



AGENDA
CITY OF CREVE COEUR
BOARD OF ADJUSTMENT
CITY COUNCIL CHAMBER
AUGUST 17, 2023
4:00 PM

CALL TO ORDER

ROLL CALL

Mr. Glen Wilen (Chair)
Mr. James Kostelc
Mr. Robert Mooney
Mr. Martin Satz
Mr. Arnold Mayersohn (Alternate)
Ms. Dana Connon (Alternate)

Mr. Carl Lumley, City Attorney
Mr. Jason Jaggi, AICP, Director of Community Development
Ms. Bethany L. Moore, City Planner
Ms. Megan Waller, Administrative Supervisor/Recording Secretary

APPROVAL OF MINUTES

- 1. May 18, 2023 Board of Adjustment Draft Meeting Minutes**

ACCEPTANCE OF THE AGENDA

UNFINISHED BUSINESS

NEW BUSINESS

- 2. Application #23-7: Variance Requests For The Property At 7 Sherwyn Lane to Encroach 15 feet into the 50 foot Front Yard Setback, 5 feet into the 15 Foot Side Yard Setback as Required by Section 405.250 and to Add 2,230.7 Square Feet of Additional Impervious Area into the Stream Bank Buffers as Regulated by Section 430.050 in Order to Expand the Footprint of the Existing House**

Summary: David Nafar, owner, of 7 Sherwyn Lane within the "A" Single Family Residential Zoning District, has submitted an application for two types of variance requests in order to expand the footprint of the existing one-story home. The proposed additions will encroach 15 feet into the required 50-foot front yard setback and 5 feet into the required 15-foot side yard setback per Section 405.250. The additions are also proposed to be built within the 25-foot undisturbed natural vegetative buffer and also within the additional 25-foot buffer beyond the undisturbed natural vegetative buffer where impervious cover shall be limited as required under the Stream Buffer Protection Regulations,



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Section 430.050. The total area of disturbance within both buffers is 3,654 square feet with 2,230.7 square feet of that being added as additional impervious areas. Each variance request is subject to a separate set of requirements that must be met in order for a variance to be granted.

BUSINESS FROM STAFF

ADJOURNMENT

Pursuant to Section 610.022 RSMO, the Board of Adjustment could, at any time during the meeting, vote to close the public meeting and move to closed session to discuss matters relating to litigation, legal actions and/or confidential or privileged communications with the City Attorney as provided under Section 610.021(1) RSMO or other matters as permitted by Chapter 610.

Posted by: _____

Date/Time posted: _____

If you need special accommodations to attend a meeting, services may be arranged by contacting the Office of the City Administrator in advance.



**MINUTES
CITY OF CREVE COEUR
BOARD OF ADJUSTMENT
CITY COUNCIL CHAMBER**

MAY 18, 2023

4:00 PM

CALL TO ORDER

The meeting was called to order at 4:00 PM.

ROLL CALL

**Mr. Glen Wilen (Chair)(Absent)
Mr. James Kostelc (Vice Chair)
Mr. Robert Mooney (Absent)
Mr. Martin Satz
Mr. Arnold Mayersohn (Alternate)
Dana Connon (Alternate)**

The following staff were also present:

**Mr. Carl Lumley, City Attorney
Mr. Jason Jaggi, Director of Community Development (Absent)
Ms. Bethany L. Moore, City Planner
Ms. Megan Waller, Administrative Supervisor/Recording Secretary**

ACCEPTANCE OF THE AGENDA

Mr. Satz made a motion to accept the agenda. Mr. Mayersohn seconded. All in favor.

APPROVAL OF MINUTES

1. March 16, 2023 Board of Adjustment Draft Meeting Minutes

Mr. Mayersohn made a motion to approve the March 16, 2023 meeting minutes. Ms. Connon seconded. All in favor.

UNFINISHED BUSINESS

None



**MINUTES
CITY OF CREVE COEUR
BOARD OF ADJUSTMENT
CITY COUNCIL CHAMBER**

MAY 18, 2023

4:00 PM

NEW BUSINESS

2. Application #12441: Variance Request for the Property At 12441 Cross Green Lane To Allow For a Rear Addition Within the Existing building Footprint of the Non-Conforming House to Encroach 18 Feet, 6 and ½ Inches into the Required 30 Foot Rear Yard Setback

Those speaking to the request were sworn in.

Ms. Amy Miller, Mosby Building Arts, 645 Leffingwell Ave, St. Louis, MO 63122, stated that her client applied for a permit for an addition, and learned that the existing home does not conform with the setbacks.

Ms. Miller stated that the proposed addition will be added directly above the existing home, and will not extend outside the existing footprint. She presented the proposed floorplan, and stated that the addition will include a master suite with a laundry room, office space, a larger bathroom, and closet.

Mr. Mayersohn asked if the new roof will be extended over the garage. Mr. Kostelc also asked if the addition will be visible from the front of the house. Ms. Miller stated that it will extend over the garage in the back of the house, but will not be visible from the front of the house.

Mr. Kostelc asked if the enlarged roof will cause water runoff issues. Ms. Miller stated that it will not.

Ms. Cannon asked if the existing deck will remain. Ms. Miller confirmed that it will.

Ms. Bethany Moore, City Planner, stated that the subject property is located in Country Forest subdivision. She explained that the rear yard and side yard setbacks are not noted on the plat, and the lots fall to the underlying zoning.

Ms. Moore stated that the proposed addition is to be built within the existing footprint of the home. She explained that the home currently sits 18 ft 6.5 inches into the required rear yard setback, and the non-conforming home causes the need for a variance.

Ms. Moore stated that the subject lot is similar to others in the subdivision, which has resulted in several variance applications and that others would also require a variance for permit approval.

Ms. Moore stated that the lot sizes and setbacks are unique to Country Forest, and are



**MINUTES
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MAY 18, 2023

4:00 PM

not normally found in the B zoning district. She explained that this is due to the fact that the rear and side yard setbacks are not noted on the plat. Staff continues to work with the trustees to find a solution that would reduce the number of variance applications.

Ms. Moore stated that the non-conforming lots for the B zoning district in Country Forest subdivision create a hardship for the property owner.

Mr. Kostelc closed the public hearing.

Mr. Lumley offered the exhibits to the record.

Mr. Kostelc made a motion to approve the variance request. Mr. Mayersohn seconded. All in favor.

RESULT: Approve MOVER: Kostelc SECONDER: None AYES: Mayerson, Satz, Connon, Kostelc NAYS: None

Mr. Kostelc made a motion to direct staff to prepare the findings of fact and conclusion of law. Mr. Mayersohn seconded. All in favor.

BUSINESS FROM STAFF

Ms. Moore stated that the application deadline for the June 15th meeting has passed, and no applications have been received. She stated that the meeting is cancelled.

ADJOURNMENT

Mr. Mayersohn made a motion to adjourn. Mr. Satz seconded. All in favor.

The meeting adjourned at 4:19 PM.

Submitted by:

Recording Secretary

Chair



APPLICATION TO THE BOARD OF ADJUSTMENT

#23-07: VARIANCE REQUESTS FOR THE PROPERTY AT 7 SHERWYN LANE TO ENCROACH 15 FEET INTO THE 50 FOOT FRONT YARD SETBACK, 5 FEET INTO THE 15 FOOT SIDE YARD SETBACK AS REQUIRED BY SECTION 405.250 IN ORDER TO EXPAND THE FOOTPRINT OF THE EXISTING HOUSE

FOR THE MEETING OF: Thursday, August 17, 2023

SUBJECT PROPERTY LOCATION: 7 Sherwyn Lane, Zoned “A” Single Family Residential District.

REQUEST: David Nafar, owner, of 7 Sherwyn Lane within the “A” Single Family Residential Zoning District, has submitted an application for two types of variance requests in order to expand the footprint of the existing one-story home. The proposed additions will encroach 15 feet into the required 50-foot front yard setback and 5 feet into the required 15-foot side yard setback per Section 405.250. The additions are also proposed to be built within the 25-foot undisturbed natural vegetative buffer and also within the additional 25-foot buffer beyond the undisturbed natural vegetative buffer where impervious cover shall be limited as required under the Stream Buffer Protection Regulations, Section 430.050. The total area of disturbance within both buffers is 3,654 square feet with 2,230.7 square feet of that being added as additional impervious areas. Each variance request is subject to a separate set of requirements that must be met in order for a variance to be granted.

ADDITIONAL INFORMATION: For clarity purposes, the two types of variance requests involved in the project will be handled in two staff reports since each variance has a different set of criteria and requires a separate vote. In December of 2008, a similar zoning variance request (not the stream buffer request) at this property was applied for by the owner, Mr. Nafar, and approved but the project was put on hold. The previous variance requests were for encroachments of 10 feet into the required 50-foot front yard setback and 4 feet into the required 15-foot side yard setback. The Stream Buffer Protection Regulations had just been enacted and were not applied to the project in late 2008. The project was postponed, and the zoning variance approval lapsed.

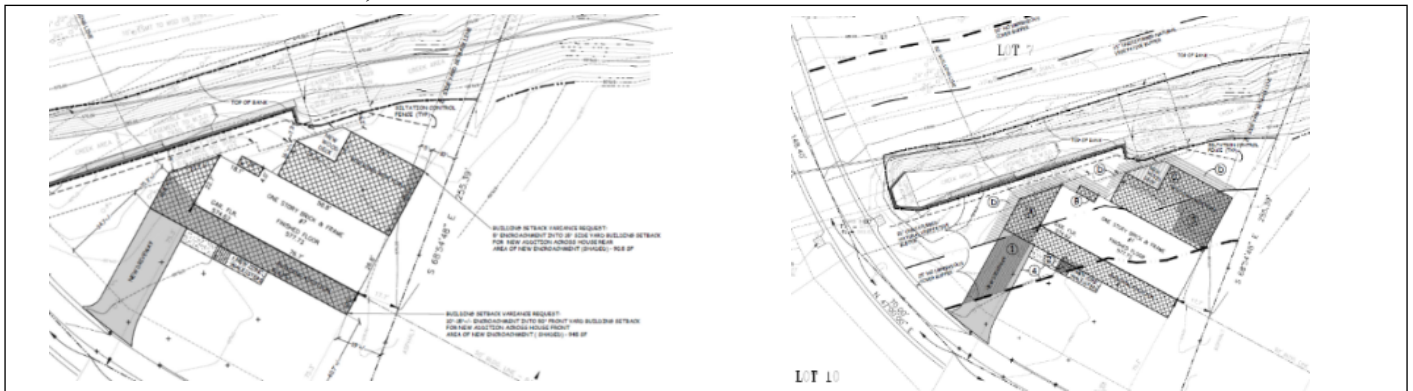
OWNER/ David Nafar
APPLICANT: 7 Sherwyn Lane
Creve Coeur, MO 63141

Key Issues:

- Impact to neighborhood
- Property versus owner hardship

Zoning Code References

- Section 405.250: “A” Single-Family Residential
- Section 405.610: Non-conformities
- Section 405.1040: Board of Adjustment
- Section 405.1110 Variances and Appeals



REPORT PREPARED BY: Bethany L. Moore, City Planner; Jason W. Jaggi, AICP
Director of Community Development (see resumes in the agenda packet)

DATE: 8/14/2023

ATTACHMENTS: Applicant's Materials submitted June 29, 2023 and August 2, 2023

SUMMARY OF VARIANCE REQUESTS AND BOARD OF ADJUSTMENT REVIEW

This application involves two separate and distinct types of variance requests related to two different chapters of the City's code of ordinances, Chapter 405 the Zoning Ordinance and Chapter 430 Stream Buffer Protection Regulations. The first request involves two setback variances from the required front and side yards. These variances are from the regulations found in Section 405.250.E.4 of the Zoning Code which establishes minimum setbacks for lots within the "A" Single Family Residential District.

The second request involves variances from the 25-foot undisturbed natural vegetative buffer and also within the additional 25-foot buffer beyond the undisturbed natural vegetative buffer where impervious cover shall be limited. These variances are from the requirements of Section 430.050 of the Stream Buffer Protection Regulations.

As previously stated, the two types of variance requests involved with the project will be handled in two staff reports since each variance has a different set of criteria and requires a separate motion and vote. All variances would need to be approved by the Board of Adjustment in order for the applicant to construct the additions as presented on the submitted plans.

PROJECT BACKGROUND

The subject property is located at 7 Sherwyn Lane in the Sherwyn Lane Subdivision that received final plat approval in 1953 under Ordinance 88. It is a 1-acre property in the "A" Single-Family Zoning District where the minimum lot size is 1 acre. The subject property has a creek running through the middle of it that was platted with a 20 foot "Storm Water Easement" around it, as shown on the plat below in Figure 1. This creek also runs through lots 8 and 9 as shown in Figure 1, highlighted in yellow. The applicant is seeking to expand the existing footprint of the house through additions that will encroach 15 feet into the required 50-foot front yard setback and 5 feet into the required side yard setback and will also increase the impervious surface within the two, 25-foot stream buffers. The criteria for a variance from the Stream Buffer Protection Regulations is addressed in a separate staff report prepared by the Public Works Department and is included in the meeting packet.

In December 2008, the applicant, David Nafar, was granted two smaller variances to encroach 10 feet into the required 50-foot front yard setback and 4 feet into the required 15-foot side yard setback in order to expand the footprint of the existing house. The Stream Buffer Protection Regulations were approved the same year as the variance requests, 2008, and were not applied to this project at the time. A possible reason is because the application may have been submitted and Staff could have been working on this project with the applicant before the Stream Buffer Protection Regulations went into effect.

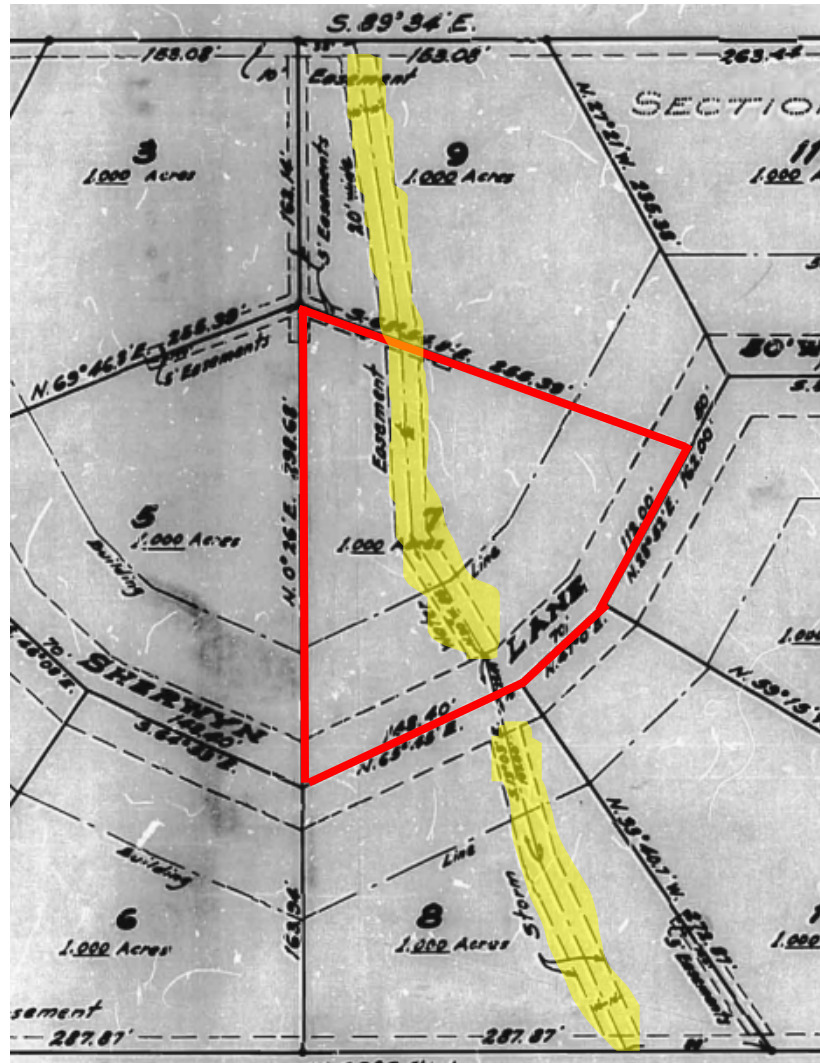


Figure 1: 1953 approved Plat for Sherwyn Lane Subdivision with 7 Sherwyn Lane outlined in red and existing creek in yellow.

BASIS FOR APPEAL AND STATED HARDSHIP

The applicant's stated basis for requesting both types of variances is a desire to expand the existing one-story house through the construction of additions to the front, rear and side. However, the lot has a creek running through the middle of it with a substantial MSD easement around it as well as two, 25-foot buffers on either side of the stream bank which significantly reduce the buildable area of the lot. The existing house is built at the existing front yard and side yard setback lines and has limited ability to be expanded without a setback variance or a second story. The majority of the existing house sits within the two 25-foot stream bank buffers, as would the proposed additions, which are covered under a separate staff report. The applicant is seeking a variance to encroach 15 feet into the required 50-foot front yard setback and 5 feet into the required 15-foot side yard setback per Section 405.250, in order to construct the additions to the house.

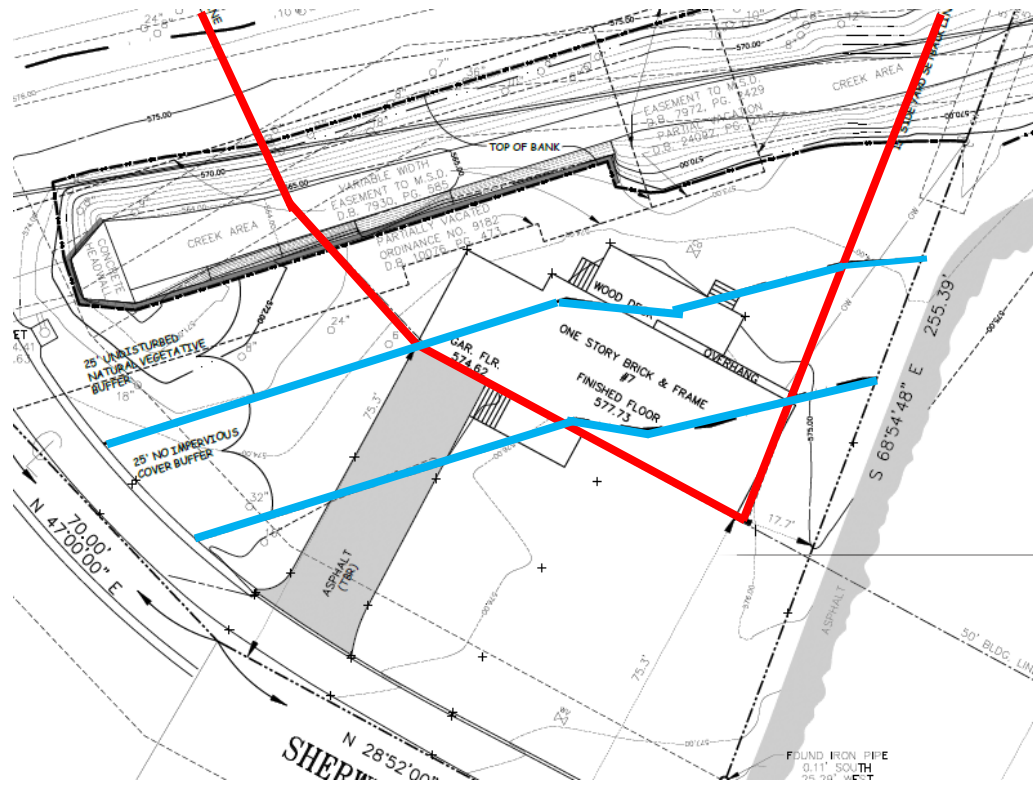


Figure 2: Existing house shown within the existing setbacks in red and within the two, 25-foot stream bank buffers in blue.

