

Permit Application Review

Permit No. 2019-69
Received complete: August 12, 2019

Applicant: Richard Miller
Consultant: Bob Molstad; Sathre-Bergquist, Inc.
Project: Miller Property
Location: 7120 Gerard Drive: Eden Prairie
Rule(s): 3,4,5,11,12
Reviewer: BCO

General Background & Comments

The project is a proposed 17-lot single-family residential development located at 7120 Gerard Drive in Eden Prairie. There is an existing single-family home on the 9.7 acre site that will be razed. A wetland complex is located on the northern end of the site that has been identified as a medium value wetland. The wetland boundary determination was approved by the District, being the LGU administering the requirements of WCA in Eden Prairie, on January 7, 2019.

The project site information is:

- Total Site Area: 9.73 acres
- Existing Site Impervious Area: 0.33 acres (14,549 square feet)
- Proposed Site Impervious Area : 2.15 acres (93,654 square feet)
- Increase in the site impervious area: 78,626 square feet
- Greater than a 100% increase in the Site Impervious Area
- Total Area to be Disturbed: 6.27 acres (273,165 square feet)

The Nine Mile Creek Watershed District's Rule for Redevelopment, Rule 4.2.3, states, if a proposed activity will disturb more than 50% of the existing impervious surface on a parcel or will increase the imperviousness of the parcel by more than 50%, storm water management will apply to the entire project parcel. Otherwise, the storm water requirements will apply only to the disturbed areas and additional impervious area on the parcel. Since the increase in the on-site impervious area is greater than 100%, storm water management is required for the 273,165 square feet of disturbed area that includes 93,654 square feet of impervious area.

The District's requirements for both storm water management and erosion and sediment control apply to the project because more than 50 cubic yards of material will be disturbed and 5000 square feet or more surface area disturbed, Rules 4.2.1a and b and 5.2.1a and b.

Storm water management is to be provided within two rainwater garden/infiltration basins that will provide volume retention, rate control and water quality management.

Silt fence is to be constructed at the limits of construction, inlet protection and a rock construction entrance will be provided for erosion control.

Exhibits

1. Permit Application dated June 14, 2019.
2. Plans dated June 7, 2019, revised July 26, 2019, prepared by Sathre-Bergquist, Inc.
3. Storm Water Management calculations dated June, 2019 and revised July, 2019, prepared by Advanced Engineering and Environmental Services.
4. Geotechnical Report dated June 10, 2019 prepared by Haugo Geotechnical Services.
5. E-mail correspondence from Barr Engineering dated August 7, 2019 agreeing with the medium value wetland identification for the wetland area on the site.
6. E-mail correspondence dated June 26, 2019 outlining 6 items requiring information for the submittal to be considered complete by the District.
7. Sathre-Bergquist July 10, 2019 response to the District's e-mail of June 26th.

The submittal is complete.

3.0 Wetlands Management

As previously stated, a wetland complex is located on the northern end of the site as identified and delineated by the permit applicant's wetland consultant. The District is the LGU administering the requirements of the Wetland Conservation Act in Eden Prairie. The wetland boundary determination was approved by the District on January 7, 2019. The MnRAM Assessment submitted has identified the wetland as a medium value wetland requiring a minimum 20 foot and 40 foot average buffer in accordance with section 3.4.1b of the District rules. We are in agreement with the medium value determination.

The plans show that the required 20 minimum and 40 foot average buffer widths are to be provided complying with section 3.4.1 of the District rules.

4.0 Stormwater Management

Storm water management is to be provided within two rainwater garden/infiltration areas (B 1 is located on the western side of the site and B11P on the southern end of the property) that will provide volume retention, rate control and water quality. The existing and proposed 2, 10 and 100 year frequency discharges from the site are:

Frequency	Existing Discharge to the North c.f.s.	Proposed Discharge to the North c.f.s.
2 year	<1.0	<1.0
10 year	1.3	1.3
100 year	5.7	5.3

Frequency	Existing Discharge to the South c.f.s.	Proposed Discharge to the South c.f.s.
2 year	<1.0	<1.0
10 year	<1.0	<1.0
100 year	1.7	<1.0

Frequency	Existing Discharge to the East c.f.s.	Proposed Discharge to the East c.f.s.
2 year	<1.0	<1.0
10 year	<1.0	<1.0
100 year	<1.0	<1.0

The requirement of section 4.3.1b of the District rules are met.

