



**Title:** Permit 20-325- Mary Lake Outlet Control Structure, Shorewood

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**Purpose:**

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 draft maintenance agreement for Waterbody Crossings & Structures for District approval, then execution;
3. Submission by the city of documentation of the 23445 Smithtown Road property owner's consent to the proposed decrease in flood freeboard. (The managers may wish to further require the city to secure recordation of a declaration memorializing the noncompliant flood-freeboard elevation after approval of a draft by District Staff.)

**Background:**

The City of Shorewood (Applicant) has applied for a Minnehaha Creek Watershed District (MCWD or District) permit to install a new 8" stormwater outlet structure at Mary Lake in the City of Shorewood. The outlet structure will connect to new stormsewer pipe that will be installed within the right-of-way (ROW) of Clover Lane, Gillet Curve, and a small segment in Wood Duck Circle that will connect into the existing storm sewer network that discharges to Studer Pond in the City of Excelsior. To install the new stormsewer, eight sections of pavement will be removed within the ROW and replaced in-kind, resulting in no increase in impervious surface. Mary Lake is a land locked Department of Natural Resources (DNR) public waters wetland composed of a southern & northern basin and Studer Pond is a DNR public waters wetland. The new outlet structure is proposed in the north basin of Mary Lake and the Applicant proposes to excavate 93 cubic yards (cy) to create a depression between the south and north basins to allow water to easily flow to the outlet. Per the Applicant's submitted narrative, Mary Lake has experienced localized flooding since 2014 which has resulted in the Applicant pumping Mary Lake to lower the water level three times. The Applicant's stated goal of the project is to construct a low maintenance, gravity flow drainage system that allows Mary Lake to outlet during times of high water, which will provide a permanent solution to reducing the risk of flooding residential properties and structures around Mary Lake.

The application is before the MCWD Board of Managers for consideration as the Applicant has requested a Variance from compliance with retaining adequate hydraulic capacity at the downstream waterbody (Studer Pond) per section 3(b) of the Waterbody Crossings & Structure rule. All necessary materials were submitted to complete the application on September 17th, 2020 and a public notification for the board meeting was provided to property owners within 600 feet of the project on September 10<sup>th</sup>, 2020.

The project triggers the District's Erosion Control, Wetland Protection, Floodplain Alteration, and Waterbody Crossings & Structures rules. The project is exempt from the Stormwater Management rule as it does not propose to increase any linear impervious surface per section 2(d) of the rule. The project plans show a shortfall from retaining adequate hydraulic capacity (as determined by the District Engineer) resulting in the exacerbation of an existing noncompliant low-floor elevation of a property on Studer Pond, and the Applicant has requested a Variance. Determination of a

variance from MCWD rule provisions is beyond the administrator's delegated authority, requiring that the determination come before the managers.

### **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 9,707 square feet of land disturbance; therefore, the rule is applied. In accordance with the rule provisions, the Applicant has submitted an erosion control plan which identifies erosion and sediment control best management practices, including silt fence downgradient of disturbed areas, floating silt curtain, locations of inlet protection, location of a rock construction entrance, and has identified that concrete washout will be contained on the truck. Additionally, a vegetative stabilization plan including the incorporation of six-inches of topsoil into underlying soils prior to final stabilization has been provided.

Identification of the contractor responsible for maintaining the erosion control plan is a recommended condition of approval. Upon satisfaction of the recommended condition, the project will meet the Erosion Control Rule.

#### Wetland Protection

The Wetland Protection rule is applicable for any project that proposes temporary or permanent wetland impact. Furthermore, the buffer provisions of the rule are applicable whenever the Waterbody Crossings & Structures rule is applied. Mary Lake is considered to be one wetland complex and two wetland locations were delineated within the project area. MCWD, as the Wetland Conservation Act (WCA) Local Governmental Unit, issued a Notice of Decision (NOD) determining the boundary and type of the wetland as Type 3/4, Shallow Marsh/Deep Marsh wetland. (W19-28; attachment 2). The project proposes to excavate an area of 1,224 square feet (sf) above the ordinary high water level (OHW) of Mary Lake (953.12 (NVGD)) to create a "saddle" to connect the south and north nodes of Mary Lake. Furthermore, the project proposes 4,456 (sf) of temporary wetland impact to install the outlet structure and access the site for the "saddle" excavation. Because the project proposes a temporary disturbance and excavation in a wetland, the rule is applicable.

Per section 2(a), The WCA, as amended, and its implementing rules as set forth in Minnesota Rules chapter 8420, as amended, specifically including sequencing requirements and all exemptions, are incorporated as a part of this rule. MCWD issued a NOD for No-Loss and a determination that the excavation is outside the scope of WCA under W20-16 (attachment 3), therefore a WCA wetland replacement plan is not required for the project.

Per section 4(a), excavation is governed by the substantive and procedural standards, criteria and requirements set forth in the WCA, as amended, and the rules implementing the WCA as set forth in Minnesota Rules chapter 8420, as amended, including all exemptions, with the exception that replacement for excavation not subject to the WCA shall be at the ratio of 2:1. Because the 1,224 sf area of excavation is not regulated by the WCA, the project is subject to the District's excavation requirements.

Per section 4(b), excavation of a wetland performed for public benefit, including excavation to remove or control invasive species, shall be deemed self-replacing if the applicant demonstrates that the wetland to be excavated is degraded. Excavation must not result in a change of wetland type, unless the applicant demonstrates that public benefit is not obtainable absent such impact. The Applicant has submitted a narrative and plan that demonstrates the excavation will result in the conversion of 1,220 sf of Type 3, seasonally flooded Shallow Marsh wetland to Type 3, semi-permanently and permanently flooded Shallow Marsh wetland, the remainder 400 sf of wetland will remain Type 3, seasonally flooded Shallow Marsh wetland, and will allow water to flow from the south node of Mary Lake to the north node. A new outlet structure will be placed in the north node which will reduce the risk of flooding properties and structures. Staff have reviewed the narrative and plan and determined that the area proposed for excavation has a dominance of reed canary grass (invasive species) and that the slight conversion in wetland type is required to alleviate high water conditions to provide the public benefit. The criteria of section 4(b) has been met.

The buffer provisions of the Wetland Protection rule are stated in sections 5, 6, and 7. Per the rule, wetland buffers must be provided around all disturbed wetlands and on wetland edges downgradient of disturbance. The Applicant

does not own any land surrounding Mary Lake nor does the Applicant have the necessary property rights to impose a permanent buffer on the private properties that surround Mary Lake, therefore the buffer provisions of the rule impose no compliance requirements on the applicant.

Per section 6 of the rule, stormwater sensitivity parameters must be analyzed and results included in the evaluation, unless all stormwater flow to wetlands is managed in compliance with the bounce, inundation and runout-elevation control criteria in subsection 8(b) of the District's Stormwater Management Rule. Because the project is exempt from the Stormwater Management rule, the impact to downstream waterbodies per section 6 is applied. Table 1 below summarizes the allowable impact to downstream waterbodies by Management Class.

Wetland Management Class/ Waterbody	Permitted Bounce for 1-, 10-, and 100-Year Event	Inundation Period for 1-Year Event	Inundation Period for 10- and 100-Year Event	Runout Control Elevation
Preserve	Existing	Existing	Existing	No change
Manage 1	Existing plus 0.5 feet	Existing plus 1 day	Existing plus 2 days	No change
Manage 2	Existing plus 1.0 feet	Existing plus 2 days	Existing plus 14 days	0 to 1.0 ft above existing runout
Manage 3	No limit	Existing plus 7 days	Existing plus 21 days	0 to 4.0 ft above existing runout
Lakes	Existing	N/A	N/A	No change

Table 1: Impacts on downstream waterbodies

The District Functional Assessment of Wetlands (FAW) identifies the downstream receiving waterbody, Studer Pond, as a Manage 1 wetland. The Applicant has submitted a plan and modeling to show that the bounce for the 1-year, 10-year and 100-year event will not exceed 0.073' as shown in Table 2 below. Additionally, the Applicant has submitted a plan and modeling to show that the project will not exceed the allowable inundation periods for the 1- year, 10-year, and 100-year event and has shown that the runout control elevation for Studer Pond will not be changed.

	Studer Pond		
	Existing	Proposed	Impact
OHW	929.4	929.4	0
1-year 24 Hr, NGVD 29	930.379	930.379	0.01
10-year 24 Hr, NGVD 29	931.111	931.162	0.051
100-year 24 Hr, NGVD 29	932.818	932.891	0.073

Table 2: Proposed Bounce to Studer Pond

The District Engineer has reviewed the plan and modeling and determined that the project will not result in a bounce greater than shown in the above table and has determined that the project will not exceed the allowable inundation periods for a Manage 1 wetland. Furthermore, the District Engineer has determined that there is no proposed change to the runout control elevation for Studer Pond. The criteria of the rule has been met.

In summary, the project will meet the requirements of the Wetland Protection Rule.

### Floodplain Alteration

The Floodplain Alteration Rule is applicable whenever land altering activity is proposed below the projected 100-year high water elevation (HWL) of any waterbody. The projected 100-year HWL for Mary Lake has been identified, and confirmed by the District Engineer, to be 955.05 (NGVD 29). The Applicant is proposing excavation below the 100-year HWL of Lake Mary, therefore the rule is applied.

Per section 3(a) of the rule, fill shall not cause a net decrease in storage capacity below the projected 100-year HWL of a waterbody and any fill brought onsite below the projected 100-year HWL must be mitigated by the creation of compensatory storage. The Applicant has submitted plans and quantified calculations, computed and signed by a professional engineer, to demonstrate the project will result in 42 cy of fill and 93 cy of compensatory storage, for a net increase of 51 cy of storage within the floodplain. The District Engineer has reviewed the plans and has confirmed that the project will result in a net increase of 51 cy, of new floodplain storage below the 955.05 elevation contour, 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. Because the project work will not occur within the floodplain of a watercourse, Section 3(b) of the rule does not apply to this project.

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 the project is creating storage within the floodplain, analysis under Section 3(c) is not necessary.

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. This project is not occurring within the floodplain of a watercourse and therefore this provision is not applicable.

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-entry openings to all new residential, commercial, and institutional structures be a minimum of 2 feet above the 100 year high-water level. The project does not propose any new residential, commercial, or institutional structures, therefore this rule is not applicable.

In summary, the project will meet the requirements of the Floodplain Alteration Rule.

### Waterbody Crossings and Structures

The Waterbody Crossings and Structures Rule is applicable whenever a structure is placed in the bed or bank of a waterbody. The Applicant is proposing a storm sewer outlet that will come into contact with the bed and bank of Mary Lake, therefore the rule is applied.

Per section 3(a) of the rule, the use of the bed or bank of a waterbody must meet a demonstrated public benefit for projects involving crossings or structures in public waters, and meet a demonstrated specific need for all other projects. The Applicant has submitted a narrative that states that the new stormsewer outlet meets a public benefit because it serves to protect residential properties and structures that are currently at risk from increasing water levels in Mary Lake by reducing the 100-year HWL by 0.084'. Staff have reviewed the narrative and determined that the project provides a public benefit.

Per section 3(b) of the rule, use of the bed or bank shall retain adequate hydraulic capacity. The District Engineer has determined that the project does not retain adequate hydraulic capacity in Studer Lake because there is inadequate flood freeboard in the existing condition at 23445 Smithtown Road, and the project exacerbates that noncompliant condition. The Applicant has submitted plans, a narrative, and a hydraulic analysis to demonstrate that the 100-year floodstage of the upstream waterbody, Mary Lake, will be reduced by 0.084' and that the downstream waterbody, Studer Pond, will increased by 0.073'. The Applicant has request a Variance to section 3(b) for a 0.073' increase in

floodstage downstream. The below table summarizes the existing and proposed ordinary high water level (OHW) of Mary Lake and Studer Pond, as well as, the existing and proposed 100-year HWLs of Mary Lake and Studer Pond.

	Mary Lake			Studer Pond		
	Existing	Proposed	Change	Existing	Proposed	Change
OHW	953.12	953.12	0	929.4	929.4	0
100-year 24 Hr (NGVD 29)	955.048	954.964	<b>-0.084</b>	932.818	932.891	<b>0.073</b>

*Table 3: 100-HWL Impacts*

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. Staff and the District Engineer have reviewed the plan and determined that the proposed outlet structure will not have an effect on navigation capacity.

Per section 3(d) of the rule, the use of the bed or bank shall preserve aquatic and upland wildlife passage. Staff have reviewed the plans and determined that the proposed outlet structure will not have an impact on aquatic or upland wildlife passage in the proposed condition from the existing condition. Staff have determined that the rule criteria has been met.

Per section 3(e) of the rule, use of the bed or bank shall not adversely affect water quality. The Applicant has submitted plans to show the location of silt fence, inlet protection, and floating silt curtain downgradient of site disturbance to ensure that sedimentation will not enter the waterbody (where applicable). Based on Staff’s review of the submitted materials, water quality will not be adversely affected as the proper erosion control best management practices will be installed during construction and areas of disturbance will be stabilized within 14 days after construction is completed. Based on this analysis, Staff 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 has provided an alternatives analysis to demonstrate the proposed project represents the minimal impact solution in consideration of other options. Based upon the alternatives analysis provided by the Applicant, a no build scenario will not meet the project goal of alleviating high water levels on Mary Lake. The second alternative considered an alternate stormsewer alignment that would route the outlet across Smithtown Road, but will require crossing a major roadway, additional wetland impacts for the outlet construction, as well as, increased water levels in the Preserve wetland north of Smithtown Road. Staff and the District Engineer have reviewed the alternatives submitted and concur that proposed outlet structure represents the minimal impact solution in terms of minimizing impacts to natural resources, 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.

Per section 6 of the rule, maintenance requirements for the structures will be met through a maintenance agreement between the City of Shorewood and the District and is listed as a recommended condition of approval.

In summary, based on the analysis by Staff and the District Engineer provided above, upon satisfaction of the recommended condition the Applicant has met all the applicable criteria of the Waterbody Crossings and Structures rule, except for the requested Variance from section 3(b).

## Variance

The Variance and Exception Rule allows the Board of Managers to grant variances from a provision of the rules based on the showing of the applicant on the District Variance Standards. Section 2 of the Variance and Exception Rule states these standards. The Applicant has submitted a Variance Application (attachment 4) requesting shortfall from maintaining adequate hydraulic capacity downstream per section 3(b) of the Waterbody Crossings & Structures rule because the project fails to maintain adequate hydraulic capacity by exacerbating an existing inadequate flood freeboard condition at 23445 Smithtown Road in the City of Shorewood.

Section 2(a) states that the applicant must demonstrate that because of special conditions inherent to the property, which do not apply generally to other land or structures in the District, strict compliance with a provision of a District rule will cause undue hardship to the applicant or property owner. Per the Applicant's submitted narrative, Mary Lake is a landlocked water basin with no outlet and has been subject to high water conditions due to increased precipitation. The project, as designed, proposes to excavate 1,224 sf (0.03 acres) of a seasonally flooded Type 3 wetland to improve drainage within Mary Lake. Meeting a "no-impact" water surface elevation change at the downstream waterbody will require 0.711 acres of excavation in Studer Pond, a public water wetland, which would be contradictory to the goal of minimizing and avoiding impacts to existing wetlands.

Section 2(b) states that the applicant must demonstrate that the hardship was not created by the landowner, the landowner's agent or representative, or a contractor, and that economic hardship is not grounds for a variance. The Applicant asserts that it did not create the land locked water basin nor did it create the precipitation patterns that has resulted in increased high water levels on Mary Lake.

Section 2(c) states that that the applicant must demonstrate that receiving the variance will not merely serve as a convenience and section 2(d) states that the applicant must demonstrate that there are no feasible and prudent alternatives to the proposed activity requiring the variance. Per the Applicant's submitted narrative several alternatives were considered to maintain hydraulic capacity downstream:

- An alternate stormsewer and outlet alignment – This alignment would avoided impacts to Studer Pond by routing the outlet across Smithtown Road, but it required crossing a major roadway, additional wetland impacts for the outlet construction, as well as increased water levels in the Preserve wetland north of Smithtown Road. Increasing the water levels in a Preserve wetland is out of compliance with the allowable impacts to downstream waterbodies per Table 1 and would result in a Variance request to the Wetland Protection rule in addition to the requested Variance to the Waterbody Crossings and Structures rule. Because of the wetland impacts and need for an additional Variance request, the alternative was rejected.
- A smaller outlet pipe –Reducing the outlet pipe from 8" to 6" did not result in a "no-rise" increase to the 100-year floodstage downstream at Studer Pond and did not provide as much decrease to the 100-year HWL of Mary Lake. Because the alternative would still require a Variance and did not provide as much of a reduction to the 100-HWL of Mary, which is the goal of the project, the alternative was rejected.
- Compensatory grading within Studer Pond – This alternative would require grading and excavating 0.711 acres of WCA and DNR regulated wetland, which is contradictory to the goal of minimizing impacts to wetlands. The proposed project proposes 0.03 acres of wetland excavation that is not considered an impact under the WCA. Because the alternative would result in 0.711 acres of permeant wetland impact, it was rejected.
- Compensatory grading at the open space owned by the City of Excelsior north of Studer Pond and south of CSAH 19 (PID 3411723240042) - The majority of the city owned property around Studer Pond is the site of an old city landfill and therefore is not a viable option for grading of compensatory storage due to potential soil contamination. The Applicant has provided a historical aerial review of the property that shows the landfill (attachment 4). Because of the potential soil contamination on the site, the alternative was rejected.
- An automatic valve system to provide additional floodplain storage in Mary Lake - The Applicant determined that the maintenance requirements and risk of clogging would make this type of feature unreliable. The small nature of the proposed pipe would make it prone to failure if the valve failed to close completely. Because of the unreliable nature of the valve system, the alternative was rejected.
- A manual valve system that would work in conjunction with potential drawdown of the OHW in advance of a storm event to create additional storage capacity in Mary Lake- This type of structure would require significant operation

and maintenance and relies too heavily on manual activities that if not performed properly could be contrary to the goals of the project. If the valve were not opened to draw down, the water levels in Mary Lake could be too high, and if the valve were left open or opened too soon could still result in increases in Studer Pond. Therefore, it was determined that the option of including a valve in the project design created too much uncertainty relative to the project's performance and the alternative was rejected.

Section 2(e) states that the applicant must show that receiving the variance will not impair or be contrary to the intent of these rules. The intent of retaining hydraulic capacity per section 3(b) of the Waterbody Crossings & Structures rule is to ensure that applicants do not increase the floodstage upstream or downstream that might result in a significant exacerbated flood risk. The Applicant has submitted a narrative, plans, and modeling that demonstrate that the floodstage upstream will be reduced by 0.084' and provide a public benefit by reducing the 100-year floodstage for properties surround Mary Lake. The Applicant has submitted a narrative, plans, and modeling that demonstrate that the 0.07' increase to the 100-year floodstage to the downstream waterbody, Studer Pond, will not result in any of the residential properties in Excelsior or Shorewood having less than 2' of freeboard from the low opening to the 100-HWL except for one property located at 23443 Smithtown Road in the City of Shorewood that is not in compliance with the 2' of freeboard from the low opening to the 100-year HWL. 23443 Smithtown Road was constructed in 1969 and is considered to be a "legally nonconforming" structure per the Applicant's submitted narrative. The existing available amount of freeboard from the low opening at 23443 Smithtown Road is 1.122'. The Applicant is proposing to reduce the amount of available free board to 1.049'.

Staff and the District Engineer have reviewed the narrative, plans, and hydraulic modeling and determined that the Applicant has submitted sufficient evidence for the Board of Managers to consider the requested Variance to section 3(b) of the Waterbody Crossings & Structures rule. Because the Applicant is proposing to increase the 100-year HWL on Studer Pond that will result in a reduced amount of available freeboard at one property located at 23443 Smithtown Road, Shorewood, it is recommended that the Board of Managers consider requiring the city to obtain the property owner's consent to the decrease in available freeboard on the property and further may wish to require that the city obtain recordation of a declaration to memorialize the noncompliant low-opening elevation.

**Summary:**

The City of Shorewood has applied for a MCWD permit for the Erosion Control, Wetland Protection, Floodplain Alteration, and Waterbody Crossings & Structures rules and has requested a Variance to maintaining hydraulic capacity at the downstream waterbody, Studer Pond, to install a new outlet structure in Mary Lake to alleviate high water conditions. Staff find that the Applicant has provided a satisfactory analysis for the Board of Managers to consider the variance request to increase the 100-year HWL of Studer Pond by 0.073'. Staff find that the proposed project meets the applicable rule requirements, upon the Board's consideration of the variance request and fulfillment of the recommended conditions of approval, and recommend approval of the permit.

