PLANNING COMMISSION JANUARY REGULAR MEETING

Council Chambers, 800 1st Terrace, Lansing, KS 66043
Wednesday, January 19, 2022 at 7:00 PM

AGENDA

CALL TO ORDER

ROLL CALL / QUORUM ANNOUNCEMENT

OLD BUSINESS

1. Approval of Minutes, December 15, 2021, Regular Meeting
2. **Site Plan Application Case # SP-2021-2 (Tabled from Dec. Meeting)**

   Application submitted by Keegan Amos of Davidson Architects & Engineers. This application is for an addition of 6,040 S.F. on an existing 2,880 S.F. single-story building to make an automotive shop (paint shop) facility located at 211 Plaza Dr. (West of Mainstreet Chrysler Dodge Jeep Ram).

NEW BUSINESS

NOTICES AND COMMUNICATIONS

REPORTS - Commission and Staff Members

- Commission Members
- Director, Community & Economic Development
- Director, Public Works / City Engineer
- Director, Wastewater Utility
- Building Inspector, Community & Economic Development

ADJOURNMENT

For information on how to view prior meetings, please visit our website at *https://www.lansingks.org*. If you require any special assistance, please notify the Community and Economic Development Director prior to the meeting.

CITY OF LANSING KANSAS

PLANNING COMMISSION DECEMBER REGULAR MEETING

Council Chambers, 800 1st Terrace, Lansing, KS 66043
Wednesday, December 15, 2021 at 7:00 PM

MINUTES

CALL TO ORDER- The regular December meeting of the Lansing Planning Commission was called to order by Chairman Jake Kowalewski at 7:00 p.m.

ROLL CALL / QUORUM ANNOUNCEMENT- In attendance were Chairman Jake Kowalewski, Commissioners Nancy McDougal, Richard Hannon, Janette Holdeman and Jerry Gies. Jake Kowalewski noted there was a quorum present.

OLD BUSINESS

1. Approval of Minutes, November 17, 2021, Regular Meeting

Motion was made by Nancy McDougal to approve and seconded by Jerry Gies to approve the meeting minutes – motion passed 5-0.

NEW BUSINESS

2. Site Plan Application Case # SP-2021-1a

Application submitted by Jeff Wagner of Wagner Construction. This application is for approval of a site plan to construct a single story (2,928 S.F.) professional office building for an Eye Doctor at 301 Centre Dr. in the Town Center Development.

Richard Hannon brought up that the project summary states that it is a two story, but it is actually a one story. He also questioned where in the building they would be selling the glasses. Mr. Schmitz then showed the floor plan and showed the dispensary where they will sell glasses. Chairman Jake Kowalewski then asked the reasoning behind it coming to the planning commission a second time. Mr. Schmitz explained that the site layout significantly changed, from a two story to a one story, and the site layout changed regarding the parking lot. Mr. Schmitz spoke about the landscaping and trees, stating that they can scale some of it back, to save the applicant money. There is currently more than what is required. Mr. Schmitz also mentioned the lighting of the building. The applicant is considering adding lighting on the west side of the building for security lighting. The parking lot also did not have lighting, but it was suggested that the applicant add one pole with lights pointing in all directions, for security purposes.

Mr. Jeff Wagner is the builder, and he was present along with Dr. Reddell, owner of Family EyeCare Center.

Commissioner Jerry Gies made a motion to approve with the changes Mr. Schmitz outlined in terms of landscaping and lighting, plus any other conditions outlined in the staff report. Commissioner Janette Holdeman seconded the motion. Motion passed 5-0.

3. **Site Plan Application Case # SP-2021-2**

   Application submitted by Keegan Amos of Davidson Architects & Engineers. This application is for an addition of 6,040 S.F. on an existing 2,880 S.F. single-story building to make an automotive shop (paint shop) facility located at 211 Plaza Dr. (West of Mainstreet Chrysler Dodge Jeep Ram).

