



**PLANNING & ZONING COMMISSION
REGULAR MEETING AGENDA**

July 9, 2025, at 6:30 P.M.

OPEN TO THE PUBLIC

*Located in Grain Valley City Hall – Council Chambers
711 Main Street – Grain Valley, Missouri*

ITEM I: CALL TO ORDER

ITEM II: ROLL CALL

ITEM III: PLEDGE OF ALLEGIANCE

ITEM IV: APPROVAL OF MINUTES

- June 11, 2025, Regular Meeting

ITEM V: CITIZEN PARTICIPATION

- Citizens are asked to please limit their comments to two (2) minutes.

ITEM VI: PUBLIC HEARINGS

ITEM VII: ACTION ITEMS

1. **Key Cannabis Dispensary-** Requesting a Conditional Use Permit in accordance with City Code 400.240 for a proposed marijuana dispensary with drive-thru development on approximately 1.37-acre lot. The property is zoned District DTZ (Downtown Transition Zone). The 1.37-acre proposed marijuana dispensary is generally located a quarter of a mile west of Buckner Tarsney Road, on the south side of Jefferson Street, just west of the Quik-Trip. AKA 205 NW Jefferson St. AKA 205 NW Jefferson St.
2. **Key Cannabis Dispensary-** Site plan review for a proposed dispensary with drive-thru development on approximately 1.37-acre lot. The property is zoned District DTZ (Downtown Transition Zone). The proposed marijuana dispensary is generally located a quarter of a mile west of Buckner Tarsney Road, on the south side of Jefferson Street, just west of the Quik-Trip. AKA 205 NW Jefferson St.. AKA 205 NW Jefferson St.

ITEM VIII: PREVIOUS BUSINESS

- None



ITEM IX: NEW BUSINESS

- None

ITEM X: ADJOURNMENT

PLEASE NOTE

The next scheduled meeting, if needed, of the City of Grain Valley Planning & Zoning Commission will take place on August 13, 2025, at 6:30 pm.

PEOPLE REQUIRING ACCOMMODATION TO ATTEND AND PARTICIPATE IN THE MEETING SHOULD CONTACT THE CITY CLERK AT 816-847-6210 AT LEAST 48 HOURS BEFORE THE MEETING. UPON REQUEST, THE MINUTES FROM THIS MEETING CAN BE MADE AVAILABLE BY CALLING 816-847-6210.



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ITEM I: CALL TO ORDER

- The Planning & Zoning Commission of the City of Grain Valley, Missouri, met in Regular Session on June 11, 2025, in the Council Chambers at City Hall.
- The meeting was called to order at 6:30 PM by Chair Justin Tyson.

ITEM II: ROLL CALL

- *Present: Scott Shafer*
- *Present: Elijah Greene*
- *Present: Chris Bamman*
- *Present: Justin Tyson*
- *Present: Debbie Saffell*
- *Present: Bob Headley*
- *Present: Craig Shelton*
- *Present: Rick Knox (BOA Liaison)*
- *There was a quorum.*

ITEM III: PLEDGE OF ALLEGIANCE

ITEM IV: APPROVAL OF MINUTES

- Commissioner Bamman motioned to approve minutes from April 9, 2025 regular schedule planning and zoning meeting Commissioner Shaffer seconded the motion. The motion was approved by a vote of 7 to 0.

ITEM V: CITIZEN PARTICIPATION

- None

ITEM VI: PUBLIC HEARINGS

- Commissioner Bamman motioned to open the public hearing for Key Cannabis Dispensary, Commissioner Shaffer seconded the motion. The motion was approved by a vote of 7 to 0. 6:32 PM

Commissioners Present

Justin Tyson
Scott Shafer
Chris Bamman
Elijah Greene
Debbie Saffell
Bob Headley
Craig Shelton
Rick Knox BOA Liaison

Commissioners Absent

None

Staff Officials Present

Patrick Martin – CD Director



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1. **Key Cannabis Dispensary-** Requesting a Conditional Use Permit in accordance with City Code 400.240 for a proposed marijuana dispensary with drive-thru development on approximately 1.37-acre lot. The property is zoned District DTZ (Downtown Transition Zone). The 1.37-acre proposed marijuana dispensary is generally located a quarter of a mile west of Buckner Tarsney Road, on the south side of Jefferson Street, just west of the Quik-Trip. AKA 205 NW Jefferson St.
 - Director Martin presented the staff report. Staff recommended approval of the proposed Conditional Use Permit for renewal.
 - David W. “Owner of Sergeants Auto 200 NW Jefferson Street” asked about the location and if the building would be facing north, and parking lot lay out.
 - Director Martin explained where the property was located. Where the building would be facing and the parking lot lay out.
 - David W. voiced concerns about the location of building and type of customers this business would bring to town and believed his property could be subject to additional crime.
 - Commissioner Tyson asked about additional foot traffic after QuikTrip opening business.
 - David W said foot traffic was up with new businesses opening.
 - Commissioner Tyson talked about the security plan and lighting of the new facility would be under consideration during approval.
 - David W. was still concerned with the type of customers.
 - Commissioner Tyson asked for any additional comments none were noted.
- Commissioner Saffell motioned to close the public hearing for Key Cannabis Dispensary, Commissioner Shelton seconded the motion. The motion was approved by a vote of 7 to 0. 6:50 PM.

ITEM VII: ACTION ITEMS

1. **Key Cannabis Dispensary-** Requesting a Conditional Use Permit in accordance with City Code 400.240 for a proposed marijuana dispensary with drive-thru development on approximately 1.37-acre lot. The property is zoned District DTZ (Downtown Transition Zone). The 1.37-acre proposed marijuana dispensary is generally located a quarter of a mile west of Buckner Tarsney Road, on the south side of Jefferson Street, just west of the Quik-Trip. AKA 205 NW Jefferson St.

Commissioners Present

Justin Tyson
Scott Shafer
Chris Bamman
Elijah Greene
Debbie Saffell
Bob Headley
Craig Shelton
Rick Knox BOA Liaison

Commissioners Absent

None

Staff Officials Present

Patrick Martin – CD Director



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- Commissioner Greene asked about the signage.
- Director Martin explained and showed the proposed signage.
- Commissioner Tyson asked the applicant to come forward.
- Jabob With Kaw Valley engineers approached and began explaining the site plan layout and details about the business regarding security.
- Commissioner Shelton expressed concerns about the detention basin.
- Director Martin responded that the area would be mowed and maintained, or it would be a code violation.
- Commissioner Bamman had concerns about screening and security.
- Director Martin responded if needed items can be put in place as conditions to the permit issued.
- Commissioner Shelton expressed he thought everything were valid points but thought the plan as submitted he didn't have concerns.
- Commissioner Shafer felt this business wasn't anymore concerning then a liquor store.
- Commissioner Tyson recommended postponing the approval until the owner was present to answer questions.
- Commissioner Headley asked about crime reports and if this was the first one in Grain Valley.
- Director Martin said it would be the first one in Grain Valley and no crime stats were submitted.
- Commissioner Tyson made a motion to postpone the vote for the Conditional Use Permit for Key Cannabis dispensary. Commissioner Bamman seconded the motion. The Commission voted 7-0 to postpone the vote.

2. **Key Cannabis Dispensary-** Site plan review for a proposed dispensary with drive-thru development on approximately 1.37-acre lot. The property is zoned District DTZ (Downtown Transition Zone). The proposed marijuana dispensary is generally located a quarter of a mile west of Buckner Tarsney Road, on the south side of Jefferson Street, just west of the Quik-Trip. AKA 205 NW Jefferson St.. AKA 205 NW Jefferson St.

- Commissioner Shelton made a motion to postpone the vote for the site plan review for Key Cannabis dispensary. Commissioner Headley seconded the motion. The Commission voted 7-0 to postpone the vote.

Commissioners Present

Justin Tyson
Scott Shafer
Chris Bamman
Elijah Greene
Debbie Saffell
Bob Headley
Craig Shelton
Rick Knox BOA Liaison

Commissioners Absent

None

Staff Officials Present

Patrick Martin – CD Director



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3. **Site Plan Review** - all of Tracts 1, 2, and 3 of Interstate Development Park– Bush Business Park LLC is requesting site plan review for two buildings with warehousing/ office space. The property is in the Downtown Overlay District – Transition Zone. The site is generally located on the east side of Jefferson Ct between Jefferson St and Jefferson St AKA 1101 Jefferson Ct.

- Commissioner Shelton asked about the location of the proposed building
- Director Martin Explained the location on Jefferson Street.
- Bryan Rahn “developer” approached the stand to explain the details about the building including the goals of the property and who might be possible tenants.
- Commissioner Tyson asked about the parking lot and layout.
- Bryan explained how the plan came to be from review with MODOT and the City and the restrictions with the lot size.
- Commissioner Shelton made a statement regarding the appearance of the building.
- Bryan responded with what is proposed and how he was trying to make it modern and covering all sides of the building facing the road to have added appearance.
- Commissioner Tyson asked about the setback requirements.
- Director Martin responded the rear setback is 20’ from the property.
- Commissioner Shelton asked about the trash enclosure.
- Bryan responded he proposed a few different locations and due to several circumstances, they are as proposed.
- Commissioner Bamman made a motion to approve the site plan as submitted. Commissioner Shafer seconded the motion. The motion was approved 5-2.

ITEM VIII: PREVIOUS BUSINESS

- None

ITEM IX: NEW BUSINESS

- None

Commissioners Present

Justin Tyson
Scott Shafer
Chris Bamman
Elijah Greene
Debbie Saffell
Bob Headley
Craig Shelton
Rick Knox BOA Liaison

Commissioners Absent

None

Staff Officials Present

Patrick Martin – CD Director



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ITEM X: ADJOURNMENT

- Commissioner Shelton made a motion to adjourn the meeting. Commissioner Shafer second the motion. The Commission approved the motion by a vote of 7 to 0.

-The Regular Meeting Adjourned at 7:58 PM-

Commissioners Present

Justin Tyson
Scott Shafer
Chris Bamman
Elijah Greene
Debbie Saffell
Bob Headley
Craig Shelton
Rick Knox BOA Liaison

Commissioners Absent

None

Staff Officials Present

Patrick Martin – CD Director

Grain Valley Community Development
NW Jefferson St & State Route
BB
03/18/2025 - 03/17/2026
Planning and Zoning
General

Printed: 06/03/2025

0813010

7dbbec20-fdcf-11ef-93ff-b967e865d3c9

Active

Under Review

Application Review Status

Pre-Review	Approved	
Planning and Zoning	Not Reviewed	03/10/2025
Final-Review	Not Reviewed	

Fees

Conditional Use	\$500.00
Subtotal	\$500.00
Amount Paid	\$500.00
Total Due	\$0.00

Payments

03/18/2025	Card Visa *6136	\$500.00
Total Paid		\$500.00

Application Form Data

(Empty fields are not included)

First Name

Jacob

Last Name

Dobbs

Phone Number

(816) 468-5858

Email

jacobd@kveng.com

Do you have an additional contact person?

No

Project Street Address

NW Jefferson St & State Route BB

City

Grain Valley

State

MO

Zip Code

64029

Lot #

9

Subdivision

Interstate Development Park

Zoning District

Downtown Transition

First Name

Charles

Last Name

Cuda

Phone Number

(816) 268-4493

Street Address

1804 Swift Ave, Suite 101

City

North Kansas City

State

MO

Zip Code

64116

Please provide a legal description of subject property

CONTAINING 56,490 SQUARE FEET OR 1.30 ACRES

ALL THAT PART OF LOT 8, REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK AND PART OF THE SOUTHWEST QUARTER OF SECTION 26, TOWNSHIP 49 NORTH, RANGE 30 WEST, ALL IN GRAIN VALLEY, JACKSON COUNTY, MISSOURI, BEING DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF THE PLAT OF QUIKTRIP STORE NO. 0259 AS

RECORDED IN BOOK I-190 AT PAGE 54 AS INSTRUMENT NUMBER 2020E0039051; THENCE S06°19'31"E, ALONG THE WESTERLY LINE OF SAID PLAT, A DISTANCE OF 292.57 FEET TO THE SOUTHWEST CORNER OF SAID PLAT; THENCE N86°48'00"W, A DISTANCE OF 42.84 FEET; THENCE N87°02'21"W, A DISTANCE OF 120.02 FEET TO A POINT ON THE WESTERLY LINE OF SAID LOT 8; THENCE N01°56'37"E, ALONG SAID WESTERLY LINE, A DISTANCE OF 162.95 FEET TO THE NORTHWEST CORNER OF SAID LOT 8, SAID POINT ALSO BEING THE NORTHEAST CORNER OF LOT 7, SAID REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK; THENCE N87°02'21"W, ALONG THE NORTHERLY LINE OF SAID LOT 7 AND ALONG THE NORTHERLY LINE OF LOT 4, SAID REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK, A DISTANCE OF 300.73 FEET TO A POINT ON THE EASTERLY RIGHT OF WAY LINE OF N. JEFFERSON STREET; THENCE N01°58'41"E, ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 5.82 FEET; THENCE N40°17'43"E, CONTINUING ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 28.02 FEET TO A POINT ON THE SOUTHERLY RIGHT OF WAY LINE OF SAID N. JEFFERSON STREET; THENCE EASTERLY ALONG SAID RIGHT OF WAY LINE, ALONG A CURVE TO THE LEFT HAVING AN INITIAL TANGENT BEARING OF N87°43'56"E, A RADIUS OF 535.00 FEET, AN ARC DISTANCE OF 95.53 FEET; THENCE N77°30'05"E, CONTINUING ALONG SAID LINE, A DISTANCE OF 250.32 FEET; THENCE EASTERLY, CONTINUING ALONG SAID LINE, ALONG A CURVE TO THE RIGHT BEING TANGENT TO THE PREVIOUSLY DESCRIBED COURSE, HAVING A RADIUS OF 496.00 FEET, AN ARC DISTANCE OF 68.70 FEET TO THE POINT OF BEGINNING,

Please depict general location of site

 Loading map...

Please provide a written description of the proposal

A proposal to use the existing open space at the project location to develop and operate a dispensary with associated drive-thru.

Please upload proof of ownership or control of property (affidavit, deed, contract, lease) or permission from property owner

 B24D5016 Executed 1st Amendment.pdf

Property Owner First Name	Property Owner Last Name	Street Address	City	State	Zip Code
Charles	Cuda	1804 Swift Ave, Suite 101	North Kansas City	MO	64116
TIMOTHY	HARRIS	244 W MILL ST STE 101	LIBERTY	MO	64068
KOSMIDES FAMILY TRUST UTD	N/A	919 FOOTHILL BLVD	LA VERNE	CA	91750
QUIKTRIP CORP	N/A	PO BOX 3475	TULSA	OK	74101
QUICKTRIP CORPORATION	N/A	4705 S 129TH AVE E	TULSA	OK	74134
SARGENT AUTO PROPERTIES LLC	N/A	200 NW JEFFERSON ST	GRAIN VALLEY	MO	64029
SHIVEN HOSPITALITY LLC	N/A	8709 NE 86TH ST	KANSAS CITY	MO	64157
BUSH BUSINESS PARK LLC	N/A	1120 NW EAGLE RIDGE BLVD	GRAIN VALLEY	MO	64029
CRIDER'S INSTITUTE OF WELDING TECH LLC	N/A	300 NW JEFFERSON	GRAIN VALLEY	MO	64029

What type of project is this?

Special/Conditional Use Permit

Please provide a description of the project

A proposed dispensary with drive-thru development on open space.

Company Name

Kaw Valley Engineering

Street Address

8040 N Oak Trafficway

City

Kansas City

State

MO

Zip Code

64118

Signature

I understand and agree that as a condition to the issuance of this permit the permittee shall agree to defend, indemnify, and hold harmless the City, its officers, employees, and agents, from any and all suits, claims, or liabilities caused by or arising out of any use authorized by any such permit. I hereby certify that I have read and examined this application and know the same to be true and correct. All provisions of laws and ordinances governing this type of work will be complied with. The granting of a permit does not presume to give authority to violate or cancel the provisions of any other state or local law regulating construction and that I make this statement under penalty of perjury.

Jacob Edward Dobbs - 03/10/2025 11:48 am

Messages

Your fees are ready to be paid.

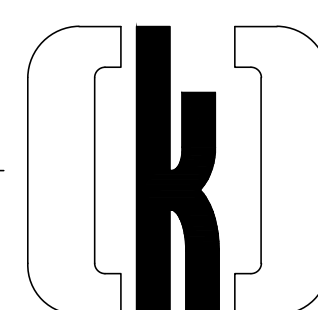
Comments:

Your fees are ready to be paid.

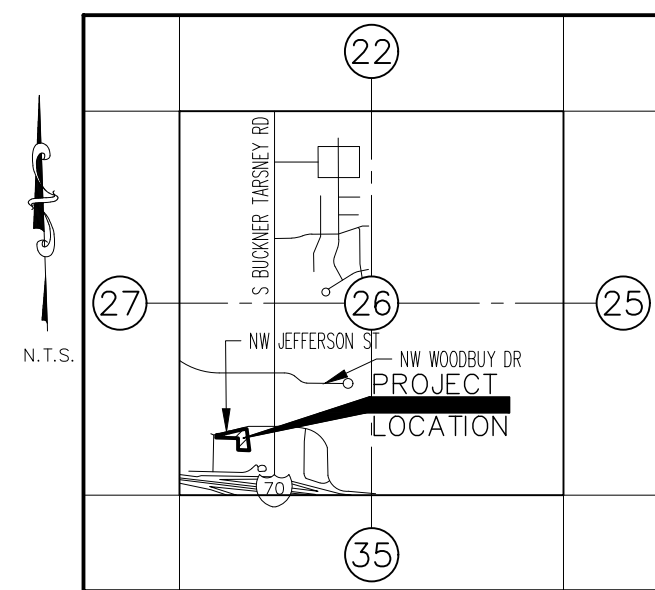
Received, thanks.

Internal Notes

Applicant email jacobd@kveng.com. Changed the email address for someone different to pay. Change back to this email once they have been paid.

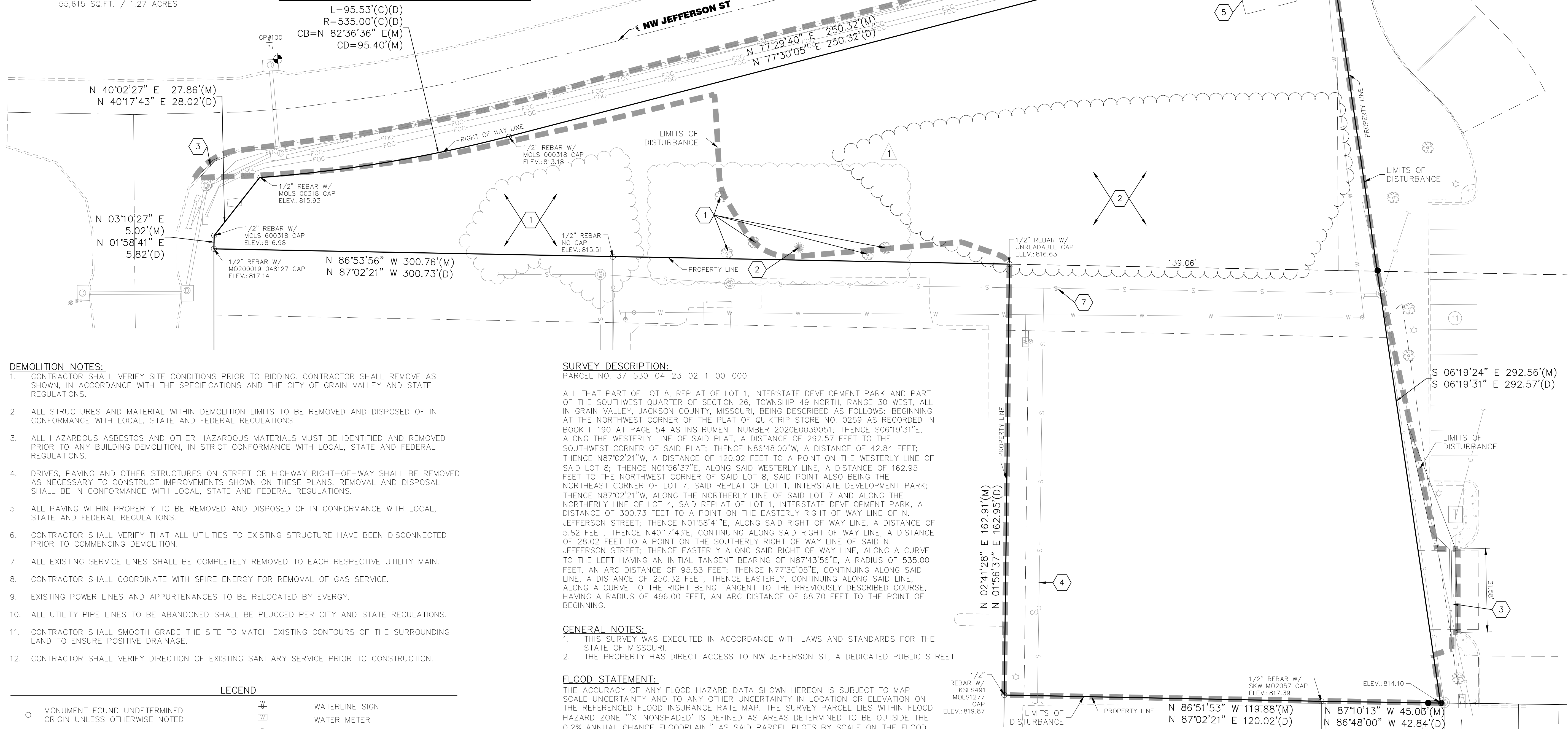


WARMAN ARCHITECTURE+DESIGN
 1735 SWIFT AVE.
 NORTH KANSAS CITY, MISSOURI 64116
 V. 816.474.2233 F. 816.474.1051



SECTION VICINITY MAP
SEC.26 - TWP 49N - RNG 30W

DISTURBED AREA:
55,615 SQ.FT. / 1.27 ACRES



DEMOLITION NOTES:

1. CONTRACTOR SHALL VERIFY SITE CONDITIONS PRIOR TO BIDDING. CONTRACTOR SHALL REMOVE AS SHOWN, IN ACCORDANCE WITH THE SPECIFICATIONS AND THE CITY OF GRAIN VALLEY AND STATE REGULATIONS.
2. ALL STRUCTURES AND MATERIAL WITHIN DEMOLITION LIMITS TO BE REMOVED AND DISPOSED OF IN CONFORMANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
3. ALL HAZARDOUS ASBESTOS AND OTHER HAZARDOUS MATERIALS MUST BE IDENTIFIED AND REMOVED PRIOR TO ANY BUILDING DEMOLITION, IN STRICT CONFORMANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
4. DRIVES, PAVING AND OTHER STRUCTURES ON STREET OR HIGHWAY RIGHT-OF-WAY SHALL BE REMOVED AS NECESSARY TO CONSTRUCT IMPROVEMENTS SHOWN ON THESE PLANS. REMOVAL AND DISPOSAL SHALL BE IN CONFORMANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
5. ALL PAVING WITHIN PROPERTY TO BE REMOVED AND DISPOSED OF IN CONFORMANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
6. CONTRACTOR SHALL VERIFY THAT ALL UTILITIES TO EXISTING STRUCTURE HAVE BEEN DISCONNECTED PRIOR TO COMMENCING DEMOLITION.
7. ALL EXISTING SERVICE LINES SHALL BE COMPLETELY REMOVED TO EACH RESPECTIVE UTILITY MAIN.
8. CONTRACTOR SHALL COORDINATE WITH SPIRE ENERGY FOR REMOVAL OF GAS SERVICE.
9. EXISTING POWER LINES AND APPURTENANCES TO BE RELOCATED BY EVERGY.
10. ALL UTILITY PIPE LINES TO BE ABANDONED SHALL BE PLUGGED PER CITY AND STATE REGULATIONS.
11. CONTRACTOR SHALL SMOOTH GRADE THE SITE TO MATCH EXISTING CONTOURS OF THE SURROUNDING LAND TO ENSURE POSITIVE DRAINAGE.
12. CONTRACTOR SHALL VERIFY DIRECTION OF EXISTING SANITARY SERVICE PRIOR TO CONSTRUCTION.

SURVEY DESCRIPTION:

PARCEL NO. 37-530-04-23-02-1-00-000

ALL THAT PART OF LOT 8, REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK AND PART OF THE SOUTHWEST QUARTER OF SECTION 26, TOWNSHIP 49 NORTH, RANGE 30 WEST, ALL IN GRAIN VALLEY, JACKSON COUNTY, MISSOURI, BEING DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF THE PLAT OF KUIKTRIP STORE NO. 0259 AS RECORDED IN BOOK 1-190 AT PAGE 54 AS INSTRUMENT NUMBER 2020C039051; THENCE S06°19'31"E, ALONG THE WESTERLY LINE OF SAID PLAT, A DISTANCE OF 29.57 FEET TO THE SOUTHWEST CORNER OF SAID PLAT; THENCE N86°48'00"W, A DISTANCE OF 42.84 FEET; THENCE N87°02'21"W, A DISTANCE OF 120.02 FEET TO A POINT ON THE WESTERLY LINE OF SAID LOT 8; THENCE N01°56'37"E, ALONG SAID WESTERLY LINE, A DISTANCE OF 162.95 FEET TO THE NORTHWEST CORNER OF SAID LOT 8; SAID POINT ALSO BEING THE NORTHEAST CORNER OF LOT 4, SAID REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK; THENCE N87°02'21"W, ALONG THE NORTHERLY LINE OF SAID LOT 7 AND ALONG THE NORTHERLY LINE OF LOT 4, SAID REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK, A DISTANCE OF 300.73 FEET TO A POINT ON THE EASTERLY RIGHT OF WAY LINE OF N. JEFFERSON STREET; THENCE N01°58'41"E, ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 5.82 FEET; THENCE N40°17'43"E, CONTINUING ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 28.02 FEET TO A POINT ON THE SOUTHERLY RIGHT OF WAY LINE OF SAID N. JEFFERSON STREET; THENCE EASTERLY ALONG SAID RIGHT OF WAY LINE, ALONG A CURVE TO THE LEFT HAVING AN INITIAL TANGENT BEARING OF N87°43'56"E, A RADIUS OF 535.00 FEET, AN ARC DISTANCE OF 95.53 FEET; THENCE N77°30'05"E, CONTINUING ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 250.32 FEET; THENCE EASTERLY, CONTINUING ALONG SAID RIGHT OF WAY LINE, ALONG A CURVE TO THE RIGHT HAVING AN INITIAL TANGENT BEARING OF S07°00'00"E, HAVING A RADIUS OF 496.00 FEET, AN ARC DISTANCE OF 68.70 FEET TO THE POINT OF BEGINNING.

GENERAL NOTES:

1. THIS SURVEY WAS EXECUTED IN ACCORDANCE WITH LAWS AND STANDARDS FOR THE STATE OF MISSOURI.
2. THE PROPERTY HAS DIRECT ACCESS TO NW JEFFERSON ST, A DEDICATED PUBLIC STREET

FLOOD STATEMENT:

THE ACCURACY OF ANY FLOOD HAZARD DATA SHOWN HEREON IS SUBJECT TO MAP SCALE UNCERTAINTY AND TO ANY OTHER UNCERTAINTY IN LOCATION OR ELEVATION ON THE REFERENCED FLOOD INSURANCE RATE MAP. THE SURVEY PARCEL LIES WITHIN FLOOD HAZARD ZONE "X-NONSHADED" IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN." AS SAID PARCEL PLOTS BY SCALE ON THE FLOOD INSURANCE RATE MAP FOR THE CITY OF GRAIN VALLEY, MISSOURI. COMMUNITY PANEL NO 29095C0339G, EFFECTIVE ON 1/20/2017.

BASIS OF BEARINGS:

NORTH 77°29'40" EAST ALONG THE NORTH LINE OF SURVEYED PROPERTY AS DETERMINED BY GLOBAL POSITIONING SYSTEM OBSERVATIONS USING MODOT VRS, 2018 GEOID, AND REFERENCED TO THE MISSOURI STATE PLANE COORDINATE SYSTEM, WEST ZONE (NAD83).

DATUM BENCHMARK:

DATUM IS U.S. SURVEY FEET AND REFERS TO NAVD88 DATUM DERIVED FROM CONNECTIONS TO MODOT VRS. ORTHOMETRIC HEIGHT WAS CALCULATED USING THE GEOID18 MODEL.

BENCHMARKS:

BENCHMARKS:
BM#60
'SQUARE' CUT
NE CORNER OF CURB INLET
N=1040393.97'
E=2873757.53'
ELEV=815.39'

BM#61

'SQUARE' CUT
NE CORNER OF CURB INLET
N=1040468.27'
E=2874121.61'
ELEV=808.61'

CP#100

1/2" X 24" REBAR W/ CAP
CONTROL POINT X
N=1040399.12'
E=2873754.50'
ELEV=815.75'

CP#30

1/2" X 24" REBAR W/ RED
CP CAP
N=1040472.78'
E=2874117.63'
ELEV=808.65'

SAFETY NOTICE TO CONTRACTOR:

IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

WARRANTY / DISCLAIMER:

THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER KAW VALLEY ENGINEERING, INC NOR ITS PERSONNEL CAN OR DO WARRANTY THESE DESIGNS OR PLANS AS CONSTRUCTED, EXCEPT IN THE SPECIFIC CASES WHERE KAW VALLEY ENGINEERING PERSONNEL INSPECT AND CONTROL THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.

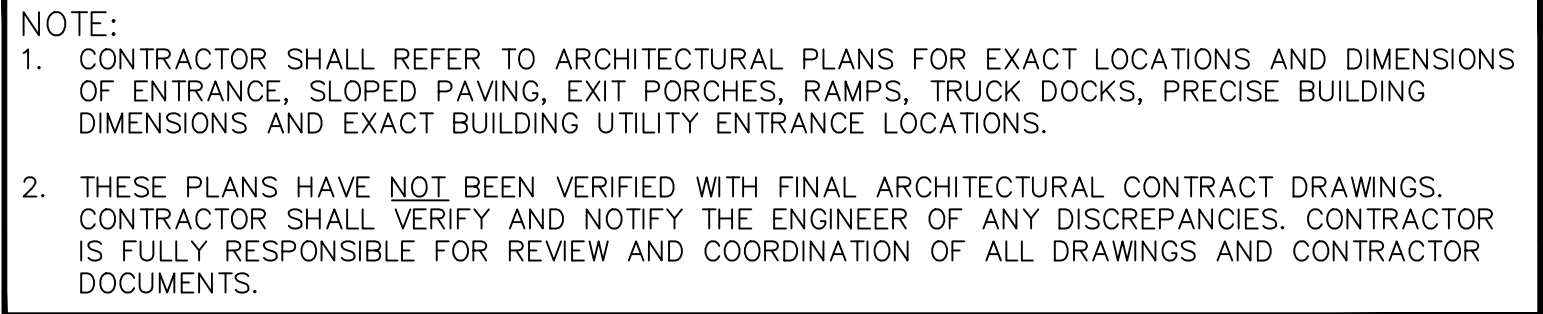
CAUTION – NOTICE TO CONTRACTOR:

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. THERE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICTS PRIOR TO ANY CONSTRUCTION.

DISCOUNT 811

PARKING SUMMARY	
DESCRIPTION	REQUIRED
REQUIRED STALLS (5 STALL PER 1,000 SF (GROSS FLOOR AREA))	15
DESCRIPTION	PROPOSED
ACCESSIBLE PARKING STALLS	2
STANDARD PARKING STALLS	24
TOTAL PARKING STALLS	26



- | | DETAILS - SEE DETAIL SHEET FOR THE FOLLOWING DETAILS |
|-----|--|
| 005 | C-1 STRAIGHT BACK CURB |
| 012 | ENTRANCE GUTTER |
| 013 | CONCRETE WHEEL STOP |
| 032 | STREET CUT RESTORATION |
| 040 | REGULAR DUTY ASPHALT PAVEMENT |
| 043 | HEAVY DUTY P.C. CONCRETE PAVEMENT |
| 055 | CONCRETE SIDEWALK |
| 060 | SIDEWALK RAMP |
| 100 | CURB TERMINUS DETAIL |
| 102 | ADA ACCESSIBLE SPACE STRIPING |
| 104 | TRAFFIC ARROW |
| 130 | BOLLARD DETAIL |

- ### NOTES:
1. ENTRY (SEE ARCH. PLANS)
 2. PICK-UP WINDOW (SEE ARCH. PLANS)
 3. CANOPY (SEE ARCH. PLANS)
 4. MONUMENT SIGN (SEE ARCH. PLANS)
 7. DUMPSTER ENCLOSURE (SEE ARCH. PLANS)
 11. WHITE PARKING LOT STRIPING PER GRAIN VALLEY STANDARDS
 29. CONCRETE DRIVEWAY PER CITY OF GRAIN VALLEY STANDARDS
 56. WATER METER PIT (SEE UTILITY PLAN)
 64. COMPOSITE OUTLET STRUCTURE
 65. NYLOPLAST CATCH BASIN W/ 2'x3' CURB INLET (SEE UTILITY PLAN)
 66. SLOPED TRENCH DRAIN (SEE UTILITY PLAN)
 67. RIP-RAP (SEE UTILITY PLAN)
 70. SANITARY SEWER CLEAN-OUT (SEE UTILITY PLAN)
 71. ADJUST EXISTING CLEAN-OUT HEIGHT AS NECESSARY

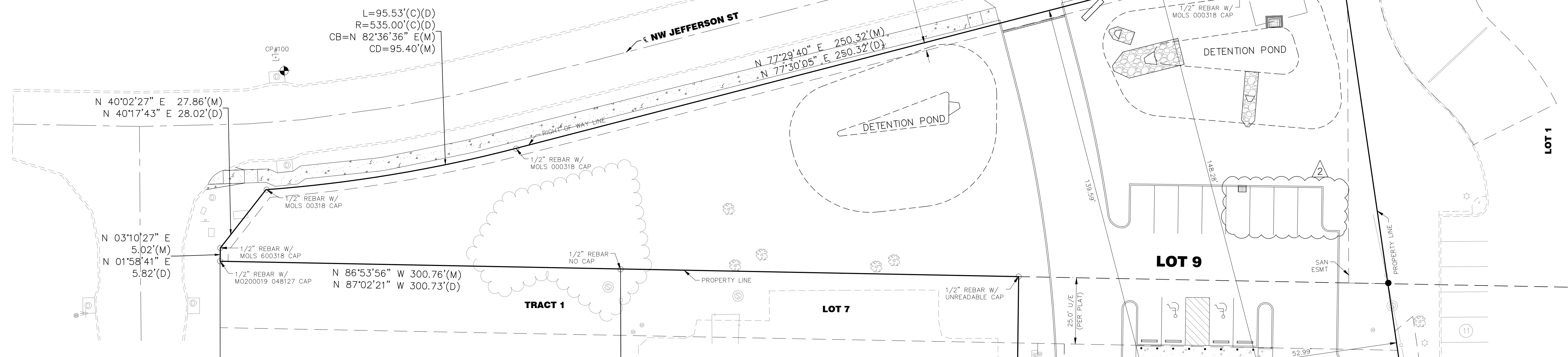
SAFETY NOTICE TO CONTRACTOR:
IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

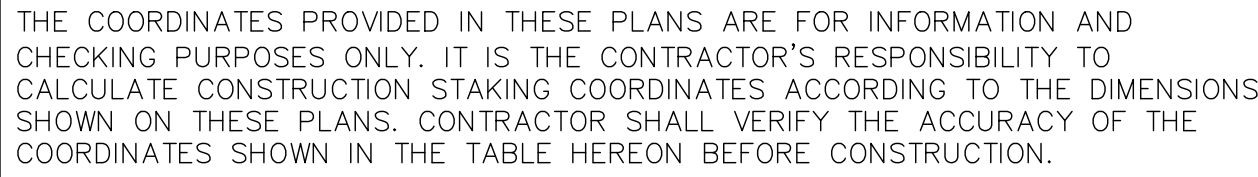
WARNING / DISCLAIMER:
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CAUTION - NOTICE TO CONTRACTOR:
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANY AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICTS PRIOR TO ANY CONSTRUCTION.

ENCLOSURE 811

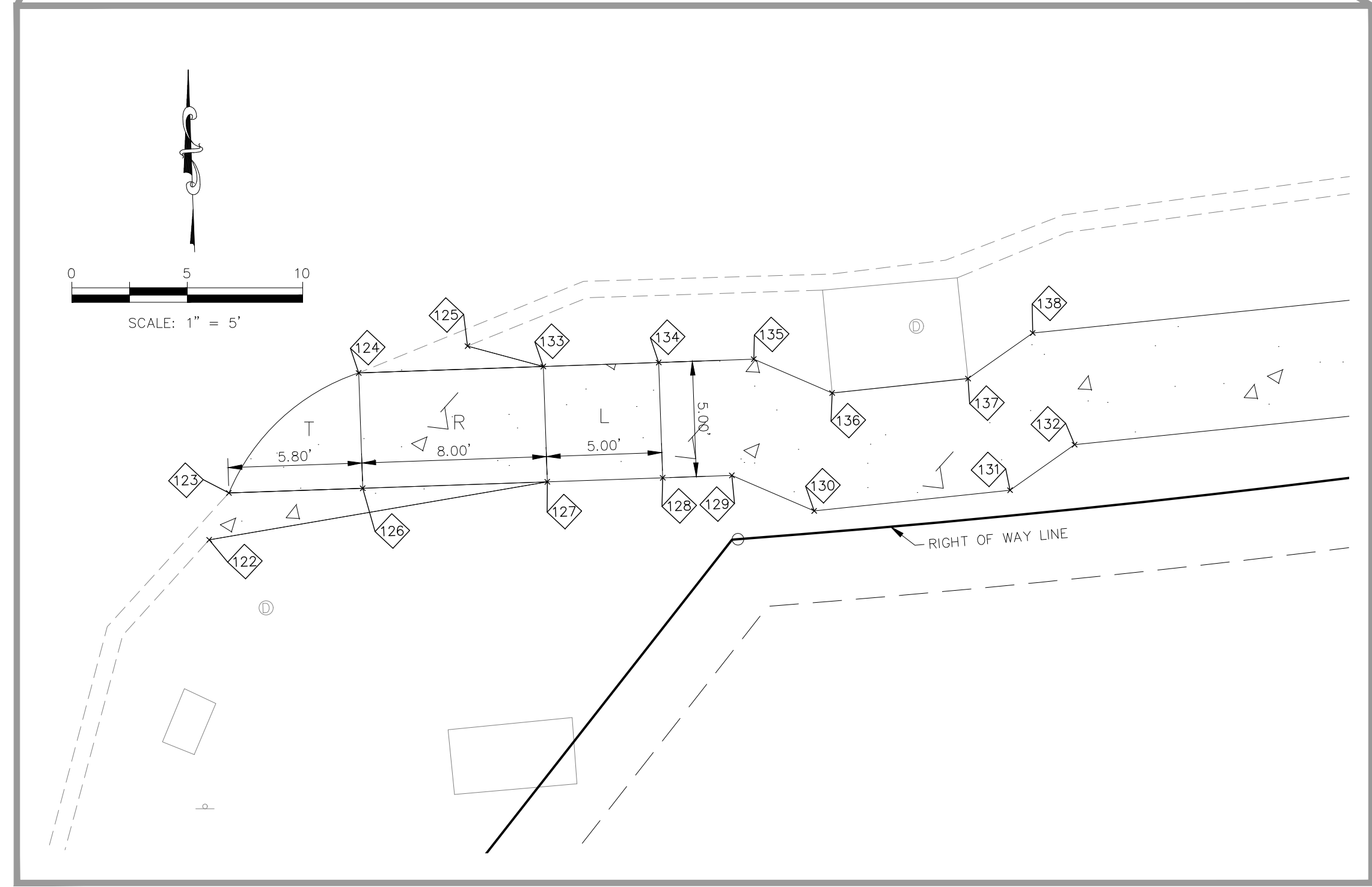
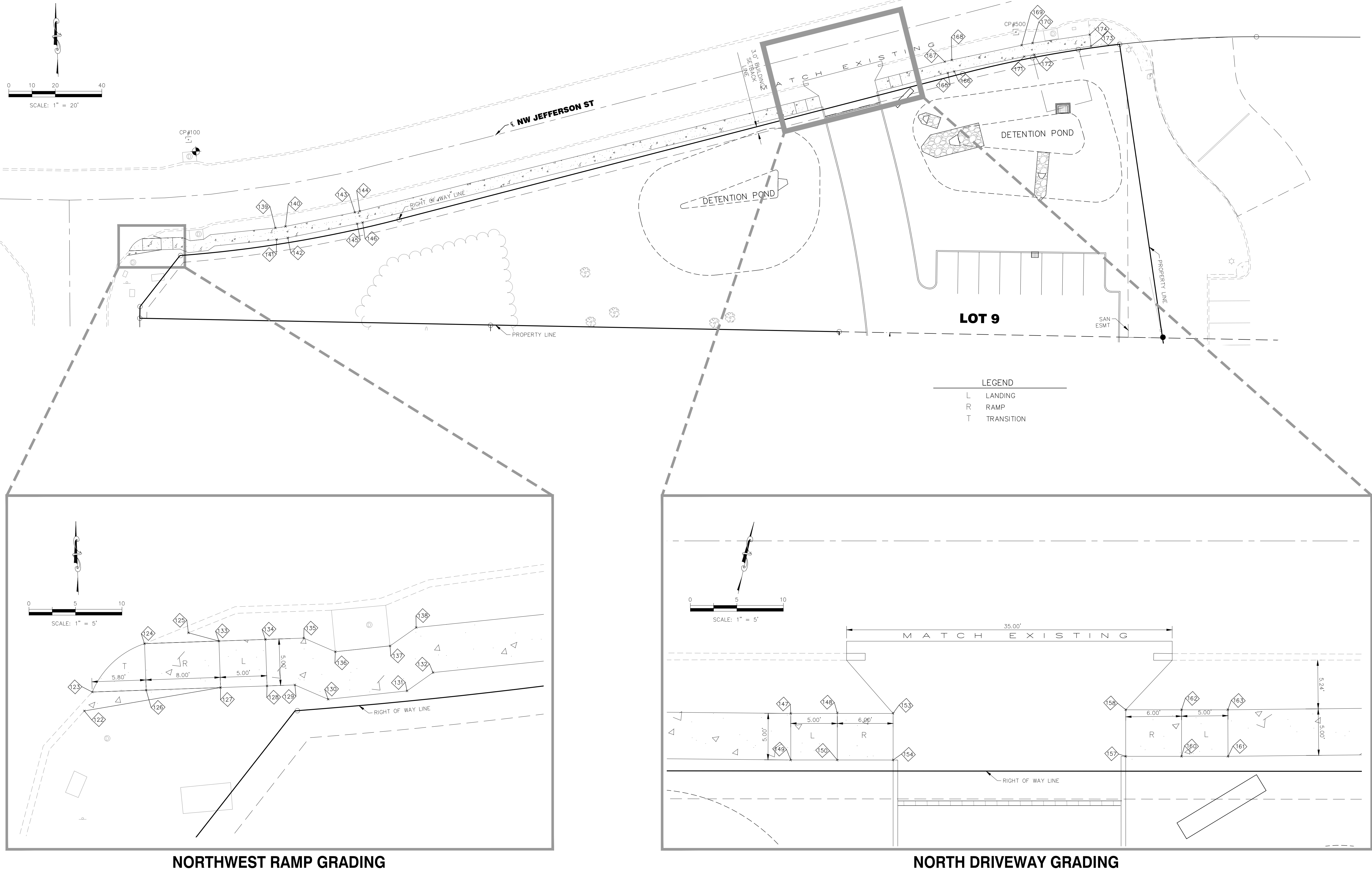
GRAIN VALLEY DISPENSARY NW JEFFERSON ST & STATE ROUTE BB GRAIN VALLEY, MO 64029							
		KAW VALLEY ENGINEERING 3940 N. W. TRAFEGWAY KANSAS CITY, MISSOURI 64118 PH. (816) 468-5858 kce@kveeng.com www.kveeng.com		MATTHEW A. CROSS ENGINEER MO # 2020008364			
CIVIL PLANS SITE PLAN		KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/25					
PROJ. NO. B24D5016		DESIGNER MAC		DRAWN BY JNG			
CFN 5016SP							
SHEET C200		REV 2		05/22/25 04/16/25 03/10/25		PER CITY COMMENTS PER CITY COMMENTS INITIAL SUBMITTAL	
				REV DATE		DESCRIPTION	
				JED JED JED		DSN DWN CHK	



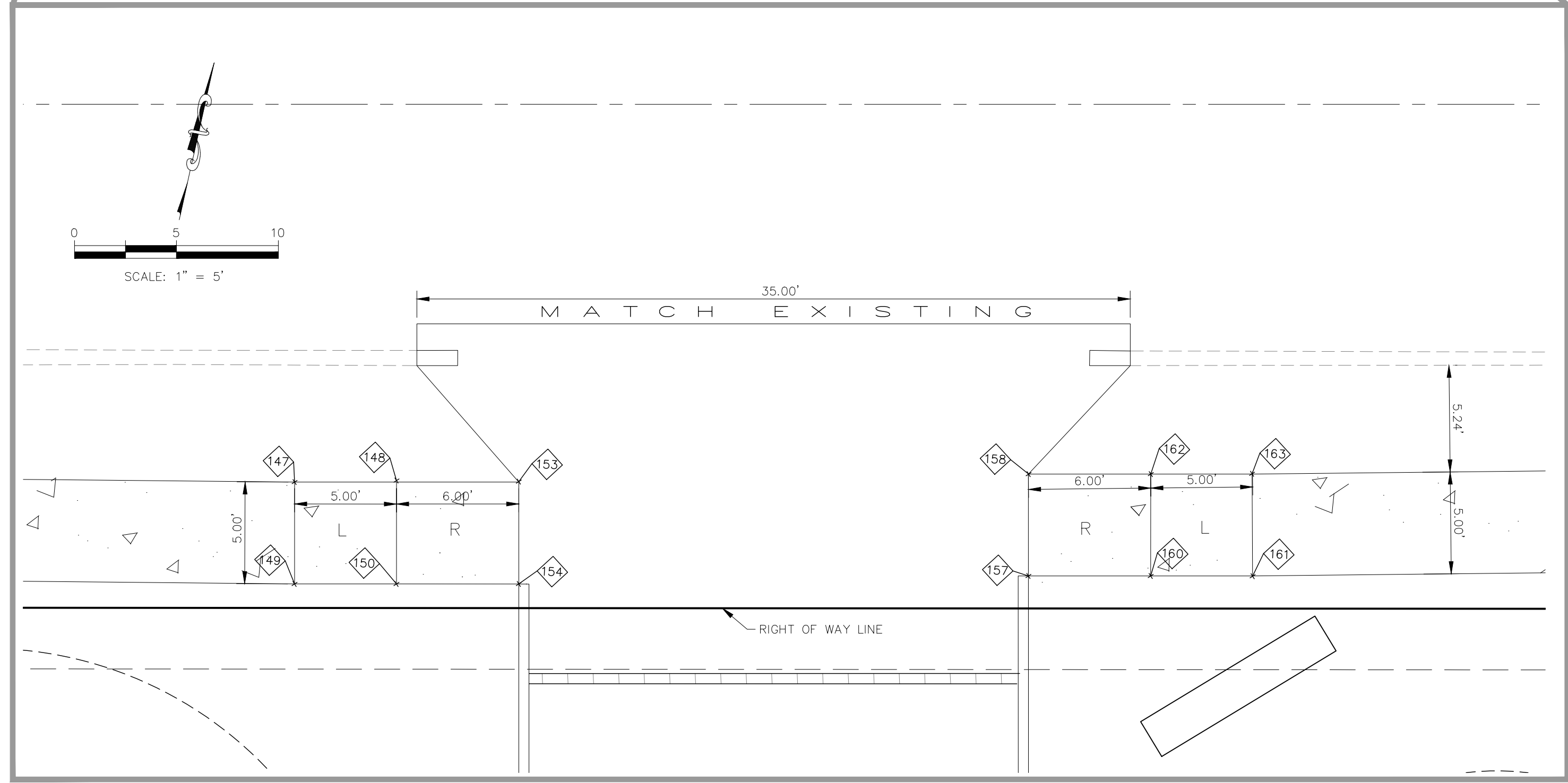
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\\WMC-FILE\Projects\B4_5016\C302\DES\CIVIL\5016DIM.dwg, 5/23/2025 2:25:55 PM, jremmd

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NORTHWEST RAMP GRADING



NORTH DRIVEWAY GRADING

THE COORDINATES PROVIDED IN THESE PLANS ARE FOR INFORMATION AND CHECKING PURPOSES ONLY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALCULATE CONSTRUCTION STAKING COORDINATES ACCORDING TO THE DIMENSIONS SHOWN ON THESE PLANS. CONTRACTOR SHALL VERIFY THE ACCURACY OF THE COORDINATES SHOWN IN THE TABLE HEREON BEFORE CONSTRUCTION.