**Attachments:**

1. Permit Application
2. W19-25 NOD
3. W20-16 NOD & Site Plan
4. Variance Application

**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: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
Email Address: \_\_\_\_\_ Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

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: \_\_\_\_\_ City: \_\_\_\_\_  
State: \_\_\_\_\_ Zip: \_\_\_\_\_ Qtr Section(s): \_\_\_\_\_ Section(s): \_\_\_\_\_ Township(s): \_\_\_\_\_ Range(s): \_\_\_\_\_  
Lot: \_\_\_\_\_ Block: \_\_\_\_\_ Subdivision: \_\_\_\_\_ PID: \_\_\_\_\_

4. Size of project parcel (square feet or acres): \_\_\_\_\_  
Area of disturbance (square feet): \_\_\_\_\_ Volume of excavation/fill (cubic yards): \_\_\_\_\_  
Area of existing impervious surface: \_\_\_\_\_ Area of proposed impervious surface: \_\_\_\_\_  
Length of shoreline affected (feet): \_\_\_\_\_ Waterbody (& bay if applicable): \_\_\_\_\_

5. Type of permit being applied for (Check all that apply):  
 EROSION CONTROL  WATERBODY CROSSINGS/STRUCTURES  
 FLOODPLAIN ALTERATION  STORMWATER MANAGEMENT  
 WETLAND PROTECTION  APPROPRIATIONS  
 DREDGING  ILLICIT DISCHARGE  
 SHORELINE/STREAMBANK STABILIZATION

6. Project purpose (Check all that apply):  
 SINGLE FAMILY HOME  MULTI FAMILY RESIDENTIAL (apartments)  
 ROAD CONSTRUCTION  COMMERCIAL or INSTITUTIONAL  
 UTILITIES  SUBDIVISIONS (include number of lots)  
 DREDGING  LANDSCAPING (pools, berms, etc.)  
 SHORELINE/STREAMBANK STABILIZATION  OTHER (DESCRIBE): Lake Outlet Structure


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

8. Waterbody receiving runoff from site: \_\_\_\_\_

9. Project Timeline: Start Date: \_\_\_\_\_ Completion Date: \_\_\_\_\_

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.

 \_\_\_\_\_ 6/29/2020  
Signature of Each Property Owner Date





## Minnesota Wetland Conservation Act Notice of Decision

<b>Local Government Unit:</b> Minnehaha Creek Watershed District	<b>County:</b> Hennepin County
<b>Applicant Name:</b> City of Shorewood (Larry Brown, Director of Public Works)	
<b>Applicant Representative:</b> Barr Engineering	
<b>Project Name:</b> Mary Lake Outlet Project	<b>LGU Project No. (if any):</b> W19-28
<b>Date Complete Application Received by LGU:</b> October 24th, 2019	
<b>Date of LGU Decision:</b> December 3rd, 2019	
<b>Date this Notice was Sent:</b> December 13th, 2019	

### WCA Decision Type - check all that apply

<input checked="" type="checkbox"/> Wetland Boundary/Type	<input type="checkbox"/> Sequencing	<input type="checkbox"/> Replacement Plan	<input type="checkbox"/> Bank Plan (not credit purchase)
<input type="checkbox"/> No-Loss (8420.0415)	<input type="checkbox"/> Exemption (8420.0420)		
Part: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G <input type="checkbox"/> H		Subpart: <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9	

### Replacement Plan Impacts (replacement plan decisions only)

<b>Total WCA Wetland Impact Area:</b>
<b>Wetland Replacement Type:</b> <input type="checkbox"/> Project Specific Credits: <input type="checkbox"/> Bank Credits:
<b>Bank Account Number(s):</b>

### Technical Evaluation Panel Findings and Recommendations (attach if any)

<input type="checkbox"/> Approve <input type="checkbox"/> Approve w/Conditions <input type="checkbox"/> Deny <input type="checkbox"/> No TEP Recommendation
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### LGU Decision

<input type="checkbox"/> Approved with Conditions (specify below) <sup>1</sup> List Conditions:	<input checked="" type="checkbox"/> Approved <sup>1</sup>	<input type="checkbox"/> Denied
<b>Decision-Maker for this Application:</b> <input checked="" type="checkbox"/> Staff <input type="checkbox"/> Governing Board/Council <input type="checkbox"/> Other:		
<b>Decision is valid for:</b> <input checked="" type="checkbox"/> 5 years (default) <input type="checkbox"/> Other (specify):		

<sup>1</sup> *Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.*

### LGU Findings – Attach document(s) and/or insert narrative providing the basis for the LGU decision<sup>1</sup>.

<input type="checkbox"/> Attachment(s) (specify):
<input checked="" type="checkbox"/> Summary:
The City of Shorewood has applied for a wetland boundary & type confirmation for the wetlands located within the defined project area referenced in the delineation report around Mary Lake near 29950 Elder Turn (PID 3411723230037) and 23955 Clover Lane (PID 3411723230028) in the City of Shorewood, Hennepin County, Minnesota. Legal description: Sections 33 and 34, Township 117N, Range 23W. The boundary & type approval was requested October 18 <sup>th</sup> , 2019.

A wetland delineation was conducted by Barr Engineering on September 27<sup>th</sup>, 2019. A complete delineation report and WCA application were submitted to MCWD on October 24<sup>th</sup>, 2019. The boundary of one wetland was delineated within the project area adjacent to Mary Lake. Mary Lake is a landlocked public water wetland (ID 27089900) and the basin to the north is hydraulically connected. Wetland 1 was identified as a Type 3/4, shallow marsh/deep marsh wetland. Barr Engineering has put in a request with the DNR to define the OHW contour elevation.

MCWD, BWSR, and Barr Engineering Staff reviewed the boundaries in the field on October 30<sup>th</sup>, 2019. MCWD was in agreement with the wetland boundaries and types identified on site and shown in the delineation report.

A MnRAM report was submitted on December 5<sup>th</sup> that classifies the wetland as a Manage 1, both the MCWD & BWSR are in agreement with this classification.

MCWD approves the wetland boundaries and types as shown in the delineation report. This decision is valid for five years. A future project located on this property may require a permit from the MCWD.

<sup>1</sup> Findings must consider any TEP recommendations.

### Attached Project Documents

Site Location Map     Project Plan(s)/Descriptions/Reports (specify): Wetland Delineation Exhibit

### Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for \$500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator  
Minnesota Board of Water & Soils Resources  
520 Lafayette Road North  
St. Paul, MN 55155  
[travis.germundson@state.mn.us](mailto:travis.germundson@state.mn.us)

Does the LGU have a local appeal process applicable to this decision?

Yes<sup>1</sup>       No

<sup>1</sup>If yes, all appeals must first be considered via the local appeals process.

**Local Appeals Submittal Requirements** (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

Appeal of an LGU staff decision. Send petition and \$100 fee to:  
Minnehaha Creek Watershed District  
15320 Minnetonka Boulevard  
Minnetonka, MN 55345  
[wca@minnehahacreek.org](mailto:wca@minnehahacreek.org)

### Notice Distribution (include name)


*Required on all notices:*

SWCD TEP Member: Stacey Lijewski-[stacey.lijewski@co.hennepin.mn.us](mailto:stacey.lijewski@co.hennepin.mn.us)  
 BWSR TEP Member: Ben Carson- [ben.carlson@state.mn.us](mailto:ben.carlson@state.mn.us)  
 LGU TEP Member (if different than LGU contact):

<input checked="" type="checkbox"/> DNR Representative: Leslie Parris -leslie.parris@state.mn.us; Jason Spiegel -Jason.spiegel@state.mn.us
<input type="checkbox"/> Watershed District or Watershed Mgmt. Org.:
<input checked="" type="checkbox"/> Applicant: Larry Brown- lbrown@ci.shorewood.mn.us
<input checked="" type="checkbox"/> Agent/Consultant: Barr Engineering Staff

*Optional or As Applicable:*

<input checked="" type="checkbox"/> Corps of Engineers: usace_requests_mn@usace.army.mil
<input type="checkbox"/> BWSR Wetland Mitigation Coordinator (required for bank plan applications only):
<input type="checkbox"/> Members of the Public (notice only): <input type="checkbox"/> Other:

<p><b>Signature:</b></p>  <p>Heidi Quinn, MCWD Permitting Technician</p>	<p><b>Date:</b></p> <p>12/13/2019</p>
---	---------------------------------------

This notice and accompanying application materials may be sent electronically or by mail. The LGU may opt to send a summary of the application to members of the public upon request per 8420.0255, Subp. 3.



- Project Area
- Public Land Survey Sections

- Sample Point
- Delineated Wetland Classification**
- Type 3
- Type 4



WETLAND  
DELINEATION MAP  
Wetland Delineation Report  
Shorewood, MN  
FIGURE 6



## Minnesota Wetland Conservation Act Notice of Decision

<b>Local Government Unit:</b> Minnehaha Creek Watershed District	<b>County:</b> Hennepin
<b>Applicant Name:</b> City of Shorewood	
<b>Applicant Representative:</b> Mark Perry, Bolton & Menk	
<b>Project Name:</b> Mary Lake Outlet Control Structure	
<b>LGU Project No. (if any):</b> W20-16	
<b>Date Complete Application Received by LGU:</b> 7/6/2020	
<b>Date of LGU Decision:</b> 9/21/2020	
<b>Date this Notice was Sent:</b> 9/21/2020	

### WCA Decision Type - check all that apply

<input type="checkbox"/> Wetland Boundary/Type	<input type="checkbox"/> Sequencing	<input type="checkbox"/> Replacement Plan	<input type="checkbox"/> Bank Plan (not credit purchase)
<input checked="" type="checkbox"/> No-Loss (8420.0415)	<input type="checkbox"/> Exemption (8420.0420)		
Part: <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G <input checked="" type="checkbox"/> H	Subpart: <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9		

### Replacement Plan Impacts (replacement plan decisions only)

Total WCA Wetland Impact Area:
Wetland Replacement Type: <input type="checkbox"/> Project Specific Credits: <input type="checkbox"/> Bank Credits:
Bank Account Number(s):

### Technical Evaluation Panel Findings and Recommendations (attach if any)

<input type="checkbox"/> Approve <input checked="" type="checkbox"/> Approve w/Conditions <input type="checkbox"/> Deny <input type="checkbox"/> No TEP Recommendation
--

### LGU Decision

<input type="checkbox"/> Approved with Conditions (specify below) <sup>1</sup> <input checked="" type="checkbox"/> Approved <sup>1</sup> <input type="checkbox"/> Denied
List Conditions: Conditions in TEP FOF were submitted and fulfilled on 9/16/2020
<b>Decision-Maker for this Application:</b> <input checked="" type="checkbox"/> Staff <input type="checkbox"/> Governing Board/Council <input type="checkbox"/> Other:
<b>Decision is valid for:</b> <input checked="" type="checkbox"/> 5 years (default) <input type="checkbox"/> Other (specify):

<sup>1</sup> *Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.*

### LGU Findings – Attach document(s) and/or insert narrative providing the basis for the LGU decision<sup>1</sup>.

<input checked="" type="checkbox"/> Attachment(s) (specify): <b>TEP FOF</b>
<input checked="" type="checkbox"/> Summary:
The City of Shorewood has applied for an exemption under 8420.0420 subp. 2- Agriculture Activities –C for 1,224 sf of wetland excavation above the OHW of Mary Lake located in the City of Shorewood, Hennepin County, Minnesota. Legal description: Section 34, Township 117, Range 23.
Per the attached Technical Evaluation Panel (TEP) Findings of Facts (FOF), the 1,224 sf of wetland excavation in a Type 3, seasonally flooded shallow marsh wetland is outside the scope of the WCA on the condition that no hard armoring be placed above the OHW. Additionally, the TEP determined that the temporary wetland

impacts would meet no-loss criteria, section H. On September 16<sup>th</sup>, 2020, the Applicant submitted an updated construction plan to show that no hard armoring would be placed above the OHW of Mary Lake (pg 8 of construction plan). Furthermore, the Applicant quantified that 4,456 sf of temporary wetland impact to install the outlet pipe and access the site for the “saddle” excavation will be restored with a native seed mix 34- 181 within 45 days (pg 19 of construction plan), thus meeting the no-loss criteria per section H.

This decision is valid for five years. The project is being reviewed under MCWD permit #20-325.

<sup>1</sup> Findings must consider any TEP recommendations.

### Attached Project Documents

Site Location Map  Project Plan(s)/Descriptions/Reports (specify): Construction Plans

### Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for \$500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator  
Minnesota Board of Water & Soils Resources  
520 Lafayette Road North  
St. Paul, MN 55155  
[travis.germundson@state.mn.us](mailto:travis.germundson@state.mn.us)

Does the LGU have a local appeal process applicable to this decision?

Yes<sup>1</sup>  No

<sup>1</sup>If yes, all appeals must first be considered via the local appeals process.

**Local Appeals Submittal Requirements** (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

Appeal of an LGU staff decision. Send petition and \$100 fee to:  
Minnehaha Creek Watershed District  
15320 Minnetonka Boulevard  
Minnetonka, MN 55345  
[wca@minnehahacreek.org](mailto:wca@minnehahacreek.org)

### Notice Distribution (include name)


*Required on all notices:*

SWCD TEP Member: Stacey Lijewski-[stacey.lijewski@co.hennepin.mn.us](mailto:stacey.lijewski@co.hennepin.mn.us)  
 BWSR TEP Member: Ben Carson- [ben.carlson@state.mn.us](mailto:ben.carlson@state.mn.us)  
 LGU TEP Member (if different than LGU contact):  
 DNR Representative: Melissa Collins- [Melissa.Collins@state.mn](mailto:Melissa.Collins@state.mn); Lucas Youngsma- [lucas.youngsma@state.mn](mailto:lucas.youngsma@state.mn)  
 Watershed District or Watershed Mgmt. Org.:  
 Applicant: City of Shorewood Staff  Agent/Consultant: Bolton & Menck Staff

*Optional or As Applicable:*

Corps of Engineers: [usace\\_requests\\_mn@usace.army.mil](mailto:usace_requests_mn@usace.army.mil)  
 BWSR Wetland Mitigation Coordinator (required for bank plan applications only):

<input checked="" type="checkbox"/> Members of the Public (notice only): City Staff	<input type="checkbox"/> Other:
---	---------------------------------

<b>Signature:</b>  Heidi Quinn, MCWD Permitting Technician	<b>Date:</b> 9/21/2020
---	---------------------------

**This notice and accompanying application materials may be sent electronically or by mail. The LGU may opt to send a summary of the application to members of the public upon request per 8420.0255, Subp. 3.**

## Minnesota Wetland Conservation Act Technical Evaluation Panel Form

This form can be used to document TEP findings and recommendations related to WCA decisions, determinations, enforcement and pre-application reviews.

<b>Local Government Unit:</b> Minnehaha Creek Watershed District <b>County:</b> Hennepin County
<b>Landowner/Applicant:</b> City of Shorewood <b>Agent/Representative(s):</b> Mark Perry, Bolton & Menk
<b>Project Name:</b> Mary Lake Outlet Control Structure <b>Project No. (if any):</b> W20-16
<b>Project Location:</b> Mary Lake, Shorewood

**Purpose of TEP Findings/Recommendation** - check all that apply and describe

<input type="checkbox"/> Pre-application review <input checked="" type="checkbox"/> Application Review (related to WCA Decision) <input type="checkbox"/> Local Government Road Wetland Replacement Program Eligibility <input type="checkbox"/> WCA Determination Request <input type="checkbox"/> Other (specify):
<p><b>Describe:</b>          MCWD, as the WCA LGU, requested a TEP meeting to discuss if the proposed 1,224 sf of excavation in a Type 3 wetland to create a “saddle” to allow water to flow to a new outlet structure on Mary Lake qualified for an exemption under 8420.0420 subp. 2 Agriculture Activities – C.</p>

**Meeting Type** – check all that apply and specify dates as applicable

<input checked="" type="checkbox"/> Virtual Meeting(s), Date(s): 8/5/2020 <input checked="" type="checkbox"/> Onsite Review(s), Date(s): 8/28/2020	<input checked="" type="checkbox"/> Electronic Exchanges (email, skype, etc.) <input type="checkbox"/> Other (specify):
---	--

**Findings and Recommendations**

<p>On August 5th, 2020 a virtual TEP meeting was attended by Heidi Quinn, MCWD; Ben Carlson, BWSR; Stacey Lijewski, Hennepin County; Lucas Youngsma, DNR; and Andrew Budde, Mark Perry, and Roberta Cronquist from Bolton &amp; Menk on behalf of the City of Shorewood.</p> <p>Bolton &amp; Menk Staff gave an overview of the project stating that Mary Lake is a landlocked basin that has experienced localized flooding in recent years. The project proposes to install a new outlet structure on the north side of Mary Lake near Clover Lane, which will drain to Studer Pond, and excavate a “saddle” in an existing land bridge that separates the north and south nodes of Mary Lake. The “saddle” excavation is needed to allow water to flow from the southern node of Mary Lake to the north outlet.</p> <p>The TEP discussed WCA vs DNR regulation and clarified that because W19-28 NOD confirmed the boundary and type of wetland areas above the OHW of Mary Lake (953.3 NAVD 88), any impact to the wetland above the OHW would fall under WCA jurisdiction. The TEP discussed whether it would be appropriate to waive WCA regulations in favor of DNR requirements, since a DNR MPARS is required for the excavation that is below the OHW of Mary Lake. In order for the WCA LGU to waive to the DNR it must be demonstrated that the activity is subject to approval of a wetland replacement plan, a no-loss, or exemption determination by the LGU and that waiving would still provide the same degree of natural resource protection.</p>
--



The TEP discussed if the project would qualify for Exemption 8420.0420 Subp. 2. Agricultural activities-C., “impacts resulting from soil and water conservation projects that are certified by soil and water conservation district technical staff after review by the technical evaluation panel, if the project minimizes adverse effects on the hydrologic and biologic characteristics of the wetland. For purposes of this item, examples of soil and water conservation projects include those identified in the State Cost Share Program Manual, available from the board or soil and water conservation districts, and federally funded demonstration, research, and cost share programs and projects”.

BWSR provided guidance that projects that are not related to agriculture can still qualify for the exemption as long as they meet the criteria. The meeting concluded with the TEP committing to do more research on what projects qualify per the State Cost Share Manual.

On August 28th, 2020 the TEP exchanged a series of e-mails and determined that the proposed excavation did not qualify for the agriculture exemption because it met the criteria for ineligible practices under section 1.5 of the State Cost Share Program. Per section 1.5, “... practices are not eligible that propose to provide stormwater conveyances that collect and move runoff but do not provided water quality benefit...”<sup>[1]</sup>. Because the project proposes to reduce localized flooding, but does not have a water quality benefit component, the exemption under 8420.0420 Subp. 2. Agricultural activities-C, cannot be approved for the “saddle” excavation.

BWSR provided guidance that the WCA regulates excavation in permanently and semipermanently flooded areas of type 3/4/5 wetlands. The definition of permanently or semipermanently flooded areas of type 3, 4, or 5 per 8420.0111 subp. 51 is “the portion of a type 3, 4, or 5 wetland below the level where the water has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly the point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial”.

On August 28th, 2020, Heidi Quinn, MCWD; Ben Carlson, BWSR; and Lucas Youngsma, DNR visited the site to determine if the wetland boundary and type classification per W19-28 NOD of a Type 3, shallow marsh, PEMC, wetland was identified correctly in the area of the “land berm” and where the excavation is proposed, as the boundary and type determination was made during flooded conditions. MCWD, BWSR, and DNR were in agreement that there was a clear transition from Type 4, deep marsh wetland below and at the OHW to a seasonally flooded Type 3 shallow marsh wetland. It was also observed that Type 3 shallow marsh transitioned to more of a Type 1 or Type 2 wetland based on vegetation and trees.

The TEP was in agreeance that the proposed “saddle” excavation in a seasonally flooded Type 3 shallow marsh wetland is outside of the scope of WCA regulation per section 8420.0105 subp. 1 on the condition that no hard armoring or fill is placed in the excavated wetland area above the OHW elevation (953.3 NAVD 88). Furthermore, it is requested that the applicant provide detail on how the site will be accessed for excavation. If temporary wetland impacts are proposed, the application materials must be updated to include a narrative on how wetland impacts will be avoided (i.e. construction entrance best management practice) and a revegetation plan.

The TEP was in agreeance that temporary impacts proposed for the construction of the outfall meet No-Loss criteria on the condition that the application is updated with quantified temporary impacts (sf) and the timeline for revegetation per No-Loss Criteria 8420.0415 (H).

<sup>[1]</sup> BWSR (2019). *Erosion Control and Water Management Program Policy*  
[https://bwsr.state.mn.us/sites/default/files/201909/FY20%20Erosion Control and Water Management%20Program Policy.pdf](https://bwsr.state.mn.us/sites/default/files/201909/FY20%20Erosion%20Control%20and%20Water%20Management%20Program%20Policy.pdf)

Attachment(s) (specify):

**DNR Protected Waters and Shoreland Protection Zone**

Will the project/activity affect DNR public waters, DNR public waters wetlands or wetlands within the shoreland protection zone?  Yes  No If yes, DNR representative is a member of the TEP.

