CALL TO ORDER

ROLL CALL
COMMISSION
Elaine Barton, Commission Chair
Patrick Blees, Commissioner
Rick Gelbmann, Commissioner
Trisha Hamm, Commission Vice-Chair - EXCUSED
John Monge, Commissioner
Tom Sonnek, Commission City Council Liaison
Michael Stahlmann, Commissioner
Allan Worm, Commissioner

STAFF
Ryan Krzos, Planning Consultant
Olivia Boerschinger, Planning Secretary

ADOPT AGENDA

APPROVAL OF MINUTES

MEETING OPEN TO THE PUBLIC
Note: This is a courtesy extended to persons wishing to address the Commission concerning issues that are not on the agenda. This discussion will be limited to 15 minutes.

PUBLIC HEARING
A. Variance Requests for Multi-family Apartments (Anchor Commons) at McKnight Road and Anchor Drive.

OLD BUSINESS

COMMISSION BUSINESS ACTION ITEMS & RECOMMENDATIONS
A. Site Plan Review and Variance Requests for Multi-family Apartments (Anchor Commons) at McKnight Road and Anchor Drive.
B. Ordinance Text Amendment: Keeping of Chickens and Bees

REPORTS FROM STAFF

REPORTS FROM COMMISSIONERS
A. Update from City Council Liaison

ADJOURNMENT
The next regularly scheduled Planning Commission Meeting is Thursday, April 2nd, 2020 at 6:15 p.m.
MEMORANDUM

Date: 2/21/2020
To: Planning Commissioners
From: Erin Perdu, AICP, City Planner
        Ryan Krzos, AICP, Planning Consultant
CC: Scott Duddeck, City Manager
        Debra Gustafson, Administrative and Community Services Director
Re: Site Plan Review and Variance Request for a Multi-family Apartment building at McKnight Road and Anchor Drive

BACKGROUND

Roger Fink of Trident Development LLC, has submitted applications on behalf of the property owner (currently the City of North St. Paul) for site plan review and four variances to facilitate the development of a multi-family apartment building at the property on the south side of Anchor Drive. In December of 2019 the City reviewed and approved a preliminary and final plat establishing the Anchor Block Commons subdivision. The subject requests would apply to lot 2, block 1, addressed pending on Anchor Drive. The site is currently zoned MU-3, Corridor Mixed-Use District and multi-family dwellings uses are permitted in the zoning district. Site Plan Review is required for new multi-family development projects. The proposed multi-family development would contain a total of 126 units within the four-story building.

As proposed, the development would include two detached garages in the area between the building and Anchor Drive. Both garages would exceed 4,000 square feet and contain 13 and 14 stalls respectively. The garage structures would be located as close as 10.1 feet from the Anchor Drive right-of-way, which is considered the corner side lot line as determined for the multiple street frontages. Accordingly, the applicant is requesting a variance from the requirements of Section 154.010 (D)(1) Accessory Building Supplemental Standards subdivisions (a)(e)&(f) for the following:

1. Variance from Section 154.010 (D)(1)(a) to allow two accessory structures to be constructed at 4,080 square feet and 4,656 square feet respectively exceeding the 1,000 square foot maximum for an individual accessory building.
2. Variance from Section 154.010 (D)(1)(e) to allow an accessory structure to be located 10.1 feet from the corner side lot line reducing the 20 ft minimum.
3. Variance from Section 154.010(D)(1)(f) to allow a second accessory structure that exceeds 200 square feet.

Additionally, the applicant is requesting a variance from Section 154.007(C)(3) to allow a reduction in the front yard (3rd St. N) setback of the principal structure from 25 ft to 22.2 ft. This variance is necessary because, although the building “fronts” Anchor Drive, the definition of “front lot line” in the North St. Paul zoning ordinance requires that the shortest frontage on a public street be considered the front.
Figure 1: Location Map

Figure 2: Zoning Map
GENERAL STAFF REVIEW

Consistency with the City Plans

- 154.004 (E)(2) Variance Standards (a) The variance is in harmony and consistent with the general purposes and intent of the Comprehensive Plan and this chapter.
- 154.004(H)(2) Site Plan Review Standards (a) The proposal is consistent with the general purposes and intent of the Comprehensive Plan;
- 154.004(H)(2) Site Plan Review Standards (i) If applicable, the proposal is consistent with officially adopted city plans and overlays.

This site is guided for corridor mixed uses by the 2040 Comprehensive Plan. This designation is established to encourage the development or redevelopment of mixed-use centers that combine retail development with a variety of housing, offices, live-work spaces, employment activities, and other complementary uses. The proposed project is part of a redevelopment of the site that would establish a combination of residential and commercial uses in the area known as the Anchor Block. The site was specially noted as being targeted for redevelopment. Accordingly, the project is consistent with the vision and intent of the Comprehensive Plan for this area. The site is not subject to any overlay zoning districts.

Health, Safety, and General Welfare

- 154.004 (E)(2) Variance Standards (b) The variance will not adversely affect the health, safety, or general welfare of the city.
- 154.004 (H)(2) Site Plan Review Standards (b) The proposal will not adversely affect the health, safety, or general welfare of the city.

Development of the site is not likely to negatively impact the health, safety, or general welfare of the City. Multi-family uses are permitted in the MU-3 District. The use is being laid out in a reasonable manner on the site, as allowed by the ordinance and requested variances.

Practical Difficulties/Special Conditions

- 154.004 (E)(2) Variance Standards (c) The variance is necessary due to special conditions applying to the structures or land in question that are particular to the property and do not apply generally to other land or structures in the district or vicinity in which the land in located.
- 154.004 (E)(2) Variance Standards (d) The variance requested is the minimum variance necessary to alleviate the practical difficulty.
- 154.004 (E)(2) Variance Standards (e) Practical difficulties are caused from the strict application of the Zoning Code as outlined below:
  i. The property owner proposes to use the property in a reasonable manner not permitted by the Zoning Code;
  ii. The plight of the landowner is due to circumstances unique to the property not created by the landowner; and
  iii. The variance, if granted, will not alter the essential character of the locality.
  iv. Economic considerations alone do not constitute practical difficulties.
  v. The variance is consistent with officially adopted city plans and overlays.
The proposed detached garage structures are accessory to a permitted use in the MU-3 District. The three accessory structure setback and building size requirements the applicant is requesting relief from are intended for single family neighborhood settings as opposed to multi-family or mixed-use development sites. Accordingly, the variance is the minimum necessary to alleviate the hardship.

The front yard setback reduction is requested because shifting the building to the west (to comply with the front yard setback) would conflict with drainage and utility easements along the property line adjoining McKnight Road. Additionally, staff finds that the principal building meets the intent of the front yard setback by its location which is a considerable distance from Anchor Drive. Because of the definitions in the Zoning Ordinance, Anchor Drive cannot treated as the front yard, but it will function as such from a practical standpoint.

This use was contemplated as part of a planned redevelopment of the Anchor Block site envisioned by the City’s Comprehensive Plan. Accordingly, approval of the variances will facilitate a development that is consistent with City Plans and meets the intent of the Zoning Ordinance.

Compatibility with Surrounding Context

- 154.004(H)(2) Site Plan Review Standards (c) The proposal is compatible with present and future land uses in the surrounding area and reasonably related to the overall needs of the city.
- 154.004(H)(2) Site Plan Review Standards (d) The proposal or appearance of the proposal is compatible with adjacent properties.
- 154.010(E)(3) General Architectural requirements (g) Protection of views. Buildings shall be designed and oriented so as not to detract from one another or to unduly restrict views to open spaces, plazas and vistas.

The site is surrounded by existing and future commercial and industrial uses to the north, east, and west. The gateway trail and townhomes adjoin the property to the south across the Gateway Trail. Properties to the east include an asphalt recycling facility and a landscaping supplier. As such this use represents a transition between the residential development to the south, and commercial and industrial development to the north, east, and west.

The site improvements are placed in a location that would not interfere with views of public open space, parks, or vistas.

Proposed Uses

- 154.004(H)(2) Site Plan Review Standards (h) The proposal is in harmony with the general purposes and intent of this chapter and the zoning district in which the applicant intends to locate the proposal.
- 154.007(C)(1) Permitted, Conditional, and Interim Uses refers to Table 6 for allowed uses within the mixed-use districts.

The proposed multi-family use is a permitted use in the MU-3 Zoning District. As previously mentioned, the site is within a larger redevelopment area known as the Anchor Block, which will establish a mix of residential and commercial uses, as envisioned for the site by the
Comprehensive Plan and as intended within the MU-3 District. The applicant is requesting multiple variances to the accessory building requirements and the front yard setback requirement. The proposal complies or could be conditioned upon demonstration of compliance with other applicable Ordinance requirements as noted herein.

Proposed Lot/Building Dimensional and Setback Requirements

- 154.007(C)(3) refers to Table 7 for the lot requirements within the mixed-use districts.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>MU-3</th>
<th>Proposed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Lot Size</td>
<td>35,000 sq. ft.</td>
<td>3.91 ac</td>
</tr>
<tr>
<td>Minimum Lot Width</td>
<td>120 ft</td>
<td>184.22 ft (along 3rd St N)</td>
</tr>
<tr>
<td>Front Yard Setback</td>
<td>25 ft</td>
<td>22.2 ft (along 3rd St N)</td>
</tr>
<tr>
<td>Rear Yard Setback</td>
<td>0 ft</td>
<td>10.7 ft (along McKinght Rd N)</td>
</tr>
<tr>
<td>Side Yard Setback</td>
<td>0 ft</td>
<td>15 ft (South) 76 ft (West)</td>
</tr>
<tr>
<td>Maximum Height</td>
<td>Five (5) stories or 55 ft</td>
<td>Four (4) Stories and 48 ft</td>
</tr>
</tbody>
</table>

- 154.010(D)(1) Accessory buildings and structures
  (a) Size. The total square feet of an accessory building shall not exceed 10% of the lot area, and in no case shall it exceed 1,000 square feet of gross floor area. The sum of all square footage for attached garages and detached garages shall not equal or exceed the finished livable floor area of the footprint (ground floor) of the principal structure to which it is an accessory.
  (b) Height. Accessory buildings shall not exceed the height of the principal building. In no case, shall an accessory building exceed 15 feet in height or in the case of an accessory dwelling unit, then 20 feet shall be the maximum height allowed.
  (c) Location. A detached garage or other accessory buildings shall be located in the side or rear yard.
  (d) Setbacks. Detached garages or other accessory buildings, including storage sheds, shall be setback a minimum of three feet from side and rear property lines or up to an easement line, but not on it, whichever is greater; and six feet from the principal structure. An accessory building shall be considered as part of a principal building if it is located less than six feet from the principal building and must meet the setbacks of the principal building.
  (e) Corner lot. A detached garage or other accessory buildings shall not be located closer than 20 feet to the side lot line adjacent to the street.
  (f) Number of structures. No more than two accessory buildings shall be constructed on a lot. The second accessory building shall not exceed 200 square feet. On lots with a detached garage, two additional accessory buildings are permitted, neither of which exceed 200 square feet, subject to the district’s lot coverage requirements.
  (g) Time of construction. No accessory building or structure shall be constructed on any lot prior to the time of construction of the principal building to which it is accessory.
  (i) Multi-family uses. Common walls for accessory buildings may be required where common walls will eliminate unsightly and hazardous areas.
The subject site was platted in December of 2019 under the current Zoning and Subdivision ordinances. Accordingly, the lot meets the size and width requirements for the MU-3 Zoning District. The proposed principal building would comply with the rear, side, and corner side yard setback requirements, and would be within the maximum building height limit. The building would conflict with the 25-foot front yard setback as measured from the 3rd Street N right-of-way. Staff finds that the proposal meets the intent of the Ordinance by providing considerable setback from the Anchor Drive frontage, which will serve as the front from a practical standpoint. The applicant is requesting a variance from the front yard setback standard.

As proposed, the development would include two detached garages in the area between the building and Anchor Drive. Both garages would exceed 4,000 square feet as they would contain 13 and 14 stalls respectively, this would exceed the size limit of 1,000 square feet for an individual accessory building and exceeding the requirement that the second accessory building be less than 200 square feet. The western most garage would be located up to as close as 10.1 feet from the Anchor Drive right-of-way, which is considered the corner side lot line, as determined for the multiple street frontages. This distance conflicts with the 20-foot minimum for the corner side yard requirement for accessory structures. The applicant is requesting variances from these requirements as noted herein. Staff finds that these regulations are intended to regulate single family residential neighborhoods as opposed to multi-family or mixed-use developments.

Utilities and Municipal Services

- 154.004(H)(2) Site Plan Review Standards (e) The proposal can be adequately supported by public urban services including the water supply, transportation system and capacity, police and fire protection, utilities, and sanitary waste disposal and stormwater disposal systems.
- 154.004(H)(2) Site Plan Review Standards (f) The proposal will not create an excessive burden on existing parks, schools, and other public facilities which serve or are proposed to serve the area;
- 154.010(A) Development Standards (9) Utility installations. All on site utility installations shall be placed underground.
- 154.010(E)(3) General Architectural requirements (b) Utilities. Building utility services and structures such as meters, transformers, refuse containers, including dumpsters, ancillary equipment and the like shall be either located inside the principal building, inside an accessory building, or, where outside be entirely screened from off-site views. For new buildings, all utilities shall be underground.

The proposed use will generate additional demand on parks and schools. Staff finds that this demand was planned for via the Comprehensive Plan and as such would not create an excessive burden on these facilities.

The facility will be served by municipal water and sewer via underground connections. Stormwater management will be provided by an on-site facility located along Anchor Drive. When the Anchor Drive roadway was platted and designed, this use was contemplated for this location. Traffic signal improvements will be installed in the vicinity therefore the surrounding
transportation systems are adequate for the proposed use. No building utility structures, or ancillary equipment is proposed to be located outside of the building.

**Open Space**

- **154.010(B)(1)(b) Multiple family.** Each lot shall contain at least 250 square feet of usable open space shall be provided for each unit.

The 126 proposed units equates to a requirement for 31,500 square feet of usable open space. The site plan proposes a tot lot and patio area at the southwest corner of the building. Landscaped area surrounds the building and detached garages around the perimeter of the site. Pervious area equals 42,445, which includes the 3,500 square foot storm water management area. Additionally, the Ordinance allows for public parks or plazas within 300 feet of the site may to be used to meet this requirement. The gateway trail corridor adjoins the site to the south having well over 30,000 square feet. Accordingly, staff finds this standard to be met.

**Landscaping**

- **154.010(F)(3) Tree requirements.** (a) Number of trees. Trees must be planted within the property lines and in a location as not to interfere with sight line visibility at maturity. The minimum number of trees of any given site shall be as follows:
  - ii. Townhouse and multiple family uses. Residential structures containing two or more units shall contain a minimum: one tree per dwelling unit.
- **154.010(F)(4) Landscape coverage.** All residential district properties are encouraged to have diversified landscaping in addition to the landscaping required in setback areas for free-standing, detached structures. All landscaped areas are encouraged to be developed with live deciduous and coniferous plants, grass, trees, and shrubs which provide a variety of color, texture, height, and forms consistent with the needs of the site and other elements of the plan. The landscaped areas may contain, but not limited to, some decorative stones, wood, patio blocks, sculptures, and other appropriate ornamental features. Overall composition and location of landscaped areas shall complement the scale of the development and its surroundings. In general, larger, well-placed contiguous planting areas shall be preferred to smaller, disconnected areas. The following zoning classifications will have the following percentage of the lot landscaped: (e) MU-2 and MU-3 Districts. All areas, except for buildings, driveways and approved parking areas, shall be landscaped as described above. Where possible, a minimum of 2% of the site may provide for diversified landscaping that allows infiltration of stormwater. Screening shall be provided and established to protect and screen abutting residential districts.
- **154.010(F)(5) Required yards and setbacks.**
  - (a) All developed uses shall consist of, but not limited to, a landscaped yard, including grass, plantings, decorative stones, trees and shrubs, along all streets.
  - (b) Except for driveways, the yard shall extend along the entire frontage of the lot, and along both streets in the case of a corner lot, such yard shall have a depth of at least ten feet.
  - (c) Required yards and setback areas, except driveways and areas used for accessory structures, shall be graded to final elevations and sodded or seeded and landscaped with grass, plantings, decorative stones, trees and shrubs.
154.010(F)(6) Interior parking landscaping. The purpose of interior parking lot landscaping is to improve the appearance of parking lots, provide shade, and improve stormwater infiltration. The following standards apply to those lots with seven or more spaces:

(a) A planting island with a minimum of one tree shall be installed for every 12 parking spaces.
(b) The primary plant material shall be shade trees with at least one deciduous canopy tree for every 200 square feet of required landscaped area.
(c) Islands may be curbed or may be designed as uncurbed bio-retention areas as part of an approved low impact stormwater management design as approved by the City Engineer.

The landscaping plan shows a total of 36 trees, some of which would have to be relocated out of utility and drainage easements. The building contains 126 units – equating to a total of 126 required trees. As was applied similarly with the Anchor Commons Storage facility site plan review, Section 154.010 (F)(2)(ii) states that landscaping requirements shall be enforced with the exception of when the review authority determines that the amount and/or locations of plantings pose a risk of overcrowding of plant materials. Therefore, staff recommends that the landscaping plan be revised to increase the number of trees as much as possible up to the 126 tree requirement; the applicant must demonstrate that additional trees would cause overcrowding to the satisfaction of the City’s consulting landscape architect. The developer has indicated an openness to working with the City on alternative compliance with the landscaping requirements.

An area exceeding 3,500 square feet will be graded and seeded for use as a stormwater management facility located along Anchor Drive. The meets the 3,408 square feet required by ordinance.

The area located between the front property line (along 3rd St N) and the parking area will be landscaped with lawn, and mulched areas containing trees and shrubs. This area would be in excess of 20 feet in width meeting the ten-foot minimum for the landscape yard.

The parking lot area contains a number of raised landscape islands with curb, including a large perennial and grass in the area in front of the main building entrance. A total of 94 surface parking stalls are provided requiring eight trees. Eight trees including Red Maple, and Honey Locust are proposed within the parking lot islands meeting the minimum required.

Screening

154.004(H)(2) Site Plan Review Standards (g) The proposal will be sufficiently compatible or separated by distance or screening from adjacent residentially zoned land.
154.010(D)(27) Multi-Family Supplemental Standards (c) Projecting air conditioning and heating units. Air conditioning or heating units shall not project through exterior walls or windows unless located behind a balcony and screened from view.
154.010(D)(27) Multi-Family Supplemental Standards (d) Transformers. If located outside, shall be screened from view.
154.010(D)(27) Multi-Family Supplemental Standards (e) Utilities. Building utility services and structures such as meters, transformers, refuse containers, including
dumpsters, ancillary equipment and the like shall be either located inside the principal building, inside an accessory building, or, where allowed, be outside and entirely screened from off-site views. For new buildings, all utilities shall be underground.

- 154.010(E)(3) General Architectural requirements (c) Screening of rooftop equipment. All rooftop equipment, with the exception of solar and wind equipment, shall be screened from view from adjacent streets and public rights-of-way. Rooftop equipment shall be screened from view from adjacent buildings to the extent possible.
- 154.010(J)(10) Off-street parking standards for non-residential districts. (d) Parking lots should be screened from streets and sidewalks by planters or plantings or both. If planters are used, their material should be compatible with adjacent buildings. Planters should be at least 18 inches high.

The site does not adjoin residentially zoned property. The submittal does not indicate that any projecting air conditioning or heating units, transformers, rooftop equipment, or building utility services/structures are proposed. Accordingly, if any of these features are proposed, the plans must be revised to depict how said equipment is to be screened prior to their installation.

Landscape plantings are proposed in the areas between sidewalks and around the perimeter of the off-street parking areas. These plantings will provide the parking lot screening that is required by Ordinance.

Drainage/Natural Resources

- 154.010(F) Landscaping Standards (9) Drainage, access & utility easements. No landscape material other than grass, or retaining walls, shall be placed within a drainage, access or utility easement. Rock or riprap may be allowed upon review and approval by the Zoning Administrator provided the proposed material does not interfere with drainage, access or utilities.
- 154.010(D)(27) Multi-Family Supplemental Standards (b) Drainage. Drainage shall be provided as required consistent with the city and Watershed District requirements. Any required NURP ponds shall be integrated into the overall plan and proper easement and maintenance agreements shall be provided.

Ten-foot wide drainage and utility easements are dedicated along the perimeter of the site. Accordingly, the landscaping plan must be revised to relocate the proposed planting outside the easement areas.

The City Engineer reviewed the drainage submittal and provided comment in the section of this memo titled “Engineering Comments.” The facility will have to meet all applicable Watershed District stormwater management requirements.

Streets and Sidewalks

- 154.010(A) Development Standards (21) Pedestrian circulation. Sidewalks or other designated pedestrian ways shall be clearly indicated and provided for the safety of pedestrians within nonresidential and mixed-use districts.
• **154.010(A) Development Standards** (22) Sidewalks and trails. Complete plans shall be provided for proposed sidewalks and trails to serve parking, recreation and service areas within developments and to link to the city's system.

• **154.010(D)(27) Multi-Family Supplemental Standards** (a) Access. No access shall be located within 50 feet of a public street corner.

• **154.010(E)(3) General Architectural requirements** (e) Pedestrian ways. Buildings shall be designed with proper provision and orientation for a pedestrian system to serve and link development.

The plans show proposed walkways from the building’s main entrance to the sidewalks along Anchor Drive. Additionally, a walkway is provided from a secondary building access to the sidewalks along 3rd St, which further connects to the Gateway Trail Corridor.

**Parking**

• **154.010(A)(23) Underground parking.** When appropriate, buildings are encouraged to provide for inside, usually underground, parking at a ratio of at least one space per dwelling unit within mixed-use districts.

• **154.010(J)(3) General Parking Standards.** (a) Minimum size regulations. Each space shall contain a minimum area of not less than 180 square feet, exclusive of access drives, a width of not less than nine feet and a depth of not less than 20 feet. Each space shall be adequately served by access drives as determined by the Zoning Administrator. All loading spaces shall be sufficient to meet the requirements of each use and shall provide adequate space for storage and maneuvering of the vehicles they are designed to serve. Parking ramps and underground parking may be allowed to have some reduction in the dimensions stated above.

• **154.010(J)(10) Off-street parking standards for non-residential districts.** (g) Required number of off-street parking spaces. The minimum number of required off-street parking spaces for the following uses shall be as indicated on Table 8. Where a specific use is not listed, the Zoning Administrator shall determine the minimum number of required off-street parking spaces by considering functional similarities between uses listed and the use not listed.