A volume retention of 8,585 cubic feet is required for 1.1-inches of runoff from the 93,654 square feet of proposed site impervious area. The two rainwater garden/infiltration basins will provide 18,250 cubic feet of volume retention. With the on-site underlying soils being classified as a poorly graded sand (SP), an infiltration rate of 0.8 inches/hour was used based on the Minnesota Stormwater Manual. Using this infiltration rate, an area of 2,681 square feet at a maximum depth of 3.2 feet is required for the 8,585 cubic feet of volume retention to be drawn down within 48 hours. An area of 9,230 square feet will be provided within the rainwater gardens. Rule 4.3.1a is met.

The District's water quality criterion requires a 60% annual removal efficiency for phosphorus and 90% annual removal efficiency for total suspended solids. The results of a P8 model show the combined rainwater garden/infiltration basins will provide an annual removal efficiency of 97.4% for total suspended solids (1,309 lbs.) and an annual removal efficiency of 97.2% for total phosphorus (4.2 lbs.). Rule 4.3.1c is met.

District Rule 4.3.3c states that all new and reconstructed buildings must be constructed such that the low floor elevation is at least two feet above the 100-year high water elevation or one foot above the emergency overflow of a constructed facility. District Rule 4.3.3 also states that all new and reconstructed buildings must be constructed such that no opening where surface water can enter the structure is less than two feet above the 100-year high water elevation of an adjacent facility or waterbody.

For Basin B1:

100-year flood elevation – M.S.L.	Lot #	Low Floor Elevation – M.S.L.	Separation - feet	Low Opening Elevation – M.S.L.	Separation - feet
911.8	10	916.1	4.3	924.8	13.0
911.8	9	916.6	4.8	925.3	13.5
911.8	8	919.1	7.3	927.8	16.0
911.8	7	923.3	11.5	932.0	20.2
911.8	6	924.6	12.8	927.6	15.8

For Basin B11P:

100-year flood elevation – M.S.L.	Lot #	Low Floor Elevation – M.S.L.	Separation - feet	Low Opening Elevation – M.S.L.	Separation - feet
917.1	1	917.6	0.5*	926.3	9.2
917.1	2	918.6	1.5*	921.6	4.5
917.1	3	919.1	2.0	922.1	5.0
917.1	4	921.1	4.0	924.1	7.0
917.1	5	923.6	6.5	923.6	6.5
917.1	6	924.6	7.5	927.6	10.5

* For lots 1 and 2: Rule 4.3.2 a states, all structures riparian to inundation areas or constructed or natural storm water management facilities must be located and elevations must be set according to Appendix 4a, "Suggested Low Floor Guidance." Referring to Plot 6, Appendix 4A of the District Rules, with groundwater not encountered to elevation 912 M.S.L. and with Lot 2 being the closes in distance (42 feet) from rainwater garden/infiltration B 11P, the minimum separation between the low floor elevation of the structure and groundwater is 0.3 feet. A minimum separation of 5.2 feet is to be provided between the low floor elevation and the elevation assumed for groundwater. Therefore, Rule 4.3.2 is met.

Basin 11P is located in the backyard areas of Lots 1-6 and has been designed to handle the rear yard drainage from these lots. Because of the steep slope of the rear yards as they join the existing residential lots to the south, the basin has been designed to retain the volume from back-to-back 100-year storm events. The volume retention will minimize the potential of site runoff from being conveyed down the slope onto adjacent private properties. In addition, a high level piped outlet from the basin will redirect site runoff to the north away from the downstream properties should the system capacity be exceeded.

In accordance with Rule 4.3.1a (i), the pre-treatment of runoff prior to reaching rainwater garden/infiltration area B1 will be provided by sump manholes within the system. Pre-treatment of runoff to B11P will be the sheet-flow of runoff across the pervious turf rear yard areas upstream of the basin. The turf grass acts as a filter providing the required pretreatment of storm water upstream of an infiltration area.