**Signatures**

LGU TEP Member: Heidi Quinn

Agree with Findings & Recommendations:  Yes  No

Signature: 

Date: 9/11/2020

SWCD TEP Member: Stacey Lijewski

Agree with Findings & Recommendations:  Yes  No

Signature: 

Date: 9-4-2020

BWSR TEP Member: Ben Carlson


Agree with Findings & Recommendations:  Yes  No

Signature: 

Date: 9/11/2020

DNR TEP Member: Lucas Youngsma

Agree with Findings & Recommendations:  Yes  No

Signature: 

Date: 9/8/2020

# CITY OF SHOREWOOD, MN

## CONSTRUCTION PLANS FOR MARY LAKE OUTLET

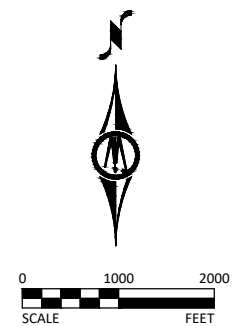
JULY 2020



### SHEET INDEX

SHEET NUMBER	SHEET TITLE
C1.01	TITLE SHEET
C1.02	LEGEND
C1.03	TYPICAL SECTIONS
C1.04-C1.10	CONSTRUCTION DETAILS
C1.11	PROJECT OVERVIEW
C2.01	EXISTING CONDITIONS & REMOVAL PLAN
C3.01	EROSION CONTROL & RESTORATION PLAN
C4.01	GRADING PLAN
C5.01-C5.02	PLAN & PROFILES

MAP OF THE  
CITY OF SHOREWOOD  
HENNEPIN COUNTY, MN



NOTE: EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 651-454-0002.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

1 ADDED PROJECT DATUM

+ BM=952.08 TNH NW CORNER OF MINNETONKA DR & CLOVER LAN	PROJECT DATUM: HENNEPIN COUNTY	RECORD DRAWING INFORMATION OBSERVER: CONTRACTOR: DATE:
	HORIZONTAL: NAD 83 (96ADJ) VERTICAL: NAVD 88 CONVERSION: NAVD 88 = NGVD 29 + 0.14 FT	

© Bolton & Menk, Inc. 2020. All Rights Reserved. 14:38:10 (16.120916) CAD/CSB/12/2020 01:01:00 9/15/2020 2:37 PM

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.

*Andrew L. Budde*  
ANDREW L. BUDDÉ  
LIC. NO. 46585 DATE 07/27/2020



2638 SHADOW LANE, SUITE 200  
CHASKA, MINNESOTA 55318  
Phone: (952) 448-8838  
Email: Chaska@bolton-menk.com  
www.bolton-menk.com

DESIGNED	NO.	ISSUED FOR	DATE
PJS	1	CONST.	8/20/20
SCD	2	CONST.	9/15/20
CHECKED			
ALB			
CLIENT PROJ. NO.	C16.120916		

CITY OF SHOREWOOD  
MARY LAKE OUTLET  
TITLE SHEET

SHEET  
C1.01

### EXISTING TOPOGRAPHIC SYMBOLS

	ACCESS GRATE		REGULATION STATION GAS
	AIR CONDITION UNIT		SATELLITE DISH
	ANTENNA		SIGN NON TRAFFIC
	AUTO SPRINKLER CONNECTION		SIGN TRAFFIC
	BARRICADE PERMANENT		SIGNAL CONTROL CABINET
	BASKETBALL POST		SOIL BORING
	BENCH		SIREN
	BIRD FEEDER		TELEPHONE BOOTH
	BOLLARD		TILE INLET
	BUSH		TILE OUTLET
	CATCH BASIN RECTANGULAR CASTING		TILE RISER
	CATCH BASIN CIRCULAR CASTING		TRANSFORMER-ELECTRIC
	CURB STOP		TREE-CONIFEROUS
	CLEAN OUT		TREE-DEAD
	CULVERT END		TREE-DECIDUOUS
	DRINKING FOUNTAIN		TREE STUMP
	DOWN SPOUT		TRAFFIC ARM BARRIER
	FILL PIPE		TRAFFIC SIGNAL
	FIRE HYDRANT		TRASH CAN
	FLAG POLE		UTILITY MARKER
	FLARED END / APRON		VALVE
	FUEL PUMP		VALVE POST INDICATOR
	GRILL		VALVE VAULT
	GUY WIRE ANCHOR		VAULT
	HANDHOLE		VENT PIPE
	HANDICAP SPACE		WATER SPIGOT
	IRRIGATION SPRINKLER HEAD		WELL
	IRRIGATION VALVE BOX		WETLAND DELINEATED MARKER
	LIFT STATION CONTROL PANEL		WETLAND
	LIFT STATION		WET WELL
	LIGHT ON POLE		YARD HYDRANT
	LIGHT-GROUND		
	MAILBOX		

### PROPOSED TOPOGRAPHIC SYMBOLS

	CLEANOUT
	MANHOLE
	LIFT STATION
	STORM SEWER CIRCULAR CASTING
	STORM SEWER RECTANGULAR CASTING
	STORM SEWER FLARED END / APRON
	STORM SEWER OUTLET STRUCTURE
	STORM SEWER OVERFLOW STRUCTURE
	CURB BOX
	FIRE HYDRANT
	WATER VALVE
	WATER REDUCER
	WATER BEND
	WATER TEE
	WATER CROSS
	WATER SLEEVE
	WATER CAP / PLUG
	RIP RAP
	DRAINAGE FLOW
	TRAFFIC SIGNS

### SURVEY SYMBOLS

	BENCHMARK LOCATION
	CONTROL POINT
	MONUMENT FOUND
	CAST IRON MONUMENT
	STONE MONUMENT

### EXISTING TOPOGRAPHIC LINES

	RETAINING WALL
	FENCE
	FENCE-DECORATIVE
	GUARD RAIL
	TREE LINE
	BUSH LINE

### SURVEY LINES

	CONTROLLED ACCESS BOUNDARY
	CENTERLINE
	EXISTING EASEMENT LINE
	PROPOSED EASEMENT LINE
	EXISTING LOT LINE
	PROPOSED LOT LINE
	EXISTING RIGHT-OF-WAY
	PROPOSED RIGHT-OF-WAY
	SETBACK LINE
	SECTION LINE
	QUARTER LINE
	SIXTEENTH LINE
	TEMPORARY EASEMENT

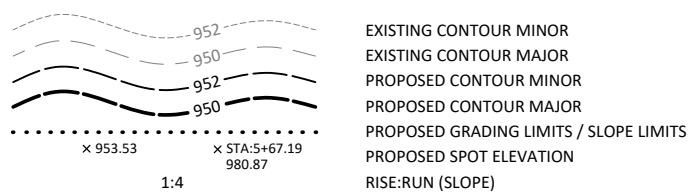
### EXISTING UTILITY LINES

	FORCE MAIN
	SANITARY SEWER
	SANITARY SERVICE
	STORM SEWER
	STORM SEWER DRAIN TILE
	WATERMAIN
	WATER SERVICE

### PROPOSED UTILITY LINES

	FORCE MAIN
	SANITARY SEWER
	SANITARY SERVICE
	STORM SEWER
	STORM SEWER DRAIN TILE
	WATERMAIN
	WATER SERVICE
	PIPE CASING

### GRADING INFORMATION



### HATCH PATTERNS

	BITUMINOUS		GRAVEL
	CONCRETE		

### EXISTING PRIVATE UTILITY LINES

NOTE:  
EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 651-454-0002.

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	UNDERGROUND FIBER OPTIC
	UNDERGROUND ELECTRIC
	UNDERGROUND GAS
	UNDERGROUND COMMUNICATION
	OVERHEAD ELECTRIC
	OVERHEAD COMMUNICATION
	OVERHEAD UTILITY

### UTILITIES IDENTIFIED WITH A QUALITY LEVEL:

LINE TYPES FOLLOW THE FORMAT: UTILITY TYPE - QUALITY LEVEL  
EXAMPLE: UNDERGROUND GAS, QUALITY LEVEL A  
UTILITY QUALITY LEVEL (A,B,C,D) DEFINITIONS CAN BE FOUND IN CI/ASCE 38-02.

### UTILITY QUALITY LEVELS:

**QUALITY LEVEL D:** PROVIDES THE MOST BASIC LEVEL OF INFORMATION. IT INVOLVES COLLECTING DATA FROM EXISTING UTILITY RECORDS. RECORDS MAY INCLUDE AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICES MAPS, EXISTING GEOGRAPHIC INFORMATION SYSTEM DATABASES, CONSTRUCTION PLANS, ETC.

**QUALITY LEVEL C:** INVOLVES SURVEYING VISIBLE SUBSURFACE UTILITY STRUCTURES SUCH AS MANHOLES, HAND-HOLES, UTILITY VALVES AND METERS, FIRE HYDRANTS, PEDESTALS AND UTILITY MARKERS, AND THEN CORRELATING THE INFORMATION WITH EXISTING UTILITY RECORDS TO CREATE COMPOSITE DRAWINGS. INCLUDES QUALITY LEVEL D ACTIVITIES.

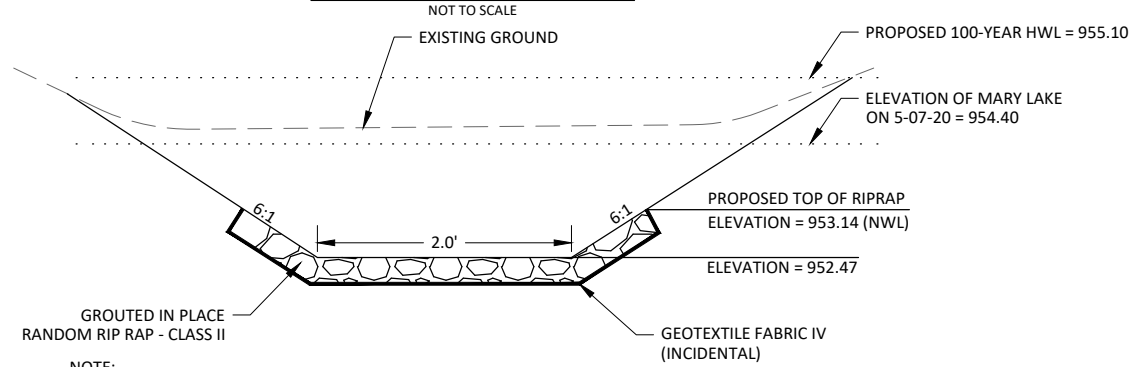
**QUALITY LEVEL B:** INVOLVES DESIGNATING THE HORIZONTAL POSITION OF SUBSURFACE UTILITIES THROUGH SURFACE DETECTION METHODS AND COLLECTING THE INFORMATION THROUGH A SURVEY METHOD. INCLUDES QUALITY LEVEL C AND D TASKS.

**QUALITY LEVEL A:** PROVIDES THE HIGHEST LEVEL OF ACCURACY. IT INVOLVES LOCATING OR POTHOLING UTILITIES AS WELL AS ACTIVITIES IN QUALITY LEVELS B, C, AND D. THE LOCATED FACILITY INFORMATION IS SURVEYED AND MAPPED AND THE DATA PROVIDES PRECISE PLAN AND PROFILE INFORMATION.

### ABBREVIATIONS

A	ALGEBRAIC DIFFERENCE	GRAV	GRAVEL	RSC	RIGID STEEL CONDUIT
ADJ	ADJUST	GU	GUTTER	RT	RIGHT
ALT	ALTERNATE	GV	GATE VALVE	SAN	SANITARY SEWER
B-B	BACK TO BACK	HDPE	HIGH DENSITY POLYETHYLENE	SCH	SCHEDULE
BIT	BITUMINOUS	HH	HANDHOLE	SERV	SERVICE
BLDG	BUILDING	HP	HIGH POINT	SHLD	SHOULDER
BMP	BEST MANAGEMENT PRACTICE	HWL	HIGH WATER LEVEL	STA	STATION
BR	BEGIN RADIUS	HYD	HYDRANT	STD	STANDARD
BV	BUTTERFLY VALVE	I	INVERT	STM	STORM SEWER
CB	CATCH BASIN	K	CURVE COEFFICIENT	TC	TOP OF CURB
C&G	CURB AND GUTTER	L	LENGTH	TE	TEMPORARY EASEMENT
CIP	CAST IRON PIPE	LO	LOWEST OPENING	TEMP	TEMPORARY
CIPP	CURED-IN-PLACE PIPE	LP	LOW POINT	TNH	TOP NUT HYDRANT
CL	CENTER LINE	LT	LEFT	TP	TOP OF PIPE
CL	CLASS	MAX	MAXIMUM	TYP	TYPICAL
CLVT	CULVERT	MH	MANHOLE	VCP	VITRIFIED CLAY PIPE
CMP	CORRUGATED METAL PIPE	MIN	MINIMUM	VERT	VERTICAL
C.O.	CHANGE ORDER	MR	MID RADIUS	VPC	VERTICAL POINT OF CURVE
COMM	COMMUNICATION	NIC	NOT IN CONTRACT	VPI	VERTICAL POINT OF INTERSECTION
CON	CONCRETE	NMC	NON-METALLIC CONDUIT	VPT	VERTICAL POINT OF TANGENT
CSP	CORRUGATED STEEL PIPE	NTS	NOT TO SCALE	WM	WATERMAIN
DIA	DIAMETER	NWL	NORMAL WATER LEVEL		
DIP	DUCTILE IRON PIPE	OHW	ORDINARY HIGH WATER LEVEL		
DWY	DRIVEWAY	PC	POINT OF CURVE	AC	ACRES
E	EXTERNAL CURVE DISTANCE	PCC	POINT OF COMPOUND CURVE	CF	CUBIC FEET
ELEC	ELECTRIC	PE	PERMANENT EASEMENT	CV	COMPACTED VOLUME
ELEV	ELEVATION	PED	PEDESTRIAN, PEDESTAL	CY	CUBIC YARD
EOF	EMERGENCY OVERFLOW	PERF	PERFORATED PIPE	EA	EACH
ER	END RADIUS	PERM	PERMANENT	EV	EXCAVATED VOLUME
ESMT	EASEMENT	PI	POINT OF INTERSECTION	LB	POUND
EX	EXISTING	PL	PROPERTY LINE	LF	LINEAR FEET
FES	FLARED END SECTION	PRC	POINT OF REVERSE CURVE	LS	LUMP SUM
F-F	FACE TO FACE	PT	POINT OF TANGENT	LV	LOOSE VOLUME
FF	FINISHED FLOOR	PVC	POLYVINYL CHLORIDE PIPE	SF	SQUARE FEET
F&I	FURNISH AND INSTALL	PVMT	PAVEMENT	SV	STOCKPILE VOLUME
FM	FORCE MAIN	R	RADIUS	SY	SQUARE YARD
FO	FIBER OPTIC	R/W	RIGHT-OF-WAY		
F.O.	FIELD ORDER	RCP	REINFORCED CONCRETE PIPE		
GRAN	GRANULAR	RET	RETAINING		

**MARY LAKE SADDLE GRADING**

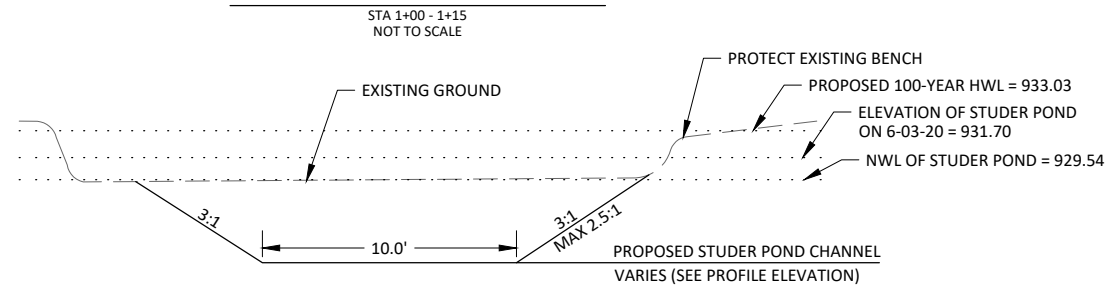


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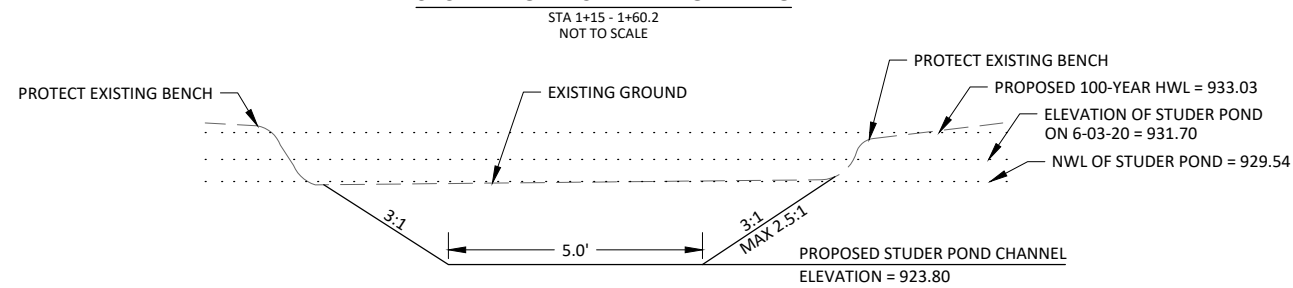
- 1) ENSURE THAT GROUT FILLS THE SPACE BETWEEN STONES THROUGHOUT THE ENTIRE THICKNESS OF THE RIPRAP.
- 2) IMMEDIATELY BEFORE PLACING THE GROUT THOROUGHLY WET THE STONES WITH WATER. DO NOT POUR GROUT OVER STONES THAT HAVE BECOME SURFACE DRY. SWEEP THE SURFACE OF THE GROUTED RIPRAP WITH A STIFF BROOM TO FINISH.

2 LOWERED SADDLE GRADING RIP RAP ELEVATION AND WIDTH.

**STUDER POND CHANNEL GRADING**

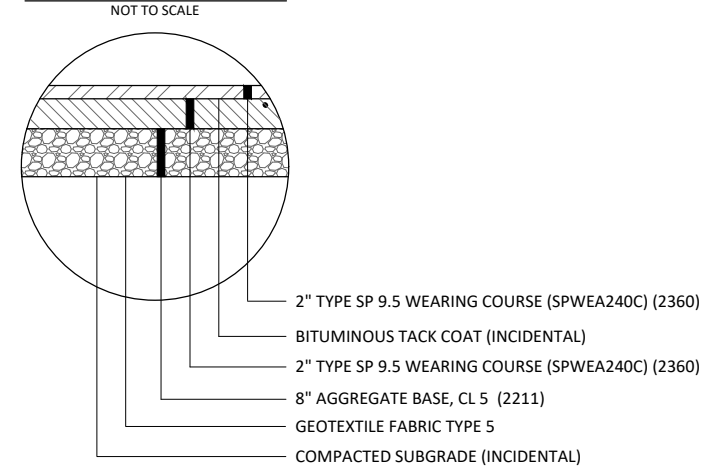


**STUDER POND CHANNEL GRADING**



1 ADDED TYPICAL SECTIONS FOR STUDER POND CHANNEL GRADING.

**EXISTING STREET PATCH**



NOTES:

1. ACTUAL PAVEMENT SECTION SHALL MATCH EXISTING PAVEMENT SECTION AND SHALL BE DETERMINED IN THE FIELD.

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*Andrew L. Budde*

ANDREW L. BUDDÉ  
LIC. NO. 46585 DATE 07/27/2020

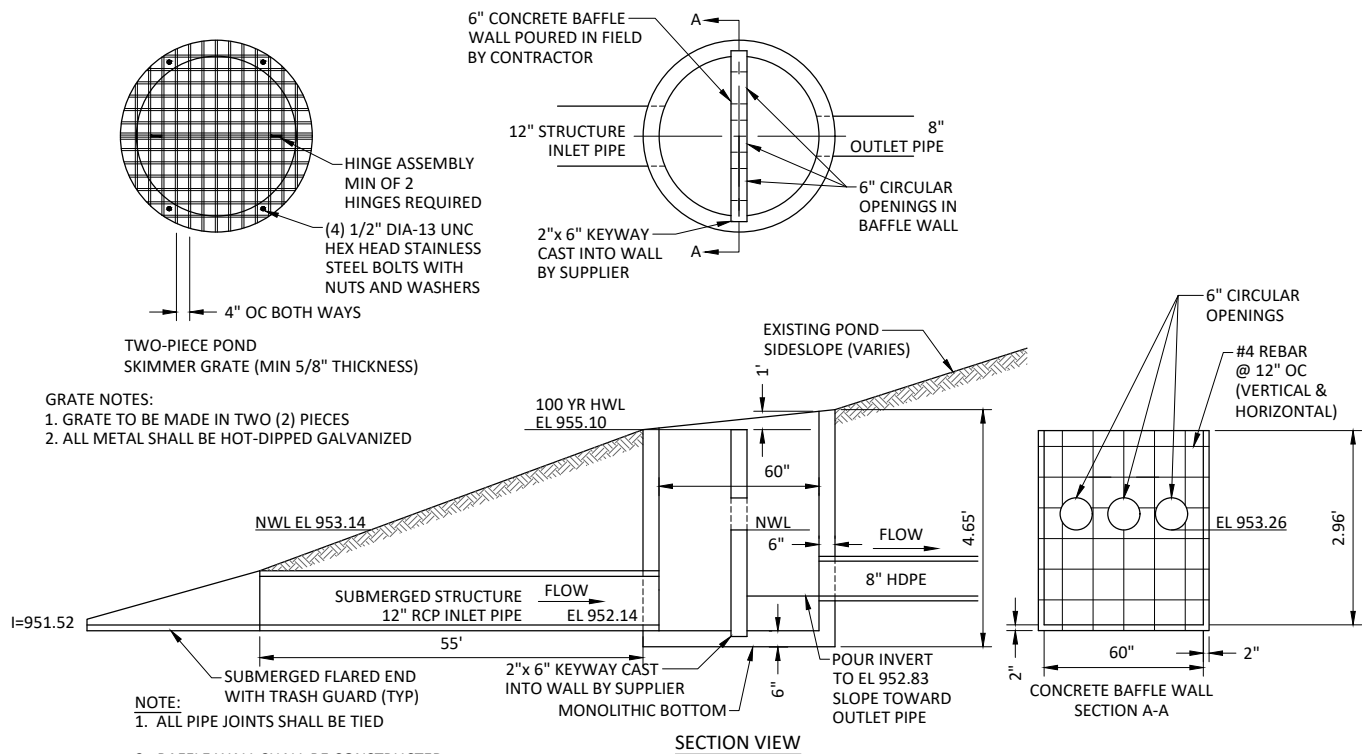


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CITY OF SHOREWOOD  
MARY LAKE OUTLET  
TYPICAL SECTIONS

SHEET  
C1.03

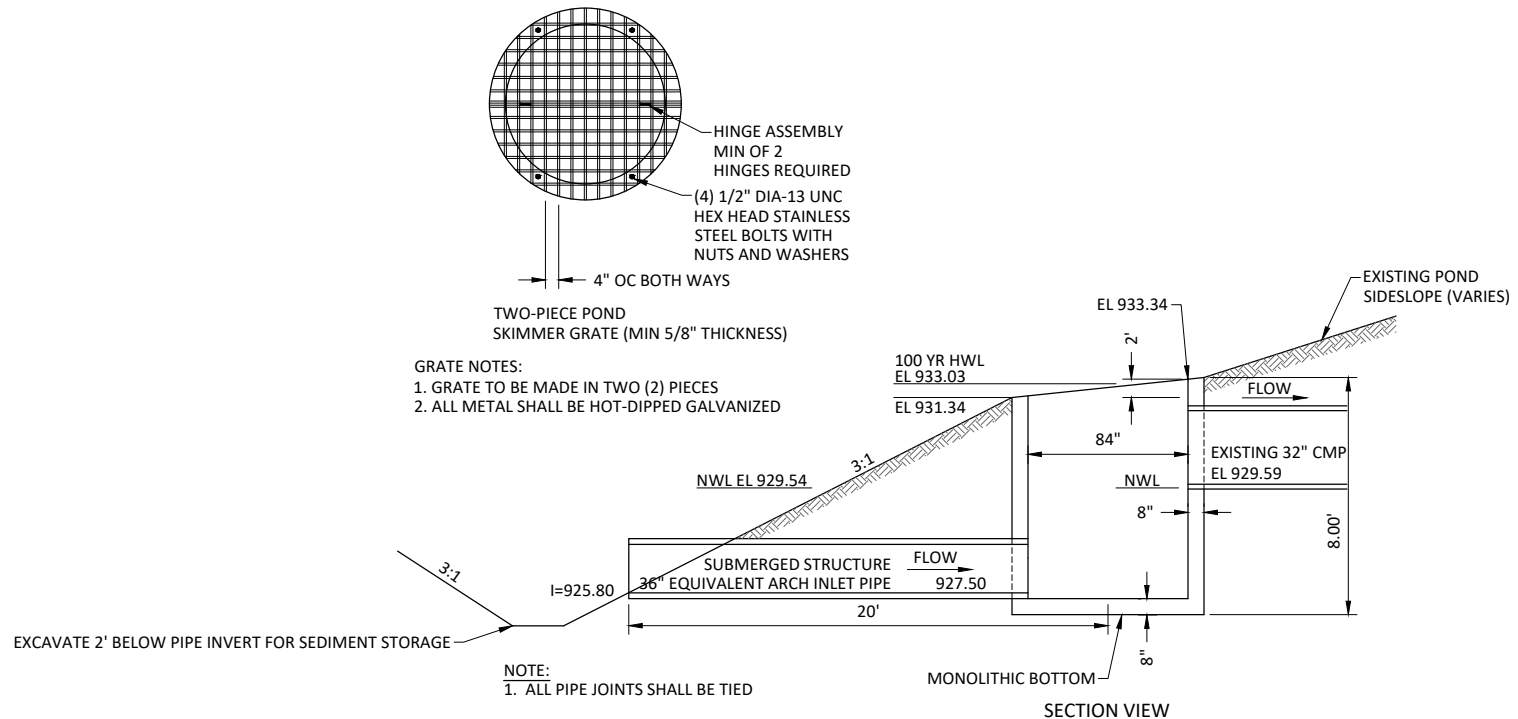


GRATE NOTES:  
 1. GRATE TO BE MADE IN TWO (2) PIECES  
 2. ALL METAL SHALL BE HOT-DIPPED GALVANIZED

NOTE:  
 1. ALL PIPE JOINTS SHALL BE TIED  
 2. BAFFLE WALL SHALL BE CONSTRUCTED TO PREVENT LEAKAGE AROUND THE WALL

**PRECAST CONCRETE POND SKIMMER STRUCTURE WITH WEIR WALL (MARY LAKE)**

NOT TO SCALE



GRATE NOTES:  
 1. GRATE TO BE MADE IN TWO (2) PIECES  
 2. ALL METAL SHALL BE HOT-DIPPED GALVANIZED

NOTE:  
 1. ALL PIPE JOINTS SHALL BE TIED

**PRECAST CONCRETE POND SKIMMER STRUCTURE (STUDER POND)**

NOT TO SCALE

1 ADDED DETAIL FOR THE PRECAST CONCRETE POND SKIMMER STRUCTURE (STUDER POND)

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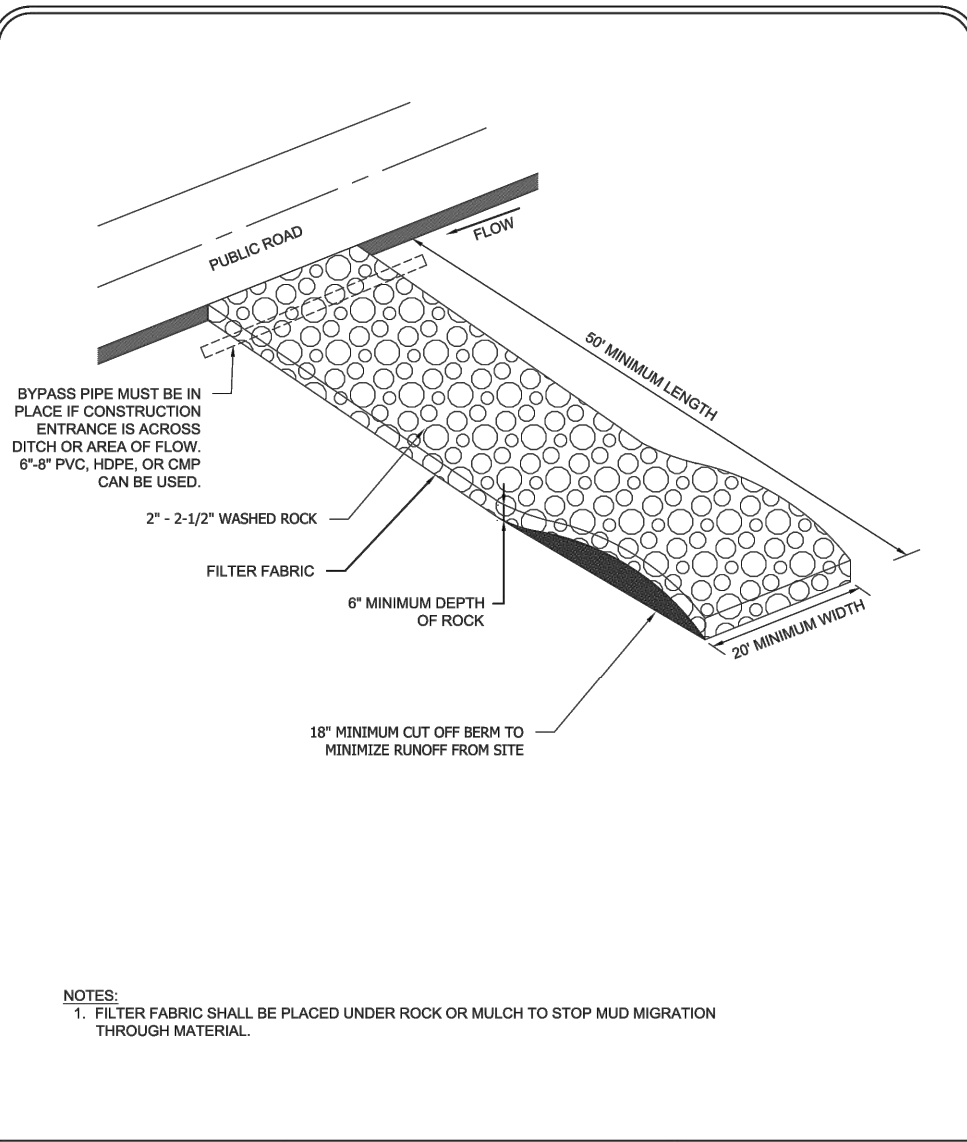


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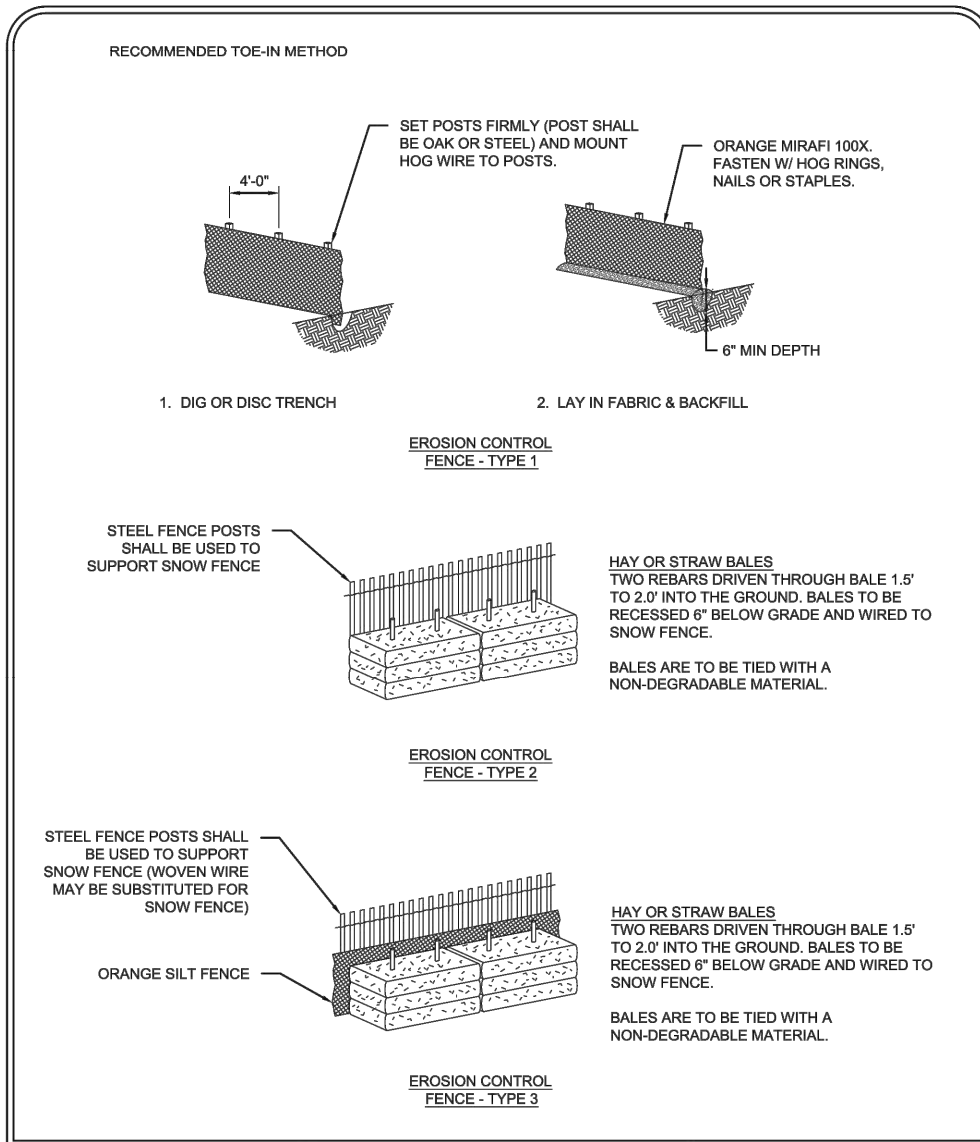
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CITY OF SHOREWOOD  
 MARY LAKE OUTLET  
 CONSTRUCTION DETAILS

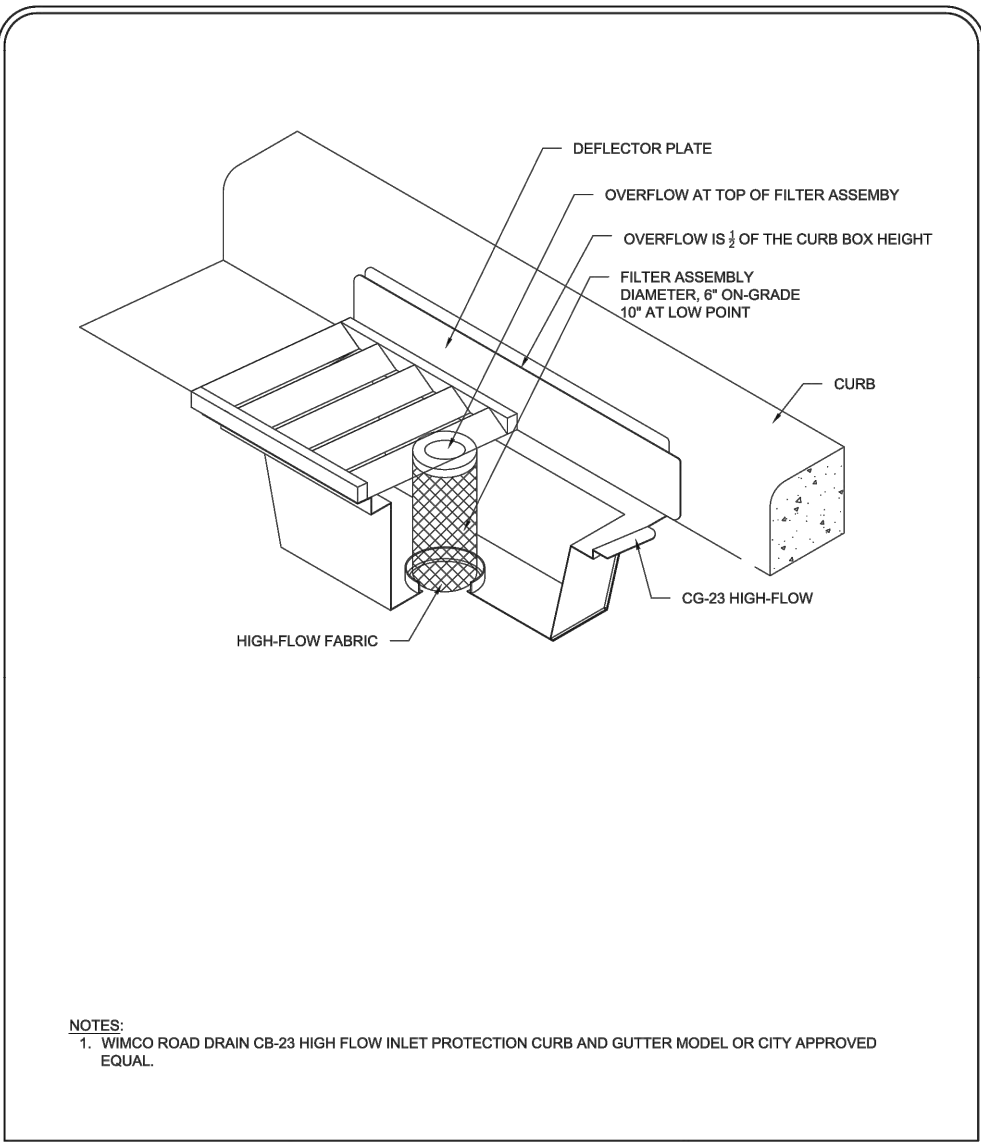
SHEET  
**C1.04**



NOTES:  
1. FILTER FABRIC SHALL BE PLACED UNDER ROCK OR MULCH TO STOP MUD MIGRATION THROUGH MATERIAL.



NOTES:  
1. WIMCO ROAD DRAIN CB-23 HIGH FLOW INLET PROTECTION CURB AND GUTTER MODEL OR CITY APPROVED EQUAL.



NOTES:  
1. WIMCO ROAD DRAIN CB-23 HIGH FLOW INLET PROTECTION CURB AND GUTTER MODEL OR CITY APPROVED EQUAL.



ROCK CONSTRUCTION ENTRANCE

Special Details	
Date:	JAN. 2016
Revised:	DEC. 2017
ERO-01	



SILT FENCE

Special Details	
Date:	JAN. 2016
Revised:	
ERO-04	



INLET PROTECTION - CATCH BASIN INSERT AFTER PAVING

Special Details	
Date:	JAN. 2016
Revised:	
ERO-06	

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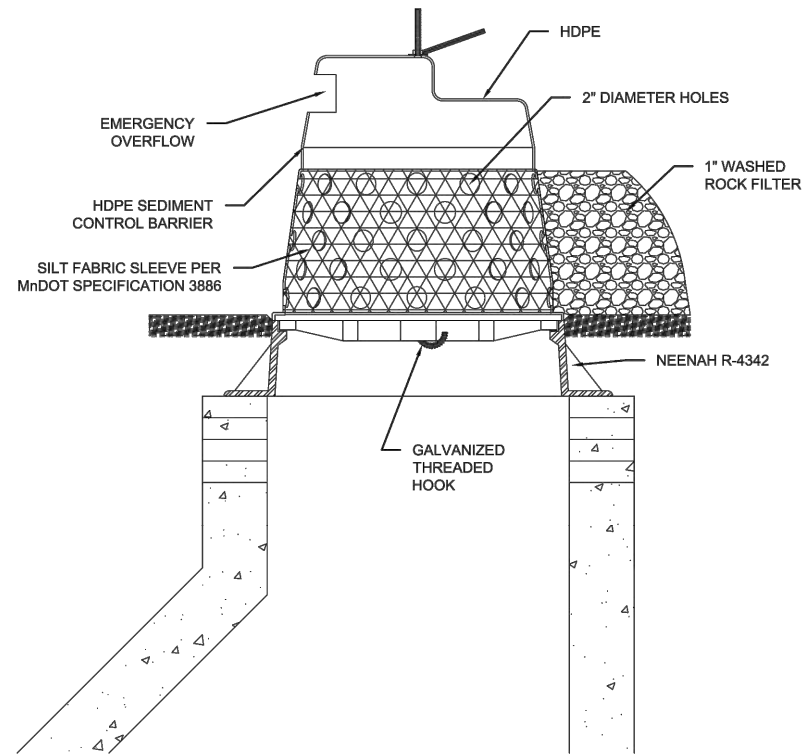


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SHEET  
C1.05

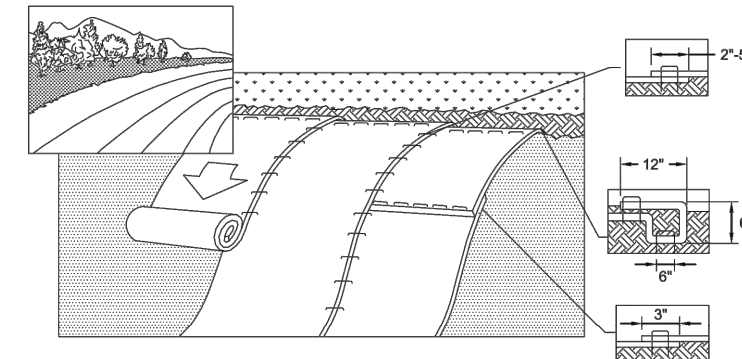
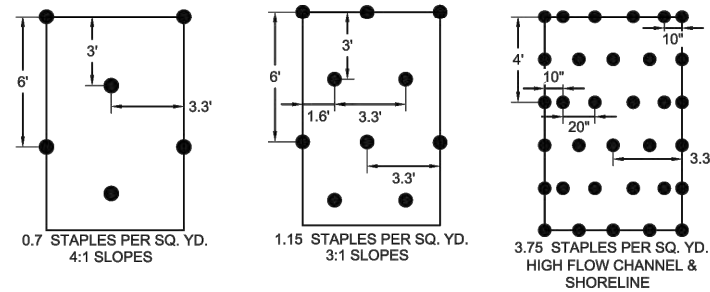


FLOW RATES SHALL COMPARE TO OR EXCEED FLOW RATES OF DITCH GRATE CASTINGS.