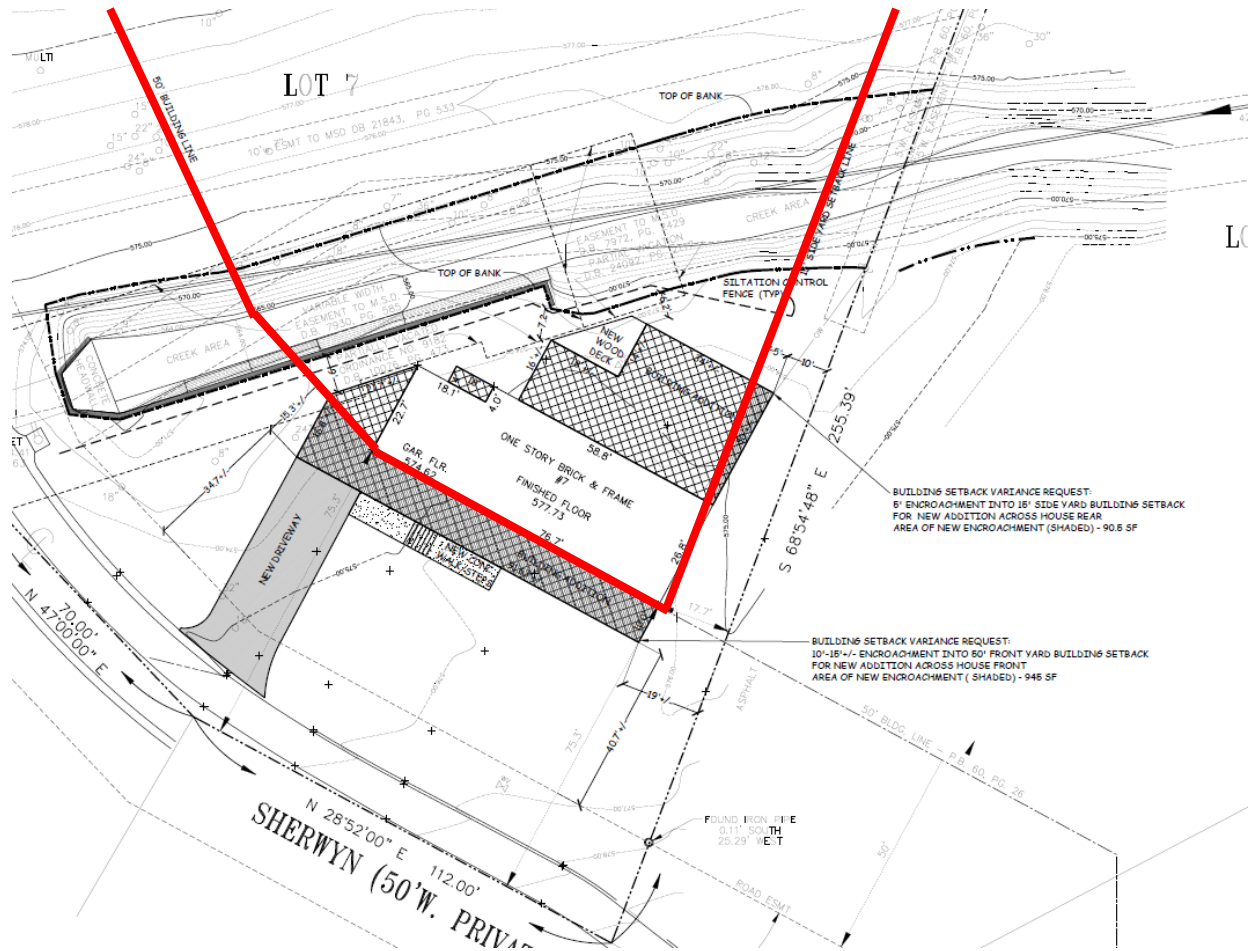


Figure 3: Proposed additions with setbacks shown in red.

LAND USE AND ZONING OF SURROUNDING PROPERTIES

The adjacent zoning and land uses are as follows:

DIRECTION	USE	ZONED	SEPARATED BY
North	Residence, Sherwyn Lane Subdivision	A-Single-Family Residential	N/A
South	Residence, Sherwyn Lane Subdivision	A-Single-Family Residential	Sherwyn Lane
East	Residence, Sherwyn Lane Subdivision	A-Single-Family Residential	N/A
West	Residence, Sherwyn Lane Subdivision	A-Single-Family Residential	N/A

STAFF ANALYSIS

Performing an analysis of a zoning variance appeal primarily requires a six-part examination of the facts, as required by *Section 405.1100, Criteria for Variances, Generally*, of the Zoning Ordinance. To wit:

- 1. The variance requested arises from a condition which is unique to the property in question and which is not ordinarily found in the same zoning district;**

While it is not unusual to have a creek on a property with easements and subject to the Stream Buffer Protection Regulations of Chapter 430 in the city, it is unusual to have a creek run through the middle of a lot. The creek in question also runs through the lot to the north of the subject property, 9 Sherwyn Lane, and through the lot to the south of the subject property, 8 Sherwyn Lane, subject to the same restrictions but the creek's location on those lots does not limit the buildable area in the same way as is present at 7 Sherwyn Lane.

- 2. The variance requested is because of a unique hardship not created by the applicant nor the owner of the property;**

The lot pattern that resulted in the creek, with easement and Stream Buffer Protection Regulation requirements, located in the middle of the applicant's lot that limits the buildable area was not created by the applicant but rather his predecessor in interest the subdivision developer. However, it is the Applicant's decision to pursue additions that do not meet the setback requirements. It should be noted that the home itself is located at the setback lines for the front yard and side yard setbacks due to the location of the creek and cannot be extended in these locations without variances. Staff have suggested the applicant consider alternatives to expand the square footage of the house without requiring a variance through a second story over the existing footprint. The applicant has stated that the existing foundation would not support a second story but has not provided any documentation to support this statement. The applicant has also stated that due to the limited footprint of the house, functional requirements, and accessibility concerns, a second story would not be suitable for their specific needs and circumstances.

- 3. The granting of the variance shall not adversely affect adjacent property owners or residents;**

The primary considerations in reviewing this finding are the serpentine line of the road, the triangular shape of the lot, and the proximity of the proposed addition proximity to 9 Sherwyn Lane. The curve of the road along the front of the applicant's property makes the house more prominent in the public view and the tapering side lot line along with the location of the house at the corner of the lot due to the location of the creek gives the appearance to the nearest neighbor, 9 Sherwyn Lane, of a lot with little or no rear and side yards. The proposed additions would expand the house closer to Sherwyn Lane and the property line for 9 Sherwyn Lane if the variances to encroach 15 feet into the required 50-foot front yard setback and to encroach 5 feet into the required 15-foot side yard setback are approved. As a result, granting these variances may be more apparent than on a conventional lot. The front yard variance request would be visually impactful to adjacent residents because it is a less typical variance request and disturbs the existing character of the neighborhood while also being subject to the curve in the road causing the house to be more prominent. The side yard variance would only impact the adjacent neighbor at 9 Sherwyn Lane, but it would reduce the distance between the adjacent neighbor's property and the applicant's improvement by 1/3 the distance that is normally required. Both scenarios could be considered an adverse effect to the residents and adjacent property owner, but that determination is up to the Board based on the information provided.

- 4. The strict application of the provisions of the Zoning Ordinance from which a variance is requested, will cause severe practical difficulty or extreme hardship for the property owner represented in the application;**

Severe practical difficulties or extreme hardships arise when a homeowner has no option to improve their property in a way that would not violate the provisions of the zoning ordinance. The question

before the Board, therefore, is whether or not the applicant has any other options, and it appears that they might. The option to add a second floor to the house, rather than expanding the existing single-story ranch, has not been ruled out and would not require a variance. The applicant has stated that the foundation will not support a second story but upon staff request provided that no structural review has been done to support that claim.

5. The variance desired will not adversely affect the public health, safety, order, convenience, or general welfare of the community, and

Nothing in the request for front-yard and side-yard variances will affect the public health, safety, order, convenience, or general welfare of the community.

6. Granting the variance desired will not violate the general spirit and intent of this Chapter.

The need for a variance arises due to a variety of circumstances where strict application of the zoning code is not feasible. Variances offer relief in these cases. The subject property is severely limited in its buildable area due to the location of the existing creek. The setback requirements for each zoning district help to reserve uniform open green space and create distance between adjacent property owners' improvements. Front yard variances are less common than other variance requests and would be more visible to the general public, especially due to the curve of the road around the property. The side yard variance would only impact the adjacent neighbor at 9 Sherwyn Lane, but that owner would lose 33% of the distance between their property and the subject property's improvements because of the unusual circumstances on the subject property which could adversely impact the adjacent property. If the Board members believe that the shorter setbacks are unacceptably disruptive in this location, and given that another option could be available, then they should find that the variance requests will violate the spirit and intent of the Chapter.

Additional Criteria for Non-Use Variances

In addition to the above, Section 405.1110.E. *Criteria for Area Variances*, states that an applicant for an area variance must meet the following criteria:

1. By reason of exceptional narrowness, shallowness or shape of the specific piece of property, or where by reason of exceptional topographical conditions or other extraordinary or exceptional circumstances that the strict application of the terms of the zoning regulations actually create a hardship to the property in a manner dissimilar to that of other similarly situated property in the zoning district in which it is located.

As established above, the location of the MSD easement and the stream bank buffers through the middle of the lot limit to an extraordinary degree the ability of the owner to expand the structure in the way that is proposed due to the buildable area of the lot being reduced. This condition is present on lots 8 and 9 but not quite to the extreme that it is present on the subject property. This does mean that while the condition is not unique to the lot, the extent to which the condition limits the development could represent an exceptional circumstance. Even with the severely limited buildable area present due to the location of the stream on the lot that limits the proposed method of expansion it does not limit all methods of expansion. The existing building could be enlarged through the addition of a second story which would not require setback variances and would not add any additional impervious coverage within the stream bank buffers. The applicant has stated that this alternative will not fit their specific needs.

2. Granting the variance would not result in the diversion of additional stormwater that would adversely affect adjacent property.

Per the calculations provided on the plans, granting the variance would not result in the diversion of additional stormwater that would adversely affect adjacent properties as the slopes indicate that surface flows from this site will enter the creek or the stormwater inlet on the south side of the lot. Please refer to the Department of Public Works staff report for additional information and analysis related to stormwater, which is a component of Chapter 430 and the variances that are being sought under that Chapter.

ACTION

Following its deliberation, the Board of Adjustment may vote in favor or against a motion to approve the request. Pursuant to Section 405.1110 of the Zoning Code, approval of a variance requires written findings of fact supporting the specified variance criteria. In order to make the vote on the application clear, an affirmative motion should be made, and members can vote to approve or disapprove that motion. An example motion for the requested variances to the front and rear-yard setbacks would be:

“I move to approve a variance allowing the reduction of the front-yard setback to 35 feet where 50 feet is the minimum required, and a variance allowing the reduction of the side setback (next to 9 Sherwyn) to 10 feet where 15 feet is the minimum required in “A” Single Family Residential zoning district for 7 Sherwyn Lane based upon a positive finding that:

1. The variances requested arise from conditions which are unique to the property in question and which are not ordinarily found elsewhere in the same zoning district;
2. The variances requested are because of a unique hardship not created by the Applicant and owner of the property;
3. The granting of the variances will not adversely affect adjacent property owners or residents;
4. The strict application of the front-yard setback and the side-yard setback will cause severe practical difficulty and extreme hardship for the property owner represented in the application;
5. The proposed variances will not adversely affect the public health, safety, order, convenience or general welfare of the community;
6. Granting the setback variances will not violate the general spirit and intent of this Chapter;
7. By reason of exceptional circumstances due to the location of the creek on the lot, the strict application of the setback requirements actually creates a hardship to the property in a manner dissimilar to that of other similarly situated property in the zoning district; and,
8. Granting the variance will not result in the diversion of additional stormwater that would adversely affect adjacent property.”

If the Board wishes to modify the application or add specific conditions of approval, they should do so by separate motion, prior to voting on the overall approval for the variances.

After the Board reaches a final decision regarding the request, a follow-up motion directing Staff to prepare and authorizing the Chair to execute the Findings of Fact and Conclusions of Law should be made. An example of such motion is:

“I move to direct Staff to prepare and authorize the Chair of the Board of Adjustment to execute Findings of Fact and Conclusions of Law regarding the front-yard and side-yard setback variances requested for 7 Sherwyn Lane based upon the testimony received and the deliberations of the Board on this application, as decided on August 17, 2023.”

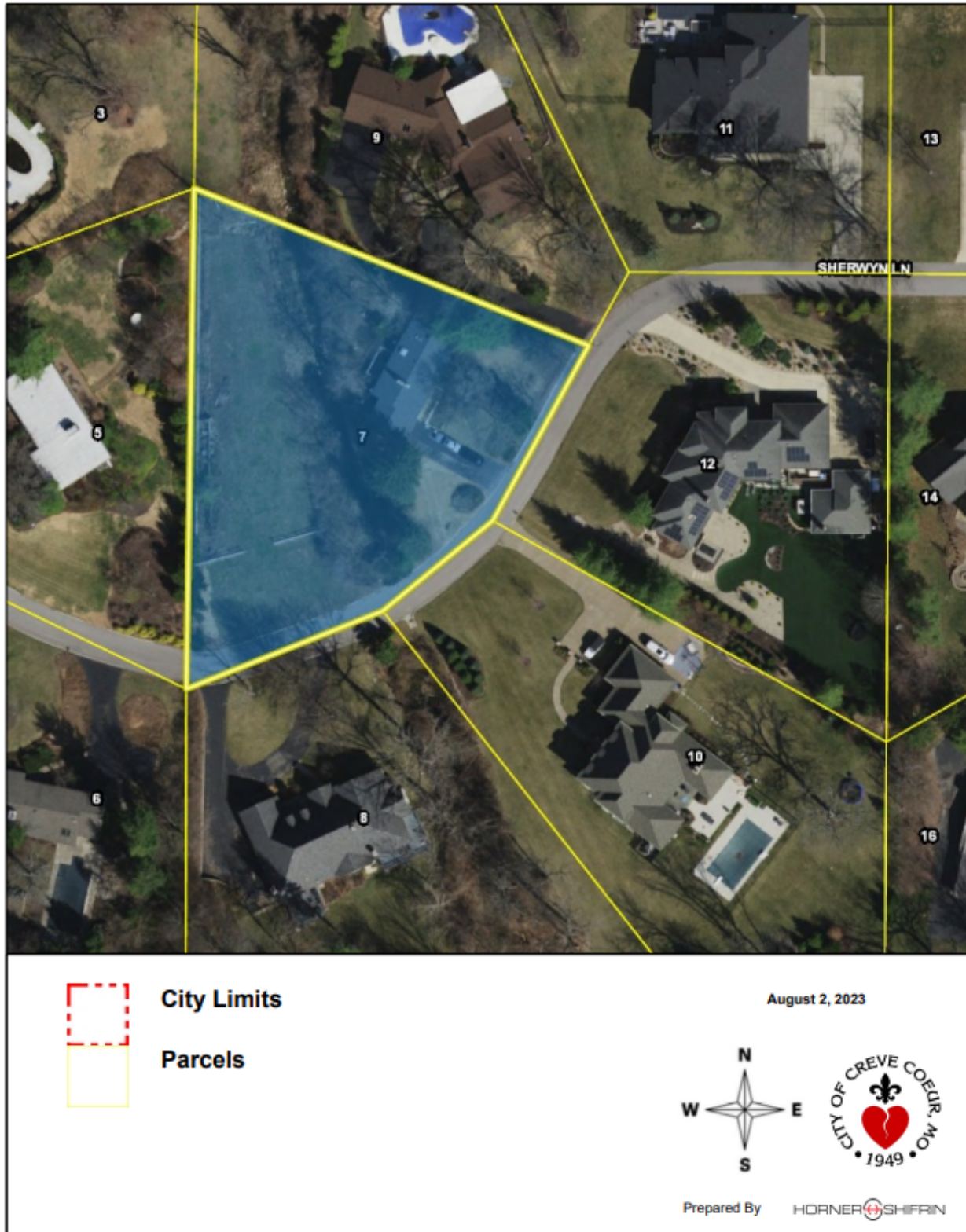
APPENDIX 1: COMPREHENSIVE PLAN

Included and attached by reference. See body of report for specific excerpts.

APPENDIX 2: ZONING CODE

Included and attached by reference. See body of report for specific excerpts.

APPENDIX 3: AERIAL PHOTO



APPENDIX 4: SITE PHOTOGRAPHS



Description:
Existing house.



Description:
Location of the
creek behind the
trees. Trees and
brush make
visibility difficult.



Description: Photo from 2008 staff report showing creek conditions.



Description: Proximity of applicant's house (shown in red) to 9 Sherwyn Lane property line.



APPLICATION TO THE BOARD OF ADJUSTMENT

#23-07: VARIANCE REQUEST FOR THE PROPERTY AT 7 SHERWYN LANE TO ADD 1,309 SQUARE FEET OF IMPERVIOUS AREA AND DISTURB 2,061 SQUARE FEET IN THE NO DISTURBANCE BUFFER AND ADD 911 SQUARE FEET OF IMPERVIOUS AREA AND DISTURB 1,593 SQUARE FEET IN THE UNDISTURBED STREAM BUFFER IN ORDER TO ADD ADDITIONAL FIRST FLOOR LIVING SPACE TO THE HOME.

FOR THE MEETING OF: Thursday, August 17, 2022

SUBJECT PROPERTY LOCATION: 7 Sherwyn Lane, Zoned “A” Single Family Residential District.

REQUEST: David Nafar, owner of 7 Sherwyn Lane within the “A” Single Family Residential Zoning District, has submitted an application for a variance request to add 1,309 square feet of impervious area and disturb 2,061 square feet in the no disturbance buffer and add 911 square feet of impervious area and disturb 1,593 square feet in the no impervious buffer required per Section 430.050 (A) in order to expand first floor living space of the house.

ADDITIONAL INFORMATION: Per Section 430.050 (A), streams shall have an undisturbed natural vegetative buffer for twenty-five (25) feet, measured horizontally, on both banks (as applicable) of the stream as measured from the top of the stream bank. An additional setback shall be maintained for twenty-five (25) feet, measured horizontally, beyond the undisturbed natural vegetative buffer in which all impervious cover shall be prohibited. Grading, filling, and earthmoving shall be minimized within the setback.

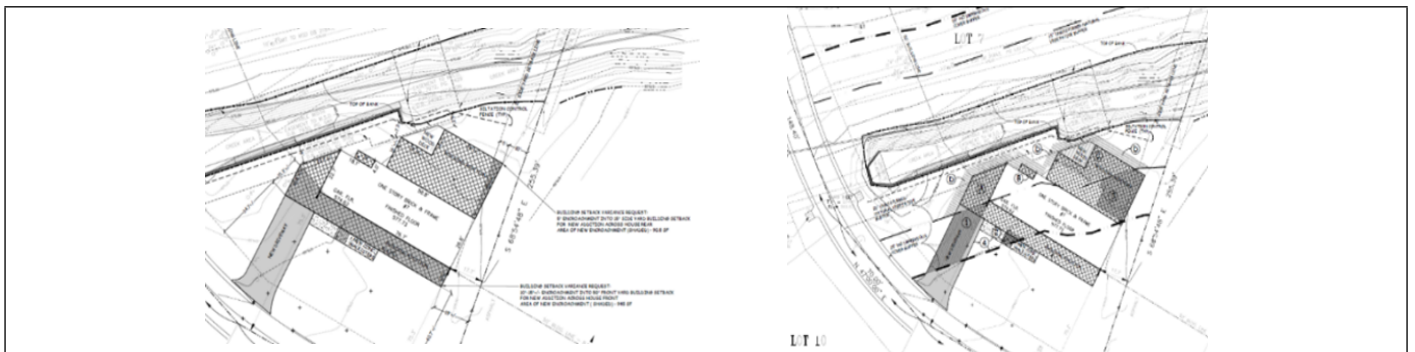
Key Issues:

- Impact to Stream Buffer

Zoning Code References

- Section 405.250: “A” Single-Family Residential
- Section 405.1040: Board of Adjustment
- Section 405.1110 Variances and Appeals
- Section 430.050 Land Development Requirement

OWNER/ David Nafar
APPLICANT: 7 Sherwyn Lane
Creve Coeur, MO 63141



REPORT PREPARED BY: Dione Garson, P.E., Civil Engineer (resume include in agenda packet)

DATE: 8/10/2023

ATTACHMENTS: Applicant’s Materials submitted

BASIS FOR APPEAL AND STATED HARDSHIP

The subject property is one acre in the “A” Single-family Residential Zoning District. The site is a pie-shaped lot located in the Sherwyn Lane Subdivision. The property is bisected by a stream that flows north to south. The west side of the property slopes moderately (15%) from west to east towards the stream and contains no improvements. The portion of the site east of the stream slopes gently (3 to 4%) from east to west towards the stream. This side of the site contains the house, an asphalt driveway, a rear yard deck, and front entry walkway. The section of the stream that flows through the lot has a combination of structural and non-structural banks. A concrete wall (eight feet high from the stream bed) contains the stream for about 50% of its course along the east bank. The wall extends above the grade of the adjacent ground by about two inches. The other approximately 50% of the east bank and the west bank have steep (2:1+) vegetated slopes.

The house was constructed in about 1955. The home is about 1,600 square feet, and is constricted by building setbacks and physical site characteristics. The stream buffer runs along approximately 93% of the total permitted building area. Approximately 81% of the existing home is already in the stream buffer.

The homeowner is requesting variances to expand the first floor living area. Given the location of the stream and shape of the lot, expanding first floor living area outside the stream buffer and behind setbacks would be difficult.

