



Title: Permit 22-553: Strawberry Lane Road Reconstruction, City of Shorewood

Prepared by: Name: Trey Jonas, Permitting Technician
Phone: 952-641-4521
tjonas@minnehahacreek.org

Recommendation:

Approval of the permit with the listed conditions

1. Submission of a signed Maintenance Agreement in a form acceptable to the District for the Smithtown Ponds.

Background, Executive Summary and Public Interest:

Project Location:

The City of Shorewood (Applicant) has applied for a Minnehaha Creek Watershed District (MCWD) permit to reconstruct 2.8 acres of Strawberry Lane, Strawberry Court, and Peach Circle. The project extends south from West 62nd Street, North to Smithtown Road, crossing the Lake Minnetonka Regional Trail at the approximate midpoint of the project. Project areas north of the Lake Minnetonka Regional Trail are referred to as Strawberry Lane North. Project areas south of the Lake Minnetonka Regional Trail are referred to as Strawberry Lane South.

Subwatershed and Hydrologic Information:

The project is located in the Lake Minnetonka subwatershed, and ultimately drains into South Lower Lake. Attachment A provides a project area overview, and Attachment B outlines the existing drainage in the area.

Strawberry Lane North:

Drainage in the Strawberry Lane North area includes approximately 45 acres of land west of Strawberry Lane and north of the Lake Minnetonka Regional Trail. Runoff from this area ultimately drains east and discharges into Pebble Creek, a channel located on private property with intermittent flow that exhibits erosion. During large storm events, runoff from this western watershed is reported to overtop the existing roadway. Twelve homes within this area are reported to have less than 2 feet of freeboard during 100-year storm events. 1 home is reported to have low openings at risk during 100-year storm events.

Within this area there are two existing stormwater management facilities located on the west side of Strawberry Lane, on the northwest and southwest side of the intersection of Strawberry Court and Strawberry Lane. The northern basin drains into the southern basin, and runoff from this area then discharges east via a 12-inch corrugated metal pipe, into Pebble Creek.

Flows from this area ultimately reach the stormsewer crossing at Smithtown Road and then discharge to Grant Lorenz Channel, running north parallel to Grant Lorenz Road, before discharging through a large wetland complex into Lake Minnetonka. Grant Lorenz Channel experiences significant flows ranging between 60 and 200 cubic feet per second for 10 and 100-year storm events respectively. The channel exhibits erosion and is reported to have overtopped driveways, the intersection of Grant Lorenz and Noble Road, and destroyed culverts.

Strawberry Lane South:

Drainage in the Strawberry Lane South area includes approximately 18.8 acres of land west of strawberry lane and south of the Lake Minnetonka Regional Trail. Runoff from this area ultimately drains east via an 18-inch stormsewer. This runoff then drains north towards the Freeman Park area, which receives runoff from an additional 106 acres, before

discharging through an outlet control structure under the Lake Minnetonka Regional Trail, where it ultimately discharges into the Grant Lorenz Channel.

Proposed Development:

This road reconstruction project, extending approximately 2,600 feet of Strawberry Lane between West 62nd Street and Smithtown Road proposes to widen the road from 22 feet to 26 feet, add a 6-foot-wide sidewalk on the East side of Strawberry Lane, and install curb and gutter and improve drainage in the corridor. Peach Circle and Strawberry Court will also be reconstructed. The proposed roadway improvements will increase impervious surface by 0.7 acres. Attachment C. outlines the proposed drainage.

Watermain improvements are also proposed. Existing watermain in Strawberry Lane South will be reconstructed. New watermain is proposed in Strawberry Lane North.

The project also proposes improvements to address drainage issues within the area, summarized above and within the [Western Shorewood Stormwater Project](#). Proposed improvements include maintenance work to one constructed ditch along Church Road, and the two existing stormwater management facilities located on the west side of Strawberry Lane, at Strawberry Court. This maintenance will include the excavation of 100 cubic yards of material from the basin to the north of Strawberry Court, 180 cubic yards of material from the south Strawberry Court basin, and 50 cubic yards from the ditch.

The proposed drainage improvements also include the construction of a 48-inch, 740 feet stormsewer, west from Strawberry Lane, under Pebble Creek to the Smithtown Ponds, a regional stormwater management facility nearing completion pending the construction of an iron-enhanced sand filter bench.

These Smithtown Ponds were previously permitted by the MCWD Board of Managers pursuant to permit application 21-113, as part of the City of Shorewood's regional stormwater management strategy for Western Shorewood. The ponds proposed to reduce peak runoff rates by approximately 40% for the 100-year design storm to Grant Lorenz Channel, and reduce phosphorus loading to Lake Minnetonka.

Rule Triggers:

The project triggers MCWD rules for erosion control, waterbody crossing and structures, shoreline and streambank stabilization, wetland protection, and stormwater management.

Based on a request from the applicant, the District issued an erosion control permit for the demolition of the existing road on May 18th, 2023.

The applicant's contractor subsequently installed the 48" stormsewer between Strawberry Lane and Smithtown Ponds. Because this included a subsurface crossing of Pebble Creek, it required a Waterbody Crossings and Structure permit and so was not authorized under the issued erosion control permit. Therefore, after the fact approval is being sought as part of this permit application.

Public Request for Board Review:

Following the June 5th, 2023 public notice for this project, on June 8th, 2023, Mr. Alan Yelsey, a resident of Shorewood, responded to the notice stating that he oppose the project and requesting, in accordance with District Resolution 2004-49, that the project application be reviewed and decided by the Board of Managers. Specifics of Mr. Yelsey's concerns are detailed Attachment D.

Mr. Yelsey has expressed concern that:

1. The Applicant's approach to project design relies heavily on models rather than utilizing field monitoring data
2. The Smithtown Ponds have damaged and will damage ecological integrity at a system scale by changing local hydrology due to diverting a portion of flows from Freeman and Pebble Creek to Smithtown Ponds.
3. Erosion and sediment control measures are not consistently compliant within the applicant's project.

District staff and engineers have worked together to assess the concerns and provide the following explanations, which are covered in more detail later in this report:

Modeling Concern:

There is extensive scientific research that provides literature values for modeling inputs, which have been validated over time with monitoring data. These models are widely used across the region and state, adhere to standard engineering principles, and are consistently accepted by public agencies to support the basis of project design and regulatory review.

Smithtown Ponds Regional Impact:

The Smithtown Ponds consists of 2 cells and the Freeman Park Basin adjacent to the east with an added Iron Enhanced Sand Filter. The Board approved construction of this facility on January 13, 2022 as Permit No. 21-113. The system covers a five-acre project area adjacent to Freeman Park and Smithtown Road. The system is designed to receive drainage from surrounding neighborhoods and provide rate control and water quality benefits to this portion of the City of Shorewood.

Additionally, the area's streams receive artificially high flows due to the level of development in the upstream watershed, which have driven significant erosion & water quality issues.

Lastly, the city's plan, implemented through the Smithtown Ponds design, partitions 2-year flows into the Freeman channel, and sends higher flows into the Smithtown Ponds for rate and phosphorus treatment. The design maintains base flow within the Freeman Channel and limits the rate at which the areas runoff volumes discharge into Grant Lorenz Channel. All water that enters will discharge from the ponds, it will just be slowed down to allow for particles to settle, and for it to be treated by the iron-enhanced sand filter before re-entering the Grant Lorenz channel.

Erosion and Sediment Control concerns:

District Staff have conducted multiple inspections, including one involving City staff and Mr. Yelsey. Overall, the site has been following best practices for sediment and erosion control: Perimeter controls are largely intact, the rock construction entrance is functioning properly, large exposed areas are stabilized using hydromulch, and the City has responded to any necessary corrections identified by the MCWD.

District Rule Analysis

Erosion Control Rule

MCWD's Erosion Control rule applies to a land disturbance of 5,000 square feet or the excavation, fill, or stockpiling on-site of 50 cubic yards of soil or earth material. The Applicant is proposing 7.3 acres of disturbance and 7,126 cubic yards of excavation volume; therefore, the rule is triggered.

Per sections 5(a) and 5(b) of the rule, an erosion and sediment control plan has been submitted and displays erosion and sediment control best management practices. These include rock construction entrances located at the intersections of Strawberry Lane and Smithtown Road and Strawberry Lane and West 62nd, silt fence downgradient of disturbed areas, and permanent stabilization for disturbed areas.

Additionally, the work is subject to a Minnesota Pollution Control Agency (MPCA) construction stormwater permit, which requires preparation of a Stormwater Pollution Prevention Plan (SWPPP) to limit site erosion and sedimentation. The applicant has provided a SWPPP (Attachment E). The project location, existing and proposed conditions, property lines, utilities, conveyances, and receiving waterbodies are included in the plans. Inlet protection is shown in all stormwater catch basins. The SWPPP also outlines that sediment tracked onto streets will be swept at the end of each business day, inspection logs will be kept and stored onsite, energy dissipation devices will be installed at all temporary or permanent pipe outlets, and temporary soil piles will be stabilized if not actively being worked. Following construction hydroseed and sod are proposed to provide permanent site stabilization.

District staff does not find that any further submittals are required under Section 6 or Section 7 of the rule.

Section 8 of the rule does not apply to projects being built by public institutions.

In summary, the application meets the requirements of the Erosion Control Rule.

Waterbody Crossings and Structures

The District's Waterbody Crossings and Structures Rule is applicable to projects that propose to place a road, utility, bridge, or associated structure in contact with the bed or bank, or beneath the bed, of any waterbody, including alteration of a waterbody to enclose it within a pipe. The applicant has installed a pipe that will convey drainage east from Strawberry Lane to the Smithtown Ponds, beneath a channel named Pebble Creek, and is seeking after-the-fact approval for the installation of the storm sewer pipe. This crossing triggers the Waterbody Crossings and Structures Rule.

Per section 3(a) of the Waterbody Crossings & Structures Rule, the use of a bed or a bank shall meet a demonstrated public benefit. The conveyance, as an element of stormwater treatment for a public road project, meets the criterion of public benefit. The road reconstruction will widen the road and add a sidewalk, improving safety and accessibility in the area. Stormwater runoff from the project will be routed to the Smithtown Ponds, a regional treatment facility. To do this, a 740 foot long, 48 inch diameter pipe was installed that will convey drainage east from Strawberry Lane to the Smithtown Ponds.

Section 3(b) requires that the crossing of a waterbody maintains adequate hydraulic capacity in the waterbody. The applicant has installed via trench a 48-inch pipe from Strawberry Lane to the Smithtown Ponds, that crossed Pebble Creek. As part of the installation, the applicants also conducted minor modifications to the channel. These changes included regrading the channel slope near the pipe outfall to a shallower slope, and widening the channel to repair erosion that has occurred. These changes did not adversely affect the hydraulic capacity of the channel, meaning this section of the rule is met.

Per Sections 3(c) and 3(d) of the rule, adequate navigational capacity and wildlife passage must be maintained. This crossing did not negatively impact Pebble Creek's navigational capacity or the ability of wildlife to pass along the creek edge.

Per section 3(e); a project that triggers this rule may not adversely affect water quality. The existing stream experiences erosion during high flow events. During installation, sediment controls were in place to prevent the sedimentation of the channel. Following the installation of the pipe, restoration of the area flattened the steep side slopes and bottom of the channel. The pipe installation did not negatively affect water quality.

Section 3(f) requires that a project represent the minimal impact solution. An alternatives analysis was conducted, exploring other options in this corridor. The applicant reported the following conclusions as alternatives, in which District staff concur:

1. Discharge to Pebble Creek
 - a. Pebble Creek experiences significant erosion under existing conditions. Increasing the flow directed to the channel would have had a negative impact on the stability of the stream's banks and channel.
2. Route to Storm Sewer Along Smithtown Road
 - a. Routing water north to Smithtown Road, then to the east to discharge to Pebble Creek, would not have allowed for the stormwater to receive the treatment necessary to comply with District and MPCA rules.
3. No Build/No New Storm Sewer
 - a. Not constructing the road would not have achieved the project's goals of improving safety, capturing untreated runoff, and improving drainage.

The crossing consisted of the pipe installation beneath Pebble Creek, a small stream that is 6-foot-wide at the top of bank. Following the pipe installation, the stream was widened and regraded to reduce the erosion that the channel experiences. The analysis above demonstrates that the crossing represents the minimal impact solution.

Per section 3(g) of the rule, any crossing below the bed of a waterbody must provide 3 feet of separation between the pipe and the bed of the waterbody. The top of the 48" pipe is at an elevation of 960.63 when it crosses under the channel. The channel bottom has an elevation of 963.70 at this location. The total separation between the pipe and channel bed is 3.07'.

Section 3(h) of this rule does not apply to this project. No sanitary sewer crossings we're proposed.

Section 4 of this rule doesn't apply, as Pebble Creek has not been significantly altered from a natural state.

Section 5(b) of the rule requires an analysis be conducted by a professional engineer on the project's effect on hydraulic capacity and water quality. An analysis was submitted by the city's engineer and no negative effects on either have occurred.

Section 5(c) of the rule require that a temporary and permanent erosion control plan is submitted. The applicant has submitted plans for both the erosion controls in place during the work, and how the area will be stabilized following project completion. Additionally, this work triggers the District's Streambank Stabilization rule, and conforms to those requirements.

Per section 5(d) of the rule, it is required that the applicant explore at least 2 project alternatives. The applicant submitted an alternatives analysis and District staff determined that this project represents the minimal impact solution.

Section 6 of the rules does not apply to this crossing, as no maintenance will be required on the subsurface pipe crossing.

In summary, the project meets the requirements of the Waterbody Crossings & Structures Rule.

Shoreline & Streambank Stabilization Rule

The District's Shoreline & Streambank Stabilization Rule applies to projects that are proposing an improvement or alteration to the shoreline or streambank. In addition to installing a pipe below Pebble Creek, the city is proposing improvements to the channel. It is proposing both to widen the first 30 feet of the channel from an average of 6 feet to an average of 10 feet, and to reduce the channel slope from 19.7% to 0.7%. This rule requires the applicant to assess the erosion intensity at that location, and submit construction details for the disturbance, a stabilization plan, and a maintenance plan.

Section 4(b) of the Streambank Stabilization rule requires that stabilization techniques be consistent with the level of erosion intensity as determined by the shear stress calculation required by section 4(a) of the rule. Post changes, the city calculated the shear stress at this location as 1.27 lbs/sf, which is classified as low erosion intensity. Section 4(b)1 of this rule requires that a streambank experiencing low erosion intensity utilize biological stabilization measures. In accordance with section 6(b)1-2, the area will be stabilized with category 30 erosion control blanket and seeded with a 34-261 mix.

Per section 6(a)1 of the rule, the District may only issue a streambank stabilization permit where there is a demonstrated need to prevent erosion. Pebble Creek currently experiences erosion during storm events and is primarily fed by storm sewer inputs. To mitigate further erosion, the first 30 ft of the channel will be widened from an average width of 6 ft to an average of 10 ft. The first 10 ft of the channel slope will be reduced from 19.7% to 0.7%. These changes proposed to the 4.31' deep channel will reduce the shear stress to 1.27 lb/sf in this section of the channel.

Section 6(a)3 states that stabilization practices should be implemented with a slope of 3:1 or flatter. Plans indicate that the blanket proposed for this project will be installed at a lesser slope than 3:1.

Per section 6(a)4 requires that encroachment of the streambank improvement into the channel is to be minimized. Widening of the stream is proposed to reduce erosion issues experienced in the area. The proposed changes decrease the amount of encroachment in the stream.

Per sections 6(a)5 & 6, streambank stabilization should not reduce channel cross-sectional area or exacerbate flood conditions. This project will increase the cross-sectional area, maintaining the natural shape of the bank, and will not worsen any flood condition.

Section 6(a)7 states that the design should consider engineering principles related to soil properties and open channel flow. The District engineer has confirmed that this design conforms with engineering principles regarding open channel flow.

Section 6(a)8 does not apply to the project, as no aquatic plants will be removed.

Per section 6(a)9 requires that a project conducted below the ordinary high-water level must use flotation sediment curtains and follow established guidelines. The applicant's stabilization plan outlines how sediment will be kept within the project area using a combination of a sediment curtain and hay blanket.

Sections 6(b)3-4 do not apply to this permit. Neither wave barriers nor bioengineering is proposed.

Section 6(c) does not apply to this project as structural stabilization is not proposed.

In summary, the project meets the requirements of the Shoreline & Streambank Stabilization Rule.

Wetland Protection and Wetland Conservation Act:

The Minnehaha Creek Watershed District serves as the WCA LGU for the City of Shorewood. The applicant submitted an Incidental Wetland review/No Loss application to the District on October 21st, 2022.

Incidental wetlands are defined as wetland areas that the landowner can demonstrate, to the satisfaction of the local government unit, were created in non-wetland areas solely by actions, the purpose of which was not to create the wetland. These can include drainage ditches, or excavations in non-wetlands solely for the purpose of stormwater retention or detention.

A No-Loss WCA application pertains to wetland impacts that will not permanently impact a wetland. Some of these activities include work within non or incidental wetlands, excavation limited to the removal of deposited sediment in wetlands that are presently utilized as stormwater basins, or a temporary impact that is rectified by repairing or restoring the affected wetland.

The applicant is planning maintenance on the stormwater basins in the corridor, restoring them to their original functionality. The application analyzed 2 basins, and 2 ditches within the project corridor. Historic aerial photos were reviewed, and construction plans for the basins & ditches were provided, see attachment F. District staff determined that the ditches and basins in the project area were created as stormwater basins to treat the runoff from the development to the west. In addition, any impacts to the ditches or basins will be restored and thus meet the no/loss requirements. A Notice of Decision was issued on November 19th, 2022, finding that the basins qualify as incidental and approving the application. Accordingly, proposed impacts to the basins are not subject to the District's Wetland Protection rule.

Stormwater Management

The District's Stormwater Management rule applies to projects that create new or reconstruct existing impervious surface. The project proposes to reconstruct 2.8 acres of existing impervious surface and add 0.7 acres of new impervious surface, for a new total impervious surface of 3.5 acres within project limits. The project is defined as a

Linear Reconstruction Project under District rules. As outlined in Section 6(b) and Table 5, a linear reconstruction project that increases impervious surface between 10,000 square feet and 1 acre requires phosphorus control and rate control for the additional impervious surface.

The proposed project consists of reconstruction and utility improvements of Strawberry Lane and Peach Circle. This project proposes full depth reconstruction, installation of curb and gutter, installation of storm sewer, restoration of water main and maintenance of two wet retention ponds.

The applicant is proposing to meet phosphorus and rate control by using the Smithtown Ponds & Freeman Park Basin east and downstream of the drainage area. The City designed these ponds to regionally treat impervious surface associated with City projects. Northern Strawberry Lane Runoff will be routed from Strawberry Lane through a 48" pipe into the Smithtown Ponds. Southern Strawberry Lane runoff will drain to the Freeman Park basin, then into the Smithtown Ponds.

Under section 3(a) of the Stormwater rule, the project must result in no net increase in phosphorus loading from existing conditions. The City prepared regional P8 water quality models to represent existing and proposed conditions. The existing condition represents pre-Strawberry Lane reconstruction & improvements and pre-Smithtown Pond construction. The proposed condition represents post-Strawberry Lane reconstruction & improvements and post-Smithtown Pond construction. The models consider regional drainage areas, which are broader in scope than the immediate areas impacted by this proposed work. In the existing condition the modeled area is shown to discharge 80.7 lbs/yr of total phosphorous and in the proposed condition which includes the street reconstruction, the discharge is modeled to be 73.5 lbs/yr of total phosphorous discharge into the Grant Lorenz Channel. Adequate phosphorus control will be provided by the Smithtown Ponds.

The ponds have the potential to provide up to an additional 7.2 lbs of TP removal capacity to accommodate regulatory requirements of future projects. Future projects should be evaluated against existing conditions to confirm the ponds' capacity to comply with project-specific requirements. If future improvements utilize the Smithtown Ponds for stormwater treatment, modeling will need to be completed to determine whether future proposed work can be treated by the Smithtown Ponds, by comparing results to the existing model.

Per section 3(b) of the rule, peak runoff rate for the 1-,10-, and 100-year storm events may not increase at any point of discharge across the site boundary. As previously stated, the Northern Strawberry Lane area will drain directly East to the Smithtown Ponds via pipe for treatment, and the Southern Strawberry Lane area will Drain Northeast to the Freeman Pond. In both instances, the runoff is enclosed in a pipe as it leaves the site boundary, on its way for treatment at the regional facility. The District Engineer has reviewed the proposed plans, stormwater models, and stormwater calculations and determined that the project will not increase peak runoff rates during the 1-, 10-, and 100-year storm events. The project as proposed is in conformance with the rate requirements of the rule, as seen in tables 1 and 2 below.

Table 1. Discharge to Pebble Creek:

Condition	1-Year, 24-hr	10-Year, 24-hr	100-Year, 24-hr
Existing	5.86	18.56	45.011
Proposed	4.10	15.75	40.21

Table 2. Discharge to Grant Lorenz Channel:

Condition	1-Year, 24-hr	10-Year, 24-hr	100-Year, 24-hr
Existing	15.62	45.75	124.32
Proposed	14.66	36.18	79.29

Per section 3(e) of the rule, The 100-year high water level of Smithtown Ponds has been evaluated and found to maintain two vertical feet of freeboard from the low opening elevation of adjacent structures.

The proposed project aims to comply with the rule's requirements, as stated in section 7(a), by treating stormwater through routing runoff to the Smithtown Ponds & the Freeman Park Basin, ensuring equal or greater phosphorus control, rate control, and volume control. The District must receive an annual accounting of the treatment capacity created and used within the drainage and treatment area. Section 7(b) specifies that District approval for using a regional facility depends on its impact on local groundwater and natural resources upstream, which this project meets by enclosing all runoff in a pipe and routing it to the Smithtown Ponds & the Freeman Park Basin. Furthermore, section 7(c) requires the incorporation of BMPs on the project site, and the proposed addition of a sump near Strawberry Lane & Strawberry Court, pretreats runoff from 3.9 acres of impervious surface on its way to the Smithtown Ponds, conforms to this rule, supplementing the existing sump on Peach Circle. District Staff and Engineers have assessed the projects compliance with the regional stormwater management rule and determined that it is in compliance.

7(d) The applicant, before commencing any land-altering activity, must demonstrate that it holds the legal rights necessary to discharge to the stormwater facility or facilities in the plan, and that the facility or facilities are subject to a maintenance document satisfying the requirements of section 11. The city of Shorewood holds drainage & utility easements that cross from the ROW on Strawberry Lane east to Smithtown ponds. Additionally, The City of Shorewood will maintain ownership and maintenance over the pond system. The project meets the requirements of this rule.

Sections 8(a) & (b) of the rule do not apply as the project does not propose a new point source or change in the runoff control elevation of any waterbody, nor does it cause a bounce on a downstream waterbody.

Section 9 of the rule does not apply to this project, as the applicant is a public entity.

Per section 11 of the rule, the maintenance requirement of the Smithtown Ponds & the sumps on Strawberry Lane and Peach Circle will be satisfied through the signing of a programmatic maintenance agreement, listed as a condition of approval.

The project as proposed, upon fulfillment of the recommended condition, meets the requirements of the Stormwater Management Rule.

Staff & Engineering Analysis on Resident Concerns

District Staff have worked closely with the engineering team to review and address the concerns and offer the following with regard to questions raised by Mr. Yelsey.

Modeling Concerns:

Mr. Yelsey has expressed concern about the lack of actual, measured data on flow and pollutant loading to and through the site and questions the validity of the modeled results.

Several decades of science and engineering studying and quantifying urban runoff characteristics drawing from real world measurements, including the National Urban Runoff Program (NURP), the Minnesota State Stormwater Manual, and many other studies across the country underpin industry accepted literature values used in models for planning, design and regulatory review of projects that affect the flow, volume, rate and pollutant loading characteristics of runoff in urban catchments.

Impact of Smithtown Ponds:

Mr. Yelsey has expressed concern that Smithtown Ponds has impacted ecological integrity at a system scale by changing local hydrology due to diverting a portion of flows from Freeman and Pebble Creek to Smithtown Ponds.

As approved by the board on January 13th, 2021, Smithtown Ponds & the Freeman Park Basin were designed as part of the Western Shorewood Stormwater Management strategy to limit the rate at which runoff from the tributary watersheds enter Grant Lorenz Channel, which has experienced significant erosion, overtopped roads and damaged infrastructure due to increase runoff rates and volumes from the City's developed landscape.

The Smithtown Ponds & the Freeman Park Basin are wet detention basins, which include an added water quality component of an iron enhanced sand filter bench. The ponds will promote particulate settling, and the iron enhanced

sand filter bench will capture both dissolved and particulate phosphorus load. Ponds and filter benches are not volume abstraction devices, and therefore, do not remove runoff volume from systems. All water that enters will discharge from the pond. Therefore, the 0.7 acre of net impervious area increase proposed by the project will result in an increase of runoff volume through the system, which ultimately drains to Lake Minnetonka. Ponds are effective at slowing the flow of water through a system, which allows them to provide nutrient removals via settling and reduce peak discharge rates, in turn reducing erosion potential within receiving waters.

Flows from the south from the Freeman Park area are split. The Freeman Park Basin has 2 outlets, one to Freeman Channel, and one to Smithtown Ponds. The Freeman Park basin discharges to the Freeman Channel when basin elevations reach 960.3. This acts as a low flow outlet and is intended to maintain hydrology in the Freeman Park Channel. Once the Freeman Basin elevations reach an elevation of 963.3, water begins entering the Smithtown Ponds, which act as a high flow relief outlet, and is intended to manage flows in the Freeman Park Channel during larger events. Minor decreases in peak flow rates are seen in the Freeman Channel following a 1-year storm, reduced flow rates from, 13.4 cfs to 11.0 cfs. More significant decreases in peak flow in the Freeman Park Channel are modeled during a 100-year storm, with the preconstruction value being 68.1 cfs and the post construction value being 32.9 cfs.

This design ensures that any runoff producing event smaller than a 2-year design storm maintains flow to Freeman Channel. Also, any runoff producing event greater than a 2-year design storm ensures Freeman Channel receives the full 2-year flow. This design maintains baseflow and ecological function within an intermittent channel and reduces risk of damage both to property and to ecological health by mitigating artificial high flows being transmitted downstream.

The Northern Strawberry Lane area of the project will drain via pipe to the Smithtown ponds, below Pebble Creek. Pebble creek receives flows from the South from the existing Peach Circle basin, and the surrounding area. Additionally, the creek receives overland flows from the direct surrounding areas. Flow that has been diverted from Pebble Creek is previously untreated Stormwater runoff from the area upstream.

Erosion and Sediment Control:

Mr. Yelsey has expressed concern over sediment and erosion control compliance within the project area.

District Staff have conducted multiple inspections, including one involving City staff and Mr. Yelsey. Overall, the site has been followed best practices for sediment and erosion control and the city has responded to any necessary corrections identified by MCWD. Generally, the site has had sufficient perimeter controls, inlet protection, construction entrance, and has stabilized any large areas of exposed soils. There have been some instances where repairs have been requested regarding downed silt fence or other sediment controls, a lack of rock construction entrance, and where additional erosion control was needed, but the city has been quick to address repairs & installations.

Summary:

The Applicant has applied for a Minnehaha Creek Watershed District permit for Erosion Control, Stormwater Management, Waterbody Crossings & Structures, and Shoreline & Streambank Stabilization rules. District staff, with the assistance of the District engineer, finds that the proposed project, with the recommended condition on permit issuance, meets applicable requirements under these rules. Therefore, staff recommends approval of the permit application with the condition stated at the beginning of the report.

Attachments

Attachment A - Site Map

Attachment B – Existing Drainage Map

Attachment C – Proposed Drainage Map

Attachment D - Resident Concerns

Attachment E - Plan Set & SWPPP

Attachment F - Construction Plans for incidental wetlands

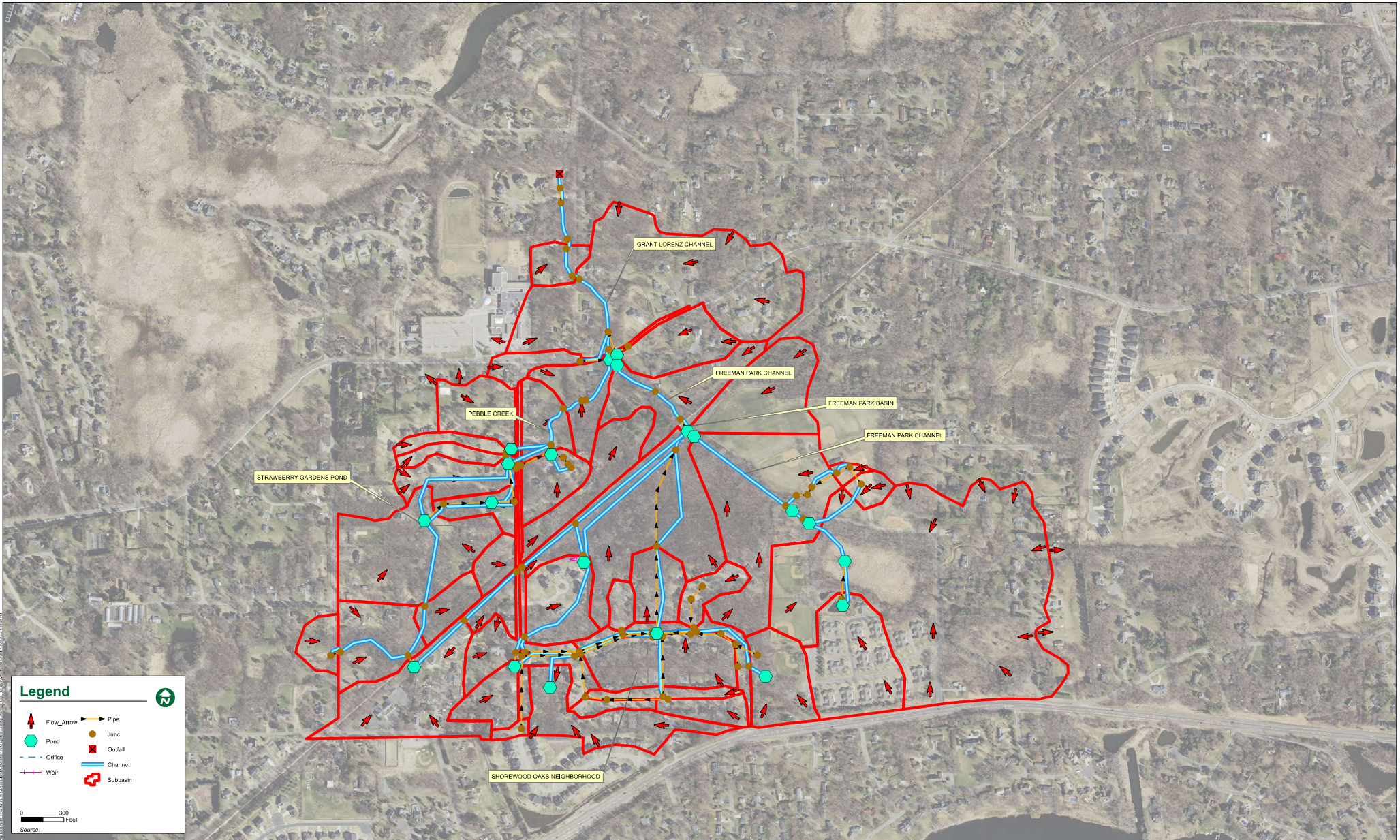


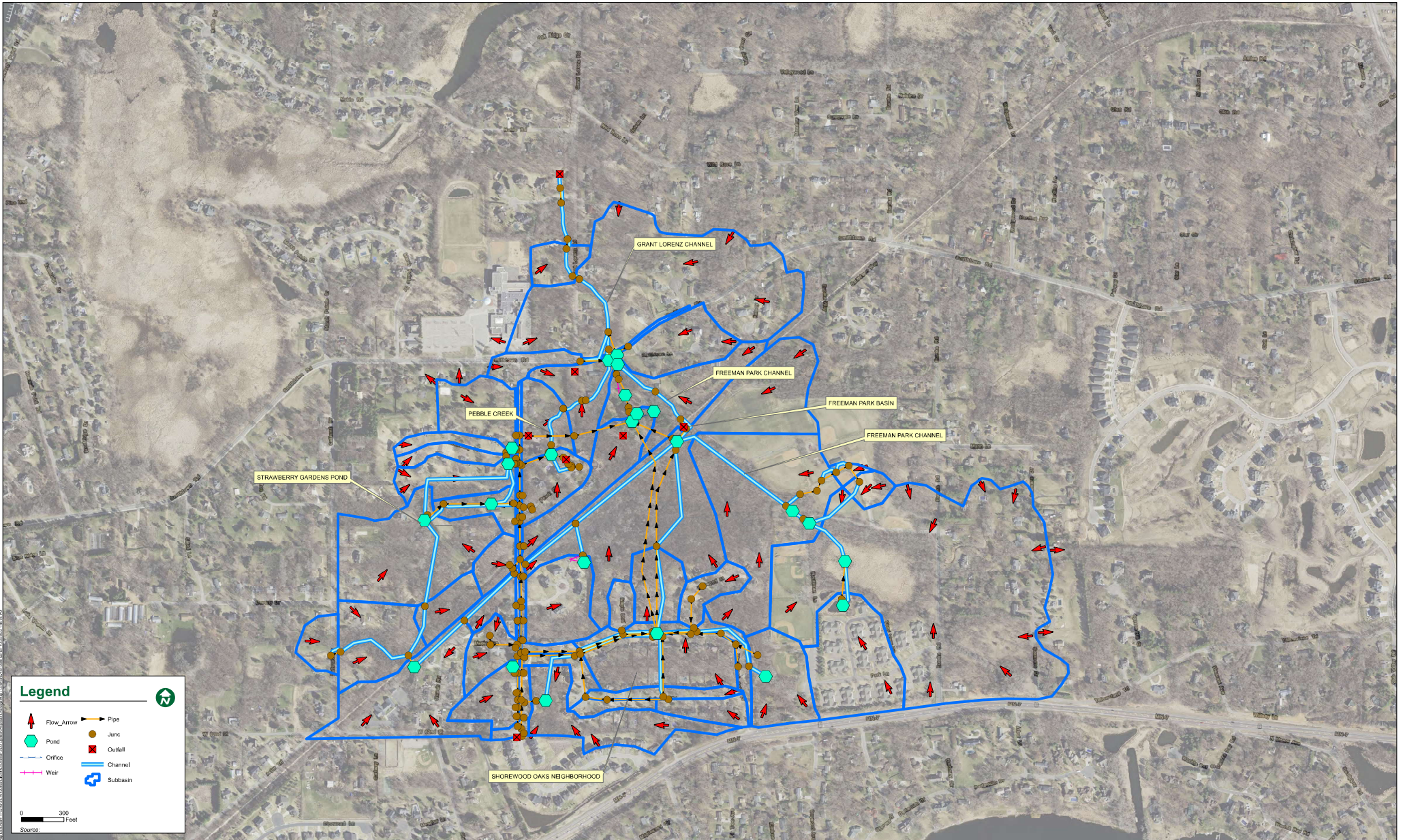
LEGEND

- Project Location
- Minor Subwatershed
- Wetland (FAW)
- Flow Direction

PROJECT LOCATION







Strawberry Lane, Peach Circle, Smithtown Ponds, Strawberry Court Concerns
Alan Yelsey, 26335 Peach Circle, Shorewood MN 55331
612-616-5430
a.yelsey@gmail.com

July 18, 2023

CONCERNS REGARDING PERMIT ADHERENCE AND PERMIT APPROVAL
CONCERNS REGARDING SHOREWOOD INFRACTIONS OF MCWD RULES & PERMITS

Erosion Control
Stormwater Management
Wetland Protection
Watershed Protection
Waterbody Crossing

Erosion
Flow
Water Quality, Contaminants
Sediment
Phosphorus
Flooding
Hydraulic Capacity/Groundwater Storage

- 1) Failure to utilize any direct measures, pre-post
- 2) Failure to require a neutral third party engineer or consultant – reliance on a single engineering firm with limited oversight and a massive profit incentive to overengineer
- 3) NEGATIVE IMPACTS TO THE WATERBODY WERE PERMITTED
No Silt Fence, No Double Silt Fence/Double Baffles, No Erosion Control, No Buffers
- 4) No Downstream Erosion Control & Creek Stabilization
- 5) No protection or replacement for 1500 trees and grasses – 1 large tree absorbs 11,000 gallons per season – Unjustified & Unnecessary removal of beneficial trees and grasses
- 6) No reduction in impervious service even though very doable
- 7) No measures to reduce contamination from field applied chemicals
- 8) Freeman Pond inlet erosion
- 9) Freeman Creek Diminishment, Pebble Creek Diminishment
- 10) Major downstream watershed and wetland Diminishment
- 11) Ground water storage diminishment- water table diminishment
- 12) No 6 inches of fill to replace topsoil
- 13) No action to correct compaction
- 14) Steepness/slopes rule violated
- 15) Sandpile uncovered & unbaffled for months

- 16) Shorewood Oaks Sump Pump Water
- 17) Failure to enforce MCWD Rules and Objectives
- 18) Failure to consider and apply systemic science to protect interconnected square miles of watersheds, waterbodies and wetlands
- 19) The City of Shorewood filled a holding pond and allowed new impermeable surface near Freeman Creek

Work occurs in the bed or bank of a waterbody and no negative impacts to the waterbody are permitted.

Vision

A landscape of vibrant communities where the natural and built environments in balance create value and enjoyment.

Mission

We collaborate with public and private partners to protect and improve land and water for current and future generations.

Guiding Principles

- Partnership - We seek to understand the goals of others so that we can meaningfully integrate our work to add broader value to the community.
- Innovation – We are flexible and creative in our approach and strive for continuous improvement.
- Excellence – We commit to work that achieves outstanding results and honors our partners.
- Sound Science – We are a trusted source of scientific data and analyses that provide the foundation for wise decisions.
- Service – We are responsive and accountable to our communities and careful stewards of public funds.

Goals

- Water Quality – To preserve and improve the quality of surface and ground waters.
- Water Quantity – To manage the volume and flow of stormwater runoff to minimize the impacts of land use change on surface and ground waters.
- Ecological Integrity – To restore, maintain, and improve the health of ecological systems.
- Thriving Communities – To promote and enhance the value of water resources in creating successful, sustainable communities.

HOW MUCH WATER DOES A TREE DRINK? A healthy 100-foot-tall tree has about 200,000 leaves. A tree this size can take 11,000 gallons of water from the soil and release it into the air again, as oxygen and water vapor, in a single growing season. HOW DO TREES DRINK? Water in the soil passes into tiny hairlike roots. It enters the root loaded with minerals from the soil and is carried up the tree's trunk all the way to the leaves. ROOTS DO MORE THAN DRINK The roots of a tree

grip the ground and act like thousands of “fingers” to anchor the tree as it keeps soil from washing away. The amazingly complex root network — often an area underground larger than the tree’s branches — also filters harmful substances out of water as it soaks downward.