INLET PROTECTION FOR BEEHIVE OR STOOL GRATE

Special Details	
Date:	JAN. 2016
Revised:	ERO-07



NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, TO A SMOOTH GRADE SO THAT BLANKET HAS DIRECT CONTACT WITH SOILS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2'-5" (6cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

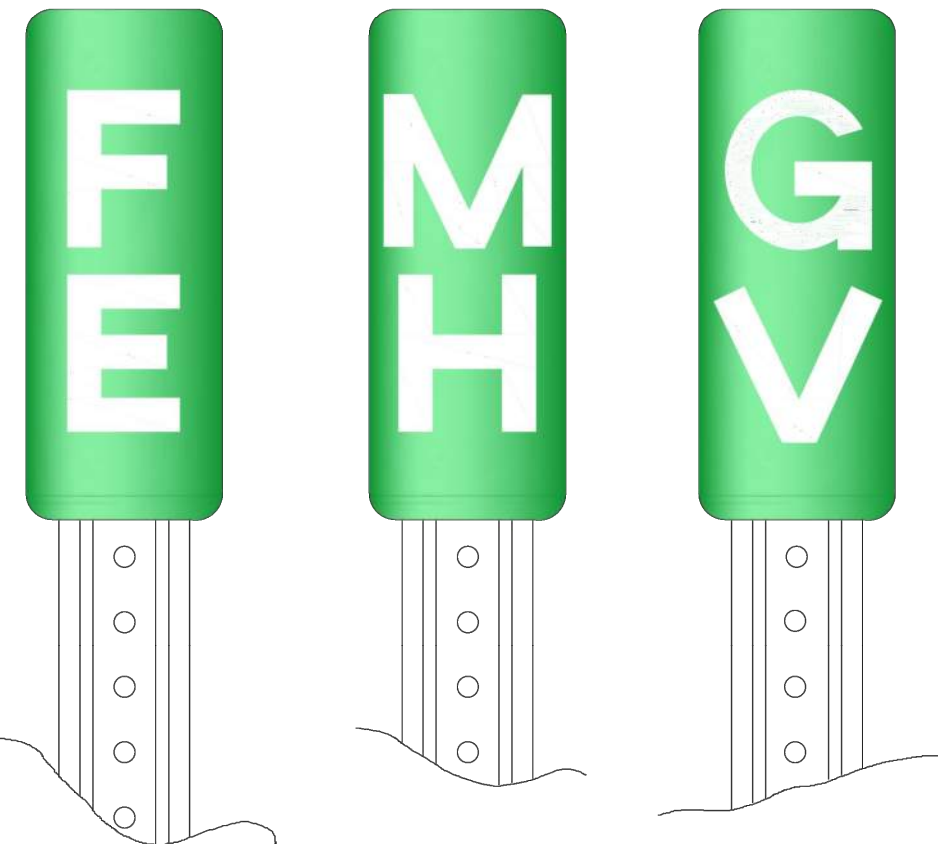
NOTE:

\*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.



EROSION CONTROL BLANKET INSTALLATION

Special Details	
Date:	JAN. 2016
Revised:	ERO-10



NOTES:

1. 0.063" THICK ALUMINUM SIGN. LETTERS ON WHITE HIGH INTENSITY REFLECTORIZED BACKGROUND SHALL BE THE FOLLOWING COLORS:
  - 1.1. WATER GV - BLUE
  - 1.2. SEWER GV - GREEN
  - 1.3. MH - SEWER - GREEN
  - 1.4. MH - STORM BLACK
  - 1.5. FE BLACK
2. U-CHANNEL POST, MINIMUM 3LB./FT. 6'-6" LONG, PAINTED GREEN.
3. STRUCTURE MARKER SIGNS SHALL BE FURNISHED AND CONSTRUCTED FOR ALL STRUCTURES LOCATED OUTSIDE OF THE STREET RIGHT OF WAY.
4. SIGNS ARE NOT REQUIRED IF STRUCTURE IS LOCATED IN A MAINTAINED LAWN.



STRUCTURE MARKER SIGNS

Special Details	
Date:	JAN. 2016
Revised:	SAN-12

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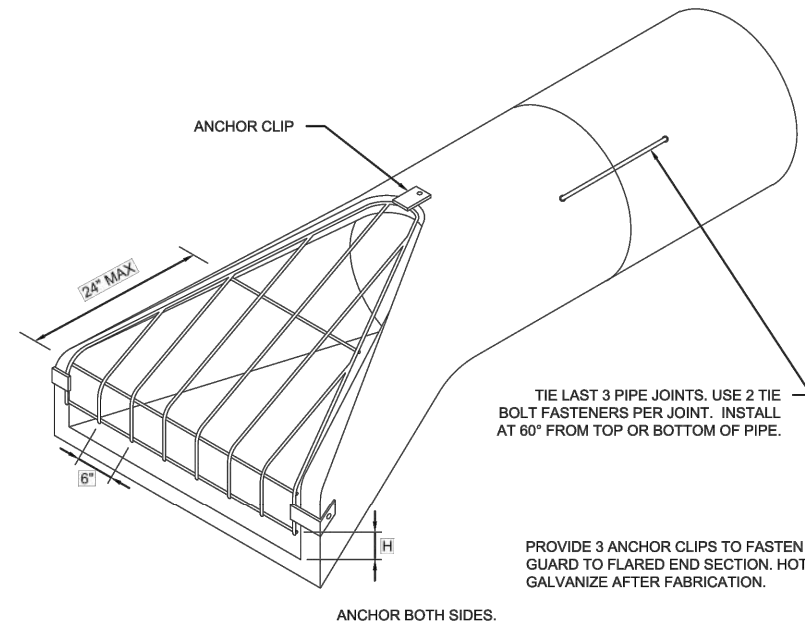
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CITY OF SHOREWOOD  
 MARY LAKE OUTLET  
 CONSTRUCTION DETAILS



SEE STANDARD PLATE NO. STO-12 FOR RIPRAP PLACEMENT.



TIE LAST 3 PIPE JOINTS. USE 2 TIE BOLT FASTENERS PER JOINT. INSTALL AT 60° FROM TOP OR BOTTOM OF PIPE.

PROVIDE 3 ANCHOR CLIPS TO FASTEN TRASH GUARD TO FLARED END SECTION. HOT DIP GALVANIZE AFTER FABRICATION.

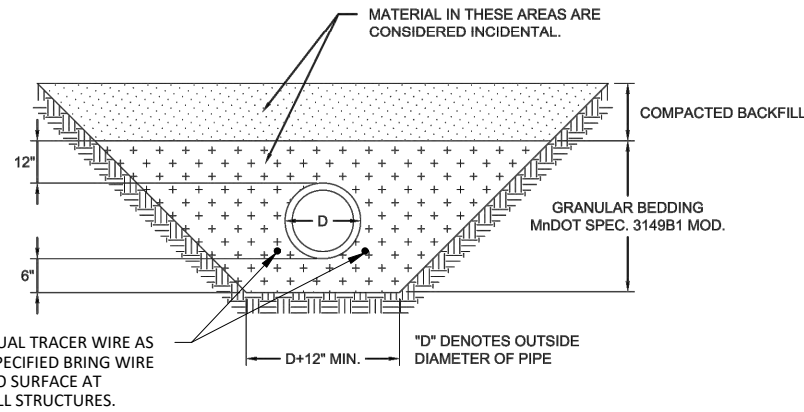
ANCHOR BOTH SIDES.

TRASH GUARD SIZING			
PIPE SIZE	BARS	"H"	BOLTS
12" - 18"	(NO TRASH GUARD FOR 12" - 18")		
21" - 42"	1" O.D.	6"	3/4"
48" - 72"	1-1/4" O.D.	12"	1"



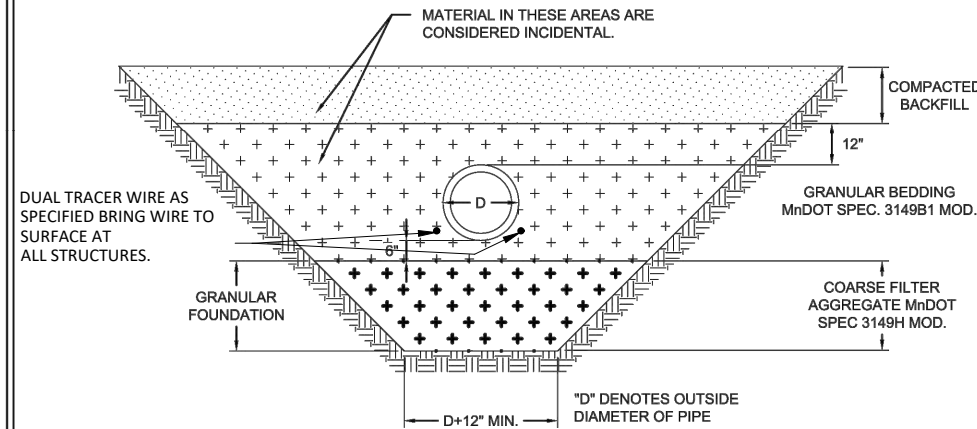
FLARED END SECTION AND TRASH GUARD

Special Details	
Date:	JAN. 2016
Revised:	STO-08



DUAL TRACER WIRE AS SPECIFIED BRING WIRE TO SURFACE AT ALL STRUCTURES.

PIPE FOUNDATION & BEDDING IN GOOD SOILS



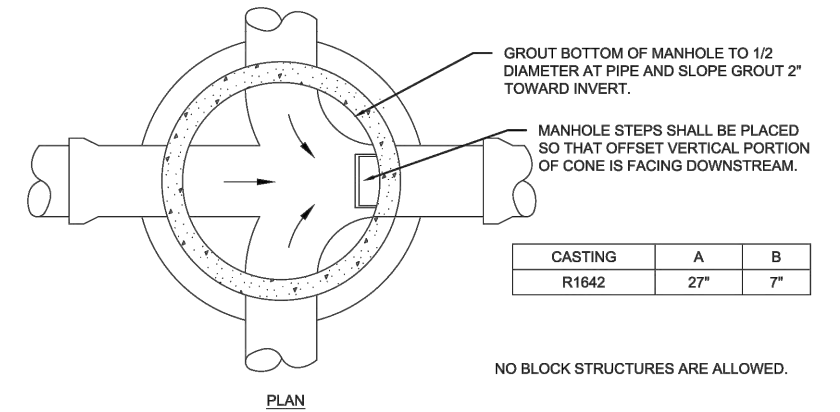
DUAL TRACER WIRE AS SPECIFIED BRING WIRE TO SURFACE AT ALL STRUCTURES.

PIPE FOUNDATION & BEDDING IN POOR SOILS



BEDDING METHODS FOR PLASTIC PIPE

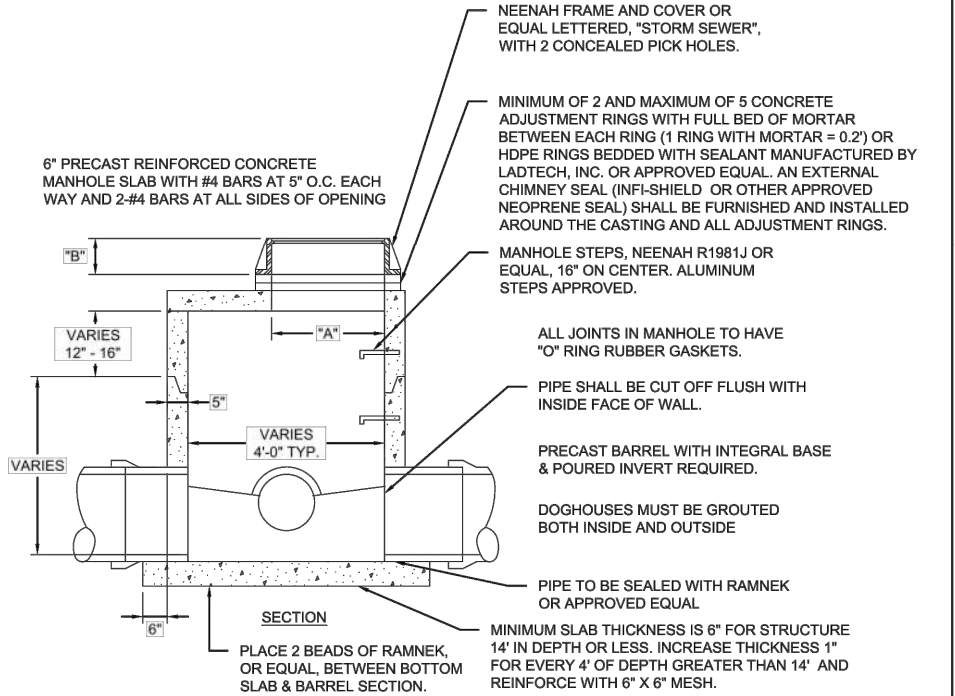
Special Details	
Date:	JAN. 2016
Revised:	DEC. 2017
	BED-01



CASTING	A	B
R1642	27"	7"

NO BLOCK STRUCTURES ARE ALLOWED.

PLAN



NEENAH FRAME AND COVER OR EQUAL LETTERED, "STORM SEWER", WITH 2 CONCEALED PICK HOLES.

MINIMUM OF 2 AND MAXIMUM OF 5 CONCRETE ADJUSTMENT RINGS WITH FULL BED OF MORTAR BETWEEN EACH RING (1 RING WITH MORTAR = 0.2") OR HDPE RINGS BEDDED WITH SEALANT MANUFACTURED BY LADTECH, INC. OR APPROVED EQUAL. AN EXTERNAL CHIMNEY SEAL (INFI-SHIELD OR OTHER APPROVED NEOPRENE SEAL) SHALL BE FURNISHED AND INSTALLED AROUND THE CASTING AND ALL ADJUSTMENT RINGS.

MANHOLE STEPS, NEENAH R1981J OR EQUAL, 16" ON CENTER. ALUMINUM STEPS APPROVED.

ALL JOINTS IN MANHOLE TO HAVE "O" RING RUBBER GASKETS.

PIPE SHALL BE CUT OFF FLUSH WITH INSIDE FACE OF WALL.

PRECAST BARREL WITH INTEGRAL BASE & POURED INVERT REQUIRED.

DOGHOUSES MUST BE GROUTED BOTH INSIDE AND OUTSIDE

PIPE TO BE SEALED WITH RAMNEK OR APPROVED EQUAL.

MINIMUM SLAB THICKNESS IS 6" FOR STRUCTURE 14' IN DEPTH OR LESS. INCREASE THICKNESS 1" FOR EVERY 4' OF DEPTH GREATER THAN 14' AND REINFORCE WITH 6" X 6" MESH.

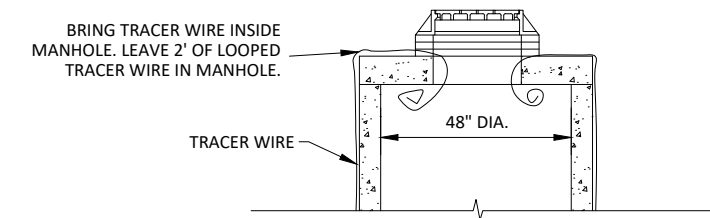
SECTION

PLACE 2 BEADS OF RAMNEK, OR EQUAL, BETWEEN BOTTOM SLAB & BARREL SECTION.

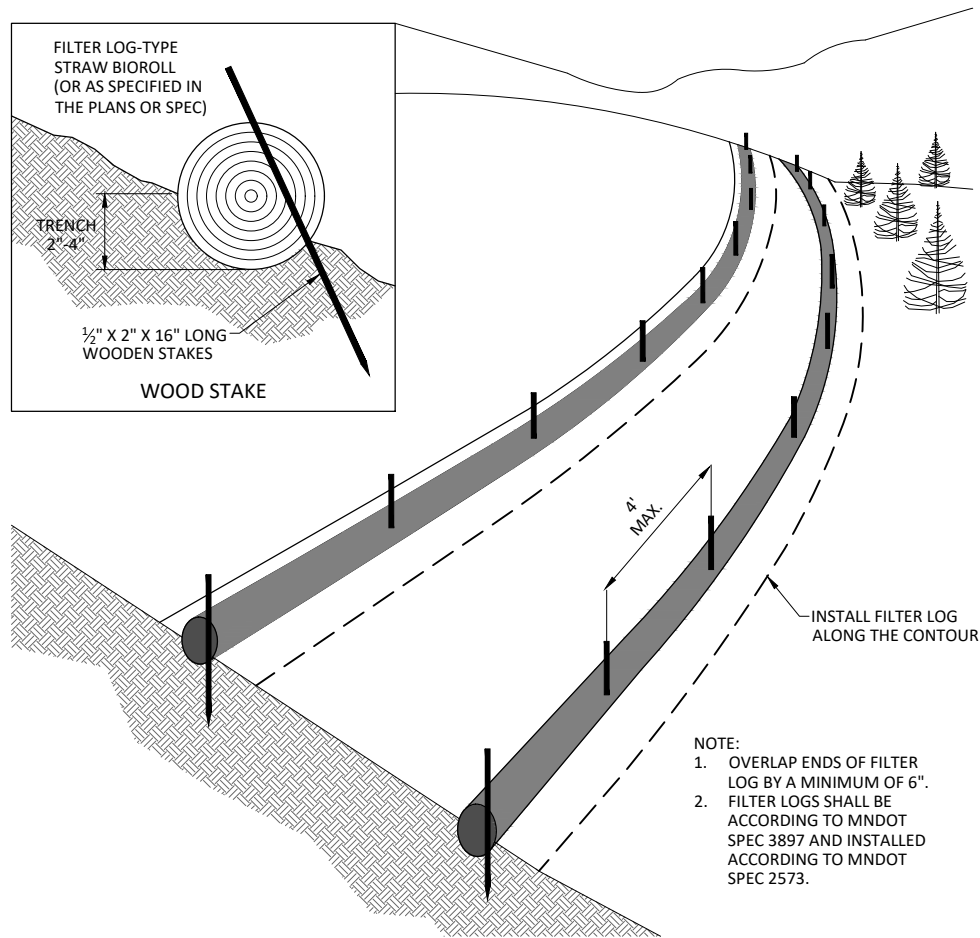
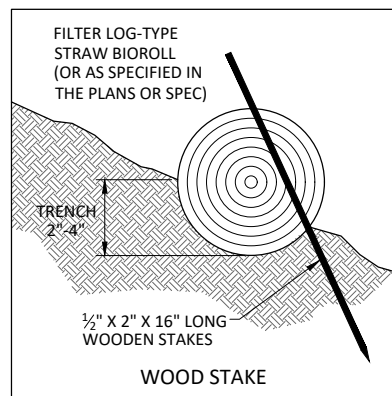


STORM SEWER MANHOLE WITH REINFORCED TOP SLAB

Special Details	
Date:	JAN. 2016
Revised:	DEC. 2017
	STO-03

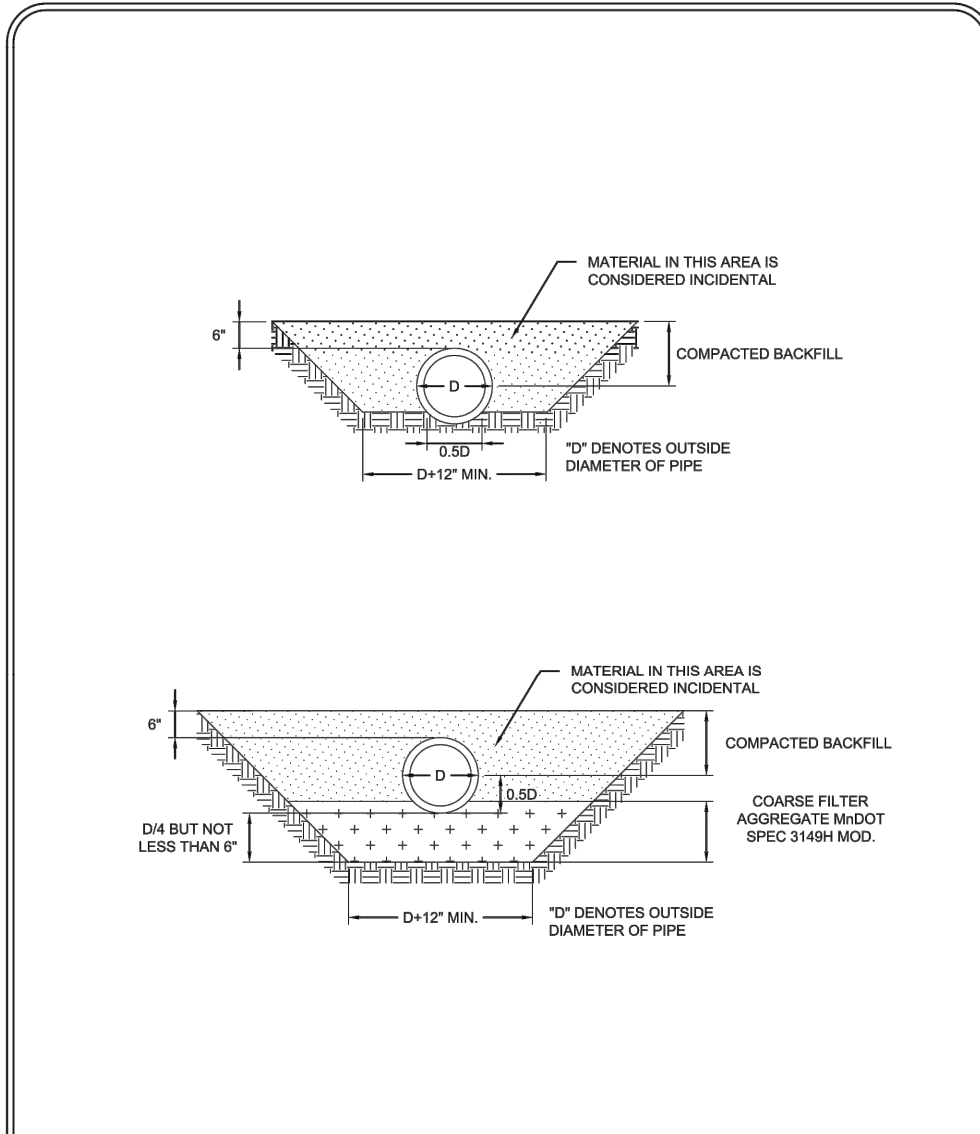


TRACER WIRE INSTALLATION AT MANHOLE



- NOTE:
1. OVERLAP ENDS OF FILTER LOG BY A MINIMUM OF 6".
  2. FILTER LOGS SHALL BE ACCORDING TO MNDOT SPEC 3897 AND INSTALLED ACCORDING TO MNDOT SPEC 2573.

