

**INVER GROVE HEIGHTS
ENVIRONMENTAL ADVISORY COMMISSION MEETING AGENDA
Thursday, July 23, 2020**

NOTICE TO RESIDENTS: The Environmental Commission is taking proactive steps to prevent the spread of COVID-19 by meeting remote. People wishing to testify at the public hearing should call into the meeting using the following information: Phone number: 651-450-2471. Individuals may submit written public comments in advance of the meeting by emailing comments to Ally Sutherland (asutherland@invergroveheights.org). Comments received prior to 4:00 p.m. on Wednesday, July 22, 2020, will be provided to the Commission before the July 23, 2020 meeting.

1. CALL TO ORDER

2. ROLL CALL

3. PRESENTATIONS – Items that do not require action.

4. ANNOUNCEMENTS

A. Next meeting – Thursday, August 27th, 2020 – Virtual Regular Meeting 7:00pm

5. CONSENT AGENDA – All items on the Consent Agenda are considered routine and have been made available to the Environmental Commission at least two days prior to the meeting; the items will be enacted in one motion. There will be no separate discussion of these items unless a Commission member or citizen so requests, in which event the item will be removed from this Agenda and considered in normal sequence.

A. Minutes of Thursday, January 23rd, 2020 Environmental Commission Meeting

6. PUBLIC COMMENT – Public comment provides an opportunity for the public to address the Commission on items that are not on the Agenda. Comments will be limited to three (3) minutes per person

7. REGULAR AGENDA – Items requiring an action.

A. Consider a Wetland Replacement Plan for 9697 Inver Grove Trail, Alliant Ventures III, LLC

B. Environmental Commissions Appointments

8. ADMINISTRATIVE PRESENTATIONS – Items that need to be discussed without any actions.

A. Partners in Energy Update

B. GreenStep Cities Step 4 Update

9. COMMISSION COMMENTS – An opportunity for Commissions to raise additional questions or comments.

10. ADJOURN

**INVER GROVE HEIGHTS
ENVIRONMENTAL ADVISORY COMMISSION MEETING MINUTES
Thursday, January 23, 2020
8150 Barbara Avenue
7:00 P.M.**

1. CALL TO ORDER

The Environmental Advisory Commission of Inver Grove Heights met in regular session on Thursday, January 23, 2020, in the City Council Chambers. Chair Trenzeluk called the meeting to order at 7:00 p.m.

2. ROLL CALL

Present: Chair Ted Trenzeluk, Commissioners; Sarah Brass, Katherine Teiken, Patricia Todd, Lauren DeGidio, Matt Mills, and Nichole Boehmke
Absent: Commissioners; Robert Heidenreich and Aditya Jayam (Excused)

3. PRESENTATIONS

A. Gas Migration Status at Pine Bend Landfill

Mr. Aaron Janice, Engineering Manager for Pine Bend Landfill, presented an update on Pine Bend Landfill's (2495 117th St) status of gas migration, as required by the April 9, 2018 City of Inver Grove Heights Resolution No. 18-69, Condition 14.

Mr. Janice reviewed a list of Pine Bend Landfill staff and presented an aerial of the landfill's footprint. A list of active permits with the State, County and City were reviewed. It was noted that the northern section of the landfill was developed in 1971 and is unlined, which is believed to be the cause of most groundwater issues on the site. Phase 3 – Phase 6 (1986-2019) of lined landfill development was reviewed. The following landfill statistics were noted; total landfill area is 358.7 acres, 2,000 tons MSW is collected per day, 3,000 cubic feet of landfill gas is generated per minute, and 9,000,000 gallons of leachate is generated per year. Mr. Janice noted to decrease the amount of gas flaring currently on site, Pine Bend is waiting for the construction of a high-BTU gas facility to be constructed by the third party who owned the previous gas-to-energy facility on the property. Mr. Janice noted the landfill gas can be burned for about 20 years after the landfill closes. The landfill gas is made of 50% methane and end of life for the landfill is reached between late 2020's – 2030.

Mr. Janice presented a cross section of the landfill. The groundwater history of the site and related projects were reviewed including; completion of a groundwater contamination study (1985), expansion of city water supply to nearby household on well water (1994), final cover development on unlined areas (1993-1996), and a dual-extraction project to remove leachate in unlined cells (2002). Mr. Janice reviewed additional historical context including; Pine Bend's participation in enhanced groundwater monitoring as required by their MPCA Permit for increased analysis, an USEPA Issued "No Further Action" ruling (1995), removal from National Priorities List (1998), and USEPA Fifth "Five-Year" Review completed in 2020. The USEPA and statistical analyses have concluded current groundwater remedies continue to be effective, they are maintaining compliance with their permits, and trends in total VOC concentration is decreasing with a greater decrease in proximity to the landfill.

Mr. Janice reviewed the Minnesota Rule 7035.2815 Subpart 11. Per Condition 14 of City of Inver Grove Heights Resolution 18-69, Pine Bend Landfill is required to achieve gas management compliance as stated in Minnesota Rule 7035.2815, Subpart 11: The concentration of any

explosive gas must not exceed its lower explosion limit at the property boundary or 25 percent of its lower explosion limit in and around facility structures or any other on-site. To comply, Pine Bend Landfill must achieve a concentration of methane no greater than 5% at their property boundary.

Mr. Janice described a graphic of the gas collection system and gas monitoring probes at the landfill and described the engineering of the gas migration probes. Mr. Janice noted that there are 39 probes monitored quarterly and the probes with exceedances are monitored monthly. Historical exceedances exist on east, south, and west side of landfill, specifically in the unlined area. One challenge for managing gas migration is that the site lacks a natural buffer due to the nearby railroads, roadways and other perimeter constraints. Pine Bend has monitored off-site impacts of gas migration and there are no known significant land use issues. They have identified presence of methane near the Recycling Center and installed building gas monitors as a result. Since installation, no methane has been identified indoors. Since 2006, Pine Bend has been working with the MPCA and City on this issue to determine the best way to address it. Currently there are probes with intermittent exceedances.

The April 9, 2018 Resolution No. 18-69, Condition 14 requires compliance with Minnesota Rule 7035.2815 for six consecutive months prior to January 1, 2025. No waste may be acceptance by Pine Bend Landfill if compliance is not met by this deadline. When Pine Bend is not in compliance with this rule, annual updates on gas migration must be provided to the Environmental Commission in the first quarter of the year. Progress reports are included in the MPCA Annual Report which the City reviews and makes comments on.

Mr. Tom Shustarich, Engineering Consultant for Wenck on the behalf of Pine Bend, addressed the Commission. Mr. Shustarich noted gas migration is a challenge to manage due to a variety of unpredictable factors such as garbage moisture levels, changes in barometric pressures, and frozen ground conditions as gas movement fluctuates as it looks for paths of least resistance.

In 2006, Pine Bend completed a geoprobe investigation and fingerprint analysis for gas migration testing. This concluded no detections across railroad tracks to the north, but a detection near the Recycling Center across the railroad tracks. A building monitor was then installed at the Recycling Center, landfill scale house and landfill office building.

In 2012, Pine Bend attempted to passively vent gas by installing a vacuum on two probes but no decrease in methane concentration was found.

In 2013-2014, Pine Bend continued a geoprobe investigation in east and west side. One exceedance was found on the east side at the Recycling Center at Probe 4, the same location identified with an exceedance in 2006. Another exceedance was found on West 100 at Probe 6.

In 2015, Pine Bend continued the geoprobe investigation and MPCA work plan. Passive vents were installed at 5 locations adjacent to probes which have been used successfully in the MPCA's Closed Landfill Program. The exceedances trended down since installation but are not as low as required by state statute.

In 2016-2017 wind turbines were installed on the passive vents. Wind spins the turbine to create a vacuum to increase flow through probes. Again, the exceedances trended down since installation but are not as low as required by state statute.

In 2017- 2018, Pine Bend continued passive venting and MPCA work plan. Turbines were installed on passive vents and additional geoprobe investigation was completed for sample testing. Pine Bend has determined that probes with vents have led to a downward trend of exceedances but there are still intermittent exceedances.

Mr. Shustarich discussed the reasons to collect or vent the methane gas and to reduce gas migration. The active gas collection system's purpose is to route the methane gas to a location that was used by another facility to generate electricity. That facility is not currently in operation but is proposed to be developed into a new high-BTU gas facility, as soon as early 2021, to convert the methane to natural gas. It is thought that gas migrates out of the gas collection system in the unlined area of the landfill. Collecting the gas instead of allowing it to migrate decreases the chance of it building up in a structure to levels that could potentially cause an explosion.

In 2020, Pine Bend will test attaching a vacuum on the vents, connected to a blower with a temporary flare. Because the gas within the probes is low quality it cannot be converted to natural gas in the future system as initially planned. If the flare pilot works, two flares are anticipated, one on the east and one on the west side. Pine Bend anticipates starting the trial by Spring/Summer 2020

Pine Bend has found gas migration acts differently at different wells, due to different garbage materials located throughout the landfill and different substrates used over time to build the cells. They have not found any surface area exceedances indicating the gas migration is coming from the unlined area. There is no standard procedure for managing gas migration at landfills. If the 2020 pilot does not work, there are additional management options to test in the future such as building more gas wells or cut-off walls. Cut-off walls require digging near the landfill, power lines and other nearby infrastructure and therefore is a last resort management technique. In 2014, an MPCA work plan was developed and the City has been actively encouraging the landfill to meet these requirements through Pine Bend Landfill's Conditional Use Permit. Pine Bend has requested information from other landfills on how they have handled gas migration, but the solutions vary greatly by situation and effectiveness.

Mr. Janice noted additional items planned for 2020. 6C-2 cell construction will begin, which includes adding a new liner and then filling over it. The high-BTU gas facility construction is planned by a third party, Fortistar, for 2020. The facility is proposed to be located across from Fortistar's previous facility, across the railroad. Mrs. Sutherland noted the City has been in communication with Fortistar over the past year but has not yet received a formal application. It is anticipated to be received in early 2020.

4. ANNOUNCEMENTS

- A. Legal Training on Roles and Responsibilities Meeting was held on 01/07/2020. Recording available at www.townsquare.tv/webstreaming.**
- B. Public comment received at the City Council meeting on 01/13/2020 regarding a Plastic Bag and Styrofoam Ordinance.**
- C. Xcel Energy's Partners in Energy (PIE) Application submitted.**

5. CONSENT AGENDA

- A. Minutes of November 21, 2019 Environmental Commission Meeting**

Motion by Commissioner DiGidio, seconded by Commissioner Mills to approve the minutes from November 21, 2019 as submitted.

Ayes: 7

Nays: 0 Motion carried.

6. PUBLIC COMMENT

7. REGULAR AGENDA

8. ADMINISTRATIVE PRESENTATIONS

9. COMMISSION COMMENTS

10. ADJOURN

Motion by Commissioner Todd, seconded by Commissioner DiGidio to adjourn at 7:53pm.

Ayes: 7

Nays: 0 Motion carried.

DRAFT

**PLANNING REPORT
CITY OF INVER GROVE HEIGHTS**

CASE NO: 20-18S

APPLICANT: Alliant Ventures III, LLC / Bob Machacek

PROPERTY OWNER: Alliant Ventures III, LLC

REQUEST: Approval of a Wetland Replacement Plan

MEETING DATE: July 23, 2020

LOCATION: 9697 Inver Grove Trail

COMPREHENSIVE PLAN: N/A

ZONING: N/A

REVIEWING DIVISIONS: Environmental Commission, WCA TEP

PREPARED BY: Ally Sutherland, Environmental Specialist

BACKGROUND

Alliant Capital III, LLC is proposing a new single-family residential housing development in the City of Inver Grove Heights called Inver Grove Trails. This proposed development will be located north of Cahill Avenue and west of Inver Grove Trail in the southeastern part of the City (Figure 1).

The site itself covers approximately 15 acres of land that consists of a vacated residence with outbuildings, deciduous woodlands, areas of mixed native and non-native grassland, and two wetland areas (Figure 2). A transmission line and associated utility easement intersects the property in a north south orientation within the western half of the site. Of the approximate 15 total acres of the site, approximately 8-10 acres is being developed with the remainder of the site being left in its current land use (undeveloped open space). Throughout the site two wetlands were delineated in 2019. Project construction will consist of site grading for infrastructure including roads, utilities, storm water facilities, and building pads. Construction is expected to begin in 2020 and will continue until fully built.

Based on the design of the project, one wetland (Wetland A, Figure 2) will be impacted and therefore a wetland replacement plan must be approved by the City for the project to move forward. There would be a total of 0.1122 acres (4,887 square feet) of permanent wetland impacts with this construction. Wetland impacts would be mitigated at a 2:1 ratio through purchase of wetland credits.

One duty of the Environmental Commission is to review wetland replacement plans and make recommendation to the City Council.

Dakota County Soil and Water Conservation District (DCSWCD) reviews and processes wetland applications under the Wetland Conservation Act for the City of Inver Grove Heights. City Staff prepares a summary memo for the Environmental Commission and City Council based on the information provided by and action taken by the DCSWCD.

EVALUATION OF THE REQUEST

DCSWC has prepared a memo on their review of the replacement plan which is attached to this report.

DCSWC noticed the application on May 26, 2020 and the comment period ended on June 19, 2020. The DCSWCD has no objection to the proposed wetland impacts and recommends approval of the wetland replacement plan.

ALTERNATIVES

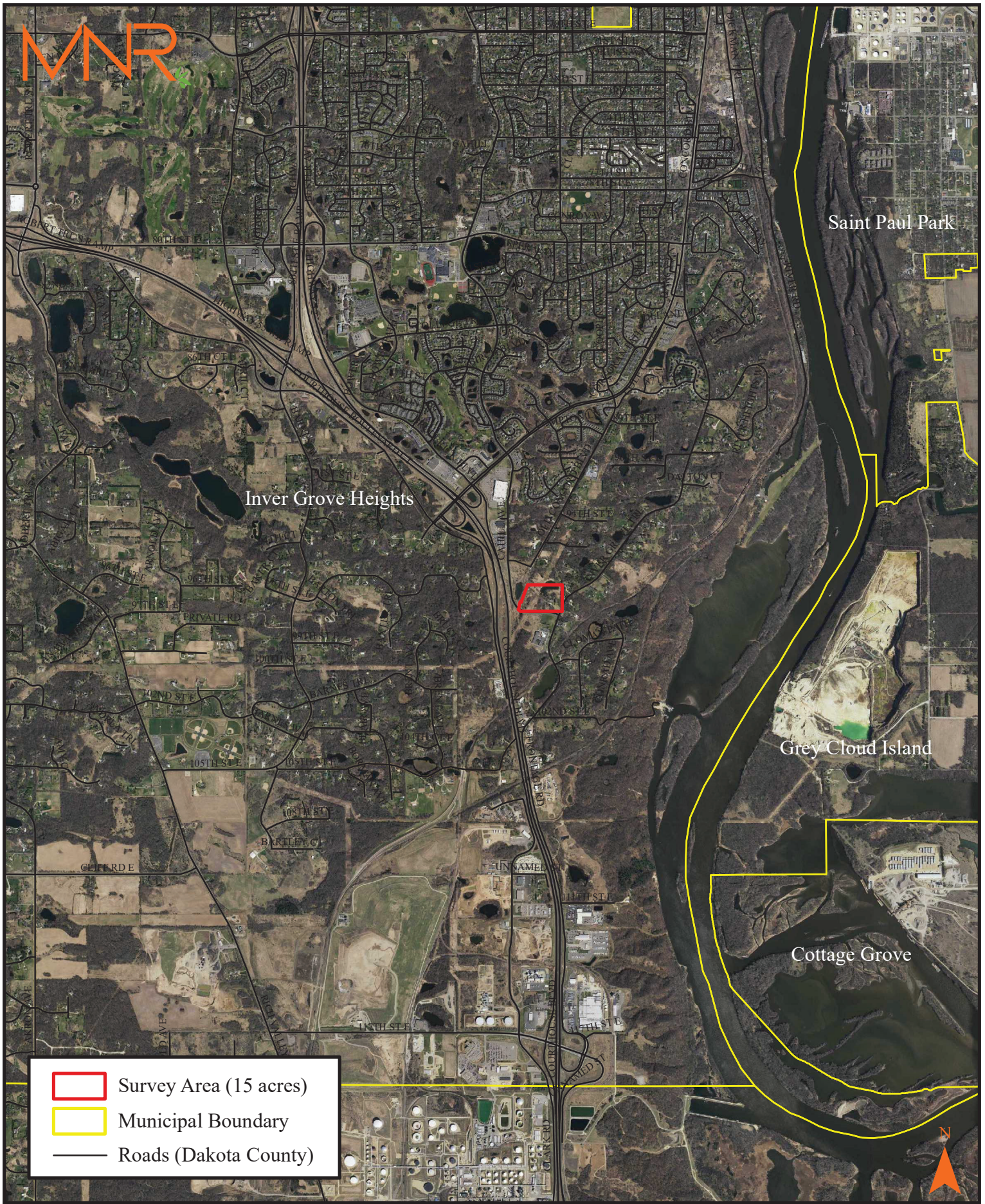
The Environmental Commission has the following actions available on the following requests:

- A. **Approval**: If the Environmental Commission finds the application to be acceptable, the following action should be taken:
 - Recommend Approval of the **Wetland Replacement Plan** as proposed.
- B. **Denial**: If the Environmental Commission does not favor the proposed application the above request should be recommended for denial. With a recommendation for denial, findings or the basis for the denial should be given.

RECOMMENDATION

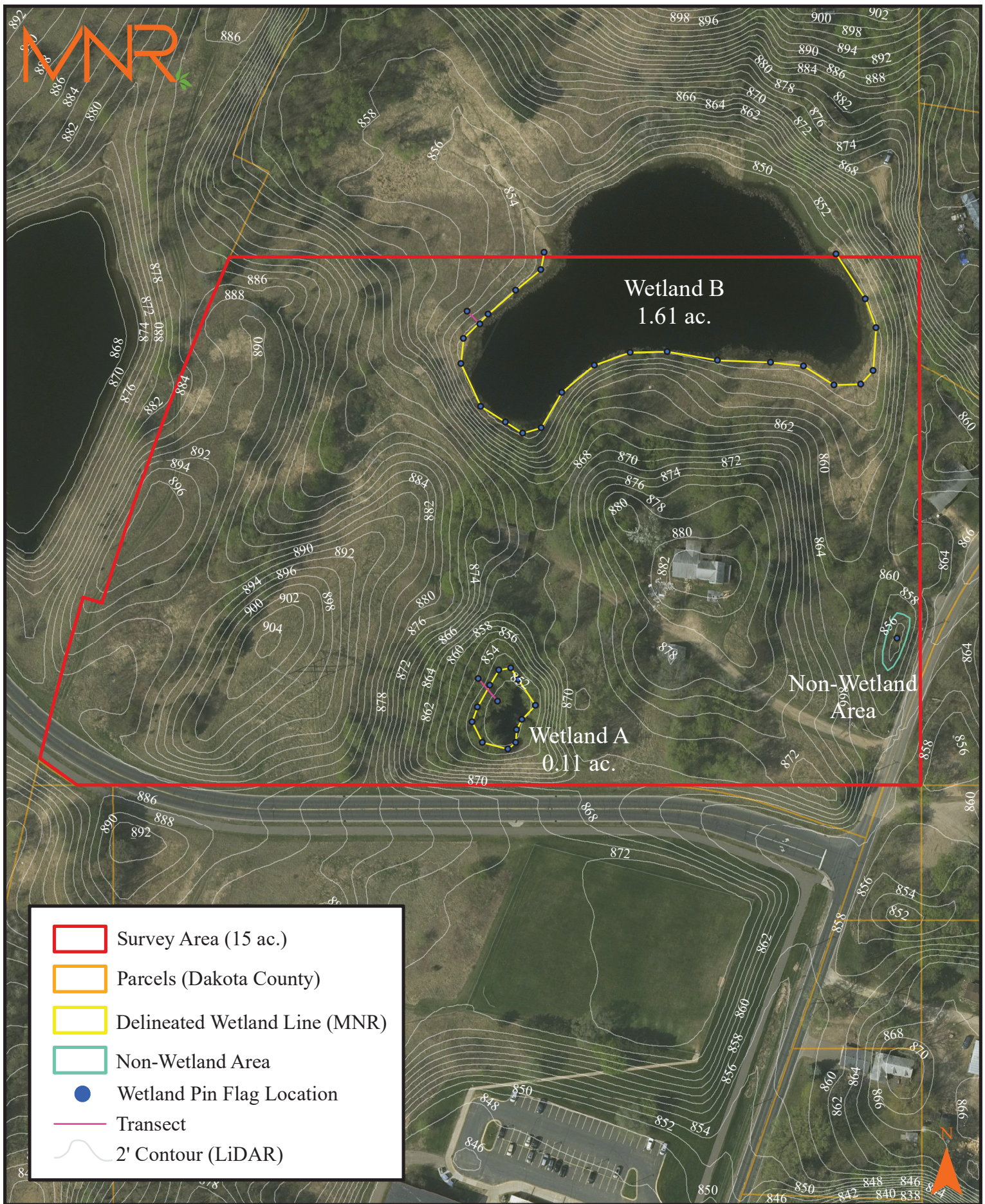
City Staff, as part of the WCA Technical Evaluation Panel, recommends approval of the wetland replacement.

Attachments: Location Maps; Figure 1 & 2
 DCSWCD Review Memo
 Final Plat of Pine Bend Estates
 Wetland Permit Application prepared by Midwest Natural Resources, Inc. (MNR)



Site Location
Inver Grove Trail
Inver Grove Heights, MN

Figure 1



**Delineated Wetlands
Inver Grove Trail
Inver Grove Heights, MN**

Figure 2



MEMORANDUM

To: Ally Sutherland, City of Inver Grove Heights

Cc: Allan Hunting, Tom Kaldunski, City of Inver Grove Heights, Brian Watson, Dakota County SWCD

From: David Holmen, Dakota County SWCD

Date: July 2, 2020

RE: **9697 Inver Grove Trail**
Application for a Wetland Replacement Plan submitted by Alliant Ventures III, LLC

Under delegated authorities from the City of Inver Grove Heights pursuant to the Minnesota Wetland Conservation Act (WCA), the 9697 Inver Grove Trail project has undergone the following administrative process to date:

October 11, 2019	Notice of Decision was provided approving the wetland boundary and wetland type of two wetlands labeled as Wetland A and Wetland B.
May 11, 2020	A wetland replacement plan application was submitted proposing to partially fill Wetland A, totaling 0.0464 acre. The impacted wetland would be replaced through the purchase of 0.0928 acre of wetland bank credits located in Anoka or Washington County.
May 18, 2020	A pre-application TEP was held on site by BWSR and SWCD staff at applicant request. BWSR staff recommended mitigation of Wetland A in its entirety due to inadequate space for a pre-treatment pond for planned direct discharge to Wetland A.
May 22, 2020	A revised wetland replacement plan application was submitted proposing to completely fill Wetland A, totaling 0.11 acre. The impacted wetland would be replaced through the purchase of 0.22 acre of wetland bank credits located in Anoka or Washington County.
May 26, 2020	Application was noticed as required under Minnesota Rule 8420.0255. Comments were requested by June 19, 2020.
June 19, 2020	Comment period closed. Comments via email were received by the Minnesota Board of Water and Soil Resources indicating that the revised application adequately addressed the need for the project.
June 24, 2020	Per Wetland Conservation Act Rule, the replacement plan application decision was extended 60 days to allow adequate time for the scheduling and consideration of this application by City Council.

Wetland Delineation

The wetland delineation was field reviewed by BWSR and SWCD staff and approved last fall. Two wetlands, labeled Wetland A and B, were delineated. This application focuses on Wetland A which is 0.1122 acre in size. The wetland is located in the Mississippi River Watershed – Metro and Bank Service Area 7.

Wetland Replacement

The application proposes to impact Wetland A in its entirety. Based on the information provided, the need for the project and the mitigation sequencing analysis has been met. The applicant is proposing to provide wetland replacement for the 0.1122 acre of impact by purchasing 0.2245 acre (2:1 ratio) from wetland bank account #1122 located in the Mississippi-Metro Watershed, Anoka County, Bank Service Area 7 or wetland bank account #1522 located in the Mississippi-Metro Watershed, Washington County, Bank Service Area 7. This is within the same Bank Service Area as the impacted wetland and also meets WCA requirements.

Summary/Recommendation

Based on our review and responses received, the SWCD supports approval of Wetland Replacement Plan application to include 0.1122 acre of impact and the purchase of 0.2245 acre of wetland bank credits from account #1122 or #1522. Upon approval by City Council, the Notice of Decision form and the wetland bank transaction form will need to be coordinated and processed by City and SWCD.

Attachments:

Application Received.

PINE BEND ESTATES

KNOW ALL PERSONS BY THESE PRESENTS: That Alliant Ventures III, LLC, a Minnesota limited liability company, owner, of the following described property:

The North Half of the Southwest Quarter of Section 22, Township 27, Range 22, lying East Roadway Thoroughfare No. 56 Except the North 659.16 feet.

Except: All that part of the North Half of the Southwest Quarter of Section 22, Township 27, Range 22 lying East of the Easterly right of way of Highway 56 except the North 659.16 feet thereof, Dakota County, Minnesota, lying southerly of a line 36 feet southerly of and parallel with the following described line A Point H to its termination.

Line A: Commencing at the South Quarter corner of Section 22, Township 27 N. Range 22 W; thence South 89 degrees 47 minutes 04 seconds West, along the South line of the Southwest Quarter of said Section 22, 209.09 feet to the point of beginning; thence northwesterly 133.05 feet, along a non–tangential curve, concave to the northeast, having a radius of 1432.39 feet, a central angle of 5 degrees 19 minutes 20 seconds, and the chord of said curve bears North 24 degrees 33 minutes 17 seconds West; thence North 21 degrees 53 minutes 37 seconds West, tangent to last described curve, 115.94 feet; thence northerly 172.68 feet, along a tangential curve, concave to the east, having a radius of 477.46 feet, and a central angle of 20 degrees 43 minutes 20 seconds, to Point A; thence continuing northerly 54.83 feet, along the extension of last described curve, having a radius of 477.46 and a central angle of 6 degrees 34 minutes, 45 seconds, to Point B; thence continuing northerly 113.14 feet, along the extension of last described curve, having a radius of 477.46, and a central angle of 13 degrees 34 minutes 38 seconds, to Point C; thence North 18 degrees 59 minutes 06 seconds East, tangent to last described curve, 330.00 feet to Point D; thence continuing North 18 degrees 59 minutes 06 seconds East, 325.08 feet to Point E; thence continuing North 18 degrees 59 minutes 06 seconds East 48.00 feet to Point F; thence North 71 degrees 00 minutes 41 seconds West , 33.00 feet to the westerly line of Inver Grove Trail; thence continuing North 71 degrees 00 minutes 41 seconds West, 85.63 feet, thence westerly 154.23 feet, along a tangential curve, concave to the south, having a radius of 460.00 feet, and a central angle of 19 degrees 12 minutes 39 seconds, to the intersection with a line 30 feet southerly of and parallel with the north line of the Southeast Quarter of the Southwest Quarter of said Section 22, said intersection being Point G, thence South 89 degrees 46 minutes 31 seconds West, along said parallel line, 467.89 feet to Point H; thence Northwesterly 670.27 feet, along a tangential curve, concave to the northeast, having a radius of 460.00 feet, and a central angle of 83 degrees 29 minutes 11 seconds, and said line there terminating.

Together with:

All that part of the Southeast Quarter of the Southwest Quarter (SE1/4 of the SW1/4) in Section 22, Township 27, Range 22, Dakota County, Minnesota, lying westerly of Inver Grove Trail and lying northerly of a line 30 feet northerly of and parallel with said Line A from Point F to Point G.

Line A: Commencing at the South Quarter Corner of Section 22, Township 27 North, Range 22 West; thence South 89 degrees 47 minutes 04 seconds West, along the South line of the Southwest Quarter of said Section 22, 209.09 feet to the point of beginning; thence northwesterly 133.05 feet, along a non–tangential curve, concave to the northeast, having a radius of 1432.39 feet, a central angle of 5 degrees 19 minutes 20 seconds, and the chord of said curve bears North 24 degrees 33 minutes 17 seconds West; thence North 21 degree 53 minutes 37 seconds West, tangent to last described curve, 115.94 feet; thence northerly 172.68 feet, along a tangential curve, concave to the east, having a radius of 477.46 feet, and a central angle of 20 degrees 43 minutes 20 seconds, to Point A; thence continuing northerly 54.83 feet, along the extension of the last described curve, having a radius of 477.46 feet and a central angle of 6 degrees 34 minutes 45 seconds, to Point B; thence continuing northerly 113.14 feet, along the extension of last described curve, having a radius of 477.46 feet and a central angle of 13 degrees 34 minutes 38 seconds, to Point C; thence North 18 degrees 59 minutes 06 seconds East, tangent to last described curve, 330.00 feet to Point D; thence continuing North 18 degrees 59 minutes 06 seconds East, 325.08 feet to Point E; thence continuing North 18 degrees 59 minutes 06 seconds East, 48.00 feet to Point F; thence North 71 degrees 00 minutes 41 seconds West, 33.00 feet to the westerly line of Inver Grove Trail; thence continuing North 71 degrees 00 minutes 41 seconds West, 85.63 feet; thence westerly 154.23 feet, along a tangential curve, concave to the south, having a radius of 460.00 feet, and a central angle of 19 degrees 12 minutes 39 seconds, to the intersection with a line 30 feet southerly of and parallel with the north line of the SE1/4 of the SW1/4 of said Section 22, said intersection being Point G; thence South 89 degrees 46 minutes 31 seconds West, along said parallel line, 467.89 feet to Point H; thence northwesterly 670.27 feet, along a tangential curve, concave to the northeast, having a radius of 460.00 feet, and a central angle of 83 degrees 29 minutes 11 seconds, and said line there terminating.

Has caused the same to be surveyed and platted as PINE BEND ESTATES and does hereby dedicate to the public for public use the public ways and the drainage and utility easements as created by this plat.

In witness whereof said Alliant Ventures III, LLC, a Minnesota limited liability company, has caused these presents to be signed by its proper officer this ____ day of _____, 20____.

Alliant Ventures III, LLC, a Minnesota limited liability company

_____ as _____

STATE OF MINNESOTA COUNTY OF _____

This instrument was acknowledged before me on _____, by _____ as _____ of Alliant Ventures III, LLC, a Minnesota limited liability company, on behalf of the company.

Signature

Printed Name
Notary Public, _____, County, Minnesota
My Commission Expires _____

SURVEYOR'S CERTIFICATE

I, Peter J. Hawkinson, do hereby certify that this plat was prepared by me or under my direct supervision; that I am a duly Licensed Land Surveyor in the State of Minnesota; that this plat is a correct representation of the boundary survey; that all mathematical data and labels are correctly designated on this plat; that all monuments depicted on this plat have been, or will be correctly set within one year; that all water boundaries and wet lands, as defined in Minnesota Statutes, Section 505.01, Subd. 3, as of the date of this certificate are shown and labeled on this plat; and all public ways are shown and labeled on this plat.

Dated this ____ day of _____, 20____.

Peter J. Hawkinson, Licensed Land Surveyor
Minnesota License No. 42299

STATE OF MINNESOTA COUNTY OF _____

This instrument was acknowledged before me on _____, by Peter J. Hawkinson.

Signature

Printed Name
Notary Public, _____, County, Minnesota
My Commission Expires _____

CITY COUNCIL, Inver Grove Heights, County of Dakota, State of Minnesota

This plat was approved by the City Council of the City of Inver Grove Heights, Minnesota, this ____ day of _____, 20____, and hereby certifies compliance with all requirements asset forth in Minnesota Statutes, Section 505.03, Subd. 2.

By: _____ By: _____
Mayor Clerk

CITY PLANNING COMMISSION, Inver Grove Heights, County of Dakota, State of Minnesota

Approved by the Planning Commission of the City of Inver Grove Heights, Minnesota this ____ day of _____, 20____

By: _____ By: _____
Chair Secretary

COUNTY SURVEYOR, Dakota County, State of Minnesota

I hereby certify that in accordance with Minnesota Statutes, Section 505.021, Subd. 11, this plat has been reviewed and approved this ____ day of _____, 20____.

By: _____
Todd B. Tollefson
Dakota County Surveyor

COUNTY BOARD, County of Dakota, State of Minnesota

We do hereby certify that on the____ day of_____, 20____, the Board of Commissioners of Dakota County, Minnesota, approved this plat of PINE BEND ESTATES, and said plat is in compliance with the provisions of Minnesota Statutes, Section 505.03, Subd. 2 and pursuant to the Dakota County Contiguous Plat Ordinance.

By: _____ Attest: _____
Chair, County Board County Treasurer–Auditor

DEPARTMENT OF PROPERTY TAXATION AND RECORDS, County of Dakota, State of Minnesota

Pursuant to Minnesota Statutes, Section 505.021, Subd. 9., taxes payable in the year 20____ on the land hereinbefore described have been paid. Also, pursuant to Minnesota Statutes, Section 272.12, there are no delinquent taxes and transfer entered this ____ day of _____, 20____.

