



The City of Lee's Summit

Final Agenda

City Council - Regular Session

Tuesday, December 3, 2019

6:00 PM

City Council Chambers

City Hall

220 SE Green Street

Lee's Summit, MO 64063

(816) 969-1000

REGULAR SESSION NO. 44

Preliminaries:

- A. Invocation
- B. Pledge of Allegiance
- C. Call to Order
- D. Roll Call

1. Approval of Agenda

2. Approval of Consent Agenda:

Items on the Consent Agenda are routine business matters or proposed ordinances approved unanimously by the Council on First Reading. Consent agenda items may be removed by any Councilmember for discussion as part of the regular agenda.

- A. [2019-3150](#) Approval of Action Letters from November 5th, 12th and 19th, 2019.

- B. [BILL NO. 19-248](#) An Ordinance approving a Special Use Permit renewal for a mini-warehouse outdoor storage facility in District PI on land located at 3920 SW M-291 Hwy, existing Storage Mart all in accordance with the provisions of Chapter 33, The Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.

(Note: First reading by Council on November 17, 2019. Passed by unanimous vote.)

Presenter: Josh Johnson, AICP, Assistant Director of Plan Services
Greg Musil, Applicant

- C. [BILL NO. 19-260](#) An Ordinance accepting Final Plat entitled Lee's Summit Airport, Lots 1-4, as a subdivision to the City of Lee's Summit, Missouri.

(Note: First reading by Council on November 17, 2019. Passed by unanimous vote.)

Presenter: Josh Johnson, AICP, Assistant Director of Plan Services
Jim Anderson, Anderson Survey Company

3. Council Roundtable

Council Roundtable is reserved for items of general interest, community announcements and other such information. Council may ask for clarification or give direction about agenda items or discuss items of an emerging nature.

4. Public Hearings:

Proposed ordinances considered after a public hearing will be read for the first time and forwarded to a future City Council meeting for second reading, unless deemed to be an emergency as defined in Sec. 3.13(f) of the Lee's Summit Charter. Five affirmative votes are required for approval of second reading.

- A. [2019-2911](#) Continued Public Hearing: Application #PL2019-020 - Rezoning from RP-2 to RP-3 and Preliminary Development Plan - Burton Townhomes, 408 & 500 NW Olive Street; Cherokee Flight, LLC, applicant.
(Note: This application was continued from July 23, 2019 pending an additional hearing at the Planning Commission. This item is to be continued to December 3, 2019 per the applicants request. This application has been withdrawn.)

Presenter: Josh Johnson, AICP, Assistant Director of Plan Services
Bruce Best, Applicant

- B. [2019-3140](#) Public Hearing: Application #PL2019-305 - Preliminary Development Plan - Main Orchard, 510 NE Main Street and 6 NW Orchard Street; Engineering Solutions, LLC, applicant.

Presenter: Josh Johnson, AICP, Assistant Director of Plan Services
Matt Schlicht, Applicant

- 1) [BILL NO. 19-261](#) An Ordinance approving a Preliminary Development Plan, located at 510 NE Main Street and 6 NW Orchard Street in District RP-2, proposed "Main Orchard" in accordance with the provisions of Chapter 33, The Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.

Presenter: Josh Johnson, AICP, Assistant Director of Plan Services
Matt Schlicht, Applicant

- C. [2019-3144](#) Public Hearing: Application #PL2019-307 - Rezoning from AG and R-1 to RP-3 and Preliminary Development Plan - Osage, approximately 32 acres located at the southwest corner of SW M-150 Hwy and SW Pryor Road; Clayton Properties Group, Inc., applicant.

Presenter: Josh Johnson, AICP, Assistant Director of Plan Services
Vincent Walker, Owner Representative
John Erpelding, PE/Engineer

- 1) [BILL NO. 19-262](#) An Ordinance approving a rezoning from District AG and R-1 to District RP-3 and Preliminary Development Plan for approximately 32 acres located at southwest corner of SW M-150 Highway and SW Pryor Road, proposed Osage in accordance with the provisions of Chapter 33, the Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.

Presenter: Josh Johnson, AICP, Assistant Director of Plan Services

- D. [2019-3137](#) Public Hearing: Application #PL2019-359- Unified Development Ordinance (UDO) Amendment - Changes to Article 1 - General Provisions, Article 2 - Applications and Procedures and Article 8 - Site Design to create an administrative reasonable accommodation process and reference ADA design standards in the International Building Code; City of Lee's Summit, applicant.

Presenter: Josh Johnson, AICP, Assistant Director of Plan Services

- 1) [BILL NO. 19-263](#) An Ordinance approving application #PL2019-359 - Unified Development Ordinance (UDO) Amendment Changes to Article 1 - General Provisions, Article 2 - Applications and Procedures and Article 8 - Site Design to create an administrative reasonable accommodation process and reference ADA design standards in the International Building Code; City of Lee's Summit, applicant.

Presenter: Josh Johnson, AICP, Assistant Director of Plan Services

- E. [2019-3131](#) Public Hearing: Residences at Echelon Amendments to Chapter 100 Industrial Development Project.

Presenter: Mark Dunning, Assistant City Manager
David Bushek, Chief Counsel of Economic Development & Planning
Kimberly Spies, Rouse Frets White Goss Gentile Rhodes, P.C.
Jake Loveless, M-150 Echelon Land Development, LLC

- 1) [BILL NO. 19-264](#) An Ordinance approving an Amended and Restated Plan for an Industrial Development Project for Residences at Echelon, approving the issuance of an additional \$9,000,000 of Industrial Development Revenue Bonds for the Project, and approving the amendment of certain documents in connection therewith.

Presenter: Mark Dunning, Assistant City Manager
David Bushek, Chief Counsel of Economic Development & Planning

5. Public Comments:

Anyone wishing to address the Mayor and Council during Public Comments will be limited to 3 minutes. Each speaker must fill out a Public Comment Card. The Public Comment Cards are located at the entrance of Council Chambers. After completion, the card is to be given to the City Clerk. Please be concise with comments and respect the 3 minute time limit.

6. Proposed Ordinances Forwarded from Committee:

The following proposed ordinances were considered by a Council Committee and are presented to the Council for two readings and adoption.

- A. [BILL NO. 19-265](#) An Ordinance amending Chapter 19 Parks and Recreation of the Code of Ordinances of the City of Lee's Summit dealing generally with removing references to the Beautification Commission and Tree Board, incorporating new definitions and modifying existing definitions, and amending language related to curfew in parks and as well as language regarding the prohibition of animals at the municipal pool. (CEDC 11/13/19)

Presenter: Jackie McCormick Heanue, Superintendent of Legal Services and Human Resources

7. Proposed Ordinances - First Reading:

The proposed ordinances presented for first reading may include items with a previous hearing; an item brought directly to the City Council without a recommendation from a Council Committee; or, items forwarded from citizen Boards or Commissions. Five affirmative votes are required for approval of second reading.

- A. [BILL NO. 19-266](#) An Ordinance approving the Second Amendment to the Cooperative Agreement among the City of Lee's Summit, Missouri, The New Longview Transportation Development District and M-III Longview, LLC.

Presenter: David Bushek, Chief Counsel of Economic Development & Planning
Corey Walker, M-III Longview, LLC
Brian Engel, Rouse Frets Law Firm

- B. [BILL NO. 19-267](#) An Ordinance approving the Cooperative Agreement among the City of Lee's Summit, Missouri, the New Longview Community Improvement District and M-III Longview, LLC.

Presenter: David Bushek, Chief Counsel of Economic Development & Planning

- C. [BILL NO. 19-268](#) An Ordinance approving the Redevelopment Contract and Lease Agreement between the City of Lee's Summit, Missouri, and DTLS Apartments, LLC, to implement the 2nd and Douglas Tax Increment Financing Plan and the 2nd and Douglas LCRA Redevelopment Plan.

Presenter: David Bushek, Chief Counsel of Economic Development & Planning
Curt Peterson, Polsinelli Law Firm, Developer's Legal Counsel
Jim Thomas, DTLS Apartments, LLC, Developer

- D. [BILL NO. 19-269](#) An Ordinance vacating certain utility easements located at 1695 SE Decker Street and 60 SE Thompson Drive in the City of Lee's Summit, Missouri.

Presenter: Josh Johnson, AICP, Assistant Director of Plan Services

8. Committee Reports

Committee chairs report on matters held in Committee.

Parks and Recreation Board – Dec. 4 at 6:00 p.m.

Finance and Budget Committee – Dec. 9 at 5:30 p.m.

Beautification Commission – Dec. 9 at 6:00 p.m.

Board of Aeronautic Commissioners - Dec. 9 at 7:00 p.m.

City Council Regular Session - Dec. 10 at 6:00 p.m.

9. Council Comments:

(NOTE: Total time for Council Comments will be limited to 5 minutes.)

10. Staff Roundtable

Staff Roundtable is reserved for items of general interest, community announcements and other such information; however, staff may ask for clarification or direction from the council related to items on the agenda or for items of an emergency nature for which insufficient time exists for adding to the agenda.

11. Adjournment

Unless determined otherwise by the Mayor and City Council, no new agenda items shall be considered after 11:00 p.m.

Packet Information

File #: 2019-3150, **Version:** 1

Approval of Action Letters from November 5th, 12th and 19th, 2019.



The City of Lee's Summit
Action Letter
City Council - Regular Session

Tuesday, November 5, 2019

6:00 PM

City Council Chambers

City Hall

220 SE Green Street

Lee's Summit, MO 64063

(816) 969-1000

REGULAR SESSION NO. 41

Preliminaries:

- A. Invocation
- B. Pledge of Allegiance
- C. Call to Order

Mayor Baird called Regular Session No. 41 to order at 6:04 p.m.

- D. Roll Call

Councilmember Carlyle arrived at 6:20 p.m.

Councilmember Binney arrived at 6:52 p.m.

Present: 6 - Mayor Bill Baird
Councilmember Fred DeMoro
Councilmember Phyllis Edson
Councilmember Diane Forte
Councilmember Bob Johnson
Councilmember Beto Lopez

Absent: 3 - Councilmember Rob Binney
Councilmember Trish Carlyle
Councilmember Craig Faith

1. Approval of Agenda

ACTION: A motion was made by Councilmember DeMoro, seconded by Councilmember Edson, to approve the agenda as published. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Binney
Councilmember Carlyle
Councilmember Faith

2. Approval of Consent Agenda:

- A. [2019-3096](#) Approval of Action Letters from October 1st, 8th and 15th, 2019.

ACTION: A motion was made by Councilmember Lopez, seconded by Councilmember Forte, to approve the Action Letters as part of the Consent Agenda. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Binney
Councilmember Carlyle
Councilmember Faith

- B. [BILL NO. 19-216](#) An Ordinance accepting final plat entitled Princeton, Lots 1 and 2, as a subdivision to the City of Lee's Summit, Missouri.
(Note: First read by City Council on September 17, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember Lopez, seconded by Councilmember Forte, that Bill No. 19-216 be adopted and numbered Ordinance No. 8755 as part of the Consent Agenda. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Binney
Councilmember Carlyle
Councilmember Faith

- C. [BILL NO. 19-223](#) An Ordinance approving an amended and restated plan for an Industrial Development Project for Village at View High, approving the issuance of an additional \$6,500,000 of Industrial Development Revenue Bonds for the Project, and approving the amendment of certain documents in connection therewith.
(Note: First reading by Council on October 15, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember Lopez, seconded by Councilmember Forte, that Bill No. 19-223 be adopted and numbered Ordinance No. 8756 as part of the Consent Agenda. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

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Absent: 3 - Councilmember Binney
Councilmember Carlyle
Councilmember Faith

- D.** [BILL NO. 19-240](#) An Ordinance accepting Final Plat entitled Summit View Farms 3rd Plat, Lots 51-74 and Tract C, as a subdivision to the City of Lee's Summit, Missouri.
(Note: First reading by Council on October 15, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember Lopez, seconded by Councilmember Forte, that Bill No. 19-240 be adopted and numbered Ordinance No. 8757 as part of the Consent Agenda. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Binney
Councilmember Carlyle
Councilmember Faith

- E.** [2019-3110](#) A Hazardous Materials Permit for the City of Lee's Summit Fuel Station located at 805 N. Main Street.

ACTION: A motion was made by Councilmember Lopez, seconded by Councilmember Forte, that this Hazardous Materials Permit be approved as part of the Consent Agenda. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Binney
Councilmember Carlyle
Councilmember Faith

- F.** [2019-3109](#) Approval of Liquor License H for All A'Bloom Flowers and Gifts, 5 SE 3rd Street, Lee's Summit, MO 64063

ACTION: A motion was made by Councilmember Lopez, seconded by Councilmember Forte, that this Liquor License be approved as part of the Consent Agenda. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Binney
Councilmember Carlyle
Councilmember Faith

3. Council Roundtable

Mayor Pro Tem Lopez recognized a local Girls Softball Team (Blue Springs School in Lee's Summit city limits) has won back to back softball titles for the State of Missouri. He also noted his daughter was on the team as a Senior this year.

Councilmember Forte stated Lee's Summit Cares had their annual State of the Youth presentation at Bridge Space on Monday, November 4th, 2019. She enjoyed hearing what youths from Lee's Summit do in their community.

4. Proclamations:

- A. [2019-3038](#) November 2019 Educational Theatre Month

This Proclamation was presented.

5. Resolutions:

- A. [RES. NO. 19-14](#) A Resolution authorizing the filing of an application with the Missouri Department of Natural Resources, State Revolving Fund Program for grants under the Missouri Clean Water Law (Section 644, RSMo.).

ACTION: A motion was made by Councilmember Lopez, seconded by Councilmember Edson, that Resolution No. 19-14 be adopted. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Binney
Councilmember Carlyle
Councilmember Faith

6. Public Hearings:

- A. [2019-3075](#) Public Hearing: Application #PL2019-233 - Preliminary Development Plan - Wendy's, 711 SE M-291 Hwy; NPC International, Inc., applicant

Exhibit A, list of exhibits 1-17, were entered into the record.

City Council discussions included:

-Entrance/exit from a side street instead of 291 incase MoDOT were to put in a median making it a right in/right out.

There were no speakers in favor of, or opposed to, this application.

- 1) [BILL NO. 19-242](#) An Ordinance approving a Preliminary Development Plan located at 711 SE M-291 Hwy in District CP-2, proposed Wendy's in accordance with the provisions of Chapter 33, the Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.
(Note: First reading by Council on November 5, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember DeMoro, seconded by Councilmember Lopez, that Bill No. 19-242 be advanced to second reading. The motion carried by the following vote:

Aye: 7 - Mayor Baird
Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 2 - Councilmember Binney
Councilmember Faith

- B. [2019-3076](#) Public Hearing: Application #PL2019-246 - Preliminary Development Plan - DCI Lee's Summit, 2001 NW Shamrock Ave; Dialysis Clinic, Inc., applicant.
Exhibit A, list of exhibits 1-19, were entered into the record.

City Council discussions included:
-Shared driveway with the Fire Department.

There were no speakers in favor of, or opposed to, this application.

- 1) [BILL NO. 19-243](#) An Ordinance approving a Preliminary Development Plan located at 2001 NW Shamrock Ave in District PMIX, Proposed Dialysis Clinic, INC. In accordance with the provisions of Chapter 33, the Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.
(Note: First reading by Council on November 5, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember Edson, seconded by Councilmember Forte, that Bill No. 19-243 be advanced to second reading. The motion carried by the following vote:

Aye: 7 - Mayor Baird
Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 2 - Councilmember Binney
Councilmember Faith

- C. [2019-3077](#) Public Hearing: Application #PL2019-255 - Rezoning from AG, RP-1, CP-2, PI and PMIX to AZ - Lee's Summit Airport, 2751 NE Douglas St; City of Lee's Summit, applicant.

Exhibit A, list of exhibits 1-16, were entered into the record

City Council discussions included:

- Homeowners on the east side of Douglas
- A dinner at the airport
- Properties on the other side of Strother and the Oppenhiemer property
- Would this allow for other services

There were no speakers in favor of, or opposed to, this application.

- 1) [BILL NO. 19-244](#) An Ordinance approving a rezoning from Districts AG, RP-1, CP-2, PI and PMIX to AZ for approximately 553.633 acres located at 2751 NE Douglas St, Lee's Summit Airport in accordance with the provisions of Chapter 33, The Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.

(Note: First reading by Council on November 5, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Lopez, that Bill No. 19-244 be advanced to second reading. The motion carried by the following vote:

Aye: 7 - Mayor Baird
Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 2 - Councilmember Binney
Councilmember Faith

- D. [2019-3078](#) Public Hearing: Application #PL2019-261 - Vacation of Right-Of-Way - unused right-of-way on Lee's Summit Airport property, 2751 NE Douglas St; City of Lee's Summit, applicant.

Exhibit A, list of exhibits 1-16, were entered into the record.

There were no questions from City Council and no speakers in favor of, or opposed to, this application.

- 1) [BILL NO. 19-245](#) An Ordinance vacating dedicated rights-of-way for a portions of NE Strother RD, NE Douglas RD, NE Hagan RD and NE Leinweber RD., located at 2751 NE Douglas ST, in the City of Lee's Summit, Missouri.
(Note: First reading by Council on November 5, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember Edson, seconded by Councilmember DeMoro, that Bill No. 19-245 be advanced to second reading. The motion carried by the following vote:

Aye: 7 - Mayor Baird
Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Away FT: 1 - Councilmember Binney

Absent: 1 - Councilmember Faith

7. Public Comments:

Mr. Wayne Pearson addressed the City Council regarding traffic, speeding and vulgar language towards him and his kids on Mulberry. He would like assistance and guidance from the city to help with the issue.

8. Proposed Ordinances Forwarded from Committee:

- A. [BILL NO. 19-246](#) An Ordinance repealing the current City of Lee' Summit Procurement Policy, as adopted by Ordinance No. 8253, and adopting in lieu thereof a new policy entitled Procurement Policy for the City of Lee's Summit, Missouri. (F&BC 10-14-19)

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Carlyle, that Bill No. 19-246 be second read. The motion carried by the following vote:

Aye: 8 - Mayor Baird
Councilmember Binney
Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 1 - Councilmember Faith

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Binney, that Bill No. 19-246 be adopted and numbered Ordinance No. 8758. The motion carried by the following vote:

Aye: 8 - Mayor Baird
Councilmember Binney
Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 1 - Councilmember Faith

9. Proposed Ordinances - Second Reading:

- A. [BILL NO. 19-241](#) An Ordinance vacating a certain utility and cross access easement located at 3924 & 3930 SW Raintree Drive in the City of Lee's Summit, Missouri.
(Note: First reading by Council on October 15, 2019.)

ACTION: A motion was made by Councilmember Carlyle, seconded by Councilmember Forte, that Bill No. 19-241 be adopted and numbered Ordinance No. 8759. The motion carried by the following vote:

Aye: 8 - Mayor Baird
Councilmember Binney
Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 1 - Councilmember Faith

10. Committee Reports

Councilmember Johnson reminded everyone there will be a Finance and Budget Committee meeting on Monday, November 11, 2019 at 5:30 p.m.

Councilmember Carlyle noted there will be a Rules Committee meeting on Wednesday, November 6, 2019 at 6:00 p.m.

Councilmember Binney announced the approval of a grant from MARC (Mid-America Regional Council) for the purchase roll off containers for the south recycling center which is approximately 90 days from reopening. Staff is still pursuing an opportunity to reopen the North Recycling Center.

11. Council Comments:

Councilmember Binney reminded Council the area at 50 Highway and 291 doesn't need more traffic until the realignment project is complete. He asked when Council will get an update on the Market Pavilion discussion.

Mayor Baird spoke in regards to the C4 committees. He would like to have the process completed in 5 months and the proposed Kick-Off date is November 25.

12. Staff Roundtable

Mr. Mark Dunning, Assistant City Manager, announced Saturday, November 9th the City is hosting RecycleFest. This year it has been moved to the Maintenance Facility on Hamblin Road. It will be open 9:00 a.m. to noon.

13. Adjournment

Hearing no further business, Mayor Baird adjourned Regular Session No. 41 at 7:25 p.m.

Unless determined otherwise by the Mayor and City Council, no new agenda items shall be considered after 11:00 p.m.

For your convenience, City Council agendas, as well as videos of City Council and Council Committee meetings, may be viewed on the City's Legislative Information Center website at "lsmo.legistar.com"



The City of Lee's Summit
Action Letter
City Council - Regular Session

Tuesday, November 12, 2019

6:00 PM

City Council Chambers

City Hall

220 SE Green Street

Lee's Summit, MO 64063

(816) 969-1000

REGULAR SESSION NO. 42 *AMENDED*****

Preliminaries:

- A. Invocation
- B. Pledge of Allegiance
- C. Call to Order

Mayor Baird called Regular Session No. 42 to order at 6:04 p.m.

- D. Roll Call

Present: 8 - Mayor Bill Baird
Councilmember Rob Binney
Councilmember Fred DeMoro
Councilmember Phyllis Edson
Councilmember Craig Faith
Councilmember Diane Forte
Councilmember Bob Johnson
Councilmember Beto Lopez

Absent: 1 - Councilmember Trish Carlyle

1. Approval of Agenda

ACTION: A motion was made by Councilmember DeMoro, seconded by Councilmember Forte, to approve the published Amended Agenda. The motion carried by the following vote:

Aye: 8 - Mayor Baird
Councilmember Binney
Councilmember DeMoro
Councilmember Edson
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 1 - Councilmember Carlyle

3. Approval of Consent Agenda:

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Faith, to approve the Consent Agenda. The motion carried by the following vote:

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Aye: 7 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Nay: 1 - Councilmember Binney

Absent: 1 - Councilmember Carlyle

- A. [BILL NO. 19-242](#)** An Ordinance approving a Preliminary Development Plan located at 711 SE M-291 Hwy in District CP-2, proposed Wendy's in accordance with the provisions of Chapter 33, the Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.
(Note: First reading by Council on November 5, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Faith, that Bill No. 19-242 be adopted and numbered Ord. No. 8760 as part of the Consent Agenda. The motion carried by the following vote:

Aye: 7 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Nay: 1 - Councilmember Binney

Absent: 1 - Councilmember Carlyle

- B. [BILL NO. 19-243](#)** An Ordinance approving a Preliminary Development Plan located at 2001 NW Shamrock Ave in District PMIX, Proposed Dialysis Clinic, INC. In accordance with the provisions of Chapter 33, the Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.
(Note: First reading by Council on November 5, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Faith, that Bill No. 19-243 be adopted and numbered Ord. No. 8761 as part of the Consent Agenda. The motion carried by the following vote:

Aye: 7 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Nay: 1 - Councilmember Binney

Absent: 1 - Councilmember Carlyle

- C. [BILL NO. 19-244](#) An Ordinance approving a rezoning from Districts AG, RP-1, CP-2, PI and PMIX to AZ for approximately 553.633 acres located at 2751 NE Douglas St, Lee's Summit Airport in accordance with the provisions of Chapter 33, The Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.
(Note: First reading by Council on November 5, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Faith, that Bill No. 19-244 be adopted and numbered Ord. No. 8762 as part of the Consent Agenda. The motion carried by the following vote:
- Aye:** 7 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez
- Nay:** 1 - Councilmember Binney
- Absent:** 1 - Councilmember Carlyle
- D. [BILL NO. 19-245](#) An Ordinance vacating dedicated rights-of-way for a portions of NE Strother RD, NE Douglas RD, NE Hagan RD and NE Leinweber RD., located at 2751 NE Douglas ST, in the City of Lee's Summit, Missouri.
(Note: First reading by Council on November 5, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Faith, that Bill No. 19-245 be adopted and numbered Ord. No. 8763 as part of the Consent Agenda. The motion carried by the following vote:
- Aye:** 7 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez
- Nay:** 1 - Councilmember Binney
- Absent:** 1 - Councilmember Carlyle
- E. [2019-3121](#) Approval of the New Ownership Arrangement regarding Liquor Licenses G3 and S for Siki Japanese Restaraunt, 601 NW Blue Parkway, Lee's Summit, MO 64063.

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Faith, that this Liquor License be approved as part of the Consent Agenda. The motion carried by the following vote:

Aye: 7 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Nay: 1 - Councilmember Binney

Absent: 1 - Councilmember Carlyle

3. Council Roundtable

Councilmember Forte commented on the recent beautiful sunsets we have been having lately.

Councilmember Binney reminded everyone about the Mayors Tree Lighting on November 22nd. He also noted that Summit Ice is now open and stated the Lee's Summit West girls cross country team recently won the state championship.

Councilmember Faith stated his wife recently commented on the recent sunsets also. He also thanked public safety workers again and included Public Works for their hard work during the recent snow events.

4. Proclamations:

A. [2019-3147](#) November 13, 2019 - Jaguars Softball Day

This Proclamation was read into the record.

5. Public Comments:

Mr. Dale Coy stated his Public Comments were not included on the September 17th Action Letter.

6. Presentations:

A. [2019-3099](#) Fire Department Community Risk Standard of Cover

Council Discussion:

- Northern District - added station
- Full station vs. substation
- Airport needs
- Insurance Services (ISO) ratings
- Revenue Streams
- 2000 hours in preparing documents for accreditation
- Dedicated Accreditation Manager
- EMS is a high priority
- Emergencies vs Non-Emergencies
- Moving Rescue 7 to Rescue 3
- Ambulance out of Station 5 is used for non-emergency transfers
- 7 Fire Stations and 9 ambulances

- Operational efficiency
- Communications Study
- Best Practices
- Short term resolutions for a better impact

This Presentation was presented.

B. [2019-3139](#) Funding for current and future operational needs

Council Discussion:

- Stormwater Study on Expansion List
- FY19 Reserve Balance - year end report
- Fund Balance \$32.8 - Unassigned and \$30.5 assigned
- Implementation of steps to find the \$4.2M for salaries
- Balanced Budget
- Expenditures vs Savings
- Reserve Fund - 39.9% balance (required is 16.7%)
- Use Tax and timeline
- Long-term Operations Strategies
- Funding Priorities
- Collaborative Council - Administration
- Growth Impact / Sustainability
- Use Tax on April Ballot

This Presentation was presented.

C. [2019-3126](#) Presentation and Discussion - Land Clearance for Redevelopment Authority Policy

Council Discussion:

- Terms and inclusions
- Amount and Duration
- Pending responses to requests
- Quality Jobs
- Targeted business / Industries
- Industrial Uses
- Currently mostly used for small businesses
- Keep small / local businesses in mind
- Flexibility
- Not get too restrictive
- Tax Generation
- Calendar Year

This Presentation was presented.

7. Resolutions:

- A. [RES. NO. 19-15](#) A Resolution authorizing the offering for sale of General Obligation Bonds for the benefit of the City of Lee's Summit, Missouri.

ACTION: A motion was made by Councilmember DeMoro, seconded by Councilmember Forte, that this Resolution be adopted. The motion carried by the following vote:

Aye: 8 - Mayor Baird
Councilmember Binney
Councilmember DeMoro
Councilmember Edson
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 1 - Councilmember Carlyle

8. Proposed Ordinances Forwarded from Committee:

- A. [BILL NO. 19-247](#) An Ordinance authorizing the execution of an intergovernmental agreement for facilitation services for Ignite strategic plan implementation plan development by and between the City Of Lee's Summit, Missouri and KU Public Management Center in the amount of \$39,900.

ACTION: A motion was made by Councilmember Faith, seconded by Councilmember Forte, that Bill No. 19-247 be second read. The motion carried by the following vote:

Aye: 7 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Nay: 1 - Councilmember Binney

Absent: 1 - Councilmember Carlyle

ACTION: A motion was made by Councilmember Faith, seconded by Councilmember Edson, that Bill No. 19-247 be adopted and numbered Ord. No. 8764. The motion carried by the following vote:

Aye: 7 - Mayor Baird
Councilmember DeMoro
Councilmember Edson
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Nay: 1 - Councilmember Binney

Absent: 1 - Councilmember Carlyle

9. Committee Reports

Councilmember Forte stated there will be a Community and Economic Development Committee (CEDC) meeting tomorrow night at 4pm.

Councilmember Edson noted the next Legislative Intergovernmental Relations Committee (LIRC) would be meeting on November 18th at 5:30 p.m. She also advised there would be a collaborative breakfast on Friday, December 6th at 7:30 a.m. and the Mayor and City Council as well as City Managers from Blue Springs, Independence and Lee's Summit have all been invited.

10. Council Comments:

Councilmember Johnson would like to have the full City Council review the Public Service Agreements before they start the budgeting process and to have the City Manager give a conceptual presentation in January.

Mayor Baird stated he felt keeping all the presentations on this agenda was important due to their timeline and having several councilmembers absent next week. He suggested cancelling the November 19th Council meeting, but Mr. Mark Dunning, Assistant City Manager, reminded him there is a Public Hearing and several committee items on that agenda. Mayor Baird stated the Council would have a quorum for a short meeting next week.

11. Staff Roundtable

There was no Staff Roundtable.

12. Adjournment

Hearing no further business, Mayor Baird adjourned Regular Session No. 42 at 10:03 p.m.

Unless determined otherwise by the Mayor and City Council, no new agenda items shall be considered after 11:00 p.m.

For your convenience, City Council agendas, as well as videos of City Council and Council Committee meetings, may be viewed on the City's Legislative Information Center website at "lsmo.legistar.com"



The City of Lee's Summit
Action Letter
City Council - Regular Session

Tuesday, November 19, 2019

6:30 PM

City Council Chambers

City Hall

220 SE Green Street

Lee's Summit, MO 64063

(816) 969-1000

REGULAR SESSION NO. 43

Preliminaries:

- A. Invocation
- B. Pledge of Allegiance
- C. Call to Order

Mayor Baird called Regular Session No. 43 to order at 6:53 p.m.

- D. Roll Call

Present: 6 - Mayor Bill Baird
Councilmember Rob Binney
Councilmember Craig Faith
Councilmember Diane Forte
Councilmember Bob Johnson
Councilmember Beto Lopez

Absent: 3 - Councilmember Trish Carlyle
Councilmember Fred DeMoro
Councilmember Phyllis Edson

1. Approval of Agenda

ACTION: A motion was made by Councilmember Binney, seconded by Councilmember Forte, to approve the agenda as published. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

2. Approval of Consent Agenda:

ACTION: A motion was made by Councilmember Lopez, seconded by Councilmember Forte, to approve the Consent Agenda. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

A. [2019-3157](#) Approval of revised Action Letter from September 17, 2019.

A motion was made by Councilmember Lopez, seconded by Councilmember Forte, to approve the revised Action Letter from September 17, 2019 as part of the Consent Agenda. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

B. [2019-3138](#) Approval of Liquor Licenses G3 and S for the new location and owner of Sabor Latino, 22 SW 3rd Street, Lee's Summit, MO 64063.

A motion was made by Councilmember Lopez, seconded by Councilmember Forte, to approve the Liquor License for Sabor Latino as part of the Consent Agenda. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

3. Council Roundtable

Councilmember Binney recognized Boy Scout Troop 336 in attendance. He asked staff for further information on the Resolution that was adopted last week. He stated it hadn't gone through committee and he wanted to know the amount of debt that is being issued and why so much is being issued at this time. Mr. Steve Arbo, City Manager, explained the amount of debt issued (\$9 Million) was to meet the legal requirements in order to keep the current debt levy and to begin the process for police station improvements. Councilmember Binney also asked about the City's bond rating and the calculation of interest in the debt levy.

Mayor Baird announced this Friday is the Mayor's Tree Lighting ceremony. Buddy the Elf will be there at 6:30 p.m. to flip the switch.

4. Public Hearings:

- A. [2019-3091](#) Public Hearing: Application #PL2019-267 - Special Use Permit renewal for mini-warehouse storage facility - Storage Mart, 3920 SW M-291 Hwy; New TKG - Storage Mart Partners Portfolio, LLC, applicant.

Exhibit A, list of exhibits 1-19 were entered into the record.

City Council discussions included:

- Fencing on the south of the property
- Set backs and easements
- SW corner doesn't have hard surface
- Traffic
- Connecting Chettington Dr to Raintree Dr
- Communication from Raintree HOA (Homeowners Association)

There were no speakers in favor of, or opposed to, the application.

This Public Hearing - Sworn was presented.

- 1) [BILL NO. 19-248](#) An Ordinance approving a Special Use Permit renewal for a mini-warehouse outdoor storage facility in District PI on land located at 3920 SW M-291 Hwy, existing Storage Mart all in accordance with the provisions of Chapter 33, The Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.
(Note: First reading by Council on November 17, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember Binney, seconded by Councilmember Forte, that Bill No. 19-248 be advanced to second reading. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

5. Public Comments:

There were no Public Comments.

6. Proposed Ordinances Forwarded from Committee:

- A. [BILL NO. 19-249](#) An Ordinance awarding Bid No. 42631783-C for Cedar Creek Interceptor Phase 3 to VF Anderson Builders, LLC in the amount of \$1,629,979.00 and authorizing the City Manager to enter into an agreement for the same. (PWC 11/04/19)

ACTION: A motion was made by Councilmember Faith, seconded by Councilmember Forte, that Bill No. 19-249 be second read. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

ACTION: A motion was made by Councilmember Faith, seconded by Councilmember Forte, that Bill No. 19-249 be adopted and numbered Ordinance No. 8765. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

- B. [BILL NO. 19-250](#) An Ordinance awarding Bid No. 43131883-C, for the Water Tower Re-Coatings: Hook and Ranson, to Worldwide Industries Corp. in the amount of \$1,386,400.00 and authorizing the City Manager to execute an agreement for the same. (PWC 11/04/19)

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Faith, that Bill No. 19-250 be second read. The motion carried by the following vote:

City Council - Regular Session

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November 19, 2019

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Faith, that Bill No. 19-250 be adopted and numbered Ordinance No. 8766. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

- C. [BILL NO. 19-251](#) An Ordinance awarding Bid No. 42831583-C, for the Tudor Road Pump Station Odor Control Improvements, to Mega Industries Corp. in the amount of \$881,390.00 and authorizing the City Manager to execute an agreement for the same. (PWC 11/04/19)

ACTION: A motion was made by Councilmember Lopez, seconded by Councilmember Binney, that Bill No. 19-251 be second read. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

ACTION: A motion was made by Councilmember Lopez, seconded by Councilmember Binney, that Bill No. 19-251 be adopted and numbered Ordinance No. 8767. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

- D. [BILL NO. 19-252](#) An Ordinance authorizing the execution of a Mid-America Regional Council-Solid Waste Management District grant agreement by and between the City of Lee's Summit, Missouri, and the Mid-America Regional Council-Solid Waste Management District, granting funds in the amount of \$42,189 for the purchase of recycling roll-off containers for use by the Solid Waste Division. (PWC 11/04/19)

ACTION: A motion was made by Councilmember Johnson, seconded by Councilmember Forte, that Bill No. 19-252 be second read. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

ACTION: A motion was made by Councilmember Johnson, seconded by Councilmember Binney, that Bill No. 19-252 be adopted and numbered Ordinance No. 8768. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

- E. [BILL NO. 19-253](#) An Ordinance approving Change Order #3 to the contract with Second Sight Systems, L.L.C. for the SCADA System improvements project, an increase of \$22,104.47 for a revised contract price of \$442,510.13. (PWC 11/04/19)

ACTION: A motion was made by Councilmember Binney, seconded by Councilmember Forte, that Bill No. 19-253 be second read. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

ACTION: A motion was made by Councilmember Binney, seconded by Councilmember Forte, that Bill No. 19-253 be adopted and numbered Ordinance No. 8769. The motion carried by the following vote:

City Council - Regular Session

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November 19, 2019

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

- F. [BILL NO. 19-254](#)** An Ordinance approving the award of RFP No. 2019-029 for the acquisition and implementation of a Laserfiche Enterprise Content Management System to OPG-3, Inc. for an amount not to exceed \$242,000.00 and authorizing the City Manager to execute agreements for the same by and on behalf of the City. (F&BC 11/11/19)

ACTION: A motion was made by Councilmember Faith, seconded by Councilmember Forte, that Bill No. 19-254 be second read. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

ACTION: A motion was made by Councilmember Faith, seconded by Councilmember Forte, that Bill No. 19-254 be adopted and numbered Ordinance No. 8770. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

- G. [BILL NO. 19-255](#)** An Ordinance authorizing the execution of a memorandum of understanding between the Kansas Bureau of Investigation and the City of Lee's Summit, Missouri for the use of Midwest High Intensity Drug Trafficking Area Award Funds. (F&BC 11/11/19)

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Binney, that Bill No. 19-255 be second read. The motion carried by the following vote:

City Council - Regular Session

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November 19, 2019

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Binney, that Bill No. 19-255 be adopted and numbered Ordinance No. 8771. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

H. [BILL NO. 19-256](#) An Ordinance authorizing the execution of a memorandum of understanding between the Kansas Bureau of Investigation and the City of Lee's Summit, Missouri for the use of Midwest High Intensity Drug Trafficking Area Award Funds. (F&BC 11/11/19)

ACTION: A motion was made by Councilmember Lopez, seconded by Councilmember Binney, that Bill No. 19-256 be second read. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

ACTION: A motion was made by Councilmember Lopez, seconded by Councilmember Binney, that Bill No. 19-256 be adopted and numbered Ordinance No. 8772. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

- I. [BILL NO. 19-257](#) An Ordinance approving the award of Bid No. 2020-034 for Fire Station # 6 roof replacement to Greenriver Roofing and Construction, Inc. and authorizing the City Manager to enter into and execute agreement for the same by and on behalf of the City of Lee's Summit, Missouri. (F&BC 11/11/19)

ACTION: A motion was made by Councilmember Johnson, seconded by Councilmember Forte, that Bill No. 19-257 be second read. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

ACTION: A motion was made by Councilmember Johnson, seconded by Councilmember Lopez, that Bill No. 19-257 be adopted and numbered Ordinance No. 8773. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

- J. [BILL NO. 19-258](#) An Ordinance accepting a grant award in the amount of \$254,455.00 from the U.S. Department of Justice, Office of Justice Programs, for a Body-Worn Camera Policy and Implementation Program. (F&BC 11/11/19)

ACTION: A motion was made by Councilmember Binney, seconded by Councilmember Forte, that Bill No. 19-258 be second read. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

ACTION: A motion was made by Councilmember Binney, seconded by Councilmember Forte, that Bill No. 19-258 be adopted and numbered Ordinance No. 8774. The motion carried by the following vote:

City Council - Regular Session

Action Letter

November 19, 2019

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

- K. [BILL NO. 19-259](#) An Ordinance approving Amendment No. 10 to the Budget for the Fiscal Year ending June 30, 2019, as adopted by Ordinance No. 8405, by revising the authorized expenditures of the City of Lee's Summit, Missouri. (F&BC 11/11/19)

ACTION: A motion was made by Councilmember Faith, seconded by Councilmember Forte, that Bill No. 19-259 be second read. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

ACTION: A motion was made by Councilmember Faith, seconded by Councilmember Forte, that Bill No. 19-259 be adopted and numbered Ordinance No. 8775. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

7. Proposed Ordinances - First Reading:

- A. [BILL NO. 19-260](#) An Ordinance accepting Final Plat entitled Lee's Summit Airport, Lots 1-4, as a subdivision to the City of Lee's Summit, Missouri.

(Note: First reading by Council on November 17, 2019. Passed by unanimous vote.)

ACTION: A motion was made by Councilmember Forte, seconded by Councilmember Binney, that Bill No. 19-260 be advanced to second reading. The motion carried by the following vote:

Aye: 6 - Mayor Baird
Councilmember Binney
Councilmember Faith
Councilmember Forte
Councilmember Johnson
Councilmember Lopez

Absent: 3 - Councilmember Carlyle
Councilmember DeMoro
Councilmember Edson

8. Committee Reports

Councilmember Binney noted the Ignite launch date is Saturday, November 25, 2019. Mayor Baird added it will be Strategic Planning night. There will be 7 different committees, with 25 members on each committee, to include City Council members, City Staff, Citizens and Community Partners (or Organizations) coming together. He asked staff to add this date to the City Calendar.

Mayor Pro Tem Lopez announced the November 25, 2019 Arts Council meeting has been cancelled.

9. Council Comments:

There were no items for Council Comments.

10. Staff Roundtable

Mr. Steve Arbo, City Manager, presented the City Council with a proposed schedule for a Use Tax for the April 7, 2020 election.

11. Adjournment

There being no further business, Mayor Baird adjourned Regular Session No. 43 at 7:50 p.m.

Unless determined otherwise by the Mayor and City Council, no new agenda items shall be considered after 11:00 p.m.

For your convenience, City Council agendas, as well as videos of City Council and Council Committee meetings, may be viewed on the City's Legislative Information Center website at "lsmo.legistar.com"

Packet Information

File #: BILL NO. 19-248, **Version:** 1

An Ordinance approving a Special Use Permit renewal for a mini-warehouse outdoor storage facility in District PI on land located at 3920 SW M-291 Hwy, existing Storage Mart all in accordance with the provisions of Chapter 33, The Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.

(Note: First reading by Council on November 17, 2019. Passed by unanimous vote.)

Proposed City Council Motion:

I move for adoption of an Ordinance approving a special use permit for a mini-warehouse outdoor storage facility in district PI on land located at 3920 SW M-291 Hwy, existing Storage Mart all in accordance with the provision of Chapter 33, The Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.

Josh Johnson, AICP, Assistant Director of Plan Services

Greg Musil, Applicant

BILL NO. 19-248

AN ORDINANCE APPROVING A SPECIAL USE PERMIT RENEWAL FOR A MINI-WAREHOUSE OUTDOOR STORAGE FACILITY IN DISTRICT PI ON LAND LOCATED AT 3920 SW M-291 HWY, EXISTING STORAGE MART ALL IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 33, THE UNIFIED DEVELOPMENT ORDINANCE OF LEE'S SUMMIT CODE OF ORDINANCES, FOR THE CITY OF LEE'S SUMMIT, MISSOURI.

WHEREAS, Application #PL2019-267 submitted by New TKG-Storage Mart Partners Portfolio, LLC, requesting a special use permit for a mini-warehouse outdoor storage facility in District PI (Planned Industrial District) on land located on *Lot 1A, South M-291 Safety Mini Storage* was referred to the Planning Commission to hold a public hearing; and

WHEREAS, the Unified Development Ordinance provides for the approval of a special use permit by the City following public hearings by the Planning Commission and City Council; and

WHEREAS, after due public notice in the manner prescribed by law, the Planning Commission held a public hearing for the consideration of the special use permit on October 24, 2019, and rendered a report to the City Council recommending that the special use permit be approved; and

WHEREAS, after due public notice in the manner prescribed by law, the City Council held a public hearing on November 19, 2019, and approved a motion for a second ordinance reading to approve the Special Use Permit renewal for said property.

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF LEE'S SUMMIT, MISSOURI, as follows:

SECTION 1. That the application pursuant to Section 6.1020 of the Unified Development Ordinance to allow for a mini-warehouse outdoor storage facility District PI with a special use permit is hereby granted for a period of 25 years, to expire on August 13, 2044 with respect to the following described property:

*LOT 1A, SOUTH M-291 SAFETY MINI STORAGE LOTS 1A, 2A, & 3A, A
SUBDIVISION IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI.*

SECTION 2. That the following conditions of approval apply:

1. The special use permit shall be approved for a period of 25 years, to expire on August 13, 2044.
2. Additional 6' tall white vinyl fencing shall be added as depicted on the site plan date stamped October 16, 2019.

SECTION 3. That development shall be in accordance with the site plan, date stamped October 16, 2019, appended hereto and made a part hereof.

SECTION 4. That failure to comply with all of the provisions contained in this ordinance shall constitute violations of both this ordinance and Chapter 33, the City's Unified Development Ordinance, of the Code of Ordinances for the City of Lee's Summit.

BILL NO. 19-248

SECTION 5. Nonseverability. All provisions of this ordinance are so essentially and inseparably connected with, and so dependent upon, each other that no such provision would be enacted without all others. If a court of competent jurisdiction enters a final judgment on the merits that is not subject to appeal and that declares any provision or part of this ordinance void, unconstitutional, or unenforceable, then this ordinance, in its collective entirety, is invalid and shall have no legal effect as of the date of such judgment.

SECTION 6. That this ordinance shall be in full force and effect from and after the date of its passage and adoption, and approval by the Mayor.

PASSED by the City Council of the City of Lee's Summit, Missouri, this _____ day of _____, 2019.

Mayor William A. Baird

ATTEST:

City Clerk *Trisha Fowler Arcuri*

APPROVED by the Mayor of said city this ____ day of _____, 2019.

Mayor William A. Baird

ATTEST:

City Clerk *Trisha Fowler Arcuri*

APPROVED AS TO FORM:

City Attorney *Brian Head*



LEE'S SUMMIT
MISSOURI
Development Services Department

Development Services Staff Report

| | |
|---------------------------------|---|
| File Number | PL2019-267 |
| File Name | SPECIAL USE PERMIT renewal for mini-warehouse storage facility |
| Applicant | New TKG-Storage Mart Partners Portfolio, LLC |
| Property Address | 3920 SW M-291 Hwy. |
| Planning Commission Date | October 24, 2019 |
| Heard by | Planning Commission and City Council |
| Analyst | Jennifer Thompson, Senior Planner |
| Checked By | Hector Soto, Jr., AICP, Planning Manager Kent D. Monter, PE, Development Engineering Manager |

Public Notification

Pre-application held: n/a
Neighborhood meeting conducted: October 1, 2019
Newspaper notification published on: October 5, 2019
Radius notices mailed to properties within 185 feet on: September 16, 2019
Site posted notice on: October 4, 2019

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Attachments

Site Plan – 1 page
Applicant Narrative for Special Use Permit – 3 pages
Narrative for neighborhood meeting – 3 pages
Ordinance approving the Special Use Permit (2003)– 2 pages

Photos of property and adjoining properties – 14 pages

Location Map

1. Project Data and Facts

| Project Data | |
|--------------------------------|--|
| Applicant/Status | New TKG-Storage Mart Partners Portfolio, LLC / Owner |
| Applicant's Representative | Weyen Burnam |
| Location of Property | 3920 SW M-291 Hwy |
| Size of Property | ±8.21 acres |
| Zoning | PI (Planned Industrial District) |
| Comprehensive Plan Designation | Retail |
| Procedure | <p>The Planning Commission makes a recommendation to the City Council on the proposed special use permit. The City Council takes final action on the special use permit.</p> <p>Duration of Validity: A special use permit shall be valid for a specific period of time if so stated in the permit.</p> |

| Current Land Use |
|--|
| The property is a platted developed lot with an existing mini-warehouse facility, comprised of twenty-three buildings containing storage units and one office structure on approximately 8.21 acres. |

| Description of Applicant's Request |
|---|
| This application is for a special use permit (SUP) renewal for a mini-warehouse facility and limited outdoor vehicular storage. The applicant has requested a 25 year time period to align with the time period of the recently approved climate-controlled facility located immediately to the east, to expire on August 13, 2044. |

2. Land Use

| Description and Character of Surrounding Area |
|--|
| The property is located at 3920 SW M-291 Hwy in the South M-291 Safety Mini Storage subdivision, located immediately west of the recently approved climate-controlled storage facility. The property is surrounded by vacant property to the north, south and east. A single-family and two-family residential subdivision is located to the west. |

Adjacent Land Uses and Zoning

| | |
|--------|--|
| North: | CP-2 (Planned Community Commercial District) – vacant ground |
| South: | CP-2 (Planned Community Commercial District) – vacant ground |
| East: | PI (Planned Industrial) – proposed climate controlled storage facility |

| | |
|--------------|---|
| West: | RP-2 (Planned Two-Family Planned Residential District) – two-family residential subdivision |
|--------------|---|

| |
|--|
| Site Characteristics |
| The site is fully developed and comprised of twenty-three outdoor storage buildings and an office structure. Single-family residential is located to the west, a future climate controlled storage facility is pending construction to the east, and vacant commercial property is located to the north and south. |

3. Project Proposal

Site Design

| | |
|-----------------|--|
| Land Use | |
| Existing use | Mini-warehouse storage facility (existing) |
| Land area | 357,775.92 sq. ft. (8.21 acres) |
| Site area | Fully developed as mini-warehouse storage facility |

4. Unified Development Ordinance (UDO)

| | |
|----------------------------|---------------------------------|
| Section | Description |
| 6.620, 6.630, 6.640, 6.650 | Special Use Permit |
| 6.1020 | Mini-warehouse storage facility |

Use of the subject property as a mini-warehouse storage facility is allowed under the UDO in the PI zoning district with approval of a special use permit, subject to certain conditions. Conditions currently in effect under the UDO include, but are not limited to, screening, building color, and roof pitch. City ordinances in effect at the time of the original special use permit approval in 1994 referenced that landscaping/screening, exterior architecture and lighting were subject to City Council approval. An expansion of the mini-warehouse facility was proposed in 2002; the special use permit approval at the time granted modifications to roof pitch, building materials, and outlined specific screening requirements. Any existing condition that does not comply with the current requirements of the UDO is a lawful non-conforming condition, and as such does not require modifications as part of the approval for a special use permit renewal.

The following are current requirements of the UDO. As previously stated, these are lawful non-conforming conditions that require no further action; they are listed below solely for your information.

- **Screening. The property has existing 6' vinyl fencing. The applicant proposes additional fencing to screen views from the west, north, and south. No modification required.**
 - Required – In any non-industrial district, a mini-warehouse facility must be enclosed on all sides by a wall or earthen berm that shields the development from view.
 - Existing – The property has existing 6' vinyl fencing along the south portions of the property. The applicant proposes additional 6' vinyl fencing along the west, south and north portions of the perimeter.
- **Color. The colors of the existing mini-warehouse buildings are beige and cream colors. No modification required.**

- Required – Colors selected must be of muted shades.
 - Existing – The structures are beige and cream colors.
- Roof pitch. **Existing flat-roofed storage buildings. No modification required.**
 - Required – Roof pitch shall be 1:3.
 - Existing – The storage units have a flat roofing system. The office structure does meet the roof pitch requirement.

5. Comprehensive Plan

| Focus Areas | Goals, Objectives & Policies |
|------------------------|------------------------------|
| Overall Area Land Use | Objective 1.1, 1.4 |
| Economic Development | Objective 2.1, 2.2, 2.3 |
| Commercial Development | Objective 4.1, 4.2, 4.3 |

6. Analysis

Background and History

- August 16, 1994 – The City Council approved a special use permit (Appl. #1994-032) for a self-storage operation at 3920 SE M-291 Hwy for a period of 25 years by Ordinance No. 4035, expiring August 16, 2019.
- October 25, 1994 – The City Council approved a final site plan for a self-storage facility at 3920 SE M-291 Hwy.
- September 10, 2002 – A minor plat was approved (Appl. #2002-234) combining property to prepare for the expansion of the self-storage facility.
- March 6, 2003 – The City Council approved a special use permit and preliminary development plan (Appl. #2002-162 and #2002-265) for the expansion of the mini-warehouse self-storage facility at 3920 SE M-291 Hwy by Ordinance Nos. 5492 and No. 5493, expiring August 16, 2019.
- December 9, 2003 – A final development plan (Appl. #2003-136) was approved for the South M-291 Safety Mini Storage facility expansion.

The applicant seeks approval for the renewal of a special use permit for the existing mini-warehouse/self-storage facility located at 3920 SE M-291 Hwy. The facility was constructed in two phases between 1994 and 2003, and has received two special use permits expiring in August of 2019. There is no proposed building expansion as part of this special use permit renewal, however the applicant is requesting approval for six (6) outdoor vehicular parking spaces for storage. Four spaces will be located on the north portion of the site, in between the buildings, and two spaces will be located on

the western portion of the site. The outdoor vehicular storage areas will be screened from view by additional 6' vinyl fencing in these areas.

The applicant requests that the special use permit renewal be approved for 25 years and to expire on August 13, 2044, to coincide with the recently approved climate controlled storage facility (Storage Mart), located immediately east of this site.

Compatibility

The proposed facility will not negatively impact the surrounding neighborhood by the continued presence of the storage facility. The facility has existed on the site for approximately 25 years. The site is screened by existing vegetation and fencing to minimize visual effects of the facility on surrounding property. Additional fencing is proposed to better screen the facility from adjacent properties.

Adverse Impacts

The storage facility is designed, located and proposed to be operated so that the public health, safety and welfare will be protected. There are no code violations of record for this facility.

Renewal of the SUP will not create excessive storm water runoff, air pollution, water pollution, noise pollution or other environmental harm.

Public Services

The storage facility has little or no impact on the existing public facilities and services. Access to the storage facility is adequately served by SW Raintree Dr. to the east. The storage facility generates an infrequent and minimal amount of traffic onto the surrounding street network.

Renewal of the special use permit will not impede the normal and orderly development and improvement of the surrounding property. The storage facility is a commercial service to the community that has been in operation for over twenty-five years.

Recommendation

The application meets the requirements of the UDO and/or the Design and Construction Manual (DCM).

7. Recommended Conditions of Approval

Site Specific

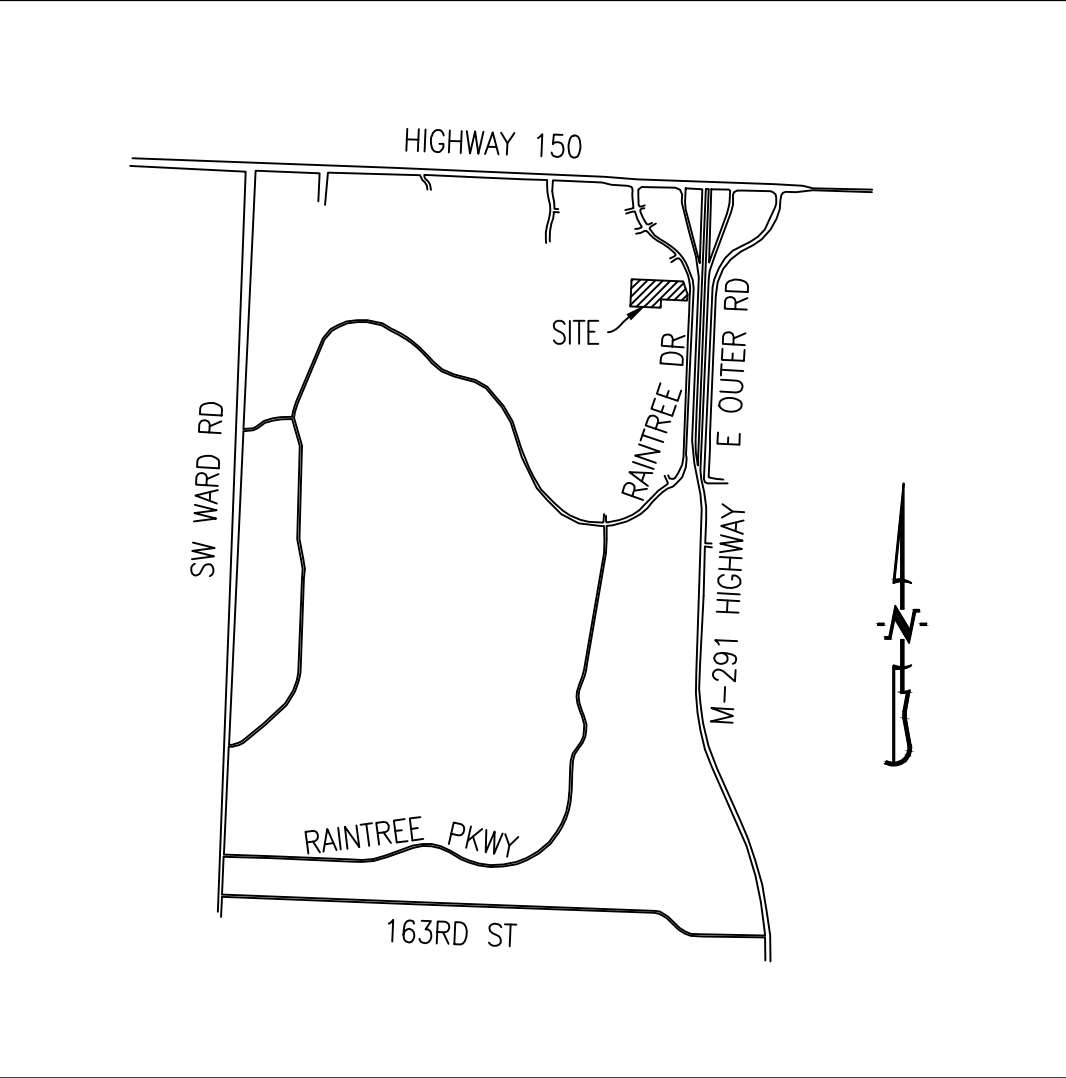
1. The special use permit shall be approved for a period of 25 years, to expire on August 13, 2044.

#PL2019-267

Planning Commission Hearing Date / October 24, 2019

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LOCATION MAP



LEGAL DESCRIPTION:

LOT 1A, SOUTH M-291 SAFETY MINI STORAGE LOTS 1A, 2A & 3A, RECORDED INSTRUMENT NO. 2006D0028581, A SUBDIVISION IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI.

LANDSCAPING NOTE:

OWNER SHALL ENSURE THAT CURRENT LANDSCAPING MEETS THE APPROVED APPROVED LIGHTING & LANDSCAPING PLAN FOR SOUTH M-291 SAFETY MINI STORAGE DATED 11/07/2003, APPROVED STAMP DATE 12/09/2003. IF THERE ARE ANY DEFICIENCIES TO THE LANDSCAPING PLAN THE OWNER SHALL BRING THE SITE TO MEET THE APPROVED PLAN.



REVISIONS:

| NO. | DATE |
|----------|------------|
| ORIGINAL | 10/19/2019 |
| 1 | 10/14/2019 |
| | |
| | |
| | |

THIS SHEET HAS BEEN SIGNED SEALED AND DATED ELECTRONICALLY

MISSOURI PROFESSIONAL ENGINEER

TIMOTHY D. CROCKETT
NUMBER
05304000775
TIMOTHY D. CROCKETT
MO LICENSE - 2004000775

SITE/CIVIL ENGINEER

CROCKETT

ENGINEERING CONSULTANTS
2511 STADIUM BLVD, SUITE 207
COLUMBIA, MO 65203
www.crockettengineering.com
Missouri License of Authority
05304000775

OWNER:

NEW TKG-STORAGEMART
PARTNERS PORTEL LC
2511 STADIUM BLVD, SUITE 207
COLUMBIA, MO 65203

STORAGE MART 156

3920 S. STATE ROUTE 291
SECTION 3, TOWNSHIP 47 NORTH, RANGE 31 WEST
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

DRAWING INCLUDES:

SITE PLAN

DESIGNED: TDC
DRAWN: JEE
PROJECT NO.: 170604
SHEET:
10F1



Packet Information

File #: BILL NO. 19-260, **Version:** 1

An Ordinance accepting Final Plat entitled Lee's Summit Airport, Lots 1-4, as a subdivision to the City of Lee's Summit, Missouri.

(Note: First reading by Council on November 17, 2019. Passed by unanimous vote.)

Proposed City Council Motion:

I move for adoption of an Ordinance accepting Final Plat entitled Lee's Summit Airport, Lots 1-4, as a subdivision to the City of Lee's Summit, Missouri.

Josh Johnson, AICP, Assistant Director of Plan Services

Jim Anderson, Anderson Survey Company

BILL NO. 19-260

AN ORDINANCE ACCEPTING FINAL PLAT ENTITLED LEE'S SUMMIT AIRPORT, LOTS 1-4, AS A SUBDIVISION TO THE CITY OF LEE'S SUMMIT, MISSOURI.

WHEREAS, Application PL2019-257, submitted by Anderson Survey Company, requesting approval of the final plat entitled "Lee's Summit Airport, Lots 1-4", was referred to the Planning Commission as required by Chapter 33, the City's Unified Development Ordinance, of the Code of Ordinances for the City of Lee's Summit; and,

WHEREAS, the Planning Commission considered the final plat on October 10, 2019, and rendered a report to the City Council recommending that the plat be approved.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LEE'S SUMMIT, MISSOURI, as follows:

SECTION 1. That the final plat entitled "Lee's Summit Airport, Lots 1-4" is a subdivision in Lee's Summit, Missouri more particularly described as follows:

LOTS 1 AND 4

DESCRIPTION: ALL OF LOT 2, CROSSROADS OF LEE'S SUMMIT, LOTS 1 AND 2; ALL OF LOTS 1 AND 2, HAGAN HEIGHTS; ALL OF TRACT A, LAKEWOOD BUSINESS CENTER ON I-470 PLAT N; ALL OF LOT 45B5, LAKEWOOD BUSINESS CENTER ON I-470, LOTS 45B5, 45B6 AND 45B7; ALL OF LOT 10B, REPLAT NO. 1 OF LAKEWOOD BUSINESS CENTER ON I-470 PLAT G; ALL OF LOT 45B3-1, REPLAT NO. 1 OF LAKEWOOD BUSINESS CENTER ON I-470 PLAT H; THAT PART OF LOTS 4, 5, 6, 7, AND 12, FIELDS FARM; AND THAT PART OF SECTIONS 17, 18, 19, 20, 29, AND 30, ALL IN TOWNSHIP 48 NORTH, RANGE 31 WEST IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI BEING MORE PARTICULARLY DESCRIBED AS FOLLOW: COMMENCING AT THE SOUTHWEST CORNER OF THE SOUTHEAST 1/4 OF SAID SECTION 18; THENCE SOUTH 87°-20'-26" EAST ALONG THE SOUTH LINE OF SAID SOUTHEAST 1/4, A DISTANCE OF 667.98 FEET; THENCE NORTH 1°-55'-36" EAST, A DISTANCE OF 20.00 FEET TO THE NORTH RIGHT OF WAY LINE OF OLD STROTHER ROAD, AS NOW ESTABLISHED, AND THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE HEREIN DESCRIBED; THENCE CONTINUING NORTH 1°-55'-36" EAST, A DISTANCE OF 793.16 FEET TO THE SOUTH RIGHT OF WAY LINE OF STROTHER ROAD AS ESTABLISHED BY DOCUMENT NO. 2014E0018251; THENCE ALONG A CURVE TO THE RIGHT, THIS AND THE FOLLOWING COURSES ALONG SAID SOUTH RIGHT OF WAY LINE OF STROTHER ROAD, HAVING AN INITIAL TANGENT BEARING OF SOUTH 83°-27'-02" EAST, A RADIUS OF 1450.00 FEET, A CENTRAL ANGLE OF 12°-21'-37", AND AN ARC LENGTH OF 312.81 FEET; THENCE SOUTH 71°-05'-25" EAST, A DISTANCE OF 186.12 FEET; THENCE ALONG A CURVE TO THE LEFT TANGENT TO THE LAST DESCRIBED COURSE, HAVING A RADIUS OF 1550.00 FEET, A CENTRAL ANGLE OF 33°-59'-41", AND AN ARC LENGTH OF 919.65 FEET; THENCE NORTH 74°-54'-54" EAST, A DISTANCE OF 100.00 FEET; THENCE ALONG A CURVE TO THE RIGHT TANGENT TO THE LAST DESCRIBED COURSE, HAVING A RADIUS OF 1450.00 FEET, A CENTRAL ANGLE OF 35°-40'-59", AND AN ARC LENGTH OF 903.04 FEET; THENCE, DEPARTING SAID SOUTH RIGHT OF WAY LINE, SOUTH 11°-50'-08" WEST, A DISTANCE OF 655.09 FEET; THENCE SOUTH 88°-21'-43" EAST, A DISTANCE OF 746.97 FEET TO THE WEST RIGHT OF WAY LINE OF HAGAN ROAD AS ESTABLISHED BY INSTRUMENT NO. 2014E0018251; THENCE ALONG A CURVE TO THE LEFT HAVING AN INITIAL TANGENT BEARING OF SOUTH 2°-18'-55" EAST, A RADIUS OF 380.00 FEET, A CENTRAL ANGLE OF 14°-38'-14", AND AN ARC LENGTH OF 97.10 FEET TO THE NORTH LINE OF THE NORTHWEST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 20; THENCE SOUTH 88°-21'-47" EAST ALONG SAID NORTH LINE, A DISTANCE OF 235.63 FEET TO THE NORTHEAST CORNER OF THE NORTHWEST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 20; THENCE SOUTH 2°-03'-41" WEST ALONG THE EAST LINE OF THE NORTHWEST 1/4 OF THE NORTHWEST 1/4 OF SAID

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SECTION 20, A DISTANCE OF 269.08 FEET; THENCE NORTH 30°-56'-03" WEST, A DISTANCE OF 36.66 FEET TO THE WEST RIGHT OF WAY LINE OF HAGAN ROAD, AS ESTABLISHED BY JACKSON COUNTY ROAD RECORD BOOK 5, PAGE 489; THENCE SOUTH 2°-03'-20" WEST ALONG LAST SAID WEST RIGHT OF WAY LINE, A DISTANCE OF 2412.44 FEET TO THE SOUTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 20; THENCE SOUTH 88°-22'-06" EAST ALONG SAID SOUTH LINE, A DISTANCE OF 19.71 FEET TO THE EAST LINE OF THE WEST 1/2 OF THE SOUTHWEST 1/4 OF SAID SECTION 20; THENCE SOUTH 1°-54'-01" WEST ALONG SAID EAST LINE, A DISTANCE OF 647.65 FEET TO THE NORTHWEST CORNER OF TRACT A, LAKEWOOD BUSINESS CENTER ON I-470 PLAT N; THENCE SOUTH 66°-41'-55" EAST ALONG THE NORTHEAST LINE OF SAID TRACT A, A DISTANCE OF 1482.21 FEET (PLAT=1482.34 FEET) TO THE NORTHEAST CORNER THEREOF; THENCE SOUTH 1°-58'-05" WEST ALONG THE EAST LINE OF SAID TRACT A, A DISTANCE OF 5.13 FEET TO THE NORTHWEST CORNER OF LOT 10A, REPLAT NO. 1 OF LAKEWOOD BUSINESS CENTER ON I-470 PLAT G; THENCE SOUTH 23°-10'-00" WEST ALONG THE EAST LINE OF SAID TRACT A AND THE WEST LINE OF SAID LOT 10A, A DISTANCE OF 25.86 FEET (PLAT=26.43 FEET) TO THE SOUTHWEST CORNER OF SAID LOT 10A; THENCE SOUTH 66°-39'-26" EAST ALONG THE SOUTH LINE OF SAID LOT 10A, A DISTANCE OF 847.58 FEET (PLAT=847.49 FEET) TO THE SOUTHEAST CORNER THEREOF, SAID POINT BEING ON THE WEST RIGHT OF WAY LINE OF INDEPENDENCE AVENUE AS ESTABLISHED BY DOCUMENT NO. I-884792 IN BOOK I-1868 AT PAGE 812; THENCE SOUTH 10°-26'-35" WEST ALONG SAID RIGHT OF WAY LINE, A DISTANCE OF 586.68 FEET; THENCE, CONTINUING ALONG SAID RIGHT OF WAY LINE AND THE EASTERLY LINE OF LOT 45B5, LAKEWOOD BUSINESS CENTER ON I-470, LOTS 45B5, 45B6 AND 45B7, ALONG A CURVE TO THE RIGHT TANGENT TO THE LAST DESCRIBED COURSE, HAVING A RADIUS OF 220.00 FEET, A CENTRAL ANGLE OF 80°-49'-00", AND AN ARC LENGTH OF 310.31 FEET; THENCE NORTH 89°-16'-45" WEST CONTINUING ALONG SAID RIGHT OF WAY LINE AND THE SOUTH LINE OF SAID LOT 45B5, A DISTANCE OF 12.88 FEET (PLAT=11.53 FEET) TO THE SOUTHERNMOST CORNER OF SAID LOT 45B5; THENCE NORTH 23°-30'-30" EAST ALONG THE SOUTHWESTERLY LINE OF SAID LOT 45B5, A DISTANCE OF 70.98 FEET (PLAT=70.85 FEET) TO THE EASTERLY CORNER OF THE SOUTHWEST LINE THEREOF; THENCE NORTH 66°-29'-41" WEST ALONG THE SOUTHWEST LINE OF SAID LOT 45B5, A DISTANCE OF 346.79 FEET TO THE NORTHWEST CORNER OF LOT 45B6; THENCE NORTH 66°-52'-36" WEST, CONTINUING ALONG THE SOUTHWEST LINE OF SAID LOT 45B5, A DISTANCE OF 243.77 FEET (PLAT=244.37 FEET) TO THE SOUTHWEST CORNER OF SAID LOT 45B5 AND THE EAST LINE OF LOT 45B3-3, REPLAT NO. 1 OF LAKEWOOD BUSINESS CENTER ON I-470 PLAT H; THENCE NORTH 1°-51'-13" EAST ALONG THE EAST LINE OF 45B3-3, A DISTANCE OF 0.57 FEET TO THE NORTHEAST CORNER OF SAID LOT 45B3-3; THENCE NORTH 66°-41'-28" WEST ALONG THE SOUTHWEST LINE OF SAID LOT 45B3-1, A DISTANCE OF 1418.82 FEET (PLAT=1418.71 FEET) TO THE SOUTHWEST CORNER THEREOF AND THE EAST LINE OF LOT 2, CROSSROADS OF LEE'S SUMMIT, LOTS 1 AND 2; THENCE SOUTH 1°-54'-01" WEST, THIS AND THE FOLLOWING COURSES ALONG THE EASTERLY LINES OF SAID LOT 2, A DISTANCE OF 1170.00 FEET; THENCE SOUTH 1°-36'-04" WEST, A DISTANCE OF 80.36 FEET (PLAT=80.21 FEET); THENCE ALONG A CURVE TO THE LEFT HAVING AN INITIAL TANGENT BEARING OF SOUTH 51°-00'-28" WEST, A RADIUS OF 330.00 FEET, A CENTRAL ANGLE OF 10°-21'-40", AND AN ARC LENGTH OF 59.68 FEET (PLAT=59.75 FEET); THENCE ALONG A CURVE TO THE LEFT HAVING AN INITIAL TANGENT BEARING OF NORTH 49°-29'-14" WEST, A RADIUS OF 275.00 FEET, A CENTRAL ANGLE OF 46°-25'-53", AND AN ARC LENGTH OF 222.86 FEET; THENCE SOUTH 84°-05'-34" WEST, A DISTANCE OF 200.00 FEET; THENCE ALONG A CURVE TO THE RIGHT TANGENT TO THE LAST DESCRIBED COURSE, HAVING A RADIUS OF 997.62 FEET (PLAT=1000.00 FEET), A CENTRAL ANGLE OF 12°-27'-57", AND AN ARC LENGTH OF 217.05 FEET (PLAT=217.14 FEET); THENCE SOUTH 16°-39'-09" WEST, A DISTANCE OF 192.99 FEET; THENCE SOUTH 8°-10'-52" WEST, A DISTANCE OF 80.33 FEET; THENCE SOUTH 11°-58'-56" EAST, A DISTANCE OF 161.93 FEET; THENCE SOUTH 34°-27'-36" EAST, A DISTANCE OF 38.50 FEET; THENCE SOUTH 13°-00'-28" WEST, A DISTANCE OF 128.94 FEET; THENCE SOUTH 8°-15'-23" EAST, A DISTANCE OF 216.99 FEET; THENCE SOUTH 6°-27'-45" WEST, A DISTANCE OF 132.45 FEET; THENCE SOUTH 35°-55'-21" EAST, A DISTANCE OF 72.72 FEET; THENCE SOUTH 57°-

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06'-52" EAST, A DISTANCE OF 169.55 FEET; THENCE SOUTH 88°-14'-48" EAST, A DISTANCE OF 262.71 FEET; THENCE ALONG A CURVE TO THE LEFT HAVING AN INITIAL TANGENT BEARING OF SOUTH 18°-08'-10" WEST, A RADIUS OF 330.00 FEET, A CENTRAL ANGLE OF 16°-29'-43", AND AN ARC LENGTH OF 95.01 FEET; THENCE SOUTH 1°-37'-33" WEST, A DISTANCE OF 57.53 FEET (PLAT=57.99 FEET) TO THE SOUTHEAST CORNER OF SAID LOT 2; THENCE NORTH 88°-15'-22" WEST ALONG THE SOUTH LINE OF SAID LOT 2, A DISTANCE OF 751.45 FEET; THENCE SOUTH 1°-36'-01" WEST, A DISTANCE OF 1280.64 FEET TO THE NORTH RIGHT OF WAY LINE OF COLBERN ROAD AS ESTABLISHED BY DOCUMENT NO. 271760 IN BOOK 556 AT PAGE 43; THENCE NORTH 88°-13'-18" WEST ALONG SAID NORTH RIGHT OF WAY LINE, A DISTANCE OF 344.87 FEET TO THE SOUTHEAST CORNER OF LOT 6, FIELDS FARM; THENCE NORTH 88°-06'-45" WEST ALONG THE SOUTH LINE OF SAID LOT 6 AND SAID NORTH RIGHT OF WAY LINE, A DISTANCE OF 1252.54 FEET; THENCE NORTH 43°-19'-35" WEST, A DISTANCE OF 35.38 FEET TO THE EAST RIGHT OF WAY LINE OF NORTHEAST DOUGLAS STREET AS ESTABLISHED BY DOCUMENT NO. 271761, BOOK 555, PAGE 66; THENCE NORTH 1°-27'-43" EAST ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 1259.84 FEET TO THE SOUTH LINE OF THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SAID SECTION 30; THENCE NORTH 1°-29'-12" EAST CONTINUING ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 80.00 FEET TO THE SOUTHWEST CORNER OF DOUGLAS CORPORATE CENTER - LOT 5, A SUBDIVISION IN SAID CITY, COUNTY, AND STATE; THENCE SOUTH 87°-55'-08" EAST ALONG THE SOUTH LINE OF SAID SUBDIVISION, A DISTANCE OF 131.20 FEET TO THE SOUTHEAST CORNER THEREOF; THENCE NORTH 9°-19'-31" EAST ALONG THE EAST LINE OF LAST SAID SUBDIVISION AND THE EAST LINE OF DOUGLAS CORPORATE CENTER - LOT 4, A SUBDIVISION IN SAID CITY, COUNTY, AND STATE, A DISTANCE OF 1252.04 FEET TO THE SOUTHEAST CORNER OF DOUGLAS CORPORATE CENTER - LOT 3, A SUBDIVISION IN SAID CITY, COUNTY, AND STATE; THENCE NORTH 2°-00'-51" EAST ALONG THE EAST LINE OF LAST SAID SUBDIVISION, DOUGLAS CORPORATE CENTER - LOT 2, AND DOUGLAS CORPORATE CENTER - LOT 1, BOTH SUBDIVISIONS IN SAID CITY, COUNTY, AND STATE, A DISTANCE OF 1327.29 FEET TO THE NORTHEAST CORNER OF DOUGLAS CORPORATE CENTER - LOT 1; THENCE NORTH 88°-19'-19" WEST ALONG THE NORTH LINE OF LAST SAID SUBDIVISION, A DISTANCE OF 14.10 FEET TO THE SOUTHEAST CORNER OF HAGAN FARM, LOTS 1 AND 2, A SUBDIVISION IN SAID CITY, COUNTY, AND STATE; THENCE NORTH 2°-15'-47" EAST ALONG THE EAST LINE OF LAST SAID SUBDIVISION, A DISTANCE OF 329.47 FEET (PLAT=330.00 FEET) TO THE NORTHEAST CORNER THEREOF; THENCE NORTH 88°-19'-18" WEST ALONG THE NORTH LINE OF LAST SAID SUBDIVISION, A DISTANCE OF 299.71 FEET TO SAID EAST RIGHT OF WAY LINE OF NORTHEAST DOUGLAS STREET; THENCE NORTH 2°-18'-47" EAST ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 1007.11 FEET TO THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 19; THENCE NORTH 87°-52'-27" WEST ALONG SAID 1/4 SECTION LINE, A DISTANCE OF 63.00 FEET TO THE WEST RIGHT OF WAY LINE OF SAID NORTHEAST DOUGLAS STREET; THENCE SOUTH 2°-18'-47" WEST ALONG SAID WEST RIGHT OF WAY LINE, A DISTANCE OF 303.38 FEET; THENCE NORTH 87°-52'-23" WEST, A DISTANCE OF 17.00 FEET TO THE NORTHEAST CORNER OF LOT 1, HAGAN HEIGHTS; THENCE SOUTH 2°-18'-47" WEST ALONG THE EAST LINE OF LOTS 1 AND 2, HAGAN HEIGHTS, A DISTANCE OF 273.00 FEET TO THE SOUTHEAST CORNER OF SAID LOT 2; THENCE NORTH 87°-52'-23" WEST ALONG THE SOUTH LINE OF SAID LOT 2 AND ITS WESTERLY PROJECTION, A DISTANCE OF 879.35 FEET; THENCE NORTH 2°-18'-47" EAST, A DISTANCE OF 173.00 FEET TO THE SOUTHWEST CORNER OF LOT 1, HAGAN HEIGHTS; THENCE NORTH 2°-43'-55" EAST ALONG THE WEST LINE OF SAID LOT 1 AND ITS NORTHERLY PROJECTION, A DISTANCE OF 403.38 FEET TO THE SOUTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 19; THENCE SOUTH 87°-52'-27" EAST ALONG SAID 1/4 SECTION LINE, A DISTANCE OF 322.61 FEET; THENCE NORTH 23°-18'-03" EAST, A DISTANCE OF 506.53 FEET; THENCE ALONG A CURVE TO THE RIGHT HAVING AN INITIAL TANGENT BEARING OF NORTH 27°-10'-29" WEST, A RADIUS OF 1250.00 FEET, A CENTRAL ANGLE OF 40°-33'-01", AND AN ARC LENGTH OF 884.67 FEET; THENCE NORTH 13°-22'-56" EAST, A DISTANCE OF 214.78 FEET; THENCE ALONG A CURVE TO THE LEFT TANGENT TO THE LAST DESCRIBED COURSE, HAVING A RADIUS OF 1150.00 FEET, A CENTRAL ANGLE OF 10°-54'-30", AND AN ARC LENGTH OF

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218.94 FEET; THENCE NORTH 2°-28'-26" EAST, A DISTANCE OF 931.55 FEET TO SAID NORTH RIGHT OF WAY LINE OF OLD STROTHER ROAD; THENCE NORTH 87°-20'-30" WEST ALONG SAID NORTH RIGHT OF WAY LINE, A DISTANCE OF 145.74 FEET TO THE POINT OF BEGINNING.

LOT 2

THAT PART OF LOTS 7 AND 12, FIELDS FARM, A SUBDIVISION IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS; COMMENCING AT THE NORTHEAST CORNER OF THE SOUTHEAST 1/4 OF SECTION 30, TOWNSHIP 48 NORTH, RANGE 31 WEST; THENCE SOUTH 1°-27'-56" WEST ALONG THE EAST LINE OF SAID 1/4 SECTION, A DISTANCE OF 40.00 FEET TO THE SOUTH RIGHT OF WAY LINE OF COLBERN ROAD AS ESTABLISHED BY DOCUMENT NO. 271760 IN BOOK 556 AT PAGE 43 AND THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE HEREIN DESCRIBED; THENCE NORTH 88°-06'-51" WEST ALONG SAID SOUTH RIGHT OF WAY LINE, A DISTANCE OF 1140.16 FEET TO THE EAST RIGHT OF WAY LINE OF DOUGLAS ROAD AS NOW ESTABLISHED; THENCE SOUTH 48°-45'-47" WEST ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 105.25 FEET; THENCE SOUTH 1°-37'-49" WEST ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 150.00 FEET TO THE NORTH RIGHT OF WAY LINE OF INTERSTATE 470 HIGHWAY AS ESTABLISHED BY DOCUMENT NO. I-53740 IN BOOK I-158 AT PAGE 1988; THENCE SOUTH 42°-16'-29" EAST, THIS AND THE FOLLOWING COURSES ALONG SAID NORTH RIGHT OF WAY LINE, A DISTANCE OF 189.09 FEET; THENCE SOUTH 78°-20'-53" EAST, A DISTANCE OF 741.78 FEET; THENCE NORTH 87°-57'-41" EAST, A DISTANCE OF 800.00 FEET; THENCE SOUTH 89°-10'-34" EAST, A DISTANCE OF 200.25 FEET; THENCE NORTH 87°-57'-41" EAST, A DISTANCE OF 17.62 FEET; THENCE NORTH 1°-41'-13" EAST DEPARTING SAID NORTH RIGHT OF WAY LINE, A DISTANCE OF 424.95 FEET TO SAID SOUTH RIGHT OF WAY LINE OF COLBERN ROAD; THENCE NORTH 88°-13'-03" WEST ALONG SAID SOUTH RIGHT OF WAY LINE, A DISTANCE OF 660.89 FEET TO THE POINT OF BEGINNING..

LOT 3

THAT PART OF THE SOUTHEAST 1/4 OF SECTION 20, TOWNSHIP 48 NORTH, RANGE 31 WEST IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS; COMMENCING AT THE SOUTHWEST CORNER OF SAID SOUTHEAST 1/4; THENCE SOUTH 88°-42'-12" EAST ALONG THE SOUTH LINE OF SAID 1/4 SECTION, A DISTANCE OF 1107.27 FEET TO THE EAST RIGHT OF WAY LINE OF INTERSTATE 470 HIGHWAY AS ESTABLISHED BY DOCUMENT NO. I-26482; THENCE NORTH 6°-44'-47" EAST ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 260.82 FEET TO THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE HEREIN DESCRIBED; THENCE CONTINUING NORTH 6°-44'-47" EAST ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 84.78 FEET; THENCE SOUTH 83°-14'-59" EAST, CONTINUING ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 124.35 FEET TO THE WEST RIGHT OF WAY LINE OF RICE ROAD AS ESTABLISHED BY DOCUMENT NO. 653842; THENCE SOUTH 1°-35'-02" WEST ALONG SAID WEST RIGHT OF WAY LINE, A DISTANCE OF 141.52 FEET; THENCE NORTH 60°-58'-17" WEST, A DISTANCE OF 148.15 FEET TO THE POINT OF BEGINNING.

SECTION 2. That the proprietor of the above described tract of land ("Proprietor") has caused the same to be subdivided in the manner shown on the accompanying plat, which subdivision shall hereafter be known as "Lee's Summit Airport, Lots 1-4".

SECTION 3. That the roads and streets shown on this plat and not heretofore dedicated to public use as thoroughfares shall be dedicated as depicted on the plat. The City Council hereby authorizes the Director of Development Services, on behalf of the City of Lee's Summit, Missouri, to accept the land or easements dedicated to the City of Lee's Summit for public use and shown on the accompanying plat, upon the subdivider filing and recording a final plat in accordance with Article 7, Subdivisions, Chapter 33, the City's Unified Development Ordinance,

BILL NO. 19-260

of the Code of Ordinances for the City of Lee's Summit; which plat shall conform to the accompanying plat, and hereby authorizes acceptance of the public improvements required by this ordinance and Article 7 of the UDO of the City, upon the Director of Public Works certifying to the Director of Development Services and the City Clerk that the public improvements have been constructed in accordance with City standards and specifications.

SECTION 4. That an easement shall be granted to the City of Lee's Summit, Missouri, to locate, construct and maintain or to authorize the location, construction, and maintenance of poles, wires, anchors, conduits, and/or structures for water, gas, sanitary sewer, storm sewer, surface drainage channel, electricity, telephone, cable TV, or any other necessary public utility or services, any or all of them, upon, over, or under those areas outlined or designated upon this plat as "Utility Easements" (U.E.) or within any street or thoroughfare dedicated to public use on this plat. Grantor, on behalf of himself, his heirs, his assigns and successors in interest, shall waive, to the fullest extent allowed by law, including, without limitation, Section 527.188, RSMo. (2006), any right to request restoration of rights previously transferred and vacation of any easement granted by this plat.

SECTION 5. That building lines or setback lines are hereby established as shown on the accompanying plat and no building or portion thereof shall be constructed between this line and the street right-of-way line.

SECTION 6. That individual lot owner(s) shall not change or obstruct the drainage flow lines on the lots.

SECTION 7. That the City Council for the City of Lee's Summit, Missouri, does hereby approve and accept, as a subdivision to the City of Lee's Summit, Missouri, the final plat entitled "Lee's Summit Airport, Lots 1-4", attached hereto and incorporated herein by reference.

SECTION 8. That this ordinance shall be in full force and effect from and after the date of its passage and adoption, and approval by the Mayor.

PASSED by the City Council for the City of Lee's Summit, Missouri, this _____ day of _____, 2019.

Mayor William A. Baird

ATTEST:

City Clerk *Trisha Fowler Arcuri*

BILL NO. 19-260

APPROVED by the Mayor of said City this _____ day of _____, 2019.

Mayor *William A. Baird*

ATTEST:

City Clerk *Trisha Fowler Arcuri*

APPROVED AS TO FORM:

City Attorney *Brian W. Head*

The City of Lee's Summit

Action Letter - Draft

Planning Commission

Thursday, October 10, 2019

5:00 PM

City Council Chambers

City Hall

220 SE Green Street

Lee's Summit, MO 64063

Call to Order

Roll Call

Present: 7 - Board Member Mark Kitchens
Board Member Carla Dial
Chairperson Jason Norbury
Vice Chair Donnie Funk
Board Member Terry Trafton
Board Member Jeff Sims
Board Member Dana Arth

Absent: 2 - Board Member John Lovell
Board Member Jake Loveless

Approval of Agenda

Chairperson Norbury announced that would be a few adjustments to the agenda. Items 2, 3, and 6, Items PL2019-261, PL2019-255, and PL2019-257, all pertaining to the Lee's Summit Airport, would be heard at the same time. Motions would be made and voted on for each item separately. He asked for a motion to approve.

A motion was made by Vice Chair Funk, seconded by Board Member Sims, that this agenda be approved as amended. The motion carried unanimously.

Public Comments

There were no public comments presented at the meeting.

Approval of Consent Agenda

[TMP-1386](#) Appl. #PL2019-296 - SIGN APPLICATION - Raintree Village monument sign, 3803 SW Ward Rd; Royal Signs & Graphics, applicant

A motion was made by Vice Chair Funk, seconded by Board Member Sims, that this application be approved. The motion carried unanimously.

[2019-3072](#) Minutes of the September 26, 2019, Planning Commission meeting

A motion was made by Vice Chair Funk, seconded by Board Member Sims, that the minutes be approved. The motion carried unanimously.

Public Hearings

[2019-3078](#) Appl. #PL2019-261 - VACATION OF RIGHT-OF-WAY - unused right-of-way on

Lee's Summit Airport property, 2751 NE Douglas St; City of Lee's Summit, applicant

Chairperson Norbury opened the hearing for agenda items 2 and 3 at 5:10 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Mr. Bob Hartnett, deputy director of the Public Works Department, gave his business address as Lee's Summit City Hall at 220 SE Green Street. The City had purchased the Airport in 1977, and had acquired about 40 additional properties since then. These properties carried the original zoning; so the Airport had land zoned for residential, commercial and industrial uses. These agenda items were primarily for clean-up, including vacation of some rights-of-way involving Strother, Hagan, Leinweber and Douglas roads. These rights-of-way were no longer necessary. The rezoning application was a request to change this zoning mixture to all AZ (Airport) zoning. Regarding the final plan (agenda item 6), would reorganize these 40 lots into three lots.

Mr. Hartnett added that Mr. Andy Boding, of the consulting engineering firm of Crawford, Murphy and Tilly (CMT) and Mr. Jim Anderson of Anderson Survey were present and could answer questions.

Mr. Shannon McGuire entered into the record Exhibit (A), list of exhibits 1-12 for Application PL2019-255 and list of exhibits 1-12 for Application PL2019-261. He confirmed that the Airport property currently consisted of 44 different lots, with a mixture of AG, RP-1, CP-2, PI and PMIX zoning designations. The City proposed to change these to the AZ Airport zoning district established in 2006. It had been established to incorporate the City airport with adjoining developable properties in order to provide for selected commercial and industrial uses that would be compatible with the airport use. Additionally, several unused rights-of-way crossed over the property, as indicated on the displayed aerial map, one of them crossing a runway. Vacating these rights-of-way was necessary for replatting the existing 44 parcels into four lots.

The proposed rezoning and right-of-way vacations would not impact the surrounding neighborhood, and the proposed AZ zoning was consistent with the entire property's use. It was substantially consistent with the Comprehensive Plan, as well as meeting the requirements of the UDO and the Design and Construction Manual. . An overhead copper cable was within the Leinweber Road right-of-way, and a Condition of Approval for this application indicated a general utility easement. The second of two Conditions of Approval was the standard requirement for recording the vacation of the right-of-way.

Following Mr. McGuire's comments, Chairperson Norbury asked if there was anyone present wishing to give testimony. Seeing one, he opened the hearing for any Commissioners' questions for the applicant or staff.

Chairperson Norbury asked Mr. McGuire if it was correct that the rezoning would have no functional impact on the Airport's operations. Mr. McGuire confirmed that it was.

Chairperson Norbury asked if there were any further questions for the applicant or staff. As there were none, he closed the public hearing at 5:10 p.m. and asked for discussion among the Commission members, or for a motion. He asked that the two applications be voted on in two separate motions.

Mr. Funk asked what would be done with Item 6, which addressed the final plat. Chairperson Norbury answered that this item would be heard next.

Mr. Funk made a motion to recommend approval of Application PL2019-261, Vacation of Right-Of Way: unused right-of-way on Lee's Summit Airport property, 2751 NE Douglas St.; City of Lee's Summit, applicant; subject to staff's letter of October 4, 2019 specifically

Conditions of Approval 1 and 2. Mr. Sims seconded.

Chairperson Norbury asked if there was any discussion of the motion. Hearing none, he called for a vote.

A motion was made by Vice Chair Funk, seconded by Board Member Sims, that this application be recommended for approval to the City Council - Regular Session, due back on 11/5/2019. The motion carried unanimously.

[2019-3077](#)

Appl. #PL2019-255 - REZONING from AG, RP-1, CP-2, PI and PMIX to AZ - Lee's Summit Airport, 2751 NE Douglas St; City of Lee's Summit, applicant

Chairperson Norbury asked for a motion on Application PL2019-255.

Mr. Funk made a motion to recommend approval of Application PL2019-255, Rezoning from AG, RP-1, CP-2, PI and PMIX to AZ; Lee's Summit Airport, 2751 NE Douglas St.; City of Lee's Summit, applicant. Mr. Sims seconded.

Chairperson Norbury asked if there was any discussion of the motion. Hearing none, he called for a vote.

A motion was made by Vice Chair Funk, seconded by Board Member Sims, that this application be recommended for approval to the City Council - Regular Session, due back on 11/5/2019. The motion carried unanimously.

[2019-3075](#)

Appl. #PL2019-233 - PRELIMINARY DEVELOPMENT PLAN - Wendy's, 711 SE M-291 Hwy; NPC International, Inc., applicant

Chairperson Norbury opened the hearing at 5:13 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Ms. Tiffany Lehman stated that she was the civil engineer for this project. She described the subject property currently had a vacant restaurant building with asphalt coverage throughout the property. An access easement existed on the southeast side, leading down to SE 7th Terrace. The applicants planned to demolish the building and redevelop the property with a 2,600 square foot Wendy's restaurant. The project would include asphalt parking, concrete sidewalks, drive-through area, and a dumpster enclosure. The access easement would be redone, and they would install landscaping on the property.

Ms. Lehman displayed colored elevations, including the front (west side) of the building facing M-291 as well as the rear of the building, the south side of the building and the north side which included the drive-through.

Following Ms. Lehman's presentation, Chairperson Norbury asked for staff comments.

Mr. Soto entered Exhibit (A), list of exhibits 1-13 into the record. He confirmed that this was a redevelopment of an existing property. Displaying an aerial photo, he pointed out the locations of SE 7th Terrace and M-291 Highway. Lee's Summit High School was across the highway to the west, and the Missouri State Highway Patrol headquarters to the southwest. The QuikTrip store and HMM AutoSport were further south. A multi-tenant retail center were to the north and immediately to the east were some office/warehouse properties with industrial zoning. Some single-family residences and duplexes were further to the northeast.

The property had previously had restaurant use, most recently a 6,500 square foot sit-down restaurant but had been vacant for at least five years. The future user would be a 2,500 square foot drive-through restaurant. The proposed parking would be 37 spaces, two more than the 35 spaces required. The site had access at three points: the right-of-way from M-291

Highway, from SE Melody Lane and from SE 7th Terrace. At the northeast corner was a cross-access that went along the back of the retail building to Bayberry and its signaled access to M-291.

Mr. Soto noted that this redevelopment would be reducing impervious coverage on the site by about 17 percent: from 91 percent coverage to 74 percent. Referring to the colored elevations referenced earlier, he noted the building materials: brown or earth tone fiber cement panels, and the aluminum composite metal (ACM) panels in red and gray. These were similar to materials previously proposed and approved for churches and for some auto dealerships, as well as other materials and architecture along M-291. The elevations also showed a large amount of glass on the north and south sides. Staff's analysis concluded that the use was consistent with the Comprehensive Plan, with the M-291 corridor north of US 50 was primarily retail use. Restaurant use would be equally appropriate, and this long-vacant site was in an especially visible location.

Staff's only Condition of Approval was that the ACM panels proposed would be allowed as a conditional material, "as shown in the preliminary development plan date stamped September 9, 2019." The UDO allowed the panels, but after a review. This was a material that had become more common.

Following Mr. Soto's comments, Chairperson Norbury asked if there was anyone present wishing to give testimony, either in support for or opposition to the application. Seeing none, he then opened the hearing for Commissioners' questions for the applicant or staff.

Mr. Funk asked if Melody Lane would end at the property or continue to be a through street in front of the restaurant. Mr. Soto answered that there would still be continuous access, but the right-of-way did terminate at the north property line and extend into the private drive beyond that. 7th Street would remain, and be improved, and it had a cross-access easement with adjoining properties. On the displayed aerial map, he pointed out the drive behind the HMM building that gave access to 7th Terrace.

Mr. Kitchens noted that the drive-through traffic was immediately to the left of the entrance/exit off M-291. It had room for 2 or 3 cars. He asked if it could be a one-way corridor, as it would be easy for drivers from M-291 to cut through the drive-through traffic. It was a common problem with fast-food restaurants whose lots combined parking and drive-through traffic.

Ms. Lehman asserted that the applicant had worked with the City on this issue. Their stacking did allow for about nine cars from the order box out to the front. Wendy's corporate usually requested six. They wanted to keep the two-way traffic, as it allowed the most access throughout the site; and as the stacking for the drive-through was more than what was required, they did not anticipate any traffic obstruction in the front. Mr. Kitchens asked if the applicant had a waiting time limit for drive-through lines.

Mr. Park clarified that the M-291 access belonged to MoDOT. They had reviewed this plan and the traffic circulation, and the property did have room for stacking of 8 or 9 vehicles up to the menu board. Staff's preference was also for the drive to be two-way; and MoDOT had indicated that this access shared with Melody to the north would be changed. This would be after interchange improvements that would move the Blue Parkway signal to 7th Street, just to the south; and at that point MoDOT would probably move it north to the Melody Lane right-of-way. At present, they did not have a schedule for interchange improvements from MoDOT and so relied on the operator of the store to mitigate congestion by directing people around the perimeter before entering the drive-through line.

Mr. Sims remarked to Mr. Park that while he understood the concern with stacking and the drive-through, he was more concerned with left turns onto M-291. He acknowledged that it

was a MoDOT right-of-way, and asked if making this a right-in-right-out access had been considered. Mr. Park answered that MoDOT did have a safety concern about the left and crossover movements onto M-291. They were reserving the access management control for an interchange. They could not know what the extent and nature of the improvements would be at this point.

At Mr. Funk's request, Ms. Lehman pointed out this area was on the site plan, toward the back of the property. The plan showed a significant area for stacking in front of it.

Regarding the aluminum composite metal panels referred to earlier, Chairperson Norbury asked Mr. Soto if City staff had considered making it a conditional use since its use was becoming more common. Mr. Soto replied that they were.

Chairperson Norbury asked if there were further questions for the applicant or staff. Hearing none, he closed the public hearing at 5:30 p.m. and asked for discussion among the Commission members, or for a motion.

Mr. Funk commended the applicant on Wendy's current designs, mentioning the store on Chipman as an example. He then made a motion to recommend approval of Application PL2019-233, Preliminary Development Plan: Wendy's, 711 SE M-291 Hwy; NPC International, Inc., applicant; subject to staff's letter of October 4, 2019, specifically Recommendation Conditions of Approval 1 (site specific) and 2-11 (Standard Conditions of Approval). Mr. Sims seconded.

Chairperson Norbury asked if there was any discussion of the motion. Hearing none, he called for a vote.

A motion was made by Vice Chair Funk, seconded by Board Member Sims, that this application be recommended for approval to the City Council - Regular Session, due back on 11/5/2019. The motion carried unanimously.

[2019-3076](#)

Appl. #PL2019-246 - PRELIMINARY DEVELOPMENT PLAN - DCI Lee's Summit, 2001 NW Shamrock Ave; Dialysis Clinic, Inc., applicant

Chairperson Norbury opened the hearing at 5:30 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Mr. Philip Pierson of the Callas Design Group, gave his address as 5016 Centennial Boulevard in Nashville, Tennessee. He was present representing Dialysis Clinic, Inc. They proposed to build a 10,400 square foot building for the clinic. The clinic would have 17 patient stations, a small suite for a doctor's office. Mr. Pierson emphasized that this was not a use that generated much noise or heavy traffic. Patients often stayed for several hours, so the clinic would have morning and afternoon shifts.

Following Mr. Pierson's presentation, Chairperson Norbury asked for staff comments.

Mr. McGuire entered Exhibit (A), list of exhibits 1-15 into the record. He first cited a correction to page 5 of staff's letter, with the site's use being "Mixed Use—John Knox Village." The subject property was on the southwest corner of NW Shamrock Avenue and NW Pryor Road and was about 2.25 acres. It was just west of the new fire station #3. It had been included in the conceptual plan approved by the City Council in September 2018 and so had required a preliminary development plan. The property was zoned PMIX, with the Comprehensive Plan identifying this area as "Mixed Use – John Knox Village." John Knox Village was to the east, and the Sterling Hills single-family subdivision was to the south. To the north was some undeveloped land kept for future commercial use.

Mr. McGuire displayed color elevations of the building, showing materials of masonry, EIFS,

brick and glass. The applicant asked for one modification, to the high-impact screening buffer required. They proposed a six-foot tall vinyl fence about three feet north of the south property line, and the required high-impact screen planted on the fence's north side instead of on both sides of the fence. With the fence three feet from the property line, and the required screening elements planted on the north side, the vegetation would be more accessible for maintenance.

The proposed development would not have any detrimental impact on the surrounding area, nor impede the development of surrounding properties. It would have an on-site stormwater detention system. The road network had enough capacity to handle the proposed use, so no road improvements were needed or required. The project met the requirements of both the UDO and the Design and Construction Manual.

Chairperson Norbury asked if there was anyone present wishing to give testimony, either in support for or opposition to the application. Seeing none, Chairperson Norbury then asked if the Commission had questions for the applicant or staff.

Chairperson asked if any City staff was working on the UDO's definition of a high-impact landscaping buffer. Mr. Soto replied that in most recent proposals the amount of landscaping met the UDO requirements; though not often stating where a required fence would be placed. Staff was working on some flexibility on this placement, to allow for different circumstances and conditions on different sites. Utility lines, for example, could often mandate modifications.

Chairperson Norbury asked if there were further questions for the applicant or staff. Hearing none, he closed the public hearing at 5:35 p.m. and asked for discussion among the Commission members, or for a motion.

Mr. Funk made a motion to recommend approval of Application PL2019-246, Preliminary Development Plan: DCI Lee's Summit, 2001 NW Shamrock Ave; Dialysis Clinic, Inc., applicant; subject to staff's letter of October 4, 2019, specifically Conditions of Approval 1 (Site Specific) through 8 (Standard Conditions of Approval). Mr. Sims seconded.

Chairperson Norbury asked if there was any discussion of the motion. Hearing none, he called for a vote.

A motion was made by Vice Chair Funk, seconded by Board Member Sims, that this application be recommended for approval to the City Council - Regular Session, due back on 11/5/2019. The motion carried unanimously.

Other Agenda Items

[TMP-1388](#)

PL2019-257 - FINAL PLAT - Lee's Summit Airport, 2751 NE Douglas St; Anderson Survey Co., applicant

Chairperson Norbury opened the hearing at 5:12 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Mr. McGuire remarked that usually this would be a Consent Agenda Item. However, due to the timing of the preliminary plat, the rezoning, and the rights-of-way vacations, it had been moved up. It was not possible to replat with the right-of-way. Consequently, there was no further presentation.

Chairperson Norbury asked for a motion for Application PL2019-257.

A motion was made by Vice Chair Funk, seconded by Board Member Sims, that this application be approved. The motion carried unanimously.

Roundtable

There were no Roundtable items at the meeting.

Adjournment

There being no further business, Chairperson Norbury adjourned the meeting at 5:42 P.M.

For your convenience, Planning Commission agendas, as well as videos of Planning Commission meetings, may be viewed on the City's Legislative Information Center website at "lsmo.legistar.com"



LEE'S SUMMIT
MISSOURI
Development Services Department

Development Services Staff Report

| | |
|---------------------------------|--|
| File Number | PL2019-257 – FINAL PLAT – Lee's Summit Airport |
| Applicant | Anderson Survey Co., applicant |
| Property Address | 2751 NE Douglas St. |
| Planning Commission Date | October 10, 2019 |
| Heard by | Planning Commission and City Council |
| Analyst | C. Shannon McGuire, Planner |
| Checked By | Hector Soto, Jr., AICP, Planning Manager Kent Monter, PE, Development Engineering Manager |

Public Notification

Pre-application held: Spring of 2019
Neighborhood meeting conducted: n/a
Newspaper notification published on: n/a
Radius notices mailed to properties within 300 feet on: n/a
Site posted notice on: n/a

Table of Contents

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| 6. Recommended Conditions of Approval | 4 |

Attachments

Final Plat, date stamped September 9, 2019—5 pages
Location Map

1. Project Data and Facts

| Project Data | |
|--------------------------------|--|
| Applicant/Status | Anderson Survey Company/ applicant |
| Applicant's Representative | Jim Anderson |
| Location of Property | 2751 NE Douglas St |
| Size of Property | 553.633 Acres |
| Zoning | AG (Agricultural District) RP-1 (Planned Single-Family Residential District) CP-2 (Planned Community Commercial District) PI (Planned Industrial District) PMIX (Planned Mixed Use District) |
| Comprehensive Plan Designation | Airport Runway Protection Zone |
| Procedure | <p>The Planning Commission makes a recommendation to the City Council on the final plat within thirty (30) days after the application is submitted to the Planning Commission. The City Council takes final action on the final plat in the form of an ordinance.</p> <p>Duration of Validity: Final plat approval shall become null and void if the plat is not recorded within one (1) year from the date of City Council approval.</p> <p>The Director may administratively grant a one (1) year extension, provided no changes have been made to any City ordinance, regulation or approved engineering plans that would require a change in the final plat.</p> <p>The City Council may grant one additional one (1) year extension, provided that additional engineering plans may be required by the City Engineer to comply with current City ordinances and regulations.</p> |

| Current Land Use |
|--------------------|
| Airport operations |

| Description of Applicant's Request |
|--|
| This application is for the final plat of <i>Lee's Summit Airport, Lots 1-4</i> . The proposed final plat consists of 4 lots on 553.633 acres. |

2. Land Use

Description and Character of Surrounding Area

The property is located at 2751 NE Douglas St. The property uses on the east include industrial, commercial, multifamily and vacant/undeveloped agricultural land. Properties to the south include commercial uses and undeveloped vacant ground. Undeveloped agricultural land is located to the north. West of the property the uses includes large lot single-family homes, industrial, and undeveloped agricultural, commercial and multifamily ground.

Adjacent Land Uses and Zoning

| | |
|---------------|---|
| North: | AG (Agricultural) |
| South: | CP-2 (Planned Community Commercial District) |
| East: | AG (Agricultural District) RP-4 (Planned Apartment Residential District) CP-2 (Planned Community Commercial District) PI (Planned Industrial District) |
| West: | AG (Agricultural District) R-1 (Single-Family Residential District) RP-4 (Planned Apartment Residential District) CP-2 (Planned Community Commercial District) PI (Planned Industrial District) |

Site Characteristics

The property is the home to the Lee's Summit Municipal Airport and is an air traffic gateway to the Kansas City metropolitan area. The airport has two runways and operates seven days a week. Runway 18-36 is 5,501 ft. in length and 100 ft. wide. Runway 11-29 is 4,000 ft. in length and 75 ft. wide. The airport property currently consists of approximately 44 parcels.

Setbacks

| Yard | Proposed | Required |
|-------------|-----------------|-----------------|
| Front | 20' | 20' |
| Side | 10' | 10' |
| Rear | 20' | 20' |

3. Unified Development Ordinance (UDO)

| Section | Description |
|----------------|--------------------|
| 4.230 | AZ (Airport Zone) |
| 7.140, 7.150 | Final Plats |

4. Comprehensive Plan

| Focus Areas | Goals, Objectives & Policies |
|-----------------------|---|
| Overall Area Land Use | Objective 1.1 Objective 1.3 Objective 1.4 |
| Economic Development | Objective 2.1 Objective 2.2 |

The Comprehensive Plan shows the area as Airport and Runway Protection Zone. The final plat does not compromise the ability to implement and/or achieve any policies, goals or objectives outlined in the Comprehensive Plan for providing quality development. The airport meets current and future demand and provides a long-term positive impact to the community.

5. Analysis

Background and History

The proposed plat consists of four (4) lots on 553.633 acres. The proposed plat is associated with a rezoning and vacation of right-of-way for the airport that are also on this agenda. The purpose for the plat is to simplify the legal description and bring additional clarity to the limits of the airport property by combining the 44 parcels that currently make up the facility into 4 defined lots.

- March 10, 2016 – The City Council approved UDO Amendment # 55 establishing the AZ (Airport Zone) zoning district (Appl. #PL2015-209) by Ordinance No. 7831.

Subdivision-Related Public Improvements

There are no required subdivision-related public improvements required for this final plat.

Compatibility

The proposed plat is consistent with the Comprehensive Plan Land Use Designations.

Adverse Impacts

The proposed plat will not negatively impact the use or aesthetics of any neighboring property, nor does it negatively impact the health, safety and welfare of the public.

Public Services

Public facilities and services will be not be compromised or negatively impacted by the proposed plat.

Recommendation

The application meets the requirements of the UDO and Design & Construction Manual (DCM).

6. Recommended Conditions of Approval

There are no site specific or standard conditions of approval.

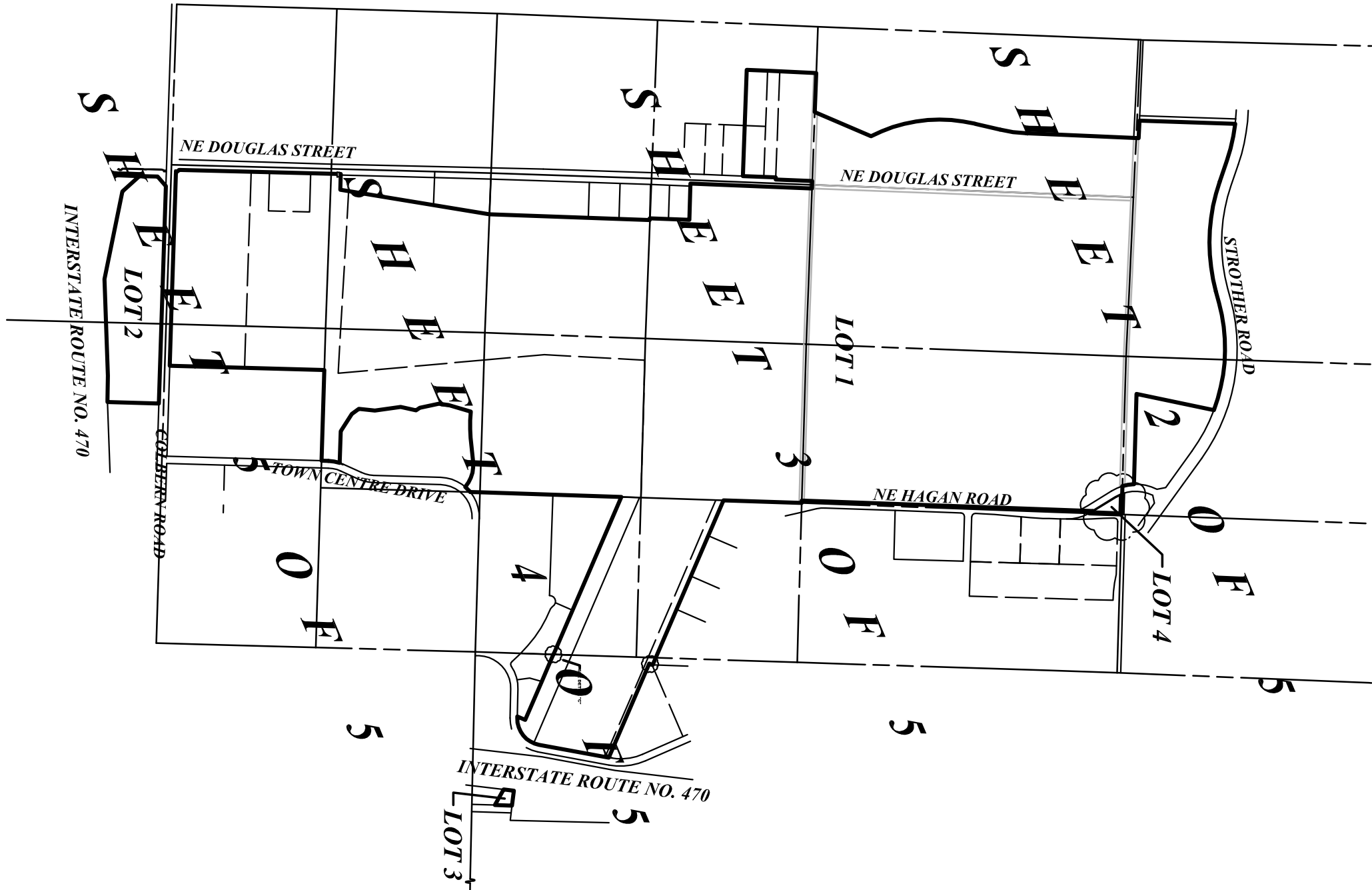
17, 18, 19, 20, 29, 30-48-31
18-10-42364-1
42364-Final Plat.dwg

DESCRIPTION:[illegible]

APPROVED: THIS IS TO CERTIFY THAT THE FINAL PLAN OF "LEES SUMMITT AIRPORT" WAS SUBMITTED TO AND DULY APPROVED BY THE CITY OF LEES SUMMITT, PURSUANT TO THE UNIFIED DEVELOPMENT ORDINANCE NO. _____;

| | | | |
|--|------|--|------|
| TRISHA FOWLER ARCURI CITY CLERK | DATE | WILLIAM A. BAIRD - MAYOR | DATE |
| GEORGE M. BINGER III, P.E. CITY ENGINEER | DATE | CARLA DAL PLANNING COMMISSION SECRETARY | DATE |
| RYAN A. ELAM, P.E. DIRECTOR OF DEVELOPMENT SERVICES | DATE | JACKSON COUNTY ASSESSOR /GIS DEPARTMENT | DATE |

FINAL PLAT OF
LEE'S SUMMIT AIRPORT, LOTS 1-4



IN WITNESS WHEREOF:
STEPHEN A. ARBO, CITY MANAGER, HAS CAUSED THESE PRESENTS TO BE SIGNED THIS ____ DAY OF _____, 2019.

STEPHEN A. ARBO, CITY MANAGER

NOTARY CERTIFICATION:
STATE OF _____)
COUNTY OF _____) S.S.

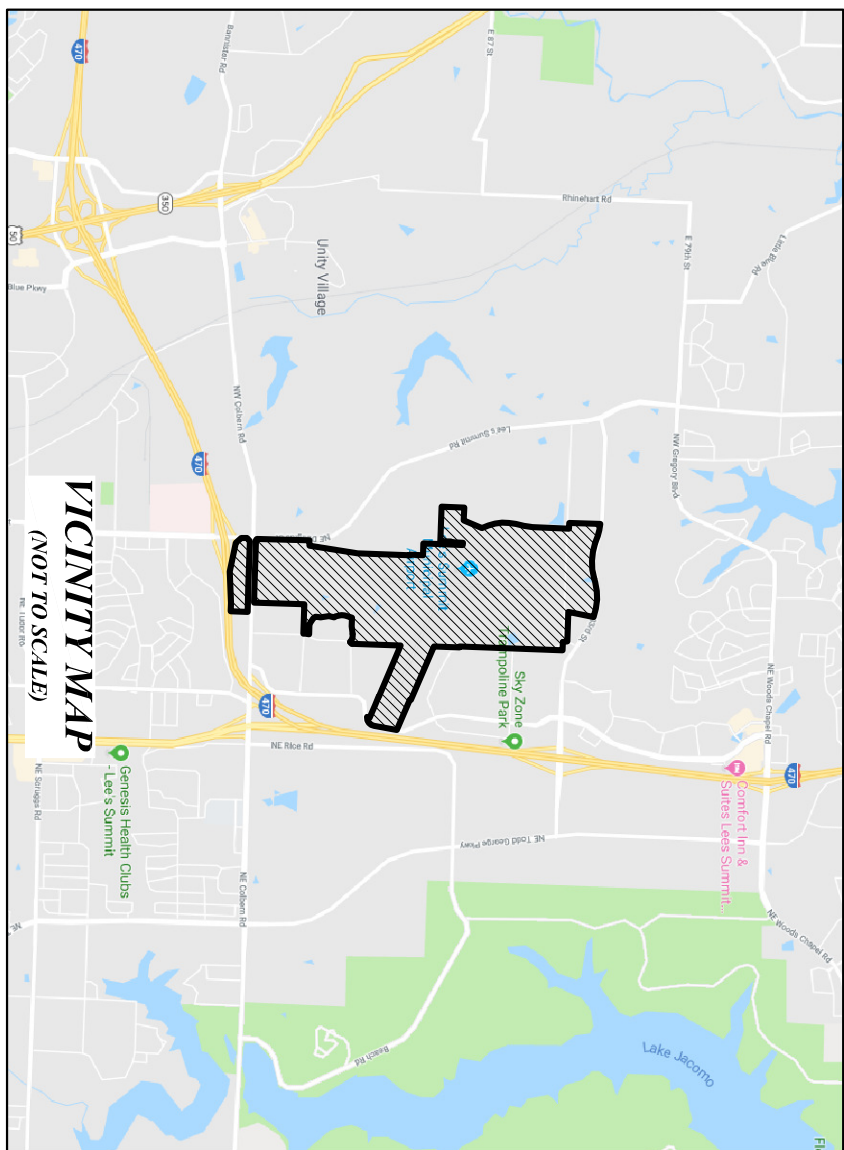
ON THIS _____ DAY OF _____, 2018, BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, PERSONALLY APPEARED STEPHEN A. ARBO, TO ME PERSONALLY KNOWN, WHO, BEING BY ME DULY SWORN DID SAY THAT HE IS THE CITY MANAGER FOR THE CITY OF LEES SUMMIT, JACKSON COUNTY, MISSOURI, AND THAT SAID STEPHEN A. ARBO ACKNOWLEDGED SAID INSTRUMENT TO BE HIS FREE ACT AND DEED.

I HAVE HEREUNTO SET MY HAND AND AFFIXED MY NOTARIAL SEAL IN MY OFFICE THE DAY AND YEAR LAST WRITTEN ABOVE.

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC _____

PRINTED NAME _____



LOT 2

THAT PART OF LOT 15 AND HEIDS FARM A SUBDIVISION IN THE CITY OF LEES SUMMIT JACKSON COUNTY MISSOURI BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS, COMMENCING AT THE NORTH EAST CORNER OF THE SOUTHWEST 1/4 SECTION 30, TOWNSHIP 48 NORTH, RANGE 9 WEST, THENCE SOUTH 1° 22' 56" WEST ALONG THE EAST LINE OF SAID 1/4 SECTION A DISTANCE OF 40.00 FEET TO THE SOUTH RIGHT OF WAY LINE OF THE HEIDS FARM DISCREPANCY THENCE NORTH 89° 00' 00" WEST ONE SOUTH RIGHT OF WAY LINE, A DISTANCE OF 10.00 FEET TO THE EAST RIGHT OF WAY LINE OF DODDAS ROAD AS NOW ESTABLISHED, THENCE SOUTH 48° 45' 47" WEST ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 105.25 FEET, THENCE SOUTH 1° 32' 48" WEST ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 150.00 FEET TO THE NORTH RIGHT OF WAY LINE OF THE INTERSTATE 40 HIGHWAY AS ESTABLISHED BY DOCUMENT NO. 145740 IN BOOK 11889 AT PAGE 1988, THENCE SOUTH 87° 20' 55" EAST, AND THE FOLLOWING COURSE AS FOLLOWS, SAID SOUTH RIGHT OF WAY LINE, A DISTANCE OF 189.00 FEET; THENCE SOUTH 78° 20' 55" EAST, A DISTANCE OF 141.78 FEET; THENCE NORTH 87° 57' 41" EAST, A DISTANCE OF 800.00 FEET; THENCE SOUTH 89° 10' 34" EAST, A DISTANCE OF 200.25 FEET; THENCE NORTH 1° 41' 13" EAST DEPARTING SAID SOUTH RIGHT OF WAY LINE, A DISTANCE OF 424.95 FEET TO SAID SOUTH RIGHT OF WAY LINE OF COLEBURN ROAD, THENCE NORTH 88° 13' 03" WEST ALONG SAID SOUTH RIGHT OF WAY LINE, A DISTANCE OF 20.89 FEET TO THE POINT OF BEGINNING.

LOT 3

THAT PART OF THE SOUTHEAST 1/4 OF SECTION 20, TOWNSHIP 48 NORTH, RANGE 4 WEST IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS COMMENCING AT THE SOUTHWEST CORNER OF SAID SOUTHERLY 1/4, THENCE SOUTH 89° 42' 12" EAST ALONG THE SOUTH LINE OF SAID 1/4 SECTION, A DISTANCE OF 1107.27 FEET TO THE EAST RIGHT OF WAY LINE OF INTERSTATE 470; THENCE HIGHWAY 65 ESTABLISHED BY DOCUMENT NO. 126482, THENCE NORTH 6° 44' 47" EAST ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 260.82 FEET TO THE POINT OF BEGINNING OF THE TRACT OF LAND TO BE BOUND; THENCE CONTINUING NORTH 6° 44' 47" EAST ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 64.78 FEET; THENCE SOUTH 89° 14' 59" EAST, CONTINUING ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 148.15 FEET TO THE WEST RIGHT OF WAY LINE, A DISTANCE OF 141.52 FEET; THENCE NORTH 67° 38' 47" WEST, A DISTANCE OF 148.15 FEET TO THE POINT OF BEGINNING.

THE DESCRIPTION OF LOTS 1, 2, 3, AND 4 WAS PREPARED BY ANDERSON SURVEY COMPANY AND DESCRIBES THE PROPERTIES IN THE FOLLOWING DOCUMENTS:

JACKSON COUNTY CIRCUIT COURT CASES:

CASE NO. 0616-6-CV-03636 - RECORDED AS DOCUMENT NO. 200606072841
CASE NO. 0616-6-CV-01238 - RECORDED AS DOCUMENT NO. 20074E0018241
CASE NO. CV-98-16110 - RECORDED AS DOCUMENT NO. 19626255 IN BOOK 1-L398 AT PAGE 1653
CASE NO. 0616-CV-03498 - RECORDED AS DOCUMENT NO. 200703064223
CASE NO. 96-5065 - RECORDED AS DOCUMENT NO. 1M034422 IN BOOK 12550 AT PAGE 125
CASE NO. 0616-CV-02388 - RECORDED AS DOCUMENT NO. 20070E010748
CASE NO. 0616-6-CV-02388 - RECORDED AS DOCUMENT NO. 20060E0556738

DEEDS

CORROSAFE WARRANTY DEED RECORDED AS DOCUMENT NO. 1-1127110 IN BOOK 12279 AT PAGE 842
GENERAL WARRANTY DEED RECORDED AS DOCUMENT NO. 2007005908904
GENERAL WARRANTY DEED RECORDED AS DOCUMENT NO. 20050106522
GENERAL WARRANTY DEED RECORDED AS DOCUMENT NO. 2006082117142
MISSOURI WARRANTY DEED RECORDED AS DOCUMENT NO. 1-3049900 IN BOOK 1794 AT PAGE 575
MISSOURI WARRANTY DEED RECORDED AS DOCUMENT NO. 1-7717814 IN BOOK 1868
MISSOURI WARRANTY DEED RECORDED AS DOCUMENT NO. 1-383882 IN BOOK 4934 AT PAGE 2301
MISSOURI WARRANTY DEED RECORDED AS DOCUMENT NO. 1-4806222 IN BOOK 1-1725 AT PAGE 8861
MISSOURI WARRANTY DEED RECORDED AS DOCUMENT NO. 1-7717814 IN BOOK 1-678 AT PAGE 889
MISSOURI DEED OF TRUST RECORDED AS DOCUMENT NO. 20020000971
PERSONAL REPRESENTATIVE'S DEED RECORDED AS DOCUMENT NO. 20050091245
SPECIAL WARRANTY DEED RECORDED AS DOCUMENT NO. 1-569220 IN BOOK 1-1311 AT PAGE 1818
SPECIAL WARRANTY DEED RECORDED AS DOCUMENT NO. 19890101147
WARRANTY DEED RECORDED AS DOCUMENT NO. 2000007734
WARRANTY DEED RECORDED AS DOCUMENT NO. 1-344400 IN BOOK 1-793 AT PAGE 454

AREA:
THE SUBJECT PROPERTY CONTAINS 24,072.973 SQUARE FEET OR 552.639 ACRES, MORE OR LESS

PLAT DEDICATION: THE UNDERSIGNED OWNER(S) OF THE PROPERTY DESCRIBED HEREIN HAS/HAVE CAUSED THE SAME TO BE SUBDIVIDED IN THE MANNER SHOWN ON THIS PLAT AND THE PROPERTY SHALL HEREAFTER BE KNOWN AS: "LEE'S SUMMIT AIRPORT, LOTS 1-4"

CASEMENTS:
THE EASEMENT INFORMATION SHOWN HEREON HAS BEEN TAKEN FROM OWNERSHIP AND ENCUMBRANCE REPORTS WITH EASEMENTS PREPARED BY ASSURED QUALITY TITLE COMPANY WITH THE FOLLOWING FILE NUMBERS:
OE12913171, OE12913173, OE12913174, OE12913176, OE12913178, OE12913180, OE12913181, OE12913183, OE12913184, OE12913186, OE12913187, OE12913188, OE12913189, OE12913190, OE12913192, OE12913194, OE12913195, OE12913196, OE12913197, OE12913198, OE12913199, OE12913200, OE12913201, OE12913202, OE12913203, OE12913204, OE12913205, OE12913206, OE12913207, OE12913208, OE12913209, OE12913210, OE12913211, OE12913212, OE12913213, OE12913214, OE12913215, OE12913216, OE12913217, OE12913218, OE12913219, OE12913220, OE12913221, OE12913222, OE12913223, OE12913224, OE12913225, OE12913226, OE12913227, OE12913228, OE12913229, OE12913230, OE12913231, OE12913232, OE12913233, OE12913234, OE12913235, OE12913236, OE12913237, AND OE12913238

FLOOD INFORMATION: ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY'S FLOOD INSURANCE RATE MAPS, COMMUNITY PANEL NO. 290950C0409G, DATED JANUARY 20, 2017 AND COMMUNITY PANEL NO. 290950C0430G, DATED JANUARY 20, 2017, THIS PROPERTY LIES WITHIN ZONE "X". AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, AS SHOWN THEREON.

DRAINAGE: THE INDIVIDUAL LOT OWNERS SHALL NOT CHANGE OR OBSTRUCT THE DRAINAGE FLOW PATHS ON THE LOTS, UNLESS SPECIFIC APPLICATION IS MADE AND APPROVED BY THE CITY ENGINEER.

OIL/GAS WELLS:
ACCORDING TO THE MISSOURI DEPARTMENT OF NATURAL RESOURCES, STATE OIL AND GAS COUNCIL - WELLS SPREADSHEET, DATED FEBRUARY 2, 1981, THE SUBJECT PROPERTY CONTAINS NO ACTIVE OR ABANDONED GAS OIL OR WELLS.

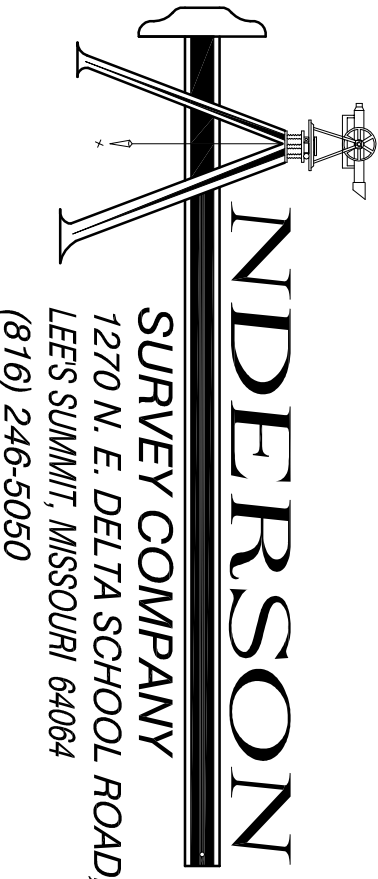
IMPLICATIONS

HEREBY CERTIFY THAT THIS PLAN OF **LEES SUMMIT APARTMENT LOT 14** IS BASED ON AN ACTUAL SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT SAID SURVEY MEETS OR EXCEEDS THE CURRENT STANDARDS FOR PROPERTY BOUNDARY SURVEYS, AS ESTABLISHED BY THE MISSOURI BOARD FOR ARCHITECTS, ENGINEERS AND LANDSCAPE ARCHITECTS, AND I FURTHER CERTIFY THAT I HAVE COMPLIED WITH ALL STATUTES, ORDINANCES, AND REGULATIONS GOVERNING THE PRACTICE OF SURVEYING AND PLATTING OF SUBDIVISIONS, TO THE BEST OF MY PROFESSIONAL INFORMATION, KNOWLEDGE, AND BELIEF.

DATE PREPARED: APRIL 15, 2019

17, 18, 19, 20, 29, 30-48-31
18-10-42364-1
42364-Final Plat.dwg

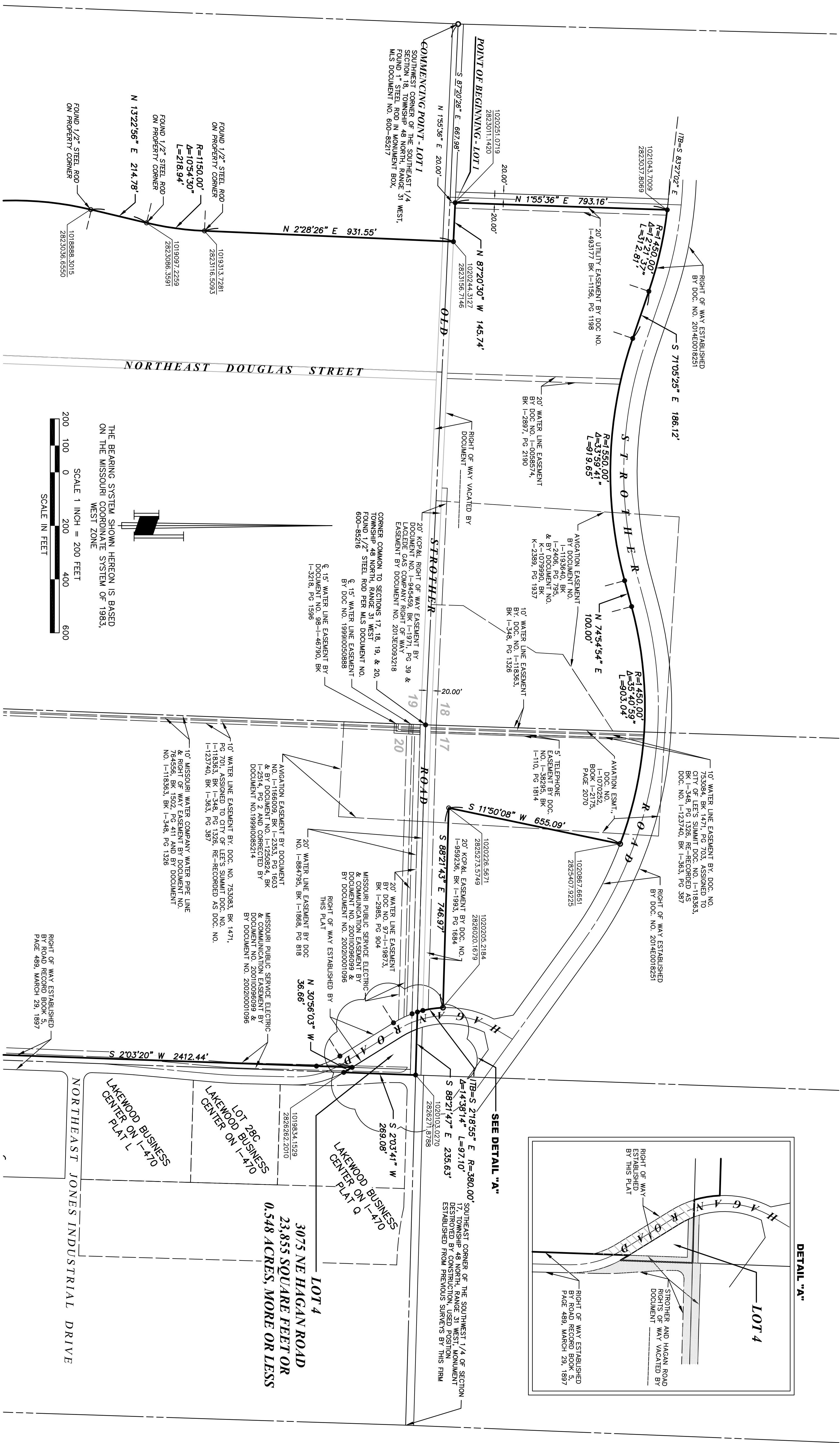
MISSOURI STATE CERTIFICATE OF AUTHORITY, 000076



SHEET 1 OF 5

JAMES S. ANDERSON,
PLS #1726

FINAL PLAT OF
LEE'S SUMMIT AIRPORT, LOTS 1-4
A MAJOR SUBDIVISION IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI
PART OF SECTIONS 17, 18, 19, 20, 29, AND 30, TOWNSHIP 48 NORTH, RANGE 31 WEST



APPROVED:
THIS IS TO CERTIFY THAT THE FINAL PLAT OF "LEE'S SUMMIT AIRPORT" WAS SUBMITTED TO AND DULY APPROVED BY THE CITY OF LEE'S SUMMIT, PURSUANT TO THE UNITED DEVELOPMENT ORDINANCE NO. ____.

| | | | |
|---|------|---|------|
| TRISHA FOWLER ARGURI CITY CLERK | DATE | WILLIAM A. BAIRD - MAYOR | DATE |
| GEORGE W. BINGER III, P.E. CITY ENGINEER | DATE | CARLA DIAL PLANNING COMMISSION SECRETARY | DATE |
| RYANA ELIAN, P.E. DIRECTOR OF DEVELOPMENT SERVICES | DATE | JACKSON COUNTY ASSESSOR / GIS DEPARTMENT | DATE |

IN WITNESS WHEREOF:
STEPHEN A. ARBO, CITY MANAGER, HAS CAUSED THESE PRESENTS TO BE SIGNED THIS ____ DAY OF _____, 2019.

NOTARY CERTIFICATION:
STATE OF _____)
COUNTY OF _____) S.S.

ON THIS ____ DAY OF _____, 2019, BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, PERSONALLY APPEARED STEPHEN A. ARBO, TO ME PERSONALLY KNOWN, WHO, BEING BY ME DULY SWORN DID SAY THAT HE IS THE CITY MANAGER FOR THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, AND THAT SAID STEPHEN A. ARBO ACKNOWLEDGED SAID INSTRUMENT TO BE HIS FREE ACT AND DEED.
I HAVE HEREUNTO SET MY HAND AND AFFIXED MY NOTARIAL SEAL IN MY OFFICE THE DAY AND YEAR LAST WRITTEN ABOVE.
MY COMMISSION EXPIRES: _____

NOTARY PUBLIC _____ PRINTED NAME _____

NOTE:
● = SET 1/2" STEEL ROD & CAP STAMPED "ASC KLS3 MLS78D" ON PROPERTY CORNER.
○ = FOUND 1/2" STEEL ROD & CAP STAMPED "ASC KLS3 MLS78D" ON PROPERTY CORNER (UNLESS NOTED OTHERWISE)

SURVEYOR'S CERTIFICATION: **LEE'S SUMMIT AIRPORT, LOTS 1-4** IS BASED ON AN ACTUAL SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT SAID SURVEY MEETS OR EXCEEDS THE CURRENT STANDARDS FOR PROPERTY BOUNDARY SURVEYS, AS PROVIDED BY THE MISSOURI PROFESSIONAL SURVEYORS AND LANDSCAPE ARCHITECTS, AND I FURTHER CERTIFY THAT I HAVE COMPLIED WITH ALL STATUTES, ORDINANCES, AND REGULATIONS GOVERNING THE PRACTICE OF SURVEYING AND PLATTING OF SUBDIVISIONS, TO THE BEST OF MY PROFESSIONAL INFORMATION, KNOWLEDGE AND BELIEF.

DATE PREPARED: APRIL 15, 2019

SURVEYOR:
JAMES S. ANDERSON, PLS
ANDERSON SURVEY COMPANY
1270 N.E. DELTA SCHOOL ROAD
LEE'S SUMMIT, MISSOURI 64064
(816) 246-5050

OWNER:
CITY OF LEE'S SUMMIT
220 SOUTHEAST GREEN STREET
LEE'S SUMMIT, MISSOURI 64063

SHEET 2 OF 5

ANDERSON
SURVEY COMPANY
1270 N. E. DELTA SCHOOL ROAD,
LEE'S SUMMIT, MISSOURI 64064
(816) 246-5050

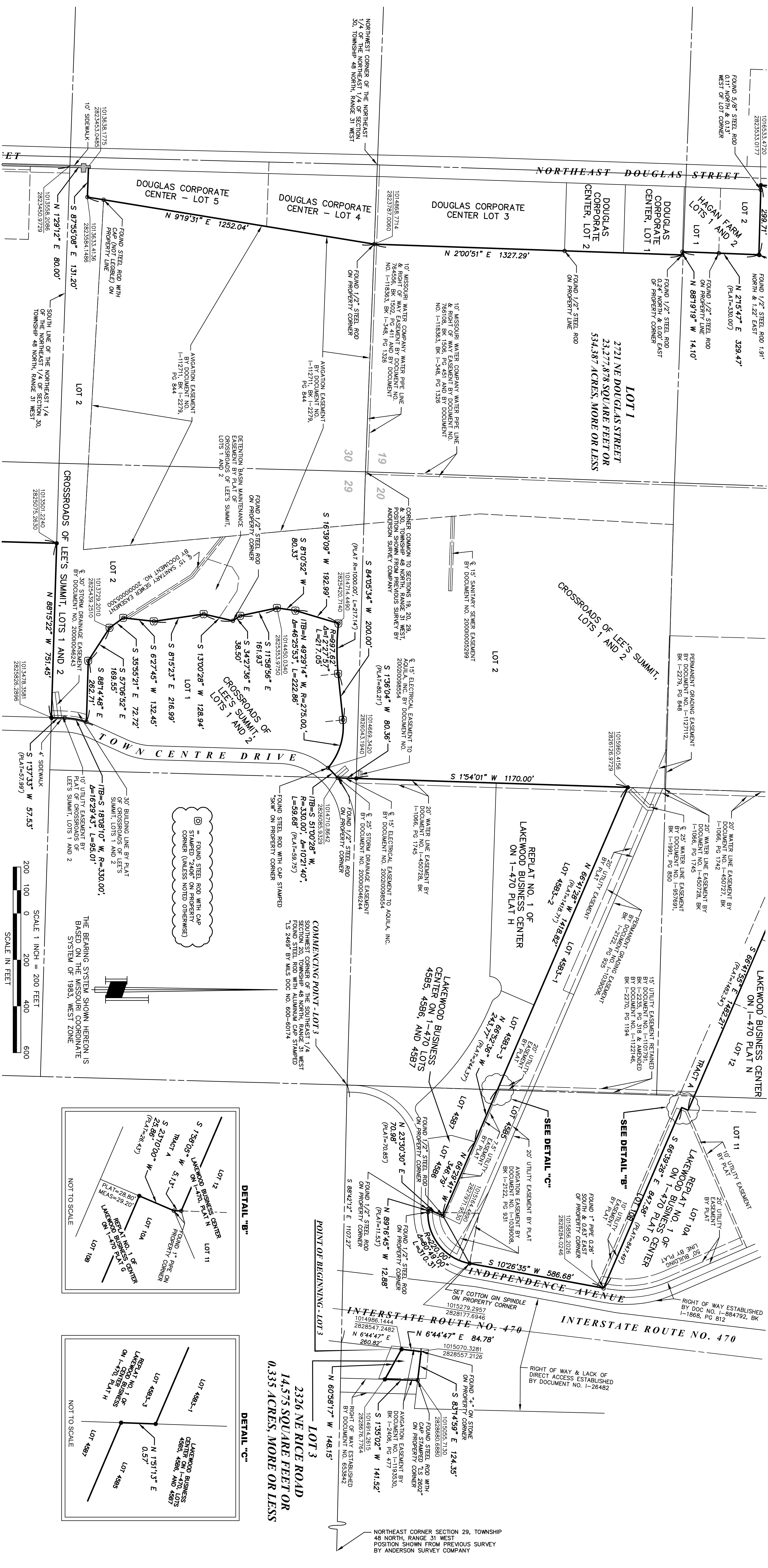
MISSOURI STATE CERTIFICATE OF AUTHORITY, 000076

JAMES S. ANDERSON,
PLS #1725

17, 18, 19, 20, 29, 30--48--31
4236--Final Plat.dwg

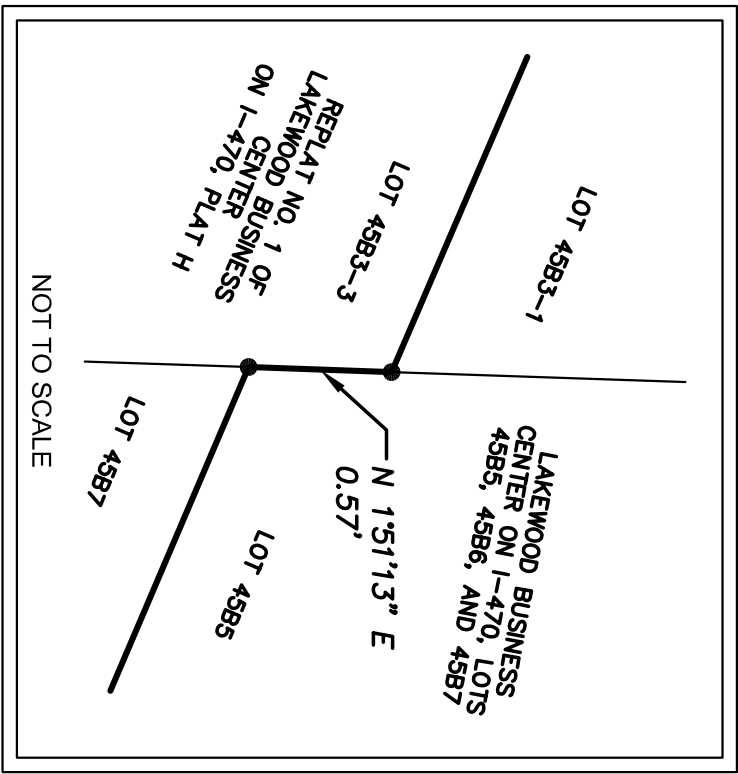
FINAL PLAT OF
LEE'S SUMMIT AIRPORT, LOTS 1-4

A MAJOR SUBDIVISION IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI
PART OF SECTIONS 17, 18, 19, 20, 29, AND 30, TOWNSHIP 48 NORTH, RANGE 31 WEST

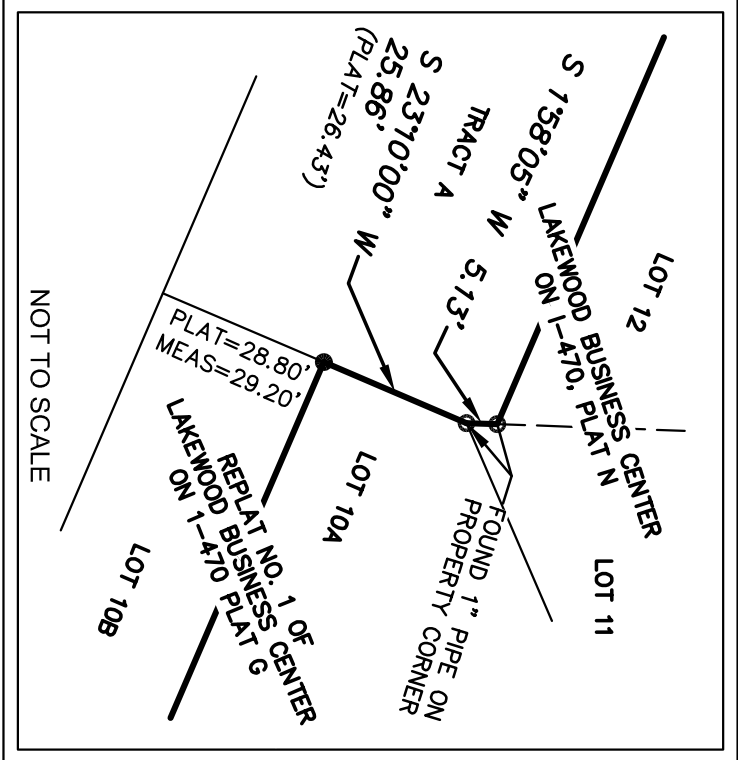


23.26 NE RICE ROAD
14,575 SQUARE FEET OR
0.335 ACRES, MORE OR LESS

DETAIL "C"



DETAIL "B"



NOTE:
● = SET 1/2\"/>

SURVEYOR'S CERTIFICATION:
I HEREBY CERTIFY THAT THIS PLAT OF **LEE'S SUMMIT AIRPORT, LOTS 1-4** IS BASED ON AN ACTUAL SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION AND THAT SAID SURVEY MEETS OR EXCEEDS THE CURRENT STANDARDS FOR PROPERTY BOUNDARY SURVEYS AS ESTABLISHED BY THE MISSOURI BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, PROFESSIONAL LAND SURVEYORS, AND LANDSCAPE ARCHITECTS, AND I FURTHER CERTIFY THAT I HAVE COMPLIED WITH ALL STATUTES, ORDINANCES, AND REGULATIONS GOVERNING THE PRACTICE OF SURVEYING AND PLATTING OF SURVEYS IN THE STATE OF MISSOURI, AND THAT I AM A LICENSED PROFESSIONAL LAND SURVEYOR, AND THAT I HAVE NO OTHER INTEREST IN THE PROPERTY SURVEYED, AND THAT I HAVE NO OTHER INFORMATION, KNOWLEDGE AND BELIEF.

SURVEYOR:
JAMES S. ANDERSON, P.L.S.
ANDERSON SURVEY COMPANY
1270 N.E. DELTA SCHOOL ROAD
LEE'S SUMMIT, MISSOURI 64064
(816) 246-5050

OWNER:

CITY OF LEE'S SUMMIT
220 SOUTHEAST GREEN STREET
LEE'S SUMMIT, MISSOURI 64063



17, 18, 19, 20, 29, 30--48--31
4236--Final Plat.dwg

DRN. RMC. P.C. KIRK CK. RJA APP.

APPROVED:
THIS IS TO CERTIFY THAT THE FINAL PLAT OF "LEE'S SUMMIT AIRPORT" WAS SUBMITTED TO AND DULY APPROVED BY THE CITY OF LEE'S SUMMIT, PURSUANT TO THE UNITED DEVELOPMENT ORDINANCE NO. ____.

| | | |
|---|------|---|
| TISHA FOWLER ARGURI CITY CLERK | DATE | WILLIAM A. BAIRD - MAYOR DATE |
| GEORGE M. BINGER III, P.E. CITY ENGINEER | DATE | CARLA DIAL PLANNING COMMISSION SECRETARY DATE |
| RYANA ELIAN, P.E. DIRECTOR OF DEVELOPMENT SERVICES | DATE | JACKSON COUNTY ASSESSOR / GIS DEPARTMENT DATE |

IN WITNESS WHEREOF:
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STATE OF _____)
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I HAVE HEREUNTO SET MY HAND AND AFFIXED MY NOTARIAL SEAL IN MY OFFICE THE DAY AND YEAR LAST WRITTEN ABOVE.
MY COMMISSION EXPIRES: _____

NOTARY PUBLIC

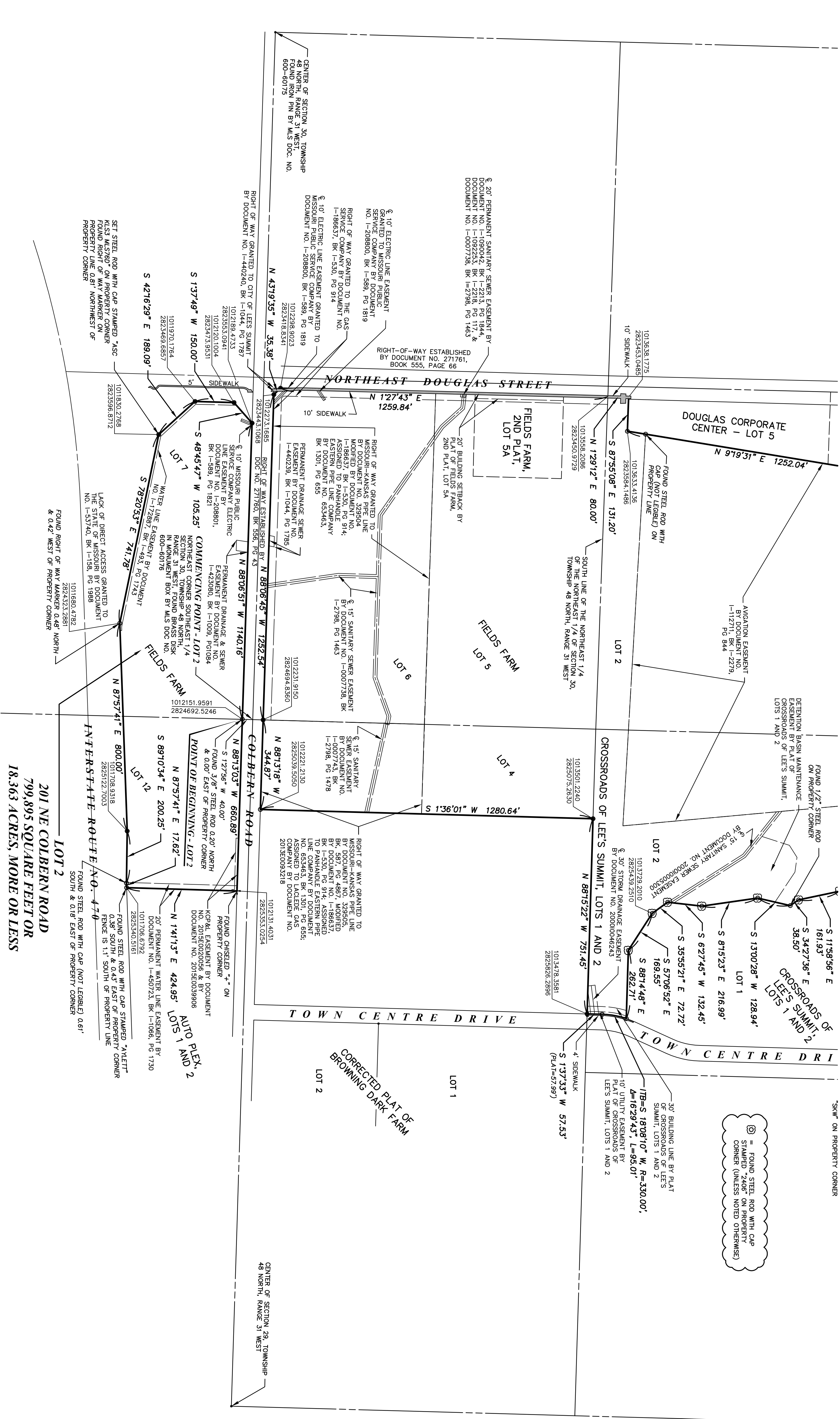
DATE PREPARED: APRIL 15, 2019

MISSOURI STATE CERTIFICATE OF AUTHORITY, 000076

JAMES S. ANDERSON,
P.L.S. #1725

FINAL PLAT OF
LEE'S SUMMIT AIRPORT, LOTS 1-4

A MAJOR SUBDIVISION IN THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI
PART OF SECTIONS 17, 18, 19, 20, 29, AND 30, TOWNSHIP 48 NORTH, RANGE 31 WEST



APPROVED:
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NOTE:
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SURVEYOR:
JAMES S. ANDERSON, PLS
ANDERSON SURVEY COMPANY
1270 N.E. DELTA SCHOOL ROAD
LEE'S SUMMIT, MISSOURI 64064
(816) 246-5050

OWNER:
CITY OF LEE'S SUMMIT
220 SOUTHEAST GREEN STREET
LEE'S SUMMIT, MISSOURI 64063

TRISHA FOWLER ARGURI
CITY CLERK
DATE
WILLIAM A. BAIRD - MAYOR
DATE
CARLA DIAL
PLANNING COMMISSION SECRETARY
DATE
RYANA A. ELAM, P.E.
DIRECTOR OF DEVELOPMENT SERVICES
DATE
JACKSON COUNTY ASSESSOR / GIS DEPARTMENT
DATE

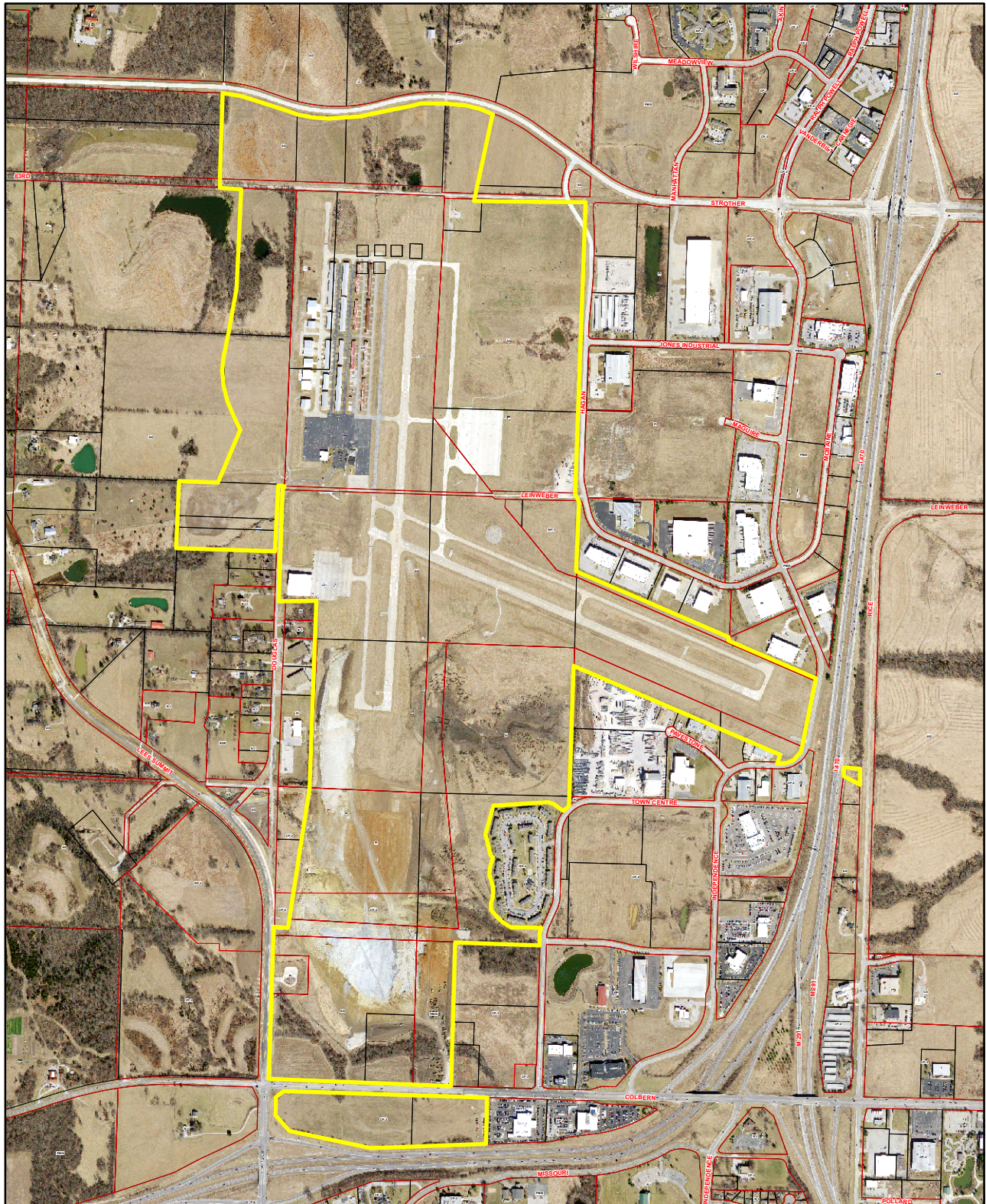
NOTARY CERTIFICATION:
STATE OF _____)
COUNTY OF _____) S.S.
_____, 2019, BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, PERSONALLY APPEARED STEPHEN A. ARBO, ON THIS _____ DAY OF _____, 2019, BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, PERSONALLY APPEARED STEPHEN A. ARBO, TO ME PERSONALLY KNOWN, WHO, BEING BY ME DULY SWORN, DID SAY THAT HE IS THE CITY MANAGER FOR THE CITY OF LEE'S SUMMIT, JACKSON COUNTY, MISSOURI, AND THAT SAID STEPHEN A. ARBO ACKNOWLEDGED SAID INSTRUMENT TO BE HIS FREE ACT AND DEED.
I HAVE HEREUNTO SET MY HAND AND AFFIXED MY NOTARIAL SEAL IN MY OFFICE THE DAY AND YEAR LAST WRITTEN ABOVE.
MY COMMISSION EXPIRES: _____

DATE PREPARED: APRIL 15, 2019
17, 18, 19, 20, 29, 30--48--31
18--10--42364-1
42364--Final Platting

ANDERSON
SURVEY COMPANY
1270 N. E. DELTA SCHOOL ROAD,
LEE'S SUMMIT, MISSOURI 64064
(816) 246-5050

MISSOURI STATE CERTIFICATE OF AUTHORITY, 000076

JAMES S. ANDERSON,
PLS #1725



Packet Information

File #: 2019-2911, **Version:** 1

Continued Public Hearing: Application #PL2019-020 - Rezoning from RP-2 to RP-3 and Preliminary Development Plan - Burton Townhomes, 408 & 500 NW Olive Street; Cherokee Flight, LLC, applicant.

(Note: This application was continued from July 23, 2019 pending an additional hearing at the Planning Commission. This item is to be continued to December 3, 2019 per the applicants request. This application has been withdrawn.)

Issue/Request:

The applicant is seeking a rezoning and preliminary development plan approval for a 36-unit residential development comprised of nine four-family attached dwelling units (fourplex). Each unit will be approximately 1,663 sq. ft.

- 36 Units
- 3.76 Acres
- 9.57 units/acre (10 units/acre max in RP-3)
- 0.43 FAR

Josh Johnson, AICP, Assistant Director of Plan Services

Bruce Best, Applicant

The City of Lee's Summit
Action Letter - Draft
Planning Commission

Thursday, July 11, 2019

5:00 PM

City Council Chambers

City Hall

220 SE Green Street

Lee's Summit, MO 64063

Call to Order

Roll Call

Present: 7 - Board Member Carla Dial
Board Member Jason Norbury
Board Member Dana Arth
Board Member Don Gustafson
Board Member Donnie Funk
Board Member Jake Loveless
Board Member John Lovell

Absent: 2 - Board Member Jeff Sims
Board Member Mark Kitchens

Approval of Agenda

A motion was made by Board Member Gustafson, seconded by Board Member Arth, that the agenda be approved. The motion carried unanimously.

Public Comments

There were no public comments at the meeting.

Approval of Consent Agenda

[2019-2900](#) Minutes of the June 27, 2019, Planning Commission meeting

A motion was made by Board Member Arth, seconded by Board Member Gustafson, that the minutes be approved. The motion carried unanimously.

Public Hearings

[2019-2895](#) Continued Appl. #PL2018-222 - REZONING from CP-2 to PI and PRELIMINARY DEVELOPMENT PLAN and #PL2018-220 - SPECIAL USE PERMIT for an indoor/outdoor mini-warehouse storage facility - Storage Mart 156, 3924 and 3930 SW Raintree Dr; New TGK-KC, LLC, applicant

Chairperson Norbury opened the hearing at 5:07 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Mr. Gregg Meusill of the law firm of Rouse Frets White Goss Gentile and Rhodes, gave his address as 5250 W. 116th Place, Ste. 400, in Leawood, Kansas. Mr. Weyen Burnam of

TKG-StorageMart might also be present at the meeting a little later, and could answer questions about operational issues. The subject property had an existing 'first generation', a type of business familiar to many people; with metal garage-type buildings and no climate control. It was next to a residential subdivision. The lot that would be the site of the new indoor climate-controlled facility was at the front, on the east side along highway 291. It would be all brick, with windows and architectural features that would meet Lee's Summit's detailed standards this kind of business. TKG Storage Mart was among the leading storage companies nationally, with headquarters in Columbia, Missouri.

Mr. Meusill remarked that the applicants had held a neighborhood meeting on February 26th, and it was refreshing to hear residential neighbors talk about a commercial neighbor in positive terms. Only 6 people had attended, including Mr. Mike Gallagher, president of the neighborhood association. The attendees had shown up wanting to learn about the proposal, and none had any objection.

As part of modernizing the business, the existing storage units would remain; but the proposed development would block them from public view. Mr. Meusill speculated that one reason for the neighbors generally supporting the development was that the new building would block noise from the highway and other businesses along it. He added that while storage businesses had been around for a long time, those with climate control were the part that was growing.

The applicants had been working with staff several months, and had tried to ensure the development would meet ordinance standards regarding parking, screening and architectural design. Staff had identified four UDO conditions for an indoor, climate-controlled storage facility and three conditions for a mini-warehouse facility. These included the required 1:3 roof pitch, though the applicants planned a flat roof. Mr. Meusill asserted that this was what would normally be on a retail or office building. The had asked for a 50-year term for the Special Use Permit, but staff recommended 25 years; which would be consistent with other SUPs granted to storage businesses. The applicants did accept the conditions staff had cited.

The applicants had made certain assurances to the neighbors. The first-generation portion of the development would not be subject to the rezoning, SUP or preliminary development plan; and the applicants had agreed to install an opaque fence between them and the neighborhood. One neighbor had been concerned about the security cameras at the southwest corner of the existing facility, as one of them appeared to be focused on the deck of his house. The applicants had already addressed this concern by repositioning the camera. Mr. Meusill then introduced Mr. Weyen Burnam, who had just arrived at the meeting.

Following Mr. Meusill's presentation, Chairperson Norbury asked for staff's report.

Ms. Thompson entered Exhibit (A), list of exhibits 1-18 into the record. She confirmed that this request was for approval of a rezoning from CP-2 to PI, a preliminary development plan and a Special Use Permit for the Storage Mart business. It would be located south of M-150 and west of M-291, just east of the existing storage business. It was surrounded by existing mini-warehouse facilities to the west, which was zoned industrial (PI), and undeveloped ground to the north, south and east. They wanted to rezone 1.27 acres from the existing CP-2 to PI for the proposed expansion. Storage facilities that had outdoor activity were allowed only in PI and CS zoning districts, which was the reason for the rezoning request.

Displaying a map of the Comprehensive Plan for the area, Ms. Thompson noted that it was essentially shown as retail use. Staff supported the rezoning, as this particular property did not lend itself to retail development. It was adjacent to industrial zoning and industrial uses, as well as having some distance from M-150 to the north. Displaying the site plan, she noted that it had one 3-story building that was 46,600 square feet, with 302 units. An elevation of the view from the east showed an office-type building built of red and tan brick.

Ms. Thompson then addressed staff's modifications and conditions. The UDO required a climate-controlled storage facility to have all activities indoors, and did not allow outdoor storage. The applicants requested some limited outdoor storage, about 7 spaces; plus 22 units that would have exterior access. It also required a 1:3 roof pitch, but the proposed building would have a flat roof. Staff supported the modifications, acknowledging the hybrid nature of climate-controlled storage and mini-warehouses and the difficulty of this variant in meeting the ordinance requirements. Ms. Thompson then displayed a color-coded map of the M-150 Corridor Development Overlay district, which had additional requirements and design and sustainability standards. The project met the requirements for four-sided architecture and quality materials. Meeting the requirements included stormwater best management practices, LED lighting, landscaping with native plants, durable and locally sourced materials, pathways for future installation of solar energy and a 'cool roofing' system.

Staff considered that all three parts of this application met the UDO and Design and Construction Manual standards; however, they also cited 5 site specific conditions. Conditions 1 and 2 listed modifications to the SUP requirements to allow for outdoor storage and outdoor activities on the site. Condition 3 allowed for a flat roof instead of the required 1:3 pitch. Condition 4 cited the Special Use Permit term of 25 years; and Condition 5 required that the development "shall be in accordance with the preliminary development plan dated May 21, 2019."

Following Ms. Thompson's comments, Chairperson Norbury asked if there was anyone present wishing to give testimony, either in support for or opposition to the application. As there were none, he then opened the hearing for questions for the applicant or staff.

Mr. Funk asked Ms. Thompson if the outdoor storage vehicles would be physically outside or just accessed from outside the building. Ms. Thompson answered that they would be inside on the back end of the building, but accessed from the exterior. The application did propose 7 spaces for outdoor storage of items like utility trailers or RVs. She pointed out their location on the site plan.

Chairperson Norbury noted that when the M-150 was initially proposed, concerns had been raised about building heights. He asked if this had been discussed at the neighborhood meeting. Mr. Meusill replied that it had not. The major topics were the fence, and general questions about the business. He added that the people attending were generally positive about the development.

Mr. Loveless asked if outdoor parking had been discussed at the meeting. Mr. Meusill answered that it was, adding that initially the spaces for RV parking had been shown at the front of the building. Since staff had been concerned about adequate screening, these spaces were now in the back between the new building and the original one.

Chairperson Norbury asked if there were further questions for the applicant or staff. Hearing none, he closed the public hearing at 5:18 p.m. and asked for discussion among the Commission members, or for a motion.

Ms. Dial rejoined the meeting.

Ms. Arth made a motion to recommend approval of continued Application PL2018-222, Rezoning from CP-2 to PI and Preliminary Development Plan; and PL2018-220, Special Use Permit for an indoor/outdoor mini-warehouse storage facility: Storage Mart 156, 3924 and 3930 SW Raintree Dr; New TGK-KC, LLC, applicant; subject to staff's letter of July 5, 2019, specifically Conditions of Approval 1 through 5. Mr. Gustafson seconded.

Chairperson Norbury asked if there was any discussion of the motion. Hearing none, he called

for a vote.

A motion was made by Board Member Arth, seconded by Board Member Gustafson, that this application recommended for approval. to the City Council - Regular Session, due back on 8/6/2019 The motion carried unanimously.

[2019-2911](#)

Continued Appl. #PL2019-020 - Rezoning from RP-2 to RP-3 and Preliminary Development Plan - Burton Townhomes, 408 & 500 NW Olive St; Cherokee Flight, LLC, applicant

Chairperson Norbury opened the hearing at 5:20 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Mr. Mick Slutter, of Renaissance Infrastructure Consulting, gave his address as 1815 McGee Street in Kansas City, Missouri. He was present representing the developer, Mr. Dick Burton. They planned a multi-family residential development at the intersection of Orchard and Olive Streets, just north of Downtown, on a total of about 3-3/4 acres. The development would have 36 units in 9 four-plex buildings. They had hosted a neighborhood meeting on June 8th and had provided traffic and stormwater studies. Mr. Slutter requested a discussion of some of the stipulations in staff's report, after staff's presentation; specifically the traffic impact statement, the recommendation to improve Olive and Orchard as far as the Chipman/Douglas intersection and some of the recommendations pertaining to architecture.

Following Mr. Slutter's presentation, Chairperson Norbury asked for staff comments.

Mr. McGuire entered Exhibit (A), list of exhibits 1-16 into the record. He related that the requested rezoning and preliminary development plan were for a 36-unit residential development. The subject property consisted of three parcels and was at the intersection of Olive and Orchard. The 408 NW Olive Street portion was two parcels totaling 1.39 acres, which included a 1,152 square foot house; and 500 NW Olive was a 2.2 acre, partially wooded lot with an existing 1,500 square foot barn. The Union-Pacific railroad line bordered the property on the west side and an existing line of trees provided some screening between the tracks and the rest of the property. The site would be accessed only from Olive Street.

Ms. Dial left the table, at 5:30 p.m.

Surrounding zoning was a mixture: PI and RP-2 to the north, RP-2 to the south and east and PI and R-1 to the west. RP-3 (Planned Residential Mixed Use) was the proposed zoning, with the current RP-2 being for "Planned Two-Family Residential" district. The proposed density would be 9.57 units per acre, with 10 per acre as the maximum in RP-3 and the proposed floor/area ratio would be .43. The nine four-plex buildings would have 44.8percent impervious coverage. It would have a total 100 parking spaces, 72 for residents and 28 additional spaces for visitors. Detention ponds would be located at the northwest and southwest corners.

Mr. McGuire displayed elevations of the proposed buildings. They would be two-story with a total height of 28 feet, 10 inches and would have a 3,524 square foot footprint. Materials would include stucco, vinyl siding board and batten siding and manufactured stone veneer. One of the requested modification was for a 6-foot vinyl fence at the property line, with a high-impact landscaping buffer planted on one side. This would make the landscaping more accessible for maintenance. This was a modification that had often been requested and granted in the past. Another modification was to the required 30-foot rear yard setback, with the applicant requesting a 26-foot setback. This was due to the west property line being adjacent to the 145-foot Union-Pacific railroad right-of-way; and the tracks were about 50 feet from the property line. Heavily wooded vegetation grew on both sides of the property line, and this plus the railroad gave the appearance of a deep setback.

Staff had received several public comments on this application. The 185-foot notification radius included 11 of the 12 neighboring properties, totally 103,879 square feet; about 39 percent of the total footage within the buffer. Of the 12 neighboring property owners, 11 owned property within the 185-foot notification boundary. The criteria for a valid protest petition had been met, since the total area of the land in possession of the property owners was over the required 30 percent. As a result, approval would need a favorable vote of two-thirds of the City Council.

Public comments had include the lack of sidewalks for the increased number of pedestrians, streets being too narrow for the increased traffic and concerns about stormwater and flooding. Other comments had been that four-plexes were not consistent with the surrounding neighborhood, and some neighbors were concerned about annoyances from the parking lot lighting. Mr. McGuire displayed photos that showed the contrast between the proposed buildings' mass and scale and the surrounding residences. Most were single-story ranch style homes that had been built in the 1950s and early 1960s. Two family home duplexes on Olive Street from the same era ranged in size from 1,432 to 1,646 square feet; for an average of about 1,500 square feet. The proposed four-plexes would be two stories with a tall roof peak, and a total height of 28 feet. The footprint would be 3,524 square feet, and individual units would be about 1,600 square feet each.

The Comprehensive Plan showed this neighborhood as being located within the Old Lee's Summit Master Plan area and as part of the older Downtown Lee's Summit area. That master plan had a goal of increasing housing stock including rental and for sale multi-family medium- to high-density townhouses and single-family homes. The proposed use was consistent with the plan's established goal of increasing available multi-family housing stock. Another goal of the master plan was to improve neighborhood streets from the current rural section to an urban section, with urban street design elements such as curbs, sidewalks and shoulders.

This proposed development would be consistent with the Old Lee's Summit development master plan, if the applicant made the improvements to Olive and Orchard Streets as described in the Traffic Impact Analysis. The Unimproved Road policy defined these two streets as being built to an unimproved road standard, with both lacking urban street elements. The transportation evaluation that the applicant's engineer had submitted had incorrectly categorized the development process and as the project had a preliminary development plan, it was subject to the Unimproved Road policy. That policy did not associate development with interim road standards on collector or local roadways. These were

required to be constructed or improved to urban standards for any development; and this meant that urban road improvements would be needed along both Olive and Orchard Streets. Mr. McGuire added that Mr. Michael Park was present and could answer questions.

Mr. McGuire then listed staff's 7 Conditions of Approval. The first two were the requested modifications for the vinyl fence and landscaping on the north property line and for the 26-foot rear yard setback. Condition 3 stated that development would comply "with the recommendation of the Transportation Impact Analysis (TIA) dated July 2, 2019." by Mr. Park. The next 4 conditions addressed the proposed buildings' compatibility with existing homes in the neighborhood. The proposed roofline would be lowered and additional unit offsets would break up the buildings' visual mass. Buildings 1 and 9 would have covered side porches facing Olive as well as a sidewalk connection to the street. The intent was to give the appearance of a front door entrance (Condition 6). Similarly, a front yard look would be created by replacing the 6-foot privacy fence on Olive with a 4-foot picket fence (Condition 7).

Following Mr. McGuire's presentation, Chairperson Norbury asked if there was anyone present wishing to give testimony, either in support for or opposition to the application. He asked that comments be limited to 3 minutes.

Ms. Cathy McClintock gave her address as 407 NW Olive Street, adding that she had lived there for 34 years. Her major concern about the project was infrastructure. Olive was a narrow street: she had measured it and it was only 25 feet. It was also a dead-end street so could not be considered a thoroughfare. At the south end were a number of businesses that operated a fleet of large flatbed trucks and trailers. Other large trucks delivered goods on a regular basis. This often shut down traffic, and she had photos of the truck traffic. Neither Olive nor Orchard had any curbs, shoulders or sidewalks, and had no storm drainage system. Years before, residents along Olive and Central Streets had been allowed to fill in ditches in order to have more parking; and this had contributed to chronic flooding. A large culvert installed under Central Street also channeled water westward into residents' yards. The Olive/Orchard intersection was quite small and had always been a nuisance. There was nowhere that a driver could maneuver if necessary; and all northbound and southbound traffic on Olive had to wait to turn onto eastbound Orchard, while vehicles were stopped at Orchard's stop sign. Due to this lack of room, drivers had sometimes even driven into the ditch. A stop sign for southbound traffic had been installed years ago, but drivers seldom did stop. This intersection was the proposed entrance and proposed exit for the townhomes planned in this application. At an average two vehicles per residence, a total of 72 vehicles would be added, causing an overload on an already overloaded street. Both streets were used by most people to get to Chipman.

Ms. Pat Vanbebber gave her address as 402 NW Olive Street. She also had concerns about increased traffic and more scarce parking. She pointed out that while there might be enough parking for residents, those residents would have friends and relatives who would also need to park their vehicles. Traffic was already heavy and people might start parking on the street. She was also concerned about the detention pond releasing water in the direction of the houses; and about increased flooding in particular.

Ms. Diana Peoples gave her address as 404 NW Olive Street. She believed the project had too many units for that small an area. She also believed that traffic, parking, and the narrow streets would be a problem, and the streets were too small for the traffic even now. Both a police car as well as a snow plow had fallen into a ditch. It was altogether a bad situation to have so many cars go through there. A neighbor across the street had especially bad problems with flooding on her property.

Ms. Tana Neill gave her address as 107 NW Orchard. She noted that when school buses went through the intersection, it could not turn that corner if a car was parked anywhere. The bus would have to wait until someone moved the car. She lived at the 'orphan' end of Orchard,

which was the last stretch of street to get a snow plow. This was not a good corner to add a lot of traffic.

Mr. Harvie Farnam gave his address as 401 NW Olive Street, which was at the dead-end. He pointed out that the street was only 20 feet wide, with ditches on both sides and no storm drains. Cedar Creek was on his side of the street, and a lot of water went through there at times. In the winter it was not plowed very often. The neighborhood and its infrastructure could not support that many more people and vehicles that would move in. He also lived near the end where large trucks and trailers came through, and they took up most of the street's width when moving.

Mr. Slutter returned to the podium and addressed some of these concerns. Most of the stormwater would be directed toward the back of the property where the two detention basins were. He was aware that much of the stormwater drained toward Olive, and he was working with staff to direct more of the water toward the back. The City had guidelines and standards for water detention, as well as stormwater treatment. Concerning parking, each unit would have a driveway with room for two vehicles, as well as garages that could serve the same purpose. Additional parking stalls would be on the site itself for overflow parking. The existing streets were 20 to 22 feet wide, with 10 to 11-foot lanes. In view of the capacity of the existing streets, the traffic impact would be minimal and the request to improve Olive and Orchard up to Chipman and Douglas was excessive. They were well below the threshold for improving streets and the improved street could handle up to 1,100 cars per day. Accordingly, he was requesting a waiver for improving Olive and Orchard. Regarding the fence, he did want to provide some kind of privacy in the back yards for people living on Olive, and the six-foot fence could go at least up to the buildings.

Mr. Dick Burton stated that the project would be "Orchard Park", not "Burton Townhomes". He had done a project like this before, Ironwood Townhomes at Florence and Third. It was 28 units on 3.2 acres, and had been very successful. That development had 11 overload parking spaces, but rarely used all of them. This complex would have 36 units and 28 overload spaces. He understood the residents being concerned about flooding, but two detention ponds were planned, not just one. They were actually directing most of the water to the north, which would relieve some of these concerns. The railroad had a break point where water would either run south nor north, and it was just south of this property. Anything directed onto the railroad would run to the north.

The request that the applicant improve Orchard and Olive Streets all the way to Chipman and Douglas was not economically feasible, as this project was not large enough for that. It had an additional street where a fire truck would make a loop through the project and come back out. There was no need to park on either Olive or Orchard; and if a school bus was to make the turn it would be coming through the project already picking up students. Mr. Burton said he understood the concerns, but he had grown up in Lee's Summit and had owned the Ironwood Townhomes for 15 years.

Mr. Burton added that he had made some commitment to the property. When he had purchased it, it had been the de facto dump for the neighborhood and he had taken out about 8 dumpster loads of trash. There had also been derelict buildings that he'd had removed. Some homeless people had been staying there and he had helped some of them get into shelters. He added that he hoped the nearby residents would give him the benefit of the doubt and was sure that they would be proud of this project in their neighborhood.

Mr. Bruce Best stated that his license as an architect was not currently active. He worked with a man who was an associate in Independence, after a long and serious illness that lasted for 8 years. He had recovered to some degree and was now working under the associate's license and was not currently registered. He had been the architect of record on the Ironwood project; and this one was similar in many ways. However, Ironwood was designed to be an

apartment project from the beginning and tonight's application was for a group of townhouses. It was designed for urban professional people who wanted the tax advantages of home ownership but did not have the time for a house. He had once lived in a similar project in Leawood; and his neighbors were professional people including doctors, empty-nesters who wanted to downsize and people whose jobs required regular traveling and wanted a home base, not an apartment. He would expect 10 to 20 percent of the residents in tonight's proposed development to be in the latter group.

In terms of changing the overall outlook, they could lower the structures somewhat. However, this was essentially a trade-off, as the higher roofs would shed water and snow more quickly. He pointed out that the existing site was heavily wooded on both the north and south sides. These were mature trees and would act as additional screening for the development. A duplex just to the north on Orchard had a similar design and was also two stories; and it had been there for over a decade with no complaints. In terms of the buildings' overall appearance, City staff had provided extensive comments about materials; though the applicant had not had time to do color renderings. They had a number of options for using these materials' colors and textures to break up the mass of the buildings and make them look smaller. The buildings at Ironwood were all the same color, and he had learned that some variety was necessary. Breaking up the visual impact for this project would make the duplexes look more like the single-family houses to the north and east.

Concerning breaking the building up from front to back, and setbacks, Mr. Best suggested that a single break would be sufficient. There was space for an extra window in the front bedrooms, which would be an asset in selling the units. Mr. Best concluded that he and his associates had done good work in the past, and he had worked on projects throughout Lee's Summit over the years.

Chairperson Norbury then asked if the Commission had questions for the applicant or staff.

Mr. Loveless asked Mr. Park for some more detail about the road improvements the applicant was to do. Mr. Park replied that they would need to bring Orchard and Olive Streets to meet the City's urban standards. This would require widening both roads and adding curb, gutters and enclosed storm sewers. Typically sidewalks were also required and staff could evaluate whether or not sidewalks would be needed for the entire widened streets or just within the limits of the project. Typically, sidewalks were always required. Additionally, the turning radius at the intersection would need improving. In general, what was on Orchard to the east of Douglas was what staff would expect of that street from Douglas west to Olive Street. Olive would be more similar to a street in a residential neighborhood.

