

**PERMIT REPORT**

To: Board of Managers

From: Elizabeth Showalter, Permitting Technician

Date: October 8, 2018

Re: Permit 18-433 Arden Park 5230 Minnehaha Blvd, Edina

Recommendation:

Approval of MCWD permit application on the following conditions:

1. Identification of the contractor responsible for implementing the erosion control plan;
2. Submission of an NPDES permit;
3. Submission of Natural Areas Management Plan and Operations and Maintenance Plan for wetland buffers. This includes:
 - a. a wetland buffer signage plan identifying sign locations at each property line and maximum spacing of every 100 feet; and
 - b. confirmation by staff that the plan is consistent with MCWD buffer-maintenance standards.
4. Submission of a construction schedule
5. Identification of final spoil disposal site for dredging spoils for confirmation by staff of conformance to the requirements of section 3(a) of the Dredging Rule
6. Maintenance of wetland buffers, stormwater facilities, and waterbody crossings are required as indicated in the programmatic maintenance agreement between MCWD and the City of Edina

And stipulation:

1. Submission of an as-built survey upon project completion.

Approval of a Wetland Conservation Act no-loss determination.

Background:

The City of Edina (Applicant) has applied for a Minnehaha Creek Watershed District (MCWD) permit for the restoration of Minnehaha Creek and associated park improvements at Arden Park. The project is a joint effort of the city and MCWD. Per MCWD Policy, District projects require board approval in order to promote transparency within the organization. The application was complete on September 12, 2018.

The project will involve removal of a grade control structure, re-meander of Minnehaha Creek, construction of a new playground area, new paths and boardwalk, two bridges, and construction of permanent stormwater management features. The Applicant's stated goal of the project is to re-route existing storm sewer infrastructure to newly constructed permanent stormwater management features and remove the existing grade control structure within Minnehaha Creek.



This is to reduce total phosphorus loading and improve water quality and hydraulics, in addition to creating new wetland areas. The removal of the grade control structure and re-meander of the creek is proposed to result in the creation of 0.6 acres of wetland habitat along the newly formed banks of the creek, which will also include newly established plant communities within the additional fringe wetland. The re-meander of the creek and reconfiguration of the park is proposed to provide additional public access to natural resources and to bolster Arden Park as a community resource.

The project triggers the District's Erosion Control, Floodplain Alteration, Wetland Protection, Dredging, Shoreline and Streambank Stabilization, Waterbody Crossings and Structures, and Stormwater Management rules. The project is also regulated under the Wetland Conservation Act, which is administered by the District in the City of Edina. The project plans show a shortfall from the applicable wetland buffer requirement, and the applicant has requested approval of an exception.

District Rule Analysis:

Erosion Control Rule

The District's Erosion Control Rule is applied to projects proposing 5,000 square feet of disturbance or 50 cubic yards of fill, excavation, or stockpiling on-site. The Applicant is proposing 15 acres of disturbance, therefore the rule is triggered. In accordance with the rule provisions, the Applicant has submitted an erosion control plan which identifies erosion and sediment control best management practices. These include a rock construction entrance, silt fence down gradient of disturbed areas, concrete washout locations utilizing impermeable liners, and inlet protection where necessary. Additionally, a vegetative stabilization plan including the incorporation of six-inches of topsoil into underlying soils prior to final stabilization has also been provided.. A temporary by-pass/diversion plan to reroute the stream around the disturbed area has be provided and will be implemented in the event the water column is not frozen through at any point during the construction.

Per MCWD Resolution 15-054 (Adoption of Rule Policy for MS4 Compliance) the use of temporary sediment basins in accordance with the MPCA Construction Stormwater Permit is required. Minnehaha Creek has construction related impairments (excess nutrients and low dissolved oxygen), therefore a temporary sediment basin is required if more than five acres are disturbed. Since the Applicant is proposing 15 acres of disturbance, a temporary sediment basin is required. The stormwater pollution prevention plan (SWPPP) states that the contractor will be responsible for siting a temporary sediment basin sized to be consistent with the requirements of the Construction Stormwater Permit (3,600 cubic feet per acre drained).

Identification of the responsible contractor and submission of an NPDES permit are listed as recommended conditions of approval. Upon satisfaction of the recommended conditions, the project meets the Erosion Control Rule.



Floodplain Alteration

The Floodplain Alteration Rule is triggered whenever land altering activity is proposed beneath the 100 year flood elevation of any waterbody. The Applicant is proposing disturbance in the floodplain of Minnehaha Creek, therefore the rule is triggered.

As stated in the District’s Floodplain Alteration Rule section 3(a), “fill shall not cause a net decrease in storage capacity below the projected 100-year high water elevation of a waterbody.” Staff and the District Engineer’s analysis of the submitted modeling, hydraulics, and site plans have concluded that the removal of the grade control structure will reduce or maintain the 100-year flood elevation of Minnehaha Creek in this area, in addition to creating 10,700 cubic feet of additional flood storage space. Therefore the criteria of section 3(a) has been met.

Section 3(b) of the rule requires no increase in the 100-year flood elevation of a watercourse. As noted above, the removal of the grade control structure and associated work will result in a net gain in flood storage space and will reduce or maintain of the 100-year flood elevation, as shown by Figure 1 below. Because no change or a slight reduction in flood elevation of the watercourse will occur for this reach of Minnehaha Creek, section 3(b) of the rule has been met.

XP-SWMM Node	Description	Existing 100-Year WSE	Proposed 100-Year WSE
MHN_42	W 52 nd Street and Minnehaha Blvd	867.01	867.01
MHN_5	W 52 nd Street and Juanita Ave	872.53	872.53
MHN_55	W 52 nd Street and Halifax Ave	878.38	878.38

Figure 1: Existing & Proposed Flood Elevations

Section 3(c) of the rule states that section 3(a) of this rule does not apply to fill in a waterbasin if the applicant shows that the proposed fill, together with the filling of all other properties on the waterbody to the same degree of encroachment will not cause high water or aggravate flooding on other properties. Because there is a net gain in flood storage space and the project involves a watercourse, section 3(c) of the rule does not apply to this project.

Section 3(d) of the rule requires that no new impervious surface be created in the lesser of 25 feet of the centerline of a watercourse or the 10 year floodplain, unless that surface is an integral component of a linear public roadway or trail. All impervious surface within 25 feet of the new centerline of the creek is part of the trail system in the park, and is therefore permitted under the rule.

Section 3(e) of the rule is not applicable, as no ice ridge grading is proposed.

Section 3(f) of the rule requires that the low openings to all structures be a minimum of 2 feet above the 100 year high water elevation. The proposed shelter building has a low opening



elevation of 867.1 and the adjacent 100 year flood elevation is 865.1. Therefore, the low opening is two feet above the 100 year high water elevation and is in conformance with the rule.

Submission of an as-built survey upon project completion is required for any project proposing more than 50 cubic yards of disturbance. Because the proposed project exceeds 50 cubic yards of floodplain disturbance, submission of an as-built survey is required, and has been listed in the recommended stipulations on the permit. Therefore, upon satisfaction of the recommended conditions, the project will meet the Floodplain Alteration Rule.

Wetland Conservation Act

The wetland boundary and types were delineated on September 23, 2016 and approved by the District on December 20, 2016 (see Attachment XX: Boundary and Type Notice of Decision). There are 3.7 acres of existing wetland within the park and the post-project condition will have 4.3 acres of wetland.

The Wetland Conservation Act regulates draining, filling, and excavation in wetlands. The project is proposing excavation and fill of wetlands as part of the larger creek restoration. Under 8420.0415 D, activities conducted by public agencies for the purpose of wetland restoration or fish and wildlife habitat restoration qualify for a no-loss determination if they are conducted in accordance with restoration guidance cited in the WCA rule¹ and do not result in a permanent loss of, or impact to, wetlands. Pilings will be located in the wetland as part of the boardwalk, but under the WCA, posts and pilings for structures traditionally constructed on pilings that do not bring the wetland into non-aquatic use are not considered fill. The proposed project is being conducted for wetland and habitat restoration in accordance with the guidance referenced in the WCA, and therefore meets the no-loss criteria, and replacement is not required. The Technical Evaluation Panel met on September 19, 2018 and all members agreed with the no-loss determination.

Wetland Protection

The buffer provision of the Wetland Protection Rule is applicable whenever any of the Wetland Protection, Stormwater Management or Waterbody Crossings & Structures rules are triggered. Because the Wetland Protection, Stormwater Management, and Waterbody Crossings & Structures Rule are triggered, the buffer provision of the Wetland Protection rule is applicable.

The project site contains a fringe wetland present along the banks and surrounding area of Minnehaha Creek. The wetland discussed under this rule analysis exists on site as one contiguous area.

Per section 5(a) of the Wetland Protection rule, buffers must be provided around all disturbed wetlands and on wetland edges downgradient of disturbance. The applicant has provided plans

¹ Wetland Restoration Guide, Minnesota Board of Water and Soil Resources (December 1982) and Wildlife Habitat Improvements in Wetlands: Guidance for Soil and Water Conservation Districts and Local Government Units in Certifying and Approving Wetland Conservation Act Exemption Proposals, Minnesota Interagency Wetlands Group, December 2000.



demonstrating that buffers will be provided on all applicable wetland areas. Additional analysis on buffer width has been provided under section 6(c) below.

Per section 5(b) of the rule, buffers are required, and have been analyzed under section 6, below.

Per section 5(c) of the rule, buffers must be documented by a declaration or other recordable instrument. Because this project takes place on public land, the Applicant has satisfied this requirement through a pre-existing programmatic agreement that has been executed between the City and the District. Therefore, the Applicant has met the criteria of section 5(c) of the rule.

Section 5(d) of the rule requires a permanent wetland buffer monument to be installed at each lot line where it intersects the buffer, and where needed to indicate the contour of the buffer, with a maximum spacing of 100 feet. This requirement has been analyzed and satisfied under section 7(b) below, as the Applicant will be submitting a conforming maintenance agreement with the District.

Per section 6(a) of the rule, buffer width requirements are determined by the management class of the wetland (Table 1). The District’s Functional Assessment of Wetlands classifies the wetland present on the project site as a Preserve, the most protected management class, which corresponds to a 75-foot buffer. No reductions in Applied Buffer Width per section 6(b) have been sought by the Applicant.

Management Class	Base Buffer Width	Minimum Applied Buffer Width
Manage 3	20 feet	16 feet
Manage 2	30 feet	24 feet
Manage 1	40 feet	34 feet
Preserve	75 feet	67 feet

Table 1: Wetland Management Classifications & Buffer Widths

Per section 6(c) of the rule, buffer averaging is permitted should the full width of the buffer not be able to be provided in all locations. Under this provision of the rule, buffer averaging may encompass minimum buffer widths of 37.5 feet, with a maximum width of 150 feet for Management Class Preserve wetlands, provided that there is no reduction in total buffer area (assumes an area equal to a uniform 75 foot buffer along the length of the wetland). Based on review of the plans and specifications, the project as proposed does not meet the buffer averaging provision in two ways. First, the minimum buffer width is not met in multiple areas within the existing park. This is due to the presence of existing park facilities that are proposed to remain in place with the project. Buffer widths are therefore restricted due to the locations of these existing facilities. Second, the total buffer area required must equate to a 75 foot buffer of uniform width along the length of the wetland. To meet this total buffer area, 5.5 acres need to be provided. The project as proposed includes 3.7 acres of wetland buffer, 1.8 acres short of the requirement. The Applicant has requested an Exception to section 6(c) of the Wetland Protection rule, which has been analyzed under the ‘*Exception*’ heading below.



Section 6(d) of the rule does not apply as the Applicant has not requested a reduction in Applied Buffer Width based on the proposed buffer providing value equal to or greater than would be provided by a buffer of the applicable Applied Buffer Width.

Section 6(e) of the rule does not apply as this is not a Linear Reconstruction Project.

Section 6(f) of this rule does not apply as this project is not a New Principal Residential Structure.

The applicant has submitted plans and specifications sufficient to show conformance with section 7(a) of the Wetland Protection rule, which prohibits actions such as mowing, fertilizing or placement of yard waste within the buffer area.

Section 7(b) of the rule allows public land, homeowners associations, and right-of-way to comply with buffer monumentation, buffer monitoring, and vegetation management through a written maintenance agreement with the District. The Applicant's contractor, once selected, will complete the initial establishment of the vegetation, including two years of maintenance from date of installation to ensure viability. Following the establishment period, management will be completed by the City of Edina, in accordance with the Natural Areas Management Plan and Operations and Maintenance Plan, which is currently in development but will be drafted consistent with the standards for vegetation maintenance and monitoring of the Wetland Protection Rule. The management plan will also include the locations of the buffer signs in accordance with the buffer monumentation requirement. Submission of the management plan and confirmation by staff that the plan comports with MCWD standards is a recommended condition of approval. Maintenance of this project will also be covered by the programmatic maintenance agreement executed between the City and the District, which includes maintenance of wetland buffers. Therefore, upon satisfaction of the recommended conditions, the Applicant meets the requirement of section 7(b) of the Wetland Protection rule.

Per section 7(c) of the rule, any buffer areas that will be disturbed by grading or other site activities during construction must be replanted and maintained according to the following standards:

- Soils must be decompacted to a depth of 18 inches and organic matter must be incorporated into soils before revegetation;
- Erosion/sediment control practices consistent with the requirements of the District Erosion Control rule must be employed during buffer establishment;
- Buffers shall be planted with a native seed mix and/or native plantings approved by the District; and
- Buffer maintenance and monitoring shall be performed and meet the standards of the District's Wetland Buffer Monitoring requirements.

Review of the plans, specifications, and additional information the Applicant submitted showed large portions of the proposed buffer will be disturbed by construction, and therefore will be subject to the items listed above. The Applicant has provided information that sufficiently addresses the requirements, including specifications for decompaction of soils, submission of an



erosion control plan, and native seed mix specifications. As noted in 7(b) above, the Applicant will be submitting a natural Areas Management Plan and Operations and Maintenance Plan for the project. This plan is currently in development, but will be drafted consistent with the rules standards of the District. Submission of the management plan and confirmation by staff that the plan comports with MCWD standards is a recommended condition of approval. Therefore, upon satisfaction of the recommended conditions, the Applicant meets the requirement of section 7(c) of the Wetland Protection rule.

In summary, the project meets the requirements of the Wetland Protection Rule, apart from section 6(c), as noted above, for which the Applicant has requested an Exception.

Dredging

The Dredging Rule is triggered by the dredging in the beds, banks, or shores of public waters or public water wetlands. The proposed project will remove a grade control structure and associated accumulated sediment immediately upstream from Minnehaha Creek, for the purposes of hydraulic and ecological improvements, therefore the rule is triggered.

Per section 3(a) of the rule, a spoil disposal site must be identified and found not to be below the OHW of a public water or public water wetland, or a floodplain, and must not be prone to erosion. Based upon review of the submitted plans and specifications, spoils will be temporarily stored on-site in a designated area, complete with perimeter control. A final disposal site has not yet been identified by the Applicant, but will be once a contractor has been selected. The identification of a final spoil disposal site has been included in the recommended conditions of approval. Therefore, with the satisfaction of the recommended conditions of approval, the Applicant meets the criteria of section 3(a) of the rule.

Per section 3(b) of the rule, where there is an identifiable source of sediment under the control of the applicant, the plan shall include remedial action to minimize deposition of sediment into a waterbody or off-site. The sediment has accumulated due to the dam, which is proposed for removal. There is no identifiable source of deposition of sediment to the creek, therefore this section is not applicable.

Section 3(c) of the rule is not applicable as the proposal does not involve navigational access to docking structures.

Per section 3(d) of the rule, projects shall represent the ‘minimal impact’ solution to a specific need with respect to all other reasonable alternatives. Based on the plans, reports, calculations, and specifications submitted, the proposed project will remove a grade control structure that has historically prevented fish migration and is an impediment to the natural stream morphology. Compared to the alternative of leaving the structure in place as it exists today, there is a distinct, quantifiable ecological and hydraulic benefit to removal of the structure, which allows for the creation of more diverse habitat and higher quality vegetative communities. Previous exploration of habitat restoration included installation of a fish bypass, which would provide some ecological benefits but would not allow for paddlers to travel under the 54th Street bridge during low flow conditions. The grade control structure could be removed from the bed of the stream without



removal of the accumulated sediment, but the Applicant determined that removal of the sediment would not cause any further disturbance. Based on the analysis of staff and the District Engineer, the Applicant meets the criteria of section 3(d) of the rule.

Per section 3(e) of the rule, dredging shall be limited to the minimum dimensions necessary for achieving the state purpose. Staff and the District Engineer's review of the proposal and associated plan, specifications, and calculations have determined that the project represents the most limited dimensions necessary to achieve the stated purpose. Based on this analysis the Applicant meets the criteria of section 3(e) of the rule.

Section 3(f) of the rule is not applicable, as the project will not be achieved by means of hydraulic dredging.

Per section 4(a) of the rule, dredging shall only be permitted:

- To maintain or remove sediment from an existing public or private channel;
- To implement or maintain an existing legal right of navigational access;
- To remove sediment to eliminate a source of nutrients, pollutants, or contaminants;
- To improve the public recreational, wildlife, or fisheries resources of surface waters;
- For actions by public entities for public purposes.

The project as proposed is both an action by a public entity for a public purpose and seeks to improve the wildlife resources of surface waters. Therefore, dredging is permitted under the rule.

Section 4(b) of the rule, regulates removal of sediment from existing channels. This project is proposed in a stream, not a channel, therefore this section is not applicable.

Section 4(c) of the rule does not apply as this is not an application for the purposes of creating or maintaining navigational access.

Per section 4(d) of the rule, no dredging shall be permitted:

- Above the ordinary high water level or into the upland adjacent to the lake or watercourse;
- That would enlarge a natural watercourse landward or that would create a channel to connect adjacent backwater areas for navigational purposes;
- Where the dredging will alter the natural shoreline of a lake;
- Where the dredging might cause increased seepage or result in subsurface drainage;
- Where any portion of the dredged area contain any slop steeper than 3:1 (H:V) in a channel or 10:1 in an area adjoining residential lakeshore;
- Where adverse ecological impact to a preserve wetland or other ecologically sensitive area cannot be minimized.
- No dredging in a public water shall occur between April 1st and June 30th.

Based on the staff and the District Engineer's review of the plans, specifications, calculations, and reports, the proposed project will not engage in any dredging above the OHW or into upland adjacent to the creek. Additionally, no connection to adjacent backwater areas for purposes of



navigation are proposed. Further, based upon the Engineer's analysis, the proposal will not result in increased seepage or result in subsurface drainage because it will only include removal of the dam and accumulated sediment, not the natural streambed and is not taking place in an area of known seepage potential. . The side slope requirement is not applicable, because the work is not proposed in a channel or adjacent to a lakeshore. The project is designed to improve the quality of wetlands, therefore no adverse impacts to the preserve wetland or other ecologically sensitive areas will occur. To further ensure that all impacts are minimized, work will occur in the winter months, prior to April 1st, to ensure frozen conditions. Based on this analysis, the Applicant meets the criteria of section 4(d) of the rule.

In summary, based upon staff and the Engineer's analysis of the submitted materials, the Applicant meets the requirements of the Dredging rule with the satisfaction of the recommended conditions.

Shoreline and Streambank Stabilization

The Shoreline and Streambank Stabilization Rule regulates alterations and improvements to the banks of watercourses. The project is proposing stabilization of approximately 4,200 ft of newly created creek banks, through bio-engineering, and addition of recreational access points to the creek for paddlers and tubers, which are both regulated by the rule. Recreational access points for purposes of this project are tiered sets of flat stone and vegetation, designed to stabilize the creek banks, provide habitat, tie into other proposed stabilization practices, and provide safe and reliable access for recreators. The recreational access points are a type of Other Shoreline Improvements, and analyzed under section 11 of this rule.

Stabilization of New Creek Banks

Per section 4(a) of the rule, applications for streambank stabilization must complete and report calculations to document bankfull stream velocity and shear stress. The Applicant has submitted calculations documenting the shear stress of this reach of Minnehaha Creek, which was found to be less than 2.5 lbs/sq. ft. Based on this information, the Applicant has met section 4(a) of the rule.

Per section 4(b) of the rule, the proposed stabilization practice must be consistent with the shear stress calculated. As noted above, the Applicant's submittals detail shear stresses of less than 2.5 lbs/sq. ft, which corresponds to the utilization of biological stabilization techniques only. The Applicant has requested Design Flexibility under section 5 of the rule, as they believe the shear stress calculation inaccurately predicts the degree of anticipated erosion.

Per section 5 of the rule, the District may approve alternative stabilization techniques if the applicant provides sufficient evidence to demonstrate that the proposed stabilization practice represent the minimal impact solution with respect to all other reasonable alternatives. Based on the hydraulic analysis and flood flow data provided by the Applicant, staff and the Engineer concur that the erosive potential of the re-meandered stream is not fully encapsulated within the shear stress calculation, and requires a more substantive stabilization practice. The Applicant has provided a plan and cross-sections detailing a bioengineered practice, which encompasses both biological and hard-armoring stabilization techniques. The bioengineered banks will include a



section with hard armoring up the entire bank with joint plantings, immediately adjacent to the 54th Street bridge and a section with toe boulders and vegetative stabilization up the bank of the creek. The use of such a practice represents the minimal impact solution with respect to achieving reliable stabilization throughout the creek corridor without overuse of hard-armoring or other structural materials. The hard-armoring used is limited to the area immediately upstream of the 54th street bridge; where inclusion of additional hard-armoring near the bridge is proposed to protect the existing infrastructure. Based on the analysis of staff and the District Engineer, the Applicant has sufficiently demonstrated the need for bio-engineering through the Design Flexibility criteria.

Per section 6(a) of the rule, the applicant must demonstrate:

- The installation of structural stabilization practices occurs only where there is a demonstrated need to prevent erosion or to restore eroded shoreline/streambank;
 - The applicant has provided plans, hydraulic modeling and analysis, and a narrative proposing the use of bio-engineering as a stabilization technique. As noted in section 5 above, the submittals provided by the Applicant demonstrate the need for a stabilization practice more substantial than vegetation alone to protect the existing infrastructure. Based on the analysis of staff and the District Engineer, the Applicant has sufficiently demonstrated the need to prevent erosion and protect the streambank.
- Removal of native vegetation within the streambank stabilization zone is limited, especially clear cutting within the access corridor and preservation of native vegetation outside of the access corridor;
 - Based on the applicant's submittal and the nature of the proposed project, the remainder of the creek will remove trees and extensively remove invasive shrubs to establish the new channel. Native vegetation is proposed to be kept to the extent feasible, and tree protection has been shown on the site plans where applicable. The new creek channel will be extensively vegetated to establish a natural vegetative community throughout the corridor. Based on staff and the District Engineer's analysis, the Applicant has met this criteria of the rule.
- Stabilization practices are installed at a 3:1 slope or flatter where practical or feasible;
 - The Applicant has submitted plans and cross-sections showing rip-rap at 3:1 slopes where feasible, and 2:1 slopes where site conditions do not allow less steep applications. Based on staff and the District Engineer's analysis, the Applicant has met this criteria of the rule.
- Encroachment from streambanks shall be minimized to the greatest extent practical to limit hydraulic impacts.
 - Bank stabilization will tie into the new creek bottoms and has been included in the modeling for the new stream channel. The applicant has met this criteria of the rule.
- Stabilization practices cannot reduce the cross-sectional area of the channel nor result in a net increase in the flood stage upstream or at the site of the streambank stabilization practice unless it can be demonstrated to not exacerbate high-water conditions;



- The Applicant has submitted plans, cross-sections, hydraulic modeling, and a narrative that details the design of the channel cross-section. Based on these submittals, staff and the District Engineer have concluded that the stabilization practices implemented on the channel banks do not reduce the channel's cross-sectional area from the existing condition. Additionally, staff and the District Engineer have determined that the flood stage or high-water conditions will not be exacerbated based on the modeling the Applicant has submitted. Per the analysis in the Floodplain Rule, section 3(a) the flood elevation of the creek will be reduced or maintained at all points within the project. Based on the analysis of staff and the Engineer, the Applicant has met this criteria of the rule.
- Streambank stabilization practices shall conform to the natural alignment of the bank;
 - The stabilization practices are part of the new realigned streambank and will contribute to the restoration of an undulating streambank.
- The design shall reflect the engineering properties of the underlying soils and any soil corrections or reinforcements. For a streambank, design shall conform to engineering principles for the hydraulic behavior of open-channel flow;
 - The Applicant has submitted plans, cross-sections, and hydraulic modeling to demonstrate conformance with this criteria of the rule. Based on staff and the District Engineer's analysis of the submittals, the stream restoration will be conducted such that the properties of the soils throughout the creek bed and banks are reflected in the design. Further, staff and the District Engineer verified via the submitted model that the design conforms to the hydraulic behavior of open-channel flow. Based on staff and the District Engineer's analysis, the Applicant has met this criteria of the rule.
- For sites involving aquatic plantings or removals, a separate Aquatic Plant Management Permit shall be obtained from the DNR, when applicable;
 - No aquatic plant management is proposed, therefore the criteria is not applicable.
- Any work below the OHW shall be encircled by a floatation sediment curtain. ;
 - Based on the plans and narrative supplied by the Applicant, the proposed stabilization will occur during the winter months to ensure frozen conditions and the minimization of suspended sediment. A plan has also been developed to divert water around the disturbed stream area if the water column is not entirely frozen. Since liquid water will not be in the area of proposed work, staff and the District Engineer have determined this criteria of the rule is not applicable.
- Stabilization applications shall submit the required exhibits as outlined in section 7 of this rule.
 - Staff and the District Engineer have determined the Applicant has met this criteria of the rule, as they have submitted all of the materials outlined in section 7 of this rule.

