

18681 Lake Drive East  
Chanhassen, MN 55317  
952-607-6512  
www.rpbcwd.org

## Riley Purgatory Bluff Creek Watershed District Permit Application Review

**Permit No:** 2024-008

**Considered at Board of Managers Meeting:** May 8, 2024

**Received complete:** March 20, 2024

**Applicant:** Roers Companies

**Representative:** Kimley-Horn, Mike Brandt

**Project:** Chanhassen Apartments - Redevelopment creating two multi-family/mixed use retail and restaurant buildings and associated onsite and under-building parking areas in Chanhassen. The project includes an underground stormwater management facility, stormwater reuse, two tree trenches, small green roof, and three ADS BayFilters to provide volume control, water quality, and rate control.

**Location:** 591 W 78<sup>th</sup> ST, Chanhassen, Carver County, MN 55317

**Reviewer:** Heather Lau, PE; and Scott Sobiech, PE; Barr Engineering Co.

### Proposed Board Action

Manager \_\_\_\_\_ moved and Manager \_\_\_\_\_ seconded adoption of the following resolutions based on the permit report that follows and the presentation of the matter at the May 8, 2024 meeting of the managers:

Resolved that the application for Permit 2024-008 is approved, subject to the conditions and stipulations set forth in the Recommendations section of the attached report;

Resolved that on determination by the RPBCWD administrator that the conditions of approval of the permit have been affirmatively resolved, the RPBCWD president or administrator is authorized and directed to sign and deliver Permit 2024-008 to the applicant, on behalf of RPBCWD.

Upon vote, the resolutions were adopted, \_\_\_\_\_ [VOTE TALLY].

### Applicable Rule Conformance Summary

Rule	Issue	Conforms to RBPCWD Rules?	Comments
C	Erosion Control Plan	See comment	See rule-specific permit conditions C1 related to the name of individual responsible for on-site erosion control.

Rule	Issue	Conforms to RBPCWD Rules?	Comments	
J	Stormwater Management	Rate	See comment	See rule-specific permit condition J1 related to design revisions to ensure snowmelt rate control.
		Volume	Yes	
		Water Quality	See comment	See rule-specific permit condition J2 & J3 related to pretreatment for discharge to tree trench BMPs and drawing revisions to list the filter media materials.
		Low Floor Elev.	Yes	
		Maintenance	See comment	See rule-specific permit condition J4 related to recordation of stormwater facility maintenance declaration.
		Chloride Management	See comment	See stipulation #4 related to providing an executed chloride management plan prior to permit close-out.
L	Permit Fee Deposit	Yes	\$3,000 deposit fee received January 23, 2024. As of May 1, 2024 the amount due is \$7,469.	
M	Financial Assurance	See Comment	The financial assurance is calculated at \$2,580,537	

**Background**

The applicant proposes to redevelopment the existing Country Inn and Suites property and the Chanhassen Theater property[EXISTING PROPERTY INFO] by removing the existing structures, utilities and parking and constructing two multi-family/mixed use retail and restaurant buildings, underground parking, and surface parking in Chanhassen, Minnesota. The applicant proposes to install seven BMPs to provide water quality treatment, rate control, and volume abstraction, including an underground system, a stormwater reuse system, two tree trenches, small green roof, and three ADS BayFilters, stormwater chambers with filter cartridges designed to remove pollutants .

The project site information is summarized in Table 1.

**Table 1. Site Information**

Project Site Information	Area
Total Site Area, acres	4.69
Existing Site Impervious, acres	3.64
Proposed Site Impervious Area, acres	4.13
New Impervious Area , acres	0.43 (13.5% increase)
Disturbed Existing Impervious Area, acres	3.64 (100% disturbed)
Regulated Impervious Area, acres	4.13
Total Disturbed Area, acres	4.69

Exhibits:

1. Permit application dated January 31, 2024 (Notified applicant on February 13, 2024 that submittal was incomplete, revised materials completing the application received March 20, 2024)
2. Stormwater Report dated January 24, 2024 (revised April 17, 2024)
3. Project SWPPP dated April 18, 2024
4. Project Plan set dated January 19, 2024 (revised April 18, 2024)
5. Phase II Environmental Site Assessment by Bruan Intertec dated December 13, 2023
6. Geotechnical Evaluation Report by Braun Intertec dated October 18, 2023
7. Existing and Proposed HydroCAD Models received January 30, 2024 (revised models received April 18, 2024)
8. Review Responses dated March 20, 2024 (the applicant's responses to the February 13th incomplete notice/review comments)
9. Review Responses dated April 18, 2024 (the applicant's responses to the April 5th review comments)
10. MPCA MTD Sizing Tool Spreadsheets received April 18, 2024
11. Existing and Proposed MIDS Models received March 20, 2024 (revised models received April 18, 2024)

**Rule Specific Permit Conditions**

**Rule C: Erosion Prevention and Sediment Control**

Because the project will involve the alteration of 4.69 acres of land-surface area or vegetation, the project must conform to the erosion prevention and sediment control requirements established in Rule C.

The erosion control plan prepared by ESG Architecture & Design includes installation of perimeter control (sediment control logs, silt fence, and silt dike), a stabilized rock construction entrance, inlet protection, placement of a minimum of 6 inches of topsoil with a minimum 5% organic matter, daily inspection, decompaction of areas compacted during construction, and retention of native topsoil onsite to the greatest extent possible. To conform to RPBCWD Rule C requirements, the following revisions are needed:

- C1. The applicant must provide the name, address and phone number of the individual who will remain liable to the District for performance under this rule and maintenance of erosion and sediment-

control measures from the time the permitted activities commence until vegetative cover is established.

**Rule J: Stormwater Management**

Because the project will disturb 4.69 acres of land-surface area, the project must meet the criteria of RPBCWD’s Stormwater Management rule (Rule J, Subsection 2.1). Because the project amounts to a disturbance of more than 50 percent of the impervious surface of the parcel, Rule J, Subsection 3.1 applies to the entire parcel.

The applicant is proposing construction of an underground stormwater management facility, reuse system, two tree trenches, small green roof, and three ADS BayFilters to provide the rate control, volume abstraction and water quality management for the proposed impervious area.

**Rate Control**

In order to meet the rate control criteria listed in Subsection 3.1.a, the 2-, 10-, and 100-year post development peak runoff rates must 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 for pre- and post-development conditions for the 2-, 10-, and 100-year frequency storm events using a nested rainfall distribution, and a 100-year frequency, 10-day snowmelt event. The existing and proposed 2-, 10-, and 100-year frequency discharges from the site are summarized in Table 2 below. The following revision is needed for the proposed project to conform to RPBCWD Rule J, Subsection 3.1.a:

- J1. The applicant must revise the design to demonstrate compliance with Rule J, Subsection 3.1.a for the 100-year frequency, 10-day snowmelt event to the East Storm Sewer offsite discharge location while maintaining conformance for the required design storm events at all other offsite discharge locations.

**Table 2. Existing and Proposed Peak Runoff Rates**

Modeled Discharge Location	2-Year Discharge (cfs)		10-Year Discharge (cfs)		100-Year Discharge (cfs)		10-Day Snowmelt (cfs)	
	Ex	Prop	Ex	Prop	Ex	Prop	Ex	Prop
North West Offsite	0.2	<0.1	0.2	0.1	0.4	0.1	<0.1	<0.1
North East Offsite	0.2	0.2	0.3	0.2	0.5	0.4	<0.1	<0.1
South West Storm Sewer Offsite	0.3	0.2	0.6	0.4	1.1	0.8	0.1	<0.1
West Storm Sewer Offsite	9.6	0.2	14.7	0.3	26.1	0.5	1.2	0.1
South Offsite	2.4	0.7	3.8	1.2	7.0	2.4	0.3	0.1

East Storm Sewer Offsite	4.7	3.3	7.1	4.8	12.5	8.7	0.6	0.9
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**Volume Abstraction**

Subsection 3.1.b of Rule J requires the abstraction onsite of 1.1 inches of runoff from the 4.13 acres of regulated impervious surfaces:16,492 cubic feet. The applicant is proposing a two tree trenches and 1300 square feet of green roof to provide abstraction volume via evapotranspiration and a rainwater harvest and reuse system to provide abstraction volume via irrigation. Site runoff routed to the proposed underground stormwater facility will be used to irrigate 0.41 acres of greenspace on the site at an irrigation rate of 1 inch per week. .

Because the soil borings indicate project the area is primarily clay soils and the Phase II ESA at the site reported soils exhibiting elevated photoionization detector results (indicating the presence of volatile organic compounds), staining, and petroleum-like odors, the engineer concurs that infiltration is not advisable for this site, the abstraction standard in Subsection 3.1 of Rule J cannot practicably be met, the site is considered a restricted site, and stormwater runoff volume must be managed in accordance with Subsection 3.3 of Rule J. For restricted sites, Subsection 3.3 of Rule J requires rate control in accordance with Subsection 3.1a and that abstraction and water quality protection be provided in accordance with the following sequence:

- a) Abstraction of 0.55 inches of runoff from site impervious surface determined in accordance with paragraphs 2.3, 3.1 or 3.2, as applicable, and treatment of all runoff to the standard in paragraph 3.1c; or
- b) Abstraction of runoff onsite to the maximum extent practicable and treatment of all runoff to the standard in paragraph 3.1c; or
- c) Off-site abstraction and treatment in the watershed to the standards in paragraph 3.1b and 3.1c.

Because infiltration of stormwater is likely to cause or exacerbate migration of underground contaminants at the site, the engineer concurs the abstraction standard in Subsection 3.3a of Rule J cannot practicably be met and the Applicant is providing abstraction of runoff from the impervious surface to the maximum extent practicable with the proposed tree trenches (18 cubic feet) and 1300 square feet of green roof (60 cubic feet) to provide abstraction volume via evapotranspiration and a rainwater harvest and reuse system (591 cubic feet) and the proposed activity conforms to Rule J, Subsection 3.3b. As shown in Table 4, the applicant is proposing a combination of stormwater methods to provide 668 cubic feet of volume abstraction.

**Table 4. Volume Abstraction Summary**

Required Abstraction Depth for Restricted Site (inches)	Required Abstraction Volume (cubic feet)	Provided Abstraction Depth (inches)	Provided Abstraction Volume (cubic feet)
0.55	8,246	0.04	668

Because the proposed stormwater reuse system requires consistent use at a specified rate to meet District water quality requirements via abstractions, performance monitoring for the site will be required to ensure that the project provides the proposed volume abstraction.

**Water Quality Management**

Subsection 3.1.c of Rule J requires the applicant to provide volume abstraction in accordance with 3.1b or least 60 percent annual removal efficiency for total phosphorus (TP), and at least 90 percent annual removal efficiency for total suspended solids (TSS) from site runoff, and no net increase in TSS or TP loading leaving the site from existing conditions.

The applicant is proposing an underground stormwater management facility, stormwater reuse, two tree trenches, a green roof area, and three ADS BayFilters to achieve the required TP and TSS removals and submitted a MIDS model to estimate the TP and TSS removals. The results of this modeling are summarized in Table 5 and Table 6 below showing the annual TSS and TP removal requirements are achieved and that there is no net increase in TSS and TP leaving the site. With the following revisions, the engineer concurs with the modeling and finds that the proposed project will be in conformance with Rule J, Subsection 3.1.c.:

- J1. Permit applicant must show the Bayfilter EMC cartridges information on the drawings by listing the required cartridge media type/material.
- J2. Pretreatment of runoff must be provided for the two tree trenches (BMP#2 and BMP#3).

**Table 5. Annual TSS and TP removal summary**

Pollutant of Interest	Regulated Site Loading (lbs/yr)	Required Load Removal (lbs/yr)	Provided Load Reduction (lbs/yr)
Total Suspended Solids (TSS)	1,345	1,211 (90%)	1,211 (90%)
Total Phosphorus (TP)	7.4	4.4 (60%)	4.9 (66%)

**Table 6. Summary of net change in TSS and TP leaving the site**

Pollutant of Interest	Existing Site Loading (lbs/yr)	Proposed Site Load after Treatment (lbs/yr)	Change (lbs/yr)
Total Suspended Solids (TSS)	1,292	134	-1,158
Total Phosphorus (TP)	7.1	2.5	-4.6

**Low floor Elevation**

All new buildings must be constructed such that the lowest floor is at least two feet above the 100-year high-water elevation or one foot above the emergency overflow of a stormwater-management facility according to Rule J, Subsection 3.6a. The lowest elevation of the nearest building and the 100-year event flood elevation in the proposed stormwater management facilities are summarized below. Using the Low-Floor Elevation Assessment outlined in Appendix J.1, the RPBCWD Engineer concurs that the proposed project is in conformance with Rule J, Subsection 3.6.

**Table 7. Appendix J.1 Low Floor Evaluation**

Structure	Stormwater Facility	100-year Event Flood Elevation of Feature (ft)	Low Floor Elevation of Building (ft)	Freeboard Provided (ft)	Distance from Building to Adj. Facility (ft)	Seasonal Water Table Elevation (ft)	Minimum Allowable Depth to Water Table (ft)	Provided Depth from Low Floor Elevation to Water Table (ft)
East	BMP#1: Underground Storage Facility	966.0	962.0	-4.0	15	938.9 (ST-6)	15	23.1
West	BMP#2: Tree Trench	969.0	966.4	-2.6	10	935.4 (ST-4)	16	31.0
West	BMP#3: Tree Trench	965.0	966.4	1.4	6	931.2 (ST-7)	19	35.2
East	BMP#4: ADS Bay Filter	958.9	962.0	3.1	Not Required	923.3 (ST-11)	Not Required	Not Required
East	BMP#5: ADS Bay Filter	955.9	962.0	6.1	Not Required	925.9 (ST-10)	Not Required	Not Required
West	BMP#6: ADS Bay Filter	960.3	966.4	6.1	Not Required	931.2 (ST-7)	Not Required	Not Required

**Maintenance**

Subsection 3.7 of Rule J requires the submission of maintenance plan. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed. While the applicant provided a draft post construction operation and maintenance plan for review, the following revisions are needed:

- J3. Permit applicant must provide a maintenance and inspection declaration. A maintenance declaration template is available on the permits page of the RPBCWD website. (<http://www.rpbcwd.org/permits/>). The declaration must include a stormwater-reuse monitoring and reporting plan that includes protection of the greenspace to be irrigated and metering of the

volume of reuse, as well as maintenance specifics provided by the manufacturer(s) or installer(s) for the proprietary systems. A draft declaration must be provided for District review and approval prior to recording.

**Chloride Management**

Subsection 3.8 of Rule J requires the submission of chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan. To close out the permit and release the \$5,000 in financial assurance held for the purpose of chloride management, the permit applicant must indicate the MPCA-certified salt applicator engaged in implementing the plan at the site.

**Rule L: Permit Fee Deposit:**

The RPBCWD permit fee schedule adopted in February 2020 requires permit applicants to deposit \$3,000 to be held in escrow and applied to cover the \$10 permit-processing fee and reimburse RPBCWD for permit review and inspection-related costs and when a permit application is approved, the deposit must be replenished to the applicable deposit amount by the applicant before the permit will be issued to cover actual costs incurred to monitor compliance with permit conditions and the RPBCWD Rules. A permit fee deposit of \$3,000 was received on January 23, 2024. If the costs of review, administration, inspections and closeout-related or other regulatory activities exceed the fee deposit amount, the applicant will be required to replenish the deposit to the original amount or such lesser amount as the RPBCWD administrator deems sufficient within 30 days of receiving notice that such deposit is due. The administrator will close out the relevant application or permit and revoke prior approvals, if any, if the permit-fee deposit is not timely replenished.

- L1. The applicant must replenish the permit fee deposit to the original amount due before the permit will be issued. As of May 1, 2024 the amount due is \$7,469.

**Rule M: Financial Assurance**

	Unit	Unit Cost	# of Units	Total
<b>Rule C: Erosion Control</b>				
Perimeter Control	LF	\$2.50	2060	\$5,150
Inlet Protection	EA	\$100	29	\$2,900
Rock Entrance	EA	\$250	1	\$250
Restoration	AC	\$2,500	4.69	\$11,725
<b>Rule J: Chloride Management</b>	LS	\$5,000	1	\$5,000
<b>Rule J: Stormwater Management:</b> 125% of engineer’s opinion of cost	EA	125% OPC	1	\$2,320,918
Contingency (10%)		10%		\$234,594
<b>Total Financial Assurance</b>				<b>\$2,580,537</b>

**Applicable General Requirements:**

1. The RPBCWD Administrator and Engineer shall be notified at least three days prior to commencement of work.
2. Construction shall be consistent with the plans and specifications approved by the District as a part of the permitting process. The date of the approved plans and specifications is listed on the permit.
3. Construction must be consistent with the plans, specifications, and models that were submitted by the applicant that were the basis of permit approval. The date(s) of the approved plans, specifications, and modeling are listed on the permit. The grant of the permit does not in any way relieve the permittee, its engineer, or other professional consultants of responsibility for the permitted work.
4. The grant of the permit will not relieve the permittee of any responsibility to obtain approval of any other regulatory body with authority.
5. The issuance of this permit will not convey any rights to either real or personal property, or any exclusive privileges, nor will it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
6. In all cases where the doing by the permittee of anything authorized by this permit involves the taking, using or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements or interests, the permittee, before proceeding therewith, must acquire all necessary property rights and interest.
7. RPBCWD's determination to approve the permit application was made in reliance on the information provided by the applicant. Any substantive change in the work affecting the nature and extent of applicability of RPBCWD regulatory requirements or substantive changes in the methods or means of compliance with RPBCWD regulatory requirements must be the subject of an application for a permit modification to the RPBCWD.
8. If the conditions herein are met and the permit is issued by RPBCWD, the applicant, by accepting the permit, grants access to the site of the work at all reasonable times during and after construction to authorized representatives of the RPBCWD for inspection of the work.

**Findings**

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. The proposed project will conform to Rules C and J if the Rule Specific Permit Conditions listed above are met.