This request to disturb and add impervious area within the stream buffer involves a variance to the Stream Buffer Protection Regulations found in Chapter 430 of the City’s code of ordinances. Specifically, the following two sections:

- Section 430.050(A)(1) *Buffer and Setback Requirements* states that for all streams, “an undisturbed natural vegetative buffer shall be maintained for twenty-five (25) feet, measured horizontally, on both banks (as applicable) of the stream as measured from the top of the stream bank.”
- Section 430.050(A)(2) *Buffer and Setback Requirements* states “an additional setback shall be maintained for twenty-five (25) feet, measured horizontally, beyond the undisturbed natural vegetative buffer, in which all impervious cover shall be prohibited. Grading, filling, and earthmoving shall be minimized.

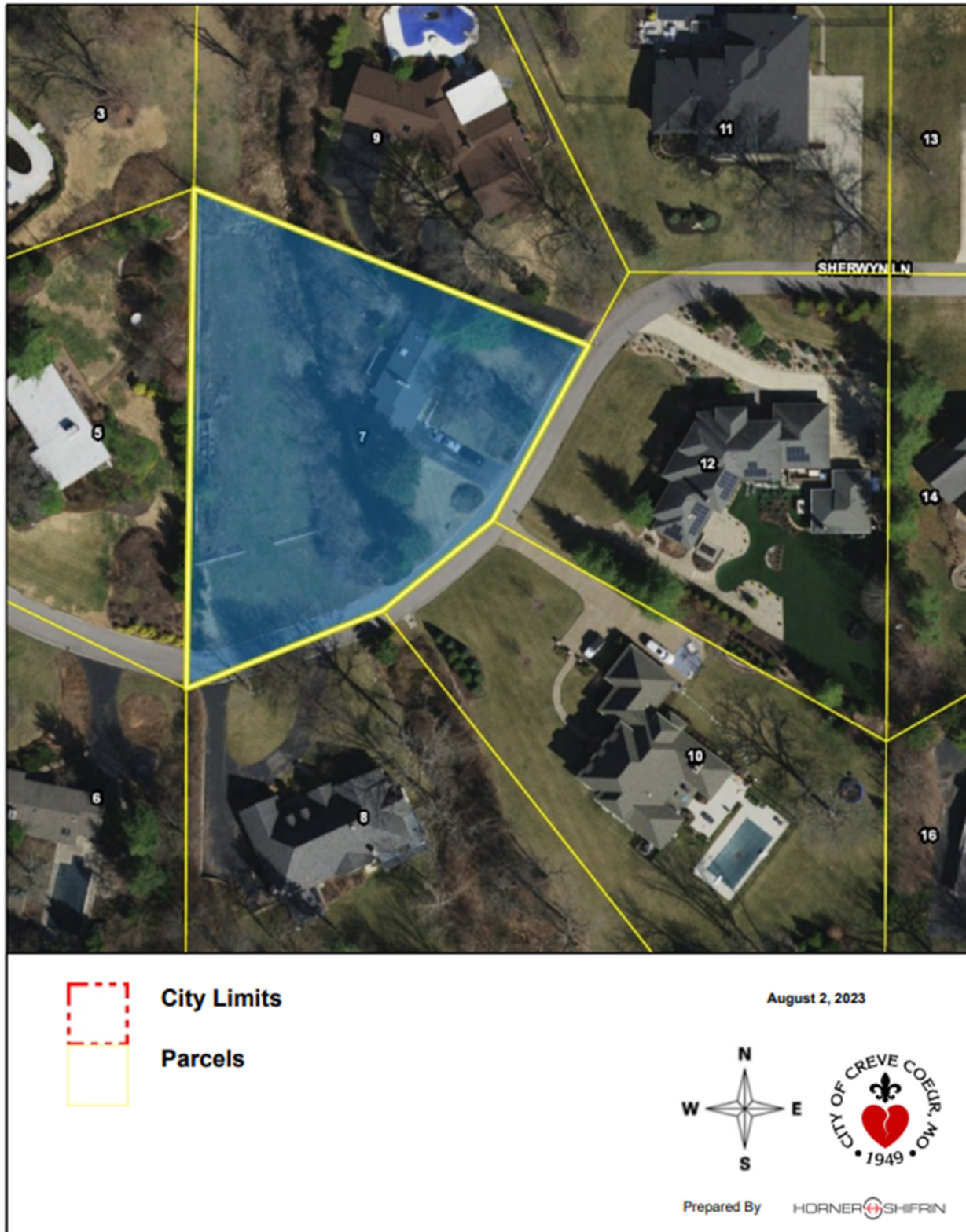


Figure 1: St. Louis County GIS Image of 7 Sherwyn Lane Property in blue.

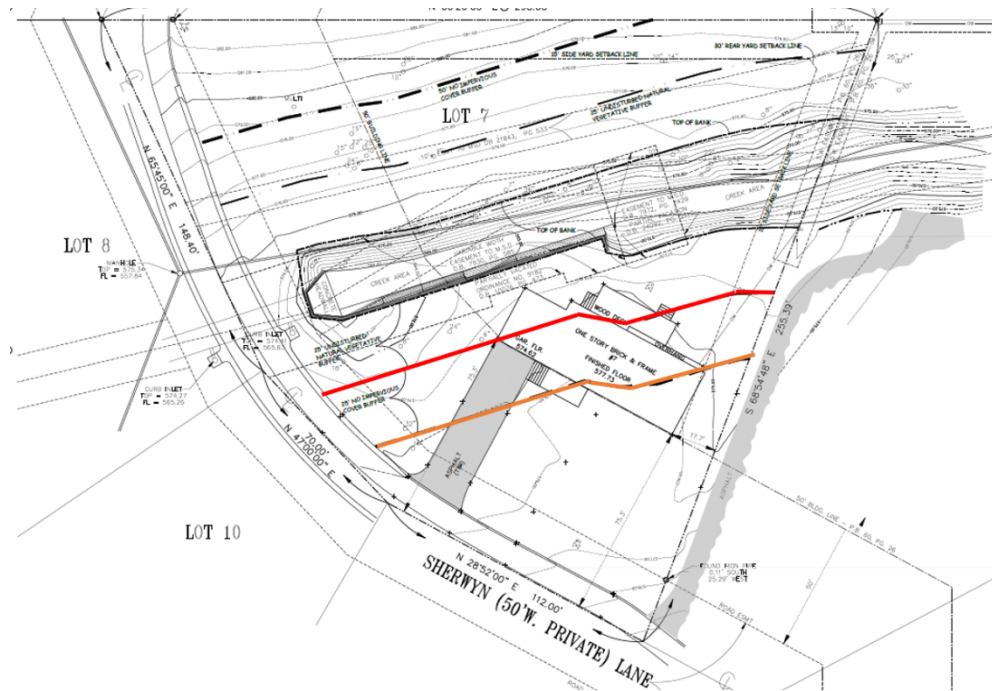


Figure 2: Site Plan that shows existing conditions. The no disturbance buffer is marked with a red line. The no impervious buffer is marked with an orange line.

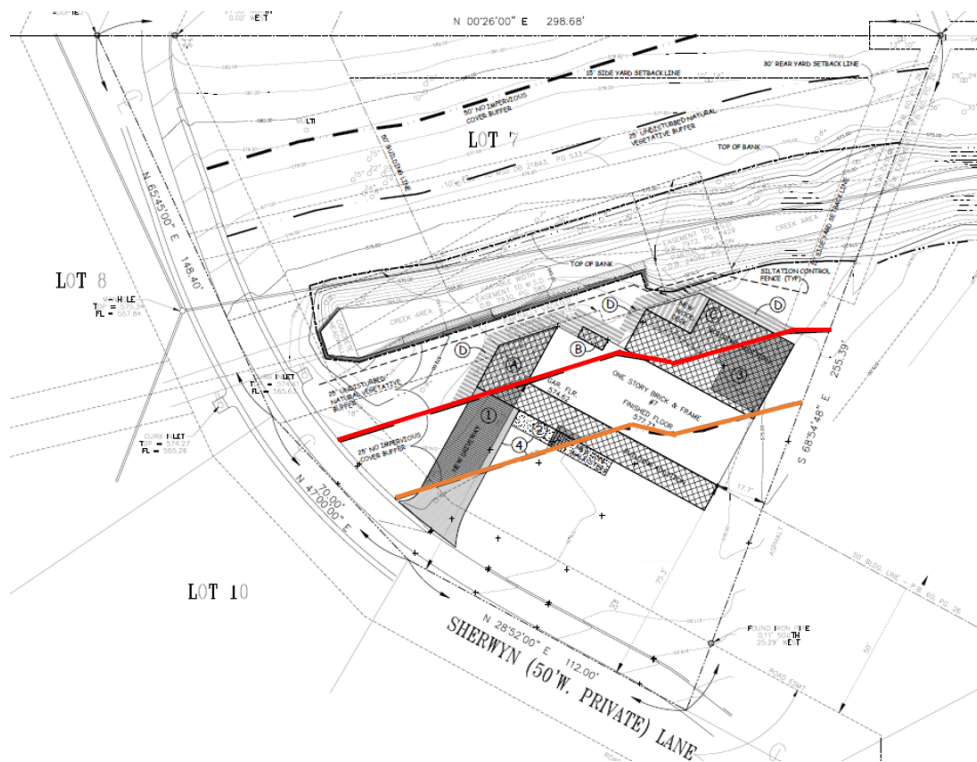


Figure 3: Site Plan that shows proposed conditions. The no disturbance buffer is marked with a red line. The no impervious buffer is marked with an orange line.

LAND USE AND ZONING OF SURROUNDING PROPERTIES

The adjacent zoning and land uses are as follows:

DIRECTION	USE	ZONED	SEPARATED BY
North	Residence, Sherwyn Lane Subdivision	A-Single-Family Residential	N/A
South	Residence, Sherwyn Lane Subdivision	A-Single-Family Residential	Sherwyn Lane
East	Residence, Sherwyn Lane Subdivision	A-Single-Family Residential	N/A
West	Residence, Sherwyn Lane Subdivision	A-Single-Family Residential	N/A

A variance request for relief from Section 430.050 for the stream buffer requirements is a separate and different process than a variance request for relief from the Zoning Code. The variance procedures related to the stream buffers are laid out in Section 430.050(B) *Variance Procedures* which states:

- Where a parcel was platted prior to the effective date of this Chapter, and its shape, topography or other existing physical condition prevents land development consistent with this Chapter, and the Department of Public Works finds and determines that the requirements of this Chapter prohibit the otherwise lawful use of the property by the owner, the Board of Adjustment of the City of Creve Coeur may grant a variance from the buffer and setback requirements hereunder, provided such variance requires mitigation measures to offset the effects of any proposed land development on the parcel.*
- Except as provided above, the Board of Adjustment of the City of Creve Coeur shall grant no variance from any provision of this Chapter without first conducting a public hearing on the application for variance and authorizing the granting of the variance by an affirmative vote of four (4) members of the Board of Adjustment, according to the requirements and procedures in Section 405.1110, Variances and Appeals, of the Zoning Code.*

Variances will be considered only in the following cases:

- When a property's shape, topography or other physical conditions existing at the time of the adoption of this Chapter prevents land development unless a buffer variance is granted.*
- Unusual circumstances when strict adherence to the minimal buffer requirements in the ordinance would create an extreme hardship.*

Variances will not be considered when, following adoption of this Chapter, actions of any property owner of a given property have created conditions of a hardship on that property.

- At a minimum, a variance request shall include the following information:

- A site map that includes locations of all streams, wetlands, floodplain boundaries and other natural features as determined by field survey;*

- b. A description of the shape, size, topography, slope, soils, vegetation and other physical characteristics of the property;*
 - c. A detailed site plan that shows the locations of all existing and proposed structures and other impervious cover, the limits of all existing and proposed land disturbance, both inside and outside the buffer and setback. The exact area of the buffer to be affected shall be accurately and clearly indicated;*
 - d. Documentation of unusual hardship should the buffer be maintained;*
 - e. At least one (1) alternative plan, which does not include a buffer or setback intrusion, or an explanation of why such a site plan is not possible;*
 - f. A calculation of the total area and length of the proposed intrusion;*
 - g. A stormwater management site plan, if applicable; and*
 - h. Proposed mitigation, if any, for the intrusion. If no mitigation is proposed, the request must include an explanation of why none is being proposed.*
- 4. following factors will be considered in determining whether to issue a variance:*
- a. The shape, size, topography, slope, soils, vegetation and other physical characteristics of the property;*
 - b. The locations of all streams on the property including along property boundaries;*
 - c. The location and extent of the proposed buffer or setback intrusion;*
 - d. Whether alternative designs are possible which require less intrusion or no intrusion;*
 - e. The long-term and construction water-quality impacts of the proposed variance; and*
 - f. Whether issuance of the variance is at least as protective of natural resources and the environment.*

STAFF ANALYSIS

The plan was reviewed by Dione Garson, P.E., Civil Engineer with the City of Creve Coeur and Tim Dean, P.E., Principal, Senior Project Manager, Intuition & Logic Engineering, Inc. Tim Dean's comments are noted in this document and listed in Appendix 3.

Tim Dean is a Principal Civil and Water Resources Engineer with 20 years of design experience whose expertise is in stormwater engineering and civil engineering infrastructure design. Tim's projects include urban channel stabilizations, watershed analysis, flood control facilities design, roadways, culvert and bridge designs, trails, boat ramps, sea walls, parking lots, utilities (electric, sanitary, water), plazas and other pedestrian facilities. Tim has led large interdisciplinary teams for federal and municipal projects continually achieving on time, on budget performance. Tim is an expert in numerical modeling including steady and unsteady state HEC-RAS, GeoRAS, HMS, GeoHMS, 1D and 2D modeling, and many more. Tim has worked in every aspect of civil engineering analysis and design and is a recognized expert in this

field of practice. Tim earned his Master's Degree in Civil Engineering from University of Missouri-Rolla in 2004 with an emphasis on Hydraulics and Hydrology. Tim is also an expert in Municipal Separate Storm Sewer System (MS4) permit implementation and compliance. Tim has been working with MS4 communities to achieve permit compliance since 2007. As Project Manager, Tim is responsible for managing the project personnel and resources through each component of the work plan (scope, schedule, and budget) from project beginning to successful completion. As Lead Engineer, Tim is the Engineer of Record, responsible for the immediate personal supervision of the project and responsible for leading the team to develop appropriate, practical, constructible designs.

Section 430.050 (B)(3)(e) at least one (1) alternative plan, which does not include a buffer or setback intrusion, or an explanation of why such a site plan is not possible;

Adding living space to the first floor is difficult given the site's constraints. Adding a second floor might have been an alternative plan that would have added less impervious area to the stream buffer. The submittal did not, however, include a structural engineering report about the foundation's structural capacity for supporting a second story. From the information provided, it is clear that a second story is undesirable, but the submittal did not prove an alternative without buffer intrusions is not possible.

Sections 430.050 (B)(3)(g) and (h) A stormwater management site plan, if applicable; and Proposed mitigation, if any, for the intrusion. If no mitigation is proposed, the request must include an explanation of why none is being proposed.

This subsection is asking the site, if applicable, to comply with both stormwater quantity and stormwater quality requirements. Chapter 425 *Stormwater Regulations* addresses water quantity, and Chapter 430 *Stream Buffer Protection Regulations* addresses water quality.

Section 425.020 *Applicability* (A) says that Chapter 425 "applies to any site improvement or building addition with a temporary or permanent land disturbance of two thousand (2,000) square feet or more." The proposed work on this site will disturb 3,578 square feet and does not qualify for any of the exemptions listed in Section 425.020 (B). As a result, the site must satisfy Section 425.030 *No Adverse Effect*. Section 425.030 (A) defines no adverse effect as "proposed changes to a property will not increase the volume, direction, velocity, or intensity of stormwater runoff for adjoining properties for the design storm."

The following section goes on to say that for the purposes of determining "no adverse effect," the design storm shall be 15-year rainfall intensity for a duration of twenty (20) minutes (15-year, 20-minute storm).

1. Table 4-2 of the MSD Regulations lists specific stormwater runoff rates for the design storm.
2. The determination of the change to the site's stormwater runoff rate will be based upon comparing the stormwater runoff rates in MSD's Table 4-2 for the existing and proposed conditions of the site.

The plan set shows that the increase in the runoff release rate from existing to proposed conditions will be 0.09 cubic feet per second (cfs). To have no adverse effect, the site must detain the volume of water that is equal to the increase in runoff release rate for the duration of the design storm. The duration of the design storm is twenty (20) minutes. For this site, the volume that needs to be detained is 0.09 cfs multiplied by 1,200 seconds (20 minutes), which equals about 108 cubic feet.

Sections 430.050 (B)(3)(h) asks if any mitigation is proposed for the intrusion. If no mitigation is proposed, the request must include an explanation of why none is being proposed.

To calculate the amount of mitigation the site would provide, the plan set uses 2,170 square feet as the area of new imperviousness in the buffer zone. Tables on the plan set page 3 of 4, however, appear to show that 2,220.7 square feet of impervious area will be added to the buffer. Using the values assumed in the plan's calculations, 2,170 square feet of impervious area was multiplied by 1.14 inches of rain. The 1.14 inches of rain is the depth used in The 2018 *Metropolitan St. Louis Sewer District Rules and Regulations and Engineering Design Requirements for Sanitary Sewer and Stormwater Drainage Facilities* design guidance for sizing water quality best management practices. Using this equation and values, the plan is showing that 206 cubic feet are intended to be detained.

To satisfy Chapter 430's requirements, this site must first show the proposed work will have no adverse effect (no change in the quantity of runoff). The site can do this by detaining 108 cubic feet of stormwater runoff. Next the site needs to mitigate for the loss of stream bank buffer. This plan's calculations are showing that 206 cubic feet of water quality mitigation are needed. Adding the requirements for quantity and water quality equals 314 cubic feet.

Why are water quantity and water quality requirements separate and cumulative? Adding impervious area to a site increases the amount of runoff from a site. Chapter 425 addresses new flows from new impervious areas. After adding new imperviousness and then detaining 108 cubic feet of new flows, the site's runoff in proposed conditions will be the same as the runoff in the existing conditions. From the stream's perspective, the amount of runoff is the same but now the size of the buffer is smaller. At this point, nothing has been done to mitigate for the loss of buffer area. The 108 cubic feet of detention are only keeping the quantity of runoff from increasing.

Chapter 430 goes beyond the water quantity and addresses water quality. This chapter looks at the reduced ability for the buffer to treat all the water that flows across it as it makes its way to the stream – not just the water from proposed site improvements. Water flowing over the buffer comes from beyond the limits of proposed construction and even beyond the bounds of this lot. The 206 cubic feet of calculated detention are needed to mitigate for the loss of stream buffer and associated ability for the buffer to treat flows. For the plan to be “at least as protective of natural resources and the environment” the plan has to show no increase runoff from the site (quantity) and the plan must also make up for the loss of water quality benefits for existing flows (quality).

To satisfy both Chapters 425 and 430, the site proposes the installation of a 4-foot by 12-foot by 12-foot dry well. Assuming 40% void space for the rock area and about 6.3 cubic feet for the volume of the empty Flow Well, the dry well system will provide about 234 cubic feet of detention. The site is providing about 85 cubic feet less detention than is required.

The case could potentially be made that less detention is required because the creek's concrete retaining wall extends two inches above the grade of the adjacent grade of the buffer. The plan does not mention the effect of the retaining wall. For the case to be made that less water quality of detention is required because the buffer is impaired, the City would need to see calculations that showed the reduced impact, if any, of the buffer in the areas with the concrete wall.

The reviewer from Intuition & Logic suggests that a variance might be more likely to be considered for those areas of the proposed work adjacent to the retaining wall than for areas adjacent to undisturbed buffer areas. On plan sheet 3 of 4, existing conditions areas A and B are adjacent to the retaining wall (approximately two inches of the wall extend above the grade of the adjunct buffer). The building

addition C and the wood deck are in the un-impaired areas of the buffer. Even if a variance was granted for areas A and B, the majority of the proposed improvements are on currently un-impaired buffer.

Section 430.050(B)(4)(e and f) the following factors will be considered in determining whether to issue a variance:

- e. The long-term and construction water-quality impacts of the proposed variance; and*
- f. Whether issuance of the variance is at least as protective of natural resources and the environment.*

In the St. Louis area, dry wells are used on many sites to manage the quantity of runoff. Dry wells are not as well suited for water quality applications as other best management practices. MSD lists acceptable urban BMP options to meet water quality volume criteria. One of the MSD accepted groups of BMPs are volume reduction practices which includes bioretention/raingardens, permeable pavement, amended soils, rainwater harvesting systems, combination treatment and infiltration practices, infiltration trenches, and infiltration basins. Dry wells detain water until it infiltrates into the ground. When the dry well is filled, water bypasses the well and discharges from a pipe. In this plan, no treatment is provided for water that is discharged from the outlet pipe. The dry well is controlling volume, but it is not, to the extent of other BMPs, addressing water quality.