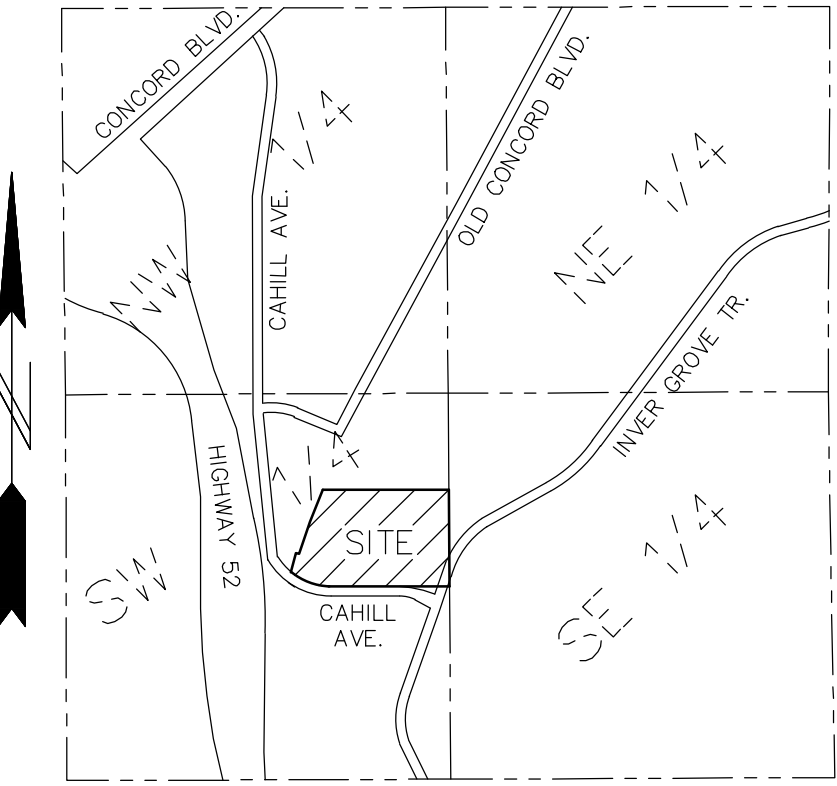
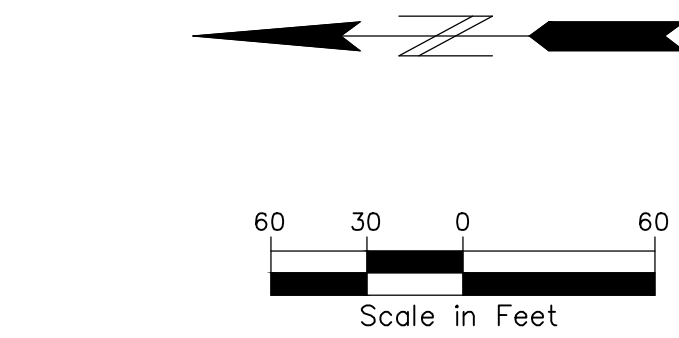
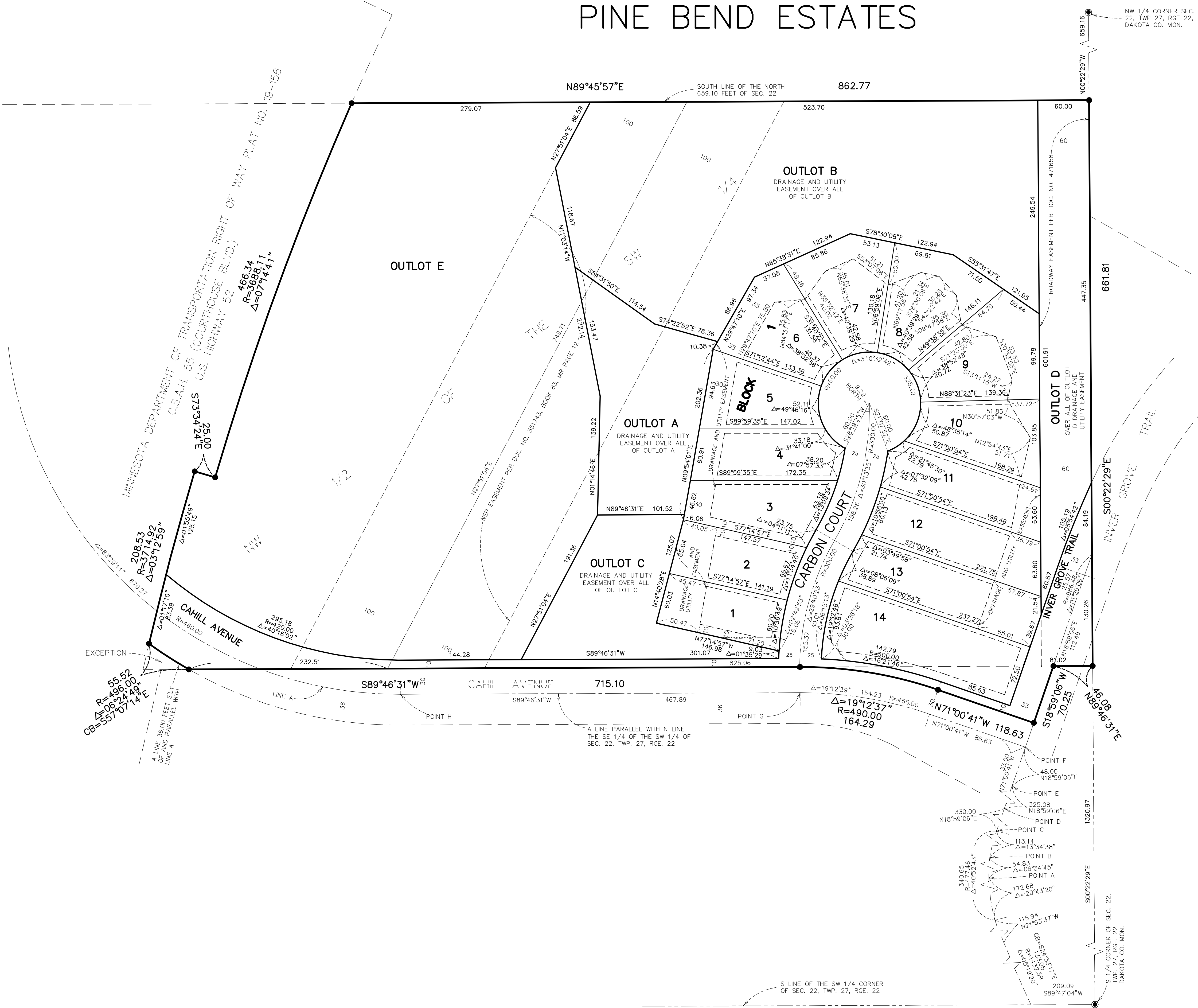
By: _____
Amy A. Koethe
Director, Department of Property Taxation and Records

COUNTY RECORDER, County of Dakota, State of Minnesota

I hereby certify that this plat of PINE BEND ESTATES was filed in the office of the County Recorder for public record on this day of _____, 20____, at ____ o'clock ____ .M. and was duly filed in Book _____ of Plats, Page as Document No. _____.

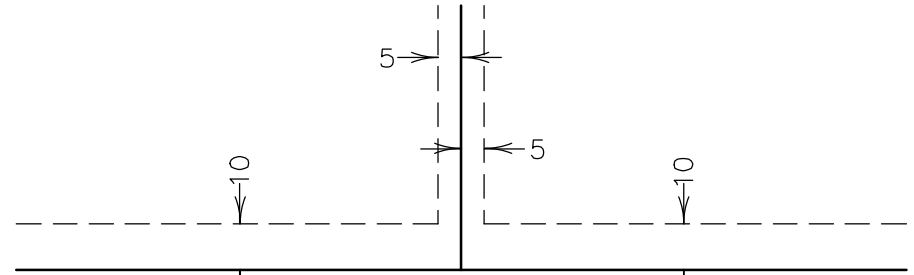
By: _____
Amy A. Koethe
Dakota County Recorder

PINE BEND ESTATES



SECTION 22, TWP. 27, RGE. 22
LOCATION MAP
NOT TO SCALE

DRAINAGE AND UTILITY
EASEMENTS ARE SHOWN THUS:



Being 5 feet in width, and adjoining side lot lines unless otherwise indicated, and 10 feet in width and adjoining rear lot lines and right of way unless otherwise indicated on the plat.

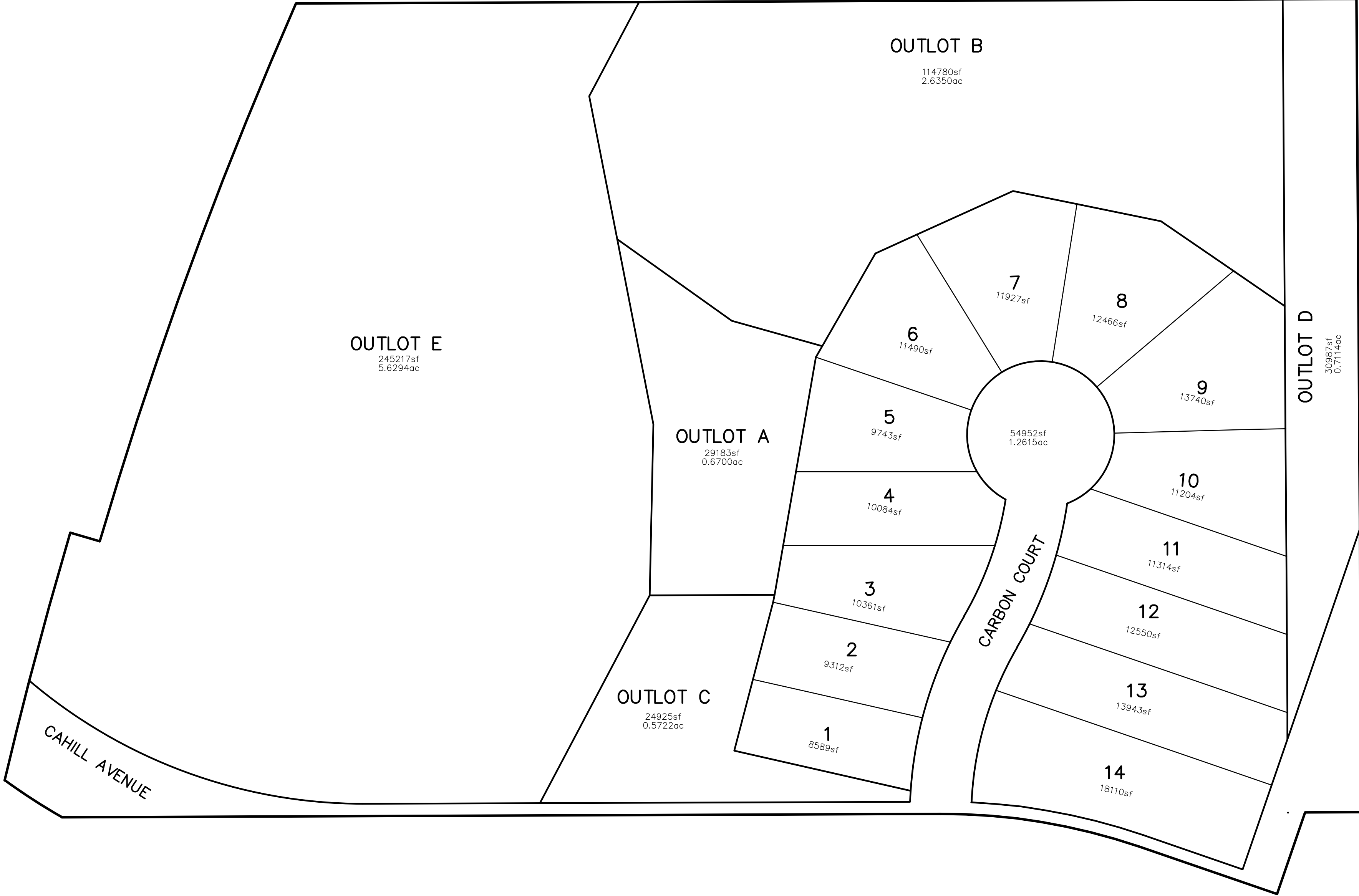
THE ORIENTATION OF THIS BEARING SYSTEM IS BASED ON THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 22, TOWNSHIP 27, RANGE 22, WHICH IS ASSUMED TO HAVE A BEARING OF SOUTH 89°42'04" WEST.

- DENOTES FOUND DAKOTA COUNTY MONUMENT
- DENOTES 1/2 INCH BY 14 INCH IRON PIPE MONUMENT SET AND MARKED BY LICENSE NUMBER 42299, OR WILL BE SET IN ACCORDANCE WITH MS SECTION 505.021, SUBD. 10.
- DENOTES FOUND 1/2 INCH IRON MONUMENT MARKED BY LICENSE NUMBER 42299 UNLESS OTHERWISE NOTED.

PINE BEND ESTATES

AREA SUMMARY

BLOCK 1 =	164,833	SF.	3.7840	AC.
OUTLOT A=	29,183	SF.	0.6700	AC.
OUTLOT B=	114,780	SF.	2.6350	AC.
OUTLOT C=	24,925	SF.	0.5722	AC.
OUTLOT D=	30,987	SF.	0.7114	AC.
OUTLOT E=	245,217	SF.	5.6294	AC.
TOTAL LOT AREA =	164,833	SF.	3.7840	AC.
TOTAL OUTLOT AREA =	445,092	SF.	10.2180	AC.
R/W AREA =	50,973	SF.	1.2615	AC.
TOTAL AREA =	660,898	SF.	15.2635	AC.



WETLAND PERMIT APPLICATION

INVER GROVE TRAIL

INVER GROVE HEIGHTS, MINNESOTA

Prepared for:
Alliant Ventures III, LLC
4655 Nichols Rd., Suite 106
Eagan, Minnesota 55122



MAY 7 (UPDATED MAY 22), 2020

Prepared by:
Midwest Natural Resources, Inc.
1032 West 7th Street, Suite 150
St. Paul, Minnesota 55102



Project Name: Inver Grove Trail

PART ONE: Applicant Information

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

Applicant/Landowner Name: Alliant Ventures III, LLC., Contact: Bob Machacek

Mailing Address: 4655 Nichols Rd., Suite 106, Eagan, MN 55122

Phone: 651-925-7365

E-mail Address: r.machacek@yahoo.com

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

Mailing Address:

Phone:

E-mail Address:

Agent Name: Ken Arndt, Midwest Natural Resources, Inc.

Mailing Address: 1032 W. 7th St. Suite 150, St. Paul, MN 55102

Phone: 651-788-0641

E-mail Address: ken.arndt@mnrinc.us

PART TWO: Site Location Information

County: Dakota

City/Township: Inver Grove Heights

Parcel ID and/or Address: 9697 Inver Grove Trail

Legal Description (Section, Township, Range): 22, 27N, 22W

Lat/Long (decimal degrees):

Attach a map showing the location of the site in relation to local streets, roads, highways. (See Figure 1)

Approximate size of site (acres) or if a linear project, length (feet): The project area is appx. 15 acres in size.

PART THREE: General Project/Site Information

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

MN Wetland Conservation Act Notice of Decision by the City of Inver Grove Heights dated Oct. 11th, 2019

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

This application is being submitted for review and approval of a single wetland impact involved with the construction of a proposed residential development. See **Attachment C** for project description, purpose and need.

PART FOUR: Aquatic Resource Impact¹ Summary

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

Aquatic Resource ID (as noted on overhead view)	Aquatic Resource Type (wetland, lake, tributary etc.)	Type of Impact (fill, excavate, drain, or remove vegetation)	Duration of Impact Permanent (P) or Temporary (T) ¹	Size of Impact ²	Overall Size of Aquatic Resource ³	Existing Plant Community Type(s) in Impact Area ⁴	County, Major Watershed #, and Bank Service Area # of Impact Area ⁵
Wetland A	wetland	fill	P	4,889 sq. ft. (0.1122 ac.)	N/A	Type 1/2 Seasonally Flooded Basin/Fresh Wet Meadow	Dakota, 20, 7

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

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

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

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

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

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

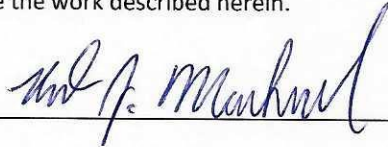
¹ The term "impact" as used in this joint application form is a generic term used for disclosure purposes to identify activities that may require approval from one or more regulatory agencies. For purposes of this form it is not meant to indicate whether or not those activities may require mitigation/replacement.

PART FIVE: Applicant Signature

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

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

Signature: _____



Date: _____

5-6-20

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

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

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

☐ **Wetland Type Confirmation**

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

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

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

The Applicant is requesting an AJD for Wetland A only.

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

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

Attachment C

Avoidance and Minimization and Additional Information

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

Alliant Capital III, LLC is proposing a new single-family residential housing development in the City of Inver Grove Heights called Inver Grove Trails. This proposed development will be located north of Cahill Avenue and west of Inver Grove Trail in the southeastern part of the City (**Figure 1**). The Inver Grove Trail development will include 14 single-family lots with associated road/cul-de-sac, storm water facilities and several outlots.

The site itself covers approximately 15 acres of land that consists of a vacated residence with outbuildings, deciduous woodlands, areas of mixed native and non-native grassland, and two wetland areas (**Figure 2**). A transmission line and associated utility easement intersects the property in a north south orientation within the western half of the site. Of the approximate 15 total acres of the site, approximately 8-10 acres is being developed with the remainder of the site being left in its current land use (undeveloped open space). Throughout the site two wetlands were delineated in 2019.

Access for the site is planned via one street connection (Street A) from Cahill Ave. The project's construction will consist of site grading for infrastructure including: roads, utilities, storm water facilities, and building pads. Construction is expected to begin in 2020 and will continue until fully built. Preliminary plans for the proposed development are included in **Appendix A**.

The need for this project is based on the expanding residential housing market in the City of Inver Grove Heights as well as availability to public infrastructure. Expected housing market growth in this part of Inver Grove Heights will be met with new residential development including the proposed Inver Grove Trail residential development. The City of Inver Grove Heights has planned for expanded growth in this part of the City.

Existing Wetland Resources On-Site

Wetlands within the Inver Grove Trail development were delineated and documented in a report submitted by Midwest Natural Resources, Inc. on August 16th, 2019 (**Appendix C**). The wetlands were reviewed by the LGU (City of Inver Grove Heights and their wetland consultant Dakota County SWCD) and approved by the Technical Evaluation Panel in the attached Notice of Decision dated October 11th, 2019 (**Appendix D**). Two wetlands were delineated within the Inver Grove Trail development site and are designated as Wetland A and Wetland B. The following is a description of Wetland A, the wetland where an impact is being proposed.

Wetland A

Wetland A is a Type 1/2 (PEMA/B; Seasonally Flooded Basin/Fresh Wet Meadow) wetland located in the southcentral part of the property and is approximately 0.11 acre in size. Plant species documented at the wetland sample point for Wetland A includes river bulrush (*Schoenoplectus fluviatilis*) and reed canary grass (*Phalaris arundinacea*). Plant species documented at the upland sample point for Wetland A includes box elder (*Acer negundo*), tatarian honeysuckle (*Lonicera tatarica*), common buckthorn (*Rhamnus cathartica*), motherwort (*Leonurus cardiaca*), garlic mustard (*Allaria petiolata*), and white snakeroot (*Ageratina altissima*).

One wetland impact is being proposed directly to Wetland A that includes permanently filling the whole wetland (4,889 sq. ft.). This impact will be the result of grading associated with house pad areas of the development and the City requirement of improving Cahill Ave including the addition of a sidewalk to be constructed along Cahill Avenue.

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

In general, total avoidance alternatives would result in the failure to meet the demand for this type of residential development in this part of the City of Inver Grove Heights by reducing or eliminating the usability and accessibility of the site. The reduction or elimination of potential residential development of the site is in conflict with the current zoning of the property. As less land is available within the City to build this size and type of development with the natural amenities this site offers, the ability to avoid Wetland A became difficult when faced with having reasonable access to existing City infrastructure, working with a range of elevation change across the site, and implementing City requirements for the development.

Wetland A

Total Wetland Avoidance Build Alternative

Due to the location of Wetland A within the Inver Grove Trail site, the predetermined entrance to the development from Cahill Avenue, having to not be able to place the entrance within the existing turn lane at the intersection of Inver Grove Trail and Cahill Avenue, and site topography, a total wetland avoidance alternative was not possible. In order for the proposed entrance to the development to connect to Cahill Avenue and to have the City-required sidewalk be constructed along the northern side of Cahill Avenue, site grading and a lack of remaining wetland hydrology will result in all of Wetland A to be permanently impacted.

To avoid direct impacts to Wetland A an alternative site design was considered that had the entrance to the development coming off of Inver Grove Trail instead of Cahill Ave. which would have not impacted Wetland A at all. This avoidance alternative was not able to be utilized since the development could not connect the Street A to Inver Grove Trail due to there being a natural Emergency Overflow of a landlocked basin using that easterly property line as a route. Creating a roadway through the EOF would have raised the natural overflow of the landlocked basin and this was not allowed by the City.

The City is also requiring that a pedestrian sidewalk be constructed along the northern side of Cahill Avenue which will result in site grading along Cahill Avenue taking place further north than the existing side slope. This section of roadway, adjacent to the impacted wetland, is very steep with a small shoulder. In order to construct the sidewalk and create the required safety slopes, a small part of the southern side of Wetland A will need to be impacted. By not constructing the sidewalk, which would result in avoiding the wetland impact to its southern perimeter, the developer would not be following the City requirements set forth for the proposed development.

No Action Alternative

The no action alternative would result in a failure to meet the purpose and need of the proposed project. The applicant considers this alternative infeasible since the proposed land use in this part of Inver Grove Heights is being planned for residential growth and would not be reasonable for the investment-backed expectations of the applicant or meeting the growing demand for single-family residential housing in Inver Grove Heights. Therefore, the no action alternative is not a viable consideration.

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

The Applicant has considered minimizing wetland impacts to the degree possible, given the constraints posed by the predetermined location of the connection to Cahill Avenue with the site entrance (Street A) as well as existing and

proposed site grades. Current grading plans propose that the slopes coming down to Wetland A from the building pad area be graded to a maximum 3:1 slope in order to minimize impact to Wetland A instead of grading the slope with a less steep grade. If proposed grades were less than a 3:1 slope, more, if not all of Wetland A would be impacted.

Another effort to minimize impacts to Wetland A considered a project plan was that included shifting the whole development to the north away from Wetland A. Although this would minimize or possibly eliminate any impact to Wetland A, it would result in site grading then impacting part of Wetland B. Wetland B is a DNR public water and a much higher quality wetland than Wetland A. This minimization effort to Wetland A would be at the expense of impacting a higher quality wetland.

The Applicant and their project engineer worked with City staff to develop many concepts of where the roadway could be placed. Ultimately City staff and the developer came to the agreement to locate the proposed site entrance location in order to best fit the usability of the site.

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

Additional Information

BMP's.

Wetland areas not being impacted on-site will be protected by erosion control fence during the construction phase of the development. All disturbed areas will be seeded and mulched. Slopes over 3:1 will be seeded and blanketed.

Other Permits or Approvals Required:

MPCA General Stormwater Permit
MPCA Sanitary Sewer Extension Permit
City of Inver Grove Heights - Preliminary and Final Plat Approval
City of Inver Grove Heights Grading Permit
Dakota County Public Works- Entrance Permit

Proposed Wetland Mitigation

Wetland mitigation being proposed for permanently impacting part of Wetland A will involve the purchase of 9,778 sq. ft. of standard wetland credit from either wetland bank #1122 or #1522 which are both located within the same Major Watershed (Mississippi Metro – 20) and Bank Service Area (7) as the subject property. This action should satisfy any mitigation requirements for the wetland being impacted within the proposed Inver Grove Trail development.

Attachment D

Replacement/Compensatory Mitigation

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

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

Wetland Bank Account #	County	Major Watershed #	Bank Service Area #	Credit Type (if applicable)	Number of Credits
1122	Anoka	20-Mississippi Metro	7	SWC	9,778 sq. ft. (0.2245 ac.)
or					
1522	Washington	20 Mississippi Metro	7	SWC	9,778 sq. ft. (0.2245 ac.)

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

Currently no wetland banking credits are available within the same minor watersheds (Mississippi River-20088) as the proposed Inver Grove Trail project area. Seventeen wetland banks are located in the same major watershed (Mississippi Metro, 20).

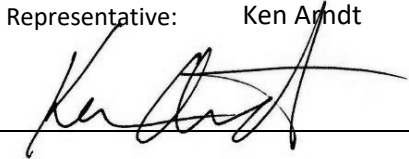
Banks #1122 and #1522, which are both located in the same major watershed as the site, will be able to provide the needed standard wetland credit for this project. Since the wetland proposed to be impacted is likely not under ACOE jurisdiction, the purchase of standard wetland credit (non-CORP approved credit) will provide sufficient replacement for the impact to Wetland A. The applicant is proposing to purchase the needed wetland banking credits from either wetland bank #1122 or #1522 in order to satisfy the mitigation requirements associated with this proposed residential development project.

Initial contact has been made with both wetland banks (#1122 and #1522) in April of 2020 to discuss credit availability for the purchase of needed standard wetland credit for the project. Based on the amount of wetland banking credit required for the mitigation associated with this project, either wetland bank #1122 or #1522 will be able to provide the total amount of standard wetland credit needed.

Upon approval of the wetland permit application by the LGU (City of Inver Grove Heights), a purchase agreement with either wetland bank #1122 or #1522 will be executed in order to secure the needed wetland banking credits for this project.

Applicant or Representative: Ken Arndt

Title: Wetland Specialist

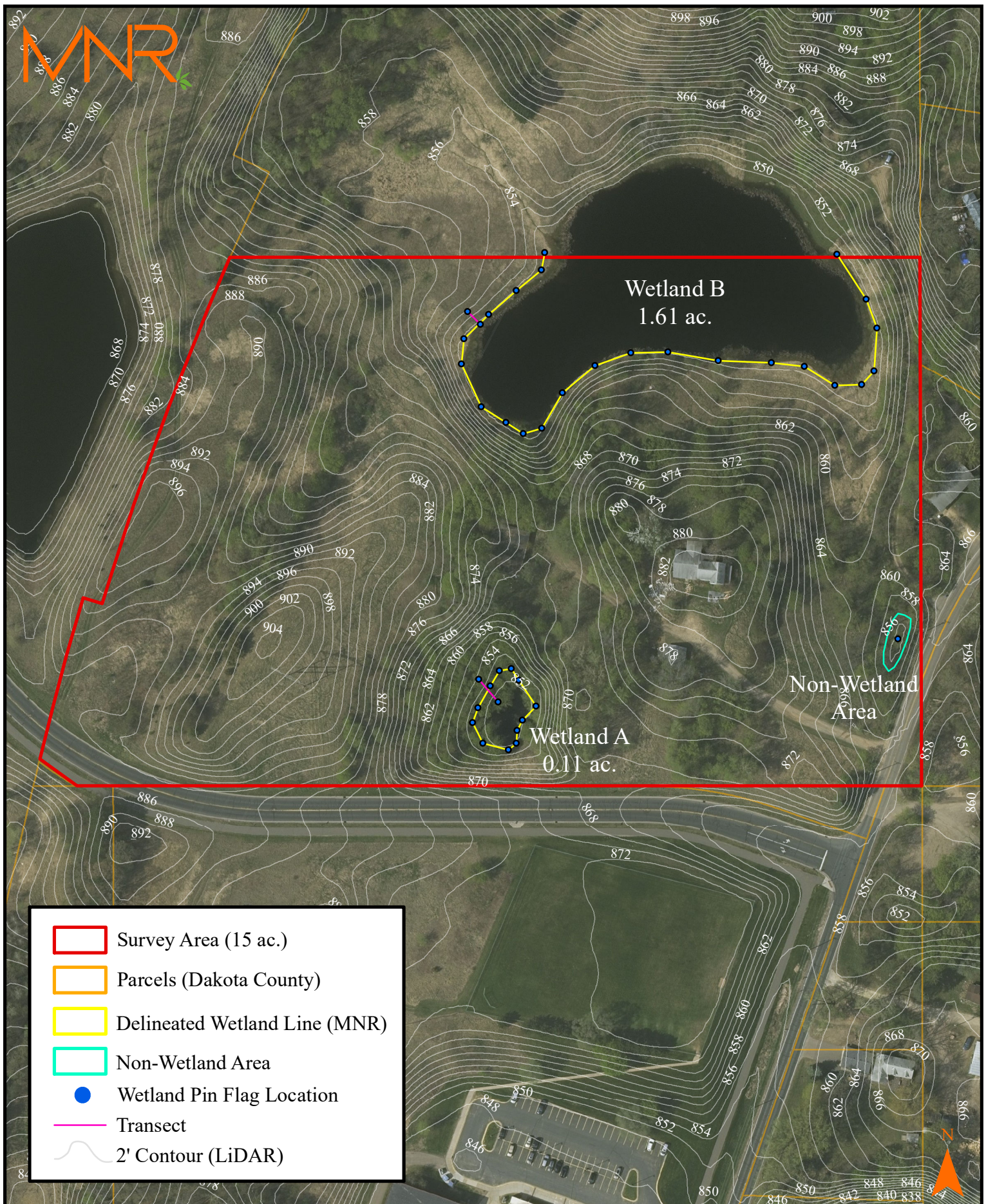
Signature: 

Date: 5-6-20



Figure 1

Site Location
Inver Grove Trail
Inver Grove Heights, MN



**Delineated Wetlands
Inver Grove Trail
Inver Grove Heights, MN**

Figure 2

Appendix A

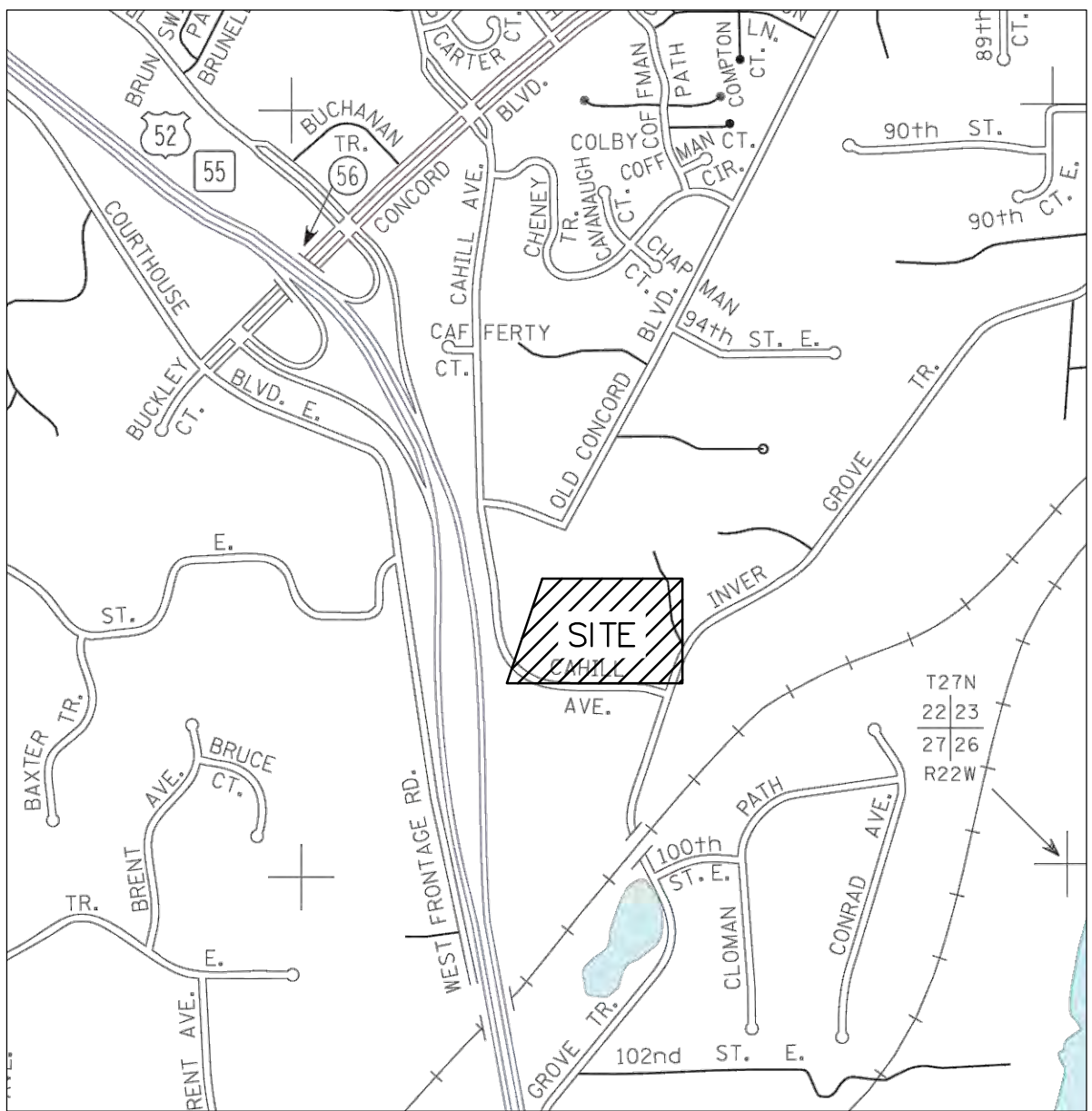
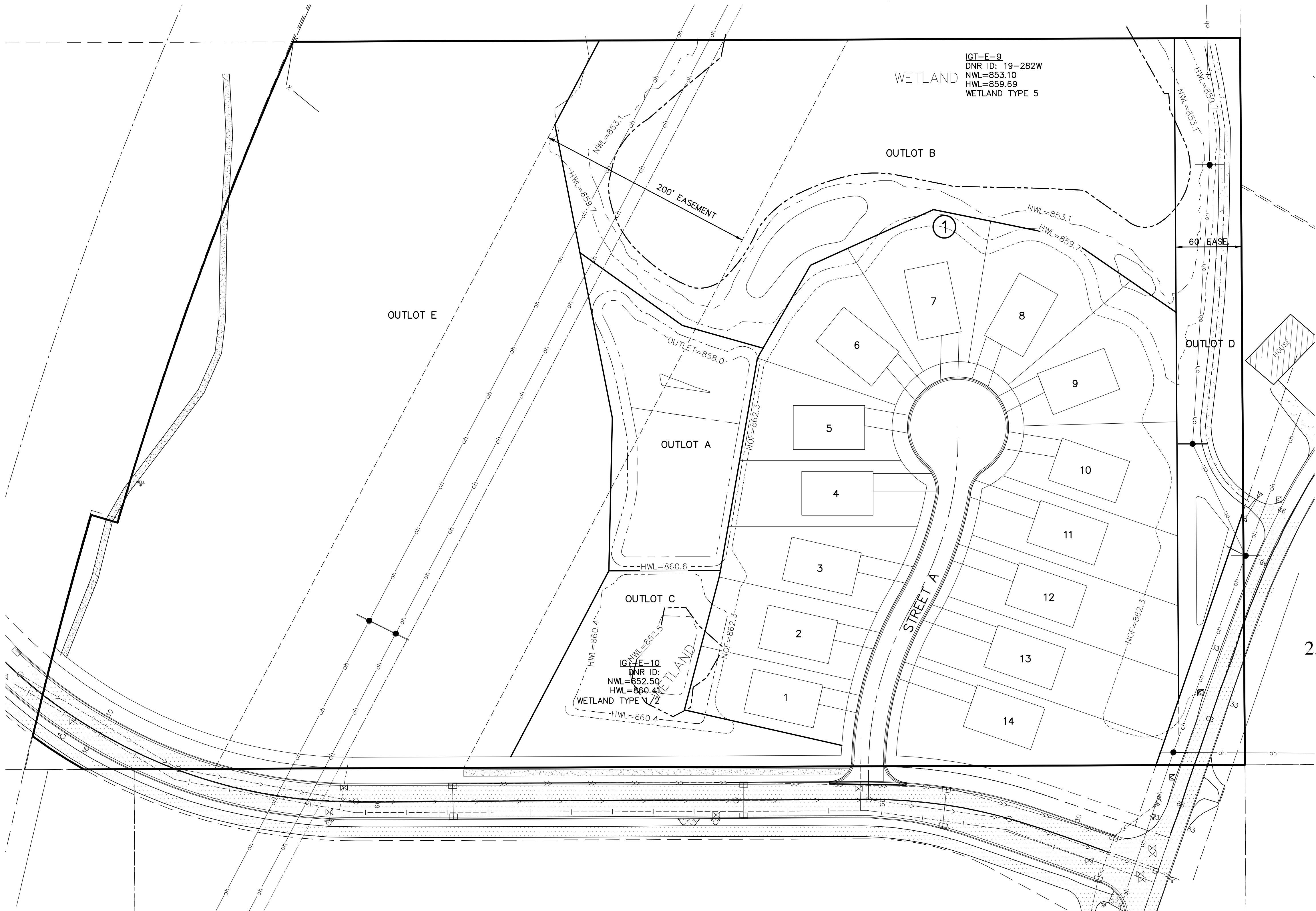
Inver Grove Trail

Preliminary Plans

by

Pioneer Engineering

INVER GROVE TRAIL PRELIMINARY PLANS INVER GROVE HEIGHTS, MINNESOTA



LOCATION MAP

PRELIMINARY ZONING REQUIREMENTS WITH VARIANCES:

MINIMUM LOT WIDTH	60 FEET
MINIMUM CORNER LOT WIDTH	80 FEET
MINIMUM FRONT YARD SETBACK	25 FEET
MINIMUM REAR YARD SETBACK	25 FEET
MINIMUM SIDE SETBACK	7.5 FEET
MINIMUM SIDE STREET SETBACK	25 FEET

LOW FLOOR = HWL+2'
LOWEST OPENING = EOF+1'
LOW FLOOR = NOF+1'

SITE DATA:

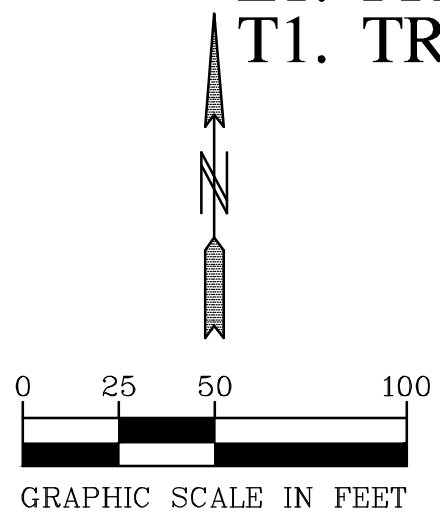
EXISTING ZONING: E-1, ESTATE
PROPOSED ZONING: R-1C
GROSS AREA: 15.09 ACRES
TOTAL SINGLE FAMILY UNITS: 14
GROSS DENSITY: 0.92 UNITS PER ACRE

BENCH MARK
TNH 400' WEST CAHILL
AVE. & INVER GROVE
TRAIL INT.
ELEV=870.62

SHEET INDEX

- 0.1 COVER SHEET
- 0.2 LEGEND SHEET
- 1.1 EXISTING CONDITIONS
- 1.2 PRELIMINARY PLAT
- 1.3 PRELIMINARY SITE PLAN
- 2.1 PRELIMINARY GRADING PLAN
- 2.2 PRELIMINARY EROSION CONTROL
- 2.3-2.5 PRELIMINARY GRADING DETAILS
- 3.1 PRE. SAN. & WM. PLAN
- 3.2 PRELIMINARY UTILITY PROFILES
- 4.1 PRELIMINARY STORM SEWER
- 5.1 PRELIMINARY STREET PROFILES
- 6.1 PRELIMINARY BASIN MITIGATION
- 7.1 PRELIMINARY WETLAND FILL
- 8.1 PRELIMINARY 3:1 SLOPES

- L1. PRELIMINARY LANDSCAPE PLAN
- T1. TREE PRESERVATION PLAN



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Mendota Heights, MN 55120

(651) 681-1914
Fax: 681-9488
www.pioneereng.com

I hereby certify that this plan 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

Name

John M. Molinaro

Reg. No.