**Recommendation:**

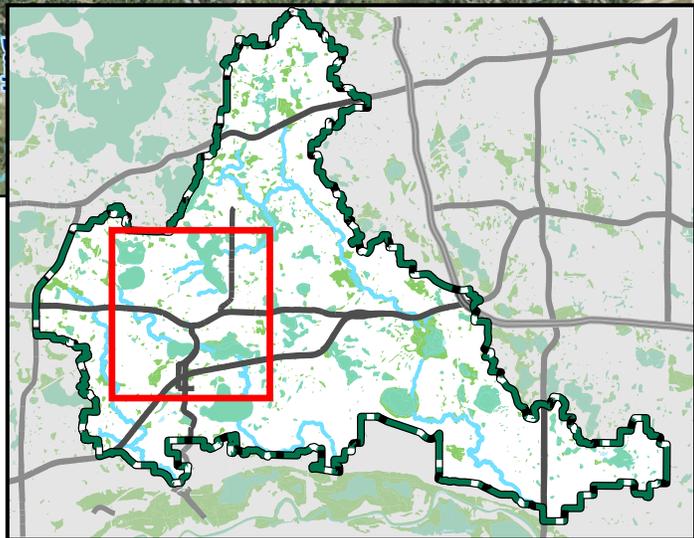
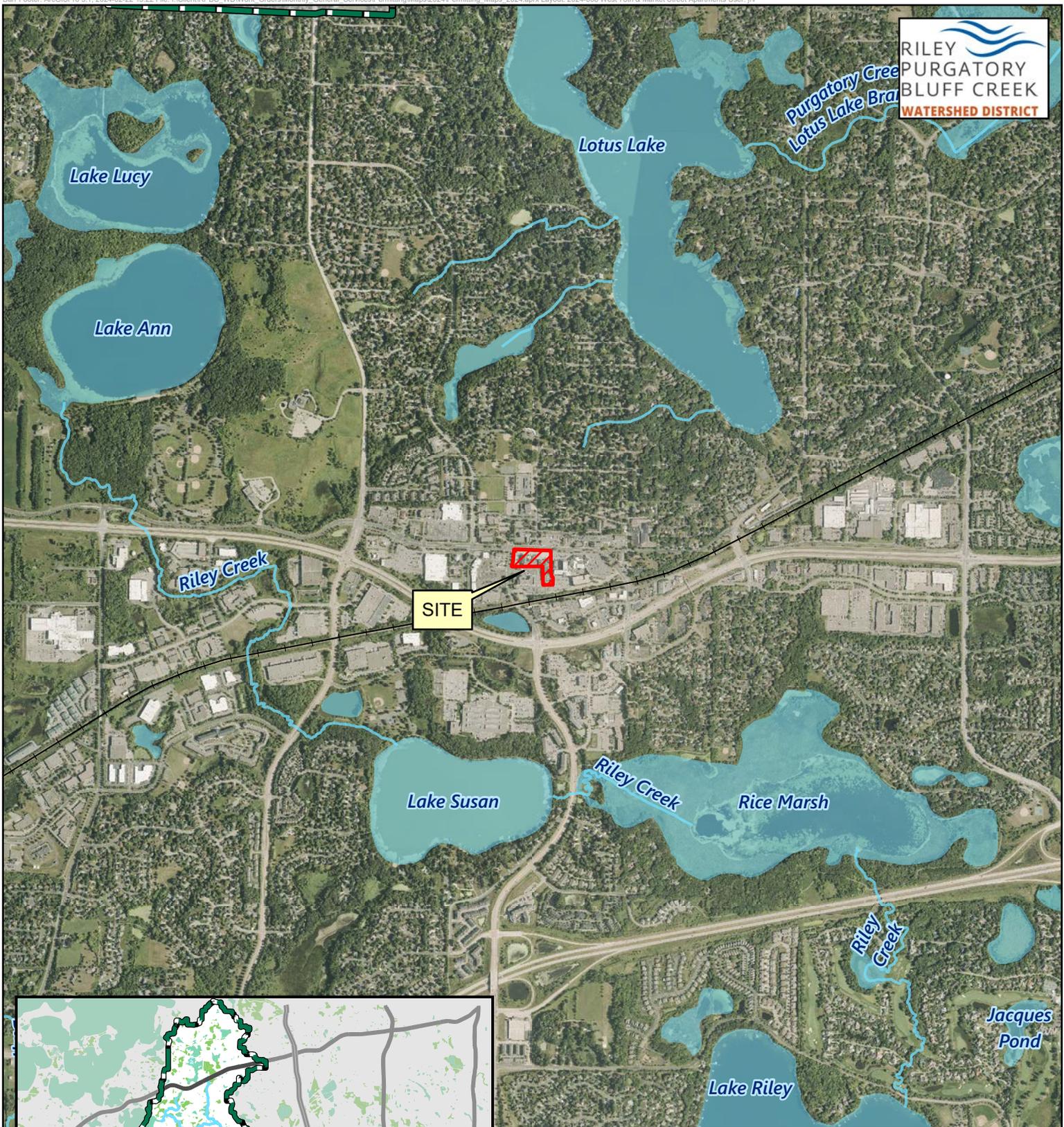
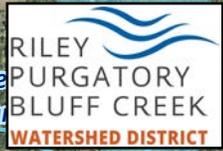
Approval of the permit contingent upon:

1. Financial Assurance in the amount of \$2,580,537.

2. Permit applicant must provide the name and contact information of the general contractor responsible for the site. RPBCWD must be notified if the responsible party changes during the permit term.
3. Pretreatment of runoff be provided for the tree trenches (BMP#2 and BMP#3).
4. The applicant demonstrate compliance with Rule J, Subsection 3.1.a for the 100-year frequency, 10-day snowmelt event to the East Storm Sewer offsite discharge location.
5. Receipt of updated plans showing the Bayfilter EMC cartridges information by listing the required cartridge media type/material.
6. Receipt by RPBCWD of documentation of recordation of a maintenance declaration for the stormwater management facility. A draft must be reviewed and approved by the District prior to recordation. The declaration must also include a stormwater reuse monitoring and reporting plan that includes protection of the greenspace to be irrigated and metering of the volume of reuse, as well as maintenance specifics provided by the manufacturer(s) or installer(s) for the proprietary system.
7. The applicant must replenish the permit fee deposit to the original amount due before the permit will be issued. As of May 1, 2024 the amount due is \$7,469.

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

1. Continued compliance with General Requirements.
2. Per Rule J Subsection 4.5, upon completion of the site work, the permittee must submit as-built drawings demonstrating that at the time of final stabilization the stormwater management facility conforms to design specifications and functions as intended and approved by the District. As-built/record drawings must be signed by a professional engineer licensed in Minnesota and include, but not limited to:
  - a) the surveyed bottom elevations, water levels, and general topography of all facilities;
  - b) the size, type, and surveyed invert elevations of all stormwater facility inlets and outlets;
  - c) the surveyed elevations of all emergency overflows including stormwater facility, street, and other;
  - d) other important features to show that the project was constructed as approved by the Managers and protects the public health, welfare, and safety.
3. Providing the following additional close-out materials:
  - a) Documentation that constructed stormwater facilities perform as designed. This may include infiltration testing, flood testing, or other with prior approval from RPBCWD
  - b) Documentation that disturbed pervious areas remaining pervious have been decompacted per Rule C Subsection 3.2c criteria
4. To close out the permit and release the \$5,000 in financial assurance held for the purpose of the chloride management, the permit applicant must indicate the MPCA-certified salt applicator engaged in implementing the plan at the site.



Feet



Permit Location Map

WEST 78TH & MARKET  
STREET APARTMENTS

**Permit 2024-008**

Riley Purgatory Bluff Creek  
Watershed District

# SITE DEVELOPMENT PLANS FOR CHANHASSEN APARTMENTS

## SECTION 13, TOWNSHIP 116 N, RANGE 23 W CHANHASSEN, CARVER COUNTY, MN

### PROJECT TEAM:

**ENGINEER**  
KIMLEY-HORN AND ASSOCIATES, INC.



PREPARED BY: MICHAEL C. BRANDT, PE  
767 EUSTIS STREET, SUITE 100  
ST. PAUL, MN 55114  
TELEPHONE: 651-645-4197

**LANDSCAPE ARCHITECT**  
KIMLEY-HORN AND ASSOCIATES, INC.  
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CONTACT: MITCHELL COOKAS

**GEOTECHNICAL ENGINEER**  
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11001 HAMPSHIRE AVENUE S  
MINNEAPOLIS, MN 55438  
TELEPHONE: 952-995-2000  
CONTACT: AARON R. SCHULZETENBERG

**OWNER / DEVELOPER**  
ROERS COMPANIES



2 CARLSON PARKWAY, SUITE 400,  
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TELEPHONE: 763-285-8808  
CONTACT: NICK ASTA

**SURVEYOR**  
EGAN, FIELD & NOWAK, INC.  
475 OLD HIGHWAY 8 NW, SUITE 200  
NEW BRIGHTON, MN 55112  
TELEPHONE: 612-466-3300  
CONTACT: CHRISTOPHER A. TERWEDO

**ARCHITECT**  
ESG ARCHITECTS  
500 SOUTH WASHINGTON AVENUE S  
MINNEAPOLIS, MN 55415  
TELEPHONE: 612-339-5508  
CONTACT: BOB LOKEN



**VICINITY  
N.T.S.**



**SITE**

Sheet List Table	
Sheet Number	Sheet Title
C000	COVER SHEET
C100	GENERAL NOTES
C101	PARCEL MAP
V101	ALTA TOPOGRAPHIC SURVEY
V102	ALTA TOPOGRAPHIC SURVEY
C200	SITE DEMOLITION PLAN
C201	TREE INVENTORY & PRESERVATION PLAN
C300	EROSION CONTROL PLAN - PHASE 1
C301	EROSION CONTROL PLAN - PHASE 2
C302	EROSION CONTROL DETAILS
C400	SITE PLAN
C401	TRUCK CIRCULATION
C402	SITE DETAILS
C403	SITE DETAILS
C404	SITE DETAILS
C500	GRADING AND DRAINAGE PLAN
C501	STORM SEWER PLAN
C600	UTILITY PLAN
C601	UTILITY DETAILS
C602	UTILITY DETAILS
C603	UTILITY DETAILS
C604	UTILITY DETAILS
C605	UTILITY DETAILS
C606	UTILITY DETAILS
C607	UTILITY DETAILS
C608	UTILITY DETAILS
L100	LANDSCAPE PLAN
L101	LANDSCAPE DETAILS
L102	IRRIGATION PLAN

### NOTES:

- CONTRACTOR SHALL CONFIRM THAT THE EXISTING CONDITIONS FOR THE SITE MATCH WHAT IS SHOWN ON THE DRAWINGS INCLUDED PRIOR TO CONSTRUCTION. IF REPRODUCED, THE SCALES SHOWN ON THESE PLANS ARE BASED ON A ARCH full bleed E1 (30.00 x 42.00 Inches) SHEET.
- ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICES COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICES.
- ALL GENERAL CONTRACTOR WORK TO BE COMPLETED (EARTHWORK, FINAL UTILITIES, AND FINAL GRADING) BY THE MILESTONE DATE IN PROJECT DOCUMENTS.

### BENCHMARKS

**SITE BENCHMARKS**  
(LOCATIONS SHOWN ON SURVEY)

PROJECT BENCHMARK: TOP OF MINNESOTA DEPARTMENT OF TRANSPORTATION GEODETIC MONUMENT "HASSEN MINDT"  
ELEVATION=983.31 (NAVD 88)

SBM #1: TOP NUT OF HYDRANT NEAR NORTHEASTERLY CORNER OF THE SURVEYED PROPERTY.  
ELEVATION=978.35 (NAVD 88)

SBM #2: TOP NUT OF HYDRANT NEAR SOUTHEASTERLY PORTION OF THE SURVEYED PROPERTY.  
ELEVATION=964.09 (NAVD 88)

MARKET BLVD  
& W 78TH ST



500 Washington Avenue South, Suite 1000  
Minneapolis, MN 55415  
P: 612.339.8800 F: 612.339.5588  
www.esgarch.com



**NOT FOR CONSTRUCTION**

ORIGINAL ISSUE:		
LAND USE APPLICATION 1/1/2024		
REVISIONS:		
No.	Description	Date
1	RPRCWD SUBMITTAL	03/20/2024
1	RPRCWD RESUBMITTAL	04/18/2024

NO REVISIONS OR REPORTS HAVE BEEN RECEIVED BY US OR MADE BY DIRECT EMPLOYEES AND THAT THIS DRAWING IS BEING REPRODUCED UNLESS INDICATED OTHERWISE BY THE STATE OF MINNESOTA.

NO FOR CONSTRUCTION  
MICHAEL CURRAN, REG.  
DATE: 01/10/2024 TEL: NO. 425951

PRELIMINARY - NOT FOR CONSTRUCTION

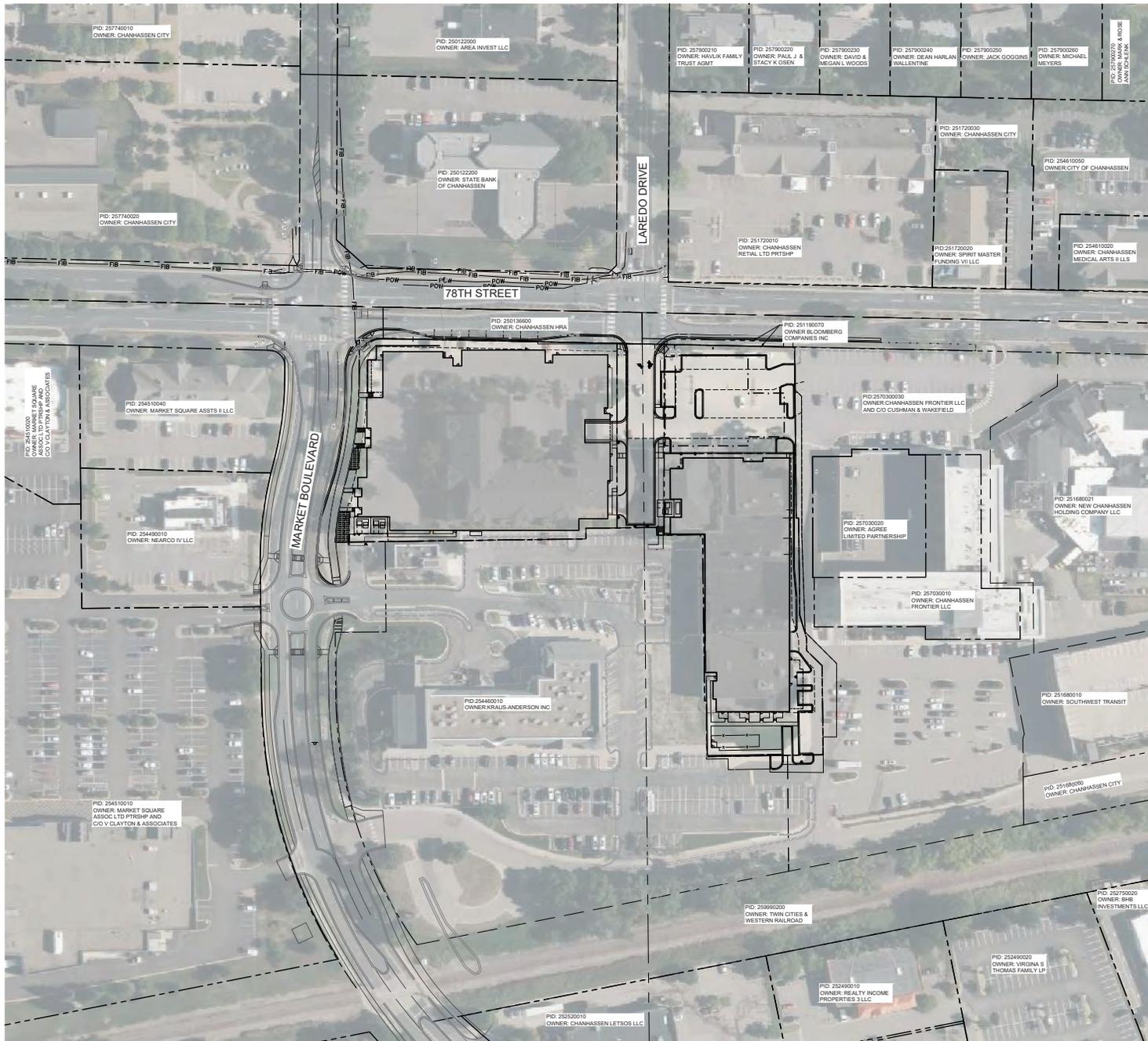
MARKET BLVD  
& W 78TH ST

COVER SHEET

C000



Know what's below.  
Call before you dig.