STREAMSIDE BUFFERS Leaving stream and river banks as natural as possible — with the soil undisturbed and covered with trees , shrubs, wildflowers, mosses and ferns — helps prevent erosion. A stream bottom filled with pebbles — rather than a dirt-filled bottom — is one sign of a healthy stream.

About the MCWD permitting program:

To ensure reasonable and consistent standards that will protect the region's water resources for generations to come, the Minnehaha Creek Watershed District (MCWD) is charged by state law to issue and monitor permits. Through the permitting process, the MCWD works with property owners and local governments to prevent irreversible damage to the area's natural resources. Ultimately, the goal is to balance property owners' use of their property with ensuring the protection and management of water and surrounding resources so that residents and visitors can enjoy local lakes, rivers, and streams.

The Minnehaha Creek Watershed District Requires Permits for Properties within its Boundaries in Order to:

- Protect the water resources of the MCWD for all current and future users
- Reduce the severity and frequency of flooding
- Preserve [floodplain](#) and wetland storage capacity
- Improve the chemical and physical quality of surface water
- Reduce sediment build-up to preserve the flow of lakes and streams
- Minimize public expenditures to correct damage in the future
- Preserve natural [shoreline](#) and habitat for aquatic life

“The soil borings taken on the Smithtown Pond site identified groundwater at four-feet to nine-feet below the ground surface immediately after the boring rod was removed. The borings were taken in August of 2020 and represent one data point. Typically, groundwater elevations will fluctuate based on the season, precipitation and characteristics of the soils. The normal water levels of the ponds are generally within one-foot of the existing groundwater elevations and will have little to no impact on the surrounding groundwater elevations. “

Minnesota's buffer law requires the establishment of perennially vegetated buffers of up to 50 feet along lakes, rivers, and streams and buffers of 16.5 feet along ditches. These buffers will help filter out phosphorus, nitrogen and sediment. The deadline for implementation for buffers on public waters was November 1, 2017. The deadline for public ditches is November 1, 2018. The law provides flexibility for landowners to install alternative practices with equivalent water quality benefits that are based on the Natural Resources Conservation Service Field Office Technical Guide.

EROSION CONTROL RULES:

Erosion control plans required for land-disturbing activities in order to limit EROSION from WIND AND WATER; reduce FLOW VOLUMES and velocities of stormwater MOVING OFF SITE; REDUCE sedimentation into water bodies; and PROTECT SOIL STABILITY.

- a. Minimize area and duration of exposed soil and unstable soil conditions
- b. Minimize disturbance of natural soil cover and vegetation
- c. Protect receiving water bodies, wetlands and storm sewer inlets
- d. Retain sediments from disturbed properties on site
- e. Minimize unintentional off site sediment transport
- f. Minimize work adjacent to waterbodies and wetlands
- g. Maintain stable slopes
- h. Avoid steep slopes
- i. Minimize disturbance to the surrounding soils, root systems and trunks of trees adjacent to site activity that are intended to be left standing
- j. Prevent and/or mitigate the compaction of site soils

SIGNATURE OF EACH PROPERTY OWNER SHOWING HE OR SHE UNDERSTANDS THAT THE PROPOSED ACTIVITY MUST BE CONDUCTED IN COMPLIANCE WITH THE APPROVED EROSION CONTROL PLAN.

5a5) IDENTIFICATION OF ALL RECEIVING WATERBODIES

5a6) IDENTIFICATION OF ALL ONSITE WATER FEATURES AND FACILITIES

5a7) LOCATION OF ALL TREES AND VEGETATION ONSITE – INSTALLATION OF PROTECTIVE FENCING TO EXCLUDE ALL FILL AND EQUIPMENT FROM THE DRIP LINE OR CRITICAL ROOT ZONE

5a9) DESCRIPTION OF ALL LAND DISTURBING ACTIVITY

5a11) DETAIL OF LOCATION OF ALL COMPACTION – PREVENTION OR MITIGATION – PERMANENTLY LANDSCAPED AS GREENSPACE

5b2) ALL EROSION CONTROL AND SEDIMENTATION CONTROL IN PLACE BEFORE LAND DISTURBING ACTIVITY COMMENCES

5b3) STOCKPILES OF SOIL AND OTHER MATERIALS SUBJECT TO EROSION SHALL BE COVERED, ENCLOSED, FENCED ON THE DOWNSIDE OR PROTECTED FROM EROSION

5b6) IF TOPSOIL REMOVED, AT LEAST 6 INCHES OF NEW TOPSOIL

6B) DESCRIPTION OF EXISTING SOILS ON SITE

9) STABILIZATION OF DITCHES WITHIN 24 HOURS

9H) NO UNBROKEN SLOPE LENGTH OF GREATER THAN 30 FEET FOR SLOPES WITH A 3:1 GRADIENT

9K) INFILTRATION OR BIOFILTRATION MUST PREVENT DISCHARGE OF SEDIMENT INTO THE AREA

9M) IF COMPACTION, SITE SOILS SHALL BE DECOMPACTED TO A DEPTH OF 9 INCHES AND ORGANIC MATTER SHALL BE INCORPORATED – ONLY ORGANIC NEAR DRIPLINE..

STORMWATER MANAGEMENT RULES

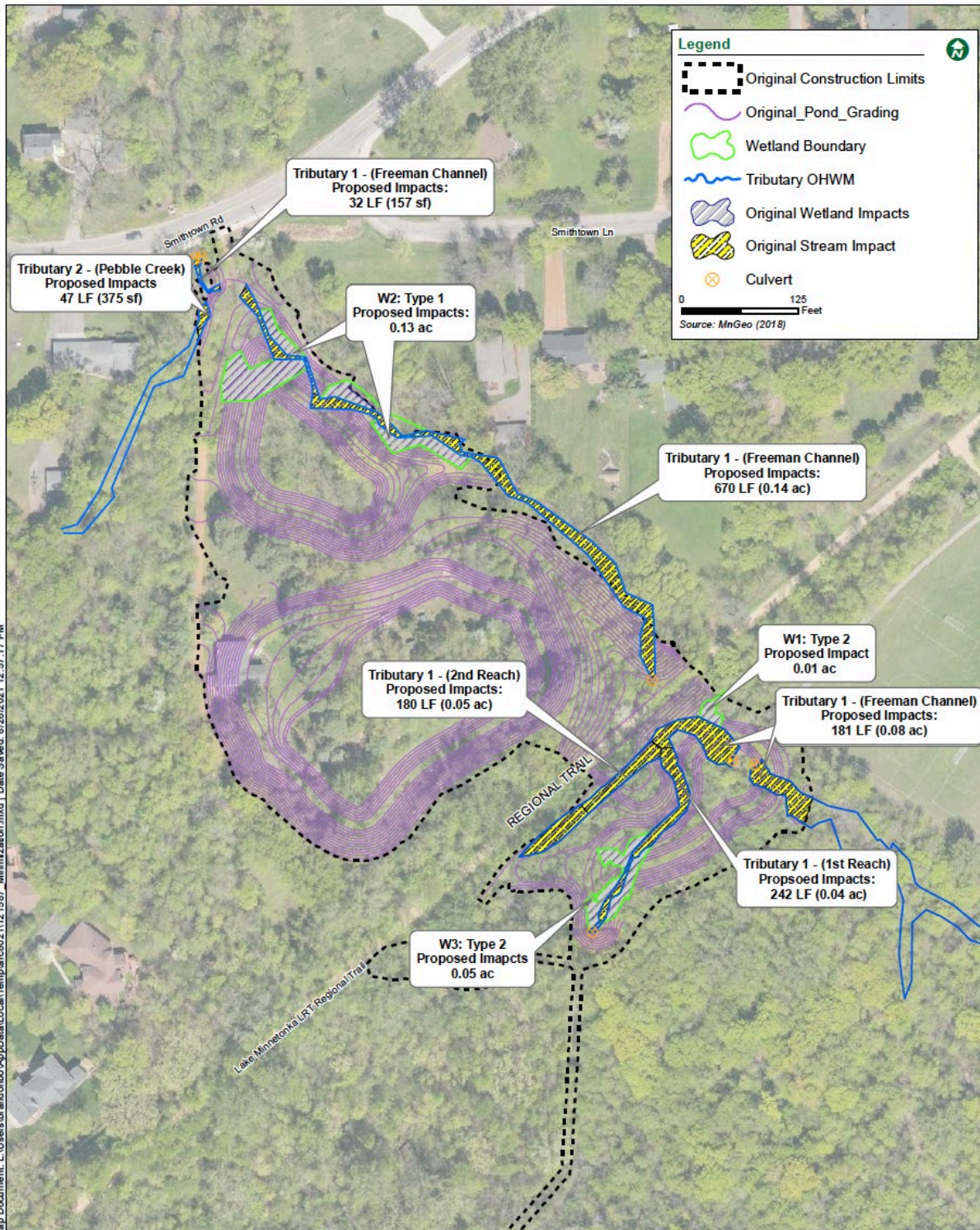
Water Quality

Increase Ground Water Recharge

Reduce Flooding

Promote Health of Native Plants

Preserve Native Vegetation



SMITHTOWN NORTH POND:
 • POND DEPTH = 2.5
 • HWL = 955.4
 • NWL = 951.5
 • BOTTOM = 949.0
 OVERFLOW PIPE

SMITHTOWN SOUTH POND:
 • POND DEPTH = 4
 • HWL = 957.7
 • NWL = 955.0
 • BOTTOM = 949.0

FREEMAN PARK BASIN:
 • POND DEPTH = 4.3
 • HWL = 960.3
 • NWL = 960.3
 • BOTTOM = 956.0

PEACH CIRCLE

PEOPLE GREEN

EMERGENT MARSH AREA

STORM SEWER FROM STRAWBERRY LANE

PROPERTY LINE, TYP.

FREEMAN PARK CHANNEL CENTERLINE

LAKES MINNETONKA LRT REGIONAL TRAIL

OVERFLOW PIPE

TEMPORARY TRAIL DURING CONSTRUCTION

BENCH & TRASH RECEPTACLE LOCATION

QR CODE

Jun 2022
Tree Removal

Jul 2022-Sept 2022
Trail Detour,
Site Grading,
Pipe Installation

Sept 2022-Mar 2023
Site Grading

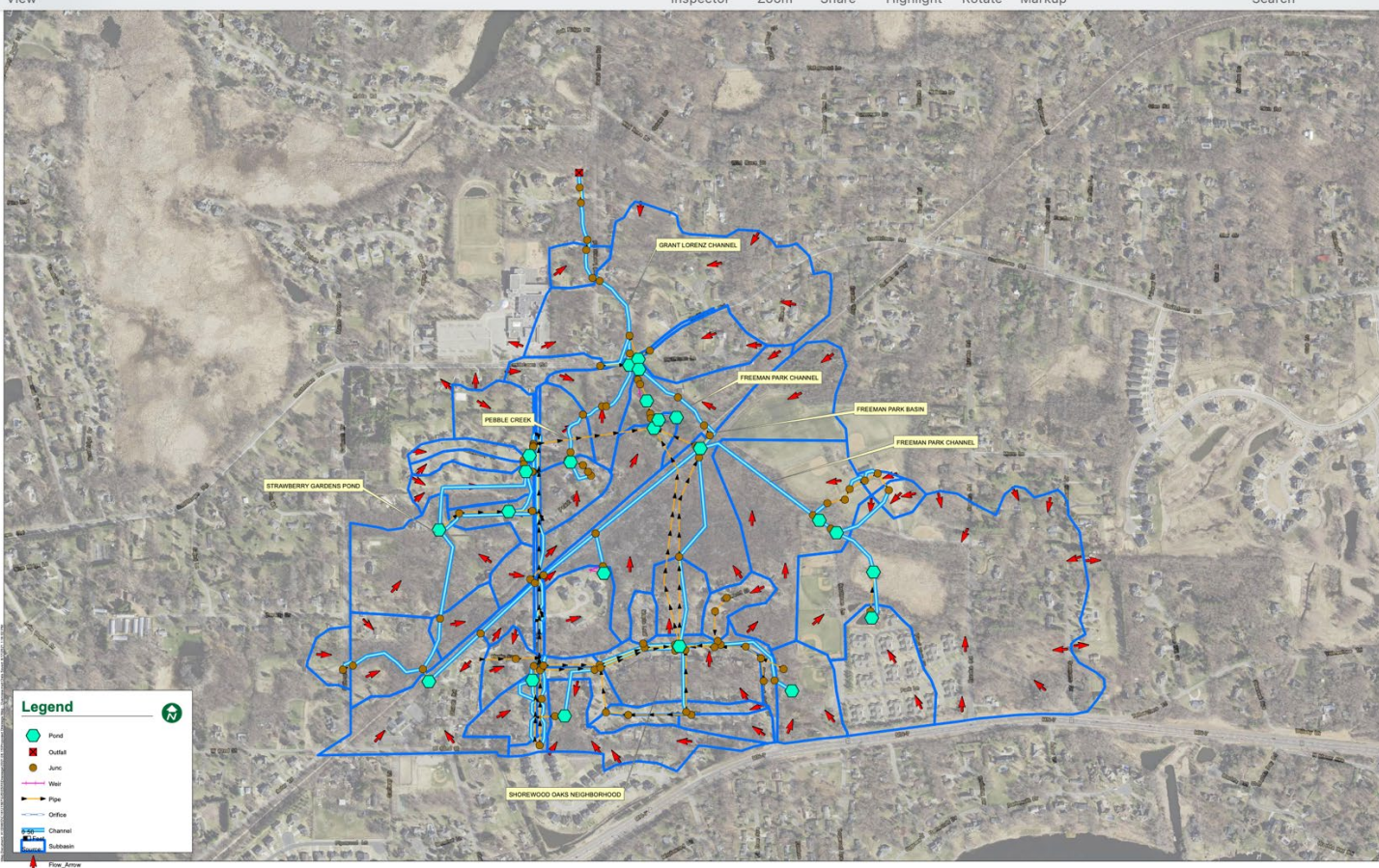
Apr 2023-Jul 2023
Site Restoration
and Tree Planting

Project goals include:

- Reducing flooding and drainage issues upstream
- Reducing flow rates in the downstream Grant Lorenz Channel
- Preservation and restoration of trees and habitat
- Creating a trail connection between Smithtown Road and the LRT
- Improving water quality to downstream water bodies

More information: ci.shorewood.mn.us/smithtownpond





CITY OF SHOREWOOD, MN

CONSTRUCTION PLANS FOR STRAWBERRY LANE RECONSTRUCTION

GRADING, AGGREGATE BASE, PLANT MIXED BITUMINOUS PAVEMENT, CURB & GUTTER,
ADA IMPROVEMENTS, WATERMAIN, STORM SEWER, RECLAMATION

SEPTEMBER 2022

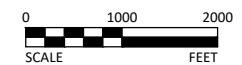


SHEET INDEX

SHEET NUMBER	SHEET TITLE
GENERAL	
G0.01	TITLE SHEET
G0.02	LEGEND
G0.03	GENERAL NOTES
G1.01-G1.04	GENERAL PLAN LAYOUT-STREETS
CIVIL	
C0.01-C0.05	EXISTING CONDITIONS & REMOVAL PLAN
C1.01	TYPICAL SECTIONS
C1.03-C1.08	CONSTRUCTION DETAILS
C1.09-C1.11	STAGING PLAN & TRAFFIC CONTROL
C2.01-C2.05	EROSION CONTROL & TURF ESTABLISHMENT
C2.06-C2.08	SWPPP
C3.01-C3.03	POND GRADING PLAN & DITCH GRADING PLAN
C4.01-C4.08	WATERMAIN PLAN & PROFILE
C5.01-C5.11	STORM SEWER PLAN & PROFILE
C6.01-C6.06	STREET PLAN & PROFILE
C6.07-C6.12	INTERSECTION DETAILS & TRAIL CROSSING
C7.01-C7.16	CROSS SECTIONS



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."

PLAN REVISIONS		
DATE	SHEET NUMBER	APPROVED BY
3/07/2023	G1.03, G1.04, C0.01-C0.03, C1.04, C1.08, C1.10, C4.01-C4.05, C4.08, C5.01-C5.04, C5.09, C6.02, C6.04, C6.11	RRJ
04/20/2023	G0.01, C0.01, C0.03, C2.03, C5.03, C6.02, C6.11, C6.12	RRJ
5/12/2023	C0.01, C0.04, C5.03, C6.12	RRJ
06/20/2023	G0.01, C0.02 C3.03, C6.04	RRJ

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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 9/19/2022



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
RRJ	2	RRJ	04/20/2023
DRAWN			
SCD/CAL			
CHECKED			
ALB			
CLIENT PROJ. NO.			
C16.120450			

CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
TITLE SHEET

SHEET
G0.01

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

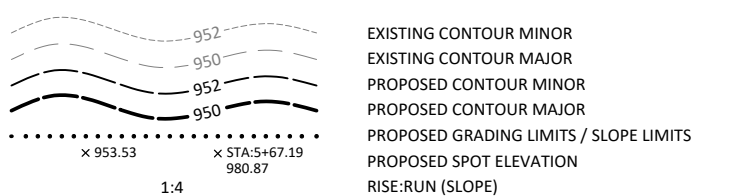
EXISTING UTILITY LINES

	FORCEMAIN
	SANITARY SEWER
	SANITARY SERVICE
	STORM SEWER
	STORM SEWER DRAIN TILE
	WATERMAIN
	WATER SERVICE

PROPOSED UTILITY LINES

	FORCEMAIN
	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

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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: G-A 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	FORCEMAIN	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		

CONSTRUCTION / SOILS NOTES

GRADING, BASE AND SURFACE:

1. TOP OF THE SUBGRADE IS DEFINED AS THE BOTTOM OF THE SELECT GRANULAR MATERIAL. TOP OF THE GRADING GRADE IS DEFINED AS THE BOTTOM OF THE CLASS 5 AGGREGATE BASE.
2. SUITABLE GRADING MATERIAL ON THIS PROJECT SHALL CONSIST OF ALL SOILS ENCOUNTERED WITH THE EXCEPTION OF TOPSOIL, DEBRIS, ORGANIC MATERIAL, AND OTHER UNSTABLE MATERIAL. NO ORGANIC SOIL SHALL BE ALLOWED IN THE TOP 5 FEET BELOW THE GRADING GRADE. FOR FIELD PURPOSES, ORGANIC SOIL WILL BE IDENTIFIED AS BEING BLACK IN COLOR AND CONTAINING VISIBLE ORGANIC MATTER.
3. STRIP ALL INPLACE TOPSOIL IN AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING. ALL TOPSOIL STRIPPING WILL BE CONSIDERED COMMON EXCAVATION.
4. UNLESS OTHERWISE NOTED, IN ANY EMBANKMENT CONSTRUCTION, PROVIDE FOR SUBCUTS TO THE DEPTHS AND LOCATIONS SHOWN ON THE TYPICAL SECTIONS. SLOPES FOR THIS CONTRACT WILL BE REPRESENTED WITH VERTICAL:HORIZONTAL NOTATION, Y(V):X(H).
5. TOPSOIL SHALL BE USED THROUGHOUT THE PROJECT AND AS DIRECTED BY THE ENGINEER. NO TOPSOIL SHALL BE ALLOWED TO BE REMOVED FROM THE SITE UNLESS APPROVED BY THE ENGINEER.
6. IN FILL SECTIONS, TOPSOIL AND OTHER UNSUITABLE MATERIALS SHALL BE ELIMINATED FROM THE UPPER 5 FEET OF THE "SUBGRADE" BENEATH THE ROADWAY, WITHIN THE LIMITS SHOWN ON THE TYPICAL SECTIONS.
7. TEST ROLLING WILL BE REQUIRED ON ALL PREPARED SUBGRADE PRIOR TO PLACEMENT OF GRANULAR MATERIAL AND AT ANY LOCATIONS DIRECTED BY THE ENGINEER, WITH A LOADED TANDEM AXLE TRUCK. THIS WORK WILL BE CONSIDERED INCIDENTAL.
8. IN THE PROPOSED CONSTRUCTION, THE CONTRACTOR SHOULD STRIVE TO SUBSTANTIALLY MATCH THE SOILS AND LAYERS INPLACE IN THE UPPER 4 FEET OF THE ROADWAYS. GRANULAR BACKFILL SHALL NOT BE PERMITTED ADJACENT TO IN PLACE NON-GRANULAR SOILS IN ORDER TO PREVENT AN ABRUPT SOILS DIFFERENTIAL.
9. IN ANY CASE WHERE GRANULAR EMBANKMENTS OR BACKFILL JOIN NON-GRANULAR SOIL EMBANKMENTS OR BACKFILL, PROVIDE A 1(V):20(H) TRANSITION TAPER BETWEEN THE CHANGES IN MATERIAL TO PREVENT AN ABRUPT SOILS DIFFERENTIAL. THE 1(V):20(H) TAPER SHALL BE CONSTRUCTED SO THAT THE GRANULAR BACKFILL MATERIAL OVERLAYS THE ADJACENT NON-GRANULAR SOIL BACKFILL.
10. WHERE SUBCUTS RUN INTO DRIVEWAYS OR LOCAL ROADS, CUT VERTICALLY TO THE BOTTOM OF THE INPLACE SURFACING OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS DEEPER, THEN AT A 1(V):4(H) TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
11. PROVIDE 1(V):20(H) TAPERS WHEN CHANGING SUBCUT DEPTHS OR WHEN GOING FROM GRANULAR MATERIAL TO SUITABLE GRADING MATERIAL.
12. DITCH BOTTOMS, TOE OR FILL, CUT RUNOUTS AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.
13. STABILIZING AGGREGATE SHALL BE INCORPORATED INTO THE SUBGRADE TO ACHIEVE SATISFACTORY SURFACE STABILITY AT LOCATIONS DEEMED NECESSARY BY THE ENGINEER.
14. ALL SALVAGED ROADWAY MATERIALS SUCH AS CONCRETE, BITUMINOUS AND AGGREGATES MAY BE UTILIZED ACCORDING TO MN/DOT SPECIFICATIONS AND PROJECT SPECIAL PROVISIONS. MATERIALS NOT UTILIZED ON THIS PROJECT WILL BECOME THE PROPERTY OF THE CONTRACTOR AND DISPOSED OF OFF THE RIGHT OF WAY IN ACCORDANCE WITH MN/DOT SPECIFICATION 2104.3C3 AND AS AGREED UPON BY THE ENGINEER.

REMOVALS:

16. PROVIDE A SAWCUT WHERE PLACING NEW PAVEMENT ADJACENT TO INPLACE PAVEMENT TO ENSURE A UNIFORM JOINT. LOCATE ALL SAWCUTS ALONG LANE LINES OR PERPENDICULAR TO LANE LINES. ALL SAWING SHALL BE WET SAWN AND ALL DUST/SLURRY SHALL BE COLLECTED TO THE EXTENT PRACTICABLE BY SWEEPING OR VACUUM AND DISPOSED OF ACCORDING TO THE SPECIFICATIONS. THIS WORK IS INCIDENTAL.
17. PROVIDE FOR THE REMOVAL AND DISPOSAL OF ANY INPLACE SURFACING, OTHER STRUCTURES OR DEBRIS THAT WOULD INTERFERE WITH CONSTRUCTION. ALL SUCH MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL EITHER BE RECYCLED TO THE EXTENT ALLOWED OR DISPOSED OF OFF THE RIGHT OF WAY IN ACCORDANCE WITH SPECIFICATION 2104.C3C. ALL BORINGS WITHIN THE EXISTING ROADWAYS ENCOUNTERED ABOUT 4" TO 6" OF BITUMINOUS PAVEMENT OVER APPROXIMATELY 6" TO 12" OF SILTY SAND BASE, SEE GEOTECHNICAL REPORT. NO COMPENSATION WILL BE MADE FOR VARIATIONS IN EXISTING BITUMINOUS PAVEMENT THICKNESSES OR EXISTING BASE THICKNESS.
18. CONTRACTOR SHALL PROTECT AND SUPPORT AS NECESSARY ALL TREES, BUILDINGS, LANDSCAPING, RETAINING WALLS, WALKWAYS, DRIVEWAYS, CURB & GUTTER, ETC. UNLESS NOTED OTHERWISE AND APPROVED FOR REMOVAL IN THE FIELD BY THE ENGINEER.
19. CONTRACTOR SHALL SALVAGE AND INSTALL OR PROTECT ALL LANDSCAPING INCLUDING BOULDERS, EDGING, LANDSCAPE ROCK, MULCH, BUSHES, PLANTS, LAWN ORNAMENTS, ETC. THAT ARE DISTURBED BY CONSTRUCTION.

TURF ESTABLISHMENT:

20. CONTRACTOR SHALL STRIP ALL INPLACE TOPSOIL IN AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING.
21. PLACE A MINIMUM OF 6 INCHES OF TOPSOIL ON ALL AREAS SCHEDULED FOR PERMANENT TURF ESTABLISHMENT.
22. IMPACTED TRESS SHALL BE REMOVED OR TREATED PRIOR TO CONSTRUCTION. IF ADDITIONAL TREES NEED TO BE REMOVED THE CONTRACTOR SHALL INFORM THE ENGINEER IMMEDIATELY.
23. PROVIDE FERTILIZER TYPE 2, PHOSPHOROUS FREE, 20-0-10, OR EQUIVALENT ON ALL AREAS TO BE SEEDED AT AN APPLICATION RATE OF 200 LBS/ACRE. THIS WORK IS INCIDENTAL.
24. PRIOR TO IMPORTING TOPSOIL THE CONTRACTOR SHALL REUSE AND SPREAD SALVAGED TOPSOIL. MATERIAL IMPORTED AND NOT NEEDED WILL NOT BE PAID FOR.
25. IMPORTED TOPSOIL SHALL BE 50% COMPOST AND 50% TOPSOIL MIXTURE.

MISCELLANEOUS:

26. WHERE SEDIMENT DEPOSITS IN WATERS OF THE STATE THE MATERIAL MUST BE REMOVED IN 7 DAYS.
27. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST CURRENT MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
28. THE CONTRACTOR IS HEREBY REMINDED OF HIS/HER RESPONSIBILITY UNDER STATE LAW TO CONTACT ALL UTILITIES THAT MAY HAVE FACILITIES IN THE AREA. CONTACT MUST BE MADE THROUGH GOPHER STATE ONE-CALL.
29. WHENEVER THE WORD "INCIDENTAL" IS USES IN THIS PLAN, IT SHALL MEAN THIS WORK WILL BE INCIDENTAL FOR WHICH NO DIRECT COMPENSATION WILL BE MADE.
30. CONTRACTOR SHALL PROTECT ALL STORM SEWER PIPE. SEGMENTS OF THE PROPOSED STORM SEWER EXTEND ABOVE THE SUBGRADE.
31. TWO TREES WILL BE OFFERED TO EACH PROPERTY OWNER. THE LOCATIONS AND SPECIES OF EACH TREE WILL BE DETERMINED IN THE FIELD BY THE HOME OWNER.
32. ANY TREE OUTSIDE OF CITY RIGHT-OF-WAY THAT IS SHOWN TO BE REMOVED IN THE PLANS MUST BE VERIFIED BY ENGINEER PRIOR TO REMOVAL.

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Andrew L. Budde
 ANDREW L. BUDDÉ
 LIC. NO. 46585 DATE 9/19/2022



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

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C16.120450			

CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 GENERAL NOTES

SHEET
 G0.03

WEST 62ND ST

MAPLE AVE

STRAWBERRY LANE

STRAWBERRY LANE




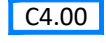




HCRA-LAKE MINNETONKA REGIONAL TRAIL

SHOREWOOD OAKS DRIVE

ALEXANDER LANE

GENERAL PLAN LAYOUT LEGEND



-  PROPOSED CONSTRUCTION
-  C3.00 POND GRADING PLAN
-  C0.00 EXISTING CONDITIONS & REMOVALS PLAN
-  C4.00 WATERMAIN PLAN & PROFILE
-  C1.00 STAGING PLAN
-  C5.00 STORM SEWER PLAN & PROFILE
-  C2.00 EROSION CONTROL & TURF ESTABLISHMENT PLAN
-  C6.00 STREET CONSTRUCTION PLAN & PROFILE, SIGNING & STRIPING PLAN



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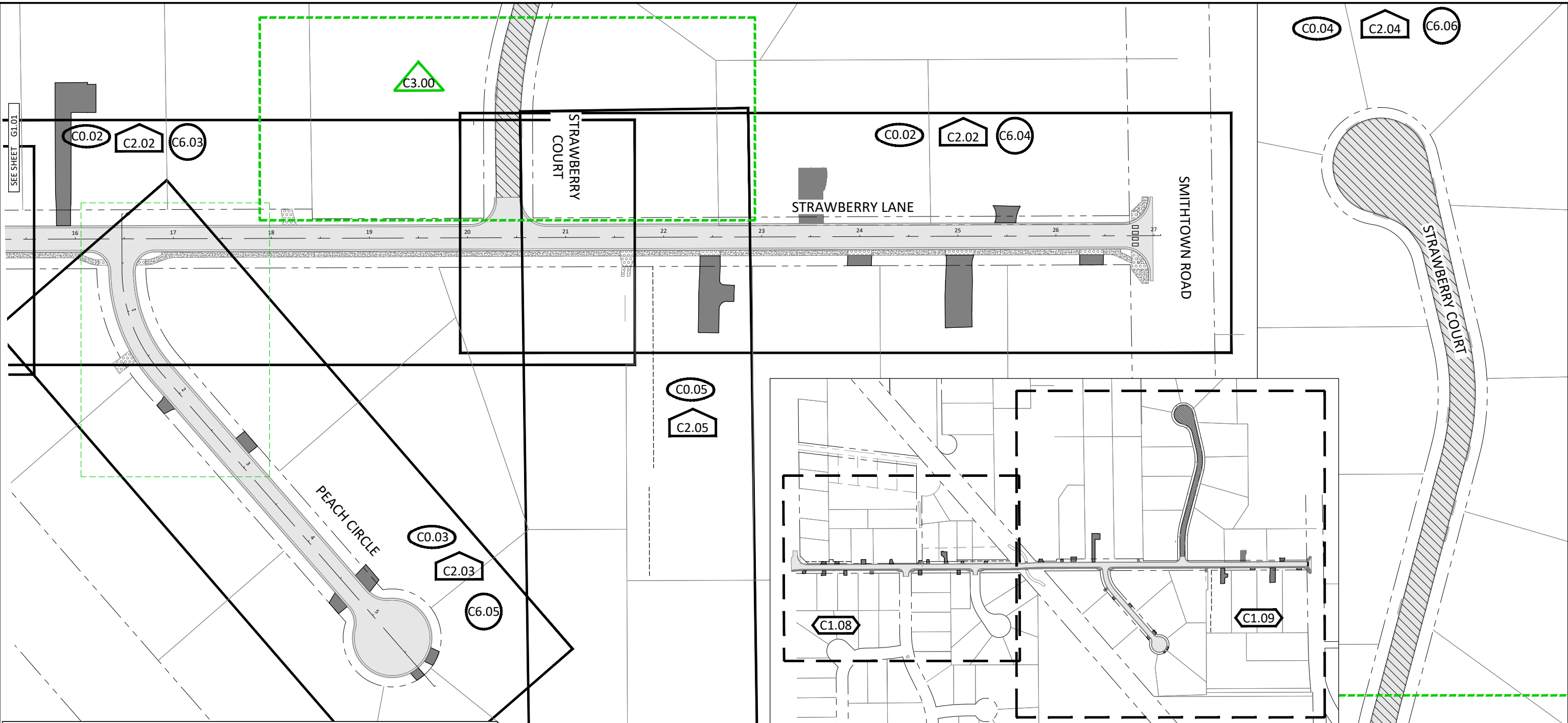
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 CHASKA, MINNESOTA 55318
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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 GENERAL PLAN LAYOUT-STREETS

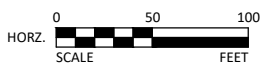
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GENERAL PLAN LAYOUT LEGEND

- | | | | |
|--|---|--|---|
| | PROPOSED CONSTRUCTION | | POND GRADING PLAN |
| | EXISTING CONDITIONS & REMOVALS PLAN | | WATERMAIN PLAN & PROFILE |
| | STAGING PLAN | | STORM SEWER PLAN & PROFILE |
| | EROSION CONTROL & TURF ESTABLISHMENT PLAN | | STREET CONSTRUCTION PLAN & PROFILE, SIGNING & STRIPING PLAN |



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 CHASKA, MINNESOTA 55318
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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 GENERAL PLAN LAYOUT-STREETS

SHEET
G1.02

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WEST 62ND ST

MAPLE AVE

STRAWBERRY LANE


STRAWBERRY LANE









SHOREWOOD OAKS DRIVE

ALEXANDER LANE

HCRRA-LAKE MINNETONKA REGIONAL TRAIL

GENERAL PLAN LAYOUT LEGEND



	PROPOSED CONSTRUCTION		POND GRADING PLAN
	EXISTING CONDITIONS & REMOVALS PLAN		WATERMAIN PLAN & PROFILE
	STAGING PLAN		STORM SEWER PLAN & PROFILE
	EROSION CONTROL & TURF ESTABLISHMENT PLAN		STREET CONSTRUCTION PLAN & PROFILE, SIGNING & STRIPING PLAN

C5.11

C5.02

C5.06

C5.03

C5.08

C4.02

C4.08

1 ADJUST WATERMAIN LAYOUT

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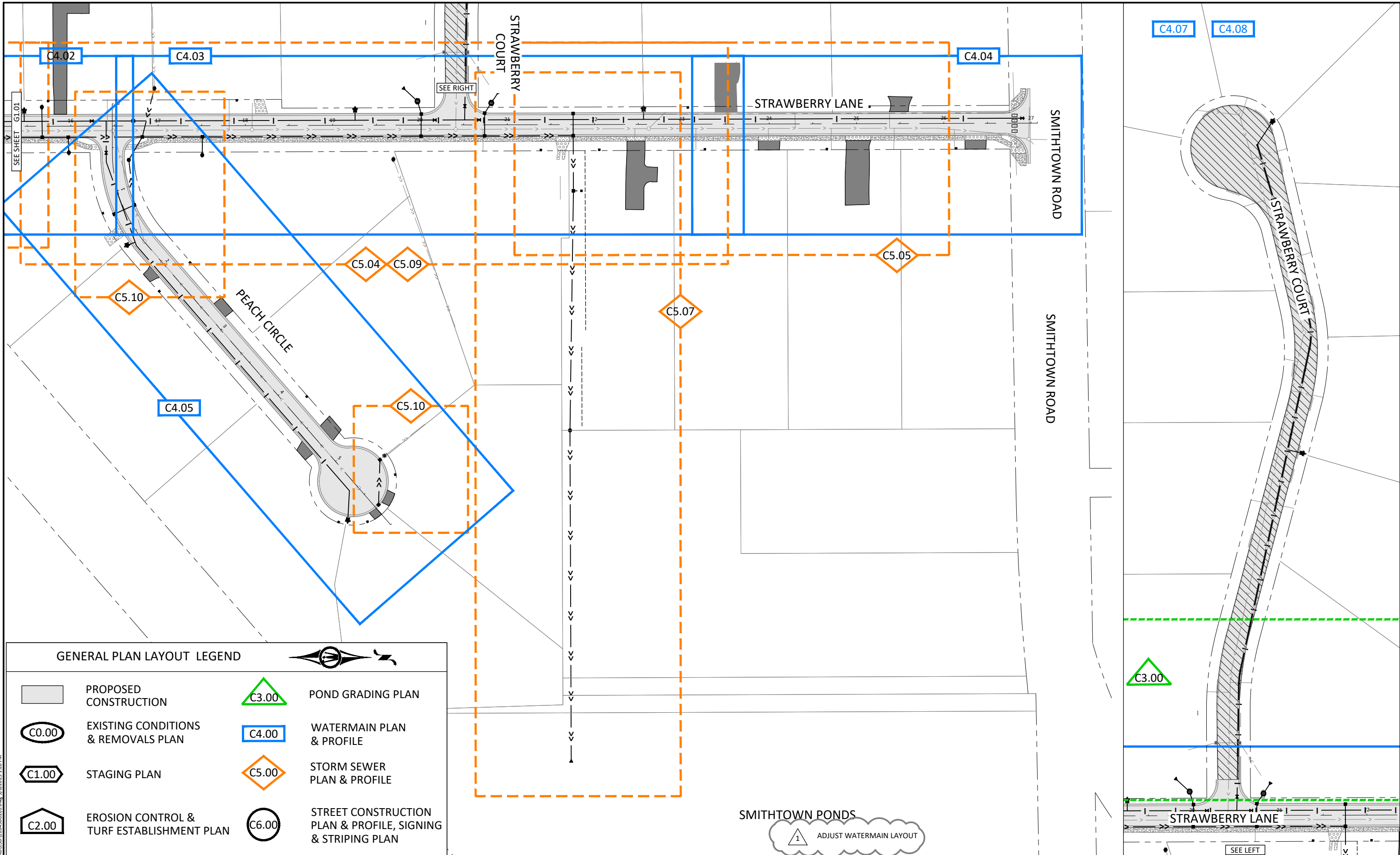


2638 SHADOW LANE, SUITE 200
 CHASKA, MINNESOTA 55318
 Phone: (952) 448-8838
 Email: Chaska@bolton-menk.com
 www.bolton-menk.com

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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 GENERAL PLAN LAYOUT-UTILITIES

SHEET
 G1.03



GENERAL PLAN LAYOUT LEGEND

- | | | | |
|--|---|--|---|
| | PROPOSED CONSTRUCTION | | POND GRADING PLAN |
| | EXISTING CONDITIONS & REMOVALS PLAN | | WATERMAIN PLAN & PROFILE |
| | STAGING PLAN | | STORM SEWER PLAN & PROFILE |
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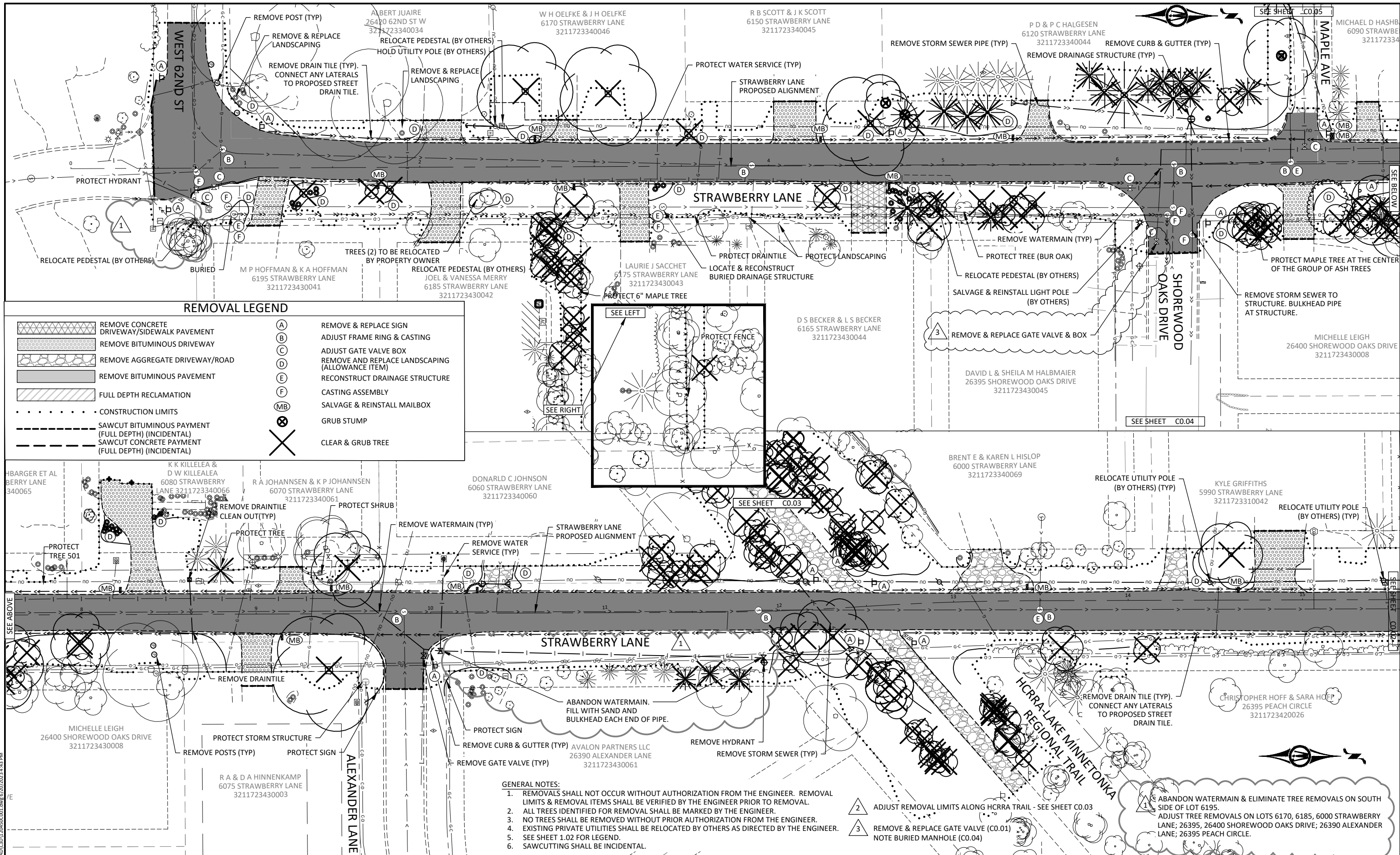
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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 GENERAL PLAN LAYOUT-UTILITIES

SHEET
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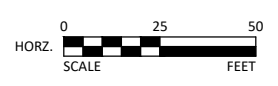


REMOVAL LEGEND

	REMOVE CONCRETE DRIVEWAY/SIDEWALK PAVEMENT	(A)	REMOVE & REPLACE SIGN
	REMOVE BITUMINOUS DRIVEWAY	(B)	ADJUST FRAME RING & CASTING
	REMOVE AGGREGATE DRIVEWAY/ROAD	(C)	ADJUST GATE VALVE BOX
	REMOVE BITUMINOUS PAVEMENT	(D)	REMOVE AND REPLACE LANDSCAPING (ALLOWANCE ITEM)
	FULL DEPTH RECLAMATION	(E)	RECONSTRUCT DRAINAGE STRUCTURE
	CONSTRUCTION LIMITS	(F)	CASTING ASSEMBLY
	SAWCUT BITUMINOUS PAYMENT (FULL DEPTH) (INCIDENTAL)	(MB)	SALVAGE & REINSTALL MAILBOX
	SAWCUT CONCRETE PAYMENT (FULL DEPTH) (INCIDENTAL)		GRUB STUMP
			CLEAR & GRUB TREE

- GENERAL NOTES:**
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 5. SEE SHEET 1.02 FOR LEGEND.
 6. SAWCUTTING SHALL BE INCIDENTAL.