45831

Date

11-1-2019

Revisions
1. 1-28-20 Client/City Comments
2. 3-30-20 Client/City Comments
3. 5-21-20 Wetland Mit. Comments

Date

11-1-19

Designed

JMM

Drawn

MSN

COVER SHEET

ALLIANT VENTURES III, LLC
4655 NICHOLS ROAD, STE. 106
EAGAN, MN 55122

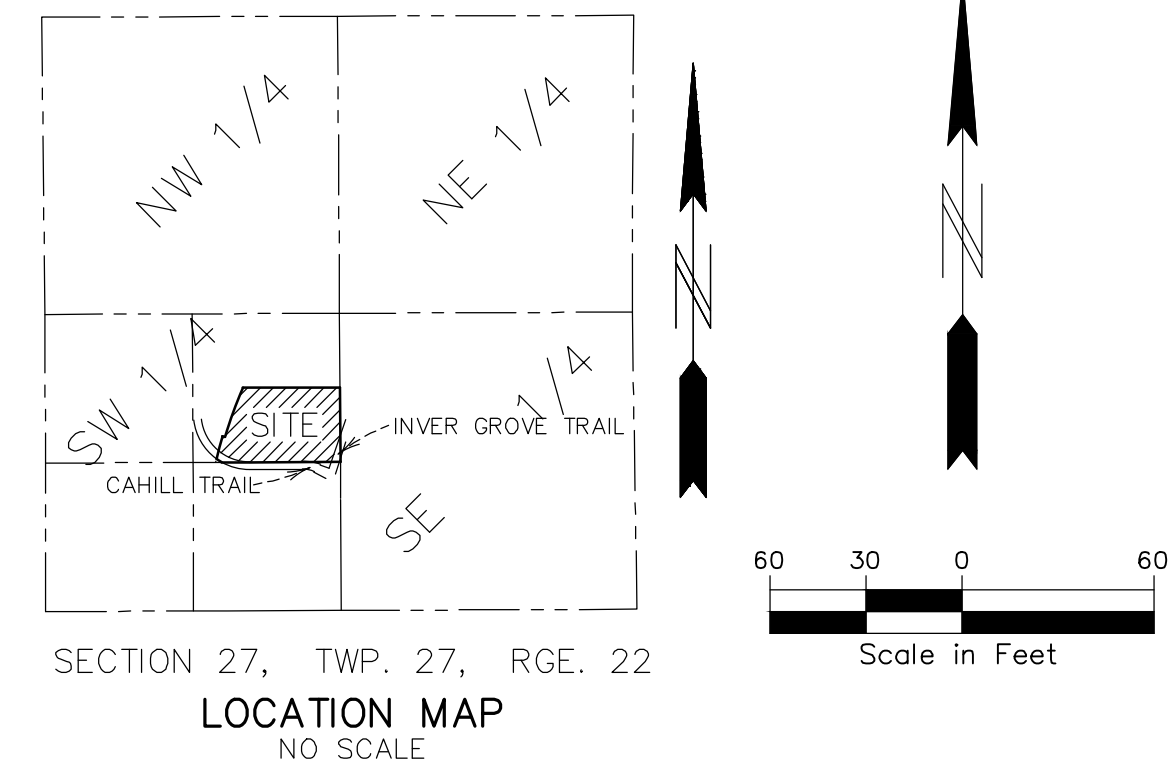
INVER GROVE TRAIL
INVER GROVE HEIGHTS, MINNESOTA

0.1 OF 19

LEGEND			
EXISTING	PROPOSED	FUTURE	DESCRIPTION
			SANITARY MANHOLE
			SANITARY SEWER (SANITARY & WATERMAIN PLANS)
			SANITARY SEWER (STORM SEWER PLANS)
			FORCE MAIN
			HYDRANT
			GATE VALVE
			REDUCER
			CURB STOP
			WATERMAIN (SANITARY & WATERMAIN PLANS)
			WATERMAIN (STORM SEWER PLANS)
			CATCH BASIN
			BEEHIVE
			STORM MANHOLE
			FLARED END SECTION
			CONTROL STRUCTURE
			STORM SEWER (SANITARY & WATERMAIN PLANS)
			STORM SEWER (STORM SEWER PLANS)
			CULVERT
			PERFORATED DRAINTILE
			SOLID DRAINTILE SERVICE
			CASING
			UNDERGROUND ELECTRIC LINE
			UNDERGROUND FIBER OPTIC LINE
			UNDERGROUND GAS PIPELINE
			UNDERGROUND PETROLEUM PIPELINE
			UNDERGROUND TELEPHONE LINES
			UNDERGROUND TELEVISION LINE
			OVERHEAD UTILITY LINES
			SURMOUNTABLE CURB & GUTTER
			B-STYLE CURB & GUTTER
			RIBBON CURB & GUTTER
			EDGE OF BITUMINOUS
			YELLOW PAVEMENT STRIPING (SINGLE/DOUBLE)
			WHITE PAVEMENT STRIPING (SINGLE/DOUBLE)
			PHASE LINE
			CENTERLINE
			2' CONTOUR LINE
			10' CONTOUR LINE
			BASIN OUTLET LINE
			BASIN HIGH WATER LINE
			PROPOSED SPOT ELEVATION
			EMERGENCY OVERFLOW
			DRAINAGE FLOW ARROW
			DELINEATED / PROPOSED WETLAND LINE
			WETLAND BUFFER
			TREE LINE
			FEMA FLOODPLAIN BOUNDARY
			RETAINING WALL
			FENCE (BARBED WIRE)
			FENCE (CHAIN LINK)
			FENCE (WOOD)
			CONSERVATION AREA SIGN
			WETLAND BUFFER SIGN
			TYPE III BARRICADE
			LIGHT POLE
			STREET SIGNS
			PEDESTRIAN RAMP
			BOUNDARY
			RIGHT OF WAY
			LOT LINE
			EASEMENT
			SET BACK LINE
			SECTION LINE
			RESTRICTED ACCESS
HATCH PATTERNS			
	GRAVEL SURFACE		WETLAND
	BITUMINOUS SURFACE		WETLAND UPLAND BUFFER
	CONCRETE SURFACE		WETLAND MITIGATION
	RIP RAP		PERMANENT TURF RESTORATION
	SELECT BACKFILL MATERIAL		PERMANENT WET BASIN SEEDING
	EROSION CONTROL BLANKET MNDOT CATEGORY PER PLAN		UPLAND/NATURAL AREA SEEDING

TOPOGRAPHIC SYMBOLS	
	CATCH BASIN
	CATCH BASIN BEEHIVE
	FLARED END SECTION
	GATE VALVE
	HYDRANT
	WATER SERVICE
	WATER WELL
	MONITORING WELL
	CLEANOUT
	HAND HOLE
	MANHOLE OTHER THAN SANITARY OR STORM
	SANITARY OR STORM MANHOLE
	LAWN SPRINKLER VALVE
	LAWN SPRINKLER HEAD
	UTILITY POLE
	TRANSFORMER BOX
	FIBER OPTIC BOX
	ELECTRIC BOX
	NATURAL GAS METER
	LIGHT POLE
	SEMAPHORE
	TELEPHONE BOX
	CABLE BOX
	CAST IRON MONUMENT
	FOUND IRON PIPE
	JUDICIAL LAND MARK
	PK NAIL
	CONTROL POINT
	SPIKE
	FLAG POLE
	TEST HOLE
	MAILBOX
	SIGN
	BOLLARD
	CONSERVATION POST
	DECIDUOUS TREE
	CONIFEROUS TREE
	SHRUB / BUSH
EROSION & SEDIMENT CONTROL	
	STANDARD EROSION CONTROL
	HEAVY-DUTY EROSION CONTROL
	SECONDARY EROSION CONTROL FENCE
	EROSION CONTROL AT BACK OF CURB
	TREE FENCE
	TEMPORARY DIVERSION DITCH
	CATCH BASIN INLET PROTECTION
	STRAW BIO ROLLS
	ROCK BERM
	SUMPED RIP RAP PERMANENT ENERGY DISSIPATER
	DISCHARGE LOCATION
	GRAVEL CONSTRUCTION ENTRANCE
	TEMPORARY OUTLET FLOATING SKIMMER
	BASIN ACCESS 8% SLOPE MAX.
	STABILIZED EMERGENCY OVERFLOW
	STEEP SLOPE 3:1 (H:V) (33.3%) OR STEEPER GRADE
CURB LEGEND	
	= GUTTER LINE ELEVATION FOR SURMOUNTABLE CURB
	= GUTTER LINE ELEVATION FOR SURMOUNTABLE CURB (TIP OUT GUTTER)
	= GUTTER LINE ELEVATION FOR B618 CURB
	= GUTTER LINE ELEVATION FOR B618 CURB (TIP OUT GUTTER)
	= BITUMINOUS ELEVATION

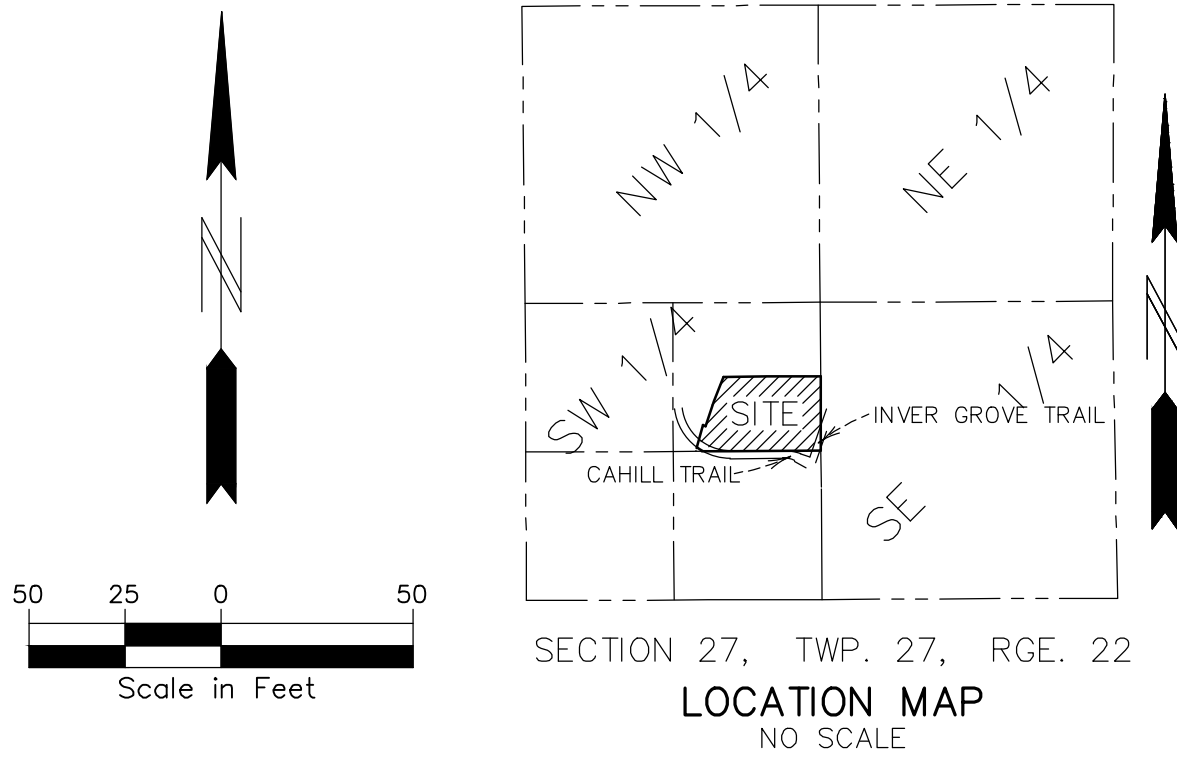
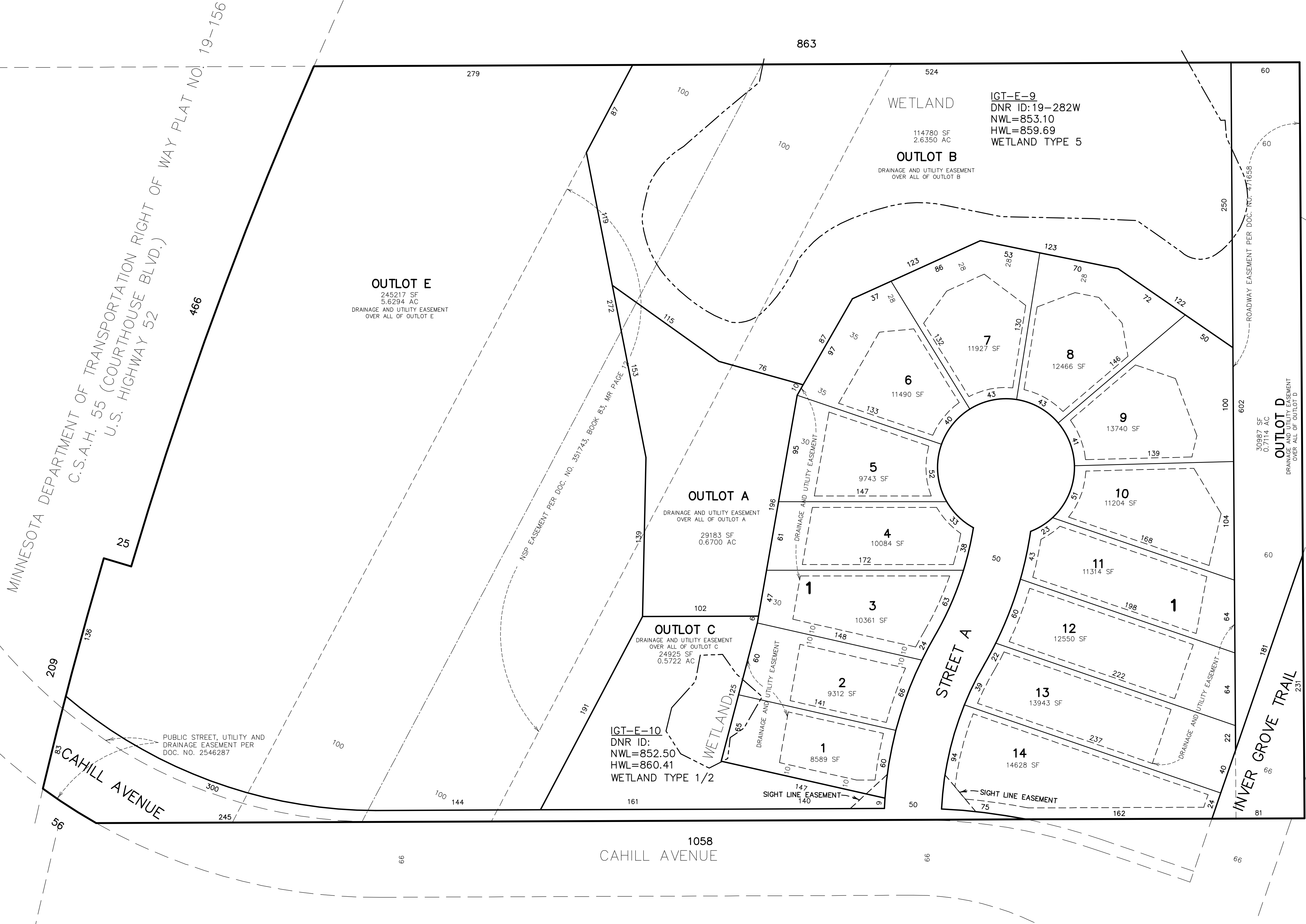
ABBREVIATIONS	
A	ALGEBRAIC DIFFERENCE
B-B	BACK TO BACK
BV	BUTTERFLY VALVE
BOC	BACK OF CURB
BFE	BASE FLOOD ELEVATION
BMP	BEST MANAGEMENT PRACTICE
C	CENTER LINE
CB	CATCHBASIN
CBMH	CATCHBASIN MANHOLE
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
CS	CURB STOP
DIP	DUCTILE IRON PIPE
DT	DRAINTILE
EL/ELEV	ELEVATION
EX	EXISTING
FES	FLARED END SECTION
F-F	FACE TO FACE
FM	FORCEMAIN
GB	GRADE BREAK
GND	GROUND
GV	GATE VALVE
HP	HIGH POINT
HYD	HYDRANT
HWL	HIGH WATER LEVEL
INV	INVERT
K	CURVE COEFFICIENT
L	LENGTH
LF	LOWEST FLOOR
LO	LOOKOUT
LO	LOWEST OPENING
LP	LIQUID PETROLEUM
LP	LOW POINT
MH	MANHOLE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
P	PROPERTY LINE
PRC	POINT OF REVERSE CURVATURE
PVT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
R	RAMBLER
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT OF WAY
SSWR	SANITARY SEWER
STA	STATION
STRM	STORM SEWER
SWPPP	STORM WATER POLLUTION PROTECTION PLAN
TNH	TOP NUT HYDRANT
TYP	TYPICAL
WM	WATER MAIN
WO	WALKOUT
LOT INFORMATION	
(TYPICAL SECTION NOT TO SCALE)	



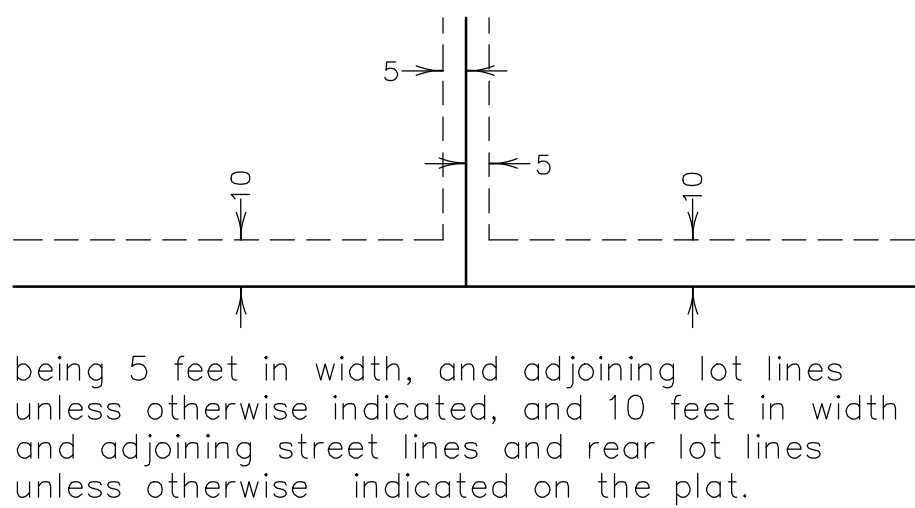
	Denotes concrete
	Denotes gravel
	Denotes bituminous
	Denotes tree line
	Denotes storm sewer line
	Denotes sanitary sewer line
	Denotes water line
	Denotes overhead utility lines
	Denotes underground gas line
	Denotes fence (barbed wire)
	Denotes fence (wood)
	Denotes catch basin
	Denotes catch basin beehive
	Denotes flared end section
	Denotes gate valve
	Denotes hydrant
	Denotes service
	Denotes water well
	Denotes cleanout
	Denotes manhole other than sanitary or storm
	Denotes sanitary or storm manhole
	Denotes utility pole
	Denotes found iron pipe
	Denotes mailbox
	Denotes sign
	Denotes deciduous tree
	Denotes coniferous tree

Except: All that part of the North $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of Section 22, Township 27, Range 22 lying East of the Easterly right of way of Highway 56 except the North 659.16 feet thereof, Dakota County, Minnesota, lying southerly of a line 36 feet southerly of and parallel with the following described line A Point H to its termination.

BENCH MARK
TNH 400' WEST CAHILL
AVE. & INVER GROVE
TRAIL INT.
ELEV=870.62



DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:



Legal Description Per Title Commitment

The North 1/4 of the Southwest 1/4 of Section 22, Township 27, Range 22, lying East Roadway Thoroughfare No. 56 Except the North 659.16 feet.

Except: All that part of the North 1/4 of the Southwest 1/4 of Section 22, Township 27, Range 22 lying East of the Easterly right of way of Highway 56 except the North 659.16 feet thereof, Dakota County, Minnesota, lying southerly of a line 36 feet southerly of and parallel with the following described line A Point H to its termination.

Line A: Commencing at the South Quarter corner of Section 22, Township 27 N. Range 22 W; thence South 89 degrees 47 minutes 04 seconds West, along the South line of the Southwest Quarter of said Section 22, 209.09 feet to the point of beginning; thence northwesterly 133.05 feet, along a non-tangential curve, concave to the northeast, having a radius of 1432.39 feet, a central angle of 5 degrees 19 minutes 20 seconds, and the chord of said curve bears North 24 degrees 33 minutes 17 seconds West; thence North 21 degrees 53 minutes 37 seconds West, tangent to last described curve, 115.94 feet; thence northerly 172.68 feet, along a tangential curve, concave to the east, having a radius of 477.46 feet, and a central angle of 20 degrees 43 minutes 20 seconds, to Point A; thence continuing northerly 54.83 feet, along the extension of last described curve, having a radius of 477.46 feet and a central angle of 6 degrees 34 minutes, 45 seconds, to Point B; thence continuing northerly 113.14 feet, along the extension of last described curve, having a radius of 477.46 feet, and a central angle of 13 degrees 34 minutes 38 seconds, to Point C; thence North 18 degrees 59 minutes 06 seconds East, tangent to last described curve, 330.00 feet to Point D; thence continuing North 18 degrees 59 minutes 06 seconds East 48.00 feet to Point F; thence North 71 degrees 00 minutes 41 seconds West, 33.00 feet to the westerly line of Inver Grove Trail; thence continuing North 71 degrees 00 minutes 41 seconds West, 85.63 feet, thence westerly 154.23 feet, along a tangential curve, concave to the south, having a radius of 460.00 feet, and a central angle of 19 degrees 12 minutes 39 seconds, to the intersection with a line 30 feet southerly of and parallel with the north line of the SE 1/4 of the SW 1/4 of said Section 22, said intersection being Point G, thence South 89 degrees 46 minutes 31 seconds West, along said parallel line, 467.89 feet to Point H; thence Northwest 670.27 feet, along a tangential curve, concave to the northeast, having a radius of 460.00 feet, and a central angle of 83 degrees 29 minutes 11 seconds, and said line there terminating.

TOTAL GROSS AREA	15.09	ACRES
NUMBER OF LOTS	14	
TOTAL LOT AREA	3.70	ACRES
NUMBER OF OUTLOTS	5	
TOTAL OUTLOT AREA	10.22	ACRES
TOTAL RIGHT OF WAY AREA	1.17	ACRES
GROSS DENSITY	.93	LOTS/ACRE
NET DENSITY (EXCLUDES WETLANDS)	1.05	LOTS/ACRE
EXISTING ZONING	E-1 ESTATE	



- TEMPORARY SEED SHALL BE DONE IN ACCORDANCE TO MNDOT 2575 & 3876, CONSISTING OF:
- MAY 1 – AUGUST 1: MINNESOTA STATE SEED MIXTURE 22-111 (OATS COVER CROP) @ 100.0 LBS. PER ACRE OR APPROVED EQUAL.
 - AUGUST 1 – OCTOBER 1: MINNESOTA STATE SEED MIXTURE 22-111 (WINTER WHEAT COVER CROP) @ 100.0 LBS. PER ACRE OR APPROVED EQUAL.
 - MULCH SHALL BE MNDOT 3882, TYPE 1 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL, INSTALLED TO MINIMUM 90% COVERAGE OF THE SURFACE AREA DISTURBED.
 - MNDOT 3881, TYPE 1 COMMERCIAL FERTILIZER, 10-10-20 @ 200 LBS. PER ACRE
- PERMANENT TURF RESTORATION SHALL BE DONE IN ACCORDANCE WITH MNDOT 2575 & 3876, CONSISTING OF:
- MINNESOTA STATE SEED MIXTURE 25-141 (MESIC GENERAL ROADSIDE) AT 59 POUNDS PER ACRE.
 - MULCH SHALL BE MNDOT 3882, TYPE 1 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL, INSTALLED TO MINIMUM 90% COVERAGE OF THE SURFACE AREA DISTURBED.
 - MNDOT 3881, TYPE 3 SLOW-RELEASE FERTILIZER, 22-5-10, MINIMUM 70% WATER-INSOLUBLE NITROGEN @ 350 LBS PER ACRE.
- PERMANENT BASIN SEEDING SHALL BE DONE IN ACCORDANCE WITH MNDOT 2575 & 3876, CONSISTING OF:
- WET BASIN BENCH/(IN)FILTRATION BASIN: MINNESOTA STATE SEED MIXTURE 33-261 (STORMWATER SOUTH AND WEST) AT 35 POUNDS PER ACRE.
 - ABOVE BASIN BENCH TO HIGH WATER LEVEL: MINNESOTA STATE SEED MIXTURE 35-241 (MESIC PRAIRIE GENERAL) AT 36.5 POUNDS PER ACRE.
 - MULCH SHALL BE MNDOT 3882, TYPE 3 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL.
 - MNDOT 3881, TYPE 4 NATURAL-BASED FERTILIZER, 18-1-8 @ 120 LBS PER ACRE OR 17-10-7 @ 150 LBS PER ACRE
- UPLAND/NATURAL AREA SEEDING SHALL BE DONE IN ACCORDANCE TO MNDOT 2575 & 3876, CONSISTING OF:
- MINNESOTA STATE SEED MIXTURE 35-621 (DRY PRAIRIE SOUTHEAST) AT 11.0 POUNDS PER ACRE.
 - MULCH SHALL BE MNDOT 3882, TYPE 3 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL.
 - MNDOT 3881, TYPE 4 NATURAL-BASED FERTILIZER, 18-1-8 @ 120 LBS PER ACRE OR 17-10-7 @ 150 LBS PER ACRE

BENCH MARK
TNH 400' WEST CAHILL
AVE. & INVER GROVE
TRAIL INT.
ELEV=870.62

LEGEND

- PERIMETER EROSION CONTROL FENCE.
INSTALL BEFORE START OF GRADING
- CATCH BASIN INLET PROTECTION
TO BE INSTALLED PRIOR TO
START OF GRADING
- CATCH BASIN INLET PROTECTION
TO BE INSTALLED PRIOR TO
START OF GRADING
- ROCK CONSTRUCTION ENTRANCE.
INSTALL BEFORE START OF GRADING
- INFILTRATION AREA (SEE DETAIL)
- BASIN ACCESS 8% SLOPE MAX.

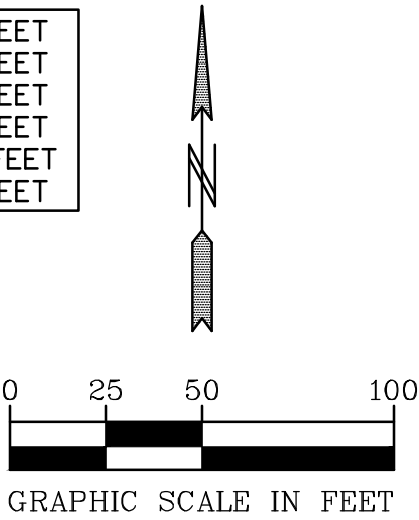
EARTHWORK QUANTITIES
CUT: 43,952 YD3
FILL: 34,219 YD3
CLEANUP/REMOVAL: ?? YD3

PRELIMINARY ZONING REQUIREMENTS WITH VARIANCES:

MINIMUM LOT WIDTH	60 FEET
MINIMUM CORNER LOT WIDTH	80 FEET
MINIMUM FRONT YARD SETBACK	25 FEET
MINIMUM REAR YARD SETBACK	25 FEET
MINIMUM SIDE SETBACK	7.5 FEET
MINIMUM SIDE STREET SETBACK	25 FEET

LOW FLOOR = HWL+2'
LOWEST OPENING = EOF+1'
LOW FLOOR = NOF+1'

NOTE:
- UPON COMPLETION OF SITE GRADING, A CERTIFICATION LETTER AND AS-BUILT SURVEY, FROM A REGISTERED ENGINEER OR LAND SURVEYOR SHALL BE PROVIDED TO THE CITY CERTIFYING THAT THE SITE GRADES ARE AS SHOWN.