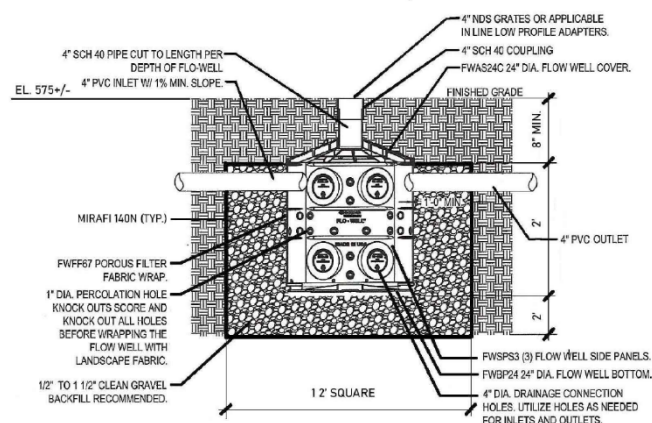


Figure 4: Detail drawing of a dry well.

Filtering practices are another group of MSD acceptable urban water quality BMPs. These BMPs capture and temporarily store water until it passes through a filter bed of sand, organic matter, soil, or other media. The water that is collected in the dry well will pass through soil, but any water that discharges from the outlet pipe will not pass through a filter bed. MSD does not list dry wells among acceptable filtering practices that include surface sand filters, underground sand filters, perimeter sand filters, organic filters, pocket sand filters, bioretention, and proprietary filtering systems.

The plan set shows that the dry well will discharge in approximately the middle of the no impervious buffer zone (please see Figure 5 below). The water directed to the BMP from the new impervious area that is not detained in the rocks' void space and discharges from the pipe will not have the full benefit of the stream buffer before entering the creek. If the pipe would discharge into one of the BMP options MSD considers well suited for water quality applications, then it would seem more likely that the variance would be at least as productive of natural resources and the environment.

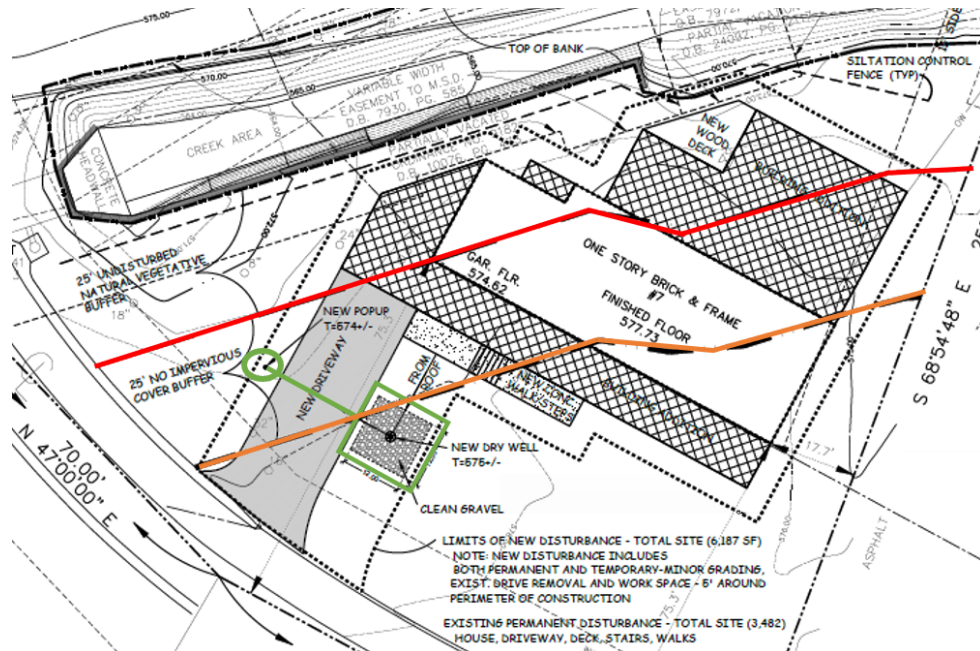


Figure 5: Site Plan that shows the location of the proposed dry well, outfall pipe, and discharge point in green. The no disturbance buffer is marked with a red line. The no impervious buffer is marked with an orange line.

An important requirement of the plan is to show that the proposed mitigation provides at least as much water quality benefit as the existing stream buffer. Installing BMPs that filter runoff or provide the opportunity for evaporation or evapotranspiration would have perhaps been better substitutes for the loss of buffer area. The City would have preferred to see one of the BMPs in MSD's list of urban water quality BMPs. The reviewer from Intuition & Logic also comments that a dry well is a typical methodology to offset volumetric (quantity) increases and that the dry well does not provide the same water quality as sheet flow to the stream buffer due to the evapotranspiration and phytoremediation provided by the plants.

The reviewer from Intuition & Logic went further and noted that while the east side of the lot has space constraints, the west side of the lot does not have improvements and could have provided opportunities for stream buffer mitigation such as vegetative strips. The reviewer added that Jefferson County has a similar stream buffer ordinance and planting enhancements are a typical mitigation method provided for variance requests.

Staff would like to note the following:

- For the Missouri Department of Natural Resources Municipal Separate Storm Sewer System (MS4) permit, the City, along with 59 other municipalities, is a co-permittee with the St. Louis Metropolitan Sewer District (MSD). It is important for the City to maintain its status as a co-permittee because complying with MS4 requirements without the benefit of being a co-permittee would be a financial and time burden on the City.

In the co-permittee relationship with MSD, managing stream buffers within municipal boundaries is the City's responsibility. Each year, the City submits a report to MSD that catalogs how the City has protected water quality. Careful and consistent enforcement of required water quality ordinances (Section 430.050) demonstrates the City's ongoing commitment to fulfilling co-permittee responsibilities.

- The proposed addition extends into an MSD easement. The City has requested proof that MSD will partially vacate the easement or allow for work to be done within the easement. Intuition & Logic’s review noted that the proposed garage within the MSD may violate MSD easement language about constructing structures within permanent easements.
- The proposed additions will require disturbing the ground near the MSD retaining wall. If a variance is approved, then the City will be requesting a geotechnical report and structural analysis showing that the proposed disturbance is not within the zone of influence and that the new additions will not have a negative impact on the wall structure.

In summary, staff offers the following findings regarding this variance request:

- The plan did not prove that a less intrusive alternative was not possible.
- The volume of detention does not seem sufficient to satisfy both quantity and quality requirements.
- The proposed detention does not seem to be a well-suited substitute for the lost stream buffer area.
- The detention proposed would discharge into the stream buffer and would not provide the full benefit of the buffer.
- The project is proposing to add 2,220 square feet of impervious area to the stream buffer, 1,309 square feet of which is in the no disturbance buffer – the area closest to the stream. In some sections of the buffers, the new imperviousness will cover the entire width of the no disturbance and no impervious cover buffers.
- Granting variances without satisfying all requirements of Section 430.050(B)(4) may jeopardize the City’s MS4 co-permittee status.

MOTION

Following its deliberation, the Board of Adjustment may vote in favor or against a motion to approve the request. Approval of a variance requires written findings of fact supporting the specified variance criteria. In order to make the vote on the application clear, an affirmative motion should be made, and members can vote to approve or disapprove that motion. An example motion for the requested variances to the stream buffer requirements would be:

“I move to approve a variance allowing the addition of 1,309 square feet of impervious area and disturbance of 2,061 square feet in the no disturbance buffer and addition of 911 square feet of impervious area and disturbance of 1,593 square feet in the no impervious buffer required per Section 430.050 (A) in order to expand first floor living space of the house in accordance with the application, based on a positive finding that:

A. The property's shape, topography or other physical conditions existing at the time of the adoption of this Chapter 430 prevents land development unless a buffer variance is granted.

B. Strict adherence to the minimal buffer requirements in the ordinance would create an extreme hardship.

C. Actions of the property owner have not created conditions of a hardship on that property.

D. Alternative designs, which require less intrusion or no intrusion, are not possible.

E. The plans to which the variance would apply will be at least as protective of natural resources and the environment as the existing circumstances.

ACTION

After the Board reaches a final decision regarding the request, a motion directing Staff to prepare and authorizing the Chair to execute the Findings of Fact and Conclusions of Law will need to be made. An example of such motion is:

“I move to direct Staff to prepare and authorize the Chair of the Board of Adjustment to execute Findings of Fact and Conclusions of Law regarding the stream buffer variances requested for 7 Sherwyn Lane based upon the testimony received and the deliberations of the Board on this application, as decided on August 17, 2023.”

APPENDIX 1: COMPREHENSIVE PLAN

Included and attached by reference. See body of report for specific excerpts.

APPENDIX 2: CHAPTER 425 AND CHAPTER 430

Included and attached by reference. See body of report for specific excerpts.

APPENDIX 3: INTUITION & LOGIC REVIEW

Included and attached by reference. See body of report for specific excerpts.

APPENDIX 3: INTUITION & LOGIC REVIEW

Review from Tim Dean, P.E., Principal, Senior Project Manager, Intuition & Logic Engineering, Inc.

- The project site is not within any FEMA mapped floodplain. Appears to be outside the draft floodplain mapping on SEMA's website as well.
- The presence of the existing retaining wall along the majority of the house makes a case for variance approval adjacent to that area as the existing buffer has already been removed, nor can it re-establish due to the wall.
- Sheet 1 does not show all of the trees on the subject property. It appears that all trees on the west side of the channel are picked up, however, no trees on the east side along the channel or within the rear yard are being shown. Aerials show this area heavily vegetated. The trees should be picked up to better assess the impact to the existing stream buffer by the proposed improvements. This likewise applies to the sideyard setback as well.
 - Question - Does the neighbor have to sign off on impacts within the side yard setback? Impacts to trees here would eliminate the existing screening and sense of privacy.
- Does the City have a Landscaping plan requirement for Tree Preservation or offsetting for this type of re-development? I wasn't sure if Section 410.320 Tree Conservation would apply here or not.
- The west side of the channel having no proposed buildings could be used to provide buffer enhancement plantings to offset proposed impacts on the east side of the channel.
 - This could also be an area for planting if the tree conservation ordinance requirements apply. There are 4 trees in the front yard alone that are being removed. These would require replacement by 7 – 2.5" Caliper trees per the ordinance.
- Site Description says 1,600 SF building (modest structure size). Basement Area and 1st floor indicate 1,981 SF is the existing bldg.
 - That's a pretty big difference on narrative. Is part of the 1981 sf the garage?
 - Is the existing garage getting re-purposed to living space/expansion of kitchen. Thus need for expanding garage west into the buffer?
 - Proposed Garage is within MSD easement. This may violate MSD easement language about construction of structures within permanent easements. Suggest property owner verify/provide copy of approval from easement holder.
 - Back of Garage is 9ft from wall. That may be within the zone of influence for that retaining wall. Could impact the internal stability of the wall due to the increase in dead and live load. Has a wall calc been checked for this? Internal/Global Stability review.
 - Revised Plans, shows additional basement area being added, not just additional 1st floor area. Somewhat counteractive to argument against 2 story alternative plan based on accessibility needs.
- Sheet 1 Site coverage calcs says 5770 sf impervious; sheet 3 & 4 says 5810 sf impervious (total site), 40 SF difference. Doesn't seem like that is the existing street pavement within the lot. Where is this difference coming from?
 - Similar Existing lists 3,699 sf imp site coverage (sht 1), Sht 3, total site adds up to 3,640 sf (2534+1106).

- Discrepancies notwithstanding, the WQ mitigation calc is using the larger prps and smaller existing numbers such that if there is an error, there is more volume being provided.
- General Construction Notes on sheet 4 says to direct impervious area to drywell in the amounts of min 3,578 max 4,000 sf. Guessing this is carryover from a different planset.
 - The detailed calc notes indicate 2,170 sf which is consistent with the calcs.
- Variance request letter has a couple errors.
 - Lot size 1.0 ac not 1.25 ac as stated
 - Addition 2,482 sf not 1,700 sf (from FAR calc, sheet 1, single floor, not including add'l bsmt area)
 - These seem to be clarified in the revised plans. The board reviewing the variance request should be made aware of the correct numbers for consideration of the request as the original variance letter implies a larger lot and smaller original building footprint.
- The Drywell is a typical methodology to offset the volumetric increase in runoff volume produced and is used in neighboring communities where the threshold for MSD WQ BMPs is not being met. However, this is typically used on redevelopment lots not located within a stream buffer. The difference is that this does not provide the same water quality benefit as sheet flow to a stream buffer due to the evapotranspiration and phytoremediation provided by the plants. Suggest planting enhancements on the West side of the channel to expand the width of the buffer there as a mitigating consideration.
 - Jefferson County has a similar stream buffer ordinance and this is a typical mitigation method employed.
 - Other options include establishing a rain garden or bioretention cell where the roof drains discharge.

Tim Dean, PE, LEED AP[®], CFM



Principal, Senior Project Manager, Intuition & Logic Engineering, Inc.

Education

M.S. Civil Engineering, University of Missouri-Rolla, 2004

B.S. Civil Engineering, University of Missouri-Rolla, 2003

Registration

Registered Professional Engineer - Missouri

LEED[®] Accredited Professional

Certified Floodplain Manager

Affiliations

American Society of Civil Engineers

American Public Works Association

Association of State Floodplain Managers

Environmental and Water Resources Institute – St. Louis Section

Phi Kappa Phi – National Academic Honor Society

Tau Beta Pi – National Engineering Honor Society

Chi Epsilon – National Civil Engineering Honor Society

Areas of Expertise

Tim Dean is a Principal Civil and Water Resources Engineer with 20 years design experience whose expertise is in stormwater engineering and civil engineering infrastructure design. Tim's projects include urban channel stabilizations, watershed analysis, flood control facilities design, roadways, culvert and bridge designs, trails, boat ramps, sea walls, parking lots, utilities (electric, sanitary, water), plazas and other pedestrian facilities. Tim has led large interdisciplinary teams for federal and municipal projects continually achieving on time, on budget performance. Tim is an expert in numerical modeling including steady and unsteady state HEC-RAS, GeoRAS, HMS, GeoHMS, 1D and 2D modeling, and many more. Tim has worked in every aspect of civil engineering analysis and design and is a recognized expert in this field of practice. Tim earned his Master's Degree in Civil Engineering from University of Missouri-Rolla in 2004 with an emphasis on Hydraulics and Hydrology. Tim is also an expert in Municipal Separate Storm Sewer System (MS4) permit implementation and compliance. Tim has been working with MS4 communities to achieve permit compliance since 2007. As Project Manager, Tim is responsible for managing the project personnel and resources through each component of the work plan (scope, schedule, and budget) from project beginning to successful completion. As Lead Engineer, Tim is the Engineer of Record, responsible for the immediate personal supervision of the project and responsible for leading the team to develop appropriate, practical, constructible designs.

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Relevant Experience

2023 Creve Coeur, MO – Stormwater Master Plan Update (Project In Progress)

2019 Wildwood, MO – Woods Road Flood Control Analysis

- 2018 Jefferson County, MO – Jefferson County Storm Water Management Plan
- 2018 Jefferson County, MO – Saline Road Flooding
- 2017 Jefferson County, MO – Highland Baptist Church Road Hydraulic Analysis
- 2016 Jefferson County, MO – County Facilities Maintenance O&M Plans
- 2016 Lincoln, NE – Lynn Creek Watershed Master Plan
- 2016 Lincoln, NE – North Salt Creek Watershed Master Plan
- 2016 Lincoln, NE – Oak Creek Watershed Master Plan
- 2016 Lincoln, NE – Salt Creek North Tributaries Watershed Master Plan
- 2016 Riverwood Estates, MO – Riverwood Estates Geomorphic Reconnaissance
- 2015 St. Peters, MO – Lakeside 370 Park Pod 4 Design
- 2015 Jacobs, Kirkwood, MO – Kirkwood Park Community Center Feasibility Study
- 2007 Columbia, MO – Clear and Gans Creek Geomorphic Recon
- 2015 Lincoln, NE - Haines Branch Watershed Master Plan
- 2007 Lincoln, NE – Little Salt Creek Basin Watershed Master Plan
- 2015 Lincoln, NE - Middle Creek Watershed Master Plan
- 2015 Lincoln, NE - Salt Creek South Tributaries Master Plans
- 2019 Creve Coeur, MO – Millennium Park Trails Alternatives Analysis
- 2019 Sunset Hills, MO – Meramec River Bridge Crossing
- 2018 St Charles County, MO – Riverside Park Design
- 2018 St Charles County, MO – Riverside Park Design
- 2018 St Charles County, MO – Riverside Park Sanitary Sewer System Design
- 2018 St Charles County, MO – Riverside Park Water System Design
- 2014 Council for a Healthy Dent County, MO – Tiger Trail Design
- 2015 St. Peters, MO – Lakeside 370 Park Sanitary Sewer Design

- 2023 MSD - Grand Glaize Creek Bank Stabilization
- 2023 Creve Coeur, MO – Stormwater Master Plan Update (Project In Progress) – Project Manager and Lead Engineer for City wide stormwater master plan update. Update includes on-line resident communications tool, resident stormwater questionnaire, data collection, stormwater complaint site field investigations, GIS database development, capital improvement project (CIP) development, CIP costs, CIP Mapping, prioritization ranking methodology development, 4 Open Houses, SaaS based on-line Capital Improvement Program & Project Management Application, City Council presentations, final stormwater master plan update report.
- 2023 ST CHARLES, MO - 2022 MS4 Services
- 2022 2219 - USACE KC DISTRICT - Periodic Inspections
- 2022 USACE KC DISTRICT - Periodic Inspections
- 2022 2215 - Jim Mann Yard Drainage
- 2022 2213 - ARNOLD TO15 - Ellen Drive Stormwater
- 2022 2212 - KERHS MILL TRAILS SUBDIVISION - Erosion and Sedimentation
- 2022 2210 - ARNOLD - June Drive Stormwater – Project Manager and Lead Design Engineer for roadway culvert(s) and yard drainage improvements to address flooding.
- 2022 2209 - JEFFCO - MOU21-10 West Shed Outfall – Project Manager and Lead Design Engineer for two roadway culverts to address flooding and erosion.

- 2022 2207 - CREVE COEUR - New Ballas Tarrytown Ln
- 2022 2206 - CREVE COEUR - Alden Lane – Project Manager and Lead Design Engineer for roadway culvert to address flooding and erosion.
- 2022 Forest Park Forever – Deer Creek Savanna – Basin Master Plan to evaluate stream erosion for Hidden Creek through the Hidden Lake Savanna and Deer Lake Savanna South Unit; determine overall channel stability; identify erosion features; and recommend improvements to provide long term stability to the channels. Analysis included Hydrologic and Hydraulic analysis, Field data collection, thalweg profile analysis, alternatives analysis, cost analysis, and final recommendations.
- 2022 ARNOLD - TO13 Christ Drive to A St
- 2021 JEFFCO MOU 21-8 HWY RDWY Vegetation
- 2021 TEPA Companies, Hopi Reservation, Arizona - Hopi Arroyo Analysis - Engineering staff to calculate the theoretical limit of lateral erosion in the arroyo immediately north of the Hopi Detention Center Project construction site.
- 2021 US Army Corps of Engineer, Kansas City District – Levee Periodic Inspections – Mr. Dean was Project Manager and Team Lead Engineer for Periodic inspections of KC District System in Salina, Kansas and Gypsum, Kansas.
- 2021 Jefferson County, MO - MOU 21-6 - Miller Road Wampler Dr to Black Cr – Mr. Dean was Project Manager and Lead Engineer for analysis and design of Miller Road stormwater management from Wampler Dr to Blacks Cr.
- 2021 Jefferson County, MO - MOU 21-5 - 3860 Miller Road Stormwater – Mr. Dean was Project Manager and Lead Engineer to design stormwater drainage and yard flooding solutions.
- 2021 Jefferson County, MO - MOU 21-4 - 24 Wampler Drive Stormwater – Mr. Dean was Project Manager and Lead Engineer for analysis and design of stormwater management to address yard flooding along Wampler Dr.
- 2021 Robbye Toft, Ladue, MO - Bank Stabilization
- 2021 Byrnes Mill, MO - 2021 MS4 Services – Project Manager and Lead Engineer to prepare the City of Byrnes Mill's MS4 compliance analysis, action plan and report.
- 2021 Arnold, MO - TO12 - 2021 MS4 – Project Manager and Lead Engineer to prepare the City of Arnolds MS4 compliance analysis, action plan and report.
- 2021 Metropolitan St. Louis Sewer District - OMCI Streambank Stabilization – Project Manager and Lead Engineer for four (4) streambank stabilization projects in various watersheds within the Coldwater and Lemay service areas to address high risk streambank failure, streambank erosion and yard erosion along various creeks. Services include alternatives analysis and recommendations, survey, design developments, preliminary through final plans, specifications and costs, permitting, easements, and public involvement.
- 2020 JEFFERSON COUNTY On Call Services
- 2020 US Army Corps of Engineer, Kansas City District - Shawnee Mission Parkway Sec 14 Project - Engineer for channel stabilization and erosion control design.
- 2020 Wildwood, MO - Cavanagh Water Quality
- 2020 Arnold, MO - 553 Christ Dr Stormwater - Project Manager and Lead Design Engineer for yard and road drainage improvements to address flooding along Christ Drive.
- 2020 SCHEMMER - Offutt Air Force Base, Omaha, NE – Lead Engineer for over 4,500 lineal feet of complete channel reshaping, stabilization and restoration including two stage channel shaping, grade controls, drop structures, energy dissipation, rock toes, flood benches, and restoration palette suitable for base operations.
- 2020 Miss Augusta, St. Charles County MO – Project Manager and Lead Engineer to design Commercial River Cruise Ship Dock and facilities on the Mississippi River in St. Charles County, Missouri. Site

improvements include utilities (electric, water, sanitary), grading, paving, docks, gangways, check-in station, site improvements, and supporting utility services at Klondike Park. Facilities include a covered guest queuing area, a 1,500 sf ticketing/office building for offices, a check-in counter, a small retail store, minor dry good storage for ship, and utility servicing for ship. Permitting includes US Army Corps of Engineers Section 408 (Rivers and Harbors Act of 1899) regarding commercial vessels in navigation channel.

