

Applicant: Kevin Walker; Beacon Interfaith Housing Collaborative
Consultant: Keith Matte; BKBM Engineers
Project: Vista 44 Multi-family Housing Development
Location: 13th Avenue South and 1st Street South: Hopkins
Rule(s): 4 and 5
Reviewer(s): LLH/BCO

General Background & Comments

The project proposes the construction of a four-story multi-family housing building with site amenities located at 13th Ave S and 1st St S in Hopkins. The project proposes the subdivision of the 2.5-acre site. The proposed multi-family housing building (Vista 44) and site amenities will be constructed on the southern 0.95-acre parcel. The 0.95-acre parcel is vacant and has historically served as a recreational field. Following the proposed subdivision, the northern parcel will not be under common or related ownership.

Proposed work includes the following:

- construction of a four-story multi-family housing building with underground and surface parking
- site improvements including concrete sidewalks, landscaping and utilities
- construction of an underground stormwater management facility (UGSWMF)

The proposed work will extend onto City of Hopkins right-of-way to “tie-in” with the existing topography and existing utilities along the eastern, western and southern boundaries of the property.

The project site information includes the following:

- Total Site Area: 0.95 acres (southern parcel, following subdivision of the lot)
- Disturbed Area: 0.95 acres
- Existing Site Impervious Area: 0 acres
- Post-construction Site Impervious Area: 0.68 acres
- An increase of 0.68 acres in site impervious area (over 100% increase)

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 on the project site. Since the project

will increase the impervious surface at the site by more than 50% (over 100% increase proposed), applicable stormwater management criteria is required for the entire site.

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 dated May 19, 2021.
2. Plans dated June 23, 2021, revised August 17, 2021, prepared by BKBM Engineers
3. Stormwater Management Plan dated June 23, 2021, revised August 17, 2021, prepared by BKBM Engineers, including the following supplemental items with the most recent revision:
 - 3.1 HydroCAD report printed July 15, 2021
 - 3.2 P8 report dated July 15, 2021
 - 3.3 Nine Mile Creek Watershed District Rules Appendix 4a Analysis Exhibit
4. Geotechnical Exploration Report dated November 1, 2019, prepared by Northern Technologies, LLC (NTI).
5. Phase I Environmental Site Assessment dated March 30, 2019, prepared by The Javelin Group.
6. Limited Phase II Environmental Site Assessment dated October 1, 2019, prepared by The Javelin Group.
7. Email correspondence dated July 14, 2021 outlining nine items required for the application to be considered complete. Email correspondence dated August 9, 2021 outlining documentation and/or supplemental items required for the application to be considered complete.

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 UGSWMF located north of the proposed building beneath the surface parking area. The UGSWMF will provide rate control, volume retention and water quality management for the entire site. The UGSWMF will capture runoff from the proposed multi-family housing building roof, surface parking lot and landscaping. A portion of stormwater runoff from landscaping and impervious surface will drain west towards 13th Ave S.

Phase I and Phase II Environment Site Assessments were completed for the site. The Javelin Group prepared a Phase I ESA report that identified recognized environmental conditions (RECs), including 1) a historic fill property and 2) a City dump site (Hopkins Dump #1). A Phase II ESA was completed to characterize soil and groundwater contaminant conditions, and to conduct soil vapor sampling. The contaminant levels found in the soil and groundwater samplings and soil borings did not exceed the Minnesota Pollution Control Agency (MPCA) risk-screening criteria. The applicant submitted documentation supporting the finding that infiltration is acceptable at the site, and that the low contamination levels found are not

reasonably likely to be mobilized by stormwater infiltration. The engineer has reviewed the findings from the environmental site assessments and concurs that infiltration is feasible at the site.