PIONEERengineering
CIVIL ENGINEERS LAND PLANNERS LAND SURVEYORS LANDSCAPE ARCHITECTS

2422 Enterprise Drive
Mendota Heights, MN 55120
(651) 681-1914
Fax: 681-9488
www.pioneereng.com

I hereby certify that this plan 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

Name
John M. Molinaro
Reg. No. 45831
Date 11-1-2019

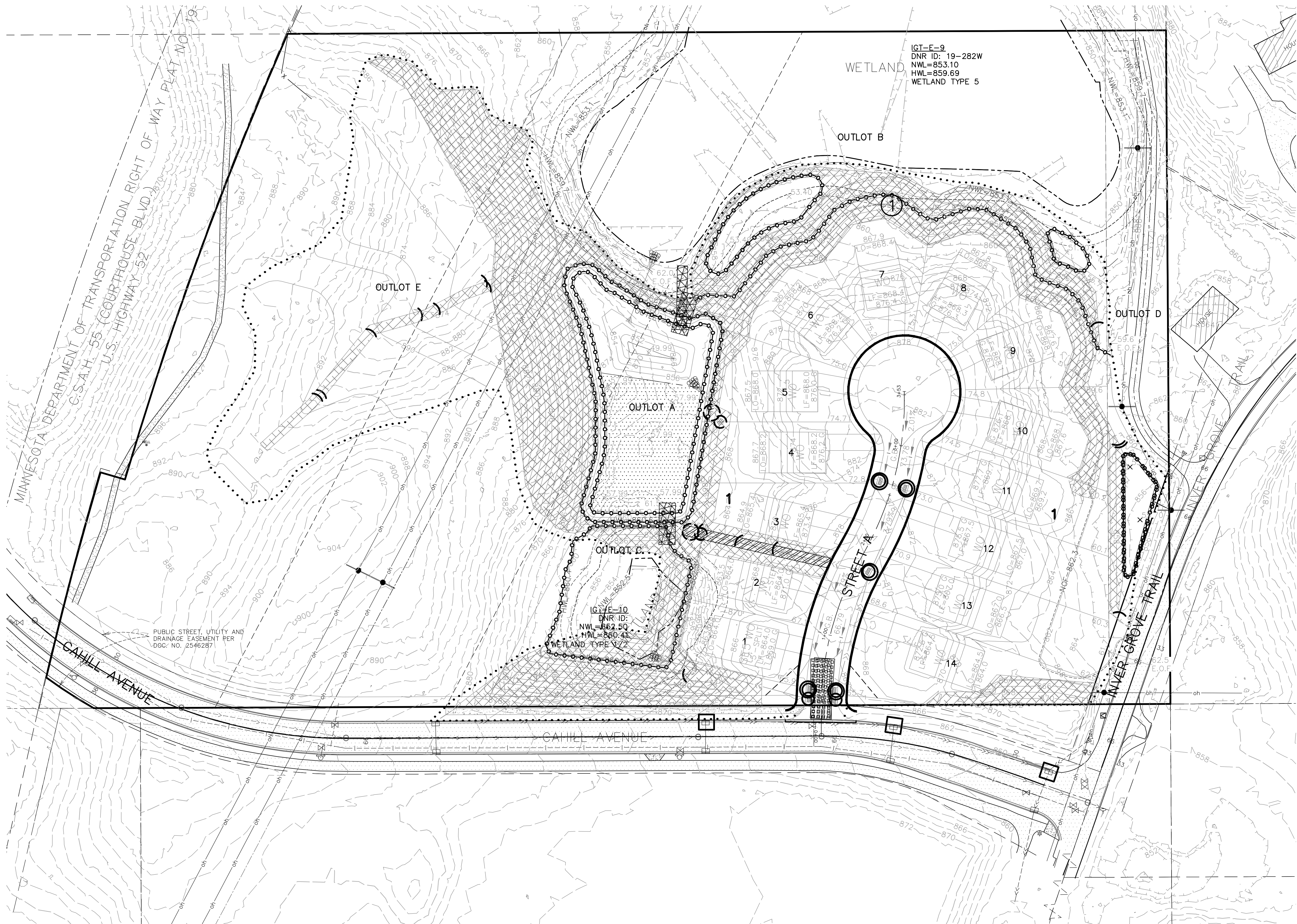
Revisions
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3. 5-21-20 Wetland Mit. Comments

Date 11-1-19
Designed JMM
Drawn MSN

PRELIMINARY GRADING PLAN

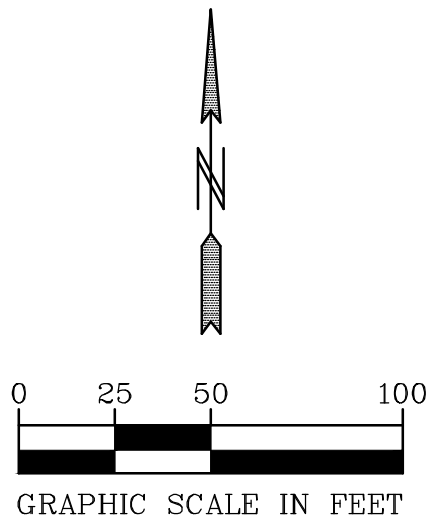
ALLIANT VENTURES III, LLC
4655 NICHOLS ROAD, STE. 106
EAGAN, MN 55122

INVER GROVE TRAIL
INVER GROVE HEIGHTS, MINNESOTA



LEGEND

- CATCH BASIN INLET PROTECTION TO BE INSTALLED AFTER 1ST LIFT OF BITUMINOUS.
- CATCH BASIN INLET PROTECTION TO BE INSTALLED WITH CATCH BASIN GRATE.
- SUMPED RIP RAP PERMANENT ENERGY DISSIPATER, INSTALL WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER.
- STRAW BIO ROLLS. INSTALL WITHIN 7 DAYS OF GRADING COMPLETION OR BEFORE 1ST RAINFALL EVENT WHICHEVER IS FIRST
- ROCK CONSTRUCTION ENTRANCE INSTALL BEFORE START OF GRADING
- PERIMETER EROSION CONTROL FENCE. INSTALL BEFORE START OF GRADING
- SECONDARY EROSION CONTROL FENCE. TO BE INSTALLED 48 HOURS AFTER COMPLETION OF GRADING.
- 2' SOD OR EROSION CONTROL FENCE AT BACK OF CURB. TO BE INSTALLED AFTER COMPLETION OF SIDEWALK CONSTRUCTION.
- MNDOT CAT 3 EROSION CONTROL BLANKET. INSTALL WITHIN 7 DAYS OF GRADING COMPLETION
- STABILIZED EMERGENCY OVERFLOW



BENCH MARK
TNH 400' WEST CAHILL
AVE. & INVER GROVE
TRAIL INT.
ELEV=870.62

EROSION CONTROL NOTES

- ENERGY DISSIPATION AT PIPE OUTLETS INSTALLED WITHIN 24 HOURS OF BEING PUT ONLINE.
- OFFSITE INLET PROTECTION TO BE INSTALLED PRIOR TO BEGINNING CONSTRUCTION.
- ONSITE STORM DRAIN INLET PROTECTION MUST BE INSTALLED WHEN BROUGHT ONLINE.
- TEMPORARY STOCKPILES MUST HAVE SEDIMENT CONTROL
- ROCK CONSTRUCTION ENTRANCE MUST BE INSTALLED AS A TRACKING BMP.
- SILT FENCE INSTALLED CROSSING CONTOURS MUST HAVE "J" HOOKS ADDED.
- A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) MEETING REQUIREMENTS OF THE MPCA'S NPDES GENERAL PERMIT IS REQUIRED IN THE PLAN OR AS A SEPARATE DOCUMENT.
- TEMPORARY SEDIMENT BASINS SHALL BE CONSTRUCTED FOR AREAS THAT RECEIVE 10 ACRES OF DRAINAGE. TEMPORARY SEDIMENT BASINS SHALL BE CONSTRUCTED IN THE LOCATION OF PERMANENT BASINS. INFILTRATION/FILTRATION BASIN AREAS MAY NOT FUNCTION AS TEMPORARY BASINS. "CONSTRUCT TEMPORARY SEDIMENTATION PONDS AND NECESSARY GRADING TO DIRECT SITE RUNOFF TO THE TEMPORARY PONDING AREA."
- SITE INSPECTIONS BY A QUALIFIED INSPECTOR ARE REQUIRED WEEKLY OR FOLLOWING A RAINFALL OF 0.5 INCHES OR GREATER.

STEEP SLOPES NOTE

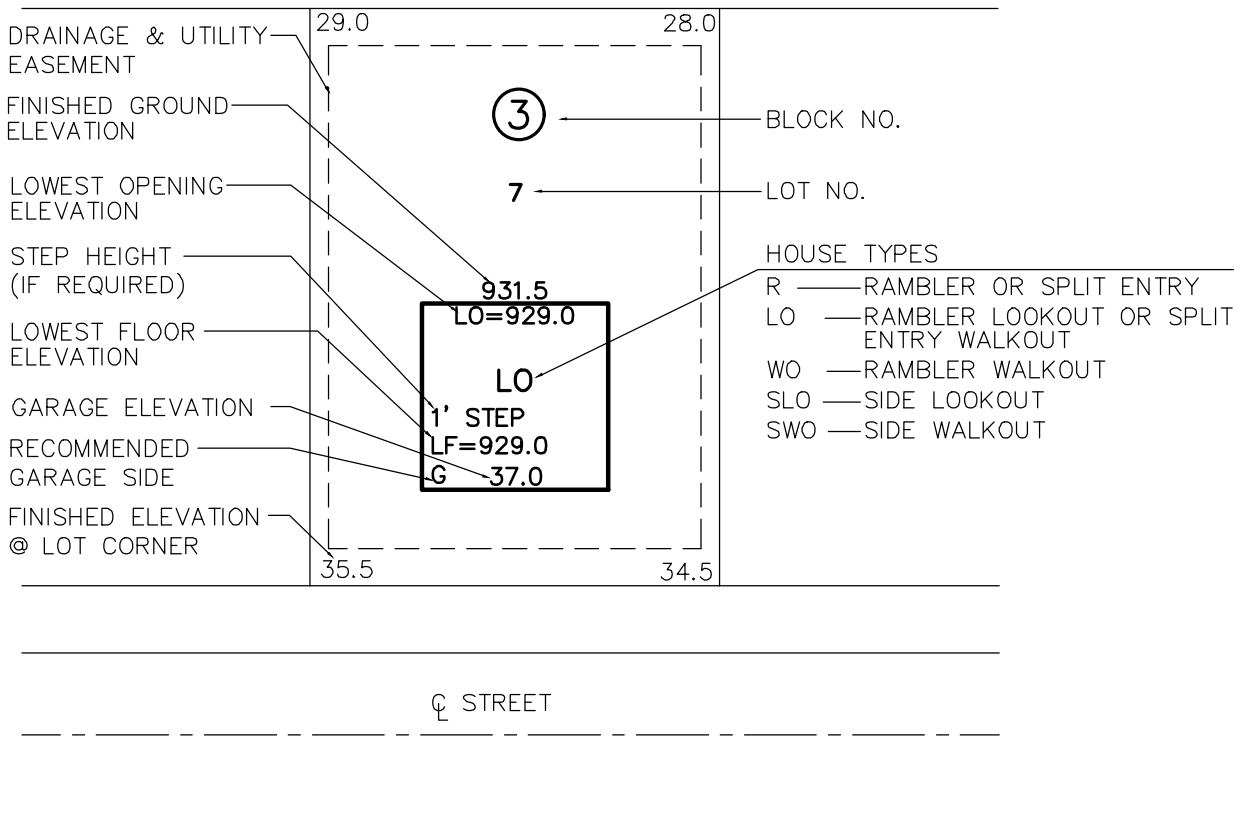
- 3:1 SLOPES—PROVIDE MNDOT RAPID STABILIZATION (2575-3) METHOD 3 OR 4.
—HYDRAULIC MULCH, SEED & FERTILIZE
—CAT.3 BLANKET, SEED & FERTILIZE

GRADING SEQUENCE

1. INSTALL ROCK CONSTRUCTION ENTRANCE.
2. INSTALL PERIMETER SEDIMENT CONTROL DEVICES (SILT FENCE).
3. STRIP TOPSOIL, STOCKPILE AND STABILIZE IN BERM FOR FUTURE SPREADING.
4. DIG TEMPORARY SEDIMENT BASIN, BASIN TO BE 1800 CF/ACRE OF AREA STRIPPED. CLEAN TEMP BASIN ONCE 50% FULL.
5. ALL SOILS WILL BE COMPACTED PER SPECIFICATIONS.
6. MAINTAIN DRAINAGE DURING GRADING OPERATIONS TO TEMPORARY SEDIMENT BASIN.
7. COMPLETE SITE GRADING PER PLAN.
8. RESPADE TOPSOIL MAINTAIN A MINIMUM OF 4" DEPTH.
9. MAINTAIN DRAINAGE TO TEMP SEDIMENT BASIN UNTIL NEXT PHASE BEGINS.
10. STABILIZE DENuded AREAS AND STOCKPILES WITHIN TIME FRAME LISTED IN EROSION PREVENTION PRACTICES

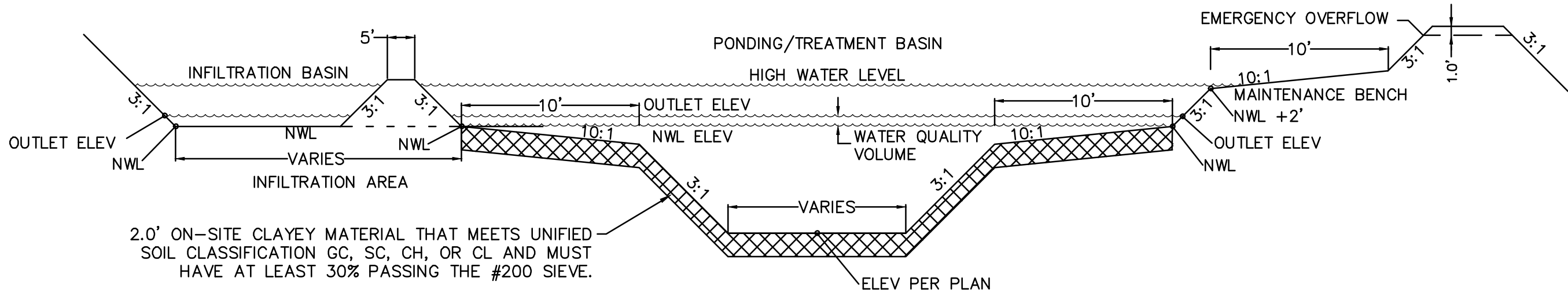
GENERAL NOTES

1. THE STORM WATER POLLUTION PREVENTION MANAGER SHALL BE A PERSON TRAINED, KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPs WHO WILL OVER SEE THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPs BEFORE AND DURING CONSTRUCTION.
2. THE CONTRACTOR TO ADHERE TO ALL REQUIREMENTS OF THE MINNESOTA POLLUTION CONTROL AGENCY N.P.D.E.S. PERMIT, INCLUDING THE REQUIREMENT TO MINIMIZE THE AREA DISTURBED BY GRADING AT ANY GIVEN TIME AND TO COMPLETE TURF RESTORATION WITHIN THE TIME REQUIRED BY THE PERMIT AFTER TEMPORARY CEASING GRADING OR COMPLETION OF GRADING.
3. A COPY OF THESE PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
4. BMP'S REFER TO EROSION AND SEDIMENT CONTROL PRACTICES DEFINED IN THE MPCA PROTECTING WATER QUALITY IN URBAN AREAS AND THE MINNESOTA CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL PLANNING HANDBOOK.
5. ALL EROSION AND SEDIMENT CONTROL FACILITIES (BMP'S) SHALL BE INSTALLED AND IN OPERATION PRIOR TO LAND DISTURBANCE ACTIVITIES. SOME EROSION CONTROLS SUCH AS CHECK DAMS AND TEMPORARY SILT PONDS MAY BE INSTALLED AS GRADING OCCURS IN THE SPECIFIC AREA. THEY SHALL BE MAINTAINED UNTL CONSTRUCTION IS COMPLETED AND THE POTENTIAL FOR EROSION HAS PASSED.
6. THE BMP'S SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. AS CONSTRUCTION PROGRESSES AND UNEXPECTED OR SEASONAL CONDITIONS DICTATE, THE PERMITTEE SHALL ANTICIPATE THAT MORE BMP'S WILL BE NECESSARY TO ENSURE EROSION AND SEDIMENT CONTROL ON THE SITE. DURING THE COURSE OF CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE PERMITTEE TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY CONSTRUCTION ACTIVITIES AND/OR CLIMATIC EVENTS AND TO PROVIDE ADDITIONAL BMP'S OVER AND ABOVE THE MINIMUM REQUIREMENTS SHOWN ON THE PLANS THAT MAY BE NEEDED TO PROVIDE EFFECTIVE PROTECTION OF WATER AND SOIL RESOURCES.
7. ALL TREES NOT LISTED FOR REMOVAL SHALL BE PROTECTED. DO NOT OPERATE EQUIPMENT WITHIN THE DRIP LINE, ROOT ZONES OR WITHIN TREE PROTECTION FENCE AREAS.
8. WHEREVER POSSIBLE, PRESERVE THE EXISTING TREES, GRASS AND OTHER VEGETATIVE COVER TO HELP FILTER RUNOFF.
9. OPERATE TRACK EQUIPMENT (DOZER) UP AND DOWN EXPOSED SOIL SLOPES ON FINAL PASS, LEAVING TRACK GROOVES PERPENDICULAR TO THE SLOPE. DO NOT BACK- BLADE. LEAVE A SURFACE ROUGH TO MINIMIZE EROSION.
10. TEMPORARY SEED SHALL BE DONE IN ACCORDANCE TO MNDOT 2575 & 3876. CONSISTING OF:
 - MN SEED MIX 22-111 @ 40 LBS. PER ACRE OR APPROVED EQUAL.
 - MULCH SHALL BE MNDOT TYPE 3 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL. INSTALLED TO MINIMUM 90% COVERAGE OF THE SURFACE AREA DISTURBED.
 - TYPE 1 FERTILIZER, 10-10-20 @ 200 LBS. PER ACRE
10. PERMANENT TURF RESTORATION SHALL BE DONE IN ACCORDANCE WITH MNDOT 2575 & 3876. CONSISTING OF:
 - MN SEED MIX 35-241 AT 30 POUNDS PER ACRE FOR NON-BUILDABLE LOT AREAS.
 - MN SEED MIX 22-112 AT 50 POUNDS PER ACRE FOR BUILDABLE LOTS.
 - MULCH SHALL BE MNDOT TYPE 3 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL. INSTALLED TO MINIMUM 90% COVERAGE OF THE SURFACE AREA DISTURBED. MULCH AT 90 % COVERAGE WITH DISK ANCHOR.
 - TYPE 3 FERTILIZER, 22-5-10 80%W.N @ 350 LBS PER ACRE.
11. SLOPES AT 3:1 OR STEEPER, AND/OR WHERE INDICATED ON THE PLANS SHALL BE SEEDED AND HAVE AN EROSION CONTROL BLANKET TYPE 3 INSTALLED OR MAY BE HYDROSEEDDED WITH TACKIFIER MULCH. PERMITTEES MUST NOT USE MULCH, HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES WITHIN AN PORTION OF THE NORMAL WETTED PERIMETER OF A TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE SECTION WITH CONTINUOUS SLOPE OF GREATER THAN 2 PERCENT.
12. THE CONTRACTOR SHALL REMOVE ALL SOILS AND SEDIMENT TRACKED ONTO EXISTING STREETS AND PAVED AREAS.
13. IF BLOWING DUST BECOMES A NUISANCE. THE CONTRACTOR SHALL APPLY WATER FROM A TANK TRUCK TO ALL CONSTRUCTION AREAS.
14. WITHIN 7 DAYS OF COMPLETION OF THE SITE GRADING OPERATIONS THE ENTIRE SITE (EXCEPT ROADWAYS) SHALL HAVE BEEN SEEDED AND MULCHED AND SILT FENCE SHALL BE INSTALLED AROUND ALL PONDS.
15. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROPERLY DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.
16. THE MINIMIZATION OF SOIL COMPACTION MUST BE USED ON AREAS OUTSIDE OF SPECIFIC COMPACTION REQUIRED AREAS. THESE PRACTICES INCLUDE: PREVENTING HEAVY EQUIPMENT TRAFFIC AND CONSTRUCTION TRAFFIC FROM AREAS, USING PRACTICES TO PREVENT CONCENTRATED FLOW OCCURRING OVER THE SOIL. PROVIDE LIGHT TRACKED EQUIPMENT TO CONSTRUCT AREA TO FINAL GRADE. THE AREAS REQUIRING LOOSE SOIL INCLUDE ALL TOPSOIL PLACEMENT AND INFILTRATION/FILTRATION BASINS.



LOT BENCHING DETAIL

NO SCALE



STORM WATER BASIN SECTION

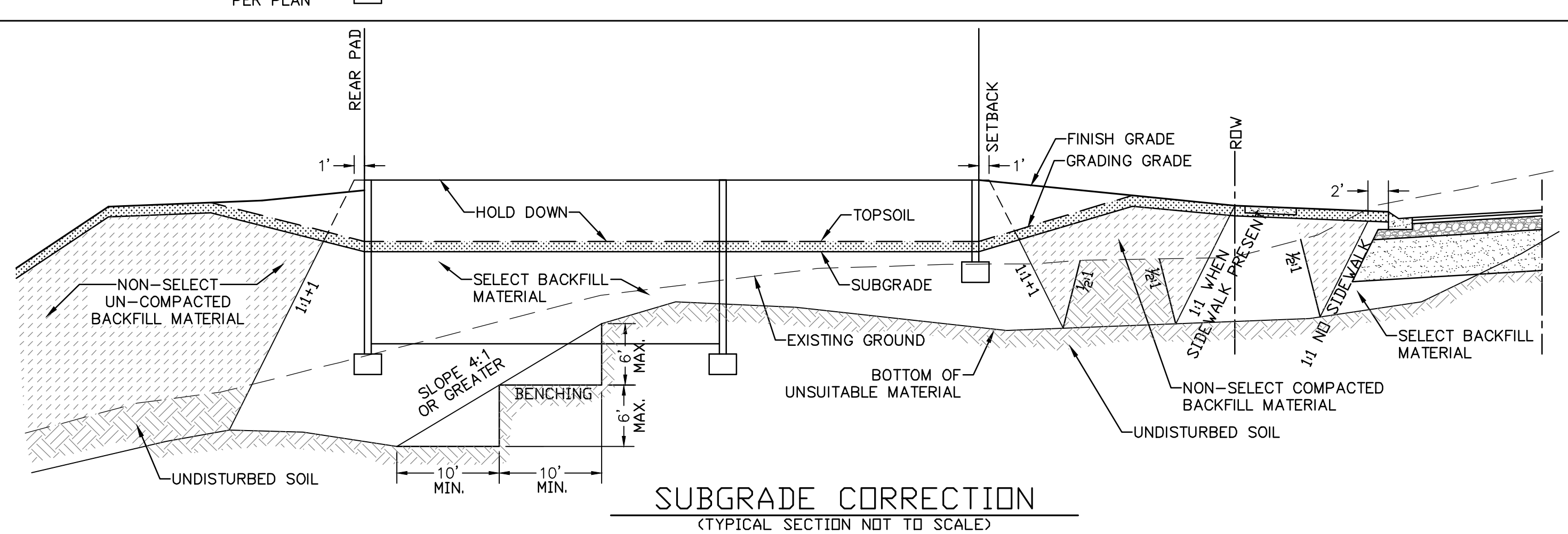
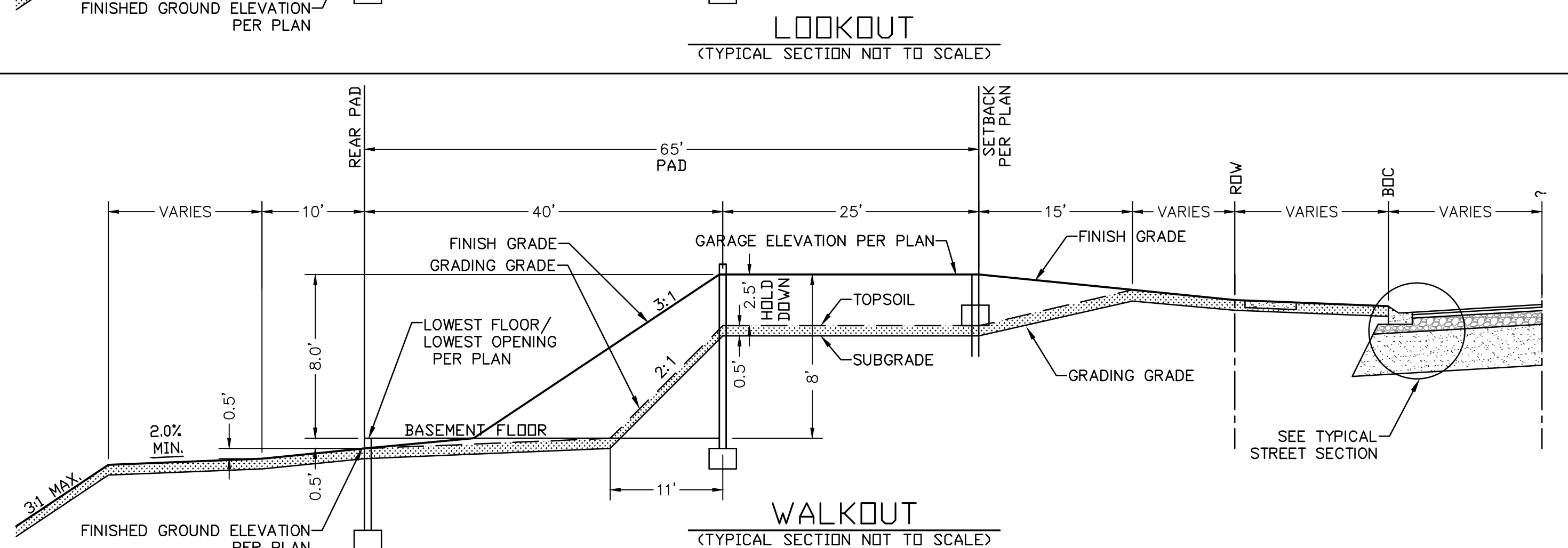
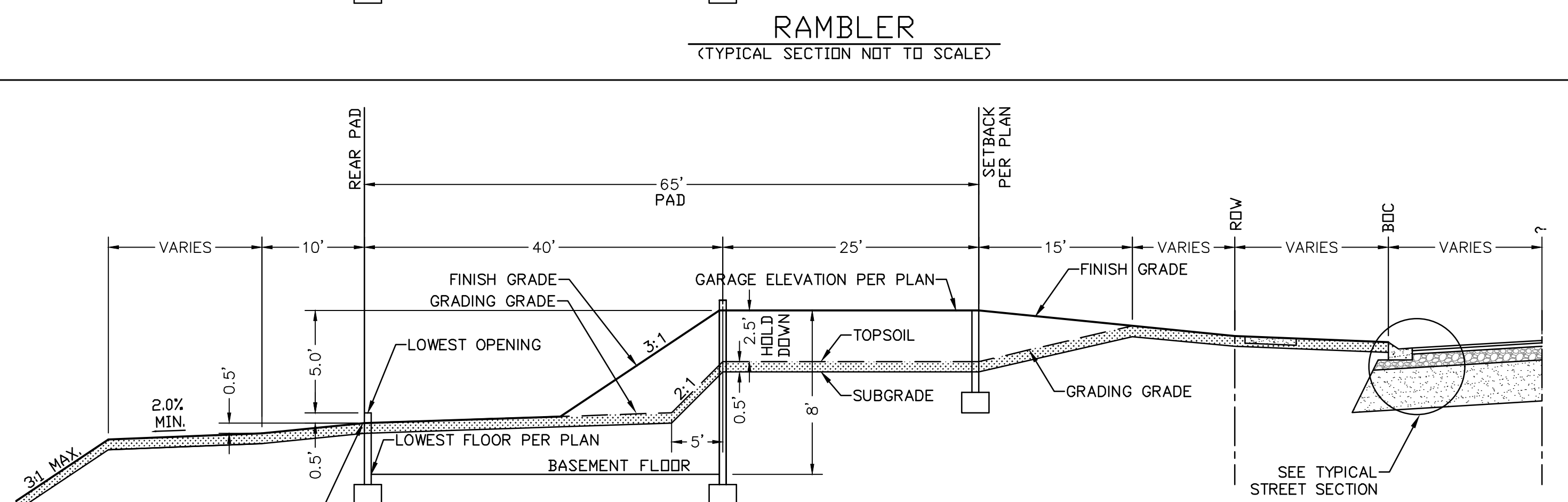
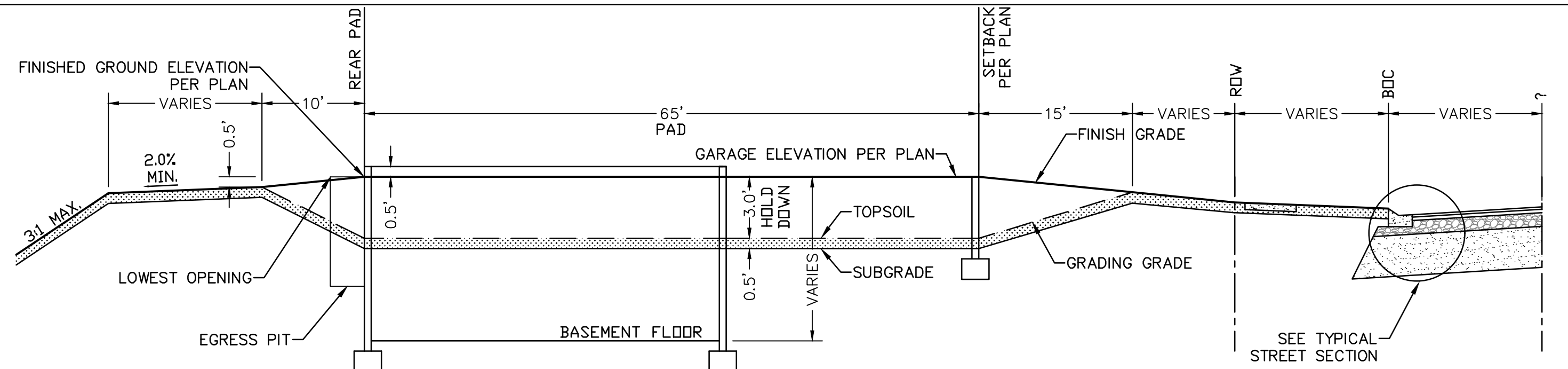
(TYPICAL SECTION NOT TO SCALE)

Name: John M. Molinaro
Reg. No.: 45831
Date: 11-1-2019

Revisions:
1. 1-28-20 Client/City Comments
2. 3-30-20 Client/City Comments
3. 5-21-20 Wetland Mit. Comments

Date: 11-1-19
Designed: JMM
Drawn: MSN

SINGLE FAMILY HOLDOWNS



PIONEERengineering
CIVIL ENGINEERS LAND PLANNERS LAND SURVEYORS LANDSCAPE ARCHITECTS

2422 Enterprise Drive
Mendota Heights, MN 55120

(651) 681-1914
Fax: 681-9488
www.pioneereng.com

I hereby certify that this plan 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

Name: John M. Molinaro
Reg. No.: 45831
Date: 11-1-2019

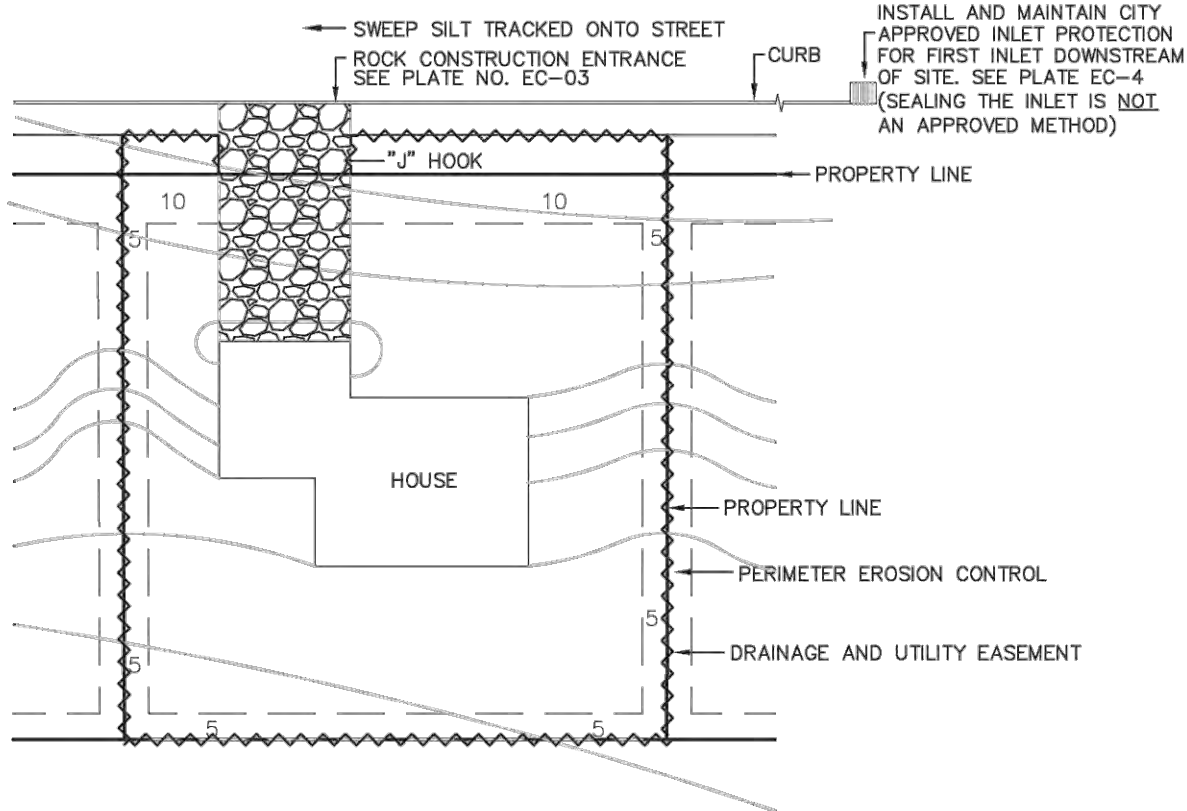
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ALLIANT VENTURES III, LLC
4655 NICHOLS ROAD, STE. 106
EAGAN, MN 55122

INVER GROVE TRAIL
INVER GROVE HEIGHTS, MINNESOTA

2.3 OF 19



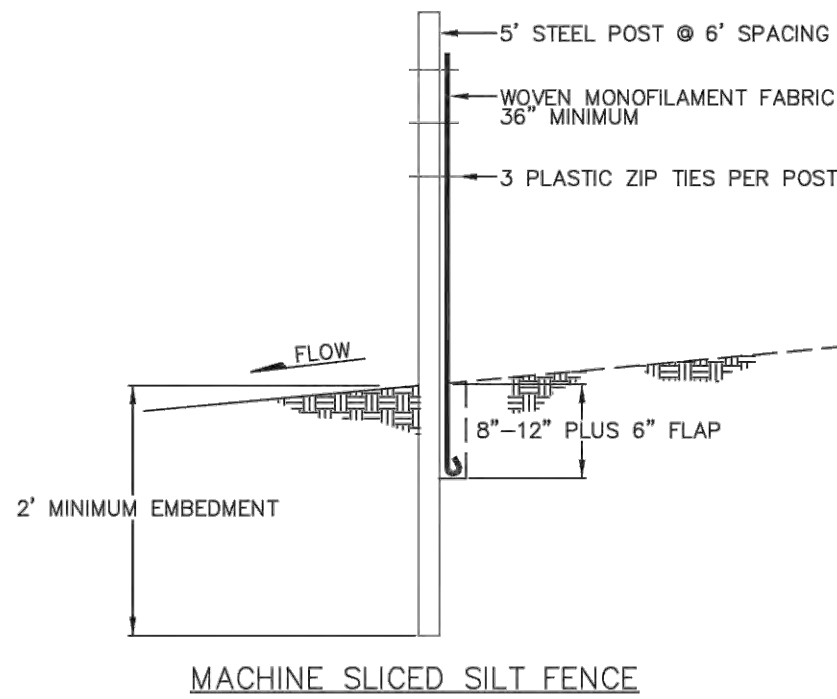
- NOTES:
- PERIMETER EROSION CONTROL IS REQUIRED. SOME ACCEPTABLE TYPES ARE SILT FENCE, TOPSOIL BERMS, VEGETATED BUFFER STRIPS, FIBER LOGS, COMPOST BERMS, COMPOST LOGS, SHREDDED WOOD MULCH BERMS, AND ROCK BERMS.
 - APPROVED INLET PROTECTION SHALL BE INSTALLED AND MAINTAINED AT THE FIRST CATCHBASIN DOWNSTREAM FROM CONSTRUCTION SITE. (SEE CITY STANDARD PLATE EC-04)
 - FOR CUSTOM GRADED LOTS, EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO ISSUANCE OF THE BUILDING PERMIT.
 - FOR NON-CUSTOM GRADED LOTS, EROSION CONTROL MEASURES SHALL BE INSTALLED BY NO LATER THAN THE SAME DAY THE HOUSE FOUNDATION IS BACKFILLED.
 - EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL ALL TURF IS ESTABLISHED.
 - SILT FENCE SHALL BE "J" HOOKED AT DRIVEWAY FOR A MINIMUM OF 4'.
 - SILT TRACKED ONTO THE STREET SHALL BE SWEEPED THE SAME DAY BY A WATER-BASED SWEEPER.
 - ACCEPTED TEMPORARY EROSION CONTROL MEASURES FOR SOIL STABILIZATION ARE: MULCH (STRAW, SHREDDED WOOD, OR COMPOST), SPRAYED MULCH, HYDROMULCH, TACKIFIER, AND EROSION CONTROL BLANKET. TEMPORARY OR PERMANENT SEEDING MIXTURES CAN BE APPLIED WITH THE LISTED SOIL STABILIZATION MEASURES.
 - IF APPLICABLE, THE CONTRACTOR SHALL FOLLOW THE NPDES TIMELINES FOR EROSION CONTROL.
 - SLOPES 3:1 OR STEEPER SHALL HAVE TEMPORARY EROSION CONTROL MEASURES, SEEDING, OR SOD INSTALLED WITHIN 7 CALENDAR DAYS.
 - FAILURE TO INSTALL OR MAINTAIN EROSION CONTROL WILL RESULT IN ISSUANCE OF AN "EROSION CONTROL CORRECTION NOTICE". FAILURE TO COMPLY WITH THE CORRECTION NOTICE MAY RESULT IN THE ISSUANCE OF A "STOP WORK ORDER".