In summary, the Applicant has demonstrated, and staff and the District Engineer concur that all applicable aspects of section 6(a) of the rule have been met.



Per section 6(b) of the rule, the applicant must meet the following criteria for bio-engineering techniques:

- Live plantings incorporated into the shoreline or bank shall be native aquatic and/or native upland vegetation known to occur in the North Central Hardwood Forest eco-region of Minnesota;
 - The Applicant has submitted a narrative and landscaping plan that extensively outlines the vegetation to be utilized within the bio-engineering stabilization practice. All species are native and appropriate to the conditions. Based on the information submitted, staff and the District Engineer's analysis, the Applicant has met this criteria of the rule.
- Vegetative treatments shall be installed in accordance with the Natural Resource Conservation Service "Engineering Field Handbook Chapter 16"
 - The proposed shoreline stabilization, as shown in the construction and landscape plans, is designed in accordance with the referenced resource. The Applicant has met this criteria of the rule.
- If wave barriers are utilized, they shall be located within the 3 foot water depth or less and may not create obstruction to navigation. Wave barriers shall be removed within 2 years of installation.
 - No wave barriers are proposed as part of this project, therefore, this criteria of the rule is not applicable.
- Bio-engineered stabilization also must comply with the criteria in 6(c)(1-3) and (5).
 - This has been analyzed below.

Per section 6(c) of the rule, the applicant must meet the following criteria for structural stabilization:

- Hard-armoring inert material, such as riprap, shall be considered wetland fill only if proposed to be placed within an area identified as wetland.
 - Based on the plans, cross-sections, wetland materials, and narrative submitted by the Applicant, staff and the District Engineer have determined that no hard-armoring will be placed within a wetland, therefore, the Applicant has met this criteria of the rule.
- Riprap shall extend no higher than the top of the bank, or two feet above the 100-year high water elevation, whichever is lower;
 - Per the plans and cross-sections submitted by the Applicant, staff and the District Engineer have determined that hard-armoring stabilization practices will be placed at the top of the bank, below the 100-year flood elevation of the new channel. Based upon this analysis, the Applicant has met this criteria of the rule.
- Riprap materials shall be durable stone meeting the size and gradation requirements of MnDOT Class III or IV riprap. Toe boulders shall be at least 50% buried and may be as large as 30 inches in diameter.
 - Per the plans, cross-sections, and specifications submitted by the Applicant, staff and the District Engineer have determined that the materials utilized for hard-armoring meet the criteria for MnDOT Class III or IV riprap, and all toe boulders



are anchored at least 50% in the underlying substrate. Based upon this analysis, the Applicant has met this criteria of the rule.

- A transitional granular filler meeting requirements of MnDOT 3601.B, at least 6 inches in depth, shall be placed between the native shoreline and the riprap to prevent erosion of fine grained soils. A geotextile filter fabric meeting the requirements of MnDOT 3733 shall be placed beneath the granular filler where appropriate.
 - Per the plans, cross-sections, and specifications submitted by the Applicant, staff and the District Engineer have determined that the granular filler and geotextile fabric meet the requirements and specifications of MnDOT 3601.B and MnDOT 3733. Based upon this analysis, the Applicant has met this criteria of the rule.
- Structural stabilization practices, including riprap, are recommended to include plantings between individual boulders or native upland plantings to retard runoff and prevent erosion wherever feasible and practical.
 - Based on the plans, cross-sections, and specifications submitted by the Applicant, live-stakings of native plantings will be included upland and between individual boulders to further reduce erosion caused by runoff and streamflow. Based upon this analysis, the Applicant has met this criteria of the rule.

In summary, the Applicant has demonstrated, and staff and the District Engineer concur, that all applicable aspects of section 6(b) and (c) of the rule have been met.

Per section 7(a-h) of the rule, the Applicant has submitted all required materials, exhibits, and details sufficient to review the proposal. Based upon the receipt of these conforming submittals, the Applicant has met these criteria of the rule.

Section 8(a-d), and 9(a-c) of the rule are not applicable, as no sandblankets are proposed with the project.

Section 10(a-d) of the rule are not applicable, as no retaining walls are proposed with the project.

Per section 11 of the rule, boat ramps and other shoreline improvements must comply with accepted engineering principles as follows:

- Boat ramps and other similar improvements shall not be allowed in riparian shoreline areas unless the applicant demonstrates that no feasible alternative riparian access is available, that aquatic habitat and water quality impacts are minimized;
- Installation of boat ramps shall involve placement of no more than 50 cubic yards of inert, clean material, and the maximum width of shoreline disturbance shall be 15 feet unless the facility is a commercial marina or public launch facility that requires a greater width; and
- Materials utilized for construction of boat ramps or other similar improvements shall be safe and cause no adverse environmental impacts; the improvement shall be of sound design and construction so that the improvement is reasonably expected to be safe and effective.



As noted in the narrative of the Shoreline and Streambank Stabilization section of this report, three new recreational access points are proposed as part of this project. Based upon the plans, cross-sections, and detail sheets provided by the Applicant, the access points will be constructed of tiered sections of flat stone and vegetation, with an approximate slope of 2:1. As noted in the narrative provided by the Applicant, the access points are designed to stabilize the banks of the creek, tie into the other proposed stabilization practices, and provide safe access to paddlers and tubers that utilize the creek for recreational purposes. Based on the analysis of staff and the District Engineer, the access points proposed are permitted as there are no feasible or prudent alternatives available that minimize aquatic habitat and water quality impacts, and provide stabilization to the banks of the creek. Further, based on the details and cross-sections supplied by the Applicant, the access points will utilize materials that minimize impacts to the shoreline, comprise less than 50 cubic yards of clean material, will comprise a width of less than 15 feet, cause no environmental degradation, and adhere to sound engineering principles, demonstrating they are both safe and effective. Based on staff and the District Engineer's analysis, the applicant has met this criteria of the rule.

In summary, based on the analysis of staff and the District Engineer provided above, the applicant has met all the applicable criteria of the Shoreline and Streambank Stabilization rule.

Waterbody Crossings and Structures

The Waterbody Crossings and Structures Rule is triggered whenever a structure is placed in the bed or bank of a waterbody. The project includes two pedestrian bridges, removal of one outfall, removal and replacement of another outfall, and a boardwalk, each of which triggers the rule. The bridges and boardwalk have been combined and analyzed in a single section, separate from the outfalls for additional clarity.

Bridges & Boardwalk

The project as proposed includes the removal and replacement of an existing pedestrian bridge at River Station 15+00 and the installation of a new pedestrian bridge at River Station 21+00 connecting to a proposed boardwalk (see Attachment 2: Site Plans). The boardwalk is proposed over restored sedge meadow and floodplain forest wetlands on the west side of the creek.

Per section 3(a) of the rule, the use of the bed or bank of a public water must meet a demonstrated public benefit. Based on the narrative submitted by the Applicant, the replacement of the bridge at River Station 15+00 is necessary as the proposed stream centerline will be shifted approximately 75 feet to the east from its existing position. The bridge at River Station 15+00 provides a commensurate level of pedestrian service as the existing condition, and is required to connect pedestrians to the parks internal paths and maintain public access.

The new bridge at River Station 21+00 is proposed to connect the proposed boardwalk to the Brookview Avenue sidewalk, along the west side of the creek. Based on the Applicant's submittals, the proposed bridge and boardwalk will better connect the Brookview neighborhood with Arden Park, and create additional connections to internal park paths and trails, while establishing a boardwalk that connects the public to natural resources.



Based on staff and the District Engineer’s analysis of the Applicant’s submittals, the project meets a demonstrated public benefit, therefore, this criteria of the rule has been met.

Per section 3(b) of the rule, use of the bed or bank shall retain adequate hydraulic capacity, and may not result in upstream or downstream increases in flood stage. The Applicant has submitted hydraulic modeling to demonstrate conformance with this section of the rule. To make a determination on this criterion, the engineer examines submitted crossing designs to determine if there are adverse impacts to upstream or downstream flood stage. However, due to the nature of this project, and the fact that the re-meander of the creek represents a hydraulically distinct system from existing conditions, existing and proposed condition comparison for each crossing does not provide a meaningful assessment of flood stage impact. To rectify this, staff and the District Engineer directed the Applicant to examine the holistic flood stage impacts of the project, to provide a hydraulic assessment of the proposal. The Applicant submitted information detailing the change of rates to this portion of the creek, shown in Figure 2, below.

Storm Event	Total Discharge	
	Existing (cfs)	Proposed ² (cfs)
1-Year	65.3	59.5
10-Year	109.7	99.2
100-Year	126.8	122.6

Figure 2: Total Discharge to Minnehaha Creek from stormwater outfalls

Additionally, staff and the Engineer’s review of the hydraulic model have determined that the 100-year flood elevation of Minnehaha Creek will be retained or decreased at all points. The Applicant provided further evidence to this fact in the form of a no-rise certificate, confirming that the project will result in no increase in flood stage from the DNR. Finally, the existing bridge design creates a backwater condition during the 10-year event; the proposed design eliminates this unfavorable hydraulic condition. Based on the hydraulic analysis provided by the Applicant, staff and the District Engineer’s findings support a determination that these criteria of the rule have been met.

Per section 3(c) of the rule, the use of the bed or bank shall retain adequate navigational capacity pursuant to any requirements of the waterbody’s classification by the District. The Applicant has submitted plans, cross-sections, and a narrative demonstrating conformance with this criteria of the rule. Staff and the District Engineer’s analysis of the Applicant’s submittals determined that both bridges are designed with 4.1 feet of clearance above the top of bank for the purposes of navigation. Comparative to the existing condition in which the existing bridge maintain less clearance, the proposed conditions improve the navigability of Minnehaha Creek. The boardwalk is located outside the navigable channel, and is therefore not analyzed under this section. Based on this analysis of the Applicant’s submittals, staff and the District Engineer have determined that this criteria of the rule has been met.

Per section 3(d) of the rule, the use of the bed or bank shall preserve aquatic and upland wildlife passage along each bank and within the waterbody as follows:



- Where there is sufficient depth and width, waterbody crossings shall provide upland bank passage to the greatest extent feasible, graded to connect to the streambank on both the upstream and downstream ends;
- Where the depth or the width of is not sufficient to provide adequate upland bank passage, waterbody crossings shall provide multiple offset culverts;
- Where the multiple offset culverts are not feasible, waterbody crossings shall provide a wildlife shelf insert above bankfull height, unless such a structure will impact hydraulic capacity;
- Rural section low traffic roads that meet vertical and horizontal site distance for a vehicle speed of 40mph or less are exempt from the requirements.

The Applicant has submitted plans, cross-sections, design details, and a narrative that demonstrate conformance with this section of the rules. Based on review and analysis of these submittals, staff and the District Engineer determined that the proposed bridge design for River Station 15+00 provides both elimination of backwater effects, and allows passage of wildlife along the bank of the newly formed Creek, compared to existing conditions where no passage is currently present.

The new bridge at River Station 21+00, similar to the design of the bridge at Station 15+00 will utilize a design with helical piers set back from the bank of the creek. This design provides for sufficient space to allow wildlife to cross on the bank of the creek. The boardwalk also incorporates at-grade crossings over foot paths connections, allowing wildlife passage underneath the bottom of the boardwalk structure. Based on the analysis of the Applicant's submittals, staff and the District Engineer have determined that the proposal sufficiently provides wildlife passage, and therefore meets this criteria of the rule.

Per section 3(e) of the rule, use of the bed or bank shall not adversely affect water quality. The submitted designs and narrative demonstrate that the crossings will not increase pollutant loading to the water resources and are designed to reduce erosion, which contributes to degradation of the creek. The incorporation of the bridges at River Station 15+00, 21+00, and the proposed boardwalk have been determined to present no adverse impacts or effects on water quality, Therefore, the Applicant has met this criteria of the rule.

Per section 3(f) of the rule, the use of the bed or bank shall represent the "minimal impact" solution to a specific need with respect to all other reasonable alternatives, including, but not limited to vegetation or bioengineering for bank stabilization, structural stabilization, acquisition of additional easements, or installation of upstream control to manage stream flow. The Applicant provided an alternatives analysis, plans, cross-sections, and calculations to demonstrate the proposed project represented the minimal impact solution in consideration of other options. Based upon the analysis provided by the Applicant, the no-build scenario for the bridges at River Station 15+00, 21+00, and boardwalk fails to achieve the goal of the project: reducing total phosphorus loading, creating wetland habitat, and a creating a community connection to the park. Additionally, the Applicant analyzed a single-bridge crossing and exclusion of boardwalk. This alternative was deemed to be infeasible as it disconnects the parks internal paths and trails from neighborhoods and from Minnehaha Creek, and encourages use of



informal pathways through restored, native vegetation, interfering with the main goals of the project. Staff and the District Engineer have reviewed the submittals provided by the Applicant, and concur with the alternatives analysis provided, and have determined the proposed project represents the minimal impact solution with respect to other alternatives. Based on this analysis, the Applicant has met this criteria of the rule.

Section 3(g) of the rule is not applicable, as no bored utility lines are proposed underneath the bed or bank of a watercourse.

Section 3(h) of the rule is not applicable, as no installation, modification, or excavation of sanitary sewer is proposed as a component of this project.

In summary, the proposed bridges at River Stations 15+00, 21+00, and the proposed boardwalk have been determined by staff and the District Engineer to meet the criteria of the Waterbody Crossings and Structures rule.

Stormwater Outfalls

As a component of the stream re-meander and incorporation of permanent stormwater management features, the project will be re-routing storm sewer on-site to treat runoff prior to entering the creek. As shown on the site plans, the existing conditions detail two outfalls discharging to Minnehaha Creek; a 24" storm sewer and a 54" storm sewer. The proposed project will involve abandonment of the 24" storm sewer outfall, retention of the 54" outfall for discharge only during high-flow events, and incorporate one new outfall discharging from the proposed permanent stormwater features.

Per section 3(a) of the rule, the use of the bed or bank shall meet a demonstrated public benefit. Based on the narrative and hydraulic modeling submitted by the Applicant, the removal of the 24" outfall, and installation of the outfall discharging from the proposed permanent stormwater features provides regionally significant stormwater treatment, proposing to reduce phosphorus loading to Minnehaha Creek by 33 lbs annually. Based on staff and the District Engineer's assessment of the narrative and calculations, the Applicant has met this criteria of the rule.

Per section 3(b) of the rule, use of the bed or bank shall retain adequate hydraulic capacity, and may not result in upstream or downstream increases in flood stage. The Applicant has submitted hydraulic modeling to demonstrate conformance with this section of the rule. As noted in the analysis of the bridges and boardwalk above, typical application of this criteria and subsequent analysis by staff and the Engineer, each crossing has examined to determine if there are adverse impacts to upstream or downstream flood stage. While examination of this is difficult for the newly meandered creek and bridge/boardwalk crossing for the reasons noted above, an analysis is able to be performed on the existing and proposed rates of outfalls within the system. The Applicant submitted information detailing the change of rates to this portion of the creek, which can be found in Figure 3 below.



Storm Event	Existing 24" Outfall	
	Existing (cfs)	Proposed (cfs)
1-Year	11.0	0.0
10-Year	17.0	0.0
100-Year	21.7	0.0

Storm Event	Existing 54" Outfall	
	Existing (cfs)	Proposed (cfs)
1-Year	54.3	39.5
10-Year	92.7	72.0
100-Year	105.1	79.8

Storm Event	Proposed Swale Outfall	
	Existing (cfs)	Proposed (cfs)
1-Year	0.0	21.1
10-Year	0.0	30.6
100-Year	0.0	43.1

Storm Event	Total Discharge	
	Existing (cfs)	Proposed ² (cfs)
1-Year	65.3	59.5
10-Year	109.7	99.2
100-Year	126.8	122.6

Figure 3: Existing and Proposed Outfall Discharge

Staff and the Engineer’s review of the hydraulic model have determined that adequate hydraulic capacity will be maintained, and the 100-year flood elevation of Minnehaha Creek will be retained or decreased at all points. The Applicant provided further evidence to this fact in the form of a no-rise certificate, confirming that the project will result in no increase in flood stage from the DNR. Based on this analysis, staff and the District Engineer have determined that the Applicant has met this criteria of the rule.

Per section 3(c) of the rule, the use of the bed or bank shall retain adequate navigational capacity pursuant to any requirements of the waterbody’s classification by the District. The Applicant has submitted plans, cross-sections, and a narrative demonstrating conformance with this criteria of the rule. Staff and the District Engineer’s analysis of the Applicant’s submittals determined that no navigational impediment is presented by the location of the proposed outfalls, as they will only be discharging to the creek. Based on this analysis, staff and the District Engineer have determined the applicant has met this criteria of the rule.

Section 3(d) of the rule is not applicable to the removal and installation of outfalls, as they are buried utilities, and do not impede wildlife movement.

Per section 3(e) of the rule, use of the bed or bank shall not adversely affect water quality. The Applicant has submitted plans, cross-sections, a narrative, and stormwater calculations demonstrating conformance with this criteria. Based on staff and the District Engineer’s review and analysis of the submitted materials, water quality will be improved through the



implementation of the proposed project by removing approximately 33 lbs of phosphorus annually, which is directly tied to the re-routing of the storm sewer and presence of the outfalls. Outfalls will also be stabilized to prevent erosion. Based on this analysis, staff and the District Engineer have determined that the Applicant has met this criteria of the rule.

Per section 3(f) of the rule, the use of the bed or bank shall represent the “minimal impact” solution to a specific need with respect to all other reasonable alternatives, including, but not limited to vegetation or bioengineering for bank stabilization, structural stabilization, acquisition of additional easements, or installation of upstream control to manage stream flow. The Applicant provided an alternatives analysis, plans, cross-sections, and calculations to demonstrate the proposed project represented the minimal impact solution in consideration of other options. Based upon the alternatives analysis provided by the Applicant, leaving the existing outfalls in their existing location did not allow for regional stormwater treatment, which runs counter to the goal of the project, and was thus deemed infeasible. As a second alternative, the Applicant considered retaining two outfalls on the north side of the park. This alternative was deemed to be infeasible as a greater water quality treatment could be achieved by cross-connecting the two pipes, and reducing the number of discharge points. Staff and the District Engineer have reviewed and concur with the Applicant’s analysis, therefore, this criteria of the rule is met.

Section 3(g) of the rule is not applicable, as no bored utility lines are proposed underneath the bed or bank of a watercourse.

Section 3(h) of the rule is not applicable, as no installation, modification, or excavation of sanitary sewer beneath a waterbody is proposed as a component of this project.

In summary, the proposed outfalls have been determined by staff and the District Engineer to meet the criteria of the Waterbody Crossings and Structures rule.

Per section 6 of the rule, maintenance requirements for the crossings will be met through the existing programmatic maintenance agreement between the City of Edina and the District.

In summary, based on the analysis of staff and the District Engineer provided above, the applicant has met all the applicable criteria of the Waterbody Crossings and Structures rule.

Stormwater Management Rule

A stated goal of the project is the installation of permanent stormwater features designed to provide water quality benefit to Minnehaha Creek. The Applicant has proposed to accomplish this by re-routing existing storm sewer to a proposed six-cell filtration swale system with a pretreatment structure.

The Stormwater Management Rule is triggered whenever new impervious surface is proposed. The project proposes 15 acres of disturbance on a 16.6 acre site. Since the proposed site disturbance is greater than 40%, phosphorus, rate, and volume control must be provided for the



entire site’s impervious surface, per section 5(c) of the rule, and shown in Table 2 below. The project proposes 35,000 square feet of impervious surface, 25,000 square feet of which is trails.

Site Size	Site Disturbance	Impervious Surface Increase	Requirements	Treatment Scope
≤ 1 acre	N/A	N/A	Incorporate BMPs	N/A
> 1 acre	< 40% site disturbance	< 50% increase in impervious surface	Phosphorus Control, Rate Control, and Volume Control	Additional impervious surface
		≥ 50% increase in impervious surface		Entire site’s impervious surface
	≥ 40% site disturbance	N/A	Phosphorus Control, Rate Control, and Volume Control	Entire site’s impervious surface

Table 2: Stormwater Requirements for redevelopment resulting in an increase in impervious surface.

Per section 2(d) of the rule, trails less than 12 feet in width bordered with a pervious buffer on the down gradient side are exempt from the Stormwater Management Rule. Therefore further demonstration of compliance with stormwater criteria is not required for the 25,000 square feet of trails, as they are less than 12 feet in width, and are buffered on the down-gradient edge by vegetation averaging half the width of the trail. The remaining impervious surface will receive stormwater treatment through a proposed swale system that treats the park and surrounding roads, subject to the requirements of section 3(a-e) of the rule, which have been analyzed below.

The proposed system is a pretreatment structure and a six cell filtration swale system. Water from existing storm sewer will discharge into the pretreatment structure, discharge into the swale system and the final cell will discharge to the creek. Additionally, the proposed impervious surface will be directed to the swales through area drains. High flows will be diverted directly to the creek through an existing 54” outfall.

Volume Control

The volume control requirement is met by abstracting the first inch of rainfall from all impervious surfaces. Based on the plans, stormwater calculations, and narrative the Applicant submitted, the required abstraction volume is 833 cf. The Applicant has provided an abstraction volume of 26,136 cf, to be accomplished through filtration, which receives a 50% abstraction credit (52,272 cf of filtration is provided). Filtration was selected as the primary method of abstraction due to the underlying clay soils (hydrologic soil group D), which serve as a poor infiltration medium. Based on staff and the District Engineer’s analysis of the submittals provided by the Applicant, the provided abstraction volume is in excess of the required abstraction. Based on this review and analysis, the volume control requirement is met.



Rate Control

The rate control requirement dictates that no net increase in the peak runoff rates for the 1-, 10-, and 100-year design storms may occur anywhere stormwater discharges across the downgradient site boundary. The Applicant has submitted plans, a stormwater model, stormwater calculations, and a narrative to demonstrate conformance with this criteria. As noted in the Waterbody Crossings & Structures analysis, comparison of existing and proposed rates for individual outfalls is difficult due to the large-scale modification of the hydraulic system. An existing and proposed conditions of rates has been prepared by the Applicant to highlight anticipated rates, as shown in Figure 3. The south boundary is the downgradient boundary, which all outfalls ultimately drain to. So, by reducing the cumulative rates from the outfalls, the rates at the downgradient boundary have been reduced. The rule also requires rates within the property boundary do not increase in specific drainage areas so as to create or exacerbate drainage or erosion problems. The reconfiguration of the outfalls will increase the rates on some portions of the property, but appropriate energy dissipation will be provided to prevent creation or exacerbation of drainage problems. Based on this analysis, staff and the District Engineer have determined the rate control requirement is met.

Phosphorus Control

The phosphorus control requirement is met by meeting the abstraction requirements as outlined in the *Volume Control* section. Because the Applicant has demonstrated conformance with the volume control requirement, the phosphorus control requirement has been met.

Best Management Practices

Per section 3(d) of the rule, best management practices must be incorporated to limit the creation of impervious surface, maintain or enhance on-site infiltration, peak flow, and limit pollution generation on and discharge from the site. The Applicant has provided plans, stormwater modeling, stormwater calculations, and a narrative to demonstrate conformance with this requirement. Based on review of the Applicant's submittals, staff and the District Engineer have determined that the proposed swales have been designed in conformance with the criteria as outlined in the *Minnesota Stormwater Manual* and incorporation of the swale system satisfies the requirements of this provision.

High Water Elevation

The high water elevation requirement of the rule requires two vertical feet of separation between the 100 year flood elevation and the low openings to structures. Based on the Applicant's submittals, and review and analysis by staff and the District Engineer, the highest 100 year high water elevation of the swales is 864.75. The low opening to the proposed building is 867.1. Therefore the high water elevation requirement is met.

Downstream Waterbodies

The downstream waterbodies section of the rule regulates new point sources and changes to the bounce and inundation of water basins. Based on the Applicant's submittals, and review and analysis by staff and the District Engineer, the rerouting of stormwater to provide treatment through the utilization of a swale system will change the location of the stormwater discharges.



The new outfall will receive the required pretreatment, through the stormwater swales, as they operate as a celled system. Initial cells of the system serve to remove particulates from runoff, thereby providing the required pre-treatment, as outlined in the rule. The bounce and inundation requirements are not applicable to the project, because Minnehaha Creek is a watercourse, not a water basin. Additional analysis on the creek's water levels can be found in the *Floodplain Alteration* section of this report. Based on this analysis, staff and the District Engineer have determined this requirement of the rule has been met.

The maintenance requirement will be met through the City of Edina's programmatic maintenance agreement.

In summary, staff and the District Engineer have determined the project as proposed meets all criteria of the Stormwater Management Rule.