Commissioner Jerry Gies stated that the building that is being expanded is about 100 feet from the existing building and should not have a problem meeting the setback requirements. He also stated that this is a good quality development and asked about landscaping. Mr. Schmitz stated that there is landscaping on the side that faces the dealership, and they are willing to add more. The applicant is not opposed to shifting the building to the east to meet the setback requirement but would prefer to keep it in-line with the existing building. Mrs. McDougal stated it might not look correct if you have to shift the new section four feet to the east. Mrs. Holdeman asked if we must have permission from surrounding neighbors and Mr. Schmitz stated this was a site plan, so it does not require notification – but the BZA action did require the neighbors to be notified. Mr. Hannon recalled that there were some drainage issues to the south and asked if it has been accounted for. Mr. Schmitz stated he thought it had already been addressed when they added curbing to the parking lot. Mr. Spickelmier stated that the property owner was asked to provide additional stormwater analysis as part of the review process. Mr. Spickelmier stated that there is a private drive, owned by Citizens Bank. The question was asked if the lot was at one point split, to which Mr. Schmitz replied that he was not sure. Mr. Schmitz also stated that there is admin site plan to add additional service bays and a carwash to the end of the building. Mr. Gies asked about toxic fumes or odors that would affect the surrounding neighbors and Mr. Schmitz said that is monitored, so there is no risk there. Mr. Kowalewski asked about separation equipment, to clean the water. Mr. Schmitz confirmed they have that. Mrs. McDougal asked about the fire departments request to have access to all sides of property, and Mr. Schmitz said they are having discussions about who has the authority to request that. It was stated that they will have to have a source of water, and Mr. Schmitz said that will be included in the building plan. Mrs. McDougal stated that there are a lot of unknowns when it comes to the sanitary issues. Mr. Schmitz said the two biggest unknowns are the sanitary sewer aspect and the stormwater drainage.

Commissioner Janette Holdeman made a motion to table the application until the Board of Zoning Appeals meeting in January. Commissioner Richard Hannon seconded the motion. Motion passed 5-0.

NOTICES AND COMMUNICATIONS- None

REPORTS - Commission and Staff Members- Matthew Schmitz announced that he ordered nameplates for the planning commission.

ADJOURNMENT- Jerry Gies made a motion to adjourn. Janette Holdeman seconded it. Meeting was adjourned at 7:50 pm.

For information on how to view prior meetings, please visit our website at ***https://www.lansingks.org***. If you require any special assistance, please notify the Community and Economic Development Director prior to the meeting.

Respectfully submitted,

Melissa Baker, Secretary

Reviewed by,

Matthew R. Schmitz, Community and Economic Development Director MRS

CITY OF LANSING KANSAS

Planning Commission Staff Report

January 19, 2022 (Tabled from Dec. 15, 2021, Meeting)

Site Plan Case SP-2021-2

Mainstreet Chrysler Dodge Jeep Ram – Paint Shop

211 Plaza Dr. (Directly West of Dealership)

Project Facts

Applicant
Davidson Architects & Engineers
Mr. Keegan Amos

Address
211 Plaza Dr.
(Directly West of Dealership)

Property ID
106-24-0-10-01-035.01-0

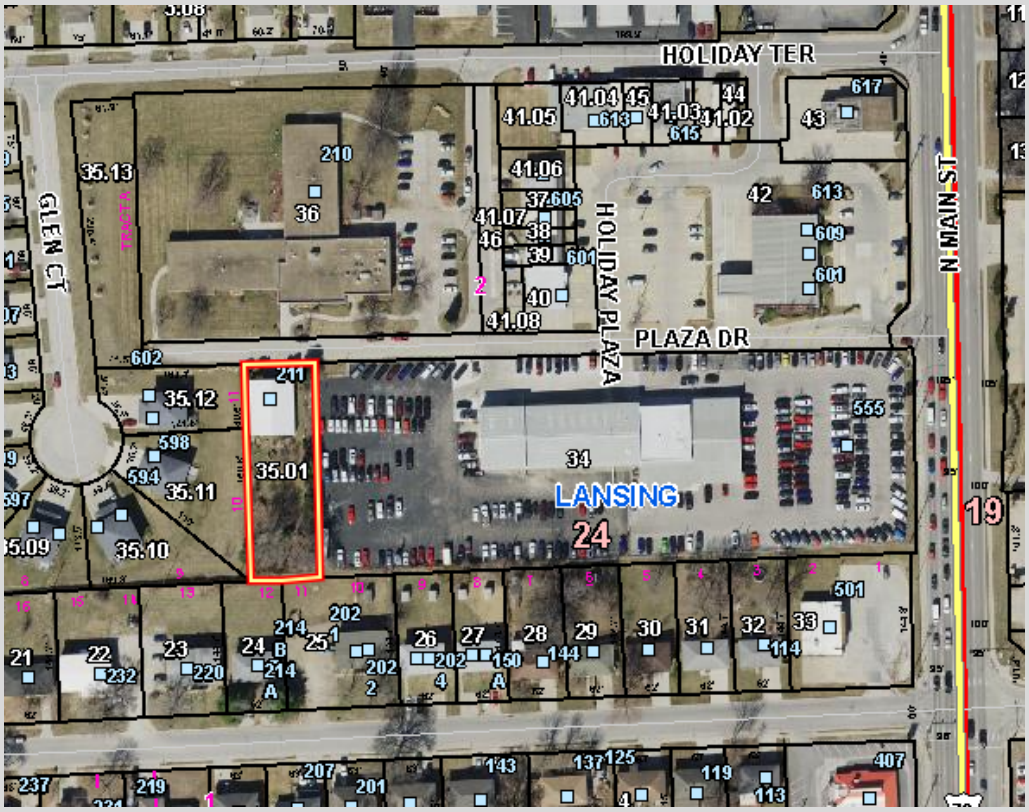
Zoning
B-3 – Regional Business District

Future Land Use
Commercial

Land
18,144.96 SF (0.42 acres)

