

Applicant: Dan Walsh; Raspberry Ridge Limited Partnership
Consultant: Nathan Bruno; LHB, Inc.
Project: Raspberry Ridge II Multi-family Housing Addition
Location: 9 7th Avenue South: Hopkins
Rule(s): 4 and 5
Reviewer(s): LLH/BCO

General Background & Comments

The project proposes the addition of a multi-family housing building and site improvements at the existing Raspberry Ridge II (Hopkins Village) Apartments located at 9 7th Ave S in Hopkins, MN. Currently, the 2.0-acre site is occupied by one multi-story apartment building with associated site elements and surface parking on two adjoining parcels. Proposed work includes the following:

- demolition and removal of the existing concrete and bituminous pavement and associated base materials along the northeastern portion of the site
- construction of a four-story multi-family housing building with one level of underground parking along the northeastern portion of the site
- mill and overlayment of the existing pavement along the southeastern portion of the site
- site improvements including concrete sidewalks, landscaping, utilities, a playground, and retaining walls
- construction of an underground stormwater management facility (UGSWMF)

Improvements to the existing multi-story apartment building along the western perimeter of the site are not proposed. 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 and northern boundaries of the property.

The project site information includes the following:

- Total Site Area: 1.98 acres (86,121 square feet)
- Disturbed Area: 0.86 acres (37,462 square feet)
- Existing Site Impervious Area: 1.63 acres (71,133 square feet)
- Post-construction Site Impervious Area: 1.50 acres (65,397 square feet)
- A decrease of 5,736 square feet in site impervious area (8.1% decrease)

- Disturbed and Reconstructed Impervious Area: 0.66 acres (28,918 square feet)
- 40.7% of the existing site impervious area is to be disturbed and reconstructed

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 disturb less than 50% of the existing site impervious surface (40.7% to be disturbed) and will not increase the impervious surface at the site by more than 50% (8.1% decrease proposed), applicable stormwater management criteria is required for the 37,462 square feet of disturbed area, including the 28,918 square feet of disturbed and reconstructed impervious surface (no net additional impervious surface is proposed).

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. Completed Permit Application dated March 24, 2021.
2. Plans dated March 3, 2021, revised March 19, 2021 and April 19, 2021, prepared by LHB, Inc.
3. Underground, Basement, and Roof Plumbing Plans dated March 3, 2021, prepared by LHB, Inc.
4. Roof Plan dated March 3, 2021, prepared by LHB, Inc.
5. Stormwater Management Plan dated March 17, 2021, revised May 13, 2021, prepared by LHB, Inc., including the following supplemental items with the most recent revision:
 - 5.1 HydroCAD report printed May 13, 2021
 - 5.2 MIDS Calculator report dated March 17, 2021
 - 5.3 Drainage Area Plan dated April 19, 2021
 - 5.4 Screening Assessment for Contamination at Potential Stormwater Infiltration Sites
 - 5.5 Nine Mile Creek Watershed District Rules Appendix 4a Analysis Exhibit
6. Geotechnical Evaluation Report dated May 26, 2020, prepared by Northern Technologies, LLC (NTI).
7. Supplemental Phase II Environmental Site Assessment dated November 2, 2020, prepared by The Javelin Group.
8. Additional Phase II Environmental Site Assessment dated March 4, 2021, prepared by The Javelin Group.
9. Soil Response Action Plan dated December 10, 2020, prepared by The Javelin Group.
10. Soil Response Action Plan Addendum #1 dated February 18, 2021, prepared by The Javelin Group.

11. United States Geological Survey (USGS) Hantush (1967) Spreadsheet Calculator for Groundwater Mounding Beneath Infiltration Basins, prepared by The Javelin Group.
12. Email correspondence dated April 22, 2021 outlining eight items required for the application to be considered complete. Email correspondence dated May 21, 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 an underground stormwater management facility (UGSWMF) located east of the existing building beneath the surface parking area. The UGSWMF will capture a portion of runoff from the northern surface parking lot, landscaping, playground, sidewalks, and proposed multi-family housing building. A portion of stormwater runoff from landscaping and impervious surface will drain east and west towards 6th Avenue South and 7th Avenue South, respectively.

Phase I and Phase II Environment Site Assessments were completed for this site. A Phase II ESA and Additional Phase II ESA were performed to characterize soil and groundwater contaminant conditions. A supplemental assessment was also performed to conduct additional soil vapor sampling at the property boundaries in an effort to define the vapor intrusion area of concern. The assessments found concentrations of various volatile organic compounds (VOCs), diesel range organics (DRO), and polynuclear aromatic hydrocarbon (PAH) in the soil and/or groundwater. The contaminant levels found exceeded the Minnesota Pollution Control Agency (MPCA) risk-screening criteria in some samples.