- ADJUST REMOVAL LIMITS ALONG HCRA TRAIL - SEE SHEET C0.03
- REMOVE & REPLACE GATE VALVE (C0.01) NOTE BURIED MANHOLE (C0.04)



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 CHASKA, MINNESOTA 55318
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 Email: Chaska@bolton-menk.com
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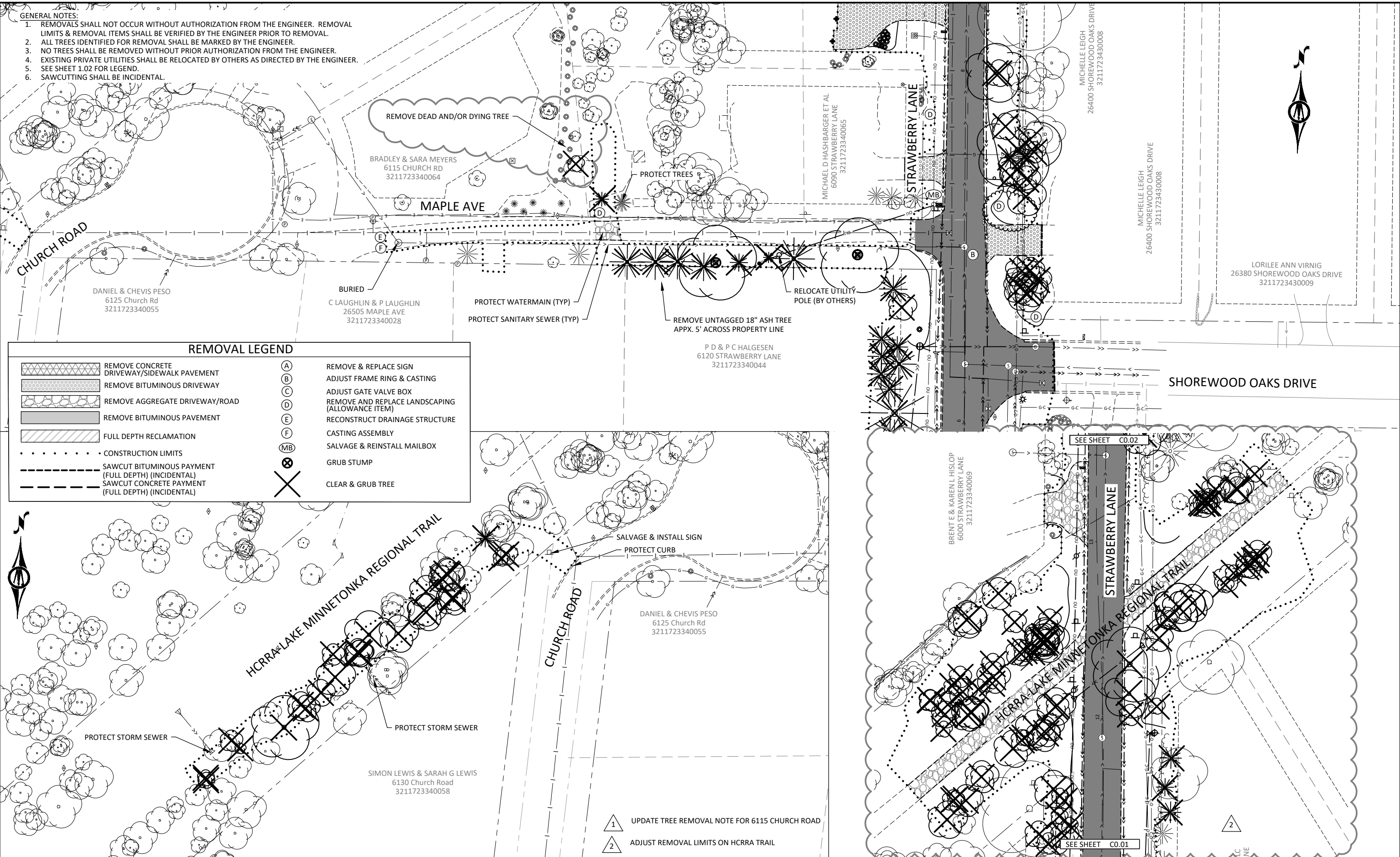
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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 EXISTING CONDITIONS & REMOVAL PLAN

SHEET
C0.01

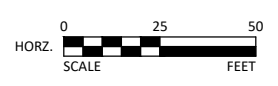
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REMOVAL LEGEND

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	REMOVE BITUMINOUS DRIVEWAY	(B)	ADJUST FRAME RING & CASTING
	REMOVE AGGREGATE DRIVEWAY/ROAD	(C)	ADJUST GATE VALVE BOX
	REMOVE BITUMINOUS PAVEMENT	(D)	REMOVE AND REPLACE LANDSCAPING (ALLOWANCE ITEM)
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	CONSTRUCTION LIMITS	(F)	CASTING ASSEMBLY
	SAWCUT BITUMINOUS PAYMENT (FULL DEPTH) (INCIDENTAL)	(MB)	SALVAGE & REINSTALL MAILBOX
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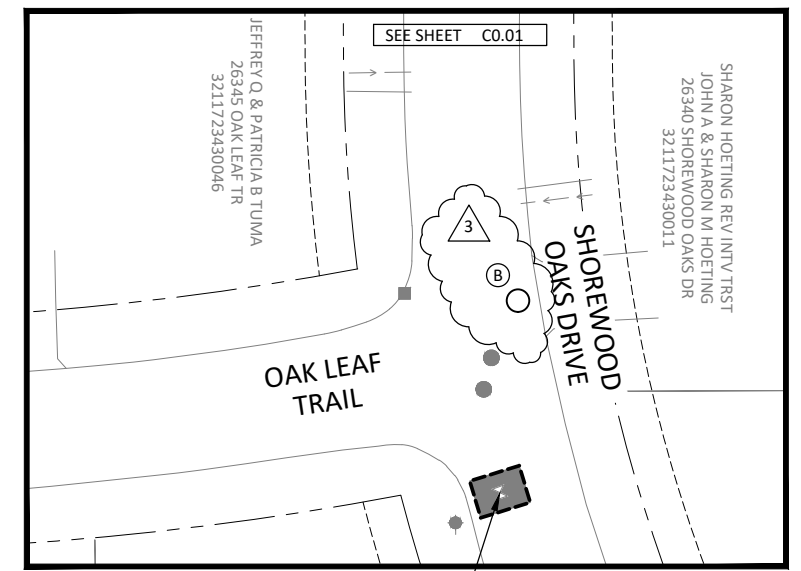
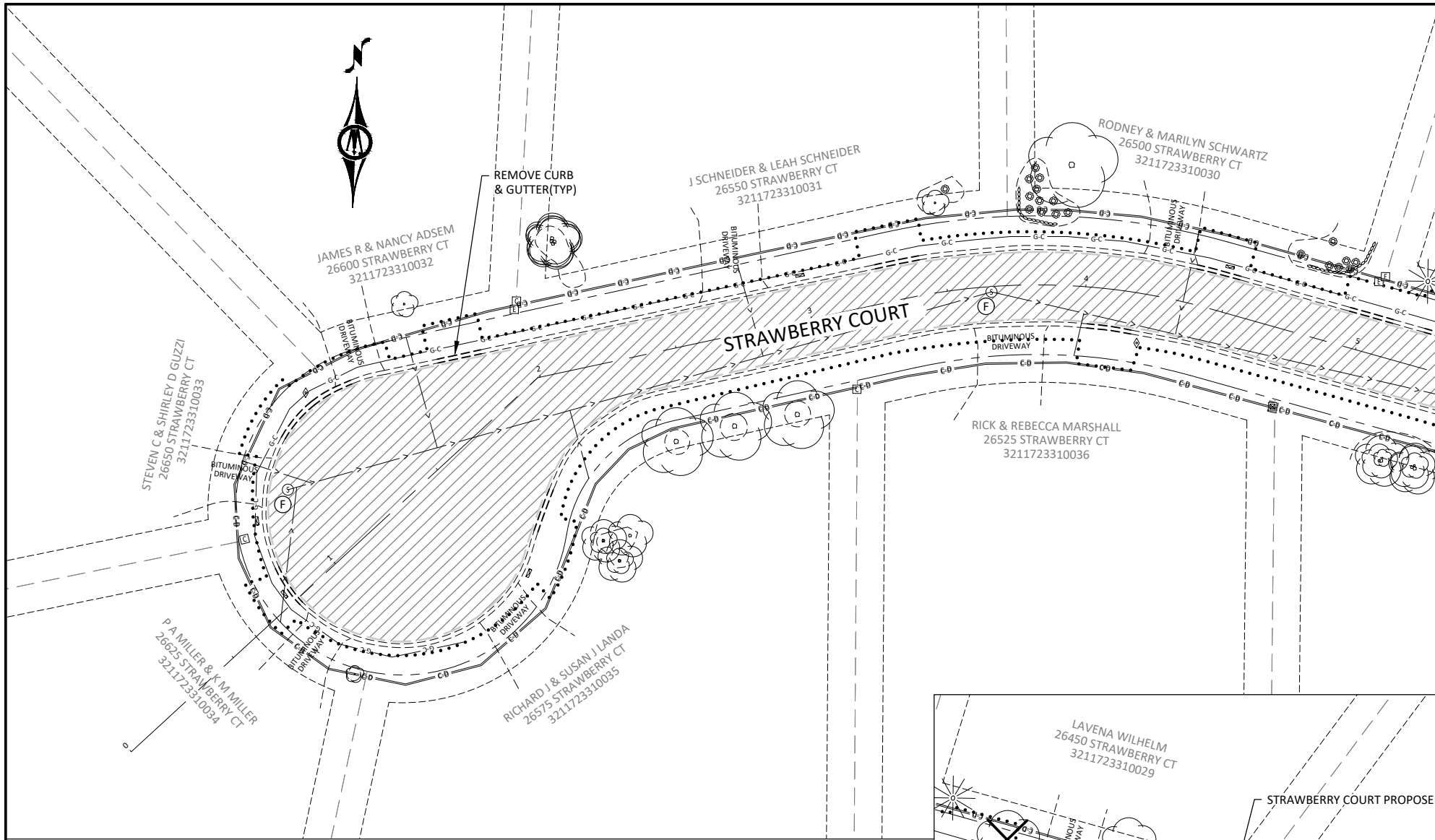
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 CHASKA, MINNESOTA 55318
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CLIENT PROJ. NO.			
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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 EXISTING CONDITIONS & REMOVAL PLAN

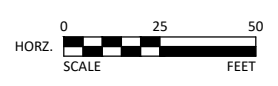
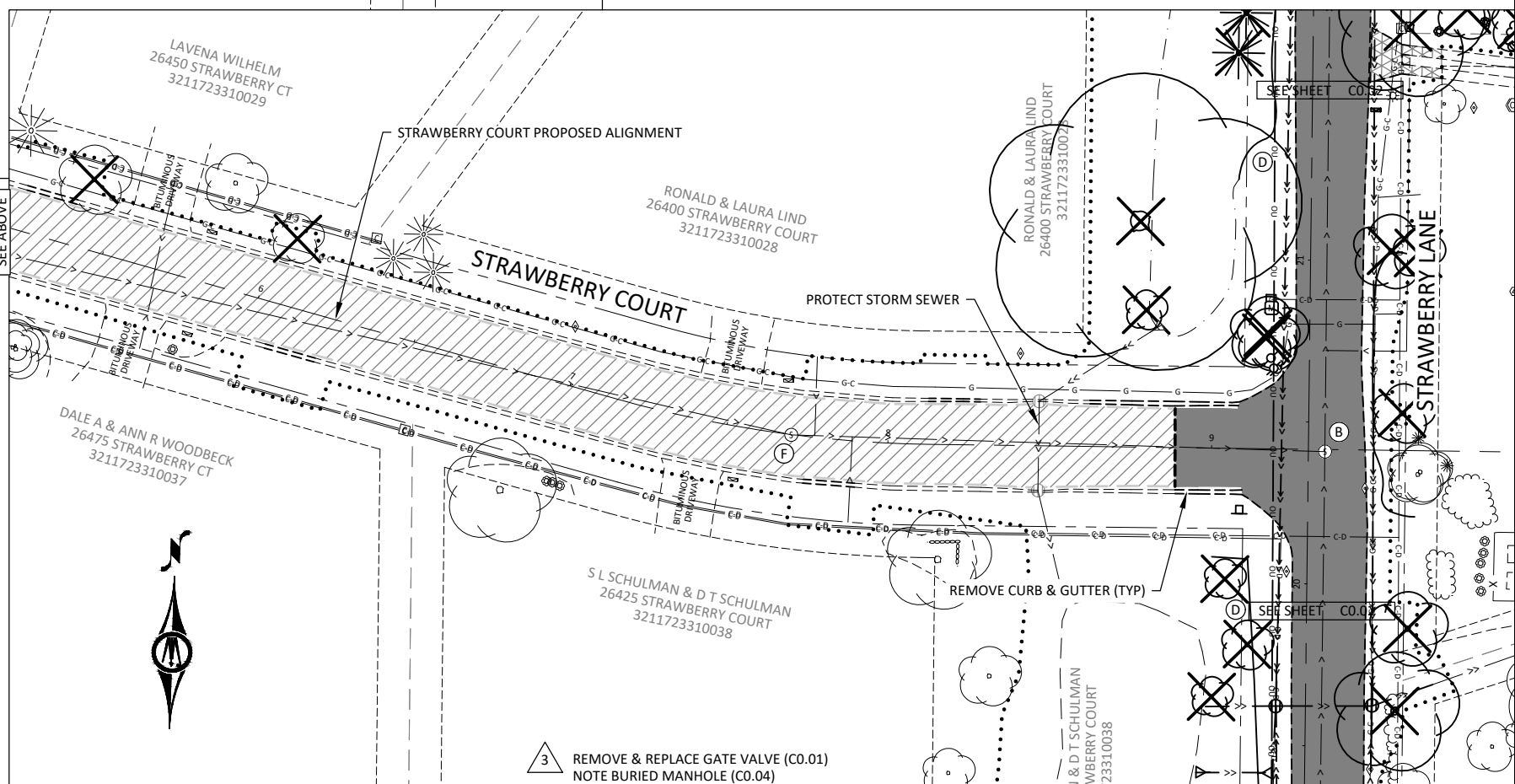
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REMOVAL LEGEND	
	REMOVE CONCRETE DRIVEWAY/SIDEWALK PAVEMENT
	REMOVE BITUMINOUS DRIVEWAY
	REMOVE AGGREGATE DRIVEWAY/ROAD
	REMOVE BITUMINOUS PAVEMENT
	FULL DEPTH RECLAMATION
	CONSTRUCTION LIMITS
	SAWCUT BITUMINOUS PAYMENT (FULL DEPTH) (INCIDENTAL)
	SAWCUT CONCRETE PAYMENT (FULL DEPTH) (INCIDENTAL)
	REMOVE & REPLACE SIGN
	ADJUST FRAME RING & CASTING
	ADJUST GATE VALVE BOX
	REMOVE AND REPLACE LANDSCAPING (ALLOWANCE ITEM)
	RECONSTRUCT DRAINAGE STRUCTURE
	CASTING ASSEMBLY
	SALVAGE & REINSTALL MAILBOX
	GRUB STUMP
	CLEAR & GRUB TREE



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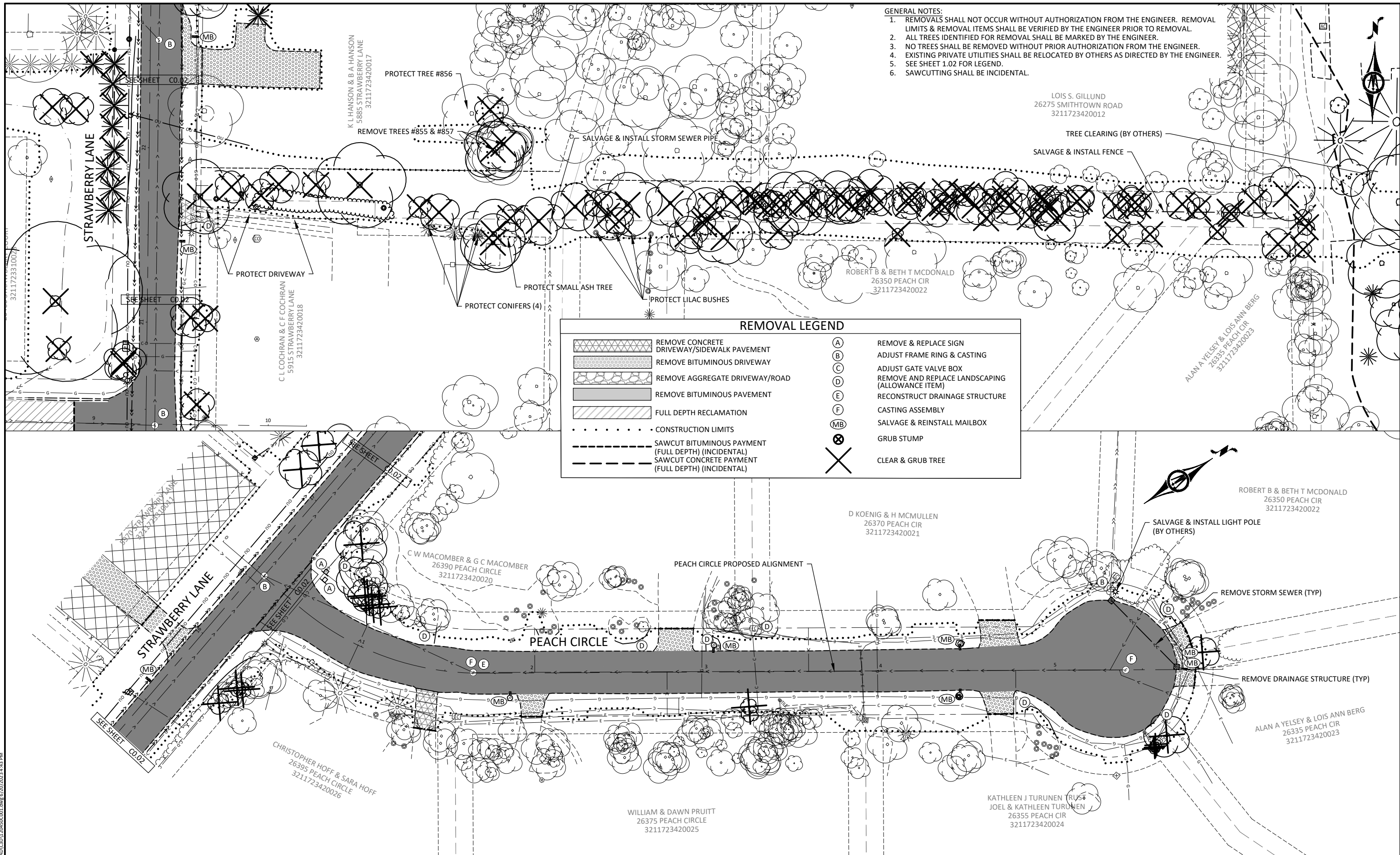
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CLIENT PROJ. NO.	C16.120450		

CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 EXISTING CONDITIONS & REMOVAL PLAN

SHEET
C0.04

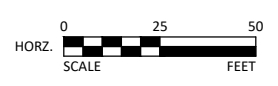
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REMOVAL LEGEND

	REMOVE CONCRETE DRIVEWAY/SIDEWALK PAVEMENT	(A)	REMOVE & REPLACE SIGN
	REMOVE BITUMINOUS DRIVEWAY	(B)	ADJUST FRAME RING & CASTING
	REMOVE AGGREGATE DRIVEWAY/ROAD	(C)	ADJUST GATE VALVE BOX
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	FULL DEPTH RECLAMATION	(E)	RECONSTRUCT DRAINAGE STRUCTURE
	CONSTRUCTION LIMITS	(F)	CASTING ASSEMBLY
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		(X)	CLEAR & GRUB TREE



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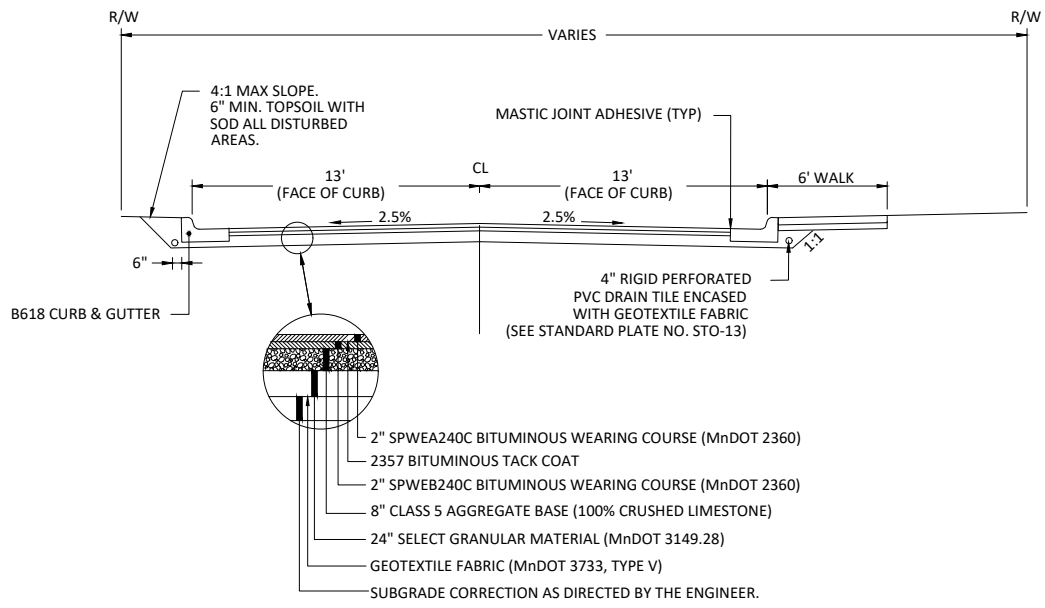
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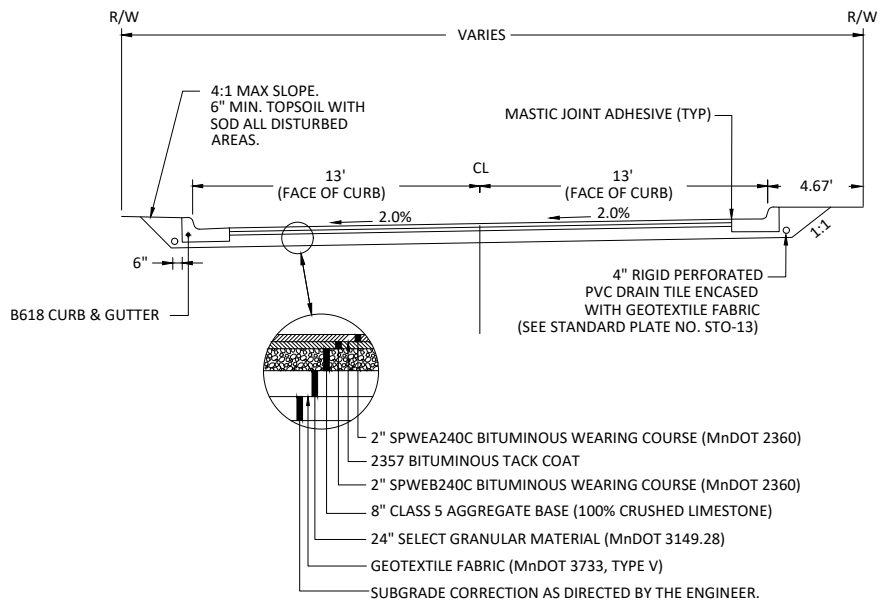
CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
EXISTING CONDITIONS & REMOVAL PLAN

SHEET
C0.05

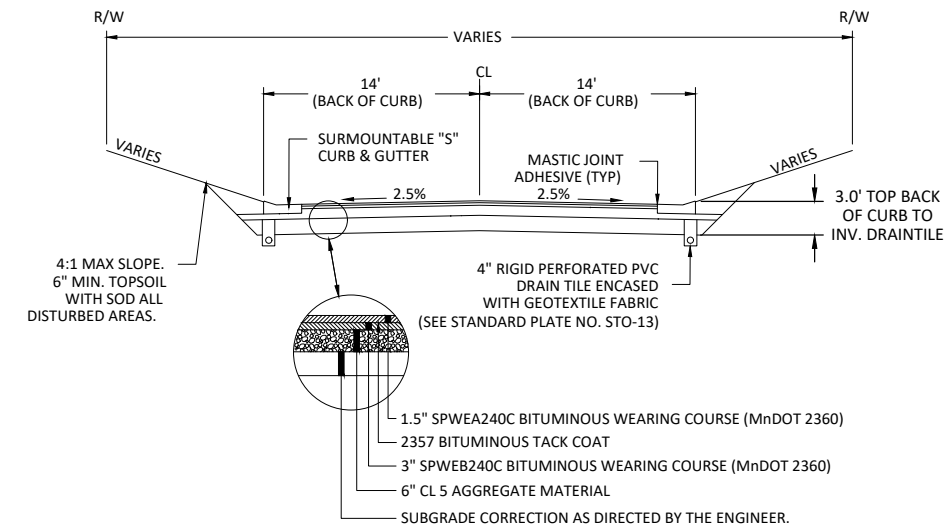
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RECONSTRUCTION TYPICAL SECTION-STRAWBERRY LANE
TYPICAL 26' F-F WITH NORMAL CROWN URBAN RESIDENTIAL BARRIER CURB STREET DETAIL

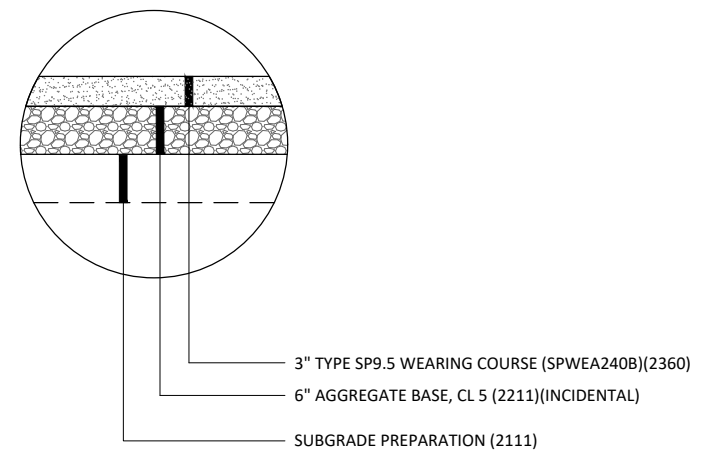


RECONSTRUCTION TYPICAL SECTION-PEACH CIRCLE
TYPICAL 26' F-F URBAN RESIDENTIAL BARRIER CURB STREET DETAIL

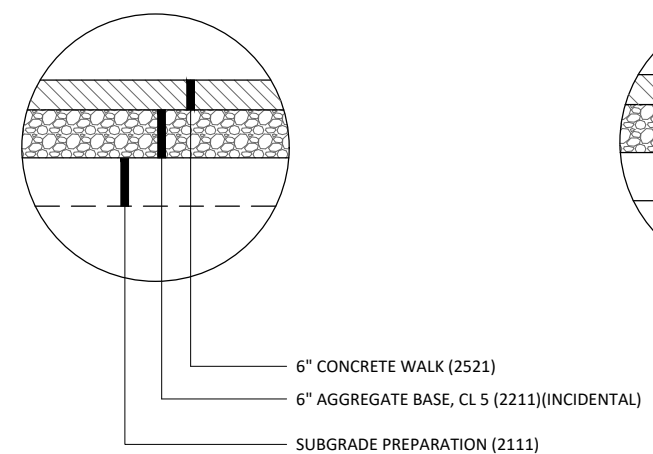


RECLAMATION TYPICAL SECTION-STRAWBERRY COURT
TYPICAL 28' B-B WITH NORMAL CROWN URBAN RESIDENTIAL SURMOUNTABLE CURB STREET DETAIL

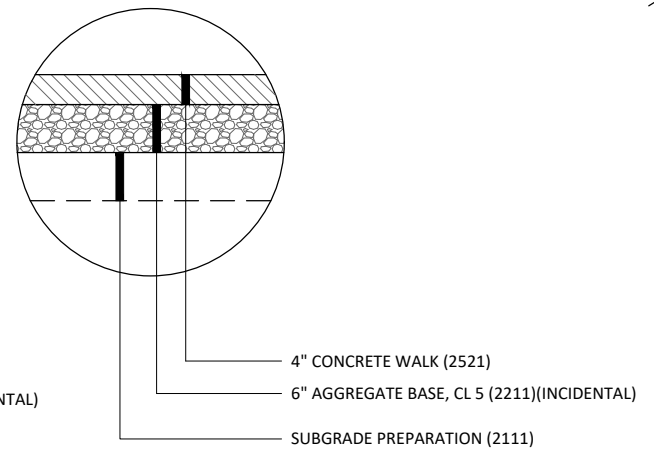
3" BITUMINOUS DRIVEWAY
NOT TO SCALE



6" CONCRETE WALK/DRIVEWAY
NOT TO SCALE

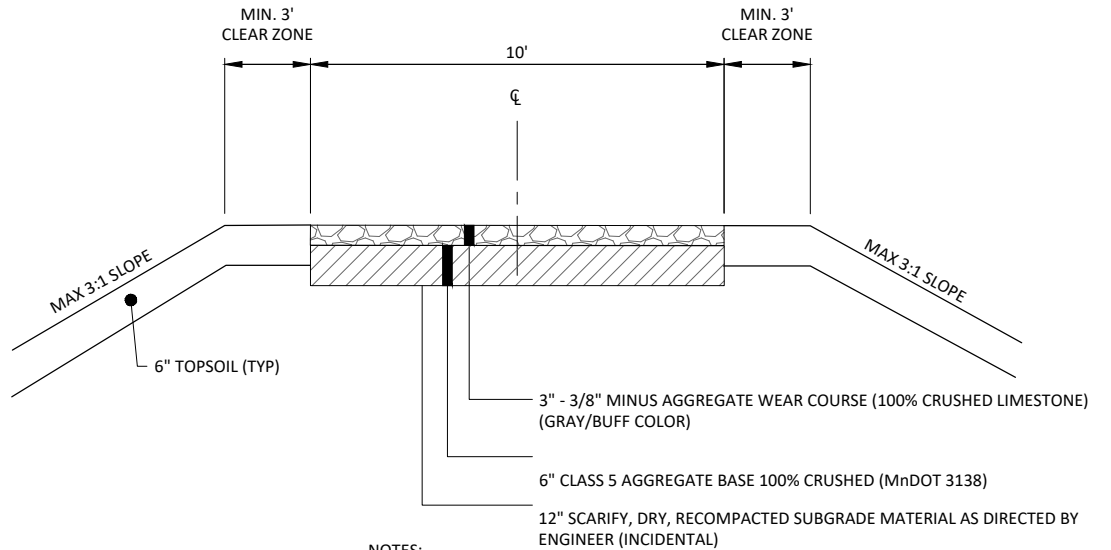


4" CONCRETE WALK
NOT TO SCALE



- GENERAL NOTES:**
- UNLESS OTHERWISE SPECIFIED, THE CROSS SLOPE OF THE GRADING GRADE MATCHES THE CROSS SLOPE OF THE DRIVING LANES.
 - PLACE BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS LIFTS AND ON EXISTING BITUMINOUS PRIOR TO PAVING WEAR COURSE. PLACE TACK COAT ON ALL VERTICAL FACES OF SAWCUT BITUMINOUS SURFACES (INCIDENTAL).
 - INSLOPES SHOWN ARE NORMAL. SEE CROSS SECTIONS FOR VARIATIONS.
 - ANY VARIATIONS FROM THE TYPICAL SECTION DIMENSIONS ARE SHOWN ON THE PLAN DRAWINGS.
 - PAVEMENT CROSS SLOPES VARY. SEE CONSTRUCTION PLANS FOR PAVEMENT SLOPES.
 - PAVEMENT SLOPES AT INTERSECTION LOCATIONS MAY VARY FROM THOSE SHOWN ON THE TYPICAL SECTION.
 - BOULEVARD SLOPES VARY. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE.
 - PAVEMENT CROSS-SLOPES TRANSITIONS 1.0% EVERY 25 FEET. SEE CONSTRUCTION PLANS.
 - DRAINTILE SHALL BE INSTALLED BEHIND CURB DRAINTILE TO BE INSTALLED AS REQUIRED TO DRAIN ALL SELECT GRANULAR FILL AREAS. (SEE STANDARD PLATE NO. STO-13).
 - THE CITY RESERVES THE RIGHT TO INCREASE THE STREET SECTION BASED ON SOIL CONDITIONS.
 - CONSTRUCT FINAL LIFT OF BITUMINOUS WEAR COURSE ONE FREEZE/THAW CYCLE AFTER UTILITIES ARE INSTALLED.

- SUBGRADE PREPARATION NOTES:**
- SCARIFY, MIX & COMPACT THE TOP 12 INCHES OF THE SUBGRADE. REPEAT PROCESS UNTIL DESIRED MOISTURE CONTENT IS ACHIEVED. CONTRACTOR SHALL NOTIFY ENGINEER OF AREAS WHERE OPTIMUM MOISTURE LEVELS CANNOT BE OBTAINED DUE TO INSITU SOIL CONDITIONS. CONTRACTOR SHALL CORRECT AREAS REPRESENTED BY FAILING TESTS.
 - CONTRACTOR SHALL MAINTAIN MOISTURE CONTENT DURING SUBGRADE CONPACTION BETWEEN -1.0 AND +3.0 OF OPTIMUM MOISTURE CONTENT, IN PERCENTAGE POINTS.
 - COMPACT SUBGRADE IN ACCORDANCE WITH THE QUALITY COMPACTION METHOD.
 - IF SUBGRADE TEST ROLL FAILS AND SUBGRADE MATERIAL MEETS MOISTURE REQUIREMENTS AND IS PROPERLY COMPACTED, ENGINEER MAY AUTHORIZE THE REMOVAL OF UNDESIRABLE MATERIAL AS SUBGRADE EXCAVATION.