• **154.010(J)(10) Off-street parking standards for non-residential districts.** (h) Yards. Off-street parking and loading facilities shall be subject to the front yard, side yard, and rear yard regulations for the use district in which the parking is located, except in the MU-1, MU-2, and MU-3 Districts, yard setbacks may be reduced if a substantial landscape setback is provided having a width meeting at least the minimum specified.

A Summary of the requirements in Table 8 is provided below for multi-family use by unit type.
A combination of 203 surface parking stalls, detached garage stall, and tuck-under garage stalls are provided. The surface stalls would comply with the above noted dimensional standards, and would have upwards for 24 feet in width for access. Underground parking stalls are not provided, however interior parking is provided at almost a one space per unit ratio (.75 spaces per unit). Staff finds the request meets the intent of this provision.

The surface parking area near the 3rd Street frontage would not comply 25 ft front yard setback requirement. For setback purposes this side of the lot is considered the front since it is the narrowest side facing a street. The Ordinance allows this setback to be reduced in this case since a 10-foot landscape yard is provided as specified in Section 154.010(F)(5)(b).

### Bicycle and Transit

- **154.010(A)(24) Bicycle storage.** When appropriate, buildings are encouraged to provide for bicycle storage in the building storage room or similar place of at least a ratio of one space per dwelling unit within mixed-use districts.
- **154.010(J)(7) Bicycle Parking Standards**
  1. **New development.** Bicycle parking shall be provided for all new commercial, industrial, community service use, and multifamily residential development.
  2. **Number of spaces.** The number of bicycle parking spaces shall be at least 10% of the minimum required vehicle parking for the use. In no case shall less than two spaces be provided.
  3. **Location of facilities.** Bicycle parking facilities shall be located within 50 feet of the main building entrance in a location that is visible to building occupants from the main parking lot.
- **154.010(A) Development Standards (25) Transit.** Developments are to take into account the needs for transit and the transit rider and related pedestrian ways. Development of transit facilities and transit plazas are to be furnished on a cooperative basis with participation from property owners, the city and metro transit. New express transit is
proposed on Highway 36 with on-line stop(s) with the possibility of a transit station between/near Margaret Street and McKnight Road.

Bicycle parking facilities are required, providing space for a minimum of 20 bicycles. The applicant will need to demonstrate a plan to comply with this requirement.

This site is not currently on transit route therefore a transit plaza is not required.

Access and Circulation

- **154.010(F)** Landscaping requirements (8) Traffic visibility. In order to provide a clear view of intersecting streets to motorists, a triangular area of clear vision formed by the two intersecting streets and driveways and a line connecting said centerlines, shall be kept clear of visual obstruction, as specified below.
  (a) Within any vision clearance triangle, screening, plantings, walls, fences or other obstructions are not permitted between a height of 30 inches and ten feet above the curb level, with the exception of fences with a maximum of three feet in height and at least two-thirds open to vision.
  (c) At the intersection of a private drive or alley with a street, the line shall extend a minimum of ten feet from the intersection of the street and alley or drive property lines.

- **154.010(J)(3)** General Parking Standards (e) Access.
  i. Parking and loading space shall have proper access from a public right-of-way as determined by the Zoning Administrator.
  ii. The number and width of access drives shall be so located as to minimize traffic congestion and traffic hazard.

Vehicular access is proposed via two driveways from Anchor Drive. The width of these driveways, equaling 24 feet, can accommodate two vehicles traveling opposite directions.

The vision triangle at the entry way is clear of permanent obstructions but does appear to contain landscaping. Said landscaping will need to be in compliance with the above noted clearance standards.

Architecture

- **154.010(E)(3)** General Architectural requirements (f) Pedestrian-oriented design. Building designs are encouraged to make the street enjoyable, visually interesting and comfortable. Individual buildings should be integrated with the streetscape to bring activity in the building in direct contact with the people on the street.

- **154.010(A)(1)** Accessory Building Supplement Standards (h) Design. The design shall be consistent with the primary building; exterior materials shall be a product that is similar, but not limited to identical product, in terms of appearance, color, and durability.

- **154.010(E)(4)** Architectural Control (c) Multiple family dwelling.
  i. Shall be designed to consist of exterior materials compatible with residential development in the area with due regard to architectural quality and the massing of structures, and shall be designed with suitable fenestration.
  ii. Roof type. Roof style shall be gable or hip roof. Flat roofs are discouraged and may not be appropriate.
The proposed building will be constructed with finishes including metal lap siding and metal panels, brick veneer, composite wood trim, and simulated stone. These materials require minimal maintenance and are commonly utilized in residential developments. Each of the units have multiple windows and their own balconies, providing ample light for residents. A number of bump-outs and changes in architectural materials provide visual interest and break up the building’s massing. Lastly, the main building has a pitched roof, with asphalt shingles.

The two detached garages buildings would use similar matching metal lap siding and simulated stone wainscot. The garages would have a pitched roof, and windows along the Anchor Drive frontage. In general, staff finds that the appearance is complementary in the main building. The garages serve as an edge and frame for pedestrians and motorists traveling along this section of Anchor Drive.

**Lighting**

- 154.010(A) Development Standards (7) Outdoor lighting. All outdoor lighting shall be directed away from adjoining property and from the street unless globe lighting is used. Bare incandescent light bulbs shall not be permitted in view of adjacent property or the public right-of-way, except decorative holiday lights having 7.5 watts or less. No exterior lighting shall exceed 0.4 foot candles at the lot line. Yard lights shall not be closer than five feet from the property line, provided the direct source of light is not visible from the public right-of-way or adjacent residential property.

The submitted lighting plan shows one proposed pole mounted light within the parking lot, and 42 wall mounted lights around the perimeter of the apartment building and detached garages. These lights would be directed downwards, and not towards any adjoining property. The lights would not exceed the 0.4-footcandle threshold along the property lines.

**Engineering Comments:**

1. The applicant is responsible for obtaining all necessary permits for the project from both the City and applicable outside agencies.
2. The onsite sanitary sewer, water, and storm sewer shall be privately owned and maintained.
3. Final hydrant locations and turnaround dimensions shall be approved by the Fire Chief.
4. Landscaping is not allowed in the drainage and utility easements.
5. Sanitary sewer service shall be PVC SDR-26 per City detail.
6. Revise site plan note number 4 to refer to North St. Paul.
7. Show the EOF at the catch basin in the northeast corner of the parking lot located at the corner of Anchor Drive and 3rd Street.

**RECOMMENDED ACTION**

Based on the findings described in this report, staff recommends the following actions:

**Approval** of the requested variances as follows:
1. Variance from Section 154.007(C)(3) to allow a reduction in the front yard setback from 25 ft to 22.2 ft.
2. Variance from Section 154.010 (D)(1)(a) to allow two accessory structures to be constructed at 4,080 square feet and 4,656 square feet respectively exceeding the 1,000 square foot maximum for an individual accessory building.
3. Variance from Section 154.010 (D)(1)(e) to allow an accessory structure to be located 10.1 feet from the corner side lot line reducing the 20 ft minimum.
4. Variance from Section 154.010(D)(1)(f) to allow a second accessory structure that exceeds 200 square feet.

**Conditional Approval** of the proposed Site Plan Review subject to the following conditions of approval:

1. A revised landscaping must be submitted without any plantings in the drainage and utility easements.
2. If any projecting air conditioning or heating units, transformers, rooftop equipment, or building utility services/structures are proposed, the plans must be revised and submitted for approval by staff prior to their installation. Said revised plans must depict how the equipment is to be screened.
3. Revision of the landscaping plan to increase the number of trees as much as possible up to the 126-tree requirement; the applicant must demonstrate that additional trees would cause overcrowding to the satisfaction of the City’s consulting landscape architect.
4. Bicycle parking stalls accommodating a minimum of 20 bicycles must be provided on a revised site plan with accompanying details for the facility.
5. Plantings, walls, fences or other obstructions are not permitted between a height of 30 inches and ten feet above the curb level within the 30-feet vision triangle created that the development driveway.
6. All signage shall comply with Zoning Ordinance requirements and the applicant or property owner shall obtain permits prior to installation.
7. The applicant is responsible for obtaining all necessary permits for the project from both the City and applicable outside agencies.
8. The onsite sanitary sewer, water, and storm sewer shall be privately owned and maintained.
9. Final hydrant locations and turnaround dimensions shall be approved by the Fire Chief.
10. Sanitary sewer service shall be PVC SDR-26 per City detail.
11. Revise site plan note number 4 to refer to North St. Paul.
12. Show the EOF at the catch basin in the northeast corner of the parking lot located at the corner of Anchor Drive and 3rd Street.
CITY OF NORTH ST. PAUL
NOTICE OF PUBLIC HEARING:
VARIANCES

NOTICE IS HEREBY GIVEN that the Planning Commission of the City of North St. Paul, Minnesota will hold a public hearing to accept public input on applications for multiple variances at the property listed below:

Parcel Identification Number: 122922330123
Property Address: 2300 McKnight Rd. N, North St. Paul 55109
Legal Description: Lot 1 Block 2 of ANCHOR BLOCK Commons
Applicant/Address: Trident Development/3601 18th St. S, Ste 103 St. Cloud, MN 56301

The application requests the approval of a variance at the property which would allow for: reduction of the front yard setback, reduction of the side lot line setback for an accessory structure, a second accessory structure over 200 sq. ft. and two accessory structures to exceed the 1,000 sq. ft. maximum for individual accessory structures.

The public hearing will be conducted on Thursday, March 6th at approximately 6:15 p.m., or shortly thereafter at the City Council Chambers of City Hall, located at 2400 Margaret Street, North St. Paul.

Such persons with desire to be heard with reference to this matter will be heard at this meeting. Written comments may be submitted until 6:00 pm on the day of the public hearing, and shall be provided to the Planning Commission at the meeting. Please direct questions or written comment to the Planning Commission Secretary: planner@northstpaul.org or (651) 747-2595.

PUBLISH: February 23rd, 2020
APPLICATION FOR SITE/BUILDING PLAN APPROVAL

The site/building plan approval process must be scheduled through the Community Development Planning and Zoning Department. The lead-time for submittals shown on this application is necessary to allow City staff and consultants time to review and comment on documents provided. Additional lead-time will be required if the City determines that the potential impacts require more detailed study, or if review by other agencies is required. Incomplete application submittals will not be forwarded to the appropriate Commission or Council until all required information has been provided.

APPLICANT INFORMATION

Applicant Name: Roger Fink
Company (if applicable): Trident Development
Address: 3001 18th St, S, Ste 103
City, State, Zip: St. Cloud, MN 56301
Phone Number: (262) 742-1609
Email: rogerf@tridentdevelopmentmn.com
Are you the owner of the property? YES NO
(If no, you must supply property owner information)

Owner Name: City of North St. Paul
Company (if applicable): 
Address: 
City, State, Zip: 
Phone Number: 
Email: 

PROPERTY INFORMATION

Street location of property (address): TBD
Parcel Identification Number (PIDS) (see Ramsey County website):
Legal description of property:
Present zoning of property (see City website): LDFI Block 2, Anchor Block Commons
Size of property (acreage):
Title information: Abstract Torrens
Property Description: Residential Commercial Industrial Institutional

PROPOSAL INFORMATION

Required for:
- Expansions of 1,000 square feet or more of commercial, industrial, institutional, and multi-family development projects.
- New commercial, industrial, institutional, and multi-family development projects.

On a separate sheet of paper, please answer the following questions in full detail:

1. Provide a project description.
2. Is the proposal consistent with the general purposes and intent of the Comprehensive Plan?
3. Will the proposal adversely affect the health, safety, or general welfare of the City?
4. Is the proposal compatible with present and future land uses in the surrounding area and reasonably related to the overall needs of the City?
5. Is the proposal or appearance of the proposal compatible with adjacent properties?
6. Can the proposal be adequately supported by public urban services including the water supply, transportation system and capacity, police and fire protection, utilities, and sanitary waste disposal and storm water disposal systems?
7. Will the proposal create an excessive burden on existing parks, schools, and other public facilities which serve or are proposed to serve the area?
8. Is the proposal sufficiently compatible or separated by distance or screening from adjacent residentially zoned land?
9. Is the proposal in harmony with the general purposes and intent of zoning codes and the zoning district in which the applicant intends to locate the proposal?
10. If applicable, is the proposal consistent with officially adopted City plans and overlays?
NOTE TO APPLICANT

All completed application and accompanying materials are due 30 days prior to the scheduled Planning Commission meeting (if applicable). The purpose of this submittal requirement is to allow for:

1. Plan distribution to the City staff, consultants, and applicable government entities.
2. Project review time and generation of staff reports.
3. Project meetings between City staff and applicants.

The North St. Paul City Codes guide and enable development activities within the City by ensuring proper and well-coordinated projects. The land use application is the mechanism that allows the City to examine proposed land uses to ensure compatibility with the City Codes, design and development standards, and the surrounding land uses and natural environments. The review is intended to ensure positive growth for the community. All applications are reviewed individually and are evaluated based on their own merit. Each land use request has an associated checklist of required items. Applicants are encouraged to participate in an initial meeting with City staff prior to submitting a formal land use application. The initial meeting is an opportunity to informally discuss the conceptual idea of the proposed project in an effort to reduce delays. Participation in the initial meeting does not provide approval, or guarantee approval of the project. The City shall not accept plans, drawings, or other information related to the project except upon submittal of a formal application. The City reserves the right to reject an incomplete application.

APPLICATION FEE STATEMENT

There may be additional expenses pertaining to project review that is the responsibility of the applicant. All applicable fees must be paid when submitting land use applications and accompanying materials. All fees, which are set annually by City Ordinance, help cover costs incurred by the City to review the application. The City of North St. Paul often uses consulting firms to assist in the review of projects. Please refer to the City’s Fee Schedule for information on planning review fees and other applicable costs.

REVIEW REQUIREMENTS

Minnesota State Statute 15.99 requires local governments to review an application within 15 business days of submission to determine if an application is complete and/or if additional information is required to complete the review. Once complete, a formal 60-day review period begins. The City has the ability to extend the review period for an additional 60 days, if necessary, due to insufficient information or scheduling difficulties. Please review the corresponding checklist that goes with the request. All applications must be received by the deadline(s) attached hereto. Failure to submit by the date given may result in a delay of the review by the Planning Commission and City Council.

ACKNOWLEDGEMENT

I certify that all information submitted is true and correct and I fully understand that all information and a complete application must be submitted at least 30 days prior to a Planning Commission meeting to ensure review by the Planning commission on that date. By signing this form, I hereby acknowledge the receipt of the checklist and procedure for the project to be submitted for consideration. It is my responsibility to check all applicable ordinances pertaining to the application, comply with all ordinance requirements, and submit all required materials. All permit requests should be submitted in a timely manner so as not to cause project delays.

Applicant signature: ___________________________ Date: 8-4-2020

Owner Signature: ___________________________ Date: ___________________________

PROPOSED MEETING DATES:

Environmental Advisory Commission City Council: __________________________

FOR OFFICE USE ONLY

Date submitted: ___________________________ Date complete: ___________________________
Date of public hearing: __________________ Date publication date: __________________
Amount fee paid: __________________ Date fee paid: __________________
If incomplete, date letter sent to applicant: __________________ Date notice sent to adjoining properties: __________________
Receipt #: __________________ File #: __________________
Planning Commission action: Recommend approval: Recommend denial: ___________________________
Date applicant/property owner notified of Planning Commission action: ___________________________
City Council action: Recommend approval: Recommend denial: ___________________________
Date applicant/property owner notified of City Council action: ___________________________
Date filed with Ramsey County Recorder office: ___________________________
February 2, 2020

City Council and Planning Commission
City of North St. Paul
2400 Margaret Street
North St. Paul, MN 55109-3020

HAND DELIVERED AND E-MAIL

Re: APPLICATION FOR SITE PLAN REVIEW
ANCHOR VIEW MULTIFAMILY HOUSING DEVELOPMENT

Dear Council and Planning Commission Members,

Trident Development, LLC is pleased to submit this application for Site Plan Review for a new multifamily housing development in the community of North St. Paul.

This narrative is intended to generally describe the proposed project and address specific development topics.

LOCATION/CURRENT USE – The proposed development site is located at TBD Anchor Drive, totaling 3.91 +/- acres and is situated between 3rd Street and McKnight Road. The site is currently zoned MU-3. The MU-3 district is defined as mixed use combining an appropriate mix of residential, commercial and retail uses. The subject property is currently a vacant parcel included within the Anchor Block redevelopment district. The City has undertaken the redevelopment activities including completing the preliminary plat and final plat for the subject property. Accordingly, the legal description of the property is now described as Lot 1 Block 2, Anchor Block Commons.

PROJECT DESCRIPTION – Trident is proposing a new construction, “work-force housing” apartment community, currently referred to as Anchor View apartments. The Anchor View apartment development plan proposes one (1) contiguous, 4-story apartment building containing a total of 126 dwelling units. The current site plan provides parking for 203 cars with a combination of 94 covered/attached parking stalls and 109 surface parking spaces. A detailed parking analysis is provided below. Attention has been given to pedestrian connections to public walks and trails, along with outdoor amenities such as recreation/playground area and generously landscaped traffic circle. The site is organized to optimize safe vehicular and pedestrian circulation along with adequate stormwater treatment system. Attractive landscaping is proposed in compliance with the City’s zoning code.

COMPREHENSIVE PLAN / ZONING DISTRICT - The City’s 2040 Comprehensive Plan designates the development site as Corridor Mixed Use which contemplates uses that combine retail, housing and office. The proposed development is consistent with the general purpose and intent of the Comprehensive Plan. Further, the proposed development is located in the MU-3 Zoning District in which residential, commercial and retail are all permitted uses. The Anchor View apartments intend to observe the
performance standards specified in the MU-3 zoning district and will be in harmony with the general purpose and intent of the applicable zoning code.

**PRESENT AND FUTURE LAND USES** - The proposed development is included within the Anchor Block redevelopment area in which a variety of commercial and residential uses are contemplated. This redevelopment area is bisected by a The Gateway State recreational trail running east and west through the property. South of the regional trail are existing medium density, owner-occupied townhomes known as the Gateway at McKnight Townhomes. The Gateway at McKnight housing development is situated at a higher topographic elevation creating an attractive visual and density transition between the Anchor View apartments and the surrounding single-family neighborhood. Additionally, the existing Gateway Trail creates a distinctive separation between the apartments and the townhomes. The land north of the Gateway Trail is currently vacant but is anticipated to be utilized as a convenience/food-fuel business and a self-storage facility, along with the proposed Anchor View apartments. The proposed apartments will serve as an appropriate transition buffer between the future commercial uses to the north and the lower density residential uses existing south of the Gateway Trail.

Due to strategic land planning of the Anchor Block redevelopment area, the apartment proposal is compatible with present and future land uses and achieves the objectives of the City’s redevelopment goals.

**IMPACT ON PUBLIC SERVICES** - As part of the overall redevelopment plan, the Anchor View apartment site has the benefit of a well-developed master plan. The design of the master redevelopment plan assures the site is adequately served by all public urban services (ie water, sanitary sewer, gas, electricity, stormwater treatment, fire protection) and afforded access to public streets providing two means of ingress and egress.

The addition of 126 new dwelling units will somewhat increase the utilization of existing parks, schools and other public facilities, but not to the extent of creating an excessive burden. The increased vehicular traffic has been addressed by installing a new signalized intersection on McKnight Road at Anchor Drive, among other related public street improvements. In addition, the real estate taxes paid by Anchor View apartments will be used to help repay the cost of the new infrastructure improvements within the redevelopment area.

The proposed development will not adversely affect the health, safety or general welfare of the City.

**WORKFORCE HOUSING APARTMENTS** - The Anchor View apartments are thoughtfully designed to provide quality, contemporary rental apartments well-suited for most working families. The apartment building will offer a variety of attractive floor plans and styles. Residents can choose from efficient studio units to functional 1 and 2 bedroom plans. A preliminary unit mix table is included as an exhibit to this application. All units are furnished with a complete kitchen appliance package, in-unit laundry, high-quality cabinetry, generous closet space, LED lighting fixtures, window treatments and balconies. Each unit is wired to accommodate the latest communication technologies. The apartments are heated by individually controlled hydronic heating systems and cooled by remote control, high-efficiency air conditioning units.

The apartment building is designed as a four-story, wood-frame structure with pitched roof. Overall height of the main building (to roof peak) is approximately 53 feet. The height from finished grade to the eave line of the roof is approximately 42 feet. At each end of the main building is a single-story parking garage which also has a pitched roof, creating a balanced, “book-end” appearance. A prominent main entry feature is positioned at the center of the building with additional entry points at the east and west ends of the building. The structure will be built of the latest, high-quality building materials including
pre-engineered trusses, “Zip-Panel” exterior sheathing, gypcrete underlayment, maintenance-free siding materials, architectural fiberglass shingles, vinyl-clad single-hung windows and powder-coated aluminum balconies. The entire building is equipped with an automatic fire suppression system in compliance with NFPA 13 which is monitored 24/7. The façade of the building incorporates numerous bump-outs, dormers and a variety of exterior materials to achieve attractive visual appeal.

Trash collection is provided in interior trash rooms (2) on the first floor of the building. Convenient trash chutes are used from the upper floors. Trash removal is provided through large exterior doors which serve the waste removal vehicles. No exterior trash enclosure is required.

**FEATURES AND AMENITIES** – The Anchor View apartments are designed to have contemporary features and competitive amenities. Building access is controlled by state-of-the-art tenant call system and operated with individual “key fob” devices. The spacious main lobby is well-appointed with soft seating, electric fireplace and high-definition television. Interior features also include individual mail boxes, 24/7 security surveillance cameras, management/leasing office, guest WiFi connection, community room, fitness center, package handling system, tenant storage, bike racks and hydraulic elevator service.

Outdoor amenities include outdoor patio with seating, grilling station, children’s play area, walking paths, bike racks and direct access to the Gateway State Trail. All garage doors have automatic openers with remote controls.

As an added benefit, Anchor View Apartments are only a short walking distance to convenience store (gas/food/groceries) and mini-storage services.

**OFF-STREET PARKING** – The off-street parking plan offers residents a variety of parking options. Tenants can choose attached/tuck-under garages (34 provided), attached/shared parking garage (30 spaces provided), individual detached parking garage stalls (30 provided) or 109 uncovered/surface parking spaces.