**LEGEND**  
 --- PROPERTY LINE

MARKET BLVD  
 & W 78TH ST

**esg**  
 ARCHITECTURE & DESIGN

100 Washington Avenue South, Suite 1000  
 Minneapolis, MN 55415  
 P: 612.339.8300 F: 612.339.8302  
 www.esgarch.com

**Kimley-Horn**

**ROERS**  
 COMPANIES

**NOT FOR  
 CONSTRUCTION**

ORIGINAL ISSUE:  
 LAND USE APPLICATION  
 1/25/2024

REVISIONS:

No.	Description	Date
1	RPRCWD SUBMITTAL	03/20/2024
1	RPRCWD RESUBMITTAL	04/18/2024

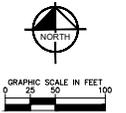
NO PRELIMINARY CONSTRUCTION

DATE: 01/10/2024 LCL NO.: 402991

MARKET BLVD  
 & W 78TH ST

PARCEL MAP

**C101**



**811**  
 Know what's below.  
 Call before you dig.

PRELIMINARY - NOT FOR CONSTRUCTION

NOT FOR  
CONSTRUCTION

ORIGINAL ISSUE:  
LAND USE APPLICATION  
1/2/2024

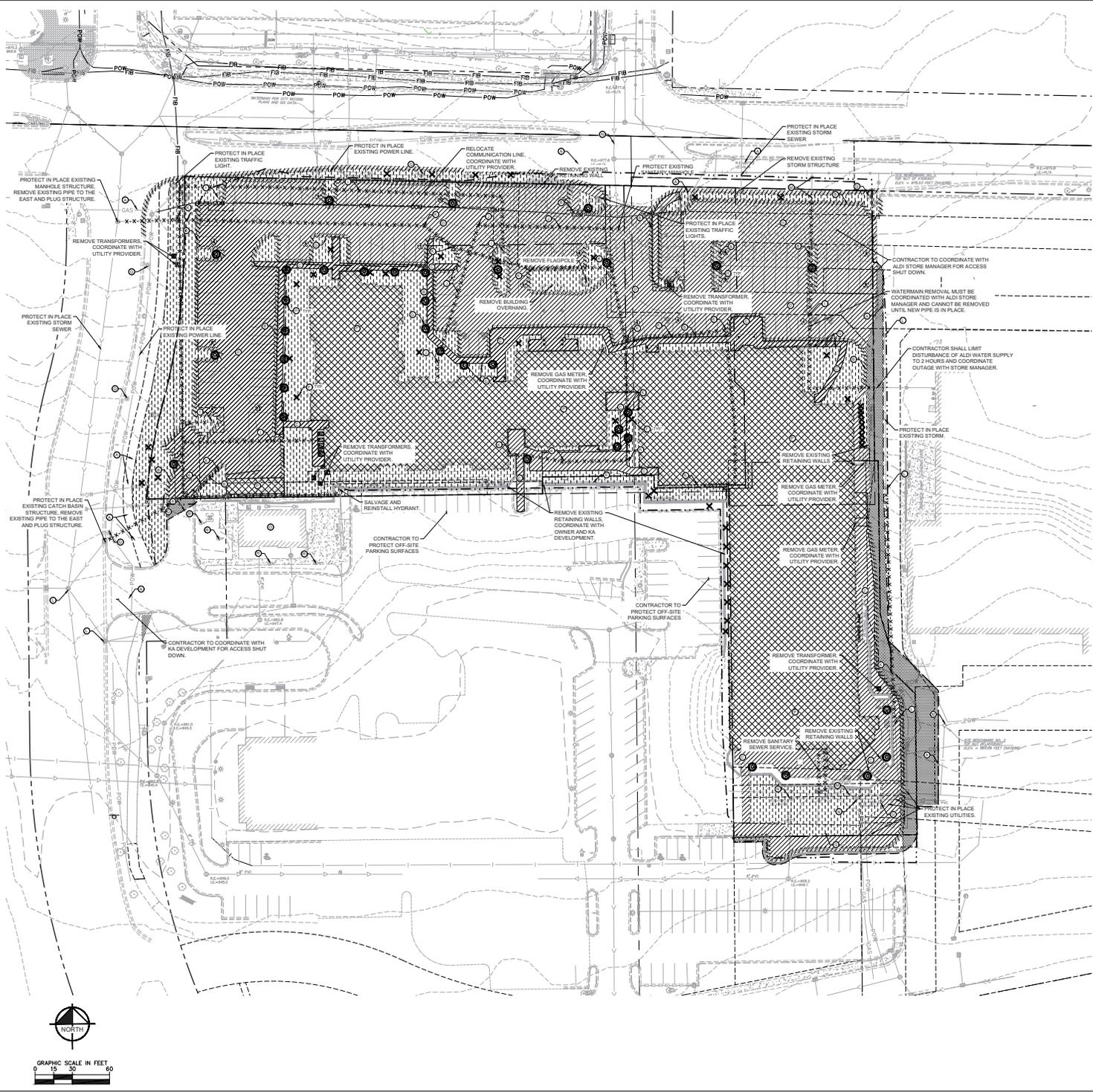
REVISIONS:

No.	Description	Date
1	RPRCWD SUBMITTAL	03/20/2024
1	RPRCWD RESUBMITTAL	04/18/2024

PRELIMINARY - NOT FOR CONSTRUCTION

MARKET BLVD  
& W 78TH ST  
SITE DEMOLITION  
PLAN

C200

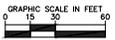


**DEMOLITION PLAN NOTES**

- THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL IN A LOCATION APPROVED BY ALL GOVERNING AGENCIES OF ALL STRUCTURES, POOL WALLS, FENCES, FOUNDATIONS, PAVING, DRIVEWAYS, DRIVEWAYS, UTILITY ETC. SUBJECT TO THE REQUIREMENTS OF THE CITY OF WALTHAM. ALL MATERIALS TO BE REMOVED SHALL BE UNDERLIFT TO SUITABLE MATERIALS TO BE BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL FOR THE PROJECT DOCUMENTS.
- THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING OF THE DEBRIS IN A SUITABLE MANNER AND IN ACCORDANCE WITH LOCAL, AND STATE REGULATIONS. THE CONTRACTOR SHALL OBTAIN ANY REQUIRED PERMITS FOR COLLECTION AND DISPOSAL FROM THE APPLICABLE AGENCIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY TREE PROGRAMS TO BE PERFORMED BY THE UTILITY COMPANY FOR THESE SERVICES. THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANIES TO PROVIDE LOCATIONS OF EXISTING UTILITIES WITHIN PROPOSED WORK AREA.
- THE CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ADJACENT PROPERTIES AT ALL TIMES. UTILITY SERVICES SHALL NOT BE INTERRUPTED UNLESS NECESSARY. THE CONTRACTOR SHALL COORDINATE WITH THE ADJACENT PROPERTIES AND/OR THE CITY.
- THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY TREE PROGRAMS TO BE PERFORMED BY THE UTILITY COMPANY FOR THESE SERVICES. THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANIES TO PROVIDE LOCATIONS OF EXISTING UTILITIES WITHIN PROPOSED WORK AREA.
- THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANIES TO PROVIDE LOCATIONS OF EXISTING UTILITIES WITHIN PROPOSED WORK AREA.
- EXISTING SEWER, SPRING AND UTILITIES SHOWN ARE BASED ON AVAILABLE RECORDED PLAN DATA AND/OR FIELD SURVEYING AND ARE NOT TO BE INTERFERED AS THE EXACT LOCATION. ADDITIONAL UNRECORDED OBSTACLES MAY EXIST ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AND/OR AN APPROPRIATE SURVEYING FEATURES. GIVE NOTICE TO AFFECTED UTILITY COMPANIES CONCERNING REMOVAL OF SERVICE LINES AND CAP ANY ABANDONED LINES BEFORE PROCEEDING WITH THE PROPOSED WORK.
- ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION TO UTILITY SERVICES. CONTRACTOR SHALL PAY CLOSE ATTENTION TO EXISTING UTILITIES AND THE PUBLIC AT ALL TIMES WITH FENCING, BARRIERS, ENCLOSURES, ETC. AND OTHER APPROPRIATE BEST MANAGEMENT PRACTICES AS APPROVED BY THE CONTRACTOR MANAGER. MAINTENANCE OF TRAFFIC CONTROL SHALL BE COORDINATED IN ACCORDANCE WITH THE CITY, COUNTY, AND STATE DOT AS NECESSARY.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES DURING CONSTRUCTION, AND SHALL NOTIFY ADJACENT PROPERTY OWNERS IF ACCESS WILL BE INTERRUPTED OR ALTERED AT ANY TIME DURING CONSTRUCTION.
- PRIOR TO THE START OF DEMOLITION, INSTALL EROSION CONTROL BMP'S IN ACCORDANCE WITH THE EROSION & SEDIMENT CONTROL PLAN (ESP/PPP).
- CONTRACTOR MAY SHUT OFF OR ADJUSTMENT REMOVAL TO ONLY THOSE AREAS WHERE IT IS REQUIRED AS SHOWN ON THESE CONSTRUCTION PLANS BUT IF ANY DAMAGE IS INCURRED ON ANY OF THE SURROUNDING PROPERTY OWNERS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR, AND REPAIR.
- THE CONTRACTOR SHALL COORDINATE WITH THE CITY OFFICE AND FIRE DEPARTMENTS TO ENSURE ADEQUATE FIRE PROTECTION IS CONSTANTLY AVAILABLE TO THE SITE AND SURROUNDING PROPERTIES THROUGH ALL PHASES OF CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR ARRANGING/PROVIDING ANY REQUIRED WATER MAIN SHUT OFFS WITH THE CITY. ANY COSTS ASSOCIATED WITH WATER MAIN SHUT OFFS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO EXTRA COMPENSATION WILL BE PROVIDED.
- IN THE EVENT A WELL IS BEING THE CONTRACTOR SHALL CONTACT THE ENGINEER AND OWNER IMMEDIATELY. ALL WELLS SHALL BE SEALED BY A LICENSED WELL CONTRACTOR IN ACCORDANCE WITH STATE REQUIREMENTS.
- IN THE EVENT THAT UNLIDDED CONTAINERS OR TANKS ARE ENCOUNTERED, THE CONTRACTOR SHALL CONTACT THE OWNER AND OWNER REPRESENTATIVE IMMEDIATELY. ALL CONTAINERS SHALL BE DEPOSED OF AT A PERMITTED LANDFILL PER THE PROJECT DOCUMENTS.
- CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY EXISTING BRANTLE IS ENCOUNTERED ON SITE. ACTIVE BRANTLE SHALL NOT BE REMOVED WITHOUT APPROVAL FROM THE ENGINEER.
- IF CONTAMINATED MATERIAL IS ENCOUNTERED ON THE PROJECT SITE, THE CONTRACTOR SHALL STOP WORK AND NOTIFY THE OWNER AND ENGINEER IMMEDIATELY.

**KEYNOTE LEGEND**

- SAWCUT EXISTING PAVEMENT
- REMOVE EXISTING CURB
- REMOVE EXISTING SIDEWALK
- REMOVE EXISTING PAVEMENT
- REMOVE EXISTING FENCE
- REMOVE EXISTING FENCE
- REMOVE EXISTING SIGN
- REMOVE EXISTING LIGHT POLE
- REMOVE EXISTING WATER LINE / HYDRANT / VALVE
- REMOVE EXISTING SEWER LINE / STRUCTURE
- REMOVE EXISTING STORM LINE / STRUCTURE
- PROTECT EXISTING STORM LINE / STRUCTURE
- PROTECT EXISTING WATER LINE / HYDRANT / VALVE
- PROTECT EXISTING SEWER LINE / STRUCTURE
- PROTECT EXISTING BUILDING / STRUCTURE
- REMOVE EXISTING BUILDING / STRUCTURE
- PROTECT EXISTING LIGHT POLE
- PROTECT EXISTING TREE



No.	Description	Date
1	RPCBWD SUBMITTAL	03/20/2024
1	RPCBWD SUBMITTAL	04/18/2024

**LEGEND**

	ROCK ENTRANCE
	EROSION CONTROL BLANKET
	SILT FENCE
	SILT DIKE
	BIO ROLL

**EROSION CONTROL PLAN NOTES**

1. THE STORM WATER POLLUTION PREVENTION PLAN ("SWPPP") IS COMPOSED OF THE EROSION CONTROL PLAN, THE STORMWATER DETENTION PLAN, THE SWPPP ATTACHMENTS INCLUDED IN THE SPECIFICATIONS OF THE SWPPP, PLUS THE PERMIT AND ALL SUBSEQUENT PERMIT AMENDMENTS AND RELATED DOCUMENTATION.
2. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH LAND DISTURBING ACTIVITIES SHALL OBTAIN A COPY OF THE SWPPP AND REVIEW IT TO UNDERSTAND THE SWPPP ELABORATION SYSTEM UNDER GENERAL PERMIT, AND BECOME FAMILIAR WITH THEIR CONTENTS.
3. BEST MANAGEMENT PRACTICES (BMPs) AND EROSION CONTROL MEASURES ARE REQUIRED BY FEDERAL, STATE AND LOCAL REQUIREMENTS, AS APPLICABLE. THE CONTRACTOR SHALL OBTAIN ADDITIONAL COPIES AS SPECIFIED IN THE PERMIT AND RELATED DOCUMENTATION.
4. SITE ENTRY AND EXIT LOCATIONS SHALL BE MAINTAINED IN A MANNER THAT WILL PREVENT THE TRACKING OF FLOTTING OF SEDIMENT ONTO PUBLIC ROADWAYS. SEDIMENT SOILED, CLOTHED, WASHED OR TRACKED ONTO A PUBLIC ROADWAY FROM THE CONSTRUCTION SITE MUST BE REMOVED AS SOON AS PRACTICABLE. WHEN REMOVAL IS REQUIRED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY, IT SHALL BE DONE IN AN AREA EXISTING WITH CURBS OR OTHER STORM DRAINAGE OR AN APPROVED SEDIMENT BASIN. ANY FEES ASSOCIATED WITH DISCHARGING SEDIMENT ONTO A PUBLIC RIGHT OF WAY SHALL BE PAID BY THE CONTRACTOR.
5. TEMPORARY SEEDING OR OTHER APPROVED METHODS OF STABILIZATION SHALL BE INSTALLED WITHIN 14 DAYS OF THE LAST DISTURBANCE OF ANY AREA OF THE SITE.
6. THE CONTRACTOR SHALL MINIMIZE LAND DISTURBANCE AND CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.
7. CONTRACTOR SHALL DENOTE ON THE PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA. BATTERED TIRE TRACKS SHALL BE REMOVED AND THE AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS AND TOILET FACILITIES.
8. ALL WASH WATER FROM THE CONSTRUCTION SITE (CONCRETE TRUCKS, VEHICLE CLEANING EQUIPMENT, ETC.) SHALL BE STORED AND PROPERLY TREATED BEFORE DISPOSAL.
9. SPILLKIT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS SHALL BE MAINTAINED ON SITE. OIL READY AVAILABLE TO CONTAIN AND CLEANUP FUEL OR CHEMICAL SPILLS AND LEAKS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OUST CONTROL ON SITE. THE USE OF MOTOR OILS AND OTHER HYDRAULIC BASED OR TOXIC LIQUIDS FOR OUST SUPPRESSION OPERATIONS IS PROHIBITED.
11. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PRESENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERWAYS OF THE STATE.
12. STAGING AREAS, STOCKPILES, SPILLS, ETC. SHALL BE LOCATED OUTSIDE OF DRAINAGE WAYS SUCH THAT STORM WATER RUNOFF WILL NOT BE AFFECTED. PROPOSED STABILIZATION MEASURES SUCH AS PERIMETER EROSION CONTROL, BMPs, SEEDING, OR OTHER MEASURES AS NECESSARY TO PREVENT EROSION.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING ANY EROSION CONTROL MEASURES THAT MAY BE DAMAGED OR DESTROYED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RE-ESTABLISHMENT OF ANY MEASURES IN THE ESTABLISHED EROSION CONTROL MEASURES THAT MAY LEAD TO UNAUTHORIZED DISCHARGE OF STORM WATER POLLUTANTS. UNAUTHORIZED POLLUTANTS INCLUDE BUT ARE NOT LIMITED TO EXCESS CONCRETE, GROUT, SAND, CONCRETE, FERTILIZER, CHEMICALS, FUELS, OILS, FUELS, LUBRICANTS, OIL, PETROLEUM, AND SOLID WASTE MATERIALS.
14. EROSION CONTROL BMPs SHOWN ON THESE PLANS SHALL BE INSTALLED PRIOR TO THE START OF LAND-DISTURBING ACTIVITIES ON THE PROJECT AND INSTALLED AS SOON AS PRACTICABLE.
15. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLYING WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION AND SHALL MAINTAIN COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS FOR THE DURATION OF CONSTRUCTION.
16. THE CONTRACTOR SHALL FIELD ADJUST AND/OR PROVIDE ADDITIONAL EROSION CONTROL BMPs AS NEEDED TO PREVENT EROSION AND OFF-SITE SEDIMENT DISCHARGE FROM THE CONSTRUCTION SITE. LOG AND RECORD ANY ADJUSTMENTS AND DEVIATIONS FROM THE APPROVED EROSION CONTROL PLANS WITHIN THE SWPPP DOCUMENTATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SWPPP DOCUMENTATION.

**SWPPP UPDATES & AMENDMENTS**

THE CONTRACTOR MUST TRACK THE PROGRESS OF CONSTRUCTION ACTIVITIES AND GENERAL CHANGES TO THE PROJECT FOR THE DURATION OF ALL DISTURBING ACTIVITIES. A BANNER UPDATER SHALL BE MADE DAILY TO TRACK CONSTRUCTION PROGRESS DESCRIBED IN THE SEQUENCE OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR NOTING THE LOCATION OF THE JOB SITE TRAILER, TEMPORARY PARKING & LAYDOWN AREAS, PORTA-POTTIES, WHEEL WASH, CONCRETE WASHOUT PANS, MATERIAL STORAGE, SOLID WASTE CONTAINERS, AND OTHER CONSTRUCTION RELATED FACILITIES THAT MAY IMPACT STORMWATER RUNOFF.

**PHASE 1 SEQUENCE OF CONSTRUCTION**

1. INSTALL PERIMETER EROSION CONTROL (I.E. SILT FENCE AND INLET PROTECTION AT EXISTING PERIMETER FACILITIES).
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT.
3. PREPARE TEMPORARY PARKING AND STORAGE AREA.
4. CLEAN AND OIL THE SITE.
5. CONSTRUCT AND INSTALL OVERPASS AND TEMPORARY SEDIMENT BARRIERS.
6. BEGIN ALL SITE GRADING AND ROADWAY CONSTRUCTION SUFFICIENT TO ESTABLISH PROPOSED DRAINAGE PATTERNS.
7. START CONSTRUCTION OF THE BUILDING PAD AND STRUCTURES.
8. TEMPORARILY SEED THROUGHOUT CONSTRUCTION DISTURBED AREAS THAT WILL BE INSTALLED FOR 14 DAYS OR MORE OR AS REQUIRED BY THE NEAREST LOCAL GOV. REGULATIONS.

NOTE: THE SEQUENCE OF CONSTRUCTION IS INTENDED TO COMPLY WITH THE GENERAL CONCEPTS OF THE EROSION CONTROL DESIGN AND SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE SEQUENCE OF CONSTRUCTION AND CONSTRUCTION SEQUENCING NECESSARY TO CONSTRUCT THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY PRIOR TO ANY MAJOR CHANGES TO CONSTRUCTION IN ANY ADDITIONAL INFORMATION ON THE CONSTRUCTION SEQUENCE IS NECESSARY.