- NOTES:**
- 2' MAX SHOULDER WIDTH. 2% SLOPE ON SHOULDER.
 - 3:1 MAX OUTSIDE OF SHOULDER
 - MAINTAIN 10' CLEAR ZONE ABOVE TRAIL. TRIM TREE BRANCHES ACCORDINGLY.
 - SUBGRADE SHALL BE TEST ROLLED PRIOR TO AGGREGATE BASE INSTALLATION AND CONFORM TO MnDOT SPEC 2111.
 - LIMESTONE SHALL BE OBTAINED FROM KRAEMER MINING & MATERIALS.

3/8" MINUS GRADATION	
SIEVE SIZE	PERCENT PASING
3/8"	100
#4	70-100
#40	20-50
#200	10-30

LRT GRAVEL TRAIL SECTION
NOT TO SCALE

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Andrew L. Budde
ANDREW L. BUDDÉ
LIC. NO. 46585 DATE 9/19/2022

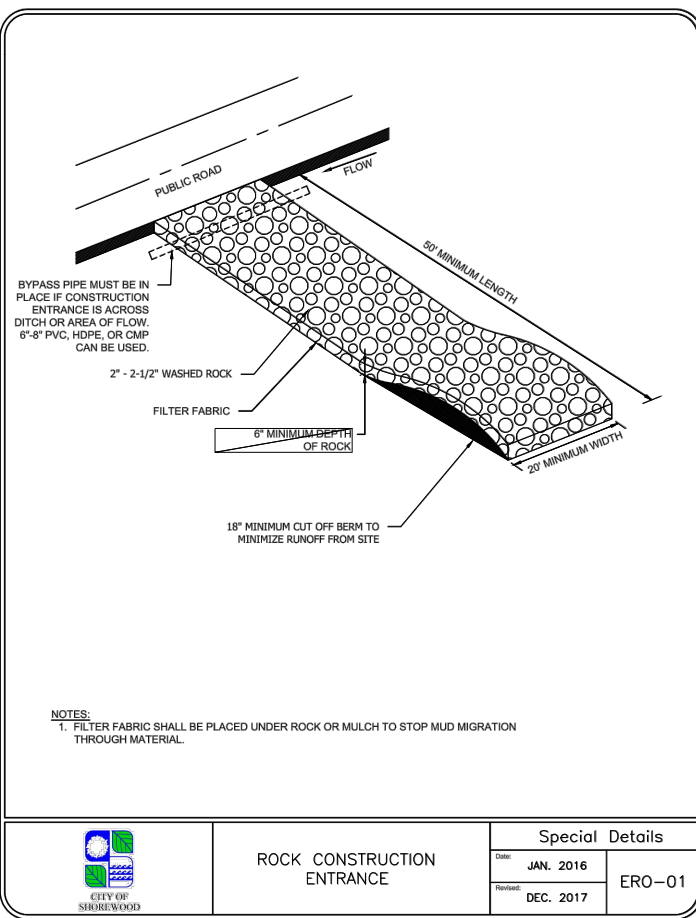


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CHASKA, MINNESOTA 55318
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Email: Chaska@bolton-menk.com
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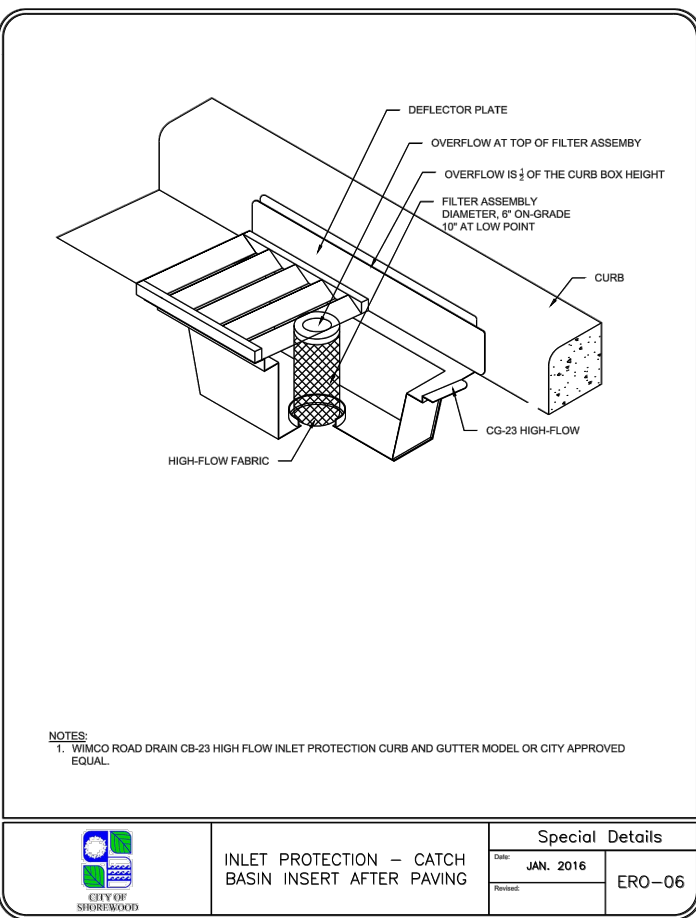
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CLIENT PROJ. NO.	C16.120450		

CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
TYPICAL SECTIONS

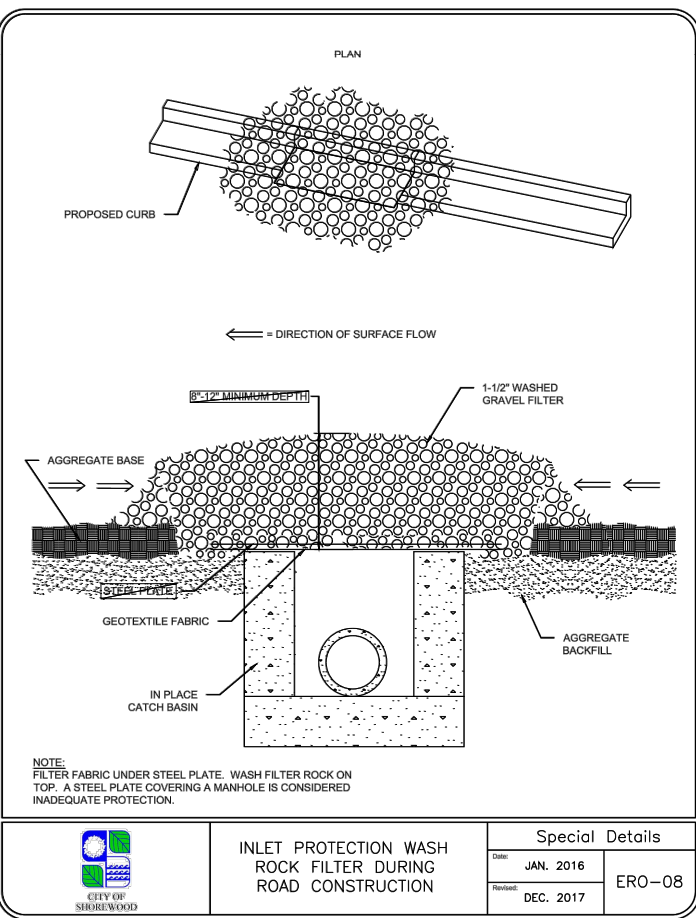
SHEET
C1.01



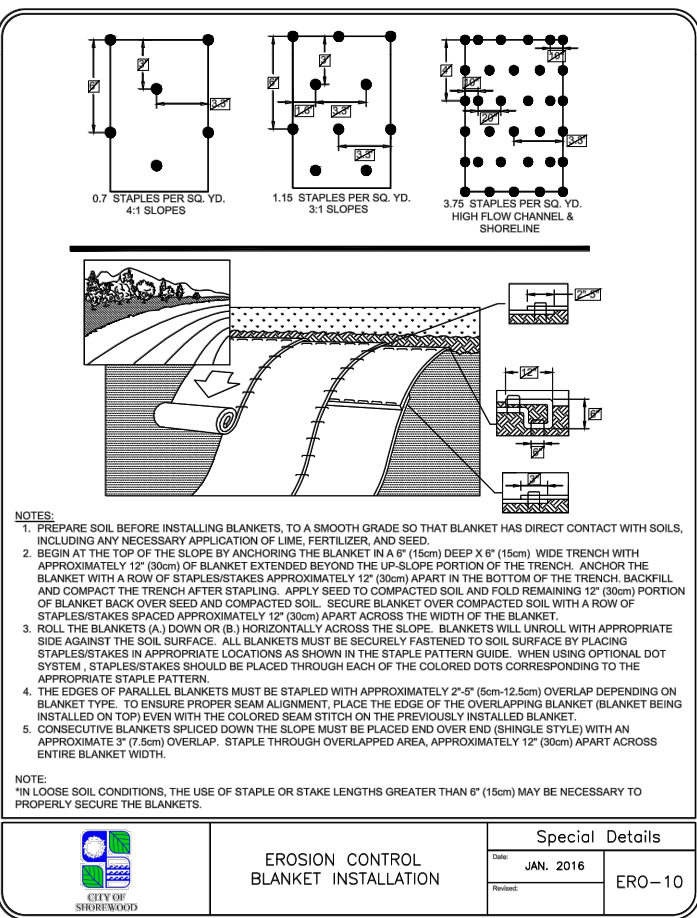
Special Details
Date: JAN. 2016
Revised: DEC. 2017
ERO-01
ROCK CONSTRUCTION ENTRANCE



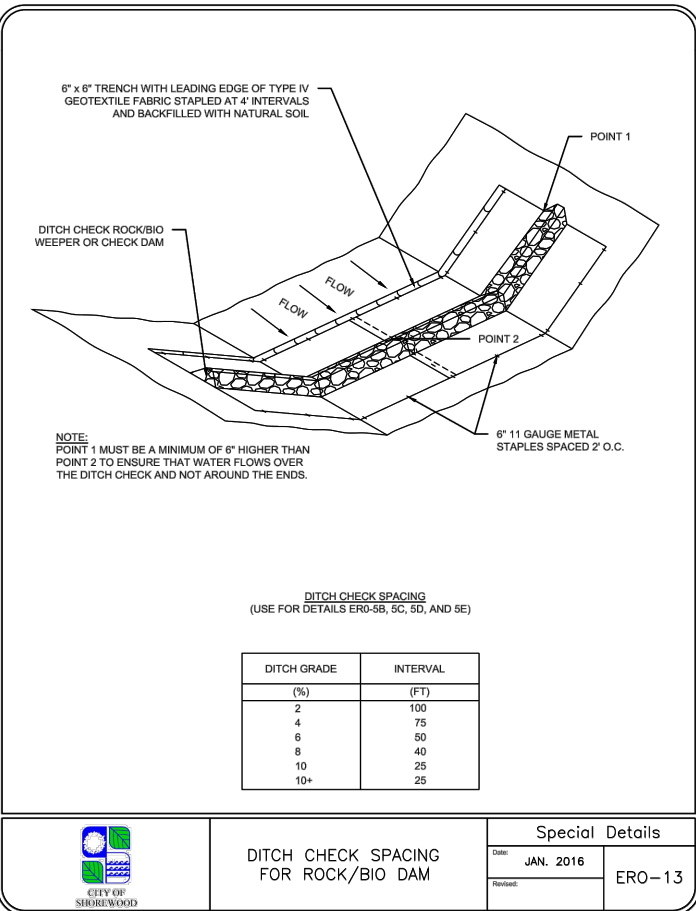
Special Details
Date: JAN. 2016
Revised: DEC. 2017
ERO-06
INLET PROTECTION - CATCH BASIN INSERT AFTER PAVING



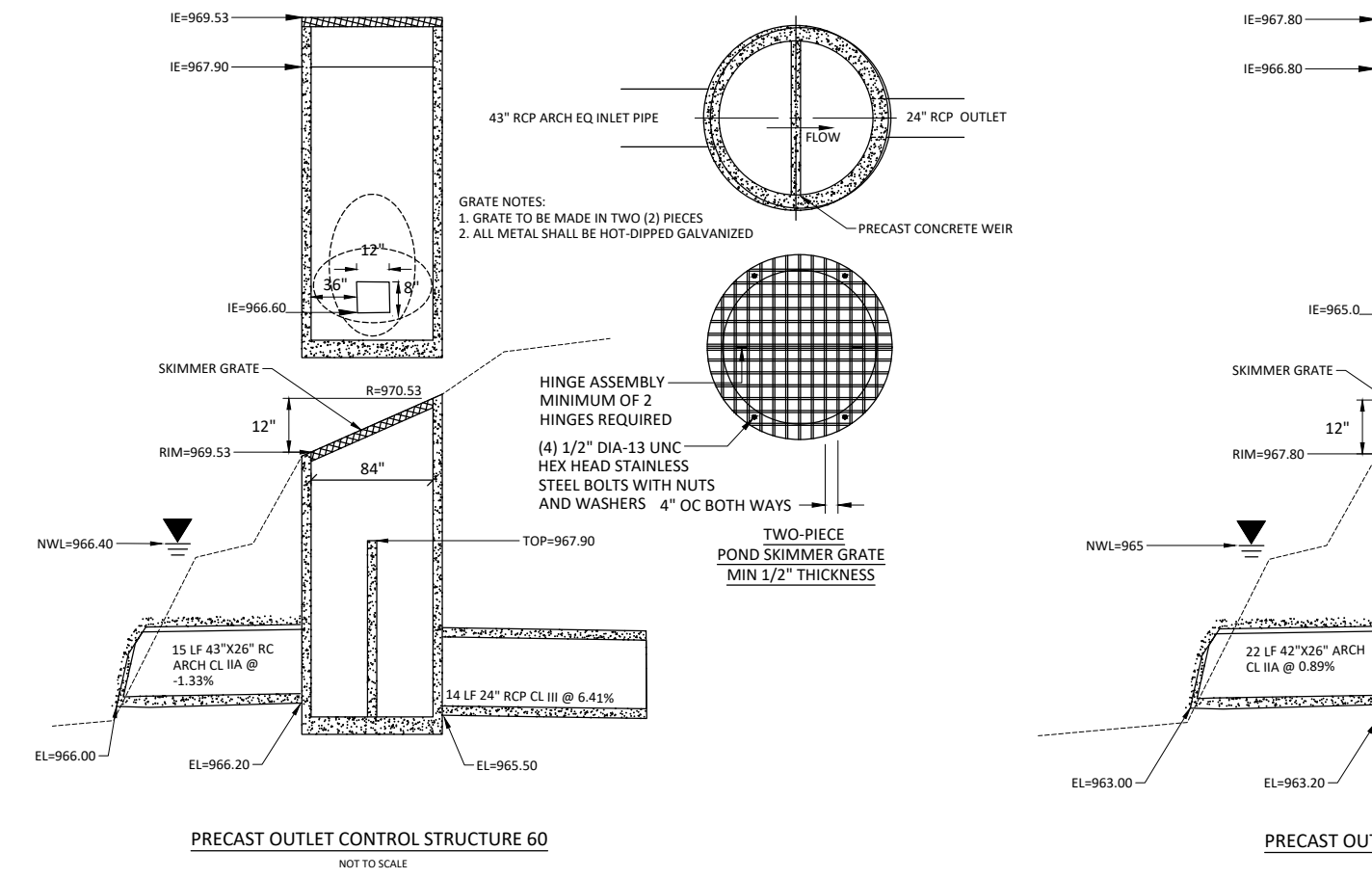
Special Details
Date: JAN. 2016
Revised: DEC. 2017
ERO-08
INLET PROTECTION WASH ROCK FILTER DURING ROAD CONSTRUCTION



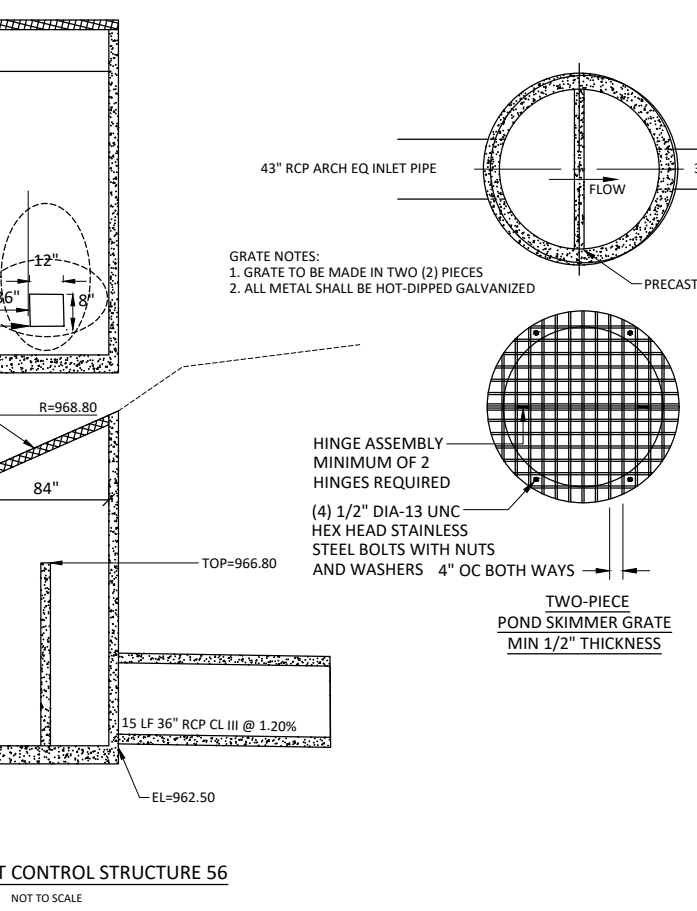
Special Details
Date: JAN. 2016
Revised: DEC. 2017
ERO-10
EROSION CONTROL BLANKET INSTALLATION



Special Details
Date: JAN. 2016
Revised: DEC. 2017
ERO-13
DITCH CHECK SPACING FOR ROCK/BIO DAM



PRECAST OUTLET CONTROL STRUCTURE 60
NOT TO SCALE



PRECAST OUTLET CONTROL STRUCTURE 56
NOT TO SCALE

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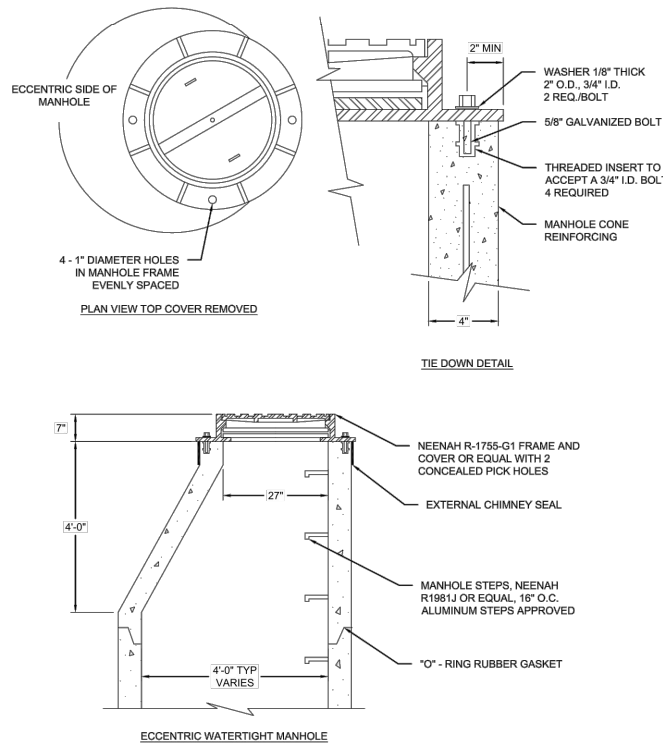


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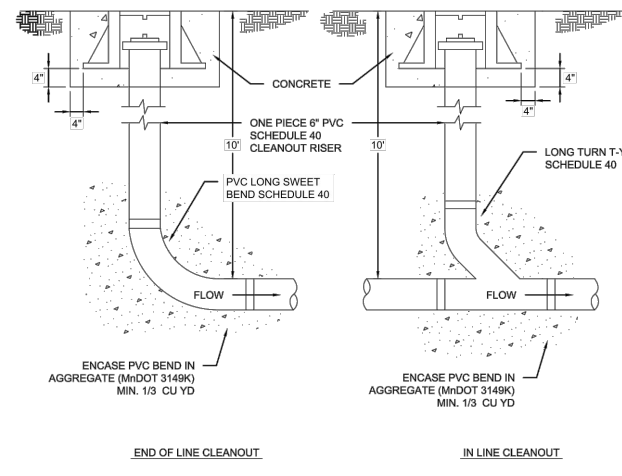
CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
CONSTRUCTION DETAILS

SHEET
C1.03

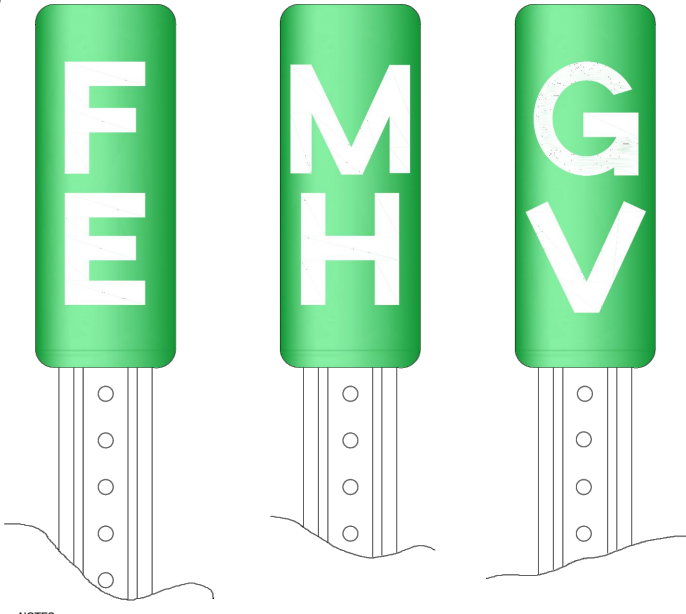


WATERTIGHT CASTING FOR SANITARY SEWER MANHOLE
 Special Details
 Date: JAN. 2016
 Revised: SAN-05

- NOTES:
 1. 6 HUB WITH THREADED PVC PLUG.
 2. ENCLOSE LONG SWEEP BEND OR COMBINATION WYE IN CONCRETE AS SHOWN.
 3. FORD A1 LOCKING EQUAL ENCASED IN CONCRETE AS SHOWN WITH #4 REBAR EACH SQUARE EMBEDDED INTO CONCRETE (INCIDENTAL TO CLEANOUT).
 4. CLEAN-OUTS ARE REQUIRED EVERY 100' ON SANITARY SEWER SERVICES.
 5. CLEAN-OUTS SHALL BE LOCATED OUTSIDE OF THE ROADWAY.

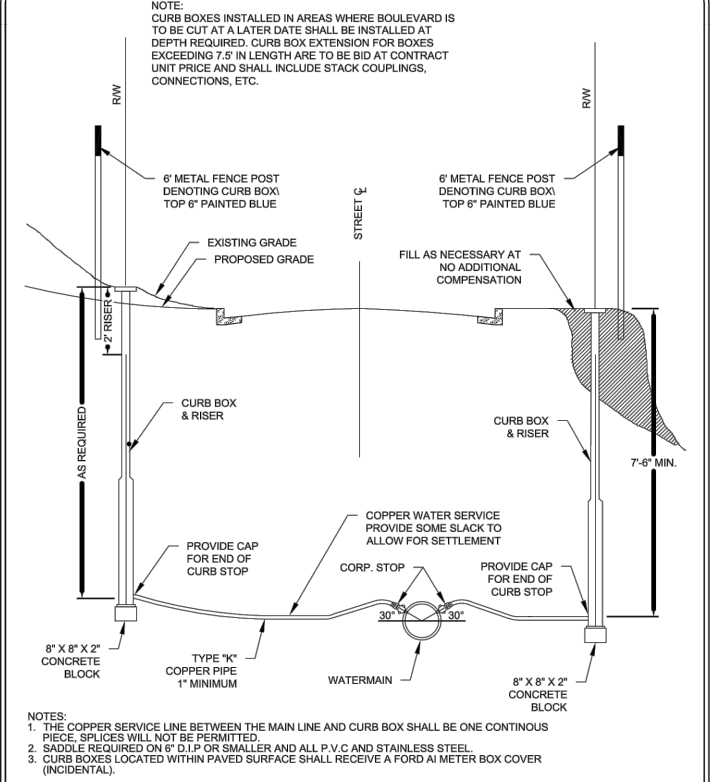


PVC SERVICE LINE CLEANOUTS
 Special Details
 Date: JAN. 2016
 Revised: DEC. 2017
 SAN-10

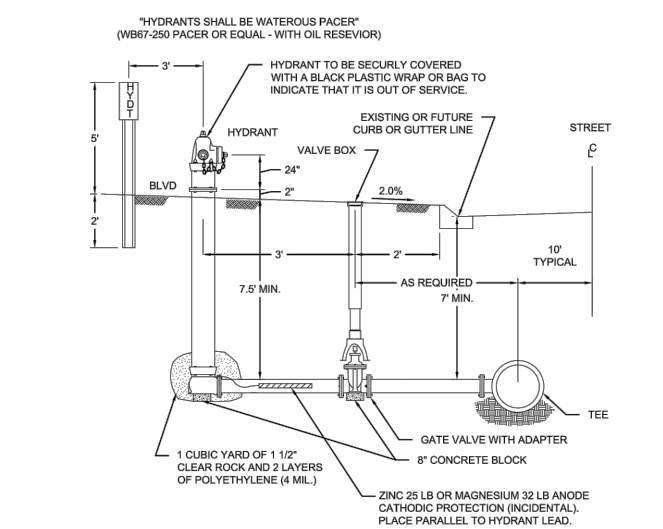


- NOTES:
 1. 0.063" THICK ALUMINUM SIGN. LETTERS ON WHITE HIGH INTENSITY REFLECTORIZED BACKGROUND SHALL BE THE FOLLOWING COLORS:
 1.1. WATER GV - BLUE
 1.2. SEWER GV - GREEN
 1.3. MH - SEWER - GREEN
 1.4. MH - STORM BLACK
 1.5. FE BLACK
 2. U-CHANNEL POST, MINIMUM 3LB./FT. 6'-6" LONG, PAINTED GREEN.
 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.

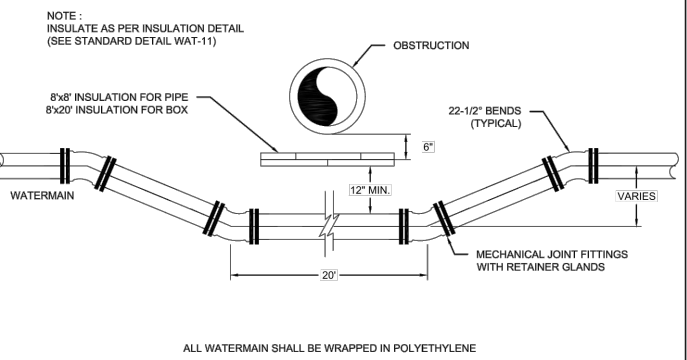
STRUCTURE MARKER SIGNS
 Special Details
 Date: JAN. 2016
 Revised: SAN-12



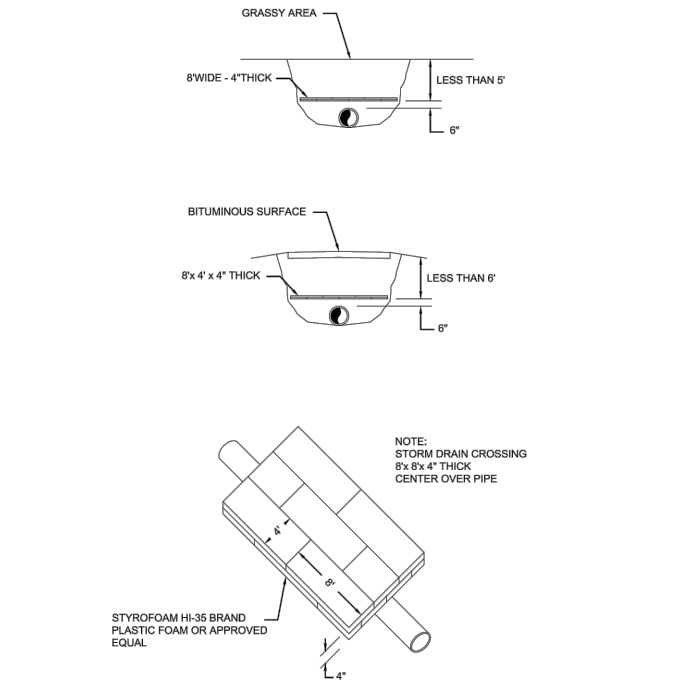
WATER SERVICE CONNECTION
 Special Details
 Date: JAN. 2016
 Revised: DEC. 2017
 WAT-02



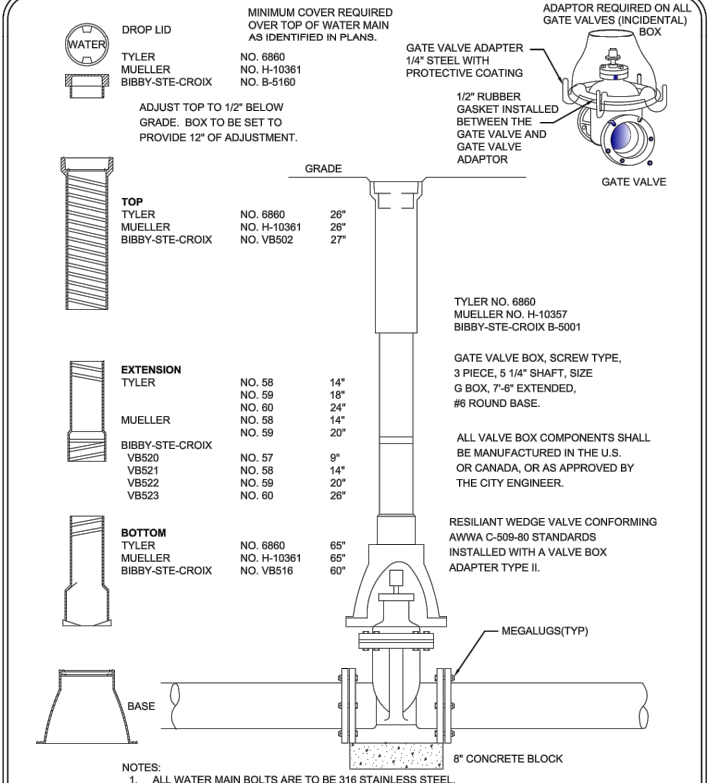
TYPICAL HYDRANT INSTALLATION
 Special Details
 Date: JAN. 2016
 Revised: JAN. 2017
 WAT-09



WATERMAIN INSULATION & LOWERING
 Special Details
 Date: JAN. 2016
 Revised: JAN. 2017
 WAT-10



INSULATION DETAIL
 Special Details
 Date: JAN. 2016
 Revised: WAT-11



GATE VALVE AND BOX INSTALLATION
 Special Details
 Date: JAN. 2016
 Revised: WAT-12

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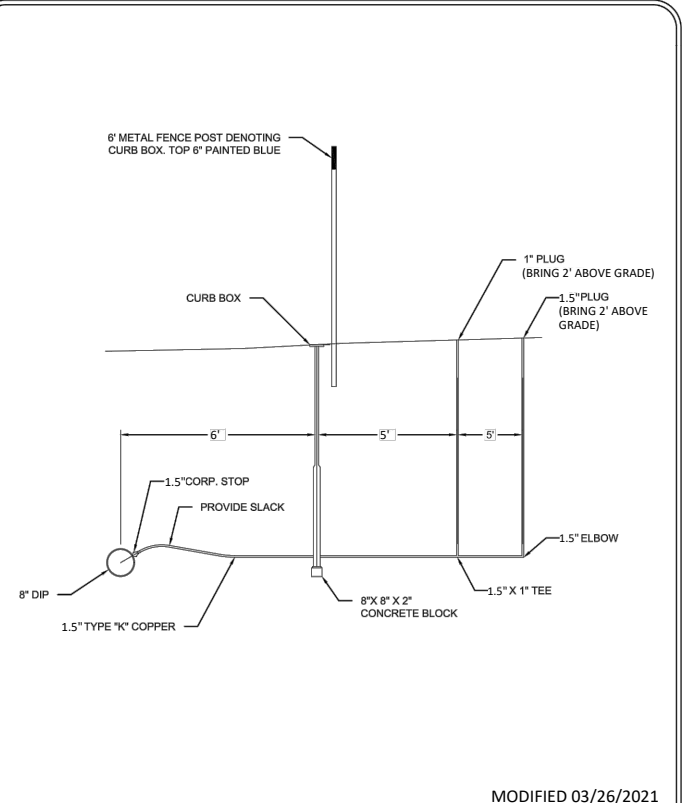


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 CHASKA, MINNESOTA 55318
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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 CONSTRUCTION DETAILS

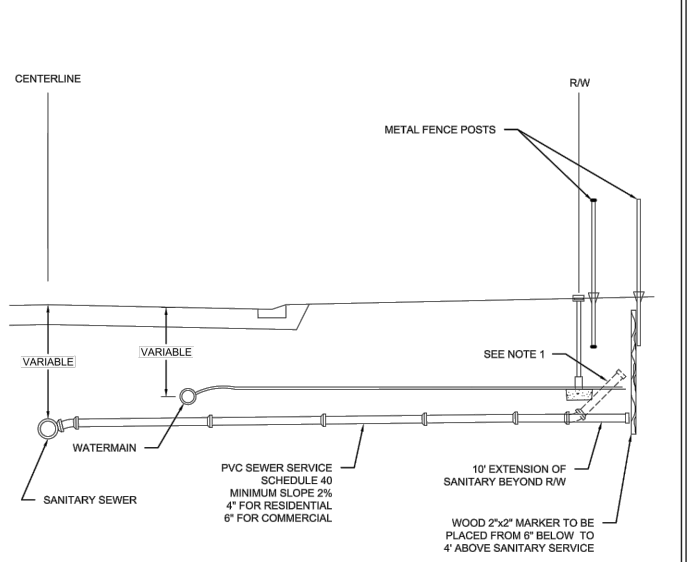
SHEET
C1.04



MODIFIED 03/26/2021

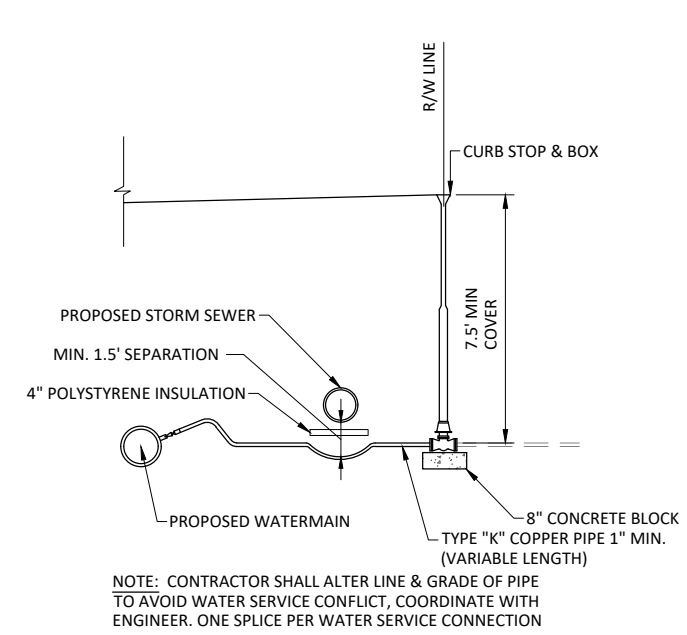
	IRRIGATION HOOKUP DETAIL	Special Details	
		Date: JAN. 2016	WAT-06

- NOTES:
- WHENEVER SERVICE LINES ARE INSTALLED IN AREAS OF HIGH GROUNDWATER THE LAST 6', AS A MINIMUM, ARE TO BE INSTALLED AS A 45° RISER TO EXTEND SERVICE LINE ABOVE GROUNDWATER LEVEL.
 - METAL FENCE POST AT END OF WATER AND SANITARY SERVICE, 4' ABOVE GRADE. WATER FENCE POST TO BE PAINTED BLUE. SANITARY FENCE POST TO BE PAINTED GREEN.
 - CLEANOUTS ARE REQUIRED EVERY 100' ON SANITARY SEWER SERVICES.



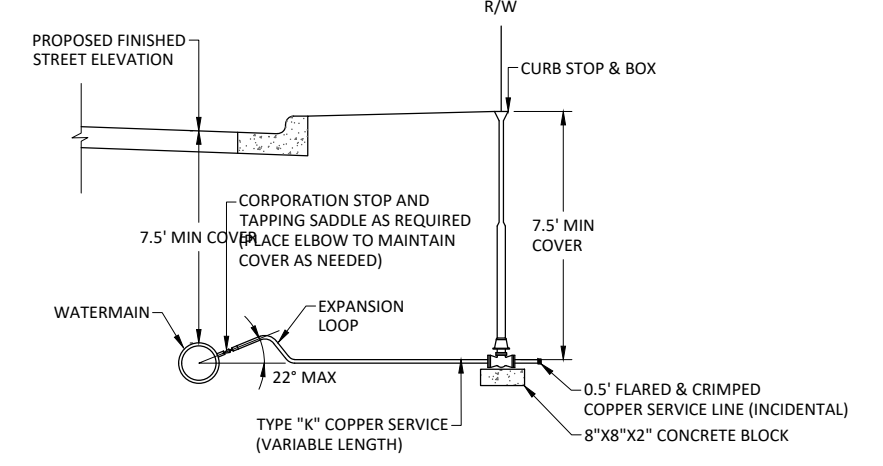
WOOD 2"x2" MARKER TO BE PLACED FROM 6" BELOW TO 4" ABOVE SANITARY SERVICE

	SEWER SERVICE CONNECTION	Special Details	
		Date: JAN. 2016	SAN-08
		Revised: DEC. 2017	



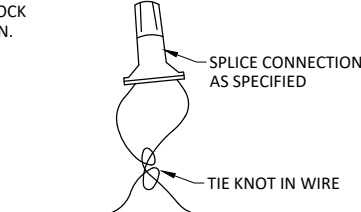
NOTE: CONTRACTOR SHALL ALTER LINE & GRADE OF PIPE TO AVOID WATER SERVICE CONFLICT, COORDINATE WITH ENGINEER. ONE SPlice PER WATER SERVICE CONNECTION

WATER SERVICE LINE CONFLICT
NOT TO SCALE



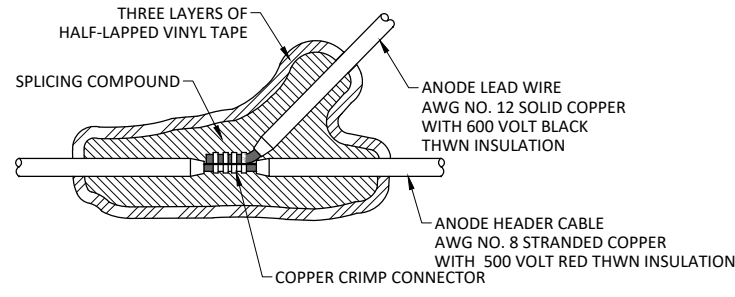
NOTE: WHERE NO EXISTING WATER SERVICE IS IN PLACE, INSTALL 0.5' FLARED & CRIMPED COPPER SERVICE LINE

WATER SERVICE INSTALLATION
NOT TO SCALE



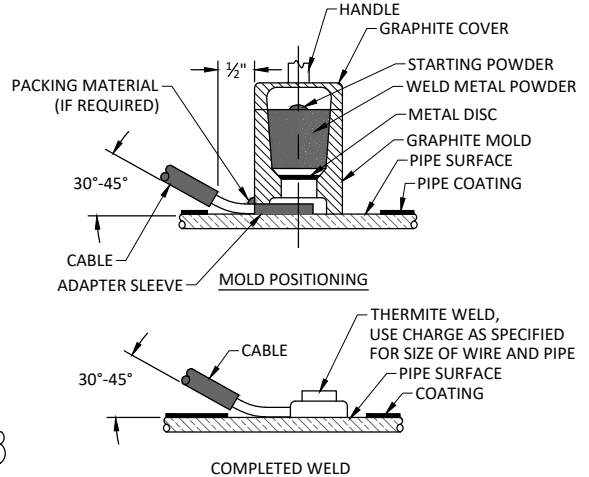
WHERE IN-LINE SPLICES ARE REQUIRED ALONG PIPES, THE TRACER WIRE SHALL BE KNOTTED PRIOR TO INSERTION INTO THE SPlice CONNECTION.