Rule 4.5.4d (i), requires a minimum separation of 3 feet between the bottom of an infiltration facility, practice or system. Groundwater was not encountered to a depth of 21 feet in the area of rainwater garden/infiltration area B11P, elevation 912 M.S.L. The bottom of basin B11P is shown to be 915 M.S.L., a minimum separation of 3 feet. For rainwater garden/infiltration area B1, the water surface elevation of the existing wetland, 878 M.S.L. provides the most representative groundwater elevation for this area of the site. The bottom elevation of B1 is shown to be 907 M.S.L., a separation of 29 feet. When constructed verification of the groundwater elevation in the area of B1 will be required.

The street within the proposed development will be public thereby being maintained by the City of Eden Prairie. Therefore the requirements with Rule 4.3.4 will be managed under the City of Eden Prairie's chloride management plan.

5.0 Erosion and Sediment Control

The submitted erosion and sediment control plan includes silt fence at the limits of construction, inlet control and a gravel construction entrance. The project contact is Bob Molstad, Sathre-Bergquist, Inc.

11.0 Fees

Fees for the project are:

Rules 2.0-6.0 \$2,000

12.0 Financial Assurances

Financial Assurances for the project are:

Rule 4.0 Volume Retention: 2,681 sq. ft. x \$12/sq. ft. = \$32,172 \$32,172

Rule 5: Silt fence: 1,735 L.F. x \$2.50/L.F.= \$4,338

Inlet Protection: 6 x \$100/each = \$600

Site restoration: 6.3 acres x \$2500/acre = \$15,750 \$20,688

Contingency and Administration \$22,740

Findings

The proposed project includes the information necessary, plan sheets and erosion control plan, for review.

1. Rules 3, 4 and 5 are met.

Recommendation

Approval, contingent upon:

1. General Conditions

2. Financial Assurance in the amount of \$75,600 for stormwater management, erosion control and site restoration.
3. Submission of documentation that a drainage easement over the stormwater-management facilities has been submitted to Eden Prairie (4.5.4i), if such easement is required by the city, and a receipt showing recordation of a maintenance declaration for the on-site storm water management facilities and wetland buffer area. A draft of the declaration must be approved by the District prior to recordation.
4. Verification that a minimum of 3 feet of separation will be provided between the bottom elevation of rainwater garden/infiltration area B1 and groundwater.

By accepting the permit, when issued, the applicant agrees to the following stipulations:

1. Per Rule 4.5.6, an as-built drawing of the storm water facilities, including stage-volume relations in tabular formation, conforming to the design specifications as approved by the District must be submitted.
2. Buffer markers, in accordance with the requirements of District Rule 3.4.5, must be installed.
3. For the release of the \$75,600 financial assurance required in Recommendation #2, Rule 12.4.1b requires demonstration and confirmation that the storm water management facilities have been constructed or installed and are functioning as designed and permitted. Verification, through daily observation logs and photographs, must be provided showing the storm water facilities used for volume retention have drawn down within 48 hours from the completion of two 1-inch (approximate) separate rainfall events.

Board Action

It was moved by Manager _____, seconded by Manager _____ to approve permit application No. 2019-69 with the conditions recommended by staff.

Permit #: 2019-69
Project Name: The Miller Property; 7120 Gerard Drive: Eden Prairie
Approval Date: August 21, 2019

General Provisions

1. All temporary erosion control measures shown on the erosion and sedimentation control plans must be installed prior to commencement of surface or vegetation alteration and be maintained until completion of construction and vegetation is established as determined by NMCWD.

If silt fence is used, the bottom flap must be buried and the maximum allowable spacing between posts is 4-foot on center. All posts must be either 2-inch x 2-inch pine, hardwood, or steel fence posts. If hay bales are used, all bales must be staked in place and reinforced on the downstream side with snow fence.