Mr. Loveless commented that this seemed like a lot of improvements considering the size of the site and the project. He asked why it was listed as a condition and Mr. Park replied that staff had a direction from the City Council regarding the adopted road policy. This policy provided the City with guidance on what to require for a development application, including what types of roads were appropriate for what areas, and what was acceptable to the City Council for development near those roadways. The policy was based less on capacity than on safety and a community design standard.

One of the first things staff looked at was whether a road had any one-lane segments. These roads were generally 20 feet wide, and sometimes 22 feet; but neither Orchard nor Olive had any one-lane stretches; so an aesthetic was a factor here rather than any safety issue. In the case of this application, it was in an older, more established part of Lee's Summit whose roads had been built to an older standard. In some situations like this, the roads would often just remain undeveloped until they became part of some capital project. That had been the case with Orchard Street east of Douglas to Independence. That was left to the Council's discretion as applicants went through the public hearing process. Sometimes this involved compromises and waivers.

Mr. Loveless asked if it would be feasible to do some sort of escrow toward future road improvements, and Mr. Park replied that this would be workable in this case, as the improvements needed to be in place in order for development to happen.

Mr. Gustafson asked Mr. Slutter if he had done a cost estimate for these improvements. Mr. Slutter answered that he had not, and had in fact one received the impact statement today. It would be about a half mile in each direction on both streets, and adding curb, gutter and storm sewers would require a complete rebuild, making it about a \$1 million project. Mr. Gustafson asked if he had any alternative mitigation of the impact to recommend, and Mr. Slutter answered that he would prefer a waiver. Mr. Gustafson then asked Mr. Park if the City had an unimproved street standard. Mr. Park replied that this was referred to in the policy as an interim road standard; however, this was generally limited to larger roads including arterials. Lee's Summit Road, for example was built to interim standards. It generally meant a road that was still rural in nature but that could accommodate single-family subdivision development. Development could later reach a point where an interim road did need an upgrade. New residential streets had to conform to an urban standard including curbs.

Mr. Gustafson asked if the City would ever consider a residential interim standard without drainage or sidewalks; and Mr. Park answered that this was the City Council's purview. That would need to be something between urban standards and the status quo.

Mr. Funk asked Mr. Park if any traffic impact was likely to result if the street improvements were not done; and if the streets in their current condition could handle this development. Mr. Park acknowledged that the streets had a very low volume of traffic. Orchard Street east of Olive had a load of about 200 or 300 cars per day; and Olive south of Chipman had about 800 to 900 per day. This volume was sometimes seen even on cul-de-sac streets. Lee's Summit's typical lane width was 12 feet for two-lane roads, and 11 feet for multiple-lane roads. In some communities, 10-foot lanes were acceptable. Narrower lanes were a problem for larger vehicles including school buses, especially at intersections.

Ms. Arth noted that some of the townhomes would be about 50 feet from the railroad tracks. Mr. Slutter answered that at the closest point, there would be 26 feet from the townhome to the property line, and the property line was approximately 50 feet to the railroad. Ms. Arth asked if there was any plan for noise abatement. Mr. Slutter answered that they planned to keep as many of the existing trees at the property line as possible. These did provide some buffering, although the trains could still be heard. Mr. Arth then asked if the homes could include windows that would muffle sound, and Mr. Best answered that these would be insulated double-pane windows, so they would help reduce the noise. Additionally, these would be 2x4 exterior walls with stucco and heavy masonry material, which would reduce sound. Nearby trains could be an obnoxious source of noise then they blew their whistles, but this development was not in a location where that was likely to happen.

Mr. Loveless left the table, at 6:10 p.m.

Ms. Arth asked if any staff member had an estimate of what improving the two roads would cost. Mr. Park responded that the applicant's estimate was probably correct. It was a total of about 3,000 feet of roadway.

Mr. Lovell asked about stormwater. Mr. Monter answered that staff had reviewed the applicant's stormwater report, which had been clear, and they had met all the requirements. He confirmed for Mr. Lovell that these were for sale and not rentals.

Chairperson Norbury noted to Mr. Best that part of this application was a rezoning from RP-2 (duplex) to RP-3 (four-plex level zoning). The applicant had addressed some concerns about the visual mass and how to mitigate it. He asked if there was a way the applicant could do that

would make the building more suggestive of a duplex in appearance. That would be closer to conformance with current zoning. Mr. Best answered that it would be, to some extent. City staff had suggested three breaks in the structures; but this would be extremely difficult to do successfully in terms of the building's appearance. It would involve high enough construction costs to make them much more expensive. They could, however, visually suggest two attached duplexes with one break in the middle. That would also increase the cost, but not as much. The perceived difference could be suggested by the two sides of the unit being different colors or different material textures. However, this site had more room for landscaping than the existing Ironwood development and the plan offered more privacy for neighbors.

Chairperson Norbury noted that the heights were close to 29 feet, and asked about the height of the duplex he had designed on Olive. Mr. Best answered that it was at least 24 feet. Chairperson Norbury then noted that a look up and down Olive showed almost all the homes as being one story; and the four-plexes would be much taller than that, an obvious visual contrast. He asked if there was any other possible mitigation, at least for the buildings on the ends, in order to make the street frontage more consistent. Mr. Best suggested that property placed landscaping, and specifically trees or shrubs, would help break up that visual impact; and in fact this was a very common approach to that sort of problem. Modifications could be made to the buildings themselves, especially with window placement and rooflines on some units. Staff had already suggested doorways facing Olive Street. These were all realistic approaches; and he suggested a direction to the applicant to submit preliminary designs to staff. They had not originally done this as they had thought the landscaping and fence screening would be sufficient.

Ms. Arth asked for some details about proposed amenities for the project. Mr. Slutter answered that this would not be an emphasis. He noted that he had put in a swimming pool at Ironwood but it was rarely used. He added that the applicant had bought an extra house and lot on the north side of the property, with the result that the first four buildings near Olive had extra-large and deep lots. This was not a situation where a two-story building was placed right next to a single-story house. They would have much bigger back yards than the units near the lumber yard or railroad track.

Chairperson Norbury answered that he was more concerned with the Olive Street frontage. Mr. Slutter commented that not all the units had sliding patio doors in back. Some of them had been moved to the side. There were several 12-inch bump outs as well as 'eyebrows' below them. Mr. Best added that the drawings also did not show shadow patterns that these bump outs would have. That would also break up the massing view, at least in the daytime.

Ms. Arth asked the applicant about the prices of the townhome units, and Mr. Slutter answered that they would be from \$220,000 to \$230,000. That was much higher than current market prices for townhomes but these would have more features. They included concrete vaults that could serve as storm shelters and exterior materials such as stone wainscoting. The buildings would not all be alike; for example, one might have batt and board on the bump outs, and another would have lap siding. They were likely to be the most expensive four-plexes in the Downtown area.

Ms. Vanbebber remarked that the neighbors were less concerned with how the buildings looked than they were with the number of people who would be living on that property, with an increase in traffic. They were pleased with the plan to widen the streets.

Ms. Janice Newman gave her address as 109 W. Orchard, adding that this was at the corner. She stated that her back yard flooded very frequently and noted that the volume of traffic did include large vehicles like trash trucks. Her car had been hit a few years ago and she expected traffic to be a bad problem.

Ms. McClintock asked if there was a photo of the intersection, adding that the access to the development would be both an entrance and exit, and it was close to what was already a problem intersection. She did not think this was a good location for such a large development.

Ms. Peoples said the problem was the number of units. She would have preferred duplexes rather than four-plexes, adding that she had lived in a four-plex and did not like it. It amounted to too many units with too many people. It would cut down on the traffic and the applicant would still get to build something on the property. She added that the streets really had needed widening but it would be nice if someone cared about the flooding.

Mr. Tracey Neill gave his address as 107 NW Orchard. Referring to the testimony that the break point of drainage was on the southwest side of the property, he'd had as much as 3 inches of water come across the road and become about 18 inches deep going down the west side of his property on its way to flooding other neighbors' back yards. He asserted that the water would not drain to the north; and in fact it came from that direction.

Mr. Funk asked Mr. Monter if the City had a plan to address the flooding problem. Mr. Monter consulted the schedule of capital projects that were approved, under construction or proposed for construction and did not see a project for this location in what had been approved and budgeted. The City did have a program, based on priority, for drainage and flooding problems. He was not sure about any specific projects in this area.

Chairperson Norbury asked Mr. Park about the alignment of the access point from Orchard. Mr. Park replied that City staff preferred that it would line up with other streets and intersection, as this reduced the number of conflict points and increased safety. The issue was actually the condition of Orchard and Olive Streets and their intersection. He would prefer an alignment with Orchard than an offset a number of feet away.

Mr. Richard Raine gave his address as 109 W. Orchard Street. He asserted that so much water came into his backyard, he might as well stock it with fish. The repeated flooding had damaged the foundation of his house. Moreover, widening the street would effectively eliminate his driveway, and he had seen many drivers go into the ditch at the corner. A lot of traffic went through for such a small street, including large heavy trucks. He did not see any benefit to the neighborhood from this project.

Ms. Tana Neill stated that the Transportation Department would not allow school buses to turn around in the development. They picked up all the children along Olive or Orchard and did not turn around anywhere.

Ms. Sharon Farnam gave her address as 401 NW Olive, which was at the bottom of the hill. Since the last heavy rain, the street was actually crumbling into the ditch. Flooding was bad in that neighborhood and the breaking point was north of the intersection. The water would stand for days before it dried out. She also had a problem with that many people coming into a single-family neighborhood. They already had problems with break-ins.

Chairperson Norbury asked if there were further questions for the applicant or staff. Hearing none, he closed the public hearing at 6:37 p.m. and asked for discussion among the Commission members.

Ms. Arth acknowledged that flooding was obviously a major concern for the neighbors and should be for the City as well. She hoped that when this application went before the City Council they would give this serious consideration as a priority. She wanted it on the record that the Commission had heard considerable testimony from the residents about this problem. It was understandable that the City wanted improved roads, but in this case they were asking a developer to bear that entire cost. She hoped the Council would look into ways to reduce that cost, as it was extremely high and could discourage new development.

Mr. Funk observed that the City was trying to encourage this type of development. He agreed that the developer was being asked to bear a very large expense. He'd had a business on Donovan several years ago and knew that there were issues with flooding. Water came from the north south and west down Donovan. He did believe that the proposed stormwater improvements would alleviate much of it. He also agreed that the developer was being asked to bear a major expense, and at that in an infill area that the City had wanted developed.

Mr. Gustafson noted a remark that street improvements were the purview of the City Council. He suggested that the applicant prepare some plans for mitigation to show to the Council when the application came to them. Mr. Lovell agreed that any alternatives or options the applicant could suggest would be helpful.

Mr. Funk noted that the applicant was not in agreement with all of the conditions.

Chairperson Norbury said some more work still needed to be done on the elevations, and he would like to the Commission to see them before the application went to the Council. He tended to be cautious any time there was a proposal to change a zoning to a more intense use, especially in a residential setting. He was not as concerned about roof heights as he was about the frontage on Olive. Regarding stormwater, applicants were not generally expected to fix all the stormwater problems, though this had been done with some large projects. Staff generally concentrated on an applicant handling the stormwater that the subject property generated. If staff's recommendation was that the project met those conditions, then an applicant was doing what they could with the stormwater they were responsible for.

The road improvements presented more difficulty. He had used that road and intersection several times and it was entirely too tight. Virtually all the neighborhoods north of Downtown were significantly behind when it came to infrastructure. He had certainly supported the improvements to Orchard east of Douglas, as it provided a lot of flood control and made the road much safer. He wanted to see the same thing on Orchard west of Douglas, as well as Olive; however, he did not think that imposing a 7-figure financial burden on the developer was consistent with the size of scope of this project. He was not sure the project was a good fit at this point, emphasizing that this was not the fault of the applicant or of the neighborhood. The reality was that the City had not yet made the necessary improvements one of the priorities. Hopefully some kind of development agreement could manage the cost in a realistic way. If that was not likely to happen he would not vote for approval.

Chairperson Norbury presented a number of options. The Commission could recommend for approval and perhaps adjust some standards. It could also choose to recommend denial, or continue the application to address these issues. Chairperson Norbury then re-opened the hearing, at 6:53 p.m.

Mr. Burton stated that this was a \$7 million project, and he did not think the City should impose on him the cost of improvements that the City should have done a long time ago. It would simply not be feasible to spend an additional \$1 million on road or stormwater improvements. Chairperson Norbury again closed the hearing.

Ms. Arth said that the Commission could send this on to the Council, and Chairperson Norbury answered that while this was an option he would prefer the architectural issues resolved before that.

Mr. Funk asked if a continuance could include asking the applicant to provide some architectural break-ups. Chairperson Norbury said they could make a recommendation on the application as presented. Mr. Soto pointed out that the Commission did have the option to continue the application in the interest of getting more information.

Planning Commission

Action Letter - Draft

July 11, 2019

Ms. Arth made a motion to continue Application PL2019-020: Rezoning from RP-2 to RP-3 and Preliminary Development Plan: Burton Townhomes, 408 & 500 NW Olive St; Cherokee Flight, LLC, applicant; to a date certain of July 25, 2019. Mr. Gustafson seconded.

Chairperson Norbury asked if there was any discussion of the motion. Hearing none, he called for a vote.

A motion was made by Board Member Arth, seconded by Board Member Lovell, that this application be continued to the Planning Commission, due back on 7/25/2019. The motion carried unanimously.

Other Agenda Items

There were no other agenda items at this meeting.

Roundtable

Kent Montor, Development Engineering Manager, noted that he appreciated when an applicant made the comment that they appreciated Staff being tough but reasonable.

Adjournment

There being no further business, Chairperson Norbury adjourned the meeting at 6:53 P.M.

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The City of Lee's Summit

Action Letter

Planning Commission

Thursday, July 25, 2019

5:00 PM

City Council Chambers

City Hall

220 SE Green Street

Lee's Summit, MO 64063

Roll Call

Present: 7 - Board Member Carla Dial
Board Member Dana Arth
Board Member Don Gustafson
Board Member Donnie Funk
Board Member Jeff Sims
Board Member Jake Loveless
Board Member John Lovell

Absent: 2 - Board Member Jason Norbury
Board Member Mark Kitchens

Roll Call

Approval of Agenda

A motion was made by Board Member Arth, seconded by Board Member Dial, that this agenda be approved. The motion carried unanimously.

Public Comments

There were no public comments presented at the meeting.

Approval of Consent Agenda

[2019-2929](#) Minutes of the July 11, 2019, Planning Commission meeting

A motion was made by Board Member Dial, seconded by Board Member Arth, that the minutes be approved. The motion carried unanimously.

Public Hearings

[2019-2911](#) Continued Appl. #PL2019-020 - Rezoning from RP-2 to RP-3 and Preliminary Development Plan - Burton Townhomes, 408 & 500 NW Olive St; Cherokee Flight, LLC, applicant

Vice Chair Funk asked Mr. Bushek whether the Commission needed to re-open this hearing or if it could hold a discussion based on staff's recommendations in their July 19, 2019 memo and what the applicant had submitted. Mr. Bushek replied that the Commission had the option to discuss the application. He believed that at least one person wanted to enter additional material into the record; and the Commission could re-open the hearing if they were going to take additional evidence and testimony.

Vice Chair Funk opened the hearing at 5:07 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Mr. Soto stated that just before the meeting, one of the neighbors had provided photographs illustrating some of the road conditions along Olive Street, as long as some of the characteristics along Orchard including drainage ditches. He entered the photographs as #19 on Exhibit (A), list of exhibits 1-19. Mr. Soto then gave the photographs to the Commissioners to view. At the last meeting the Commission had given a direction that they wanted to see some architectural changes, including offsets between the units. That might include reducing the structure's overall height, to reduce some of the bulk and make the building fit better with the existing neighborhood. Changes were requested to the previous elevations, on at least corners or street-facing sides.

Mr. Soto then displayed the revised elevations that staff had received. The drawings did not show offsets between units. The structure height was lowered a little under two feet, from 28 feet 9 inches to just under 27 feet. A side view showed that an added covered side entry. The Commissioners' packets included a memo from Mr. McGuire about these items. Staff believed that the revised changes had not gone into as much detail as the Commission had hoped to see; based on comments made at the previous meeting.

Mr. Bruce Best, associate with Architecture Graphics Management and Planning (AGMP), stated that the applicants had complied with the request to lower the roof. However, they did want to maintain a roof slope sufficient to shed the seasonal leaves as well as rain and snow. A lower pitch could result in vegetation and debris accumulating on the roof; a seasonal pattern that he had seen occur in this region for a number of years. Concerning the side elevations, they were considering a number of changes, separating the buildings into a pair of duplexes and shifting them a few feet. There was already a significant change in the depth of the garages, which would reduce the size of back yards and raise the cost of the buildings. Elevation changes, including projections out on both sides and back and the addition of gable ends on the sides and front, would also break up the visual effect. They could also vary the colors and the amount of stone veneer, with the goal of giving each unit its own identifiable look.

Vice Chair Funk asked if there was any member of the public present who could add to the testimony at the last meeting.

Ms. Cathy McClintock gave her address as 407 NW Olive Street. She commented that the photographs she had provided had shown an everyday occurrence at the intersection. The big trucks shown came through the neighborhood every weekday, and sometimes on Sunday at the property's southern end. She did not have any objection to development, but did not think this was the right place for 36 duplex units, especially without making changes to the streets.

Vice Chair Funk then asked if the Commission had questions for the applicant or staff.

Mr. Loveless asked Mr. Soto for a summary of how the applicant had addressed the comments on the updated plans they had submitted. Mr. Soto noted that most of the structures in the neighborhood were single-story and so staff had a compatibility concern about roof heights. a compatibility concern in terms of the buildings' relatively massive appearance in particular. At this point, a 2-foot reduction in roof height was not enough to compensate for the overall visual contrast with the rest of the neighborhood. Mr. Soto acknowledged that they did provide a covered side entry, on the sides facing Olive Street. A few additional features could make the side look more like a front entry, consistent with existing homes along Olive; although the intent was not to make the side look identical to the front.

Mr. Loveless asked if staff believed that the exterior materials the applicants suggested fit in with the rest of the neighborhood. Mr. Soto acknowledged that there was a mixture of materials; and he did not consider the materials themselves to be an issue. However, the covered side entry could be 'dressed up' a little more even with the added element of the pitched roof. He confirmed for Mr. Loveless that the concerns about the front architecture were about the lack of apparent offsets. It would be a wide building, so offsets could break up the large wall planes. Ideally they would be between each unit; but the applicant wanted to have them between two 'twin' sides.

Mr. Loveless asked if it was accurate that both staff and the City Council were directing that all of Orchard should be improved by the developer as part of the project. Mr. Soto replied that the City's unimproved road policy did call for that.

Vice Chair Funk ask the applicant if they were on the record that they were not willing to provide the road improvements. Mr. Mick Slutter, of Renaissance Infrastructure Consulting and present representing the developer Mr. Dick Burton, stated that he had spoken with one of the Councilmembers who had agreed that the developer should not be responsible for the road improvements. The expenses would effectively kill a project of this size: it was just not do-able to pay for \$1 million in road improvements in a \$7 million project. Moreover, these were public streets that should have been improved years ago. The reason for not having offsets between each unit was that everyone he had shown these plans had already thought they were duplexes. They had already added 6 or 7 gables to the building; and the side entry was an issue they'd had to deal with on short notice after the last meeting. All of the other buildings were within the project, and a visitor or neighbor would have to drive through to see them.

Mr. Best added that the drawings of this building showed mostly predominantly hip roofs, which were slanted on the ends as well as the sides. That reduced the effective roof height, as the highest portion of it, would be further back. The highest point could be, as much as 15 or 20 feet back from the corners. That was designed specifically to make the roof less conspicuous and the general look to be more consistent with the neighborhood. He emphasized that the drawings he had meant to generally illustrate the whole project, with some specifics on that one end. In terms of wanting additional design elements and materials on the ends, the applicant could provide a supplemental detail of just that area. Options would include more decorative columns or a gate.

Mr. Loveless asked Mr. Monter if any offsite improvements other than the roads that would be needed for this site. Mr. Monter answered that there were not.

Mr. Slutter added that he had read the traffic report, and they were well below the point of any kind of traffic overload, and well within design criteria for the roads. One street had 400 cars a day and the other had 800 per day; and at that level 60 additional cars would make little difference.

Mr. Loveless noted to Mr. Monter that there were improvements to infrastructure that typically happened with development. He asked if another improvement could be done that might be more appropriate for this development specifically; adding that he was looking for what needed to be included in a recommendation to the Counsel. Mr. Johnson explained that staff did not have a recommendation from the City traffic engineer about any middle ground. It would be the Commission's responsibility to inform the Council if its consensus was that full enforcement of the improvements policy was unreasonable in this case. Unfortunately, the recommendation would need to be an all-or-nothing decision; although there would likely be more debate at the City Council level.

Vice Chair Funk asked if there were further questions for the applicant or staff. Hearing none, he closed the public hearing at 5:22 p.m. and asked for discussion among the Commission

members.

Ms. Dial believed that improving all of Olive Street out to Chipman, and Orchard all the way to Douglas, would be an unreasonable burden on the developer; although the developer should contribute something toward improving the intersection. She agreed with the principle that someone bringing new development into a neighborhood was also bringing in more traffic and did need to take some responsibility. This particular neighborhood already had some problems that the Council might want to discuss in terms of priorities.

Mr. Loveless agreed with Ms. Dial's comments, adding that he wanted to see City staff recommend something other than the improvement of these two roads, including the intersection. The Commission might be able to include a second option in moving the application to the Council for a hearing, in addition to a general approval of the use for this area.

Mr. Gustafson noted that he had brought this up at the last meeting, and believed that there were several options; such as widening Orchard Street or do some intersection improvements. Or they could request an improvement district, in which the nearby lumber business could also participate.

Vice Chair Funk agreed that the Commission should not make a recommendation to the Council without some sort of final direction or recommendation from staff concerning the design of the project itself. This would be the point in the process where staff could make their preferences about designs in particular clear. He had the impression that staff was not altogether comfortable with the design, although the roofline had been reduced and side porches had been added. He did not like idea of 6x6 posts and gable over a doorway. Mr. Soto clarified that at the previous meeting, the Commission had given some direction of what they wanted to see; but he was not sure at present if what they had cited at tonight's meeting was the extent of revisions the applicant was willing to make. Staff could make some suggestions, but the applicant might or might not be willing to take them.

Hearing no further discussion, Vice Chair Funk called for a motion.

Mr. Gustafson made a motion to recommend approval of continued Application PL2019-020, Rezoning from RP-2 to RP-3 and Preliminary Development Plan: Burton Townhomes, 408 & 500 NW Oliver St.; Cherokee Flight, LLC, applicant; subject to staff's letter of July 11, 2019, specifically Conditions of Approval 1 through 14. Mr. Sims seconded.

Vice Chair Funk asked if there was any discussion of the motion.

Mr. Lovell asked if this recommendation was to approve the application to move forward to the Council as is, with no recommendation as to road improvements, or if it would include an amendment stating that while the Commission approved the use, it did not specifically recommend that the developer be made solely responsible for the road improvements. Mr. Gustafson was not sure if it was appropriate for the Planning Commission to make suggestions to the Council. Mr. Loveless stated that the recommendation would include staff's conditions as presented, and that would include improvements for both roads. Mr. Lovell observed that in that case, if the Commission did not agree that the developer should pay for the improvements it would not approve the motion. Vice Chair Funk clarified that the application would go forward to the City Council whether the vote was a recommendation for approval or denial.

Ms. Arth noted that the Commission was not making any recommendations about the road issues. They had not heard from the applicant as to what other changes they were willing to make in response to the Commission's suggestions at the last meeting. She felt that the Commission still had some work to do. Mr. Loveless stated that staff did not seem to have a

Planning Commission

Action Letter

July 25, 2019

second recommendation in terms of the off-site improvements. The City's policy called for improvements on both those roads; and he wanted to know if the Commission had an alternative to suggest. If the Commission did not vote for denial, it could continue the application in order for staff to produce some examples of these alternatives. Or the Commission would approve the application as-is, with staff's conditions of approval, with the Council deciding the extent of the responsibility the applicant would have.

Vice Chair Funk noted that if staff did not have a recommendation on the road improvements, they would be based on the Council's decision. He assumed that Ms. Arth's question regarding the motion was whether the Commission would be approving the design as presented. Ms. Arth remarked that the motion or vote could be to continue the application. Mr. Gustafson was willing to withdraw his motion if the Commission wanted to vote on a continuance; and Mr. Bushek confirmed that this was an option. Mr. Gustafson then withdrew his motion, and Mr. Sims withdrew his second.

Mr. Lovell commented that the Commission had asked for changes to the design; and at this point it was important to separate out the road issue. The Commission could continue the application tonight, or it could vote for approval and the Council could work out what was the appropriate responsibility for the developer. He did not have a problem with the design; as was in favor of moving forward with the motion as originally stated.

On the motion of Mr. Gustafson, seconded by Ms. Arth, the Planning Commission members voted unanimously by voice vote to recommend APPROVAL of continued Application PL2019-020, Rezoning from RP-2 to RP-3 and Preliminary Development Plan: Burton Townhomes, 408 & 500 NW Oliver St.; Cherokee Flight, LLC, applicant; subject to staff's letter of July 11, 2019, specifically Conditions of Approval 1 through 14 to the City Council - Regular session, due back on 8/20/19.

Other Agenda Items

Roundtable

Adjournment

There being no further business, Vice Chairperson Funk adjourned the meeting at 5:37 P.M.

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LEE'S SUMMIT

MISSOURI

MEMO:

July 19, 2019

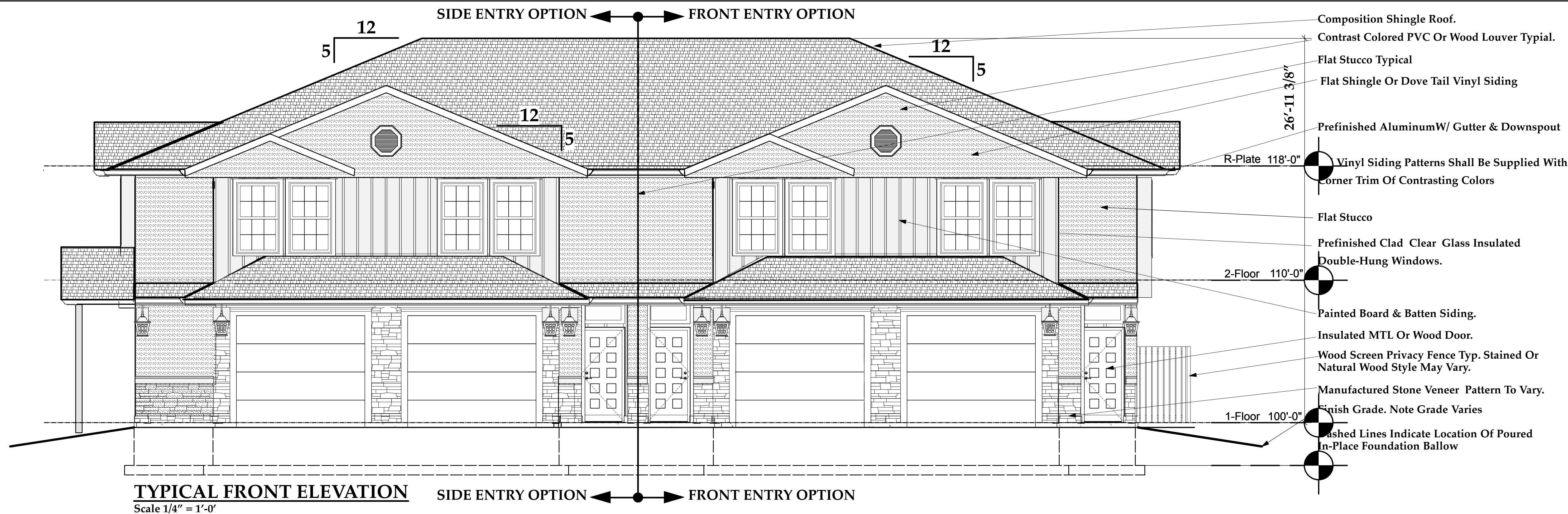
Re: #PL2019-020 – Rezoning and Preliminary Development Plan – Burton Townhomes

To: Planning Commission

On July 11, 2019 the subject application was continued by the Planning Commission in order for the applicant to produce revised elevations in response to concerns raised during the public hearing regarding the bulk and mass of the buildings; the lack of building offsets; and lack of architectural features facing NW Olive St. On July 18, 2019, the applicant submitted revised plans. Changes to the revised plans include: a reduction of the building height from 28' 9-7/8" to 26' 11-3/8" (1' 10-1/2" total reduction); and a covered side entry.

The change to the revised roof height is minimal and does not fully address the concerns of reducing the bulk and mass of the proposed structures to be more compatible with the mass and scale of the existing homes on NW Olive St. Additionally, the applicant neglected to incorporate unit offsets to break up the massing and front planes of the proposed structures. The covered side entry fails to accomplish the requested goal of integrating the side elevations into the existing neighborhood street wall along NW Olive St. The covered side entry could incorporate additional details in order to mimic a front entry along NW Olive St.

It is staff's opinion that the proposed changes do not go far enough to address the architectural concerns raised by the Planning Commission and staff.



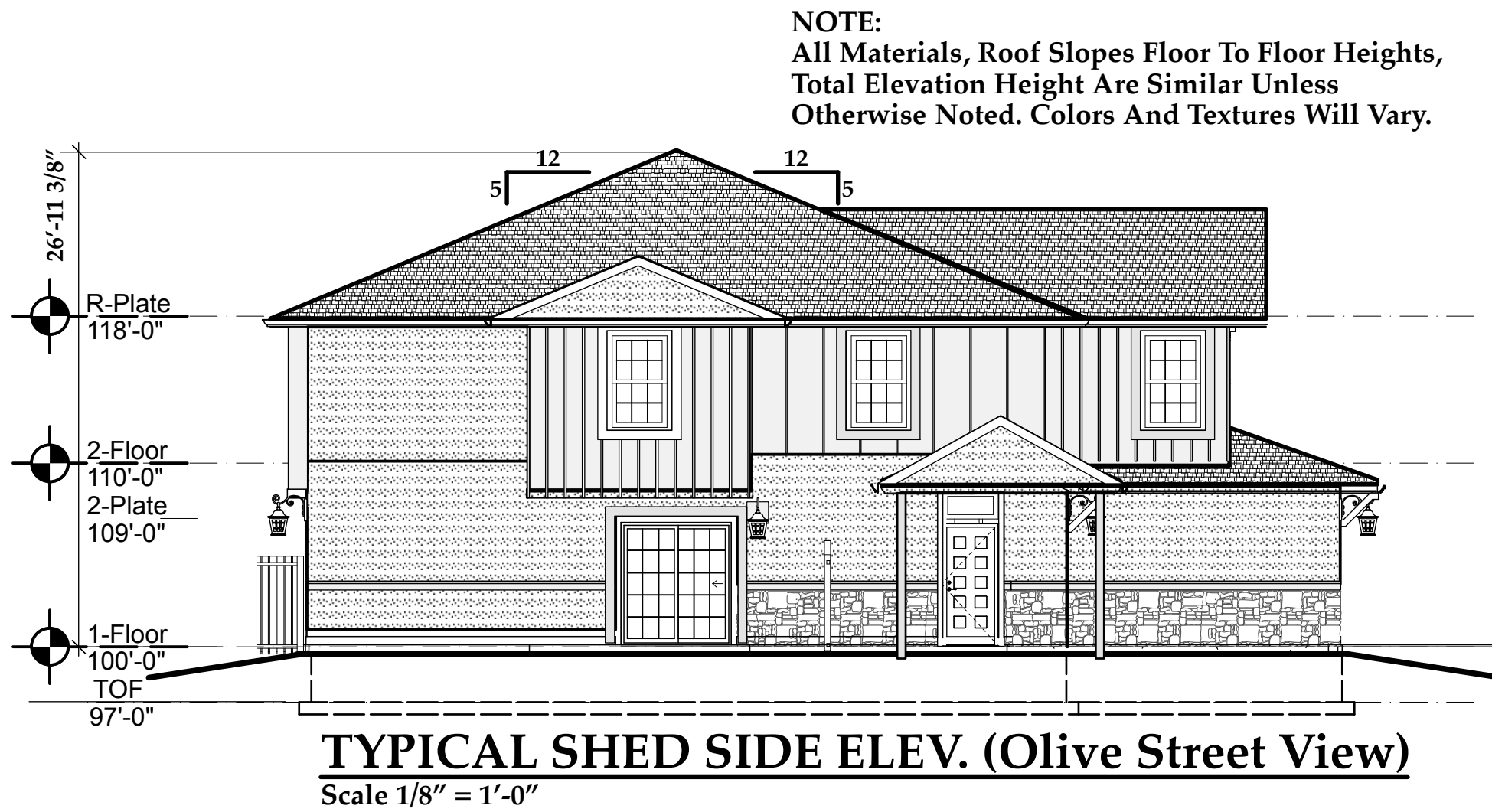
| BUILDING CODE & DESIGN REQUIREMENTS | | | |
|-------------------------------------|--|---------------|--|
| Tenant Identification: | Spec. NEW 2 & 3 Bedroom, Attached Two Story Townhouse 4-Plex, Slab On Grade Units For Resale. | | |
| Applicable Building Codes: | 2012 International Residential Code, 2012 International Mechanical Code, 2012 International Plumbing Code, 2012 Life Safety Code, 2012 International Fire Code, 2006 National Electrical Code, And ANSI A117.1-2006As Ammended And Adopted By The City Of Lee's Summit, Missouri Per The Date Of This Submittal. | | |
| Occupancy Type: | R (Residential) | | |
| Occupant Load: | Gross Area | | |
| | First Floor Living Area | 621 Sq. Ft. | |
| | First Floor Garage Area | 269 Sq. Ft. | |
| | Second Floor Living Area | 793 Sq. Ft. | |
| | Gross Unit Area (living & Garage) | 1,683 Sq. Ft. | |
| | Gross Area | 6,732 Sq. Ft. | |
| Building Construction Type: | Type 5B | | |
| Scope Of Work: | New Construction On Green Field Site. (9) 4-Plex Buildings To Be Constructed On This Site. Units Are To Be Provided With Gas Range, Stove And Water Heater. | | |

NOTE:
All Altered Electrical Circuits In All Electrical Power Outlets In Unfinished, Basement, Bathrooms And Kitchen Within 6'-0" Of Water Shall Be GFI Type Outlets. All Other Electrical Power Circuits Shall Be Upgraded To Standard Arch Fault Breaker Protection As Noted In Current Applicable Residential Building Code.

ENERGY CODE

RECOMMENDED STANDARDS

R-38 ATTICS
R-30 VAULTS
R-13 WALLS
R-8 DUCTWORK IN UNCONDITIONED SPACES
R-19 FLOORS OVER UNCONDITIONED SPACES
.40 U-VALUE WINDOWS



NOTE:
All Materials, Roof Slopes Floor To Floor Heights, Total Elevation Height Are Similar Unless Otherwise Noted. Colors And Textures Will Vary.



Architecture Graphics Management & Planning

Independence Office
Roy Browne 816-228-1111
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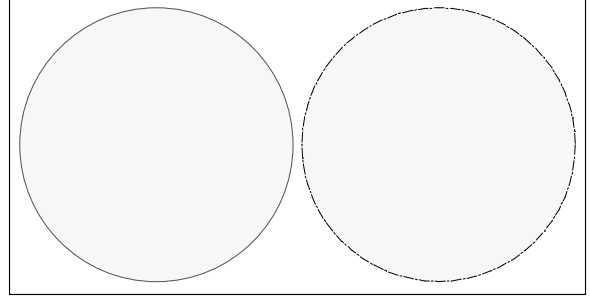
Roy Browne Architect of Record

BURTON TOWNHOMES

??? Thru ??? Olive Street

Lee's Summit, Missouri

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| 4 | REVISION |
| 5 | REVISION |



LEE'S SUMMIT
MISSOURI
Development Services Department

Development Services Staff Report

| | |
|---------------------------------|--|
| File Number | PL2019-020 |
| File Name | Continued Appl. #PL2019-020 – REZONING from RP-2 to RP-3 and PRELIMINARY DEVELOPMENT PLAN – Burton Townhomes |
| Applicant | Cherokee Flight LLC |
| Property Address | 408 & 500 NW Olive St. |
| Planning Commission Date | July 11, 2019 |
| Heard by | Planning Commission and City Council |
| Analyst | C. Shannon McGuire, Planner |
| Checked By | Hector Soto, Jr., AICP, Planning Manager Kent Monter, PE, Development Engineering Manager |

Public Notification

Pre-application held: October 23, 2018 & January 8, 2019
Neighborhood meeting conducted: June 8, 2019
Newspaper notification published on: June 22, 2019
Radius notices mailed to properties within 185 feet on: May 24, 2019
Site posted notice on: May 31, 2019

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Attachments

Transportation Impact Analysis prepared by Michael Park, dated June 2, 2019 – 5 pages

Traffic Study submitted by Priority Engineers, dated October 8, 2018 – 4 pages

Storm Water Report by Renaissance Infrastructure Consulting, Date stamped March 14, 2019 – 12 pages

Preliminary Development Plan, date stamped May 14, 2019 – 11 pages

Architectural Elevations, dated stamped May 14, 2019 – 1 page

Location Map

1. Project Data and Facts

| Project Data | |
|---------------------------------------|---|
| Applicant | Cherokee Flight LLC |
| Applicant's Representative | Dick Burton/Owner Mick Slutter, PE/Engineer |
| Location of Property | 408 & 500 Olive St |
| Size of Property | 3.76 Acres |
| Zoning (Proposed) | RP-3 (Planned Residential Mixed Use District) |
| Zoning (Existing) | RP-2 (Planned Two-Family Residential District) |
| Density (Proposed) | 9.57 units/acre (10 units/acre max in RP-3) |
| Floor Area Ratio | 0.43 |
| Comprehensive Plan Designation | Old Lee's Summit Neighborhoods |
| Procedure | The Planning Commission makes a recommendation to the City Council on the proposed rezoning and preliminary development plan. The City Council takes final action on the rezoning and preliminary development plan. |
| Duration of Validity | Preliminary development plan approval by the City Council shall not be valid for a period longer than twenty-four (24) months from the date of such approval, unless within such period a final development plan application is submitted. The City Council may grant one extension not exceeding twelve (12) months upon written request. There is no expiration to an approval for rezoning. |

| Current Land Use |
|--|
| 408 NW Olive St. consists of two parcels totaling 1.39 acres with an existing 1,152 sq. ft. single family home. 500 NW Olive St. is a 2.2 acre partially wooded lot with an existing 1,500 sq. ft. barn. |

| Description of Applicant's Request |
|---|
| The applicant is seeking rezoning and preliminary development plan approval for a 36-unit residential development comprised of nine four-family attached dwelling units (fourplex). Each unit will be approximately 1,663 sq. ft. The applicant has indicated that the intention is to condo each unit. A |

restriction will be included in the covenants prohibiting rentals and limiting them to owner occupied units.

2. Land Use

Description and Character of Surrounding Area

The proposed site is located west of the intersection of NW Olive St and NW Orchard St. approximately 500 feet north of the NW Olive St. dead end. The surrounding neighborhood is comprised of a mix of 25 single family homes (average 1,066.52 sq. ft.) and 10 smaller two family homes (average 1,510.2 sq. ft. or 755.1 sq. ft. per unit). These one story single family and two family homes are characteristic of the simple post WWII architectural style.

Adjacent Land Uses and Zoning

| | |
|---------------------------------------|---|
| North: | PI (Planned Industrial District) – Boise Cascade Lumber Yard RP-2 (Planned Two-Family Residential District) – Single family and two family homes |
| South: | RP-2 (Planned Two-Family Residential District) – Single family homes |
| East (across NW Olive St.): | RP-2 (Planned Two-Family Residential District) – Single family homes |
| West (across railroad tracts): | PI (Planned Industrial District) – Attic Storage R-1 (Single-Family Residential District) - Single family homes |

Site Characteristics

The site consists of three lots that form a T-shaped site. The Union Pacific railroad line borders the site on the west side; an existing tree line provides screening between the railroad line and the subject tracts. 408 NW Olive St. consists of two parcels totaling 1.39 acres with an existing 1,152 sq. ft. single family home. 500 NW Olive St. is a 2.2 acre partially wooded lot with an existing 1,500 sq. ft. barn. The sole access to the site is from NW Olive St.

Special Considerations

The Union Pacific railroad line borders the site on the west side.

3. Project Proposal

Site Design

| Land Use | |
|----------------------|-------------|
| Impervious Coverage: | 44.8% |
| Pervious: | 55.2% |
| TOTAL | 100% |

Parking

| Proposed | | Required | |
|--------------------------------|--|--------------------------------|----|
| Total parking spaces proposed: | 72 - 2 per unit 28 - visitor parking 100 Total | Total parking spaces required: | 72 |

Setbacks (Perimeter)

| Yard | Building Required | Building Proposed |
|-------------|---|---|
| Front | 20' | 20' |
| Side | 10' from lot line and 20' separation between buildings | 20' from lot line and 20' separation between buildings |
| Rear | 30' | 26'* |

*Requires modification

Structure(s) Design

| Number and Proposed Use of Buildings |
|---|
| 9 multi-family buildings (fourplex) |
| Building Height |
| 28'10" |
| Number of Stories |
| 2 stories |

4. Unified Development Ordinance (UDO)

| Section | Description |
|----------------------------|--|
| 2.240, 2.250, 2.260 | Rezoning |
| 2.260, 2.300, 2.310, 2.320 | Preliminary Development Plan |
| 2.320 | Development plan and allowable modifications |
| 4.120 | Zoning District Regulations |

5. Comprehensive Plan

| Focus Areas | Goals, Objectives & Policies |
|--|---|
| Overall Area Land Use | Objective 1.4 |
| Residential Development | Objective 3.2 Objective 3.3 Objective 3.4 |
| Chapter IV: Preferred Framework (Old Lee's Summit Development Master Plan) | Increase Housing Stock |

6. Analysis

Background and History

- March 16, 1887 – The plat for Hearne's Addition was recorded.

Staff has had several conversations and met with the applicant on three occasions. During those conversations and meetings, staff conveyed the concern that the proposed project needs to be consistent with the surrounding neighborhood in terms of the building scale and massing. The applicant was also directed to take into account the historical nature of the Downtown Lee's Summit neighborhoods when designing the exteriors of the building. Subsequent resubmittals of the development plans provided an increase in the architectural elements of the buildings in the form of additional windows, projections and architectural accents. However, the applicant has not addressed the concerns with the buildings scale and massing.

Compatibility

The single family homes on NW Olive St are typical post WWII single story ranch homes built between 1950-1962, with the exception of 407 NW Olive St which was constructed in 1935. These homes range in size from 864 sq. ft. to 1,646 sq. ft., with the average being 1,066.52 sq. ft. The two family (duplex) homes on NW Olive St. were constructed between 1950 and 1962. These duplexes range in size between 1,432 sq. ft. to 1,646 sq. ft., with the average being 1,510.2 sq. ft.

While the opportunity for neighborhood redevelopment and additional infill is present in the neighborhood, the mass and scale of the proposed building is in contrast with the character of the existing homes. The four family buildings will be two stories with a tall roof peak and have a total height of nearly 28' 10". The buildings will have a footprint of 3,524 sq. ft. with individual units being 1,663 sq. ft.

Adverse Impacts

The development is designed and located in such a way that it will act as a buffer to the more intensive uses to the north (lumber yard) and west (railroad). It also serves as a transition between these uses to the surrounding residential homes. Additional storm water runoff will be mitigated by the construction of two detention ponds adjacent to the western property line. The increase in traffic caused by the

proposed development will be mitigated by road improvements as outlined below and in the Transportation Impact Analysis dated July 2, 2019, prepared by Michael Park, City Traffic Engineer.

Public Services

Olive St and Orchard St are defined according to the Unimproved Road Policy as built to unimproved road standards. Both roadways lack urban street design elements (e.g. curb, sidewalk) and shoulders present on interim standard roadways.

A transportation evaluation pertaining to this development and applicability of the Unimproved Road Policy was conducted by Priority Engineers. This evaluation included some analysis of traffic, trip generation and the development impact on Olive St and Orchard St. The transportation evaluation submitted by the applicant's engineer incorrectly characterized the development process and policy applicability on this project. The proposed development is a preliminary development plan and remains subject to the Unimproved Road Policy.

The Unimproved Road Policy does not associate development activity with interim road standards on local or collector roadways and specifically requires local and collectors to be constructed to or improved to the urban standard for any development per the Policy. Though Olive Street and Orchard Street had a measured average daily traffic volume far below 5,000 vehicles per day the Policy requires improvements to urban standards on both roadways from the project to Chipman Rd and Douglas St, respectively, as neither roadway is an arterial.

Since the transportation evaluation provided by the applicant's engineer dismissed the policy or erred in its interpretations of applicability, there has been no justification for waivers nor road improvements recommended by the applicant's engineer or included in the applicant's development plans.

The volume of traffic on Olive St and Orchard St is low, even for residential streets, and the added trips generated by this proposed residential development are also minimal. There are no known one-lane sections of roadway along Olive Street or Orchard Street. The existing 10-foot to 11-foot lanes are plenty capable of handling the existing traffic and projected trip generation from this residential project without creating poor operations, delay, etc. Staff is not aware of any existing crash concerns along Olive Street or Orchard Street. The intersections of Olive Street at Chipman Road and Orchard Street at Douglas Street should also have adequate level of service if this development were to proceed.

The absence of sidewalks along Olive Street and Orchard Street is a safety concern. However, the City's current development standards do not require development activity to extend sidewalk beyond the project area unless associated with off-site road improvements. If improvements to Olive Street and/or Orchard Street were required based on the Unimproved Road Policy, the road improvements would require sidewalks.

Staff recommends approval of the proposed preliminary development plan subject to urban road improvements along Olive St and Orchard St according to the Unimproved Road Policy.

There shall be at least 60 feet of right-of-way for Olive St. Any necessary right-of-way adjacent to the development shall be dedicated to the City to provide this minimum width as depicted on the preliminary development plans.

Unified Development Ordinance

The requested RP-3 (Planned Residential Mixed Use District) provides for medium-density mixed residential uses at a maximum of ten units per gross acre. The RP-3 District allows for one, two, three and four family attached and detached dwelling units. Should the requested rezoning and modifications be granted, the proposed development would satisfy any requirements applicable to the zoning district pursuant to UDO.

Modifications

A high impact screening buffer between developments of differing land uses adjoining one another is required by the UDO along the north property line, adjacent to the industrially zoned lumberyard. The high impact screening requirements include a twenty foot buffer yard with a six foot high masonry wall or opaque vinyl fence and high-impact screening planted on both sides of the wall or the fence.

The applicant proposes to provide a 20' wide high impact landscape screen with a 6' tall vinyl fence placed on the north property line, with the high impact screen planted on the south side of the fence. By installing the fence on the property line and planting the required screening elements on the south side of the fence, the vegetation will be more accessible and the burden of any required ongoing maintenance will be reduced.

A rear-building setback of 30' is required along the west property line. The applicant proposes to provide a 26' setback. The west property line runs adjacent to the 145' Union Pacific Railroad right-of-way with the tracks located approximately 50' from the property line. Heavily wooded vegetation exists on both sides of the western property.

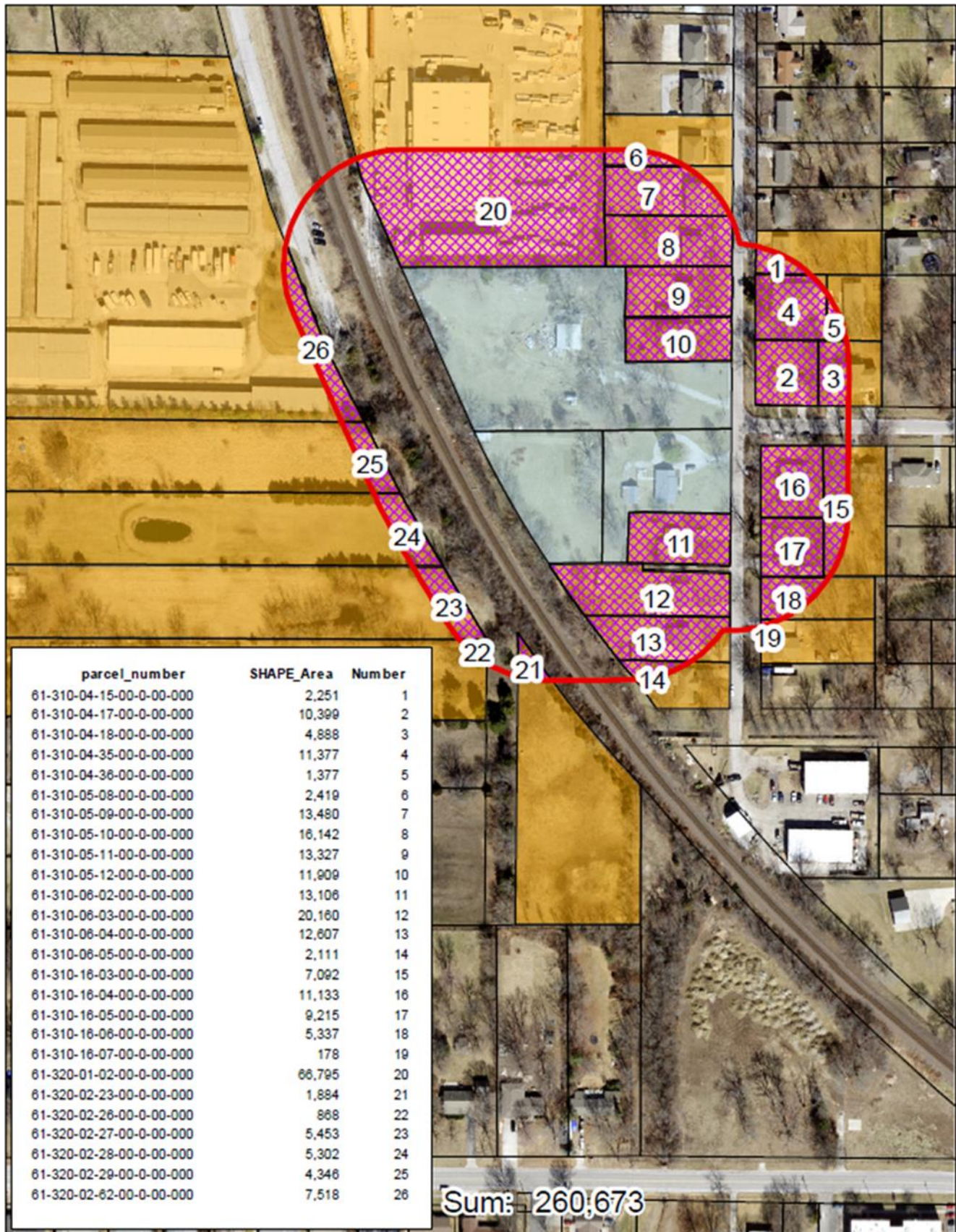
Comprehensive Plan

The proposed project site is located within the boundaries of the Old Lee's Summit Development Master Plan area and is identified as being a part of the Old Lee's Summit Neighborhood area. The preferred framework of the Old Lee's Summit Development Master Plan sets the goal of increasing the housing stock, to include rental and for sale multi-family, medium to high-density single family and townhouse units in this area. The proposed use is in alliance with the plan's established goal of increasing the available multi-family housing stock by providing a diverse housing type to meet the changing housing needs of the community.

An additional element of the preferred framework of the Old Lee's Summit Development Master Plan established the goal of improving neighborhood streets from the current rural section to an urban section. The proposed development would be in conformance to the Old Lee's Summit Development Master Plan should the applicant make improvements to Olive St and Orchard St based on the Unimproved Road Policy and as outlined in the Transportation Impact Analyses.

Protest Petition

A total of twelve property owners submitted protest petitions against the project. Eleven of those persons own property within the 185' notification boundary, and they represent 103,879 sq. ft. or 39.9% of the property within 185' from the boundaries of the property included in the application. The criteria to trigger a valid protest petition **HAS** been met per Section 89.060, RSMo, and UDO Sec. 2.200, as the total areas of the land represented among the protesting property owners is greater than the required 30%. An ordinance approving the application shall not become effective except by the favorable vote of two-thirds of all members of the Governing Body.



#PL2019-020

Planning Commission Hearing Date / July 11, 2019

Page 10 of 12

Protesting:

| <u>Property Owners</u> | <u>Parcel Number</u> | <u>Map #</u> | <u>Sq. Ft. w/in 185'</u> | <u>% of Total</u> |
|-----------------------------|--------------------------|--------------|--------------------------|-------------------|
| Amy Matson | 61-310-04-17-00-0-00-000 | #2 | 10,399 | 3.99% |
| LW Properties LLC | 61-310-04-35-00-0-00-000 | #4 | 11,377 | 4.36% |
| LW Properties LLC | 61-310-04-36-00-0-00-000 | #5 | 1,377 | 0.53% |
| William Jr & Michelle Sandy | 61-310-06-02-00-0-00-000 | #11 | 13,106 | 5.03% |
| Dianna & Paul Peoples | 61-310-06-03-00-0-00-000 | #12 | 20,160 | 7.73% |
| Ralph & Patsy Vanbebber | 61-310-06-04-00-0-00-000 | #13 | 12,607 | 4.84% |
| Albert D Redmon | 61-310-06-05-00-0-00-000 | #14 | 2,111 | 0.81% |
| Tracey & Tana Neill | 61-310-16-03-00-0-00-000 | #15 | 7,092 | 2.72% |
| Janice Newman | 61-310-16-04-00-0-00-000 | #16 | 11,133 | 4.27% |
| Cathy McClintock | 61-310-16-05-00-0-00-000 | #17 | 9,215 | 3.54% |
| Tena & Johnnie Nichols | 61-320-02-28-00-0-00-000 | #24 | 5,302 | 2.03% |
| Total | | | 103,879 | 39.9% |

Other Properties:

| <u>Property Owners</u> | <u>Parcel Number</u> | <u>Map #</u> | <u>Sq. Ft. w/in 185'</u> | <u>% of Total</u> |
|---|--------------------------|--------------|--------------------------|-------------------|
| Heather Forester | 61-310-04-15-00-0-00-000 | #1 | 2,251 | 0.86% |
| Tim & Machell Seiler | 61-310-04-18-00-0-00-000 | #3 | 4,888 | 1.88% |
| Burnett Investments LLC | 61-310-05-08-00-0-00-000 | #6 | 2,419 | 0.93% |
| Cherie Bray-Magee | 61-310-05-09-00-0-00-000 | #7 | 13,480 | 5.17% |
| Burnett Investments LLC | 61-310-05-10-00-0-00-000 | #8 | 16,142 | 6.19% |
| Stewardship Investments LLC | 61-310-05-11-00-0-00-000 | #9 | 13,327 | 5.11% |
| Constellation Real Estate Investments LLC | 61-310-05-12-00-0-00-000 | #10 | 11,909 | 5.57% |
| Carol Posey | 61-310-16-06-00-0-00-000 | #18 | 5,337 | 2.05% |
| Eric Long & Lindsay Zehnder | 61-310-16-07-00-0-00-000 | #19 | 178 | 0.0007% |
| 221 NW Chipman Road LLC | 61-320-01-02-00-0-00-000 | #20 | 66,795 | 25.62% |
| Mark Farhner & Darold Farhner | 61-320-02-23-00-0-00-000 | #21 | 1,884 | 0.72% |
| Mark Farhner & Darold Farhner | 61-320-02-26-00-0-00-000 | #22 | 868 | 0.33% |
| Mark Farhner | 61-320-02-27-00-0-00-000 | #23 | 5,453 | 2.09% |
| PJCJ Donovan LLC | 61-320-02-29-00-0-00-000 | #25 | 4,346 | 1.67% |
| Stow It Associates LLC | 61-320-02-62-00-0-00-000 | #26 | 7,518 | 2.88% |
| Total | | | 156,794 | 60.1% |

****Total Sq. Ft. Within 185' of "Burton Townhomes" Property = 260,673 sq. ft.**

Properties outside of 185':

| <u>Property Owners</u> | <u>Parcel Number</u> | <u>Address</u> |
|------------------------|--------------------------|-----------------|
| Harvie & Sharon Farnam | 61-310-16-08-00-0-00-000 | 401 NW OLIVE ST |

Recommendation

With the conditions of approval below, the application meets the requirements of the UDO and/or Design and Construction Manual (DCM).

7. Recommended Conditions of Approval

Site Specific Conditions

1. A modification shall be granted to the design of the required 20' wide high impact landscape screen along the north property line, to allow a 6' vinyl fence placed on the north property line and all required landscaping material planted on the south side of the fence.
2. A modification shall be granted to the required 30' rear yard setback, to allow for a 26' rear yard setback along the west property line.
3. The proposed building roofline shall be lowered in order to reduce the bulk and mass of the proposed structures so as to be more compatible with the mass and scale of the existing homes on NW Olive St.
4. A front door entrance with a covered side porch that faces NW Olive St and sidewalk connection to Olive St shall be created on building 1 & 9 to achieve a front door entrance appearance.
5. A minimum of three (3) foot unit offsets between dwelling units shall be created to break up the mass of the buildings.
6. The fence along NW Olive St. shall be reduced from a 6' privacy fence to a 4' picket fence to create the appearance of front yard look, more consistent with the adjoining homes.
7. Development shall comply with the recommendation of the Transportation Impact Analysis (TIA) dated July 2, 2019, prepared by Michael Park, City Traffic Engineer.

Standard Conditions of Approval

8. All required engineering plans and studies, including water lines, sanitary sewers, storm drainage, streets and erosion and sediment control shall be submitted along with the final development plan. All public infrastructure must be substantially complete, prior to the issuance of any certificates of occupancy.
9. All Engineering Plan Review and Inspection Fees shall be paid prior to approval of the associated engineering plans and prior to the issuance of any infrastructure permits or the start of construction (excluding land disturbance permit).
10. All subdivision-related public improvements must have a Certificate of Final Acceptance prior to approval of the final plat, unless security is provided in the manner set forth in the City's Unified Development Ordinance (UDO) Section 16.340. If security is provided, building permits may be issued upon issuance of a Certificate of Substantial Completion of the public infrastructure as outlined in Section 1000 of the City's Design and Construction Manual.
11. A Land Disturbance Permit shall be obtained from the City if ground breaking will take place prior to the issuance of an infrastructure permit, building permit, or prior to the approval of the Final Development Plan / Engineering Plans.
12. Any cut and / or fill operations, which cause public infrastructure to exceed the maximum / minimum depths of cover shall be mitigated by relocating the infrastructure vertically and / or horizontally to meet the specifications contained within the City's Design and Construction Manual.

13. All issues pertaining to life safety and property protection from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to the safety to fire fighters and emergency responders during emergency operations, shall be in accordance with the 2012 International Fire Code.
14. IFC 503.3 - Where required by the fire code official, approved signs or other approved notices or markings that include the words NO PARKING—FIRE LANE shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. The means by which fire lanes are designated shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility. One side of the street shall be posted "No Parking" by signage.



LEE'S SUMMIT MISSOURI

DEVELOPMENT REVIEW FORM TRANSPORTATION IMPACT

DATE: July 2, 2019 **CONDUCTED BY:** Michael K Park, PE, PTOE
SUBMITTAL DATE: March 14, 2019 **PHONE:** 816.969.1800
APPLICATION #: PL2019020 **EMAIL:** Michael.Park@cityofls.net
PROJECT NAME: BURTON TOWNHOMES **PROJECT TYPE:** Prel Dev Plan (PDP)

SURROUNDING ENVIRONMENT (*Streets, Developments*)

The proposed development project is located between the UPRR Corridor and Olive Street, near Orchard Street. The surrounding area includes a railroad to the west, a lumber yard to the northwest and residential properties to the south, east, and northeast.

ALLOWABLE ACCESS

The proposed development will be accessed from a driveway along Olive Street that aligns with Orchard Street.

EXISTING STREET CHARACTERISTICS (*Lanes, Speed limits, Sight Distance, Medians*)

Olive Street and Orchard Street are two lane residential streets with a 25 mph speed limit. These streets in the vicinity of the project have no curb, shoulder or sidewalk. The lanes are generally narrower than typical residential streets and range in width from 10 feet to 11 feet wide. These conditions are generally defined as unimproved based on the City Council Unimproved Road Policy. Olive Street dead-ends south of Orchard Street and extends north approximately 1,300 feet to Chipman Road where the intersection is traffic signal controlled. Orchard Street extends east from Olive Street about 1,400 feet to Douglas Street; then to Independence Avenue. The portion of Orchard Street east of Douglas Street, a residential collector, has been improved to urban standards with wide lanes, curb, enclosed storm sewer, sidewalks, etc. Orchard Street is stop controlled at Douglas Street, Independence Avenue and Olive Street. Orchard Street and Olive Street are identified as bike routes in the Bicycle Transportation Plan. Sight distances at the existing intersections and proposed driveway location are adequate.

ACCESS MANAGEMENT CODE COMPLIANCE? Yes ☒ No ☐

All criteria in the Access Management Code have been satisfied.

TRIP GENERATION

| Time Period | Total | In | Out |
|----------------|-------|-----|-----|
| Weekday | 232 | 116 | 116 |
| A.M. Peak Hour | 18 | 4 | 14 |
| P.M. Peak Hour | 24 | 15 | 9 |

TRANSPORTATION IMPACT STUDY REQUIRED? Yes ☐ No ☒

The proposed development will not likely generate more than 100 vehicle trips to the surrounding street system during any given peak hour as a minimum condition for a transportation impact

study. However, a transportation evaluation pertaining to this development and applicability of the Unimproved Road Policy, adopted by City Council (Resolution 16-22), was conducted by Priority Engineers, dated October 8, 2018. This evaluation included some analysis of traffic, trip generation and the development impact on Olive Street and Orchard Street.

Olive Street and Orchard Street, from Olive Street to Douglas Street, are defined according to the City Council adopted Unimproved Road Policy as built to unimproved road standards. Both roadways lack urban street design elements (e.g. curb, sidewalk) and shoulders present on interim standard roadways. The pavement width for Olive Street is approximately 20 feet to 22 feet wide between Orchard Street and Chipman Road (with exception of the curbed section of Olive Street from Chipman Road south about 270 feet). The pavement width of Orchard Street west of Douglas Street is about the same as the unimproved section of Olive Street. There are no known pavement sections of Olive Street or Orchard Street restricted to one-way traffic. Parking is allowed similar to most residential streets and parking regulation requires at least 10 feet of passable pavement at all times for thru traffic and passing vehicles. Typical lane widths range from 10 feet to 12 feet on roadways; 12 feet is the current standard in Lee's Summit for two lane local roads and 11 feet lane width for multi-lane roadways. Other communities have accepted a 10 foot wide lane standard on multi-lane roadways.

The proposed development is residential (i.e. four-plex or less). Based on the Unimproved Road Policy, residential development processed by a minor plat may be exempted from interim or urban road improvements with exception of mitigating one-way restrictions. The transportation evaluation submitted by the applicant's engineer wrongly characterized the development process and policy applicability. The proposed development is not a minor plat; it is a preliminary development plan and remains subject to the Unimproved Road Policy. The transportation evaluation then assessed conditions under the provisions of the Unimproved Road Policy that allows residential development on unimproved roads until approximately 50% of the capacity, or 5,000 vehicles per day, is reached. Again, the transportation evaluation submitted by the applicant's engineer wrongly ascertained the applicability of Policy to all roadways including local and collector streets like Olive Street and Orchard Street. The Unimproved Road Policy and associated traffic capacity thresholds referenced therein were pertinent to two-lane unimproved and interim standard arterial roads. The Unimproved Road Policy did not associate development activity with interim road standards on local or collector roadways and specifically requires local and collectors to be constructed to or improved to the urban standard for any development per the Policy. Though Olive Street and Orchard Street had a measured average daily traffic volume far below 5,000 vehicles per day, including projected trip generation from the residential development, the Policy requires improvements to urban standards on both roadways from the project to Chipman Road and Douglas Street, respectively, as neither roadway is an arterial. Since the transportation evaluation provided by the applicant's engineer dismissed the Policy or erred in its interpretations of applicability, there has been no justification for waivers nor road improvements recommended by the applicant's engineer or included in the applicant's development plans.

The Unimproved Road Policy is adopted by City Council; and City Council will consider its intentions and requirements in relation to this development on the adjacent unimproved residential streets in review of the development application. The Policy in this situation more so addresses acceptable community standards for development than roadway capacity. With regard to roadway capacity, Olive Street and Orchard Street have existing daily traffic volumes of less than 850 vehicles and 250 vehicles, respectively. This volume of traffic is low, even for residential streets, and the added trips generated by this proposed residential development are also minimal.

Furthermore, there are no known one-lane sections of roadway along Olive Street or Orchard Street. The existing 10-foot to 11-foot lanes are plenty capable of handling the existing traffic and projected trip generation from this residential project without creating poor operations, delay, etc. Staff is not aware of any existing crash concerns along Olive Street or Orchard Street. The intersections of Olive Street at Chipman Road and Orchard Street at Douglas Street should also have adequate level of service if this development were to proceed.

The absence of sidewalks along Olive Street and Orchard Street is concerning safety. However, the City's current development standards do not require development activity to extend sidewalk beyond the project area unless associated with off-site road improvements. If improvements to Olive Street and/or Orchard Street were required based on the Unimproved Road Policy, the road improvements should require sidewalks. Otherwise, sidewalks would be constructed if a capital roadway improvement project is done by the City or as a sidewalk gap project based on City Council directed priority for sidewalk gaps with limited resources.

LIVABLE STREETS (*Resolution 10-17*)

COMPLIANT ☒

EXCEPTIONS ☐

The proposed development plan includes all Livable Streets elements identified in the City's adopted Comprehensive Plan, associated Greenway Master Plan and Bicycle Transportation Plan attachments, and elements otherwise required by ordinances and standards, including but not limited to sidewalk, landscaping and accessibility. Orchard Street and Olive Street are identified bike routes in the Bicycle Transportation Plan. The development would meet bikeway and sidewalk plan elements if the unimproved roads are improved according to the Unimproved Road Policy.

RECOMMENDATION:

APPROVAL ☒

DENIAL ☐

N/A ☐

STIPULATIONS ☒

Recommendations for Approval refer only to the transportation impact and do not constitute an endorsement from City Staff.

Staff recommends approval of the proposed preliminary development plan subject to urban road improvements along Olive Street (from Orchard Street to Chipman Road) and Orchard Street (from Olive Street to Douglas Street) according to the Unimproved Road Policy, as directed by City Council.

There shall be at least 60 feet of right-of-way for Olive Street and any necessary right-of-way adjacent to the development shall be dedicated to the City to provide this minimum width as depicted on the preliminary development plans.



October 8, 2018

Mr. Dick Burton
Cherokee Flight LLC
8 SW Missouri Route AA
Kingsville, MO 64061

RE: Burton Townhomes Trip Generation – Lee's Summit, Missouri

Dear Mr. Burton,

As requested, Priority Engineers, Inc. has reviewed your proposed Burton Town Homes residential development in regards to the anticipated traffic impacts and the compliance with the City of Lee's Summit's Unimproved Road Policy.

Existing Conditions

The proposed Burton Townhome development located near the intersection of NW Olive Street with NW Orchard Street in Lee's Summit, Missouri. The intersection of NW Olive Street and NW Orchard Street is stop controlled on NW Orchard Street. NW Olive street is a two-lane facility with a posted speed limit of 25 MPH. The Mid-America Regional Council (MARC) has given Olive Street a functional classification of Local Road. NW Olive Street is also listed in the 2015 City of Lee's Summit Thoroughfare Master Plan (2015 TMP) as a local road. North of the proposed development, NW Olive Street intersects NE Chipman Road at a signalized intersection. NE Chipman Road has been designated by MARC as having a function classification of Minor Arterial while the City's 2015 TMP identifies NE Chipman Road as a Major Arterial. NW Orchard street is a two-lane facility with a posted speed limit of 25 MPH. Both MARC and the 2015 TMP identify NW Orchard Street as having a functional classification of Local Road. East of the proposed development NW Orchard Street intersects NE Douglas at a stop-controlled intersection.

Trip generation

It is our understanding that the proposed development with consist of 9 multi-family buildings with 4 dwelling units in each building. The vehicle trips generated were estimated using the Institute of Transportation Engineers' Trip Generation Manual, 10th Edition. The Multifamily Housing (Low-Rise) Land Use 220 was utilized. Table 1 below illustrates the anticipated trips generation by the proposed development at full occupancy.

Table 1: Trip Generation

| <i>Land Use</i> | <i>Intensity</i> | <i>Daily</i> | <i>AM Peak Hour</i> | | | <i>PM Peak Hour</i> | | |
|--------------------------------|------------------|--------------|---------------------|-----------|------------|---------------------|-----------|------------|
| | | | <i>Total</i> | <i>In</i> | <i>Out</i> | <i>Total</i> | <i>In</i> | <i>Out</i> |
| Multifamily Housing (Low Rise) | 36 Units | 231 | 18 | 4 | 14 | 24 | 15 | 9 |
| Total | | 231 | 18 | 4 | 14 | 24 | 15 | 9 |

Unimproved Road Policy

Currently, NW Olive Street and NW Orchard Street meet the City of Lee Summit's definition of an unimproved road due to their pavement width. The City of Lee Summit's 2016 Unimproved Road Policy allows residential developments on unimproved roads when the developments can be processed without a preliminary plat or major plat. It is our understanding that your development will be able to be processed as a minor plat, conforming with the City's Policy. The City only allows developments on unimproved roads until the roadway reaches a traffic volume of approximately 50 percent of the roadway's capacity, or 5,000 vehicles per day. In order to determine if NW Orchard Street and NW Olive Street were approaching the 5,000 vehicle per day threshold, pneumatic tube counters were placed and twenty-four-hour traffic counts were attempted on September 25th, 2018. Attached is the data from the pneumatic tube count on NW Orchard Street. The rubber tubes associated with the count on NW Olive were damaged by traffic before the count was completed so the traffic data for NW Olive Street was collected via a traffic video camera. The data collected for NW Olive Street via video camera is also attached. NW Orchard street was found to have a total daily traffic of 285 vehicles with 119 vehicles traveling westbound and 166 vehicles traveling eastbound. NW Olive Street was found to have a total daily traffic of 848 vehicles with 426 vehicles traveling southbound and 422 vehicles traveling northbound. NW Olive Street and NW Orchard Street are expected to operate with volumes that are less than the 50 percent threshold of the Unimproved Road Policy, after factoring in the additional traffic generated with the proposed development.

Conclusion

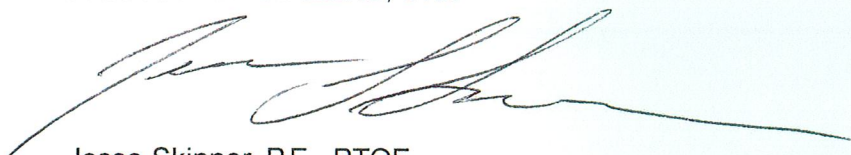
The proposed development will produce minimal increases in both Peak Hour and Daily traffic volumes. The anticipated additional traffic will be distributed between NW Olive Street and NW Orchard Street. NW Olive Street's intersection with NE Chipman Road is signalized. NW orchard Street's intersection with NE Douglas Street is stop controlled. It is anticipated that these existing intersections are sufficient for these minimal increases in traffic.

The Burton Townhome development, as described above, is in compliance with the City of Lee's Summit's Unimproved Road Policy with no further improvements necessary.

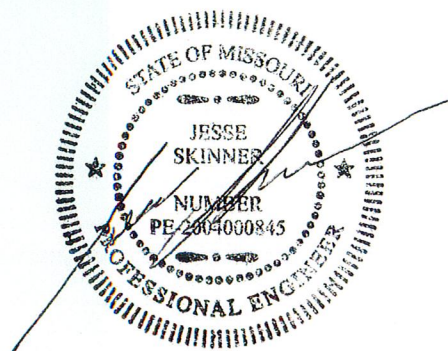
Please let me know if you have any questions or require additional information. I can be reached at (816) 810-4964.

Sincerely,

PRIORITY ENGINEERS, INC.

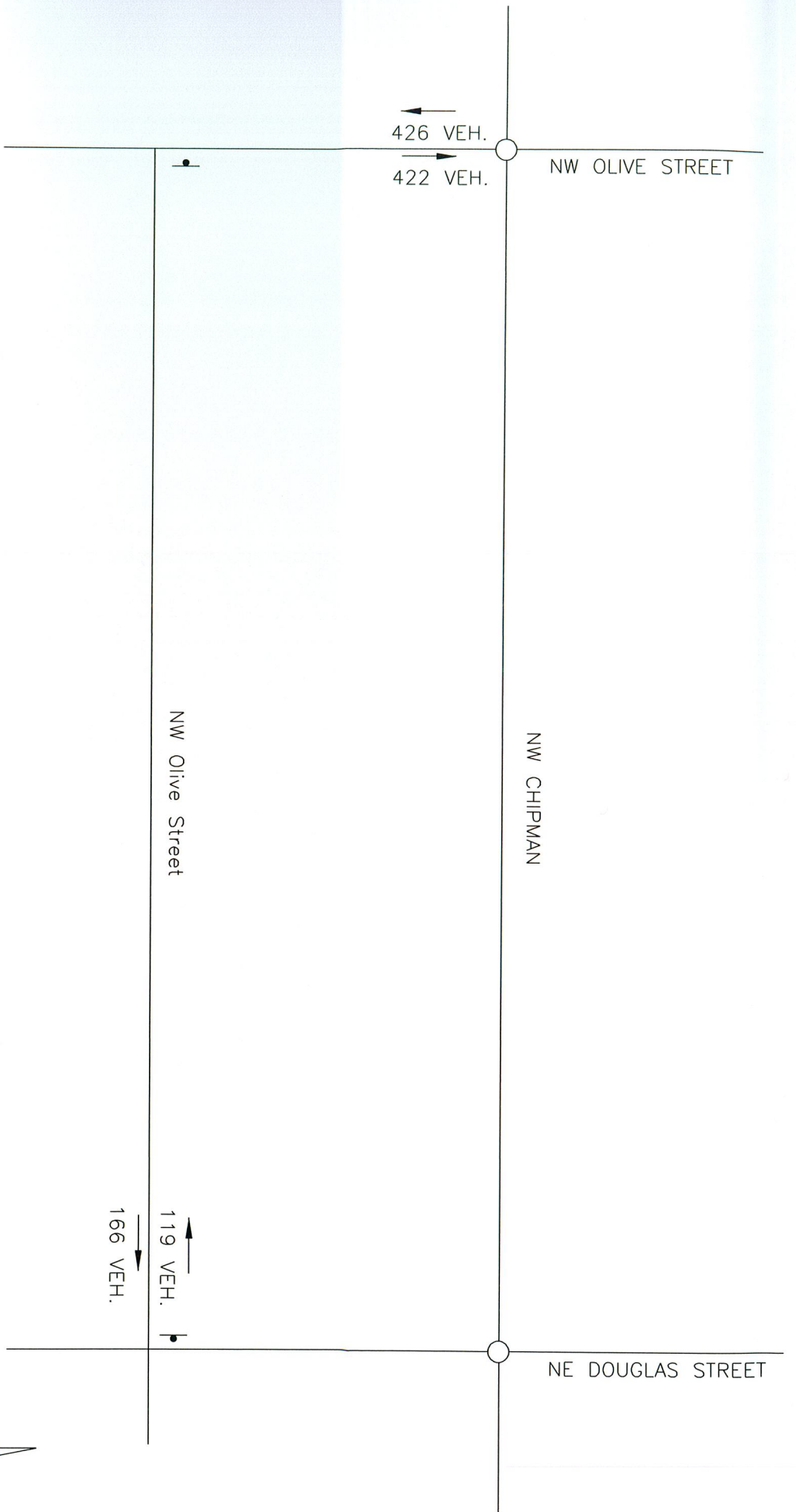


Jesse Skinner, P.E., PTOE
Senior Traffic Engineer



10-08-18

Attachments



LEGEND

- Stop Sign
- Traffic Signal

24 HOUR TRAFFIC VOLUMES

BURTON TOWN HOMES
LEE'S SUMMIT, MO

No Scale

Figure 1



Priority
ENGINEERS

PO Box 563
Garden City, MO 64747
816.738.4400

Micro Storm Water Drainage Study

Burton Townhomes Lee's Summit

Southwest Corner of NW Olive St and NW Orchard Dr
City of Lee's Summit, Jackson County, Missouri

Created On:

January 18, 2019

Revised On:

March 8, 2019

Prepared by:

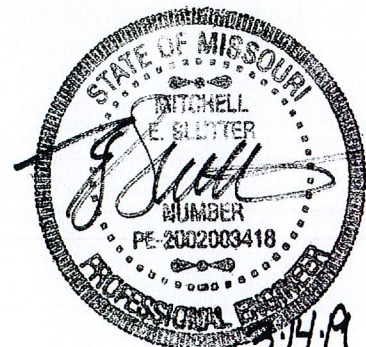


RECEIVED

MAR 14 2019

Development Services

1815 McGee Street, #200 | Kansas City, MO 64108
mslutter@ric-consult.com
816.800.0950



2019-020--

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GENERAL INFORMATION**A. Project Location**

The proposed Burton Townhomes development is in the City of Lee's Summit, Jackson County, MO. The project is located on the southwest corner of NW Olive St and NW Orchard Dr and is 3.76 acres in size. The proposed location is currently 4 lots zoned for single family residential or vacant residential land that are planned to be re-zoned Planned Residential Mixed-Use RP-3. The entire site is located within the Cedar Creek Watershed. Table 1 lists the parcel information for each of the 4 proposed lots and all adjacent properties.

Table 1: Existing Lot Information

| Parcel Description | Address | Parcel ID | Land Use Type |
|------------------------------------|--|--------------------------|--------------------------------|
| Proposed Parcel Information | | | |
| NE Corner of Proposed Lot | 502 NW Olive St | 61-310-05-12-00-0-00-000 | 1110 – Single Family Residence |
| NW Corner of Proposed Lot | 500 NW Olive St | 61-320-01-06-00-0-00-000 | 1101 – Vacant Residential Land |
| SE Corner of Proposed Lot | 408 NW Olive St | 61-310-06-01-00-0-00-000 | 1110 – Single Family Residence |
| SW Corner of Proposed Lot | No Address Assigned by City Lee's Summit, MO | 61-320-07-01-00-0-00-000 | 1101-Vacant Residential Land |
| Adjacent Parcel Information | | | |
| N of Proposed Lot | 221 NW Chipman Rd | 61-320-01-02-00-0-00-000 | 3216 – Wholesale Trade |
| NE of Proposed Lot | 504 NW Olive St | 61-310-05-11-00-0-00-000 | 1110 – Single Family Residence |
| NE of Proposed Lot | 502 NW Olive St | 61-310-05-12-00-0-00-000 | 1110 – Single Family Residence |
| SE of Proposed Lot | 406 NW Olive St | 61-310-06-02-00-0-00-000 | 1110 – Single Family Residence |
| S of Proposed Lot | 404 NW Olive St | 61-310-06-03-00-0-00-000 | 1110 – Single Family Residence |

Activities include the construction of a proposed townhome development and associated infrastructure. The proposed site will not impact downstream infrastructure because none exists. See Exhibit A for a site location map.

B. Federal Emergency Management Agency (FEMA) Classification

According to the Flood Insurance Rate Map (FIRM) panel number 29095C0417G, dated January 20, 2017, the property lies within Zone "X" (future base flood) as defined as areas having a one percent annual chance flood based on future conditions hydrology. See Exhibit B for a site location FEMA FIRM map.

C. Soil Classification

Soil classifications published by the United States Department of Agriculture/Natural Resources Conservation Service (USDA/NRCS) website for Jackson County, MO on October 16, 2018 indicate the existing site is made up of three soil types:

| | |
|-------|---|
| 10082 | Arisburg-Urban Land Complex, 1 to 5 percent slopes Hydraulic Soil Group (HSG) Type C |
| 10128 | Sharpsburg-Urban Land Complex, 2 to 5 percent slopes Hydraulic Soils Group (HSG) Type D |
| 7462 | Udarents -Urban Land - Sampsel, 5 to 9 percent slopes Hydraulic Soils Group (HSG) Type C |

See Exhibit C for a detailed soil report.

D. Drainage Patterns

Two existing sub basins were identified at the project location. ExNW was identified as the northern drainage area with a discharge point at the northwest corner of the sub basin. The second existing sub basin was identified as ExSE with a discharge point at the southeast corner of the sub basin. One offsite drainage area was identified at the project location. ExOffsite was identified at the southwest corner of the proposed lot contributing to the ExNW sub basin. See Exhibit D for an existing drainage map.

METHODOLOGY

This study was prepared in accordance with the provisions of "Section 5600 – Storm Drainage Systems and Facilities" (February 15, 2006) of the Kansas City Metropolitan Chapter of the American Public Works Association as adopted and modified (City of Lee's Summit Section 5600, August 8, 2011) for use in storm facilities design by the City of Lee's Summit, MO. Pre and post development runoff were determined using the curve number method described in SCS (now NRCS) Technical Release No. 55 "Urban Hydrology for Small Watersheds" (2nd Edition, June 1986) as provided for in APWA Sub-section 5602.2. Storm water management controls included in the post development TR55 analyses were designed to reduce peak discharges to or below pre-development values as stipulated in Sub-section 5601.5. The analyses were performed using the Type II 24-hour storm distribution for 2-year, 10-year and 100-year storm events. The rainfall depths used in the analyses corresponding to those events are shown in Table 2.

Table 2: Storm Analysis Table

| Storm | Percent | Rainfall Depth (in) |
|----------|---------|---------------------|
| 2-Year | 50% | 3.50 |
| 10-Year | 10% | 5.30 |
| 100-Year | 1% | 7.70 |

EXISTING CONDITIONS ANALYSIS

Existing site drainage patterns are shown in Exhibit D – Existing Drainage Map. Exhibit D shows two on-site and one off-site drainage areas that were analyzed for existing conditions. The total drainage area of the existing site is 3.76 acres and includes 0.02 acres of offsite drainages.

The curve numbers used in the TR55 existing condition analysis are 74.0 (ExNW, >75% grass cover, good) and 83.0 (ExSE, ¼ acre lots, 38% impervious).

The existing drainage map (Exhibit D) identifies each sub basin discharge point and related area shown in Table 3 below. The existing conditions model results have been provided in Exhibit E. The time of concentration determined for each sub basin is shown in Table 4. The sub basin discharge for the three storm events investigated are shown in Table 5 and summarized in Table 6.

Comprehensive control was used in accordance with APWA 5608.4 to determine maximum release rates for each post development sub basin. This allows for a maximum discharge (cfs/acre) for 2-yr, 10-yr, and 100-yr storm events. The single off-site drainage contributor was documented with the existing conditions analysis. The sub basin allowable release rates for the three storm events investigated are shown in Table 7.

Table 3. Existing Discharge Points

| Outfall | Direction |
|----------------|---|
| ExNW | Flow travels across the lot from east (NW Olive St) to west (Railroad ROW). Runoff that is discharged across the western property line is conveyed to the NW corner parallel to the railroad. |
| ExSW | Flow travels across the lot from north to south parallel to NW Olive St. Runoff is discharged in the SE corner of the sub basin. |
| ExOffsite | Flat portion of SW corner along the railroad ROW draining into ExNW. Discharge conveyed to ExNW Discharge Point A. |

Table 4. Existing Time of Concentration Calculations

| Sub Basin | Overland Flow | Shallow Concentrated Flow | Channel Flow | T_c (Min.) |
|------------------|---|--|---|-----------------------------|
| ExNW | Length=100 ft Slope=2.8% N Value=0.30 | Length= 380 ft Slope= 3.0% Short Grass Pasture | Length= n/a Slope= n/a Cross Section Area= n/a Wetted Perimeter= n/a | 19.49 |
| ExSE | Length=100 ft Slope=3.0% N Value=0.30 | Length=150 ft Slope=3.70% Short Grass Pasture | Length= n/a Slope= n/a Cross Section Area= n/a Wetted Perimeter= n/a | 15.72 |
| ExOffsite | Length= 10 ft Slope= 0.1% N Value= 0.30 | Length = n/a Slope = n/a | Length= n/a Slope= n/a Cross Section Area= n/a Wetted Perimeter= n/a | 8.57 |

Table 5: Existing Site Hydrology and Flows

| Sub Basin | Discharge Point | Outfall | Outfall Type | Area (Ac.) | T_c (min) | CN Value | Q₂ (cfs) | Q₁₀ (cfs) | Q₁₀₀ (cfs) |
|------------------|------------------------|----------------|---------------------|-------------------|----------------------------|-----------------|----------------------------|-----------------------------|------------------------------|
| ExNW | A | NW | Low Point | 2.73 | 19.49 | 74.00 | 3.66 | 7.93 | 14.18 |
| ExSE | B | SE | Low Point | 1.03 | 15.72 | 83.00 | 2.34 | 4.29 | 6.95 |
| ExOffsite | A | NW | Low Point | 0.02 | 8.57 | 74.00 | 0.03 | 0.07 | 0.13 |

Table 6: Total Outflow Summary

| Sub Basin | Q₂ (cfs) | Q₁₀ (cfs) | Q₁₀₀ (cfs) |
|------------------|--------------------------------|---------------------------------|----------------------------------|
| ExNW | 3.66 | 7.93 | 14.18 |
| ExSE | 2.34 | 4.29 | 6.95 |
| ExOffsite | 0.03 | 0.07 | 0.13 |

Table 7: Allowable Release Rates per Existing Discharge Point

| Sub Basin | Q₂ (cfs) | Q₁₀ (cfs) | Q₁₀₀ (cfs) |
|------------------|--------------------------------|---------------------------------|----------------------------------|
| ExNW | 1.37 | 5.46 | 8.19 |
| ExSE | 0.52 | 2.06 | 3.09 |

PROPOSED CONDITIONS ANALYSIS

The overall drainage pattern for the proposed condition has been updated to three sub basins with three separate discharge points. See Exhibit F for a proposed drainage map. The development will not add any area to the existing 3.76 acres, but the area of each sub basin has changed.

The curve number used for the proposed site was 90.0 (1/8 acre lots, 65% impervious). HSG C was assumed for the curve number calculations.

The proposed drainage map (Exhibit F) identifies the sub basin discharge points and related area shown in Table 8 below. The proposed conditions model results have been provided in Exhibit G. The time of concentration assumptions for each sub basin are shown in Table 9. The sub basin discharge for the three storm events investigated are shown in Table 10 and summarized in Table 11. The sub basin allowable release rates for the three storm events investigated are shown in Table 12.

Table 8. Proposed Discharge Points

| Outfall | Direction |
|----------------------|---|
| Northwest (ProNW) | Runoff is conveyed NW across the ProNW sub basin to a discharge point in the NW corner of the proposed lot. |
| Southeast (ProSE) | Runoff is conveyed SE across the ProSE sub basin to an existing roadway ditch and discharge point in the SE corner of the proposed lot. |
| South (ProS) | Runoff is conveyed SW across the ProS sub basin to a discharge point in the NW corner of the ProS sub basin. |

Table 9. Proposed Time of Concentration Calculations

| Sub Basin | Overland Flow | Shallow Concentrated Flow | Channel Flow | T _c (Min.) |
|-----------|--|--|---|-----------------------|
| ProNW | Length= 150 ft Slope= 2.5% N Value= 0.30 | Length= 65 ft Slope= 1.3% Grassed Waterway | Length= 365 Slope= 1.8% Cross Section Area= 8 ft ² Wetted Perimeter= 6 ft | 12.65 |
| ProSE | Length= 70 ft Slope= 1.0% N Value= 0.015 | Length= 120 ft Slope= 2.0% Short Grass | Length= n/a Slope= n/a Cross Section Area= n/a Wetted Perimeter= n/a | 9.84 |
| ProS | Length= 40 ft Slope= 1.0% N Value= 0.30 | Length= 200 ft Slope= 1.0% Paved | Length= n/a Slope= n/a Cross Section Area= n/a Wetted Perimeter= n/a | 11.98 |

Table 10: Proposed Site Hydrology and Flows

| Sub Basin | Discharge Point | Outfall Type | Area (Ac.) | T _c (min) | CN | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|-----------|-----------------|-----------------------|------------|----------------------|-------|----------------------|-----------------------|------------------------|
| ProNW | A | Railroad ROW | 2.02 | 12.65 | 90.00 | 6.35 | 10.53 | 16.04 |
| ProSE | B | Un-Detained Discharge | 0.59 | 9.84 | 90.00 | 1.96 | 3.26 | 4.97 |
| ProS | C | Railroad ROW | 1.15 | 11.98 | 90.00 | 3.67 | 6.08 | 9.26 |

Table 11: Total Outflow Summary

| Sub Basin | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|-----------|----------------------|-----------------------|------------------------|
| ProNE | 6.35 | 10.53 | 16.04 |
| ProSE | 1.96 | 3.26 | 4.97 |
| ProS | 3.67 | 6.08 | 9.26 |

Table 12: Allowable Release Rates per Proposed Discharge Point

| Sub Basin | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|-----------|----------------------|-----------------------|------------------------|
| ProNW | 1.01 | 4.04 | 6.06 |
| ProSE | 0.30 | 1.18 | 1.77 |
| ProS | 0.58 | 2.30 | 3.45 |

DETENTION ANALYSIS

Detention analysis was completed according to APWA Section 5608: Stormwater Detention and Retention. The proposed detention analysis was completed per APWA 5608.4.C.1.a (pg 92) which allows a maximum peak discharge rate of 0.5 (2-yr), 2.0 (10-yr), and 3.0 (100-yr) cfs/acre for any development under runoff control strategies. Criteria from APWA 5608.4.C.1.b (pg 92) was also applied to ensure 40-hour extended detention of runoff for local 90% mean annual event. (1.37"/24-hour rainfall)

All outflow conditions assume free flow. All downstream pipes of the detention basin will be sized using manning's equation to carry the 100-year flow condition to site development. To mitigate this, we are proposing two detention basins on site.

The proposed onsite detention consists of two above ground extended dry detention basins (EDDB) which accommodate wet detention for a 40-hour extended period. A 4" outfall pipe was assumed for the water quality outfall in each detention pond based on the minimum allowable cross-sectional area outlet.

The proposed northwest basin (ProNW) will have an invert elevation of 1007.00', a top of dam of 1012.60', and a 100-year HGL of 1010.63'. The total volume of the storage basin at the 100-year HGL is 0.42 acre-feet. Runoff is to be conveyed through 1-Perforated Riser (Invert = 1007.00', 40-hour extended dry detention outfall) and 1-12" HDPE Pipe (invert = 1008.87'). The 40-linear foot 12" pipe will be built at a 4.7% slope. Runoff from both outfall pipes will daylight on the existing property (Invert = 1007.00') and flow towards railroad right-of-way.

The emergency overflow structure consists of a 103' wide naturally graded trapezoidal weir at an elevation of 1011.4'. A minimum of 0.50' of freeboard is required between the emergency spillway crest and the maximum 100-year. For the 100-year maximum water surface elevation of 1010.63' the total provided freeboard is 0.77'.

The proposed south basin (ProS) will have an invert elevation of 1014.25', a top of dam of 1017.70', and a 100-year HGL of 1015.88'. The total volume of the storage basin at the 100-year HGL is 0.27 acre-feet. Runoff is to be conveyed through 1 - Perforated Riser (Invert = 1014.25', 40-hour extended dry detention outfall) and 1-12" HDPE Pipe (invert = 1014.85'). The 20-linear foot 12" pipe will be built at a 4.25% slope. Runoff from both outfall pipes will daylight on the existing property (Invert = 1014.00') and flow towards railroad right-of-way.

The emergency overflow structure consists of a 50' wide naturally graded trapezoidal weir at an elevation of 1016.50'. A minimum of 0.50' of freeboard is required between the emergency spillway crest and the maximum 100-year WSE. For the 100-year maximum water surface elevation of 1015.88' the total provided freeboard is 0.62'.

Please see Table 13 below for a summary of pipe velocities during 2, 10, and 100-year storms, Table 14 for a detention basin inflow/outflow summary, Table 15 for a detention basin summary, and Table 16 for an APWA 5608 peak discharge requirement summary.

Table 13: Summary of Pipe Velocities

| Pipe | V ₂ (fps) | V ₁₀ (fps) | V ₁₀₀ (fps) |
|-----------------------------|-------------------------|--------------------------|---------------------------|
| Proposed NE Detention Basin | | | |
| 12" HDPE | 1.29 | 4.04 | 6.56 |
| Proposed S Detention Basin | | | |
| 12" HDPE | 0.70 | 2.10 | 4.24 |

Table 14: Detention Basin Inflow/Outflow Summary

| Storm Event | Q _{in} (cfs) | Ponding Elevation (ft) | Max Depth Attained (ft) | Q _{out} (cfs) |
|-------------------------|--------------------------|---------------------------|----------------------------|---------------------------|
| Proposed NW Pond | | | | |
| 100- Year Storm | 16.02 | 3.63 | 1010.63 | 5.15 |
| 10-Year Storm | 10.52 | 2.81 | 1009.81 | 3.17 |
| 2-Year Storm | 6.32 | 2.15 | 1009.15 | 1.01 |
| Proposed S Pond | | | | |
| 100- Year Storm | 9.26 | 1.63 | 1015.88 | 3.33 |
| 10-Year Storm | 6.08 | 1.18 | 1015.43 | 1.65 |
| 2-Year Storm | 3.66 | 0.78 | 1015.03 | 0.55 |

Table 15: Summary of Detention Basin Design

| Proposed NW Detention Basin | |
|------------------------------------|---|
| Drainage Area | 2.02 AC |
| Curve Number | 90.00 |
| Basin Flow Line Outfall | 1007.00' |
| Pond Base Elevation | 1007.00' |
| Outlet Structure | 1 – 12" HDPE Pipes @ 1008.87' 1 – Perforated Pipe @ 1007.00' |
| Max 100-year HGL | 1010.63' |
| 100-Year Emergency Weir Elevation | 1011.5' |
| Top of Dam | 1012.60' |
| Proposed SE Detention Basin | |
| Drainage Area | 1.15 AC |
| Curve Number | 90.00 |
| Basin Flow Line Outfall | 1014.00' |
| Pond Base Elevation | 1014.25' |
| Outlet Structure | 1 – 12" HDPE Pipe @ 1014.85' 1 – Perforated Pipe @ 1014.25" |
| Max 100-year HGL | 1015.88' |
| 100-Year Emergency Weir Elevation | 1016.50' |
| Top of Dam | 1017.70' |

Table 16. Summary of APWA 5608 Peak Discharge Requirements

| Outfall Desc. | Q₂ (cfs) | Q₁₀ (cfs) | Q₁₀₀ (cfs) |
|----------------------|----------------------------|-----------------------------|------------------------------|
| ProNW Allowable | 1.01 | 4.10 | 6.06 |
| ProNW Actual | 1.01 | 3.17 | 5.15 |
| Difference | +0.00 | -0.93 | -0.91 |
| ProS Allowable | 0.58 | 2.30 | 3.45 |
| ProS Actual | 0.55 | 1.65 | 3.33 |
| Difference | -0.03 | -0.65 | -0.12 |

APWA Section 5608.4.F.2 requires that the detention basin emergency spillway performance provides a minimum of 1.0 ft of freeboard from the design stage to the top of dam, assuming zero available storage in the basin and zero flow through the primary outlet. (100% clogged condition) FHWA HEC-22, Table 8-1, pg. 8-27 was used to determine a broad-crested weir coefficient of 2.7. Total 100-yr runoff flowrates were used to calculate the maximum energy grade line (EGL) for each pond assuming zero storage in the pond. Table 17 shows a summary of emergency spillway performance for the 100-yr storm event assuming zero flow through the primary outlet. Reference Exhibit H for 100-yr spillway flowrate and EGL performance calculations.

Table 17. Summary of Emergency Spillway Performance (100-Yr Event)

| Outfall Desc. | Max Inflow (cfs) | Crest Elev (ft) | Length (ft) | Top of Dam Elev (ft) | Max WSE (ft) | Max EGL (ft) | Freeboard (ft) |
|----------------------|-------------------------|------------------------|--------------------|-----------------------------|---------------------|---------------------|-----------------------|
| ProNW | 16.02 | 1011.40 | 103 | 1012.60 | 1011.55 | 1011.57 | 1.03 |
| ProS | 9.26 | 1016.50 | 50 | 1017.70 | 1016.67 | 1016.69 | 1.01 |

The proposed southeast sub basin (ProSE) is an un-detained drainage area. The existing discharge point (Discharge point B on Exhibits D & F) will remain the same for the ProSE sub basin but the drainage area has decreased. The decreased area will be un-detained and discharge at existing discharge point B. Updated curve number and drainage area for the SE basin show an overall reduction in runoff conveyed to discharge point B. See Table 18 below for a summary of existing and proposed conditions at discharge point B.

Table 18. Summary of Discharge Point B Conditions

| Outfall Desc. | Area (AC) | CN | Q₂ (cfs) | Q₁₀ (cfs) | Q₁₀₀ (cfs) |
|----------------------|------------------|-----------|----------------------------|-----------------------------|------------------------------|
| ExSE | 1.03 | 83.00 | 2.34 | 4.26 | 6.95 |
| ProSE | 0.60 | 90.00 | 1.96 | 3.26 | 4.97 |

WATER QUALITY ANALYSIS

MARC BMP Manual Section 4.0 was used to determine BMP requirements for the proposed site. Worksheet 1A (Required level of Service – Developed Site) was used to determine the existing site value rating based on the current single-family residential land use. An existing value rating of 18.95 was calculated based on the existing impervious area for the site. See Exhibit H for Worksheet 1A calculations.

MARC BMP Manual Section 4.0, Worksheet 2 was used to analyze the proposed site BMP mitigation package. Extended-dry detention was added to 1.50 acres of the ProNW sub basin with the remaining 0.52 acres draining through a vegetated swale to extended-dry detention. Extended-dry detention to native

vegetation swale was added to the 1.15-acre ProS sub basin. Preserved native vegetation was also added to the ProSE and ProNW sub basins. See Exhibit J for a BMP location plan of the proposed BMP mitigation package. A total value rating of 18.99 was calculated for the proposed site. See Exhibit I for MARC BMP Manual - Worksheet 2 calculations.

APWA 5608.4 and Chapter 6 of the MARC/APWA BMP Manual require 40-hour extended detention to treat the Water Quality Storm. MARC BMP Manual Chapter 6 section 6.2 Short-Cut Method (pg 6-1) was used to determine the water quality volume for a proposed drainage area of less than 10 acres. Table 19 lists rainfall event, percent impervious area, and volumetric runoff coefficient assumptions made for the ProNW and ProS detention basin design. Table 20 lists the water quality volume calculations for each sub basin. EDDB calculations have been provided in Exhibit I.

Table 19. APWA/MARC Water Quality Volume

| | |
|------------------------------------|-------|
| Rainfall Event (P, in/24-hrs) | 1.37 |
| Percent Site Imperviousness (I, %) | 65 |
| Volumetric Runoff Coefficient (Rv) | 0.635 |

Table 20. APWA/MARC Water Quality Volume

| Detention Basin | Area (AC) | Water Quality Volume (ac-ft) | Provided Water Quality Volume (ac-ft) | Q _{out} (cfs) |
|-----------------|-----------|------------------------------|---------------------------------------|------------------------|
| ProNW | 2.02 | 0.15 | 0.15 | 0.05 |
| ProS | 1.15 | 0.09 | 0.12 | 0.03 |

Note: Q_{out} (cfs) assumes full 40-hr extended detention of total design volume.

SUMMARY

The proposed site will require stormwater detention because the proposed development will increase runoff from the existing conditions. Table 21 summarizes the existing and proposed peak flows from the entire site with no stormwater detention.

Table 21. Summary of Existing and Proposed Peak Flows

| Outfall Desc. | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|--------------------------------------|----------------------|-----------------------|------------------------|
| Total Existing Site | 6.00 | 12.22 | 21.13 |
| Total Proposed Site w/ out Detention | 11.98 | 19.87 | 30.27 |

Two above ground extended dry detention basins, two vegetated swales, and native vegetation have been added to the proposed site (ProNW and ProS) to reduce the proposed site peak runoff, improve water quality, and control release rates for all required design storms. Table 22 summarizes the existing and proposed peak flowrate decrease with the included stormwater detention. The proposed detention meets all APWA 5608 peak discharge requirements. Table 23 summarizes allowable and actual proposed site peak discharge requirements.

Table 22. Summary of Total Existing and Proposed Peak Discharges

| Outfall Desc. | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|----------------------------------|----------------------|-----------------------|------------------------|
| Total Existing Site | 6.00 | 12.22 | 21.13 |
| Total Proposed Site w/ Detention | 3.52 | 8.08 | 13.45 |

Table 23. Summary of Proposed Peak Discharge Requirements

| Outfall Desc. | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|-----------------|----------------------|-----------------------|------------------------|
| ProNW Allowable | 1.01 | 4.10 | 6.06 |
| ProNW Actual | 1.01 | 3.17 | 5.15 |
| ProS Allowable | 0.58 | 2.30 | 3.45 |
| ProS Actual | 0.55 | 1.65 | 3.33 |

The proposed site will also have a third un-detained sub basin (ProSE). A request for waiver from the City of Lee's Summit Design and Construction Manual requirement has been proposed based on an overall decrease in peak flowrate discharging to outlet point B. Table 24 summarizes the existing and proposed peak flowrates at discharge point B.

Table 24. Summary of Discharge Point B Conditions

| Outfall Desc. | Area (AC) | CN | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|---------------|-----------|-------|----------------------|-----------------------|------------------------|
| ExSE | 1.03 | 83.00 | 2.34 | 4.29 | 6.96 |
| ProSE | 0.59 | 90.00 | 1.96 | 3.26 | 4.97 |

CONCLUSION

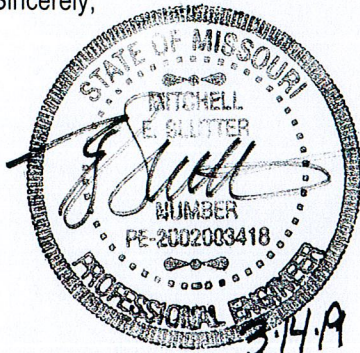
The proposed Burton Townhomes development is a 3.76 acre site in Lee's Summit, MO that will include the construction of 9 townhome units and associated infrastructure. Two above ground extended-dry detention basins have been proposed to control the increase runoff produced by the development.

The proposed development meets all stormwater criteria set forth by the City of Lee's Summit, Missouri and APWA 5600 design criteria. These requirements include an overall decrease in post development peak flowrates, 40-hour water quality extended detention, and a maximum allowable sub basin discharge rate.

A request for waiver from the City of Lee's Summit Design and Construction Manual requirement has been proposed for the un-detained sub basin ProSE based on a peak flowrate discharge decrease under proposed conditions.

Based on this information, Renaissance Infrastructure Consulting recommends approval of this storm study. If you have any questions or need additional information, please contact me.

Sincerely,



Mick Slutter, PE

Jonathan Daldalian

Jonathan Daldalian, EI

RENAISSANCE INFRASTRUCTURE CONSULTING



Know what's below.
Call before you dig.

UTILITIES

WATER & SANITARY SEWER
City of Lee's Summit Water Utilities
220 SE Green St
Lee's Summit, MO
Phone: 816.969.1900
After Hours: 816.969.7407

TELEPHONE
AT&T
Phone: 800.288.2020

Time Warner Cable
Phone: 816.222.5952

ELECTRICITY
Kansas City Power and Light
Phone: 816.471.5275

CABLE TV
Comcast
Phone: 816.795.1100

GAS
Missouri Gas Energy
PO Box 219255
Kansas City, Missouri 64141
Phone: 816.756.5252

Time Warner Cable
Phone: 816.358.8833

BENCHMARK:
BM-A: 1.0 mi NW along the Missouri Pacific Railroad from the station at Lee's Summit, at the crossing of Sheer Road, 86 ft southeast of the center line of Sheer Road, 36 ft northeast of the northwest rail, 28.4 ft southwest of a telephone pole, 697 ft southwest of a fence, 1.8 ft west of a witness post, set in the top of a concrete post which projects 0.3 ft above the ground.
Elev: 994.87

BM-B: 1.3 mi N along the Missouri Pacific Railroad from the station at Lee's Summit, Jackson County, at semaphore 2611, on the top of the concrete base, and 10 ft east of the track. A chiseled square.
Elev: 971.80

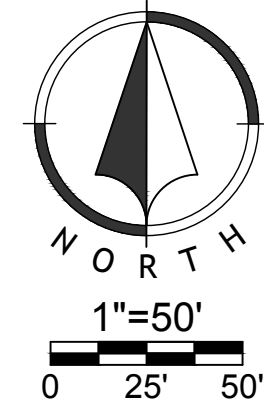
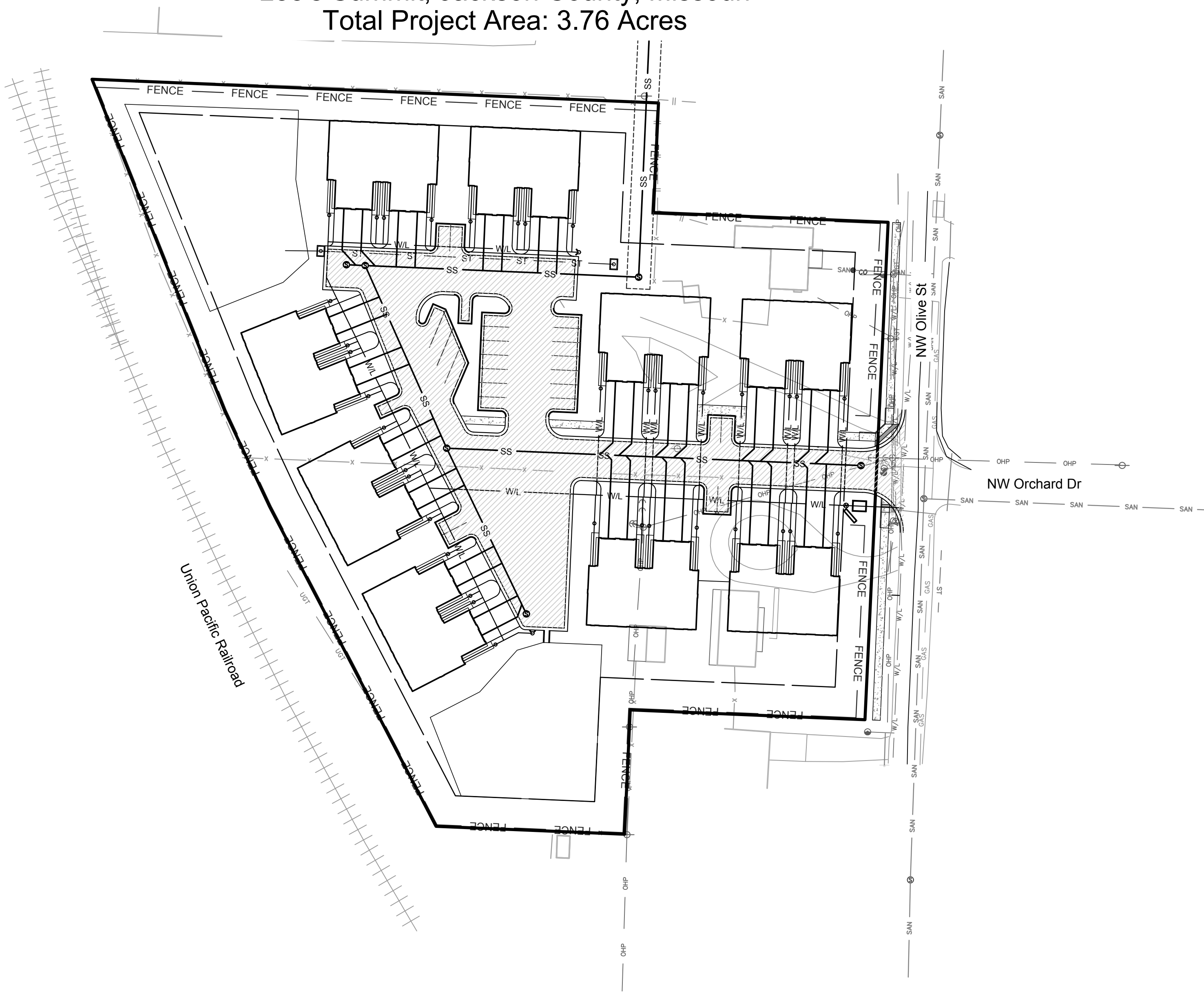
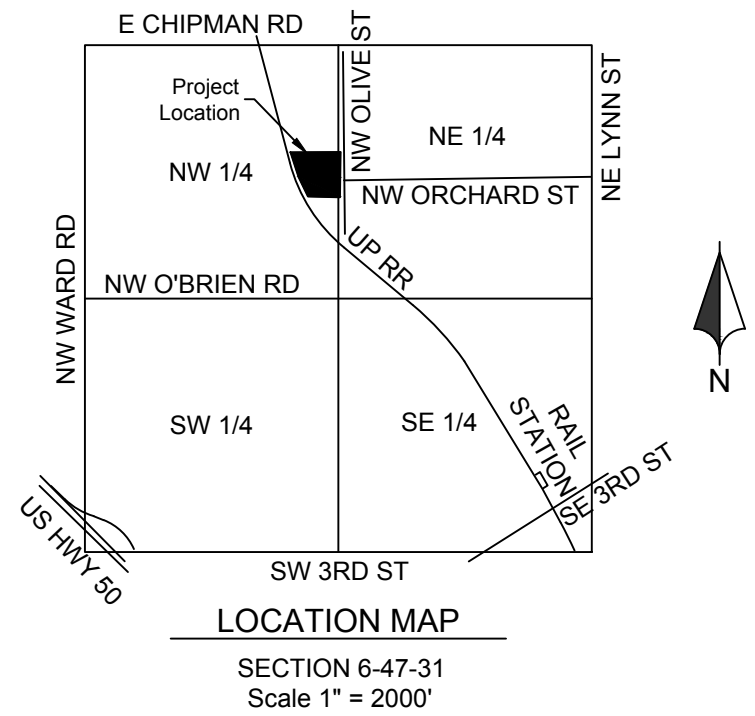
Oil / Gas Well Note:
There is no visible evidence, this date, of abandoned oil or gas wells located within the property boundary, as identified in "Environmental Impact Study of Abandoned Oil and Gas Wells in Lee's Summit, Missouri."
(Figure B-4, pg. 91)

Flood Plain Note
We have reviewed the F.E.M.A. Flood Insurance Rate Map Number 29095C0417G, revised January 20, 2017, this tract graphically lies in OTHER AREAS, ZONE X, defined as areas determined to be outside the 0.2% annual chance floodplain.

GENERAL NOTES

- All construction shall follow the City of Lee's Summit Design and Construction Manual as adopted by Ordinance 5813. Where discrepancies exist between the Preliminary Development Plan and the Design and Construction Manual, the Design and Construction Manual shall govern.
- The contractor will be responsible for securing all bonds, and insurance required by the contract documents, City of Lee's Summit, Mo., and all other governing agencies (including local, county, state, and federal authorities) having jurisdiction over the work proposed by these construction documents. The cost for all bonds, and insurance shall be the contractor's responsibility and shall be included in the bid for the work.
- All existing utilities indicated on the drawings are according to the best information available to the engineer; however, all utilities actually existing may not be shown. The contractor shall be responsible for contacting all utility companies for an exact field location of each utility prior to any construction. All utilities, shown and un-shown, damaged through the negligence of the contractor shall be repaired or replaced by the contractor at his/her expense.
- The contractor will be responsible for all damages to existing utilities, pavement, fences, structures, and other features not designated for removal. The contractor shall repair all damages at his/her expense.
- The demolition of existing pavement, curbs, structures, and all other features necessary to construct the proposed improvements, shall be performed by the contractor. All waste material removed during construction shall be disposed off the project site. The contractor shall be responsible for all permits for hauling and disposing of waste material. The disposal of waste material shall be in accordance with all local, state, and federal regulations.
- By use of these construction documents the contractor hereby agrees that he shall be solely responsible for the safety of the construction workers and the public. The contractor agrees to hold the engineer and owner harmless for any and all injuries, claims, losses, or damages related to the project.
- The contractor will be responsible for providing all signage, barricades, lighting, etc., as required for temporary traffic control during the construction of this project. Maintenance of the temporary traffic control devices will be the contractor's responsibility. All traffic control in conduction with construction in the right-of-way shall be in conformance with the City Traffic Control Requirements.
- Contractor shall furnish evidence that his/her insurance meets the requirements of the City of Lee's Summit, Missouri Municipal Code.
- Prior to installing, constructing, or performing any work on the public storm sewer line (including connecting private drainage systems to the storm sewer), contact Lee Summit Inspections.
- Connections to the public storm sewers between structures will not be permitted.
- Contractor shall verify and accept existing topography shown herein. Contractor shall notify Engineer if any discrepancies are found prior to any earthwork activities.
- Planning and Codes Administration will require a retaining wall design by a registered engineer in the State of Missouri.
- Geo-grid, footings, or other elements of the retaining wall(s) cannot encroach into the right of way or public easements.
- A Knox Box shall be provided for Each Building.
- All building and life safety issues shall comply with the 2012 International Fire Code and local amendments as adopted by the City of Lee's Summit.

Preliminary Development Plans For
Burton Townhomes
Lee's Summit, Jackson County, Missouri
Total Project Area: 3.76 Acres



Description:

Lots 1, 2, and 3, EXCEPT the North 70 feet of the East 150 feet of Lot 3, HEARNE'S ADDITION, (aka/ HEARNES FIRST ADDITION) and the North Half of vacated Orchard Street lying South and adjacent, a subdivision in Lee's Summit, Jackson County, Missouri.

Lot 22, and 23, HEARNE'S ADDITION, a subdivision in Lee's Summit, Jackson County, Missouri, EXCEPT the South 8 feet of the West 50 feet of Lot 22 and also EXCEPT, the South 8 feet of Lot 23, and ALSO EXCEPT the South 88 feet of the East 150 feet of Lot 22, together with the South 1/2 of vacated Orchard Street lying North of and Adjacent to the said premises in question.

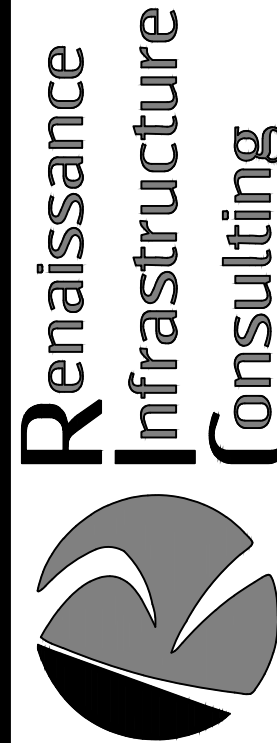
Common Property:

All common property and common property maintenance plans shall be maintained in accordance with Article 5, Division V of the City of Lee's Summit Unified Development Ordinance. The homeowners association shall have ownership and responsibility of common property and common property maintenance plan revisions.

Sheet List Table

| Sheet Number | Sheet Title |
|--------------|---------------------------|
| C01 | Cover Sheet |
| C02 | General Layout |
| C03 | Rezoning Map |
| C04 | Grading Plan |
| C05 | Utility Plan |
| C06 | Hydrant Coverage |
| C07 | Drainage Map |
| C08 | Erosion Control Phase I |
| C09 | Erosion Control Phase II |
| C10 | Erosion Control Phase III |
| L01 | Landscape Plan |

NOT FOR
CONSTRUCTION



1816 MCCREE STREET, SUITE 200
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Cover Sheet

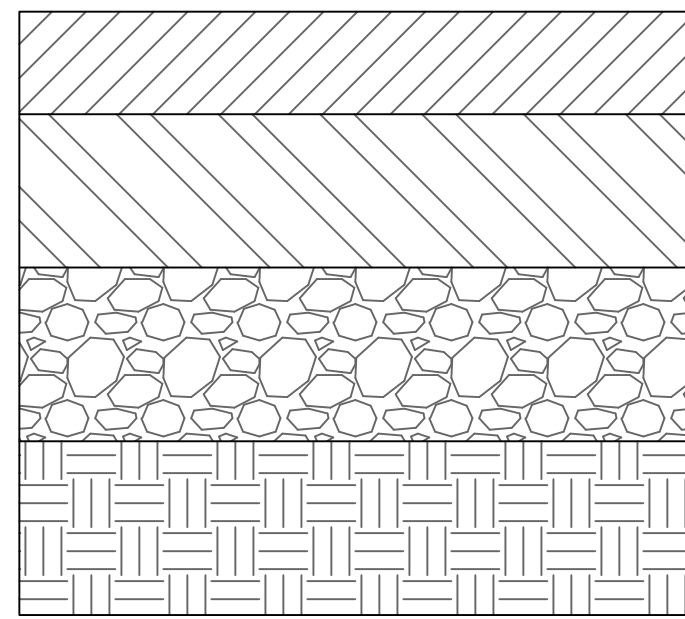
Preliminary Development Plans

18-0251

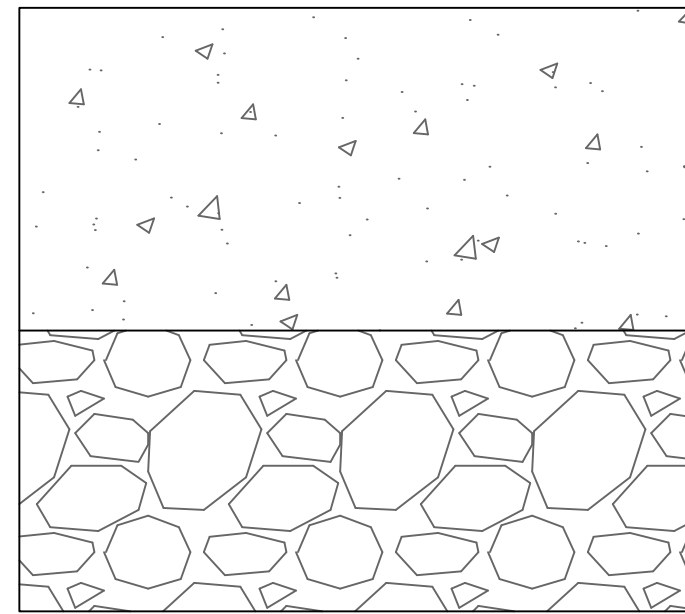
Burton Townhomes
Lee's Summit, Jackson County, Missouri

Sheet
C01

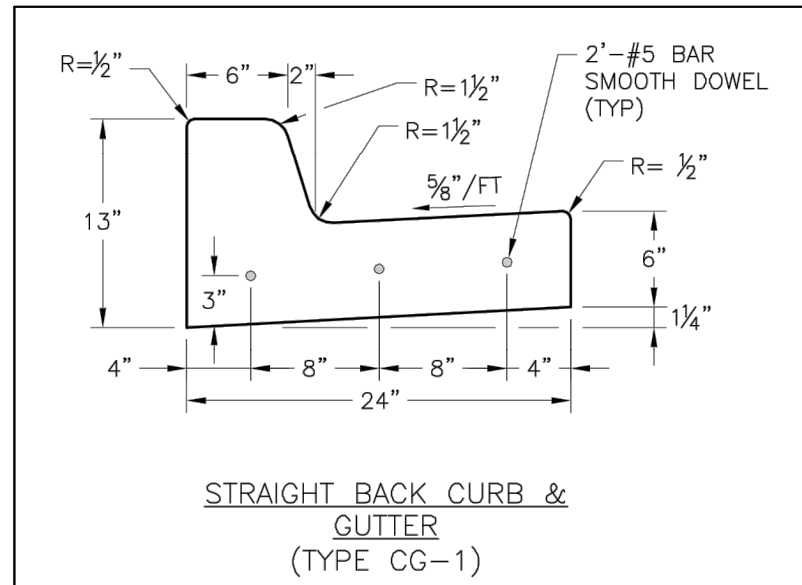
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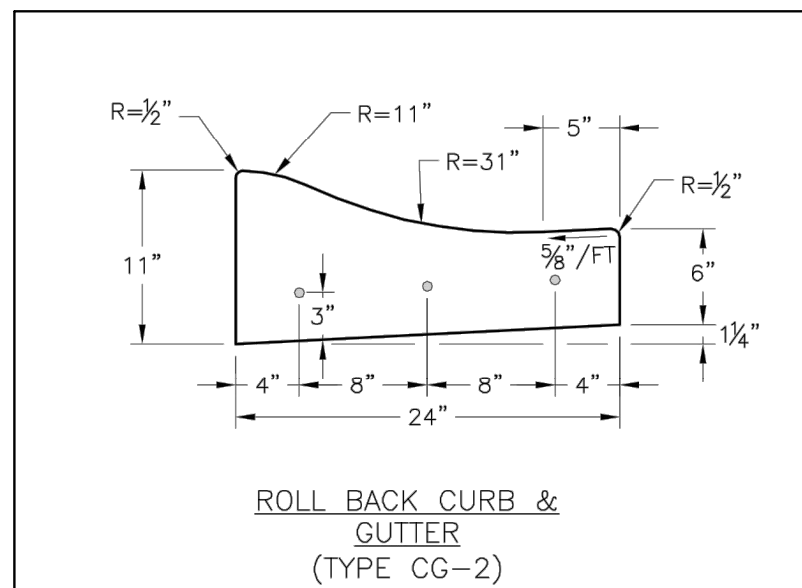
Asphaltic Pavement Section



PCC Pavement Section



City of Lee's Summit Standard Details - GEN 4
Straight Back Dry Curb & Gutter (Type CG-1 Dry)

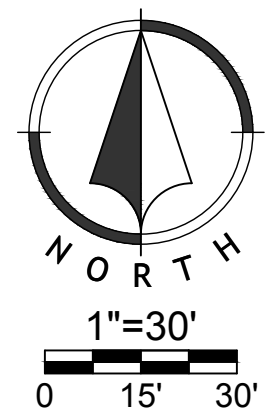
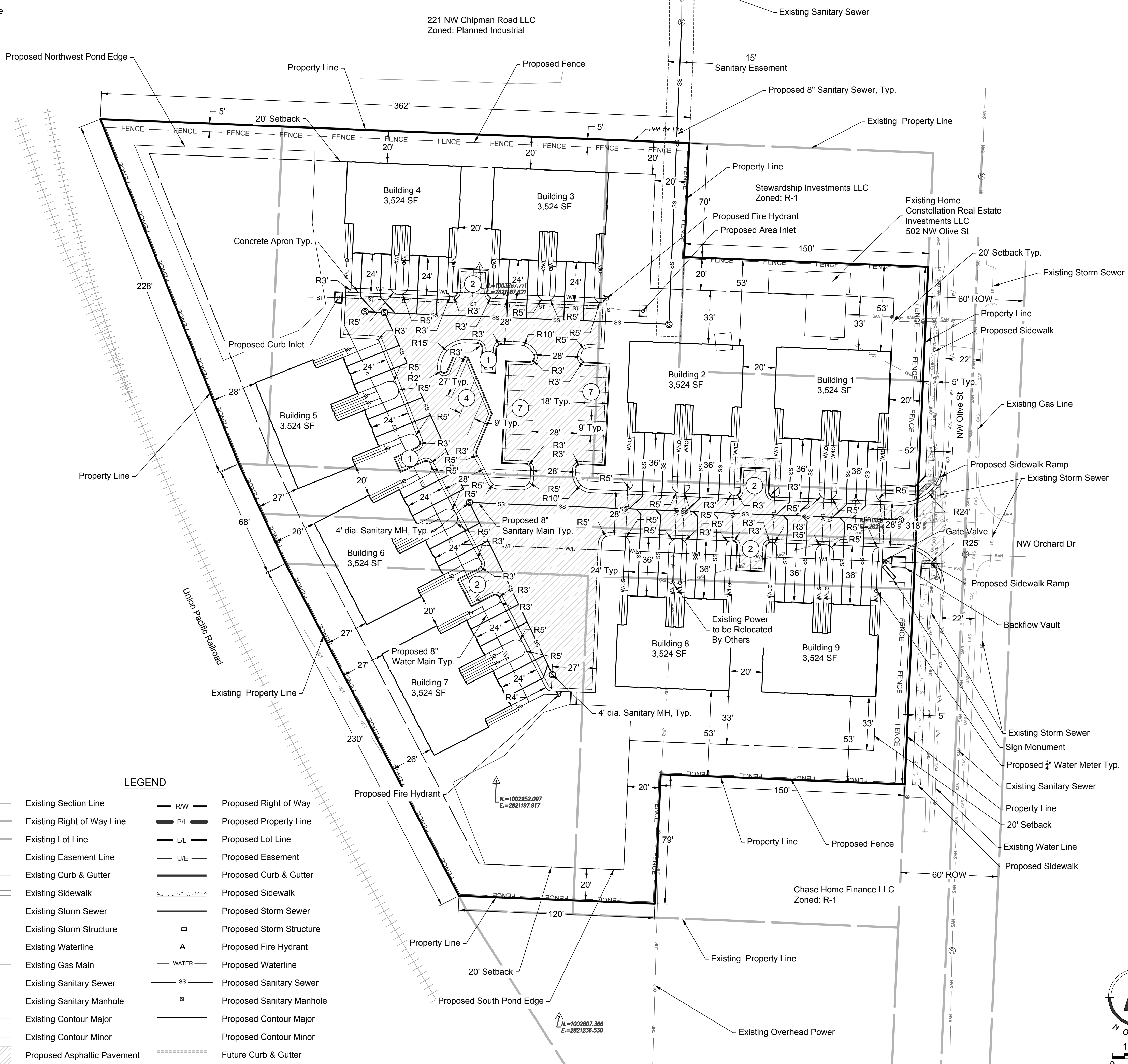


City of Lee's Summit Standard Details - GEN 4
Roll Back Dry Curb & Gutter (Type CG-2 Dry)

Lot Info
Lot Area: 3.76AC
Units: 36
Units per Acre: 9.57
Unit Size: 1,663 SF
Total Floor Area: 66,520 SF
Floor Area Ratio: 43
Impervious Area: 68,663 SF (44.8%)
Parking Required: 72 (2/Unit)
Parking Provided: 136 (3/Unit, & 28 Visitor Parking)

Note:
1) All fencing constructed adjacent to PL zoning districts shall conform to City of Lee's Summit UDO Section 8.890 minimum buffer screen requirements.

| LEGEND | |
|--------|-----------------------------|
| | Existing Section Line |
| | Existing Right-of-Way Line |
| | Existing Lot Line |
| | Existing Easement Line |
| | Existing Curb & Gutter |
| | Existing Sidewalk |
| | Existing Storm Sewer |
| | Existing Storm Structure |
| | Existing Waterline |
| | Existing Gas Main |
| | Existing Sanitary Sewer |
| | Existing Sanitary Manhole |
| | Existing Contour Major |
| | Existing Contour Minor |
| | Proposed Asphaltic Pavement |
| | Proposed Right-of-Way |
| | Proposed Property Line |
| | Proposed Lot Line |
| | Proposed Easement |
| | Proposed Curb & Gutter |
| | Proposed Sidewalk |
| | Proposed Storm Sewer |
| | Proposed Storm Structure |
| | Proposed Fire Hydrant |
| | Proposed Waterline |
| | Proposed Sanitary Sewer |
| | Proposed Sanitary Manhole |
| | Proposed Contour Major |
| | Proposed Contour Minor |
| | Future Curb & Gutter |



Sheet
C02

Preliminary Development Plans
18-0251
Burton Townhomes
Lee's Summit, Jackson County, Missouri

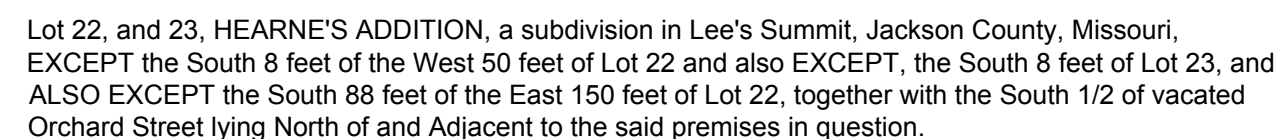
General Layout

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| 1 | JGD | MES | 07/18/19 | REVISION |

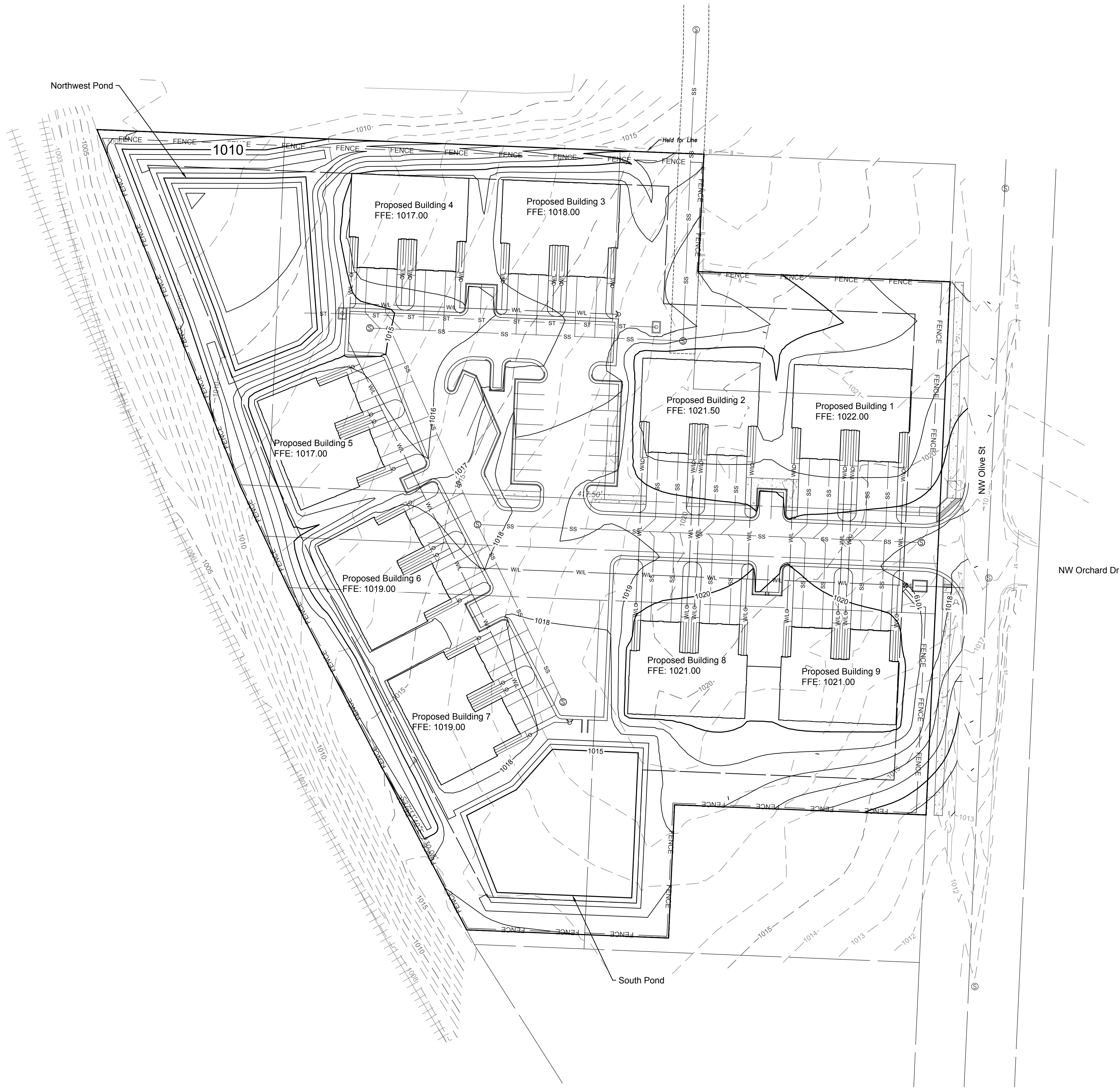
Renaissance
Infrastructure
Consulting

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KANSAS CITY, MISSOURI 64108
816.800.0950
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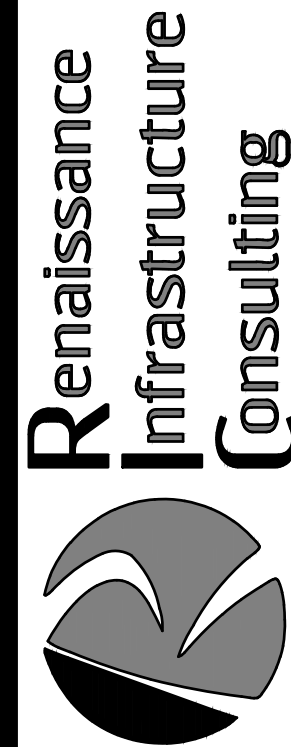
MO Certificate of Authority: E-2010033530



Mar 14, 2019 10:17am
2:ARC Design\2018\18-0251 Burton Townhomes Lees Summit\DWG\PDPA\Grading Plan.dwg



| Legend | |
|--------|------------------------|
| | Proposed Major Contour |
| | Proposed Minor Contour |
| | Existing Major Contour |
| | Existing Minor Contour |



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| NO. | BY | CD | DATE | PER CITY COMMENT |
|-----|-----|-----|----------|--------------------|
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| 1 | JGD | MES | 07/18/19 | REVISION |

Grading Plan

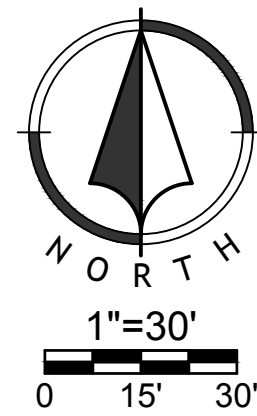
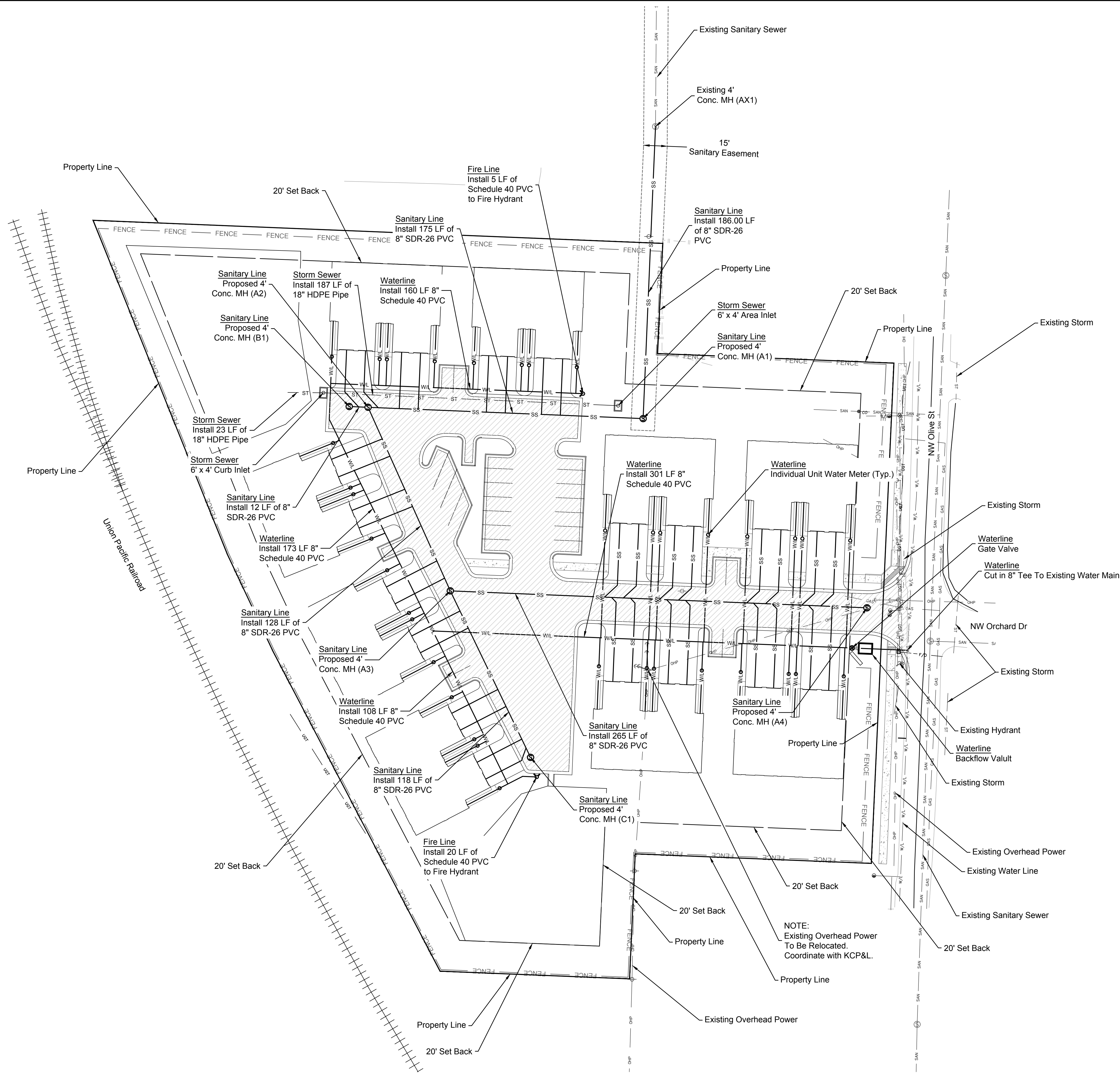
Preliminary Development Plans

18-0251

Burton Townhomes
Lee's Summit, Jackson County, Missouri

Sheet
C04

Mar 14, 2019 10:17am
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Sheet
C05

Preliminary Development Plans
18-0251
Burton Townhomes
Lee's Summit, Jackson County, Missouri

Utility Plan

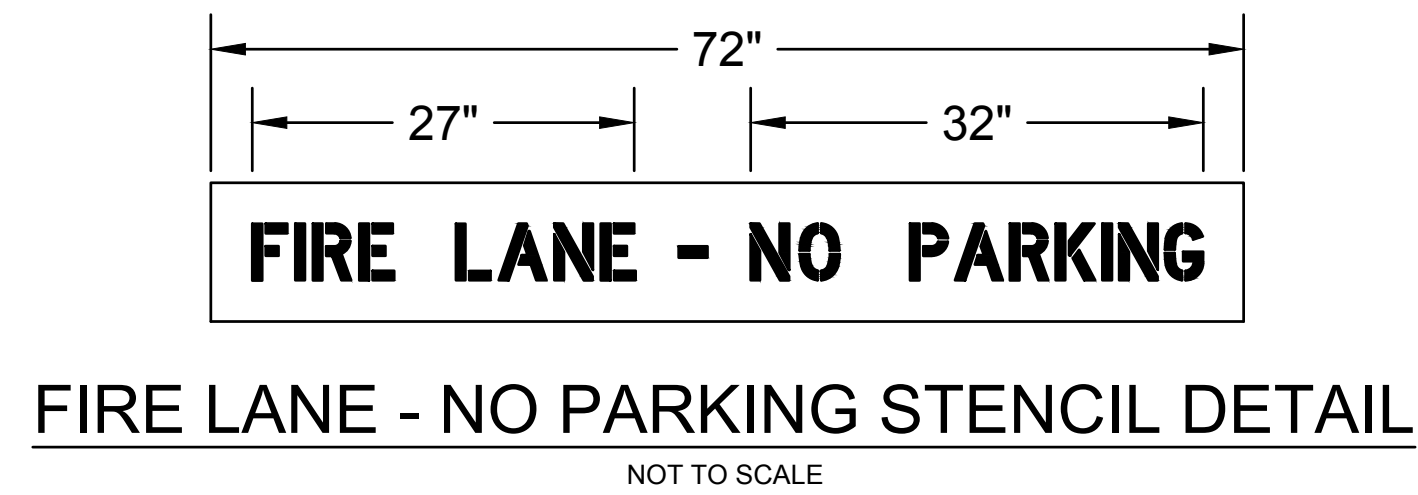
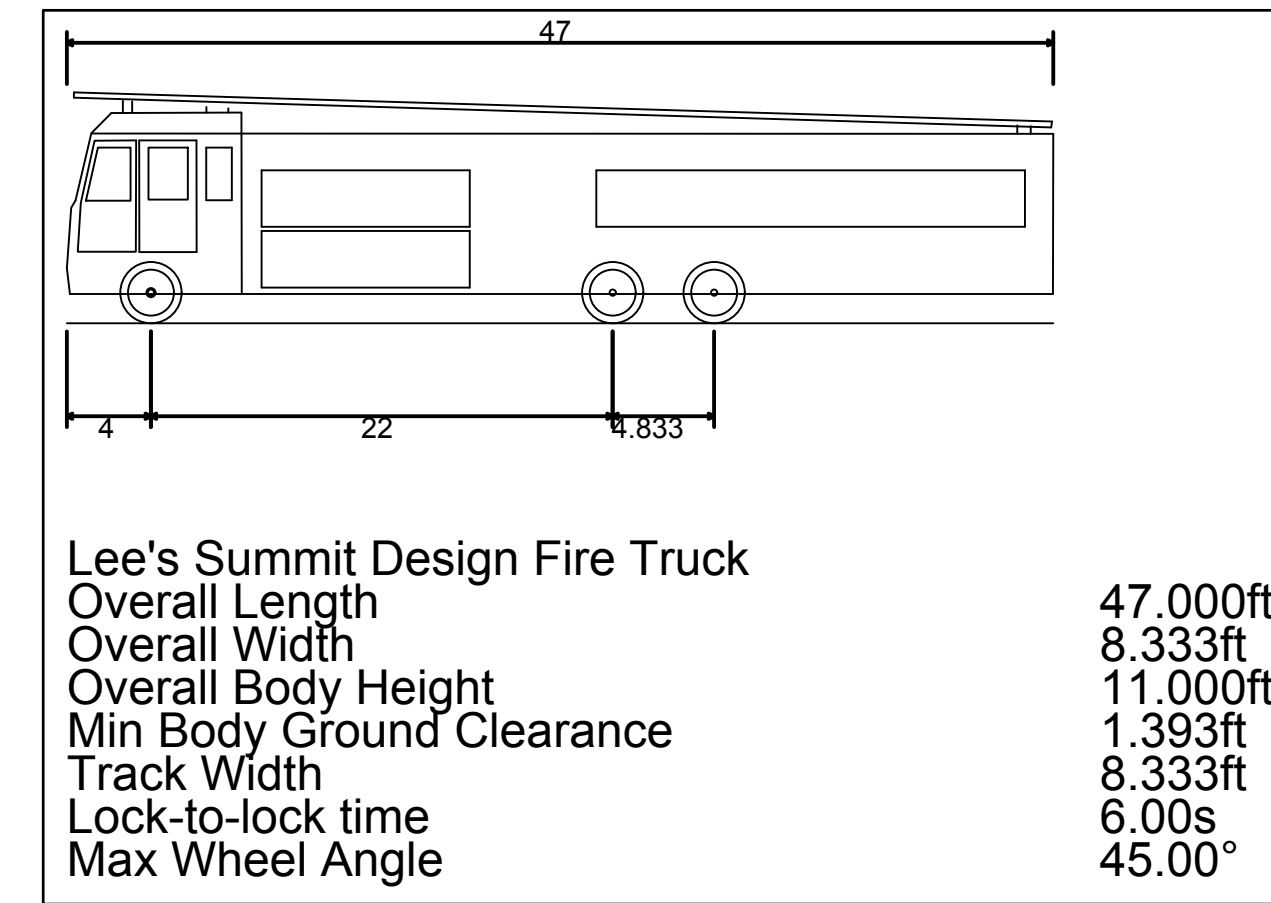
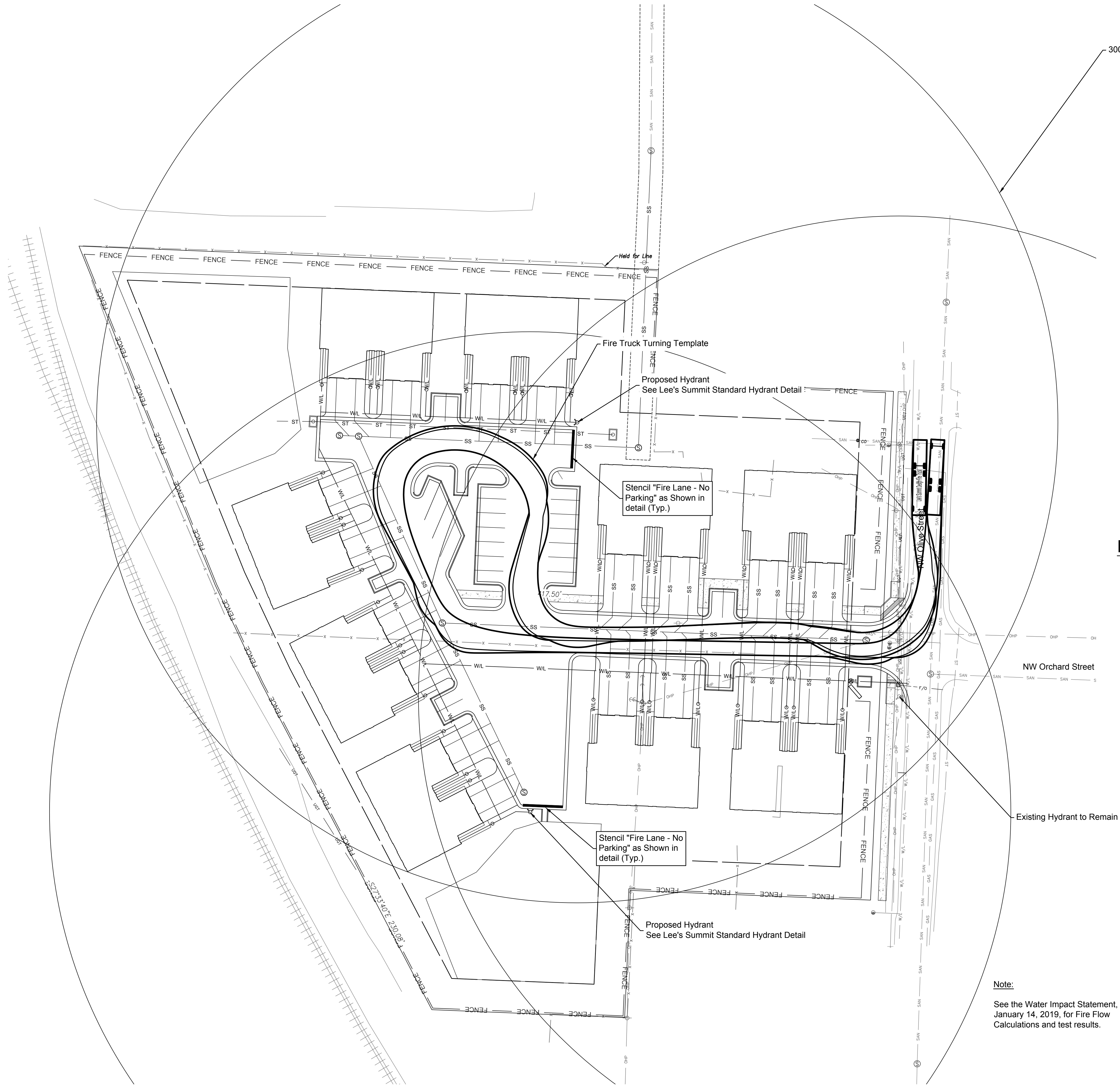
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| 1 | JGD | MES 07/18/19 | REVISION |

Renaissance Infrastructure Consulting

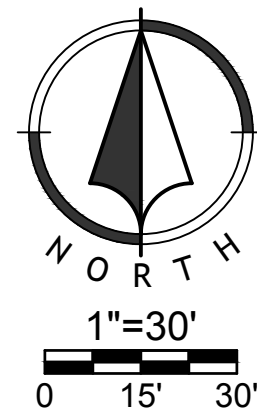
1815 MCCREE STREET, SUITE 200
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MO Certificate of Authority: E-2010033530

Mar 14, 2019 10:17am
2:KRG Design 18-0251 Burton Townhomes Lees Summit Dwg (PDR) Hydrant Coverage.dwg



Note:
See the Water Impact Statement, Dated
January 14, 2019, for Fire Flow
Calculations and test results.



Sheet
C06

Preliminary Development Plans
18-0251
Burton Townhomes
Lee's Summit, Jackson County, Missouri

Hydrant Coverage

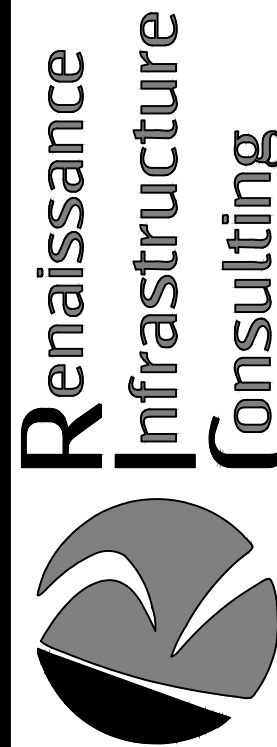
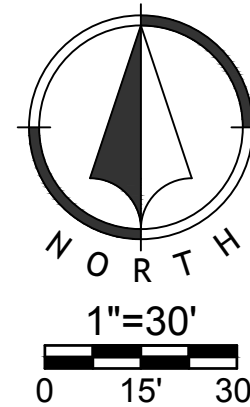
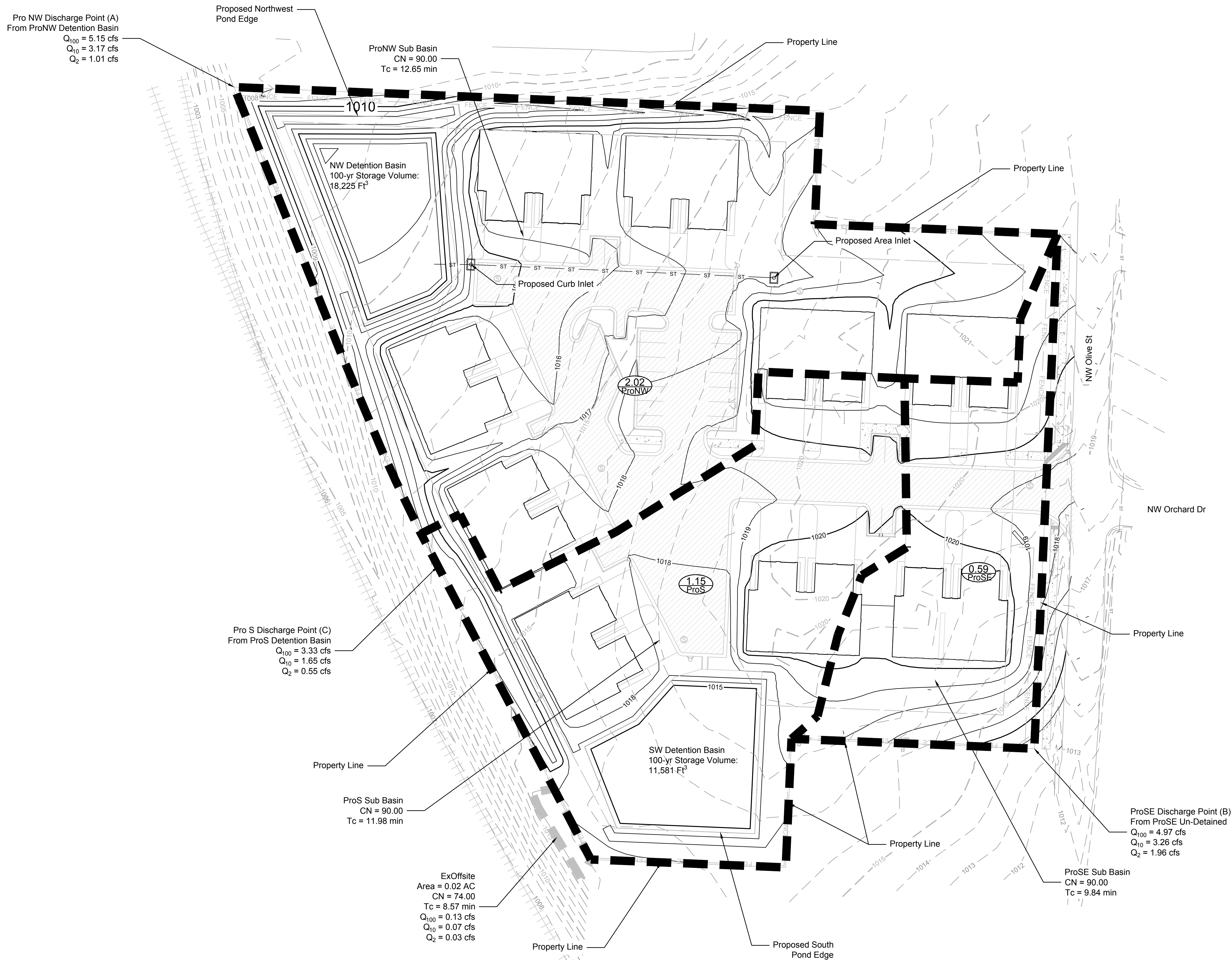
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| | NO | BY | GD | DATE |

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Mar 14, 2019 10:17am
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| NO. | BY | CD | DATE | PER CITY COMMENT |
|-----|-----|-----|----------|--------------------|
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| 1 | JGD | MES | 07/18/19 | REVISION |

Drainage Map

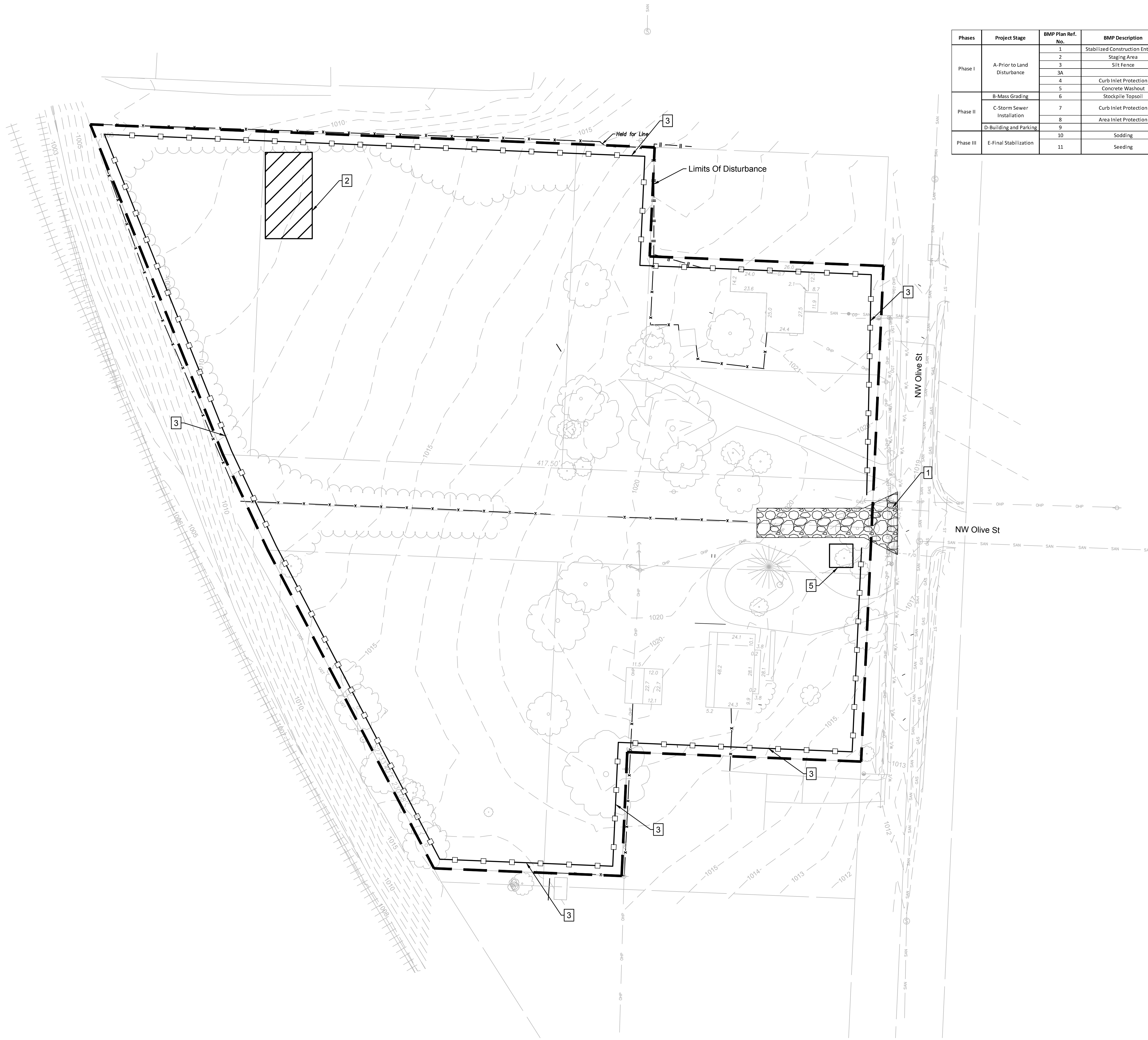
Preliminary Development Plans

18-0251

Burton Townhomes
Lee's Summit, Jackson County, Missouri

Sheet
C07

Mar 14, 2019 10:17am
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| Phases | Project Stage | BMP Plan Ref. No. | BMP Description | Remove After Stage | Notes |
|-----------|-----------------------------|-------------------|----------------------------------|--------------------|--|
| Phase I | A-Prior to Land Disturbance | 1 | Stabilized Construction Entrance | D | Install Construction Entrance. Construction Entrance to be Removed during Stage D. |
| | | 2 | Staging Area | D | Install Staging Area |
| | | 3 | Silt Fence | D | Install Silt Fence. As Shown on the Plans. |
| | | 3A | | | |
| | | 4 | Curb Inlet Protection | E | Install Filter Bags on Existing Inlets |
| Phase II | B-Mass Grading | 5 | Concrete Washout | D | Install Concrete Washout, as Shown on Plans Prior to Pouring any Concrete. |
| | | 6 | Stockpile Topsoil | D | Install Sediment Fence a Minimum of 5' Beyond the Toe of the Slope. |
| | | 7 | Curb Inlet Protection | E | Install Sediment Fence Around Curb Inlets Prior to Pavement Placement. Install Filter Bags Around Pavement After Pavement Placement. |
| | | 8 | Area Inlet Protection | E | Install Stabilized Buffer and Filter Bags. |
| | | 9 | | | |
| Phase III | E-Final Stabilization | 10 | Sodding | N/A | Redistribute Topsoil and Sod Disturbed Area. |
| | | 11 | Seeding | N/A | Redistribute Topsoil and Seed Disturbed Area. Establish Perennial Vegetation with 70% Density over 100% Disturbed Area. |

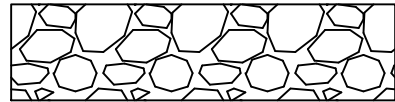
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ESTIMATED EARTHWORK

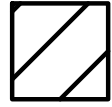
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Earthwork calculations are informational only. Contractor shall be responsible for their own earthwork calculations and perform all necessary earthwork shown herein without additional cost to the owner if quantities differ than above. Earthwork numbers are unadjusted.

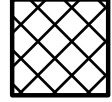
EROSION CONTROL LEGEND



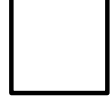
Stabilized Construction Entrance



Staging Area



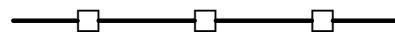
Stockpile Area



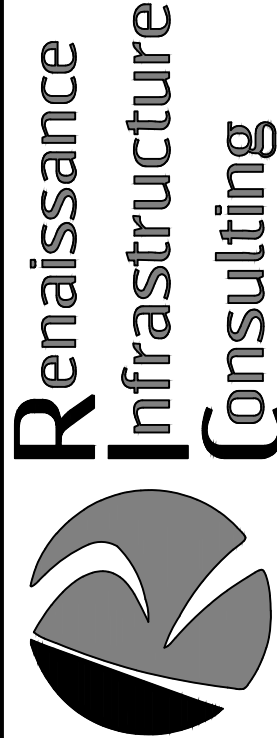
Concrete Washout



Limits of Disturbance



Silt Fence



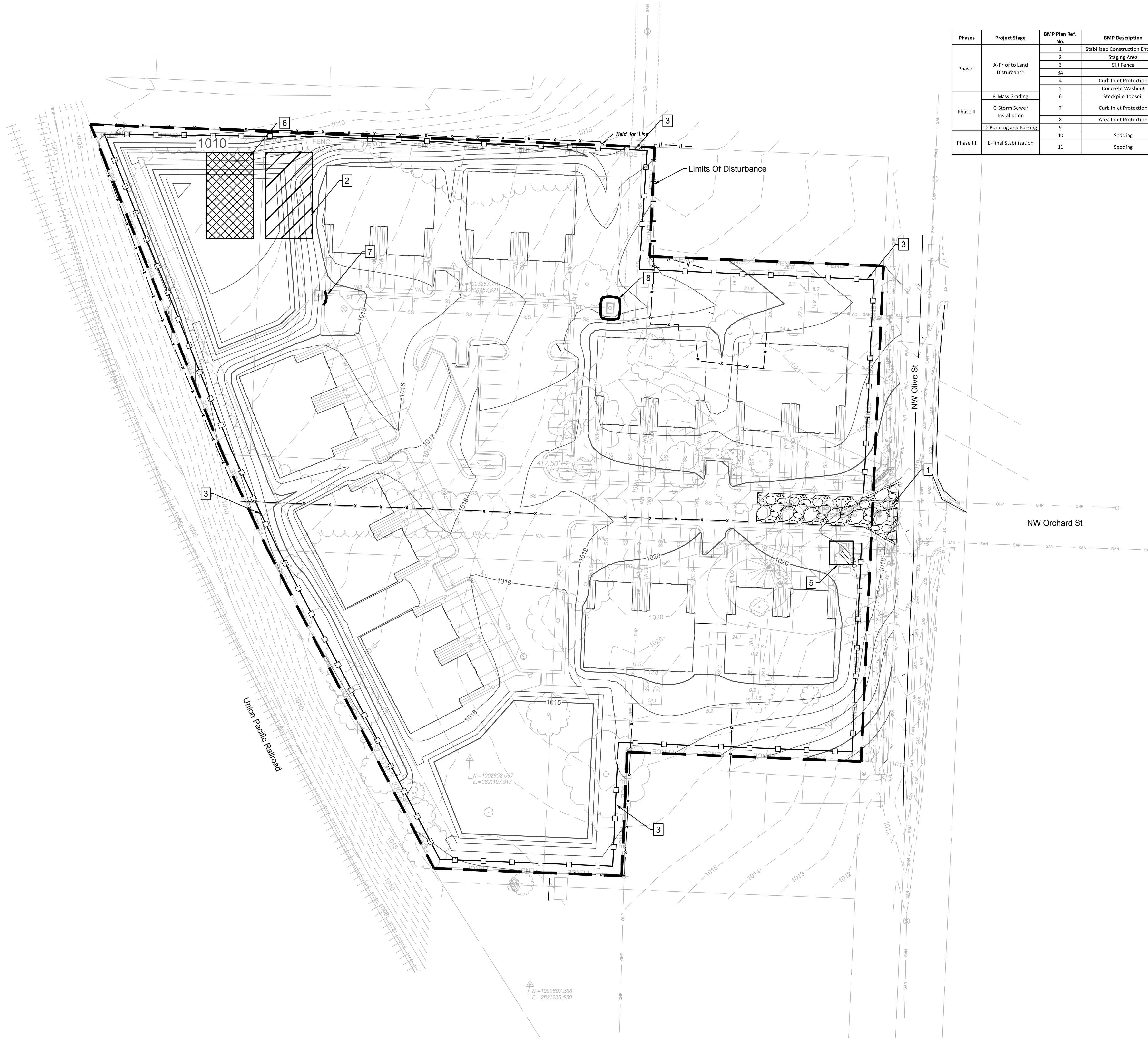
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Erosion Control Phase I

| NO. | BY | CD | DATE | PER CITY COMMENT |
|-----|-----|-----|----------|--------------------|
| 2 | JGD | MES | 03/13/19 | ORIGINAL SUBMITTAL |
| 1 | JGD | MES | 07/18/19 | REVISION |

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2:ARC Design\2018\18-0251 Burton Townhomes Lees Summit\DWG\PDPS\Erosion Control.dwg



| Phases | Project Stage | BMP Plan Ref. No. | BMP Description | Remove After Stage | Notes |
|-----------|-----------------------------|-------------------|----------------------------------|--------------------|--|
| Phase I | A-Prior to Land Disturbance | 1 | Stabilized Construction Entrance | D | Install Construction Entrance. Construction Entrance to be Removed during Stage D. |
| | | 2 | Staging Area | D | Install Staging Area |
| | | 3 | Silt Fence | D | Install Silt Fence. As Shown on the Plans. |
| | | 3A | | | |
| | | 4 | Curb Inlet Protection | E | Install Filter Bags on Existing Inlets |
| Phase II | B-Mass Grading | 5 | Concrete Washout | D | Install Concrete Washout, as Shown on Plans Prior to Pouring any Concrete. |
| | | 6 | Stockpile Topsoil | D | Install Sediment Fence a Minimum of 5' Beyond the Toe of the Slope. |
| | | 7 | Curb Inlet Protection | E | Install Sediment Fence Around Curb Inlets Prior to Pavement Placement. Install Filter Bags Around Pavement After Pavement Placement. |
| | | 8 | Area Inlet Protection | E | Install Stabilized Buffer and Filter Bags. |
| Phase III | E-Final Stabilization | 9 | | | |
| | | 10 | Sodding | N/A | Redistribute Topsoil and Sod Disturbed Area. |
| | | 11 | Seeding | N/A | Redistribute Topsoil and Seed Disturbed Area. Establish Perennial Vegetation with 70% Density over 100% Disturbed Area. |

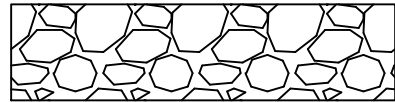
Disturbed Area: 3.76 AC

ESTIMATED EARTHWORK

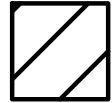
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Fill: 4737 CY

Earthwork calculations are informational only. Contractor shall be responsible for their own earthwork calculations and perform all necessary earthwork shown herein without additional cost to the owner if quantities differ than above. Earthwork numbers are unadjusted.

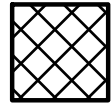
EROSION CONTROL LEGEND



Stabilized Construction Entrance



Staging Area



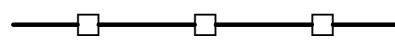
Stockpile Area



Concrete Washout



Limits of Disturbance



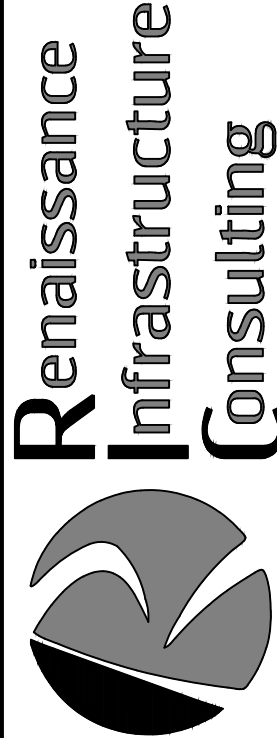
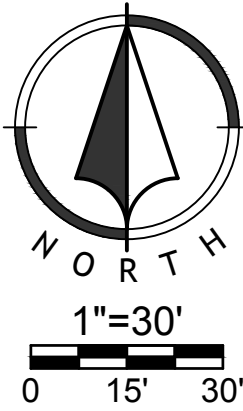
Silt Fence



Curb Inlet Protection



Area Inlet Protection



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Erosion Control Phase II

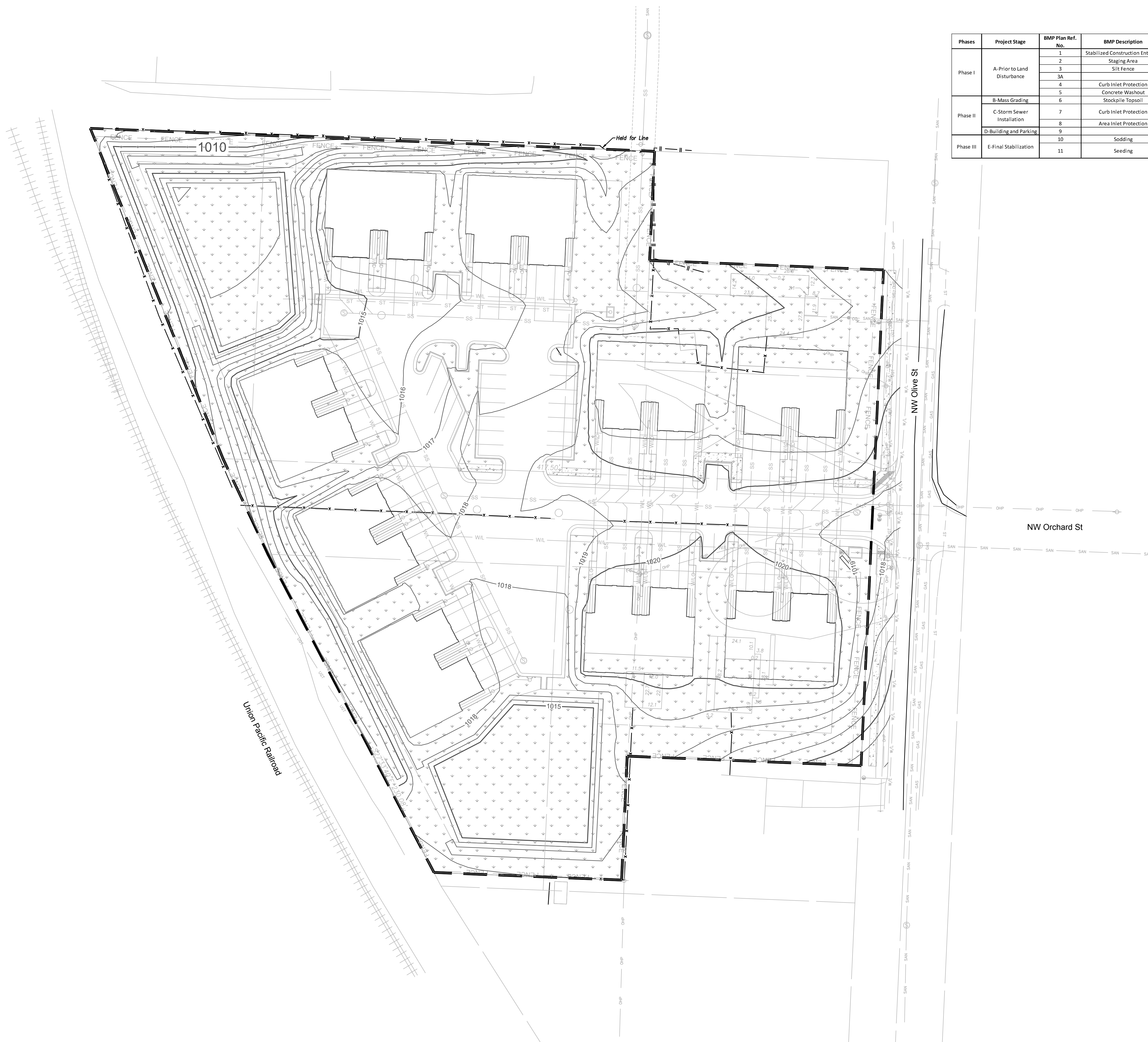
Preliminary Development Plans

18-0251

Burton Townhomes

Lee's Summit, Jackson County, Missouri

Sheet
C09

[illegible]

| Phases | Project Stage | BMP Plan Ref. No. | BMP Description | Remove After Stage | Notes |
|-----------|-----------------------------|-------------------|----------------------------------|-----------------------|---|
| Phase I | A-Prior to Land Disturbance | 1 | Stabilized Construction Entrance | D | Install Construction Entrance. Construction Entrance to be Removed during Stage D. |
| | | 2 | Staging Area | D | Install Staging Area |
| | | 3 | Silt Fence | D | Install Silt Fence. As Shown on the Plans. |
| | | 3A | | | |
| | | | 4 | Curb Inlet Protection | E |
| Phase II | B-Mass Grading | 5 | Concrete Washout | D | Install Concrete Washout, as Shown on Plans Prior to Pouring any Concrete. |
| | C-Storm Sewer Installation | 6 | Stockpile Topsoil | D | Install Sediment Fence a Minimum of 5' Beyond the Toe of the Slope. |
| | | 7 | Curb Inlet Protection | E | Install Sediment Fence Around Curb Inlets Prior to Pavement Placement. Install Filter Bags Around Pavement After Pavement Placement |
| | | 8 | Area Inlet Protection | E | Install Stabilized Buffer and Filter Bags. |
| | D-Building and Parking | 9 | | | |
| Phase III | E-Final Stabilization | 10 | Sodding | N/A | Redistribute Topsoil and Sod Disturbed Area. |
| | | 11 | Seeding | N/A | Redistribute Topsoil and Seed Disturbed Area. Establish Perennial Vegetation with 70% Density over 100% Disturbed Area. |

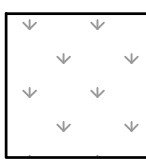
Disturbed Area: 3.76 AC

ESTIMATED EARTHWORK

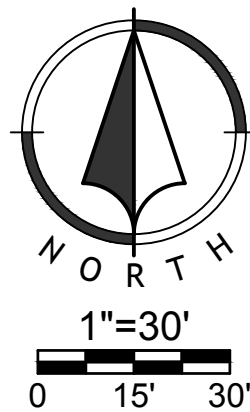
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Earthwork calculations are informational only. Contractor shall be responsible for their own earthwork calculations and perform all necessary earthwork shown herein without additional cost to the owner if quantities differ than above. Earthwork numbers are unadjusted.