EROSION CONTROL FOR RESIDENTIAL LOTS

CITY OF INVER GROVE HEIGHTS
ENGINEERING DEPARTMENT

2/15

PLATE NO.
EC-01



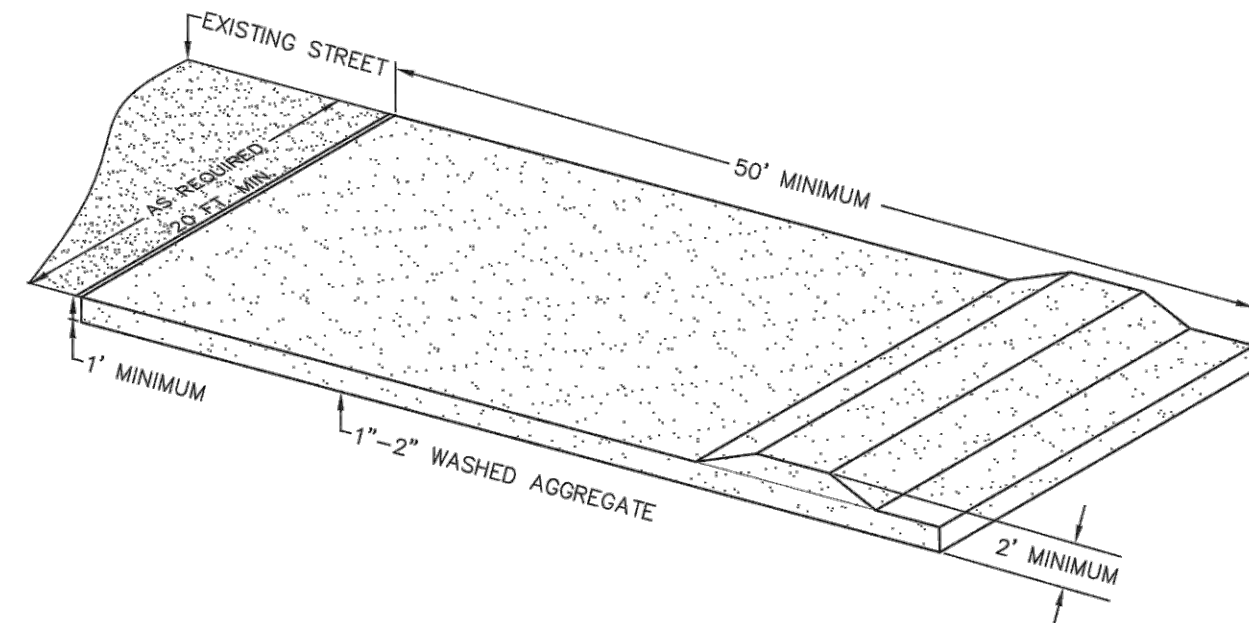
- NOTES:
- WOOD POSTS MAY BE USED IN NON-CRITICAL AREAS. WOOD POST SPACING AT 4' MAXIMUM. STEEL POSTS ARE REQUIRED WHEN HEAVY DUTY SILT FENCE IS SPECIFIED.
 - SILT FENCE MUST BE CLEANED OR REPLACED WHEN SILT DEPTH IS 1/3 HEIGHT OF FABRIC.

SILT FENCE

CITY OF INVER GROVE HEIGHTS
ENGINEERING DEPARTMENT

4/11

PLATE NO.
EC-02



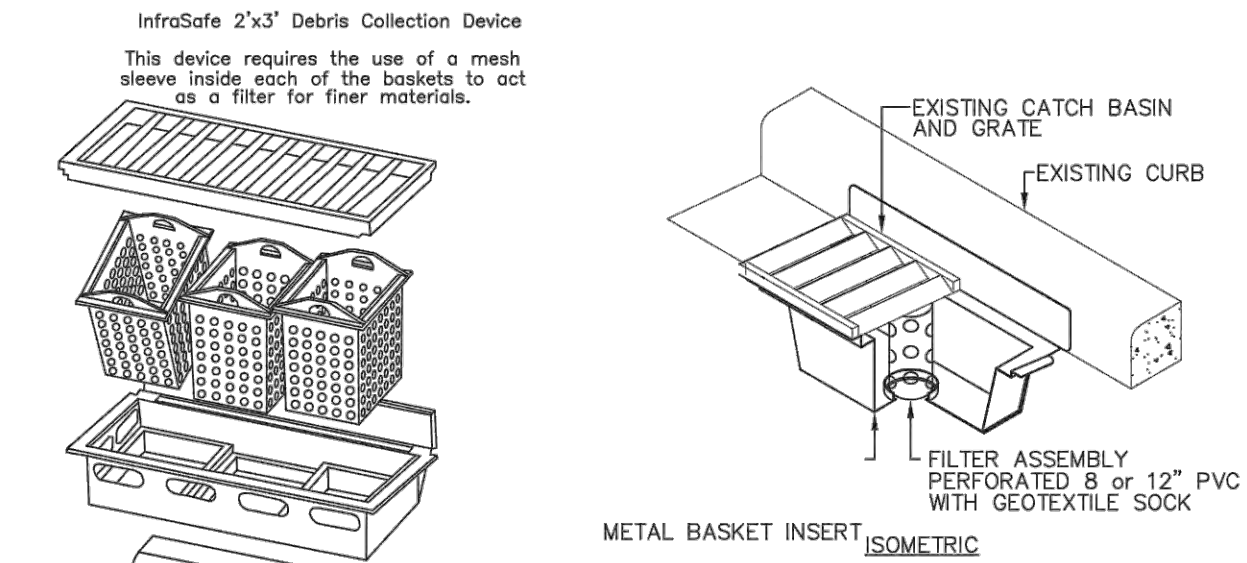
- NOTES:
- ROCK CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED PRIOR TO CONSTRUCTION ACTIVITY.
 - FOR RESIDENTIAL CONSTRUCTION, CLASS 5 MAY BE INSTALLED AS A ROCK CONSTRUCTION ENTRANCE.
 - AGGREGATE SHALL BE CLEANED, MAINTAINED, OR REPLENISHED AS NECESSARY.
 - SILT TRACKED ONTO THE STREET SHALL BE SWEEPED THE SAME DAY BY A WATER BASED SWEEPER.
 - LENGTH MAY BE MODIFIED AND 1' HIGH RIDGE MAY BE ELIMINATED FOR RESIDENTIAL CONSTRUCTION.

ROCK CONSTRUCTION ENTRANCE

CITY OF INVER GROVE HEIGHTS
ENGINEERING DEPARTMENT

4/11

PLATE NO.
EC-03



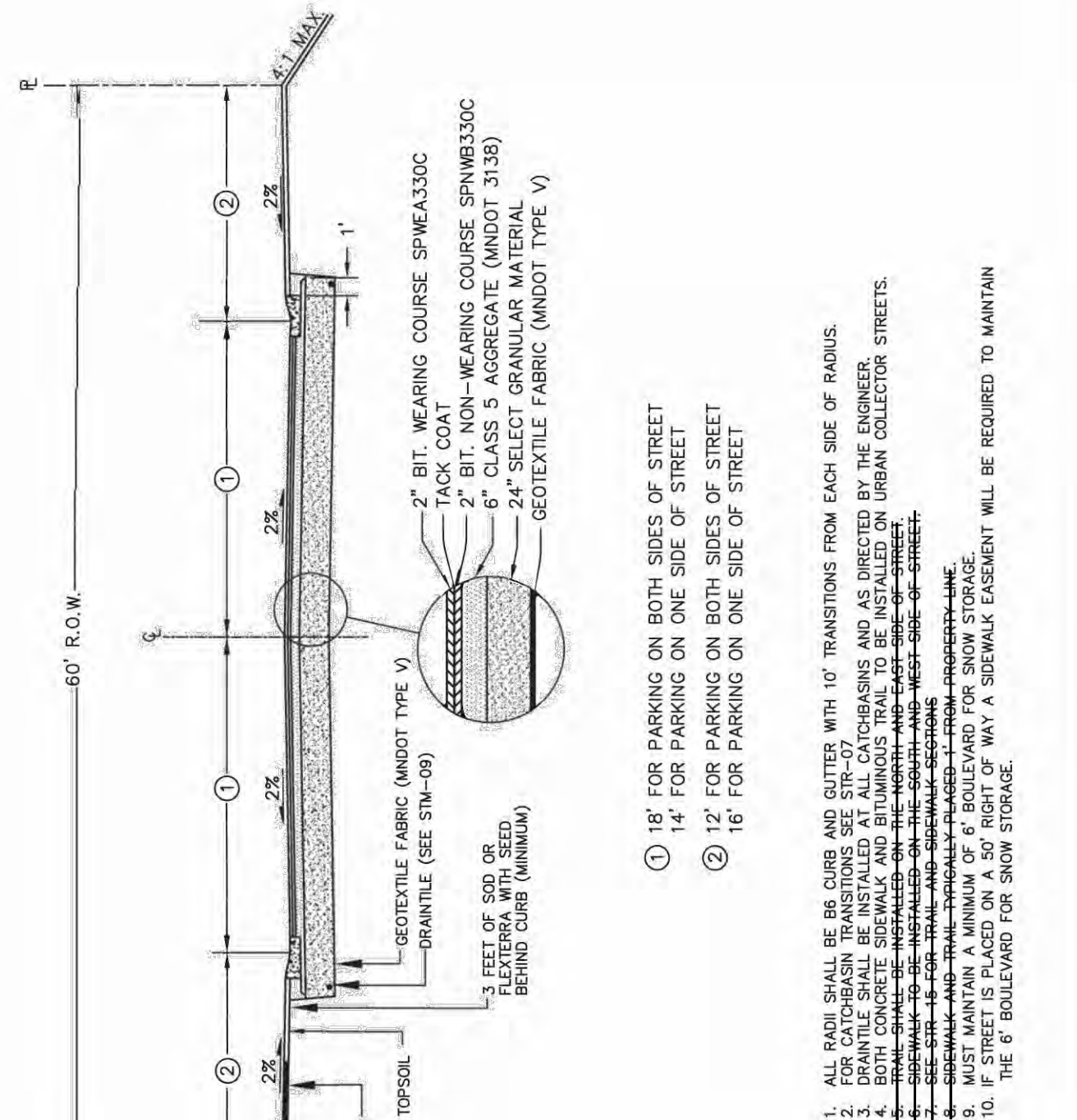
- NOTES:
- EACH STORM WATER INLET REQUIRES AN APPROVED INLET PROTECTION DEVICE FROM THE TIME THE CASTING AND RINGS ARE PLACED UNTIL THE SURROUNDING AREAS ARE ESTABLISHED, OR UNTIL DIRECTED BY THE CITY ENGINEER.
 - THESE DEVICES SHALL BE REMOVED WHEN THERE IS FROST IN THE GROUND AND REINSTALLED WHEN THE GROUND THAWS.
 - THE CONTRACTOR IS RESPONSIBLE FOR THE PLACEMENT, MAINTENANCE, AND REMOVAL OF ALL INLET PROTECTION DEVICES.
 - SEALING THE STORM SEWER INLET WITH FABRIC IS NOT AN APPROVED METHOD OF INLET PROTECTION.

STORM SEWER INLET PROTECTION

CITY OF INVER GROVE HEIGHTS
ENGINEERING DEPARTMENT

4/11

PLATE NO.
EC-04

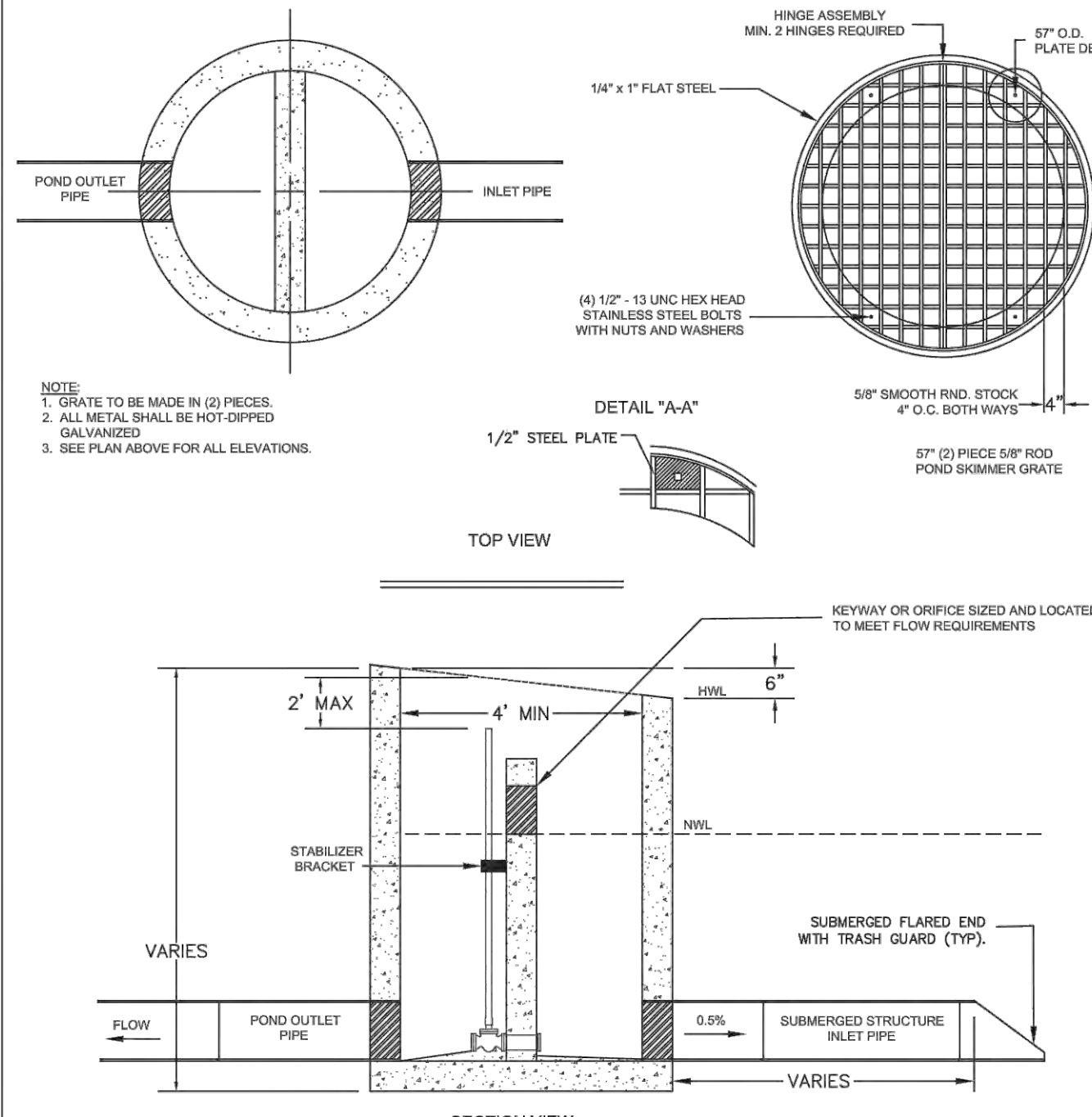


URBAN STREET DESIGN LOCAL STREET

CITY OF INVER GROVE HEIGHTS
ENGINEERING DEPARTMENT

9/15

PLATE NO.
STR-02

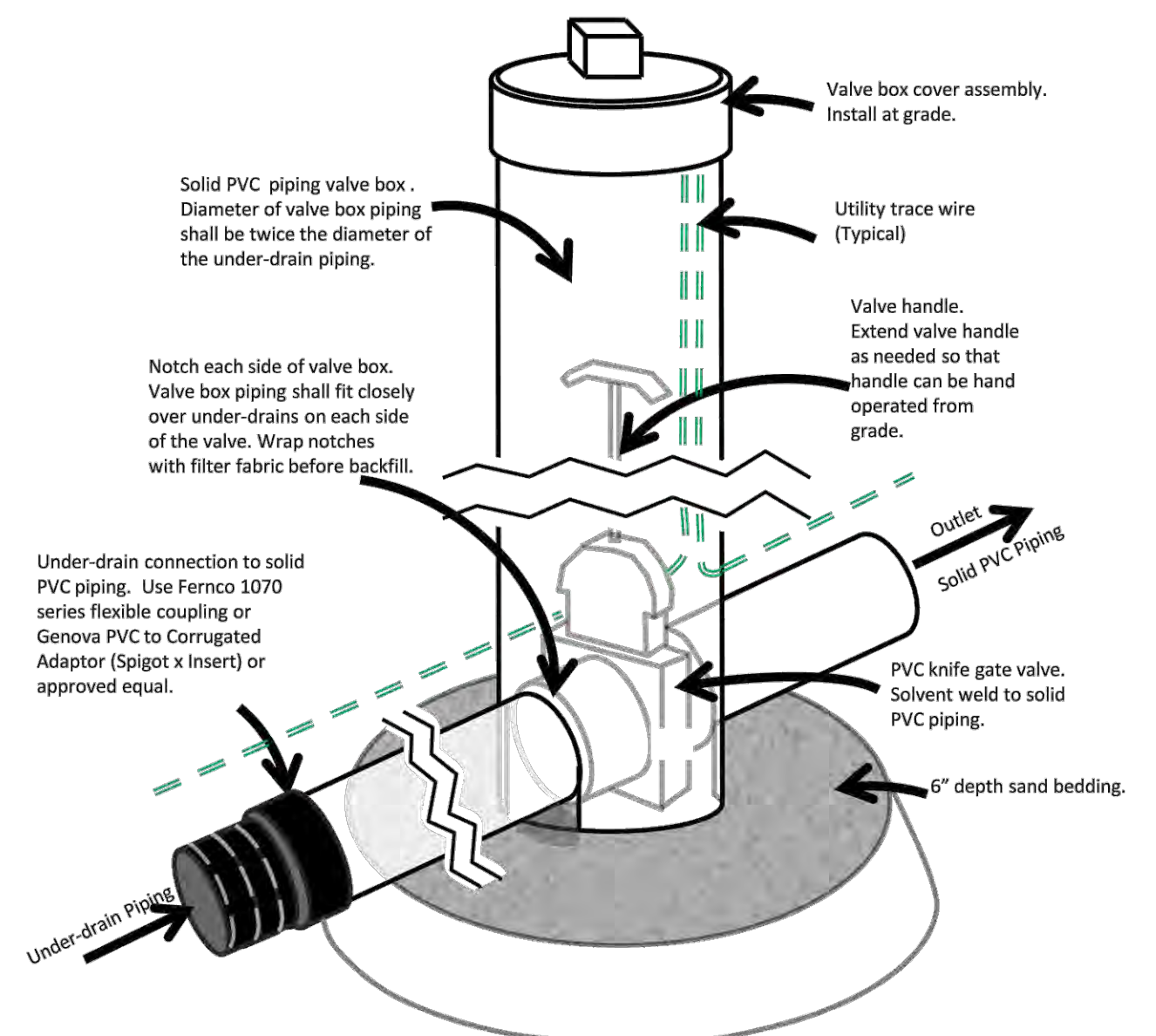


POND SKIMMER OUTLET (SUBMERGED INLET TYPE)

CITY OF INVER GROVE HEIGHTS
ENGINEERING DEPARTMENT

3/15

PLATE NO.
STM-06



- NOTES:
- Solid piping and fittings shall be PVC Schedule 40 unless noted otherwise. Piping diameters and elevations shall be as shown on the approved plans. All solid pipe fitting and joints shall be solvent welded or have mechanical coupler to provide watertight connections.
 - The knife gate valve shall be a Valterra GKV PVC Schedule 40 with 304 stainless steel paddle and metal handle or approved equal. The valve diameter shall match the diameter of the under-drain piping unless noted otherwise.
 - Valve box cover assembly includes a PVC clean-out adapter with threaded plug to access valve handle and trace wires from grade.
 - The utility trace wire shall be insulated 12 gauge copper installed along all pipe runs. Provide access to wires inside of the valve box.
 - The valve shall be installed in the full open position. The SWCD will observe the temporary pool following a rain event and will adjust the valve as needed to achieve the optimum drain down time of approximately 12 hours. Further valve adjustment should not be needed unless plants show signs of stress.

Dakota County Soil And Water Conservation District

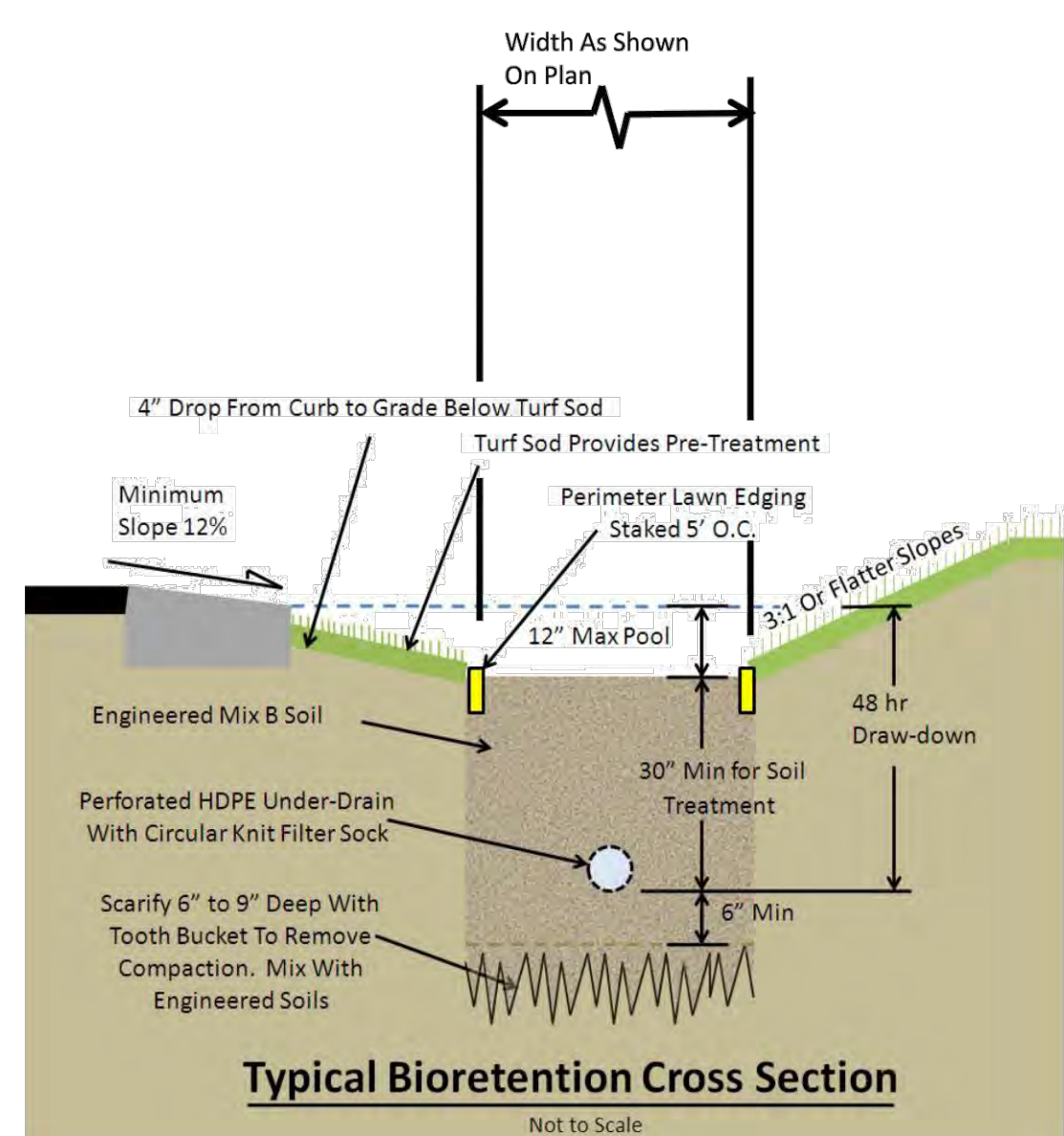
4100 220th Street West, Suite 102
Farmington, MN 55024
Phone: 651.480.7777
www.dakotacountywcd.org

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Under-drain Valve & Valve Box

Not to Scale

Revision Date 11/22/11



Dakota County Soil And Water Conservation District

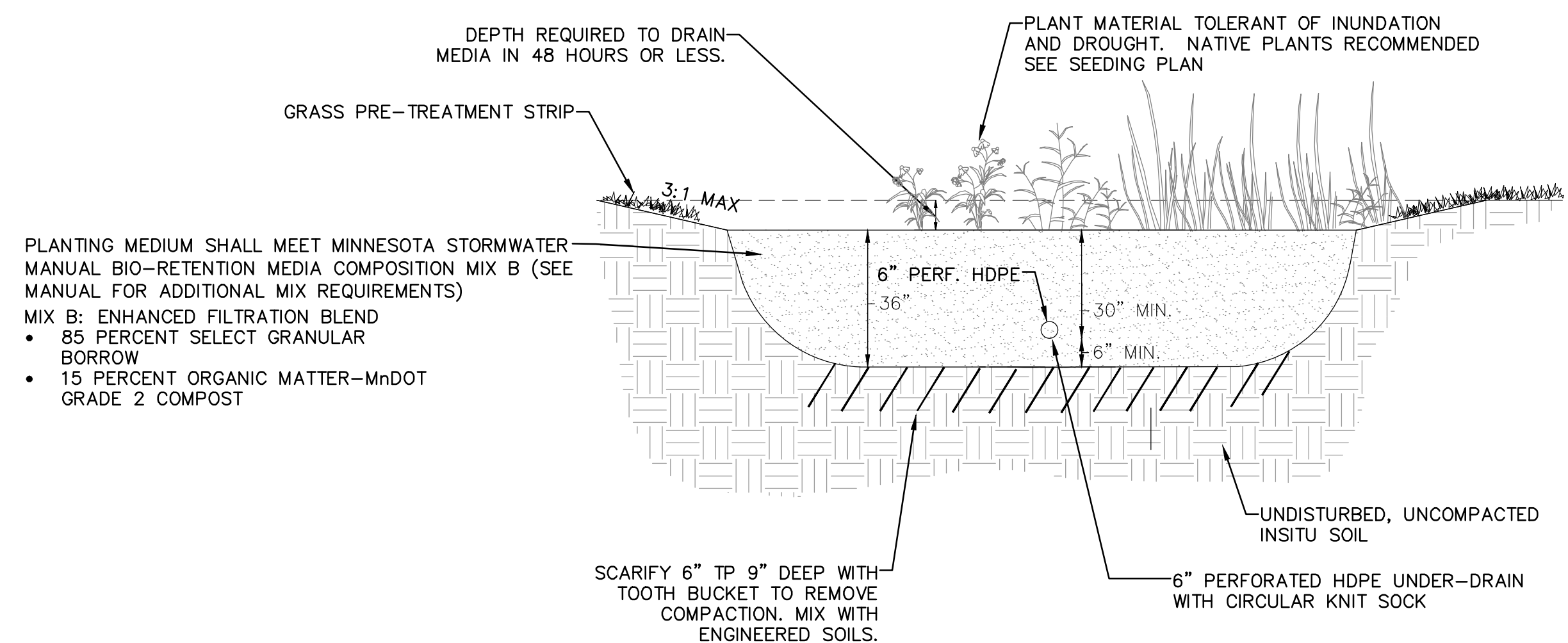
4100 220th Street West, Suite 102
Farmington, MN 55024
Phone: 651.480.7777
www.dakotacountywcd.org

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Typical Bioretention Cross Section

Not to Scale

Revision Date 11/22/11



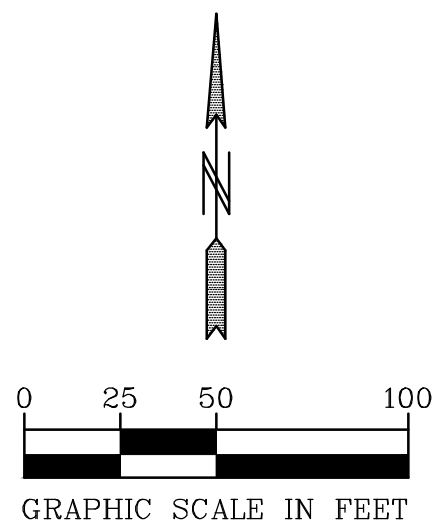
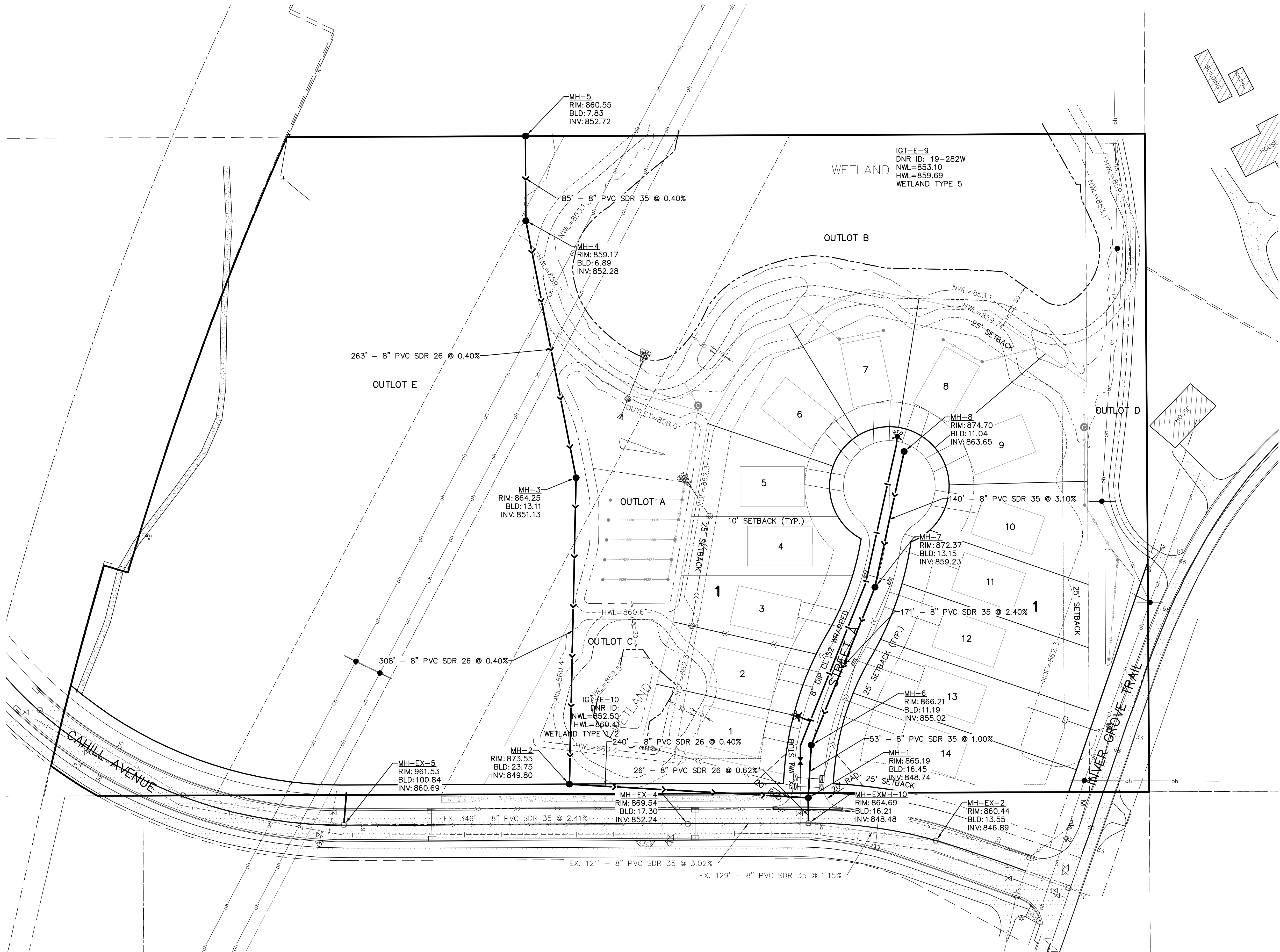
INFILTRATION/FILTRATION BASIN CONSTRUCTION NOTES

CONSTRUCTION SEQUENCING

1. INSTALL SILT FENCE AND/OR OTHER APPROPRIATE EROSION CONTROL DEVICES TO PREVENT SEDIMENT FROM LEAVING OR ENTERING THE PRACTICE DURING CONSTRUCTION.
2. ALL DOWN-GRADIENT PERIMETER SEDIMENT CONTROL BMPs MUST BE IN PLACE BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITY BEGINS.
3. PERFORM CONTINUOUS INSPECTIONS OF EROSION CONTROL PRACTICES.
4. INSTALL UTILITIES (WATER, SANITARY SEWER, ELECTRIC, PHONE, FIBER OPTIC, ETC) PRIOR TO SETTING FINAL GRADE OF RETENTION DEVICE.
5. ROUGH GRADE THE SITE. DO NOT USE RETENTION AREA AS TEMPORARY SEDIMENT BASINS.
6. PERFORM ALL OTHER SITE IMPROVEMENTS.
7. SEED AND MULCH ALL AREAS AFTER DISTURBANCE.
8. CONSTRUCT RETENTION DEVICE UPON STABILIZATION OF CONTRIBUTING DRAINAGE AREA.
9. IMPLEMENT TEMPORARY AND PERMANENT EROSION CONTROL PRACTICES.
10. PLANT AND MULCH RETENTION DEVICE.
11. REMOVE TEMPORARY EROSION CONTROL DEVICES AFTER THE CONTRIBUTING DRAINAGE AREA IS ADEQUATELY VEGETATED.

GENERAL NOTES

1. IN THE EVENT THAT SEDIMENT IS INTRODUCED INTO THE BMP DURING OR IMMEDIATELY FOLLOWING EXCAVATION, THIS MATERIAL SHALL BE REMOVED FROM THE PRACTICE PRIOR TO CONTINUING CONSTRUCTION.
2. GRADING OF RETENTION DEVICES SHALL BE ACCOMPLISHED USING LOW-COMPACTION EARTH-MOVING EQUIPMENT TO PREVENT COMPACTION OF UNDERLYING SOILS.
3. ALL SUB MATERIALS BELOW THE SPECIFIED BIORETENTION DEPTH (ELEVATION) SHALL BE UNDISTURBED, UNLESS OTHERWISE NOTED.