2. All areas altered because of construction must be restored with seed and disced mulch, sod, wood fiber blanket, or be hard surfaced within two weeks after completion of land alteration and no later than the end of the permit period.
3. Upon final stabilization, the permit applicant is responsible for the removal of all erosion control measures installed throughout the project site.
4. At the entryway onto the site, a rock filter dike being a minimum of two feet in height and having maximum side slopes of 4:1 must be constructed. This rock filter dike will enable construction traffic to enter the site and also provide an erosion control facility.
5. If dewatering is required and sump pumps are used, all pumped water must be discharged through an erosion control facility prior to leaving the construction site. Proper energy dissipation must be provided at the outlet of the pump system.
6. The NMCWD must be notified a minimum of 48 hours prior to commencement of construction.
7. The NMCWD, its officers, employees and agents review, comment upon, and approve plans and specifications prepared by permit applicants and their consultants for the limited administrative purpose of determining whether there is reasonable assurance that the proposed project will comply with the regulations and criteria of the NMCWD. The determination of the NMCWD that issuance of this permit is appropriate was made in reliance on the information provided by the applicant.
8. The grant of this permit shall not in any way relieve the permittee, its engineer, or other professional consultants of responsibility, nor shall it make the NMCWD responsible for the technical adequacy of the engineer's or consultant's work. The grant of this permit shall not relieve the permittee from complying with all conditions and requirements of the permit which shall be retained by the permittee with the permit.
9. The issue of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
10. This permit is permissive only. No liability shall be imposed upon the NMCWD or any of its officers, agents or employees, officially or personally, on account of the granting of this permit or on account of any damage to any person or property resulting from any act or omission of the permittee or any of its agents, employees, or contractors.

11. In all cases where the doing by the permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly-owned lands or improvements or interests, the permittee, before proceeding therewith, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all necessary property, rights, and interest.
12. The permit is transferable only with the approval of the NMCWD (see NMCWD Rule 1.0). The permittee shall make no changes, without written permission previously obtained from the NMCWD, in the dimensions, capacity, or location of any items of work authorized by this permit.
13. The permittee shall grant access to the site at all reasonable times during and after construction to authorized representatives of the NMCWD for inspection of the work authorized by this permit.
14. This permit may be terminated by the NMCWD at any time deemed necessary in the interest of public health and welfare, or for violation of any of the provisions of this permit.
15. Construction work authorized under this permit shall be completed on or before date specified above. The permittee may, in writing, request that the NMCWD extend the time to complete the project in accordance with NMCWD Rule 1.0.



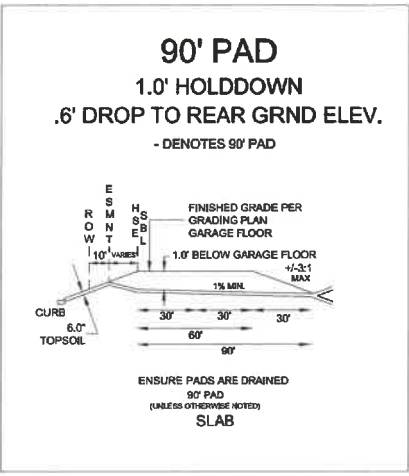
Permit No.2019-69

Is hereby issued to Rick Miller, personal representative for the Estate of Mary A. Miller, subject to the conditions specified in the attached form:

The Miller Property to be located at 7120 Gerard Drive in Eden Prairie

Jodi Peterson, Chair
Nine Mile Creek Watershed District

This permit expires on: September 1, 2020



- GENERAL NOTES:**
- INSTALL SILT FENCE AS SHOWN ON PLAN, AS REQUIRED BY THE CITY OF EDEN PRAIRIE OR DIRECTED BY THE ENGINEER.
 - THE WATER QUALITY BASIN MUST BE EXCAVATED AT THE BEGINNING OF GRADING OPERATIONS TO PROVIDE TEMPORARY STORM WATER DETENTION DURING CONSTRUCTION. SAND AND SILT MUST BE REMOVED FROM THE POND AS NECESSARY DURING CONSTRUCTION AND AT THE COMPLETION OF THE PROJECT.
 - BEGIN GRADING, INSTALL PERFORATED RISER PIPE IN POND WHEN POND GRADING IS COMPLETE. TEMPORARY DRAINAGE PIPE SHALL BE USED FOR INTERMEDIATE DRAINAGE DURING THE CONSTRUCTION PERIOD AS NECESSARY AND DIRECTED BY THE ENGINEER. INSTALL SILT FENCE AROUND EXCAVATED PONDS.
 - INSPECT POND, SILT FENCE, AND ROCK ENTRANCE BERM AFTER ALL RAINFALL EVENTS AS REQUIRED BY THE NOTES PERMIT.
 - LINE ALL PONDS WITH A MINIMUM 3" ORGANIC SOILS & SEED SLOPES BETWEEN MWL AND 100 YR HWL WITH A WATER TOLERANT MIX. (OR AS NOTED)
 - REMOVE PERFORATED RISER PIPE WHEN STORM SEWER AND OUTLET STRUCTURE FOR BASIN ARE INSTALLED.
 - BASIN - 4:1 MAX
 - SLAB PADS 3:1 MAX. ALL OTHER SLOPES 4:1 MAX (UNLESS NOTED)
 - THE GRADING CONTRACTOR IS RESPONSIBLE FOR ALL STORM WATER INSPECTIONS ACCORDING TO THE MPCA STORM WATER PERMIT. THIS INCLUDES BOTH WEEKLY INSPECTIONS AND INSPECTIONS DONE AFTER A 0.5" RAIN EVENT. A COPY OF THE INSPECTION REPORT MUST BE EMAILED TO THE ENGINEER AND DEVELOPER ON A WEEKLY BASIS.
 - THE CONTRACTOR SHALL PLACE INLET PROTECTION DEVICES IN ACCORDANCE WITH THE CITY OF EDEN PRAIRIE DETAIL PLATES FOR ALL STORM SEWER INLETS AND MAINTAIN THEM AS AN EFFECTIVE SILT CONTROL DEVICE. INLET PROTECTION SHALL BE REMOVED WHEN RESTORATION HAS BEEN ESTABLISHED.
 - RIP RAP - RIP RAP WILL BE UTILIZED AT ALL APRONS FOR ENERGY DISSIPATION AND PROVIDE SEDIMENT CONTROL.
 - ALL RETAINING WALLS WILL REQUIRE A STRUCTURAL DESIGN, A BUILDING PERMIT & A FINAL INSPECTION REPORT.
 - A 1'-2" CRUSHED ROCK ENTRANCE BERM SHALL BE PLACED AT THE SITE ENTRANCE, TO REPLACE SILT FENCE, AND MINIMIZE EROSION ON TO THE STREETS. THE ROCK BERMS SHALL BE THE WIDTH OF THE ENTRANCE AND 2 FEET HIGH WITH 4:1 SLOPES.
 - THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING PAD AND STREET AREAS THROUGHOUT CONSTRUCTION.
 - THE CONTRACTOR SHALL ATTEMPT TO PREVENT SOIL MATERIALS FROM LEAVING THE SITE BY EROSION AND VEHICLE WHEEL TRACKING. HE SHALL BE RESPONSIBLE FOR CLEANING OF STREET, BOULEVARD AND UTILITY FACILITIES THAT RECEIVE ANY ERODED OR TRACKED SOIL MATERIAL OR OTHER CONSTRUCTION DEBRIS OR MATERIAL.
 - EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES ARISING OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.
 - BUILDING PADS ARE 1' DEEP, UNLESS OTHERWISE NOTED. THE FRONT AND REAR BUILDING PAD LINES ARE SHOWN ON THE PLAN. THE ENGINEER SHOULD BE CONTACTED IF THE CONTRACTOR HAS ANY QUESTIONS REGARDING BUILDING PADS.
 - RESTORATION NOTES:
 - RESTORATION - 2.2 ACRES
 - A. RESTORE ALL DISTURBED AREAS WITH 6" OF TOPSOIL, OR EXISTING ON-SITE ORGANIC MTRL.
 - B. SEED POND SLOPES AND DETENTION AREAS WITH MINDOT 33-351 OR BWSR P8 SEED MIX AT A RATE OF 100 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE.
 - C. SEED BASIN AREAS WITH MINDOT 33-261 SEED MIX AT A RATE OF 35 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE. SEED OVER GAS MAIN EASEMENT WITH MIX 35-24-1 AT A RATE OF 36.5 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE.
 - D. SEED ALL OTHER DISTURBED AREAS WITH MINDOT 25-141 SEED MIX AT A RATE OF 100 LBS./ACRE AND FERTILIZE WITH 20-0-10 AT 100 LBS./ACRE (UNLESS OTHERWISE NOTED)
 - E. ONLY PHOSPHOROUS FREE FERTILIZER IS TO BE USED ON SITE.
 - F. MULCH WITH TYPE 1 AT A RATE OF 2 TONS/ACRE AND DISC ANCHOR IMMEDIATELY AFTER PLACEMENT. USE WOODFIBER BLANKET ON ALL SLOPES 3:1 (FT) OR GREATER.
 - G. PLACE APPROVED STORM SEWER INLET PROTECTION IN OR AROUND ALL STORM SEWER INLETS AND MAINTAIN UNTIL STREET CONSTRUCTION IS COMPLETED. REFER TO CITY DETAILS FOR APPROVED DEVICES.
 - H. MAINTAIN ALL SILT FENCE UNTIL TURF HAS BEEN ESTABLISHED.
 - I. RESTORATION WORK WILL BE COMPLETED WITHIN 72 HOURS OF GRADING COMPLETION.
 - J. SILT FENCE, BEFORE GRADING - 1,233 LF
 - K. WOODFIBER BLANKET - AS NEEDED
 - ON-SITE BMPs:
 - 1. REDUCE IMPERVIOUS AREA
 - 2. NURP POND - NURP POND WILL BE UTILIZED TO MEET OR EXCEED QUALITY AND RATE CONTROL REQUIREMENTS.
 - 3. SWIMMERS - THE POND OUTLET STRUCTURE INCLUDES A SUBMERGED INLET PIPE TO ALLOW SWIMMING.
 - 4. RIP RAP - RIP RAP WILL BE UTILIZED AT ALL APRONS FOR ENERGY DISSIPATION AND PROVIDE SEDIMENT CONTROL.
 - 5. INLET PROTECTION - INLET PROTECTION WILL BE INSTALLED AND MAINTAINED IN ALL CATCH BASINS & REAR YARD STRUCTURES. REFER TO THE CITY DETAIL PLATES TO DETERMINE WHICH INLET PROTECTION DEVICE IS APPLICABLE.
 - 6. SLOPE STABILIZATION - SILT FENCE WILL BE INSTALLED ALONG DOWN GRADIENT GRADING LIMITS AND WOODFIBER BLANKET WILL BE UTILIZED ON ALL SLOPES 3:1 OR GREATER TO PROVIDE ADEQUATE SLOPE STABILIZATION.
 - 7. BIOROLLS - BIOROLLS WILL BE INSTALLED ALONG REAR YARD SWALES TO PREVENT SEDIMENT FROM REACHING THE NURP POND AND ULTIMATELY DOWNSTREAM WETLANDS.
 - 8. INFILTRATION/RETENTION AREAS - INFILTRATION/RETENTION AREAS WILL BE UTILIZED TO REDUCE/RETAIN THE RUNOFF FROM THE INCREASED HARD SURFACE.
 - 9. STREET SWEEPING - STREET SWEEPING WILL BE DONE A MINIMUM OF ONCE PER WEEK OR MORE FREQUENTLY TO MINIMIZE DUST CONTROL AND VEHICLE TRACKING.
 - 10. PHOSPHOROUS FREE FERTILIZER - PHOSPHOROUS FREE FERTILIZER WILL ALSO BE USED ON SITE.
 - 11. ONE RAIN BARREL WILL BE PROVIDED FOR EACH HOME.