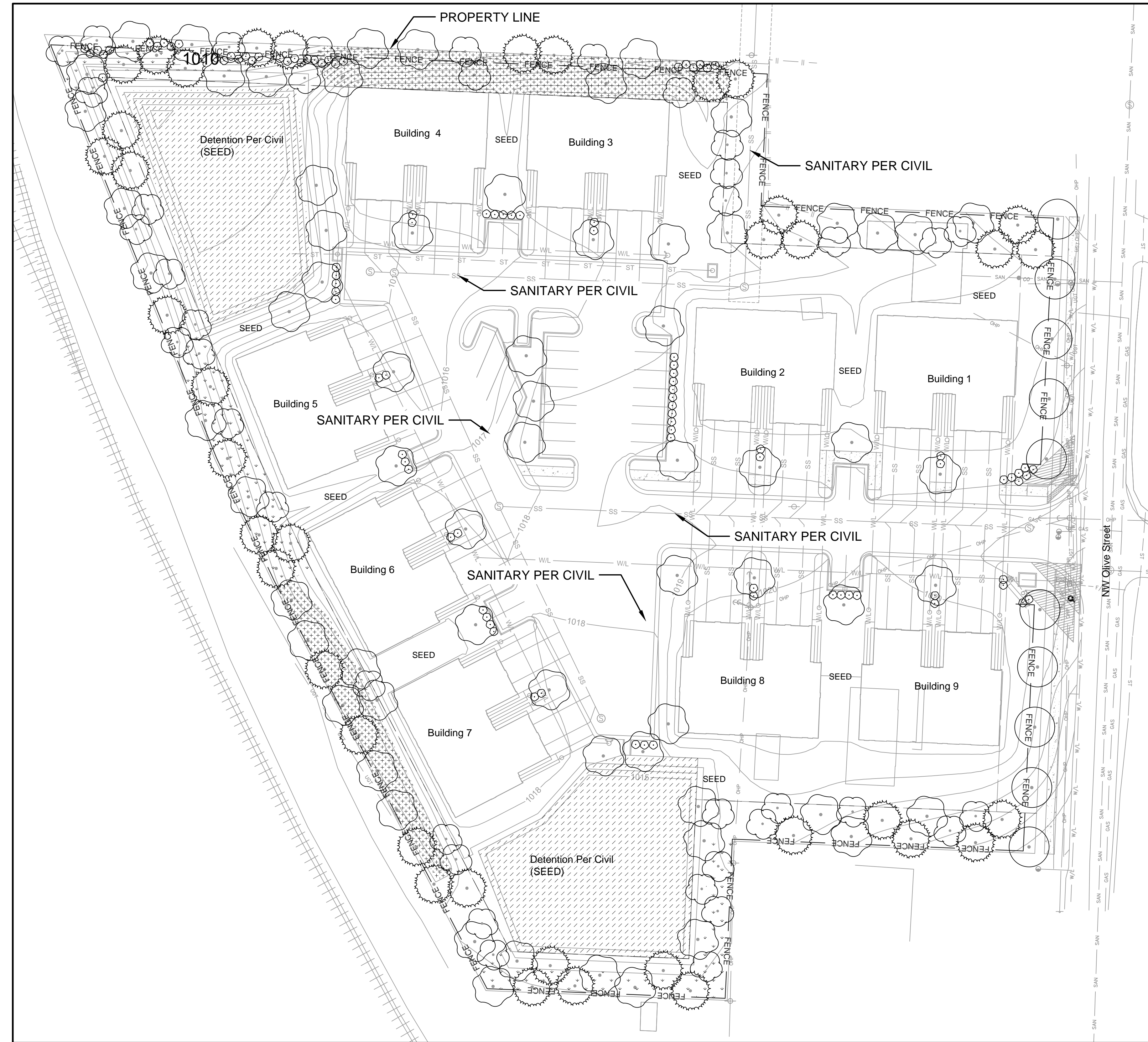
LEGEND



See Landscape Plan



Mar 07 2019 12:57pm
Z:\RIC Design\2018\18-0251 Burton Townhomes Lees Summit\DWG\18-0251 Landscape-REV1.dwg



Landscape Notes

1. LOCATE UTILITIES PRIOR TO COMMENCING LANDSCAPE OPERATIONS. ALL TREES SHALL BE FIELD POSITIONED AS TO AVOID CONFLICTS WITH EXISTING AND PROPOSED UTILITIES. NOTIFY LANDSCAPE ARCHITECT OF ANY CONFLICTS OR OBSTRUCTIONS.
2. CONTRACTOR SHALL STAKE ALL PLANTING AREAS IN THE FIELD PRIOR TO PLANTING FOR APPROVAL OF THE OWNER OR THEIR REPRESENTATIVE.
3. CONTRACTOR SHALL VERIFY ALL PLANT QUANTITIES PRIOR TO PLANTING. ANY DISCREPANCIES WITH THE PLAN SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. THE PLAN QUANTITIES SHALL SUPERCEDE SCHEDULED QUANTITIES.
4. ALL PLANT MATERIAL SHALL BE SPECIMEN QUALITY AND SHALL COMPLY WITH RECOMMENDATIONS AND REQUIREMENTS OF ANSI Z60.1 THE 'AMERICAN STANDARD FOR NURSERY STOCK'.
5. ALL PLANTING BEDS & NATIVE GRASS STANDS SHALL BE EDGED.
6. PREPARE PLANTING BEDS AND INCORPORATE AMENDMENTS ACCORDING TO PLANS.
7. SHREDDED HARDWOOD MULCH, PER SPECIFICATIONS SHALL BE USED AS A THREE INCH (3") TOP DRESSING IN ALL PLANTING BEDS AND AROUND ALL TREES. SINGLE TREES AND SHRUBS SHALL BE MULCHED TO THE OUTSIDE EDGE OF THE SAUCER OR LANDSCAPE ISLAND.
8. ALL TREES SHALL BE STAKED PER DETAIL.
9. ALL PLANT MATERIAL SHALL BE INSTALLED TO ALLOW A ONE FOOT (1') CLEARANCE BETWEEN PLANT AND ADJACENT PAVEMENT.
10. THE LANDSCAPE CONTRACTOR SHALL NOT COMMENCE WORK UNTIL THE SITE IS FREE OF DEBRIS CAUSED BY ON-GOING CONSTRUCTION OPERATIONS. REMOVAL OF DEBRIS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR. LANDSCAPE WORK SHALL NOT BEGIN UNTIL THE LANDSCAPE ARCHITECT AND OWNER HAVE GIVEN WRITTEN APPROVAL FOR SUCH. THERE SHALL BE NO DELAYS DUE TO LACK OF COORDINATION FOR THIS ACTIVITY.
11. THE LANDSCAPE ARCHITECT AND OWNER SHALL APPROVE GRADES AND CONDITION OF SITE PRIOR TO SODDING/SEEDING OPERATIONS.
12. ALL AREAS DISTURBED DURING CONSTRUCTION AND NOT DESIGNATED FOR OTHER PLANTINGS OR HARDSCAPE SHALL BE SODDED WITH TURF TYPE FESCUE.
13. ALL PLANT MATERIAL SHALL BE NATIVE OR ADAPTED SPECIES.
14. ALL SEED SHALL BE TURF-TYPE TALL FESCUE UNLESS OTHERWISE INDICATED.

Landscape Data

Street Frontage - 219lf

Required Setback: 20'
Required Trees: 1 / 30lf = 8
Required Shrubs: 1 / 20lf = 11

Provided Setback: 20'
Provided Trees: 8
Provided Shrubs: 11

Open Space - 163,829sf

Required Trees: 1 / 5,000sf = 27
Required Shrubs: 2 / 5,000sf = 53

Provided Trees: 27
Provided Shrubs: 53

Buffer

Required Intensity: High - 330' North Property Line adjacent to Industrial Zone = 6600sf
low impact screening to be planted on both sides of structure

Required Side Width: 20'
Required Fence: Opaque, 6' Height
Required Shade Trees : 1/750sf x 2 = 8.8
Required Ornamental Trees: 1/750sf x 2 = 8.8
Required Evergreen Trees: 1/750sf = 8.8
Required Shrubs: 1/200sf = 33

Provided Width: 20'
Provided Fence: 6'
Provided Shade Trees: 9
Provided Ornamental Trees: 9
Provided Evergreen Trees: 9
Provided Shrubs: 33

Required Intensity: Low - 220' Northeast Property Line adjacent to RP-2 = 4,400sf
Required Side Width: 20'
Required Back Width: 20'
Required Shade Trees : 1/750sf = 5.86
Required Ornamental Trees: 1/750sf = 5.86
Required Evergreen Trees: 1/750sf = 5.86
Required Shrubs: 1/200sf = 22

Provided Width: 20'
Provided Width: 20'
Provided Shade Trees: 6
Provided Ornamental Trees: 6
Provided Evergreen Trees: 6
Provided Shrubs: Fence in lieu of shrubs

Required Intensity: Low - 340' South Property Line adjacent to RP-2 = 6,800 sf
Required Side Width: 20'
Required Back Width: 20'
Required Shade Trees : 1/750sf = 9.06
Required Ornamental Trees: 1/750sf = 9.06
Required Evergreen Trees: 1/750sf = 9.06
Required Shrubs: 1/200sf = 34

Provided Width: 20'
Provided Width: 20'
Provided Shade Trees: 10
Provided Ornamental Trees: 10
Provided Evergreen Trees: 10
Provided Shrubs: Fence in lieu of shrubs

Required Intensity: Low - 503' West Property Line = 10,060 sf
Required Side Width: 20'
Required Back Width: 20'
Required Shade Trees : 1/750sf = 13.41
Required Ornamental Trees: 1/750sf = 13.41
Required Evergreen Trees: 1/750sf = 13.41
Required Shrubs: 1/200sf = 50.3

Provided Width: 20'
Provided Width: 20'
Provided Shade Trees: 14
Provided Ornamental Trees: 14
Provided Evergreen Trees: 14
Provided Shrubs: Fence in lieu of shrubs

CONCEPT PLANT SCHEDULE

| | | |
|--|---|-----------|
| | STREET TREE Minimum 3" Cal. | 10 |
| | SHADE TREE Minimum 3" Cal. | 67 |
| | ORNAMENTAL TREE Minimum 3" Cal. | 39 |
| | EVERGREEN TREE Minimum 8' Ht | 39 |
| | SHRUB 18" to 24" B&B or 2 gal 24" to 30" B&B or 5 gal | 98 |
| | NATIVE GRASS SWALE Wet/Dry prairie grasses | 6,531 sf |
| | NATIVE GRASSES Dry Short Prairie Grasses | 6,056 sf |
| | NATIVE GRASS DETENTION Extended Dry Prairie Grass | 16,220 sf |

NOTES:

1. TREES THAT DO NOT MEET THE SIZE REQUIREMENT WILL BE REJECTED
2. TREES SHALL BE INSPECTED BY OWNERS REPRESENTATIVE PRIOR TO INSTALLATION.

PRUNE OUT ANY DEAD OR BROKEN BRANCHES AND REMOVE DEBRIS FROM SITE.

SECURE TREE TO STAKES WITH STRAPS (RE: SPECS). STRAPS SHALL BE LOOSE ENOUGH TO ALLOW SOME MOVEMENT OF THE TRUNK WITH THE WIND

SET TREE WITH TOP OF ROOT BALL FLUSH WITH GRADE. TRUNK FLARE MUST BE VISIBLE AT THE TOP OF ROOT BALL. REMOVE EXCESS SOIL TO TOP OF LATERAL ROOTS.

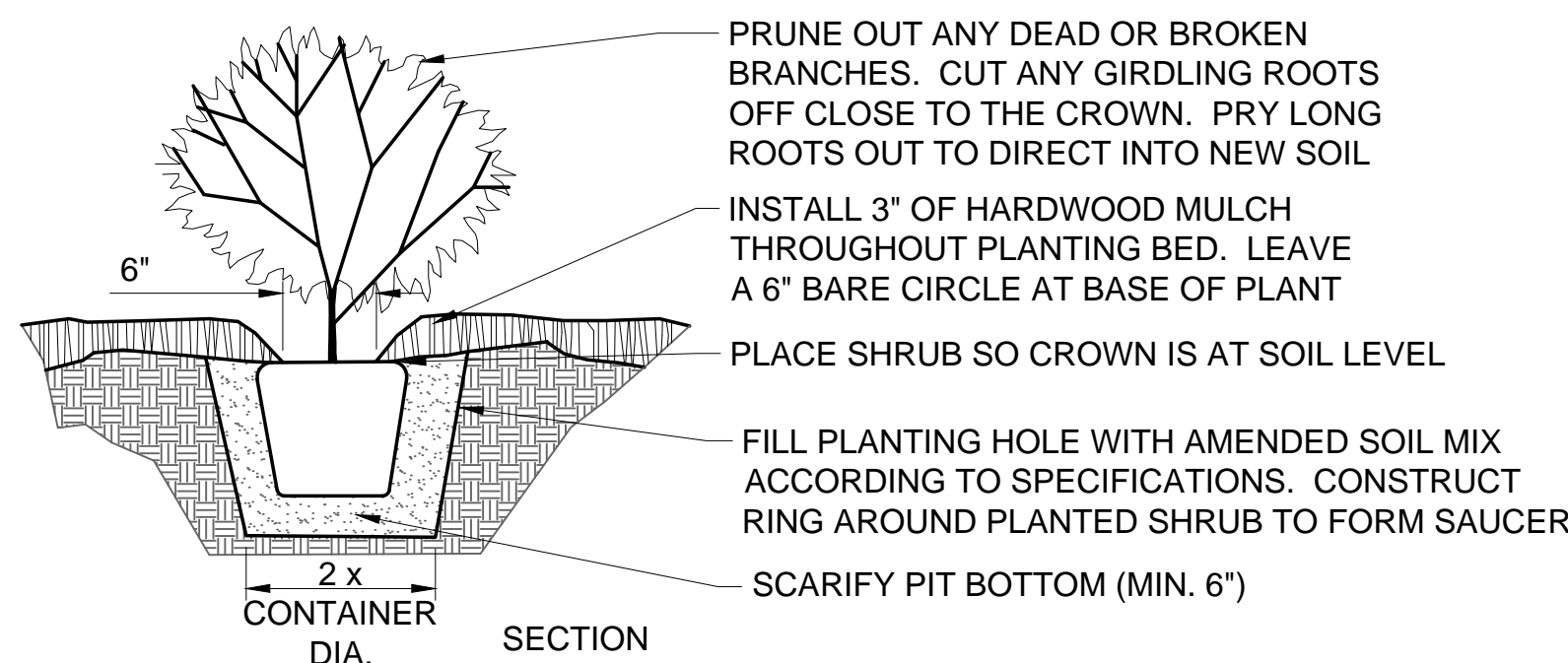
MIN. 6" LONG STEEL STAKES SECURED INTO UNDISTURBED SOIL. PLACE NORTH AND SOUTH OF TREE.

3" MULCH PER SPECIFICATIONS. DO NOT PLACE ON TRUNK OR TRUNK FLARE. BERM AT OUTER EDGES OF RING TO CREATE A SAUCER FORM.

REMOVE TWINE AND CAGE FROM ROOT BALL AND TRUNK. PEEL AND REMOVE BURLAP FROM TO 1/3 OF THE ROOT BALL.

PLANTING HOLE SHALL BE AT LEAST 3 TIMES WIDER THAN THE SPREAD OF ITS ROOTS, BUT NO DEEPER. PLACE ROOT BALL ON UNDISTURBED SOIL WITH ROOT FLARE EVEN WITH OR 1" ABOVE GRADE. SCARIFY SIDES AND BOTTOM OF PIT.

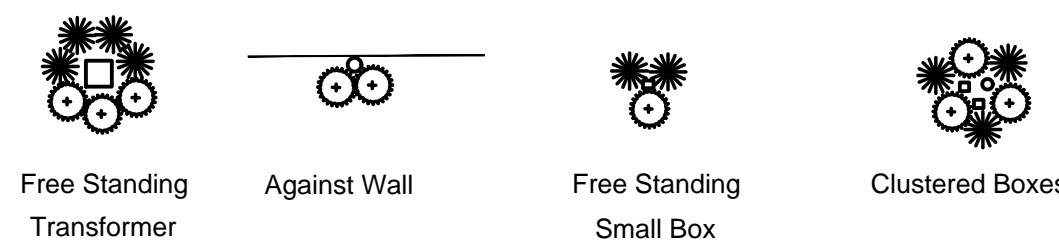
AMEND SOIL ACCORDING TO SPECIFICATIONS.



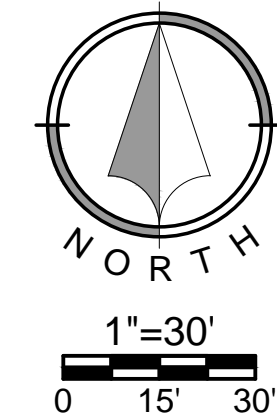
NOTES:

1. REFER TO SPECIFICATIONS FOR TOPSOIL BACKFILL MIX.
2. CONTRACTOR TO WATER THOROUGHLY AFTER PLANTING
3. INSTALLATION TO BE IN ACCORDANCE WITH PLANTING SPECIFICATIONS

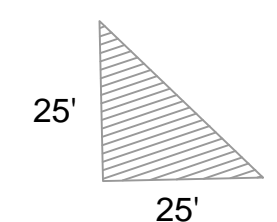
SHRUB PLANTING DETAIL - NTS



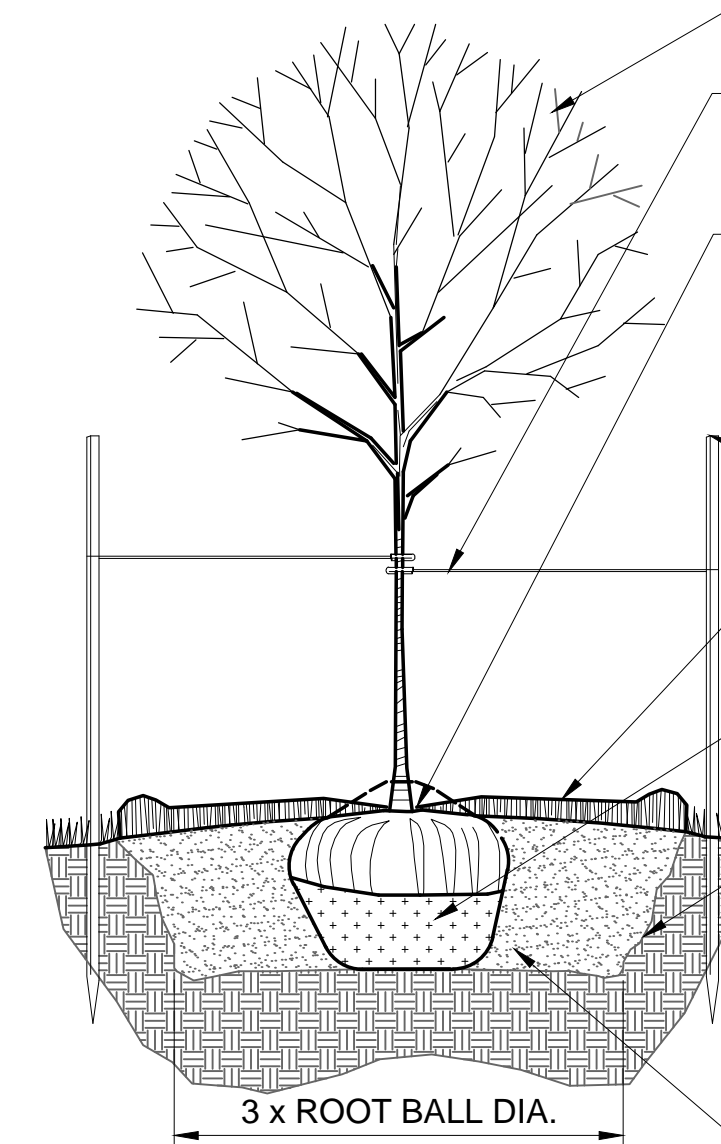
TYPICAL UTILITY BOX SCREENING DETAILS - NTS



NOTE:
SIGHT TRIANGLE TO RUN ALONG EDGE OF PAVEMENT AT POINT OF INTERSECTION

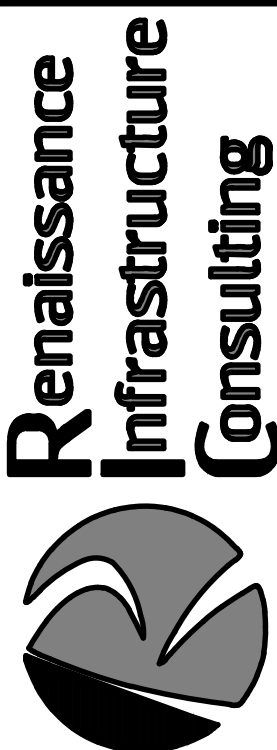


SIGHT TRIANGLE - NTS



DECIDUOUS TREE PLANTING DETAIL - NTS

| NO. | BY | DATE | REVISION |
|-----|--------|--------|--------------------|
| 1 | JMM AG | 3/8/19 | PER CITY COMMENTS |
| | JMM AG | 1/7/19 | ORIGINAL SUBMITTAL |



132 ABBE AVE
KANSAS CITY, KANSAS 66103
WWW.RIC-CONSULT.COM

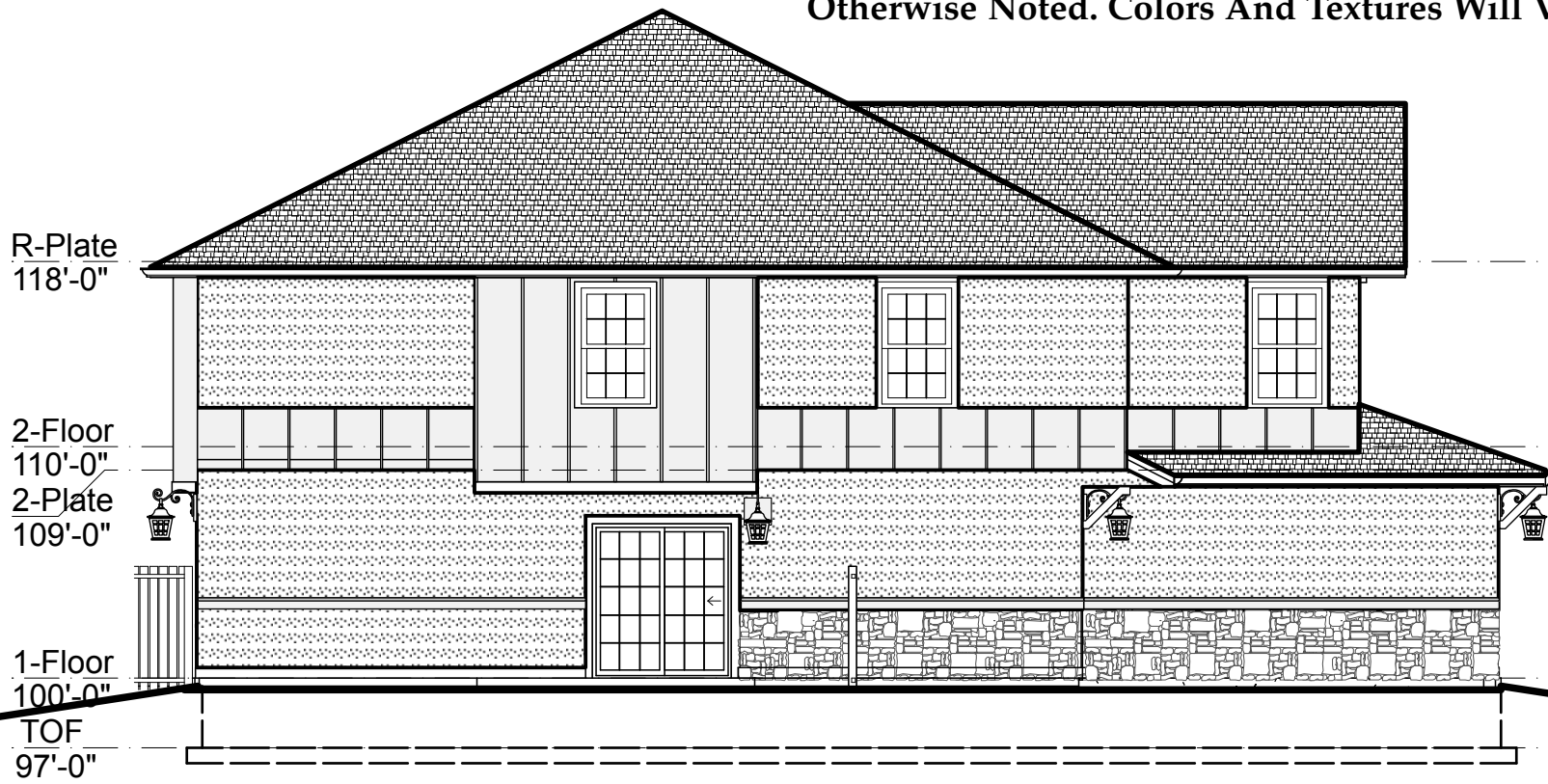
KS Certificate of Authority: E-1814



TYPICAL FRONT ELEVATION
Scale 1/4" = 1'-0"

- Composition Shingle Roof.
- Contrast Colored PVC Or Wood Louver Typial.
- Flat Stucco Typical
- Flat Shingle Or Dove Tail Vinyl Siding
- Prefinished AluminumW/ Gutter & Downspout
- Vinyl Siding Patterns Shall Be Supplied With Corner Trim Of Contrasting Colors
- Flat Stucco
- Prefinished Clad Clear Glass Insulated Double-Hung Windows.
- Painted Board & Batten Siding.
- Insulated MTL Or Wood Door.
- Wood Screen Privacy Fence Typ. Stained Or Natural Wood Style May Vary.
- Manufactured Stone Veneer Pattern To Vary.
- Finish Grade. Note Grade Varies
- Dashed Lines Indicate Location Of Poured In-Place Foundation Ballo

NOTE:
All Materials, Roof Slopes Floor To Floor Heights,
Total Elevation Height Are Similar Unless
Otherwise Noted. Colors And Textures Will Vary.

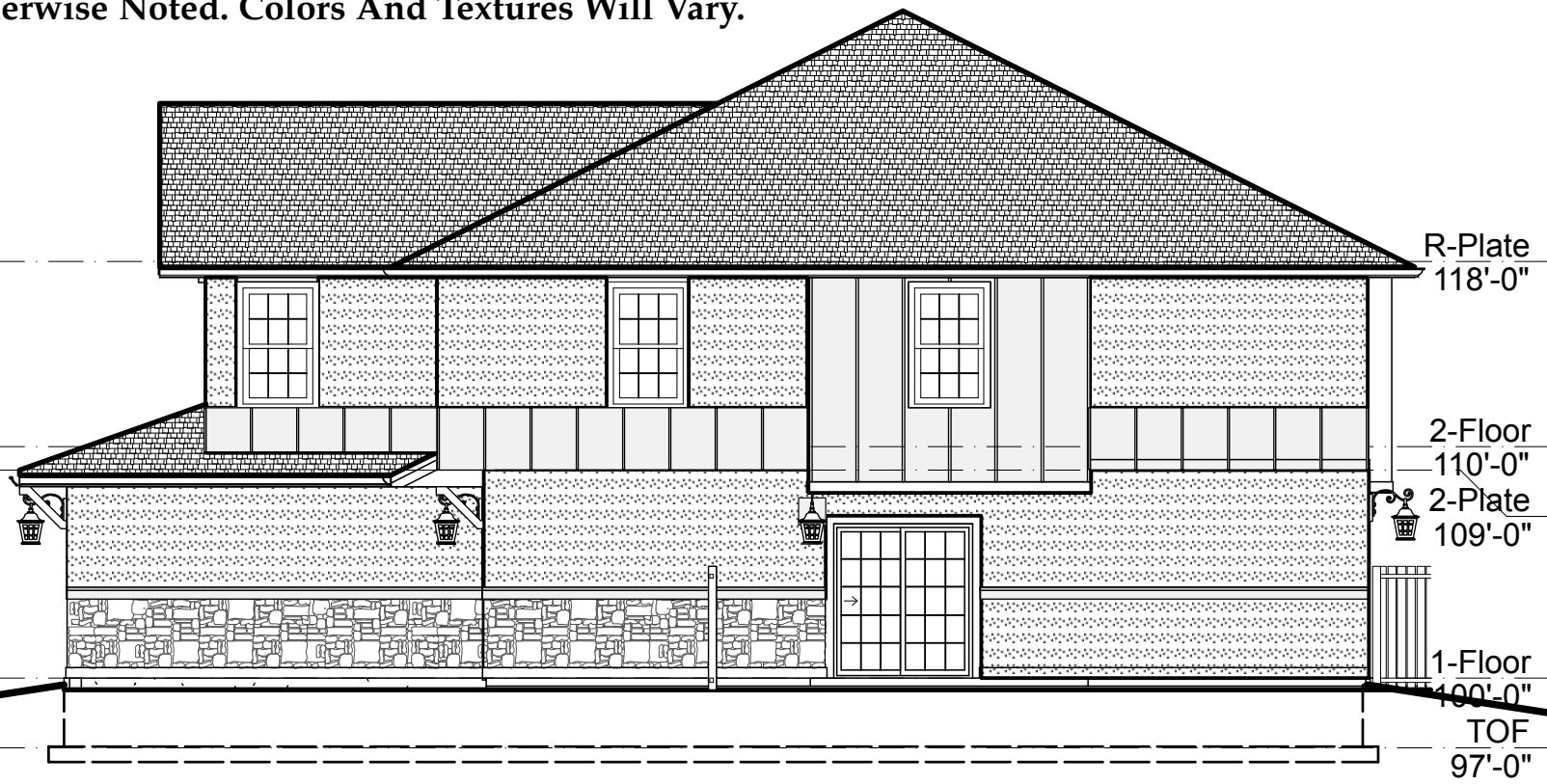


TYPICAL SHED SIDE ELEV. (ALT. Materials)
Scale 1/8" = 1'-0"



TYPICAL SHEAD ROOF FRONT ELEVATION
Scale 1/8" = 1'-0"

NOTE:
All Materials, Roof Slopes Floor To Floor Heights,
Total Elevation Height Are Similar Unless
Otherwise Noted. Colors And Textures Will Vary.



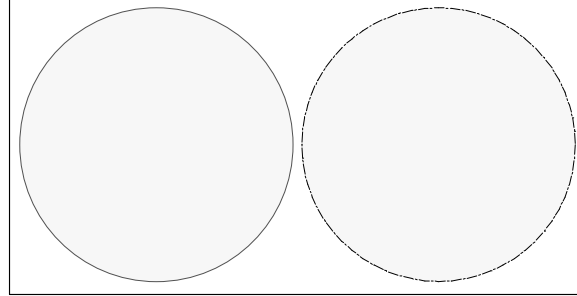
TYPICAL SHED SIDE ELEVATION
Scale 1/8" = 1'-0"



TYPICAL REAR ELEVATION
Scale 1/8" = 1'-0"

BURTON TOWNHOMES
??? Thru ??? Olive Street
Lee's Summit, Missouri

This Drawing And Information Contained
Within Is Provided As An Instrument Of
Service By The Architect, And Is Intended
For Use On This Project Only. This
Drawing Remains The Property Of The
Architect And Shall Be Returned To Him
Upon Completion Of The Construction
Work. All Drawings, Specifications, Ideas,
Designs And Arrangements Appearing
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A-0

| | |
|---|----------|
| 1 | Date |
| 2 | REVISION |
| 3 | REVISION |
| 4 | REVISION |
| 5 | REVISION |

**Appl. #PL2019-020 – REZONING from RP-2 to RP-3 and
PRELIMINARY DEVELOPMENT PLAN
Burton Townhomes, 408 & 500 NW Olive St
Cherokee Flight, LLC, applicant**



Packet Information

File #: 2019-3140, **Version:** 1

Public Hearing: Application #PL2019-305 - Preliminary Development Plan - Main Orchard, 510 NE Main Street and 6 NW Orchard Street; Engineering Solutions, LLC, applicant.

Issue/Request:

The applicant is seeking a preliminary development plan approval for a 6 lot single family residential development consisting of one existing home (proposed Lot 3), plus five (5) new single family home sites. Proposed architectural styles, are provided and include single and two-story Bungalow, Craftsman, and American Foursquare housing styles, detached/attached garages and front porches. The proposed building materials consist of lap siding, brick or stone veneer, and wood panels in a variety of color options. A modification is requested for the maximum building height for the detached garage located on Lot 3.

Josh Johnson, AICP, Assistant Director of Plan Services
Matt Schlicht, Applicant

With the conditions of approval below, the application meets the requirements of the UDO and/or Design and Construction Manual (DCM).

Recommended Conditions of Approval

Site Specific Conditions

1. The developer shall make payment to the City of Lee's Summit for construction costs in lieu of actual construction for the segment of sidewalk along NW Orchard St.

A motion was made by Board Member Dial, seconded by Board Member Lovell, that Appl. #PL2019-305 - PRELIMINARY DEVELOPMENT PLAN - Main Orchard, 510 NE Main St and 6 NW Orchard St; Engineering Solutions, LLC, applicant, be recommended for approval to the City Council - Regular session, due back on 12/3/2019. The motion carried unanimously.



LEE'S SUMMIT

MISSOURI

MEMO TO CITY COUNCIL:

Wednesday, November 20, 2019

Re: Application # PL2019-305– Preliminary Development Plan for “Main Orchard”

To: City Council

Since the Planning Commission meeting on November 14, 2019 the applicant has requested to remove the modification request for building height of the detached garage on Lot 3. All detached garages will be required to meet the Unified Development Ordinance requirements for building height.

Development Services

220 SE Green Street | Lee's Summit, MO 64063 | P: 816.969.1200 | F: 816.969.1221 | cityofLS.net



LEE'S SUMMIT
MISSOURI

The City of Lee's Summit
Action Letter - Draft
Planning Commission

Thursday, November 14, 2019

5:00 PM

City Council Chambers

City Hall

220 SE Green Street

Lee's Summit, MO 64063

Call to Order

Present: 7 - Board Member John Lovell
Board Member Jake Loveless
Board Member Carla Dial
Chairperson Jason Norbury
Board Member Terry Trafton
Board Member Jeff Sims
Board Member Dana Arth

Absent: 2 - Board Member Mark Kitchens
Vice Chair Donnie Funk

Roll Call

Approval of Agenda

A motion was made by Board Member Dial, seconded by Board Member Trafton, that the agenda be approved. The motion carried unanimously.

Public Comments

There were no public comments at the meeting.

Approval of Consent Agenda

[TMP-1419](#) Appl. #PL2019-292 - VACATION OF EASEMENT - 1695 SE Decker St and 60 SE Thompson Dr; Thompson Properties, LLC, applicant

A motion was made by Board Member Dial, seconded by Board Member Sims, that this application be recommended for approval to the City Council - Regular Session, due back on 12/3/2019. The motion carried unanimously.

[2019-3143](#) Appl. #PL2019-370 - SIGN APPLICATION - Edward Jones, 500 SW Market St; Fastsigns, applicant

A motion was made by Board Member Dial, seconded by Board Member Sims, that this application be approved. The motion carried unanimously.

[2019-3114](#) Minutes of the October 24, 2019, Planning Commission meeting

A motion was made by Board Member Dial, seconded by Board Member Sims, that the minutes be approved. The motion carried unanimously.

Public Hearings

[2019-3140](#)

Public Hearing: Application #PL2019-305 - Preliminary Development Plan - Main Orchard, 510 NW Main St and 6 NW Orchard St; Engineering Solutions, LLC, applicant.

Chairperson Norbury opened the hearing at 5:06 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Mr. Matt Schlicht of Engineering Solutions gave his address as 50 SE 30th Street in Lee's Summit. The project was located on the west side of Main Street, north of Orchard Street; 510 Main and NW Orchard. This was a vacant property, about 2.5 acres. One existing home on 510 Main dated to about 1920 and was a bungalow-style, front porch home with a dormer and a gravel drive but no garage. The proposal was to divide the property into six residential lots, adding a garage and an above-garage loft space to the existing home. The other five lots would be sold. The applicants had provided staff with a memorandum of ideas, outlining the applicants' preference for the size and style of the homes, with the developer providing some help with what the applicant wanted to see. They wanted to leave the existing home in place, with the new homes being the early-mid 20th century style of 'foursquare' bungalow style with dormers, front porches and garages in the back.

The sheet that the applicant had given the Commissioners a summary of the house characteristics. They would be a minimum 1,000 square feet, with each having a garage, including the existing house; and each would have a front porch covering at least 50 percent of the front side and a minimum 6-foot depth. All would be one or two stories with a dormer on the two-story houses. These would all be consistent with the Craftsman style that was common throughout the Downtown area. The driveway width would be limited to 16 feet at the front and side, in order to keep the streetscape more similar to the older style.

A neighborhood meeting had been held at the Gamber Center, with all residents within a 300-foot radius of the property invited; however, only 3 neighbors attended. They had asked if the homes would be rentals, and he had replied that the lots would be sold for development. Mr. Schlicht noted that many of the same people attended these meetings: young couples who wanted to purchase a Downtown home. This would provide someone to have their desired home built. These houses were in the \$200,000-\$300,000 range.

Mr. Schlicht displayed a colored example of what the houses would look like. Each would be built slightly above grade with a welcoming stairway/porch entry. Each would have a sidewalk from the front steps to the public sidewalk. Like the style, the colors and materials would be standard for the older Downtown neighborhoods: shake shingles or Hardiboard siding, real stone or brick veneers. He wanted to avoid using vinyl or metal sidings or stucco. Colors would be low-contrast, but color palettes were provided for buyers who wanted a slightly different color.

Originally, the Old Lee's Summit development master plan had identified this specific area, and some areas to the west of it, as being parts of the Downtown core that were under-utilized. The applicants believed that this plan was consistent with the plan. Mr. Schlicht then displayed a photo of the existing home at 510 Main Street. It had been built in the early 1920s and was currently being rented. The house was 1,100 square feet, had a stone foundation and a faux dormer at the top. The plan was to add a garage with a loft behind it, and to replace the gravel drive with a concrete one. Other photos showed the interior of the existing house.

Mr. Schlicht stated that he had worked with staff to control some of the stormwater from nearby houses. He showed a diagram of individual detention pits. Stormwater would be piped down from all the roofs, downspouts and hard surfaces into the pit area for each lot. A rock chamber below would store water during major rain events. It was basically a design for a

rain garden. Rain gardens reduced some of the peak runoff that would go downstream.

The applicants were asking for one modification. The rule for the RP-2 zoning district dictated that a garage could not be any taller than the principal structure. That would rule out a loft above a garage in this case. He had done a sight line survey and showed that the garages would be far back enough to not be visible above the roofs of the houses.

Following Mr. Schlicht's presentation, Chairperson Norbury asked for staff comments.

Ms. Thompson entered Exhibit (A), list of exhibits 1-17 into the record. She confirmed that the applicant was submitting a preliminary development plan for five single-family homes at the northwest corner of NW Orchard and NE Main Street. This property and the surrounding properties were zoned RP-2, for planned two-family residences. She displayed a slide of the proposed site plan, showing the five vacant lots and one existing home; and footprints for the five proposed homes. She showed a number of elevations for similar structures, adding that once a residential building permit was submitted to the City, the planning staff would review these elevations to make sure they complied with what was approved. The modification request was for a detached garage with loft on Lot 3, with an overall building height of 26 feet. Staff did not support a detached garage that was taller than the principal structure, and requested that the garages conform to height limits.

Ms. Thompson confirmed that this area was part of the Old Downtown part of Lee's Summit. They were in favor of increasing the housing stock in the area, which this plan could do. Regarding sidewalks, they were required as part of the platting process; however, there were not many sidewalks in this particular area. The applicant asked for a waiver for a sidewalk along Orchard and to make a payment in lieu of construction. He did propose a sidewalk along NE Main Street, which would be constructed as each house was built.

The application had two Conditions of Approval. The detached garage would conform to the UDO requirements for building height, and the developer would pay the City of Lee's Summit for construction costs instead of constructing a sidewalk along NW Orchard.

Following Ms. Thompson's comments, Chairperson Norbury asked if there was anyone present wishing to give testimony, either in support for or opposition to the application. Seeing none, he then asked if the Commission had questions for the applicant or staff.

Mr. Loveless noted Ms. Thompson's mention that before a builder applying for get a building permit on one of these lots would have to submit plans that staff would approve as architecturally consistent with the rest of the neighborhood. Ms. Thompson stated that they would have to submit a plot plan along with residential plans, including floor plans and elevations. This required a review from a planner, who would check for approved elevations and complied with what was approved.

Mr. Loveless then asked Mr. Schlicht for some details about the stormwater collection plan. He noted that with connectivity among the lots and asked why they could not be tied in with the typical water system. Mr. Schlicht pointed out on the map the about 30 acres in the neighborhood that drained a large area through Olive. It had open ditches and few collection systems. The idea was for the individual houses to collect rainwater off the roofs on site and give each homeowner individual control. They would also have the opportunity to start rain gardens. Mr. Loveless asked if it was accurate that this would effectively create a net zero in terms of impervious surface, and Mr. Schlicht replied that it was.

Mr. Loveless asked about driveways. Mr. Schlicht pointed out the two houses, including the existing one that would have two large maple trees on each side, and a corner with a few more large trees. One of the houses would be built behind the trees, which would enable landscaping along the north side with a long driveway. This was typical of the old Downtown

neighborhood, which had houses built varying distances from the street instead of just a row of houses directly next to each other. Mr. Loveless noted that Mr. Schlicht planned to keep the existing home but add a garage behind the home that would be taller than the house. Mr. Schlicht explained that he planned to build a garage with loft behind the existing house at 510 Main. He had discussed this with staff, and determined that a garage with loft could be permitted, up to a height of 40 feet. If the garage was first built and a loft added later it would not comply with the UDO. The garage was part of this application; but he would not ask for a modification at this time.

Mr. Trafton asked why Lot 1 was offset so far back. Mr. Schlicht stated that he wanted to keep the trees on the lots, and the lots had different characteristics, and provided different opportunities for buyers. A buyer could choose the narrow, elongated 60-foot lot or the corner lot which was a little bit larger. These lots reflected Downtown's unique character and lent itself to providing different opportunities. The L-shaped lot at the north end in particular made a bigger building and a choice of location for the garage. It was an opportunity to do something different.

Concerning the detention pit, Mr. Trafton said he assumed these were not tied to any kind of runoff from the street, but would provide a way to collect the water and let it naturally move into the system. He asked if there were other parts of Lee's Summit where this had been tried successfully. Mr. Schlicht did not know of any within the city limits, although a rain garden would be somewhat similar. They did lots of redevelopment in Leawood, Fairway and Prairie Village, tearing down homes and rebuilding in infill sites, and were using this system. It seemed to function well. With no infrastructure for stormwater, the water would just either run across the ground and continue onto another property or be diverted into a large detention basin that that was used by a number of residents. The latter was often a headache.

Chairperson Norbury asked if there were further questions for the applicant or staff. Hearing none, he closed the public hearing at 5:32 p.m. and asked for discussion among the Commission members, or for a motion.

Ms. Dial made a motion to recommend approval of Application PL2019-305, Preliminary Development Plan, Main Orchard, 510 NW Main St and 6 NW Orchard St; Engineering Solutions, LLC, applicant; subject to staff's letter of November 7, specifically Conditions of Approval 1 through 11. Mr. Trafton seconded.

Chairperson Norbury asked if there was any discussion of the motion. Hearing none, he called for a vote.

A motion was made by Board Member Dial, seconded by Board Member Lovell, that this application be recommended for approval to the City Council - Regular Session, due back on 12/3/2019. The motion carried unanimously.

[2019-3144](#)

Public Hearing: Application #PL2019-307 - Rezoning from AG and R-1 to RP-3 and Preliminary Development Plan - Osage, approximately 32 acres located at the southwest corner of SW M-150 Hwy and SW Pryor Rd; Clayton Properties Group, Inc., applicant.

Chairperson Norbury opened the hearing at 5:34 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Mr. John Erpelding of Olsson stated that Mr. Vince Walker and Mr. Travis Roof of Summit Homes were also present. They proposed a rezoning and preliminary development plan for Osage, which would cover about 31.5 acres at Pryor Road and 150 Highway. It would consist of a total 160 units. Mr. Erpelding displayed a color-coded map showing the different types of housing product. They planned 32 single-family homes, 22 two-family structures named "Twin Gallery", in the middle and 21 four-family townhomes. The property also included 16 common

area tracts that would be used for detention, landscaping, buffer areas, monument signs and amenities. These tracts totaled about 6.3 acres, about 20 percent of the property.

Osage was to be developed in three phases, and Mr. Erpelding pointed out these phases, indicated by dashed lines, on the map. The first would have two points of access, one on Pryor and one on M-150. The latter would be a right-in-right-out intersection due to an existing median. Mr. Erpelding listed improvements associated with the first phase. These included monument signs at both entrances and on the M-150 and Pryor Road corner, the stormwater detention facility at the property's southeast corner, an off-site sanitary sewer extension reaching about 780 feet to the east and some street stubs to adjacent properties to the south and west that would allow for future connectivity. Some street improvements were also planned. The M-150 entrance would have an eastbound right-turn lane and some and both northbound and southbound turn lanes at the Pryor Road access. The northbound left turn lane on Pryor Road would be extended. They would add paved shoulders on both sides of Pryor along the length of the east side. As part of another project, Summit Homes would also widen and add paved shoulders further to the south, from County Line Road to the subject properties south boundary. These were interim road improvements. The second phase would focus on the northwest quadrant of the development. Streets would be looped for better connectivity; and the third phase would develop the southwest corner of the property.

The single-family lots would be 50 to 70 feet wide and 120 feet deep. The Twin Gallery structures would be on lots about 70 by 118 feet; and both would have a minimum of 10 feet between each structure. The townhomes would be on 140 feet wide and 120 feet deep, with a minimum of 20 feet between buildings. The applicant was not requesting any modifications to the zoning requirements, as they were meeting all the requirements for setbacks, density, lot widths and depths, landscape buffers or parking. They would provide 20-foot wide landscape buffers between adjoining properties, and these buffers would confirm to UDO requirements. Additionally, a five-foot tract would run along the south property line, to preserve the existing trees and fence. The streets would be lined with trees with 30-foot spacing.

They had held two neighborhood meetings. One was an unofficial one in August, and a formal neighborhood meeting on October 14th. This was also sparsely attended, with about five people; but everyone within 300 feet had been invited. Most of the questions were about prices. The applicant agreed with all of staff's Conditions of Approval.

Mr. Vince Walker addressed the project's layout and architecture. They had heard and taken into account the feedback they had previously received. In using a variety of housing designs, they were able to provide prospective buyers a variety of options. The four-unit detached townhomes would be at the property's north end bordering M-150. The Twin Gallery units would be in the center section, and the "Lifestyle Collection" single-family homes would be on the south side. A central amenity section would include a 25-meter lap pool and children's "splash" area, clubhouse pavilion and a park. These would be administered by a Homeowners Association. All homes would be built using the same quality materials on both exteriors and interior finishes. He then presented a visual video of what Osage was planned to look like. It showed the road system, considerable green space including trees, playground, pavilion, and various types of housing.

Following the applicant's presentation, Chairperson Norbury asked for staff comments.

Mr. McGuire entered Exhibit (A), list of exhibits 1-16 into the record. He confirmed that the applicant was asking to rezone 31.47 acres at the corner of Pryor Road and 150 Highway from AG and R-1 to RP-3. The development would have 32 single-family lots, 22 two-family lots, 21 four-family lots and 16 common area tracts. The surrounding area was a mixture of single-family homes (to the north) and undeveloped properties (to the east and west). Large-lot single-family homes were to the south. The Napa Valley single-family subdivision was

to the southeast, and Grand Summit View and Arborwalk to the northeast.

Displaying colored elevations, of single-family and two-family dwellings and the proposed clubhouse Mr. McGuire observed that the applicant proposed to use materials and designs compatible with other nearby subdivisions and throughout Lee's Summit in general. Exteriors would be stone veneer, lap and panel or shake siding and composite shingle roofs. The requested RP-3 zoning would provide for medium-density mixed residential uses, and the project was generally consistent with the Comprehensive Plan, including the plan's objectives of providing diverse housing types. The maximum density would be 10 units per acre. Any deviation from the approved plan would require approval of a replacement preliminary development plan.

This project was compatible with existing and planned uses on surrounding properties. The 310-acre Arborwalk development was further to the northeast. This was also a mixed-use development that included single-family villa lots, standard single-family lots, duplexes, triplexes, fourplexes and apartments. Villa lots at Arborwalk were allowed a minimum size of 3,675 square feet. The 88-acre Napa Valley development was to the southeast. Napa Valley also had a mixture of single-family villa lots, standard single-family lots and estate-size lots. Napa Valley's villa lots had a minimum lot size of 4,950 square feet. This project's proposed 6,000 square foot minimum lot size for a single-family house was 2,325 square feet larger than the minimum at Arborwalk and 1,050 square feet larger than Napa Valley's minimum. If this application was approved, the plan would satisfy any requirements applicable to zoning district as outlined in the UDO and the Design and Construction Manual.

Following Mr. McGuire's comments, Chairperson Norbury asked if there was anyone present wishing to give testimony, either in support for or opposition to the application.

Mr. Charles Ray gave his address as 4090 SW Pryor Road. He asked what the plans were for Pryor Road to the south, and asked where sidewalks would be. He noted that the small number of people attending the meeting was due to not many people living within 300 feet of this property. The neighbors who did live nearby had a nice park down the street that they had to get to on foot, so they knew that the traffic on Pryor Road had increased considerably. He knew that adding 160 housing units on that corner would increase the traffic even more.

Mr. Roofl stated that they had an obligation connected with Stoney Creek to make interim improvements to Pryor Road from County Line Road up to Pryor. The improved road would be 24 feet wide and restriped, with 6-foot paved shoulders on both sides up to Napa Valley's entrance. When the Osage project was completed, the road would be improved from Napa Valley to M-150 and additional rights-of-way were dedicated for future road improvements. This project would have sidewalks up to the property lines. The 6-foot paved shoulders could be used as pedestrian or bike lanes for the present.

Chairperson Norbury then asked if the Commission had questions for the applicant or staff.

Mr. Trafton asked if it was correct that the median on M-150 would be left intact, in order to prevent traffic problems generated by left turns. Mr. Walker answered that it was. Mr. Trafton then asked what the street widths inside the development were, remarking that the video had not shown cars parked on the streets and in driveways. There were likely to be many of them due to the fourplexes. Mr. Erpelding answered that they would be 28 feet wide, which was the City's standard for local streets. That was wide enough to allow for on-street parking. He acknowledged that cars parked on both sides could cause difficulties for other vehicles, including emergency vehicles. He displayed a parking diagram, with red lines indicating parts of streets in front of side yards. Parked cars would be less of a problem in those locations, as long as they did not block driveways. The plan identified a total of 77 on-street parking spaces.

Mr. Trafton then asked what was the reasoning for concentrating so much of the density in one north quadrant with about 180 residents. Mr. Walker answered that it was typical for this kind of land use to concentrate higher densities near a highway corridor and transition into lower-density product further down. M-150 would have a sidewalk just to the north side of the property line; but the interim improvements for Pryor Road did not require sidewalks on both sides. Mr. Trafton asked staff if this meant the Livable Streets ordinance would not require adding sidewalks on Pryor. Mr. Soto answered that Pryor would require sidewalks. He confirmed that for interim standards, the paved 6-foot wide shoulders could serve as a proxy for sidewalks until final improvements were made to the road.

Mr. Park noted that Pryor Road was in a state of transition from a rural to an urban roadway. The proposed improvements met the standards for an interim road, which Pryor Road was north of M-150 Highway. That meant a 24-foot width with turn lanes and paved shoulders required by the Access Management Code. The paved shoulders did serve as a pedestrian route in the absence of sidewalks. If Pryor was improved from this interim condition it would be brought up to urban standards which included curbs, sidewalks and traffic signals. At this point, the City's progression of Pryor started at M-150 and moved north to Longview Road. The capital improvement program had funds to begin develop Pryor to urban standard from Hook Road to Longview. After that, improvements would extend south from M-150 based on demand. Mr. Trafton asked if this meant that the City intended to just let kids and families walk on the road's shoulders; and Mr. Park replied that staff was following the standards that the City Council had adopted. They permitted an interim road standard at this point. It was within the Council's purview to require a development to exceed that standard. He added that if sidewalks were put in at this point, they would have to be torn out at the time that Pryor Road was improved along that stretch. At present, many people walked, jogged and ride bicycles on the paved shoulders of Pryor north of M-150.

Mr. Trafton asked what the average prices for the development were. Mr. Walker answered that the prices were not set at this time. They did intend to have three different price points. Concerning the parking, he pointed out that the development included two-car garages as well as 25-foot building lines. The latter allowed for two cars parked in a driveway as well. The subdivision's layout did follow the pattern of transitioning from a higher density at one end where there was a major roadway down to a lower single-family density at the opposite end. Mr. Trafton asked what the estimated square footage of the fourplexes would be. Mr. Walker answered that the townhomes would be about 1,500 square feet, with two-story and 1.5-story plans; and the Twin Gallery units would range from 1,300 to 1,900 square feet. The single-family homes would range from 1,500 to 2,500 square feet. All these units would have full basements. He did not specify the square footage of the fourplexes.

Mr. Lovell asked how many bedrooms the townhomes would have, and Mr. Walker answered that they would be 2 or 3 bedrooms. These would be for sale and not for rent. The streets were 28 feet wide from curb to curb. Mr. Lovell remarked at in New Longview where he lived, detached garages were in the back but residents had no room to park extra cars behind the garages, resulting in a lot of cars parked on the streets. Concerning the townhomes, he asked if they might be maintenance-free for yards. Mr. Walker answered that there had been discussion of that but nothing was finalized.

Chairperson Norbury remarked that much of tonight's application was in response to concerns raised in the previous application. Mr. Walker responded that the project as a whole had been a more uniform project, without the multiple home choices that tonight's version had. Much of the feedback they'd received had to do with the uniformity of the product. The elevations they'd shown had been contemporary; whereas tonight's version showed a 'modern farmhouse' look, which was a little more traditional. Traffic had also been an issue with the initial application; and the traffic impact would be less with tonight's plan than if the whole project had been a single-family development. 'Too much of one thing' was one of the criticisms they'd heard, and they had now provided more of a variety of choices. This was a

very conventional development in terms of what was provided in Lee's Summit. They had received feedback from the Napa Valley neighbors that this plan was a major improvement.

Mr. Walker confirmed for Chairperson Norbury that these units would all be for sale and not rentals. Chairperson Norbury recalled from the previous application that price points were \$225,000 to \$275,000, and asked about the prices of the townhome and duplex units. Mr. Walker answered that the single-family homes would be somewhat over \$300,000. They did not have price points for the other housing. He noted that M-150 did not have a crosswalk.

Mr. Loveless left the meeting, at 6:16 p.m.

Mr. Ray returned to the podium and asked about people coming out of the subdivision making U turns off M-150 to go west. Mr. Park consulted the traffic study and replied that the current traffic count at peak hour was about 3 doing a U turn at M-150 and Pryor. The traffic engineer hired by the applicant projected an increase of 9 over a 60-minute period at the busiest time. That would maintain a satisfactory level of service. He did think a pedestrian crosswalk was a very good suggestion, adding that M-150 was under the jurisdiction of MoDOT, not the City. He was willing to report this suggestion to MoDOT.

Chairperson Norbury asked if there were further questions for the applicant or staff. Hearing none, he closed the public hearing at 6:17 p.m. and asked for discussion among the Commission members.

Mr. Lovell stated that in view of the changes in tonight's application, it looked like a very good project. It would accommodate upwardly mobile younger buyers who did not necessarily want to buy a large house; and Lee's Summit needed more product that would encourage them to remain in the community. He also liked developments that reflected thinking outside the box, and definitely supported this application.

Ms. Arth agreed with Mr. Lovell's commendation on the improvements, and said she had enjoyed the video. She also appreciated the applicant being aware of and responding to the parking issues, as well as the amenities and variety of housing options.

Mr. Trafton asked if there were covenants and restrictions covering the requirements for buying the townhomes, duplexes and fourplexes rather than renting or leasing. Chairperson Norbury stated that once these units were for sale, there was no guarantee that someone could not buy a unit and then rent it, subject to the City's rules regarding short-term renting.

Chairperson Norbury commended the applicant for making every effort to get a development done on this piece of land and responding to what the residents and the City Council had to say. However, he considered the prior project to be a better one, and the varying sizes of the homes and being able to have a single-family home in the price range now cited for townhomes was a far better idea for the community. The architecture now was rather standard-looking and unimpressive. The City Council had essentially cut off any capacity for the applicant to have any architectural variation or interest; and the city would be poorer for that. This was a precursor to the uniformity that Lee's Summit would end up with. He did think the applicant had done an admirable job of sticking to the original goal of offering housing product that someone of medium income could afford for new construction. He planned to recommend approval, though he would not if it was a rental project as that would not meet the goal he'd referenced. He hoped that there would be more vision from City officials in the future.

Hearing no further discussion, Chairperson Norbury called for a motion.

Ms. Dial made a motion to recommend approval of Application PL2019-307, Rezoning from AG and R-1 to RP-3 and Preliminary Development Plan: Osage, approximately 32 acres located at

the southwest corner of SW M-150 Hwy and SW Pryor Rd; Clayton Properties Group, Inc., applicant; subject to staff's letter of November 7, 2019, specifically Conditions of Approval 1 through 17. Ms. Arth seconded.

Chairperson Norbury asked if there was any discussion of the motion. Hearing none, he called for a vote.

Commissioner Loveless left the meeting at 6:14 P.M., before vote.

A motion was made by Board Member Dial, seconded by Board Member Arth, that this application be recommended for approval to the City Council - Regular Session, due back on 12/3/2019. The motion carried unanimously.

[2019-3137](#)

Public Hearing: Application #PL2019-359- Unified Development Ordinance (UDO) Amendment - Changes to Article 1 - General Provisions, Article 2 - Applications and Procedures and Article 8 - Site Design to create an administrative reasonable accommodation process and reference ADA design standards in the International Building Code; City of Lee's Summit, applicant.

Chairperson Norbury opened the hearing at 6:25 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Mr. Johnson entered Exhibit (A), list of exhibits 1-6 into the record. He stated that this amendment had two goals. One was create a reasonable accommodation process. It addressed situations such as someone needing something added to their home to accommodate a disability, such as a ramp, and that item had to be put in a setback. The City code currently required a variance that would be granted by the Board of Zoning Adjustments. The change would create a no-cost process where a staff board could approve it administratively. This board would consist of a member each of Development Services, the Fire Department and Public Works. A development review committee now met every week and could do that review so the process would be fairly quick.

The second part of the amendment would adopt standards from the building code for ADA standards for parking lot design. The City adopted new codes every 6 years and the International Building Code had been adopted by not only Lee's Summit but also most other jurisdictions in the metro area. All were now under the 2018 code.

The third revision was to require applicants to show accessible routes in final development plans, making it easier to evaluate parking areas for accommodation.

Chairperson Norbury asked if there was anyone present wishing to give testimony, either in support for or opposition to the application. As there were none, he opened the hearing Commissioners' questions.

Chairperson Norbury asked if there was nothing that would prevent the City from either augmenting or varying from the IBC if they so decided on a particular issue. Mr. Johnson responded that the IBC was the guide for designing parking lot facilities. There could be code modification requests but it had not been the City's policy to do that when it involved the ADA. Chairperson Norbury said he was referring to a situation where the City decided that the IBC was outdated after a new standard was adopted.

Chairperson Norbury asked if there were further questions for the applicant or staff. Hearing none, he closed the public hearing at 6:30 p.m. and asked for discussion among the Commission members, or for a motion.

Ms. Dial made a motion to recommend approval of Application PL2019-359, Unified Development Ordinance (UDO) Amendment: Changes to Article 1, General Provisions; Article

2, Applications and Procedures and Article 8, Site Design to create an administrative reasonable accommodation process and reference ADA design standards in the International Building Code; City of Lee's Summit, applicant. Mr. Sims seconded.

Chairperson Norbury asked if there was any discussion of the motion. Hearing none, he called for a vote.

A motion was made by Board Member Dial, seconded by Board Member Sims, that this application be recommended for approval to the City Council - Regular Session, due back on 12/3/2019. The motion carried unanimously.

Roundtable

Regarding the earlier question about water management as proposed for the Main Orchard project, Mr. Monter stated that staff had taken some time reviewing this with the applicant. It was not much different from rainwater draining off a parking lot into a rain garden area. There was an example on Douglas at the Nationwide business. The apartments next to the Sonic were another example. This was something that staff wanted to encourage, especially for infill projects. It could be an improvement over detention basins that might or might not be maintained.

Ms. Dial said she had been contacted by some members of the public who had a problem with a developer who gave testimony under oath that they were going to use or not use a particular product on their building. In reality it turned out that the product was one the developer had said they would not use. The Homes Association and the Alliance had said this was not enforceable by the City because specific wording had not been included in the development plan approved by the City Council. She wanted to make the Commission aware that this had happened, and hopefully they could find a way to ensure it would not happen again. Mr. Johnson replied that this concerned an email exchange between the Alliance and himself. During public testimony at the Kessler Ridge application, the president of Inspired Homes promised not to use a certain product and made a few other commitments. This was not added to the ordinance as a condition of approval, and the elevations they had provided did not call out any materials. There was nothing holding the project to a specific set of materials. It had to be locked into an ordinance and public testimony itself was not binding. This had been reflected in the Main Orchard application, where specific criteria about items such as front porches. Chairperson Norbury remarked that if a developer wanted to make a specific promise it could be made a condition of recommendation.

Adjournment

There being no further business, Chairperson Norbury adjourned the meeting at 6:33 P.M.

For your convenience, Planning Commission agendas, as well as videos of Planning Commission meetings, may be viewed on the City's Legislative Information Center website at "lsmo.legistar.com"



Main Orchard
Residential Subdivision
Lee's Summit, MO



Project Summary

| | |
|------------|--|
| Zoned: | RP-2 |
| # of Lots | 6 |
| Area: | 2.31 Acres |
| Density: | 2.60 Lots/Acre (7.5 Units / Acre Allowed) |
| Comp Plan: | Old Town Master Plan |

Project Summary

- 6 Residential Family Lots with 1 Existing Home located at 510 NW Main Street.
- Lot 3 is the location of the existing home and the current plan is to construct a Garage with an upper level Loft

House Characteristics

| | |
|-----------------------|---|
| Minimum Floor Area | 1,000 sf |
| Garage | Minimum Single Stall (Detached or Attached to Residence) |
| Garage Location | No street facing overhead garage doors (Detached or Attached) |
| Front Porch | Minimum width of 50% of Total House Width with a 6-foot depth |
| House Style | Single Story with Dormer or Two Story (American Foursquare, Bungalow, Craftsman) |
| Driveway Width at ROW | 16 Feet |



Old Lee's Summit Development Master Plan

Chapter IV, Section C "Old Lee's Summit"

North of O'Brien Street, west of NE Main Street and east of NW Donovan Street. This general boundary includes underutilized and/or vacant lands that could be developed with additional residential housing stock for the Old Lee's Summit area.



Neighborhood Meeting

Meeting Date
Location

10-10-19
Gamber Center, Yellowstone Room

Questions

Will the new homes be rentals?
-Expect these to be homeowners

What is the price of the new homes?
-\$225,000 to \$325,000



House Style

The style of the home should include

- Street facing front to promote pedestrian and neighborhood connectivity
- Driveway width at the street should be limited to 16
- Entry to the home shall incorporate a minimum of two steps from the sidewalk
- Front porch must incorporate a minimum of
 - Two column elements porch
 - Minimum 30% of the porch being constructed with a railing or knee wall.

House Color and Material

The developer will have the authority to review and approve all home colors, materials and styles prior to building permit approval.

- Front of the House siding shall consist of multiple types of house siding
- Front and two sides of the home shall provide trim around window and door elements to be painted in a color that is different than the main body color of the house.
- The side and rear elevations shall maintain the principal home siding material around the entire perimeter of the home.
- The detached or attached garage shall maintain the same siding primary / secondary materials as the main house.

Acceptable materials for exterior siding of homes

- Wood Panel, Shingle
- Stone or Brick Veneer
- Real Brick or Stone
- Fiber Cement Lap Siding, Panel or Shingle

Excluded materials for exterior siding of homes

- Horizontal or Vertical Vinyl Siding
- Horizontal or Vertical Metal Siding
- Stucco

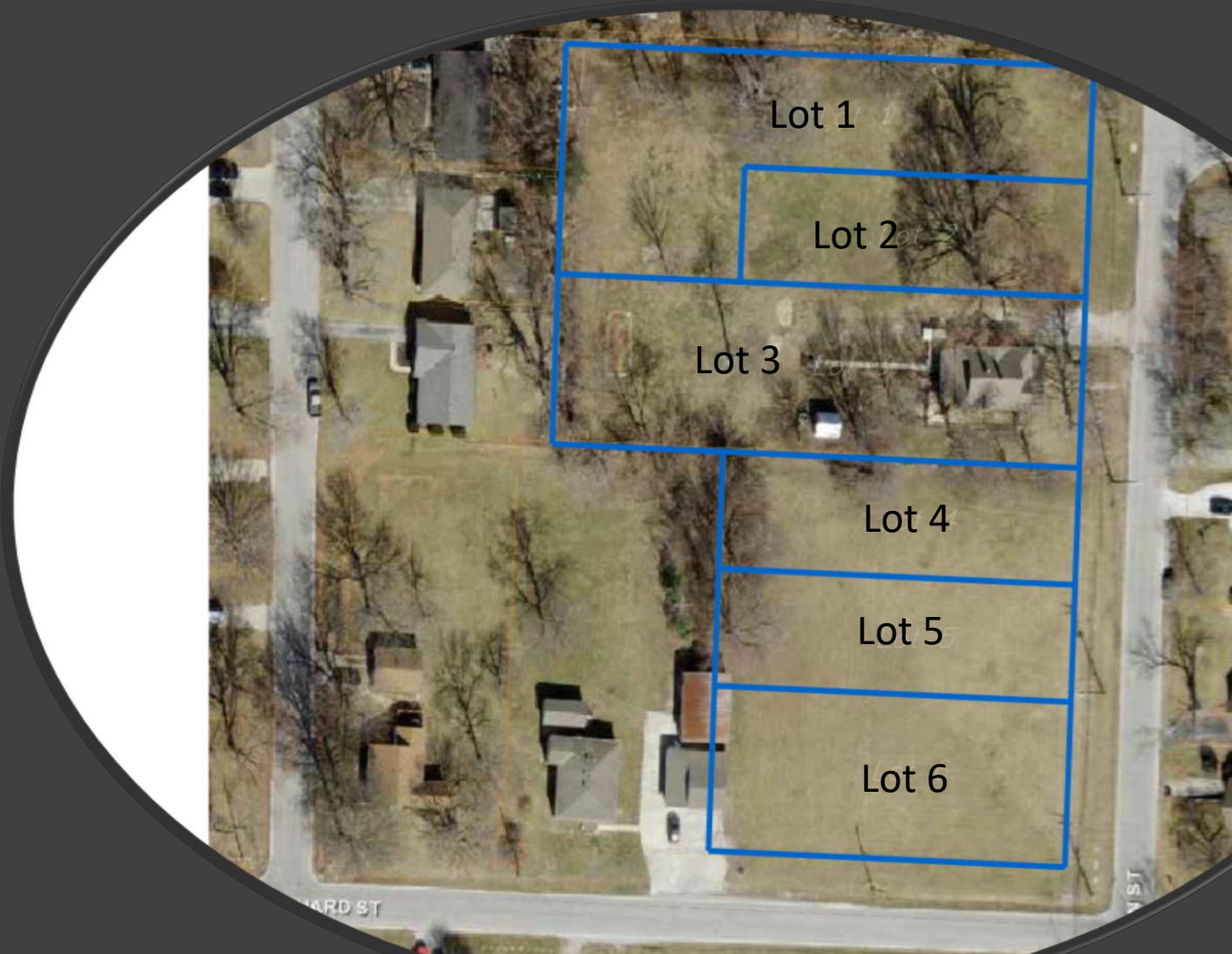
Home colors shall not be

- High Contrasting Color Palettes
- Florescent



Existing Home 510 NW Main St

| | |
|----------------|----------|
| Size | 1,090 sf |
| Built | 1920's |
| Style | Bungalow |
| Constructed on | Lot 3 |





EXTERIOR FEATURES:

- Huge yard with grass, mature trees, and gardens
- Fully fenced dog run attached to house
- Entertainment-sized cement patio
- Large custom shed with loft storage
- Gravel driveway with ample parking
- Lovely front porch, perfect for rocking and relaxing with a glass of wine or tea



INTERIOR FEATURES:

- Century-old charm & character completely renovated; move in ready
- Main floor laundry
- Unfinished basement
- 100% new electrical including new exterior service panel & pole, interior panel, ALL wiring, fixtures, & outlets
- 100% new interior plumbing using PEX lines throughout
- 100% new forced air 95% efficient YORK HVAC & AC units
- Totally remodeled chef's kitchen with commercial gas range, custom oven vent, hidden dishwasher, butcher block counters, large under mount stainless sink including disposal, & Kenmore fridge with ice maker
- Original hardwood flooring, doors and trim all refinished in 2016



Walking distance to parks, farmer's market, and downtown Lee's Summit.

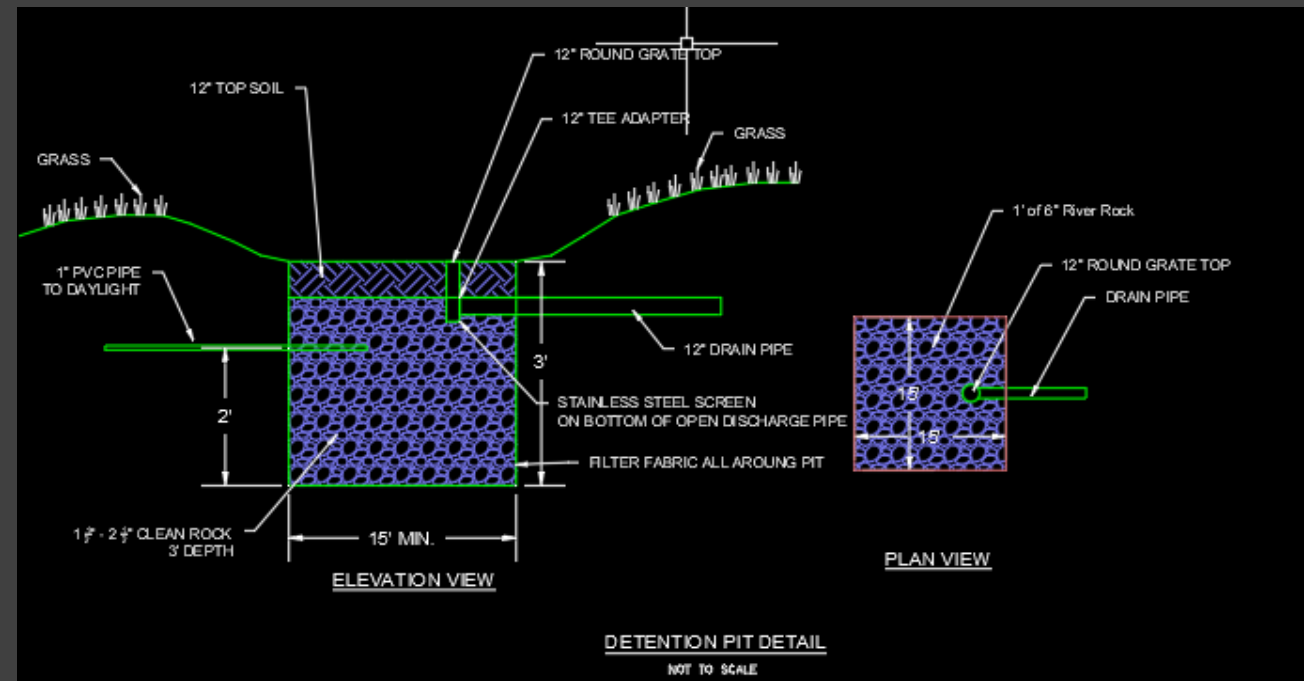
Convenient access to freeways, shopping, and many restaurants.

Award winning Lee's Summit R7 School District.



Storm Drainage Runoff

- Each Lot will Drain all the roof area below grade and into a Detention Pit
- Decrease the peak runoff from the development
- Promote storm water quality





Questions

Main Orchard Preliminary Development Plan

PL2019-305

November 14, 2019



LEE'S SUMMIT
MISSOURI



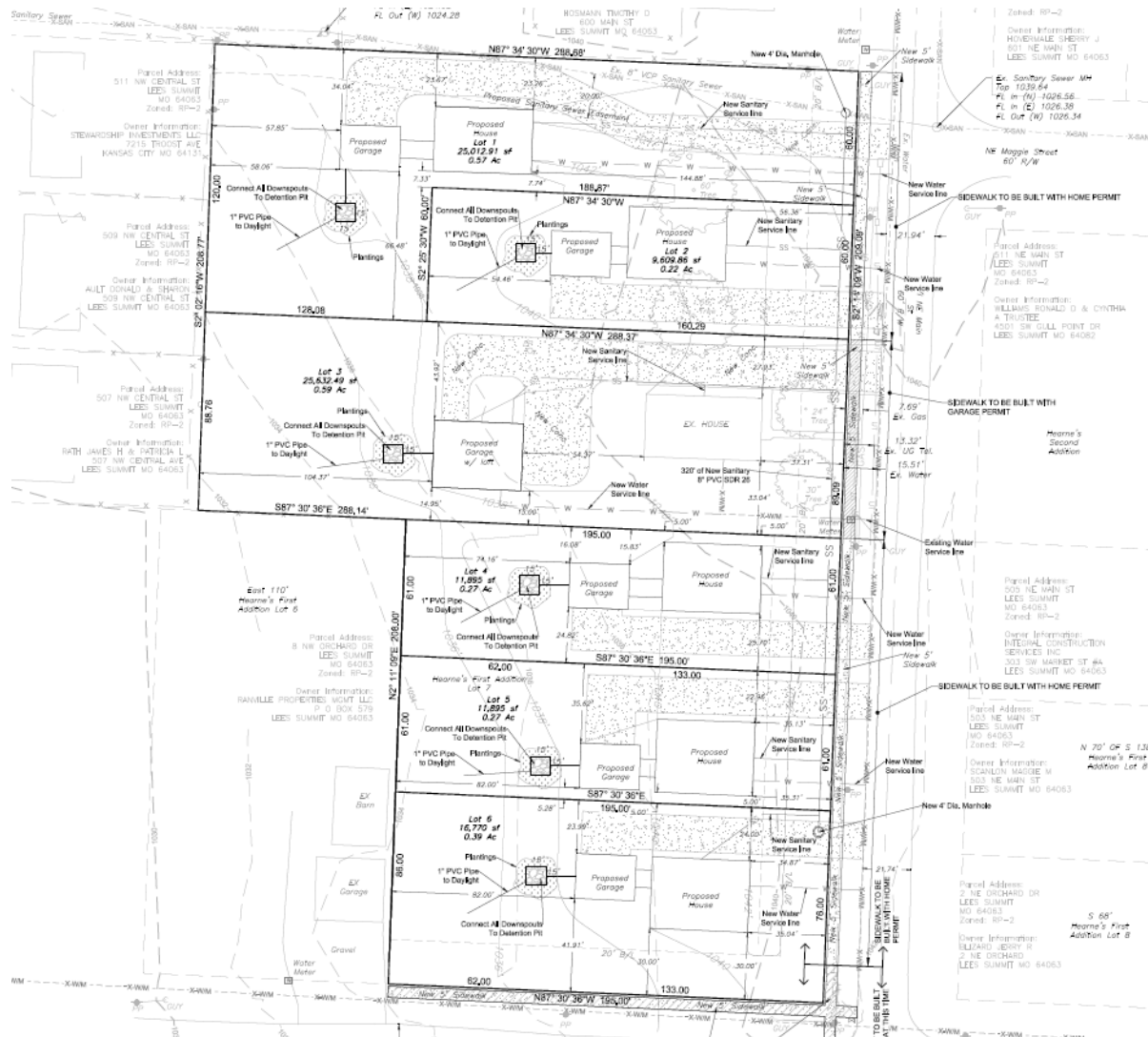
Yours Truly

Aerial Map



Zoning Map









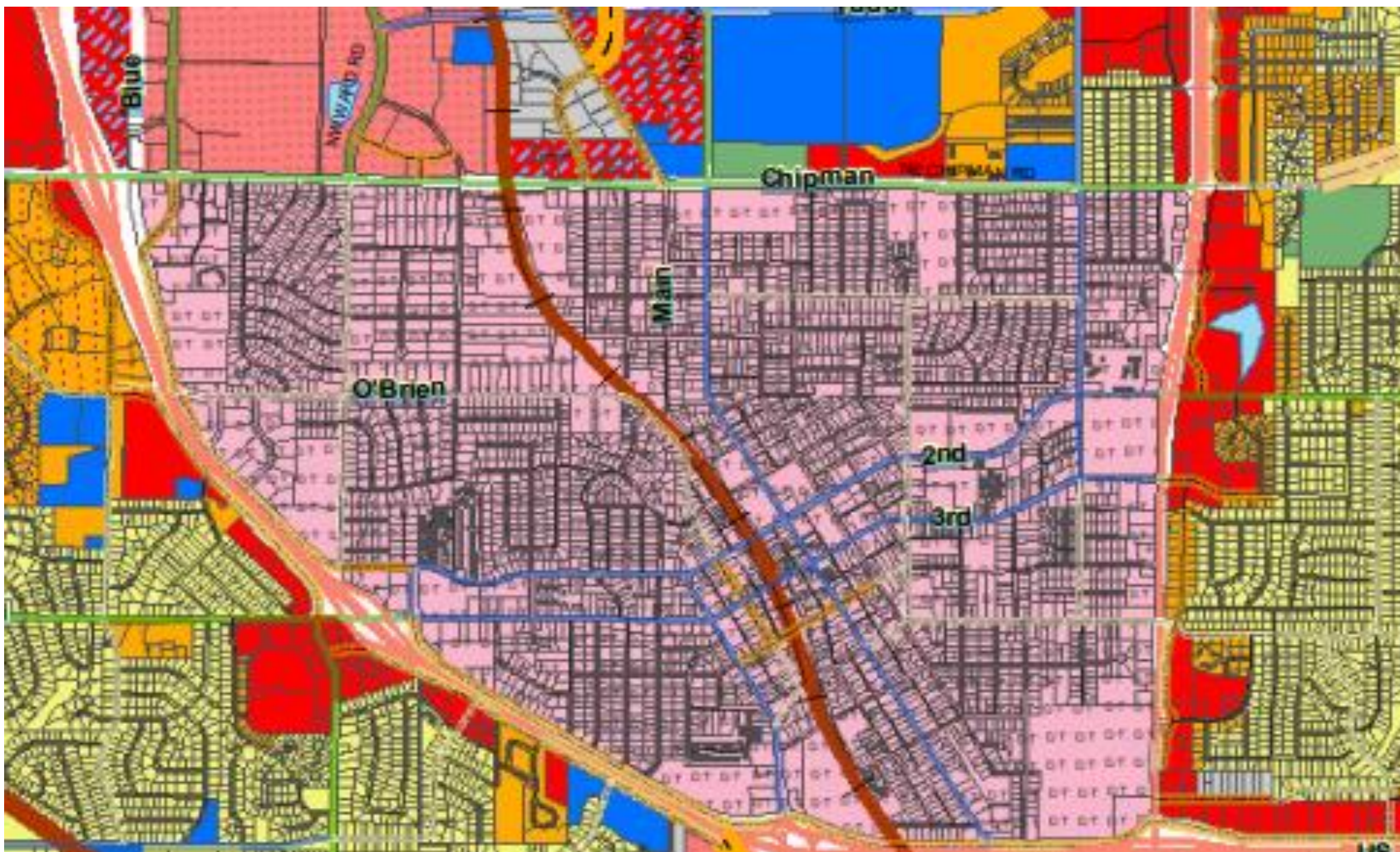






A modification is requested for the proposed detached garage located on lot 3.

- Allow for an overall building height 26' for the detached garage.
- Staff doesn't support a detached garage to be "taller" than the principal structure.



Planning Commission Highlights

- Discussion regarding proposed stormwater collection.
- Discussion regarding modification for building height for detached garage (Update: applicant is no longer requesting this modification), the detached garage will be in compliance with UDO requirements.
- Discussion regarding process for elevation review and approval prior to “building permit” issuance.

Conditions of Approval

1. The detached garage shall meet the requirements of the Unified Development Ordinance for building height.
2. The developer shall make payment to the City of Lee's Summit for construction costs in lieu of actual construction for the segment of sidewalk along NW Orchard St.



LEE'S SUMMIT
MISSOURI
Development Services Department

Development Services Staff Report

| | |
|---------------------------------|--|
| File Number | PL2019-305 |
| File Name | PRELIMINARY DEVELOPMENT PLAN – Main Orchard |
| Applicant | Engineering Solutions |
| Property Address | 510 NW Main Street and 6 NW Orchard Street |
| Planning Commission Date | November 14, 2019 |
| Heard by | Planning Commission and City Council |
| Analyst | Jennifer Thompson, Senior Planner |
| Checked By | Hector Soto, Jr., AICP, Planning Manager Kent Monter, PE, Development Engineering Manager |

Public Notification

Pre-application held: July 16, 2019
Neighborhood meeting conducted: October 10, 2019
Newspaper notification published on: October 26, 2019
Radius notices mailed to properties within 300 feet on: October 18, 2019
Site posted notice on: October 23, 2019

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Attachments

Preliminary Development Plan, date stamped October 14, 2019 – 5 pages
Site Line Drawing –1 page
Storm Water Drainage Report, dated September 13, 2019 – 10 pages

Applicant narrative/Project Details, date stamped November 8, 2019

– 25 pages

Neighborhood Meeting Information, date stamped October 14, 2019

–2 pages

Preliminary Development Plan Criteria response from applicant, date stamped November 8, 2019 – 3 pages

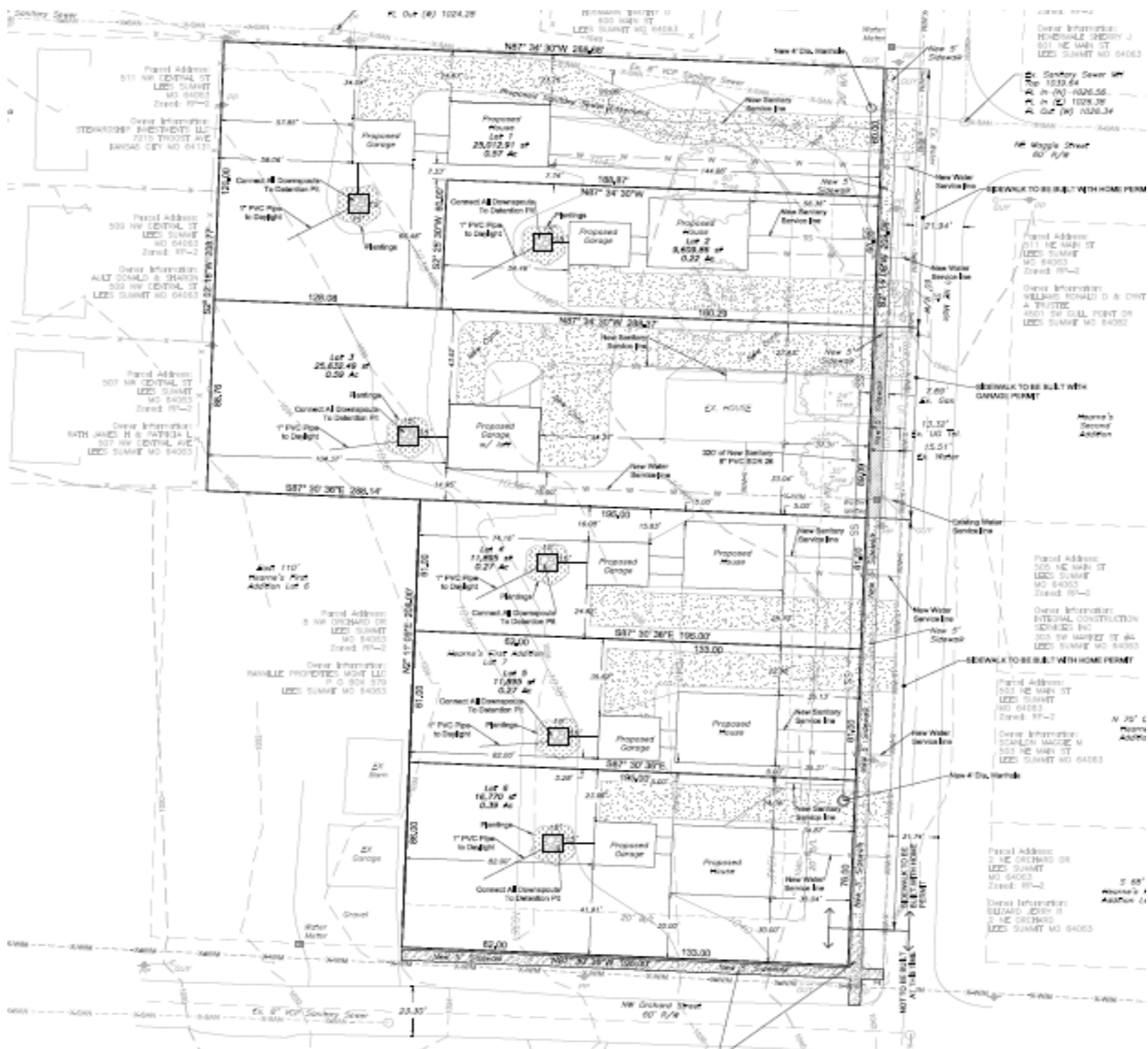
Location Map

1. Project Data and Facts

| Project Data | |
|---------------------------------------|--|
| Applicant | Engineering Solutions |
| Applicant's Representative | Matt Schlicht/Owner |
| Location of Property | 510 NW Main St and 6 NW Orchard St |
| Size of Property | 2.31 Acres |
| Zoning (Existing) | RP-2 (Planned Two-Family Residential District) |
| Density (Proposed) | 2.60 units/acre (7.5 units/acre max in RP-2) |
| Comprehensive Plan Designation | Residential Infill Opportunities (Old Town Master Development Plan) |
| Procedure | The Planning Commission makes a recommendation to the City Council on the proposed preliminary development plan. The City Council takes final action on the preliminary development plan. |
| Duration of Validity | Preliminary development plan approval by the City Council shall not be valid for a period longer than twenty-four (24) months from the date of such approval, unless within such period a final development plan application is submitted. The City Council may grant one extension not exceeding twelve (12) months upon written request. |

| Current Land Use |
|--|
| The subject project area is approximately 2.31 acres comprised of one (1) undeveloped vacant lot and one (1) unplatted parcel that has an existing single family home on the property. The properties surrounding the area primarily consists of single family detached homes. |

| Description of Applicant's Request |
|--|
| The applicant is seeking a preliminary development plan approval for a 6 lot single family residential development consisting of one existing home (proposed Lot 3), plus five (5) new single family home sites. Proposed architectural styles, are provided and include single and two-story Bungalow, Craftsman, and American Foursquare housing styles, detached/attached garages and front porches. The proposed building materials consist of lap siding, brick or stone veneer, and wood panels in a variety of color options. A modification is requested for the maximum building height for the detached garage located on Lot 3. |



2. Land Use

Description and Character of Surrounding Area

The proposed site is located at the northwest corner of NW Orchard St. and northwest Main St. The surrounding neighborhood is primarily comprised of single-family residential dwellings with a mixture of housing styles varying from mid-century ranch and typical Bungalow and Craftsman styles.

Adjacent Land Uses and Zoning

| | |
|---------------------------------------|--|
| North: | RP-2 (Planned Two-Family Residential District) – Single family homes |
| South (across NW Orchard St.): | RP-2 (Planned Two-Family Residential District) – Single family homes |

| | |
|----------------------------------|--|
| East (across NE Main St): | RP-2 (Planned Two-Family Residential District) – Single family homes |
| West: | RP-2 (Planned Two-Family Residential District) – Single family homes |

Site Characteristics

The property consists of two lots/parcels totaling 2.31 acres located at the northwest corner of NW Orchard St. and NE Main St. An existing home, built in 1920, is located on the north parcel; the south lot has remained a vacant lot. Existing single family dwellings are located to the north, south, east, and west of this site. Other single-family homes and duplexes are scattered within the neighborhood.

Special Considerations

The development is considered an infill development located within the Old Lee's Summit Neighborhood. The existing home on the proposed Lot 3 will remain in place as part of the six (6) lot single family subdivision.

3. Project Proposal**Site Design**

| | |
|-----------------|------|
| Land Use | |
| Density: | 2.60 |

Setbacks (Perimeter)

| Yard | Building Required | Building Proposed |
|-------------|--------------------------|--------------------------|
| Front | 20' | 30'+ |
| Side | 5' | 5'+ |
| Rear | 20' | 58'+ |

Lot Width

| Lot Width | Required for Single family in RP-2 | Proposed |
|------------------|---|-----------------|
| At right-of-way | 60' | 60'+ |

Structure(s) Design

| |
|--|
| Number and Proposed Use of Buildings |
| 5-new single family structures, 1-existing single family structure |
| Building Height for Principal Structures |
| 30'+ not to exceed 40' |
| Number of Stories |
| 1-2 stories |

4. Unified Development Ordinance (UDO)

| Section | Description |
|----------------|--------------------|
|----------------|--------------------|

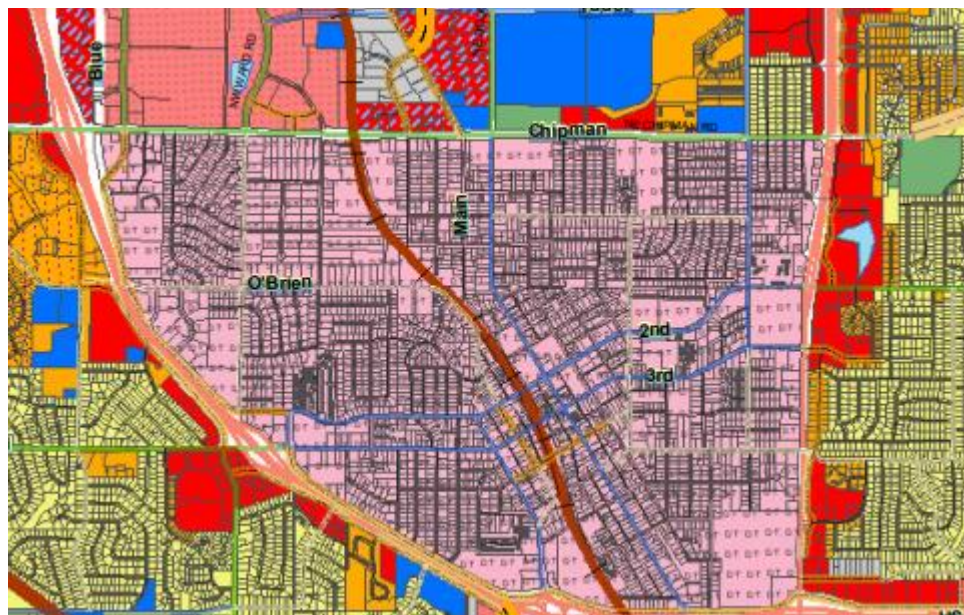
| | |
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| 2.260, 2.300, 2.310, 2.320 | Preliminary Development Plan |
| 2.320 | Development plan and allowable modifications |

5. Comprehensive Plan

| Focus Areas | Goals, Objectives & Policies |
|--|------------------------------|
| Overall Area Land Use | Objective 1.4 |
| Residential Development | Objective 3.2 |
| Chapter IV: Preferred Framework (Old Lee's Summit Development Master Plan) | Increase Housing Stock |

Comprehensive Plan

The proposed use is consistent with the recommended land use for the area under the “Old Town Master Development Plan”. The site is identified as being a part of the Old Lee’s Summit Neighborhood area. The preferred framework of the “Old Town Lee’s Summit Development Master Plan” sets the goal of increasing housing stock to include rental and for sale multi-family; medium to high-density single family; and townhouse units in this area. The proposed use is in alignment with the plan’s established goal of increasing the available housing stock by providing additional housing to meet the changing housing needs of the community.



6. Analysis

Background and History

The south portion of the project property was platted in 1887 as part of the *Hearne's Addition* subdivision; the north portion of the property has remained unplatted and has an established single

family home that was built in 1920. This house will remain in place as part of the proposed Lot 3 of the *Main Orchard* residential subdivision. The proposed development will create six (6) residential lots and proposes design standards that establish building footprints, design styles, colors, and exterior building materials for the new single family structures.

- March 4, 1887 – Final Plat for *Hearne's Addition* was recorded at Jackson County Recorder of Deeds.
- 1920 – A single family home was built at 510 NW Main St.

Compatibility

The proposal for this infill residential development is in accordance with the existing zoning and compatible with surrounding single-family homes. The surrounding housing types include single family and duplex homes with a mixture of housing styles varying from mid-century ranch style homes, typical American Foursquare and Bungalow style designs.



Adverse Impacts

The proposed single family residential development will not detrimentally impact the surrounding area. The buildings are designed and located to be compatible with neighboring properties and should enhance the neighborhood.

Stormwater

Due to downstream drainage concerns in the vicinity of Olive St. and Orchard St., the applicant was asked to perform a stormwater study to determine the downstream impact of the development. The proposed development will increase impervious area to a degree, based on the pre-developed condition which is currently a grassed area, with a small portion of the site being impervious at the location of the existing home at 510 NW Main St. Without any stormwater controls to mitigate the increased peak flows from the increased impervious area, there would be a slight increase in the peak flows from the site due to the increased impervious drainage area, which might have the potential to impact the downstream drainage system. The results of the stormwater study recommend the installation of “stormwater detention pits” on each lot to mitigate stormwater flows from each lot.

Section 5600 of the Design and Construction Manual, provides for an alternative design standard for infill developments and redevelopment projects. This design standard requires an applicant to compare the pre-development condition to the post-development condition, and ensure the post-development peak stormwater release rate is less than or equal to the pre-development condition. Comparing the pre-development versus post-development peak flowrates in the vicinity of Olive St. and Orchard St. to the west of this development, the results of the stormwater study concluded that the criteria has been met. This criteria has also been met in regard to the points of interest immediately adjacent to the proposed development, in particular, the adjacent property along Orchard St. to the west, and the adjacent properties along Central St. to the west.

Staff recommends that the alternative design standard be allowed for this infill development. Individual “stormwater detention pits” will be installed in the rear yard of each lot in order to lessen the peak stormwater flows from the site and to the west, to a level that is less than the existing peak stormwater flow rates to the west.

Public Services

The proposed development will not impede the normal and orderly development and improvement of the surrounding property. The majority of the subject property is an infill site that has remained vacant. The proposed development will tie into the existing public infrastructure. A public sidewalk is proposed along NE Main St.; sidewalk along NW Orchard will not be built at this time, payment in lieu of construction will be required as part of the platting approval.

The proposed single family homes do not result in a measurable traffic impact on the adjacent streets since trip generation associated with 6 family homes on property already zoned for single family construction with existing similar land use generates negligible traffic and no increase in zoning density/intensity. The project does not require roadway improvements applicable to the Unimproved Road Policy based on its scope, zoning and expected traffic impact. If not for the planned zoning ordinances associated with the property and process of combining two lots for subsequent six lot subdivision, each lot individually may otherwise be minor platted to generate the same number of single family plots administratively.

Modifications

Building height - detached garage without loft dwelling unit

- Required – 21'4" max. (UDO requirement is 40' max., but not to exceed height of principal structure on property. The existing principal structure on the proposed Lot 3 is approximately 21'4" in height.)
- Proposed – 26' detached garage.
- Recommended – The proposed accessory structure height does not comply with the UDO. The detached garage (without a loft dwelling unit) exceeds the height of the principal structure on the same property by approximately 5 feet. There are aspects of the project site and the proposed surrounding homes that could justify the granting of the requested modification.
 - The lot depth for Lot 3 is approximately 288'. The detached garage is proposed to be set/back approximately 104' from the rear property line and 145' from the front property line. These distances provides more green space, depth and lot area to serve as a spatial buffer between the detached structure and surrounding properties in order to mitigate the impacts of the increased structure height.
 - The maximum allowable height of a principal structure in the RP-2 zoning district is 40'.
 - See the provided Site Line drawings for a visual representation of the proposed detached garage on the proposed Lot 3 in relationship to the principal structure.

Staff does not support the modification request for the building height of the detached garage. No conditions or hardships have been identified that would impede the detached garage from meeting the height restrictions of the UDO. It should be noted that the UDO allows a detached garage with a loft dwelling unit to have a maximum height of 40'. However, the applicant has no definitive plans at this time to construct a loft dwelling above the detached garage. If the applicant were to construct a loft dwelling above the garage, the proposed height of 26' would comply with the maximum allowable 40' building height for a detached garage with a loft.

Recommendation

With the conditions of approval below, the application meets the requirements of the UDO and/or Design and Construction Manual (DCM).

7. Recommended Conditions of Approval

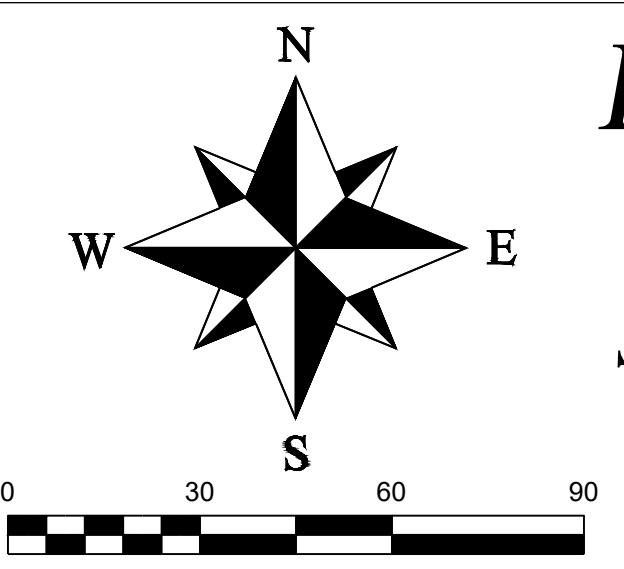
Site Specific Conditions

1. The detached garage shall meet the requirements of the Unified Development Ordinance for building height.

2. The developer shall make payment to the City of Lee's Summit for construction costs in lieu of actual construction for the segment of sidewalk along NW Orchard St.

Standard Conditions of Approval

3. All required engineering plans and studies, including water lines, sanitary sewers, storm drainage, streets and erosion and sediment control shall be submitted along with the final plat and approved prior to the approval of the final plat. All public infrastructure must be substantially complete, prior to the issuance of any building permits.
4. A Master Drainage Plan (MDP) shall be submitted and approved in accordance with the City's Design and Construction Manual for all areas of the development, including all surrounding impacted areas, along with the engineering plans for the development. The MDP shall address drainage level of service issues on an individual lot basis.
5. All Engineering Plan Review and Inspection Fees shall be paid prior to approval of the associated engineering plans and prior to the issuance of any infrastructure permits or the start of construction (excluding land disturbance permit).
6. All subdivision-related public improvements must have a Certificate of Final Acceptance prior to approval of the final plat, unless security is provided in the manner set forth in the City's Unified Development Ordinance (UDO) Section 16.340. If security is provided, building permits may be issued upon issuance of a Certificate of Substantial Completion of the public infrastructure as outlined in Section 1000 of the City's Design and Construction Manual.
7. The As-graded Master Drainage Plan shall be submitted to and accepted by the City prior to the issuance of a Certificate of Substantial Completion and prior to the issuance of any building permits for the development.
8. A Land Disturbance Permit shall be obtained from the City if ground breaking will take place prior to the issuance of an infrastructure permit, building permit, or prior to the approval of the Final Development Plan / Engineering Plans.
9. A restriction note shall be included on the final plat stating: "Individual lot owner(s) shall not change or obstruct the drainage flow paths on the lots, as shown on the Master Drainage Plan, unless specific application is made and approved by the City Engineer."
10. Any cut and / or fill operations, which cause public infrastructure to exceed the maximum / minimum depths of cover shall be mitigated by relocating the infrastructure vertically and / or horizontally to meet the specifications contained within the City's Design and Construction Manual.
11. A final plat shall be approved and recorded (with the appropriate number of copies of the recorded plat returned to the Development Services Department) prior to any building permits being issued.



Preliminary Development Plan

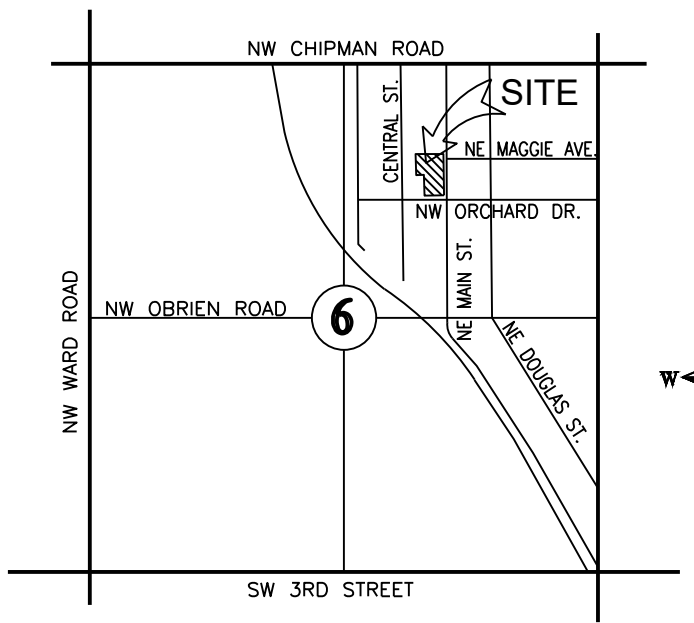
Lots 1 - 6, Main Orchard

Section 6, Township 47 North, Range 31 West

Lee's Summit, Jackson County, Missouri

LEGEND

- These standard symbols will be found in the drawing.
- Set 1/2" Rebar & Cap
 - ⊙ Found Survey Monument (As Noted)
 - Ⓢ Exception Document Location
 - X— Existing Fence Line - Chain Link
 - X-WM— Existing Water Line
 - X-SAN— Existing Sanitary Sewer Main
 - X-STM— Existing Storm Sewer
 - GAS— Existing Gas Line
 - UT— Existing Underground Telephone
 - E— Existing Underground Electric
 - 1998— Existing Contours
 - 1935— Proposed Contours



PLAT BOUNDARY DESCRIPTION

All that part of the Northwest Quarter of the Northeast Quarter of Section 6, Township 47, Range 31, Lee's Summit, Jackson County, Missouri, described as follows: Beginning at the Northeast corner of Lot 7 HEARNE'S ADDITION to the City of Lee's Summit, said point being in the West line of Main Street; thence North along the West line of Main Street 208.75 feet; thence West 289.3 feet, more or less, to the Northeast corner of Lot 7, NORTH LEA ADDITION, a subdivision in Lee's Summit; thence South along the East lines of Lots 7, 8 and 9 in said Addition to the Southeast corner of Lot 9; thence East 289.3 feet, more or less, to the point of beginning.

AND
All of Lot 7, Hearne's Addition, a subdivision as recorded in the Office of the Recorder, Jackson County, Missouri

Site Data Table :

| | |
|-------------------------|-------------------------------|
| Lot Area: | 100815.83 Sq. Ft. (2.31 Ac.) |
| Lots: | 6 |
| Density: | 2.60 Lots/Acre |
| Current Impervious Area | 3,842 sq. ft (3.8% of Site) |
| New Impervious Area | 28,434 sq. ft (28.2% of Site) |

Current Zoning: Planned 2-Family Residential
Proposed Zoning: Planned 2-Family Residential

Sanitary Sewer Service

Sanitary Sewer service will be connected to the main line being constructed the east of the development

Water Service

Water Service will be extended to the lots from the existing City of Lee's Summit water along the west side of Main Street.

Storm Sewer

Individual Storm Detention will be provided by each builder per detail this sheet.

SURVEY AND PLAT NOTES:

THE SUBJECT PROPERTY SURVEYED LIES WITHIN A FLOOD ZONE DESIGNATED ZONE (X). AREAS LOCATED OUTSIDE THE 100 YEAR FLOOD PLAIN, PER F.E.M.A. MAP, COMMUNITY PANEL NO. 28095C0417 G EFFECTIVE DATE: JANUARY 20, 2017.

OIL - GAS WELLS

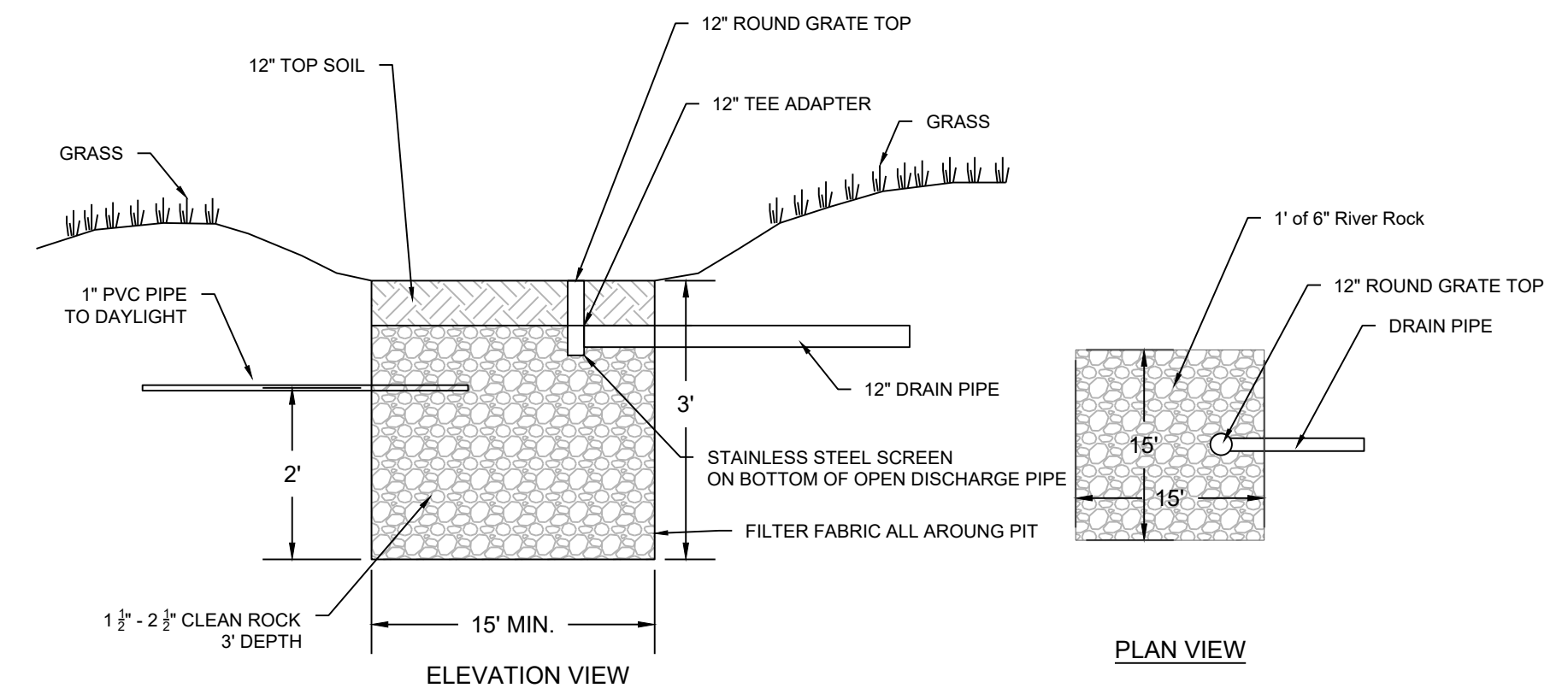
ACCORDING TO EDWARD ALTON MAY JR'S ENVIRONMENTAL IMPACT STUDY OF ABANDONED OIL AND GAS WELLS IN LEE'S SUMMIT, MISSOURI IN 1995, THERE ARE NOT OIL AND GAS WELLS WITHIN 165 FEET OF THE PROPERTY AS SURVEYED HEREON.

UTILITIES:

THE INFORMATION CONCERNING THE EXISTENCE, LOCATION, SIZE OR TYPE OF MATERIALS OF UNDERGROUND UTILITIES SHOWN HEREON, WHICH ARE NOT VISIBLE FROM THE SURFACE, HAS BEEN COMPILED FROM THE RECORDS OF THE VARIOUS UTILITY COMPANIES OR OTHER SOURCES OF INFORMATION AND HAS NOT BEEN VERIFIED IN THE FIELD BY THIS COMPANY. WHERE RECORD MEASUREMENTS WERE NOT AVAILABLE, THE LOCATION OF THESE UNDERGROUND LINES WAS SCALED FROM THE COMPANY'S RECORDS. THIS INFORMATION IS NOT TO BE CONSTRUED AS ACCURATE, COMPLETE NOR EXACT. ANY INFORMATION CONCERNING UNDERGROUND UTILITIES SHOWN HEREON MUST BE CONFIRMED BY THE DESIGN PROFESSIONAL PRIOR TO DESIGNING ANY IMPROVEMENTS WHICH MAY BE AFFECTED BY THIS INFORMATION OR BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION ACTIVITY.

SURVEYOR'S GENERAL NOTES:

- 1). This survey is based upon the following information provided by the client or researched by this surveyor:
 - (A). Final Plat of HEARNE'S 1ST ADDITION
 - (B). Final Plat of HEARNE'S ADDITION LOTS 18A B C
 - (C). Final Plat of W T HEARNE'S 2ND ADDITION
 - (D). Final Plat of NORTH LEA ADDITION
 - (E). Final Plat of NORTHVIEW ADDITION
- 2). This survey meets or exceeds the accuracy standards of a (SUBURBAN) Property Boundary Survey as defined by the Missouri Standards for Property Boundary Surveys.
- 3). No Title report was furnished.
- 4). Bearings shown hereon are based upon bearings described in the legal description
- 5). This company assumes no responsibility in the location of existing utilities within the subject premises. This is an above-ground survey. The underground utilities, if shown, are based on information provided by the various utility companies and these locations should be considered approximate. There may be additional underground utilities not shown on this drawing. Dig Rite Ticket #150071203, 150071179, 150071171
- 7). Subsurface and environmental conditions were not surveyed or examined or considered as a part of this survey. No evidence or statement is made concerning the existence of underground or overhead conditions, containers or facilities that may affect the use or development of this property. No attempt has been made to obtain or show data concerning existence, size, depth, conditions, capacity or location of any utility existing on the site, whether private, municipal or public owned.



DETENTION PIT DETAIL
NOT TO SCALE

REVISIONS

| DATE | DESCRIPTION |
|------|-------------|
| | |
| | |
| | |
| | |

Preliminary Development Plan

Section 6, Township 47 North, Range 31 West

Lee's Summit, Jackson County, Missouri

Lots 1 - 6, Main Orchard

| SHEET | SECTION | TOWNSHIP | RANGE | COUNTY | JOB NO. |
|-------|---------|----------|-------|---------|-------------|
| 1 | 6 | 47 | 31 | Jackson | 510 NW Main |

M. Schlicht, PLS., PE

September 13, 2019

ENGINEERING & SURVEYING SOLUTIONS

50 SE 20TH STREET
LEE'S SUMMIT, MO 64082
P: (816) 623-9888 F: (816) 623-9849

MACRO STORM WATER DRAINAGE STUDY

Main Orchard

Lots 1 – 6

SITE ACREAGE: 2.31 ACRES

DRAINAGE AREA: 52.52 ACRES

Lee's Summit, MO

PREPARED BY:



Submittal Date: September 13, 2019

Revision

| Date | Comment | By |
|----------|---------------|-----|
| 10-14-19 | City Comments | MJS |
| 10-29-19 | City Comments | AEP |
| | | |

Anthony Philipscheck, PE

TABLE OF CONTENTS

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3. GENERAL INFORMATION

This storm study has been prepared to evaluate the potential impacts of developing 5 additional residential lots located at the Northwest corner of Orchard and Main in Lee's Summit, Missouri. There is an existing home located at 510 NW Main Street which is to remain and be part of the proposed 6 lot single family residential development called Main Orchard. The overall site is 2.31 acres. Currently 1.38 acres serves as a single family residence with the remaining 0.93 acres being undeveloped. The 2.31 acre proposed development will contain an impervious area of 28.2%. The site drains primarily to the southwest with a portion draining to the north. Runoff from the site is conveyed via roadside ditches and a few pipe culverts.

Both the Existing and Proposed Sites contain two overall drainage areas labeled as A and B for the purposes of this report. Area A will drain to the north and ultimately beneath Chipman Road and Area B will drain to the southwest and ultimately into a culvert beneath the railroad. See Exhibit A for the Overall Drainage Map. The overall drainage map is shown in the pre developed condition and details the extent of the overall boundaries for drainage areas A and B. Areas A and B were divided into smaller Subareas at or near the property boundaries of the project site to evaluate potential negative impacts adjacent to the site.

Drainage Areas (Existing)

Area A

-Contains 19.72 acres, with 0.27 acres being located within the development area. The northern portion of the site drains to the north via open road ditches and ultimately to POI A which consists of dual 36-inch storm pipes beneath Chipman Road.

Subarea A-1

-Contains 1.01 acres and includes 0.27 acres of the proposed development of which 0.26 acres are developed ($C=0.51$) and 0.01 acres are undeveloped ($C=0.30$). Tributary area for Subarea A-1 converges at the drainage ditch just north of the property line on the west side of Main Street. This point is called POI A-1.

Area B

-Contains 32.80 acres, with 2.04 acres being located within the development area. The site drains to the southwest into a 48-inch storm pipe beneath the Railroad. The storm water is directed to the 48-inch culvert through open road ditches and 3 culverts:

- | | | |
|----|-----------------------|--|
| 1. | Central and Orchard – | 12-inch culvert on the north side of Orchard |
| 2. | Orchard and Olive – | 15-inch culvert on the east side of Olive |
| 3. | Central St - | 15-inch culvert crossing east to west |

All culverts appear to convey the lower intensity storms and allow the storm water to cross atop the street during the higher intensity storm events. The 48-inch culvert crosses beneath the railroad adjacent to the existing commercial development located at 315 NW Olive St. The site has indications that the storm water backs up during higher intensity rain events and an illustration is provided in Exhibit B within the report.

Subarea B-1

-Contains 6.27 acres, with 2.06 acres being located within the development area. Subarea B-1 contains Onsite Subareas B-2 and B-3. Tributary area for Subarea B-1 converges at a 12 inch culvert on the north side of Orchard crossing Central from west to east. This point is called POI B-1.

Subarea B-2

-contains 0.93 acres all of which are located within the proposed development. Subarea B-2 is currently undeveloped $C=0.30$. Subarea B-2 drains to a swale located on the neighboring property adjacent to the west property line. This point is called POI B-2.

Subarea B-3

-contains 1.13 acres all of which are located within the proposed development. Subarea B-3 is currently developed $C=0.51$. Subarea B-3 drains to the southwest property corner (POI B-3) via a swale section where it crosses the adjacent west property for eventual conveyance by the culvert at POI B-1.

4. METHODOLOGY

This Macro Storm Drainage Study has been prepared to evaluate potential hydrologic impacts from the proposed development and recommend improvements to eliminate potential negative impacts. The study utilized existing city contours to create the Pre-Development Drainage Area Map. The study conforms to the requirements of the City of Lee's Summit, Missouri "Design and Construction Manual" and all applicable codes and criteria referred to therein.

Using the above criteria, the proposed site was evaluated using the Rational Method to calculate storm runoff volumes, peak rates of discharge, pre and post developed hydrographs and required storage volumes for detention facilities. The analysis contains results for the 2, 10 and 100-year design storms.

A soils map for the site may be found in Exhibit C. A Pre-Development Drainage Map may be found in Exhibit D. A complete breakdown of Rational Method hydrographs may be found in Exhibit E. The following tables summarize the results of the Existing Conditions analysis.

Table 4.1 Existing Conditions Subarea Data

| Subarea | Area (ac.) | Runoff Coefficient | Tc (min) |
|---------|------------|--------------------|----------|
| A | 19.72 | 0.58 | 19.1 |
| A-1 | 1.01 | 0.51 | 12.9 |
| B | 32.80 | 0.55 | 16.6 |
| B-1 | 6.27 | 0.48 | 11.8 |
| B-2 | 0.93 | 0.30 | 10.9 |
| B-3 | 1.13 | 0.51 | 7.8 |

*Development area is located partially in Area A and B

Table 4.2 Existing Conditions Subarea/Point of Interest Peak Discharge Rates

| Subarea | Q2 (cfs) | Q10 (cfs) | Q100 (cfs) |
|---------|----------|-----------|------------|
| A | 36.78 | 54.22 | 81.99 |
| A-1 | 1.94 | 2.86 | 4.33 |
| B | 60.99 | 89.91 | 135.95 |
| B-1 | 11.69 | 17.23 | 26.06 |
| B-2 | 1.12 | 1.65 | 2.49 |
| B-3 | 2.54 | 3.75 | 5.68 |

*Area B has an inlet control release located on 315 NW Olive beneath the Railroad. The existing 100-year peak discharge has a 100 year back water elevation of 1009.75'

Per APWA Section 5608.4 and City of Lee's Summit criteria, the performance criteria for detention is to provide detention to limit peak flow rates at downstream points of interest to maximum release rates:

- 50% storm peak rate less than or equal to 0.5 cfs per site acre
- 10% storm peak rate less than or equal to 2.0 cfs per site acre
- 1% storm peak rate less than or equal to 3.0 cfs per site acre

Allowable release rates are comprised of a combination of peak offsite flows and allowable onsite post development peak flows at each point of interest. Since some offsite areas have substantially higher curve numbers the area ratio method will not be used to determine allowable release rates. Instead, peak flows from onsite areas will be determined for each point of interest and subtracted from the overall peak discharge rates (Table 4-2) then the allowable release rate for onsite area will be added back to give the allowable peak release rate at each point of interest.

Allowable Release Example Calculation Subarea A (2-Yr): $36.78 - 0.43 + (0.27 \times 0.5) = 36.49$

Table 4.3 Existing Conditions Onsite Subarea Data

| Subarea | Area (ac.) | Composite CN | Tc (min.) |
|---------|------------|--------------|-----------|
| A | 0.27 | 0.50 | 19.1 |
| A-1 | 0.27 | 0.50 | 12.9 |
| B | 2.06 | 0.42 | 16.6 |
| B-1 | 2.06 | 0.42 | 11.8 |
| B-2 | 0.93 | 0.30 | 10.9 |
| B-3 | 1.13 | 0.51 | 7.8 |

Table 4.4 Existing Conditions Subarea/Point of Interest Onsite Peak Discharge Rates

| Subarea | Q2 (cfs) | Q10 (cfs) | Q100 (cfs) |
|---------|----------|-----------|------------|
| A | 0.43 | 0.64 | 0.97 |
| A-1 | 0.51 | 0.75 | 1.14 |
| B | 2.93 | 4.31 | 6.52 |
| B-1 | 3.36 | 4.95 | 7.49 |
| B-2 | 1.12 | 1.65 | 2.49 |
| B-3 | 2.54 | 3.75 | 5.68 |

Table 4.5 Existing Conditions Subarea/Point of Interest Allowable Peak Discharge Release Rates

| Subarea | Q2 (cfs) | Q10 (cfs) | Q100 (cfs) |
|---------|----------|-----------|------------|
| A | 36.49 | 54.12 | 81.83 |
| A-1 | 1.57 | 2.65 | 4.00 |
| B | 59.09 | 89.72 | 135.61 |
| B-1 | 9.36 | 16.40 | 24.75 |
| B-2 | 0.47 | 1.86 | 2.79 |
| B-3 | 0.57 | 2.26 | 3.39 |

5. PROPOSED CONDITIONS

The Proposed Conditions analysis assumes completion of all new residential homes, including construction of a new garage /loft on Lot 3. The difference between the Existing Conditions model and the Proposed Conditions model is a direct result of the construction of the new residential homes and incorporating new detention pits for each home. Geometry for Subareas A-1, B-1, B-2 and B-3 have been slightly modified due to proposed grading that will take place during construction of the proposed improvements. Subarea A-1 will contain 0.01 acres more land area. Tributary land area for Subareas B-2 and B-3 will be reduced due to the addition of roof drain systems and detention pits. A small portion of Area B-2 will be redirected to Subarea B-1 after development due to finish grading around proposed residences. A Post Development Drainage Map may be found in Exhibit F.

Post-Development Flow Rates

The post development flow rates were calculated based on a runoff coefficient of 0.51 for the developed site area. This runoff coefficient was determined based on APWA Table 5602-3 for residential lots. The peak discharge rates for Subareas A, B and B-1 were developed by combining Subarea hydrographs within each Point of Interest. Subarea data shown below has been broken down for each specific Subarea so they may be combined together to determine downstream peak discharge rates at a given Point of Interest. The Subarea information in parenthesis for each lot refers to the Subarea in which each lot contributes runoff.

Table 5.1 Proposed Conditions Subarea Data

| Subarea | Area (ac.) | Runoff Coefficient “c” | Tc (min) |
|-----------------------------|------------|------------------------|----------|
| A | 18.72 | 0.58 | 19.0 |
| A-1 | 1.02 | 0.51 | 13.8 |
| B | 26.54 | 0.57 | 16.6 |
| B-1 | 4.49 | 0.51 | 11.8 |
| B-2 | 0.49 | 0.51 | 7.8 |
| B-3 | 0.96 | 0.51 | 7.8 |
| Lot 1 – Building Imp. (B-3) | 0.055 | 0.90 | 5.0 |
| Lot 2 – Building Imp. (B-3) | 0.055 | 0.90 | 5.0 |
| Lot 3 – Building Imp. (B-3) | 0.055 | 0.90 | 5.0 |
| Lot 4 – Building Imp. (B-2) | 0.055 | 0.90 | 5.0 |
| Lot 5 – Building Imp. (B-2) | 0.055 | 0.90 | 5.0 |
| Lot 6 – Building Imp. (B-1) | 0.055 | 0.90 | 5.0 |

The roof runoff for each lot will be collected via a piped roof drain system and routed to a detention pit located in the rear yard. See Section 6 for a general detail of the proposed detention pits. The detention pits modeled in this report are 15’x15’x3’ deep with large diameter aggregate filling the volume. A conservative voids ratio of 25% has been assumed within the detention pit. The detention pits are sized to store the 100-year runoff volume from 2,400 sf of impervious roof area which equates to 163 cubic feet. The objective is twofold, to reduce overall runoff by infiltration and reduce peak discharge rates by attenuating collected runoff with the aid of a 1” dia. PVC drain pipe located 2’ above the bottom of the pits. An additional 20’x20’x5” deep minimum containment area will be provided above the detention pits for times when the detention pits are inundated. The additional surface volume will accommodate runoff from a consecutive 100-year storm while allowing attenuation of all design storm events. The detention pits modeled in the report have their outlet pipe elevation assumed as the bottom of the pit so the metering effect may be accounted for during all storm events. If not done this way the software yields zero peak discharge for the 2 and 10 year events since the available storage

below the outlet pipe elevation is greater than the hydraulic volume of the rainfall event. This method of modeling the detention pits is the most conservative providing the highest factor of safety.

Table 5.2 Proposed Conditions Subarea/Point of Interest Peak Discharge Rates

| Subarea | Q2 (cfs) | Q10 (cfs) | Q100 (cfs) |
|------------------------------|----------|-----------|------------|
| A | 34.91 | 51.47 | 77.83 |
| A-1 | 1.96 | 2.89 | 4.37 |
| B | 51.14 | 75.40 | 114.01 |
| B-1 | 8.89 | 13.11 | 19.83 |
| B-2 | 1.10 | 1.63 | 2.46 |
| B-3 | 2.16 | 3.19 | 4.82 |
| Lot 1 – Lot 6 (Un-detained)* | 0.244 | 0.360 | 0.544 |
| Lot 1 – Lot 6 (Detained)* | 0.009 | 0.009 | 0.009 |

*Residential House flows and attenuated peak flows are identical for each lot. Three decimal point precision used to account for small tributary area and associated flow rates.

Table 5.3 Proposed Conditions Combined Subarea/Point of Interest Peak Discharge Rates

| Subarea | Q2 (cfs) | Q10 (cfs) | Q100 (cfs) |
|---------|----------|-----------|------------|
| A | 36.14 | 53.28 | 80.56 |
| B-3 | 2.19 | 3.21 | 4.85 |
| B-2 | 1.12 | 1.65 | 2.48 |
| B-1 | 8.90 | 13.12 | 19.84 |
| B | 56.38 | 83.10 | 125.63 |

*Area B has an inlet control release located on 315 NW Olive beneath the Railroad. The proposed (Combined) 100-year peak discharge has a 100 year back water elevation of 1009.68' which is 0.07' lower than the existing condition.

Table 5.4 below provides a comparison of runoff data between Existing, Proposed and Allowable Conditions at the various Points of Interest.

Table 5.4 Point of Interest Peak Discharge Comparison

| Point of Interest | Condition | Q2 (cfs) | Q10 (cfs) | Q100 (cfs) |
|-------------------|------------|----------|-----------|------------|
| A | Proposed | 36.14 | 53.28 | 80.56 |
| | Existing | 36.78 | 54.22 | 81.99 |
| | Difference | -0.64 | -0.94 | -1.43 |
| | Allowable | 36.49 | 54.12 | 81.83 |
| | Difference | -0.35 | -0.84 | -1.27 |
| A-1 | Proposed | 1.96 | 2.89 | 4.37 |
| | Existing | 1.94 | 2.86 | 4.33 |
| | Difference | 0.02 | 0.03 | 0.04 |
| | Allowable | 1.57 | 2.65 | 4.00 |
| | Difference | 0.39 | 0.24 | 0.37 |
| B-3 | Proposed | 2.19 | 3.21 | 4.85 |
| | Existing | 2.54 | 3.75 | 5.68 |
| | Difference | -0.35 | -0.54 | -0.83 |
| | Allowable | 0.57 | 2.26 | 3.39 |
| | Difference | 1.62 | 0.95 | 1.46 |

| | | | | |
|------------|------------|-------|-------|--------|
| B-2 | Proposed | 1.12 | 1.65 | 2.48 |
| | Existing | 1.12 | 1.65 | 2.49 |
| | Difference | 0 | 0 | -0.01 |
| | Allowable | 0.47 | 1.86 | 2.79 |
| | Difference | 0.65 | -0.21 | -0.31 |
| B-1 | Proposed | 10.57 | 15.57 | 23.52 |
| | Existing | 11.69 | 17.23 | 26.06 |
| | Difference | -1.12 | -1.66 | -2.54 |
| | Allowable | 9.36 | 16.40 | 24.75 |
| | Difference | 1.21 | -0.83 | -1.23 |
| B | Proposed | 56.38 | 83.10 | 125.63 |
| | Existing | 60.99 | 89.91 | 135.95 |
| | Difference | -4.61 | -6.81 | -10.32 |
| | Allowable | 59.09 | 89.72 | 135.61 |
| | Difference | -2.71 | -6.62 | -9.98 |

POI A: Peak discharges for all storm events will be attenuated below existing and allowable.

POI A-1: Peak discharges for existing conditions will be slightly above existing due to a slight increase in tributary area however the anticipated increases are negligible. Allowable flows will not be met and a waiver will be requested for Subarea A-1.

POI B: Peak discharges for all storm events will be attenuated below existing and allowable.

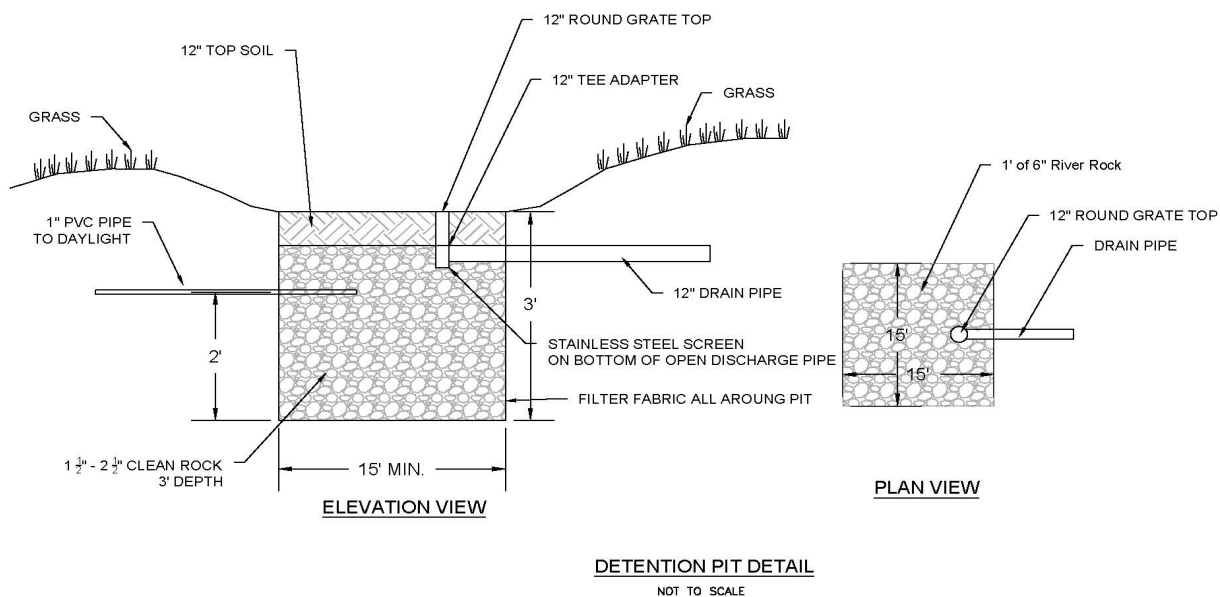
POI B-1: Peak discharges for all storm events will be attenuated below existing and allowable except for the allowable 2-year event. No negative impacts will be created due to the development of the proposed site. A waiver will be requested for Subarea B-1.

POI B-2: Peak discharges for all storm events will be attenuated at or below existing and allowable except for the allowable 2-year event. No negative impacts will be created due to the development of the proposed site. A waiver will be requested for Subarea B-2.

POI B-3: Peak discharges for all storm events will be attenuated below existing. Allowable rates will not be met however there will be no increase in net runoff from the proposed site. A waiver will be requested for Subarea B-3.

6. Best Management Practices Report

The development will use individual onsite detention pits for the new residential units by connecting the downspouts to the 15' x 15' x 3' pit. The pit will consist of 3 feet of clean 1.5 to 2.5-inch gravel to promote infiltration, however due to the low infiltration capacity ($K_{sat}(avg) = 0.13 \text{ in/hr}$) of the soil in the area a 1-inch outlet pipe will be installed 2 feet above the bottom of the detention pit to allow for the water to drain. The detention pit is sized to store the runoff generated by the impervious area of the home for the 100-year storm event. In addition, the detention pit will be depressed providing capacity to store a consecutive 100-year storm event. The top of the detention pit shall incorporate deep rooted plantings to help accelerate infiltration into the pit.



7. Conclusions & Recommendations

Runoff from the proposed development will be reduced below existing for all subareas except Subarea A-1 which is negligible. No negative impact is anticipated downstream from the proposed development. Allowable release rates which are peak discharge rate goals will not be met for several subareas due to the size of the subareas however as previously stated the downstream drainage system and property will not be adversely affected but overall storm drainage for the subarea will be improved by the employ of individual detention pits on Lots 1 – 6 as opposed to a shared onsite storm water detention facility. Engineering Solutions recommends approval of this macro storm water drainage study.

There are existing storm water backups located at 315 NW Olive Street (POI B). The development of this project will reduce the impact of the existing downstream backups.

Waiver Requests:

A-1 (2-Yr), (10-Yr), (100-Yr) Allowable & Proposed (Increase is negligible 0.02 – 0.04 cfs)

B-1 (2-Yr) Allowable

B-2 (2-Yr) Allowable

B-3 (2-Yr), (10-Yr), (100-Yr) Allowable

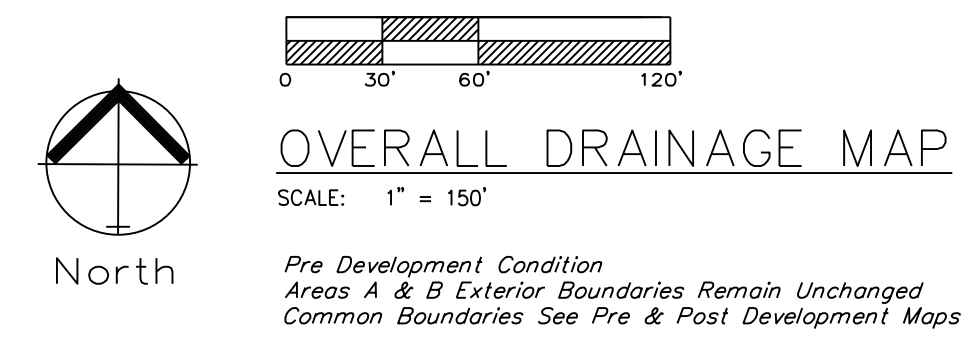
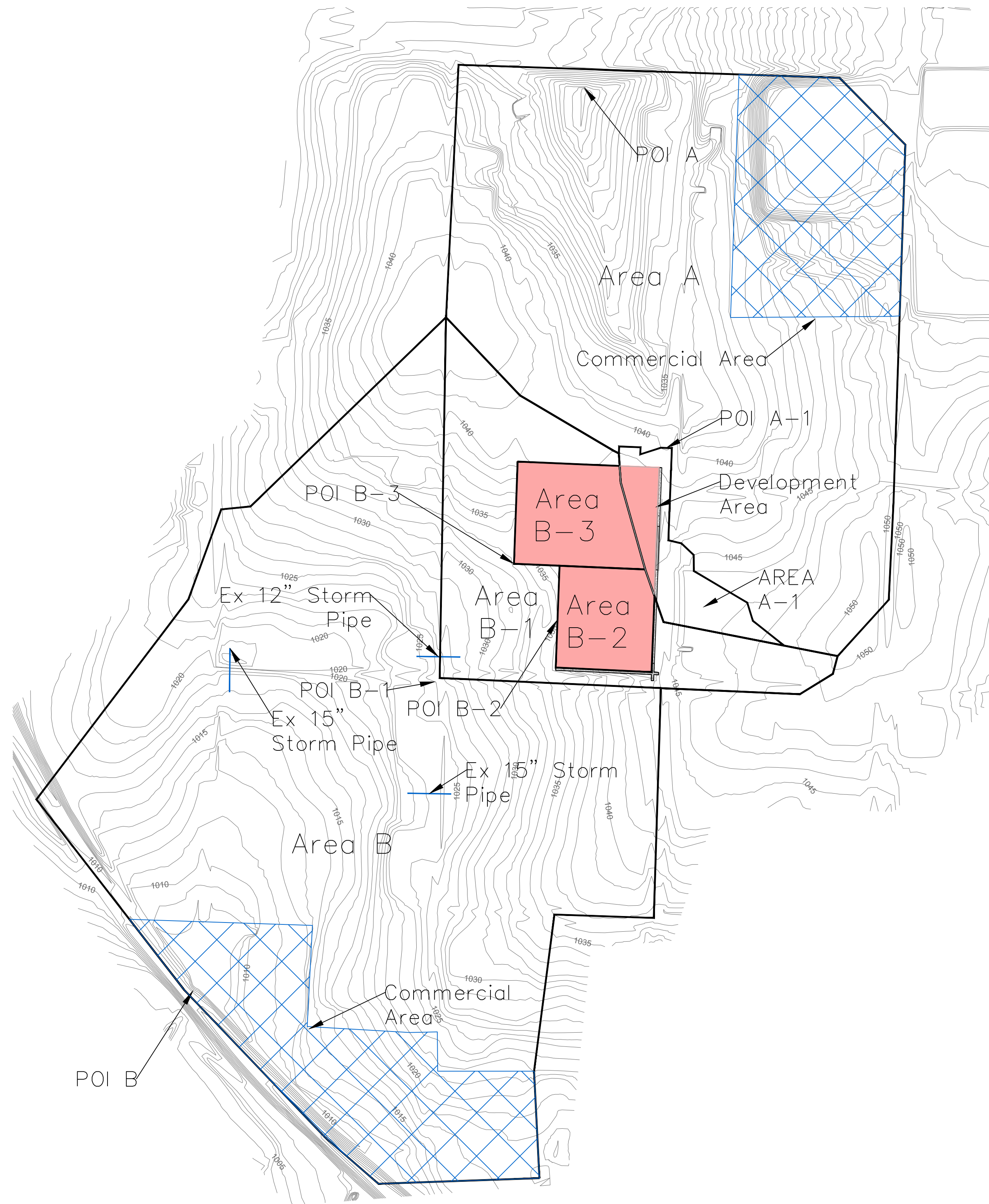
8. MAPS & EXHIBITS

EXHIBITS:

- **Exhibit A**
 - **Overall Drainage Map**
- **Exhibit B**
 - **315 NW Olive Storage Map**
- **Exhibit C**
 - **USDA Soils Map**
- **Exhibit D**
 - **Pre Development Drainage Map**
- **Exhibit E**
 - **Hydraflow Hydrograph Analysis**
- **Exhibit F**
 - **Post Development Drainage Map**

Exhibit A

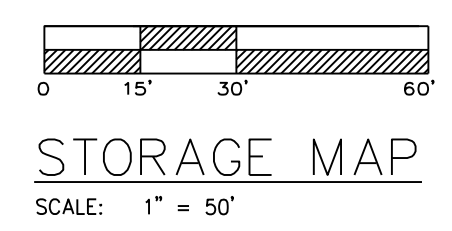
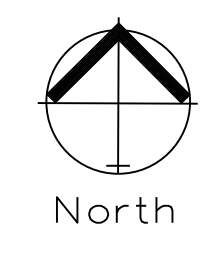
Overall Drainage Map



| APWA STORM DRAINAGE "TC" COMPUTATIONS FOR : MAIN ORCHARD | | | | | | | | | | | | | | | | | | | | | | | | |
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Exhibit B

Storage Map



Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

510 NW MAIN STREET
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

Project:
510 NW MAIN ST
LS MO
Issue Date:
September 13, 2019

315 NW OLIVE STORM
Construction Plans for:
510 NW MAIN STREET
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

| REVISIONS |
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Exhibit

Exhibit C

USDA Soils Map



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

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

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

510 Orchard Main



October 29, 2019

Preface

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

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

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

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

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

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

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

Custom Soil Resource Report

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

Soil Map

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

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Jackson County, Missouri
Survey Area Data: Version 20, Sep 16, 2019

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

Date(s) aerial images were photographed: Jun 11, 2017—Sep 22, 2017

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

Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|------------------------------------|--|--------------|----------------|
| 10128 | Sharpsburg-Urban land complex, 2 to 5 percent slopes | 2.4 | 100.0% |
| Totals for Area of Interest | | 2.4 | 100.0% |

Map Unit Descriptions

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

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

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

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

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

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

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

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

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

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

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

Jackson County, Missouri

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

Map Unit Setting

National map unit symbol: 2ql09
Elevation: 1,000 to 1,300 feet
Mean annual precipitation: 33 to 41 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 177 to 220 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sharpsburg and similar soils: 60 percent
Urban land: 35 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sharpsburg

Setting

Landform: Interfluves
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loess

Typical profile

A - 0 to 17 inches: silt loam
Bt - 17 to 55 inches: silty clay loam
C - 55 to 60 inches: silty clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 35 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very high (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Ecological site: Loess Upland Prairie (R109XY002MO)
Other vegetative classification: Grass/Prairie (Herbaceous Vegetation)
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Interfluves

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Interfluve

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8

Hydric soil rating: No

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Exhibit D

Pre Development Drainage Map

Exhibit E

Hydraflow Hydrograph Analysis

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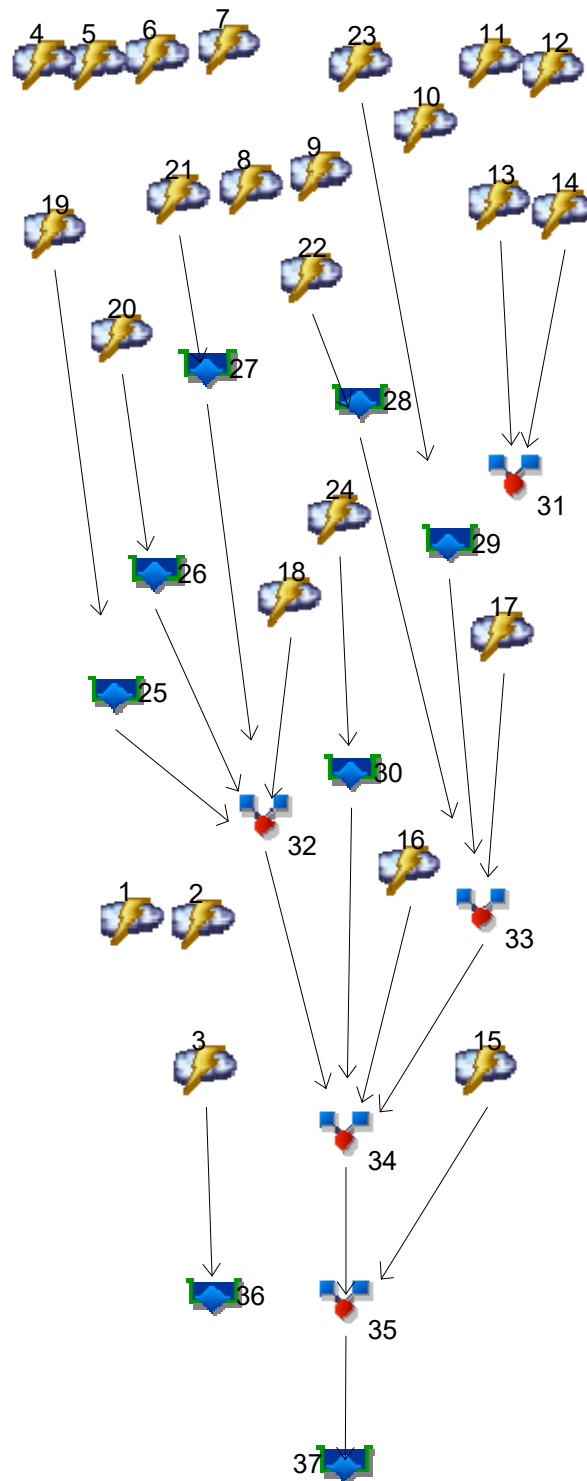
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Watershed Model Schematic

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Legend

| Hyd. | Origin | Description |
|------|-----------|-------------------|
| 1 | Rational | Ex. A |
| 2 | Rational | Ex. A-1 |
| 3 | Rational | Ex. B |
| 4 | Rational | Ex. B-1 |
| 5 | Rational | Ex. B-2 |
| 6 | Rational | Ex. B-3 |
| 7 | Rational | Ex. Onsite A |
| 8 | Rational | Ex. Onsite A-1 |
| 9 | Rational | Ex. Onsite B |
| 10 | Rational | Ex. Onsite B-1 |
| 11 | Rational | Ex. Onsite B-2 |
| 12 | Rational | Ex. Onsite B-3 |
| 13 | Rational | Prop. A |
| 14 | Rational | Prop. A-1 |
| 15 | Rational | Prop. B |
| 16 | Rational | Prop. B-1 |
| 17 | Rational | Prop. B-2 |
| 18 | Rational | Prop. B-3 |
| 19 | Rational | Lot 1 |
| 20 | Rational | Lot 2 |
| 21 | Rational | Lot 3 |
| 22 | Rational | Lot 4 |
| 23 | Rational | Lot 5 |
| 24 | Rational | Lot 6 |
| 25 | Reservoir | Lot 1 Detention |
| 26 | Reservoir | Lot 2 Detention |
| 27 | Reservoir | Lot 3 Detention |
| 28 | Reservoir | Lot 4 Detention |
| 29 | Reservoir | Lot 5 Detention |
| 30 | Reservoir | Lot 6 Detention |
| 31 | Combine | Combined A |
| 32 | Combine | Combined B-3 |
| 33 | Combine | Combined B-2 |
| 34 | Combine | Combined B-1 |
| 35 | Combine | Combined B |
| 36 | Reservoir | Ex. B Routed |
| 37 | Reservoir | Combined B Routed |



Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

| Hyd. No. | Hydrograph type (origin) | Inflow hyd(s) | Peak Outflow (cfs) | | | | | | | | Hydrograph Description |
|---|--------------------------|-----------------|--------------------|-------|-------|-------|-------|-------|-------|------------------------|------------------------|
| | | | 1-yr | 2-yr | 3-yr | 5-yr | 10-yr | 25-yr | 50-yr | 100-yr | |
| 1 | Rational | ----- | ----- | 36.78 | ----- | ----- | 54.22 | ----- | ----- | 81.99 | Ex. A |
| 2 | Rational | ----- | ----- | 1.942 | ----- | ----- | 2.863 | ----- | ----- | 4.330 | Ex. A-1 |
| 3 | Rational | ----- | ----- | 60.99 | ----- | ----- | 89.91 | ----- | ----- | 135.95 | Ex. B |
| 4 | Rational | ----- | ----- | 11.69 | ----- | ----- | 17.23 | ----- | ----- | 26.06 | Ex. B-1 |
| 5 | Rational | ----- | ----- | 1.117 | ----- | ----- | 1.647 | ----- | ----- | 2.490 | Ex. B-2 |
| 6 | Rational | ----- | ----- | 2.543 | ----- | ----- | 3.752 | ----- | ----- | 5.675 | Ex. B-3 |
| 7 | Rational | ----- | ----- | 0.434 | ----- | ----- | 0.640 | ----- | ----- | 0.968 | Ex. Onsite A |
| 8 | Rational | ----- | ----- | 0.509 | ----- | ----- | 0.750 | ----- | ----- | 1.135 | Ex. Onsite A-1 |
| 9 | Rational | ----- | ----- | 2.925 | ----- | ----- | 4.312 | ----- | ----- | 6.520 | Ex. Onsite B |
| 10 | Rational | ----- | ----- | 3.359 | ----- | ----- | 4.954 | ----- | ----- | 7.491 | Ex. Onsite B-1 |
| 11 | Rational | ----- | ----- | 1.117 | ----- | ----- | 1.647 | ----- | ----- | 2.490 | Ex. Onsite B-2 |
| 12 | Rational | ----- | ----- | 2.543 | ----- | ----- | 3.752 | ----- | ----- | 5.675 | Ex. Onsite B-3 |
| 13 | Rational | ----- | ----- | 34.91 | ----- | ----- | 51.47 | ----- | ----- | 77.83 | Prop. A |
| 14 | Rational | ----- | ----- | 1.961 | ----- | ----- | 2.892 | ----- | ----- | 4.373 | Prop. A-1 |
| 15 | Rational | ----- | ----- | 51.14 | ----- | ----- | 75.40 | ----- | ----- | 114.01 | Prop. B |
| 16 | Rational | ----- | ----- | 8.891 | ----- | ----- | 13.11 | ----- | ----- | 19.83 | Prop. B-1 |
| 17 | Rational | ----- | ----- | 1.103 | ----- | ----- | 1.627 | ----- | ----- | 2.461 | Prop. B-2 |
| 18 | Rational | ----- | ----- | 2.160 | ----- | ----- | 3.188 | ----- | ----- | 4.822 | Prop. B-3 |
| 19 | Rational | ----- | ----- | 0.244 | ----- | ----- | 0.360 | ----- | ----- | 0.544 | Lot 1 |
| 20 | Rational | ----- | ----- | 0.244 | ----- | ----- | 0.360 | ----- | ----- | 0.544 | Lot 2 |
| 21 | Rational | ----- | ----- | 0.244 | ----- | ----- | 0.360 | ----- | ----- | 0.544 | Lot 3 |
| 22 | Rational | ----- | ----- | 0.244 | ----- | ----- | 0.360 | ----- | ----- | 0.544 | Lot 4 |
| 23 | Rational | ----- | ----- | 0.244 | ----- | ----- | 0.360 | ----- | ----- | 0.544 | Lot 5 |
| 24 | Rational | ----- | ----- | 0.244 | ----- | ----- | 0.360 | ----- | ----- | 0.544 | Lot 6 |
| 25 | Reservoir | 19 | ----- | 0.009 | ----- | ----- | 0.009 | ----- | ----- | 0.009 | Lot 1 Detention |
| 26 | Reservoir | 20 | ----- | 0.009 | ----- | ----- | 0.009 | ----- | ----- | 0.009 | Lot 2 Detention |
| 27 | Reservoir | 21 | ----- | 0.009 | ----- | ----- | 0.009 | ----- | ----- | 0.009 | Lot 3 Detention |
| 28 | Reservoir | 22 | ----- | 0.009 | ----- | ----- | 0.009 | ----- | ----- | 0.009 | Lot 4 Detention |
| 29 | Reservoir | 23 | ----- | 0.009 | ----- | ----- | 0.009 | ----- | ----- | 0.009 | Lot 5 Detention |
| 30 | Reservoir | 24 | ----- | 0.009 | ----- | ----- | 0.009 | ----- | ----- | 0.009 | Lot 6 Detention |
| 31 | Combine | 13, 14, | ----- | 35.97 | ----- | ----- | 53.03 | ----- | ----- | 80.19 | Combined A |
| 32 | Combine | 18, 25, 26, 27, | ----- | 2.186 | ----- | ----- | 3.214 | ----- | ----- | 4.849 | Combined B-3 |
| 33 | Combine | 17, 28, 29, | ----- | 1.120 | ----- | ----- | 1.645 | ----- | ----- | 2.479 | Combined B-2 |
| 34 | Combine | 16, 30, 32, 33 | ----- | 10.57 | ----- | ----- | 15.57 | ----- | ----- | 23.52 | Combined B-1 |
| Proj. file: MAIN ORCHARD STORM STUDY 191022.gpw | | | | | | | | | | Monday, 10 / 28 / 2019 | |

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

| Hyd. No. | Hydrograph type (origin) | Peak flow (cfs) | Time interval (min) | Time to Peak (min) | Hyd. volume (cuft) | Inflow hyd(s) | Maximum elevation (ft) | Total strge used (cuft) | Hydrograph Description |
|-------------------------------------|--------------------------|-----------------|---------------------|--------------------|-----------------------|-----------------|------------------------|-------------------------|------------------------|
| 1 | Rational | 36.78 | 1 | 19 | 41,925 | ----- | ----- | ----- | Ex. A |
| 2 | Rational | 1.942 | 1 | 13 | 1,515 | ----- | ----- | ----- | Ex. A-1 |
| 3 | Rational | 60.99 | 1 | 17 | 62,206 | ----- | ----- | ----- | Ex. B |
| 4 | Rational | 11.69 | 1 | 12 | 8,414 | ----- | ----- | ----- | Ex. B-1 |
| 5 | Rational | 1.117 | 1 | 11 | 737 | ----- | ----- | ----- | Ex. B-2 |
| 6 | Rational | 2.543 | 1 | 8 | 1,221 | ----- | ----- | ----- | Ex. B-3 |
| 7 | Rational | 0.434 | 1 | 19 | 495 | ----- | ----- | ----- | Ex. Onsite A |
| 8 | Rational | 0.509 | 1 | 13 | 397 | ----- | ----- | ----- | Ex. Onsite A-1 |
| 9 | Rational | 2.925 | 1 | 17 | 2,983 | ----- | ----- | ----- | Ex. Onsite B |
| 10 | Rational | 3.359 | 1 | 12 | 2,419 | ----- | ----- | ----- | Ex. Onsite B-1 |
| 11 | Rational | 1.117 | 1 | 11 | 737 | ----- | ----- | ----- | Ex. Onsite B-2 |
| 12 | Rational | 2.543 | 1 | 8 | 1,221 | ----- | ----- | ----- | Ex. Onsite B-3 |
| 13 | Rational | 34.91 | 1 | 19 | 39,799 | ----- | ----- | ----- | Prop. A |
| 14 | Rational | 1.961 | 1 | 13 | 1,530 | ----- | ----- | ----- | Prop. A-1 |
| 15 | Rational | 51.14 | 1 | 17 | 52,164 | ----- | ----- | ----- | Prop. B |
| 16 | Rational | 8.891 | 1 | 12 | 6,402 | ----- | ----- | ----- | Prop. B-1 |
| 17 | Rational | 1.103 | 1 | 8 | 529 | ----- | ----- | ----- | Prop. B-2 |
| 18 | Rational | 2.160 | 1 | 8 | 1,037 | ----- | ----- | ----- | Prop. B-3 |
| 19 | Rational | 0.244 | 1 | 5 | 73 | ----- | ----- | ----- | Lot 1 |
| 20 | Rational | 0.244 | 1 | 5 | 73 | ----- | ----- | ----- | Lot 2 |
| 21 | Rational | 0.244 | 1 | 5 | 73 | ----- | ----- | ----- | Lot 3 |
| 22 | Rational | 0.244 | 1 | 5 | 73 | ----- | ----- | ----- | Lot 4 |
| 23 | Rational | 0.244 | 1 | 5 | 73 | ----- | ----- | ----- | Lot 5 |
| 24 | Rational | 0.244 | 1 | 5 | 73 | ----- | ----- | ----- | Lot 6 |
| 25 | Reservoir | 0.009 | 1 | 10 | 72 | 19 | 1038.03 | 69.2 | Lot 1 Detention |
| 26 | Reservoir | 0.009 | 1 | 10 | 72 | 20 | 1040.03 | 69.2 | Lot 2 Detention |
| 27 | Reservoir | 0.009 | 1 | 10 | 72 | 21 | 1037.03 | 69.2 | Lot 3 Detention |
| 28 | Reservoir | 0.009 | 1 | 10 | 72 | 22 | 1039.03 | 69.2 | Lot 4 Detention |
| 29 | Reservoir | 0.009 | 1 | 10 | 72 | 23 | 1038.03 | 69.2 | Lot 5 Detention |
| 30 | Reservoir | 0.009 | 1 | 10 | 72 | 24 | 1038.03 | 69.2 | Lot 6 Detention |
| 31 | Combine | 35.97 | 1 | 19 | 41,329 | 13, 14, | ----- | ----- | Combined A |
| 32 | Combine | 2.186 | 1 | 8 | 1,253 | 18, 25, 26, 27, | ----- | ----- | Combined B-3 |
| 33 | Combine | 1.120 | 1 | 8 | 673 | 17, 28, 29, | ----- | ----- | Combined B-2 |
| 34 | Combine | 10.57 | 1 | 12 | 8,399 | 16, 30, 32, 33 | ----- | ----- | Combined B-1 |
| MAIN ORCHARD STORM STUDY 191022.gpr | | | | | Return Period: 2 Year | | | Monday, 10 / 28 / 2019 | |

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

| Hyd. No. | Hydrograph type (origin) | Peak flow (cfs) | Time interval (min) | Time to Peak (min) | Hyd. volume (cuft) | Inflow hyd(s) | Maximum elevation (ft) | Total strge used (cuft) | Hydrograph Description |
|-------------------------------------|--------------------------|-----------------|---------------------|--------------------|-----------------------|---------------|------------------------|-------------------------|------------------------|
| 35 | Combine | 56.38 | 1 | 17 | 60,563 | 15, 34 | ----- | ----- | Combined B |
| 36 | Reservoir | 25.83 | 1 | 27 | 62,197 | 3 | 1008.83 | 36,351 | Ex. B Routed |
| 37 | Reservoir | 24.66 | 1 | 26 | 60,554 | 35 | 1008.78 | 34,789 | Combined B Routed |
| MAIN ORCHARD STORM STUDY 191022.gpw | | | | | Return Period: 2 Year | | | Monday, 10 / 28 / 2019 | |

Hydrograph Report

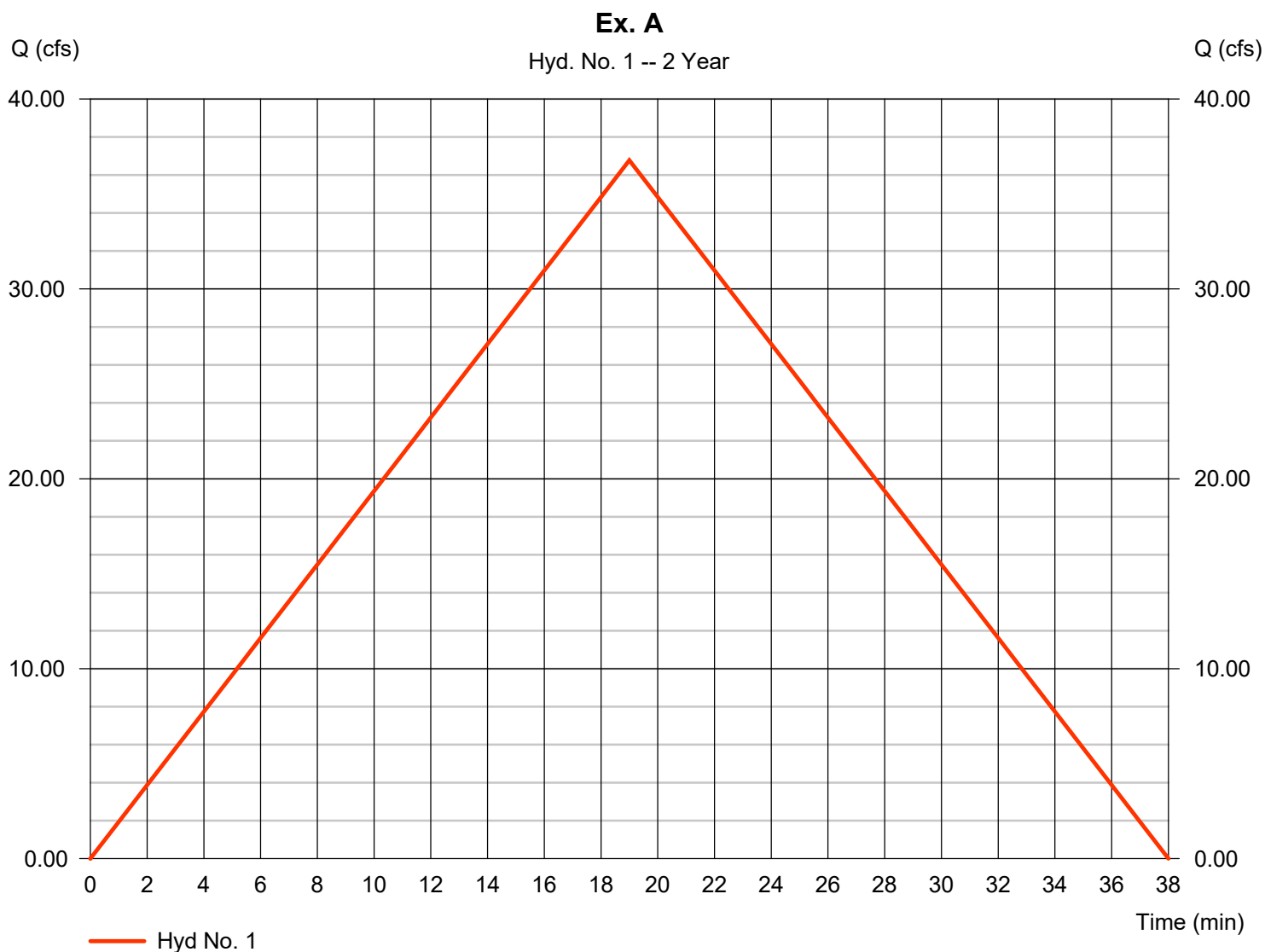
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 1

Ex. A

| | | | |
|-----------------|---------------|-------------------|---------------|
| Hydrograph type | = Rational | Peak discharge | = 36.78 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 19 min |
| Time interval | = 1 min | Hyd. volume | = 41,925 cuft |
| Drainage area | = 19.720 ac | Runoff coeff. | = 0.58 |
| Intensity | = 3.215 in/hr | Tc by User | = 19.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

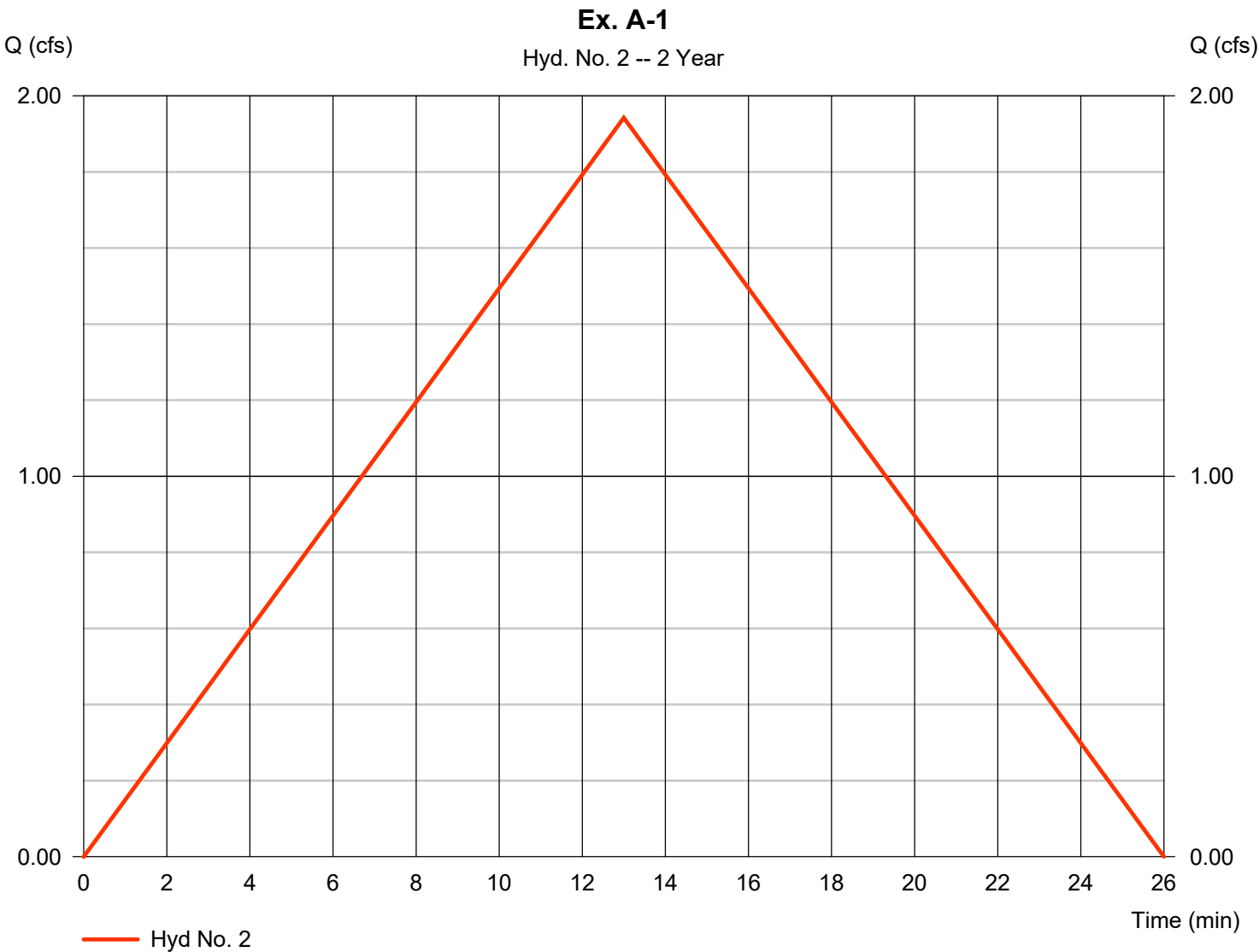
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 2

Ex. A-1

| | | | |
|-----------------|---------------|-------------------|--------------|
| Hydrograph type | = Rational | Peak discharge | = 1.942 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 13 min |
| Time interval | = 1 min | Hyd. volume | = 1,515 cuft |
| Drainage area | = 1.010 ac | Runoff coeff. | = 0.51 |
| Intensity | = 3.770 in/hr | Tc by User | = 13.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

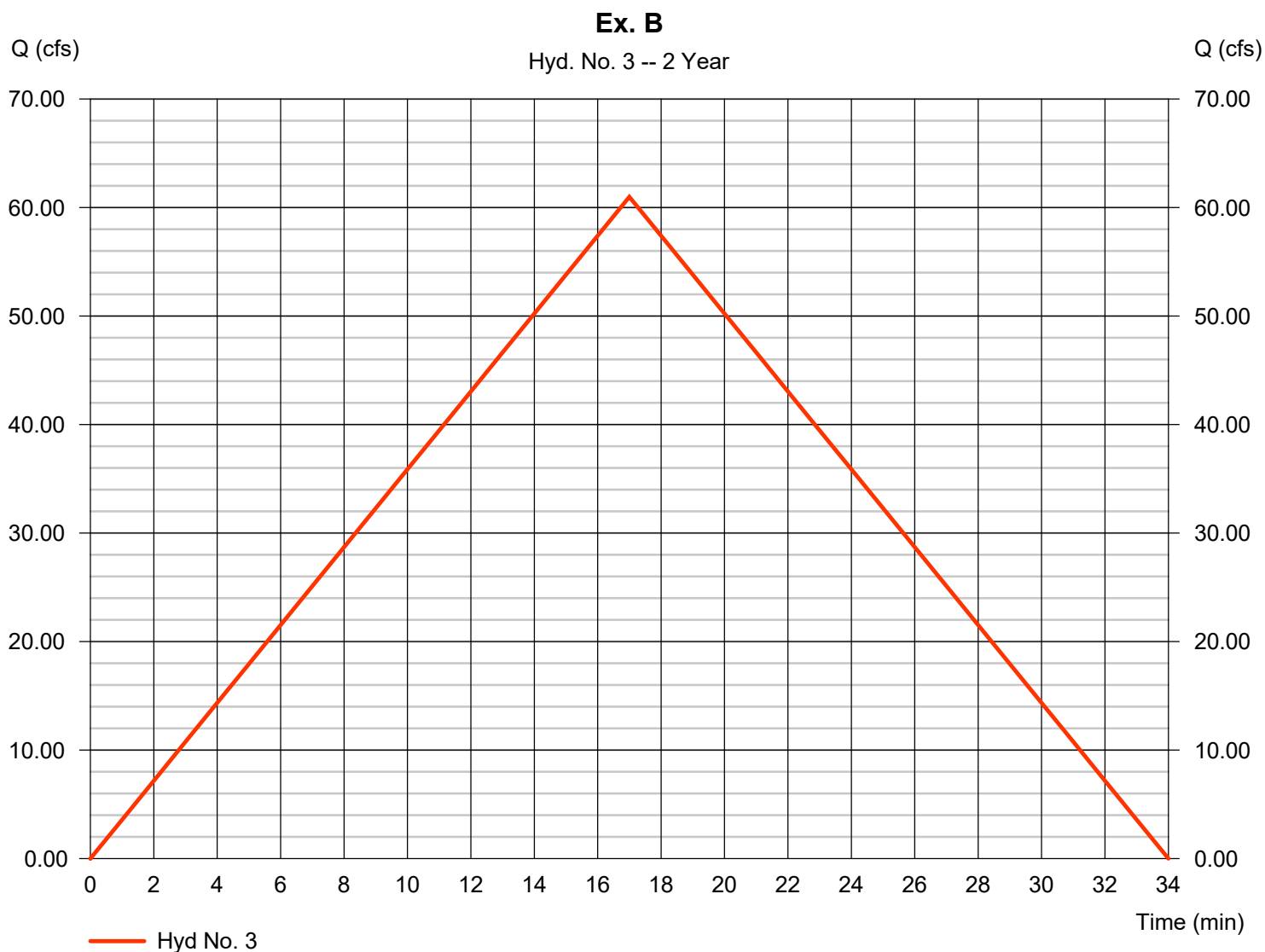
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 3

Ex. B

| | | | |
|-----------------|---------------|-------------------|---------------|
| Hydrograph type | = Rational | Peak discharge | = 60.99 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 17 min |
| Time interval | = 1 min | Hyd. volume | = 62,206 cuft |
| Drainage area | = 32.800 ac | Runoff coeff. | = 0.55 |
| Intensity | = 3.381 in/hr | Tc by User | = 17.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

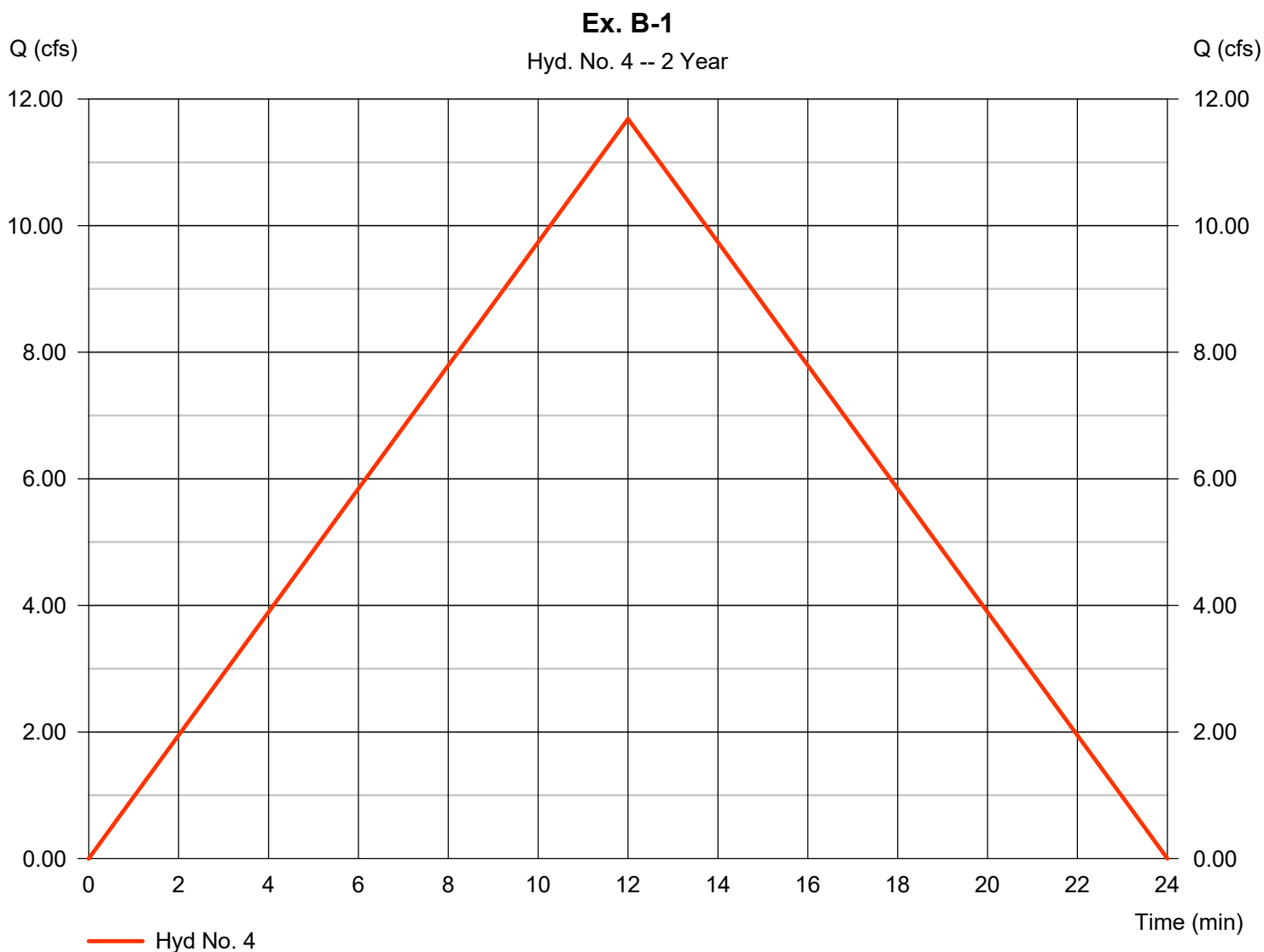
Monday, 10 / 28 / 2019

Hyd. No. 4

Ex. B-1

Hydrograph type = Rational
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 6.270 ac
 Intensity = 3.883 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 11.69 cfs
 Time to peak = 12 min
 Hyd. volume = 8,414 cuft
 Runoff coeff. = 0.48
 Tc by User = 12.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

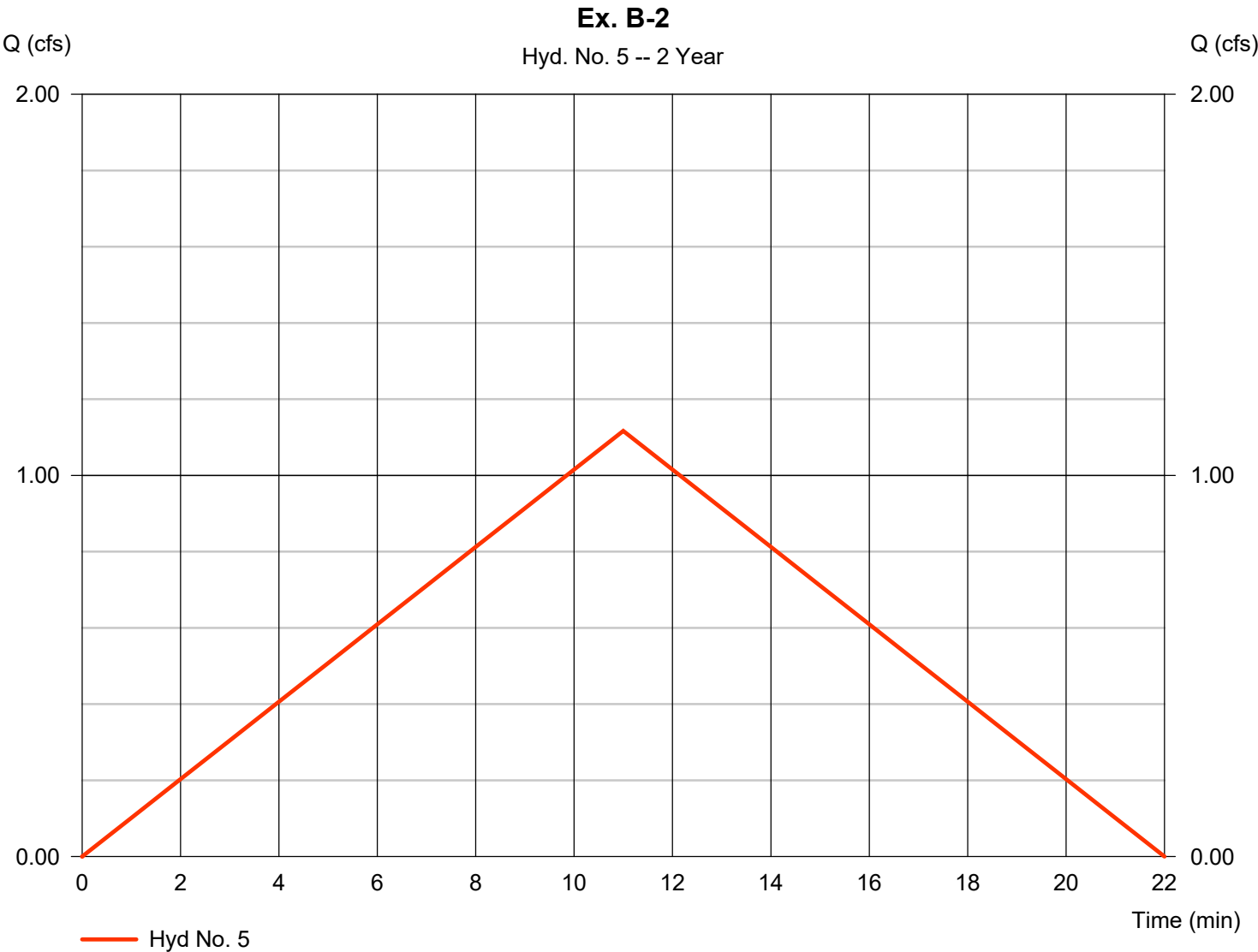
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 5

Ex. B-2

| | | | |
|-----------------|---------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 1.117 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 11 min |
| Time interval | = 1 min | Hyd. volume | = 737 cuft |
| Drainage area | = 0.930 ac | Runoff coeff. | = 0.3 |
| Intensity | = 4.002 in/hr | Tc by User | = 11.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |

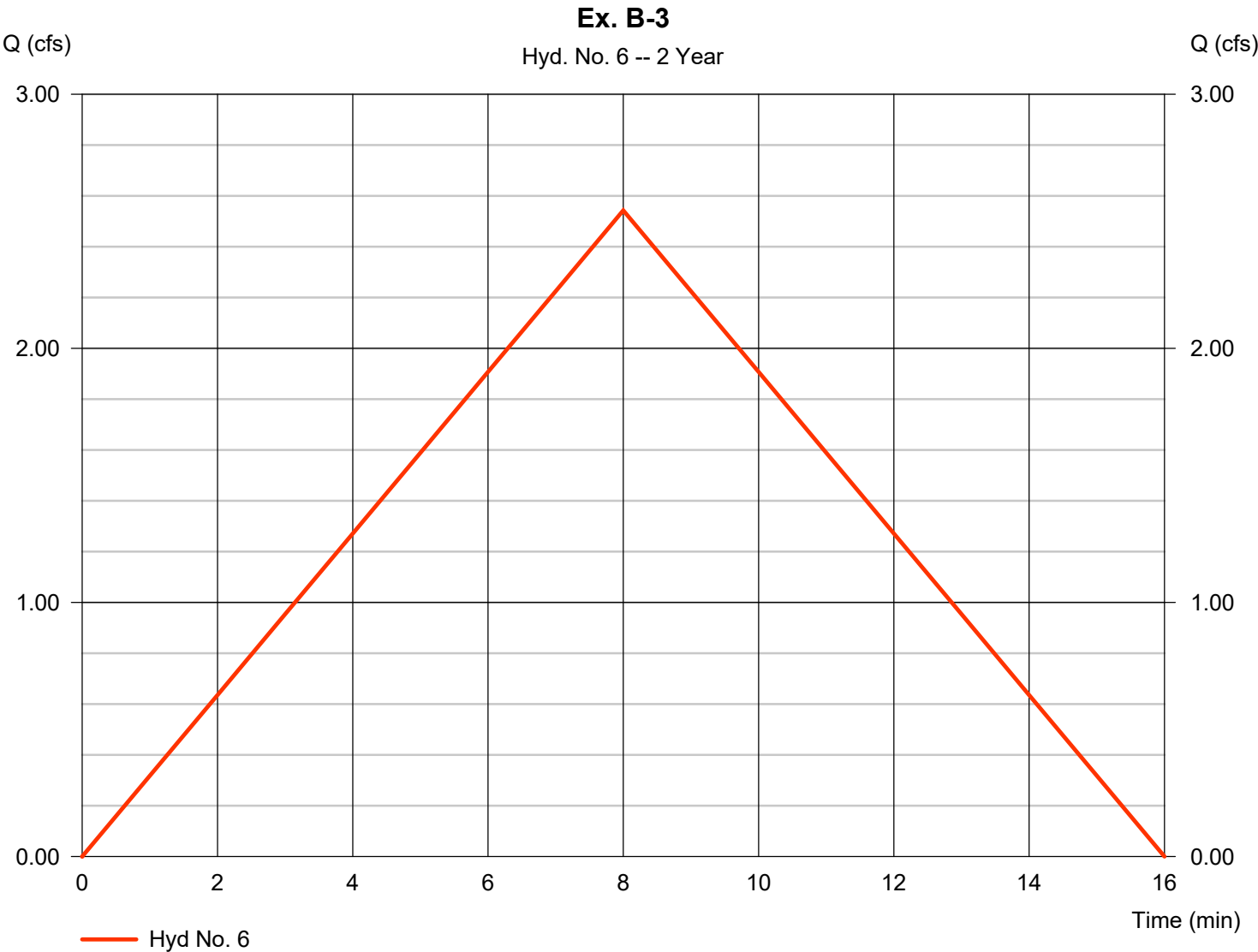


Hydrograph Report

Hyd. No. 6

Ex. B-3

| | | | |
|-----------------|---------------|-------------------|--------------|
| Hydrograph type | = Rational | Peak discharge | = 2.543 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 8 min |
| Time interval | = 1 min | Hyd. volume | = 1,221 cuft |
| Drainage area | = 1.130 ac | Runoff coeff. | = 0.51 |
| Intensity | = 4.412 in/hr | Tc by User | = 8.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