- 2020 Saint Charles County, MO – Klondike Park Courtesy Boat Dock – Project Manager and lead design engineer for the final design and permitting of the courtesy boat dock on the Mississippi River at Klondike Park. Site improvements include bank protection, dock, gangways, and access trails.
- 2020 Forest Park Forever – Nature Playscape Channel Design – Lead design engineer for Ozark style ledge-rock and boulder channel playscape with pools, steps, climbing waterfall and flat play areas. The design includes stormwater management and erosion control throughout the 17 acre nature playscape area. I&L services include negotiation with the park contractors to utilize on site material as much as practical, coordinate channel design with Forest Park Forever Staff, coordinate construction cost with the contractor, construction change orders, on site measurements, pay application review and punch list.
- 2020 Saint Charles County, MO - Flatwoods Park Boat Ramp - Project Manager and lead design engineer for Flatwoods Park new boat ramp on Quiver River including parking lot, trails, plaza and amenities.
- 2020 Wildwood, MO – Pavilion Hill Drainage - Project Manager and Lead Engineer for analysis and design of local flood control measures.
- 2020 Clayton, MO – 8027 Forsyth SWPPP Inspections – Project Manager and Lead Engineer for on-site SWPPP Inspections and reporting.
- 2020 Jefferson County, MO – 2020 MS4 Services – PM and Lead Engineer developing MS4 updates and presenting SWPPP training for County Employees, dry weather inspections and water quality testing.
- 2019 Jefferson County, MO – 2019 Storm Water Management Plan Report Revisions – Project Manager and Lead Engineer for inspections and report revisions to the SWMP Report.
- 2020 Lower Platte South NRD - Beal Slough Design 70th to Pine - Project Manager and Engineer to design grade controls and associated bank stabilization to reduce incision and bank erosion on the reach of Beal Slough from 70th Street to Pine Lake Road and prepare final design plans, specifications and CD's for use in bidding and construction. Final design included boulder grade control drop structures, rock grade controls, rock toe protection, and vegetated rock bank revetment. Services included construction management as the owner's representative.
- 2019 Creve Coeur, MO – Balcon Estates Culvert – Project Manager and Lead Engineer for design of Balcon Estates culvert and associated channel restorations for flood control.
- 2019 US Army Corps of Engineer, Kansas City District – Levee Periodic Inspections – Mr. Dean was Field Team Lead and Team Hydraulic Engineer for Periodic inspections of KC District System R-351 located in Atherton, MO and Seward located in Seward, NE. Project includes hydraulic, hydrologic, geotechnical, structural, mechanical, levee, floodwall, closure structure, interior drainage system, pump station, and flood reduction channel design reviews; field analysis of system; system performance assessment; and independent technical review of approach and findings. CPARS Ratings: Quality: Very Good; Schedule: Satisfactory; Management: Very Good. The KC District commented "The Contractor demonstrated a high level of professionalism and management. They provided a quality product within the contract time frame and budget and with little needed oversight from the government."

- 2019 Wildwood, MO – Woods Road Flood Control Analysis – Project Manager and Lead Engineer for hydraulic and hydrologic modeling and flood control alternatives analysis.
- 2019 Clayton, MO – Adzick Field Renovations SWPPP Inspections – Project Manager and Lead Engineer for on-site SWPPP Inspections and reporting.
- 2019 Clayton, MO – SWPPP Inspections for Clarendale Senior Living Construction – Project Manager and Lead Engineer for on-site SWPPP Inspections and reporting.
- 2019 Ross Hammond, MO – Hammond Parcel Retaining Wall and Channel Stabilization – Project Manager and Lead Engineer for Retaining Wall and Channel Stabilization Project. Final design, plans and specifications included rock grade control, sanitary manhole protection, rock toe slope protection and modular block retaining wall.
- 2021 Saint Charles, MO – 2019 Streambank Stabilization Projects – Mr. Dean was Project Manager and Lead Engineer to design and permit stream stabilization along 2,600-ft of eroding channels at three locations along Boschert Creek and Crystal Springs Creek and associated stormwater system, sanitary system and water system improvements. Hydrology was developed in HEC-HMS. Hydraulics were developed in HEC-RAS starting with the FEMA effective model. Enclosed stormwater systems were developed in Civil 3D and IntelliSOLVE software. Channel revetment sizing was done using WEST software and USBR methodology. Floodplain mapping was prepared in ArcGIS. Channel Stabilization includes channel grade controls, flood benches, retaining walls, bank revetments, and riparian corridor enhancement. The project also included 2,900-ft of sanitary sewer capacity improvement to upsize in place 120-ft of 8-inch, 450-ft of 21-inch, 1,740-ft of 18-inch to 24-inch and 590-ft of CIPP Lining plus 2,000-ft of new 8-inch water main to connect to existing 6-inch and 16-inch mains.
- 2021 Lee's Summit, MO – Flood Analysis and Design for Hackamore Drive and Secretariat Drive – Mr. Dean was the Project Manager and Lead Engineer for flood control analysis and design to reduce structure flooding in residential homes and roadway flooding along Hackamore Drive. Analysis included three regional detention basins with HEC-RAS Dam Breach Analysis. Final design included floodproofing one home to enclose the basement plus enclosed system capacity increase - 440 ft of 4ft X 6ft box, 200 ft of 24-inch RCP, 8 manholes, 5 curb inlets, retaining walls, and outfall energy dissipation. Services include alternatives analysis, HEC-HMS, HEC-RAS and IntelliSolve numerical Modeling, utility coordination, final design, plans, specifications, cost analysis, USACE and FEMA permitting, public involvement, FEMA Mapping, and easements.
- 2020 Cape Girardeau, MO - Capaha Park Pond – Engineer for alternatives analysis and design of pond dredging, spawning bed and habitat for the existing pond in Capaha Park. Alternatives includes water quality treatment forebay and hydro dynamic separators for incoming stormwater to help reduce the debris load to the pond.
- 2019 Clayton, MO – 2019 DeMun Park Renovation SWPPP Inspections – Project Manager and Lead Engineer for on-site SWPPP Inspections and reporting.
- 2019 Lower Platte South Natural Resources District, Lincoln, NE – Beal Slough Channel Stabilization 70th to Pine St – Mr. Dean is Project Manager and Lead Engineer for the hydraulic and geomorphic design of channel stabilization and culvert replacements on Beal Slough through Gap Park, one of the City of Lincoln, NE newest parks. The design includes hydraulic and hydrologic modeling of channel using HEC-RAS and HEC-HMS, geomorphic channel analysis, design of 8 grade controls, drop structure, new culvert and access roadway, bank revetment and restoration with native riparian corridor vegetation.
- 2019 Columbia, MO – FEMA Mapping for W Alhambra Drive – Mr. Dean was Project Manager, Lead Hydrologic Modeler and Lead Engineer to develop FEMA FIRM mapping of tributary along W Alhambra Drive for FEMA Zone A Map Revision. Channel hydrology was developed using HEC-HMS

and several new basins were delineated per FEMA requirements. New basins were delineated in GIS using Boone County raster supplemented with terrain and pipe network data. Rainfall hyetographs from the HEC-1 effective model data was evaluated and flow rates developed for the 0.2%, 1%, 2% and 10% AEP events. Hydrology was developed in HEC-RAS 5.0.3. a new DEM was developed in GIS by supplementing existing GIS terrain data with ground survey. 2D mapping was developed in ArcGIS per FEMA requirements. FEMA issued the Letter of Map Revision September 2021.

- 2018 Arnold, MO – 2018 MS4 Stormwater Management Plan – Project Manager and Lead Engineer to prepare the City of Arnolds MS4 compliance analysis, action plan and report.
- 2018 CDI – St Louis County Suson Lakes Modifications - Project engineer to design pond modifications for park enhancement, bank stabilization and habitat creation.
- 2018 Jefferson County, MO – Jefferson County Storm Water Management Plan – Project Manager and Lead Engineer for modifications and submittal of Storm Water Management Plan required by MODNR.
- 2018 Clayton, MO – SWPPP Inspections at 7501 Maryland Avenue – Project Manager and Lead Engineer for on-site SWPPP Inspections and reporting.
- 2018 SWT Design – St Ferdinand Park Pond Modifications, St Louis County Parks Department – Project engineer to design pond modifications for park enhancement, bank stabilization and habitat creation.
- 2018 Creve Coeur, MO – Sherwyn Lane Flood Control Alternatives Analysis - Project Manager and Lead Engineer for stormwater system modifications to alleviate flooding.
- 2018 Ladue, MO – Robin Hill Flood Control Culvert and Channel Design – Mr. Dean is the Project Manager and Lead Engineer for the analysis and design of flood control and channel stabilization measures to reduce flood impacts in densely populated residential neighborhood. The project includes flood modeling using HEC-RAS and HEC-HMS, Bridge and Culvert design, channel stabilization design, sediment transport analysis and design, public involvement, utility coordination, permitting including FEMA no-rise certification and US Army Corps of Engineers 404, final construction plans, specifications, cost estimating, bidding services and construction management as owner’s representative. The final design includes a two stage culvert and vegetated channel with a rock toe to facilitate sediment continuity and provide the needed flood conveyance with a 10’ wide low flow channel, 1½’ to 2’ tall - 20’ to 30’ wide flood bench with two staged 10’ X 5’ and 10’ X 7’ barrel culverts provided excellent sediment transport, erosion control and flood performance throughout the project.
- 2018 Jefferson County, MO – Saline Road Flooding Analysis – Project Manager and Lead Engineer for roadway flood analysis involving multiple detention basins, wet ponds, roadway drainage systems, culverts and bridges. The analysis produced cost analysis of multiple flood control alternatives including multiple detention basin retrofits, wet pond modifications, over 1,100 feet of new 54” and 72” RCP roadway drainage systems, culvert replacement and a bridge option.
- 2018 St Charles, MO – Sandfort Creek Channel Stabilization Design – Mr. Dean is Project Manager and Lead Engineer for stabilization of 800-ft of eroding channels at two project locations through urban areas along Sandfort Creek and Crystal Springs Creek. Stabilization includes hydraulic and geomorphic analysis, channel grade controls, flood benches, bank revetments, riparian corridor restoration, establishing natural channel sinuosity and riffle-pool spacing, improving outfalls and associated stormwater system improvements.
- 2018 Jefferson County, MO – MS4 Compliance Employee Training – Project Manager and Class Instructor for Jefferson County MS4 compliance training.

- 2018 Jefferson County, MO – MS4 Training Services – PM and Lead Engineer developing and presenting SWPPP training for County Employees
- 2017 Clayton, MO – Shaw Park Field Renovation SWPPP Inspections - Project Manager and Lead Engineer for on-site SWPPP inspections and reporting as City Representative.
- 2017 Jefferson County, MO – Highland Baptist Church Road Hydraulic Analysis - Project Manager and Lead Engineer for evaluating roadway and right of way drainage structures and recommending improvements to reduce flooding, road topping, driveway topping and ditch/channel erosion.
- 2017 USDA Forest Service, Hot Springs, AR – Ouachita Lake Seawall Design - Engineer to develop multiple options for replacing the deteriorated and failing sea wall including regrade and armor, concrete cast in place wall, modular block wall and a pile wall, among others. The modular block wall provided the most practical and cost effective alternative. The design includes 2,594 square feet sea wall, electric utility relocation, clearing, grading, drainage, and site restoration. The wall was designed to withstand wave run-up. CPARS Ratings: Quality: Very Good; Schedule: Very Good; Management: Exceptional; Regulatory Compliance: Satisfactory
- 2017 Creve Coeur, MO – Malcolm Terrace Park Bridge and Deer Creek Channel - Mr. Dean is the Project Manager and Lead Engineer for the hydraulic, hydrologic and geomorphic analysis and design of bridge and channel modifications to reduce flooding in Malcolm Terrace Park. The design includes flood modeling using HEC-RAS and HEC-HMS, Bridge design, channel stabilization design, utility coordination, permitting including FEMA no-rise certification and US Army Corps of Engineers 404, final construction plans, specifications, cost estimating and bidding services.
- 2017 Lancaster County, NE – Hydraulic Capacity Analysis and Conveyance Design of 25 WPA Bridges - Mr. Dean was Lead Hydraulic and Hydrologic Engineer for to identify culvert replacement options to meet current flooding criteria on 25 WPA Bridges in Lancaster County. The Cordes and Hotchkiss method was used to determine the 2, 10, 50, 100, 200, and 500 year flow event, in accordance with the recommended regression equation sets for the region. The Iowa State Department of Transportation (IowaDOT) Culvert Hydraulics (v 2.0) program was used as a starting point to develop culvert solutions. The detailed analysis was performed in HY-8, where inlet and outlet conditions were taken into account. A tailwater conditions rating curve was developed within HY8 by approximating the downstream.
- 2017 St Charles, MO – Cole Creek Bank Stabilization - Mr. Dean is Project Manager and Lead Engineer for hydraulic, hydrologic and geomorphic analysis and design of stream stabilization to address 30+ foot tall vertical slope failures and deeply incised channel through dense residential and retail area. Stabilization includes revisions to channel plan and profile geometries and re-establishing natural geomorphic geometry, bank toe and slope stabilization with riparian vegetation, retaining walls on upper slope to match grades at existing apartment and retail developments, grade controls, flood benches, improving outfalls and associated stormwater system, sanitary, water, electric and telecommunication utility relocations, final plans, specifications and construction documents.
- 2016 Jefferson County, MO – County Facilities Maintenance O&M Plans - Project Manager and Lead Engineer to develop O&M SWPPP plans for 3 large maintenance facilities in the County.
- 2020 Lower Platte South Natural Resources District, Lincoln, NE – South Salt Creek Channel Stabilization at Old Cheney Bridge - Project Manager and Lead Engineer for large channel grade controls and stilling basins to stabilize major bridge crossings. Final design included quartzite boulder drop structures, composite revetment bank protection, channel and bank re-shaping and planting with native riparian corridor vegetation.
- 2019 Lower Platte South Natural Resources District, Lincoln, NE – South Salt Creek Channel Stabilization at Pioneers Bridge - Project Manager and Lead Engineer for large channel grade controls and

stilling basins to stabilize major bridge crossings. Final design included quartzite boulder drop structures, composite revetment bank protection, channel and bank re-shaping and planting with native riparian corridor vegetation.

- 2016 Jefferson County, MO – 2017-2018 On Call Stormwater Engineering Services – Project Manager and Lead Engineer for On Call Stormwater Services Contract.
- 2016 Lincoln, NE – Lynn Creek Watershed Master Plan – Assistant Project Manager and engineer for comprehensive Watershed Master Plan with Capital Improvement Projects for 4 square miles study area with 15 lineal miles of channel. The masterplan included developing a \$1.6 Million Capital Improvement Project program.
- 2016 Lincoln, NE – North Salt Creek Watershed Master Plan – Assistant Project Manager and engineer for comprehensive Watershed Master Plan with Capital Improvement Projects for 34 square miles study area with 80 lineal miles of channel. The masterplan included developing a \$0.8 Million Capital Improvement Project program.
- 2016 Lincoln, NE – Oak Creek Watershed Master Plan – Assistant Project Manager and engineer for comprehensive Watershed Master Plan with Capital Improvement Projects for 36 square miles study area with 69 lineal miles of channel. The masterplan included developing a \$1.7 Million Capital Improvement Project program.
- 2016 Lincoln, NE – Salt Creek North Tributaries Watershed Master Plan – Mr. Dean was the Lead Hydrologic Engineer for stormwater masterplan covering 76 square mile study area, 164 miles of channel with a 1,124 square mile drainage area and including Hydraulic and Hydrologic analysis, land use analysis, developing a minimum stream corridor buffer regulation, geomorphic analysis of 49 miles channel, and developing a \$4,100,000 capital improvement program detailing 5 projects including costs and prioritization. H&H analysis included evaluation of FEMA effective HEC-RAS model at select section for inundation depths and flood hazard area boundary accuracy and HY8 analysis at select roadway culverts. The minimum corridor evaluated dozens of channels and inundation to develop the criteria recommendation to base buffer widths on contributing drainage area. The land use analysis recommended flow attenuation on storm events between the water quality control rainfall and the 2 year event to further mimic predevelopment hydrology and protect receiving streams.
- 2017 PDS, St. Louis, MO – St Louis Zoo Lakes Planning and Design, St. Louis MO – Tim was the team lead civil engineer to re-design and renovate the central lakes complex in the World Renown St. Louis Zoo. Tim provided civil engineering analysis and design, extensive utilities coordination and relocations (gas, electric, sewer, fiber, storm), grading, paving, stormwater management and stormwater quality BMP design.
- 2017 Arnold, MO – Arnold TO8 2016-2017 MS4 – Project Manager and Lead Engineer for MS4 annual compliance and reporting.
- 2016 CMT, Springfield, MO – Mount Vernon and Grand Avenue Bridge Replacements – Project Manager and Lead Engineer for geomorphic analysis and design of channel stabilization associated with two bridge replacements over Jordan Creek. Designs included two stage channel shaping for energy management, grade controls, drop structures, rock toe or slope and bank stabilization and planting.
- 2016 Ideal Construction for St. Charles, MO – Webster Park Bank Stabilization – Project Manager and Lead Engineer of bank stabilization design in Webster Park. Bank stabilization includes grade controls, reshaping channel to restore flood bench, vegetated rock bank stabilization and associated roadway and enclosed drainage outfalls into the channel.
- 2016 St. Charles, MO – Creek Stabilization and Sewer Projects – Project Manager and Lead Engineer for two sites to stabilize 30ft tall cut bank threatening properties along Cole Creek and to protect a sanitary sewer crossing Boschert Creek. Final design, plans and specifications included boulder toe

stabilization, replace existing 15" sanitary sewer and manholes, replace storm sewer and manhole, modular block retaining wall, rock grade control and channel restoration with native riparian vegetation.

