:
- a) Item no's 1-8 are not survey related
 - b) Item no. 9 - Rights of the public and the State of Minnesota in and to that portion of the insured premises lying below the natural high water mark of Lake Minnewashta.
 - c) Item no. 10 - Riparian rights are neither guaranteed nor insured herein
 - d) Item no. 11 - Subject to Minnewashta Parkway as laid out and traveled over
 - e) Item no. 12 - Subject to the rights in the property for the following matters as evidenced on the survey prepared by Harry S. Johnson co., Inc., dated May 1, 1923
 - a) A portion of the building encroaches over the South Property line.
 - b) Underground Electric, Underground Telephone, Water, Gas, and Sanitary Sewer lines along Minnewashta Parkway.
 - c) Gas line runs over the North property line.
 - d) Fence on/over the North property line by Minnewashta Lake.
 - e) Gravel path extend over the South property line.
- 2) Observations/Comments noted hereon per field survey such as (but not limited to): access, occupation, and easements or servitudes:
- There are discrepancies in the centerline of Minnewashta Parkway according to the adjacent plats and the centerline as traveled. We have created a best fit as shown along the entire length of the subject property. Found monuments along the southerly portion of the subject property indicate a slightly wider right-of-way as shown on the survey.
- 3) Wetland Delineation prepared by Anderson Environmental on June 9, 2025. LGU/TEP review pending.

○	CAST IRON MONUMENT	⊗	PIEZOMETER	W	WALKOUT ELEVATION
○	IRON PIPE MONUMENT SET	⊗	POWER POLE	FFE	FIRST FLOOR ELEVATION
○	IRON PIPE MONUMENT FOUND	⊗	GUY WIRE	GFE	GARAGE FLOOR ELEVATION
○	DRILL HOLE FOUND	⊗	ROOF DRAIN	TOP	TOP OF FOUNDATION ELEV.
⊗	CHISELED "X" MONUMENT SET	⊗	LIFT STATION	LOE	LOWEST OPENING ELEV.
⊗	CHISELED "X" MONUMENT FOUND	⊗	SANITARY MANHOLE		
⊗	REBAR MONUMENT FOUND	⊗	SANITARY CLEANOUT	○	BITUMINOUS CONCRETE
△	PK NAIL MONUMENT SET	⊗	STORM MANHOLE	---	BUILDING SETBACK LINE
⊗	PK NAIL MONUMENT FOUND	⊗	STORM DRAIN	---	CABLE TV
⊗	PK NAIL W/ ALUMINUM DISC	⊗	CATCH BASIN	---	CONCRETE CURB
⊗	SURVEY CONTROL POINT	⊗	FLARED END SECTION	---	CONTOUR EXISTING
A/	A/C UNIT	⊗	TREE CONIFEROUS	---	CONTOUR PROPOSED
⊗	CABLE TV PEDESTAL	⊗	TREE DECIDUOUS	---	CURB RAIL
⊗	ELECTRIC TRANSFORMER	⊗	TREE CONIFEROUS REMOVED	DT	DRAIN TILE
⊗	ELECTRIC MANHOLE	⊗	TREE DECIDUOUS REMOVED	ELC	ELECTRIC UNDERGROUND
⊗	ELECTRIC METER	⊗	TELEPHONE MANHOLE	---	FENCE
⊗	ELECTRIC OUTLET	⊗	TELEPHONE PEDESTAL	FO	FIBER OPTIC UNDERGROUND
⊗	YARD LIGHT	⊗	UTILITY MANHOLE	GAS	GAS UNDERGROUND
⊗	LIGHT POLE	⊗	UTILITY PEDESTAL	OHU	OVERHEAD UTILITY
⊗	FIBER OPTIC MANHOLE	⊗	UTILITY VAULT	---	TREE LINE
PT	FIRE DEPT. HOOK UP	⊗	WATERMAIN MANHOLE	---	SEWER
PT	FLAG POLE	⊗	WATER METER	---	SANITARY SEWER
PT	FUEL PUMP	⊗	WATER METER	---	STORM SEWER
PT	FUEL TANK	⊗	WATER SPOIGT	---	TELEPHONE UNDERGROUND
PT	PROPANE TANK	⊗	WELL	---	RETAINING WALL
⊗	GAS METER	⊗	MONITORING WELL	---	UTILITY UNDERGROUND
⊗	GAS VALVE	⊗	CURB STOP	---	WATERMAIN
⊗	GAS MANHOLE	⊗	GATE VALVE	---	TRAFFIC SIGNAL
⊗	IRRIGATOR	⊗	HYDRANT	---	RAILROAD TRACKS
⊗	IRRIGATION VALVE	⊗	IRRIGATION VALVE	---	RAILROAD SIGNAL
⊗	GUARD POST	⊗	POST INDICATOR VALVE	---	RAILROAD SWITCH
⊗	HAND HOLE	⊗	SIGN	---	SATELLITE DISH
⊗	MAIL BOX	⊗	SOIL BORING	---	WETLAND BUFFER SIGN