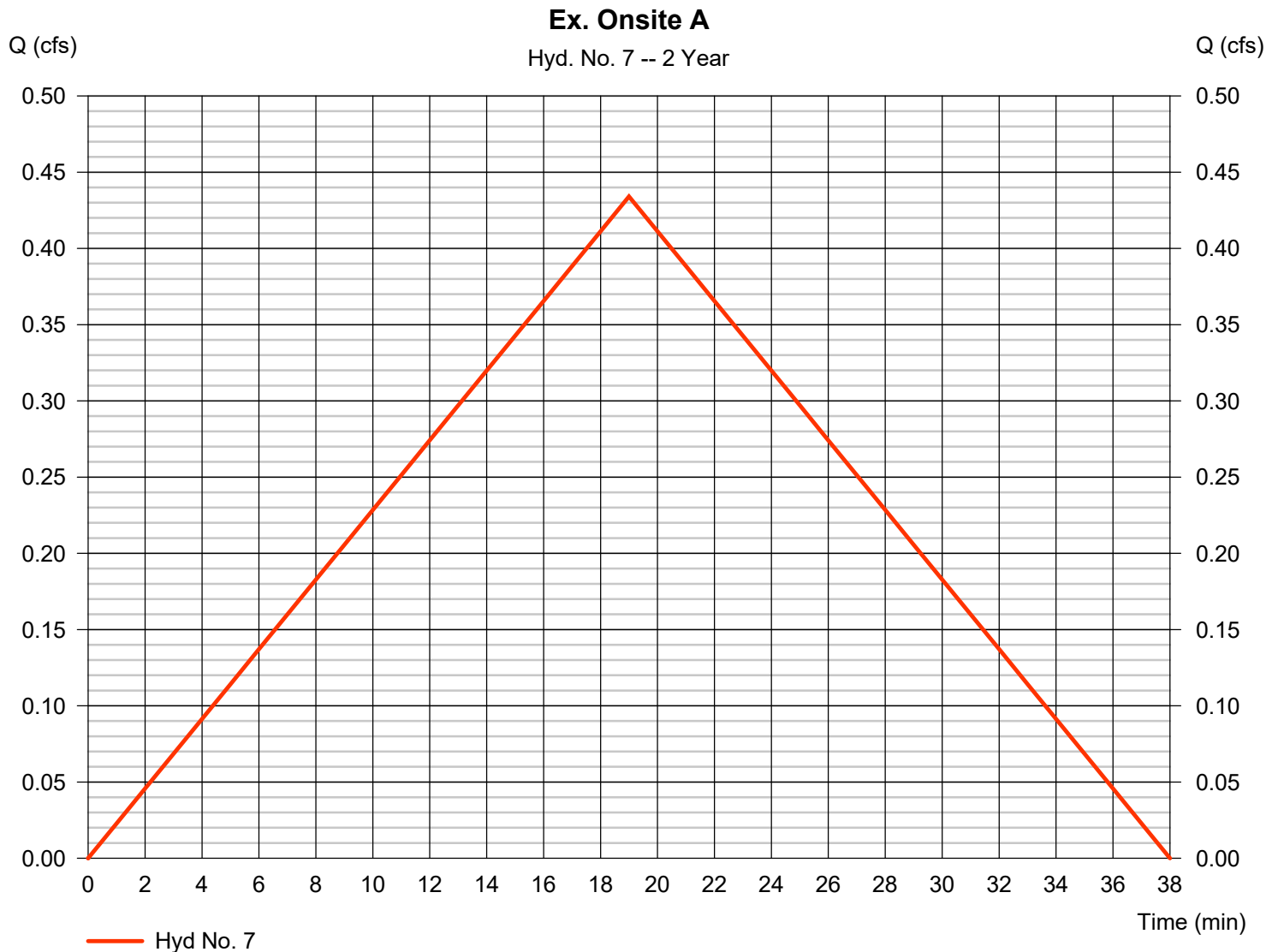
Monday, 10 / 28 / 2019

Hyd. No. 7

Ex. Onsite A

Hydrograph type = Rational
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 0.270 ac
 Intensity = 3.215 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 0.434 cfs
 Time to peak = 19 min
 Hyd. volume = 495 cuft
 Runoff coeff. = 0.5
 Tc by User = 19.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

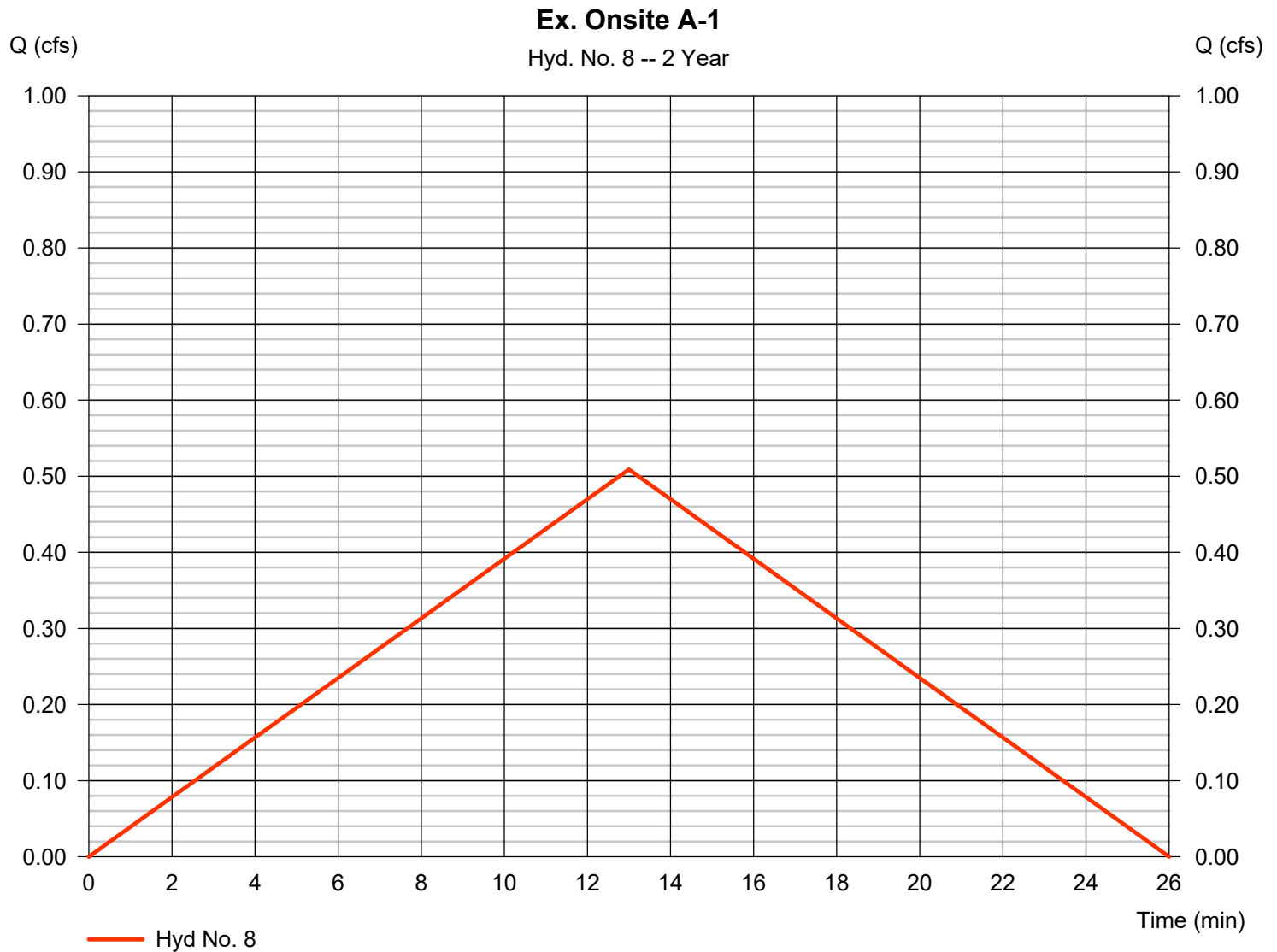
Monday, 10 / 28 / 2019

Hyd. No. 8

Ex. Onsite A-1

Hydrograph type = Rational
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 0.270 ac
 Intensity = 3.770 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 0.509 cfs
 Time to peak = 13 min
 Hyd. volume = 397 cuft
 Runoff coeff. = 0.5
 Tc by User = 13.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

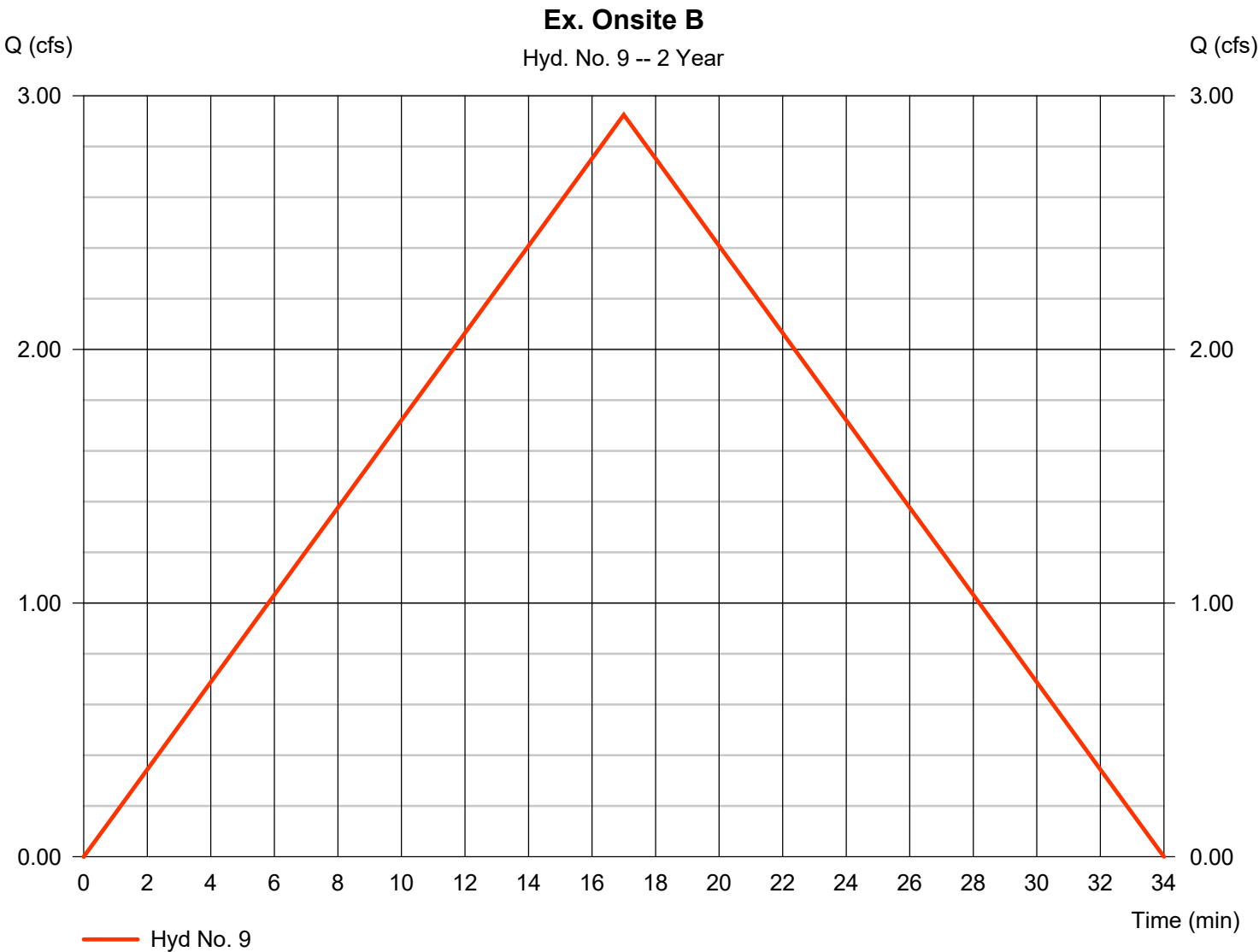
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 9

Ex. Onsite B

| | | | |
|-----------------|---------------|-------------------|--------------|
| Hydrograph type | = Rational | Peak discharge | = 2.925 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 17 min |
| Time interval | = 1 min | Hyd. volume | = 2,983 cuft |
| Drainage area | = 2.060 ac | Runoff coeff. | = 0.42 |
| Intensity | = 3.381 in/hr | Tc by User | = 17.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 10

Ex. Onsite B-1

| | | | |
|-----------------|---------------|-------------------|--------------|
| Hydrograph type | = Rational | Peak discharge | = 3.359 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 12 min |
| Time interval | = 1 min | Hyd. volume | = 2,419 cuft |
| Drainage area | = 2.060 ac | Runoff coeff. | = 0.42 |
| Intensity | = 3.883 in/hr | Tc by User | = 12.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

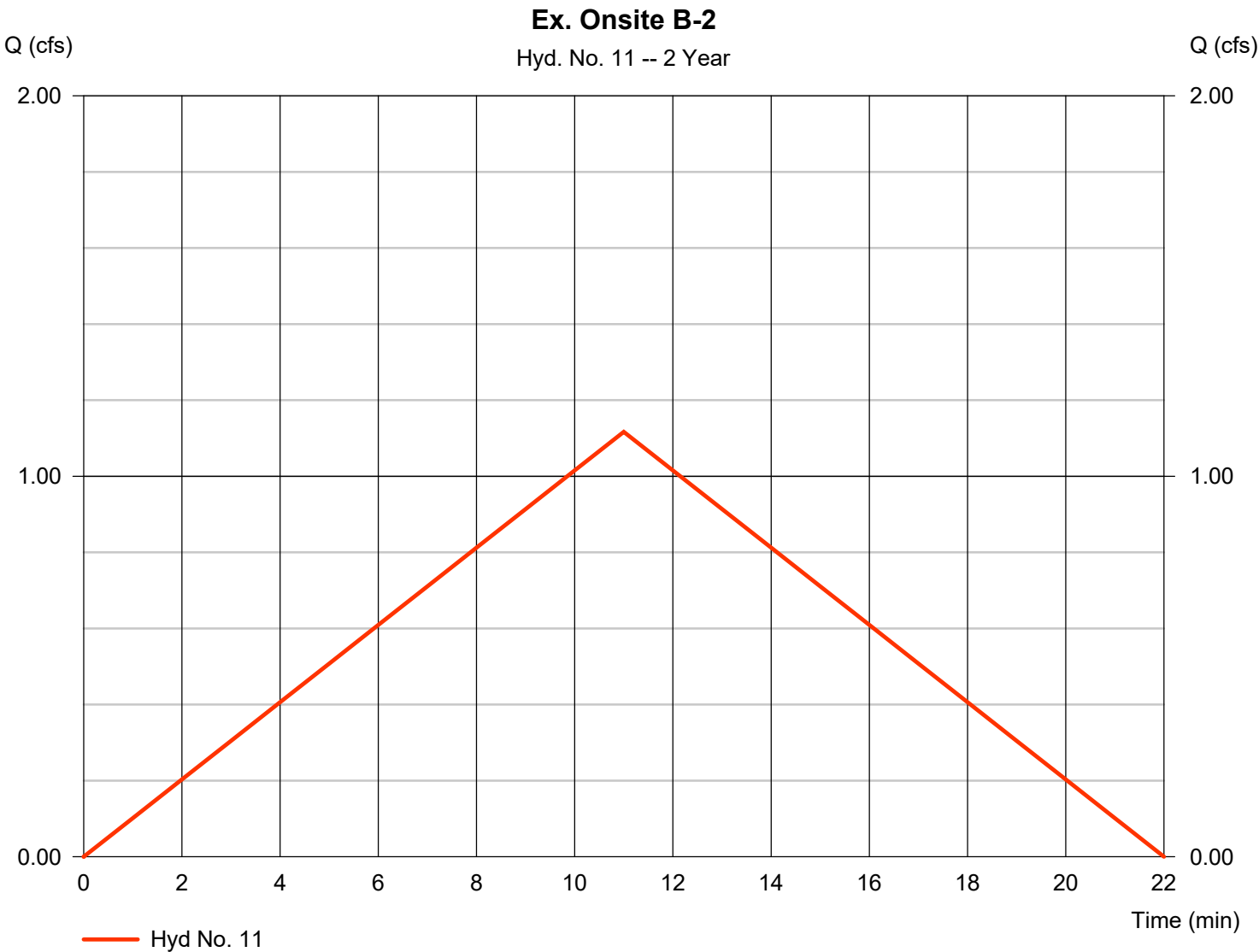
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 11

Ex. Onsite B-2

| | | | |
|-----------------|---------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 1.117 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 11 min |
| Time interval | = 1 min | Hyd. volume | = 737 cuft |
| Drainage area | = 0.930 ac | Runoff coeff. | = 0.3 |
| Intensity | = 4.002 in/hr | Tc by User | = 11.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

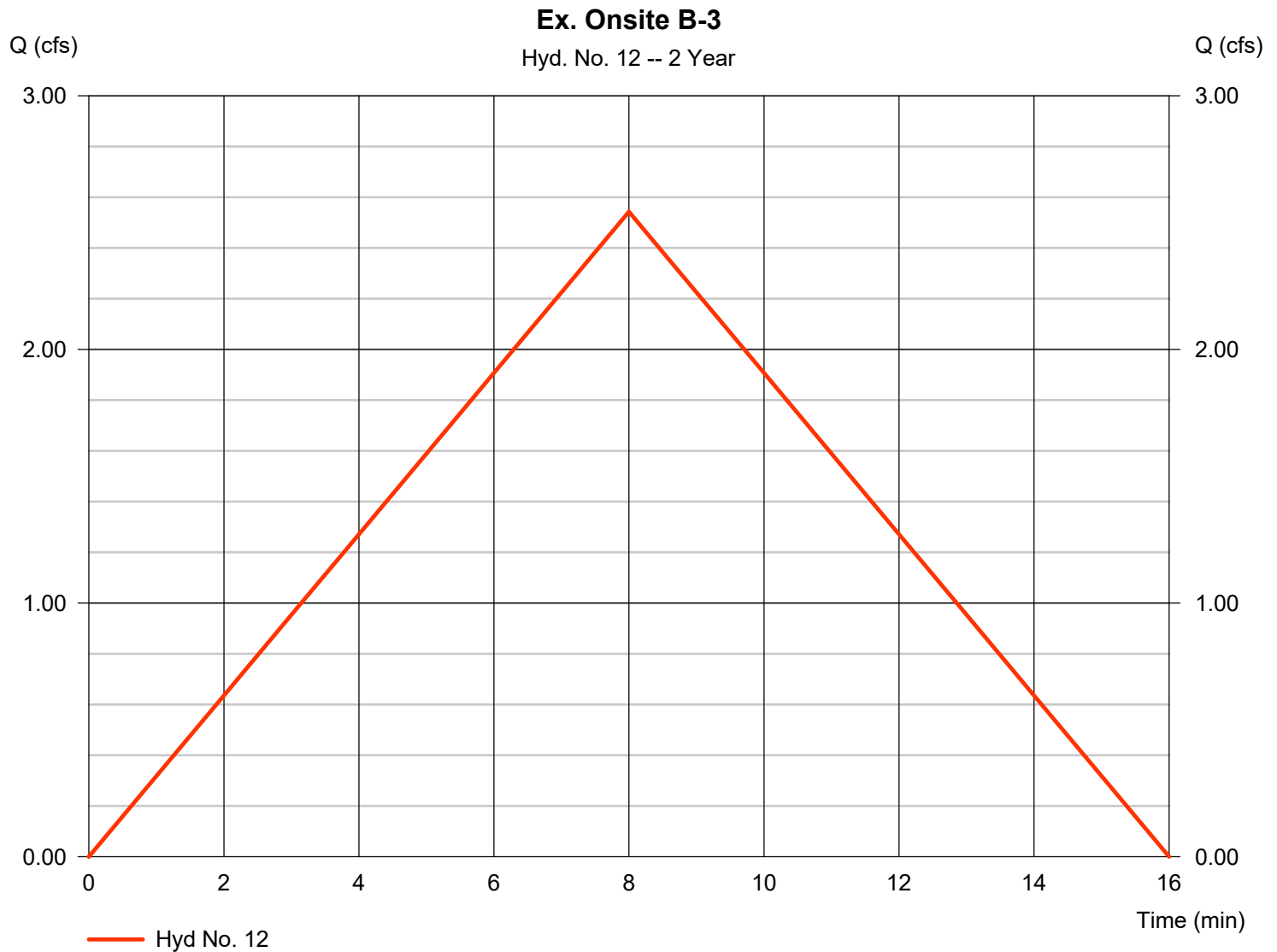
Monday, 10 / 28 / 2019

Hyd. No. 12

Ex. Onsite B-3

Hydrograph type = Rational
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 1.130 ac
 Intensity = 4.412 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 2.543 cfs
 Time to peak = 8 min
 Hyd. volume = 1,221 cuft
 Runoff coeff. = 0.51
 Tc by User = 8.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

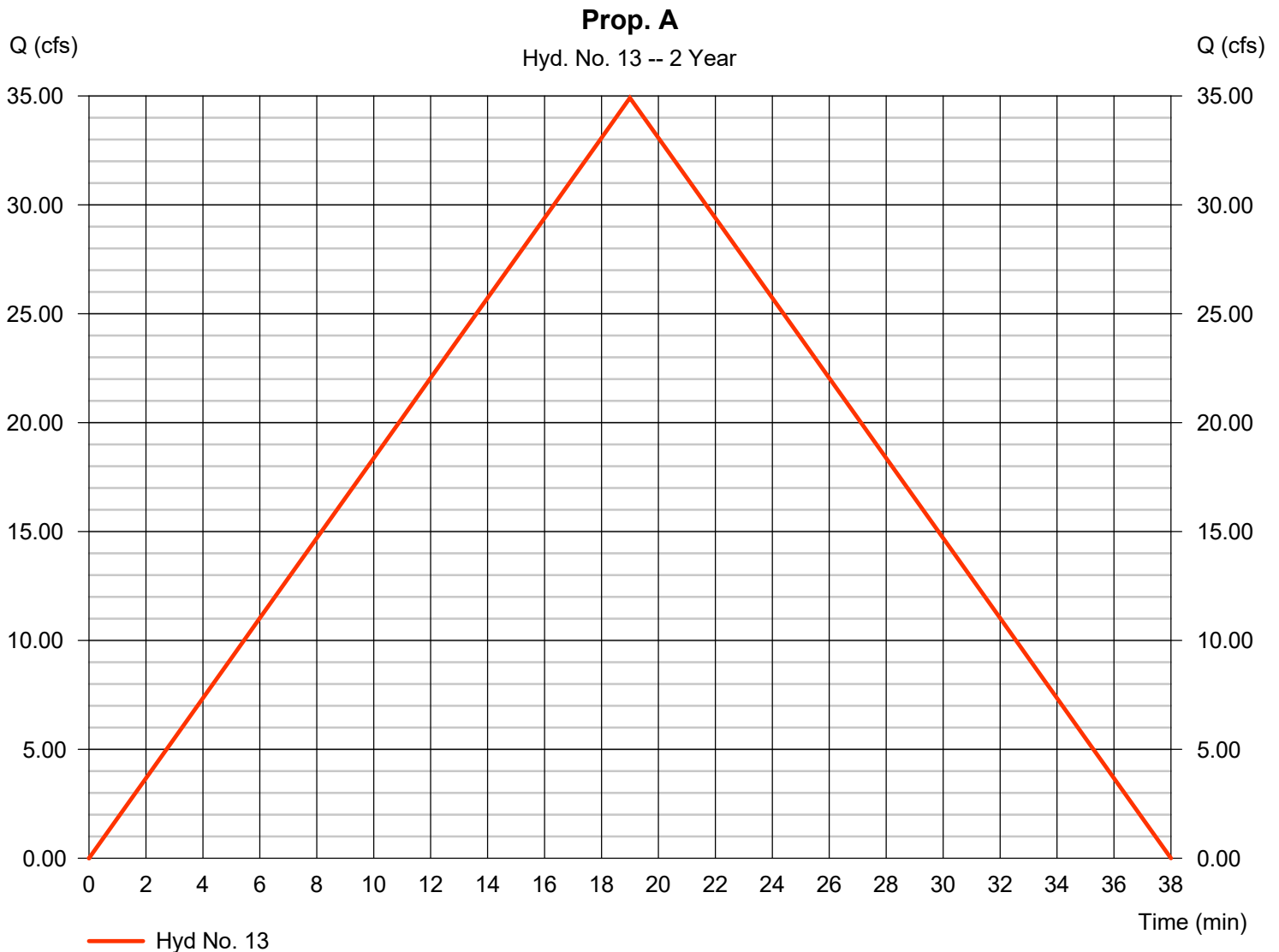
Monday, 10 / 28 / 2019

Hyd. No. 13

Prop. A

Hydrograph type = Rational
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 18.720 ac
 Intensity = 3.215 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 34.91 cfs
 Time to peak = 19 min
 Hyd. volume = 39,799 cuft
 Runoff coeff. = 0.58
 Tc by User = 19.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

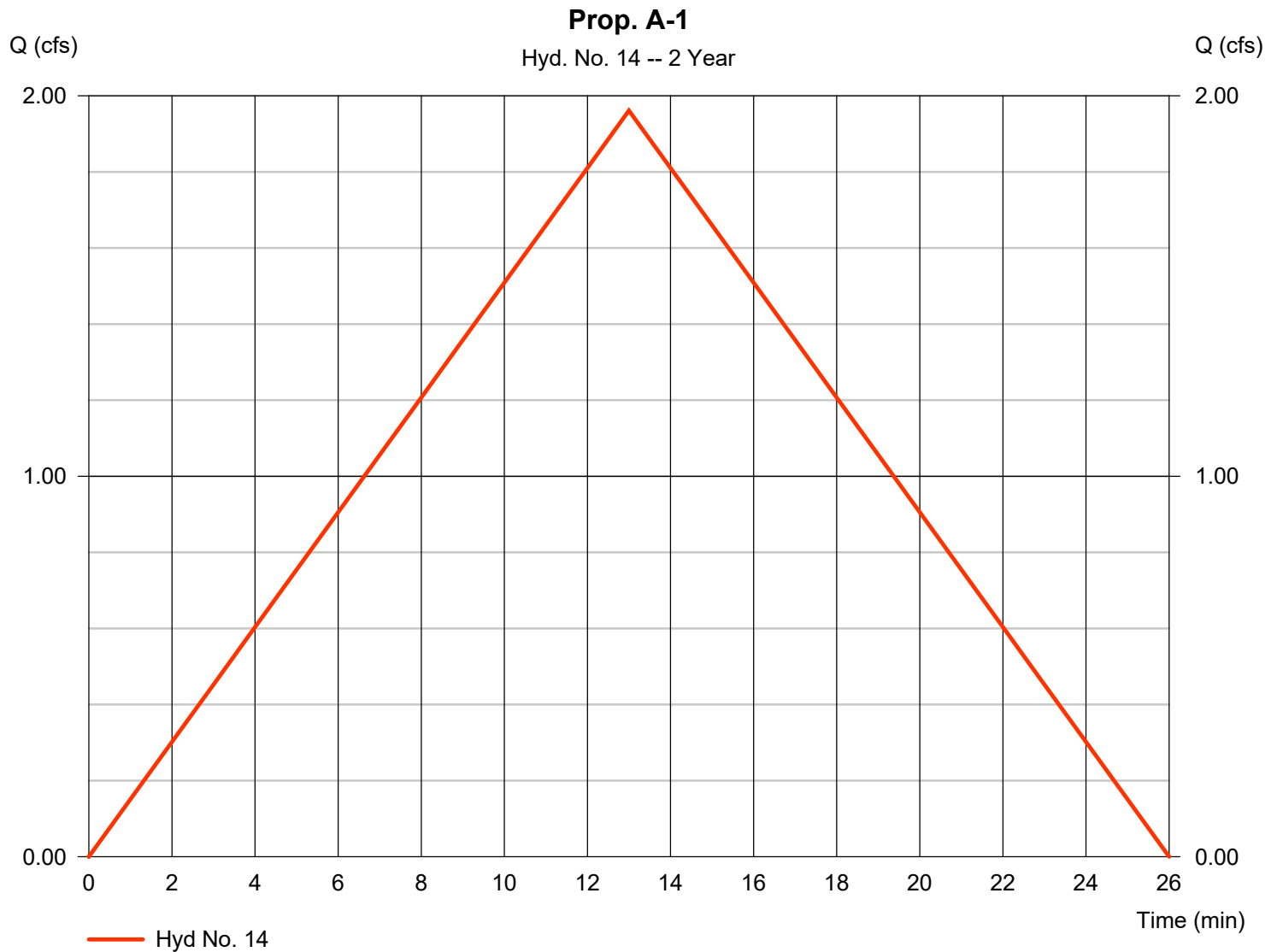
Monday, 10 / 28 / 2019

Hyd. No. 14

Prop. A-1

Hydrograph type = Rational
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 1.020 ac
 Intensity = 3.770 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 1.961 cfs
 Time to peak = 13 min
 Hyd. volume = 1,530 cuft
 Runoff coeff. = 0.51
 Tc by User = 13.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

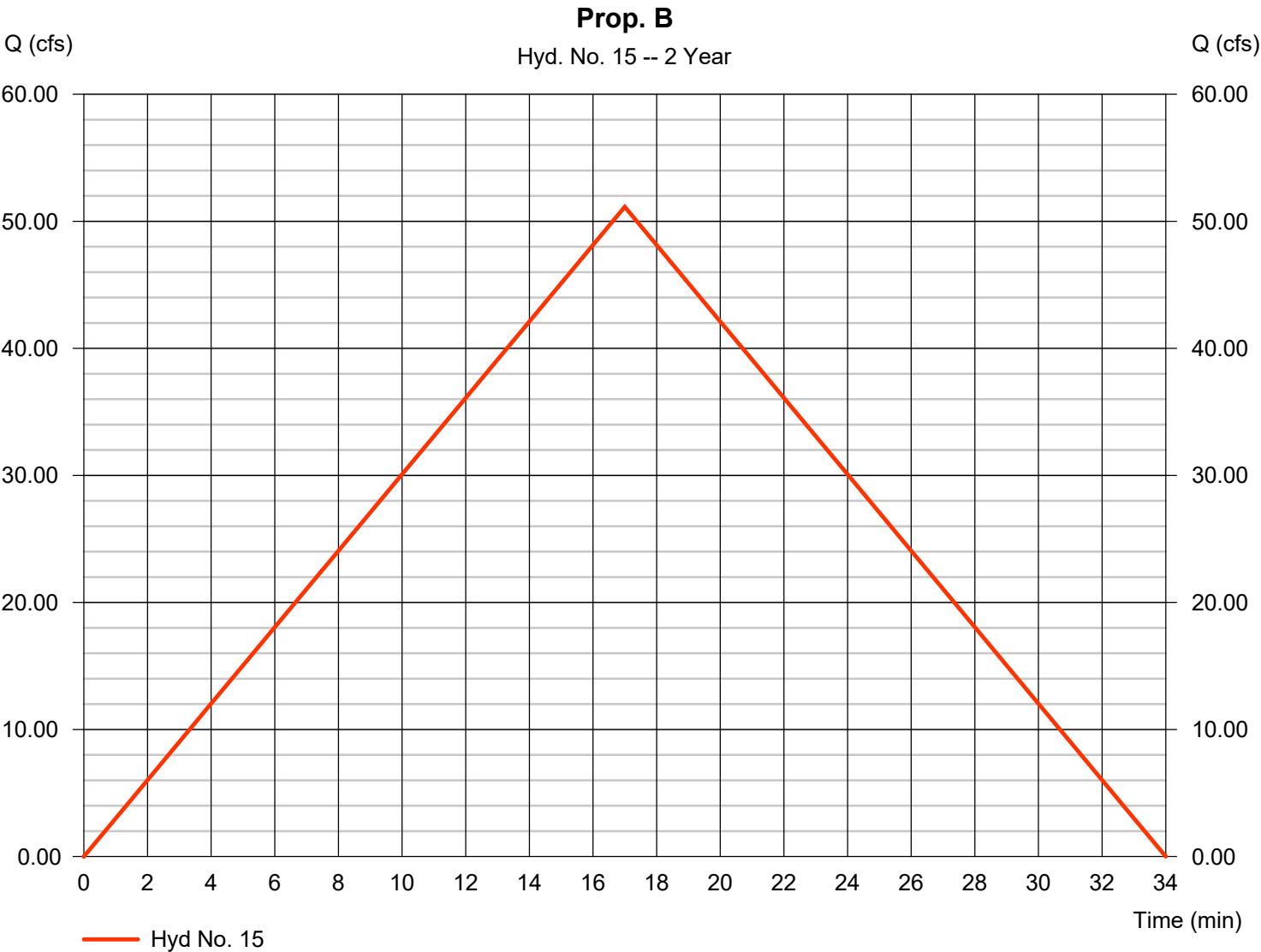
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 15

Prop. B

| | | | |
|-----------------|---------------|-------------------|---------------|
| Hydrograph type | = Rational | Peak discharge | = 51.14 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 17 min |
| Time interval | = 1 min | Hyd. volume | = 52,164 cuft |
| Drainage area | = 26.540 ac | Runoff coeff. | = 0.57 |
| Intensity | = 3.381 in/hr | Tc by User | = 17.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

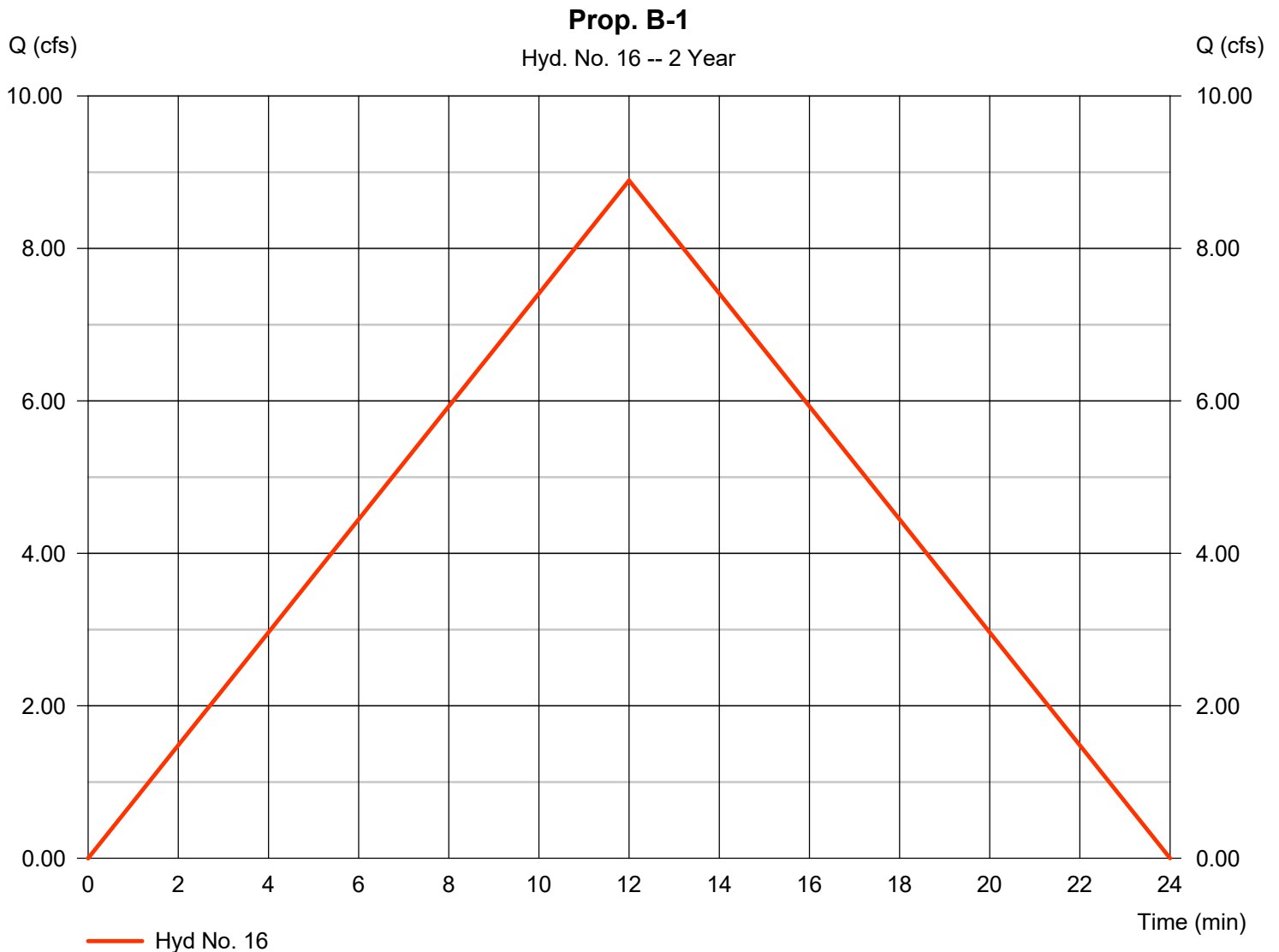
Monday, 10 / 28 / 2019

Hyd. No. 16

Prop. B-1

Hydrograph type = Rational
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 4.490 ac
 Intensity = 3.883 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 8.891 cfs
 Time to peak = 12 min
 Hyd. volume = 6,402 cuft
 Runoff coeff. = 0.51
 Tc by User = 12.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

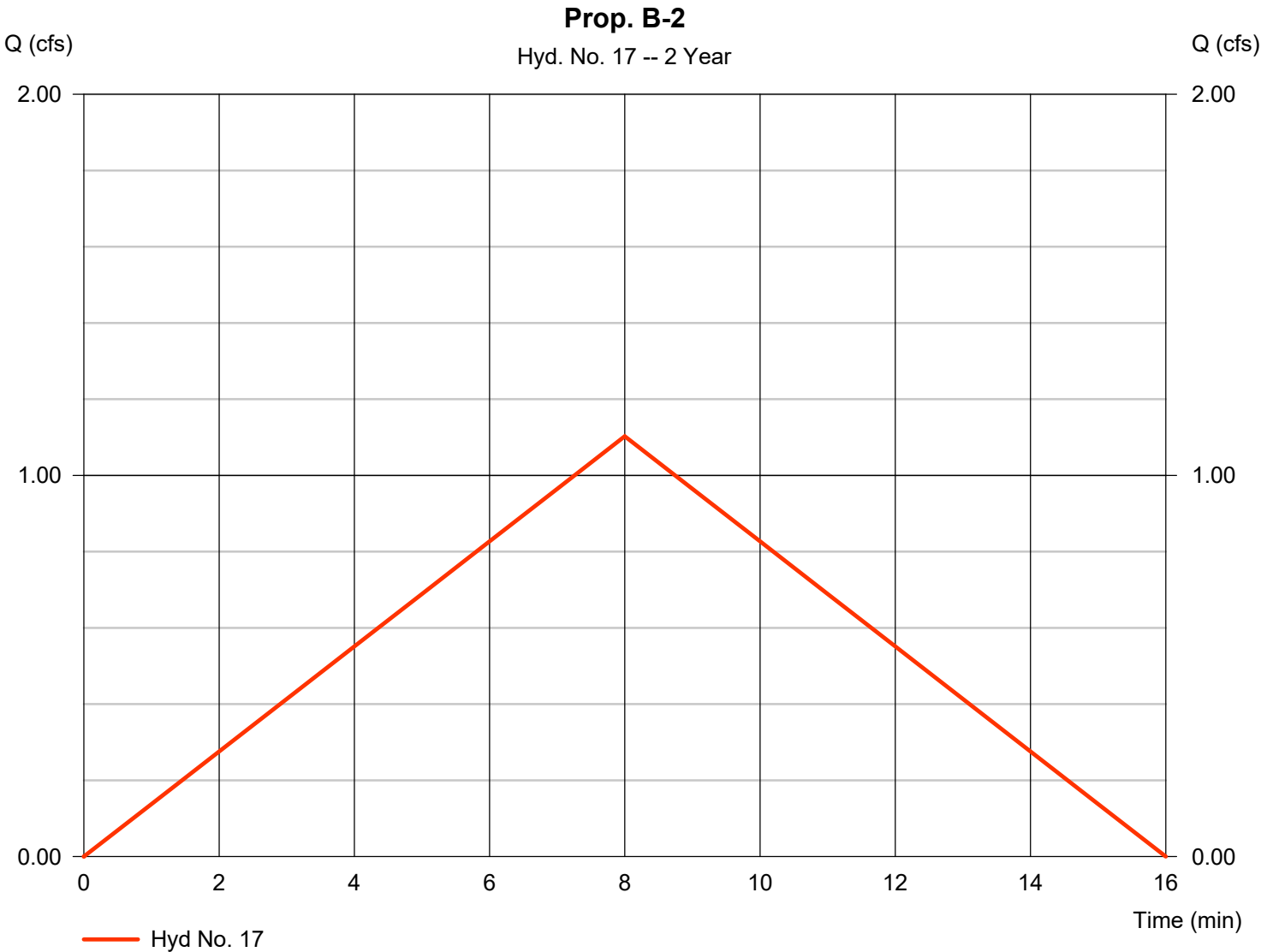
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 17

Prop. B-2

| | | | |
|-----------------|---------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 1.103 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 8 min |
| Time interval | = 1 min | Hyd. volume | = 529 cuft |
| Drainage area | = 0.490 ac | Runoff coeff. | = 0.51 |
| Intensity | = 4.412 in/hr | Tc by User | = 8.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

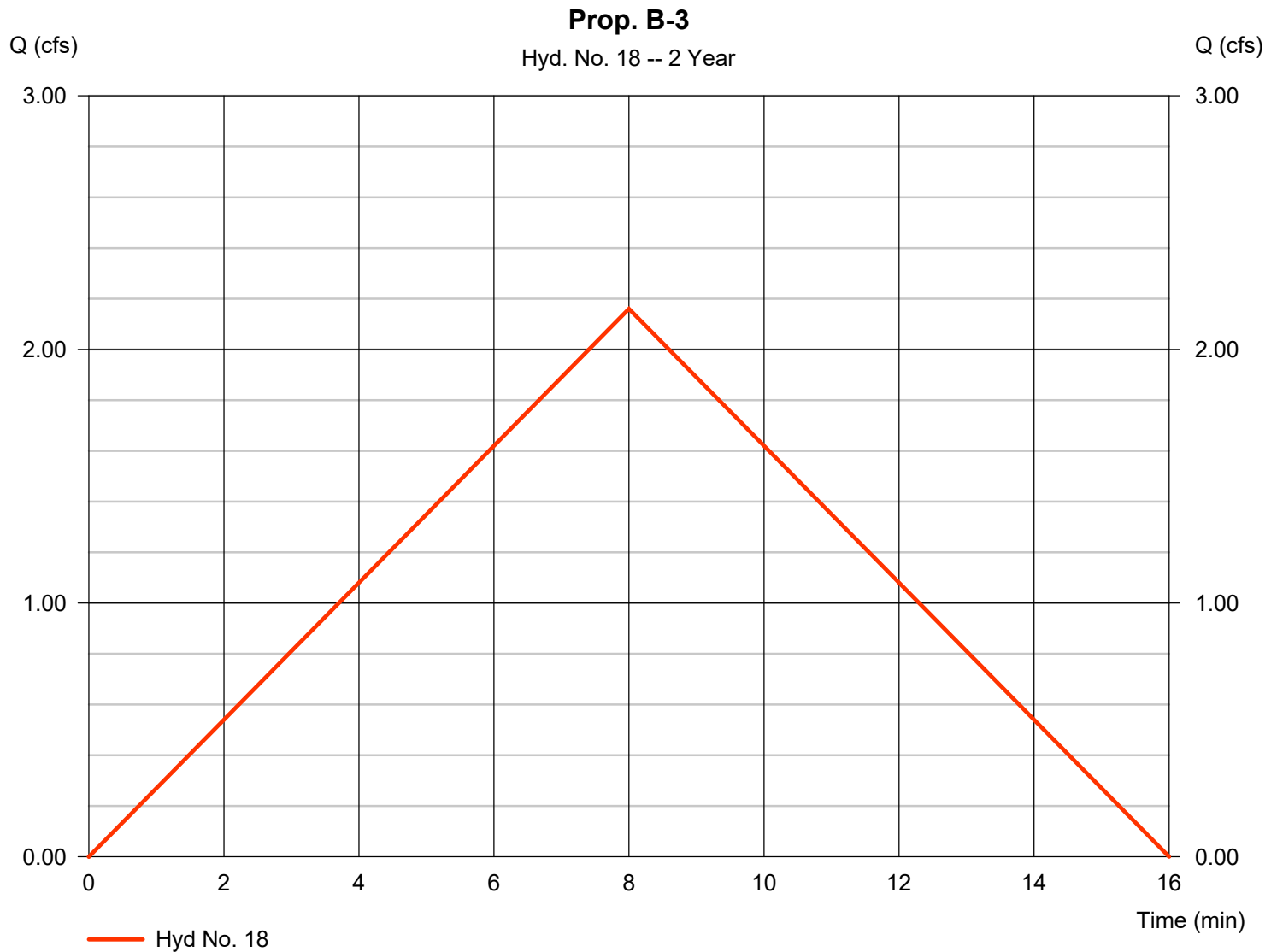
Monday, 10 / 28 / 2019

Hyd. No. 18

Prop. B-3

Hydrograph type = Rational
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 0.960 ac
 Intensity = 4.412 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 2.160 cfs
 Time to peak = 8 min
 Hyd. volume = 1,037 cuft
 Runoff coeff. = 0.51
 Tc by User = 8.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 19

Lot 1

| | | | |
|-----------------|---------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 0.244 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 5 min |
| Time interval | = 1 min | Hyd. volume | = 73 cuft |
| Drainage area | = 0.055 ac | Runoff coeff. | = 0.9 |
| Intensity | = 4.920 in/hr | Tc by User | = 5.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

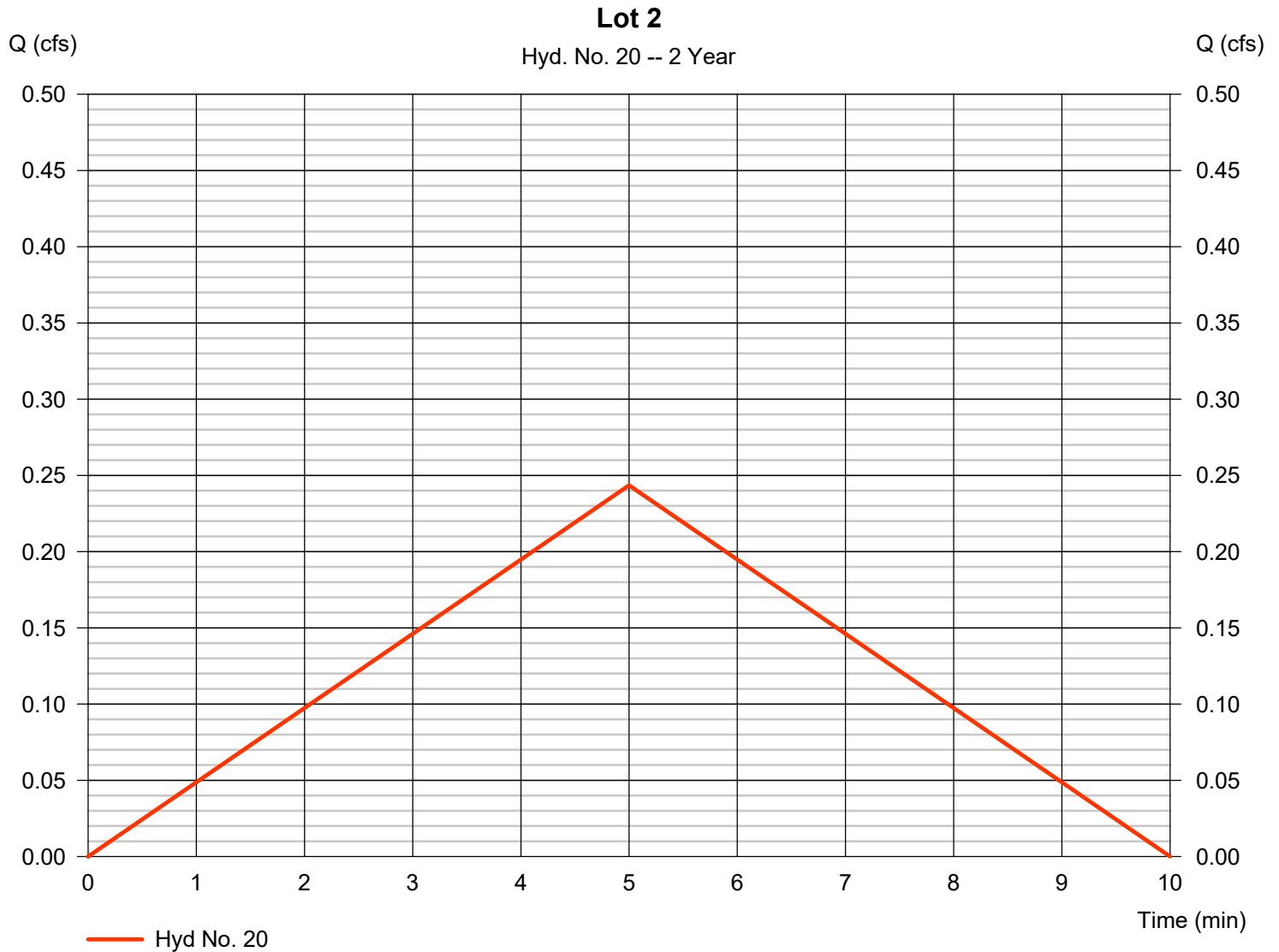
Monday, 10 / 28 / 2019

Hyd. No. 20

Lot 2

Hydrograph type = Rational
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 0.055 ac
 Intensity = 4.920 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 0.244 cfs
 Time to peak = 5 min
 Hyd. volume = 73 cuft
 Runoff coeff. = 0.9
 Tc by User = 5.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

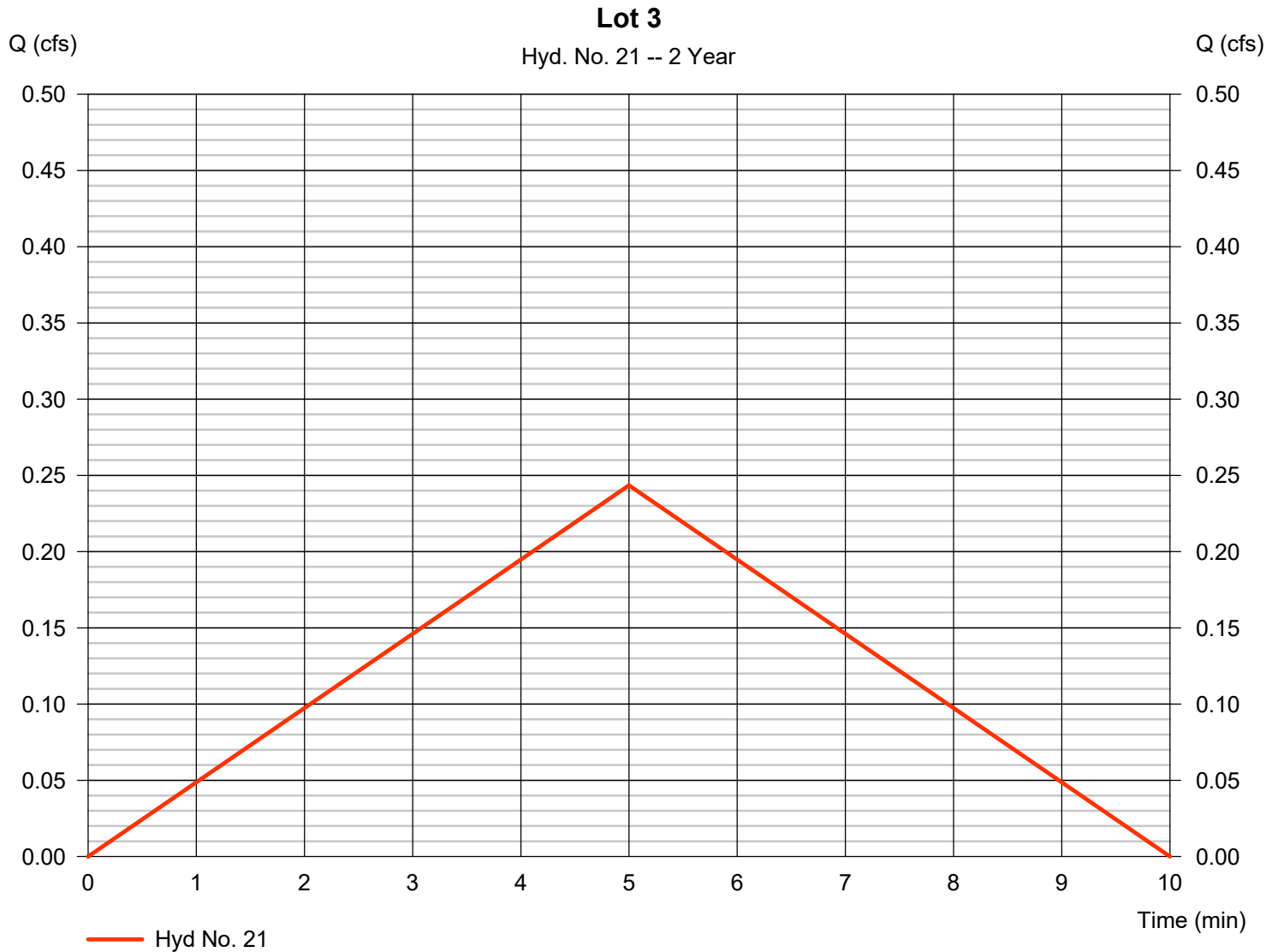
Monday, 10 / 28 / 2019

Hyd. No. 21

Lot 3

Hydrograph type = Rational
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 0.055 ac
 Intensity = 4.920 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 0.244 cfs
 Time to peak = 5 min
 Hyd. volume = 73 cuft
 Runoff coeff. = 0.9
 Tc by User = 5.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

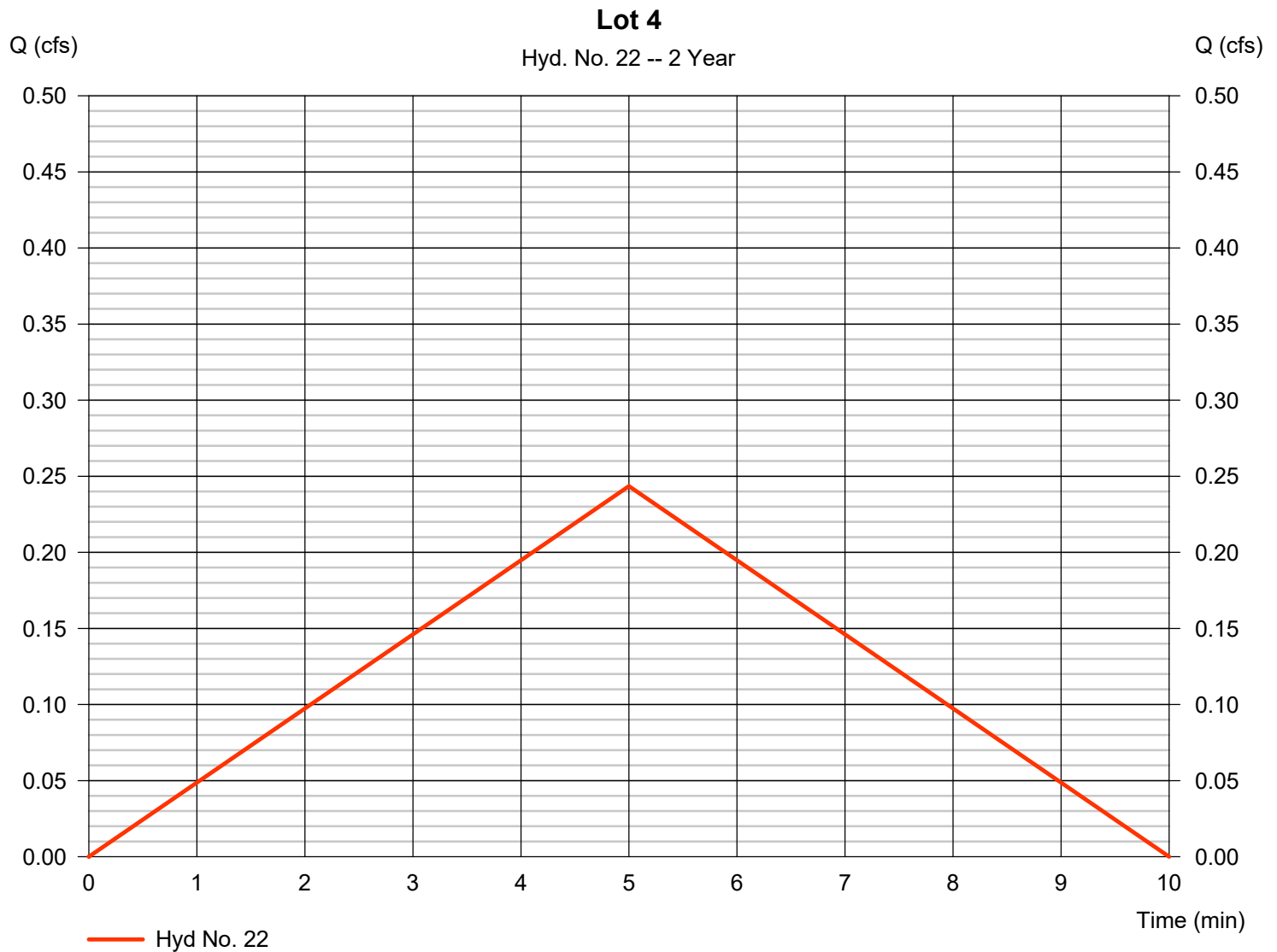
Monday, 10 / 28 / 2019

Hyd. No. 22

Lot 4

Hydrograph type = Rational
 Storm frequency = 2 yrs
 Time interval = 1 min
 Drainage area = 0.055 ac
 Intensity = 4.920 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 0.244 cfs
 Time to peak = 5 min
 Hyd. volume = 73 cuft
 Runoff coeff. = 0.9
 Tc by User = 5.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

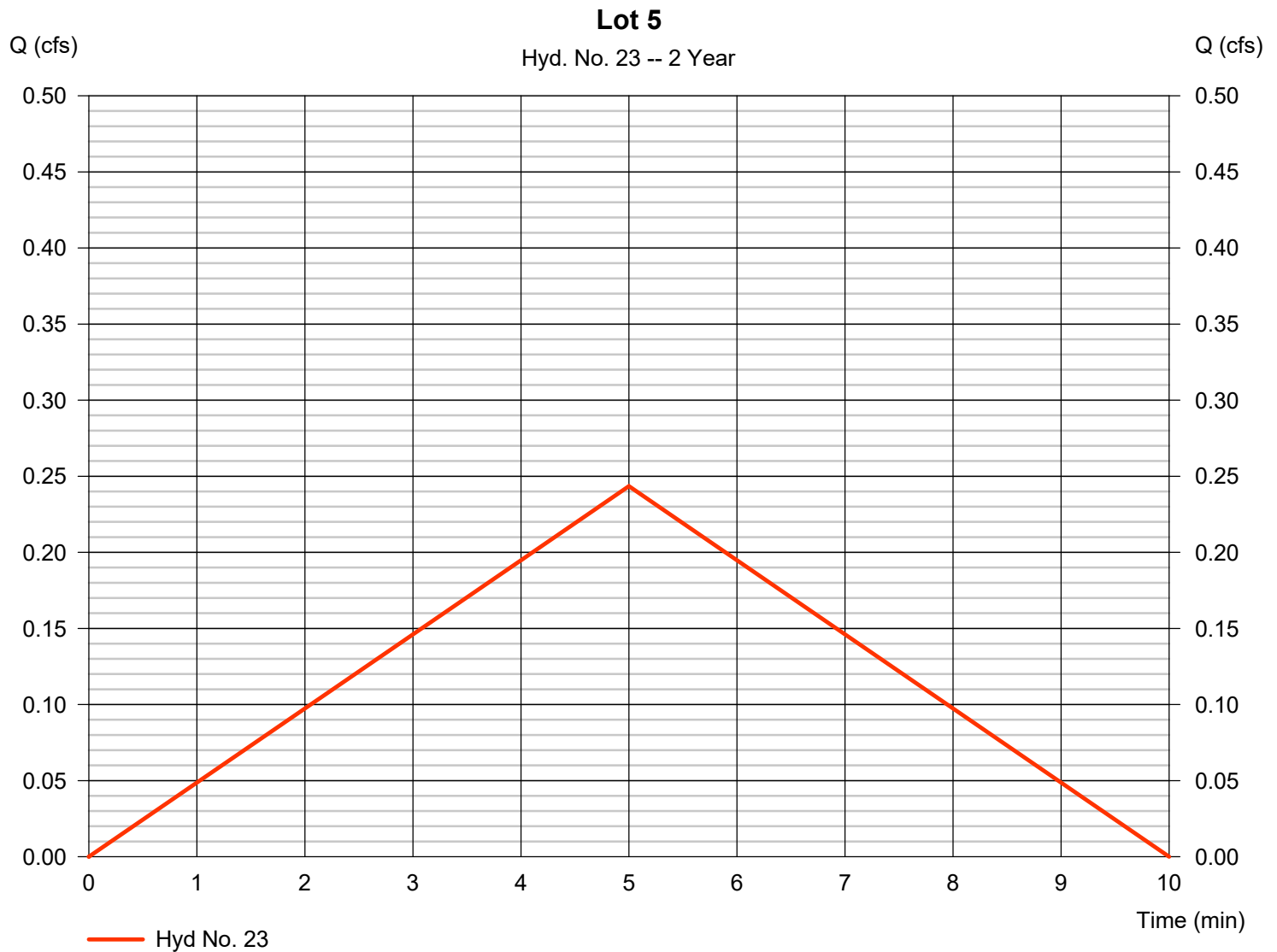
Monday, 10 / 28 / 2019

Hyd. No. 23

Lot 5

Hydrograph type = Rational
Storm frequency = 2 yrs
Time interval = 1 min
Drainage area = 0.055 ac
Intensity = 4.920 in/hr
IDF Curve = KCMO.IDF

Peak discharge = 0.244 cfs
Time to peak = 5 min
Hyd. volume = 73 cuft
Runoff coeff. = 0.9
Tc by User = 5.00 min
Asc/Rec limb fact = 1/1



Hydrograph Report

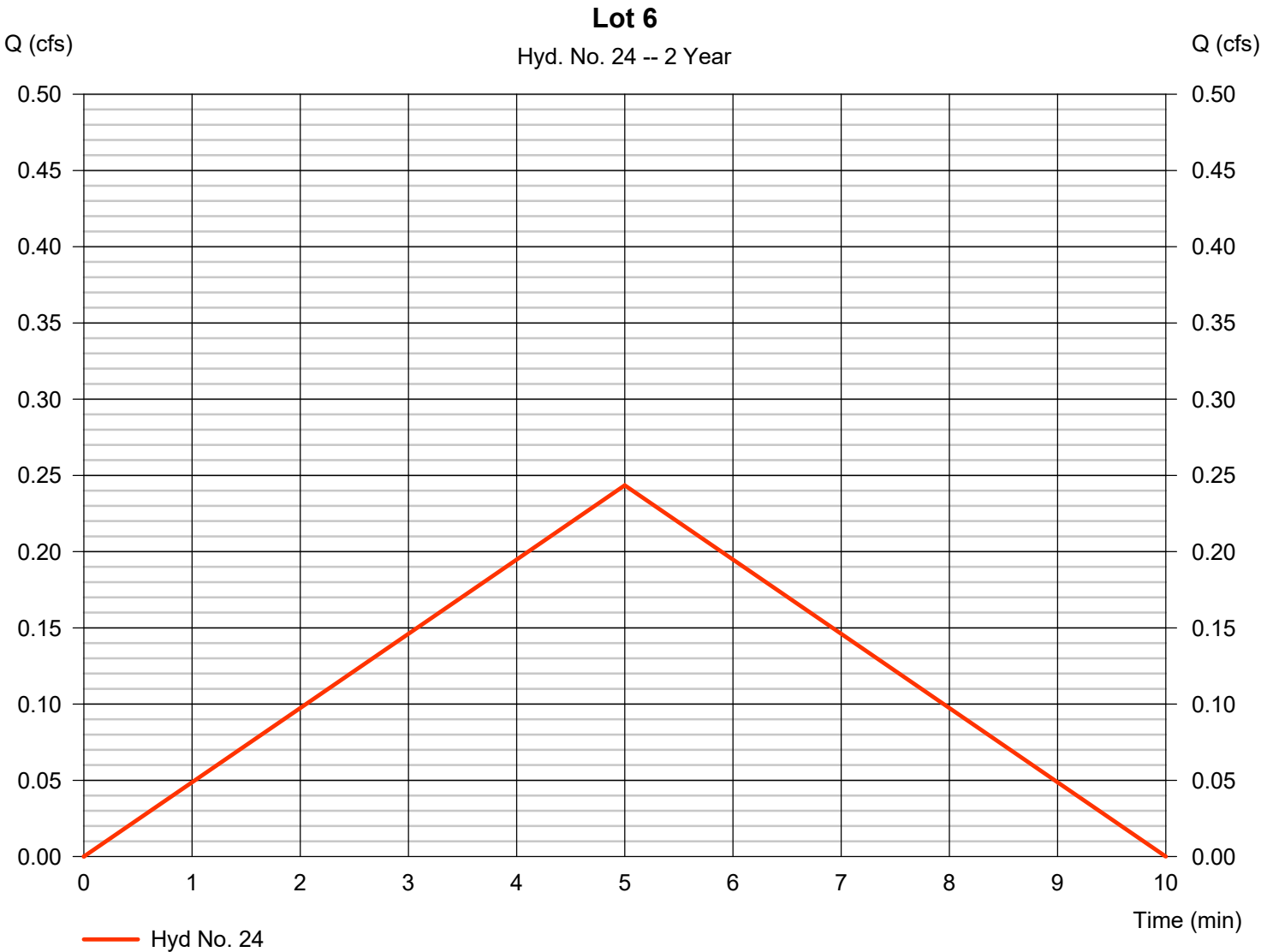
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 24

Lot 6

| | | | |
|-----------------|---------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 0.244 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 5 min |
| Time interval | = 1 min | Hyd. volume | = 73 cuft |
| Drainage area | = 0.055 ac | Runoff coeff. | = 0.9 |
| Intensity | = 4.920 in/hr | Tc by User | = 5.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

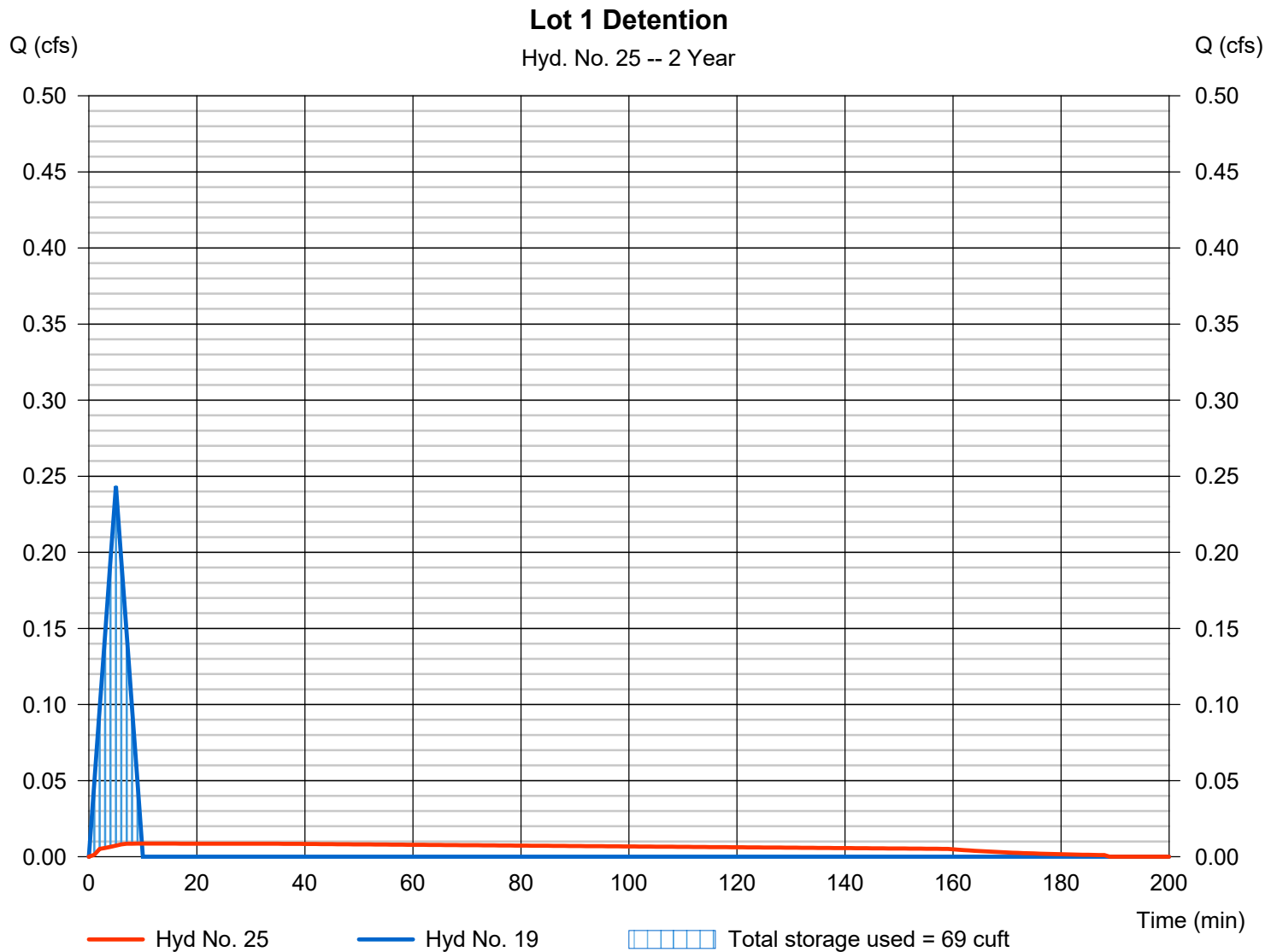
Monday, 10 / 28 / 2019

Hyd. No. 25

Lot 1 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 72 cuft |
| Inflow hyd. No. | = 19 - Lot 1 | Max. Elevation | = 1038.03 ft |
| Reservoir name | = Lot 1 Detention Pit | Max. Storage | = 69 cuft |

Storage Indication method used.



Pond No. 2 - Lot 1 Detention Pit

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1037.00 ft. Voids = 25.00%

Stage / Storage Table

| Stage (ft) | Elevation (ft) | Contour area (sqft) | Incr. Storage (cuft) | Total storage (cuft) |
|------------|----------------|---------------------|----------------------|----------------------|
| 0.00 | 1037.00 | 225 | 0 | 0 |
| 1.00 | 1038.00 | 225 | 56 | 56 |
| 1.42 | 1038.42 | 3,675 | 168 | 225 |

Culvert / Orifice Structures

| | [A] | [B] | [C] | [PrfRsr] |
|-----------------|-----------|------|------|----------|
| Rise (in) | = 1.00 | 0.00 | 0.00 | 0.00 |
| Span (in) | = 1.00 | 0.00 | 0.00 | 0.00 |
| No. Barrels | = 1 | 0 | 0 | 0 |
| Invert El. (ft) | = 1037.00 | 0.00 | 0.00 | 0.00 |
| Length (ft) | = 50.00 | 0.00 | 0.00 | 0.00 |
| Slope (%) | = 1.00 | 0.00 | 0.00 | n/a |
| N-Value | = .012 | .013 | .013 | n/a |
| Orifice Coeff. | = 0.60 | 0.60 | 0.60 | 0.60 |
| Multi-Stage | = n/a | No | No | No |

Weir Structures

| | [A] | [B] | [C] | [D] |
|----------------|-----------------------|------|------|------|
| Crest Len (ft) | = 20.00 | 0.00 | 0.00 | 0.00 |
| Crest El. (ft) | = 1038.42 | 0.00 | 0.00 | 0.00 |
| Weir Coeff. | = 3.33 | 3.33 | 3.33 | 3.33 |
| Weir Type | = Broad | --- | --- | --- |
| Multi-Stage | = No | No | No | No |
| Exfil.(in/hr) | = 0.000 (by Wet area) | | | |
| TW Elev. (ft) | = 0.00 | | | |

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

| Stage ft | Storage cuft | Elevation ft | Civ A cfs | Civ B cfs | Civ C cfs | PrfRsr cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Exfil cfs | User cfs | Total cfs |
|----------|--------------|--------------|-----------|-----------|-----------|------------|----------|----------|----------|----------|-----------|----------|-----------|
| 0.00 | 0 | 1037.00 | 0.00 | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.000 |
| 1.00 | 56 | 1038.00 | 0.01 oc | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.009 |
| 1.42 | 225 | 1038.42 | 0.01 oc | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.010 |

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

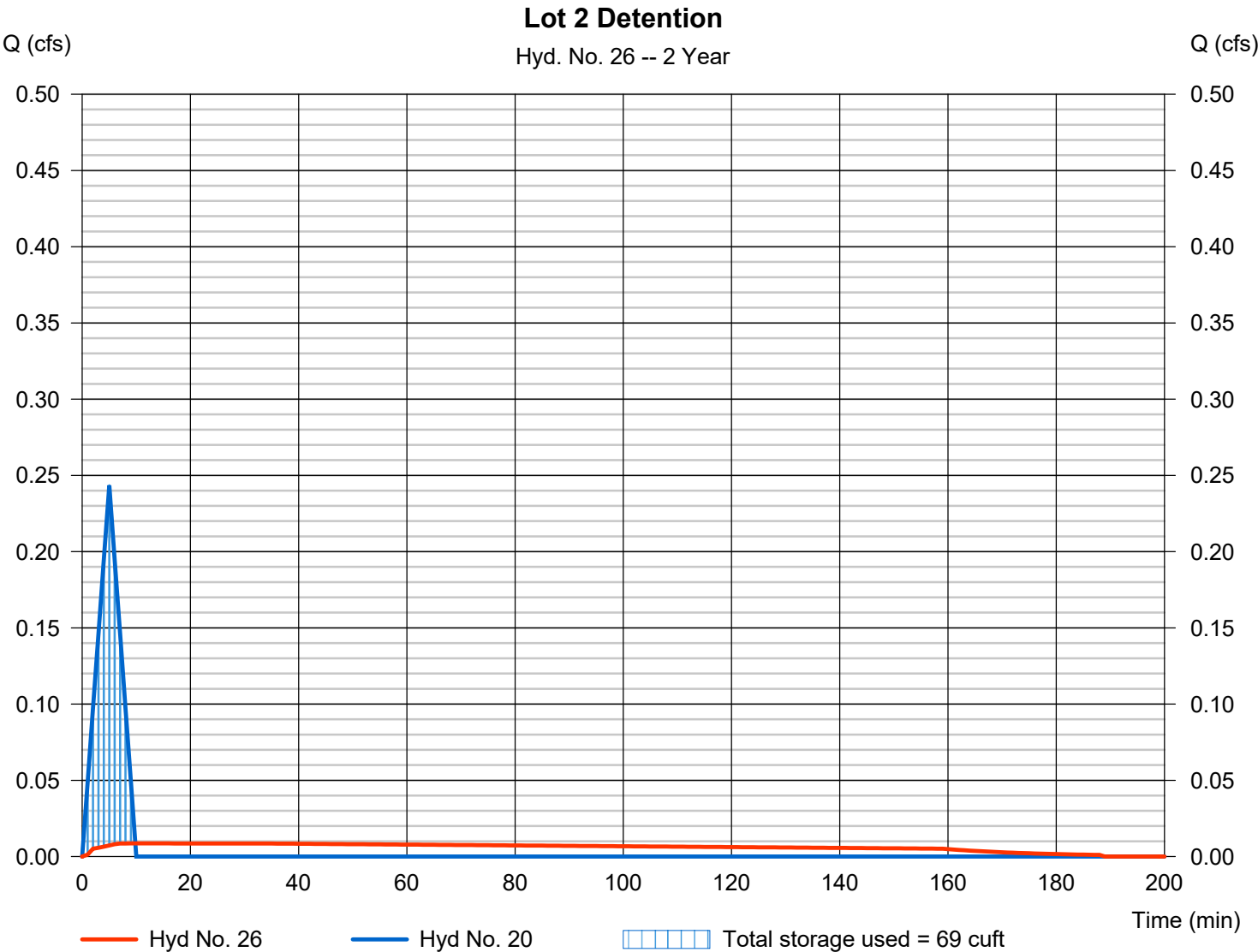
Monday, 10 / 28 / 2019

Hyd. No. 26

Lot 2 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 72 cuft |
| Inflow hyd. No. | = 20 - Lot 2 | Max. Elevation | = 1040.03 ft |
| Reservoir name | = Lot 2 Detention Pit | Max. Storage | = 69 cuft |

Storage Indication method used.



Pond No. 3 - Lot 2 Detention Pit

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1039.00 ft. Voids = 25.00%

Stage / Storage Table

| Stage (ft) | Elevation (ft) | Contour area (sqft) | Incr. Storage (cuft) | Total storage (cuft) |
|------------|----------------|---------------------|----------------------|----------------------|
| 0.00 | 1039.00 | 225 | 0 | 0 |
| 1.00 | 1040.00 | 225 | 56 | 56 |
| 1.42 | 1040.42 | 3,675 | 168 | 225 |

Culvert / Orifice Structures

| | [A] | [B] | [C] | [PrfRsr] |
|-----------------|-----------|------|------|----------|
| Rise (in) | = 1.00 | 0.00 | 0.00 | 0.00 |
| Span (in) | = 1.00 | 0.00 | 0.00 | 0.00 |
| No. Barrels | = 1 | 0 | 0 | 0 |
| Invert El. (ft) | = 1039.00 | 0.00 | 0.00 | 0.00 |
| Length (ft) | = 50.00 | 0.00 | 0.00 | 0.00 |
| Slope (%) | = 1.00 | 0.00 | 0.00 | n/a |
| N-Value | = .012 | .013 | .013 | n/a |
| Orifice Coeff. | = 0.60 | 0.60 | 0.60 | 0.60 |
| Multi-Stage | = n/a | No | No | No |

Weir Structures

| | [A] | [B] | [C] | [D] |
|----------------|-----------------------|------|------|------|
| Crest Len (ft) | = 20.00 | 0.00 | 0.00 | 0.00 |
| Crest El. (ft) | = 1040.42 | 0.00 | 0.00 | 0.00 |
| Weir Coeff. | = 3.33 | 3.33 | 3.33 | 3.33 |
| Weir Type | = --- | --- | --- | --- |
| Multi-Stage | = No | No | No | No |
| Exfil.(in/hr) | = 0.000 (by Wet area) | | | |
| TW Elev. (ft) | = 0.00 | | | |

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

| Stage ft | Storage cuft | Elevation ft | Civ A cfs | Civ B cfs | Civ C cfs | PrfRsr cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Exfil cfs | User cfs | Total cfs |
|----------|--------------|--------------|-----------|-----------|-----------|------------|----------|----------|----------|----------|-----------|----------|-----------|
| 0.00 | 0 | 1039.00 | 0.00 | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.000 |
| 1.00 | 56 | 1040.00 | 0.01 oc | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.009 |
| 1.42 | 225 | 1040.42 | 0.01 oc | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.010 |

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

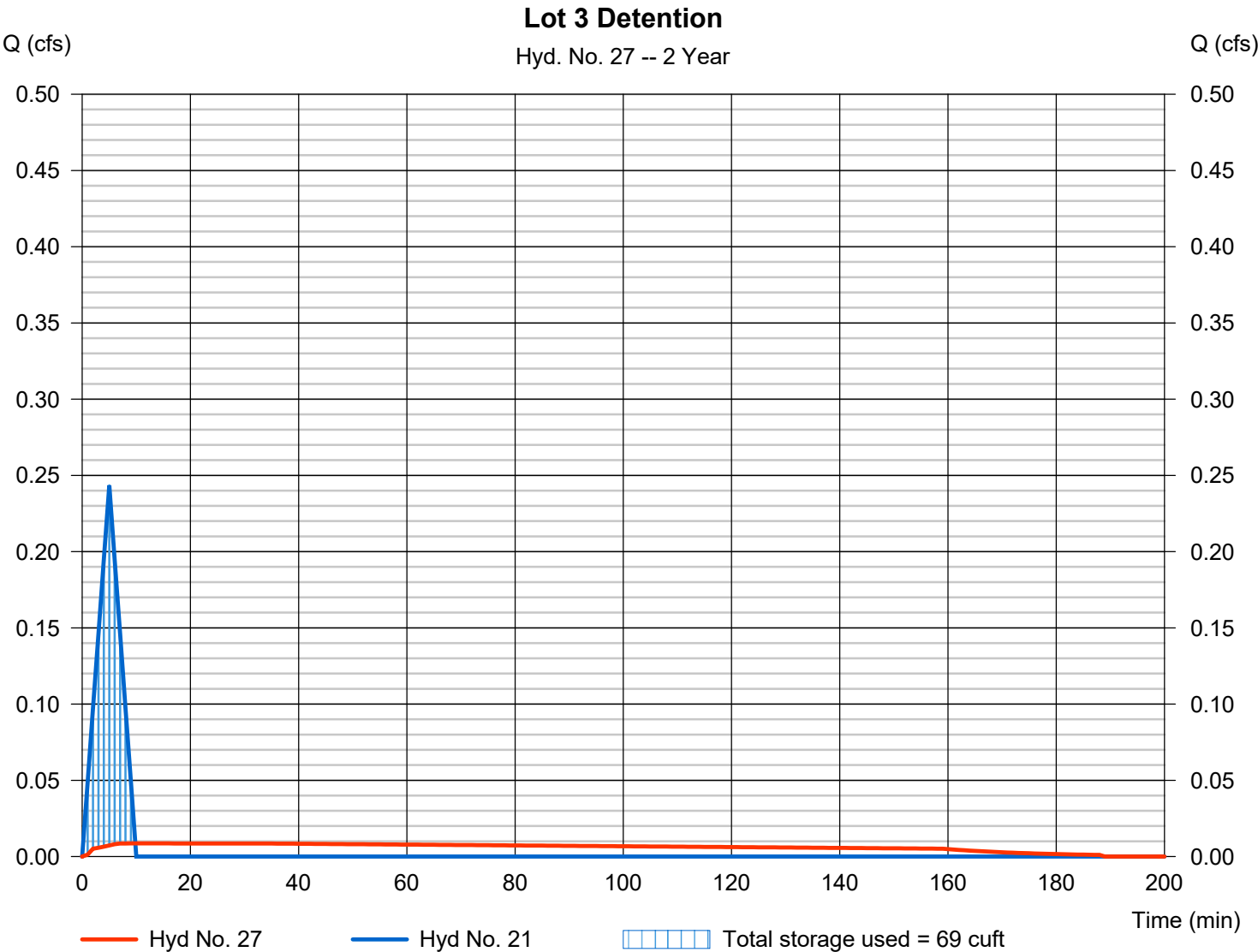
Monday, 10 / 28 / 2019

Hyd. No. 27

Lot 3 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 72 cuft |
| Inflow hyd. No. | = 21 - Lot 3 | Max. Elevation | = 1037.03 ft |
| Reservoir name | = Lot 3 Detention Pit | Max. Storage | = 69 cuft |

Storage Indication method used.



Pond No. 4 - Lot 3 Detention Pit

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1036.00 ft. Voids = 25.00%

Stage / Storage Table

| Stage (ft) | Elevation (ft) | Contour area (sqft) | Incr. Storage (cuft) | Total storage (cuft) |
|------------|----------------|---------------------|----------------------|----------------------|
| 0.00 | 1036.00 | 225 | 0 | 0 |
| 1.00 | 1037.00 | 225 | 56 | 56 |
| 1.42 | 1037.42 | 3,675 | 168 | 225 |

Culvert / Orifice Structures

| | [A] | [B] | [C] | [PrfRsr] |
|-----------------|-----------|------|------|----------|
| Rise (in) | = 1.00 | 0.00 | 0.00 | 0.00 |
| Span (in) | = 1.00 | 0.00 | 0.00 | 0.00 |
| No. Barrels | = 1 | 0 | 0 | 0 |
| Invert El. (ft) | = 1036.00 | 0.00 | 0.00 | 0.00 |
| Length (ft) | = 50.00 | 0.00 | 0.00 | 0.00 |
| Slope (%) | = 1.00 | 0.00 | 0.00 | n/a |
| N-Value | = .012 | .013 | .013 | n/a |
| Orifice Coeff. | = 0.60 | 0.60 | 0.60 | 0.60 |
| Multi-Stage | = n/a | No | No | No |

Weir Structures

| | [A] | [B] | [C] | [D] |
|----------------|-----------------------|------|------|------|
| Crest Len (ft) | = 20.00 | 0.00 | 0.00 | 0.00 |
| Crest El. (ft) | = 1037.42 | 0.00 | 0.00 | 0.00 |
| Weir Coeff. | = 2.60 | 3.33 | 3.33 | 3.33 |
| Weir Type | = Broad | --- | --- | --- |
| Multi-Stage | = No | No | No | No |
| Exfil.(in/hr) | = 0.000 (by Wet area) | | | |
| TW Elev. (ft) | = 0.00 | | | |

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

| Stage ft | Storage cuft | Elevation ft | Civ A cfs | Civ B cfs | Civ C cfs | PrfRsr cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Exfil cfs | User cfs | Total cfs |
|----------|--------------|--------------|-----------|-----------|-----------|------------|----------|----------|----------|----------|-----------|----------|-----------|
| 0.00 | 0 | 1036.00 | 0.00 | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.000 |
| 1.00 | 56 | 1037.00 | 0.01 oc | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.009 |
| 1.42 | 225 | 1037.42 | 0.01 oc | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.010 |

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

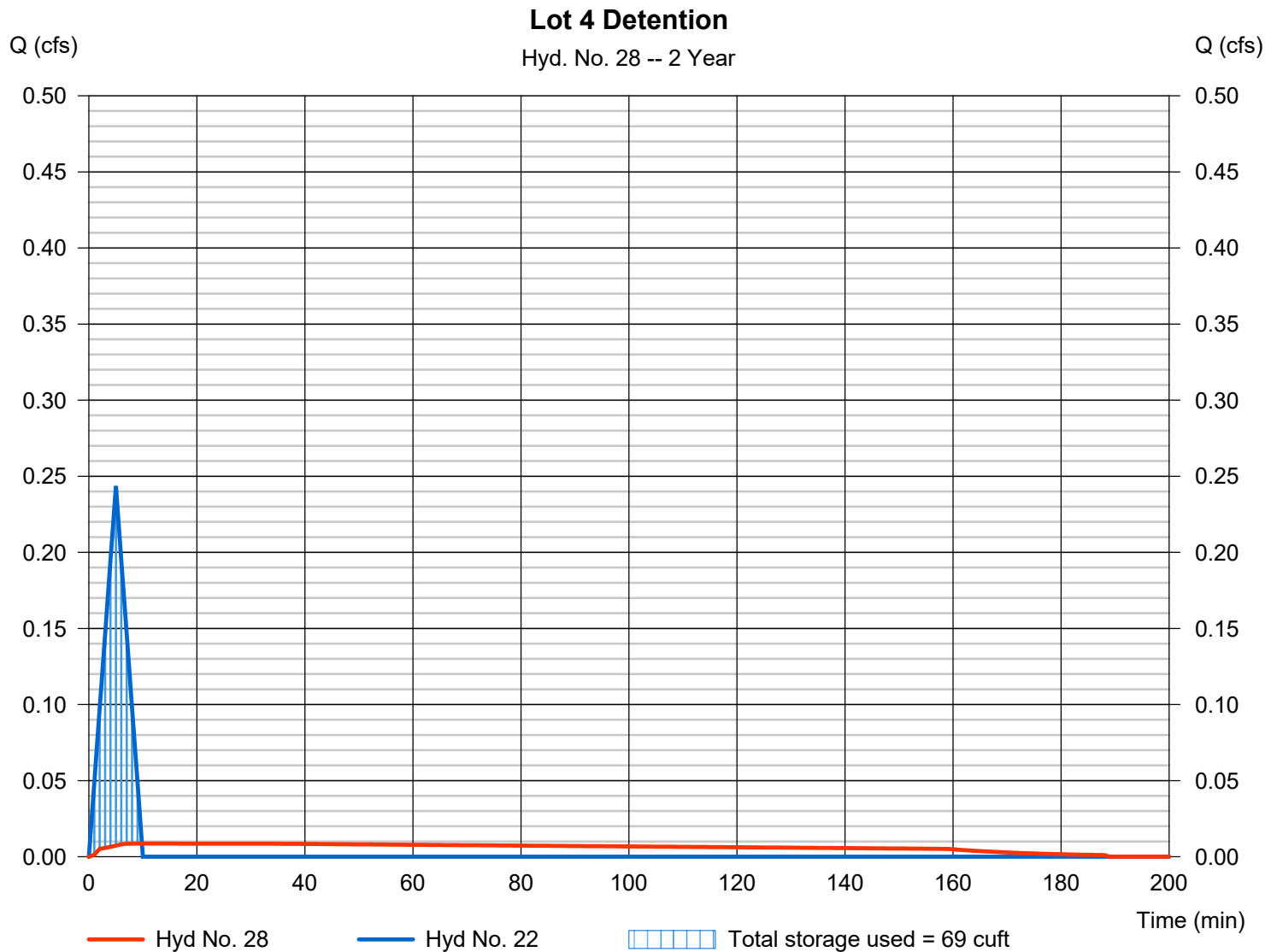
Monday, 10 / 28 / 2019

Hyd. No. 28

Lot 4 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 72 cuft |
| Inflow hyd. No. | = 22 - Lot 4 | Max. Elevation | = 1039.03 ft |
| Reservoir name | = Lot 4 Detention Pit | Max. Storage | = 69 cuft |

Storage Indication method used.



Pond No. 5 - Lot 4 Detention Pit

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1038.00 ft. Voids = 25.00%

Stage / Storage Table

| Stage (ft) | Elevation (ft) | Contour area (sqft) | Incr. Storage (cuft) | Total storage (cuft) |
|------------|----------------|---------------------|----------------------|----------------------|
| 0.00 | 1038.00 | 225 | 0 | 0 |
| 1.00 | 1039.00 | 225 | 56 | 56 |
| 1.42 | 1039.42 | 3,675 | 168 | 225 |

Culvert / Orifice Structures

| | [A] | [B] | [C] | [PrfRsr] |
|-----------------|-----------|------|------|----------|
| Rise (in) | = 1.00 | 0.00 | 0.00 | 0.00 |
| Span (in) | = 1.00 | 0.00 | 0.00 | 0.00 |
| No. Barrels | = 1 | 0 | 0 | 0 |
| Invert El. (ft) | = 1038.00 | 0.00 | 0.00 | 0.00 |
| Length (ft) | = 50.00 | 0.00 | 0.00 | 0.00 |
| Slope (%) | = 1.00 | 0.00 | 0.00 | n/a |
| N-Value | = .012 | .013 | .013 | n/a |
| Orifice Coeff. | = 0.60 | 0.60 | 0.60 | 0.60 |
| Multi-Stage | = n/a | No | No | No |

Weir Structures

| | [A] | [B] | [C] | [D] |
|----------------|-----------------------|------|------|------|
| Crest Len (ft) | = 20.00 | 0.00 | 0.00 | 0.00 |
| Crest El. (ft) | = 1039.42 | 0.00 | 0.00 | 0.00 |
| Weir Coeff. | = 2.60 | 3.33 | 3.33 | 3.33 |
| Weir Type | = Broad | --- | --- | --- |
| Multi-Stage | = No | No | No | No |
| Exfil.(in/hr) | = 0.000 (by Wet area) | | | |
| TW Elev. (ft) | = 0.00 | | | |

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

| Stage ft | Storage cuft | Elevation ft | Civ A cfs | Civ B cfs | Civ C cfs | PrfRsr cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Exfil cfs | User cfs | Total cfs |
|----------|--------------|--------------|-----------|-----------|-----------|------------|----------|----------|----------|----------|-----------|----------|-----------|
| 0.00 | 0 | 1038.00 | 0.00 | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.000 |
| 1.00 | 56 | 1039.00 | 0.01 oc | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.009 |
| 1.42 | 225 | 1039.42 | 0.01 oc | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.010 |

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

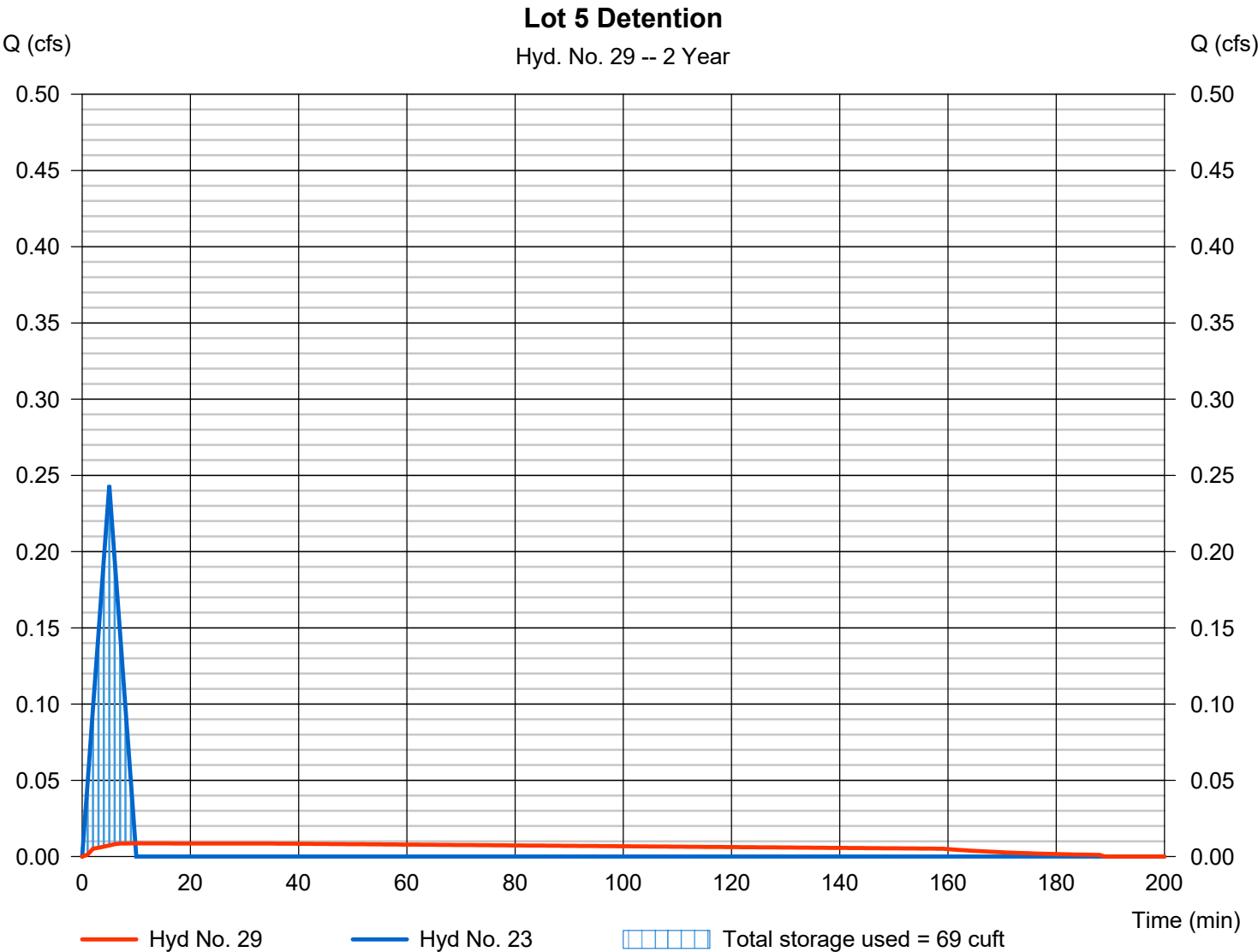
Monday, 10 / 28 / 2019

Hyd. No. 29

Lot 5 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 72 cuft |
| Inflow hyd. No. | = 23 - Lot 5 | Max. Elevation | = 1038.03 ft |
| Reservoir name | = Lot 5 Detention Pit | Max. Storage | = 69 cuft |

Storage Indication method used.



Pond No. 6 - Lot 5 Detention Pit

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1037.00 ft. Voids = 25.00%

Stage / Storage Table

| Stage (ft) | Elevation (ft) | Contour area (sqft) | Incr. Storage (cuft) | Total storage (cuft) |
|------------|----------------|---------------------|----------------------|----------------------|
| 0.00 | 1037.00 | 225 | 0 | 0 |
| 1.00 | 1038.00 | 225 | 56 | 56 |
| 1.42 | 1038.42 | 3,675 | 168 | 225 |

Culvert / Orifice Structures

| | [A] | [B] | [C] | [PrfRsr] |
|-----------------|-----------|------|------|----------|
| Rise (in) | = 1.00 | 0.00 | 0.00 | 0.00 |
| Span (in) | = 1.00 | 0.00 | 0.00 | 0.00 |
| No. Barrels | = 1 | 0 | 0 | 0 |
| Invert El. (ft) | = 1037.00 | 0.00 | 0.00 | 0.00 |
| Length (ft) | = 50.00 | 0.00 | 0.00 | 0.00 |
| Slope (%) | = 1.00 | 0.00 | 0.00 | n/a |
| N-Value | = .012 | .013 | .013 | n/a |
| Orifice Coeff. | = 0.60 | 0.60 | 0.60 | 0.60 |
| Multi-Stage | = n/a | No | No | No |

Weir Structures

| | [A] | [B] | [C] | [D] |
|----------------|-----------------------|------|------|------|
| Crest Len (ft) | = 20.00 | 0.00 | 0.00 | 0.00 |
| Crest El. (ft) | = 1038.42 | 0.00 | 0.00 | 0.00 |
| Weir Coeff. | = 2.60 | 3.33 | 3.33 | 3.33 |
| Weir Type | = Broad | --- | --- | --- |
| Multi-Stage | = No | No | No | No |
| Exfil.(in/hr) | = 0.000 (by Wet area) | | | |
| TW Elev. (ft) | = 0.00 | | | |

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

| Stage ft | Storage cuft | Elevation ft | Civ A cfs | Civ B cfs | Civ C cfs | PrfRsr cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Exfil cfs | User cfs | Total cfs |
|----------|--------------|--------------|-----------|-----------|-----------|------------|----------|----------|----------|----------|-----------|----------|-----------|
| 0.00 | 0 | 1037.00 | 0.00 | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.000 |
| 1.00 | 56 | 1038.00 | 0.01 oc | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.009 |
| 1.42 | 225 | 1038.42 | 0.01 oc | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.010 |

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

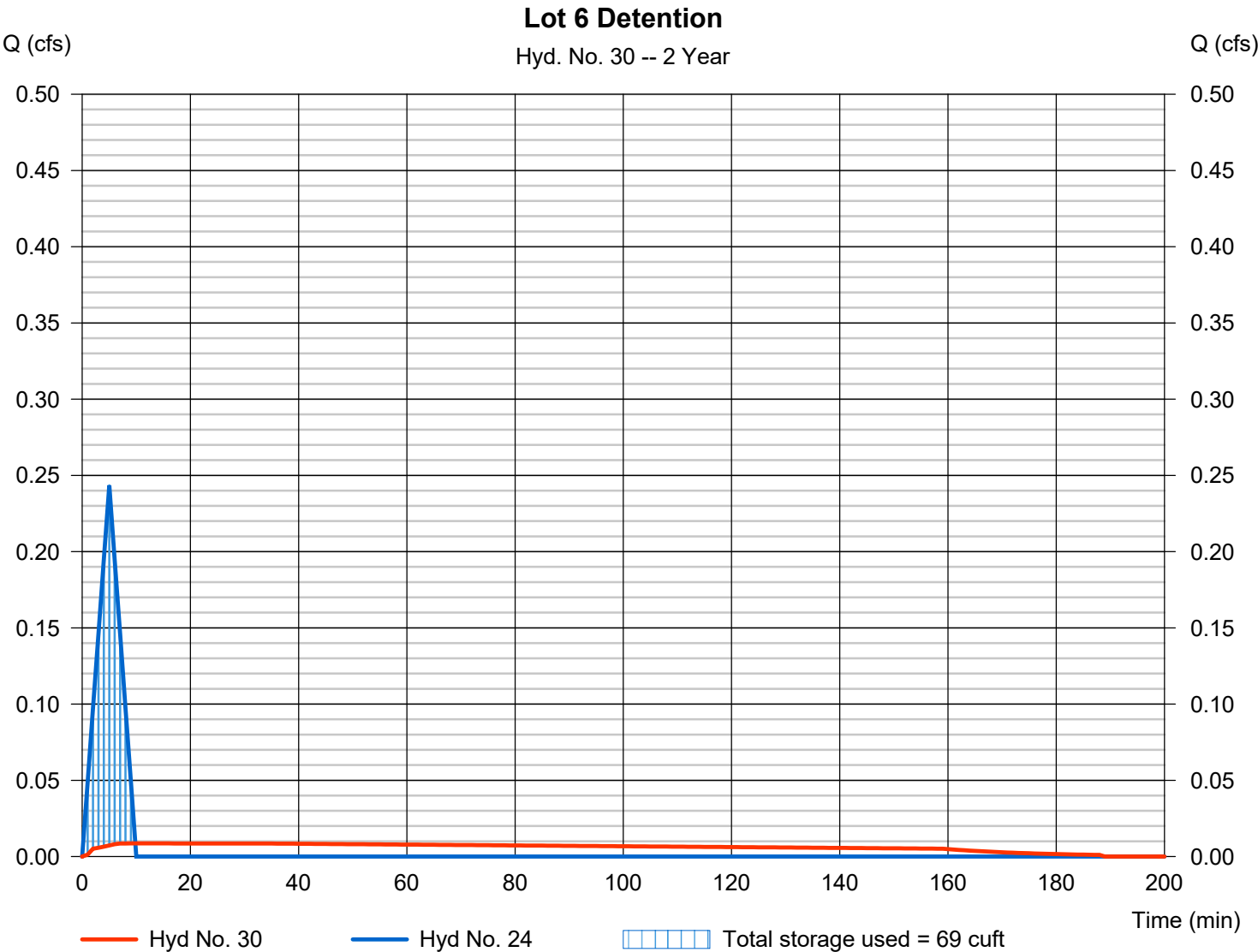
Monday, 10 / 28 / 2019

Hyd. No. 30

Lot 6 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 72 cuft |
| Inflow hyd. No. | = 24 - Lot 6 | Max. Elevation | = 1038.03 ft |
| Reservoir name | = Lot 6 Detention Pit | Max. Storage | = 69 cuft |

Storage Indication method used.



Pond No. 7 - Lot 6 Detention Pit

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1037.00 ft. Voids = 25.00%

Stage / Storage Table

| Stage (ft) | Elevation (ft) | Contour area (sqft) | Incr. Storage (cuft) | Total storage (cuft) |
|------------|----------------|---------------------|----------------------|----------------------|
| 0.00 | 1037.00 | 225 | 0 | 0 |
| 1.00 | 1038.00 | 225 | 56 | 56 |
| 1.42 | 1038.42 | 3,675 | 168 | 225 |

Culvert / Orifice Structures

| | [A] | [B] | [C] | [PrfRsr] |
|-----------------|-----------|------|------|----------|
| Rise (in) | = 1.00 | 0.00 | 0.00 | 0.00 |
| Span (in) | = 1.00 | 0.00 | 0.00 | 0.00 |
| No. Barrels | = 1 | 0 | 0 | 0 |
| Invert El. (ft) | = 1037.00 | 0.00 | 0.00 | 0.00 |
| Length (ft) | = 50.00 | 0.00 | 0.00 | 0.00 |
| Slope (%) | = 1.00 | 0.00 | 0.00 | n/a |
| N-Value | = .012 | .013 | .013 | n/a |
| Orifice Coeff. | = 0.60 | 0.60 | 0.60 | 0.60 |
| Multi-Stage | = n/a | No | No | No |

Weir Structures

| | [A] | [B] | [C] | [D] |
|----------------|-----------------------|------|------|------|
| Crest Len (ft) | = 20.00 | 0.00 | 0.00 | 0.00 |
| Crest El. (ft) | = 1038.42 | 0.00 | 0.00 | 0.00 |
| Weir Coeff. | = 2.60 | 3.33 | 3.33 | 3.33 |
| Weir Type | = Broad | --- | --- | --- |
| Multi-Stage | = No | No | No | No |
| Exfil.(in/hr) | = 0.000 (by Wet area) | | | |
| TW Elev. (ft) | = 0.00 | | | |

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

| Stage ft | Storage cuft | Elevation ft | Civ A cfs | Civ B cfs | Civ C cfs | PrfRsr cfs | Wr A cfs | Wr B cfs | Wr C cfs | Wr D cfs | Exfil cfs | User cfs | Total cfs |
|----------|--------------|--------------|-----------|-----------|-----------|------------|----------|----------|----------|----------|-----------|----------|-----------|
| 0.00 | 0 | 1037.00 | 0.00 | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.000 |
| 1.00 | 56 | 1038.00 | 0.01 oc | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.009 |
| 1.42 | 225 | 1038.42 | 0.01 oc | --- | --- | --- | 0.00 | --- | --- | --- | --- | --- | 0.010 |

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

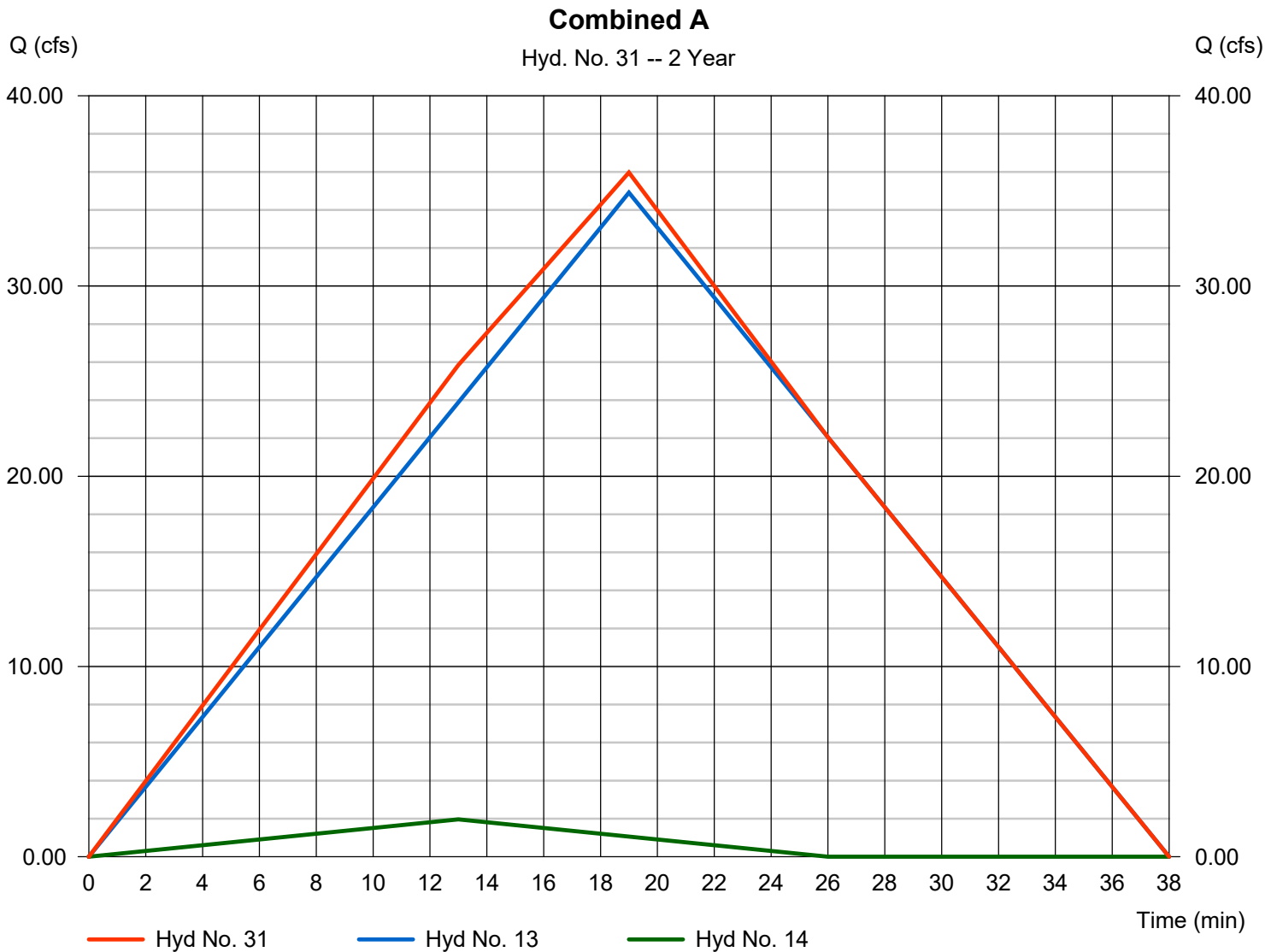
Monday, 10 / 28 / 2019

Hyd. No. 31

Combined A

Hydrograph type = Combine
 Storm frequency = 2 yrs
 Time interval = 1 min
 Inflow hyds. = 13, 14

Peak discharge = 35.97 cfs
 Time to peak = 19 min
 Hyd. volume = 41,329 cuft
 Contrib. drain. area = 19.740 ac



Hydrograph Report

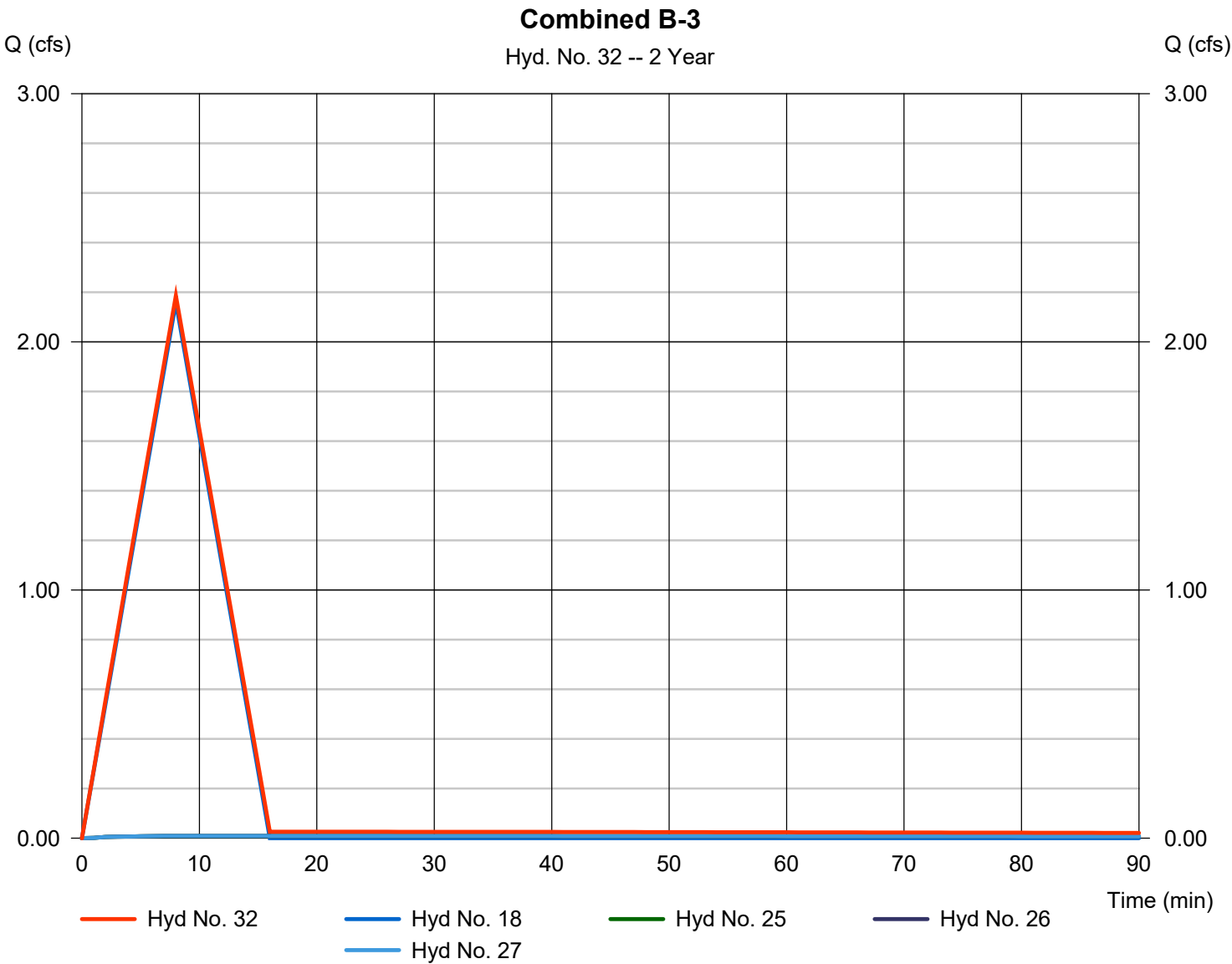
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

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Hyd. No. 32

Combined B-3

| | | | |
|-----------------|------------------|----------------------|--------------|
| Hydrograph type | = Combine | Peak discharge | = 2.186 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 8 min |
| Time interval | = 1 min | Hyd. volume | = 1,253 cuft |
| Inflow hyds. | = 18, 25, 26, 27 | Contrib. drain. area | = 0.960 ac |



Hydrograph Report

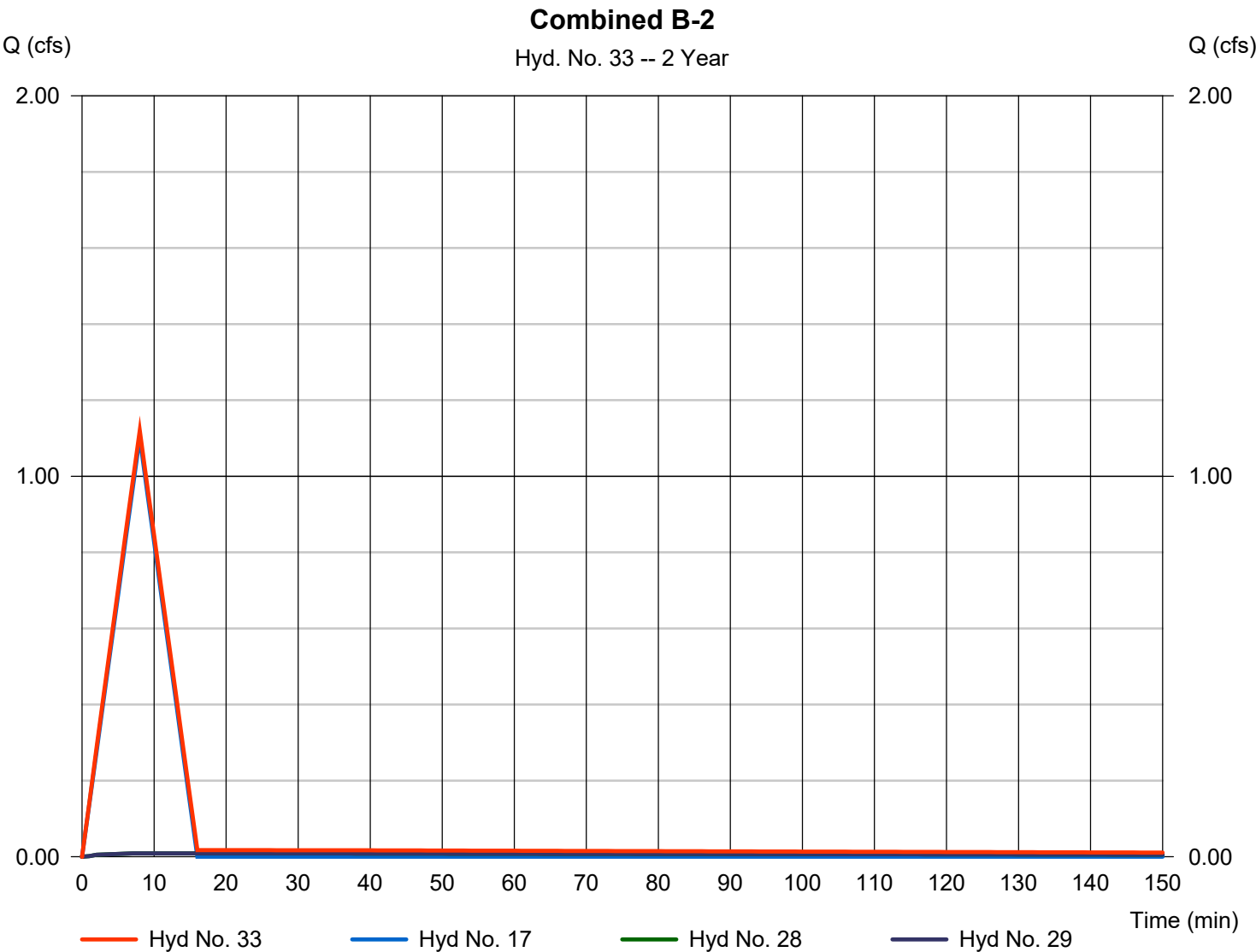
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 33

Combined B-2

| | | | |
|-----------------|--------------|----------------------|-------------|
| Hydrograph type | = Combine | Peak discharge | = 1.120 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 8 min |
| Time interval | = 1 min | Hyd. volume | = 673 cuft |
| Inflow hyds. | = 17, 28, 29 | Contrib. drain. area | = 0.490 ac |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

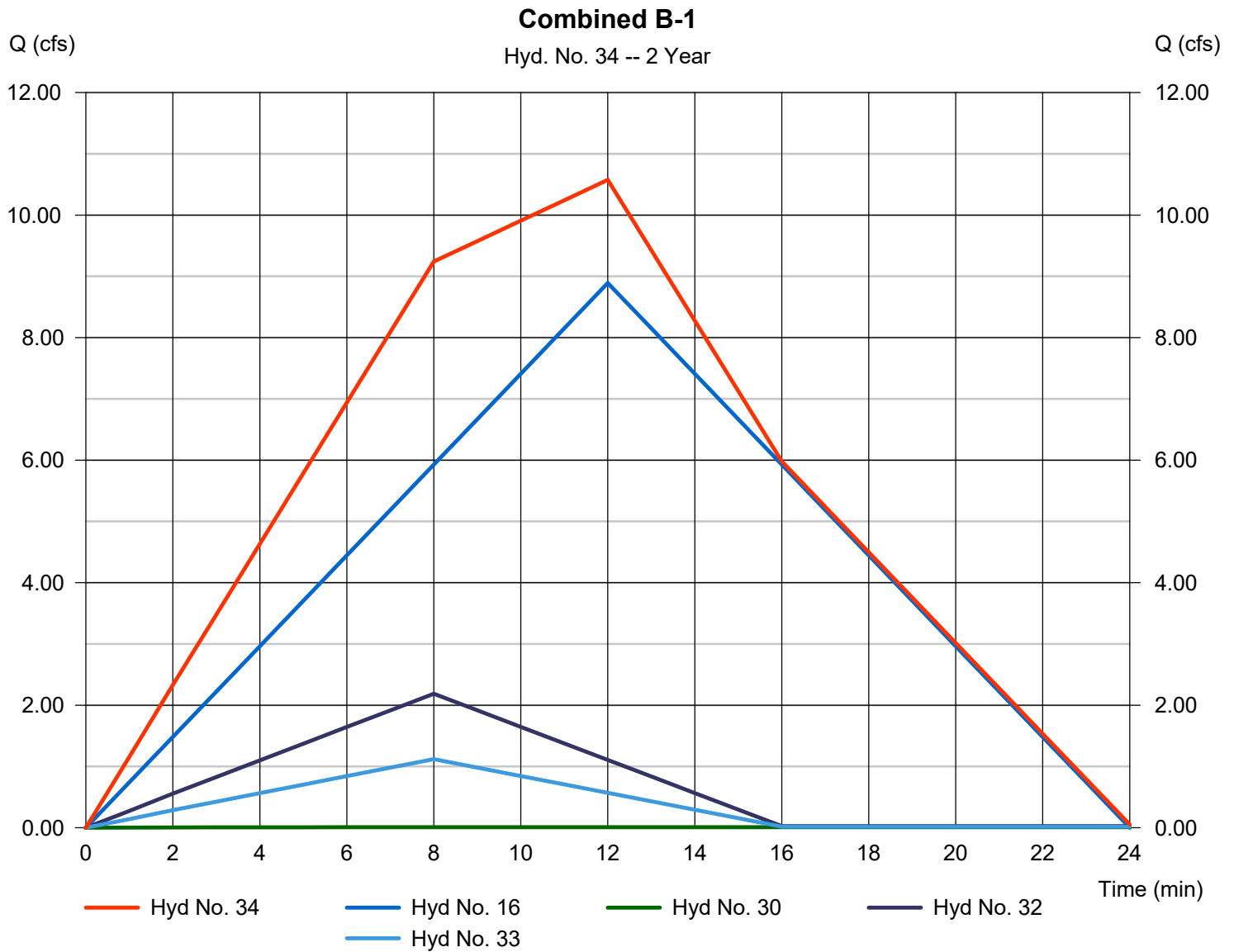
Monday, 10 / 28 / 2019

Hyd. No. 34

Combined B-1

Hydrograph type = Combine
 Storm frequency = 2 yrs
 Time interval = 1 min
 Inflow hyds. = 16, 30, 32, 33

Peak discharge = 10.57 cfs
 Time to peak = 12 min
 Hyd. volume = 8,399 cuft
 Contrib. drain. area = 4.490 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

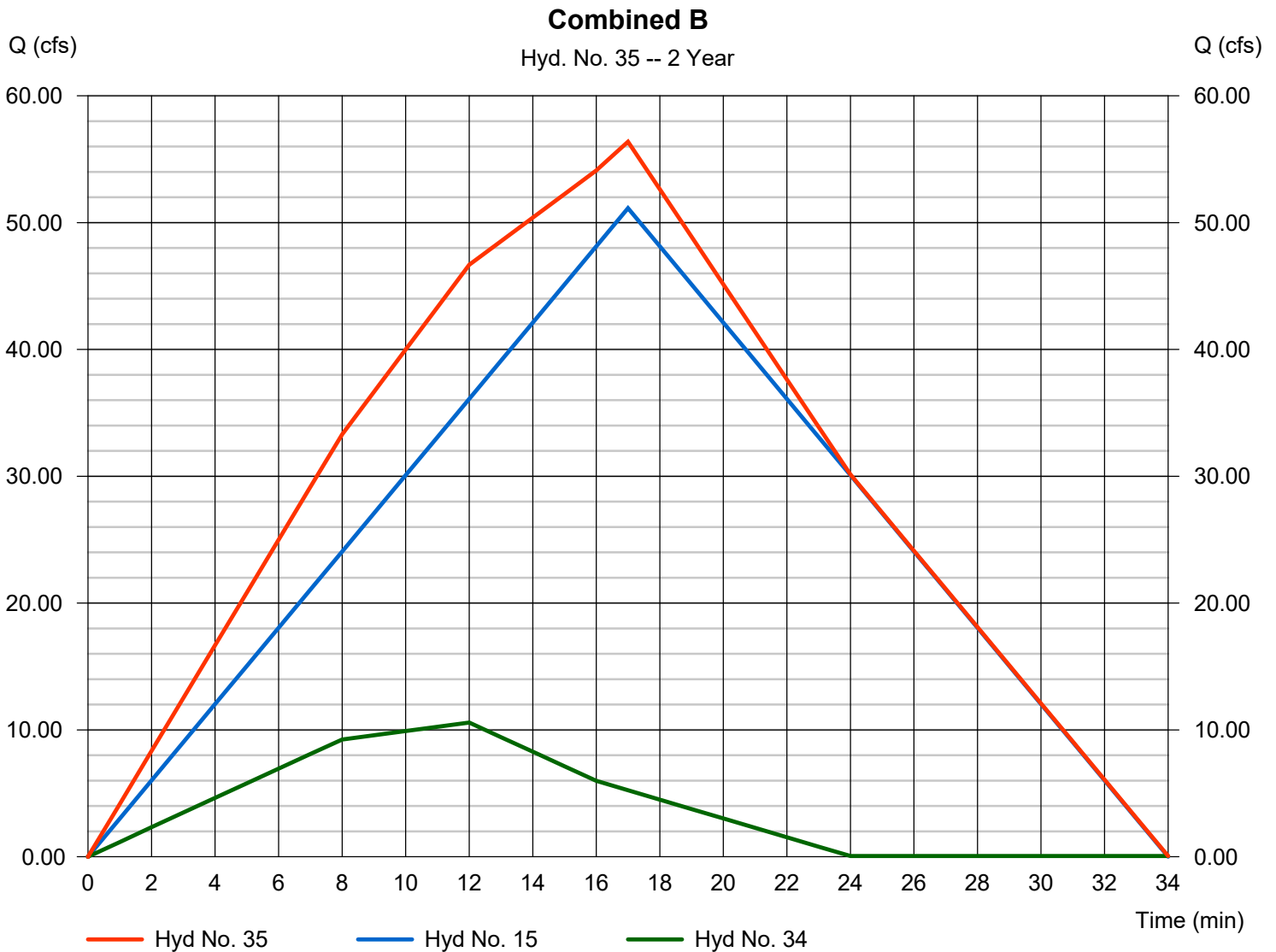
Monday, 10 / 28 / 2019

Hyd. No. 35

Combined B

Hydrograph type = Combine
 Storm frequency = 2 yrs
 Time interval = 1 min
 Inflow hyds. = 15, 34

Peak discharge = 56.38 cfs
 Time to peak = 17 min
 Hyd. volume = 60,563 cuft
 Contrib. drain. area = 26.540 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

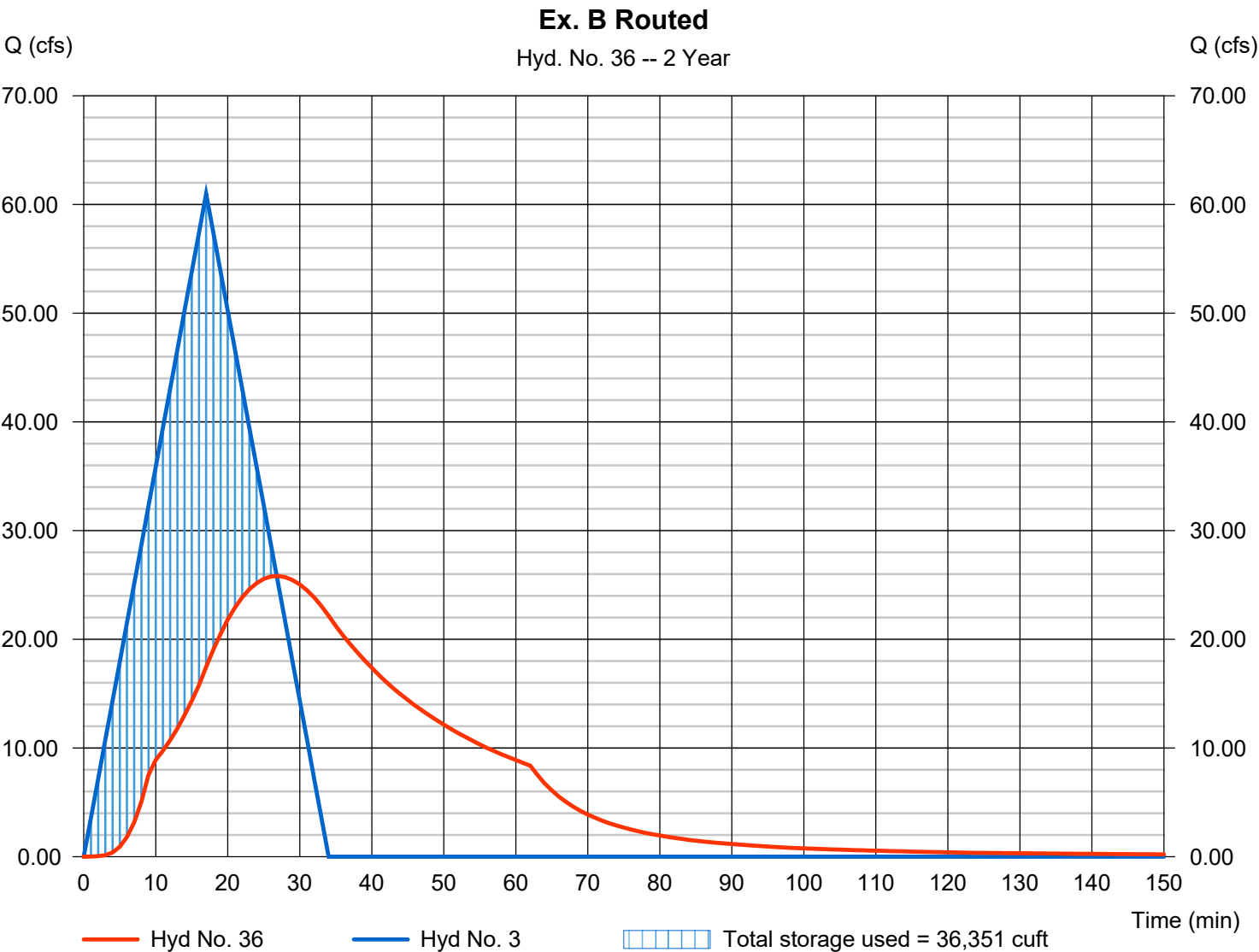
Monday, 10 / 28 / 2019

Hyd. No. 36

Ex. B Routed

| | | | |
|-----------------|----------------|----------------|---------------|
| Hydrograph type | = Reservoir | Peak discharge | = 25.83 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 27 min |
| Time interval | = 1 min | Hyd. volume | = 62,197 cuft |
| Inflow hyd. No. | = 3 - Ex. B | Max. Elevation | = 1008.83 ft |
| Reservoir name | = 315 NW Olive | Max. Storage | = 36,351 cuft |

Storage Indication method used.



Pond No. 1 - 315 NW Olive

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1007.00 ft

Stage / Storage Table

| Stage (ft) | Elevation (ft) | Contour area (sqft) | Incr. Storage (cuft) | Total storage (cuft) |
|------------|----------------|---------------------|----------------------|----------------------|
| 0.00 | 1007.00 | 00 | 0 | 0 |
| 1.00 | 1008.00 | 24,769 | 8,256 | 8,256 |
| 2.00 | 1009.00 | 43,967 | 33,909 | 42,164 |
| 3.00 | 1010.00 | 70,835 | 56,864 | 99,028 |

Culvert / Orifice Structures

| | [A] | [B] | [C] | [PrfRsr] |
|-----------------|-----------|------|------|----------|
| Rise (in) | = 48.00 | 0.00 | 0.00 | 0.00 |
| Span (in) | = 48.00 | 0.00 | 0.00 | 0.00 |
| No. Barrels | = 1 | 0 | 0 | 0 |
| Invert El. (ft) | = 1017.00 | 0.00 | 0.00 | 0.00 |
| Length (ft) | = 41.18 | 0.00 | 0.00 | 0.00 |
| Slope (%) | = 3.00 | 0.00 | 0.00 | n/a |
| N-Value | = .024 | .013 | .013 | n/a |
| Orifice Coeff. | = 0.60 | 0.60 | 0.60 | 0.60 |
| Multi-Stage | = n/a | No | No | No |

Weir Structures

| | [A] | [B] | [C] | [D] |
|-----------------------|-----------------------|------|------|------|
| Crest Len (ft) | = 0.00 | 0.00 | 0.00 | 0.00 |
| Crest El. (ft) | = 0.00 | 0.00 | 0.00 | 0.00 |
| Weir Coeff. | = 3.33 | 3.33 | 3.33 | 3.33 |
| Weir Type | = --- | --- | --- | --- |
| Multi-Stage | = No | No | No | No |
| Exfil.(in/hr) | = 0.000 (by Wet area) | | | |
| TW Elev. (ft) | = 0.00 | | | |

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

[illegible]

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

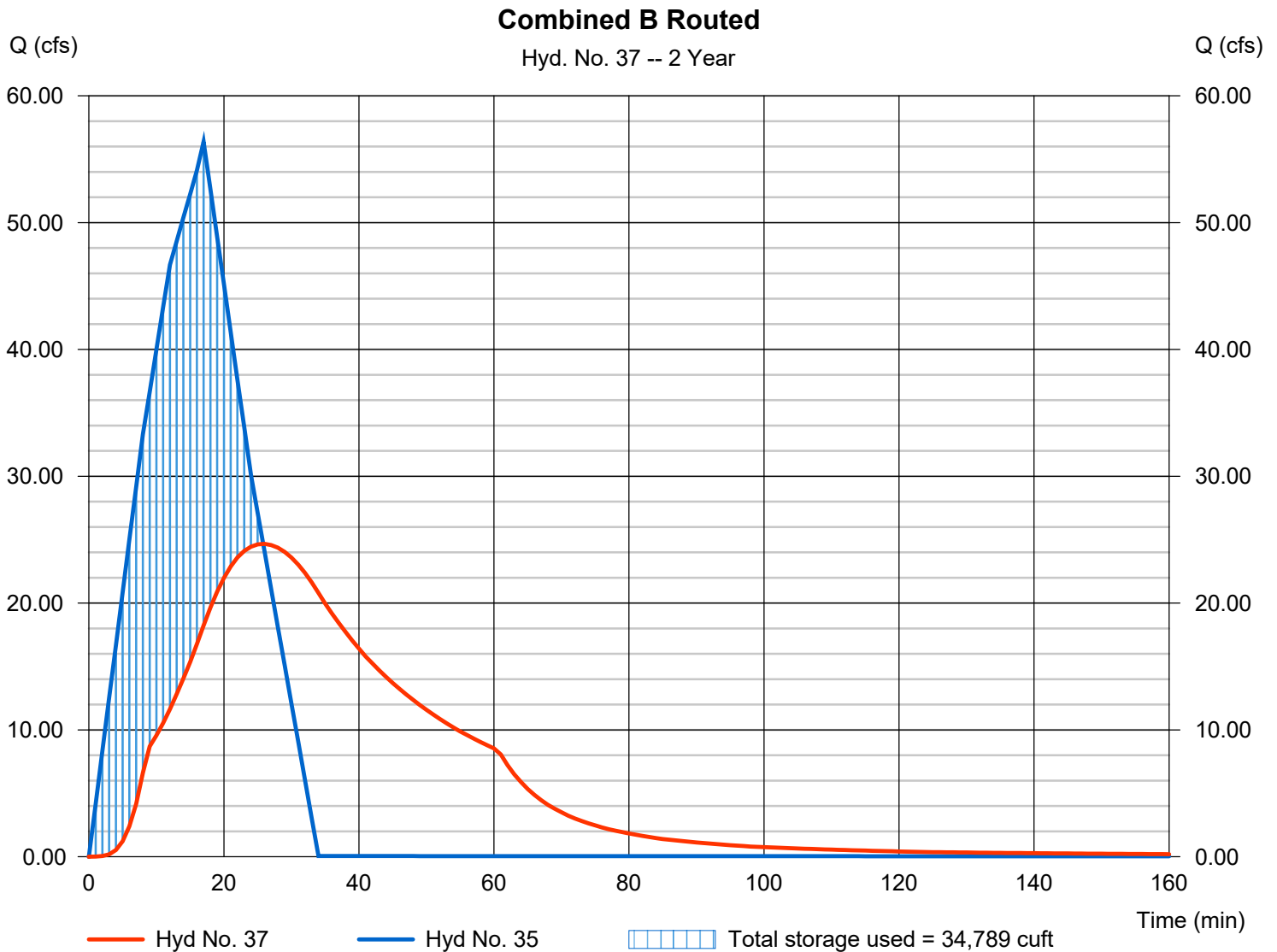
Monday, 10 / 28 / 2019

Hyd. No. 37

Combined B Routed

| | | | |
|-----------------|-------------------|----------------|---------------|
| Hydrograph type | = Reservoir | Peak discharge | = 24.66 cfs |
| Storm frequency | = 2 yrs | Time to peak | = 26 min |
| Time interval | = 1 min | Hyd. volume | = 60,554 cuft |
| Inflow hyd. No. | = 35 - Combined B | Max. Elevation | = 1008.78 ft |
| Reservoir name | = 315 NW Olive | Max. Storage | = 34,789 cuft |

Storage Indication method used.



Pond No. 1 - 315 NW Olive

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 1007.00 ft

Stage / Storage Table

| Stage (ft) | Elevation (ft) | Contour area (sqft) | Incr. Storage (cuft) | Total storage (cuft) |
|------------|----------------|---------------------|----------------------|----------------------|
| 0.00 | 1007.00 | 00 | 0 | 0 |
| 1.00 | 1008.00 | 24,769 | 8,256 | 8,256 |
| 2.00 | 1009.00 | 43,967 | 33,909 | 42,164 |
| 3.00 | 1010.00 | 70,835 | 56,864 | 99,028 |

Culvert / Orifice Structures

| | [A] | [B] | [C] | [PrfRsr] |
|-----------------|-----------|------|------|----------|
| Rise (in) | = 48.00 | 0.00 | 0.00 | 0.00 |
| Span (in) | = 48.00 | 0.00 | 0.00 | 0.00 |
| No. Barrels | = 1 | 0 | 0 | 0 |
| Invert El. (ft) | = 1017.00 | 0.00 | 0.00 | 0.00 |
| Length (ft) | = 41.18 | 0.00 | 0.00 | 0.00 |
| Slope (%) | = 3.00 | 0.00 | 0.00 | n/a |
| N-Value | = .024 | .013 | .013 | n/a |
| Orifice Coeff. | = 0.60 | 0.60 | 0.60 | 0.60 |
| Multi-Stage | = n/a | No | No | No |

Weir Structures

| | [A] | [B] | [C] | [D] |
|-----------------------|-----------------------|------|------|------|
| Crest Len (ft) | = 0.00 | 0.00 | 0.00 | 0.00 |
| Crest El. (ft) | = 0.00 | 0.00 | 0.00 | 0.00 |
| Weir Coeff. | = 3.33 | 3.33 | 3.33 | 3.33 |
| Weir Type | = --- | --- | --- | --- |
| Multi-Stage | = No | No | No | No |
| Exfil.(in/hr) | = 0.000 (by Wet area) | | | |
| TW Elev. (ft) | = 0.00 | | | |

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

[illegible]

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

| Hyd. No. | Hydrograph type (origin) | Peak flow (cfs) | Time interval (min) | Time to Peak (min) | Hyd. volume (cuft) | Inflow hyd(s) | Maximum elevation (ft) | Total strge used (cuft) | Hydrograph Description |
|-------------------------------------|--------------------------|-----------------|---------------------|--------------------|------------------------|-----------------|------------------------|-------------------------|------------------------|
| 1 | Rational | 54.22 | 1 | 19 | 61,816 | ---- | ---- | ---- | Ex. A |
| 2 | Rational | 2.863 | 1 | 13 | 2,233 | ---- | ---- | ---- | Ex. A-1 |
| 3 | Rational | 89.91 | 1 | 17 | 91,710 | ---- | ---- | ---- | Ex. B |
| 4 | Rational | 17.23 | 1 | 12 | 12,406 | ---- | ---- | ---- | Ex. B-1 |
| 5 | Rational | 1.647 | 1 | 11 | 1,087 | ---- | ---- | ---- | Ex. B-2 |
| 6 | Rational | 3.752 | 1 | 8 | 1,801 | ---- | ---- | ---- | Ex. B-3 |
| 7 | Rational | 0.640 | 1 | 19 | 730 | ---- | ---- | ---- | Ex. Onsite A |
| 8 | Rational | 0.750 | 1 | 13 | 585 | ---- | ---- | ---- | Ex. Onsite A-1 |
| 9 | Rational | 4.312 | 1 | 17 | 4,398 | ---- | ---- | ---- | Ex. Onsite B |
| 10 | Rational | 4.954 | 1 | 12 | 3,567 | ---- | ---- | ---- | Ex. Onsite B-1 |
| 11 | Rational | 1.647 | 1 | 11 | 1,087 | ---- | ---- | ---- | Ex. Onsite B-2 |
| 12 | Rational | 3.752 | 1 | 8 | 1,801 | ---- | ---- | ---- | Ex. Onsite B-3 |
| 13 | Rational | 51.47 | 1 | 19 | 58,681 | ---- | ---- | ---- | Prop. A |
| 14 | Rational | 2.892 | 1 | 13 | 2,256 | ---- | ---- | ---- | Prop. A-1 |
| 15 | Rational | 75.40 | 1 | 17 | 76,906 | ---- | ---- | ---- | Prop. B |
| 16 | Rational | 13.11 | 1 | 12 | 9,440 | ---- | ---- | ---- | Prop. B-1 |
| 17 | Rational | 1.627 | 1 | 8 | 781 | ---- | ---- | ---- | Prop. B-2 |
| 18 | Rational | 3.188 | 1 | 8 | 1,530 | ---- | ---- | ---- | Prop. B-3 |
| 19 | Rational | 0.360 | 1 | 5 | 108 | ---- | ---- | ---- | Lot 1 |
| 20 | Rational | 0.360 | 1 | 5 | 108 | ---- | ---- | ---- | Lot 2 |
| 21 | Rational | 0.360 | 1 | 5 | 108 | ---- | ---- | ---- | Lot 3 |
| 22 | Rational | 0.360 | 1 | 5 | 108 | ---- | ---- | ---- | Lot 4 |
| 23 | Rational | 0.360 | 1 | 5 | 108 | ---- | ---- | ---- | Lot 5 |
| 24 | Rational | 0.360 | 1 | 5 | 108 | ---- | ---- | ---- | Lot 6 |
| 25 | Reservoir | 0.009 | 1 | 10 | 107 | 19 | 1038.12 | 104 | Lot 1 Detention |
| 26 | Reservoir | 0.009 | 1 | 10 | 107 | 20 | 1040.12 | 104 | Lot 2 Detention |
| 27 | Reservoir | 0.009 | 1 | 10 | 107 | 21 | 1037.12 | 104 | Lot 3 Detention |
| 28 | Reservoir | 0.009 | 1 | 10 | 107 | 22 | 1039.12 | 104 | Lot 4 Detention |
| 29 | Reservoir | 0.009 | 1 | 10 | 107 | 23 | 1038.12 | 104 | Lot 5 Detention |
| 30 | Reservoir | 0.009 | 1 | 10 | 107 | 24 | 1038.12 | 104 | Lot 6 Detention |
| 31 | Combine | 53.03 | 1 | 19 | 60,937 | 13, 14, | ---- | ---- | Combined A |
| 32 | Combine | 3.214 | 1 | 8 | 1,851 | 18, 25, 26, 27, | ---- | ---- | Combined B-3 |
| 33 | Combine | 1.645 | 1 | 8 | 995 | 17, 28, 29, | ---- | ---- | Combined B-2 |
| 34 | Combine | 15.57 | 1 | 12 | 12,392 | 16, 30, 32, 33 | ---- | ---- | Combined B-1 |
| MAIN ORCHARD STORM STUDY 191022.gpr | | | | | Return Period: 10 Year | | | Monday, 10 / 28 / 2019 | |

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

| Hyd. No. | Hydrograph type (origin) | Peak flow (cfs) | Time interval (min) | Time to Peak (min) | Hyd. volume (cuft) | Inflow hyd(s) | Maximum elevation (ft) | Total strge used (cuft) | Hydrograph Description |
|-------------------------------------|--------------------------|-----------------|---------------------|--------------------|------------------------|---------------|------------------------|-------------------------|------------------------|
| 35 | Combine | 83.10 | 1 | 17 | 89,297 | 15, 34 | ----- | ----- | Combined B |
| 36 | Reservoir | 36.23 | 1 | 27 | 91,701 | 3 | 1009.22 | 54,438 | Ex. B Routed |
| 37 | Reservoir | 34.98 | 1 | 26 | 89,288 | 35 | 1009.17 | 51,916 | Combined B Routed |
| MAIN ORCHARD STORM STUDY 191022.gpw | | | | | Return Period: 10 Year | | | Monday, 10 / 28 / 2019 | |

Hydrograph Report

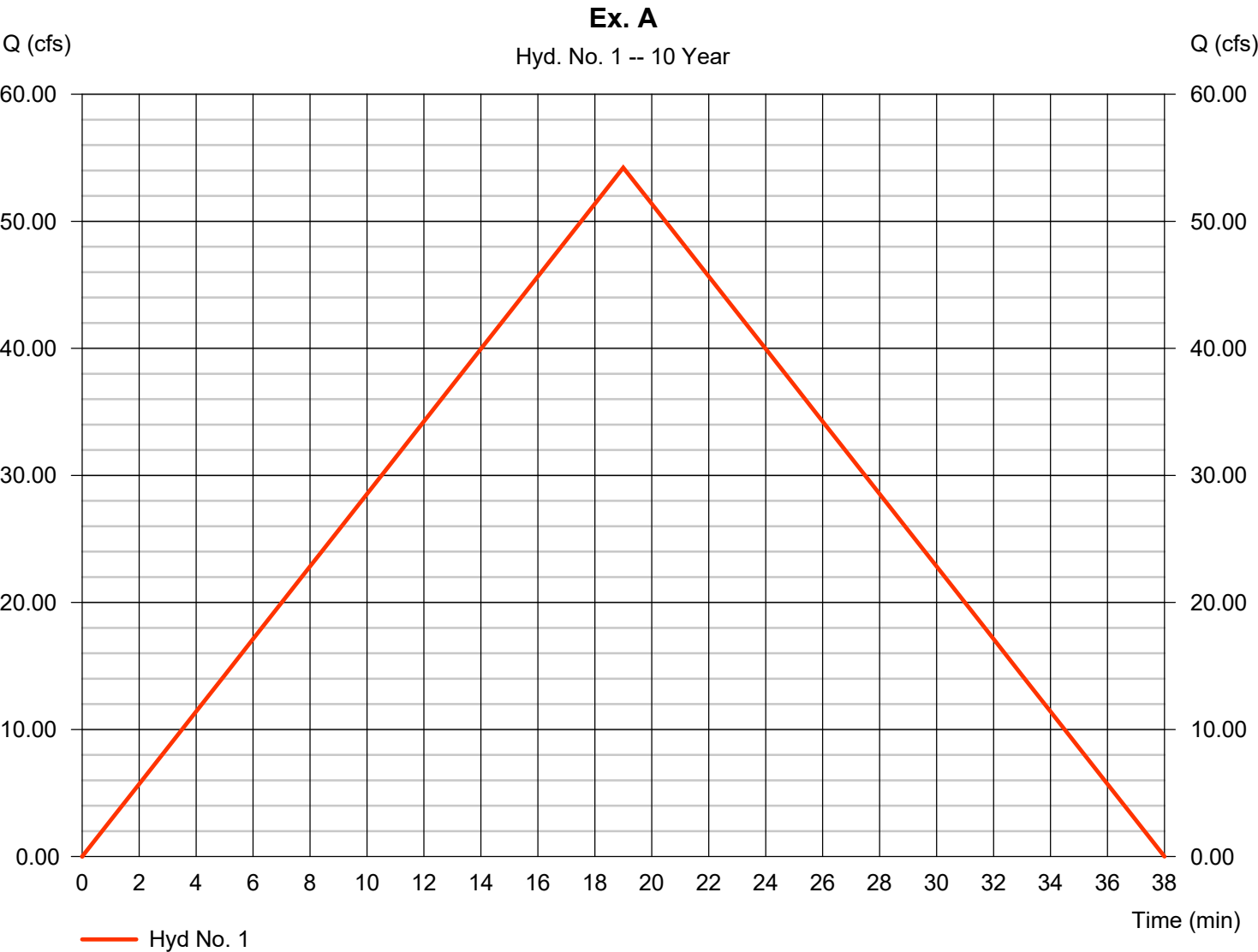
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Monday, 10 / 28 / 2019

Hyd. No. 1

Ex. A

| | | | |
|-----------------|---------------|-------------------|---------------|
| Hydrograph type | = Rational | Peak discharge | = 54.22 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 19 min |
| Time interval | = 1 min | Hyd. volume | = 61,816 cuft |
| Drainage area | = 19.720 ac | Runoff coeff. | = 0.58 |
| Intensity | = 4.741 in/hr | Tc by User | = 19.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

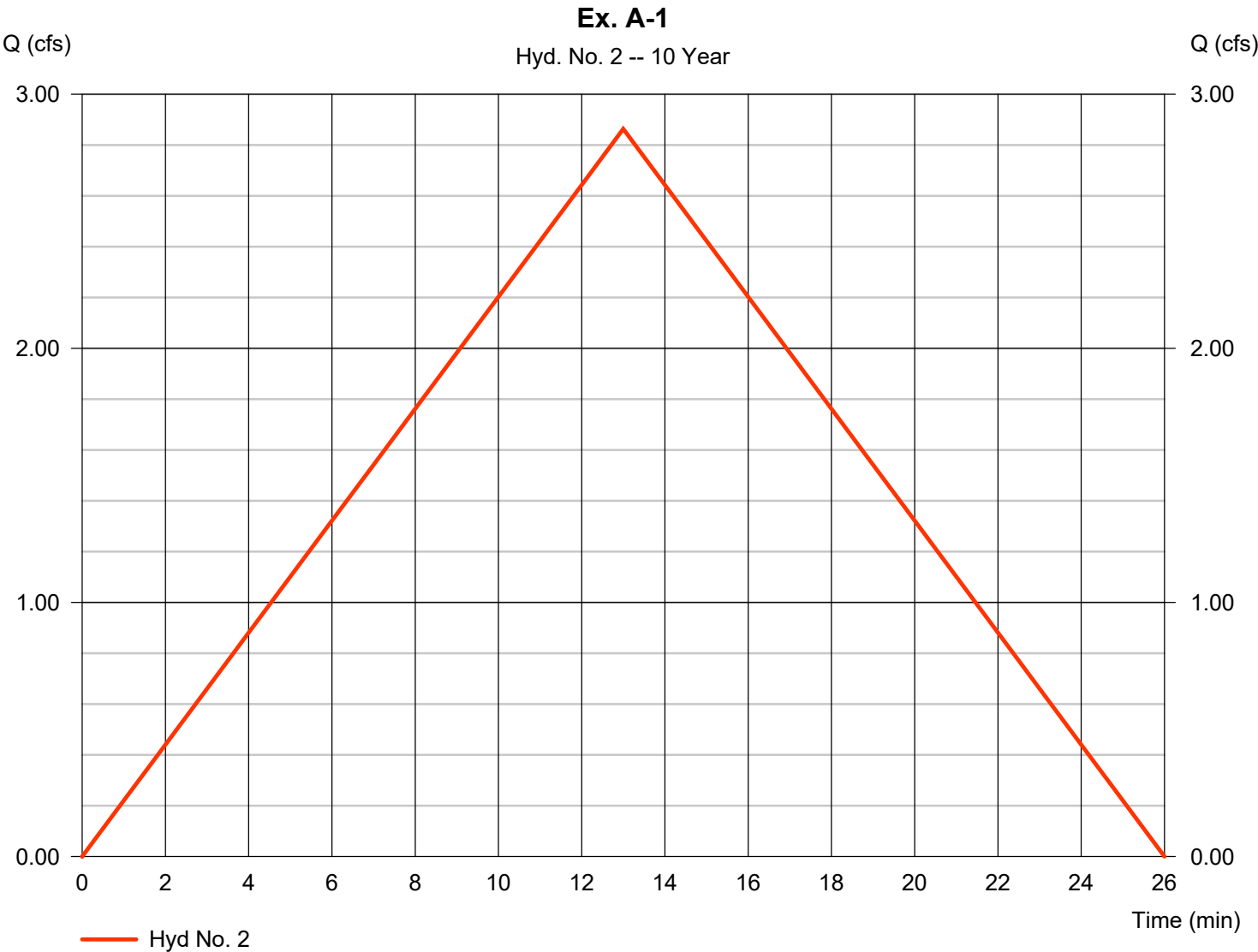
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Monday, 10 / 28 / 2019

Hyd. No. 2

Ex. A-1

| | | | |
|-----------------|---------------|-------------------|--------------|
| Hydrograph type | = Rational | Peak discharge | = 2.863 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 13 min |
| Time interval | = 1 min | Hyd. volume | = 2,233 cuft |
| Drainage area | = 1.010 ac | Runoff coeff. | = 0.51 |
| Intensity | = 5.559 in/hr | Tc by User | = 13.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

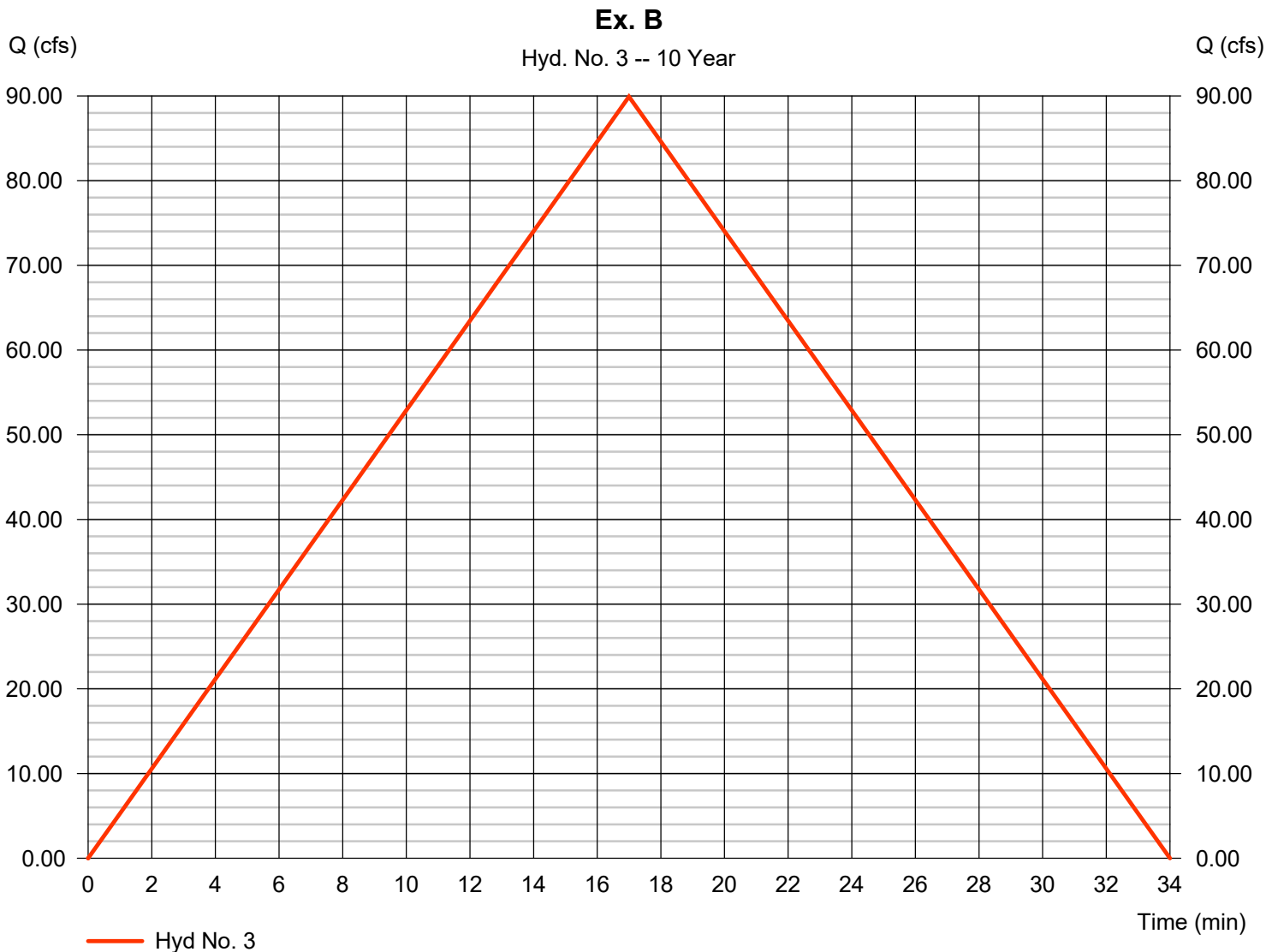
Monday, 10 / 28 / 2019

Hyd. No. 3

Ex. B

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 32.800 ac
 Intensity = 4.984 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 89.91 cfs
 Time to peak = 17 min
 Hyd. volume = 91,710 cuft
 Runoff coeff. = 0.55
 Tc by User = 17.00 min
 Asc/Rec limb fact = 1/1

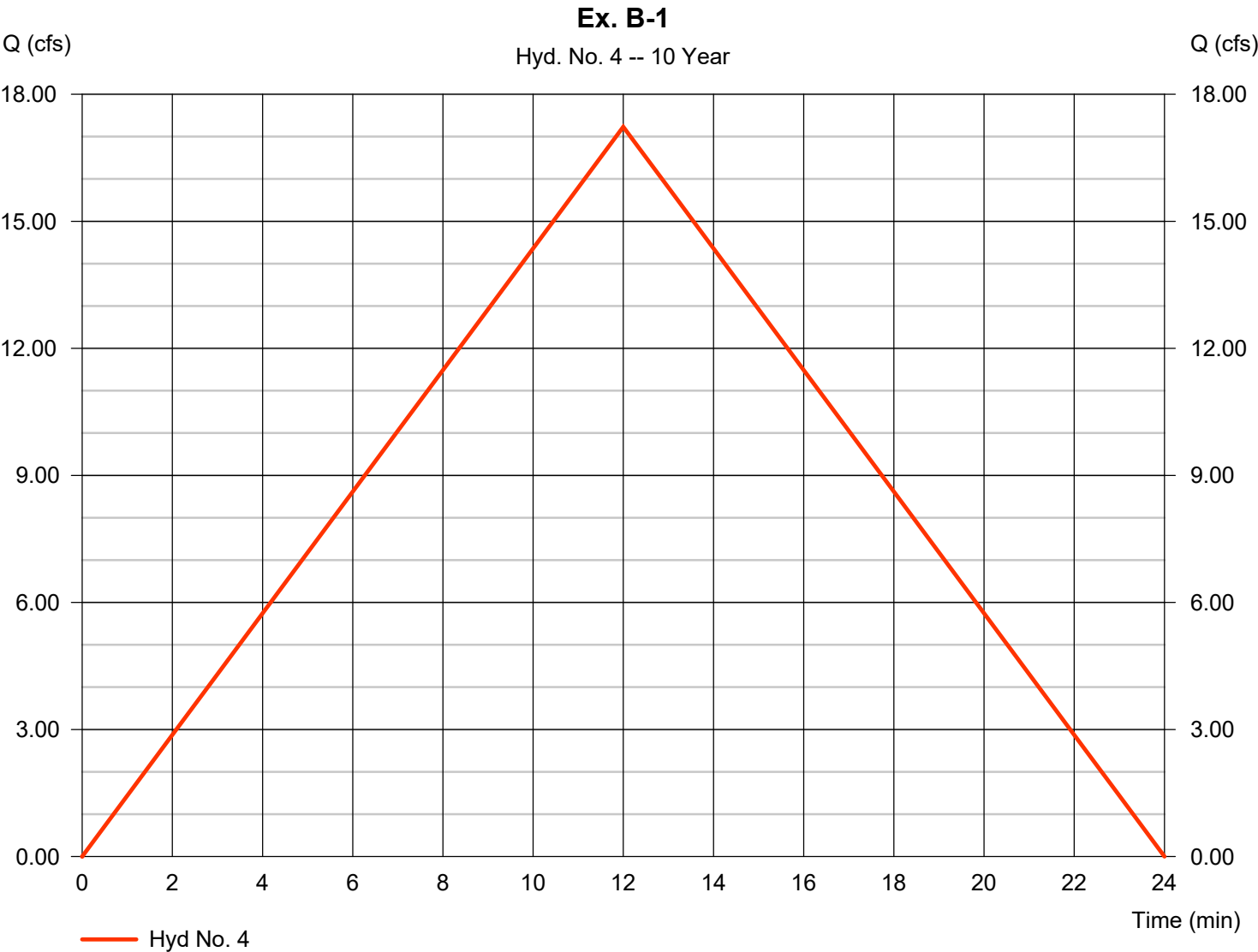


Hydrograph Report

Hyd. No. 4

Ex. B-1

| | | | |
|-----------------|---------------|-------------------|---------------|
| Hydrograph type | = Rational | Peak discharge | = 17.23 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 12 min |
| Time interval | = 1 min | Hyd. volume | = 12,406 cuft |
| Drainage area | = 6.270 ac | Runoff coeff. | = 0.48 |
| Intensity | = 5.725 in/hr | Tc by User | = 12.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

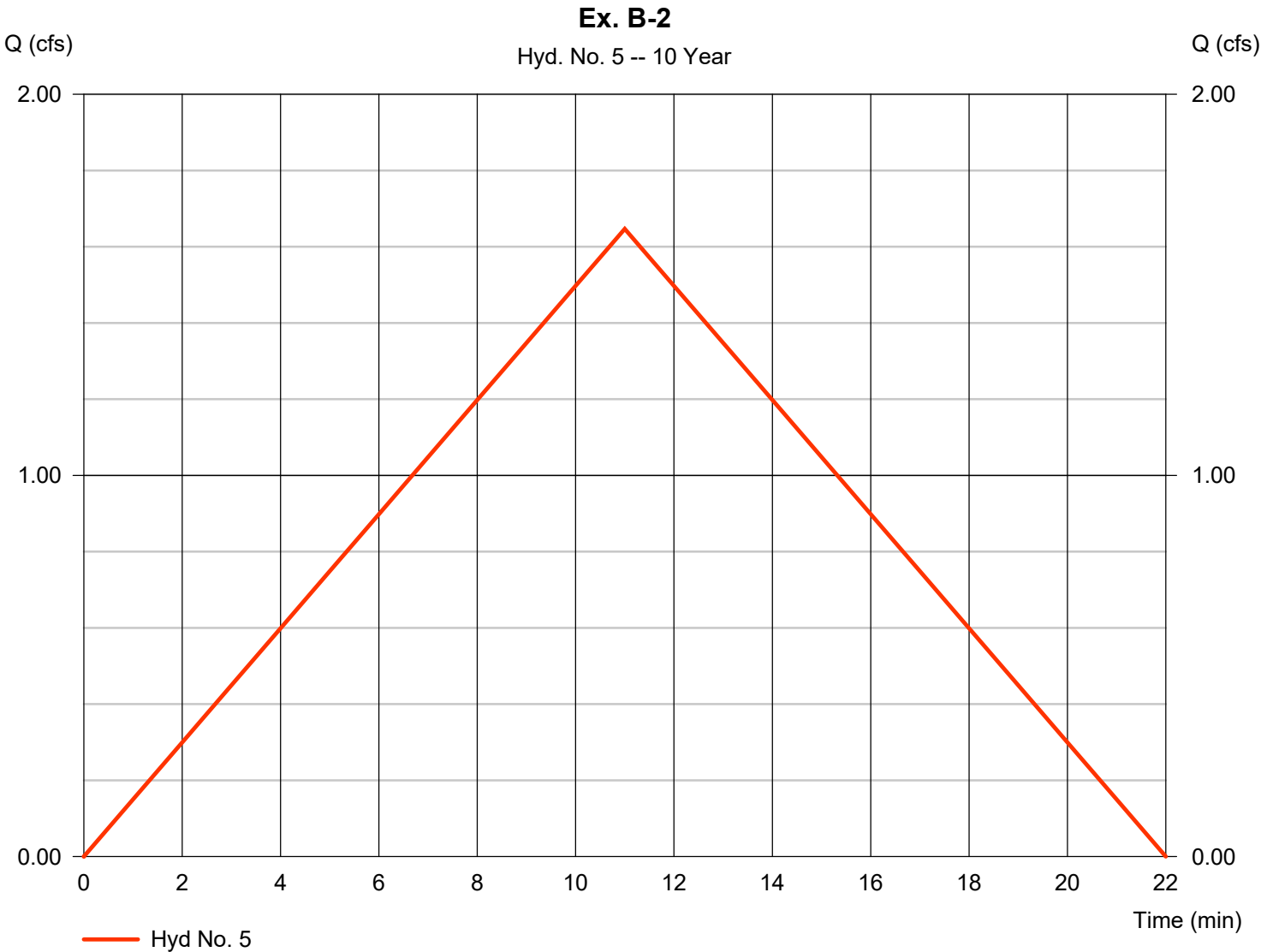
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Monday, 10 / 28 / 2019

Hyd. No. 5

Ex. B-2

| | | | |
|-----------------|---------------|-------------------|--------------|
| Hydrograph type | = Rational | Peak discharge | = 1.647 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 11 min |
| Time interval | = 1 min | Hyd. volume | = 1,087 cuft |
| Drainage area | = 0.930 ac | Runoff coeff. | = 0.3 |
| Intensity | = 5.903 in/hr | Tc by User | = 11.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

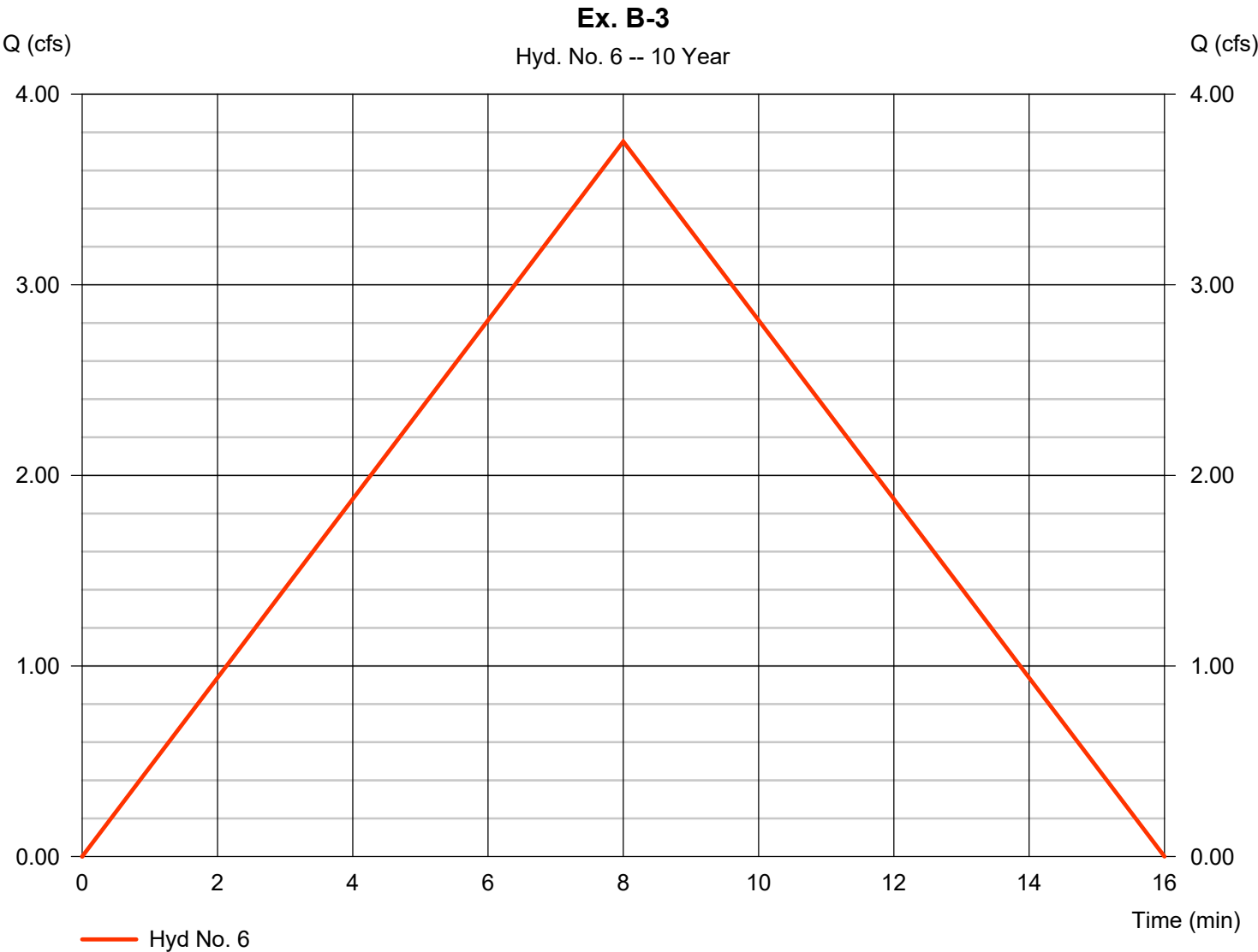
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Monday, 10 / 28 / 2019

Hyd. No. 6

Ex. B-3

| | | | |
|-----------------|---------------|-------------------|--------------|
| Hydrograph type | = Rational | Peak discharge | = 3.752 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 8 min |
| Time interval | = 1 min | Hyd. volume | = 1,801 cuft |
| Drainage area | = 1.130 ac | Runoff coeff. | = 0.51 |
| Intensity | = 6.511 in/hr | Tc by User | = 8.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

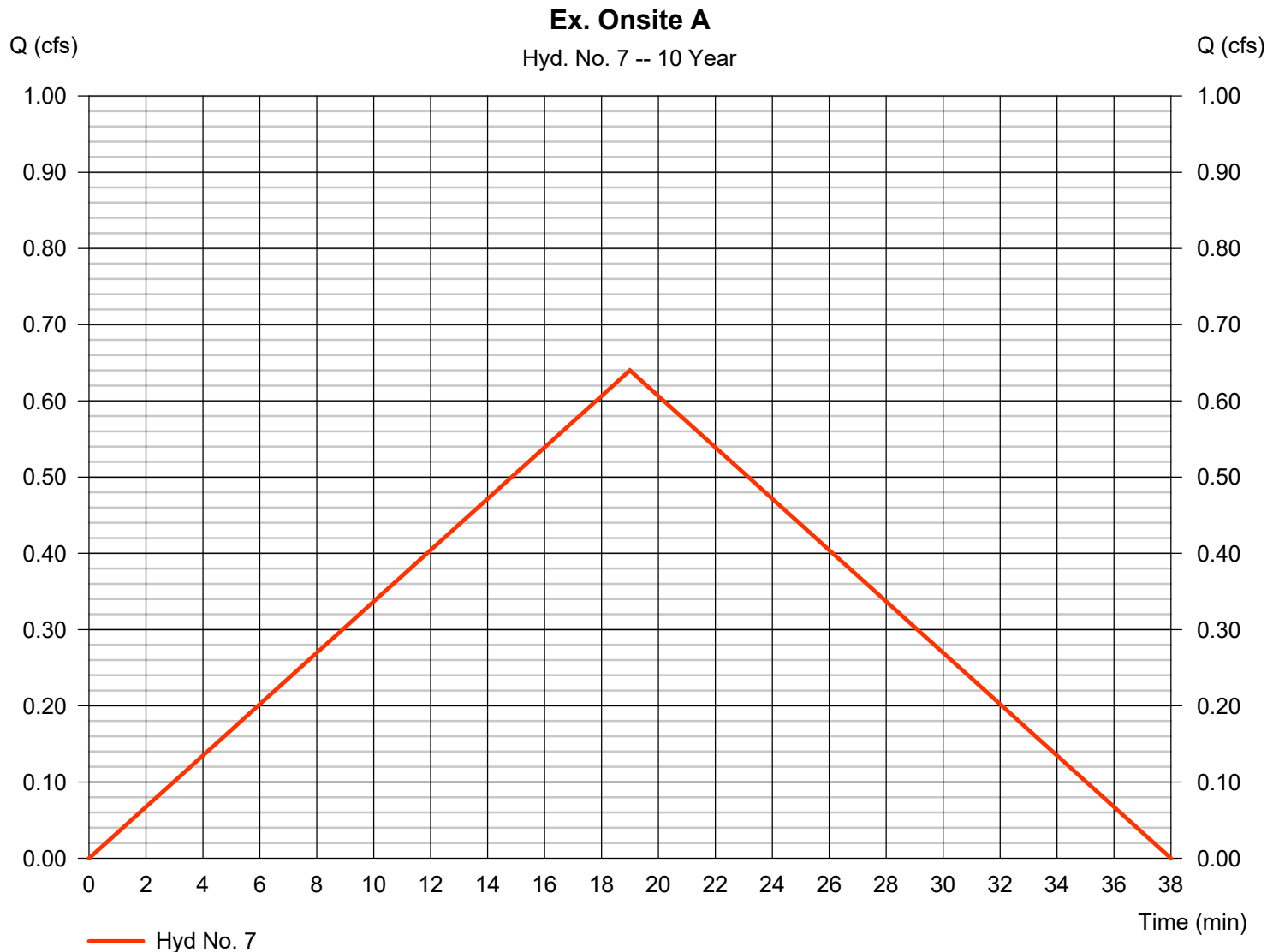
Monday, 10 / 28 / 2019

Hyd. No. 7

Ex. Onsite A

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 0.270 ac
 Intensity = 4.741 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 0.640 cfs
 Time to peak = 19 min
 Hyd. volume = 730 cuft
 Runoff coeff. = 0.5
 Tc by User = 19.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

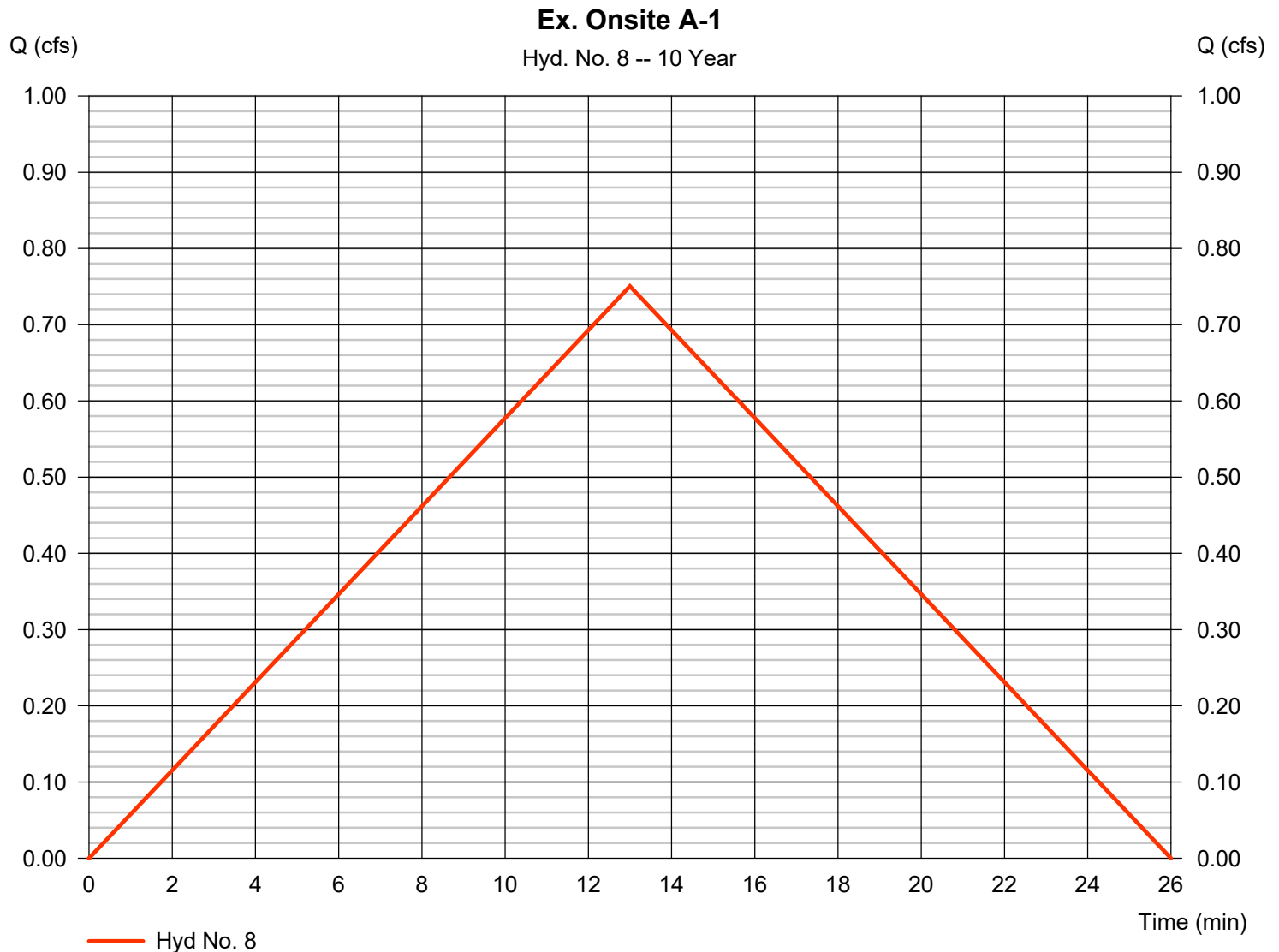
Monday, 10 / 28 / 2019

Hyd. No. 8

Ex. Onsite A-1

Hydrograph type = Rational
Storm frequency = 10 yrs
Time interval = 1 min
Drainage area = 0.270 ac
Intensity = 5.559 in/hr
IDF Curve = KCMO.IDF