In compliance with the City of North St Paul Zoning Code, the following formula was used in determining required off-street parking:

- Studio Units - 1.25 spaces per unit
- One Bedroom - 1.50 spaces per unit
- Two Bedroom - 2.00 spaces per unit

**Proposed unit mix and required parking spaces are as follows:**

- 28 Studio Units x 1.25 = 35 spaces
- 62 One Bedroom x 1.50 = 93 spaces
- 36 Two Bedroom x 2.00 = 72 spaces
- 126 Total Units = 200 total spaces

**Total Parking Required = 200 (1.58/unit)**

**Total Parking Provided = 203 (1.61/unit)**
- Total Covered Parking Provided = 94
- Total Surface Parking Provided = 109
UNIT MIX/SIZES/RENTAL RATES – Based on a recent apartment market data and past apartment development experience, Trident and its architect have developed an appropriate mix of unit floor plans and styles. Each unit plan is carefully reviewed for functionality and marketability. Anchor View will contain a mix of 28 studio/efficiencies (22%), 64 one-bedroom units (49%) and 34 two-bedroom units (29%). Further detail on unit sizes and estimated rental rates appears below:

28 – Studio Style Units (4 floor plans) 495 SF – 624 SF Est. Monthly Rent $1,000/mo to $1,150/mo
  - Minimum qualifying household income $35,000* = monthly rent $975.00 (affordable)

64 – 1 Bedroom/1 Bath Style Units (4 floor plans) 680 SF – 848 SF Est. Monthly Rent $1,300/mo to $1,500/mo
  - Minimum qualifying household income $40,000* = monthly rent $1,100.00 (affordable)

34 – 2 Bedroom/2 Bath Style Units (3 floor plans) 1008 SF – 1079 SF Est. Monthly Rent $1,650/mo to $1,700/mo
  - Minimum qualifying household income $45,000* = monthly rent $1,250.00 (affordable)

*based on 50% of the Minneapolis-St Paul MSA median income data

Enclosed with this application narrative please a completed/signed Zoning and Land Use Application Form and a check in the amount of $1,500.00, which represents the application fee of $500.00 together with the required escrow deposit of $1,000.00.

Together with the application form and fees referenced above, we are also delivering the following:
  - Two (2) full-size (24” x 36”) AND two (2) reduced (11” x 17”) copies of:
    - Certificate of Survey
    - Site Plan
    - Parking and Circulation Plan
    - Grading/Stormwater Management Plan
    - Sanitary Sewer and Water Plan w/ estimated use per day
    - Landscape Plan
    - Lighting Plan
    - Architectural Detail Drawings (floor plans, unit plans, elevations)
    - Signage Plan
  - Soils report
  - Names and addresses of the owners of lands within 350 feet of the subject site.
  - One (1) flashdrive containing electronic files of the submittal items referenced above.
We thank you in advance for considering this application and look forward to your comments. Please feel free to contact me at (320) 258-4438 or (612) 242-6097 if there are any questions.

Regards,
Trident Development, LLC

Roger D. Fink
Sr. Vice President
Enclosures

C: Scott O’Brien, Trident Development, LLC
   Carin Bzdok, Trident Development, LLC
APPLICATION FOR VARIANCE

The variance process must be scheduled through the Community Development Planning and Zoning Department. The lead-time for submittals shown on this application is necessary to allow City staff and consultants time to review and comment on documents provided. Additional lead-time will be required if the City determines that the potential impacts require more detailed study, or if review by other agencies is required. Incomplete application submittals will not be forwarded to the appropriate Commission or Council until all required information has been provided.

APPLICANT INFORMATION

Applicant Name: Roger Fink
Company (if applicable): Trident Development
Address: 3001 18th St. So., Ste. 103
City, State, Zip: St. Paul, MN 55103
Phone Number: (320) 958-4438
Email: roger@tridentdevelopmentmn.com
Are you the owner of the property? YES NO
(If no, you must supply property owner information)

Owner Name: City of North St. Paul
Company (if applicable): 
Address: 
City, State, Zip: 
Phone Number: 
Email: 

PROPERTY INFORMATION

Street location of property (address): TBD
Parcel Identification Number (PID) (see Ramsey County website): 16301330123
Legal description of property: Lot 1, Block 2, Anchor Block Commons
Present zoning of property (see City website): 
Size of property (acreage): 3.91
Title information: Abstract Torrens
Property Description: Residential Commercial Industrial Institutional

PROPOSAL INFORMATION

The request(s) which we desire for our property is/are in conflict with the following section(s) of the City of North St. Paul Zoning Code (reference Zoning Code, see City website): PLEASE SEE ENCLOSED LETTER

Proposed non-conformance(s): PLEASE SEE ENCLOSED LETTER

On a separate sheet of paper, please answer the following questions in full detail:

1. Provide a project description.
2. Is the variance in harmony and consistent with the general purposes and intent of the Comprehensive Plan and Chapter 154?
3. Will the variance adversely affect the health, safety, or general welfare of the City?
4. Is the variance necessary due to special conditions applying to the structures or land in question that are particular to the property and do not apply generally to other land or structures in the district or vicinity in which the land is located?
5. Is the variance requested, the minimum variance necessary to alleviate the practical difficulty? Practical Difficulties are caused from the strict application of the Zoning Code as outlined below:
   • The property owner proposes to use the property in a reasonable manner not permitted by the Zoning Code.
   • The plight of the landowner is due to circumstances unique to the property not created by the landowner.
   • The variance, if granted, will not alter the essential character of the locality.
   • Economic considerations alone do not constitute practical difficulties.
   • The variance is consistent with officially adopted City plans and overlays.
NOTE TO APPLICANT
All completed application and accompanying materials are due 30 days prior to the scheduled Planning Commission meeting (if applicable). The purpose of this submittal requirement is to allow for:

1. Plan distribution to the City staff, consultants, and applicable government entities.
2. Project review time and generation of staff reports.
3. Project meetings between City staff and applicants.

The North St. Paul City Codes guide and enable development activities within the City by ensuring proper and well-coordinated projects. The land use application is the mechanism that allows the City to examine proposed land uses to ensure compatibility with the City Codes, design and development standards, and the surrounding land uses and natural environments. The review is intended to ensure positive growth for the community. All applications are reviewed individually and are evaluated based on their own merit. Each land use request has an associated checklist of required items. Applicants are encouraged to participate in an initial meeting with City staff prior to submitting a formal land use application. The initial meeting is an opportunity to informally discuss the conceptual idea of the proposed project in an effort to reduce delays. Participation in the initial meeting does not provide approval, or guarantee approval of the project. The City shall not accept plans, drawings, or other information related to the project except upon submittal of a formal application. The City reserves the right to reject an incomplete application.

APPLICATION FEE STATEMENT
There may be additional expenses pertaining to project review that is the responsibility of the applicant. All applicable fees must be paid when submitting land use applications and accompanying materials. All fees, which are set annually by City Ordinance, help cover costs incurred by the City to review the application. The City of North St. Paul often uses consulting firms to assist in the review of projects. Please refer to the City's Fee Schedule for information on planning review fees and other applicable costs.

REVIEW REQUIREMENTS
Minnesota State Statute 15.99 requires local governments to review an application within 15 business days of submission to determine if an application is complete and/or if additional information is required to complete the review. Once complete, a formal 60-day review period begins. The City has the ability to extend the review period for an additional 60 days, if necessary, due to insufficient information or scheduling difficulties. Please review the corresponding checklist that goes with the request. All applications must be received by the deadline(s) attached hereto. Failure to submit by the date given may result in a delay of the review by the Planning Commission and City Council.

ACKNOWLEDGEMENT
I certify that all information submitted is true and correct and I fully understand that all information and a complete application must be submitted at least 30 days prior to a Planning Commission meeting to ensure review by the Planning Commission on that date. By signing this form, I hereby acknowledge the receipt of the checklist and procedure for the project to be submitted for consideration. It is my responsibility to check all applicable ordinances pertaining to the application, comply with all ordinance requirements, and submit all required materials. All permit requests should be submitted in a timely manner so as not to cause project delays.

Applicant signature: ___________________________ Date: 2-20-2020
Owner Signature: ___________________________

PROPOSED MEETING DATES:
Design Review Commission: Planning Commission Parks & Rec Commission
Environmental Advisory Commission City Council

FOR OFFICE USE ONLY
Date submitted: ___________________________ Date complete: ___________________________
Date of public hearing: ___________________________ Publication date: ___________________________
Amount fee paid: ___________________________ Date paid: ___________________________
If incomplete, date letter sent to applicant: ___________________________
Date notice sent to adjoining properties: ___________________________
Receipt #: ___________________________ File #: ___________________________
Planning Commission action: ___________________________
Recommend approval: ___________________________
Recommend denial: ___________________________
Date applicant/property owner notified of Planning Commission action: ___________________________

City Council action: ___________________________
Recommend approval: ___________________________
Recommend denial: ___________________________
Date applicant/property owner notified of City Council action: ___________________________

Date filed with Ramsey County Recorder office: ___________________________
February 21, 2020

City Council and Planning Commission
City of North St. Paul
2400 Margaret Street
North St. Paul, MN 55109-3020

HAND DELIVERED AND E-MAIL

Re: SITE PLAN VARIANCE APPLICATION
     ANCHOR VIEW MULTIFAMILY HOUSING DEVELOPMENT

Dear Council and Planning Commission Members,

Trident Development, LLC is formally requesting consideration and approval of certain variances to the site plan submitted for the Anchor View Apartment Development.

This narrative is intended to provide specific details on the nature of the non-conformance regarding accessory buildings and structures and landscape standards.

LOCATION/CURRENT USE – The proposed development site is located at TBD Anchor Drive, totaling 3.91 +/- acres and is situated between 3rd Street and McKnight Road. The site is currently zoned MU-3. The MU-3 district is defined as mixed use combining an appropriate mix of residential, commercial and retail uses. The subject property is currently a vacant parcel included within the Anchor Block redevelopment district. The legal description of the property is described as Lot 1 Block 2, Anchor Block Commons.

PROJECT DESCRIPTION – Trident is proposing a new construction, “work-force housing” apartment community, currently referred to as Anchor View apartments. The Anchor View apartment development plan proposes one (1) contiguous, 4-story apartment building containing a total of 126 dwelling units. The current site plan provides parking for 203 cars with a combination of 94 covered/attached parking stalls and 109 surface parking spaces. Attention has been given to pedestrian connections to public walks and trails, along with outdoor amenities such as recreation/playground area and generously landscaped traffic circle. The site is organized to optimize safe vehicular and pedestrian circulation along with adequate stormwater treatment system. Attractive landscaping is proposed in compliance with the City’s zoning code.

COMPREHENSIVE PLAN / ZONING DISTRICT – The City’s 2040 Comprehensive Plan designates the development site as Corridor Mixed Use which contemplates uses that combine retail, housing and office. The proposed development is consistent and in harmony with the general purpose and intent of the Comprehensive Plan and Chapter 154. Further, the proposed development is located in the MU-3 Zoning District in which residential, commercial and retail are all permitted uses.
**REQUEST FOR VARIANCE** - Unfortunately, the MU-3 Zoning District contains some provisions that apply to accessory buildings that seem to contemplate single family homes. The following is an excerpt of the Accessory buildings and structures section of the Zoning Code:

1. **Accessory buildings and structures.**

   (a) Size. The total square feet of an accessory building shall not exceed 10% of the lot area, and in no case shall it exceed 1,000 square feet of gross floor area. The sum of all square footage for attached garages and detached garages shall not equal or exceed the finished livable floor area of the footprint (ground floor) of the principal structure to which it is an accessory. *Each Detached Garage structure is over 4,000 sf. One structure includes 16 individual garages and the second structure includes 14 individual garages.*

   (e) Corner lot. A detached garage or other accessory buildings shall not be located closer than 20 feet to the side lot line adjacent to the street. *The code would suggest the frontage along 3rd St N is the front lot line – therefore the Anchor Drive Frontage is the corner side. One of the garages is within 10.1 ft of the ROW along Anchor Dr.*

   (f) Number of structures. No more than two accessory buildings shall be constructed on a lot. The second accessory building shall not exceed 200 square feet. On lots with a detached garage, two additional accessory buildings are permitted, neither of which exceed 200 square feet, subject to the district’s lot coverage requirements. *Again, there are two structures, both 4,000 sf with one containing 16 individual garages and the other containing 14 individual garages.*

A variance is necessary because the Zoning Code as written imposes difficulties in using the property in a reasonable manner because the intended use (high-density housing) is considerably different than the use contemplated in the Code (single-family housing).

Trident Development, LLC respectfully requests approval for a variance(s) which will permit the following:

1. Two (2) detached garage structures which each exceed 1,000 square feet of floor area. The easterly garage provides for 16 parking stalls and the westerly garage provide 14 parking stalls.
2. A deviation in the set-back distance for the front yard lot line from 20 feet to 10.1 feet for one of the detached parking structures on Anchor Drive. As designed, the garage structure will still be placed 20 + feet from the curb.
3. Approval of two (2) detached garage structures/accessory structures, one of which exceeds 1,000 square feet of gross floor area and a second one which exceeds 200 square feet of gross floor area.
4. Location of off-street parking lot at 10.6 feet from the 3rd Street North Right-of-Way.

The requested variances will not adversely affect the health, safety or general welfare of the City.

The variances requested above represent the minimum variances necessary to alleviate the unintended restrictions imposed by the current Zoning Code.
LANDSCAPE STANDARDS -

Tree requirements:

iii. MU-2 and MU-3 Districts. Whichever is greater: one tree per 1,000 square feet of gross building floor area or one tree per 50 lineal feet of site perimeter. Plans show 59 trees including ornamental and coniferous. First level footprint is 46,729 per the plans. Floors 2-4 are each probably 35773. Which totals 154,048 sf and equates to 154 trees.

Due to the limited landscape areas on which to plant trees, installing the required 154 trees is not practical with the proposed site plan. Trident’s objective is to provide an attractive, generously landscaped exterior without creating crowded conditions among the plantings, thus encouraging healthier plant growth. Trident is prepared to discuss alternative landscape and planting plans which accomplish this objective, together with the goals of the City.

Enclosed with this application narrative please a completed/signed Application for Variance together with an application fee of $250.00.

We thank you in advance for considering this application and look forward to your comments. Please feel free to contact me at (320) 258-4438 or (612) 242-6097 if there are any questions.

Regards,
Trident Development, LLC

[Signature]
Roger D. Fink
Sr. Vice President
Enclosures

C: Scott O’Brien, Trident Development, LLC
Carin Bzdok, Trident Development, LLC
ANCHOR VIEW APARTMENTS
~ Site Improvement Plans ~
North St. Paul, Minnesota

PROJECT OWNER
TRIDENT DEVELOPMENT LLC
3601 18th Street South, Suite 103
St. Cloud, MN  56301

ARCHITECT
TRIDENT DEVELOPMENT LLC
3601 18th Street South, Suite 103
St. Cloud, MN  56301

CIVIL ENGINEER
TRIDENT DEVELOPMENT LLC
3601 18th Street South, Suite 103
St. Cloud, MN  56301

LANDSCAPE ARCHITECT
TRIDENT DEVELOPMENT LLC
3601 18th Street South, Suite 103
St. Cloud, MN  56301

TRIDENT DEVELOPMENT LLC
3601 18th Street South, Suite 103
St. Cloud, MN  56301

ENVIRONMENTAL ENGINEERING
ENVIRONMENTAL SURVEYING

REVISIONS
DRAWN BY:
DESIGNED BY:
ISSUE DATE:
02/03/20

ANCHOR VIEW APARTMENTS
North St. Paul, Minnesota

Joseph T. Radach, P.E.
Name:
Signature:
Date: 02/03/20 License #:

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

Call before you dig.
Certificate of Survey

Trident Development, LLC
3601 - 18th Street South, Suite 103
St. Cloud, MN  56301

REVISIONS
1. 
2. 
3. 
4. 
5. 
6. 

DRAWN BY: 
ISSUE DATE: 2/03/20

Anchor View Apartments
North St. Paul, Minnesota

FILE NO: 639-b

Legend:
- (o) = Deciduous trees
- (o) = Evergreen trees
- (s) = Street signs
- (r) = Road signs
- (a) = Aerial signs
- (h) = Highway signs
- (w) = Water
- (c) = Cemeteries
- (m) = Mines
- (s) = Snow banks
- (d) = Ditches
- (w) = Waterways
- (h) = Highways
- (c) = Cemeteries
- (m) = Mines

Benchmarks:
- Lot 1, Block 2, Anchor Block Commons, according to the recorded plat dated Ramsey County, Minnesota
- Coordinates:

Notes:
1. Benchmark shown to nearest 0.1 ft or less on the day of Lot 1, Block 2, Anchor Block Commons, which is recorded for use 02/03/20.
2. Surveyed property corner at 7,400.00 sq. ft. (7.88 acres).
3. Due to road and other conditions, additional improvements may not have been made or located at the time of survey.

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Know what's below. Call before you dig.
1. Know what's below before you dig.
1. Know what's below before you dig. Call R

STORMWATER POLLUTION PREVENTION PLAN

ANCHOR VIEW APARTMENTS
North St. Paul, Minnesota
PRELIMINARY LANDSCAPE PLAN
ANCHOR VIEW APARTMENTS
North St. Paul, Minnesota

1. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING
2. TRIM OUT DEAD WOOD AND WEAK AND/OR DEFORMED TWIGS. DO NOT CUT A LEADER.
3. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED BACKFILL SOIL. INSTALL PLANT SO THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE.
4. PLACE PLANT IN PLANTING HOLE WITH BURLAP AND WIRE BASKET, (IF USED), INTACT. BACKFILL WITHIN APPROXIMATELY 12" OF THE TOP OF ROOTBALL, WATER PLANT. REMOVE TOP 1/3 OF THE BASKET OR THE TOP TWO HORIZONTAL RINGS, WHICHEVER IS GREATER. REMOVE ALL BURLAP AND NAILS FROM TOP 1/3 OF THE BALL. REMOVE ALL TWINE.
5. PLUMB AND BACKFILL WITH BACKFILL SOIL.
6. WATER TO SETTLE PLANTS AND FILL Voids.
7. WATER WITHIN TWO HOURS OF INSTALLATION. WATERING MUST BE SUFFICIENT TO THOROUGHLY SATURATE ROOT BALL AND PLANTING HOLE.
8. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

NOTE: SEE PLANTING NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.

UNDISTURBED SUBSOIL
4 INCH DEEP SAUCER

NOTE: SEE LANDSCAPE NOTES FOR TYPE OF MULCH
<table>
<thead>
<tr>
<th>CODE</th>
<th>QTY</th>
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<th>COMMON NAME</th>
<th>SIZE</th>
<th>CONTAINER</th>
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<tr>
<td>RM</td>
<td>7</td>
<td>Acer rubrum <code>Northwood</code></td>
<td>Northwood Red Maple</td>
<td>2.5&quot; Cal.</td>
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<td>RB</td>
<td>3</td>
<td>Betula nigra</td>
<td>River Birch Multi-Trunk</td>
<td>10` Ht.</td>
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<td>HL</td>
<td>4</td>
<td>Gleditsia triacanthos inermis <code>Harve</code></td>
<td>Northern Acclaim Thornless Honey Locust</td>
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<td>B&amp;B</td>
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<td>WO</td>
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<td>Quercus bicolor</td>
<td>Swamp White Oak</td>
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<td>BL</td>
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<td>Ulmus americana <code>Princeton</code></td>
<td>American Elm</td>
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**CONIFEROUS TREES**

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<td>BF</td>
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<td>Abies balsamea</td>
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<td>Picea glauca densata</td>
<td>Black Hills Spruce</td>
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**ORNAMENTAL TREES**

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<td>SB</td>
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<td>Amelanchier x grandiflora <code>Autumn Brilliance</code></td>
<td>Autumn Brilliance Serviceberry</td>
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<td>JL</td>
<td>4</td>
<td>Syringa reticulata <code>Ivory Silk</code></td>
<td>Ivory Silk Japanese Tree Lilac</td>
<td>2&quot; Cal.</td>
<td>B&amp;B</td>
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**SHRUBS**

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<tr>
<td>BCB</td>
<td>14</td>
<td>Aronia melanocarpa <code>Autumn Magic</code></td>
<td>Autumn Magic Black Chokeberry</td>
<td>#5 Cont.</td>
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<tr>
<td>SSC</td>
<td>9</td>
<td>Clethra alnifolia <code>Hummingbird</code></td>
<td>Summersweet</td>
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<tr>
<td>RTD</td>
<td>13</td>
<td>Cornus sericea <code>Alleman</code>s Compact`</td>
<td>Dwarf Red Twig Dogwood</td>
<td>#5 Cont.</td>
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<td>DBH</td>
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<td>Diervilla lonicera</td>
<td>Dwarf Bush Honeysuckle</td>
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<td>Euonymus alatus <code>Compactus</code></td>
<td>Compact Burning Bush</td>
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<tr>
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<td>Physocarpus opulifolius <code>Seward</code> TM</td>
<td>Summer Wine Seward Ninebark</td>
<td>#5 Cont.</td>
<td></td>
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<td>SPG</td>
<td>8</td>
<td>Spiraea x bumalda <code>Goldflame</code></td>
<td>Goldflame Spirea</td>
<td>#5 Cont.</td>
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<td>MKL</td>
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<td>Syringa patula <code>Miss Kim</code></td>
<td>Miss Kim Lilac</td>
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<td>VBC</td>
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<td>Viburnum trilobum <code>Bailey Compact</code></td>
<td>Bailey`s Compact American Cranberry Bush</td>
<td>Red Fall Color</td>
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**EVERGREEN SHRUBS**

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<td>Juniperus chinensis <code>Sea Green</code></td>
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<td>YEW</td>
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<td>Taxus x media <code>Tauntonii</code></td>
<td>Tauton Yew</td>
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**GRASSES**

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<td>KFG</td>
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<td>Calamagrostis x acutiflora <code>Karl Foerster</code></td>
<td>Feather Reed Grass</td>
<td>#5 Cont.</td>
<td></td>
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<td>PDS</td>
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<td>Sporobolus heterolepis</td>
<td>Prairie Dropseed</td>
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**PERENNIALS**

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<td>Hemerocallis x <code>Baja</code></td>
<td>Daylily</td>
<td>#1 Cont.</td>
<td></td>
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<tr>
<td>DLS</td>
<td>71</td>
<td>Hemerocallis x <code>Stella De Oro</code></td>
<td>Stella De Oro Daylily</td>
<td>#1 Cont.</td>
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<tr>
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<td>Liatris spicata <code>Kobold</code></td>
<td>Spike Gayfeather</td>
<td>#1 Cont.</td>
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**GROUND COVERS**

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<tr>
<td>ROCK</td>
<td>9,171 sf</td>
<td>Rock Mulch</td>
<td>Non-Woven Geotextile Incidental 1.5&quot; Trap Rock Mulch</td>
<td>4&quot; Depth</td>
<td></td>
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<tr>
<td>SOD</td>
<td>68,278 sf</td>
<td>Turf Sod Bluegrass</td>
<td>Kentucky Bluegrass</td>
<td>sod</td>
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<tr>
<td>TII</td>
<td>11,745 sf</td>
<td>Type II - Stormwater Seed Mix</td>
<td>Refer to notes for acceptable seeding</td>
<td></td>
<td></td>
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</table>
I hereby certify that this plan, specification or report was prepared by or under my direct supervision and is a duly Licensed Architect under the laws of the State of Minnesota.

