

Applicant: Steve Carpenter: Archetype Design
Consultant: David Knaeble: Civil Site Group
Project: Building Addition and Site Improvements
Location: 9641 James Avenue: Bloomington
Rule(s): 4 and 5
Reviewer: BCO

General Background & Comments

The project proposes the construction of a 1,200 square foot building addition with miscellaneous site improvements including the installation of concrete curb around the perimeter of the current pavement at 9641 James Avenue in Bloomington.

The proposed work will extend onto City of Bloomington right-of-way to “tie-in” with the existing topography and for the construction of a concrete sidewalk.

The project site information includes the following:

- Existing Site Area: 30,559 square feet
- Existing Site Impervious Area: 24,051 square feet
- Proposed Site Impervious Area: 22,564 square feet
- A decrease of 1,487 square feet in the site impervious area - a 6.2% decrease
- New and Reconstructed Impervious Area: 4,532 square feet
- 18.8% of the existing site impervious area is to be disturbed and reconstructed
- Total disturbed area: 9,850 square feet

The Nine Mile Creek Watershed District’s Rule for Redevelopment, Rule 4.2.3, states, if a proposed activity will disturb more than 50% of the existing impervious surface on the site or will increase the imperviousness of the site by more than 50%, stormwater management will apply to the entire project site. Otherwise, the stormwater requirements will apply only to the disturbed, replaced and net additional impervious surface. Since the project will disturb less than 50% of the existing impervious surface on the site (18.8%) and there will be a decrease of 6.2 % of the site impervious area, applicable stormwater management criterion is required for the 9,850 square feet of disturbed area, including the 4,532 square feet of new, disturbed, and reconstructed impervious surface. Management of stormwater runoff from 130 lineal feet of 8-foot sidewalk to be constructed within the James Avenue right-of-way will be provided by

a minimum of 4-feet of pervious area downgradient of the impervious area in accordance with subsection 4.2.2c of the Rules.

The District's requirements for both stormwater management and erosion and sediment control apply to the project because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area is altered, Rules 4.2.1a and b and 5.2.1a and b.

Exhibits

1. Permit Application signed and dated March 31, 2021, received April 5, 2021.
2. Plans dated March 17, 2021 prepared by Civil Site Group.
3. Stormwater Management Report dated March 17, 2021 prepared by Civil Site Group.
4. Geotechnical Report dated August 11, 2015 completed by Braun Intertec (submitted as part of Permit #2015-117 for 9601 James Avenue – located immediately north of the site).

The application with the submittal items above is complete.

4.0 Stormwater Management

Stormwater management for compliance with Rule 4.3.1 will be provided by an underground stormwater management facility (UGSWMF) located in the "green space" area behind the curb of the southern parking lot.

The UGSWMF will provide volume retention and water quality management for the site runoff. Rate control will be provided by the 1,487 square feet reduction in the site impervious area. Currently, stormwater management is not provided for the site runoff.

Currently, the majority of stormwater runoff from the site drains to catch basins throughout the parking lot that convey stormwater to discharge points along Wanda Miller Pond.

Rule 4.3.1b requires the 2-, 10-, and 100-year post development peak runoff rates be equal to or less than the existing discharge rates where stormwater leaves the site. The applicant used a HydroCAD hydrologic model to simulate runoff rates from the site. The existing and proposed 2-, 10- and 100-year frequency discharges from the site are:

Existing Conditions			
	2 year (c.f.s.)	10 year (c.f.s.)	100 year (c.f.s.)
Total	2.2	3.7	7.1

Proposed Conditions			
	2 year (c.f.s.)	10 year (c.f.s.)	100 year (c.f.s.)
Total	2.0	3.4	6.7

Rule 4.3.1b is met.