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 at all locations where stormwater leaves the site. The applicant used a HydroCAD hydrologic model to simulate runoff rates. The existing and proposed 2-, 10- and 100-year frequency discharges from the site are:

Existing Conditions			
Drainage Area	2 year (c.f.s.)	10 year (c.f.s.)	100 year (c.f.s.)
To 13th Ave S	<1	1.6	5.4
Total	<1	1.6	5.4

Proposed Conditions			
Drainage Area	2 year (c.f.s.)	10 year (c.f.s.)	100 year (c.f.s.)
To 13th Ave S	<1	1.6	4.5
Total	<1	1.6	4.5

Rule 4.3.1b is met.

The NTI geotechnical report dated November 1, 2019, identifies the on-site underlying soil at the proposed UGSWMF location as poorly graded sand with silt (SP-SM). A design infiltration rate of 0.45 inches per hour has been used, conforming with infiltration rates shown in the Minnesota Storm Water Manual.

A retention volume of 2,715 cubic feet is required from the proposed 29,621 square feet of impervious area on the site, Rule 4.3.1a. A HydroCAD hydrologic model was used to identify a total volume of 3,809 cubic feet (2,715 cubic feet required) with an area of 2,160 square feet (1,508 square feet required) provided below the outlet elevation of the UGSWMF. With the area provided (2,160 square feet) and using a design infiltration rate of 0.45 inches per hour, the UGSWMF will drawdown within the required 48 hours. Rule 4.3.1a is met.

The District's water quality criteria requires 60% annual removal efficiency for total phosphorus and 90% annual removal efficiency for total suspended solids. The results from a P8 model provided shows the UGSWMF will provide an annual removal efficiency of 90% for total suspended solids (45.6 lbs.) and 83% for total phosphorus (0.3 lbs.) for water quality treatment. We are in agreement with the modeling results. Rule 4.3.1c is met.

Rule 4.5.4d (i) requires at least three feet of separation between the bottom of a stormwater management facility and groundwater. The boring taken by NTI near the proposed UGSWMF location encountered groundwater at a depth of 9.4 feet, elevation 901.6 M.S.L. The proposed bottom elevation of the UGSWMF is 904.7 M.S.L., providing a separation of 3.1 feet between

the bottom of the proposed facility and the elevation where groundwater was encountered. In accordance with Rule 4.5.4d, the required three feet of separation between the bottom of an infiltration area and groundwater is provided.

Rule 4.3.3 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. Rule 4.3.3 also states, a stormwater management facility must be constructed at an elevation that ensures that no adjacent habitable building will be brought into noncompliance with a standard in subsection 4.3.3. Additionally, no opening where surface flow can enter the structure may be less than 2- feet above the 100-year high water elevation of an adjacent facility or waterbody. Alternatively, the plots in Appendix 4a as described in Rule 4.3.3a, may be used to determine compliance with Rule 4.3.3 criteria.

With a proposed low floor and low opening elevation of 905 M.S.L. at the proposed structure underground parking elevation and the calculated 100-year frequency flood elevation of 909.65 M.S.L. for the proposed UGSWMF, the plots in Appendix 4a as described in Rule 4.3.3, are used to determine compliance with this requirement. The closest distance between the UGSWMF and the proposed structure is 48 feet. Using Plot 5, the minimum permissible depth to the water table is approximately 2.1 feet. A separation of 2.8 feet is to be provided – 905 M.S.L. (underground garage parking floor elevation) – 902.3 M.S.L. (groundwater encountered in SB-3).

Additionally, Rule 4.3.3 states that all new and reconstructed buildings must be constructed such that no opening where surface flow can enter the structure is less than two feet above the 100-year high water elevation of an adjacent facility. The high-water elevation calculated for the UGSWMF (909.6 M.S.L.) will remain below the ground surface not having an impact on the 905 M.S.L. low opening of the proposed building (the underground parking garage entrance). Additionally, the site entrance driveway along 13th Ave S is graded to direct stormwater away from the bituminous driveway leading to the low opening of the proposed building (905 M.S.L.) and is not hydraulically connected to the UGSWMF overflow. The project conforms to 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. Sump manholes 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. Erosion control measures include sediment control log at the limits of construction, a rock construction entrance and storm drain inlet protection.