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Daniel L. Schmidt, PLS
schmidt@sathre.com

Minnesota License No. 26147



CHANHASSEN,
MINNESOTA

PREPARED FOR:
L. CRAEMER

2

Attachment C: Floodplain Technical Memo



TECHNICAL MEMORANDUM

To: Dan Schmidt, PE
Sathre-Bergquist, Inc

From: Luke LaMoore, PE
Water Resources Engineer

Re: **7380 Minnewashta Parkway Floodplain Analysis**

Date: October 16, 2025

PROJECT BACKGROUND

A parcel is proposed to be redeveloped at 7380 Minnewashta Parkway in Excelsior, MN. This parcel is located within the Minnehaha Creek Watershed District (MCWD). The parcel has a wetland onsite with an unknown floodplain boundary or elevation. The purpose of this memo is to document the floodplain elevation and extents to comply with local regulations. The wetland is not mapped by FEMA, therefore no permitting with FEMA is necessary for the wetland located adjacent to the roadway. All elevations are in vertical datum NAVD88.

EXISTING CONDITIONS

Hydrologic data was generated using GIS. Drainage areas were delineated using aerial imagery and contour data (MnTOPO) along with onsite survey. Soils are classified as HSG B, C, and D for the study area. Time of Concentration was calculated using TR-55 methodology.

PROPOSED CONDITIONS

For proposed conditions, the new site impervious was incorporated into the model. The only other change in the proposed condition is the driveway on the south boundary of the site being replaced with grass. The wetland outlet, a culvert and berm, is being maintained and unchanged between existing and proposed conditions. The table below lists the 100-year High Water Level (HWL) of the onsite wetland. See **Appendix A** for the HydroCAD modeling. Note that the floodplain elevation does not change and the proposed grading is above this elevation.

Table 1: 100-Year Floodplain Elevation Summary

Scenario	Wetland HWL
Existing	956.72
Proposed	956.72
Difference	0.0

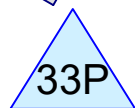


Existing

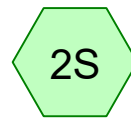
Proposed



DA1



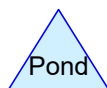
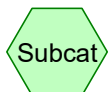
Wetland



DA1



Wetland



Routing Diagram for Craemer_20250929

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	100-Year	MSE 24-hr	3	Default	24.00	1	7.24	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.970	98	WETLAND (1S, 2S)
0.862	58	Woods/grass comb., Good, HSG B (1S, 2S)
1.029	72	Woods/grass comb., Good, HSG C (1S, 2S)
1.451	79	Woods/grass comb., Good, HSG D (1S, 2S)
0.174	98	impervious (1S, 2S)
4.486	78	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.862	HSG B	1S, 2S
1.029	HSG C	1S, 2S
1.451	HSG D	1S, 2S
1.144	Other	1S, 2S
4.486		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.970	0.970	WETLAND	1S, 2S
0.000	0.862	1.029	1.451	0.000	3.342	Woods/grass comb., Good	1S, 2S
0.000	0.000	0.000	0.000	0.174	0.174	impervious	1S, 2S
0.000	0.862	1.029	1.451	1.144	4.486	TOTAL AREA	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	33P	955.20	955.30	18.3	-0.0055	0.013	0.0	12.0	0.0
2	35P	955.20	955.30	18.3	-0.0055	0.013	0.0	12.0	0.0

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MSE 24-hr 3 100-Year Rainfall=7.24"

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Time span=0.00-24.00 hrs, dt=0.03 hrs, 801 points x 2
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment1S: DA1