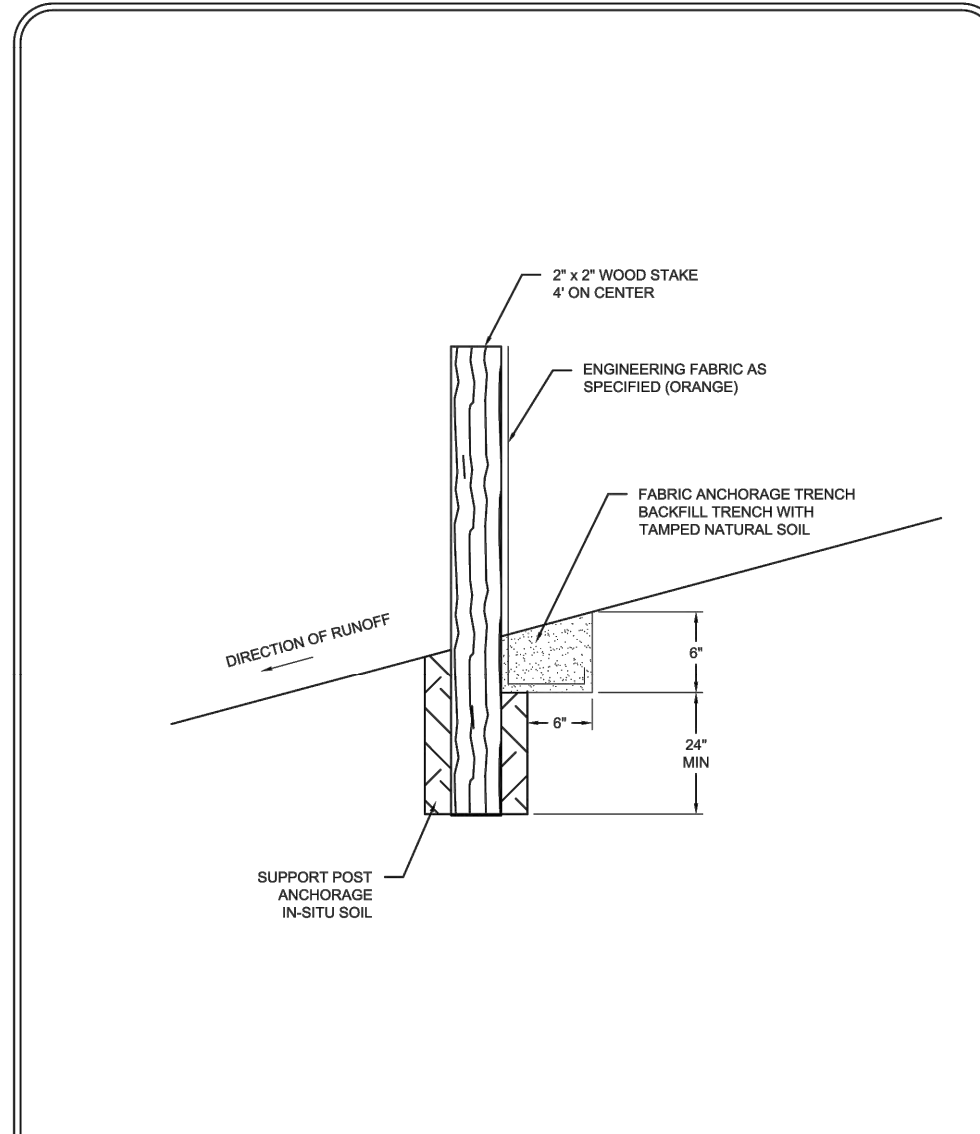
PERIMETER PROTECTION-FILTER LOG  
NOT TO SCALE



BEDDING METHODS FOR RCP AND DIP

Special Details

Date:	JAN. 2016	BED-02
Revised:	DEC. 2017	



SILT FENCE

Special Details

Date:	JAN. 2016	ERO-02
Revised:		

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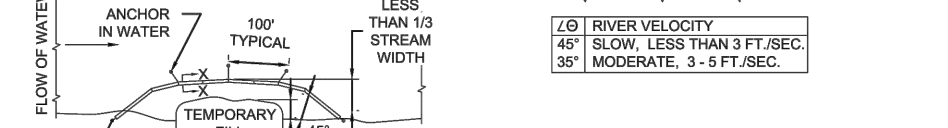
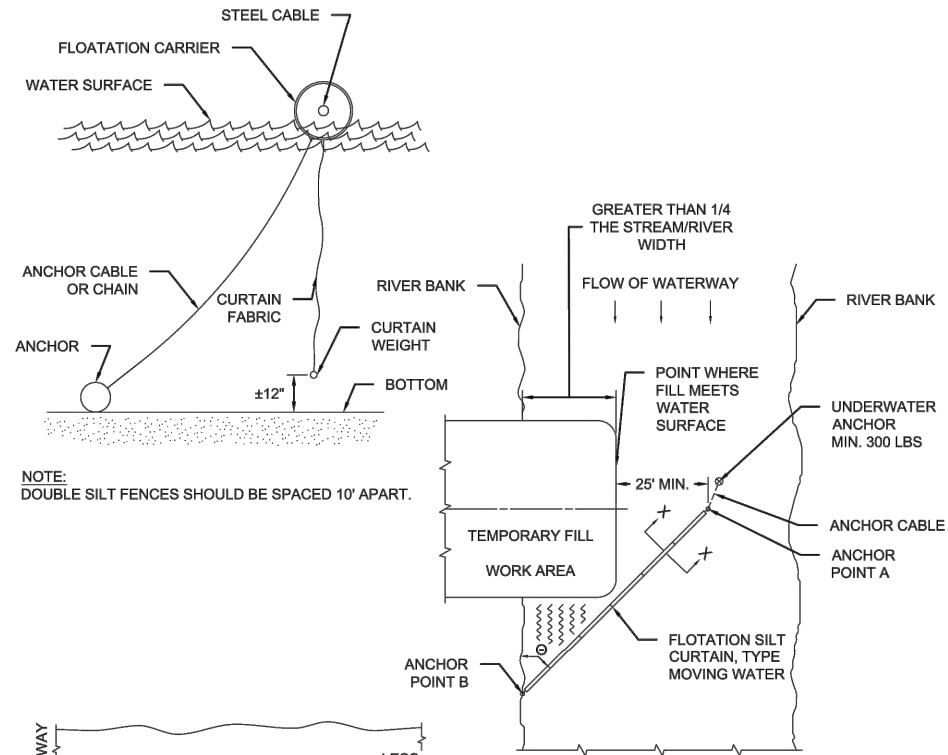


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CITY OF SHOREWOOD  
MARY LAKE OUTLET  
CONSTRUCTION DETAILS

SHEET  
C1.08

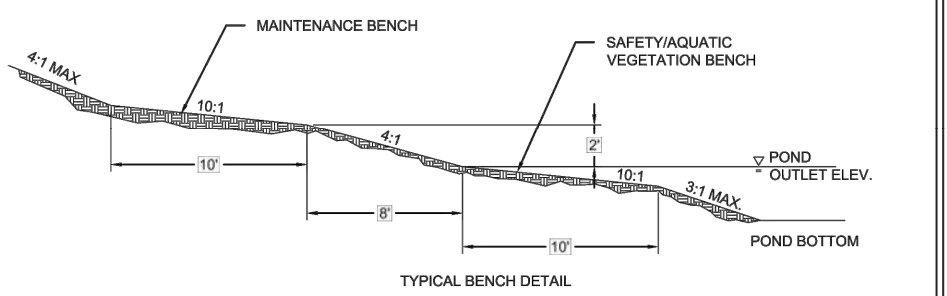
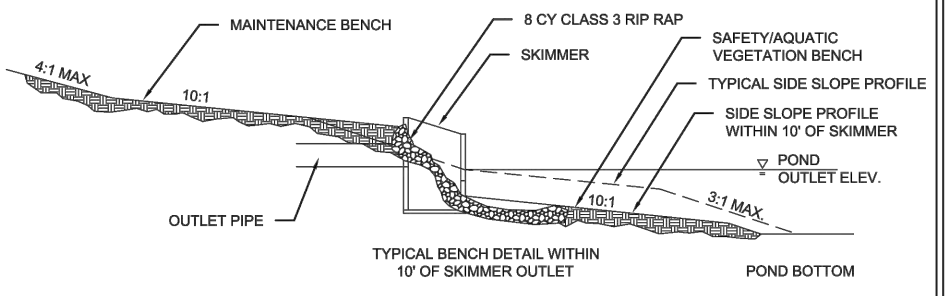


45°	RIVER VELOCITY SLOW, LESS THAN 3 FT./SEC.
35°	MODERATE, 3 - 5 FT./SEC.

**PLAN VIEW**  
**FLOTATION SILT CURTAIN - TYPE MOVING WATER (SPEC. 3887)**  
 FOR CONTAINING OVERFLOWS FROM WEIRS, STANDPIPES, SETTLING PONDS

**DESIGN GUIDELINES:**  
 WHEN TEMPORARY FILL ENCLOSES MORE THAN 1/4 OF THE WIDTH OF STREAM BUT LESS THAN 1/3 WIDTH OF THE STREAM.  
 MAXIMUM WATER VELOCITY: 5 FT./SEC.  
 MINIMUM WATER DEPTH: 3 FT.  
 MAXIMUM WATER DEPTH: 11 FT.

**DESIGN GUIDELINES:**  
 WHEN TEMPORARY FILL ENCLOSES LESS THAN 1/4 OF THE WIDTH OF STREAM.  
 MAXIMUM WATER VELOCITY: 5 FT./SEC.  
 MAXIMUM WATER DEPTH: 11 FT.



**NOTE:**  
 SEE CITY PLATE #STO-15 OR #STO-16 FOR SPECIFIC SKIMMER STRUCTURE DETAILS.



FLOATING SILT CURTAIN

Special Details	
Date:	JAN. 2016
Revised:	ERO-05



TYPICAL BENCH DETAIL

Special Details	
Date:	JAN. 2016
Revised:	STO-17

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*Andrew L. Budde*  
 ANDREW L. BUDDÉ  
 LIC. NO. 46585 DATE 07/27/2020

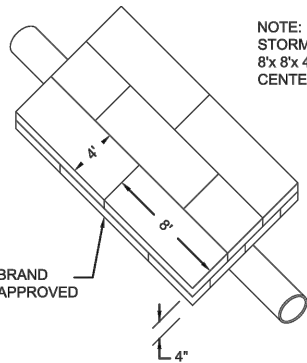
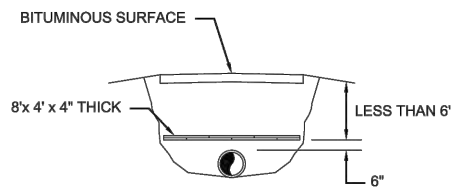
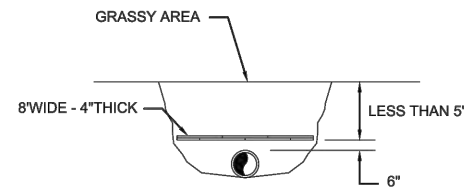


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 CHASKA, MINNESOTA 55318  
 Phone: (952) 448-8838  
 Email: Chaska@bolton-menk.com  
 www.bolton-menk.com

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CITY OF SHOREWOOD  
 MARY LAKE OUTLET  
 CONSTRUCTION DETAILS

SHEET  
 C1.09



NOTE:  
STORM DRAIN CROSSING  
8" x 4" THICK  
CENTER OVER PIPE

STYROFOAM HI-35 BRAND  
PLASTIC FOAM OR APPROVED  
EQUAL



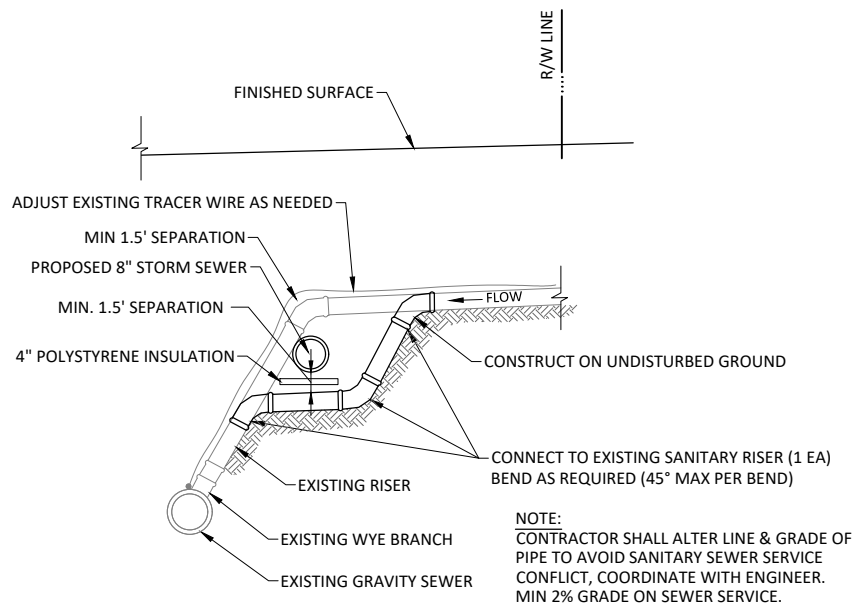
INSULATION DETAIL

Special Details

Date: JAN. 2016

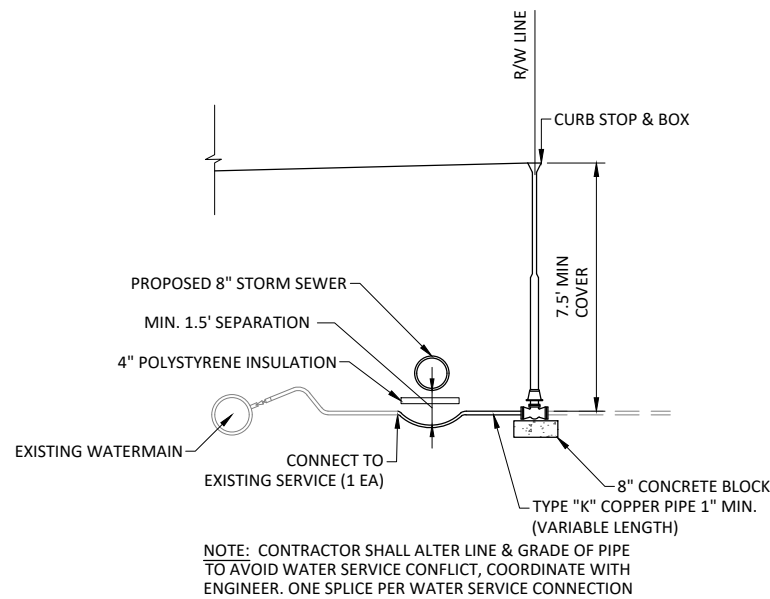
Revised:

WAT-11



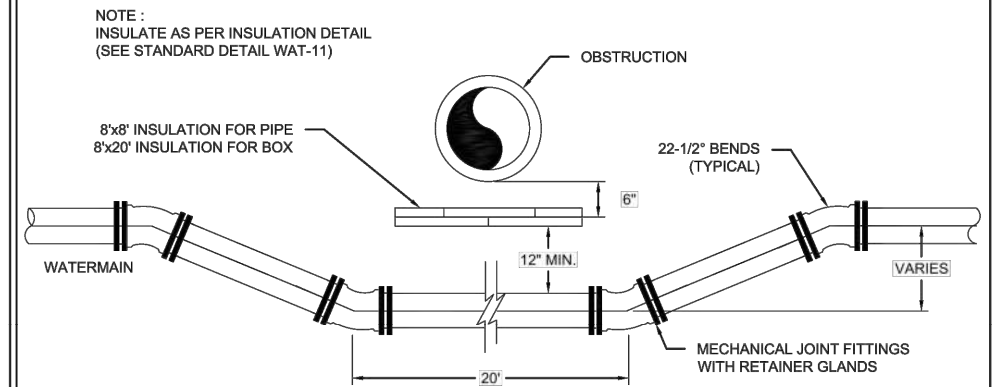
**REMOVE & REPLACE SANITARY SEWER LINE**

NOT TO SCALE



**REMOVE & REPLACE COPPER WATER SERVICE LINE**

NOT TO SCALE



ALL WATERMAIN SHALL BE WRAPPED IN POLYETHYLENE



WATERMAIN INSULATION  
& LOWERING

Special Details

Date: JAN. 2016

Revised:

WAT-10

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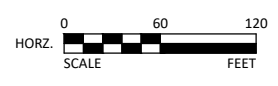
CITY OF SHOREWOOD  
MARY LAKE OUTLET  
CONSTRUCTION DETAILS


SHEET

C1.10



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CITY OF SHOREWOOD  
 MARY LAKE OUTLET  
 PROJECT OVERVIEW

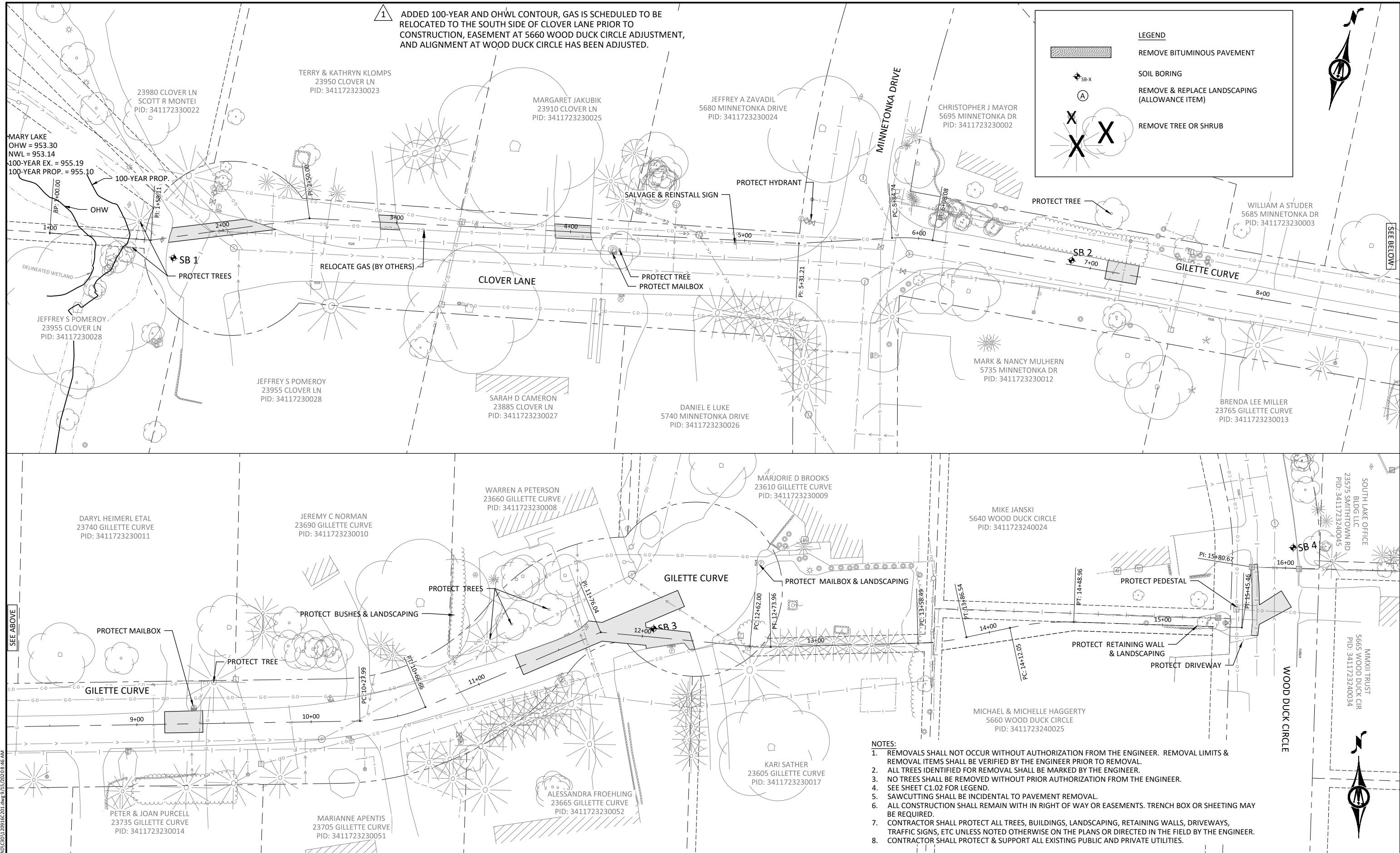
SHEET  
**C1.11**

1 CHANGED SCALE AND INCLUDED STUDER POND WORK.

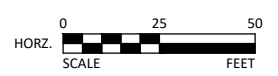
1 ADDED 100-YEAR AND OHWL CONTOUR, GAS IS SCHEDULED TO BE RELOCATED TO THE SOUTH SIDE OF CLOVER LANE PRIOR TO CONSTRUCTION, EASEMENT AT 5660 WOOD DUCK CIRCLE ADJUSTMENT, AND ALIGNMENT AT WOOD DUCK CIRCLE HAS BEEN ADJUSTED.