The contractor for the project will need to designate a contact who will remain liable to the District for performance under the District's Erosion and Sediment Control Rule 5.0 from the time the permitted activities commence until vegetative cover is established, in accordance with subsection 5.4.1e.

11.0 Fees

Fees for the project are:

Rules 4.0 and 5.0	\$1,500
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12.0 Financial Assurances

Financial Assurances for the project are:

Rule 4: Volume Retention: 1,508 sq. ft. x \$12/sq. ft. = \$18,096	\$18,096
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Chloride Management:	\$5,000
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Rule 5: Perimeter control: 645 L.F. x \$2.50/L.F. = \$1,613	
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Inlet Control: 1 x \$100/each = \$100	
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Site restoration: 1.0 acres x \$2,500/acre = \$2,500	\$4,213
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Contingency and Administration	\$9,691
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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 will be met with the fulfillment of the conditions identified below.
3. The proposed stormwater management facility will provide volume retention, rate control and water quality management in accordance with Rules 4.3.1a, 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:

General Provisions

Financial assurance in the amount of \$37,000: \$32,000 for stormwater management, erosion control and site restoration, and \$5,000 for compliance with the chloride management requirements.

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

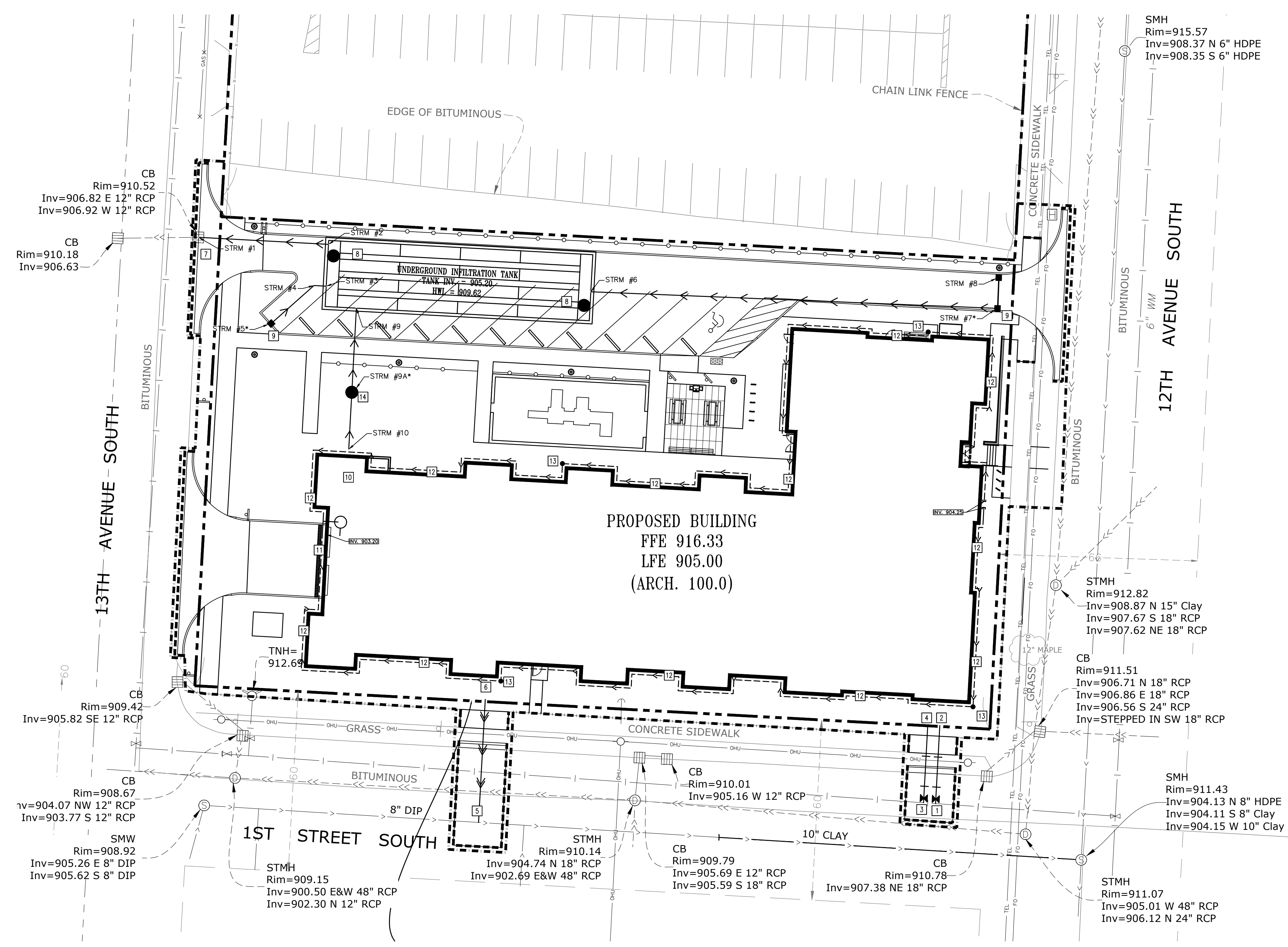
The applicant providing a name and contact information from the contractor responsible for the erosion and sediment control at the site. NMCWD must be notified if the responsible individual changes during the permit term.