Signature: ____________________________  Printed name: ____________________________  License no.: ____________________________

Date: 1943MM / CH02/04/2020  Drawn by: ____________________________  Project No: PR-1
I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Architect under the laws of the State of Minnesota.

Signature: [Signature]
Printed name: [Printed name]
License no.: [License no.]
Date: [Date]
Drawn by: [Drawn by]
Project No: [Project No.]

ANCHOR VIEW APARTMENTS
North St. Paul, MN

NORTH BUILDING PERSPECTIVE
N.T.B.

46 of 113
NORTH BUILDING PERSPECTIVE

Anchor View Apartments
North St. Paul, MN

PR-3

1943MM/CH02/04/2020

Anchor View
Apartments
North St. Paul, MN
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Signature: ____________________________
Printed name: ________________________
License no.: __________________________
Date: ____________________________

Drawn by: ____________________________
Project No: ____________________________

Anchor View Apartments
North St. Paul, MN

PR-4

EAST BUILDING PERSPECTIVE
N.T.S.
I hereby certify that this plan, specification or report was prepared by me or under my direct supervision & that I am a duly Licensed Architect under the laws of the State of Minnesota.

Signature: __________________________________________
Printed name: __________________________
License no.: __________________________
Date: ____________

Drawn by: __________________________
Project No: __________________________

ANCHOR VIEW
APARTMENTS
North St. Paul, MN

1943MM/CH02/04/2020

Anchor View
SOUTHEAST BUILDING PERSPECTIVE

N.T.B.
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Printed name: License no.: Date: Drawn by: Project No: PR-6

Anchor View Apartments
North St. Paul, MN
DRAINAGE REPORT

February 3, 2020

Anchor View Apartments
North St. Paul, Minnesota

Re: Anchor View Apartments – Stormwater Management Plan

The purpose of this letter report is to discuss the proposed stormwater management system for the development of the apartment lot in the Anchor Block Commons master plan of development. The site consists of Lot 1, Block 2 of the Anchor Block Commons plat completed in 2019. The site was previous graded as part of the overall mass grading for the Anchor Block Commons master plan of development. See Figure 1 for site location map.

Existing Conditions
The overall Anchor Block Commons site is located in the southeast quadrant of the intersection of Trunk Highway 36 and McKnight Road North (CSAH 68) in North St. Paul, Ramsey County, Minnesota. The site is bounded on the north by Trunk Highway 36 and North St. Paul Drive, on the east by 3rd Street North, on the South by the Gateway Trail Corridor, and on the west by McKnight Road North. The site was previously used as a concrete block plant by Anchor Block. In or around 2011, the Anchor Block Plant was decommissioned and the site was razed. In the fall of 2019, the City of North St. Paul mass graded the site for future development and platted the site into three lots.

The proposed apartment site consists of Lot 1, Block 2 of the Anchor Block Commons plat and contains 3.91 acres. There are no existing impervious surfaces onsite.

Proposed Conditions
The City of North St. Paul plans to construct Anchor Drive in the Spring of 2020. Also, in the Spring of 2020, Trident Development plans to construct a 126-unit apartment building with covered parking and paved parking and drive areas. During construction, approximately 4 acres will be disturbed. After construction, the site will contain approximately 2.94 acres of impervious surface.

Stormwater from the site will be treated by filtration basins. One filtration basin will be constructed on site by the apartment contractor and one filtration basin was constructed off site by the City’s contractor in the fall of 2019. Storm sewer will be used to collect runoff from the site and the storm sewer will either discharge to the proposed onsite filtration basin or connected to a storm sewer stub being provided by the City. All stormwater from the site will ultimately drain to the existing MnDOT pond north of the site.

Anchor Block Commons Stormwater Management Plan
Carlson McCain prepared the stormwater management plan for the overall Anchor Block Commons master development plan. This plan of development proposed four filtration basins to treat stormwater from the entire site. The apartment lot was designed to drain to two of the filtration basins, one on the apartment site (Basin 30) and one on the north side of Anchor Drive (Basin 10). Because the apartment site layout was not final at the time of the City’s mass grading project, Basin 30 was not constructed.
The apartment site layout assumed under the Anchor Block Commons plan of development contained approximately 2.33 acres of impervious surface and the design filtration volume of Basin 30 was 0.131 acre feet.

**Anchor View Apartments Stormwater Management Plan**

The proposed layout for the Anchor View Apartments contains approximately 2.94 acres of impervious surface. The new layout proposes an additional 0.61 acres of impervious surface. Based on Ramsey Washington Metro Watershed District (RWMWD) 1.1 inch volume abstraction requirement, the additional volume abstraction required is 0.056 acre feet. Per RWMWD, filtration of the water quality volume receives 55% credit. Based on the 55% credit, the additional filtration volume required is 0.102 acre feet.

Under the Anchor Block Commons stormwater management plan, there was an additional 0.041 acre feet of filtration volume available for the site. Under the Anchor View Apartments plan, Basin 30 has a proposed filtration volume of 0.198 acre feet, which is 0.067 acre feet greater than the original design. Therefore, including the excess filtration volume from Anchor Block Commons and the proposed additional filtration volume in Basin 30, the total additional filtration volume is 0.108 acre feet, which meets the site requirement.

**Storm Sewer Design**

Storm sewer will be used to collect stormwater from the site. The storm sewer will either outlet to a stub provided from Anchor Drive or to Filtration Basin 30. The rational method was used to determine anticipated flows to each catch basin and the pipes were sized using those flows along with Manning’s equation. All onsite storm sewers were designed to accommodate a 10-year storm at a minimum. See attached Figure 2 for Storm Sewer Drainage Map and attached rational method spreadsheet for design calculations.

**Summary**

The proposed apartment lot will meet the overall stormwater treatment requirements from RWMWD and the MPCA Construction Stormwater Permit. Adequate volume abstraction is provided by one onsite filtration basin and one off site filtration basin. All storm sewers have been sized to accommodate a 10-year storm at a minimum. The proposed development will not have an adverse impact on the existing stormwater infrastructure originally planned for the development of the site.

**Certification**

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

Joseph T. Radach, P.E.  License #: 45889  Date: 02/03/20

**Attachments**

- Figure 1: Site Location Map
- Figure 2: Storm Sewer Drainage Map
- Attachment 1: Storm Sewer Design Spreadsheet
ANCHOR VIEW APARTMENTS
North St. Paul, Minnesota

FIGURE 1
SITE LOCATION MAP

SOURCE: USGS 7.5 MIN. QUADRANGLE
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<thead>
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<th>LOCATION</th>
<th>MH SIZE</th>
<th>AREA</th>
<th>&quot;C&quot; COEFFICIENT</th>
<th>GENERAL</th>
<th>DESIGN</th>
<th>PROFILE INFORMATION</th>
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<tr>
<td>CBMH (ft)</td>
<td>CBMH (to)</td>
<td>Diameter (in)</td>
<td>Impervious (sf)</td>
<td>Pervious (sf)</td>
<td>Total Area (ac)</td>
<td>Inc. &quot;C&quot;</td>
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FORMER ANCHOR BLOCK NORTH REDEVELOPMENT

FOR
CITY OF NORTH ST PAUL

June 21, 2019
REVISED June 24, 2019
CERTIFICATION

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

Mark W. Osborn, PE

Date: June 24, 2019

Lic. No. 41362
June 24, 2019

Mr. Scott Duddeck
City Manager – City of North St. Paul
2400 Margaret Street North
North St. Paul, MN 55109

Re: Revised Geotechnical Report
Former Anchor Block North – Redevelopment
North St. Paul, Minnesota
WSB Project No.: 014065-000

Dear Mr. Duddeck:

We have conducted a geotechnical subsurface exploration program for the above referenced project. This report contains our soil boring logs, an evaluation of the conditions encountered in the borings and our recommendations for suitable foundation type, allowable soil bearing pressure for footing design, and other geotechnical related design and construction considerations.

If you have any questions concerning this report or our recommendations, or for construction material testing for this project, please call us at (952) 737-4660.

Sincerely,

WSB

Mark Osborn, PE
Geotechnical Project Engineer

Darin Hyatt, PE
Senior Geotechnical Engineer

Attachment:
Geotechnical Report

MWO/tw
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**Appendix A**

- Soil Boring Exhibit
- Logs of Test Borings
- Symbols and Terminology on Test Boring Log
- Notice to Report Users Boring Log Information
- Unified Soil Classification System (USCS)
1. INTRODUCTION

1.1 Project Location
The site is located to the southeast of the intersection of McKnight Road and County Highway 36 in North St. Paul, Minnesota. The approximate soil boring locations can be found on the Soil Boring Exhibit in Appendix A.

1.2 Previous Site Evaluation
We were provided with a Response Action Plan for this site prepared by Braun Intertec on April 22, 2015, (Braun project #: 22056.13). The report was intended for environmental discussion and included groundwater information and a description of the soils encountered.

WSB issued a report for this project dated June 21, 2019. After issuance of that report, we were made aware that the proposed storage facility would have 3-stories. This revised report acknowledges that change and addresses any recommendations that may be affected.

1.3 Project Description
It is proposed to construct a 3-story wood framed apartment building. The building will include an underground parking garage if site conditions are acceptable for it. Structural loads for the apartments were not provided, but we estimate that they could be in the range of five (5) to eight (8) kips per lineal foot along the bearing walls of the building, with column loads of up to 100 kips. The finished floor elevation of the building was unknown at the time of drilling but we anticipate it will be near existing grade. We assumed an elevation of 944 for finished floor elevations. We understand that underground parking is planned to depths of approximately 10 feet below existing grade. We estimated this would be near an elevation of about 934 feet.

We understand the gas station / convenience store located in the northwest area of the site is planned to include a 1-story wood framed building, fuel pumps, and underground fuel tanks. We also anticipated that this building would be constructed with a finished floor elevation near existing grade of 943 feet. The fuel pump canopy loads are anticipated to be less than 50 kips per column, and the 1-story building is anticipated to have perimeter wall loads of two (2) to four (4) kips per lineal foot.

The northeast area of the site is planned for a storage facility. We understand this facility will consist of a 3-story building. The finished floor elevation of the building is anticipated to be near existing grade of about 943 feet. Perimeter wall loads were assumed to be in the range of five (5) to eight (8) kips per lineal foot and column loads of up to 200 kips.

Bituminous paved parking lots and roadways will be constructed as well, with underground utilities including watermain, sanitary, and storm sewers.

WSB has developed foundation recommendations for this project in consideration of the proposed layout, loadings, and structural configurations as understood at this time. When the designer develops additional information about final design structural loadings, building configuration, or other significant factors, the recommendations presented herein may no longer apply. WSB must be made aware of the revised or additional information in order to evaluate the recommendations for continued applicability.

1.4 Purpose and Project Scope of Services
Mr. Scott Duddeck with the City of North St. Paul (City) authorized this scope of service. In order to assist the design team in preparing plans and specifications, we have developed recommendations for designing foundations, retaining walls, slabs and pavements. As such, we have completed a subsurface exploration program and prepared a geotechnical report for the referenced site. This stated purpose was a significant factor in determining the scope and level of service provided. Should the purpose of the report change the report immediately ceases to be valid and use of it without WSB’s prior review and written authorization shall be at the user’s sole risk.
Our authorized scope of work has been limited to:

1. Clearing underground utilities utilizing Gopher State One Call.
2. Mobilization / demobilization of a truck mounted drill rig.
3. Drilling 18 standard penetration borings to depths of about 20 to 30 feet below grade.
4. Drilling 4 vapor test locations.
5. Sealing the borings per Minnesota Department of Health procedures.
6. Perform soil classification and analysis.
7. Review of readily available project information and geologic data.
8. Providing this geotechnical report containing:
   a. Summary of our findings.
   b. Discussion of subsurface soil and groundwater conditions and how they may affect the proposed basement and foundations.
   c. Estimated allowable bearing capacity of the soils.
   d. Estimated excavation depths to suitable soils.
   e. Estimated R-value of the soils.
   f. Recommended pavement section.
   g. A discussion of soils for use as structural fill and site fill.
2. PROCEDURES

2.1 Boring Layout and Soil Sampling Procedures
WSB proposed to complete 18 standard penetration soil borings across the site and 4 vapor test locations. WSB recommended the boring depths and selected the desired locations. Based on site conditions the 4 pavement borings were changed to geotube sampling. Due to shallow groundwater conditions in the borings, the 30 foot borings were drilled as standard penetration borings only to 20 foot depths, and geotube sampling was completed to 30 foot depths. Our field crew staked the borings by estimating from existing site features using an aerial map. The approximate boring locations are shown on the Soil Boring Exhibit in Appendix A which is an aerial photo. The ground surface elevations at the borings were determined based on a review of online data from MnTOPO, which is provided by the Minnesota Department of Natural Resources. These maps should be accurate to within +/- one foot (1’) provided ground surface modifications at this site have not been completed since LIDAR data was obtained.

We completed the borings between May 20 and May 29, 2019 with a truck-mounted CME-55 drill rig operated by a two-person crew. The drill crew advanced the borings using continuous hollow stem augers. The drilling information is provided on the boring logs.

Generally, the drill crew sampled the soil in advance of the auger tip at two and one-half (2 ½) foot intervals to a depth of 15 feet and then at five (5) foot intervals thereafter to the termination depth of the boring. The soil samples were obtained using a split-barrel sampler which was driven into the ground during standard penetration tests in accordance with ASTM D 1586, Standard Method of Penetration Test and Split-Barrel Sampling of Soils. The geotube borings were continuously sampled with 5 foot long geotubes. The materials encountered were described on field logs and representative samples were containerized, and transported to our laboratory for further examination and testing.

The samples were visually examined to estimate the distribution of grain sizes, plasticity, consistency, moisture condition, color, presence of lenses and seams, and apparent geologic origin. We classified the soils according to type using the Unified Soil Classification System (USCS). A chart describing the USCS is included in Appendix A.

It should be noted that environmental soil screening was performed concurrently with the geotechnical drilling and sampling. The results of the environmental screening will be reported under separate cover.

2.2 Groundwater Measurements and Borehole Abandonment
The drill crew observed the borings for free groundwater while drilling and after completion of the borings. These observations and measurements are noted on the boring logs. The crew then backfilled the borings to comply with Minnesota Department of Health regulations.

2.3 Boring Log Procedures and Qualifications
The subsurface conditions encountered by the borings are illustrated on the Logs of Test Borings in Appendix A. Similar soils were grouped into the strata shown on the boring logs, and the appropriate estimated USCS classification symbols were also added. The depths and thickness of the subsurface strata indicated on the boring logs were estimated from the drilling results.

The transition between materials (horizontal and vertical) is approximate and is usually far more gradual than shown. Information on actual subsurface conditions exists only at the specific locations indicated and is relevant only to the time exploration was performed. Subsurface conditions and groundwater levels at other locations may differ from conditions found at the indicated locations. The nature and extent of these conditions would not become evident until exposed by construction excavation. These stratification lines were used for our analytical purposes and, due to the aforementioned limitations, should not be used as a basis of design or construction cost estimates.
3. EXPLORATION RESULTS

3.1 Site and Geology
Boring elevations ranged from 941.78 to 944.54 feet.

The Ramsey County Geologic Atlas indicates the surficial geology of the area is mostly glacial till deposits consisting of silty sands, clayey sands, and clays. The tills are gray, and oxidize to yellowish brown. The till is commonly banded with reddish brown tills or sands. In areas, the glacial tills are overlain by alluvial deposits.

3.2 Subsurface Soil and Groundwater Conditions
The boring profile generally consisted of fill materials and topsoil overlying glacial till. We also noted some alluvial deposits above the glacial till in areas.

Fills
The fills encountered in the borings generally consisted of silty sand, clayey sand, sand with clay, silty clay, and lean clays. Fill depths ranged from about 2 to 13 feet. Organics were encountered in borings B-1, B-3, B-8, and B-15, and fills were placed over organic and peat soils at borings B-1, B-6, B-8, B-9, B-14, B-15, B-16, and B-17.

Topsoil
Topsoil was encountered at borings B-1, B-4, B-8, B-9, B-14, B-15, B-16 and B-17. These organic soils generally consisted of organic clays, or clayey sands with organics. These soils were dark brown to black in color. The depth of organics in the borings ranged from about 1 to 3 feet.

Peat
Peat deposits were encountered at boring B-6. These peat deposits were about 1 foot in thickness and black in color.

Alluvial Deposits
Borings B-3, B-6, B-10, B-12, B-13, B-14, B-16, and B-17 noted alluvial deposits. These alluvial deposits are likely stream deposits and consisted of fine alluvial silts and clays as well as coarse alluvial sands. These soils were generally brown in color and wet to waterbearing/saturated.

Glacial Till
The glacial tills encountered consisted of clayey sands, silty sand, lean clays with sand, and sandy clays. These soils were brown to reddish brown to gray in color and were moist to wet to saturated.

3.3 Strength Characteristics
The penetration resistance N-values of the materials encountered were recorded during drilling and are indicated as blows per foot (BPF). Those values provide an indication of soil strength characteristics and are located on the boring log sheets. Also, visual-manual classification techniques and apparent moisture contents were also utilized to make an engineering judgment of the consistency of the materials.
Table 1 presents a summary of the penetration resistances in the soils for the borings completed and remarks regarding the material strengths of the soils.

**Table 1: Penetration Resistances**

<table>
<thead>
<tr>
<th>Soil Type</th>
<th>Classification</th>
<th>Penetration Resistances</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fill</td>
<td>SM, SC, CL, ML, SP-SC, SP, SP-SM</td>
<td>4 to 20 BPF</td>
<td>Variable compaction</td>
</tr>
<tr>
<td>Topsoil</td>
<td>SC, CL, OL</td>
<td>6 to 14 BPF</td>
<td>Soft to firm</td>
</tr>
<tr>
<td>Fine Alluvium</td>
<td>ML, CL</td>
<td>2 to 12 BPF Average 7 BPF</td>
<td>Very soft/loose to firm/medium dense Generally soft/loose</td>
</tr>
<tr>
<td>Coarse Alluvium</td>
<td>SP, SM</td>
<td>WH* – 22 BPF Average 9 BPF</td>
<td>Very loose to medium dense Generally loose</td>
</tr>
<tr>
<td>Glacial Till</td>
<td>SC, SP-SC, CL, SM, SP-SM, SP</td>
<td>3 to 39 BPF Average 15 BPF</td>
<td>Very loose to dense Generally medium dense</td>
</tr>
</tbody>
</table>

*WH indicates the weight of hammer was sufficient to drive the sampler 18 inches.

The preceding is a generalized description of soil conditions at this site. Variations from the generalized profile exist and should be assessed from the boring logs, the normal geologic character of the deposits, and the soils uncovered during site excavation.

### 3.4 Groundwater Conditions

WSB took groundwater level readings in the exploratory borings, reviewed the data obtained, and discussed its interpretation of the data in the text of the report. Note that groundwater levels may fluctuate due to seasonal variations (e.g. precipitation, snowmelt and rainfall) and/or other factors not evident at the time of measurement. The bore holes were only left open a short period of time, and groundwater levels may not have stabilized.

Table 2 below is a summary of the estimated water levels at our borings.

**Table 2: Groundwater Measurements**

<table>
<thead>
<tr>
<th>Boring No.</th>
<th>Ground Surface Elevation</th>
<th>Estimated Depth to Groundwater</th>
<th>Estimated Groundwater Elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-1</td>
<td>943.53</td>
<td>4</td>
<td>940</td>
</tr>
<tr>
<td>B-2</td>
<td>944.30</td>
<td>4</td>
<td>940 ½</td>
</tr>
<tr>
<td>B-3</td>
<td>943.46</td>
<td>3</td>
<td>940 ½</td>
</tr>
<tr>
<td>B-4</td>
<td>943.49</td>
<td>2</td>
<td>941 ½</td>
</tr>
<tr>
<td>B-5</td>
<td>943.72</td>
<td>2</td>
<td>942</td>
</tr>
<tr>
<td>B-6</td>
<td>942.01</td>
<td>3</td>
<td>939 ½</td>
</tr>
<tr>
<td>B-7</td>
<td>943.09</td>
<td>4</td>
<td>939 ½</td>
</tr>
<tr>
<td>B-8</td>
<td>941.78</td>
<td>5</td>
<td>937</td>
</tr>
<tr>
<td>B-9</td>
<td>943.85</td>
<td>3</td>
<td>941</td>
</tr>
<tr>
<td>B-10</td>
<td>944.54</td>
<td>1</td>
<td>944</td>
</tr>
<tr>
<td>B-11</td>
<td>943.30</td>
<td>2</td>
<td>941 ½</td>
</tr>
<tr>
<td>B-12</td>
<td>943.25</td>
<td>5</td>
<td>938 ½</td>
</tr>
<tr>
<td>Boring No.</td>
<td>Ground Surface Elevation</td>
<td>Estimated Depth to Groundwater</td>
<td>Estimated Groundwater Elevation</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>B-13</td>
<td>943.41</td>
<td>10</td>
<td>933 ½</td>
</tr>
<tr>
<td>B-14</td>
<td>942.87</td>
<td>2</td>
<td>941</td>
</tr>
<tr>
<td>B-15</td>
<td>942.45</td>
<td>2</td>
<td>940 ½</td>
</tr>
<tr>
<td>B-16</td>
<td>943.96</td>
<td>10</td>
<td>934</td>
</tr>
<tr>
<td>B-17</td>
<td>942.93</td>
<td>5</td>
<td>938</td>
</tr>
<tr>
<td>B-18</td>
<td>943.03</td>
<td>1</td>
<td>942 ½</td>
</tr>
</tbody>
</table>

Elevations are rounded to the highest ½ foot.