PROJ. NO. B24D5016	
DESIGNER MAC	DRAWN BY JNG
CFN 5016DIM	
SHEET C302	REV 2

GRAIN VALLEY DISPENSARY NW JEFFERSON ST & STATE ROUTE BB GRAIN VALLEY, MO 64029	
CIVIL PLANS DETAILED DIMENSION PLAN - SIDEWALKS & RAMPS	

KAW VALLEY ENGINEERING 8040 N. OAK TRAFFICWAY KANSAS CITY, MISSOURI 64118 kce@kvweng.com www.kvweng.com	
KAW VALLEY ENGINEERING, INC. IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/25	

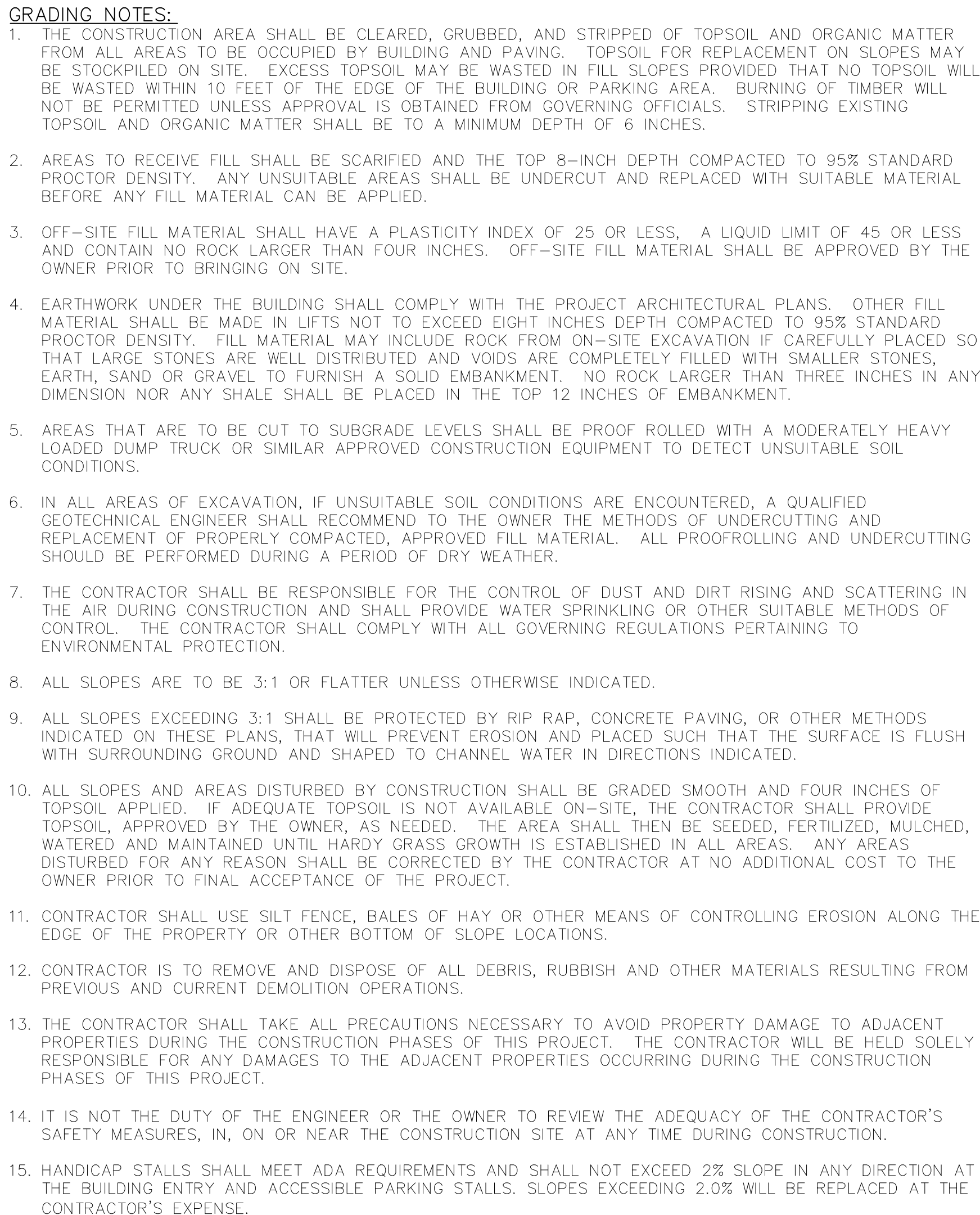
MATTHEW A. CROSS ENGINEER MO # 2020008364	
MATTHEW A. CROSS ENGINEER MO # 2020008364	

2	05/22/25	PER CITY COMMENTS	JED	JAD	---
1	04/16/25	PER CITY COMMENTS	JED	JED	---
0	03/10/25	INITIAL SUBMITTAL	JED	JNG	---

REV	DATE	DESCRIPTION	DSN	DWN	CHK
-----	------	-------------	-----	-----	-----



(ME) MATCH EXISTING
FFE FINISH FLOOR ELEVATION
— FLOW DIRECTION
-82.92 SPOT ELEVATION (ADD 800),
TOP OF PAVEMENT
-83.60 TOP OF CURB (ADD 800)
-83.10 FLOWLINE OF CURB (ADD 800)
-81.5 EXISTING 1' CONTOUR INTERVAL
5 FINISHED 1' CONTOUR INTERVAL



CUT/FILL SUMMARY		
NAME	2D AREA	NET
5016EG-FG	46531.99 SQ. FT.	84.21 CU. YD.(CUT)

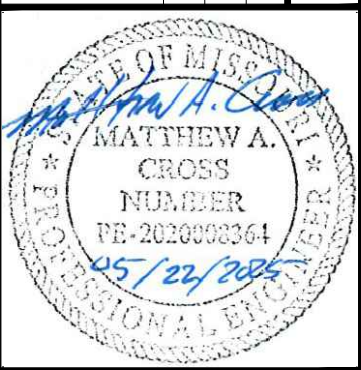
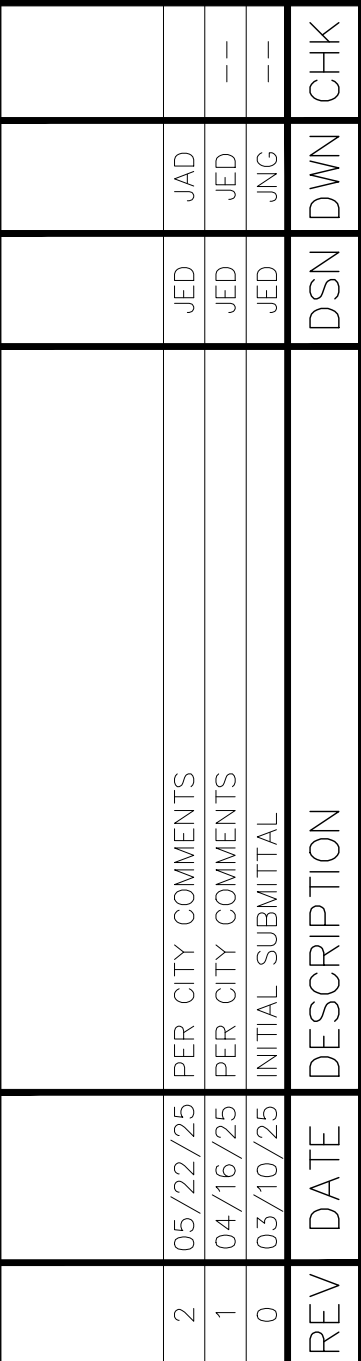
DATUM BENCHMARK:
 DATUM IS U.S. SURVEY FEET AND REFERS TO NAVD88 DATUM DERIVED FROM CONNECTIONS
 TO MODOT VRS. ORTHOMETRIC HEIGHT WAS CALCULATED USING THE GEOID18 MODEL.

CP#100
1/2" X 24" REBAR W/ CAP
CONTROL POINT X
N=1040399.12'
E=2873754.50'
ELEV=815.75'

CP#301
1/2" X 24" REBAR W/ RED
CAP
N=1040472.78'
E=2874117.63'
ELEV=808.65'

WARRANTY / DISCLAIMER:
THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER KAW VALLEY ENGINEERING, INC NOR ITS PERSONNEL CAN OR DO WARRANTY THESE DESIGNS OR PLANS AS CONSTRUCTED, EXCEPT IN THE SPECIFIC CASES WHERE KAW VALLEY ENGINEERING PERSONNEL INSPECT AND CONTROL THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.

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MATTHEW A. CROSS
ENGINEER
MO # 2020008364

8040 N. Oak Trafficway
Kansas City, Missouri 64118
PH. (816) 468-5858
kc@kveeng.com | www.kveeng.com

KAW VALLEY ENGINEERING

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EXPIRES 12/31/25

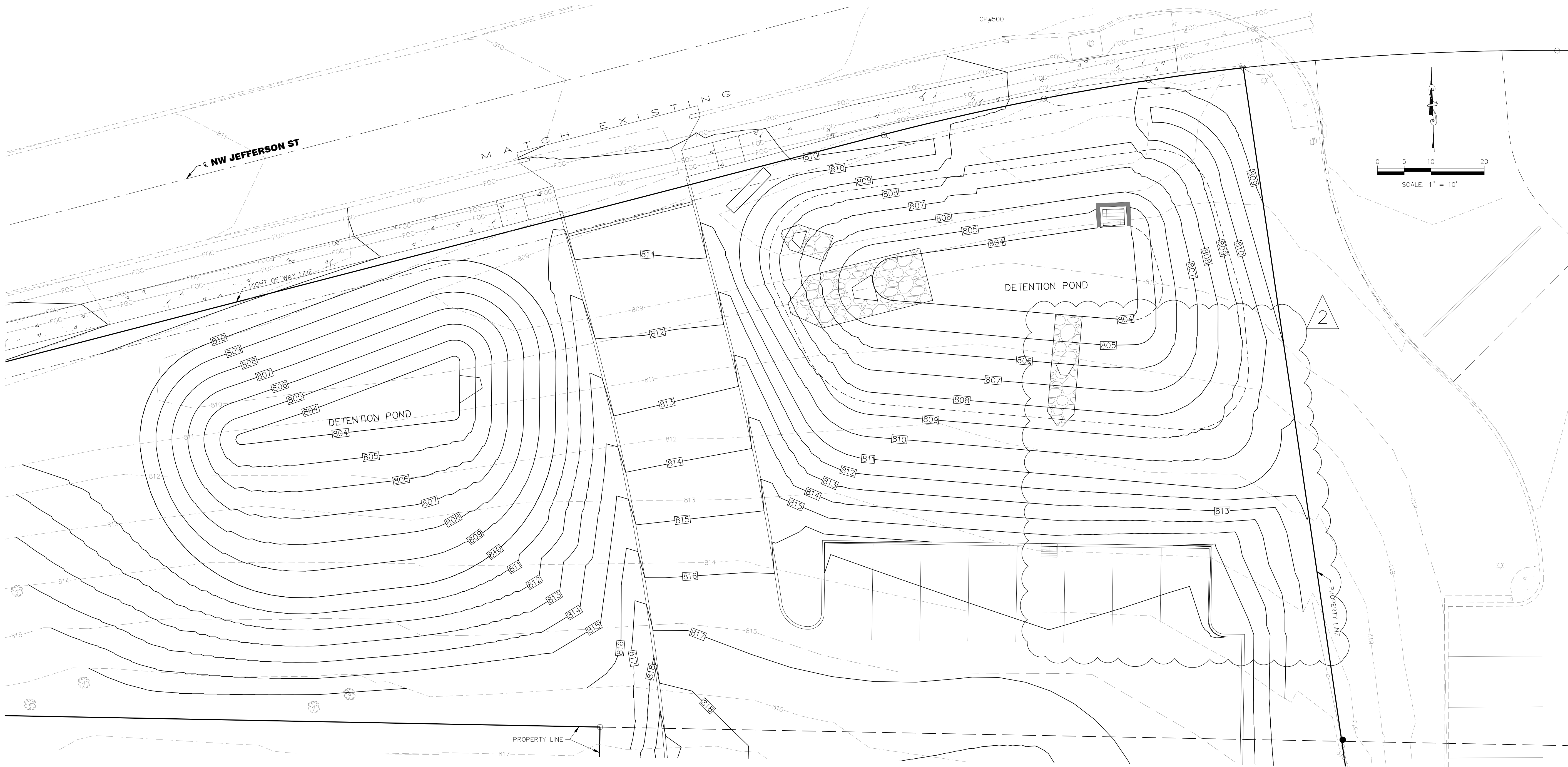
GRAIN VALLEY DISPENSARY
NW JEFFERSON ST & STATE ROUTE BB
GRAIN VALLEY, MO 64029

CIVIL PLANS
DETAILED GRADING PLAN 01

PROJ. NO.		B24D5016	
DESIGNER	MAC	DRAWN BY	JNG
CFN		5016GP	
SHEET		REV	
C401		2	

\\WMC-FILE\Projects\B24_5016\C3D04\DES\CIVIL\5016GP.dwg, 5/23/2025 2:26:27 PM, jsemyd

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LEGEND (PROPOSED)			
(ME)	MATCH EXISTING	82.92	SPOT ELEVATION (ADD 800), TOP OF PAVEMENT
FFE	FINISH FLOOR ELEVATION	83.60	TOP OF CURB (ADD 800)
815	EXISTING 1' CONTOUR INTERVALS	83.10	FLOWLINE OF CURB (ADD 800)
815	FINISHED 1' CONTOUR INTERVALS		FLOW DIRECTION



GRAIN VALLEY DISPENSARY
NW JEFFERSON ST & STATE ROUTE BB
GRAIN VALLEY, MO 64029

CIVIL PLANS

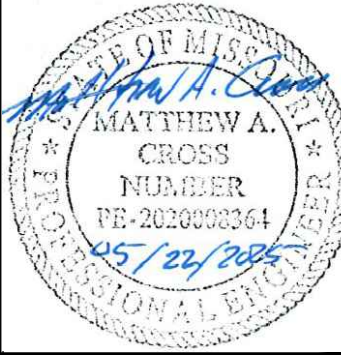
DETAILED GRADING PLAN - DETENTION PONDS

PROJ. NO.	B24D5016
DESIGNER	MAC
CFN	5016GP
SHEET	C402
REV	2

K&W VALLEY ENGINEERING
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8040 N. OAK TRAILWAY
KANSAS CITY, MISSOURI 64118
kce@kvweng.com | www.kvweng.com

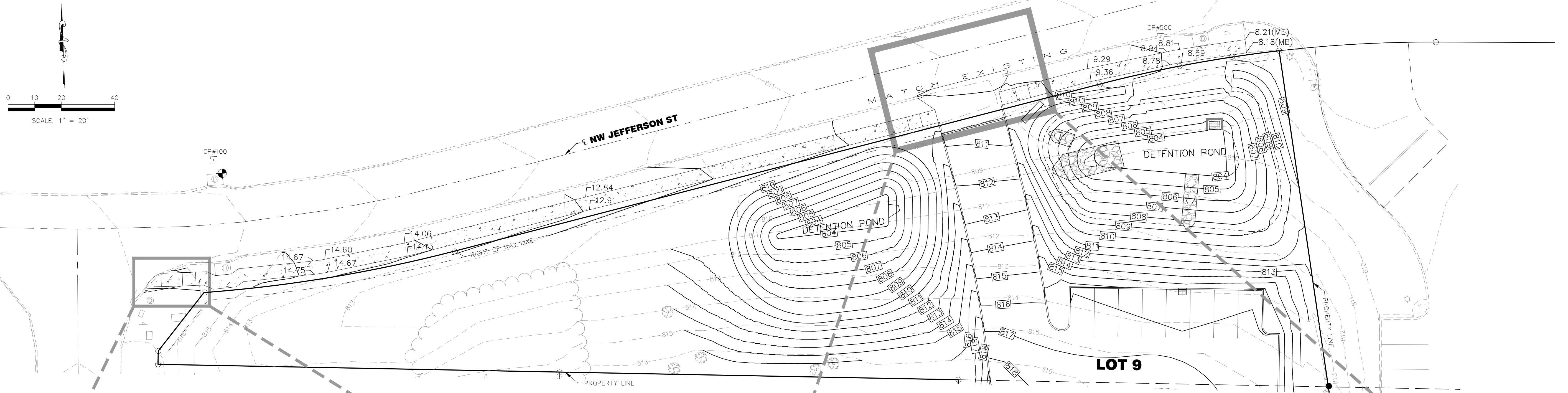
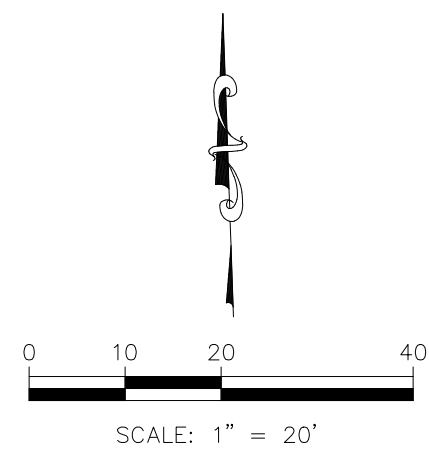
MATTHEW A. CROSS
ENGINEER
MO # 2020008364



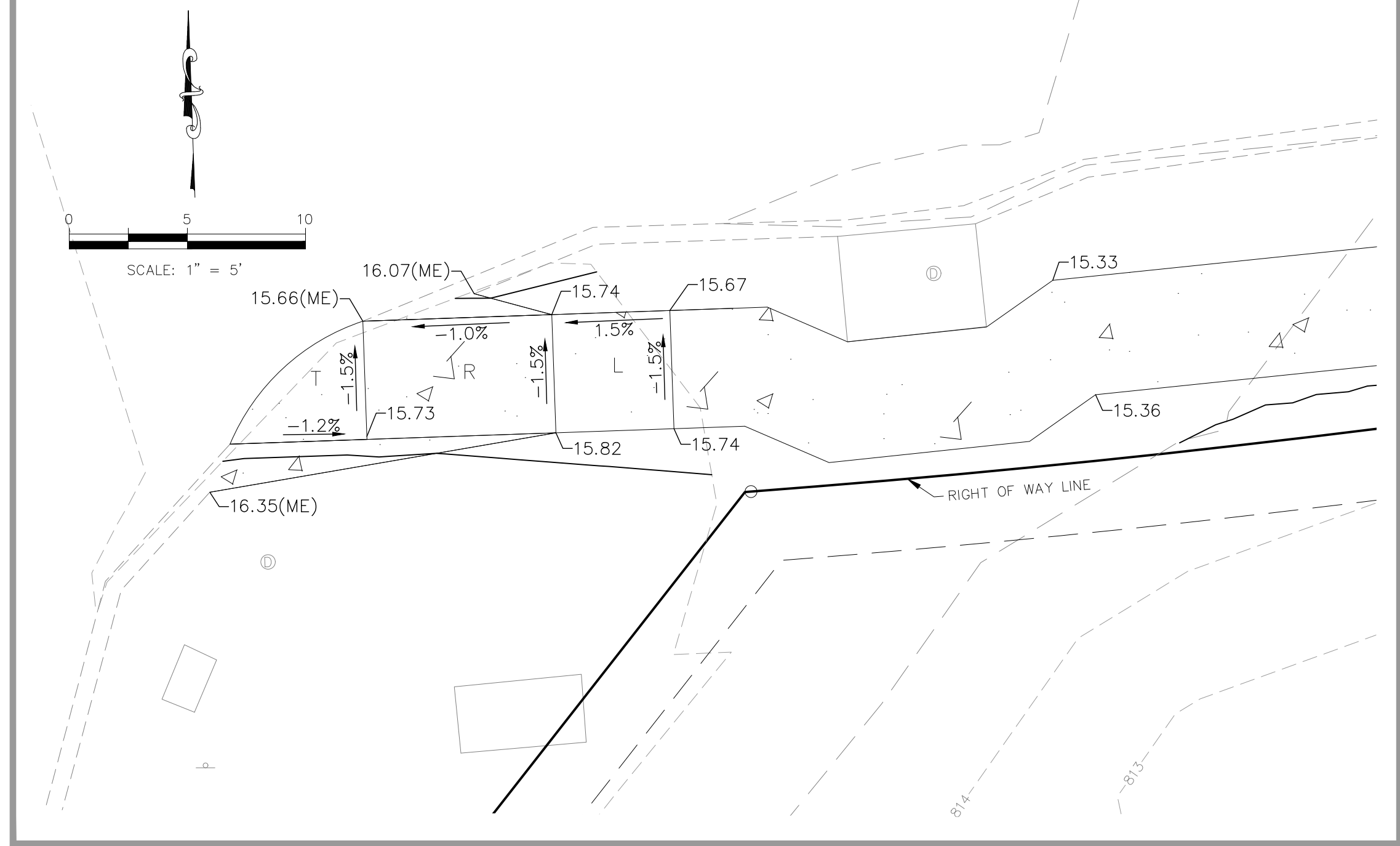
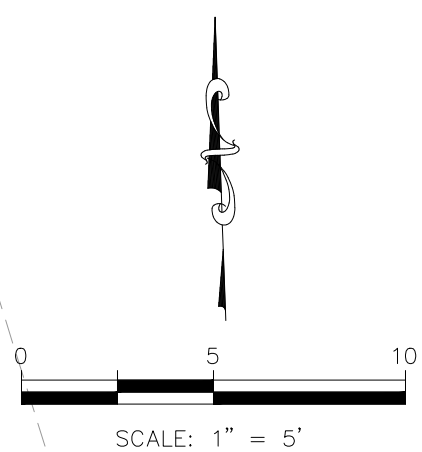
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1	04/16/25	PER CITY COMMENTS
0	03/10/25	INITIAL SUBMITTAL

	JED	JAD	
	JED	JED	
	JED	JNG	
	JED	DWN	CHK

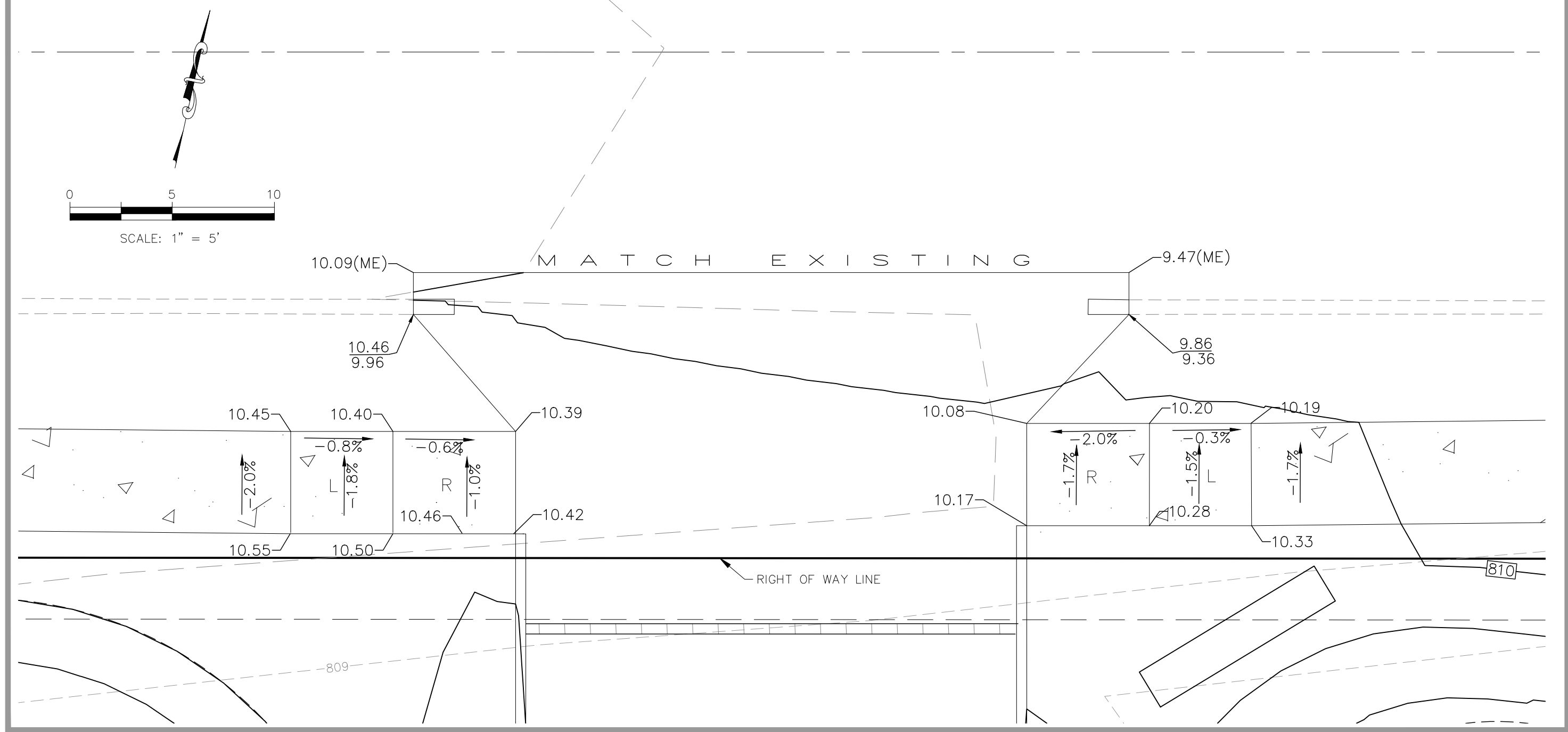
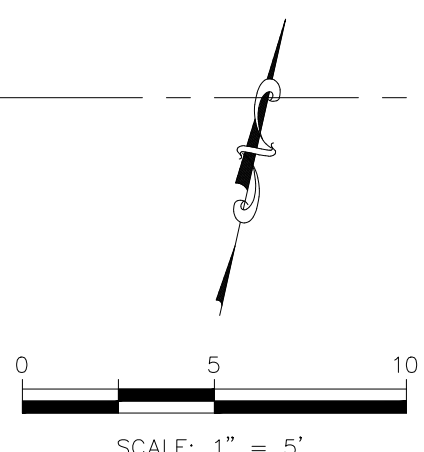
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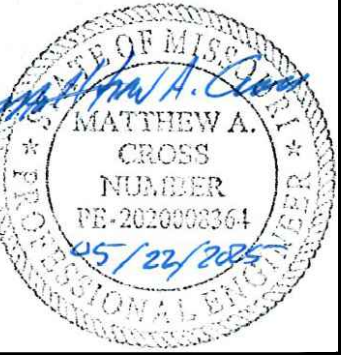
LEGEND (PROPOSED)	
(ME) MATCH EXISTING	82.92 SPOT ELEVATION (ADD 800), TOP OF PAVEMENT
FFE FINISH FLOOR ELEVATION	83.60 TOP OF CURB (ADD 800)
815 EXISTING 1' CONTOUR INTERVALS	83.10 FLOWLINE OF CURB (ADD 800)
815 FINISHED 1' CONTOUR INTERVALS	FLOW DIRECTION
L LANDING	
R RAMP	
T TRANSITION	



NORTHWEST RAMP GRADING



NORTH DRIVEWAY GRADING



MATTHEW A. CROSS
ENGINEER
MO # 2020008364

8040 N. OAK TRAILWAY
KANSAS CITY, MISSOURI 64118
kce@kvweng.com | www.kvweng.com

KAW VALLEY ENGINEERING
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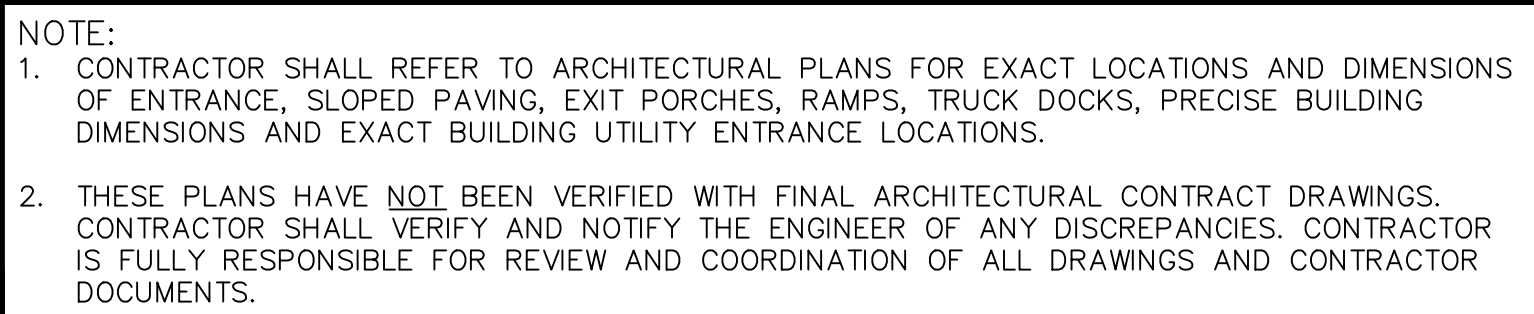
GRAIN VALLEY DISPENSARY
NW JEFFERSON ST & STATE ROUTE BB
GRAIN VALLEY, MO 64029

CIVIL PLANS
DETAILED GRADING PLAN - SIDEWALKS & RAMPS

PROJ. NO.	B24D5016
DESIGNER	MAC
CFN	5016GP
SHEET	C403
REV	2

REV	DATE	DESCRIPTION	DSN	CHK
2	05/22/25	PER CITY COMMENTS	JED	JAD
1	04/16/25	PER CITY COMMENTS	JED	JED
0	03/10/25	INITIAL SUBMITTAL	JED	JNG





N.T.S.

ALL WATER SERVICE INSTALLATIONS, INCLUDING BACKFLOW DEVICES, ARE SUBJECT TO FIELD VERIFICATION, AND APPROVAL BY THE WATER DEPARTMENT INSPECTOR.

THE UNDERGROUND UTILITIES SHOWN HEREON ARE FROM FIELD SURVEY INFORMATION OF ONE-CALL LOCATED UTILITIES, FIELD SURVEY INFORMATION OF ABOVE GROUND OBSERVABLE EVIDENCE, AND/OR THE SCALING AND PLOTTING OF EXISTING UTILITY MAPS AND DRAWINGS AVAILABLE TO THE SURVEYOR AT THE TIME OF SURVEY. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHERMORE, THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES BY EXCAVATION UNLESS OTHERWISE NOTED ON THIS SURVEY.

WITH REGARD TO UNDERGROUND UTILITIES, INFORMATION FROM THE SOURCES LISTED HEREON WILL BE COMBINED WITH OBSERVED EVIDENCE OF UTILITIES PURSUANT TO SECTION 5.E.IV. OF THE MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES, HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY, AND RELIABLY DEPICTED. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUESTS FROM SURVEYORS MAY BE IGNORED OR RESULT IN AN INCOMPLETE RESPONSE. WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT EXCAVATION MAY BE NECESSARY.

IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

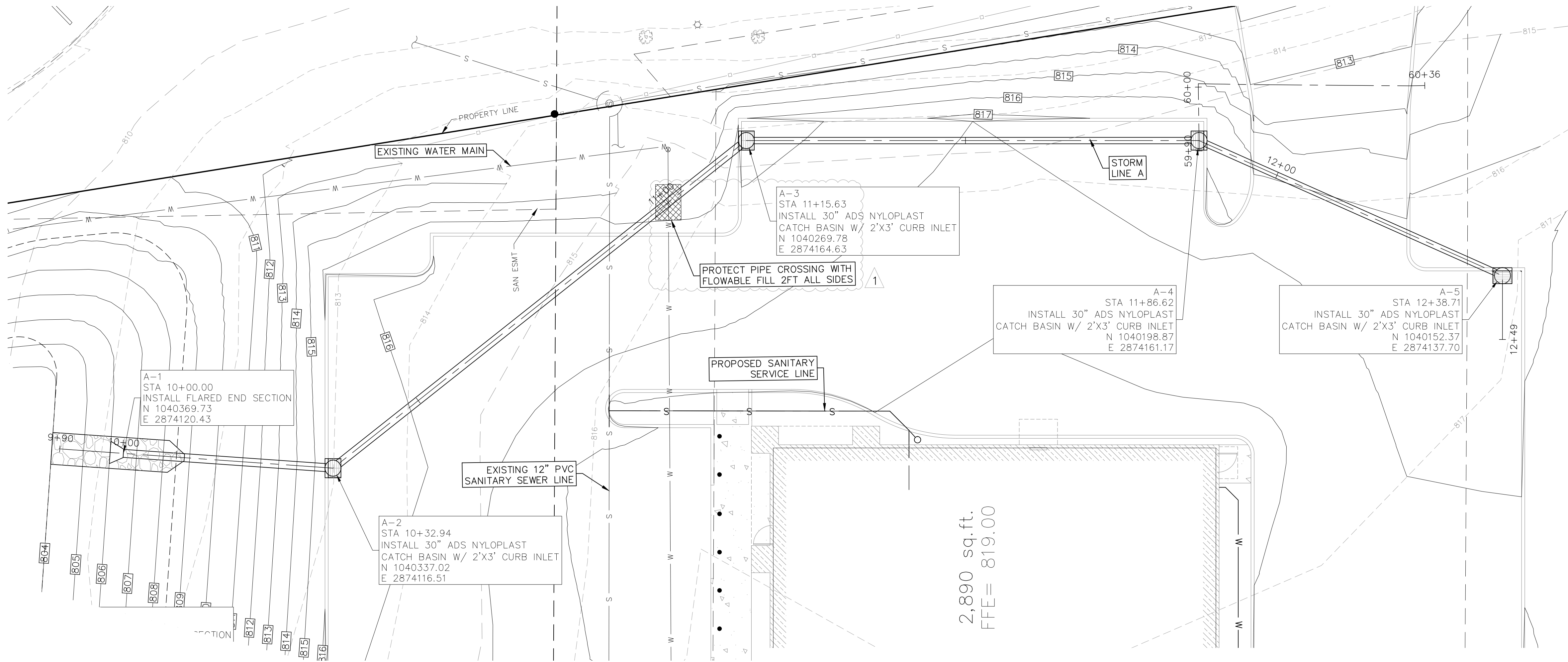
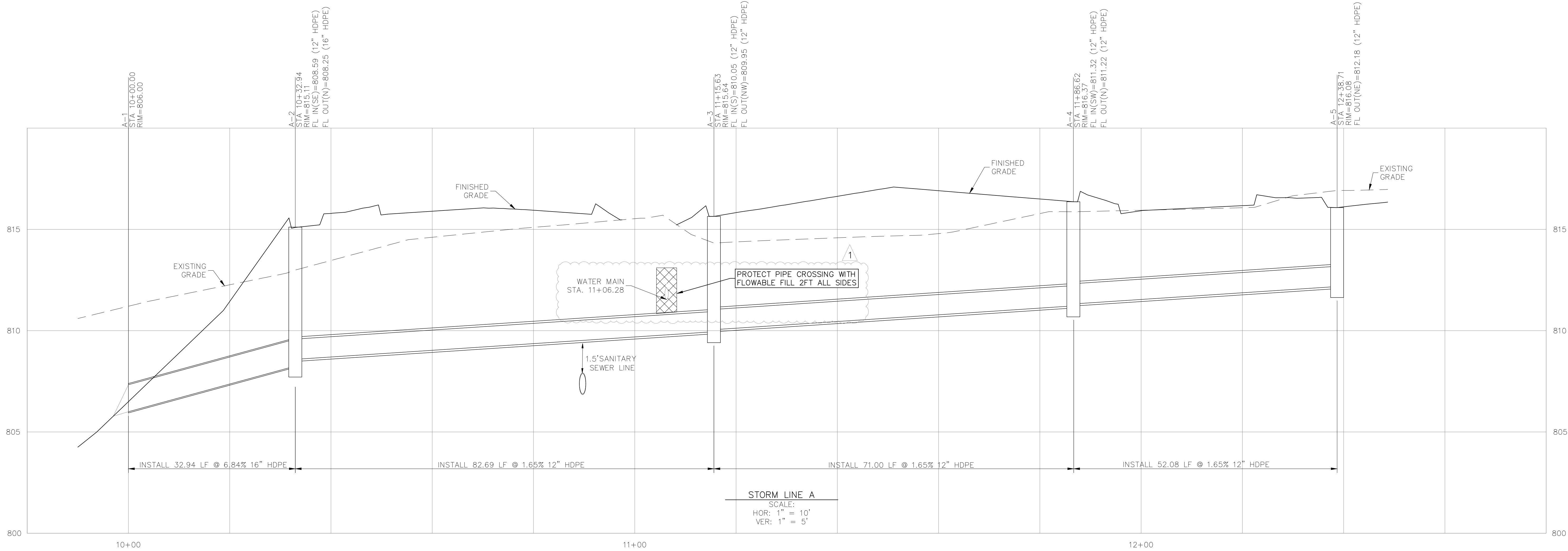
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[illegible]

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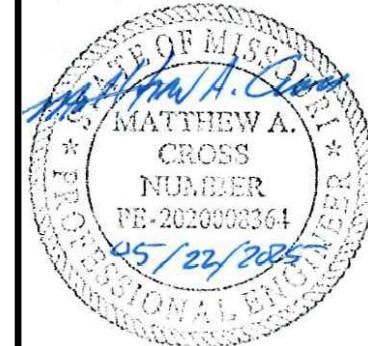
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GRAIN VALLEY DISPENSARY
NW JEFFERSON ST & STATE ROUTE BB
GRAIN VALLEY, MO 64029
CIVIL PLANS
STORM LINE A PLAN AND PROFILE

PROJ. NO.	B24D5016
DESIGNER	MAC
CFN	5016DPP
SHEET	C501
REV	2

K&W VALLEY ENGINEERING
K&W VALLEY ENGINEERING, INC. IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842.
EXPIRES 12/31/25



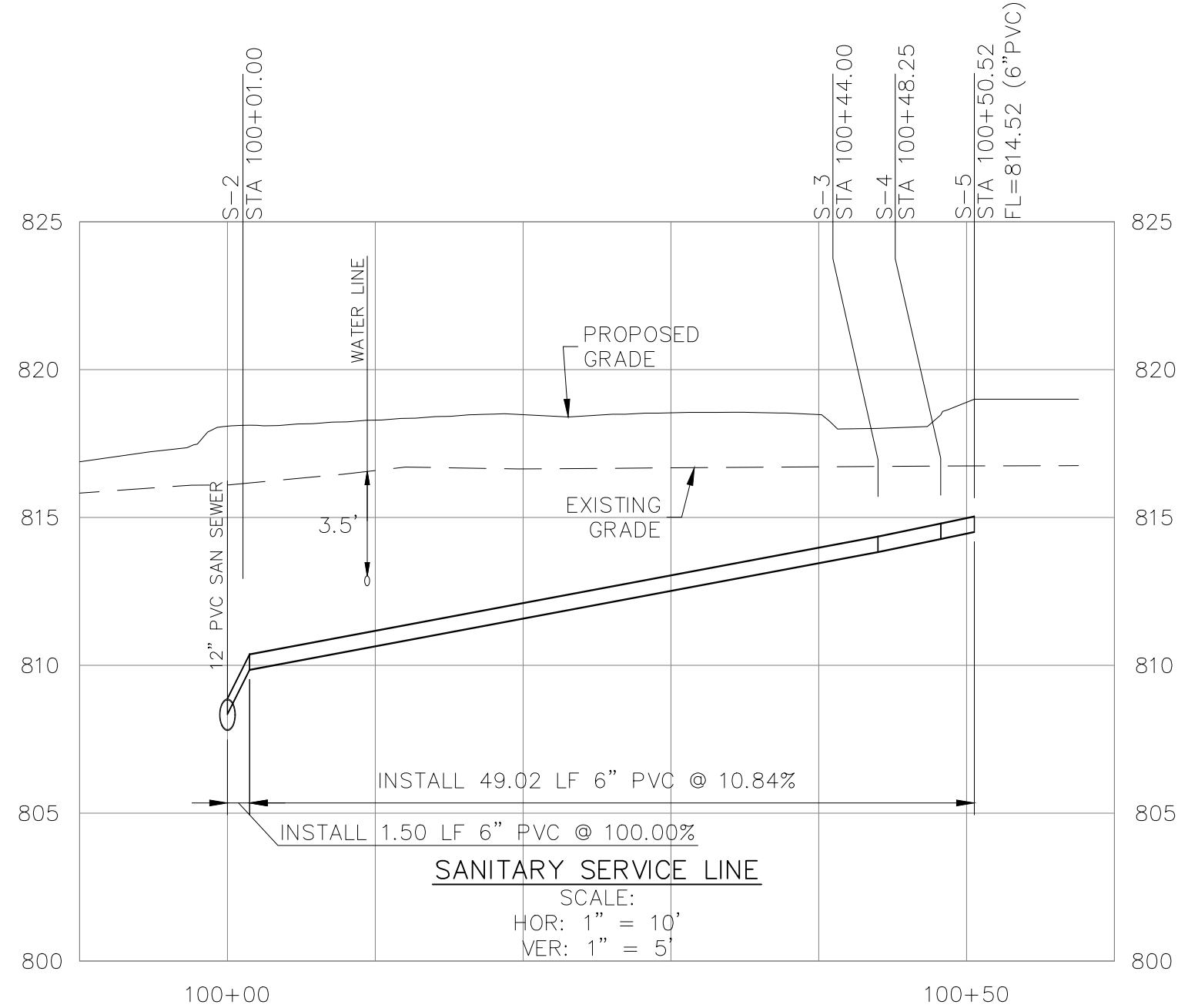
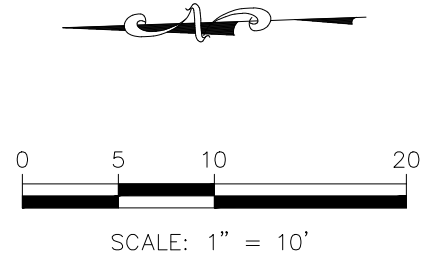
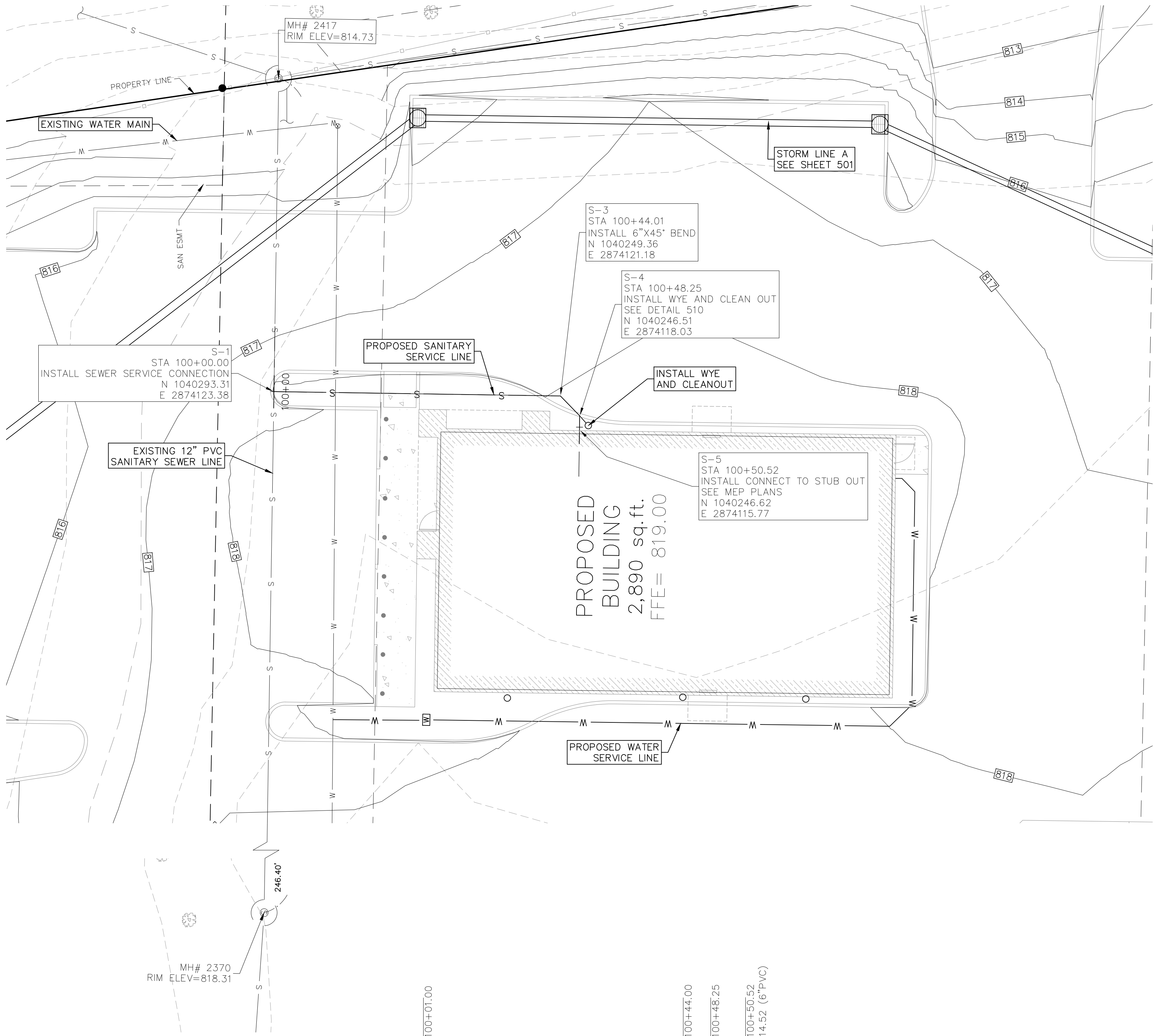
MATTHEW A. CROSS
ENGINEER
MO # 20200008364

REV	DATE	DESCRIPTION
2	05/22/25	PER CITY COMMENTS
1	04/16/25	PER CITY COMMENTS
0	03/10/25	INITIAL SUBMITTAL

	JED	JAD	CHK
	JED	JED	DSN
	JED	JED	DWN

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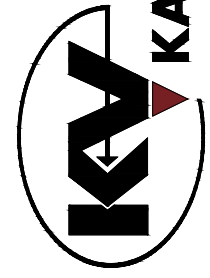
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GRAIN VALLEY DISPENSARY
NW JEFFERSON ST & STATE ROUTE BB
GRAIN VALLEY, MO 64029

CIVIL PLANS
SANITARY SERVICE PLAN AND PROFILE

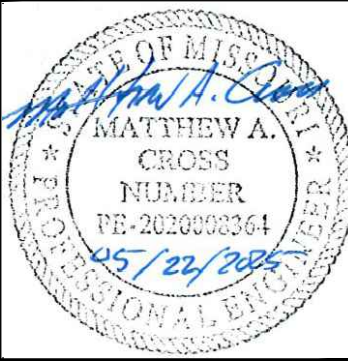
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DESIGNER MAC	DRAWN BY JNG
CFN 5016SPP	
SHEET C503	REV 2



K&W VALLEY ENGINEERING
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8040 N. OAK TRAFFICWAY
KANSAS CITY, MISSOURI 64118
(816) 451-1100
kce@kvweng.com | www.kvweng.com

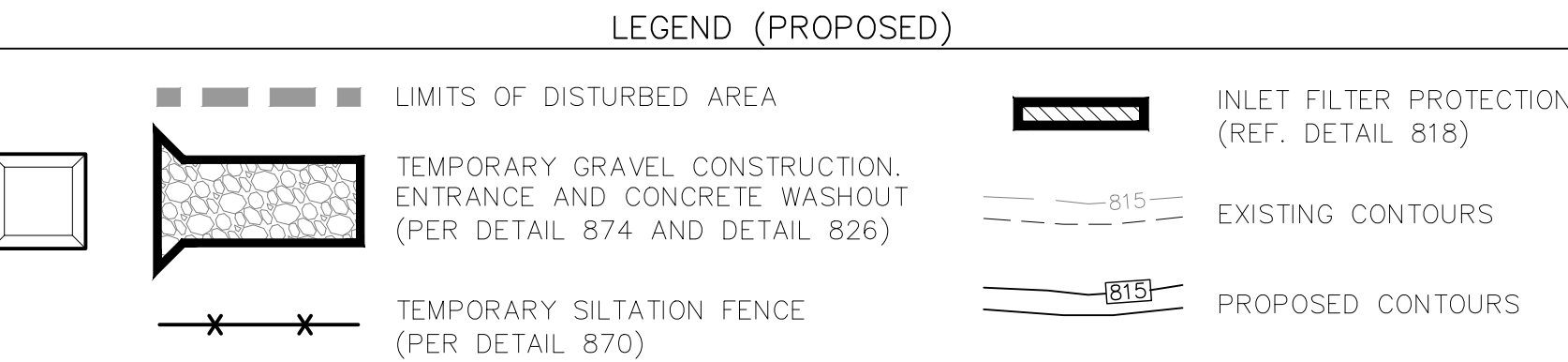
MATTHEW A. CROSS
ENGINEER
MO # 2020008364



REV	DATE	DESCRIPTION
2	05/22/25	PER CITY COMMENTS
1	04/16/25	PER CITY COMMENTS
0	03/10/25	INITIAL SUBMITTAL

	JED	JAD	CHK
	JED	JED	DWN
	JED	JED	DSN

- PROPERTY LINE LINE IS LOTS OF CONSTRUCTION EXCEPT AS SHOWN.
2. THE CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES AS SHOWN ON THE DRAWINGS PRIOR TO BEGINNING EARTHWORK OPERATIONS AND DURING APPROPRIATE PHASING AS CONSTRUCTION PROGRESSES.
3. THE CONTRACTOR SHALL MAINTAIN ALL SILT CONTROL MEASURES DURING CONSTRUCTION. BUILDERS AND/OR DEVELOPER TO MAINTAIN EROSION CONTROL AND SILT CONTROL UPON COMPLETION OF THIS PROJECT.
4. ALL SILT SHALL REMAIN ON SITE AND SURROUNDING STREETS SHALL BE KEPT CLEAR OF ALL MUD AND DEBRIS.
5. SEDIMENTATION BARRIERS ARE TO BE INSTALLED AS SHOWN AND AT ANY ADDITIONAL AREAS OF CONCENTRATED FLOWS NOT SHOWN ON PLANS.
6. ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE SEDIMENTATION BARRIERS MAINTAINED AS NEEDED TO PREVENT SEDIMENTATION BYPASS OF THE BARRIER.
7. SLOPES ARE TO BE LEFT IN A ROUGH CONDITION DURING GRADING.
8. CURB INLET SEDIMENTATION BARRIERS ARE TO BE INSTALLED AROUND INLETS AND WEIRS WHERE SEDIMENTATION IS A CONCERN. INLET BARRIERS SHALL BE FILTERS, OR SILT FENCE, OR STRAW BALES (PRIOR TO PAVING PLACEMENT). AFTER PAVEMENT IS IN PLACE, PROVIDE FILTER PROTECTION THAT CANNOT BE WASHED INTO INLETS OR WASHED AWAY. STRAW/HAY BALES WILL NOT BE ALLOWED ON CONCRETE OR ASPHALT PAVING.
9. SEDIMENT IS TO BE REMOVED FROM STORM WATER DRAINAGE SYSTEMS. ALL SEDIMENT CONTROL MEASURES TO BE INSPECTED AND REPAIRED IMMEDIATELY AND ON A REGULAR BASIS AFTER ALL RAIN STORMS.
10. RIPRAP IS TO BE INSTALLED AT AREAS OF CONCENTRATED FLOW (I.E. CULVERT OUTLETS).
11. CONTRACTOR IS RESPONSIBLE FOR INSTALLING ANY ADDITIONAL EROSION CONTROL AS HE/SHE DEEMS NECESSARY TO PREVENT SEDIMENT FROM ENTERING STORM DRAINS, STREETS, AND WATERWAYS.
12. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, TOOLS, EQUIPMENT AND LABOR AS NECESSARY TO INSTALL AND MAINTAIN ADEQUATE EROSION AND SILTATION CONTROLS REQUIRED TO PREVENT SOIL EROSION FROM LEAVING THE PROJECT SITE. IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO ENSURE THAT METHODS UTILIZED ARE ADEQUATE AND COMPLY WITH REQUIREMENTS OF THE SPECIFICATIONS AND GOVERNMENTAL AGENCIES HAVING JURISDICTION OVER THE WORK.
13. TEMPORARY SEDIMENT FENCE EROSION CONTROL MEASURES TO REMAIN UNTIL ADEQUATE VEGETATION IS ESTABLISHED. ON PROJECTS THAT ARE NOT EXPECTING IMMEDIATE DEVELOPMENT (I.E., INTERCEPT SEWERS, OFFSITE IMPROVEMENTS, ETC.), EROSION CONTROL MEASURES ARE TO BE REMOVED BY CONTRACTOR AS SOON AS ADEQUATE VEGETATION IS ESTABLISHED.
14. MUD, SILT, AND DEBRIS SHALL BE CLEANED UP AT THE CONCLUSION OF EACH WORKING DAY, OR AFTER EACH RAINFALL.
15. EROSION CONTROL SEDIMENT FENCE OR OTHER STRUCTURE MUST BE PLACED TO CONTROL RUNOFF DURING LOT DEVELOPMENT (BY OTHERS).
16. INSPECTION, MAINTENANCE AND REPAIR OF EROSION CONTROL DEVICES SHALL BE ON GOING THROUGHOUT THE LIFE OF INFRASTRUCTURE AND BUILDING CONSTRUCTION TO KEEP THE DEVICES IN OPERABLE CONDITION AT ALL TIMES. ADDITIONAL MEASURES SHALL BE INSTALLED AS REQUIRED BY ACTUAL FIELD CONDITIONS AND/OR GOVERNING INSPECTION AGENCIES. NOTE: ALTHOUGH EXTENSIVE EFFORT IS PUT INTO THE DESIGN OF THE EROSION CONTROL PLAN BY THE ENGINEER, IT IS THE RESPONSIBILITY OF THE CONTRACTOR/DEVELOPER TO ENSURE THAT ANY ADDITIONAL REQUIRED EROSION CONTROL MEASURES ARE INSTALLED AND MAINTAINED AT NO ADDITIONAL COST TO THE OWNER.
17. INSTALL AND MAINTAIN CONSTRUCTION ENTRANCE(S) AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING THE SITE AND AS SHOWN ON PLANS.
18. AT COMPLETION OF SITE GRADING AND OTHER RELATED CONSTRUCTION ACTIVITIES, ALL DISTURBED AREAS WITHIN THE PROJECT SITE SHALL BE SEED, SODDED, OR LANDSCAPED. FLAT LOTS WILL NOT REQUIRE SEEDING BUT ALL SLOPES, DISTURBED AREAS AND STREET RIGHT-OF-WAYS WILL BE SEED.
19. TOPSOIL IS TO BE PLACED IN AREAS UNSUITABLE FOR VEGETATIVE GROWTH.
20. STRIP TOPSOIL PRIOR TO EXCAVATION, STOCKPILE AND SPREAD ONTO DISKED SUBGRADE (4" MIN) A THICKNESS OF 4 INCHES.
21. ROCK LINING (RIPRAP) SHALL BE DURABLE STONE CONTAINING A COMBINED TOTAL OF NOT MORE THAN 10 PERCENT OF EARTH, SAND, SHALE AND NON-DURABLE ROCK. AT LEAST 60 PERCENT OF THE MASS SHALL BE OF PIECES HAVING A MINIMUM WEIGHT OF 150 POUNDS OR MORE PER CUBIC FOOT.
22. THE CONTRACTOR SHALL HAVE THE RESPONSIBILITY FOR RESOLVING COMPLAINTS IN THE EVENT THAT COMPLAINTS OR DAMAGE CLAIMS ARE FILED DUE TO DAMAGES OCCURRING, ADJACENT TO OR DOWNSTREAM FROM PROPERTY, BY SEDIMENT RESULTING FROM EROSION ON THE PROJECT SITE.
23. GOOD HOUSEKEEPING PRACTICES SHALL BE MAINTAINED ON SITE TO KEEP SOLID WASTE FROM ENTRY INTO WATERS.
24. ALL FUELING FACILITIES PRESENT ON SITE SHALL ADHERE TO APPLICABLE FEDERAL AND STATE REQUIREMENTS CONCERNING UNDERGROUND STORAGE, ABOVE GROUND STORAGE AND DISPENSERS, INCLUDING SPILL PREVENTION, CONTROL AND COUNTER MEASURES.
25. MINIMAL WASHING OF CONCRETE EQUIPMENT ALLOWED (CHUTE, TOOLS, ETC.) AT A CONTRACTOR DEFINED LOCATION. CONCRETE WASHOUT OF THE DRUM IS NOT ALLOWED. ANY PIT/WASHOUT AREA NEEDS TO BE MAINTAINED IN A NON-DISCHARGING MANNER AND ANY WASTE RESIDUE WILL NEED TO BE CLEANED OUT AND REMOVED AT THE END OF PROJECT.
26. DEVELOPER IS RESPONSIBLE FOR HAVING LOT BUILDERS FOLLOW THE GUIDELINES OF "CONTROLLING EROSION WHEN BUILDING YOUR HOME" PROVIDED BY MISSOURI DEPARTMENT OF HEALTH AND ENVIRONMENT.
27. EROSION CONTROL STRAW/FIBER WATTLES TO BE INSTALLED 1'-0" BEHIND CURB & GUTTER UPON COMPLETION OF BACKFILL OF CURB IN ALL AREAS WHERE SLOPES FROM LOT DRAIN TOWARDS CURB. UPON COMPLETION OF FINAL GRADING THE TOES OF ALL EMBANKMENTS IN EXCESS OF TWO FEET IN HEIGHT WILL HAVE EROSION CONTROL SEDIMENT FENCE INSTALLED.