The geotechnical evaluation prepared by Braun Intertec and submitted for Permit #2015-117, for the site immediately north (9601 James Avenue) of the 9641 James site identified the underlying soil within the area as poorly graded sand (SP) with groundwater not encountered to elevation 800.5 M.S.L. A design infiltration rate of 0.8 inches per hour has been used for the UGSWMF, conforming with infiltration rates shown in the Minnesota Storm Water Manual.

An infiltration volume of 415 cubic feet is required from the proposed 4,532 square feet of new, disturbed, and reconstructed site impervious area, Rule 4.3.1a. The UGSWMF provides a volume of 435 cubic feet (415 cubic feet required) with an area of 557 square feet (230 square feet required). The retention volume, using a design infiltration rate of 0.8 inches per hour and area for infiltration provided, can be drawn down within 48-hours. Rule 4.3.1a is met.

The District's water quality criterion requires 60% annual removal efficiency for total phosphorus and 90% annual removal efficiency for total suspended solids. The results from the MIDS model provided show that the UGSWMF will provide an annual removal efficiency of 97% for total phosphorus (0.14 lbs.) and 97% for total suspended solids (26 lbs.) We agree with the modeling results. Rule 4.3.1c is met. In accordance with Rule 4.3.1a (i), where infiltration facilities, practices or systems are proposed, pre-treatment of runoff must be provided.

Rule 4.5.4d (i) requires at least three feet of separation between the bottom of a stormwater management facility and groundwater. From the Braun Intertec geotechnical report, groundwater was not encountered on the 9601 James Avenue site to elevation 800.5 M.S.L. The bottom of the UGSWMF is shown to be 806 M.S.L., providing a separation of 5.5 feet, complying with Rule 4.5.4d (i).

Rule 4.3.3c states that all new and reconstructed buildings must be constructed such that the low floor is at least two feet above the 100-year high water elevation or one foot above the emergency overflow of a constructed facility. Additionally, a separation of at least two feet must be provided between the 100-year high-water elevation of the stormwater management facilities and the elevation where surface water could enter a structure. The finished floor elevation and low opening of both the existing building and proposed addition is identified as 811.9 M.S.L. The UGSWMF 100-year high water elevation is 809.1 M.S.L., providing 2.8 feet of separation. The project conforms to NMCWD Rule 4.3.3.

In accordance with Rule 4.3.1a (i), where infiltration facilities, practices or systems are proposed, pre-treatment of runoff must be provided. An isolator row constructed as part of the UGSWMF will provide pretreatment for runoff entering the UGSWMF. Rule 4.3.1a (i) is met.

In accordance with Rule 4.3.4, a post-project chloride management plan must be provided that will, 1) designate an individual authorized to implement the chloride-use plan and 2) designate a MPCA certified salt applicator engaged in the implementation of the chloride-use plan for the site.

5.0 Erosion and Sediment Control

The requirements of Rule 5.0 - Erosion and Sediment Control are applicable to the project since land-disturbing activities will involve excavation of more than 50 cubic yards of material and will disturb 5,000 square feet of more of surface area or vegetation, Rules 5.2.1a and b.

For temporary erosion control measures, silt fence will be utilized at the limits of the proposed areas of disturbance. Storm drain inlet protection will be provided onsite and along James Avenue and West 97th Street downgradient from land-disturbing activities.

David Knaeble, Civil Site Group., is the project contact.

11.0 Fees

Fees for the project are:

Rules 4.0 and 5.0	\$XX
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12.0 Financial Assurances

Financial Assurances for the project are:

Rule 4: Volume Retention: 230 sq. ft. x \$12/sq. ft. = \$2,760	\$2,760
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Chloride Management:	\$5,000
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Rule 5: Perimeter control: 875 L.F. x \$2.50/L.F. = \$2,188	
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Inlet Control: 4 x \$100/each = \$400	
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Site restoration: 0.23 acres x \$2,500/acre = \$575	\$3,163
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Contingency and Administration	\$2,577
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Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. Rules 4 and 5 are met.
3. The proposed stormwater management facility will provide volume retention, rate control and water quality management in accordance with Rules 4.3.1 a, b, and c, respectively. In accordance with NMCWD Rule 4.3.5, the applicant must provide a maintenance and inspection plan that identifies and protects the design, capacity and functionality of the stormwater management facility.