Exception

The Variance and Exception Rule allows the Board of Managers to grant exceptions from a provision of the rules on a determination that the proposed application will achieve a greater degree of water resource protection than strict compliance with the provision. The Applicant has requested an exception from the buffer provision of the Wetland Protection Rule.

The buffer provision of the Wetland Protection rule requires buffers on all wetlands that are down gradient of disturbance. Because the wetlands downgradient of disturbance in the project area are management class preserve, the required average width of the buffer is 75 feet and the minimum buffer width is 37.5 feet. Buffers are not required on lakes or streams.

Based on the Applicant's submittals, the creation of new wetland adjacent to the stream, accomplished through the re-meander of the creek and removal of the grade control structure, increases the required buffer area by 1.4 acres.

The primary areas of buffer shortfall are the hockey rink and the area of the proposed shelter building. The hockey rink is popular with the residents, and removal of the amenity was not considered an acceptable project outcome. The hockey rink is not able to be relocated without causing significant tree removal, in addition to the tree removal required for realignment of the stream and for management of ash trees, and significant grading the natural area. A shelter building is a required element of the project, as it facilitates the City's desired programming and will serve as a warming house for the ice rinks. The building has been set further back from the creek than the current shelter building, and further from the creek than the original concept design. The placement of the building was determined to allow for the patio area to have views of the creek and to allow sufficient play space for programming and recreation to the east of the building.

From existing conditions, there are 2.9 acres of buffer present. Of that 2.9 acres of buffer, 1.4 acres does not meet the minimum width requirements of the buffer provision. The proposed project will be increasing buffer area from the existing conditions by 0.8 acres to 3.7 acres. The inclusion of additional buffer associated with this project reduces the existing acreage of buffer not meeting the minimum buffer width requirement from 1.4 acres to 0.8 acres.



	Existing (ac)	Proposed (ac)
Buffer Required	4.1	5.5
Buffer Provided	2.9	3.7
Area not meeting the 50% of required width threshold	1.4	0.8

Table 3: Existing and Proposed Buffer Areas

The project overall will be a substantial ecological uplift, resulting in 0.6 acres of additional wetland habitat creation; an improvement from the invasive monoculture that currently exists today. Additionally, the project provides a substantial water quality benefit through the diversion of storm sewer structures and inclusion of permanent stormwater features for treatment prior to discharge to Minnehaha Creek. Based upon the Applicant’s submitted stormwater modeling and calculations the proposed project will reduce discharge rates to the creek, reduce phosphorus loading by approximately 33 lbs annually, and reduce total suspended solid loading by approximately 18,000 lbs annually. The buffer width and area shortfalls result from the overall design of the project, which was determined through consideration of all relevant ecological and land-use purposes by the project partners. The design, as a whole, balances these considerations, and results in overall ecological improvement and water-resources protection.

Summary:

The City of Edina has applied for a Minnehaha Creek Watershed District permit under the Erosion Control, Floodplain Alteration, Wetland Protection, Dredging, Shoreline and Streambank Stabilization, Waterbody Crossings and Structures, Stormwater Management, and Variance and Exception rules for a restoration of Minnehaha Creek and associated park improvements. The proposed project meets the applicable requirements under the applicable rules, upon satisfaction of the recommended conditions and approval of the exception by the Board of Managers. Staff recommends approval of the permit with the conditions listed.

Attachments:

1. Water Resources Application Form
2. Combined Joint Notification Form
3. Site Plans
4. Boundary and Type NOD
5. Existing and Proposed Wetland Boundaries
6. Wetland Buffer Exhibit
7. Floodplain Exhibit

WATER RESOURCE PERMIT APPLICATION FORM

Use this form to notify/apply to the Minnehaha Creek Watershed District (MCWD) of a proposed project or work which may fall within their jurisdiction. Fill out this form completely and submit with your site plan, maps, etc. to the MCWD at:
15320 Minnetonka Blvd. Minnetonka, MN 55345.

Keep a copy for your records.

YOU MUST OBTAIN ALL REQUIRED AUTHORIZATIONS BEFORE BEGINNING WORK.

1. Name of each property owner: City of Edina
 Mailing Address: 7450 Metro Boulevard City: Edina State: MN Zip: 55439
 Email Address: rbintner@edinamn.gov Phone: 952-903-5713 Fax: 952-826-0392

2. Property Owner Representative Information (not required) (licensed contractor, architect, engineer, etc...)
 Business Name: _____ Representative Name: _____
 Business Address: _____ City: _____ State: _____ Zip: _____
 Email Address: _____ Phone: _____ Fax: _____

3. Project Address: 5230 Minnehaha Blvd. City: Edina
 State: MN Zip: 55424 Qtr Section(s): _____ Section(s): _____ Township(s): _____ Range(s): _____
 Lot: _____ Block: _____ Subdivision: _____ PID: 1802824430095, 1802824430096

4. Size of project parcel (square feet or acres): 19 acres
 Area of disturbance (square feet): 822640 Volume of excavation/fill (cubic yards): 14575/1735
 Area of existing impervious surface: 33900 Area of proposed impervious surface: 35000
 Length of shoreline affected (feet): _____ Waterbody (& bay if applicable): Minnehaha Creek

5. Type of permit being applied for (Check all that apply):

<input checked="" type="checkbox"/> EROSION CONTROL	<input checked="" type="checkbox"/> WATERBODY CROSSINGS/STRUCTURES
<input checked="" type="checkbox"/> FLOODPLAIN ALTERATION	<input checked="" type="checkbox"/> STORMWATER MANAGEMENT
<input checked="" type="checkbox"/> WETLAND PROTECTION	<input type="checkbox"/> APPROPRIATIONS
<input checked="" type="checkbox"/> DREDGING	<input type="checkbox"/> ILLICIT DISCHARGE
<input checked="" type="checkbox"/> SHORELINE/STREAMBANK STABILIZATION	

6. Project purpose (Check all that apply):

<input type="checkbox"/> SINGLE FAMILY HOME	<input type="checkbox"/> MULTI FAMILY RESIDENTIAL (apartments)
<input type="checkbox"/> ROAD CONSTRUCTION	<input type="checkbox"/> COMMERCIAL or INSTITUTIONAL
<input type="checkbox"/> UTILITIES	<input type="checkbox"/> SUBDIVISIONS (include number of lots)
<input type="checkbox"/> DREDGING	<input type="checkbox"/> LANDSCAPING (pools, berms, etc.)
<input type="checkbox"/> SHORELINE/STREAMBANK STABILIZATION	<input checked="" type="checkbox"/> OTHER (DESCRIBE): _____

7. NPDES/SDS General Stormwater Permit Number (if applicable): _____

8. Waterbody receiving runoff from site: Minnehaha Creek

9. Project Timeline: Start Date: December 1, 2018 Completion Date: November 30, 2019

Permits have been applied for: City County MN Pollution Control Agency DNR COE
 Permits have been received: City County MN Pollution Control Agency DNR COE

By signing below, I hereby request a permit to authorize the activities described herein. I certify that I am familiar with MCWD Rules and that the proposed activity will be conducted in compliance with these Rules. I am familiar with the information contained in this application and, to the best of my knowledge and belief, all information is true, complete and accurate. I understand that proceeding with work before all required authorizations are obtained may be subject to federal, state and/or local administrative, civil and/or criminal penalties.

Ross Bintner Digitally signed by Ross Bintner
 Signature of Each Property Owner DN: cn=Ross Bintner, o=City of Edina, ou=Engineering, email=rbintner@edinamn.gov, c=US
 Date: 2018.07.16 14:44:40 -05'00' _____ Date _____

Joint Application Form for Activities Affecting Water Resources in Minnesota

This joint application form is the accepted means for initiating review of proposals that may affect a water resource (wetland, tributary, lake, etc.) in the State of Minnesota under state and federal regulatory programs. Applicants for Minnesota Department of Natural Resources (DNR) Public Waters permits **MUST** use the MPARS online permitting system for submitting applications to the DNR. Applicants can use the information entered into MPARS to substitute for completing parts of this joint application form (see the paragraph on MPARS at the end of the joint application form instructions for additional information). This form is only applicable to the water resource aspects of proposed projects under state and federal regulatory programs; other local applications and approvals may be required. Depending on the nature of the project and the location and type of water resources impacted, multiple authorizations may be required as different regulatory programs have different types of jurisdiction over different types of resources.

Regulatory Review Structure

Federal

The St. Paul District of the U.S. Army Corps of Engineers (Corps) is the federal agency that regulates discharges of dredged or fill material into waters of the United States (wetlands, tributaries, lakes, etc.) under Section 404 of the Clean Water Act (CWA) and regulates work in navigable waters under Section 10 of the Rivers and Harbors Act. Applications are assigned to Corps project managers who are responsible for implementing the Corps regulatory program within a particular geographic area.

State

There are three state regulatory programs that regulate activities affecting water resources. The Wetland Conservation Act (WCA) regulates most activities affecting wetlands. It is administered by local government units (LGUs) which can be counties, townships, cities, watershed districts, watershed management organizations or state agencies (on state-owned land). The Minnesota DNR Division of Ecological and Water Resources issues permits for work in specially-designated public waters via the Public Waters Work Permit Program (DNR Public Waters Permits). The Minnesota Pollution Control Agency (MPCA) under Section 401 of the Clean Water Act certifies that discharges of dredged or fill material authorized by a federal permit or license comply with state water quality standards. One or more of these regulatory programs may be applicable to any one project.

Required Information

Prior to submitting an application, applicants are **strongly encouraged** to seek input from the Corps Project Manager and LGU staff to identify regulatory issues and required application materials for their proposed project. Project proponents can request a pre-application consultation with the Corps and LGU to discuss their proposed project by providing the information required in Sections 1 through 5 of this joint application form to facilitate a meaningful discussion about their project. Many LGUs provide a venue (such as regularly scheduled technical evaluation panel meetings) for potential applicants to discuss their projects with multiple agencies prior to submitting an application. Contact information is provided below.

The following bullets outline the information generally required for several common types of determinations/authorizations.

- For delineation approvals and/or jurisdictional determinations, submit Parts 1, 2 and 5, and Attachment A.
- For activities involving CWA/WCA exemptions, WCA no-loss determinations, and activities not requiring mitigation, submit Parts 1 through 5, and Attachment B.
- For activities requiring compensatory mitigation/replacement plan, submit Parts 1 thru 5, and Attachments C and D.
- For local road authority activities that qualify for the state's local road wetland replacement program, submit Parts 1 through 5, and Attachments C, D (if applicable), and E to both the Corps and the LGU.

Submission Instructions

Send the completed joint application form and all required attachments to:

U.S Army Corps of Engineers. Applications may be sent directly to the appropriate Corps Office. For a current listing of areas of responsibilities and contact information, visit the St. Paul District's website at:

<http://www.mvp.usace.army.mil/Missions/Regulatory.aspx> and select "Minnesota" from the contact Information box.

Alternatively, applications may be sent directly to the St. Paul District Headquarters and the Corps will forward them to the appropriate field office.

Section 401 Water Quality Certification: Applicants do not need to submit the joint application form to the MPCA unless specifically requested. The MPCA will request a copy of the completed joint application form directly from an applicant when they determine an individual 401 water quality certification is required for a proposed project.

Wetland Conservation Act Local Government Unit: Send to the appropriate Local Government Unit. If necessary, contact your county Soil and Water Conservation District (SWCD) office or visit the Board of Water and Soil Resources (BWSR) web site (www.bwsr.state.mn.us) to determine the appropriate LGU.

DNR Public Waters Permitting: In 2014 the DNR will begin using the Minnesota DNR Permitting and Reporting System (MPARS) for submission of Public Waters permit applications (<https://webapps11.dnr.state.mn.us/mpars/public/authentication/login>).

Applicants for Public Waters permits **MUST** use the MPARS online permitting system for submitting applications to the DNR. To avoid duplication and to streamline the application process among the various resource agencies, applicants can use the information entered into MPARS to substitute for completing parts of this joint application form. The MPARS print/save function will provide the applicant with a copy of the Public Waters permit application which, at a minimum, will satisfy Parts one and two of this joint application. For certain types of activities, the MPARS application may also provide all of the necessary information required under Parts three and four of the joint application. However, it is the responsibility of the Applicant to make sure that the joint application contains all of the required information, including identification of all aquatic resources impacted by the project (see Part four of the joint application). After confirming that the MPARS application contains all of the required information in Parts one and two the Applicant may attach a copy to the joint application and fill in any missing information in the remainder of the joint application.

PART ONE: Applicant Information

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: The City of Edina, Attn: Ross Bintner

Mailing Address: 7450 Metro Boulevard, Edina, MN 55439

Phone: 952-826-0392

E-mail Address: rbintner@edina.mn.gov

Authorized Contact (do not complete if same as above):

Mailing Address:

Phone:

E-mail Address:

Agent Name: Renae Clark, Planner-Project Manager

Mailing Address: 15320 Minnetonka Boulevard, Minnetonka, MN 55345

Phone: 952-641-4510

E-mail Address: rclark@minnehahacreek.org

PART TWO: Site Location Information

County: Hennepin

City/Township: Edina

Parcel ID and/or Address: 1802824430095, 1802824430097, 1802824440001, 1802824440002, 1802824430096, 1802824420003, 1902824120158, 1902824110063

Legal Description (Section, Township, Range): $\frac{1}{4}$, $\frac{1}{4}$, Ssec. 18, Township 028N, Range 24W

Lat/Long (decimal degrees): 44.907606°, -93.333572°

Attach a map showing the location of the site in relation to local streets, roads, highways.

Approximate size of site (acres) or if a linear project, length (feet): 14.5 Acres

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform_4345_2012oct.pdf

PART THREE: General Project/Site Information

If this application is related to a delineation approval, exemption determination, jurisdictional determination, or other correspondence submitted *prior to* this application then describe that here and provide the Corps of Engineers project number.

Describe the project that is being proposed, the project purpose and need, and schedule for implementation and completion. The project description must fully describe the nature and scope of the proposed activity including a description of all project elements that effect aquatic resources (wetland, lake, tributary, etc.) and must also include plans and cross section or profile drawings showing the location, character, and dimensions of all proposed activities and aquatic resource impacts.

See Attachment

PART FOUR: Aquatic Resource Impact¹ Summary

If your proposed project involves a direct or indirect impact to an aquatic resource (wetland, lake, tributary, etc.) identify each impact in the table below. Include all anticipated impacts, including those expected to be temporary. Attach an overhead view map, aerial photo, and/or drawing showing all of the aquatic resources in the project area and the location(s) of the proposed impacts. Label each aquatic resource on the map with a reference number or letter and identify the impacts in the following table.

Aquatic Resource ID (as noted on overhead view)	Aquatic Resource Type (wetland, lake, tributary etc.)	Type of Impact (fill, excavate, drain, or remove vegetation)	Duration of Impact Permanent (P) or Temporary (T) ¹	Size of Impact ²	Overall Size of Aquatic Resource ³	Existing Plant Community Type(s) in Impact Area ⁴	County, Major Watershed #, and Bank Service Area # of Impact Area ⁵

¹If impacts are temporary; enter the duration of the impacts in days next to the "T". For example, a project with a temporary access fill that would be removed after 220 days would be entered "T (220)".

²Impacts less than 0.01 acre should be reported in square feet. Impacts 0.01 acre or greater should be reported as acres and rounded to the nearest 0.01 acre. Tributary impacts must be reported in linear feet of impact and an area of impact by indicating first the linear feet of impact along the flowline of the stream followed by the area impact in parentheses). For example, a project that impacts 50 feet of a stream that is 6 feet wide would be reported as 50 ft (300 square feet).

³This is generally only applicable if you are applying for a de minimis exemption under MN Rules 8420.0420 Subp. 8, otherwise enter "N/A".

⁴Use *Wetland Plants and Plant Community Types of Minnesota and Wisconsin* 3rd Ed. as modified in MN Rules 8420.0405 Subp. 2.

⁵Refer to Major Watershed and Bank Service Area maps in MN Rules 8420.0522 Subp. 7.

If any of the above identified impacts have already occurred, identify which impacts they are and the circumstances associated with each:

PART FIVE: Applicant Signature

Check here if you are requesting a pre-application consultation with the Corps and LGU based on the information you have provided. Regulatory entities will not initiate a formal application review if this box is checked.

By signature below, I attest that the information in this application is complete and accurate. I further attest that I possess the authority to undertake the work described herein.

Signature: _____ Date: _____

I hereby authorize _____ to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

¹ The term "impact" as used in this joint application form is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For purposes of this form it is not meant to indicate whether or not those activities may require mitigation/replacement.

Attachment A

Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination

By submission of the enclosed wetland delineation report, I am requesting that the U.S. Army Corps of Engineers, St. Paul District (Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):

Wetland Type Confirmation

Delineation Concurrence. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).

Preliminary Jurisdictional Determination. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.

Approved Jurisdictional Determination. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.

In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the *Guidelines for Submitting Wetland Delineations in Minnesota* (2013).

<http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx>

Attachment B

Supporting Information for Applications Involving Exemptions, No Loss Determinations, and Activities Not Requiring Mitigation

Complete this part *if* you maintain that the identified aquatic resource impacts in Part Four do not require wetland replacement/compensatory mitigation OR *if* you are seeking verification that the proposed water resource impacts are either exempt from replacement or are not under CWA/WCA jurisdiction.

Identify the specific exemption or no-loss provision for which you believe your project or site qualifies:

WCA No-Loss 8420.0415 D: Activities conducted or authorized by a public agency for the purpose of wetland restoration

NWP 27: Aquatic habitat restoration, enhancement, and establishment activities

Please note that while these provisions may be used for wetland restoration for banking purposes, no wetland banking credits are proposed.

Provide a detailed explanation of how your project or site qualifies for the above. Be specific and provide and refer to attachments and exhibits that support your contention. Applicants should refer to rules (e.g. WCA rules), guidance documents (e.g. BWSR guidance, Corps guidance letters/public notices), and permit conditions (e.g. Corps General Permit conditions) to determine the necessary information to support the application. Applicants are strongly encouraged to contact the WCA LGU and Corps Project Manager prior to submitting an application if they are unsure of what type of information to provide:

The project involves the removal of a four foot dam and realignment of the creek which was historically ditched. Within the restored stream channel, riffle and pool areas will be constructed in the new channel to promote habitat diversity and fish spawning and large woody debris will be incorporated into the banks to provide fish and macroinvertebrate cover. The remainder will result in a net increase in riverine area. Adjacent wetland area will be restored involving fill and excavation resulting in a net increase in wetland area. Due to the removal of the dam, a substantial portion of the existing marsh will be converted to sedge meadow and floodplain forest. All disturbed wetland area will be revegetated with native plants, primarily plugs, live stakes, and trees. Seed will be limited to areas outside of flood flow. Three ecological references are provided one upstream (Reach 16-Wooddale Avenue to Browndale Dam) and two downstream (Reach 14-France Ave S to 54th Street and Reach 13-West 54th Street to France Ave S). The ecological references feature wide floodplain wetlands, primarily floodplain forest. Under the proposed conditions, the restored creek corridor will include a substantial increase in floodplain forest which will be vegetated with appropriate tree species.

Attachment C

Avoidance and Minimization

Project Purpose, Need, and Requirements. Clearly state the purpose of your project and need for your project. Also include a description of any specific requirements of the project as they relate to project location, project footprint, water management, and any other applicable requirements. Attach an overhead plan sheet showing all relevant features of the project (buildings, roads, etc.), aquatic resource features (impact areas noted) and construction details (grading plans, storm water management plans, etc.), referencing these as necessary:

Avoidance. Both the CWA and the WCA require that impacts to aquatic resources be avoided if practicable alternatives exist. Clearly describe all on-site measures considered to avoid impacts to aquatic resources and discuss at least two project alternatives that avoid all impacts to aquatic resources on the site. These alternatives may include alternative site plans, alternate sites, and/or not doing the project. Alternatives should be feasible and prudent (see MN Rules 8420.0520 Subp. 2 C). Applicants are encouraged to attach drawings and plans to support their analysis:

Minimization. Both the CWA and the WCA require that all unavoidable impacts to aquatic resources be minimized to the greatest extent practicable. Discuss all features of the proposed project that have been modified to minimize the impacts to water resources (see MN Rules 8420.0520 Subp. 4):

Off-Site Alternatives. An off-site alternatives analysis is not required for all permit applications. If you know that your proposal will require an individual permit (standard permit or letter of permission) from the U.S. Army Corps of Engineers, you may be required to provide an off-site alternatives analysis. The alternatives analysis is not required for a complete application but must be provided during the review process in order for the Corps to complete the evaluation of your application and reach a final decision. Applicants with questions about when an off-site alternatives analysis is required should contact their Corps Project Manager.

Attachment D Replacement/Compensatory Mitigation

Complete this part *if* your application involves wetland replacement/compensatory mitigation not associated with the local road wetland replacement program. Applicants should consult Corps mitigation guidelines and WCA rules for requirements.

Replacement/Compensatory Mitigation via Wetland Banking. Complete this section if you are proposing to use credits from an existing wetland bank (with an account number in the State wetland banking system) for all or part of your replacement/compensatory mitigation requirements.

Wetland Bank Account #	County	Major Watershed #	Bank Service Area #	Credit Type (if applicable)	Number of Credits

Applicants should attach documentation indicating that they have contacted the wetland bank account owner and reached at least a tentative agreement to utilize the identified credits for the project. This documentation could be a signed purchase agreement, signed application for withdrawal of credits or some other correspondence indicating an agreement between the applicant and the bank owner. *However, applicants are advised not to enter into a binding agreement to purchase credits until the mitigation plan is approved by the Corps and LGU.*

Project-Specific Replacement/Permittee Responsible Mitigation. Complete this section if you are proposing to pursue actions (restoration, creation, preservation, etc.) to generate wetland replacement/compensatory mitigation credits for this proposed project.

WCA Action Eligible for Credit ¹	Corps Mitigation Compensation Technique ²	Acres	Credit % Requested	Credits Anticipated ³	County	Major Watershed #	Bank Service Area #

¹Refer to the name and subpart number in MN Rule 8420.0526.

²Refer to the technique listed in *St. Paul District Policy for Wetland Compensatory Mitigation in Minnesota*.

³If WCA and Corps crediting differs, then enter both numbers and distinguish which is Corps and which is WCA.

Explain how each proposed action or technique will be completed (e.g. wetland hydrology will be restored by breaking the tile.....) and how the proposal meets the crediting criteria associated with it. Applicants should refer to the Corps mitigation policy language, WCA rule language, and all associated Corps and WCA guidance related to the action or technique:

Attach a site location map, soils map, recent aerial photograph, and any other maps to show the location and other relevant features of each wetland replacement/mitigation site. Discuss in detail existing vegetation, existing landscape features, land use (on and surrounding the site), existing soils, drainage systems (if present), and water sources and movement. Include a topographic map showing key features related to hydrology and water flow (inlets, outlets, ditches, pumps, etc.):

Project Name and/or Number:

Attach a map of the existing aquatic resources, associated delineation report, and any documentation of regulatory review or approval. Discuss as necessary:

For actions involving construction activities, attach construction plans and specifications with all relevant details. Discuss and provide documentation of a hydrologic and hydraulic analysis of the site to define existing conditions, predict project outcomes, identify specific project performance standards and avoid adverse offsite impacts. Plans and specifications should be prepared by a licensed engineer following standard engineering practices. Discuss anticipated construction sequence and timing:

For projects involving vegetation restoration, provide a vegetation establishment plan that includes information on site preparation, seed mixes and plant materials, seeding/planting plan (attach seeding/planting zone map), planting/seeding methods, vegetation maintenance, and an anticipated schedule of activities:

For projects involving construction or vegetation restoration, identify and discuss goals and specific outcomes that can be determined for credit allocation. Provide a proposed credit allocation table tied to outcomes:

Provide a five-year monitoring plan to address project outcomes and credit allocation:

Discuss and provide evidence of ownership or rights to conduct wetland replacement/mitigation on each site:

Quantify all proposed wetland credits and compare to wetland impacts to identify a proposed wetland replacement ratio. Discuss how this replacement ratio is consistent with Corps and WCA requirements:

By signature below, the applicant attests to the following (only required if application involves project-specific/permittee responsible replacement):

- All proposed replacement wetlands were not:
 - Previously restored or created under a prior approved replacement plan or permit
 - Drained or filled under an exemption during the previous 10 years
 - Restored with financial assistance from public conservation programs
 - Restored using private funds, other than landowner funds, unless the funds are paid back with interest to the individual or organization that funded the restoration and the individual or organization notifies the local government unit in writing that the restored wetland may be considered for replacement.
- The wetland will be replaced before or concurrent with the actual draining or filling of a wetland.
- An irrevocable bank letter of credit, performance bond, or other acceptable security will be provided to guarantee successful completion of the wetland replacement.
- Within 30 days of either receiving approval of this application or beginning work on the project, I will record the Declaration of Restrictions and Covenants on the deed for the property on which the replacement wetland(s) will be located and submit proof of such recording to the LGU and the Corps.