CITY OF EDEN PRAIRIE					
TYPICAL MINIMUM ROADWAY SECTION					
ROAD TYPE	RIGHT-OF-WAY (FEET)	ROADWAY WIDTH (FEET)	ROADWAY WIDTH (FEET)	ENTRANCE SPACING	ENTRANCE SPACING
RESIDENTIAL 1	50	28	1.5" SPWEA_400" (5) 2" SPWNB_300" 8" CLASS 5 AGGREGATE BASE (100% CRUSHED QUARRY ROCK)	AS REQUIRED	MINIMUM 100 FEET WITHIN INTERSECTIONS
COLLECTOR	60	32	1.5" SPWEA_400" (5) 2" SPWNB_300" 10" CLASS 5 AGGREGATE BASE (100% CRUSHED QUARRY ROCK)	AS REQUIRED	MINIMUM 100 FEET WITHIN INTERSECTIONS
INDUSTRIAL 4	70-100	32-52	2" SPWEA_400" (5) 4" SPWNB_300" 10" CLASS 5 AGGREGATE BASE (100% CRUSHED QUARRY ROCK)	AS REQUIRED	MINIMUM 150 FEET WITHIN INTERSECTIONS
COMMERCIAL 4	100	52	2" SPWEA_400" (5) 4" SPWNB_300" 10" CLASS 5 AGGREGATE BASE (100% CRUSHED QUARRY ROCK)	BOTH SIDES	MINIMUM 80 FEET BETWEEN FULL INTERSECTIONS
MSA TYPICAL	110	282x3	3" SPWEA_400" (5) 2" SPWNB_300" 4" SPWNB_300" 12" CLASS 5 AGGREGATE BASE (100% CRUSHED QUARRY ROCK)	BOTH SIDES	MINIMUM 600 FEET BETWEEN FULL INTERSECTIONS