Runoff Area=2.243 ac 25.41% Impervious Runoff Depth>4.70"
Flow Length=250' Tc=14.0 min CN=71/98 Runoff=13.39 cfs 0.879 af

Subcatchment2S: DA1

Runoff Area=2.243 ac 25.59% Impervious Runoff Depth>4.71"
Flow Length=250' Tc=14.0 min CN=71/98 Runoff=13.40 cfs 0.880 af

Pond 33P: Wetland

Peak Elev=956.72' Storage=15,935 cf Inflow=13.39 cfs 0.879 af
Primary=3.14 cfs 0.871 af Secondary=0.00 cfs 0.000 af Outflow=3.14 cfs 0.871 af

Pond 35P: Wetland

Peak Elev=956.72' Storage=15,953 cf Inflow=13.40 cfs 0.880 af
Primary=3.14 cfs 0.872 af Secondary=0.00 cfs 0.000 af Outflow=3.14 cfs 0.872 af

Total Runoff Area = 4.486 ac Runoff Volume = 1.760 af Average Runoff Depth = 4.71"
74.50% Pervious = 3.342 ac 25.50% Impervious = 1.144 ac

Summary for Subcatchment 1S: DA1

Runoff = 13.39 cfs @ 12.22 hrs, Volume= 0.879 af, Depth> 4.70"
Routed to Pond 33P : Wetland

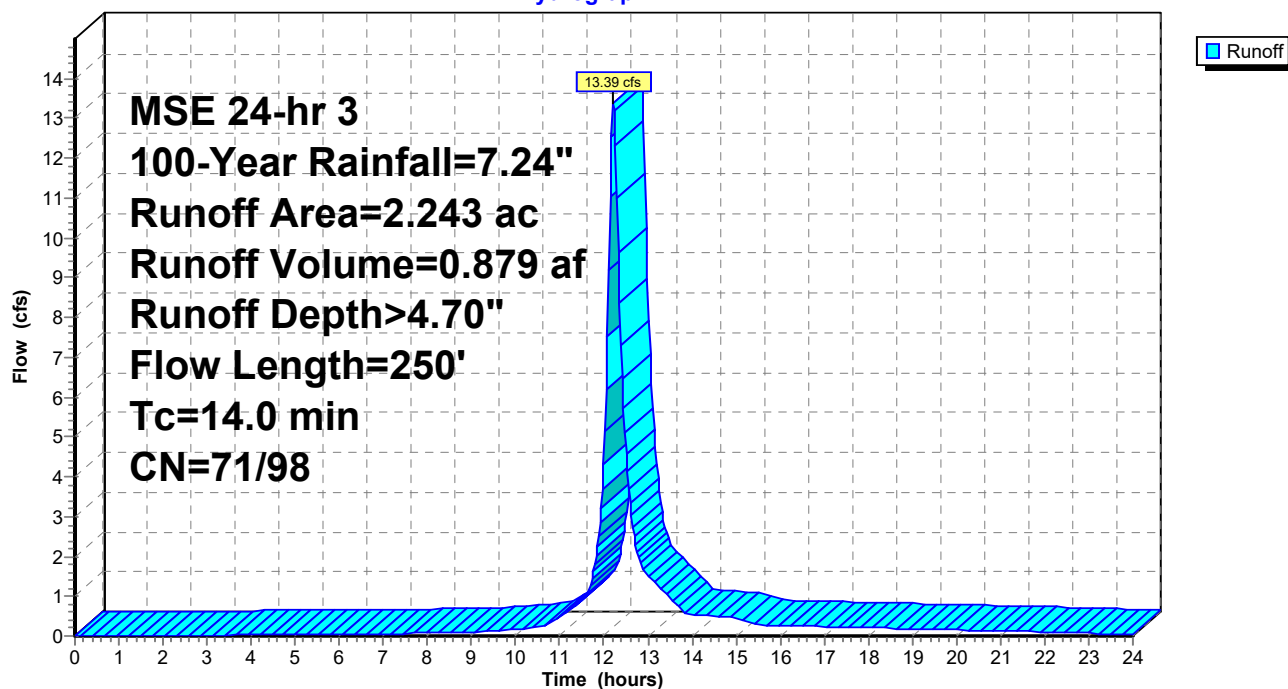
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
MSE 24-hr 3 100-Year Rainfall=7.24"