- 2016 Clayton, MO – 7636 Forsyth SWPPP Inspections - Project Manager and Lead Engineer for on-site SWPPP inspections and reporting as City Representative.
- 2016 Creve Coeur, MO – Temporary Dam Stabilization Design - Project Manager and Lead Engineer for design and construction services to temporarily stabilize failing dam in City Golf Course.
- 2016 Riverwood Estates, MO – Riverwood Estates Geomorphic Reconnaissance - Project Manager and Lead Engineer for geomorphic reconnaissance of subdivision channels and recommendations and associated costs for stabilization.
- 2016 Lower Platte South Natural Resources District, Lincoln, NE – Beal Slough Geomorphic Recon – Project Manager and Lead Engineer of channel geomorphic reconnaissance and capital improvement project development to address channel erosion and threatened infrastructure along Beal Slough. Final design included rock grade controls, drop structures, stilling basins, vegetated bank revetments and replacing damaged culverts.
- 2016 Clayton, MO – 25 North Central SWPPP Inspections - Project Manager and Lead Engineer for on-site SWPPP inspections and reporting as City Representative.
- 2016 Clayton, MO – 8500 Maryland Avenue SWPPP Inspections - Project Manager and Lead Engineer for on-site SWPPP inspections and reporting as City Representative.
- 2015 St. Peters, MO – Lakeside 370 Park Pod 4 Design – Project Manager and lead engineer of RV campground expansion within Lakeside 370 Park. Sanitary system included 2 duplex sanitary lift stations, 2,200 LF of low head sanitary force main, 30,000 gallon capacity passive sanitary storage tanks, aerators and control system, 2,300 LF of gravity sewer and 5,900 LF of water main.
- 2015 Jacobs, Kirkwood, MO – Kirkwood Park Community Center Feasibility Study - Project Manager and engineer of record for civil engineering and costs associated with layout alternatives for the Kirkwood Park Community Center feasibility study.
- 2015 Lincoln, NE - Haines Branch Watershed Master Plan - Lead engineer for the development of GIS based, comprehensive watershed masterplan.
- 2015 Lincoln, NE - Middle Creek Watershed Master Plan - Lead engineer for the development of GIS based, comprehensive watershed masterplan.
- 2015 Lincoln, NE - Salt Creek South Tributaries Master Plans – Mr. Dean was the Lead Hydrologic Engineer for stormwater masterplan covering 89 square mile study area, 264 miles of channel with a 568 square mile drainage area and included hydrologic/hydraulic analysis, geomorphic analysis, water quality field data collection and analysis, and developing a \$10,700,000 capital improvement program detailing 19 projects including costs and prioritization. H&H analysis included the development of pre-development flowrates for 15,000 acres for the City of Lincoln's use in regulating post construction runoff. 100 acre sub-basins were delineated using ArcView, HEC-GeoHMS, and the digital elevation model (DEM) provided by the City. GIS based land use, soil maps, and LiDAR based terrain data were used to develop runoff hydrographs for each subbasin. SCS Type II storm distribution was used to develop the 24-hr events of the 2-, 5-, 10-, 25-, 50-, 100-, and 500-yr storm events.
- 2007 Columbia, MO – Clear and Gans Creek Geomorphic Recon – Engineering staff assisting with watershed geomorphic analysis and recommendations
- 2007 Lincoln, NE – Little Salt Creek Basin Watershed Master Plan –Engineering staff assisting in geomorphic fieldwork and analysis for the watershed master planning services
- 2015 Chesterfield, MO - Riparian Trail Channel Stabilization – Project Engineer for final design, plans, specifications and permitting of 2,600 feet of channel stabilization design and construction

services including boulder toe protection, rock grade control, multiple sewer crossing protection, replacing sanitary sewer and manhole, retaining walls, boulder drop structures, and vegetated gully erosion protection.

- 2015 Lower Platte South Natural Resources District, Lincoln, NE – Stevens 5789 Monitoring – Project Manager and Principal in charge of channel stabilization monitoring and annual report for USACE permit compliance.
- 2015 Maryland Heights, MO – Midland Creek – Design Engineer responsible for hydraulic modeling of proposed channel stabilization of 2,700 feet of Midland creek.
- 2015 Metropolitan St. Louis Sewer District, St. Louis, MO – Cold Water Creek Contract G – Project Manager and Lead Design Engineer for three bank stabilization projects.
- 2015 Metropolitan St. Louis Sewer District, St. Louis, MO – DeSmet Industrial Ct Channel Stabilization – Project Manager and Lead Design Engineer bank stabilization of 18 ft tall bank along 450 ft of Coldwater Creek behind DeSmet Industrial building. Final design plans and specifications included rock toe stabilization, composite revetment slopes, replacing two stormwater sewers, pavement, fencing and more.
- 2015 Metropolitan St. Louis Sewer District, St. Louis, MO – Frostwood Park Channel Stabilization – Project Manager and Lead Design Engineer for channel and bank stabilization of 100 feet section of channel. Final design, plans and specifications include biostabilization bank protection and boulder channel grade control structure.
- 2015 Metropolitan St. Louis Sewer District, St. Louis, MO – Herbert Avenue Channel Stabilization and Flood Reduction – Project Manager and Lead Design Engineer for channel stabilization, storm sewer and flood control project along 1,100 feet reach of Herbert Avenue between Tutwiler Avenue and Stansberry Avenue. Design, plans and specifications included new storm culvert and manholes at road crossings and vegetated rock channel stabilization and grade control.
- 2015 Schemmer Associates, Lincoln, NE – 2D Flood Modeling - Project Manager and engineer of record to provide 2D floodplain modeling along lower Deadmans Run Creek in support of substantial roadway reconfigurations.
- 2015 St Charles, MO - Exposed Sewer Pipe in Channel Stabilization – Project Manager and engineer of record for channel restorations and bank stabilizations associated with three exposed sanitary sewer crossings.
- 2015 St. Peters, MO – Channel Design Modifications for SC5, 6 & 7 - Project Manager and engineer of record for revisions to channel stabilization designs to accommodate new site conditions.
- 2015 SWT, University City, MO – Heman Park – Project Manager and lead engineer of channel stabilization design.
- 2014 PDS, Kirkwood, MO - Kirkwood Park Channel Design – Project Manager and lead designer for stormwater channel restoration and water quality retrofitting.
- 2013 Lower Platte South NRD, Lincoln, NE - Stevens Creek #5 & 7 Channel Restoration – Design Engineer responsible for hydraulic analysis and permitting of channel stabilization project.
- 2013 Lower Platte South NRD, Lincoln, NE - Stevens Creek #8 & 9 Channel Restoration – Design Engineer responsible for hydraulic analysis and permitting of channel stabilization project.
- 2010 Maryland Heights, MO – 73 Grand Circle Dr Stormwater – Lead Engineer for Urban Stormwater Channel Restoration Design.
- 2008 Maryland Heights, MO – 11767 Lackland Rd Stormwater – Design Engineer assisting with Urban Stormwater Channel Restoration Design.
- 2008 Metropolitan St. Louis Sewer District, St. Louis, MO – Hardwick Court – Lead Engineer for Urban Stormwater Channel Restoration Design to stabilize a 6 ft tall knick point, erosion and deep scour pool at a 60-in diameter gravity sewer crossing Maline Creek. Proposed improvements include two

new manholes on either bank, replacing the existing 60 inch sewer pipe crossing, reinforced concrete spillway, composite revetment bank stabilization, rock armored stilling basin, spillway toe wall using large-size hollow core modular block retaining wall system filled with concrete and reinforcement which was joined to the spillway slab. The composite revetment bank stabilization provided the required stream mitigation credits to offset construction impacts to the channel as well as the scrub-shrub forested wetland.

- 2015 Arnold, MO - 2015 MS4 Report – Project Manager for City’s annual MS4 compliance analysis and reporting. Also provided technical workshops and training.
- 2015 Arnold, MO - Farmcrest Drive Enclosed System Design – Project Manager and lead designer for roadway and structure flooding analysis and roadway stormwater system design.
- 2015 Clayton, MO – Clayton SWPPP Plan Review – Lead Engineer for Stormwater Pollution Prevention Plan site plan reviews for compliance with City ordinances.
- 2015 US Army Corps of Engineer, Omaha District - Cottonwood Springs Dam Conduit Analysis – Mr. Dean was the Lead Hydraulic Engineer, Project Health and Safety Officer, and inspection team member for inspection and evaluating damage to the primary discharge conduit for Cottonwood Dam and evaluating methods of rehabilitating the conduit. Mr. Dean used Darcy Weisbach equation for energy loss, Swamee Jain Equation for the friction factor and USACE EM 1110-2-1602 for entrance loss coefficients, among others. Revised stage discharge relationships were developed for the 123 foot tall dam for the damaged conduit and each repair option. Mr. Dean used the hydraulic model to evaluate multiple repair options including steel and HOBAS slip lining; spin, saturated resin and spiral wound cast in place pile.
- 2015 US Army Corps of Engineers, Los Angeles District – Initial Eligibility Inspections (IEI) – Project Engineer for initial eligibility analysis and inspection for 73 flood control facilities in southern California.

- 2014 Creve Coeur, MO - Dam and Channel Replacement – Design Engineer responsible for hydraulic analysis and permitting of dam reconstruction and outfall repairs.
US Army Corps of Engineer, Omaha District - Cottonwood Springs Dam Conduit Analysis – Mr. Dean was the Lead Hydraulic Engineer, Project Health and Safety Officer, and inspection team member for inspection and evaluating damage to the primary discharge conduit for Cottonwood Dam and evaluating methods of rehabilitating the conduit. Mr. Dean used Darcy Weisbach equation for energy loss, Swamee Jain Equation for the friction factor and USACE EM 1110-2-1602 for entrance loss coefficients, among others. Revised stage discharge relationships were developed for the 123 foot tall dam for the damaged conduit and each repair option. Mr. Dean used the hydraulic model to evaluate multiple repair options including steel and HOBAS slip lining; spin, saturated resin and spiral wound cast in place pile.
- 2015 US Army Corps of Engineers, Los Angeles District – Initial Eligibility Inspections (IEI) – Project Engineer for initial eligibility analysis and inspection for 73 flood control facilities in southern California.
- 2016 Creve Coeur, MO – Temporary Dam Stabilization Design - Project Manager and Lead Engineer for design and construction services to temporarily stabilize failing dam in City Golf Course.
- 2015 US Army Corps of Engineers, Los Angeles District – Initial Eligibility Inspections (IEI) – Project Engineer for initial eligibility analysis and inspection for 73 flood control facilities in southern California.

2021	US Army Corps of Engineer, Kansas City District – Levee Periodic Inspections – Mr. Dean was Project Manager and Team Lead Engineer for Periodic inspections of KC District System in Salina, Kansas and Gypsum, Kansas.
2019	US Army Corps of Engineer, Kansas City District – Levee Periodic Inspections – Mr. Dean was Field Team Lead and Team Hydraulic Engineer for Periodic inspections of KC District System R-351 located in Atherton, MO and Steward located in Steward, NE. Project includes hydraulic, hydrologic, geotechnical, structural, mechanical, levee, floodwall, closure structure, interior drainage system, pump station, and flood reduction channel design reviews; field analysis of system; system performance assessment; and independent technical review of approach and findings. CPARS Ratings: Quality: Very Good; Schedule: Satisfactory; Management: Very Good. The KC District commented “The Contractor demonstrated a high level of professionalism and management. They provided a quality product within the contract time frame and budget and with little needed oversight from the government.”
2014	US Army Corps of Engineer, Omaha District – Levee Inspections – Project engineer and inspection team lead for Periodic Levee Inspection for six systems throughout the district.
2009	US Army Corps of Engineers Omaha District, Multiple, IA – USACE Dam and Levee Inspections – One of the Staff Engineers for \$3.1 million dollar levee inspection and system GIS database creation project.
2014	Creve Coeur, MO - Dam and Channel Replacement – Design Engineer responsible for hydraulic analysis and permitting of dam reconstruction and outfall repairs.
2015	US Army Corps of Engineer, Omaha District - Cottonwood Springs Dam Conduit Analysis – Mr. Dean was the Lead Hydraulic Engineer, Project Health and Safety Officer, and inspection team member for inspection and evaluating damage to the primary discharge conduit for Cottonwood Dam and evaluating methods of rehabilitating the conduit. Mr. Dean used Darcy Weisbach equation for energy loss, Swamee Jain Equation for the friction factor and USACE EM 1110-2-1602 for entrance loss coefficients, among others. Revised stage discharge relationships were developed for the 123 foot tall dam for the damaged conduit and each repair option. Mr. Dean used the hydraulic model to evaluate multiple repair options including steel and HOBAS slip lining; spin, saturated resin and spiral wound cast in place pile.
2016	Creve Coeur, MO – Temporary Dam Stabilization Design - Project Manager and Lead Engineer for design and construction services to temporarily stabilize failing dam in City Golf Course.

Selected publications, presentations, and short courses

T. Dean –Instructor; Storm Water Pollution Prevention Plan Preparation and Development Training; Jefferson County Employee Training Seminars, Hillsboro, Missouri, January 13, 2023

T. Dean –Instructor; Municipal Training Stormwater Pollution Prevention Plans; Arnold, MO Employee Training Seminar, Arnold, Missouri, December 7, 2022

T. Dean –Instructor; Storm Water Pollution Prevention Plan Inspection Training; Jefferson County Employee Training Seminars, Hillsboro, Missouri, December 19, 2022

T. Dean, M. Cook –Presenters; Storm Water Master Plan Advancements in Jefferson County; ASCE St. Louis Section, Missouri, November 17, 2022

T. Dean –Instructor; Jefferson County Stormwater Design Criteria Updates; Jefferson County hosted Development Engineering Training Seminars, Hillsboro, Missouri, October 14, 2022

T. Dean, M. Cook –Presenters; Storm Water Master Plan Advancements in Jefferson County; Missouri Floodplain and Stormwater Managers Association Fall Conference, Tan-Tar-A, Lake of the Ozarks, Missouri, August 31, 2022

T. Dean –Instructor; Stormwater Municipal Training for Inspection, Highway, Fleet, and Construction Personnel; Jefferson County Employee Training Seminars, Hillsboro, Missouri, December 16, 2021 – Multi-Class, All Day Seminar

T. Dean –Instructor; Municipal Training Annual Refresher; Arnold, MO Employee Training Seminar, Arnold, Missouri, December 2021

T. Dean –Instructor; Stormwater Plan Review Training; Jefferson County Employee Training Seminars, Hillsboro, Missouri, October 29, 2021

T. Dean –Instructor; Municipal Training Annual Refresher; Arnold, MO Employee Training Seminar, Arnold, Missouri, December 2020

T. Dean –Instructor; Municipal Training Annual Refresher; Jefferson County Employee Training Seminars, Hillsboro, Missouri, August 12, 2020

T. Dean –Instructor; Dry Weather Screening Training; Jefferson County Employee Training Seminars, Hillsboro, Missouri, June 25, 2020

T. Dean –Instructor; Municipal Training Annual Refresher; Arnold, MO Employee Training Seminar, Arnold, Missouri, November 2019

T. Dean –Instructor; Stormwater Pollution Prevention Plans; Arnold, MO Employee Training Seminar, Arnold, Missouri, November 2019

T. Dean –Instructor; Stormwater Pollution Prevention Plans; Jefferson County Employee Training Seminars, Hillsboro, Missouri, March 21, 2019

T. Dean –Instructor; Municipal Training Annual Refresher; Arnold, MO Employee Training Seminar, Arnold, Missouri, October 18, 2018

T. Dean –Instructor; NPDES Permit Compliance; Jefferson County Employee Training Seminars, Hillsboro, Missouri, April 14, 2018

T. Dean –Instructor; Municipal Training for Inspection Personnel; Jefferson County Employee Training Seminars, Hillsboro, Missouri, March 6, 2018

T. Dean –Instructor; Municipal Training Annual Refresher; Arnold, MO Employee Training Seminar, Arnold, Missouri, September 6, 2017

T. Dean –Instructor; Municipal Training Annual Refresher; Arnold, MO Employee Training Seminar, Arnold, Missouri, March 16, 2016

T. Dean, J. Hargrave, and P. Laufersweiler – Greener Solutions to Municipal Landscape Design; Tour Guide, Presenter and Panelist; Shaw Series Seminar, Kirkwood Community Center, Kirkwood, Missouri, July 15, 2015

T. Dean – NPDES Permit Compliance; Instructor; Arnold Professional Series Training Seminar, Arnold, Missouri, May 14, 2015

T. Dean – Municipal Good Housekeeping BMPs; Instructor; Arnold Professional Series Training Seminar, Arnold, Missouri, April 22, 2015

T. Dean – Storm Water Pollution Prevention Plans (SWPPPS); Instructor; Arnold Professional Series Training Seminar, Arnold, Missouri, October 29, 2014

T. Dean – Minimum Control Measures and Best Management Practices (MCMs & BMPs); Instructor; Arnold Professional Series Training Seminar, Arnold, Missouri, April 30, 2014

T. Dean – Storm Water Management, Planning and Design; Instructor; Arnold Professional Series Training Seminar, Arnold, Missouri, February 12, 2014

T. Dean – Wet and Wetland Pond Design; Instructor; Greener Stormwater Solutions Training, Metropolitan St. Louis Sewer District, St. Louis Missouri, March 30th, 2009

T. Dean – An Investigation of Stream Erosion Potential Based on Soil Classification, Thesis - Master of Science in Civil Engineering, University of Missouri – Rolla, Rolla, Missouri, May 2004.

Bethany L. Moore

5021 Lindenwood Ave, Apt 1w
St. Louis, Mo 63109
(636) 290-6137
bethanymoore9412@gmail.com

EXPERIENCE

Community Development, City of Creve Coeur — *City Planner*

October 2021 – Present

- Fence and sign permit review
- Planning and Zoning Commission staff reports and presentations
- Board of Adjustment staff reports and presentations
- public service communication
- planning and zoning project review
- city ordinance compliance
- interdepartmental communication

Cultural Resources Office, City of Saint Louis — *Preservation Planner I*

October 2018 – October 2021

- historic district permit review
- architectural plan review
- form based code review
- Section 106 review
- public service communication
- neighborhood association coordination
- building project management
- city ordinance compliance
- demolition review
- monthly preservation board presentation
- interdepartmental communication
- violation and court processing

EDUCATION

University of Georgia, Athens, Ga — *Masters of Historic Preservation*

August 2016 - August 2018

Truman State University, Kirksville, Mo — *Bachelor of Arts in History*

August 2012 - May 2016

Minors in Art History and Philosophy and Religion.

SKILLS

Public speaking, plan review, copywriting/editing, research, data entry, MS Office suite, customer service, project management, deadline adherence, mass communication.

AWARDS

AICP Candidate-Spring 2023

Masters of Historic Preservation Assistantship - Spring 2017

Missouri's Little Dixie Heritage Foundation Research Grant- Summer 2018

JASON W. JAGGI, AICP

3 Butternut Court O'Fallon, MO 63368

Cell: 636-697-2378

plnrjay@yahoo.com

WORK EXPERIENCE

Director of Community Development, City of Creve Coeur, MO

August 2015- Present

Responsibilities:

Plan, organize, and direct a department of 12 employees that provides a full range of planning, building and code enforcement services in a West St. Louis County municipality. Staff liaison to the Planning and Zoning Commission and Board of Adjustment providing professional land use recommendations. Serve as the City's Zoning Administrator. Prepare zoning code amendments as needed. Prepare Department budget. Oversee the City's development review process, building permits and inspection programs while working collaboratively with a wide variety of stakeholders. Guided the update of the comprehensive plan, 39 North Master Plan and other long range planning studies.

Planning Manager, City of St. Charles, MO

March 2012- August 2015

Responsibilities:

Manage the Planning Division within the Department of Community Development and supervise a professional staff of four by assigning, reviewing work and evaluating performance. Coordinate long range and current planning functions. Assist in the development and interpretation of the Comprehensive Plan and Zoning Ordinance. Prepare zoning code amendments as needed. Assist the Department Director with budget preparation and department policies. Coordinate and oversee Geographic Information Systems, Community Development Block Grant, and Historic Preservation programs. Direct responsibility for the City's floodplain management program, zoning administration, and development review processes. Staff liaison to the Planning and Zoning Commission, Landmarks Board, Board of Adjustment, and Main Street/Downtown Special Business District.

Senior Planner, City of Clayton, MO

February 2009—December 2009; July 2010—March 2012

Responsibilities:

Supervise the Administrative Secretary-Planning position and Department interns by assigning and reviewing work and evaluating performance. Project management involves complex development reviews and coordination of the review process, present findings and make professional land use recommendations to the Plan Commission, Architectural Review Board, Board of Adjustment, and Board of Aldermen. Interpret and administer the City's land use codes including the Zoning and Subdivision regulations. Draft code amendments including renewable energy code, residential tree and landscaping ordinance, and transit-oriented development zoning overlay districts. Assist the Department Director with special projects as assigned.

JASON W. JAGGI, AICP PAGE 2

Acting Director of Planning and Development Services, City of Clayton, MO

January 2010—June 2010

Responsibilities:

Plan, organize, and direct a department of nine employees that provide a full range of planning, building and code enforcement services on an interim basis. Staff liaison to the Plan Commission, Architectural Review Board and Board of Adjustment providing professional land use recommendations. Prepare Department budget. Oversee the City's development review process, building permits and inspection programs. Key leadership role in the update of the Downtown Clayton Master Plan and Retail Strategy. Assisted with the City's sustainability initiatives.

Planner, City of Clayton, MO

August 2004—January 2009

Responsibilities:

Perform review of development proposals and prepare staff reports to the Plan Commission and Architectural Review Board. Administer the Zoning and Subdivision Ordinances and draft amendments as needed. Develop and maintain City's Geographic Information Systems. Prepare and present findings for variance requests submitted to the Board of Adjustment. Provide technical assistance for Census updates, data analysis, and economic development initiatives.

Planner, St. Louis County Government, MO

October 2000—July 2004

Responsibilities:

Staff planner in the Comprehensive Planning Division. Assist in the preparation of community development plans, countywide five-year strategic plan. Project manager for a neighborhood community center strategic plan. Planning Department liaison providing technical assistance for community building and economic development initiatives in two unincorporated St. Louis County communities.