BENCH MARK
TNH 400' WEST CAHILL
AVE. & INVER GROVE
TRAIL INT.
ELEV=870.62

UTILITY CONSTRUCTION NOTE
1. STRUCTURES IN BOULEVARDS/GREENSPACE REQUIRE
FIBERGLASS FLEX STAKE MARKERS, CITY PLATE (MISC-01)

PRELIMINARY ZONING REQUIREMENTS WITH VARIANCES:

MINIMUM LOT WIDTH	60 FEET
MINIMUM CORNER LOT WIDTH	80 FEET
MINIMUM FRONT YARD SETBACK	25 FEET
MINIMUM REAR YARD SETBACK	25 FEET
MINIMUM SIDE SETBACK	7.5 FEET
MINIMUM SIDE STREET SETBACK	25 FEET

LOW FLOOR = HWL+2'
LOWEST OPENING = EOF+1'
LOW FLOOR = NOF+1'



2422 Enterprise Drive
Mendota Heights, MN 55120
(651) 681-1914
Fax: 681-9488
www.pioneereng.com

I hereby certify that this plan 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

Name
John M. Molinaro
Reg. No. 45831
Date 11-1-2019

Revisions
1. 1-28-20 Client/City Comments
2. 3-30-20 Client/City Comments
3. 5-21-20 Wetland Mit. Comments

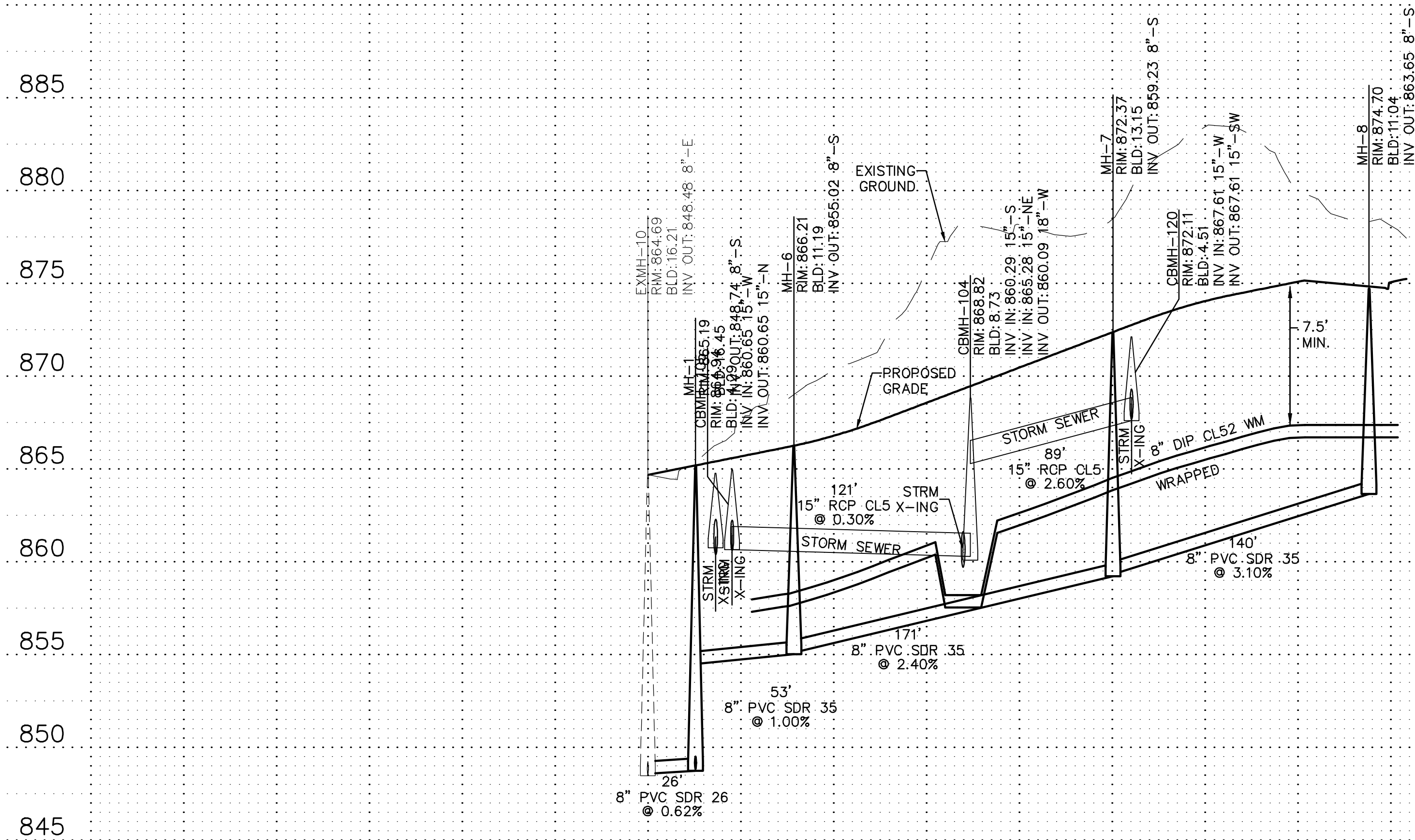
Date 11-1-19
Designed JMM
Drawn MSN

PRELIMINARY SANITARY &
WATERMAIN/ SITE PLAN

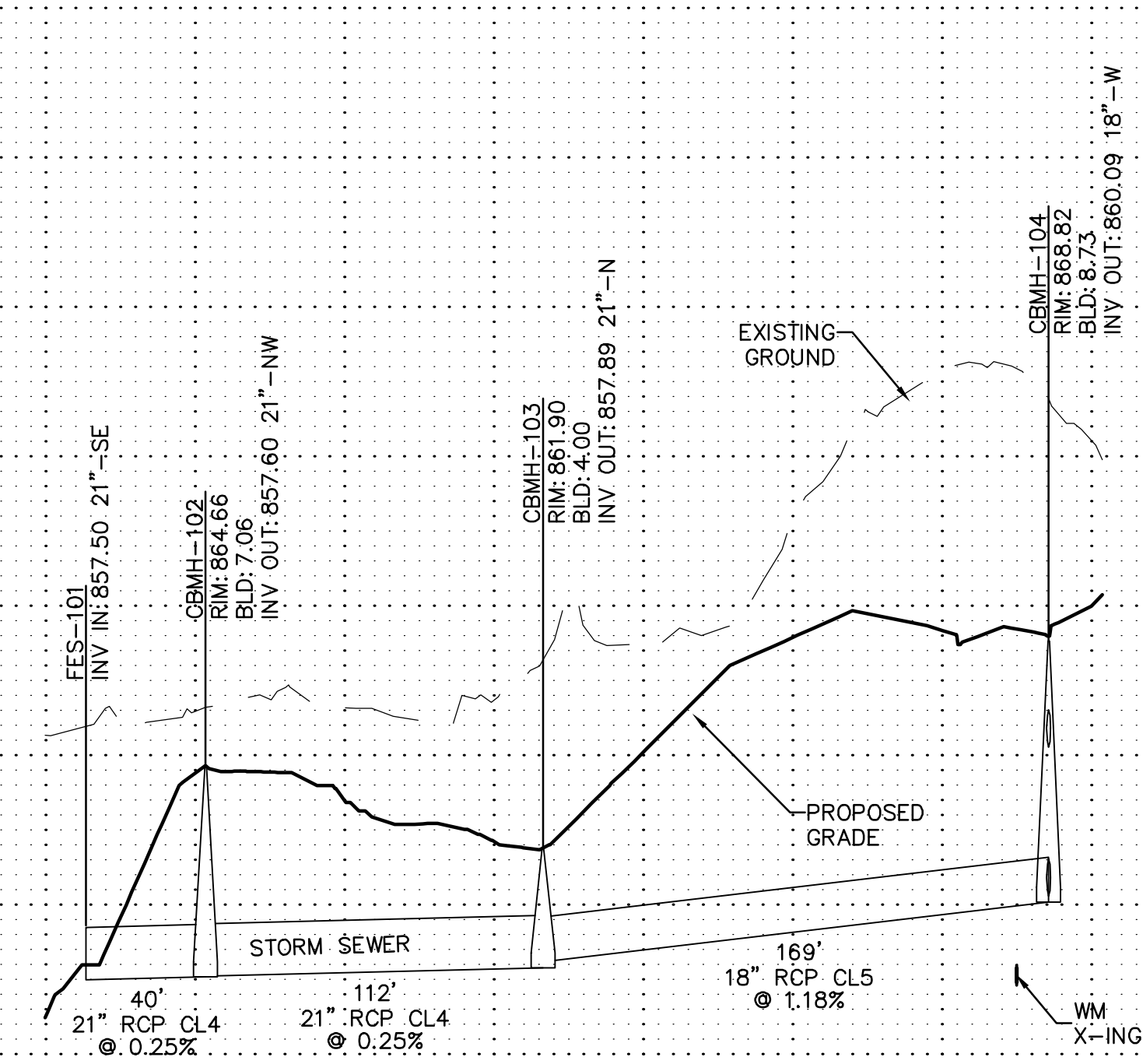
ALLIANT VENTURES III, LLC
4655 NICHOLS ROAD, STE. 106
EAGAN, MN 55122

INVER GROVE TRAIL
INVER GROVE HEIGHTS, MINNESOTA

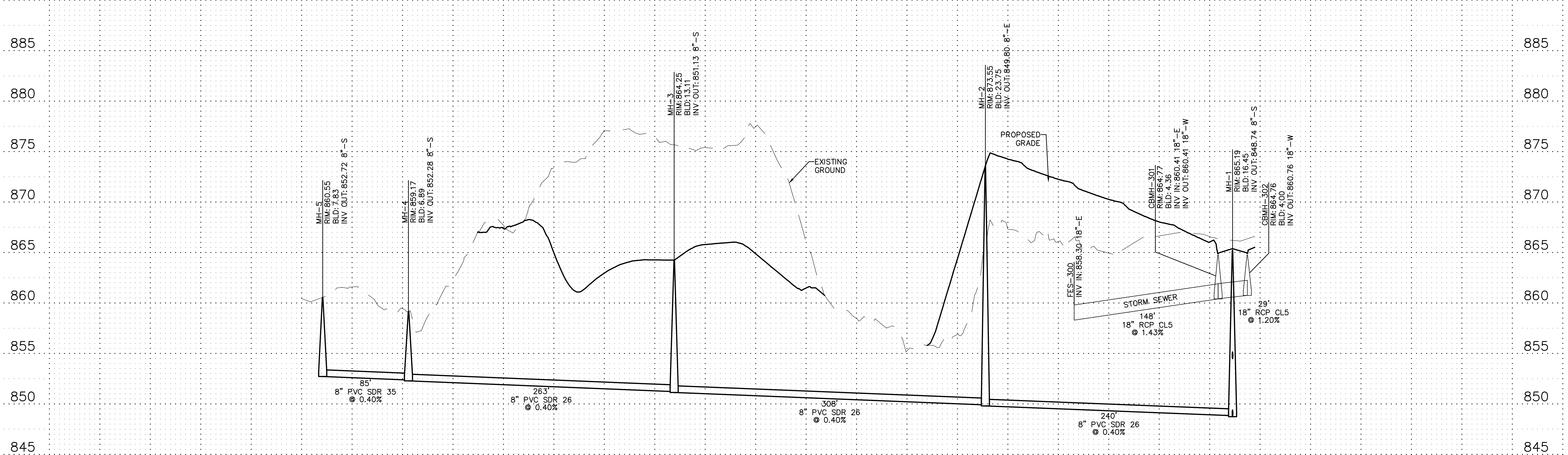
STREET A

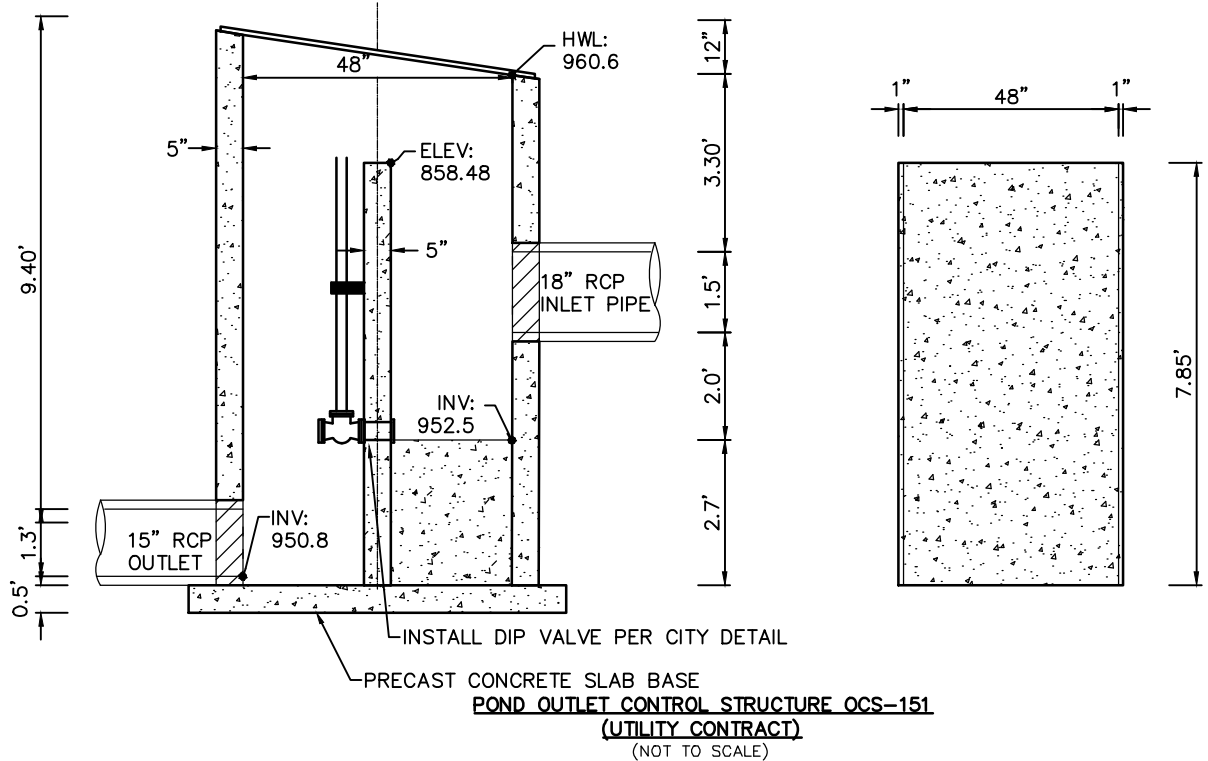
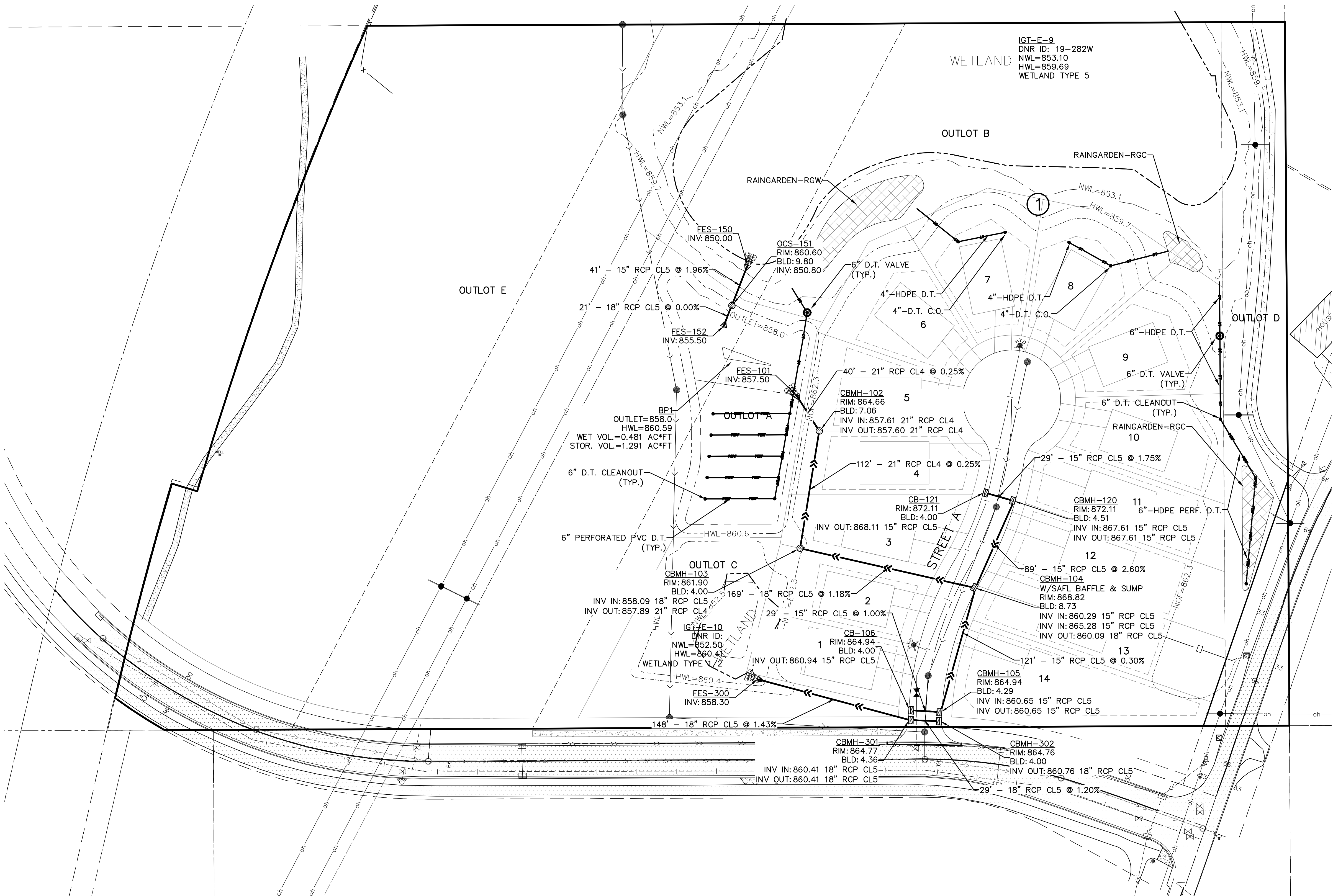


STORM SEWER TO BASIN

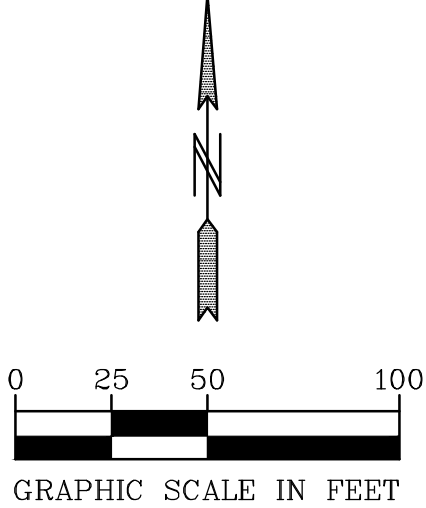


TRUNK SANITARY SEWER





BENCH MARK
TNH 400' WEST CAHILL
AVE. & INVER GROVE
TRAIL INT.
ELEV=870.62

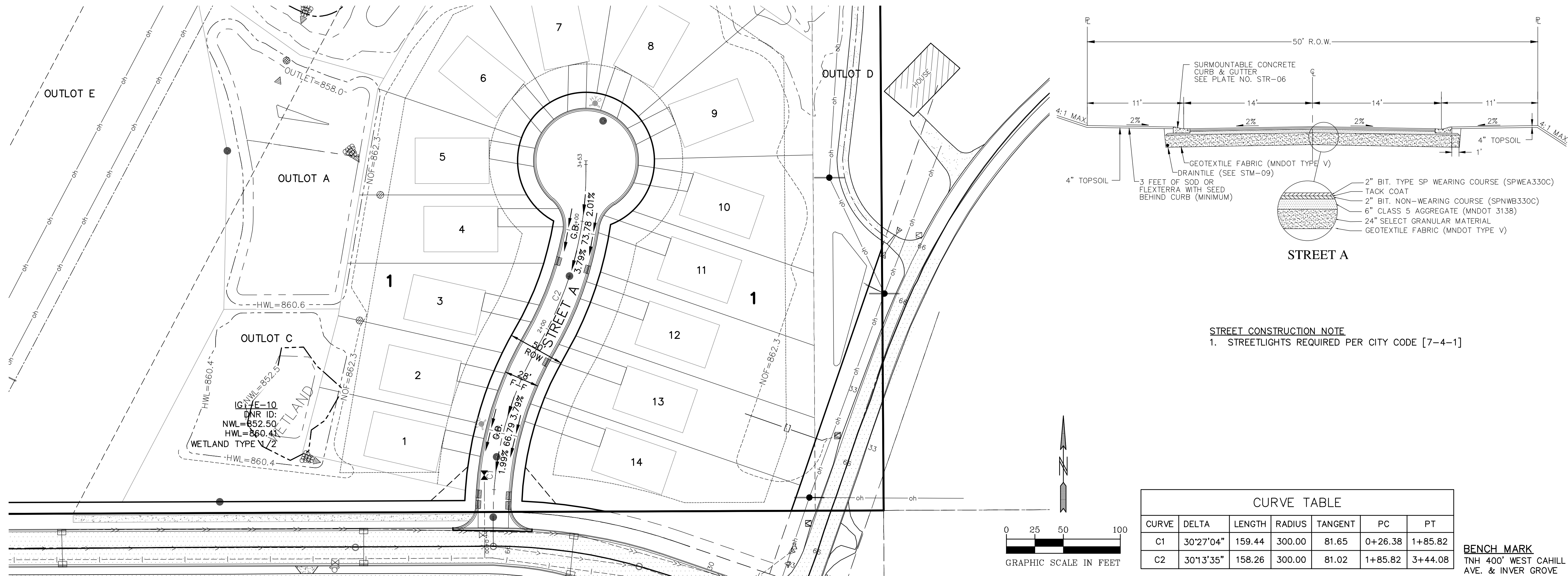


PRELIMINARY ZONING REQUIREMENTS WITH VARIANCES:

MINIMUM LOT WIDTH	60 FEET
MINIMUM CORNER LOT WIDTH	80 FEET
MINIMUM FRONT YARD SETBACK	25 FEET
MINIMUM REAR YARD SETBACK	25 FEET
MINIMUM SIDE SETBACK	7.5 FEET
MINIMUM SIDE STREET SETBACK	25 FEET

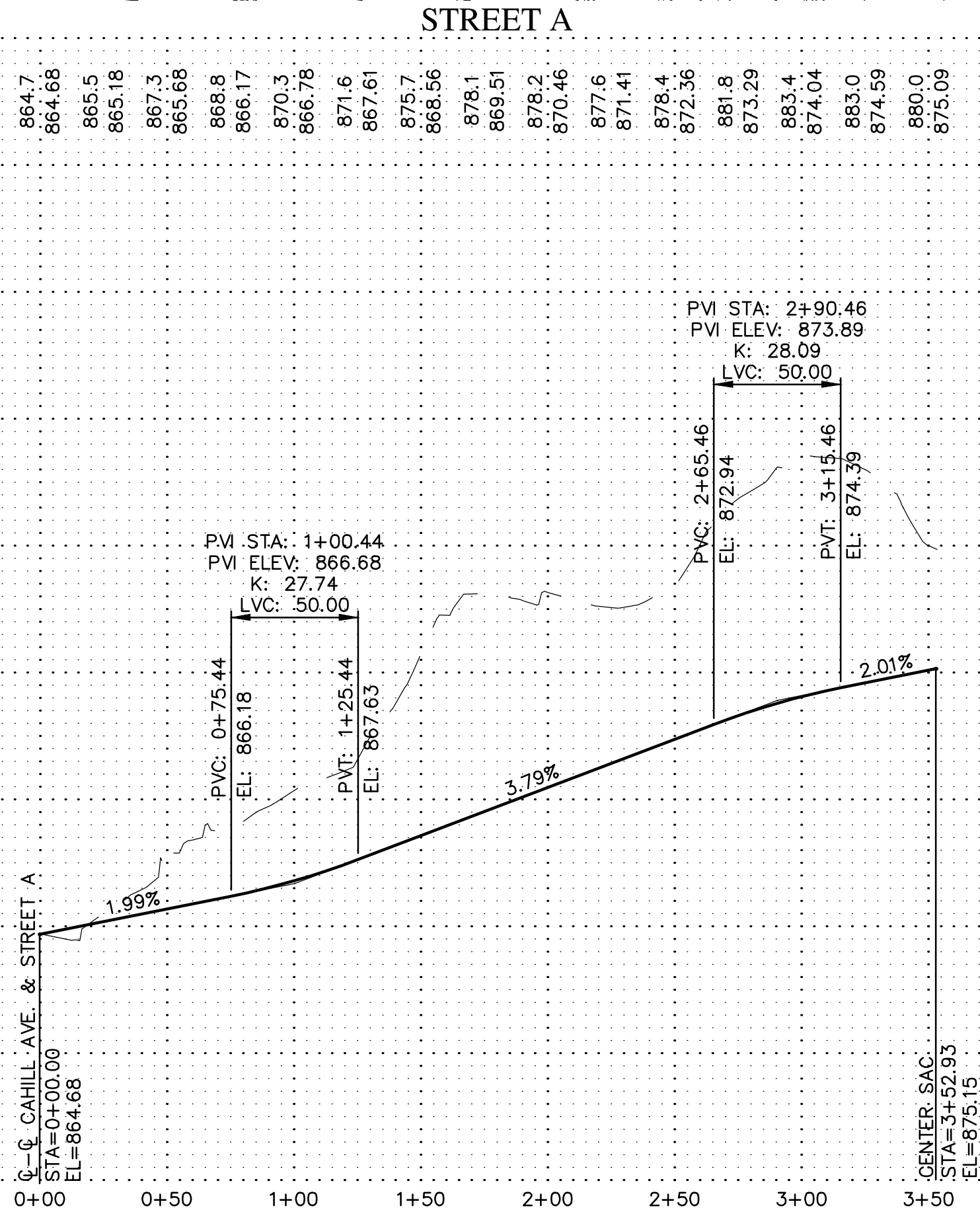
LOW FLOOR = HWL+2'
LOWEST OPENING = EOF+1'
LOW FLOOR = NOF+1'

UTILITY CONSTRUCTION NOTE
1. STRUCTURES IN BOULEVARDS/GREENSPACE REQUIRE
FIBERGLASS FLEX STAKE MARKERS, CITY PLATE (MISC-01)



CURVE TABLE					
CURVE	DELTA	LENGTH	RADIUS	TANGENT	PC PT
C1	30°27'04"	159.44	300.00	81.65	0+26.38 1+85.82
C2	30°13'35"	158.26	300.00	81.02	1+85.82 3+44.08

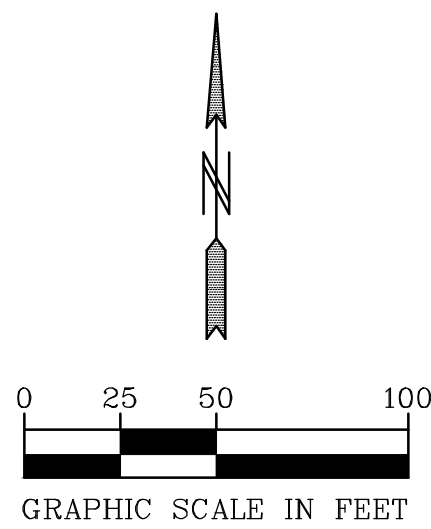
BENCH MARK
TNH 400' WEST CAHILL
AVE. & INVER GROVE
TRAIL INT.
ELEV=870.62



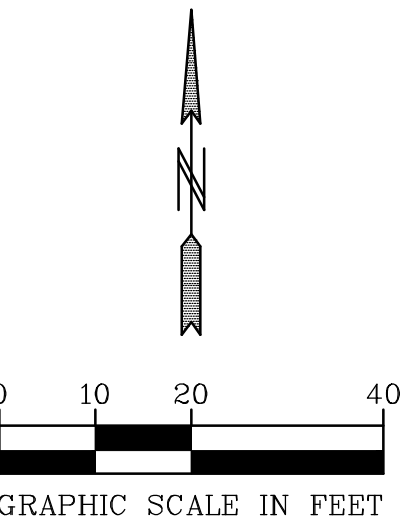
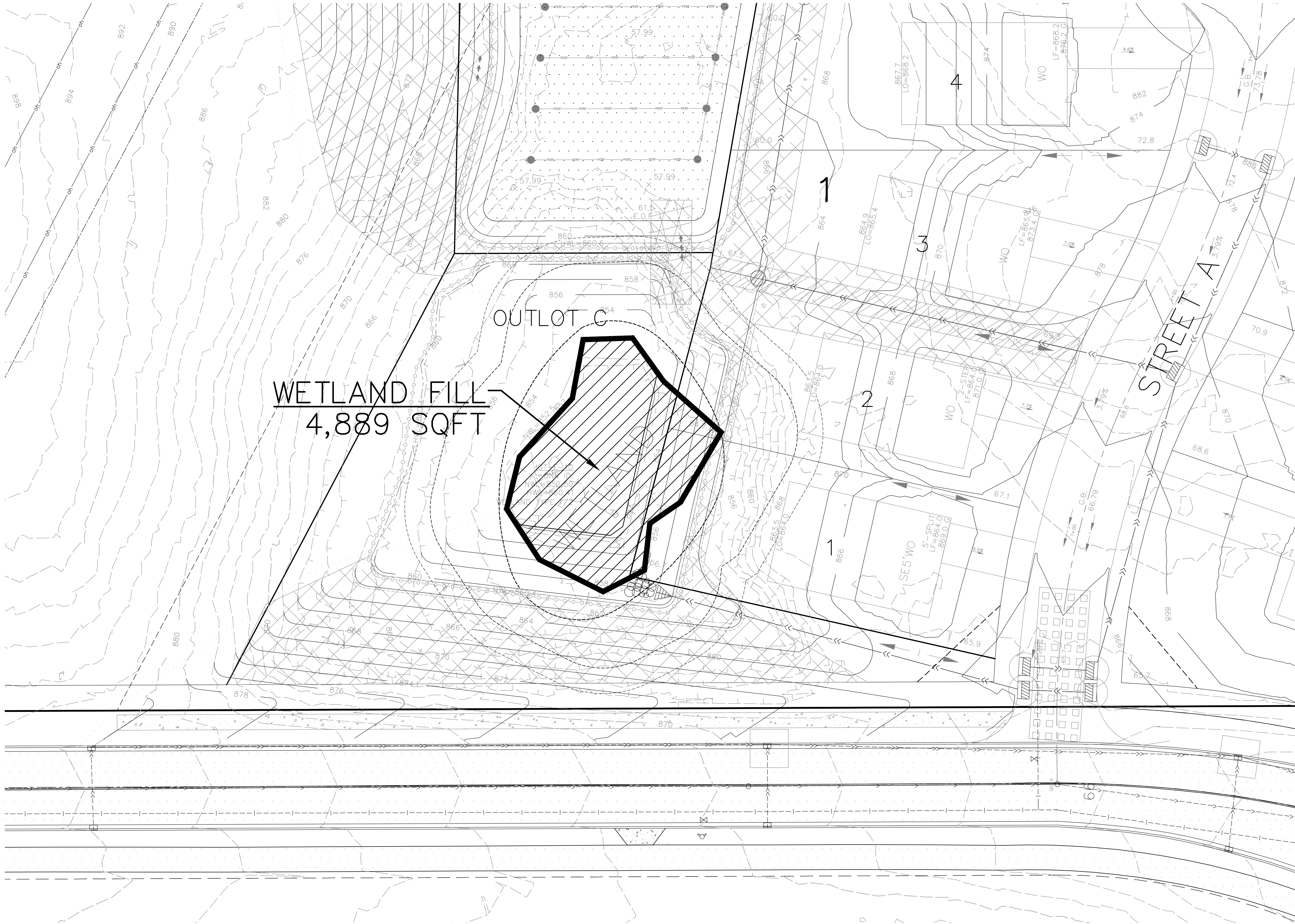


IGA-E-9 MITIGATION SUMMARY

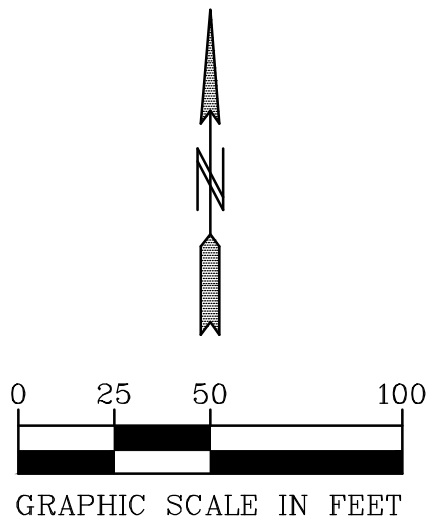
QUANTITY (CU YD)	
FILL	742
CUT	1645
NET	903 (CUT)



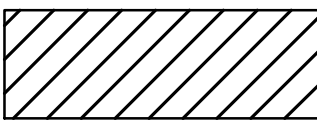
BENCH MARK
TNH 400' WEST CAHILL
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BENCH MARK
TNH 400' WEST CAHILL
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TRAIL INT.
ELEV=870.62

 -STEEP SLOPES

STEEP SLOPES NOTE
1. 3:1 SLOPES-PROVIDE MNDOT RAPID STABILIZATION
(2575-3) METHOD 3 OR 4.
-HYDRAULIC MULCH, SEED & FERTILIZE
-CAT.3 BLANKET, SEED & FERTILIZE



PLANT SCHEDULE				
KEY	COMMON NAME/Scientific name	ROOT	QUANTITY	INSTRUCTIONS
OVERSTORY TREES				
	AUTUMN BLAZE MAPLE/Acer x freemanii 'Jeffersred'	3" B&B	7	
	RIVER BIRCH/Betula nigra 'Heritage'	12-14' B&B	22	Clump
	THORNLESS HONEYLOCUST/Gleditsia triacanthos var. inermis	3" B&B	3	
	SENTRY LINDEN/Tilia americana 'Sentry'	3" B&B	4	
	NORTHERN PIN OAK/Quercus ellipsoidalis	3" B&B	6	
	SWAMP WHITE OAK/Quercus bicolor	3" B&B	23	
	SUGAR MAPLE/Acer saccharum	3" B&B	10	
	COMMON HACKBERRY/Celtis occidentalis	3" B&B	9	
EVERGREEN TREES				
	BLACK HILLS SPRUCE/Picea glauca densata	8' B&B	43	
	WHITE PINE/Pinus strobus	8' B&B	29	

LANDSCAPE NOTES:

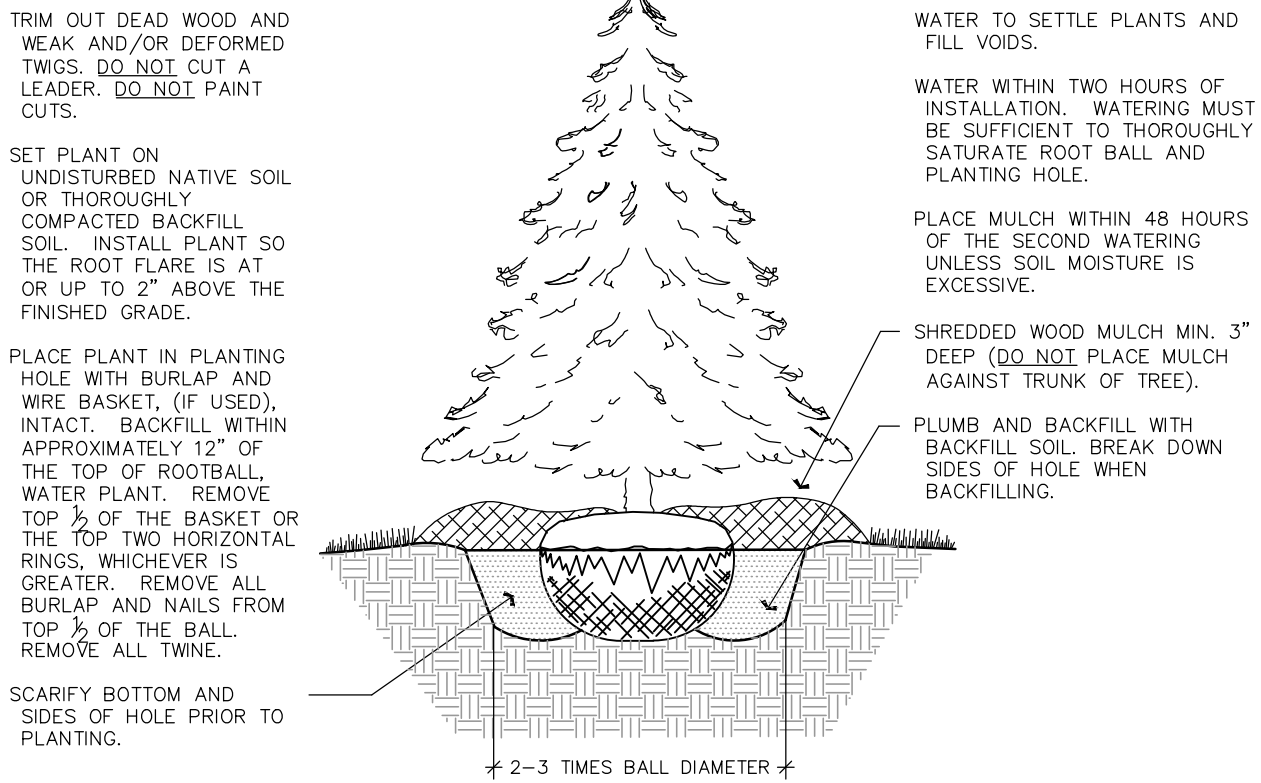
STREET TREE REQUIREMENT: 1 TREE/40 FEET, A MINIMUM OF 1 TREE/LOT
TREES MUST BE PLANTED 5-7' INSIDE PROPERTY LINE AND NO CLOSER THAN 30' TO THE CURBLINE INTERSECTION ON CORNER LOTS.
MITIGATION REQUIRED: 535.7" (SEE SUBMITTED TREE PRESERVATION PLAN)

PROPOSED TREES:
84 3" OVERSTORY (252")
72 8' EVERGREEN (288"), EACH 8' EVERGREEN IS 4" CALIPER
TOTAL TREES: 156 (540")

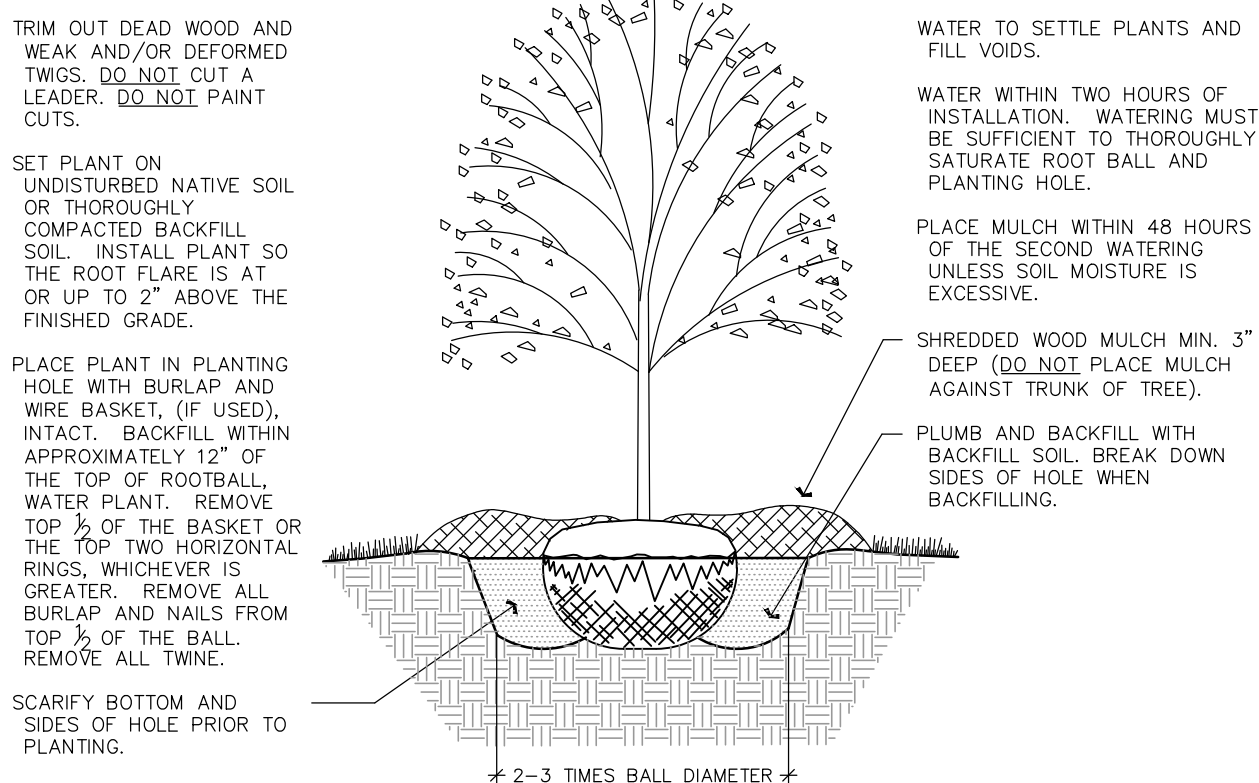
LANDSCAPE NOTES

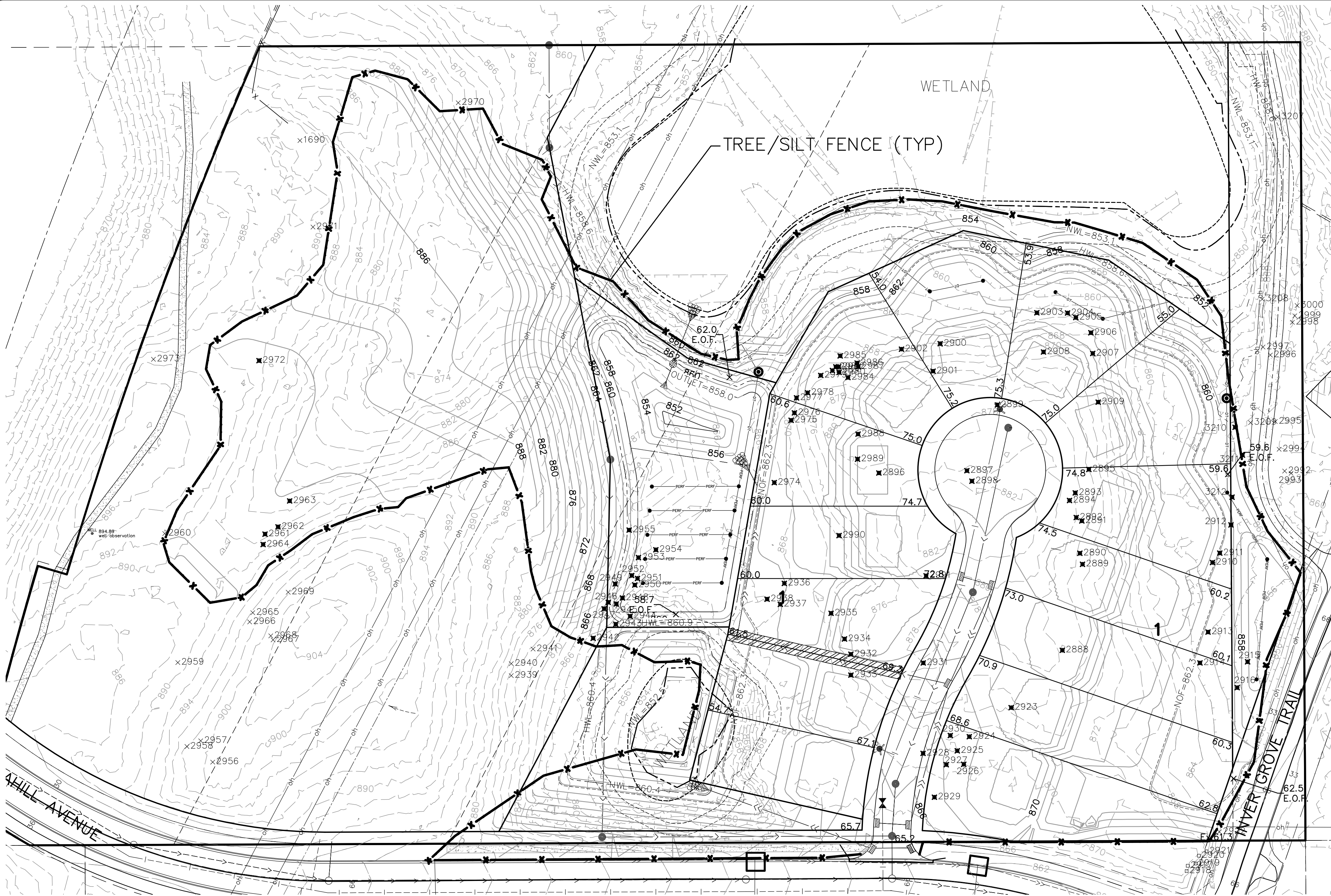
- THE LANDSCAPE CONTRACTOR SHALL VISIT THE PROJECT SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID.
- THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF PROPOSED PHYSICAL START DATE AT LEAST 7 DAYS IN ADVANCE.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIELD VERIFICATION OF ALL EXISTING UTILITY LOCATIONS ON THE PROJECT SITE WITH GOPHER STATE ONE CALL 1-800-252-1166 PRIOR TO COMMENCING WORK. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF EXISTING UTILITIES DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER. NOTIFY THE LANDSCAPE ARCHITECT OF ANY CONFLICTS TO FACILITATE PLANT RELOCATION.
- GRADING TO BE PERFORMED BY OTHERS.
- NO PLANT MATERIAL SHALL BE INSTALLED UNTIL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
- ALL PLANT MATERIAL SHALL MEET THE STANDARDS FOUND IN THE AMERICAN ASSOCIATION OF NURSEYMEN-AMERICAN STANDARD FOR NURSERY STOCK.
- ALL CONTAINER MATERIAL TO BE GROWN IN THE CONTAINER A MINIMUM OF SIX (6) MONTHS PRIOR TO PLANTING ON SITE.
- DECIDUOUS AND CONIFEROUS TREES SHALL NOT BE STAKED, BUT THE LANDSCAPE CONTRACTOR MUST GUARANTEE STABILITY TO A WIND SPEED OF 60 M.P.H.
- THE LANDSCAPE CONTRACTOR SHALL PROVIDE A MINIMUM GUARANTEE OF ONE YEAR ONE TIME REPLACEMENT ON NEW PLANT MATERIALS. GUARANTEE SHALL BE AGREED UPON BY DEVELOPER/BUILDER AND LANDSCAPE CONTRACTOR.
- THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANTS WHICH ARE DEEMED UNSATISFACTORY BEFORE, DURING OR AFTER INSTALLATION.
- IF THERE IS A DISCREPANCY BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND THE NUMBER SHOWN ON THE PLANT LIST, THE NUMBER SHOWN ON THE PLAN WILL TAKE PRECEDENCE.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MULCHES AND PLANTING SOIL QUANTITIES TO COMPLETE WORK SHOWN ON THE PLAN. THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES SHOWN ON THE PLANT SCHEDULE.
- COMMERCIAL GRADE POLY LAWN EDGING SHALL BE INSTALLED WHERE NOTED.
- THE LANDSCAPE CONTRACTOR SHALL REPAIR ALL DAMAGE TO THE SITE CAUSED BY THE PLANTING OPERATION AT NO COST TO THE OWNER.
- THE LANDSCAPE CONTRACTOR SHALL KEEP PAVEMENTS CLEAN UNSTAINED. ALL PEDESTRIAN AND VEHICLE ACCESS TO BE MAINTAINED THROUGHOUT CONSTRUCTION PERIOD. ALL WASTES SHALL BE PROMPTLY REMOVED FROM THE SITE. ANY DAMAGE TO EXISTING FACILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE CODES, REGULATIONS AND PERMITS GOVERNING THE WORK.
- STORAGE OF MATERIALS OR SUPPLIES ON-SITE WILL NOT BE ALLOWED.

CONIFEROUS TREE PLANTING DETAIL



DECIDUOUS TREE PLANTING DETAIL





Tree Preservation Data

Total Inches: 1,625"
Removed Total: 1,238"
"Class A" Trees Saved: 180"
"Class A" Tree Removed: 691"
"Class B" Trees Saved: 207"
"Class B" Tree Removed: 547"
"Class C" Trees Saved: 0"
"Class C" Tree Removed: 0"
Allowed to Remove 30%: 488"

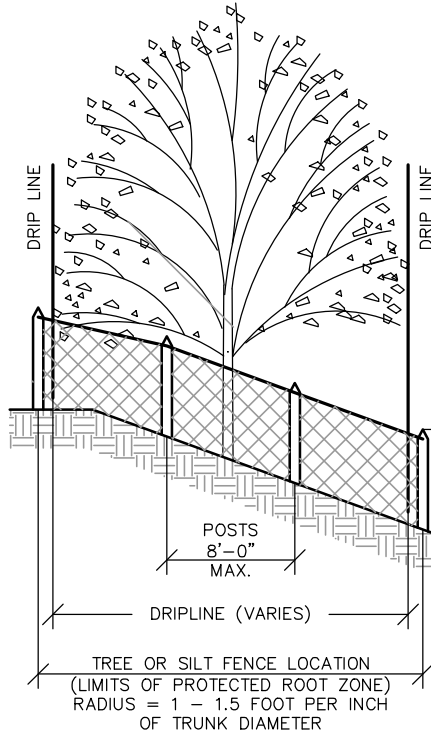
Mitigation Required

Mitigation based on City's "Tree Preservation Workbook" as provided by the City
Subtotal adjusted replacement inches 535.7
Total (lesser of subtotal or max. def. inches) 535.7
Equivalent number of trees @ 2.5 caliper inches per tree 214.3

TREE PROTECTION DETAIL
NOT TO SCALE

TREES TO BE SAVED SHALL BE FENCED OFF WITH BRIGHT ORANGE POLYETHYLENE SAFETY NETTING OR HEAVY DUTY SILT FENCE AND STEEL STAKES AT THE DRIP LINE, OR AS DIRECTED BY THE OWNER'S CONSULTANT.

PROTECTION FENCE WILL HELP INSURE AGAINST DAMAGE BY VEHICLES, COMPACTION OF SOILS, AND/OR THE CHEMICAL ALTERATION OF SOILS DUE TO CONCRETE WASHOUT, PAINTS AND LEAKAGE OR SPILLAGE OF ANY TOXIC MATERIALS.



INSTALL TREE OR SILT FENCE PRIOR TO OR AT SAME TIME AS LAND CLEARING.

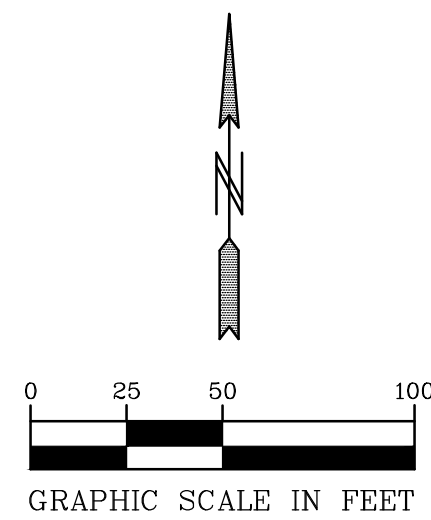
PROTECTION FENCE SHOULD REMAIN IN PLACE UNTIL ALL CONSTRUCTION IS COMPLETE.

IF PROTECTION FENCE IS DAMAGED OR REMOVED, NEW FENCING MUST BE PLACED BACK IN ORIGINAL POSITION UNTIL CONSTRUCTION IS COMPLETE.

☒ 141 TREE TO BE REMOVED

× 141 TREE TO BE SAVED

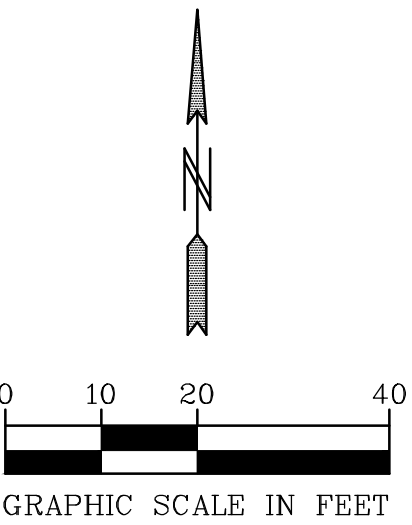
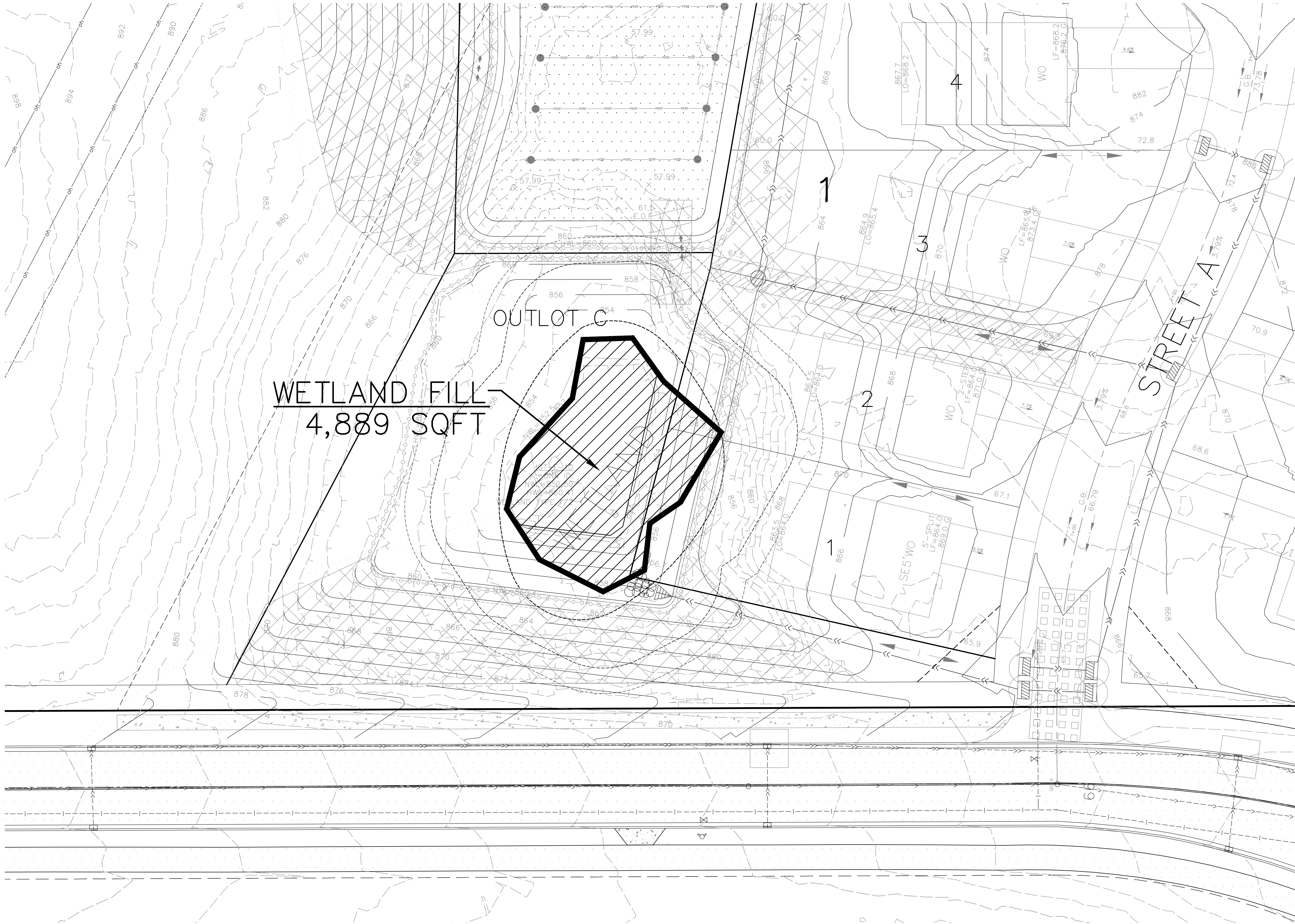
□ 141 TREE LOCATED OFF-SITE



Tag No.	DBH	Common Name	Scientific Name	Notes	Status	Class
1690	16,9	Siberian Elm	Ulmus pumila		Save	A
2888	16,13	Crabapple	Malus sp.		Remove	B
2889	17	Colorado Blue Spruce	Picea pungens	35' in height (lower half no needles)	Remove	B
2890	16	Colorado Blue Spruce	Picea pungens	35' in height (lower half no needles)	Remove	B
2891	16	Colorado Blue Spruce	Picea pungens	30' in height (lower half no needles)	Remove	B
2892	14	Colorado Blue Spruce	Picea pungens	30' in height (lower half no needles)	Remove	B
2893	10,9,8	Mulberry	Morus sp.		Remove	A
2894	18	Norway Spruce	Picea abies	35' in height (lower half no needles)	Remove	B
2895	12	Black Walnut	Juglans nigra		Remove	B
2896	24	Pear	Pyrus sp.		Remove	B
2897	9	Siberian Elm	Ulmus pumila		Remove	A
2898	9,9	Siberian Elm	Ulmus pumila		Remove	A
2899	17	American Elm	Ulmus americana		Remove	A
2900	16	Apple	Malus sp.	hollow at base	Remove	
2901	18	Apple	Malus sp.	internal decay at base	Remove	
2902	23	Apple	Malus sp.	hollow at base	Remove	
2903	14	Apple	Malus sp.	internal decay along trunk	Remove	
2904	10	Green Ash	Fraxinus pennsylvanica		Remove	A
2905	15	Black Cherry	Prunus serotina		Remove	B
2906	16	Northern Pin Oak	Quercus ellipsoidalis		Remove	B
2907	15	Black Walnut	Juglans nigra		Remove	B
2908	18	Apple	Malus sp.	hollow at base	Remove	
2909	9	Black Walnut	Juglans nigra		Remove	B
2910	10	Black Walnut	Juglans nigra		Remove	B
2911	11	Black Walnut	Juglans nigra		Remove	B
2912	11	Black Walnut	Juglans nigra		Remove	B
2913	11	Black Walnut	Juglans nigra		Remove	B
2914	18,16	Black Walnut	Juglans nigra		Remove	B
2915	16	Black Walnut	Juglans nigra		Remove	B
2916	17	Black Walnut	Juglans nigra		Remove	B
2917	15	Colorado Blue Spruce	Picea pungens	30' in height	Off-Site	
2918	14	Colorado Blue Spruce	Picea pungens	30' in height	Off-Site	
2919	14	Black Cherry	Prunus serotina		Off-Site	
2920	6	Colorado Blue Spruce	Picea pungens	20' in height	Off-Site	
2921	10	Apple	Malus sp.		Off-Site	
2922	8	American Elm	Ulmus americana		Save	A
2923	18,10	Siberian Elm	Ulmus pumila		Remove	A
2924	14,10	Siberian Elm	Ulmus pumila		Remove	A
2925	8	American Elm	Ulmus americana		Remove	A
2926	16	American Elm	Ulmus americana		Remove	A
2927	14	Cottonwood	Populus deltoides	non-significant tree, tagged accidentally	Remove	A
2928	9	Siberian Elm	Ulmus pumila		Remove	A
2929	16	Willow	Salix sp.		Remove	A
2930	21,19	Siberian Elm	Ulmus pumila		Remove	A
2931	22	Siberian Elm	Ulmus pumila		Remove	A
2932	13	Siberian Elm	Ulmus pumila		Remove	A
2933	11	Siberian Elm	Ulmus pumila		Remove	A
2934	14	Siberian Elm	Ulmus pumila		Remove	A
2935	12	Siberian Elm	Ulmus pumila		Remove	A
2936	11	Siberian Elm	Ulmus pumila		Remove	A
2937	9	Siberian Elm	Ulmus pumila		Remove	A
2938	9	Siberian Elm	Ulmus pumila		Remove	A
2939	14	American Elm	Ulmus americana		Save	A
2940	16	Black Cherry	Prunus serotina		Save	B
2941	8	Northern Pin Oak	Quercus ellipsoidalis		Save	B
2942	10	Siberian Elm	Ulmus pumila		Remove	A
2943	16	Siberian Elm	Ulmus pumila		Remove	A
2944	13	Siberian Elm	Ulmus pumila		Remove	A
2945	19	Siberian Elm	Ulmus pumila		Remove	A
2946	11	Siberian Elm	Ulmus pumila		Remove	A
2947	15	Siberian Elm	Ulmus pumila		Remove	A
2948	11	Siberian Elm	Ulmus pumila		Remove	A
2949	8	Siberian Elm	Ulmus pumila		Remove	A
2950	18	Siberian Elm	Ulmus pumila		Remove	A
2951	15	Siberian Elm	Ulmus pumila		Remove	A
2952	17	Siberian Elm	Ulmus pumila		Remove	A
2953	16	Siberian Elm	Ulmus pumila		Remove	A
2954	19	Siberian Elm	Ulmus pumila		Remove	A
2955	28	Siberian Elm	Ulmus pumila		Remove	A
2956	6	Red Cedar	Juniperus virginiana	15' in height	save	B
2957	21,19	Black Cherry	Prunus serotina		Save	B
2958	8	Green Ash	Fraxinus pennsylvanica		Save	A
2959	15	Green Ash	Fraxinus pennsylvanica		Save	A
2960	11	Green Ash	Fraxinus pennsylvanica		Save	A
2961	16	Northern Pin Oak	Quercus ellipsoidalis		Remove	B
2962	21	Northern Pin Oak	Quercus ellipsoidalis		Remove	B
2963	8	Northern Pin Oak	Quercus ellipsoidalis		Remove	B
2964	8	Bur Oak	Quercus macrocarpa		Remove	B
2965	12	Red Cedar	Juniperus virginiana	25' in height	Save	B
2966	10	Red Cedar	Juniperus virginiana	20' in height	Save	B
2967	16	Red Cedar	Juniperus virginiana	25' in height	Save	B
2968	14	Red Cedar	Juniperus virginiana	25' in height	Save	B
2969	15	Red Cedar	Juniperus virginiana	25' in height	Save	B
2970	11	Red Cedar	Juniperus virginiana	25' in height, internal decay along trunk	Save	B
2971	11	American Elm	Ulmus americana		Save	A
2972	12	American Elm	Ulmus americana		Remove	A
2973	18	Bur Oak	Quercus macrocarpa		Save	B
2974	21	Siberian Elm	Ulmus pumila		Remove	A
2975	19	Siberian Elm	Ulmus pumila		Remove	A
2976	19	Siberian Elm	Ulmus pumila		Remove	A
2977	22	Siberian Elm	Ulmus pumila		Remove	A
2978	14	Siberian Elm	Ulmus pumila		Remove	A
2979	14	Red Pine	Pinus resinosa	40' in height	Remove	B
2980	10	Red Pine	Pinus resinosa	40' in height	Remove	B
2981	16	Red Pine	Pinus resinosa	40' in height	Remove	B
2982	6	Red Pine	Pinus resinosa	35' in height	Remove	B
2983	6	Red Pine	Pinus resinosa	35' in height	Remove	B
2984	9	Red Pine	Pinus resinosa	40' in height	Remove	B
2985	14	Red Pine	Pinus resinosa	40' in height	Remove	B
2986	11	Red Pine	Pinus resinosa	40' in height	Remove	B
2987	15	Red Pine	Pinus resinosa	40' in height	Remove	B
2988	20	White Spruce	Picea glauca	40' in height	Remove	B
2989	17,16	Pear	Pyrus sp.		Remove	B
2990	23,22	American Elm	Ulmus americana		Remove	A
2991	37	Siberian Elm	Ulmus pumila	90% top missing	Remove	A
2992	11	Black Cherry	Prunus serotina		Save	B
2993	11	American Elm	Ulmus americana		Save	A
2994	11	Sugar Maple	Acer saccharum		Save	B
2995	11	Sugar Maple	Acer saccharum		Save	B
2996	11	American Elm	Ulmus americana		Save	A
2997	8	American Elm	Ulmus americana		Save	A
2998	15	Willow	Salix sp.		Save	A
2999	9	Willow	Salix sp.		Save	A
3000	12	Willow	Salix sp.		Save	A
3207	11	American Elm	Ulmus americana		Save	A
3208	11	Willow	Salix sp.		Save	A
3209	8	Black Walnut	Juglans nigra		Save	B
3210	12	Black Walnut	Juglans nigra		Remove	B
3211	9	Black Walnut	Juglans nigra		Remove	B
3212	8	Black Walnut	Juglans nigra		Remove	B

Appendix B

**Inver Grove Trail
Preliminary Wetland Fill
by
Pioneer Engineering**



BENCH MARK
TNH 400' WEST CAHILL
AVE. & INVER GROVE
TRAIL INT.
ELEV=870.62

Appendix C

Wetland Delineation Report

by

Midwest Natural Resources, Inc.

(dated 8-16-19)

WETLAND DELINEATION REPORT

9697 INVER GROVE TRAIL INVER GROVE HEIGHTS, MINNESOTA

Prepared for:
Alliant Ventures III, LLC.
4655 Nicols Rd., Suite 106
Eagan, MN 55122



AUGUST 16, 2019

Prepared by:
Midwest Natural Resources, Inc.
1032 West 7th Street, Suite 150
St. Paul, Minnesota 55102



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Introduction

Midwest Natural Resources, Inc. (MNR) was contracted by Alliant Ventures III, LLC. to provide wetland delineation services for the 15 acre property located at 9697 Inver Grove Trail in Inver Grove Heights, Dakota County, Minnesota (**Appendix A, Figure 1**). On August 6th, 2019 MNR conducted a routine wetland delineation within the 15 acre survey area to determine current wetland boundaries. In all, the boundaries of two wetland areas were delineated within the survey area.

Objective

To determine and delineate the current wetland boundaries located within the 15 acre survey area. This information will be used for planning for a residential development.

Methods

Prior to conducting the fieldwork, existing data were reviewed. These data include the U.S. Fish and Wildlife Service National Wetlands Inventory and the MN DNR National Wetlands Inventory Update June, 2013 (**Appendix A, Figure 2**), the U.S. Department of Agriculture digital Soil Survey of Dakota County (**Appendix A, Figure 3**), and the Minnesota Department of Natural Resources Public Waters Inventory (PWI) (**Appendix A, Figure 4**). Recent climate data (precipitation and temperature) were also obtained for the survey location.

Delineation efforts were based on the Routine “Onsite” Determination Method contained in the U.S. Army Corps of Engineers Midwest Supplement Version 2.0, Aug. 2010 to the 1987 Wetlands Delineation Manual Technical Report Y-87_1. According to this methodology, wetland boundaries are determined based on the evaluation of the three parameters (hydric soil, hydrophytic vegetation, and wetland hydrology) required for an area to be defined as a wetland. The wetland boundary for both wetlands on-site were identified as the upper-most extent of each area that met the criteria required to be defined as a wetland: hydric soils, hydrophytic vegetation, and wetland hydrology. Wetland A and B’s delineated boundaries were marked with pink pin flags with representative letters and numbers A1-A12 and B1-B23 (**Appendix A, Figures 5**).

For the wetlands within the property, a sample transect was established where the wetland/upland transition occurs. At each of the transects, the vegetation, soils, and hydrology were investigated at two positions in the landscape, one within the wetland and one within the upland. Vegetation, soils, and hydrology were documented following the aforementioned delineation protocols. Soils were characterized based on soil matrix/mottle colors and texture, as well as the presence/absence of hydric soil indicators. The dominant vascular plant species were identified and the cover was estimated visually. The indicator status of the dominant plant species was taken from the *State of Minnesota 2016 Wetland Plant List* (Lichvar, R.W., D.L. Banks Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List. 2016 wetland ratings. Phytoneuron 2016-30. Published 28 April 2016. ISSN 2153 733X). Hydrologic indicators (i.e. presence/absence of inundated and/or saturated soils, drift lines, drainage patterns, water marks, etc.) were evaluated to determine wetland hydrology. Finally, the wetlands were classified based on the Cowardin, Circular 39 and Eggers & Reed wetland descriptions. All collected field data is summarized in the Wetland Determination Data Forms (Midwest Region) included in this report (**Appendix C**).

Climate Data

To provide context for the wetland survey effort, recent climatic conditions were investigated for the local area, including precipitation and temperature data and are included in **Appendix D**.

Results

The land located within the 15 acre survey area is comprised of a vacant residence with outbuildings, upland grassland with scattered trees, box elder dominated woodlands, and two wetland areas. In total, MNR delineated and located the boundaries of two wetlands located within the 15 acre property.

The following is a table that summarizes the delineated wetlands by Circular 39 type, Cowardin classification, Eggers and Reed Plant Community and by size in acres.

Table 1. Wetland Classification, Type and Area

Wetland	Circular 39 Type/s	Cowardin Classification	Eggers and Reed Plant Community Type	Size (acres)
A	1/2	PEMA/B	Seasonally Flooded Basin/Fresh Wet Meadow	0.11 ac.
B	5	PUBG	Open Water	1.61 ac.

Both wetlands were delineated using methods and criteria that follow the U.S. Army Corps of Engineers Wetlands Delineation Manual (1987) and the Regional Supplement to the COE Wetland Delineation Manual: Midwest Version 2.0, Aug. 2010. The boundaries of Wetlands A and B were flagged and located by MNR and also located by Pioneer Engineering, P.A.

Wetland A

Wetland A is a Type 1/2 (PEMA/B; Seasonally Flooded Basin/Fresh Wet Meadow) wetland located in the south central part of the property and is approximately 0.11 acre in size. Plant species documented at the wetland sample point for Wetland A includes river bulrush (*Schoenoplectus fluviatilis*) and reed canary grass (*Phalaris arundinacea*). Plant species documented at the upland sample point for Wetland A includes box elder (*Acer negundo*), tatarian honeysuckle (*Lonicera tatarica*), common buckthorn (*Rhamnus cathartica*), motherwort (*Leonurus cardiaca*), garlic mustard (*Allaria petiolata*), and white snakeroot (*Ageratina altissima*).

From the digital U.S. Department of Agriculture Soil Survey for Dakota County, the soils mapped within the area of Wetland A are described as Quam silt loam which is mapped as a hydric soil. The soils investigated within the wetland soil sample met the Redox Dark Surface (F6) hydric soil indicator. Wetland hydrology indicators observed at the wet point for Wetland A include two secondary indicators: geomorphic position (D2) and FAC-neutral test (D5).