1. CEA-DE-SAC REQUIREMENTS, RIGHT-OF-WAY RADIUS 50 FEET, ROWWAY RADIUS 30 FEET TO BACK OF CURB

2. AT MAJOR INTERSECTIONS INCREASE TO 130 FEET

3. FOUR LANE DIVIDED WITH 18 FEET MEDIAN

4. FINAL DESIGN DEPENDENT UPON TRAFFIC VOLUME AND SOIL FACTORS

5. AFTER 1 FREEZE - THAW CYCLE OR SECOND YEAR

** TO BE DETERMINED BY PAVEMENT DESIGN FOR CSALS

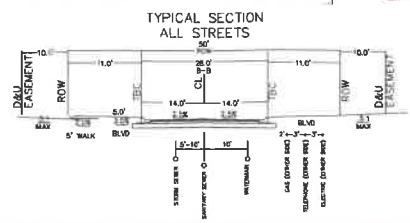
GENERAL SPECIFICATIONS

MINDOT 2380 SPECIFICATIONS SHALL APPLY

MAXIMUM GRADE = 8.0%, MINIMUM GRADE = 0.5%

RADIUS ON CURB RETURNS MINIMUM 20'

RECYCLED CL 8 MAY BE USED WITH THE CITY ENGINEERS APPROVAL AND IN ACCORDANCE WITH CITY SPECIFICATIONS



- NOTE:**
- ALL BOULEVARDS SHALL HAVE 6" TOPSOIL A 24" STRIP OF SO2 NEXT TO CURB, SEED AND MULCH REMAINDER OF BOULEVARD AND ALL OTHER DISTURBED AREAS.
 - EDEN PRAIRIE MOUNTABLE CONCRETE CURB 7 CUTTER (DETAIL R-11) (BOTH SIDES).
 - TRENCH LOCATION FOR UTILITIES MAY BE MOVED WHEN JOINT TRENCHING IS IMPLEMENTED.
 - CROWN SHALL BE 2" ABOVE TOP OF MOUNTABLE CURB, WHERE 'B' TYPE CURB IS USED, THE CROWN ELEVATION SHALL BE EQUAL TO TOP OF CURB.

EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ANY AND ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES ARISING OUT OF HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL EXISTING UTILITIES.

DRAWING NAME	NO.	BY	DATE	REVISIONS
grading - miller	01	TCW	06/28/19	INCOMPLETE LETTER 06/28/19
DRAWN BY	02	TCW	07/19/19	PROJECT NAME CHANGE
TCW	03	TCW	07/28/19	CITY REVIEW LETTER 07/17/19
CHECKED BY				
RSM				
DATE				
08/07/19				

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I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Robert S. Molstad

ROBERT S. MOLSTAD, P.E.
Date: 08/07/19 Lic. No. 24728

ENGINEERS SURVEYORS DESIGNERS PLANNERS

SATHRE-BERGQUIST, INC.
150 SOUTH BROADWAY WAYZATA, MN. 55391 (952) 478-6000

CITY PROJECT NO. ---

EDEN PRAIRIE, MINNESOTA

FINAL GRADING PLAN

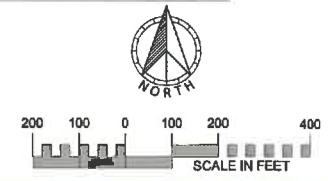
HIGHLAND OAKS

WOODDALE BUILDERS

FILE NO. 9745-058

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7/20/19-69