THE ACCURACY OF ANY FLOOD HAZARD DATA SHOWN HEREON IS SUBJECT TO MAP SCALE UNCERTAINTY AND TO ANY OTHER UNCERTAINTY IN LOCATION OR ELEVATION ON THE REFERENCED FLOOD INSURANCE RATE MAP. THE SURVEY PARCEL LIES WITHIN FLOOD HAZARD ZONE "X-X-NONSHADED" IS DEFINED AS AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN." AS SAID PARCEL PLOTS BY SCALE ON THE FLOOD INSURANCE RATE MAP FOR THE CITY OF GRAIN VALLEY, MISSOURI. COMMUNITY PANEL NO. 29095C0339G, EFFECTIVE ON 1/20/2017.

SEEDBED PREPARATION – SEEDBED SHOULD BE WELL-PULVERIZED, LOOSE AND UNIFORM. LIME AND FERTILIZER SHOULD BE APPLIED ACCORDING TO SOIL TEST RECOMMENDATIONS. IF pH IS UNKNOWN, APPLY LIME AT A RATE OF 2 TONS/ACRE. APPLY A 10-10-10 GRADE FERTILIZER AT 700-1,000 LB/ACRE. INCORPORATE BOTH INTO THE TOP 4-6 INCHES OF SOIL.

PLANT SELECTION – ANNUAL RYE GRASS, WHEAT OR OATS FOR TEMPORARY SEEDING

SEEDING – EVENLY APPLY SEED USING A CYCLONE SEEDER (BROADCAST), DRILL, CULTPACKER SEEDER OR HYDROSEEDER. ANNUAL RYE GRASS SHOULD BE APPLIED AT A RATE OF 120 LBS/ACRE, WHEAT OR OATS SHOULD BE APPLIED AT A RATE OF 100 LBS/ACRE. BROADCAST SEEDING AND HYDROSEEDING ARE APPROPRIATE FOR STEEP SLOPES WHERE EQUIPMENT CANNOT BE DRIVEN. HAND BROADCASTING IS NOT RECOMMENDED BECAUSE OF THE DIFFICULTY IN ACHIEVING A UNIFORM DISTRIBUTION. SMALL GRAINS SHOULD BE PLANTED NO MORE THAN 1/2 INCH DEEP, AND GRASSES AND LEGUMES NO MORE THAN 1/2 INCH. BROADCAST SEED COVERED BY RAKING OR CHAIN DRAGGING, ALLOW THE LIGHTLY FIRMS WITH A ROLLER OR CULTPACKER. HYDROSEEDING MIXTURES SHOULD INCLUDE A WOOD FIBER (CELLULOSE) MULCH.

MULCHING – THE USE OF MULCH WILL HELP ENSURE ESTABLISHMENT UNDER NORMAL CONDITIONS AND IS ESSENTIAL TO SEEDING SUCCESS UNDER HARSH CONDITIONS SUCH AS SEEDING IN FALL OR WINTER COVER (WOOD FIBER MULCHES ARE NOT CONSIDERED ADEQUATE FOR THIS USE). SLOPES STEEPER THAN 3:1, EXCESSIVELY HOT OR DRY WEATHER, ADVERSE SOILS (SHALLOW, ROCKY, HIGH IN CLAY OR SAND), AND AREAS RECEIVING CONCENTRATED FLOW, IF AREA TO BE MULCHED IS SUBJECT TO CONCENTRATED WATERFLOW, AS IN CHANNELS, ANCHOR MULCH WITH NETTING.

MAINTENANCE – RESEED, REFERTILIZE AND MULCH AREAS OF INSUFFICIENT GROWTH. RESEED, REFERTILIZE AND MULCH IMMEDIATELY FOLLOWING EROSION OR OTHER DAMAGE.

THE FOLLOWING PERCENTAGES ARE THE MINIMUM REQUIREMENTS IN THE ACCEPTANCE OF SEED AS PER MISSOURI SEED LAW REQUIREMENTS:	
GRASS	<u>PURITY</u> <u>GERMINATION</u>
KENTUCKY BLUE GRASS	90% 75%
PERENNIAL RYE GRASS	95% 90%
TALL FESCUE	95% 85%

MIX I: SUNNY LOCATIONS WH/ SLOPES LESS THAN TEN PERCENT (10%)
TURF TYPE: RYE GRASS: ONE OF THE FOLLOWING AT 20% BY VOLUME ... DERBY, PALMER, PRELUDE,
 MANHATTAN, MANHATTAN II, PREMIER, PEN FINE, TURF STAR, REGAL
BLUE GRASS: THREE OF THE FOLLOWING TO TOTAL 80% BY VOLUME ... BARRON, ADELPHI, TOUCHDOWN, MERIT,
 BARKER, GLADE, RAM I, RUGBY (FOR SHADY SITES USE GLADE AT 60% BY VOLUME PLUS 20% OF ONE OF THE
 OTHERS)
 MIX II: ON SUNNY SLOPES STEEPER THAN 10%, USE ONE OF THE FOLLOWING AT 90% PER VOLUME PLUS ONE
 BLUE GRASS FROM ABOVE AT 10%. FOR SHADY SLOPES USE GLADE BLUE GRASS AT 10% WITH ONE OF THE
 FOLLOWING:
TURF GRASS TYPE: REBEL, REBEL II, APACHE, OLYMPIC, FALCON, HOUNDG, BONANZA, TRIDENT
 SEEDING RATE:
 MIX I – APPLY THE RYE GRASS/BLUE GRASS MIX AT 100 LBS OF MIX PER ACRE
 MIX II – APPLY THE TALL FESCUE/BLUE GRASS MIX AT 195 LBS MIX PER ACRE
 SEE ABOVE NOTES FOR SEEDING PREPARATION. SEEDING, MULCHING AND MAINTENANCE. HYDROSEEDING MAY
 BE REQUIRED WHERE PERMANENT SEEDING CANNOT
 BE EASILY ESTABLISHED.

THE UNDERGROUND UTILITIES SHOWN HEREON ARE FROM FIELD SURVEY INFORMATION OF ONE-CALL LOCATED UTILITIES, FIELD SURVEY INFORMATION OF ABOVE GROUND OBSERVABLE EVIDENCE, AND/OR THE SCALING AND PLOTTING OF EXISTING UTILITY MAPS AND DRAWINGS AVAILABLE TO THE SURVEYOR AT THE TIME OF SURVEY. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHERMORE, THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES BY EXCAVATION UNLESS OTHERWISE NOTED ON THIS SURVEY.

WITH REGARD TO UNDERGROUND UTILITIES, INFORMATION FROM THE SOURCES LISTED HEREON WILL BE COMBINED WITH OBSERVED EVIDENCE OF UTILITIES PURSUANT TO SECTION 5.4.IV. OF THE MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES. HOWEVER, LACKING EXCAVATION, THE EXACT LOCATION OF UTILITIES AND THEIR FEATURES CANNOT BE ACCURATELY, COMPLETELY, AND RELIABLY DETERMINED. IN ADDITION, IN SOME JURISDICTIONS, 811 OR OTHER SIMILAR UTILITY LOCATE REQUESTS FROM SURVEYORS MAY BE IGNORED OR RESULT IN AN INCOMPLETE RESPONSE, WHERE ADDITIONAL OR MORE DETAILED INFORMATION IS REQUIRED, THE CLIENT IS ADVISED THAT EXCAVATION MAY BE NECESSARY.

IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.

THE DESIGNS REPRESENTED IN THESE PLANS ARE IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING FOR THE DESIGN FUNCTIONS AND USES INTENDED BY THE OWNER AT THIS TIME. HOWEVER, NEITHER KAW VALLEY ENGINEERING, INC NOR ITS PERSONNEL CAN OR DO WARRANTY THESE DESIGNS OR PLANS AS CONSTRUCTED, EXCEPT IN THE SPECIFIC CASES WHERE KAW VALLEY ENGINEERING PERSONNEL INSPECT AND CONTROL THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.

THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 48 HOURS BEFORE EXCAVATION TO REQUEST AN ACCURATE FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH PROPOSED IMPROVEMENTS SHOWN ON THE PLANS. THE CONTRACTOR SHALL EXPOSE EXISTING UTILITIES AT LOCATIONS OF POSSIBLE CONFLICTS PRIOR TO ANY CONSTRUCTION.

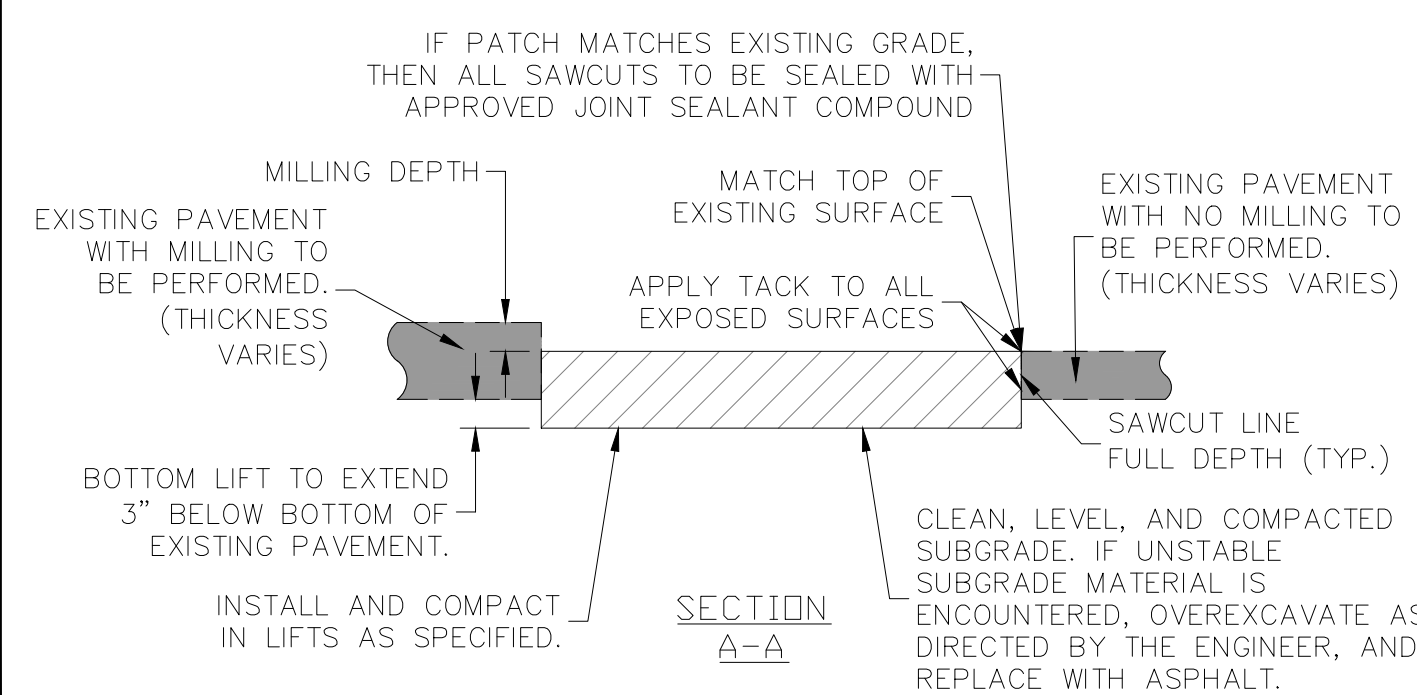
GRAIN VALLEY DISPENSARY NW JEFFERSON ST & STATE ROUTE BB GRAIN VALLEY, MO 64029		 KAW VALLEY ENGINEERING 3640 N. HWY. 169/BRIDGEWAY KANSAS CITY, MISSOURI 64118 PH. (816) 468-5553 kce@kvweng.com www.kvweng.com		 MATTHEW A. CROSS ENGINEER MO # 20200008364					
CIVIL PLANS EROSION CONTROL PLAN		KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/25							
PROJ. NO.		B24D5016							
DESIGNER		MAC		DRAWN BY		JNG			
CFN		5016ECP							
SHEET		C600		REV		2			
				2		05/22/25		PER CITY COMMENTS	
				1		04/16/25		PER CITY COMMENTS	
				0		03/10/25		INITIAL SUBMITTAL	
				REV		DATE		DESCRIPTION	
				DSN		DWN		CHK	



NOTES:

1. FLEXIBLE PAVEMENT SHALL BE IN ACCORDANCE WITH THE LATEST MODOT STANDARDS.
2. SURFACE COURSE SHALL BE VIRGIN ASPHALT. RECYCLED ASPHALT MEETING MODOT SPECIFICATIONS MAY BE CONSIDERED FOR BASE COURSE.
3. PORTLAND CEMENT CONCRETE SHALL COMPLY WITH MODOT STANDARDS.
4. SUBGRADE TO BE COMPACTED TO 90% SUBGRADE TO 90% MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D698. MOISTURE CONTENT TO BE WITHIN A RANGE OF 2% BELOW TO 2% ABOVE OPTIMUM MOISTURE AS DEFINED BY ASTM D698.
5. SIDEWALK JOINTS MAY BE SAVN UNLESS SHOWN OTHERWISE ON ARCHITECT/LANDSCAPE PLANS.
6. SIDEWALKS TO BE SMOOTH FINISHED.
7. MIXES SELECTED FOR THE HOT-MIX ASPHALT CONCRETE CAN BE MODOT SP125FEFF. IF A MARSHALL DESIGNED MIX IS DESIRED, ANY 50-BLOW MARSHALL MIX MAY BE SELECTED MEETING THE AGGREGATE AND GRADATION REQUIREMENTS OF MODOT SP-1 OR 2. OR OTHER LOCALLY PRODUCED MARSHALL MIX THAT IS EQUIVALENT TO ANY SUBMITTED 50-BLOW MARSHALL MIX DESIGN SHOULD ALSO BE CHECKED FOR RESISTANCE TO STRIPPING DURING DESIGN USING AASHTO T 283 TO DETERMINE IF AN ANTISTRIPPING AGENT IS NEEDED FOR THE SAME ASPHALT CONCRETE CHOSEN FOR THE PROJECT. THE INDEX OF RETAINED STRENGTH SHALL EXCEED 75%.

- ### **CURB & GUTTER NOTES:**
1. 1/2" PREMOLED EXPANSION JOINTS SHALL BE PLACED AT POINTS OF CURVATURE, CURB RETURNS, CURB INLETS AND AT 250' CENTERS. THE EXPANSION JOINTS SHALL BE DOWELED IN ACCORDANCE WITH THE SPECIFICATIONS. CONTRACTION JOINTS SHALL BE PLACED AT 15' INTERVALS EQUALLY SPACED BETWEEN EXPANSION JOINTS.
 2. ALL CONCRETE USED IN THIS WORK SHALL COMPLY WITH LATEST MODOT STANDARDS.
 3. ALL REINFORCING STEEL SHALL BE SUPPORTED ON FABRICATED STEEL BAR SUPPORTS @ 3'-0" MAXIMUM SPACING.
 4. REINFORCING STEEL SHALL BE GRADE 60 AND COMPLY WITH ASTM A615. EPOXY COATED BARS AS NOTED SHALL COMPLY WITH ASTM A775. ALL CUT ENDS OR DAMAGED AREAS SHALL BE FIELD REPAIRED WITH EPOXY COATING.
 5. SEE SIDEWALK RAMP DETAILS FOR TYPICAL SIDEWALK RAMP CURB & GUTTER SECTIONS.
 6. DETAILS AS SHOWN FOR CONCRETE AND ASPHALT PAVING. WHEN USED WITH CONCRETE PAVING POURED MONOLITHICALLY WITH CURB NO MODIFICATIONS ARE REQUIRED. WHEN CURB AND CONCRETE PAVING ARE TO BE POURED SEPARATELY #5 BARS, 24" LONG AND 36" OFF CENTER ARE TO BE PROVIDED TO THE CURB TOGETHER WITH CONCRETE PAVING.
 7. CURBS TO BE CONSTRUCTED ON MINIMUM 6 INCHES OF COMPACTED WELL GRADED BASE ROCK.
 8. CONTRACTOR TO PROVIDE DEDUCT TO OMIT 3-#4 BARS IN ALL CURB CONSTRUCTION.
 9. JOINT SEALING COMPOUNDS SHALL COMPLY WITH LATEST MODOT STANDARDS.
 10. ISOLATION JOINT FILLER SHALL CONFORM TO ASTM D1751, D1752, OR ASTM 7174.



- NOTES:**
1. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 IN ALL DIRECTIONS.
 2. ALL DIMENSIONS SHOWN ARE MINIMUM. SEE DIMENSION PLAN FOR WIDTH OF STALLS AND BUFFER ZONES.
 3. ADA PARKING SPACES AND ACCESS ISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 IN ALL DIRECTIONS.

GRAIN VALLEY DISPENSARY													
NW JEFFERSON ST & STATE ROUTE BB													
GRAIN VALLEY, MO 64029													
CIVIL PLANS													
DETAIL SHEET													
PROJ. NO.						B24D5016							
DESIGNER						MAC				DRAWN BY JNG			
CFN						5016DET							
SHEET						C700				REV			
										2			



KV
KAW VALLEY ENGINEERING

8040 N. OAK TRAFICWAY
KANSAS CITY, MISSOURI 64118
PH. (816) 468-5858
kc@kve.com | www.kve.com

KAW VALLEY ENGINEERING, INC. IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF AUTHORITY # 000842. EXPIRES 12/31/2025

PROJ. NO.		B24D5016	
DESIGNER		DRAWN BY	
MAC		JNG	
CFN			
5016DET			
SHEET		REV	
C702		2	

Planting Notes

1. Location of all existing utilities needs to be done before commencing work.
2. The planting plan graphically illustrates overall plant massings. Each plant species massing shall be placed in the field to utilize the greatest coverage of ground plane. The following applies for individual plantings:

a. Creeping groundcover shall be a minimum of 6" from paving edge.

b. All trees shall be a minimum of 3' from paving edge.

c. All plants of the same species shall be equally spaced apart and placed for best aesthetic viewing.

d. All shrubs shall be a minimum of 2' from paved edge.
3. Mulch all planting bed areas to a minimum depth of 3". Mulch individual trees to a minimum depth of 4".
4. Note: If plants are not labeled - they are existing and shall remain.

Materials:

1. Plant material shall be healthy, vigorous, and free of disease and insects as per AAN standards.
2. Shredded bark mulch installed at trees shall be finely chipped and shredded hardwood chips, consisting of pure wood products and free of all other foreign substances. Pine bark compost mulch installed at planting bed areas shall be free of all other foreign substances.

Installation:

1. All planting beds shall be amended with 1 cubic yard of peat moss per 1,000 square feet. Till peat moss into soil to a 6" depth. A 10-10-10 fertilizer shall be spread over all planting areas prior to planting, at a rate of 50 pounds per 2,000 square feet.
2. After plants have been installed, all planting beds shall be treated with Dacthal pre-emergent herbicide prior to mulch application.
3. Plant pit backfill for trees and shrubs shall be 50% peat or well composted manure and 50% topsoil.
4. Plant material shall be maintained and guaranteed for a period of one year after Owner's acceptance of finished job. All dead or damaged plant material shall be replaced at Landscape Contractor's expense.
6. Landscape contractor shall maintain all plant material until final acceptance, at which point the one year guarantee begins.

Landscape Requirements/Calculations

MINIMUM STANDARDS FOR LANDSCAPING:

The minimum landscaping requirements for all uses, including single-family and duplexes, shall be one (1) shade tree and one (1) ornamental tree per building lot. Said trees shall be planted on private property, not on public property. Said shade trees shall be a minimum of one and one-half (1 1/2) inches in diameter. The minimum landscaping requirements for all uses, excluding single-family and duplex developments, shall be one (1) tree and two (2) shrubs per seven thousand five hundred (7,500) square feet of total lot area.

56,525 sf total site. 56,525 / 7,500 = 7.53

Total Trees required: 8 Total Shrubs required 16

Requirement Met.

PARKING LOT INTERIOR LANDSCAPING

The minimum requirement for parking lot interior landscaping shall be as follows: No less than two and one-half percent (2.5%) of the total parking lot square footage shall be landscaped. The number of trees used in the parking lot interior shall be not less than one (1) for each two hundred (200) square feet, or portions thereof, of required parking lot interior landscaping.

Total SF of Parking Lot = 11,355 sf. .025 x 11,355 = 283.8 sf (interior landscape required) 620 sf Provided

1 tree per 200 sf of interior landscape required

284/200 = 1.5

2 Total Trees Required

2 Total Trees Provided

Each landscaped area shall contain at least one (1) tree which is adaptable to the environment of parking areas and the remaining area shall be landscaped using shrubs, ground cover and other suitable landscape material.

Requirements Met

The required parking lot landscaping will not be counted towards the site landscaping requirement.

Landscape Requirements/Calculations (Cont.)

MINIMUM STANDARDS FOR SCREENING:

For all buildings except single-family and two-family dwellings, all exterior trash storage containers shall be screened so that they are not visible from off the property.

For all buildings, except residential structures, in Districts "C-1" through "M-2," including planned districts, a solid screen fence or wall shall be provided, not less than six (6) feet in height, along all side and rear property lines which are common to property zoned or used for residential purposes, except that such screening shall not extend in front of the building line or adjacent dwellings and shall not be required where such screening exists on the abutting residential property.

Requirements Met

OBSTRUCTION OF SIGHT DISTANCE AT INTERSECTIONS:

Landscaping and/or screening materials shall not interfere with the line of sight between two and one-half (2 1/2) feet and eight (8) feet above the curb at driveways or intersections.

Requirements Met

TREE PLANTING NOTES:

- 1) DO NOT HEAVILY PRUNE THE TREE. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, & BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS & LATERAL BRANCHES MAY BE PRUNED. DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN
- 2) MARK THE NORTH SIDE OF THE TREE IN THE NURSERY, AND ROTATE TREE TO FACE NORTH AT THE SITE WHENEVER POSSIBLE
- 3) SET TOP OF ROOT BALL 1-2 INCHES HIGHER THAN SURROUNDING GRADE
- 4) APPLY 4" THK WOOD MULCH. DO NOT PLACE MULCH IN DIRECT CONTACT W/ TREE TRUNK

- 5) EACH TREE MUST BE PLANTED SUCH THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. TREES WHERE THE FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL W/ SOIL
- 6) REMOVE ALL TWINE, ROPE, WIRE AND BURLAP FROM THE UPPER 1/3 OF ROOT BALL (REMOVE WIRE BASKETS)
- 7) PLACE ALL ROOT BALLS ON UN-EXCAVATED OR TAMPED SOIL. TYP

STAKING REQUIREMENTS:

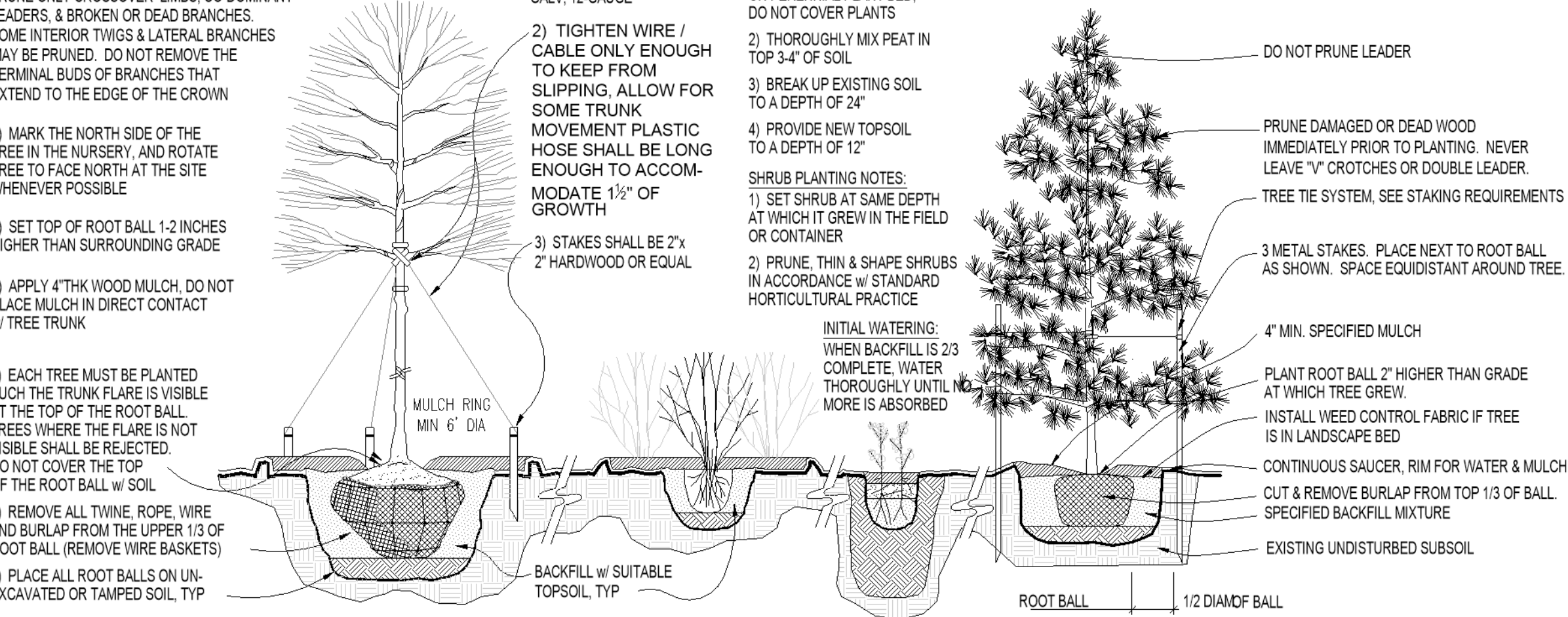
- 1) WIRE / CABLE SHALL BE GALV. 12-GAUGE
- 2) TIGHTEN WIRE / CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. PLASTIC HOSE SHALL BE LONG ENOUGH TO ACCOMMODATE 1 1/2" OF GROWTH
- 3) STAKES SHALL BE 2"x 2" HARDWOOD OR EQUAL

PERENNIAL PLANTING NOTES:

- 1) APPLY 2" THK BED OF MULCH ON PERENNIAL PLANT BED. DO NOT COVER PLANTS
- 2) THOROUGHLY MIX PEAT IN TOP 3-4" OF SOIL
- 3) BREAK UP EXISTING SOIL TO A DEPTH OF 24"
- 4) PROVIDE NEW TOPSOIL TO A DEPTH OF 12"

- SHRUB PLANTING NOTES:
- 1) SET SHRUB AT SAME DEPTH AT WHICH IT GREW IN THE FIELD OR CONTAINER
- 2) PRUNE, THIN & SHAPE SHRUBS IN ACCORDANCE W/ STANDARD HORTICULTURAL PRACTICE

INITIAL WATERING: WHEN BACKFILL IS 2/3 COMPLETE, WATER THOROUGHLY UNTIL NO MORE IS ABSORBED

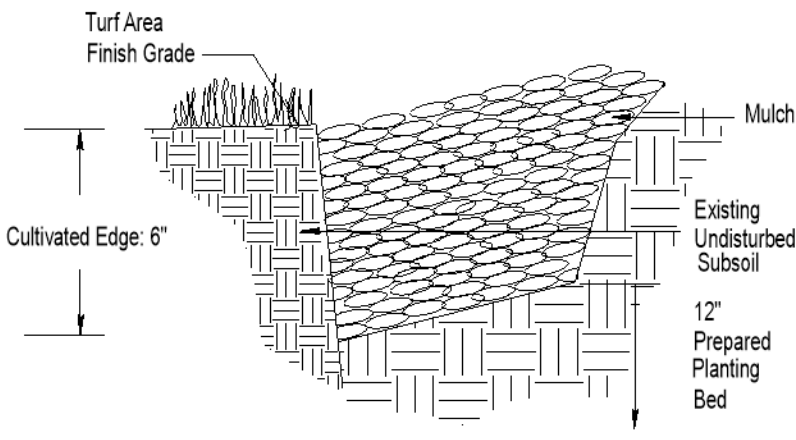


1 PLANTING INSTALLATION DETAILS

SCALE: NTS

2 CULTIVATED EDGE DETAIL

SCALE: NTS



3 LANDSCAPE PLAN

SCALE: 1"=20'-0"

Landscape Schedule

Symbol	Qty.	Botanical Name	Common Name	Min.Root	Min.Size	Caliper	Remarks
OVERSTORY TREES							
	1	Quercus rubra	Northern Red Oak		1.5"	6"	min. clear., ground to canopy
	3	Gleditsia triacanthos 'Shademaster'	Shademaster Honeylocust		1.5"	6"	min. clear., ground to canopy
	2	Acer x truncatum 'Warrenred'	Pacific Sunset Maple		1.5"	6"	min. clear., ground to canopy
EVERGREEN TREES							
	3	Juniperus chinensis 'Keteleeri'	Keteleeri Juniper			5' ht.	symmetrical pyramidal form
DECIDUOUS SHRUBS							
	0	Spiraea x bumalda 'Limemound'	Limemound spiraea		18-24 inches		Plant @ 3' O.C.
	3	Hydrangea paniculata 'Quick Fire'	Little Quick Fire Hydrangea		18-24 inches		Plant @ 4' O.C.
	5	Syringa X 'Penda'	Blooming Purple Lilac		18-24 inches		Plant @ 5' O.C.
EVERGREEN SHRUBS							
	4	Juniperus chinensis 'Sea Green'	Sea Green Juniper		18-24 inches		Plant @ 4' O.C.
	Juniperus chinensis 'Gold Coast'	Gold Coast Juniper		18-24 inches			Plant @ 4' O.C.
	0	Juniperus chinensis 'Spartan'	Spartan Juniper		5' ht.		Symmetrical pyramidal form

MEIER
LANDSCAPE
ARCHITECTURE

15245 Metcalf Ave.
Overland Park, KS 66223
913.787.2817



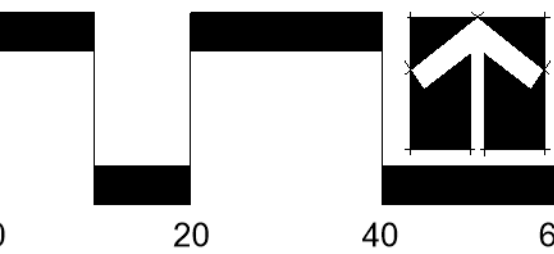
CLIENT

Grain Valley Dispensary

PROJECT

Grain Valley Dispensary
Jefferson Street
Grain Valley MO

SCALE: 1"=20'



Date: 4.10.2025

Project #: 1260

Landscape Plan

L1



WARMAN ARCHITECTURE+DESIGN
1735 SWIFT AVE.
NORTH KANSAS CITY, MISSOURI 64116
V. 816.474.2233 F. 816.474.1051

Missouri State Certificate of Authority #ARC 000745

KATHLEEN ANN WARMAN - ARCHITECT
MO # A-5819

KEY CANNABIS
210 JEFFERSON ST
GRAIN VALLEY, MO

PRELIMINARY EXTERIOR ELEVATIONS

ELEVATION CANNABIS
1804 SWIFT ST
NORTH KANSAS CITY, MO 64116

[illegible]

DATE: 24.10.2024

DESIGNED BY: KA

RAWN BY: JD

APPROVED BY: KA

SHEET NUMBER

A-201

IQR NUMBER

6158 24

0158-24

Jacob Dobbs

From: Ed Turner <eturner@grainvalleypolice.org>
Sent: Wednesday, April 16, 2025 9:09 PM
To: Stout, Scott
Cc: Patrick Martin
Subject: Re: Security Plan

Scott,

Yes, it looks good. I approve your hardware plan you presented. You can proceed with Community Development and move to the next step.

Could you send me your policy, procedures, and training for staff? I'm specifically looking for any background hiring standards, panic alarms tested, procedures for transporting cash to the bank, etc. I will need to get a digital copy of the completed floor plan as well.

Please let me know if you have questions.

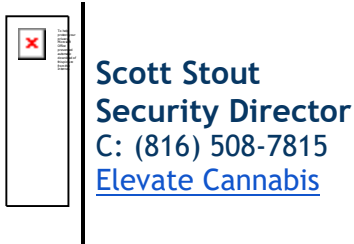
Respectfully,
Ed

Sent from my T-Mobile 5G Device
Get [Outlook for Android](#)

From: Stout, Scott <sstout@elevatecannabis.com>
Sent: Wednesday, April 16, 2025 9:13:37 AM
To: Ed Turner <eturner@grainvalleypolice.org>
Subject: Re: Security Plan

WARNING: Email originates outside the organization. Please stop and think before clicking a link, opening attachments or entering credentials.

Morning Ed. Was just touching base to see if you received my last email?

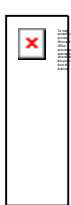


On Mon, Apr 14, 2025 at 9:33 AM Stout, Scott <[sstout@elevatecannabis.com](mailto:sshout@elevatecannabis.com)> wrote:

Ed, it was nice talking to you today. Attached you will find the security plan for the Key dispensary that will be coming to your area soon. Let me know if you need anything else. I look forward to meeting you soon. Thanks

Security Plan for Grain Valley

- 1 customer entrance, 1 employee entrance
- There are 3 glass breaks, 9 motion detectors 2 IDS Keypads, 2 Alarm sounders, 17 panic alarms.
- There are 53 fixed cameras with a 60min battery backup and 60 days of retention on playback.
- There are 8 Access control readers. These are the areas that customers are not allowed to be in.
- The vault has a security mesh surrounding it on all 4 sides.
- The alarm system is monitored 24/7, 7 days a week.
- 20ft exterior perimeter covered by cameras
- All interior has a min of 2 camera angles at 1080P
- 1 overhead door for delivery of product. The van pulls inside the building and doors remain closed the entire time.
- 6 soffit cans, 1 wall pack, 2 canopy lights and 4 parking lot lights to provide more than enough lights at night.
- All sites have a command station to monitor cameras and activities 24/7



Scott Stout
Security Director
C: (816) 508-7815
[Elevate Cannabis](#)

The content of this email is confidential and intended for the original recipient only. Do not disseminate, distribute or copy any part of this communication without prior written consent of the sender. If you received this message in error, please reply to this message and follow with its deletion, so that we can ensure such an oversight does not occur in the future.



ELECTRONICALLY RECORDED
JACKSON COUNTY, MISSOURI

02/15/2024 11:24 AM

FEE: \$96.00 26 PGS

INSTRUMENT NUMBER
2024E0009547

WHEN RECORDED RETURN TO:

Ms. Rachelle M. Biondo
White Goss, a Professional Corporation
4510 Bellevue Avenue, Suite 300
Kansas City, Missouri 64111-3538

60309

Title of Document: First Amendment to Reciprocal Easement Agreement

Date of Document: February 15, 2024

Grantor(s): QuikTrip Corporation
4705 S. 129th E. Ave.
Tulsa, Oklahoma 74134-7008
Attn: General Counsel

Grantee(s): QuikTrip Corporation
4705 S. 129th E. Ave.
Tulsa, Oklahoma 74134-7008
Attn: General Counsel

SMAS Investors, LLC
P.O. Box 480811
Kansas City, Missouri 64148
Attn: J. Michael Neighbors

Legal Description: See Attached Exhibit A, Exhibit B and Exhibit C

Reference Book and Page(s): 2019E0096061

KC 220169
Filed By
Chicago Title

FIRST AMENDMENT TO RECIPROCAL EASEMENT AGREEMENT

THIS FIRST AMENDMENT TO RECIPROCAL EASEMENT AGREEMENT (this “**Declaration**”) is made, granted, and entered into by QuikTrip Corporation, an Oklahoma corporation (“**QuikTrip**”) and SMAS Investors, LLC, a Missouri limited liability company (“**SMAS**”) effective as of this 15 day of February, 2024 (the “**Effective Date**”).

WHEREAS, SMAS is the fee owner of that certain tract of land described in Exhibit A attached hereto and incorporated herein, said property being hereinafter referred to as the “**SMAS Property**”;

WHEREAS, QuikTrip is the fee owner of that certain tract of land described in Exhibit B attached hereto and incorporated herein (the “**QuikTrip Property**”) (the QuikTrip Property and the MedWise Property are sometimes individually referred to herein as a “**Parcel**”);

WHEREAS, SMAS has sold to QuikTrip that certain real property described in Exhibit C attached hereto and incorporated herein (the “**MedWise Property**”), upon which QuikTrip intends to construct on the MedWise Property a new MedWise retail urgent care or retail primary care facility;

WHEREAS, the SMAS Property, MedWise Property and the QuikTrip Property are subject to that certain Reciprocal Easement Agreement dated November 21, 2019, recorded in Instrument 2019E0096061 in the Jackson County Recorder of Deeds Office (“**Original Declaration**”);

WHEREAS, the parties desire to amend the Original Declaration.

NOW, THEREFORE, for and in consideration of the foregoing recitals, the mutual covenants and conditions set forth herein, and other good and valuable consideration, the receipt and sufficiency of which are acknowledged, the parties hereby agree as follows:

1. **Incorporation of Recitals**. The foregoing recitals are hereby incorporated into and made a part of this Declaration, as if fully set forth herein.

2. **Grant of Easements for the benefit of the MedWise Property and the SMAS Property**. QuikTrip hereby grants, bargains, sells and conveys to QuikTrip and SMAS the following easements for the benefit of the MedWise Property, the SMAS Property, QuikTrip’s and SMAS’s successors, invitees, customers, employees and agents, and, to the extent title to the QuikTrip Property is leased, transferred or assigned by QuikTrip, to its successors and assigns:

2.1 **Cross Access Easement**. A perpetual, non-exclusive and unobstructed access, ingress and egress easement over, across, upon and through those portions of the QuikTrip Property, legally described on Exhibit D and as shown shaded and labeled as the “**QuikTrip Cross Access Easement**” on Exhibit D-1, each attached hereto and incorporated herein, which easement will burden the QuikTrip Property and benefit the MedWise Property and the SMAS Property (the “**QuikTrip Cross Access Easement**”) for the purpose of vehicular and pedestrian access, ingress and egress to and from the

MedWise Property and the SMAS Property through the QuikTrip Property to access Buckner-Tarsney Road and NW Jefferson Street and for the purpose of utilizing the curb cuts and driveways located on the QuikTrip Property. At no point shall any Owner have the right to block access over the QuikTrip Cross Access Easement, except as reasonably required to complete any repairs, maintenance or replacement of improvements on an Owner's Parcel or prevent the dedication of such area to the public. Any Owner shall have the right to remove any obstructions at the sole cost and expense of the Owner upon whose parcel the obstruction lies, which shall be reimbursed within thirty (30) days of demand therefore.

2.2 Utility Easement. A perpetual, non-exclusive and unobstructed right of way and easement over, across, upon and through that portion of the QuikTrip Property, as legally described on Exhibit E and as shown shaded and labeled as the "QuikTrip Sanitary Sewer Easement" on Exhibit E-1, each attached hereto and incorporated herein, which easement will burden the QuikTrip Property and benefit the MedWise Property and the SMAS Property (the "**QuikTrip Sanitary Sewer Easement**") to install, operate, maintain, repair, replace and remove sanitary sewer lines and all necessary and incidental fixtures and equipment thereto to and from the MedWise Property and SMAS Property and through the QuikTrip Property to the main sanitary sewer line. By the granting of this easement, it shall not be construed to prohibit the Owner of the QuikTrip Property from developing the QuikTrip Property or from the laying out, establishing and constructing pavement, surfacing of roadways, curbing and gutters along, upon, over or across said easement or any portion thereof; provided, however, said easement shall be kept free from buildings, and any other structure or obstruction (except sidewalks, roadways pavement, grass, shrubs, fences, or curbs), which will interfere with the use of the QuikTrip Sanitary Sewer Easement and the improvements and appurtenances located therein nor interfere with the maintenance thereof. The Owners of the MedWise Property and the SMAS Property shall have an easement upon, under over and across those portions of the QuikTrip Property within 10 feet on either side of the QuikTrip Sanitary Sewer Easement as reasonably necessary to perform maintenance within the QuikTrip Sanitary Sewer Easement.

3. Grant of Easements for the benefit of the SMAS Property. QuikTrip hereby grants, bargains, sells and conveys to SMAS and QuikTrip the following easements for the benefit of SMAS, the SMAS Property, QuikTrip, the QuikTrip Property and SMAS's and QuikTrip's successors, invitees, customers, employees, agents, successors and assigns:

3.1 Cross Access Easement. A perpetual, non-exclusive and unobstructed access, ingress and egress easement over, across, upon and through those portions of the MedWise Property, legally described on Exhibit F and as shown shaded and labeled as the "MedWise Cross Access Easement" on Exhibit F-1, each attached hereto and incorporated herein, which easement will burden the MedWise Property and benefit the SMAS Property and QuikTrip Property (the "**MedWise Cross Access Easement**") for the purpose of vehicular and pedestrian access, ingress and egress to and from the SMAS Property and the QuikTrip Property through the MedWise Property and for the purpose of utilizing the curb cuts and driveways located on the MedWise Property. At no point shall any Owner have the right to block access over the MedWise Cross Access

Easement, except as reasonably required to complete any repairs, maintenance or replacement of improvements on an Owner's Parcel or prevent the dedication of such area to the public. Any Owner shall have the right to remove any obstructions at the sole cost and expense of the Owner upon whose parcel the obstruction lies, which shall be reimbursed within thirty (30) days of demand therefore.

3.2 Utility Easement. A perpetual, non-exclusive and unobstructed right of way and easement over, across, upon and through that portion of the MedWise Property, as legally described on Exhibit G and as shown shaded and labeled as the "MedWise Sanitary Sewer Easement" on Exhibit G-1, each attached hereto and incorporated herein, which easement will burden the MedWise Property and benefit the SMAS Property (the "**MedWise Sanitary Sewer Easement**") to install, operate, maintain, repair, replace and remove sanitary sewer lines and all necessary and incidental fixtures and equipment thereto to and from the SMAS Property and through the MedWise Property to the main sanitary sewer line at the point it enters the MedWise Property. By the granting of this easement, it shall not be construed to prohibit the Owner of the MedWise Property from developing the MedWise Property or from the laying out, establishing and constructing pavement, surfacing of roadways, curbing and gutters along, upon, over or across said easement or any portion thereof; provided, however, said easement shall be kept free from buildings, and any other structure or obstruction (except sidewalks, roadways pavement, grass, shrubs, fences, or curbs), which will interfere with the use of the MedWise Sanitary Sewer Easement and the improvements and appurtenances located therein nor interfere with the maintenance thereof. The Owners of the SMAS Property shall have an easement upon, under over and across those portions of the MedWise Property within 10 feet on either side of the MedWise Sanitary Sewer Easement as reasonably necessary to perform maintenance within the MedWise Sanitary Sewer Easement.

4. Grant of Easements for the benefit of the MedWise Property. SMAS hereby grants, bargains, sells and conveys to QuikTrip the following easements for the benefit of QuikTrip, MedWise Property and QuikTrip Property, QuikTrip's successors, invitees, customers, employees, agents, successors and assigns:

4.1 Cross Access Easement. A perpetual, non-exclusive and unobstructed access, ingress and egress easement over, across, upon and through those portions of the SMAS Property improved with driveways and sidewalks, as the same exist from time to time, for the purpose of vehicular and pedestrian access, ingress and egress to and from the MedWise Property and the QuikTrip Property through the SMAS Property to access NW Jefferson Street and for the purpose of utilizing the curb cuts and driveways located on the SMAS Property (the "**SMAS Cross Access Easement**"). At no point shall any Owner have the right to block access over the SMAS Cross Access Easement, except as reasonably required to complete any repairs, maintenance or replacement of improvements on an Owner's Parcel or prevent the dedication of such area to the public. Any Owner shall have the right to remove any obstructions at the sole cost and expense of the Owner upon whose parcel the obstruction lies, which shall be reimbursed within thirty (30) days of demand therefore.

4.2 Temporary Construction Easement. A temporary easement over the Temporary Construction Easement Area on the attached Exhibit H and depicted on Exhibit H-1 for construction of improvements, grading activities, operation of equipment and materials in the movement of workforce in connection with the construction by QuikTrip of certain improvements on the MedWise Property, as well as making certain alterations to the grade on the Temporary Construction Easement Area (the "Temporary Construction Easement"). The Temporary Construction Easement herein granted shall automatically terminate, without any further action by either party, upon the earlier of (i) the completion of the construction of the improvements upon the QuikTrip Property or (ii) six (6) months after QuikTrip commences construction of the improvements on the MedWise Property.

5. Cost and Expenses for Construction of Certain Improvements.

5.1 Initial Construction of Certain Improvements. QuikTrip, as part of QuikTrip's development of the MedWise Property, and at QuikTrip's sole cost and expense, shall construct driveways within the MedWise Cross Access Easement and shall extend the sanitary sewer line from the QuikTrip Property to the southern boundary of the MedWise Property.

5.2 Responsibility for Costs and Expenses of Maintenance after Completion of Initial Construction. Each of the Owners agrees to maintain in good condition and working order all of the facilities located on any portion of such Owner's Parcel, at such Owner's expense, except for any repairs or maintenance required due to damage caused by another Owner and shall be repaired as provided in Section 5.3 below.

5.3 Other Construction Obligations. Any work performed pursuant to this Agreement shall be performed, and all easements created by this Agreement (unless otherwise specifically provided herein) shall be maintained (a) in a good, diligent and workmanlike manner, and (b) in compliance with all applicable laws, rules, regulations, permits and ordinances. Any damage occasioned by work performed pursuant to this Agreement shall be repaired and restored with due diligence at the sole cost and expense of the Owner causing the damage. Any Owner shall promptly pay for all work done on its behalf or at its direction (unless a bona fide dispute exists concerning payment) and cause to be discharged any lien affecting another Owner's Parcel arising from or relating to such work, provided, that, in the event that an Owner has a good faith dispute with any such lien (the "Disputing Owner"), then the Disputing Owner may in good faith contest, by proper legal actions or proceedings, any such lien or encumbrance, provided that at the time of commencement of any such action or proceeding, and during the pendency thereof (i) such contest operates to suspend collection of the contested amounts and is maintained and prosecuted with diligence; (ii) none of the Owner's Parcel would be subject to forfeiture or loss or a lien by reason of the institution or prosecution of such contest; and (iii) the Disputing Owner shall promptly pay or discharge such contested amounts and all additional charges, interest, penalties and expenses if any, and shall deliver to the other Owner

evidence acceptable to the other Owner of such compliance, payment or discharge, if such contest is terminated or discontinued adversely to the Disputing Owner. No work done by an Owner on another Owner's Parcel shall give such Owner (or anyone doing work on behalf of such Owner) any lien claims or rights in and to the other Owner's Parcel.

5.4 Restoration of Easement Areas. Upon the completion of any work, the Property upon which such work was performed shall be restored to a substantially similar condition that existed prior to such work, except to the extent that such Property has been maintained or improved as a result of such work.

6. Governing Law. This Amendment shall be construed in accordance with and pursuant to the laws of the State of Missouri. Any action on this Amendment or the Original Declaration shall be commenced and prosecuted to completion in a state or federal court located in Jackson County, Missouri.

7. Severability. Invalidation of any of the provisions contained in this Amendment, or of the application thereof to any person by judgment or court order shall in no way affect any of the other provisions hereof or the application thereof to any other person and the same shall remain in full force and effect.

8. Ratification. Except as modified by this Amendment, the Original Declaration remains unmodified and in full force and effect.

9. Counterparts. This Amendment may be executed in any number of counterparts, which when taken together shall constitute one complete document.

[SIGNATURES APPEAR ON THE FOLLOWING PAGE]

IN WITNESS WHEREOF, the undersigned, as Owner of the real property described below, has executed this Declaration effective as of the Effective Date first above written.

QUIKTRIP:

QUIKTRIP CORPORATION,
an Oklahoma corporation

By: _____

Jason Acord

Regional Director of Real Estate

STATE OF Kansas)

COUNTY OF Johnson)

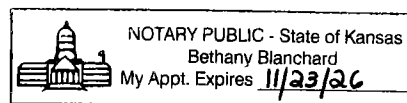
I, Bethany Blanchard, a notary public in and for said County, in the aforesaid State, do hereby certify that Jason Acord, Regional Director of Real Estate of QuikTrip Corporation, an Oklahoma corporation, and personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that he signed and delivered said instrument, pursuant to authority given to him by the governing body of said entity, for the uses and purposes therein set forth.

GIVEN under my hand and official seal this 1st day of February, 2024.

Bethany Blanchard

Notary Public

Commission Expires: 11/23/26



SMAS:

SMAS INVESTORS, LLC,
A Missouri limited liability company

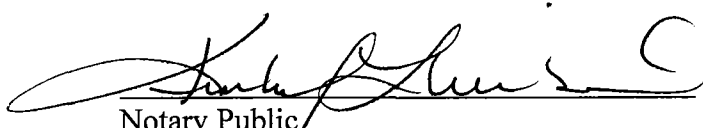
By: 
Rob Herman, Manager

STATE OF Kansas)

COUNTY OF Johnson)

I, Kimberly Weibel, a notary public in and for said County, in the aforesaid State, do hereby certify that Rob Herman, Manager of SMAS Investors, LLC, a Missouri limited liability company, and personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that he signed and delivered said instrument, pursuant to authority given to him by the governing body of said entity, for the uses and purposes therein set forth.