Wetland B

Wetland B is a Type 5 (PUBG; Open Water) wetland located along the northern property line and is approximately 1.61 acre in size within the property boundary. This wetland extends off-site to the north as a similar type wetland. This wetland has a very narrow fringe of emergent vegetation around its perimeter. Plant species documented at the wetland sample point for Wetland B includes reed canary grass (*Phalaris arundinacea*), narrow leaf cattail (*Typha angustifolia*) and boneset (*Eupatorium perfoliatum*). Plant species documented at the upland sample point for Wetland B includes Canada goldenrod (*Solidago canadensis*), Kentucky bluegrass (*Poa pratensis*), common yarrow (*Achillea millefolium*) and dandelion (*Taraxacum officinale*).

From the digital U.S. Department of Agriculture Soil Survey for Anoka County, the soils mapped within the area of Wetland B are described as water. The soils investigated within the wetland soil sample met the Redox Dark Surface (F6) hydric soil indicator. Wetland hydrology indicators observed at the wet point for

Wetland B include one primary and two secondary indicators: surface water (A1), geomorphic position (D2) and FAC-neutral test (D5). The wetland sample point was advanced in standing water with a depth of 4”.

Non-Wetland Area 1

Non-Wetland Area 1 is a small depressional area located just west of Inver Grove Trail within the property. Plant species documented at the sample point for Area 1 includes box elder (*Acer negundo*), common burdock (*Arctium minus*), white snakeroot (*Ageratina altissima*) and enchanter’s nightshade (*Circaea canadensis*). From the digital U.S. Department of Agriculture Soil Survey for Dakota, the soils mapped within the area of Area 1 is described as Spillville loam, occasionally flooded which is listed as a hydric soil. The soils investigated within the area did not meet any hydric soil indicators. Wetland hydrology indicators observed for this area include just one secondary indicator: geomorphic position (D2).

The determination of this area being non-wetland was based on having non-hydric soil present, a dominance of upland vegetation growing throughout the depression and a lack of adequate wetland hydrology with only one secondary indicator of hydrology present.

Appendix A

Supporting Site Figures



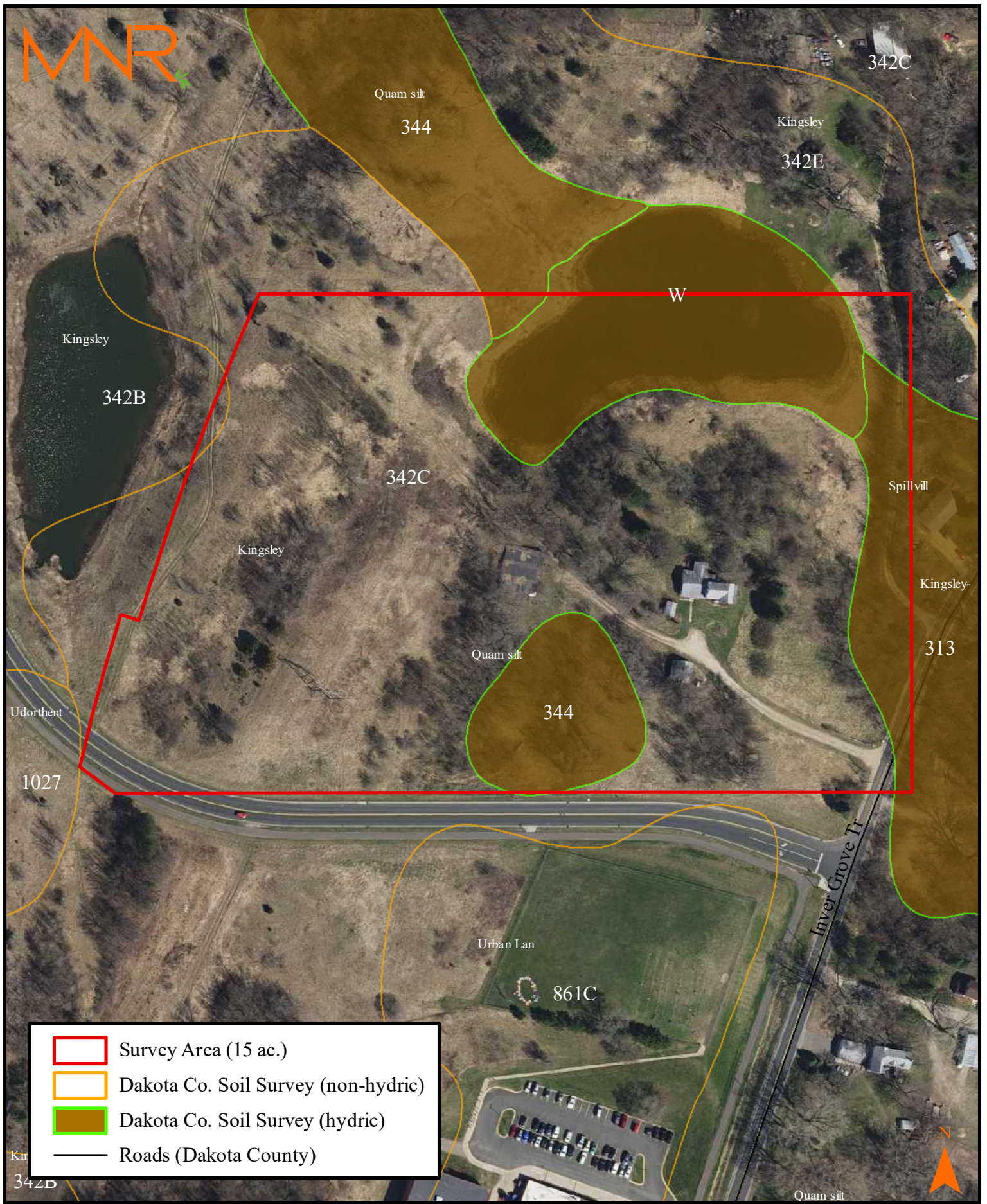
Figure 1

Site Location
9697 Inver Grove Trail
Inver Grove Heights, MN



National Wetlands Inventory
9697 Inver Grove Trail
Inver Grove Heights, MN

Figure 2

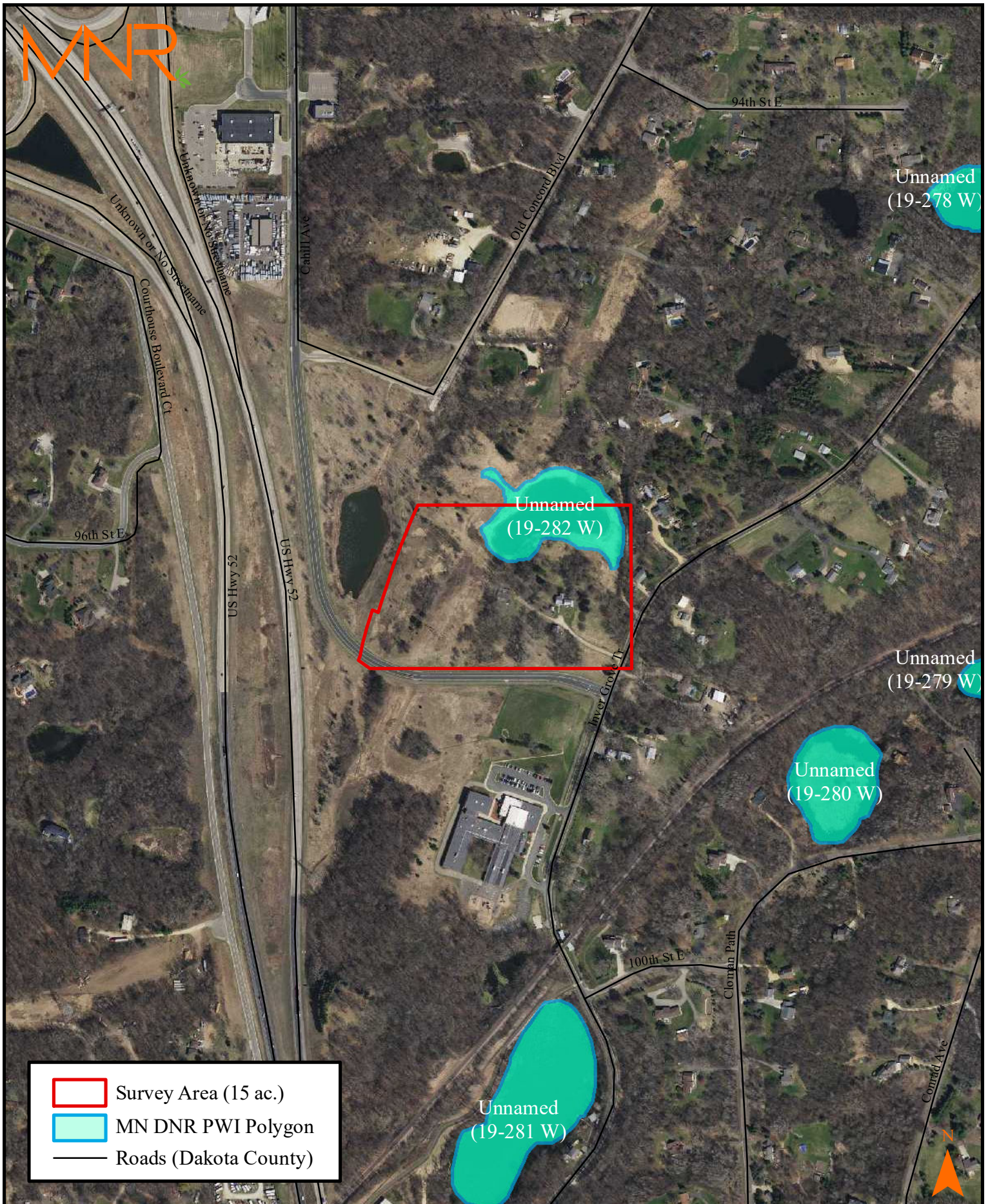


0 75 150 300
Feet

Dakota County Soil Survey
9697 Inver Grove Tail
Inver Grove Heights, MN

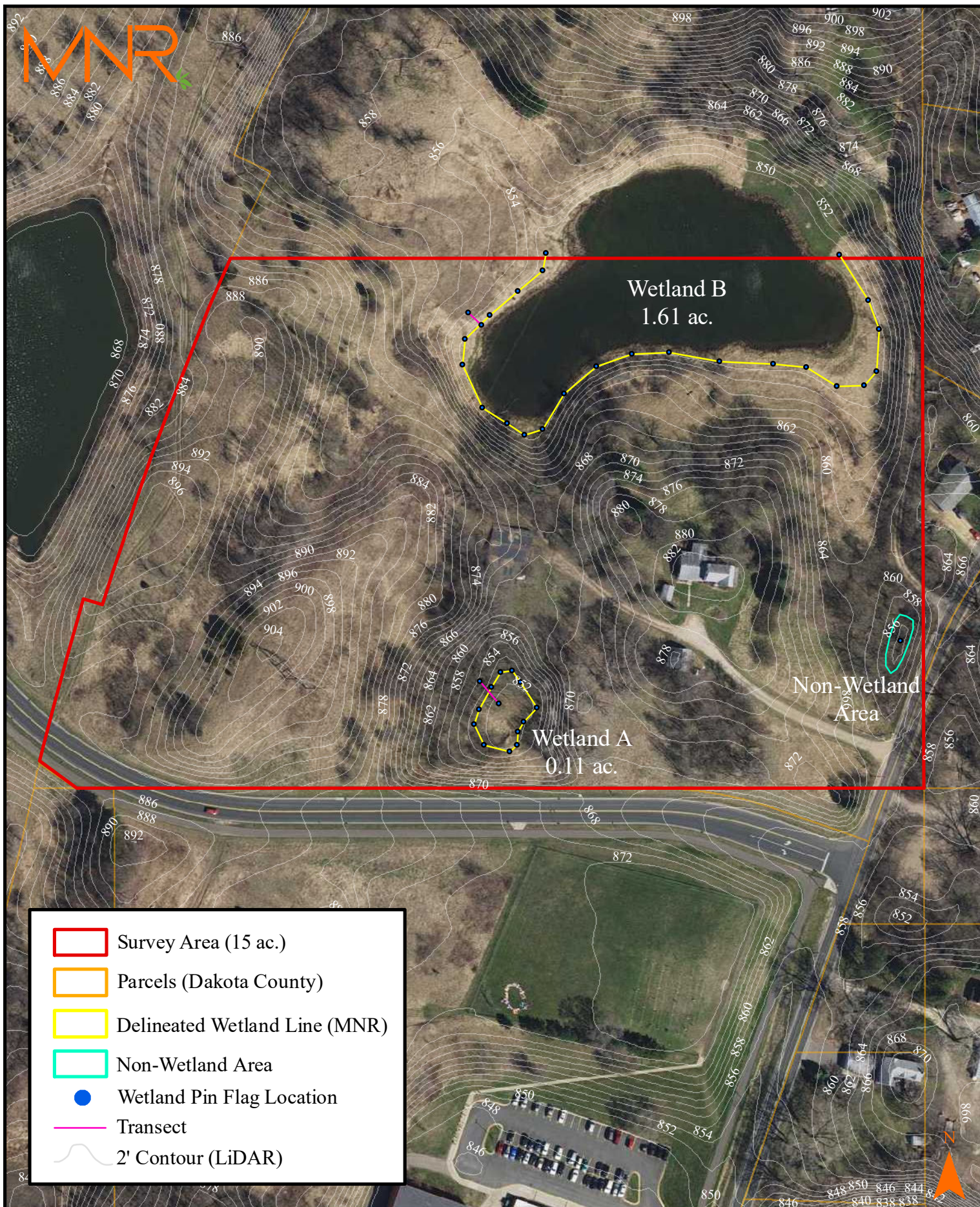
Source: 2016 color 7-county

Figure 3



MN DNR Public Waters Inventory Map
9697 Inver Grove Tail
Inver Grove Heights, MN

Figure 4



**Delineated Wetlands
9697 Inver Grove Tail
Inver Grove Heights, MN**

Figure 5

Appendix B

Representative Photos

Appendix B, Representative Photos

Wetland A



Photo of Wetland A, view from north side facing south across wetland.

Wetland A



Photo of Wetland A, view from southwest side facing northeast across wetland.

Wetland B



Photo of Wetland B from southwestern edge facing northeast across wetland.

Wetland B



Photo of Wetland B from eastern side facing west across wetland.

Area 1



Photo of Area 1 from its center facing north at typical vegetation growing within the depressional area.

Appendix C

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 9697 Inver Grove Trail City/County: Inver Grove Heights/Dakota Sampling Date: 2019-08-06
 Applicant/Owner: Alliant Ventures III, LLC. State: MN Sampling Point: 19-232-WA-W
 Investigator(s): Ken Arndt, MNR Section, Township, Range: 22, 27, 22
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-2% Lat: 44.808431 Long: -93.036435 Datum: WGS84
 Soil Map Unit Name: Quam silt loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No _____	Is the Sampled Area within a Wetland? Yes ☒ No _____
Hydric Soil Present? Yes ☒ No _____	
Wetland Hydrology Present? Yes ☒ No _____	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____	Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>15</u> (A)</td> <td><u>20</u> (B)</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>15</u> (A)	<u>20</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>10</u>	x 1 = <u>10</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>15</u> (A)	<u>20</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Schoenoplectus fluviatilis</u> <u>10</u> <u>Y</u> <u>OBL</u> 2. <u>Phalaris arundinacea</u> <u>5</u> <u>Y</u> <u>FACW</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ _____ = Total Cover																		

Hydrophytic Vegetation Indicators:
☒ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
 ___ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No _____

Remarks: (Include photo numbers here or on a separate sheet.)

Area is mostly bare ground due to being inundated earlier this season for an extended period of time.

SOIL

Sampling Point: 19-232-WA-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		%	Redox Features			Type ¹	Loc ²	Texture	Remarks
	Color (moist)			Color (moist)		%				
0-8	10YR	3/2	90	2.5YR	4/6	10	C	M	CL	clay loam
9-18	10YR	3/2	80	2.5YR	4/6	20	C	M	CL	clay loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 9697 Inver Grove Trail City/County: Inver Grove Heights/Dakota Sampling Date: 2019-08-06
 Applicant/Owner: Alliant Ventures III, LLC. State: MN Sampling Point: 19-232-WA-U
 Investigator(s): Ken Arndt, MNR Section, Township, Range: 22, 27, 22
 Landform (hillslope, terrace, etc.): Side slope Local relief (concave, convex, none): Concave
 Slope (%): 3-7% Lat: 44.808564 Long: -93.036559 Datum: WGS84
 Soil Map Unit Name: Kingsley NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)																
1. <u>Acer negundo</u>	<u>70</u>	<u>Y</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____	Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>115</u></td> <td>x 3 = <u>345</u></td> </tr> <tr> <td>FACU species <u>65</u></td> <td>x 4 = <u>260</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>180</u> (A)</td> <td><u>605</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.36</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>115</u>	x 3 = <u>345</u>	FACU species <u>65</u>	x 4 = <u>260</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>180</u> (A)	<u>605</u> (B)	Prevalence Index = B/A = <u>3.36</u>	
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OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>115</u>	x 3 = <u>345</u>																			
FACU species <u>65</u>	x 4 = <u>260</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>180</u> (A)	<u>605</u> (B)																			
Prevalence Index = B/A = <u>3.36</u>																				
Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. <u>Lonicera tatarica</u> <u>50</u> <u>Y</u> <u>FACU</u> 2. <u>Rhamnus cathartica</u> <u>10</u> <u>N</u> <u>FAC</u> 3. _____ 4. _____ 5. _____ <u>70</u> = Total Cover																				
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Leonurus cardiaca</u> <u>30</u> <u>Y</u> <u>ndefine</u> 2. <u>Alliaria petiolata</u> <u>30</u> <u>Y</u> <u>FAC</u> 3. <u>Ageratina altissima</u> <u>15</u> <u>N</u> <u>FACU</u> 4. <u>Rhamnus cathartica</u> <u>5</u> <u>N</u> <u>FAC</u> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ <u>80</u> = Total Cover																				
Woody Vine Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ <u>0</u> = Total Cover																				
Remarks: (Include photo numbers here or on a separate sheet.) <u>20% of herb layer is bare ground</u>																				

SOIL

Sampling Point: 19-232-WA-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		%	Redox Features				Texture	Remarks
	Color (moist)			Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	3/2	100					FSL	fine sandy loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)

- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____
Water Table Present? Yes _____ No ☒ Depth (inches): _____
Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 9697 Inver Grove Trail City/County: Inver Grove Heights/Dakota Sampling Date: 2019-08-06
 Applicant/Owner: Alliant Ventures III, LLC. State: MN Sampling Point: 19-232-WB-W
 Investigator(s): Ken Arndt, MNR Section, Township, Range: 22, 27, 22
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-2% Lat: 44.809795 Long: -93.036534 Datum: WGS84
 Soil Map Unit Name: water NWI classification: PUBG

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐
 Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Hydric Soil Present? Yes ☒ No ☐	
Wetland Hydrology Present? Yes ☒ No ☐	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.00</u> (A/B)																		
1. _____	_____	_____	_____																			
2. _____	_____	_____	_____																			
3. _____	_____	_____	_____																			
4. _____	_____	_____	_____																			
5. _____	_____	_____	_____	Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>35</u></td> <td>x 1 = <u>35</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>95</u> (A)</td> <td><u>155</u> (B)</td> </tr> <tr> <td colspan="4">Prevalence Index = B/A = <u>1.63</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>35</u>	x 1 = <u>35</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>95</u> (A)	<u>155</u> (B)	Prevalence Index = B/A = <u>1.63</u>			
Total % Cover of:	Multiply by:																					
OBL species <u>35</u>	x 1 = <u>35</u>																					
FACW species <u>60</u>	x 2 = <u>120</u>																					
FAC species <u>0</u>	x 3 = <u>0</u>																					
FACU species <u>0</u>	x 4 = <u>0</u>																					
UPL species <u>0</u>	x 5 = <u>0</u>																					
Column Totals: <u>95</u> (A)	<u>155</u> (B)																					
Prevalence Index = B/A = <u>1.63</u>																						
Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover																						
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Phalaris arundinacea</u> <u>60</u> <u>Y</u> <u>FACW</u> 2. <u>Typha angustifolia</u> <u>30</u> <u>Y</u> <u>OBL</u> 3. <u>Eupatorium perfoliatum</u> <u>5</u> <u>N</u> <u>OBL</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover																						
Woody Vine Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ _____ = Total Cover																						
Remarks: (Include photo numbers here or on a separate sheet.)																						

SOIL

Sampling Point: 19-232-WB-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix			Redox Features					Texture	Remarks
	Color (moist)		%	Color (moist)		%	Type ¹	Loc ²		
0-7	10YR	2/1	100						SL	sandy loam (mucky) with grave
8-18	10YR	3/2	80	7.5YR	4/6	20	C	M	SL	sandy loam (mucky)

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 4"
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

sample point was taken in standing water

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 9697 Inver Grove Trail City/County: Inver Grove Heights/Dakota Sampling Date: 2019-08-06
 Applicant/Owner: Alliant Ventures III, LLC. State: MN Sampling Point: 19-232-WB-U
 Investigator(s): Ken Arndt, MNR Section, Township, Range: 22, 27, 22
 Landform (hillslope, terrace, etc.): Side slope Local relief (concave, convex, none): Concave
 Slope (%): 3-7% Lat: 44.809838 Long: -93.036585 Datum: WGS84
 Soil Map Unit Name: Kingsley NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.00</u> (A/B)														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____	Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>85</u></td> <td>x 4 = <u>340</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>430</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.74</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>85</u>	x 4 = <u>340</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>115</u> (A)	<u>430</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>30</u>	x 3 = <u>90</u>																	
FACU species <u>85</u>	x 4 = <u>340</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>115</u> (A)	<u>430</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Solidago canadensis</u> <u>70</u> <u>Y</u> <u>FACU</u> 2. <u>Poa pratensis</u> <u>30</u> <u>Y</u> <u>FAC</u> 3. <u>Achillea millefolium</u> <u>10</u> <u>N</u> <u>FACU</u> 4. <u>Taraxacum officinale</u> <u>5</u> <u>N</u> <u>FACU</u> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ _____ = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ _____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		

SOIL

Sampling Point: 19-232-WB-U

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-16	10YR	4/2	100				SIL	silt loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- ☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5)
☐ 2 cm Muck (A10)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)

- ☐ Water-Stained Leaves (B9)
☐ Aquatic Fauna (B13)
☐ True Aquatic Plants (B14)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Gauge or Well Data (D9)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
☐ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)

Field Observations:Surface Water Present? Yes _____ No ☒ Depth (inches): _____Water Table Present? Yes _____ No ☒ Depth (inches): _____Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: 9697 Inver Grove Trail City/County: Inver Grove Heights/Dakota Sampling Date: 2019-08-06
 Applicant/Owner: Alliant Ventures III, LLC. State: MN Sampling Point: 19-232-Area 1
 Investigator(s): Ken Arndt, MNR Section, Township, Range: 22, 27, 22
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
 Slope (%): 0-2% Lat: 44.808637 Long: -93.034458 Datum: WGS84
 Soil Map Unit Name: Spillville loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No ☒	Is the Sampled Area within a Wetland? Yes _____ No ☒
Hydric Soil Present? Yes _____ No ☒	
Wetland Hydrology Present? Yes _____ No ☒	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.33</u> (A/B)														
1. <u>Acer negundo</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____	Prevalence Index worksheet: <table border="0"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>50</u></td> <td>x 3 = <u>150</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>150</u> (A)</td> <td><u>550</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.67</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>50</u>	x 3 = <u>150</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>150</u> (A)	<u>550</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>50</u>	x 3 = <u>150</u>																	
FACU species <u>100</u>	x 4 = <u>400</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>150</u> (A)	<u>550</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ <u>0</u> = Total Cover																		
Herb Stratum (Plot size: <u>5'</u>) 1. <u>Arctium minus</u> <u>60</u> <u>Y</u> <u>FACU</u> 2. <u>Ageratina altissima</u> <u>30</u> <u>Y</u> <u>FACU</u> 3. <u>Circaea canadensis</u> <u>10</u> <u>N</u> <u>FACU</u> 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ <u>100</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'</u>) 1. _____ 2. _____ <u>0</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																		

SOIL

Sampling Point: 19-232-Area 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		%	Redox Features				Texture	Remarks
	Color (moist)			Color (moist)	%	Type ¹	Loc ²		
0-17	10YR	2/2	100					L	loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron-Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ☒ Depth (inches): _____
Water Table Present? Yes _____ No ☒ Depth (inches): _____
Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix D

Recent Climatic Conditions

Past Year's Precipitation Data from Gridded Database

Source: Minnesota Climatology Working Group website: <http://climate.umn.edu/>

Since the delineation of the property located at 9697 Inver Grove Trail was conducted on August 6th, 2019 daily precipitation data from the months of May, June, and July were reviewed. Annual precipitation data for the three months prior to August were obtained from the Minnesota Climatology Working Group for the area of Dakota County where the nearest precipitation data was collected. Precipitation data was obtained using the following as the target location:

County: Washington

Township Name: unnamed

Nearest Community: Pine Bend

Township Number: 27N

Range Number: 22W

Section Number: 22

Aerial photograph or site visit date:

Tuesday, August 6, 2019

Score using 1981-2010 normal period

values are in inches

A 'R' following a monthly total indicates a provisional value derived from [radar-based estimates](#).

estimated precipitation total for this location:

there is a 30% chance this location will have less than:

there is a 30% chance this location will have more than:

type of month: **dry** **normal** **wet**

monthly score

first prior
month:

July 2019

5.83R

2.61

4.63

wet

3 * 3 = 9

second prior
month:

June 2019

3.39R

3.68

4.73

dry

2 * 1 = 2

third prior
month:

May 2019

6.00R

2.89

4.41

wet

1 * 3 = 3

multi-month score:

6 to 9 (dry) **10 to 14 (normal)** **15 to 18 (wet)**

14 (Normal)

Recent Precipitation: During the first six days of August no rain was recorded at the Inver Grove Heights 1.3 ENE weather station. In July 4.70" of rain was recorded, in June 0.76" of rain was recorded, and in May 6.07" of rain was recorded.

Average Temperature Climate Data

Source: Minnesota Department of Natural Resources Local Climatological Data

<http://www.dnr.state.mn.us/climate/historical/lcd.html?loc=msp>

Average monthly high temperature for the three months preceding field survey and for the actual day of survey are reported in **Table 1** below. Temperature data were obtained from the weather station at the Minneapolis/St. Paul International Airport.

Table 1. Monthly Average High Temperature

	May	June	July	August 6
Temperature (°F)	65.4°	79.2°	83.8°	86°

Appendix D

Notice of Decision

9697 Inver Grove Trail

City of Inver Grove Heights

(dated 10-11-19)

Minnesota Wetland Conservation Act

Notice of Decision

Local Government Unit (LGU) City of Inver Grove Heights	Address 8150 Barbara Avenue Inver Grove Heights, MN 55077
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1. PROJECT INFORMATION

Applicant Name Alliant Ventures III, LLC Bob Machacek	Project Name 9697 Inver Grove Trail	Date of Application August 22, 2019	Application Number SWCD # 19-IGH-195
☒ Attach site locator map.			

Type of Decision:

☒ Wetland Boundary or Type	☐ No-Loss	☐ Exemption	☐ Sequencing
☐ Replacement Plan	☐ Banking Plan		

Technical Evaluation Panel Findings and Recommendation (if any):

☐ Approve	☐ Approve with conditions	☐ Deny
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2. LOCAL GOVERNMENT UNIT DECISION

Date of Decision: October 11, 2019		
☒ Approved	☐ Approved with conditions (include below)	☐ Denied

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

Alliant Ventures III LLC submitted a wetland boundary application for an area north of Cahill Avenue and west of Inver Grove Trail (Parcel ID: 200220054011) in the City of Inver Grove Heights. Two wetlands, Wetlands A and B were identified within the review area. The Notice of Application was sent out August 26, 2019 and the comment period ended on September 27, 2019. No comments were received during the comment period. The SWCD and BWSR conducted a field review of the project site on September 23, 2019.

For Replacement Plans using credits from the State Wetland Bank:

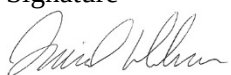
Bank Account #	Bank Service Area	County	Credits Approved for Withdrawal (sq. ft. or nearest .01 acre)
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Replacement Plan Approval Conditions. In addition to any conditions specified by the LGU, the approval of a Wetland Replacement Plan is conditional upon the following:

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

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

LGU Authorized Signature:

Signing and mailing of this completed form to the appropriate recipients in accordance with 8420.0255, Subp. 5 provides notice that a decision was made by the LGU under the Wetland Conservation Act as specified above. If additional details on the decision exist, they have been provided to the landowner and are available from the LGU upon request.		
Name David Holmen, Dakota SWCD	Title Resource Conservationist	
Signature 	Date 10/11/19	Phone Number and E-mail 651-480-7791 david.holmen@co.dakota.mn.us

THIS DECISION ONLY APPLIES TO THE MINNESOTA WETLAND CONSERVATION ACT. Additional approvals or permits from local, state, and federal agencies may be required. Check with all appropriate authorities before commencing work in or near wetlands.

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

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

3. APPEAL OF THIS DECISION

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

Check one:

☒ Appeal of an LGU staff decision. Send petition and \$TBD fee (if applicable) to: City of Inver Grove Heights 8150 Barbara Avenue Inver Grove Heights, MN 55077	☐ Appeal of LGU governing body decision. Send petition and \$500 filing fee to: Executive Director Minnesota Board of Water and Soil Resources 520 Lafayette Road North St. Paul, MN 55155
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4. LIST OF ADDRESSEES

- ☒ SWCD TEP member: **David Holmen**
- ☒ BWSR TEP member: **Ben Carlson**
- ☒ LGU TEP member (if different than LGU Contact): **Allan Hunting, City of Inver Grove Heights**
- ☒ DNR TEP member: **Jennie Skancke, Area Hydrologist**
- ☒ DNR Regional Office (if different than DNR TEP member): **Leslie Pariss, Environmental Review**
- ☒ WD or WMO (if applicable): **Joe Barten, Lower Mississippi River WMO**
- ☒ Applicant and Landowner (if different): **Ken Arndt, Midwest Natural Resources, Inc**
Bob Machacek, Alliant Ventures III, LLC
- ☐ Members of the public who requested notice:
- ☒ Corps of Engineers Project Manager: **usace_requests_mn@usace.army.mil**
- ☐ BWSR Wetland Bank Coordinator (wetland bank plan decisions only)

5. MAILING INFORMATION

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

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

➤ Department of Natural Resources Regional Offices:

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

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

US Army Corps of Engineers
St. Paul District, ATTN: OP-R
180 Fifth St. East, Suite 700
St. Paul, MN 55101-1678

➤ For Wetland Bank Plan applications, also send a copy of the application to:

Minnesota Board of Water and Soil Resources
Wetland Bank Coordinator
520 Lafayette Road North
St. Paul, MN 55155

6. ATTACHMENTS

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

☒ **Location and Wetland Delineation Maps**

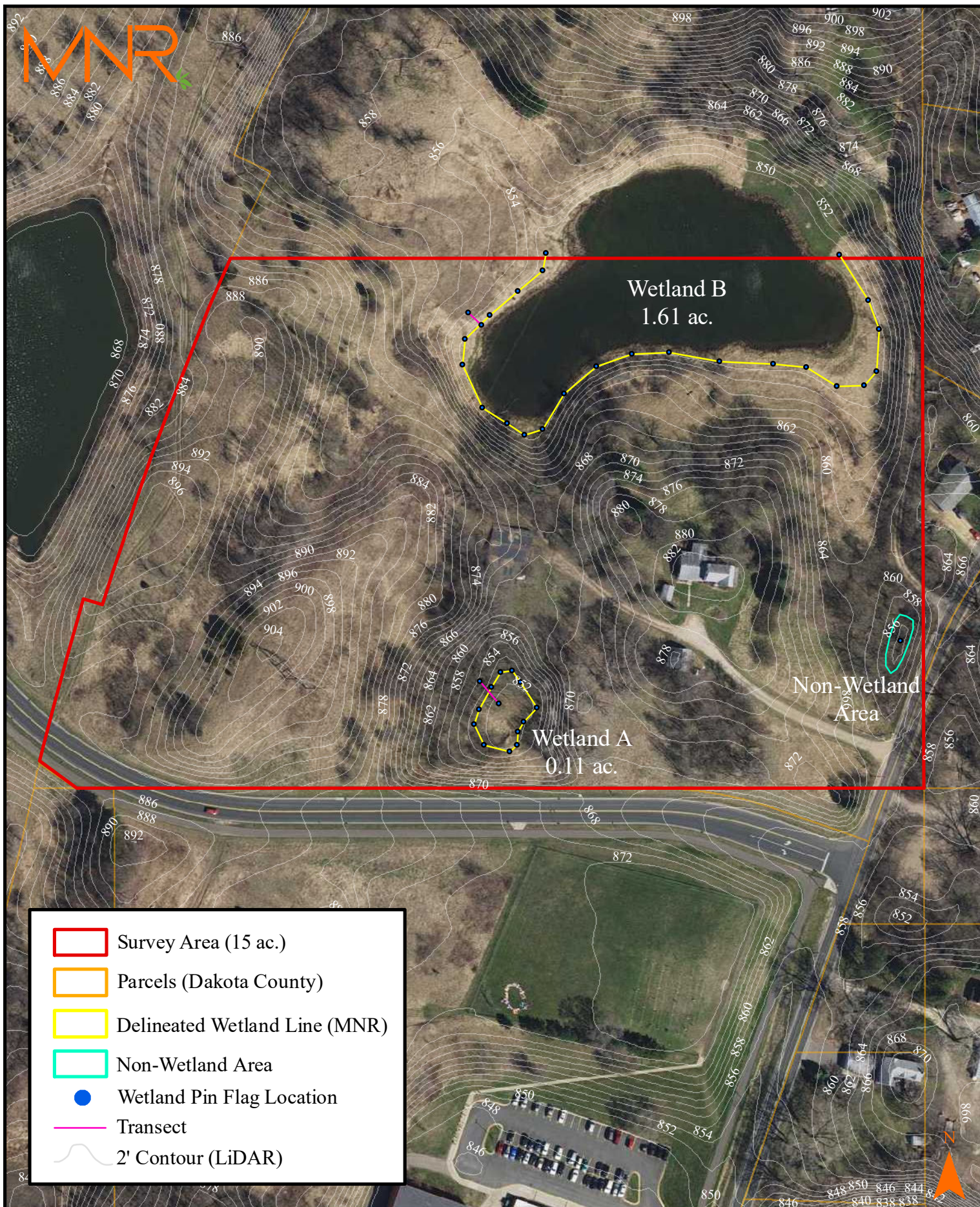
☐

☐



Figure 1

Site Location
9697 Inver Grove Trail
Inver Grove Heights, MN



**Delineated Wetlands
9697 Inver Grove Trail
Inver Grove Heights, MN**

Figure 5