As a result of contaminant levels found, the applicant's consultant conducted an Additional Phase II ESA in accordance with MPCA guidance documents to characterize soil and groundwater contaminant conditions at the location of the proposed UGSWMF. Two soil borings (GP-27 and GP-28) were completed at locations within the UGSWMF infiltration area. One groundwater sample from each well was collected. Based on the additional data collected, no significant petroleum-related or PAH soil impacts within the proposed UGSWMF footprint were identified, DRO concentrations were below the MPCA risk criteria, and groundwater was not impacted by contaminant concentrations exceeding MPCA criteria.

As the proposed infiltration area footprint did not exhibit groundwater or soil contamination levels exceeding MPCA criteria, the applicant submitted documentation to support determination of the adequate feasible separation between a potential contamination source and a stormwater management facility infiltration area. In accordance with MPCA guidance, if contamination exists on a site, an infiltration facility footprint may be located a safe distance from the contamination - the distance or setback at which contaminants may not be mobilized by infiltrated stormwater. MPCA guidance recommends that the calculated maximum extent of estimated groundwater mound above the groundwater table, defined as a 0.25-foot water-level increase at a distance measured from the edge of the infiltration area, be increased by a safety factor of two.

The United States Geological Survey (USGS) Hantush (1967) Spreadsheet Calculator for Groundwater Mounding Beneath Infiltration Basins, prepared by The Javelin Group, was submitted to support determination of the appropriate setback described above. Based on the

submitted USGS spreadsheet calculator tool, the infiltration practice should be no closer than 60 feet from a point of contamination within the soil profile. The soil analytical data from the Phase II ESAs demonstrates that no soil contamination exceeding MPCA criteria was detected at depths of greater than 5 feet, approximately elevation 919 M.S.L. As shown by the submitted USGS Groundwater Mounding Calculator, the maximum groundwater mounding elevation is approximately 5.1 feet above the groundwater table, elevation 909.5 M.S.L. Therefore, the maximum groundwater mounding is elevation 914.6 M.S.L., providing a separation of approximately 4.4 feet below the lowest elevation (919 M.S.L.) where contamination was encountered at levels exceeding MPCA guidance criteria. The engineer has reviewed the findings from the environmental site assessments and USGS Calculator results, and concurs that infiltration is feasible at the proposed location.

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 North	<1	<1	<1
To South	1.9	1.9	3.6
To East	4.9	7.3	12.9
Total	7.1	9.6	17.2

Proposed Conditions			
Drainage Area	2 year (c.f.s.)	10 year (c.f.s.)	100 year (c.f.s.)
To North	<1	<1	<1
To South	1.3	1.9	3.6
To East	4.4	6.8	12.0
Total	5.8	8.9	16.0

Rule 4.3.1b is met.

The NTI geotechnical report dated May 26, 2020 indicates the on-site underlying soil as poorly graded sand with silt (SP-SM). A design infiltration rate of 0.8 inches per hour has been used, conforming with infiltration rates shown in the Minnesota Storm Water Manual.

A retention volume of 2,651 cubic feet is required from the proposed 28,918 square feet of disturbed and reconstructed impervious area, Rule 4.3.1a. A HydroCAD hydrologic model was used to identify a total volume of 2,684 cubic feet (2,651 cubic feet required) with an area of 1,675 square feet (828 square feet required) provided below the outlet elevation of the UGSWMF. With the area provided (1,675 square feet) and using a design infiltration rate of

0.8 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 MIDS Calculator provided shows the UGSWMF will provide an annual removal efficiency of 90% for total suspended solids (224 lbs.) and 61% for total phosphorus (1.2 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(s) taken by NTI encountered groundwater at a depth of 15 feet, elevation 909.5 M.S.L. The proposed bottom elevation of the UGSWMF is 916 M.S.L., providing a separation of 6.5 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. In addition, a stormwater management facility must be constructed an elevation that ensures no adjacent habitable building will be brought into noncompliance with a standard in subsection 4.3.3. With a low floor elevation of 925.4 M.S.L. at the existing building along the western boundary of the site and a calculated 100-year frequency flood elevation of 921.3 M.S.L. for the proposed stormwater management facility, a separation of 4.1 feet is provided (two feet required).

With a proposed low floor elevation of 913.8 M.S.L. at the underground parking garage and a calculated 100-year frequency flood elevation of 921.3 M.S.L. for the proposed stormwater management facility, Appendix 4a as described in Rule 4.3.3a was utilized to determine compliance with this requirement. The closest distance between the UGSWMF and the proposed structure is 45 feet. Using Plot 5, the minimum permissible depth to the water table is approximately 3.3 feet. A separation of 4.3 feet is to be provided – 913.8 M.S.L. (underground garage parking floor elevation) – 909.5 M.S.L. (groundwater encountered in SB-9 and GP-28).