GIVEN under my hand and official seal this 16th day of February, 2024.

Commission Expires: 6/23/2025

Notary Public

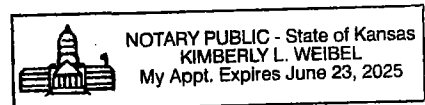


EXHIBIT "A"

SMAS PROPERTY

EXHIBIT A

All that part of the Southwest Quarter of Section 26, Township 49 North, Range 30 West of the Fifth Principal Meridian and all that part of Lot 8B as shown on a Certificate of Survey of Lot 8, REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK, filed with the Jackson County, Missouri Recorder of Deeds as Instrument No. 2007E0068248 on May 22, 2007, situate in the City of Grain Valley, Jackson County, Missouri, being described as follows:

Commencing at the Southwest corner of said Southwest Quarter; thence South 88°03'12" East, along the South line of said Southwest Quarter, a distance of 1,330.37 feet to the Southeast corner of the Southwest Quarter of the Southwest Quarter of said Section 26; thence North 1°22'31" East, along the East line of said Southwest Quarter of the Southwest Quarter, a distance of 599.39 feet; thence North 87°13'39" West, departing the East line of said Southwest Quarter of the Southwest Quarter, a distance of 63.02 feet to the Southeast corner of Lot 1, QUIKTRIP STORE NO. 0259, a subdivision of record in said City, County, and State, filed with said Recorder of Deeds as Instrument No. 2020E0039051 on May 14, 2020, said point being the Point of Beginning; thence continuing North 87°13'39" West, along the South line of said Lot 1, a distance of 289.00 feet to the Southwest corner thereof; thence North 6°21'45" West, along the West line of said Lot 1, a distance of 292.45 feet to the Northwest corner thereof, said corner lying on the South right-of-way line of N. Jefferson Street, as now established; thence along the North right-of-way line of said N. Jefferson Street the following five (5) courses: 1) Westerly around a curve to the left that is non-tangent with the exit of the last-described course, having a chord bearing of South 81°28'00" West, a radius of 496.00 feet, a chord distance of 68.60 feet, and an arc distance of 68.65 feet; 2) South 77°30'05" West a distance of 250.32 feet; 3) Westerly, around a curve to the right that is tangent with the exit of the last-described course, having a chord bearing of South 82°37'00" West, a radius of 535.00 feet, a chord distance of 95.40 feet, and an arc distance of 95.53 feet; 4) South 40°13'16" West a distance of 27.98 feet; 5) South 2°25'26" West a distance of 4.93 feet to the intersection with the North line of Lot 4, REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK, a subdivision of record in said City, County, and State filed with said Recorder of Deeds as Instrument No. 1998I0025166 on April 13, 1998; thence South 86°54'47" East, along the North line of said Lot 4 and continuing along the North line of Lot 7, REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK, a distance of 300.76 feet to the Northwest corner of said Lot 8B; thence along the West line of said Lot 8B the following three (3) courses: 1) South 2°44'21" West a distance of 163.14 feet; 2) South 86°55'50" East a distance of 119.99 feet; 3) South 2°05'36" West a distance of 250.02 feet to the Southernmost Southwest corner of said Lot 8B; thence South 86°51'45" East, along the South line of said Lot 8B, a distance of 12.75 feet to the Southernmost Southeast corner of said Lot 8B, said point also being the intersection with the North right-of-way line of Interstate 70 as described in a Quitclaim Deed filed with said Recorder of Deeds as Instrument No. 2016E0058009 on June 29, 2016; thence South 54°59'56" East, along the North right-of-way line of said Interstate 70, a distance of 77.60 feet; thence South 88°16'11" East, continuing along the North right-of-way line of said Interstate 70, a distance of 232.99 feet to the intersection with the West right-of-way line of NW Buckner Tarsney Road (AKA Missouri State Route BB), as now established; thence along the West right-of-way line of said NW Buckner Tarsney Road the following four courses: 1) North 40°00'17" East a distance of 25.78 feet; 2) North 1°45'21" East a distance of 191.22 feet; 3) North 1°48'42" East a distance of 37.48 feet; 4) North 15°09'19" East a distance of 38.96 feet to the Point of Beginning.

Containing 149,131 square feet or 3.424 acres, more or less.

The bearings in this description are based on the Missouri Coordinate System of 1983, West Zone, NAD83.

**LAMP
RYNEARSON**
LAMPRYNEARSON.COM

OMAHA, NEBRASKA
4710 W. DOUGLASS ST. 1B (402) 494-2400
NE AUTH. NO. 1290138
FORT COLLINS, COLORADO
4710 W. DOUGLASS ST. 1B (970) 228-2442
KANSAS CITY, MISSOURI
1801 STATE ST. 1B (816) 381-0440
MO AUTH. NO. 6-2013114231 LS-2019043127

DESIGNER / DRAFTER

KMG

REVIEWER

CNR

PROJECT NUMBER

0323030.01

DATE

7/28/23

MO CERT. OF AUTHORITY

E-2013011903 LS-2019043127

KS CERT. OF AUTHORITY

E-874 LS-350

MEDWISE
60309

SMAS Property

EXHIBIT "B"

QUIKTRIP PROPERTY

EXHIBIT B

Lot 1, QUIKTRIP STORE NO. 0259, a subdivision of record situate in the City of Grain Valley, Jackson County, Missouri.

L:\Engineering\0323030 QuikTrip Site 60309 ALTA SURVEY DRAWINGS\BASE MODELS\0323030_R01.dwg, 7/28/2023 4:17:58 PM, KELAN GREGORY, LAMP RYNEARSON

**LAMP
RYNEARSON**
LAMPRYNEARSON.COM

OMAHA, NEBRASKA
14710 N. 100TH ST. STE. 102 (402) 491-2464
NE 4TH, NO. 100119
FORT COLLINS, COLORADO
4010 HINCHCLIFF DR. STE. 100 (970) 228-8242
KANSAS CITY, MISSOURI
5001 ST. JOE, STE. 100 (816) 351-1040
MO. AUTH. NO. 5-01311903 / LS-2018043117

DESIGNER / DRAFTER

KMG

REVIEWER

CNR

PROJECT NUMBER

0323030.01

DATE

7/28/23

MO CERT. OF AUTHORITY

E-2013011903 / LS-2018043127

KS CERT. OF AUTHORITY

E-874 / LS-350

QuikTrip Property

MEDWISE
60309

EXHIBIT "C"

MEDWISE PROPERTY

All that part of the Southwest Quarter of Section 26, Township 49 North, Range 30 West of the Fifth Principal Meridian and all that part of Lot 8B as shown on a Certificate of Survey of Lot 8, REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK, filed with the Jackson County, Missouri Recorder of Deeds as Instrument No. 2007E0068248 on May 22, 2007, situate in the City of Grain Valley, Jackson County, Missouri, being described as follows:

Commencing at the Southwest corner of said Southwest Quarter; thence South 88°03'12" East, along the South line of said Southwest Quarter, a distance of 1,330.37 feet to the Southeast corner of the Southwest Quarter of the Southwest Quarter of said Section 26; thence North 1°22'31" East, along the East line of said Southwest Quarter of the Southwest Quarter, a distance of 599.39 feet; thence North 87°13'39" West, departing the East line of said Southwest Quarter of the Southwest Quarter, a distance of 63.02 feet to the Southeast corner of Lot 1, QUIKTRIP STORE NO. 0259, a subdivision of record in said City, County, and State, filed with said Recorder of Deeds as Instrument No. 2020E0039051 on May 14, 2020, said point being the Point of Beginning; thence continuing North 87°13'39" West, along the South line of said Lot 1, a distance of 289.00 feet to the Southwest corner thereof; thence North 87°15'11" West, departing the South line of said Lot 1, a distance of 45.24 feet to the Northeast corner of Lot 8A as shown on said Certificate of Survey, said point also being located on the West line of said Lot 8B as shown thereon; thence South 2°05'36" West, along the West line of said Lot 8B, a distance of 145.74 feet to the intersection with the Westerly prolongation of the North line of a parcel of property described in a Quitclaim Deed filed with said Recorder of Deeds as Instrument No. 2016E0058009 on June 29, 2016; thence South 88°16'11" East, across said Lot 8B and along the North line of said parcel of property and its Westerly prolongation, a distance of 325.98 feet to the intersection with the West right-of-way line of NW Buckner Tarsney Road (AKA Missouri State Route BB), as now established; thence along the West right-of-way line of said NW Buckner Tarsney Road the following three (3) courses: 1) North 1°45'21" East a distance of 64.31 feet; 2) North 1°48'42" East a distance of 37.48 feet; 3) North 15°09'19" East a distance of 38.96 feet to the Point of Beginning.

Containing 46,665 square feet or 1.071 acres, more or less.

The bearings in this description are based on the Missouri Coordinate System of 1983, West Zone, NAD83.

DESCRIPTION PREPARED BY KELLAN M. GREGORY MO PLS NO. 2011001372 AND LAMP RYNEARSON, MO CLS NO. 2019043127.

TRACT 2:

Non-exclusive easements for utilities, access, ingress, egress and visibility created by Reciprocal Easement Agreement dated November 21, 2019 and recorded November 21, 2019 as Document No. 2019E0096061. Subject to the terms, provisions and conditions set forth in said instrument.

EXHIBIT "D"

LEGAL DESCRIPTION OF QUIKTRIP ACCESS EASEMENT

35' WIDE ACCESS EASEMENT

All that part of the West Half of the Southwest Quarter of Section 26, Township 49 North, Range 30 West lying in Grain Valley, Jackson County, being more particularly described as follows:

Commencing at the Northeast corner of Lot 8B, CERTIFICATE OF SURVEY OF LOT 8 IN THE REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK, filed in the office of the recorder of deeds for Jackson County, Missouri as Document Number 20070E00628248 in Book E28 at Page 92; thence N87°01'22"W (N87°33'51"W, Plat), a distance of 126.83 feet to a point on the West line of Proposed QUIKTRIP STORE NO. 0259; thence N06°19'31"W, along said West line, a distance of 127.21 feet to the Northwest corner of said Proposed QUIKTRIP STORE NO. 0259, also being a point on the South right-of-way of North Jefferson Street, as now established; thence along the North line of said Proposed QUIKTRIP STORE NO. 0259 and along the South right-of-way of said North Jefferson Street, being along a curve to the right, having an initial tangent bearing of N85°26'06"E, a radius of 496.00 feet a central angle of 01°34'04" and an arc length of 13.57 feet to the Point of Beginning; thence continuing along the last described course and curve having a radius of 496.00 feet, a central angle of 04°02'47" and an arc length of 35.03 feet; thence S02°59'51"E, a distance of 14.81 feet; thence along a curve to the left, tangent to the last described course, having a radius of 25.00 feet, a central angle of 40°21'17" and an arc length of 17.61 feet; thence S43°21'08"E, a distance of 9.66 feet; thence S46°38'52"W, a distance of 35.00 feet; thence N43°21'08"W, a distance of 9.66 feet; thence along a curve to the right, tangent to the last describe course having a radius of 60.00 feet, a central angle of 40°21'17" and an arc length of 42.26 feet; thence N02°59'51"W, a distance of 16.05 feet to the Point of Beginning.

Containing 1,926 square feet, more or less.

Basis of Bearings: Missouri State Plane West Zone, NAD 83

30' ACCESS EASEMENTS

All that part of Lot 8B, CERTIFICATE OF SURVEY OF LOT 8 IN THE REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK, filed in the office of the recorder of deeds for Jackson County, Missouri as Document Number 20070E00628248 in Book E28 at Page 92 being more particularly described as follows:

Commencing at the Northeast corner of aforesaid Lot 8B; thence $S02^{\circ}49'12''W$ ($802^{\circ}16'43''W$, Plat), along the East line of said Lot 8B, a distance of 162.75 feet to a point on the South line of Proposed QUIKTRIP STORE NO. 0259; thence $N87^{\circ}16'15''W$ along said South line, a distance of 56.04 feet to the Point of Beginning; thence continuing $N87^{\circ}16'15''W$ along said South line, a distance of 30.00 feet to a point herein after known as Point A; thence $N01^{\circ}43'46''E$, a distance of 17.59 feet; thence $S88^{\circ}16'14''E$, a distance of 30.00 feet; thence $S01^{\circ}43'46''W$, a distance of 18.12 feet to the Point of Beginning.

Containing 536 square feet, more or less.

Also

Commencing at said Point A; thence $N87^{\circ}16'15''W$ along said South line, a distance of 14.51 feet to the Southwest corner of said Proposed QUIKTRIP STORE NO. 0259; thence $N06^{\circ}19'31''W$, along the West line of said Proposed QUIKTRIP STORE NO. 0259, a distance of 28.03 feet to the Point of Beginning; thence continuing along the last described course $N06^{\circ}19'31''W$, a distance of 30.30 feet; thence $S88^{\circ}16'14''E$, a distance of 22.68 feet; thence $S01^{\circ}43'46''W$, a distance of 30.00 feet; thence $N88^{\circ}16'14''W$, a distance of 18.44 feet to the Point of Beginning

Containing 617 square feet, more or less.

Basis of Bearings: Missouri State Plane West Zone, NAD 83

25' AND 30' WIDE ACCESS EASEMENT

All that part of the West Half of the Southwest Quarter of Section 26, Township 49 North, Range 30 West lying in Grain Valley, Jackson County, being more particularly described as follows:

Commencing at the Northeast corner of Lot 8B, CERTIFICATE OF SURVEY OF LOT 8 IN THE REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK, filed in the office of the recorder of deeds for Jackson County, Missouri as Document Number 20070E00628248 in Book E28 at Page 92; thence S02°49'12"W (S02°16'43"W, Plat), along the East line of said Lot 8B, a distance of 162.75 feet to a point on the South line of Proposed QUIKTRIP STORE NO. 0259; thence S87°16'15"E, along the said South line, a distance of 126.65 feet to the Point of Beginning; thence N01°43'46"E, a distance of 13.71 feet; thence S88°16'14"E, a distance of 30.00 feet; thence S01°43'46"W, a distance of 14.24 feet to a point on said South line, said point hereinafter known as Point A; thence N87°16'15"W, along said South line, a distance of 30.00 feet to the Point of Beginning.

Containing 419 square feet, more or less.

Also

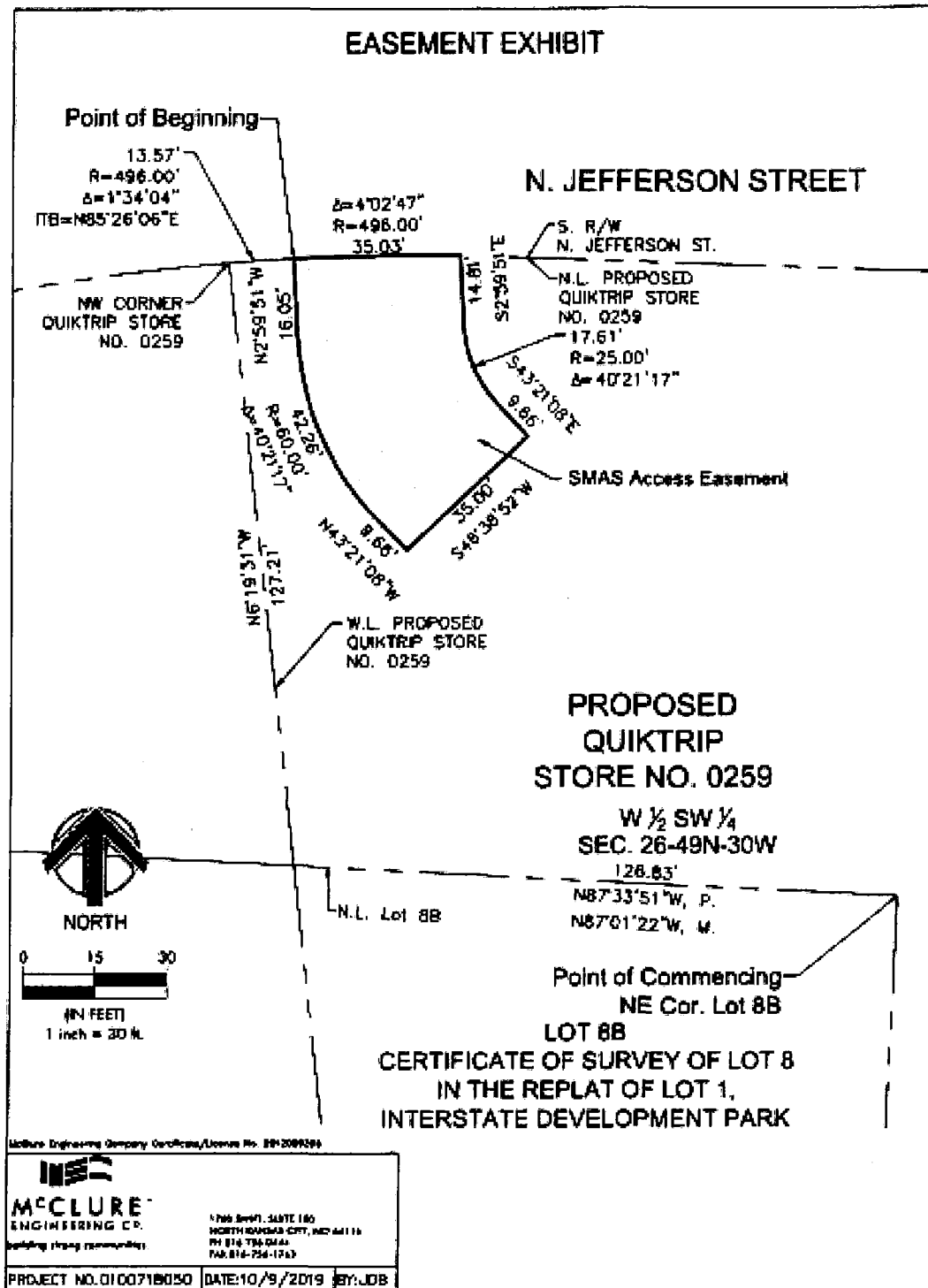
Commencing at said Point A; thence S87°16'15"E, along said South line, a distance of 32.02 feet to the Southeast corner of said Proposed QUIKTRIP STORE NO. 0259, said point also being a point on the West right-of-way of Missouri State Route BB, as now established; thence the following courses and distances along the East line of said Proposed QUIKTRIP STORE NO. 0259 and along the West right-of-way of said Missouri State Route BB; thence N15°19'19"E (N15°19'40"E, Deed), a distance of 32.70 feet; thence N08°37'16"E (N08°37'37"E, Deed), a distance of 42.67 feet; thence N01°43'46"E (N01°43'49"E, Deed) a distance of 40.49 feet to the Point of Beginning; thence departing the East line of said Proposed QUIKTRIP STORE NO. 0259 and the West right-of-way of said Missouri State Route BB, N88°16'14"W, a distance of 44.82 feet; thence N01°43'46"E, a distance of 25.00 feet; thence S88°16'14"E, a distance of 44.82 feet to a point on the East line of said Proposed QUIKTRIP STORE NO. 0259 and the West right-of-way of said Missouri State Route BB; thence S01°43'46"W (S01°43'49", Deed), along the East line of said Proposed QUIKTRIP STORE NO. 0259 and along the West right-of-way of said Missouri State Route BB, a distance of 25.00 feet to the Point of Beginning.

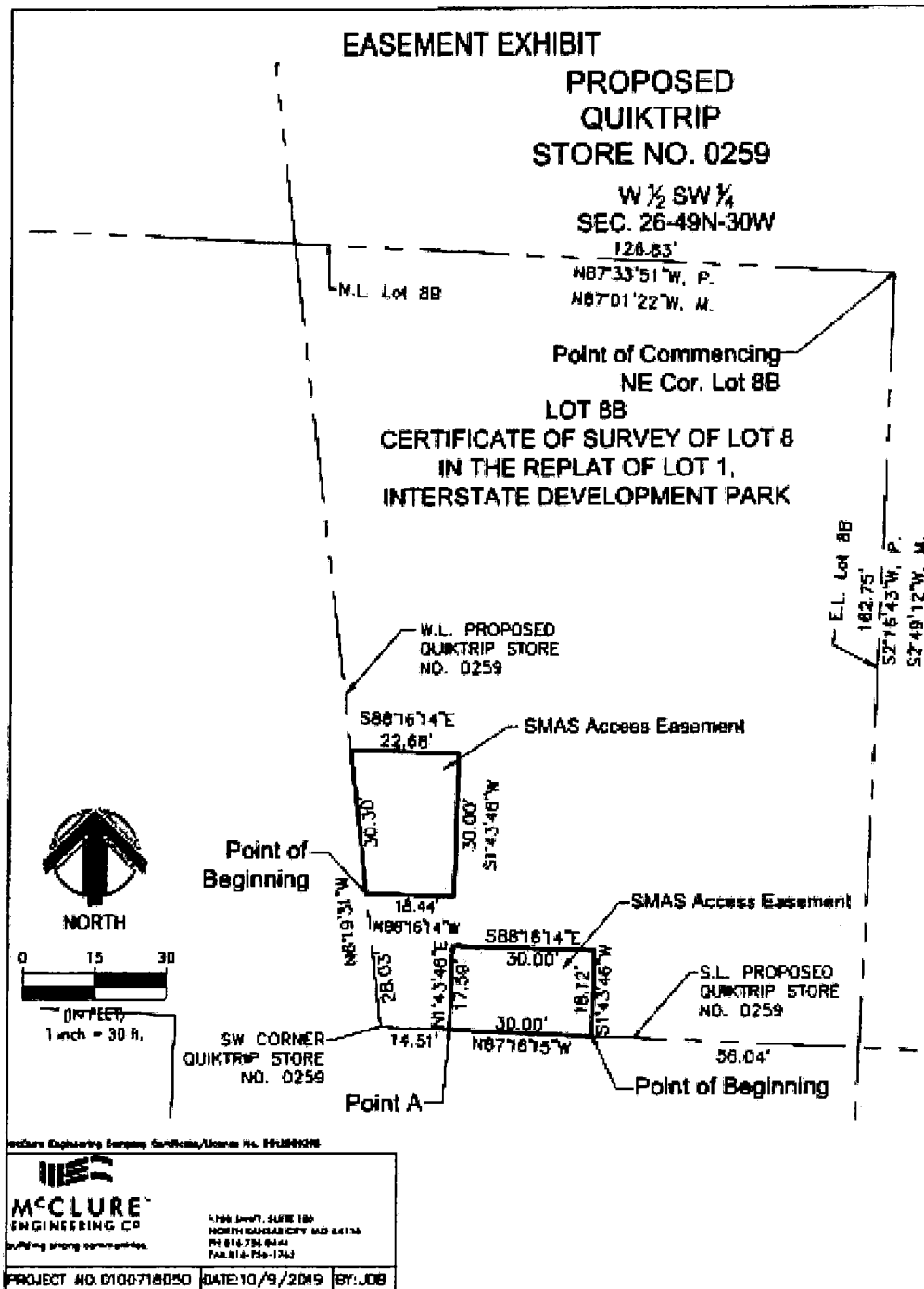
Containing 1,121 square feet, more or less.

Basis of Bearings: Missouri State Plane West Zone, NAD 83

EXHIBIT "D-1"

DEPICTION OF QUIKTRIP ACCESS EASEMENT





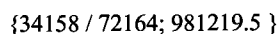


EXHIBIT "E"

LEGAL DESCRIPTION OF QUIKTRIP SANITARY SEWER EASEMENT

All that part of the West Half of the Southwest Quarter of Section 26, Township 49 North, Range 30 West, lying in Grain Valley, Jackson County Missouri, being more particularly described as follows:

Commencing at the Northeast corner of aforesaid Lot 8B; thence N87°01'22"W (N87°33'51"W, Plat), along the North line of said Lot 8B, a distance of 126.83 feet to a point on the West line of Proposed QUIKTRIP STORE NO. 0259 and the Point of Beginning; thence continuing N87°01'22"W (N87°33'51"W, Plat), along the last described course, a distance of 14.75 feet; thence N01°43'46"E, a distance of 103.85 to a point on the West line of said Proposed QUIKTRIP STORE NO. 0259; thence S06°19'31"E along the West line of said Proposed QUIKTRIP STORE NO. 0259, a distance of 105.21 feet to the Point of Beginning.

Containing 765 Square Feet, more or less.

Basis of Bearings: Missouri State Plane West Zone, NAD 83

EXHIBIT "E-1"

DEPICTION OF QUIKTRIP SANITARY SEWER EASEMENT

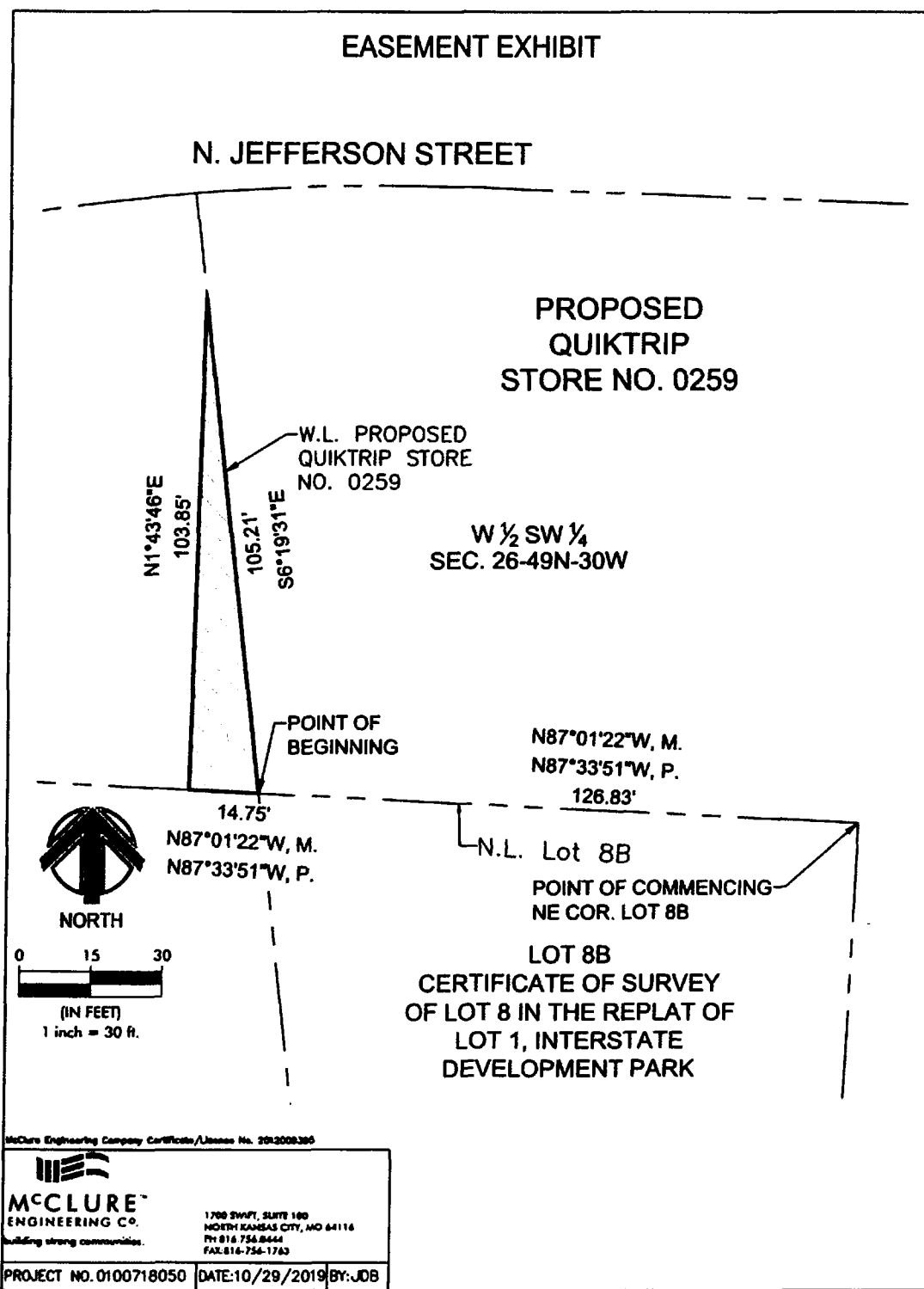


EXHIBIT "F"

LEGAL DESCRIPTION OF MEDWISE ACCESS EASEMENT

EXHIBIT F

LEGAL DESCRIPTION (EAST TRACT)

A strip of land 30.00 feet-wide across the Southwest Quarter of Section 26, Township 49 North, Range 30 West of the Fifth Principal Meridian, situate in the City of Grain Valley, Jackson County, Missouri, lying 15.00 feet on each side of the following described centerline:

Commencing at the Southwest corner of said Southwest Quarter; thence South 88°03'12" East, along the South line of said Southwest Quarter, a distance of 1,330.37 feet to the Southeast corner of the Southwest Quarter of the Southwest Quarter of said Section 26; thence North 1°22'31" East, along the East line of said Southwest Quarter of the Southwest Quarter, a distance of 599.39 feet; thence North 87°13'39" West, departing the East line of said Southwest Quarter of the Southwest Quarter, a distance of 63.02 feet to the Southeast corner of Lot 1, QUIKTRIP STORE NO. 0259, a subdivision of record in said City, County, and State, filed with the Jackson County, Missouri Recorder of Deeds as Instrument No. 2020E0039051 on May 14, 2020; thence North 87°13'39" West, along the South line of said Lot 1, a distance of 46.99 feet to the Point of Beginning; thence South 1°43'49" West, departing the South line of said Lot 1, a distance of 140.42 feet to the intersection with the South line of a tract of land described in a Special Warranty Deed filed with said Recorder of Deeds as Instrument No. 2015E0051738 on June 17, 2015, said point being the Point of Terminus. The sidelines of the aforesaid description shall be shortened or elongated to match themselves with the South line of said Lot 1 and the South line of said tract of land.

Containing 4,216 square feet, more or less.

The bearings in this description are based on the Missouri Coordinate System of 1983, West Zone, NAD83.



Prepared by: Kellan M. Gregory, MO PLS #2011001372

PAGE 1 OF 2

**LAMP
RYNEARSON**
LAMPRYNEARSON.COM

OMAHA, NEBRASKA
10712 W. 200th St. Suite 102, Omaha, NE 68148
402.491.1000
FORT COLLINS, COLORADO
4755 BRANFORD DR., #115, FORT COLLINS, CO 80504
970.225.1111
KANSAS CITY, MISSOURI
801 E. 10th St., Suite 100, Kansas City, MO 64105
816.241.1111

DESIGNER / DRAFTER

KMG

REVIEWER

CNR

PROJECT NUMBER

0323030.01

DATE

10/31/23

MO CERT. OF AUTHORITY

E-2013011903 | LS-2019043127

KS CERT. OF AUTHORITY

E-874 | LS-350

MEDWISE
60309

MedWise Cross Access Easement

EXHIBIT F

LEGAL DESCRIPTION (WEST TRACT)

A strip of land 30.00 feet-wide across part of Lot 8B as shown on a Certificate of Survey of Lot 8, REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK, filed with the Jackson County, Missouri Recorder of Deeds as Instrument No. 2007E0068248 on May 22, 2007, situate in the City of Grain Valley, Jackson County, Missouri, lying 15.00 feet on each side of the following described centerline:

Commencing at the Southwest corner of the Southwest Quarter of Section 26, Township 49 North, Range 30 West of the Fifth Principal Meridian; thence South 88°03'12" East, along the South line of said Southwest Quarter, a distance of 1,330.37 feet to the Southeast corner of the Southwest Quarter of the Southwest Quarter of said Section 26; thence North 1°22'31" East, along the East line of said Southwest Quarter of the Southwest Quarter, a distance of 599.39 feet; thence North 87°13'39" West, departing the East line of said Southwest Quarter of the Southwest Quarter, a distance of 63.02 feet to the Southeast corner of Lot 1, QUIKTRIP STORE NO. 0259, a subdivision of record in said City, County, and State, filed with said Recorder of Deeds as Instrument No. 2020E0039051 on May 14, 2020; thence North 87°13'39" West, along the South line of said Lot 1, a distance of 259.68 feet to the Point of Beginning; thence South 1°43'46" West, departing the South line of said Lot 1, a distance of 144.39 feet to the intersection with the Westerly prolongation of the South line of a tract of land described in a Special Warranty Deed filed with said Recorder of Deeds as Instrument No. 2015E0051738 on June 17, 2015, said point being the Point of Terminus. The sidelines of the aforesaid description shall be shortened or elongated to match themselves with the South line of said Lot 1 and the Westerly prolongation of the South line of said tract of land.

Containing 4,332 square feet, more or less.

The bearings in this description are based on the Missouri Coordinate System of 1983, West Zone, NAD83.



Prepared by: Kellan M. Gregory, MO PLS #2011001372

PAGE 2 OF 2

**LAMP
RYNEARSON**
LAMPRYNEARSON.COM

CAMPUS REPRESENTATIVE
OFFICE OF THE SURVEYOR
1000 N. 10TH ST. SUITE 100
DENVER, CO 80202
TEL: 303.733.1111
FAX: 303.733.1112
WWW.CO.SURVEYOR.COM

DESIGNER / DRAFTER

KMG

REVIEWER

CNR

PROJECT NUMBER

0323030.01

DATE

10/31/23

MO CERT. OF AUTHORITY

E-2013011903 | LS-2019043127

KS CERT. OF AUTHORITY

E-874 | LS-350

MEDWISE
60309

MedWise Cross Access Easement

EXHIBIT "F-1"

DEPICTION OF MEDWISE ACCESS EASEMENT

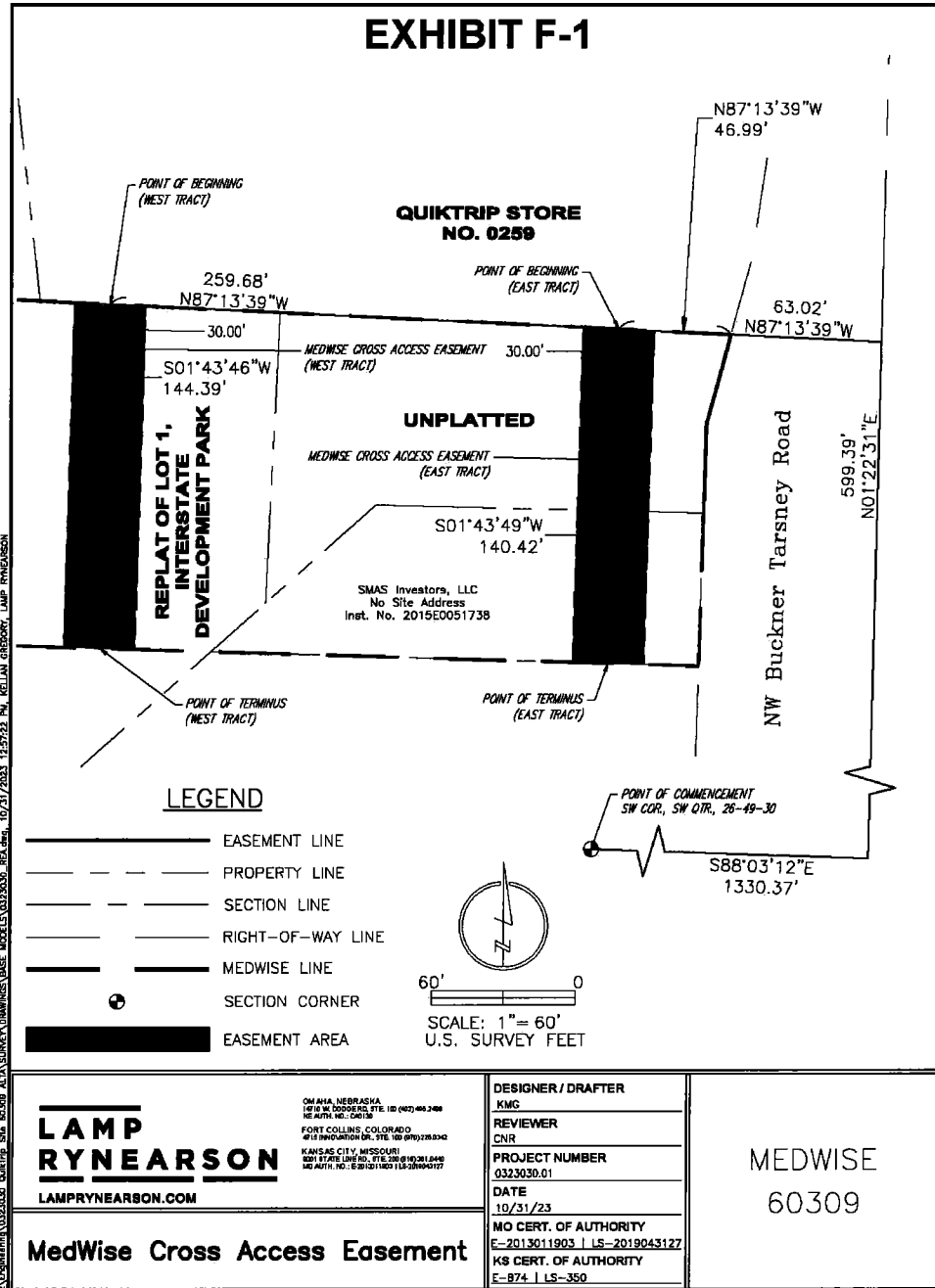


EXHIBIT "G"

LEGAL DESCRIPTION OF MEDWISE SANITARY SEWER EASEMENT

EXHIBIT G

LEGAL DESCRIPTION

All that part of Lot 8B as shown on a Certificate of Survey of Lot 8, REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK, filed with the Jackson County, Missouri Recorder of Deeds as Instrument No. 2007E0068248 on May 22, 2007, situate in the City of Grain Valley, Jackson County, Missouri, being described as follows:

Commencing at the Southwest corner of the Southwest Quarter of Section 26, Township 49 North, Range 30 West of the Fifth Principal Meridian; thence South 88°03'12" East, along the South line of said Southwest Quarter, a distance of 1,330.37 feet to the Southeast corner of the Southwest Quarter of the Southwest Quarter of said Section 26; thence North 1°22'31" East, along the East line of said Southwest Quarter of the Southwest Quarter, a distance of 599.39 feet; thence North 87°13'39" West, departing the East line of said Southwest Quarter of the Southwest Quarter, a distance of 63.02 feet to the Southeast corner of Lot 1, QUIKTRIP STORE NO. 0259, a subdivision of record in said City, County, and State, filed with said Recorder of Deeds as Instrument No. 2020E0039051 on May 14, 2020; thence North 87°13'39" West, along the South line of said Lot 1, a distance of 281.49 feet to the Point of Beginning; thence North 87°13'39" West, continuing along the South line of said Lot 1 and its Westerly prolongation, a distance of 15.02 feet; thence South 0°19'21" East, departing the Westerly prolongation of the South line of said Lot 1, a distance of 145.17 feet; thence South 88°16'11" East a distance of 15.01 feet; thence North 0°19'21" West a distance of 144.90 feet to the Point of Beginning.

Containing 2,175 square feet, more or less.

The bearings in this description are based on the Missouri Coordinate System of 1983, West Zone, NAD83.



Prepared by: Kellan M. Gregory, MO PLS #2011001372

**LAMP
RYNEARSON**
LAMPRYNEARSON.COM

OMAHA, NEBRASKA
1410 N. 10TH ST., STE. 100 (402) 486-3400
HEALTHY, MO. 64108
FORT COLLINS, COLORADO
4700 HUNTERCREEK DR., STE. 100 (970) 328-8342
KANSAS CITY, MISSOURI
1801 STATE LINE RD., STE. 300 (816) 861-2400
MO. NORTH, MO. 64108 (816) 861-2400

DESIGNER / DRAFTER

KMG

REVIEWER

CNR

PROJECT NUMBER

0323030.01

DATE

7/28/23

MO CERT. OF AUTHORITY

E-2013011903 | LS-2019043127

KS CERT. OF AUTHORITY

E-874 | LS-350

MEDWISE
60309

MedWise Sanitary Sewer Easement

EXHIBIT "G-1"

DEPICTION OF MEDWISE SANITARY SEWER EASEMENT

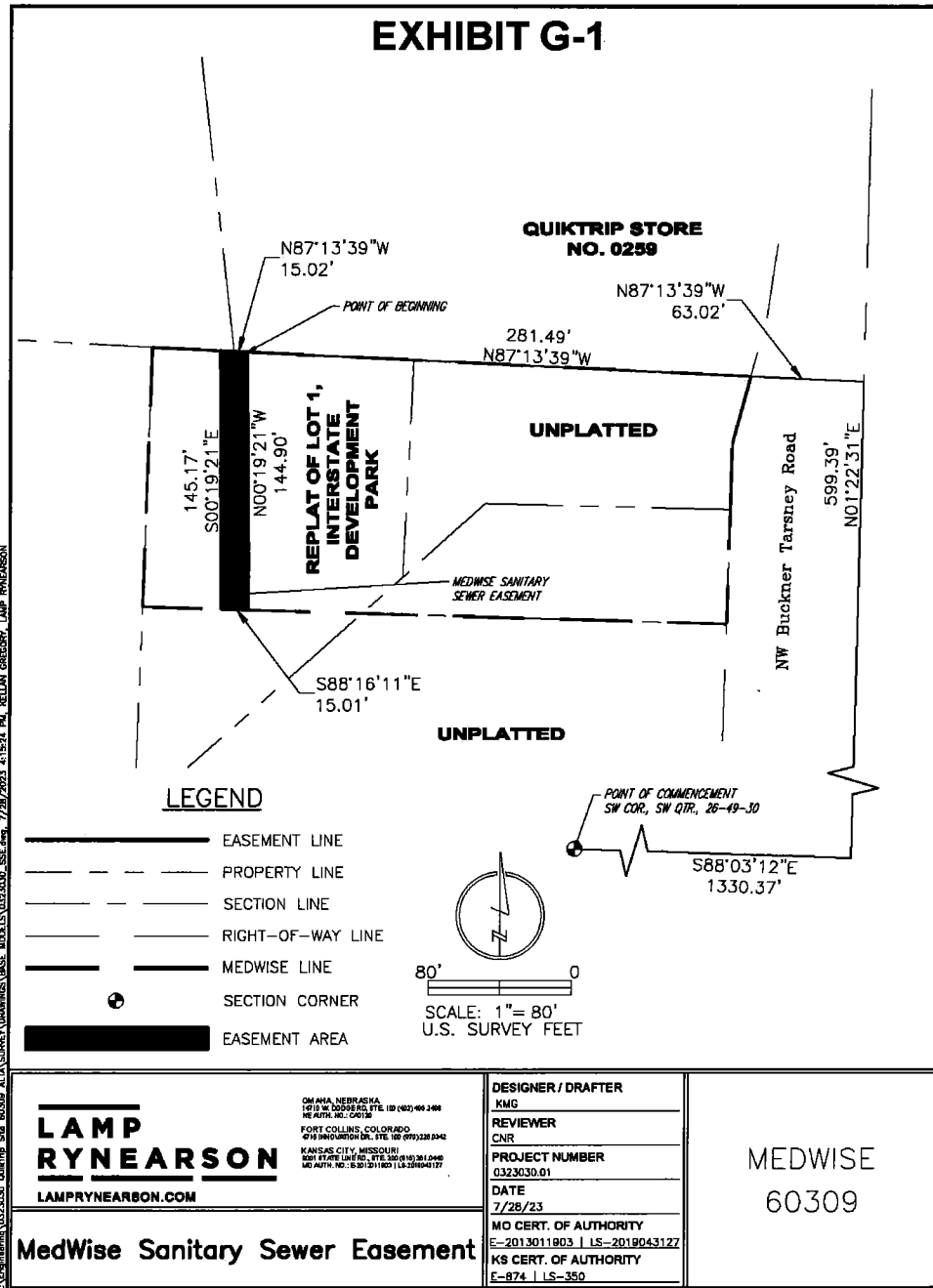


EXHIBIT "H"

DEPICTION OF TEMPORARY CONSTRUCTION EASEMENT

EXHIBIT H

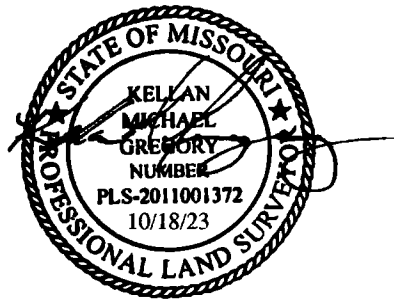
LEGAL DESCRIPTION

All that part of the Southwest Quarter of Section 26, Township 49 North, Range 30 West of the Fifth Principal Meridian and all that part of Lot 8B as shown on a Certificate of Survey of Lot 8, REPLAT OF LOT 1, INTERSTATE DEVELOPMENT PARK, filed with the Jackson County, Missouri Recorder of Deeds as Instrument No. 2007E0068248 on May 22, 2007, situate in the City of Grain Valley, Jackson County, Missouri, being described as follows:

Commencing at the Southwest corner of said Southwest Quarter; thence South 88°03'12" East, along the South line of said Southwest Quarter, a distance of 1,330.37 feet to the Southeast corner of the Southwest Quarter of the Southwest Quarter of said Section 26; thence North 1°22'31" East, along the East line of said Southwest Quarter of the Southwest Quarter, a distance of 460.85 feet to the intersection with the East line of said Quarter-Quarter section and the Easterly prolongation of the North line of a tract of land described in a Quitclaim Deed filed with said Recorder of Deeds as Instrument No. 2016E0058009 on June 29, 2016; thence North 88°16'11" West, along the Easterly prolongation of the North line of said tract of land, a distance of 72.99 feet to the Northeast corner thereof, said point also being located on the West right-of-way line of NW Buckner Tarsney Road, as now established; thence North 88°16'11" West, along the North line of said tract of land, a distance of 201.15 feet to the Point of Beginning; thence North 88°16'11" West, continuing along the North line of said tract of land and also across said Lot 8B, a distance of 76.42 feet; thence South 1°43'59" West, across the line common between said Lot 8B and said tract of land, a distance of 116.68 feet; thence North 53°21'02" East a distance of 97.49 feet; thence North 1°43'49" East a distance of 56.15 feet to the Point of Beginning.

Containing 6,604 square feet, more or less.

The bearings in this description are based on the Missouri Coordinate System of 1983, West Zone, NAD83.



Prepared by: Kellan M. Gregory, MO PLS #2011001372

**LAMP
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LAMPRYNEARSON.COM

OMAHA, NEBRASKA
14710 W. GORDGE RD. STE. 100 (402) 496-2400
NE ALTH. NO. 024035
FORT COLLINS, COLORADO
4715 INNOVATION DR., STE. 100 (970) 226-0342
KANSAS CITY, MISSOURI
1001 STATELINE RD., STE. 200 (816) 361-0440
MO ALTH. NO. E-2013011903 | LS-2018043127

DESIGNER / DRAFTER
KMG

REVIEWER
CNR

PROJECT NUMBER
0323030.01

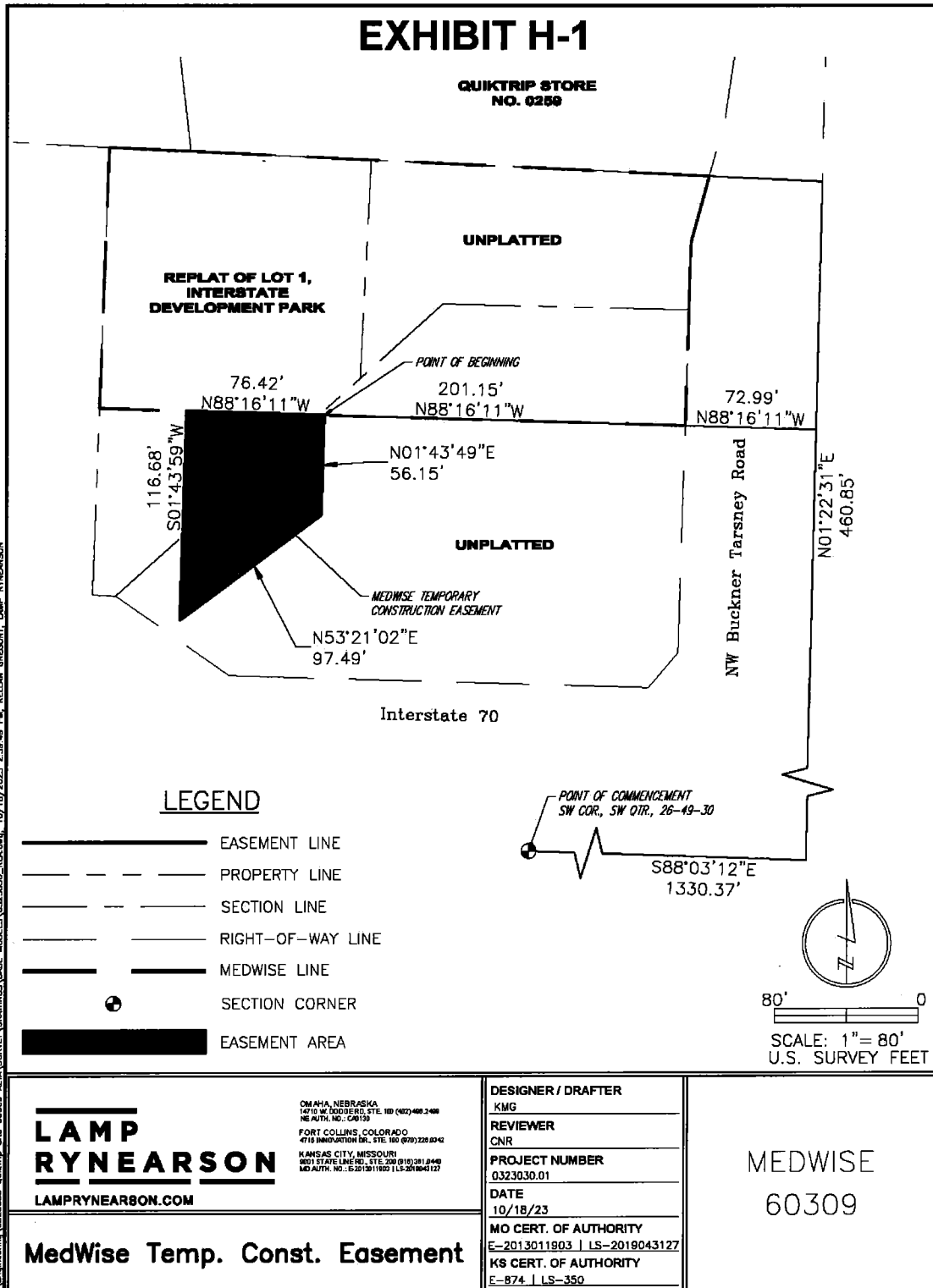
DATE
10/18/23

MO CERT. OF AUTHORITY
E-2013011903 | LS-2019043127
KS CERT. OF AUTHORITY
E-874 | LS-350

MEDWISE
60309

MedWise Temp. Const. Easement

EXHIBIT "H-1"





OWNERSHIP AFFIDAVIT

STATE OF MISSOURI)

COUNTY OF JACKSON)

Comes now SMAS INVESTORS LLC HAROLD HERMAN /mbr (owner)
Who being duly sworn upon his/her oath, does state that he/she is the owner of the property
legally described in the proposed condition use permit and acknowledges the submission of the
application for conditional use permit on said property under the City of Grain Valley Code of
Ordinances.