By accepting the permit, when issued, the applicant agrees to the following for closeout of the permit and release of the financial assurance after the project:

Per Rule 4.5.8, submit an as-built drawing of the stormwater management facility conforming to the design specifications, including a stage volume relationship in tabular form for the stormwater management facility.

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.

The applicant is required to demonstrate that the stormwater management facility is functioning as designed and permitted (Rule 12.4.1b). Verification, through daily observation logs and photographs, must be provided showing the stormwater facility used for volume retention has drawn down within 48 hours from the completion of two 1-inch (approximate) separate rainfall events.



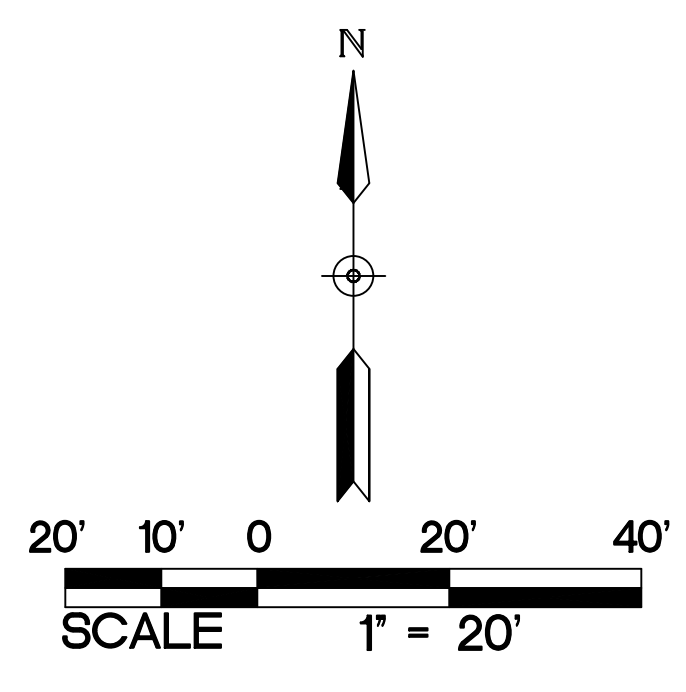
1 UTILITY PLAN
1" = 20'

PROPOSED PLAN SYMBOLS

CONSTRUCTION LIMITS	---
PROPERTY LINE	---
SAWCUT LINE (APPROX.)	- - - -
SANITARY SEWER	---
WATER PIPE	---
DRAIN TILE	---
STORM SEWER	---
GATE VALVE	+
CLEANOUT	+
CATCH BASIN	+
SEWER INVERT ELEVATION	INVERT