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 (921.3 M.S.L.) will remain below the ground surface not having an impact on the 913.8 M.S.L. low opening of the proposed building (the underground parking garage entrance). A surface overflow from the UGSWMF, should it occur, is located within a proposed manhole with a rim elevation at 923.9 M.S.L. The site entrance driveway along 6th Avenue South is graded to direct stormwater away from the bituminous driveway leading to the low opening of the proposed building (913.8 M.S.L.). Additionally, the entrance driveway elevation (924.2 M.S.L.) leading to the underground parking garage entrance provides adequate separation between the UGSWMF 100-year high water elevation and the elevation where surface flow could enter the low opening of the structure. 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. An isolator row and sump manhole will provide pretreatment for runoff entering the UGSWMF.

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 silt fence at the limits of construction, a stabilized rock construction entrance and storm drain inlet protection.

The project contact is Nathan Bruno, LHB, Inc.

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: 828 sq. ft. x \$12/sq. ft. = \$9,936	\$9,936
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Chloride Management:	\$5,000
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Rule 5: Perimeter control: 650 L.F. x \$2.50/L.F.= \$1,625	
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Inlet Control: 3 x \$100/each = \$300	
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Site restoration: 0.9 acres x \$2,500/acre = \$2,250	\$4,175
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Contingency and Administration	\$6,089
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Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. Rule 5 is met. Rule 4 will be met with the fulfillment of the conditions identified below.
3. Phase I and II Environmental Site Assessments were completed for the site. The assessments found concentrations of various volatile organic compounds (VOCs), diesel range organics (DRO), and polynuclear aromatic hydrocarbon (PAH) in the soil and/or groundwater. The applicant submitted documentation to show that the proposed infiltration area footprint did not exhibit groundwater or soil contamination levels exceeding MPCA criteria. In accordance with MPCA guidance, if contamination exists on a site, an infiltration facility may be located a safe distance from the contamination - the distance or setback at which contaminants may not be mobilized by infiltrated stormwater. The applicant has provided technical documentation to support the location of the underground stormwater

management facility in relation to contaminated soils at the site and groundwater mounding. The engineer has reviewed the findings from the environmental site assessments and USGS Calculator results, and concurs that infiltration is feasible at the proposed location.

4. The proposed stormwater management facility will provide rate control and water quality management in accordance with Rules 4.3.1b and 4.3.1c, 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. General Conditions
2. Financial Assurance in the amount of \$25,200, \$20,200 for stormwater management, erosion control and site restoration, and \$5,000 for compliance with the chloride management requirements.
3. Per Rule 4.3.5, a receipt showing recordation 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.
4. The Geotechnical Evaluation Report dated May 26, 2020 prepared by Northern Technologies, LLC (NTI) indicates the on-site underlying soil as sandy lean clay (CL) near the bottom of the proposed stormwater management facility (elevation 916 M.S.L.), with approximately 10 feet of underlying layers of clayey sand (SC) and poorly graded sand with silt (SP-SM) in SB-9. The applicant has used a design infiltration rate of 0.8 inches per hour, which aligns with infiltration rates for HSG Type A soils per Minnesota Stormwater Manual Guidance. The restrictive layers below the proposed stormwater management facility must be removed and replaced with material having an infiltration rate comparable with the poorly graded sand (SP) between the bottom of the infiltration area and the native SP soils (approximately 10 feet).
5. The site plans must be amended to identify the low floor and low opening elevation of the existing structure on-site.

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 management facility conforming to the design specifications.
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 \$20,200 financial assurance required, Rule 12.4.1b requires demonstration and confirmation that the stormwater management facilities have 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.

CLIENT:
**Raspberry Ridge
 Limited Partnership**

614 North First Street
 Suite 100
 Minneapolis, MN 55401

THIS SQUARE APPEARS 1/2" x 1/2" ON
 FULL SIZE SHEETS.

NO	DATE	ISSUED FOR
2	04/19/2021	CONFORMED SET
1	03/03/2021	ISSUED FOR BIDDING
NO	DATE	ISSUED FOR
NO	DATE	REVISION

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.

SIGNATURE: *Megan Goplin*
 TYPED OR PRINTED NAME: MEGAN GOPLIN
 DATE: 03-03-2021 REG. NO.: 53018

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PROJECT NAME:
**Raspberry Ridge
 BID PACKAGE 2**