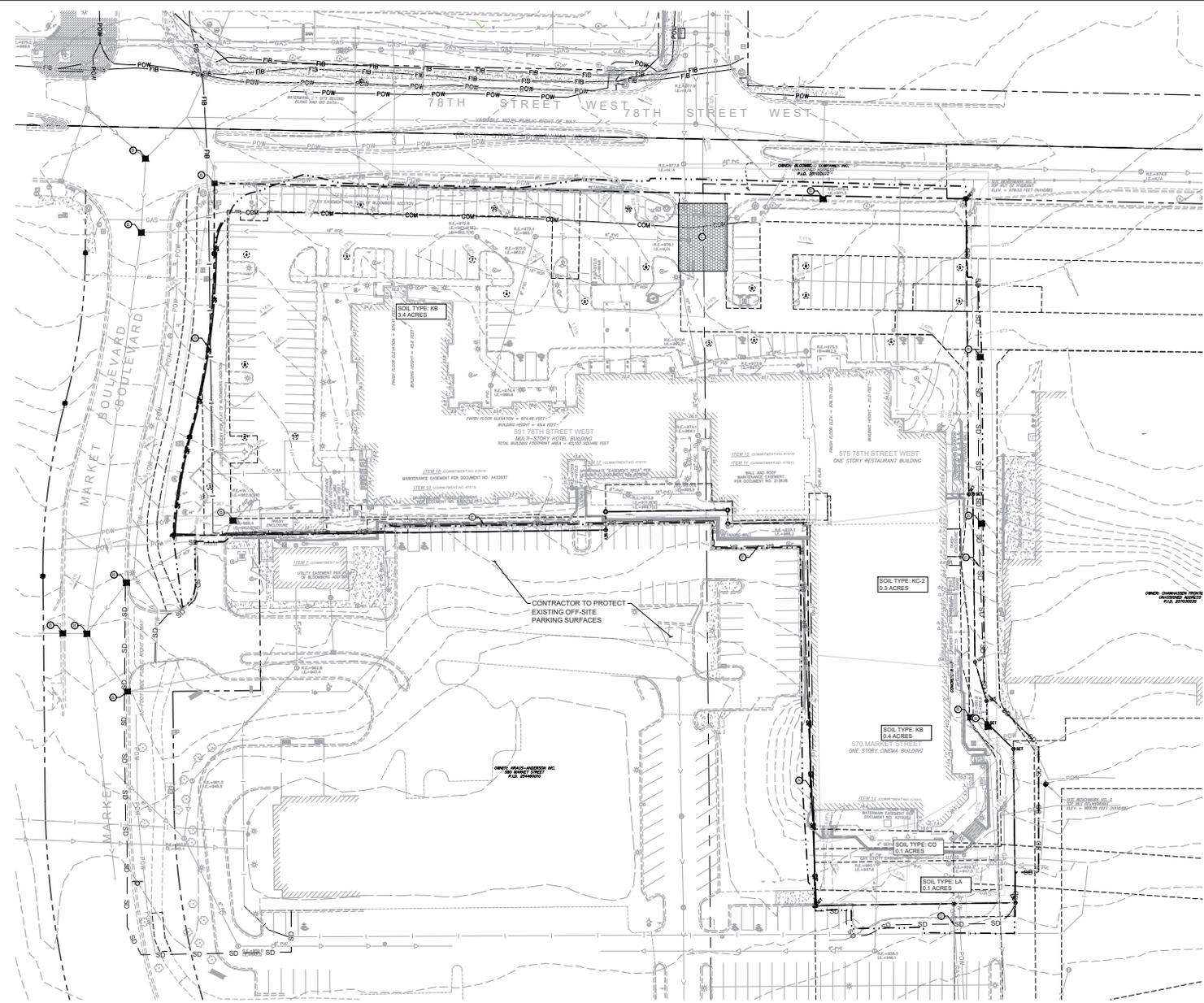
PROPERTY SUMMARY	
TOTAL PROPERTY AREA	4.09 AC / 178,247 SF
EXISTING IMPERVIOUS AREA	3.30 AC / 146,308 SF / 82.1%
EXISTING PERVIOUS AREA	0.79 AC / 31,941 SF / 17.9%
PROPOSED IMPERVIOUS AREA	3.66 AC / 159,455 SF / 89.5%
PROPOSED PERVIOUS AREA	0.43 AC / 18,792 SF / 10.5%

SOIL MAP LEGEND	
CO - CORDOVA CLAY (LOAM) 0 TO 2 PERCENT SLOPES	0.1 ACRES
KB - MILKENNY LESTER LOAMS 2 TO 6 PERCENT SLOPES	3.8 ACRES
KC2 - LESTER MILKENNY COMPLEX 6 TO 10 PERCENT SLOPES, MODERATELY ERODED	0.3 ACRES
LA - LE SUEUR LESTER COMPLEX 1 TO 6 PERCENT SLOPES	0.1 ACRES

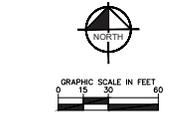
PHASE I BMP QUANTITIES	
SILT FENCE	4885 LF
INLET PROTECTION	14 EA
ROCK CONSTRUCTION ENTRANCE	3 EA
SILT DIKE	#1,250 LF
BIO ROLL	4560

**KEYNOTE LEGEND**

	ROCK CONSTRUCTION ENTRANCE
	SILT FENCE
	SILT DIKE
	BIO ROLL



- RPCBWD REQUIREMENTS**
1. TEMPORARY AND PERMANENT EROSION CONTROL MEASURES MUST BE PROVIDED, INCLUDING RETENTION DITCHES OF NATIVE TOPSOIL TO THE GREATEST EXTENT POSSIBLE.
  2. ADDITIONAL MEASURES, SUCH AS FORMAL TRACKING AND OTHER PRACTICES AS SPECIFIED BY THE DISTRICT MUST BE USED ON SLOPES OF 3:1 (H:V) OR STEEPER TO PROVIDE ADEQUATE STABILIZATION.
  3. FINAL SITE STABILIZATION MEASURES MUST BE INSTALLED WITHIN 14 DAYS OF THE COMPLETION OF CONSTRUCTION AND MUST BE MAINTAINED FOR A PERIOD OF 180 DAYS. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN 14 CALENDAR DAYS AFTER LAND DISTURBING WORK HAS TEMPORARILY OR PERMANENTLY CEASED ON A PROJECT THAT DRAINS TO AN IMPROVED WATERWAY WITHIN 14 DAYS ELSEWHERE.
  4. THE PERMITTEE MUST, AT A MINIMUM, MAINTAIN AND REPAIR ALL DISTURBED SURFACES AND ALL EROSION AND SEDIMENT CONTROL FACILITIES AND SOIL STABILIZATION MEASURES EVERY DAY WORK IS PERFORMED ON THE SITE, AND AT LEAST EVERY 14 DAYS, LAND DISTURBING ACTIVITY HAS CEASED FOR A PERIOD OF 14 DAYS. VEGETATIVE COVER IS ESTABLISHED. THE PERMITTEE WILL MAINTAIN A LOG OF ACTIVITIES UNDER THIS.



**SILT FENCE, MACHINE SLICED (1)**

**SILT FENCE, HEAVY DUTY (2)**

**SILT FENCE, PREASSEMBLED (3)**

**NOTES:**

- Silt Fence to Meet the Requirements of the Most Recent Edition of the MDOT Specifications. See Sections 2573 & 3086.
- Head Silt Fence Posts May Only be Used if Prior Approval is Obtained From the City.
- To Protect Area From Sheet Flow
- Maximum Contributing Area: 1 Acre

**CITY OF CHANHASSEN**

**SILT FENCE**

REVISD: 1-21  
FILE NAME: G:\VEND\SPEC\5300

ENGINEERING DEPARTMENT PLATE NO.: 5300

**ROCK CONSTRUCTION ENTRANCE**

**NOTE:** FILTER FABRIC SHALL BE PLACED UNDER ROCK TO STOP MUD MIGRATION THROUGH ROCK.

**CITY OF CHANHASSEN**

**ROCK CONSTRUCTION ENTRANCE**

REVISD: 12-19  
FILE NAME: G:\VEND\SPEC\5302

ENGINEERING DEPARTMENT PLATE NO.: 5301

**POP-UP HEAD FILTER**

**GENERAL NOTES:**

- SEE MMDOT SPECIFICATIONS 2573.
- POP-UP HEAD FILTER TO BE USED IN CONSTRUCTION WHERE STEEL PLATED STRUCTURES REQUIRE DRAINAGE.
- FILTER SOCK SHALL BE INSPECTED DURING EROSION CONTROL INSPECTIONS. ANY DEFECTIVE OR DAMAGED MATERIALS MUST BE REPLACED WITHIN 24 HOURS.
- POP-UP HEAD FILTER SOCK TO BE INSTALLED WITHIN 24 HOURS OF STRUCTURE PLACEMENT.
- SOCKS SHALL BE MAINTAINED & MONITORED TO PREVENT FLOODING OF PROPERTIES, DRIVEWAYS & PRIVATE PROPERTY.

**CITY OF CHANHASSEN**

**TEMPORARY SEDIMENT CONTROL POP-UP FILTER HEAD**

REVISD: 3-22  
FILE NAME: G:\VEND\SPEC\5303

ENGINEERING DEPARTMENT PLATE NO.: 5302

**SEDIMENT TRAP**

MANUFACTURED BY WIMCO, LLC, SHAKOPEE, MN.,  
ESS BROS., CORCORAN, MN. OR APPROVED EQUAL.

**MODEL #CG 3067**

**CITY OF CHANHASSEN**

**CATCH BASIN SEDIMENT TRAP**

REVISD: 1-22  
FILE NAME: G:\VEND\SPEC\5303A

ENGINEERING DEPARTMENT PLATE NO.: 5302A

**WASHOUT AREA**

**SECTION A-A**

**NOTES:**

- LOCATION OF THE WASHOUT AREA SHALL BE AT THE DISCRETION OF THE CONTRACTOR BUT IT MUST BE SHOWN ON THE PLANS AND MUST BE IDENTIFIED ON-SITE USING SIGNAGE. THE WASHOUT AREA SHALL BE AT LEAST THE MINIMUM DISTANCE FROM THE RIGHT OF WAY AS REQUIRED BY LOCAL JURISDICTION. THIS WASHOUT AREA SHALL BE LOCATED IN SUCH A MANNER SO THAT CONCRETE TRUCKS MAY PASS THROUGH THE WASHOUT AREA PRIOR TO THE STABILIZED ROCK CONSTRUCTION EXT.
- HARDENED MATERIAL SHALL BE BROKEN UP AND CLEANED OUT AS NEEDED TO MAINTAIN A FUNCTIONING WASHOUT AREA VOLUME OR AS DIRECTED BY THE ENGINEER.
- THE WASHOUT AREA MUST BE GREATER THAN 50 FEET FROM ANY TREES.
- THE WASHOUT AREA MUST BE SELF CONTAINED AND WATER TIGHT.

**CITY OF CHANHASSEN**

**CONCRETE WASHOUT AREA**

REVISD: 3-14  
FILE NAME: G:\VEND\SPEC\5304

ENGINEERING DEPARTMENT PLATE NO.: 5304

**PROJECT NAME**

PROJECT DESCRIPTION - A 54 LOT SINGLE FAMILY RESIDENTIAL SUBDIVISION

DEVELOPER - NAME PHONE NUMBER

CONTACT - NAME PHONE NUMBER

PERMITTED CONSTRUCTION HOURS - MON - FRI 7AM - 6PM SATURDAY 9AM - 5PM

ABSOLUTELY!!! NO CONSTRUCTION ACTIVITY, MAINTENANCE OR DELIVERIES ALLOWED ON-SITE OUTSIDE OF THESE HOURS.

CITY OF CHANHASSEN ENGINEERING DEPARTMENT 952-227-1610

**CITY OF CHANHASSEN**

**DEVELOPMENT INFO SIGN**

REVISD: 1-10  
FILE NAME: G:\VEND\SPEC\5313

ENGINEERING DEPARTMENT PLATE NO.: 5313

**TEMPORARY SEDIMENT TRAP 2.5 ACRES OR LESS**

**NOTES:**

- TRAP USED FOR 2.5 ACRES DRAINAGE AREA OR LESS. DESIGN VOLUME IS A MINIMUM OF 1800 CUBIC FEET PER ACRE OF CONTRIBUTING DRAINAGE AREA.
- TRAP SHALL BE SELF CONTAINED OTHER DESIGN CRITERIA SHALL BE MAINTAINED.
- TRAP OR OTHER SHALL BE MAINTAINED TO PREVENT FLOODING OF PROPERTIES, DRIVEWAYS & PRIVATE PROPERTY.

**CITY OF CHANHASSEN**

**TEMPORARY SEDIMENT TRAP 2.5 ACRES OR LESS**

REVISD: 2-10  
FILE NAME: G:\VEND\SPEC\5302A

ENGINEERING DEPARTMENT PLATE NO.: 5302I

**SILT DIKE**

**DIKE PLAN VIEW**

**SECTION A-A**

**BIOROLL**

**NOTES:**

- INSTALL SILT DIKE UNIT SHALL HAVE CONTINUOUS AND FIRM CONTACT WITH PAVEMENT.
- ADHESIVES SHALL BE LIQUID NAIL OR APPROVED EQUAL FOR CONCRETE PAVEMENT APPLICATIONS AND RELEASED ADHESIVE FOR ASPHALT APPLICATIONS. ADHESIVE SHALL BE PLACED WHERE THE UNITS OVERLAP AND A 20' STRIP ALONG BOTH EDGES.

**CITY OF CHANHASSEN**

**BIOROLL**

REVISD: 1-22  
FILE NAME: G:\VEND\SPEC\5303A

ENGINEERING DEPARTMENT PLATE NO.: 5302A

MARKET BLVD & W 78TH ST

**esg**  
ARCHITECTURE & DESIGN

**Kimley-Horn**

**ROERS**  
COMPANIES

NOT FOR CONSTRUCTION

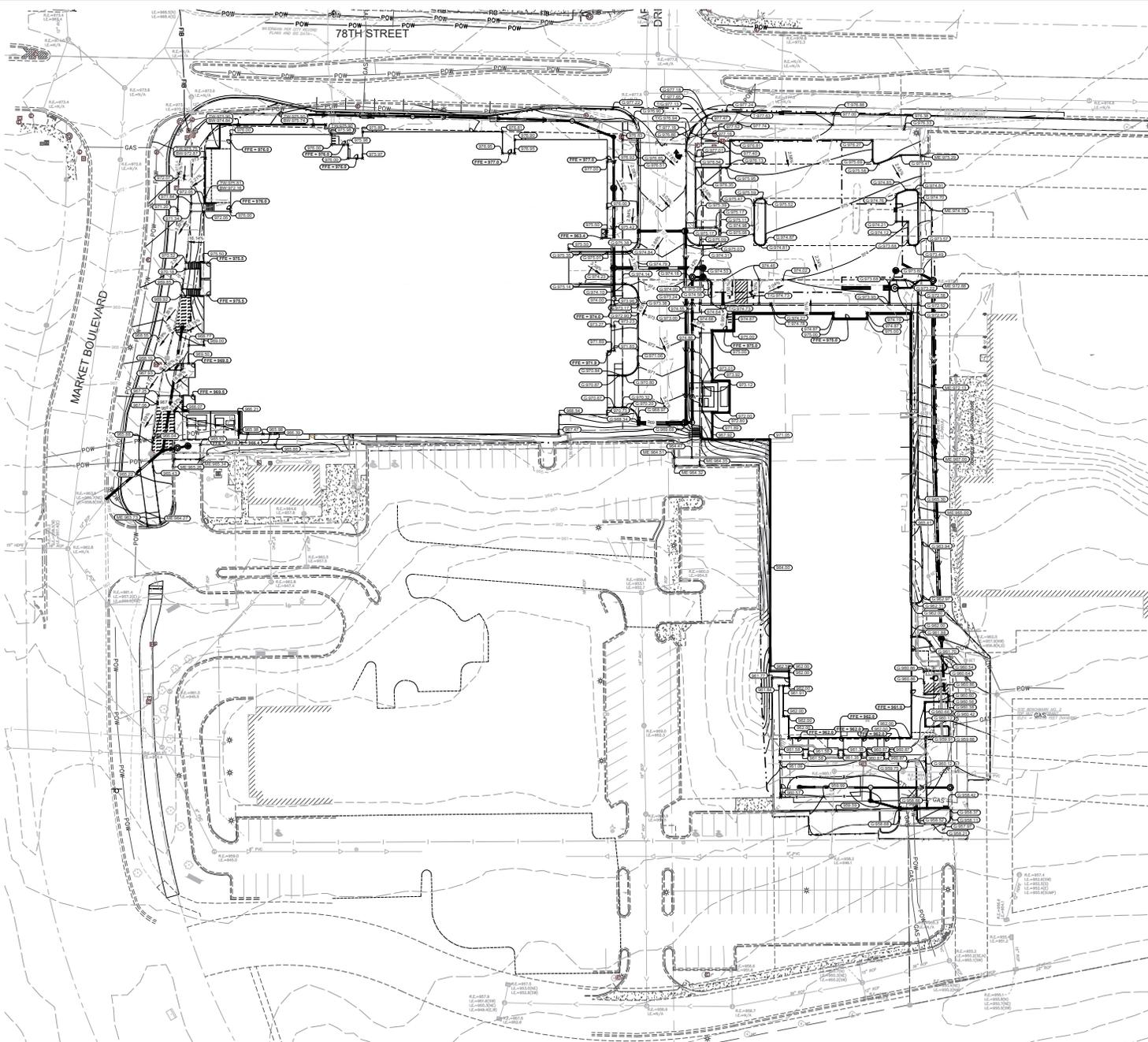
ORIGINAL ISSUE:  
LAND USE APPLICATION  
1/2/2024

Revisions:	No.	Description	Date
	1	RPCBWD SUBMITTAL	03/20/2024
	1	RPCBWD RESUBMITTAL	04/18/2024