Date this 15 day of April, 2025

Harold R Herman /member
Signature of Owner

HAROLD R HERMAN /member
Printed Name

Subscribed and sworn to before me this 15th day of April, 2025



Tina Saddler
Notary Public

10/24/2028

My Commission Expires

Interstate Development Park



5/7/2025

 Tax Parcels

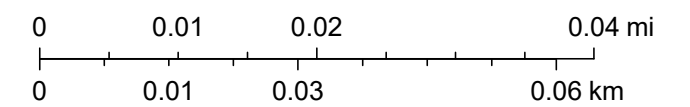
Subdivisions

Address Points



County Boundary

1:1,128



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

State of Missouri
Department of Health & Senior Services
Division of Cannabis Regulation
Comprehensive Dispensary License Issued:

TC AppliCo, LLC

6820 E FRONT ST
KANSAS CITY, MO 64120

DIS000078

*The Division of Cannabis Regulation hereby grants a license to **dispense** marijuana at the above named location in accordance with Article XIV of the Missouri Constitution and the rules promulgated thereunder, subject to all the provisions thereof and to the regulations of the Missouri Department of Health & Senior Services, Division of Cannabis Regulation.*

Issued: 01/23/2020

Expires: 01/23/2026





STORMWATER DRAINAGE REPORT

NW JEFFERSON ST & STATE ROUTE BB GRAIN VALLEY, JACKSON COUNTY, MISSOURI

Prepared for:

PAUCH, LLC
1804 Swift Ave, Suite 101
North Kansas City, Missouri 64116

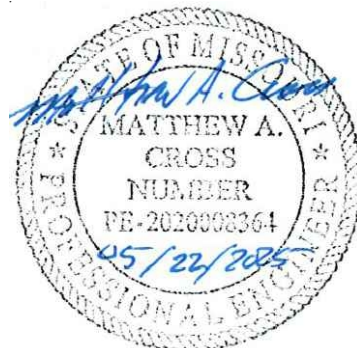
Prepared by:

Kaw Valley Engineering, Inc.
8040 N. Oak Trafficway
Kansas City, MO 64118

KVE B24D5016

Initial Submittal: March 10, 2025

Revised: May 21, 2025



**STORMWATER DRAINAGE REPORT
GRAIN VALLEY DISPENSARY
NW JEFFERSON ST & STATE ROUTE BB
GRAIN VALLEY, JACKSON COUNTY, MISSOURI 64029
Project No. B24D5016**

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EXISTING CONDITION	2
PROPOSED CONDITION	3
SUMMARY AND RECOMMENDATION.....	6

EXHIBITS:

EXHIBIT A	EXISTING CONDITIONS AND DRAINAGE AREA MAP
EXHIBIT B	PROPOSED CONDITIONS AND DRAINAGE AREA MAP
EXHIBIT C	PIPE CALCULATIONS
EXHIBIT D	FEMA FIRMETTE
EXHIBIT E	USDA SOILS REPORT
EXHIBIT F	NATIONAL WETLANDS INVENTORY
EXHIBIT G	BMP CALCULATIONS
EXHIBIT H	RIP RAP CALCULATIONS
EXHIBIT I	NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY TABLE
EXHIBIT J	PONDPACK CALCULATIONS

INTRODUCTION

Kaw Valley Engineering, Inc., on behalf of our client, Pauch, LLC, has prepared this Storm Drainage Report to evaluate the impact of a commercial development on parcel # 37-530-04-23-02-1-00-000 in Grain Valley, Jackson County, Missouri. The proposed development is planned to consist of a commercial building with an associated parking lot. The site is located south of Jefferson Ct. It is bound by Jefferson Ct on the north and west, and by commercial property on the east and south. A project vicinity map is provided below in Figure 1.



Figure 1: Project Vicinity Map

METHOD OF ANALYSIS

This report evaluates and compares stormwater runoff for existing and proposed conditions within the proposed development. Runoff for the project site was analyzed for 2-year, 10-year, and 100-year return events using PondPack software and the SCS Runoff Curve Number method. NOAA Atlas 14 depth-duration-frequency data for the area was applied to the site. Rainfall quantities can be found in Exhibit I.

SCS Curve Numbers for the drainage areas to be used in the calculations are identified within the data tables. This number was based upon the percentage of impervious and pervious surfaces as specified in section 5600 of APWA. It was assumed that pervious surfaces have a CN value of

74 and impervious surfaces have a CN value of 98. Storm water detention within the detention pond was modeled in PondPack V8i. Input data and calculated results for each storm event can be found in Exhibit J.

Best management practice (BMP) calculations were performed according to the October 2012 edition of MARC *Manual of Best Management Practices for Stormwater Quality* and the results can be found in Exhibit G.

EXISTING CONDITION

The site is located within the Missouri River watershed. Drainage across the site currently consists of overland flow draining to the north. Once offsite, drainage flows into Sni-A-Bar Creek and is eventually conveyed into the Missouri River. For this study, the total drainage area analyzed was approximately 3.5 acres and is shown in Exhibit A. The total drainage area was split into onsite drainage, labeled EDA-1, and offsite drainage, labeled EDA-2. EDA-1 consists of mostly undeveloped green spaces with light tree coverage. EDA-2 consists of a mix of undeveloped green space and commercial areas. Drainage areas data are presented below in Table 1.

Table 1: C & CN Values for Existing Drainage Areas

Existing	Area (ft ²)	Acres	Pervious Area (ft ²)	Impervious Area (ft ²)	C	CN
EDA-1	56,463	1.30	56,463	0	0.30	74
EDA-2	97,098	2.23	46,844	50,254	0.61	86
Total	153,561	3.53	103,307	50,254	0.50	82

Table 2 below shows a listing of each drainage area and calculations for each corresponding time of concentration.

Table 2: Existing Time of Concentration Calculations

Time of Concentration (Existing)										
(T _i) Overland Flow Time $T_i = 1.8(1.1 - C)(D^{0.5})/S^{1/3}$						(T ₁) Shallow Concentrated Flow (V from US SCS 1975b)				
		Runoff Coeff.	Distance	Slope	Travel Time	Flow Velocity (by Manning)	Channelized Length	Travel Time	Calc. Total Time	
Drainage Area	Acres	C	D (<100')	S (%)	T _i (min)	V (ft/s)	L (ft)	T ₁ (min)	T _c (min)	T _c (min)
EDA-1	1.30	0.3	100	5.61	8.10	7	536	1.28	9.38	9.4
EDA-2	2.23	0.61	100	2.5	6.49	10	448	0.75	7.24	7.2

Table 3 below shows an analysis of stormwater runoff generated in the existing condition.

Table 3: Existing Stormwater Calculations

Existing Conditions									
Existing	Area (ft ²)	Acres	Pervious Area (ft ²)	Impervious Area (ft ²)	C	CN	Qmax(2yr) cfs*	Qmax(10yr) cfs*	Qmax(100yr) cfs*
EDA-1	56,463	1.30	56,463	0	0.30	74	2.41	5.05	10.46
EDA-2	97,098	2.23	46,844	50,254	0.61	86	7.58	13.03	23.25
Total	153,561	3.53	103,307	50,254	0.50	82	9.85	17.94	33.69

*All flows from PondPack

The site lies outside of the 100 Year Flood Plain per the Flood Insurance Rate Map for Jackson County, Missouri, as shown in Exhibit D.

Soils as identified in the Custom Soil Resource Report for Jackson County, Missouri for the site are presented in Exhibit E and in Table 4:

Table 4: Hydrologic Soil Groups

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
10032	Higginsville-Urban land complex, 5 to 9 percent slopes	C	0.7	48.2%
10128	Sharpsburg-Urban land complex, 2 to 5 percent slopes	D	0.7	51.8%
Totals for Area of Interest			1.4	100.0%

All soils within the site are of Hydrologic Soil Group C or D. Soil Group D contains soils that have a very slow infiltration rate and a high runoff potential when thoroughly wet, as well as a very slow rate of transmission. Soil group C contains soils that have a slow infiltration rate when thoroughly wet and have a slow rate of transmission. The soils profile that makes up the site typically consists of a mix of silt loam and silty clay loam.

PROPOSED CONDITION

Proposed improvements for the site will include a commercial building with associated parking. See Exhibit B for the proposed drainage area map.

Table 5 shows a complete listing of all drainage areas analyzed in the proposed condition.

Table 5: C & CN Values for Proposed Drainage Areas

Proposed Condition						
Proposed	Area (ft ²)	Acres	Pervious Area (ft ²)	Impervious Area (ft ²)	C	CN
PDA-C1	108,540	2.49	73,951	34,589	0.49	82
PDA-C2	2,585	0.06	0	2,585	0.90	98
PDA-C3	5,491	0.13	211	5,280	0.88	97
PDA-C4	6,661	0.15	0	6,661	0.90	98
PDA-C5	1,989	0.05	0	1,989	0.90	98
PDA-C6	2,581	0.06	0	2,581	0.90	98
PDA-C7	2,666	0.06	122	2,544	0.87	97
PDA-B1	20,491	0.47	5,084	15,407	0.75	92
Total	151,004	3.47	79,368	71,636	0.58	85

Comparing the difference in runoff coefficient and curve number values in both the existing and proposed condition shows an increase in both values. An increase in curve number leads to an increase in stormwater flow. To mitigate this issue, KVE recommends the construction of a detention pond to reduce runoff to a level at or below predevelopment conditions. The pond outfall will connect to the public storm system downstream. Table 6 provides the time of concentration values that were used in the proposed condition.

Table 6: Proposed Time of Concentration Calculations

Time of Concentration (Proposed)										
(T _i) Overland Flow Time $T_i = 1.8(1.1 - C)(D^{0.5})/S^{1/3}$						(T _r) Shallow Concentrated Flow (V from US SCS 1975b)				
		Runoff Coeff.	Distance	Slope	Travel Time	Flow Velocity (by Manning)	Channelized Length	Travel Time	Calc. Total Time	
Drainage Area	Acres	C	D (<100')		T _i (min)	V (ft/s)	L (ft)	T _r (min)	T _c (min)	T _c (min)
PDA-C1	2.56	0.49	100	2.5	8.15	10	536	0.89	9.04	9.0
PDA-C2	0.06	0.90	79	2	2.54	7	0	0.00	2.54	5.0
PDA-C3	0.18	0.90	100	1.6	3.08	10	18	0.03	3.11	5.0
PDA-C4	0.15	0.90	100	1	3.60	7	46	0.11	3.71	5.0
PDA-C5	0.05	0.90	76	2.9	2.20	7	0	0.00	2.20	5.0
PDA-C6	0.05	0.90	100	2.9	2.52	7	46	0.11	2.63	5.0
PDA-B1	0.47	0.75	100	3.2	4.28	10	98	0.16	4.44	5.0

Table 7 shows an analysis of stormwater runoff generated in the proposed condition.

Table 7: Proposed Stormwater Calculations

Proposed Conditions									
Proposed	Area (ft ²)	Acres	Pervious Area (ft ²)	Impervious Area (ft ²)	C	CN	Qmax(2yr) cfs*	Qmax(10yr) cfs*	Qmax(100yr) cfs*
PDA-C1	111,697	2.56	77,108	34,589	0.49	81	6.58	12.28	23.62
PDA-C2	2,585	0.06	0	2,585	0.90	98	0.27	0.42	0.69
PDA-C3	8,053	0.18	0	8,053	0.90	98	0.84	1.28	2.12
PDA-C4	6,661	0.15	0	6,661	0.90	98	0.71	1.09	1.80
PDA-C5	1,989	0.05	0	1,989	0.90	98	0.21	0.32	0.53
PDA-C6	2,270	0.05	0	2,270	0.90	98	0.24	0.37	0.61
PDA-B1	20,306	0.47	5,094	15,212	0.75	75	1.00	2.05	4.29
Total	153,561	3.53	82,202	71,359	0.58	85	8.76	14.81	19.55

Detention

The pond shown in Exhibit B has been designed to provide the necessary detention and to serve as a BMP to improve stormwater quality. The pond will have a bottom elevation of 804.00' and a maximum elevation of 810.00'. The outlet structure will consist of a 4'x4' concrete box. The outlet structure is shown below in Figure 2.

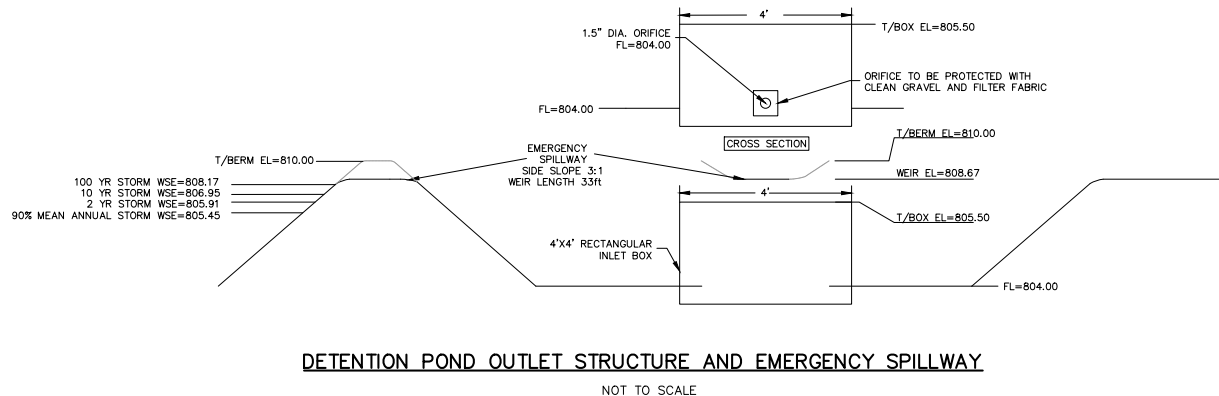


Figure 2: DETENTION POND OUTLET STRUCTURE & EMERGENCY SPILLWAY

The bottom 1.5" orifice is to detain the WQv storm while the top of box structure acts as a 16' weir and controls the 2-Year, 10-Year, and 100-Year storms. A graded weir will be utilized as an emergency spillway and will have a weir crest elevation of 808.67'. The emergency spillway weir length will be 33' and will route the flow to the northeast of the site where it will be captured by existing offsite inlets. As shown in Table 8, the 100-Yr water surface elevation will be 808.17'. This provides 0.5' of freeboard to the graded weir. Under back-to-back 100-Yr storm conditions, where the primary outlet is either clogged or before there is adequate time to drain, an additional 1' of freeboard is provided as required by KC Metro APWA 5600.

The volume to be detained for the WQv 90% Mean Annual Storm, is determined to be 2,254 cf. The bottom orifice of the pond outlet structure can store and release runoff from the 90% Mean Annual Storm at a drawdown time of 57 hours, which falls within the 40-72 hour requirement. The results can be seen in Exhibit J.

Water surface elevations (WSE) and volumes for all design storms are shown in Table 8.

Table 8: Detention Pond WSE and Storage Volume

Dry Detention Basin WSE (ft)			
	2-Year	10-Year	100-Year
Surface EL	805.91	806.96	808.17
Storage (cf)	3,229	6,662	12,532

With construction of the detention pond and its release structures, the 100-year WSE for the pond was minimized while simultaneously decreasing stormwater flow leaving the site as shown in Table 9.

Table 9: Comparison of Pre-development vs. Post-development Runoff

	Area (ft ²)	Acres	Pervious Area (ft ²)	Impervious Area (ft ²)	C	CN	Qmax(2yr) cfs	Qmax(10yr) cfs	Qmax(100yr) cfs
Existing	153,561	3.53	103,307.00	50,254.00	0.50	82	9.85	17.94	33.69
Proposed	153,561	3.53	82,202.00	71,359.00	0.58	85	8.76	14.81	19.55
Difference	0	0.00	-21,105	21,105	0.08	3	-1.09	-3.13	-14.14

BMP CALCULATIONS

Following the APWA/MARC BMP Manuals for an undeveloped site, the change in CN values is a difference of 12, with a required level of service found to be at 7. To meet this requirement, the proposed dry detention pond will be used to improve stormwater quality. Native vegetation inhabits the natural swale that exists directly upstream of the site, which will flow directly into the detention pond. Therefore, the detention pond and native vegetation will provide a treatment train and together they will give a weighted value rating of 9.25, which exceeds the required level of service. BMP calculations can be found in Exhibit G.

SUMMARY AND RECOMMENDATION

This Storm Drainage Report addresses the storm water impacts from the development and meets the requirements of the City of Grain Valley. As outlined in this Storm Drainage Report KVE recommends the following:

- Construct a dry detention basin to decrease the stormwater runoff flowrate leaving the site. It will also serve as BMP to improve stormwater quality. Also, preserve native vegetation in the existing swale to provide a treatment train with the detention basin and meet the required level of service.

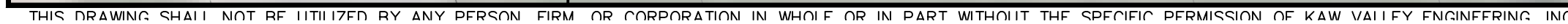
Respectfully Submitted,
Kaw Valley Engineering, Inc.

Jacob Dobbs, IE
Design Engineer

Matthew A. Cross, P.E.
Project Manager

EXHIBIT A

EXISTING CONDITIONS AND DRAINAGE AREA MAP



PROJ. NO. B24D5016 DESIGNER RPS DRAWN BY RPS OFN 5016DAM SHEET REV		GRAIN VALLEY DISPENSARY NW JEFFERSON ST & STATE ROUTE BB GRAIN VALLEY, MO		 KAW VALLEY ENGINEERING 8040 N. OAK TRAFFICWAY KANSAS CITY, MO 64118 PH. (816) 468-5858 kce@kveeng.com www.kveeng.com					
EXHIBIT A		DRAINAGE AREA MAP EXISTING CONDITIONS							
						REV		DATE	
						DESCRIPTION		DSN	
								DWN	
								CHK	

EXHIBIT B

PROPOSED CONDITIONS AND DRAINAGE AREA MAP



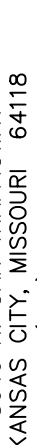
 KAW VALLEY ENGINEERING 8040 N. OAK TRAFFICWAY KANSAS CITY, MO 64118 (816) 468-5858 kce@kveeng.com www.kveeng.com							
GRAIN VALLEY DISPENSARY NW JEFFERSON ST & STATE ROUTE BB GRAIN VALLEY, MO		PROJ. NO. B24D5016		DESIGNER RPS		DRAWN BY RPS	
SHEET 5016DAM		OFN		REV		DATE	
EXHIBIT B		DRAINAGE AREA MAP PROPOSED CONDITIONS		DESCRIPTION		DSN DWN CHK	

EXHIBIT C

PIPE CALCULATIONS

EXHIBIT C: PIPE CALCULATIONS

	Overland Flow													System Flow						Pipe Design																				
Design Storm	Structure	Downstream Structure	Pipe	Tributary Area (A)	Runoff coefficient ("C")	A x C	Antecedent Precipitation (K)	Rainfall Intensity Factor "F"	A x C x K x F	Time of Concentration Tc	Rainfall Intensity**	Tributary Runoff (cfs)	Total Runoff (cfs)	Total Area	Composite "C"	Summation of Inlet A x C x K x F	System Tc	System Rainfall Intensity	System Discharge1	Pipe Material	Pipe Shape	Pipe Size	Manning's Coefficient	Upstream Invert	Downstream Invert	Length	Design Storm	Pipe Slope	Design Flow	Full Flow Capacity**	Design Velocity	Full Flow Velocity	Depth (in.)	Flow Time (sec)	Upstream Crown Elevations	Downstream Crown Elevations	Upstream Depth of Cover	Downstream Depth of Cover	Structure	Rim Elevation
2-year	C2	C1	C2 - C1	2.49	0.49	1.22	1	1	1.22	8.9	4.6	5.6	5.6	2.49	0.49	1.22	8.9	4.6	5.6	HDPE	Circular	24	0.012	804.25	804.00	72	100yr	0.35%	13.6	14.4	5.2	4.6	18.54	13.8	808.3	806.0	0.0	0.0	C2	0.00
10-year							1		1.22		6.3	7.7	7.7			1.22		6.3	7.7																					
25-year							1.1		1.34		7.3	9.8	9.8			1.34		7.3	9.8																					
50-year							1.2		1.47		8.1	11.9	11.9			1.47		8.1	11.9																					
100-year							1.25		1.53		8.9	13.6	13.6			1.53		8.9	13.6																					
2-year	B3	B2	B3 - B2	0.06	0.90	0.05	1	1	0.05	5.0	5.4	0.3	0.3	0.06	0.90	0.05	5.0	5.4	0.3	HDPE	Circular	6	0.012	809.14	808.65	24	100yr	2.04%	0.6	0.9	4.8	4.4	3.74	5.0	809.6	809.2	1.4	0.0	B3	811.02
10-year							1		0.05		7.4	0.4	0.4			0.05		7.4	0.4																					
25-year							1.1		0.06		8.5	0.5	0.5			0.06		8.5	0.5																					
50-year							1.2		0.06		9.4	0.6	0.6			0.06		9.4	0.6																					
100-year							1.25		0.06		10.3	0.6	0.6			0.06		10.3	0.6																					
2-year	A5	A4	A5 - A4	0.15	0.90	0.14	1	1	0.14	5.0	5.4	0.7	0.7	0.15	0.90	0.14	5.0	5.4	0.7	HDPE	Circular	12	0.012	812.18	811.32	52	25yr	1.65%	1.3	5.0	5.3	6.3	4.18	9.8	813.2	812.3	2.8	4.0	A5	815.97
10-year							1		0.14		7.4	1.0	1.0			0.14		7.4	1.0																					
25-year							1.1		0.15		8.5	1.3	1.3			0.15		8.5	1.3																					
50-year							1.2		0.15		9.4	1.4	1.4			0.15		9.4	1.4																					
100-year							1.25		0.15		10.3	1.6	1.6			0.15		10.3	1.6																					
2-year	A4	A3	A4 - A3	0.05	0.90	0.04	1	1	0.04	5.0	5.4	0.2	0.2	0.20	0.90	0.18	5.2	5.4	1.0	HDPE	Circular	12	0.012	811.22	810.05	71	25yr	1.65%	3.0	5.0	6.6	6.3	6.68	10.8	812.2	811.1	4.1	4.9	A4	816.37
10-year							1		0.04		7.4	0.3	0.3			0.18		7.3	1.3																					
25-year							1.1		0.05		8.5	0.4	0.4			0.20		8.5	1.7																					
50-year							1.2		0.05		9.4	0.4	0.4			0.20		9.3	1.9																					
100-year							1.25		0.05		10.3	0.5	0.5			0.20		10.3	2.0																					
2-year	A3	A2	A3 - A2	0.06	0.90	0.05	1	1	0.05	5.0	5.4	0.3	0.3	0.23	0.90	0.23	5.3	5.3	1.2	HDPE	Circular	12	0.012	809.95	808.42	83	25yr	1.84%	5.1	5.2	7.6	6.7	9.56	10.9	811.0	809.4	5.0	5.0	A3	815.91
10-year							1		0.05		7.4	0.4	0.4			0.23		7.2	1.7																					
25-year							1.1		0.06		8.5	0.5	0.5			0.26		8.4	2.1																					
50-year							1.2		0.06		9.4	0.6	0.6			0.26		9.3	2.4																					
100-year							1.25		0.06		10.3	0.6	0.6			0.26		10.2	2.6																					
2-year	A2	A1	A2 - A1	0.13	0.88	0.11	1	1	0.11	5.0	5.4	0.6	0.6	0.35	0.89	0.35	5.5	5.3	1.8	HDPE	Circular	12	0.012	807.92	806.00	35	100yr	5.48%	9.0	9.0	13.1	11.5	9.82	2.7	808.9	807.0	5.5	0.0	A2	814.41
10-year							1		0.11		7.4	0.8	0.8			0.35		7.2	2.5																					
25-year							1.1		0.13		8.5	1.1	1.1			0.38		8.3	3.2																					
50-year							1.2		0.13		9.4	1.2	1.2			0.39		9.2	3.6																					
100-year							1.25		0.13		10.3	1.3	1.3			0.39		10.1	3.9																					
2-year	D1	EX #2051	D1 - EX #2051			0.00	1	1	0.00	8.9	4.6	0.0	0.0	0.00	0.00	0.00	8.9	4.6	0.0	HDPE	Circular	18	0.012	804.00	802.15	25	25yr	7.40%	17.5	31.0	18.0	17.5	9.68	1.4	803.5	802.5	3.5	3.5	D1	807.00
10-year							1		0.00		6.3	0.0	0.0			0.00		6.3	0.0																					
25-year							1.1		0.00		7.3	0.0	0.0			0.00		7.3	0.0																					
50-year							1.2		0.00		8.1	0.0	0.0			0.00		8.1	0.0																					
100-year							1.25		0.00		8.9	0.0	0.0			0.00		8.9	0.0																					

EXHIBIT D

FEMA FIRMETTE

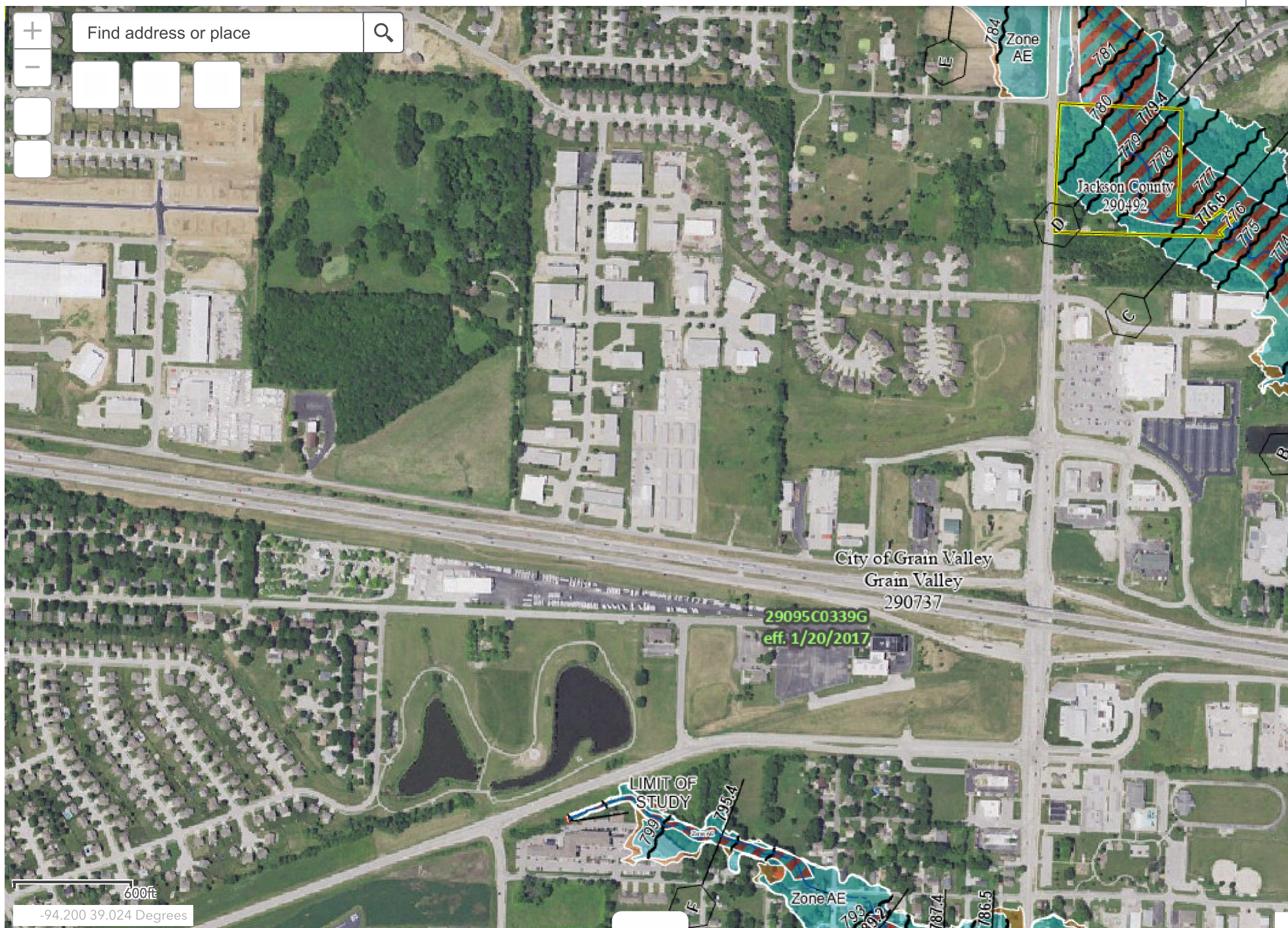


EXHIBIT E

USDA SOILS REPORT



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Jackson County, Missouri**



February 4, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Jackson County, Missouri
Survey Area Data: Version 27, Aug 27, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 30, 2022—Sep 16, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
10032	Higginsville-Urban land complex, 5 to 9 percent slopes	0.7	48.2%
10128	Sharpsburg-Urban land complex, 2 to 5 percent slopes	0.7	51.8%
Totals for Area of Interest		1.4	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Jackson County, Missouri

10032—Higginsville-Urban land complex, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2qkyc

Elevation: 650 to 900 feet

Mean annual precipitation: 33 to 41 inches

Mean annual air temperature: 50 to 55 degrees F

Frost-free period: 177 to 220 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Higginsville and similar soils: 60 percent

Urban land: 40 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Higginsville

Setting

Landform: Hillslopes

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Concave, convex

Parent material: Loess

Typical profile

A - 0 to 12 inches: silt loam

Bt1 - 12 to 18 inches: silty clay loam

Bt2 - 18 to 49 inches: silty clay loam

C - 49 to 80 inches: silty clay loam

Properties and qualities

Slope: 5 to 9 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: About 18 to 36 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Ecological site: R107XB002MO - Deep Loess Upland Prairie

Hydric soil rating: No

Description of Urban Land

Setting

Landform: Hillslopes

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Side slope

Across-slope shape: Concave, convex

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

10128—Sharpsburg-Urban land complex, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2ql09

Elevation: 1,000 to 1,320 feet

Mean annual precipitation: 33 to 41 inches

Mean annual air temperature: 50 to 55 degrees F

Frost-free period: 155 to 220 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Sharpsburg and similar soils: 60 percent

Urban land: 35 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sharpsburg

Setting

Landform: Interfluves

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loess

Typical profile

A - 0 to 17 inches: silt loam

Bt - 17 to 55 inches: silty clay loam

C - 55 to 60 inches: silty clay loam

Properties and qualities

Slope: 2 to 5 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained

Runoff class: High

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Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 24 to 35 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Very high (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: D

Ecological site: R109XY002MO - Loess Upland Prairie

Hydric soil rating: No

Description of Urban Land

Setting

Landform: Interfluves

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

Minor Components

Macksburg

Percent of map unit: 5 percent

Landform: Ridges

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: R108XD860IA - Loess Upland Prairie

Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

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Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report Map—Hydrologic Soil Group



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Jackson County, Missouri
Survey Area Data: Version 27, Aug 27, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 30, 2022—Sep 16, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
10032	Higginsville-Urban land complex, 5 to 9 percent slopes	C	0.7	48.2%
10128	Sharpsburg-Urban land complex, 2 to 5 percent slopes	D	0.7	51.8%
Totals for Area of Interest			1.4	100.0%

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

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United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

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United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

EXHIBIT F

NATIONAL WETLANDS INVENTORY



U.S. Fish and Wildlife Service

National Wetlands Inventory

Grain Valley Dispensary



U.S. Fish and Wildlife Service, National Standards and Support Team,
wetlands_team@fws.gov

February 3, 2025

Wetlands

	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

EXHIBIT G

BMP CALCULATIONS

WORKSHEET 1: REQUIRED LEVEL OF SERVICE - UNDEVELOPED SITE

Project: B24D5016
Location: NW JEFFERSON ST & STATE ROUTE BB

By: RPS
Checked: JED

Date: 2/4/2025
Date: 2/12/2025

1. Runoff Curve Number**A. Predevelopment CN**

Cover Description	Soil HSG ¹	CN from Table 1	Area (ac.)	Product of CN x Area
Brush-weeds-grass (Poor)	D	83	0.481221	39.94136823
Woods-grass (Good)	D	77	0.188315	14.50025253
Woods-grass (Good)	C	70	0.626309	43.8415978
Totals:			1.295845	98.28321855

Area-Weighted CN = total product/total area = 75.84 76 (Round to integer)

B. Postdevelopment CN

Cover Description	Soil HSG ¹	CN from Table 1	Area (ac.)	Product of CN x Area
Woods-grass (Good)	C	70	0.393962	27.57736455
Commercial Business	C	95	0.229637	21.81554178
Commercial Business	D	95	0.510032	48.45305326
Open Space Turf (Good)	D	80	0.158907	12.71258035
Totals:			1.292539	110.5585399

¹ Postdevelopment CN is one HSG higher for all cover types except preserved vegetation, absent documentation showing how postdevelopment soil structure will be preserved.

Area-Weighted CN = total product/total area = 85.54 86 (Round to integer)

C. Level of Service (LS) Calculation

Predevelopment CN: 76

Postdevelopment CN: 86

Difference: 10

LS Required (see scale at right): 7

* All CN Values determined from Table 4.1 of the BMP Manual

WORKSHEET 2: DEVELOP MITIGATION PACKAGE(S) THAT MEET THE REQUIRED LS

Project: B24D5016

By: RPS

Date: 2/4/2025

Location: NW JEFFERSON ST & STATE ROUTE BB

Checked: JED

Date: 2/12/2025

Sheet 1 of 1**1. Required LS (New Development, Wksht 1) or Total VR (Redevelopment, Wksht 1A):****7**

Note: Various BMPs may alter CN of proposed development, and LS; recalculate both if applicable.

2. Proposed BMP Option Package No. 1

Cover/BMP Description	Treatment Area	VR from Table 4.4 or 4.61	Product of VR x Area
Native Vegetation to dry detention basin	1.29318182	9.25	11.961932
Total²	1.29	Totals:	11.961932
		Weighted VR:	9.25

¹ VR calculated for final BMP only in Treatment Train² Total treatment area cannot exceed 100 percent of the actual site area.

* Blank in Redevelopment

Meets required LS (Yes/No)?

YES

(If No, or if additional options are being tested, proceed below)

2. Proposed BMP Option Package No. 2

Cover/BMP Description	Treatment Area	VR from Table 4.4 or 4.6 ¹	Product of VR x Area
			0
			0
			0
			0
			0
Total²	0	Totals:	0
		Weighted VR:	N/A

= total product/total A

¹ VR calculated for final BMP only in Treatment Train² Total treatment area cannot exceed 100 percent of the actual site area.

* Blank in Redevelopment

Meets required LS (Yes/No)?

N/A

(If No, or if additional options are being tested, proceed below)

EXHIBIT H

RIP RAP CALCULATIONS

EXHIBIT H: RIP RAP CALCULATIONS

*From FHWA HEC 14 Manual

$$D_{50} = 0.2 D \left(\frac{Q}{\sqrt{gD^{2.5}}} \right)^{\frac{2}{3}} \left(\frac{D}{TW} \right) \quad (10.4)$$

where,

- D_{50} = riprap size, m (ft)
- Q = design discharge, m³/s (ft³/s)
- D = culvert diameter (circular), m (ft)
- TW = tailwater depth, m (ft)
- g = acceleration due to gravity, 9.81 m/s² (32.2 ft/s²)

D50 Calculations									
Outlet Structure	Q100 (exit from pipe)	TW (flow depth of pipe)		D (pipe dia.)		D50 (median rock size)		D50 ACTUAL	CLASS
	cfs	in	ft	in	ft	in	ft	in	
A1	3.92	9.82	0.82	12.00	1.00	1.79	0.15	5.00	1
B1	0.62	3.74	0.31	6.00	0.50	1.01	0.08	5.00	1
C1	13.61	18.54	1.54	24.00	2.00	1.99	0.17	5.00	1

Apron Length Calculations								
Outlet Structure	Q100 (exit from pipe) cfs	D (pipe dia.)		D50 ft	L (apron length) ft	L actual ft	Apron Depth	
		in	ft				ft	in
A1	3.92	12.00	1.00	0.15	4.00	8	0.52	7
B1	0.62	6.00	0.50	0.08	2.00	5	0.30	4
C1	13.61	24.00	2.00	0.17	8.00	10	0.58	7

FHWA Hec 14 Table 10.1. Rip Rap Classes and Apron Dimensions				
Class	D50 (in)	D50 (mm)	Apron Length	Apron Depth
1	5	125	4D	3.5D ₅₀
2	6	150	4D	3.3D ₅₀
3	10	250	5D	2.4D ₅₀
4	14	350	6D	2.2D ₅₀
5	20	500	7D	2.0D ₅₀
6	22	550	8D	2.0D ₅₀

EXHIBIT I

NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY
TABLE



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffrey Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerals](#)

PF tabular

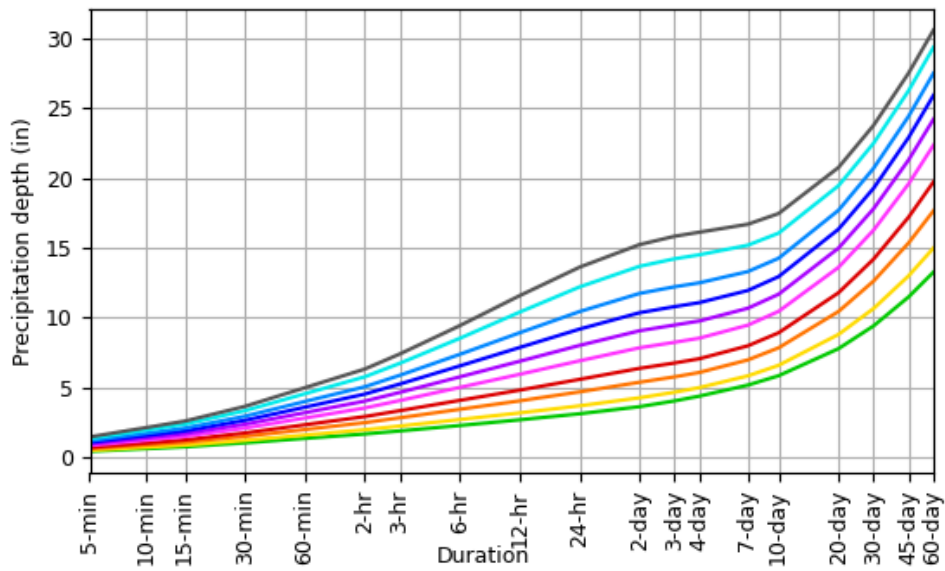
PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.410 (0.325-0.519)	0.478 (0.378-0.605)	0.591 (0.467-0.751)	0.689 (0.540-0.878)	0.826 (0.630-1.09)	0.935 (0.697-1.25)	1.05 (0.756-1.43)	1.16 (0.808-1.62)	1.32 (0.885-1.89)	1.44 (0.944-2.10)
10-min	0.600 (0.475-0.759)	0.699 (0.553-0.886)	0.866 (0.683-1.10)	1.01 (0.791-1.29)	1.21 (0.922-1.59)	1.37 (1.02-1.82)	1.53 (1.11-2.09)	1.70 (1.18-2.38)	1.94 (1.30-2.77)	2.12 (1.38-3.07)
15-min	0.731 (0.579-0.926)	0.853 (0.675-1.08)	1.06 (0.833-1.34)	1.23 (0.965-1.57)	1.48 (1.12-1.94)	1.67 (1.24-2.23)	1.87 (1.35-2.55)	2.08 (1.44-2.90)	2.36 (1.58-3.38)	2.58 (1.68-3.74)
30-min	1.02 (0.808-1.29)	1.19 (0.944-1.51)	1.48 (1.17-1.88)	1.73 (1.36-2.20)	2.08 (1.58-2.73)	2.35 (1.75-3.13)	2.63 (1.90-3.59)	2.93 (2.03-4.09)	3.32 (2.23-4.76)	3.63 (2.37-5.27)
60-min	1.34 (1.06-1.69)	1.58 (1.25-2.00)	1.97 (1.56-2.51)	2.32 (1.82-2.95)	2.80 (2.13-3.68)	3.18 (2.37-4.24)	3.57 (2.58-4.87)	3.98 (2.77-5.56)	4.54 (3.04-6.50)	4.97 (3.25-7.21)
2-hr	1.66 (1.32-2.08)	1.96 (1.56-2.46)	2.47 (1.96-3.11)	2.90 (2.29-3.67)	3.52 (2.70-4.60)	4.01 (3.01-5.31)	4.51 (3.28-6.11)	5.04 (3.52-6.99)	5.75 (3.88-8.18)	6.31 (4.15-9.09)
3-hr	1.87 (1.50-2.34)	2.22 (1.78-2.78)	2.82 (2.24-3.54)	3.32 (2.64-4.19)	4.05 (3.12-5.29)	4.63 (3.49-6.12)	5.23 (3.82-7.06)	5.86 (4.12-8.11)	6.72 (4.56-9.53)	7.39 (4.88-10.6)
6-hr	2.26 (1.82-2.81)	2.69 (2.16-3.35)	3.42 (2.75-4.27)	4.06 (3.24-5.09)	4.99 (3.88-6.49)	5.74 (4.37-7.55)	6.53 (4.81-8.77)	7.36 (5.22-10.1)	8.51 (5.82-12.0)	9.41 (6.27-13.4)
12-hr	2.67 (2.17-3.30)	3.16 (2.57-3.91)	4.03 (3.26-4.99)	4.80 (3.86-5.96)	5.93 (4.66-7.68)	6.86 (5.26-8.98)	7.85 (5.83-10.5)	8.91 (6.37-12.2)	10.4 (7.16-14.6)	11.6 (7.76-16.4)
24-hr	3.10 (2.53-3.80)	3.67 (3.00-4.50)	4.67 (3.80-5.74)	5.57 (4.51-6.87)	6.90 (5.46-8.88)	8.00 (6.18-10.4)	9.17 (6.87-12.2)	10.4 (7.52-14.2)	12.2 (8.48-17.0)	13.6 (9.20-19.1)
2-day	3.61 (2.97-4.39)	4.25 (3.49-5.17)	5.36 (4.39-6.54)	6.36 (5.18-7.79)	7.83 (6.24-10.0)	9.05 (7.04-11.7)	10.3 (7.80-13.6)	11.7 (8.51-15.8)	13.7 (9.57-18.9)	15.2 (10.4-21.3)
3-day	4.02 (3.32-4.88)	4.65 (3.83-5.63)	5.75 (4.73-6.98)	6.74 (5.52-8.22)	8.22 (6.59-10.5)	9.46 (7.40-12.2)	10.8 (8.17-14.2)	12.2 (8.90-16.4)	14.2 (10.0-19.6)	15.8 (10.8-22.0)
4-day	4.37 (3.62-5.28)	4.98 (4.12-6.02)	6.06 (5.00-7.35)	7.05 (5.78-8.57)	8.52 (6.85-10.8)	9.75 (7.65-12.5)	11.1 (8.42-14.5)	12.5 (9.14-16.8)	14.5 (10.2-19.9)	16.1 (11.1-22.4)
7-day	5.16 (4.30-6.19)	5.82 (4.84-6.99)	6.96 (5.78-8.38)	7.97 (6.58-9.64)	9.45 (7.62-11.9)	10.7 (8.40-13.5)	11.9 (9.12-15.5)	13.3 (9.78-17.7)	15.2 (10.8-20.7)	16.7 (11.5-23.0)
10-day	5.83 (4.87-6.97)	6.57 (5.49-7.87)	7.83 (6.52-9.39)	8.90 (7.38-10.7)	10.4 (8.42-13.0)	11.7 (9.21-14.7)	12.9 (9.89-16.7)	14.2 (10.5-18.8)	16.0 (11.4-21.8)	17.4 (12.1-24.0)
20-day	7.77 (6.54-9.22)	8.79 (7.39-10.4)	10.4 (8.75-12.4)	11.8 (9.82-14.1)	13.6 (11.0-16.7)	15.0 (11.9-18.6)	16.3 (12.6-20.8)	17.7 (13.1-23.1)	19.4 (13.9-26.1)	20.8 (14.5-28.3)
30-day	9.40 (7.95-11.1)	10.6 (8.99-12.6)	12.6 (10.6-15.0)	14.2 (11.9-16.9)	16.3 (13.2-19.8)	17.8 (14.1-22.0)	19.3 (14.8-24.3)	20.7 (15.4-26.8)	22.5 (16.1-29.9)	23.8 (16.7-32.3)
45-day	11.5 (9.74-13.5)	13.0 (11.0-15.3)	15.3 (13.0-18.1)	17.2 (14.5-20.4)	19.6 (15.9-23.6)	21.3 (17.0-26.1)	22.9 (17.7-28.7)	24.4 (18.2-31.5)	26.3 (18.9-34.8)	27.5 (19.4-37.2)
60-day	13.3 (11.3-15.5)	15.0 (12.7-17.6)	17.6 (15.0-20.8)	19.7 (16.6-23.3)	22.3 (18.2-26.9)	24.2 (19.3-29.6)	25.9 (20.1-32.4)	27.5 (20.5-35.3)	29.4 (21.2-38.7)	30.6 (21.7-41.3)
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.										