Applicant or Representative:


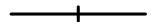






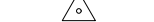
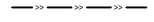



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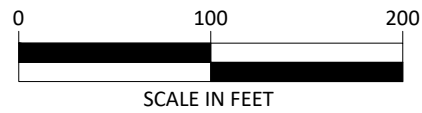
Signature: _____

Date:

Project Name and/or Number:

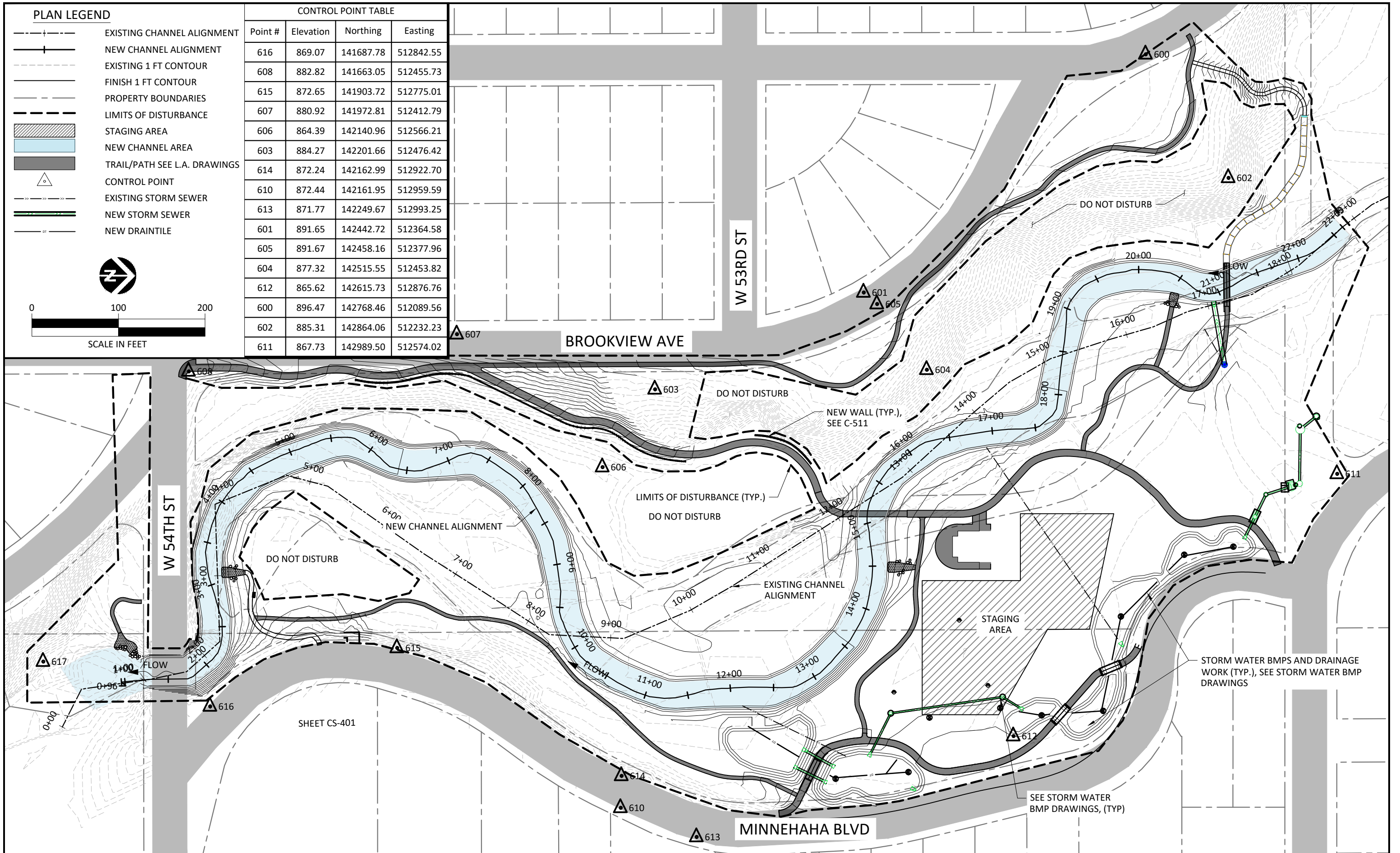
PLAN LEGEND

-  EXISTING CHANNEL ALIGNMENT
-  NEW CHANNEL ALIGNMENT
-  EXISTING 1 FT CONTOUR
-  FINISH 1 FT CONTOUR
-  PROPERTY BOUNDARIES
-  LIMITS OF DISTURBANCE
-  STAGING AREA
-  NEW CHANNEL AREA
-  TRAIL/PATH SEE L.A. DRAWINGS
-  CONTROL POINT
-  EXISTING STORM SEWER
-  NEW STORM SEWER
-  NEW DRAINTILE



CONTROL POINT TABLE

Point #	Elevation	Northing	Easting
616	869.07	141687.78	512842.55
608	882.82	141663.05	512455.73
615	872.65	141903.72	512775.01
607	880.92	141972.81	512412.79
606	864.39	142140.96	512566.21
603	884.27	142201.66	512476.42
614	872.24	142162.99	512922.70
610	872.44	142161.95	512959.59
613	871.77	142249.67	512993.25
601	891.65	142442.72	512364.58
605	891.67	142458.16	512377.96
604	877.32	142515.55	512453.82
612	865.62	142615.73	512876.76
600	896.47	142768.46	512089.56
602	885.31	142864.06	512232.23
611	867.73	142989.50	512574.02



NO.	DATE	REVISION DESCRIPTION

CP,GS,BL	MM,BL	MM
DRAWN	DESIGNED	CHECKED
JK	8/1/2018	18-04-01
APPROVED	DATE	PROJECT

ARDEN PARK CREEK RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
EDINA, MINNESOTA

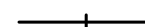

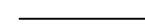



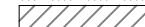
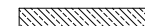
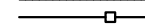


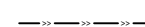




I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Signature: **WENCK**
 Typed or Printed Name: **WENCK**
 Date: 8/1/18 License Number: 44129

SITE PLAN

SHEET
CS-101

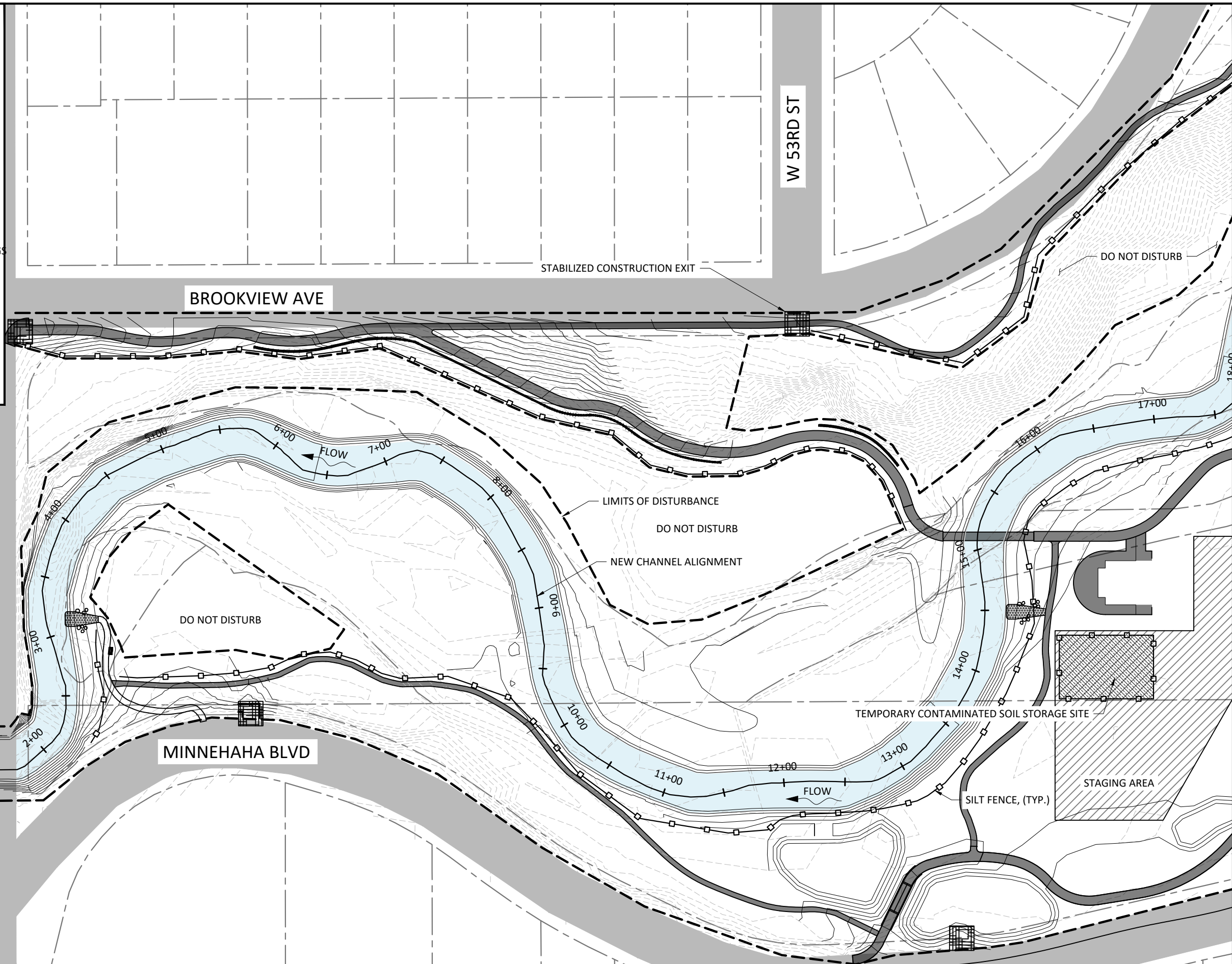
PLAN LEGEND

-  NEW CHANNEL ALIGNMENT
-  EXISTING 1 FT CONTOUR
-  FINISH 1 FT CONTOUR
-  PROPERTY BOUNDARIES
-  LIMITS OF DISTURBANCE
-  STABILIZED CONSTRUCTION EXIT
-  STAGING AREA
-  TEMPORARY CONTAMINATED SOIL STORAGE
-  SILT FENCE
-  INLET PROTECTION
-  NEW TRAIL/PATH, SEE L.A. DRAWINGS
-  NEW STORM SEWER, SEE SITE/CIVIL DRAWINGS
-  NEW WALL, SEE SITE/CIVIL DRAWINGS
-  NEW CHANNEL AREA



0 80 160

SCALE IN FEET



NO.	DATE	REVISION DESCRIPTION

CP,GS,BL	MM,BL	MM
DRAWN	DESIGNED	CHECKED
JK	8/1/2018	18-04-01
APPROVED	DATE	PROJECT

ARDEN PARK CREEK RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
EDINA, MINNESOTA

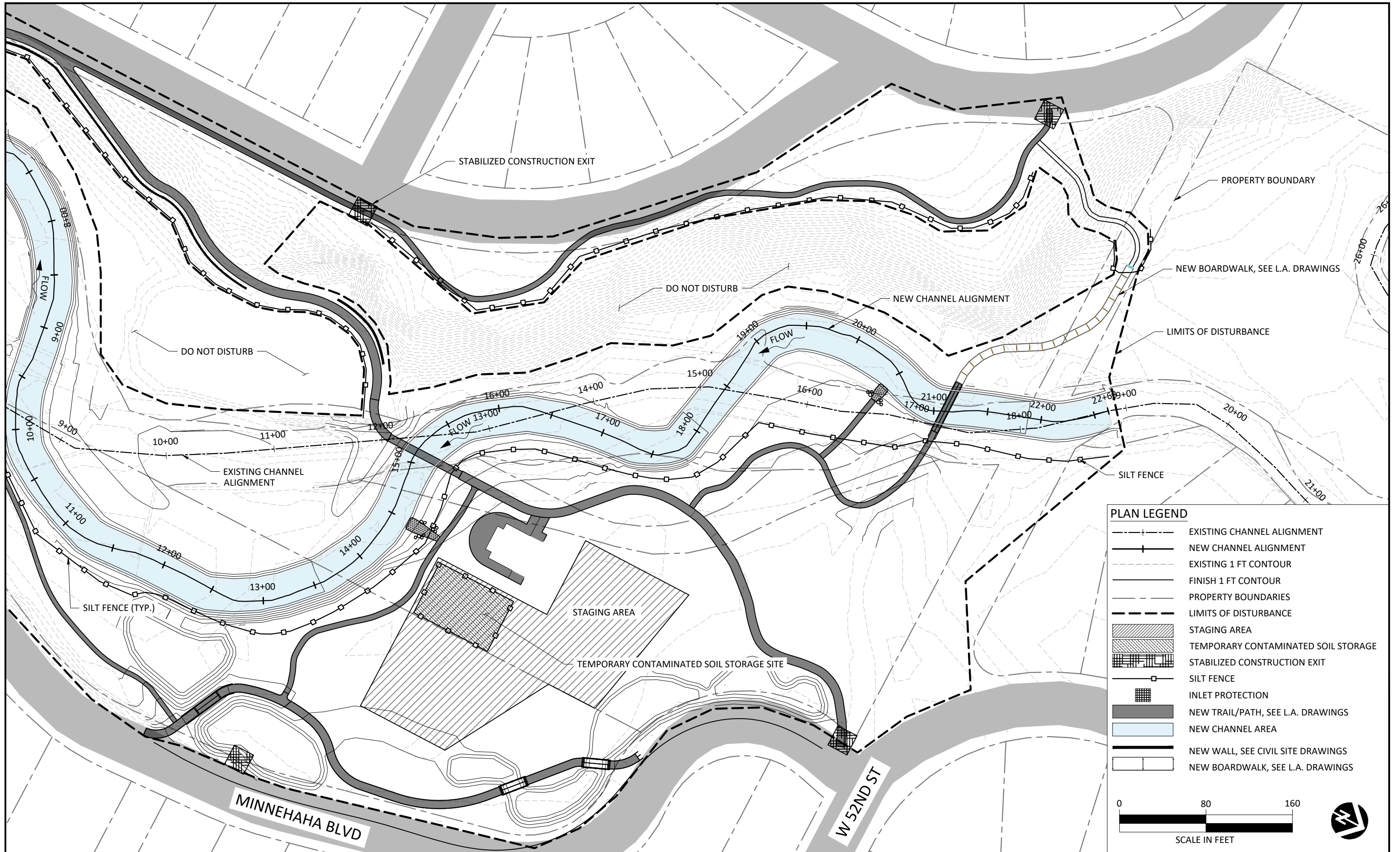


I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Signature: **NATHAN KUSA**
 Typed or Printed Name: **NATHAN KUSA**
 Date: 8/1/18 License Number: 44129

DRAFT

EROSION & SEDIMENT CONTROL PLAN

SHEET
CS-104



PLAN LEGEND	
	EXISTING CHANNEL ALIGNMENT
	NEW CHANNEL ALIGNMENT
	EXISTING 1 FT CONTOUR
	FINISH 1 FT CONTOUR
	PROPERTY BOUNDARIES
	LIMITS OF DISTURBANCE
	STAGING AREA
	TEMPORARY CONTAMINATED SOIL STORAGE
	STABILIZED CONSTRUCTION EXIT
	SILT FENCE
	INLET PROTECTION
	NEW TRAIL/PATH, SEE L.A. DRAWINGS
	NEW WALL, SEE CIVIL SITE DRAWINGS
	NEW BOARDWALK, SEE L.A. DRAWINGS



NO.	DATE	REVISION DESCRIPTION

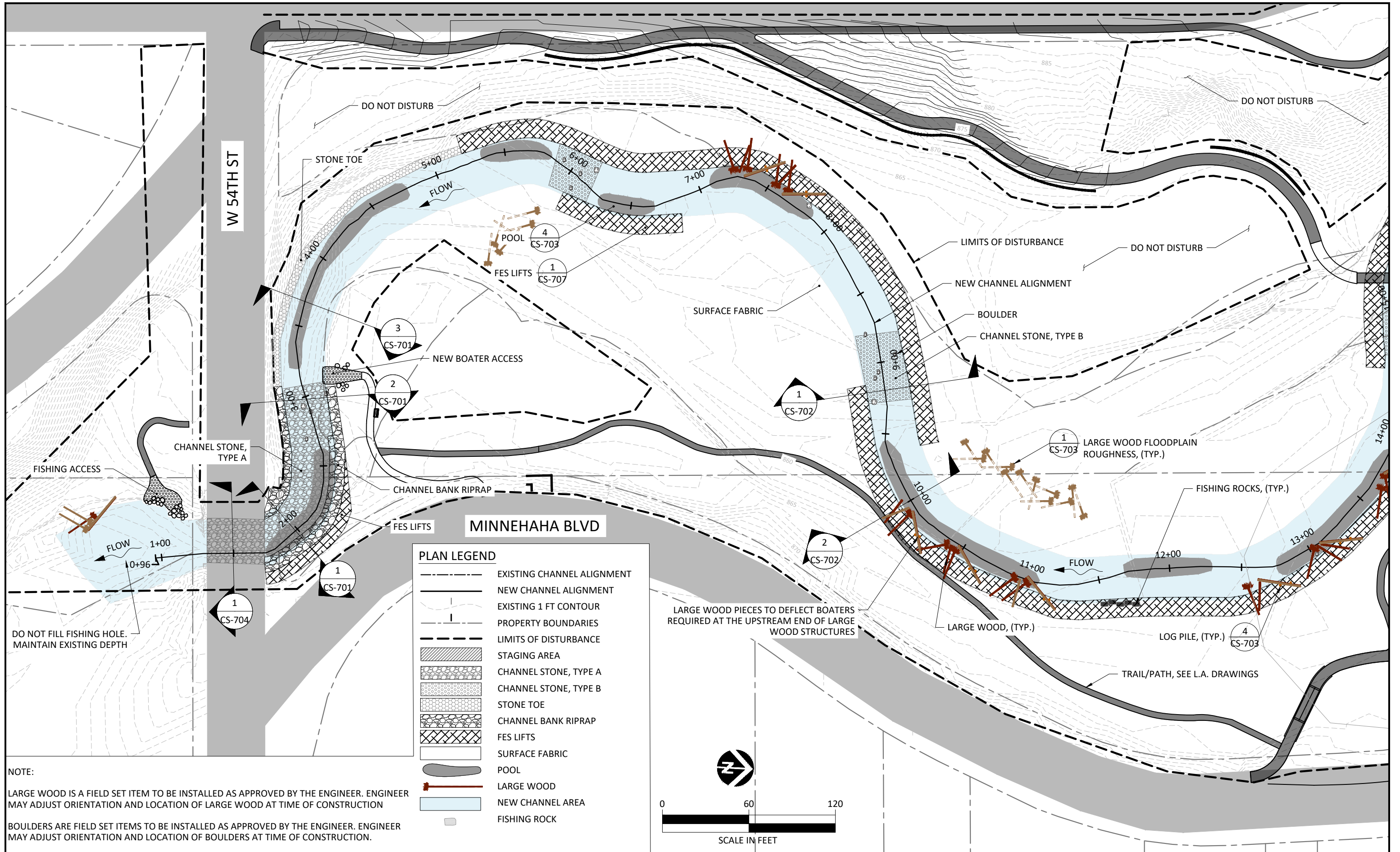
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JK	8/1/2018	18-04-01
APPROVED	DATE	PROJECT

ARDEN PARK CREEK RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
EDINA, MINNESOTA



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Signature: **DRAFT**
Typed or Printed Name: NATHAN KRUSA
Date: 8/1/18 License Number: 44129

EROSION & SEDIMENT CONTROL PLAN
SHEET CS-105



NOTE:
 LARGE WOOD IS A FIELD SET ITEM TO BE INSTALLED AS APPROVED BY THE ENGINEER. ENGINEER MAY ADJUST ORIENTATION AND LOCATION OF LARGE WOOD AT TIME OF CONSTRUCTION
 BOULDERS ARE FIELD SET ITEMS TO BE INSTALLED AS APPROVED BY THE ENGINEER. ENGINEER MAY ADJUST ORIENTATION AND LOCATION OF BOULDERS AT TIME OF CONSTRUCTION.

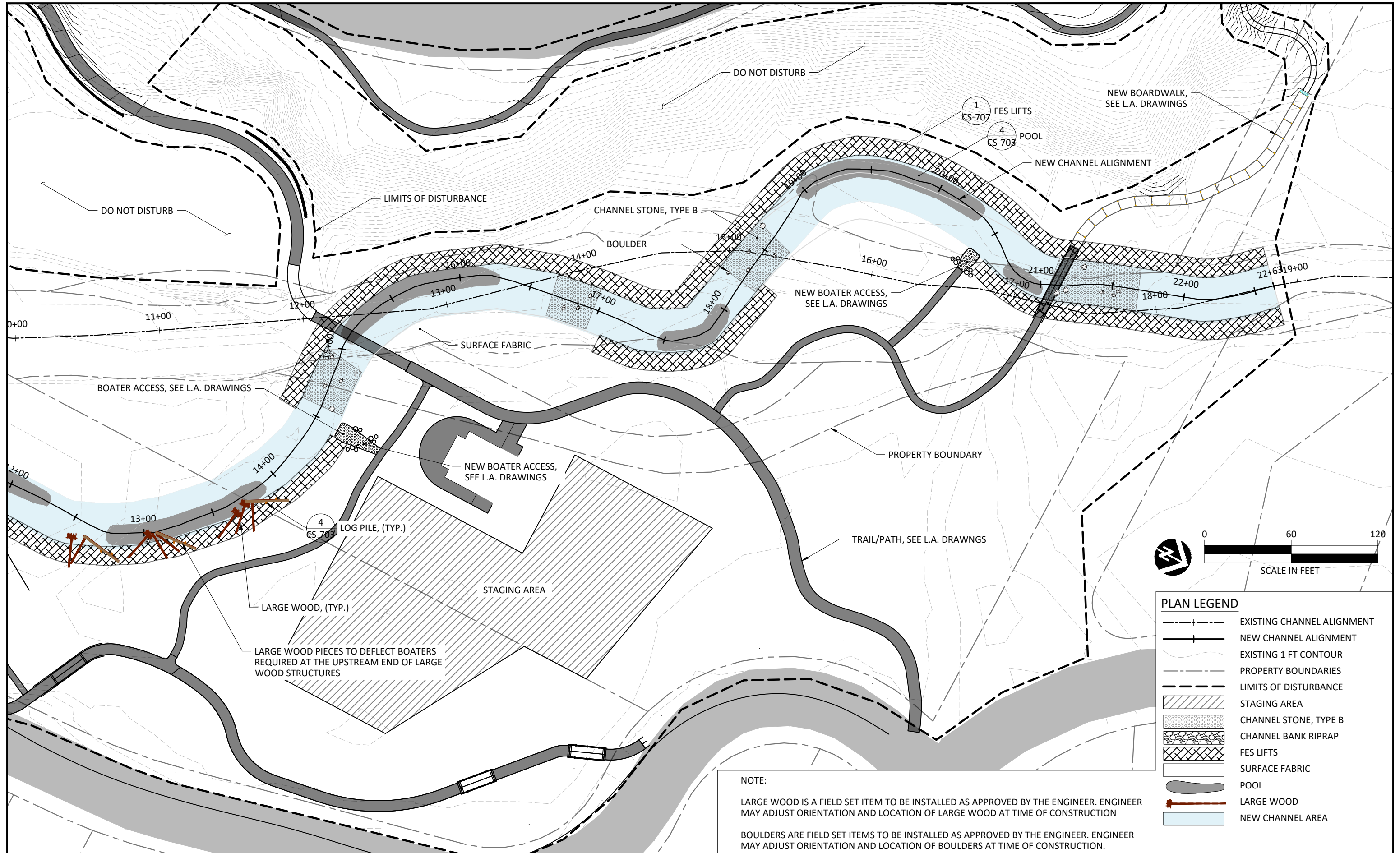
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JK	8/1/2018	18-04-01
APPROVED	DATE	PROJECT

ARDEN PARK CREEK RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
EDINA, MINNESOTA



I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
 Signature: [Signature]
 Typed or Printed Name: [Name]
 Date: 8/1/18 License Number: 44129