PRELIMINARY - NOT FOR CONSTRUCTION

MARKET BLVD & W 78TH ST  
EROSION CONTROL DETAILS

C302



**LEGEND**

---	PROPERTY LINE
---	EXISTING CONTOUR
---	PROPOSED CONTOUR
---	PROPOSED HOGE LINE
---	PROPOSED SHALE
○	PROPOSED STORM MANHOLE (ROUND CASTING)
○	PROPOSED STORM MANHOLE (CATCH BASIN) (ROUND INLET CASTING)
○	PROPOSED STORM SEWER CLEANOUT
○	PROPOSED FLARED END SECTION
○	PROPOSED BERSAP
○	PROPOSED STORM SEWER
○	PROPOSED SPOT ELEVATION
○	PROPOSED HIGH POINT ELEVATION
○	PROPOSED LOW POINT ELEVATION
○	PROPOSED GUTTER ELEVATION
○	PROPOSED TOP OF CURB ELEVATION
○	PROPOSED FLUSH PAVEMENT ELEVATION
○	MATCH EXISTING ELEVATION
○	PROPOSED EMERGENCY OVERFLOW ELEVATION
○	PROPOSED TOP/BOTTOM OF WALL ELEVATION
○	PROPOSED DRAINAGE DIRECTION

- GRADING PLAN NOTES**
1. PREPARE GRADING WORK IN ACCORDANCE WITH APPLICABLE CITY SPECIFICATIONS AND BUILDING PERMIT REQUIREMENTS.
  2. CONTACT STATE 811 CALL-BEFORE-YOU-DIG LOCATING SERVICE AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION FOR UNDERGROUND UTILITY LOCATIONS.
  3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROL.
  4. FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE START OF GRADING ACTIVITIES. NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS IMPACTING THE PROPOSED DESIGN OF THE PROJECT.
  5. IN PAVED AREAS, ROUGH GRADE TO SUBGRADE ELEVATION AND LEAVE THE SITE READY FOR SUBGRADE.
  6. SURFACE EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER EXCAVATION TO HELP OFFSET ANY STABILITY PROBLEMS DUE TO WATER BEHIND OR STEEP SLOPES. WHEN A FACING NEW SURFACE MATERIAL ADJACENT TO EXISTING PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING OF EXISTING PAVEMENT.
  7. ELEVATIONS SHOWN REPRESENT FINISHED SURFACE GRADES. SPOT ELEVATIONS ALONG CURBS & GUTTERS REPRESENT THE FLOW LINE UNLESS OTHERWISE NOTED.
  8. EXCESS MATERIAL, BITUMINOUS SURFACING, CONCRETE ITEMS, ABANDONED UTILITY TRENCHES AND OTHER UNWANTED MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE CONSTRUCTION SITE.
  9. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF PAVEMENTS AND CURB AND GUTTERS WITH SMOOTH LAND GRAD SLOPES THAT PROVIDE PROPER DRAINAGE TO COLLECTION POINTS. MAINTAIN A MINIMUM SLOPE OF 2% IN DRIVEWAY/PAVEMENT AREAS AND A MINIMUM SLOPE OF 0.5% IN CONCRETE PAVEMENT AREAS.
  10. MAINTAIN A MINIMUM SLOPE OF 0.5% ALONG CURBS & GUTTERS. REVIEW PAVEMENT GRADER AND CONSTRUCT "WALL" CURBS WHERE PAVEMENT DRAINS TOWARD THE GUTTER, AND "OUT-FALL" CURBS WHERE PAVEMENT DRAINS AWAY FROM THE GUTTER.
  11. INSTALL A MINIMUM 6" ANCHORS OF AGGREGATE BASE MATERIAL UNDER PROPOSED CONCRETE CURBS & GUTTERS, SIDEWALKS, AND TRAILS UNLESS OTHERWISE DETAILED.
  12. GRADING FOR SIDEWALKS AND ACCESSIBLE ROUTES, INCLUDING CROSSINGS OVER/UNDER, SHALL CONFORM TO CURRENT STATE & NATIONAL ADA STANDARDS.  
ACCESSIBLE RAMP SLOPES SHALL NOT EXCEED A 3% (1/2").  
SIDEWALK CROSS SLOPES SHALL NOT EXCEED 2%.  
LONGITUDINAL SIDEWALK SLOPES SHALL NOT EXCEED 0.5%.  
ACCESSIBLE PARKING SPACES AND ACCESSIBLE AREAS SHALL NOT EXCEED 2% IN ANY DIRECTION. A MAXIMUM SLOPE OF 1.5% IS PREFERRED.
  13. SIDEWALK ACCESS TO EXTERNAL BUILDING DOORS AND GARAGES SHALL BE ADA COMPLIANT. NOTIFY ENGINEER IMMEDIATELY IF ADA CRITERIA CANNOT BE MET IN ANY LOCATION PRIOR TO PAVEMENT. RETAILLATION CHANGE ORDERS WILL NOT BE ACCEPTED FOR ADA COMPLIANCE ISSUES.
  14. UPON COMPLETION OF LAND DISTURBING ACTIVITIES, RESTORE ADJACENT OFFSITE AREAS UNLESS BY CONSTRUCTION TO MATCH OR EXCEEDS THE ORIGINAL CONDITION. LANDSCAPE AREAS SHALL BE RE-VEGETATED WITH A MINIMUM OF 4-INCHES OF TOPSOIL.
  15. EXCAVATE DRAINAGE TRENCHES TO FOLLOW PROPOSED STORM SEWER ALIGNMENTS REFER TO THE UTILITY PLAN FOR LAYOUT AND ELEVATIONS FOR PROPOSED SANITARY SEWER, WATER MAIN, AND OTHER BUILDING UTILITY SERVICE CONNECTIONS.

- RETAINING WALL NOTES**
1. RETAINING WALLS SHALL BE DESIGNED BY OTHERS.
  2. PLANS SHOW THE HORIZONTAL LOCATION OF THE TOP OF THE WALL AND PROVIDES FINISHED SURFACE ELEVATIONS AT THE TOP AND BOTTOM FACE OF THE WALL ONLY.
  3. RETAINING WALL DESIGN PLANS SHALL BE CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER AND SUBMITTED TO THE REVIEWING AUTHORITY AND KIMLEY-HORN ENGINEER OF RECORD FOR APPROVAL.
  4. RETAINING WALL DESIGNER MUST ACCOUNT FOR DRAINAGE AROUND THE WALL AS SHOWN ON THE GRADING PLAN. SURFACE DRAINAGE SHALL NOT BE ALLOWED TO DRAIN OVER THE TOP OF THE WALL.
  5. RETAINING WALL MATERIAL AND COLOR SHALL BE SELECTED BY THE OWNER.
  6. RETAINING WALL DESIGNER IS RESPONSIBLE FOR OBTAINING GEOTECHNICAL INFORMATION AS NEEDED FOR DESIGN OF THE PROPOSED WALL.

**MARKET BLVD & W 78TH ST**

**esg**  
ARCHITECTURE & DESIGN

800 Washington Avenue South, Suite 1000  
Wilmington, NC 28401  
910.338.8000 | 910.338.8282  
www.esgarch.com

**Kimley-Horn**  
ARCHITECTS & ENGINEERS

**ROERS**  
CORP.

**NOT FOR CONSTRUCTION**

ORIGINAL ISSUE:  
LAND USE APPLICATION  
1/25/2024

REVISIONS:

No.	Description	Date
1	RPBCWD SUBMITTAL	03/20/2024
1	RPBCWD RESUBMITTAL	04/18/2024

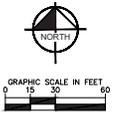
NO PRELIMINARY CONSTRUCTION

DATE: 01/10/2024

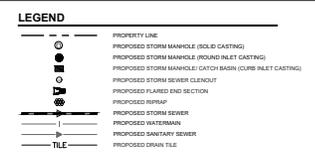
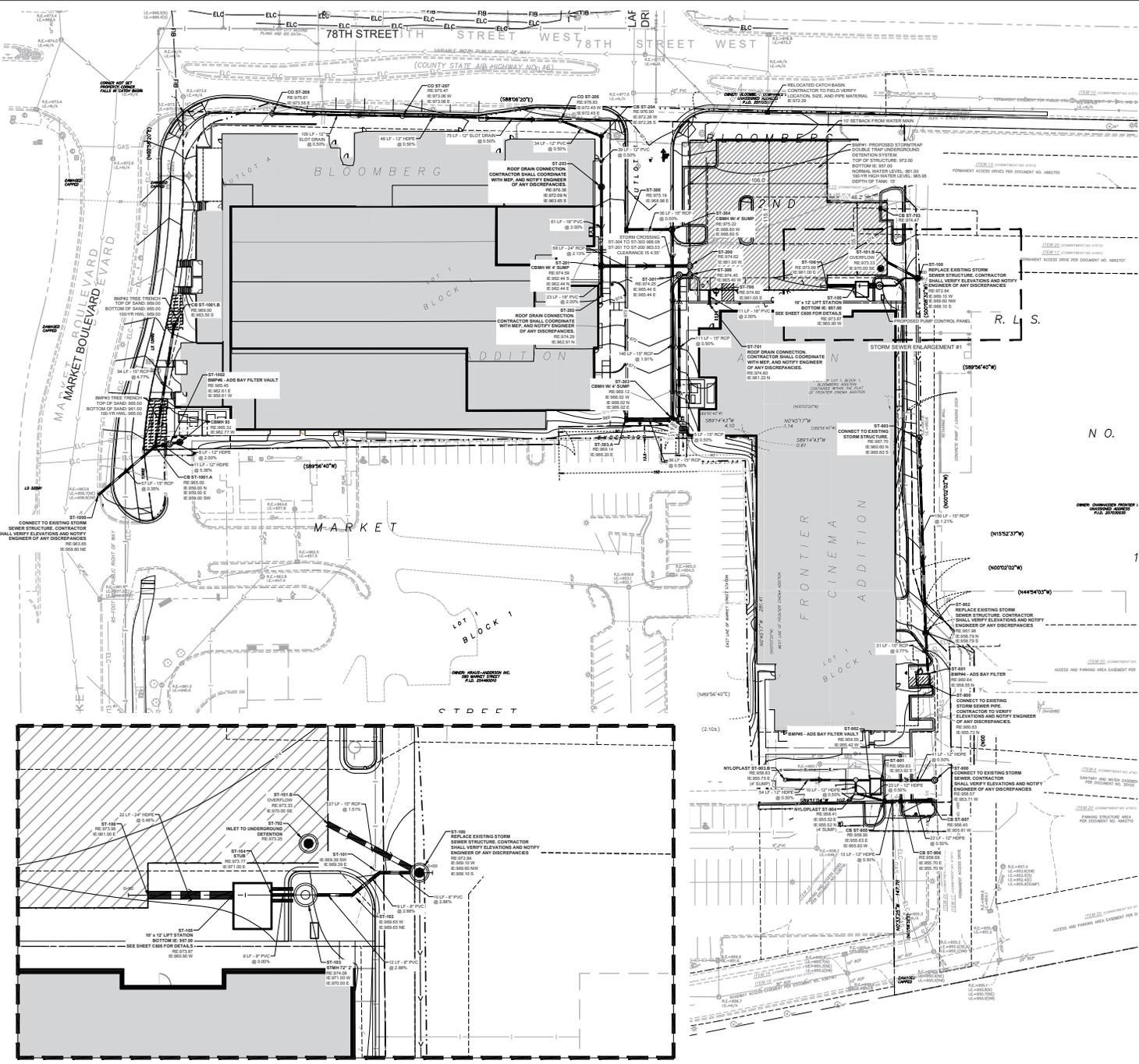
**MARKET BLVD & W 78TH ST**

**GRADING AND DRAINAGE PLAN**

**C500**



PRELIMINARY - NOT FOR CONSTRUCTION



- STORM SEWER NOTES**
1. INSTALL STORM SEWER IN ACCORDANCE WITH APPLICABLE CITY OR STATE SPECIFICATIONS. STATE SPECIFICATIONS SHALL BE THE MINIMUM REQUIREMENTS.
  2. CONTRACTOR SHALL CALL BEFORE EXCAVATING LOCATING SERVICE AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION FOR UNDERGROUND UTILITY LOCATIONS.
  3. STORM SEWER PIPE SHALL BE:
    - RE: ASTM C-118
    - RE: ASTM F-448
    - PVC ASTM 5379
    - PVC SCH 40 PER ASTM D-3085, F-754
    - DRAIN TILE SHALL BE:
      - RE: ASTM F-687
      - RE: ASTM F-687
      - RE: ASTM F-687
    - FITTINGS SHALL BE:
      - RE: ASTM C-312
      - PVC ADAPTER JOINTS PER ASTM C-309, AND C-443
      - PVC SCH 40 PER ASTM D-3085, F-754
  4. CONTRACTOR IS RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROL.
  5. FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE START OF LAND DISTURBING ACTIVITIES. NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS IMPACTING THE PROPOSED DESIGN OF THE PROJECT.
  6. EXCAVATE DRAINAGE TRENCHES TO FOLLOW PROPOSED STORM SEWER ALIGNMENTS. REFER TO THE UTILITY PLANS FOR LAYOUT AND ELEVATIONS FOR PROPOSED SANITARY SEWER, WATER MAIN, AND OTHER BUILDING UTILITY SERVICE CONNECTIONS. REFER TO THE GRADING PLAN FOR DETAILED SURFACE ELEVATIONS.
  7. EXCESS MATERIAL, REINFORCING, SURFACE CONCRETE TRIMS, ABANDONED UTILITY TRENCH, AND OTHER UNDESIRABLE MATERIALS SHALL BE REMOVED FROM THE PROJECT SITE AND SHALL BE DEPOSITED OFF THE CONSTRUCTION SITE.
  8. COORDINATE WITH THE PLUMBING PLANS FOR THE LOCATION, SIZE AND ELEVATION OF THE PROPOSED UNDERGROUND ROOF DRAIN CONNECTIONS.
  9. WHERE STORM SEWER ROOF DRAINS HAVE LESS THAN 4 FEET OF COVER IN GRADED AREAS OR 3 FEET OF COVER IN LANDSCAPE AREAS, PROVIDE 3 INCH THICK INSULATION A MINIMUM OF 3 FEET IN WIDTH, CENTERED ON THE PIPE.
  10. ALL STORM SEWER PIPE JOINTS SHALL BE WATER-TIGHT CONNECTIONS.
  11. ALL STORM SEWER PIPE CONNECTIONS TO MANHOLES SHALL BE GASSED AND WATER TIGHT. BOOTED COUPLERS AT THE STRUCTURE OR WATER STOP WITH NON-SHANK GROUT MAY BE USED IN ACCORDANCE WITH LOCAL CODES.
  12. CONTRACTOR SHALL AIR TEST ALL STORM SEWER PIPE IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

MARKET BLVD & W 78TH ST



NOT FOR CONSTRUCTION

ORIGINAL ISSUE:  
LAND USE APPLICATION  
1/25/2024

REVISIONS:

No.	Description	Date
1	RPRCWD SUBMITTAL	03/20/2024
1	RPRCWD RESUBMITTAL	04/18/2024

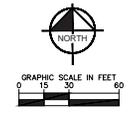
DATE: 03/18/2024  
SCALE: 1/8" = 1'-0"

MARKET BLVD & W 78TH ST  
STORM SEWER PLAN

C501

1 STORM SEWER ENLARGEMENT #1

Scale: 1" = 1'



PRELIMINARY - NOT FOR CONSTRUCTION

ORIGINAL ISSUE:  
LAND USE APPLICATION  
1/25/2024

REVISIONS:

No.	Description	Date
1	RFP/CMD SUBMITTAL	03/20/2024
1	RFP/CMD RESUBMITTAL	04/18/2024

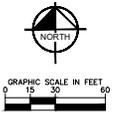
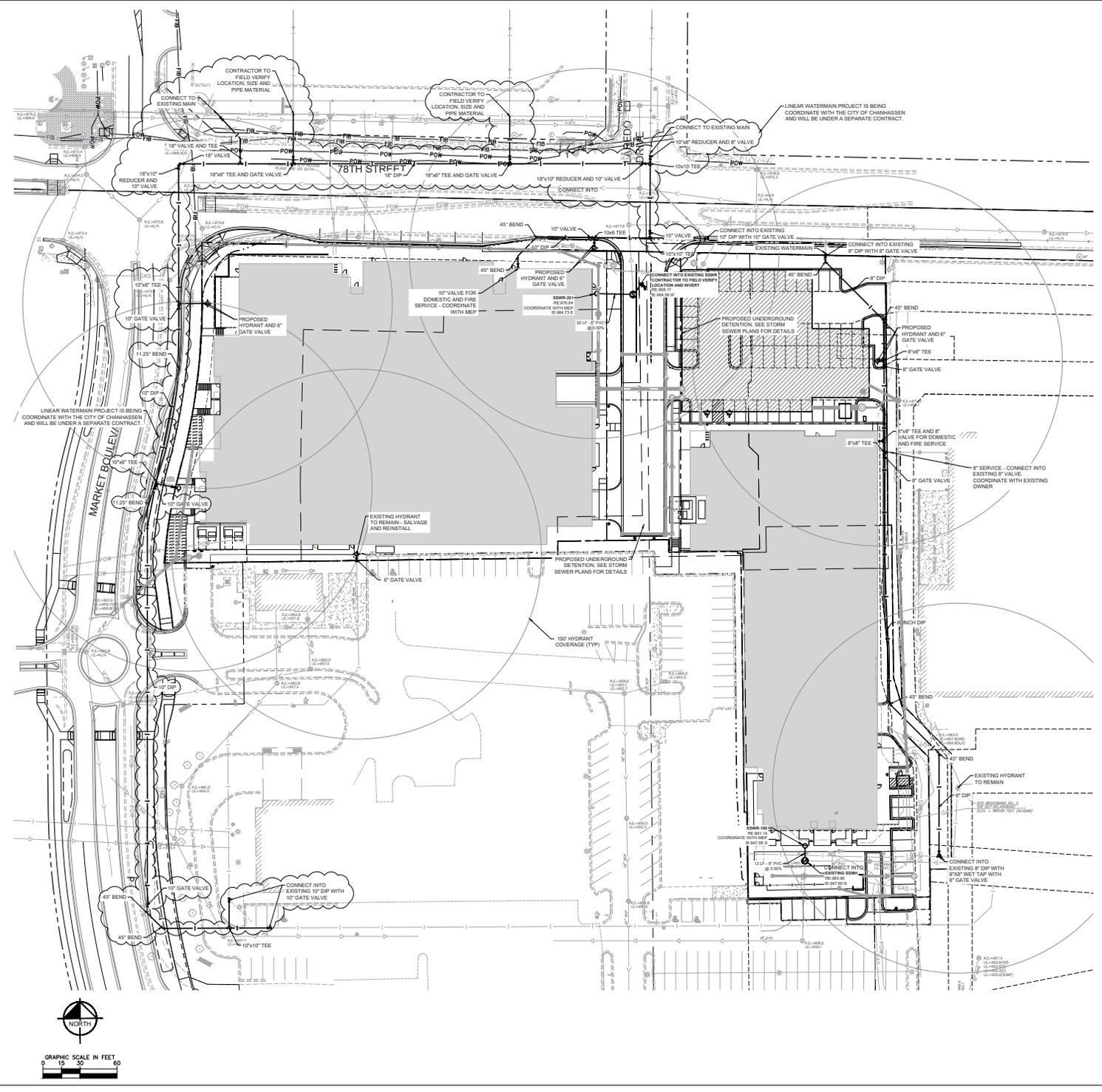
NO FOR CONSTRUCTION