IN-LINE TRACER WIRE SPlice
NOT TO SCALE



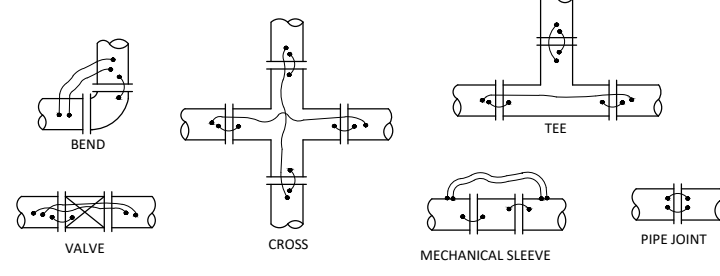
- NOTES:
- TAPER AND ROUGHEN WIRE INSULATION IN SPlicing COMPOUND.
 - COAT ENTIRE SPlice WITH ELECTRICAL COATING COMPOUND.

GALVANIC ANODE SPlice
NOT TO SCALE



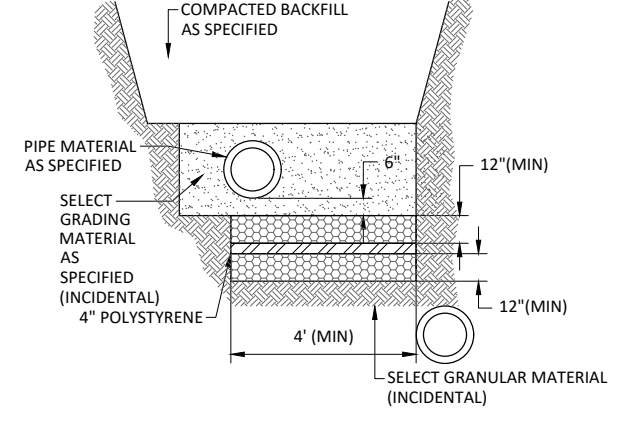
- NOTES:
- CLEAN SURFACE OF PIPE OR BONDING PLATE TO BRIGHT METAL.
 - STRIP INSULATION FROM END OF COPPER WIRE.
 - INSTALL ADAPTER SLEEVE ON WIRE.
 - HOLD THERMITE MOLD FIRMLY AGAINST PIPE OR BONDING PLATE, INSERT WIRE, IGNITE WELD METAL.
 - REMOVE SLAG FROM THERMITE WELD.
 - STRIKE WELD FIRMLY WITH HAMMER TO VERIFY CONNECTION.
 - COAT WELD AREA AND ALL EXPOSED COPPER.
 - FOR MORTAR COATED PIPE, COVER PIPE WELD WITH A MORTAR COATING.

THERMITE WELDING DETAIL
NOT TO SCALE

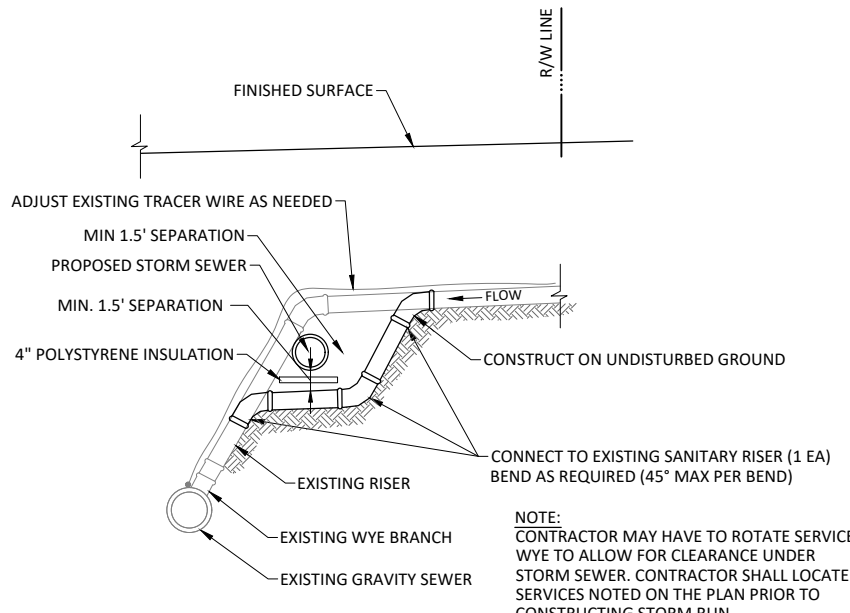


- NOTES:
- COATING REQUIRED FOR ALL WELD LOCATIONS
 - WIRE SIZE SHALL BE #4 AWG COPPER WIRE
 - USE A MINIMUM OF TWO BONDS PER PIPE JOINT

PIPE JOINT BONDING DETAIL
NOT TO SCALE



**STORM SEWER INSULATION
PARALLEL TO SANITARY SEWER**
NOT TO SCALE



REMOVE & REPLACE SANITARY SEWER LINE
NOT TO SCALE

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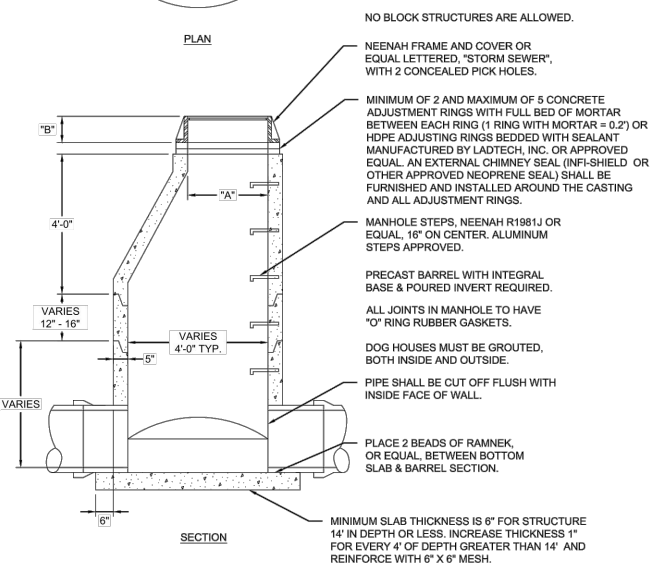
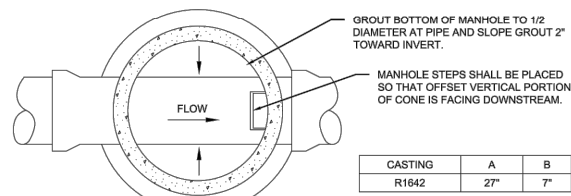


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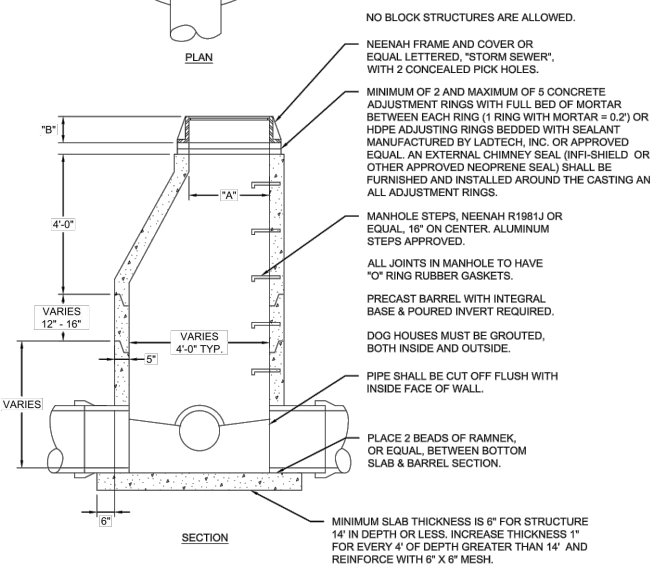
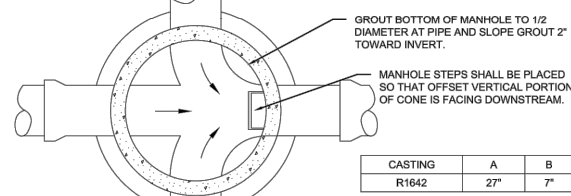
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CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
CONSTRUCTION DETAILS

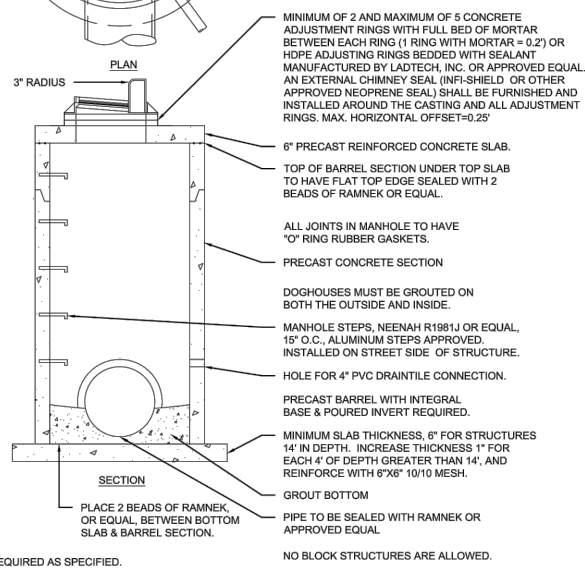
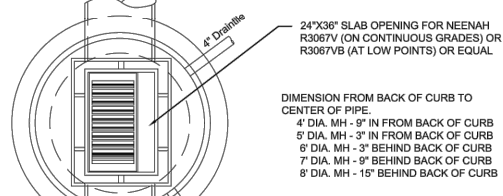
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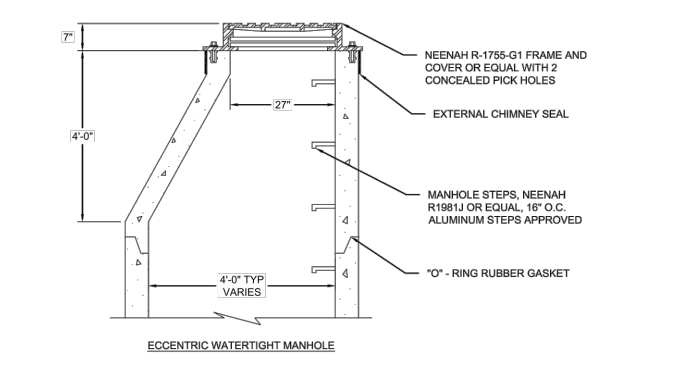
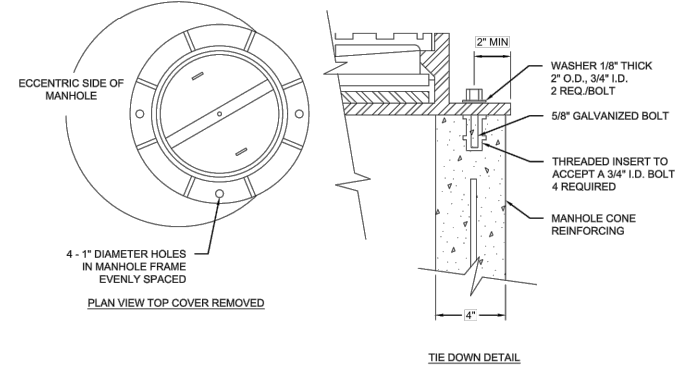
CITY OF SHOREWOOD	STORM SEWER MANHOLE	Special Details	
		Date:	JAN. 2016
		Revised:	DEC. 2017



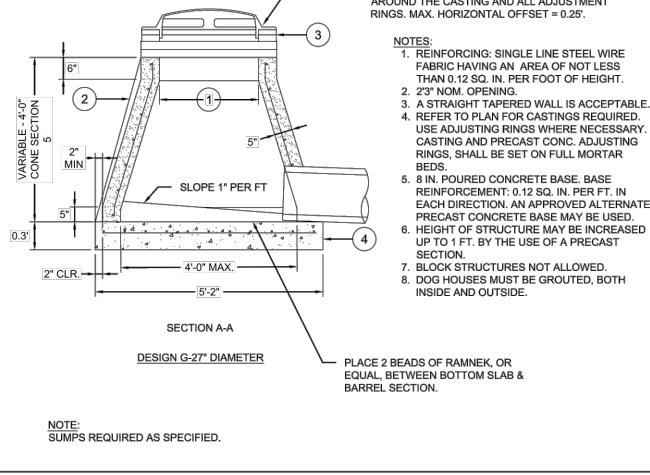
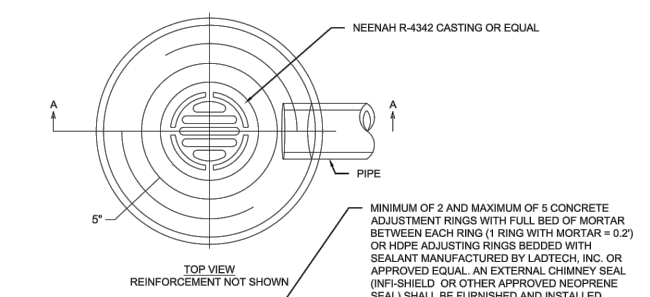
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		Date:	JAN. 2016
		Revised:	DEC. 2017



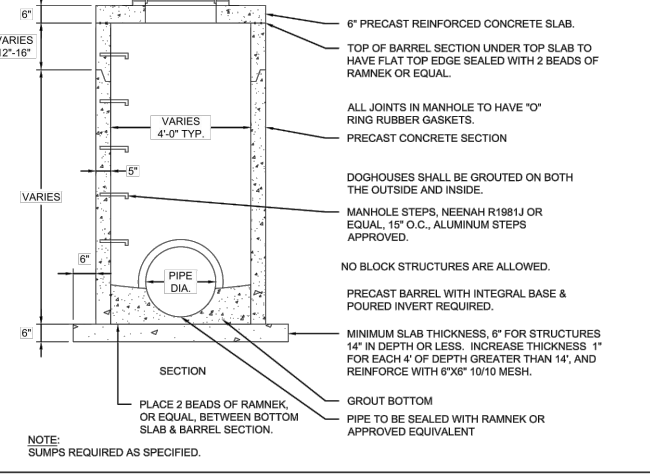
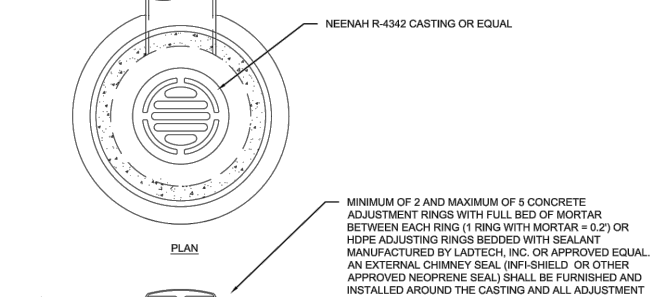
CITY OF SHOREWOOD	CATCH BASIN MANHOLE	Special Details	
		Date:	JAN. 2016
		Revised:	JAN. 2017



CITY OF SHOREWOOD	WATERTIGHT CASTING FOR SANITARY SEWER MANHOLE	Special Details	
		Date:	JAN. 2016
		Revised:	

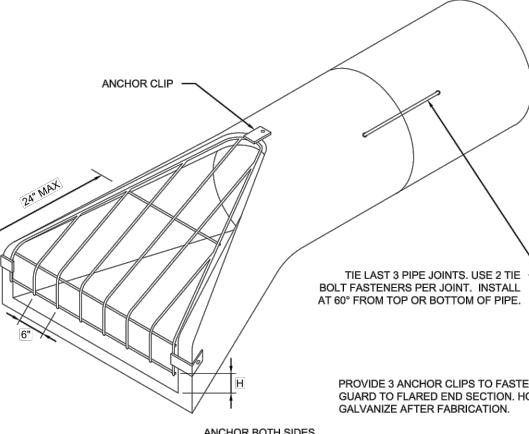


CITY OF SHOREWOOD	CATCH BASIN MANHOLE TYPE G	Special Details	
		Date:	JAN. 2016
		Revised:	DEC. 2017

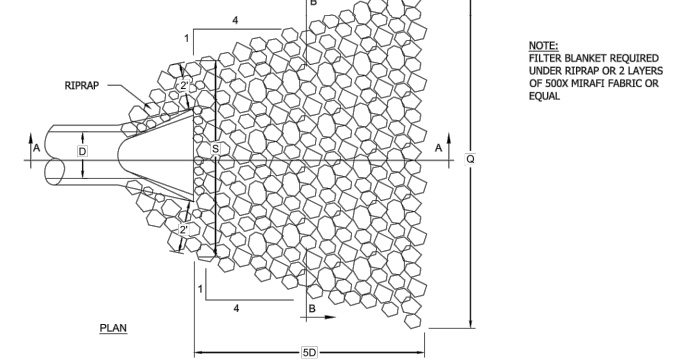


CITY OF SHOREWOOD	CATCH BASIN MANHOLE TURF AREAS	Special Details	
		Date:	JAN. 2016
		Revised:	DEC. 2017

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



CITY OF SHOREWOOD	FLARED END SECTION AND TRASH GUARD	Special Details	
		Date:	JAN. 2016
		Revised:	



CITY OF SHOREWOOD	RIPRAP AT OUTLETS	Special Details	
		Date:	JAN. 2016
		Revised:	

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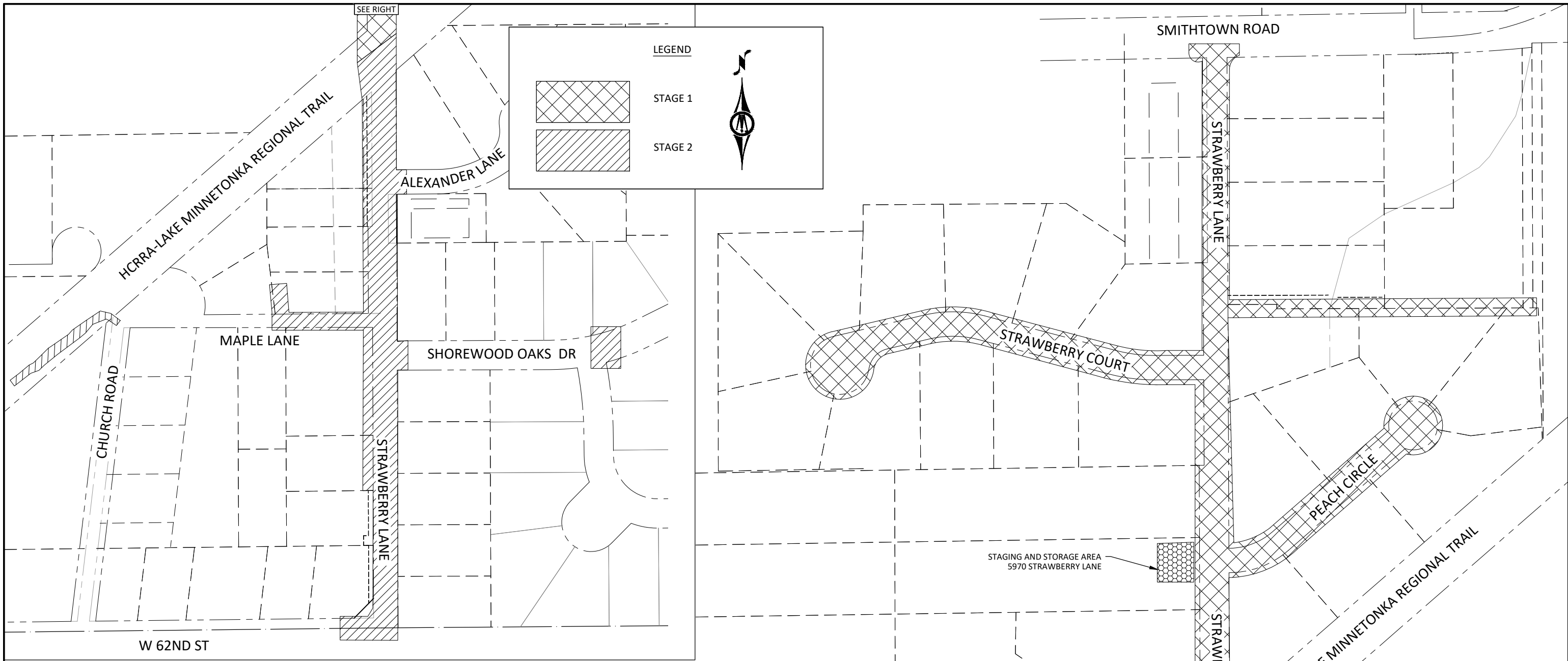
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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 CONSTRUCTION DETAILS



GENERAL NOTES:

1. SEE 01350 SPECIAL PROJECT PROCEDURES IN THE PROJECT MANUAL FOR STAGING REQUIREMENTS.
2. ONLY ONE STAGE CAN BE WORKED ON AT A TIME. PRIOR TO PROCEEDING TO THE NEXT STAGE ALL UTILITIES MUST BE INSTALLED AND THE ROADS MUST BE CONSTRUCTED UP TO THE AGGREGATE BASE ALLOWING RESIDENTS ACCESS TO THEIR DRIVEWAYS. CURB & GUTTER, DRIVEWAY RESTORATION, AND BASE COURSE PAVING MAY BE CONSTRUCTED AFTER ALL STAGES HAVE BEEN COMPLETED.
3. ONE WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. ALL BARRIERS, FLAGGERS, AND TRAFFIC SIGNAGE THE CONTRACTOR NEEDS TO ALLOW ONE WAY TRAFFIC DURING CONSTRUCTION SHALL BE PAID UNDER THE BID ITEM TRAFFIC CONTROL.
4. WORKING HOURS ARE 7 AM TO 7 PM. DURING ALL STAGES RESIDENTS SHALL HAVE ACCESS TO THEIR HOMES AFTER WORKING HOURS. ALL BARRIERS AND TRAFFIC SIGNAGE THE CONTRACTOR NEEDS TO ALLOW FOR ACCESS TO RESIDENTS HOMES SHALL BE PAID UNDER THE BID ITEM TRAFFIC CONTROL.
5. THE CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN THE DEVICES IN THIS TRAFFIC CONTROL PLAN UNLESS OTHERWISE NOTED. IN PLACE SIGNAGE MUST ALSO BE MAINTAINED OR TEMPORARILY RELOCATED FOR CONSTRUCTION ACTIVITIES.
6. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.
7. QUANTITIES FOR TRAFFIC CONTROL DEVICES ARE APPROXIMATE AND ARE SHOWN FOR INFORMATION ONLY. THE ITEM "TRAFFIC CONTROL" COVERS ALL DEVICES SHOWN ON THE PLAN SHEETS AND OTHER SETUPS REQUIRED BY THE CONTRACTORS OPERATIONS SUCH AS, BUT NOT LIMITED TO CONSTRUCTION UNDER TRAFFIC, TEMPORARY ROAD CLOSURES, ADJUSTMENTS TO THE TRAFFIC CONTROL PLAN FOR CONSTRUCTION OPERATIONS, STAGED UTILITY INSTALLATION, PAVEMENT RAMPING, ONE-WAY TRAFFIC, USE OF PORTABLE CONCRETE BARRIERS, AND TRANSITIONING FROM ONE STAGE TO ANOTHER.
8. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE MINNESOTA MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MN MUTCD) AND INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS. TRAFFIC CONTROL NOT IN COMPLIANCE WITH MN MUTCD WILL BE SUBJECT TO VIOLATION IN ACCORDANCE WITH SPECIAL PROVISIONS.
9. SIX (6) "ROAD CLOSED" BARRICADE ASSEMBLIES WITH FLASHERS, SIX (6) ADDITIONAL TYPE III BARRICADES AND TEN (10) ADDITIONAL BARRELS SHALL BE AVAILABLE FOR USE BY THE PROJECT ENGINEER AT HIS DISCRETION AND SHALL BE INCLUDED IN THE PRICE BID FOR TRAFFIC CONTROL.
10. PLACE ADVANCE NOTICE SIGNS 7 DAYS IN ADVANCE.
11. CONTRACTOR SHALL COORDINATE WITH TRASH/RECYCLING SERVICES AND RESIDENTS. CONTRACTOR SHALL ALLOW TRASH/RECYCLING SERVICES ACCESS TO PICK UP TRASH OR SHALL DELIVER TRASH CAN TO A LOCATION THAT THEY CAN BE PICKED UP. (INCIDENTAL)
12. CONTRACTOR MAY PROPOSE ALTERNATE STAGING, BUT MUST BE APPROVED BY THE ENGINEER. REQUEST MUST ME MADE 7 DAYS IN ADVANCE OF STARTING WORK.
13. WHEN PLACING CURB AND GUTTER A LENGTH OF CURB SHALL REMAIN OPEN FOR RESIDENTS TO HAVE ACCESS TO THEIR HOMES. ONCE CONCRETE CURB HAS CURED AND CAN BE DRIVEN OVER THE REMAINING CURB SHALL BE PLACED AND TIED WITH THE DRILL & GROUT REINFORCEMENT BARS (EPOXY COATED) PAY ITEM.
14. THERE MAY BE OVERLAP WITH UTILITIES FROM STAGE TO STAGE.

NOTES:

- 1) STAGING AREA CAN BE USED TO STORE EQUIPMENT, MATERIALS FOR PROJECT, AND BE USED FOR CONTRACTOR PARKING.
- 2) WORKING HOURS ARE 7 AM TO 7 PM M-F, 9 AM TO 5 PM ON SATURDAY, AND NO WORK ON SUNDAY OR HOLIDAYS WITH THE ENGINEERS APPROVAL. CONTRACTOR SHALL NOT OPERATE EQUIPMENT OUTSIDE OF WORKING HOURS.
- 3) TEMPORARY CONSTRUCTION ACCESS TO STAGING AREA SHALL BE PAID UNDER THE BID ITEM STABILIZED CONSTRUCTION EXIT. CONTRACTOR SHALL DETERMINE THE SIZE AND LOCATION OF THE ACCESS PRIOR TO BIDDING.

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Andrew L. Budde
 ANDREW L. BUDDÉ
 LIC. NO. 46585 DATE 9/19/2022



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

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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 STAGING PLAN

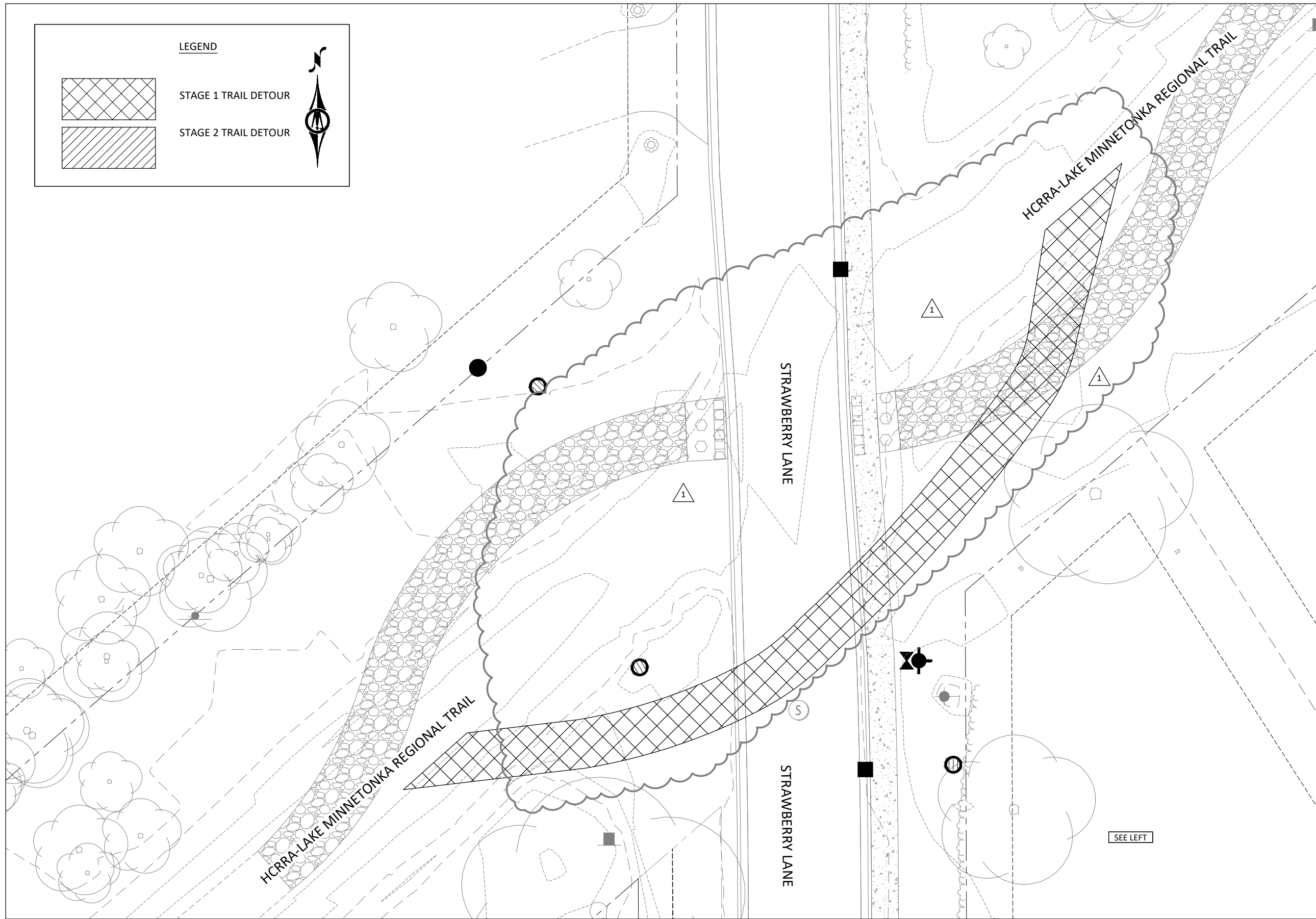
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LEGEND

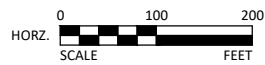
STAGE 1 TRAIL DETOUR

STAGE 2 TRAIL DETOUR



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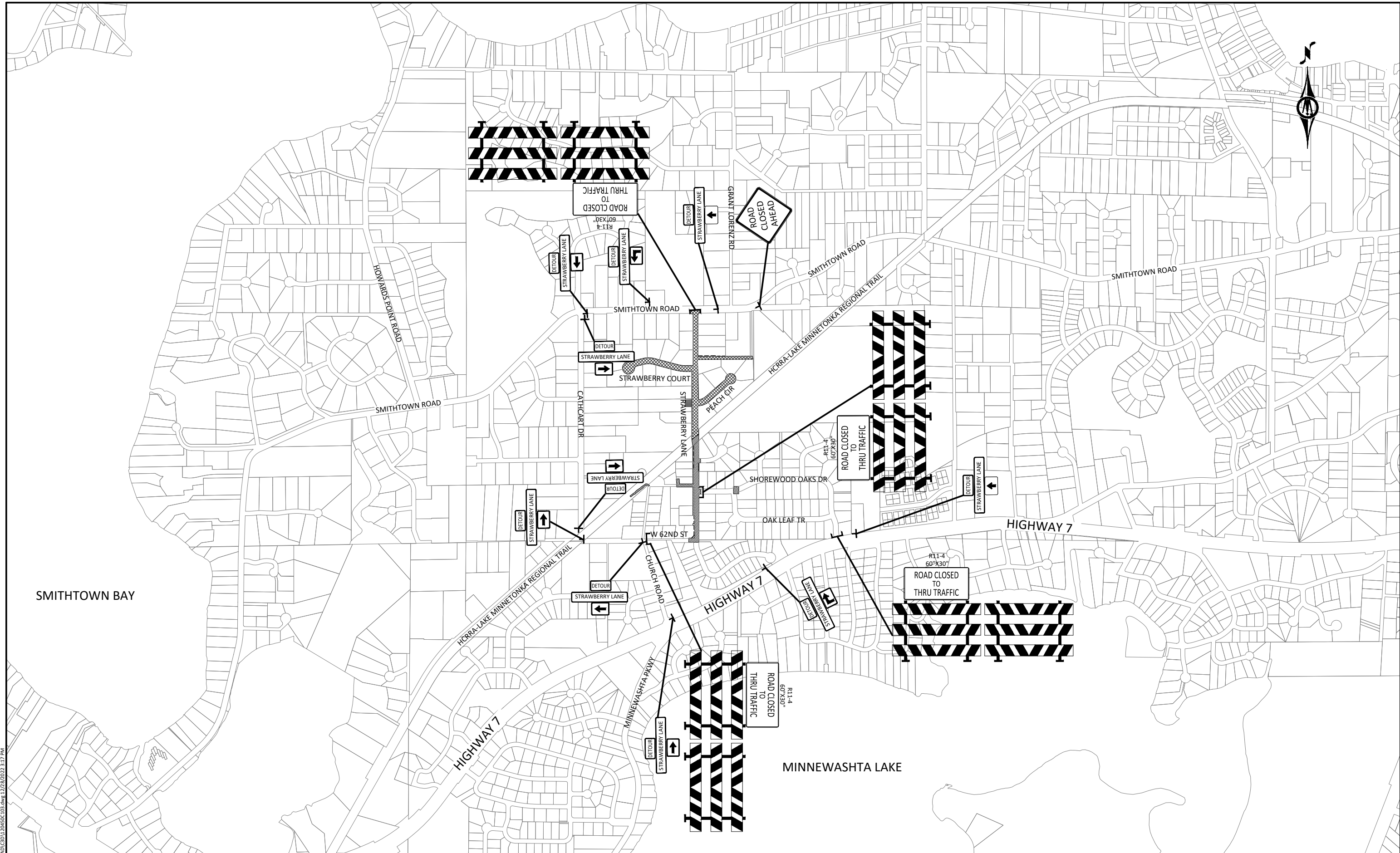


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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 TRAIL DETOUR

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SMIHTOWN BAY

MINNEWASHTA LAKE



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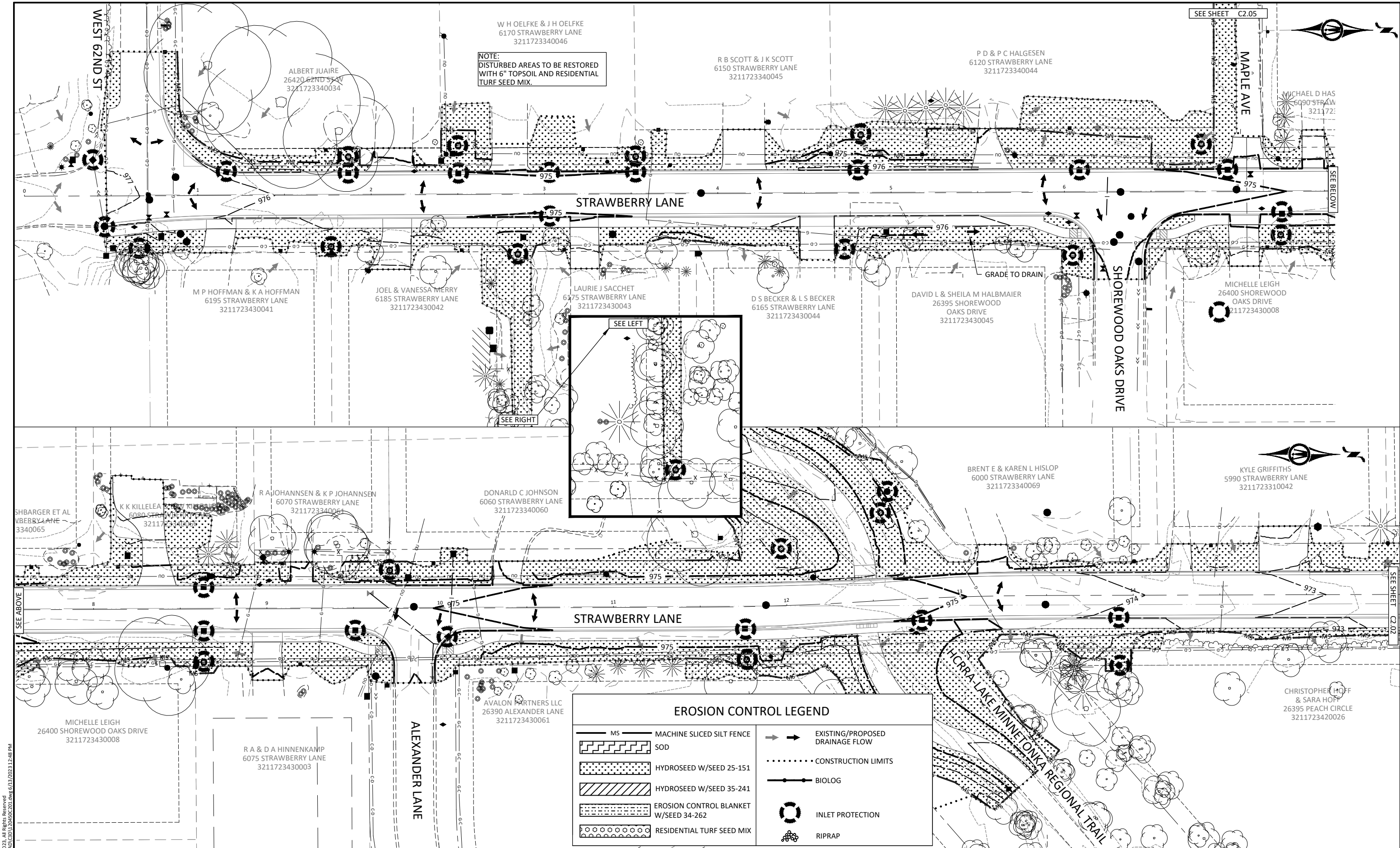
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CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
TRAFFIC CONTROL

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W H OELFKE & J H OELFKE
6170 STRAWBERRY LANE
3211723340046

NOTE:
DISTURBED AREAS TO BE RESTORED
WITH 6" TOPSOIL AND RESIDENTIAL
TURF SEED MIX.