Building
Existing: 2,880 SF
Proposed: 8,920 SF

Requested Approvals
Site Plan



Project Summary

The Applicant proposes to construct an addition of 6,040 S.F. on an existing 2,880 S.F. single-story building to make an automotive shop (paint shop) facility. This is an existing building site that was formally used to store vehicles and the excess ground to the south was undeveloped green space. The plan includes the addition, site work, landscaping, parking lot improvements and fence reconfiguration. Approval of this Site Plan would authorize the applicant to apply for a building permit on the property, subject to any conditions added during the approval process at the Planning Commission meeting.

The applicant applied for and was granted a variance by the Board of Zoning Appeals reducing the side setback on the West side of the property from 10' to 6' to accommodate this project. Draft minutes are attached for review.

An overall site plan, and preliminary building plans, are attached to this report.

The timeline of the project, should this application be approved, is to proceed to construction as quickly as possible.

Summary of Open Items

Staff identified the following open items that require further discussion at the Planning Commission meeting. Please see the remainder of this report for more information on each open item.

Community & Economic Development Department

1. Outstanding items from the Site Plan Review are noted in the body of the report below.

Public Works Department & City Engineer

1. Stormwater items as noted in body of report below.

Wastewater Department

1. Wastewater items as noted in body of report below.

Open Items – Community & Economic Development Department

Site Plan Application items

The Community & Economic Development Director, and staff from Gould Evans, have reviewed the site plan for conformance with the site plan requirements as outlined in the Unified Development Ordinance (UDO), as well as the Site Plan Application, and found the following items of concern:

The Director reviewed this site plan application for the following:

1. In general, any site plan in compliance with all requirements of this code shall be approved.
    - *The existing structure is a Nonconforming Structure Per Section 4.02, Table 4-1 General Development Standards. The existing structure abuts a residential district on the west and is not set back 10 feet from it as the UDO requires. This occurred because the building was constructed long before the UDO was adopted. The plans as drawn are not set back 10 feet from the residential district and are considered an expansion of an existing Nonconforming Structure. The applicant applied for a variance request from the Board of Zoning Appeals,* ***the BZA meeting was held January 5th, 2022, and this application was approved.***
    - *The Landscape Plan is in compliance with Article 6 – Site & Landscape Requirements, and the planting requirements in Table 6-1.*
    - *The Access and Parking Plan is in compliance with required counts and shared parking arrangement standards per Article 7.04.*
2. In making a determination of compliance, or for site plans accompanying any discretionary review or administrative relief, the review body shall consider whether:
    - The site is capable of accommodating the buildings, proposed use, access and other site design elements required by the code and will not negatively impact the function and design of rights-of-way or adjacent property.
        - *Because the variance was approved at the Board of Zoning Appeals, the proposed development does fit on the site as designed.*
    - The design and arrangement of buildings and open spaces is consistent with good planning, landscape design and site engineering principles and practices.
        - *Proposed site arrangement and landscape design is appropriate for the site and context*.
    - The architecture and building design use quality materials and the style is appropriate for the context considering the proportion, massing, and scale of different elements of the building.
        - *The extension is proposed to be made of architectural metal panel and pre-finished metal rake trim, consistent with the existing building. The proposed architectural style and building materials appear to be appropriate for the site, which is in B-3 – Regional Business District along K-7.*

- The overall design is compatible to the context considering the location and relationships of other buildings, open spaces, natural features, or site design elements.
  - *The proposed design appears to be appropriate for the context, which is in B-3 – Regional Business District along K-7.*
- Whether any additional site-specific conditions are necessary to meet the intent and design objectives of any of the applicable development standards.
  - *Not applicable.*

3. The application meets the criteria for all other reviews needed to build the project as proposed.
   - *Official review is underway by other appropriate City Departments, including Public Works and Wastewater. Fulfillment of all criteria as outlined in the UDO will be required before a building permit can be issued for this project.*
4. The recommendations of professional staff.
   - *Staff recommends approval of this site development plan.*

The site plan does not show the current zoning, but the site is zoned as B-3 – Regional Business District per the Lansing Zoning Map.

There is no trash enclosure shown on the proposed development. It is assumed that any needed trash services for the property will either be handled within the building or will utilize the next-door property owned by the same owner.

The Director has worked with Leavenworth County Fire District #1 to obtain approval for the project. The Fire Department has agreed that installing pavement markings on the property to ensure that a fire lane always exists is adequate for this development. An updated plan sheet is attached which shows the 24' wide fire lane to be established, as well as the gate that will be kept clear of vehicles to allow the FD access. Staff will work to ensure that additional information, if requested, is shown on the plans when a building permit is presented, and before the site plan is officially approved and accepted.