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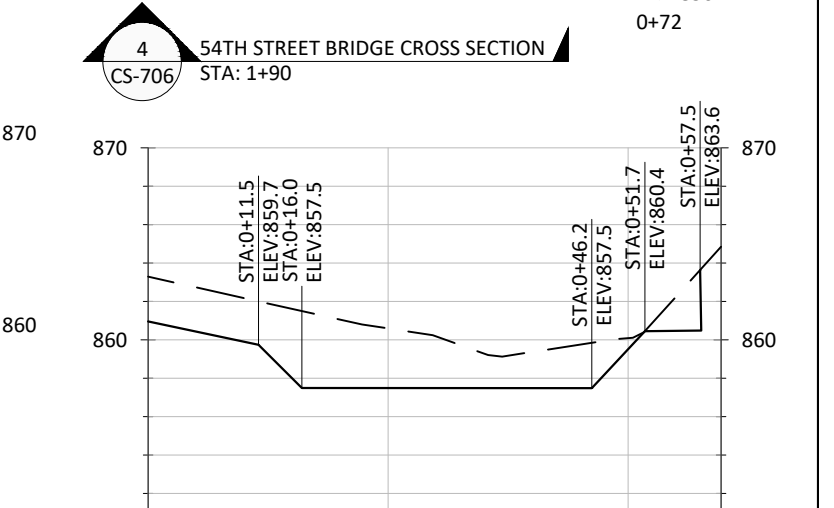
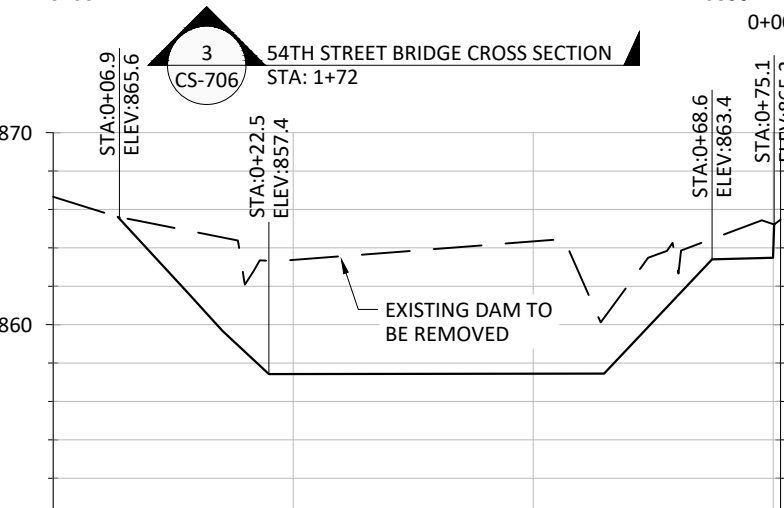
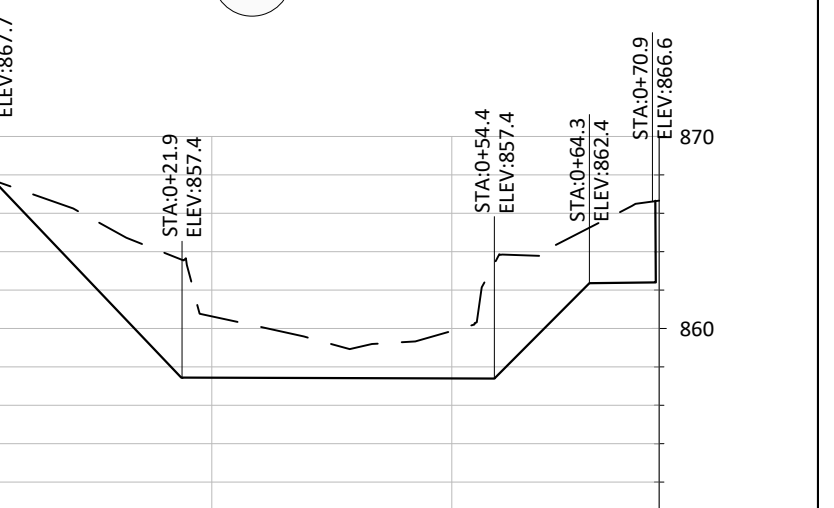
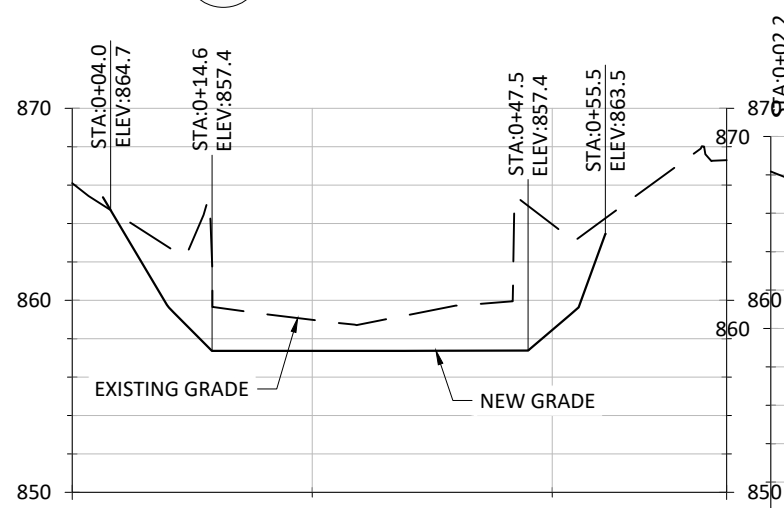
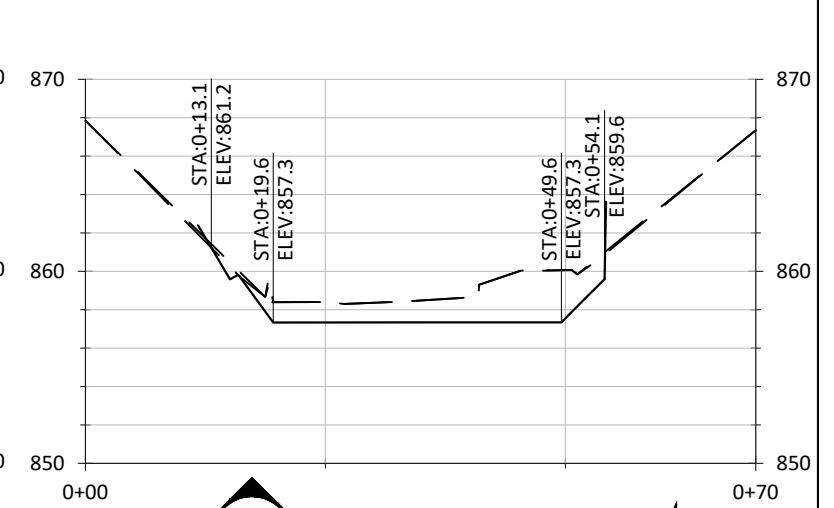
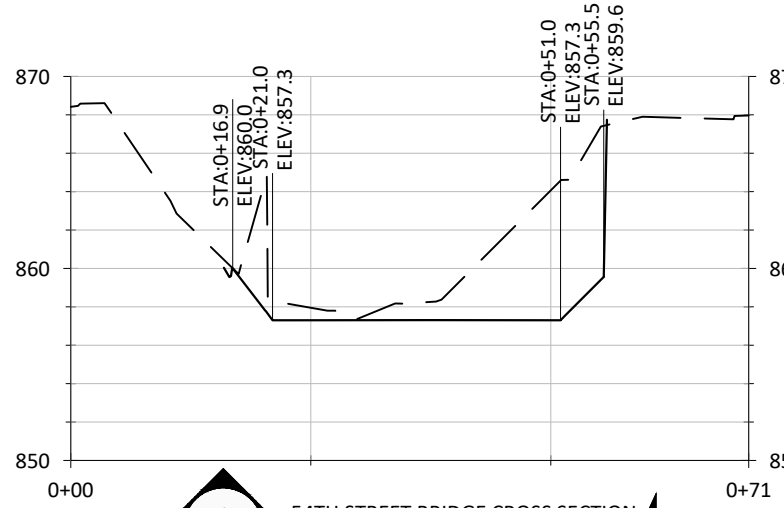
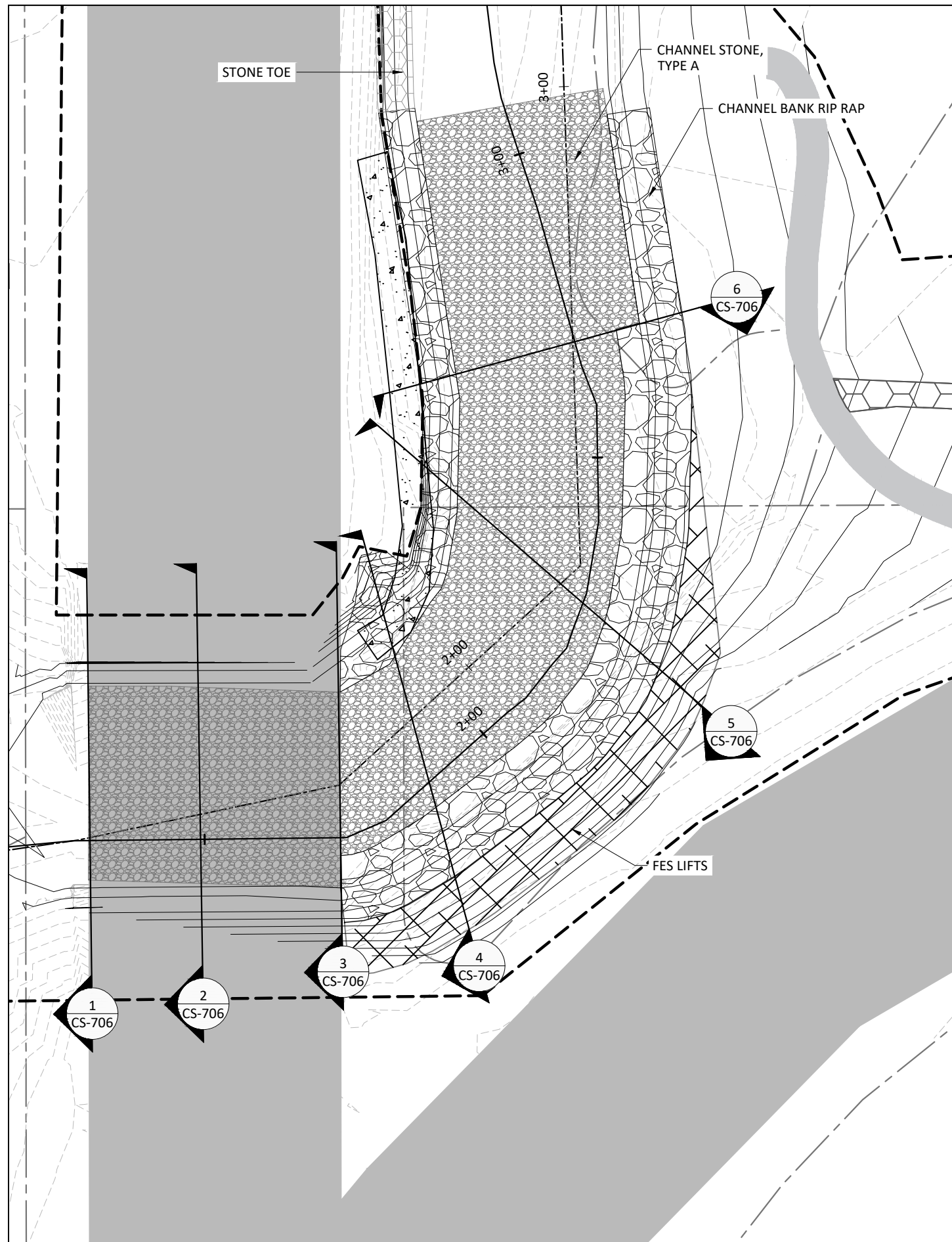
ARDEN PARK CREEK RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
EDINA, MINNESOTA



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

Signature: **NATHAN KUSA**
 Typed or Printed Name: NATHAN KUSA
 Date: 8/1/18 License Number: 44129

DRAFT



NO.	DATE	REVISION DESCRIPTION

CP,GS,BL	MM,BL	MM
DRAWN	DESIGNED	CHECKED
JK	8/1/2018	18-04-01
APPROVED	DATE	PROJECT

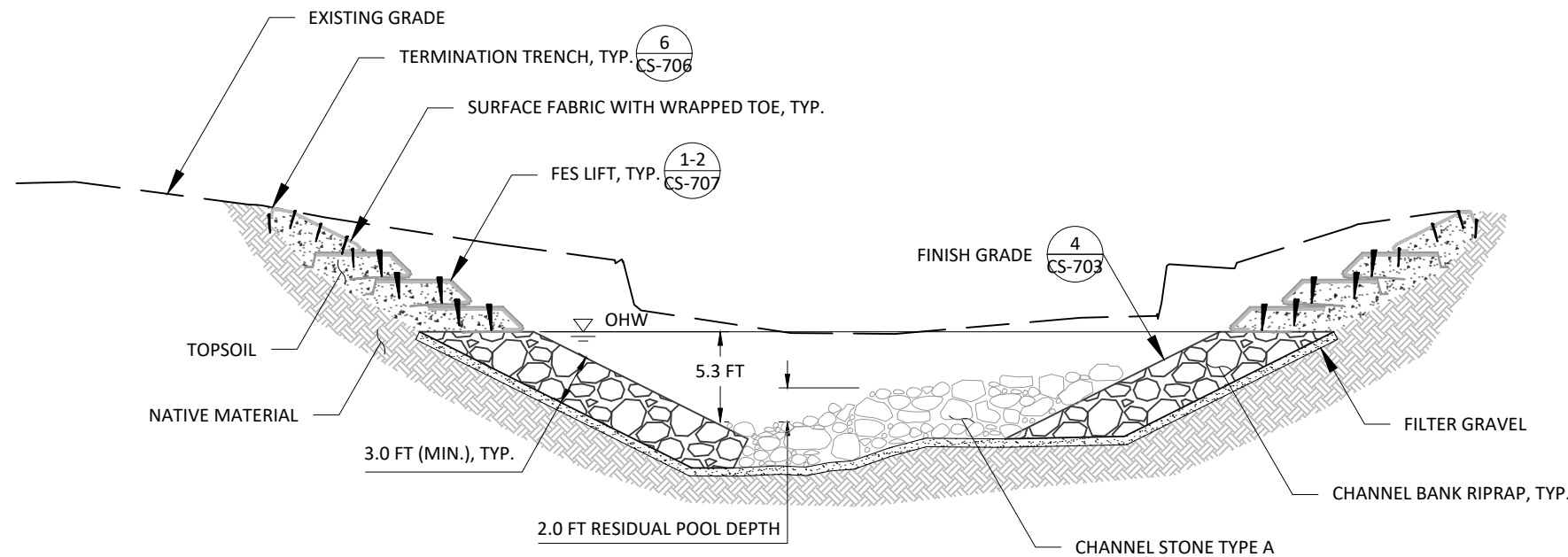
ARDEN PARK CREEK RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
EDINA, MINNESOTA



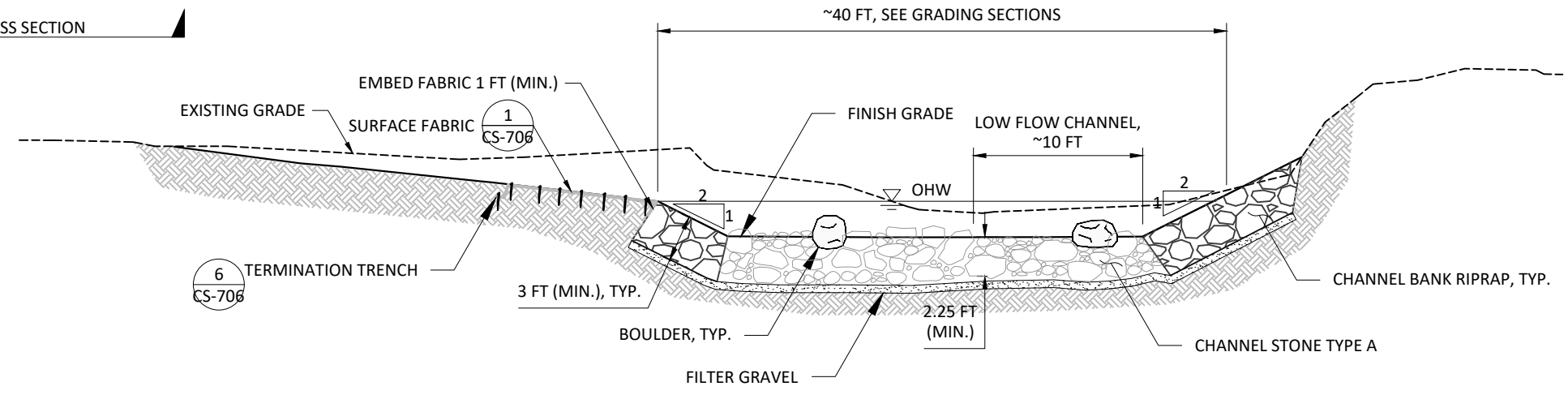
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Signature: [Signature]
Typed or Printed Name: NATHAN KUSA
Date: 8/1/18 License Number: 44129

54TH STREET BRIDGE PLAN
AND CROSS SECTIONS

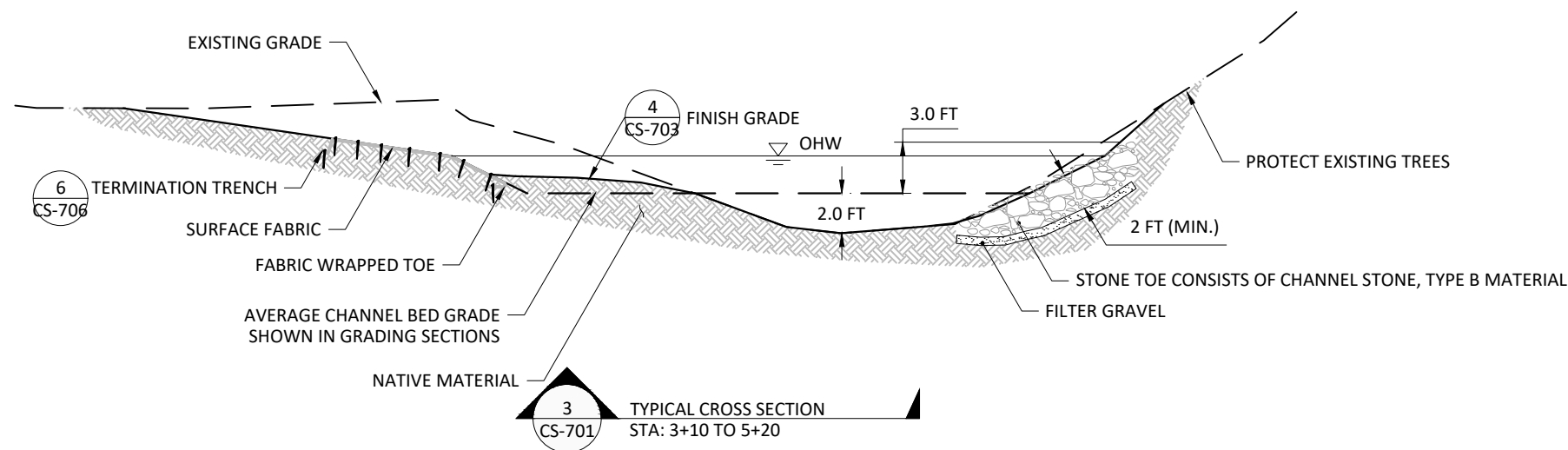
SHEET
CS-407



1 TYPICAL CROSS SECTION
CS-701
STA: 2+06



2 TYPICAL CROSS SECTION
CS-701
STA: 2+75 TO 3+10



3 TYPICAL CROSS SECTION
CS-701
STA: 3+10 TO 5+20

NOTES:

LOW FLOW CHANNEL ALIGNMENT TO BE INSTALLED AS DIRECTED BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

BOULDERS ARE FIELD SET ITEMS TO BE INCORPORATED INTO CHANNEL STONE. LOCATIONS TO BE VERIFIED IN THE FIELD BY THE ENGINEER AT THE TIME OF CONSTRUCTION.

FILL ALL RIPRAP VOID SPACES WITH TOPSOIL ABOVE THE ORDINARY HIGH WATER MARK.

STREAMBED GRANULAR FILTER TYPE A REQUIRED WITHIN VOIDS OF CHANNEL STONE TYPE A.

FINE GRADING OF THE CHANNEL BED TO BE COMPLETED IN THE PRESENCE OF THE ENGINEER.

NO.	DATE	REVISION DESCRIPTION

CP,GS,BL	MM,BL	MM
DRAWN	DESIGNED	CHECKED
JK	8/1/2018	18-04-01
APPROVED	DATE	PROJECT

ARDEN PARK CREEK RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
EDINA, MINNESOTA

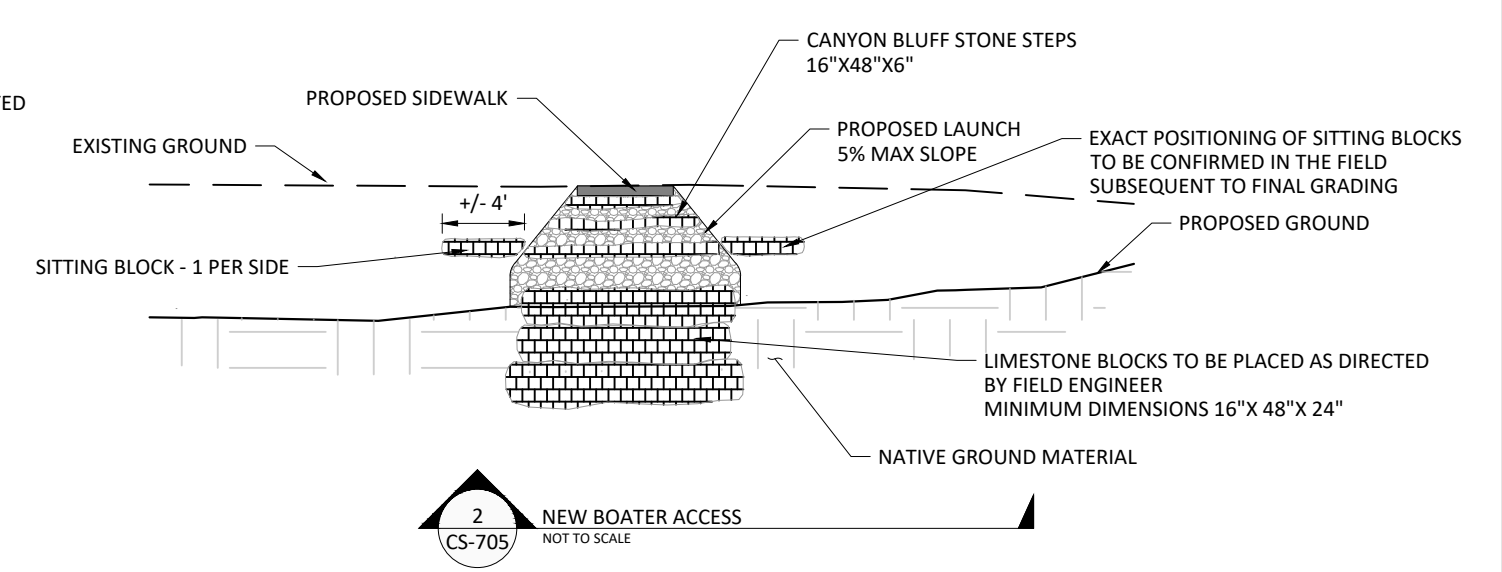
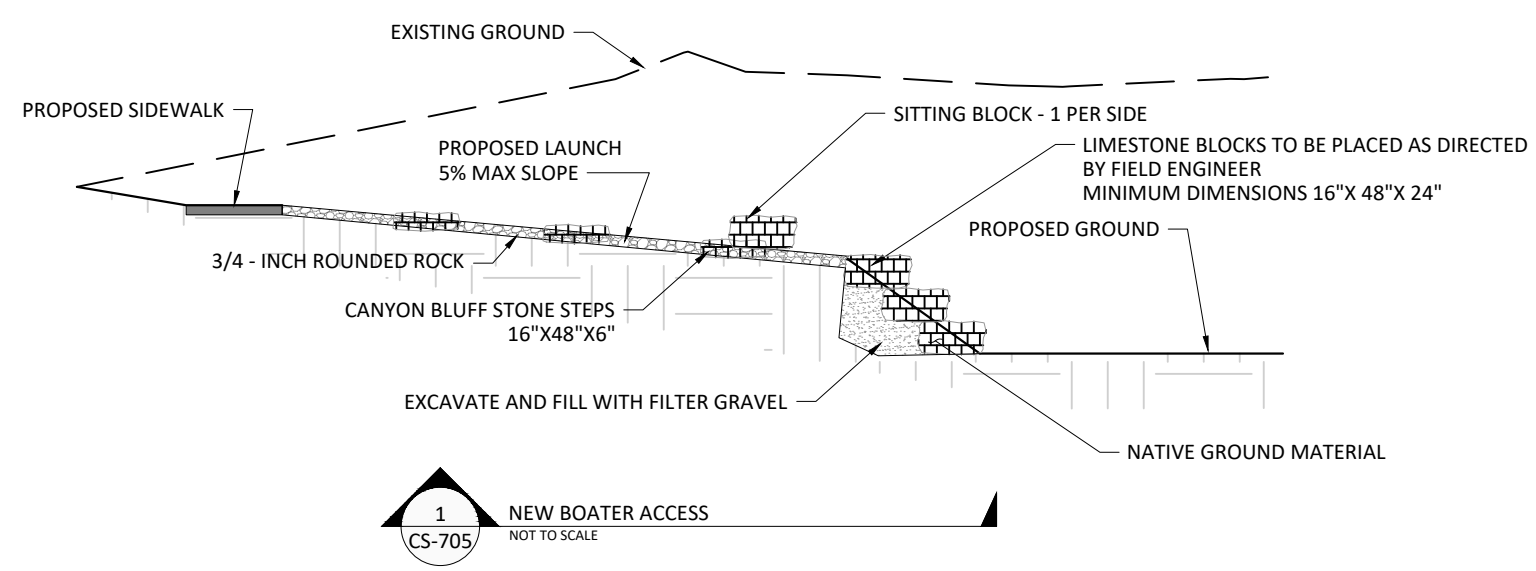
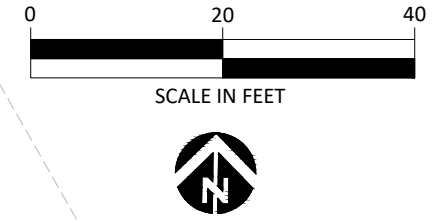
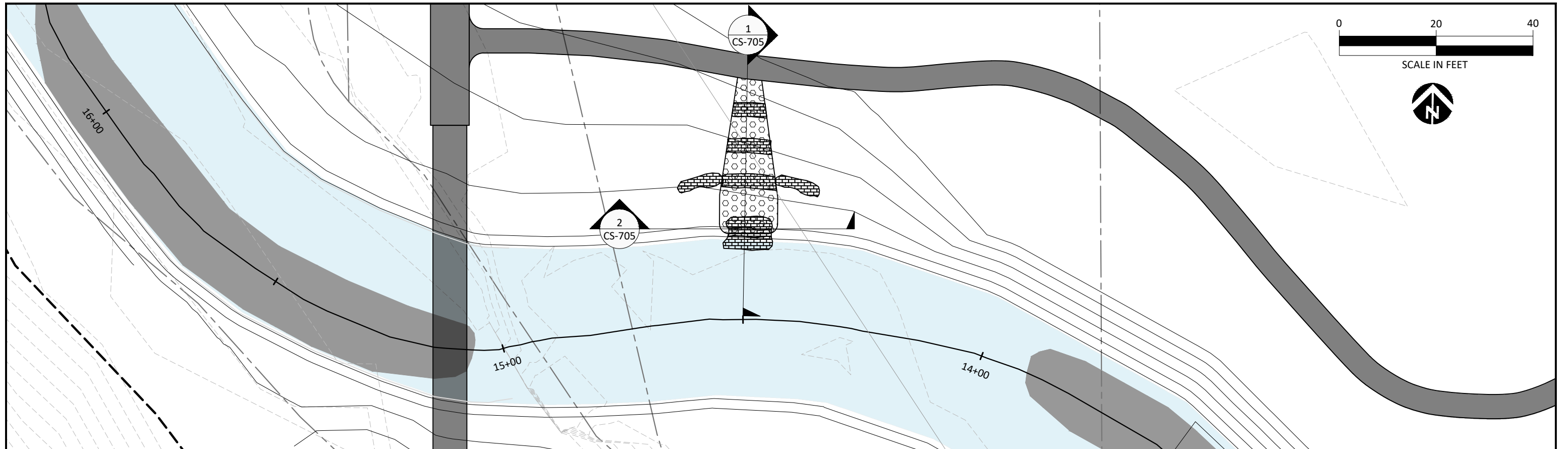