Peak discharge = 0.750 cfs
Time to peak = 13 min
Hyd. volume = 585 cuft
Runoff coeff. = 0.5
Tc by User = 13.00 min
Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

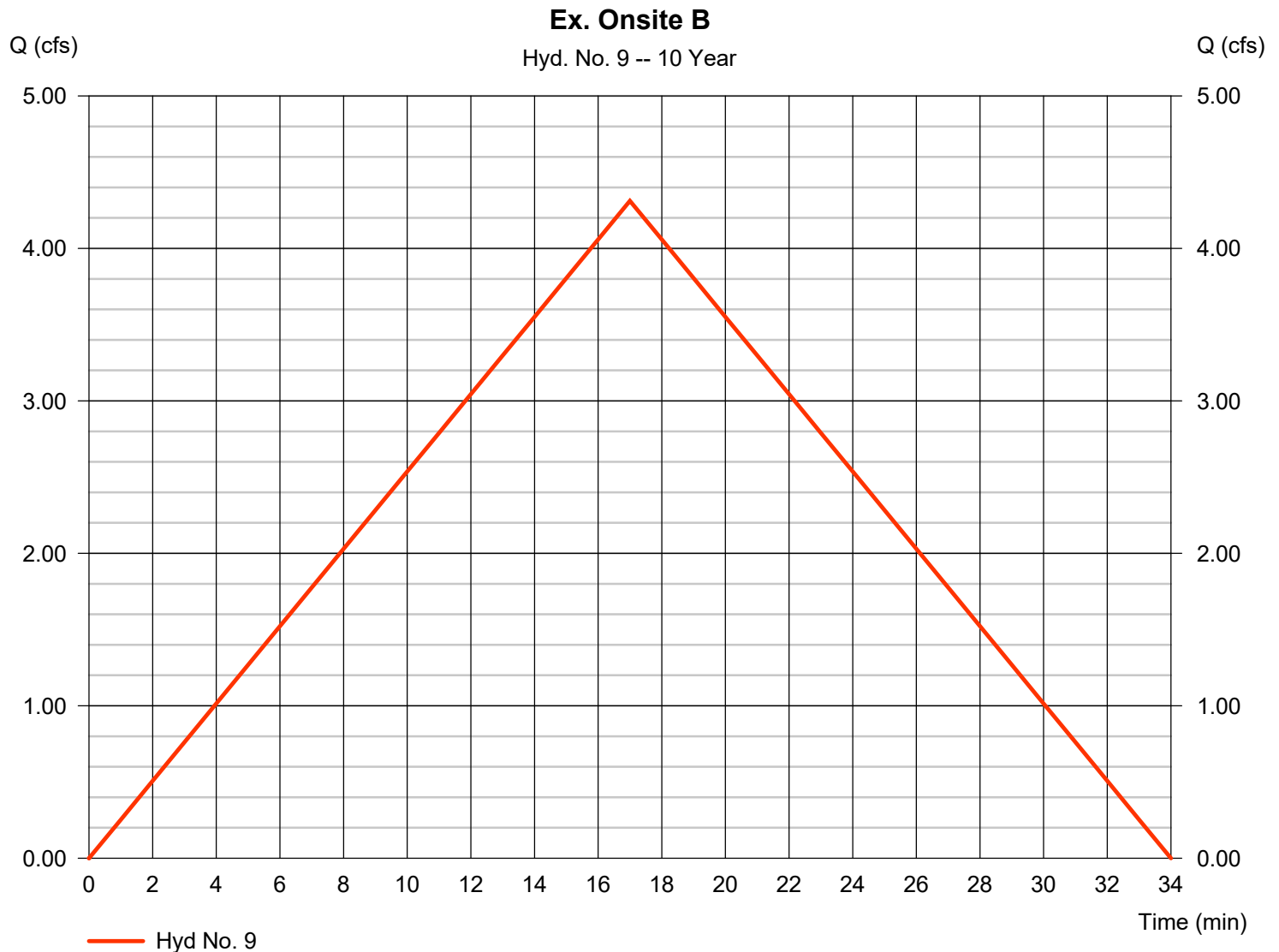
Monday, 10 / 28 / 2019

Hyd. No. 9

Ex. Onsite B

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 2.060 ac
 Intensity = 4.984 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 4.312 cfs
 Time to peak = 17 min
 Hyd. volume = 4,398 cuft
 Runoff coeff. = 0.42
 Tc by User = 17.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

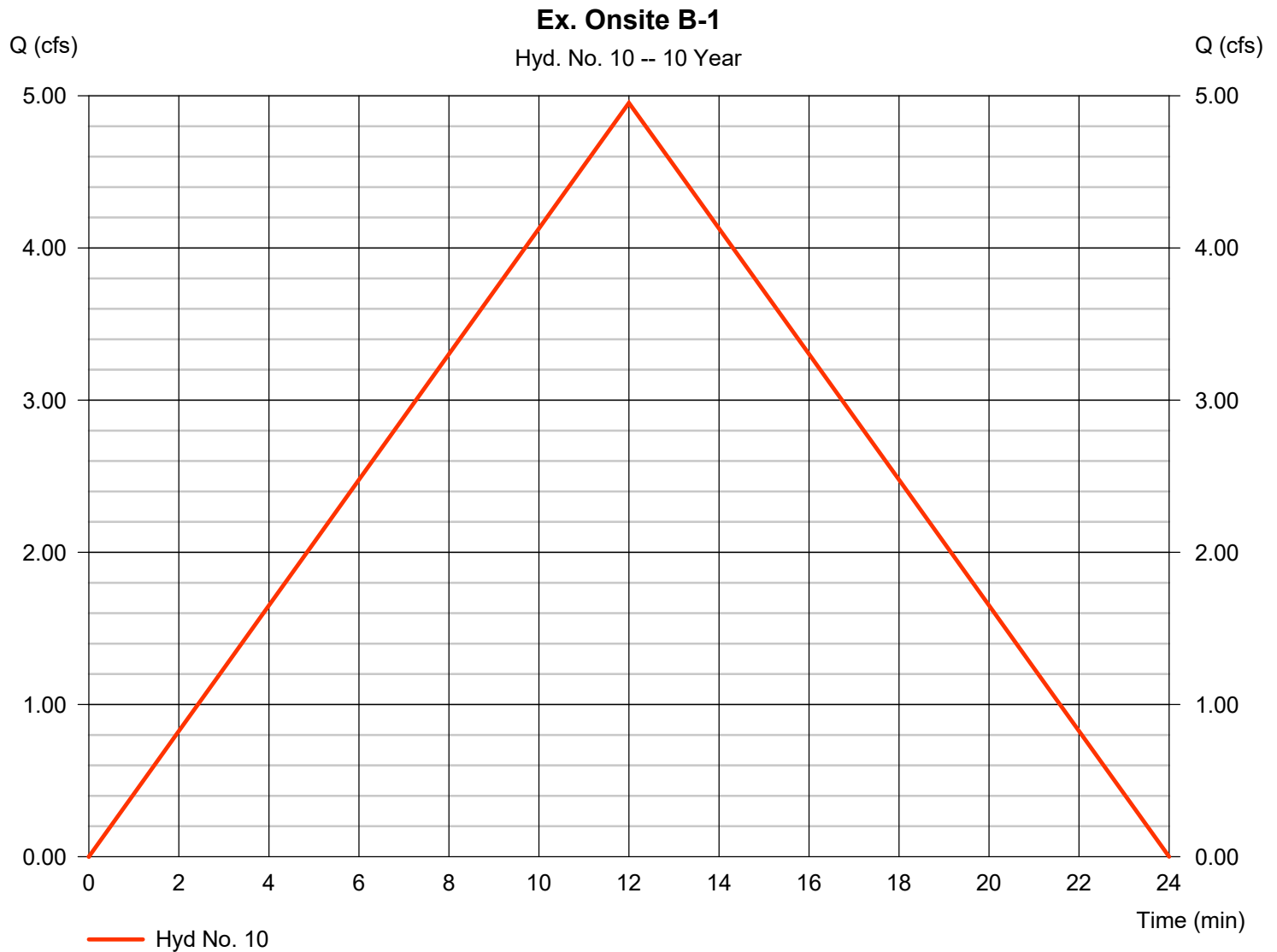
Monday, 10 / 28 / 2019

Hyd. No. 10

Ex. Onsite B-1

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 2.060 ac
 Intensity = 5.725 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 4.954 cfs
 Time to peak = 12 min
 Hyd. volume = 3,567 cuft
 Runoff coeff. = 0.42
 Tc by User = 12.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 11

Ex. Onsite B-2

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 0.930 ac
 Intensity = 5.903 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 1.647 cfs
 Time to peak = 11 min
 Hyd. volume = 1,087 cuft
 Runoff coeff. = 0.3
 Tc by User = 11.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

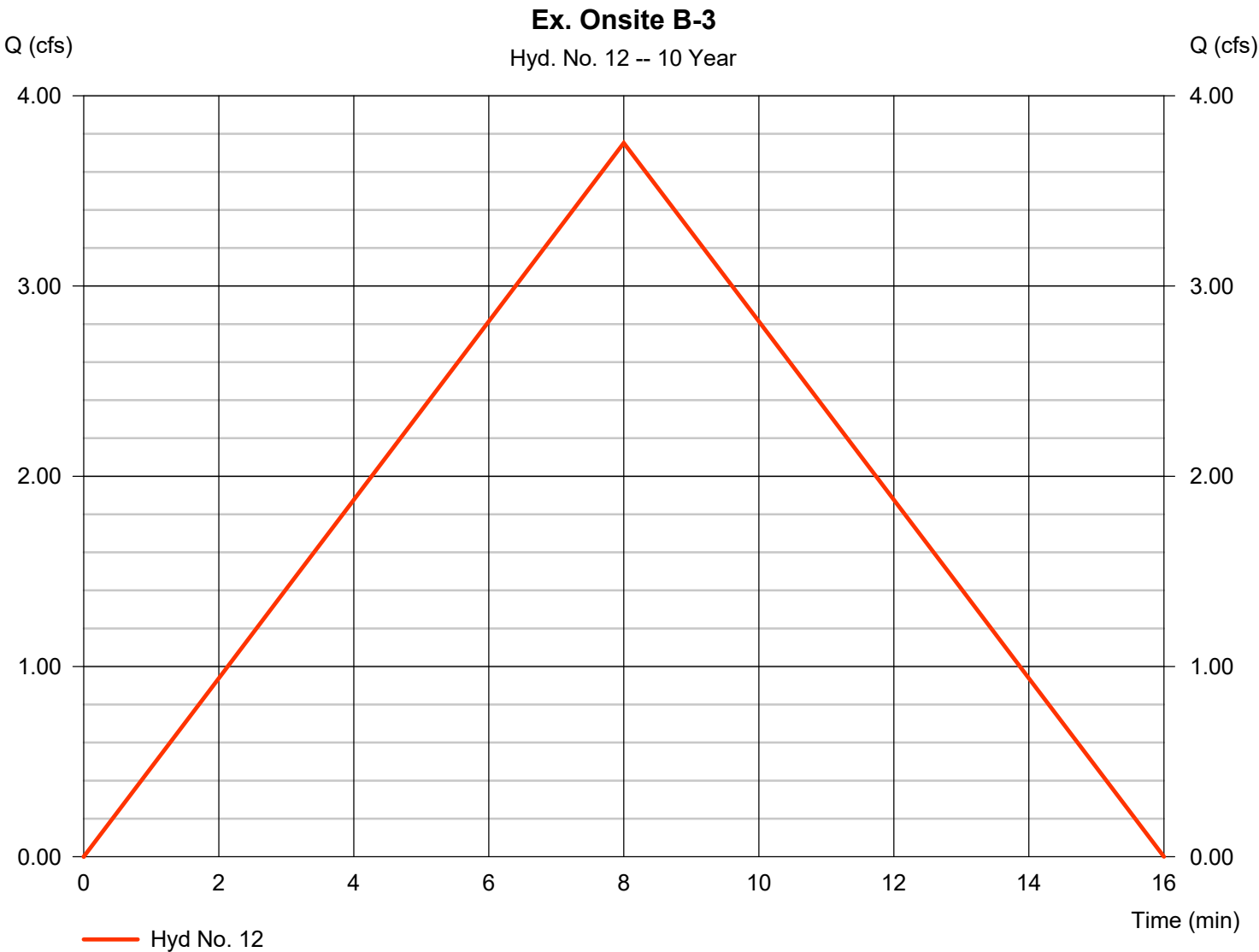
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Monday, 10 / 28 / 2019

Hyd. No. 12

Ex. Onsite B-3

| | | | |
|-----------------|---------------|-------------------|--------------|
| Hydrograph type | = Rational | Peak discharge | = 3.752 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 8 min |
| Time interval | = 1 min | Hyd. volume | = 1,801 cuft |
| Drainage area | = 1.130 ac | Runoff coeff. | = 0.51 |
| Intensity | = 6.511 in/hr | Tc by User | = 8.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

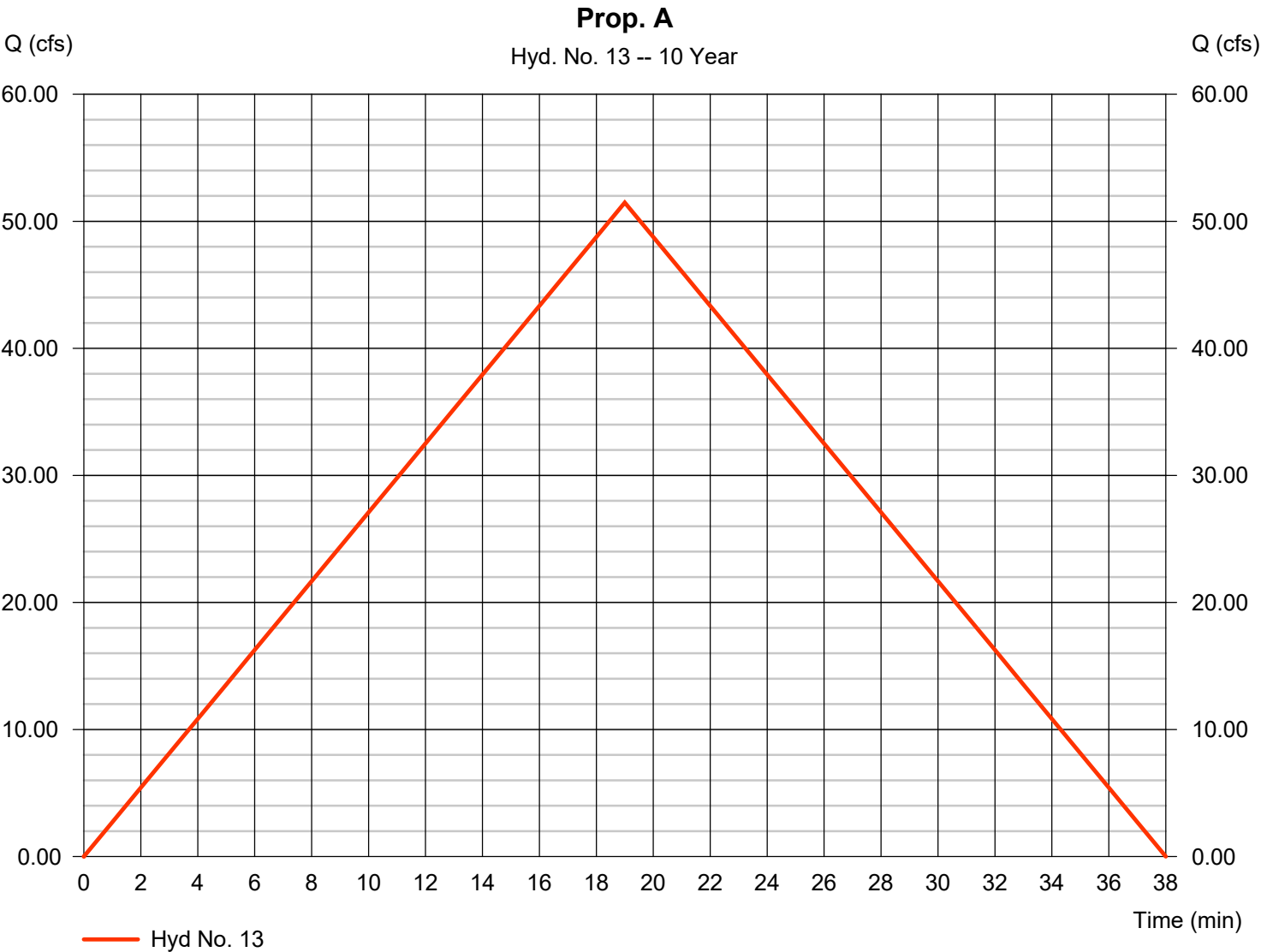
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Monday, 10 / 28 / 2019

Hyd. No. 13

Prop. A

| | | | |
|-----------------|---------------|-------------------|---------------|
| Hydrograph type | = Rational | Peak discharge | = 51.47 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 19 min |
| Time interval | = 1 min | Hyd. volume | = 58,681 cuft |
| Drainage area | = 18.720 ac | Runoff coeff. | = 0.58 |
| Intensity | = 4.741 in/hr | Tc by User | = 19.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

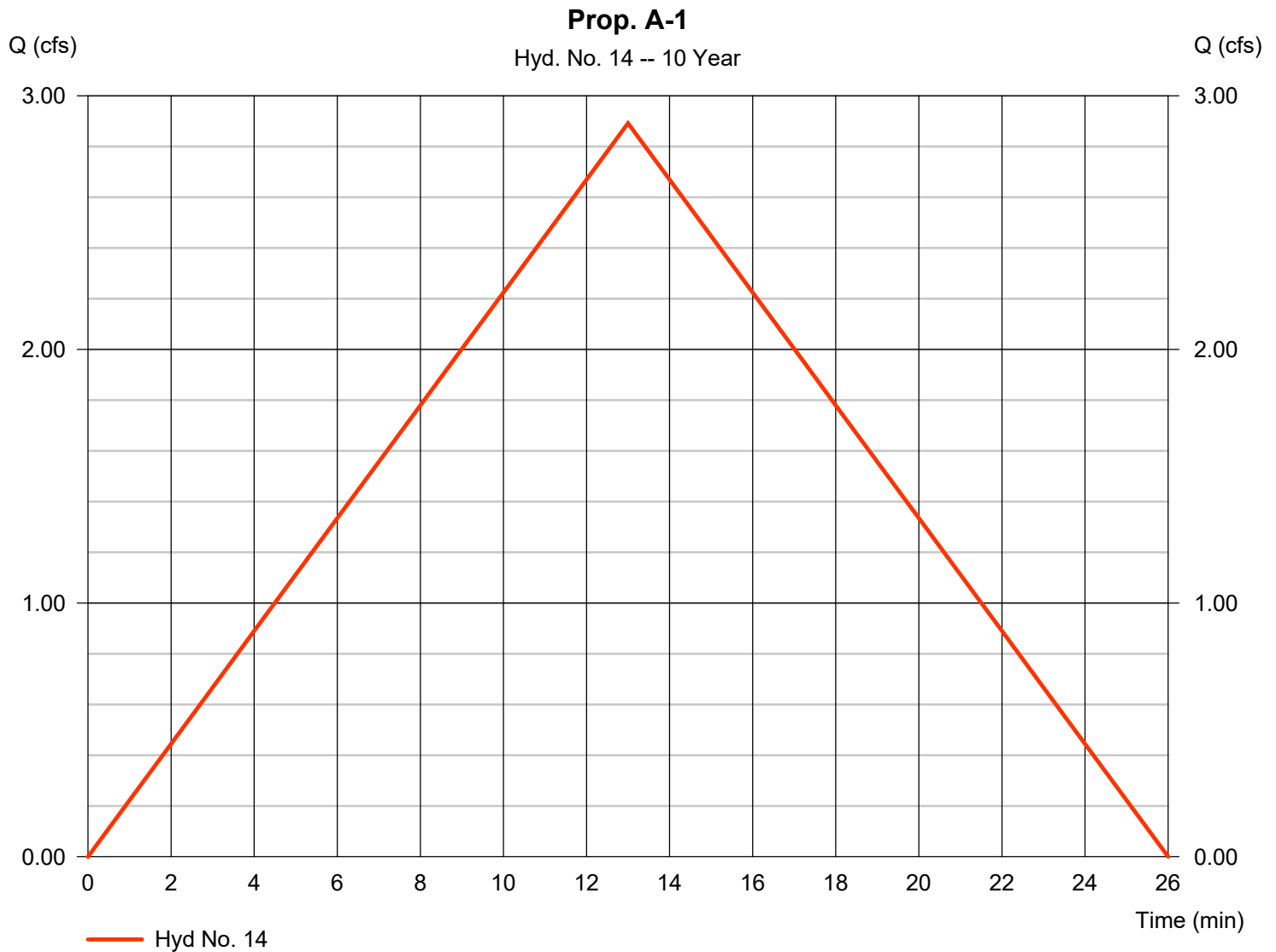
Monday, 10 / 28 / 2019

Hyd. No. 14

Prop. A-1

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 1.020 ac
 Intensity = 5.559 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 2.892 cfs
 Time to peak = 13 min
 Hyd. volume = 2,256 cuft
 Runoff coeff. = 0.51
 Tc by User = 13.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

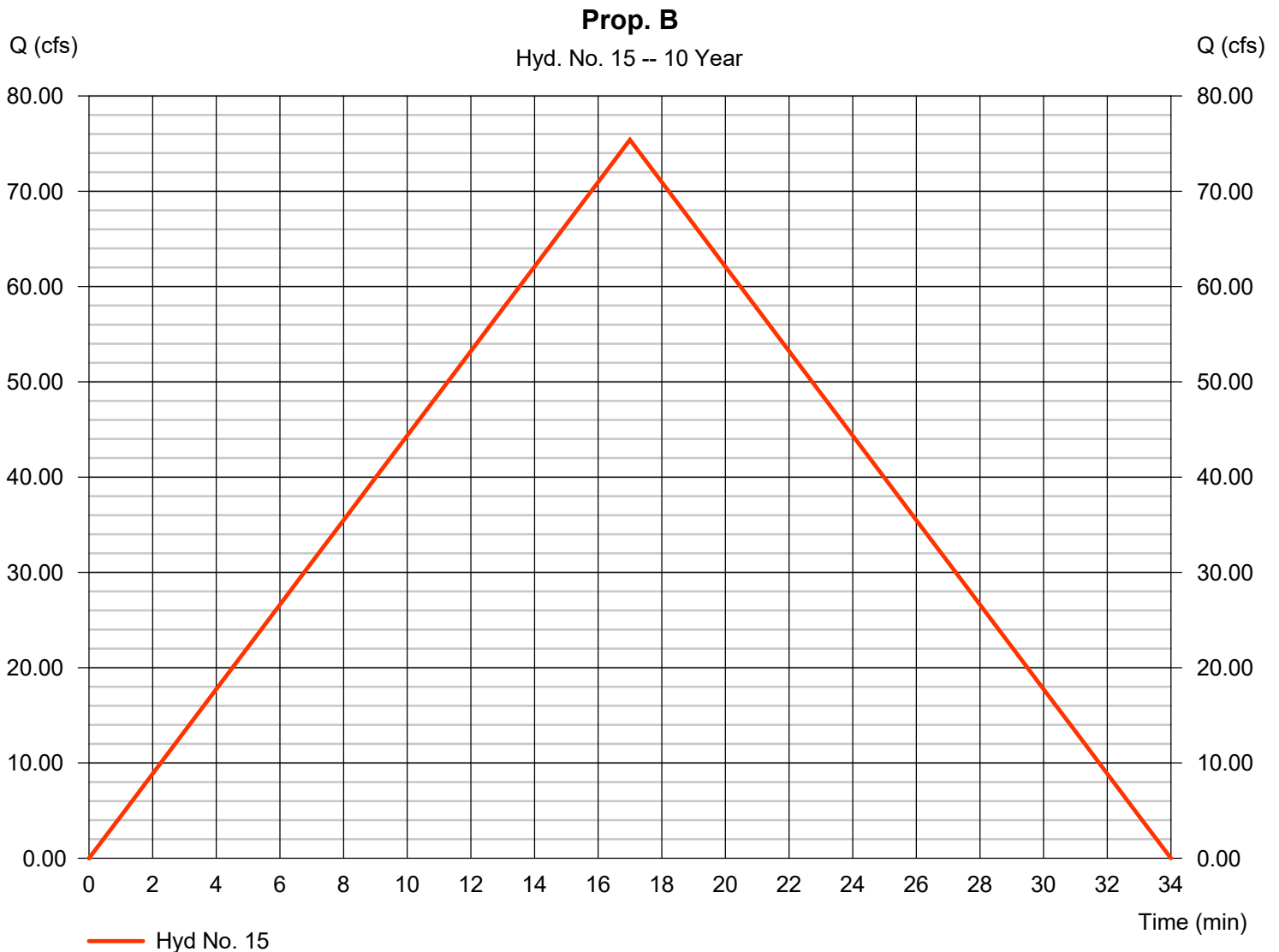
Monday, 10 / 28 / 2019

Hyd. No. 15

Prop. B

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 26.540 ac
 Intensity = 4.984 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 75.40 cfs
 Time to peak = 17 min
 Hyd. volume = 76,906 cuft
 Runoff coeff. = 0.57
 Tc by User = 17.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

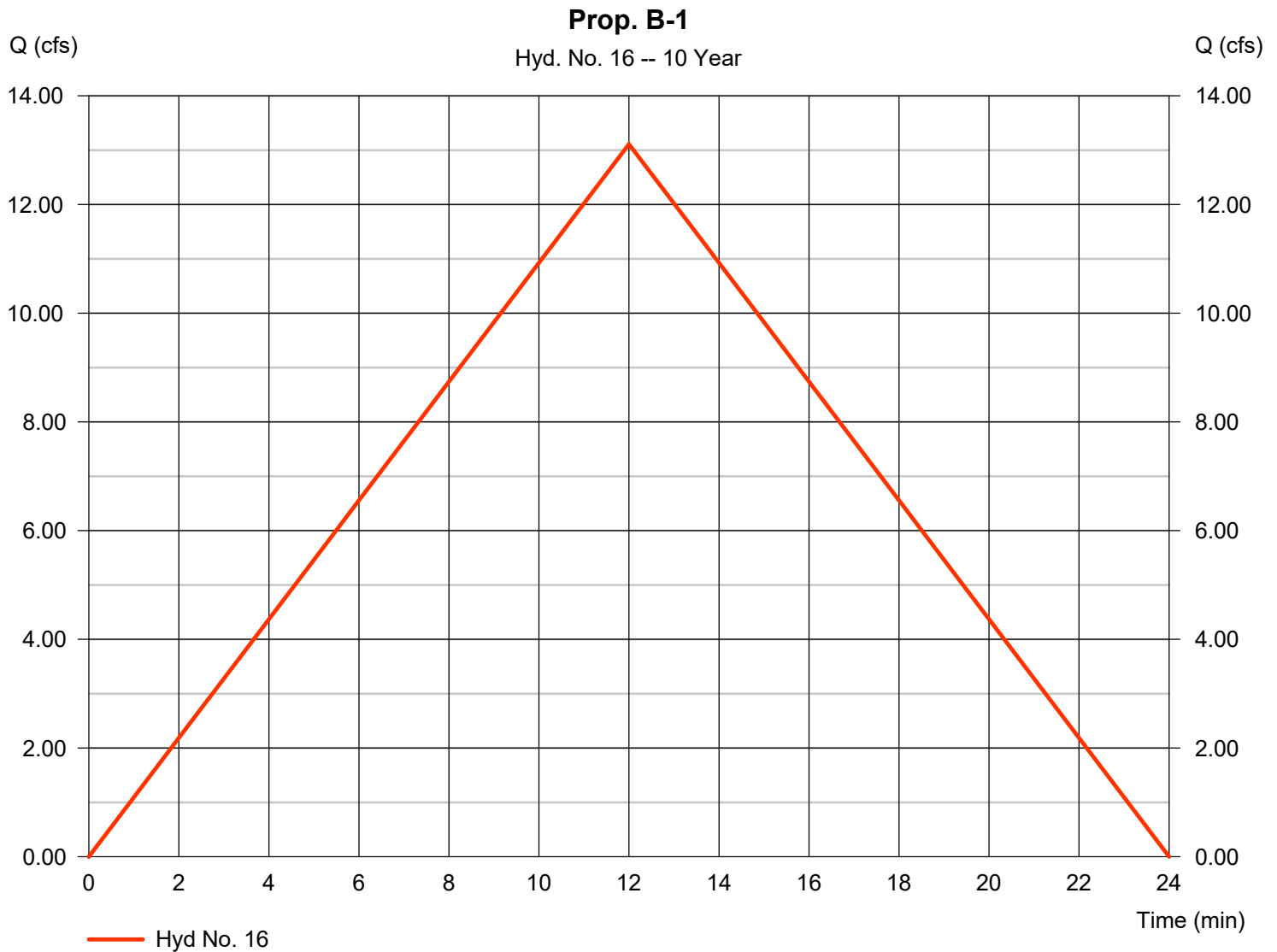
Monday, 10 / 28 / 2019

Hyd. No. 16

Prop. B-1

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 4.490 ac
 Intensity = 5.725 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 13.11 cfs
 Time to peak = 12 min
 Hyd. volume = 9,440 cuft
 Runoff coeff. = 0.51
 Tc by User = 12.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

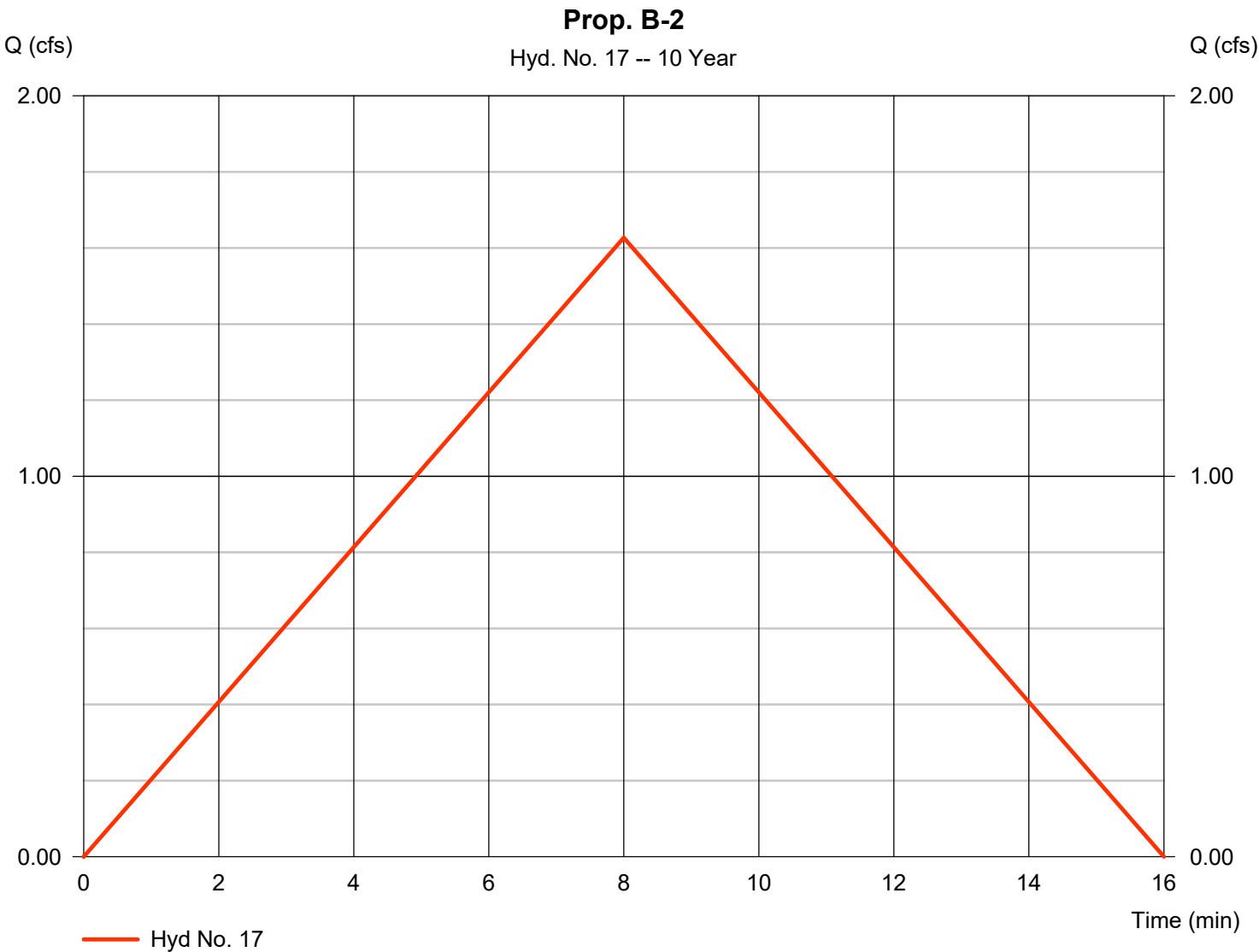
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Monday, 10 / 28 / 2019

Hyd. No. 17

Prop. B-2

| | | | |
|-----------------|---------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 1.627 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 8 min |
| Time interval | = 1 min | Hyd. volume | = 781 cuft |
| Drainage area | = 0.490 ac | Runoff coeff. | = 0.51 |
| Intensity | = 6.511 in/hr | Tc by User | = 8.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

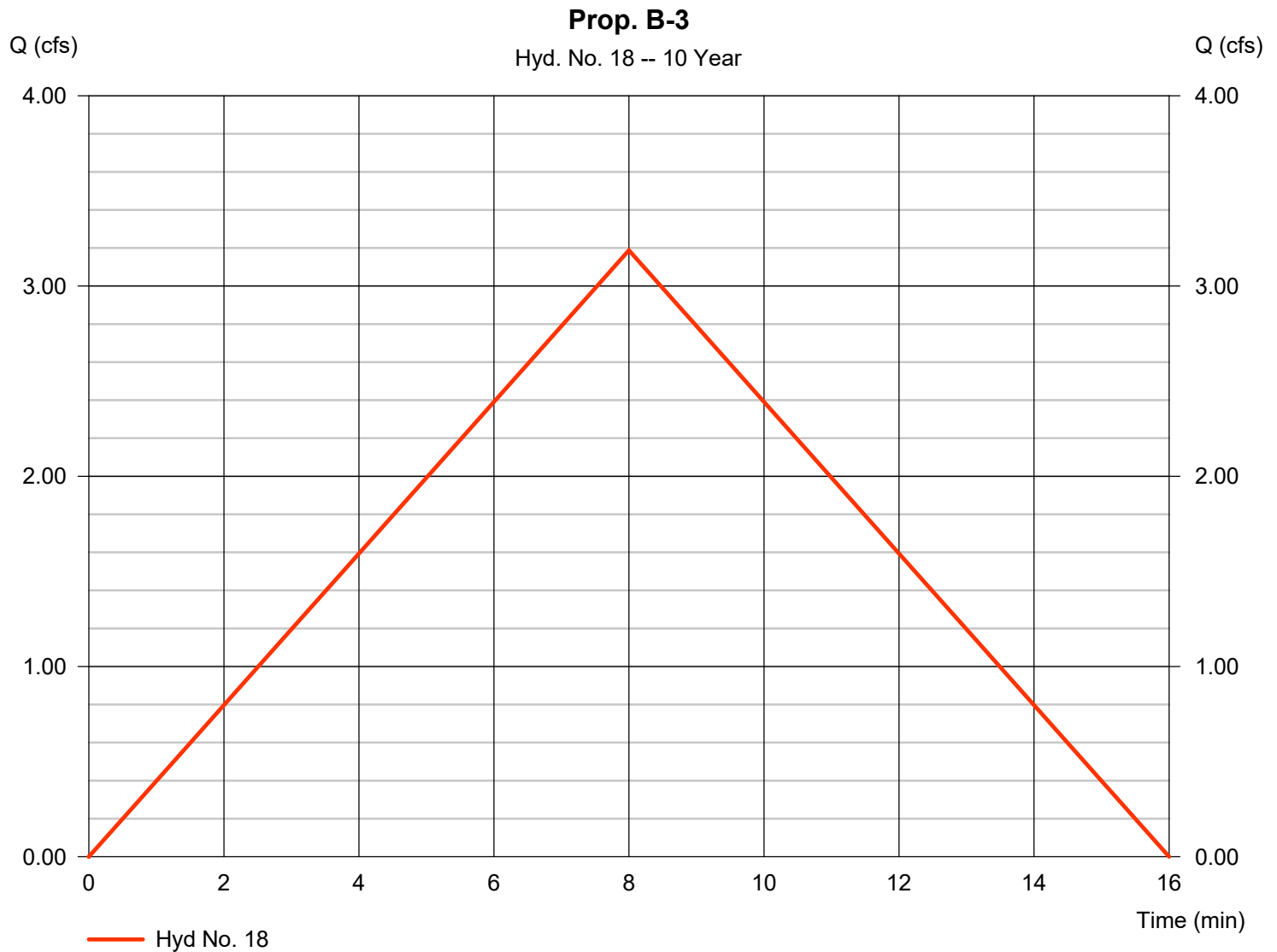
Monday, 10 / 28 / 2019

Hyd. No. 18

Prop. B-3

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 0.960 ac
 Intensity = 6.511 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 3.188 cfs
 Time to peak = 8 min
 Hyd. volume = 1,530 cuft
 Runoff coeff. = 0.51
 Tc by User = 8.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

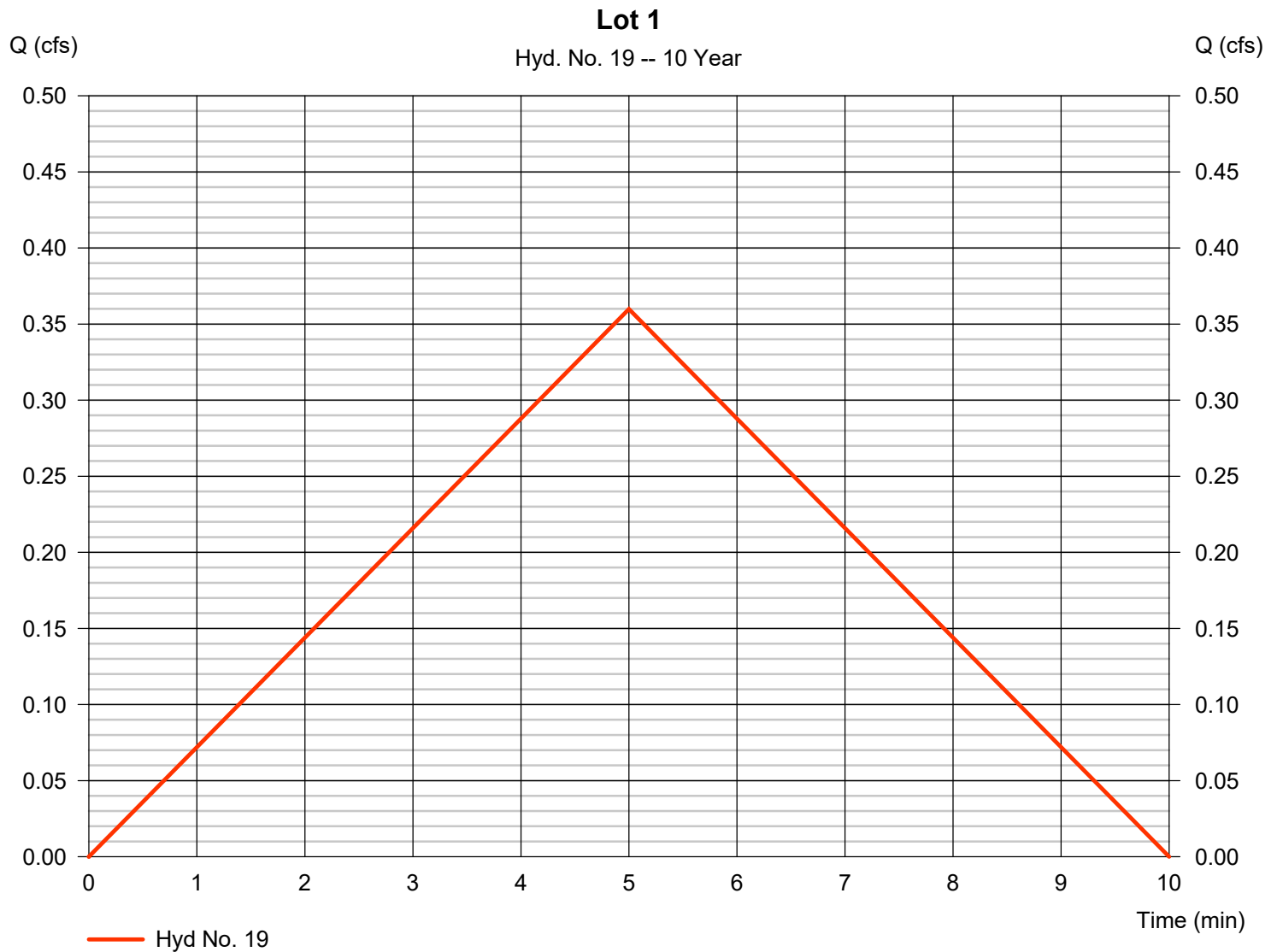
Monday, 10 / 28 / 2019

Hyd. No. 19

Lot 1

Hydrograph type = Rational
Storm frequency = 10 yrs
Time interval = 1 min
Drainage area = 0.055 ac
Intensity = 7.269 in/hr
IDF Curve = KCMO.IDF

Peak discharge = 0.360 cfs
Time to peak = 5 min
Hyd. volume = 108 cuft
Runoff coeff. = 0.9
Tc by User = 5.00 min
Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

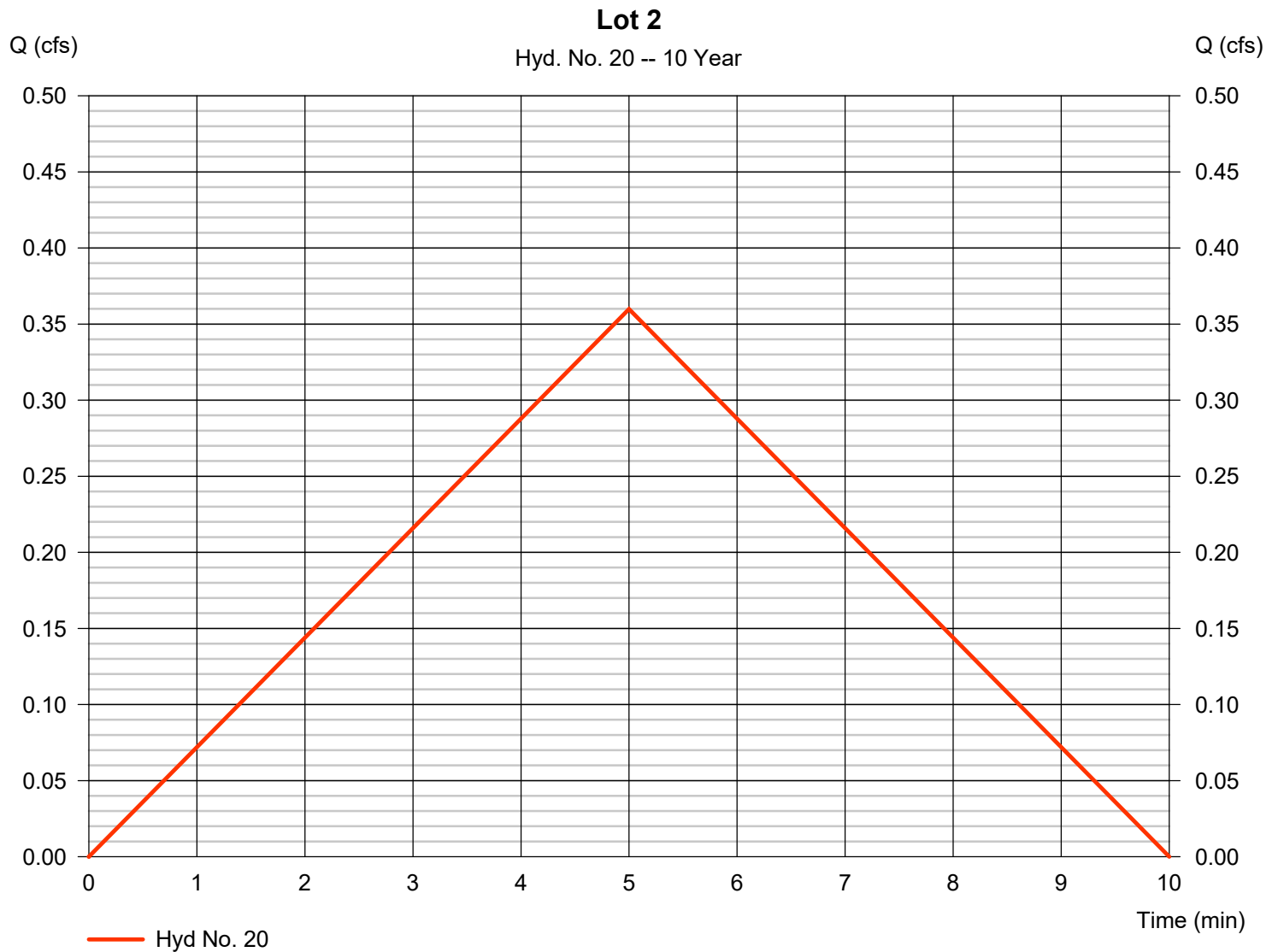
Monday, 10 / 28 / 2019

Hyd. No. 20

Lot 2

Hydrograph type = Rational
Storm frequency = 10 yrs
Time interval = 1 min
Drainage area = 0.055 ac
Intensity = 7.269 in/hr
IDF Curve = KCMO.IDF

Peak discharge = 0.360 cfs
Time to peak = 5 min
Hyd. volume = 108 cuft
Runoff coeff. = 0.9
Tc by User = 5.00 min
Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

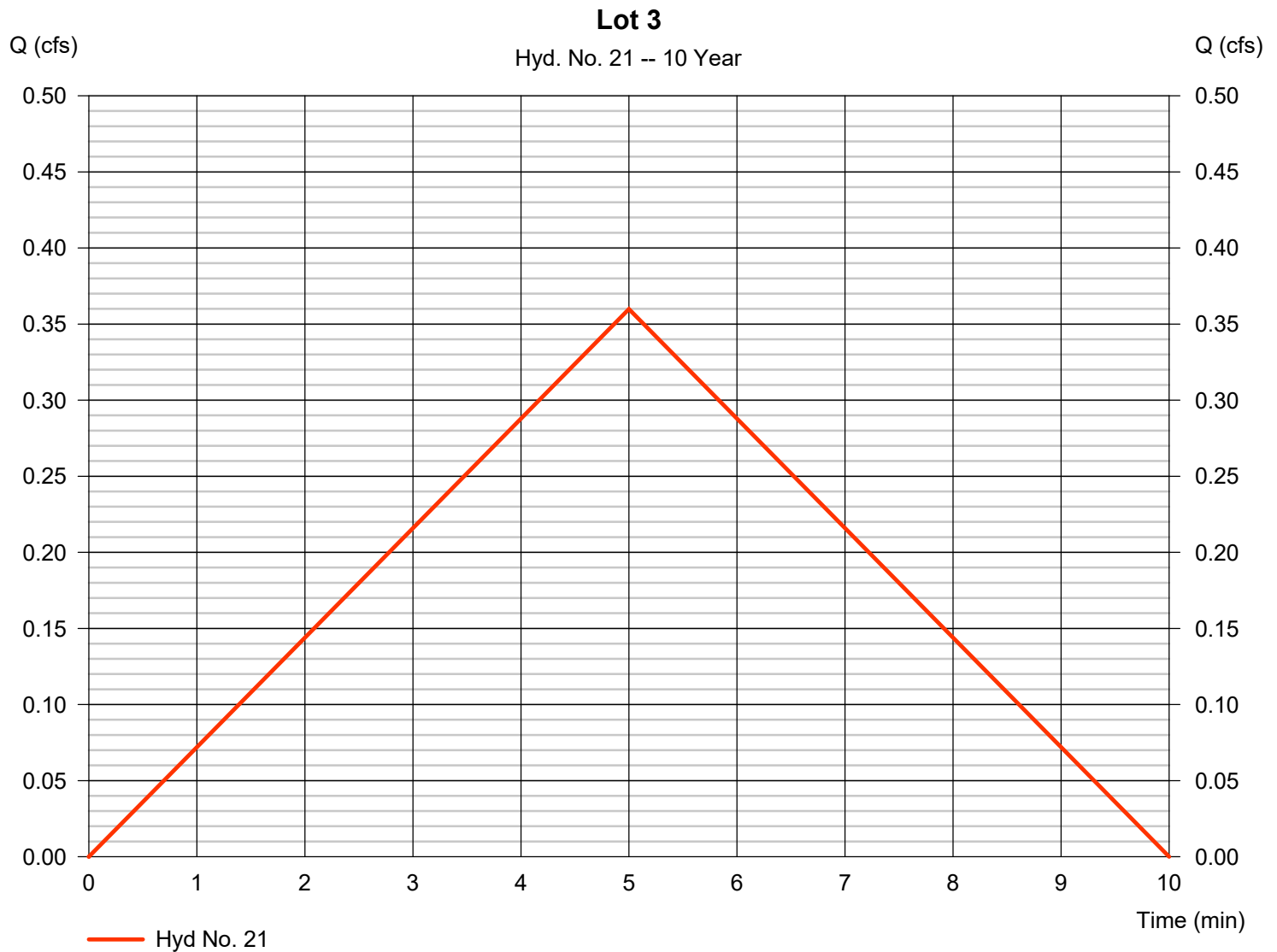
Monday, 10 / 28 / 2019

Hyd. No. 21

Lot 3

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 0.055 ac
 Intensity = 7.269 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 0.360 cfs
 Time to peak = 5 min
 Hyd. volume = 108 cuft
 Runoff coeff. = 0.9
 Tc by User = 5.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

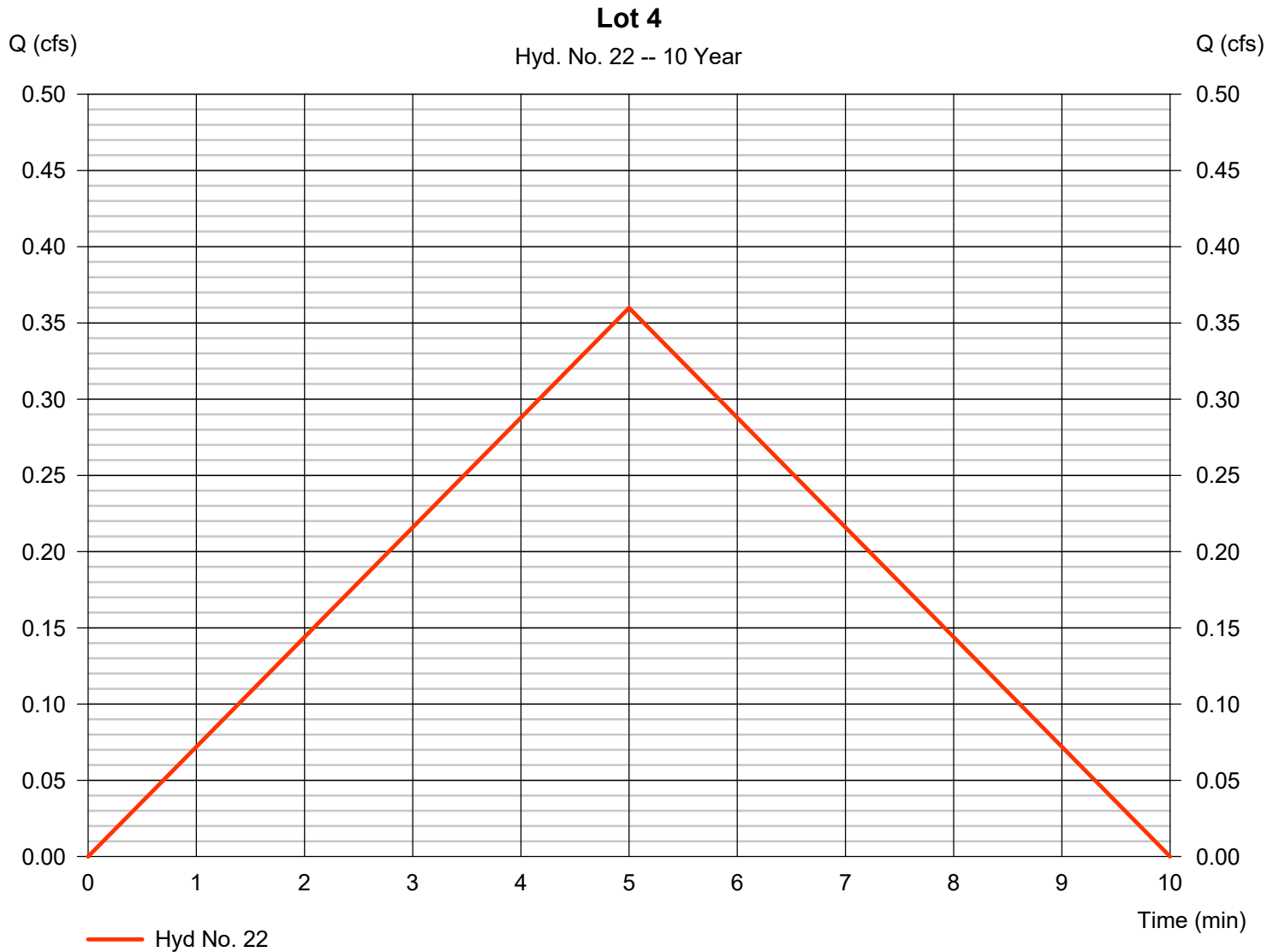
Monday, 10 / 28 / 2019

Hyd. No. 22

Lot 4

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 0.055 ac
 Intensity = 7.269 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 0.360 cfs
 Time to peak = 5 min
 Hyd. volume = 108 cuft
 Runoff coeff. = 0.9
 Tc by User = 5.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

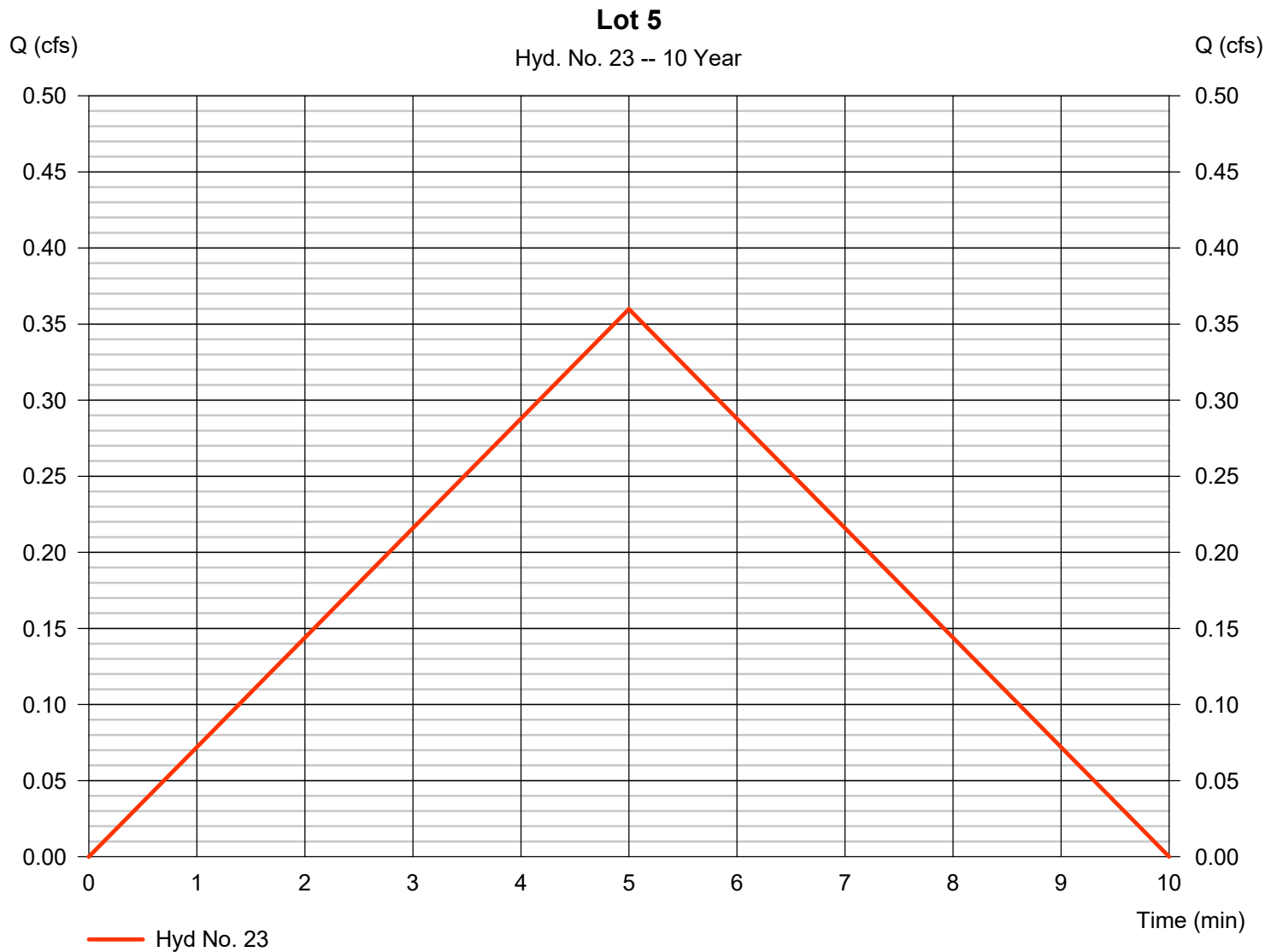
Monday, 10 / 28 / 2019

Hyd. No. 23

Lot 5

Hydrograph type = Rational
 Storm frequency = 10 yrs
 Time interval = 1 min
 Drainage area = 0.055 ac
 Intensity = 7.269 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 0.360 cfs
 Time to peak = 5 min
 Hyd. volume = 108 cuft
 Runoff coeff. = 0.9
 Tc by User = 5.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

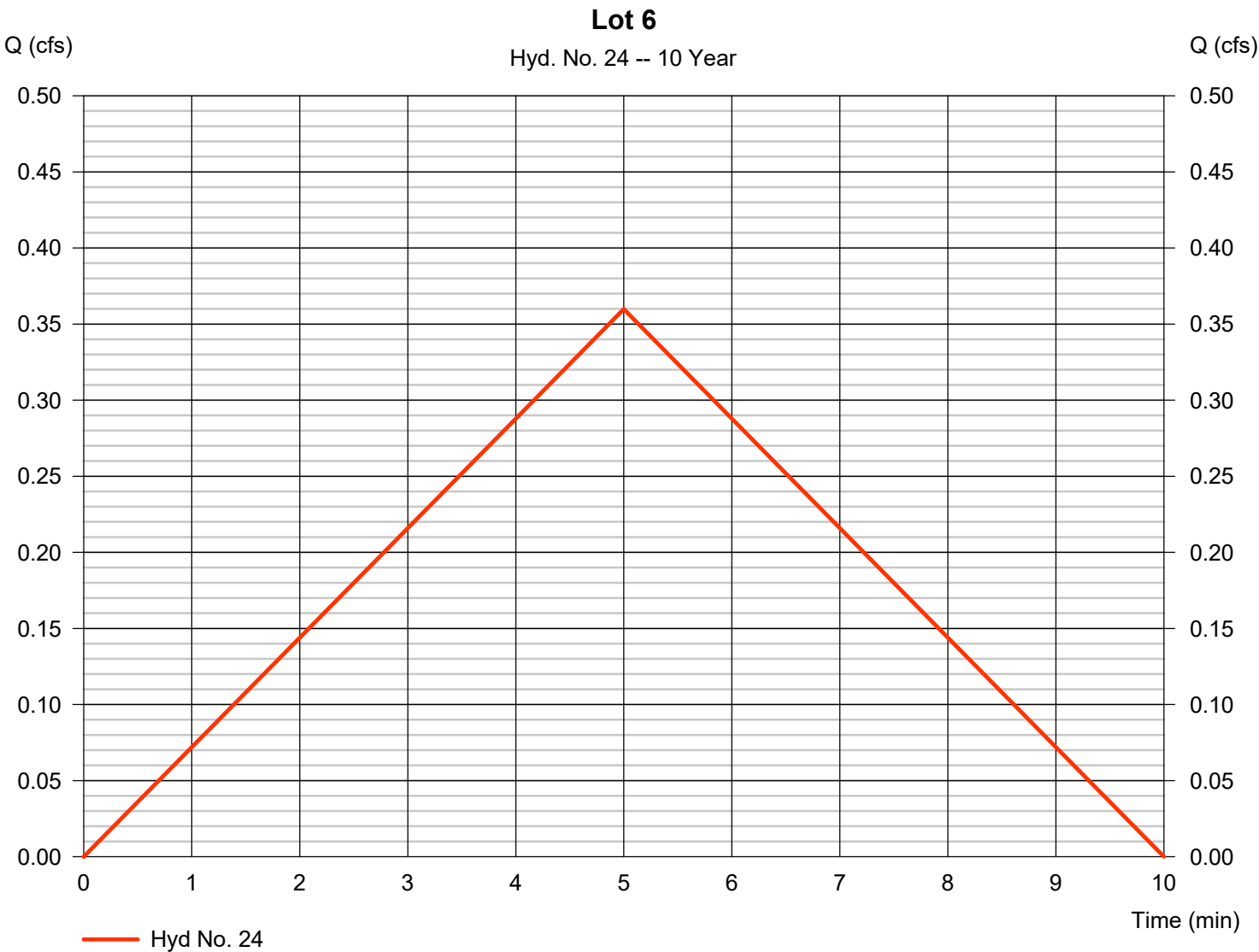
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 24

Lot 6

| | | | |
|-----------------|---------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 0.360 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 5 min |
| Time interval | = 1 min | Hyd. volume | = 108 cuft |
| Drainage area | = 0.055 ac | Runoff coeff. | = 0.9 |
| Intensity | = 7.269 in/hr | Tc by User | = 5.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

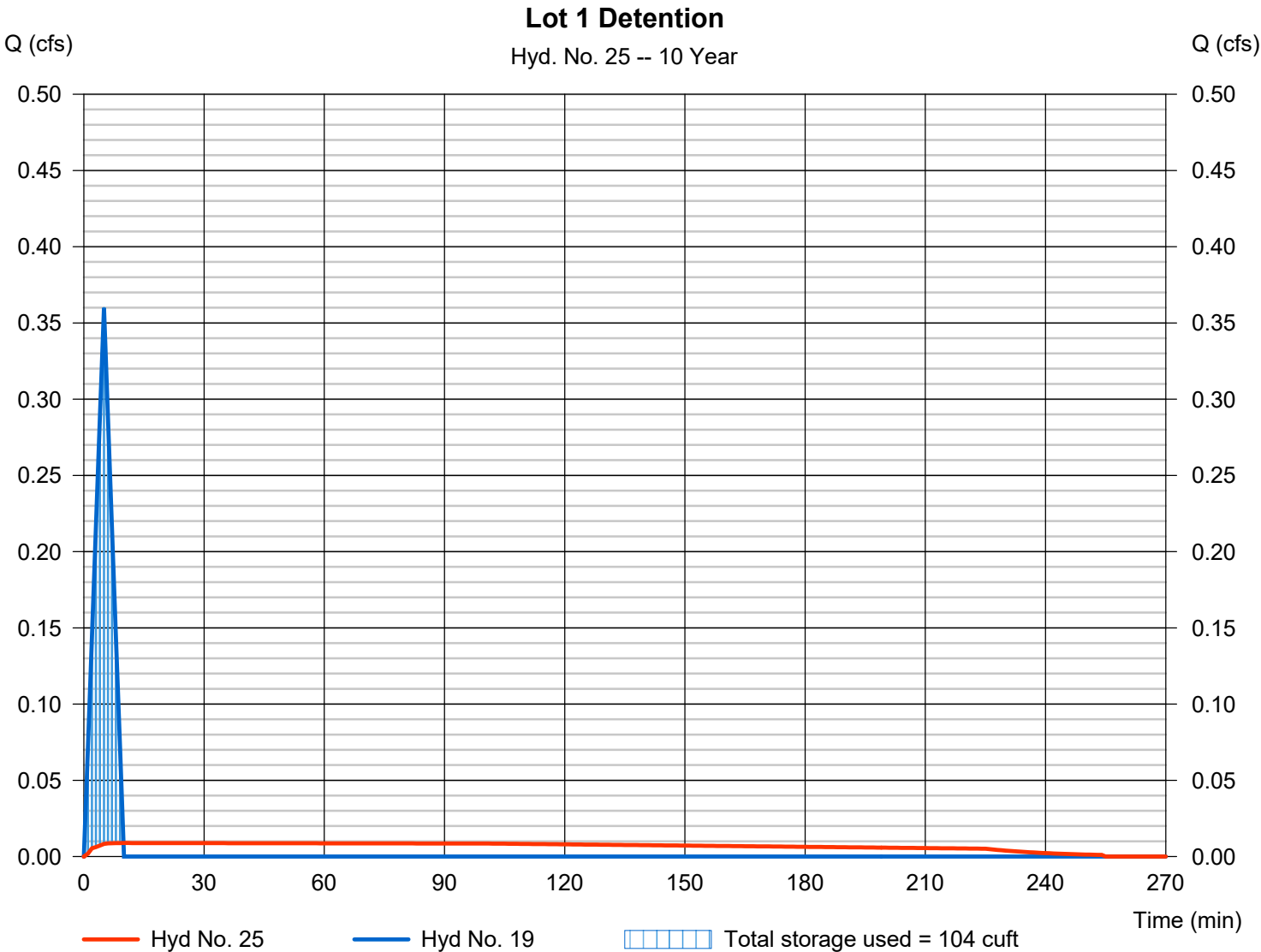
Monday, 10 / 28 / 2019

Hyd. No. 25

Lot 1 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 107 cuft |
| Inflow hyd. No. | = 19 - Lot 1 | Max. Elevation | = 1038.12 ft |
| Reservoir name | = Lot 1 Detention Pit | Max. Storage | = 104 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

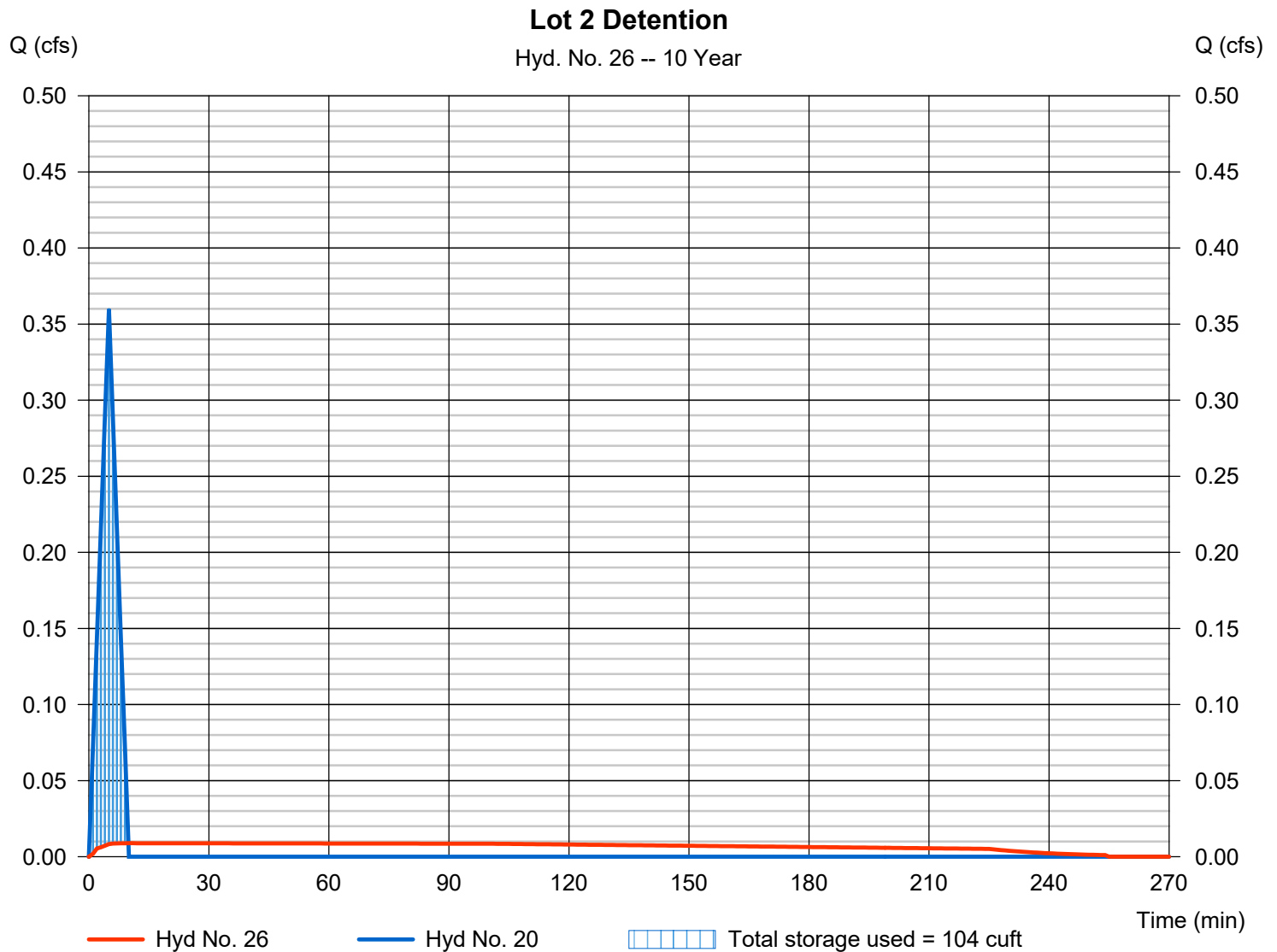
Monday, 10 / 28 / 2019

Hyd. No. 26

Lot 2 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 107 cuft |
| Inflow hyd. No. | = 20 - Lot 2 | Max. Elevation | = 1040.12 ft |
| Reservoir name | = Lot 2 Detention Pit | Max. Storage | = 104 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

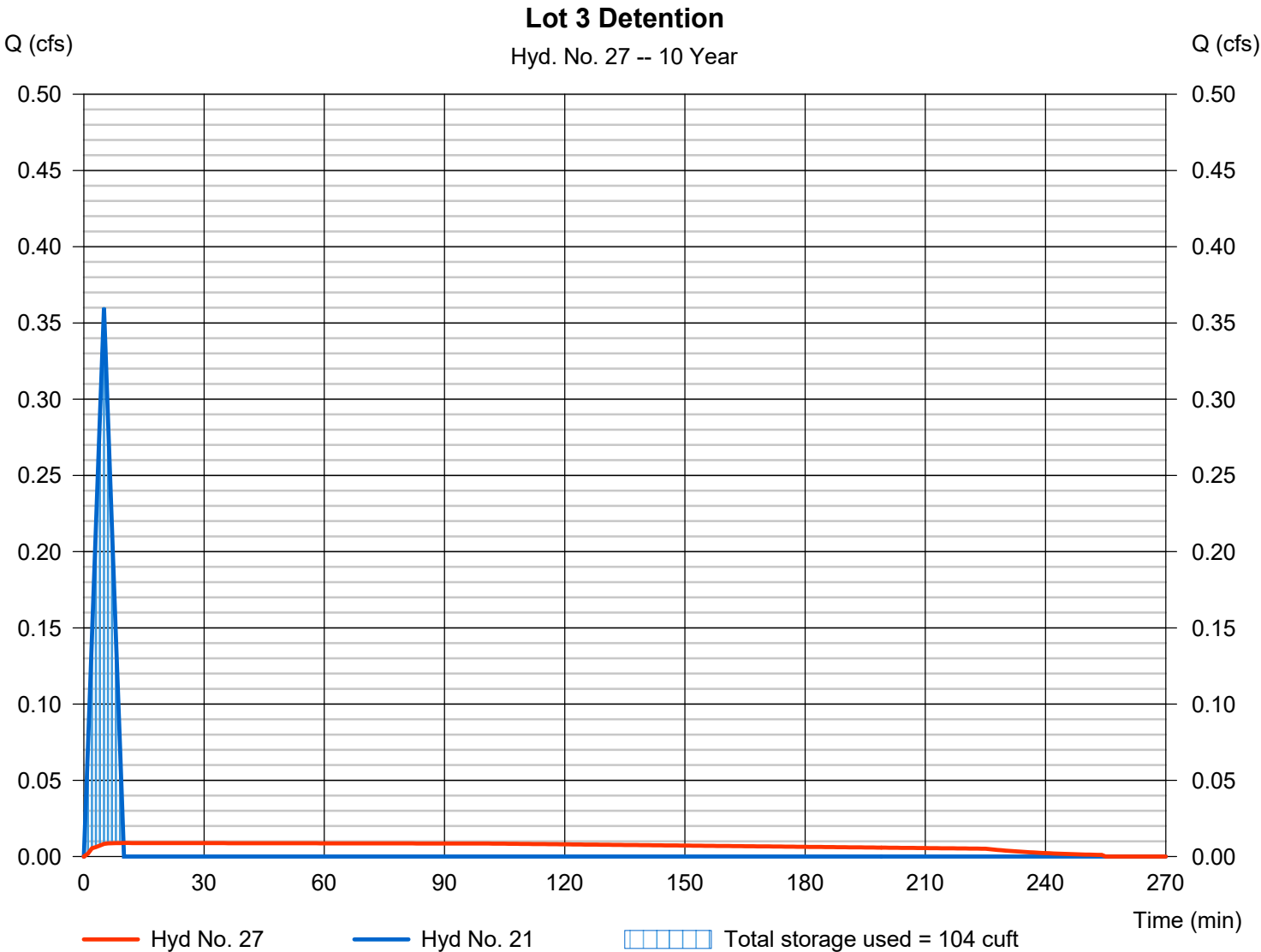
Monday, 10 / 28 / 2019

Hyd. No. 27

Lot 3 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 107 cuft |
| Inflow hyd. No. | = 21 - Lot 3 | Max. Elevation | = 1037.12 ft |
| Reservoir name | = Lot 3 Detention Pit | Max. Storage | = 104 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

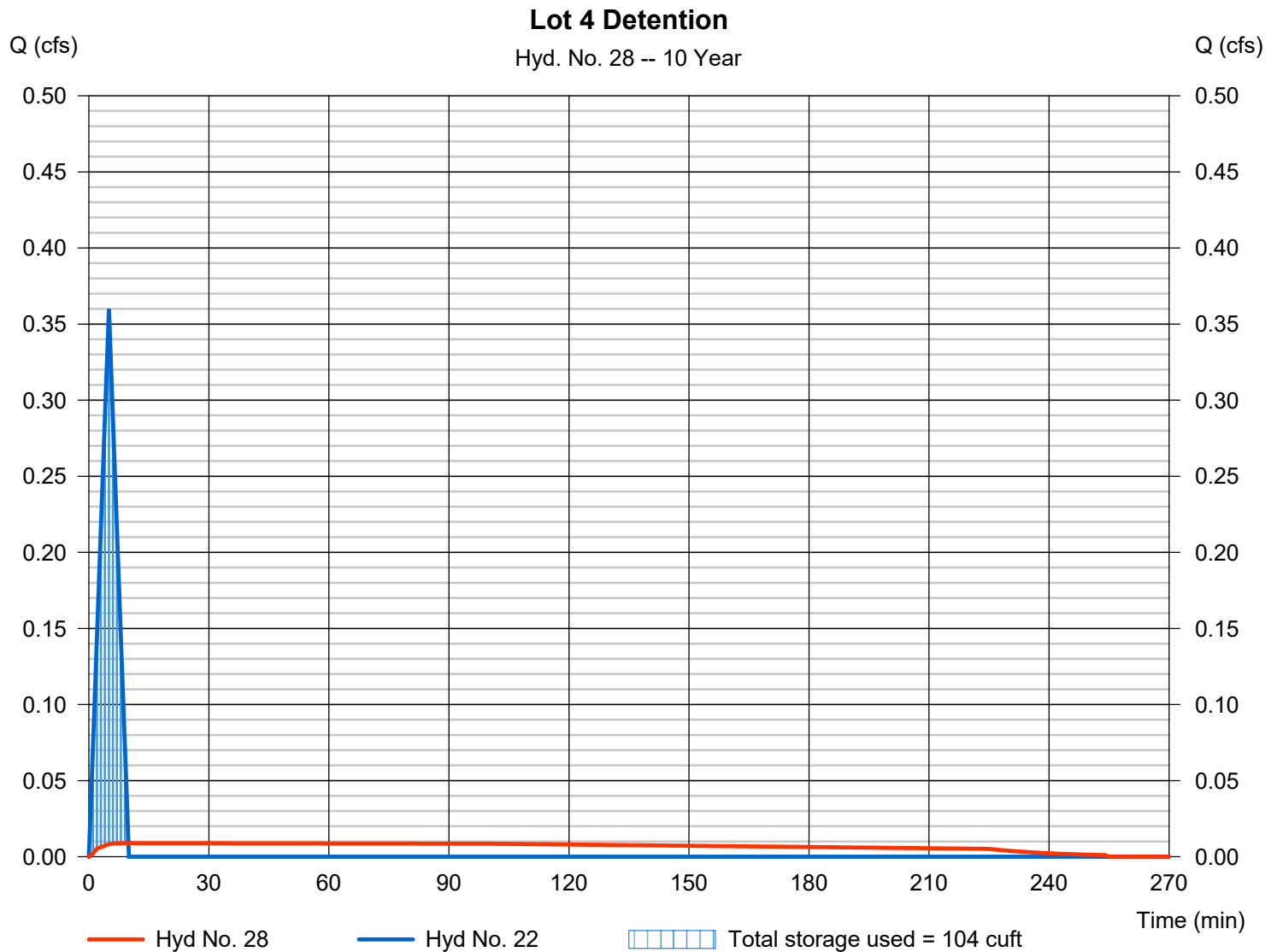
Monday, 10 / 28 / 2019

Hyd. No. 28

Lot 4 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 107 cuft |
| Inflow hyd. No. | = 22 - Lot 4 | Max. Elevation | = 1039.12 ft |
| Reservoir name | = Lot 4 Detention Pit | Max. Storage | = 104 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

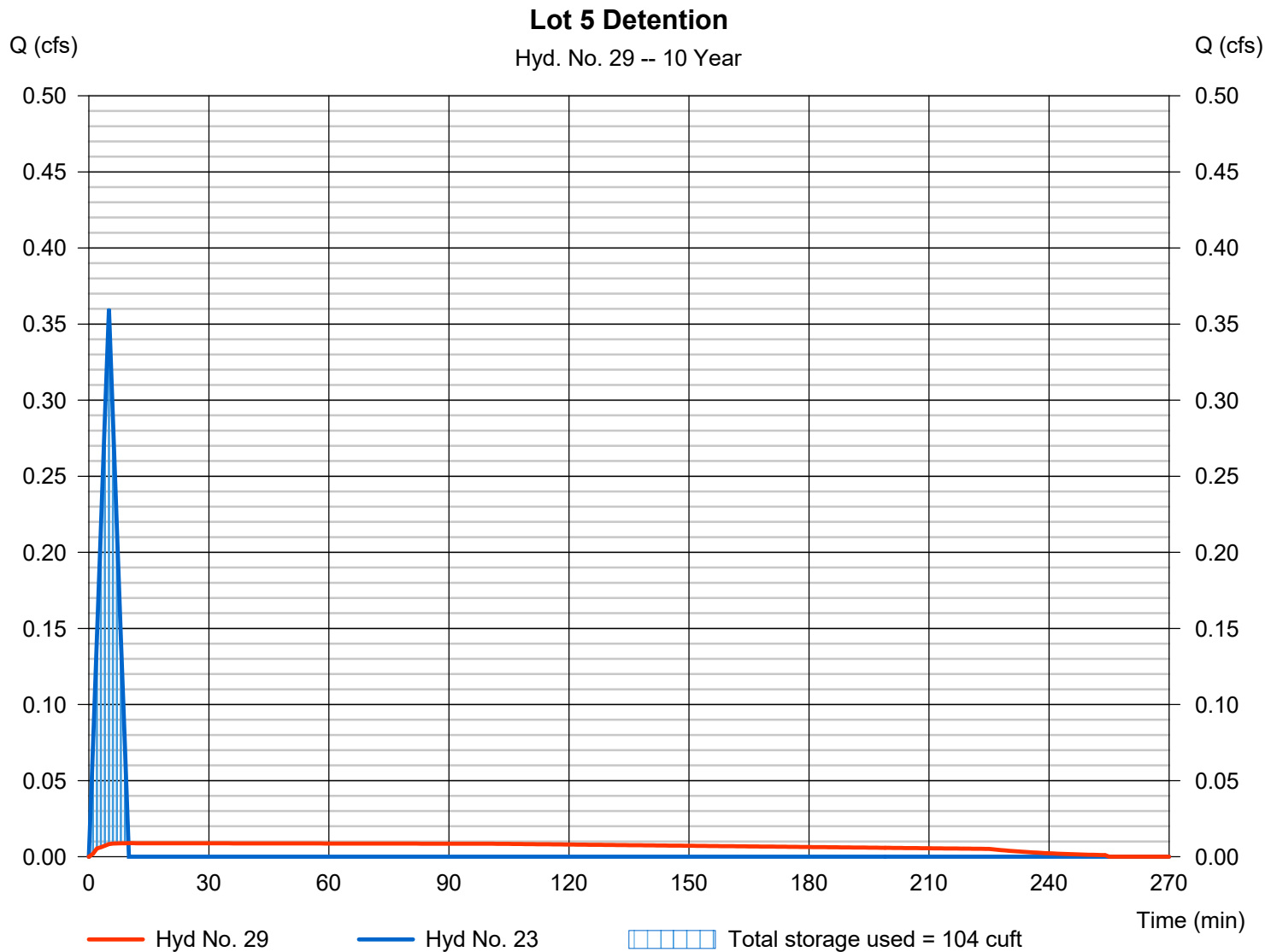
Monday, 10 / 28 / 2019

Hyd. No. 29

Lot 5 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 107 cuft |
| Inflow hyd. No. | = 23 - Lot 5 | Max. Elevation | = 1038.12 ft |
| Reservoir name | = Lot 5 Detention Pit | Max. Storage | = 104 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

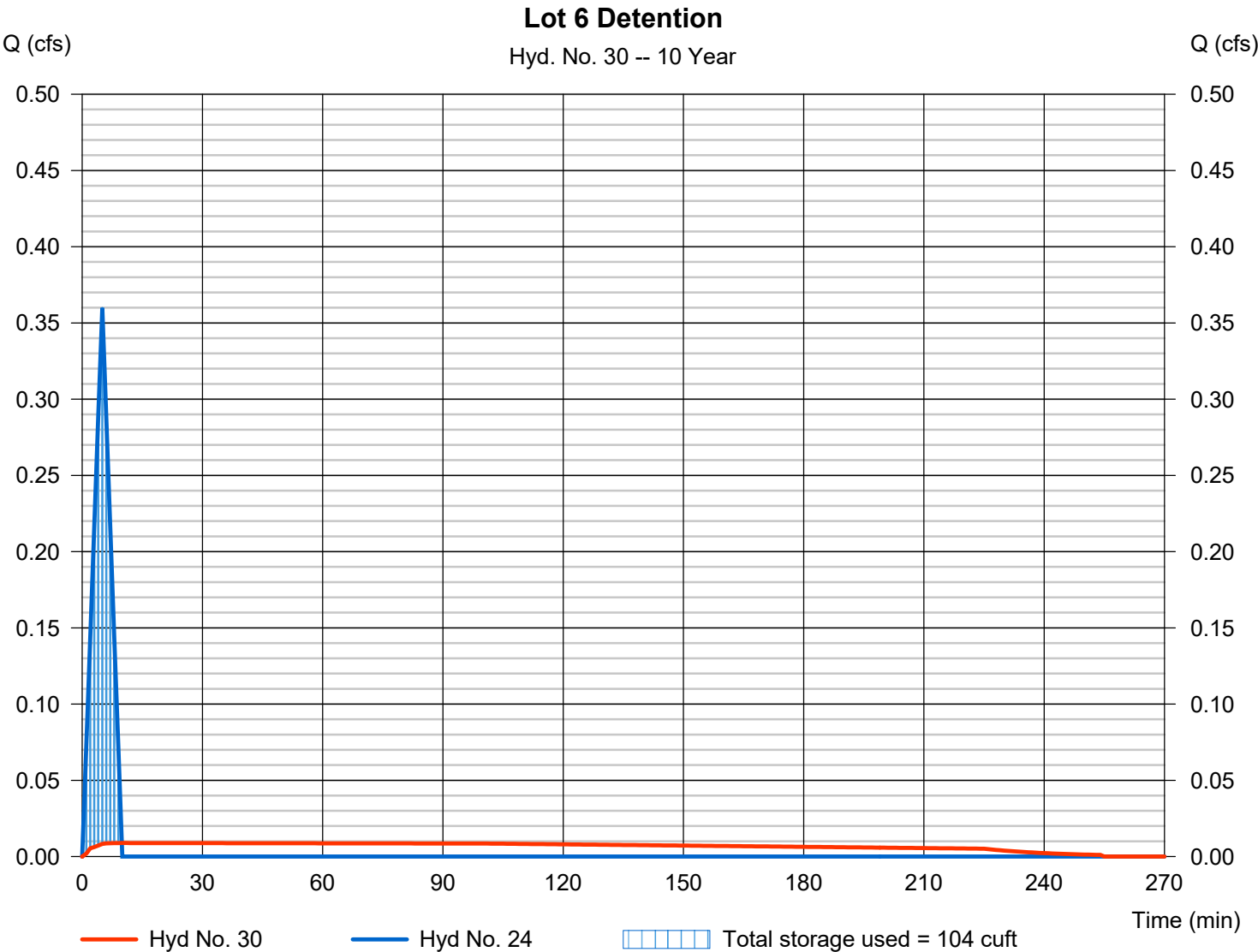
Monday, 10 / 28 / 2019

Hyd. No. 30

Lot 6 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 107 cuft |
| Inflow hyd. No. | = 24 - Lot 6 | Max. Elevation | = 1038.12 ft |
| Reservoir name | = Lot 6 Detention Pit | Max. Storage | = 104 cuft |

Storage Indication method used.



Hydrograph Report

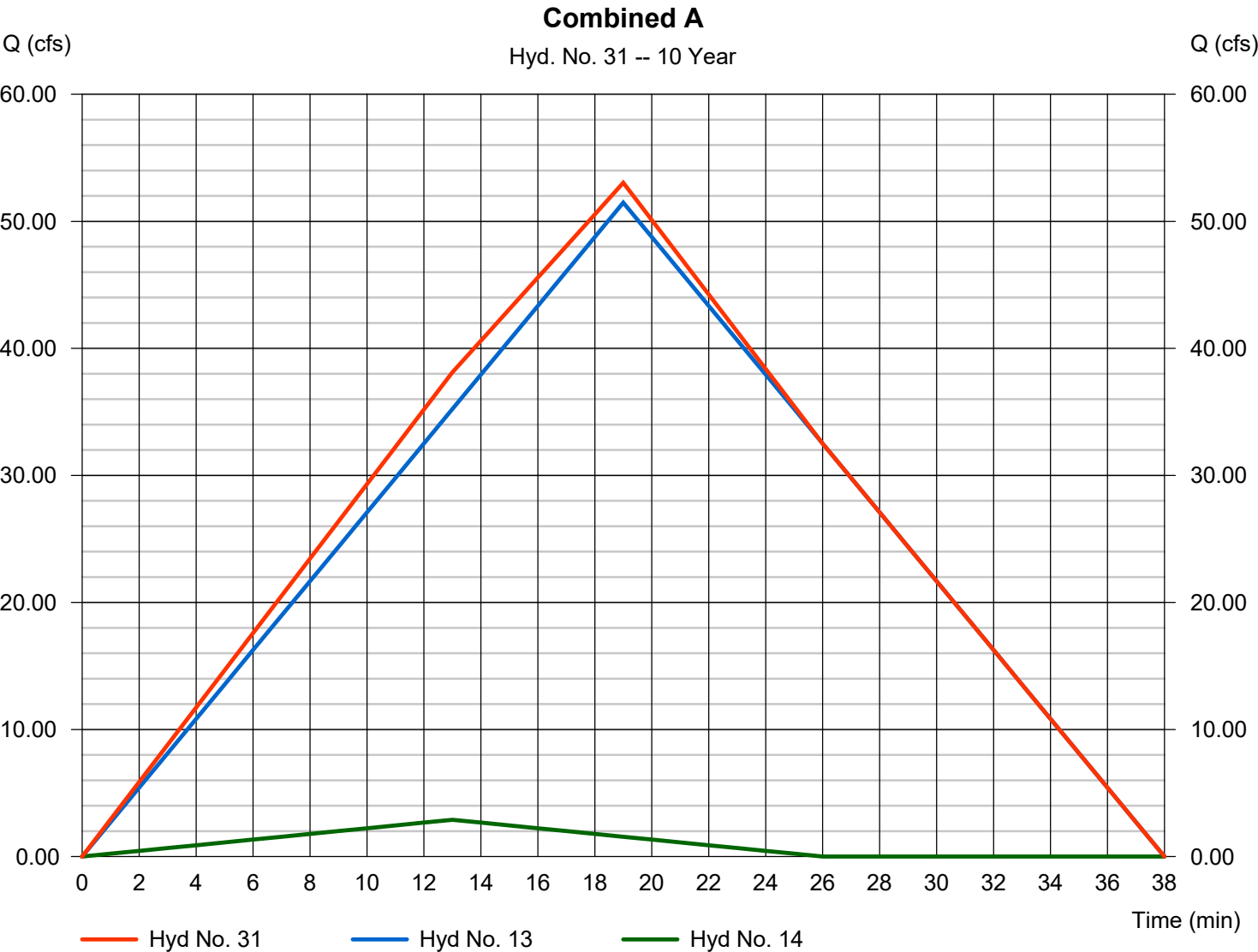
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 31

Combined A

| | | | |
|-----------------|-----------|----------------------|---------------|
| Hydrograph type | = Combine | Peak discharge | = 53.03 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 19 min |
| Time interval | = 1 min | Hyd. volume | = 60,937 cuft |
| Inflow hyds. | = 13, 14 | Contrib. drain. area | = 19.740 ac |



Hydrograph Report

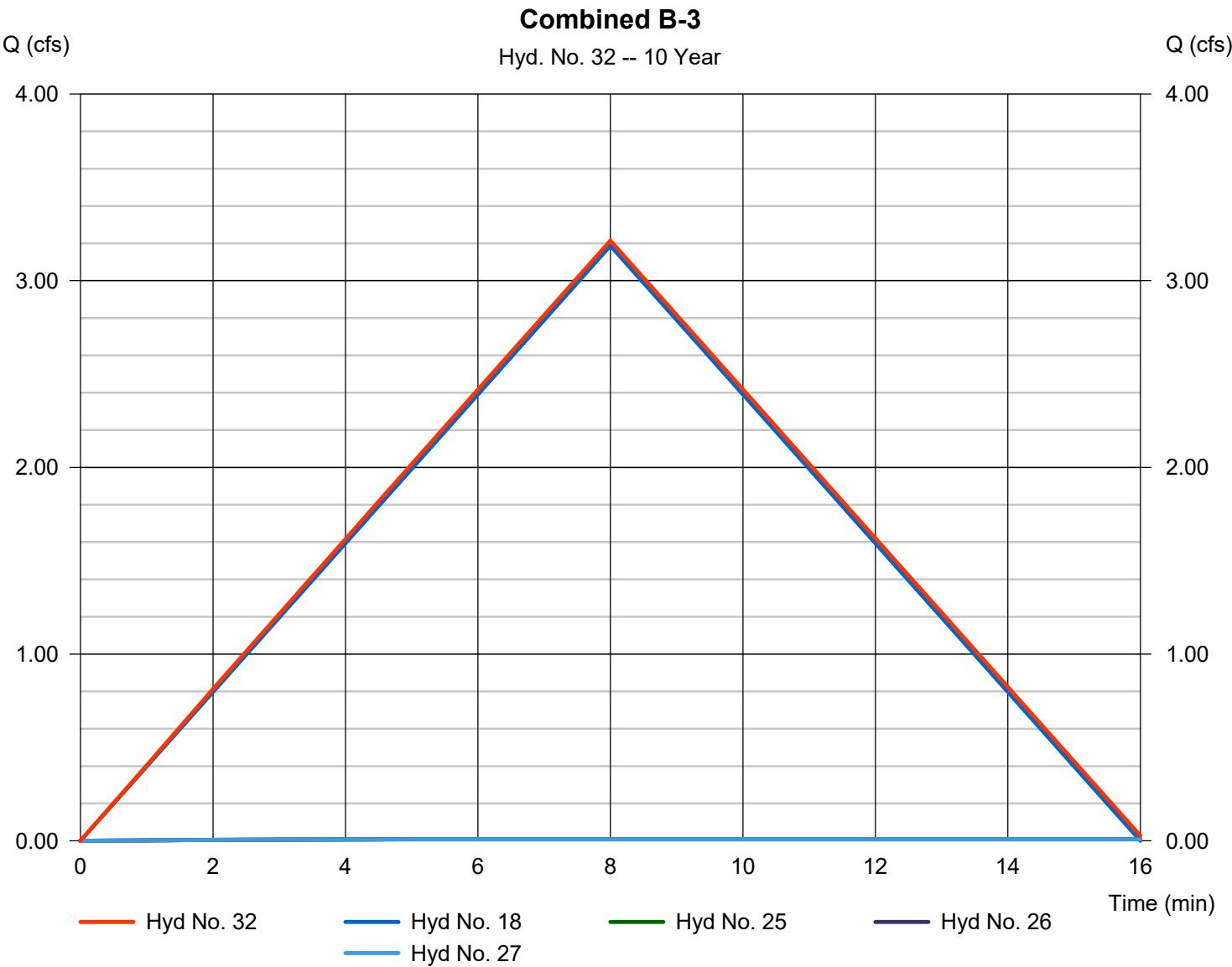
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 32

Combined B-3

| | | | |
|-----------------|------------------|----------------------|--------------|
| Hydrograph type | = Combine | Peak discharge | = 3.214 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 8 min |
| Time interval | = 1 min | Hyd. volume | = 1,851 cuft |
| Inflow hyds. | = 18, 25, 26, 27 | Contrib. drain. area | = 0.960 ac |



Hydrograph Report

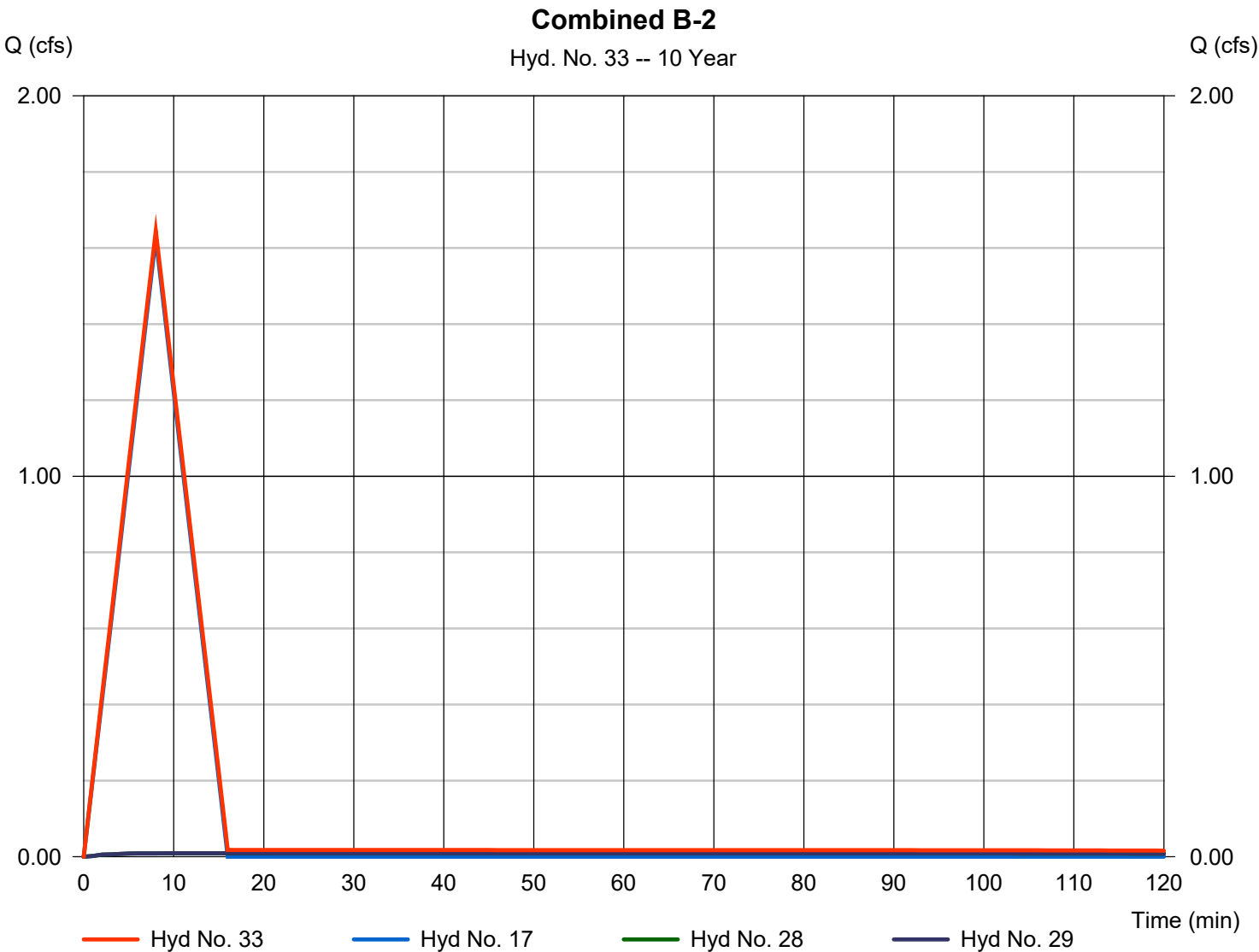
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 33

Combined B-2

| | | | |
|-----------------|--------------|----------------------|-------------|
| Hydrograph type | = Combine | Peak discharge | = 1.645 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 8 min |
| Time interval | = 1 min | Hyd. volume | = 995 cuft |
| Inflow hyds. | = 17, 28, 29 | Contrib. drain. area | = 0.490 ac |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

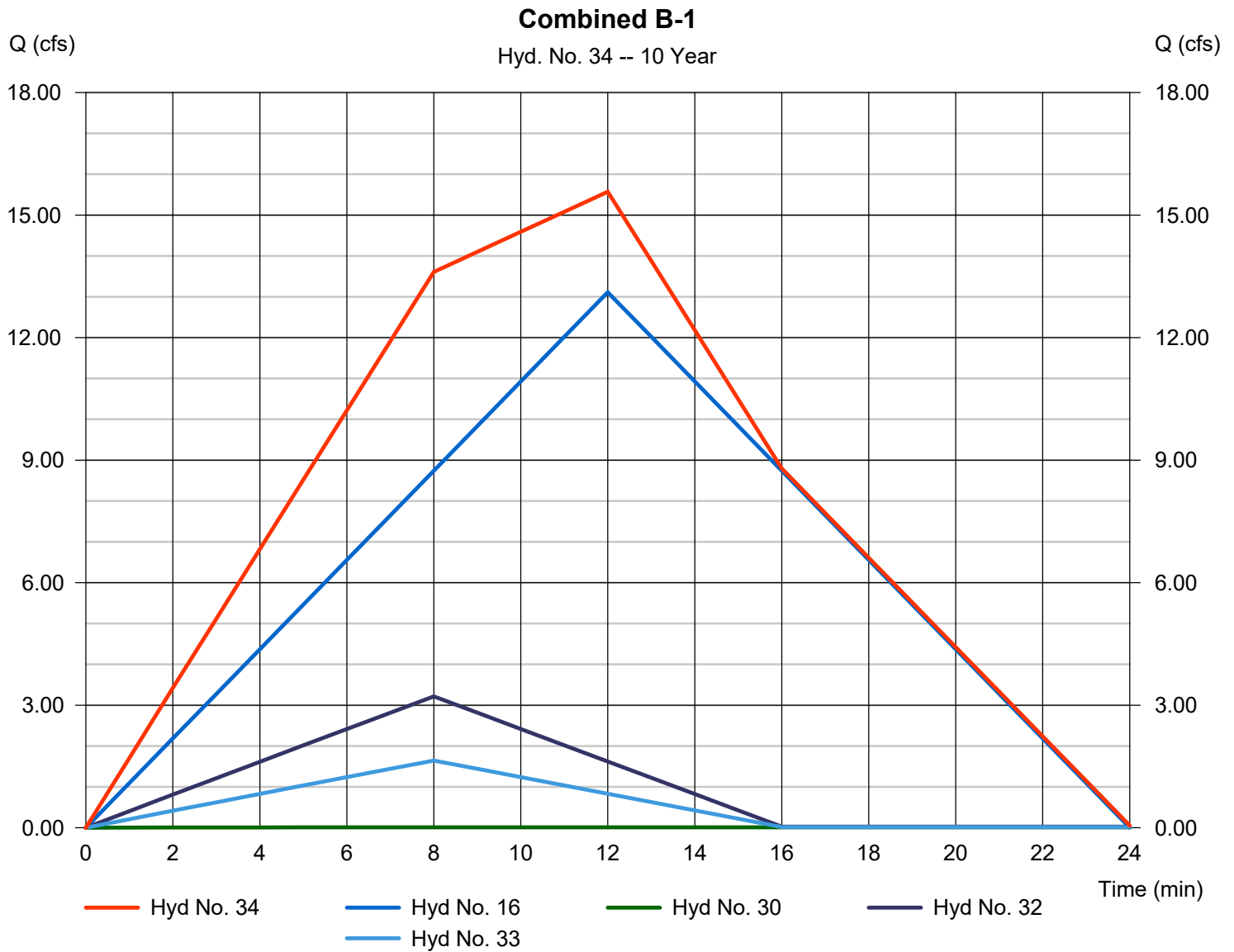
Monday, 10 / 28 / 2019

Hyd. No. 34

Combined B-1

Hydrograph type = Combine
 Storm frequency = 10 yrs
 Time interval = 1 min
 Inflow hyds. = 16, 30, 32, 33

Peak discharge = 15.57 cfs
 Time to peak = 12 min
 Hyd. volume = 12,392 cuft
 Contrib. drain. area = 4.490 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

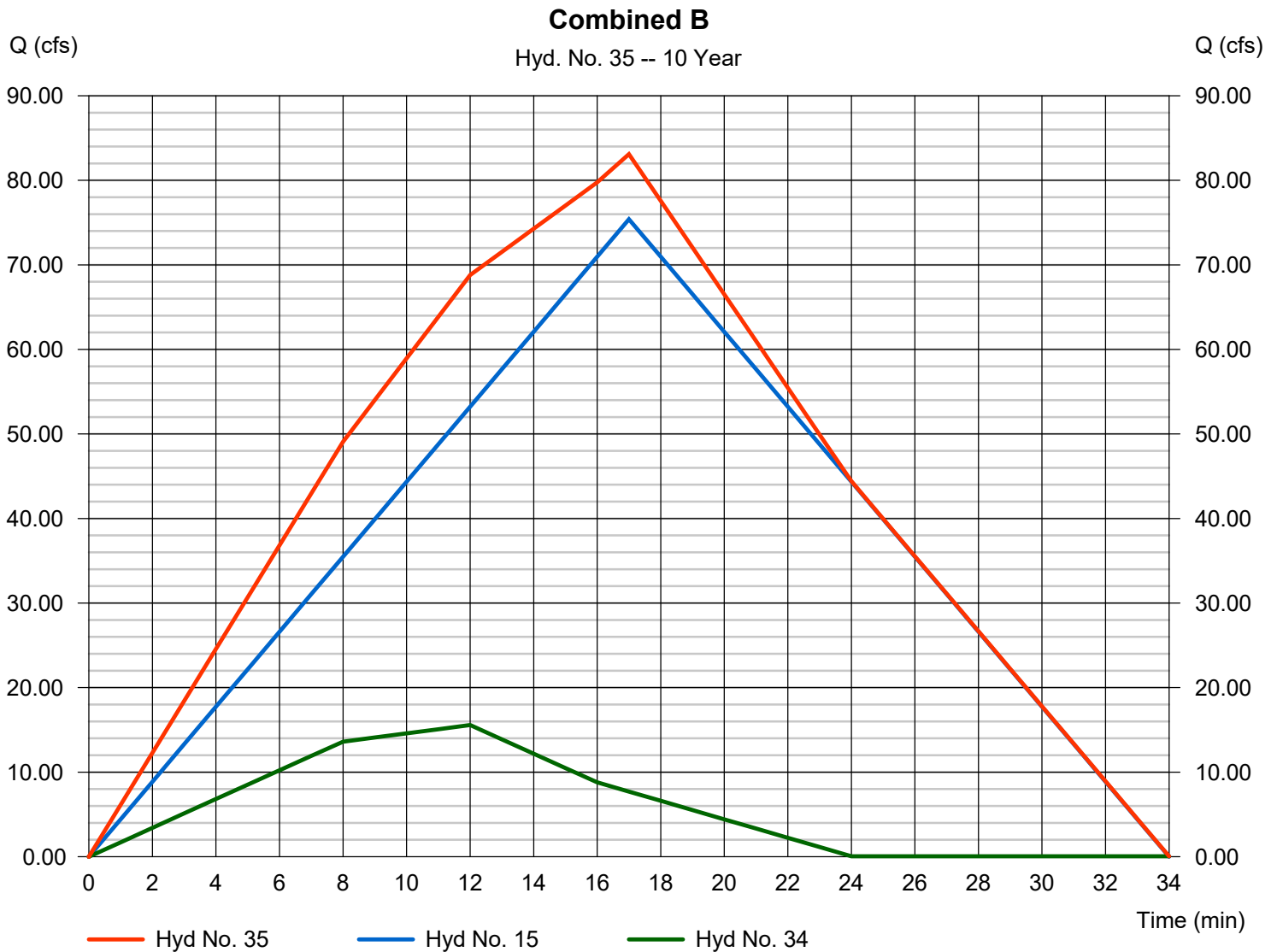
Monday, 10 / 28 / 2019

Hyd. No. 35

Combined B

Hydrograph type = Combine
 Storm frequency = 10 yrs
 Time interval = 1 min
 Inflow hyds. = 15, 34

Peak discharge = 83.10 cfs
 Time to peak = 17 min
 Hyd. volume = 89,297 cuft
 Contrib. drain. area = 26.540 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

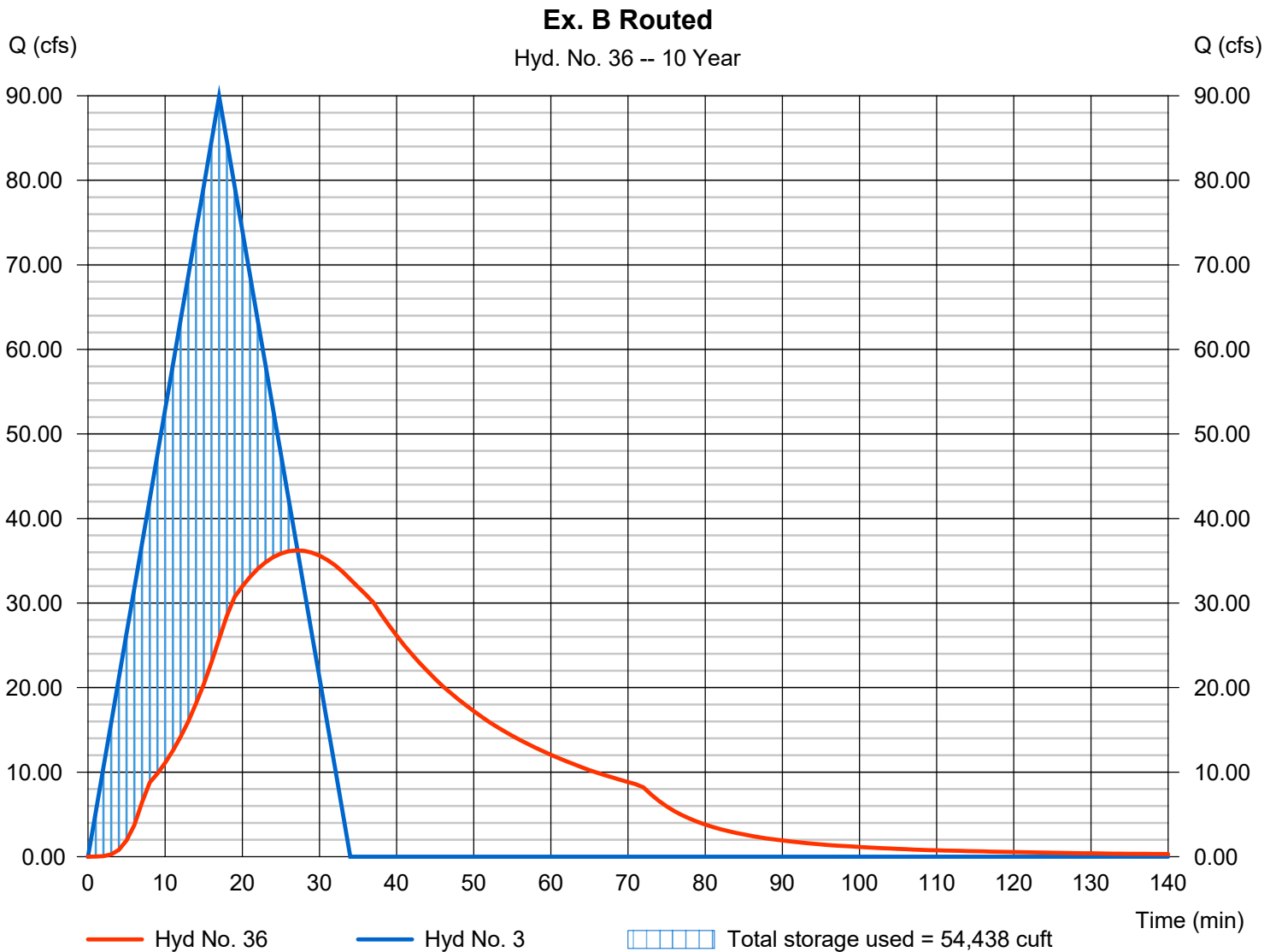
Hyd. No. 36

Ex. B Routed

Hydrograph type = Reservoir
 Storm frequency = 10 yrs
 Time interval = 1 min
 Inflow hyd. No. = 3 - Ex. B
 Reservoir name = 315 NW Olive

Peak discharge = 36.23 cfs
 Time to peak = 27 min
 Hyd. volume = 91,701 cuft
 Max. Elevation = 1009.22 ft
 Max. Storage = 54,438 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

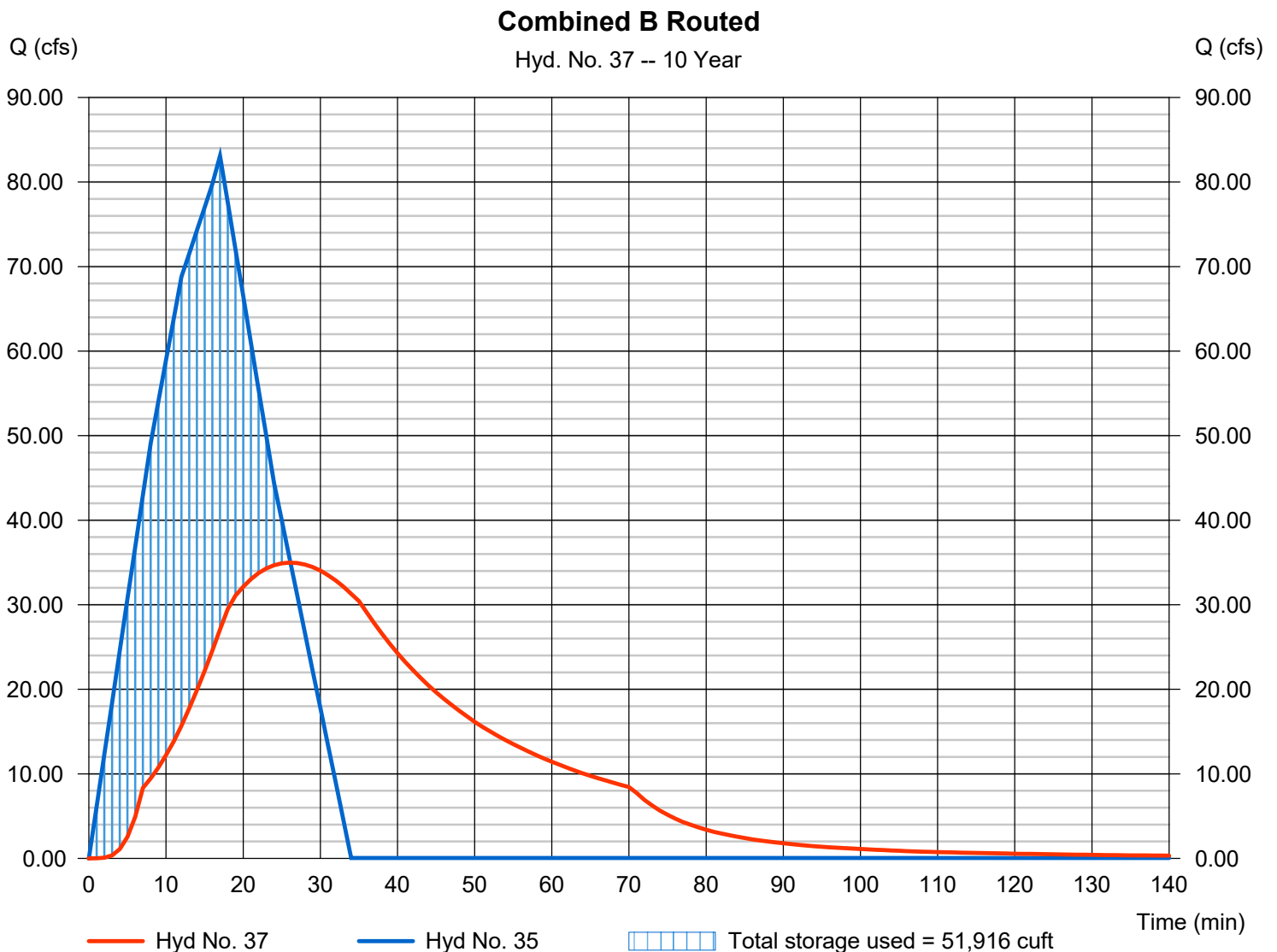
Monday, 10 / 28 / 2019

Hyd. No. 37

Combined B Routed

| | | | |
|-----------------|-------------------|----------------|---------------|
| Hydrograph type | = Reservoir | Peak discharge | = 34.98 cfs |
| Storm frequency | = 10 yrs | Time to peak | = 26 min |
| Time interval | = 1 min | Hyd. volume | = 89,288 cuft |
| Inflow hyd. No. | = 35 - Combined B | Max. Elevation | = 1009.17 ft |
| Reservoir name | = 315 NW Olive | Max. Storage | = 51,916 cuft |

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

| Hyd. No. | Hydrograph type (origin) | Peak flow (cfs) | Time interval (min) | Time to Peak (min) | Hyd. volume (cuft) | Inflow hyd(s) | Maximum elevation (ft) | Total strge used (cuft) | Hydrograph Description |
|-------------------------------------|--------------------------|-----------------|---------------------|--------------------|-------------------------|-----------------|------------------------|-------------------------|------------------------|
| 1 | Rational | 81.99 | 1 | 19 | 93,468 | ----- | ----- | ----- | Ex. A |
| 2 | Rational | 4.330 | 1 | 13 | 3,378 | ----- | ----- | ----- | Ex. A-1 |
| 3 | Rational | 135.95 | 1 | 17 | 138,674 | ----- | ----- | ----- | Ex. B |
| 4 | Rational | 26.06 | 1 | 12 | 18,762 | ----- | ----- | ----- | Ex. B-1 |
| 5 | Rational | 2.490 | 1 | 11 | 1,644 | ----- | ----- | ----- | Ex. B-2 |
| 6 | Rational | 5.675 | 1 | 8 | 2,724 | ----- | ----- | ----- | Ex. B-3 |
| 7 | Rational | 0.968 | 1 | 19 | 1,103 | ----- | ----- | ----- | Ex. Onsite A |
| 8 | Rational | 1.135 | 1 | 13 | 885 | ----- | ----- | ----- | Ex. Onsite A-1 |
| 9 | Rational | 6.520 | 1 | 17 | 6,651 | ----- | ----- | ----- | Ex. Onsite B |
| 10 | Rational | 7.491 | 1 | 12 | 5,394 | ----- | ----- | ----- | Ex. Onsite B-1 |
| 11 | Rational | 2.490 | 1 | 11 | 1,644 | ----- | ----- | ----- | Ex. Onsite B-2 |
| 12 | Rational | 5.675 | 1 | 8 | 2,724 | ----- | ----- | ----- | Ex. Onsite B-3 |
| 13 | Rational | 77.83 | 1 | 19 | 88,728 | ----- | ----- | ----- | Prop. A |
| 14 | Rational | 4.373 | 1 | 13 | 3,411 | ----- | ----- | ----- | Prop. A-1 |
| 15 | Rational | 114.01 | 1 | 17 | 116,288 | ----- | ----- | ----- | Prop. B |
| 16 | Rational | 19.83 | 1 | 12 | 14,275 | ----- | ----- | ----- | Prop. B-1 |
| 17 | Rational | 2.461 | 1 | 8 | 1,181 | ----- | ----- | ----- | Prop. B-2 |
| 18 | Rational | 4.822 | 1 | 8 | 2,314 | ----- | ----- | ----- | Prop. B-3 |
| 19 | Rational | 0.544 | 1 | 5 | 163 | ----- | ----- | ----- | Lot 1 |
| 20 | Rational | 0.544 | 1 | 5 | 163 | ----- | ----- | ----- | Lot 2 |
| 21 | Rational | 0.544 | 1 | 5 | 163 | ----- | ----- | ----- | Lot 3 |
| 22 | Rational | 0.544 | 1 | 5 | 163 | ----- | ----- | ----- | Lot 4 |
| 23 | Rational | 0.544 | 1 | 5 | 163 | ----- | ----- | ----- | Lot 5 |
| 24 | Rational | 0.544 | 1 | 5 | 163 | ----- | ----- | ----- | Lot 6 |
| 25 | Reservoir | 0.009 | 1 | 10 | 162 | 19 | 1038.26 | 159 | Lot 1 Detention |
| 26 | Reservoir | 0.009 | 1 | 10 | 162 | 20 | 1040.26 | 159 | Lot 2 Detention |
| 27 | Reservoir | 0.009 | 1 | 10 | 162 | 21 | 1037.26 | 159 | Lot 3 Detention |
| 28 | Reservoir | 0.009 | 1 | 10 | 162 | 22 | 1039.26 | 159 | Lot 4 Detention |
| 29 | Reservoir | 0.009 | 1 | 10 | 162 | 23 | 1038.26 | 159 | Lot 5 Detention |
| 30 | Reservoir | 0.009 | 1 | 10 | 162 | 24 | 1038.26 | 159 | Lot 6 Detention |
| 31 | Combine | 80.19 | 1 | 19 | 92,139 | 13, 14, | ----- | ----- | Combined A |
| 32 | Combine | 4.849 | 1 | 8 | 2,801 | 18, 25, 26, 27, | ----- | ----- | Combined B-3 |
| 33 | Combine | 2.479 | 1 | 8 | 1,506 | 17, 28, 29, | ----- | ----- | Combined B-2 |
| 34 | Combine | 23.52 | 1 | 12 | 18,744 | 16, 30, 32, 33 | ----- | ----- | Combined B-1 |
| MAIN ORCHARD STORM STUDY 191022.gpr | | | | | Return Period: 100 Year | | | Monday, 10 / 28 / 2019 | |

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

| Hyd. No. | Hydrograph type (origin) | Peak flow (cfs) | Time interval (min) | Time to Peak (min) | Hyd. volume (cuft) | Inflow hyd(s) | Maximum elevation (ft) | Total strge used (cuft) | Hydrograph Description |
|-------------------------------------|--------------------------|-----------------|---------------------|--------------------|-------------------------|---------------|------------------------|-------------------------|------------------------|
| 35 | Combine | 125.63 | 1 | 17 | 135,032 | 15, 34 | ----- | ----- | Combined B |
| 36 | Reservoir | 51.98 | 1 | 27 | 138,665 | 3 | 1009.75 | 84,744 | Ex. B Routed |
| 37 | Reservoir | 49.94 | 1 | 27 | 135,023 | 35 | 1009.68 | 80,904 | Combined B Routed |
| MAIN ORCHARD STORM STUDY 191022.gpw | | | | | Return Period: 100 Year | | | Monday, 10 / 28 / 2019 | |

Hydrograph Report

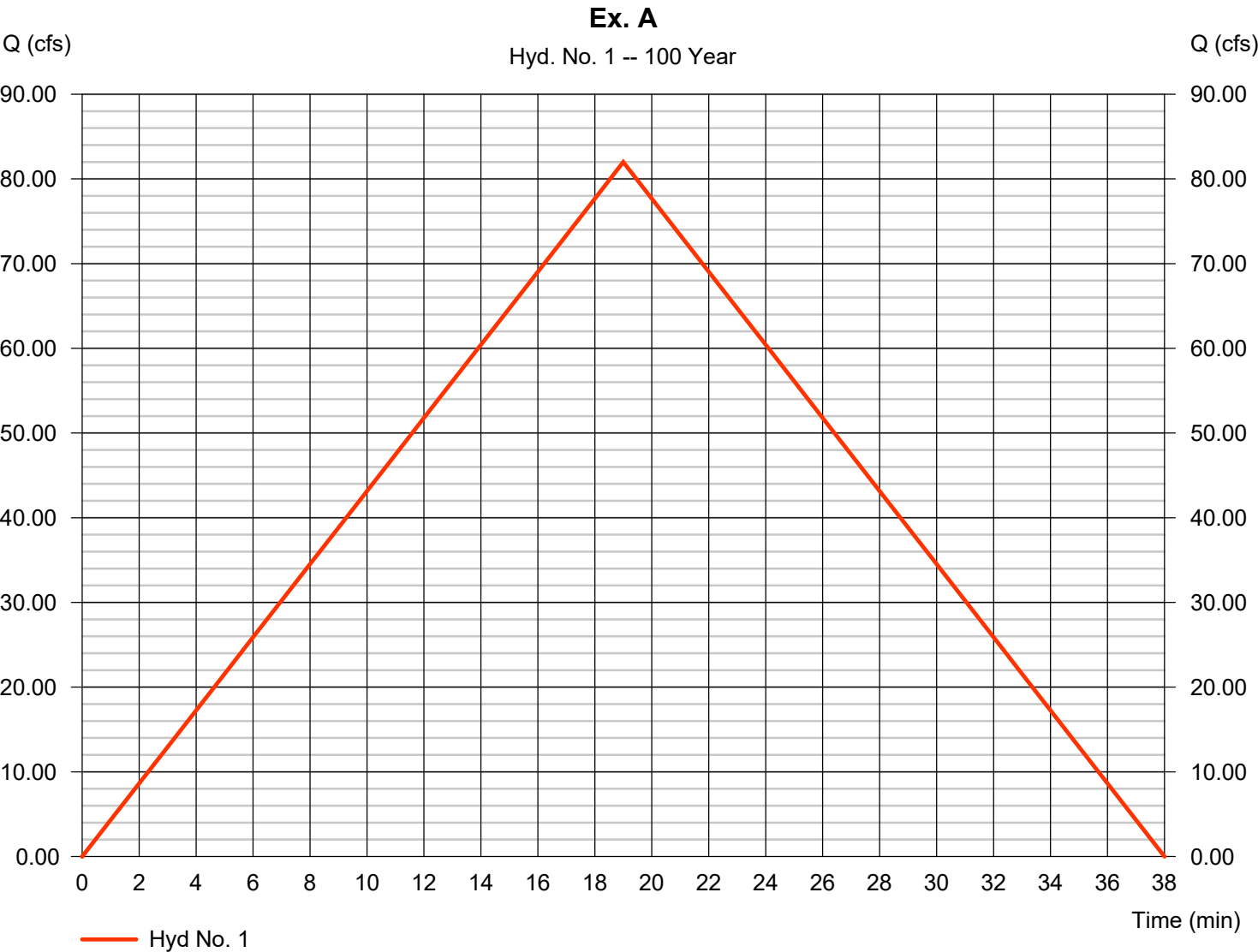
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 1

Ex. A

| | | | |
|-----------------|---------------|-------------------|---------------|
| Hydrograph type | = Rational | Peak discharge | = 81.99 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 19 min |
| Time interval | = 1 min | Hyd. volume | = 93,468 cuft |
| Drainage area | = 19.720 ac | Runoff coeff. | = 0.58 |
| Intensity | = 7.168 in/hr | Tc by User | = 19.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |

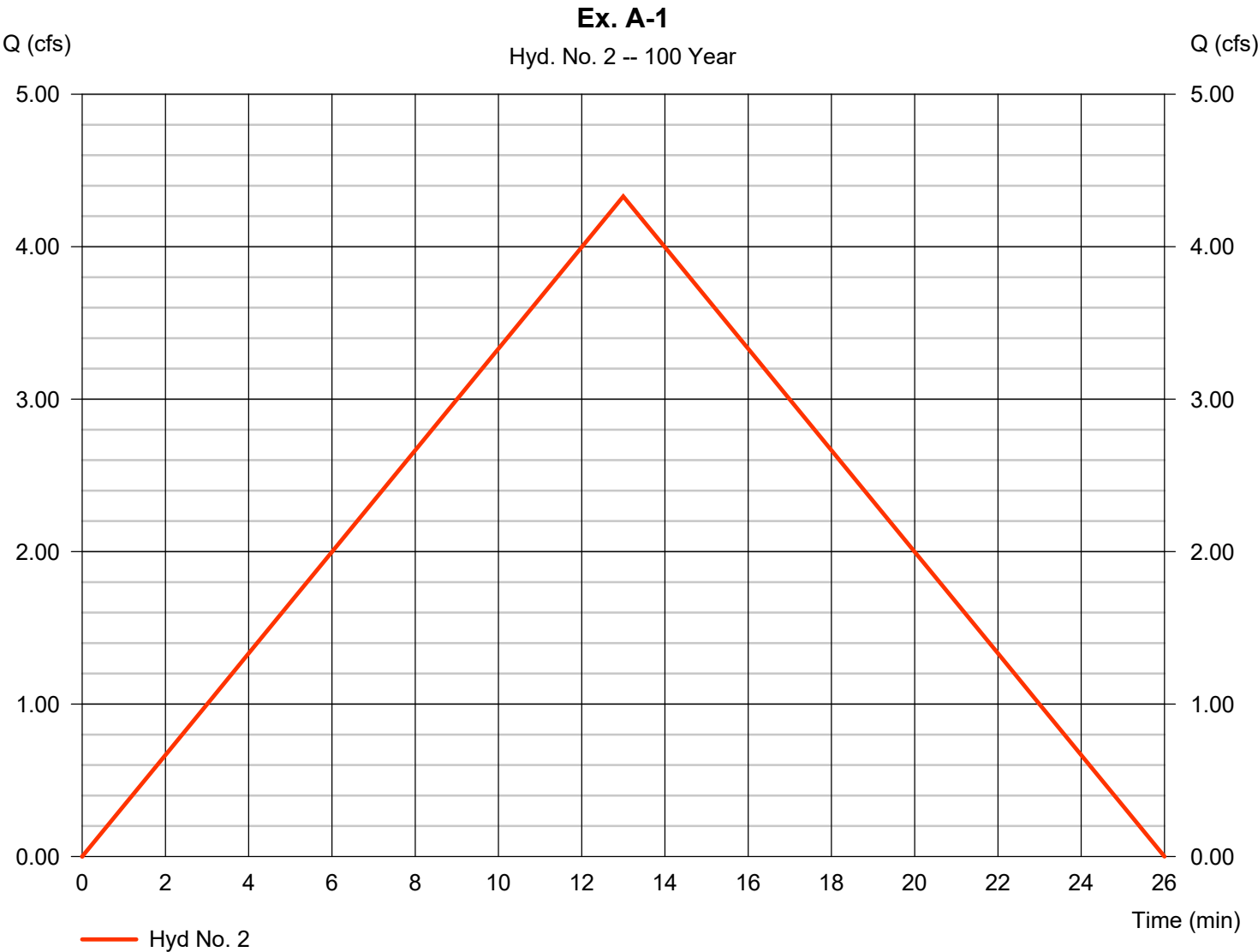


Hydrograph Report

Hyd. No. 2

Ex. A-1

| | | | |
|-----------------|---------------|-------------------|--------------|
| Hydrograph type | = Rational | Peak discharge | = 4.330 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 13 min |
| Time interval | = 1 min | Hyd. volume | = 3,378 cuft |
| Drainage area | = 1.010 ac | Runoff coeff. | = 0.51 |
| Intensity | = 8.406 in/hr | Tc by User | = 13.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

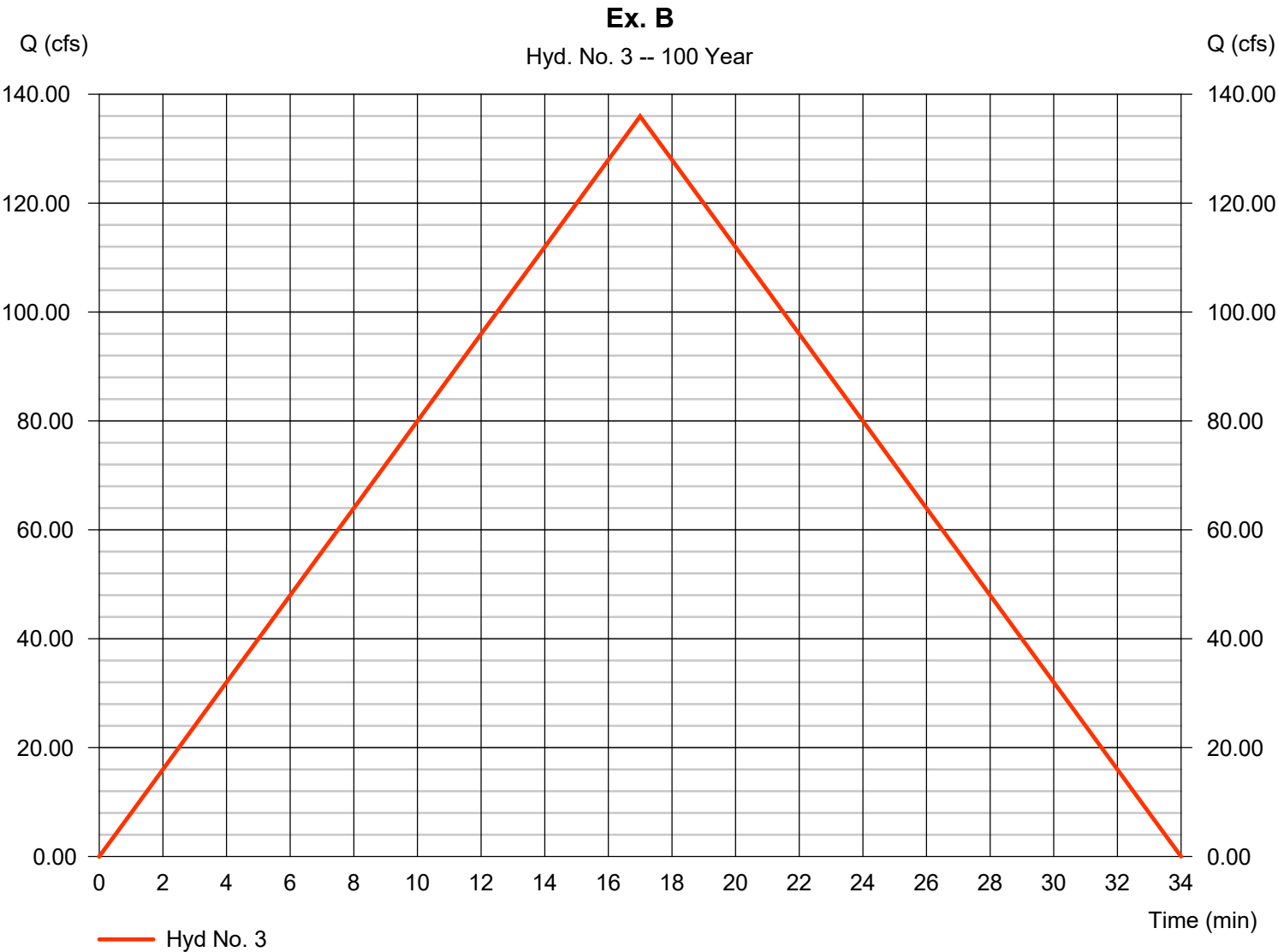
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 3

Ex. B

| | | | |
|-----------------|---------------|-------------------|----------------|
| Hydrograph type | = Rational | Peak discharge | = 135.95 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 17 min |
| Time interval | = 1 min | Hyd. volume | = 138,674 cuft |
| Drainage area | = 32.800 ac | Runoff coeff. | = 0.55 |
| Intensity | = 7.536 in/hr | Tc by User | = 17.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |

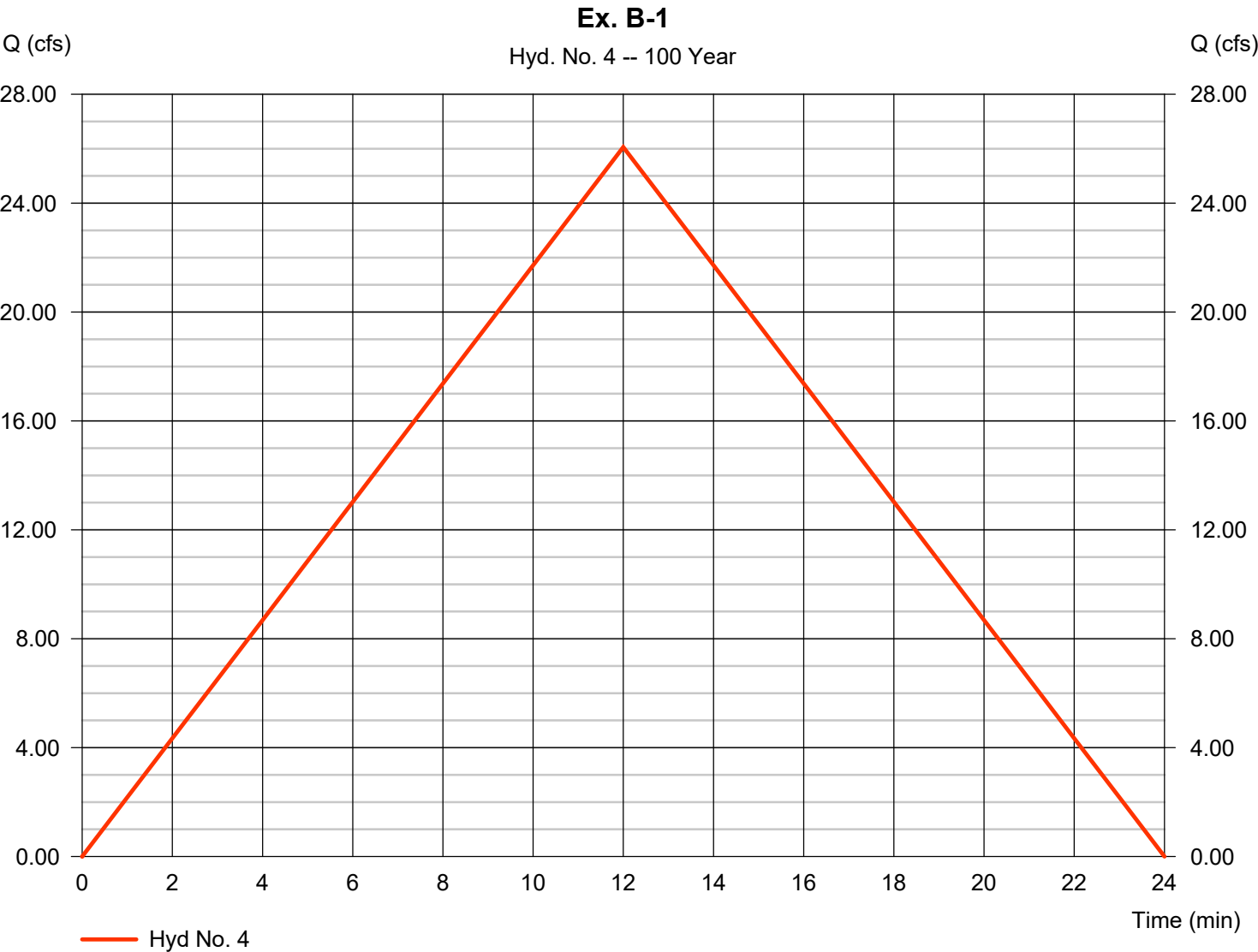


Hydrograph Report

Hyd. No. 4

Ex. B-1

| | | | |
|-----------------|---------------|-------------------|---------------|
| Hydrograph type | = Rational | Peak discharge | = 26.06 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 12 min |
| Time interval | = 1 min | Hyd. volume | = 18,762 cuft |
| Drainage area | = 6.270 ac | Runoff coeff. | = 0.48 |
| Intensity | = 8.658 in/hr | Tc by User | = 12.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 5

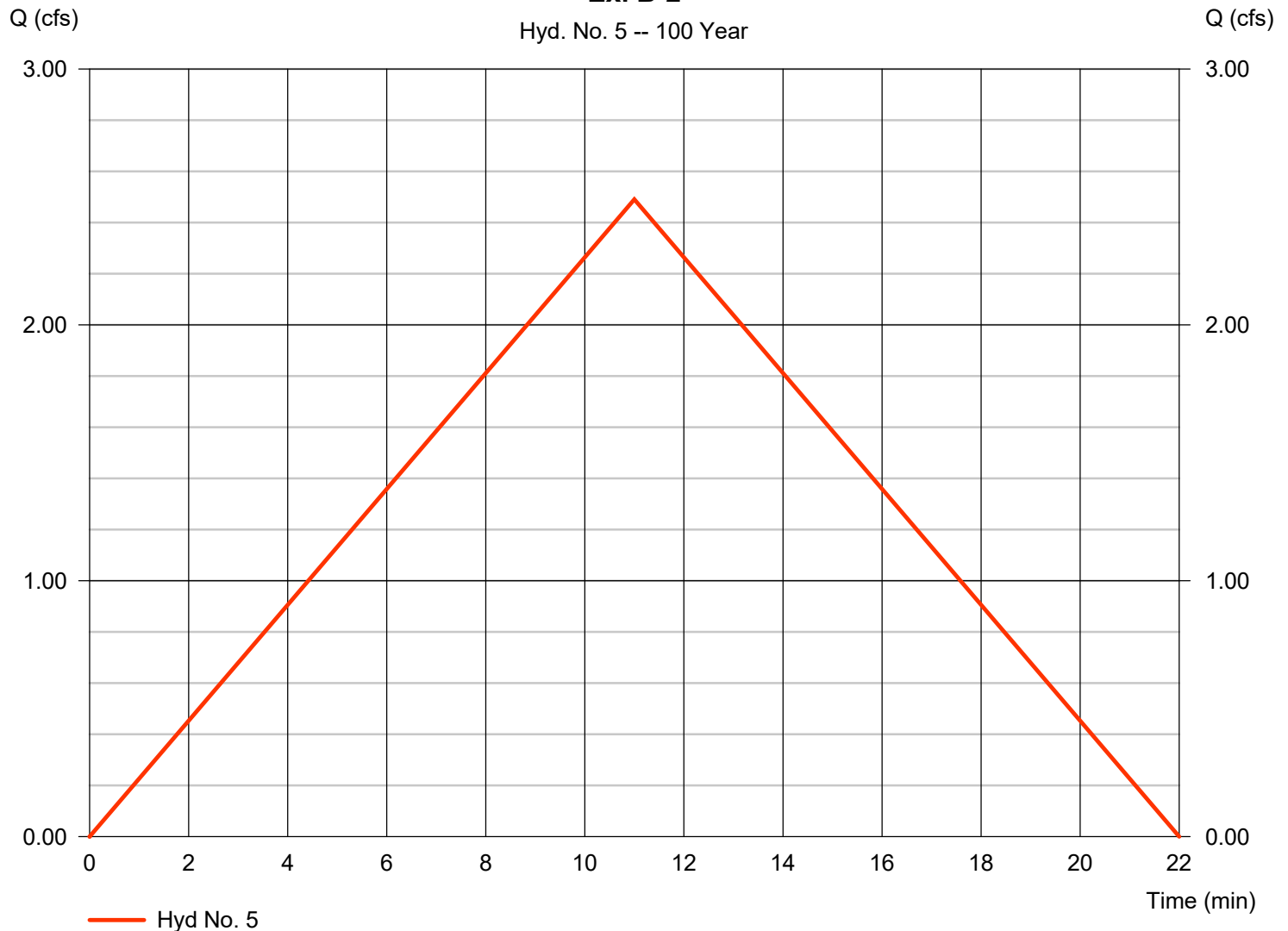
Ex. B-2

Hydrograph type = Rational
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 0.930 ac
 Intensity = 8.926 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 2.490 cfs
 Time to peak = 11 min
 Hyd. volume = 1,644 cuft
 Runoff coeff. = 0.3
 Tc by User = 11.00 min
 Asc/Rec limb fact = 1/1

Ex. B-2

Hyd. No. 5 -- 100 Year



Hydrograph Report

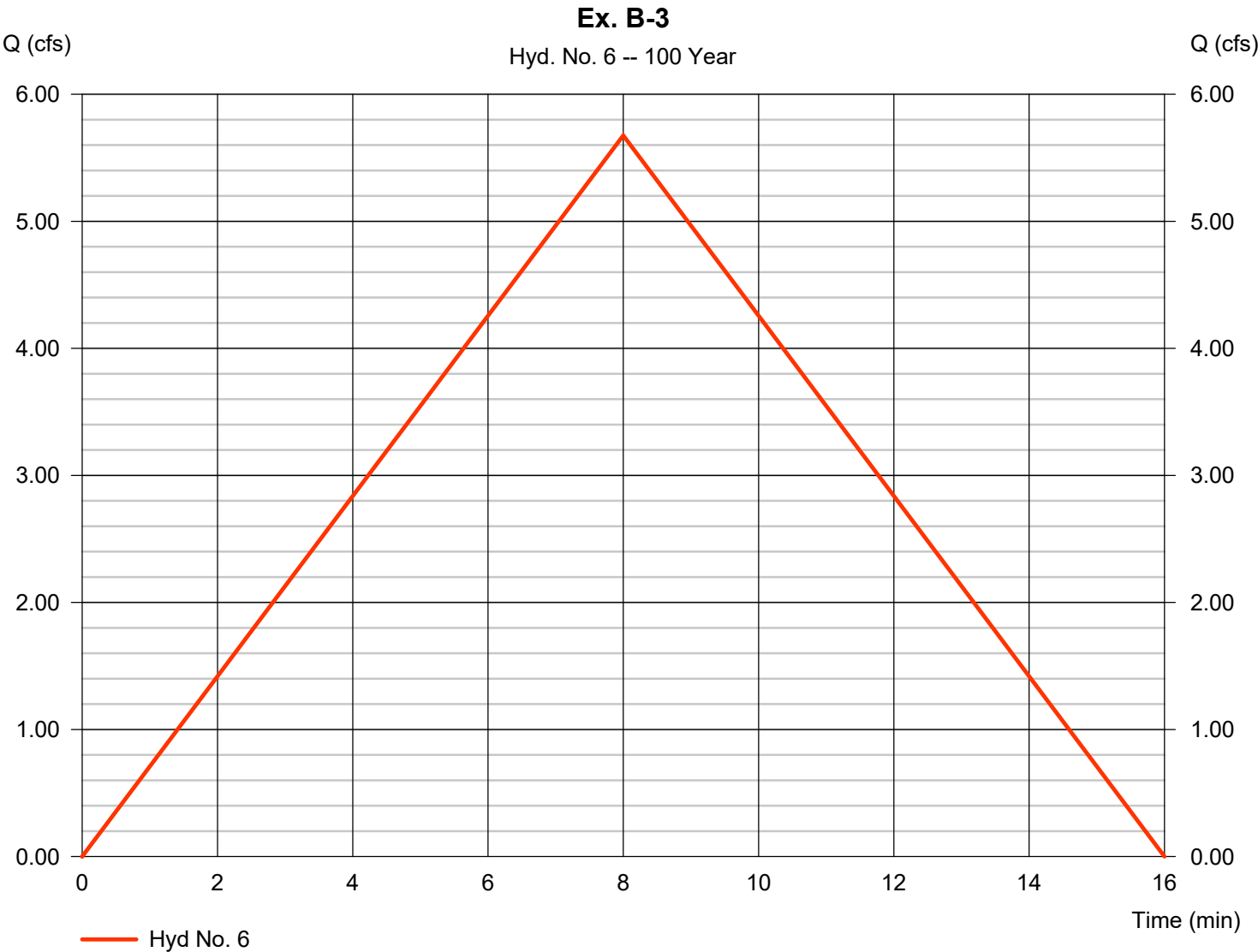
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 6

Ex. B-3

| | | | |
|-----------------|---------------|-------------------|--------------|
| Hydrograph type | = Rational | Peak discharge | = 5.675 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 8 min |
| Time interval | = 1 min | Hyd. volume | = 2,724 cuft |
| Drainage area | = 1.130 ac | Runoff coeff. | = 0.51 |
| Intensity | = 9.848 in/hr | Tc by User | = 8.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

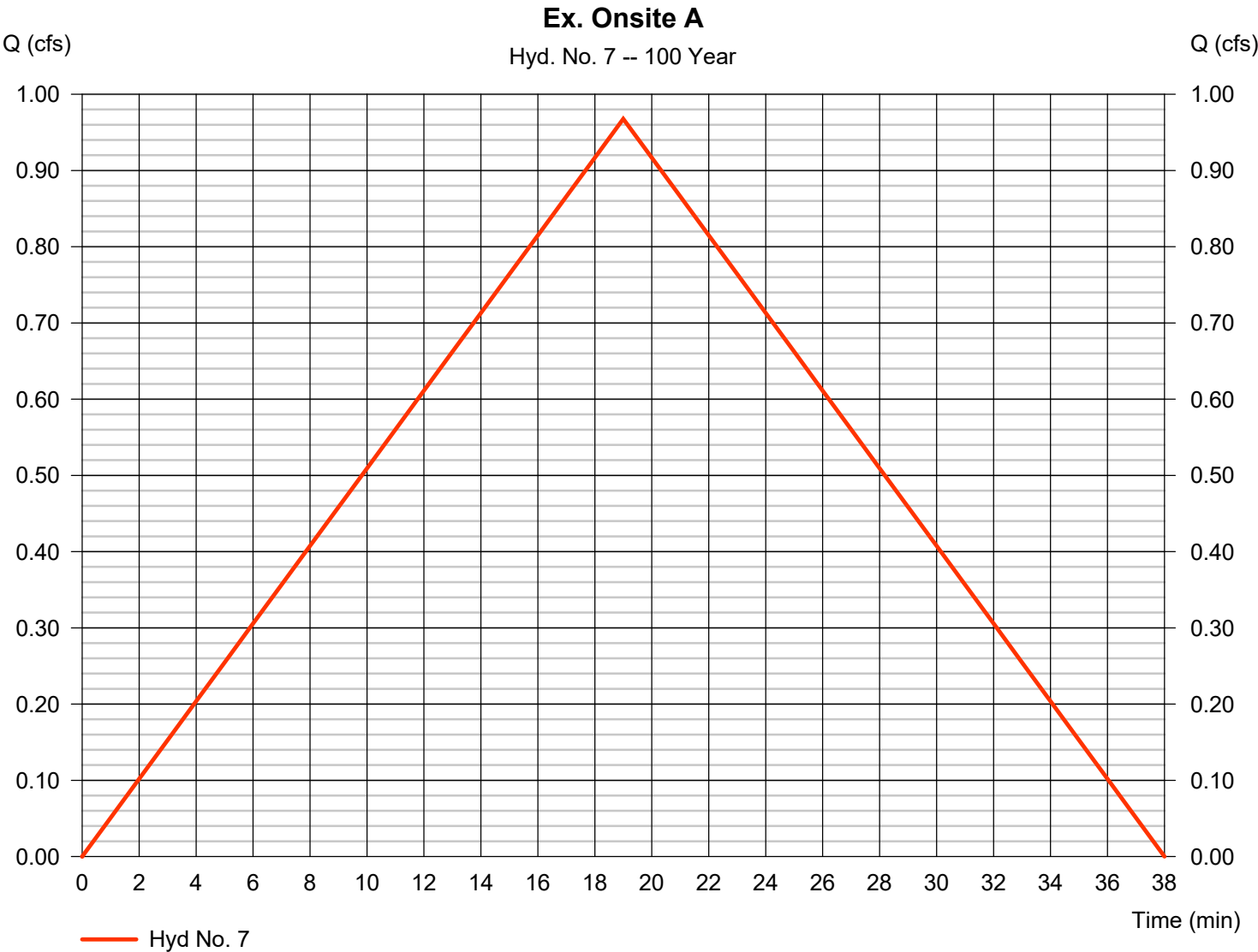
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 7

Ex. Onsite A

| | | | |
|-----------------|---------------|-------------------|--------------|
| Hydrograph type | = Rational | Peak discharge | = 0.968 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 19 min |
| Time interval | = 1 min | Hyd. volume | = 1,103 cuft |
| Drainage area | = 0.270 ac | Runoff coeff. | = 0.5 |
| Intensity | = 7.168 in/hr | Tc by User | = 19.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

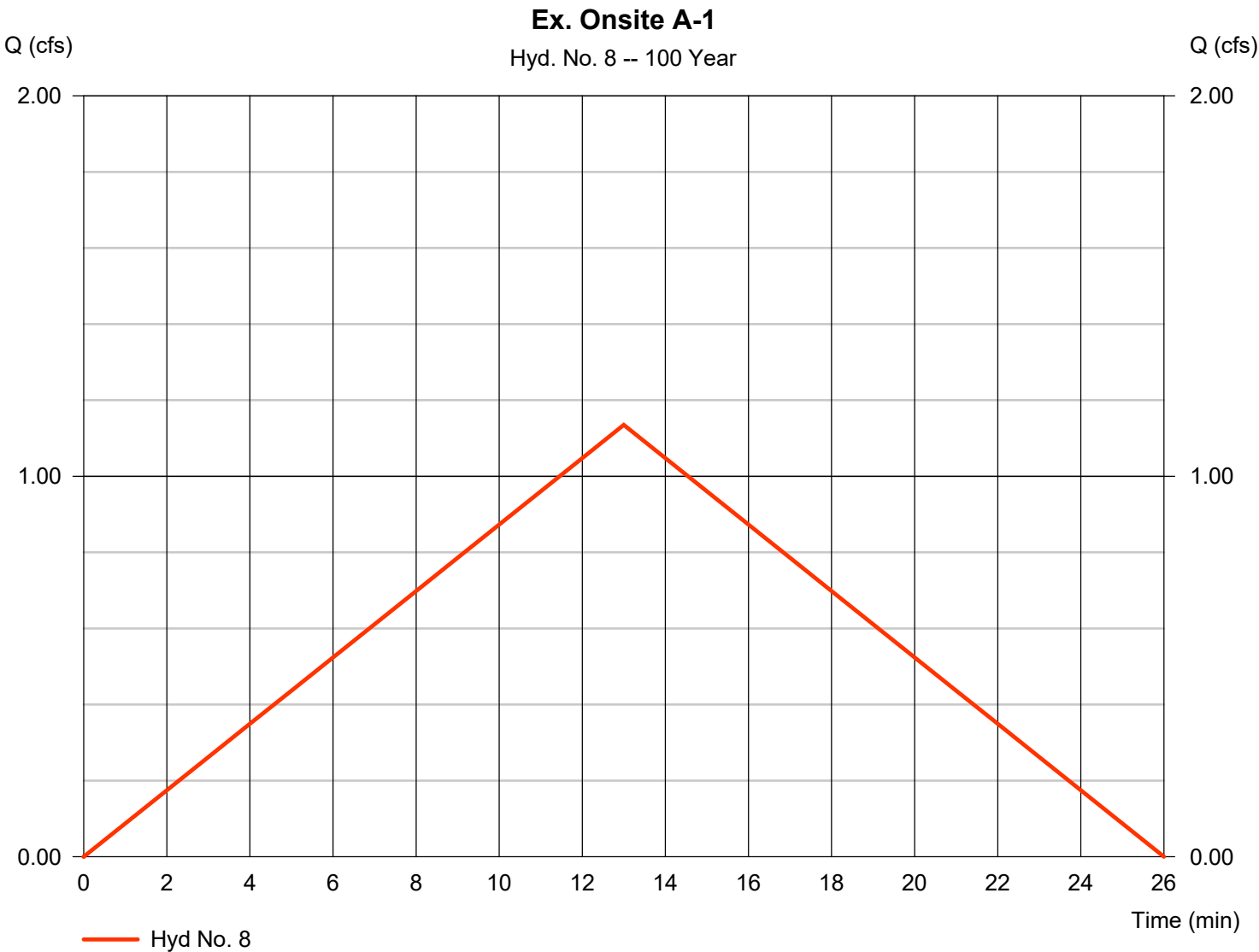
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 8

Ex. Onsite A-1

| | | | |
|-----------------|---------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 1.135 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 13 min |
| Time interval | = 1 min | Hyd. volume | = 885 cuft |
| Drainage area | = 0.270 ac | Runoff coeff. | = 0.5 |
| Intensity | = 8.406 in/hr | Tc by User | = 13.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

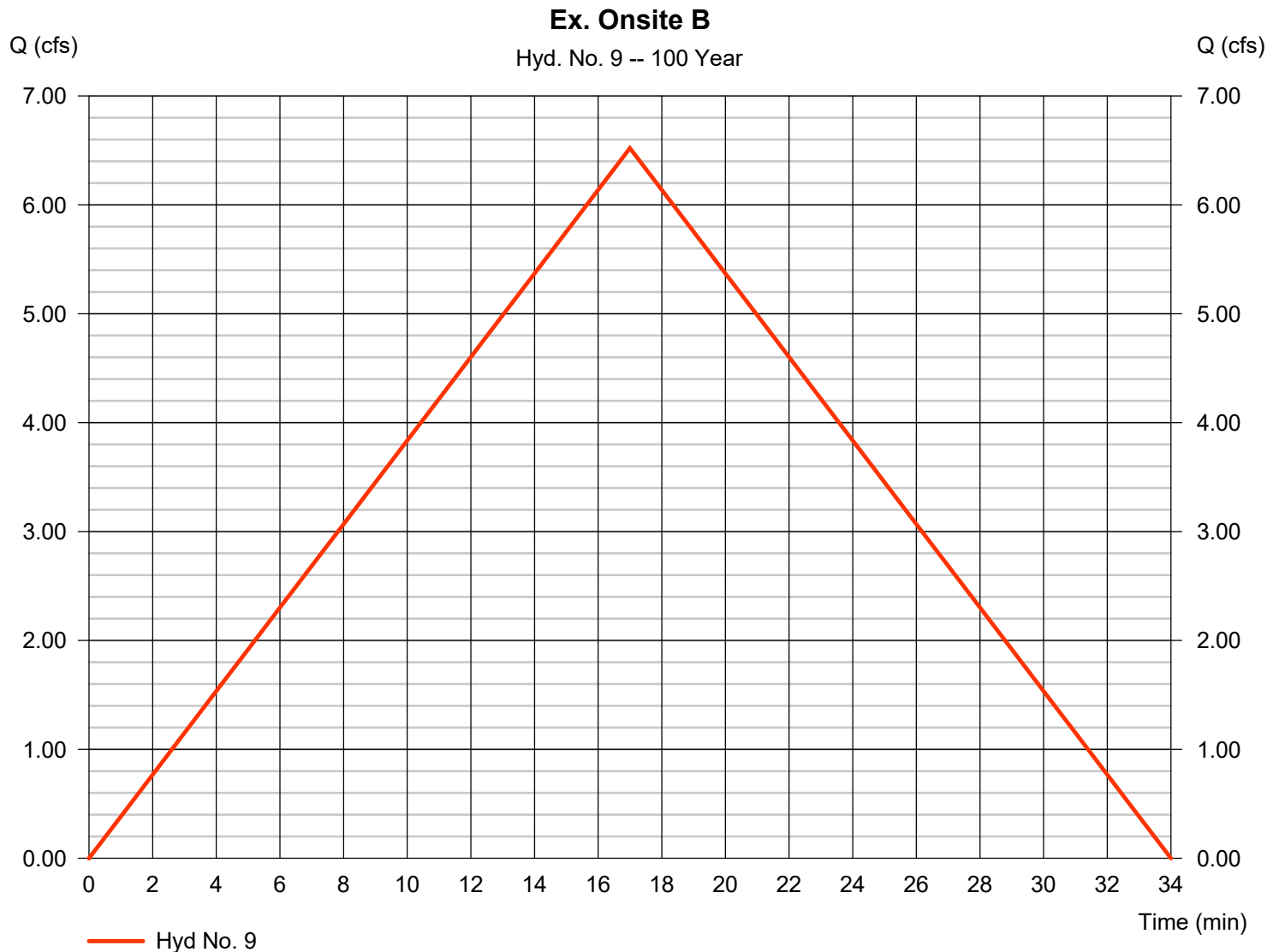
Monday, 10 / 28 / 2019

Hyd. No. 9

Ex. Onsite B

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 2.060 ac
Intensity = 7.536 in/hr
IDF Curve = KCMO.IDF

Peak discharge = 6.520 cfs
Time to peak = 17 min
Hyd. volume = 6,651 cuft
Runoff coeff. = 0.42
Tc by User = 17.00 min
Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

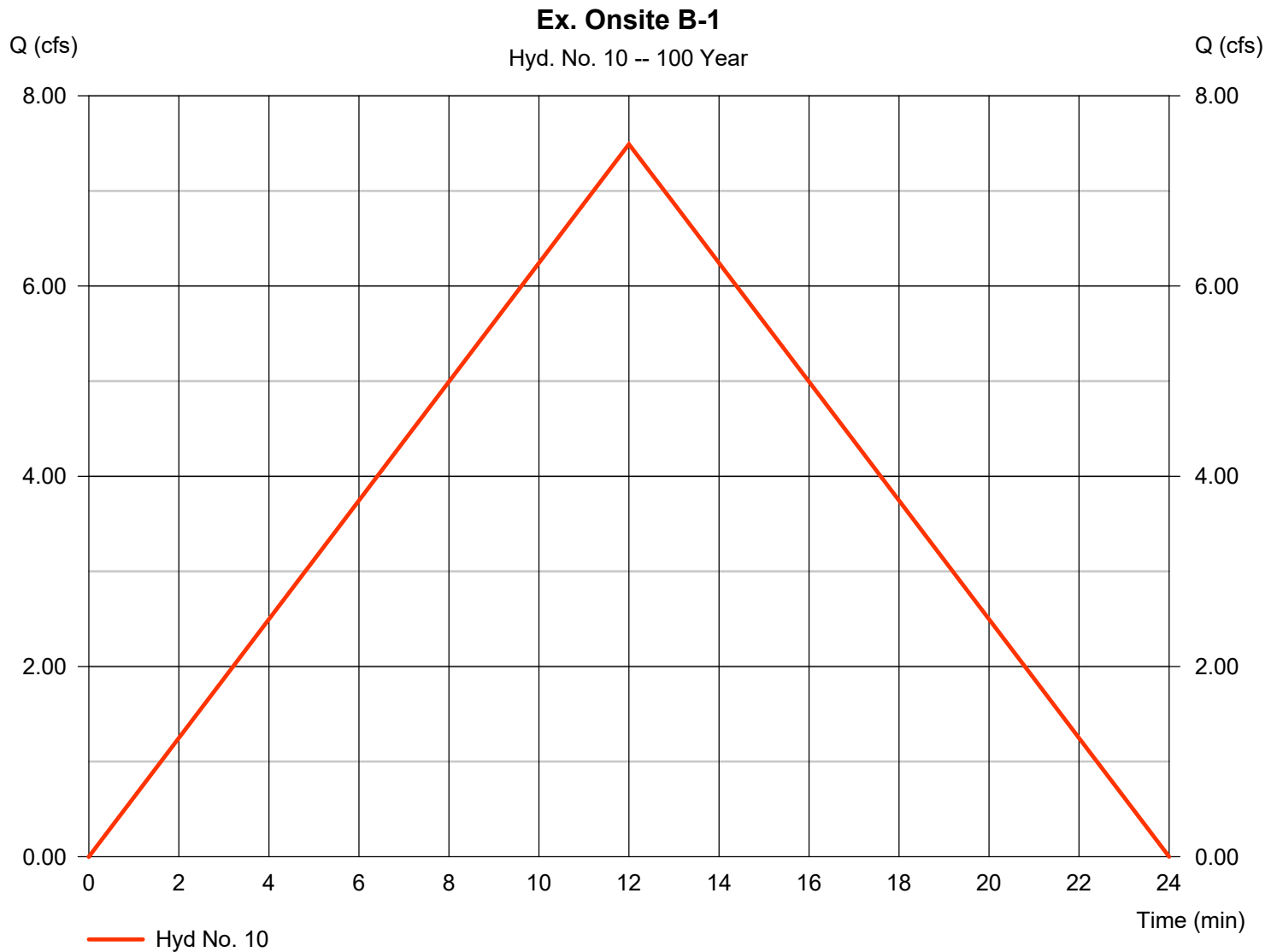
Monday, 10 / 28 / 2019

Hyd. No. 10

Ex. Onsite B-1

Hydrograph type = Rational
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 2.060 ac
 Intensity = 8.658 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 7.491 cfs
 Time to peak = 12 min
 Hyd. volume = 5,394 cuft
 Runoff coeff. = 0.42
 Tc by User = 12.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

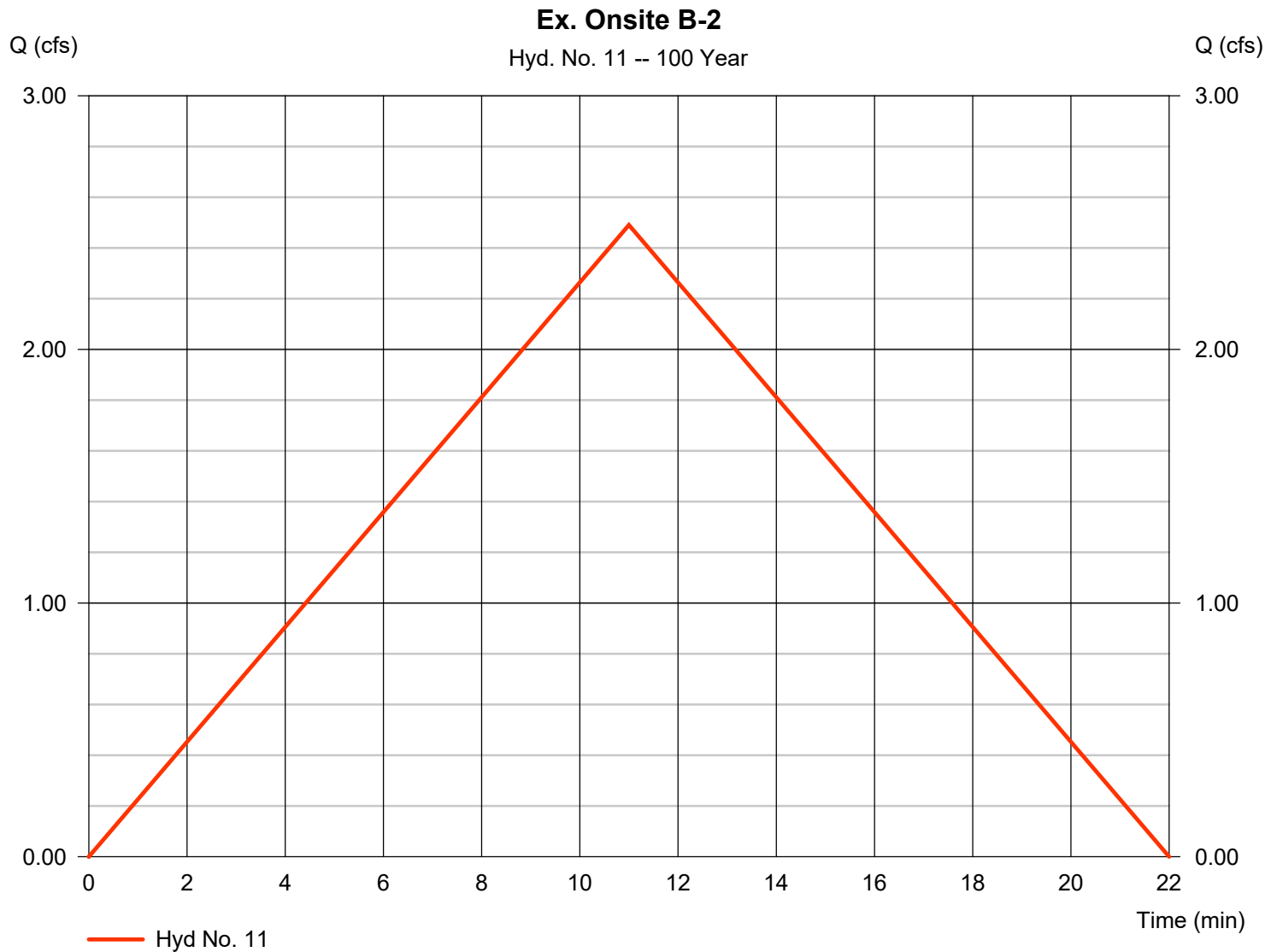
Monday, 10 / 28 / 2019

Hyd. No. 11

Ex. Onsite B-2

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 0.930 ac
Intensity = 8.926 in/hr
IDF Curve = KCMO.IDF

Peak discharge = 2.490 cfs
Time to peak = 11 min
Hyd. volume = 1,644 cuft
Runoff coeff. = 0.3
Tc by User = 11.00 min
Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

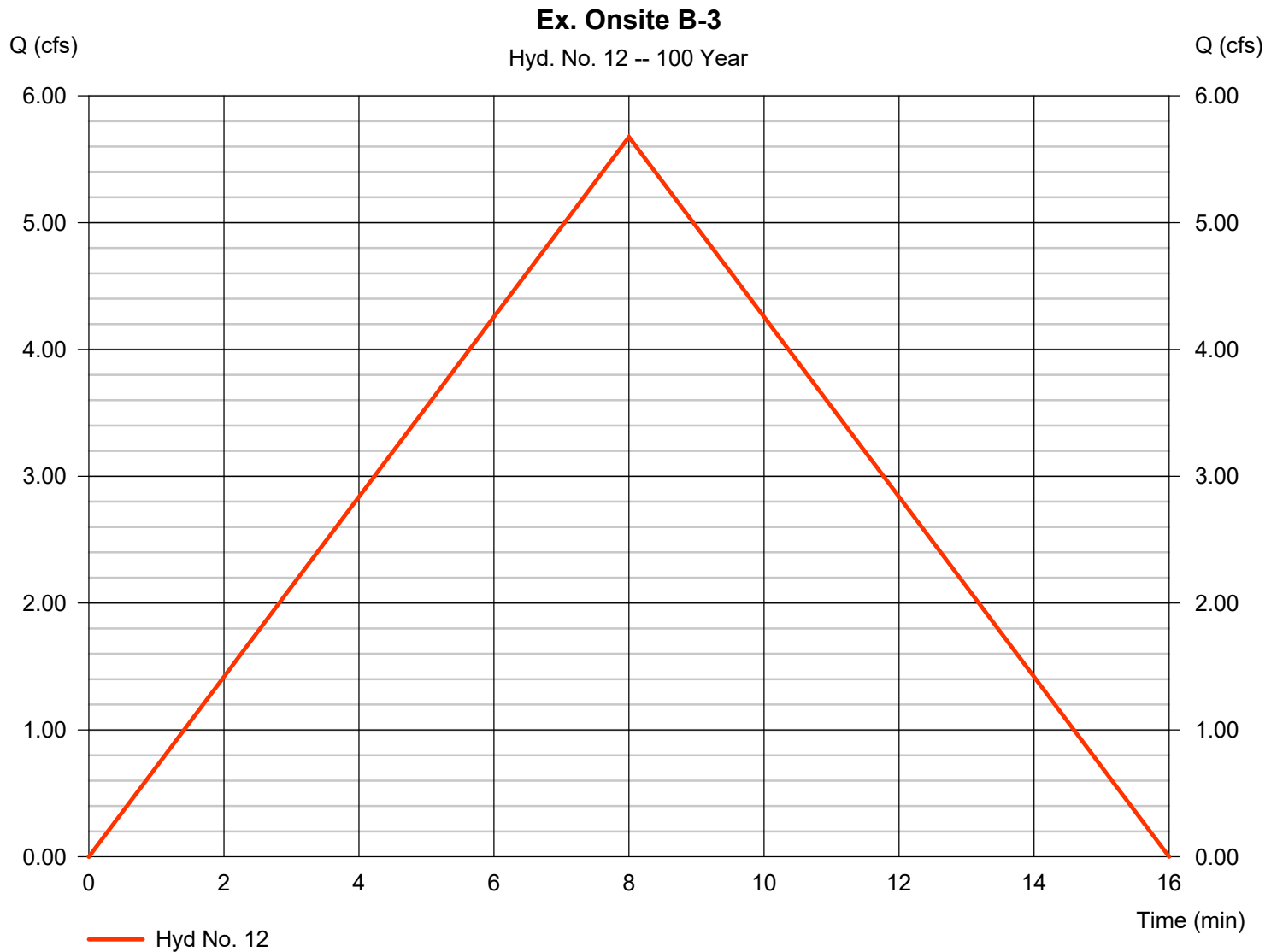
Monday, 10 / 28 / 2019

Hyd. No. 12

Ex. Onsite B-3

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 1.130 ac
Intensity = 9.848 in/hr
IDF Curve = KCMO.IDF

Peak discharge = 5.675 cfs
Time to peak = 8 min
Hyd. volume = 2,724 cuft
Runoff coeff. = 0.51
Tc by User = 8.00 min
Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

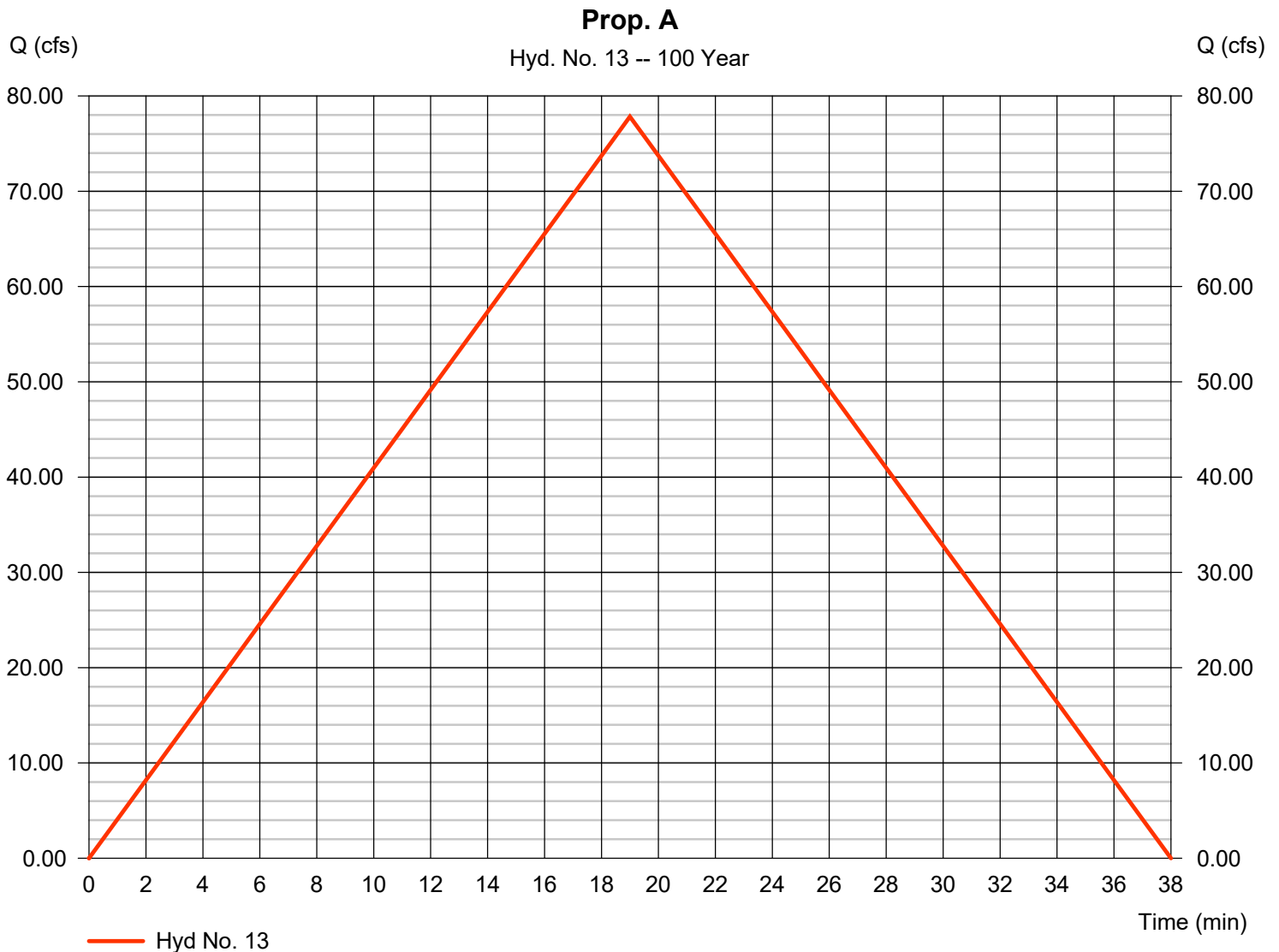
Monday, 10 / 28 / 2019

Hyd. No. 13

Prop. A

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 18.720 ac
Intensity = 7.168 in/hr
IDF Curve = KCMO.IDF

Peak discharge = 77.83 cfs
Time to peak = 19 min
Hyd. volume = 88,728 cuft
Runoff coeff. = 0.58
Tc by User = 19.00 min
Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