Planner, City of Kirkwood, MO

June 1999—September 2000

Responsibilities:

Assist in neighborhood planning and economic development in association with a residential and commercial Tax Increment Financing redevelopment project. Provide staff support and technical assistance to the downtown Kirkwood Junction Special Business District. Assist in the administration of housing grant programs. Provide historic preservation technical assistance to the Landmarks Commission. Assist the Department Director as assigned.

PROFESSIONAL ORGANIZATIONS, SERVICE, AND HONORS

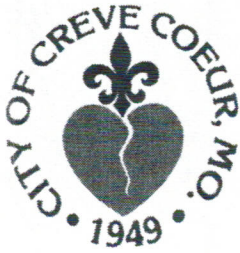
- Member, American Institute of Certified Planners (AICP)
- Member, American Planning Association (APA)
- Former St. Louis Metro Section APA Board Member
- Advisory Board Member 2007-2012, Missouri State University Department of Geography, Geology, and Planning
- 2009 Alumni Honoree, Kansas State University, College of Architecture, Planning and Design
- Instructor: University of Missouri-St. Louis Chancellor's Certificate in Planning and Zoning

JASON W. JAGGI, AICP PAGE 3

EDUCATION

Master of Regional and Community Planning, 1999
Kansas State University, Manhattan, Kansas

Bachelor of Science, Community and Regional Planning, 1997
Missouri State University, Springfield, Missouri



city
of

CREVE COEUR

File # _____

300 North New Ballas Road • Creve Coeur, Missouri 63141
(314) 872-2500/872-2501 • Fax (314) 872-2505 • Relay MO 1-800-735-2966
www.creve-coeur.org

BOARD OF ADJUSTMENT APPLICATION NON-USE VARIANCE

<i>Applicant:</i>	<i>Applicant's Representative (if applicable):</i>
David Nafar	
<i>Name</i>	<i>Name</i>
<i>Company (If Applicable)</i>	<i>Company (If Applicable)</i>
7 Sherwyn Lane, Creve Coeur, MO 63141	
<i>Address</i>	<i>Address</i>
Creve Coeur Mo, 63141	
<i>Address</i>	<i>Address</i>
<i>Telephone #</i> (314)995-9695 or (636) 299-2422	<i>Telephone #</i>
<i>Fax #</i>	<i>Fax #</i>
<i>Email:</i> david.nafar@gmail.com	<i>Email:</i>

APPLICANT: Architect _____ Engineer _____ Contractor _____ Agent _____ Owner ☒

The undersigned hereby requests to be placed on the Agenda for the Board of Adjustment meeting at 4:00 P.M. on Thursday, _____, 20__.


Applicant's Signature

Applicant's Representative's Signature

06/29/2023
Date

Date

Submittal Checklist

- Two (2) checks, \$50.00 filing fee & \$250.00 non-refundable escrow
- Four (4) sets of signed and sealed plans
(Folded to a size no larger than 11"x14") for the improvements necessary for the proposed use
- Written Justification
- Electronic copy of all submitted documents

Updated 10/2022

Attachment To Board of Adjustment Application Non-Use Variance

1. I request variance so that the following may be built or installed on the property (attach building plans):

- Currently, there is a 15 ft. setback on the side of my property. I am requesting a variance to reduce the 15 feet setback from adjacent property to about 10 feet.
- Also, there is a 50 ft. setback on the front of my property. I am requesting a variance to reduce the front setback on most parts, by 10 ft. and on a small part by 15 ft.
- Based on the Stream Buffer Protection Ordinance (Section 430.050), there is a 25 ft. buffer zone (undisturbed natural vegetation) and an additional 25 ft. buffer zone (no impervious cover) on my property. In total there is a 50 ft. buffer zone on my property. I am requesting a variance on these restrictions (Please see the attached plan).

I would like to make an addition to my property at 7 Sherwyn Lane. I am requesting the above restrictions to be lifted so that I can make additions to my house.

2. In support of my request, I offer the following:

- **Unique physical characteristics of the property (creek, steep slope, lot shape, etc.):**

The property at 7 Sherwyn Lane has a pie-shaped configuration. There is a creek/stormwater channel running through the middle of the property, which has led to several easements and significant restrictions. A few years ago, MSD (Metropolitan Sewer District) upgraded its sewer pipelines, relocating the old pipeline from the middle of the creek to a position outside the creek, parallel to the original pipeline. Consequently, the installation of the new sewer pipeline resulted in additional easements on my property. There is also a Stream Buffer Protection Ordinance (Section 430.050) in addition to the existing restrictions, that prohibits any construction of additional structures or a new house on this lot.

- **Unique non-physical characteristics of the property (location, access, history, etc.):**
There are no non-physical characteristics.

- **Any other differences between the Subject Property and other properties in the surrounding area which would warrant different treatment of the subject Property:**

No other properties in the surrounding area bear the same extent of restrictions as the subject property. The presence of easements on this property, coupled with the City ordinances, imposes a significantly higher level of burden and hardship compared to neighboring properties. These unique circumstances warrant a distinct treatment for the subject property.

6. Assuming the variance is approved, describe any utilities or City and emergency services that will have to be added to or upgraded as a result?

None

7. Assuming the variance is approved, describe how much additional traffic will be created on the property and in the surrounding area as a result:

None

8. Assuming the variance is approved, describe any additional street access or parking that will be needed:

None

9. Zoning district in which the property is located:

Residential Single Family

10. Size of the lot (total square feet or acres):

1.25 acres

11. Please provide any other information in support of this request (on a separate sheet if needed):

In support of this request, I have attached separate sheets containing additional information. The attached documents provide comprehensive details, including relevant plans and supporting materials, that further support and justify the request being made. Please refer to the attached documents for a more comprehensive understanding of the situation and the specific information provided in support of this request.

Variance Request from Stream Buffer Protection Regulations

Name: David Nafar
Address: 7 Sherwyn Lane Creve Coeur, MO 63301
Telephone number: Home, (314) 995-9695 and Cell (636)299-2422
Email: david.nafar@gmail.com

I, David Nafar, am the owner of the property located at 7 Sherwyn Lane. I am submitting this request for a variance from **Stream Buffer Protection Regulation Section 430.050**.

The property encompasses a small creek, which is part of Deer Creek, passing through its middle and dividing it into two sections. This creek originates from the southern area of Olive Boulevard and Spoede Road, flowing towards Ladue Road. The plat for Sherwyn subdivision, recorded in August 1953 in St. Louis County, designates a 20-foot-wide creek/stormwater canal. As the area developed, this small creek transformed into a stormwater canal. Stormwater from the streets, rooftops, and driveways is collected through a network of stormwater inlets, pipes, and culverts, directing it to the creek. In 1958, the creek was widened, and a sanitary pipe was embedded at the bottom of the creek bed.

In 1986, due to increased development upstream and the subsequent rise in water flow during rainy days, the City of Creve Coeur and MSD constructed a concrete wall and culvert on this property. The purpose was to address the frequent flooding of Sherwyn Lane. This construction altered the course of the creek/stormwater canal and imposed additional easements on 7 Sherwyn Lane.

I purchased this property in 2004 because my wife began teaching at MICDS and commuting from St. Charles to MICDS in the mornings was challenging. Before buying the house, I consulted with the city planning and zoning department to ensure that I could make additions to the property. In 2008, the city adopted **Stream Buffer Protection Regulations under Chapter 430**, which mandated a 50-foot buffer on both sides of the creek in addition to the existing 20-foot width of the creek/stormwater canal. Consequently, the usable area of the property was significantly reduced. The adoption of this ordinance has caused extreme hardship for 7 Sherwyn Lane, essentially rendering the entire lot unusable.

In 2008, I was granted permission by the Board of Adjustment to construct an approximately 1,700 sq. ft. addition to the property. However, due to the housing market crash and changes in income, we postponed the plan.

Currently, we are planning to proceed with the construction of a 1,700 sq. ft. addition to 7 Sherwyn Lane, and we are hereby requesting a variance from Stream Buffer

Protection Regulation Section 430.050. In compliance with Part C of Section 430.050, I will address the minimum required information as follows:

- a) A site map that includes locations of all streams, wetlands, floodplain boundaries and other natural features as determined by field survey;**

A site plan is included in this request.

- b) A description of the shape, size, topography, slope, soils, vegetation and other physical characteristics of the property;**

The property at 7 Sherwyn Lane encompasses approximately 1.25 acres and has a unique shape resembling "a slice of pie." Much of the lot exhibits a relatively flat topography, except for the section traversed by the creek. Following the completion of the MSD project, only a few trees remain on the property.

- c) A detailed site plan that shows the locations of all existing and proposed structures and other impervious covers, the limits of all existing and proposed land disturbance, both inside and outside the buffer and setback. The exact area of the buffer to be affected shall be accurately and clearly indicated;**

Please find the attached site plan, which accompanies this request application. The provided site plan offers a detailed representation of the property, showcasing the precise locations of all existing and proposed structures, as well as other impervious cover. Additionally, the plan accurately depicts the limits of both existing and proposed land disturbance, both within and outside the buffer and setback areas. Furthermore, the exact area of the buffer to be affected is clearly indicated on the site plan, ensuring accurate and comprehensive documentation of the proposed project.

- d) Documentation of unusual hardship should the buffer be maintained.**

Dear Bord member,

I am writing to address the matter of the Stream Buffer Protection Regulations and the potential impact they pose on my property. I believe that strict compliance with the buffer maintenance requirements would result in an unusual hardship, making it practically impossible for me to make any additions to my house. I kindly request a review of my case, considering the documentation provided herein.

Upon careful evaluation of the applicable regulations and an assessment of my property, it has become apparent that if I were to adhere strictly to the buffer maintenance requirements, approximately all my land would be encompassed within the buffer zone. Such a significant reduction in usable land would severely limit my ability to undertake any reasonable development or expansion of my property.

I would like to outline the following points to support my claim of an unusual hardship:

1. **Economic Implications:** The compliance measures would lead to a substantial financial burden, as the reduction in land available for development would significantly impact the overall value of my property. This situation would prevent me from utilizing my property in a manner consistent with its intended purpose and potential.

2. Practical Difficulties: The proposed buffer maintenance requirements would render a substantial portion of my property unusable for any productive activities or additions to my house. This would significantly hinder the livability and functionality of my property, impeding my ability to accommodate the evolving needs of my household.

3. Unique Circumstances: My property exhibits unique characteristics and constraints that make strict compliance with the buffer maintenance regulations exceptionally challenging. These include the topography, existing structures, and the placement of the water stream relative to my house. These factors make it impractical to conform entirely to the prescribed buffer zone dimensions while maintaining a reasonable use of my property.

Considering the aforementioned factors, I kindly request that you review my case with due consideration for the unusual hardship that strict compliance with the buffer maintenance requirements would impose.

I have attached relevant documentation, including property surveys, land assessments, and supporting photographs, to provide a comprehensive understanding of the specific challenges I face. I hope this information will assist you in evaluating my case and reaching a fair and equitable resolution.

I appreciate your attention to this matter. Please do not hesitate to contact me if any additional information or clarification is required.

Thank you for your time and understanding.

e) At least one (1) alternative plan, which does not include a buffer or setback intrusion, or an explanation of why such a site plan is not possible;

The alternative plan considered was to construct a 2-story building as a potential solution. However, after careful evaluation, it became apparent that this alternative plan is not feasible for the following reasons:

Foundation Limitations: Given that the original construction of the building dates back to the 1950s, it is likely that the foundation is not designed to support an additional floor.

Limited Footprint: The existing house has a narrow footprint, which does not provide sufficient space to accommodate a staircase for access to the second floor.

Functional Requirements: Our needs primarily revolve around expanding the kitchen, dining room, and living room areas. Placing these essential spaces on the second floor would not be practical or feasible within the constraints of the property.

Accessibility: Considering our age and the potential challenges of navigating stairs, it would pose significant difficulties for us to regularly go up and down between floors.

Given these limitations and constraints, implementing a 2-story building as an alternative plan is not possible or suitable for addressing our needs effectively.

f) A calculation of the total area and length of the proposed intrusion;

These areas are shown on the site plan.

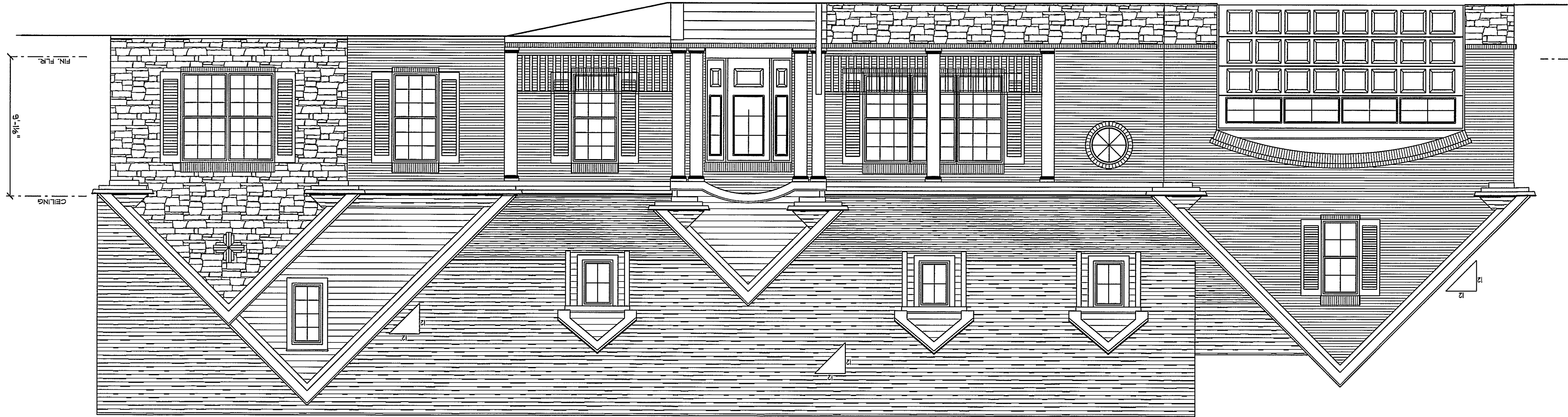
g) A stormwater management site plan, if applicable; and
The stormwater management site plan is attached.

h) Proposed mitigation, if any, for the intrusion. If no mitigation is proposed, the request must include an explanation of why none is being proposed.

A proposed mitigation plan is attached.

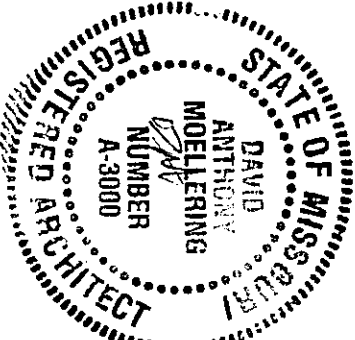
FRONT ELEVATION

SCALE 1/4"=1'-0"

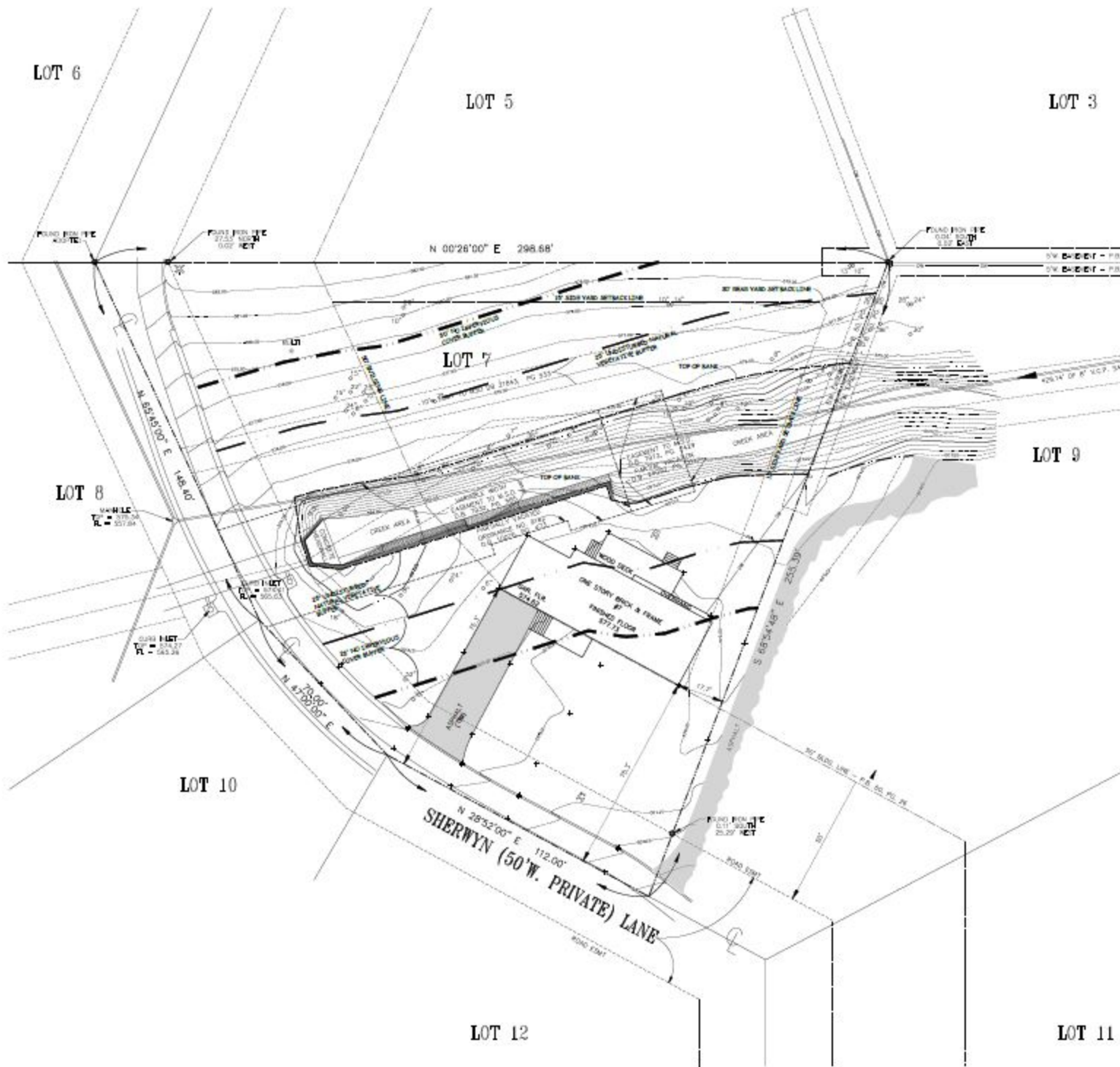


OF	SHEET	PLAN NO.	DATE	CHK. BY:	DRWN. BY: L.S.	REVISED
	22-1112					
PROPOSED ADDITION FOR DAVID NAJAR 1 SHERIDAN LANE ST. LOUIS COUNTY MISSOURI						

VISIT WEBSITE:
LRSPPRAUL.COM



L.R. SPRUAL DESIGN LLC
RESIDENTIAL DESIGNERS, NO. LLC, NO. 2014026909
DAVID A. MOELLER
ARCHITECT A-3000
PHONE: 636-240-8962
112 W. PITMAN
OF FALLON MO. 63366



SITE PLAN



LOCATION MAP
NOT TO SCALE

PROJECT INFORMATION

Address of Site: 47 Sherwyn Lane
Creve Coeur, MO 63141
Property Owner: David Nafar
47 Sherwyn Lane
Creve Coeur, MO 63141

Locator Number: 18N-64-0334
Current Zoning: "A" Single Family Residential District
Proposed Zoning: Same
Area of Site: 1.0 ac. (43,560 sf)
New Disturbed Area: 3,578 sf. (0.08 ac.)
Project location: Creve Coeur, Missouri.
FIRM Panel Number: 29189CD191X

Floor Area Ratio (FAR) Calcs:
Existing Bsm Area = 1981 sf
Existing First Floor Area = 1981 sf
Proposed Add'n Bsm Area = 1309 sf
Proposed Add'n First Floor Area = 1309 sf + 1133 sf + 40 sf
TOTAL FLOOR AREA = 7753 sf
FAR = Floor Area/Site Area = 7753 / 43,560 = 0.178
MAX. FAR = 0.3

Site Coverage Calcs:
Existing Bldg Area = 1981 sf
Existing Impervious (Pavt, Decks) = 1718 sf
TOTAL = 3699 sf
Exist. Site Coverage % = Total Coverage/Site Area = 3699 / 43,560 = 0.085 or 8.5%
Proposed Bldg Area = 1981 sf + 1309 sf + 1133 sf + 40 sf = 4463 sf
Proposed Impervious = 926 sf + 226 sf + 155 sf = 1307 sf
TOTAL = 5770 sf
Prop. Site Coverage % = Total Coverage/Site Area = 5770 / 43,560 = 0.132 or 13.2%
MAX. SITE COVERAGE % = 25%

** Note: Above Calcs do not include street pavement area within property limits.

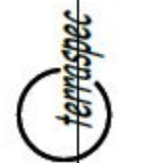
SITE DESCRIPTION

THE SITE IS A PIE SHAPED LOT (1 ACRE) LOCATED IN THE SHERWYN LANE SUBDIVISION, IN CREVE COEUR, MO. THE PROPERTY IS BISECTED BY A SUBSTANTIAL STREAM THAT FLOWS FROM NORTH TO SOUTH. THE PORTION OF THE SITE, WEST OF THE BISECTING STREAM, SLOPES MODERATELY (15%) FROM WEST TO EAST TOWARD THE STREAM AND CONTAINS NO IMPROVEMENTS. THE PORTION OF THE SITE, EAST OF THE BISECTING STREAM, SLOPES GENTLY (3-4%) FROM EAST TO WEST TOWARD THE STREAM AND CONTAINS IMPROVEMENTS SUCH AS A HOUSE, AN ASPHALT DRIVEWAY, A REAR YARD DECK AND FRONT ENTRY WALKWAY. THE PROPERTY CONTAINS AN EXTENSIVE AMOUNT OF VEGETATION, INCLUDING TREES, SHRUBS AND GROUNDCOVERS. THE STREAM, THAT FLOWS THROUGH THE LOT, POSSESSES A COMBINATION OF STRUCTURAL AND NON-STRUCTURAL BANKS. A CONCRETE WALL (8' HT.) CONTAINS THE STREAM FOR ABOUT 50% OF ITS COURSE ALONG THE EAST BANK WHILE THE REST OF THE EAST BANK AND THE WEST BANK EXHIBIT STEEP (2:1+) VEGETATED SLOPES.