Recommendation

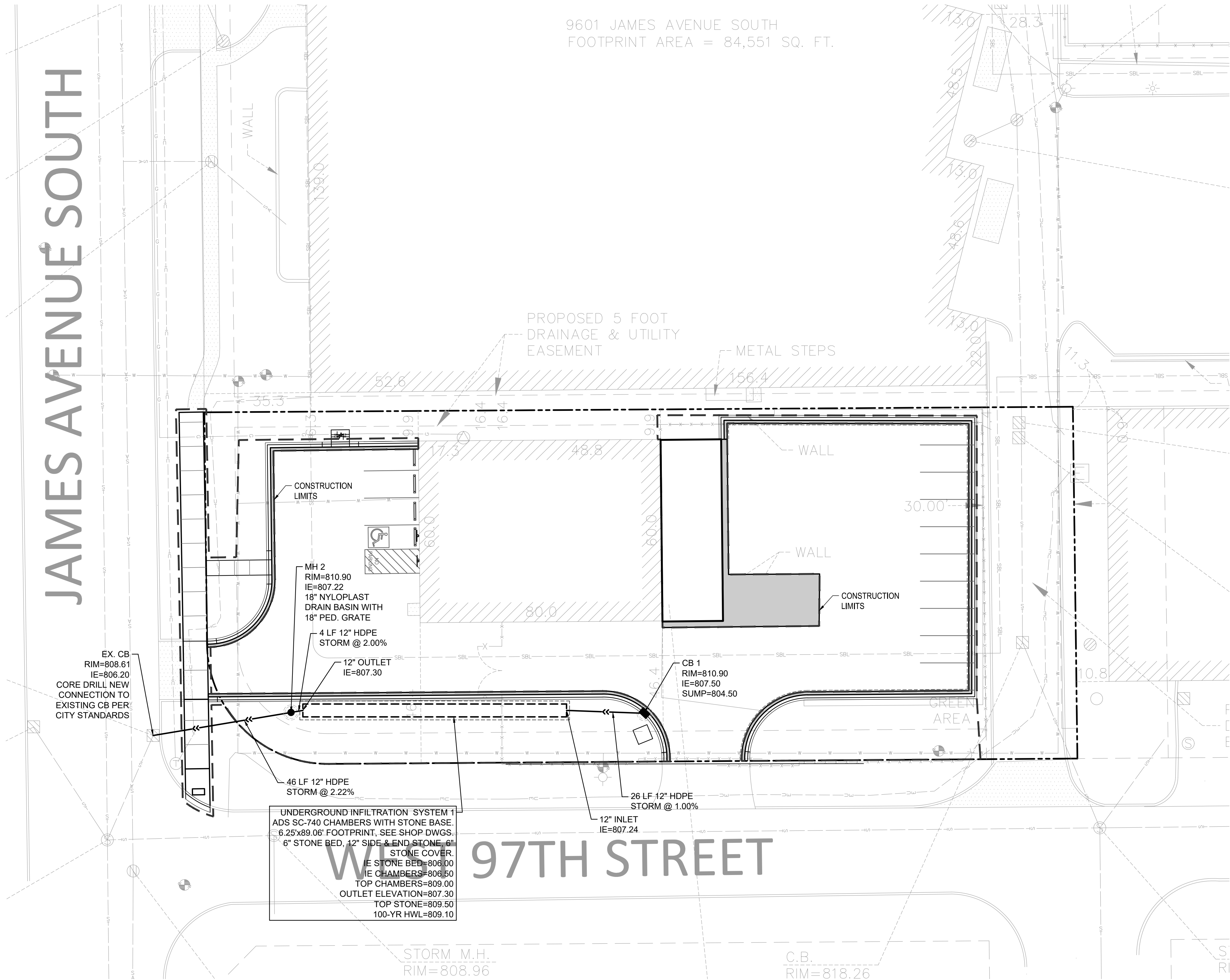
Approval, contingent upon:

1. In accordance with Rule 1.2.1, written documentation must be provided indicating Steve Carpenter, Archetype Design, is the property owner or an authorized representative of the property owner for obtaining the project permit and compliance with the requirements of the Nine Mile Creek Watershed District.
2. General Conditions
3. Financial Assurance in the amount of \$13,500, including \$8,500 for stormwater management, erosion control, and site restoration, and \$5,000 for compliance with the chloride management requirements.

4. A receipt showing recordation of a maintenance declaration for the on-site stormwater management facility, Rule 4.3.5. A draft of the declaration must be approved by the District prior to recordation.

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

1. Per Rule 4.5.8, an as-built drawing of the stormwater facility conforming to the design specifications, including a stage volume relationship in tabular form for the underground stormwater management facility.
2. Submission of a plan for post-project management of Chloride use on the site. The plan must include 1) the designation of an individual authorized to implement the chloride use plan and 2) the designation of a Minnesota Pollution Control Agency certified salt applicator engaged in the implementation of the chloride-use plan for the site. The release of the \$5,000 of the financial assurance required for the chloride-management plan requires that chloride-management plan has been provided and approved by the District's Administrator.
3. For the release of the \$8,500 financial assurance required, Rule 12.4.1b requires demonstration and confirmation that the stormwater management facility has been constructed or installed and is functioning as designed and permitted. Verification, through daily observation logs and photographs, must be provided showing the stormwater facilities used for volume retention have drawn down within 48 hours from the completion of two 1-inch (approximate) separate rainfall events.



CITY OF BLOOMINGTON UTILITY NOTES:

- CONTRACTOR SHALL OBTAIN A PUBLIC WORKS PERMIT FOR UNDERGROUND WORK WITHIN THE RIGHT-OF-WAY. PERMIT IS REQUIRED PRIOR TO REMOVALS OR INSTALLATION. CONTACT UTILITIES (952-563-4568) FOR PERMIT INFORMATION.
- UTILITY PERMITS ARE REQUIRED FOR CONNECTIONS TO THE PUBLIC STORM SANITARY, AND WATER SYSTEM. CONTACT UTILITIES (952-563-8777) FOR PERMIT INFORMATION.
- PROVIDE A MINIMUM OF 8' AND A MAXIMUM OF 10' OF COVER OVER ALL WATER LINES, VALVES, & SERVICES.
- CONTRACTOR MUST PROVIDE A UTILITY AS-BUILT TO THE CITY PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY.
- HDPE PIPE CONNECTIONS INTO ALL CONCRETE STRUCTURES MUST BE MADE WITH WATER TIGHT MATERIALS UTILIZING AN A-LOK OR WATERSTOP GASKET OR BOOT, CAST-IN-PLACE RUBBER BOOT, OR APPROVED EQUAL. WHERE THE ALIGNMENT PRECLUDES THE USE OF THE ABOVE APPROVED WATERTIGHT METHODS, CONSEAL 231 WATERSTOP SEALANT, OR APPROVED EQUAL WILL ONLY BE ALLOWED AS APPROVED BY THE ENGINEER.
- CONTRACTOR TO KEEP SAWCUT LIMITS OUTSIDE OF WHEEL PATHS.