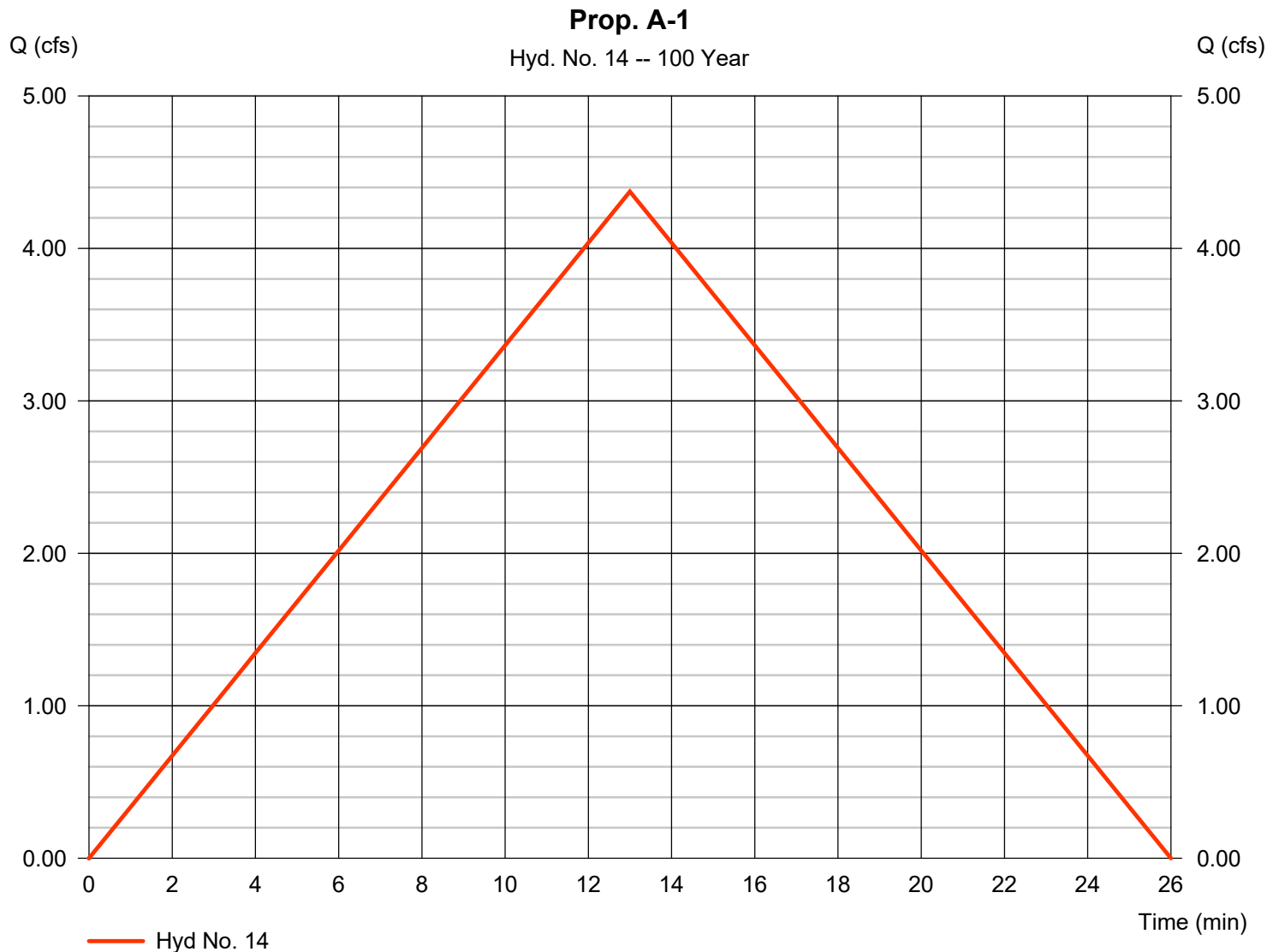
Monday, 10 / 28 / 2019

Hyd. No. 14

Prop. A-1

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 1.020 ac
Intensity = 8.406 in/hr
IDF Curve = KCMO.IDF

Peak discharge = 4.373 cfs
Time to peak = 13 min
Hyd. volume = 3,411 cuft
Runoff coeff. = 0.51
Tc by User = 13.00 min
Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

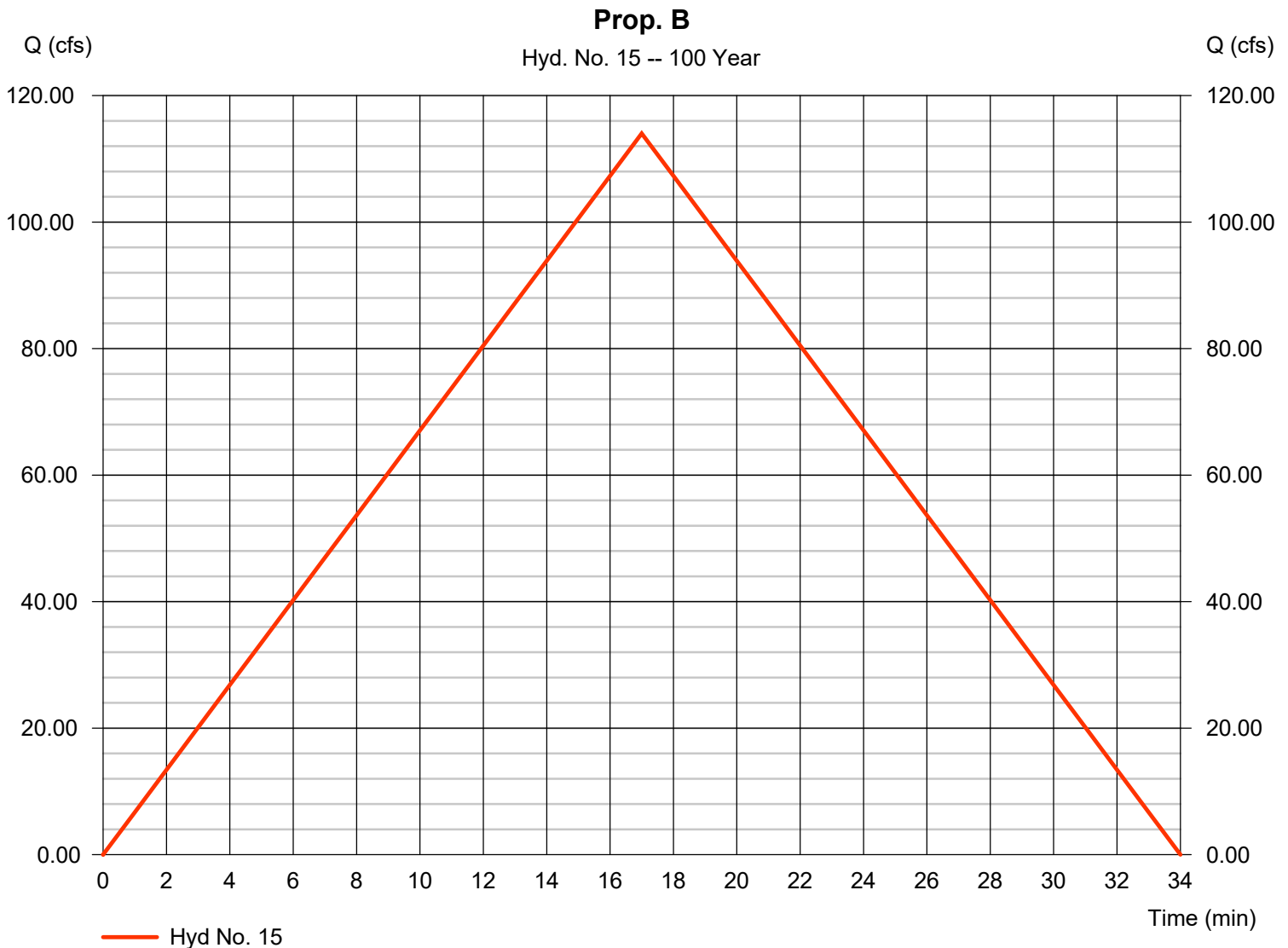
Monday, 10 / 28 / 2019

Hyd. No. 15

Prop. B

Hydrograph type = Rational
Storm frequency = 100 yrs
Time interval = 1 min
Drainage area = 26.540 ac
Intensity = 7.536 in/hr
IDF Curve = KCMO.IDF

Peak discharge = 114.01 cfs
Time to peak = 17 min
Hyd. volume = 116,288 cuft
Runoff coeff. = 0.57
Tc by User = 17.00 min
Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 16

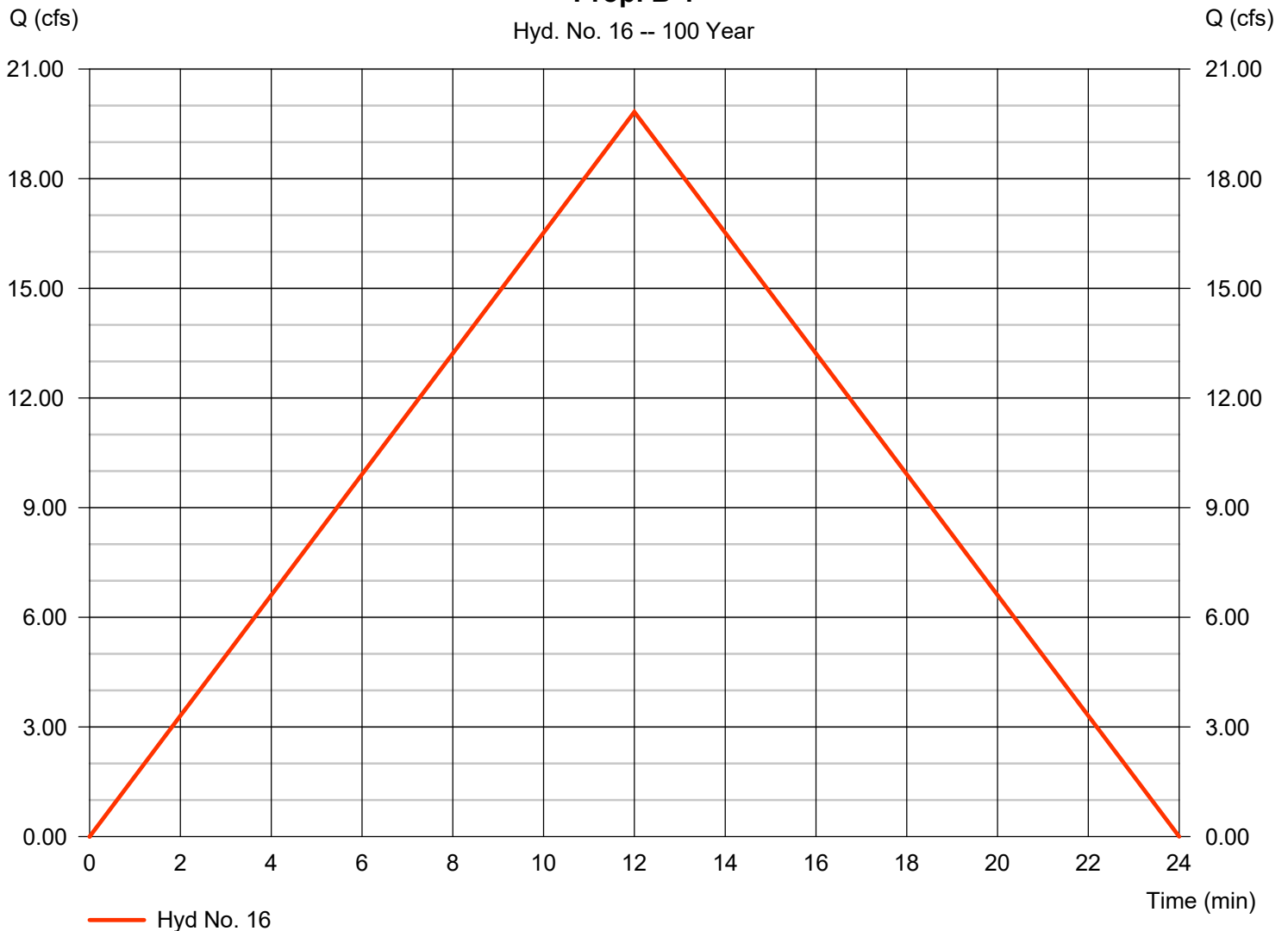
Prop. B-1

Hydrograph type = Rational
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 4.490 ac
 Intensity = 8.658 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 19.83 cfs
 Time to peak = 12 min
 Hyd. volume = 14,275 cuft
 Runoff coeff. = 0.51
 Tc by User = 12.00 min
 Asc/Rec limb fact = 1/1

Prop. B-1

Hyd. No. 16 -- 100 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

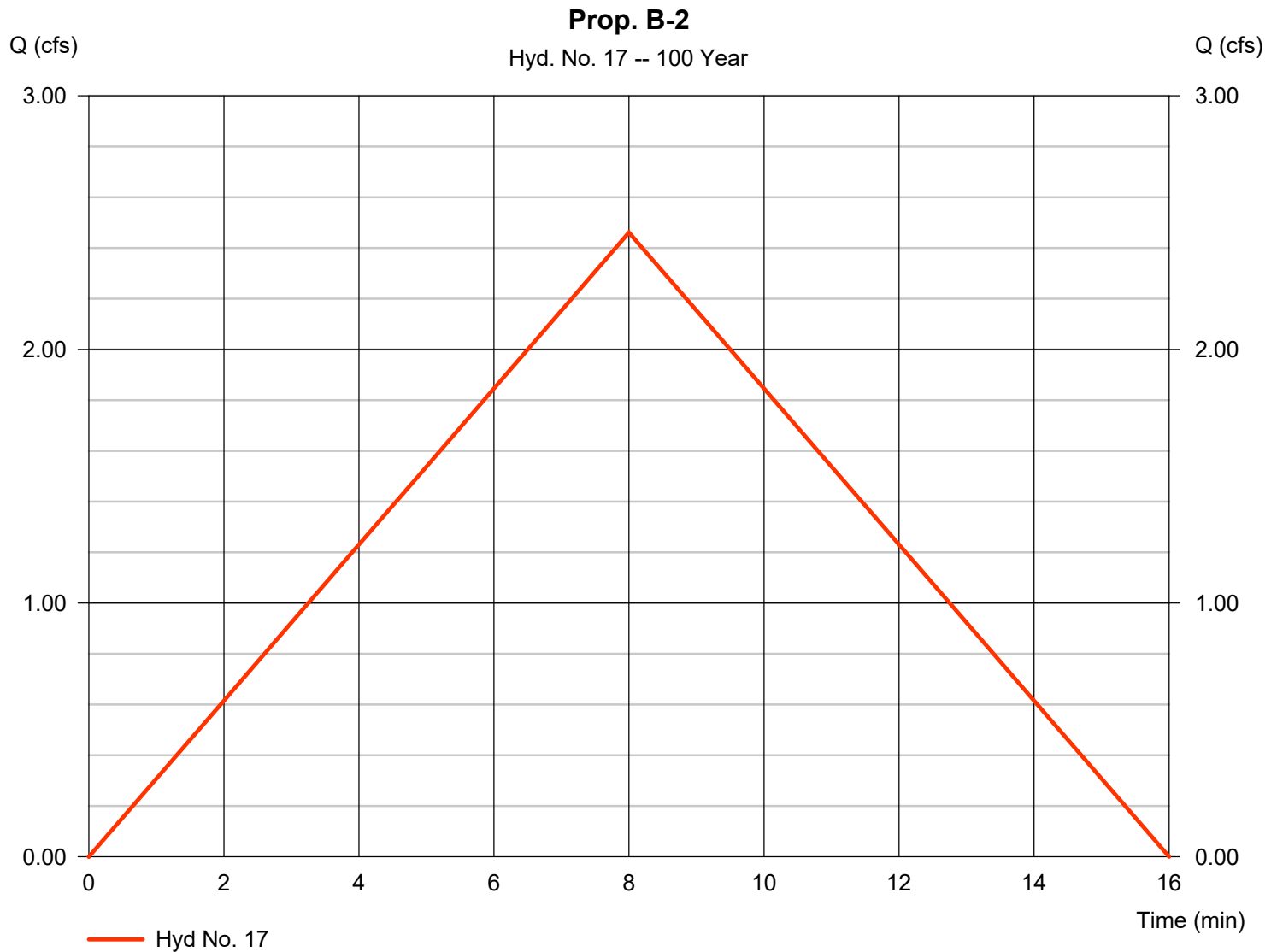
Monday, 10 / 28 / 2019

Hyd. No. 17

Prop. B-2

Hydrograph type = Rational
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 0.490 ac
 Intensity = 9.848 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 2.461 cfs
 Time to peak = 8 min
 Hyd. volume = 1,181 cuft
 Runoff coeff. = 0.51
 Tc by User = 8.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

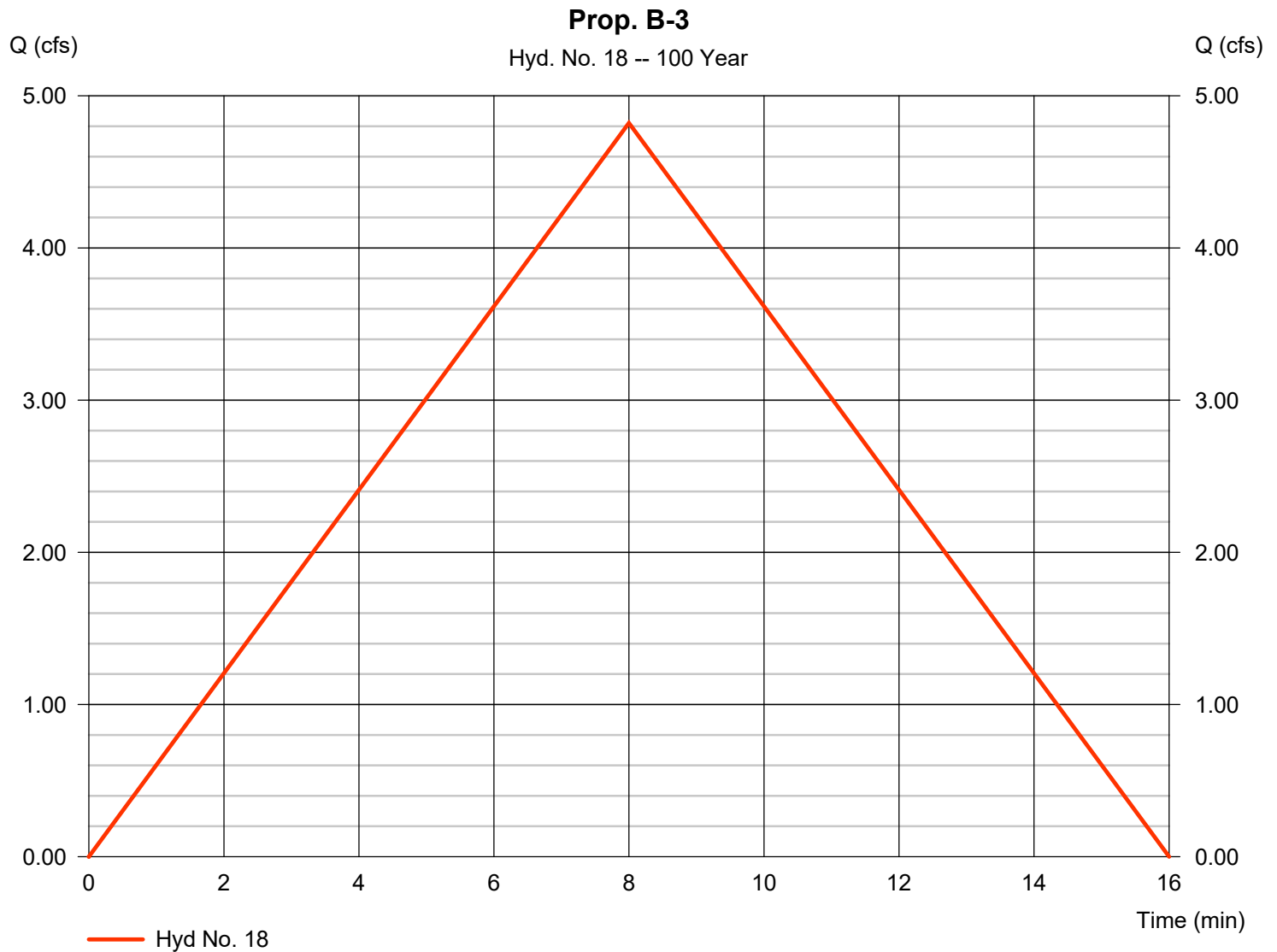
Monday, 10 / 28 / 2019

Hyd. No. 18

Prop. B-3

Hydrograph type = Rational
 Storm frequency = 100 yrs
 Time interval = 1 min
 Drainage area = 0.960 ac
 Intensity = 9.848 in/hr
 IDF Curve = KCMO.IDF

Peak discharge = 4.822 cfs
 Time to peak = 8 min
 Hyd. volume = 2,314 cuft
 Runoff coeff. = 0.51
 Tc by User = 8.00 min
 Asc/Rec limb fact = 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

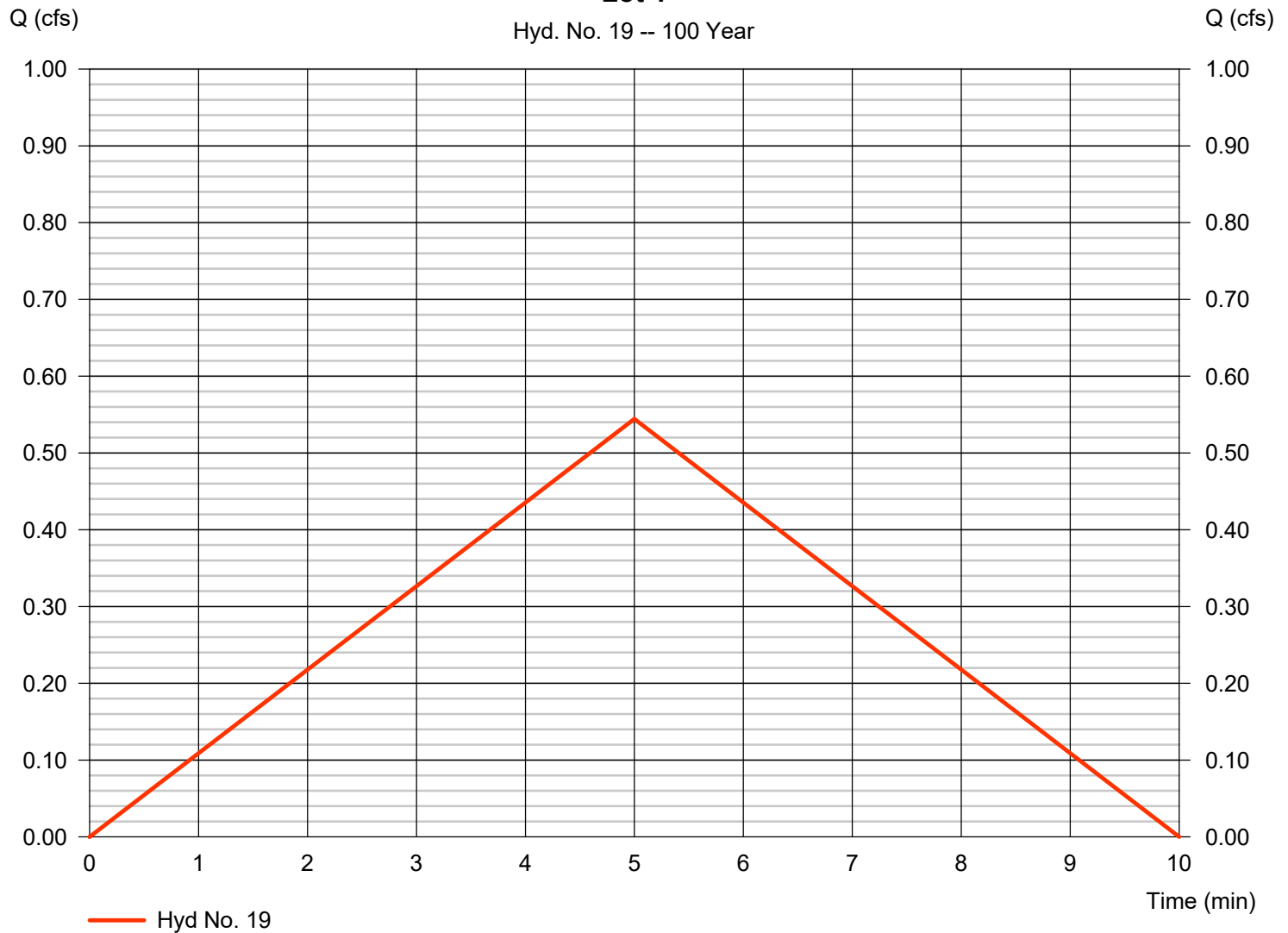
Hyd. No. 19

Lot 1

| | | | |
|-----------------|----------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 0.544 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 5 min |
| Time interval | = 1 min | Hyd. volume | = 163 cuft |
| Drainage area | = 0.055 ac | Runoff coeff. | = 0.9 |
| Intensity | = 10.996 in/hr | Tc by User | = 5.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |

Lot 1

Hyd. No. 19 -- 100 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

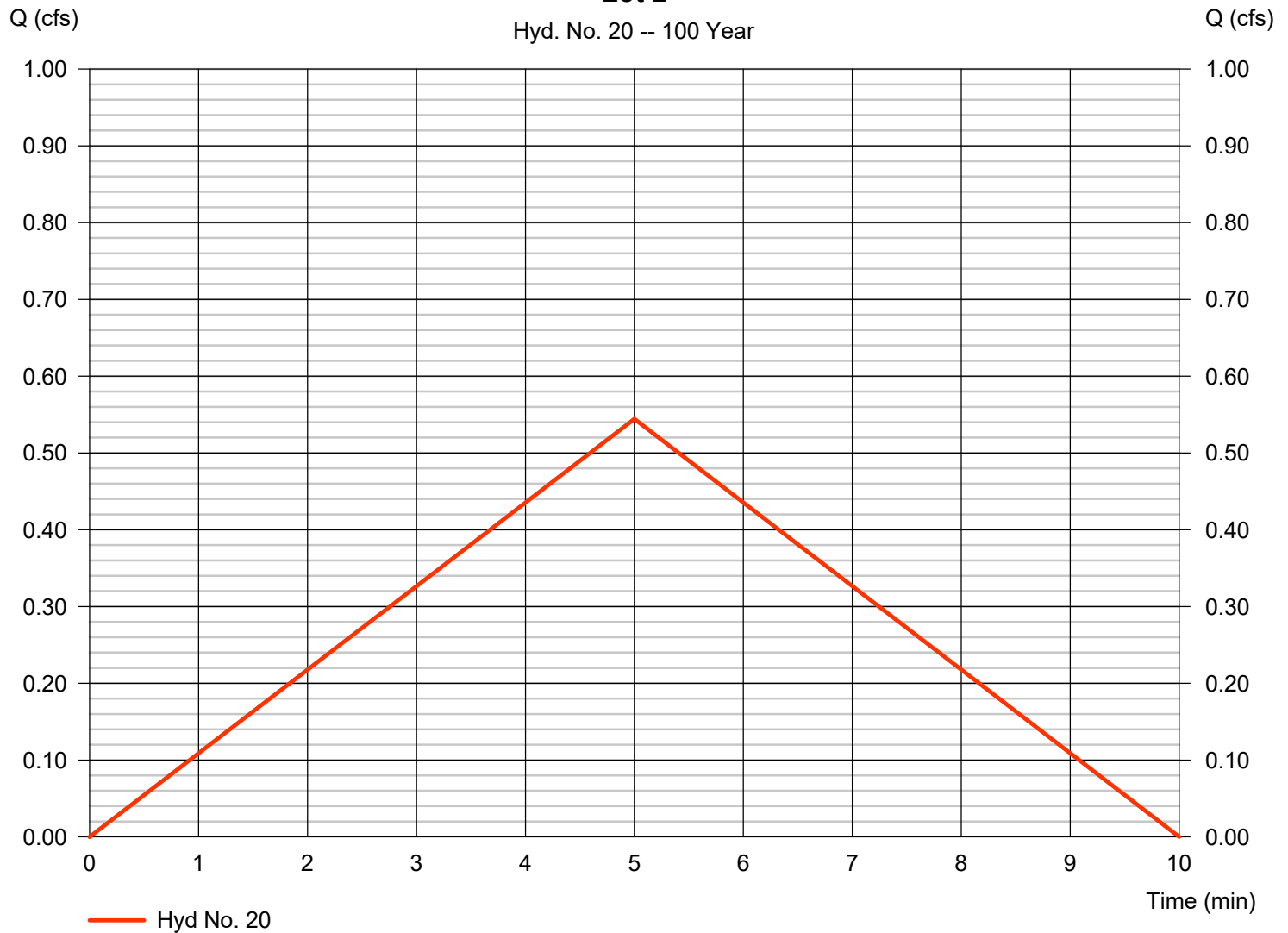
Hyd. No. 20

Lot 2

| | | | |
|-----------------|----------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 0.544 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 5 min |
| Time interval | = 1 min | Hyd. volume | = 163 cuft |
| Drainage area | = 0.055 ac | Runoff coeff. | = 0.9 |
| Intensity | = 10.996 in/hr | Tc by User | = 5.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |

Lot 2

Hyd. No. 20 -- 100 Year



Hydrograph Report

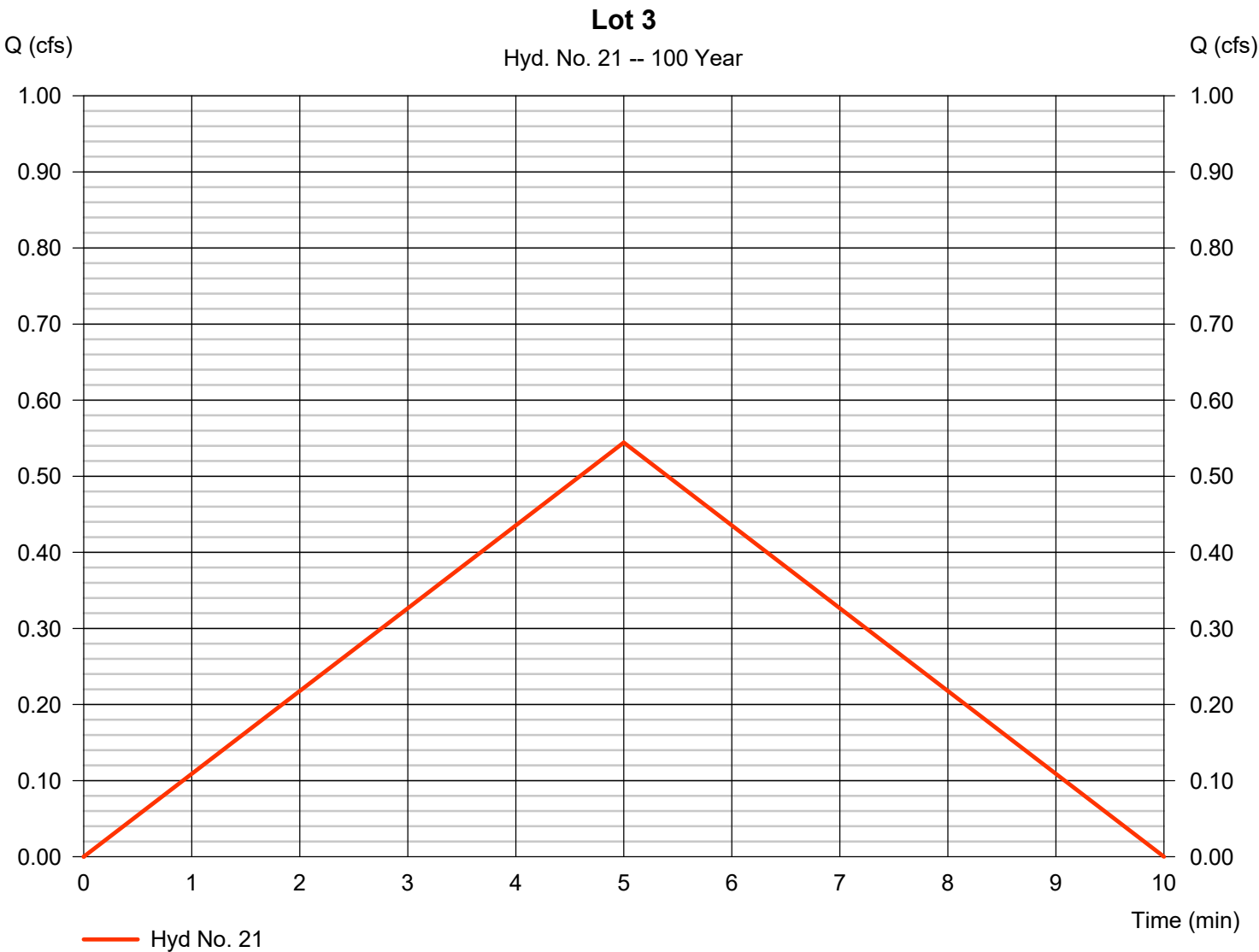
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 21

Lot 3

| | | | |
|-----------------|----------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 0.544 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 5 min |
| Time interval | = 1 min | Hyd. volume | = 163 cuft |
| Drainage area | = 0.055 ac | Runoff coeff. | = 0.9 |
| Intensity | = 10.996 in/hr | Tc by User | = 5.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

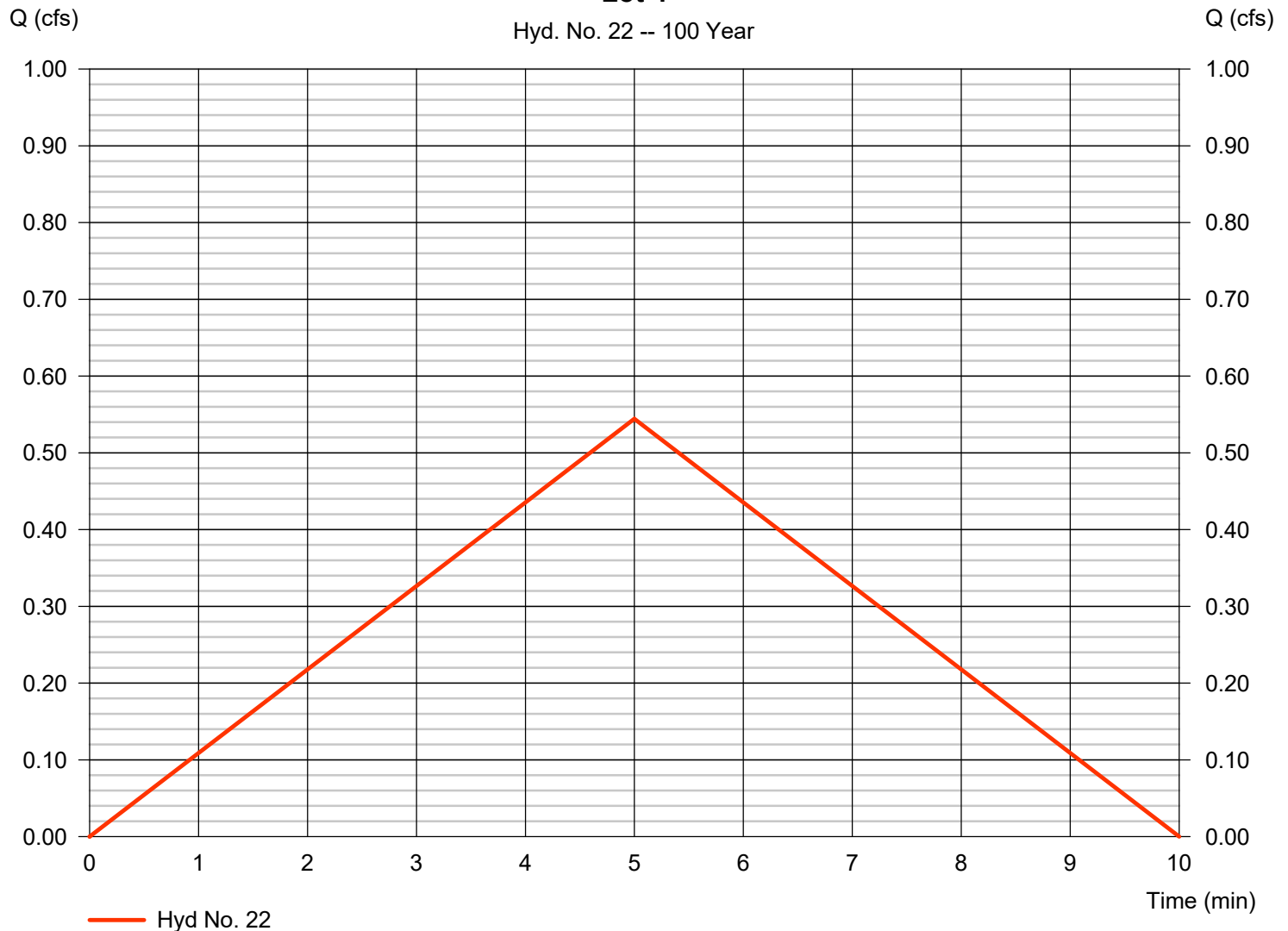
Monday, 10 / 28 / 2019

Hyd. No. 22

Lot 4

| | | | |
|-----------------|----------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 0.544 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 5 min |
| Time interval | = 1 min | Hyd. volume | = 163 cuft |
| Drainage area | = 0.055 ac | Runoff coeff. | = 0.9 |
| Intensity | = 10.996 in/hr | Tc by User | = 5.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |

Lot 4



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

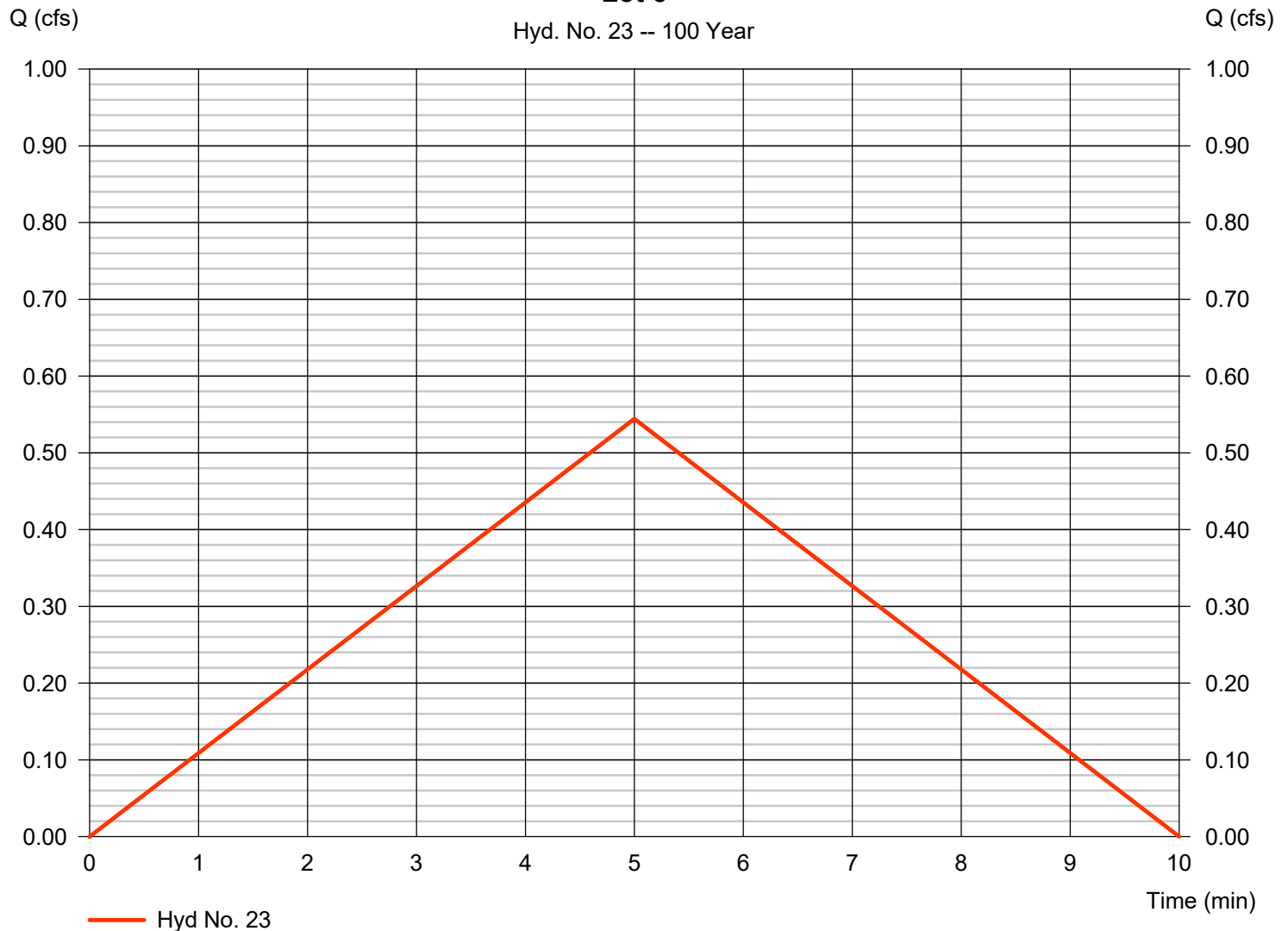
Monday, 10 / 28 / 2019

Hyd. No. 23

Lot 5

| | | | |
|-----------------|----------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 0.544 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 5 min |
| Time interval | = 1 min | Hyd. volume | = 163 cuft |
| Drainage area | = 0.055 ac | Runoff coeff. | = 0.9 |
| Intensity | = 10.996 in/hr | Tc by User | = 5.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |

Lot 5



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

Hyd. No. 24

Lot 6

| | | | |
|-----------------|----------------|-------------------|-------------|
| Hydrograph type | = Rational | Peak discharge | = 0.544 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 5 min |
| Time interval | = 1 min | Hyd. volume | = 163 cuft |
| Drainage area | = 0.055 ac | Runoff coeff. | = 0.9 |
| Intensity | = 10.996 in/hr | Tc by User | = 5.00 min |
| IDF Curve | = KCMO.IDF | Asc/Rec limb fact | = 1/1 |



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

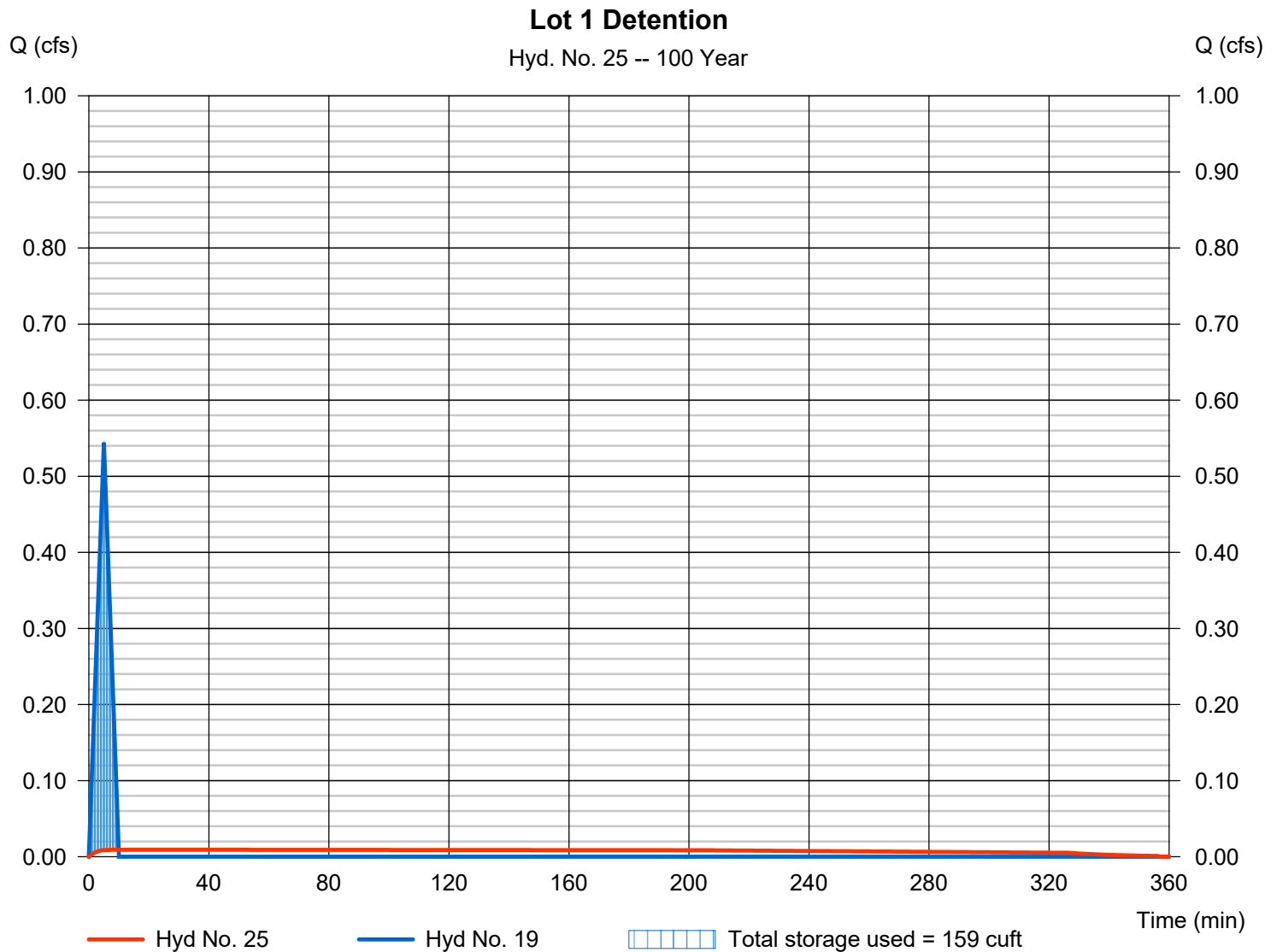
Monday, 10 / 28 / 2019

Hyd. No. 25

Lot 1 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 162 cuft |
| Inflow hyd. No. | = 19 - Lot 1 | Max. Elevation | = 1038.26 ft |
| Reservoir name | = Lot 1 Detention Pit | Max. Storage | = 159 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

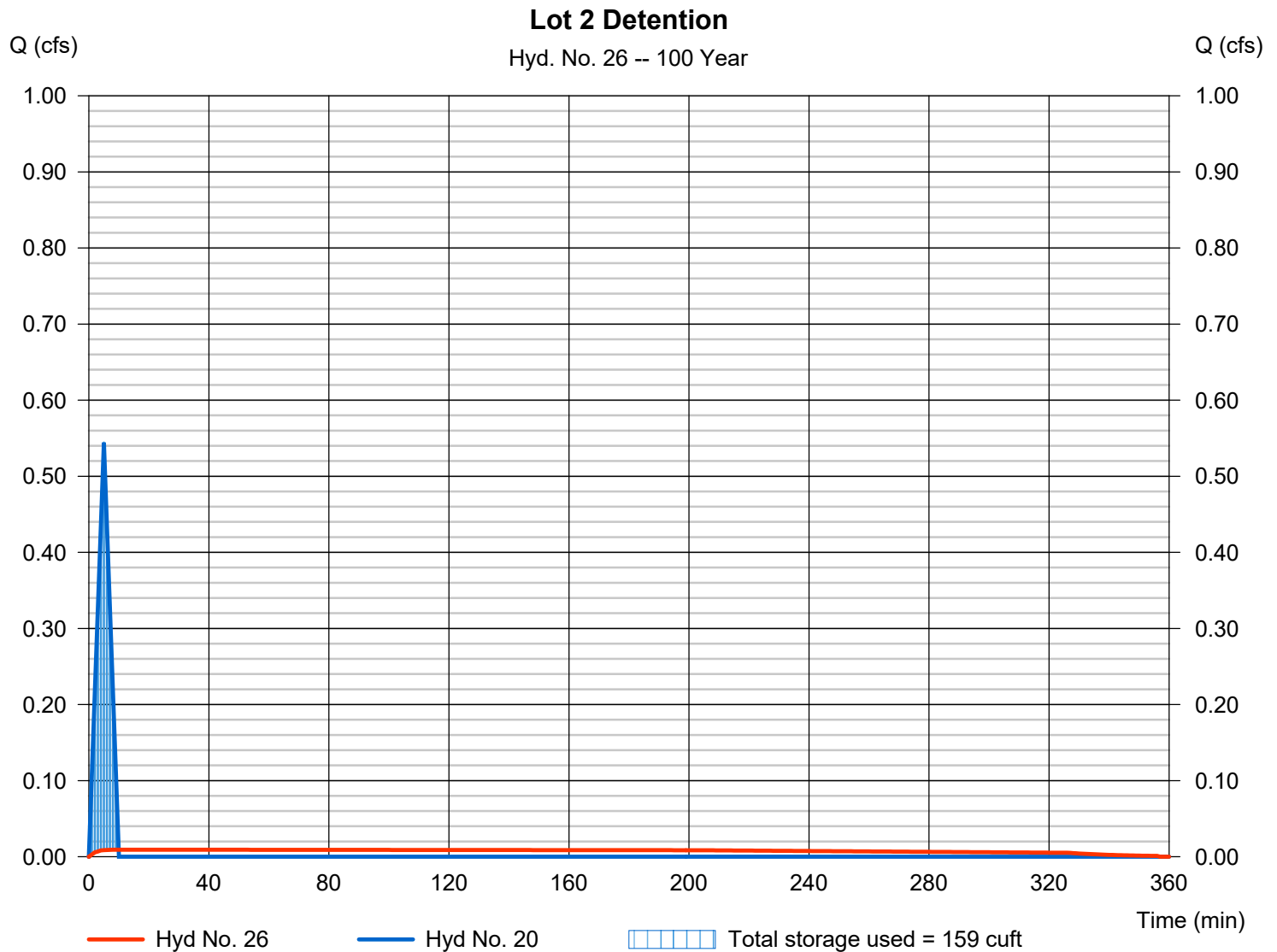
Monday, 10 / 28 / 2019

Hyd. No. 26

Lot 2 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 162 cuft |
| Inflow hyd. No. | = 20 - Lot 2 | Max. Elevation | = 1040.26 ft |
| Reservoir name | = Lot 2 Detention Pit | Max. Storage | = 159 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

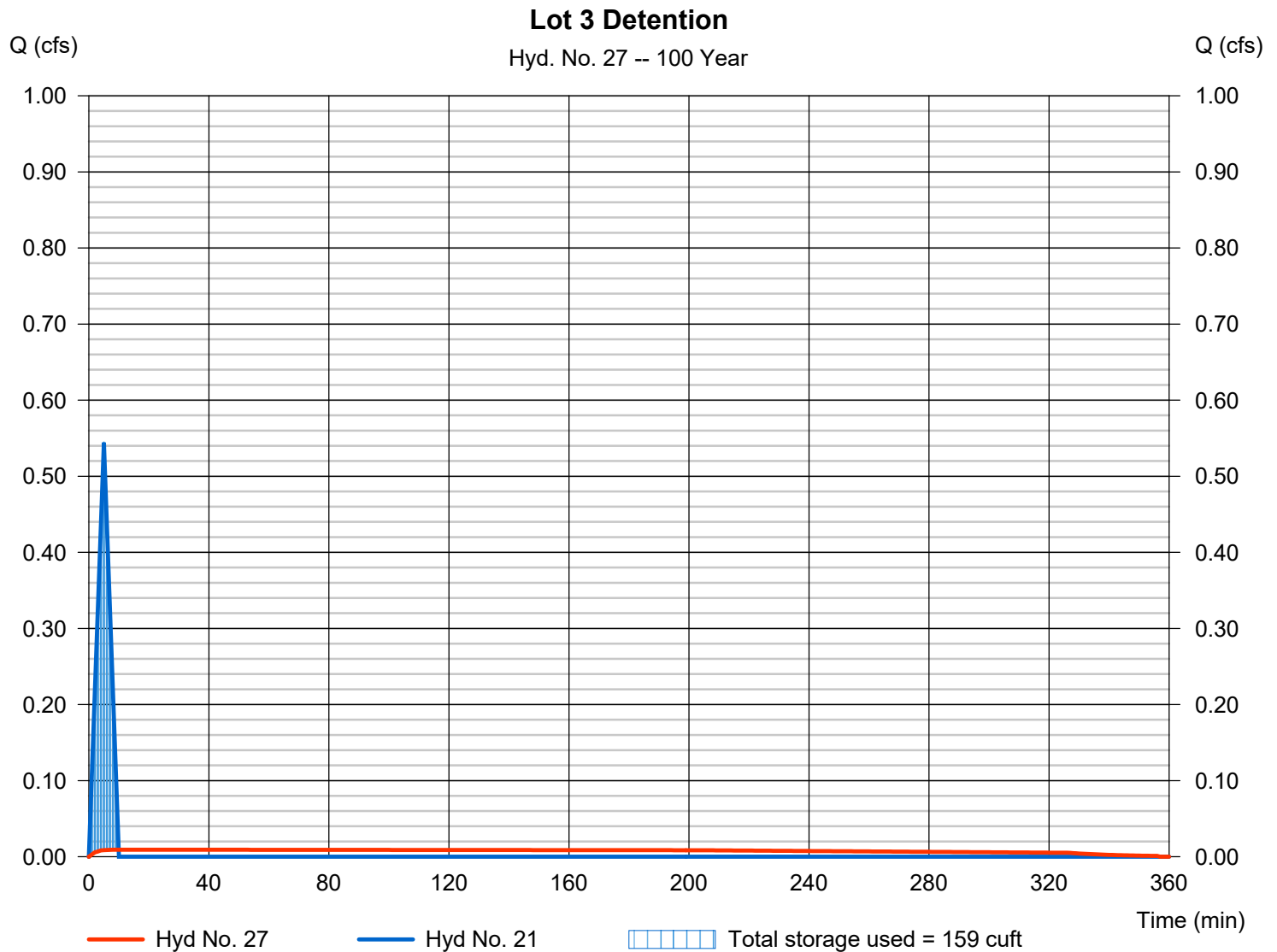
Monday, 10 / 28 / 2019

Hyd. No. 27

Lot 3 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 162 cuft |
| Inflow hyd. No. | = 21 - Lot 3 | Max. Elevation | = 1037.26 ft |
| Reservoir name | = Lot 3 Detention Pit | Max. Storage | = 159 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

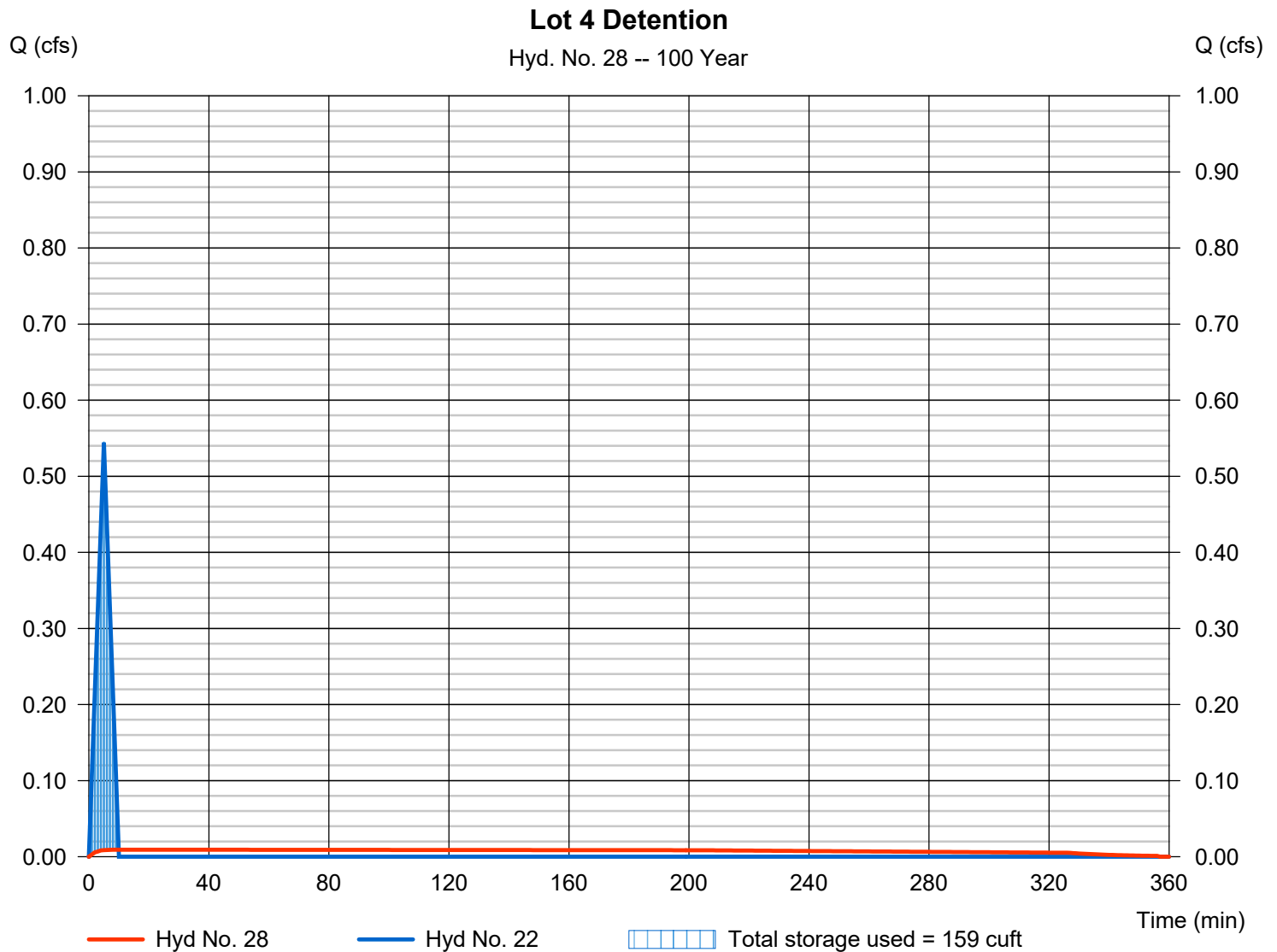
Monday, 10 / 28 / 2019

Hyd. No. 28

Lot 4 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 162 cuft |
| Inflow hyd. No. | = 22 - Lot 4 | Max. Elevation | = 1039.26 ft |
| Reservoir name | = Lot 4 Detention Pit | Max. Storage | = 159 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

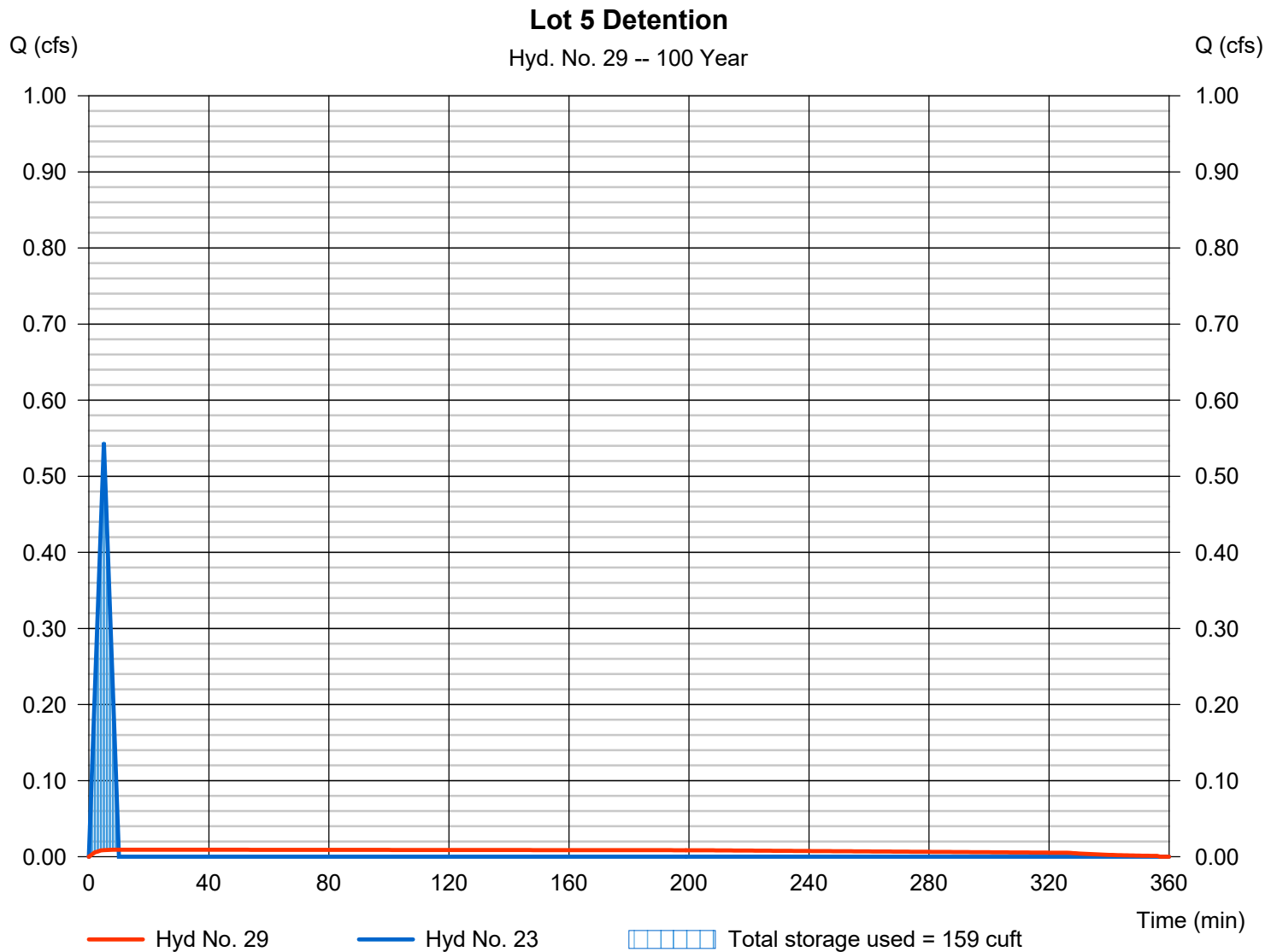
Monday, 10 / 28 / 2019

Hyd. No. 29

Lot 5 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 162 cuft |
| Inflow hyd. No. | = 23 - Lot 5 | Max. Elevation | = 1038.26 ft |
| Reservoir name | = Lot 5 Detention Pit | Max. Storage | = 159 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

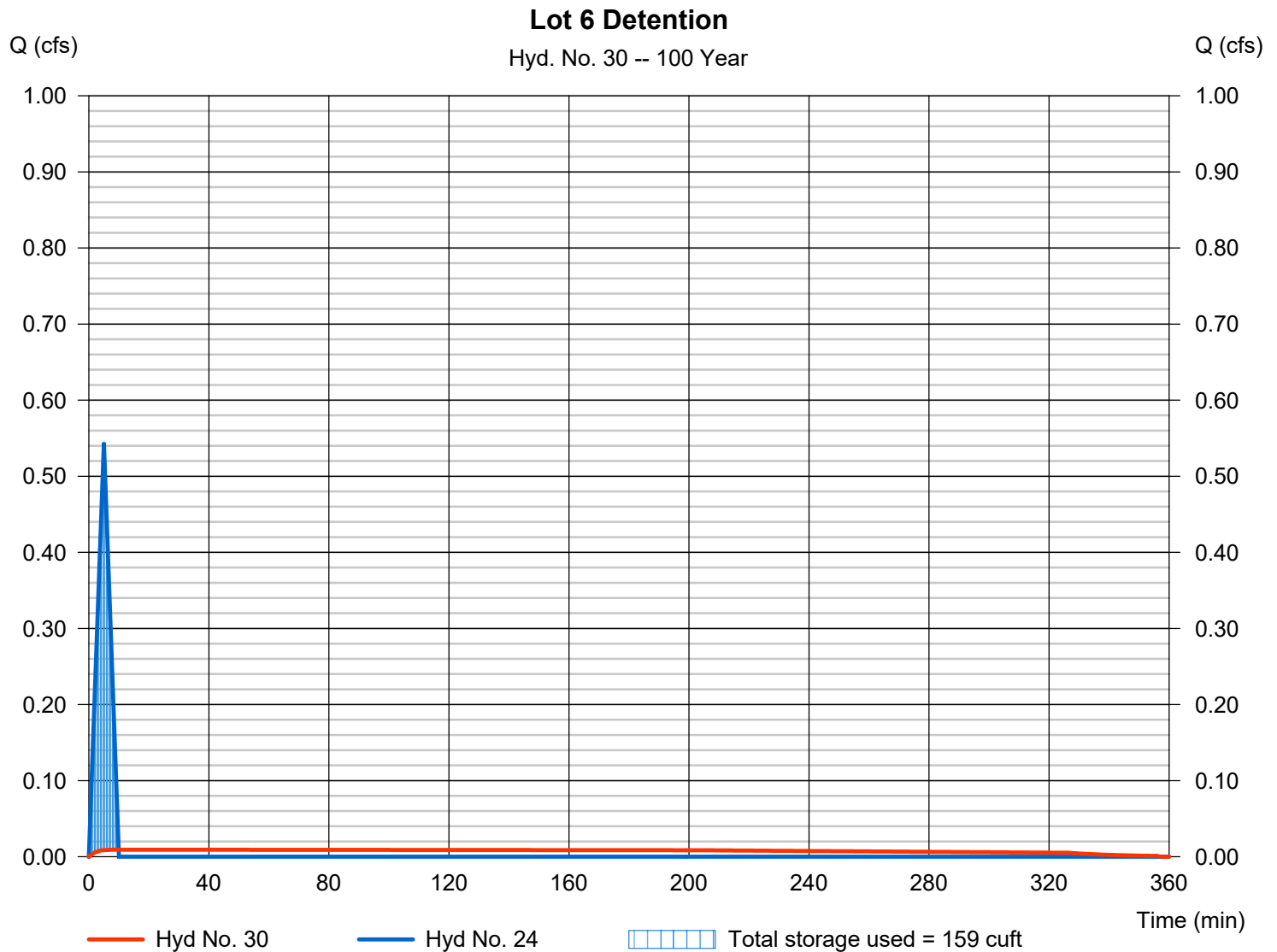
Monday, 10 / 28 / 2019

Hyd. No. 30

Lot 6 Detention

| | | | |
|-----------------|-----------------------|----------------|--------------|
| Hydrograph type | = Reservoir | Peak discharge | = 0.009 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 10 min |
| Time interval | = 1 min | Hyd. volume | = 162 cuft |
| Inflow hyd. No. | = 24 - Lot 6 | Max. Elevation | = 1038.26 ft |
| Reservoir name | = Lot 6 Detention Pit | Max. Storage | = 159 cuft |

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

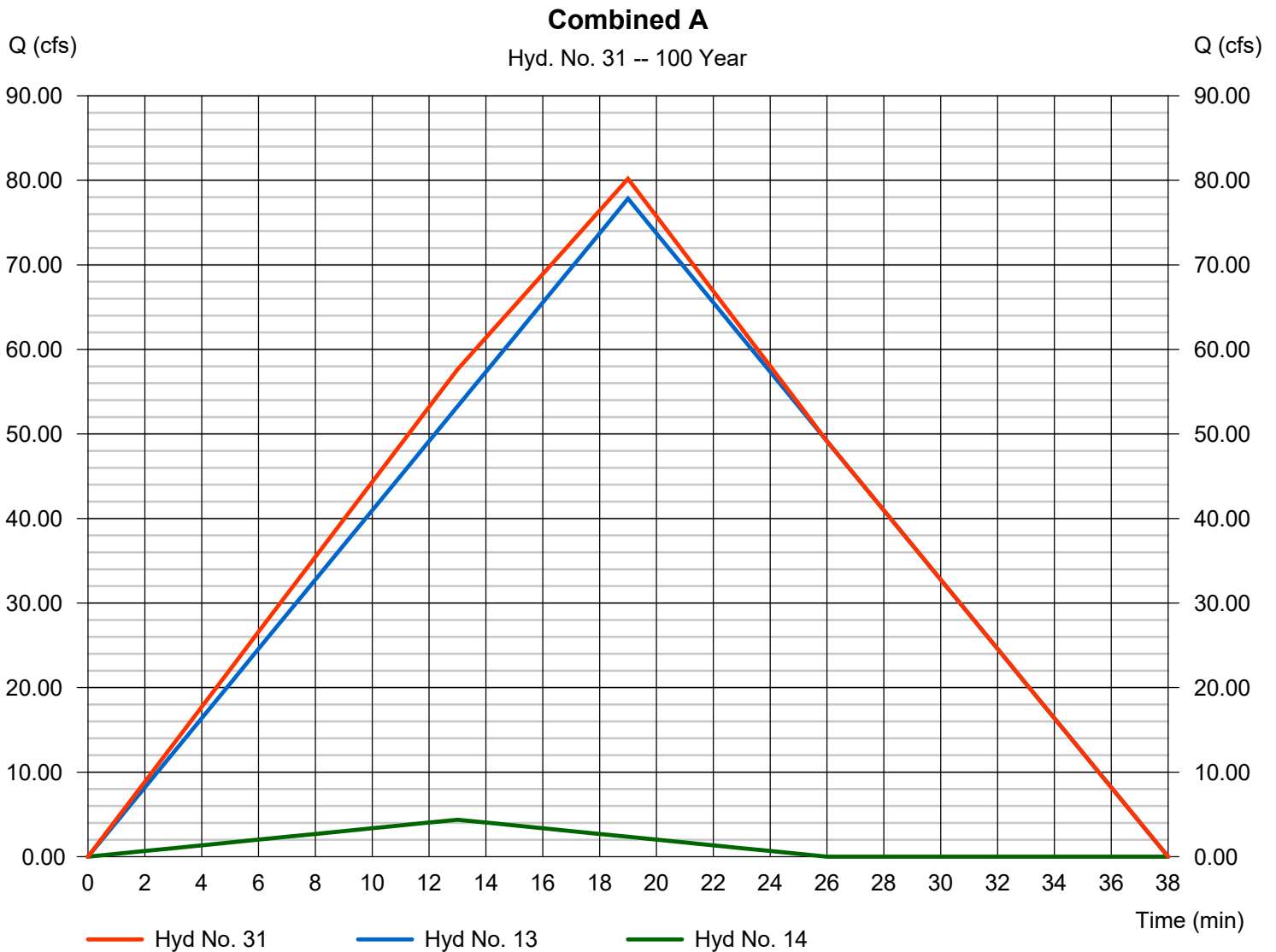
Monday, 10 / 28 / 2019

Hyd. No. 31

Combined A

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 1 min
Inflow hyds. = 13, 14

Peak discharge = 80.19 cfs
Time to peak = 19 min
Hyd. volume = 92,139 cuft
Contrib. drain. area = 19.740 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

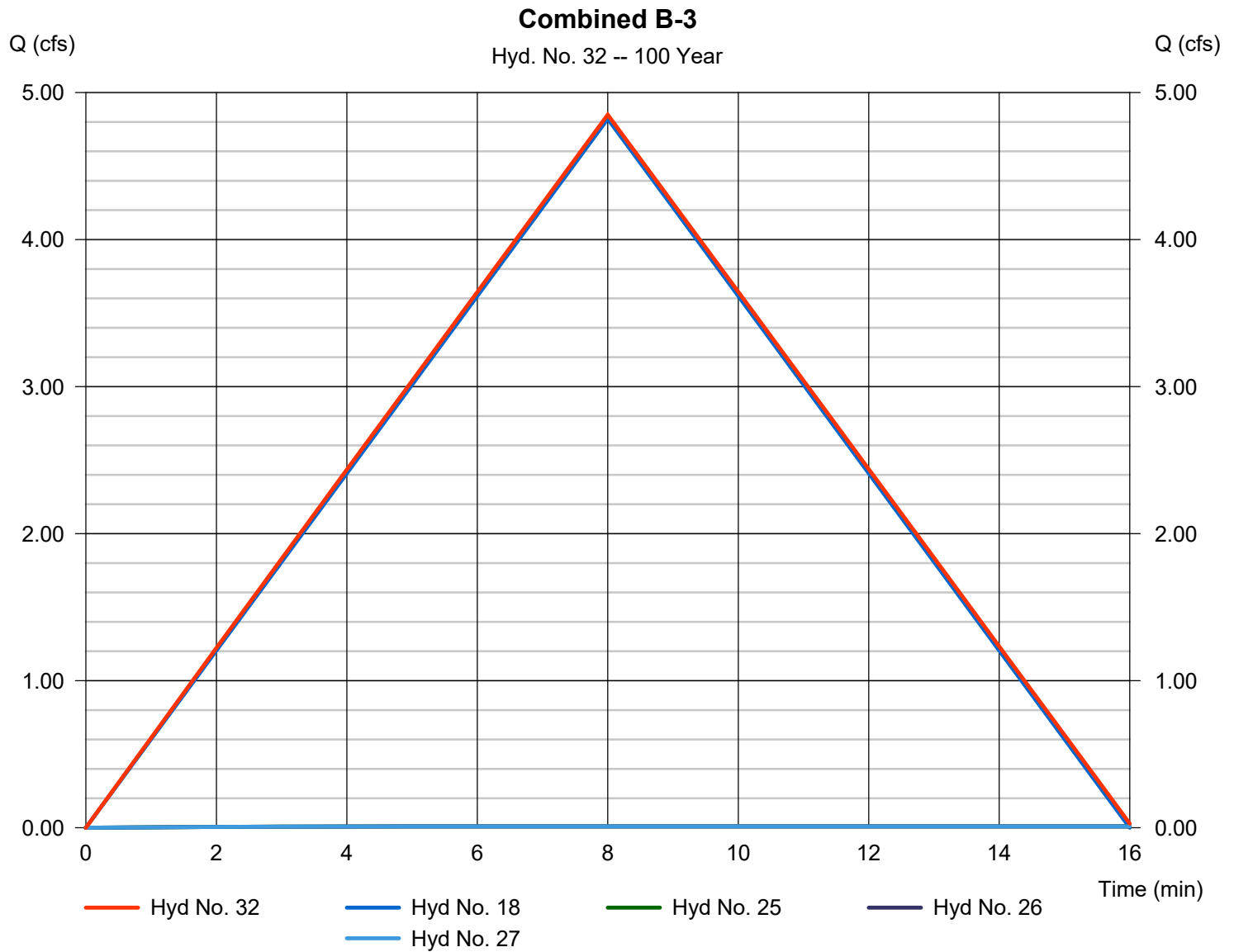
Monday, 10 / 28 / 2019

Hyd. No. 32

Combined B-3

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 1 min
Inflow hyds. = 18, 25, 26, 27

Peak discharge = 4.849 cfs
Time to peak = 8 min
Hyd. volume = 2,801 cuft
Contrib. drain. area = 0.960 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

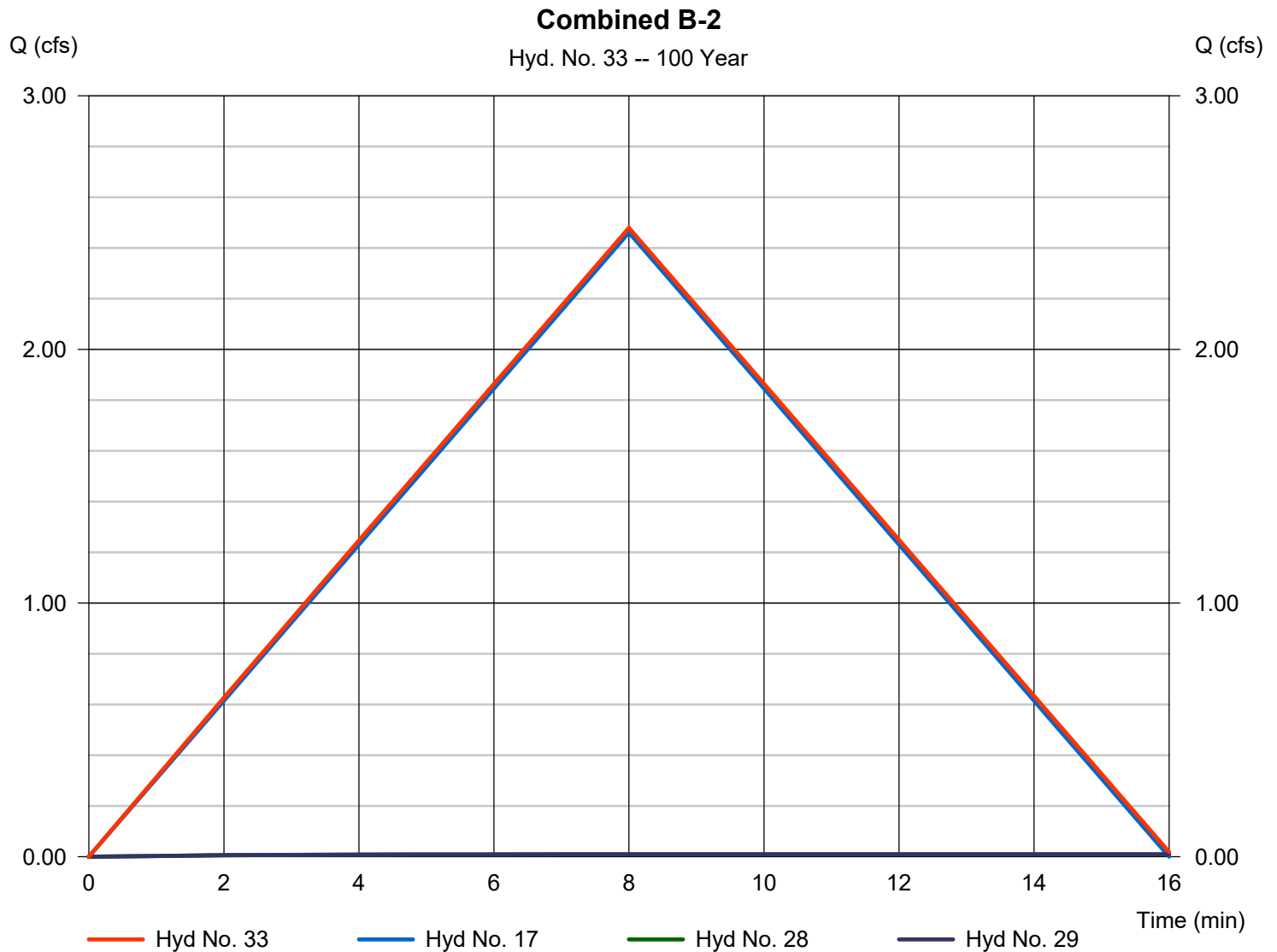
Monday, 10 / 28 / 2019

Hyd. No. 33

Combined B-2

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 1 min
Inflow hyds. = 17, 28, 29

Peak discharge = 2.479 cfs
Time to peak = 8 min
Hyd. volume = 1,506 cuft
Contrib. drain. area = 0.490 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

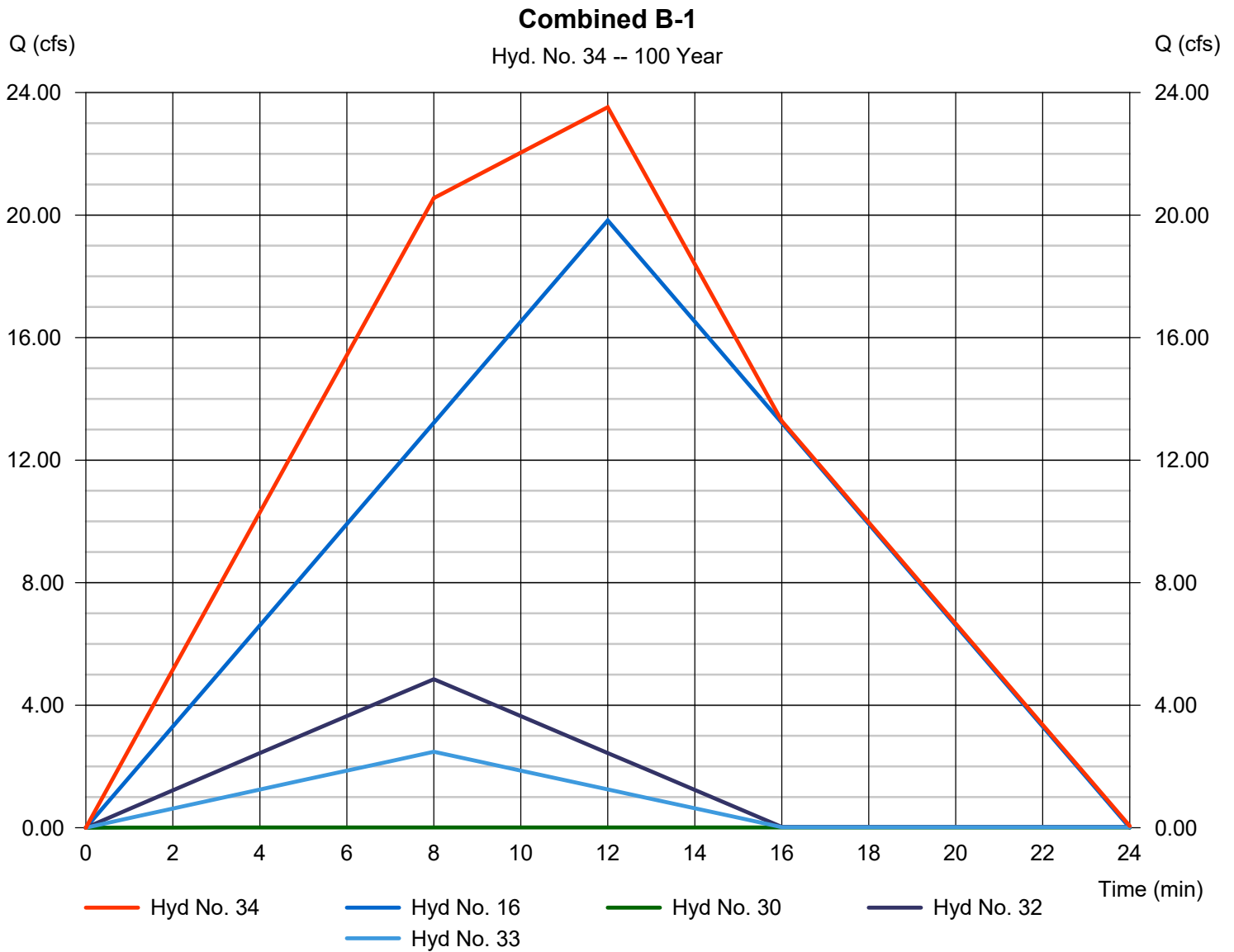
Monday, 10 / 28 / 2019

Hyd. No. 34

Combined B-1

Hydrograph type = Combine
 Storm frequency = 100 yrs
 Time interval = 1 min
 Inflow hyds. = 16, 30, 32, 33

Peak discharge = 23.52 cfs
 Time to peak = 12 min
 Hyd. volume = 18,744 cuft
 Contrib. drain. area = 4.490 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

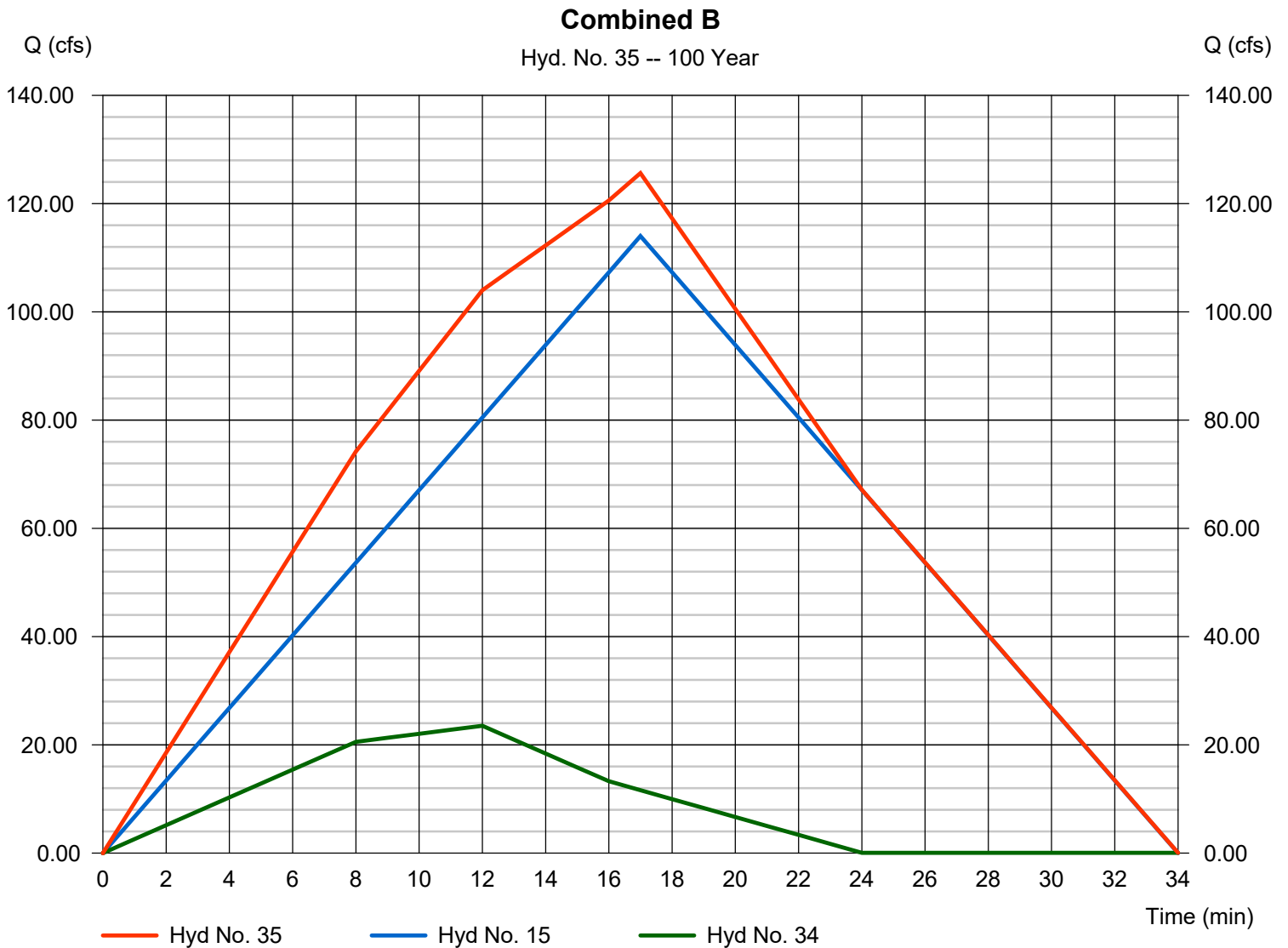
Monday, 10 / 28 / 2019

Hyd. No. 35

Combined B

Hydrograph type = Combine
Storm frequency = 100 yrs
Time interval = 1 min
Inflow hyds. = 15, 34

Peak discharge = 125.63 cfs
Time to peak = 17 min
Hyd. volume = 135,032 cuft
Contrib. drain. area = 26.540 ac



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

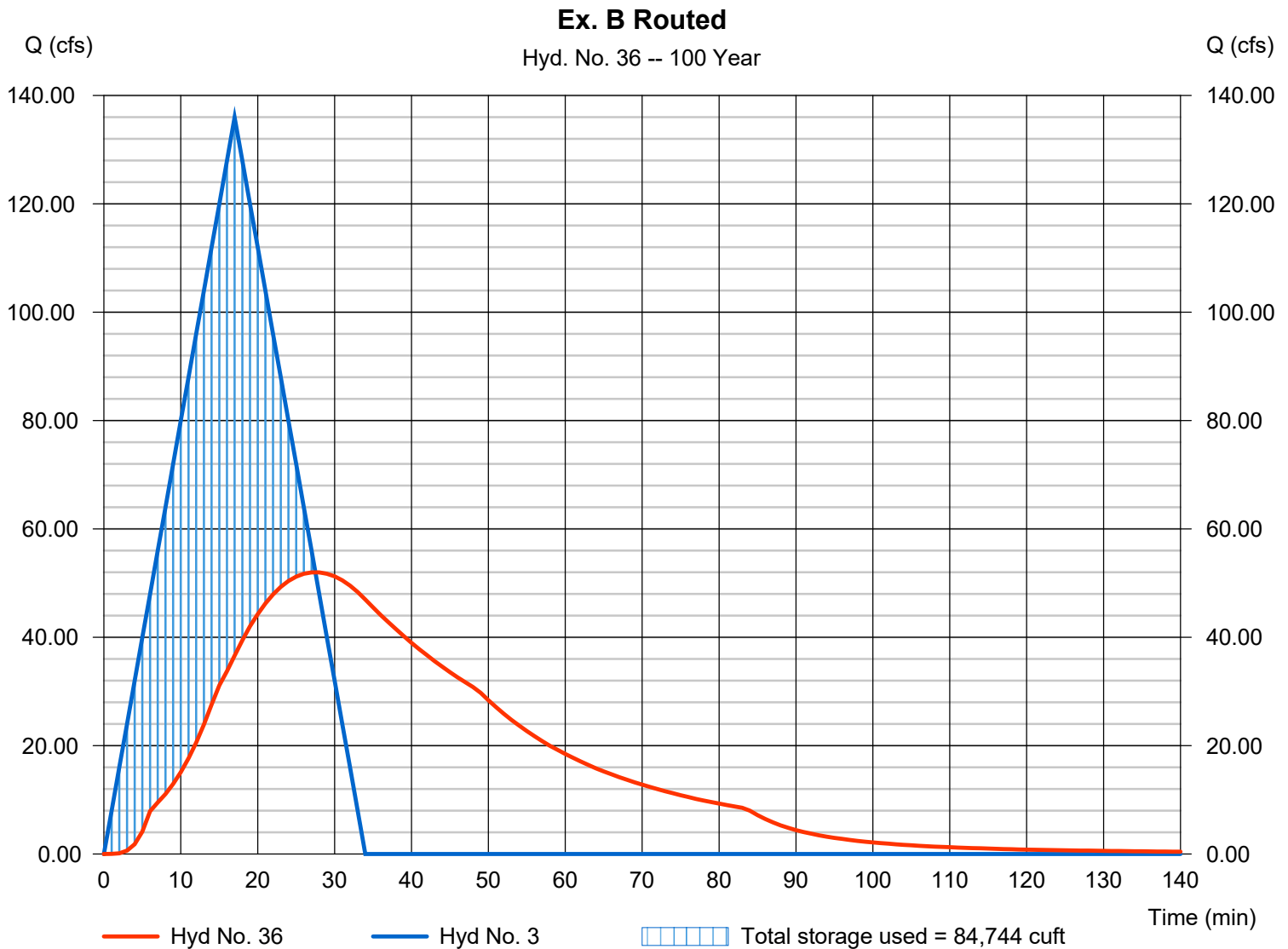
Hyd. No. 36

Ex. B Routed

Hydrograph type = Reservoir
 Storm frequency = 100 yrs
 Time interval = 1 min
 Inflow hyd. No. = 3 - Ex. B
 Reservoir name = 315 NW Olive

Peak discharge = 51.98 cfs
 Time to peak = 27 min
 Hyd. volume = 138,665 cuft
 Max. Elevation = 1009.75 ft
 Max. Storage = 84,744 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

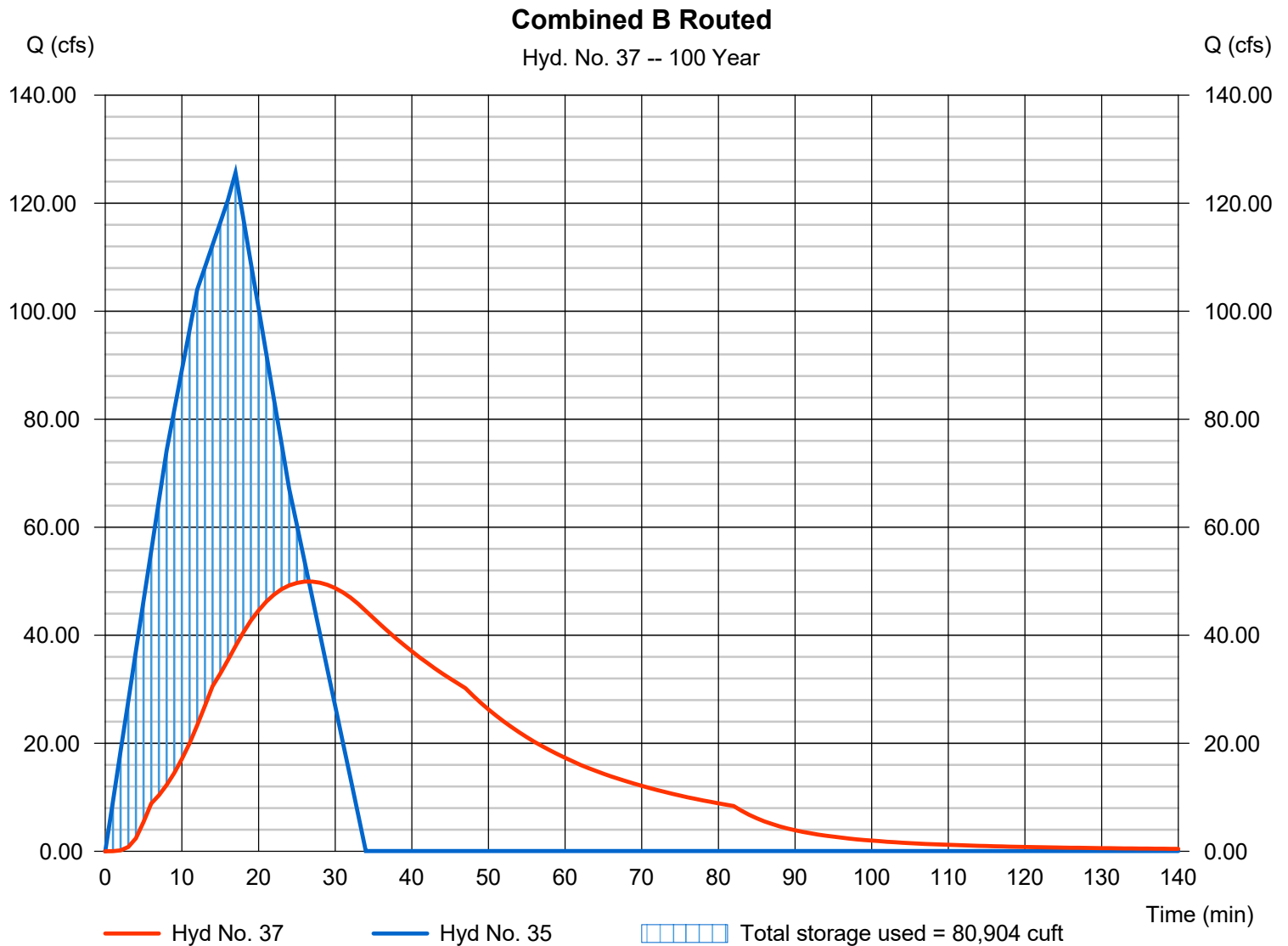
Monday, 10 / 28 / 2019

Hyd. No. 37

Combined B Routed

| | | | |
|-----------------|-------------------|----------------|----------------|
| Hydrograph type | = Reservoir | Peak discharge | = 49.94 cfs |
| Storm frequency | = 100 yrs | Time to peak | = 27 min |
| Time interval | = 1 min | Hyd. volume | = 135,023 cuft |
| Inflow hyd. No. | = 35 - Combined B | Max. Elevation | = 1009.68 ft |
| Reservoir name | = 315 NW Olive | Max. Storage | = 80,904 cuft |

Storage Indication method used.



Hydraflow Rainfall Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2018 by Autodesk, Inc. v12

Monday, 10 / 28 / 2019

| Return Period (Yrs) | Intensity-Duration-Frequency Equation Coefficients (FHA) | | | |
|------------------------|--|---------|--------|-------|
| | B | D | E | (N/A) |
| 1 | 64.1474 | 17.7000 | 0.8922 | ----- |
| 2 | 95.7859 | 19.2000 | 0.9317 | ----- |
| 3 | 0.0000 | 0.0000 | 0.0000 | ----- |
| 5 | 118.7799 | 19.1000 | 0.9266 | ----- |
| 10 | 125.1300 | 18.2000 | 0.9051 | ----- |
| 25 | 158.9867 | 18.7000 | 0.9180 | ----- |
| 50 | 171.2459 | 18.3000 | 0.9078 | ----- |
| 100 | 187.3624 | 18.1000 | 0.9031 | ----- |

File name: KCMO.IDF

$$\text{Intensity} = B / (T_c + D)^E$$

| Return Period (Yrs) | Intensity Values (in/hr) | | | | | | | | | | | |
|------------------------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|
| | 5 min | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 1 | 3.96 | 3.31 | 2.86 | 2.52 | 2.25 | 2.04 | 1.87 | 1.72 | 1.60 | 1.49 | 1.40 | 1.32 |
| 2 | 4.92 | 4.13 | 3.56 | 3.14 | 2.81 | 2.54 | 2.32 | 2.14 | 1.98 | 1.85 | 1.73 | 1.63 |
| 3 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5 | 6.23 | 5.23 | 4.51 | 3.98 | 3.56 | 3.22 | 2.94 | 2.71 | 2.52 | 2.35 | 2.20 | 2.07 |
| 10 | 7.27 | 6.09 | 5.26 | 4.63 | 4.14 | 3.75 | 3.43 | 3.16 | 2.93 | 2.74 | 2.57 | 2.42 |
| 25 | 8.70 | 7.30 | 6.30 | 5.54 | 4.96 | 4.49 | 4.10 | 3.78 | 3.51 | 3.27 | 3.07 | 2.89 |
| 50 | 9.83 | 8.24 | 7.11 | 6.26 | 5.60 | 5.07 | 4.64 | 4.27 | 3.97 | 3.70 | 3.47 | 3.27 |
| 100 | 11.00 | 9.21 | 7.95 | 7.00 | 6.26 | 5.67 | 5.19 | 4.78 | 4.44 | 4.14 | 3.89 | 3.66 |

Tc = time in minutes. Values may exceed 60.

Precip. file name: Z:\acad\KCMO.pcp

| Storm Distribution | Rainfall Precipitation Table (in) | | | | | | | |
|--------------------|-----------------------------------|------|------|------|-------|-------|-------|--------|
| | 1-yr | 2-yr | 3-yr | 5-yr | 10-yr | 25-yr | 50-yr | 100-yr |
| SCS 24-hour | 2.93 | 3.50 | 0.00 | 3.30 | 5.20 | 6.00 | 6.80 | 7.70 |
| SCS 6-Hr | 0.00 | 1.80 | 0.00 | 0.00 | 2.60 | 0.00 | 0.00 | 4.00 |
| Huff-1st | 0.00 | 1.55 | 0.00 | 2.75 | 4.00 | 5.38 | 6.50 | 8.00 |
| Huff-2nd | 2.49 | 3.10 | 0.00 | 4.01 | 4.64 | 5.52 | 6.21 | 6.90 |
| Huff-3rd | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Huff-4th | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Huff-Indy | 0.00 | 1.55 | 0.00 | 2.75 | 4.00 | 5.38 | 6.50 | 8.00 |
| Custom | 0.00 | 1.75 | 0.00 | 2.80 | 3.90 | 5.25 | 6.00 | 7.10 |

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100 - Year

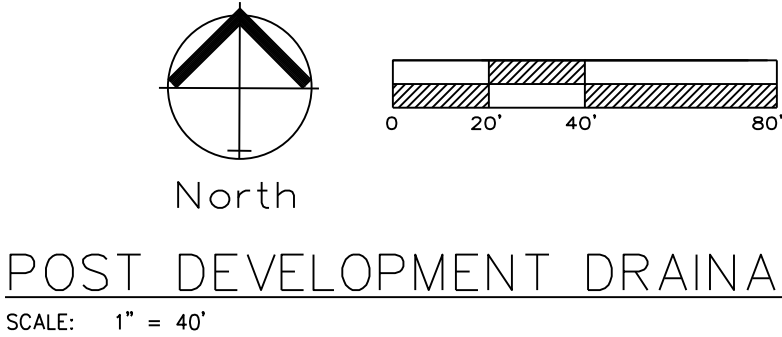
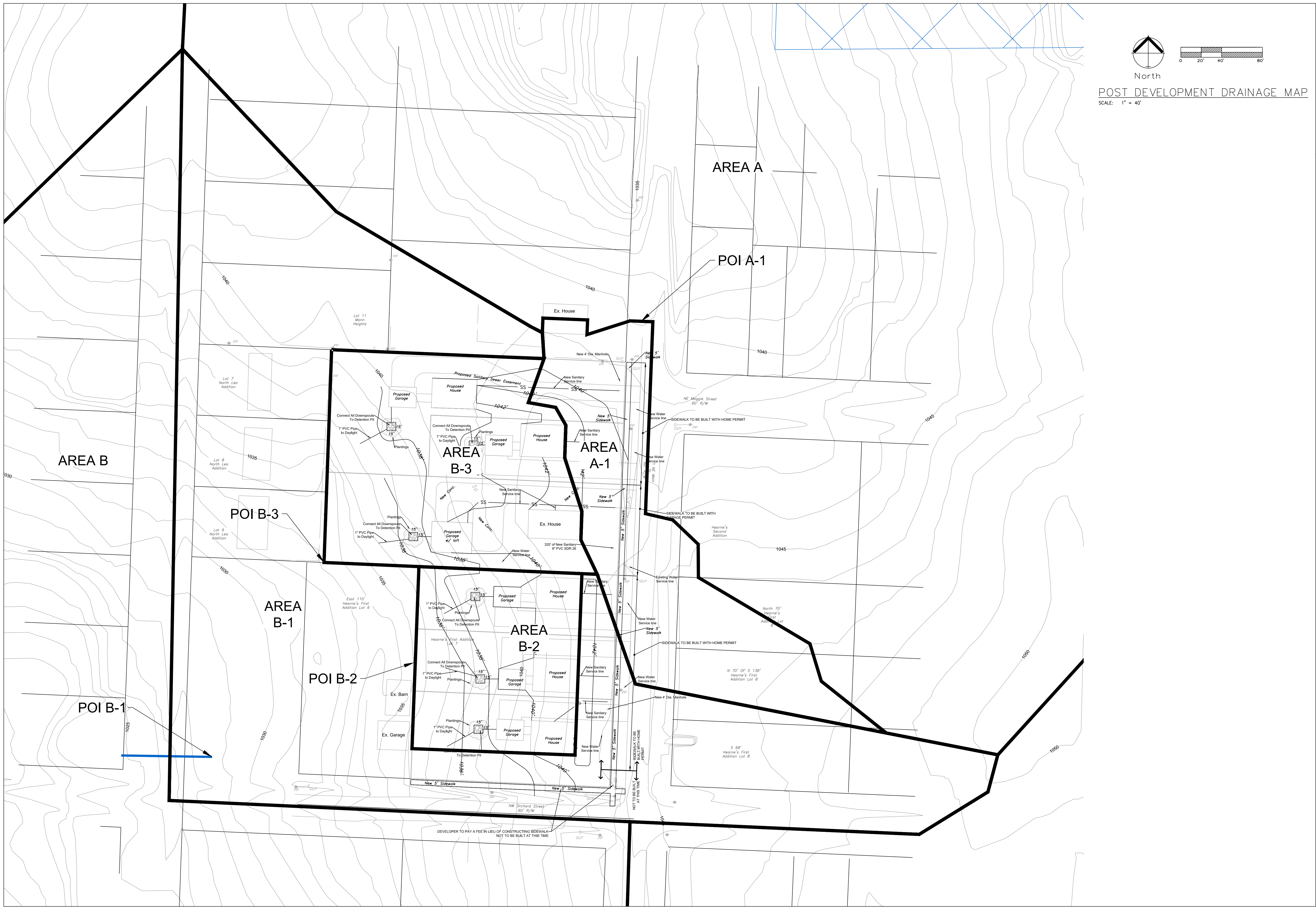
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Exhibit F

Post Development Drainage Map



Professional Registration
 Missouri
 Engineering 2005002186-D
 Surveying 2005008319-D
 Kansas
 Engineering E-1695
 Surveying LS-218
 Oklahoma
 Engineering 6254
 Nebraska
 Engineering CA2821

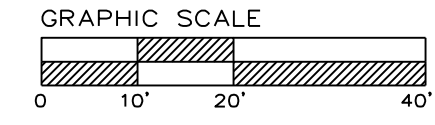
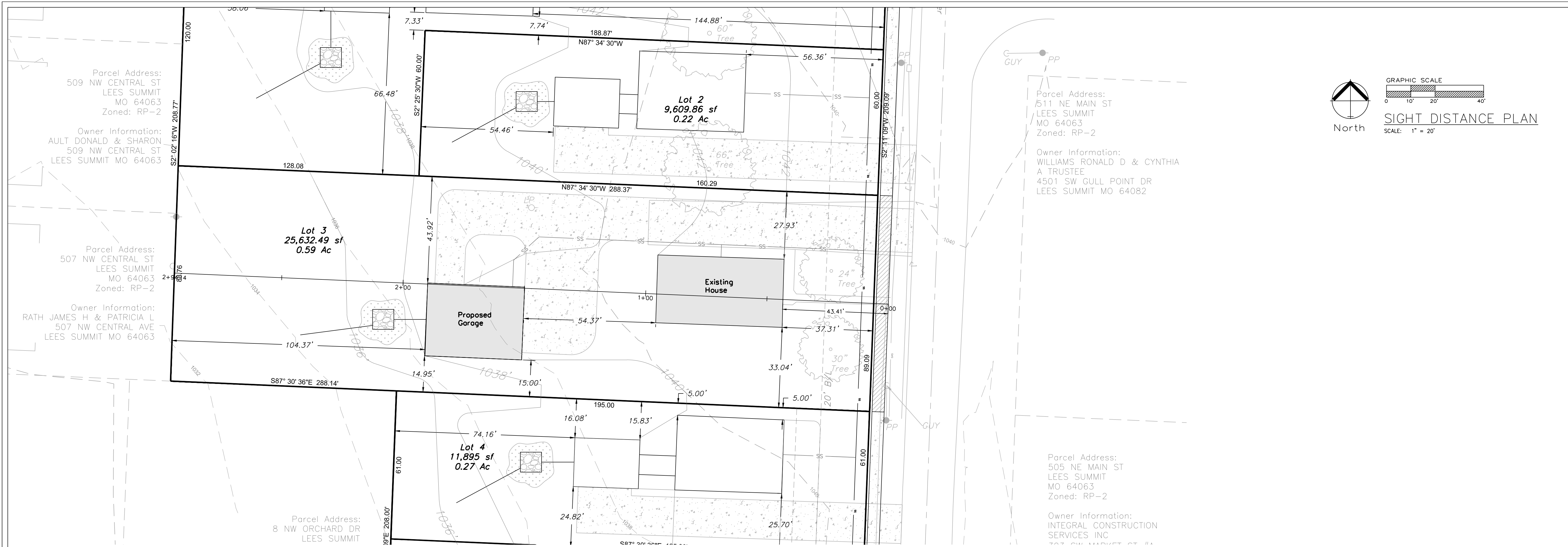
510 NW MAIN STREET
 Section 6, Township 47 North, Range 31 West
 Lee's Summit, Jackson County, Missouri

Project:
 510 NW MAIN ST
 LS MO
 Issue Date:
 September 13, 2019

Post Development Drainage Map
 Construction Plans for:
 510 NW MAIN STREET
 Section 6, Township 47 North, Range 31 West
 Lee's Summit, Jackson County, Missouri

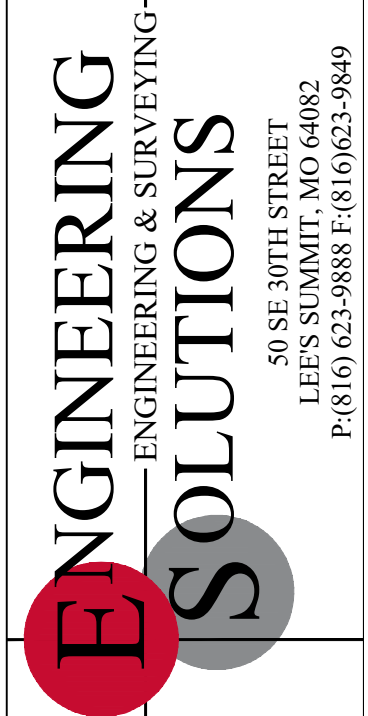
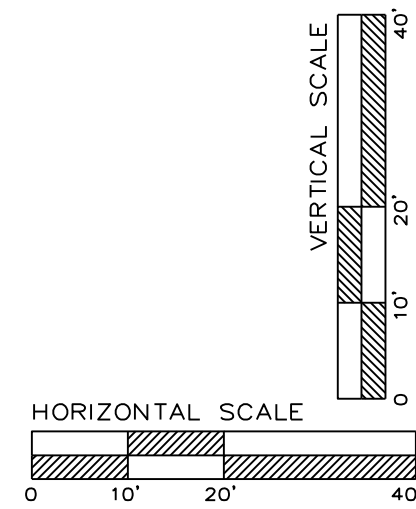
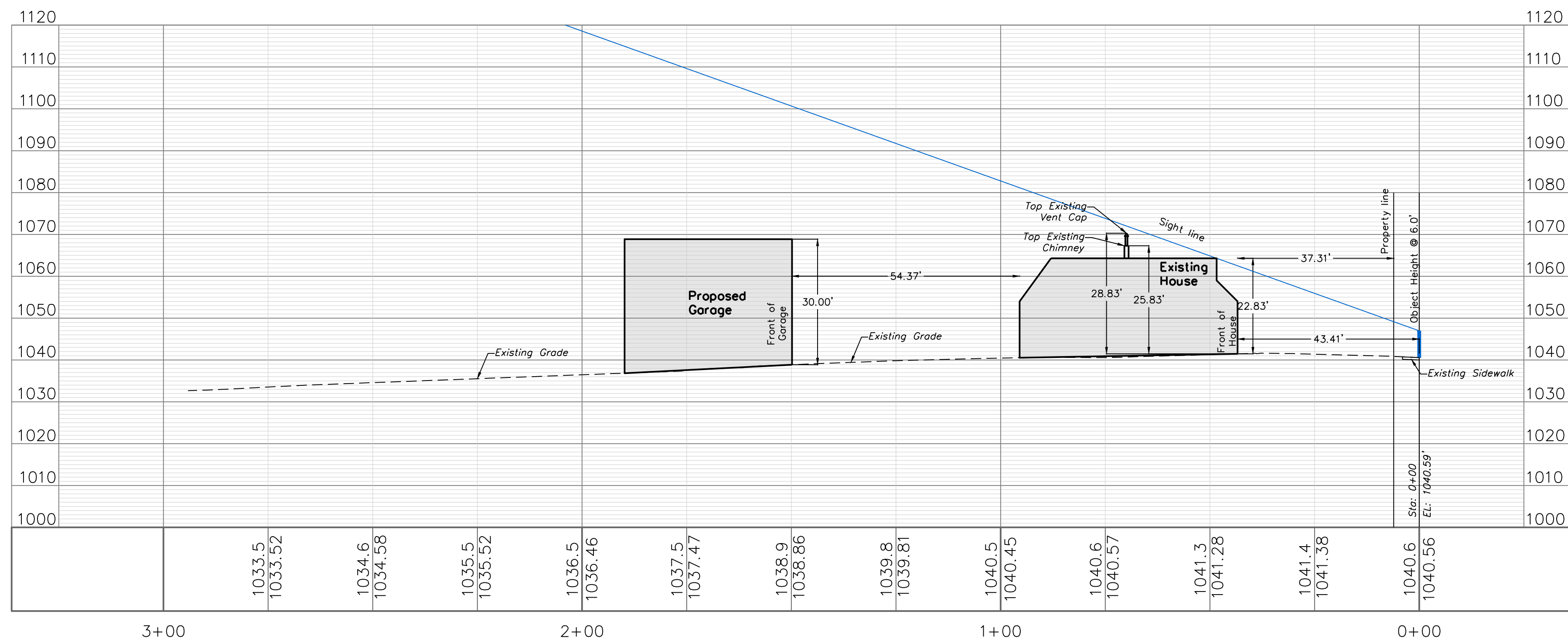
Matthew J. Schlicht
 MO PE 2006019708
 KS PE 19071
 OK PE 25226
 NE PE E-14335

| REVISIONS |
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SIGHT DISTANCE PLAN
SCALE: 1" = 20'

SIGHT DISTANCE



Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

510 NW MAIN STREET
Section 6, Township 47 North, Range 31 West
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Matthew J. Schlicht
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KS PE 19071
OK PE 25226
NE PE E-14335

| REVISIONS |
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Project: Lots 1 – 6, Main Orchard

This memorandum is to serve as a guideline for the home construction on Lots 1, 2 & 4– 6, Main Orchard. Lot 3 is an existing 1,100 sf home constructed around the early 1900's.

Existing Area Description

The proposed development is located within an area of Downtown Lee's Summit that is one block west of Douglas Street and two blocks south of Chipman Road and the adjacent area is all zoned RP-2, Planned Two Family Residential District. The area to the north and west is single family and duplex family homes that were constructed in the 1950's with an average home size around 1,050 sf and a lots size of approximately 15,000 sf. Many of the existing homes that were constructed in the 1950's can be described as a mid-century ranch style home. These homes are typically rectangular in shape and have a long linear presentation toward the street with a single stall parking garage on one end of the home. Within the development area there are a few homes there were constructed in the early 1900's and have a typical "American Foursquare" and "Bungalow" style designs, with home sizes being 1,500 sf and 1,000 sf respectively and the lots sizes are approximately 0.50 acres in size.



Existing Ranch Style Home



Existing Bungalow Style Home



Existing Bungalow with Front Porch



New Home, Hearne's Addition Lot 18 A



Existing Duplex

Development Plan Description

Lots 1, 2, 4, 5 and 6

-These lots are going to be available for purchase by individual buyers to construct a new home. The home will be required to comply with the required items listed in the "House Characteristics" section of this memorandum.

Lot 3

-This lot has an existing "Bungalow" style home that is approximately 1,100 sf with a full stone foundation. The home has a dormer and a full house width front porch. There is not an existing garage and the driveway is gravel. The purposed development plan illustrates future construction of a two-story garage / apartment with a footprint of 1,200 sf. The intent is to build a lower level two stall garage for the existing home and a one stall garage for the second-floor apartment. This lot will be maintained as one owner and the house and garage unit will remain as a rental.



Requested Modification to the height of the garage structure on Lot 3 not to exceed the height of the principal structure. The principal structure is shown below in the Table 1 and the request is to construct the garage to a maximum height of 26 feet. With the setback from the right of way and location on the lot the structure will not appear imposing on the existing structures, but the height will allow for the construction of home elements to keep the architectural style consistent.

Table 1. Existing House Height Measurements

| | |
|-------------------------|-----------|
| Top of Hip Roof | 22' – 10" |
| Top of Lower Hip Roof | 19' – 10" |
| Average Building Height | 21' – 4" |

*Modification is to allow an increase of 4' – 8" higher Loft / Garage



House Characteristics

| | |
|-----------------------|--|
| Minimum Floor Area | 1,000 sf |
| Garage | Minimum Single Stall (Detached or Attached to Residence) |
| Garage Location | No street facing overhead garage doors (Detached or Attached) |
| Front Porch | Minimum width of 50% of Total House Width with a 6-foot depth |
| House Style | Two-Story or Single Story with Dormer (American Foursquare, Bungalow, Craftsman) |
| Driveway Width at ROW | 16 Feet |

House Style

The style of the home should include front porches that are facing the street right of way to promote pedestrian and neighborhood connectivity. This will include incorporating a walkway connection from the front of the home to the public sidewalk. The public sidewalk will not be constructed with the development, but the connection shall be provided for. The driveway width at the street should be limited to 16 feet to limit the amount of concrete mass on the site but the driveway width can expand behind the home to allow for a multi stall garage. The home shall be constructed in such a way that the entry to the home shall incorporate a minimum of two steps from the sidewalk grade to the front porch. Front porch must incorporate a minimum of two column elements to delineate the porch with a minimum of 30% of the porch being constructed with a railing or knee wall.



House Color and Material

The developer will have the authority to review and approve all home colors, materials and styles prior to building permit approval.

The front of the House siding shall consist of multiple types of house siding to vary the appearance. Examples would include but not limited to lap siding or shake shingle combinations with stone or brick. The front and two sides of the home shall provide trim around window and door elements to be painted in a color that is different than the main body color of the house.

Acceptable materials for exterior siding of homes

- Wood Panel, Shingle
- Stone or Brick Veneer
- Real Brick or Stone
- Fiber Cement Lap Siding, Panel or Shingle

Excluded materials for exterior siding of homes

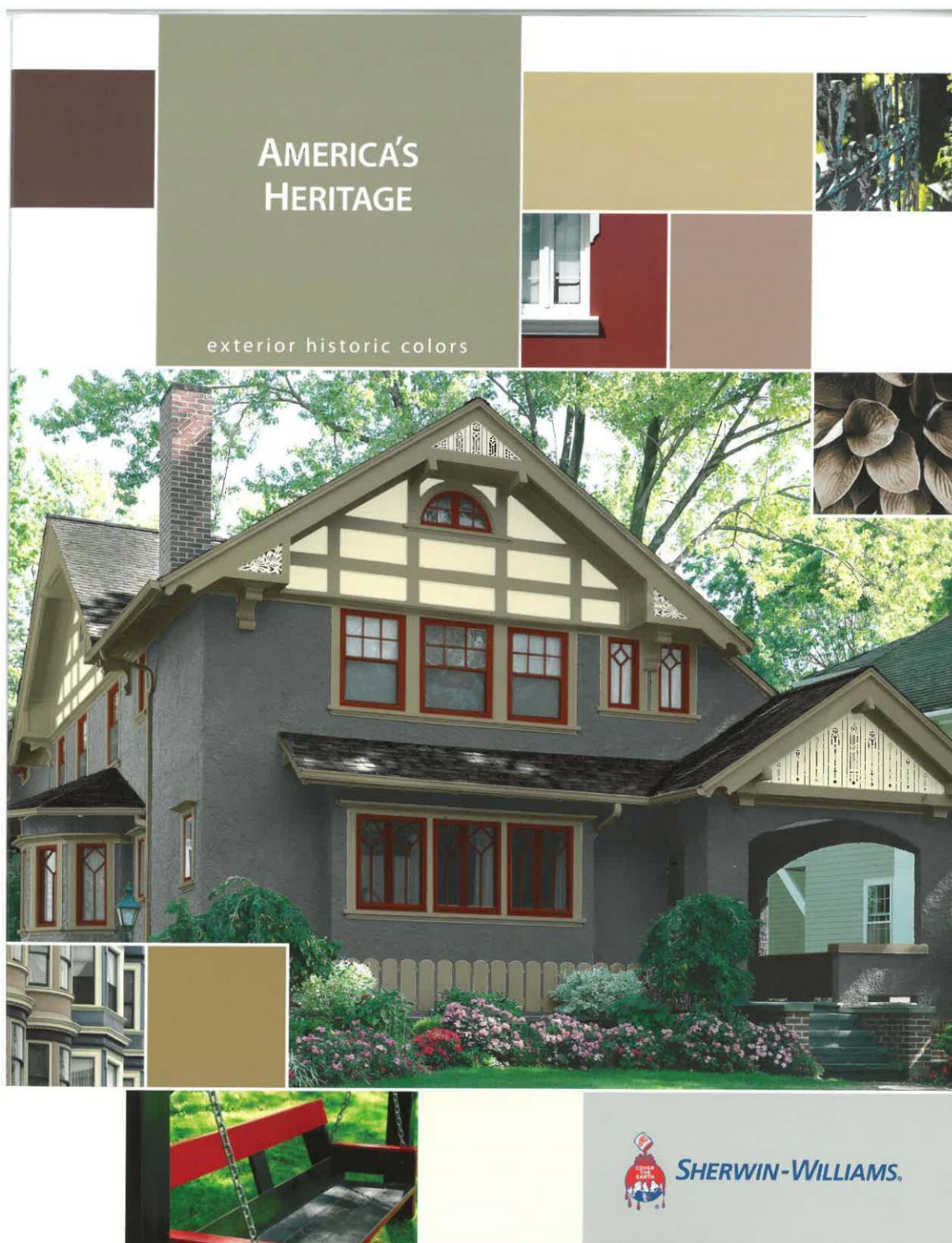
- Horizontal or Vertical Vinyl Siding
- Horizontal or Vertical Metal Siding
- Stucco

The following pictures are illustrations of home materials and the intended appearance of the homes. The side and rear elevations shall maintain the principal home siding material around the entire perimeter of the home. The detached or attached garage shall maintain the same siding primary / secondary materials as the main house.

Home colors shall not be

- High Contrasting Color Palettes
- Florescent

The following pages are taken from Sherwin Williams and will provide options for the home colors and schemes, the final houses are not limited to these specific color palettes, but these are to be considered the basis for judgement of the final home options. White is not shown on these pages but is allowed as a home color.



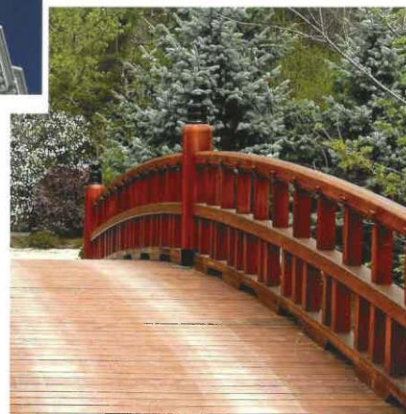


exterior historic colors



AMERICA'S HERITAGE

The America's Heritage Palette pays homage to key architectural styles throughout American history. Ranging from exuberant hues that adorned ornately appointed Victorians to the softer, restrained shades of Craftsman bungalows, our featured color combinations are based on authentic schemes from their respective eras. Each has endured the test of time and is sure to provide beauty and enjoyment for centuries to come.



historic color

AMERICA'S HERITAGE



| BODY | TRIM | ACCENT | ACCENT 2 |
|-------------------------------|--------------------------|-----------------------------------|-----------------------------------|
| Renwick Rose Beige SW 2804 | Renwick Beige SW 2805 | Pewter Tankard SW 0023 | Polished Mahogany SW 2838 |
| Renwick Golden Oak SW 2824 | Downing Straw SW 2813 | Roycroft Vellum SW 2833 | Deepest Mauve SW 0005 |
| Downing Sand SW 2822 | Rookwood Clay SW 2823 | Rookwood Sash Green SW 2810 | Rookwood Blue Green SW 2811 |



| BODY | TRIM | ACCENT | ACCENT 2 |
|--------------------------|-------------------------------|--------------------------------------|--------------------------|
| Sheraton Sage SW 0014 | Downing Sand SW 2822 | Rookwood Antique Gold SW 2814 | Fairfax Brown SW 2856 |
| Eastlake Gold SW 0009 | Classical White SW 2829 | Curio Gray SW 0024 | Downing Slate SW 2819 |
| Pearl Gray SW 0052 | Classic Light Buff SW 0050 | Colonial Revival Stone SW 2827 | Mulberry Silk SW 0001 |

Due to variations in the printing process, actual colors may vary from those shown in this brochure.





| BODY | TRIM | ACCENT | ACCENT 2 |
|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| Downing Slate SW 2819 | Downing Straw SW 2813 | Rookwood Antique Gold SW 2814 | Rookwood Medium Brown SW 2807 |
| Downing Earth SW 2820 | Renwick Beige SW 2805 | Rookwood Terra Cotta SW 2803 | Rookwood Dark Brown SW 2808 |
| Renwick Olive SW 2815 | Downing Sand SW 2822 | Rookwood Dark Green SW 2816 | Rookwood Amber SW 2817 |



| BODY | TRIM | ACCENT | ACCENT 2 |
|----------------------------|---------------------------------|-------------------------------------|-----------------------------------|
| Craftsman Brown SW 2835 | Roycroft Vellum SW 2833 | Rookwood Brown SW 2806 | Naval SW 6244 |
| Birdseye Maple SW 2834 | Roycroft Brass SW 2843 | Roycroft Bronze Green SW 2846 | Aurora Brown SW 2837 |
| Roycroft Pewter SW 2848 | Weathered Shingle SW 2841 | Roycroft Vellum SW 2833 | Roycroft Copper Red SW 2839 |

The above scheme is featured on the cover.



| BODY | TRIM | ACCENT | ACCENT 2 |
|--------------------------|-----------------------------|-------------------------------------|-----------------------------------|
| Downing Stone SW 2821 | Sage Green Light SW 2851 | Roycroft Bronze Green SW 2846 | Classic Light Buff SW 0050 |
| Rookwood Clay SW 2823 | Pure White SW 7005 | Downing Sand SW 2822 | Teal Stencil SW 0018 |
| Downing Straw SW 2813 | Roycroft Vellum SW 2833 | Roycroft Pewter SW 2848 | Classic French Gray SW 0077 |



| BODY | TRIM | ACCENT | ACCENT 2 |
|-------------------------------|-------------------------------------|----------------------------|-------------------------------------|
| Antique White SW 6119 | Roycroft Suede SW 2842 | Creamy SW 7012 | Bungalowhouse Blue SW 0048 |
| Peace Yellow SW 2857 | Rookwood Antique Gold SW 2814 | Classical White SW 2829 | Roycroft Bottle Green SW 2847 |
| Roycroft Mist Gray SW 2844 | Downing Stone SW 2821 | Extra White SW 7006 | Rookwood Dark Red SW 2801 |





| BODY | TRIM | ACCENT | ACCENT 2 |
|------------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|
| Needlepoint Navy SW 0032 | Classic Light Buff SW 0050 | New Colonial Yellow SW 2853 | Antiquarian Brown SW 0045 |
| Chelsea Gray SW 2850 | Westchester Gray SW 2849 | Decorous Amber SW 0007 | Roycroft Pewter SW 2848 |
| Downing Sand SW 2822 | Classical White SW 2829 | Toile Red SW 0006 | Rookwood Dark Brown SW 2808 |

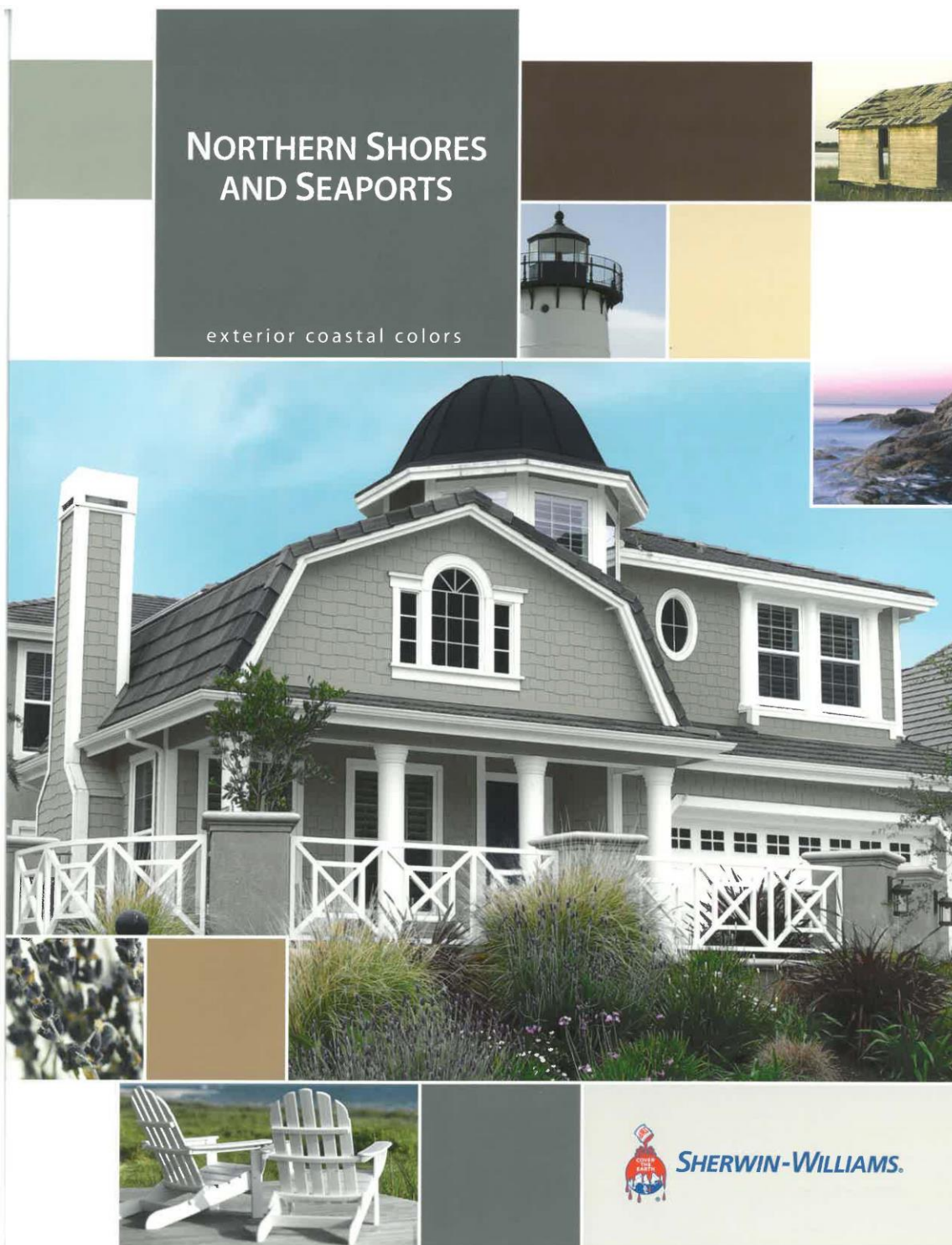


| BODY | TRIM | ACCENT | ACCENT 2 |
|--|--------------------------------------|-------------------------------------|---|
| Colonial Revival Stone SW 2827 | Classical White SW 2829 | Tricorn Black SW 6258 | Rookwood Red SW 2802 |
| Colonial Revival Gray SW 2832 | Pure White SW 7005 | Downing Slate SW 2819 | Harvester SW 6373 |
| Colonial Revival Green Stone SW 2826 | Classic Light Buff SW 0050 | Polished Mahogany SW 2838 | Roycroft Bronze Green SW 2846 |

(B) Body (T) Trim (A) Accent | Featured accent colors can be used individually or as a combination.

**NORTHERN SHORES
AND SEAPORTS**

exterior coastal colors





exterior coastal colors



NORTHERN SHORES AND SEAPORTS

From the lush forests of the Pacific Northwest to the misty harbors of Maine, cool weather and gentle waters create a perfect environment for relaxation and rejuvenation.

In the Northern Shores & Seaports Palette, you'll find softened shades of traditional colors found throughout nature. Slate blue, dusty red and subdued gray-green tones offer a calming serenity reflective of a vast, pristine landscape.



coastal color

NORTHERN SHORES AND SEAPORTS



| BODY | TRIM | ACCENT |
|-----------------------------------|-----------------------------------|----------------------------------|
| Restrained Gold SW 6129 | Believable Buff SW 6120 | Sierra Redwood SW 7598 |
| Butternut SW 6389 | Concord Buff SW 7684 | Olympic Range SW 7750 |
| Homburg Gray SW 7622 | White Duck SW 7010 | Butterscotch SW 6377 |



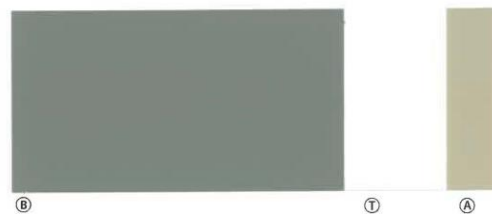
| BODY | TRIM | ACCENT |
|----------------------------------|-------------------------------|------------------------------|
| Carriage Door SW 7594 | Urban Putty SW 7532 | Sanderling SW 7513 |
| Creamy SW 7012 | Lanyard SW 7680 | Tanbark SW 6061 |
| Perfect Greige SW 6073 | Pure White SW 7005 | Naval SW 6244 |

The above scheme is featured on the cover.





| BODY | TRIM | ACCENT |
|------------------------------|-------------------------------|----------------------------|
| Portabello SW 6102 | Modern Gray SW 7632 | Porpoise SW 7047 |
| Anew Gray SW 7030 | Extra White SW 7006 | Fireweed SW 6328 |
| Retreat SW 6207 | Creamy SW 7012 | Portico SW 7548 |



| BODY | TRIM | ACCENT |
|-------------------------------|-----------------------------|---------------------------------|
| Storm Cloud SW 6249 | Alabaster SW 7008 | Ramie SW 6156 |
| Svelte Sage SW 6164 | Lotus Pod SW 7572 | Leather Bound SW 6118 |
| Lanyard SW 7680 | Buff SW 7683 | Sea Serpent SW 7615 |



| BODY | TRIM | ACCENT |
|------------------------------------|-------------------------------|--------------------------------|
| Downing Earth SW 2820 | Dover White SW 6385 | Spiced Cider SW 7702 |
| Accessible Beige SW 7036 | Tony Taupe SW 7036 | Foggy Day SW 6235 |
| Chatroom SW 6771 | Muslin SW 6133 | Beach House SW 7518 |



| BODY | TRIM | ACCENT |
|------------------------------|-----------------------------------|---------------------------------------|
| Stone Lion SW 7507 | Windfresh White SW 7628 | Roycroft Copper Red SW 2839 |
| Macadamia SW 6142 | Pure White SW 7005 | Caviar SW 6990 |
| Meadowlark SW 7522 | Dover White SW 6385 | Pier SW 7545 |

Due to variations in the printing process, actual colors may vary from those shown on this brochure.





| BODY | TRIM | ACCENT |
|-------------------------------|----------------------------|----------------------------|
| Pottery Urn SW 7715 | Fresco Cream SW 7719 | Roycroft Brass SW 2843 |
| Roycroft Mist Gray SW 2844 | Attitude Gray SW 7060 | Rock Bottom SW 7062 |
| Renwick Olive SW 2815 | Roycroft Vellum SW 2833 | Renwick Heather SW 2818 |



(B)

(T)

(A)



(B)

(T)

(A)



| BODY | TRIM | ACCENT |
|-------------------------|-----------------------|--------------------------|
| Comfort Gray SW 6205 | Alabaster SW 7008 | Rookwood Red SW 2802 |
| Latte SW 6108 | Warm Stone SW 7032 | Muddled Basil SW 7745 |
| Harmonic Tan SW 6136 | Ivoire SW 6127 | Java SW 6090 |

(B) Body

(T) Trim

(A) Accent

The following are example houses that could be constructed on the lots







Detached Garage Option



Detached Garage Option



House Type Description
November 8, 2019
Main Orchard
Lee's Summit, MO



Attached Garage w/ Breezeway



Attached Garage w/ Breezeway





Four-Sided Architecture



Neighborhood Meeting Notes

Meeting Date 10-10-19 at 6pm
Location Gamber Community Center, Yellowstone Room
4 SE Independence, MO

Attendance Sheet is attached to this report

The meeting began at 6pm and Mr. Schlicht presented the project as a residential development of the 2 lots located at 510 NW Main and 6 NW Orchard to create 5 new residential single family lots and the existing home at 510 NW Main is proposing to construct a Garage / Loft structure for use as a rental on that lot. Mr. Schlicht explained the current area is zoned RP-2, which would allow for a multifamily development, however at this time the 5 new lots are being proposed as single family construction and if someone would like to build multifamily units on those lots, a new Preliminary Development Plan application would be required.

Following the presentation Mr. Schlicht asked if there were any questions or comments and the following things were asked:

-Will the new homes be rentals?

Mr. Schlicht explained that he will be selling the lots and the builder would be able to rent or sell the home. He explained that he expected individuals to purchase the lots and construct a new home for their own residence, but he did not know for sure.

-What will the expected cost of the homes be?

Mr. Schlicht again noted he is selling the lots but speculated that if the lot costs \$65,000 and the person constructs a new 1,000 sf home at \$140 to \$150/sf, that the home price would be a minimum of \$225,000 and that currently there is homes on the market for around \$325,000.

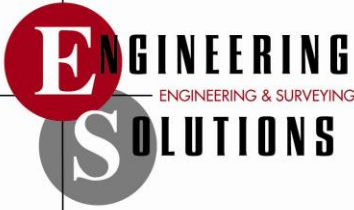
There was some additional discussion on the home and the neighborhood that was more general in nature but overall the meeting went well, and everyone was gone by 6:45 pm.

Mr. Schlicht explained they would receive another notice about the public meeting and that everyone will have an opportunity to speak at the public meeting and they are welcome to contact Mr. Schlicht or the City of Lee's Summit if they had any questions.



Preliminary Development Criteria

1. The character of the neighborhood.
 - The area to the north and west is single family and duplex family homes that were constructed in the 1950's with an average home size around 1,050 sf and a lots size of approximately 15,000 sf. Many of the existing homes that were constructed in the 1950's can be described as a mid-century ranch style home. These homes are typically rectangular in shape and have a long linear presentation toward the street with a single stall parking garage on one end of the home. Within the development area there are a few homes there were constructed in the early 1900's and have a typical "American Foursquare" and "Bungalow" style designs, with home sizes being 1,500 sf and 1,000 sf respectively and the lots sizes are approximately 0.50 acres in size.
2. The existing and any proposed zoning and uses of adjacent properties, and the extent to which the proposed use is compatible with the adjacent zoning and uses.
 - The area is zoned RP-2 and the area is generally single family and duplex home sites. These two parcels are two of the few remaining lots within the downtown area
3. The extent to which the proposed use facilitates the adequate provision of transportation, water, sewerage, schools, parks and other public requirements.
 - The site has adequate access to all necessary public facilities and the development will improve the sanitary sewer system with a new sewer extension to serve the proposed lots.
4. The suitability of the property for the uses to which it has been restricted under the applicable zoning district regulations.
 - The site is zoned for two family residential zoning and the homes will comply with the zoning district
5. The length of time, if any, the property has remained vacant as zoned.
 - The parcel located at 6 NE Orchard has always been a vacant parcel and the parcel located at 510 NW Main has an existing home and the remaining area has been undeveloped.
6. The extent to which the proposed use will negatively affect the aesthetics of the property and neighboring property.
 - The development of this parcel will continue to develop new downtown homes that rekindle the mid 1900's Craftsman Style Bungalow in the downtown area.
7. The extent to which the proposed use will seriously injure the appropriate use of, or detrimentally affect, neighboring property.
 - This development will not create any detrimental impact the downtown / neighboring area and will continue the revitalization of the downtown area.
8. The extent to which the proposed use will adversely affect the capacity or safety of the portions of the street network impacted by the use, or present parking problems in the vicinity of the property.
 - The construction of the new sidewalks along Main Street and Orchard will continue to improve the pedestrian access throughout the downtown area. Each home site will provide a garage and off-street parking to not create any parking concerns for the area.



9. The extent to which the proposed use will create excessive storm water runoff, air pollution, water pollution, noise pollution or other environmental harm.
 - The site will provide individual onsite detention facilities that will incorporate Best Management Practices for storm water management to provide some innovative and aesthetically appealing plantings within the development area.
10. The extent to which the proposed use will negatively affect the values of the property or neighboring properties.
 - With the estimated home prices being \$225,000 or more it is expected the development of these lots will increase the value of the neighboring properties.
11. The extent to which there is a need for the use in the community.
 - The downtown area is a very desirable area to live and is continuing to develop in a positive direction. This project will provide an opportunity for the community to purchase and construct a new home with the old town feel of the downtown community.
12. The economic impact of the proposed use on the community.
 - With the estimated home prices being \$225,000 or more it is expected the development of these lots will increase the value of the neighboring properties.
13. The ability of the applicant to satisfy any requirements applicable to the specific use imposed pursuant to the UDO.
 - The development will comply with the UDO requirements and is asking for a variance on a few storm water requirements and on the height of the proposed Garage / Loft on Lot 3.
14. The extent to which public facilities and services are available and adequate to meet the demand for facilities and services generated by the proposed use.
 - The existing facilities will be adequate for the development of this project and the Developer will install a new sanitary sewer line to serve the proposed lots with a new sanitary sewer service.
15. The gain, if any, to the public health, safety and welfare due to approval of the application as compared to the hardship imposed upon the landowner, if any, as a result of denial of the application.
 - The Developer believes the parcels are currently underutilized and the development of these lots will provide a very desirable lot for a future Lee's Summit resident. The hardship or denial of the application will mean the land will stay undeveloped as it has for years and it is the Developer's belief that this is not the best use of the parcel.
16. The conformance of the proposed use to the Comprehensive Plan, the Major Street Plan, the Capital Improvement Plan, and other adopted planning policies.
 - The proposed development conforms to the overall plans for the site.
17. The recommendation of professional staff.
 - This is the highest and best use for these parcels.



18. The consistency of the proposed use with the permitted uses and the uses subject to conditions in the district in which the proposed rezoning or special use is located.
 - The proposed development is consistent with the surrounding development and City's long-term plans for the area.

Article 2 of the UDO Requirements

1. Development is designed, located and proposed to be operated so that the public health, safety and welfare will be protected.
 - The development conforms with the City's long-term plan and zoning for these parcels.
2. Development will not impede the normal and orderly development and improvement of the surrounding property.
 - These two parcels are a two of the few remaining undeveloped lots located within the downtown area and the development of these lots is consistent with the existing development within the area.
3. Development incorporates adequate ingress and egress and an internal street network that minimizes traffic congestion.
 - The proposed lots will connect directly to Main Street and the driveways are being limited to 16 feet to minimize the impervious impact to the front yard area of the proposed lots.

510 NW MAIN STREET

Lots 1 Thru 6

SANITARY SEWER CONSTRUCTION PLANS

Part of the NE 1/4 Section 6, Township 47 North, Range 31 West
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

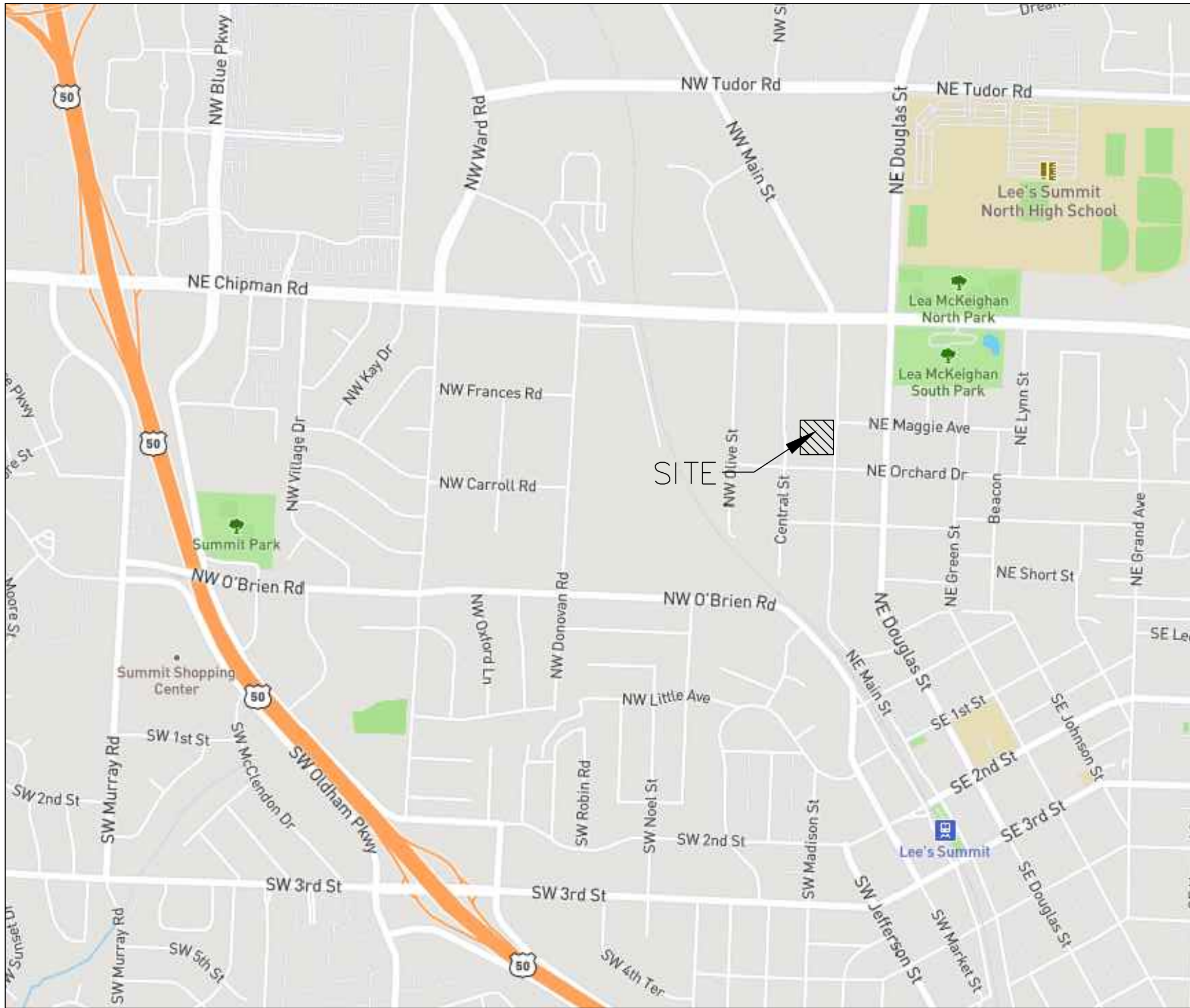
CONSTRUCTION AND DESIGN NOTES:

SANITARY SEWERS:

1. SANITARY SEWER PIPE SHALL BE POLY VINYL CHLORIDE (PVC), SDR-26, UNLESS NOTED OTHERWISE IN THESE PLANS.
2. HOUSE SEWER LATERALS SHALL BE 4 INCH PVC, SDR-26. LATERALS SHALL BE CONSTRUCTED USING A TOP ORIENTED "WYE" AT THE SEWER STATION SHOWN IN THESE PLANS. LATERALS SHALL BE LAID AT A GRADE OF 2.0% FROM THE SEWER MAIN TO THE STREET RIGHT-OF-WAY LINE OR EASEMENT LINE AS REPRESENTED BY THE LATERAL LENGTH SHOWN IN THESE PLANS. THE ELEVATION SHOWN FOR THE END OF THE LATERAL IN THESE PLANS IS APPROXIMATE. THE ACTUAL ELEVATION SHALL BE DETERMINED BY THE FLOW LINE ELEVATION OF THE SEWER MAIN, THE FITTINGS AND GRADE OF THE SEWER LATERAL.
3. THE CONTRACTOR SHALL MAINTAIN A LOG OF THE "AS BUILT" STATION AND LENGTH OF EACH HOUSE LATERAL AND SHALL PROVIDE ENGINEERING SOLUTIONS, L.L.C. WITH A COPY OF SAID LOG UPON COMPLETION OF SEWER CONSTRUCTION.
4. ALL MANHOLES INSTALLED IN THE STREET RIGHT-OF-WAY SHALL BE FINISHED 1/2" PER FOOT ABOVE THE NEAREST ADJACENT BACK OF CURB
5. A STAKE SHALL BE PLACED AT THE END OF EACH WYE CONNECTION WITH THE END ELEVATION WRITTEN ON THE STAKE
6. FILL AREAS SHALL HAVE 3 FEET OF COMPACTED FILL IN PLACE PRIOR TO TRENCHING
7. A TRENCH CHECK CONSISTING OF FLOWABLE FILL MUST BE INSTALLED ON EVERY PRIVATE LATERAL.

GENERAL NOTE:

- 1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- 2 ~ TRENCH CHECKS SHALL BE INSTALL AT ALL SANITARY WYES LOCATION.



UTILITY COMPANIES:

THE FOLLOWING LIST OF UTILITY COMPANIES IS PROVIDED FOR INFORMATION ONLY. WE DO NOT OFFER ANY GUARANTEE OR WARRANTY THAT THIS LIST IS COMPLETE OR ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION AND VERIFYING THE ACTUAL LOCATION OF EACH UTILITY LINE. THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH PROPOSED IMPROVEMENTS.

KCP&L ~ 298-1196
SPIRE ~ 969-2200
SOUTHWESTERN BELL TELEPHONE ~ 761-5011
COMCAST CABLE ~ 795-1100
CITY OF LEE'S SUMMIT PUBLIC WORKS ~ 969-1800
CITY OF LEE'S SUMMIT DEVELOPMENT ENGINEERING INSPECTION AT 816.969.1200
CITY OF LEE'S SUMMIT WATER UTILITIES ~ 969-1900
MISSOURI ONE CALL (DIG RITE) ~ 1-800-344-7483

LEGEND:

- B/L - BUILDING SET-BACK
- C/A - COMMON AREA
- D/E - DRAINAGE EASEMENT
- FND. - FOUND
- L/E - LANDSCAPE EASEMENT
- L.N.A. - LIMITS OF NO ACCESS
- R/W - RIGHT OF WAY
- SAN - SANITARY SEWER LINE
- S/W - SIDEWALK
- U/E - UTILITY EASEMENT
- W - WATER LINE
- ST - STORM SEWER LINE

ENGINEER'S CERTIFICATION:

I HEREBY CERTIFY THAT THIS PROJECT HAS BEEN DESIGNED AND THESE PLANS PREPARED IN ACCORDANCE WITH THE CURRENT DESIGN CRITERIA OF THE CITY OF LEE'S SUMMIT, MISSOURI AND THE STATE OF MISSOURI. I FURTHER CERTIFY THAT THESE PLANS WERE DESIGNED IN ACCORDANCE TO AASHTO STANDARDS.

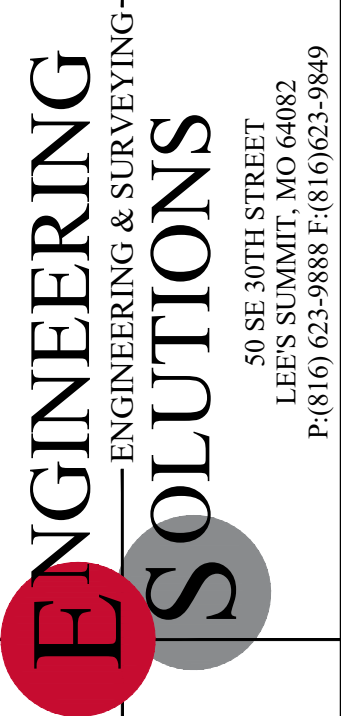
CITY OF LEE'S SUMMIT, MISSOURI

APPROVED: _____ DATE: _____

BY: _____
CITY ENGINEER

INDEX OF SHEETS:

- C.400 ~ SANITARY SEWER COVER SHEET
- C.401 ~ SANITARY SEWER GENERAL LAYOUT
- C.402 ~ SANITARY SEWER PLAN & PROFILE
- C.403 ~ SANITARY SEWER DETAILS



Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

510 NW MAIN STREET
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

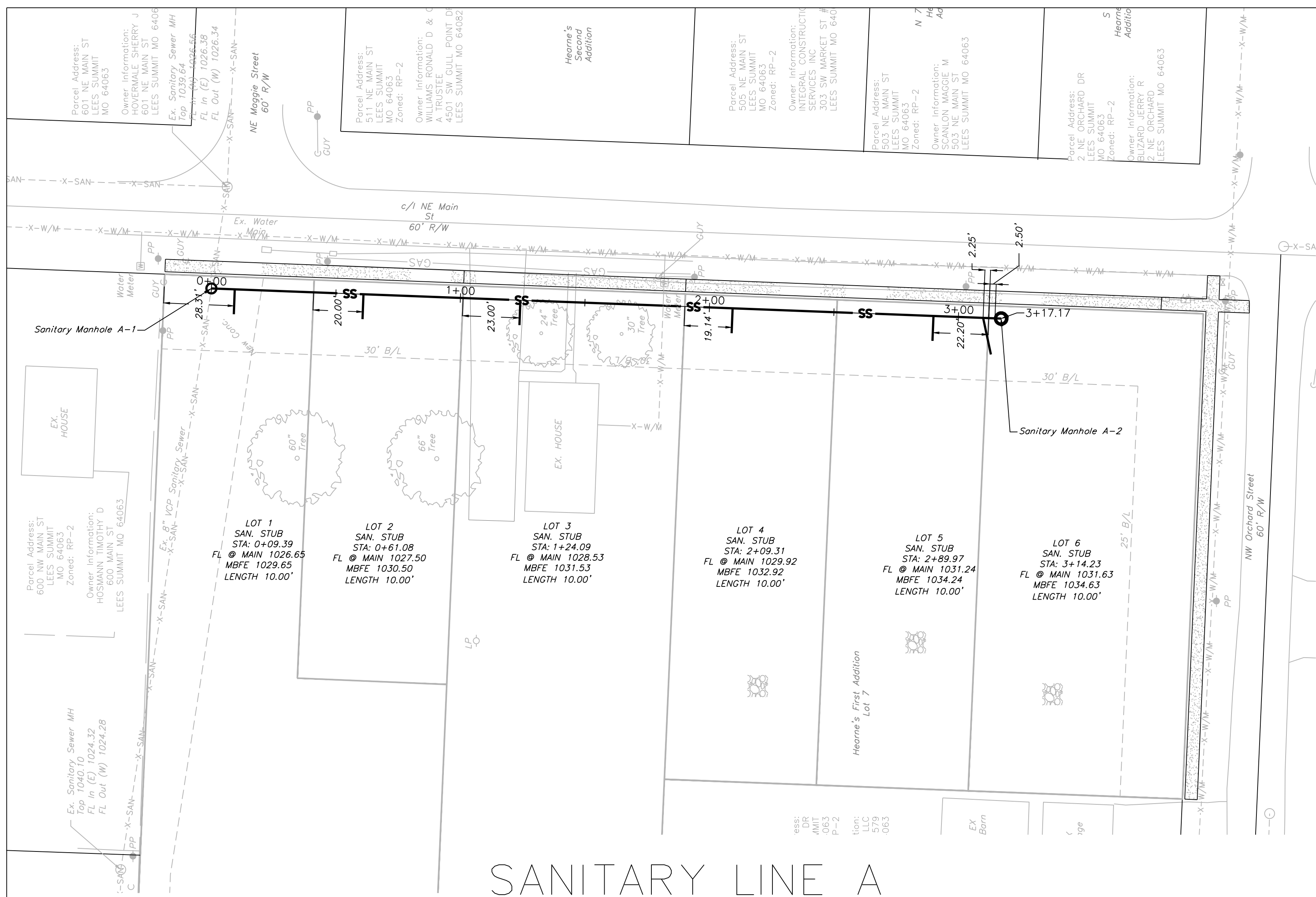
Project: 510 NW MAIN ST
LS, MO
Issue Date: September 13, 2019

Sanitary Sewer General Layout
Construction Plans for:
510 NW MAIN STREET
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

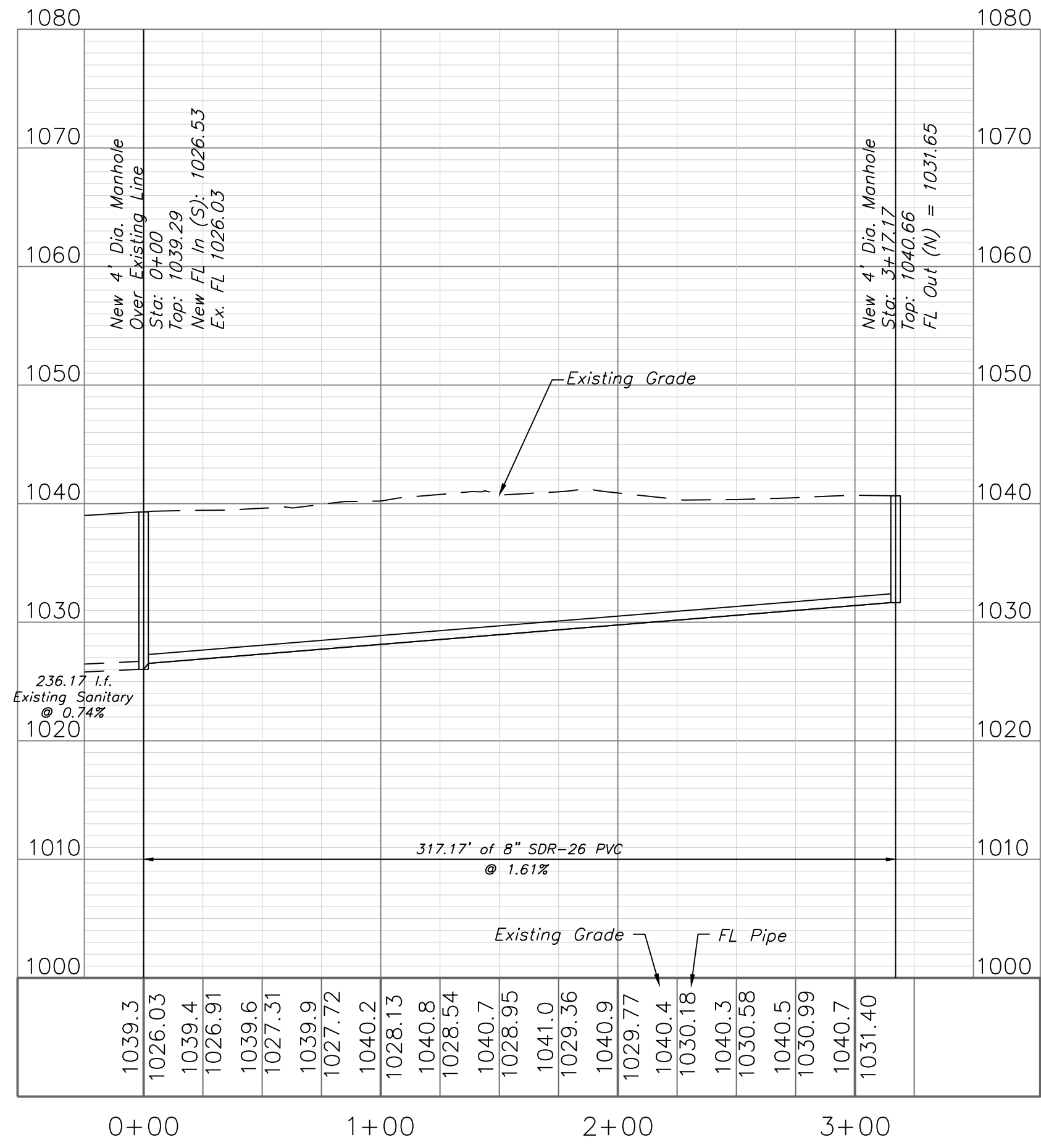
Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS

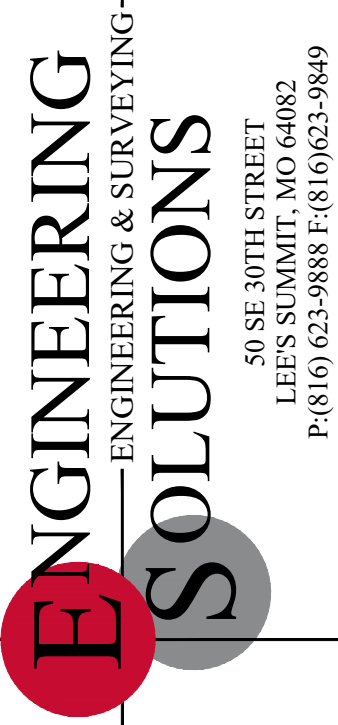
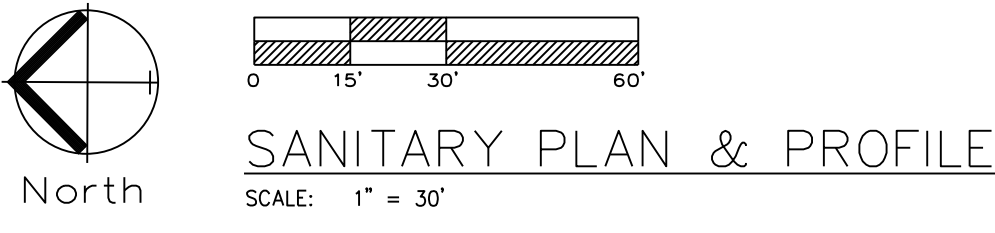
C.401



SANITARY LINE A



GENERAL NOTE:
1 ~ ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
2 ~ TRENCH CHECKS SHALL BE INSTALL AT ALL SANITARY WYES LOCATION.



Professional Registration
Missouri
Engineering 2005002186-D
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Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6284
Nebraska
Engineering CA2821

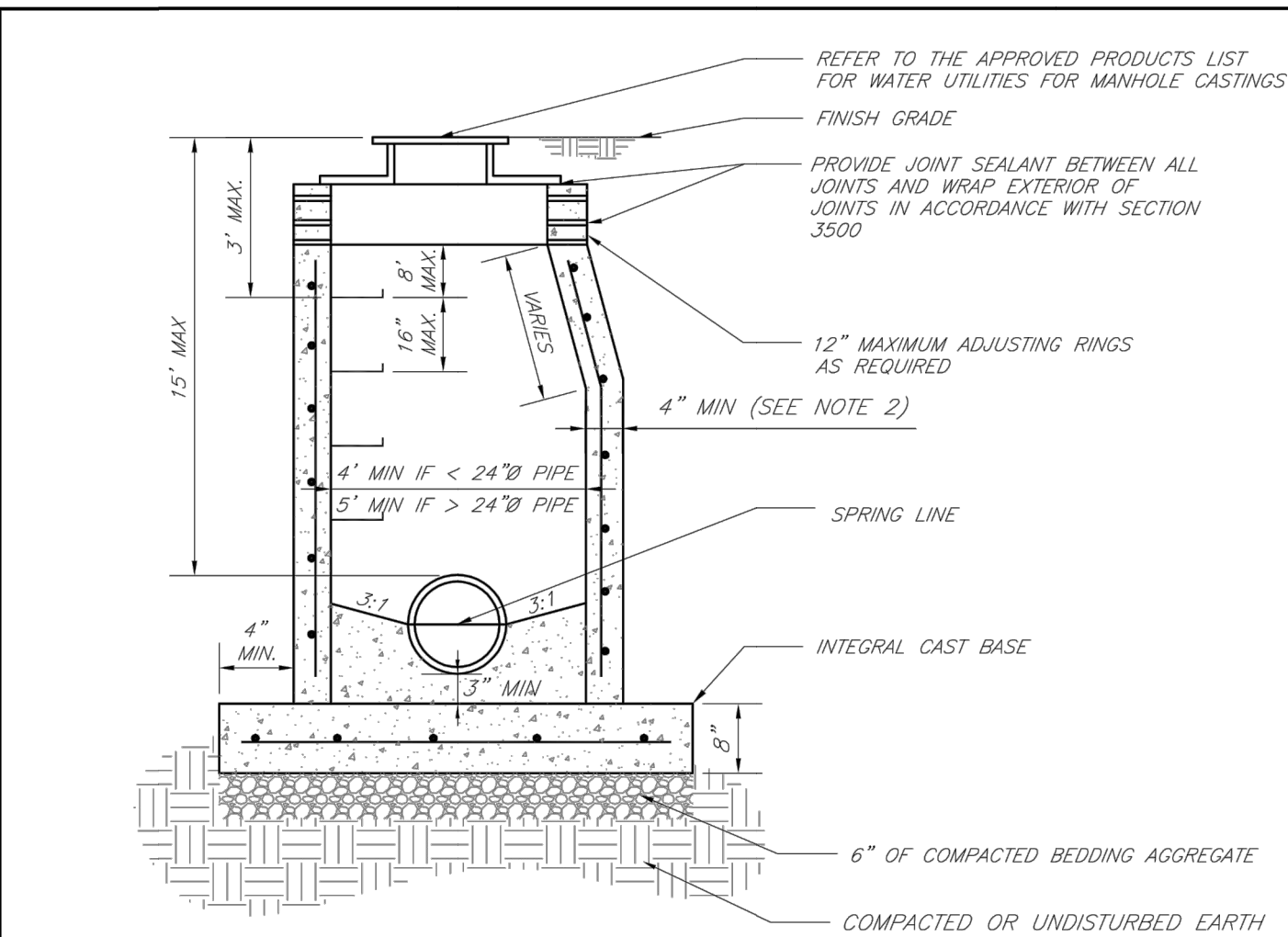
510 NW MAIN STREET
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

Project:
510 NW MAIN ST
LS MO
Issue Date:
September 13, 2019

Sanitary Plan and Profile
Construction Plans for:
510 NW MAIN STREET
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

| REVISIONS |
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- NOTES:
1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
 2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH ($\frac{1}{12}$) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THAN 15'.
 3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 14 MILS OF BITUMINOUS COATING.
 4. ONLY ECCENTRIC MANHOLE CONES WILL BE ALLOWED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
 5. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
 6. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR APPROVED MANHOLE GASKET MODELS.
 7. REFER TO THE APPROVED PRODUCTS LIST FOR APPROVED STEPS.

LS

LEE'S SUMMIT

MISSOURI

PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD PRECAST MANHOLE — SANITARY SEWER

Date: 02/13

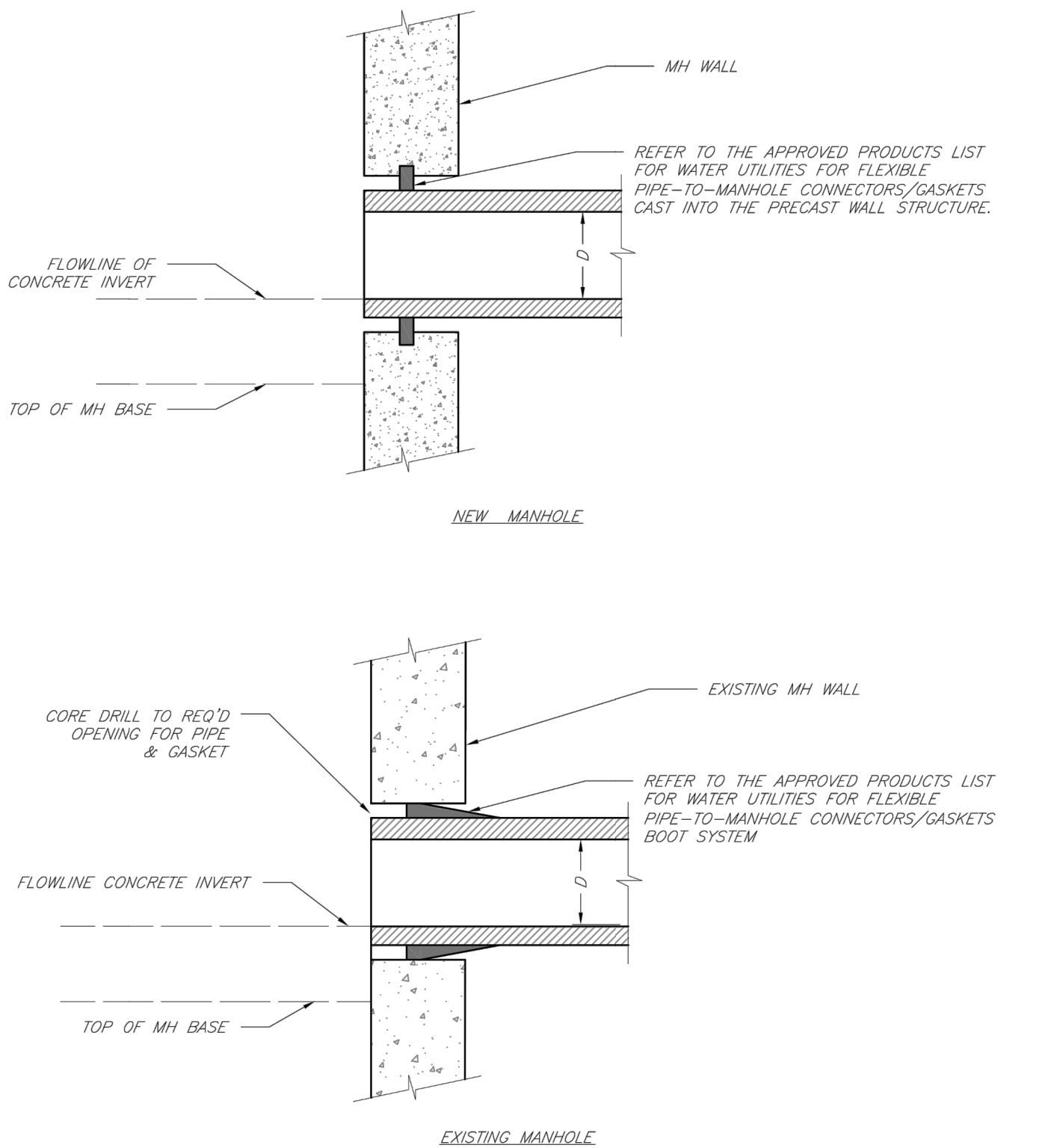
Drawn By: JN

Checked By: DL

FILE: SAN-2

Rev: 1/14

Rev:



LS

LEE'S SUMMIT

MISSOURI

PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

MANHOLE WALL CONNECTIONS

Date: 02/13

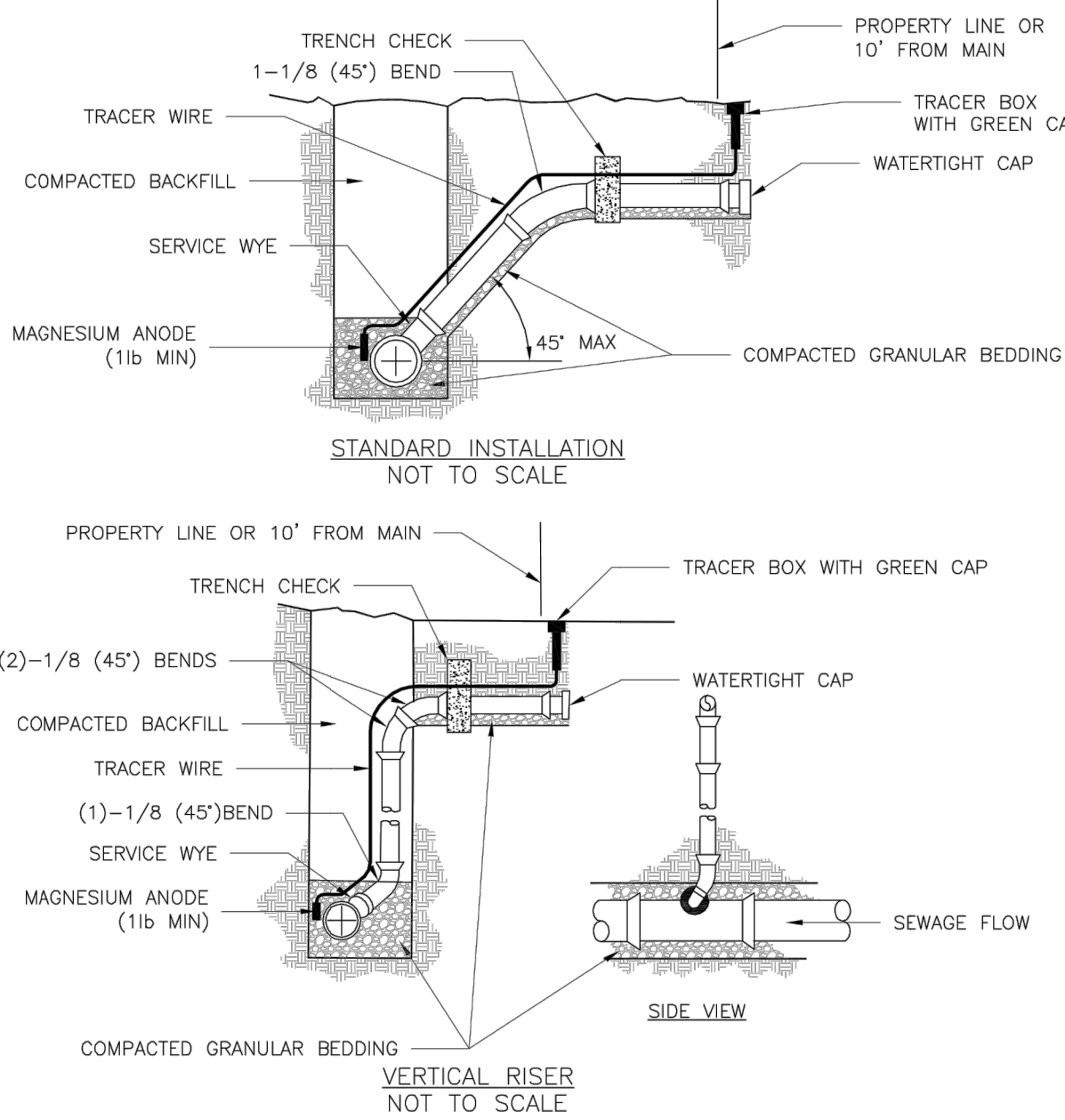
Drawn By: JN

Checked By: DL

FILE: SAN-5

Rev: 1/14

Rev:



- NOTES:
1. ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN, WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
 2. ALL NEW CONSTRUCTION OFF SEWER STUBS SHALL BE TEMPORARILY MARKED WITH A MARKING STAKE, 36" ABOVE GROUND AND PAINTED GREEN.
 3. IMPERVIOUS TRENCH CHECKS SHALL BE PLACED ON BUILDING SEWER STUBS (AT LEAST 5' AWAY FROM THE SANITARY SEWER MAIN).
 4. TRENCH CHECKS ON THE BUILDING SEWER STUBS SHALL EXTEND 6" BELOW THE BOTTOM OF THE PIPE, LENGTH SHALL BE A MINIMUM OF 12", THE HEIGHT OF THE TRENCH CHECK SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE. THE WIDTH OF THE TRENCH CHECK SHALL BE THE WIDTH OF THE TRENCH.
 5. SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL.
 6. #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.
 7. FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A GREEN CAST IRON LOCKABLE TOP. WIRE SHALL BE TAPED OR TIED TO THE PIPE AT 5' INTERVALS.
 8. TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1.0' OF PROPERTY LINE.
 9. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS. WIRE NUTS SHALL NOT BE USED. A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

LS

LEE'S SUMMIT

MISSOURI

PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

BUILDING SEWER STUB AND RISER

Date: 04/17

Drawn By: MF

Checked By: DL

FILE: SAN-1

Rev:

GENERAL NOTE:

1 - ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.

2 - TRENCH CHECKS SHALL BE INSTALL AT ALL SANITARY WYES LOCATION.

510 NW MAIN STREET
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

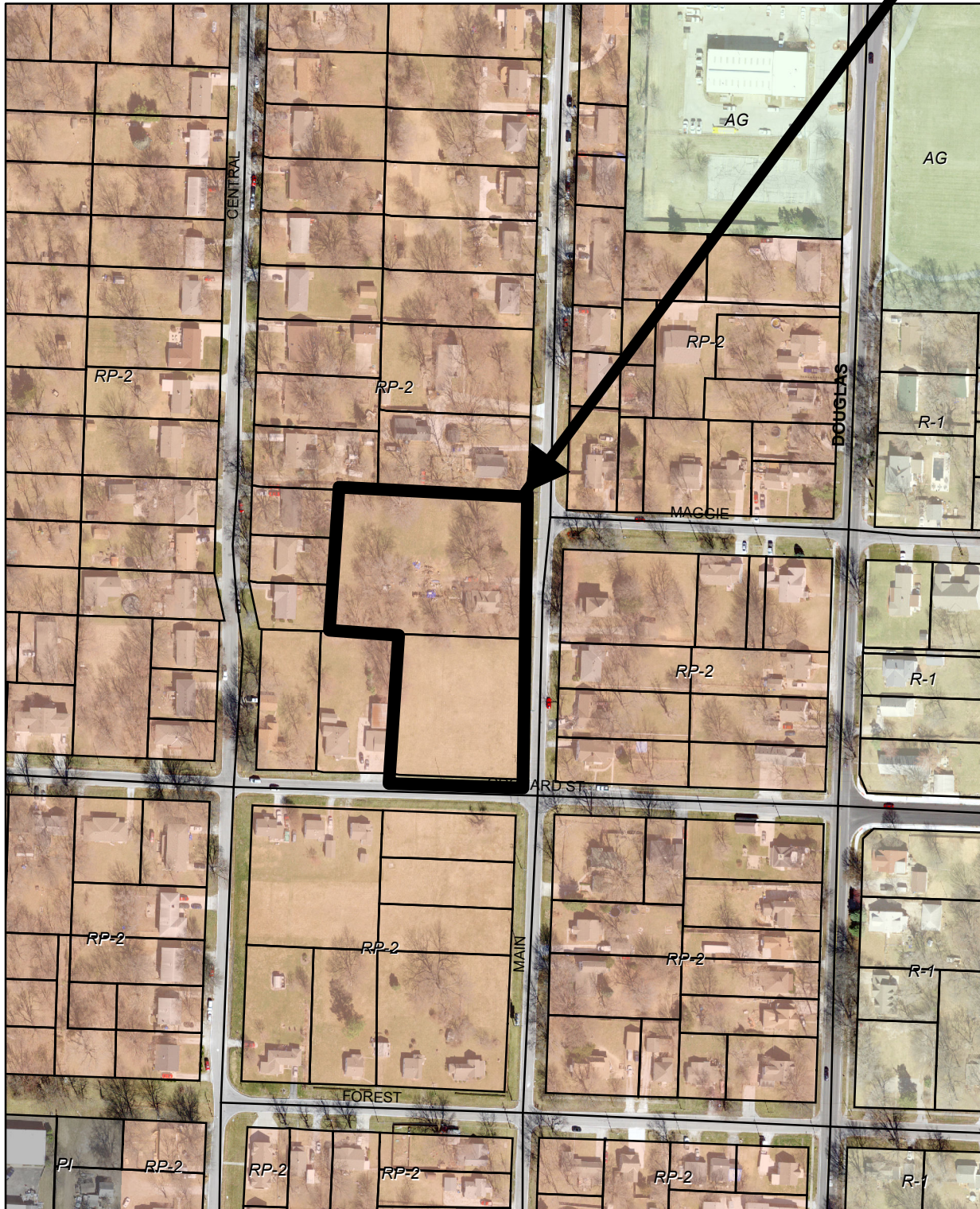
Project:
510 NW MAIN ST
LS MO
Issue Date:
September 13, 2019

Sanitary Details
Construction Plans for:
510 NW MAIN STREET
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

| REVISIONS |
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**PL2019-305 PRELIM DEV PLAN
MAIN ORCHARD
510 NW MAIN ST AND 6 NW ORCHARD ST**



Packet Information

File #: BILL NO. 19-261, **Version:** 1

An Ordinance approving a Preliminary Development Plan, located at 510 NE Main Street and 6 NW Orchard Street in District RP-2, proposed "Main Orchard" in accordance with the provisions of Chapter 33, The Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.