Area (ac)	CN	Description
* 0.485	98	WETLAND
* 0.085	98	impervious
0.432	58	Woods/grass comb., Good, HSG B
0.515	72	Woods/grass comb., Good, HSG C
0.726	79	Woods/grass comb., Good, HSG D
2.243	78	Weighted Average
1.673	71	74.59% Pervious Area
0.570	98	25.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0800	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.85"
0.9	150	0.1600	2.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	250	Total			

Subcatchment 1S: DA1

Hydrograph



Summary for Subcatchment 2S: DA1

Runoff = 13.40 cfs @ 12.22 hrs, Volume= 0.880 af, Depth> 4.71"
 Routed to Pond 35P : Wetland

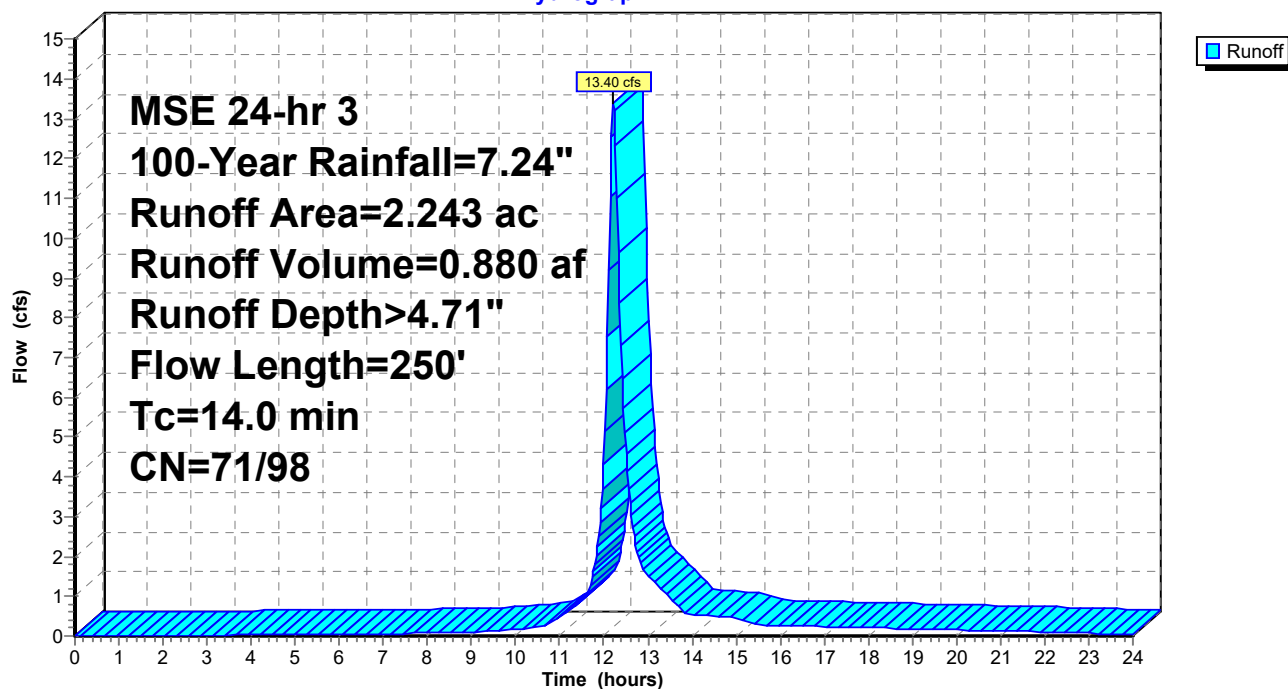
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-24.00 hrs, dt= 0.03 hrs
 MSE 24-hr 3 100-Year Rainfall=7.24"

Area (ac)	CN	Description
* 0.485	98	WETLAND
* 0.089	98	impervious
0.430	58	Woods/grass comb., Good, HSG B
0.514	72	Woods/grass comb., Good, HSG C
0.725	79	Woods/grass comb., Good, HSG D
2.243	78	Weighted Average
1.669	71	74.41% Pervious Area
0.574	98	25.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	100	0.0800	0.13		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.85"
0.9	150	0.1600	2.80		Shallow Concentrated Flow, Short Grass Pasture Kv= 7.0 fps
14.0	250	Total			