GENERAL UTILITY NOTES:

- ALL EXISTING UTILITY LOCATIONS SHOWN ARE APPROXIMATE. CONTACT "GOPHER STATE ONE CALL" (651-454-0002 OR 800-252-1166) FOR UTILITY LOCATIONS. 48 HOURS PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.
- SEE SITE PLAN FOR HORIZONTAL DIMENSIONS AND LAYOUT.
- CONTRACTOR SHALL FIELD VERIFY LOCATION AND ELEVATION OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF DISCREPANCIES OR VARIATIONS FROM THE PLANS.
- UTILITY INSTALLATION SHALL CONFORM TO THE CURRENT EDITION OF "STANDARD SPECIFICATIONS FOR WATER MAIN AND SERVICE LINE INSTALLATION" AND "SANITARY SEWER AND STORM SEWER INSTALLATION" AS PREPARED BY THE CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM), AND SHALL CONFORM WITH THE REQUIREMENTS OF THE CITY AND THE PROJECT SPECIFICATIONS.
- CASTINGS SHALL BE SALVAGED FROM STRUCTURE REMOVALS AND RE-USED OR PLACED AT THE DIRECTION OF THE OWNER.
- ALL WATER PIPE SHALL BE CLASS 52 DUCTILE IRON PIPE (DIP) AWWA C151, ASME B16.4, AWWA C110, AWWA C153 UNLESS OTHERWISE NOTED.
- ALL SANITARY SEWER SHALL BE SDR 26 POLYVINYL CHLORIDE (PVC) ASTM D3034 & F679, OR SCH 40 ASTM D1785, 2665, ASTM F794, 1866) UNLESS OTHERWISE NOTED.
- ALL STORM SEWER PIPE SHALL BE HDPE ASTM F714 & F2306 WITH ASTM D3212 SPEC FITTINGS UNLESS OTHERWISE NOTED.
- PIPE LENGTHS SHOWN ARE FROM CENTER TO CENTER OF STRUCTURE OR TO END OF FLARED END SECTION.
- UTILITIES ON THE PLAN ARE SHOWN TO WITHIN 5' OF THE BUILDING FOOTPRINT. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR THE FINAL CONNECTION TO BUILDING LINES. COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS.
- CATCH BASINS AND MANHOLES IN PAVED AREAS SHALL BE SUMPED 0.04 FEET. ALL CATCH BASINS IN GUTTERS SHALL BE SUMPED 0.15 FEET PER DETAILS. RIM ELEVATIONS SHOWN ON THIS PLAN DO NOT REFLECT SUMPED ELEVATIONS.
- ALL FIRE HYDRANTS SHALL BE LOCATED 5 FEET BEHIND BACK OF CURB UNLESS OTHERWISE NOTED.
- HYDRANT TYPE, VALVE, AND CONNECTION SHALL BE IN ACCORDANCE WITH CITY REQUIREMENTS. HYDRANT EXTENSIONS ARE INCIDENTAL.
- A MINIMUM OF 8 FEET OF COVER IS REQUIRED OVER ALL WATERMAIN, UNLESS OTHERWISE NOTED. EXTRA DEPTH MAY BE REQUIRED TO MAINTAIN A MINIMUM OF 18" VERTICAL SEPARATION TO SANITARY OR STORM SEWER LINES. EXTRA DEPTH WATERMAIN IS INCIDENTAL.
- A MINIMUM OF 18 INCHES OF VERTICAL SEPARATION AND 10 FEET OF HORIZONTAL SEPARATION IS REQUIRED FOR ALL UTILITIES, UNLESS OTHERWISE NOTED.
- ALL CONNECTIONS TO EXISTING UTILITIES SHALL BE IN ACCORDANCE WITH CITY STANDARDS AND COORDINATED WITH THE CITY PRIOR TO CONSTRUCTION.
- CONNECTIONS TO EXISTING STRUCTURES SHALL BE CORE-DRILLED.
- COORDINATE LOCATIONS AND SIZES OF SERVICE CONNECTIONS WITH THE MECHANICAL DRAWINGS.