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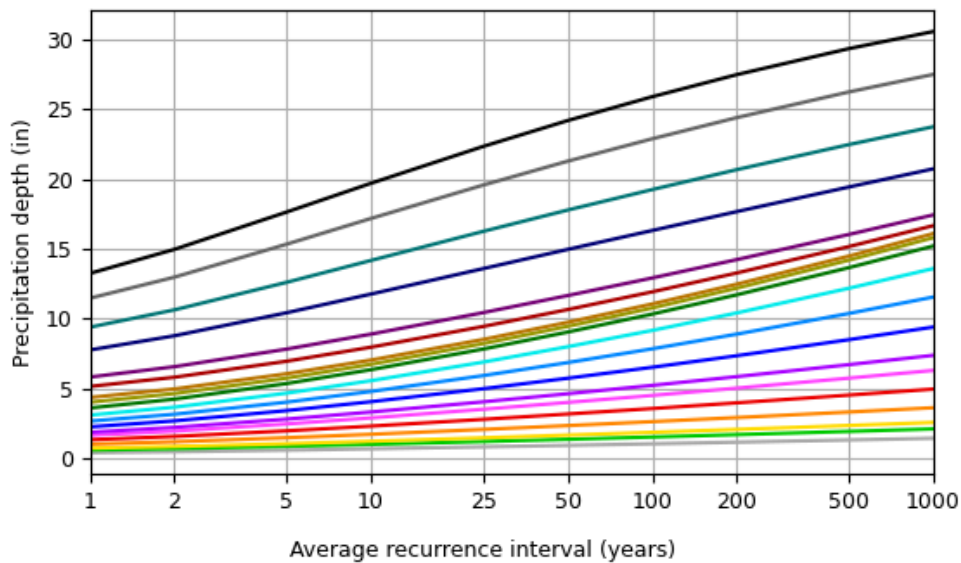
PF graphical

PDS-based depth-duration-frequency (DDF) curves

Latitude: 39.0234°, Longitude: -94.1994°



Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000

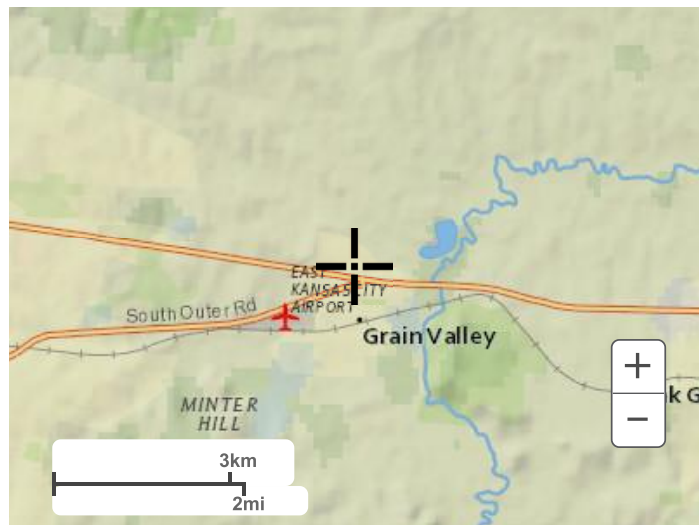


Duration	
5-min	2-day
10-min	3-day
15-min	4-day
30-min	7-day
60-min	10-day
2-hr	20-day
3-hr	30-day
6-hr	45-day
12-hr	60-day
24-hr	

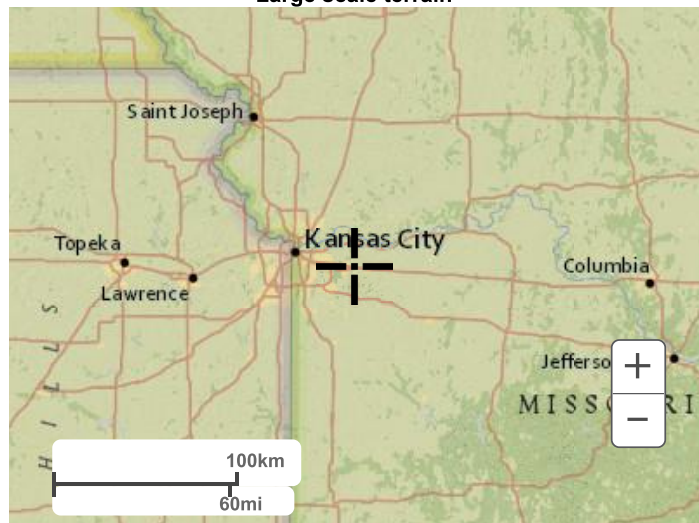
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Maps & aerials

Small scale terrain



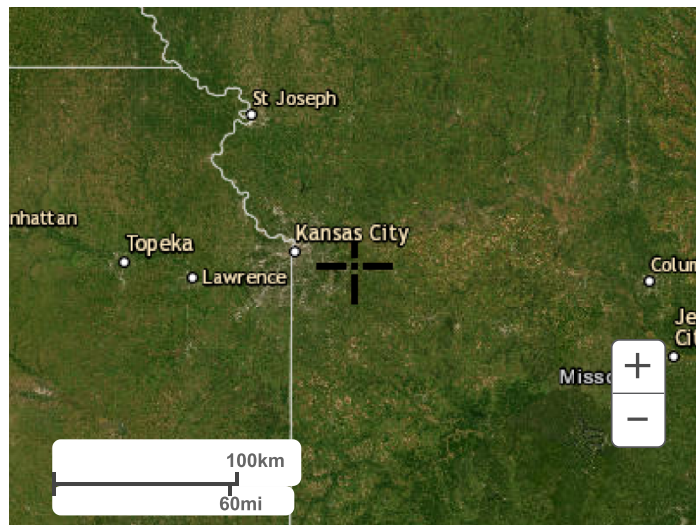
Large scale terrain



Large scale map



Large scale aerial



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1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

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Grain Valley Dispensary - Detention

Project Summary

Title	Grain Valley Dispensary
Engineer	mcross
Company	kve
Date	5/21/2025

Notes

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Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	7
Scenario	Pre-Development 100
Element Type	Catchment
Element Id	34
Label	EDA-1
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 1.7 % is greater than 1.5 %. Computed peak flow= 10.64 ft ³ /s Interp. peak flow= 10.46 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 2
Element Type	Catchment
Element Id	83
Label	PDA-B1
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 3.2 % is greater than 1.5 %. Computed peak flow= 1.03 ft ³ /s Interp. peak flow= 1.00 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 2
Element Type	Catchment
Element Id	80
Label	PDA-C2
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.5 % is greater than 1.5 %. Computed peak flow= 0.28 ft ³ /s Interp. peak flow= 0.27 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 2
Element Type	Catchment
Element Id	104
Label	PDA-C3
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.8 % is greater than 1.5 %. Computed peak flow= 0.86 ft ³ /s Interp. peak flow= 0.84 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	7
Scenario	Post-Development 2
Element Type	Catchment
Element Id	107
Label	PDA-C4
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 1.6 % is greater than 1.5 %. Computed peak flow= 0.73 ft ³ /s Interp. peak flow= 0.71 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 2
Element Type	Catchment
Element Id	108
Label	PDA-C5
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.1 % is greater than 1.5 %. Computed peak flow= 0.22 ft ³ /s Interp. peak flow= 0.21 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 2
Element Type	Catchment
Element Id	109
Label	PDA-C6
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 1.6 % is greater than 1.5 %. Computed peak flow= 0.25 ft ³ /s Interp. peak flow= 0.24 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	15
Scenario	Post-Development 2
Element Type	Composite Outlet Structure
Element Id	138
Label	Composite Outlet Structure - Opt 2
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.200 .
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	19
Scenario	Post-Development 2
Element Type	Composite Outlet Structure
Element Id	138
Label	Composite Outlet Structure - Opt 2
Time	(N/A)
Message	Charged riser flow adjusted to weir flow rate to maintain convergence. If adjustments are desired, substitute a user defined outlet rating table for level pool routing. Or, store rating curve(s) in E-Q-TW table, edit, then route with ICPM option.
Source	Warning
Message Id	41
Scenario	Post-Development 2
Element Type	Conduit
Element Id	130
Label	A5-A4
Time	(N/A)
Message	For weighted average inflow = 0.21 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.242 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 2
Element Type	Conduit
Element Id	117
Label	A4-A3
Time	(N/A)
Message	For weighted average inflow = 0.27 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.307 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 2
Element Type	Conduit
Element Id	133
Label	SWALE
Time	(N/A)
Message	For weighted average inflow = 2.22 ft ³ /s, travel time is shorter than the output increment in calculation options = 2.435 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 2
Element Type	Conduit
Element Id	119
Label	A3-A2
Time	(N/A)
Message	For weighted average inflow = 0.35 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.321 min. Consider reducing output increment.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	41
Scenario	Post-Development 2
Element Type	Conduit
Element Id	123
Label	A2-A1
Time	(N/A)
Message	For weighted average inflow = 0.59 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.076 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 2
Element Type	Conduit
Element Id	129
Label	B2-B1
Time	(N/A)
Message	For weighted average inflow = 0.07 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.155 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 2
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	For weighted average inflow = 2.19 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.357 min. Consider reducing output increment.
Source	Warning
Message Id	7
Scenario	Post-Development 10
Element Type	Catchment
Element Id	83
Label	PDA-B1
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 4.6 % is greater than 1.5 %. Computed peak flow= 2.15 ft ³ /s Interp. peak flow= 2.05 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 10
Element Type	Catchment
Element Id	80
Label	PDA-C2
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.4 % is greater than 1.5 %. Computed peak flow= 0.43 ft ³ /s Interp. peak flow= 0.42 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	7
Scenario	Post-Development 10
Element Type	Catchment
Element Id	104
Label	PDA-C3
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.8 % is greater than 1.5 %. Computed peak flow= 1.32 ft ³ /s Interp. peak flow= 1.28 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 10
Element Type	Catchment
Element Id	107
Label	PDA-C4
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 1.6 % is greater than 1.5 %. Computed peak flow= 1.11 ft ³ /s Interp. peak flow= 1.09 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 10
Element Type	Catchment
Element Id	108
Label	PDA-C5
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.1 % is greater than 1.5 %. Computed peak flow= 0.33 ft ³ /s Interp. peak flow= 0.32 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 10
Element Type	Catchment
Element Id	109
Label	PDA-C6
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 1.6 % is greater than 1.5 %. Computed peak flow= 0.38 ft ³ /s Interp. peak flow= 0.37 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	15
Scenario	Post-Development 10
Element Type	Composite Outlet Structure
Element Id	138
Label	Composite Outlet Structure - Opt 2
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.200 .
Source	Warning
Message Id	19
Scenario	Post-Development 10
Element Type	Composite Outlet Structure
Element Id	138
Label	Composite Outlet Structure - Opt 2
Time	(N/A)
Message	Charged riser flow adjusted to weir flow rate to maintain convergence. If adjustments are desired, substitute a user defined outlet rating table for level pool routing. Or, store rating curve(s) in E-Q-TW table, edit, then route with ICPM option.
Source	Warning
Message Id	41
Scenario	Post-Development 10
Element Type	Conduit
Element Id	130
Label	A5-A4
Time	(N/A)
Message	For weighted average inflow = 0.32 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.214 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 10
Element Type	Conduit
Element Id	117
Label	A4-A3
Time	(N/A)
Message	For weighted average inflow = 0.41 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.272 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 10
Element Type	Conduit
Element Id	133
Label	SWALE
Time	(N/A)
Message	For weighted average inflow = 4.19 ft ³ /s, travel time is shorter than the output increment in calculation options = 2.008 min. Consider reducing output increment.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	41
Scenario	Post-Development 10
Element Type	Conduit
Element Id	119
Label	A3-A2
Time	(N/A)
Message	For weighted average inflow = 0.53 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.285 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 10
Element Type	Conduit
Element Id	123
Label	A2-A1
Time	(N/A)
Message	For weighted average inflow = 0.89 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.068 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 10
Element Type	Conduit
Element Id	129
Label	B2-B1
Time	(N/A)
Message	For weighted average inflow = 0.11 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.137 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 10
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	For weighted average inflow = 4.14 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.297 min. Consider reducing output increment.
Source	Warning
Message Id	56
Scenario	Post-Development 10
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	Volume/Outflow data exceeded. Inflow= 11.43 ft ³ /s, Outflow > 18.38 ft ³ /s.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	59
Scenario	Post-Development 10
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	Volume/Outflow data exceeded during routing.
Source	Warning
Message Id	44
Scenario	Post-Development 10
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	Elevation-flow-volume table data overtopped...routing results invalid.
Source	Warning
Message Id	7
Scenario	Post-Development 100
Element Type	Catchment
Element Id	83
Label	PDA-B1
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 3.2 % is greater than 1.5 %. Computed peak flow= 4.43 ft ³ /s Interp. peak flow= 4.29 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 100
Element Type	Catchment
Element Id	80
Label	PDA-C2
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.4 % is greater than 1.5 %. Computed peak flow= 0.70 ft ³ /s Interp. peak flow= 0.69 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 100
Element Type	Catchment
Element Id	104
Label	PDA-C3
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.8 % is greater than 1.5 %. Computed peak flow= 2.18 ft ³ /s Interp. peak flow= 2.12 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	7
Scenario	Post-Development 100
Element Type	Catchment
Element Id	107
Label	PDA-C4
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 1.5 % is greater than 1.5 %. Computed peak flow= 1.83 ft ³ /s Interp. peak flow= 1.80 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 100
Element Type	Catchment
Element Id	108
Label	PDA-C5
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.0 % is greater than 1.5 %. Computed peak flow= 0.54 ft ³ /s Interp. peak flow= 0.53 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 100
Element Type	Catchment
Element Id	109
Label	PDA-C6
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 1.5 % is greater than 1.5 %. Computed peak flow= 0.62 ft ³ /s Interp. peak flow= 0.61 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	130
Label	A5-A4
Time	(N/A)
Message	For weighted average inflow = 0.52 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.186 min. Consider reducing output increment.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	117
Label	A4-A3
Time	(N/A)
Message	For weighted average inflow = 0.67 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.236 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	133
Label	SWALE
Time	(N/A)
Message	For weighted average inflow = 7.90 ft ³ /s, travel time is shorter than the output increment in calculation options = 1.654 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	119
Label	A3-A2
Time	(N/A)
Message	For weighted average inflow = 0.86 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.247 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	123
Label	A2-A1
Time	(N/A)
Message	For weighted average inflow = 1.45 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.059 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	129
Label	B2-B1
Time	(N/A)
Message	For weighted average inflow = 0.18 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.118 min. Consider reducing output increment.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	For weighted average inflow = 7.80 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.251 min. Consider reducing output increment.
Source	Warning
Message Id	56
Scenario	Post-Development 100
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	Volume/Outflow data exceeded. Inflow= 17.21 ft ³ /s, Outflow > 18.38 ft ³ /s.
Source	Warning
Message Id	59
Scenario	Post-Development 100
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	Volume/Outflow data exceeded during routing.
Source	Warning
Message Id	44
Scenario	Post-Development 100
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	Elevation-flow-volume table data overtopped...routing results invalid.
Source	Warning
Message Id	7
Scenario	Post-WQv
Element Type	Catchment
Element Id	83
Label	PDA-B1
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 7.9 % is greater than 1.5 %. Computed peak flow= 0.06 ft ³ /s Interp. peak flow= 0.05 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	7
Scenario	Post-WQv
Element Type	Catchment
Element Id	81
Label	PDA-C1
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.9 % is greater than 1.5 %. Computed peak flow= 0.78 ft ³ /s Interp. peak flow= 0.76 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-WQv
Element Type	Catchment
Element Id	80
Label	PDA-C2
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.8 % is greater than 1.5 %. Computed peak flow= 0.10 ft ³ /s Interp. peak flow= 0.10 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-WQv
Element Type	Catchment
Element Id	104
Label	PDA-C3
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 3.1 % is greater than 1.5 %. Computed peak flow= 0.31 ft ³ /s Interp. peak flow= 0.30 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-WQv
Element Type	Catchment
Element Id	107
Label	PDA-C4
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.0 % is greater than 1.5 %. Computed peak flow= 0.26 ft ³ /s Interp. peak flow= 0.25 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	7
Scenario	Post-WQv
Element Type	Catchment
Element Id	108
Label	PDA-C5
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.4 % is greater than 1.5 %. Computed peak flow= 0.08 ft ³ /s Interp. peak flow= 0.07 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-WQv
Element Type	Catchment
Element Id	109
Label	PDA-C6
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.0 % is greater than 1.5 %. Computed peak flow= 0.09 ft ³ /s Interp. peak flow= 0.09 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	15
Scenario	Post-WQv
Element Type	Composite Outlet Structure
Element Id	138
Label	Composite Outlet Structure - Opt 2
Time	(N/A)
Message	Kr (reverse flow entrance loss coefficient) was not specified. Kr was set to same value as Ke= 0.200 .
Source	Warning
Message Id	19
Scenario	Post-WQv
Element Type	Composite Outlet Structure
Element Id	138
Label	Composite Outlet Structure - Opt 2
Time	(N/A)
Message	Charged riser flow adjusted to weir flow rate to maintain convergence. If adjustments are desired, substitute a user defined outlet rating table for level pool routing. Or, store rating curve(s) in E-Q-TW table, edit, then route with ICPM option.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	41
Scenario	Post-WQv
Element Type	Conduit
Element Id	130
Label	A5-A4
Time	(N/A)
Message	For weighted average inflow = 0.08 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.326 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-WQv
Element Type	Conduit
Element Id	117
Label	A4-A3
Time	(N/A)
Message	For weighted average inflow = 0.10 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.412 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-WQv
Element Type	Conduit
Element Id	119
Label	A3-A2
Time	(N/A)
Message	For weighted average inflow = 0.13 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.432 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-WQv
Element Type	Conduit
Element Id	123
Label	A2-A1
Time	(N/A)
Message	For weighted average inflow = 0.22 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.103 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-WQv
Element Type	Conduit
Element Id	129
Label	B2-B1
Time	(N/A)
Message	For weighted average inflow = 0.03 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.207 min. Consider reducing output increment.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: User Notifications

User Notifications

Message Id	41
Scenario	Post-WQv
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	For weighted average inflow = 0.19 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.729 min. Consider reducing output increment.
Source	Warning

Grain Valley Dispensary - Detention

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (min)	Peak Flow (ft ³ /s)
EDA-1	Pre-Development 2	2	6,394.000	720.000	2.41
EDA-1	Pre-Development 10	10	13,303.000	720.000	5.05
EDA-1	Pre-Development 100	100	28,162.000	720.000	10.46
EDA-2	Pre-Development 2	2	18,895.000	717.000	7.58
EDA-2	Pre-Development 10	10	33,222.000	717.000	13.03
EDA-2	Pre-Development 100	100	61,418.000	717.000	23.25
PDA-C2	Post-WQv	0	248.000	714.000	0.10
PDA-C2	Post-Development 2	2	740.000	714.000	0.27
PDA-C2	Post-Development 10	10	1,149.000	714.000	0.42
PDA-C2	Post-Development 100	100	1,924.000	714.000	0.69
PDA-C1	Post-WQv	0	2,327.000	720.000	0.76
PDA-C1	Post-Development 2	2	17,194.000	720.000	6.58
PDA-C1	Post-Development 10	10	32,523.000	717.000	12.28
PDA-C1	Post-Development 100	100	63,791.000	717.000	23.62
PDA-B1	Post-WQv	0	207.000	720.000	0.05
PDA-B1	Post-Development 2	2	2,408.000	717.000	1.00
PDA-B1	Post-Development 10	10	4,939.000	714.000	2.05
PDA-B1	Post-Development 100	100	10,336.000	714.000	4.29
PDA-C3	Post-WQv	0	773.000	714.000	0.30
PDA-C3	Post-Development 2	2	2,306.000	714.000	0.84
PDA-C3	Post-Development 10	10	3,578.000	714.000	1.28
PDA-C3	Post-Development 100	100	5,992.000	714.000	2.12
PDA-C4	Post-WQv	0	640.000	714.000	0.25
PDA-C4	Post-Development 2	2	1,907.000	714.000	0.71
PDA-C4	Post-Development 10	10	2,960.000	714.000	1.09
PDA-C4	Post-Development 100	100	4,957.000	714.000	1.80
PDA-C5	Post-WQv	0	191.000	714.000	0.07
PDA-C5	Post-Development 2	2	570.000	714.000	0.21
PDA-C5	Post-Development 10	10	884.000	714.000	0.32
PDA-C5	Post-Development 100	100	1,480.000	714.000	0.53
PDA-C6	Post-WQv	0	218.000	714.000	0.09
PDA-C6	Post-Development 2	2	650.000	714.000	0.24
PDA-C6	Post-Development 10	10	1,009.000	714.000	0.37
PDA-C6	Post-Development 100	100	1,689.000	714.000	0.61

Node Summary

Grain Valley Dispensary - Detention

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (min)	Peak Flow (ft ³ /s)
o-1	Post-WQv	0	4,604.000	720.000	0.10
o-1	Pre-Development 2	2	25,289.000	717.000	9.85
o-1	Post-Development 2	2	25,774.000	723.000	8.76
o-1	Pre-Development 10	10	46,526.000	717.000	17.94
o-1	Post-Development 10	10	49,172.000	723.000	14.81
o-1	Pre-Development 100	100	89,580.000	717.000	33.69
o-1	Post-Development 100	100	89,668.000	717.000	27.22
A5	Post-WQv	0	640.000	714.000	0.25
A5	Post-Development 2	2	1,907.000	714.000	0.71
A5	Post-Development 10	10	2,960.000	714.000	1.09
A5	Post-Development 100	100	4,957.000	714.000	1.80
A4	Post-WQv	0	831.000	717.000	0.32
A4	Post-Development 2	2	2,477.000	717.000	0.89
A4	Post-Development 10	10	3,844.000	717.000	1.36
A4	Post-Development 100	100	6,437.000	717.000	2.25
A3	Post-WQv	0	1,079.000	717.000	0.40
A3	Post-Development 2	2	3,217.000	717.000	1.13
A3	Post-Development 10	10	4,992.000	717.000	1.72
A3	Post-Development 100	100	8,360.000	717.000	2.84
A2	Post-WQv	0	1,852.000	717.000	0.67
A2	Post-Development 2	2	5,522.000	717.000	1.89
A2	Post-Development 10	10	8,570.000	717.000	2.88
A2	Post-Development 100	100	14,352.000	717.000	4.76
B2	Post-WQv	0	218.000	714.000	0.09
B2	Post-Development 2	2	650.000	714.000	0.24
B2	Post-Development 10	10	1,009.000	714.000	0.37
B2	Post-Development 100	100	1,689.000	714.000	0.61
SWALE2	Post-WQv	0	2,327.000	720.000	0.76
SWALE2	Post-Development 2	2	17,194.000	720.000	6.58
SWALE2	Post-Development 10	10	32,523.000	717.000	12.28
SWALE2	Post-Development 100	100	63,791.000	717.000	23.62
SWALE1	Post-WQv	0	2,327.000	723.000	0.72
SWALE1	Post-Development 2	2	17,194.000	720.000	6.58
SWALE1	Post-Development 10	10	32,523.000	720.000	12.25
SWALE1	Post-Development 100	100	63,791.000	720.000	23.37

Grain Valley Dispensary - Detention

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (min)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
POND (IN)	Post-WQv	0	4,397.000	723.000	1.30	(N/A)	(N/A)
POND (OUT)	Post-WQv	0	4,397.000	837.000	0.08	805.50	2,254.000
POND (IN)	Post-Development 2	2	23,366.000	720.000	8.31	(N/A)	(N/A)
POND (OUT)	Post-Development 2	2	23,366.000	723.000	8.12	805.91	3,229.000
POND (IN)	Post-Development 10	10	44,234.000	720.000	21.51	(N/A)	(N/A)
POND (OUT)	Post-Development 10	10	44,234.000	726.000	13.96	806.96	6,662.000
POND (IN)	Post-Development 100	100	82,535.000	720.000	23.54	(N/A)	(N/A)
POND (OUT)	Post-Development 100	100	79,332.000	720.000	23.51	809.00	5,515.000

Grain Valley Dispensary - Detention

Subsection: Time-Depth Curve

Label: kcmo scs typeII-24 hr

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-yr storm

Time-Depth Curve: 100-yr storm

Label	100-yr storm
Start Time	0.000 min
Increment	6.000 min
End Time	1,440.000 min
Return Event	100 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 6.000 min

Time on left represents time for first value in each row.

Time (min)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
30.000	0.0	0.1	0.1	0.1	0.1
60.000	0.1	0.1	0.1	0.1	0.1
90.000	0.1	0.2	0.2	0.2	0.2
120.000	0.2	0.2	0.2	0.2	0.2
150.000	0.3	0.3	0.3	0.3	0.3
180.000	0.3	0.3	0.3	0.4	0.4
210.000	0.4	0.4	0.4	0.4	0.4
240.000	0.4	0.5	0.5	0.5	0.5
270.000	0.5	0.5	0.5	0.5	0.6
300.000	0.6	0.6	0.6	0.6	0.6
330.000	0.7	0.7	0.7	0.7	0.7
360.000	0.7	0.8	0.8	0.8	0.8
390.000	0.8	0.8	0.9	0.9	0.9
420.000	0.9	0.9	0.9	1.0	1.0
450.000	1.0	1.0	1.0	1.1	1.1
480.000	1.1	1.1	1.1	1.2	1.2
510.000	1.2	1.2	1.3	1.3	1.3
540.000	1.3	1.4	1.4	1.4	1.5
570.000	1.5	1.5	1.6	1.6	1.6
600.000	1.7	1.7	1.7	1.8	1.8
630.000	1.9	1.9	2.0	2.0	2.1
660.000	2.2	2.2	2.3	2.4	2.5
690.000	2.6	2.8	3.2	4.0	5.2
720.000	6.1	6.3	6.4	6.5	6.6
750.000	6.7	6.8	6.9	7.0	7.0
780.000	7.1	7.1	7.2	7.2	7.3
810.000	7.3	7.4	7.4	7.4	7.5
840.000	7.5	7.6	7.6	7.6	7.6
870.000	7.7	7.7	7.7	7.8	7.8
900.000	7.8	7.9	7.9	7.9	7.9
930.000	8.0	8.0	8.0	8.0	8.0
960.000	8.1	8.1	8.1	8.1	8.2
990.000	8.2	8.2	8.2	8.2	8.3

Grain Valley Dispensary - Detention

Subsection: Time-Depth Curve

Label: kcmo scs typeII-24 hr

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-yr storm

CUMULATIVE RAINFALL (in)

Output Time Increment = 6.000 min

Time on left represents time for first value in each row.

Time (min)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
1,020.000	8.3	8.3	8.3	8.3	8.3
1,050.000	8.4	8.4	8.4	8.4	8.4
1,080.000	8.4	8.5	8.5	8.5	8.5
1,110.000	8.5	8.5	8.6	8.6	8.6
1,140.000	8.6	8.6	8.6	8.6	8.7
1,170.000	8.7	8.7	8.7	8.7	8.7
1,200.000	8.7	8.7	8.8	8.8	8.8
1,230.000	8.8	8.8	8.8	8.8	8.8
1,260.000	8.8	8.9	8.9	8.9	8.9
1,290.000	8.9	8.9	8.9	8.9	8.9
1,320.000	9.0	9.0	9.0	9.0	9.0
1,350.000	9.0	9.0	9.0	9.0	9.1
1,380.000	9.1	9.1	9.1	9.1	9.1
1,410.000	9.1	9.1	9.1	9.1	9.2
1,440.000	9.2	(N/A)	(N/A)	(N/A)	(N/A)

Grain Valley Dispensary - Detention

Subsection: Time-Depth Curve

Label: kcmo scs typeII-24 hr

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-yr storm

Time-Depth Curve: 10-yr storm

Label	10-yr storm
Start Time	0.000 min
Increment	6.000 min
End Time	1,440.000 min
Return Event	10 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 6.000 min

Time on left represents time for first value in each row.

Time (min)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
30.000	0.0	0.0	0.0	0.0	0.1
60.000	0.1	0.1	0.1	0.1	0.1
90.000	0.1	0.1	0.1	0.1	0.1
120.000	0.1	0.1	0.1	0.1	0.1
150.000	0.2	0.2	0.2	0.2	0.2
180.000	0.2	0.2	0.2	0.2	0.2
210.000	0.2	0.2	0.2	0.3	0.3
240.000	0.3	0.3	0.3	0.3	0.3
270.000	0.3	0.3	0.3	0.3	0.3
300.000	0.4	0.4	0.4	0.4	0.4
330.000	0.4	0.4	0.4	0.4	0.4
360.000	0.4	0.5	0.5	0.5	0.5
390.000	0.5	0.5	0.5	0.5	0.5
420.000	0.6	0.6	0.6	0.6	0.6
450.000	0.6	0.6	0.6	0.6	0.7
480.000	0.7	0.7	0.7	0.7	0.7
510.000	0.7	0.8	0.8	0.8	0.8
540.000	0.8	0.8	0.9	0.9	0.9
570.000	0.9	0.9	0.9	1.0	1.0
600.000	1.0	1.0	1.1	1.1	1.1
630.000	1.1	1.2	1.2	1.2	1.3
660.000	1.3	1.4	1.4	1.5	1.5
690.000	1.6	1.7	2.0	2.4	3.2
720.000	3.7	3.8	3.9	4.0	4.0
750.000	4.1	4.1	4.2	4.2	4.3
780.000	4.3	4.3	4.4	4.4	4.4
810.000	4.5	4.5	4.5	4.5	4.5
840.000	4.6	4.6	4.6	4.6	4.6
870.000	4.7	4.7	4.7	4.7	4.7
900.000	4.8	4.8	4.8	4.8	4.8
930.000	4.8	4.8	4.9	4.9	4.9
960.000	4.9	4.9	4.9	4.9	5.0
990.000	5.0	5.0	5.0	5.0	5.0

Grain Valley Dispensary - Detention

Subsection: Time-Depth Curve

Label: kcmo scs typeII-24 hr

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-yr storm

CUMULATIVE RAINFALL (in)

Output Time Increment = 6.000 min

Time on left represents time for first value in each row.

Time (min)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
1,020.000	5.0	5.0	5.0	5.1	5.1
1,050.000	5.1	5.1	5.1	5.1	5.1
1,080.000	5.1	5.1	5.1	5.2	5.2
1,110.000	5.2	5.2	5.2	5.2	5.2
1,140.000	5.2	5.2	5.2	5.2	5.3
1,170.000	5.3	5.3	5.3	5.3	5.3
1,200.000	5.3	5.3	5.3	5.3	5.3
1,230.000	5.3	5.3	5.4	5.4	5.4
1,260.000	5.4	5.4	5.4	5.4	5.4
1,290.000	5.4	5.4	5.4	5.4	5.4
1,320.000	5.4	5.4	5.5	5.5	5.5
1,350.000	5.5	5.5	5.5	5.5	5.5
1,380.000	5.5	5.5	5.5	5.5	5.5
1,410.000	5.5	5.5	5.6	5.6	5.6
1,440.000	5.6	(N/A)	(N/A)	(N/A)	(N/A)

Grain Valley Dispensary - Detention

Subsection: Time-Depth Curve

Label: kcmo scs typeII-24 hr

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-yr storm

Time-Depth Curve: 2-yr storm

Label	2-yr storm
Start Time	0.000 min
Increment	6.000 min
End Time	1,440.000 min
Return Event	2 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 6.000 min

Time on left represents time for first value in each row.

Time (min)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
30.000	0.0	0.0	0.0	0.0	0.0
60.000	0.0	0.0	0.0	0.1	0.1
90.000	0.1	0.1	0.1	0.1	0.1
120.000	0.1	0.1	0.1	0.1	0.1
150.000	0.1	0.1	0.1	0.1	0.1
180.000	0.1	0.1	0.1	0.1	0.1
210.000	0.2	0.2	0.2	0.2	0.2
240.000	0.2	0.2	0.2	0.2	0.2
270.000	0.2	0.2	0.2	0.2	0.2
300.000	0.2	0.2	0.2	0.2	0.3
330.000	0.3	0.3	0.3	0.3	0.3
360.000	0.3	0.3	0.3	0.3	0.3
390.000	0.3	0.3	0.3	0.3	0.4
420.000	0.4	0.4	0.4	0.4	0.4
450.000	0.4	0.4	0.4	0.4	0.4
480.000	0.4	0.4	0.5	0.5	0.5
510.000	0.5	0.5	0.5	0.5	0.5
540.000	0.5	0.6	0.6	0.6	0.6
570.000	0.6	0.6	0.6	0.6	0.6
600.000	0.7	0.7	0.7	0.7	0.7
630.000	0.7	0.8	0.8	0.8	0.8
660.000	0.9	0.9	0.9	1.0	1.0
690.000	1.0	1.1	1.3	1.6	2.1
720.000	2.4	2.5	2.6	2.6	2.7
750.000	2.7	2.7	2.8	2.8	2.8
780.000	2.8	2.9	2.9	2.9	2.9
810.000	2.9	2.9	3.0	3.0	3.0
840.000	3.0	3.0	3.0	3.0	3.1
870.000	3.1	3.1	3.1	3.1	3.1
900.000	3.1	3.1	3.2	3.2	3.2
930.000	3.2	3.2	3.2	3.2	3.2
960.000	3.2	3.2	3.2	3.3	3.3
990.000	3.3	3.3	3.3	3.3	3.3

Grain Valley Dispensary - Detention

Subsection: Time-Depth Curve

Label: kcmo scs typeII-24 hr

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-yr storm

CUMULATIVE RAINFALL (in)

Output Time Increment = 6.000 min

Time on left represents time for first value in each row.

Time (min)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
1,020.000	3.3	3.3	3.3	3.3	3.3
1,050.000	3.3	3.4	3.4	3.4	3.4
1,080.000	3.4	3.4	3.4	3.4	3.4
1,110.000	3.4	3.4	3.4	3.4	3.4
1,140.000	3.4	3.4	3.5	3.5	3.5
1,170.000	3.5	3.5	3.5	3.5	3.5
1,200.000	3.5	3.5	3.5	3.5	3.5
1,230.000	3.5	3.5	3.5	3.5	3.5
1,260.000	3.5	3.5	3.5	3.6	3.6
1,290.000	3.6	3.6	3.6	3.6	3.6
1,320.000	3.6	3.6	3.6	3.6	3.6
1,350.000	3.6	3.6	3.6	3.6	3.6
1,380.000	3.6	3.6	3.6	3.6	3.6
1,410.000	3.6	3.7	3.7	3.7	3.7
1,440.000	3.7	(N/A)	(N/A)	(N/A)	(N/A)

Grain Valley Dispensary - Detention

Subsection: Time-Depth Curve

Label: kcmo scs typeII-24 hr

Scenario: Post-WQv

Return Event: 0 years

Storm Event: WQv

Time-Depth Curve: WQv

Label	WQv
Start Time	0.000 min
Increment	6.000 min
End Time	1,440.000 min
Return Event	0 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 6.000 min

Time on left represents time for first value in each row.

Time (min)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
30.000	0.0	0.0	0.0	0.0	0.0
60.000	0.0	0.0	0.0	0.0	0.0
90.000	0.0	0.0	0.0	0.0	0.0
120.000	0.0	0.0	0.0	0.0	0.0
150.000	0.0	0.0	0.0	0.0	0.0
180.000	0.0	0.0	0.1	0.1	0.1
210.000	0.1	0.1	0.1	0.1	0.1
240.000	0.1	0.1	0.1	0.1	0.1
270.000	0.1	0.1	0.1	0.1	0.1
300.000	0.1	0.1	0.1	0.1	0.1
330.000	0.1	0.1	0.1	0.1	0.1
360.000	0.1	0.1	0.1	0.1	0.1
390.000	0.1	0.1	0.1	0.1	0.1
420.000	0.1	0.1	0.1	0.1	0.1
450.000	0.1	0.2	0.2	0.2	0.2
480.000	0.2	0.2	0.2	0.2	0.2
510.000	0.2	0.2	0.2	0.2	0.2
540.000	0.2	0.2	0.2	0.2	0.2
570.000	0.2	0.2	0.2	0.2	0.2
600.000	0.2	0.3	0.3	0.3	0.3
630.000	0.3	0.3	0.3	0.3	0.3
660.000	0.3	0.3	0.3	0.4	0.4
690.000	0.4	0.4	0.5	0.6	0.8
720.000	0.9	0.9	1.0	1.0	1.0
750.000	1.0	1.0	1.0	1.0	1.0
780.000	1.1	1.1	1.1	1.1	1.1
810.000	1.1	1.1	1.1	1.1	1.1
840.000	1.1	1.1	1.1	1.1	1.1
870.000	1.1	1.2	1.2	1.2	1.2
900.000	1.2	1.2	1.2	1.2	1.2
930.000	1.2	1.2	1.2	1.2	1.2
960.000	1.2	1.2	1.2	1.2	1.2
990.000	1.2	1.2	1.2	1.2	1.2

Grain Valley Dispensary - Detention

Subsection: Time-Depth Curve

Label: kcmo scs typeII-24 hr

Scenario: Post-WQv

Return Event: 0 years

Storm Event: WQv

CUMULATIVE RAINFALL (in)

Output Time Increment = 6.000 min

Time on left represents time for first value in each row.

Time (min)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
1,020.000	1.2	1.2	1.2	1.2	1.2
1,050.000	1.2	1.3	1.3	1.3	1.3
1,080.000	1.3	1.3	1.3	1.3	1.3
1,110.000	1.3	1.3	1.3	1.3	1.3
1,140.000	1.3	1.3	1.3	1.3	1.3
1,170.000	1.3	1.3	1.3	1.3	1.3
1,200.000	1.3	1.3	1.3	1.3	1.3
1,230.000	1.3	1.3	1.3	1.3	1.3
1,260.000	1.3	1.3	1.3	1.3	1.3
1,290.000	1.3	1.3	1.3	1.3	1.3
1,320.000	1.3	1.3	1.3	1.3	1.3
1,350.000	1.3	1.3	1.3	1.4	1.4
1,380.000	1.4	1.4	1.4	1.4	1.4
1,410.000	1.4	1.4	1.4	1.4	1.4
1,440.000	1.4	(N/A)	(N/A)	(N/A)	(N/A)

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Return Event: 0 years

Label: POND

Storm Event: WQv

Scenario: Post-WQv

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.000	0.000	0.000	0.000	0.000
30.000	0.000	0.000	0.000	0.000	0.000
45.000	0.000	0.000	0.000	0.000	0.000
60.000	0.000	0.000	0.000	0.000	0.000
75.000	0.000	0.000	0.000	0.000	0.000
90.000	0.000	0.000	0.000	0.000	0.000
105.000	0.000	0.000	0.000	0.000	0.000
120.000	0.000	0.000	0.000	0.000	0.000
135.000	0.000	0.000	0.000	0.000	0.000
150.000	0.000	0.000	0.000	0.000	0.000
165.000	0.000	0.000	0.000	0.000	0.000
180.000	0.000	0.000	0.000	0.000	0.000
195.000	1.000	1.000	1.000	1.000	1.000
210.000	1.000	1.000	1.000	2.000	2.000
225.000	2.000	2.000	2.000	3.000	3.000
240.000	3.000	3.000	4.000	4.000	4.000
255.000	4.000	5.000	5.000	5.000	6.000
270.000	6.000	6.000	6.000	7.000	7.000
285.000	8.000	8.000	8.000	9.000	9.000
300.000	9.000	10.000	10.000	11.000	11.000
315.000	12.000	12.000	12.000	13.000	13.000
330.000	14.000	14.000	15.000	15.000	16.000
345.000	16.000	17.000	17.000	18.000	19.000
360.000	19.000	20.000	20.000	21.000	21.000
375.000	22.000	23.000	23.000	24.000	24.000
390.000	25.000	26.000	26.000	27.000	28.000
405.000	28.000	29.000	30.000	30.000	31.000
420.000	32.000	32.000	33.000	34.000	35.000
435.000	35.000	36.000	37.000	38.000	38.000
450.000	39.000	40.000	41.000	41.000	42.000
465.000	43.000	44.000	45.000	45.000	46.000
480.000	47.000	48.000	49.000	49.000	50.000
495.000	51.000	52.000	53.000	54.000	55.000
510.000	56.000	57.000	58.000	60.000	61.000
525.000	62.000	63.000	64.000	66.000	67.000
540.000	69.000	70.000	71.000	73.000	74.000
555.000	76.000	77.000	79.000	80.000	82.000
570.000	83.000	85.000	86.000	88.000	89.000
585.000	91.000	92.000	94.000	96.000	98.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Return Event: 0 years

Label: POND

Storm Event: WQv

Scenario: Post-WQv

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
600.000	99.000	101.000	103.000	105.000	108.000
615.000	110.000	112.000	114.000	117.000	120.000
630.000	122.000	125.000	128.000	131.000	134.000
645.000	138.000	141.000	145.000	149.000	153.000
660.000	157.000	161.000	166.000	171.000	176.000
675.000	182.000	188.000	194.000	201.000	209.000
690.000	217.000	226.000	238.000	255.000	281.000
705.000	318.000	371.000	448.000	559.000	689.000
720.000	871.000	1,096.000	1,322.000	1,479.000	1,598.000
735.000	1,682.000	1,746.000	1,797.000	1,841.000	1,880.000
750.000	1,914.000	1,943.000	1,970.000	1,993.000	2,014.000
765.000	2,033.000	2,051.000	2,067.000	2,083.000	2,097.000
780.000	2,111.000	2,124.000	2,136.000	2,147.000	2,158.000
795.000	2,168.000	2,177.000	2,186.000	2,194.000	2,202.000
810.000	2,210.000	2,217.000	2,224.000	2,230.000	2,235.000
825.000	2,241.000	2,245.000	2,250.000	2,253.000	2,254.000
840.000	2,254.000	2,253.000	2,253.000	2,253.000	2,253.000
855.000	2,253.000	2,253.000	2,252.000	2,252.000	2,252.000
870.000	2,252.000	2,252.000	2,252.000	2,252.000	2,252.000
885.000	2,252.000	2,252.000	2,252.000	2,251.000	2,251.000
900.000	2,251.000	2,250.000	2,249.000	2,249.000	2,248.000
915.000	2,247.000	2,245.000	2,244.000	2,243.000	2,241.000
930.000	2,239.000	2,237.000	2,235.000	2,233.000	2,231.000
945.000	2,229.000	2,226.000	2,224.000	2,221.000	2,218.000
960.000	2,215.000	2,212.000	2,208.000	2,205.000	2,202.000
975.000	2,198.000	2,194.000	2,191.000	2,187.000	2,183.000
990.000	2,179.000	2,175.000	2,172.000	2,168.000	2,164.000
1,005.000	2,160.000	2,156.000	2,152.000	2,147.000	2,143.000
1,020.000	2,139.000	2,135.000	2,131.000	2,126.000	2,122.000
1,035.000	2,118.000	2,113.000	2,109.000	2,105.000	2,100.000
1,050.000	2,096.000	2,091.000	2,087.000	2,082.000	2,077.000
1,065.000	2,073.000	2,068.000	2,063.000	2,059.000	2,054.000
1,080.000	2,049.000	2,044.000	2,039.000	2,035.000	2,030.000
1,095.000	2,025.000	2,020.000	2,015.000	2,010.000	2,004.000
1,110.000	1,999.000	1,994.000	1,989.000	1,984.000	1,979.000
1,125.000	1,973.000	1,968.000	1,963.000	1,957.000	1,952.000
1,140.000	1,947.000	1,941.000	1,936.000	1,930.000	1,925.000
1,155.000	1,919.000	1,913.000	1,908.000	1,902.000	1,896.000
1,170.000	1,891.000	1,885.000	1,879.000	1,873.000	1,868.000
1,185.000	1,862.000	1,856.000	1,850.000	1,844.000	1,838.000
1,200.000	1,832.000	1,826.000	1,820.000	1,814.000	1,808.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Return Event: 0 years

Label: POND

Storm Event: WQv

Scenario: Post-WQv

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
1,215.000	1,802.000	1,796.000	1,790.000	1,784.000	1,778.000
1,230.000	1,772.000	1,766.000	1,760.000	1,754.000	1,748.000
1,245.000	1,742.000	1,736.000	1,730.000	1,724.000	1,718.000
1,260.000	1,712.000	1,706.000	1,701.000	1,695.000	1,689.000
1,275.000	1,683.000	1,677.000	1,671.000	1,666.000	1,660.000
1,290.000	1,654.000	1,648.000	1,643.000	1,637.000	1,631.000
1,305.000	1,626.000	1,620.000	1,614.000	1,609.000	1,603.000
1,320.000	1,598.000	1,592.000	1,586.000	1,581.000	1,575.000
1,335.000	1,570.000	1,564.000	1,559.000	1,553.000	1,548.000
1,350.000	1,542.000	1,537.000	1,531.000	1,526.000	1,521.000
1,365.000	1,515.000	1,510.000	1,504.000	1,499.000	1,494.000
1,380.000	1,488.000	1,483.000	1,478.000	1,472.000	1,467.000
1,395.000	1,462.000	1,457.000	1,451.000	1,446.000	1,441.000
1,410.000	1,436.000	1,430.000	1,425.000	1,420.000	1,415.000
1,425.000	1,410.000	1,405.000	1,399.000	1,394.000	1,389.000
1,440.000	1,384.000	1,379.000	1,373.000	1,367.000	1,360.000
1,455.000	1,353.000	1,345.000	1,337.000	1,328.000	1,319.000
1,470.000	1,310.000	1,302.000	1,293.000	1,284.000	1,272.000
1,485.000	1,261.000	1,250.000	1,239.000	1,227.000	1,216.000
1,500.000	1,205.000	1,195.000	1,184.000	1,173.000	1,162.000
1,515.000	1,152.000	1,141.000	1,131.000	1,121.000	1,111.000
1,530.000	1,101.000	1,091.000	1,081.000	1,071.000	1,061.000
1,545.000	1,051.000	1,042.000	1,032.000	1,023.000	1,013.000
1,560.000	1,004.000	995.000	986.000	976.000	967.000
1,575.000	958.000	950.000	941.000	932.000	923.000
1,590.000	915.000	906.000	898.000	889.000	881.000
1,605.000	873.000	865.000	856.000	848.000	840.000
1,620.000	832.000	825.000	817.000	809.000	801.000
1,635.000	794.000	786.000	778.000	771.000	764.000
1,650.000	756.000	749.000	742.000	735.000	727.000
1,665.000	720.000	713.000	706.000	699.000	693.000
1,680.000	686.000	679.000	672.000	666.000	659.000
1,695.000	652.000	646.000	640.000	633.000	627.000
1,710.000	620.000	614.000	608.000	602.000	596.000
1,725.000	590.000	584.000	578.000	572.000	566.000
1,740.000	560.000	554.000	548.000	542.000	534.000
1,755.000	527.000	519.000	512.000	505.000	498.000
1,770.000	491.000	484.000	477.000	470.000	464.000
1,785.000	457.000	451.000	445.000	439.000	433.000
1,800.000	427.000	421.000	415.000	409.000	404.000
1,815.000	398.000	393.000	387.000	382.000	377.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Return Event: 0 years

Label: POND

Storm Event: WQv

Scenario: Post-WQv

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
1,830.000	371.000	366.000	361.000	356.000	352.000
1,845.000	347.000	342.000	338.000	333.000	328.000
1,860.000	324.000	320.000	315.000	311.000	307.000
1,875.000	303.000	299.000	295.000	291.000	287.000
1,890.000	283.000	279.000	276.000	272.000	268.000
1,905.000	265.000	261.000	258.000	254.000	251.000
1,920.000	248.000	244.000	241.000	238.000	235.000
1,935.000	232.000	229.000	226.000	223.000	220.000
1,950.000	217.000	214.000	211.000	209.000	206.000
1,965.000	203.000	201.000	198.000	195.000	193.000
1,980.000	190.000	188.000	186.000	183.000	181.000
1,995.000	178.000	176.000	174.000	172.000	169.000
2,010.000	167.000	165.000	163.000	161.000	159.000
2,025.000	157.000	155.000	153.000	151.000	149.000
2,040.000	147.000	145.000	143.000	141.000	140.000
2,055.000	138.000	136.000	134.000	133.000	131.000
2,070.000	129.000	128.000	126.000	124.000	123.000
2,085.000	121.000	120.000	118.000	117.000	115.000
2,100.000	114.000	112.000	111.000	109.000	108.000
2,115.000	107.000	105.000	104.000	103.000	101.000
2,130.000	100.000	99.000	98.000	96.000	95.000
2,145.000	94.000	93.000	92.000	91.000	89.000
2,160.000	88.000	87.000	86.000	85.000	84.000
2,175.000	83.000	82.000	81.000	80.000	79.000
2,190.000	78.000	77.000	76.000	75.000	74.000
2,205.000	73.000	72.000	71.000	70.000	70.000
2,220.000	69.000	68.000	67.000	66.000	65.000
2,235.000	64.000	64.000	63.000	62.000	61.000
2,250.000	61.000	60.000	59.000	58.000	58.000
2,265.000	57.000	56.000	55.000	55.000	54.000
2,280.000	53.000	53.000	52.000	51.000	51.000
2,295.000	50.000	50.000	49.000	48.000	48.000
2,310.000	47.000	47.000	46.000	45.000	45.000
2,325.000	44.000	44.000	43.000	43.000	42.000
2,340.000	42.000	41.000	41.000	40.000	40.000
2,355.000	39.000	39.000	38.000	38.000	37.000
2,370.000	37.000	36.000	36.000	35.000	35.000
2,385.000	35.000	34.000	34.000	33.000	33.000
2,400.000	33.000	32.000	32.000	31.000	31.000
2,415.000	31.000	30.000	30.000	29.000	29.000
2,430.000	29.000	28.000	28.000	28.000	27.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-WQv

Return Event: 0 years

Storm Event: WQv

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
2,445.000	27.000	27.000	26.000	26.000	26.000
2,460.000	25.000	25.000	25.000	24.000	24.000
2,475.000	24.000	24.000	23.000	23.000	23.000
2,490.000	22.000	22.000	22.000	22.000	21.000
2,505.000	21.000	21.000	21.000	20.000	20.000
2,520.000	20.000	20.000	19.000	19.000	19.000
2,535.000	19.000	18.000	18.000	18.000	18.000
2,550.000	18.000	17.000	17.000	17.000	17.000
2,565.000	17.000	16.000	16.000	16.000	16.000
2,580.000	16.000	15.000	15.000	15.000	15.000
2,595.000	15.000	14.000	14.000	14.000	14.000
2,610.000	14.000	14.000	13.000	13.000	13.000
2,625.000	13.000	13.000	13.000	12.000	12.000
2,640.000	12.000	12.000	12.000	12.000	12.000
2,655.000	11.000	11.000	11.000	11.000	11.000
2,670.000	11.000	11.000	10.000	10.000	10.000
2,685.000	10.000	10.000	10.000	10.000	10.000
2,700.000	10.000	9.000	9.000	9.000	9.000
2,715.000	9.000	9.000	9.000	9.000	9.000
2,730.000	8.000	8.000	8.000	8.000	8.000
2,745.000	8.000	8.000	8.000	8.000	8.000
2,760.000	7.000	7.000	7.000	7.000	7.000
2,775.000	7.000	7.000	7.000	7.000	7.000
2,790.000	7.000	7.000	6.000	6.000	6.000
2,805.000	6.000	6.000	6.000	6.000	6.000
2,820.000	6.000	6.000	6.000	6.000	6.000
2,835.000	5.000	5.000	5.000	5.000	5.000
2,850.000	5.000	5.000	5.000	5.000	5.000
2,865.000	5.000	5.000	5.000	5.000	5.000
2,880.000	5.000	5.000	4.000	4.000	4.000
2,895.000	4.000	4.000	4.000	4.000	4.000
2,910.000	4.000	4.000	4.000	4.000	4.000
2,925.000	4.000	4.000	4.000	4.000	4.000
2,940.000	4.000	4.000	3.000	3.000	3.000
2,955.000	3.000	3.000	3.000	3.000	3.000
2,970.000	3.000	3.000	3.000	3.000	3.000
2,985.000	3.000	3.000	3.000	3.000	3.000
3,000.000	3.000	3.000	3.000	3.000	3.000
3,015.000	3.000	3.000	3.000	3.000	3.000
3,030.000	2.000	2.000	2.000	2.000	2.000
3,045.000	2.000	2.000	2.000	2.000	2.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Return Event: 0 years

Label: POND

Storm Event: WQv

Scenario: Post-WQv

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
3,060.000	2.000	2.000	2.000	2.000	2.000
3,075.000	2.000	2.000	2.000	2.000	2.000
3,090.000	2.000	2.000	2.000	2.000	2.000
3,105.000	2.000	2.000	2.000	2.000	2.000
3,120.000	2.000	2.000	2.000	2.000	2.000
3,135.000	2.000	2.000	2.000	2.000	2.000
3,150.000	2.000	2.000	1.000	1.000	1.000
3,165.000	1.000	1.000	1.000	1.000	1.000
3,180.000	1.000	1.000	1.000	1.000	1.000
3,195.000	1.000	1.000	1.000	1.000	1.000
3,210.000	1.000	1.000	1.000	1.000	1.000
3,225.000	1.000	1.000	1.000	1.000	1.000
3,240.000	1.000	1.000	1.000	1.000	1.000
3,255.000	1.000	1.000	1.000	1.000	1.000
3,270.000	1.000	1.000	1.000	1.000	1.000
3,285.000	1.000	1.000	1.000	1.000	1.000
3,300.000	1.000	1.000	1.000	1.000	1.000
3,315.000	1.000	1.000	1.000	1.000	1.000
3,330.000	1.000	1.000	1.000	1.000	1.000
3,345.000	1.000	1.000	1.000	1.000	1.000
3,360.000	1.000	1.000	1.000	1.000	1.000
3,375.000	1.000	1.000	1.000	1.000	1.000
3,390.000	1.000	1.000	1.000	1.000	1.000
3,405.000	1.000	1.000	1.000	1.000	1.000
3,420.000	1.000	0.000	0.000	0.000	0.000
3,435.000	0.000	0.000	0.000	0.000	0.000
3,450.000	0.000	0.000	0.000	0.000	0.000
3,465.000	0.000	0.000	0.000	0.000	0.000
3,480.000	0.000	0.000	0.000	0.000	0.000
3,495.000	0.000	0.000	0.000	0.000	0.000
3,510.000	0.000	0.000	0.000	0.000	0.000
3,525.000	0.000	0.000	0.000	0.000	0.000
3,540.000	0.000	0.000	0.000	0.000	0.000
3,555.000	0.000	0.000	0.000	0.000	0.000
3,570.000	0.000	0.000	0.000	0.000	0.000
3,585.000	0.000	0.000	0.000	0.000	0.000
3,600.000	0.000	0.000	0.000	0.000	0.000
3,615.000	0.000	0.000	0.000	0.000	0.000
3,630.000	0.000	0.000	0.000	0.000	0.000
3,645.000	0.000	0.000	0.000	0.000	0.000
3,660.000	0.000	0.000	0.000	0.000	0.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Return Event: 0 years

Label: POND

Storm Event: WQv

Scenario: Post-WQv

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
3,675.000	0.000	0.000	0.000	0.000	0.000
3,690.000	0.000	0.000	0.000	0.000	0.000
3,705.000	0.000	0.000	0.000	0.000	0.000
3,720.000	0.000	0.000	0.000	0.000	0.000
3,735.000	0.000	0.000	0.000	0.000	0.000
3,750.000	0.000	0.000	0.000	0.000	0.000
3,765.000	0.000	0.000	0.000	0.000	0.000
3,780.000	0.000	0.000	0.000	0.000	0.000
3,795.000	0.000	0.000	0.000	0.000	0.000
3,810.000	0.000	0.000	0.000	0.000	0.000
3,825.000	0.000	0.000	0.000	0.000	0.000
3,840.000	0.000	0.000	0.000	0.000	0.000
3,855.000	0.000	0.000	0.000	0.000	0.000
3,870.000	0.000	0.000	0.000	0.000	0.000
3,885.000	0.000	0.000	0.000	0.000	0.000
3,900.000	0.000	0.000	0.000	0.000	0.000
3,915.000	0.000	0.000	0.000	0.000	0.000
3,930.000	0.000	0.000	0.000	0.000	0.000
3,945.000	0.000	0.000	0.000	0.000	0.000
3,960.000	0.000	0.000	0.000	0.000	0.000
3,975.000	0.000	0.000	0.000	0.000	0.000
3,990.000	0.000	0.000	0.000	0.000	0.000
4,005.000	0.000	0.000	0.000	0.000	0.000
4,020.000	0.000	0.000	0.000	0.000	0.000
4,035.000	0.000	0.000	0.000	0.000	0.000
4,050.000	0.000	0.000	0.000	0.000	0.000
4,065.000	0.000	0.000	0.000	0.000	0.000
4,080.000	0.000	0.000	0.000	0.000	0.000
4,095.000	0.000	0.000	0.000	0.000	0.000
4,110.000	0.000	0.000	0.000	0.000	0.000
4,125.000	0.000	0.000	0.000	0.000	0.000
4,140.000	0.000	0.000	0.000	0.000	0.000
4,155.000	0.000	0.000	0.000	0.000	0.000
4,170.000	0.000	0.000	0.000	0.000	0.000
4,185.000	0.000	0.000	0.000	0.000	0.000
4,200.000	0.000	0.000	0.000	0.000	0.000
4,215.000	0.000	0.000	0.000	0.000	0.000
4,230.000	0.000	0.000	0.000	0.000	0.000
4,245.000	0.000	0.000	0.000	0.000	0.000
4,260.000	0.000	0.000	0.000	0.000	0.000
4,275.000	0.000	0.000	0.000	0.000	0.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-WQv

Return Event: 0 years

Storm Event: WQv

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
4,290.000	0.000	0.000	0.000	0.000	0.000
4,305.000	0.000	0.000	0.000	0.000	0.000
4,320.000	0.000	0.000	0.000	0.000	0.000
4,335.000	0.000	0.000	0.000	0.000	0.000
4,350.000	0.000	0.000	0.000	0.000	0.000
4,365.000	0.000	0.000	0.000	0.000	0.000
4,380.000	0.000	0.000	0.000	0.000	0.000
4,395.000	0.000	0.000	0.000	0.000	0.000
4,410.000	0.000	0.000	0.000	0.000	0.000
4,425.000	0.000	0.000	0.000	0.000	0.000
4,440.000	0.000	0.000	0.000	0.000	0.000
4,455.000	0.000	0.000	0.000	0.000	0.000
4,470.000	0.000	0.000	0.000	0.000	0.000
4,485.000	0.000	0.000	0.000	0.000	0.000
4,500.000	0.000	0.000	0.000	0.000	0.000
4,515.000	0.000	0.000	0.000	0.000	0.000
4,530.000	0.000	0.000	0.000	0.000	0.000
4,545.000	0.000	0.000	0.000	0.000	0.000
4,560.000	0.000	0.000	0.000	0.000	0.000
4,575.000	0.000	0.000	0.000	0.000	0.000
4,590.000	0.000	0.000	0.000	0.000	0.000
4,605.000	0.000	0.000	0.000	0.000	0.000
4,620.000	0.000	0.000	0.000	0.000	0.000
4,635.000	0.000	0.000	0.000	0.000	0.000
4,650.000	0.000	0.000	0.000	0.000	0.000
4,665.000	0.000	0.000	0.000	0.000	0.000
4,680.000	0.000	0.000	0.000	0.000	0.000
4,695.000	0.000	0.000	0.000	0.000	0.000
4,710.000	0.000	0.000	0.000	0.000	0.000
4,725.000	0.000	0.000	0.000	0.000	0.000
4,740.000	0.000	0.000	0.000	0.000	0.000
4,755.000	0.000	0.000	0.000	0.000	0.000
4,770.000	0.000	0.000	0.000	0.000	0.000
4,785.000	0.000	0.000	0.000	0.000	0.000
4,800.000	0.000	0.000	0.000	0.000	0.000
4,815.000	0.000	0.000	0.000	0.000	0.000
4,830.000	0.000	0.000	0.000	0.000	0.000
4,845.000	0.000	0.000	0.000	0.000	0.000
4,860.000	0.000	0.000	0.000	0.000	0.000
4,875.000	0.000	0.000	0.000	0.000	0.000
4,890.000	0.000	0.000	0.000	0.000	0.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Return Event: 0 years