Groundwater was encountered at all boring locations. Groundwater ranged from about 1 to 10 feet below grade and was generally encountered within the upper 5 feet. Borings B-2, B-3, B-4, B-5, and B-8 were left open for additional time to obtain a more stable groundwater elevation. The borings likely better reflect the onsite groundwater elevations. Based on the borings that were left open for an extended amount of time, it is our opinion that groundwater levels could be encountered at an elevation of about 941 or 942 feet.

The Response Action Plan completed in 2015 by Braun indicated groundwater depths of 7.2 to 8.1 below grade. The recent borings indicate a high groundwater table. It should be noted that rainfall in the Twin Cities area was 6.5 inches above average for 2019 at the time of drilling.

The groundwater could present an issue to excavations and placement of foundations and basements.

The best option to determine the long-term subsurface groundwater elevation at this site is to install piezometers and monitor groundwater levels over several months. Ideally this would occur over March to May when groundwater levels are typically higher due to spring melt. Monitoring of the groundwater table elevation could occur up to the time of construction. This work was outside our scope of services.
4. ENGINEERING ANALYSIS AND RECOMMENDATIONS

4.1 Discussion

Fills
No information was provided to us regarding density tests or excavation observations for the existing fills encountered at the boring locations. Generally, fills that are not documented are considered uncontrolled fills and are recommended for removal and replacement with an engineered fill. Our borings encountered deleterious materials (organics) within or beneath the fill in several of the borings. It is our opinion that the fills at this site were not placed to support foundations, slabs, or fuel tanks, and should be excavated below these areas and replaced with an engineered fill.

In the pavement areas, the best option is complete removal of all existing fill materials. However, a partial subcut and replacement with an engineered fill may be an alternative option to reduce costs. This alternate option will have higher maintenance costs and increased risk of detrimental settlements.

Organics
Organic soils, vegetated root zones, and peat are not suitable for structural support, and should be removed from beneath all building, slab, and engineered fill areas.

In the pavement areas, the best option is complete removal of all existing organic materials. However, a partial subcut and replacement with an engineered fill may be an alternative option to reduce costs. This alternate option will have higher maintenance costs and increased risk of detrimental settlements.

Alluvial Deposits
The fine alluvial deposits generally consisted of silts and clays and are poorly suited for support of foundations, slabs, or pavements. These soils would only be suitable to support light foundation loads and below foundations, slabs, or pavements may require a partial subcut to remove wet soils.

The coarse alluvial deposits encountered in the borings generally would be suitable to support light to moderate foundation loads, as well as slab and pavement areas.

Glacial Deposits
Based on the results of our borings, the glacially deposited soils generally appear capable of supporting the foundations, floor slabs, and pavement areas. Where till soils are encountered that are wet and soft/loose, we recommend a partial subcut and replacement with an engineered fill.

General
It is our opinion that groundwater will be encountered by shallow excavations at this site. Construction of underground basements or parking facilities will be difficult and likely require waterproofing, drain tiles, sump pumps, and warning systems in case of potential flooding. Underground fuel tanks will need to be ballasted. Foundations will require drain tile and waterproofing methods.

Generally, the soils in the upper 4 feet of the subgrade influence pavement performance the most. The soils within the pavement subgrade included clays and silts, which are frost susceptible soils. Consideration should be given to partially subcutting these soils and replacing with a non-frost susceptible granular fill to reduce the potential frost heave below the pavement section.

4.2 Building, Fuel Island, Fuel Tanks, and Canopy Area Preparation
We recommend removal of the fill/organics from the construction area.
Based on the borings, recommended excavation depths are indicated in Table 3.

<table>
<thead>
<tr>
<th>Boring</th>
<th>Surface Elevation</th>
<th>Estimated Excavation depth to suitable soils</th>
<th>Estimated Bottom of Excavation Elevation to suitable soils*</th>
</tr>
</thead>
<tbody>
<tr>
<td>B-1</td>
<td>943.53</td>
<td>12 ½</td>
<td>931</td>
</tr>
<tr>
<td>B-2</td>
<td>944.30</td>
<td>0</td>
<td>944</td>
</tr>
<tr>
<td>B-3</td>
<td>943.46</td>
<td>5</td>
<td>938</td>
</tr>
<tr>
<td>B-4</td>
<td>943.49</td>
<td>2</td>
<td>941</td>
</tr>
<tr>
<td>B-5</td>
<td>943.72</td>
<td>0</td>
<td>943 ½</td>
</tr>
<tr>
<td>B-10</td>
<td>944.54</td>
<td>7</td>
<td>937 ½</td>
</tr>
<tr>
<td>B-11</td>
<td>943.30</td>
<td>0</td>
<td>943</td>
</tr>
<tr>
<td>B-12</td>
<td>943.25</td>
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<td>B-13</td>
<td>943.41</td>
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<td>B-14</td>
<td>942.87</td>
<td>7</td>
<td>935 ½</td>
</tr>
<tr>
<td>B-15</td>
<td>942.45</td>
<td>7</td>
<td>935</td>
</tr>
<tr>
<td>B-16</td>
<td>943.96</td>
<td>7</td>
<td>936 ½</td>
</tr>
<tr>
<td>B-17</td>
<td>942.93</td>
<td>4 ½</td>
<td>938</td>
</tr>
<tr>
<td>B-18</td>
<td>943.03</td>
<td>5</td>
<td>938</td>
</tr>
</tbody>
</table>

*Elevations rounded to the lowest ½ foot.

If clayey or silty soils at the base of footing excavations are wet and soft/loose they should be subcut. We recommend the soils be subcut a minimum of two feet (2') below the base of wall footings and below column footings to a depth of half (1/2) the width of the column footings. The sub-excavations should be oversized by at least one foot (1') beyond the edge of footings for each foot of depth below the bottom of footing elevations (1-horizontal to 1-vertical lateral oversizing). Because the depth and lateral extent of the sub-excavations will vary away from our borings, we recommend a qualified engineering technician working under the direction of a registered professional geotechnical engineer observe and test the excavation bases during construction.

Based on the borings, it appears that the on-site non-organic soil can generally be reused as structural backfill provided it is moisture conditioned and can be compacted to project specifications. Silt (ML) soils are poor fill materials and should not be used below foundation, slab, pavement, and oversize areas.

The underground fuel tanks will likely need to be ballasted to prevent groundwater from pushing them to the surface.

The site should be graded to prevent water from ponding on silty soils and potentially softening them.

### 4.3 Foundation Recommendations

We recommend that the building be supported on conventional spread footings bearing on naturally occurring firm / medium dense glacial tills, coarse alluvial soils, or upon an engineered fill. Based on the borings, it is our opinion the footings throughout may be designed for a net allowable soil bearing pressure not to exceed 3,000 pounds per square foot (psf).

Frost protection should follow Minnesota Administrative Rules 1305.1809. Perimeter building footings should be based at least 42 inches below adjacent exterior grade for frost protection. We recommend unheated garage or deck footings should be placed at least five feet (5’) below adjacent exterior grade.
The factor of safety against shear or bearing capacity failure for this footing design would be three (3) or greater. If the site is prepared as recommended, we estimate that total and differential settlements corresponding to our assumed structural loads would be less than one inch (1") and one-half inch (1/2"), respectively, provided the bearing soils are not frozen or disturbed at the time of construction.

4.4 Exterior/Unheated Slabs
After removal of the vegetation and root zone, we anticipate that clayey or silty soils will be present in the subgrades which are frost susceptible. We anticipate that heave could occur if such soils are wet and then freeze. Heaving slabs or stoops are not only an annoyance, especially in front of doorways, but can also create a tripping hazard.

In order to reduce potential frost heave at those critical areas, several options exist such as:

1. Removing the frost susceptible soils to frost depth and replacing it with relatively clean sand [not more than ten percent (10%) passing a #200 sieve] and providing sub-drainage.
2. Designing the slabs or steps to be supported on frost depth footings with a void form.
3. Placing insulating foam beneath and slightly beyond slabs.

4.5 Below-Grade/Retaining Walls
To help prevent water from accumulating behind any below-grade/retaining walls in clayey or silty soils, we recommend drain tiles be placed at the base of the footings. To promote water migration to the drain tile, we recommend either a drainage composite be placed against the back side of the wall or at least two feet (2') (horizontally) of clean coarse sand be placed along the back of the wall. We recommend the upper foot of backfill consist of clayey soils to act as a “cap” and reduce water infiltration into the backfill soils. The drain tile should be connected to the storm sewer system or “daylighted” to suitable disposal areas.

To assist in below-grade/retaining wall design Table 4 presents estimated soil parameters for common backfill soils. The coefficients presented below assume a level backfill at the top of wall. If the backfill is sloped, these values may change significantly. Silt (ML) is not recommended as backfill for walls.

| Table 4: Estimated Soil Parameters for Below Grade/Retaining Wall Design |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Soil Type       | Unit Weight pcf | Cohesion | Adhesion | Angle of Internal Friction | Equivalent Fluid Weight (psf/ft)^2 |
| SP, SP-SM       | 120             | ---      | ---      | 32               | 35  400  55     |
| SM, SC          | 125             | ---      | ---      | 30               | 40  375  65     |
| CL              | 115             | 1000     | 700      | 18               | 60  220  80     |

* - Parameters do not include safety factors.

4.6 Backfill and Fill Selection and Compaction
The on-site non-organic soils may be reused as backfill and fill provided they are moisture conditioned and can be compacted to their specified densities. Any wet soils excavated would need to be dried before reuse as an engineered fill. We recommend use of a minimum of 2 feet of clean coarse sand with less than 50 percent passing the #40 sieve and less than 5 percent passing the #200 sieve when backfilling the bottom of a wet excavation.

Backfills with cobbles larger than six inches (6") should not be placed within 3 feet of foundations, slabs, grading grade or in contact with utilities. We recommend that sandy soils be moisture conditioned to
meet compaction specifications as determined from their standard Proctor tests (ASTM D-698). Fill should be spread in lifts of 8 to 12 inches, depending on the size and type of compaction equipment used.

Table 5 provides the recommended compaction levels.

<table>
<thead>
<tr>
<th>Area</th>
<th>Percent of Standard Proctor Maximum Dry Density</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beneath Structures (Foundations/Slabs)</td>
<td>98</td>
</tr>
<tr>
<td>Pavement: Within 3 feet of bottom of aggregate base</td>
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</tr>
<tr>
<td></td>
<td>Within 3-foot radius of vertical utility structure</td>
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<tr>
<td>Pavement: Greater than 3 feet below bottom of aggregate base</td>
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</tr>
<tr>
<td>Utility Trench</td>
<td>95</td>
</tr>
<tr>
<td>Landscaping (non-structural)</td>
<td>90</td>
</tr>
</tbody>
</table>

4.7 Pavement Subgrade Preparation and Stability

We recommend excavation of organics below the pavement areas. This will provide the best design for pavement areas.

Alternately, if the city is willing to accept a higher risk of settlement in the pavement areas, organic deposits that are greater than 4 feet below the aggregate base can be left in place and bridged over with granular soils and geofabric. This option could significantly lower costs for construction in pavement areas.

The soils at the bottom of the excavation should be prepared in accordance with MnDOT Specification 2112, Subgrade Preparation. If the subgrade preparation operations encounter unstable soils, we recommend removing these unsuitable materials and replacing them with Select Grading Material (MnDOT 2015.1.A.6). If the on-site soils cannot be properly moisture conditioned and compacted, additional measures, such as placement of additional sand subbase or a section of coarse breaker run aggregate, may be required to provide a firm base for subsequent fill placement.

Before placement of the sand subbase, the final subgrade should have proper stability within three vertical feet of grading grade (grade which contacts the bottom of the aggregate base). This will generally be achieved in fill areas with proper compaction of embankment materials and in cut areas through proper subgrade preparation. The stability of the pavement subgrade should be evaluated prior to placement of the sand subbase using the test roll procedure (MnDOT 2111), except a fully loaded tandem axle dump truck or a full water truck should be utilized for the proof roll. If unstable soils are found under the test roll, these soils should be improved by means of scarification, moisture conditioning, and re-compaction, or by subcutting and replacement.

We recommend placement of a geotextile fabric meeting the requirements of MnDOT Specification 3733, Type V beneath the sand subbase and above the on-site silt soils to limit mixing of the granular materials with the underlying fine-grained subgrade.

4.8 Pavement Area

Once the site has been prepared as recommended, we anticipate the prepared subgrade soils will consist mostly of silty sands and clayey sands, as well as some lean clays, sands with silt, and sands with clay. Based on the MnDOT Flexible Pavement Guide from 2017, the R-values of the subgrade soils would range between 12 and 30. We used a design R-value of 12 for the pavement areas.
Heavy Duty Pavement
No traffic data was provided. Based on a 3-story apartment building, gas station, and warehouse building, we estimated the Annual Average Daily Traffic (AADT) to be approximately 150,000 Equivalent Single Axle Loads (ESAL’s) for pavement design in the roadway and main drive areas. Our design is based on a standard twenty (20) year design life of the pavement section.

Based on MnDOT’s FlexPave excel design utilizing granular equivalent charts, we recommend the pavement section indicated below in Table 6.

<table>
<thead>
<tr>
<th>Table 6: Heavy Duty Pavement - Recommended Flexible Pavement Section</th>
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</thead>
<tbody>
<tr>
<td><strong>Section</strong></td>
</tr>
<tr>
<td>Bituminous Course, MnDOT 2360 SPWEB240C</td>
</tr>
<tr>
<td>Bituminous Course, MnDOT 2360 SPWEB240C</td>
</tr>
<tr>
<td>Aggregate Base, MnDOT 3138 (Class 5, 5Q, or 6)</td>
</tr>
<tr>
<td>Geotextile Fabric Type V, MnDOT Spec 3733</td>
</tr>
<tr>
<td>Subgrade Preparation, MnDOT 2122</td>
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<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

Light Duty Pavement
No traffic data was provided. We estimated the Annual Average Daily Traffic (AADT) to be less than 75,000 Equivalent Single Axle Loads (ESAL’s) for parking lot areas. Our design is based on a standard twenty (20) year design life of the pavement section.

Based on MnDOT’s FlexPave excel design utilizing granular equivalent charts, we recommend the pavement section indicated below in Table 7.

<table>
<thead>
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<th>Table 7: Light Duty Pavement - Recommended Flexible Pavement Section</th>
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<tr>
<td>Subgrade Preparation, MnDOT 2122</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

“A” type aggregate is recommended in the bituminous course to yield a smooth tight surface. Level 4 super pave is recommended to increase the percentage of crushed aggregate and help limit depressions in the parking stalls.

General
We recommend limiting Recycled Asphalt Pavement (RAP) within the upper wear course to a maximum of 10 percent in order to minimize cracking.

Aggregate base placement for pavement support should meet the gradation and quality requirements for Class 5, 5Q, or 6 per MnDOT Specification 3138. All aggregate base material should be compacted to 100 percent of its standard Proctor maximum dry density.
Within several years after initial paving, some thermal shrinkage cracks will develop. We recommend routine maintenance be performed to improve pavement performance and increase pavement life. Pavement should be sealed with a liquid bitumen sealer to retard water intrusion into the base course and subgrade. Localized patch failures may also develop where trucks or buses turn on the pavement. When these occur, they should be cut out and patch repaired.

The pavement sections above provide options to meet the ESAL requirements. Other pavement design options would be acceptable as well as long as they meet the minimum requirements for bituminous thickness, aggregate base thickness, and can meet the ESAL requirements.

4.9 Frost Free Pavement Design Option

Optionally, the use of a non-frost susceptible sand cushion below the pavement in Section 4.8 will help reduce the effects of frost heave. In our opinion, placement of 15 inches of select granular fill below the Aggregate Base should generally provide for a non-frost susceptible subgrade. It should be noted that any sand cushion placed below the pavement section will provide positive benefits for reduced potential frost heave. The owner should evaluate the costs and benefit of this option to determine if it should be incorporated into the pavement design.

Drainage of the sand cushion will be necessary. Drainage of the sand cushion may be accomplished by daylighting to adjacent ditches or the use of drain tile. Drain tile wrapped in a sock should be placed at the base of the sand cushion and tied into catch basins. We recommend the sand cushion contain a select granular sand with less than 12% passing the #200 sieve. Alternately, a 3 inch minus rock fill could be placed instead of a select granular sand.

For transitioning the thickness of the sand subbase along the profile of the roadway, we recommend the thickness have a longitudinal taper of no steeper than 10H:1V. A taper of 4H:1V can be used perpendicular to the centerline for cross street/driveway connections. The placement of the sand subbase should extend slightly beyond the outer edge of the curbs to maintain subgrade uniformity for frost movement.

4.10 Underground Tanks

With assumed tank invert at elevations of about 930 to 935, and groundwater observed at an elevation as high as 944 feet, dewatering will be necessary for tank installation. Dewatering with sand points or wells, prior to excavation, is recommended.

To prevent the tanks from being lifted out of the ground due to the buoyant forces of water we recommend the tanks be ballasted. We recommend assuming the water table will rise above the top of the tanks.

We recommend sand be used as backfill around the tanks. To prevent backfill from settling around the tanks, we recommend special attention be paid during placing and compacting of backfill around the tanks.

4.11 Dewatering

Groundwater was encountered in the borings at very shallow excavations. Groundwater is expected to enter the excavations for soil corrections, utilities, and underground tanks. Dewatering will likely require sand well points, and preferably would occur prior to excavation.

4.12 Construction Considerations

Good surface drainage should be maintained throughout the work so that the site is not vulnerable to ponding during or after a rainfall. If water enters the excavations, it should be promptly removed prior to further construction activities. Under no circumstances should fill or concrete be placed into standing water.
Soil corrections at this site for foundations and pavement subgrades may not be continuous in all areas. We recommend tapering the fills back to native soils at a 10H:1V slope.

It is important to review the fill limits and total depth of fill when placing structures upon compacted materials and when filling the excavation. The location of the footings must allow for at least a one to one (1:1) slope from the bottom of the footing to the outside limits of the engineered fill.

It is important to check this at the time of construction and to assure that during filling, unsuitable soils do not encroach within the one to one (1:1) slope limits and extending downward and outward from future footings.

4.13 Construction Safety
All excavations must comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P “Excavations and Trenches”. This document states that excavation safety is the responsibility of the contractor. Reference to this OSHA requirement should be included in the job specifications.

The responsibility to provide safe working conditions on this site, for earthwork, building construction, or any associated operations is solely that of the contractor. This responsibility is not borne in any manner by WSB.

4.14 Cold Weather Construction
It is our understanding that construction is unlikely to occur during the winter months. However, if the construction does continue into the winter months we recommend the following guidelines.

Pavement areas should not be constructed during periods when the subgrade material freezes while being placed and compacted, nor should any material be placed on soil that is frozen to a depth greater than 4 inches. When the soils are frozen to a depth exceeding 4 inches, at a time when weather conditions are such that construction could be continued without the material freezing as it is being placed and compacted, the contractor may be permitted to excavate the frozen soil and proceed with the embankment construction for so long as the weather will permit. The frozen soils should be pulverized or replaced with other suitable soils, as may be necessary to construct as specified. Only unfrozen fill should be used.

Placement of fill and/or foundation concrete must not be permitted on frozen soil, and the bearing soils under footings or under the floor slab should not be allowed to freeze after concrete is placed, because excessive post-construction settlement could occur as the frozen soils thaw.

4.15 Field Observation and Testing
The soil conditions illustrated on the Logs of Test Borings in Appendix A are indicative of the conditions only at the boring locations. For this reason, we recommend that all excavations at this site be observed by a soil engineer or technician prior to fill or backfill placement or construction of any foundation elements to determine if the soils are capable of supporting the fill backfill and/or foundation loads. These observations are necessary to judge if all unsuitable materials have been removed from within the planned construction area and an appropriate degree of lateral oversize has been provided.

WSB also recommends a representative number of field density tests be taken in all engineered fill and backfill placed to aid in judging its suitability. Fill placement and compaction should be monitored and tested to determine that the resulting fill and backfill conforms to specified density, strength or compressibility requirements. We recommend at least one compaction test for every 2,000 square feet of building area at vertical intervals not exceeding two (2) feet. Prior to use, any proposed fill and backfill material should be submitted to the WSB laboratory for testing to verify compliance with recommendations and project specifications.

Dynamic Cone Penetrometer (DCP) tests can be completed in the aggregate base in lieu of density testing. We recommend following MnDOT Specification 2211.3.D.2.c.
WSB would be pleased to provide the necessary field observation, monitoring and testing services during construction.

4.16 Plan Review and Remarks
The observations, recommendations and conclusions described in this report are based primarily on information provided to WSB, obtained from our subsurface exploration, our experience, several necessary assumptions and the scopes of service developed for this project and are for the sole use of our client. We recommend that WSB be retained to perform a review of final design drawing and specifications to evaluate that the geotechnical engineering report has not been misinterpreted. Should there be any changes in the design or location of the structures related to this project or if there are any uncertainties in the report we should be notified. We would be pleased to review any project changes and modify the recommendations in this report (if necessary) or provide any clarification in writing.

The entire report should be kept together; for example, boring logs should not be removed and placed in the specifications separately.

The boring logs and related information included in this report are indicators of the subsurface conditions only at the specific locations indicated on the Soil Boring Exhibit and times noted on the Logs of Test Boring sheets in Appendix A. The subsurface conditions, including groundwater levels, at other locations on the site may differ significantly from conditions that existed at the time of sampling and at the boring locations.

Environmental testing completed at this project was reported under separate cover.

WSB has not performed any observations, investigations, studies or testing that is not specifically listed in the scope of service. WSB shall not be liable for failing to discover any condition whose discovery required the performance of services not authorized by the Agreement.
5. STANDARD OF CARE

The recommendations and opinions contained in this report are based on our professional judgment. The soil testing and geotechnical engineering services performed for this project have been performed with the level of skill and diligence ordinarily exercised by reputable members of the same profession under similar circumstances, at the same time and in the same or a similar locale. No warranty, either expressed or implied, is made.
APPENDIX A

Soil Borings Exhibit
Logs of Test Borings
Symbols and Terminology on Test Boring Log
Notice to Report Users Boring Log Information
Unified Soil Classification Sheet (USCS)
**LOG OF TEST BORING**

**PROJECT NAME:** Former Anchor Block  
**PROJECT LOCATION:** North St Paul, Minnesota

**SURFACE ELEVATION:** 943.53 ft

<table>
<thead>
<tr>
<th>DEPTH (ft)</th>
<th>ELEV. (ft)</th>
<th>DESCRIPTION OF MATERIAL</th>
<th>USCS</th>
<th>GEOLOGIC ORIGIN</th>
<th>WIL</th>
<th>PID (ppm)</th>
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<tbody>
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<td>Fill</td>
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<td>Glacial Till</td>
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End of Boring 30.0 ft.