R B SCOTT & J K SCOTT
6150 STRAWBERRY LANE
3211723340045

P D & P C HALGESEN
6120 STRAWBERRY LANE
3211723340044

MICHAEL D HAS
6090 STRAW
321172:

ALBERT JUARE
26420 62ND ST W
3211723340034

M P HOFFMAN & K A HOFFMAN
6195 STRAWBERRY LANE
3211723430041

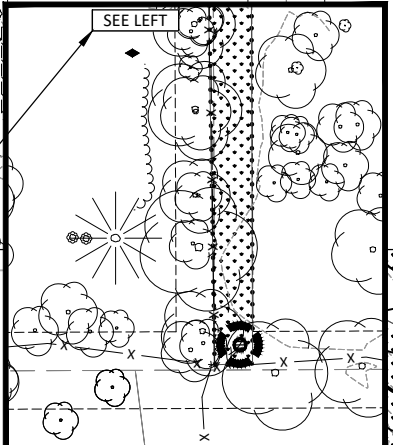
JOEL & VANESSA MERRY
6185 STRAWBERRY LANE
3211723430042

LAURIE J SACCHET
6175 STRAWBERRY LANE
3211723430043

D S BECKER & L S BECKER
6165 STRAWBERRY LANE
3211723430044

DAVID L & SHEILA M HALBMAIER
26395 SHOREWOOD
OAKS DRIVE
3211723430045

MICHELLE LEIGH
26400 SHOREWOOD
OAKS DRIVE
3211723430008



BRENT E & KAREN L HISLOP
6000 STRAWBERRY LANE
3211723340069

KYLE GRIFFITHS
5990 STRAWBERRY LANE
3211723310042

SHBARGER ET AL
VBERRY LANE
3340065

K K KILLELEA
6080 STRAWBERRY LANE
3211723340066

R A JOHANNSEN & K P JOHANNSEN
6070 STRAWBERRY LANE
3211723340061

DONARLD C JOHNSON
6060 STRAWBERRY LANE
3211723340060

SEE ABOVE

MICHELLE LEIGH
26400 SHOREWOOD OAKS DRIVE
3211723430008

R A & D A HINNENKAMP
6075 STRAWBERRY LANE
3211723430003

AVALON PARTNERS LLC
26390 ALEXANDER LANE
3211723430061

CHRISTOPHER HOFF
& SARA HOFF
26395 PEACH CIRCLE
3211723420026

EROSION CONTROL LEGEND

	MACHINE SLICED SILT FENCE		EXISTING/PROPOSED DRAINAGE FLOW
	SOD		CONSTRUCTION LIMITS
	HYDROSEED W/SEED 25-151		BIOLOG
	HYDROSEED W/SEED 35-241		INLET PROTECTION
	EROSION CONTROL BLANKET W/SEED 34-262		RIPRAP
	RESIDENTIAL TURF SEED MIX		



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ANDREW L. BUDDÉ
LIC. NO. 46585 DATE 9/19/2022



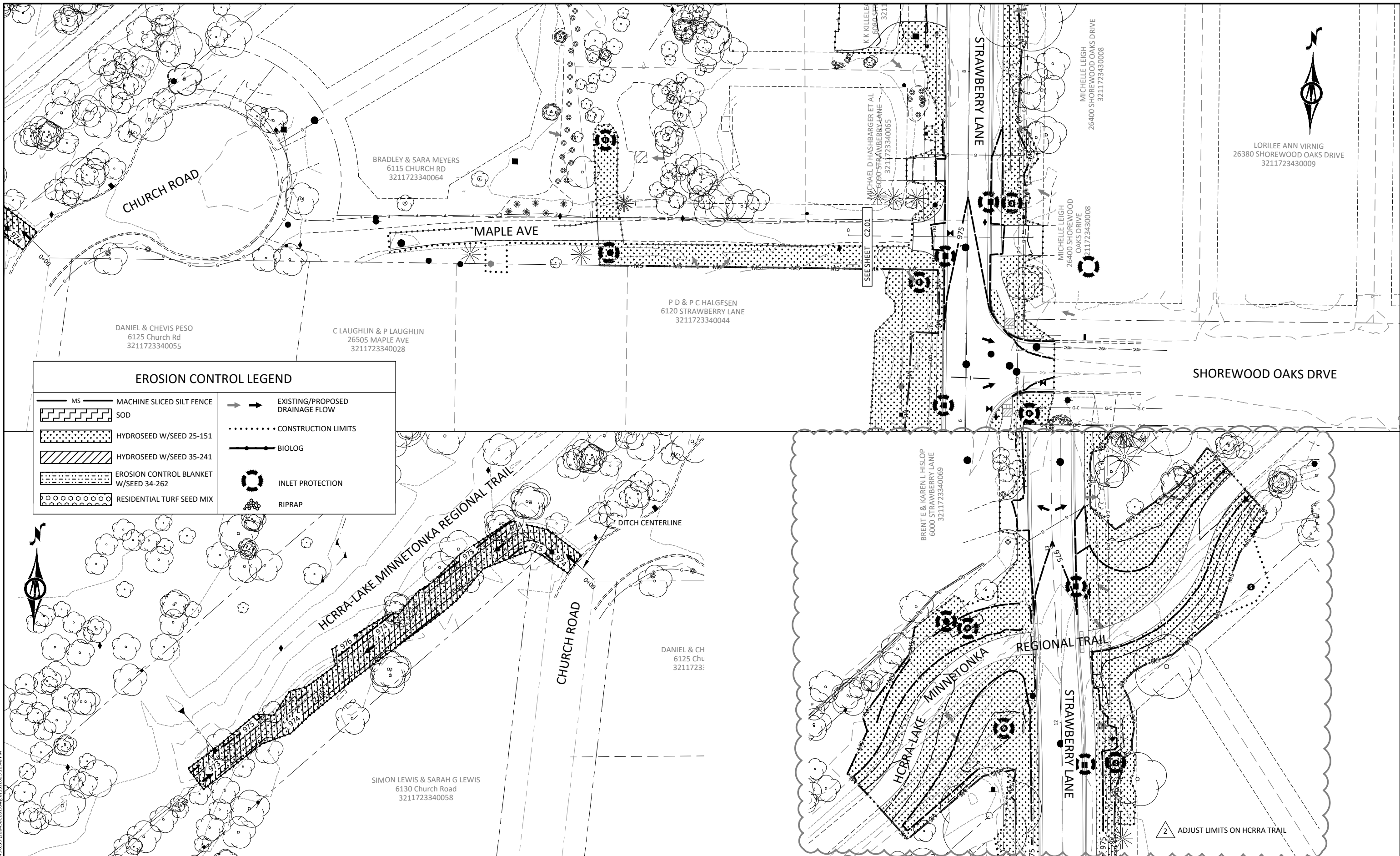
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CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
EROSION CONTROL & TURF ESTABLISHMENT

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EROSION CONTROL LEGEND

	MS MACHINE SLICED SILT FENCE		EXISTING/PROPOSED DRAINAGE FLOW
	SOD		CONSTRUCTION LIMITS
	HYDROSEED W/SEED 25-151		BIOLOG
	HYDROSEED W/SEED 35-241		INLET PROTECTION
	EROSION CONTROL BLANKET W/SEED 34-262		RIPRAP
	RESIDENTIAL TURF SEED MIX		



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LIC. NO. 46585 DATE 9/19/2022



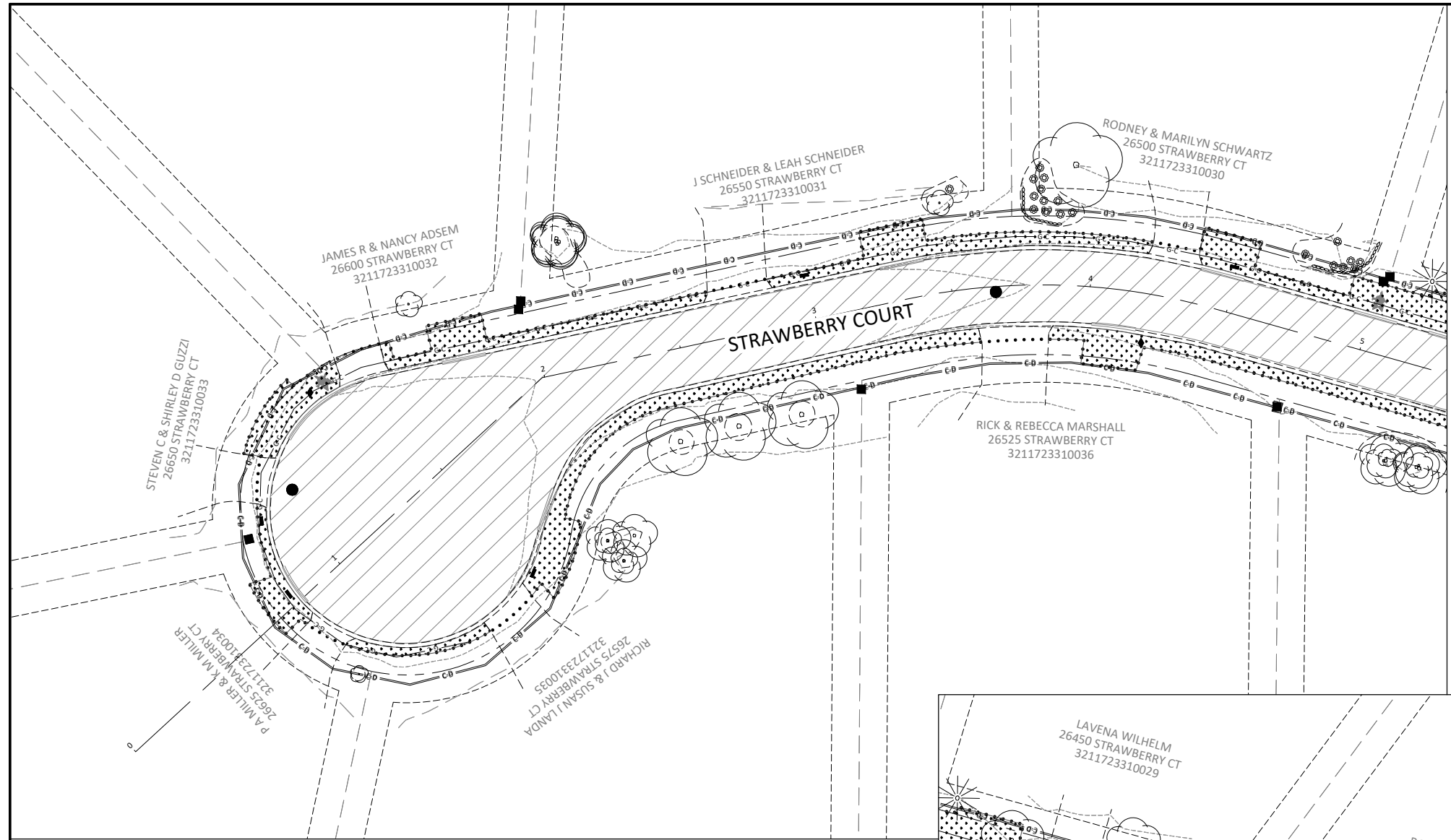
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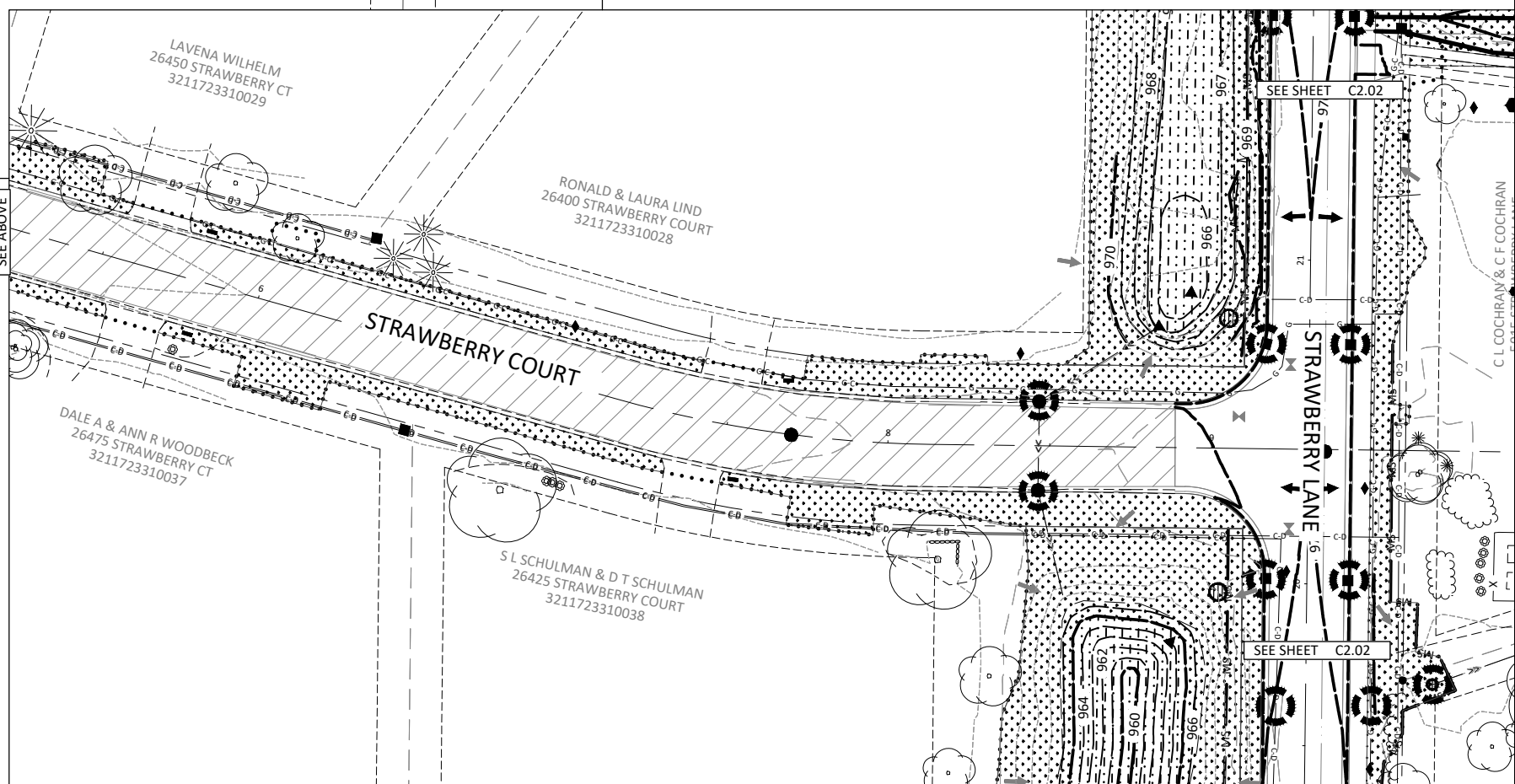
CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
EROSION CONTROL & TURF ESTABLISHMENT

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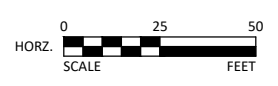
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EROSION CONTROL LEGEND				
	MS	MACHINE SLICED SILT FENCE		EXISTING/PROPOSED DRAINAGE FLOW
	SOD			CONSTRUCTION LIMITS
	HYDROSEED W/SEED 25-151			BIOLOG
	HYDROSEED W/SEED 35-241			INLET PROTECTION
	EROSION CONTROL BLANKET W/SEED 34-262			RIPRAP
	RESIDENTIAL TURF SEED MIX			



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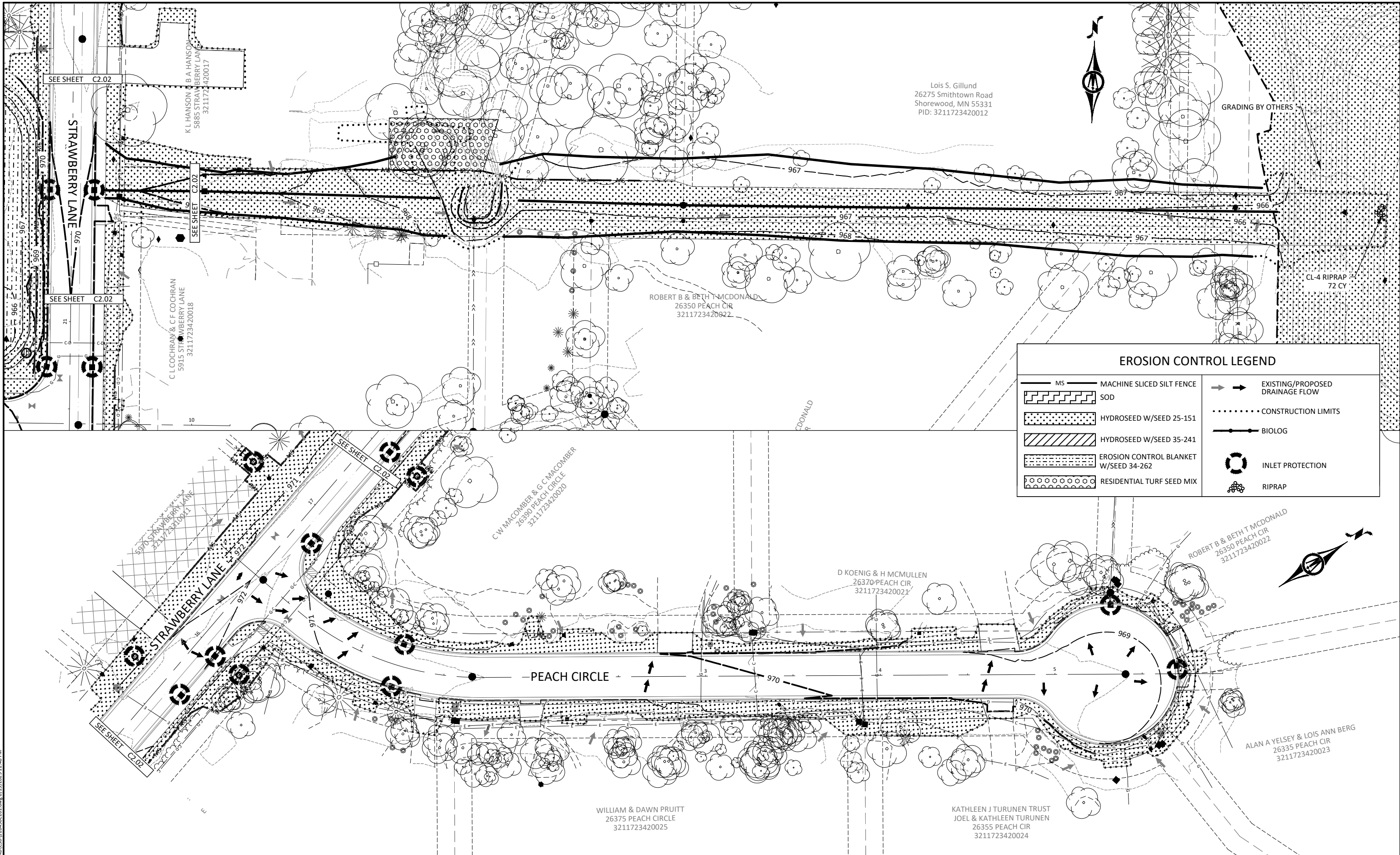


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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 EROSION CONTROL & TURF ESTABLISHMENT

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EROSION CONTROL LEGEND

MS	MACHINE SLICED SILT FENCE	EXISTING/PROPOSED DRAINAGE FLOW
SOD		CONSTRUCTION LIMITS
HYDROSEED W/SEED 25-151		BIOLOG
HYDROSEED W/SEED 35-241		INLET PROTECTION
EROSION CONTROL BLANKET W/SEED 34-262		RIPRAP
RESIDENTIAL TURF SEED MIX		



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 CHASKA, MINNESOTA 55318
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Information contained in this SWPPP narrative sheet summarizes requirements of the GENERAL PERMIT AUTHORIZATION TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM/STATE DISPOSAL SYSTEM PROGRAM - Permit No: MN RI00001 (Permit) as they apply to this project. All provisions of the Permit including those not specifically cited herein shall apply to this project. The Contractor is responsible to be familiar with and comply with all conditions of the permit. The full text of the Permit is available at: <https://www.pca.state.mn.us/sites/default/files/wq-strm2-80a.pdf>

SWPPP AMENDMENTS AND SUBMITTALS

Contractor must prepare and submit to the Engineer a SWPPP amendment as necessary to include additional Best Management Practices (BMPs) to correct problems identified or address the following situations.

1. Contact information and training documentation for Construction SWPPP Manager and BMP Installer,
2. There is a change in construction method of phasing, operation, maintenance, weather or seasonal conditions not anticipated during the design of the SWPPP including but not limited to:
 - a. Types and/or Locations of BMPs
 - b. Material Storage and Spill Response
 - c. Fueling Plans
 - d. Locations for Stockpiles, Concrete Washout, and Sanitation Facilities and
 - e. Project Phasing
3. It is determined that the SWPPP is not achieving objectives of minimizing pollutants in stormwater discharges associated with construction activity, or
4. The SWPPP is not consistent with the terms and conditions of the permit.

The Contractor may implement SWPPP amendments immediately and is not required to wait for Engineer review of the submittal. The responsibility for completeness of SWPPP amendments and compliance with the Permit lies with the Contractor. Review, comment, or lack of comment by the Engineer on a SWPPP amendment shall not absolve the responsibilities of the Contractor in any way.

If a change order is issued for a design change the SWPPP amendment will be prepared by the Engineer and included in the change order.

In addition to SWPPP amendments, the Contractor shall submit to the Engineer Weekly Erosion and Sediment Control Schedule meeting the requirements of MnDOT 1717.

The Contractor shall keep copies of all SWPPP amendments, Weekly Erosion and Sediment Control Schedules, inspection logs, and maintenance logs with the field copy of the SWPPP. A PDF copy of these documents will be provided along with a copy of the final Field Copy of the SWPPP to the Engineer along with the signed Notice of Termination when final stabilization is complete.

EROSION PREVENTION PRACTICES

Stormwater conveyance channels shall be routed around unstabilized areas. Erosion controls and velocity dissipation devices shall be used at outlets within and along the length of any constructed conveyance channel.

The normal wetted perimeter of all ditches or swales, including storm water management pond slopes, that drain waters from the site must be stabilized within 200' of any property edge or discharge point, including storm sewer inlets, within 24 hours of connection.

Temporary or permanent ditches or swales used as sediment containment during construction do not need to be stabilized during temporary period of use and shall be stabilized within 24 hours after no longer used as sediment containment.

Mulch, hydromulch, tackifier, or similar practice shall not be used in any portion of the wetted perimeter of a temporary or permanent drainage ditch or swale section with a continuous slope of greater than 2 percent.

Energy dissipation shall be installed at all temporary or permanent pipe outlets within 24 hours of connection to a surface water or permanent stormwater treatment system.

The Contractor shall phase construction and use construction methods to the extent practical to minimize exposed soils. The project phasing shall be documented in the Weekly Erosion and Sediment Control Schedule.

SEDIMENT CONTROL PRACTICES

Down gradient BMPs including perimeter BMPs must be in place before up gradient land- disturbing activities begin and shall remain in place until final stabilization.

All BMPs that have been adjusted or removed to accommodate short-term activities shall be re-installed or replaced the earlier of the end of the work day or before the next precipitation event even if the activity is not complete.

Inlet BMPs may be removed for specific safety concerns. The BMPs shall be replaced as soon as the safety concern is resolved. The removal shall be documented in the SWPPP as a SWPPP amendment.

Temporary stockpiles must have sediment control BMPs. The Contractor shall prepare and submit to the Engineer a SWPPP amendment showing the location of temporary stockpiles and the BMPs for each stockpile. The SWPPP amendment must meet the minimum requirements of Section 9 of the Permit.

Soil compaction shall be minimized and topsoil shall be preserved, unless infeasible or if construction activities dictate soil compaction or topsoil stripping.

The use of polymers, flocculants, or other sedimentation treatment chemicals are not proposed as part of this SWPPP as designed by the Engineer. If methods or phasing of construction require the use of any of these chemicals, the Contractor shall prepare and submit to the Engineer a SWPPP amendment that meets the minimum requirements of Section 9 of the Permit.

TEMPORARY SEDIMENTATION BASINS

A temporary sedimentation basin has not been included in this SWPPP as designed by the Engineer. If a basin is later determined to be desirable or necessary the Contractor shall prepare and submit to the Engineer a SWPPP amendment. Temporary sedimentation basins shall meet or exceed the minimum requirements of Section 14 of the Permit and shall include a basin draining plan meeting or exceeding the minimum requirements of Section 10 of the Permit. Where the site discharges to Special and/or Impaired Waters the SWPPP amendment shall also meet or exceed the minimum requirements of Section 23 of the permit.

DEWATERING

A dewatering plan has not been included in this SWPPP as designed by the Engineer. If dewatering is required for this project, the Contractor shall prepare and submit to the Engineer a SWPPP amendment. All dewatering shall meet or exceed the minimum requirements of Section 10 of the Permit.

POLLUTION PREVENTION

Products and materials that have the potential to leach pollutants that are stored on the site must be stored in a manner designed to minimize contact with stormwater. Materials that are not a source of potential contamination to stormwater or that are designed for exposure to stormwater are not required to be covered.

Hazardous materials including but not limited to pesticides, fertilizer, petroleum products, curing compounds and toxic waste must be properly stored and protected from stormwater exposure as recommended by the manufacturer in an access restricted area.

Solid waste must be stored, collected and disposed of in compliance with Minnesota Administrative Rules Chapter 7035.

Portable toilets must be positioned so that they are secure and will not be tipped or knocked over. Sanitary waste must be disposed of properly in accordance with Minn. R. CH 7041.

Exterior vehicle or equipment washing on the project site shall be limited to a defined area of the site. No engine degreasing is allowed on site. A sign must be installed adjacent to each washout facility that requires site personnel to utilize the proper facilities for disposal of concrete and other washout wastes.

The Contractor shall prepare and submit a SWPPP amendment detailing the location and BMPs proposed for storage of materials, solid waste, portable toilets, and exterior vehicle or equipment washing on the site. The SWPPP amendment shall include a spill prevention and response plan that is appropriate for the materials proposed to be on the site. The SWPPP amendment shall meet or exceed the minimum requirements of Section 12 of the Permit.

INSPECTION & MAINTENANCE

A trained person shall routinely inspect the entire construction site at the time interval indicated on this sheet of the SWPPP during active construction and within 24-hours after a rainfall event greater than 0.5 inches in 24 hours. Following an inspection that occurs within 24-hours after a rainfall event, the next inspection must be conducted at the time interval indicated in the Receiving Waters Table found on the SITE PLAN AND INFORMATION SHEET of the SWPPP.

All inspections and maintenance conducted during construction must be recorded on the day it is completed and must be retained with the SWPPP. Inspection report forms are available in the Project Specifications. Inspection report forms other than those provided shall be approved by the engineer.

The Contractor may request a change in inspection schedule for the following conditions:

- a. Inspections of areas with permanent cover to be reduced to once per month,
- b. Inspections of areas that have permanent cover and have had no construction activity for 12 months to be suspended until construction resumes,
- c. Inspections of areas where construction is suspended due to frozen ground conditions, inspections to be suspended until the earlier of within 24 hours of runoff occurring, or upon resuming construction.

No change in inspection schedule shall occur until authorized by the Engineer.

Inspections must include:

1. All erosion prevention and sediment control BMPs and Pollution Prevention Management Measures to ensure integrity and effectiveness.
2. Surface waters, including drainage ditches and conveyance systems for evidence of erosion and sediment deposition.
3. Construction site vehicle exit locations, streets and curb and gutter systems within and adjacent to the project for sedimentation from erosion or tracked sediment from vehicles.
4. Infiltration areas to ensure that no sediment from ongoing construction activity is reaching the infiltration area and that equipment is not being driven across the infiltration area.

All non-functioning BMPs and those BMPs where sediment reaches one-half (1/2) of the depth of the BMP, or in the case of sediment basins one-half (1/2) of the storage volume, must be repaired, replaced, or supplemented by the end of the next business day after discovery, or as soon as field conditions allow.

Permittees must repair, replace or supplement all nonfunctional BMPs with functional BMPs by the end of the next business day after discovery, or as soon as field conditions allow.

Any sediment that escapes the site must be removed and the area stabilized within 7 calendar days of discovery unless precluded by legal, regulatory, or physical access in which case the work shall be completed within 7 calendar days of authorization. Paved surfaces such as streets shall have any escaped or tracked sediment removed by the end of the day that it is discovered. Sediment release, other than paved surfaces that can be cleaned up with street sweeping shall be reported immediately upon discovery to the Engineer.

PUBLIC WATER RESTRICTIONS:

For public waters that have been promulgated "work in water restrictions" during fish spawning time frames, all exposed soil areas that are within 200 feet of the water's edge, and drain to these waters must complete stabilization within 24-hours during the time period. MN DNR permits are not valid for work in waters that are designated as infested waters unless accompanied by an Infested Waters Permit or written notification has been obtained from MN DNR stating that such permit is not required. There is no exception for pre-existing permits. If a MN DNR Permit has been issued for the project and the water is later designated as infested, the Contractor shall halt all work covered by the MN DNR Permit until an Infested Waters Permit is obtained or that written notification is obtained stating that such permit is not required.

FINAL STABILIZATION

Final Stabilization is not complete until all the following requirements have been met:

1. Substantial Completion has been reached and no ground disturbing activities are anticipated.
2. Permanent cover has been installed with an established minimum uniform perennial vegetation density of 70 percent of its expected final growth. Vegetation is not required in areas where no vegetation is proposed by this project such as impervious surfaces or the base of a sand filter.

3. Accumulated sediment has been removed from all permanent stormwater treatment systems as necessary to ensure the system is operating as designed.
4. All sediment has been removed from conveyance systems
5. All temporary synthetic erosion prevention and sediment control BMPs have been removed. BMPs designated on the SWPPP to remain to decompose on-site may remain.
6. For residential construction only, permit coverage terminates on individual lots if the structures are finished and temporary erosion prevention and downgradient perimeter control is complete, the residence sells to the homeowner, and the permittee distributes the MPCA's "Homeowner Fact Sheet" to the homeowner.
7. For agricultural land only (e.g., pipelines across cropland), the disturbed land must be returned to its preconstruction agricultural use prior to submitting the NOT.

SITE STABILIZATION COMPLETION:

Stabilization of exposed soils shall begin immediately and shall be completed after the construction activity has temporarily or permanently ceased no later than:	14 calendar days
--	------------------

SITE INSPECTION INTERVAL:

A trained person shall routinely inspect the entire construction site during active construction at an interval of no less than:	7 calendar days
--	-----------------

SPECIAL ENVIRONMENTAL CONSIDERATIONS AND PERMITS:

1) Was an environmental review required for this project or any part of a common plan of development or sale that includes all or any portion of this project?	NO
2) Does any portion of the site have the potential to affect threatened or endangered species or their critical habitat?	NO
3) Does any portion of this site discharge to a Calcareous fen.	NO
4) Will any portion of the site potentially affect properties listed on the National Register of Historic Places or a known or discovered archeological site?	NO
5) Have any Karst features been identified in the project vicinity?	NO
6) Is compliance with temporary or permanent stormwater management design requirements infeasible for this project?	NO
7) Has the MN DNR promulgated "work in water restrictions" for any Public Water this site discharges to during fish spawning?	NO

TYPE OF PERMIT	PERMITTING AGENCY	PERMIT STATUS AND CONDITIONS
Construction Stormwater NPDES	MPCA	

SWPPP DESIGNER TRAINING DOCUMENTATION:

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Andrew L. Budde
 ANDREW L. BUDDÉ
 LIC. NO. 46585 DATE 9/19/2022



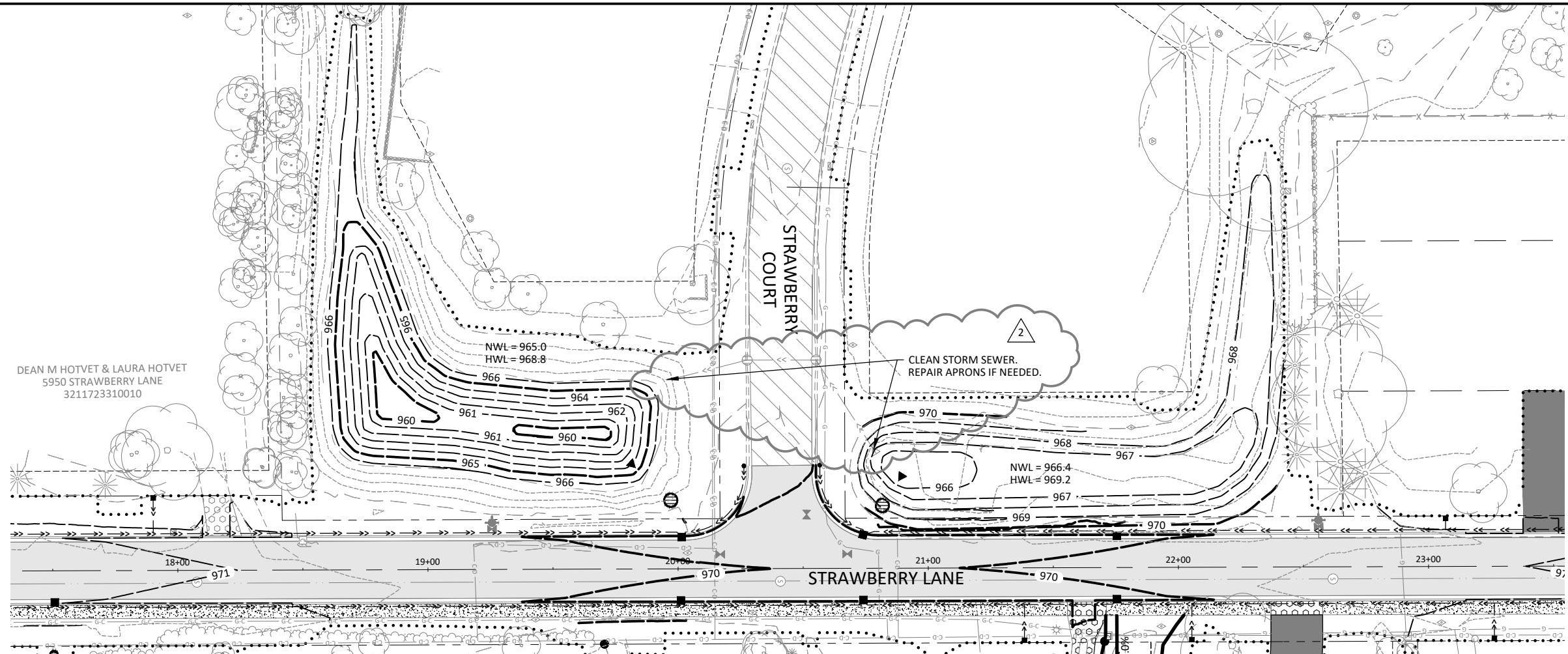
2638 SHADOW LANE, SUITE 200
 CHASKA, MINNESOTA 55318
 Phone: (952) 448-8838
 Email: Chaska@bolton-menk.com
 www.bolton-menk.com

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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 SWPPP NARRATIVE

SHEET

C2.06

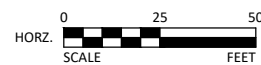


DEAN M HOTVET & LAURA HOTVET
5950 STRAWBERRY LANE
3211723310010

POND GRADING:

1. DEWATERING WILL BE REQUIRED TO ACCESS THE POND BOTTOM. DEWATERING SHALL BE PERFORMED IN ACCORDANCE WITH NPDES AND MINNEHAHA CREEK WATERSHED DISTRICT (MCWD) REQUIREMENTS. CONTRACTOR SHALL NOTIFY MCWD IN WRITING PRIOR TO ANY DEWATERING ACTIVITIES. ANY NECESSARY REMOVAL OF ICE OR SNOW SHALL BE CONSIDERED INCIDENTAL.
2. MUCK EXCAVATION FROM EXISTING POND BOTTOM - TO BE EXPORTED AND DISPOSED OF OFFSITE (WITH WATER TIGHT TRUCKS)
3. CONTRACTOR SHALL COORDINATE OFF-SITE LOCATION TO PLACE EXCESS MATERIAL AND SUBMIT ANY PLACEMENT PLANS AND/OR PERMITTING NECESSARY TO CITY/COUNTY PRIOR TO EXPORTING MATERIAL FROM SITE (INCIDENTAL).
4. IF TEMPORARY STOCKPILING OF EXCAVATED SEDIMENT IS DONE, PERIMETER EROSION CONTROL MUST BE INSTALLED AND SHALL BE CONSIDERED INCIDENTAL TO POND EXCAVATION.
5. ALL DISTURBED LAWN AREAS SHALL BE RESTORED WITH SEED MIX 25-151 WITH HYDROMULCH. ALL DISTURBED POND AREAS SHALL BE RESTORED WITH STATE SEED MIX 34-262. ALL AREAS REQUIRING RESTORATION MUST BE COVERED WITHIN 7 DAYS OF DISTURBANCE.
6. ALL DISTURBED AREAS ABOVE THE NORMAL WATER LEVEL SHALL BE RESTORED WITH 6" TOPSOIL. FROZEN MATERIAL SHALL NOT BE USED FOR TOPSOIL RESPREAD.
7. SUITABLE TOPSOIL SHALL BE SALVAGED AND REPLACED (INCIDENTAL). TOPSOIL WILL BE IMPORTED TO SUPPLEMENT SALVAGED TOPSOIL AS NEEDED TO ACHIEVE 6" OF TOPSOIL OVER DISTURBED AREAS.
8. CONSTRUCTION ACTIVITY SHALL BE CONTAINED TO EASEMENT AREAS AND CONSTRUCTION LIMITS AS SHOWN ON THE PLANS.
9. CONTRACTOR SHALL COORDINATE REMOVAL/CONSTRUCTION LIMITS, FINAL CONTOURS, AND EXTENTS OF RIPRAP AND HYDROSEED IN FIELD WITH ENGINEER.
10. FINAL GRADES SHALL CONFORM TO THE PROPOSED ELEVATIONS AT +/- 0.25-FEET. FINAL APPROVAL OF GRADING SHALL BE REQUIRED FROM THE ENGINEER PRIOR TO RESTORATION ACTIVITIES.