Subcatchment 2S: DA1

Hydrograph



Summary for Pond 33P: Wetland

Inflow Area = 2.243 ac, 25.41% Impervious, Inflow Depth > 4.70" for 100-Year event
 Inflow = 13.39 cfs @ 12.22 hrs, Volume= 0.879 af
 Outflow = 3.14 cfs @ 12.62 hrs, Volume= 0.871 af, Atten= 77%, Lag= 24.0 min
 Primary = 3.14 cfs @ 12.62 hrs, Volume= 0.871 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs / 2
 Peak Elev= 956.72' @ 12.62 hrs Surf.Area= 20,110 sf Storage= 15,935 cf

Plug-Flow detention time= 72.1 min calculated for 0.871 af (99% of inflow)
 Center-of-Mass det. time= 66.2 min (852.7 - 786.5)

Volume	Invert	Avail.Storage	Storage Description
#1	955.20'	51,712 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
955.20	100	0	0
956.00	11,480	4,632	4,632
958.00	35,600	47,080	51,712

Device	Routing	Invert	Outlet Devices
#1	Primary	955.30'	12.0" Round Culvert L= 18.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 955.20' / 955.30' S= -0.0055 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	956.90'	15.0' long + 10.0 ' SideZ x 3.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=3.14 cfs @ 12.62 hrs HW=956.72' (Free Discharge)

↑ **1=Culvert** (Barrel Controls 3.14 cfs @ 4.00 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=955.20' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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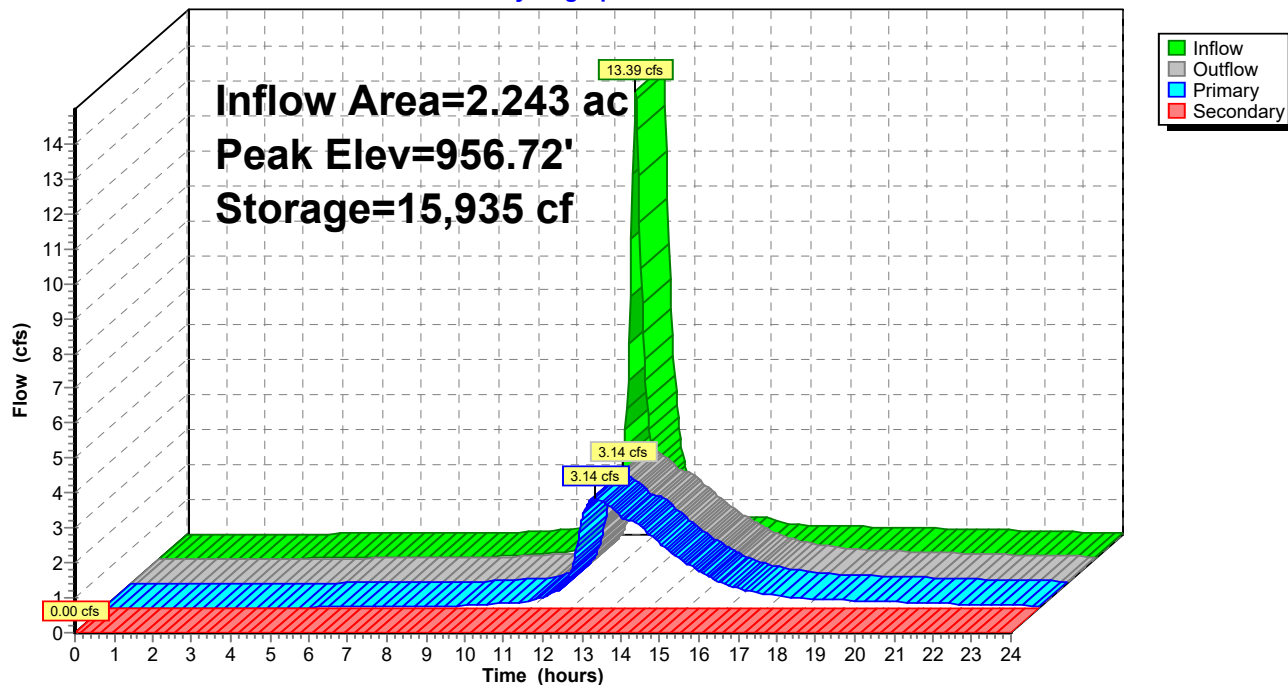
MSE 24-hr 3 100-Year Rainfall=7.24"