DATE: 01/10/2024 TEL NO.: 60991

**LEGEND**

EXISTING	PROPOSED	
(H)	(H)	GATE VALVE
(H)	(H)	HYDRANT
(R)	(R)	REDUCER
(T)	(T)	TEE
(S)	(S)	SANITARY SEWER MANHOLE
(O)	(O)	SANITARY CLEANOUT
(W)	(W)	WATER MAIN
(S)	(S)	SANITARY SEWER
(S)	(S)	STORM SEWER
(P)	(P)	UNDERGROUND ELECTRIC
(C)	(C)	TELEPHONE
(G)	(G)	GAS MAIN

- UTILITY PLAN NOTES**
1. RETAIL UTILITIES TO BE INSTALLED WITH APPLICABLE CITY SPECIFICATIONS, STATE PLUMBING CODE, AND BUILDING PERMIT REQUIREMENTS.
  2. CONTRACT SHALL BE CALLED BEFORE ANY LOCATIONS SERVICE AT LEAST TWO WORKING DAYS PRIOR TO INSTALLATION FOR UNDERGROUND UTILITY LOCATIONS.
  3. CONTRACTOR IS RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROL.
  4. SANITARY SEWER PIPE SHALL BE:  
PVC ASTM D2733 (S-305)  
PVC SCH 40 ASTM D1782, F14, F14, F404  
SANITARY SEWER FITTINGS SHALL BE:  
PVC SCH 40 ASTM D2733 (S-305)  
PVC SCH 40E ASTM D2853, F2734, F-1865
  5. WATER MAIN PIPE SHALL BE:  
PVC SCH 40E (15" D), 20" DIA, 24" DIA, 30" DIA  
DUCTILE IRON (AWWA C15)  
WATER MAIN FITTINGS SHALL BE:  
PVC SCH 40E (15" D), 20" DIA, 24" DIA, 30" DIA  
DUCTILE IRON (AWWA C15), C-145, A536 514
  6. STORM SEWER PIPE SHALL BE:  
PVC SCH 40E (15" D), 20" DIA, 24" DIA, 30" DIA  
DUCTILE IRON (AWWA C15)  
STORM SEWER FITTINGS SHALL BE:  
PVC SCH 40E (15" D), 20" DIA, 24" DIA, 30" DIA  
DUCTILE IRON (AWWA C15), C-145, A536 514
  7. WHEN CONNECTING TO AN EXISTING UTILITY LINE, FIELD VERIFY THE LOCATION, DEPTH, AND SIZE OF THE EXISTING PIPELINE PRIOR TO THE NEW LINES. NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS IMPACTING THE PROPOSED DESIGN OF THE PROJECT.
  8. PLACE AND COMPACT ALL FILL MATERIAL PRIOR TO INSTALLATION OF PROPOSED UNDERGROUND UTILITIES. MINIMUM WIDTH SHALL BE 2 FEET.
  9. MAINTAIN A MINIMUM OF 7'-0" COVER ON ALL WATER LINES.
  10. FOR WATER LINES AND STUB-OUTS UTILITY MECHANICAL JOINTS WITH RESTRAINTS SUCH AS SWIRE BLOCING, WITH SCHEDULE 40S OR COMPLY WITH THE RESTRAINTS INDICATED IN THE CITY SPECIFICATIONS AND PROJECT DOCUMENTS.
  11. MAINTAIN 18-INCH MINIMUM VERTICAL SEPARATION WHERE SEWER PIPE CROSSING WATER LINES. CROSSING OF PIPE TO CROSSING OF PIPE OR STRUCTURES. PRELIMINARY FIELD VERIFICATION SHALL BE REQUIRED TO VERIFY THE VERTICAL SEPARATION.
  12. IN THE EVENT OF A VERTICAL CONFLICT BETWEEN WATER LINES, SANITARY LINES, STORM LINES AND GAS LINES OR ANY OBSTRUCTION EXISTING AND PROPOSED, THE SANITARY PIPE MATERIAL SHALL BE PROTECTED AS PER CODES AND HAVE MECHANICAL JOINTS AT LEAST 12 FEET ON EITHER SIDE OF THE CENTERLINE OF THE CROSSING. THE WATER LINE SHALL HAVE MECHANICAL JOINTS WITH APPROPRIATE FASTENERS AS REQUIRED TO PROVIDE A MINIMUM OF 18-INCH VERTICAL SEPARATION MEETING REQUIREMENTS OF ANSI A21.10 OR ANSI 21.11 (AWWA C-15) (CLASS 50).
  13. ALL PVC 4" HOSE WRENCH AND WATER PIPE SHALL HAVE A TRACER WIRE INSTALLED IN THE TRENCH AND TERMINATED PER THE DETAILS.
  14. UNDERGROUND UTILITY LINES SHALL BE INSTALLED, INSPECTED AND APPROVED PRIOR TO ANY BACKFILL.
  15. IN PAVEMENT AREAS, RAISE MANHOLE CASTINGS TO BE FLUSH WITH PROPOSED FINISHED SURFACE GRADE. IN GREEN AREAS, RAISE MANHOLE CASTINGS TO BE ONE FOOT ABOVE FINISHED GRADE ELEVATION. INSTALL A WATERSTOP UG REFER TO PLUMBING PLANS FOR LOCATION, SIZE AND ELEVATION OF UTILITY SERVICE CONNECTING AND HOOP BRACKS TO THE EXISTING BUILDING SYSTEMS. RACKING USE DECKY AND PNF ASSEMBLIES & METERS ARE LOCATED INSIDE THE BUILDING.
  16. CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT FOR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 24 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES FIELD CORRECT WITH THE PROPOSED APPROVEMENTS SHOWN ON THE PLANS.
  17. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY PERMITS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES. COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
  18. REFER TO THE SITE ELECTRICAL PLANS FOR SPECIFICATIONS OF THE PROPOSED SITE LIGHTING AND ELECTRICAL EQUIPMENT.
  19. EXCAVATE DRAINAGE TRENCHES TO FOLLOW PROPOSED STORM SEWER ALIGNMENTS. REFER TO THE UTILITY PLANS FOR LAYOUT AND ELEVATIONS FOR PROPOSED SANITARY SEWER, WATER MAIN AND OTHER BUILDING UTILITY SERVICE CONNECTIONS. REFER TO THE GRADING PLAN FOR EXISTING SURFACE ELEVATIONS.
  20. EXCESS MATERIAL, ABANDONED UTILITY ITEMS, AND OTHER UNSALVAGEABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE CONSTRUCTION SITE.
  21. COORDINATE WITH THE PLUMBING PLANS FOR THE LOCATION, SIZE AND ELEVATION OF THE PROPOSED UNDERGROUND ROOF DRAIN CONNECTIONS.
  22. WHERE STORM SEWER ROOF DRAINS HAVE LESS THAN 4 FEET OF COVER IN ROVED AREAS OR STREET OF COVER IN LANDSCAPE AREAS, PROVIDE SUCH THAT INSULATION A MINIMUM OF 5.4 FEET IN WIDTH, CENTERED ON THE PIPE.
  23. ALL STORM SEWER PIPE JOINTS SHALL BE WELDED JOINT CONNECTIONS.
  24. ALL STORM SEWER PIPE CONNECTIONS TO MANHOLES SHALL BE GARBED AND WATER TIGHT BOOTED COUPLERS AT THE STRUCTURE OR A WATER STOP WITH NON-SHRAK GROUT MAY BE USED IN ACCORDANCE WITH LOCAL CODES.
  25. CONTRACTOR SHALL AIR TEST ALL STORM SEWER PIPE IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.



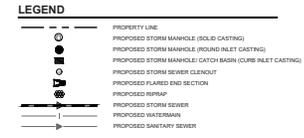
**NOT FOR  
CONSTRUCTION**

ORIGINAL ISSUE:  
LAND USE APPLICATION  
1/2/2024

REVISIONS:

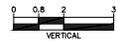
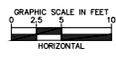
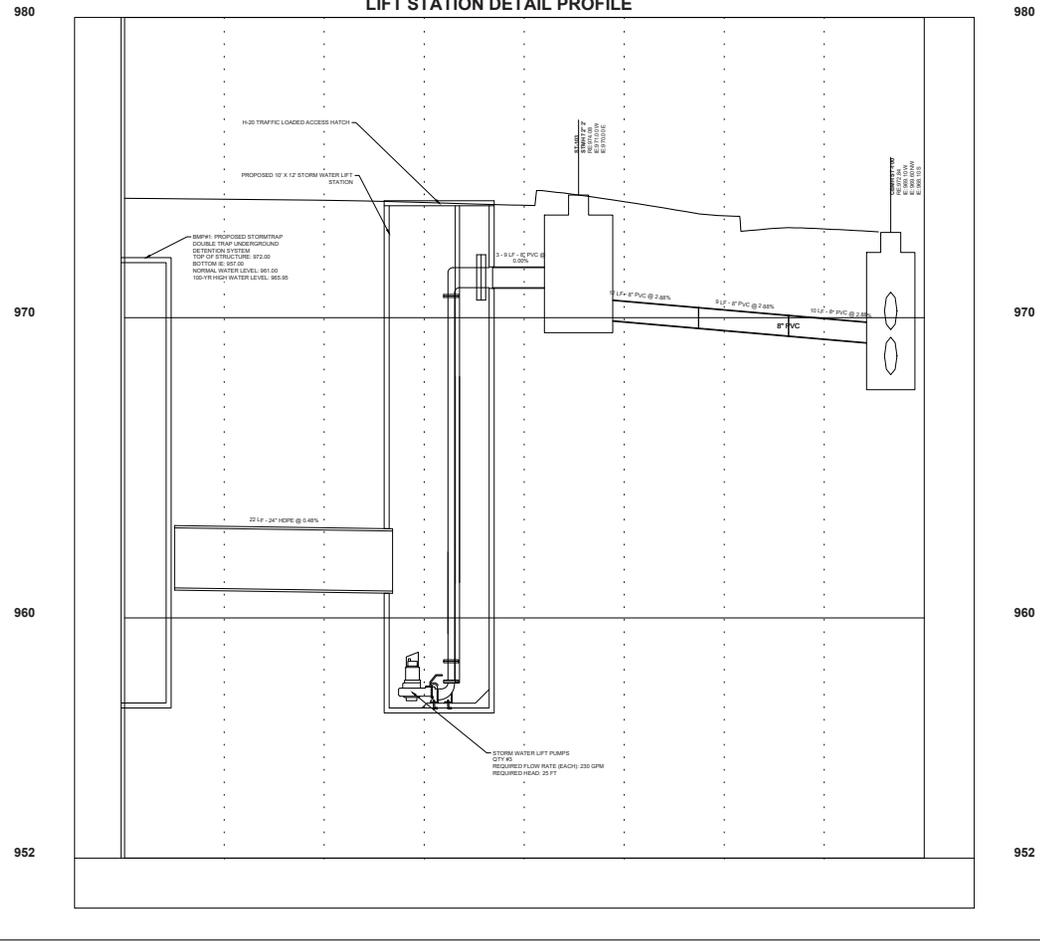
No.	Description	Date
1	RPBCWD SUBMITTAL	03/20/2024
1	RPBCWD RESUBMITTAL	04/18/2024

NO PRELIMINARY CONSTRUCTION  
MICHAEL CURRAN, P.E.  
DATE: 01/10/2024 TEL NO: 60991



- STORM SEWER NOTES**
- INSTALL STORM SEWER IN ACCORDANCE WITH APPLICABLE CITY OR STATE SPECIFICATIONS, STATE PLUMBING CODE, AND BUILDING PERMIT REQUIREMENTS.
  - CONTRACT STATE #11 CALL-BEFORE-YOU-DIG LOCATING SERVICE AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION FOR UNDERGROUND UTILITY LOCATIONS.
  - STORM SEWER PIPE SHALL BE:  
RCP: ASTM C-15  
HDPE: ASTM F-14, F-404  
PVC: ASTM D-3052  
PVC SCHEDULE 40: ASTM D-1785, D-3085, F-754  
DRAW TILE SHALL BE:  
RCP: ASTM F-887  
PVC: ASTM F-887  
FITTINGS SHALL BE:  
RCP: ASTM C-403, JOINTS PER ASTM C-381, C-386, AND C-443  
HDPE: ASTM D-3212  
PVC: ASTM D-3212, JOINTS PER ASTM D-3212  
PVC SCHEDULE 40: D-3085, F-754, F-888
  - CONTRACTOR IS RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROL.
  - FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE START OF LAND DISTURBING ACTIVITIES. NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS IMPACTING THE PROPOSED DESIGN OF THE PROJECT.
  - EXCAVATE DRAINAGE TRENCHES TO FOLLOW PROPOSED STORM SEWER ALIGNMENTS. REFER TO THE UTILITY PLANS FOR LAYOUT AND ELEVATIONS FOR PROPOSED SANITARY SEWER, WATER MAIN, AND OTHER BUILDING UTILITY SERVICE CONNECTIONS. REFER TO THE GROUND PLAN FOR DETAILED SURFACE ELEVATIONS.
  - EXCESS MATERIAL, NETWORKS, SURFACING, CONCRETE FORMS, ABANDONED UTILITY ITEMS, AND OTHER UNSTABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE EXPEDITED OFF THE CONSTRUCTION SITE.
  - COORDINATE WITH THE PLUMBING PLANS FOR THE LOCATION, SIZE AND ELEVATION OF THE PROPOSED UNDERGROUND ROOF DRAIN CONNECTIONS.
  - WHERE STORM SEWER ROOF DRAINS HAVE LESS THAN 4 FEET OF COVER IN PAVED AREAS OR 3 FEET OF COVER IN LANDSCAPE AREAS, PROVIDE 3 INCH THICK INSULATION A MINIMUM OF 3 FEET WIDTH, CENTERED ON THE PIPE.
  - ALL STORM SEWER PIPE JOINTS SHALL BE WATER-TIGHT CONNECTIONS.
  - ALL STORM SEWER PIPE CONNECTIONS TO MANHOLES SHALL BE GASKETED AND WATER TIGHT. BOOTED COUPLERS AT THE STRUCTURE OR WATER STOP WITH NON-SHANK GROUT MAY BE USED IN ACCORDANCE WITH LOCAL CODES.
  - CONTRACTOR SHALL AIR TEST ALL STORM SEWER PIPE IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

**LIFT STATION DETAIL PROFILE**



PRELIMINARY - NOT FOR CONSTRUCTION





NOT FOR CONSTRUCTION

**BAYFILTER VAULT DESIGN TABLE**

BPV0810-6-	522	530	545
HEAD REQUIRED (ft)	1.8'	3.3'	3.8'
# BAYFILTER CARTRIDGES	6	9	9
CARTRIDGE DESIGN FLOW RATE	0.33 CFS	0.33 CFS	0.33 CFS
SYSTEM TREATMENT CAPACITY	0.33 CFS	0.33 CFS	0.33 CFS

DESIGN TABLE SHOWS THE MAXIMUM NUMBER OF CARTRIDGES THAT WILL FIT IN THE STRUCTURE.

**BAYFILTER**

OUTLET PIPE  
AIR RELEASE VALVE  
FLOW CONTROL ORIFICE  
INLET PLUG  
INLET  
INTERNAL BYPASS WEIR  
MEDIA SPINAL  
OUTLET  
DRAINAGE MATERIAL

THE BAYFILTER STORMWATER MANAGEMENT SYSTEM IS A STORMWATER TREATMENT DEVICE DESIGNED TO REMOVE FINE SEDIMENTS, HEAVY METALS, AND PHOSPHORUS. THE BAYFILTER SYSTEM INCLUDES ONE OR MORE SPINAL MEDIA FILTER CARTRIDGES WITH APPROXIMATELY 100 SQUARE FEET OF FILTRATION AREA. THE FILTER CARTRIDGES ARE HOUSED IN A CONCRETE STRUCTURE THAT EVENLY DISTRIBUTES THE FLOW BETWEEN CARTRIDGES. THE SYSTEM IS OFFLINE WITH AN INTERNAL BYPASS THAT DIVERTS HIGH INTENSITY FLOWS AROUND THE SYSTEM. THE FILTER CARTRIDGES REMOVE POLLUTANTS FROM RUNOFF BY FILTRATION AND ADSORPTION.