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Andrew L. Budde
ANDREW L. BUDDÉ
LIC. NO. 46585 DATE 9/19/2022

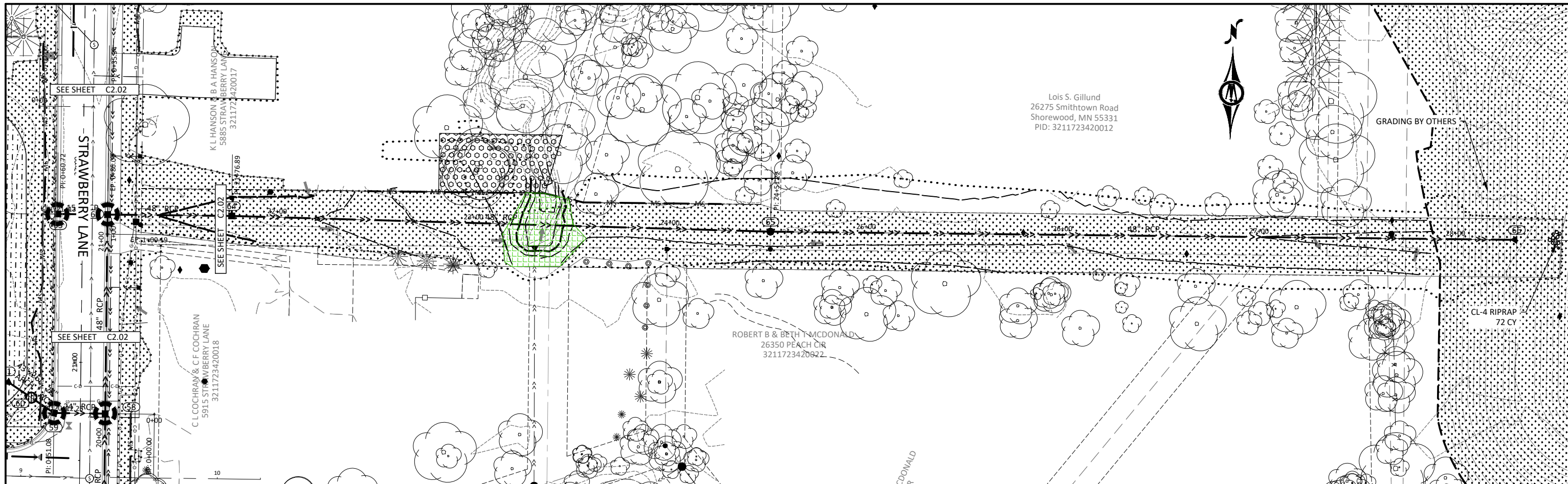


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CHASKA, MINNESOTA 55318
Phone: (952) 448-8838
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CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
POND GRADING PLAN

SHEET
C3.01

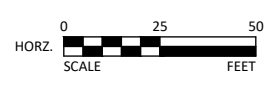


Lois S. Gillund
 26275 Smithtown Road
 Shorewood, MN 55331
 PID: 3211723420012

- NOTES:**
1. PLACE MINIMUM OF 6 INCHES OF TOPSOIL ON CREEK AREA BEING GRADED.
 2. SEED MIX 34-261 TO BE SEEDED AT AN APPLICATION RATE OF 31.5 LB/AC.
 3. TO REDUCE WEED ESTABLISHMENT, MOW 2 TO 3 TIMES (30 DAYS APART) DURING 1ST YEAR AT A HEIGHT OF 6"-8" OFF THE GROUND. MOW ONE TIME DURING THE 2ND YEAR BEFORE WEEDS SET THEIR SEEDS. BURN OR MOW ONCE EVERY 3 TO 5 YEARS FOLLOWING THE INITIAL 2 YEARS OF MAINTENANCE TO REMOVE DEAD PLANT MATERIAL AND STIMULATE NEW SEED.
 4. WHEN CITY'S MAINTENANCE AGREEMENT WITH MCWD IS FINALIZED, MAINTENANCE WILL BE PERFORMED IN ACCORDANCE WITH THAT AGREEMENT.

EROSION CONTROL LEGEND	
	MACHINE SLICED SILT FENCE
	SOD
	HYDROSEED W/SEED 25-151
	HYDROSEED W/SEED 35-241
	EROSION CONTROL BLANKET W/SEED 34-262
	EROSION CONTROL BLANKET CAT 30 W/SEED 34-261
	RESIDENTIAL TURF SEED MIX
	EXISTING/PROPOSED DRAINAGE FLOW
	CONSTRUCTION LIMITS
	BIOLOG
	INLET PROTECTION
	RIPRAP

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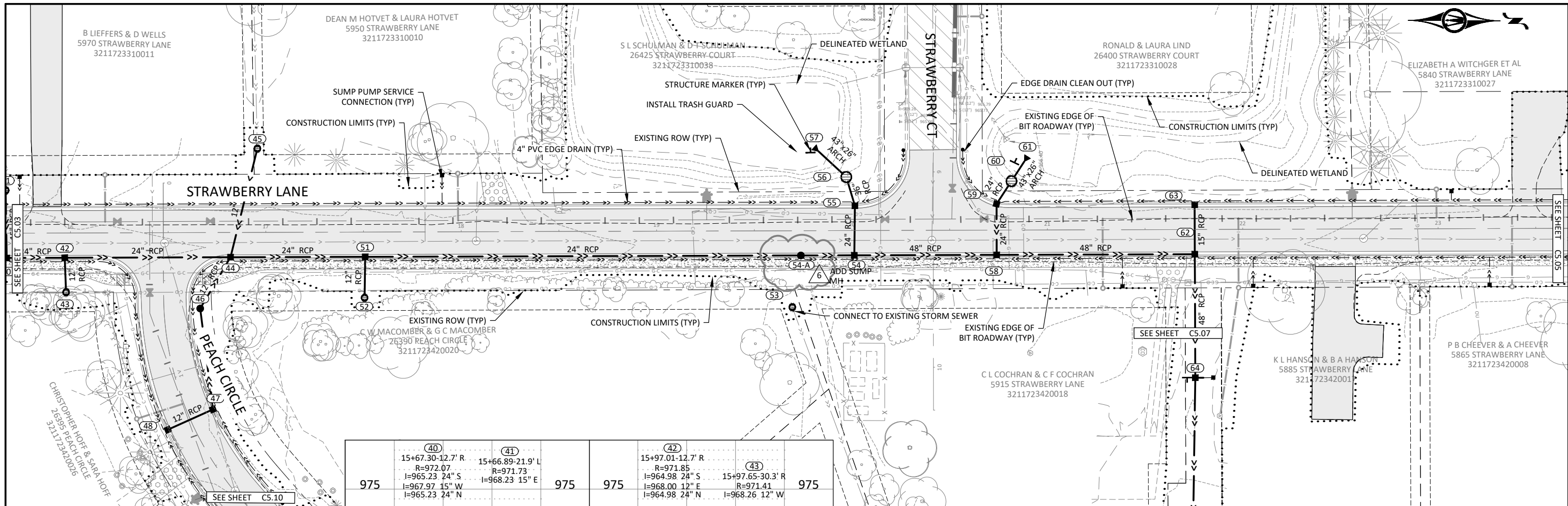


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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 EROSION CONTROL & TURF ESTABLISHMENT

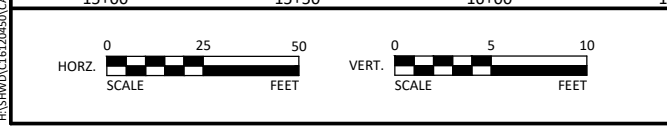
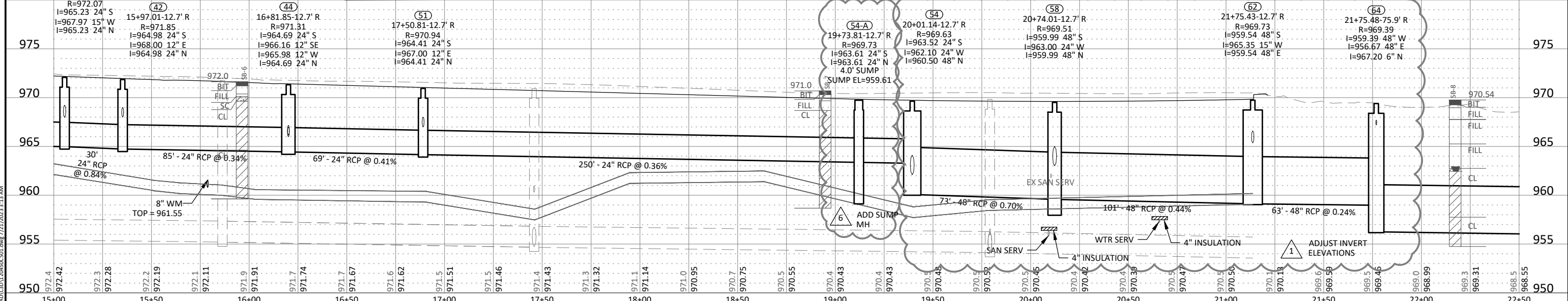
SHEET
C2.05



975	(40) 15+67.30-12.7' R R=972.07 I=965.23 24" S I=967.97 15" W I=965.23 24" N	(41) 15+66.89-21.9' L R=971.73 I=968.23 15" E	975	975	(42) 15+97.01-12.7' R R=971.85 I=964.98 24" S I=968.00 12" E I=964.98 24" N	(43) 15+97.65-30.3' R R=971.41 I=968.26 12" W	975
970			970	970			970
965			965	965			965
960	971.1	972.3 972.20	971.5 972.16	972.0	971.9 972.44	972.3 972.04	971.5 971.5
	0+00	0+50	0+75	0+00	0+50	0+75	0+75

NOTES:

- THE LOCATIONS 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. THEY AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY THEIR FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.
- 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.
- CONTRACTOR SHALL PROTECT ALL STORM SEWER PIPE DURING GRADING ACTIVITIES.



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Andrew L. Budde
ANDREW L. BUDDÉ
 LIC. NO. 46585 DATE 9/19/2022

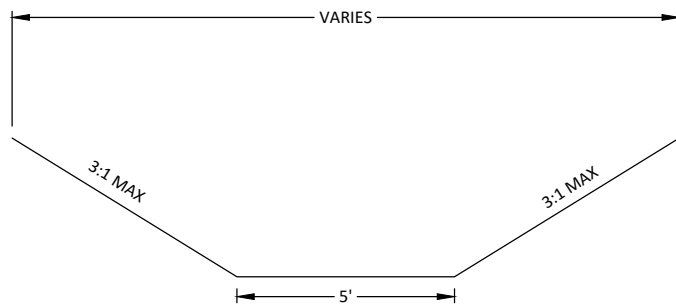
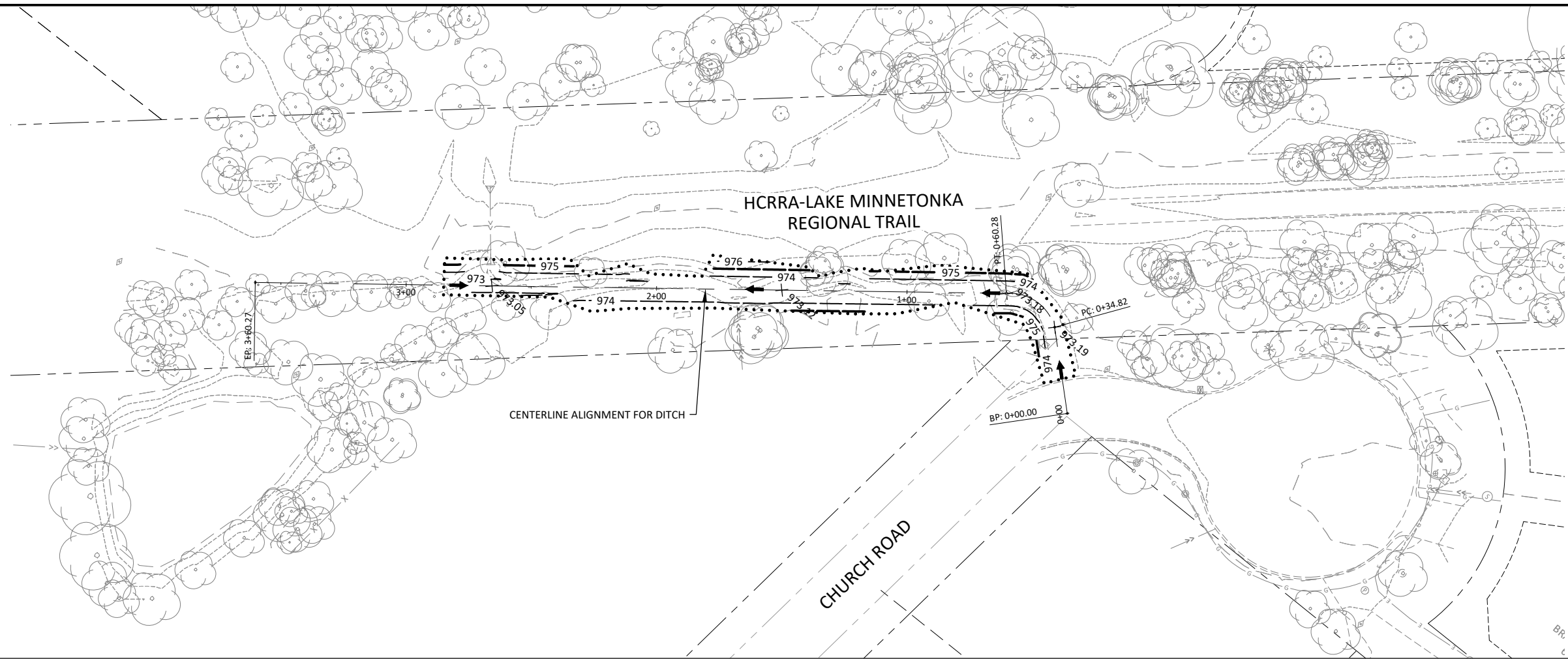
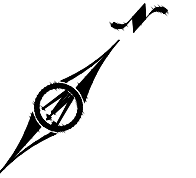


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 Phone: (952) 448-8838
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 www.bolton-menk.com

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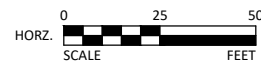
CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
STORM SEWER PLAN & PROFILE

SHEET
C5.04



DITCH GRADING

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Andrew L. Budde
 ANDREW L. BUDDÉ
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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 DITCH GRADING PLAN

SHEET
C3.02



P B CHEEVER & A CHEEVER
5865 STRAWBERRY LANE
3211723420008

K L HANSON & B A HANSON
5885 STRAWBERRY LANE
3211723420017

FUTURE DRAINTILE
(BY OTHERS)

INV = 965.24

CLEANOUT
INV = 964.94

72' - 4" DRAINTILE @ 1.00%

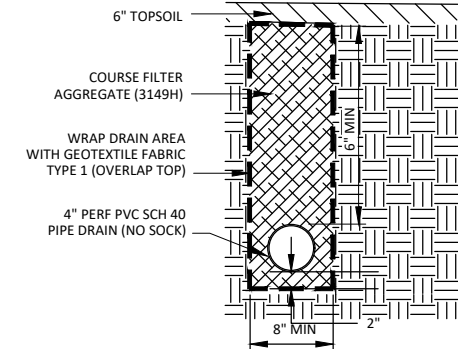
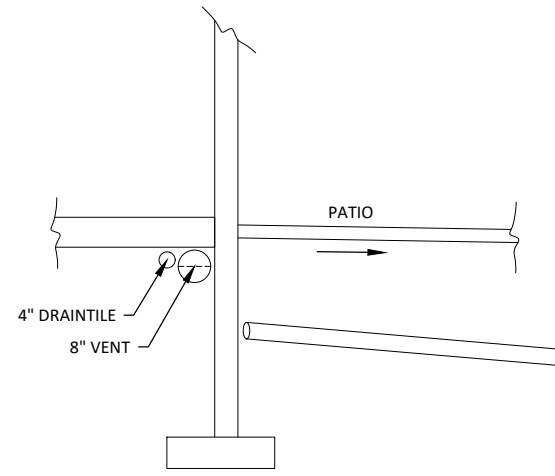
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GRADE TO DRAIN

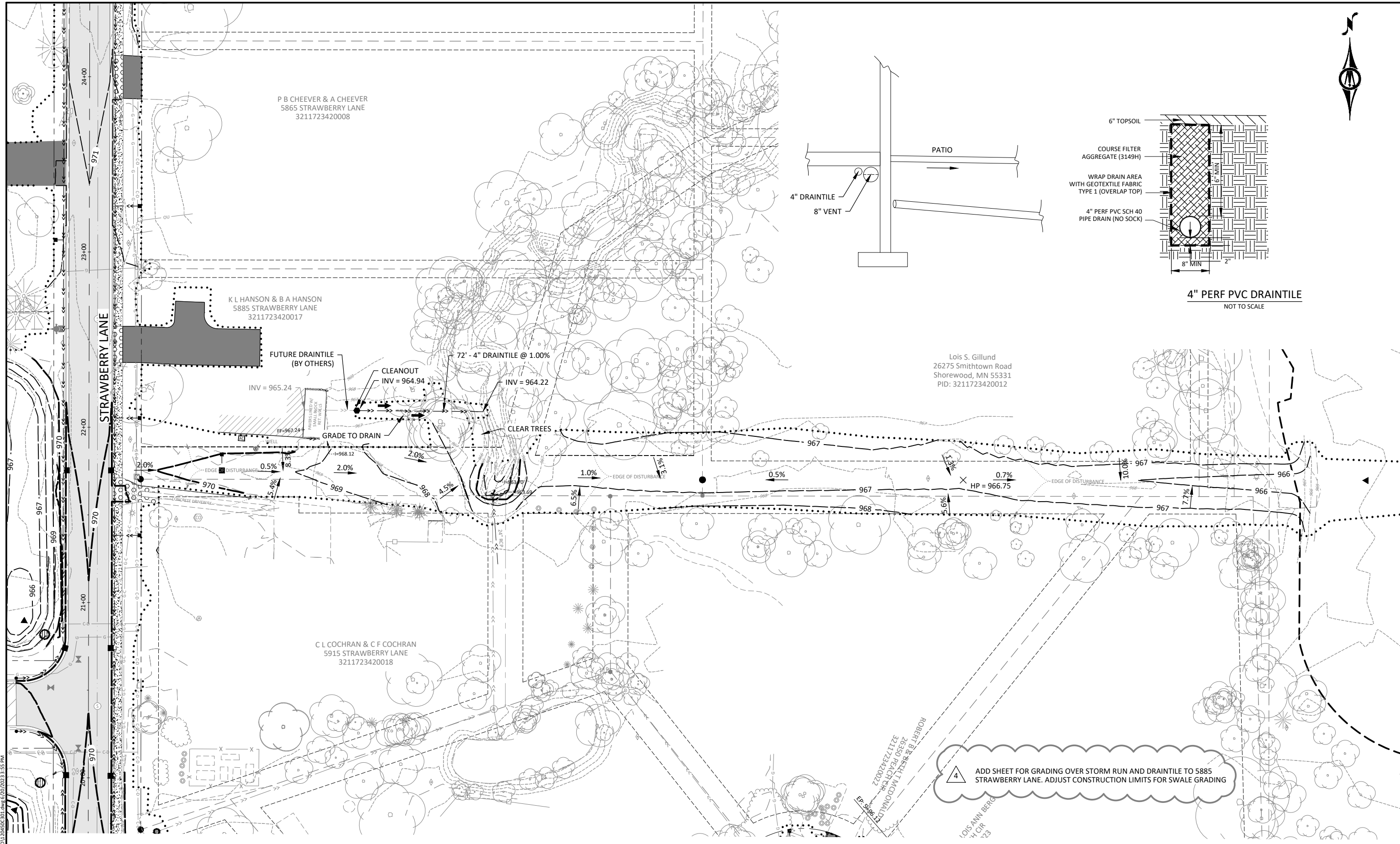
CLEAR TREES

Lois S. Gillund
26275 Smithtown Road
Shorewood, MN 55331
PID: 3211723420012

C L COCHRAN & C F COCHRAN
5915 STRAWBERRY LANE
3211723420018



4" PERF PVC DRAINTILE
NOT TO SCALE



4 ADD SHEET FOR GRADING OVER STORM RUN AND DRAINTILE TO 5885 STRAWBERRY LANE. ADJUST CONSTRUCTION LIMITS FOR SWALE GRADING

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Andrew L. Budde
ANDREW L. BUDDÉ
LIC. NO. 46585 DATE 9/19/2022

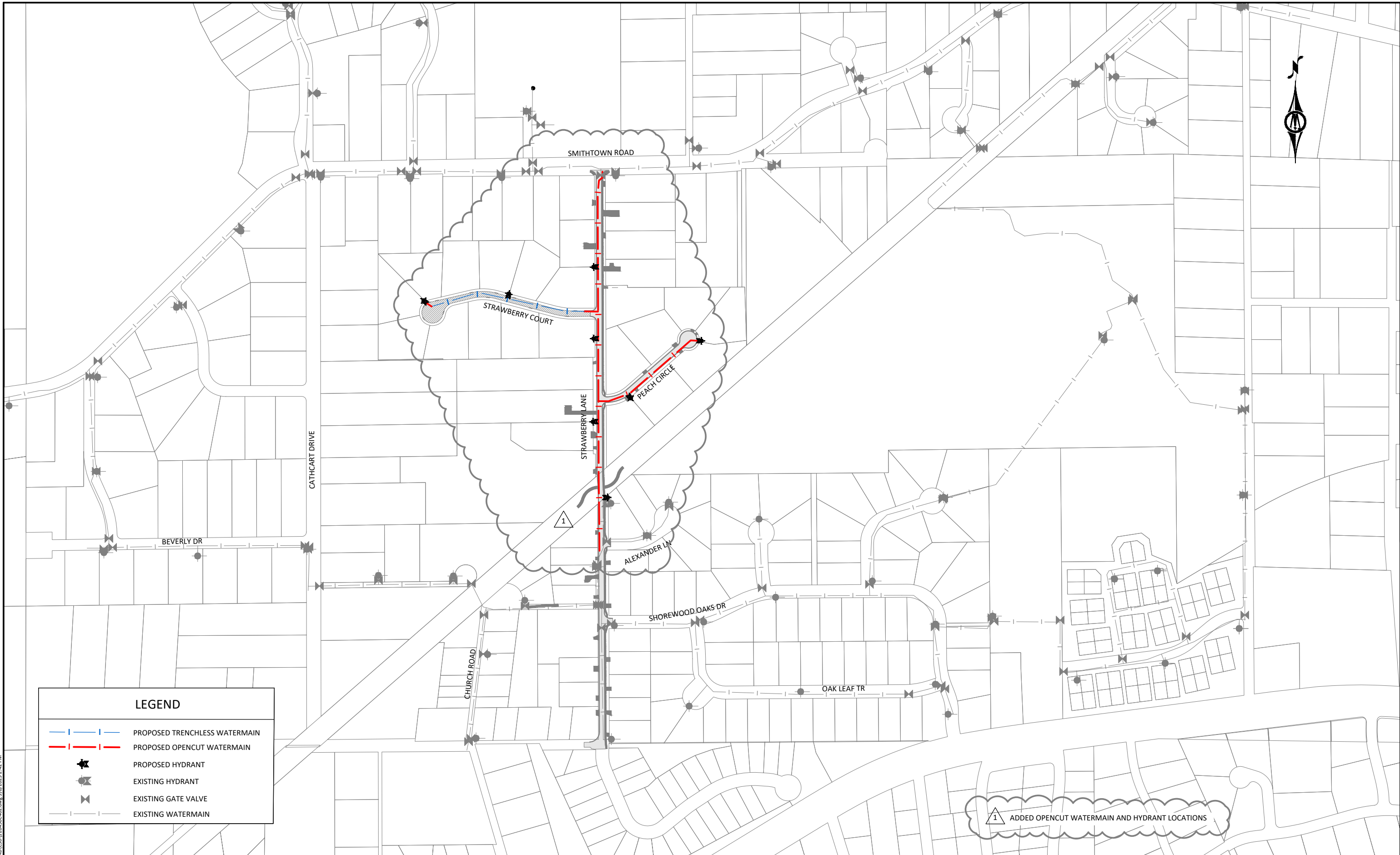


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CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
5885 STRAWBERRY LANE GRADING PLAN

SHEET
C3.03



LEGEND

- PROPOSED TRENCHLESS WATERMAIN
- PROPOSED OPENCUT WATERMAIN
- PROPOSED HYDRANT
- EXISTING HYDRANT
- EXISTING GATE VALVE
- EXISTING WATERMAIN

ADDED OPENCUT WATERMAIN AND HYDRANT LOCATIONS

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Andrew L. Budde
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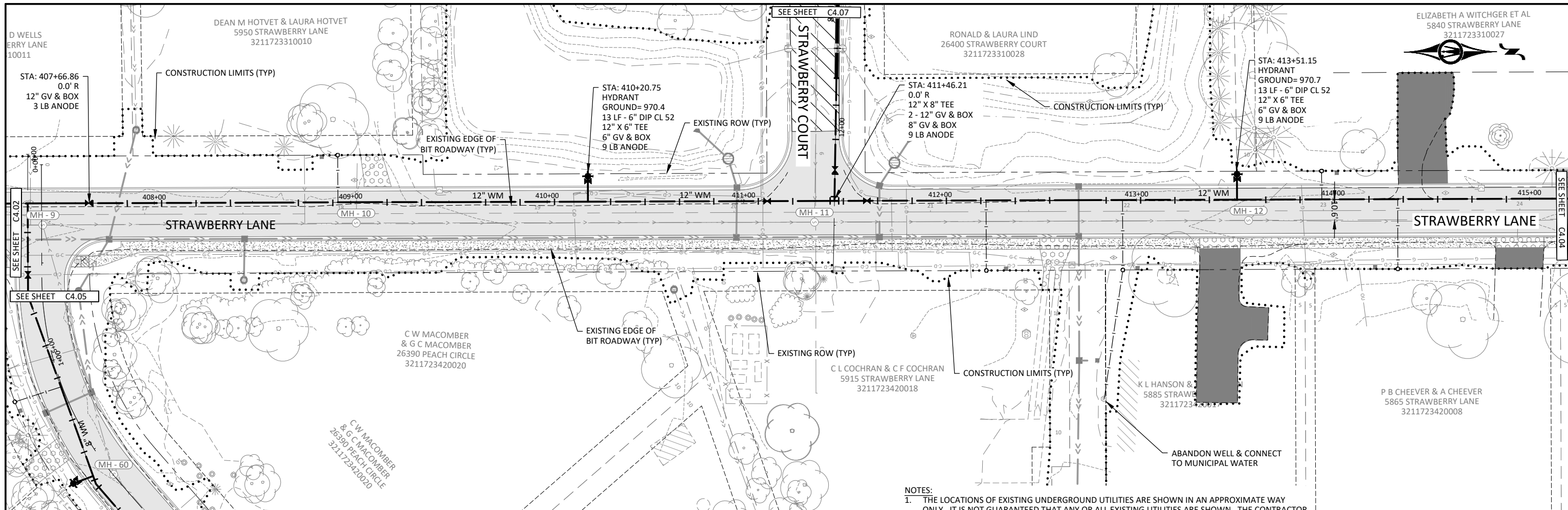


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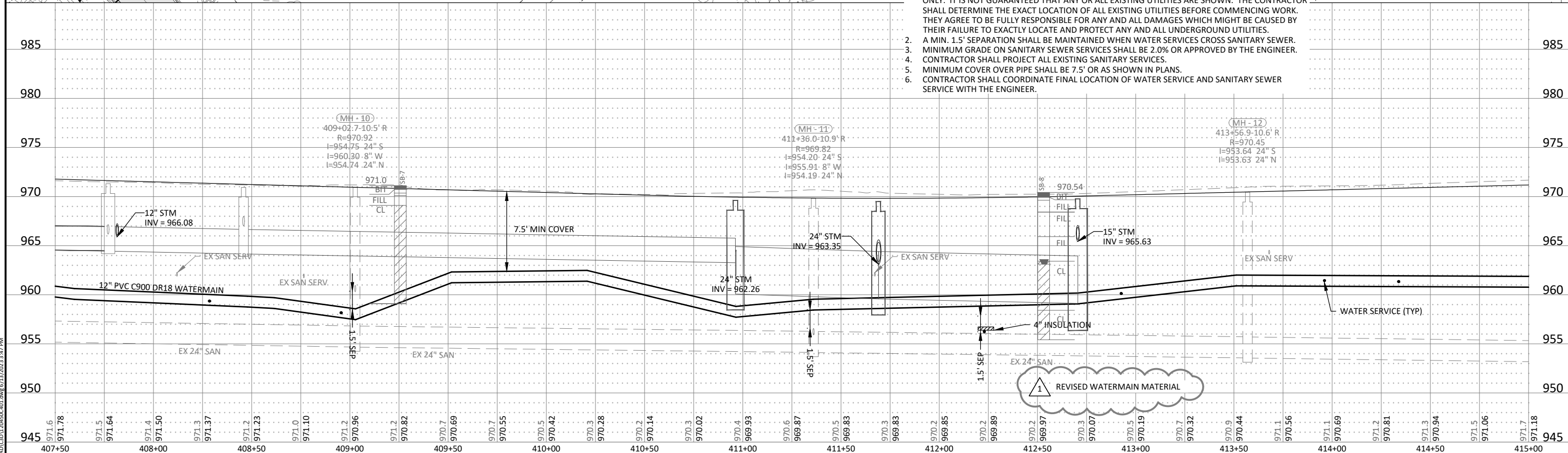
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CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 WATERMAIN OVERVIEW

SHEET
C4.01



- NOTES:**
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 2. A MIN. 1.5' SEPARATION SHALL BE MAINTAINED WHEN WATER SERVICES CROSS SANITARY SEWER.
 3. MINIMUM GRADE ON SANITARY SEWER SERVICES SHALL BE 2.0% OR APPROVED BY THE ENGINEER.
 4. CONTRACTOR SHALL PROJECT ALL EXISTING SANITARY SERVICES.
 5. MINIMUM COVER OVER PIPE SHALL BE 7.5' OR AS SHOWN IN PLANS.
 6. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF WATER SERVICE AND SANITARY SEWER SERVICE WITH THE ENGINEER.



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Andrew L. Budde
ANDREW L. BUDDÉ
LIC. NO. 46585 DATE 9/19/2022



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CHASKA, MINNESOTA 55318
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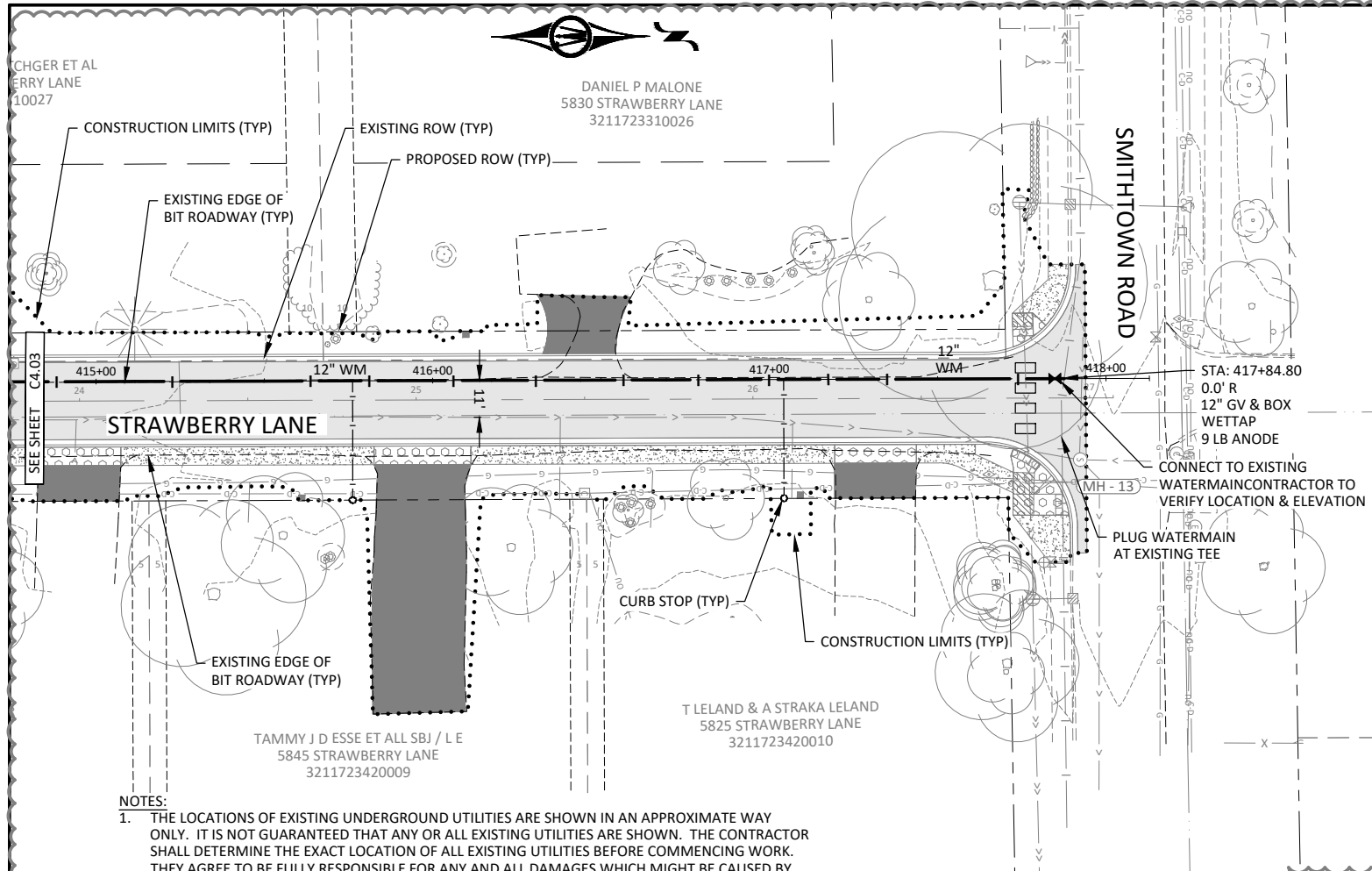
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CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
WATERMAIN PLAN & PROFILE-STRAWBERRY LANE