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Signature: **DRAFT**
Typed or Printed Name: NATHAN KUSA
Date: 8/1/18 License Number: 44129

TYPICAL SECTIONS

SHEET
CS-701



NO.	DATE	REVISION DESCRIPTION

CP,GS,BL	MM,BL	MM
DRAWN	DESIGNED	CHECKED
JK	8/1/2018	18-04-01
APPROVED	DATE	PROJECT

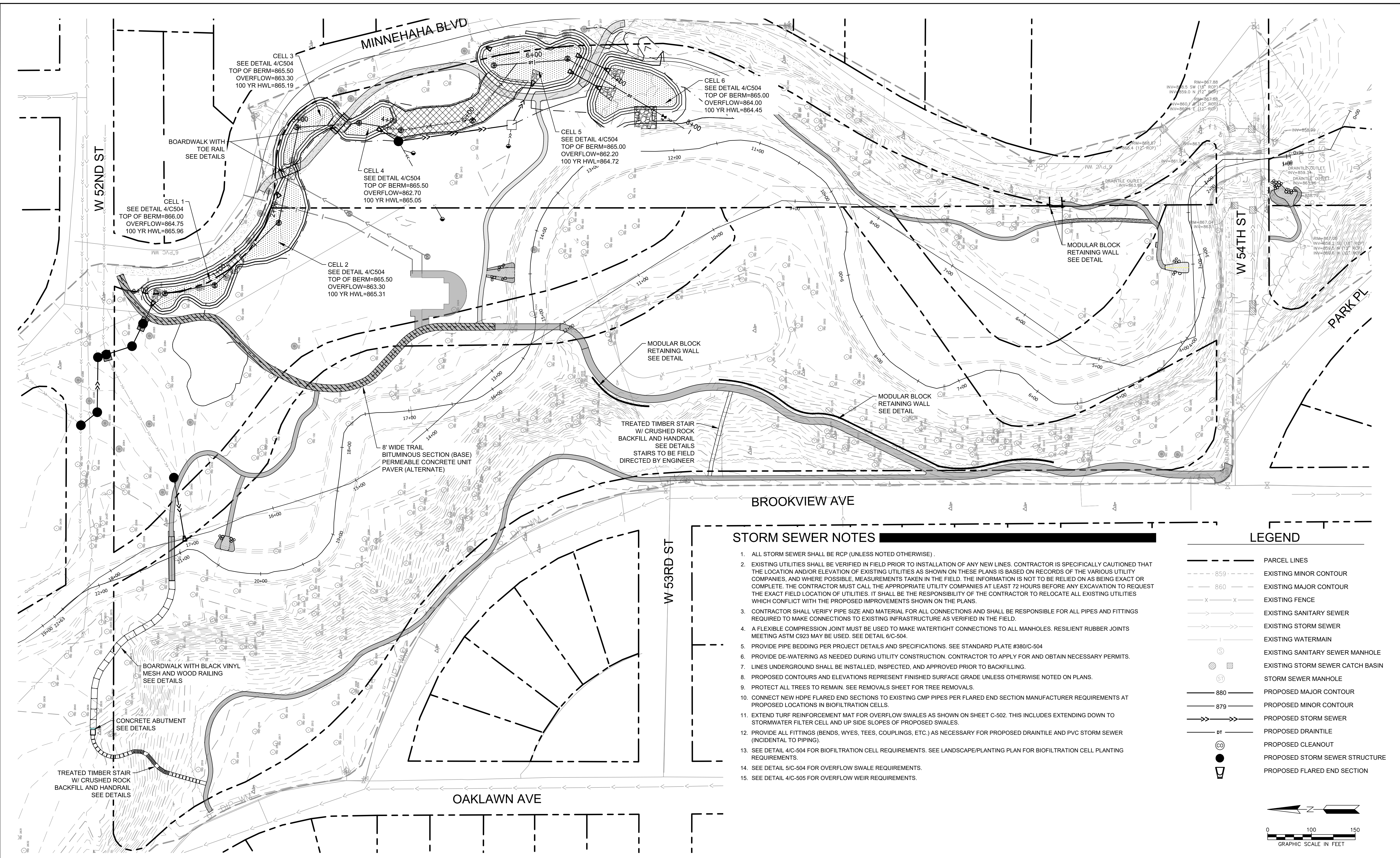
ARDEN PARK CREEK RESTORATION
 MINNEHAHA CREEK WATERSHED DISTRICT
 EDINA, MINNESOTA



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 Signature: **NATHAN KUSA**
 Typed or Printed Name: NATHAN KUSA
 Date: 8/1/18 License Number: 44129

BOATER ACCESS
 DETAILS

SHEET
 CS-705

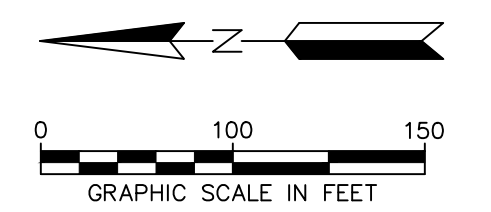


STORM SEWER NOTES

1. ALL STORM SEWER SHALL BE RCP (UNLESS NOTED OTHERWISE).
2. EXISTING UTILITIES SHALL BE VERIFIED IN FIELD PRIOR TO INSTALLATION OF ANY NEW LINES. CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST THE EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
3. CONTRACTOR SHALL VERIFY PIPE SIZE AND MATERIAL FOR ALL CONNECTIONS AND SHALL BE RESPONSIBLE FOR ALL PIPES AND FITTINGS REQUIRED TO MAKE CONNECTIONS TO EXISTING INFRASTRUCTURE AS VERIFIED IN THE FIELD.
4. A FLEXIBLE COMPRESSION JOINT MUST BE USED TO MAKE WATERTIGHT CONNECTIONS TO ALL MANHOLES. RESILIENT RUBBER JOINTS MEETING ASTM C923 MAY BE USED. SEE DETAIL 6/C-504.
5. PROVIDE PIPE BEDDING PER PROJECT DETAILS AND SPECIFICATIONS. SEE STANDARD PLATE #380/C-504
6. PROVIDE DE-WATERING AS NEEDED DURING UTILITY CONSTRUCTION. CONTRACTOR TO APPLY FOR AND OBTAIN NECESSARY PERMITS.
7. LINES UNDERGROUND SHALL BE INSTALLED, INSPECTED, AND APPROVED PRIOR TO BACKFILLING.
8. PROPOSED CONTOURS AND ELEVATIONS REPRESENT FINISHED SURFACE GRADE UNLESS OTHERWISE NOTED ON PLANS.
9. PROTECT ALL TREES TO REMAIN. SEE REMOVALS SHEET FOR TREE REMOVALS.
10. CONNECT NEW HDPE FLARED END SECTIONS TO EXISTING CMP PIPES PER FLARED END SECTION MANUFACTURER REQUIREMENTS AT PROPOSED LOCATIONS IN BIOFILTRATION CELLS.
11. EXTEND TURF REINFORCEMENT MAT FOR OVERFLOW SWALES AS SHOWN ON SHEET C-502. THIS INCLUDES EXTENDING DOWN TO STORMWATER FILTER CELL AND UP SIDE SLOPES OF PROPOSED SWALES.
12. PROVIDE ALL FITTINGS (BENDS, WYES, TEES, COUPLINGS, ETC.) AS NECESSARY FOR PROPOSED DRAIN TILE AND PVC STORM SEWER (INCIDENTAL TO PIPING).
13. SEE DETAIL 4/C-504 FOR BIOFILTRATION CELL REQUIREMENTS. SEE LANDSCAPE/PLANTING PLAN FOR BIOFILTRATION CELL PLANTING REQUIREMENTS.
14. SEE DETAIL 5/C-504 FOR OVERFLOW SWALE REQUIREMENTS.
15. SEE DETAIL 4/C-505 FOR OVERFLOW WEIR REQUIREMENTS.

LEGEND

- PARCEL LINES
- - - 859 - - - EXISTING MINOR CONTOUR
- - - 860 - - - EXISTING MAJOR CONTOUR
- x - x - EXISTING FENCE
- - - - - EXISTING SANITARY SEWER
- - - - - EXISTING STORM SEWER
- - - - - EXISTING WATERMAIN
- ⊙ EXISTING SANITARY SEWER MANHOLE
- ⊙ EXISTING STORM SEWER CATCH BASIN
- ⊙ STORM SEWER MANHOLE
- 880 --- PROPOSED MAJOR CONTOUR
- 879 --- PROPOSED MINOR CONTOUR
- - - - - PROPOSED STORM SEWER
- - - - - PROPOSED DRAIN TILE
- ⊙ PROPOSED CLEANOUT
- PROPOSED STORM SEWER STRUCTURE
- ▽ PROPOSED FLARED END SECTION



NO.	DATE	REVISION DESCRIPTION

DRAWN	DESIGNED	CHECKED
	7/30/2018	18-04-01
APPROVED	DATE	PROJECT

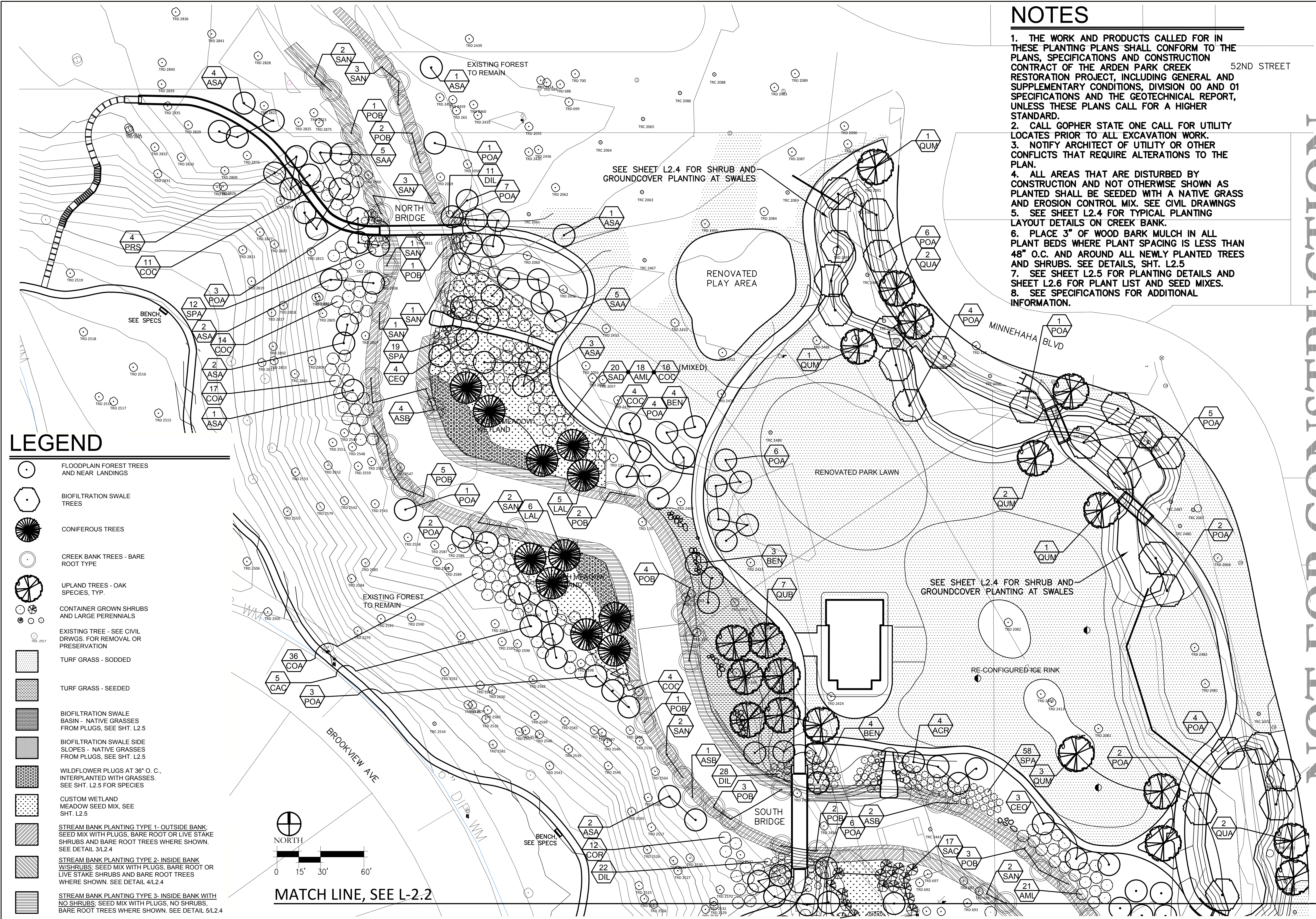
ARDEN PARK CREEK RESTORATION
MINNEHAHA CREEK WATERSHED DISTRICT
EDINA, MINNESOTA



DRAFT

OVERALL STORM SEWER AND BMP PLAN

SHEET
C-501

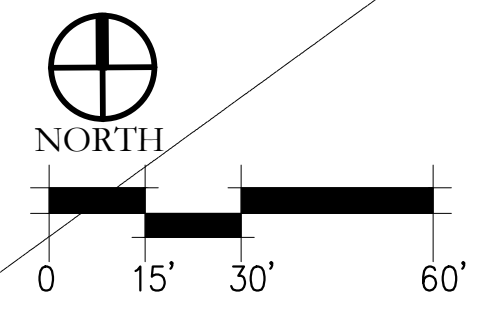


NOTES

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5. SEE SHEET L2.4 FOR TYPICAL PLANTING LAYOUT DETAILS ON CREEK BANK.
6. PLACE 3" OF WOOD BARK MULCH IN ALL PLANT BEDS WHERE PLANT SPACING IS LESS THAN 48" O.C. AND AROUND ALL NEWLY PLANTED TREES AND SHRUBS. SEE DETAILS, SHT. L2.5
7. SEE SHEET L2.5 FOR PLANTING DETAILS AND SHEET L2.6 FOR PLANT LIST AND SEED MIXES.
8. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

LEGEND

- FLOODPLAIN FOREST TREES AND NEAR LANDINGS
- BIOFILTRATION SWALE TREES
- CONIFEROUS TREES
- CREEK BANK TREES - BARE ROOT TYPE
- UPLAND TREES - OAK SPECIES, TYP.
- CONTAINER GROWN SHRUBS AND LARGE PERENNIALS
- EXISTING TREE - SEE CIVIL DRWGS. FOR REMOVAL OR PRESERVATION
- TURF GRASS - SODDED
- TURF GRASS - SEEDDED
- BIOFILTRATION SWALE BASIN - NATIVE GRASSES FROM PLUGS. SEE SHT. L2.5
- BIOFILTRATION SWALE SIDE SLOPES - NATIVE GRASSES FROM PLUGS. SEE SHT. L2.5
- WILDFLOWER PLUGS AT 36" O. C., INTERPLANTED WITH GRASSES. SEE SHT. L2.5 FOR SPECIES
- CUSTOM WETLAND MEADOW SEED MIX, SEE SHT. L2.5
- STREAM BANK PLANTING TYPE 1- OUTSIDE BANK, SEED MIX WITH PLUGS, BARE ROOT OR LIVE STAKE SHRUBS AND BARE ROOT TREES WHERE SHOWN. SEE DETAIL 3/L2.4
- STREAM BANK PLANTING TYPE 2- INSIDE BANK W/SHRUBS, SEED MIX WITH PLUGS, BARE ROOT OR LIVE STAKE SHRUBS AND BARE ROOT TREES WHERE SHOWN. SEE DETAIL 4/L2.4
- STREAM BANK PLANTING TYPE 3- INSIDE BANK WITH NO SHRUBS, SEED MIX WITH PLUGS, NO SHRUBS, BARE ROOT TREES WHERE SHOWN. SEE DETAIL 5/L2.4

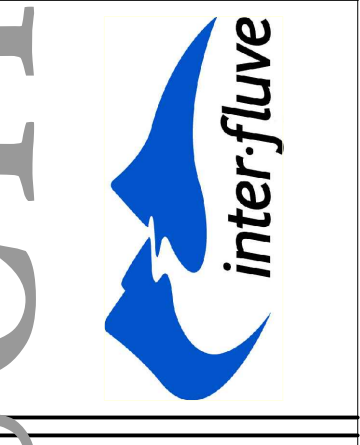


MATCH LINE, SEE L-2.2

NOT FOR CONSTRUCTION



HART | HOWERTON
 1000 W. WASHINGTON ST., SUITE 200
 EDINA, MN 55425 | TEL: 952.933.3373
 Email: hah@hart-howerton.com



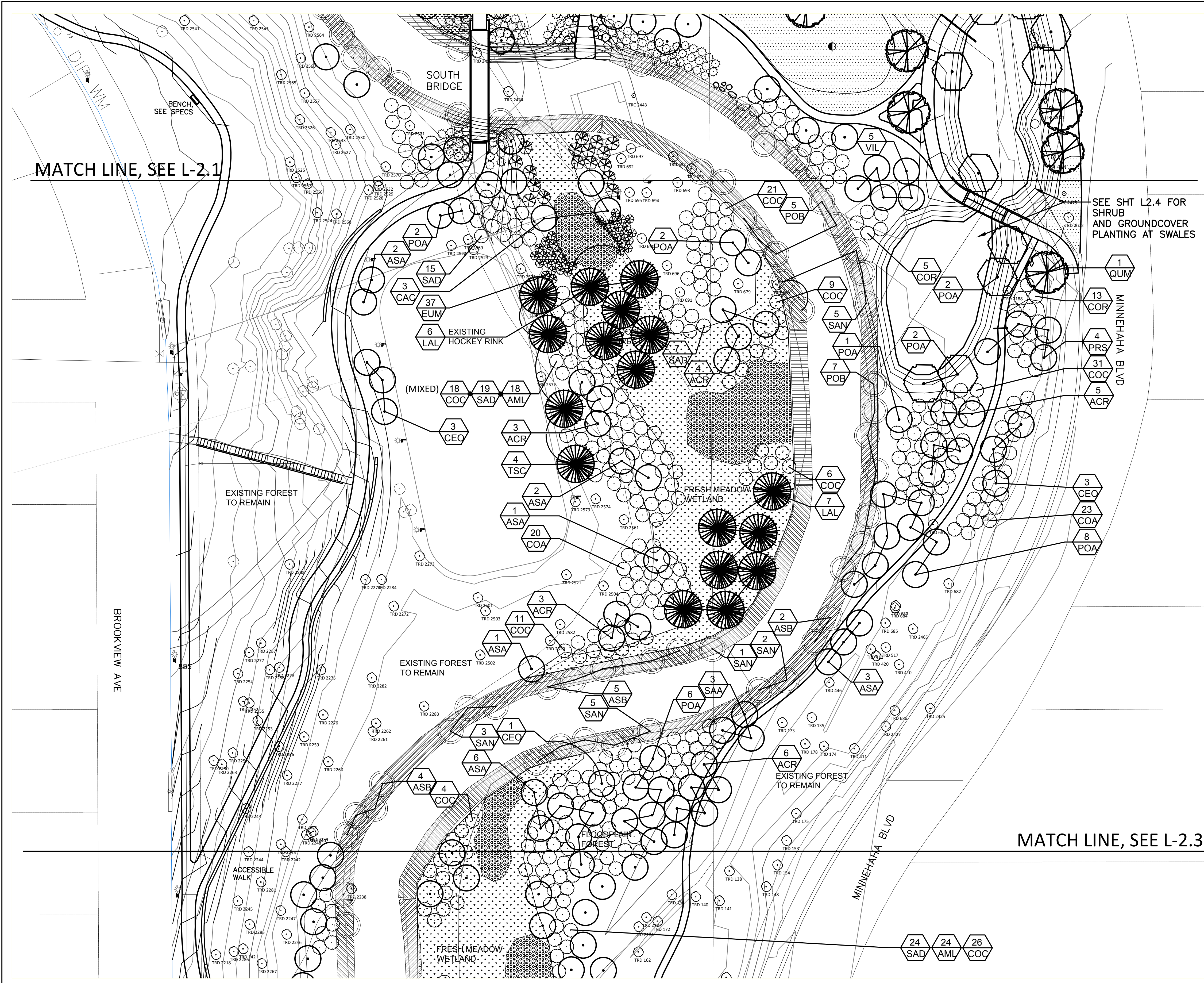
Edina, Minnesota
 Minnehaha Creek Watershed District
 City of Edina

SCALE: AS NOTED
 ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED
 ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED
 ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED

DATE/REVISIONS		
NO.	DATE	ISSUE
1	05/13/18	60% SET
2	07/31/18	90% SET

PROJECT # :
16-028
 DRAWN BY :
JAL
 CHECKED BY :
RSA

DRAWING NO :
L-2.1



NOTES

1. THE WORK AND PRODUCTS CALLED FOR IN THESE PLANTING PLANS SHALL CONFORM TO THE PLANS, SPECIFICATIONS AND CONSTRUCTION CONTRACT OF THE ARDEN PARK CREEK RESTORATION PROJECT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS, DIVISION 00 AND 01 SPECIFICATIONS AND THE GEOTECHNICAL REPORT, UNLESS THESE PLANS CALL FOR A HIGHER STANDARD.
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5. SEE SHEET L2.4 FOR TYPICAL PLANTING LAYOUT DETAILS ON CREEK BANK.
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7. SEE SHEET L2.5 FOR PLANTING DETAILS AND SHEET L2.6 FOR PLANT LIST AND SEED MIXES.
8. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

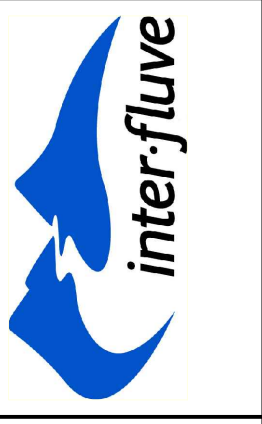
LEGEND

- FLOODPLAIN FOREST TREES AND NEAR LANDINGS
- BIOFILTRATION SWALE TREES
- CONIFEROUS TREES
- CREEK BANK TREES - BARE ROOT TYPE
- UPLAND TREES - OAK SPECIES, TYP.
- CONTAINER GROWN SHRUBS AND LARGE PERENNIALS
- EXISTING TREE - SEE CIVIL DRWGS. FOR REMOVAL OR PRESERVATION
- TURF GRASS - SODDED
- TURF GRASS - SEEDED
- BIOFILTRATION SWALE BASIN - NATIVE GRASSES FROM PLUGS, SEE SHT. L2.5
- BIOFILTRATION SWALE SIDE SLOPES - NATIVE GRASSES FROM PLUGS, SEE SHT. L2.5
- WILDFLOWER PLUGS AT 36" O. C., INTERPLANTED WITH GRASSES. SEE SHT. L2.5 FOR SPECIES
- CUSTOM WETLAND MEADOW SEED MIX, SEE SHT. L2.5
- STREAM BANK PLANTING TYPE 1- OUTSIDE BANK: SEED MIX WITH PLUGS, BARE ROOT OR LIVE STAKE SHRUBS AND BARE ROOT TREES WHERE SHOWN. SEE DETAIL 3/L2.4
- STREAM BANK PLANTING TYPE 2- INSIDE BANK W/SHRUBS: SEED MIX WITH PLUGS, BARE ROOT OR LIVE STAKE SHRUBS AND BARE ROOT TREES WHERE SHOWN. SEE DETAIL 4/L2.4
- STREAM BANK PLANTING TYPE 3- INSIDE BANK WITH NO SHRUBS: SEED MIX WITH PLUGS, NO SHRUBS, BARE ROOT TREES WHERE SHOWN. SEE DETAIL 5/L2.4

NOT FOR CONSTRUCTION



HART HOWERTON
 1000 Lakeside Drive, Suite 300, Edina, MN 55425
 Phone: 612.461.1100
 Fax: 612.461.1101
 Email: hhowerton@hart-howerton.com



Edina, Minnesota
 Minnehaha Creek Watershed District
 City of Edina

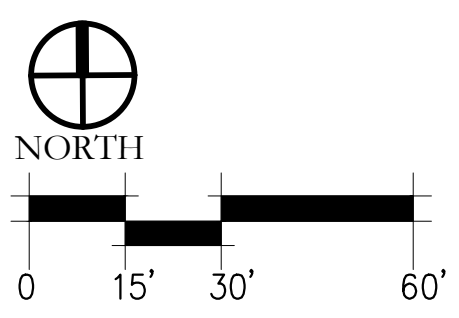
SCALE: AS NOTED
 THIS DRAWING IS 25% OF THE TOTAL PROJECT DESIGN. THE DESIGN AND CONCEPTS SHOWN ARE THE SOLE PROPERTY OF HART HOWERTON. THE DRAWINGS MAY NOT BE USED EXCEPT WITH THE EXPRESSED WRITTEN CONSENT OF HART HOWERTON.