- COORDINATE INSTALLATION AND SCHEDULING OF THE INSTALLATION OF UTILITIES WITH ADJACENT CONTRACTORS AND CITY STAFF.
- ALL STREET REPAIRS AND PATCHING SHALL BE PERFORMED PER THE REQUIREMENTS OF THE CITY. ALL PAVEMENT CONNECTIONS SHALL BE SAWCUT. ALL TRAFFIC CONTROLS SHALL BE PROVIDED BY THE CONTRACTOR AND SHALL BE ESTABLISHED PER THE REQUIREMENTS OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) AND THE CITY. THIS SHALL INCLUDE BUT NOT BE LIMITED TO: SIGNAGE, BARRICADES, FLASHERS, AND FLAGGERS AS NEEDED. ALL PUBLIC STREETS SHALL BE OPEN TO TRAFFIC AT ALL TIMES. NO ROAD CLOSURES SHALL BE PERMITTED WITHOUT APPROVAL BY THE CITY.
- ALL STRUCTURES, PUBLIC AND PRIVATE, SHALL BE ADJUSTED TO PROPOSED GRADES WHERE REQUIRED. THE REQUIREMENTS OF ALL OWNERS MUST BE COMPLIED WITH. STRUCTURES BEING RESET TO PAVED AREAS MUST MEET OWNERS REQUIREMENTS FOR TRAFFIC LOADING.
- CONTRACTOR SHALL COORDINATE ALL WORK WITH PRIVATE UTILITY COMPANIES.
- CONTRACTOR SHALL COORDINATE CONNECTION OF IRRIGATION SERVICE TO UTILITIES. COORDINATE THE INSTALLATION OF IRRIGATION SLEEVES NECESSARY AS TO NOT IMPACT INSTALLATION OF UTILITIES.
- CONTRACTOR SHALL MAINTAIN AS-BUILT PLANS THROUGHOUT CONSTRUCTION AND SUBMIT THESE PLANS TO ENGINEER UPON COMPLETION OF WORK.
- ALL JOINTS AND CONNECTIONS IN STORM SEWER SYSTEM SHALL BE GASTIGHT OR WATERTIGHT. APPROVED RESILIENT RUBBER JOINTS MUST BE USED TO MAKE WATERTIGHT CONNECTIONS TO MANHOLES, CATCHBASINS, OR OTHER STRUCTURES.
- ALL PORTIONS OF THE STORM SEWER SYSTEM LOCATED WITHIN 10 FEET OF THE BUILDING OR WATER SERVICE LINE MUST BE TESTED IN ACCORDANCE WITH MN RULES, CHAPTER 4714, SECTION 1109.0.
- FOR ALL SITES LOCATED IN CLAY SOIL AREAS, DRAIN TILE MUST BE INSTALLED AT ALL LOW POINT CATCH BASINS 25' IN EACH DIRECTION. SEE PLAN AND DETAIL. INSTALL LOW POINT DRAIN TILE PER PLANS AND GEOTECHNICAL REPORT RECOMMENDATIONS AND REQUIREMENTS.

UTILITY LEGEND:

- | | |
|--|--------------------------|
| | CATCH BASIN |
| | MANHOLE |
| | GATE VALVE AND VALVE BOX |
| | PROPOSED FIRE HYDRANT |
| | WATER MAIN |
| | SANITARY SEWER |
| | STORM SEWER |
| | FES AND RIP RAP |



Know what's below.
Call before you dig.



1" = 20'-0"
10'-0" 0 20'-0"

ARCHETYPE ADDITION

9641 JAMES AVENUE; BLOOMINGTON, MN 55431

RK TYPE LLC

9611 JAMES AVE S; BLOOMINGTON, MN 55431

PROJECT

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.

David J. Knaeble
DATE 03/17/21 LICENSE NO. 48776

ISSUE/SUBMITTAL SUMMARY

DATE DESCRIPTION

03/17/21 CITY SUBMITTAL

DRAWN BY: MW, RB REVIEWED BY: DK

PROJECT NUMBER: 21076

REVISION SUMMARY

DATE DESCRIPTION

UTILITY PLAN

C4.0