**LEGEND**

- REMOVE BITUMINOUS PAVEMENT
- SOIL BORING
- REMOVE & REPLACE LANDSCAPING (ALLOWANCE ITEM)
- REMOVE TREE OR SHRUB



- NOTES:**
- REMOVALS SHALL NOT OCCUR WITHOUT AUTHORIZATION FROM THE ENGINEER. REMOVAL LIMITS & REMOVAL ITEMS SHALL BE VERIFIED BY THE ENGINEER PRIOR TO REMOVAL.
  - ALL TREES IDENTIFIED FOR REMOVAL SHALL BE MARKED BY THE ENGINEER.
  - NO TREES SHALL BE REMOVED WITHOUT PRIOR AUTHORIZATION FROM THE ENGINEER.
  - SEE SHEET C1.02 FOR LEGEND.
  - SAWCUTTING SHALL BE INCIDENTAL TO PAVEMENT REMOVAL.
  - ALL CONSTRUCTION SHALL REMAIN WITH IN RIGHT OF WAY OR EASEMENTS. TRENCH BOX OR SHEETING MAY BE REQUIRED.
  - CONTRACTOR SHALL PROTECT ALL TREES, BUILDINGS, LANDSCAPING, RETAINING WALLS, DRIVEWAYS, TRAFFIC SIGNS, ETC UNLESS NOTED OTHERWISE ON THE PLANS OR DIRECTED IN THE FIELD BY THE ENGINEER.
  - CONTRACTOR SHALL PROTECT & SUPPORT ALL EXISTING PUBLIC AND PRIVATE UTILITIES.



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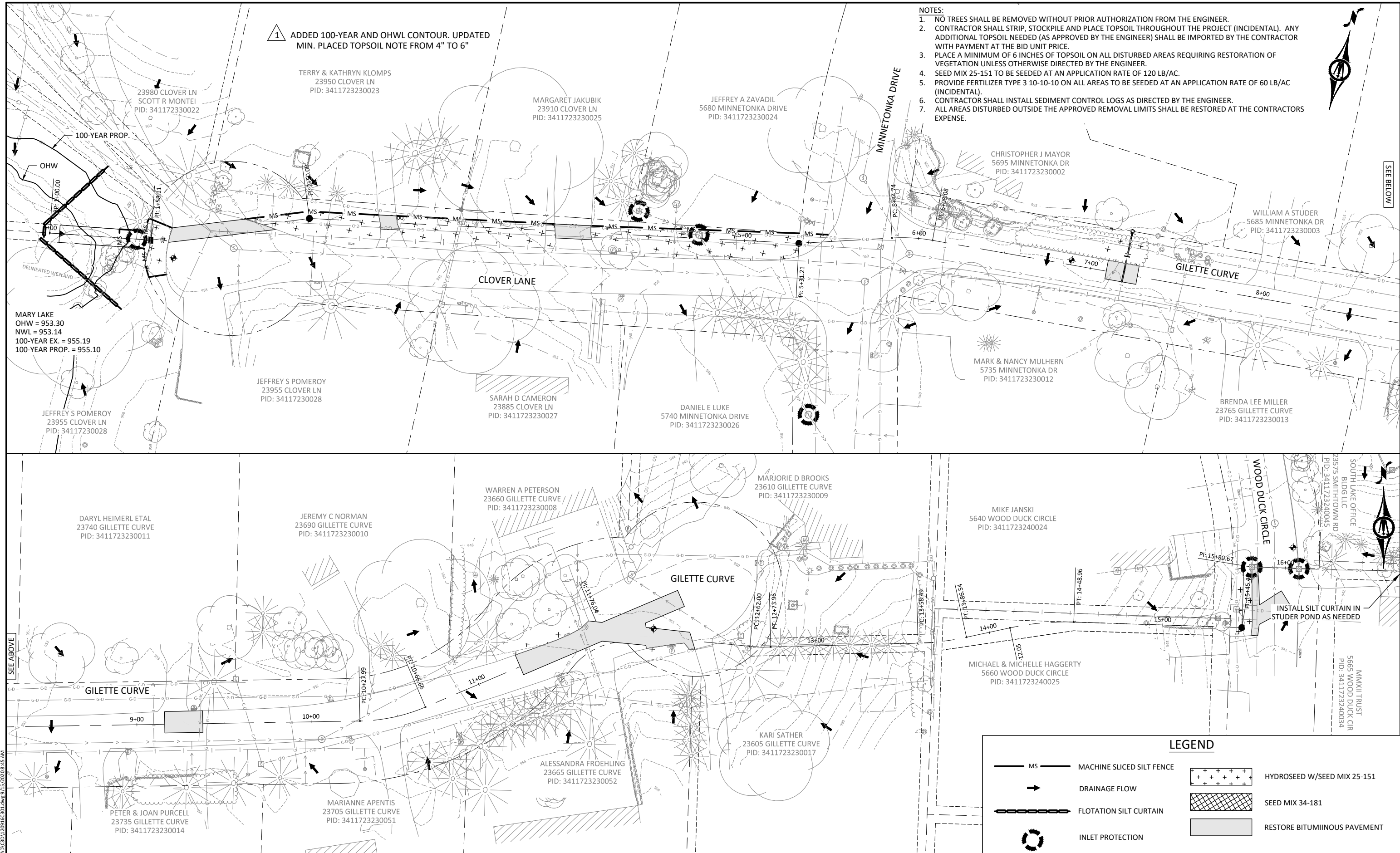
**CITY OF SHOREWOOD**  
 MARY LAKE OUTLET  
 EXISTING CONDITIONS & REMOVAL PLAN

SHEET  
**C2.01**

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1 ADDED 100-YEAR AND OHWL CONTOUR. UPDATED MIN. PLACED TOPSOIL NOTE FROM 4" TO 6"

- NOTES:
- NO TREES SHALL BE REMOVED WITHOUT PRIOR AUTHORIZATION FROM THE ENGINEER.
  - CONTRACTOR SHALL STRIP, STOCKPILE AND PLACE TOPSOIL THROUGHOUT THE PROJECT (INCIDENTAL). ANY ADDITIONAL TOPSOIL NEEDED (AS APPROVED BY THE ENGINEER) SHALL BE IMPORTED BY THE CONTRACTOR WITH PAYMENT AT THE BID UNIT PRICE.
  - PLACE A MINIMUM OF 6 INCHES OF TOPSOIL ON ALL DISTURBED AREAS REQUIRING RESTORATION OF VEGETATION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
  - SEED MIX 25-151 TO BE SEEDED AT AN APPLICATION RATE OF 120 LB/AC.
  - PROVIDE FERTILIZER TYPE 3 10-10-10 ON ALL AREAS TO BE SEEDED AT AN APPLICATION RATE OF 60 LB/AC (INCIDENTAL).
  - CONTRACTOR SHALL INSTALL SEDIMENT CONTROL LOGS AS DIRECTED BY THE ENGINEER.
  - ALL AREAS DISTURBED OUTSIDE THE APPROVED REMOVAL LIMITS SHALL BE RESTORED AT THE CONTRACTORS EXPENSE.

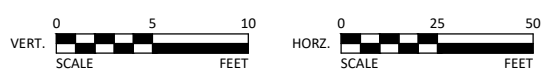


SEE BELOW

SEE ABOVE

LEGEND

- MS MACHINE SLICED SILT FENCE
- DRAINAGE FLOW
- ▬ FLOTATION SILT CURTAIN
- ⊙ INLET PROTECTION
- ⊕ HYDROSEED W/SEED MIX 25-151
- ▨ SEED MIX 34-181
- RESTORE BITUMINOUS PAVEMENT



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*Andrew L. Budde*  
 ANDREW L. BUDDÉ  
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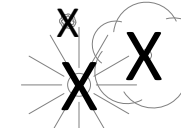
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CITY OF SHOREWOOD  
 MARY LAKE OUTLET  
 EROSION CONTROL & RESTORATION PLAN

SHEET  
 C3.01

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### LEGEND

-  SILT CURTAIN, STILL WATER
-  MORTARED IN PLACE RIP RAP
-  SEED MIX 34-181
-  REMOVE TREE OR SHRUB

ANNA SANDOR  
23950 ELDER TURN  
PID: 3411723230037



### SADDLE GRADING

ELEVATION			ELEVATION
955		PROPOSED 100-YEAR HWL = 955.10	955
950		6:1 TYP	950
945		5' BOTTOM TYP ELEV. 952.47	945
940		EX 15" SAN	940
935		954.4 952.71	935

PHOBE G HARRINGTON  
23870 ELDER TURN  
PID: 3411723230038

MICHAEL A EMOLA  
5725 ECHO RD  
PID: 3311723140018

ROBERT W SHAW  
5745 ECHO RD  
PID: 3311723140037

STEVEN & BARBARA SWANSON  
5755 ECHO RD  
PID: 3311723140038

ADAM & NICOLE RUBINGER  
24035 MARY LAKE TRAIL  
PID: 3311723410044

OHW

PERMANENT EASEMENT

PROTECT TREE

MINIMIZE IMPACTS TO THE DELINEATED WETLAND TO THE EXTENT POSSIBLE. DISTURBED AREAS MUST BE RESTORED TO ITS NATURAL STATE AFTER WORK HAS BEEN COMPLETED. RESTORATION WORK MUST BE COMPLETED WITHIN 14 DAYS.

PROTECT TREE

PROTECT TREE

100-YEAR PROP.

REMOVE ONE TREE. COORDINATE WITH PROPERTY OWNER PRIOR TO REMOVAL

EXISTING MET COUNCIL D & U EASEMENT

SADDLE GRADING SITE ACCESS.

ELDER TURN

PROTECT EXISTING SANITARY MANHOLE  
DO NOT PLACE FILL OVER CASTING

CONSTRUCTION LIMITS

ALL DISTURBED AREA MUST BE RESTORED TO ITS NATURAL STATE AFTER WORK HAS BEEN COMPLETED. RESTORATION WORK MUST BE COMPLETED WITHIN 14 DAYS.

- NOTE:
- ALL DISTURBED DELINEATED WETLAND AND LAKE SHORE AREAS SHALL BE RESTORED WITH SEED MIX 34-181 AT A RATE OF 5 LBS/ACRE. ALL OTHER DISTURBED AREAS SHALL BE RESTORED WITH HYDROMULCH W/SEED MIX 25-151. COORDINATE WITH ENGINEER. CONTRACTOR MAY USE MATERIAL GENERATED FROM SADDLE GRADING AS TEMPORARY COFFER DAM. CONTRACTOR SHALL VERIFY SUITABILITY OF EXISTING MATERIAL FOR COFFER DAM OR PROVIDE OTHER MEANS AND METHODS FOR CONSTRUCTION. CONTRACTOR SHALL MAKE SURE ALL MATERIAL IS REMOVED AFTER CONSTRUCTION.
  - ADDED 100-YEAR AND OHWL CONTOUR, ADJUSTED LOCATION OF SADDLE GRADING, ADDED TURF HATCH, CHANGED SCALE, AND ADDED COFFER DAM NOTE
  - UPDATED SADDLE GRADING

- ADDED 100-YEAR AND OHWL CONTOUR, ADJUSTED LOCATION OF SADDLE GRADING, ADDED TURF HATCH, CHANGED SCALE, AND ADDED COFFER DAM NOTE
- UPDATED SADDLE GRADING

MARY LAKE



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*Andrew L. Budde*  
ANDREW L. BUDDÉ  
LIC. NO. 46585 DATE 07/27/2020



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CITY OF SHOREWOOD  
MARY LAKE OUTLET  
GRADING PLAN

SHEET  
**C4.01**

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SMITHTOWN ROAD/CR 19

THOMAS & CATHY LINGO  
23445 SMITHTOWN ROAD  
PID: 3411723240040

PANACO LLC  
130 OAK ST  
PID: 3411723210008

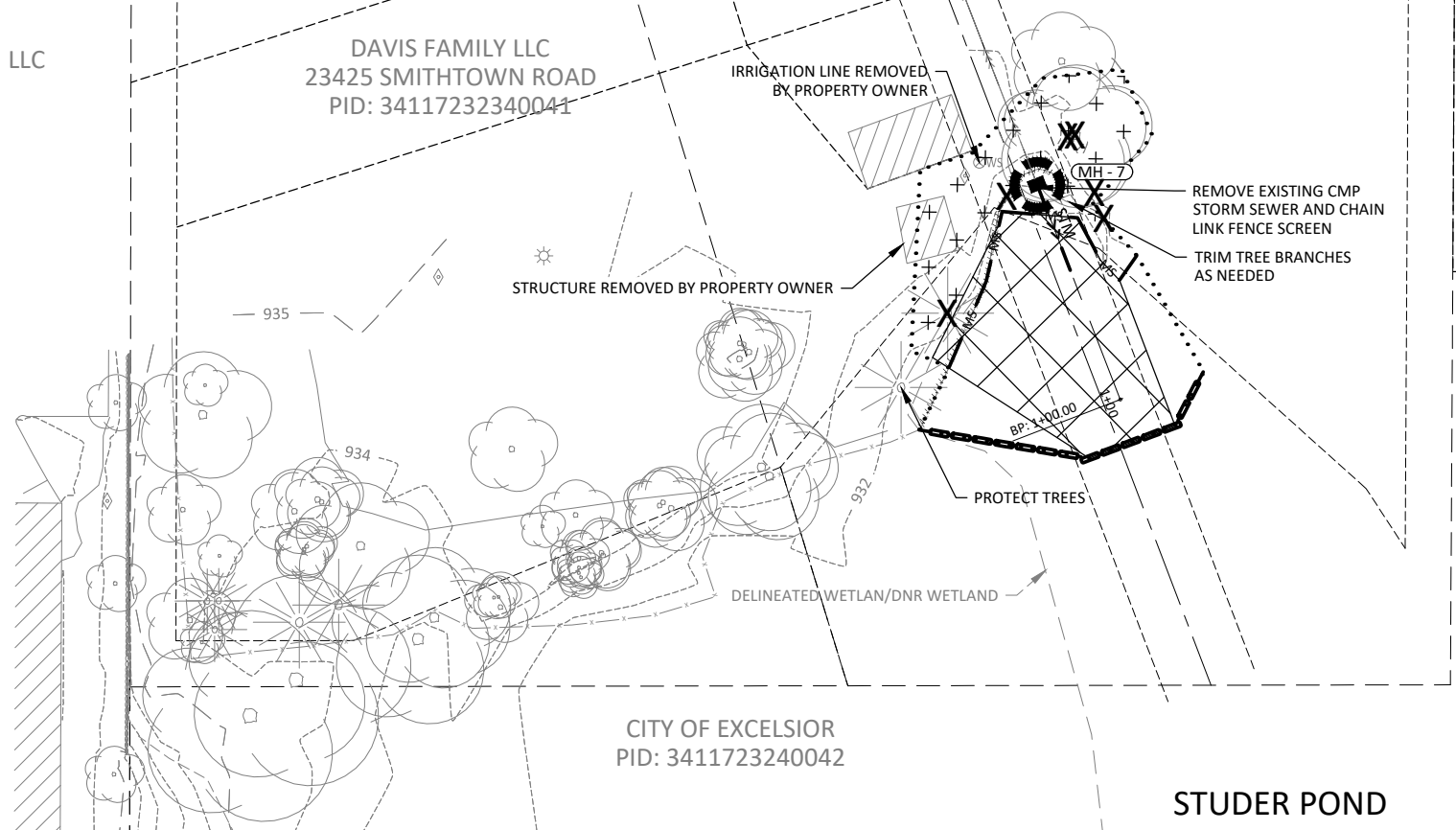
SOUTH LAKE OFFICE BUILDING LLC  
23575 SMITHTOWN ROAD  
PID: 34117232340045

DAVIS FAMILY LLC  
23425 SMITHTOWN ROAD  
PID: 34117232340041

CITY OF EXCELSIOR  
PID: 3411723240042

STUDER POND

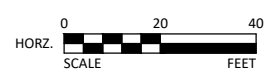
LEGEND	
	SILT CURTAIN, STILL WATER
	MACHINE SLICED SILT FENCE
	SALVAGE & REINSTALL FENCE
	HYDROSEED W/SEED MIX 25-151
	SEED MIX 34-181
	INLET PROTECTION
	REMOVE TREE OR SHRUB



- NOTE:
- 1) ALL DISTURBED DELINEATED WETLAND AND LAKE SHORE AREAS SHALL BE RESTORED WITH SEED MIX 34-181 AT A RATE OF 5 LBS/ACRE. ALL OTHER DISTURBED AREAS SHALL BE RESTORED WITH HYDROMULCH W/SEED MIX 25-151. COORDINATE WITH ENGINEER.
  - 2) CONTRACTOR'S WORK SHALL REMAIN WITH IN ALL EASEMENTS.
  - 3) CONTRACTOR SHALL UTILIZE GARDEN PATCH PARKING LOT AND EASEMENTS FOR SITE ACCESS. CONTRACTOR SHALL PROTECT GARDEN PATCH PARKING LOT, SMITHTOWN ROAD/CR 19, AND ANY OTHER PAVEMENTS.
  - 4) CONTRACTOR MAY USE MATERIAL GENERATED FROM THE OUTLET CONTROL STRUCTURE AS TEMPORARY COFFER DAM. CONTRACTOR SHALL VERIFY SUITABILITY OF EXISTING MATERIAL FOR COFFER DAM OR PROVIDE OTHER MEANS AND METHODS FOR CONSTRUCTION. CONTRACTOR SHALL MAKE SURE ALL MATERIAL IS REMOVED AFTER CONSTRUCTION.
  - 5) CONTRACTORS CONSTRUCTION METHODS MAY REQUIRE SWAMP MATS/LOGS OR A LONG REACH EXCAVATOR TO EXCAVATE STUDER POND CHANNEL MATERIAL (INCIDENTAL).

OUTLET CONTROL STRUCTURE AND POND GRADING			
940	(MH-7) 1+50.1 R=931.34 I=927.50 EQUIV. 36" S I=929.59 32" N		940
935			935
100 YEAR HWL = 933.03 ELEV. 6-3-20 = 931.7			
930		EX 32" STM	930
NWL = 929.54			
925	I = 925.8	EQUIV. 36" ARCH PIPE @ 8.50%	925
EXCAVATE TO 923.8			
920			920
915	928.82 931.3 923.93 932.1 933.9		915

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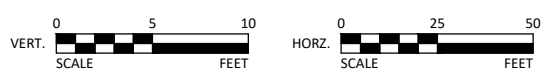
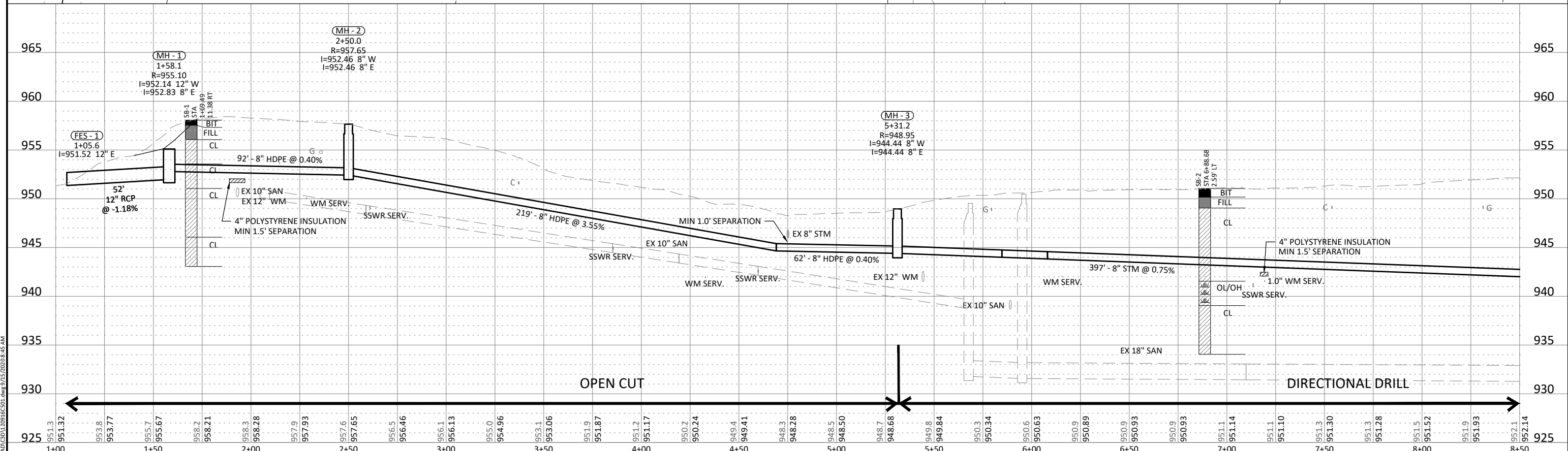
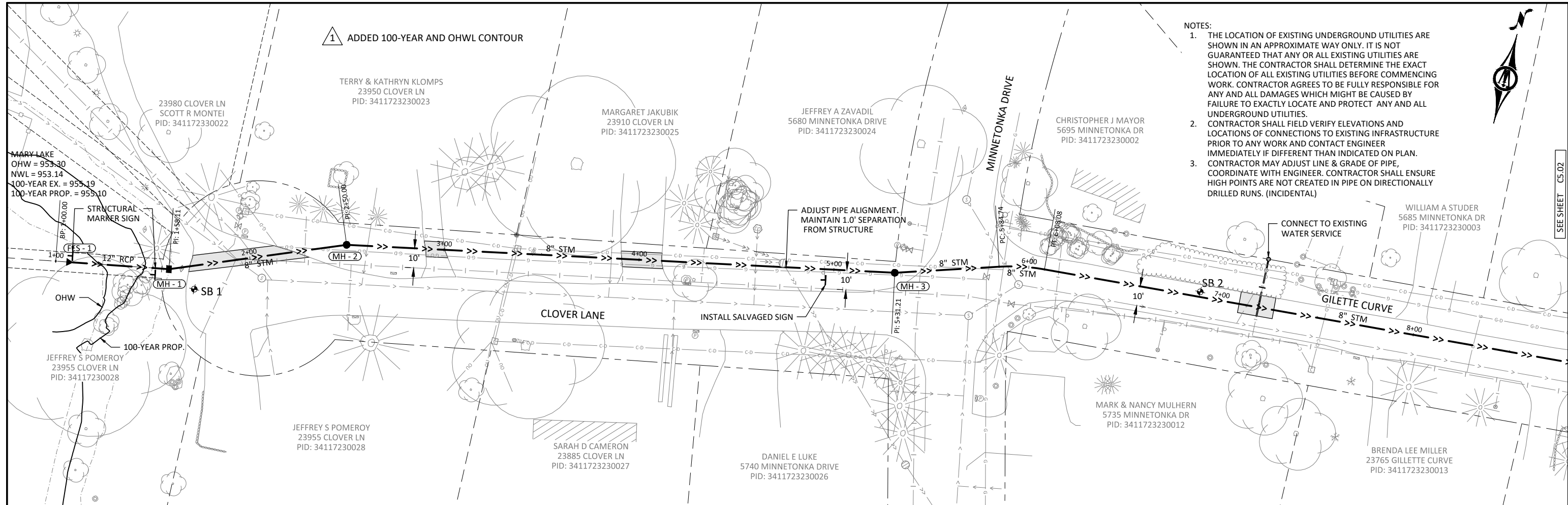