Raspberry Ridge II
 Mainstreet and 6th Avenue South
 Hopkins, MN 55343

DRAWING TITLE:
GRADING PLAN

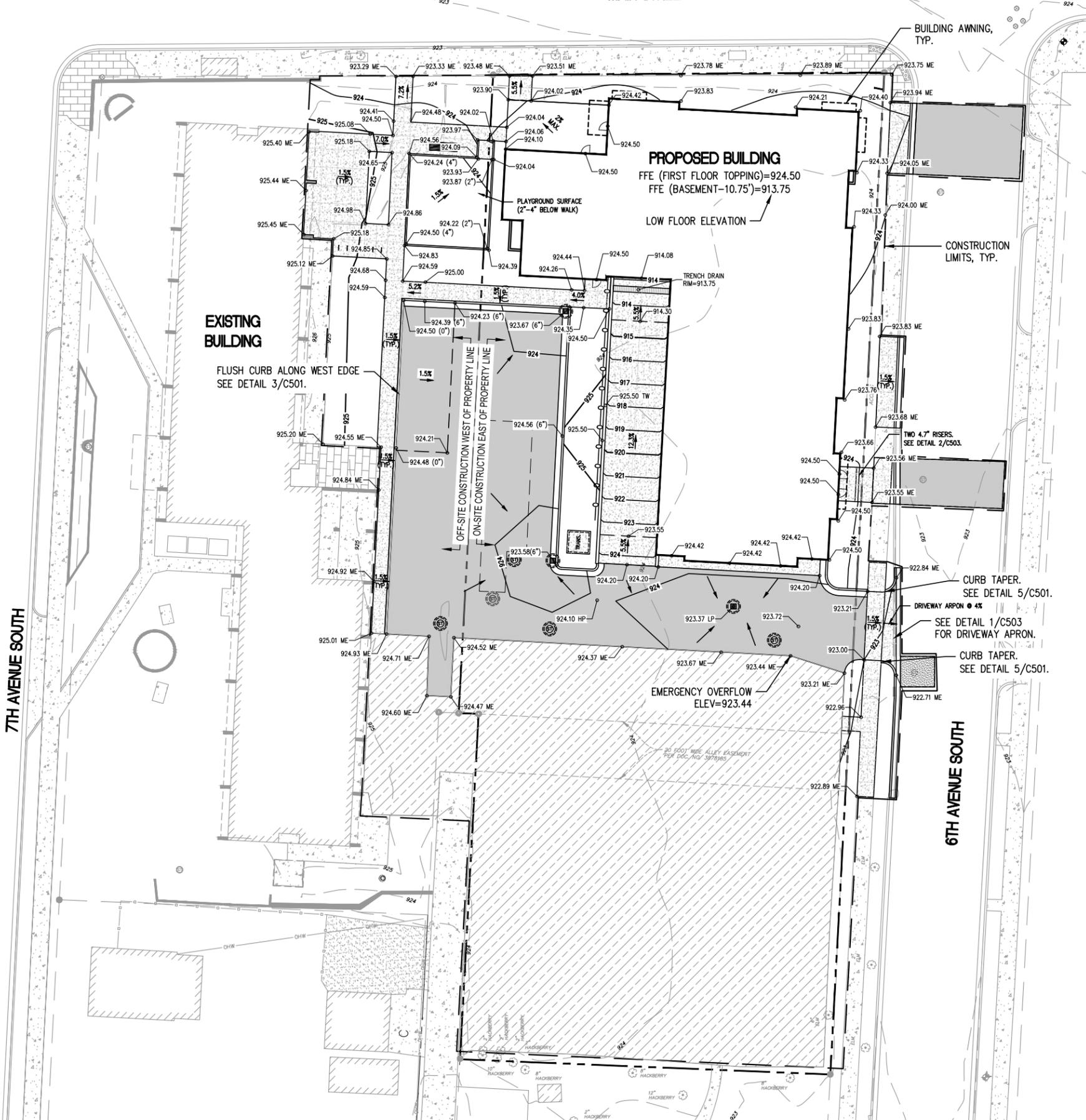
FILE: .1190468600 Drawings\C1190468 HV2 C200 - Grading.dwg
 DRAWN BY: DRP
 CHECKED BY: MAG
 PROJ. NO: 190468
 DRAWING NO:

C200

MAIN STREET

7TH AVENUE SOUTH

6TH AVENUE SOUTH



LEGEND:

- RIGHT OF WAY
- PROPOSED BITUMINOUS PAVEMENT
SEE DETAIL 1/C501
- PROPOSED CONCRETE WALK/DRIVEWAY
- PROPOSED BITUMINOUS MILL AND OVERLAY.
SEE DETAIL 1/C501
- PROPOSED UNDERGROUND STORMWATER TREATMENT
- PROPOSED STORM MANHOLE/CATCH BASIN
- EXISTING STORM MANHOLE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- GRADE BREAK
- PROPOSED SLOPE ARROW
- FINISHED SPOT ELEV.
(GUTTER WHEN INDICATED AT CURBS.)
- CURB HEIGHT (ADD TO SPOT ELEV.)
- LOW POINT
- HIGH POINT
- MATCH EXISTING (VERIFY PROPOSED ELEV.)
- FINISHED FLOOR ELEVATION
- TOP OF WALL
- STRUCTURE RIM ELEVATION