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Pond 33P: Wetland

Hydrograph



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MSE 24-hr 3 100-Year Rainfall=7.24"

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Stage-Area-Storage for Pond 33P: Wetland

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
955.20	100	0	957.75	32,585	43,189
955.25	811	23	957.80	33,188	44,833
955.30	1,523	81	957.85	33,791	46,508
955.35	2,234	175	957.90	34,394	48,212
955.40	2,945	305	957.95	34,997	49,947
955.45	3,656	470	958.00	35,600	51,712
955.50	4,367	670			
955.55	5,079	906			
955.60	5,790	1,178			
955.65	6,501	1,485			
955.70	7,213	1,828			
955.75	7,924	2,207			
955.80	8,635	2,621			
955.85	9,346	3,070			
955.90	10,058	3,555			
955.95	10,769	4,076			
956.00	11,480	4,632			
956.05	12,083	5,221			
956.10	12,686	5,840			
956.15	13,289	6,490			
956.20	13,892	7,169			
956.25	14,495	7,879			
956.30	15,098	8,619			
956.35	15,701	9,389			
956.40	16,304	10,189			
956.45	16,907	11,019			
956.50	17,510	11,879			
956.55	18,113	12,770			
956.60	18,716	13,691			
956.65	19,319	14,642			
956.70	19,922	15,623			
956.75	20,525	16,634			
956.80	21,128	17,675			
956.85	21,731	18,747			
956.90	22,334	19,848			
956.95	22,937	20,980			
957.00	23,540	22,142			
957.05	24,143	23,334			
957.10	24,746	24,556			
957.15	25,349	25,809			
957.20	25,952	27,091			
957.25	26,555	28,404			
957.30	27,158	29,747			
957.35	27,761	31,120			
957.40	28,364	32,523			
957.45	28,967	33,956			
957.50	29,570	35,419			
957.55	30,173	36,913			
957.60	30,776	38,437			
957.65	31,379	39,991			
957.70	31,982	41,575			

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MSE 24-hr 3 100-Year Rainfall=7.24"

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Summary for Pond 35P: Wetland

Inflow Area = 2.243 ac, 25.59% Impervious, Inflow Depth > 4.71" for 100-Year event
 Inflow = 13.40 cfs @ 12.22 hrs, Volume= 0.880 af
 Outflow = 3.14 cfs @ 12.62 hrs, Volume= 0.872 af, Atten= 77%, Lag= 24.0 min
 Primary = 3.14 cfs @ 12.62 hrs, Volume= 0.872 af
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.03 hrs / 2
 Peak Elev= 956.72' @ 12.62 hrs Surf.Area= 20,121 sf Storage= 15,953 cf

Plug-Flow detention time= 72.1 min calculated for 0.871 af (99% of inflow)
 Center-of-Mass det. time= 66.2 min (852.6 - 786.4)

Volume	Invert	Avail.Storage	Storage Description
#1	955.20'	51,712 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
955.20	100	0	0
956.00	11,480	4,632	4,632
958.00	35,600	47,080	51,712

Device	Routing	Invert	Outlet Devices
#1	Primary	955.30'	12.0" Round Culvert L= 18.3' RCP, sq.cut end projecting, Ke= 0.500 Inlet / Outlet Invert= 955.20' / 955.30' S= -0.0055 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Secondary	956.90'	15.0' long + 10.0 ' SideZ x 3.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=3.14 cfs @ 12.62 hrs HW=956.72' (Free Discharge)↑ **1=Culvert** (Barrel Controls 3.14 cfs @ 4.00 fps)**Secondary OutFlow** Max=0.00 cfs @ 0.00 hrs HW=955.20' (Free Discharge)↑ **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