ABBREVIATIONS

BUILDING	Building
BM	Bench Mark
CB	Catch Basin
CONC	Concrete
DIP	Ductile Iron Pipe
ELEV	Elevation
EX	Existing
FFE	Finished Floor Elevation
HDPE	High Density Polyethylene
INV	Invert
LFE	Lower Floor Elevation
MH	Manhole
PIV	Post Indicator Valve
PVC	Polyvinyl Chloride
RCP	Reinforced Concrete Pipe



UTILITY NOTES FOR WORK IN PUBLIC RIGHT-OF-WAY:

- FOLLOW ALL CITY OF HOPKINS STANDARDS AND SPECIFICATIONS.
- PRIOR TO CONSTRUCTION, CONTRACTORS ARE TO COORDINATE ALL WORK WITHIN RIGHT OF WAY AND OBTAIN ALL APPLICABLE PERMITS.

KEYED NOTES

- KEYED NOTES ARE DENOTED BY [] ON PLAN.
- INSTALL 6-INCH WET TAP. REFER TO DETAILS 5/C400 AND 6/C400. FOLLOW ALL CITY OF HOPKINS STANDARDS AND SPECIFICATIONS.
 - STUB 6-INCH FIRE PROTECTION LINE TO WITHIN 5- FEET OF PROPOSED BUILDING. FOLLOW ALL CITY OF HOPKINS STANDARDS AND SPECIFICATIONS.
 - INSTALL 3-INCH WET TAP. REFER TO DETAILS 5/C400 AND 6/C400. FOLLOW ALL CITY OF HOPKINS STANDARDS AND SPECIFICATIONS.
 - STUB 3-INCH DOMESTIC WATER SERVICE TO WITHIN 5- FEET OF PROPOSED BUILDING. FOLLOW ALL CITY OF HOPKINS STANDARDS AND SPECIFICATIONS.
 - CONNECT TO EXISTING 8-INCH DIP PIPE WITH A 8-INCH X 8-INCH PVC WYE. INVERT = 904.91. INSTALL 41- FEET OF 8-INCH PVC SDR 35 PIPE AT 2.0% TO INVERT OF 905.73. STUB TO WITHIN 5- FEET OF PROPOSED BUILDING. FOLLOW ALL CITY OF HOPKINS STANDARDS AND SPECIFICATIONS. COORDINATE EXACT LOCATION AND INVERT ELEVATION WITH MECHANICAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
 - LOCATION OF PROPOSED SANITARY SEWER SERVICE. COORDINATE EXACT LOCATION AND INVERT ELEVATION WITH MECHANICAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
 - CONNECT TO EXISTING CATCH BASIN FOR PROPOSED PIPE CONNECTION AT EXISTING OPENING FROM REMOVED 12-INCH PIPE. GROUT SEAL AROUND OPENING. FOLLOW ALL CITY OF HOPKINS STANDARDS AND SPECIFICATIONS.
 - INSTALL INFILTRATION SYSTEM PER DETAIL 9/C401. INFILTRATION SYSTEM SHALL HAVE AN INFILTRATION VOLUME OF 3,786 CUBIC FEET. A TOTAL VOLUME OF 8,271 CUBIC FEET. MEET THE RATE CONTROL REQUIREMENTS INDICATED ON SHEET C500. ANY ALTERNATE DESIGNS MUST BE APPROVED BY CIVIL ENGINEER PRIOR TO CONSTRUCTION. REMOVE UNDOCUMENTED FILL BELOW SYSTEM TO APPROXIMATE ELEVATION 902. FILL WITH CLEAN SANDS TO BOTTOM OF ROCK, ELEVATION 904.70.
 - INSTALL SUMP CATCH BASIN. REFER TO DETAIL 4/C401.
 - LOCATION OF PROPOSED ROOF DRAIN LEAD. REFER TO STORM SEWER TABLE FOR INVERT ELEVATIONS AND PIPE SIZES. COORDINATE EXACT LOCATION AND INVERT ELEVATION WITH MECHANICAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
 - INSTALL TRENCH DRAIN AND CONNECT TO BUILDING AT INVERT ELEVATION OF 903.20. REFER TO DETAIL 6/C401. DRAIN IS TO BE ROUTED INTO AN INTERNAL SUMP PIT TO BE DETAILED BY THE MECHANICAL ENGINEER. THE OUTLET IS TO BE ROUTED TO THE STORMWATER SYSTEM. COORDINATE EXACT LOCATION AND INVERT ELEVATION WITH MECHANICAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
 - INSTALL PERIMETER DRAIN TILE. REFER TO DETAIL 7/C401. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF CONNECTION TO BUILDING SUMP WITH MECHANICAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. PROVIDE SOLID PIPE AND WATER TIGHT CONNECTIONS TO 10- FEET OF EITHER SIDE OF ALL WATER CROSSINGS PER MN PLUMBING CODE.
 - INSTALL DRAIN TILE CLEAN OUT. REFER TO DETAIL 8/C401. FOLLOW ALL CITY OF HOPKINS STANDARDS AND SPECIFICATIONS.
 - INSTALL SUMP MANHOLE. REFER TO DETAIL 4/C401.