**WATER LEVEL MEASUREMENTS**

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<th>DATE</th>
<th>TIME</th>
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<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
<th>CREW CHIEF</th>
<th>LOGGED BY</th>
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<tr>
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<td>10:00 am</td>
<td>21</td>
<td>19.5</td>
<td>5.0</td>
<td>938.53</td>
<td>3 1/4&quot; HSA 0' - 21&quot;</td>
<td>1&quot; GeoTube 21' - 30&quot;</td>
<td>R. Kurth</td>
<td>MWO</td>
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<td>10:15 am</td>
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Notes:

80 of 113
## LOG OF TEST BORING

**PROJECT NAME:** Former Anchor Block  
**PROJECT LOCATION:** North St Paul, Minnesota  
**SURFACE ELEVATION:** 944.3 ft  
**BORING NUMBER B-02**  
**CLIENT/WSB #: 014065-000**  

### DEPTH (ft) | ELEV. (ft) | DESCRIPTION OF MATERIAL | USCS | GEOLOGIC ORIGIN | WIL | SAMPLE TYPE | No. | MC % | N-VALUE
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---
1 | 943 | FILL, Clayey Sand and Lean Clay with Sand, brown, moist | Fill | Fill | HSA | SB 1 | 10 | 0.1 | 21.5  
2 | 942 | | | | | | | |  
3 | 941 | | | | | | | |  
4 | 940 | SILT WITH SAND, brown, wet, medium dense | ML | Mixed Alluvium | HSA | SB 2 | 12 | 0.2 | 43  
5 | 939 | | | | | | | |  
6 | 938 | | | | | | | |  
7 | 937 | CLAYEY SAND WITH GRAVEL, brown, wet, medium dense | SC | Glacial Till | HSA | SB 3 | 17 | 0.2 | 17  
8 | 936 | | | | | | | |  
9 | 935 | SAND WITH CLAY, a little Gravel, brown, dense to medium dense | SP-SC | | | | | |  
10 | 934 | | | | | | | |  
11 | 933 | | | | | | | |  
12 | 932 | | | | | | | |  
13 | 931 | | | | | | | |  
14 | 930 | | | | | | | |  
15 | 929 | | | | | | | |  
16 | 928 | | | | | | | |  
17 | 927 | | | | | | | |  
18 | 926 | | | | | | | |  
19 | 925 | | | | | | | |  
20 | 924 | | | | | | | |  
21 | 923 | | | | | | | |  
22 | 922 | | | | | | | |  
23 | 921 | | | | | | | |  
24 | 920 | CLAYEY SAND, gray, moist | SC | | | SH 8 | | |  
25 | 919 | | | | | | | |  
26 | 918 | | | | | | | |  
27 | 917 | | | | | | | |  
28 | 916 | | | | | | | |  
29 | 915 | | | | | | | |  
30 | 914 | End of Boring 30.0 ft. | | | | | | | |

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### WATER LEVEL MEASUREMENTS

**START:** 5/28/2019  
**END:** 5/28/2019  

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<th>DATE</th>
<th>TIME</th>
<th>SAMPLED DEPTH</th>
<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
<th>CREW CHIEF</th>
<th>LOGGED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/28/2019</td>
<td>10:00 am</td>
<td>21</td>
<td>19.5</td>
<td>5.0</td>
<td>939.3</td>
<td>3 1/4&quot; HSA 0' - 21'</td>
<td>Notes:</td>
<td>R. Kurth</td>
<td>MWO</td>
</tr>
<tr>
<td>5/28/2019</td>
<td>10:15 am</td>
<td>30</td>
<td>21</td>
<td>15</td>
<td>940.3</td>
<td>1&quot; GeoTube 21' - 30'</td>
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**LOG OF TEST BORING**

**PROJECT NAME:** Former Anchor Block  
**PROJECT LOCATION:** North St Paul, Minnesota  
**BORING NUMBER B-03**

**CLIENT/WSB #:** 014065-000  
**SURFACE ELEVATION:** 943.46 ft

<table>
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<th>DEPTH (ft)</th>
<th>ELEV. (ft)</th>
<th>DESCRIPTION OF MATERIAL</th>
<th>USCS</th>
<th>GEOLOGIC ORIGIN</th>
<th>N-Value Plot</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>942</td>
<td>FILL, Silty Sand and Clayey Sand, slightly Organic, brown and dark brown, moist</td>
<td>Fill</td>
<td>Fill</td>
<td>HSA</td>
</tr>
<tr>
<td>2</td>
<td>941</td>
<td>SILTY CLAY, olive brown, saturated, firm</td>
<td>CL</td>
<td>Fine Alluvium</td>
<td>SB 1 17</td>
</tr>
<tr>
<td>3</td>
<td>940</td>
<td>SAND WITH GRAVEL, fine to medium grained, brown, waterbearing, medium dense</td>
<td>SP</td>
<td>Coarse Alluvium</td>
<td>SB 3 12 15</td>
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<tr>
<td>4</td>
<td>939</td>
<td>SAND WITH CLAY, a little Gravel, fine to medium grained, brown, medium dense to dense</td>
<td>SC</td>
<td>Glacial Till</td>
<td>SB 5 22</td>
</tr>
<tr>
<td>5</td>
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<td>LEAN CLAY WITH SAND AND GRAVEL, gray, wet</td>
<td>CL</td>
<td></td>
<td>SB 7 16</td>
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<tr>
<td>6</td>
<td>937</td>
<td>WEATHERED DOLOSTONE, Lean Clay with Sand, pieces of Dolostone, tan, wet</td>
<td>SH</td>
<td>Prairie Du Chien</td>
<td>SH 8 15</td>
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</table>

End of Boring 30.0 ft.

**WATER LEVEL MEASUREMENTS**

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<th>TIME</th>
<th>SAMPLED DEPTH</th>
<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
<th>Crew Chief: R. Kurth</th>
<th>Logged By: MWO</th>
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<tbody>
<tr>
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<td>21</td>
<td>19.5</td>
<td>5.0</td>
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<td>21</td>
<td>8</td>
<td>940.46</td>
<td>1&quot; GeoTube 21' - 30</td>
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</table>
PROJECT NAME: Former Anchor Block
PROJECT LOCATION: North St Paul, Minnesota

BORING NUMBER B-04

SURFACE ELEVATION: 943.49 ft

DEPTH (ft)  ELEV. (ft)  DESCRIPTION OF MATERIAL  USCS  GEOLOGIC ORIGIN  WIL  SAMPLE TYPE  No.  N  MC %  N-VALUE Plot

1  942  LEAN CLAY, slightly Organic, dark brown, wet  CL  Topsoil  HSA
2  941  FILL, Clayey Sand, brown and gray, wet  Fill  Fill  SB  1  11
3  940  SILT WITH CLAY, olive brown, moist, loose  ML  Fine Alluvium  SB  2  12
4  939  SILTY SAND, fine grained, brown, waterbearing, very loose to medium dense  SM  Glacial Till  SB  3  7  12
5  938
6  937
7  936
8  935
9  934
10  933
11  932
12  931
13  930
14  929
15  928
16  927
17  926
18  925
19  924
20  923
21  922
22  921
23  920
24  919
25  918
26  917
27  916
28  915
29  914
30  913

End of Boring 30.0 ft.

WATER LEVEL MEASUREMENTS


<table>
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<tr>
<th>DATE</th>
<th>TIME</th>
<th>SAMPLED DEPTH</th>
<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
<th>CREW CHIEF</th>
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<tbody>
<tr>
<td>5/28/19</td>
<td>1:00 pm</td>
<td>21</td>
<td>19.5</td>
<td>7.0</td>
<td>936.49</td>
<td>3 1/4&quot; HSA 0' - 21'</td>
<td>Notes: MWO</td>
<td>R. Kurth</td>
<td>MWO</td>
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<tr>
<td>5/28/19</td>
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<td>30</td>
<td>21</td>
<td>4</td>
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</table>
LOG OF TEST BORING

PROJECT NUMBER: B-05

DEPTH (ft)  ELEV. (ft)  DESCRIPTION OF MATERIAL  USCS  GEOLOGIC ORIGIN  WL  SAMPLE TYPE  No.  N  MC  %  PID (ppm)  N-VALUE Plot

1  943  SILTY SAND, fine grained, brown, wet  SM  Coarse Alluvium  HSA  1  4  0.1

2  942  SAND WITH GRAVEL, medium to coarse grained, brown, wet to waterbearing, very loose to loose  SP  HSA  SB  2  6  0.2

3  941  SAND WITH CLAY, a little Gravel, brown, saturated, loose  SP-SC  Glacial Till  HSA  SB  3  3  0.1

4  939  SAND WITH SILT, a little Gravel, fine to medium grained, brown, waterbearing, medium dense  SP-SM  HSA  SB  4  4  0.1

5  938  SAND WITH CLAY, a little Gravel, brown, saturated, loose  SP-SC  Glacial Till  HSA  SB  5  4  13  0.2

6  937  SAND WITH CLAY, a little Gravel, brown, saturated, loose  SP-SC  Glacial Till  HSA  SB  6  8  0.2

7  936  CLAYEY SAND, brown, moist, lenses of Clay  SC  SH  8  12  0.2

8  935  CLAYEY SAND, brown, moist, lenses of Clay  SC  SH  9  0.1

End of Boring 30.0 ft.

WATER LEVEL MEASUREMENTS

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>SAMPLED DEPTH</th>
<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
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<td>12:00 pm</td>
<td>21</td>
<td>19.5</td>
<td>3.0</td>
<td>940.72</td>
<td>3 1/4&quot; HSA 0' - 21'</td>
<td>Notes:</td>
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84 of 113
**LOG OF TEST BORING**

**PROJECT NAME:** Former Anchor Block  
**PROJECT LOCATION:** North St Paul, Minnesota  
**SURFACE ELEVATION:** 942.01 ft  

**BORING NUMBER B-06**

<table>
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<th>DESCRIPTION OF MATERIAL</th>
<th>USCS</th>
<th>GEOLOGIC ORIGIN</th>
<th>SPECIAL TOOLS</th>
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<tbody>
<tr>
<td>1</td>
<td>941</td>
<td>FILL, Clayey Sand and Silty Sand, brown and dark brown, moist to wet</td>
<td>Fill</td>
<td>Fill</td>
<td>SH 1</td>
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<tr>
<td>2</td>
<td>940</td>
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<td>4</td>
<td>938</td>
<td>PEAT, black, wet</td>
<td>PT</td>
<td>Swamp Deposits</td>
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<td>937</td>
<td>SILTY CLAY, olive brown, wet</td>
<td>CL</td>
<td>Fine Alluvium</td>
<td>30 0</td>
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<tr>
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<td>SAND WITH SILT, a little Gravel, brown, fine grained, waterbearing</td>
<td>SP-SM</td>
<td>Glacial Till</td>
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<td>7</td>
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End of Boring 20.0 ft.

**WATER LEVEL MEASUREMENTS**

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<th>TIME</th>
<th>SAMPLED DEPTH</th>
<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
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<tr>
<td>5/20/2019</td>
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<td>5.0</td>
<td></td>
<td>937.01</td>
<td>1&quot; GeoTube 0' - 20'</td>
<td>R. Kurth</td>
<td>MWO</td>
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**LOG OF TEST BORING**

**PROJECT NAME:** Former Anchor Block

**PROJECT LOCATION:** North St Paul, Minnesota

**SURFACE ELEVATION:** 943.09 ft

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<th>ELEV. (ft)</th>
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<th>USCS</th>
<th>GEOLOGIC ORIGIN</th>
<th>WIL</th>
<th>MC %</th>
<th>PD/Temp</th>
<th>N-VALUE Plot</th>
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<td>CLAYEY SAND WITH ORGANICS, dark brown, moist</td>
<td>SC</td>
<td>Topsoil</td>
<td>SH 1</td>
<td>0.1</td>
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<tr>
<td>2</td>
<td>941</td>
<td>SAND WITH GRAVEL, fine to medium grained, brown, wet to waterbearing</td>
<td>SP</td>
<td>Coarse Alluvium</td>
<td>SH 1</td>
<td>0.1</td>
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<td>940</td>
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<td>9</td>
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<tr>
<td>16</td>
<td>927</td>
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<td>SC</td>
<td>Glacial Till</td>
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<tr>
<td>18</td>
<td>925</td>
<td>SAND WITH GRAVEL, fine to medium grained, brown, waterbearing</td>
<td>SP</td>
<td></td>
<td>SH 4</td>
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<td></td>
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**WATER LEVEL MEASUREMENTS**

**START:** 5/20/2019  **END:** 5/20/2019

<table>
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<tr>
<th>DATE</th>
<th>TIME</th>
<th>SAMPLED DEPTH</th>
<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
<th>CREW CHIEF</th>
<th>LOGGED BY</th>
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<tbody>
<tr>
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<td>11:30 am</td>
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<td>1&quot; GeoTube 0' - 20'</td>
<td></td>
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</table>

**Notes:**

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# LOG OF TEST BORING

**PROJECT NAME:** Former Anchor Block  
**PROJECT LOCATION:** North St Paul, Minnesota  
**SURFACE ELEVATION:** 941.78 ft

**BOARING NUMBER B-08**

**DEPTH**  | **ELEV.**  | **DESCRIPTION OF MATERIAL**  | **USCS**  | **GEOLOGIC ORIGIN**  | **WL**  | **SAMPLE TYPE**  | **MC %**  | **PD %**  | **N-VALUE Plot**
---|---|---|---|---|---|---|---|---|---
1 | 941 | FILL, Clayey Sand, brown, moist | Fill | Fill | SH 1 | 0.1 |
2 | 940 | | |
3 | 939 | FILL, Silty Clay, brown to gray, wet, a few Roots | Fill | 0.1 |
4 | 938 | | |
5 | 937 | | |
6 | 936 | | |
7 | 935 | | |
8 | 934 | FILL, Sand with Clay and Gravel, brown, waterbearing | Fill | 0.1 |
9 | 933 | | |
10 | 932 | | |
11 | 931 | | |
12 | 930 | | |
13 | 929 | ORGANIC CLAY, black, wet | OL | Topsoil | SH 3 | 0 |
14 | 928 | | |
15 | 927 | | |
16 | 926 | | |
17 | 925 | | |
18 | 924 | | |
19 | 923 | | |
20 | 922 | | |

End of Boring 20.0 ft.

---

**WATER LEVEL MEASUREMENTS**  
**START:** 5/21/2019  
**END:** 5/21/2019

<table>
<thead>
<tr>
<th>DATE</th>
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<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
<th>CREW CHIEF</th>
<th>LOGGED BY</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/21/19</td>
<td>12:30 pm</td>
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<td>7.5</td>
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<td>934.28</td>
<td>1&quot; GeoTube 0' - 20'</td>
<td>R. Kurth</td>
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<td>5/21/19</td>
<td>12:45 pm</td>
<td>20</td>
<td>5</td>
<td>None</td>
<td>934.28</td>
<td>1&quot; GeoTube 0' - 20'</td>
<td>R. Kurth</td>
<td>MWO</td>
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Notes:

[Image of the page with geological data and N-Value Plot]
### Log of Test Boring

**Project Name:** Former Anchor Block  
**Project Location:** North St Paul, Minnesota  
**Surface Elevation:** 943.85 ft  

#### Boring Number B-09

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Elevation (ft)</th>
<th>Description of Material</th>
<th>USCS</th>
<th>Geologic Origin</th>
<th>N-Value</th>
<th>Environment</th>
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<th>PD %</th>
<th>Notes</th>
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<tbody>
<tr>
<td>1-2</td>
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<td>Fill, Sand with Gravel, fine to medium grained, brown, moist to wet to waterbearing</td>
<td>Fill</td>
<td>Fill</td>
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<tr>
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<td>Topsoil</td>
<td>SH 2</td>
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<td>Glacial Till</td>
<td>SH 3</td>
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<td>17-18</td>
<td>927-926</td>
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<td>925-924</td>
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**End of Boring 20.0 ft.**

#### Water Level Measurements

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<th>Time</th>
<th>Sampled Depth</th>
<th>Casing Depth</th>
<th>Cave-In Depth</th>
<th>Water Depth</th>
<th>Water Elevation</th>
<th>Method</th>
<th>Crew Chief</th>
<th>Logged By</th>
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<tr>
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<td>4:00 pm</td>
<td>20</td>
<td>5.5</td>
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<td>MWO</td>
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<td>4:15 pm</td>
<td>20</td>
<td>3</td>
<td>None</td>
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**Start:** 5/21/2019  
**End:** 5/21/2019
## LOG OF TEST BORING

### PROJECT NAME: Former Anchor Block
### CLIENT/WSB #: 014065-000
### SURFACE ELEVATION: 944.54 ft

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<th>DEPTH (ft)</th>
<th>ELEV. (ft)</th>
<th>DESCRIPTION OF MATERIAL</th>
<th>USCS</th>
<th>GEOLOGIC ORIGIN</th>
<th>N-VALUE</th>
<th>NOTES</th>
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<td>1</td>
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<td>FILL, Clayey Sand, a few Roots, brown, wet</td>
<td>Fill</td>
<td>Fill</td>
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<tr>
<td>2</td>
<td>943</td>
<td>FILL, Clayey Sand, brown and dark brown and gray, wet</td>
<td>Fill</td>
<td>HSA</td>
<td>SB 1 18 11</td>
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<tr>
<td>3</td>
<td>942</td>
<td>- a few Roots</td>
<td></td>
<td>HSA</td>
<td>SB 2 20</td>
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<tr>
<td>7</td>
<td>938</td>
<td>SILT WITH CLAY, gray with brown streaks, wet, loose</td>
<td>ML</td>
<td>Fine Alluvium</td>
<td>SB 3 6 21</td>
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<tr>
<td>10</td>
<td>935</td>
<td>SAND WITH GRAVEL, medium to coarse grained, brown, waterbearing, loose</td>
<td>SP</td>
<td>Coarse Alluvium</td>
<td>SB 4 9</td>
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<tr>
<td>14</td>
<td>931</td>
<td>SAND WITH GRAVEL, fine to medium grained, brown, waterbearing, medium dense</td>
<td>SP</td>
<td>HSA</td>
<td>SB 5 10</td>
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<tr>
<td>18</td>
<td>927</td>
<td>CLAYEY SAND, a little Gravel, brown, saturated, medium dense</td>
<td>SC</td>
<td>Glacial Till</td>
<td>SB 7 14</td>
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End of Boring 21.0 ft.

### WATER LEVEL MEASUREMENTS

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<th>SAMPLED DEPTH</th>
<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
<th>CREW CHIEF</th>
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<td>5/29/2019</td>
<td>12:30 pm</td>
<td>21</td>
<td>19.5</td>
<td>10.0</td>
<td>934.54</td>
<td>3 1/4&quot; HSA 0' - 21</td>
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<td>5/29/2019</td>
<td>12:45 pm</td>
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<td>21</td>
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<td>Notes:</td>
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**LOG OF TEST BORING**

**PROJECT NAME:** Former Anchor Block  
**PROJECT LOCATION:** North St Paul, Minnesota  
**CLIENT/WSB #:** 014065-000  
**SURFACE ELEVATION:** 943.3 ft  
**BORING NUMBER B-11**  
**PAGE 1 OF 1**

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<th>USCS</th>
<th>GEOLOGIC ORIGIN</th>
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<th>SAMPLE TYPE</th>
<th>No.</th>
<th>MC %</th>
<th>N-VALUE Plot</th>
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<td>923</td>
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<td>Coarse Alluvium</td>
<td>HSA</td>
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</tr>
<tr>
<td>2-1</td>
<td>924</td>
<td>SAND WITH SILT AND GRAVEL, fine grained, brown, wet to waterbearing, very loose</td>
<td>SP-SM</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>3-1</td>
<td>925</td>
<td>SAND WITH GRAVEL, fine to medium grained, brown, waterbearing, medium dense</td>
<td>SP</td>
<td>Glacial Till</td>
<td>SB  1 WH</td>
<td></td>
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</tr>
<tr>
<td>4-1</td>
<td>926</td>
<td>SAND WITH CLAY AND GRAVEL, fine to medium grained, brown, saturated, medium dense</td>
<td>SP-SC</td>
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<td>SAND WITH GRAVEL, fine to medium grained, brown, waterbearing, medium dense</td>
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<td>SB  2 2</td>
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<td>928</td>
<td>SAND WITH GRAY AND SAND, a little Gravel, fine grained, brown, saturated, very dense</td>
<td>SC</td>
<td></td>
<td>SB  3 12</td>
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<tr>
<td>7-1</td>
<td>929</td>
<td>SAND WITH GRAY AND SAND, a little Gravel, fine grained, brown, saturated, very dense</td>
<td>SC</td>
<td></td>
<td>SB  4 22</td>
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<tr>
<td>8-1</td>
<td>930</td>
<td>CLAYEY SAND, a little Gravel, fine grained, brown, saturated, very dense</td>
<td>SC</td>
<td></td>
<td>SB  5 21 15</td>
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</tr>
<tr>
<td>9-1</td>
<td>931</td>
<td>CLAYEY SAND, a little Gravel, fine grained, brown, saturated, very dense</td>
<td>SC</td>
<td></td>
<td>SB  6 18</td>
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<tr>
<td>10-1</td>
<td>932</td>
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<td></td>
<td>SB  7 31</td>
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End of Boring 21.0 ft.

**WATER LEVEL MEASUREMENTS**

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<tr>
<th>DATE</th>
<th>TIME</th>
<th>SAMPLED DEPTH</th>
<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
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<th>Logged By:</th>
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<td>19.5</td>
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<td>939.3</td>
<td>3 1/4&quot; HSA 0'</td>
<td>21</td>
<td>R. Kurth</td>
<td>MWO</td>
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<td>5/29/2019</td>
<td>10:35 am</td>
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<td>21</td>
<td>2</td>
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LOG OF TEST BORING

PROJECT NAME: Former Anchor Block
PROJECT LOCATION: North St Paul, Minnesota
CLIENT/WSB #: 014065-000
SURFACE ELEVATION: 943.25 ft

BORING NUMBER B-12

Page 1 of 1

## BORING LOCATION DATA

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<th>GEOLOGIC ORIGIN</th>
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<tbody>
<tr>
<td>1</td>
<td>942</td>
<td>SAND WITH SILT, a little Gravel, fine to medium grained, brown, moist</td>
<td>SP-SM</td>
<td>Coarse Alluvium</td>
</tr>
<tr>
<td>2</td>
<td>941</td>
<td>SAND WITH A LITTLE GRAVEL, fine to medium grained, brown, wet to waterbearing, loose to medium dense</td>
<td>SP</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>940</td>
<td>CLAYEY SAND, a little Gravel, brown, saturated, loose</td>
<td>SC</td>
<td>Glacial Till</td>
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End of Boring 21.0 ft.