DATE/REVISIONS		
NO.	DATE	ISSUE
05/13/18		60% SET
07/31/18		90% SET

DRAWING TITLE: **PLANTING PLAN**

PROJECT #: 16-028
 DRAWN BY: JAL
 CHECKED BY: RSA

DRAWING NO.: **L-2.2**



DATE/REVISIONS	
NO.	ISSUE
05/13/18	60% SET
07/31/18	90% SET

DRAWING TITLE:
PLANTING PLAN

PROJECT #:
16-028
DRAWN BY:
JAL
CHECKED BY:
RSA

DRAWING NO.:
L-2.3

NOT FOR CONSTRUCTION

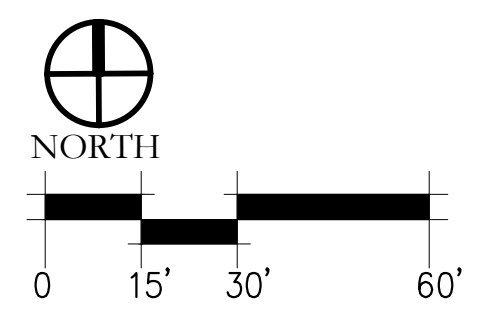
MATCH LINE, SEE L-2.2

NOTES

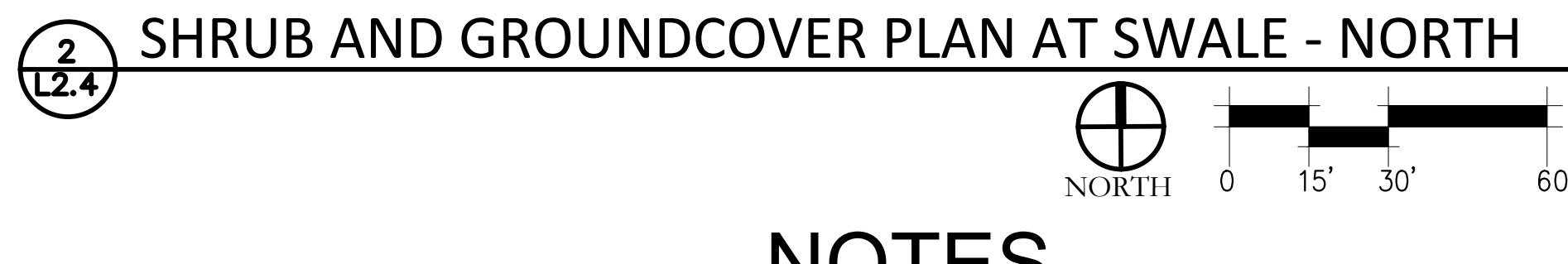
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- SEE SHEET L2.4 FOR TYPICAL PLANTING LAYOUT DETAILS ON CREEK BANK.
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- SEE SHEET L2.5 FOR PLANTING DETAILS AND SHEET L2.6 FOR PLANT LIST AND SEED MIXES.
- SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

LEGEND

- FLOODPLAIN FOREST TREES AND NEAR LANDINGS
- BIOFILTRATION SWALE TREES
- CONIFEROUS TREES
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- UPLAND TREES - OAK SPECIES, TYP.
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- STREAM BANK PLANTING TYPE 3- INSIDE BANK WITH NO SHRUBS; SEED MIX WITH PLUGS, NO SHRUBS, BARE ROOT TREES WHERE SHOWN. SEE DETAIL 5/L2.4



MATCH LINE, SEE 2/L2.4

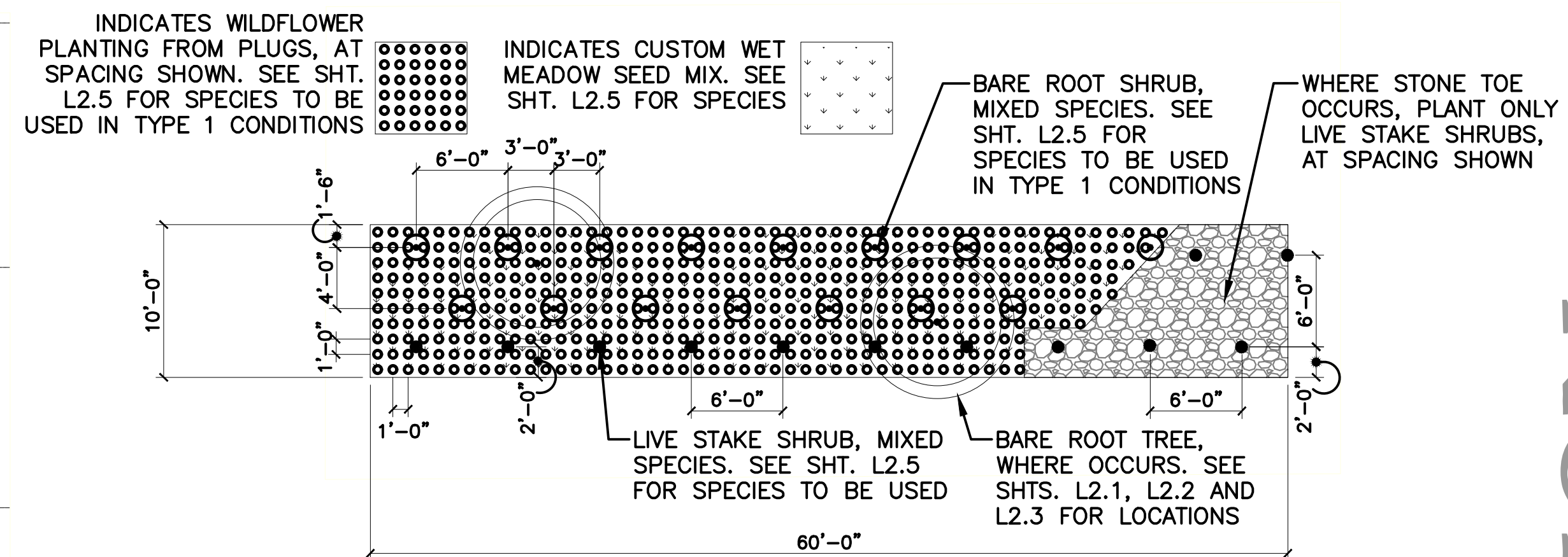


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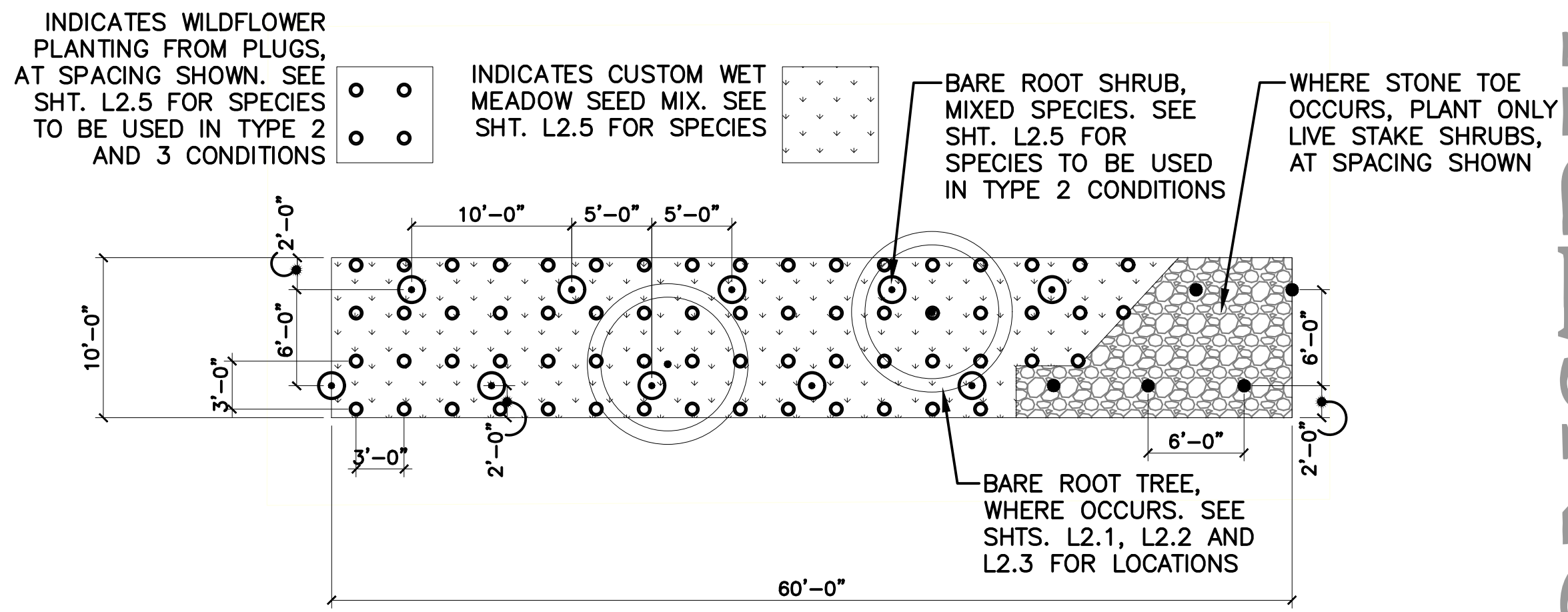
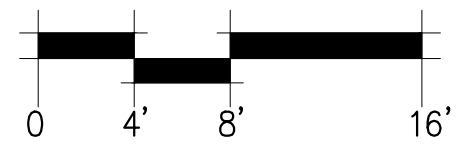
	FLOODPLAIN FOREST TREES AND NEAR LANDINGS		TURF GRASS - SODDED
	BIOFILTRATION SWALE TREES		TURF GRASS - SEEDDED
	CONIFEROUS TREES		BIOFILTRATION SWALE BASIN - NATIVE GRASSES FROM PLUGS, SEE SHT. L2.5
	CREEK BANK TREES - BARE ROOT TYPE		BIOFILTRATION SWALE SIDE SLOPES - NATIVE GRASSES FROM PLUGS, SEE SHT. L2.5
	UPLAND TREES - OAK SPECIES, TYP.		WILDFLOWER PLUGS AT 36" O. C., INTERPLANTED WITH GRASSES. SEE SHT. L2.5 FOR SPECIES
	CONTAINER GROWN SHRUBS AND LARGE PERENNIALS		CUSTOM WETLAND MEADOW SEED MIX, SEE SHT. L2.5
	EXISTING TREE - SEE CIVIL DRWGS. FOR REMOVAL OR PRESERVATION		STREAM BANK PLANTING TYPE 1- OUTSIDE BANK SEED MIX WITH PLUGS, BARE ROOT OR LIVE STAKE SHRUBS AND BARE ROOT TREES WHERE SHOWN. SEE DETAIL 3/L2.4
			STREAM BANK PLANTING TYPE 2- INSIDE BANK W/SHRUBS: SEED MIX WITH PLUGS, BARE ROOT OR LIVE STAKE SHRUBS AND BARE ROOT TREES WHERE SHOWN. SEE DETAIL 4/L2.4
			STREAM BANK PLANTING TYPE 3- INSIDE BANK WITH NO SHRUBS: SEED MIX WITH PLUGS, NO SHRUBS, BARE ROOT TREES WHERE SHOWN. SEE DETAIL 5/L2.4

NOTES

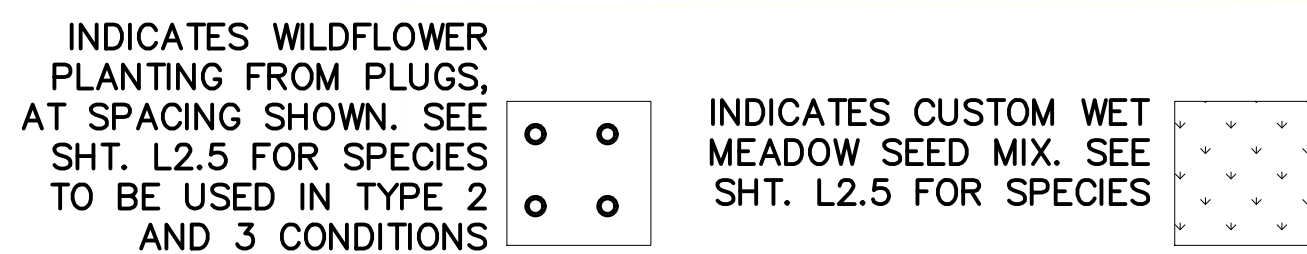
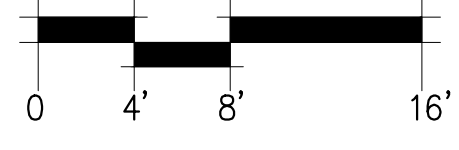
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7. SEE SHEET L2.5 FOR PLANTING DETAILS AND SHEET L2.6 FOR PLANT LIST AND SEED MIXES.
8. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.



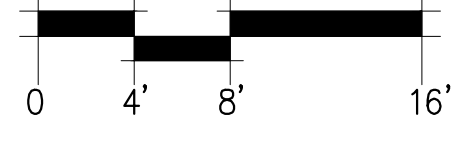
3
L2.4 TYPICAL STREAM BANK PLANTING PLAN - TYPE 1; OUTSIDE BANK



4
L2.4 TYPICAL STREAM BANK PLANTING PLAN - TYPE 2; INSIDE BANK WITH SHRUB PLANTING



5
L2.4 TYPICAL STREAM BANK PLANTING PLAN - TYPE 3; INSIDE BANK WITH NO SHRUB PLANTING



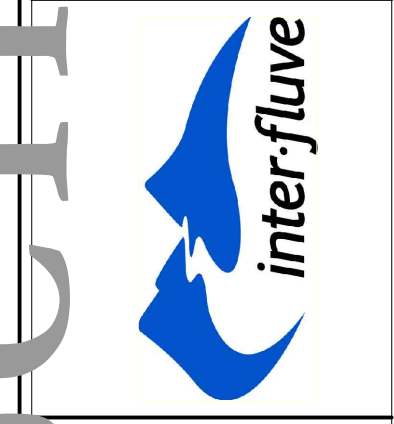
STREAM BANK PLANTING NOTES

1. AREA SHOWN IN DETAILS 3/L2.4, 4/L2.4 AND 5/L2.4 IS PROTOTYPICAL, TO INDICATE INTENDED SPACING OF PLANTS. STAKE OUT AND CONFIRM EXACT EXTENT OF STREAM BANK PLANTING AREA FOR EACH TYPE IN THE FIELD WITH OWNERS REPRESENTATIVE BEFORE PLANTING.

NOT FOR CONSTRUCTION



HART HOWERTON
1111 Hennepin Avenue, Suite 300, Minneapolis, MN 55403
TEL: 612.675.1111 FAX: 612.675.1173
h.hart@howerton.com



ARDEN PARK
Edina, Minnesota
Minnehaha Creek Watershed District
City of Edina

SCALE: AS NOTED
IF THESE DRAWINGS ARE USED FOR ANY OTHER PROJECT, THE USER ASSUMES ALL RESPONSIBILITY FOR MEASUREMENTS THAT ARE NOT SHOWN.

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LANDSCAPE ARCHITECTS
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DATE/REVISIONS		
NO.	DATE	ISSUE
05/13/18	07/31/18	60% SET 90% SET

DRAWING TITLE: **DETAILED PLANTING PLANS**

PROJECT #: 16-028
DRAWN BY: JAL
CHECKED BY: RSA

DRAWING NO.: **L-2.4**

Minnesota Wetland Conservation Act

Notice of Decision

Local Government Unit (LGU) Minnehaha Creek Watershed District	Address 15320 Minnetonka Blvd Minnetonka, MN 55345
--	---

1. PROJECT INFORMATION

Applicant Name Minnehaha Creek Watershed District	Project Name Arden Park	Date of Application 10/21/2016	Application Number W16-60
<input checked="" type="checkbox"/> Attach site locator map			

Type of Decision:

<input checked="" type="checkbox"/> Wetland Boundary or Type	<input type="checkbox"/> No-Loss	<input type="checkbox"/> Exemption	<input type="checkbox"/> Sequencing
<input type="checkbox"/> Replacement Plan	<input type="checkbox"/> Banking Plan		

Technical Evaluation Panel Findings and Recommendation (if any):

<input checked="" type="checkbox"/> Approve	<input type="checkbox"/> Approve with conditions	<input type="checkbox"/> Deny
Summary (or attach): BWSR recommended that the original wetland boundary and types be revised to 1) distinguish the non-wetland portions with the creek channel as a separate aquatic resource and 2) distinguish the different wetland types within the wetland area. These comments were incorporated into the updated figure. Hennepin County recommended that the original wetland boundary be revised to eliminate an erroneous extension of the wetland boundary outside of the project boundary area. This comment was incorporated into the updated figure. No comments were received from the DNR.		

2. LOCAL GOVERNMENT UNIT DECISION

Date of Decision: 12/20/2016		
<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Approved with conditions (include below)	<input type="checkbox"/> Denied

LGU Findings and Conclusions (attach additional sheets as necessary):

Minnehaha Creek Watershed District has applied for a wetland boundary & type confirmation for the wetlands located at Arden Park (PIDs=1802824420003,1802824429005,1802824430095, 1802824430096, 1802824430097, 1802824439002, 1802824440001, 1802824440002) located north of 54th Street W and west of Minnehaha Boulevard in the City of Edina, Hennepin County, Minnesota. Legal description: Section 18, Township 28N, Range 24W. The boundary & type approval was requested October 21st, 2016.

A wetland delineation was conducted by Wenck Associates on September 23rd, 2016. Precipitation levels were seasonally above average. A complete delineation report and WCA application were submitted to MCWD on October 21st, 2016. One wetland was delineated within the project area. Wetland A was identified as a Type 1, Floodplain forest. One public water, Minnehaha Creek (PWI # 108879), is present on the site. The level of Minnehaha Creek is affected by Gray's Bay dam.

The boundaries were reviewed by MCWD staff and BWSR on November 4th, 2016. Updates were made to the wetland boundary and type to delineate the portions of Wetland A that were Type 1, floodplain forest; Type 2, fresh (wet) meadow; and Type 3/Type 4, shallow marsh/deep marsh wetland. The boundary was also updated to delineate the non-wetland portions of the Creek as an Other Aquatic Resource and to remove non-wetland areas from the wetland boundary.

MCWD approves the wetland boundaries and types as delineated in the field on November 4th, 2016 and documented in the updated wetland boundary and type figure submitted December 1st, 2016. This decision is valid for five years. A future project located on this property may require a permit from the MCWD.

For Replacement Plans using credits from the State Wetland Bank:

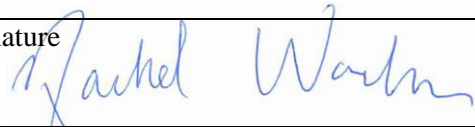
Bank Account #	Bank Service Area	County	Credits Approved for Withdrawal (sq. ft. or nearest .01 acre)

Replacement Plan Approval Conditions. In addition to any conditions specified by the LGU, the approval of a Wetland Replacement Plan is conditional upon the following:

- Financial Assurance:** For project-specific replacement that is not in-advance, a financial assurance specified by the LGU must be submitted to the LGU in accordance with MN Rule 8420.0522, Subp. 9 (List amount and type in LGU Findings).
- Deed Recording:** For project-specific replacement, evidence must be provided to the LGU that the BWSR “Declaration of Restrictions and Covenants” and “Consent to Replacement Wetland” forms have been filed with the county recorder’s office in which the replacement wetland is located.
- Credit Withdrawal:** For replacement consisting of wetland bank credits, confirmation that BWSR has withdrawn the credits from the state wetland bank as specified in the approved replacement plan.

Wetlands may not be impacted until all applicable conditions have been met!

LGU Authorized Signature:

Signing and mailing of this completed form to the appropriate recipients in accordance with 8420.0255, Subp. 5 provides notice that a decision was made by the LGU under the Wetland Conservation Act as specified above. If additional details on the decision exist, they have been provided to the landowner and are available from the LGU upon request.		
Name Rachel Workin	Title Permitting Technician	
Signature 	Date 12/20/2016	Phone Number and E-mail (952) 641-4518 rworkin@minnehahacreek.org

THIS DECISION ONLY APPLIES TO THE MINNESOTA WETLAND CONSERVATION ACT.

Additional approvals or permits from local, state, and federal agencies may be required. Check with all appropriate authorities before commencing work in or near wetlands.

Applicants proceed at their own risk if work authorized by this decision is started before the time period for appeal (30 days) has expired. If this decision is reversed or revised under appeal, the applicant may be responsible for restoring or replacing all wetland impacts.

This decision is valid for three years from the date of decision unless a longer period is advised by the TEP and specified in this notice of decision.