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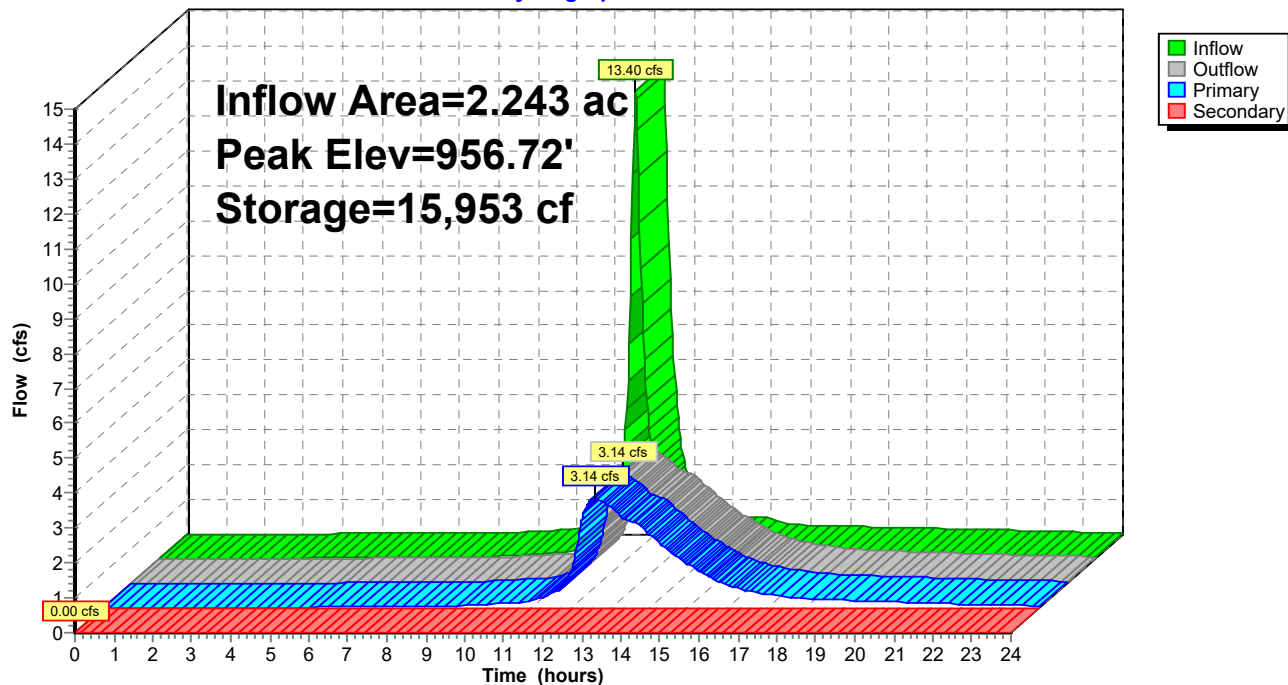
MSE 24-hr 3 100-Year Rainfall=7.24"

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Pond 35P: Wetland

Hydrograph



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Stage-Area-Storage for Pond 35P: Wetland

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
955.20	100	0	957.75	32,585	43,189
955.25	811	23	957.80	33,188	44,833
955.30	1,523	81	957.85	33,791	46,508
955.35	2,234	175	957.90	34,394	48,212
955.40	2,945	305	957.95	34,997	49,947
955.45	3,656	470	958.00	35,600	51,712
955.50	4,367	670			
955.55	5,079	906			
955.60	5,790	1,178			
955.65	6,501	1,485			
955.70	7,213	1,828			
955.75	7,924	2,207			
955.80	8,635	2,621			
955.85	9,346	3,070			
955.90	10,058	3,555			
955.95	10,769	4,076			
956.00	11,480	4,632			
956.05	12,083	5,221			
956.10	12,686	5,840			
956.15	13,289	6,490			
956.20	13,892	7,169			
956.25	14,495	7,879			
956.30	15,098	8,619			
956.35	15,701	9,389			
956.40	16,304	10,189			
956.45	16,907	11,019			
956.50	17,510	11,879			
956.55	18,113	12,770			
956.60	18,716	13,691			
956.65	19,319	14,642			
956.70	19,922	15,623			
956.75	20,525	16,634			
956.80	21,128	17,675			
956.85	21,731	18,747			
956.90	22,334	19,848			
956.95	22,937	20,980			
957.00	23,540	22,142			
957.05	24,143	23,334			
957.10	24,746	24,556			
957.15	25,349	25,809			
957.20	25,952	27,091			
957.25	26,555	28,404			
957.30	27,158	29,747			
957.35	27,761	31,120			
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