**BAYFILTER**

PROJECT: \_\_\_\_\_  
LOCATION: \_\_\_\_\_  
DRAINAGE AREA: \_\_\_\_\_  
CARTRIDGE DESIGN FLOW RATE: 0.33 GPM  
# BAYFILTER CARTRIDGES: 6  
TREATED SEDIMENT CAPACITY: 1685 LB

THE BAYFILTER STORMWATER MANAGEMENT SYSTEM IS A STORMWATER FILTRATION DEVICE DESIGNED TO REMOVE FINE SEDIMENTS, HEAVY METALS, AND PHOSPHORUS. THE BAYFILTER SYSTEM INCLUDES ONE OR MORE SPINAL MEDIA FILTER CARTRIDGES WITH APPROXIMATELY 100 SQUARE FEET OF FILTRATION AREA. THE FILTER CARTRIDGES ARE HOUSED IN A CONCRETE STRUCTURE THAT EVENLY DISTRIBUTES THE FLOW BETWEEN CARTRIDGES. THE SYSTEM IS OFFLINE WITH AN INTERNAL BYPASS THAT DIVERTS HIGH INTENSITY FLOWS AROUND THE SYSTEM. THE FILTER CARTRIDGES REMOVE POLLUTANTS FROM RUNOFF BY FILTRATION AND ADSORPTION.

DATE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
SCALE: \_\_\_\_\_

**BAYFILTER**

DATE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
SCALE: \_\_\_\_\_

SHEET \_\_\_\_\_ OF \_\_\_\_\_

**BAYFILTER VAULT DESIGN TABLE**

BPV0810-6-	522	530	545
HEAD REQUIRED (ft)	1.8'	3.3'	3.8'
# BAYFILTER CARTRIDGES	6	9	9
CARTRIDGE DESIGN FLOW RATE	0.33 CFS	0.33 CFS	0.33 CFS
SYSTEM TREATMENT CAPACITY	0.33 CFS	0.33 CFS	0.33 CFS

DESIGN TABLE SHOWS THE MAXIMUM NUMBER OF CARTRIDGES THAT WILL FIT IN THE STRUCTURE.

**BAYFILTER**

OUTLET PIPE  
AIR RELEASE VALVE  
FLOW CONTROL ORIFICE  
INLET PLUG  
INLET  
INTERNAL BYPASS WEIR  
MEDIA SPINAL  
OUTLET  
DRAINAGE MATERIAL

THE BAYFILTER STORMWATER MANAGEMENT SYSTEM IS A STORMWATER TREATMENT DEVICE DESIGNED TO REMOVE FINE SEDIMENTS, HEAVY METALS, AND PHOSPHORUS. THE BAYFILTER SYSTEM INCLUDES ONE OR MORE SPINAL MEDIA FILTER CARTRIDGES WITH APPROXIMATELY 100 SQUARE FEET OF FILTRATION AREA. THE FILTER CARTRIDGES ARE HOUSED IN A CONCRETE STRUCTURE THAT EVENLY DISTRIBUTES THE FLOW BETWEEN CARTRIDGES. THE SYSTEM IS OFFLINE WITH AN INTERNAL BYPASS THAT DIVERTS HIGH INTENSITY FLOWS AROUND THE SYSTEM. THE FILTER CARTRIDGES REMOVE POLLUTANTS FROM RUNOFF BY FILTRATION AND ADSORPTION.

**BAYFILTER**

PROJECT: \_\_\_\_\_  
LOCATION: \_\_\_\_\_  
DRAINAGE AREA: \_\_\_\_\_  
CARTRIDGE DESIGN FLOW RATE: 0.33 GPM  
# BAYFILTER CARTRIDGES: 6  
TREATED SEDIMENT CAPACITY: 1685 LB

THE BAYFILTER STORMWATER MANAGEMENT SYSTEM IS A STORMWATER FILTRATION DEVICE DESIGNED TO REMOVE FINE SEDIMENTS, HEAVY METALS, AND PHOSPHORUS. THE BAYFILTER SYSTEM INCLUDES ONE OR MORE SPINAL MEDIA FILTER CARTRIDGES WITH APPROXIMATELY 100 SQUARE FEET OF FILTRATION AREA. THE FILTER CARTRIDGES ARE HOUSED IN A CONCRETE STRUCTURE THAT EVENLY DISTRIBUTES THE FLOW BETWEEN CARTRIDGES. THE SYSTEM IS OFFLINE WITH AN INTERNAL BYPASS THAT DIVERTS HIGH INTENSITY FLOWS AROUND THE SYSTEM. THE FILTER CARTRIDGES REMOVE POLLUTANTS FROM RUNOFF BY FILTRATION AND ADSORPTION.

DATE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
SCALE: \_\_\_\_\_

**BAYFILTER**

DATE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
SCALE: \_\_\_\_\_

SHEET \_\_\_\_\_ OF \_\_\_\_\_

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LAND USE APPLICATION  
1/15/2024

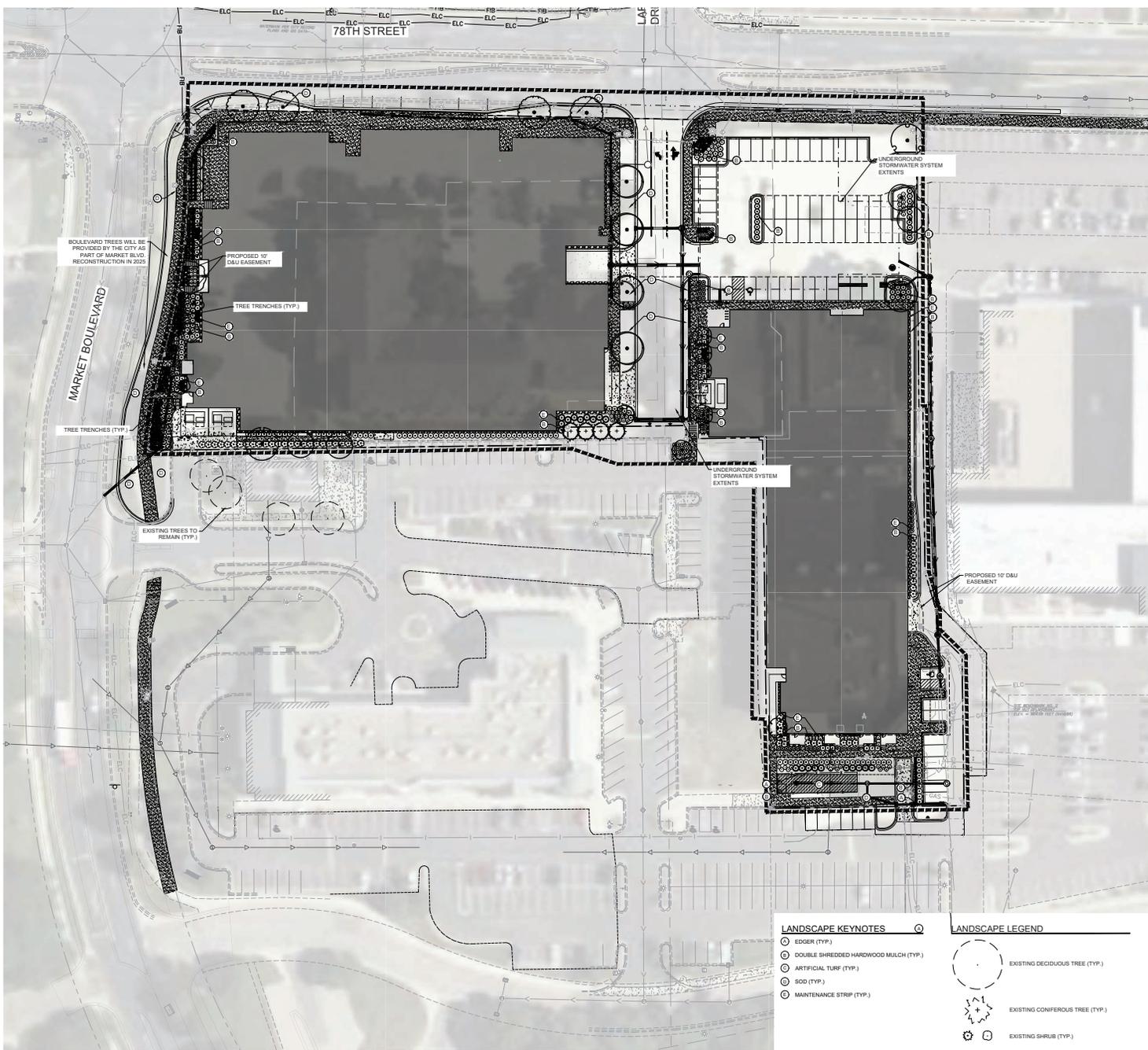
REVISIONS:

No.	Description	Date
1	RPBCWD SUBMITTAL	03/20/2024
1	RPBCWD RESUBMITTAL	04/18/2024

PRELIMINARY  
NOT FOR CONSTRUCTION

DATE: 01/10/2024  
REV. NO. \_\_\_\_\_

PRELIMINARY - NOT FOR CONSTRUCTION



**LANDSCAPE SUMMARY**

**REPLACEMENT REQUIREMENTS**  
 CALIPER REPLACEMENT REQUIRED: 1.488 INCHES  
 CALIPER REPLACEMENT PROPOSED: 100 INCHES  
 NOTE: REMAINDER OF REQUIRED TREES TO BE PROVIDED AT OFF-SITE LOCATION OR PAYMENT IN LIEU OF (CITY TO CONFIRM)

**LANDSCAPE REQUIREMENTS**  
 BUFFERVARD REQUIRED: (EAST SIDE 519 L.F.)  
 BUFFERVARD PROVIDED: (EAST SIDE 519 L.F.)  
 BUFFERVARD REQUIRED: (SOUTH SIDE 905 L.F.)  
 BUFFERVARD PROVIDED: (SOUTH SIDE 905 L.F.)

**DIVERSITY REQUIREMENTS**  
 REQUIREMENT: NO MORE THAN 20% (7.2 TREES) OF TREES MAY BE FROM ANY ONE GENUS  
 PROVIDED: SEE SCHEDULE  
 \*NOTE: COST FOR IN-LIEU PLANTING IS BASED ON \$300 PER INCH OF CALIPER FOR REPLACEMENT TREES

**REPLACEMENT REQUIREMENTS**  
 BUFFERVARD A  
 6 OVERSTORY TREES = 1 OVERSTORY TREE / 100 L.F. OF FRONTAGE  
 11 UNDERSTORY TREES = 2 UNDERSTORY TREES / 100 L.F. OF FRONTAGE  
 16 SHRUBS = 3 SHRUBS / 100 L.F. OF FRONTAGE  
 4 OVERSTORY TREES  
 0 UNDERSTORY TREES  
 16 SHRUBS

**REPLACEMENT REQUIREMENTS**  
 BUFFERVARD A  
 10 OVERSTORY TREES = 1 OVERSTORY TREE / 100 L.F. OF FRONTAGE  
 19 UNDERSTORY TREES = 2 UNDERSTORY TREES / 100 L.F. OF FRONTAGE  
 28 SHRUBS = 3 SHRUBS / 100 L.F. OF FRONTAGE  
 11 OVERSTORY TREES  
 4 UNDERSTORY TREES  
 98 SHRUBS

PLANT KEY

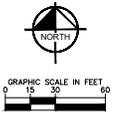
SYMBOL	CODE	COMMON NAME
<b>CONIFEROUS TREE</b>		
	BHS	BLACK HILLS SPRUCE
<b>ORNAMENTAL TREE</b>		
	ARM	ARMSTRONG RED MAPLE
	RVB	RIVER BIRCH MULTI-TRUNK
<b>OVERSTORY TREE</b>		
	ABM	AUTUMN BLAZE MAPLE
	BOL	BOULEVARD LINDEN
	CSO	CRIMSON SPIRE OAK
	HCK	COMMON HACKBERRY
	IHL	IMPERIAL HONEYLOCUST
	PRE	AMERICAN ELM
<b>CONIFEROUS SHRUBS</b>		
	GOJ	GREY OWL JUNIPER
	SGJ	SEA GREEN JUNIPER
<b>DECIDUOUS SHRUBS</b>		
	ANH	ANNABELLE HYDRANGEA
	BLC	IROQUOIS BEAUTY BLACK CHOKEBERRY
	CB	FIREDANCE™ RED TWIG DOGWOOD
	DBH	DWARF BUSH HONEYSUCKLE
	GGD	GARDEN GLOW DOGWOOD
	GLS	GRO-LOW FRAGRANT SUMAC
	SEM	SEM FALSESPIREA
<b>ORNAMENTAL GRASSES</b>		
	HMS	HEAVY METAL SWITCHGRASS
	KFG2	KARL FOERSTER FEATHER REED GRASS
<b>PERENNIALS</b>		
	BES2	BLACK-EYED SUSAN
	BFI	BLUE FLAG
	BMW	BUTTERFLY MILKWEED
	EBP	EMERALD BLUE CREEPING PHLOX
	FAS	FALL ASTER
	NW	WALKER'S LOW CATMINT

**LANDSCAPE KEYNOTES**

- EDGER (TYP.)
- DOUBLE SHREDDED HARDWOOD MULCH (TYP.)
- ARTIFICIAL TURF (TYP.)
- SOD (TYP.)
- MAINTENANCE STRIP (TYP.)

**LANDSCAPE LEGEND**

- EXISTING DECIDUOUS TREE (TYP.)
- EXISTING CONIFEROUS TREE (TYP.)
- EXISTING SHRUB (TYP.)
- EDGER (TYP.)
- APPROXIMATE LIMITS OF SODDING/IRRIGATION, SOD ALL DISTURBED AREAS (TYP.)
- SEED/ SOD EDGE (TYP.)
- ROCK MULCH (TYP.)
- ARTIFICIAL TURF, SEE DETAIL (TYP.)



MARKET BLVD & W 78TH ST



NOT FOR CONSTRUCTION

ORIGINAL ISSUE:  
 LAND USE APPLICATION  
 1/2/2024

REVISIONS:

No.	Description	Date
1	RIBCWD SUBMITTAL	03/20/2024
1	RIBCWD RESUBMITTAL	04/18/2024

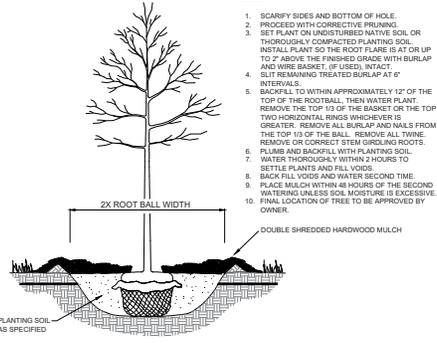
PRELIMINARY - NOT FOR CONSTRUCTION

MARKET BLVD & W 78TH ST  
 LANDSCAPE PLAN

L100

NOTE: SEE SHEET L101 FOR FULL PLANT SCHEDULE

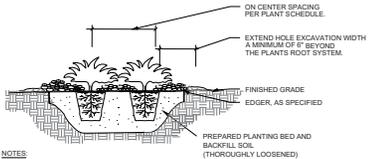
**NOTES**



**1 TREE PLANTING DETAIL**

SCALE: N.T.S.

L101



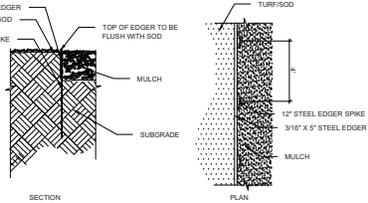
**NOTES**

- SCAFFRY SIDES AND BOTTOM OF HOLE.
- PROCEED WITH CORRECTIVE PRUNING OF TOP AND ROOT.
- REMOVE CONTAINER AND SCOPE OUTSIDE OF SOIL MASS TO REDIRECT AND PREVENT CIRCULATING FIBROUS ROOTS. REMOVE OR CORRECT STEM BEING GRIDLING ROOTS.
- PLUMB AND BACKFILL WITH PLANTING SOIL.
- WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
- BACK FILL VOIDS AND WATER SECOND TIME.
- PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.
- MIX IN 1/4" OF ORGANIC COMPOST.

**2 SHRUB / PERENNIAL PLANTING DETAIL**

SCALE: N.T.S.

L101



**3 STEEL EDGER DETAIL**

SCALE: N.T.S.

L101

**PLANT SCHEDULE**

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONTAINER	CAL/SIZE
<b>CONIFEROUS TREE</b>						
	BHS	4	PICEA GLAUCA 'DENSATA'	BLACK HILLS SPRUCE	B & B	6' HT.
<b>ORNAMENTAL TREE</b>						
	ARM	7	ACER RUBRUM 'ARMSTRONG'	ARMSTRONG RED MAPLE	B & B	2.5" CAL.
	RVB	3	BETULA NIGRA	RIVER BIRCH MULTI-TRUNK	B & B	8' HT.
<b>OVERSTORY TREE</b>						
	ABM	4	ACER X FREEMANII 'AUTUMN BLAZE'	AUTUMN BLAZE MAPLE	B & B	2.5" CAL.
	BOL	4	TILIA AMERICANA 'BOULEVARD'	BOULEVARD LINDEN	B & B	2.5" CAL.
	CSO	4	QUERCUS ROBUR X ALBA 'CRIMSCHMIDT'	CRIMSON SPIRE OAK	B & B	2.5" CAL.
	HCK	3	CELTIS OCCIDENTALIS	COMMON HACKBERRY	B & B	2.5" CAL.
	IHL	4	GLEDITSIA TRIACANTHOS VAR. INERMIS 'IMPERIAL'	IMPERIAL HONEYLOCUST	B & B	2.5" CAL.
	PRE	3	ULMUS AMERICANA 'PRINCETON'	AMERICAN ELM	B & B	2.5" CAL.
<b>CONIFEROUS SHRUBS</b>						
	GOJ	6	JUNIPERUS VIRGINIANA 'GREY OWL'	GREY OWL JUNIPER	#5 CONT.	4" O.C.
	SGJ	20	JUNIPERUS CHINENSIS 'SEA GREEN'	SEA GREEN JUNIPER	#5 CONT.	5" O.C.
<b>DECIDUOUS SHRUBS</b>						
	ANH	6	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE HYDRANGEA	#5 CONT.	4" O.C.
	BLC	120	ARONIA MELANOCARPA 'IROQUOIS BEAUTY' TM	IROQUOIS BEAUTY BLACK CHOKEBERRY	#5 CONT.	4" O.C.
	CB	28	CORNUS SERICEA 'BAILADELINE'	FIREDANCE™ RED TWIG DOGWOOD	#5 CONT.	4" O.C.
	DBH	39	DIERVILLA LONICERA	DWARF BUSH HONEYSUCKLE	#5 CONT.	3" O.C.
	GGD	49	CORNUS HESSE 'GARDEN GLOW'	GARDEN GLOW DOGWOOD	#5 CONT.	5" O.C.
	GLS	64	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	#5 CONT.	4" O.C.
	SEM	43	SORBARIA SORBIFOLIA 'SEM'	SEM FALSESPIREA	#5 CONT.	3" O.C.
<b>ORNAMENTAL GRASSES</b>						
	HMS	106	PANICUM VIRGATUM 'HEAVY METAL'	HEAVY METAL SWITCHGRASS	#1 CONT.	3" O.C.
	KFG2	63	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	KARL FOERSTER FEATHER REED GRASS	#1 CONT.	24" O.C.
<b>PERENNIALS</b>						
	BES2	17	RUDBECKIA FULGIDA 'GOLDSTURM'	BLACK-EYED SUSAN	#1 CONT.	18" O.C.
	BFI	25	IRIS VERSICOLOR	BLUE FLAG	#1 CONT.	2" O.C.
	BMW	14	ASCLEPIAS TUBEROSA	BUTTERFLY MILKWEED	#1 CONT.	2" O.C.
	EBP	123	PHLOX SUBULATA 'EMERALD BLUE'	EMERALD BLUE CREEPING PHLOX	#1 CONT.	12" O.C.
	FAS	13	SYMPHYOTRICHUM OBLONGIFOLIUM	FALL ASTER	#1 CONT.	2" O.C.
	NW	51	NEPETA X WALKER'S LOW	WALKER'S LOW CATMINT	#1 CONT.	18" O.C.
	PBS	13	LIATRIS PYCNOSTACHYA	PRAIRIE BLAZING STAR	#1 CONT.	18" O.C.
	PCF	62	ECHINACEA PURPUREA	PURPLE CONFLOWER	#1 CONT.	18" O.C.
	SH4	128	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPS EED	#1 CONT.	18" O.C.