Proposed City Council Motion:

I move for a second reading of an Ordinance approving a Preliminary Development Plan, located at 510 NE Main St and 6 NW Orchard St in District RP-2, proposed "Main Orchard" in accordance with the provisions of Chapter 33, The Unified Development Ordinance of Lee's Summit Code of Ordinances, for the City of Lee's Summit, Missouri.

Josh Johnson, AICP, Assistant Director of Plan Services

Matt Schlicht, Applicant

BILL NO. 19-261

AN ORDINANCE APPROVING A PRELIMINARY DEVELOPMENT PLAN LOCATED AT 510 NE MAIN STREET AND 6 NW ORCHARD STREET IN DISTRICT RP-2, PROPOSED "MAIN ORCHARD" IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER 33, THE UNIFIED DEVELOPMENT ORDINANCE OF LEE'S SUMMIT CODE OF ORDINANCES, FOR THE CITY OF LEE'S SUMMIT, MISSOURI.

WHEREAS, Application #PL2019-305, submitted by Engineering Solutions, requesting approval of a preliminary development plan in District RP-2 (Planned Two-Family Residential District) on land located at 510 NE Main St and 6 NW Orchard St was referred to the Planning Commission to hold a public hearing; and,

WHEREAS, the Unified Development Ordinance provides for the approval of a preliminary development plan by the City following public hearings by the Planning Commission and City Council; and,

WHEREAS, after due public notice in the manner prescribed by law, the Planning Commission held a public hearing for the consideration of the preliminary development plan on November 14, 2019, and rendered a report to the City Council recommending that the preliminary development plan be approved; and,

WHEREAS, after due public notice in the manner prescribed by law, the City Council held a public hearing on December 3, 2019, and approved a motion for a second ordinance reading to approve the preliminary development plan for said property; and,

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF LEE'S SUMMIT, MISSOURI, as follows:

SECTION 1. That a preliminary development plan is hereby approved in District RP-2 on the following described property:

Section 6, Township 47 North, Range 31 West, in Lee's Summit, Jackson County, Missouri, being described as follows:

All that part of the Northwest Quarter of the Northeast Quarter of Section 6, Township 47, Range 31, Lee's Summit, Jackson County, Missouri, described as follows: Beginning at the Northeast corner of Lot 7 HEARNE'S ADDITION to the City of Lee's Summit, said point being in the West line of Main Street; thence north along the West line of Main Street 208.75 feet; thence West 289.3, more or less, to the Northeast corner of Lot 7, NORTH LEA ADDITION, a subdivision in Lee's Summit; thence South along the East lines of Lots 7, 8, and 9 in said Addition to the Southeast corner of Lot 9; thence East 289.3 feet, more or less, to the point of beginning.

AND

All of Lot 7, Hearne's Addition, a subdivision as recorded in the Office of the Recorder, Jackson County, Missouri.

BILL NO. 19-261

SECTION 2. That the following conditions of approval apply:

1. The developer shall make payment to the City of Lee's Summit for construction costs in lieu of actual construction of the segment of sidewalk along NW Orchard St.
2. The proposed structures shall meet the design criteria and development plan descriptions as set forth in the "House Type Description Narrative", date stamped November 8, 2019, as referenced in Exhibit (A), 13 – List of Exhibits and attached hereto.

SECTION 3. That development shall be in accordance with the preliminary development plan, date stamped September 9, 2019:

SECTION 4. Nonseverability. All provisions of this ordinance are so essentially and inseparably connected with, and so dependent upon, each other that no such provision would be enacted without all others. If a court of competent jurisdiction enters a final judgment on the merits that is not subject to appeal and that declares any provision or part of this ordinance void, unconstitutional, or unenforceable, then this ordinance, in its collective entirety, is invalid and shall have no legal effect as of the date of such judgment.

SECTION 5. That failure to comply with all of the provisions contained in this ordinance shall constitute violations of both this ordinance and Chapter 33, the City's Unified Development Ordinance, of the Code of Ordinances for the City of Lee's Summit.

SECTION 6. That this ordinance shall be in full force and effect from and after the date of its passage and adoption, and approval by the Mayor.

PASSED by the City Council of the City of Lee's Summit, Missouri, this ____ day of _____, 2019.

ATTEST:

Mayor *William A. Baird*

City Clerk *Trisha Fowler Arcuri*

APPROVED by the Mayor of said city this ____ day of _____, 2019.

ATTEST:

Mayor *William A. Baird*

City Clerk *Trisha Fowler Arcuri*

APPROVED AS TO FORM:

City Attorney *Brian W/ Head*



LEE'S SUMMIT

MISSOURI

MEMO TO CITY COUNCIL:

Wednesday, November 20, 2019

Re: Application # PL2019-305– Preliminary Development Plan for “Main Orchard”

To: City Council

Since the Planning Commission meeting on November 14, 2019 the applicant has requested to remove the modification request for building height of the detached garage on Lot 3. All detached garages will be required to meet the Unified Development Ordinance requirements for building height.

Development Services

220 SE Green Street | Lee's Summit, MO 64063 | P: 816.969.1200 | F: 816.969.1221 | cityofLS.net



LEE'S SUMMIT
MISSOURI



LEE'S SUMMIT
MISSOURI
Development Services Department

Development Services Staff Report

| | |
|---------------------------------|--|
| File Number | PL2019-305 |
| File Name | PRELIMINARY DEVELOPMENT PLAN – Main Orchard |
| Applicant | Engineering Solutions |
| Property Address | 510 NW Main Street and 6 NW Orchard Street |
| Planning Commission Date | November 14, 2019 |
| Heard by | Planning Commission and City Council |
| Analyst | Jennifer Thompson, Senior Planner |
| Checked By | Hector Soto, Jr., AICP, Planning Manager Kent Monter, PE, Development Engineering Manager |

Public Notification

Pre-application held: July 16, 2019
Neighborhood meeting conducted: October 10, 2019
Newspaper notification published on: October 26, 2019
Radius notices mailed to properties within 300 feet on: October 18, 2019
Site posted notice on: October 23, 2019

Table of Contents

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| 1. Project Data and Facts | 2 |
| 2. Land Use | 3 |
| 3. Project Proposal | 4 |
| 4. Unified Development Ordinance (UDO) | 4 |
| 5. Comprehensive Plan | 5 |
| 6. Analysis | 5 |
| 7. Recommended Conditions of Approval | 8 |

Attachments

Preliminary Development Plan, date stamped October 14, 2019 – 5 pages
Site Line Drawing –1 page
Storm Water Drainage Report, dated September 13, 2019 – 10 pages

Applicant narrative/Project Details, date stamped November 8, 2019

– 25 pages

Neighborhood Meeting Information, date stamped October 14, 2019

–2 pages

Preliminary Development Plan Criteria response from applicant, date stamped November 8, 2019 – 3 pages

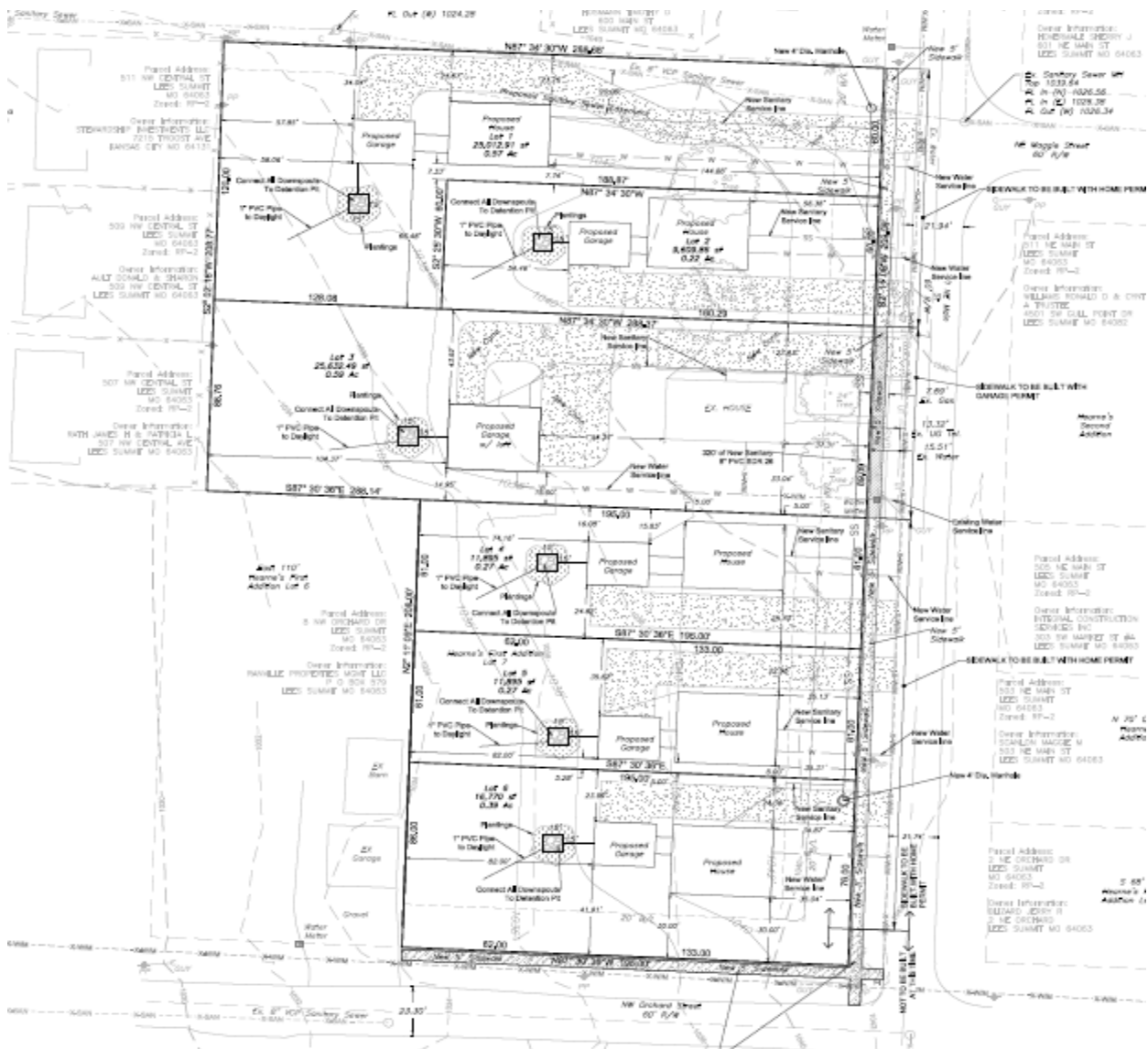
Location Map

1. Project Data and Facts

| Project Data | |
|---------------------------------------|--|
| Applicant | Engineering Solutions |
| Applicant's Representative | Matt Schlicht/Owner |
| Location of Property | 510 NW Main St and 6 NW Orchard St |
| Size of Property | 2.31 Acres |
| Zoning (Existing) | RP-2 (Planned Two-Family Residential District) |
| Density (Proposed) | 2.60 units/acre (7.5 units/acre max in RP-2) |
| Comprehensive Plan Designation | Residential Infill Opportunities (Old Town Master Development Plan) |
| Procedure | The Planning Commission makes a recommendation to the City Council on the proposed preliminary development plan. The City Council takes final action on the preliminary development plan. |
| Duration of Validity | Preliminary development plan approval by the City Council shall not be valid for a period longer than twenty-four (24) months from the date of such approval, unless within such period a final development plan application is submitted. The City Council may grant one extension not exceeding twelve (12) months upon written request. |

| Current Land Use |
|--|
| The subject project area is approximately 2.31 acres comprised of one (1) undeveloped vacant lot and one (1) unplatted parcel that has an existing single family home on the property. The properties surrounding the area primarily consists of single family detached homes. |

| Description of Applicant's Request |
|--|
| The applicant is seeking a preliminary development plan approval for a 6 lot single family residential development consisting of one existing home (proposed Lot 3), plus five (5) new single family home sites. Proposed architectural styles, are provided and include single and two-story Bungalow, Craftsman, and American Foursquare housing styles, detached/attached garages and front porches. The proposed building materials consist of lap siding, brick or stone veneer, and wood panels in a variety of color options. A modification is requested for the maximum building height for the detached garage located on Lot 3. |



2. Land Use

Description and Character of Surrounding Area

The proposed site is located at the northwest corner of NW Orchard St. and northwest Main St. The surrounding neighborhood is primarily comprised of single-family residential dwellings with a mixture of housing styles varying from mid-century ranch and typical Bungalow and Craftsman styles.

Adjacent Land Uses and Zoning

| | |
|---------------------------------------|--|
| North: | RP-2 (Planned Two-Family Residential District) – Single family homes |
| South (across NW Orchard St.): | RP-2 (Planned Two-Family Residential District) – Single family homes |

| | |
|----------------------------------|--|
| East (across NE Main St): | RP-2 (Planned Two-Family Residential District) – Single family homes |
| West: | RP-2 (Planned Two-Family Residential District) – Single family homes |

Site Characteristics

The property consists of two lots/parcels totaling 2.31 acres located at the northwest corner of NW Orchard St. and NE Main St. An existing home, built in 1920, is located on the north parcel; the south lot has remained a vacant lot. Existing single family dwellings are located to the north, south, east, and west of this site. Other single-family homes and duplexes are scattered within the neighborhood.

Special Considerations

The development is considered an infill development located within the Old Lee's Summit Neighborhood. The existing home on the proposed Lot 3 will remain in place as part of the six (6) lot single family subdivision.

3. Project Proposal**Site Design**

| | |
|-----------------|------|
| Land Use | |
| Density: | 2.60 |

Setbacks (Perimeter)

| Yard | Building Required | Building Proposed |
|-------------|--------------------------|--------------------------|
| Front | 20' | 30'+ |
| Side | 5' | 5'+ |
| Rear | 20' | 58'+ |

Lot Width

| Lot Width | Required for Single family in RP-2 | Proposed |
|------------------|---|-----------------|
| At right-of-way | 60' | 60'+ |

Structure(s) Design

| |
|--|
| Number and Proposed Use of Buildings |
| 5-new single family structures, 1-existing single family structure |
| Building Height for Principal Structures |
| 30'+ not to exceed 40' |
| Number of Stories |
| 1-2 stories |

4. Unified Development Ordinance (UDO)

| Section | Description |
|----------------|--------------------|
|----------------|--------------------|

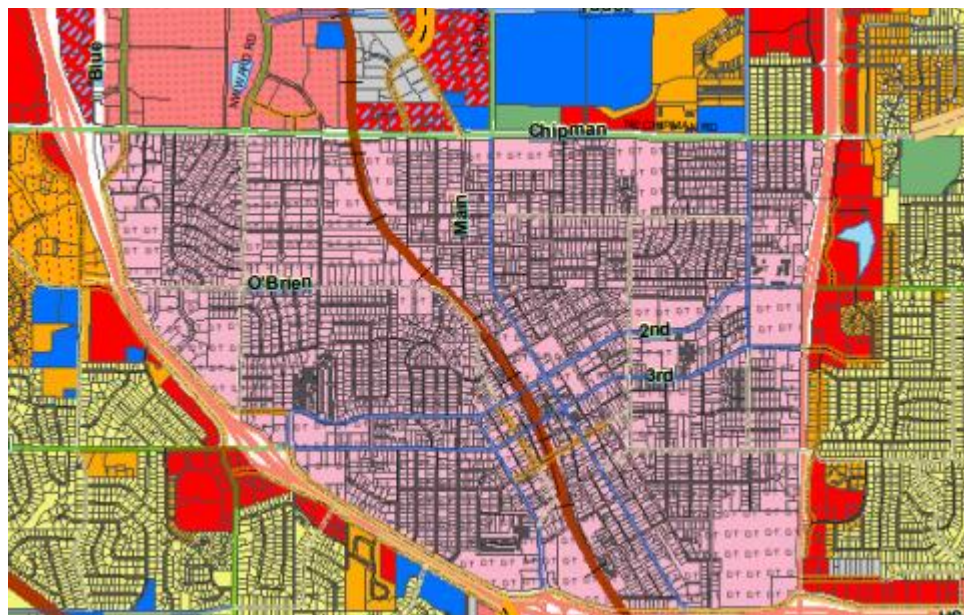
| | |
|----------------------------|--|
| 2.260, 2.300, 2.310, 2.320 | Preliminary Development Plan |
| 2.320 | Development plan and allowable modifications |

5. Comprehensive Plan

| Focus Areas | Goals, Objectives & Policies |
|--|------------------------------|
| Overall Area Land Use | Objective 1.4 |
| Residential Development | Objective 3.2 |
| Chapter IV: Preferred Framework (Old Lee's Summit Development Master Plan) | Increase Housing Stock |

Comprehensive Plan

The proposed use is consistent with the recommended land use for the area under the “Old Town Master Development Plan”. The site is identified as being a part of the Old Lee’s Summit Neighborhood area. The preferred framework of the “Old Town Lee’s Summit Development Master Plan” sets the goal of increasing housing stock to include rental and for sale multi-family; medium to high-density single family; and townhouse units in this area. The proposed use is in alignment with the plan’s established goal of increasing the available housing stock by providing additional housing to meet the changing housing needs of the community.



6. Analysis

Background and History

The south portion of the project property was platted in 1887 as part of the *Hearne's Addition* subdivision; the north portion of the property has remained unplatted and has an established single

family home that was built in 1920. This house will remain in place as part of the proposed Lot 3 of the *Main Orchard* residential subdivision. The proposed development will create six (6) residential lots and proposes design standards that establish building footprints, design styles, colors, and exterior building materials for the new single family structures.

- March 4, 1887 – Final Plat for *Hearne's Addition* was recorded at Jackson County Recorder of Deeds.
- 1920 – A single family home was built at 510 NW Main St.

Compatibility

The proposal for this infill residential development is in accordance with the existing zoning and compatible with surrounding single-family homes. The surrounding housing types include single family and duplex homes with a mixture of housing styles varying from mid-century ranch style homes, typical American Foursquare and Bungalow style designs.



Adverse Impacts

The proposed single family residential development will not detrimentally impact the surrounding area. The buildings are designed and located to be compatible with neighboring properties and should enhance the neighborhood.

Stormwater

Due to downstream drainage concerns in the vicinity of Olive St. and Orchard St., the applicant was asked to perform a stormwater study to determine the downstream impact of the development. The proposed development will increase impervious area to a degree, based on the pre-developed condition which is currently a grassed area, with a small portion of the site being impervious at the location of the existing home at 510 NW Main St. Without any stormwater controls to mitigate the increased peak flows from the increased impervious area, there would be a slight increase in the peak flows from the site due to the increased impervious drainage area, which might have the potential to impact the downstream drainage system. The results of the stormwater study recommend the installation of “stormwater detention pits” on each lot to mitigate stormwater flows from each lot.

Section 5600 of the Design and Construction Manual, provides for an alternative design standard for infill developments and redevelopment projects. This design standard requires an applicant to compare the pre-development condition to the post-development condition, and ensure the post-development peak stormwater release rate is less than or equal to the pre-development condition. Comparing the pre-development versus post-development peak flowrates in the vicinity of Olive St. and Orchard St. to the west of this development, the results of the stormwater study concluded that the criteria has been met. This criteria has also been met in regard to the points of interest immediately adjacent to the proposed development, in particular, the adjacent property along Orchard St. to the west, and the adjacent properties along Central St. to the west.

Staff recommends that the alternative design standard be allowed for this infill development. Individual “stormwater detention pits” will be installed in the rear yard of each lot in order to lessen the peak stormwater flows from the site and to the west, to a level that is less than the existing peak stormwater flow rates to the west.

Public Services

The proposed development will not impede the normal and orderly development and improvement of the surrounding property. The majority of the subject property is an infill site that has remained vacant. The proposed development will tie into the existing public infrastructure. A public sidewalk is proposed along NE Main St.; sidewalk along NW Orchard will not be built at this time, payment in lieu of construction will be required as part of the platting approval.

The proposed single family homes do not result in a measurable traffic impact on the adjacent streets since trip generation associated with 6 family homes on property already zoned for single family construction with existing similar land use generates negligible traffic and no increase in zoning density/intensity. The project does not require roadway improvements applicable to the Unimproved Road Policy based on its scope, zoning and expected traffic impact. If not for the planned zoning ordinances associated with the property and process of combining two lots for subsequent six lot subdivision, each lot individually may otherwise be minor platted to generate the same number of single family plots administratively.

Modifications

Building height - detached garage without loft dwelling unit

- Required – 21'4" max. (UDO requirement is 40' max., but not to exceed height of principal structure on property. The existing principal structure on the proposed Lot 3 is approximately 21'4" in height.)
- Proposed – 26' detached garage.
- Recommended – The proposed accessory structure height does not comply with the UDO. The detached garage (without a loft dwelling unit) exceeds the height of the principal structure on the same property by approximately 5 feet. There are aspects of the project site and the proposed surrounding homes that could justify the granting of the requested modification.
 - The lot depth for Lot 3 is approximately 288'. The detached garage is proposed to be set/back approximately 104' from the rear property line and 145' from the front property line. These distances provides more green space, depth and lot area to serve as a spatial buffer between the detached structure and surrounding properties in order to mitigate the impacts of the increased structure height.
 - The maximum allowable height of a principal structure in the RP-2 zoning district is 40'.
 - See the provided Site Line drawings for a visual representation of the proposed detached garage on the proposed Lot 3 in relationship to the principal structure.

Staff does not support the modification request for the building height of the detached garage. No conditions or hardships have been identified that would impede the detached garage from meeting the height restrictions of the UDO. It should be noted that the UDO allows a detached garage with a loft dwelling unit to have a maximum height of 40'. However, the applicant has no definitive plans at this time to construct a loft dwelling above the detached garage. If the applicant were to construct a loft dwelling above the garage, the proposed height of 26' would comply with the maximum allowable 40' building height for a detached garage with a loft.

Recommendation

With the conditions of approval below, the application meets the requirements of the UDO and/or Design and Construction Manual (DCM).

7. Recommended Conditions of Approval

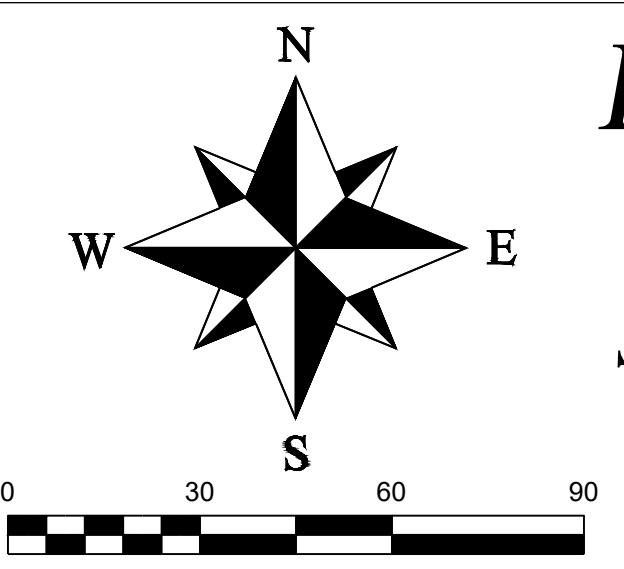
Site Specific Conditions

1. The detached garage shall meet the requirements of the Unified Development Ordinance for building height.

2. The developer shall make payment to the City of Lee's Summit for construction costs in lieu of actual construction for the segment of sidewalk along NW Orchard St.

Standard Conditions of Approval

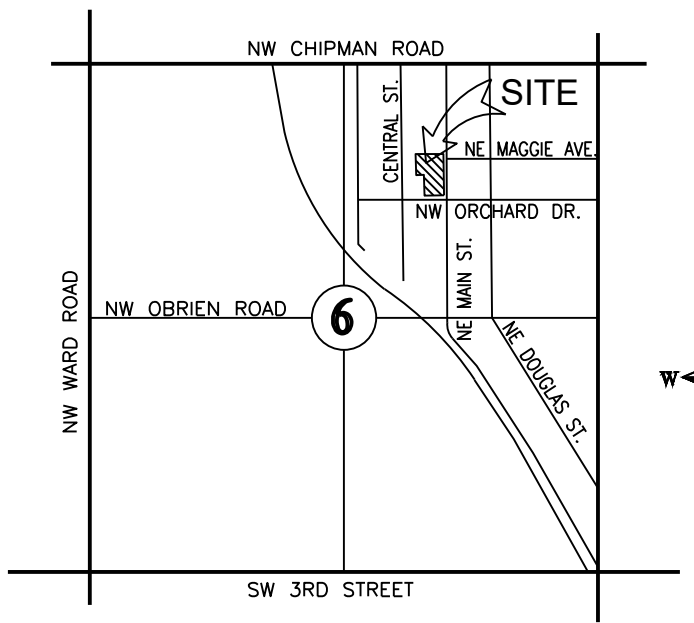
3. All required engineering plans and studies, including water lines, sanitary sewers, storm drainage, streets and erosion and sediment control shall be submitted along with the final plat and approved prior to the approval of the final plat. All public infrastructure must be substantially complete, prior to the issuance of any building permits.
4. A Master Drainage Plan (MDP) shall be submitted and approved in accordance with the City's Design and Construction Manual for all areas of the development, including all surrounding impacted areas, along with the engineering plans for the development. The MDP shall address drainage level of service issues on an individual lot basis.
5. All Engineering Plan Review and Inspection Fees shall be paid prior to approval of the associated engineering plans and prior to the issuance of any infrastructure permits or the start of construction (excluding land disturbance permit).
6. All subdivision-related public improvements must have a Certificate of Final Acceptance prior to approval of the final plat, unless security is provided in the manner set forth in the City's Unified Development Ordinance (UDO) Section 16.340. If security is provided, building permits may be issued upon issuance of a Certificate of Substantial Completion of the public infrastructure as outlined in Section 1000 of the City's Design and Construction Manual.
7. The As-graded Master Drainage Plan shall be submitted to and accepted by the City prior to the issuance of a Certificate of Substantial Completion and prior to the issuance of any building permits for the development.
8. A Land Disturbance Permit shall be obtained from the City if ground breaking will take place prior to the issuance of an infrastructure permit, building permit, or prior to the approval of the Final Development Plan / Engineering Plans.
9. A restriction note shall be included on the final plat stating: "Individual lot owner(s) shall not change or obstruct the drainage flow paths on the lots, as shown on the Master Drainage Plan, unless specific application is made and approved by the City Engineer."
10. Any cut and / or fill operations, which cause public infrastructure to exceed the maximum / minimum depths of cover shall be mitigated by relocating the infrastructure vertically and / or horizontally to meet the specifications contained within the City's Design and Construction Manual.
11. A final plat shall be approved and recorded (with the appropriate number of copies of the recorded plat returned to the Development Services Department) prior to any building permits being issued.



Preliminary Development Plan
Lots 1 - 6, Main Orchard
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

LEGEND

- These standard symbols will be found in the drawing.
- Set 1/2" Rebar & Cap
 - ⊙ Found Survey Monument (As Noted)
 - Ⓢ Exception Document Location
 - X— Existing Fence Line - Chain Link
 - X-WM— Existing Water Line
 - X-SAN— Existing Sanitary Sewer Main
 - X-STM— Existing Storm Sewer
 - GAS— Existing Gas Line
 - UT— Existing Underground Telephone
 - E— Existing Underground Electric
 - 1998— Existing Contours
 - 1935— Proposed Contours



PLAT BOUNDARY DESCRIPTION
All that part of the Northwest Quarter of the Northeast Quarter of Section 6, Township 47, Range 31, Lee's Summit, Jackson County, Missouri, described as follows: Beginning at the Northeast corner of Lot 7 HEARNE'S ADDITION to the City of Lee's Summit, said point being in the West line of Main Street; thence North along the West line of Main Street 208.75 feet; thence West 289.3 feet, more or less, to the Northeast corner of Lot 7, NORTH LEA ADDITION, a subdivision in Lee's Summit; thence South along the East lines of Lots 7, 8 and 9 in said Addition to the Southeast corner of Lot 9; thence East 289.3 feet, more or less, to the point of beginning.
AND
All of Lot 7, Hearne's Addition, a subdivision as recorded in the Office of the Recorder, Jackson County, Missouri

Site Data Table :

| | |
|-------------------------|-------------------------------|
| Lot Area: | 100815.83 Sq. Ft. (2.31 Ac.) |
| Lots: | 6 |
| Density: | 2.60 Lots/Acre |
| Current Impervious Area | 3,842 sq. ft (3.8% of Site) |
| New Impervious Area | 28,434 sq. ft (28.2% of Site) |

Current Zoning: Planned 2-Family Residential
Proposed Zoning: Planned 2-Family Residential

Sanitary Sewer Service
Sanitary Sewer service will be connected to the main line being constructed the east of the development

Water Service
Water Service will be extended to the lots from the existing City of Lee's Summit water along the west side of Main Street.

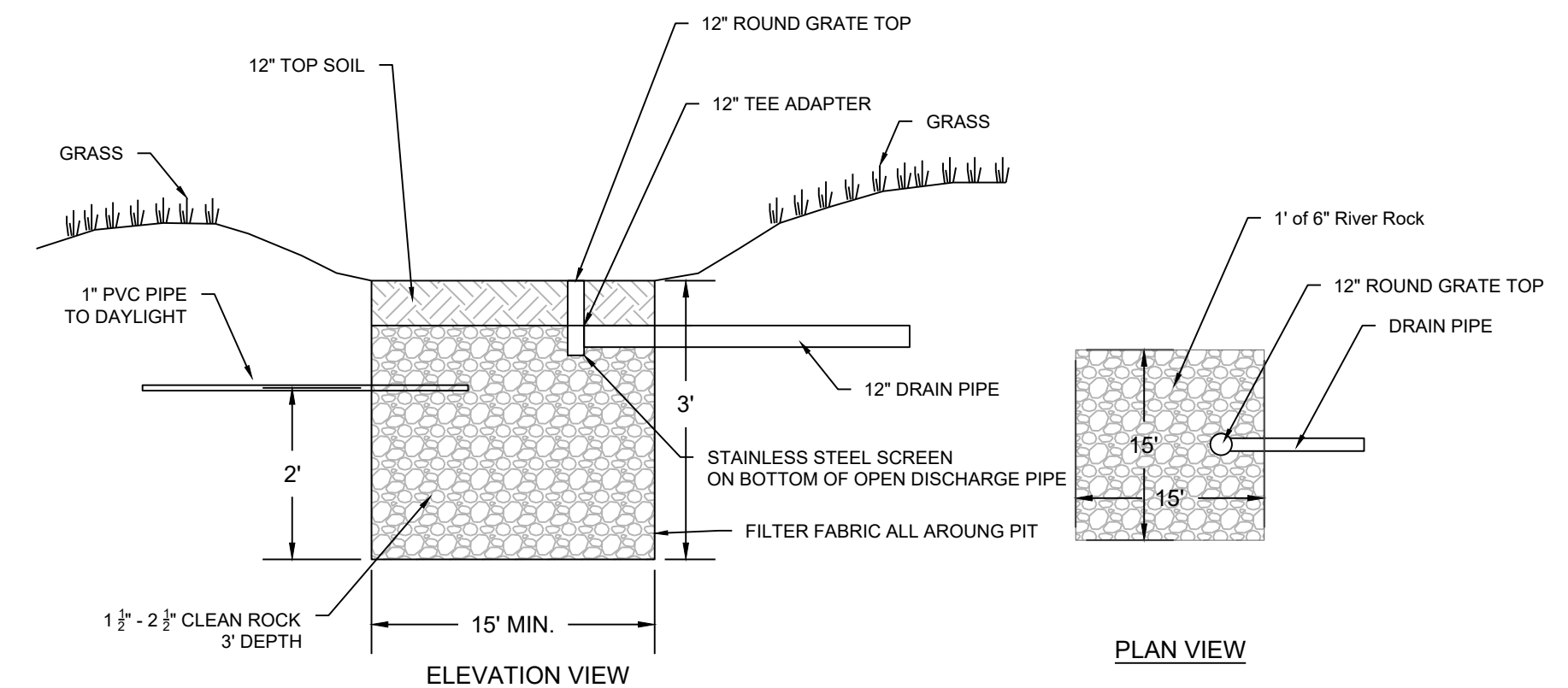
Storm Sewer
Individual Storm Detention will be provided by each builder per detail this sheet.

SURVEY AND PLAT NOTES:
THE SUBJECT PROPERTY SURVEYED LIES WITHIN A FLOOD ZONE DESIGNATED ZONE (X). AREAS LOCATED OUTSIDE THE 100 YEAR FLOOD PLAIN, PER F.E.M.A. MAP, COMMUNITY PANEL NO. 28095C0417 G EFFECTIVE DATE: JANUARY 20, 2017.

OIL - GAS WELLS
ACCORDING TO EDWARD ALTON MAY JR'S ENVIRONMENTAL IMPACT STUDY OF ABANDONED OIL AND GAS WELLS IN LEE'S SUMMIT, MISSOURI IN 1995, THERE ARE NOT OIL AND GAS WELLS WITHIN 165 FEET OF THE PROPERTY AS SURVEYED HEREON.

UTILITIES:
THE INFORMATION CONCERNING THE EXISTENCE, LOCATION, SIZE OR TYPE OF MATERIALS OF UNDERGROUND UTILITIES SHOWN HEREON, WHICH ARE NOT VISIBLE FROM THE SURFACE, HAS BEEN COMPILED FROM THE RECORDS OF THE VARIOUS UTILITY COMPANIES OR OTHER SOURCES OF INFORMATION AND HAS NOT BEEN VERIFIED IN THE FIELD BY THIS COMPANY. WHERE RECORD MEASUREMENTS WERE NOT AVAILABLE, THE LOCATION OF THESE UNDERGROUND LINES WAS SCALED FROM THE COMPANY'S RECORDS. THIS INFORMATION IS NOT TO BE CONSTRUED AS ACCURATE, COMPLETE NOR EXACT. ANY INFORMATION CONCERNING UNDERGROUND UTILITIES SHOWN HEREON MUST BE CONFIRMED BY THE DESIGN PROFESSIONAL PRIOR TO DESIGNING ANY IMPROVEMENTS WHICH MAY BE AFFECTED BY THIS INFORMATION OR BY THE CONTRACTOR PRIOR TO ANY CONSTRUCTION ACTIVITY.

SURVEYOR'S GENERAL NOTES:
1). This survey is based upon the following information provided by the client or researched by this surveyor
A). Final Plat of HEARNE'S 1ST ADDITION
B). Final Plat of HEARNE'S ADDITION LOTS 18A B C
C). Final Plat of W T HEARNE'S 2ND ADDITION
D). Final Plat of NORTH LEA ADDITION
E). Final Plat of NORTHVIEW ADDITION
2). This survey meets or exceeds the accuracy standards of a (SUBURBAN) Property Boundary Survey as defined by the Missouri Standards for Property Boundary Surveys.
3). No Title report was furnished.
4). Bearings shown hereon are based upon bearings described in the legal description
5). This company assumes no responsibility in the location of existing utilities within the subject premises. This is an above-ground survey. The underground utilities, if shown, are based on information provided by the various utility companies and these locations should be considered approximate. There may be additional underground utilities not shown on this drawing. Dig Rite Ticket #150071203, 150071179, 150071171
7). Subsurface and environmental conditions were not surveyed or examined or considered as a part of this survey. No evidence or statement is made concerning the existence of underground or overhead conditions, containers or facilities that may affect the use or development of this property. No attempt has been made to obtain or show data concerning existence, size, depth, conditions, capacity or location of any utility existing on the site, whether private, municipal or public owned.



DETENTION PIT DETAIL
NOT TO SCALE

REVISIONS

| DATE | DESCRIPTION |
|------|-------------|
| | |
| | |
| | |
| | |

Preliminary Development Plan
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

| SHEET | SECTION | TOWNSHIP | RANGE | COUNTY | JOB NO. |
|-------|---------|----------|-------|---------|-------------|
| 1 | 6 | 47 | 31 | Jackson | 510 NW Main |

DATE OF PREPARATION

September 13, 2019

ENGINEERING & SURVEYING SOLUTIONS

50 SE 20TH STREET
LEE'S SUMMIT, MO 64082
P: (816) 623-9888 F: (816) 623-9849

Lots 1 - 6, Main Orchard

Project: Lots 1 – 6, Main Orchard

This memorandum is to serve as a guideline for the home construction on Lots 1, 2 & 4– 6, Main Orchard. Lot 3 is an existing 1,100 sf home constructed around the early 1900's.

Existing Area Description

The proposed development is located within an area of Downtown Lee's Summit that is one block west of Douglas Street and two blocks south of Chipman Road and the adjacent area is all zoned RP-2, Planned Two Family Residential District. The area to the north and west is single family and duplex family homes that were constructed in the 1950's with an average home size around 1,050 sf and a lots size of approximately 15,000 sf. Many of the existing homes that were constructed in the 1950's can be described as a mid-century ranch style home. These homes are typically rectangular in shape and have a long linear presentation toward the street with a single stall parking garage on one end of the home. Within the development area there are a few homes there were constructed in the early 1900's and have a typical "American Foursquare" and "Bungalow" style designs, with home sizes being 1,500 sf and 1,000 sf respectively and the lots sizes are approximately 0.50 acres in size.



Existing Ranch Style Home



Existing Bungalow Style Home



Existing Bungalow with Front Porch



New Home, Hearne's Addition Lot 18 A



Existing Duplex

Development Plan Description

Lots 1, 2, 4, 5 and 6

-These lots are going to be available for purchase by individual buyers to construct a new home. The home will be required to comply with the required items listed in the "House Characteristics" section of this memorandum.

Lot 3

-This lot has an existing "Bungalow" style home that is approximately 1,100 sf with a full stone foundation. The home has a dormer and a full house width front porch. There is not an existing garage and the driveway is gravel. The purposed development plan illustrates future construction of a two-story garage / apartment with a footprint of 1,200 sf. The intent is to build a lower level two stall garage for the existing home and a one stall garage for the second-floor apartment. This lot will be maintained as one owner and the house and garage unit will remain as a rental.



Requested Modification to the height of the garage structure on Lot 3 not to exceed the height of the principal structure. The principal structure is shown below in the Table 1 and the request is to construct the garage to a maximum height of 26 feet. With the setback from the right of way and location on the lot the structure will not appear imposing on the existing structures, but the height will allow for the construction of home elements to keep the architectural style consistent.

Table 1. Existing House Height Measurements

| | |
|-------------------------|-----------|
| Top of Hip Roof | 22' – 10" |
| Top of Lower Hip Roof | 19' – 10" |
| Average Building Height | 21' – 4" |

*Modification is to allow an increase of 4' – 8" higher Loft / Garage



House Characteristics

| | |
|-----------------------|--|
| Minimum Floor Area | 1,000 sf |
| Garage | Minimum Single Stall (Detached or Attached to Residence) |
| Garage Location | No street facing overhead garage doors (Detached or Attached) |
| Front Porch | Minimum width of 50% of Total House Width with a 6-foot depth |
| House Style | Two-Story or Single Story with Dormer (American Foursquare, Bungalow, Craftsman) |
| Driveway Width at ROW | 16 Feet |

House Style

The style of the home should include front porches that are facing the street right of way to promote pedestrian and neighborhood connectivity. This will include incorporating a walkway connection from the front of the home to the public sidewalk. The public sidewalk will not be constructed with the development, but the connection shall be provided for. The driveway width at the street should be limited to 16 feet to limit the amount of concrete mass on the site but the driveway width can expand behind the home to allow for a multi stall garage. The home shall be constructed in such a way that the entry to the home shall incorporate a minimum of two steps from the sidewalk grade to the front porch. Front porch must incorporate a minimum of two column elements to delineate the porch with a minimum of 30% of the porch being constructed with a railing or knee wall.



House Color and Material

The developer will have the authority to review and approve all home colors, materials and styles prior to building permit approval.

The front of the House siding shall consist of multiple types of house siding to vary the appearance. Examples would include but not limited to lap siding or shake shingle combinations with stone or brick. The front and two sides of the home shall provide trim around window and door elements to be painted in a color that is different than the main body color of the house.

Acceptable materials for exterior siding of homes

- Wood Panel, Shingle
- Stone or Brick Veneer
- Real Brick or Stone
- Fiber Cement Lap Siding, Panel or Shingle

Excluded materials for exterior siding of homes

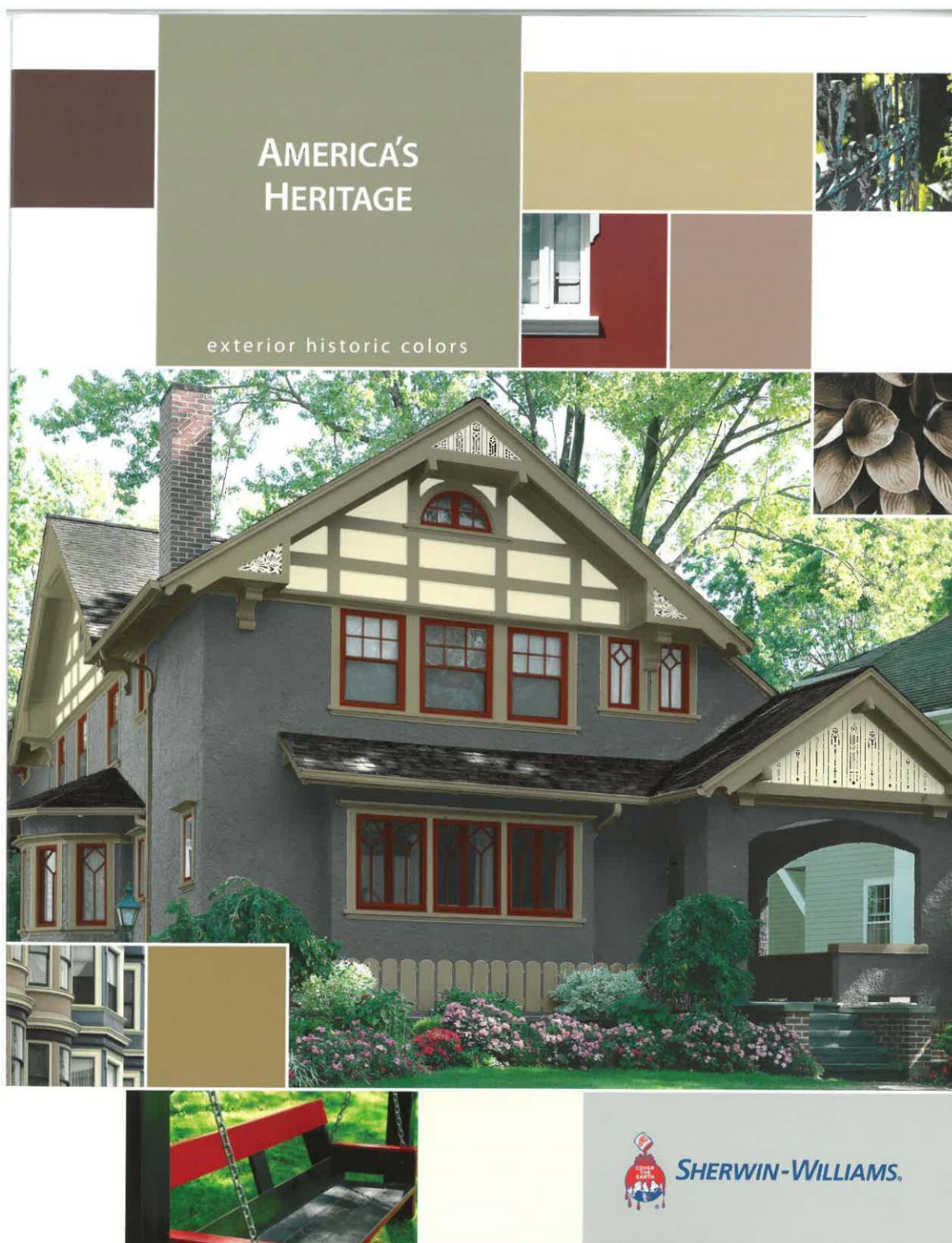
- Horizontal or Vertical Vinyl Siding
- Horizontal or Vertical Metal Siding
- Stucco

The following pictures are illustrations of home materials and the intended appearance of the homes. The side and rear elevations shall maintain the principal home siding material around the entire perimeter of the home. The detached or attached garage shall maintain the same siding primary / secondary materials as the main house.

Home colors shall not be

- High Contrasting Color Palettes
- Florescent

The following pages are taken from Sherwin Williams and will provide options for the home colors and schemes, the final houses are not limited to these specific color palettes, but these are to be considered the basis for judgement of the final home options. White is not shown on these pages but is allowed as a home color.



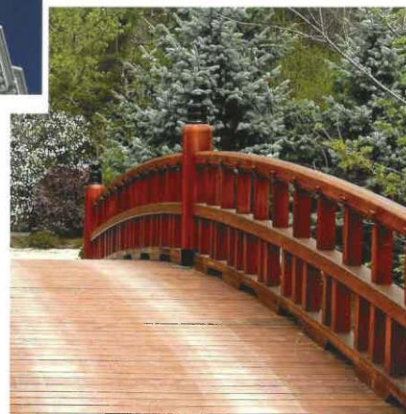


exterior historic colors



AMERICA'S HERITAGE

The America's Heritage Palette pays homage to key architectural styles throughout American history. Ranging from exuberant hues that adorned ornately appointed Victorians to the softer, restrained shades of Craftsman bungalows, our featured color combinations are based on authentic schemes from their respective eras. Each has endured the test of time and is sure to provide beauty and enjoyment for centuries to come.



historic color

AMERICA'S HERITAGE



| BODY | TRIM | ACCENT | ACCENT 2 |
|-------------------------------|--------------------------|--------------------------------|--------------------------------|
| Renwick Rose Beige SW 2804 | Renwick Beige SW 2805 | Pewter Tankard SW 0023 | Polished Mahogany SW 2838 |
| Renwick Golden Oak SW 2824 | Downing Straw SW 2813 | Roycroft Vellum SW 2833 | Deepest Mauve SW 0005 |
| Downing Sand SW 2822 | Rookwood Clay SW 2823 | Rookwood Sash Green SW 2810 | Rookwood Blue Green SW 2811 |



| BODY | TRIM | ACCENT | ACCENT 2 |
|--------------------------|-------------------------------|-----------------------------------|--------------------------|
| Sheraton Sage SW 0014 | Downing Sand SW 2822 | Rookwood Antique Gold SW 2814 | Fairfax Brown SW 2856 |
| Eastlake Gold SW 0009 | Classical White SW 2829 | Curio Gray SW 0024 | Downing Slate SW 2819 |
| Pearl Gray SW 0052 | Classic Light Buff SW 0050 | Colonial Revival Stone SW 2827 | Mulberry Silk SW 0001 |

Due to variations in the printing process, actual colors may vary from those shown in this brochure.





| BODY | TRIM | ACCENT | ACCENT 2 |
|--------------------------|--------------------------|-------------------------------------|-------------------------------------|
| Downing Slate SW 2819 | Downing Straw SW 2813 | Rookwood Antique Gold SW 2814 | Rookwood Medium Brown SW 2807 |
| Downing Earth SW 2820 | Renwick Beige SW 2805 | Rookwood Terra Cotta SW 2803 | Rookwood Dark Brown SW 2808 |
| Renwick Olive SW 2815 | Downing Sand SW 2822 | Rookwood Dark Green SW 2816 | Rookwood Amber SW 2817 |



| BODY | TRIM | ACCENT | ACCENT 2 |
|----------------------------|---------------------------------|-------------------------------------|-----------------------------------|
| Craftsman Brown SW 2835 | Roycroft Vellum SW 2833 | Rookwood Brown SW 2806 | Naval SW 6244 |
| Birdseye Maple SW 2834 | Roycroft Brass SW 2843 | Roycroft Bronze Green SW 2846 | Aurora Brown SW 2837 |
| Roycroft Pewter SW 2848 | Weathered Shingle SW 2841 | Roycroft Vellum SW 2833 | Roycroft Copper Red SW 2839 |

The above scheme is featured on the cover.



| BODY | TRIM | ACCENT | ACCENT 2 |
|--------------------------|-----------------------------|-------------------------------------|-----------------------------------|
| Downing Stone SW 2821 | Sage Green Light SW 2851 | Roycroft Bronze Green SW 2846 | Classic Light Buff SW 0050 |
| Rookwood Clay SW 2823 | Pure White SW 7005 | Downing Sand SW 2822 | Teal Stencil SW 0018 |
| Downing Straw SW 2813 | Roycroft Vellum SW 2833 | Roycroft Pewter SW 2848 | Classic French Gray SW 0077 |



| BODY | TRIM | ACCENT | ACCENT 2 |
|-------------------------------|-------------------------------------|----------------------------|-------------------------------------|
| Antique White SW 6119 | Roycroft Suede SW 2842 | Creamy SW 7012 | Bungalowhouse Blue SW 0048 |
| Peace Yellow SW 2857 | Rookwood Antique Gold SW 2814 | Classical White SW 2829 | Roycroft Bottle Green SW 2847 |
| Roycroft Mist Gray SW 2844 | Downing Stone SW 2821 | Extra White SW 7006 | Rookwood Dark Red SW 2801 |



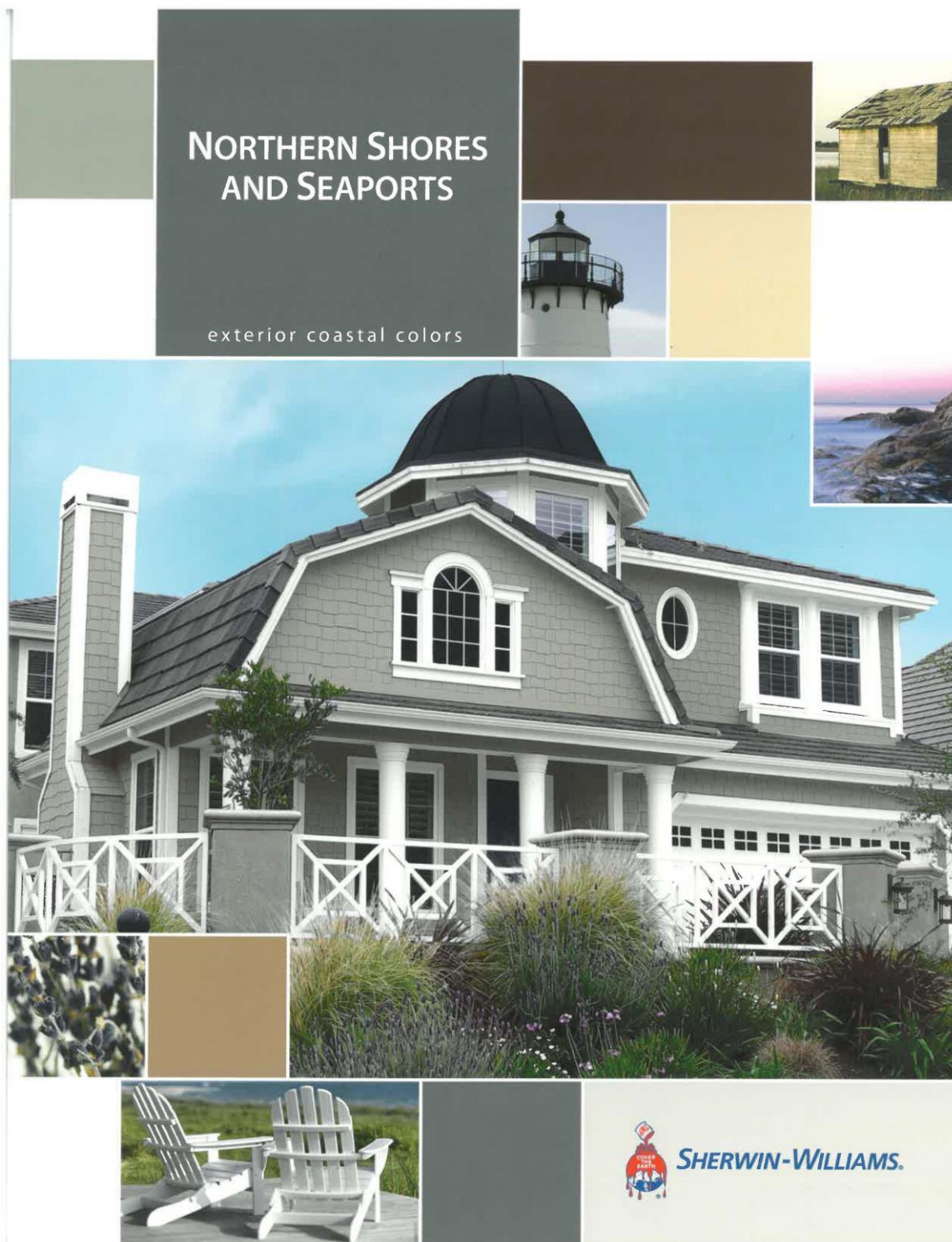


| BODY | TRIM | ACCENT | ACCENT 2 |
|------------------------------------|--------------------------------------|---------------------------------------|---------------------------------------|
| Needlepoint Navy SW 0032 | Classic Light Buff SW 0050 | New Colonial Yellow SW 2853 | Antiquarian Brown SW 0045 |
| Chelsea Gray SW 2850 | Westchester Gray SW 2849 | Decorous Amber SW 0007 | Roycroft Pewter SW 2848 |
| Downing Sand SW 2822 | Classical White SW 2829 | Toile Red SW 0006 | Rookwood Dark Brown SW 2808 |



| BODY | TRIM | ACCENT | ACCENT 2 |
|--|--------------------------------------|-------------------------------------|---|
| Colonial Revival Stone SW 2827 | Classical White SW 2829 | Tricorn Black SW 6258 | Rookwood Red SW 2802 |
| Colonial Revival Gray SW 2832 | Pure White SW 7005 | Downing Slate SW 2819 | Harvester SW 6373 |
| Colonial Revival Green Stone SW 2826 | Classic Light Buff SW 0050 | Polished Mahogany SW 2838 | Roycroft Bronze Green SW 2846 |

(B) Body (T) Trim (A) Accent | Featured accent colors can be used individually or as a combination.





exterior coastal colors



NORTHERN SHORES AND SEAPORTS

From the lush forests of the Pacific Northwest to the misty harbors of Maine, cool weather and gentle waters create a perfect environment for relaxation and rejuvenation.

In the Northern Shores & Seaports Palette, you'll find softened shades of traditional colors found throughout nature. Slate blue, dusty red and subdued gray-green tones offer a calming serenity reflective of a vast, pristine landscape.



coastal color

NORTHERN SHORES AND SEAPORTS



| BODY | TRIM | ACCENT |
|-----------------------------------|-----------------------------------|----------------------------------|
| Restrained Gold SW 6129 | Believable Buff SW 6120 | Sierra Redwood SW 7598 |
| Butternut SW 6389 | Concord Buff SW 7684 | Olympic Range SW 7750 |
| Homburg Gray SW 7622 | White Duck SW 7010 | Butterscotch SW 6377 |



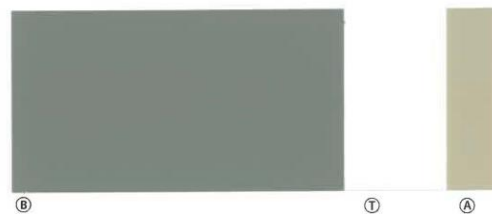
| BODY | TRIM | ACCENT |
|----------------------------------|-------------------------------|------------------------------|
| Carriage Door SW 7594 | Urban Putty SW 7532 | Sanderling SW 7513 |
| Creamy SW 7012 | Lanyard SW 7680 | Tanbark SW 6061 |
| Perfect Greige SW 6073 | Pure White SW 7005 | Naval SW 6244 |

The above scheme is featured on the cover.





| BODY | TRIM | ACCENT |
|------------------------------|-------------------------------|----------------------------|
| Portabello SW 6102 | Modern Gray SW 7632 | Porpoise SW 7047 |
| Anew Gray SW 7030 | Extra White SW 7006 | Fireweed SW 6328 |
| Retreat SW 6207 | Creamy SW 7012 | Portico SW 7548 |



| BODY | TRIM | ACCENT |
|-------------------------------|-----------------------------|---------------------------------|
| Storm Cloud SW 6249 | Alabaster SW 7008 | Ramie SW 6156 |
| Svelte Sage SW 6164 | Lotus Pod SW 7572 | Leather Bound SW 6118 |
| Lanyard SW 7680 | Buff SW 7683 | Sea Serpent SW 7615 |



| BODY | TRIM | ACCENT |
|------------------------------------|-------------------------------|--------------------------------|
| Downing Earth SW 2820 | Dover White SW 6385 | Spiced Cider SW 7702 |
| Accessible Beige SW 7036 | Tony Taupe SW 7036 | Foggy Day SW 6235 |
| Chatroom SW 6771 | Muslin SW 6133 | Beach House SW 7518 |



| BODY | TRIM | ACCENT |
|------------------------------|-----------------------------------|---------------------------------------|
| Stone Lion SW 7507 | Windfresh White SW 7628 | Roycroft Copper Red SW 2839 |
| Macadamia SW 6142 | Pure White SW 7005 | Caviar SW 6990 |
| Meadowlark SW 7522 | Dover White SW 6385 | Pier SW 7545 |

Due to variations in the printing process, actual colors may vary from those shown on this brochure.





| BODY | TRIM | ACCENT |
|-------------------------------|----------------------------|----------------------------|
| Pottery Urn SW 7715 | Fresco Cream SW 7719 | Roycroft Brass SW 2843 |
| Roycroft Mist Gray SW 2844 | Attitude Gray SW 7060 | Rock Bottom SW 7062 |
| Renwick Olive SW 2815 | Roycroft Vellum SW 2833 | Renwick Heather SW 2818 |



(B)

(T)

(A)



(B)

(T)

(A)



| BODY | TRIM | ACCENT |
|-------------------------|-----------------------|--------------------------|
| Comfort Gray SW 6205 | Alabaster SW 7008 | Rookwood Red SW 2802 |
| Latte SW 6108 | Warm Stone SW 7032 | Muddled Basil SW 7745 |
| Harmonic Tan SW 6136 | Ivoire SW 6127 | Java SW 6090 |

(B) Body

(T) Trim

(A) Accent

The following are example houses that could be constructed on the lots







Detached Garage Option



Detached Garage Option



House Type Description
November 8, 2019
Main Orchard
Lee's Summit, MO



Attached Garage w/ Breezeway



Attached Garage w/ Breezeway





Four-Sided Architecture

510 NW MAIN STREET

Lots 1 Thru 6

SANITARY SEWER CONSTRUCTION PLANS

Part of the NE 1/4 Section 6, Township 47 North, Range 31 West
LEE'S SUMMIT, JACKSON COUNTY, MISSOURI

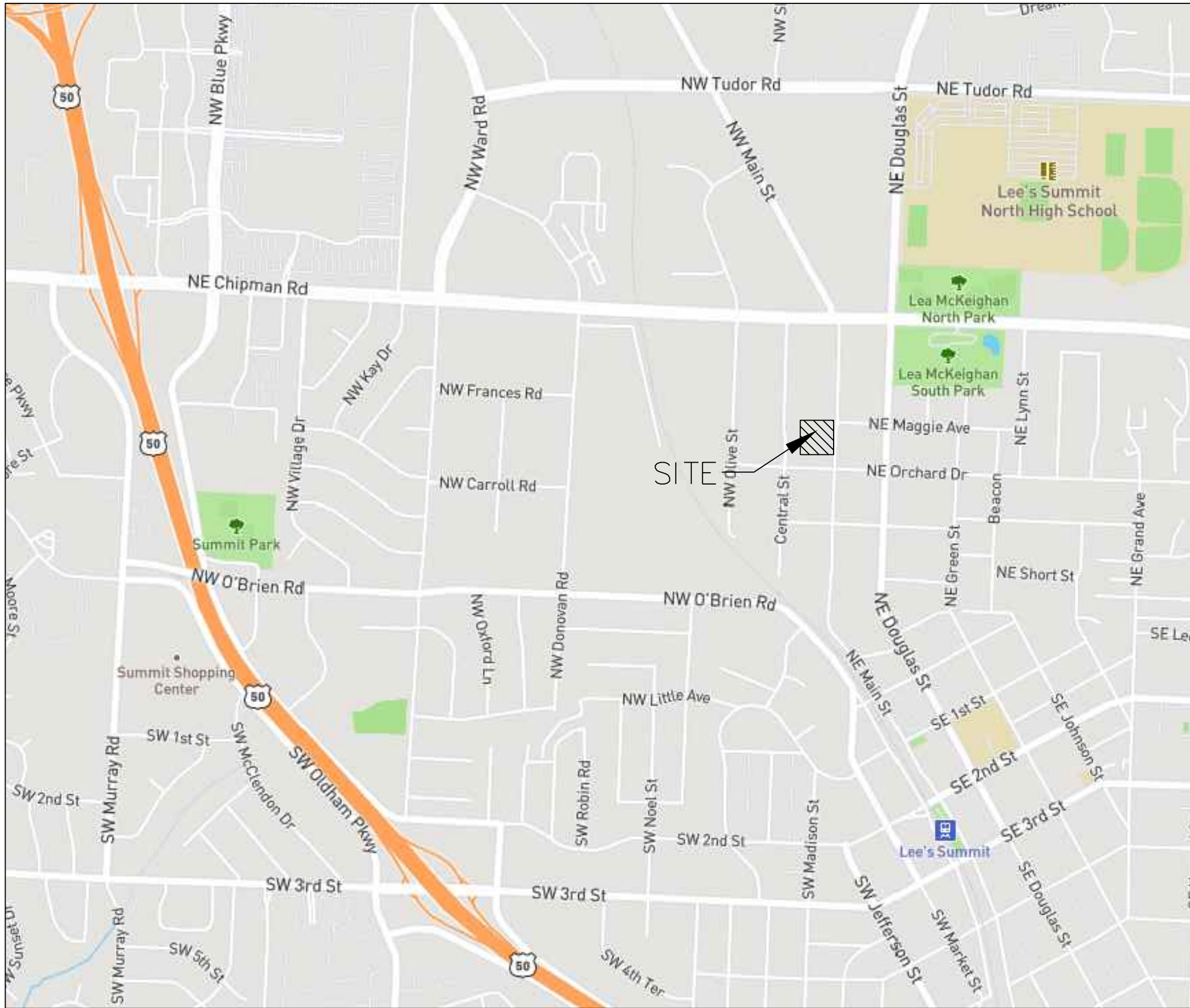
CONSTRUCTION AND DESIGN NOTES:

SANITARY SEWERS:

- SANITARY SEWER PIPE SHALL BE POLY VINYL CHLORIDE (PVC), SDR-26, UNLESS NOTED OTHERWISE IN THESE PLANS.
- HOUSE SEWER LATERALS SHALL BE 4 INCH PVC, SDR-26. LATERALS SHALL BE CONSTRUCTED USING A TOP ORIENTED "WYE" AT THE SEWER STATION SHOWN IN THESE PLANS. LATERALS SHALL BE LAID AT A GRADE OF 2.0% FROM THE SEWER MAIN TO THE STREET RIGHT-OF-WAY LINE OR EASEMENT LINE AS REPRESENTED BY THE LATERAL LENGTH SHOWN IN THESE PLANS. THE ELEVATION SHOWN FOR THE END OF THE LATERAL IN THESE PLANS IS APPROXIMATE. THE ACTUAL ELEVATION SHALL BE DETERMINED BY THE FLOW LINE ELEVATION OF THE SEWER MAIN, THE FITTINGS AND GRADE OF THE SEWER LATERAL.
- THE CONTRACTOR SHALL MAINTAIN A LOG OF THE "AS BUILT" STATION AND LENGTH OF EACH HOUSE LATERAL AND SHALL PROVIDE ENGINEERING SOLUTIONS, L.L.C. WITH A COPY OF SAID LOG UPON COMPLETION OF SEWER CONSTRUCTION.
- ALL MANHOLES INSTALLED IN THE STREET RIGHT-OF-WAY SHALL BE FINISHED 1/2" PER FOOT ABOVE THE NEAREST ADJACENT BACK OF CURB
- A STAKE SHALL BE PLACED AT THE END OF EACH WYE CONNECTION WITH THE END ELEVATION WRITTEN ON THE STAKE
- FILL AREAS SHALL HAVE 3 FEET OF COMPACTED FILL IN PLACE PRIOR TO TRENCHING
- A TRENCH CHECK CONSISTING OF FLOWABLE FILL MUST BE INSTALLED ON EVERY PRIVATE LATERAL.

GENERAL NOTE:

- ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- TRENCH CHECKS SHALL BE INSTALL AT ALL SANITARY WYES LOCATION.



UTILITY COMPANIES:

THE FOLLOWING LIST OF UTILITY COMPANIES IS PROVIDED FOR INFORMATION ONLY. WE DO NOT OFFER ANY GUARANTEE OR WARRANTY THAT THIS LIST IS COMPLETE OR ACCURATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES THAT MAY BE AFFECTED BY THE PROPOSED CONSTRUCTION AND VERIFYING THE ACTUAL LOCATION OF EACH UTILITY LINE. THE CONTRACTOR SHALL NOTIFY ENGINEERING SOLUTIONS AT 816.623.9888 OF ANY CONFLICT WITH PROPOSED IMPROVEMENTS.

KCP&L ~ 298-1196
SPIRE ~ 969-2200
SOUTHWESTERN BELL TELEPHONE ~ 761-5011
COMCAST CABLE ~ 795-1100
CITY OF LEE'S SUMMIT PUBLIC WORKS ~ 969-1800
CITY OF LEE'S SUMMIT DEVELOPMENT ENGINEERING INSPECTION AT 816.969.1200
CITY OF LEE'S SUMMIT WATER UTILITIES ~ 969-1900
MISSOURI ONE CALL (DIG RITE) ~ 1-800-344-7483

LEGEND:

- B/L - BUILDING SET-BACK
- C/A - COMMON AREA
- D/E - DRAINAGE EASEMENT
- FND. - FOUND
- L/E - LANDSCAPE EASEMENT
- L.N.A. - LIMITS OF NO ACCESS
- R/W - RIGHT OF WAY
- SAN - SANITARY SEWER LINE
- S/W - SIDEWALK
- U/E - UTILITY EASEMENT
- W - WATER LINE
- ST - STORM SEWER LINE

ENGINEER'S CERTIFICATION:

I HEREBY CERTIFY THAT THIS PROJECT HAS BEEN DESIGNED AND THESE PLANS PREPARED IN ACCORDANCE WITH THE CURRENT DESIGN CRITERIA OF THE CITY OF LEE'S SUMMIT, MISSOURI AND THE STATE OF MISSOURI. I FURTHER CERTIFY THAT THESE PLANS WERE DESIGNED IN ACCORDANCE TO AASHTO STANDARDS.

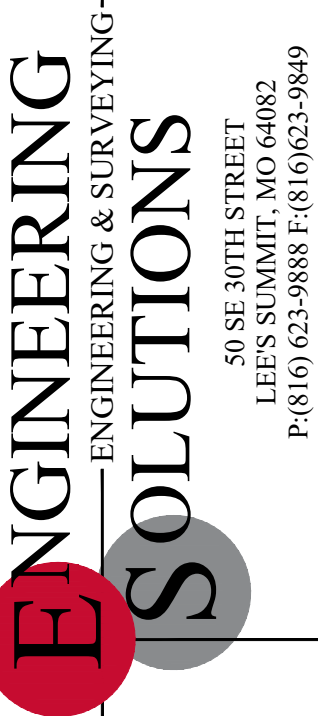
CITY OF LEE'S SUMMIT, MISSOURI

APPROVED: _____ DATE: _____

BY: _____
CITY ENGINEER

INDEX OF SHEETS:

- C.400 ~ SANITARY SEWER COVER SHEET
- C.401 ~ SANITARY SEWER GENERAL LAYOUT
- C.402 ~ SANITARY SEWER PLAN & PROFILE
- C.403 ~ SANITARY SEWER DETAILS



Professional Registration
Missouri
Engineering 2005002186-D
Surveying 2005008319-D
Kansas
Engineering E-1695
Surveying LS-218
Oklahoma
Engineering 6254
Nebraska
Engineering CA2821

510 NW MAIN STREET
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

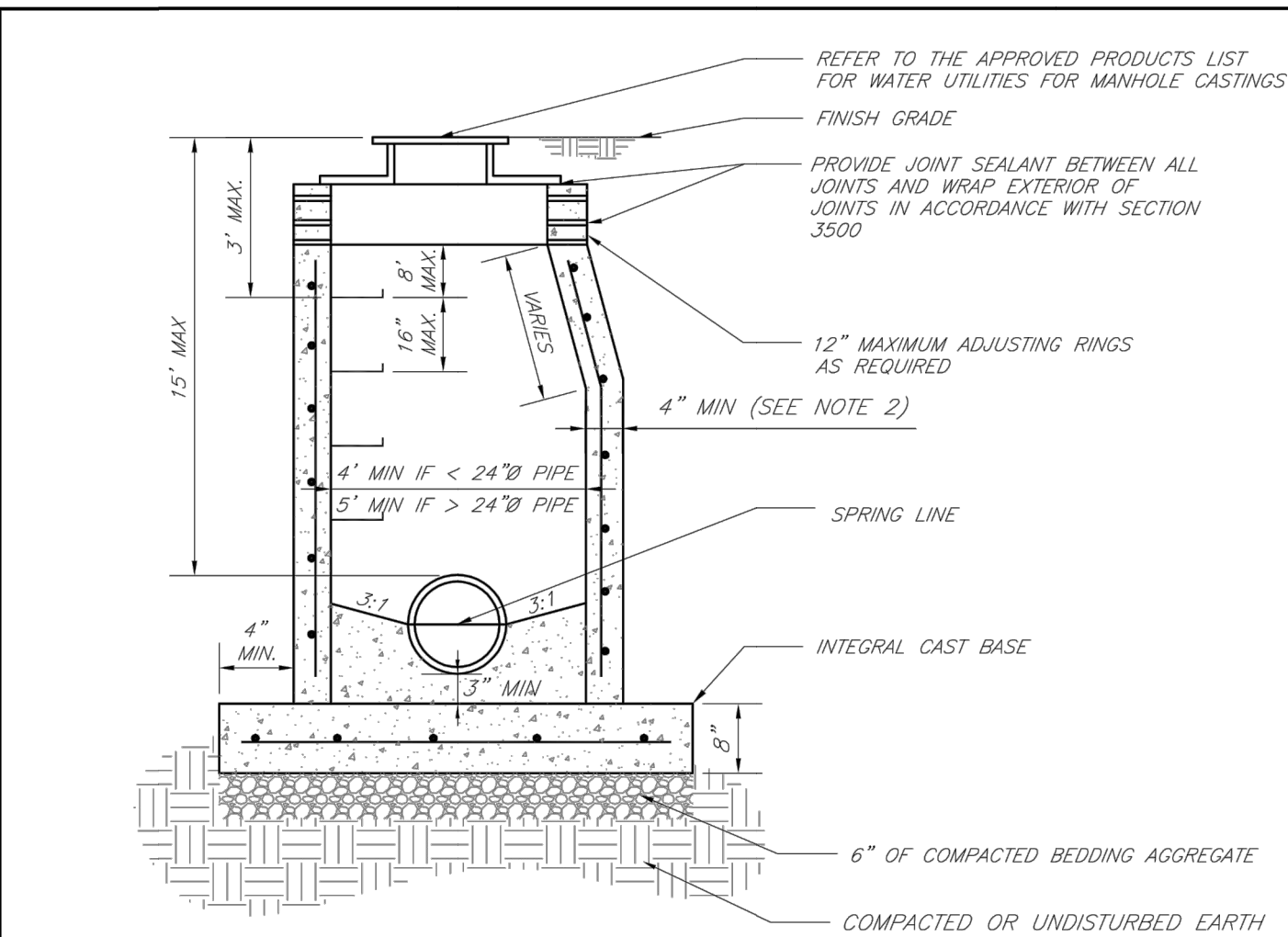
510 NW MAIN ST
LS, MO
Issue Date:
September 13, 2019

Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

Matthew J. Schlich
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

REVISIONS

C.401



- NOTES:
1. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478 EXCEPT AS MODIFIED BY THE SPECIFICATIONS.
 2. A WALL THICKNESS NOT LESS THAN ONE-TWELFTH ($\frac{1}{12}$) OF THE INSIDE DIAMETER OR 4", WHICHEVER IS GREATER, SHALL BE USED WHEN THE MANHOLE DEPTH IS LESS THAN 15'.
 3. WATERPROOFING SHALL BE REQUIRED ON THE OUTSIDE OF MANHOLES. THE WATERPROOFING SHALL CONSIST OF A TOTAL DRY FILM THICKNESS OF NOT LESS THAN 14 MILS OF BITUMINOUS COATING.
 4. ONLY ECCENTRIC MANHOLE CONES WILL BE ALLOWED UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
 5. THE FILL CONCRETE FLOW CHANNEL FOR SIDE BRANCHES SHALL BE PLACED TO PROVIDE A SMOOTH TRANSITION INTO THE FLOW LINE.
 6. REFER TO THE APPROVED PRODUCTS LIST FOR WATER UTILITIES FOR APPROVED MANHOLE GASKET MODELS.
 7. REFER TO THE APPROVED PRODUCTS LIST FOR APPROVED STEPS.

LS

LEE'S SUMMIT

MISSOURI

PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

STANDARD PRECAST MANHOLE – SANITARY SEWER

Date: 02/13

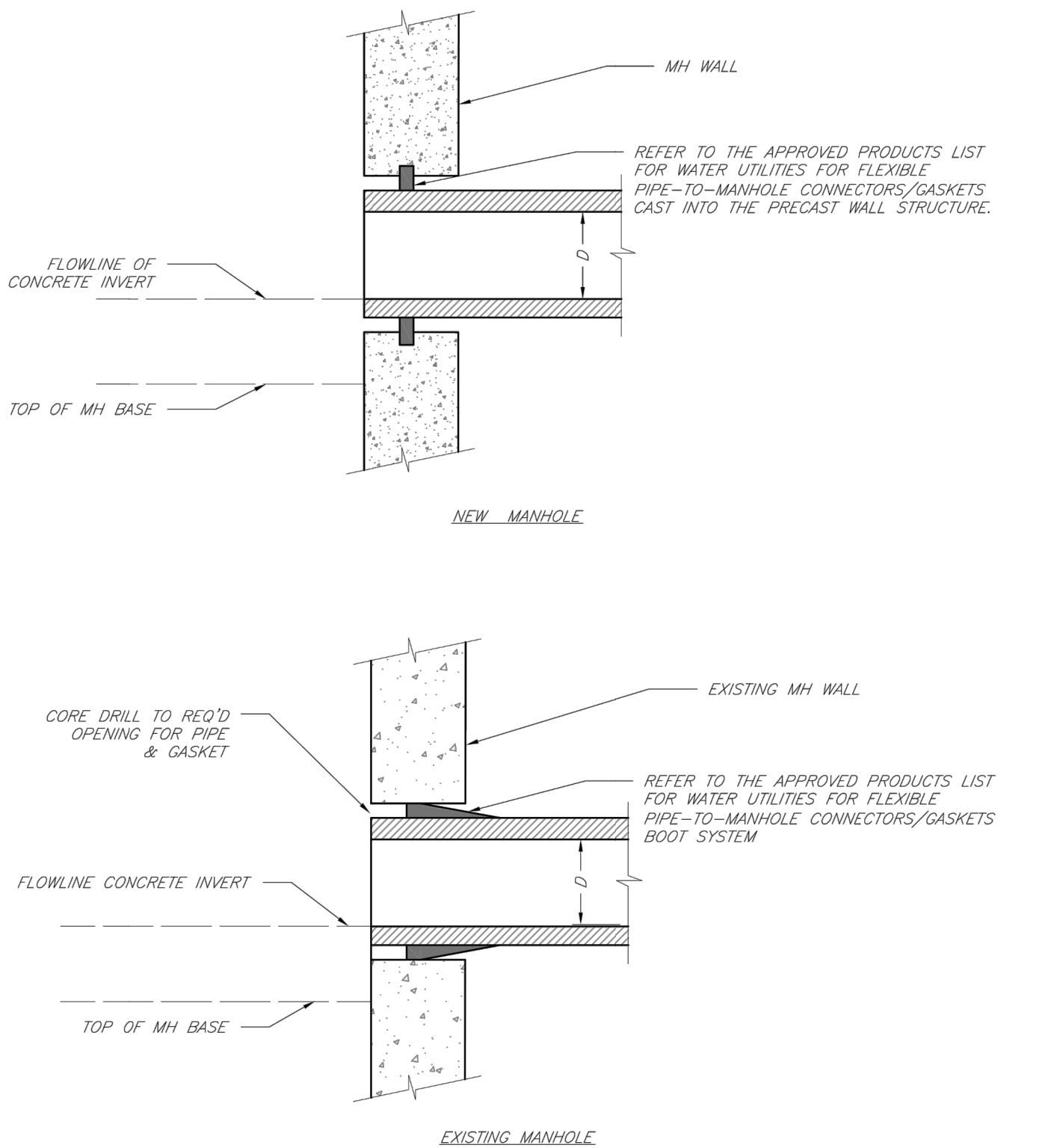
Drawn By: JN

Checked By: DL

FILE: SAN-2

Rev: 1/14

Rev:



LS

LEE'S SUMMIT

MISSOURI

PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

MANHOLE WALL CONNECTIONS

Date: 02/13

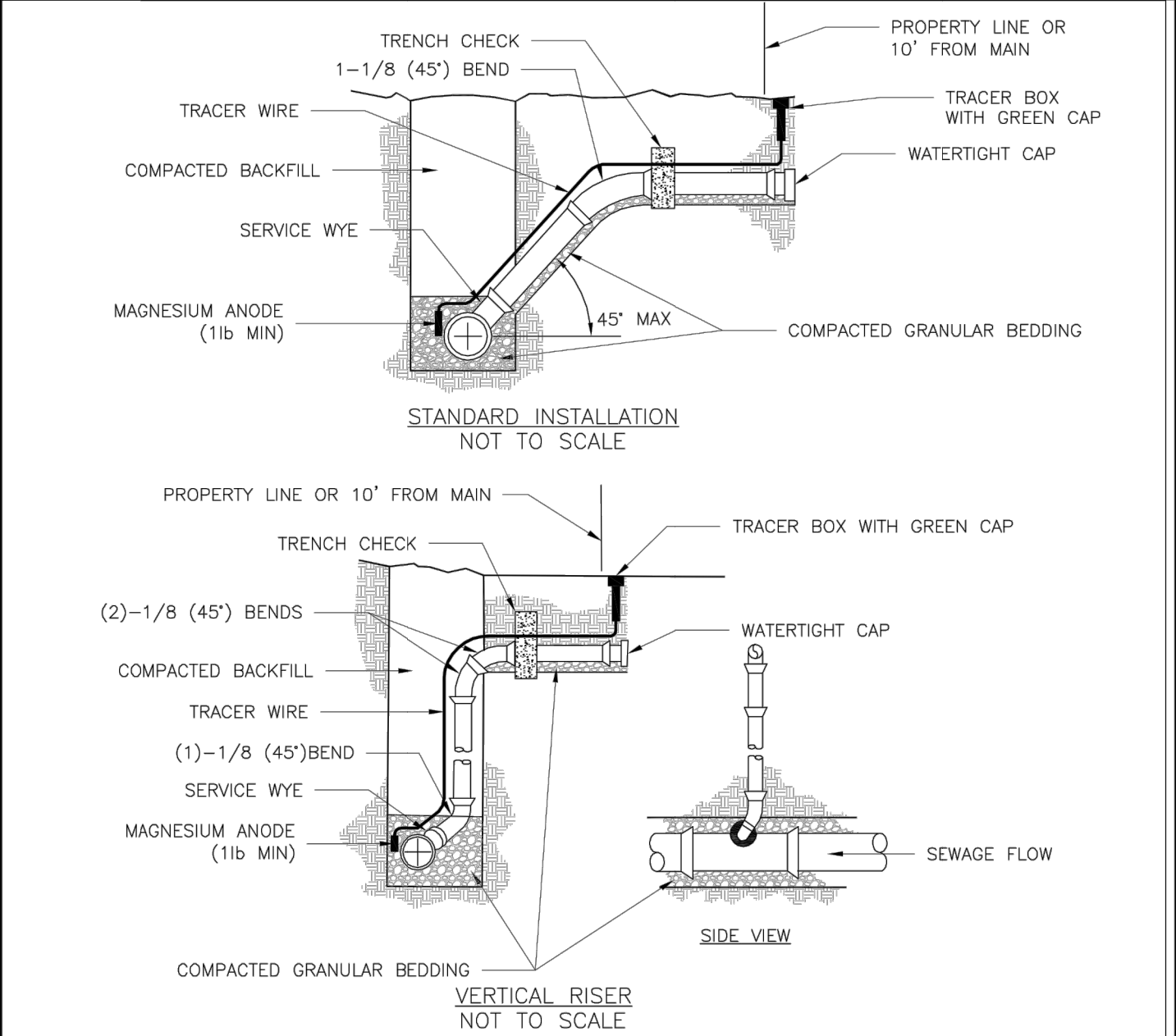
Drawn By: JN

Checked By: DL

FILE: SAN-5

Rev: 1/14

Rev:



- NOTES:
1. ALL SEWER STUBS SHALL BE CONSTRUCTED TO PROPERTY LINE OR 10' MINIMUM FROM THE MAIN, WHERE SIDEWALKS ARE PRESENT, CONTRACTOR SHALL EXTEND SERVICE LINE UNDER EXISTING SIDEWALK TO TWO FEET BEYOND.
 2. ALL NEW CONSTRUCTION OFF SEWER STUBS SHALL BE TEMPORARILY MARKED WITH A MARKING STAKE, 36" ABOVE GROUND AND PAINTED GREEN.
 3. IMPERVIOUS TRENCH CHECKS SHALL BE PLACED ON BUILDING SEWER STUBS (AT LEAST 5' AWAY FROM THE SANITARY SEWER MAIN).
 4. TRENCH CHECKS ON THE BUILDING SEWER STUBS SHALL EXTEND 6" BELOW THE BOTTOM OF THE PIPE, LENGTH SHALL BE A MINIMUM OF 12", THE HEIGHT OF THE TRENCH CHECK SHALL EXTEND 12" ABOVE THE TOP OF THE PIPE. THE WIDTH OF THE TRENCH CHECK SHALL BE THE WIDTH OF THE TRENCH.
 5. SEE SPECIFICATION SECTION 2100 FOR SEWER MAIN BEDDING AND BACKFILL.
 6. #12 GAUGE GREEN INSULATED COPPER TRACER WIRE SHALL BE INSTALLED. TRACER WIRE TERMINAL BOXES SHALL BE INSTALLED DIRECTLY ABOVE THE SEWER SERVICE OR AS DETERMINED BY THE ENGINEER.
 7. FOR SERVICES, TRACER WIRE SHALL RUN FROM THE WYE AND TERMINATE IN A FLUSH MOUNTED TRACER BOX WITH A GREEN CAST IRON LOCKABLE TOP, WIRE SHALL BE TAPED OR TIED TO THE PIPE AT 5' INTERVALS.
 8. TRACER WIRE BOX SHALL BE INSTALLED WITHIN 1.0' OF PROPERTY LINE.
 9. THE TRACER WIRE SHALL REMAIN CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. SPLICES IN THE TRACER WIRE SHOULD BE MADE WITH SPLIT BOLT CONNECTORS, WIRE NUTS SHALL NOT BE USED, A WATER-PROOF CONNECTION IS NECESSARY TO PREVENT CORROSION.

LS

LEE'S SUMMIT

MISSOURI

PUBLIC WORKS ENGINEERING DIVISION | 220 SE GREEN STREET | LEE'S SUMMIT, MO 64063

BUILDING SEWER STUB AND RISER

Date: 04/17

Drawn By: MF

Checked By: DL

FILE: SAN-1

Rev:

GENERAL NOTE:

1 – ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.

2 – TRENCH CHECKS SHALL BE INSTALL AT ALL SANITARY WYES LOCATION.

ENGINEERING

ENGINEERING & SURVEYING

SOLUTIONS

50 SE 30TH STREET

LEE'S SUMMIT, MO 64062

P: (816) 623-9888 F: (816) 623-9849

Professional Registration

Missouri

Engineering 2005002186-D

Surveying 2005008319-D

Kansas

Engineering E-1695

Surveying LS-218

Oklahoma

Engineering 6254

Nebraska

Engineering CA2821

510 NW MAIN STREET
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

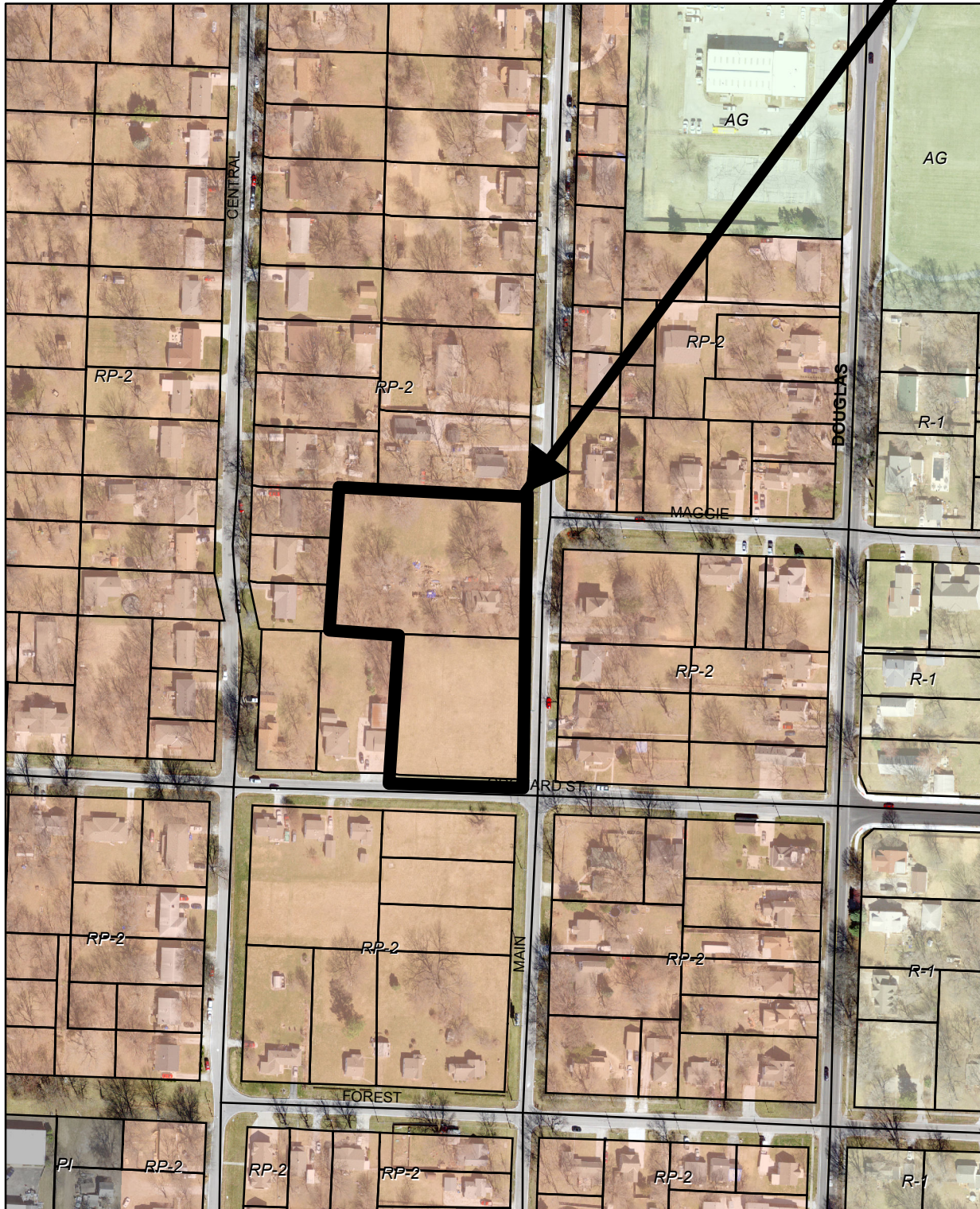
Project:
510 NW MAIN ST
LS MO
Issue Date:
September 13, 2019

Sanitary Details
Construction Plans for:
510 NW MAIN STREET
Section 6, Township 47 North, Range 31 West
Lee's Summit, Jackson County, Missouri

Matthew J. Schlicht
MO PE 2006019708
KS PE 19071
OK PE 25226
NE PE E-14335

| REVISIONS |
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**PL2019-305 PRELIM DEV PLAN
MAIN ORCHARD
510 NW MAIN ST AND 6 NW ORCHARD ST**



Packet Information

File #: 2019-3144, **Version:** 2

Public Hearing: Application #PL2019-307 - Rezoning from AG and R-1 to RP-3 and Preliminary Development Plan - Osage, approximately 32 acres located at the southwest corner of SW M-150 Hwy and SW Pryor Road; Clayton Properties Group, Inc., applicant.

Issue/Request:

The applicant proposes to rezone 31.47 acres, located at the southwest corner of SW Pryor Rd and SW M-150 Hwy, from AG (Agricultural) and R-1 (Single-Family Residential) to RP-3 (Planned Residential Mixed Use). The proposed subdivision will be a three-phase development composed of 32 single-family lots, 22 two-family structures, 21 four-family structures and 16 common area tracts.

Proposed Planning Commission Motion:

I move to recommend approval of appl. #PL2019-307 - REZONING from AG and R-1 to RP-3 and PRELIMINARY DEVELOPMENT PLAN - Osage, approximately 32 acres located at the southwest corner of SW M-150 Hwy and SW Pryor Rd; Clayton Properties Group, Inc., applicant

Josh Johnson, AICP, Assistant Director of Plan Services

Vincent Walker, Owner Representative

John Erpelding, PE/Engineer

The City of Lee's Summit
Action Letter - Draft
Planning Commission

Thursday, November 14, 2019

5:00 PM

City Council Chambers

City Hall

220 SE Green Street

Lee's Summit, MO 64063

Call to Order

Present: 7 - Board Member John Lovell
Board Member Jake Loveless
Board Member Carla Dial
Chairperson Jason Norbury
Board Member Terry Trafton
Board Member Jeff Sims
Board Member Dana Arth

Absent: 2 - Board Member Mark Kitchens
Vice Chair Donnie Funk

Roll Call

Approval of Agenda

A motion was made by Board Member Dial, seconded by Board Member Trafton, that the agenda be approved. The motion carried unanimously.

Public Comments

There were no public comments at the meeting.

Approval of Consent Agenda

[TMP-1419](#) Appl. #PL2019-292 - VACATION OF EASEMENT - 1695 SE Decker St and 60 SE Thompson Dr; Thompson Properties, LLC, applicant

A motion was made by Board Member Dial, seconded by Board Member Sims, that this application be recommended for approval to the City Council - Regular Session, due back on 12/3/2019. The motion carried unanimously.

[2019-3143](#) Appl. #PL2019-370 - SIGN APPLICATION - Edward Jones, 500 SW Market St; Fastsigns, applicant

A motion was made by Board Member Dial, seconded by Board Member Sims, that this application be approved. The motion carried unanimously.

[2019-3114](#) Minutes of the October 24, 2019, Planning Commission meeting

A motion was made by Board Member Dial, seconded by Board Member Sims, that the minutes be approved. The motion carried unanimously.

Public Hearings

[2019-3140](#)

Public Hearing: Application #PL2019-305 - Preliminary Development Plan - Main Orchard, 510 NW Main St and 6 NW Orchard St; Engineering Solutions, LLC, applicant.

Chairperson Norbury opened the hearing at 5:06 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Mr. Matt Schlicht of Engineering Solutions gave his address as 50 SE 30th Street in Lee's Summit. The project was located on the west side of Main Street, north of Orchard Street; 510 Main and NW Orchard. This was a vacant property, about 2.5 acres. One existing home on 510 Main dated to about 1920 and was a bungalow-style, front porch home with a dormer and a gravel drive but no garage. The proposal was to divide the property into six residential lots, adding a garage and an above-garage loft space to the existing home. The other five lots would be sold. The applicants had provided staff with a memorandum of ideas, outlining the applicants' preference for the size and style of the homes, with the developer providing some help with what the applicant wanted to see. They wanted to leave the existing home in place, with the new homes being the early-mid 20th century style of 'foursquare' bungalow style with dormers, front porches and garages in the back.

The sheet that the applicant had given the Commissioners a summary of the house characteristics. They would be a minimum 1,000 square feet, with each having a garage, including the existing house; and each would have a front porch covering at least 50 percent of the front side and a minimum 6-foot depth. All would be one or two stories with a dormer on the two-story houses. These would all be consistent with the Craftsman style that was common throughout the Downtown area. The driveway width would be limited to 16 feet at the front and side, in order to keep the streetscape more similar to the older style.

A neighborhood meeting had been held at the Gamber Center, with all residents within a 300-foot radius of the property invited; however, only 3 neighbors attended. They had asked if the homes would be rentals, and he had replied that the lots would be sold for development. Mr. Schlicht noted that many of the same people attended these meetings: young couples who wanted to purchase a Downtown home. This would provide someone to have their desired home built. These houses were in the \$200,000-\$300,000 range.

Mr. Schlicht displayed a colored example of what the houses would look like. Each would be built slightly above grade with a welcoming stairway/porch entry. Each would have a sidewalk from the front steps to the public sidewalk. Like the style, the colors and materials would be standard for the older Downtown neighborhoods: shake shingles or Hardiboard siding, real stone or brick veneers. He wanted to avoid using vinyl or metal sidings or stucco. Colors would be low-contrast, but color palettes were provided for buyers who wanted a slightly different color.

Originally, the Old Lee's Summit development master plan had identified this specific area, and some areas to the west of it, as being parts of the Downtown core that were under-utilized. The applicants believed that this plan was consistent with the plan. Mr. Schlicht then displayed a photo of the existing home at 510 Main Street. It had been built in the early 1920s and was currently being rented. The house was 1,100 square feet, had a stone foundation and a faux dormer at the top. The plan was to add a garage with a loft behind it, and to replace the gravel drive with a concrete one. Other photos showed the interior of the existing house.

Mr. Schlicht stated that he had worked with staff to control some of the stormwater from nearby houses. He showed a diagram of individual detention pits. Stormwater would be piped down from all the roofs, downspouts and hard surfaces into the pit area for each lot. A rock chamber below would store water during major rain events. It was basically a design for a

rain garden. Rain gardens reduced some of the peak runoff that would go downstream.

The applicants were asking for one modification. The rule for the RP-2 zoning district dictated that a garage could not be any taller than the principal structure. That would rule out a loft above a garage in this case. He had done a sight line survey and showed that the garages would be far back enough to not be visible above the roofs of the houses.

Following Mr. Schlicht's presentation, Chairperson Norbury asked for staff comments.

Ms. Thompson entered Exhibit (A), list of exhibits 1-17 into the record. She confirmed that the applicant was submitting a preliminary development plan for five single-family homes at the northwest corner of NW Orchard and NE Main Street. This property and the surrounding properties were zoned RP-2, for planned two-family residences. She displayed a slide of the proposed site plan, showing the five vacant lots and one existing home; and footprints for the five proposed homes. She showed a number of elevations for similar structures, adding that once a residential building permit was submitted to the City, the planning staff would review these elevations to make sure they complied with what was approved. The modification request was for a detached garage with loft on Lot 3, with an overall building height of 26 feet. Staff did not support a detached garage that was taller than the principal structure, and requested that the garages conform to height limits.

Ms. Thompson confirmed that this area was part of the Old Downtown part of Lee's Summit. They were in favor of increasing the housing stock in the area, which this plan could do. Regarding sidewalks, they were required as part of the platting process; however, there were not many sidewalks in this particular area. The applicant asked for a waiver for a sidewalk along Orchard and to make a payment in lieu of construction. He did propose a sidewalk along NE Main Street, which would be constructed as each house was built.

The application had two Conditions of Approval. The detached garage would conform to the UDO requirements for building height, and the developer would pay the City of Lee's Summit for construction costs instead of constructing a sidewalk along NW Orchard.

Following Ms. Thompson's comments, Chairperson Norbury asked if there was anyone present wishing to give testimony, either in support for or opposition to the application. Seeing none, he then asked if the Commission had questions for the applicant or staff.

Mr. Loveless noted Ms. Thompson's mention that before a builder applying for get a building permit on one of these lots would have to submit plans that staff would approve as architecturally consistent with the rest of the neighborhood. Ms. Thompson stated that they would have to submit a plot plan along with residential plans, including floor plans and elevations. This required a review from a planner, who would check for approved elevations and complied with what was approved.

Mr. Loveless then asked Mr. Schlicht for some details about the stormwater collection plan. He noted that with connectivity among the lots and asked why they could not be tied in with the typical water system. Mr. Schlicht pointed out on the map the about 30 acres in the neighborhood that drained a large area through Olive. It had open ditches and few collection systems. The idea was for the individual houses to collect rainwater off the roofs on site and give each homeowner individual control. They would also have the opportunity to start rain gardens. Mr. Loveless asked if it was accurate that this would effectively create a net zero in terms of impervious surface, and Mr. Schlicht replied that it was.

Mr. Loveless asked about driveways. Mr. Schlicht pointed out the two houses, including the existing one that would have two large maple trees on each side, and a corner with a few more large trees. One of the houses would be built behind the trees, which would enable landscaping along the north side with a long driveway. This was typical of the old Downtown

neighborhood, which had houses built varying distances from the street instead of just a row of houses directly next to each other. Mr. Loveless noted that Mr. Schlicht planned to keep the existing home but add a garage behind the home that would be taller than the house. Mr. Schlicht explained that he planned to build a garage with loft behind the existing house at 510 Main. He had discussed this with staff, and determined that a garage with loft could be permitted, up to a height of 40 feet. If the garage was first built and a loft added later it would not comply with the UDO. The garage was part of this application; but he would not ask for a modification at this time.

Mr. Trafton asked why Lot 1 was offset so far back. Mr. Schlicht stated that he wanted to keep the trees on the lots, and the lots had different characteristics, and provided different opportunities for buyers. A buyer could choose the narrow, elongated 60-foot lot or the corner lot which was a little bit larger. These lots reflected Downtown's unique character and lent itself to providing different opportunities. The L-shaped lot at the north end in particular made a bigger building and a choice of location for the garage. It was an opportunity to do something different.

Concerning the detention pit, Mr. Trafton said he assumed these were not tied to any kind of runoff from the street, but would provide a way to collect the water and let it naturally move into the system. He asked if there were other parts of Lee's Summit where this had been tried successfully. Mr. Schlicht did not know of any within the city limits, although a rain garden would be somewhat similar. They did lots of redevelopment in Leawood, Fairway and Prairie Village, tearing down homes and rebuilding in infill sites, and were using this system. It seemed to function well. With no infrastructure for stormwater, the water would just either run across the ground and continue onto another property or be diverted into a large detention basin that that was used by a number of residents. The latter was often a headache.

Chairperson Norbury asked if there were further questions for the applicant or staff. Hearing none, he closed the public hearing at 5:32 p.m. and asked for discussion among the Commission members, or for a motion.

Ms. Dial made a motion to recommend approval of Application PL2019-305, Preliminary Development Plan, Main Orchard, 510 NW Main St and 6 NW Orchard St; Engineering Solutions, LLC, applicant; subject to staff's letter of November 7, specifically Conditions of Approval 1 through 11. Mr. Trafton seconded.

Chairperson Norbury asked if there was any discussion of the motion. Hearing none, he called for a vote.

A motion was made by Board Member Dial, seconded by Board Member Lovell, that this application be recommended for approval to the City Council - Regular Session, due back on 12/3/2019. The motion carried unanimously.

[2019-3144](#)

Public Hearing: Application #PL2019-307 - Rezoning from AG and R-1 to RP-3 and Preliminary Development Plan - Osage, approximately 32 acres located at the southwest corner of SW M-150 Hwy and SW Pryor Rd; Clayton Properties Group, Inc., applicant.

Chairperson Norbury opened the hearing at 5:34 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Mr. John Erpelding of Olsson stated that Mr. Vince Walker and Mr. Travis Roof of Summit Homes were also present. They proposed a rezoning and preliminary development plan for Osage, which would cover about 31.5 acres at Pryor Road and 150 Highway. It would consist of a total 160 units. Mr. Erpelding displayed a color-coded map showing the different types of housing product. They planned 32 single-family homes, 22 two-family structures named "Twin Gallery", in the middle and 21 four-family townhomes. The property also included 16 common

area tracts that would be used for detention, landscaping, buffer areas, monument signs and amenities. These tracts totaled about 6.3 acres, about 20 percent of the property.

Osage was to be developed in three phases, and Mr. Erpelding pointed out these phases, indicated by dashed lines, on the map. The first would have two points of access, one on Pryor and one on M-150. The latter would be a right-in-right-out intersection due to an existing median. Mr. Erpelding listed improvements associated with the first phase. These included monument signs at both entrances and on the M-150 and Pryor Road corner, the stormwater detention facility at the property's southeast corner, an off-site sanitary sewer extension reaching about 780 feet to the east and some street stubs to adjacent properties to the south and west that would allow for future connectivity. Some street improvements were also planned. The M-150 entrance would have an eastbound right-turn lane and some and both northbound and southbound turn lanes at the Pryor Road access. The northbound left turn lane on Pryor Road would be extended. They would add paved shoulders on both sides of Pryor along the length of the east side. As part of another project, Summit Homes would also widen and add paved shoulders further to the south, from County Line Road to the subject properties south boundary. These were interim road improvements. The second phase would focus on the northwest quadrant of the development. Streets would be looped for better connectivity; and the third phase would develop the southwest corner of the property.

The single-family lots would be 50 to 70 feet wide and 120 feet deep. The Twin Gallery structures would be on lots about 70 by 118 feet; and both would have a minimum of 10 feet between each structure. The townhomes would be on 140 feet wide and 120 feet deep, with a minimum of 20 feet between buildings. The applicant was not requesting any modifications to the zoning requirements, as they were meeting all the requirements for setbacks, density, lot widths and depths, landscape buffers or parking. They would provide 20-foot wide landscape buffers between adjoining properties, and these buffers would confirm to UDO requirements. Additionally, a five-foot tract would run along the south property line, to preserve the existing trees and fence. The streets would be lined with trees with 30-foot spacing.

They had held two neighborhood meetings. One was an unofficial one in August, and a formal neighborhood meeting on October 14th. This was also sparsely attended, with about five people; but everyone within 300 feet had been invited. Most of the questions were about prices. The applicant agreed with all of staff's Conditions of Approval.

Mr. Vince Walker addressed the project's layout and architecture. They had heard and taken into account the feedback they had previously received. In using a variety of housing designs, they were able to provide prospective buyers a variety of options. The four-unit detached townhomes would be at the property's north end bordering M-150. The Twin Gallery units would be in the center section, and the "Lifestyle Collection" single-family homes would be on the south side. A central amenity section would include a 25-meter lap pool and children's "splash" area, clubhouse pavilion and a park. These would be administered by a Homeowners Association. All homes would be built using the same quality materials on both exteriors and interior finishes. He then presented a visual video of what Osage was planned to look like. It showed the road system, considerable green space including trees, playground, pavilion, and various types of housing.

Following the applicant's presentation, Chairperson Norbury asked for staff comments.

Mr. McGuire entered Exhibit (A), list of exhibits 1-16 into the record. He confirmed that the applicant was asking to rezone 31.47 acres at the corner of Pryor Road and 150 Highway from AG and R-1 to RP-3. The development would have 32 single-family lots, 22 two-family lots, 21 four-family lots and 16 common area tracts. The surrounding area was a mixture of single-family homes (to the north) and undeveloped properties (to the east and west). Large-lot single-family homes were to the south. The Napa Valley single-family subdivision was

to the southeast, and Grand Summit View and Arborwalk to the northeast.

Displaying colored elevations, of single-family and two-family dwellings and the proposed clubhouse Mr. McGuire observed that the applicant proposed to use materials and designs compatible with other nearby subdivisions and throughout Lee's Summit in general. Exteriors would be stone veneer, lap and panel or shake siding and composite shingle roofs. The requested RP-3 zoning would provide for medium-density mixed residential uses, and the project was generally consistent with the Comprehensive Plan, including the plan's objectives of providing diverse housing types. The maximum density would be 10 units per acre. Any deviation from the approved plan would require approval of a replacement preliminary development plan.

This project was compatible with existing and planned uses on surrounding properties. The 310-acre Arborwalk development was further to the northeast. This was also a mixed-use development that included single-family villa lots, standard single-family lots, duplexes, triplexes, fourplexes and apartments. Villa lots at Arborwalk were allowed a minimum size of 3,675 square feet. The 88-acre Napa Valley development was to the southeast. Napa Valley also had a mixture of single-family villa lots, standard single-family lots and estate-size lots. Napa Valley's villa lots had a minimum lot size of 4,950 square feet. This project's proposed 6,000 square foot minimum lot size for a single-family house was 2,325 square feet larger than the minimum at Arborwalk and 1,050 square feet larger than Napa Valley's minimum. If this application was approved, the plan would satisfy any requirements applicable to zoning district as outlined in the UDO and the Design and Construction Manual.

Following Mr. McGuire's comments, Chairperson Norbury asked if there was anyone present wishing to give testimony, either in support for or opposition to the application.

Mr. Charles Ray gave his address as 4090 SW Pryor Road. He asked what the plans were for Pryor Road to the south, and asked where sidewalks would be. He noted that the small number of people attending the meeting was due to not many people living within 300 feet of this property. The neighbors who did live nearby had a nice park down the street that they had to get to on foot, so they knew that the traffic on Pryor Road had increased considerably. He knew that adding 160 housing units on that corner would increase the traffic even more.

Mr. Roofl stated that they had an obligation connected with Stoney Creek to make interim improvements to Pryor Road from County Line Road up to Pryor. The improved road would be 24 feet wide and restriped, with 6-foot paved shoulders on both sides up to Napa Valley's entrance. When the Osage project was completed, the road would be improved from Napa Valley to M-150 and additional rights-of-way were dedicated for future road improvements. This project would have sidewalks up to the property lines. The 6-foot paved shoulders could be used as pedestrian or bike lanes for the present.

Chairperson Norbury then asked if the Commission had questions for the applicant or staff.

Mr. Trafton asked if it was correct that the median on M-150 would be left intact, in order to prevent traffic problems generated by left turns. Mr. Walker answered that it was. Mr. Trafton then asked what the street widths inside the development were, remarking that the video had not shown cars parked on the streets and in driveways. There were likely to be many of them due to the fourplexes. Mr. Erpelding answered that they would be 28 feet wide, which was the City's standard for local streets. That was wide enough to allow for on-street parking. He acknowledged that cars parked on both sides could cause difficulties for other vehicles, including emergency vehicles. He displayed a parking diagram, with red lines indicating parts of streets in front of side yards. Parked cars would be less of a problem in those locations, as long as they did not block driveways. The plan identified a total of 77 on-street parking spaces.

Mr. Trafton then asked what was the reasoning for concentrating so much of the density in one north quadrant with about 180 residents. Mr. Walker answered that it was typical for this kind of land use to concentrate higher densities near a highway corridor and transition into lower-density product further down. M-150 would have a sidewalk just to the north side of the property line; but the interim improvements for Pryor Road did not require sidewalks on both sides. Mr. Trafton asked staff if this meant the Livable Streets ordinance would not require adding sidewalks on Pryor. Mr. Soto answered that Pryor would require sidewalks. He confirmed that for interim standards, the paved 6-foot wide shoulders could serve as a proxy for sidewalks until final improvements were made to the road.

Mr. Park noted that Pryor Road was in a state of transition from a rural to an urban roadway. The proposed improvements met the standards for an interim road, which Pryor Road was north of M-150 Highway. That meant a 24-foot width with turn lanes and paved shoulders required by the Access Management Code. The paved shoulders did serve as a pedestrian route in the absence of sidewalks. If Pryor was improved from this interim condition it would be brought up to urban standards which included curbs, sidewalks and traffic signals. At this point, the City's progression of Pryor started at M-150 and moved north to Longview Road. The capital improvement program had funds to begin develop Pryor to urban standard from Hook Road to Longview. After that, improvements would extend south from M-150 based on demand. Mr. Trafton asked if this meant that the City intended to just let kids and families walk on the road's shoulders; and Mr. Park replied that staff was following the standards that the City Council had adopted. They permitted an interim road standard at this point. It was within the Council's purview to require a development to exceed that standard. He added that if sidewalks were put in at this point, they would have to be torn out at the time that Pryor Road was improved along that stretch. At present, many people walked, jogged and ride bicycles on the paved shoulders of Pryor north of M-150.

Mr. Trafton asked what the average prices for the development were. Mr. Walker answered that the prices were not set at this time. They did intend to have three different price points. Concerning the parking, he pointed out that the development included two-car garages as well as 25-foot building lines. The latter allowed for two cars parked in a driveway as well. The subdivision's layout did follow the pattern of transitioning from a higher density at one end where there was a major roadway down to a lower single-family density at the opposite end. Mr. Trafton asked what the estimated square footage of the fourplexes would be. Mr. Walker answered that the townhomes would be about 1,500 square feet, with two-story and 1.5-story plans; and the Twin Gallery units would range from 1,300 to 1,900 square feet. The single-family homes would range from 1,500 to 2,500 square feet. All these units would have full basements. He did not specify the square footage of the fourplexes.

Mr. Lovell asked how many bedrooms the townhomes would have, and Mr. Walker answered that they would be 2 or 3 bedrooms. These would be for sale and not for rent. The streets were 28 feet wide from curb to curb. Mr. Lovell remarked at in New Longview where he lived, detached garages were in the back but residents had no room to park extra cars behind the garages, resulting in a lot of cars parked on the streets. Concerning the townhomes, he asked if they might be maintenance-free for yards. Mr. Walker answered that there had been discussion of that but nothing was finalized.

Chairperson Norbury remarked that much of tonight's application was in response to concerns raised in the previous application. Mr. Walker responded that the project as a whole had been a more uniform project, without the multiple home choices that tonight's version had. Much of the feedback they'd received had to do with the uniformity of the product. The elevations they'd shown had been contemporary; whereas tonight's version showed a 'modern farmhouse' look, which was a little more traditional. Traffic had also been an issue with the initial application; and the traffic impact would be less with tonight's plan than if the whole project had been a single-family development. 'Too much of one thing' was one of the criticisms they'd heard, and they had now provided more of a variety of choices. This was a

very conventional development in terms of what was provided in Lee's Summit. They had received feedback from the Napa Valley neighbors that this plan was a major improvement.

Mr. Walker confirmed for Chairperson Norbury that these units would all be for sale and not rentals. Chairperson Norbury recalled from the previous application that price points were \$225,000 to \$275,000, and asked about the prices of the townhome and duplex units. Mr. Walker answered that the single-family homes would be somewhat over \$300,000. They did not have price points for the other housing. He noted that M-150 did not have a crosswalk.

Mr. Loveless left the meeting, at 6:16 p.m.

Mr. Ray returned to the podium and asked about people coming out of the subdivision making U turns off M-150 to go west. Mr. Park consulted the traffic study and replied that the current traffic count at peak hour was about 3 doing a U turn at M-150 and Pryor. The traffic engineer hired by the applicant projected an increase of 9 over a 60-minute period at the busiest time. That would maintain a satisfactory level of service. He did think a pedestrian crosswalk was a very good suggestion, adding that M-150 was under the jurisdiction of MoDOT, not the City. He was willing to report this suggestion to MoDOT.

Chairperson Norbury asked if there were further questions for the applicant or staff. Hearing none, he closed the public hearing at 6:17 p.m. and asked for discussion among the Commission members.

Mr. Lovell stated that in view of the changes in tonight's application, it looked like a very good project. It would accommodate upwardly mobile younger buyers who did not necessarily want to buy a large house; and Lee's Summit needed more product that would encourage them to remain in the community. He also liked developments that reflected thinking outside the box, and definitely supported this application.

Ms. Arth agreed with Mr. Lovell's commendation on the improvements, and said she had enjoyed the video. She also appreciated the applicant being aware of and responding to the parking issues, as well as the amenities and variety of housing options.

Mr. Trafton asked if there were covenants and restrictions covering the requirements for buying the townhomes, duplexes and fourplexes rather than renting or leasing. Chairperson Norbury stated that once these units were for sale, there was no guarantee that someone could not buy a unit and then rent it, subject to the City's rules regarding short-term renting.

Chairperson Norbury commended the applicant for making every effort to get a development done on this piece of land and responding to what the residents and the City Council had to say. However, he considered the prior project to be a better one, and the varying sizes of the homes and being able to have a single-family home in the price range now cited for townhomes was a far better idea for the community. The architecture now was rather standard-looking and unimpressive. The City Council had essentially cut off any capacity for the applicant to have any architectural variation or interest; and the city would be poorer for that. This was a precursor to the uniformity that Lee's Summit would end up with. He did think the applicant had done an admirable job of sticking to the original goal of offering housing product that someone of medium income could afford for new construction. He planned to recommend approval, though he would not if it was a rental project as that would not meet the goal he'd referenced. He hoped that there would be more vision from City officials in the future.

Hearing no further discussion, Chairperson Norbury called for a motion.

Ms. Dial made a motion to recommend approval of Application PL2019-307, Rezoning from AG and R-1 to RP-3 and Preliminary Development Plan: Osage, approximately 32 acres located at

the southwest corner of SW M-150 Hwy and SW Pryor Rd; Clayton Properties Group, Inc., applicant; subject to staff's letter of November 7, 2019, specifically Conditions of Approval 1 through 17. Ms. Arth seconded.

Chairperson Norbury asked if there was any discussion of the motion. Hearing none, he called for a vote.

Commissioner Loveless left the meeting at 6:14 P.M., before vote.

A motion was made by Board Member Dial, seconded by Board Member Arth, that this application be recommended for approval to the City Council - Regular Session, due back on 12/3/2019. The motion carried unanimously.

[2019-3137](#)

Public Hearing: Application #PL2019-359- Unified Development Ordinance (UDO) Amendment - Changes to Article 1 - General Provisions, Article 2 - Applications and Procedures and Article 8 - Site Design to create an administrative reasonable accommodation process and reference ADA design standards in the International Building Code; City of Lee's Summit, applicant.

Chairperson Norbury opened the hearing at 6:25 p.m. and asked those wishing to speak, or provide testimony, to stand and be sworn in.

Mr. Johnson entered Exhibit (A), list of exhibits 1-6 into the record. He stated that this amendment had two goals. One was create a reasonable accommodation process. It addressed situations such as someone needing something added to their home to accommodate a disability, such as a ramp, and that item had to be put in a setback. The City code currently required a variance that would be granted by the Board of Zoning Adjustments. The change would create a no-cost process where a staff board could approve it administratively. This board would consist of a member each of Development Services, the Fire Department and Public Works. A development review committee now met every week and could do that review so the process would be fairly quick.

The second part of the amendment would adopt standards from the building code for ADA standards for parking lot design. The City adopted new codes every 6 years and the International Building Code had been adopted by not only Lee's Summit but also most other jurisdictions in the metro area. All were now under the 2018 code.

The third revision was to require applicants to show accessible routes in final development plans, making it easier to evaluate parking areas for accommodation.

Chairperson Norbury asked if there was anyone present wishing to give testimony, either in support for or opposition to the application. As there were none, he opened the hearing Commissioners' questions.

Chairperson Norbury asked if there was nothing that would prevent the City from either augmenting or varying from the IBC if they so decided on a particular issue. Mr. Johnson responded that the IBC was the guide for designing parking lot facilities. There could be code modification requests but it had not been the City's policy to do that when it involved the ADA. Chairperson Norbury said he was referring to a situation where the City decided that the IBC was outdated after a new standard was adopted.

Chairperson Norbury asked if there were further questions for the applicant or staff. Hearing none, he closed the public hearing at 6:30 p.m. and asked for discussion among the Commission members, or for a motion.

Ms. Dial made a motion to recommend approval of Application PL2019-359, Unified Development Ordinance (UDO) Amendment: Changes to Article 1, General Provisions; Article

2, Applications and Procedures and Article 8, Site Design to create an administrative reasonable accommodation process and reference ADA design standards in the International Building Code; City of Lee's Summit, applicant. Mr. Sims seconded.

Chairperson Norbury asked if there was any discussion of the motion. Hearing none, he called for a vote.

A motion was made by Board Member Dial, seconded by Board Member Sims, that this application be recommended for approval to the City Council - Regular Session, due back on 12/3/2019. The motion carried unanimously.

Roundtable

Regarding the earlier question about water management as proposed for the Main Orchard project, Mr. Monter stated that staff had taken some time reviewing this with the applicant. It was not much different from rainwater draining off a parking lot into a rain garden area. There was an example on Douglas at the Nationwide business. The apartments next to the Sonic were another example. This was something that staff wanted to encourage, especially for infill projects. It could be an improvement over detention basins that might or might not be maintained.

Ms. Dial said she had been contacted by some members of the public who had a problem with a developer who gave testimony under oath that they were going to use or not use a particular product on their building. In reality it turned out that the product was one the developer had said they would not use. The Homes Association and the Alliance had said this was not enforceable by the City because specific wording had not been included in the development plan approved by the City Council. She wanted to make the Commission aware that this had happened, and hopefully they could find a way to ensure it would not happen again. Mr. Johnson replied that this concerned an email exchange between the Alliance and himself. During public testimony at the Kessler Ridge application, the president of Inspired Homes promised not to use a certain product and made a few other commitments. This was not added to the ordinance as a condition of approval, and the elevations they had provided did not call out any materials. There was nothing holding the project to a specific set of materials. It had to be locked into an ordinance and public testimony itself was not binding. This had been reflected in the Main Orchard application, where specific criteria about items such as front porches. Chairperson Norbury remarked that if a developer wanted to make a specific promise it could be made a condition of recommendation.

Adjournment

There being no further business, Chairperson Norbury adjourned the meeting at 6:33 P.M.

For your convenience, Planning Commission agendas, as well as videos of Planning Commission meetings, may be viewed on the City's Legislative Information Center website at "lsmo.legistar.com"



LEE'S SUMMIT
MISSOURI
Development Services Department

Development Services Staff Report

| | |
|---------------------------------|--|
| File Number | PL2019-307 |
| File Name | REZONING from AG and R-1 to RP-3 and PRELIMINARY DEVELOPMENT PLAN – Osage |
| Applicant | Clayton Properties Group, Inc. |
| Property Address | Southwest corner of SW M-150 Hwy and SW Pryor Rd |
| Planning Commission Date | November 14, 2019 |
| Heard by | Planning Commission and City Council |
| Analyst | C. Shannon McGuire, Planner |
| Checked By | Hector Soto, Jr., AICP, Planning Manager Kent Monter, PE, Development Engineering Manager |

Public Notification

Pre-application held: June 24, 2019
Neighborhood meeting conducted: October 14, 2019
Newspaper notification published on: October 26, 2019
Radius notices mailed to properties within 300 feet on: October 25, 2019
Site posted notice on: October 25, 2019

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Attachments

Transportation Impact Analysis prepared by Michael Park, dated November 7, 2019 – 4 pages
Osage Trip Generation Memo submitted by Olsson, dated September 12, 2019 – 7 pages
Traffic Study submitted by Olsson, dated October 17, 2018 – 27 pages

Stormwater Drainage Study by Olsson, dated October 11, 2019 – 11 pages

Preliminary Development Plan, date stamped October 15, 2019 – 17 pages

Location Map

1. Project Data and Facts

| Project Data | |
|---------------------------------------|---|
| Applicant | Clayton Properties Group, Inc. |
| Applicant's Representative | Vincent Walker/Owner Representative John Erpelding, PE/Engineer |
| Location of Property | Southwest corner of SW M-150 Hwy and SW Pryor Rd |
| Size of Property | 31.47 Acres |
| Zoning (Proposed) | RP-3 (Planned Residential Mixed Use District) |
| Zoning (Existing) | AG (Agricultural District) R-1 (Single-Family Residential District) |
| Density (Proposed) | 5.1 units/acre (including common area); 8.7 units/acre (excluding common area) – 10 units/acre max allowed in RP-3 |
| Comprehensive Plan Designation | Planned Mixed Use Residential Mixed-density Low-density Residential |
| Procedure | The Planning Commission makes a recommendation to the City Council on the proposed rezoning and preliminary development plan. The City Council takes final action on the rezoning and preliminary development plan. |
| Duration of Validity | Preliminary development plan approval by the City Council shall not be valid for a period longer than twenty-four (24) months from the date of such approval, unless within such period a final development plan application is submitted. The City Council may grant one extension not exceeding twelve (12) months upon written request. There is no expiration to an approval for rezoning. |

| Current Land Use |
|---|
| The 31.47 acre property is a mix of three (3) un-platted and two (2) platted parcels. The platted parcels are currently zoned R-1 (Single-Family Residential), one of which has an existing single-family home. The remaining three unplatted lots are undeveloped, with two being zoned R-1 (Single-Family Residential) and one zoned AG (Agricultural). |

| Description of Applicant's Request |
|---|
| The applicant proposes to rezone 31.47 acres located at the southwest corner of SW Pryor Rd and SW M-150 Hwy from AG (Agricultural) and R-1 (Single-Family Residential) to RP-3 (Planned Residential Mixed Use). The proposed subdivision will be a three-phase development composed of 32 single-family lots, 22 two-family structures, 21 four-family structures and 16 common area tracts. |

2. Land Use

Description and Character of Surrounding Area

The surrounding area is a mix of single-family and undeveloped vacant properties. The properties to the north are large lot single-family homes. The properties to the east and west are undeveloped vacant parcels. To the south are large lot single-family homes. The Napa Valley single-family subdivision is located southeast of the proposed project. Grand Summit View and Arborwalk single-family subdivisions are located to the northeast.

Adjacent Land Uses and Zoning

| | |
|---------------------------------|--|
| North(across M-150 Hwy): | AG (Agricultural) and R-1 (Single-Family Residential) — large lot single-family |
| South: | AG (Agricultural)—large lot single-family |
| East | CP-2 (Planned Community Commercial/Retail) and RP-3 (Planned Residential Mixed Use) —vacant ground |
| West: | AG (Agricultural) and R-1 (Single-Family Residential) —vacant ground |

Site Characteristics

The 31.47 acre property is currently a mix of three (3) unplatted and two (2) platted parcels. The platted parcels are currently zoned R-1 (Single-Family Residential), one of which has an existing single-family home. The remaining three unplatted lots are undeveloped with two being zoned R-1 (Single-Family Residential) and one zoned AG (Agricultural).

Special Considerations

N/A

3. Project Proposal

Parking

| Proposed | | Required | |
|--|----|-------------------------------------|----|
| Total parking spaces proposed (Subdivision swimming pool): | 13 | 1 space per 16 lots in subdivision: | 10 |

Setbacks

| Yard | Required | Proposed |
|---|---------------------|---------------------|
| Single-Family (Lots 26-41, 60-75) | | |
| Front | 25'/15' corner lots | 25'/15' corner lots |
| Side | 5' | 5' |
| Rear | 20' | 20' |
| Two-Family (Lots 16-25, 45, 49-59) | | |

| | | |
|--|---------------------|---------------------|
| Front | 25'/15' corner lots | 25'/15' corner lots |
| Side | 5' | 5' |
| Rear | 20' | 20' |
| Four-Family (Lots 1-15, 42-44, 46-48) | | |
| Front | 25'/15' corner lots | 25'/15' corner lots |
| Side | 10' | 10' |
| Rear | 30' | 30' |

Lot Dimensions

| | Single-Family (Lots 26-41, 60-75) | Two-Family (Lots 16-25, 45, 49-59) | Four-Family (Lots 1-15, 42-44, 46-48) |
|---------------|--|---|--|
| Minimum Depth | 120' | 118' | 120' |
| Minimum Width | 50' | 70' | 140' |
| Minimum Area | 6,000 Sq. Ft. | 8,260 Sq. Ft. | 16,800 Sq. Ft. |

4. Unified Development Ordinance (UDO)

| Section | Description |
|----------------------------|------------------------------|
| 2.240, 2.250, 2.260 | Rezoning |
| 2.260, 2.300, 2.310, 2.320 | Preliminary Development Plan |
| 4.120 | Zoning District Regulations |

5. Comprehensive Plan

| Focus Areas | Goals, Objectives & Policies |
|-------------------------|---|
| Overall Area Land Use | Objective 1.1 Objective 1.2 Objective 1.4 |
| Residential Development | Objective 3.2 Objective 3.3 |

6. Analysis**Background and History**

- November 11, 1975 – The City Council approved a rezoning (Appl. #1975-003) of approximately 87 acres generally located at the southwest corner of SW M-150 Hwy and SW Pryor Rd from AG to R-1 by Ordinance #1632. The south 20 acres of the proposed Osage residential development was included in this rezoning.
- June 1, 1993—The City Council approved a rezoning (Appl. #1993-017) of 10 acres located at the southwest corner of SW M-150 Hwy and SW Pryor Rd from AG (Agricultural) to R-1 (Single-Family Residential) for the proposed Salvaggio's Ranch final plat by Ordinance #3852. This property constitutes the northeast portion of the proposed Osage residential development.

- June 1, 1993—The City Council approved the final plat (Appl. #1993-235) of Salvaggio's Ranch, Lots 1-3 by Ordinance #3856.
- February 5, 2019 — Appl. #PL2018-184 – Rezoning from AG and R-1 to RP-3 and Preliminary Development Plan – Proposed Allera single-family development failed to attain the minimum required affirmative votes to be approved.

Analysis of Rezoning

The proposal is to rezone 31.47 acres from AG (Agricultural) and R-1 (Single-Family Residential) to RP-3 (Planned Residential Mixed Use). The proposed subdivision will be a three-phase development composed of 32 single-family lots, 22 two-family structures, 21 four-family structures and 16 common area tracts. All development of this site shall be tied an approved plan and any deviation will require a new preliminary development plan approval.

Comprehensive Plan

The 2005 Lee's Summit Comprehensive Plan Land Use Map identifies the area of the proposed project as a mix of Planned Mixed Use, Residential Mixed-density and Low-density Residential. The intersection of SW Pryor Rd and SW M-150 Hwy is identified as an Activity Center.

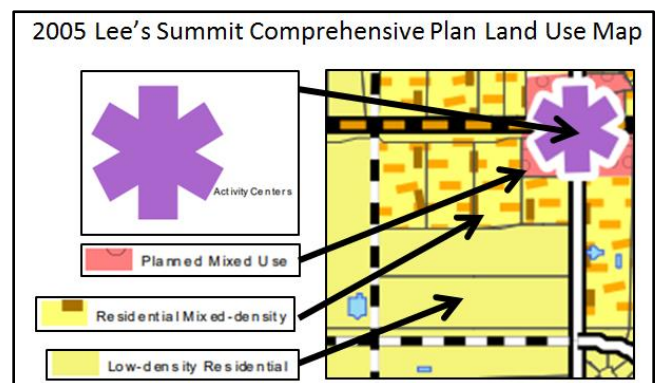
The M-150 Sustainable Corridor Vision and Framework Plan identifies an Activity Center as a Mixed-use center intended to promote compatibility with adjacent uses and to concentrate higher intensity uses such as retail, office, and multi-family residential in areas where they may be readily accessed and supported by existing and future neighborhoods.

The use is generally consistent with the Comprehensive Plan; is compatible with existing and planned surrounding land uses; and meets Comprehensive Plan objectives of providing a diverse housing type that meets an identified need in the market.

Compatibility

The property is located at the southwest corner of the intersection of M-150 Hwy and SW Pryor Rd. M-150 Hwy serves as gateway into Lee's Summit.

Single-family and multi-family residential are compatible uses for the area and proposed zoning. Relative to existing development in the general area, the northeast corner of M-150 Hwy and SW Pryor Rd is developed as a single-family residential subdivision. Further to the northeast sits the 310-acre Arborwalk development. Arborwalk is a mixed use development that includes single-family villa lots, standard single-family lots, duplexes, tri-plexes, four-plexes and apartments. Villa lots in Arborwalk are allowed a minimum lot size of 3,675 sq. ft.



Southeast of the subject property sits the 80-acre Napa Valley development. Napa Valley has a mix of single-family villa lots, standard single-family lots and estate single-family lots. Villa lots in Napa Valley are allowed a minimum lot size of 4,950 sq. ft. The proposed 6,000 sq. ft. minimum lot size for single-family in the proposed Osage development is 2,325 sq. ft. larger than the minimum in Arborwalk and 1,050 sq. ft. larger than the minimum in Napa Valley.

The proposed building materials and architecture are similar and compatible with existing residential subdivisions in the area and throughout the city. The proposed building exterior is composed of stone veneer, LP Smart lap/panel siding, LP shake shingle siding and composite shingle roofs.

Adverse Impacts

The proposed development will not detrimentally impact the surrounding area as the use is not expected to create excessive noise and air pollution. The proposed development will not create excessive storm water runoff. Stormwater will be managed on-site by the construction of a detention pond adjacent to the southeastern property line.

The development is designed and situated in such a way that the more intense multi-family use is adjacent to M-150 and the single-family use be situated adjacent to the surrounding residential homes. A 20' medium impact landscaping buffer will be installed along the west and south property lines to further provide screening to adjoin uses.

Public Services

The increase in traffic caused by the proposed development will be mitigated by road improvements as outlined below and in the Transportation Impact Analysis dated November 7, 2019, prepared by Michael Park, City Traffic Engineer.

1. Right-of-way shall be dedicated along the west side of Pryor Road adjacent to the proposed development, where necessary, to accommodate a minimum 100-foot right-of-way centered on the existing section for the Pryor Road corridor.
2. Pryor Road shall have an interim road section compliant with the Unimproved Road Policy that includes at least two 12-foot lanes with 6-foot paved shoulders from M-150 Highway to Napa Valley Drive. This improvement shall be substantially completed prior to the issuance of any residential building permits.
3. A 200-foot, plus taper, northbound left-turn lane along Pryor Road at Osage Drive shall be constructed. This improvement shall be substantially completed prior to the issuance of any residential building permits.
4. A 150-foot, plus taper, eastbound right-turn lane along M-150 Highway at Clayton Place shall be constructed. This improvement shall be substantially completed prior to the issuance of any residential building permits. This improvement may be modified at the discretion of MoDOT.

5. A 150-foot, plus taper, southbound right-turn lane along Pryor Road at Osage Drive shall be constructed. This improvement shall be substantially completed prior to the issuance of any residential building permits.
6. A 150-foot, plus taper, northbound left-turn lane along Pryor Road at M-150 Highway shall be constructed. This improvement shall be substantially completed prior to the issuance of any residential building permits.

Unified Development Ordinance

The requested RP-3 (Planned Residential Mixed Use District) provides for medium-density mixed residential uses at a maximum of ten units per gross acre. The RP-3 District allows for one-, two-, three- and four-family attached and detached dwelling units. Should the requested rezoning and preliminary development plan be granted, the proposed development would satisfy any requirements applicable to the zoning district pursuant to UDO.

Recommendation

With the conditions of approval below, the application meets the requirements of the UDO and/or Design and Construction Manual (DCM).

7. Recommended Conditions of Approval

Site Specific Conditions

1. Development shall comply with the recommendation of the Transportation Impact Analysis (TIA) dated November 7, 2019, prepared by Michael Park, City Traffic Engineer.

Standard Conditions of Approval

2. All required engineering plans and studies, including water lines, sanitary sewers, storm drainage, streets and erosion and sediment control shall be submitted along with the final plat and approved prior to the approval of the final plat. All public infrastructure must be substantially complete, prior to the issuance of any building permits
3. A Master Drainage Plan (MDP) shall be submitted and approved in accordance with the City's Design and Construction Manual for all areas of the development, including all surrounding impacted areas, along with the engineering plans for the development. The MDP shall address drainage level of service issues on an individual lot basis.
4. All Engineering Plan Review and Inspection Fees shall be paid prior to approval of the associated engineering plans and prior to the issuance of any infrastructure permits or the start of construction (excluding land disturbance permit).
5. All subdivision-related public improvements must have a Certificate of Final Acceptance prior to approval of the final plat, unless security is provided in the manner set forth in the City's Unified Development Ordinance (UDO). If security is provided, building permits may be issued upon

issuance of a Certificate of Substantial Completion of the public infrastructure as outlined in Section 1000 of the City's Design and Construction Manual.

6. The As-graded Master Drainage Plan shall be submitted to and accepted by the City prior to the issuance of a Certificate of Substantial Completion and prior to the issuance of any building permits for the development.
7. A Land Disturbance Permit shall be obtained from the City if ground breaking will take place prior to the issuance of an infrastructure permit, building permit, or prior to the approval of the engineering plans.
8. All permanent off-site easements, in a form acceptable to the City, shall be executed and recorded with the Jackson County Recorder of Deeds prior to the approval of any engineering plans. A certified copy shall be submitted to the City for verification.
9. A restriction note shall be included on the final plat stating: "Individual lot owner(s) shall not change or obstruct the drainage flow paths on the lots, as shown on the Master Drainage Plan, unless specific application is made and approved by the City Engineer."
10. Upon approval of the proposed rezoning, the applicant will become responsible to provide the appropriate level of right-of-way maintenance (mowing) during each growing season with the defined area abutting their property as defined and outlined in the City's Mowing Policy, approved by Council on November 3, 2005.
11. Any cut and / or fill operations, which cause public infrastructure to exceed the maximum / minimum depths of cover shall be mitigated by relocating the infrastructure vertically and / or horizontally to meet the specifications contained within the City's Design and Construction Manual.
12. All ADA sidewalk ramps shall be constructed by the developer at the time the street is constructed.
13. All sidewalks adjacent to a common area tract, unplatted land or any land where no structure is intended to be built, and is required, shall be constructed by the developer at the time the street is constructed.
14. All issues pertaining to life safety and property protection from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises, and to the safety to fire fighters and emergency responders during emergency operations, shall be in accordance with the 2018 International Fire Code.
15. IFC 503.2.5 - Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) in length shall be provided with an approved area for turning around fire apparatus.
16. Sign permits shall be obtained prior to installation of any signs through the Development Services Department. All signs proposed must comply with the sign requirements as outlined in the sign section of the Unified Development Ordinance.
17. A final plat shall be approved and recorded prior to any building permits being issued.



LEE'S SUMMIT MISSOURI

DEVELOPMENT REVIEW FORM TRANSPORTATION IMPACT

DATE: November 7, 2019 **CONDUCTED BY:** Michael K Park, PE, PTOE
SUBMITTAL DATE: October 15, 2019 **PHONE:** 816.969.1800
APPLICATION #: PL2019307 **EMAIL:** Michael.Park@cityofls.net
PROJECT NAME: OSAGE **PROJECT TYPE:** Prel Dev Plan (PDP)

SURROUNDING ENVIRONMENT (*Streets, Developments*)

The proposed residential subdivision is located at the southwest corner of M-150 Highway and Pryor Road. The surrounding area consists of single-family subdivision to the northeast and southeast with the remaining property near the site described as large lot or rural residential and agricultural property.

ALLOWABLE ACCESS

The proposed development will be primarily accessed from Pryor Road and M-150 Highway through a proposed network of new residential streets. The proposed street intersection with M-150 Highway, Clayton Place, will be limited to right-in/right-out traffic by an existing raised median along M-150 Highway. The proposed street intersection with Pryor Road, Osage Drive, will be full access. Individual lot access within the subdivision will be from the proposed residential streets, not from surrounding arterials and highway. The proposed residential streets will have two lanes and a 25 mph speed limit. The proposed street intersections will have adequate sight distance.

EXISTING STREET CHARACTERISTICS (*Lanes, Speed limits, Sight Distance, Medians*)

Pryor Road is a two lane undivided major arterial with a 45 mph speed limit currently constructed to interim road standards with turf shoulders south of M-150 Highway to County Line Road and paved shoulders north of M-150 Highway to Longview Road. Future improvements to Pryor Road north of M-150 Highway included in the Capital Improvement Program will provide for a four-lane urban road section with turn lanes, sidewalks, trails, lighting, etc. consistent with the typical section of Pryor Road north of Longview Road. Additional improvements to Pryor Road south of M-150 Highway to County Line Road are proposed in association with the approved Stoney Creek development. Those approved improvements will provide turn lanes at its street intersections with Pryor Road and paved shoulders the length of Pryor Road may be constructed at the City's option since at the time of development approval only grass shoulders were required by the Unimproved Road Policy. M-150 Highway is a four-lane median divided highway owned and maintained by MoDOT. The intersection of Pryor Road at M-150 Highway is traffic signal controlled. There are no existing sight distance concerns in the area of the proposed development.

ACCESS MANAGEMENT CODE COMPLIANCE?

Yes ☒

No ☐

All intersection spacing, turn lanes and other applicable criteria required by the Access Management Code and MoDOT Access Management Guide have been satisfied and/or will be

compliant as shown on the development plan and/or considering stipulated conditions of approval.

TRIP GENERATION

| Time Period | Total | In | Out |
|----------------|-------|-----|-----|
| Weekday | 1,432 | 716 | 716 |
| A.M. Peak Hour | 102 | 25 | 77 |
| P.M. Peak Hour | 129 | 82 | 47 |

TRANSPORTATION IMPACT STUDY REQUIRED?

YES ☒

No ☐

The proposed development requires a traffic impact study in compliance with the Access Management Code because the traffic impact to the surrounding street system likely exceeds 100 trips during the peak hour. A traffic impact study was prepared by Olsson, dated October 17, 2018, for the Allera residential development of similar scope, layout and land use at the same location. The proposed development is less dense than the previously studied Allera project. A memorandum dated September 12, 2019, prepared by Olsson, compares the proposed development to the Allera development for purposes of validating the prior traffic study as a conservative assessment and its continued applicability of conclusions and recommendations to the proposed development plan. The following information is in reference to the 2018 traffic study and generally summarizes the expected traffic impact of the proposed development.

The traffic impact study provides an assessment of existing conditions and developed conditions during the morning and evening peak hours of adjacent street traffic. The study analyzed traffic operations at the intersection of M-150 Highway and Pryor Road, as well as proposed intersections along M-150 Highway and Pryor Road. Since M-150 Highway is a state owned facility, MoDOT also reviewed the traffic impact study and applied state standards regarding access management and operations to its recommendations for approval in association with the development.

The traffic impact study indicates adequate traffic operations currently exist at the study intersection(s). An existing level of service (LOS) D is reported at the intersection of Pryor Road and M-150 Highway during the morning peak hour and LOS C during the evening peak hour. Level of Service is an industry accepted standard of measure for traffic operational performance that is represented with a grade range from A-F, A the best and F the worst. The City of Lee's Summit has an established LOS Policy to evaluate adequate traffic conditions. The City has a LOS C goal for traffic signal controlled intersections and LOS D for stop controlled movements. However, the subject intersection is under MoDOT control. MoDOT has a lower level of service acceptance than the City, at LOS D or LOS E.

The traffic impact study concludes adequate traffic operations will be maintained at the study intersections in consideration of the proposed development. Several traffic improvements in association with the proposed development were reviewed in the study to mitigate operational impacts, maintain acceptable levels of service and/or comply with access management criteria established by each jurisdiction that governs intersection spacing, turn lane requirements, etc. along public roadways for traffic operations and public safety. The traffic study recommendations are summarized below:

- Construct an eastbound right-turn lane with storage length of 150 feet plus taper at the proposed access along M-150 Highway.
- Construct a northbound left-turn lane with storage length of 150 feet plus taper at the intersection of Pryor Road and M-150 Highway.

The projected conditions with development and roadway improvements noted above have a reported LOS the same as existing conditions. Though an increase in delay and vehicle queuing is reported, the overall LOS did not change. The traffic study did not consider trip generation from approved, unbuilt, development in the surrounding area that directly accesses Pryor Road.

Staff and MoDOT concur with the analysis and study findings, except that all access management and unimproved road policy requirements should be reasonably satisfied as noted below. The study assumed a minor arterial classification for Pryor Road south of M-150 Highway based on existing roadway conditions and traffic volume rather than the established major arterial classification assigned in the Thoroughfare Master Plan. The major arterial classification considers long-term function, planned community growth, increased volume, rights-of-ways, adjacent land use, traffic speed, and other factors. Similar developments along Pryor Road north and south of M-150 have been evaluated consistently in consideration of the major arterial classification as well. The difference in applied classification changes the access management criteria. A major arterial road has lower thresholds for certain turn lane requirements than a minor arterial. In this case, turn lanes at the proposed intersection along Pryor Road are warranted and certain turn lane capacities are greater than would be determined if Pryor Road were a lower roadway class. The turn lanes and road improvements recommended by staff to support this development are listed in the staff recommendations for approval.

The traffic study further addresses access spacing, vehicle queuing, turn lane requirements and capacities at each study intersection. The study notes limited capacity of existing turn lanes at the intersection of M-150 Highway and Pryor Road. The northbound and southbound right-turn lanes and left-turn lanes each have a storage capacity less than 50 feet and do not meet the MoDOT or City minimum recommended lengths of 200 feet and 250 feet, respectively. These are existing conditions at an off-site study intersection in which queuing analysis was done to determine any recommended improvement needs. No improvements to the southbound turn lanes were recommended in the study and the City has a planned capital project that may incorporate turn lanes of more appropriate length to address this issue in the near future. Improvements to the northbound turn lanes are recommended in the study to accommodate projected vehicle queues, but the recommended turn lane length does not meet the minimum length described by code. Since the roadway is constructed to an interim standard and vehicle queues within the turn lane and adjacent thru lane do not exceed 150 feet during a peak hour, the proposed length of 150 feet is acceptable to MoDOT at this off-site MoDOT intersection. A westbound right-turn lane is warranted based on MoDOT requirements, but not recommended in the study or by MoDOT at this time given adequate operations and consideration of impact (or lack thereof) by trips generated by the proposed development. A northbound right-turn lane would likely be constructed in association with continued development along the Pryor Road corridor, especially the east side of Pryor Road, or a future capital improvement project. Staff and MoDOT support these conclusions. No other traffic improvements are recommended in the study and all other criteria in the Access Management Code have been met.

The project would provide improvement to Pryor Road in compliance with the Unimproved Road Policy, including paved shoulders. The project would also convey rights-of-way to the City along

Pryor Road for the necessary width of Pryor Road in consideration of long-term planning identified in the Thoroughfare Master Plan.

LIVABLE STREETS (Resolution 10-17)

COMPLIANT ☒

EXCEPTIONS ☐

The proposed development includes all Livable Streets elements identified in the City's adopted Comprehensive Plan, associated Greenway Master Plan and Bicycle Transportation Plan attachments, and elements otherwise required by ordinances and standards, including but not limited to sidewalk, paved shoulders, street connectivity and accessibility. The project will provide for street connections to adjacent property and facilitates a surrounding network of planned residential collectors generally depicted in the Thoroughfare Master Plan. No exceptions to the Livable Streets Policy adopted by Resolution 10-17 have been proposed.

RECOMMENDATION:

APPROVAL ☒

DENIAL ☐

N/A ☐

STIPULATIONS ☒

Recommendations for Approval refer only to the transportation impact and do not constitute an endorsement from City Staff.

Staff recommends approval of the proposed development subject to the following stipulations:

1. Right-of-way shall be dedicated along the west side of Pryor Road adjacent to the proposed development, where necessary, to accommodate a minimum 100-foot right-of-way centered on the existing section for the Pryor Road corridor.
2. Pryor Road shall have an interim road section compliant with the Unimproved Road Policy that includes at least two 12-foot lanes with 6-foot paved shoulders from M-150 Highway to Napa Valley Drive. This improvement shall be substantially completed prior to the issuance of any residential building permits.
3. A 200-foot, plus taper, northbound left-turn lane along Pryor Road at Osage Drive shall be constructed. This improvement shall be substantially completed prior to the issuance of any residential building permits.
4. A 150-foot, plus taper, eastbound right-turn lane along M-150 Highway at Clayton Place shall be constructed. This improvement shall be substantially completed prior to the issuance of any residential building permits. This improvement may be modified at the discretion of MoDOT.
5. A 150-foot, plus taper, southbound right-turn lane along Pryor Road at Clayton Drive shall be constructed. This improvement shall be substantially completed prior to the issuance of any residential building permits.
6. A 150-foot, plus taper, northbound left-turn lane along Pryor Road at M-150 Highway shall be constructed. This improvement shall be substantially completed prior to the issuance of any residential building permits.

MEMO



olsson

| | |
|---|---------------|
| | Overnight |
| | Regular Mail |
| | Hand Delivery |
| x | Other: E-mail |

| | |
|------------|--|
| TO: | Vincent Walker, Summit Homes |
| FROM: | Tom Fulton, Technical Leader Shannon Jeffries, PE, PTOE |
| RE: | Summit Homes Osage Residential Development |
| DATE: | September 12, 2019 |
| PROJECT #: | 019-2339 |

This memorandum provides a comparison of trip generation for the Summit Homes Osage residential development to a prior development plan located on the same site. The Osage development site is located in the southwest corner of Missouri Highway 150 (M-150) and Pryor Road. The land uses associated with the proposed development (site plan dated August 14, 2019) are a combination of single family, duplex, and four-unit townhome residential units. The site plan is provided in the **Appendix**.

A previous traffic study was conducted, and approved, for a residential development planned for the subject property. This memorandum references the approved traffic impact study for comparison purposes. The previous land use considered 160 single family residential units. This memorandum compares the number of trips expected to be generated by the proposed Osage development to trips generated under the prior development plan. Trip generation referenced from the approved traffic impact study is provided in the **Appendix**.

Trip Generation

Trip generation was conducted for the proposed Osage development land uses. Trip generation for the proposed plan was conducted using the ITE *Trip Generation Manual* (10th Edition). The land uses that most resemble the proposed uses are *Single-Family Detached Housing (LU 210)* and *Multi-Family Housing (Low Rise) (LU 220)*.

Table 1 illustrates the land use comparison between the prior development plan and proposed development. The prior development plan use is for 160 Single-Family Detached Housing units. The proposed site plan is for 21 Four-Unit Townhome Lots (84 units), 22 Twin Gallery Lots (duplexes, 44 units), and 32 Simplicity Lots (single family residential). The 84 townhome units were classified under multi-family housing (low-rise). The 32 single-family residential units were classified under single-family detached housing. In reviewing the ITE *Trip Generation Manual*, a specific land use is not provided for duplexes, which represent two-unit attached housing. Multi-family housing (LU 220) typically refers to housing developments with more than three units. In reviewing trip generation, the single-family detached housing land use is more



conservative in the number of trips generated when compared to the multi-family land use. Thus, the 44 duplex units have been classified as Single-Family Detached Housing for the purposes of this trip generation comparison.

Table 1: Land Use Comparison

| Land Use | Prior Development Plan | Proposed Site Plan |
|---------------------------------|------------------------|--------------------|
| Single-Family Detached Housing | 160 Units | 76 Units |
| Multi-Family Housing (Low Rise) | - | 84 units |

Table 2 illustrates the prior development plan and proposed land use trip generation for daily, AM, and PM peak hour periods and compares the difference for each.

Table 2: Daily and Peak Hour Trip Generation Comparison (All Trips)

| Daily Comparison | | | | AM Peak Hour Comparison | | | | PM Peak Hour Comparison | | | |
|--------------------|-------------|-------------|-------------|-------------------------|-----------|------------|------------|-------------------------|------------|------------|------------|
| Prior Site Plan | | | | Prior Site Plan | | | | Prior Site Plan | | | |
| | Enter | Exit | Total | | Enter | Exit | Total | | Enter | Exit | Total |
| Total | 802 | 801 | 1,603 | Total | 30 | 89 | 119 | Total | 101 | 59 | 160 |
| Proposed Site Plan | | | | Proposed Site Plan | | | | Proposed Site Plan | | | |
| | Enter | Exit | Total | | Enter | Exit | Total | | Enter | Exit | Total |
| Total | 702 | 701 | 1,403 | Total | 25 | 75 | 100 | Total | 83 | 47 | 130 |
| Difference | | | | Difference | | | | Difference | | | |
| Total | -100 | -100 | -200 | Total | -5 | -14 | -19 | Total | -18 | -12 | -30 |

Referencing **Table 2**, the proposed land use is expected to generate approximately 200 less trips during a typical weekday, 19 less AM peak hour trips, and 30 less PM peak hour trips when compared to the prior development plan land use. Detailed trip generation calculations are provided in the **Appendix**.

Trip Distribution

The trip distribution for the proposed land use is expected to be the same as the previously approved traffic impact study due to the similar residential uses. Due to the reduction in trip generation due to the change in proposed land use, it would be expected that trips to and from the development at the proposed access points would decrease. This may result in a slight improvement of expected operations at proposed access points when compared to the approved study. Trip distribution percentages from the previous study are provided in the **Appendix** for reference.



Proposed Access

The Osage development proposed access points are similar to those presented in the approved traffic study. Throat distance of the access approaches are similar to the approved study. With the previous development, single family residential properties were expected to have a direct connection to the access approach to M-150. In reviewing the proposed site plan, access to the four-unit townhomes will be provided along roadways internal to the site and the throat of the approach to M-150 will not have direct residential access.

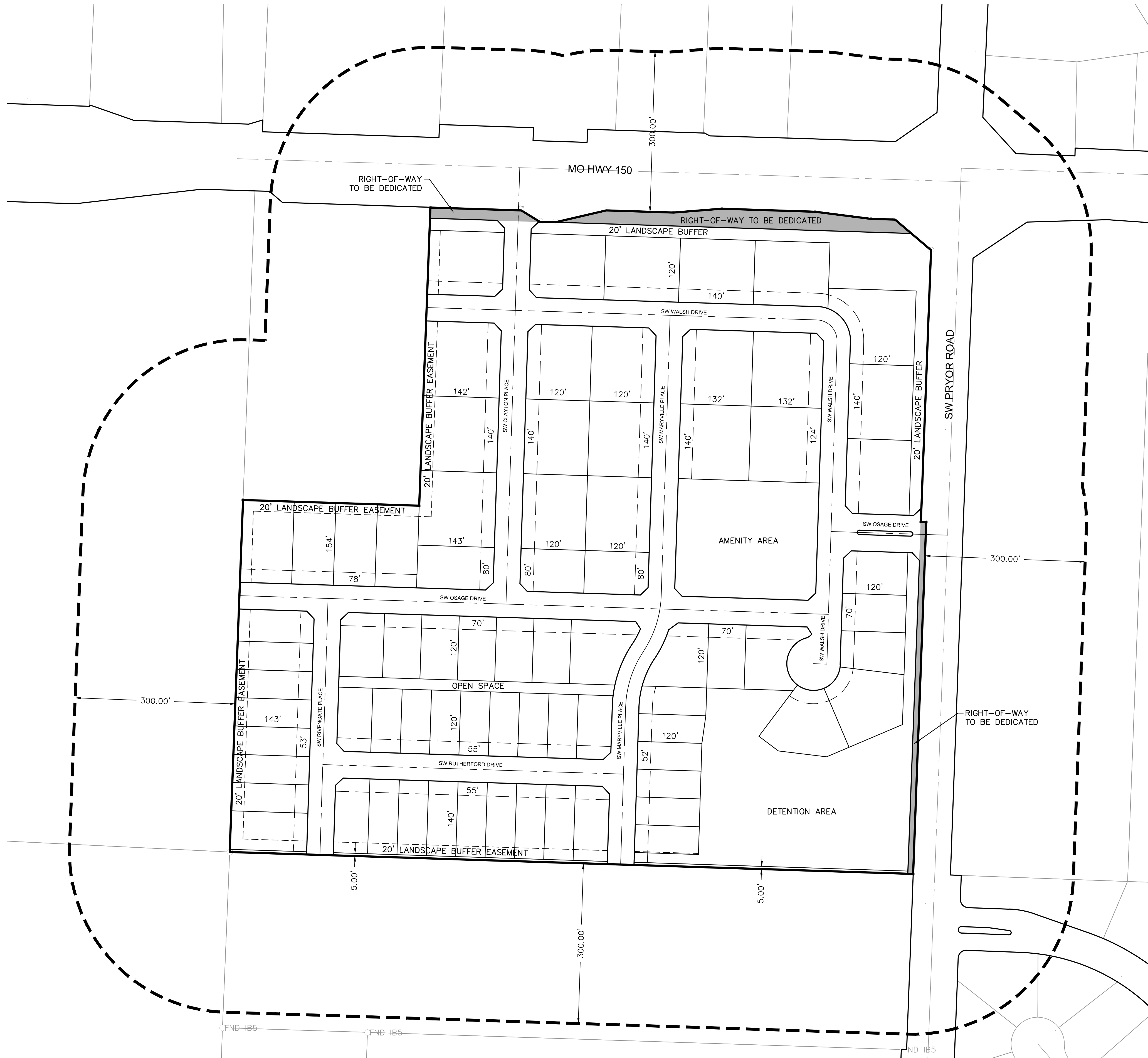
Summary

The proposed residential development is expected to generate fewer trips when compared to the prior single-family development plan. The proposed development is expected to have similar or improved traffic operations when compared to the previous site. Access connections to M-150 and Pryor Road are similar to the prior development plan.

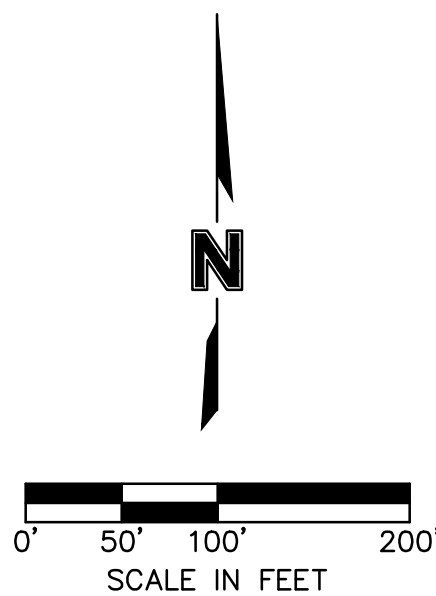
Recommendations regarding public roadway improvements presented in the approved traffic study, plus additional improvements requested by City staff, are expected to be completed with the proposed development plan.

We hope that we have provided adequate information for your request. If you have additional questions, please contact us at 913.381.1170.

APPENDIX



- NOTES:
- 21 4-UNIT TOWNHOME LOTS (84 UNITS)
- 140' WIDTH x 120' DEPTH MIN.
 - 25' FRONT SETBACK
 - 30' REAR SETBACK
 - 10' SIDE SETBACK
- 22 TWIN GALLERY LOTS (44 UNITS)
- 70' WIDTH x 120' DEPTH MIN.
 - 25' FRONT SETBACK
 - 20' REAR SETBACK
 - 7' SIDE SETBACK
- 32 SIMPLICITY LOTS
- 52' WIDTH x 120' DEPTH MIN.
 - 25' FRONT SETBACK
 - 20' REAR SETBACK
 - 6' SIDE SETBACK



| | | | |
|----------------------------|--|-----------|--|
| CONCEPT PLAN | | BY | |
| OSAGE | | | |
| MO HWY 150 & SW PRYOR ROAD | | | |
| LEE'S SUMMIT, MO | | 2019 | |
| drawn by: _____ C.J.H. | | REVISIONS | |
| checked by: _____ J.F.E. | | | |
| designed by: _____ C.J.H. | | | |
| QA/QC by: _____ | | | |
| project no.: 018-2503 | | | |
| date: 2019.08.14 | | | |
| SHEET | | | |
| 1 OF 1 | | | |

Olsson - Civil Engineering
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North Kansas City, MO 64116
TEL 816.361.1177
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4.1. Proposed Development Trip Generation and Distribution

To determine the impact of potential site traffic on the roadway network, expected trips associated with the proposed site were generated and applied to the study network. The Institute of Transportation Engineers (ITE) provides methods for estimating traffic volumes of common land uses in the Trip Generation Manual (10th Edition). The land use that most resembles that which is planned for this site is Land Use Code 210 (Single-Family Detached Housing).

Based on the ITE Trip Generation Manual, trip generation characteristics were developed for the proposed site. Trip generation characteristics expected for the site are shown in **Table 4**. Detailed ITE trip generation information can be found in **Appendix C**.

Table 4. Proposed Development Trip Generation

| Land Use | Size | Average Weekday | AM Peak Hour | | | PM Peak Hour | | |
|--------------------------------|--------|-----------------|--------------|-------|------|--------------|-------|------|
| | | | Total | Enter | Exit | Total | Enter | Exit |
| Single-Family Detached Housing | 160 DU | 1,603 | 119 | 30 | 89 | 160 | 101 | 59 |

Trips were distributed based on the anticipated land use, discussions with City staff, as well as a review of existing traffic behavior within the study area. **Table 5** illustrates general trip distribution for the site.

Table 5. Proposed Development Trip Distribution

| Route | Percent Distribution |
|---------------------|----------------------|
| Pryor Road (north) | 15% |
| Pryor Road (south) | 5% |
| MO Route 150 (west) | 50% |
| MO Route 150 (east) | 30% |

The trip distribution for the proposed development is shown in **Figure 6**. Existing plus development volumes are illustrated in **Figure 7**.

Trip Generation

Daily Trip Generation

| ITE Code/Page | Land Use | Size | Unit | Trip Gen. Avg. Rate/Eq. | Daily Trips | Trip Distribution | | Daily Trips | |
|------------------|---------------------------------|------|----------------|----------------------------|----------------|-------------------|------|-------------|------|
| | | | | | | Enter | Exit | Enter | Exit |
| 210 | Single-Family Detached Housing | 76 | Dwelling Units | Equation | 808 | 50% | 50% | 404 | 404 |
| 220 | Multi-family Housing (Low Rise) | 84 | Dwelling Units | Equation | 595 | 50% | 50% | 298 | 297 |
| Total | | 160 | | | 1,403 | | | 702 | 701 |

AM Peak Hour Trip Generation

| ITE Code/Page | Land Use | Size | Unit | Trip Gen. Avg. Rate/Eq. | AM Trips | Trip Distribution | | AM Trips | |
|------------------|---------------------------------|------|----------------|----------------------------|-------------|-------------------|------|----------|------|
| | | | | | | Enter | Exit | Enter | Exit |
| 210 | Single-Family Detached Housing | 76 | Dwelling Units | Equation | 59 | 25% | 75% | 15 | 44 |
| 220 | Multi-family Housing (Low Rise) | 84 | Dwelling Units | Equation | 41 | 23% | 77% | 10 | 31 |
| Total | | 160 | | | 100 | | | 25 | 75 |

PM Peak Hour Trip Generation

| ITE Code/Page | Land Use | Size | Unit | Trip Gen. Avg. Rate/Eq. | PM Trips | Trip Distribution | | PM Trips | |
|------------------|---------------------------------|------|----------------|----------------------------|-------------|-------------------|------|----------|------|
| | | | | | | Enter | Exit | Enter | Exit |
| 210 | Single-Family Detached Housing | 76 | Dwelling Units | Equation | 79 | 63% | 37% | 50 | 29 |
| 220 | Multi-family Housing (Low Rise) | 84 | Dwelling Units | Equation | 51 | 63% | 37% | 33 | 18 |
| Total | | 160 | | | 130 | | | 83 | 47 |

| | Approved Site Plan | Proposed Site Plan | Difference |
|--------------------------|--------------------|--------------------|------------|
| Daily Total Trips | 1,603 | 1,403 | -200 |
| AM Peak Hour Total Trips | 119 | 100 | -19 |
| PM Peak Hour Total Trips | 160 | 130 | -30 |

ALLERA RESIDENTIAL DEVELOPMENT

MO ROUTE 150 AND PRYOR ROAD LEE'S SUMMIT, MO

Prepared for:

Summit Homes

Lee's Summit, Missouri



October 2018

Olsson Project No. 018-2503



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APPENDICES

Appendix A: Data Collection

Appendix B: Existing Conditions Analysis

Appendix C: Existing Plus Development Conditions Analysis

1. INTRODUCTION AND OBJECTIVE

This report studies traffic impacts associated with a proposed residential development located in the southwest quadrant of the intersection of Missouri Route 150 (MO Route 150) and Pryor Road in Lee's Summit, Missouri. The objective of this study is to evaluate operations at study intersections for the scenarios detailed below. The report will review roadway conditions and consider potential impacts of the proposed development regarding turn lanes, storage bays, and intersection control methods. Study intersections include:

- MO Route 150 and Pryor Road
- Proposed Site Drives

The two scenarios that were analyzed as a part of this study are as follows:

- Existing Conditions
- Existing Plus Development Conditions

The approximate location of the proposed development is shown on the vicinity map in **Figure 1**.

City of Lee's Summit and Missouri Department of Transportation (MoDOT) staff provided guidance on study intersections and analysis periods to review. City staff indicated that there are no approved projects near the project area to consider in this traffic study.

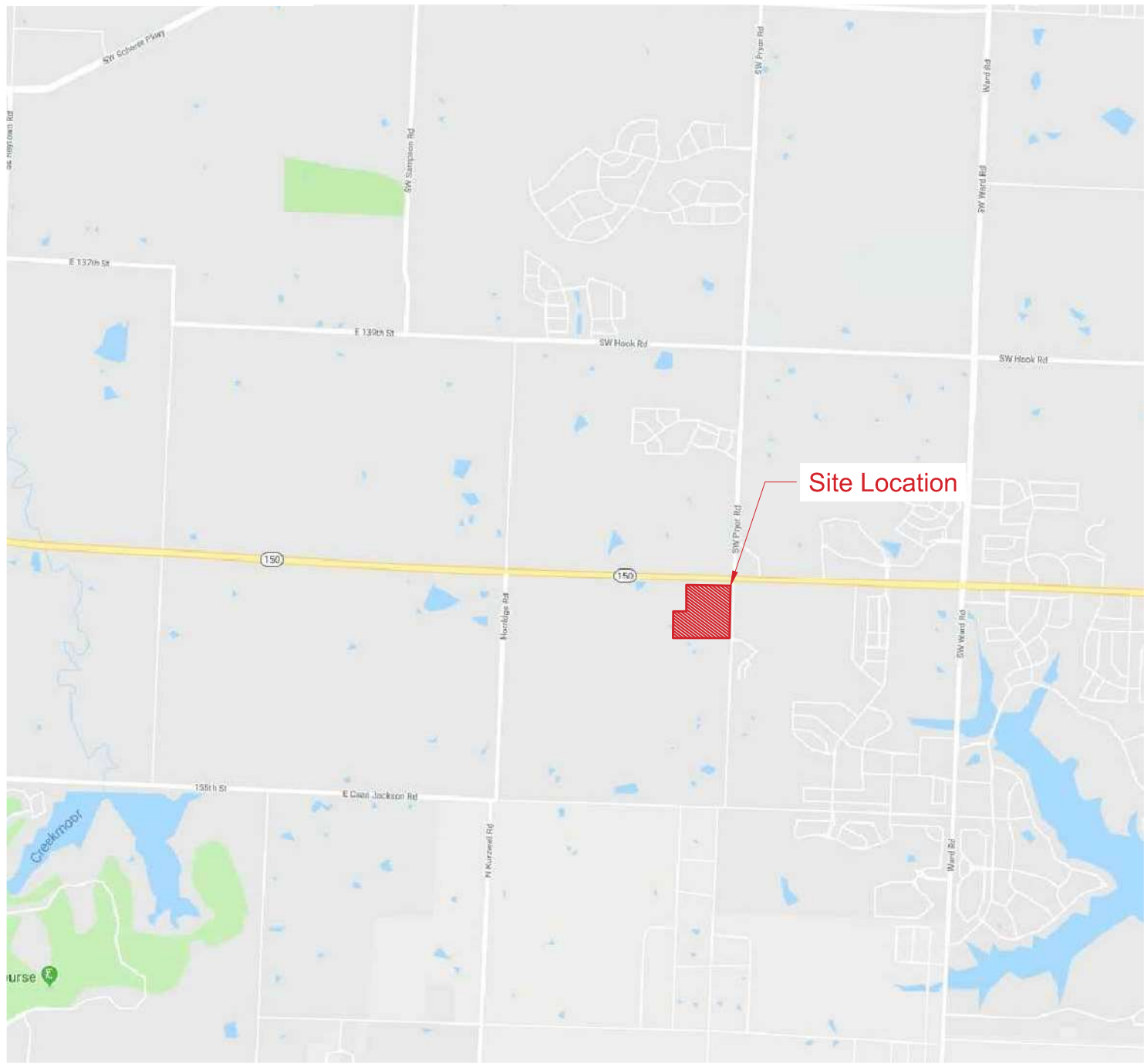
FIGURE 1

Vicinity Map

Allera Residential Development
Lee's Summit, MO



olsson



LEGEND

Site

Source: Google Maps

2. DATA COLLECTION

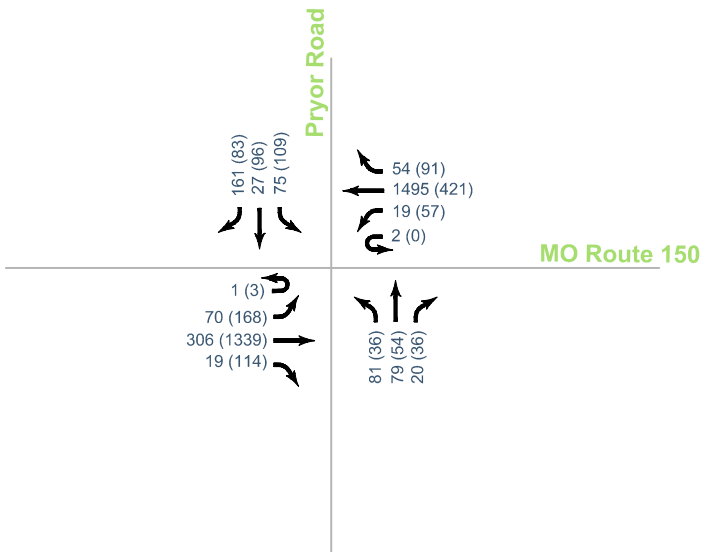
The data collection effort included acquiring AM and PM peak hour turning movement counts and documentation of current roadway geometrics. Intersection turning movement counts were conducted during the AM and PM peak hour periods on Thursday, August 16th, 2018 at the intersection of MO Route 150 and Pryor Road.

Based on the data collected, the peak hour periods for the study area were determined to be 7:00-8:00 AM and 5:00-6:00 PM. The existing peak hour volumes at the study intersections are illustrated in **Figure 2**. Count data collected for this study can be found in **Appendix A**.

Existing signal timing information for the signalized intersection of MO Route 150 and Pryor Road was provided by MoDOT.

FIGURE 2

Existing Conditions
Peak Hour Volumes
Allera Residential Development
Lee's Summit, MO



LEGEND

AM (PM) Peak Hour Volume



3. EXISTING CONDITIONS

To provide a baseline for comparative purposes for the proposed development scenario, existing traffic operations were reviewed for the study intersections. This analysis considers existing conditions and does not include the consideration of any proposed development.

3.1. Network Characteristics

Two roadways within the study area were considered during analysis: MO Route 150 and Pryor Road. Current network characteristics are summarized in **Table 1** below. MO Route 150 is a roadway maintained by MoDOT. The functional classification for MO Route 150 was acquired from the MoDOT Functional Classification System Map. Pryor Road is a roadway maintained by the City of Lee's Summit. The functional classification for Pryor Road was acquired from the City of Lee's Summit, Missouri Existing Functional Classification Map. The intersection of MO Route 150 and Pryor Road is signalized and is maintained by MoDOT.

Table 1. Existing Network Summary

| Roadway | Functional Classification | Section | Median Type | Posted Speed |
|--------------|---------------------------|---------|-------------|--|
| MO Route 150 | Other Principal Arterial | 4-Lane | Raised | 45 mph |
| Pryor Road | Major Arterial | 2-Lane | n/a | 45 mph north of MO Route 150; 35 mph south of MO Route 150 |

3.2. Existing Warrant Analysis

Existing Turn Lane Warrants: MoDOT's Access Management Guidelines, located in MoDOT Engineering Policy Guide (EPG) Section 940.9, were used to determine whether additional auxiliary turn lanes are currently warranted along MO Route 150 at the intersection with Pryor Road. Following the procedures outlined in the EPG, it was determined that the westbound right-turn movement at the intersection of MO Route 150 and Pryor Road warrants a right-turn lane based on existing AM and PM peak hour volumes. Capacity analysis will be reviewed to determine if a right-turn lane is necessary for this movement based on existing operations.

City of Lee's Summit Access Management Code guidelines were reviewed for turn lanes along Pryor Road at the intersection with MO Route 150. Northbound and southbound left-turn lanes are provided, meeting AMC guidelines; however, the turn bay lengths do not meet the recommended minimum turn bay length for an arterial intersecting an arterial.

Based on the AMC, a right-turn lane is required on major arterial streets with a right-turn movement of 30 vehicles in any hour. The southbound right-turn volume exceeds 30 vehicles during the AM and PM peak hour periods. A southbound right-turn lane is provided, although the length of the turn bay does not meet the recommended minimum length of 250 feet plus taper for an arterial intersecting another arterial.

Pryor Road south of MO Route 150 is a two-lane section and services a lower volume of vehicles. Based on review of the City of Lee's Summit Thoroughfare Master Plan, future capacity improvements are not planned. Based on the current and expected operations of Pryor Road south of MO Route 150, right-turn guidelines were reviewed considering Pryor Road as a minor arterial roadway. Based on the AMC, a right-turn lane is required on minor arterial streets with a right-turn volume of at least 60 vehicles in any hour. The northbound right-turn volume does not meet this criteria during the AM or PM peak hour periods. It should be noted that a northbound right-turn lane is currently provided, with a turn bay length of approximately 45 feet.

Existing conditions lane configurations and traffic control for the study network are illustrated in **Figure 3**. Turn lane warrant analysis sheets can be found in **Appendix B**.

3.3. Existing Capacity Analysis

Capacity analysis was performed for the study intersections utilizing the existing lane configurations and traffic control. Analysis was conducted using Synchro, Version 10, based on the Highway Capacity Manual (HCM) delay methodologies. In order to utilize the latest methodology, HCM 6th Edition, U-turn movements at the signalized intersection were coded as left-turn movements during analysis. Due to the low volume of U-turn movements at the study intersection, considering U-turn movements as a left-turn movement is expected to have minimal impact on results of capacity analysis. For simplicity, the amount of control delay is equated to a grade or Level of Service (LOS) based on thresholds of driver acceptance. The amount of delay is assigned a letter grade A through F, LOS A representing little or no delay and LOS F representing very high delay. **Table 2** shows the delays associated with each LOS grade for signalized and unsignalized intersections, respectively.

Table 2. Intersection LOS Criteria

| Level-of-Service | Average Control Delay (seconds) | |
|---|---------------------------------|--------------|
| | Signalized | Unsignalized |
| A | < 10 | < 10 |
| B | > 10-20 | > 10-15 |
| C | > 20-35 | > 15-25 |
| D | > 35-55 | > 25-35 |
| E | > 55-80 | > 35-50 |
| F | > 80 | > 50 |
| Highway Capacity Manual (HCM 6th Edition) | | |

The signalized study intersection of MO Route 150 and Pryor Road is operating at an overall LOS D and LOS C during both the AM and PM peak hour periods, respectively. All individual movements at the intersection are operating at a LOS D or better during the AM and PM peak hour periods except for the southbound right-turn movement, which operates at a LOS E during the AM peak hour.

A long 95th-percentile queue length was noted for westbound through traffic during the AM peak hour period and eastbound through traffic during the PM peak hour period. The 95th-percentile queue represents the queue length that has a 5 percent probability of being exceeded during the peak hour. A review of existing operations indicates that while longer queue lengths do occur during the AM and PM peak hour periods (directionally), the queues typically clear within one signal cycle length.

The existing capacity analysis summary is illustrated in **Figure 4**. Detailed results may be found in **Appendix B**.

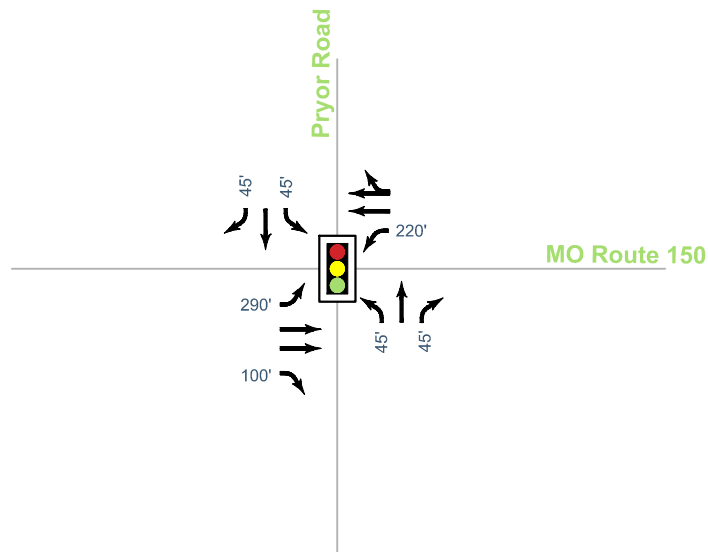
Existing operations were also reviewed to determine if a westbound right-turn lane, based on direction provided in the MoDOT EPG, should be provided at the intersection of MO Route 150 and Pryor Road. Level of service as well as 95th-percentile queue length were considered. While a westbound right-turn lane may improve operations and reduce delay for westbound right-turning traffic and westbound through traffic, construction of a westbound right-turn lane would impact an existing residential property in the northeast quadrant of the intersection. The addition of a westbound right-turn lane would also require relocation of an existing multi-use trail. To avoid impacting the existing properties driveway, only a short westbound right-turn lane could be provided. Considering the acceptable operations of the westbound movement and the

potential impact to existing residential property, it is not recommended to install a westbound right-turn lane at the intersection of MO Route 150 and Pryor Road at this time.

Existing operations were reviewed for the existing northbound and southbound left and right-turn movements. All movements are provided a dedicated turn bay; however, the turn bay lengths do not meet minimum guidelines set forth in the AMC. Reviewing existing operations, the northbound left-turn and southbound left-turn movements are exceeding available storage length for the respective turn movement. Additionally, the northbound and southbound through queues are extending beyond the provided turn bay during both the AM and PM peak hour periods.

FIGURE 3

Existing Conditions
Lane Configuration and Traffic Control
Allera Residential Development
Lee's Summit, MO



LEGEND

xx' → Lane Configuration & Storage Length



Signalized Intersection

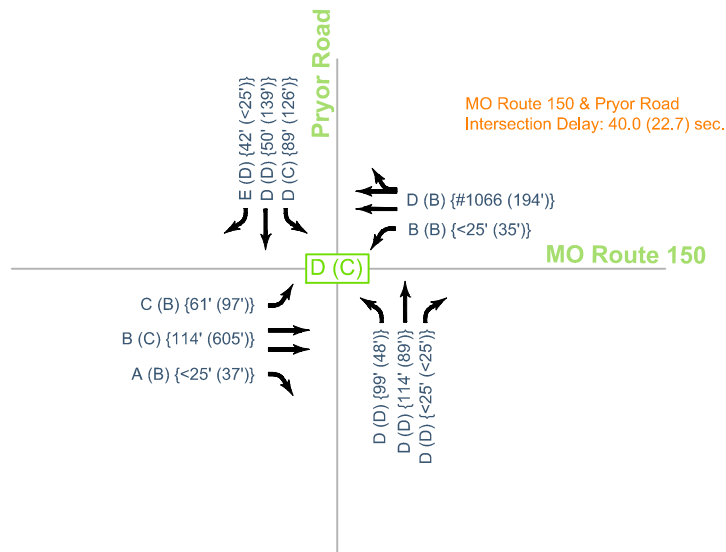


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FIGURE 4

Existing Conditions Capacity Analysis

Allera Residential Development
Lee's Summit, MO



LEGEND

AM (PM) {AM (PM)} Movement LOS & {95th Percentile Queue}

AM (PM) Signalized Intersection LOS

→ Lane Geometry

95th Percentile Queue Exceeds Capacity



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4. SITE CHARACTERISTICS

The proposed residential development is located in the southwest quadrant of the intersection of MO Route 150 and Pryor Road. The proposed development consists of 160 single-family residential dwelling units. The site plan associated with this proposed development is illustrated in **Figure 5**.

Proposed Access Spacing

Access to the development is proposed via two new residential roadways. Access 1 is proposed as a right-in/right-out access along MO Route 150, located approximately 860 feet west of Pryor Road. Access 2 is proposed as a full access located along Pryor Road approximately 730 feet south of MO Route 150.

Existing signalized intersections along MO Route 150 are spaced approximately 1 mile apart. Limited access (right-in/right-out) intersections east of the site are spaced at approximately 600 feet from adjacent intersections. Full access unsignalized intersections east of the proposed site are spaced 1,400 to 1,800 feet apart. Intersection spacing is measured center to center of intersection.

Proposed access along MO Route 150 was reviewed in accordance with MoDOT EPG Section 940.5 'At Grade Intersection Spacing' and Section 940.15 'Spacing and Clearance for Right-in, Right-out Driveways'. MO Route 150 was considered a major, non-freeway roadway based on its location within a developing, suburban area. Based on guidance provided in the EPG Section 940.5, intersections along major, non-freeway roadways should be spaced at $\frac{1}{2}$ - 1 mile. Based on the proposed limited access of Access 1 (right-in/right-out), characteristics of this segment of MO Route 150, and the suburban/developing characteristics of the area, a reduction in this recommended spacing was considered. Access 1 is proposed 860 feet west of Pryor Road. This exceeds recommended right-in/right-out driveway spacing provided in Section 940.15 of the MoDOT EPG. While this access does not meet access spacing for a full intersection as recommended in the EPG, a reduction in spacing from $\frac{1}{2}$ - 1 mile was considered due to the limited movements of the access. Operations of the proposed roadway in relation to surrounding intersections will be considered.