Label: POND

Storm Event: WQv

Scenario: Post-WQv

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
4,905.000	0.000	0.000	0.000	0.000	0.000
4,920.000	0.000	0.000	0.000	0.000	0.000
4,935.000	0.000	0.000	0.000	0.000	0.000
4,950.000	0.000	0.000	0.000	0.000	0.000
4,965.000	0.000	0.000	0.000	0.000	0.000
4,980.000	0.000	0.000	0.000	0.000	0.000
4,995.000	0.000	0.000	0.000	0.000	0.000
5,010.000	0.000	0.000	0.000	0.000	0.000
5,025.000	0.000	0.000	0.000	0.000	0.000
5,040.000	0.000	0.000	0.000	0.000	0.000
5,055.000	0.000	0.000	0.000	0.000	0.000
5,070.000	0.000	0.000	0.000	0.000	0.000
5,085.000	0.000	0.000	0.000	0.000	0.000
5,100.000	0.000	0.000	0.000	0.000	0.000
5,115.000	0.000	0.000	0.000	0.000	0.000
5,130.000	0.000	0.000	0.000	0.000	0.000
5,145.000	0.000	0.000	0.000	0.000	0.000
5,160.000	0.000	0.000	0.000	0.000	0.000
5,175.000	0.000	0.000	0.000	0.000	0.000
5,190.000	0.000	0.000	0.000	0.000	0.000
5,205.000	0.000	0.000	0.000	0.000	0.000
5,220.000	0.000	0.000	0.000	0.000	0.000
5,235.000	0.000	0.000	0.000	0.000	0.000
5,250.000	0.000	0.000	0.000	0.000	0.000
5,265.000	0.000	0.000	0.000	0.000	0.000
5,280.000	0.000	0.000	0.000	0.000	0.000
5,295.000	0.000	0.000	0.000	0.000	0.000
5,310.000	0.000	0.000	0.000	0.000	0.000
5,325.000	0.000	0.000	0.000	0.000	0.000
5,340.000	0.000	0.000	0.000	0.000	0.000
5,355.000	0.000	0.000	0.000	0.000	0.000
5,370.000	0.000	0.000	0.000	0.000	0.000
5,385.000	0.000	0.000	0.000	0.000	0.000
5,400.000	0.000	0.000	0.000	0.000	0.000
5,415.000	0.000	0.000	0.000	0.000	0.000
5,430.000	0.000	0.000	0.000	0.000	0.000
5,445.000	0.000	0.000	0.000	0.000	0.000
5,460.000	0.000	0.000	0.000	0.000	0.000
5,475.000	0.000	0.000	0.000	0.000	0.000
5,490.000	0.000	0.000	0.000	0.000	0.000
5,505.000	0.000	0.000	0.000	0.000	0.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-WQv

Return Event: 0 years

Storm Event: WQv

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
5,520.000	0.000	0.000	0.000	0.000	0.000
5,535.000	0.000	0.000	0.000	0.000	0.000
5,550.000	0.000	0.000	0.000	0.000	0.000
5,565.000	0.000	0.000	0.000	0.000	0.000
5,580.000	0.000	0.000	0.000	0.000	0.000
5,595.000	0.000	0.000	0.000	0.000	0.000
5,610.000	0.000	0.000	0.000	0.000	0.000
5,625.000	0.000	0.000	0.000	0.000	0.000
5,640.000	0.000	0.000	0.000	0.000	0.000
5,655.000	0.000	0.000	0.000	0.000	0.000
5,670.000	0.000	0.000	0.000	0.000	0.000
5,685.000	0.000	0.000	0.000	0.000	0.000
5,700.000	0.000	0.000	0.000	0.000	0.000
5,715.000	0.000	0.000	0.000	0.000	0.000
5,730.000	0.000	0.000	0.000	0.000	0.000
5,745.000	0.000	0.000	0.000	0.000	0.000
5,760.000	0.000	(N/A)	(N/A)	(N/A)	(N/A)

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.000	0.000	0.000	0.000	0.000
30.000	0.000	0.000	0.000	0.000	0.000
45.000	0.000	0.000	0.000	0.000	0.000
60.000	0.000	0.000	0.000	0.000	0.000
75.000	0.000	0.000	0.000	1.000	1.000
90.000	1.000	2.000	2.000	2.000	3.000
105.000	4.000	4.000	5.000	6.000	6.000
120.000	7.000	8.000	9.000	10.000	11.000
135.000	12.000	12.000	14.000	15.000	16.000
150.000	17.000	18.000	19.000	20.000	22.000
165.000	23.000	24.000	25.000	27.000	28.000
180.000	30.000	31.000	32.000	34.000	35.000
195.000	37.000	38.000	40.000	41.000	43.000
210.000	44.000	46.000	48.000	49.000	51.000
225.000	53.000	54.000	56.000	58.000	59.000
240.000	61.000	63.000	65.000	66.000	68.000
255.000	70.000	72.000	74.000	76.000	78.000
270.000	80.000	81.000	83.000	85.000	87.000
285.000	89.000	91.000	94.000	96.000	98.000
300.000	100.000	102.000	104.000	106.000	108.000
315.000	111.000	113.000	115.000	117.000	120.000
330.000	122.000	124.000	127.000	129.000	131.000
345.000	134.000	136.000	138.000	141.000	143.000
360.000	146.000	148.000	151.000	153.000	156.000
375.000	158.000	161.000	163.000	166.000	168.000
390.000	171.000	174.000	176.000	179.000	181.000
405.000	184.000	187.000	189.000	192.000	195.000
420.000	198.000	200.000	203.000	206.000	209.000
435.000	211.000	214.000	217.000	220.000	223.000
450.000	225.000	228.000	231.000	234.000	237.000
465.000	240.000	243.000	246.000	248.000	251.000
480.000	254.000	257.000	260.000	263.000	266.000
495.000	270.000	273.000	276.000	280.000	284.000
510.000	288.000	292.000	296.000	300.000	305.000
525.000	310.000	316.000	321.000	327.000	334.000
540.000	341.000	348.000	355.000	363.000	371.000
555.000	380.000	388.000	397.000	406.000	415.000
570.000	425.000	435.000	445.000	455.000	466.000
585.000	477.000	489.000	501.000	514.000	528.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
600.000	543.000	554.000	566.000	579.000	592.000
615.000	606.000	622.000	638.000	655.000	673.000
630.000	692.000	713.000	735.000	759.000	784.000
645.000	811.000	841.000	872.000	905.000	941.000
660.000	980.000	1,021.000	1,065.000	1,113.000	1,165.000
675.000	1,223.000	1,285.000	1,339.000	1,397.000	1,461.000
690.000	1,532.000	1,611.000	1,710.000	1,846.000	2,052.000
705.000	2,306.000	2,478.000	2,600.000	2,755.000	2,957.000
720.000	3,146.000	3,229.000	3,158.000	2,968.000	2,752.000
735.000	2,589.000	2,492.000	2,440.000	2,411.000	2,391.000
750.000	2,376.000	2,364.000	2,354.000	2,345.000	2,337.000
765.000	2,331.000	2,327.000	2,323.000	2,321.000	2,318.000
780.000	2,315.000	2,313.000	2,310.000	2,308.000	2,306.000
795.000	2,304.000	2,303.000	2,301.000	2,300.000	2,298.000
810.000	2,297.000	2,296.000	2,294.000	2,293.000	2,292.000
825.000	2,291.000	2,290.000	2,289.000	2,288.000	2,287.000
840.000	2,286.000	2,285.000	2,284.000	2,283.000	2,282.000
855.000	2,282.000	2,281.000	2,281.000	2,280.000	2,280.000
870.000	2,280.000	2,279.000	2,279.000	2,279.000	2,278.000
885.000	2,278.000	2,278.000	2,277.000	2,277.000	2,277.000
900.000	2,276.000	2,276.000	2,276.000	2,275.000	2,275.000
915.000	2,275.000	2,274.000	2,274.000	2,274.000	2,273.000
930.000	2,273.000	2,273.000	2,272.000	2,272.000	2,272.000
945.000	2,271.000	2,271.000	2,270.000	2,270.000	2,270.000
960.000	2,269.000	2,269.000	2,269.000	2,268.000	2,268.000
975.000	2,268.000	2,268.000	2,268.000	2,267.000	2,267.000
990.000	2,267.000	2,267.000	2,267.000	2,267.000	2,267.000
1,005.000	2,267.000	2,266.000	2,266.000	2,266.000	2,266.000
1,020.000	2,266.000	2,266.000	2,266.000	2,266.000	2,265.000
1,035.000	2,265.000	2,265.000	2,265.000	2,265.000	2,265.000
1,050.000	2,265.000	2,265.000	2,264.000	2,264.000	2,264.000
1,065.000	2,264.000	2,264.000	2,264.000	2,264.000	2,264.000
1,080.000	2,263.000	2,263.000	2,263.000	2,263.000	2,263.000
1,095.000	2,263.000	2,263.000	2,263.000	2,262.000	2,262.000
1,110.000	2,262.000	2,262.000	2,262.000	2,262.000	2,262.000
1,125.000	2,262.000	2,261.000	2,261.000	2,261.000	2,261.000
1,140.000	2,261.000	2,261.000	2,261.000	2,261.000	2,260.000
1,155.000	2,260.000	2,260.000	2,260.000	2,260.000	2,260.000
1,170.000	2,260.000	2,260.000	2,259.000	2,259.000	2,259.000
1,185.000	2,259.000	2,259.000	2,259.000	2,259.000	2,259.000
1,200.000	2,258.000	2,258.000	2,258.000	2,258.000	2,258.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
1,215.000	2,258.000	2,258.000	2,258.000	2,258.000	2,258.000
1,230.000	2,258.000	2,258.000	2,258.000	2,258.000	2,258.000
1,245.000	2,258.000	2,258.000	2,258.000	2,257.000	2,257.000
1,260.000	2,257.000	2,257.000	2,257.000	2,257.000	2,257.000
1,275.000	2,257.000	2,257.000	2,257.000	2,257.000	2,257.000
1,290.000	2,257.000	2,257.000	2,257.000	2,257.000	2,257.000
1,305.000	2,257.000	2,257.000	2,257.000	2,257.000	2,257.000
1,320.000	2,257.000	2,257.000	2,257.000	2,257.000	2,257.000
1,335.000	2,257.000	2,257.000	2,257.000	2,257.000	2,257.000
1,350.000	2,257.000	2,257.000	2,257.000	2,257.000	2,257.000
1,365.000	2,257.000	2,257.000	2,257.000	2,257.000	2,256.000
1,380.000	2,256.000	2,256.000	2,256.000	2,256.000	2,256.000
1,395.000	2,256.000	2,256.000	2,256.000	2,256.000	2,256.000
1,410.000	2,256.000	2,256.000	2,256.000	2,256.000	2,256.000
1,425.000	2,256.000	2,256.000	2,256.000	2,256.000	2,256.000
1,440.000	2,256.000	2,256.000	2,255.000	2,254.000	2,251.000
1,455.000	2,247.000	2,239.000	2,230.000	2,219.000	2,207.000
1,470.000	2,195.000	2,182.000	2,169.000	2,156.000	2,143.000
1,485.000	2,130.000	2,117.000	2,104.000	2,090.000	2,077.000
1,500.000	2,065.000	2,052.000	2,039.000	2,026.000	2,013.000
1,515.000	2,001.000	1,988.000	1,976.000	1,963.000	1,951.000
1,530.000	1,939.000	1,927.000	1,915.000	1,902.000	1,890.000
1,545.000	1,878.000	1,867.000	1,855.000	1,843.000	1,831.000
1,560.000	1,820.000	1,808.000	1,796.000	1,785.000	1,774.000
1,575.000	1,762.000	1,751.000	1,740.000	1,729.000	1,717.000
1,590.000	1,706.000	1,695.000	1,684.000	1,674.000	1,663.000
1,605.000	1,652.000	1,641.000	1,631.000	1,620.000	1,609.000
1,620.000	1,599.000	1,588.000	1,578.000	1,568.000	1,557.000
1,635.000	1,547.000	1,537.000	1,527.000	1,517.000	1,507.000
1,650.000	1,497.000	1,487.000	1,477.000	1,467.000	1,457.000
1,665.000	1,448.000	1,438.000	1,428.000	1,419.000	1,409.000
1,680.000	1,400.000	1,390.000	1,381.000	1,372.000	1,363.000
1,695.000	1,353.000	1,344.000	1,335.000	1,326.000	1,317.000
1,710.000	1,308.000	1,299.000	1,290.000	1,280.000	1,269.000
1,725.000	1,257.000	1,246.000	1,235.000	1,224.000	1,213.000
1,740.000	1,202.000	1,191.000	1,180.000	1,169.000	1,159.000
1,755.000	1,148.000	1,138.000	1,128.000	1,117.000	1,107.000
1,770.000	1,097.000	1,087.000	1,077.000	1,067.000	1,058.000
1,785.000	1,048.000	1,038.000	1,029.000	1,019.000	1,010.000
1,800.000	1,001.000	992.000	982.000	973.000	964.000
1,815.000	955.000	947.000	938.000	929.000	920.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
1,830.000	912.000	903.000	895.000	887.000	878.000
1,845.000	870.000	862.000	854.000	846.000	838.000
1,860.000	830.000	822.000	814.000	806.000	799.000
1,875.000	791.000	783.000	776.000	768.000	761.000
1,890.000	754.000	746.000	739.000	732.000	725.000
1,905.000	718.000	711.000	704.000	697.000	690.000
1,920.000	683.000	677.000	670.000	663.000	657.000
1,935.000	650.000	644.000	637.000	631.000	625.000
1,950.000	618.000	612.000	606.000	600.000	594.000
1,965.000	588.000	582.000	576.000	570.000	564.000
1,980.000	558.000	552.000	546.000	540.000	532.000
1,995.000	524.000	517.000	510.000	502.000	495.000
2,010.000	488.000	482.000	475.000	468.000	462.000
2,025.000	455.000	449.000	443.000	437.000	431.000
2,040.000	425.000	419.000	413.000	407.000	402.000
2,055.000	396.000	391.000	385.000	380.000	375.000
2,070.000	370.000	365.000	360.000	355.000	350.000
2,085.000	345.000	341.000	336.000	331.000	327.000
2,100.000	323.000	318.000	314.000	310.000	306.000
2,115.000	301.000	297.000	293.000	290.000	286.000
2,130.000	282.000	278.000	274.000	271.000	267.000
2,145.000	264.000	260.000	257.000	253.000	250.000
2,160.000	247.000	243.000	240.000	237.000	234.000
2,175.000	231.000	228.000	225.000	222.000	219.000
2,190.000	216.000	213.000	210.000	208.000	205.000
2,205.000	202.000	200.000	197.000	195.000	192.000
2,220.000	190.000	187.000	185.000	182.000	180.000
2,235.000	178.000	175.000	173.000	171.000	169.000
2,250.000	166.000	164.000	162.000	160.000	158.000
2,265.000	156.000	154.000	152.000	150.000	148.000
2,280.000	146.000	144.000	143.000	141.000	139.000
2,295.000	137.000	135.000	134.000	132.000	130.000
2,310.000	129.000	127.000	125.000	124.000	122.000
2,325.000	121.000	119.000	118.000	116.000	115.000
2,340.000	113.000	112.000	110.000	109.000	108.000
2,355.000	106.000	105.000	104.000	102.000	101.000
2,370.000	100.000	98.000	97.000	96.000	95.000
2,385.000	94.000	92.000	91.000	90.000	89.000
2,400.000	88.000	87.000	86.000	85.000	84.000
2,415.000	83.000	81.000	80.000	79.000	78.000
2,430.000	77.000	77.000	76.000	75.000	74.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
2,445.000	73.000	72.000	71.000	70.000	69.000
2,460.000	68.000	67.000	67.000	66.000	65.000
2,475.000	64.000	63.000	63.000	62.000	61.000
2,490.000	60.000	60.000	59.000	58.000	57.000
2,505.000	57.000	56.000	55.000	55.000	54.000
2,520.000	53.000	53.000	52.000	51.000	51.000
2,535.000	50.000	49.000	49.000	48.000	48.000
2,550.000	47.000	46.000	46.000	45.000	45.000
2,565.000	44.000	44.000	43.000	43.000	42.000
2,580.000	42.000	41.000	40.000	40.000	40.000
2,595.000	39.000	39.000	38.000	38.000	37.000
2,610.000	37.000	36.000	36.000	35.000	35.000
2,625.000	34.000	34.000	34.000	33.000	33.000
2,640.000	32.000	32.000	32.000	31.000	31.000
2,655.000	30.000	30.000	30.000	29.000	29.000
2,670.000	29.000	28.000	28.000	28.000	27.000
2,685.000	27.000	27.000	26.000	26.000	26.000
2,700.000	25.000	25.000	25.000	24.000	24.000
2,715.000	24.000	24.000	23.000	23.000	23.000
2,730.000	22.000	22.000	22.000	22.000	21.000
2,745.000	21.000	21.000	21.000	20.000	20.000
2,760.000	20.000	20.000	19.000	19.000	19.000
2,775.000	19.000	18.000	18.000	18.000	18.000
2,790.000	17.000	17.000	17.000	17.000	17.000
2,805.000	16.000	16.000	16.000	16.000	16.000
2,820.000	15.000	15.000	15.000	15.000	15.000
2,835.000	15.000	14.000	14.000	14.000	14.000
2,850.000	14.000	14.000	13.000	13.000	13.000
2,865.000	13.000	13.000	13.000	12.000	12.000
2,880.000	12.000	12.000	12.000	12.000	12.000
2,895.000	11.000	11.000	11.000	11.000	11.000
2,910.000	11.000	11.000	10.000	10.000	10.000
2,925.000	10.000	10.000	10.000	10.000	10.000
2,940.000	9.000	9.000	9.000	9.000	9.000
2,955.000	9.000	9.000	9.000	9.000	8.000
2,970.000	8.000	8.000	8.000	8.000	8.000
2,985.000	8.000	8.000	8.000	8.000	8.000
3,000.000	7.000	7.000	7.000	7.000	7.000
3,015.000	7.000	7.000	7.000	7.000	7.000
3,030.000	7.000	6.000	6.000	6.000	6.000
3,045.000	6.000	6.000	6.000	6.000	6.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
3,060.000	6.000	6.000	6.000	6.000	6.000
3,075.000	5.000	5.000	5.000	5.000	5.000
3,090.000	5.000	5.000	5.000	5.000	5.000
3,105.000	5.000	5.000	5.000	5.000	5.000
3,120.000	5.000	4.000	4.000	4.000	4.000
3,135.000	4.000	4.000	4.000	4.000	4.000
3,150.000	4.000	4.000	4.000	4.000	4.000
3,165.000	4.000	4.000	4.000	4.000	4.000
3,180.000	4.000	4.000	3.000	3.000	3.000
3,195.000	3.000	3.000	3.000	3.000	3.000
3,210.000	3.000	3.000	3.000	3.000	3.000
3,225.000	3.000	3.000	3.000	3.000	3.000
3,240.000	3.000	3.000	3.000	3.000	3.000
3,255.000	3.000	3.000	3.000	3.000	2.000
3,270.000	2.000	2.000	2.000	2.000	2.000
3,285.000	2.000	2.000	2.000	2.000	2.000
3,300.000	2.000	2.000	2.000	2.000	2.000
3,315.000	2.000	2.000	2.000	2.000	2.000
3,330.000	2.000	2.000	2.000	2.000	2.000
3,345.000	2.000	2.000	2.000	2.000	2.000
3,360.000	2.000	2.000	2.000	2.000	2.000
3,375.000	2.000	2.000	2.000	2.000	2.000
3,390.000	2.000	1.000	1.000	1.000	1.000
3,405.000	1.000	1.000	1.000	1.000	1.000
3,420.000	1.000	1.000	1.000	1.000	1.000
3,435.000	1.000	1.000	1.000	1.000	1.000
3,450.000	1.000	1.000	1.000	1.000	1.000
3,465.000	1.000	1.000	1.000	1.000	1.000
3,480.000	1.000	1.000	1.000	1.000	1.000
3,495.000	1.000	1.000	1.000	1.000	1.000
3,510.000	1.000	1.000	1.000	1.000	1.000
3,525.000	1.000	1.000	1.000	1.000	1.000
3,540.000	1.000	1.000	1.000	1.000	1.000
3,555.000	1.000	1.000	1.000	1.000	1.000
3,570.000	1.000	1.000	1.000	1.000	1.000
3,585.000	1.000	1.000	1.000	1.000	1.000
3,600.000	1.000	1.000	1.000	1.000	1.000
3,615.000	1.000	1.000	1.000	1.000	1.000
3,630.000	1.000	1.000	1.000	1.000	1.000
3,645.000	1.000	1.000	1.000	1.000	1.000
3,660.000	1.000	0.000	0.000	0.000	0.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
3,675.000	0.000	0.000	0.000	0.000	0.000
3,690.000	0.000	0.000	0.000	0.000	0.000
3,705.000	0.000	0.000	0.000	0.000	0.000
3,720.000	0.000	0.000	0.000	0.000	0.000
3,735.000	0.000	0.000	0.000	0.000	0.000
3,750.000	0.000	0.000	0.000	0.000	0.000
3,765.000	0.000	0.000	0.000	0.000	0.000
3,780.000	0.000	0.000	0.000	0.000	0.000
3,795.000	0.000	0.000	0.000	0.000	0.000
3,810.000	0.000	0.000	0.000	0.000	0.000
3,825.000	0.000	0.000	0.000	0.000	0.000
3,840.000	0.000	0.000	0.000	0.000	0.000
3,855.000	0.000	0.000	0.000	0.000	0.000
3,870.000	0.000	0.000	0.000	0.000	0.000
3,885.000	0.000	0.000	0.000	0.000	0.000
3,900.000	0.000	0.000	0.000	0.000	0.000
3,915.000	0.000	0.000	0.000	0.000	0.000
3,930.000	0.000	0.000	0.000	0.000	0.000
3,945.000	0.000	0.000	0.000	0.000	0.000
3,960.000	0.000	0.000	0.000	0.000	0.000
3,975.000	0.000	0.000	0.000	0.000	0.000
3,990.000	0.000	0.000	0.000	0.000	0.000
4,005.000	0.000	0.000	0.000	0.000	0.000
4,020.000	0.000	0.000	0.000	0.000	0.000
4,035.000	0.000	0.000	0.000	0.000	0.000
4,050.000	0.000	0.000	0.000	0.000	0.000
4,065.000	0.000	0.000	0.000	0.000	0.000
4,080.000	0.000	0.000	0.000	0.000	0.000
4,095.000	0.000	0.000	0.000	0.000	0.000
4,110.000	0.000	0.000	0.000	0.000	0.000
4,125.000	0.000	0.000	0.000	0.000	0.000
4,140.000	0.000	0.000	0.000	0.000	0.000
4,155.000	0.000	0.000	0.000	0.000	0.000
4,170.000	0.000	0.000	0.000	0.000	0.000
4,185.000	0.000	0.000	0.000	0.000	0.000
4,200.000	0.000	0.000	0.000	0.000	0.000
4,215.000	0.000	0.000	0.000	0.000	0.000
4,230.000	0.000	0.000	0.000	0.000	0.000
4,245.000	0.000	0.000	0.000	0.000	0.000
4,260.000	0.000	0.000	0.000	0.000	0.000
4,275.000	0.000	0.000	0.000	0.000	0.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
4,290.000	0.000	0.000	0.000	0.000	0.000
4,305.000	0.000	0.000	0.000	0.000	0.000
4,320.000	0.000	0.000	0.000	0.000	0.000
4,335.000	0.000	0.000	0.000	0.000	0.000
4,350.000	0.000	0.000	0.000	0.000	0.000
4,365.000	0.000	0.000	0.000	0.000	0.000
4,380.000	0.000	0.000	0.000	0.000	0.000
4,395.000	0.000	0.000	0.000	0.000	0.000
4,410.000	0.000	0.000	0.000	0.000	0.000
4,425.000	0.000	0.000	0.000	0.000	0.000
4,440.000	0.000	0.000	0.000	0.000	0.000
4,455.000	0.000	0.000	0.000	0.000	0.000
4,470.000	0.000	0.000	0.000	0.000	0.000
4,485.000	0.000	0.000	0.000	0.000	0.000
4,500.000	0.000	0.000	0.000	0.000	0.000
4,515.000	0.000	0.000	0.000	0.000	0.000
4,530.000	0.000	0.000	0.000	0.000	0.000
4,545.000	0.000	0.000	0.000	0.000	0.000
4,560.000	0.000	0.000	0.000	0.000	0.000
4,575.000	0.000	0.000	0.000	0.000	0.000
4,590.000	0.000	0.000	0.000	0.000	0.000
4,605.000	0.000	0.000	0.000	0.000	0.000
4,620.000	0.000	0.000	0.000	0.000	0.000
4,635.000	0.000	0.000	0.000	0.000	0.000
4,650.000	0.000	0.000	0.000	0.000	0.000
4,665.000	0.000	0.000	0.000	0.000	0.000
4,680.000	0.000	0.000	0.000	0.000	0.000
4,695.000	0.000	0.000	0.000	0.000	0.000
4,710.000	0.000	0.000	0.000	0.000	0.000
4,725.000	0.000	0.000	0.000	0.000	0.000
4,740.000	0.000	0.000	0.000	0.000	0.000
4,755.000	0.000	0.000	0.000	0.000	0.000
4,770.000	0.000	0.000	0.000	0.000	0.000
4,785.000	0.000	0.000	0.000	0.000	0.000
4,800.000	0.000	0.000	0.000	0.000	0.000
4,815.000	0.000	0.000	0.000	0.000	0.000
4,830.000	0.000	0.000	0.000	0.000	0.000
4,845.000	0.000	0.000	0.000	0.000	0.000
4,860.000	0.000	0.000	0.000	0.000	0.000
4,875.000	0.000	0.000	0.000	0.000	0.000
4,890.000	0.000	0.000	0.000	0.000	0.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
4,905.000	0.000	0.000	0.000	0.000	0.000
4,920.000	0.000	0.000	0.000	0.000	0.000
4,935.000	0.000	0.000	0.000	0.000	0.000
4,950.000	0.000	0.000	0.000	0.000	0.000
4,965.000	0.000	0.000	0.000	0.000	0.000
4,980.000	0.000	0.000	0.000	0.000	0.000
4,995.000	0.000	0.000	0.000	0.000	0.000
5,010.000	0.000	0.000	0.000	0.000	0.000
5,025.000	0.000	0.000	0.000	0.000	0.000
5,040.000	0.000	0.000	0.000	0.000	0.000
5,055.000	0.000	0.000	0.000	0.000	0.000
5,070.000	0.000	0.000	0.000	0.000	0.000
5,085.000	0.000	0.000	0.000	0.000	0.000
5,100.000	0.000	0.000	0.000	0.000	0.000
5,115.000	0.000	0.000	0.000	0.000	0.000
5,130.000	0.000	0.000	0.000	0.000	0.000
5,145.000	0.000	0.000	0.000	0.000	0.000
5,160.000	0.000	0.000	0.000	0.000	0.000
5,175.000	0.000	0.000	0.000	0.000	0.000
5,190.000	0.000	0.000	0.000	0.000	0.000
5,205.000	0.000	0.000	0.000	0.000	0.000
5,220.000	0.000	0.000	0.000	0.000	0.000
5,235.000	0.000	0.000	0.000	0.000	0.000
5,250.000	0.000	0.000	0.000	0.000	0.000
5,265.000	0.000	0.000	0.000	0.000	0.000
5,280.000	0.000	0.000	0.000	0.000	0.000
5,295.000	0.000	0.000	0.000	0.000	0.000
5,310.000	0.000	0.000	0.000	0.000	0.000
5,325.000	0.000	0.000	0.000	0.000	0.000
5,340.000	0.000	0.000	0.000	0.000	0.000
5,355.000	0.000	0.000	0.000	0.000	0.000
5,370.000	0.000	0.000	0.000	0.000	0.000
5,385.000	0.000	0.000	0.000	0.000	0.000
5,400.000	0.000	0.000	0.000	0.000	0.000
5,415.000	0.000	0.000	0.000	0.000	0.000
5,430.000	0.000	0.000	0.000	0.000	0.000
5,445.000	0.000	0.000	0.000	0.000	0.000
5,460.000	0.000	0.000	0.000	0.000	0.000
5,475.000	0.000	0.000	0.000	0.000	0.000
5,490.000	0.000	0.000	0.000	0.000	0.000
5,505.000	0.000	0.000	0.000	0.000	0.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 2

Return Event: 2 years

Storm Event: 2-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
5,520.000	0.000	0.000	0.000	0.000	0.000
5,535.000	0.000	0.000	0.000	0.000	0.000
5,550.000	0.000	0.000	0.000	0.000	0.000
5,565.000	0.000	0.000	0.000	0.000	0.000
5,580.000	0.000	0.000	0.000	0.000	0.000
5,595.000	0.000	0.000	0.000	0.000	0.000
5,610.000	0.000	0.000	0.000	0.000	0.000
5,625.000	0.000	0.000	0.000	0.000	0.000
5,640.000	0.000	0.000	0.000	0.000	0.000
5,655.000	0.000	0.000	0.000	0.000	0.000
5,670.000	0.000	0.000	0.000	0.000	0.000
5,685.000	0.000	0.000	0.000	0.000	0.000
5,700.000	0.000	0.000	0.000	0.000	0.000
5,715.000	0.000	0.000	0.000	0.000	0.000
5,730.000	0.000	0.000	0.000	0.000	0.000
5,745.000	0.000	0.000	0.000	0.000	0.000
5,760.000	0.000	(N/A)	(N/A)	(N/A)	(N/A)

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.000	0.000	0.000	0.000	0.000
30.000	0.000	0.000	0.000	0.000	0.000
45.000	0.000	0.000	0.000	0.000	0.000
60.000	1.000	1.000	2.000	3.000	3.000
75.000	4.000	5.000	6.000	7.000	9.000
90.000	10.000	11.000	13.000	14.000	16.000
105.000	18.000	19.000	21.000	23.000	25.000
120.000	27.000	29.000	31.000	33.000	35.000
135.000	37.000	40.000	42.000	44.000	47.000
150.000	49.000	52.000	54.000	57.000	59.000
165.000	62.000	65.000	67.000	70.000	73.000
180.000	76.000	78.000	81.000	84.000	87.000
195.000	90.000	93.000	96.000	99.000	102.000
210.000	105.000	108.000	111.000	114.000	117.000
225.000	120.000	123.000	126.000	129.000	132.000
240.000	136.000	139.000	142.000	145.000	149.000
255.000	152.000	155.000	158.000	162.000	165.000
270.000	169.000	172.000	176.000	179.000	183.000
285.000	186.000	190.000	193.000	197.000	201.000
300.000	204.000	208.000	212.000	216.000	219.000
315.000	223.000	227.000	231.000	235.000	239.000
330.000	243.000	247.000	251.000	255.000	259.000
345.000	263.000	267.000	271.000	275.000	279.000
360.000	283.000	288.000	292.000	296.000	300.000
375.000	305.000	309.000	313.000	318.000	322.000
390.000	327.000	331.000	336.000	341.000	347.000
405.000	352.000	358.000	364.000	370.000	377.000
420.000	383.000	391.000	398.000	405.000	413.000
435.000	421.000	430.000	438.000	447.000	456.000
450.000	466.000	475.000	485.000	495.000	506.000
465.000	517.000	528.000	539.000	549.000	558.000
480.000	567.000	576.000	586.000	596.000	607.000
495.000	618.000	629.000	641.000	654.000	667.000
510.000	682.000	696.000	712.000	728.000	745.000
525.000	763.000	782.000	802.000	822.000	844.000
540.000	867.000	891.000	916.000	942.000	969.000
555.000	997.000	1,025.000	1,054.000	1,083.000	1,113.000
570.000	1,144.000	1,176.000	1,208.000	1,241.000	1,275.000
585.000	1,305.000	1,333.000	1,363.000	1,395.000	1,428.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
600.000	1,462.000	1,498.000	1,536.000	1,576.000	1,619.000
615.000	1,663.000	1,710.000	1,760.000	1,812.000	1,868.000
630.000	1,927.000	1,989.000	2,054.000	2,124.000	2,197.000
645.000	2,263.000	2,292.000	2,298.000	2,302.000	2,304.000
660.000	2,307.000	2,310.000	2,313.000	2,317.000	2,321.000
675.000	2,325.000	2,331.000	2,337.000	2,343.000	2,349.000
690.000	2,356.000	2,365.000	2,385.000	2,424.000	2,495.000
705.000	2,607.000	2,762.000	2,973.000	3,274.000	3,709.000
720.000	4,842.000	6,244.000	6,662.000	6,015.000	5,000.000
735.000	3,775.000	2,927.000	2,620.000	2,536.000	2,497.000
750.000	2,470.000	2,449.000	2,431.000	2,415.000	2,402.000
765.000	2,392.000	2,384.000	2,378.000	2,373.000	2,369.000
780.000	2,364.000	2,360.000	2,356.000	2,352.000	2,349.000
795.000	2,346.000	2,343.000	2,341.000	2,338.000	2,336.000
810.000	2,333.000	2,331.000	2,329.000	2,327.000	2,325.000
825.000	2,323.000	2,321.000	2,319.000	2,317.000	2,316.000
840.000	2,314.000	2,312.000	2,311.000	2,309.000	2,308.000
855.000	2,307.000	2,306.000	2,305.000	2,305.000	2,304.000
870.000	2,304.000	2,303.000	2,302.000	2,302.000	2,301.000
885.000	2,301.000	2,300.000	2,300.000	2,299.000	2,298.000
900.000	2,298.000	2,297.000	2,297.000	2,296.000	2,295.000
915.000	2,295.000	2,294.000	2,294.000	2,293.000	2,293.000
930.000	2,292.000	2,291.000	2,291.000	2,290.000	2,290.000
945.000	2,289.000	2,289.000	2,288.000	2,287.000	2,287.000
960.000	2,286.000	2,286.000	2,285.000	2,284.000	2,284.000
975.000	2,284.000	2,283.000	2,283.000	2,283.000	2,283.000
990.000	2,282.000	2,282.000	2,282.000	2,282.000	2,282.000
1,005.000	2,281.000	2,281.000	2,281.000	2,281.000	2,281.000
1,020.000	2,280.000	2,280.000	2,280.000	2,280.000	2,279.000
1,035.000	2,279.000	2,279.000	2,279.000	2,279.000	2,278.000
1,050.000	2,278.000	2,278.000	2,278.000	2,278.000	2,277.000
1,065.000	2,277.000	2,277.000	2,277.000	2,277.000	2,276.000
1,080.000	2,276.000	2,276.000	2,276.000	2,275.000	2,275.000
1,095.000	2,275.000	2,275.000	2,275.000	2,274.000	2,274.000
1,110.000	2,274.000	2,274.000	2,274.000	2,273.000	2,273.000
1,125.000	2,273.000	2,273.000	2,273.000	2,272.000	2,272.000
1,140.000	2,272.000	2,272.000	2,271.000	2,271.000	2,271.000
1,155.000	2,271.000	2,271.000	2,270.000	2,270.000	2,270.000
1,170.000	2,270.000	2,270.000	2,269.000	2,269.000	2,269.000
1,185.000	2,269.000	2,268.000	2,268.000	2,268.000	2,268.000
1,200.000	2,268.000	2,267.000	2,267.000	2,267.000	2,267.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
1,215.000	2,267.000	2,267.000	2,267.000	2,267.000	2,266.000
1,230.000	2,266.000	2,266.000	2,266.000	2,266.000	2,266.000
1,245.000	2,266.000	2,266.000	2,266.000	2,266.000	2,266.000
1,260.000	2,266.000	2,266.000	2,266.000	2,266.000	2,266.000
1,275.000	2,266.000	2,266.000	2,266.000	2,266.000	2,266.000
1,290.000	2,266.000	2,266.000	2,266.000	2,265.000	2,265.000
1,305.000	2,265.000	2,265.000	2,265.000	2,265.000	2,265.000
1,320.000	2,265.000	2,265.000	2,265.000	2,265.000	2,265.000
1,335.000	2,265.000	2,265.000	2,265.000	2,265.000	2,265.000
1,350.000	2,265.000	2,265.000	2,265.000	2,265.000	2,265.000
1,365.000	2,265.000	2,265.000	2,264.000	2,264.000	2,264.000
1,380.000	2,264.000	2,264.000	2,264.000	2,264.000	2,264.000
1,395.000	2,264.000	2,264.000	2,264.000	2,264.000	2,264.000
1,410.000	2,264.000	2,264.000	2,264.000	2,264.000	2,264.000
1,425.000	2,264.000	2,264.000	2,264.000	2,264.000	2,264.000
1,440.000	2,264.000	2,263.000	2,262.000	2,259.000	2,255.000
1,455.000	2,252.000	2,247.000	2,239.000	2,229.000	2,218.000
1,470.000	2,206.000	2,194.000	2,181.000	2,168.000	2,155.000
1,485.000	2,142.000	2,129.000	2,116.000	2,102.000	2,089.000
1,500.000	2,076.000	2,064.000	2,051.000	2,038.000	2,025.000
1,515.000	2,012.000	2,000.000	1,987.000	1,975.000	1,962.000
1,530.000	1,950.000	1,938.000	1,926.000	1,914.000	1,901.000
1,545.000	1,889.000	1,877.000	1,866.000	1,854.000	1,842.000
1,560.000	1,830.000	1,819.000	1,807.000	1,796.000	1,784.000
1,575.000	1,773.000	1,761.000	1,750.000	1,739.000	1,728.000
1,590.000	1,717.000	1,705.000	1,694.000	1,684.000	1,673.000
1,605.000	1,662.000	1,651.000	1,640.000	1,630.000	1,619.000
1,620.000	1,609.000	1,598.000	1,588.000	1,577.000	1,567.000
1,635.000	1,557.000	1,546.000	1,536.000	1,526.000	1,516.000
1,650.000	1,506.000	1,496.000	1,486.000	1,476.000	1,466.000
1,665.000	1,457.000	1,447.000	1,437.000	1,428.000	1,418.000
1,680.000	1,409.000	1,399.000	1,390.000	1,380.000	1,371.000
1,695.000	1,362.000	1,353.000	1,343.000	1,334.000	1,325.000
1,710.000	1,316.000	1,307.000	1,298.000	1,289.000	1,279.000
1,725.000	1,268.000	1,256.000	1,245.000	1,234.000	1,223.000
1,740.000	1,212.000	1,201.000	1,190.000	1,179.000	1,169.000
1,755.000	1,158.000	1,148.000	1,137.000	1,127.000	1,117.000
1,770.000	1,106.000	1,096.000	1,086.000	1,076.000	1,067.000
1,785.000	1,057.000	1,047.000	1,038.000	1,028.000	1,019.000
1,800.000	1,009.000	1,000.000	991.000	982.000	973.000
1,815.000	964.000	955.000	946.000	937.000	928.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
1,830.000	920.000	911.000	903.000	894.000	886.000
1,845.000	878.000	869.000	861.000	853.000	845.000
1,860.000	837.000	829.000	821.000	813.000	806.000
1,875.000	798.000	790.000	783.000	775.000	768.000
1,890.000	760.000	753.000	746.000	739.000	732.000
1,905.000	724.000	717.000	710.000	703.000	697.000
1,920.000	690.000	683.000	676.000	669.000	663.000
1,935.000	656.000	650.000	643.000	637.000	630.000
1,950.000	624.000	618.000	612.000	605.000	599.000
1,965.000	593.000	587.000	581.000	575.000	569.000
1,980.000	563.000	557.000	552.000	546.000	539.000
1,995.000	531.000	524.000	516.000	509.000	502.000
2,010.000	495.000	488.000	481.000	474.000	468.000
2,025.000	461.000	455.000	448.000	442.000	436.000
2,040.000	430.000	424.000	418.000	412.000	407.000
2,055.000	401.000	396.000	390.000	385.000	380.000
2,070.000	374.000	369.000	364.000	359.000	354.000
2,085.000	350.000	345.000	340.000	336.000	331.000
2,100.000	327.000	322.000	318.000	314.000	309.000
2,115.000	305.000	301.000	297.000	293.000	289.000
2,130.000	285.000	282.000	278.000	274.000	270.000
2,145.000	267.000	263.000	260.000	256.000	253.000
2,160.000	250.000	246.000	243.000	240.000	237.000
2,175.000	234.000	231.000	228.000	225.000	222.000
2,190.000	219.000	216.000	213.000	210.000	208.000
2,205.000	205.000	202.000	200.000	197.000	194.000
2,220.000	192.000	189.000	187.000	184.000	182.000
2,235.000	180.000	177.000	175.000	173.000	171.000
2,250.000	168.000	166.000	164.000	162.000	160.000
2,265.000	158.000	156.000	154.000	152.000	150.000
2,280.000	148.000	146.000	144.000	142.000	141.000
2,295.000	139.000	137.000	135.000	134.000	132.000
2,310.000	130.000	129.000	127.000	125.000	124.000
2,325.000	122.000	121.000	119.000	118.000	116.000
2,340.000	115.000	113.000	112.000	110.000	109.000
2,355.000	108.000	106.000	105.000	103.000	102.000
2,370.000	101.000	100.000	98.000	97.000	96.000
2,385.000	95.000	94.000	92.000	91.000	90.000
2,400.000	89.000	88.000	87.000	86.000	85.000
2,415.000	83.000	82.000	81.000	80.000	79.000
2,430.000	78.000	77.000	76.000	75.000	75.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
2,445.000	74.000	73.000	72.000	71.000	70.000
2,460.000	69.000	68.000	67.000	67.000	66.000
2,475.000	65.000	64.000	63.000	63.000	62.000
2,490.000	61.000	60.000	59.000	59.000	58.000
2,505.000	57.000	57.000	56.000	55.000	55.000
2,520.000	54.000	53.000	53.000	52.000	51.000
2,535.000	51.000	50.000	49.000	49.000	48.000
2,550.000	48.000	47.000	46.000	46.000	45.000
2,565.000	45.000	44.000	44.000	43.000	43.000
2,580.000	42.000	41.000	41.000	40.000	40.000
2,595.000	39.000	39.000	38.000	38.000	38.000
2,610.000	37.000	37.000	36.000	36.000	35.000
2,625.000	35.000	34.000	34.000	34.000	33.000
2,640.000	33.000	32.000	32.000	32.000	31.000
2,655.000	31.000	30.000	30.000	30.000	29.000
2,670.000	29.000	29.000	28.000	28.000	28.000
2,685.000	27.000	27.000	27.000	26.000	26.000
2,700.000	26.000	25.000	25.000	25.000	24.000
2,715.000	24.000	24.000	23.000	23.000	23.000
2,730.000	23.000	22.000	22.000	22.000	22.000
2,745.000	21.000	21.000	21.000	21.000	20.000
2,760.000	20.000	20.000	20.000	19.000	19.000
2,775.000	19.000	19.000	18.000	18.000	18.000
2,790.000	18.000	17.000	17.000	17.000	17.000
2,805.000	17.000	16.000	16.000	16.000	16.000
2,820.000	16.000	15.000	15.000	15.000	15.000
2,835.000	15.000	15.000	14.000	14.000	14.000
2,850.000	14.000	14.000	14.000	13.000	13.000
2,865.000	13.000	13.000	13.000	13.000	12.000
2,880.000	12.000	12.000	12.000	12.000	12.000
2,895.000	12.000	11.000	11.000	11.000	11.000
2,910.000	11.000	11.000	11.000	10.000	10.000
2,925.000	10.000	10.000	10.000	10.000	10.000
2,940.000	10.000	9.000	9.000	9.000	9.000
2,955.000	9.000	9.000	9.000	9.000	9.000
2,970.000	8.000	8.000	8.000	8.000	8.000
2,985.000	8.000	8.000	8.000	8.000	8.000
3,000.000	7.000	7.000	7.000	7.000	7.000
3,015.000	7.000	7.000	7.000	7.000	7.000
3,030.000	7.000	7.000	6.000	6.000	6.000
3,045.000	6.000	6.000	6.000	6.000	6.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
3,060.000	6.000	6.000	6.000	6.000	6.000
3,075.000	6.000	5.000	5.000	5.000	5.000
3,090.000	5.000	5.000	5.000	5.000	5.000
3,105.000	5.000	5.000	5.000	5.000	5.000
3,120.000	5.000	5.000	4.000	4.000	4.000
3,135.000	4.000	4.000	4.000	4.000	4.000
3,150.000	4.000	4.000	4.000	4.000	4.000
3,165.000	4.000	4.000	4.000	4.000	4.000
3,180.000	4.000	4.000	4.000	3.000	3.000
3,195.000	3.000	3.000	3.000	3.000	3.000
3,210.000	3.000	3.000	3.000	3.000	3.000
3,225.000	3.000	3.000	3.000	3.000	3.000
3,240.000	3.000	3.000	3.000	3.000	3.000
3,255.000	3.000	3.000	3.000	3.000	3.000
3,270.000	2.000	2.000	2.000	2.000	2.000
3,285.000	2.000	2.000	2.000	2.000	2.000
3,300.000	2.000	2.000	2.000	2.000	2.000
3,315.000	2.000	2.000	2.000	2.000	2.000
3,330.000	2.000	2.000	2.000	2.000	2.000
3,345.000	2.000	2.000	2.000	2.000	2.000
3,360.000	2.000	2.000	2.000	2.000	2.000
3,375.000	2.000	2.000	2.000	2.000	2.000
3,390.000	2.000	2.000	1.000	1.000	1.000
3,405.000	1.000	1.000	1.000	1.000	1.000
3,420.000	1.000	1.000	1.000	1.000	1.000
3,435.000	1.000	1.000	1.000	1.000	1.000
3,450.000	1.000	1.000	1.000	1.000	1.000
3,465.000	1.000	1.000	1.000	1.000	1.000
3,480.000	1.000	1.000	1.000	1.000	1.000
3,495.000	1.000	1.000	1.000	1.000	1.000
3,510.000	1.000	1.000	1.000	1.000	1.000
3,525.000	1.000	1.000	1.000	1.000	1.000
3,540.000	1.000	1.000	1.000	1.000	1.000
3,555.000	1.000	1.000	1.000	1.000	1.000
3,570.000	1.000	1.000	1.000	1.000	1.000
3,585.000	1.000	1.000	1.000	1.000	1.000
3,600.000	1.000	1.000	1.000	1.000	1.000
3,615.000	1.000	1.000	1.000	1.000	1.000
3,630.000	1.000	1.000	1.000	1.000	1.000
3,645.000	1.000	1.000	1.000	1.000	1.000
3,660.000	1.000	1.000	0.000	0.000	0.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
3,675.000	0.000	0.000	0.000	0.000	0.000
3,690.000	0.000	0.000	0.000	0.000	0.000
3,705.000	0.000	0.000	0.000	0.000	0.000
3,720.000	0.000	0.000	0.000	0.000	0.000
3,735.000	0.000	0.000	0.000	0.000	0.000
3,750.000	0.000	0.000	0.000	0.000	0.000
3,765.000	0.000	0.000	0.000	0.000	0.000
3,780.000	0.000	0.000	0.000	0.000	0.000
3,795.000	0.000	0.000	0.000	0.000	0.000
3,810.000	0.000	0.000	0.000	0.000	0.000
3,825.000	0.000	0.000	0.000	0.000	0.000
3,840.000	0.000	0.000	0.000	0.000	0.000
3,855.000	0.000	0.000	0.000	0.000	0.000
3,870.000	0.000	0.000	0.000	0.000	0.000
3,885.000	0.000	0.000	0.000	0.000	0.000
3,900.000	0.000	0.000	0.000	0.000	0.000
3,915.000	0.000	0.000	0.000	0.000	0.000
3,930.000	0.000	0.000	0.000	0.000	0.000
3,945.000	0.000	0.000	0.000	0.000	0.000
3,960.000	0.000	0.000	0.000	0.000	0.000
3,975.000	0.000	0.000	0.000	0.000	0.000
3,990.000	0.000	0.000	0.000	0.000	0.000
4,005.000	0.000	0.000	0.000	0.000	0.000
4,020.000	0.000	0.000	0.000	0.000	0.000
4,035.000	0.000	0.000	0.000	0.000	0.000
4,050.000	0.000	0.000	0.000	0.000	0.000
4,065.000	0.000	0.000	0.000	0.000	0.000
4,080.000	0.000	0.000	0.000	0.000	0.000
4,095.000	0.000	0.000	0.000	0.000	0.000
4,110.000	0.000	0.000	0.000	0.000	0.000
4,125.000	0.000	0.000	0.000	0.000	0.000
4,140.000	0.000	0.000	0.000	0.000	0.000
4,155.000	0.000	0.000	0.000	0.000	0.000
4,170.000	0.000	0.000	0.000	0.000	0.000
4,185.000	0.000	0.000	0.000	0.000	0.000
4,200.000	0.000	0.000	0.000	0.000	0.000
4,215.000	0.000	0.000	0.000	0.000	0.000
4,230.000	0.000	0.000	0.000	0.000	0.000
4,245.000	0.000	0.000	0.000	0.000	0.000
4,260.000	0.000	0.000	0.000	0.000	0.000
4,275.000	0.000	0.000	0.000	0.000	0.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
4,290.000	0.000	0.000	0.000	0.000	0.000
4,305.000	0.000	0.000	0.000	0.000	0.000
4,320.000	0.000	0.000	0.000	0.000	0.000
4,335.000	0.000	0.000	0.000	0.000	0.000
4,350.000	0.000	0.000	0.000	0.000	0.000
4,365.000	0.000	0.000	0.000	0.000	0.000
4,380.000	0.000	0.000	0.000	0.000	0.000
4,395.000	0.000	0.000	0.000	0.000	0.000
4,410.000	0.000	0.000	0.000	0.000	0.000
4,425.000	0.000	0.000	0.000	0.000	0.000
4,440.000	0.000	0.000	0.000	0.000	0.000
4,455.000	0.000	0.000	0.000	0.000	0.000
4,470.000	0.000	0.000	0.000	0.000	0.000
4,485.000	0.000	0.000	0.000	0.000	0.000
4,500.000	0.000	0.000	0.000	0.000	0.000
4,515.000	0.000	0.000	0.000	0.000	0.000
4,530.000	0.000	0.000	0.000	0.000	0.000
4,545.000	0.000	0.000	0.000	0.000	0.000
4,560.000	0.000	0.000	0.000	0.000	0.000
4,575.000	0.000	0.000	0.000	0.000	0.000
4,590.000	0.000	0.000	0.000	0.000	0.000
4,605.000	0.000	0.000	0.000	0.000	0.000
4,620.000	0.000	0.000	0.000	0.000	0.000
4,635.000	0.000	0.000	0.000	0.000	0.000
4,650.000	0.000	0.000	0.000	0.000	0.000
4,665.000	0.000	0.000	0.000	0.000	0.000
4,680.000	0.000	0.000	0.000	0.000	0.000
4,695.000	0.000	0.000	0.000	0.000	0.000
4,710.000	0.000	0.000	0.000	0.000	0.000
4,725.000	0.000	0.000	0.000	0.000	0.000
4,740.000	0.000	0.000	0.000	0.000	0.000
4,755.000	0.000	0.000	0.000	0.000	0.000
4,770.000	0.000	0.000	0.000	0.000	0.000
4,785.000	0.000	0.000	0.000	0.000	0.000
4,800.000	0.000	0.000	0.000	0.000	0.000
4,815.000	0.000	0.000	0.000	0.000	0.000
4,830.000	0.000	0.000	0.000	0.000	0.000
4,845.000	0.000	0.000	0.000	0.000	0.000
4,860.000	0.000	0.000	0.000	0.000	0.000
4,875.000	0.000	0.000	0.000	0.000	0.000
4,890.000	0.000	0.000	0.000	0.000	0.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
4,905.000	0.000	0.000	0.000	0.000	0.000
4,920.000	0.000	0.000	0.000	0.000	0.000
4,935.000	0.000	0.000	0.000	0.000	0.000
4,950.000	0.000	0.000	0.000	0.000	0.000
4,965.000	0.000	0.000	0.000	0.000	0.000
4,980.000	0.000	0.000	0.000	0.000	0.000
4,995.000	0.000	0.000	0.000	0.000	0.000
5,010.000	0.000	0.000	0.000	0.000	0.000
5,025.000	0.000	0.000	0.000	0.000	0.000
5,040.000	0.000	0.000	0.000	0.000	0.000
5,055.000	0.000	0.000	0.000	0.000	0.000
5,070.000	0.000	0.000	0.000	0.000	0.000
5,085.000	0.000	0.000	0.000	0.000	0.000
5,100.000	0.000	0.000	0.000	0.000	0.000
5,115.000	0.000	0.000	0.000	0.000	0.000
5,130.000	0.000	0.000	0.000	0.000	0.000
5,145.000	0.000	0.000	0.000	0.000	0.000
5,160.000	0.000	0.000	0.000	0.000	0.000
5,175.000	0.000	0.000	0.000	0.000	0.000
5,190.000	0.000	0.000	0.000	0.000	0.000
5,205.000	0.000	0.000	0.000	0.000	0.000
5,220.000	0.000	0.000	0.000	0.000	0.000
5,235.000	0.000	0.000	0.000	0.000	0.000
5,250.000	0.000	0.000	0.000	0.000	0.000
5,265.000	0.000	0.000	0.000	0.000	0.000
5,280.000	0.000	0.000	0.000	0.000	0.000
5,295.000	0.000	0.000	0.000	0.000	0.000
5,310.000	0.000	0.000	0.000	0.000	0.000
5,325.000	0.000	0.000	0.000	0.000	0.000
5,340.000	0.000	0.000	0.000	0.000	0.000
5,355.000	0.000	0.000	0.000	0.000	0.000
5,370.000	0.000	0.000	0.000	0.000	0.000
5,385.000	0.000	0.000	0.000	0.000	0.000
5,400.000	0.000	0.000	0.000	0.000	0.000
5,415.000	0.000	0.000	0.000	0.000	0.000
5,430.000	0.000	0.000	0.000	0.000	0.000
5,445.000	0.000	0.000	0.000	0.000	0.000
5,460.000	0.000	0.000	0.000	0.000	0.000
5,475.000	0.000	0.000	0.000	0.000	0.000
5,490.000	0.000	0.000	0.000	0.000	0.000
5,505.000	0.000	0.000	0.000	0.000	0.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 10