### WATER LEVEL MEASUREMENTS

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<th>TIME</th>
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<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
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<tr>
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<td>21</td>
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Notes:

Logged By: MWO
Crew Chief: R. Kurth
## LOG OF TEST BORING

**PROJECT NAME:** Former Anchor Block  
**PROJECT LOCATION:** North St Paul, Minnesota  
**CLIENT/WSB #:** 014065-000  
**SURFACE ELEVATION:** 943.41 ft

### SAMPLES

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### WATER LEVEL MEASUREMENTS

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<th>CAVE-IN DEPTH</th>
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<th>WATER ELEVATION</th>
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LOG OF TEST BORING

PROJECT NAME: Former Anchor Block
PROJECT LOCATION: North St Paul, Minnesota
CLIENT/WSB #: 014065-000
SURFACE ELEVATION: 942.87 ft

BORING NUMBER B-14

DEPTH (ft) | ELEV. (ft) | DESCRIPTION OF MATERIAL | USCS | GEOLOGIC ORIGIN | N-Value Plot
---|---|---|---|---|---
1 | 942 | FILL, Sand with Clay and Gravel, brown to dark brown, wet | Fill | HSA | 0
2 | 941 | ORGANIC CLAY, black, wet | OL | Topsoil | 10
3 | 940 | SILTY CLAY, olive brown, wet, soft to very soft | CL | Fine Alluvium | 5
4 | 939 | CLAYEY SILT, brown, saturated, very loose | ML | | 3
5 | 938 | SAND WITH CLAY, a little Gravel, brown, saturated, loose to very loose | SP-SC | Glacial Till | 4
6 | 937 | End of Boring 21.0 ft.

END OF BORING 21.0 ft.

WATER LEVEL MEASUREMENTS
START: 5/29/2019
END: 5/29/2019

<table>
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<tr>
<th>DATE</th>
<th>TIME</th>
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<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
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<th>METHOD</th>
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<tbody>
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<td>19.5</td>
<td>12.0</td>
<td>930.87</td>
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Notes:

Crew Chief: R. Kurth
Logged By: MWO

Page 1 of 1
**LOG OF TEST BORING**

**PROJECT NAME:** Former Anchor Block  
**PROJECT LOCATION:** North St Paul, Minnesota  
**BORING NUMBER:** B-15  
**SURFACE ELEVATION:** 942.45 ft  
**CLIENT/WSB #:** 014065-000

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<td>Fill</td>
<td>Fill</td>
<td>HSA</td>
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<td>19</td>
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<td>23</td>
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<tr>
<td>2</td>
<td>940</td>
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<td>SB</td>
<td>HSA</td>
<td>SB 2</td>
<td>6</td>
<td>13% Organics</td>
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<td>3</td>
<td>939</td>
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<td>OL</td>
<td>Topsoil</td>
<td>HSA</td>
<td>SB 3</td>
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<tr>
<td>4</td>
<td>938</td>
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<td>Glacial Till</td>
<td>HSA</td>
<td>SB 4</td>
<td>9</td>
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<td>CL</td>
<td>HSA</td>
<td>SB 5</td>
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<td>6</td>
<td>936</td>
<td>CLAYEY SAND, brown, wet, medium dense</td>
<td>SC</td>
<td>HSA</td>
<td>SB 6</td>
<td>4</td>
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**WATER LEVEL MEASUREMENTS**

<table>
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<tr>
<th>DATE</th>
<th>TIME</th>
<th>SAMPLED DEPTH</th>
<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
<th>CREW CHIEF</th>
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<td>933.45</td>
<td>3 1/4&quot; HSA 0' - 21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/29/19</td>
<td>4:38 pm</td>
<td>30</td>
<td>21</td>
<td>10</td>
<td>940.45</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
**LOG OF TEST BORING**

**PROJECT NAME:** Former Anchor Block  
**PROJECT LOCATION:** North St Paul, Minnesota

**BOARING NUMBER B-16**

**CLIENT/WSB #:** 014065-000  
**SURFACE ELEVATION:** 943.96 ft

<table>
<thead>
<tr>
<th>DEPTH (ft)</th>
<th>ELEV. (ft)</th>
<th>DESCRIPTION OF MATERIAL</th>
<th>USCS</th>
<th>GEOLOGIC ORIGIN</th>
<th>WIL</th>
<th>SAMPLE TYPE No.</th>
<th>N</th>
<th>MC %</th>
<th>PDD (psf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>943</td>
<td>FILL, Sand with Clay and Gravel, light brown, moist, a few Roots</td>
<td>Fill</td>
<td>Fill</td>
<td>HSA</td>
<td>SB 1</td>
<td>14</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>942</td>
<td>FILL, Clayey Sand, dark brown and browb, moist</td>
<td>Fill</td>
<td></td>
<td></td>
<td>SB 2</td>
<td>14</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>941</td>
<td>ORGANIC CLAY, black, wet</td>
<td>OL</td>
<td>Topsoil</td>
<td>HSA</td>
<td>SB 3</td>
<td>5</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>937</td>
<td>SILTY CLAY, olive brown, wet, soft</td>
<td>CL</td>
<td>Fine Alluvium</td>
<td>HSA</td>
<td>SB 4</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>932</td>
<td>SAND WITH A LITTLE GRAVEL, fine to medium grained, dark brown, waterbearing, loose</td>
<td>SP</td>
<td>Coarse Alluvium</td>
<td>HSA</td>
<td>SB 5</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>929</td>
<td>SAND WITH GRAVEL, fine grained, brown, waterbearing, loose to medium dense</td>
<td>SP</td>
<td></td>
<td>HSA</td>
<td>SB 6</td>
<td>9</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

End of Boring 21.0 ft.

**WATER LEVEL MEASUREMENTS**

**START:** 5/29/2019  
**END:** 5/29/2019

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>SAMPLED DEPTH</th>
<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
<th>項目名:</th>
<th>Notes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/29/2019</td>
<td>1:17 pm</td>
<td>21</td>
<td>19.5</td>
<td>12.0</td>
<td>931.96</td>
<td>3 1/4&quot; HSA 0' - 21</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/29/2019</td>
<td>1:30 pm</td>
<td>30</td>
<td>21</td>
<td>10</td>
<td>933.96</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
LOG OF TEST BORING

PROJECT NAME: Former Anchor Block
PROJECT LOCATION: North St Paul, Minnesota

CLIENT/WSB #: 014065-000
SURFACE ELEVATION: 943.03 ft

BORING NUMBER B-18

DEPTH (ft) | ELEV. (ft) | DESCRIPTION OF MATERIAL | USCS | GEOLOGIC ORIGIN | WIL | SAMPLE | TYPE | No. | N | MC % | PD/Depth | N-Value Plot
---|---|---|---|---|---|---|---|---|---|---|---|---|---
1 | 942 | FILL, Sand with Clay and Gravel, brown, wet | Fill | Fill | HSA | | | | | |
2 | 941 | | | | SB | 1 | 11 | 14 |
3 | 940 | FILL, Clayey Sand, pieces of Brick, brown and dark brown and red, saturated | Fill | | SB | 2 | 8 |
4 | 939 | | | | SB | 3 | 23 |
5 | 938 | CLAYEY SAND WITH GRAVEL, brown, saturated, loose to dense | SC | Glacial Till | SB | 4 | 14 |
6 | 937 | | | | SB | 5 | 30 |
7 | 936 | | | | SB | 6 | 20 |
8 | 935 | | | | | | | | | | |
9 | 934 | | | | | | | | | | |
10 | 933 | | | | | | | | | | |
11 | 932 | | | | | | | | | | |
12 | 931 | | | | | | | | | | |
13 | 930 | - cobbly | | | | | | | | | |
14 | 929 | | | | | | | | | | |
15 | 928 | | | | | | | | | | |
16 | 927 | | | | | | | | | | |
17 | 926 | | | | | | | | | | |
18 | 925 | | | | | | | | | | |
19 | 924 | | | | | | | | | | |
20 | 923 | | | | | | | | | | |
21 | 922 | | | | | | | | | | |
21 | 921 | End of Boring 21.0 ft.

WATER LEVEL MEASUREMENTS

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>SAMPLED DEPTH</th>
<th>CASING DEPTH</th>
<th>CAVE-IN DEPTH</th>
<th>WATER DEPTH</th>
<th>WATER ELEVATION</th>
<th>METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/29/2019</td>
<td>12:02 pm</td>
<td>21</td>
<td>19.5</td>
<td>10.0</td>
<td>933.03</td>
<td>3 1/4&quot; HSA 0' - 21</td>
<td></td>
</tr>
<tr>
<td>5/29/2019</td>
<td>12:12 pm</td>
<td>30</td>
<td>21</td>
<td>9.0</td>
<td>942.03</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
## SYMBOLS AND TERMINOLOGY ON TEST BORING LOG

### SYMBOLS

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSA</td>
<td>3 1/4&quot; L.D. Hollow Stem Auger</td>
<td>MC</td>
<td>Moisture content, % (ASTM D2216)</td>
</tr>
<tr>
<td>FA</td>
<td>Flight Auger</td>
<td>DD</td>
<td>Dry Density,pcf</td>
</tr>
<tr>
<td>HA</td>
<td>Hand Auger</td>
<td>LL</td>
<td>Liquid Limit (ASTM D4318)</td>
</tr>
<tr>
<td>RC</td>
<td>Size A, B, or N rotary casing</td>
<td>PL</td>
<td>Plastic Limit (ASTM D4318)</td>
</tr>
<tr>
<td>CS</td>
<td>Continuous split barrel sampling</td>
<td></td>
<td>- Inserts in last column</td>
</tr>
<tr>
<td>DM</td>
<td>Drilling Mud</td>
<td></td>
<td></td>
</tr>
<tr>
<td>JW</td>
<td>Jetting Water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB</td>
<td>2&quot; O.D. split barrel sampling</td>
<td>Qu</td>
<td>Unconfined compressive strength, psf (ASTM D2166)</td>
</tr>
<tr>
<td>_L</td>
<td>2 1/2&quot; or 3 1/2&quot; OD split barrel liner sampler</td>
<td>Pq</td>
<td>Penetrometer Reading, tsf (ASTM D1558)</td>
</tr>
<tr>
<td>_T</td>
<td>2&quot; or 3&quot; thin walled tube sample</td>
<td>Ts</td>
<td>Torvane Reading, ts</td>
</tr>
<tr>
<td>W</td>
<td>Wash sample</td>
<td>G</td>
<td>Specific Gravity (ASTM D854)</td>
</tr>
<tr>
<td>B</td>
<td>Bag sample</td>
<td>SL</td>
<td>Shrinkage limits (ASTM D427)</td>
</tr>
<tr>
<td>P</td>
<td>Test Pit sample</td>
<td>OC</td>
<td>Organic Content (ASTM D2974)</td>
</tr>
<tr>
<td>_Q</td>
<td>BQ, NQ, or PQ wire line system</td>
<td>SP</td>
<td>Swell Pressure, tsf (ASTM D4546)</td>
</tr>
<tr>
<td>_X</td>
<td>AX, BX, or NX double tube barrel</td>
<td>PS</td>
<td>Percent swell under pressure (ASTM D4546)</td>
</tr>
<tr>
<td>N</td>
<td>Standard penetration test, blow per foot</td>
<td>FS</td>
<td>Free swell, % (ASTM D4546)</td>
</tr>
<tr>
<td>CR</td>
<td>Core recovery, percent</td>
<td>SS</td>
<td>Shrink swell, % (ASTM D4546)</td>
</tr>
<tr>
<td>WL</td>
<td>Water level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n/a</td>
<td>no measurement recorded</td>
<td></td>
<td></td>
</tr>
<tr>
<td>_L</td>
<td>2 1/2&quot; or 3 1/2&quot; OD split barrel liner sampler</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TERMINOLOGY

#### Particle Sizes

<table>
<thead>
<tr>
<th>Type</th>
<th>Size Range</th>
<th>Term</th>
<th>Visual Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boulders</td>
<td>&gt; 12&quot;</td>
<td>Lenses</td>
<td>Small pockets of different soils</td>
</tr>
<tr>
<td>Cobble</td>
<td>3&quot; - 12&quot;</td>
<td>Lamination</td>
<td>&lt; 1/4&quot; thick stratum</td>
</tr>
<tr>
<td>Coarse gravel</td>
<td>3/4&quot; - 3&quot;</td>
<td>Layer</td>
<td>1/4&quot; - 12&quot; thick stratum</td>
</tr>
<tr>
<td>Fine gravel</td>
<td>#4 sieve - 3/4&quot;</td>
<td>Stratified</td>
<td>Altering lenses of varying materials or colors</td>
</tr>
<tr>
<td>Coarse sand</td>
<td>#4 sieve - #10 sieve</td>
<td>Varved</td>
<td>Altering laminations of clay, silt, fine sand, or colors</td>
</tr>
<tr>
<td>Medium sand</td>
<td>#10 sieve - #40 sieve</td>
<td>Dry</td>
<td>Powdery, no noticeable water</td>
</tr>
<tr>
<td>Fine sand</td>
<td>#40 sieve - #200 sieve</td>
<td>Moist</td>
<td>Damp, below saturation</td>
</tr>
<tr>
<td>Silt</td>
<td>100% passing #200 sieve, and &gt; 0.002mm</td>
<td>Wet</td>
<td>MC above plastic limit</td>
</tr>
<tr>
<td>Clay</td>
<td>100% passing #200 sieve, and &lt; 0.002mm</td>
<td>Waterbearing</td>
<td>Pervious soil below water table</td>
</tr>
</tbody>
</table>

#### Gravel Content

<table>
<thead>
<tr>
<th>Type</th>
<th>% Gravel</th>
<th>Description</th>
<th>% Gravel</th>
<th>Description</th>
<th>N-Value</th>
<th>Relative Density</th>
<th>N-Value</th>
<th>Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse-Grained Soil</td>
<td>2 - 15</td>
<td>A little gravel</td>
<td>2 - 5</td>
<td>Trace of gravel</td>
<td>0 - 4</td>
<td>Very loose</td>
<td>0 - 4</td>
<td>Very soft</td>
</tr>
<tr>
<td></td>
<td>16 - 30</td>
<td>With gravel</td>
<td>5 - 15</td>
<td>a little gravel</td>
<td>5 - 10</td>
<td>Loose</td>
<td>5 - 8</td>
<td>Soft</td>
</tr>
<tr>
<td></td>
<td>31 - 49</td>
<td>Gravelly</td>
<td>16 - 30</td>
<td>with gravel</td>
<td>11 - 30</td>
<td>Medium dense</td>
<td>9 - 15</td>
<td>Firm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>31 - 49</td>
<td>Gravelly</td>
<td>31 - 50</td>
<td>Dense</td>
<td>16 - 30</td>
<td>Hard</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt;50</td>
<td>Very dense</td>
<td>&gt;30</td>
<td>Very hard</td>
</tr>
</tbody>
</table>

#### Soil Layering and Moisture

<table>
<thead>
<tr>
<th>Type</th>
<th>Term</th>
<th>Visual Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse-Grained Soil</td>
<td>Trace of gravel</td>
<td>Pervious soil below water table</td>
</tr>
<tr>
<td>Silt</td>
<td>Wet</td>
<td>MC above plastic limit</td>
</tr>
<tr>
<td>Clay</td>
<td>Saturated</td>
<td>Cohesive soil with MC above liquit limit</td>
</tr>
</tbody>
</table>

#### Soil Layering and Moisture

<table>
<thead>
<tr>
<th>Type</th>
<th>Term</th>
<th>Visual Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coarse-Grained Soil</td>
<td>Trace of gravel</td>
<td>Pervious soil below water table</td>
</tr>
<tr>
<td>Silt</td>
<td>Wet</td>
<td>MC above plastic limit</td>
</tr>
<tr>
<td>Clay</td>
<td>Saturated</td>
<td>Cohesive soil with MC above liquit limit</td>
</tr>
</tbody>
</table>

#### Standard Penetration Resistance (N-value)

<table>
<thead>
<tr>
<th>N-Value</th>
<th>Relative Density</th>
<th>N-Value</th>
<th>Consistency</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 4</td>
<td>Very loose</td>
<td>0 - 4</td>
<td>Very soft</td>
</tr>
<tr>
<td>5 - 10</td>
<td>Loose</td>
<td>5 - 8</td>
<td>Soft</td>
</tr>
<tr>
<td>11 - 30</td>
<td>Medium dense</td>
<td>9 - 15</td>
<td>Firm</td>
</tr>
<tr>
<td>31 - 50</td>
<td>Dense</td>
<td>16 - 30</td>
<td>Hard</td>
</tr>
<tr>
<td>&gt;50</td>
<td>Very dense</td>
<td>&gt;30</td>
<td>Very hard</td>
</tr>
</tbody>
</table>
NOTICE TO REPORT USERS BORING LOG INFORMATION

Subsurface Profiles

The subsurface stratification lines on the graphic representation of the test borings show an approximate boundary between soil types or rock. The transition between materials is approximate and is usually far more gradual than shown. Estimating excavation depths, soil volumes, and other computations relying on the subsurface strata may not be possible to any degree of accuracy.

Water Level

WSB & Associates, Inc. took groundwater level readings in the exploratory borings, reviewed the data obtained, and discussed its interpretation of the data in the text of this report. The groundwater level may fluctuate due to seasonal variations caused by precipitation, snowmelt, rainfalls, construction or remediation activities, and/or other factors not evident at the time of measurement.

The actual determination of the subsurface water level is an interpretive process. Subsurface water level may not be accurately depicted by the levels indicated on the boring logs. Normally, a subsurface exploration obtains general information regarding subsurface features for design purposes. An accurate determination of subsurface water levels is not possible with a typical scope of work. The use of the subsurface water level information provided for estimating purposes or other site review can present a moderate to high risk of error.

The following information is obtained in the field and noted under "Water Level Measurements" at the bottom of the log.

- **Sample Depth:** The lowest depth of soil sampling at the time a water level measurement is taken.
- **Casing Depth:** The depth to the bottom of the casing or hollow stem auger at the time of water level measurement.
- **Cave-in Depth:** The depth at which a measuring tape stops in the bore hole.
- **Water Level:** The point in the bore hole at which free-standing water is encountered by a measure device from the surface.

Obstruction Depths

Obstructions and/or obstruction depths may be noted on the boring logs. Obstruction indicates the sampling equipment encountered resistance to penetration. It must be realized that continuation of drilling, the use of other drilling equipment or further exploration may provide information other than that depicted on the logs. The correlation of obstruction depths on the log with construction features such as rock excavation, foundation depths, or buried debris cannot normally be determined with any degree of accuracy. For example, penetration of weathered rock by soil sampling equipment may not correlate with removal by certain types of construction equipment. Using this information for estimating purposes often results in a high degree of misinterpretation.

Accurately identifying the obstruction or estimating depths where hard rock is present over the site requires a scope of service beyond the normal geotechnical exploration program. The risk of using the information noted on the boring logs for estimating purposes must be understood.
### Unified Soil Classification and Symbol Chart

**Coarse-Grained Soils** (more than 50% of material is larger than No. 200 sieve size.)

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GW</strong></td>
<td>Clean Gravels (Less than 5% fines)</td>
</tr>
<tr>
<td><strong>GP</strong></td>
<td>Well-graded gravels, gravel-sand mixtures, little or no fines</td>
</tr>
<tr>
<td><strong>GM</strong></td>
<td>Poorly-graded gravels, gravel-sand mixtures, little or no fines</td>
</tr>
<tr>
<td><strong>GC</strong></td>
<td>Gravels with fines (More than 12% fines)</td>
</tr>
<tr>
<td><strong>SW</strong></td>
<td>Clayey gravels, gravel-sand-clay mixtures</td>
</tr>
</tbody>
</table>

**Sands** (50% or more of coarse fraction smaller than No. 4 sieve size)

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SW</strong></td>
<td>Clean Sands (Less than 5% fines)</td>
</tr>
<tr>
<td><strong>SP</strong></td>
<td>Well-graded sands, gravelly sands, little or no fines</td>
</tr>
<tr>
<td><strong>SM</strong></td>
<td>Poorly graded sands, gravelly sands, little or no fines</td>
</tr>
<tr>
<td><strong>SC</strong></td>
<td>Sands with fines (More than 12% fines)</td>
</tr>
<tr>
<td><strong>SM</strong></td>
<td>Silty sands, sand-silt mixtures</td>
</tr>
</tbody>
</table>

**Fine-Grained Soils** (50% or more of material is smaller than No. 200 sieve size.)

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ML</strong></td>
<td>Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity</td>
</tr>
<tr>
<td><strong>CL</strong></td>
<td>Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays</td>
</tr>
<tr>
<td><strong>OL</strong></td>
<td>Organic silts and organic silty clays of low plasticity</td>
</tr>
<tr>
<td><strong>MH</strong></td>
<td>Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts</td>
</tr>
<tr>
<td><strong>CH</strong></td>
<td>Inorganic clays of high plasticity, fat clays</td>
</tr>
<tr>
<td><strong>OH</strong></td>
<td>Organic clays of medium to high plasticity, organic silts</td>
</tr>
</tbody>
</table>

---

### Laboratory Classification Criteria

**GW**

\[
C_u = \frac{D_{60}}{D_{10}} \text{ greater than 4; } C_c = \frac{D_{90}}{D_{10} \times D_{60}} \text{ between 1 and 3}
\]

**GP**

Not meeting all gradation requirements for GW

**GM**

Atterberg limits below "A" line or P.I. less than 4

Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols

**GC**

Atterberg limits above "A" line with P.I. greater than 7

**SW**

\[
C_u = \frac{D_{60}}{D_{10}} \text{ greater than 4; } C_c = \frac{D_{90}}{D_{10} \times D_{60}} \text{ between 1 and 3}
\]

**SP**

Not meeting all gradation requirements for GW

**SM**

Atterberg limits below "A" line or P.I. less than 4

Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols

**SC**

Atterberg limits above "A" line with P.I. greater than 7

---

### Plasticity Chart

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:
- Less than 5 percent: GW, GP, SW, SP
- More than 12 percent: GM, GC, SM, SC
- 5 to 12 percent: Borderline cases requiring dual symbols

---

### Summary

- **ML:** Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
- **CL:** Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
- **OL:** Organic silts and organic silty clays of low plasticity
- **MH:** Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
- **CH:** Inorganic clays of high plasticity, fat clays
- **OH:** Organic clays of medium to high plasticity, organic silts

---

100 of 113
MEMORANDUM

Date: 3/5/2020
To: Planning Commissioners
From: Olivia Boerschinger, Community Development
CC: Scott Duddeck, City Manager
     Debra Gustafson, Administrative and Community Services Director
Re: Keeping of Chickens and Bees Ordinance Recommendation

BACKGROUND
City Manager Scott Duddeck has requested that the Keeping of Bees and Chickens ordinance return for consideration by Planning Commission and City Council. City Council intends to take action on the ordinance proposed at March 17th meeting. Sixteen ordinances from communities throughout the metro area were reviewed and analyzed for the drafting of this ordinance. Attached you will find:

- Proposed ordinance language
- A summary matrix of surrounding cities chicken and bee ordinance characteristics
- Summary of other survey responses from metro communities regarding chicken and bee ordinances

ANALYSIS
The proposed ordinance was drafted after reviewing the ordinances of other municipalities, particularly those adjacent to North St. Paul, similar population, or similar lot sizes to North St. Paul. The proposed ordinances include:

Chickens
- Permit is required that shall include a detailed site plan including property lines, and location of the chicken coop and run
- An initial inspection of the coop, run, fence, and property is required to verify compliance prior to moving chickens on to the property
- Notice of application mailed to all adjacent property owners
- Coop and run are permitted in the rear yard only, and must maintain 5’ setback from property lines and 20’ setback from any principal building on an abutting lot
- Maximum number of hens allowed: 6
- No roosters permitted

Bees
- Permit is required that shall include a detailed site plan including property lines, and location of hives and water source
- Hives must be located at least 10’ from all property lines and 25’ setback from any principal building on an abutting lot
- Flyaway barriers are required for any hive within 20’ of a property line
- Applicants shall completed a beekeeping training course prior to issuance of a permit
• An initial inspection of the property, hives, water source, and flyaway barrier (when applicable) is required prior to bringing bees on to the property
• Notice of application mailed to all property owners within 150’ of applicant
• Maximum number of colonies allowed: 4

RECOMMENDED ACTION
Staff recommends that the Planning Commission make a motion to recommend the proposed ordinance additions regarding Keeping of Bees and Chickens to the City Council for approval.
CITY OF NORTH ST. PAUL

ORDINANCE NO. ___

AN ORDINANCE AMENDING THE
NORTH SAINT PAUL CITY CODE OF ORDINANCES
TITLE IX, CHAPTER 95
PERTAINING TO THE KEEPING OF CHICKENS AND BEES

SECTION 1. Title IX, Chapter 95, Section 95.01 of the North St. Paul City Code is hereby amended as follows. The underlined text shows the proposed additions to the ordinance and the struck out text shows deleted wording:

§ 95.01 DEFINITIONS

*CHICKEN.* A domesticated bird (of the species *Gallus domesticus* or various similar or related birds) that serves as a source of eggs and/or meat.