**LANDSCAPE NOTES**

- CONTACT COMMON GROUND ALLIANCE AT 811 OR CALL 311 TO VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF ANY PLANTS OR PLANTING MATERIAL.
- ACTUAL LOCATION OF PLANT MATERIAL IS SUBJECT TO FIELD AND SITE CONDITIONS.
- NO PLANTING WILL BE INSTALLED UNTIL ALL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.
- ALL SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO SUBMISSION OF ANY BID AND/OR QUOTE BY THE LANDSCAPE CONTRACTOR.
- PROVIDE TWO YEAR GUARANTEE OF ALL PLANT MATERIALS. THE GUARANTEE BEGINS ON THE DATE OF THE LANDSCAPE ARCHITECT'S OR OWNER'S WRITTEN ACCEPTANCE OF THE INITIAL PLANTING. REPLACEMENT PLANT MATERIAL SHALL HAVE A ONE YEAR GUARANTEE COMMENCING UPON PLANTING.
- ALL PLANTS TO BE SPECIMEN GRADE. MINNESOTA-GROWN AND/OR HARDY. SPECIMEN GRADE SHALL ADHERE TO, BUT IS NOT LIMITED BY, THE FOLLOWING STANDARDS: ALL PLANTS SHALL BE FREE FROM DISEASE, PESTS, WOUNDS, SCARS, ETC. ALL PLANTS SHALL BE FREE FROM NOTICEABLE GAPS, HOLES, OR DEFOLIATIONS. ALL PLANTS SHALL BE FREE FROM BROKEN OR DEAD BRANCHES. ALL PLANTS SHALL HAVE HEAVY, HEALTHY BRANCHING AND PLUMB. CONIFEROUS TREES SHALL HAVE AN ESTABLISHED MAIN LEADER AND A HEIGHT TO WIDTH RATIO OF NO LESS THAN 1:1.
- PLANTS TO MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2014) OR MOST CURRENT VERSION. PRODUCE PER SPECIFIED SIZE AND PIPE SPECIFIED.
- PLANTS TO BE INSTALLED AS PER MALLEE AND STANDARD PLANTING PRACTICES.
- INSTALL PLANTS BY PLANT INSTALLATION PERIOD INFORMATION IN THE LATEST STANDARD PLANTING DETAILS FROM MNDOT. PLANTINGS BEFORE OR AFTER THESE DATES ARE DONE AT RISK.
- PLANTS SHALL BE IMMEDIATELY PLANTED UPON ARRIVAL AT SITE. PROPERLY HEEL-IN MATERIALS IF NECESSARY. TEMPORARY ONLY.
- PRIOR TO PLANTING, FIELD VERIFY THAT THE ROOT COLLAR/ROOT FLARE IS LOCATED AT THE TOP OF THE BALLED & BURLAP TREE. IF THIS IS NOT THE CASE, SOIL SHALL BE REMOVED DOWN TO THE ROOT COLLAR/ROOT FLARE. IF THIS COLLAR/ROOT FLARE IS PLANTED, THE ROOT COLLAR/ROOT FLARE SHALL BE EVEN OR SURPLAP ABOVE FINISHED GRADE.
- OPEN TOP OR SURPLAP ON BB MATERIALS. REMOVE POT OR POTTED PLANTS; SPLIT AND BREAK APART PEAT POTS.
- PRUNE PLANTS AS NECESSARY. PER STANDARD NURSERY PRACTICE AND TO CORRECT POOR BRANCHING OF EXISTING AND PROPOSED TREES.
- WRAP ALL BRUSH-TAKED TREES - FASTEN TOP AND BOTTOM. REMOVE BY APRIL 1ST.
- STAKING OF TREES AS REQUIRED. REPOSITION, PLUMB AND STAKE IF NOT PLUMB AFTER ONE YEAR.

**SOIL**

- THE NEED FOR SOIL AMENDMENTS SHALL BE DETERMINED UPON SITE SOIL CONDITIONS PRIOR TO PLANTING. LANDSCAPE CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT FOR THE NEED OF ANY SOIL AMENDMENTS.
- BACKFILL SOIL AND TOPSOIL TO ADHERE TO MNDOT STANDARD SPECIFICATION 3877 & OAM TOPSOIL BOROY AND TO EXISTING TOP SOIL FROM SITE FREE OF ROOTS, ROCKS LARGER THAN ONE INCH SUBSOIL DEBRIS, AND LARGE WEEDS UNLESS SPECIFIED OTHERWISE. MINIMUM 4" DEPTH TOPSOIL FOR ALL LAWN GRASS AREAS AND 12" DEPTH TOPSOIL FOR TREE, SHRUBS, AND PERENNIALS.

**MULCH**

- MULCH TO BE AT ALL TREE, SHRUB, PERENNIAL AND MAINTENANCE AREAS. TREE AND SHRUB PLANTING BEDS SHALL HAVE 4" DEPTH OF DOUBLE SHREDDED HARDWOOD MULCH. DOUBLE SHREDDED HARDWOOD MULCH SHALL BE FREE OF STEEPERUS BRANCHES AND NATURAL BARK CHIP DEBRIS. PERENNIAL AND ORNAMENTAL GRASS BEDS SHALL HAVE 2" DEPTH DOUBLE SHREDDED HARDWOOD MULCH. MULCH TO BE FREE OF STEEPERUS BRANCHES AND NATURAL BARK CHIP DEBRIS. APPROXIMATE EQUAL ROCK MULCH TO BE 1/2" THICK, 1/2" DIAMETER, AT MINIMUM 3" DEPTH, OR APPROVED EQUAL. APPLY PREEMBERSIVE IRRIGATION PRIOR TO MULCH APPLICATION FOR MANUFACTURED GEOTEXTILE FABRIC. USE PREN OR PER APPROVED EQUAL. ROCK MULCH TO BE ON COMMERCIAL GRADE FILTER FABRIC, BY TYPE AND APPROVED EQUAL WITH NO EXCESSIVE MULCH AND FABRIC TO BE APPROVED BY OWNER PRIOR TO INSTALLATION. MULCH TO MATCH EXISTING CONDITIONS (WHERE APPLICABLE).

**EDGING**

- EDGING TO BE COMMERCIAL GRADE COLMET OR EQUAL STEEL EDGING, 3/16" THICK X 4" TALL, COLOR BLACK OR PAVED EDGE. AS INDICATED. STEEL EDGING SHALL BE PLACED WITH SHOOTS CHAINS AND STAKED WITH METAL SPIRES NO GREATER THAN 4 FEET ON CENTER WITH TOP OF EDGER AT GRADE. FOR MOWERS TO CUT ABOVE WITHOUT DAMAGE. UTILIZE CURBS AND EDGES WHERE POSSIBLE. WHERE EDGING TERMINATES AT A SIDEWALK, BEVEL OR RECESSED ENDS TO PREVENT TRIP HAZARD. SPACED EDGE TO PROVIDE 1/4" GROUND DEPTH AND WITH 1/4" GROUND SPACING BETWEEN MULCH AND GRASS. INDIVIDUAL TREE, SHRUB, OR RAIN-GARDEN BEDS TO BE SPACED EDGE, UNLESS NOTED OTHERWISE. EDGING TO MATCH EXISTING CONDITIONS (WHERE APPLICABLE).

**SEEDS/OO**

- ALL DISTURBED AREAS TO BE SOODED OR SEEDDED, UNLESS OTHERWISE NOTED. SOO TO BE STANDARD MINNESOTA-GROWN AND HARDY BLS GRASS MIX, FREE OF LAWN WEEDS. ALL TOPSOIL AREAS TO BE RAKED TO REMOVE DEBRIS AND ENSURE DRAINAGE. SLOPES OF 3:1 OR GREATER SHALL BE STAKED. SEEDS AS SPECIFIED PER MNDOT SPECIFICATIONS AND SUPPLIER/MANUFACTURER RECOMMENDATIONS. IF NOT INDICATED ON LANDSCAPE PLAN, SEE EROSION CONTROL PLAN.

**IRRIGATION**

- PROVIDE IRRIGATION (PROVIDE NEW SYSTEM OR MODIFY EXISTING IRRIGATION PER OWNERS DIRECTION) TO ALL PLANTED AREAS ON SITE. IRRIGATION SYSTEM TO BE DESIGNED BY LANDSCAPE CONTRACTOR. LANDSCAPE CONTRACTOR TO PROVIDE SHOP DRAWINGS TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION OF IRRIGATION SYSTEM. CONTRACTOR TO PROVIDE OPERATION MANUALS AS-BUILT PLANS, AND NORMAL PROGRAMMING. SYSTEM SHALL BE WINTERIZED AND HAVE SPRING STARTUP DURING FIRST YEAR OF OPERATION. SYSTEM SHALL HAVE ONE-YEAR WARRANTY ON ALL PARTS AND LABOR. ALL INFORMATION ABOUT INSTALLATION AND SCHEDULING CAN BE OBTAINED FROM THE GENERAL CONTRACTOR. SYSTEM SHALL INCLUDE A MAIN RENOVATOR AND APPROPRIATE TECHNOLOGY.

**ESTABLISHMENT**

- PROVIDE NECESSARY WATERING OF PLANT MATERIALS UNTIL THE PLANT IS FULLY ESTABLISHED OR IRRIGATION SYSTEM IS OPERATIONAL. OWNER WILL NOT PROVIDE WATER FOR CONTRACTOR ADJACENT TO THE SITE DISTURBED DURING CONSTRUCTION.

**WARRANTY**

- REPAIR ALL DAMAGE TO PROPERTY FROM PLANTING OPERATIONS AT NO COST TO OWNER.
- MAINTAIN TREES, SHRUBS, SEED AND OTHER PLANTS UNTIL PROJECT COMPLETION. BUT IN NO CASE LESS THAN FOLLOWING PERIOD: 1 YEAR AFTER PROJECT COMPLETION. MAINTAIN TREES, SHRUBS, SEED AND OTHER PLANTS BY PRUNING, CULTIVATING AND WEEDING AS REQUIRED FOR HEALTHY GROWTH. RESTORE PLANTING GRASSES, TIGHTEN AND REPAIR BIRME AND BIRME AND REPAIR TREES AND SHRUBS TO PRIOR CONDITION OR BETTER. REPAIR TO BE FREE OF INSECTS AND DAMAGED WRAPPINGS. SPRAY AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE. REPAIR SHRUB MULCH TO THE REQUIRED DEPTH. MAINTAIN LAWN FOR 90 DAYS AFTER INSTALLING SOO INCLUDING MOWING WHEN SOO RECESSES 4" IN HEIGHT. WEED PLANTING BEDS AND MULCH SAUCERS AT MINIMUM ONCE A MONTH DURING THE GROWING SEASON. PROVIDE A MONTHLY REPORT TO THE OWNER ON WEEDING AND OTHER MAINTENANCE RESPONSIBILITIES.
- SEE ELECTRICAL PLANS FOR SITE LIGHTING.

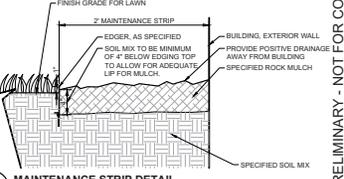
**4 ARTIFICIAL TURF DETAIL**

SCALE: 1:12"=1'

L101

**5 MAINTENANCE STRIP DETAIL**

SCALE: 1:12"=1'



**MARKET BLVD & W 78TH ST**



500 Washington Avenue South, Suite 1000  
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**ORIGINAL ISSUE:**

LAND USE APPLICATION

1/20/2024

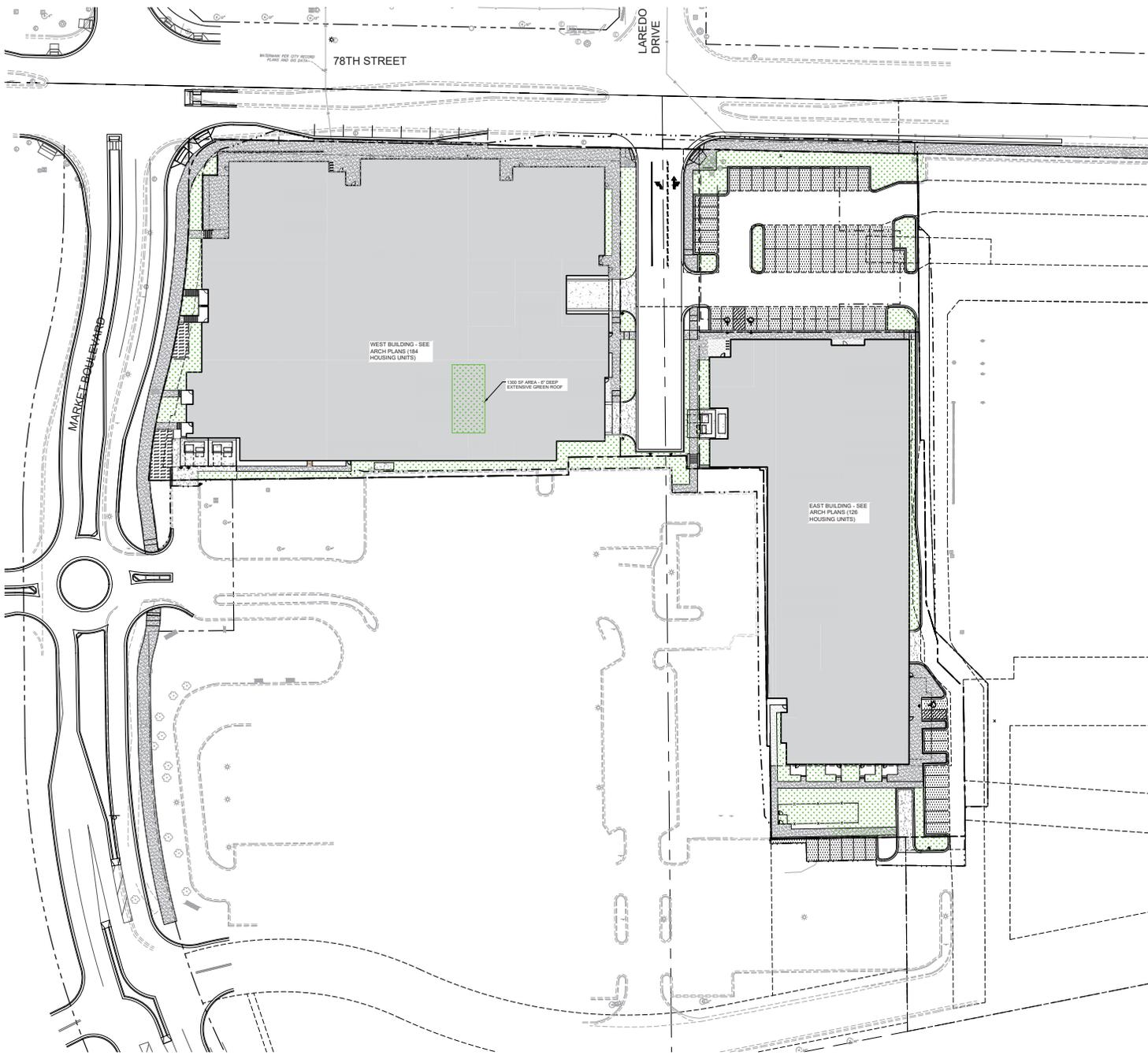
**REVISIONS:**

No. Description Date

1 RPB/CMD SUBMITTAL 03/20/2024

1 RPB/CMD RESUBMITTAL 04/18/2024

1 RPB/CMD RESUBMIT



**LEGEND**

- PROPERTY LINE
- PROPOSED TREE TRENCH
- PROPOSED PAVABLE AREA

**811**  
Know what's below.  
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ORIGINAL ISSUE:  
LAND USE APPLICATION  
1/2/2024

REVISIONS:

No.	Description	Date
1	RPBCWD SUBMITTAL	03/20/2024
1	RPBCWD RESUBMITTAL	04/18/2024

THIS PLAN AND/OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE JURISDICTION OF THE STATE OF MINNESOTA.

NO FOR CONSTRUCTION

MICHAEL CURRAN, P.E.

DATE: 01/10/2024 TEL NO: 402891

MARKET BLVD & W 78TH ST  
IRRIGATION EXHIBIT

**L102**

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