SHEET
C4.03

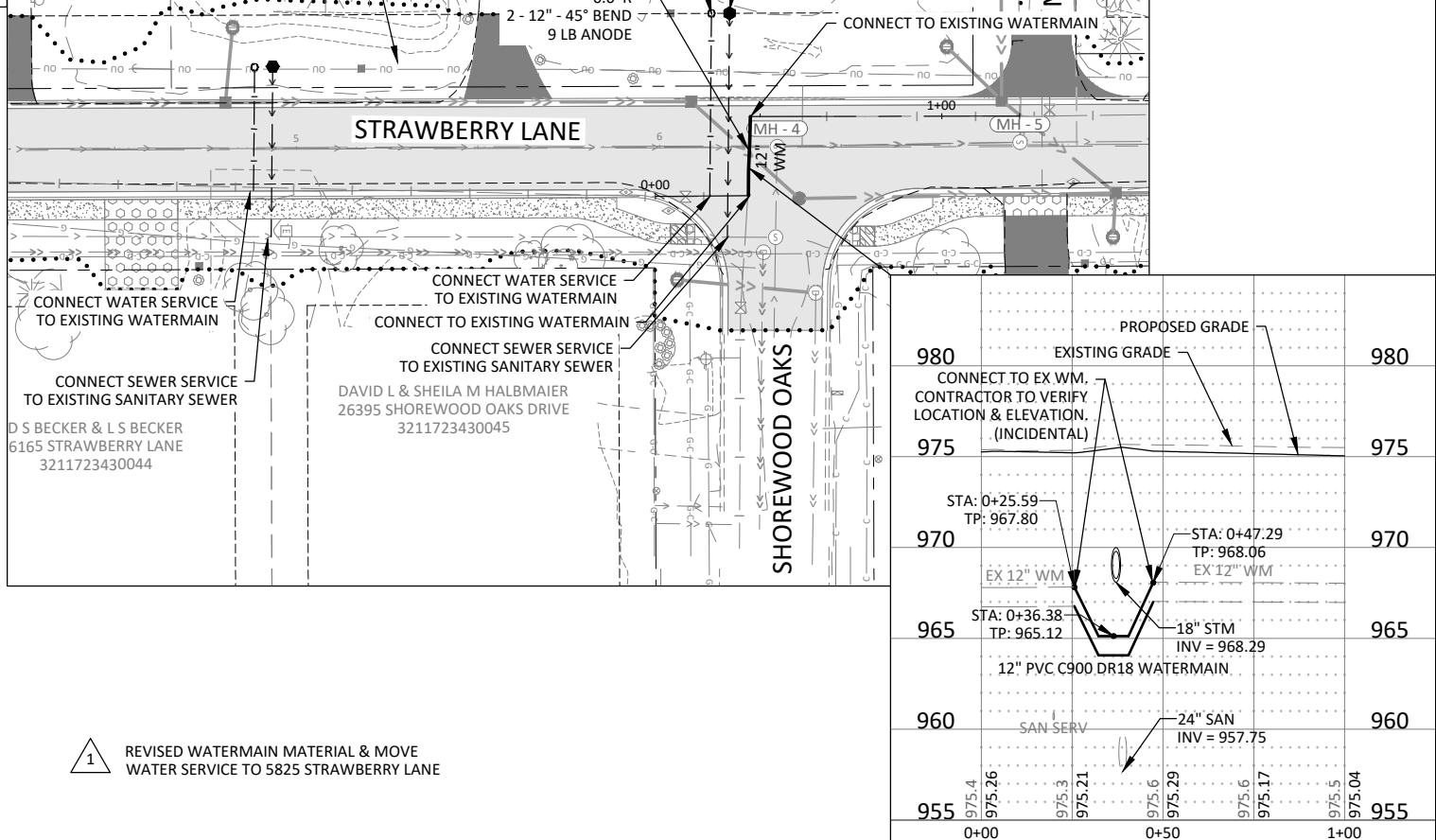
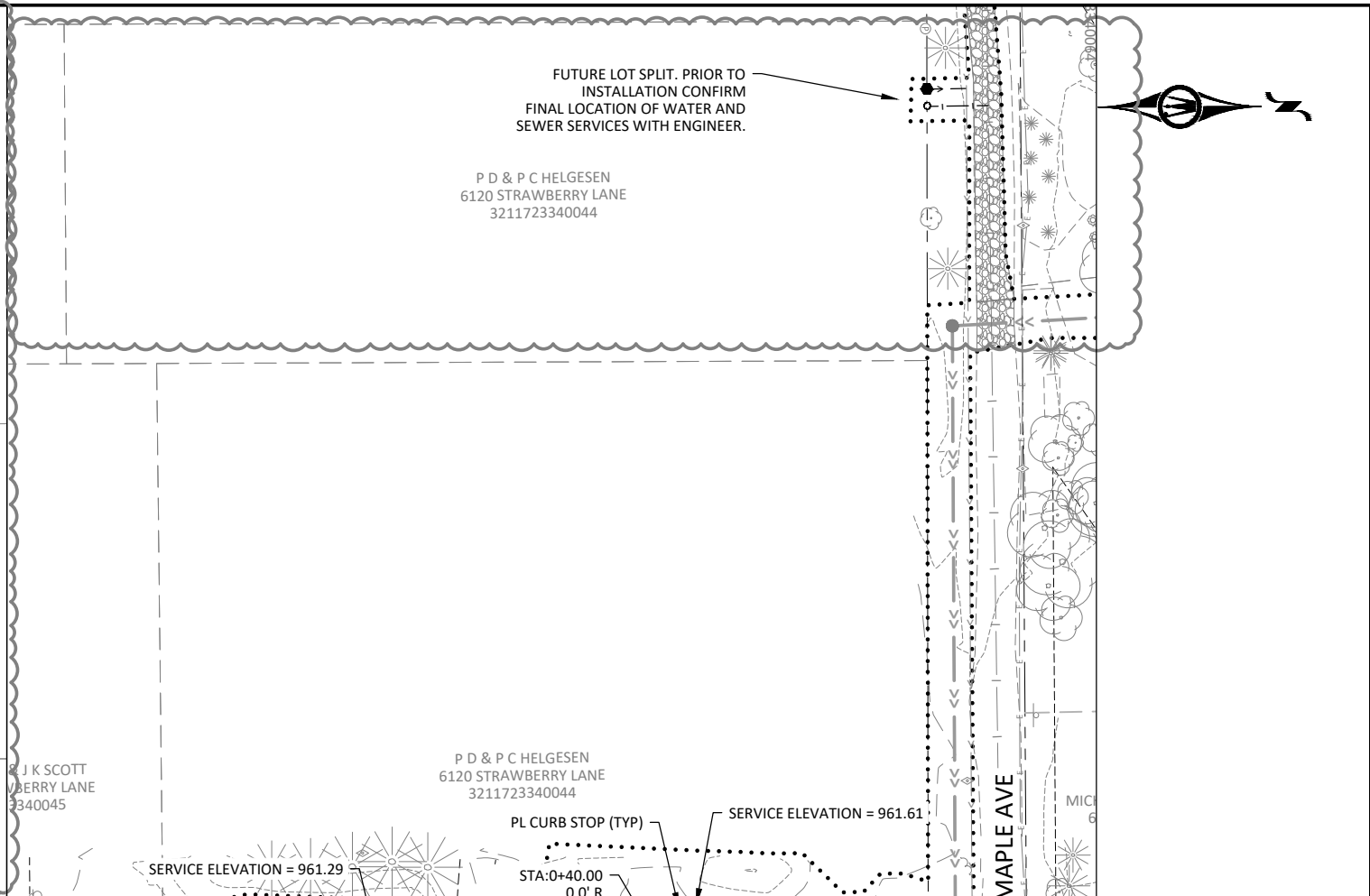
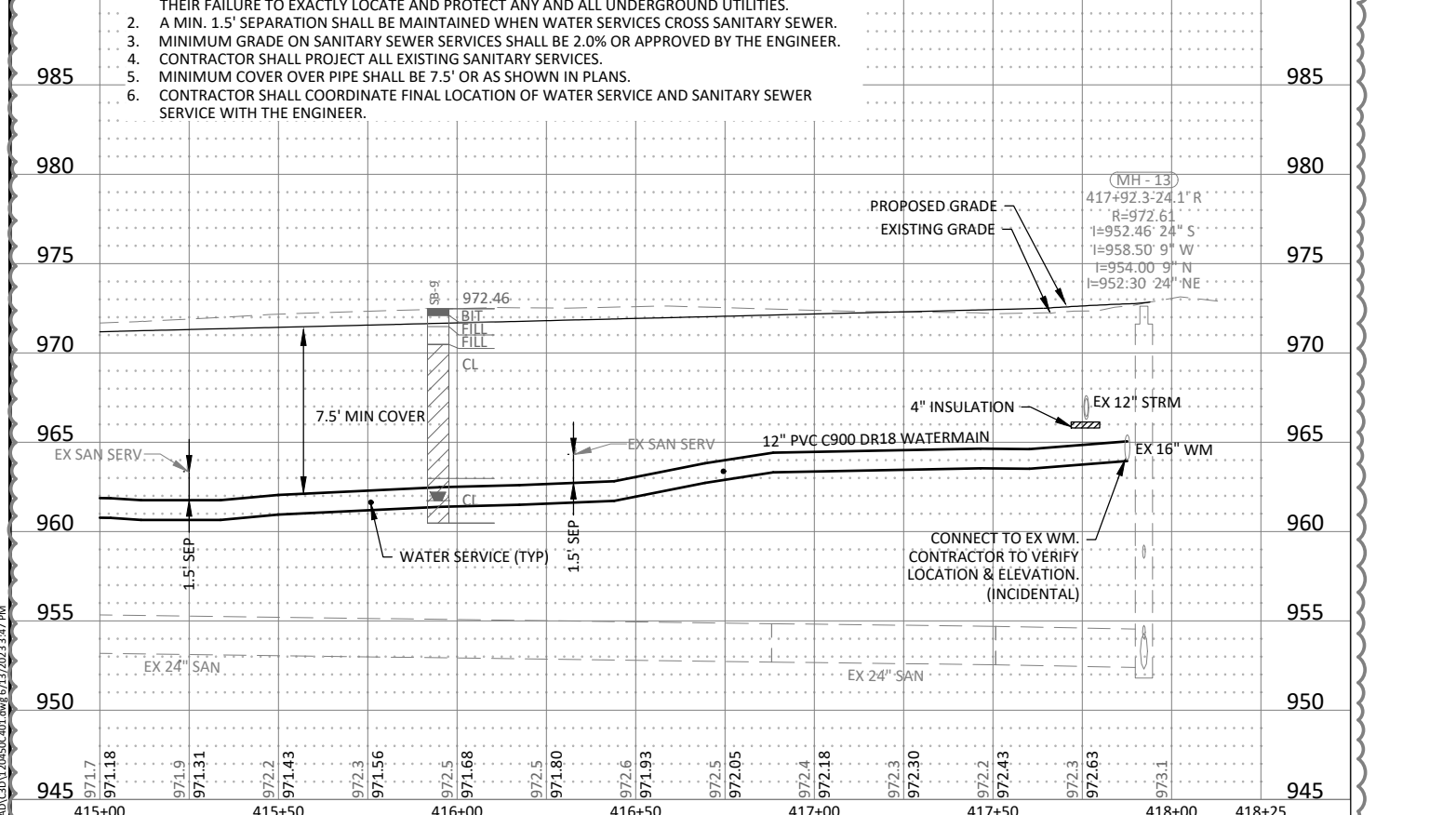
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NOTES:

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5. MINIMUM COVER OVER PIPE SHALL BE 7.5' OR AS SHOWN IN PLANS.
6. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF WATER SERVICE AND SANITARY SEWER SERVICE WITH THE ENGINEER.



1 REVISED WATERMAIN MATERIAL & MOVE WATER SERVICE TO 5825 STRAWBERRY LANE

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Andrew L. Budde
ANDREW L. BUDDÉ
LIC. NO. 46585 DATE 9/19/2022



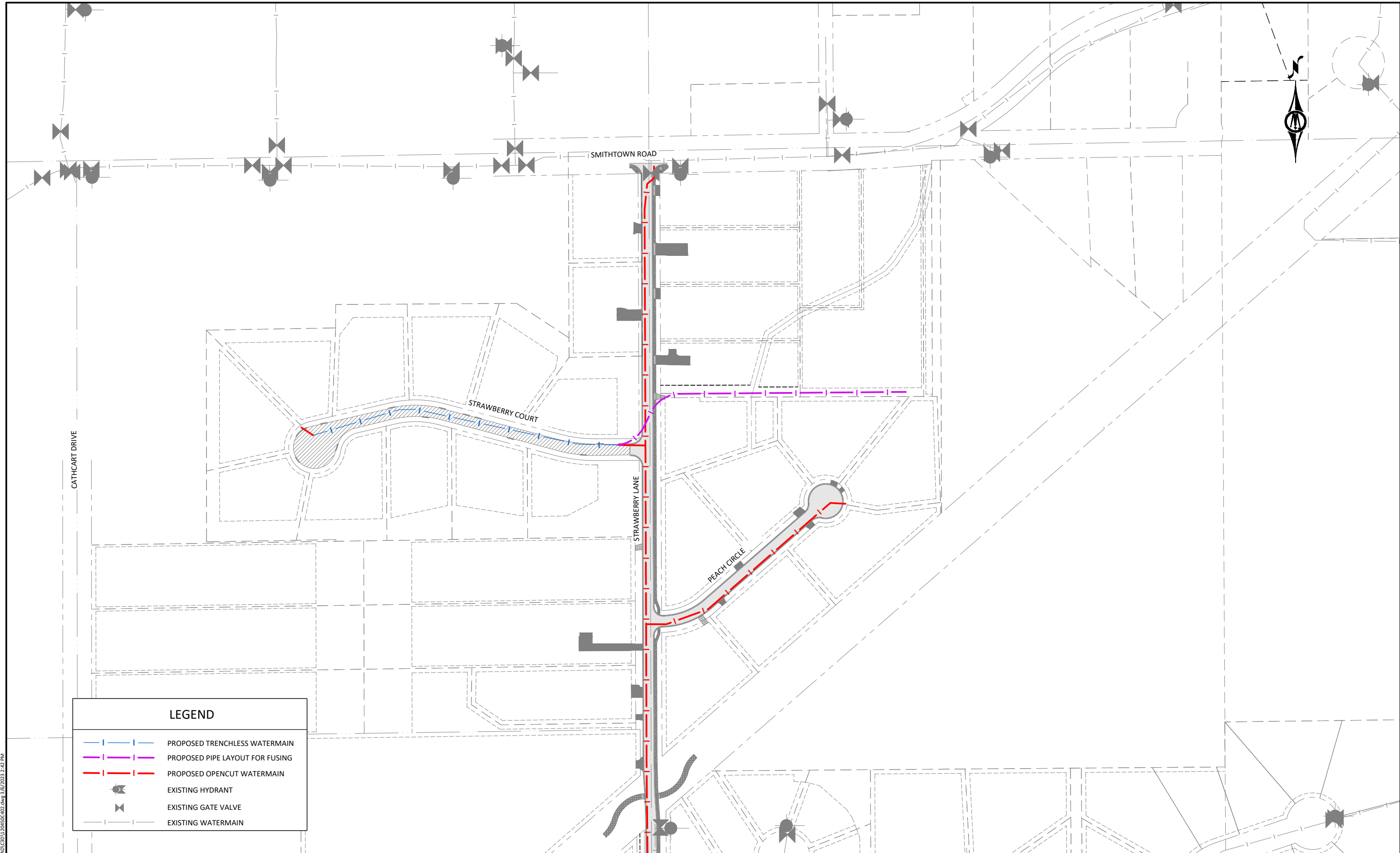
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CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
WATERMAIN PLAN & PROFILE-STRAWBERRY LANE

SHEET
C4.04

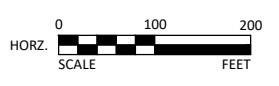
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LEGEND

- PROPOSED TRENCHLESS WATERMAIN
- PROPOSED PIPE LAYOUT FOR FUSING
- PROPOSED OPENCUT WATERMAIN
- EXISTING HYDRANT
- EXISTING GATE VALVE
- EXISTING WATERMAIN

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 PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

 ANDREW L. BUDDÉ
 LIC. NO. 46585 DATE 9/19/2022

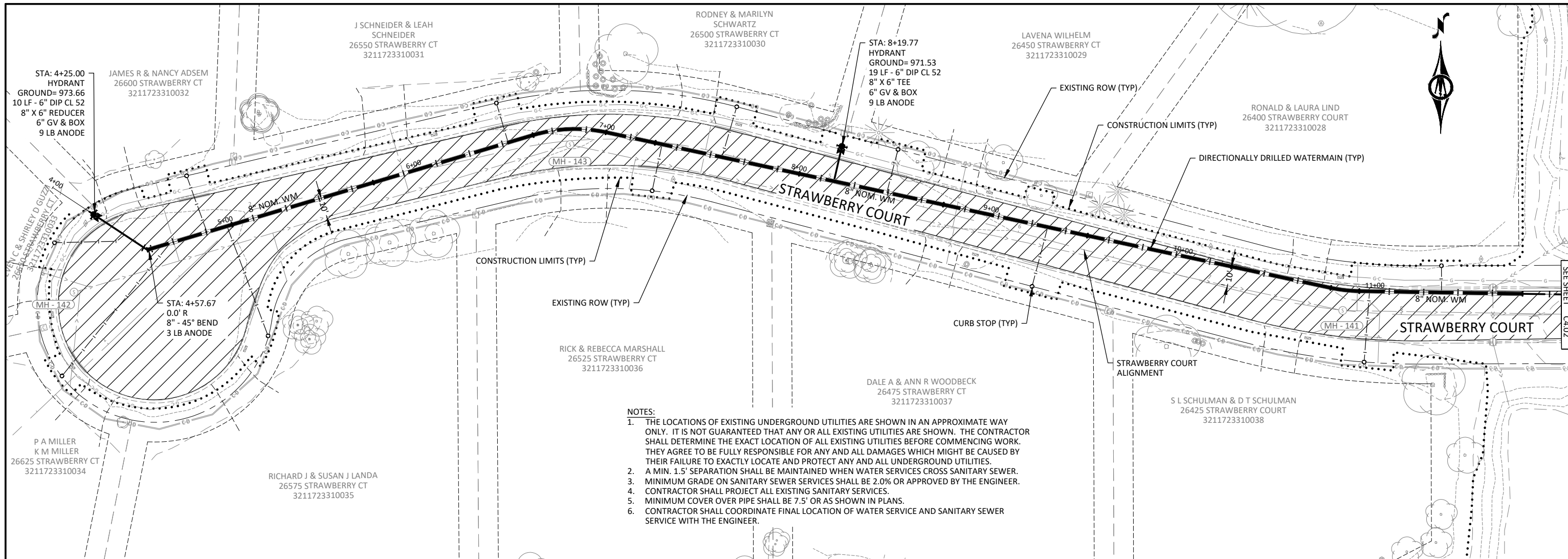


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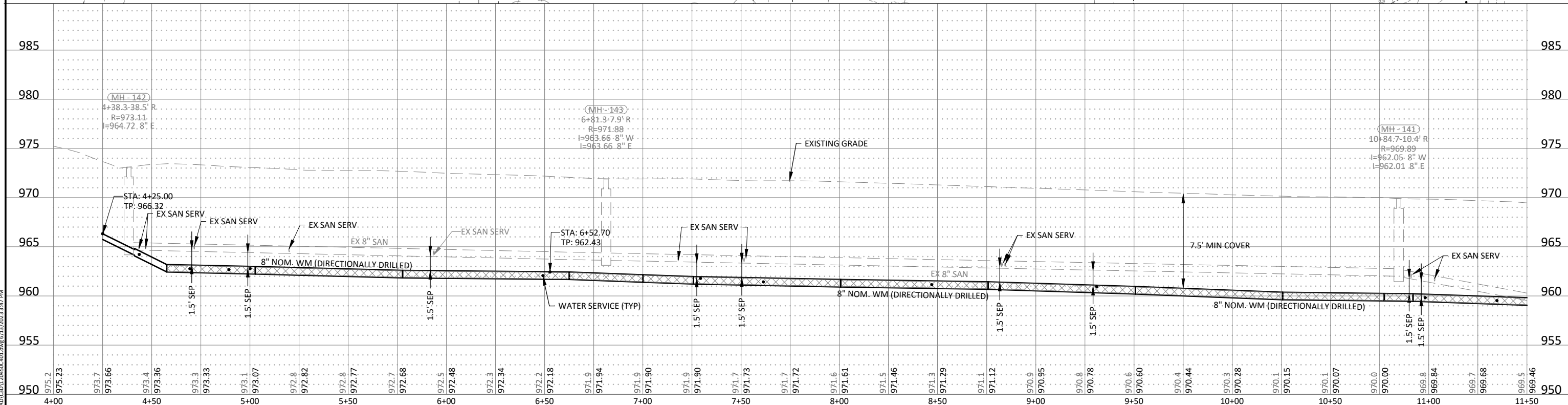
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CLIENT PROJ. NO.	C16.120450		

CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 TRENCHLESS WATERMAIN LAYOUT

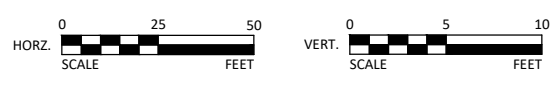
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- NOTES:**
1. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. IT IS NOT GUARANTEED THAT ANY OR ALL EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THEY AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY THEIR FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.
 2. A MIN. 1.5' SEPARATION SHALL BE MAINTAINED WHEN WATER SERVICES CROSS SANITARY SEWER.
 3. MINIMUM GRADE ON SANITARY SEWER SERVICES SHALL BE 2.0% OR APPROVED BY THE ENGINEER.
 4. CONTRACTOR SHALL PROJECT ALL EXISTING SANITARY SERVICES.
 5. MINIMUM COVER OVER PIPE SHALL BE 7.5' OR AS SHOWN IN PLANS.
 6. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF WATER SERVICE AND SANITARY SEWER SERVICE WITH THE ENGINEER.



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Andrew L. Budde
ANDREW L. BUDDÉ
 LIC. NO. 46585 DATE 9/19/2022

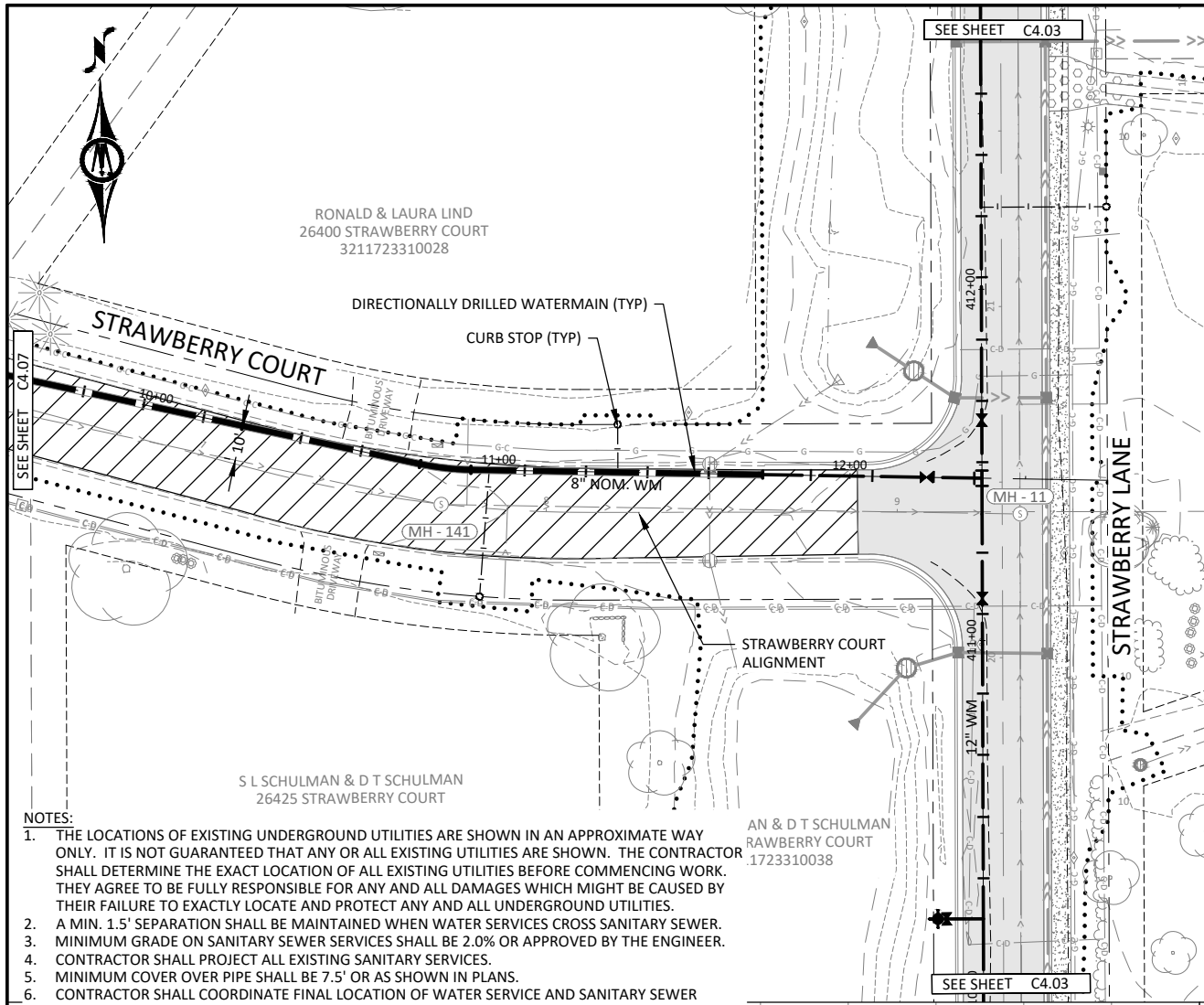


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 CHASKA, MINNESOTA 55318
 Phone: (952) 448-8838
 Email: Chaska@bolton-menk.com
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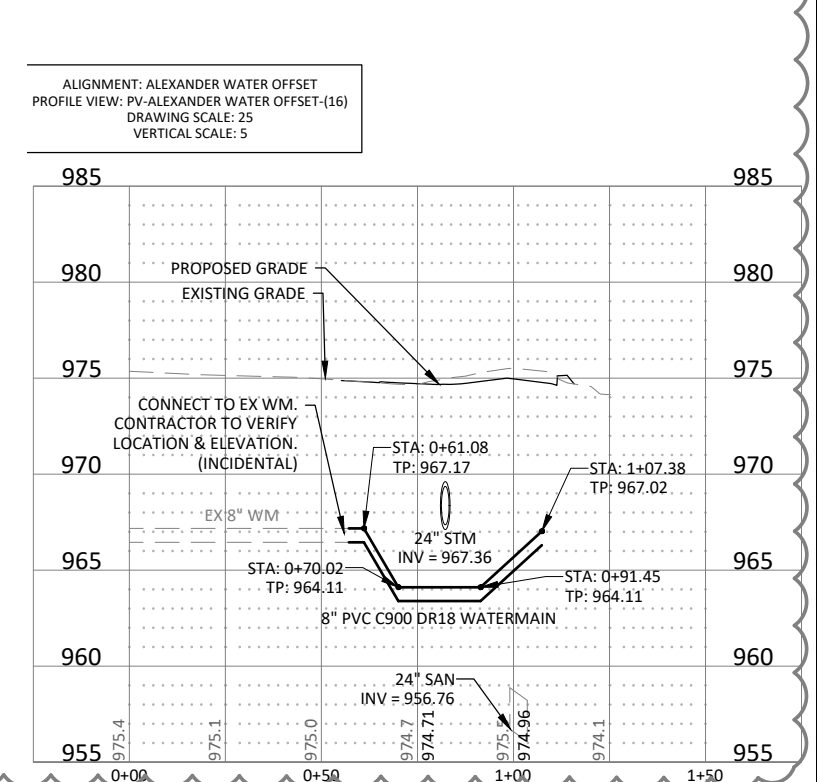
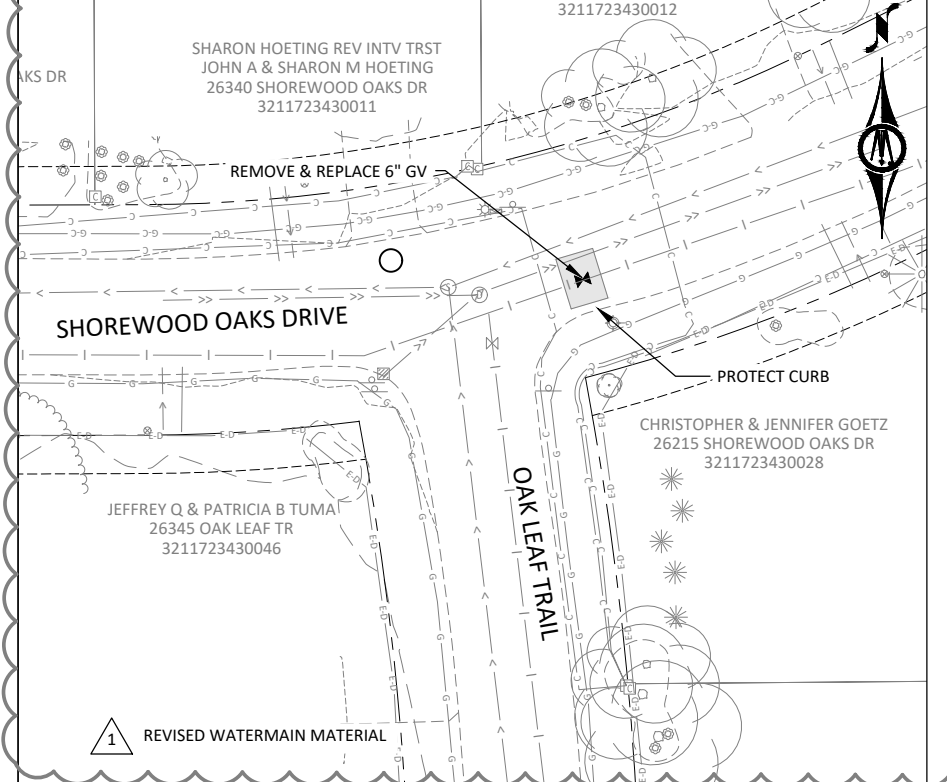
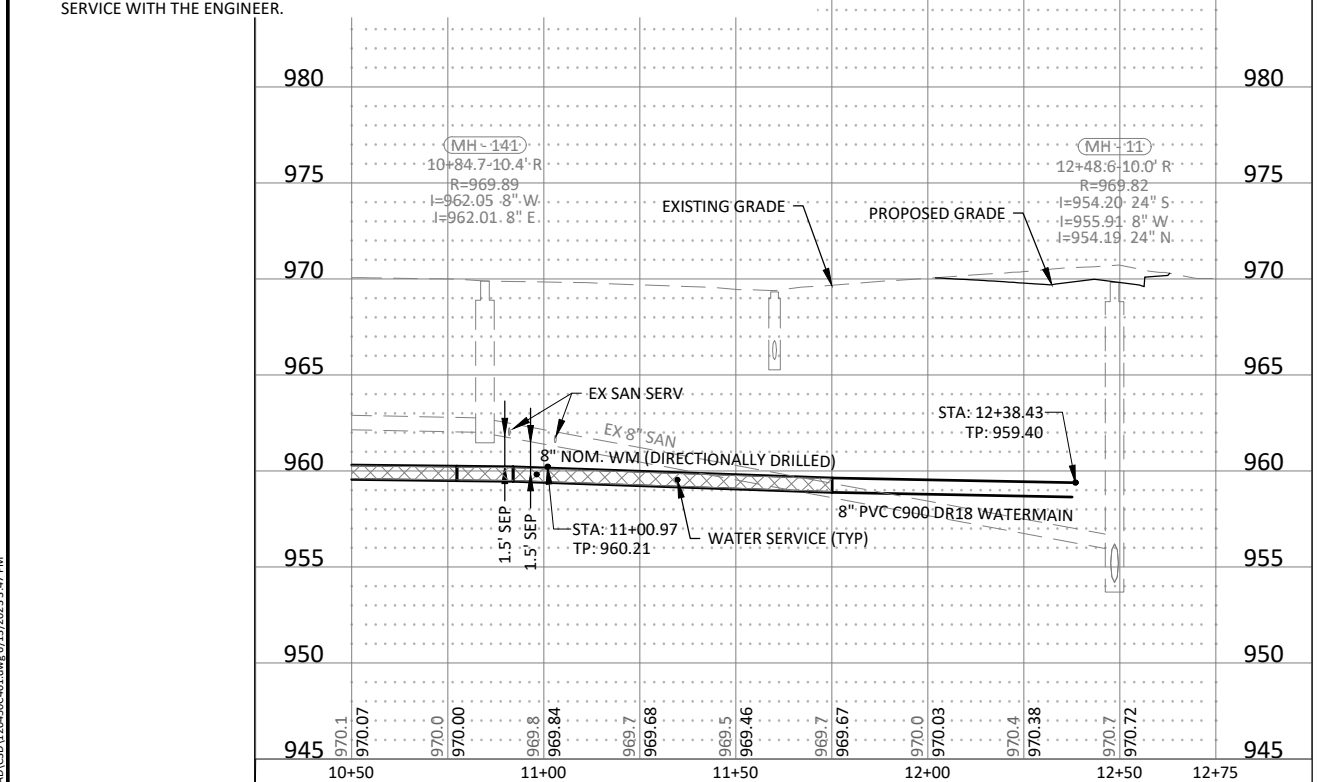
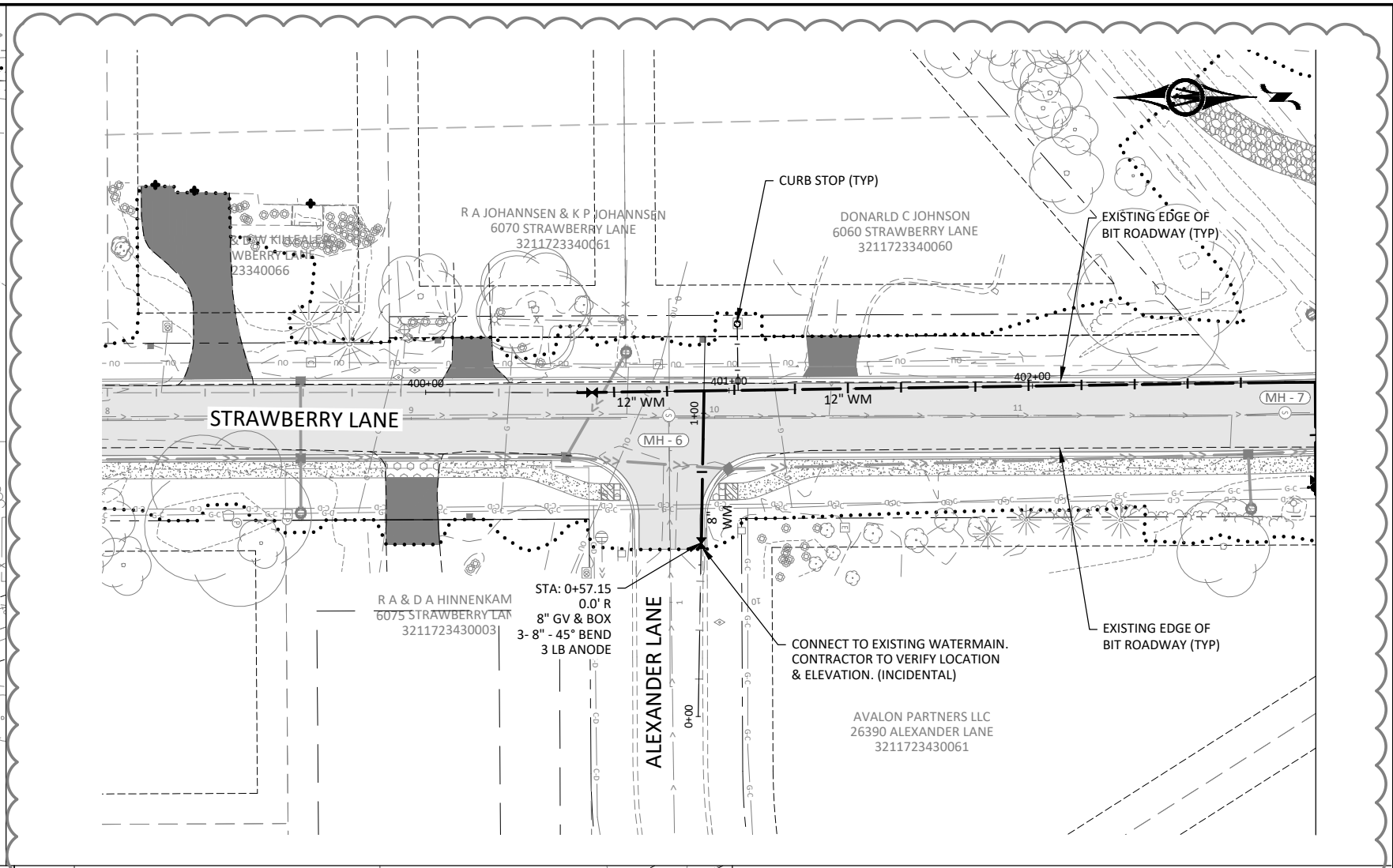
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CITY OF SHOREWOOD
STRAWBERRY LANE RECONSTRUCTION
WATERMAIN PLAN & PROFILE - STRAWBERRY COURT

SHEET
C4.07



- NOTES:
1. THE LOCATIONS 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. THEY AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY THEIR FAILURE TO EXACTLY LOCATE AND PROTECT ANY AND ALL UNDERGROUND UTILITIES.
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 4. CONTRACTOR SHALL PROJECT ALL EXISTING SANITARY SERVICES.
 5. MINIMUM COVER OVER PIPE SHALL BE 7.5' OR AS SHOWN IN PLANS.
 6. CONTRACTOR SHALL COORDINATE FINAL LOCATION OF WATER SERVICE AND SANITARY SEWER SERVICE WITH THE ENGINEER.



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Andrew L. Budde
ANDREW L. BUDDÉ
LIC. NO. 46585 DATE 9/19/2022



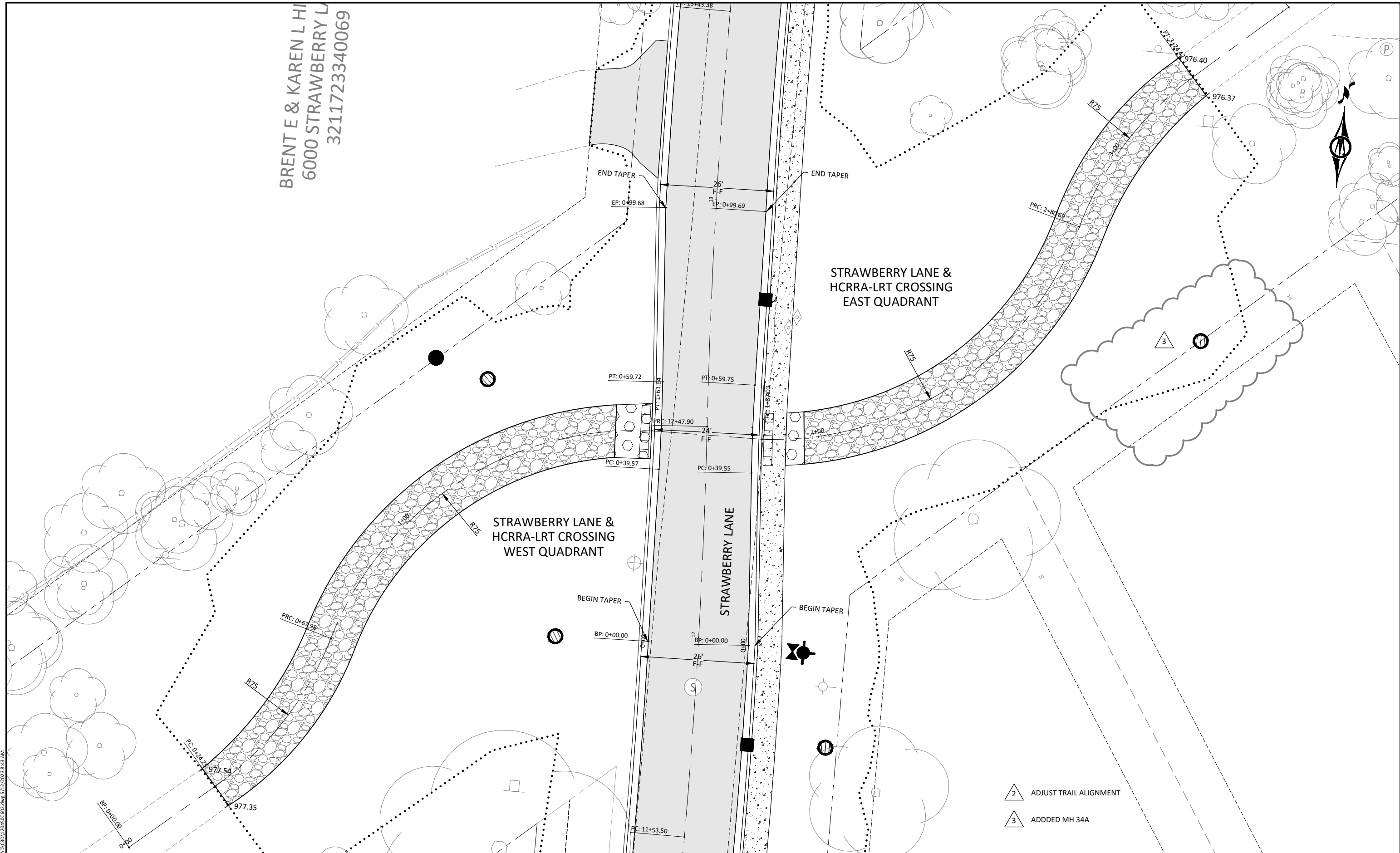
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CHASKA, MINNESOTA 55318
Phone: (952) 448-8838
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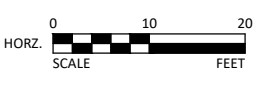
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STRAWBERRY LANE RECONSTRUCTION
WATERMAIN PLAN & PROFILE - STRAWBERRY COURT

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C4.08

BRENT E & KAREN L HI
 6000 STRAWBERRY LANE
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Andrew L. Budde
 ANDREW L. BUDDÉ
 LIC. NO. 46585 DATE 9/19/2022



2638 SHADOW LANE, SUITE 200
 CHASKA, MINNESOTA 55318
 Phone: (952) 448-8838
 Email: Chaska@bolton-menk.com
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SCD/CAL	3	RRJ	5/12/2023
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CLIENT PROJ. NO.			
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- △ 2 ADJUST TRAIL ALIGNMENT
- △ 3 ADDED MH 34A

CITY OF SHOREWOOD
 STRAWBERRY LANE RECONSTRUCTION
 HCRRA TRAIL CROSSING

SHEET
C6.12