Return Event: 10 years

Storm Event: 10-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
5,520.000	0.000	0.000	0.000	0.000	0.000
5,535.000	0.000	0.000	0.000	0.000	0.000
5,550.000	0.000	0.000	0.000	0.000	0.000
5,565.000	0.000	0.000	0.000	0.000	0.000
5,580.000	0.000	0.000	0.000	0.000	0.000
5,595.000	0.000	0.000	0.000	0.000	0.000
5,610.000	0.000	0.000	0.000	0.000	0.000
5,625.000	0.000	0.000	0.000	0.000	0.000
5,640.000	0.000	0.000	0.000	0.000	0.000
5,655.000	0.000	0.000	0.000	0.000	0.000
5,670.000	0.000	0.000	0.000	0.000	0.000
5,685.000	0.000	0.000	0.000	0.000	0.000
5,700.000	0.000	0.000	0.000	0.000	0.000
5,715.000	0.000	0.000	0.000	0.000	0.000
5,730.000	0.000	0.000	0.000	0.000	0.000
5,745.000	0.000	0.000	0.000	0.000	0.000
5,760.000	0.000	(N/A)	(N/A)	(N/A)	(N/A)

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Return Event: 100 years

Label: POND

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
0.000	0.000	0.000	0.000	0.000	0.000
15.000	0.000	0.000	0.000	0.000	0.000
30.000	0.000	0.000	0.000	1.000	2.000
45.000	3.000	4.000	6.000	8.000	10.000
60.000	13.000	16.000	19.000	22.000	25.000
75.000	29.000	33.000	37.000	41.000	45.000
90.000	50.000	55.000	60.000	65.000	70.000
105.000	75.000	81.000	86.000	92.000	98.000
120.000	104.000	110.000	117.000	123.000	129.000
135.000	136.000	143.000	150.000	157.000	164.000
150.000	171.000	178.000	185.000	193.000	200.000
165.000	208.000	216.000	224.000	231.000	239.000
180.000	247.000	256.000	264.000	272.000	280.000
195.000	289.000	297.000	306.000	315.000	324.000
210.000	332.000	341.000	350.000	359.000	369.000
225.000	378.000	387.000	396.000	406.000	415.000
240.000	425.000	434.000	444.000	454.000	464.000
255.000	474.000	484.000	494.000	504.000	515.000
270.000	526.000	537.000	548.000	560.000	572.000
285.000	585.000	598.000	612.000	626.000	640.000
300.000	655.000	671.000	687.000	703.000	720.000
315.000	737.000	755.000	774.000	793.000	812.000
330.000	832.000	852.000	873.000	895.000	917.000
345.000	940.000	963.000	987.000	1,011.000	1,036.000
360.000	1,061.000	1,087.000	1,114.000	1,141.000	1,168.000
375.000	1,197.000	1,226.000	1,256.000	1,287.000	1,318.000
390.000	1,350.000	1,382.000	1,415.000	1,449.000	1,483.000
405.000	1,518.000	1,554.000	1,590.000	1,627.000	1,664.000
420.000	1,703.000	1,742.000	1,781.000	1,821.000	1,862.000
435.000	1,904.000	1,946.000	1,989.000	2,033.000	2,077.000
450.000	2,122.000	2,168.000	2,215.000	2,262.000	2,310.000
465.000	2,359.000	2,408.000	2,458.000	2,509.000	2,561.000
480.000	2,614.000	2,667.000	2,721.000	2,776.000	2,833.000
495.000	2,891.000	2,950.000	3,011.000	3,075.000	3,140.000
510.000	3,205.000	3,235.000	3,238.000	3,239.000	3,240.000
525.000	3,241.000	3,242.000	3,243.000	3,244.000	3,245.000
540.000	3,246.000	3,247.000	3,248.000	3,249.000	3,250.000
555.000	3,250.000	3,251.000	3,251.000	3,252.000	3,252.000
570.000	3,252.000	3,253.000	3,253.000	3,254.000	3,255.000
585.000	3,256.000	3,257.000	3,259.000	3,260.000	3,262.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Return Event: 100 years

Label: POND

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
600.000	3,263.000	3,265.000	3,267.000	3,269.000	3,271.000
615.000	3,273.000	3,275.000	3,278.000	3,280.000	3,283.000
630.000	3,285.000	3,288.000	3,291.000	3,294.000	3,297.000
645.000	3,301.000	3,305.000	3,309.000	3,314.000	3,318.000
660.000	3,323.000	3,327.000	3,333.000	3,339.000	3,346.000
675.000	3,354.000	3,363.000	3,373.000	3,384.000	3,395.000
690.000	3,406.000	3,422.000	3,457.000	3,530.000	3,658.000
705.000	3,850.000	4,105.000	4,754.000	5,348.000	5,470.000
720.000	5,515.000	5,485.000	5,390.000	5,265.000	5,165.000
735.000	4,546.000	3,852.000	3,685.000	3,615.000	3,570.000
750.000	3,534.000	3,503.000	3,477.000	3,454.000	3,435.000
765.000	3,421.000	3,411.000	3,403.000	3,396.000	3,389.000
780.000	3,382.000	3,376.000	3,370.000	3,364.000	3,359.000
795.000	3,354.000	3,350.000	3,347.000	3,343.000	3,339.000
810.000	3,336.000	3,332.000	3,329.000	3,326.000	3,323.000
825.000	3,320.000	3,317.000	3,314.000	3,312.000	3,309.000
840.000	3,307.000	3,304.000	3,302.000	3,300.000	3,298.000
855.000	3,297.000	3,296.000	3,294.000	3,294.000	3,293.000
870.000	3,292.000	3,291.000	3,290.000	3,289.000	3,288.000
885.000	3,287.000	3,286.000	3,286.000	3,285.000	3,284.000
900.000	3,283.000	3,282.000	3,281.000	3,280.000	3,279.000
915.000	3,279.000	3,278.000	3,277.000	3,276.000	3,275.000
930.000	3,274.000	3,273.000	3,272.000	3,272.000	3,271.000
945.000	3,270.000	3,269.000	3,268.000	3,267.000	3,266.000
960.000	3,265.000	3,264.000	3,264.000	3,263.000	3,262.000
975.000	3,262.000	3,261.000	3,261.000	3,261.000	3,260.000
990.000	3,260.000	3,260.000	3,259.000	3,259.000	3,259.000
1,005.000	3,258.000	3,258.000	3,258.000	3,257.000	3,257.000
1,020.000	3,257.000	3,256.000	3,256.000	3,256.000	3,255.000
1,035.000	3,255.000	3,255.000	3,255.000	3,254.000	3,254.000
1,050.000	3,254.000	3,253.000	3,253.000	3,253.000	3,252.000
1,065.000	3,252.000	3,252.000	3,251.000	3,251.000	3,251.000
1,080.000	3,250.000	3,250.000	3,250.000	3,249.000	3,249.000
1,095.000	3,249.000	3,249.000	3,248.000	3,248.000	3,248.000
1,110.000	3,247.000	3,247.000	3,247.000	3,246.000	3,246.000
1,125.000	3,246.000	3,245.000	3,245.000	3,245.000	3,244.000
1,140.000	3,244.000	3,244.000	3,243.000	3,243.000	3,243.000
1,155.000	3,242.000	3,242.000	3,242.000	3,242.000	3,241.000
1,170.000	3,241.000	3,241.000	3,240.000	3,240.000	3,240.000
1,185.000	3,239.000	3,239.000	3,239.000	3,238.000	3,238.000
1,200.000	3,238.000	3,237.000	3,237.000	3,237.000	3,237.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
1,215.000	3,237.000	3,236.000	3,236.000	3,236.000	3,236.000
1,230.000	3,236.000	3,236.000	3,236.000	3,236.000	3,236.000
1,245.000	3,236.000	3,236.000	3,236.000	3,236.000	3,235.000
1,260.000	3,235.000	3,235.000	3,235.000	3,235.000	3,235.000
1,275.000	3,235.000	3,235.000	3,235.000	3,235.000	3,235.000
1,290.000	3,235.000	3,235.000	3,235.000	3,235.000	3,235.000
1,305.000	3,234.000	3,234.000	3,234.000	3,234.000	3,234.000
1,320.000	3,234.000	3,234.000	3,234.000	3,234.000	3,234.000
1,335.000	3,234.000	3,234.000	3,234.000	3,234.000	3,234.000
1,350.000	3,234.000	3,233.000	3,233.000	3,233.000	3,233.000
1,365.000	3,233.000	3,233.000	3,233.000	3,233.000	3,233.000
1,380.000	3,233.000	3,233.000	3,233.000	3,233.000	3,233.000
1,395.000	3,233.000	3,233.000	3,232.000	3,232.000	3,232.000
1,410.000	3,232.000	3,232.000	3,232.000	3,232.000	3,232.000
1,425.000	3,232.000	3,232.000	3,232.000	3,232.000	3,232.000
1,440.000	3,232.000	3,231.000	3,229.000	3,224.000	3,218.000
1,455.000	3,213.000	3,209.000	3,207.000	3,206.000	3,205.000
1,470.000	3,204.000	3,204.000	3,204.000	3,203.000	3,203.000
1,485.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,500.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,515.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,530.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,545.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,560.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,575.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,590.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,605.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,620.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,635.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,650.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,665.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,680.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,695.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,710.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,725.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,740.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,755.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,770.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,785.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,800.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,815.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
1,830.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,845.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,860.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,875.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,890.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,905.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,920.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,935.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,950.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,965.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,980.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
1,995.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,010.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,025.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,040.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,055.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,070.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,085.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,100.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,115.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,130.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,145.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,160.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,175.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,190.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,205.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,220.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,235.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,250.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,265.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,280.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,295.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,310.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,325.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,340.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,355.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,370.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,385.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,400.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,415.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,430.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
2,445.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,460.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,475.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,490.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,505.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,520.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,535.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,550.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,565.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,580.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,595.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,610.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,625.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,640.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,655.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,670.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,685.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,700.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,715.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,730.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,745.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,760.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,775.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,790.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,805.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,820.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,835.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,850.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,865.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,880.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,895.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,910.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,925.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,940.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,955.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,970.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
2,985.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,000.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,015.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,030.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,045.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
3,060.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,075.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,090.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,105.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,120.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,135.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,150.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,165.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,180.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,195.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,210.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,225.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,240.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,255.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,270.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,285.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,300.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,315.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,330.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,345.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,360.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,375.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,390.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,405.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,420.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,435.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,450.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,465.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,480.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,495.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,510.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,525.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,540.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,555.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,570.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,585.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,600.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,615.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,630.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,645.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,660.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
3,675.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,690.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,705.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,720.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,735.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,750.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,765.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,780.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,795.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,810.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,825.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,840.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,855.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,870.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,885.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,900.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,915.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,930.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,945.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,960.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,975.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
3,990.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,005.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,020.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,035.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,050.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,065.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,080.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,095.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,110.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,125.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,140.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,155.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,170.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,185.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,200.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,215.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,230.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,245.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,260.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,275.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)	Volume (ft³)
4,290.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,305.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,320.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,335.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,350.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,365.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,380.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,395.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,410.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,425.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,440.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,455.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,470.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,485.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,500.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,515.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,530.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,545.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,560.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,575.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,590.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,605.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,620.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,635.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,650.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,665.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,680.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,695.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,710.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,725.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,740.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,755.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,770.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,785.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,800.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,815.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,830.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,845.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,860.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,875.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,890.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Label: POND

Scenario: Post-Development 100

Return Event: 100 years

Storm Event: 100-yr storm

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
4,905.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,920.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,935.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,950.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,965.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,980.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
4,995.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,010.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,025.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,040.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,055.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,070.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,085.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,100.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,115.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,130.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,145.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,160.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,175.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,190.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,205.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,220.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,235.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,250.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,265.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,280.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,295.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,310.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,325.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,340.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,355.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,370.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,385.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,400.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,415.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,430.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,445.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,460.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,475.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,490.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,505.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000

Grain Valley Dispensary - Detention

Subsection: Time vs. Volume

Return Event: 100 years

Label: POND

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Volume (ft³)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
5,520.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,535.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,550.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,565.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,580.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,595.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,610.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,625.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,640.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,655.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,670.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,685.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,700.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,715.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,730.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,745.000	3,203.000	3,203.000	3,203.000	3,203.000	3,203.000
5,760.000	3,203.000	(N/A)	(N/A)	(N/A)	(N/A)

Grain Valley Dispensary - Detention

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Grain Valley Dispensary - Emergency Spillway

Project Summary

Title	Grain Valley Dispensary
Engineer	mcross
Company	kve
Date	5/21/2025

Notes

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Grain Valley Dispensary - Emergency Spillway

Subsection: User Notifications

User Notifications

Message Id	7
Scenario	Post-Development 100
Element Type	Catchment
Element Id	83
Label	PDA-B1
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 3.2 % is greater than 1.5 %. Computed peak flow= 4.43 ft ³ /s Interp. peak flow= 4.29 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 100
Element Type	Catchment
Element Id	80
Label	PDA-C2
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.4 % is greater than 1.5 %. Computed peak flow= 0.70 ft ³ /s Interp. peak flow= 0.69 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 100
Element Type	Catchment
Element Id	104
Label	PDA-C3
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.8 % is greater than 1.5 %. Computed peak flow= 2.18 ft ³ /s Interp. peak flow= 2.12 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning
Message Id	7
Scenario	Post-Development 100
Element Type	Catchment
Element Id	107
Label	PDA-C4
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 1.5 % is greater than 1.5 %. Computed peak flow= 1.83 ft ³ /s Interp. peak flow= 1.80 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Grain Valley Dispensary - Emergency Spillway

Subsection: User Notifications

User Notifications

Message Id	7
Scenario	Post-Development 100
Element Type	Catchment
Element Id	108
Label	PDA-C5
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 2.0 % is greater than 1.5 %. Computed peak flow= 0.54 ft ³ /s Interp. peak flow= 0.53 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Message Id	7
Scenario	Post-Development 100
Element Type	Catchment
Element Id	109
Label	PDA-C6
Time	(N/A)
Message	The difference between calculated peak flow and interpolated peak flow 1.5 % is greater than 1.5 %. Computed peak flow= 0.62 ft ³ /s Interp. peak flow= 0.61 ft ³ /s. Output increment for this catchment may be too large.
Source	Warning

Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	130
Label	A5-A4
Time	(N/A)
Message	For weighted average inflow = 0.52 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.186 min. Consider reducing output increment.
Source	Warning

Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	117
Label	A4-A3
Time	(N/A)
Message	For weighted average inflow = 0.67 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.236 min. Consider reducing output increment.
Source	Warning

Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	133
Label	SWALE
Time	(N/A)
Message	For weighted average inflow = 7.90 ft ³ /s, travel time is shorter than the output increment in calculation options = 1.654 min. Consider reducing output increment.
Source	Warning

Grain Valley Dispensary - Emergency Spillway

Subsection: User Notifications

User Notifications

Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	119
Label	A3-A2
Time	(N/A)
Message	For weighted average inflow = 0.86 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.247 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	123
Label	A2-A1
Time	(N/A)
Message	For weighted average inflow = 1.45 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.059 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	129
Label	B2-B1
Time	(N/A)
Message	For weighted average inflow = 0.18 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.118 min. Consider reducing output increment.
Source	Warning
Message Id	41
Scenario	Post-Development 100
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	For weighted average inflow = 7.80 ft ³ /s, travel time is shorter than the output increment in calculation options = 0.251 min. Consider reducing output increment.
Source	Warning
Message Id	56
Scenario	Post-Development 100
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	Volume/Outflow data exceeded. Inflow= 17.21 ft ³ /s, Outflow > 18.38 ft ³ /s.
Source	Warning

Grain Valley Dispensary - Emergency Spillway

Subsection: User Notifications

User Notifications

Message Id	59
Scenario	Post-Development 100
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	Volume/Outflow data exceeded during routing.
Source	Warning
Message Id	44
Scenario	Post-Development 100
Element Type	Conduit
Element Id	135
Label	C2-C1
Time	(N/A)
Message	Elevation-flow-volume table data overtopped...routing results invalid.
Source	Warning

Grain Valley Dispensary - Emergency Spillway

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (min)	Peak Flow (ft ³ /s)
PDA-B1	Post-Development 100	100	10,336.000	714.000	4.29
PDA-C1	Post-Development 100	100	63,791.000	717.000	23.62
PDA-C2	Post-Development 100	100	1,924.000	714.000	0.69
PDA-C3	Post-Development 100	100	5,992.000	714.000	2.12
PDA-C4	Post-Development 100	100	4,957.000	714.000	1.80
PDA-C5	Post-Development 100	100	1,480.000	714.000	0.53
PDA-C6	Post-Development 100	100	1,689.000	714.000	0.61

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (min)	Peak Flow (ft ³ /s)
A2	Post-Development 100	100	14,352.000	717.000	4.76
A3	Post-Development 100	100	8,360.000	717.000	2.84
A4	Post-Development 100	100	6,437.000	717.000	2.25
A5	Post-Development 100	100	4,957.000	714.000	1.80
B2	Post-Development 100	100	1,689.000	714.000	0.61
SWALE1	Post-Development 100	100	63,791.000	720.000	23.37
SWALE2	Post-Development 100	100	63,791.000	717.000	23.62
o-1	Post-Development 100	100	89,668.000	717.000	27.22

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (min)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
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Grain Valley Dispensary - Emergency Spillway

Subsection: Master Network Summary

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (min)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
POND (IN)	Post-Development 100	100	82,535.000	720.000	23.54	(N/A)	(N/A)
POND (OUT)	Post-Development 100	100	79,332.000	720.000	23.51	809.00	5,515.000

Grain Valley Dispensary - Emergency Spillway

Subsection: Time vs. Elevation

Return Event: 100 years

Label: POND (OUT)

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Elevation (ft)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	808.17	808.17	808.17	808.17	808.17
15.000	808.17	808.17	808.17	808.17	808.17
30.000	808.17	808.17	808.17	808.17	808.17
45.000	808.17	808.17	808.17	808.17	808.17
60.000	808.17	808.17	808.17	808.17	808.17
75.000	808.17	808.18	808.18	808.18	808.18
90.000	808.18	808.18	808.18	808.18	808.18
105.000	808.18	808.18	808.18	808.19	808.19
120.000	808.19	808.19	808.19	808.19	808.19
135.000	808.19	808.19	808.19	808.20	808.20
150.000	808.20	808.20	808.20	808.20	808.20
165.000	808.20	808.21	808.21	808.21	808.21
180.000	808.21	808.21	808.21	808.22	808.22
195.000	808.22	808.22	808.22	808.22	808.22
210.000	808.23	808.23	808.23	808.23	808.23
225.000	808.23	808.23	808.24	808.24	808.24
240.000	808.24	808.24	808.24	808.24	808.25
255.000	808.25	808.25	808.25	808.25	808.25
270.000	808.26	808.26	808.26	808.26	808.26
285.000	808.27	808.27	808.27	808.27	808.28
300.000	808.28	808.28	808.28	808.29	808.29
315.000	808.29	808.29	808.30	808.30	808.30
330.000	808.31	808.31	808.31	808.32	808.32
345.000	808.32	808.33	808.33	808.33	808.34
360.000	808.34	808.35	808.35	808.36	808.36
375.000	808.36	808.37	808.37	808.38	808.38
390.000	808.39	808.39	808.40	808.40	808.41
405.000	808.42	808.42	808.43	808.43	808.44
420.000	808.44	808.45	808.46	808.46	808.47
435.000	808.47	808.48	808.49	808.49	808.50
450.000	808.51	808.52	808.52	808.53	808.54
465.000	808.54	808.55	808.56	808.57	808.57
480.000	808.58	808.59	808.60	808.61	808.62
495.000	808.62	808.63	808.64	808.65	808.66
510.000	808.67	808.67	808.68	808.68	808.68
525.000	808.68	808.68	808.68	808.68	808.68
540.000	808.68	808.68	808.68	808.68	808.68
555.000	808.68	808.68	808.68	808.68	808.68
570.000	808.68	808.68	808.68	808.68	808.68
585.000	808.68	808.68	808.68	808.68	808.68

Grain Valley Dispensary - Emergency Spillway

Subsection: Time vs. Elevation

Return Event: 100 years

Label: POND (OUT)

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Elevation (ft)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
600.000	808.68	808.68	808.68	808.68	808.68
615.000	808.68	808.68	808.68	808.68	808.68
630.000	808.68	808.68	808.68	808.68	808.68
645.000	808.68	808.68	808.69	808.69	808.69
660.000	808.69	808.69	808.69	808.69	808.69
675.000	808.69	808.69	808.69	808.70	808.70
690.000	808.70	808.70	808.71	808.72	808.74
705.000	808.76	808.80	808.89	808.97	808.99
720.000	809.00	808.99	808.98	808.96	808.95
735.000	808.86	808.76	808.74	808.73	808.72
750.000	808.72	808.71	808.71	808.71	808.70
765.000	808.70	808.70	808.70	808.70	808.70
780.000	808.70	808.70	808.69	808.69	808.69
795.000	808.69	808.69	808.69	808.69	808.69
810.000	808.69	808.69	808.69	808.69	808.69
825.000	808.69	808.69	808.69	808.69	808.69
840.000	808.69	808.68	808.68	808.68	808.68
855.000	808.68	808.68	808.68	808.68	808.68
870.000	808.68	808.68	808.68	808.68	808.68
885.000	808.68	808.68	808.68	808.68	808.68
900.000	808.68	808.68	808.68	808.68	808.68
915.000	808.68	808.68	808.68	808.68	808.68
930.000	808.68	808.68	808.68	808.68	808.68
945.000	808.68	808.68	808.68	808.68	808.68
960.000	808.68	808.68	808.68	808.68	808.68
975.000	808.68	808.68	808.68	808.68	808.68
990.000	808.68	808.68	808.68	808.68	808.68
1,005.000	808.68	808.68	808.68	808.68	808.68
1,020.000	808.68	808.68	808.68	808.68	808.68
1,035.000	808.68	808.68	808.68	808.68	808.68
1,050.000	808.68	808.68	808.68	808.68	808.68
1,065.000	808.68	808.68	808.68	808.68	808.68
1,080.000	808.68	808.68	808.68	808.68	808.68
1,095.000	808.68	808.68	808.68	808.68	808.68
1,110.000	808.68	808.68	808.68	808.68	808.68
1,125.000	808.68	808.68	808.68	808.68	808.68
1,140.000	808.68	808.68	808.68	808.68	808.68
1,155.000	808.68	808.68	808.68	808.68	808.68
1,170.000	808.68	808.68	808.68	808.68	808.68
1,185.000	808.68	808.68	808.68	808.68	808.68
1,200.000	808.68	808.68	808.67	808.67	808.67

Grain Valley Dispensary - Emergency Spillway

Subsection: Time vs. Elevation

Return Event: 100 years

Label: POND (OUT)

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Elevation (ft)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
1,215.000	808.67	808.67	808.67	808.67	808.67
1,230.000	808.67	808.67	808.67	808.67	808.67
1,245.000	808.67	808.67	808.67	808.67	808.67
1,260.000	808.67	808.67	808.67	808.67	808.67
1,275.000	808.67	808.67	808.67	808.67	808.67
1,290.000	808.67	808.67	808.67	808.67	808.67
1,305.000	808.67	808.67	808.67	808.67	808.67
1,320.000	808.67	808.67	808.67	808.67	808.67
1,335.000	808.67	808.67	808.67	808.67	808.67
1,350.000	808.67	808.67	808.67	808.67	808.67
1,365.000	808.67	808.67	808.67	808.67	808.67
1,380.000	808.67	808.67	808.67	808.67	808.67
1,395.000	808.67	808.67	808.67	808.67	808.67
1,410.000	808.67	808.67	808.67	808.67	808.67
1,425.000	808.67	808.67	808.67	808.67	808.67
1,440.000	808.67	808.67	808.67	808.67	808.67
1,455.000	808.67	808.67	808.67	808.67	808.67
1,470.000	808.67	808.67	808.67	808.67	808.67
1,485.000	808.67	808.67	808.67	808.67	808.67
1,500.000	808.67	808.67	808.67	808.67	808.67
1,515.000	808.67	808.67	808.67	808.67	808.67
1,530.000	808.67	808.67	808.67	808.67	808.67
1,545.000	808.67	808.67	808.67	808.67	808.67
1,560.000	808.67	808.67	808.67	808.67	808.67
1,575.000	808.67	808.67	808.67	808.67	808.67
1,590.000	808.67	808.67	808.67	808.67	808.67
1,605.000	808.67	808.67	808.67	808.67	808.67
1,620.000	808.67	808.67	808.67	808.67	808.67
1,635.000	808.67	808.67	808.67	808.67	808.67
1,650.000	808.67	808.67	808.67	808.67	808.67
1,665.000	808.67	808.67	808.67	808.67	808.67
1,680.000	808.67	808.67	808.67	808.67	808.67
1,695.000	808.67	808.67	808.67	808.67	808.67
1,710.000	808.67	808.67	808.67	808.67	808.67
1,725.000	808.67	808.67	808.67	808.67	808.67
1,740.000	808.67	808.67	808.67	808.67	808.67
1,755.000	808.67	808.67	808.67	808.67	808.67
1,770.000	808.67	808.67	808.67	808.67	808.67
1,785.000	808.67	808.67	808.67	808.67	808.67
1,800.000	808.67	808.67	808.67	808.67	808.67
1,815.000	808.67	808.67	808.67	808.67	808.67

Grain Valley Dispensary - Emergency Spillway

Subsection: Time vs. Elevation

Return Event: 100 years

Label: POND (OUT)

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Elevation (ft)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
1,830.000	808.67	808.67	808.67	808.67	808.67
1,845.000	808.67	808.67	808.67	808.67	808.67
1,860.000	808.67	808.67	808.67	808.67	808.67
1,875.000	808.67	808.67	808.67	808.67	808.67
1,890.000	808.67	808.67	808.67	808.67	808.67
1,905.000	808.67	808.67	808.67	808.67	808.67
1,920.000	808.67	808.67	808.67	808.67	808.67
1,935.000	808.67	808.67	808.67	808.67	808.67
1,950.000	808.67	808.67	808.67	808.67	808.67
1,965.000	808.67	808.67	808.67	808.67	808.67
1,980.000	808.67	808.67	808.67	808.67	808.67
1,995.000	808.67	808.67	808.67	808.67	808.67
2,010.000	808.67	808.67	808.67	808.67	808.67
2,025.000	808.67	808.67	808.67	808.67	808.67
2,040.000	808.67	808.67	808.67	808.67	808.67
2,055.000	808.67	808.67	808.67	808.67	808.67
2,070.000	808.67	808.67	808.67	808.67	808.67
2,085.000	808.67	808.67	808.67	808.67	808.67
2,100.000	808.67	808.67	808.67	808.67	808.67
2,115.000	808.67	808.67	808.67	808.67	808.67
2,130.000	808.67	808.67	808.67	808.67	808.67
2,145.000	808.67	808.67	808.67	808.67	808.67
2,160.000	808.67	808.67	808.67	808.67	808.67
2,175.000	808.67	808.67	808.67	808.67	808.67
2,190.000	808.67	808.67	808.67	808.67	808.67
2,205.000	808.67	808.67	808.67	808.67	808.67
2,220.000	808.67	808.67	808.67	808.67	808.67
2,235.000	808.67	808.67	808.67	808.67	808.67
2,250.000	808.67	808.67	808.67	808.67	808.67
2,265.000	808.67	808.67	808.67	808.67	808.67
2,280.000	808.67	808.67	808.67	808.67	808.67
2,295.000	808.67	808.67	808.67	808.67	808.67
2,310.000	808.67	808.67	808.67	808.67	808.67
2,325.000	808.67	808.67	808.67	808.67	808.67
2,340.000	808.67	808.67	808.67	808.67	808.67
2,355.000	808.67	808.67	808.67	808.67	808.67
2,370.000	808.67	808.67	808.67	808.67	808.67
2,385.000	808.67	808.67	808.67	808.67	808.67
2,400.000	808.67	808.67	808.67	808.67	808.67
2,415.000	808.67	808.67	808.67	808.67	808.67
2,430.000	808.67	808.67	808.67	808.67	808.67

Grain Valley Dispensary - Emergency Spillway

Subsection: Time vs. Elevation

Return Event: 100 years

Label: POND (OUT)

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Elevation (ft)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
2,445.000	808.67	808.67	808.67	808.67	808.67
2,460.000	808.67	808.67	808.67	808.67	808.67
2,475.000	808.67	808.67	808.67	808.67	808.67
2,490.000	808.67	808.67	808.67	808.67	808.67
2,505.000	808.67	808.67	808.67	808.67	808.67
2,520.000	808.67	808.67	808.67	808.67	808.67
2,535.000	808.67	808.67	808.67	808.67	808.67
2,550.000	808.67	808.67	808.67	808.67	808.67
2,565.000	808.67	808.67	808.67	808.67	808.67
2,580.000	808.67	808.67	808.67	808.67	808.67
2,595.000	808.67	808.67	808.67	808.67	808.67
2,610.000	808.67	808.67	808.67	808.67	808.67
2,625.000	808.67	808.67	808.67	808.67	808.67
2,640.000	808.67	808.67	808.67	808.67	808.67
2,655.000	808.67	808.67	808.67	808.67	808.67
2,670.000	808.67	808.67	808.67	808.67	808.67
2,685.000	808.67	808.67	808.67	808.67	808.67
2,700.000	808.67	808.67	808.67	808.67	808.67
2,715.000	808.67	808.67	808.67	808.67	808.67
2,730.000	808.67	808.67	808.67	808.67	808.67
2,745.000	808.67	808.67	808.67	808.67	808.67
2,760.000	808.67	808.67	808.67	808.67	808.67
2,775.000	808.67	808.67	808.67	808.67	808.67
2,790.000	808.67	808.67	808.67	808.67	808.67
2,805.000	808.67	808.67	808.67	808.67	808.67
2,820.000	808.67	808.67	808.67	808.67	808.67
2,835.000	808.67	808.67	808.67	808.67	808.67
2,850.000	808.67	808.67	808.67	808.67	808.67
2,865.000	808.67	808.67	808.67	808.67	808.67
2,880.000	808.67	808.67	808.67	808.67	808.67
2,895.000	808.67	808.67	808.67	808.67	808.67
2,910.000	808.67	808.67	808.67	808.67	808.67
2,925.000	808.67	808.67	808.67	808.67	808.67
2,940.000	808.67	808.67	808.67	808.67	808.67
2,955.000	808.67	808.67	808.67	808.67	808.67
2,970.000	808.67	808.67	808.67	808.67	808.67
2,985.000	808.67	808.67	808.67	808.67	808.67
3,000.000	808.67	808.67	808.67	808.67	808.67
3,015.000	808.67	808.67	808.67	808.67	808.67
3,030.000	808.67	808.67	808.67	808.67	808.67
3,045.000	808.67	808.67	808.67	808.67	808.67

Grain Valley Dispensary - Emergency Spillway

Subsection: Time vs. Elevation

Return Event: 100 years

Label: POND (OUT)

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Elevation (ft)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
3,060.000	808.67	808.67	808.67	808.67	808.67
3,075.000	808.67	808.67	808.67	808.67	808.67
3,090.000	808.67	808.67	808.67	808.67	808.67
3,105.000	808.67	808.67	808.67	808.67	808.67
3,120.000	808.67	808.67	808.67	808.67	808.67
3,135.000	808.67	808.67	808.67	808.67	808.67
3,150.000	808.67	808.67	808.67	808.67	808.67
3,165.000	808.67	808.67	808.67	808.67	808.67
3,180.000	808.67	808.67	808.67	808.67	808.67
3,195.000	808.67	808.67	808.67	808.67	808.67
3,210.000	808.67	808.67	808.67	808.67	808.67
3,225.000	808.67	808.67	808.67	808.67	808.67
3,240.000	808.67	808.67	808.67	808.67	808.67
3,255.000	808.67	808.67	808.67	808.67	808.67
3,270.000	808.67	808.67	808.67	808.67	808.67
3,285.000	808.67	808.67	808.67	808.67	808.67
3,300.000	808.67	808.67	808.67	808.67	808.67
3,315.000	808.67	808.67	808.67	808.67	808.67
3,330.000	808.67	808.67	808.67	808.67	808.67
3,345.000	808.67	808.67	808.67	808.67	808.67
3,360.000	808.67	808.67	808.67	808.67	808.67
3,375.000	808.67	808.67	808.67	808.67	808.67
3,390.000	808.67	808.67	808.67	808.67	808.67
3,405.000	808.67	808.67	808.67	808.67	808.67
3,420.000	808.67	808.67	808.67	808.67	808.67
3,435.000	808.67	808.67	808.67	808.67	808.67
3,450.000	808.67	808.67	808.67	808.67	808.67
3,465.000	808.67	808.67	808.67	808.67	808.67
3,480.000	808.67	808.67	808.67	808.67	808.67
3,495.000	808.67	808.67	808.67	808.67	808.67
3,510.000	808.67	808.67	808.67	808.67	808.67
3,525.000	808.67	808.67	808.67	808.67	808.67
3,540.000	808.67	808.67	808.67	808.67	808.67
3,555.000	808.67	808.67	808.67	808.67	808.67
3,570.000	808.67	808.67	808.67	808.67	808.67
3,585.000	808.67	808.67	808.67	808.67	808.67
3,600.000	808.67	808.67	808.67	808.67	808.67
3,615.000	808.67	808.67	808.67	808.67	808.67
3,630.000	808.67	808.67	808.67	808.67	808.67
3,645.000	808.67	808.67	808.67	808.67	808.67
3,660.000	808.67	808.67	808.67	808.67	808.67

Grain Valley Dispensary - Emergency Spillway

Subsection: Time vs. Elevation

Return Event: 100 years

Label: POND (OUT)

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Elevation (ft)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
3,675.000	808.67	808.67	808.67	808.67	808.67
3,690.000	808.67	808.67	808.67	808.67	808.67
3,705.000	808.67	808.67	808.67	808.67	808.67
3,720.000	808.67	808.67	808.67	808.67	808.67
3,735.000	808.67	808.67	808.67	808.67	808.67
3,750.000	808.67	808.67	808.67	808.67	808.67
3,765.000	808.67	808.67	808.67	808.67	808.67
3,780.000	808.67	808.67	808.67	808.67	808.67
3,795.000	808.67	808.67	808.67	808.67	808.67
3,810.000	808.67	808.67	808.67	808.67	808.67
3,825.000	808.67	808.67	808.67	808.67	808.67
3,840.000	808.67	808.67	808.67	808.67	808.67
3,855.000	808.67	808.67	808.67	808.67	808.67
3,870.000	808.67	808.67	808.67	808.67	808.67
3,885.000	808.67	808.67	808.67	808.67	808.67
3,900.000	808.67	808.67	808.67	808.67	808.67
3,915.000	808.67	808.67	808.67	808.67	808.67
3,930.000	808.67	808.67	808.67	808.67	808.67
3,945.000	808.67	808.67	808.67	808.67	808.67
3,960.000	808.67	808.67	808.67	808.67	808.67
3,975.000	808.67	808.67	808.67	808.67	808.67
3,990.000	808.67	808.67	808.67	808.67	808.67
4,005.000	808.67	808.67	808.67	808.67	808.67
4,020.000	808.67	808.67	808.67	808.67	808.67
4,035.000	808.67	808.67	808.67	808.67	808.67
4,050.000	808.67	808.67	808.67	808.67	808.67
4,065.000	808.67	808.67	808.67	808.67	808.67
4,080.000	808.67	808.67	808.67	808.67	808.67
4,095.000	808.67	808.67	808.67	808.67	808.67
4,110.000	808.67	808.67	808.67	808.67	808.67
4,125.000	808.67	808.67	808.67	808.67	808.67
4,140.000	808.67	808.67	808.67	808.67	808.67
4,155.000	808.67	808.67	808.67	808.67	808.67
4,170.000	808.67	808.67	808.67	808.67	808.67
4,185.000	808.67	808.67	808.67	808.67	808.67
4,200.000	808.67	808.67	808.67	808.67	808.67
4,215.000	808.67	808.67	808.67	808.67	808.67
4,230.000	808.67	808.67	808.67	808.67	808.67
4,245.000	808.67	808.67	808.67	808.67	808.67
4,260.000	808.67	808.67	808.67	808.67	808.67
4,275.000	808.67	808.67	808.67	808.67	808.67

Grain Valley Dispensary - Emergency Spillway

Subsection: Time vs. Elevation

Return Event: 100 years

Label: POND (OUT)

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Elevation (ft)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
4,290.000	808.67	808.67	808.67	808.67	808.67
4,305.000	808.67	808.67	808.67	808.67	808.67
4,320.000	808.67	808.67	808.67	808.67	808.67
4,335.000	808.67	808.67	808.67	808.67	808.67
4,350.000	808.67	808.67	808.67	808.67	808.67
4,365.000	808.67	808.67	808.67	808.67	808.67
4,380.000	808.67	808.67	808.67	808.67	808.67
4,395.000	808.67	808.67	808.67	808.67	808.67
4,410.000	808.67	808.67	808.67	808.67	808.67
4,425.000	808.67	808.67	808.67	808.67	808.67
4,440.000	808.67	808.67	808.67	808.67	808.67
4,455.000	808.67	808.67	808.67	808.67	808.67
4,470.000	808.67	808.67	808.67	808.67	808.67
4,485.000	808.67	808.67	808.67	808.67	808.67
4,500.000	808.67	808.67	808.67	808.67	808.67
4,515.000	808.67	808.67	808.67	808.67	808.67
4,530.000	808.67	808.67	808.67	808.67	808.67
4,545.000	808.67	808.67	808.67	808.67	808.67
4,560.000	808.67	808.67	808.67	808.67	808.67
4,575.000	808.67	808.67	808.67	808.67	808.67
4,590.000	808.67	808.67	808.67	808.67	808.67
4,605.000	808.67	808.67	808.67	808.67	808.67
4,620.000	808.67	808.67	808.67	808.67	808.67
4,635.000	808.67	808.67	808.67	808.67	808.67
4,650.000	808.67	808.67	808.67	808.67	808.67
4,665.000	808.67	808.67	808.67	808.67	808.67
4,680.000	808.67	808.67	808.67	808.67	808.67
4,695.000	808.67	808.67	808.67	808.67	808.67
4,710.000	808.67	808.67	808.67	808.67	808.67
4,725.000	808.67	808.67	808.67	808.67	808.67
4,740.000	808.67	808.67	808.67	808.67	808.67
4,755.000	808.67	808.67	808.67	808.67	808.67
4,770.000	808.67	808.67	808.67	808.67	808.67
4,785.000	808.67	808.67	808.67	808.67	808.67
4,800.000	808.67	808.67	808.67	808.67	808.67
4,815.000	808.67	808.67	808.67	808.67	808.67
4,830.000	808.67	808.67	808.67	808.67	808.67
4,845.000	808.67	808.67	808.67	808.67	808.67
4,860.000	808.67	808.67	808.67	808.67	808.67
4,875.000	808.67	808.67	808.67	808.67	808.67
4,890.000	808.67	808.67	808.67	808.67	808.67

Grain Valley Dispensary - Emergency Spillway

Subsection: Time vs. Elevation

Return Event: 100 years

Label: POND (OUT)

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Elevation (ft)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
4,905.000	808.67	808.67	808.67	808.67	808.67
4,920.000	808.67	808.67	808.67	808.67	808.67
4,935.000	808.67	808.67	808.67	808.67	808.67
4,950.000	808.67	808.67	808.67	808.67	808.67
4,965.000	808.67	808.67	808.67	808.67	808.67
4,980.000	808.67	808.67	808.67	808.67	808.67
4,995.000	808.67	808.67	808.67	808.67	808.67
5,010.000	808.67	808.67	808.67	808.67	808.67
5,025.000	808.67	808.67	808.67	808.67	808.67
5,040.000	808.67	808.67	808.67	808.67	808.67
5,055.000	808.67	808.67	808.67	808.67	808.67
5,070.000	808.67	808.67	808.67	808.67	808.67
5,085.000	808.67	808.67	808.67	808.67	808.67
5,100.000	808.67	808.67	808.67	808.67	808.67
5,115.000	808.67	808.67	808.67	808.67	808.67
5,130.000	808.67	808.67	808.67	808.67	808.67
5,145.000	808.67	808.67	808.67	808.67	808.67
5,160.000	808.67	808.67	808.67	808.67	808.67
5,175.000	808.67	808.67	808.67	808.67	808.67
5,190.000	808.67	808.67	808.67	808.67	808.67
5,205.000	808.67	808.67	808.67	808.67	808.67
5,220.000	808.67	808.67	808.67	808.67	808.67
5,235.000	808.67	808.67	808.67	808.67	808.67
5,250.000	808.67	808.67	808.67	808.67	808.67
5,265.000	808.67	808.67	808.67	808.67	808.67
5,280.000	808.67	808.67	808.67	808.67	808.67
5,295.000	808.67	808.67	808.67	808.67	808.67
5,310.000	808.67	808.67	808.67	808.67	808.67
5,325.000	808.67	808.67	808.67	808.67	808.67
5,340.000	808.67	808.67	808.67	808.67	808.67
5,355.000	808.67	808.67	808.67	808.67	808.67
5,370.000	808.67	808.67	808.67	808.67	808.67
5,385.000	808.67	808.67	808.67	808.67	808.67
5,400.000	808.67	808.67	808.67	808.67	808.67
5,415.000	808.67	808.67	808.67	808.67	808.67
5,430.000	808.67	808.67	808.67	808.67	808.67
5,445.000	808.67	808.67	808.67	808.67	808.67
5,460.000	808.67	808.67	808.67	808.67	808.67
5,475.000	808.67	808.67	808.67	808.67	808.67
5,490.000	808.67	808.67	808.67	808.67	808.67
5,505.000	808.67	808.67	808.67	808.67	808.67

Grain Valley Dispensary - Emergency Spillway

Subsection: Time vs. Elevation

Return Event: 100 years

Label: POND (OUT)

Storm Event: 100-yr storm

Scenario: Post-Development 100

Time vs. Elevation (ft)

Output Time increment = 3.000 min

Time on left represents time for first value in each row.

Time (min)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
5,520.000	808.67	808.67	808.67	808.67	808.67
5,535.000	808.67	808.67	808.67	808.67	808.67
5,550.000	808.67	808.67	808.67	808.67	808.67
5,565.000	808.67	808.67	808.67	808.67	808.67
5,580.000	808.67	808.67	808.67	808.67	808.67
5,595.000	808.67	808.67	808.67	808.67	808.67
5,610.000	808.67	808.67	808.67	808.67	808.67
5,625.000	808.67	808.67	808.67	808.67	808.67
5,640.000	808.67	808.67	808.67	808.67	808.67
5,655.000	808.67	808.67	808.67	808.67	808.67
5,670.000	808.67	808.67	808.67	808.67	808.67
5,685.000	808.67	808.67	808.67	808.67	808.67
5,700.000	808.67	808.67	808.67	808.67	808.67
5,715.000	808.67	808.67	808.67	808.67	808.67
5,730.000	808.67	808.67	808.67	808.67	808.67
5,745.000	808.67	808.67	808.67	808.67	808.67
5,760.000	808.67	(N/A)	(N/A)	(N/A)	(N/A)

Grain Valley Dispensary - Emergency Spillway

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STAFF REPORT

Key Cannabis Dispensary

July 1st, 2025

Purpose:

Requesting a Conditional Use Permit in accordance with City Code 400.240 for a proposed marijuana dispensary with drive-thru development on approximately 1.37-acre lot. The property is zoned District DTZ (Downtown Transition Zone). The 1.37-acre proposed marijuana dispensary is generally located a quarter of a mile west of Buckner Tarsney Road, on the south side of Jefferson Street, just west of the Quik-Trip. AKA 205 NW Jefferson St.

ANAYLSIS:

The applicant applied for the conditional use permit and after review has met all requirements set forth in section 425.040 Marijuana siting requirements. This includes:

A marijuana dispensary may be located as a conditional use in any Controlled Business District (C-B), Central Business District (C-1), General Business District (C-2), Highway Commercial District (C-3) and the Downtown Overlay District, upon satisfactory compliance with the provisions of this Section:

1. Marijuana dispensary conditional use permit applicants shall comply with all provisions of Section 400.240 of the Code of the City of Grain Valley regarding conditional use permit applications, including, but not limited to, the requirements of this Section.
2. A marijuana dispensary shall have the appropriate State license. An applicant may apply for a conditional use permit upon showing that they have applied for State license as required by law, but the conditional use permit shall not be issued until such license has been obtained from the Missouri Department of Health and Senior Services.
3. A marijuana dispensary shall not be located closer than five hundred (500) feet to any other marijuana dispensary or marijuana facility, except when the facilities share common ownership.
4. No marijuana dispensary shall be located within seven hundred and fifty (750) feet of any then-existing elementary or secondary school, day care, or church.
5. An applicant for a marijuana dispensary conditional use permit shall provide the following plans and documentation for City review and approval:
 - a. A site plan for a marijuana dispensary that shall include a floor plan showing where the various activities will be conducted. No marijuana products shall be visible from the exterior of the building.
 - b. All City-adopted building, fire, mechanical, plumbing, and electrical codes shall be complied with when submitting building plans for remodel or new construction.
 - c. A plan which reasonably shows that the marijuana dispensary is capable, when functioning properly, of preventing odors of marijuana from being detected by a person of ordinary sense of smell beyond the boundary of the lot on which the marijuana dispensary is located.



STAFF REPORT

Key Cannabis Dispensary

July 1, 2025

Page 2

d. A security plan for review and input from the Grain Valley Police Department, which reasonably shows that the marijuana dispensary can be kept secure from access by unauthorized persons both during and after normal operating hours and provides adequate overnight security for product trucks parked outside the marijuana dispensary at any hour.

e. A waste disposal plan for any unused product, marijuana byproduct, or hazardous materials used as part of normal operations by a marijuana dispensary in accordance with Missouri Department of Health and Senior Services guidelines.

f. All signage shall conform to the standards of Section 400.300 and Section 655.030(A)(4) of the Code of the City of Grain Valley as well as the Missouri Department of Health and Senior Services guidelines. Signage shall be reviewed and approved under a separate permit process.

6. If an application for a marijuana dispensary conditional use permit is approved, such conditional use permit shall be personal to the applicant at the approved site and shall not run with the land. In addition, the conditional use permit shall be subject to the applicant's continued compliance with all applicable City ordinances and State law regarding the operation of a marijuana dispensary facility. A marijuana dispensary conditional use permit shall be personal to the applicant and shall not be transferable. In the event the applicant's State-issued license expires, terminates, or is revoked for any reason, their conditional use permit shall terminate immediately without any additional notice or action.

7. If any change occurs from the permitted use of a structure as a marijuana dispensary, a new conditional use permit shall be required in all cases.

8. The State-licensed operator of any marijuana dispensary shall provide a copy of their State license, issued by the Missouri Department of Health and Senior Services, to the Community Development Department annually to confirm their continuing licensed status with the State of Missouri. In the case of a marijuana dispensary that was granted a conditional use permit by the City, the State-licensed operator and the applicant to whom the conditional use permit was issued shall be the same. The City may request such documentation at any time.

PUBLIC INFORMATION AND PROCESS:

Public notice was given in the Examiner on Wednesday, May 28, 2025 and by letter to property owners of record within 185 feet of the applicant's property.

The Public Hearing June 11th, 2025.

STAFF RECOMMENDATION:

Staff recommends approval.



STAFF REPORT
Key Cannabis Dispensary
July 1st, 2025

Action: Requesting a Site plan review in the Downtown Transition Zone.

Purpose:

For a proposed marijuana dispensary with drive-thru development on approximately 1.37-acre lot. The property is zoned District DTZ (Downtown Transition Zone). The proposed marijuana dispensary is generally located a quarter of a mile west of Buckner Tarsney Road, on the south side of Jefferson Street, just west of the Quik-Trip. AKA 205 NW Jefferson St.

ANAYLSIS:

The applicant applied for site plan review and after staff review the applicant has met all requirements set forth for the development.

The applicant met all items in section 425.040 Marijuana siting requirements.

The application shows renderings meeting section 400.220 Additional controls for exterior walls and materials standards.

The applicant submitted plan has met the planting requirements set forth in section 400.280 Landscaping and Screening.

The applicants plan identified and met section 400.290 Off-Street Parking and Loading Regulations.

STAFF RECOMMENDATION:

Staff recommends approval.