*COOP.* The structure for the keeping or housing of chickens.

*HEN.* A female chicken.

*ROOSTER.* A male chicken.

*RUN.* A fully enclosed area attached to a coop where hens can roam.

*COLONY.* An aggregate of bees consisting principally of workers, but having, when perfect, one queen, drones, brood, combs and honey.

*HIVE.* The receptacle inhabited by a colony that is manufactured for that purpose.

*HONEYBEE.* All life stages of the common domestic honey bee, *Apis mellifera*. African subspecies and Africanized hybrids are not considered to be honeybees for the purposes of this Chapter.

*FARM ANIMALS.* Those animals commonly associated with a farm or performing work in an agricultural setting. Unless otherwise defined, *FARM ANIMALS* shall include members of the equestrian family (horses, mules), bovine family (cows, bulls), sheep, poultry (chickens, turkeys), fowl (ducks, geese), swine (including Vietnamese pot-bellied pigs), goats, bees, and other animals associated with a farm, ranch or stable.

SECTION 2. Title IX, Chapter 95, Section 95.23 of the North St. Paul City Code is hereby amended with the additions as follows. The underlined text shows the proposed additions to the ordinance and the struck out text shows deleted wording:
§ 95.23 EXOTIC PETS/NON-DOMESTIC ANIMALS/FARM ANIMALS.

No person shall harbor any exotic pets, non-domestic pets, or farm animals, nor build, maintain or use a structure for the keeping of such animals within the city limits. Exceptions include those animals in subsections below, and shall not be kept within the City without first obtaining a permit from the City.

(A) KEEPING OF CHICKENS.

a. Intent. It is recognized that the ability to cultivate one’s own food is a sustainable activity that can also be a rewarding pastime and intent of this ordinance to permit the keeping and maintenance of hens in a clean and sanitary manner that does not create a nuisance and is not detrimental to the public health, safety and welfare of the residents of the City.

b. Permit Required. No person shall keep, maintain, or otherwise care for chickens within the City without first obtaining a permit for the keeping of chickens from the City.

c. Conditions. The keeping of chickens is permitted, pursuant to a permit issued under this section, subject to the following conditions:

i. All premises in which hens are kept or maintained shall be kept reasonably clean from filth, garbage, and any substances which attract rodents. A coop and its surroundings, including any run, must be cleaned frequently enough to control odor. Feces shall not be allowed to accumulate in a way that creates an unsanitary condition or causes odors detectible on another property.

ii. Coops shall be constructed and maintained so as to be predator and rodent-proof and must be maintained in good condition and working order.

iii. All grains and other hen food shall be kept in rodent proof container.

iv. Hens shall not be kept in such a manner as to constitute a nuisance to the occupants of adjacent properties and must be kept in a coop. An exception may be made for hens under (4) months in age to be temporarily kept in an accessory structure to facilitate the regulation of their temperature.

v. All coops and runs shall be located in the rear yard and shall be at least twenty (20) feet from adjacent habitable structures and five (5) feet from all property lines. Portable coops and runs are allowed, but must be identified on the required site plan and shall comply with the setback requirements of this provision.

vi. A coop shall provide a minimum of four (4) square feet of floor space per hen.

vii. In no case shall the number of hens on the property exceed six (6).

viii. Roosters are prohibited.

ix. Breeding is prohibited.

x. Hens must be contained within the coop or run whenever unattended, but when attended by the owner, may be allowed in a yard completely fenced
by a fence at least four (4) feet in height. Hens must be confined to the owner’s premises at all times, may not roam at large, and must be secured inside a coop from sunset to sunrise each day.

xi. Dead hens must be disposed of according to the Minnesota Board of Animal Health rules.

d. Permit Process:
   i. An applicant shall complete an application form provided by the City. The application shall include a description of all coops. The applicant must also provide a site plan depicting the property and showing the location, size and setbacks of the coop and run from all adjacent habitable structures and property lines.
   
   ii. Applicants who are not the owner of record of the property where chickens will be kept shall provide evidence of the property owner’s consent to the keeping of chickens on the property.
   
   iii. A chicken permit is non-transferable and shall only permit the keeping of chicken by the permit holder at the location listed on the permit.

iv. An initial inspection of the coop, fence and property is required to verify compliance with this ordinance and the site plan submitted with the application prior to moving chickens on to the property.

e. Notice to Surrounding Property Owners: Once a complete application from is received from an applicant, the City shall provide written notice of and include a copy of said application to property owners of properties directly abutting the applicant’s property.

f. Right of Entry for Inspection: City Staff may enter and inspect any property for which a chicken permit has been issued following notice to the property owner at any reasonable time for the purpose of ensuring compliance with this section. It shall be deemed a violation of this section for any person to resist, impede, or hinder City Staff or their designee in the performance of their duties in inspecting any chicken-related materials.

g. Violation and Penalties: If a violation of the terms of this Section or the chicken permit is found, the City shall give written notice thereof to the permit holder. If the violation is not remedied within ten (10) days of the date of the notice, a misdemeanor citation may be issued and/or the chicken permit may be revoked following notice and a hearing before the City Council.

(B) KEEPING OF BEES

  a. Certain Beekeeping Permitted: It is the purpose and the intent of this section to permit the keeping of honeybees as a hobby, subject to the regulations contained hereinafter. It is recognized that the ability to cultivate one’s own food is a sustainable activity that can also be a rewarding pastime, and that gentle strains of honeybees can be maintained within populated areas without causing a nuisance if carefully managed. It is the purposed and intent of this section to permit the
keeping of bees in such ways that is not a nuisance or detrimental to the public health, safety, or welfare.

b. Permit Required: No person shall keep, maintain, or otherwise care for bees within the City without first obtaining a beekeeping permit.

c. Conditions: The keeping of honeybees is permitted pursuant to a permit issued under this section, subject to the following conditions:
   i. No more than four colonies may be kept on any one property.
   ii. Honeybee colonies shall be kept in hives with removable frames, which shall be kept in sound and usable condition. Each hive structure shall not exceed twenty (20) cubic feet in volume
   iii. A convenient source of water shall be available within ten (10) feet of the hives at all times that the colonies remain active outside of the hive. An adjacent lake or pond shall not constitute an acceptable convenient source of water.
   iv. No wax comb or other material that might encourage robbing by other bees shall be left exposed outdoors. Such materials shall be stored in sealed insect-proof containers or placed within a building.
   v. Beekeeping equipment shall be maintained in good condition and unused beekeeping equipment shall be protected to prevent occupancy by swarming honeybees.
   vi. Hives shall be continuously managed to provide adequate living space for their resident honeybees to control swarming.
   vii. In any instance in which a colony exhibits unusually aggressive behavior, it shall be the duty of the permit holder to promptly take appropriate action to address the behavior.
   viii. No honey may be sold from the property where the gives are located unless a home occupation interim use permit has been issued for the property.
   ix. Hives must be located at least ten (10) feet from all property lines and at least twenty-five (25) feet from a principal building on an abutting lot. Hives may not be located in a front or side yard.
   x. A flyaway barrier shall shield any part of a property line that is within twenty (20) feet from a hive. The flyaway barrier shall be six (6) feet in height and shall consist of a wall, fence, dense vegetation or a combination thereof such that the bees will fly over, rather than through to reach the hive.
   xi. Each hive shall be posted with a “Warning: Bee Hive” sign consisting of letters at least four (4) inches tall.

d. Permit Process:
   i. An applicant shall complete and application form provided by the City. The application shall include a site plan depicting the property and show the location, size, and type of the hives.
ii. Applicants shall complete a beekeeping training course prior to issuance of a permit. Proof of completion of the required training course shall be provided at the time of permit application. The curriculum of the beekeeping course shall be similar to that of the beekeeping courses offered by the University of Minnesota, Century College, or the Three Rivers Park District.

iii. Permit holders shall submit a new application to the City following issuance of a beekeeping permit if the permittee proposes to increase the number of colonies located on the property.

iv. Applicants who are not the owner of record of the property where honeybees will be kept shall provide evidence of the property owner’s consent to the beekeeping activity on the property.

v. Notice that an application for a beekeeping permit has been submitted shall be mailed to all recorded owners of property located within one hundred fifty (150) feet of the property lines of the property where the beekeeping is proposed to occur.

vi. A beekeeping permit is non-transferable and shall only permit the keeping of bees by the permit holder at the location listed on the permit.

vii. An initial inspection of the property, hive(s), water source, and flyaway barrier is required to verify compliance with this ordinance and the site plan submitted with the application prior to bringing bees on to the property.

5. Right of Entry for Inspection: City Staff may enter and inspect any property for which a beekeeping permit has been issued following notice to the property owner at any reasonable time for the purpose of ensuring compliance with this section.

6. Violation and Penalties: If a violation of the terms of this Section or the beekeeping permit is found, the City shall give written notice thereof to the permit holder. If the violation is not remedied within ten (10) days of the date of the notice, a misdemeanor citation may be issued and/or the beekeeping permit may be revoked following notice and a hearing before the City Council.

SECTION 3. This Ordinance shall become effective upon the approval of the City Council. The City Clerk is hereby directed to publish this ordinance as required by law.
# Municipal Bee Keeping Ordinances

<table>
<thead>
<tr>
<th>City</th>
<th>Initial Permit Fee</th>
<th>Renewal Fee</th>
<th>Permit Renewal</th>
<th>Property Line Setbacks</th>
<th>Adjacent Home Setback</th>
<th>Inspection Required</th>
<th>Site Plan Required</th>
<th>Training Required</th>
<th>Neighbor Consent Required</th>
<th>Colonies Allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagan</td>
<td>$50</td>
<td>$50</td>
<td>annually</td>
<td>20'</td>
<td>30'</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>2+, per lot size</td>
</tr>
<tr>
<td>Gem Lake</td>
<td>Currently no bee ordinance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inver Grove Heights</td>
<td>Only allowed in agricultural zones</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake Elmo</td>
<td>$25</td>
<td>—</td>
<td>2 years</td>
<td>25'</td>
<td>not specified</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>within 150'</td>
<td>4 - only on lots .75 acre or larger</td>
</tr>
<tr>
<td>Lakeville</td>
<td>Interim Use Permit</td>
<td>20'</td>
<td>not specified</td>
<td>yes</td>
<td>based on requirements of IUP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2-8, per lot size</td>
</tr>
<tr>
<td>Mahtomedi</td>
<td>$30</td>
<td>no</td>
<td>5 years</td>
<td>10'</td>
<td>25'</td>
<td>no</td>
<td>yes</td>
<td>yes</td>
<td>within 350'</td>
<td>4</td>
</tr>
<tr>
<td>Maplewood</td>
<td>—</td>
<td>—</td>
<td>permitted as accessory use</td>
<td>5'</td>
<td>25'</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>Must not cause a public nuisance</td>
<td></td>
</tr>
<tr>
<td>Mendota Heights</td>
<td>—</td>
<td>—</td>
<td>permitted as accessory use</td>
<td>100'</td>
<td>not specified</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>10</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>$105</td>
<td>none</td>
<td>annually</td>
<td>25'</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>all immediately adjacent</td>
<td>2-8, per lot size</td>
</tr>
<tr>
<td>Mounds View</td>
<td>$50</td>
<td>—</td>
<td>—</td>
<td>10'</td>
<td>25'</td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>not specified</td>
<td>4</td>
</tr>
<tr>
<td>Oakdale</td>
<td>Keeping of Animals Application maintained by Police Department</td>
<td>yes</td>
<td>—</td>
<td>consent from 75% of neighbors within 150'</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Shoreview</td>
<td>$30</td>
<td>$30</td>
<td>2 years</td>
<td>15'</td>
<td>25'</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>written to neighbors 150' after permit issued</td>
<td>2-8, per lot size</td>
</tr>
<tr>
<td>Location</td>
<td>Fee 1</td>
<td>Fee 2</td>
<td>Frequency</td>
<td>Min.'</td>
<td>Max.'</td>
<td>Zoning</td>
<td>Distance</td>
<td>Consent Notes</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>St. Paul</td>
<td>$76</td>
<td>$28</td>
<td>annually</td>
<td>10'</td>
<td>25'</td>
<td>yes</td>
<td>yes</td>
<td>yes 75% consent from adjacent properties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stillwater</td>
<td>$50</td>
<td>none</td>
<td>2 years</td>
<td>25'</td>
<td>no</td>
<td>no</td>
<td>yes</td>
<td>yes, within 150' 2 up to unlimited per lot size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vadnais Heights</td>
<td>—</td>
<td>—</td>
<td>permitted as conditional use</td>
<td>20'</td>
<td>50'</td>
<td>yes</td>
<td>—</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White Bear Lake</td>
<td>$30</td>
<td>$30</td>
<td>5 years</td>
<td>10'</td>
<td>25'</td>
<td>yes</td>
<td>yes</td>
<td>yes, within 100' 4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Municipal Chicken Ordinances

<table>
<thead>
<tr>
<th>City</th>
<th>Initial Permit Fee</th>
<th>Renewal Fee</th>
<th>Permits</th>
<th>Permit Renewal</th>
<th>Property Line Setbacks</th>
<th>Adjacent Home Setback</th>
<th>Structure Requirements</th>
<th>Inspection Required</th>
<th>Site plan Required</th>
<th>Training Required</th>
<th>Neighbor Consent Required</th>
<th>Hens Allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eagan</td>
<td>$50</td>
<td>$50</td>
<td>annually</td>
<td>5' side 10' rear</td>
<td>25'</td>
<td>rear yard only, coop min. size 2 sf/chicken, run 5 sf/chicken, meet Accessory Structure code</td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>not specified</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Gem Lake</td>
<td>$25</td>
<td>$15</td>
<td>annually</td>
<td>not specified</td>
<td>50'</td>
<td>rear yard only; 5 sf/chicken (max 200 sf); run 11 sf/chicken</td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>not specified</td>
<td>based on coop size</td>
<td></td>
</tr>
<tr>
<td>Inver Grove Heights</td>
<td>$25</td>
<td>$25</td>
<td>2 years</td>
<td>10'</td>
<td>25'</td>
<td>must comply with Zoning Code for accessory structure</td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>City notifies all adjacent properties</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Lake Elmo</td>
<td>$25</td>
<td>$25</td>
<td>2 years</td>
<td>5'</td>
<td>20'</td>
<td>rear yard only; 4 sf/chicken, runs 10 ft/chicken</td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>notice to properties within 150'</td>
<td>4-22, per lot size</td>
<td></td>
</tr>
<tr>
<td>Lakeville</td>
<td>$100</td>
<td>not specified</td>
<td>not specified</td>
<td>20'</td>
<td>closer to building on principal property than any other</td>
<td>rear yard only; coop: 2 sf/chicken, max 32 sf; run: 5-20 sf/chicken</td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>not specified</td>
<td>3</td>
<td></td>
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<tr>
<td>Mahtomedi</td>
<td>$50</td>
<td>$50</td>
<td>5 years</td>
<td>5'</td>
<td>20'</td>
<td>rear yard only; coop 4 sf/hen, fenced run or yard</td>
<td>yes</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Maplewood</td>
<td>$75</td>
<td>$50</td>
<td>2 years</td>
<td>5'</td>
<td>not specified</td>
<td>rear or side yard; coop 4sf/chicken; run 10 sf/chicken</td>
<td>yes</td>
<td>yes</td>
<td>no</td>
<td>60% consent of adjacent properties or, proof that applicant property lines are 150' away from any home</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Mendota Heights</td>
<td>$15</td>
<td>$50</td>
<td>annually</td>
<td>10'</td>
<td>not specified</td>
<td>rear yard only; max 144 sf; coop: 2sf/chicken, run: 5 sf/chicken</td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>not specified</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Minneapolis</td>
<td>$30-80</td>
<td>same</td>
<td>annually</td>
<td>not specified</td>
<td>20'</td>
<td>Rear yard only; screened from habitable buildings; run must have at least 10 sf/chicken</td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>written consent of 80% of neighbors within 100'</td>
<td>up to 30</td>
<td></td>
</tr>
<tr>
<td>Mounds View</td>
<td>$100</td>
<td>$30</td>
<td>annually</td>
<td>20'</td>
<td>20'</td>
<td>rear yard only; comply with accessory structure conditions</td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>notice mailed to properties within 350'</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Oakdale</td>
<td>Keeping of Animals Application maintained by Police Department</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>75% consent of adjacent properties or, proof that applicant property lines are 150' away from any home</td>
<td>not specified</td>
<td></td>
</tr>
<tr>
<td>Shoreview</td>
<td>$30</td>
<td>None</td>
<td>2 years</td>
<td>10'</td>
<td>30'</td>
<td>rear yard only, shelter in compliance with other accessory structure code</td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>not specified</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Minimum</td>
<td>Maximum</td>
<td>Term</td>
<td>Minimum</td>
<td>Maximum</td>
<td>Minimum</td>
<td>Maximum</td>
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</tr>
<tr>
<td>St. Paul</td>
<td>$76</td>
<td>$28</td>
<td>annually</td>
<td>5'</td>
<td>not specified</td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>75% approval of owner/renter within 150'</td>
<td>up to 15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stillwater</td>
<td>$50</td>
<td>$50</td>
<td>2 years</td>
<td>5' side 10' rear</td>
<td>20'</td>
<td>rear yard only; coop 4 ft/chicken</td>
<td>no</td>
<td>yes</td>
<td>City publication acknowledgement</td>
<td>yes, mailed to those 150' from property</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Vadnais Heights</td>
<td>not specified</td>
<td>20'</td>
<td>50'</td>
<td>rear yard only; 120 sf max, min 4 sf/chicken</td>
<td>yes</td>
<td>yes</td>
<td>not specified</td>
<td>&lt;.5 acre lot, 75% concen of adjacent owners</td>
<td>5-20, per lot size</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White Bear Lake</td>
<td>$50</td>
<td>_</td>
<td>none</td>
<td>5'</td>
<td>50'</td>
<td>coop min 4sf/chicken, max 30 sf total, run 10 sf/hen if no access to fenced yard</td>
<td>yes</td>
<td>yes</td>
<td>only if less than 50' setback from neighboring structures</td>
<td>yes, if less than 50' from neighbors home</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
32 cities contacted  (27 allow chickens)  (5 do not allow chickens)

Summary of Chicken survey. Following are some of the findings of the 27 that allow chickens.

Codes
21 have a chicken code
6 have no code

Permit fees
5 have a one-time permit fee only
4 have a large initial permit fee and a smaller annual fee beginning the second year
8 charge fees semi annually
10 have no permit fees

Neighbor consent
Most cities don’t require neighbor consent. The cities requiring consent state this creates most of their complaints.

Training
Over half don’t require training

Inspection
Over half don’t require Inspection

Hens allowed
From 1-10. The average is about 4-5

Complaints
Very few except for Maplewood (Nearly all are because of neighbor consent req.)

Total Permits
Average less than 20 per city

32 cities contacted  (21 allow bees)  (11 do not allow bees)

Summary of Bee survey. Following are some of the findings of the 21 that allow bees.

Codes
9 have a bee code
12 have no code

Permit fees
4 have a one-time permit fee only
2 have a large initial permit fee and a smaller annual fee beginning the second year
3 charge fees semi annually
12 have no permit fees

Neighbor consent
Most cities don’t require neighbor consent.

Training
Over half require training

Inspection
Almost all don’t require Inspection

Hives allowed
From 2 - Any. The average is 3

Complaints
All report zero to very few complaints

Total Permits
Average about 5 per city