UTILITY NOTES:

- COORDINATE SERVICE CONNECTION LOCATIONS AT THE BUILDING WITH THE MECHANICAL CONTRACTOR PRIOR TO CONSTRUCTION. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR UNCOORDINATED WORK.
- COORDINATE UTILITY INSTALLATION WITH STRUCTURAL PRIOR TO START OF CONSTRUCTION. UTILITIES SHALL NOT BE INSTALLED WITHIN THE ZONE OF INFLUENCE OF ANY STRUCTURAL ELEMENTS. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR UNCOORDINATED WORK.
- ALL SEWER SERVICE CONNECTIONS WITH LESS THAN 5 FEET OF COVER OVER THE TOP OF PIPE SHALL BE INSULATED. INSULATION SHALL BE INSTALLED FROM THE CONNECTION OF THE SERVICE AT THE BUILDING TO THE POINT WHICH THE SERVICE ATTAINS 5 FEET OF COVER. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ARCHITECT OR ENGINEER PRIOR TO INSTALLATION OF INSULATION.
- PROTECT ALL EXISTING STRUCTURES AND UTILITIES WHICH ARE NOT SCHEDULED TO BE REMOVED.
- ALL SEWER AND WATER CROSSINGS SHALL HAVE A MINIMUM VERTICAL SEPARATION OF 1.5 FEET AND HORIZONTAL SEPARATION OF 10 FEET. FOLLOW ALL HEALTH DEPARTMENT AND CITY OF HOPKINS AND HENNEPIN COUNTY STANDARDS.
- ALL WATER MAINS SHALL BE DUCTILE IRON PIPE, CLASS 52, UNLESS NOTED OTHERWISE.
- ALL WATER MAIN SHALL HAVE A MINIMUM DEPTH OF COVER OF 7.5 FEET OVER TOP OF WATER MAIN.
- PROVIDE THRUST BLOCKING ON ALL WATER MAIN PER CITY OF HOPKINS. PROVIDE MECHANICAL JOINT RESTRAINTS ON ALL BENDS, VALVES, TEES, PLUGS AND HYDRANT LEADS.
- SANITARY SEWER PIPING SHALL BE SDR 35 PVC UNLESS NOTED OTHERWISE.
- STORM SEWER PIPING SHALL BE SMOOTH INTERIOR AND ANNUJAR EXTERIOR CORRUGATED HIGH DENSITY POLYETHYLENE (HDPE), UNLESS NOTED OTHERWISE. HDPE PIPE SHALL CONFORM TO ASTM F2308. (ALL STORM SEWER PIPE THAT IS EXTENDED TO THE BUILDING FOR ROOF DRAIN SERVICES IS TO BE SCHEDULE 40 PVC. PVC PIPE AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D2665).
- ALL FLARED END SECTIONS SHALL HAVE TRASH GUARDS. ALL DOWNSTREAM FLARED END SECTIONS SHALL HAVE GEOTEXTILE FABRIC AND RIPRAP PER MNDOT STANDARDS, AS DETAILED.
- CONTRACTORS SHALL COORDINATE ALL WORK WITH GAS, ELECTRIC, TELEVISION AND TELEPHONE COMPANIES PRIOR TO START OF CONSTRUCTION.
- WHERE PROPOSED GRADE OVER EXISTING SMALL UTILITIES IS PROPOSED TO BE LOWERED, CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER FOR THE LOWERING OF THE EXISTING UTILITY TO PROVIDE THE MINIMUM COVER REQUIRED.
- ALL PORTIONS OF THE STORM SEWER SYSTEM LOCATED WITHIN 10- FEET OF THE BUILDING OR WATER SERVICE LINE SHALL BE TESTED IN ACCORDANCE WITH MN PLUMBING CODE.
- ALL JOINTS AND CONNECTIONS IN THE STORM SEWER SYSTEM SHALL BE GAS TIGHT OR WATER TIGHT IN ACCORDANCE TO MN PLUMBING CODE. APPROVED RESILIENT RUBBER JOINTS MUST BE USED TO MAKE WATER TIGHT CONNECTIONS TO MANHOLES, CATCH BASINS, AND OTHER STRUCTURES. RESILIENT WATER-STOP GROUTING RINGS ARE AN ACCEPTABLE ALTERNATIVE. CEMENT MORTAR JOINTS ARE PERMITTED ONLY FOR REPAIRS AND CONNECTIONS OF EXISTING LINES CONSTRUCTED WITH SUCH JOINTS.