Three curb cuts are currently provided along the segment of MO Route 150 where the development is proposed. Two curb cuts are not currently used, and one serves as access to residential property. These three curb cuts are proposed to be consolidated into one access point, providing access to the proposed development along MO Route 150.

The City of Lee's Summit Access Management Code (AMC) was referenced to evaluate the proposed Access 2 located along Pryor Road. Referencing Section 15.1, 'Connection Spacing Standards' of the AMC, connection spacing must be outside the intersection functional area of adjacent intersections and accommodate warranted or required turn lanes. Minimum recommended connection spacing is 660 feet along a major arterial roadway. Two intersections are adjacent to the proposed access location. The intersection of MO Route 150 with Pryor Road is located to the north, and the intersection of Pryor Road with Napa Valley is located to the south. Access 2 is outside the intersection functional area of both existing intersections and meets or exceeds the recommended minimum connection spacing.

Access Throat Length and Driveway Width

Throat length of an access point refers to the length of approach provided within the development site approaching the intersection with the public roadway. The proposed throat length for each development access point is provided in **Table 3**. Each access is proposed with one entering and one exiting lane of traffic.

Table 3. Proposed Access Characteristics

| Proposed Access | Public Roadway Intersected | Access Type | Proposed Throat Length | Median Divided |
|-----------------|----------------------------|------------------------|------------------------|----------------|
| Access 1 | MO Route 150 | Right-in/ Right-out | 80 feet* | No |
| Access 2 | Pryor Road | Full Access | 180 feet** | Yes |

*Throat length was measured from the intersection with MO Route 150 to the first residential property line.

**Throat length was measured from the intersection with Pryor Road to the first internal roadway. It is assumed access to the corner property will be provided via an internal roadway.

Accesses 1 and 2 are proposed as public, residential roadways which will be maintained by the City of Lee's Summit. The MoDOT EPG and City of Lee's Summit AMC were referenced for driveway geometric requirements for Access 1. Access 1 is anticipated to be maintained by the City of Lee's Summit, with the roadway associated with Access 1 intersecting a MoDOT route. Access 2 will be evaluated using only the City of Lee's Summit AMC due to the accesses location along a City maintained roadway.

Access 1: Both MoDOT and Lee's Summit driveway width criteria are based on projected peak hour and daily traffic volumes. Trip generation completed in **Section 4.1** of this report anticipates that Access 1 will service 68 vehicles during the highest peak hour period. Access 1 has a proposed driveway width of 28 feet, measured back of curb to back of curb. Referencing *Table 18-1* of the AMC and *Section 940.16.4* of the EPG, driveways servicing less than 150 vph during the peak hour period should have a driveway width of 28 feet to 42 feet for two-way access. Access 1 meets City and MoDOT standards.

Throat length standards for a proposed access is set forth by the City of Lee's Summit and MoDOT and is based on projected peak hour traffic volumes. Access 1 has a proposed driveway throat length of 80 feet. Referencing *Table 18-2* of the *AMC*, driveways servicing between 50 to 100 vph during the peak hour period should have a minimum driveway throat length of 100 feet adjacent to an arterial roadway. Access 1 does not meet City standards. Referencing *Section 940.16.8* of the MoDOT *EPG*, driveways servicing less than 150 vph during the peak hour period should have a minimum driveway throat length of 20 feet. Access 1 meets MoDOT standards. Capacity analysis will be reviewed to determine if adequate throat length is provided to accommodate expected vehicular queuing.

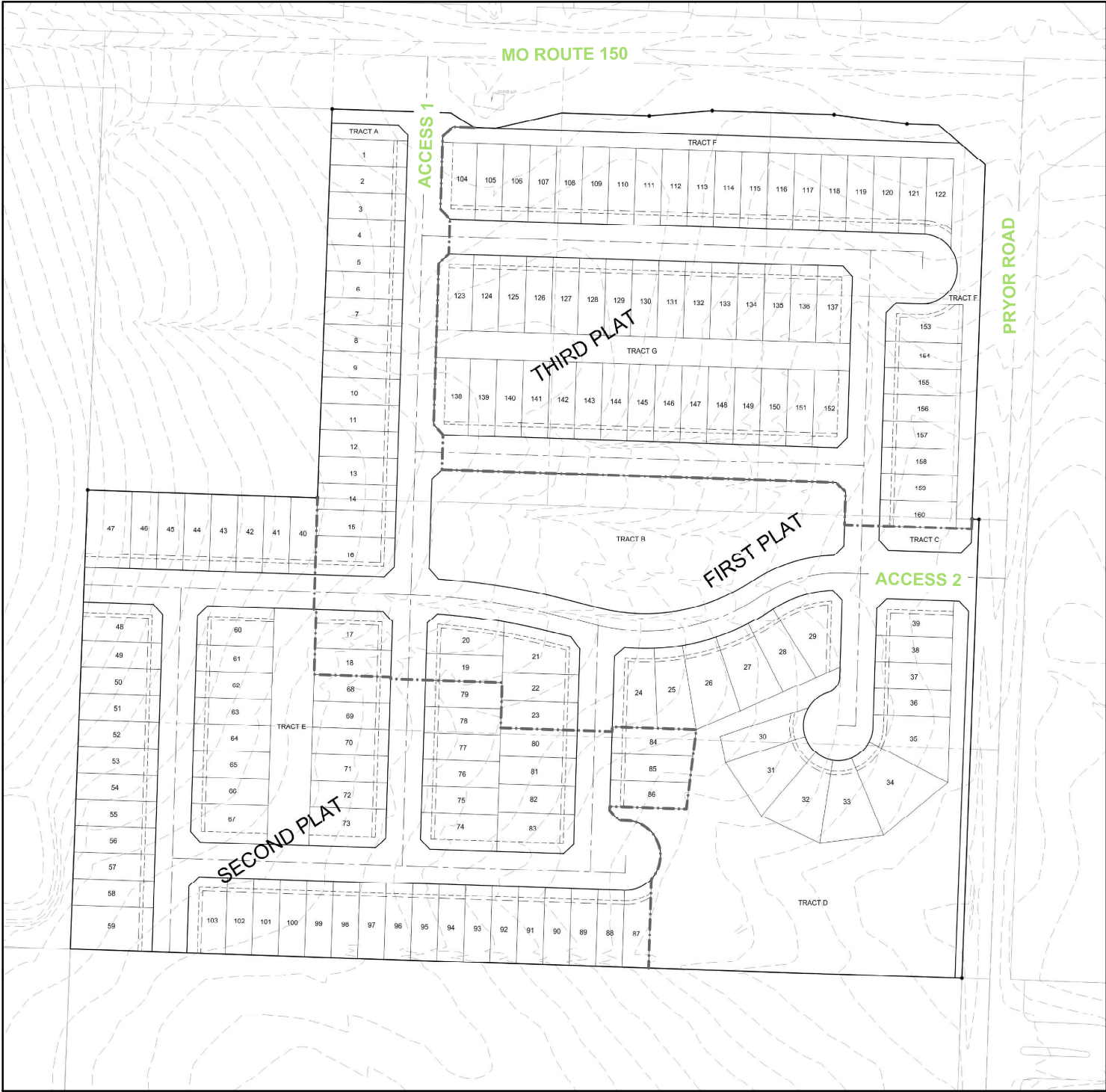
Access 2: City of Lee's Summit criteria were used to evaluate driveway width and throat length for Access 2. Access 2 is expected to service 93 vehicles during the highest peak hour period. Access 2 has a proposed driveway width of 48 feet (includes an 8-foot median), measured back of curb to back of curb. Access 2, including the median width, is wider than City standards.

Access 2 has a proposed driveway throat length of 180 feet. Access 2 meets the minimum recommended driveway throat length. Capacity analysis will be reviewed to determine if adequate throat length is provided to accommodate expected vehicular queuing.

To maintain the provided throat length at the roadway approach to MO Route 150 or Pryor Road, it is recommended to restrict parking within the provided throat length.

FIGURE 5

Site Plan
Allera Residential Development
Lee's Summit, MO



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4.1. Proposed Development Trip Generation and Distribution

To determine the impact of potential site traffic on the roadway network, expected trips associated with the proposed site were generated and applied to the study network. The Institute of Transportation Engineers (ITE) provides methods for estimating traffic volumes of common land uses in the Trip Generation Manual (10th Edition). The land use that most resembles that which is planned for this site is Land Use Code 210 (Single-Family Detached Housing).

Based on the ITE Trip Generation Manual, trip generation characteristics were developed for the proposed site. Trip generation characteristics expected for the site are shown in **Table 4**. Detailed ITE trip generation information can be found in **Appendix C**.

Table 4. Proposed Development Trip Generation

| Land Use | Size | Average Weekday | AM Peak Hour | | | PM Peak Hour | | |
|--------------------------------|--------|-----------------|--------------|-------|------|--------------|-------|------|
| | | | Total | Enter | Exit | Total | Enter | Exit |
| Single-Family Detached Housing | 160 DU | 1,603 | 119 | 30 | 89 | 160 | 101 | 59 |

Trips were distributed based on the anticipated land use, discussions with City staff, as well as a review of existing traffic behavior within the study area. **Table 5** illustrates general trip distribution for the site.

Table 5. Proposed Development Trip Distribution

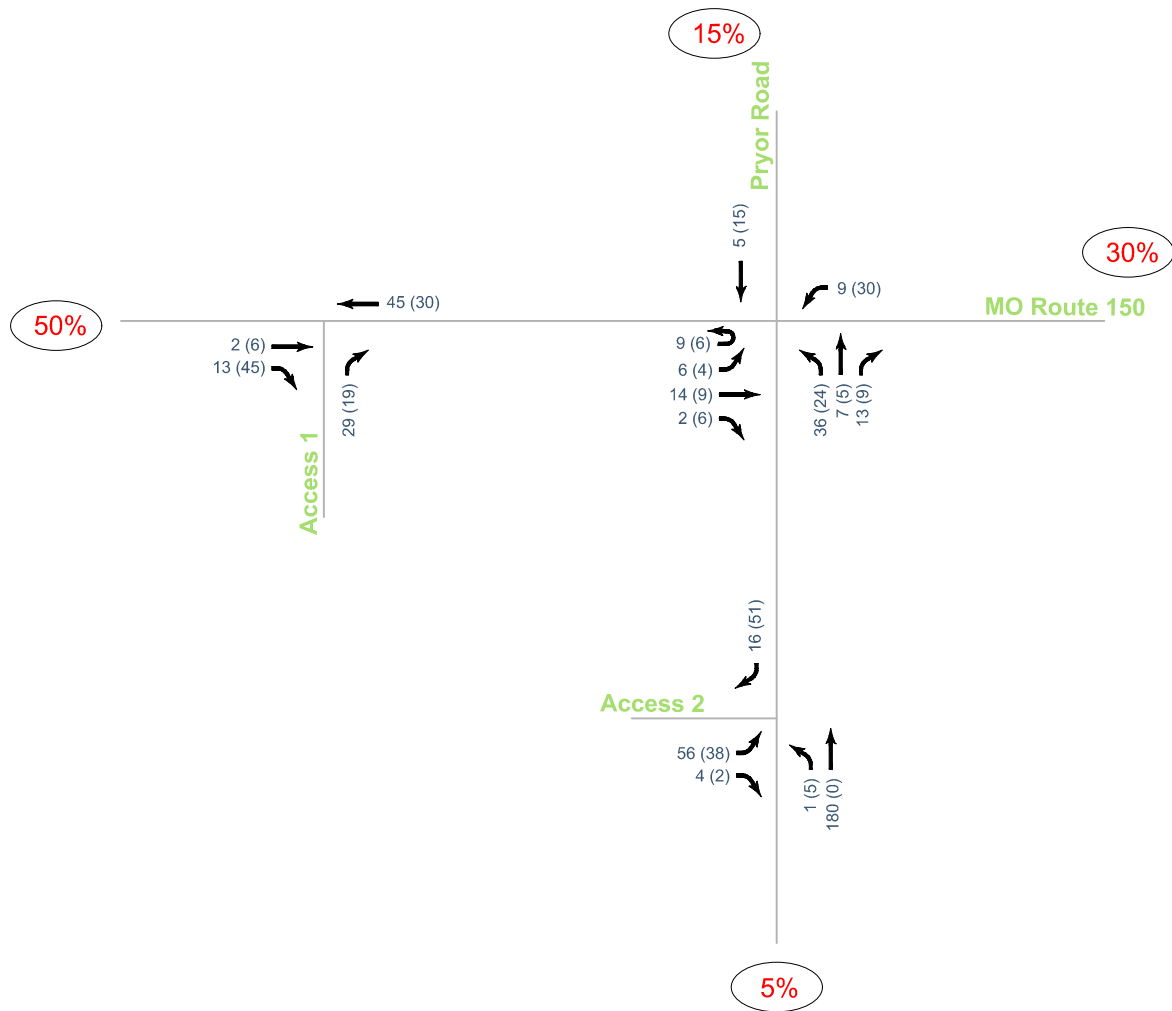
| Route | Percent Distribution |
|---------------------|----------------------|
| Pryor Road (north) | 15% |
| Pryor Road (south) | 5% |
| MO Route 150 (west) | 50% |
| MO Route 150 (east) | 30% |

The trip distribution for the proposed development is shown in **Figure 6**. Existing plus development volumes are illustrated in **Figure 7**.

FIGURE 6

Proposed Development Trip Distribution

Allera Residential Development
Lee's Summit, MO



LEGEND

AM (PM) AM (PM) Peak Hour Development Trips

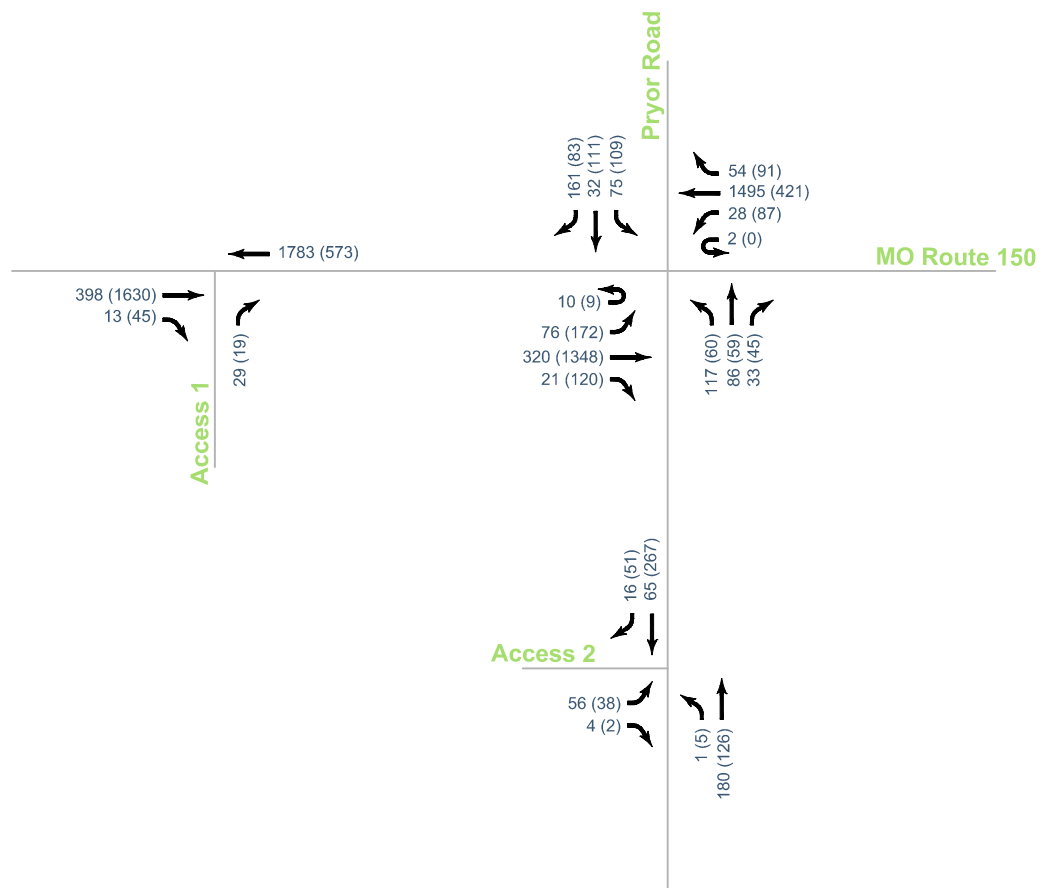
XX% To/From Trip Distribution Percentages



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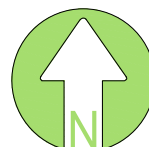
FIGURE 7

Existing + Development
Conditions
Peak Hour Volumes
Allera Residential Development
Lee's Summit, MO



LEGEND

AM (PM) Peak Hour Volume



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5. EXISTING PLUS DEVELOPMENT CONDITIONS

Traffic conditions were reviewed to identify any potential geometric improvements that could be attributed to additional traffic associated with the proposed development.

5.1. Existing plus Development Warrants

Existing plus Development Signal Warrants: A traffic signal may be justified if traffic conditions meet any of the applicable nine signal warrants described in the 2009 Manual on Uniform Traffic Control Devices (MUTCD). The MUTCD provides criteria for conducting an engineering study to determine whether a traffic signal is appropriate at any intersection.

Considering existing plus development volumes, the intersection of Pryor Road and Access 2 is not expected to meet the criteria for signalization during either peak hour period based on Warrant 3 (peak hour warrant). Signal warrant analysis sheets can be found in **Appendix C**.

Existing plus Development Turn Lane Warrants: The MoDOT *EPG* was used to determine if turn lanes are required for Access 1. **Section 3.2** discussed the procedure used for evaluation of turn lanes. Following the procedures outlined in the *EPG*, an eastbound right-turn lane is warranted at the intersection of MO Route 150 and Access 1 during the PM peak hour period. It is recommended to provide an eastbound right-turn lane at this access location to remove turning traffic from the through lane. Based on MoDOT deceleration guidance, the right-turn lane should have a minimum storage of 150 feet plus taper.

The westbound right-turn movement at the intersection of MO Route 150 and Pryor Road warranted a right-turn lane under existing conditions. Capacity analysis will be reviewed to determine if a right-turn lane is necessary for this movement based on existing plus development operations.

The City of Lee's Summit *AMC* was used to determine if turn lanes may be required for Access 2. The *AMC* provides direction on when turn lanes should be provided based on intersection control, roadway classification and traffic volumes.

Left-Turn Lane: The Lee's Summit *AMC* was referenced in evaluating left-turn lane recommendations for the intersection of Pryor Road and Access 2. Based on the *AMC*, left-turn lanes should be provided on all major arterial streets at the intersection with a connector. Left-turn lanes should be provided on minor arterial streets intersecting an arterial or collector roadway. At other connector locations along a minor arterial, left-turn volume is considered when determining if a left-turn lane should be provided. As stated in **Section 3.1**, Pryor Road is currently classified as a Major Arterial. However, based on the current traffic volumes of Pryor Road (south of MO Route 150) and the provided roadway surface (two-lane roadway), this segment of Pryor Road was evaluated using turn lane criteria for a minor arterial. Referencing

these criteria, a left-turn lane is required on minor arterial streets at the intersection with a local street when the left-turn volume is at least 20 vehicles in any hour. Based on the low volume of traffic expected to access the development from the south, a northbound left-turn lane is not recommended at Access 2. Referencing the City of Lee's Summit *Thoroughfare Plan*, the segment of Pryor Road south of MO Route 150 is expected to operate at acceptable levels of service in the future and planned capacity improvements are not noted. If growth occurs along this segment of roadway and capacity improvements are made, at that time a re-evaluation of providing a northbound left-turn lane at Access 2 may be appropriate.

Right-Turn Lane: The Lee's Summit *AMC* was referenced in evaluating right-turn lane recommendations for the intersection of Pryor Road and Access 2. Based on the *AMC*, right-turn lanes are required on all major arterial streets at an intersecting street when the right-turn volume is at least 30 vehicles in any hour. For a minor arterial roadway, a right-turn lane is required when the right-turn volume is at least 60 vehicles in any hour. As with the left-turn lane analysis, this segment of Pryor Road was evaluated using minor arterial criteria due to the low volume of vehicular traffic along the roadway and the two-lane roadway section. The highest expected right-turn volume is during the PM peak hour period, in which 51 southbound right-turning vehicles are expected. Considering the roadway volume, roadway conditions, and posted speed limit of 35 mph, a southbound right-turn lane is not recommended at Access 2. As discussed previously for the left-turn lane, this segment of Pryor Road is expected to operate at acceptable levels of service in the future and planned capacity improvements are not noted. If growth occurs along this segment of roadway and capacity improvements are made, at that time a re-evaluation of providing a southbound right-turn lane at Access 2 may be appropriate.

Existing plus development conditions lane configurations and traffic control for the study network are illustrated in **Figure 8**.

5.2. Existing plus Development Capacity Analysis

Capacity analysis was performed for existing plus development conditions using the methodologies described previously. Results of the capacity analysis indicate similar operations to existing conditions. The overall signalized study intersection and associated individual movements are expected to operate at LOS D or better during both the AM and PM peak hour periods. As with existing conditions, long 95th-percentile queue lengths are expected for eastbound and westbound traffic during the peak hour periods. Development traffic is not expected to significantly impact the queue length or operations of the intersection. As with existing conditions, the eastbound and westbound through movement queues would be expected to typically clear within one signal cycle.

Expected 95th-percentile queue lengths at Access 1 and Access 2 are not expected to exceed the provided throat length.

As discussed in **Section 3.3**, the northbound left-turn movement exceeds available turn bay storage considering existing traffic volumes. With the proposed development traffic, the northbound left-turn movement 95th-percentile queue at the intersection of MO Route 150 and Pryor Road is expected to increase by approximately 1.5 vehicles during the AM peak hour period and 1 vehicle during the PM peak hour period. To accommodate the expected queue after development, the northbound left-turn lane is recommended to be extended 105 feet to provide a total turn bay length of 150 feet plus taper. While the recommended turn bay length does not meet the required length as detailed in the *AMC*, the turn bay length is adequate to accommodate expected traffic volumes for existing plus development conditions. Referencing the *Thoroughfare Master Plan*, minimal traffic growth is expected along this segment of the corridor in the future.

As discussed in **Section 3.3**, the southbound left-turn movement is exceeding available turn bay storage considering existing traffic volumes. Additionally, the southbound and northbound right-turn lanes will be blocked during a portion of the peak hour period by the through movement queue, although the 95th-percentile queue for the right-turn movements is contained within the provided storage. With the addition of development traffic to the roadway network, slight increases in vehicular queuing for the movements are expected. The expected impact to the movements is minimal considering the low volume of trips expected to be added to the roadway network due to the proposed development.

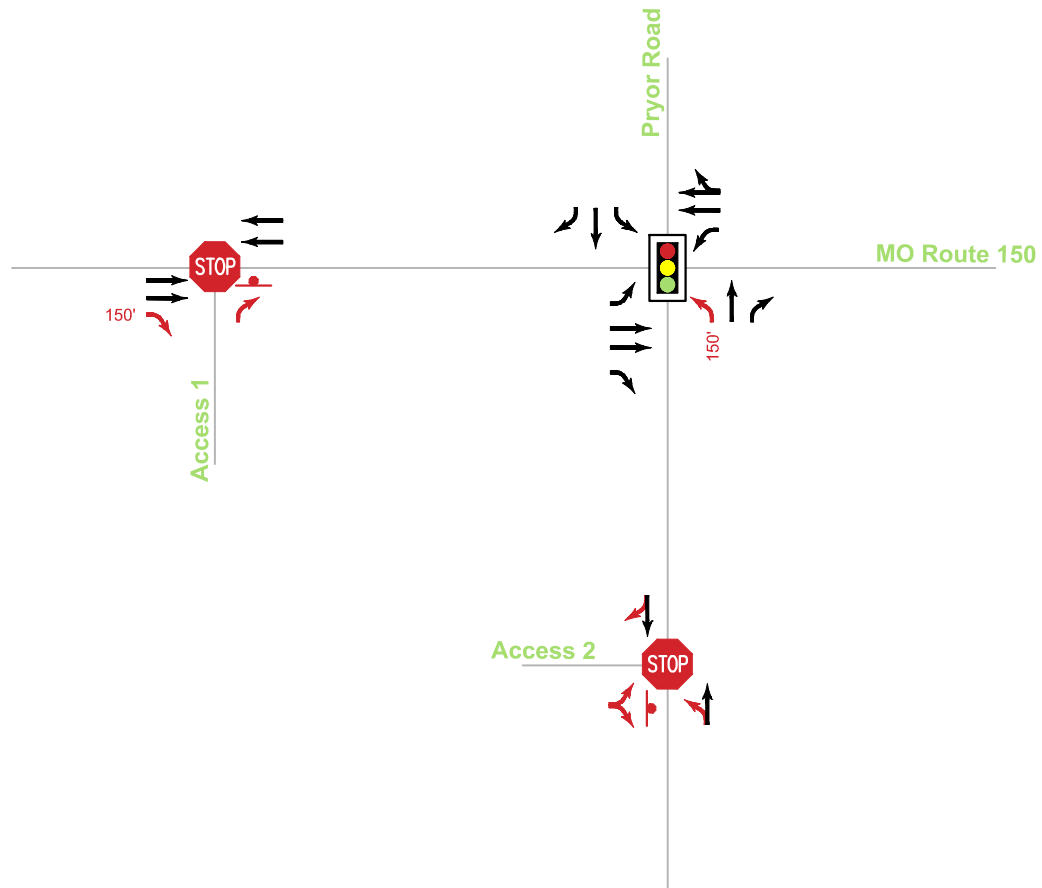
The existing plus development capacity analysis summary is illustrated in **Figure 9**. Detailed results may be found in **Appendix C**.

As discussed previously, a westbound right-turn lane is warranted at the intersection of MO Route 150 and Pryor Road based on existing conditions. Reviewing expected operations for this intersection based on existing plus development conditions, operations are expected to be similar to the existing conditions. Considering the acceptable operations of the westbound movement and the potential impact to existing residential property, it is not recommended to install a westbound right-turn lane at the intersection of MO Route 150 and Pryor Road.






FIGURE 8

Existing + Development Conditions Lane Configuration and Traffic Control

Allera Residential Development
Lee's Summit, MO



LEGEND

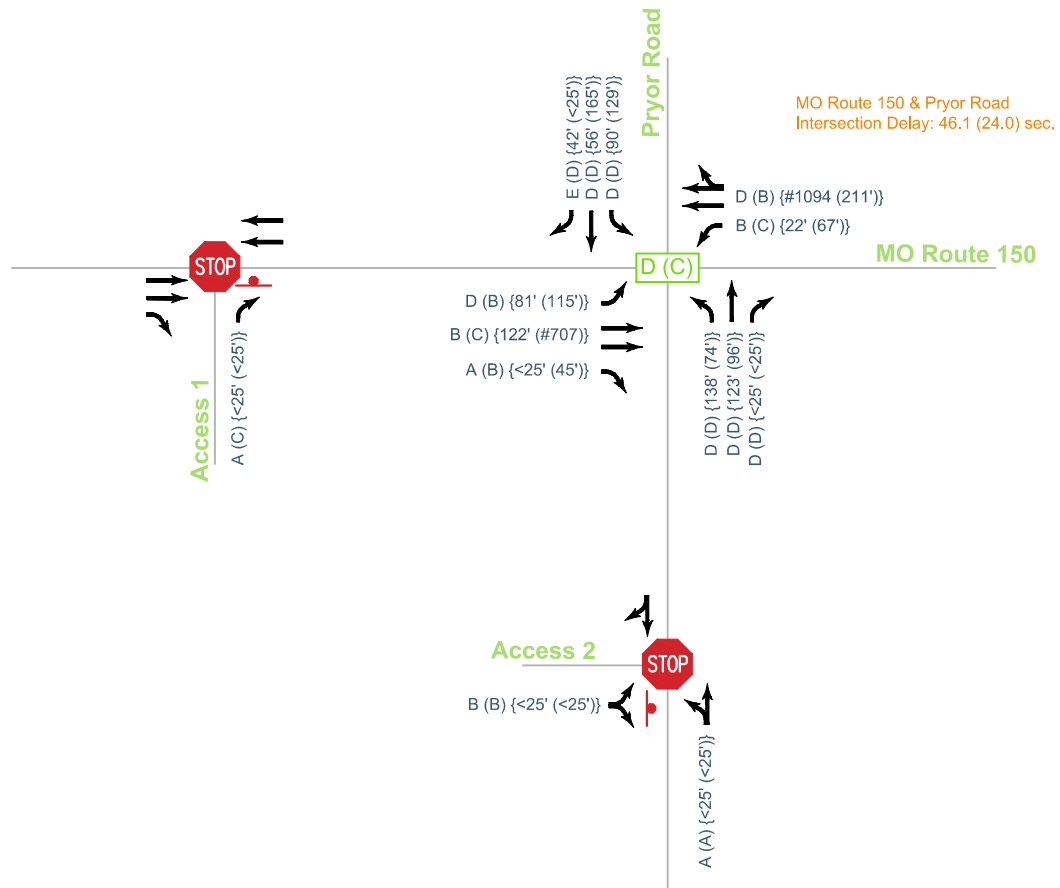
-  Lane Configuration
-  Proposed Lane Configuration & Storage Length
-  Stop Controlled Intersection
-  Stop Sign
-  Signalized Intersection



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Existing + Development Conditions Capacity Analysis

Allera Residential Development
Lee's Summit, MO



LEGEND

AM (PM) {AM (PM)} Movement LOS & {95th
Percentile Queue}

AM (PM) *Signalized Intersection LOS*

 Stop Controlled Intersection

 Stop Sign

→ Lane Geometry

95th Percentile Queue Exceeds Capacity



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6. CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to summarize the traffic impacts regarding a proposed residential development located in the southwest quadrant of the intersection of MO Route 150 and Pryor Road in Lee's Summit, Missouri. Based on this evaluation, the following conclusions and recommendations are made for the study area.

6.1. Conclusions

The general findings of this traffic impact study are summarized as:

1. In general, traffic operations after development of the proposed site are expected to be acceptable and be similar to existing conditions.
2. A westbound right-turn lane is warranted at the intersection of MO Route 150 and Pryor Road based on MoDOT EPG criteria under existing conditions. Due to acceptable operations and the impact construction of a right-turn lane would have on existing residential property and an existing multi-use trail, it is not recommended to install a westbound right-turn lane at the intersection.
3. Access 1 meets MoDOT recommended minimum throat length (20 feet) but does not meet City of Lee's Summit recommended minimum throat length (100 feet). Based on capacity analysis, adequate throat is provided (80 feet) to accommodate queuing associated with the northbound movement.
4. Due to the low volume of traffic serviced along this segment of Pryor Road and the two-lane roadway section, turn lanes are not recommended at the intersection of Pryor Road and Access 2. Referencing the City of Lee's Summit Thoroughfare Master Plan, capacity improvements to the roadway segment are not anticipated in the future. If the roadway is improved, at that time consideration may be given to providing a southbound right-turn lane and northbound left-turn lane at Access 2.

6.2. Recommendations

Given the review of information, list of conclusions and intersection specific capacity analysis, the following items are recommended for the study area:

1. An eastbound right-turn lane with a storage length of 150 feet plus taper is recommended at the intersection of MO Route 150 and Access 1.
2. It is recommended to provide 'No Parking' signage along the throat lengths of Access 1 and Access 2 to protect the approach to the intersection.
3. Extend the existing northbound left-turn lane at the intersection of MO Route 150 and Pryor Road 105 feet to provide a total storage length of 150 feet plus taper.

APPENDIX A

Data Collection

OSAGE DEVELOPMENT PRELIMINARY STORMWATER DRAINAGE STUDY

Prepared for:

Clayton Properties Group, Inc. DBA Summit Homes
120 SE 30th Street
Lee's Summit, MO 64082



October 2019
Olsson Project No. 019-2339

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1.0 GENERAL INFORMATION

Osage is a proposed single-family residential development on approximately 36 acres, including a pool, amenity tract reserved for open space, and stormwater detention basin. This project is located in the southwest of the intersection of NW Pryor Road and Highway 150 in Lee's Summit, Missouri



Figure 1. Location Map

1.1 FEMA Floodplain Classification

FEMA Flood Boundary and Floodway Map Community Panel Number 29095C0531G classifies the Osage property as unshaded "Zone X" Area, which FEMA defines as an area of minimal flood hazard, usually above the 500-year flood level. See Exhibit 1—Floodplain Map in Appendix A for location of site in relation to FEMA flood boundaries.

1.2 Soil Classifications

Soil Maps published on the NRCS Web Soil Survey categorize soils on the Osage property as shown in Table 1. See Exhibit 2 in Appendix A for a map of soils on the property.

Table 1. Soil Classifications

| Symbol | Name | Slopes | HSG |
|--------|-----------------------------|--------|-----|
| 10082 | Arisburg-Urban Land Complex | 1-5% | C |
| 10116 | Sampsel Silty Clay Loam | 2-5% | C/D |
| 10117 | Sampsel Silty Clay Loam | 5-9% | C/D |
| 10122 | Sharpsburg Silt Loam | 5-9% | C |

2.0 METHODOLOGY

This drainage study has been prepared to evaluate the hydrologic impact generated by development of Osage. The base data for the models prepared for this report has been obtained from available online maps and aerial imagery. Stormwater management is based upon methods and objectives defined in “Kansas City Metropolitan Chapter American Public Works Association (KC-APWA) Section 5600 Storm Drainage Systems & Facilities” (2011).

The following methods were used in this study to model Existing and Proposed Conditions for stormwater runoff:

Hydraflow Hydrographs Extension Version 12

- SCS Unit Hydrograph Method
 - 2-year, 10-year and 100-year Return Frequency Storms
 - AMC II Soil Moisture Conditions
 - 24-Hour SCS Type II Rainfall Distribution
 - SCS Runoff Curve Numbers per SCS TR-55 (Tables 2-2a – 2-2c)
 - SCS TR-55 methods for determination of Time of Concentration and Travel Time. Where specific data pertaining to channel geometry is not available, “Length & Velocity” estimates for channel flow Travel Time is utilized per Section 5600, KC-APWA Standard Specifications and Design Criteria.

Stormwater runoff models were created for the 2-, 10- and 100-year design storm events. The precipitation depths used in the analysis have been interpolated from the “Technical Paper No. 40 Rainfall Frequency Atlas of the United States” (TP-40) isopluvial maps (May 1961). The following table summarizes the rainfall depths used in this analysis:

Table 2. Precipitation Depths

| Return Period | 24-Hour Precipitation Depth (in.) |
|---------------------|--------------------------------------|
| 2-Year (50% Storm) | 3.60 |
| 10-year (10% Storm) | 5.34 |
| 100-Year (1% Storm) | 7.90 |

3.0 EXISTING CONDITIONS

To quantify the effects of development of this project, the following areas and points of interest have been used for existing and proposed conditions analysis. See Exhibit 3—Existing Conditions Drainage Map in Appendix A.

Drainage Area A represents the area in the southwest corner of the site, which bypasses the proposed detention location. In existing conditions, drainage area A has an area of 5.16 acres.

Drainage Area B represents the majority of the site in both the existing and proposed conditions models, which drains to the southeast corner of the site. In existing conditions, drainage area B has an area of 28.57 acres.

Drainage Area C is located in the northwest corner of the site and drains north to Highway 150. In existing conditions, drainage area C has an area of 11.27 acres.

Three points of interest were chosen for comparison between existing and proposed conditions based on the three points of discharge from the site. These points can be found in both Exhibits 3 and 4 in Appendix A.

Point of Interest A1 represents the southwest corner of the site and compares drainage area A for both models.

Point of Interest B1 represents a point near the southeast corner of the site, just upstream of the triple 30-inch CMP culverts crossing NW Pryor Road. Discharge to this point was compared between drainage area B in the existing conditions model and drainage areas B1 and B2 in the proposed conditions model at the outlet of the detention basin. Drainage area B2 bypasses the basin; flows from drainage areas B1 and B2 were combined before comparison with Existing Conditions. See Exhibit—4 Proposed Conditions Drainage Map and Section 4.0 of this report for a more detailed discussion of the Proposed Conditions drainage areas.

Point of Interest C1 represents the northwest corner of the site and compares drainage area C for existing and proposed conditions.

Bypass Area A was included in the model to account for area that does not pass through the site but drains to the culvert under NW Pryor Road near the southeast corner of the development. This area was included in the model to calculate tailwater elevations for the proposed detention basin.

The following tables summarize the results of the Existing Conditions analysis. The proposed conditions data is compared to these results in Sections 4 of this report. Refer to Appendix B for output and a schematic for the existing conditions model and detailed calculations for the time of concentration.

Curve Numbers were determined for existing and proposed conditions as shown in Table 3.

Table 3. Curve Numbers

| Land Use | HSG* | CN |
|-----------------------------|------|----|
| Straight Row Crop | C | 85 |
| Straight Row Crop | D | 89 |
| Multi-Family Residential | C | 90 |
| Multi-Family Residential | D | 92 |
| Pasture | C | 79 |
| Pasture | D | 84 |
| Paved Open Ditches with ROW | C | 92 |
| Paved Open Ditched with ROW | D | 93 |

*Hydrologic Soil Group

Table 4. Existing Conditions Area Data

| Area Name | Onsite Area (ac.) | Offsite Area (ac.) | Total Area (ac.) | T _C (hr.) | Weighted CN |
|-----------|-------------------|--------------------|------------------|----------------------|-------------|
| A | 2.10 | 3.06 | 5.16 | 0.33 | 82 |
| B | 25.26 | 3.31 | 28.57 | 0.36 | 84 |
| C | 4.02 | 7.25 | 11.27 | 0.33 | 83 |
| Bypass A | 0 | 2.86 | 2.86 | 0.18 | 87 |

Table 5. Existing Conditions Point of Interest Peak Flow Rates

| Point of Interest | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|-------------------|----------------------|-----------------------|------------------------|
| A1 | 11.1 | 20.2 | 33.9 |
| B1 | 61.8 | 109 | 179 |
| C1 | 25.4 | 45.3 | 75.2 |

Per APWA Section 5608.4 and the City of Lee's Summit criteria, the performance criteria for comprehensive control is to provide detention to limit peak flow rates at downstream points of interest to maximum release rates:

- 50% storm peak rate less than or equal to 0.5 cfs per site acre
- 10% storm peak rate less than or equal to 2.0 cfs per site acre
- 1% storm peak rate less than or equal to 3.0 cfs per site acre

Extended detention of the 90% mean annual event is also required for comprehensive control per APWA Section 5608.4.

Allowable release rates were calculated for the points of interest, allowing that offsite peak discharges would be permitted to bypass the detention. Offsite bypass peak flow rates were calculated as a percentage of the existing conditions, relating to the percentage of offsite area flowing to each point. The release rates for the proposed development on the development site were calculated based on the detention criteria. The development release rates were added to the bypass peak flow rates to calculate an allowable peak flow rate for each point of interest as follows.

Table 6. Point of Interest Onsite Area

| Point of Interest | Total Area (ac) | Onsite Area (ac) | Percent Onsite |
|-------------------|-----------------|------------------|----------------|
| A1 | 5.16 | 2.10 | 40.7% |
| B1 | 28.57 | 25.26 | 88.4% |
| C1 | 11.27 | 4.02 | 35.7% |

Table 7. Allowable Peak Flow Rates

| Point of Interest | Allowable 2-Year Q (cfs) | Allowable 10-Year Q (cfs) | Allowable 100-Year Q (cfs) |
|-------------------|--------------------------|---------------------------|----------------------------|
| A1 | 7.6 | 16.0 | 26.1 |
| B1 | 19.8 | 63.2 | 96.5 |
| C1 | 18.3 | 37.1 | 60.3 |

4.0 PROPOSED CONDITIONS

4.1 Effects of Development

The proposed conditions analysis assumes completion of the entire Osage development. The modeled subareas and points of interest are similar to the existing conditions model. However, throughout the site, some shifting of ridgelines will occur accommodating proposed detention facilities and anticipated grading activities, which will change the relative areas draining to each point of interest. The following is a summary of the proposed conditions drainage areas, see Exhibit 4—Proposed Conditions Drainage Map in Appendix A.

Drainage Area A in proposed conditions has an area of 0.43 acres. Proposed grading shifts 4.72 acres from drainage area A to drainage area B1.

Drainage Area B1 in proposed conditions has an area is 33.54 acres and will drain to the proposed detention basin. Drainage area from existing conditions is shifted from drainage areas A and C to area B1.

Drainage Area B2 was previously part of drainage area B in existing conditions. This area was separated in the proposed conditions model because it bypasses the detention basin. For

consistency, the sum of drainage areas B1 and B2 were compared at the same point of interest as drainage area B in existing conditions. Drainage Area B2 has an area of 2.73 acres.

Drainage Area C in proposed conditions has a drainage area of 8.30 acres. Proposed grading shifts area from drainage area C to drainage area B1.

The analysis provided in Section 3 established existing conditions of the development's drainage areas and analysis in this section will provide guidance for configuration of detention basin to meet the objectives established in Section 3.

The following tables summarize the results of the proposed conditions analysis. Tables 9 and 10 assume no detention is provided, to demonstrate the effects of development for each drainage area. Refer to Appendix C for output from and a schematic of the proposed conditions Hydraflow Hydrographs model.

Table 8. Proposed Conditions Area Data

| Area Name | Area (ac.) | T _c (hr.) | Weighted CN |
|-----------|------------|----------------------|-------------|
| A | 0.43 | 0.10 | 91 |
| B1 | 33.54 | 0.35 | 88 |
| B2 | 2.73 | 0.10 | 90 |
| C | 8.30 | 0.32 | 86 |
| Bypass A | 2.86 | 0.18 | 87 |

Table 9. Proposed (No Detention) Conditions Point of Interest Peak Flow Rates

| Point of Interest | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|-------------------|----------------------|-----------------------|------------------------|
| A1 | 1.7 | 2.8 | 4.3 |
| B1 | 91.6 | 152.0 | 240.0 |
| C1 | 21.0 | 35.9 | 57.9 |

The following table compares the results of the proposed conditions analysis to the existing conditions from Section 3 at the points of interest. Negative values indicate a reduction in peak flow rate, while positive values indicate an increase. Without detention, flow rates will increase at point B1, but decrease for A1 and C1. The decrease in flow rates at A1 and C1 is due to the proposed changes in grading, which shifts parts of each of these areas to drainage area B1.

Table 10. Proposed (No Detention) vs. Existing Conditions

| Point of Interest | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|-------------------|-------------------------|--------------------------|---------------------------|
| A1 | -9.4 | -17.4 | -29.6 |
| B1 | 29.8 | 43.0 | 61.0 |
| C1 | -4.4 | -9.4 | -17.3 |

4.2 Proposed Detention Facilities

To mitigate the increases in peak flows shown in the previous table and where possible, decrease further to the allowable release rates established in Section 3, detention will be provided for drainage area B1.

The detention facility was placed to capture most of the site runoff and to mitigate increases in peak discharge from the site. The detention facility will be located near the southeast corner of the site and will meet of the requirements outlined in Section 3. It will contain a multistage outlet structure and an independent 160-ft long broad crested weir graded into the east side of the berm. The following points summarize the multistage outlet structure and the emergency spillway:

- The structure itself will be a 5'x5' open-top concrete box with a top elevation of 1017.1, which generally controls the 100-year discharge.
- A 36" opening is present in the box at an elevation of 1012.6, which generally controls the 10-year and 100-year discharge.
- A 4.5" orifice is present in the box at the bottom elevation of the pond- 1010.0. This helps control the 90% mean annual storm event. The 2-year discharge is controlled by a combination of the 4.5" orifice and the 36" opening.
- The entire structure outlets to a 48" RCP, which carries the water to Pryor Road.
- The emergency spillway will consist of a 160-ft long broad crested weir set at an elevation of 1018.4.

A 4.5-inch orifice will be set at the bottom of the multi-stage outlet structure to comply with the KC-APWA requirement for 40-hour release of the 90% mean annual event. The total inflow volume from this event is 2.09 acre-feet for this site. This will be released over 40 hours at a rate of 0.63 cfs.

Table 11 includes a summary of the Proposed Detention Facility

Due to constrictions in lot grading, site size limitations, and the relatively small drainage area detention is not planned for drainage area C. The drainage area to this point is reduced from existing conditions with proposed grading. As a result, the peak discharge rates for the 2-, 10-, and 100-year storms are below the existing values shown in Table 5. Table 10 illustrates these reductions. For point C1, the peak discharge values meet the allowable release rates for the 10-year and 100-year storm but exceed the KC-APWA 5600 allowable release rates of 0.5 cfs per

acre for the 2-year storm. A comparison with allowable release rates can be seen in Table 13. To achieve these release rates at point C-1, a small detention facility would need to be placed in the northwest corner of the site. The benefit of installing this detention facility in order to reduce the 2-year peak discharge value by 3.0 cfs is outweighed by the impact the facility would have on the feasibility of the development, especially considering the substantial reduction in peak discharge values already achieved when compared to existing conditions. As such, a waiver is requested for the 2-year storm for point C-1.

Table 11. Proposed Conditions Detention Flow and Volume Data

| | Peak Q In (cfs) | TP In (hr) | Peak Q Out (cfs) | TP Out (hr) | Peak W.S.E. (ft) | Stored Volume (ac-ft) |
|----------|--------------------|---------------|------------------------|----------------|------------------------|-----------------------------|
| 2-Year | 84.4 | 12.10 | 5.9 | 13.53 | 1014.12 | 4.2 |
| 10-Year | 141.0 | 12.10 | 39.5 | 12.47 | 1015.61 | 6.0 |
| 100-Year | 223.0 | 12.10 | 92.4 | 12.37 | 1017.87 | 9.0 |

4.3 Effects of Proposed Detention

The following tables compares the results of the proposed conditions analysis with the detention described above to the existing conditions from Section 3 at the points of interest. In Table 13, negative values indicate a reduction in peak flows, while positive values indicate an increase.

Table 12. Proposed (with Detention) Point of Interest Peak Flow Rates

| Point of Interest | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|-------------------|-------------------------|--------------------------|---------------------------|
| A1 | 1.7 | 2.8 | 4.3 |
| B1 | 10.3 | 41.4 | 95.7 |
| C1 | 21.3 | 35.9 | 57.9 |

Table 13. Proposed (with Detention) vs. Allowable Release Rates

| Point of Interest | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|-------------------|-------------------------|--------------------------|---------------------------|
| A1 | -5.9 | -13.2 | -21.8 |
| B1 | -9.5 | -21.8 | -0.9 |
| C1 | 3.0 | -1.2 | -2.4 |

Table 14. Proposed (with Detention) vs. Existing Conditions

| Point of Interest | Q ₂ (cfs) | Q ₁₀ (cfs) | Q ₁₀₀ (cfs) |
|-------------------|-------------------------|--------------------------|---------------------------|
| A1 | -9.4 | -17.4 | -29.6 |
| B1 | -51.5 | -67.6 | -83.3 |
| C1 | -4.1 | -9.4 | -17.3 |

5.0 SUMMARY

This stormwater drainage study was prepared to evaluate the hydrologic impact generated by the development of Osage and to provide recommendations for a comprehensive stormwater management plan. The project is a single-family residential development on approximately 36 acres, including a pool and amenity tract and open space which will be reserved for detention.

Increases in peak flow rates caused by development will be mitigated for all points of discharge through the site through a combination of dry detention and drainage area changes.

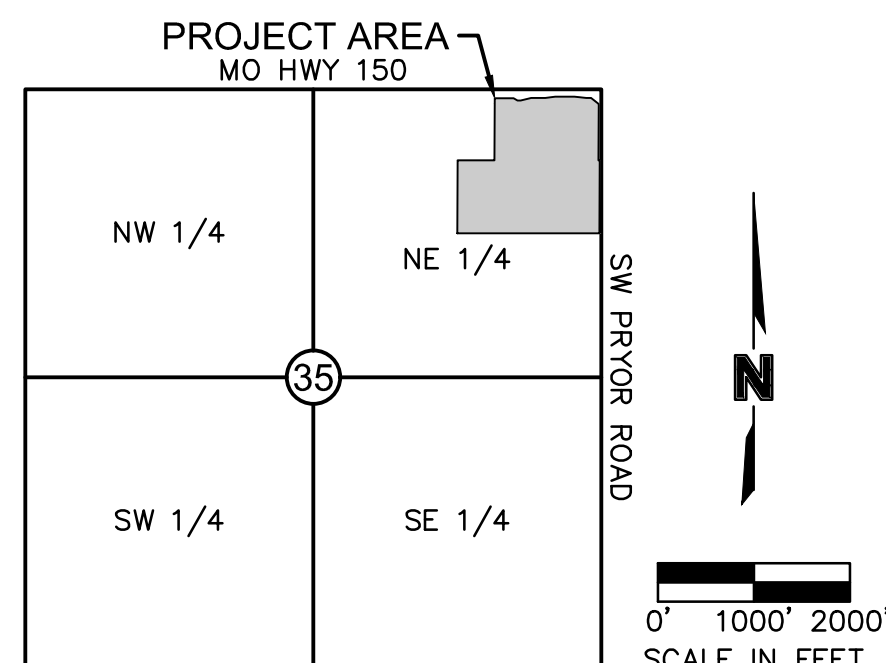
6.0 CONCLUSIONS AND RECOMMENDATIONS

This proposed stormwater management plan was designed to achieve compliance with current design criteria in effect for the City of Lee's Summit, Missouri; however, a waiver is requested at point of interest C1 for the 2-year storm. A final macro and first plat micro stormwater drainage study will be required with submittal of the first plat of this development.

The results of the analysis demonstrate that the proposed stormwater management plan for the project achieves compliance with design criteria, including extended detention of the 90% mean annual event, along with the requested waiver for drainage area C. We therefore request approval of this Osage Stormwater Drainage Study. This approval is conditional and should be substantiated with each future plat of Osage.

OSAGE REZONING & PRELIMINARY DEVELOPMENT PLAN

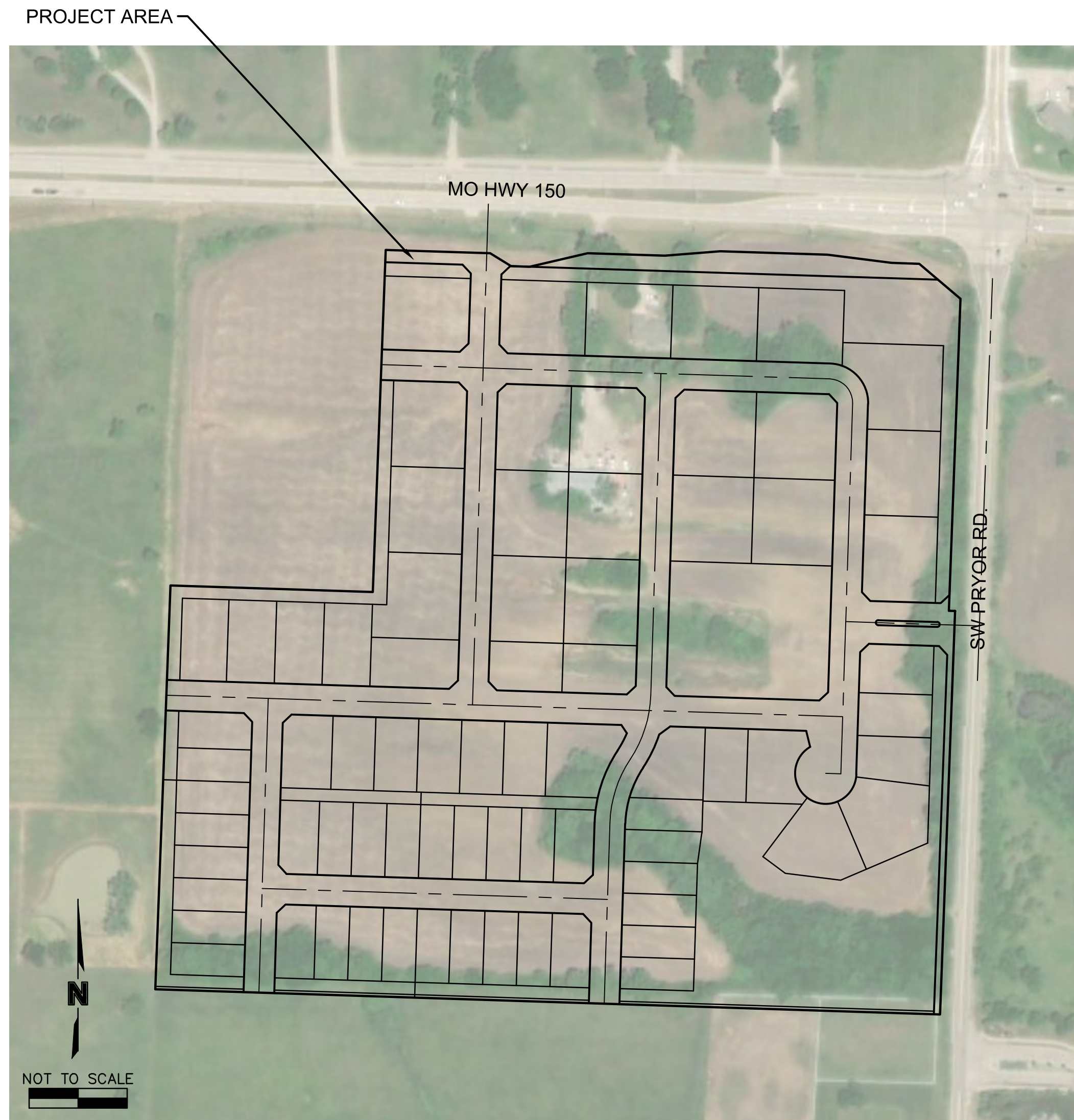
SECTION 35, TOWNSHIP 47N, RANGE 32W
IN LEE'S SUMMIT, JACKSON COUNTY, MISSOURI



VICINITY MAP

S35, T47N, R32W
SCALE 1"=2000'

| PROJECT TEAM CONTACT LIST | |
|--|--|
| <u>OWNER / DEVELOPER</u> | |
| CLAYTON PROPERTIES GROUP, INC. DBA SUMMIT HOMES 120 SE 30TH ST. LEE'S SUMMIT, MO 64082 CONTACT: VINCENT WALKER PHONE: 816.246.6700 EMAIL: VINCENT@SUMMITHOMESKC.COM | |
| <u>ENGINEER</u> | |
| OLSSON 1301 BURLINGTON, SUITE 100 NORTH KANSAS CITY, MO 64116 CONTACT: JOHN ERPELDING PHONE: 816.361.1177 EMAIL: JERPELDING@OLSSON.COM | |



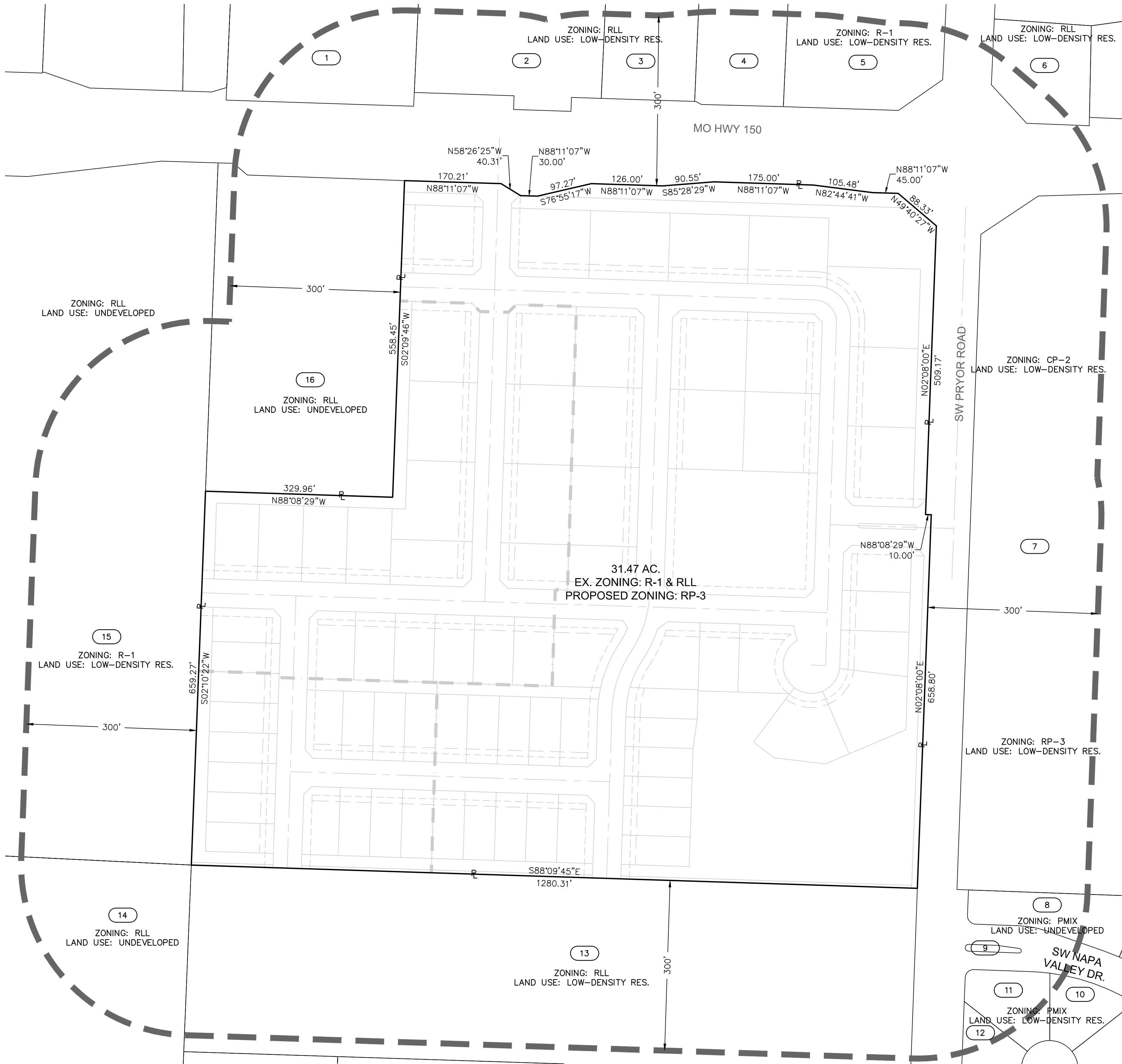
PROPERTY DESCRIPTION:

A tract of land in the Northeast Quarter of the Northeast Quarter of Section 35, Township 47 North, Range 32 West of the 5th Principal Meridian, including part of Lot 1, 2 and 3, SALVAGGIO'S RANCH, a subdivision of land, all in Lee's Summit, Jackson County, Missouri, being bounded and described as follows: Commencing at the Northeast corner of the Northeast Quarter of said Section 35; thence South 02°08'00" West, along the East line of said Northeast Quarter, 658.78 feet to the Southeast corner of the North Half of the Northeast Quarter of the Northeast Quarter of said Section 35; thence North 88°08'29" West, along the South line of said North Half, 50.00 feet to the Southeast Corner of said Lot 3, said point also being on the Westerly right of way line of SW Pryor Road as now established and the Point of Beginning of the tract of land to be herein described; thence South 88°08'29" East, along the South line of said North Half, 99.96 feet to the Southeast corner of the Northeast Quarter of the Northeast Quarter of the Northeast Quarter of said Section 35; thence South 02°08'00" West, along the West line of said Northeast Quarter of the Northeast Quarter of said Section 35; thence South 02°08'00" West, along said last Westerly right of way line and said parallel line, 658.80 feet to a point on the South line of the Northeast Quarter of the Northeast Quarter of said Section 35; thence North 88°09'45" West, along said South line, 1280.31 feet to the Southwest corner of the Northeast Quarter of the Northeast Quarter of said Section 35; thence North 02°10'22" East, along the West line of the Northeast Quarter of the Northeast Quarter of said Section 35, 659.27 feet to the Southwest corner of the North Half of the Northeast Quarter of the Northeast Quarter of said Section 35; thence South 88°08'29" East, along the South line of said North Half of the Northeast Quarter of the Northeast Quarter of the Northeast Quarter of said Section 35, 99.96 feet to the Southeast corner of the Northeast Quarter of the Northeast Quarter of the Northeast Quarter of said Section 35; thence North 02°09'46" East, along the West line of East Half of the Northeast Quarter of the Northeast Quarter of the Northeast Quarter of said Section 35, 558.45 feet to a point on the Southerly right of way line of Missouri State Highway No. 150 as established by Document 2009E0064160, being 80.00 feet right of centerline Station 3164+29.79 (Station 3164+29.52 Deed); thence South 88°11°07" East, along said Southerly right of way line 170.21 feet to a point that is 80.00 feet right of centerline Station 318+00.00; thence South 58°26'25" East, along said Southerly right of way line, 40.31 feet to a point that is 100.00 feet right of centerline Station 318+35.00; thence South 88°11°07" East, along said Southerly right of way line, 30.00 feet to a point that is 100.00 feet right of centerline Station 318+65.00; thence North 65°51'17" East, along said Southerly right of way line, 97.27 feet to a point on the Southerly right of way line of Missouri State Highway No. 150 as established by Document 2009E0064160, being 80.00 feet right of centerline Station 320+85.00; thence North 85°28'29" East, along said Southerly right of way line, 126.00 feet to a point that is 75.00 feet right of centerline Station 320+85.00; thence North 85°28'29" East, along said Southerly right of way line, 90.55 feet to a point that is 65.00 feet right of centerline Station 321+75.00; thence South 88°11°07" East, along said Southerly right of way line and along the Southerly right of way line of Missouri State Highway No. 150 as established by Document 2009E0006351, 175.00 feet to a point that is 65.00 feet right of centerline Station 323+50.00; thence South 82°44'41" East, along said Southerly right of way line, 105.48 feet to a point that is 75.00 feet right of centerline Station 324+55.00; thence South 88°11°07" East, along said Southerly right of way line, 45.00 feet to a point that is 75.00 feet right of centerline Station 325+00.00; thence South 49°40'27" East, along said Southerly right of way line, 88.33 feet to a point that is 130.00 feet right of centerline Station 325+69.12 (Station 325+69.30 Deed), said point also being on the South line of said Lot 2, SALVAGGIO'S RANCH, and on the West right of way of said SW Pryor Road as now established; thence South 02°08'00" West, along said South line of said Lot line and said West right of way line, 509.17 feet to the Point of Beginning, Containing 1,370,951 square feet ±, 31.473 acres, more or less.

| INDEX OF SHEETS | |
|--|--------------|
| Sheet Title | Sheet Number |
| TITLE SHEET | 01 |
| REZONING PLAN | 02 |
| EXISTING CONDITIONS | 03 |
| SITE PLAN | 04 |
| PRELIMINARY GRADING PLAN | 05 |
| PRELIMINARY UTILITY PLAN | 06 |
| PRELIMINARY UTILITY PLAN (CONT'D.) | 07 |
| OVERALL PLAN (LANDSCAPE) | L1 |
| ENTRY MONUMENTS | L2 |
| ENTRY MONUMENTS | L3 |
| ENTRY MONUMENTS | L4 |
| AMENITY AREA PLAN | L5 |
| AMENITY AREA PLAN | L6 |
| ARCHITECTURAL ELEVATIONS - TOWNHOMES | A1 |
| ARCHITECTURAL ELEVATIONS - TWIN GALLERY | A2 |
| ARCHITECTURAL ELEVATIONS - SINGLE-FAMILY | A3 |
| POOL RENDERINGS | A4 |

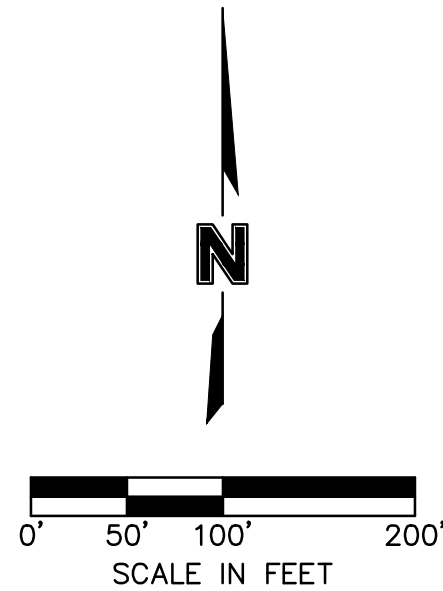
[illegible]

| PROPERTY OWNERS WITHIN 300' | | |
|-----------------------------|--|---|
| KEY | ADDRESS | OWNER(S) & MAILING ADDRESS |
| 1 | 2124 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | DANIELS NANCY SUE & G MARK-TR 13320 S PRATT RD LEE'S SUMMIT, MO 64086 |
| 2 | 2052 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | DALE DONALD RAY-TRUSTEE 2052 SW MO 150 HWY LEE'S SUMMIT, MO 64082 |
| 3 | 2040 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | RYAN JOHN C 2040 SW MO 150 HWY LEE'S SUMMIT, MO 64082 |
| 4 | 2030 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | HARRISON JERRY DALE & DONNA C 2030 SW MO 150 HWY LEE'S SUMMIT, MO 64063 |
| 5 | 3540 SW PRYOR RD LEE'S SUMMIT, MO 64082 | DOANE ERIC J & JULIE A-TRUSTEES 3540 SW PRYOR RD LEE'S SUMMIT, MO 64082 |
| 6 | 3699 SW PRYOR RD LEE'S SUMMIT, MO 64082 | MC MILLIN PAULA 3699 SW PRYOR RD LEE'S SUMMIT, MO 64082 |
| 7 | 1905 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | GRIFFIN RILEY INVESTMENTS LLC 120 SE 30TH ST LEE'S SUMMIT, MO 64082 |
| 8 | ** NO ADDRESS ** | NAPA VALLEY INVESTMENTS LLC PO BOX 375 GREENWOOD, MO 64034 |
| 9 | TRAFFIC MEDIAN LEE'S SUMMIT, MO 64082 | NAPA VALLEY INVESTMENTS LLC PO BOX 375 GREENWOOD, MO 64034 |
| 10 | 1912 SW SAGE CANYON RD LEE'S SUMMIT, MO 64082 | COX COLIN G & JESSICA S 1912 SW SAGE CANYON RD LEE'S SUMMIT, MO 64082 |
| 11 | 1916 SW SAGE CANYON RD LEE'S SUMMIT, MO 64082 | DEL FRATTE GEORGE & BETTY J TRUSTEE 1916 SW SAGE CANYON RD LEE'S SUMMIT, MO 64082 |
| 12 | 1917 SW SAGE CANYON RD LEE'S SUMMIT, MO 64082 | THOMAS JOHN R & CHRISTINE D 1917 SW SAGE CANYON RD LEE'S SUMMIT, MO 64082 |
| 13 | ** NO ADDRESS ** | THOMPSON GARY L & DEBORAH L 1313 SW PACIFIC DR LEE'S SUMMIT, MO 64081 |
| 14 | ** NO ADDRESS ** | HIGHVIEW PROPERTIES LLC 2422 SW SPRINGWATER RDG LEE'S SUMMIT, MO 64081 |
| 15 | 2201 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | SOLANO CESAR E & CARLA EVANS 316 S SHORE DR LAKE WINNEBAGO, MO 64034 |
| 16 | 14501 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | SHERRARD LAWRENCE III & MARY 4603 W 122ND ST APT 715 LEAWOOD, KS 66209 |



PROPERTY DESCRIPTION:

A tract of land in the Northeast Quarter of the Northeast Quarter of Section 35, Township 47 North, Range 32 West of the 5th Principal Meridian, including part of Lots 1, 2 and 3, SALVAGGIO'S RANCH, a subdivision of land, all in Lee's Summit, Jackson County, Missouri being bounded and described as follows: Commencing at the Northeast corner of the Northeast Quarter of said Section 35; thence South 02°08'00" West, along the East line of said Northeast Quarter, 658.78 feet to the Southeast corner of the North Half of the Northeast Quarter of said Section 35; thence North 88°08'29" West, along the South line of said North Half, 50.00 feet to the Southeast Corner of said Lot 3, said point also being on the Westerly right of way line of SW Pryor Road as now established and the Point of Beginning of the tract of land to be herein described; thence South 88°08'29" East, along said North Line and along said Westerly right of way line, 10.00 feet; to the Westerly right of way line of said SW Pryor Road as established by Document 19631814460, in Book 1634, at page 487, being on a line that 40.00 West of and parallel with the East line of the Northeast Quarter of said Section 35; thence South 02°08'00" West, along last said Westerly right of way line and said parallel line, 658.80 feet to a point on the South line of the Northeast Quarter of said Section 35; thence North 88°09'45" West, along said South line, 1280.31 feet to the Southwest corner of the Northeast Quarter of said Section 35; thence North 02°10'22" East, along the West line of the Northeast Quarter of said Section 35, 659.27 feet to the Southwest corner of the North Half of the Northeast Quarter of said Section 35; thence North 88°08'29" East, along the South line of said North Half of the Northeast Quarter of said Section 35, 329.96 feet to the Southwest corner of the East Half of the Northwest Quarter of the Northeast Quarter of said Section 35; thence North 02°09'46" East, along the West line of East Half of the Northwest Quarter of the Northeast Quarter of the Northeast Quarter of said Section 35, 558.45 feet to a point on the Southerly right of way line of Missouri State Highway No. 150 as established by Document 2009E0064160, being 80.00 feet right of centerline Station 316+29.79 (Station 316+29.51 Deed); thence South 88°11'07" East, along said Southerly right of way line 170.21 feet to a point that is 80.00 feet right of centerline Station 318+35.00; thence South 58°26'25" East, along said Southerly right of way line, 40.31 feet to a point that is 100.00 feet right of centerline Station 318+35.00; thence South 88°11'07" East, along said Southerly right of way line, 30.00 feet to a point that is 100.00 feet right of centerline Station 318+65.00; thence North 76°55'17" East, along said Southerly right of way line, 97.27 feet to a point on the Southerly right of way line of Missouri State Highway No. 150 as established by Document 2009E006361, being 75.00 feet right of centerline Station 319+59.00; thence South 88°11'07" East, along said Southerly right of way line, 126.00 feet to a point that is 75.00 feet right of centerline Station 320+85.00; thence North 85°28'29" East, along said Southerly right of way line, 90.55 feet to a point that is 65.00 feet right of centerline Station 321+75.00; thence South 88°11'07" East, along said Southerly right of way line and along the Southerly right of way line of Missouri State Highway No. 150 as established by Document 2009E006351, 175.00 feet to a point that is 65.00 feet right of centerline Station 323+50.00; thence South 82°44'41" East, along said Southerly right of way line, 105.48 feet to a point that is 75.00 feet right of centerline Station 324+55.00; thence South 88°11'07" East, along said Southerly right of way line, 45.00 feet to a point that is 75.00 feet right of centerline Station 325+00.00; thence South 49°40'27" East, along said Southerly right of way line, 88.33 feet to a point that is 130.00 feet right of centerline Station 325+69.12 (Station 325+69.30 Deed), said point also being on the East line of said Lot 2, SALVAGGIO'S RANCH and on the West right of way of said SW Pryor Road as now established; thence South 02°08'00" West, along said East lot line and said West right of way line, 509.17 feet to the Point of Beginning. Containing 1,370,951 square feet or 31.473 acres, more or less.



olsson

Olsson - Civil Engineering
Missouri Certificate of Authority #001592
1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177
www.olsson.com

REV. NO.

DATE

REVISIONS DESCRIPTION

BY

1

2019.10.15

Revised per DRC comments.

CJH

REZONING PLAN

OSAGE

REZONING & PRELIMINARY DEVELOPMENT PLAN

2019

LEE'S SUMMIT, MO

drawn by: CJH

checked by: CGW

approved by: JFE

QA/QC by: MGD

project no.: 019-2339

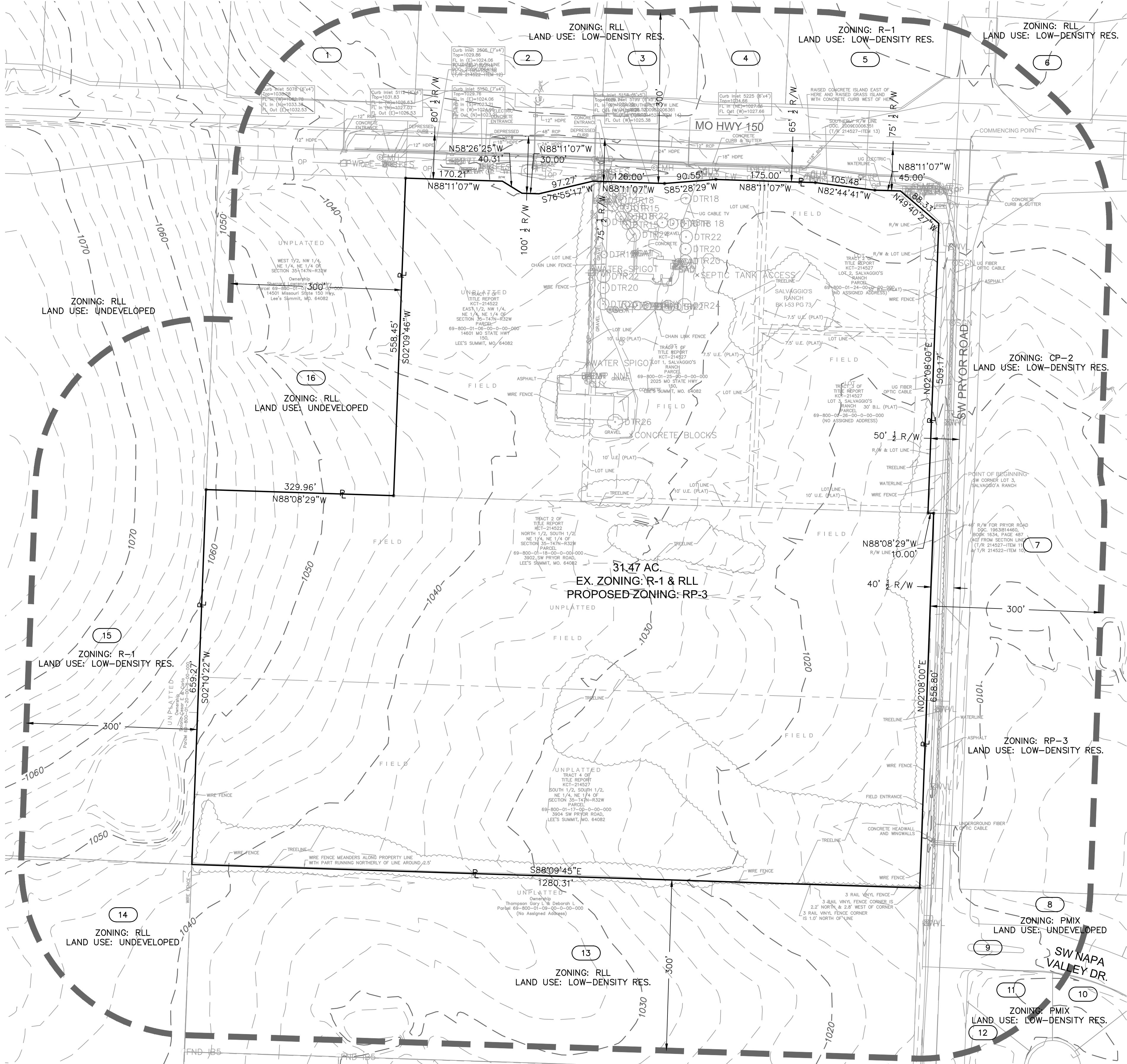
drawing no.: C-REZ01_0192339

date: 2019.09.13

SHEET

02

| PROPERTY OWNERS WITHIN 300' | | |
|-----------------------------|--|---|
| KEY | ADDRESS | OWNER(S) & MAILING ADDRESS |
| 1 | 2124 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | DANIELS NANCY SUE & G MARK-TR 13320 S PRATT RD LEE'S SUMMIT, MO 64086 |
| 2 | 2052 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | DALE DONALD RAY-TRUSTEE 2052 SW MO 150 HWY LEE'S SUMMIT, MO 64082 |
| 3 | 2040 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | RYAN JOHN C 2040 SW MO 150 HWY LEE'S SUMMIT, MO 64082 |
| 4 | 2030 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | HARRISON JERRY DALE & DONNA C 2030 SW MO 150 HWY LEE'S SUMMIT, MO 64063 |
| 5 | 3540 SW PRYOR RD LEE'S SUMMIT, MO 64082 | DOANE ERIC J & JULIE A-TRUSTEES 3540 SW PRYOR RD LEE'S SUMMIT, MO 64082 |
| 6 | 3699 SW PRYOR RD LEE'S SUMMIT, MO 64082 | MCILLIN PAULA 3699 SW PRYOR RD LEE'S SUMMIT, MO 64082 |
| 7 | 1905 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | GRIFFIN RILEY INVESTMENTS LLC 120 SE 30TH ST LEE'S SUMMIT, MO 64082 |
| 8 | ** NO ADDRESS ** | NAPA VALLEY INVESTMENTS LLC PO BOX 375 GREENWOOD, MO 64034 |
| 9 | TRAFFIC MEDIAN LEE'S SUMMIT, MO 64082 | NAPA VALLEY INVESTMENTS LLC PO BOX 375 GREENWOOD, MO 64034 |
| 10 | 1912 SW SAGE CANYON RD LEE'S SUMMIT, MO 64082 | COX COLIN G & JESSICA S 1912 SW SAGE CANYON RD LEE'S SUMMIT, MO 64082 |
| 11 | 1916 SW SAGE CANYON RD LEE'S SUMMIT, MO 64082 | DEL FRATTE GEORGE & BETTY J TRUSTEE 1916 SW SAGE CANYON RD LEE'S SUMMIT, MO 64082 |
| 12 | 1917 SW SAGE CANYON RD LEE'S SUMMIT, MO 64082 | THOMAS JOHN R & CHRISTINE D 1917 SW SAGE CANYON RD LEE'S SUMMIT, MO 64082 |
| 13 | ** NO ADDRESS ** | THOMPSON GARY L & DEBORAH L 1313 SW PACIFIC DR LEE'S SUMMIT, MO 64081 |
| 14 | ** NO ADDRESS ** | HIGHVIEW PROPERTIES LLC 2422 SW SPRINGWATER RDG LEE'S SUMMIT, MO 64081 |
| 15 | 2201 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | SOLANO CESAR E & CARLA EVANS 316 S SHORE DR LAKE WINNEBAGO, MO 64034 |
| 16 | 14501 SW MO 150 HWY LEE'S SUMMIT, MO 64082 | SHERRARD LAWRENCE III & MARY 4603 W 122ND ST APT 715 LEAWOOD, KS 66209 |



NOTES:
1. EXISTING ZONING: R-1 & RLL
2. EXISTING LAND USE: LOW-DENSITY RESIDENTIAL & UNDEVELOPED
3. NO OIL OR GAS WELLS ARE LOCATED ON THE PROPERTY.
INFORMATION VERIFIED VIA MISSOURI DNR:
<https://dnr.mo.gov/geology/geosrv/oilandgas.htm>
(UPDATED AUGUST 2018)
4. FEMA FLOODPLAIN ZONE: AREA OF MINIMAL FLOOD HAZARD, PER MAP 29095C0531G, EFF. 1/20/2017

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BY

CJH

REVISIONS DESCRIPTION

DATE

REV. NO.

1

2019.10.15

Revised per DRC comments.

EXISTING CONDITIONS

OSAGE

REZONING & PRELIMINARY DEVELOPMENT PLAN

LEE'S SUMMIT, MO

2019

drawn by: CJH

checked by: CGW

approved by: JFE

QA/QC by: MGD

project no.: 019-2339

drawing no.: C_EXC01_0192339

date: 2019.09.13

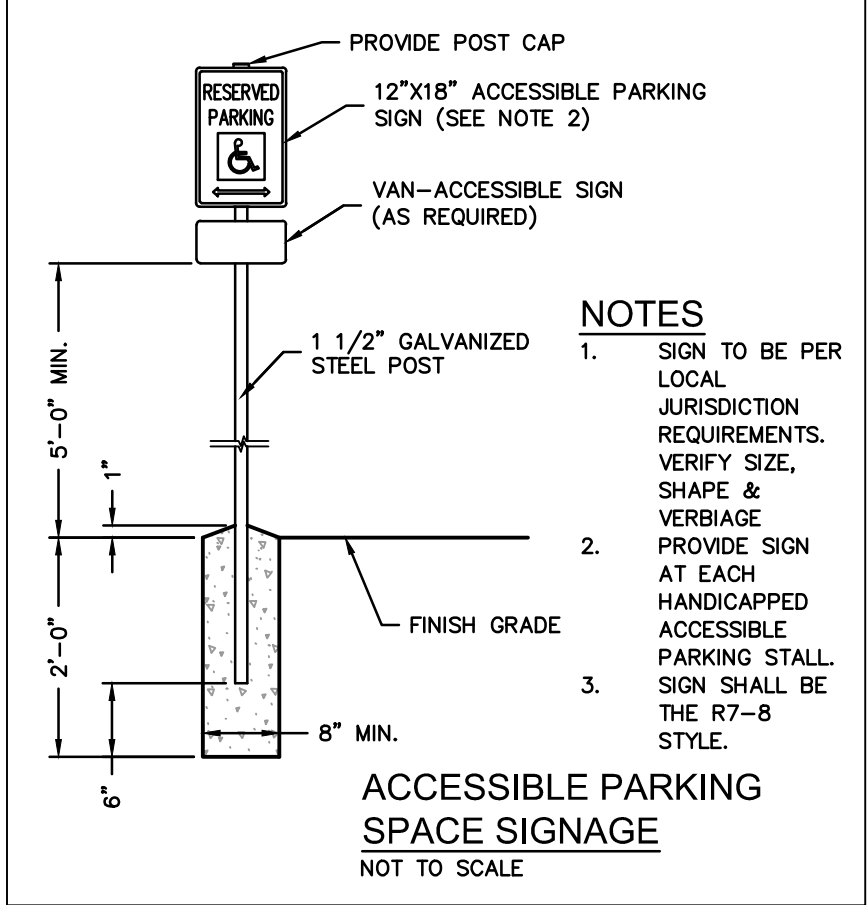
SHEET

03

| DEVELOPMENT DATA | | | | | | | | | | | | | |
|------------------|-----------|-----------|-------------|-----------------|-----------------|----------------|-----------|---|-------------------------|-------|------------------|------------------------------------|-----------------|
| PHASE | EX ZONING | PR ZONING | GROSS ACRES | STREET R/W (AC) | OPEN SPACE (AC) | DETENTION (AC) | NET ACRES | LAND USE | LOTS | UNITS | REQUIRED PARKING | PROVIDED PARKING (OFF-STREET ONLY) | D.U./AC (GROSS) |
| 1 | R-1 & RLL | RP-3 | 21.06 | 4.79 | 2.74 | 2.61 | 10.92 | 4 FAMILY DWELLING 2 FAMILY DWELLING SINGLE-FAMILY | 1-15 16-25 26-41 | 60 | 192 | 384 | 4.56 |
| 2 | R-1 & RLL | RP-3 | 7.14 | 1.42 | 0.46 | 0.00 | 5.26 | 4 FAMILY DWELLING 2 FAMILY DWELLING SINGLE-FAMILY | 42-44 45-49 50-61 | 24 | 100 | 200 | 7.00 |
| 3 | R-1 & RLL | RP-3 | 3.27 | 0.65 | 0.50 | 0.00 | 2.12 | 4 FAMILY DWELLING 2 FAMILY DWELLING SINGLE-FAMILY | 62-75 76-82 83-90 | 14 | 28 | 56 | 4.28 |
| TOTAL | | | 31.47 | 6.86 | 3.70 | 2.61 | 18.30 | | 160 | 320 | 640 | 5.08 | 8.74 |

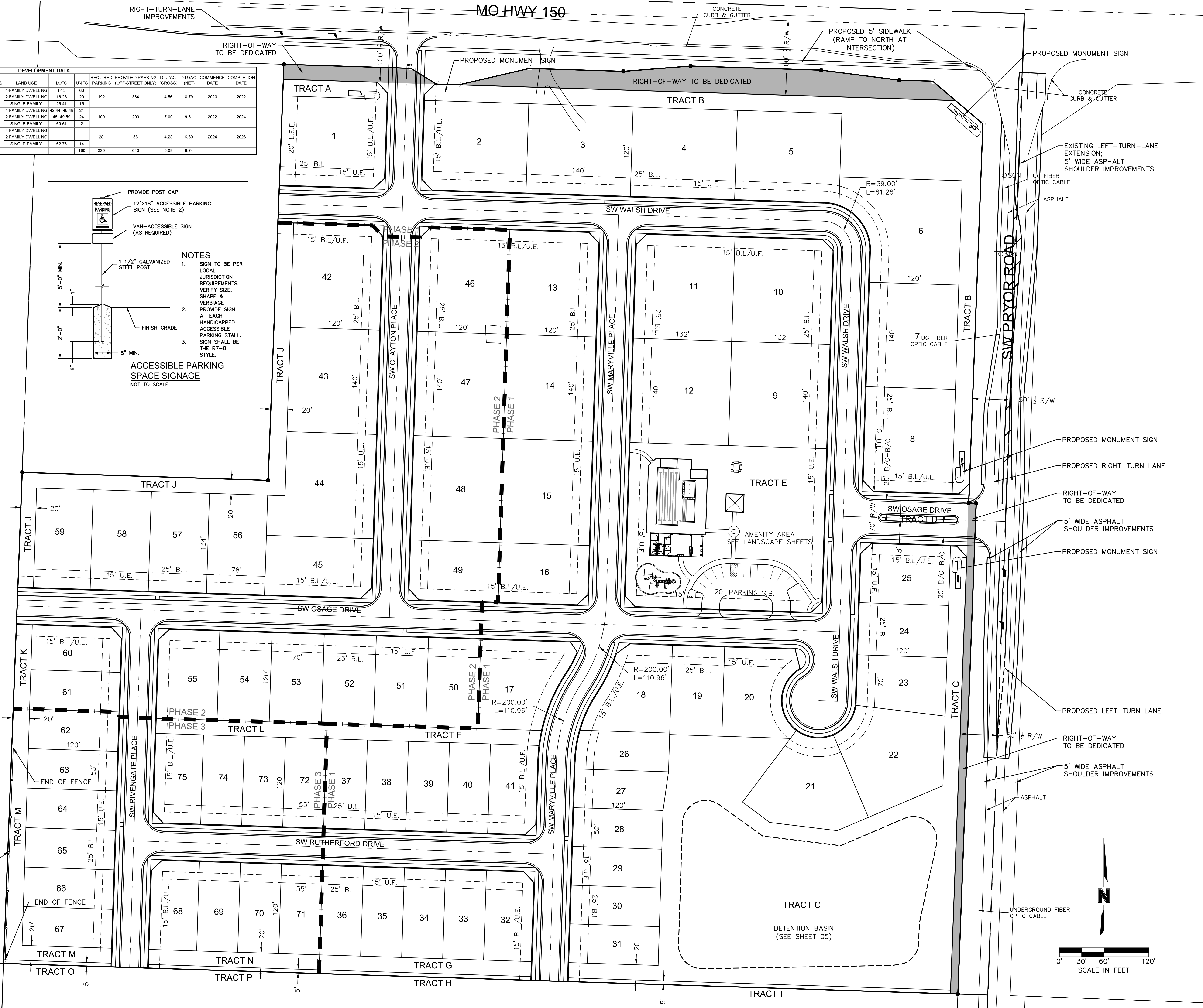
| TRACTS | |
|--------|------------|
| TRACT | AREA (AC.) |
| A | 0.07 |
| B | 0.97 |
| C | 2.61 |
| D | 0.02 |
| E | 1.33 |
| F | 0.13 |
| G | 0.13 |
| H | 0.03 |
| I | 0.06 |
| J | 0.40 |
| K | 0.06 |
| L | 0.11 |
| M | 0.23 |
| N | 0.11 |
| O | 0.02 |
| P | 0.03 |

- NOTES:
- RIGHT-OF-WAY WIDTH SHALL BE 50', EXCEPT WHERE OTHERWISE NOTED. CUL-DE-SAC R/W SHALL BE A 50' RADIUS AS MEASURED FROM THE CENTER OF THE CUL-DE-SAC.
 - STREET WIDTHS AS MEASURED BETWEEN BACKS OF CURBS SHALL BE 28', EXCEPT WHERE OTHERWISE NOTED. CUL-DE-SAC PAVEMENT SHALL BE A 39' RADIUS AS MEASURED FROM THE CENTER OF THE CUL-DE-SAC TO BACK OF CURB.
 - 5' SIDEWALKS SHALL BE INSTALLED ALONG BOTH SIDES OF ALL PROPOSED STREETS.
 - TRACTS A, B, & C SHALL BE A MINIMUM OF 20' WIDE WHERE SEPARATING REAR LOT LINES AND RIGHT-OF-WAY.
 - MEDIUM-DENSITY BUFFERS TO ADJACENT LAND USES SHALL BE LOCATED WITHIN 20' LANDSCAPE EASEMENTS WITHIN LOTS.
 - LOTS 1, 2, 8, 25 SHALL NOT BE PERMITTED DRIVEWAY ACCESS TO STREETS ALONG SIDES OF LOTS.
 - LOT DIMENSIONS AND SETBACKS:
 - LOTS 1-15, 42-44, 46-48
 - (4-FAMILY BUILDINGS):
 - MINIMUM DEPTH: 120'
 - MINIMUM WIDTH: 140'
 - MINIMUM AREA: 16,800 SF
 - FRONT SETBACK: 25'
 - SIDE YARD SETBACK: 10' MIN.
 - REAR YARD SETBACK: 30' MIN.
 - CORNER LOTS: 15' MIN.
 - LOTS 16-25, 45, 49-59 (2-FAMILY BUILDINGS):
 - MINIMUM DEPTH: 118'
 - MINIMUM WIDTH: 70'
 - MINIMUM AREA: 8260 SF
 - FRONT SETBACK: 25'
 - SIDE YARD SETBACK: 5' MIN.
 - REAR YARD SETBACK: 20' MIN.
 - CORNER LOTS: 15' MIN.
 - LOTS 26-41, 62-75 (SINGLE-FAMILY):
 - MINIMUM DEPTH: 120'
 - MINIMUM WIDTH: 50'
 - MINIMUM AREA: 6000 SF
 - FRONT SETBACK: 25'
 - SIDE YARD SETBACK: 5' MIN.
 - REAR YARD SETBACK: 20' MIN.
 - CORNER LOTS: 15' MIN.
 - THE HOUSING ASSOCIATION SHALL AT ALL TIMES, FROM AND AFTER ITS DATE OF FORMATION AND AT ITS EXPENSE, BE RESPONSIBLE FOR PROPERLY REPAIRING, REPLACING, CONTROLLING, MAINTAINING, OPERATING AND INSURING, AS APPLICABLE, ALL COMMON AREAS, SUBJECT TO ANY CONTROL THEREOVER MAINTAINED BY ANY GOVERNMENTAL AUTHORITY, UTILITY OR SIMILAR PERSON OR ENTITY.



- NOTES
- SIGN TO BE PER LOCAL JURISDICTION REQUIREMENTS. VERIFY SIZE, SHAPE & VERBIAGE.
 - PROVIDE SIGN AT EACH HANDICAPPED ACCESSIBLE PARKING STALL.
 - SIGN SHALL BE THE R7-8 STYLE.

ACCESSIBLE PARKING SPACE SIGNAGE
NOT TO SCALE



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REVISIONS

| REV. NO. | DATE | REVISIONS DESCRIPTION | BY |
|----------|------------|---------------------------|-----|
| 1 | 2019.10.15 | Revised per DRC comments. | CJH |

SITE PLAN

OSAGE
REZONING & PRELIMINARY DEVELOPMENT PLAN

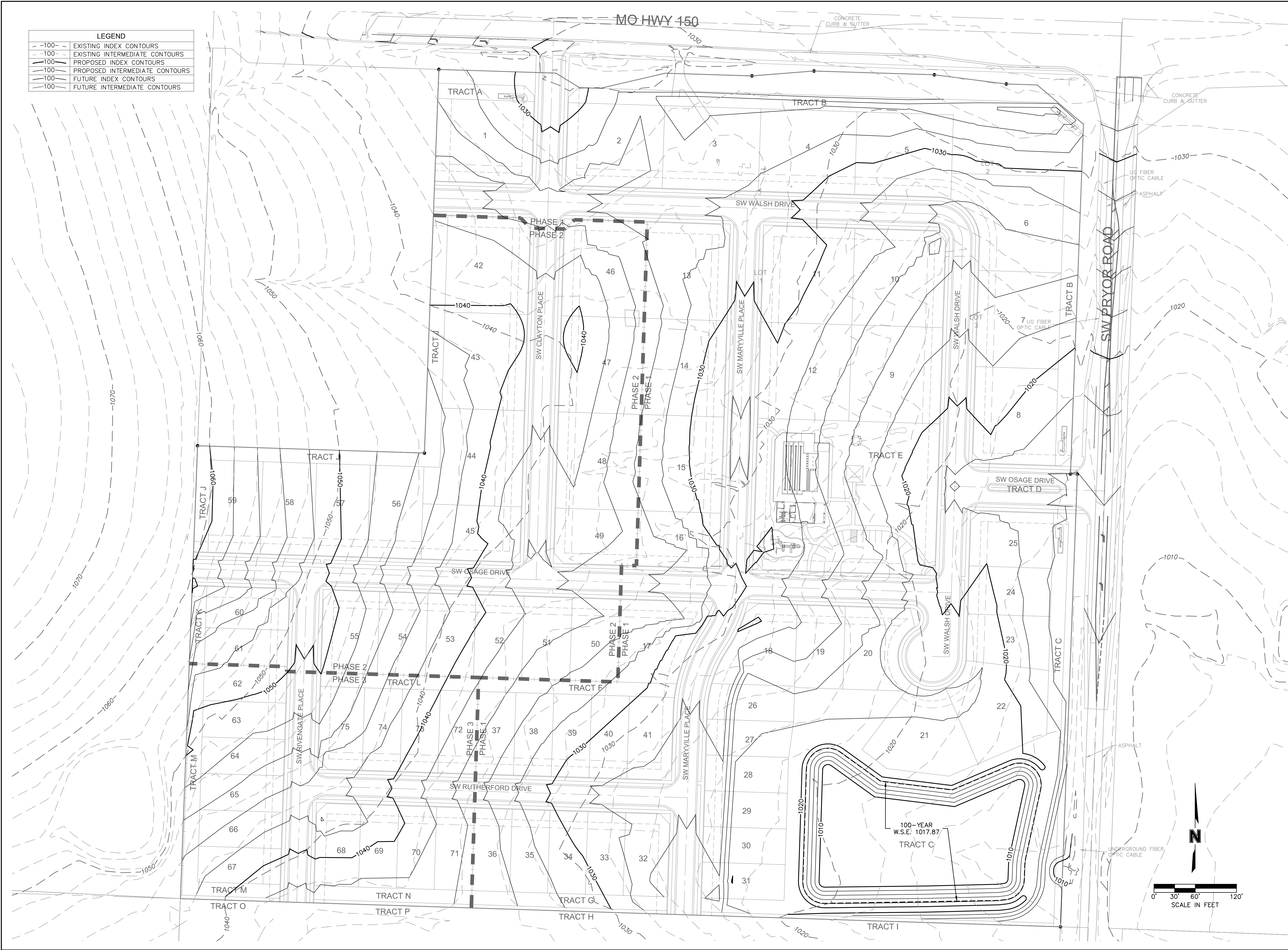
2019

drawn by: CJH
checked by: CGW
approved by: JFE
QA/QC by: MGD
project no.: 019-2339
drawing no.: C_SIT01_0192339
date: 2019.09.13

SHEET
04

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| LEGEND | |
|--------|--------------------------------|
| -100- | EXISTING INDEX CONTOURS |
| -100- | EXISTING INTERMEDIATE CONTOURS |
| 100 | PROPOSED INDEX CONTOURS |
| 100 | PROPOSED INTERMEDIATE CONTOURS |
| 100 | FUTURE INDEX CONTOURS |
| 100 | FUTURE INTERMEDIATE CONTOURS |



PRELIMINARY GRADING PLAN

OSAGE
REZONING & PRELIMINARY DEVELOPMENT PLAN

LEE'S SUMMIT, MO

2019

| REV. NO. | DATE | REVISIONS DESCRIPTION |
|----------|------------|---------------------------|
| 1 | 2019.10.15 | Revised per DRC comments. |

| BY |
|-----|
| CJH |

REVISIONS

drawn by: CJH
checked by: CGW
approved by: JFE
QA/QC by: MGD
project no.: 019-2339
drawing no.: C_GRD01_0192339
date: 2019.09.13

SHEET
05

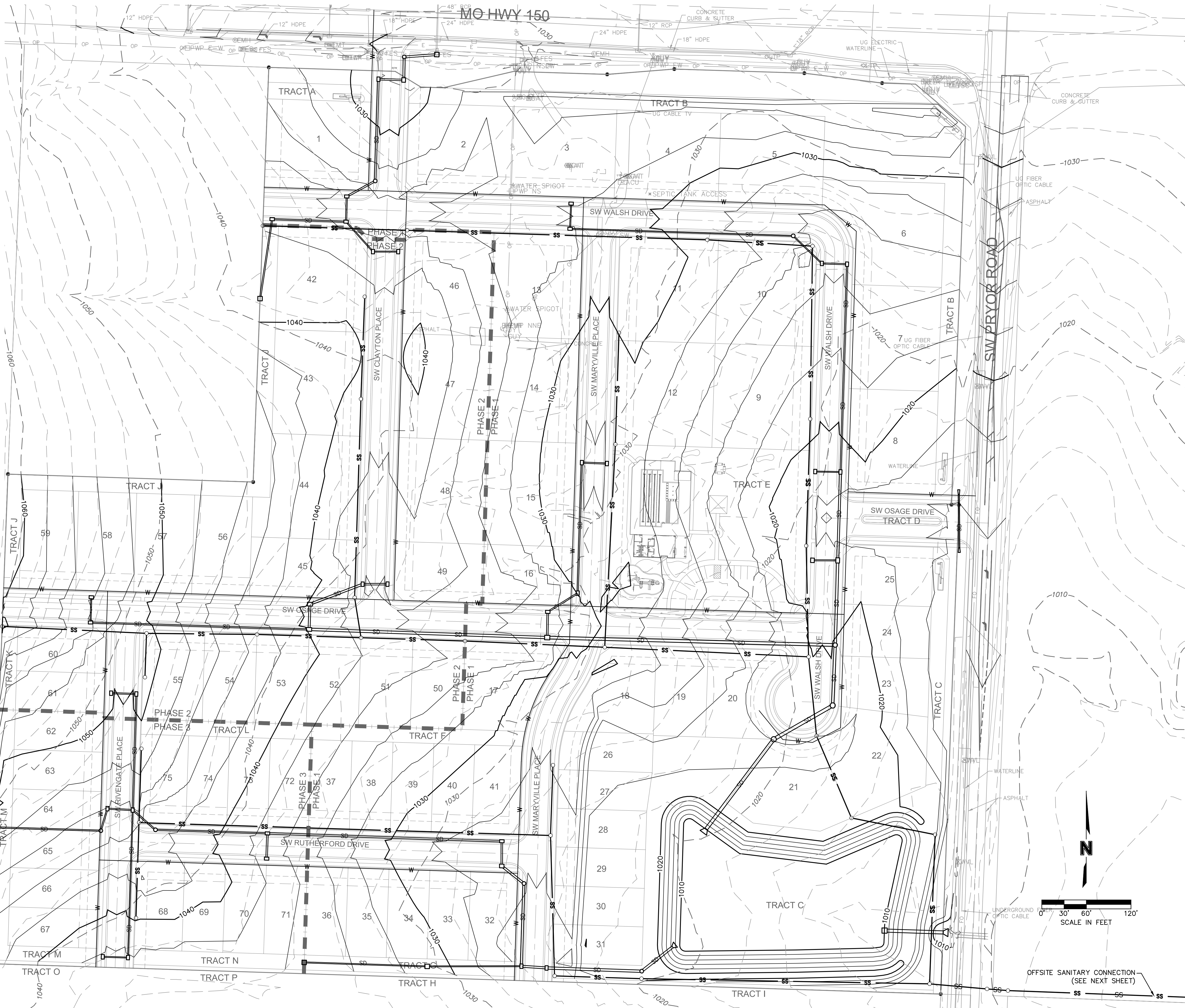
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North Kansas City, MO 64116

TEL 816.361.1177
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| LEGEND | |
|--------|---|
| ECTVOH | EXISTING CABLE TV, OVERHEAD |
| ECTV | EXISTING CABLE TV, UNDERGROUND |
| CTVOH | PROPOSED CABLE TV, OVERHEAD |
| CTV | PROPOSED CABLE TV, UNDERGROUND |
| FGTVOH | FUTURE CABLE TV, OVERHEAD |
| FGTV | FUTURE CABLE TV, UNDERGROUND |
| EFOOH | EXISTING FIBER OPTIC, OVERHEAD |
| EFO | EXISTING FIBER OPTIC, UNDERGROUND |
| FOOH | PROPOSED FIBER OPTIC, OVERHEAD |
| FO | PROPOSED FIBER OPTIC, UNDERGROUND |
| FGTOH | FUTURE FIBER OPTIC, OVERHEAD |
| FGT | FUTURE FIBER OPTIC, UNDERGROUND |
| EFP | EXISTING FIRE PROTECTION SYSTEM LINE |
| FP | PROPOSED FIRE PROTECTION SYSTEM LINE |
| FEP | FUTURE FIRE PROTECTION SYSTEM LINE |
| EFL | EXISTING FUEL LINE |
| FL | PROPOSED FUEL LINE |
| FFL | FUTURE FUEL LINE |
| EG | EXISTING NATURAL GAS LINE |
| G | PROPOSED NATURAL GAS LINE |
| FG | FUTURE NATURAL GAS LINE |
| ETELOH | EXISTING TELEPHONE LINE, OVERHEAD |
| ETEL | EXISTING TELEPHONE LINE, UNDERGROUND |
| TELOH | PROPOSED TELEPHONE LINE, OVERHEAD |
| TEL | PROPOSED TELEPHONE LINE, UNDERGROUND |
| FTELOH | FUTURE TELEPHONE LINE, OVERHEAD |
| FTEL | FUTURE TELEPHONE LINE, UNDERGROUND |
| EEOH | EXISTING POWER/ELECTRIC LINE, OVERHEAD |
| EE | EXISTING POWER/ELECTRIC LINE, UNDERGROUND |
| EOH | PROPOSED POWER/ELECTRIC LINE, OVERHEAD |
| E | PROPOSED POWER/ELECTRIC LINE, UNDERGROUND |
| FEH | FUTURE POWER/ELECTRIC LINE, OVERHEAD |
| FE | FUTURE POWER/ELECTRIC LINE, UNDERGROUND |
| ESS | EXISTING SANITARY SEWER |
| SS | PROPOSED SANITARY SEWER |
| FSS | FUTURE SANITARY SEWER |
| ESL | EXISTING STEAM LINE |
| SL | PROPOSED STEAM LINE |
| FSL | FUTURE STEAM LINE |
| ESD | EXISTING STORM SEWER |
| SD | PROPOSED STORM SEWER |
| FSD | FUTURE STORM SEWER |
| EW | EXISTING WATER LINE |
| W | PROPOSED WATER LINE |
| FEW | FUTURE WATER LINE |

| LEGEND | |
|--------|--------------------------------|
| -100- | EXISTING INDEX CONTOURS |
| -100- | EXISTING INTERMEDIATE CONTOURS |
| -100- | PROPOSED INDEX CONTOURS |
| -100- | PROPOSED INTERMEDIATE CONTOURS |
| -100- | FUTURE INDEX CONTOURS |
| -100- | FUTURE INTERMEDIATE CONTOURS |



PRELIMINARY UTILITY PLAN

OSAGE
REZONING & PRELIMINARY DEVELOPMENT PLAN

LEE'S SUMMIT, MO

2019

| REV. NO. | DATE | REVISIONS DESCRIPTION | BY |
|----------|------------|---------------------------|-----|
| 1 | 2019.10.15 | Revised per DRC comments. | CJH |
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REVISIONS

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| drawn by: | CJH |
| checked by: | CGW |
| approved by: | JFE |
| QA/QC by: | MGD |
| project no.: | 019-2339 |
| drawing no.: | C-UTL01_0192339 |
| date: | 2019.09.13 |

SHEET
06

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DWG: F:\2019\2001-2500\019-2339\40-Design\AutoCAD\Preliminary Plans\Sheets\GNV\C_UTL02_0192339.dwg
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| LEGEND | |
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| | EXISTING CABLE TV, OVERHEAD |
| | EXISTING CABLE TV, UNDERGROUND |
| | PROPOSED CABLE TV, OVERHEAD |
| | PROPOSED CABLE TV, UNDERGROUND |
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| | EXISTING FIBER OPTIC, OVERHEAD |
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| | PROPOSED FIBER OPTIC, UNDERGROUND |
| | FUTURE FIBER OPTIC, OVERHEAD |
| | FUTURE FIBER OPTIC, UNDERGROUND |
| | EXISTING FIRE PROTECTION SYSTEM LINE |
| | PROPOSED FIRE PROTECTION SYSTEM LINE |
| | FUTURE FIRE PROTECTION SYSTEM LINE |
| | EXISTING FUEL LINE |
| | PROPOSED FUEL LINE |
| | FUTURE FUEL LINE |
| | EXISTING NATURAL GAS LINE |
| | PROPOSED NATURAL GAS LINE |
| | FUTURE NATURAL GAS LINE |
| | EXISTING TELEPHONE LINE, OVERHEAD |
| | EXISTING TELEPHONE LINE, UNDERGROUND |
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| | PROPOSED TELEPHONE LINE, UNDERGROUND |
| | FUTURE TELEPHONE LINE, OVERHEAD |
| | FUTURE TELEPHONE LINE, UNDERGROUND |
| | EXISTING POWER/ELECTRIC LINE, OVERHEAD |
| | EXISTING POWER/ELECTRIC LINE, UNDERGROUND |
| | PROPOSED POWER/ELECTRIC LINE, OVERHEAD |
| | PROPOSED POWER/ELECTRIC LINE, UNDERGROUND |
| | FUTURE POWER/ELECTRIC LINE, OVERHEAD |
| | FUTURE POWER/ELECTRIC LINE, UNDERGROUND |
| | EXISTING SANITARY SEWER |
| | PROPOSED SANITARY SEWER |
| | FUTURE SANITARY SEWER |
| | EXISTING STEAM LINE |
| | PROPOSED STEAM LINE |
| | FUTURE STEAM LINE |
| | EXISTING STORM SEWER |
| | PROPOSED STORM SEWER |
| | FUTURE STORM SEWER |
| | EXISTING WATER LINE |
| | PROPOSED WATER LINE |
| | FUTURE WATER LINE |

| LEGEND | |
|--------|--------------------------------|
| | EXISTING INDEX CONTOURS |
| | EXISTING INTERMEDIATE CONTOURS |
| | PROPOSED INDEX CONTOURS |
| | PROPOSED INTERMEDIATE CONTOURS |
| | FUTURE INDEX CONTOURS |
| | FUTURE INTERMEDIATE CONTOURS |



PRELIMINARY UTILITY PLAN (CONT'D.)

OSAGE
REZONING & PRELIMINARY DEVELOPMENT PLAN

LEE'S SUMMIT, MO

| REV. NO. | DATE | REVISIONS DESCRIPTION | BY |
|----------|------------|---------------------------|-----|
| 1 | 2019.10.15 | Revised per DRC comments. | CJH |
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REVISIONS

2019

drawn by: CJH
checked by: CGW
approved by: JFE
QA/QC by: MGD
project no.: 019-2339
drawing no.: C_UTL02_0192339
date: 2019.09.13

SHEET
07

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Landscape Schedule

| Symbol | Qty. | Botanical Name | Common Name | Min.Root | Min.Size | Caliper | Remarks |
|--------------------------|------|-----------------------------------|-------------------------|---------------------|----------|----------------------------------|---------|
| OVERSTORY TREES | | | | | | | |
| | 55 | Gleditsia triacanthos "Skyline" | Shademaster Honeylocust | | 3" | 6' min. clear., ground to canopy | |
| | 104 | Platanus x acerifolia | London Plane Tree | | 3" | 6' min. clear., ground to canopy | |
| | 121 | Acer x truncatum "Warrenred" | Pacific Sunset Maple | | 3" | 6' min. clear., ground to canopy | |
| | 53 | Quercus bicolor | Swamp White Oak | | 3" | 6' min. clear., ground to canopy | |
| | 68 | Acer griseum | Paperbark Maple | | 3" | 6' min. clear., ground to canopy | |
| | 36 | Ulmus parvifolia | Lacebark Elm | | 3" | 6' min. clear., ground to canopy | |
| EVERGREEN TREES | | | | | | | |
| | 107 | Juniperus chinensis "Keteleeri" | Keteleeri Juniper | | 8' ht. | symmetrical pyramidal form | |
| | 78 | Picea abies | Norway Spruce | | 8' ht. | symmetrical pyramidal form | |
| | 101 | Picea pungens | Colorado Blue Spruce | | 6' ht. | symmetrical pyramidal form | |
| ORNAMENTAL TREES | | | | | | | |
| | 82 | Cercis canadensis | Eastern Redbud | | 3" | | |
| | 20 | Cornus florida "Cloud Nine" | Cloud 9 Dogwood | | 3" | | |
| DECIDUOUS SHRUBS/GRASSES | | | | | | | |
| | 101 | Liriope spicata "Silver Dragon" | Silver Dragon Liriope | 1 gal. | | Plant @ 18" O.C. | |
| | 80 | Festuca ovina glauca | Dwarf Blue Fescue | 1 gal. | | Plant @ 18" O.C. | |
| | 13 | Abelia x grandiflora Kaleidoscope | Kaleidoscope Abelia | 3 gal. 18" ht. min. | | Plant @ 4' O.C. | |
| | 138 | Equisetum hyemale | Horsetail Reed | 1 gal. | | Plant @ 18" O.C. | |
| EVERGREEN SHRUBS | | | | | | | |
| | 51 | Juniperus chinensis "Spartan" | Spartan Juniper | | 5' ht. | Symmetrical pyramidal form | |

Landscape Calculations/Requirements

Street Frontage: (For all Districts) One (1) tree shall be planted for each thirty (30) feet of street frontage, within 20' setback. REQUIREMENTS MET

Amenity Parking: (For all Districts) One parking stall per every 16 units. 160 total units.
10 Stalls required.
10 stalls provided.
REQUIREMENTS MET

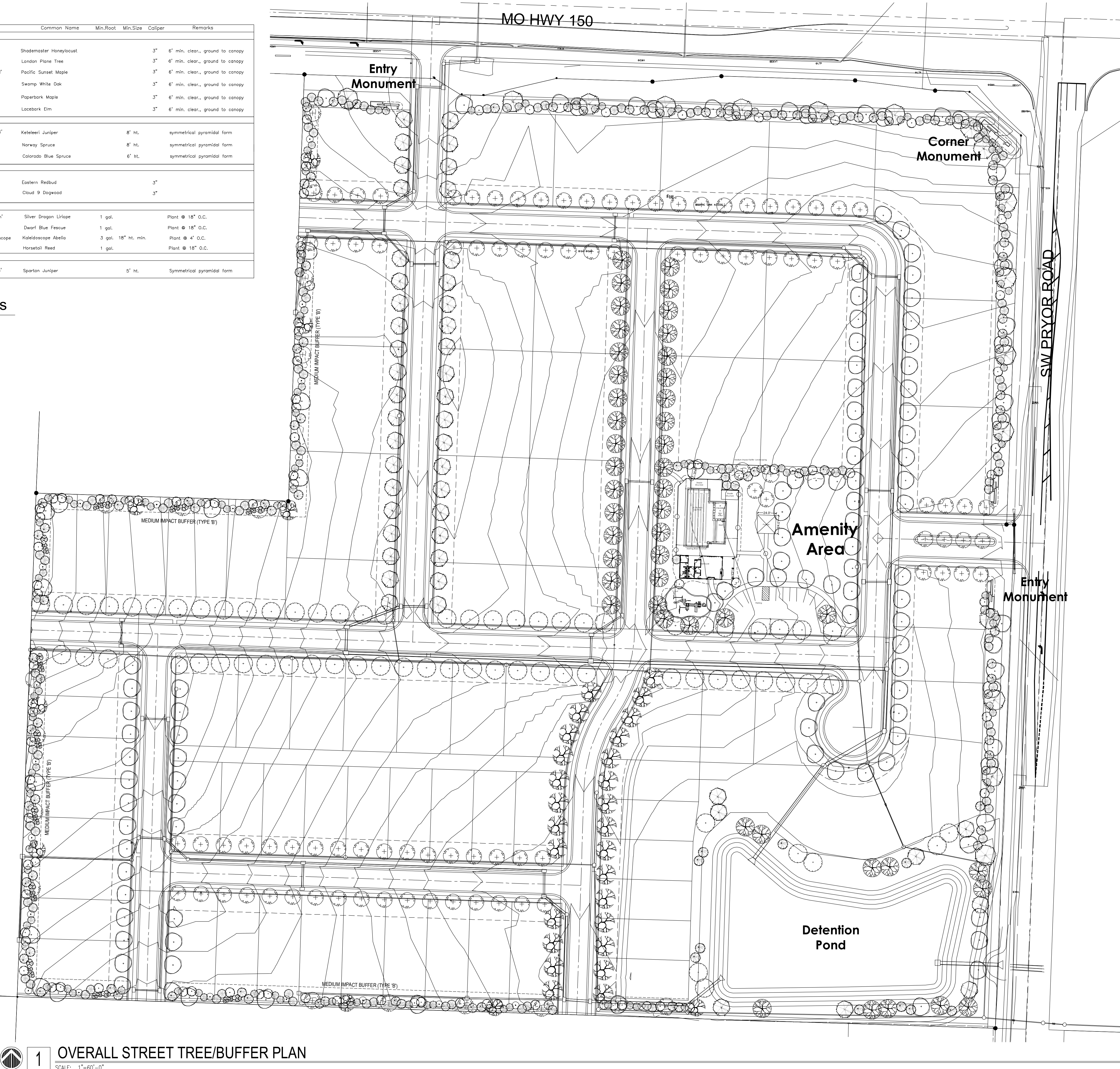
Buffer Landscape: Medium Density Buffer (type B) provided on all West and South sides of development. Also, provided on north side of Amenity area as shown.
REQUIREMENTS MET

Planting Notes

1. Location of all existing utilities needs to done before commencing work.
2. The planting plan graphically illustrates overall plant massings. Each plant species massing shall be placed in the field to utilize the greatest coverage of ground plane. The following applies for individual plantings:
 - a. Creeping groundcover shall be a minimum of 6" from paving edge.
 - b. All trees shall be a minimum of 3' from paving edge.
 - c. All plants of the same species shall be equally spaced apart and placed for best aesthetic viewing.
 - d. All shrubs shall be a minimum of 2' from paved edge.
3. Mulch all planting bed areas to a minimum depth of 3". Mulch individual trees to a minimum depth of 4".
4. Note: If plants are not labeled - they are existing and shall remain.
5. All landscaped areas in ROW shall be sodded and irrigated unless otherwise specified.

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

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

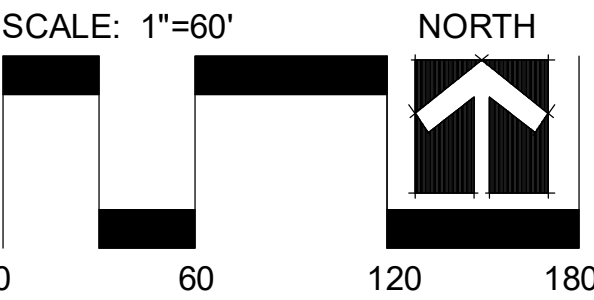


MEIER
LANDSCAPE
ARCHITECTURE
15245 Metcalf Ave.
Overland Park, KS 66223
913.787.2817



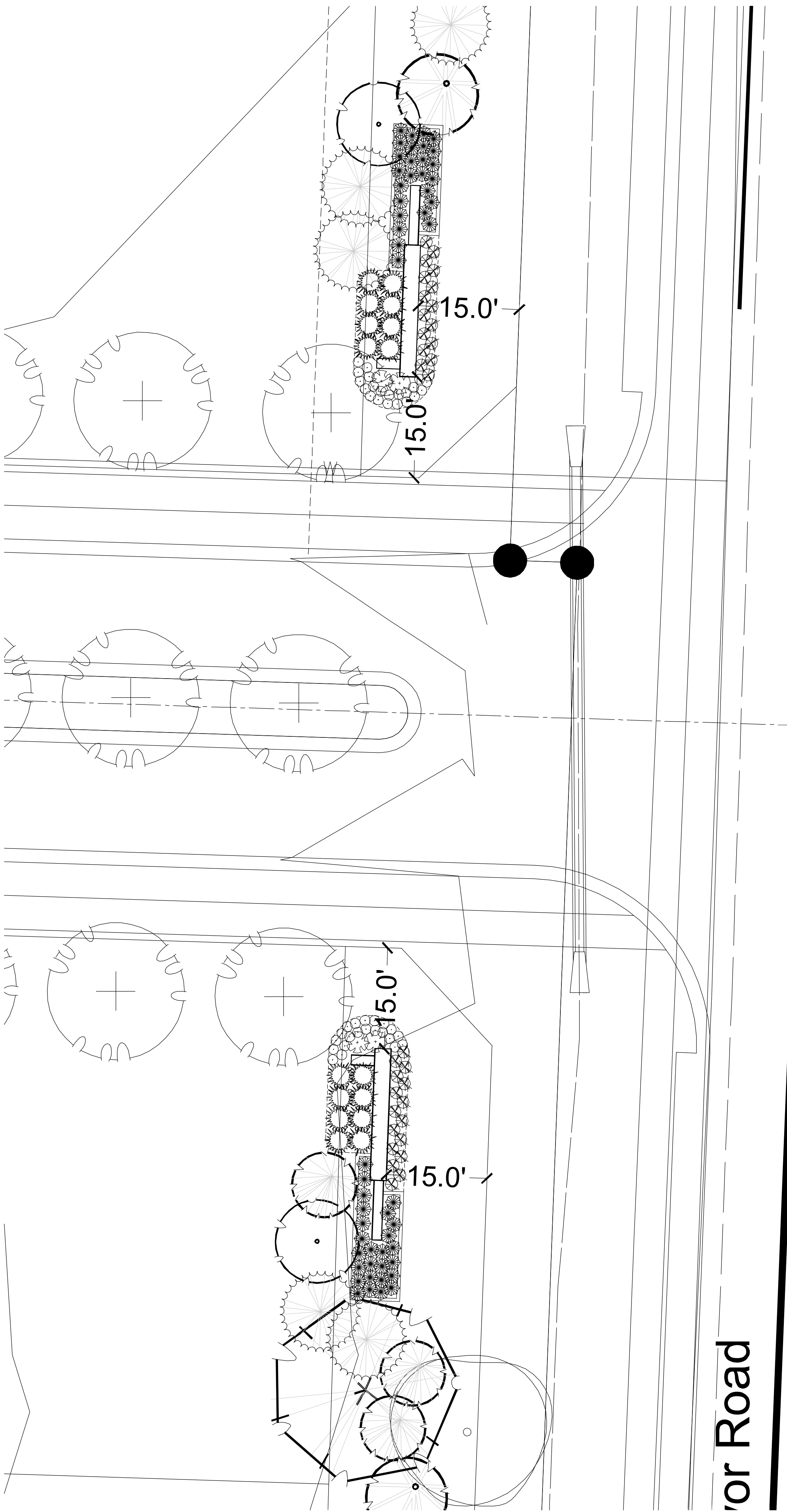
CLIENT
Summit Homes
120 SE 30th St
Lee's Summit, MO 64082

PROJECT
Osage
Highway 150 and
Pryor Road
Lee's Summit, MO

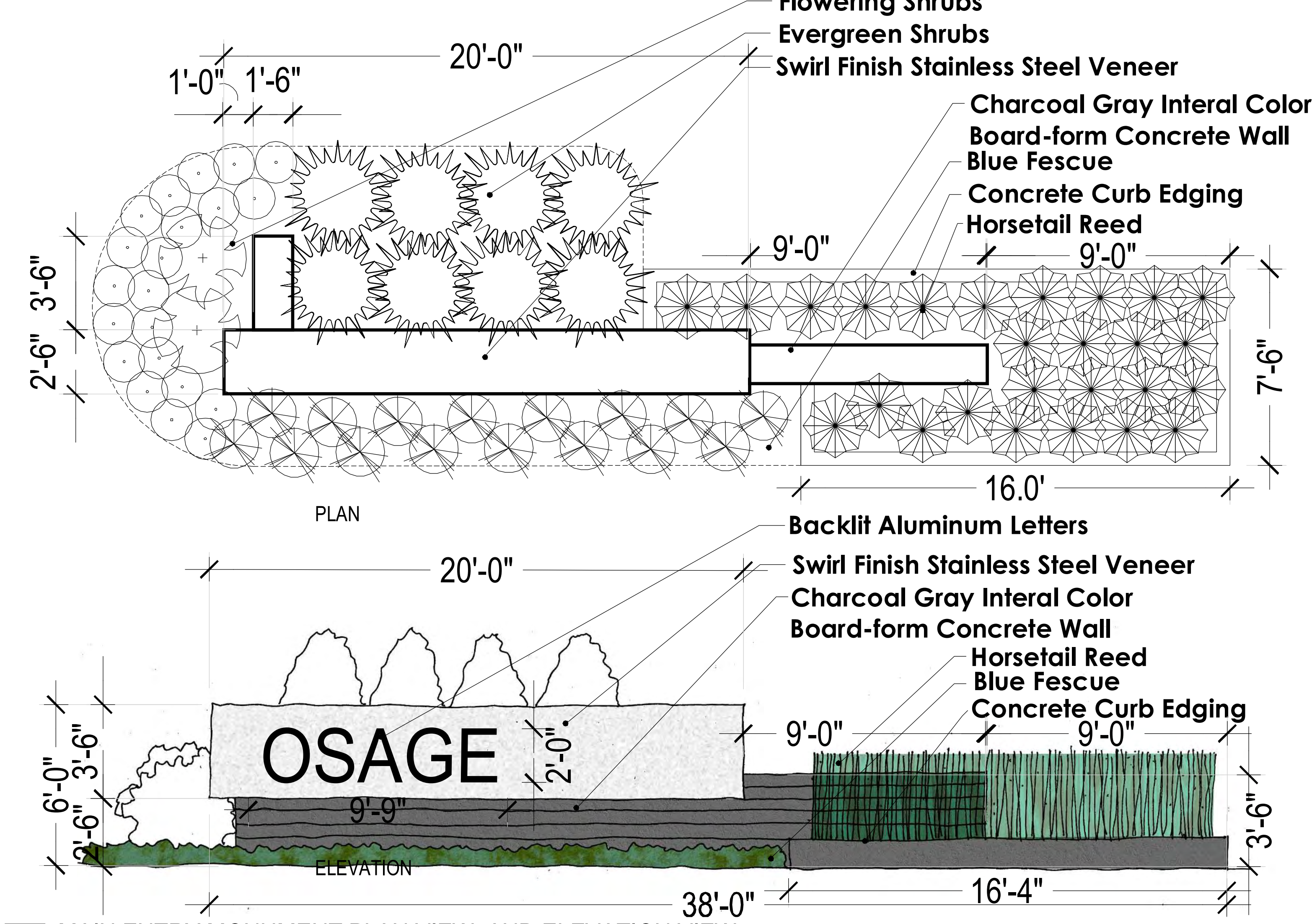


Date: 10.3.19
Project #: 482
Overall Plan

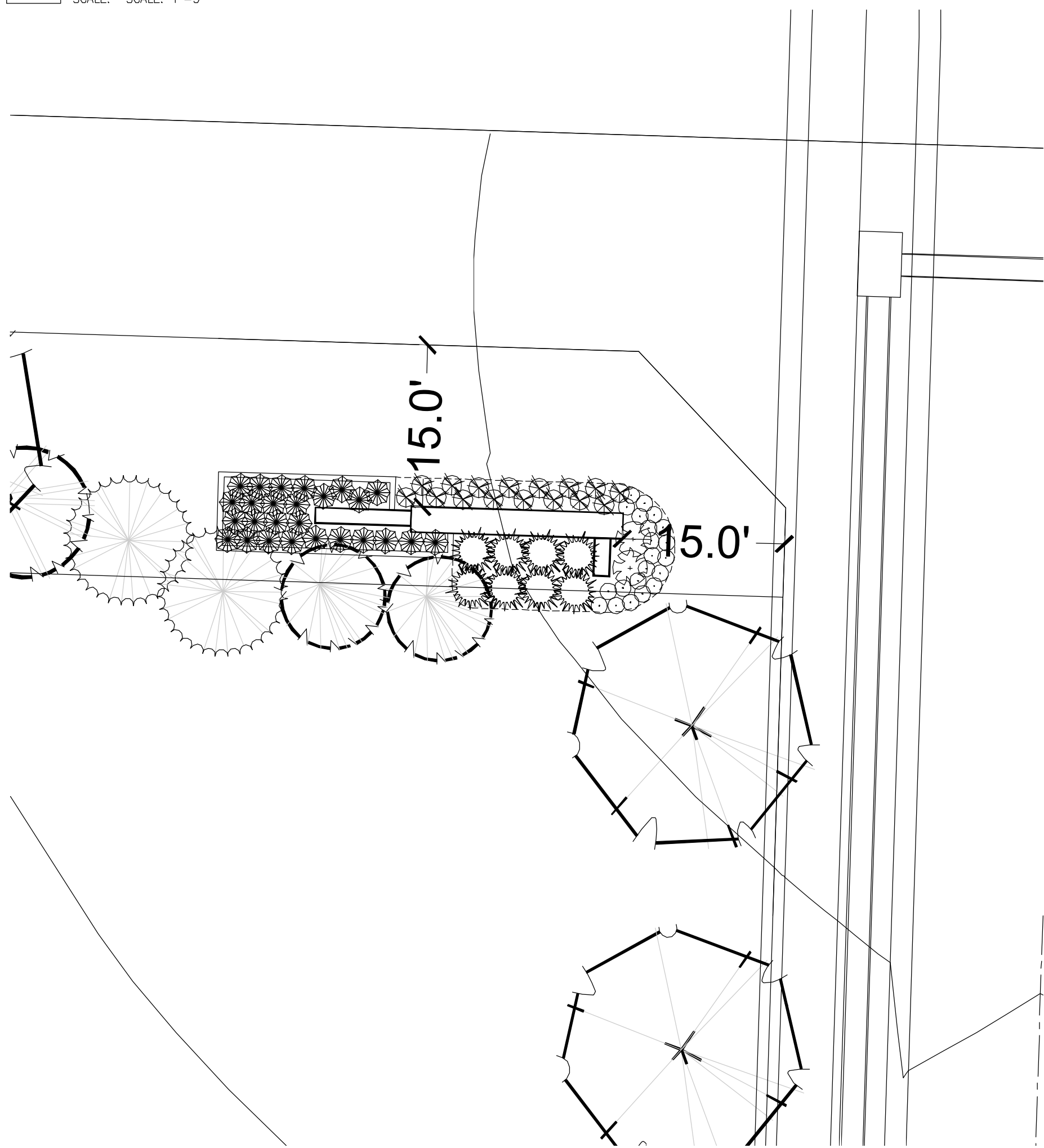
L1



1 PRYOR ROAD ENTRY MONUMENT LANDSCAPE PLAN
SCALE: 1"=10'-0"



2 MAIN ENTRY MONUMENT PLAN VIEW, AND ELEVATION VIEW
SCALE: SCALE: 1"=3'



3 CLAYTON PLACE ENTRY MONUMENT LANDSCAPE PLAN
SCALE: 1"=20'-0"

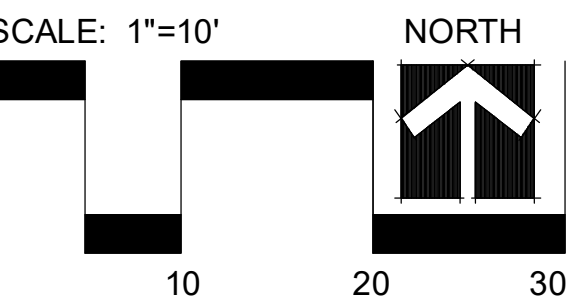
Landscape Schedule

| Symbol | Qty. | Botanical Name | Common Name | Min.Root | Min.Size | Caliper | Remarks |
|--------------------------|-----------------------------------|-------------------------|-------------|----------|--------------|---------|----------------------------------|
| OVERSTORY TREES | | | | | | | |
| 55 | Gleditsia triacanthos "Skyline" | Shademaster Honeylocust | | | | 3" | 6' min. clear., ground to canopy |
| 104 | Platanus x acerifolia | London Plane Tree | | | | 3" | 6' min. clear., ground to canopy |
| 121 | Acer x truncatum "Warrenred" | Pacific Sunset Maple | | | | 3" | 6' min. clear., ground to canopy |
| 53 | Quercus bicolor | Swamp White Oak | | | | 3" | 6' min. clear., ground to canopy |
| 68 | Acer griseum | Paperbark Maple | | | | 3" | 6' min. clear., ground to canopy |
| 36 | Ulmus parvifolia | Lacebark Elm | | | | 3" | 6' min. clear., ground to canopy |
| EVERGREEN TREES | | | | | | | |
| 107 | Juniperus chinensis "Keteleeri" | Keteleeri Juniper | | | 8' ht. | | symmetrical pyramidal form |
| 78 | Picea abies | Norway Spruce | | | 8' ht. | | symmetrical pyramidal form |
| 101 | Picea pungens | Colorado Blue Spruce | | | 6' ht. | | symmetrical pyramidal form |
| ORNAMENTAL TREES | | | | | | | |
| 82 | Cercis canadensis | Eastern Redbud | | | | 3" | |
| 20 | Cornus florida "Cloud Nine" | Cloud 9 Dogwood | | | | 3" | |
| DECIDUOUS SHRUBS/GRASSES | | | | | | | |
| 101 | Liriope spicata "Silver Dragon" | Silver Dragon Liriope | | 1 gal. | | | Plant @ 18" O.C. |
| 80 | Festuca ovina glauca | Dwarf Blue Fescue | | 1 gal. | | | Plant @ 18" O.C. |
| 13 | Abelia x grandiflora Kaleidoscope | Kaleidoscope Abelia | | 3 gal. | 18" ht. min. | | Plant @ 4' O.C. |
| 138 | Equisetum hyemale | Horsetail Reed | | 1 gal. | | | Plant @ 18" O.C. |
| EVERGREEN SHRUBS | | | | | | | |
| 51 | Juniperus chinensis "Spartan" | Spartan Juniper | | | 5' ht. | | Symmetrical pyramidal form |

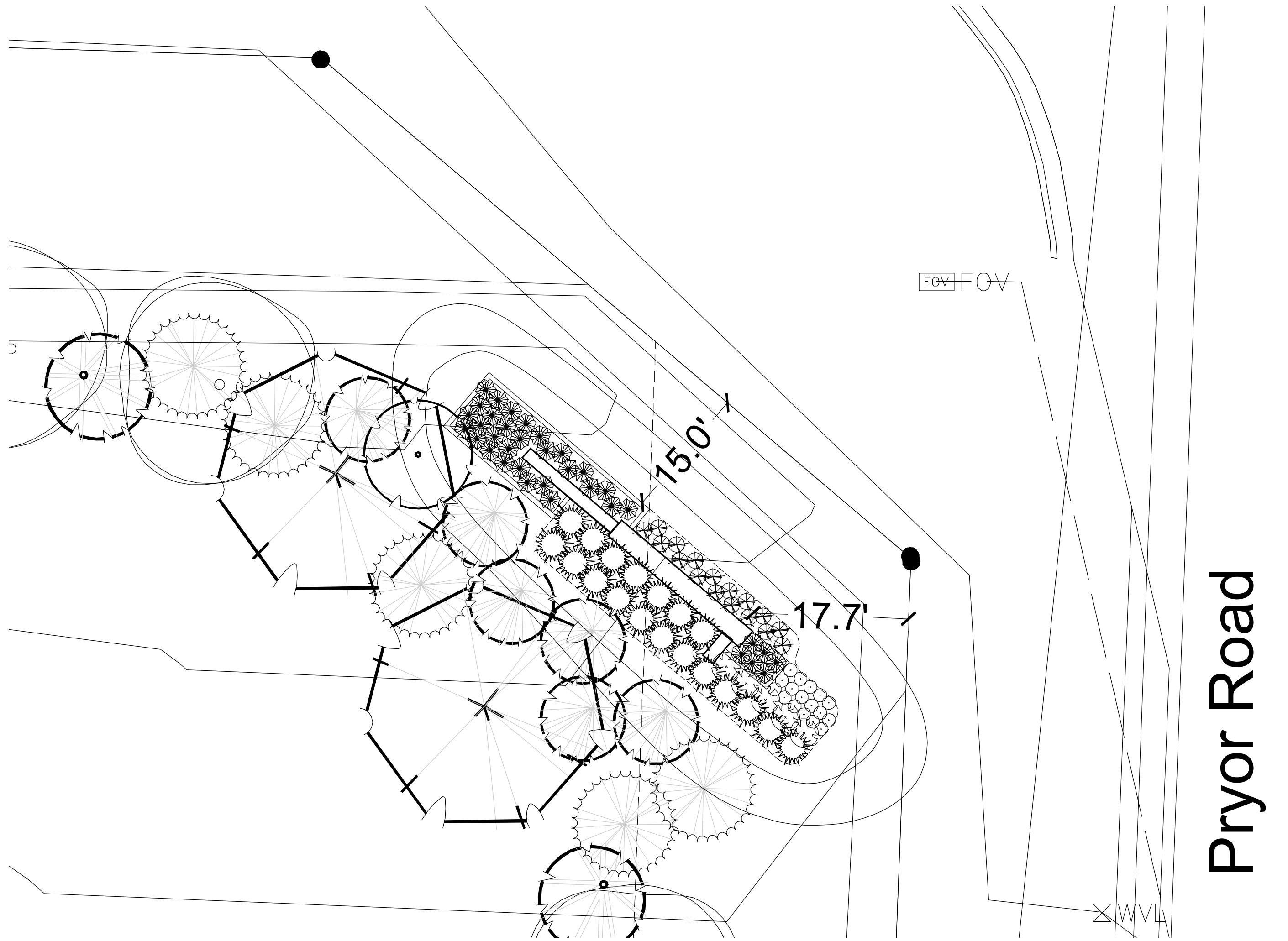


CLIENT
Summit Homes
120 SE 30th St
Lee's Summit, MO 64082

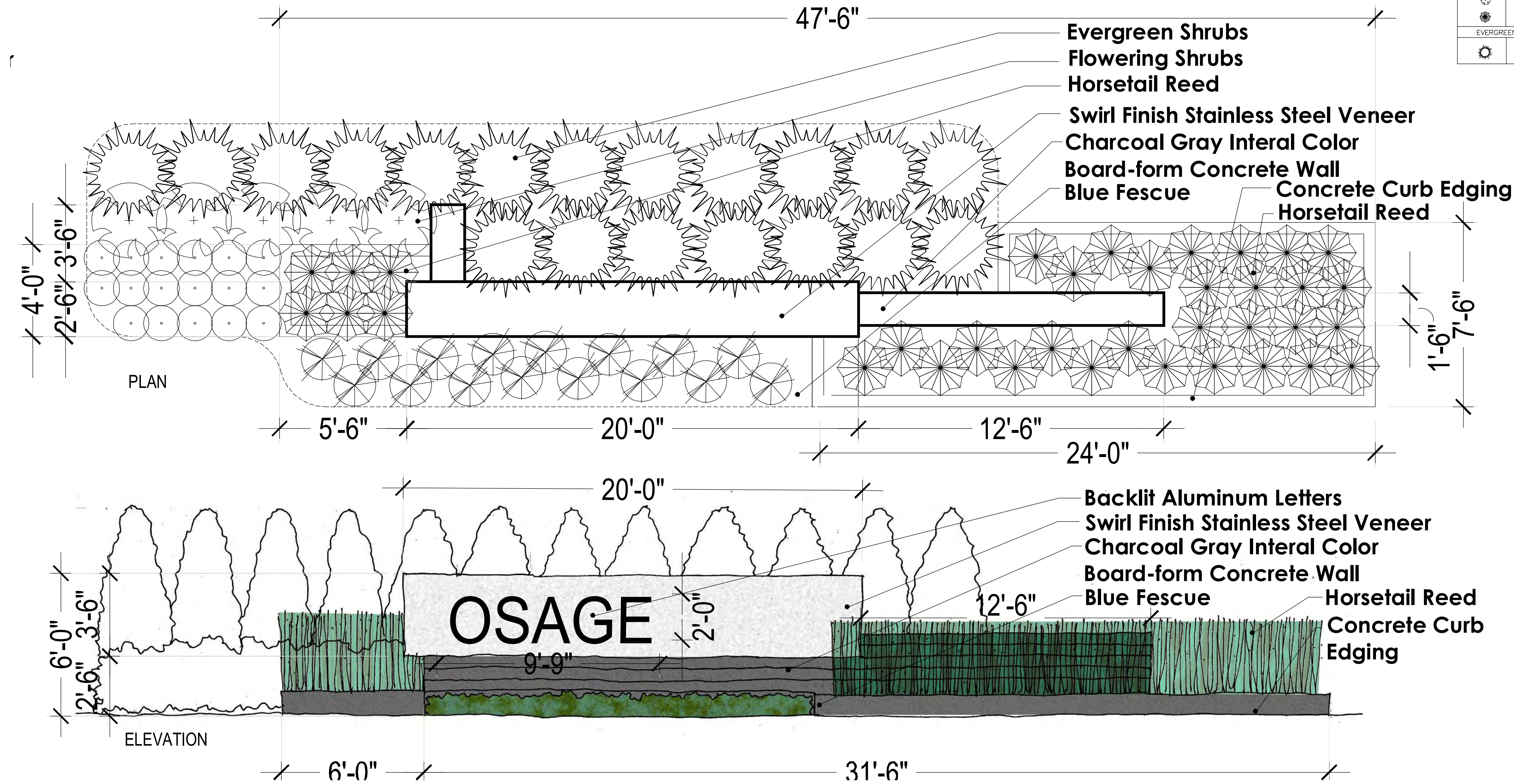
PROJECT
Osage
Highway 150 and
Pryor Road
Lee's Summit, MO



Date: 10.3.19
Project #: 482
Entry Monuments



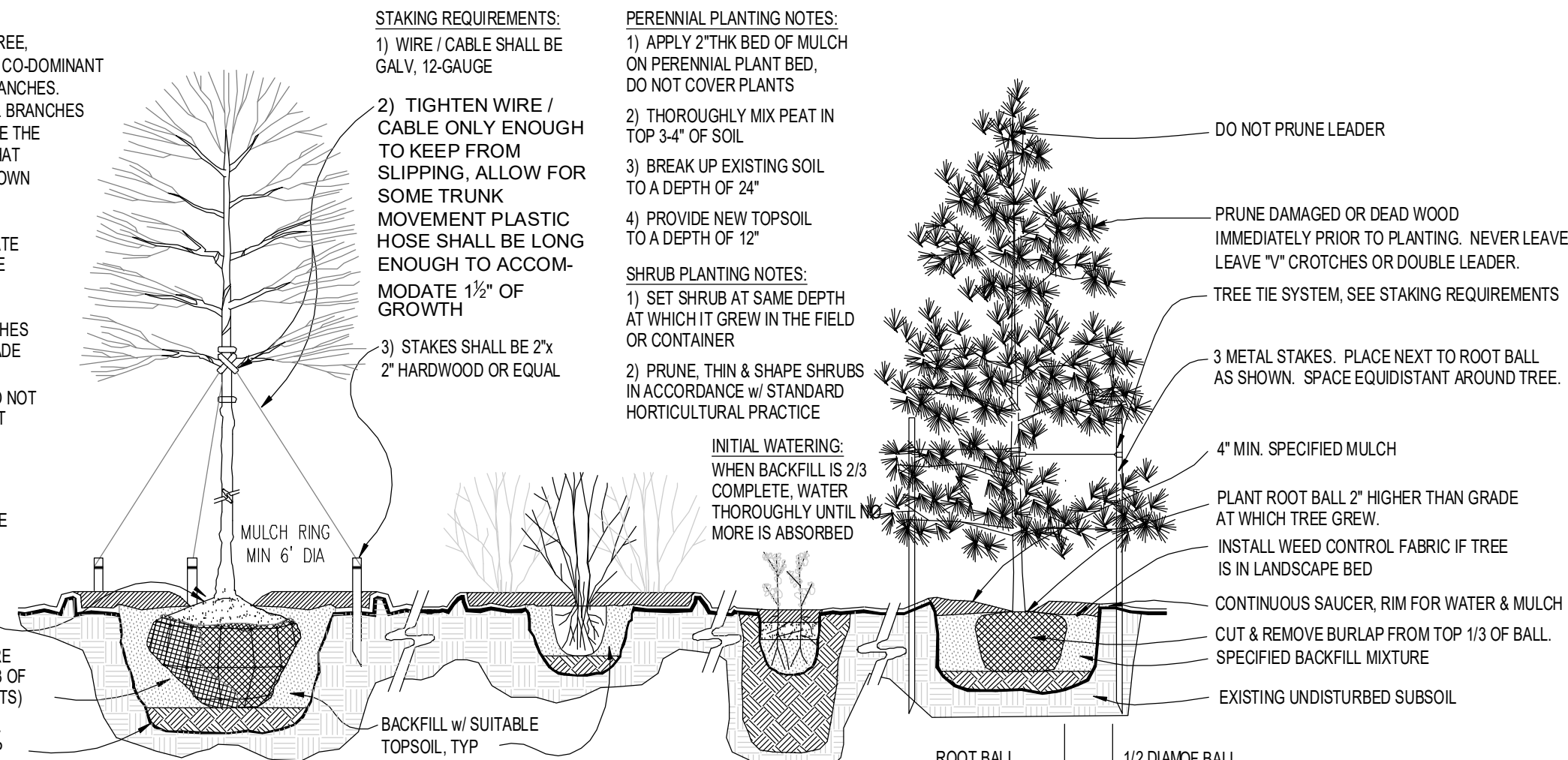
1 CORNER ENTRY MONUMENT LANDSCAPE PLAN
SCALE: 1"=10'-0"



3 CORNER ENTRY MONUMENT
SCALE: 1"=3'

TREE PLANTING NOTES:
1) DO NOT HEAVILY PRUNE THE TREE, PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS, & BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS & LATERAL BRANCHES MAY BE PRUNED. DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN
2) MARK THE NORTH SIDE OF THE TREE IN THE NURSERY, AND ROTATE TREE TO FACE NORTH AT THE SITE WHENEVER POSSIBLE
3) SET TOP OF ROOT BALL 1-2 INCHES HIGHER THAN SURROUNDING GRADE
4) APPLY 4"THK WOOD MULCH. DO NOT PLACE MULCH IN DIRECT CONTACT W/ TREE TRUNK
5) EACH TREE MUST BE PLANTED SUCH THE TRUNK FLARE IS VISIBLE AT THE TOP OF THE ROOT BALL. TREES WHERE THE FLARE IS NOT VISIBLE SHALL BE REJECTED. DO NOT COVER THE TOP OF THE ROOT BALL W/ SOIL
6) REMOVE ALL TWINE, ROPE, WIRE AND BURLAP FROM THE UPPER 1/3 OF ROOT BALL (REMOVE WIRE BASKETS)
7) PLACE ALL ROOT BALLS ON UN-EXCAVATED OR TAMPED SOIL, TYP

2 PLANTING INSTALLATION DETAILS
SCALE: NTS



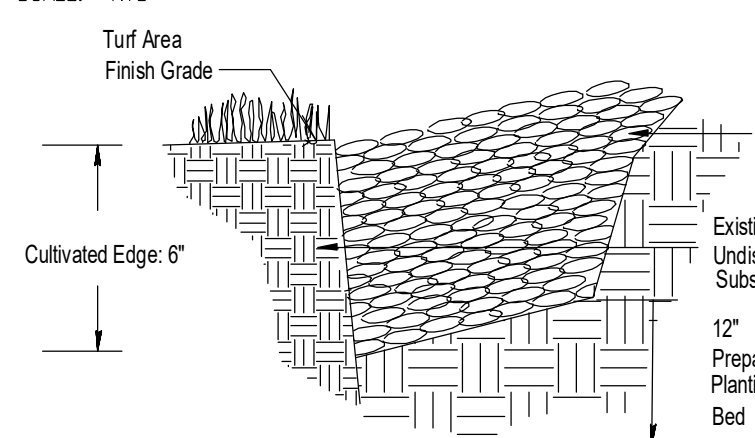
Landscape Schedule

| Symbol | Qty. | Botanical Name | Common Name | Min.Root | Min.Size | Caliper | Remarks |
|--------------------------|------|-----------------------------------|-------------------------|---------------------|----------|---------|----------------------------------|
| OVERSTORY TREES | | | | | | | |
| | 55 | Oedipata triacanthos "Skyline" | Shademaster Honeylocust | | | 3" | 6' min. clear., ground to canopy |
| | 104 | Platanus x acerifolia | London Plane Tree | | | 3" | 6' min. clear., ground to canopy |
| | 121 | Acer x truncatum "Warrenred" | Pacific Sunset Maple | | | 3" | 6' min. clear., ground to canopy |
| | 53 | Quercus bicolor | Swamp White Oak | | | 3" | 6' min. clear., ground to canopy |
| | 68 | Acer griseum | Paperbark Maple | | | 3" | 6' min. clear., ground to canopy |
| | 36 | Ulmus parvifolia | Lacebark Elm | | | 3" | 6' min. clear., ground to canopy |
| EVERGREEN TREES | | | | | | | |
| | 107 | Juniperus chinensis "Keteleeri" | Keteleeri Juniper | | 8' ht. | | symmetrical pyramidal form |
| | 78 | Picea abies | Norway Spruce | | 8' ht. | | symmetrical pyramidal form |
| | 101 | Picea pungens | Colorado Blue Spruce | | 6' ht. | | symmetrical pyramidal form |
| ORNAMENTAL TREES | | | | | | | |
| | 82 | Cercia canadensis | Eastern Redbud | | | 3" | |
| | 20 | Cornus florida "Cloud Nine" | Cloud 9 Dogwood | | | 3" | |
| DECIDUOUS SHRUBS/GRASSES | | | | | | | |
| | 101 | Liriope spicata "Silver Dragon" | Silver Dragon Liriope | 1 gal. | | | Plant @ 18" O.C. |
| | 80 | Festuca ovina glauca | Dwarf Blue Fescue | 1 gal. | | | Plant @ 18" O.C. |
| | 13 | Abelia x grandiflora Kaleidoscope | Kaleidoscope Abelia | 3 gal. 18" ht. min. | | | Plant @ 4' O.C. |
| | 138 | Equisetum hyemale | Horsetail Reed | 1 gal. | | | Plant @ 18" O.C. |
| EVERGREEN SHRUBS | | | | | | | |
| | 51 | Juniperus chinensis "Spartan" | Spartan Juniper | | 5' ht. | | Symmetrical pyramidal form |

| Groundcover or Shrub Pit | Container | Shredded Bark Mulch | Notes |
|--------------------------|--------------------|---------------------|-------------------|
| 10" | 12" | 18" | 30" |
| Square Feet x 1.50 | Square Feet x 1.00 | Square Feet x .44 | Square Feet x .16 |
| | | | Square Feet x .11 |

NOTES: 1. SPACING FOR GROUNDCOVERS, SHRUBS, AND PERENNIALS NOTED ON PLANS.
2. TILL SOIL IN BED TO A 12" MINIMUM DEPTH AND THOROUGHLY MIX IN SOIL AMENITIES AS NOTED ON PLANS.

4 GROUNDCOVER/SHRUB DETAIL
SCALE: NTS



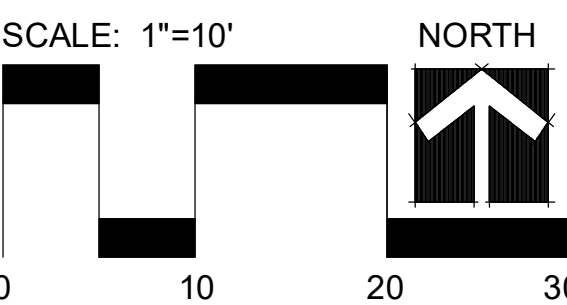
5 CULTIVATED EDGE DETAIL
SCALE: NTS

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15245 Metcalf Ave.
Overland Park, KS 66223
913.787.2817



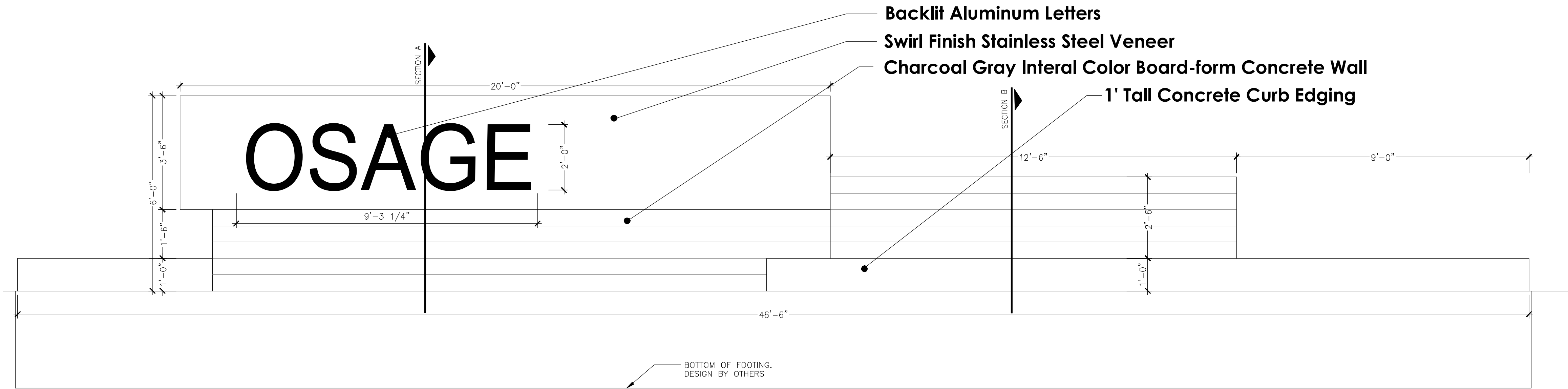
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Lee's Summit, MO 64082

PROJECT
Osage
Highway 150 and
Pryor Road
Lee's Summit, MO



Date: 10.3.19
Project #: 482
Entry Monuments

L3



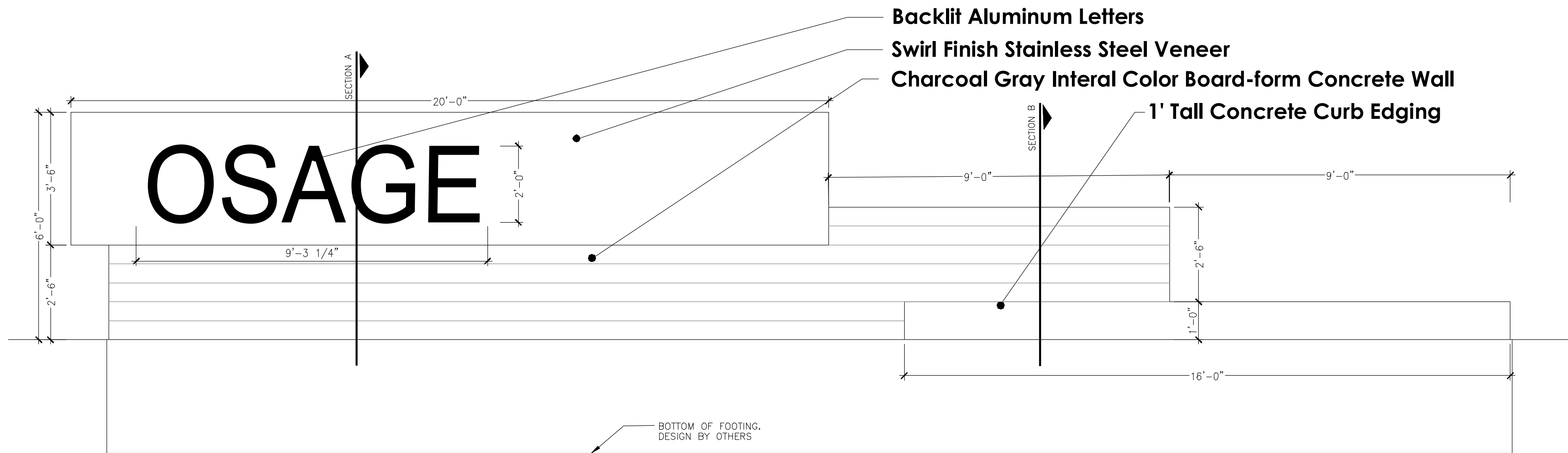
1 MAIN ENTRY MONUMENT ELEVATION DETAIL

SCALE: NTS



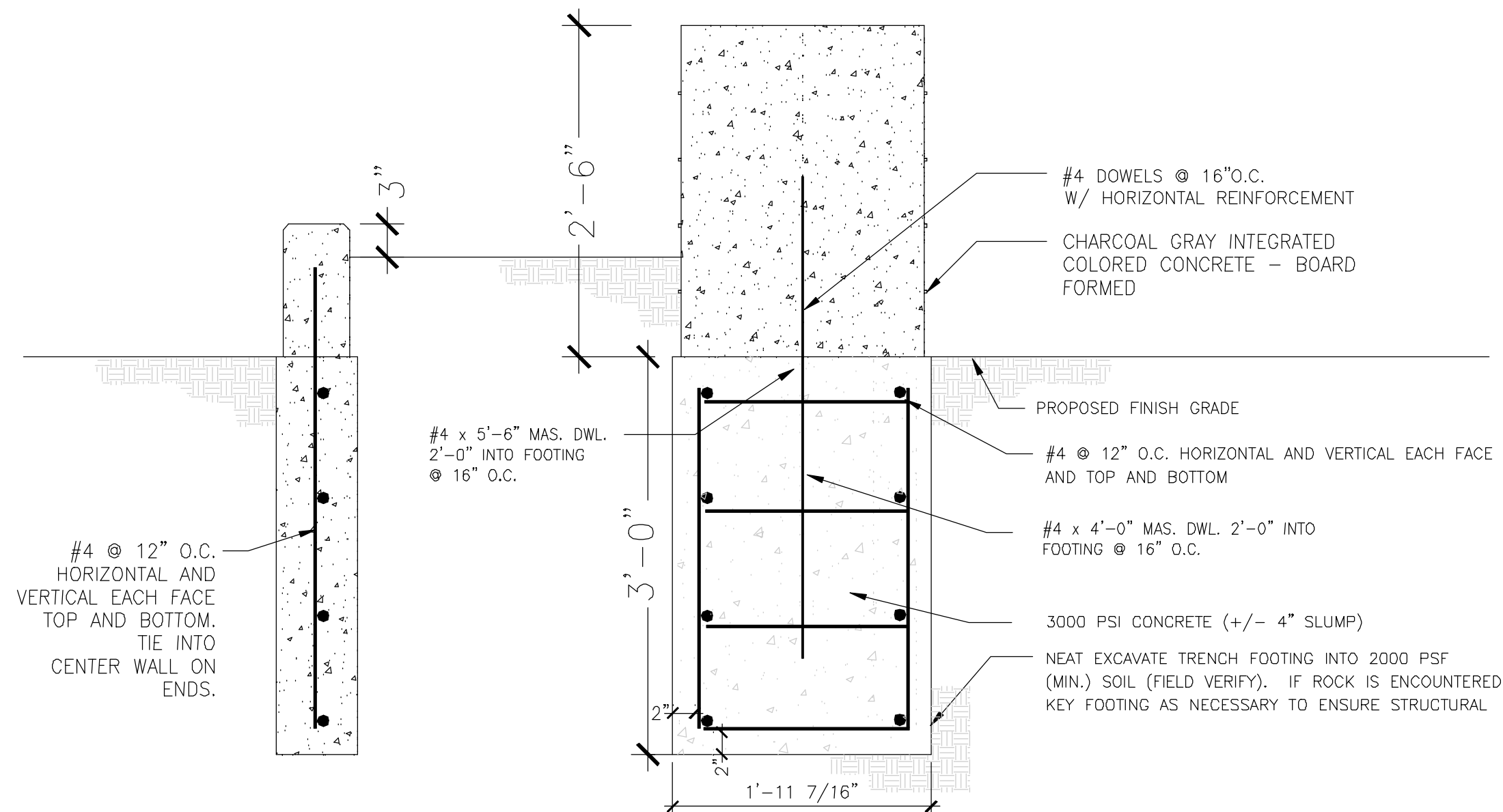
2 BOARD FORMED WALL IMAGE

SCALE: NTS



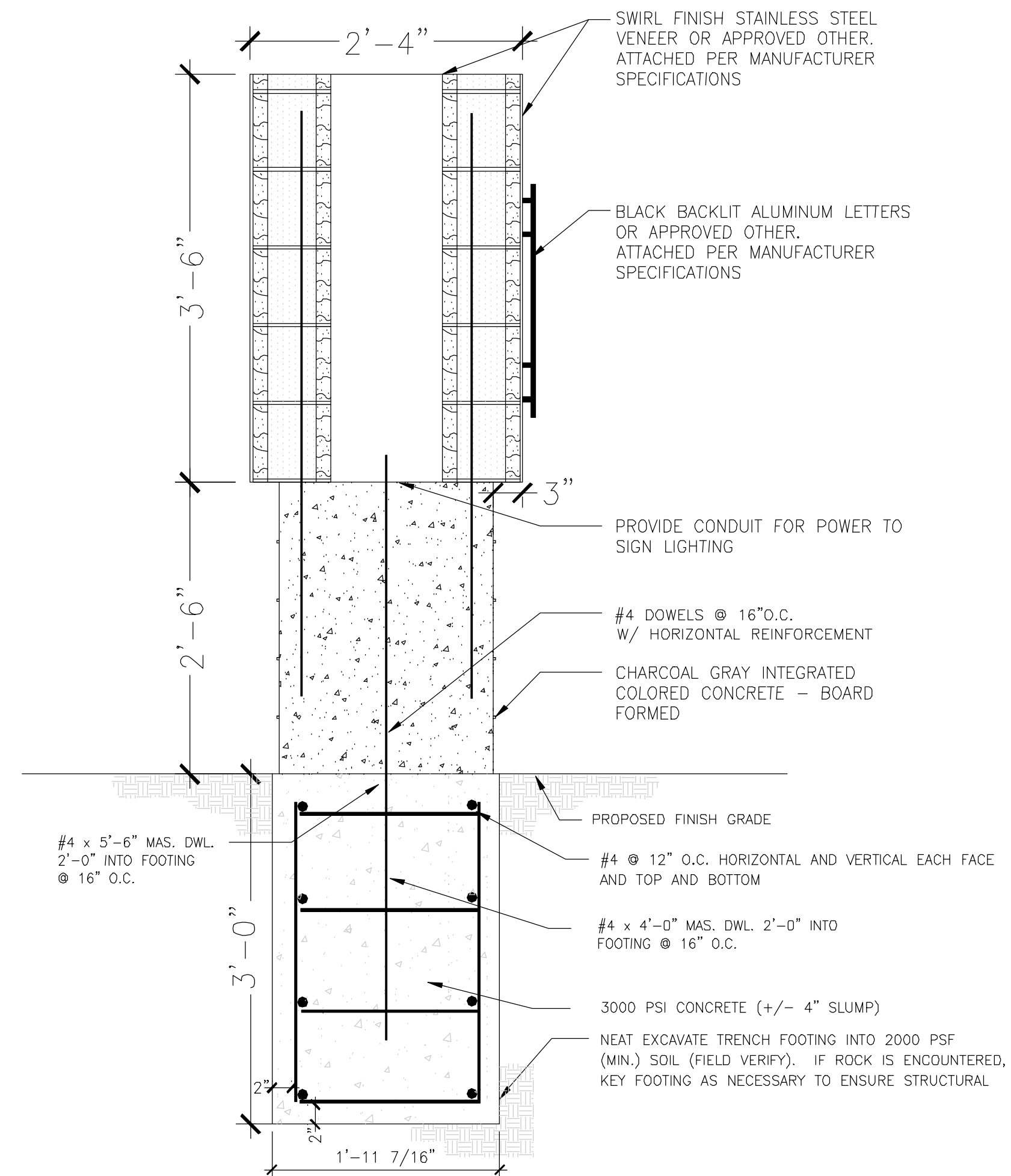
3 CORNER ENTRY MONUMENT ELEVATION DETAIL

SCALE: NTS



4 SECTION DETAILS FOR ENTRY MONUMENTS

SCALE: NTS



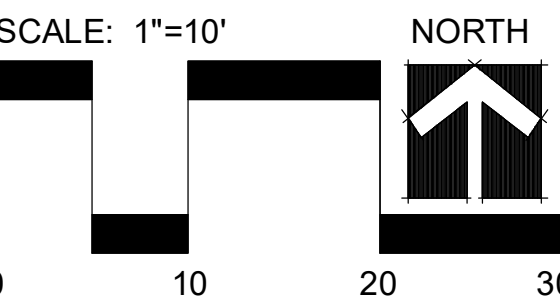
5 SECTION DETAILS FOR ENTRY MONUMENTS

SCALE: NTS



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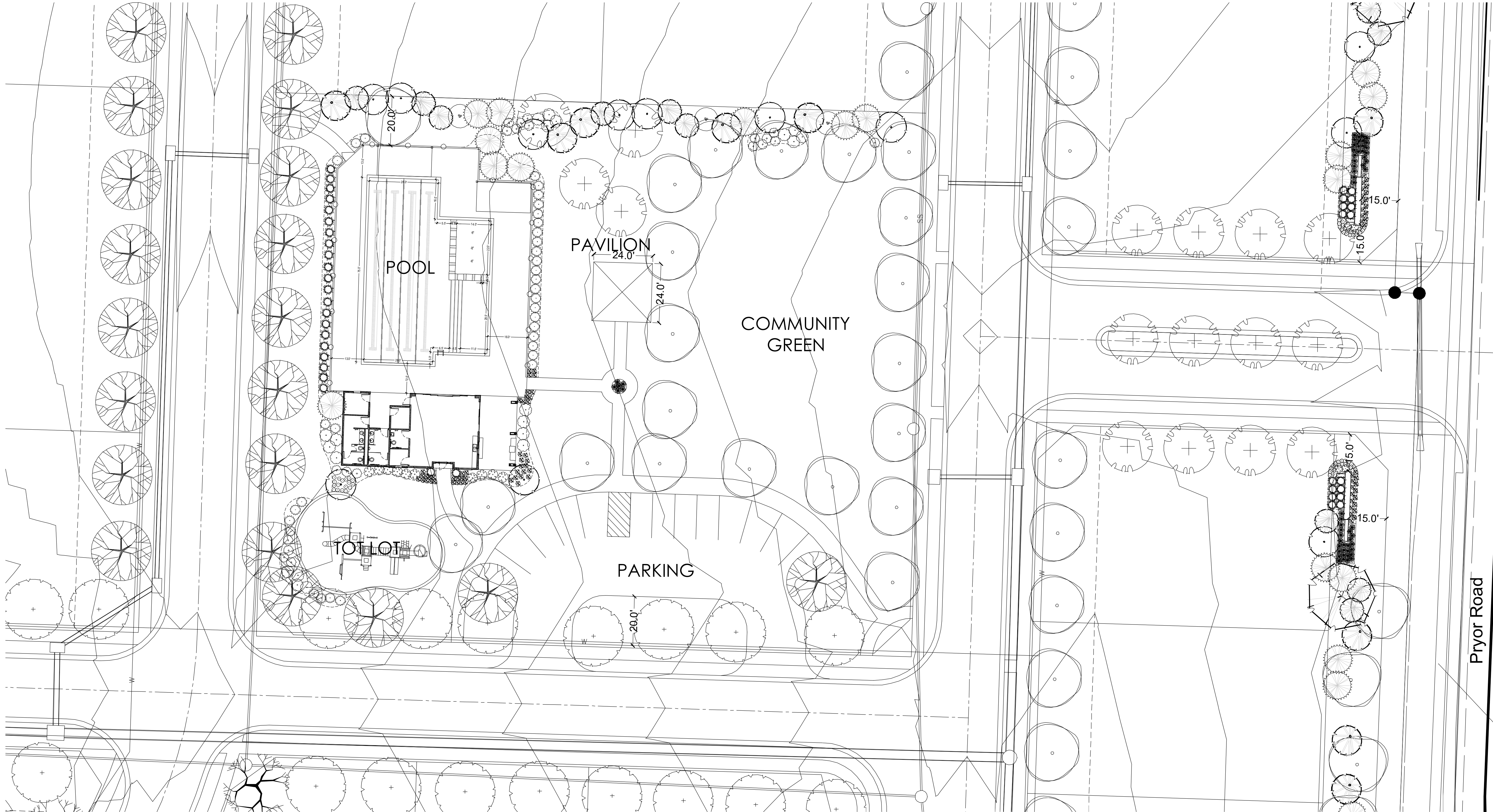
PROJECT
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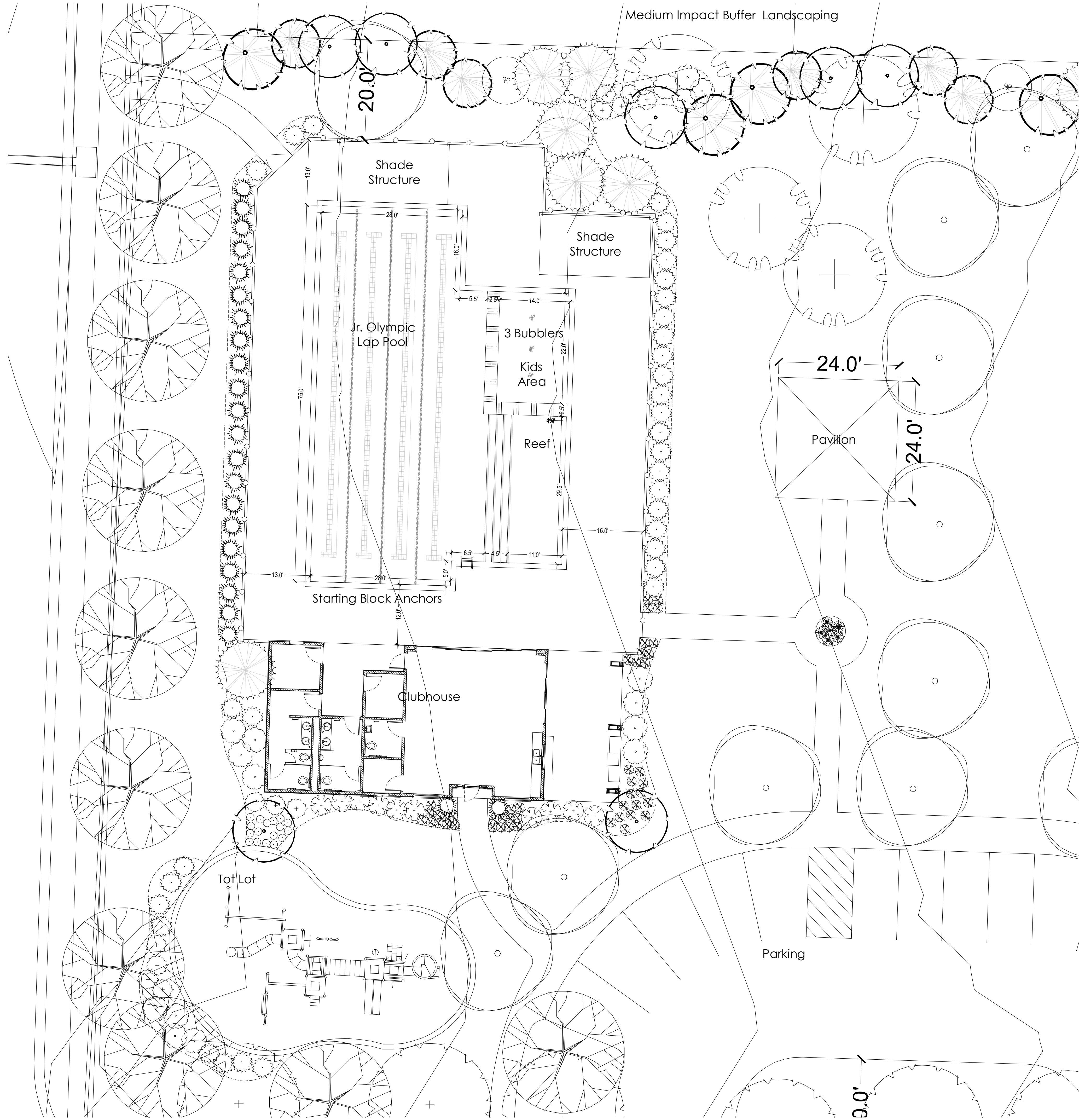


Date: 10.3.19
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Entry Monuments

Landscape Schedule (Amenity area only)

| Symbol | Qty. | Botanical Name | Common Name | Min.Root | Min.Size | Caliper | Remarks |
|--------------------------|------|-----------------------------------|-----------------------------|----------|--------------|---------|----------------------------------|
| OVERSTORY TREES | | | | | | | |
| | 4 | Platanus x acerifolia | London Plane Tree | | | 3" | 6' min. clear., ground to canopy |
| | 14 | Acer x truncatum 'Warrenred' | Pacific Sunset Maple | | | 3" | 6' min. clear., ground to canopy |
| | 8 | Quercus bicolor | Swamp White Oak | | | 3" | 6' min. clear., ground to canopy |
| EVERGREEN TREES | | | | | | | |
| | 9 | Juniperus chinensis 'Keteleeri' | Keteleeri Juniper | | 8' ht. | | symmetrical pyramidal form |
| | 5 | Picea abies | Norway Spruce | | 8' ht. | | symmetrical pyramidal form |
| | 6 | Picea pungens | Colorado Blue Spruce | | 6' ht. | | symmetrical pyramidal form |
| ORNAMENTAL TREES | | | | | | | |
| | 9 | Cercis canadensis | Eastern Redbud | | | 3" | |
| | 2 | Cornus florida 'Cloud Nine' | Cloud 9 Dogwood | | | 3" | |
| DECIDUOUS SHRUBS/GRASSES | | | | | | | |
| | 17 | Liriope spicata 'Silver Dragon' | Silver Dragon Liriope | 1 gal. | | | Plant @ 18" O.C. |
| | 45 | Festuca ovina glauca | Dwarf Blue Fescue | 1 gal. | | | Plant @ 18" O.C. |
| | 10 | Hydrangea paniculata 'Quick Fire' | Little Quick Fire Hydrangea | 3 gal. | 18" Ht. min. | | Plant @ 4' O.C. |
| | 6 | Equisetum hyemale | Horsetail Reed | 1 gal. | | | Plant @ 18" O.C. |
| | 20 | Syringa X 'Penda' | Blooming Purple Lilac | 5 gal. | | | Plant @ 5' O.C. |
| EVERGREEN SHRUBS | | | | | | | |
| | 23 | Juniperus chinensis 'Spartan' | Spartan Juniper | | 5' ht. | | Symmetrical pyramidal form |
| | 34 | Juniperus chinensis 'Sea Green' | Sea Green Juniper | 3 gal. | | | Plant @ 4' O.C. |
| | 20 | Juniperus chinensis 'Gold Coast' | Gold Coast Juniper | 3 gal. | | | Plant @ 4' O.C. |





Landscape Schedule (Amenity area only)

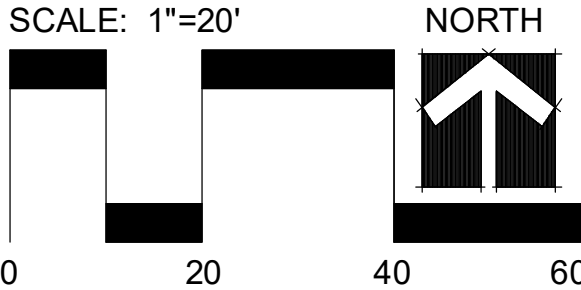
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CLIENT
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Lee's Summit, MO 64082

PROJECT
Osage
Highway 150 and
Pryor Road
Lee's Summit, MO



Date: 10.3.19
Project #: 482
Amenity Area Plan

L6



- BUILDING MATERIALS:**
- LP SMART LAP
 - LP SMART PANEL
 - LP TRIM
 - BOARD AND BAT
 - STUCCO
 - LP SHAKE SHINGLE SIDING
 - MANUFACTURED STONE VENEER
 - COMPOSITE SHINGLES
 - CEDAR BRACKETS AND CORBEL
 - TRIMMED FAUX LOUVER ACCENTS
 - COACH LIGHTS

OSAGE

TOWNHOME
CONCEPT



| | | | | | | | | | | | | | | | | | |
|--------|--------------|--------|--------|---------------|--------|--------|---------------|--------|--------|----------------|--------|--------|-------------|--------|--------|-------------|--------|
| Main | Tin Lizzie | SW9183 | Main | Keystone Gray | SW7504 | Main | Gauntlet Gray | SW7019 | Main | Attitude Gray | SW7060 | Main | Summit Gray | SW7660 | Main | Gray Harbor | SW5336 |
| Accent | Cyanace | SW7067 | Accent | Skyline Steel | SW1015 | Accent | Reveal | SW7018 | Accent | Corwalle Slate | SW9183 | Accent | Web Gray | SW7075 | Accent | Cadet | SW5216 |
| Trim | Gray Matters | SW7066 | Trim | White Duck | SW7010 | Trim | Snowbound | SW7084 | Trim | Natural Tan | SW7567 | Trim | Alabaster | SW7008 | Trim | Repose Gray | SW7015 |

ARCHITECTURAL ELEVATIONS - TOWNHOMES

OSAGE REZONING & PRELIMINARY DEVELOPMENT PLAN

LEE'S SUMMIT, MO

drawn by: _____ CJH
checked by: _____ CGW
approved by: _____ JFE
QA/QC by: _____ MGD
project no.: _____ 019-2339
drawing no.: C ARC01 0192339
date: _____ 2019.09.13

SHEET
A1

Olsson

Olsson - Civil Engineering
Missouri Certificate of Authority #001592
1301 Burlington Street
North Kansas City, MO 64116

REVISIONS

2019



- BUILDING MATERIALS:**
- LP SMART LAP
 - LP SMART PANEL
 - LP TRIM
 - BOARD AND BAT
 - STUCCO
 - LP SHAKE SHINGLE SIDING
 - MANUFACTURED STONE VENEER
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 - TRIMMED FAUX LOUVER ACCENTS
 - COACH LIGHTS

olsson

Olsson - Civil Engineering
Missouri Certificate of Authority #001592
1301 Burlington Street
North Kansas City, MO 64116

TEL 816.361.1177
www.olsson.com

| REV. NO. | DATE | REVISIONS DESCRIPTION | BY |
|----------|------------|---------------------------|-----|
| 1 | 2019.10.15 | Revised per DRC comments. | CJH |
| | | | |
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| | | | |

ARCHITECTURAL ELEVATIONS - SINGLE-FAMILY

OSAGE
REZONING & PRELIMINARY DEVELOPMENT PLAN

LEE'S SUMMIT, MO

drawn by: CJH

checked by: CGW

approved by: JFE

QA/QC by: MGD

project no.: 019-2339

drawing no.: C_ARC03_0192339

date: 2019.09.13

SHEET

A3

- BUILDING MATERIALS:
- LP SMART LAP
 - LP SMART PANEL
 - LP TRIM
 - BOARD AND BAT
 - STUCCO
 - LP SHAKE SHINGLE SIDING
 - MANUFACTURED STONE VENEER
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North Kansas City, MO 64116
TEL 816.361.1177
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REV

NO.

1

2019.10.15

Revised per DRC comments.

BY

CJH

REVISIONS

POOL RENDERINGS

OSAGE
RE~~CONING~~ ☐ PRELIMINARY DEVELOPMENT PLAN

LEE'S SUMMIT, MO

2019

drawn by: CJH

checked by: CGW

approved by: JFE

☐ A~~E~~ C by: MGD

project no.: 019-2339

drawing no.: C_ARC04_0192339

date: 2019.09.13

SHEET

A4

**Appl. #PL2019-307 - REZONING from AG and R-1 to RP-3
and PRELIMINARY DEVELOPMENT PLAN - Osage
Approximately 32 acres located at the southwest corner
of SW M-150 Hwy and SW Pryor Rd
Clayton Properties Group, Inc., applicant**