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1 ADDED 100-YEAR AND OHWL CONTOUR

- NOTES:
1. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. IT IS NOT GUARANTEED THAT ANY OR ALL EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.
  2. CONTRACTOR SHALL FIELD VERIFY ELEVATIONS AND LOCATIONS OF CONNECTIONS TO EXISTING INFRASTRUCTURE PRIOR TO ANY WORK AND CONTACT ENGINEER IMMEDIATELY IF DIFFERENT THAN INDICATED ON PLAN.
  3. CONTRACTOR MAY ADJUST LINE & GRADE OF PIPE, COORDINATE WITH ENGINEER. CONTRACTOR SHALL ENSURE HIGH POINTS ARE NOT CREATED IN PIPE ON DIRECTIONALLY DRILLED RUNS. (INCIDENTAL)



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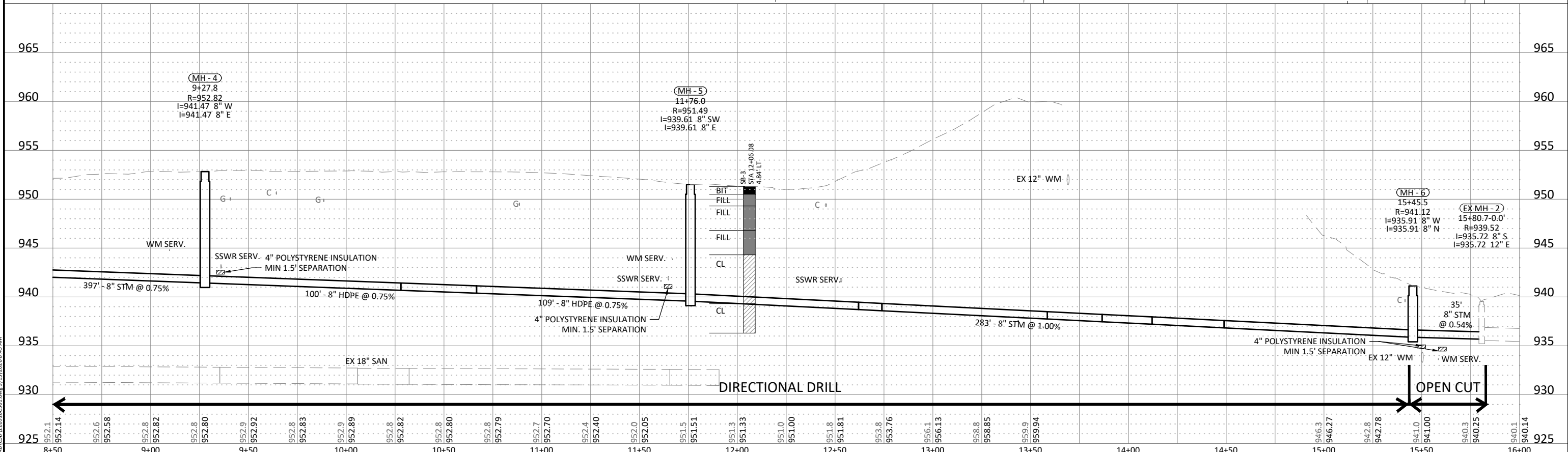
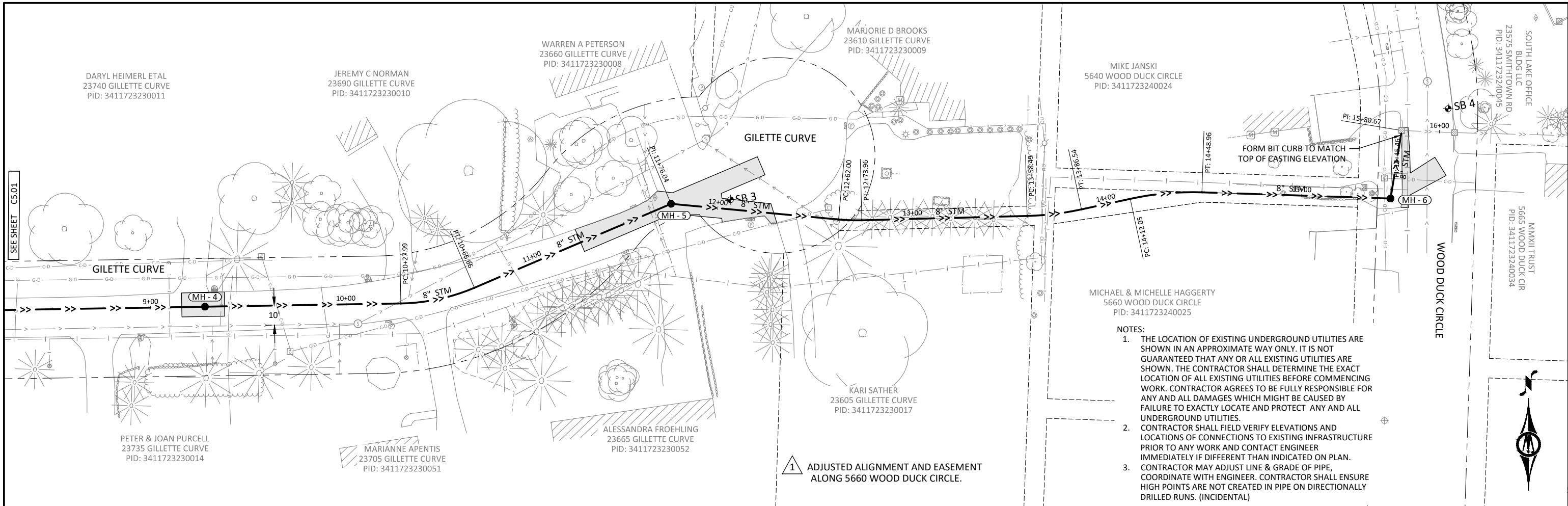
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CITY OF SHOREWOOD  
 MARY LAKE OUTLET  
 STORM SEWER PLAN & PROFILE

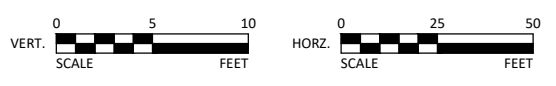
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SEE SHEET C5.02



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**CITY OF SHOREWOOD**  
 MARY LAKE OUTLET  
 STORM SEWER PLAN & PROFILE

SHEET  
**C5.02**

# REQUEST FOR VARIANCE AND STATEMENT OF HARDSHIP

**MINNEHAHA CREEK WATERSHED DISTRICT (MCWD)**  
**15320 MINNETONKA BLVD.**  
**MINNETONKA, MN 55345**

**Phone: 952-471-0590**  
**Fax: 952-471-0682**

A request for a Variance must be accompanied by a MCWD Water Resources Application

**Project Details:**

Project address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
County: \_\_\_\_\_ Property ID number (PID): \_\_\_\_\_

The Board of Managers may hear requests for variances from strict compliance with provisions of the District Rules in instances where strict enforcement of the rules would cause an undue hardship because of circumstances unique to the property under consideration. The Board of Managers may grant variances where it is demonstrated that such action will remain in spirit and with the intent of these rules. An applicant granted a variance from full compliance with a requirement of the rules would be required to meet the requirement to the greatest degree feasible short of full compliance. A variance must be approved by a two-thirds majority of managers voting.

To grant a variance, the Board of Managers must determine, based on a showing by the applicant:

- That because of special conditions inherent to the property, which do not apply generally to other land or structures in the District, strict compliance with a provision of a District rule will cause undue hardship to the applicant or property owner;
- That the hardship was not created by the landowner, the landowner's agent or representative, or a contractor. Economic hardship is not grounds for issuing a variance.
- That granting such variance will not merely serve as a convenience to the applicant.
- That there is no feasible and prudent alternative to the proposed activity requiring the variance.
- That granting the variance will not impair or be contrary to the intent of these rules.

A variance will remain valid only as long as the underlying permit remains valid.

A violation of any condition of approval of a permit subject to a variance shall constitute grounds for termination of the variance.

Variance Requested From MCWD Rule(s):

- Erosion Control
- Floodplain Alteration
- Wetland Protection
- Shoreline & Streambank Stabilization

- Waterbody Crossings & Structures
- Stormwater Management
- Appropriations
- Illicit Discharge

Provision(s) and Requirement(s) of the Rule(s):

Section 3(b)(1) indicates changes in hydraulic capacity may not result in upstream or downstream increases in flood stage".

Requested Variance:

This project is proposing construction of a new outlet from Mary Lake into Studer Pond. The existing 100-year, 24-hour water level is 932.818. The proposed project increases the 100-year, 24-hour water level in Studer Pond by 0.045 feet to an elevation of 932.863. The lowest existing structure surrounding Studer Pond has a finished floor elevation of 934.4, which is above the proposed 100-year water elevation of 932.863 ft (NGVD29).

Please complete the below narrative to be used as the variance justification that will be considered by the Board of Managers. Please note that economic hardship is not grounds for issuing a variance.

Describe the special conditions inherent to the property and how strict compliance with the rule will cause an undue hardship.

The project, as designed, proposes grading impacts to approximately 1,224 sqft (0.03 acres) of existing wetland to improve drainage within Mary Lake. Meeting a "no-impact" water surface elevation change alternative will require substantial excavation in Studer Pond which would result in a significantly larger additional impact footprint (0.64 acres) in Studer Pond and would be contradictory to minimizing/avoiding impacts to existing wetlands. Additionally there is not access to the area for ongoing maintenance creating additional hardship if the Studer Pond Excavation is required to fully comply with the rule.

Describe how the special condition was not created by the applicant, the representative, or a contractor.

There is no existing outlet to Mary Lake, and the stormwater is currently being pumped out by the City of Shorewood to reduce increasing water levels. This project proposes to create an overflow outlet above the existing OHW to eliminate the need to for pumping to maintain Mary Lake water levels.

Provide a minimum of two alternatives that were considered and why they were rejected to demonstrate that there is no feasible and prudent alternative to the proposed activity requiring the variance.

1. Alternate Alignment - avoided impacts to Studer Pond by routing the outlet across Smithtown Road but created additional downstream impacts.
2. Smaller outlet pipe – reducing the outlet pipe from 8" to 6" did not eliminate the impact of the project.
3. Compensatory grading within Studer Pond - would require grading of 0.64 Acres of potential existing wetland, which is contradictory to the goal of minimizing impacts to wetlands.

Referring to the Policy of the Rule(s), describe how the intent of the rule(s) will be met.

The intent of the rule is to prevent water level increases for the 100-year event. In this case the impact of the 0.045 foot increase in Studer Pond does not cause increased damage to existing properties and has a significantly smaller grading footprint and less wetland impacts than alternatives that avoid the Studer Pond increase.

**Additional Alternatives Considered:**

Several valve system options were considered by the City of Shorewood as an alternative to potentially mitigate the proposed increases in Studer Pond. They are discussed further below.

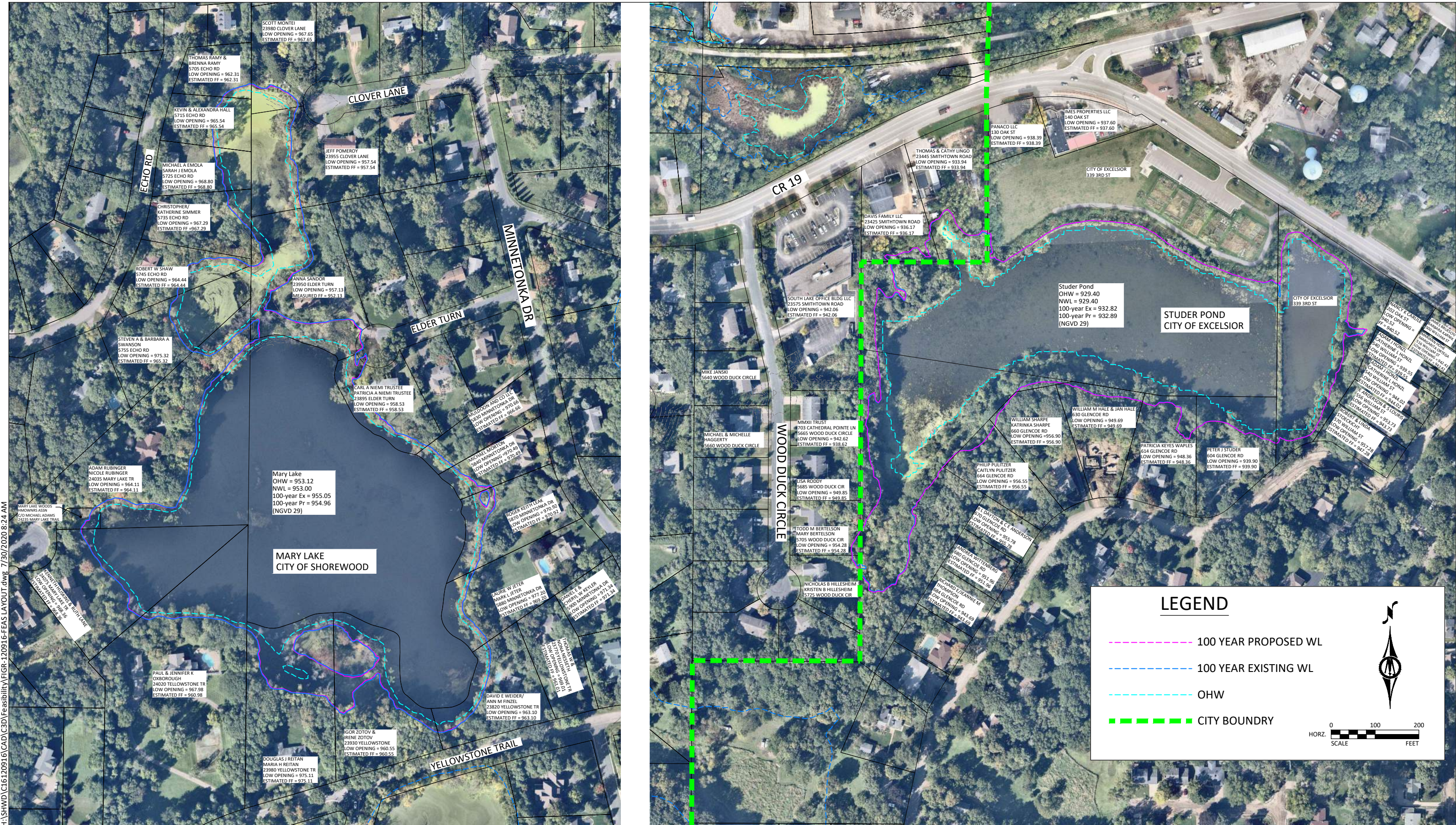
An automatic valve system was considered, however the City determined that the maintenance requirements and risk of clogging would make this type of feature both cost prohibitive and unreliable. The small nature of the proposed pipe would make it prone to failure if the valve failed to close completely. Because a majority of the outlet system is being constructed with trenchless construction it would be cost prohibitive to increase the size of the drainage system.

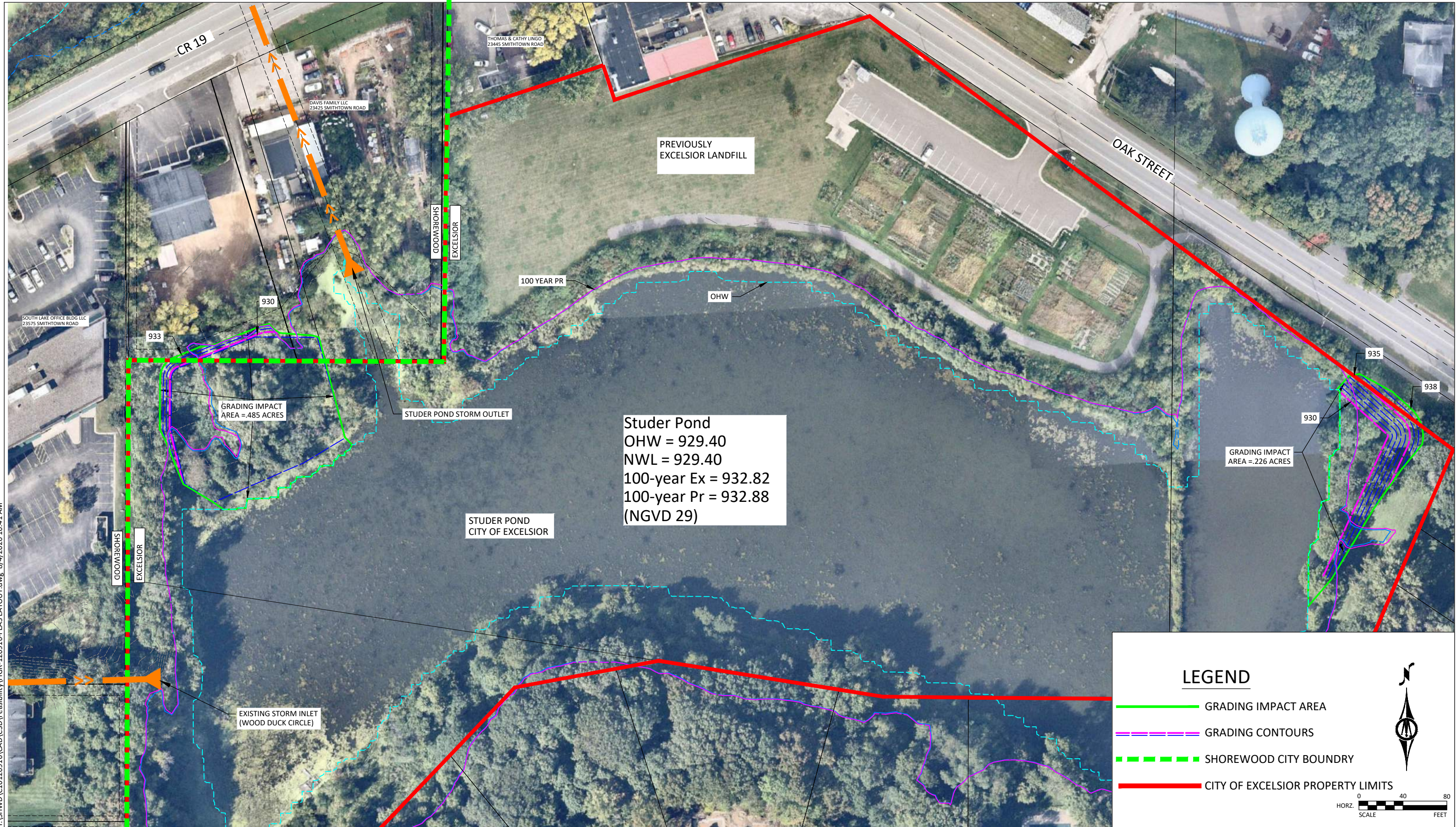
A manual valve was also considered, particularly in conjunction with potential drawdown of the OHW in advance of a storm event to create additional storage capacity in Mary Lake. However, this type of structure would require significant operation and maintenance and relies too heavily on manual activities that if not performed properly could be contrary to the goals of the project. If the valve were not opened to draw down, the water levels in Mary Lake could be too high, and if the valve were left open or opened to soon could still result in increases in Studer Pond. Therefore, it was determined that the option of including a valve in the project design created too much uncertainty relative to the project's performance.

In all valving scenarios freezing is also a concern. The ideal locations to place the valves for access and maintenance would be close to the Mary Lake outlet control structure. The valve would only have 3'-4' of cover. Even with insulation, the pipe and valve would likely freeze and break becoming a maintenance and operation concern.

**Current Pumping Permit Background:**

I am unsure of when the pumping of Mary Lake was initiated, however per the City Engineer the City of Shorewood has pumped to lower the water level in Mary Lake an estimated 3 times in the previous 6 years. Per the MNDNR, the City of Shorewood's temporary appropriation permit 2019-2903 expired Dec. 31, 2019, although an amendment was requested by the City. The status of the amendment is currently unknown.





**LEGEND**

- GRADING IMPACT AREA
- GRADING CONTOURS
- SHOREWOOD CITY BOUNDRY
- CITY OF EXCELSIOR PROPERTY LIMITS

HORIZ. SCALE 0 40 80 FEET

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