STORM SEWER TABLE						
STRUCTURE ID	STRUCTURE DIMENSION (INCHES)	NEENAH CASTING TYPE	RIM ELEVATION	INVERT ELEVATION(S)	PIPE LENGTH, DIAMETER, SLOPE & NEXT UPSTREAM STRUCTURE	
STRM #1	EXISTING CB	EXISTING	E = 906.92	E = 906.92	43 L.F. OF 10" HDPE @ 0.6%, STRM #2	
STRM #2	SERVICE/TANK CONNECTION	NA		W = 907.18	-----	
STRM #3	UNDERGROUND INFILTRATION TANK	NA		W = 907.23	4 L.F. OF 12" HDPE @ 1.2%, STRM #4	
STRM #4	45-DEGREE PIPE BEND	NA	E = 907.28	SW = 907.28	19 L.F. OF 12" HDPE @ 1.2%, STRM #5*	
STRM #5*	48" SUMP MH	R-3067	910.87	NE = 907.50	-----	
STRM #6	UNDERGROUND INFILTRATION TANK	NA		E = 908.08	135 L.F. OF 12" HDPE @ 2.0%, STRM #7*	
STRM #7*	48" SUMP MH	R-3067	914.32	W = 910.79 N = 910.79	10 L.F. OF 12" HDPE @ 2.3%, STRM #8	
STRM #8	24"x36" CB	R-3067	914.53	S = 911.03	-----	
STRM #9	UNDERGROUND INFILTRATION TANK	NA		S = 907.25	28 L.F. OF 12" PVC @ 1.1%, STRM #9A*	
STRM #9A*	48" SUMP MH	R-1642	912.53	N = 907.57 S = 907.57	19 L.F. OF 12" PVC @ 1.1%, STRM #10	
STRM #10	ROOF DRAIN LEAD	R-3067	2.14	N = 907.78	-----	

*48-INCH SUMP DEPTH