3. APPEAL OF THIS DECISION

Pursuant to MN Rule 8420.0905, any appeal of this decision can only be commenced by mailing a petition for appeal, including applicable fee, within thirty (30) calendar days of the date of the mailing of this Notice to the following as indicated:

Check one:

<input checked="" type="checkbox"/> Appeal of an LGU staff decision. Send petition and \$0 fee (if applicable) to: Minnehaha Creek Watershed District 15320 Minnetonka Blvd Minnetonka, MN 55345	<input type="checkbox"/> Appeal of LGU governing body decision. Send petition and \$500 filing fee to: Executive Director Minnesota Board of Water and Soil Resources 520 Lafayette Road North St. Paul, MN 55155
--	---

4. LIST OF ADDRESSEES

<input checked="" type="checkbox"/> SWCD TEP member: Tony Brough
<input checked="" type="checkbox"/> BWSR TEP member: Ben Meyer
<input type="checkbox"/> LGU TEP member (if different than LGU Contact):
<input checked="" type="checkbox"/> DNR TEP Becky Horton; Kate Drewry
<input checked="" type="checkbox"/> DNR Regional Office (if different than DNR TEP member):
<input type="checkbox"/> WD or WMO (if applicable):
<input checked="" type="checkbox"/> Applicant (notice only) and Landowner (if different): MCWD (Rena Clark)
<input checked="" type="checkbox"/> Members of the public who requested notice (notice only): Wenck Associates (Wes Boll); City of Edina (Jessica Vanderweff Wilson); City of Edina (Ross Binter)
<input checked="" type="checkbox"/> Corps of Engineers Project Manager (notice only): Melissa Jenny; Paul Hauser
<input type="checkbox"/> BWSR Wetland Bank Coordinator (wetland bank plan applications only)

5. MAILING INFORMATION

➤ For a list of BWSR TEP representatives: www.bwsr.state.mn.us/aboutbwsr/workareas/WCA_areas.pdf

➤ For a list of DNR TEP representatives: www.bwsr.state.mn.us/wetlands/wca/DNR_TEP_contacts.pdf

➤ Department of Natural Resources Regional Offices:

<u>NW Region:</u> Reg. Env. Assess. Ecol. Div. Ecol. Resources 2115 Birchmont Beach Rd. NE Bemidji, MN 56601	<u>NE Region:</u> Reg. Env. Assess. Ecol. Div. Ecol. Resources 1201 E. Hwy. 2 Grand Rapids, MN 55744	<u>Central Region:</u> Reg. Env. Assess. Ecol. Div. Ecol. Resources 1200 Warner Road St. Paul, MN 55106	<u>Southern Region:</u> Reg. Env. Assess. Ecol. Div. Ecol. Resources 261 Hwy. 15 South New Ulm, MN 56073
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For a map of DNR Administrative Regions, see: http://files.dnr.state.mn.us/aboutdnr/dnr_regions.pdf

➤ For a list of Corps of Project Managers: www.mvp.usace.army.mil/regulatory/default.asp?pageid=687 or send to:

US Army Corps of Engineers

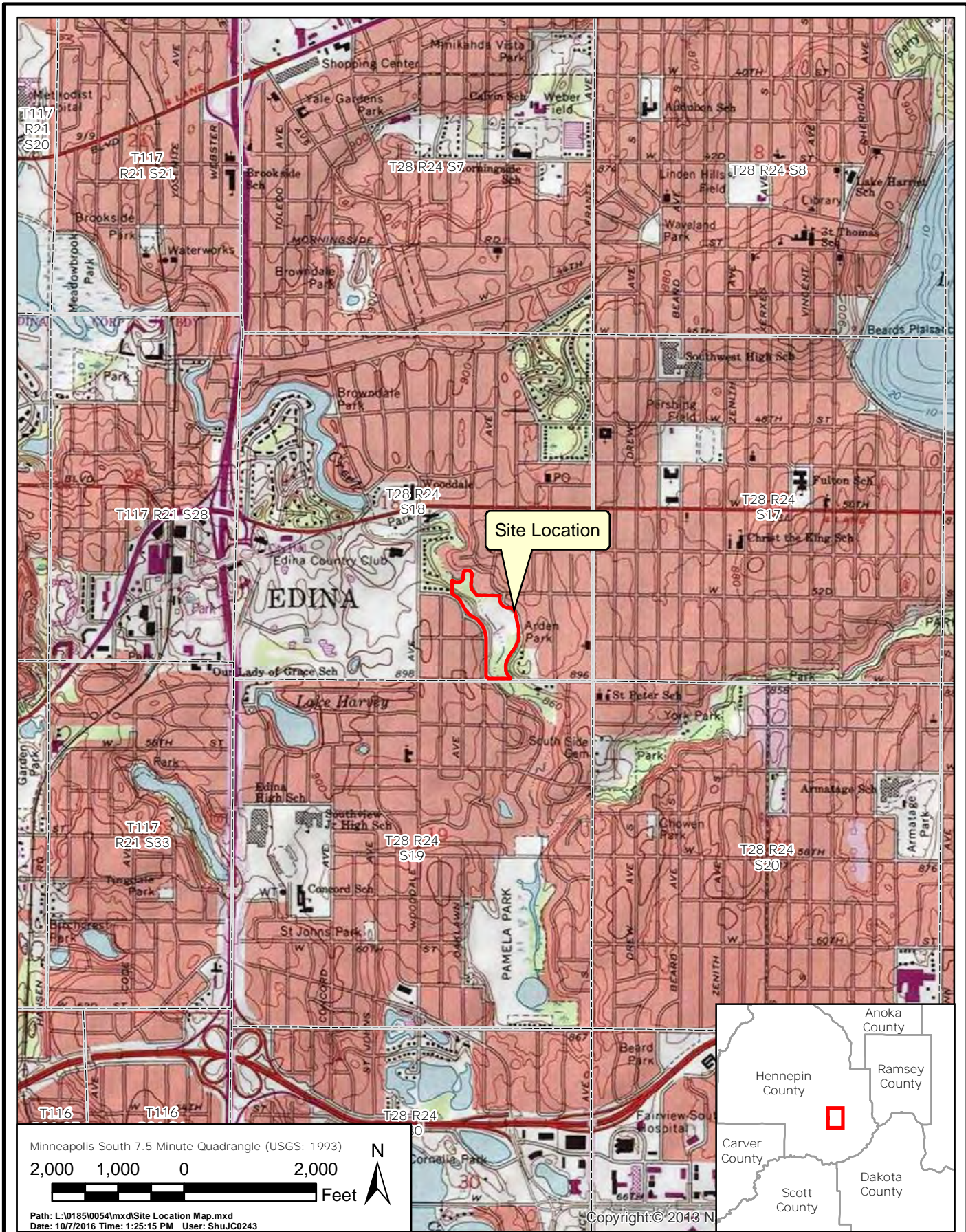
St. Paul District, ATTN: OP-R
180 Fifth St. East, Suite 700
St. Paul, MN 55101-1678

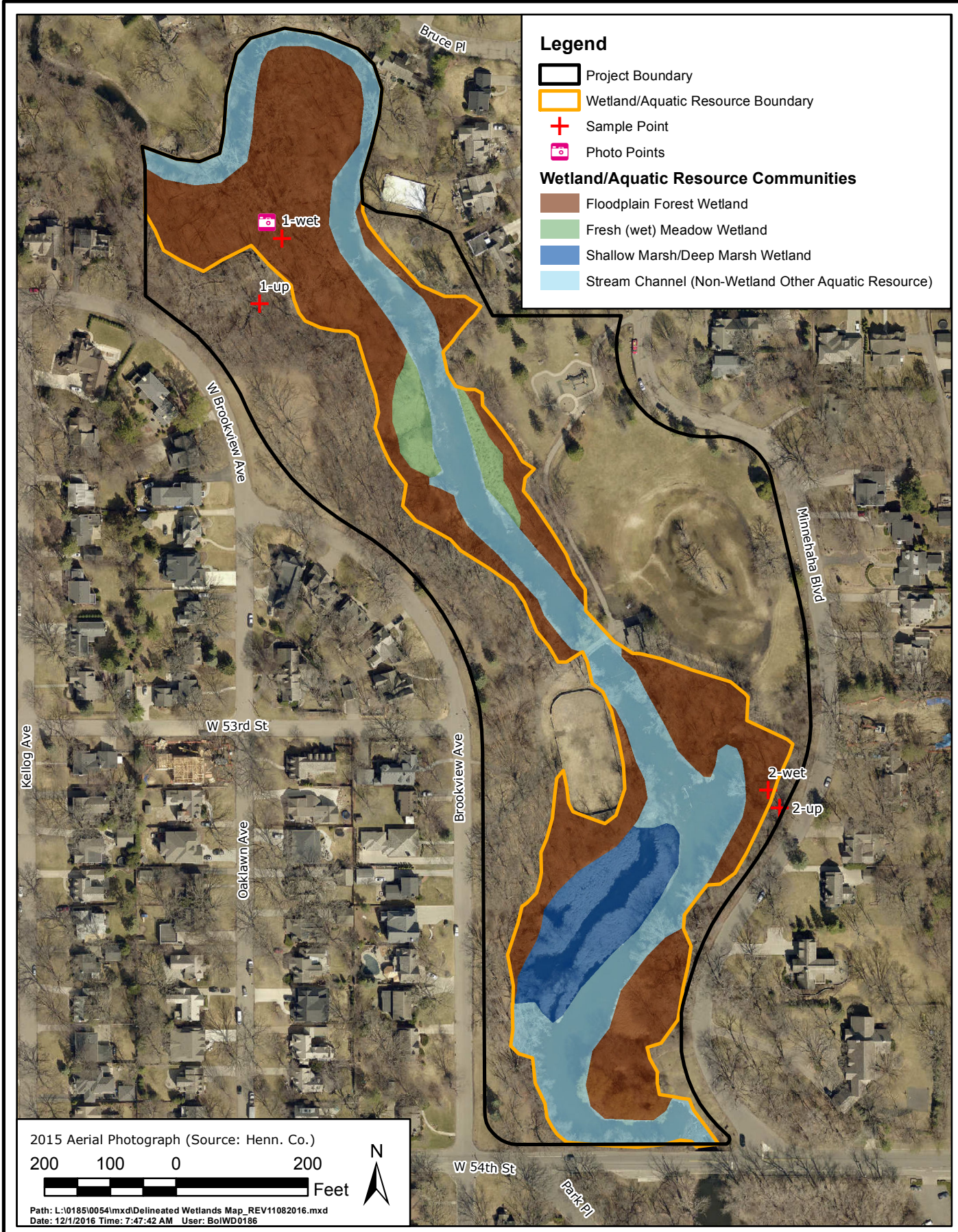
- For Wetland Bank Plan applications, also send a copy of the application to:
Minnesota Board of Water and Soil Resources
Wetland Bank Coordinator
520 Lafayette Road North
St. Paul, MN 55155

6. ATTACHMENTS

In addition to the site locator map, list any other attachments:

Updated Wetland Boundary and Type Figure (submitted 12/01/2016)





Legend

- Project Boundary
 - Wetland/Aquatic Resource Boundary
 - Sample Point
 - Photo Points
- Wetland/Aquatic Resource Communities**
- Floodplain Forest Wetland
 - Fresh (wet) Meadow Wetland
 - Shallow Marsh/Deep Marsh Wetland
 - Stream Channel (Non-Wetland Other Aquatic Resource)

2015 Aerial Photograph (Source: Henn. Co.)

200 100 0 200 Feet

Path: L:\0185\0054\mxd\Delineated Wetlands Map_REV11082016.mxd
 Date: 12/1/2016 Time: 7:47:42 AM User: BoIWD0186

MCWD
 Delineated Wetlands

WENCK
 ASSOCIATES

Responsive partner. Exceptional outcomes.

OCT 2016
 Figure 5

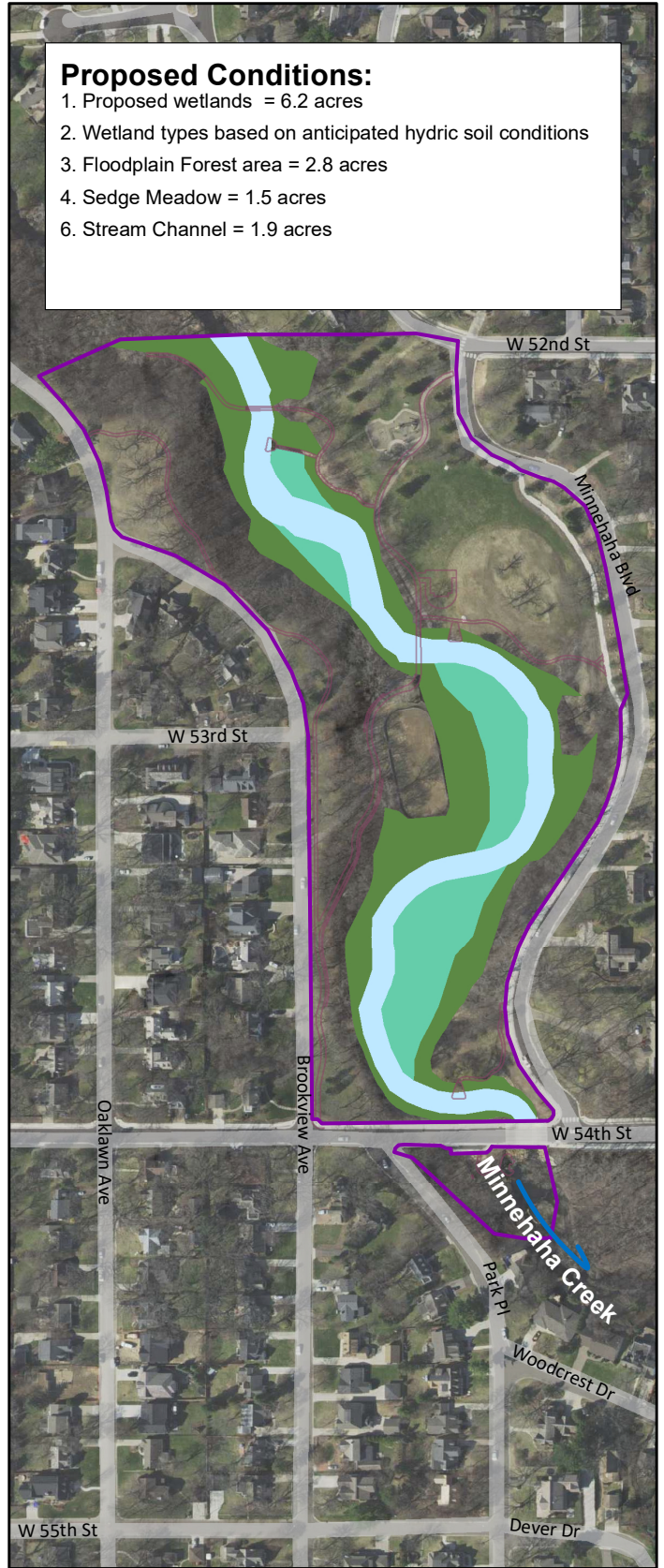
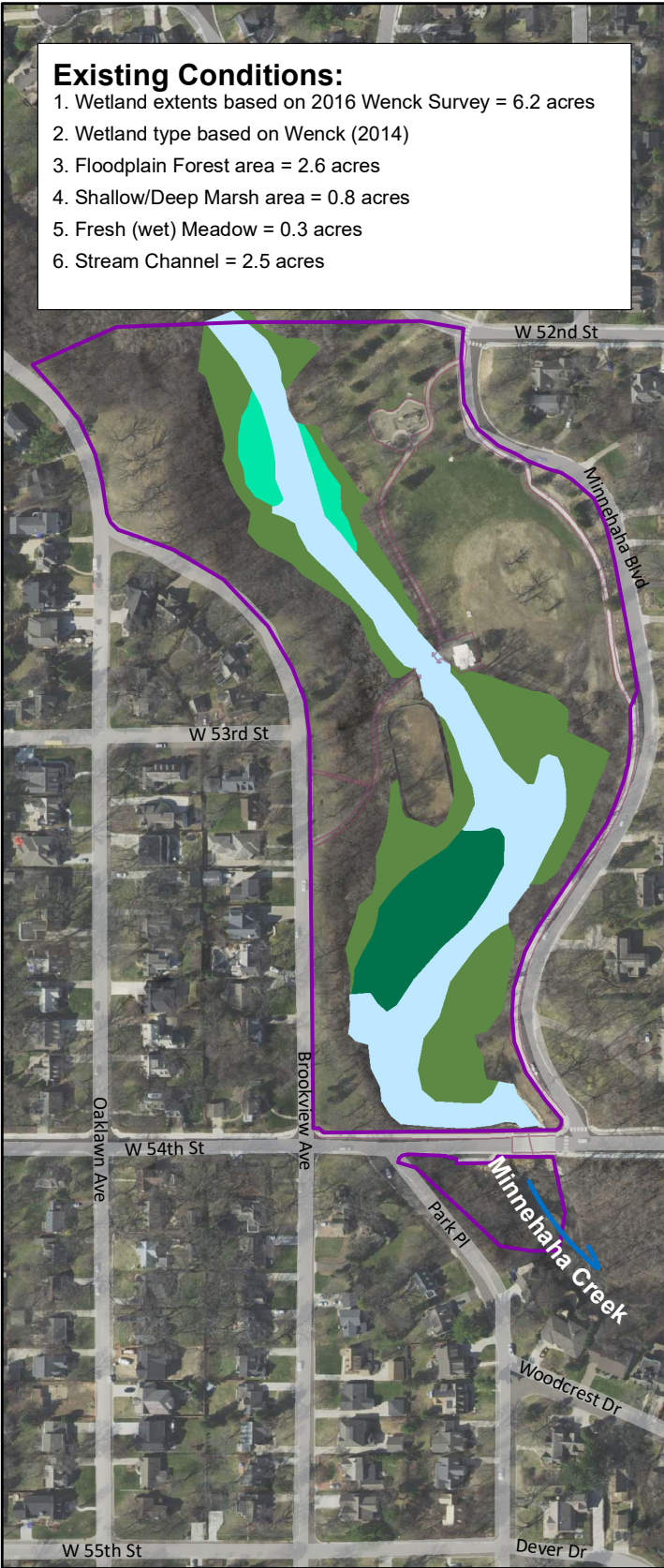
Document Path: C:\GIS\Arden Park Wetland.mxd Date: 8/29/2018 User Name: smorrison

Existing Conditions:

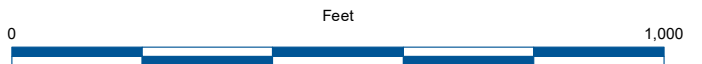
1. Wetland extents based on 2016 Wenck Survey = 6.2 acres
2. Wetland type based on Wenck (2014)
3. Floodplain Forest area = 2.6 acres
4. Shallow/Deep Marsh area = 0.8 acres
5. Fresh (wet) Meadow = 0.3 acres
6. Stream Channel = 2.5 acres

Proposed Conditions:

1. Proposed wetlands = 6.2 acres
2. Wetland types based on anticipated hydric soil conditions
3. Floodplain Forest area = 2.8 acres
4. Sedge Meadow = 1.5 acres
6. Stream Channel = 1.9 acres



- Area of Potential Effect
 - Existing trails
 - Floodplain Forest (Type 1)
 - Fresh (wet) Meadow Wetland (Type 2)
 - Shallow Marsh/Deep Marsh Wetland Type 3/4)
 - Stream Channel
 - Sedge Meadow* (Type 2)
- Eggers and Reed (Circular 39)



Arden Park Restoration Project
City of Edina
Minnehaha Creek Watershed District



*Sedge Meadow to be maintained by MCWD to minimized growth of Reed Canary Grass



Existing Conditions:
 1. Total required buffer area = 4.1 acres

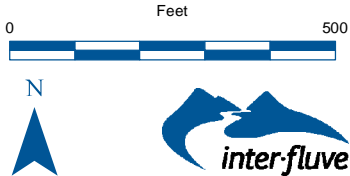


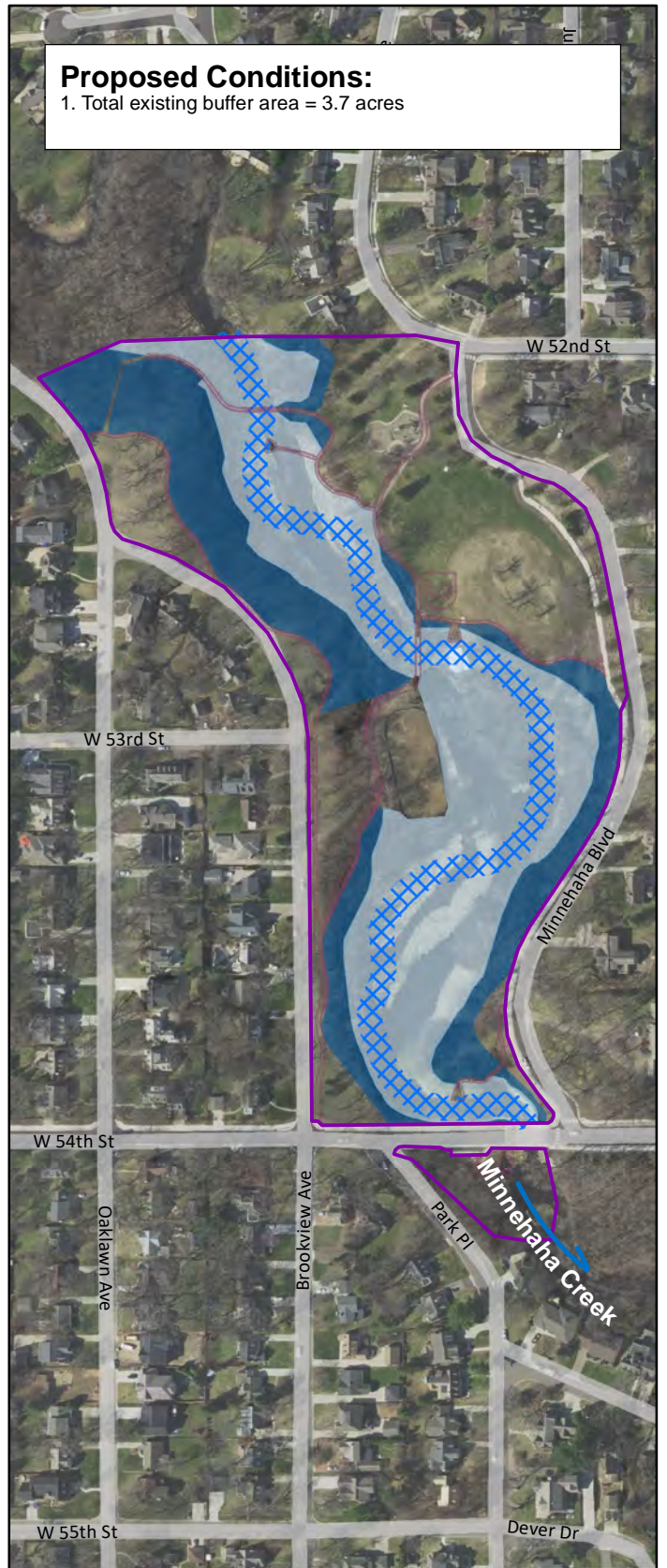
Proposed Conditions:
 1. Total required buffer (75 ft offset) = 5.5 acres

Required Wetland Buffer

Arden Park Restoration Project
 City of Edina
 Minnehaha Creek Watershed District

- No buffer required (no wetland)
- Area of Potential Effect
- Wetland Extent
- Required Buffer
- Creek Area
- Trails

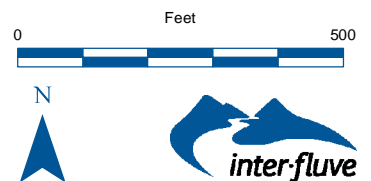


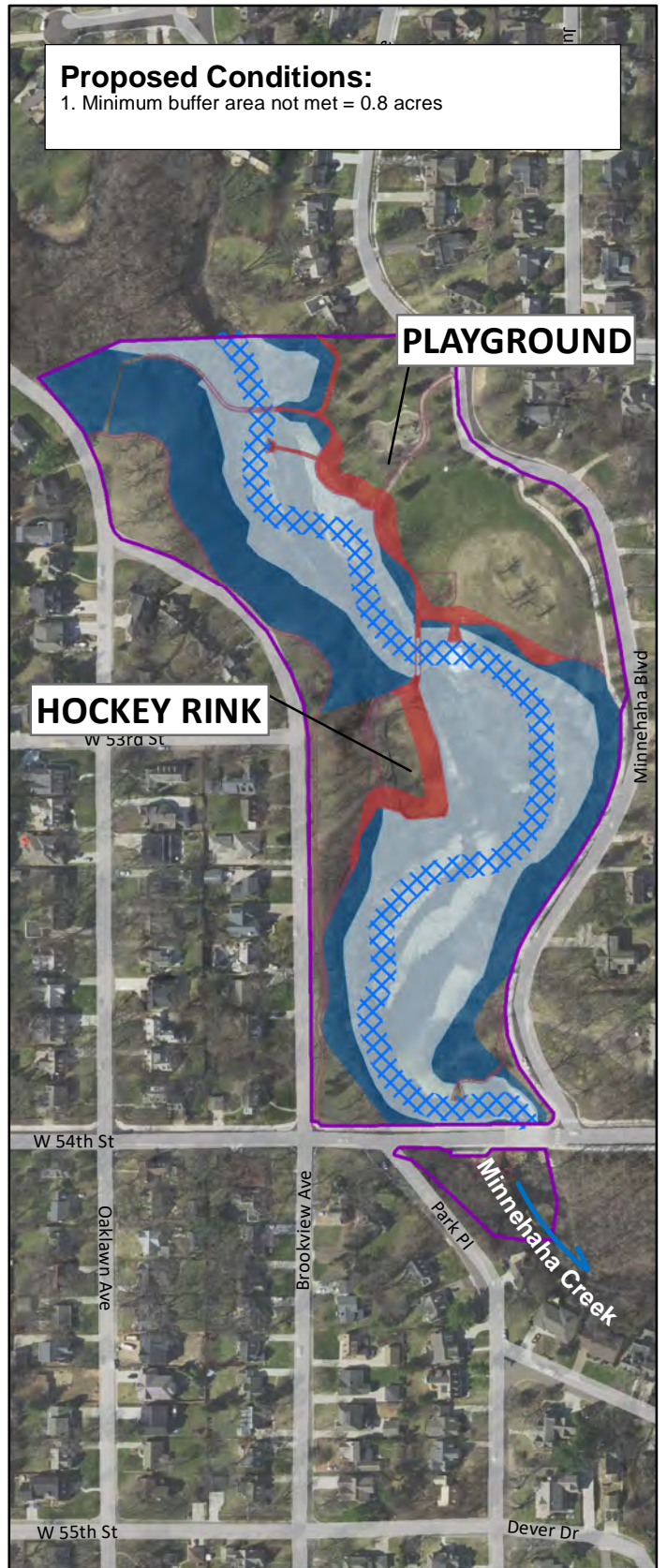


Wetland Buffer Extents

Arden Park Restoration Project
 City of Edina
 Minnehaha Creek Watershed District






-  Area of Potential Effect
-  Wetland Extent
-  Wetland Buffer
-  Creek Area
-  Trails

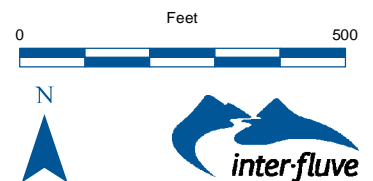




Buffer Width Not Met

Arden Park Restoration Project
City of Edina
Minnehaha Creek Watershed District

-  Area of Potential Effect
-  Buffer Width Not Met
-  Wetland Extent
-  Creek Area
-  Trails





Arden Park Restoration Project Existing and Proposed Flood Extents



**MINNEHAHA CREEK
WATERSHED DISTRICT**
QUALITY OF WATER, QUALITY OF LIFE



Flood Extent

Area of Potential Effect