THE HOUSE, LOCATED ON THE EASTERN HALF OF THE SITE, WAS CONSTRUCTED AROUND 1955. THE MODEST SIZED STRUCTURE (APPROX. 1600 SF) IS CONSTRUCTED BY BUILDING SETBACKS AND PHYSICAL SITE CHARACTERISTICS. FURTHER COMPOUNDING THE BUILDING RESTRICTIONS ON THIS SITE, A STREAM PROTECTION BUFFER WAS ESTABLISHED IN THE EARLY 2000S. THE STREAM BUFFER CONSUMES APPROX. 93% OF THE TOTAL PERMITTED BUILDING AREA ON THE LOT AND ENGULFS OVER 81% OF THE EXISTING IMPROVEMENTS, MAKING ANY EXPANSION TO THE EXISTING STRUCTURE OR OTHER IMPERVIOUS IMPROVEMENTS IMPOSSIBLE WITHOUT VARIANCES TO BOTH BUILDING SETBACK AND STREAM BUFFER YARD REQUIREMENTS.



ALL EXISTING UTILITIES SHOWN ARE BASED ON RECORD PLANS AND FIELD SURVEY. THE LOCATION OF UTILITIES IS NOT GUARANTEED. THE CLIENT IS RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.



Hawkins Associates, LLC
332 Fox Bear Lane
Ballwin, MO 63021



Nafar Residence
7 Sherwyn Lane
CREVE COEUR, MO. 63141

OWNER:
Mr. David Nafar
7 SHERWYN LANE
CREVE COEUR, MO
63141
914-686-0885
636-286-2422

DRAWN BY:
KJK

DATE: 04/11/23

REVISION: 1

TOWN: City of Creve Coeur

PROJECT NUMBER: 0803101

DATE: 04/11/23

REVISION: 1

TOWN: City of Creve Coeur

PROJECT NUMBER: 0803101

DATE: 04/11/23

REVISION: 1

TOWN: City of Creve Coeur

David Nafar
7 Sherwyn Lane
Creve Coeur, MO 63141

August 2, 2023

Ms. Bethany L., Moore, City Planner
300 North North New Balls Rd.
Creve Coeur, MO 63141

Response letter to amend Application #23-7; 7 Sherwyn Lane stream buffer and front and side yard variance requests:

Front and Side Yard Variance Requests:

- 1. Please provide existing site coverage percentage and proposed site coverage percentage so staff can verify compliance with Section 405.250.**

Notes are added in the Project Information Section addressing the Floor Area Ratio and Site Coverage Calculations (Please see sheet 1).

- 2. Do you have any kind of documentation to support the claim in your response letter that the existing foundation would not support a second story? If so, please provide.**

The City application mandates the submission of an alternative plan without a buffer or setback intrusion. I included the alternative plan solely due to this requirement. However, I must emphasize that the alternative plan is not suitable for achieving our objectives. I do not have specific documentation regarding the foundation. In my application, in addition to considering the age of building, I highlighted several other reasons as to why the alternative two-story building plan is not suitable for our objectives. The following are the main reasons why the two-story alternative does not meet our objectives:

- **Limited Footprint:** The existing house has a narrow footprint, making it challenging to incorporate a staircase for access to the second floor without significant structural modifications.

- **Functional Requirements:** Our primary needs involve expanding the kitchen, dining room, and living room areas, which would be more practical and feasible to achieve on a single floor.
- **Accessibility Concerns:** Considering our age and potential mobility challenges, having essential living spaces on the second floor would not be conducive to comfortable and safe daily use.

The above factors strongly suggest that pursuing the two-story alternative plan is not suitable for our specific needs and circumstances.

Stream Bank Buffer Variance Request:

- 1. Please verify that the calculations for the impervious coverage within the two buffer zones on sheet 3 of 4 is correct. Proposed and existing impervious coverage totals in the buffer zone are different than disturbance area total in the buffer zone. Please provide separate, clear tables addressing both the impervious coverage within the two buffer zones and the total disturbance within the two buffer zones.**

The Stream Buffer information is modified to enhance clarity. Also, a Summary Table has been added per the City's request (Please see sheet 3).

- 2. The City's Section 430.050.B.3.h. has not been met. Please refer to MSD Rules and Regulations and Engineering Design Requirements for Sanitary Sewer and Stormwater Drainage Facilities, February 1, 2018 Sections 4.060.02 and 4.060.05.**

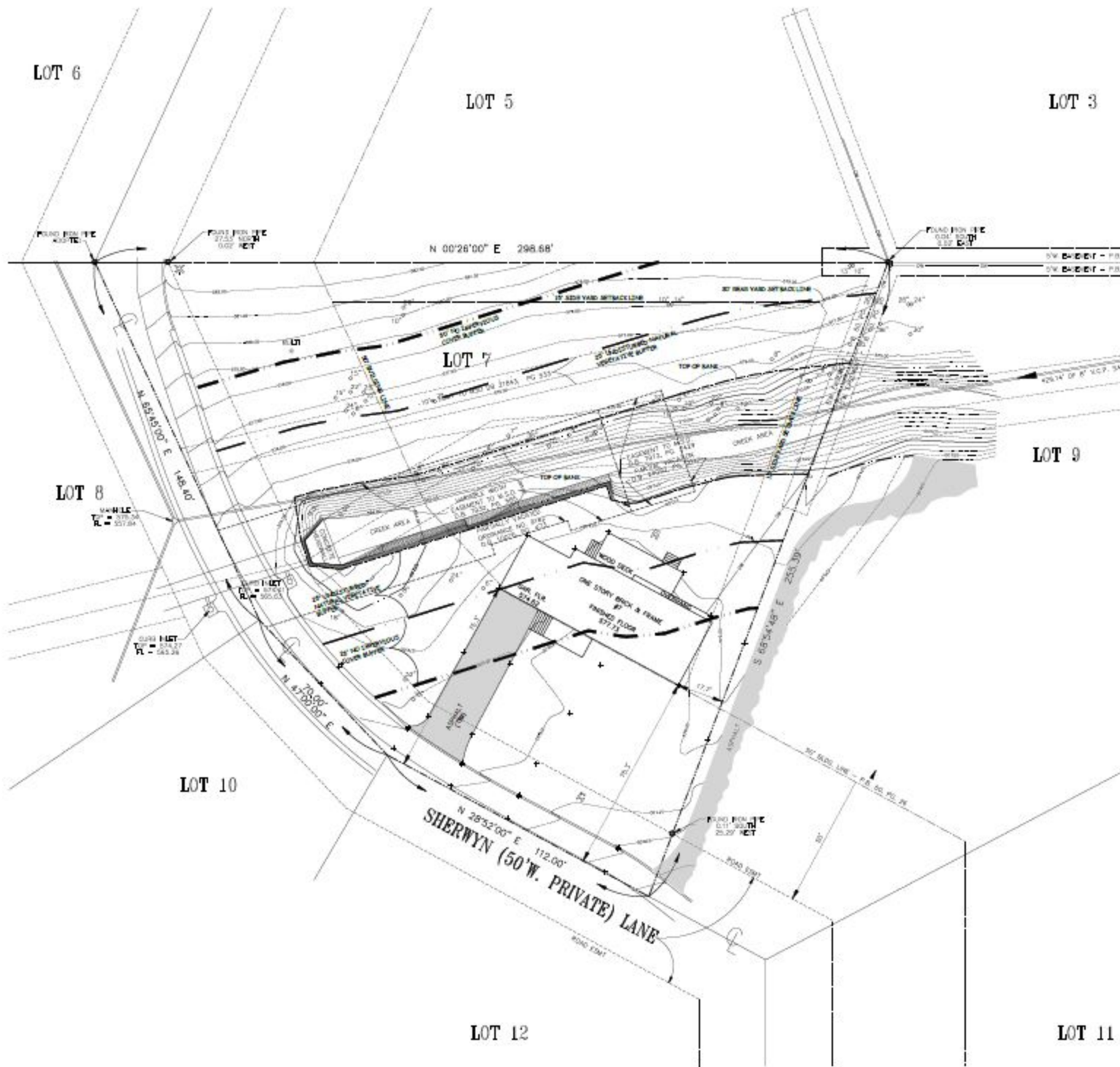
Runoff calculation is corrected (Please see sheet 4).

Thank you for reviewing the amendment to my application. Please feel free to contact me if I can provide you with additional information.

Sincerely,

David A. Nafar

David Nafar



SITE PLAN



LOCATION MAP
NOT TO SCALE

PROJECT INFORMATION

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SITE DESCRIPTION

THE SITE IS A PIE SHAPED LOT (1 ACRE) LOCATED IN THE SHERWYN LANE SUBDIVISION, IN CREVE COEUR, MO. THE PROPERTY IS BISECTED BY A SUBSTANTIAL STREAM THAT FLOWS FROM NORTH TO SOUTH. THE PORTION OF THE SITE, WEST OF THE BISECTING STREAM, SLOPES MODERATELY (15%) FROM WEST TO EAST TOWARD THE STREAM AND CONTAINS NO IMPROVEMENTS. THE PORTION OF THE SITE, EAST OF THE BISECTING STREAM, SLOPES GENTLY (3-4%) FROM EAST TO WEST TOWARD THE STREAM AND CONTAINS IMPROVEMENTS SUCH AS A HOUSE, AN ASPHALT DRIVEWAY, A REAR YARD DECK AND FRONT ENTRY WALKWAY. THE PROPERTY CONTAINS AN EXTENSIVE AMOUNT OF VEGETATION, INCLUDING TREES, SHRUBS AND GROUNDCOVERS. THE STREAM, THAT FLOWS THROUGH THE LOT, POSSESSES A COMBINATION OF STRUCTURAL AND NON-STRUCTURAL BANKS. A CONCRETE WALL (8' HT.) CONTAINS THE STREAM FOR ABOUT 50% OF ITS COURSE ALONG THE EAST BANK WHILE THE REST OF THE EAST BANK AND THE WEST BANK EXHIBIT STEEP (2:1+) VEGETATED SLOPES.

THE HOUSE, LOCATED ON THE EASTERN HALF OF THE SITE, WAS CONSTRUCTED AROUND 1955. THE MODEST SIZED STRUCTURE (APPROX. 1600 SF) IS CONSTRUCTED BY BUILDING SETBACKS AND PHYSICAL SITE CHARACTERISTICS. FURTHER COMPOUNDING THE BUILDING RESTRICTIONS ON THIS SITE, A STREAM PROTECTION BUFFER WAS ESTABLISHED IN THE EARLY 2000S. THE STREAM BUFFER CONSUMES APPROX. 93% OF THE TOTAL PERMITTED BUILDING AREA ON THE LOT AND ENGULFS OVER 81% OF THE EXISTING IMPROVEMENTS, MAKING ANY EXPANSION TO THE EXISTING STRUCTURE OR OTHER IMPERVIOUS IMPROVEMENTS IMPOSSIBLE WITHOUT VARIANCES TO BOTH BUILDING SETBACK AND STREAM BUFFER YARD REQUIREMENTS.



ALL EXISTING UTILITIES SHOWN ARE BASED ON RECORD DRAWINGS AND FIELD SURVEY. THE LOCATION OF UTILITIES IS NOT GUARANTEED. THE CLIENT IS RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.



Hawkins Associates, LLC
332 Fox Bear Lane
Ballwin, MO 63021



Nafar Residence
7 Sherwyn Lane
CREVE COEUR, MO. 63141

OWNER:
Mr. David Nafar
7 SHERWYN LANE
CREVE COEUR, MO
63141
914-695-0895
636-286-2422

DRAWN BY:
KJK

DATE: 04/11/23

REVISION: 1

TITLE: City Council

JOB NUMBER: 0803101

DATE: 04/11/23

REVISION: 1

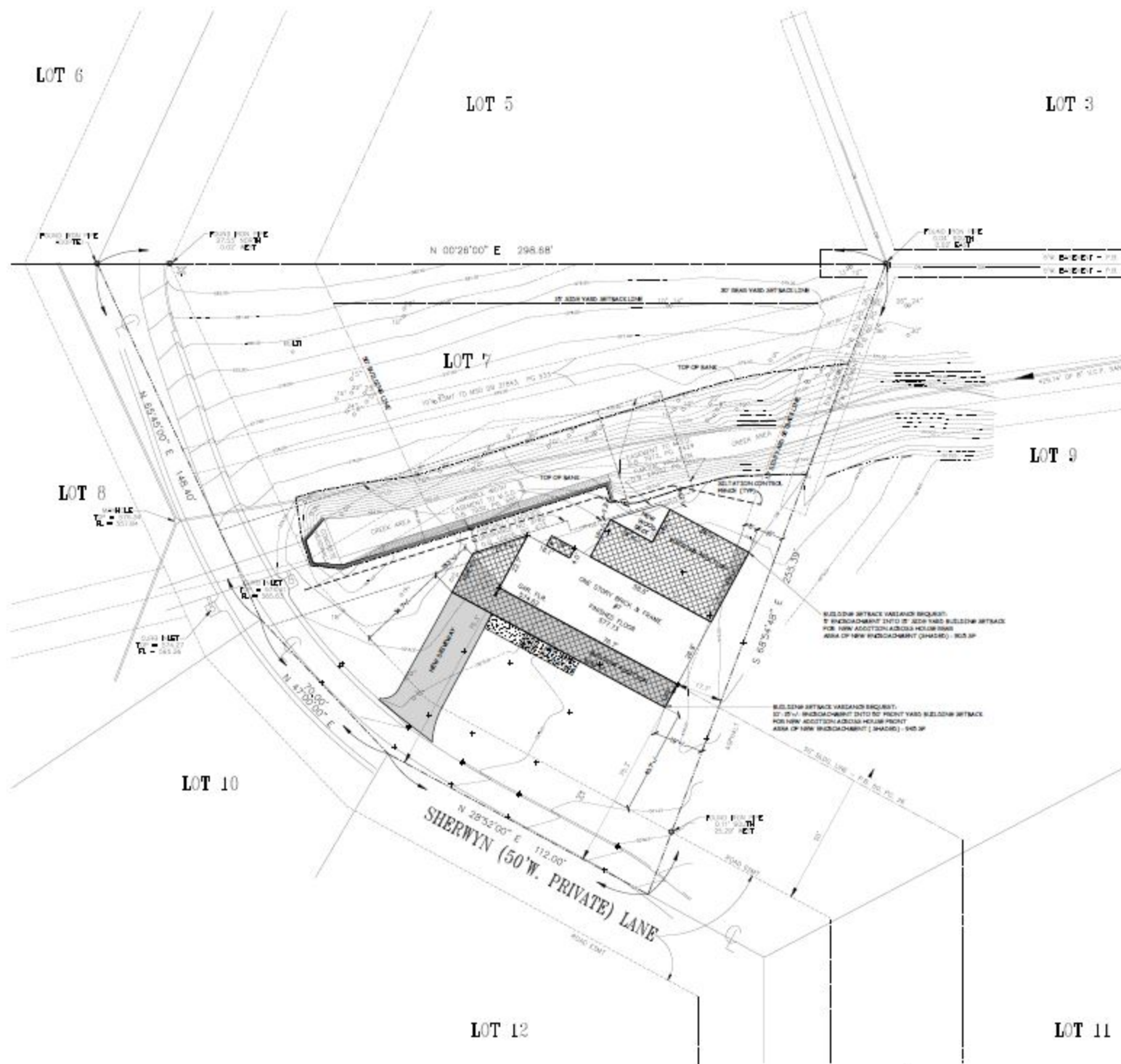
TITLE: City Council

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REVISION: 1

TITLE: City Council



SITE PLAN



Nafar Residence
7 Sherwyn Lane
CREVE COEUR, MO. 63141

Mr. David Nider
7 BERNYN LANE
GREVE GOEUR, MO
63041
314-835-8985
638-280-2422

Bldg. Setback Variance Request

0803101

DATE DRAWN BY
04/11/23 KJK

BRYLIDON
TICAD **Gly Colloids**

Engineering Experience

City of Creve Coeur

2022 to present – Civil Engineer

- Manage projects under the City's Stormwater Program.
- Serve as the City's day-to-day contact for the Watershed Management Plan.
- Meet with residents about stormwater issues and conduct onsite investigations.
- Review plans for compliance with the City's Stormwater Regulations (Chapter 425).

Milwaukee Metropolitan Sewerage District (MMSD)

January 2017 to July 2021 – Project Engineer

- Review and approve stormwater management plans that include HydroCAD modeling, green infrastructure plans, and municipal sanitary sewer plans submitted by the 28 municipalities served by MMSD. Consistently deliver a high-level of service by accurately completing reviews within a targeted performance goal of half the time allowed by the rules.
- Calculate flows for developments and redevelopments in the MMSD sewer service area. Collaborate with IT staff to create a map-based database that identifies areas of the system with the highest demand for flows allocated by the Facilities Plan.
- Support senior staff in managing the schedule, scope, and budget for capital projects.
- Collaborate with the Legal Department to amend MMSD stormwater rules to increase the implementation of green infrastructure. Educate partners about new requirements and facilitate compliance by writing guidance documents and delivering presentations to municipal engineers.
- Work with the Legal Department to amend MMSD municipal sewer construction rules to comply with state statutes.
- Transform municipal annual reporting to streamline the process for municipal partners and capture useful information for the MMSD Planning, Watercourse, and Sustainability Departments.
- Improve municipal sewer plan databases to make information more accessible and searchable.
- Inspect municipal sewer construction sites.
- Contribute to the planning and execution of MMSD's yearly inspection conference.
- Develop strong relationships with municipal engineers, Milwaukee County engineers, and Wisconsin Department of Natural Resources reviewers.
- Represent MMSD at public events and job fairs.

June 2016 to December 2016 – Watercourse Intern

- Inspect jurisdictional watercourse assets.
- Improve inspection process and documentation by working with ArcGIS staff to develop a map-based iPad application and database.
- Assist the asset management team to generate cost-over-time budget projections and future replacement costs.
- Write short-form contacts.

Education & Qualifications

University of Wisconsin – Madison | May 1997

Bachelor of Science in Journalism – Specialization in Advertising

University of Wisconsin – Milwaukee | December 2016 | Magna Cum Laude

Bachelor of Science in Civil Engineering – Environmental and Water Resource Management

Professional Engineer in the state of Missouri

Certifications & Skills

- Envision Sustainability Professional (ENV SP)
- National Association of Sewer Service Companies (NASSCO) Pipe Assessment Certification Program (PACP) certified
- Confined space trained
- ArcGIS
- P6 & e-Builder
- Storm Water Management Model (SWMM)

Advertising Experience

1997 to 2014

Milwaukee advertising agencies

- Work within the parameters of scope, schedule, and budget to create advertising campaigns that include integrated components such as television & radio spots, online & print ads, and websites.
- Increase agency revenue with meaningful contributions to new business proposals.
- Create and deliver engaging and persuasive presentations.
- Develop relationships and earn trust with clients, internal partners, and vendors by achieving project goals.
- Awarded Webby Award for Best City and Urban Innovation Website (Client: Visit Milwaukee) and other local, regional, and national awards.