Open Items – Public Works Department

Site Plan Application items

The Public Works Director / City Engineer has reviewed the site plan for conformance with City requirements and found items missing on the original submittal. Those items have been submitted for review to the Public Works Director / City Engineer, and that review is underway. The stormwater analysis included does show a small detention area and a reduction in existing peak runoff which would conform to the City's no net increase policy.

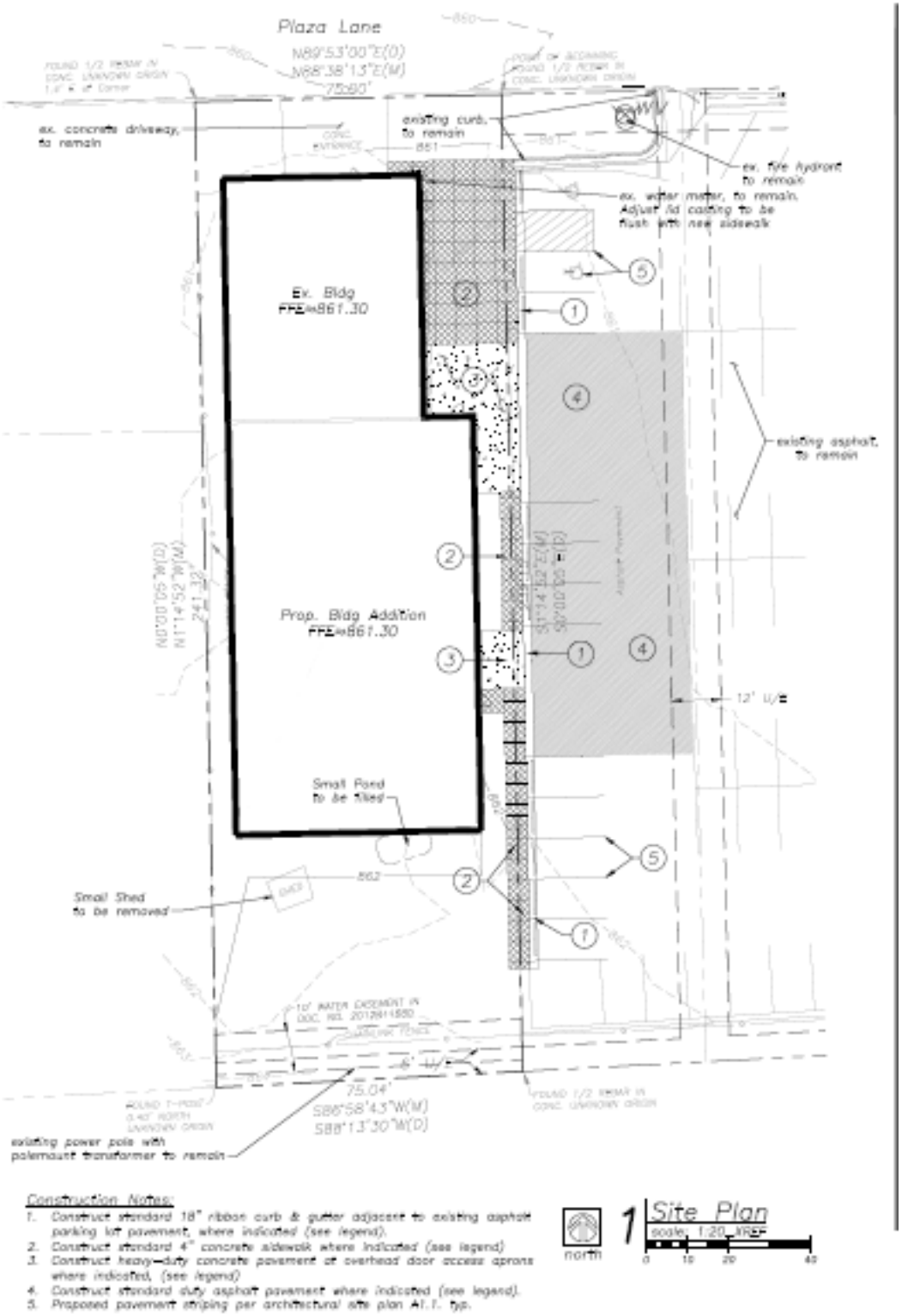
Open Items – Wastewater Department

Site Plan Application items

The Wastewater Director has reviewed the site plan for conformance with City requirements and found some items missing from the submittal. Those items have been noted on the attached plans and will require additional information before the Wastewater Director will approve the submitted plans.

Building Site Plan

Below is the building Site Plan that shows the location of the building on the lot:

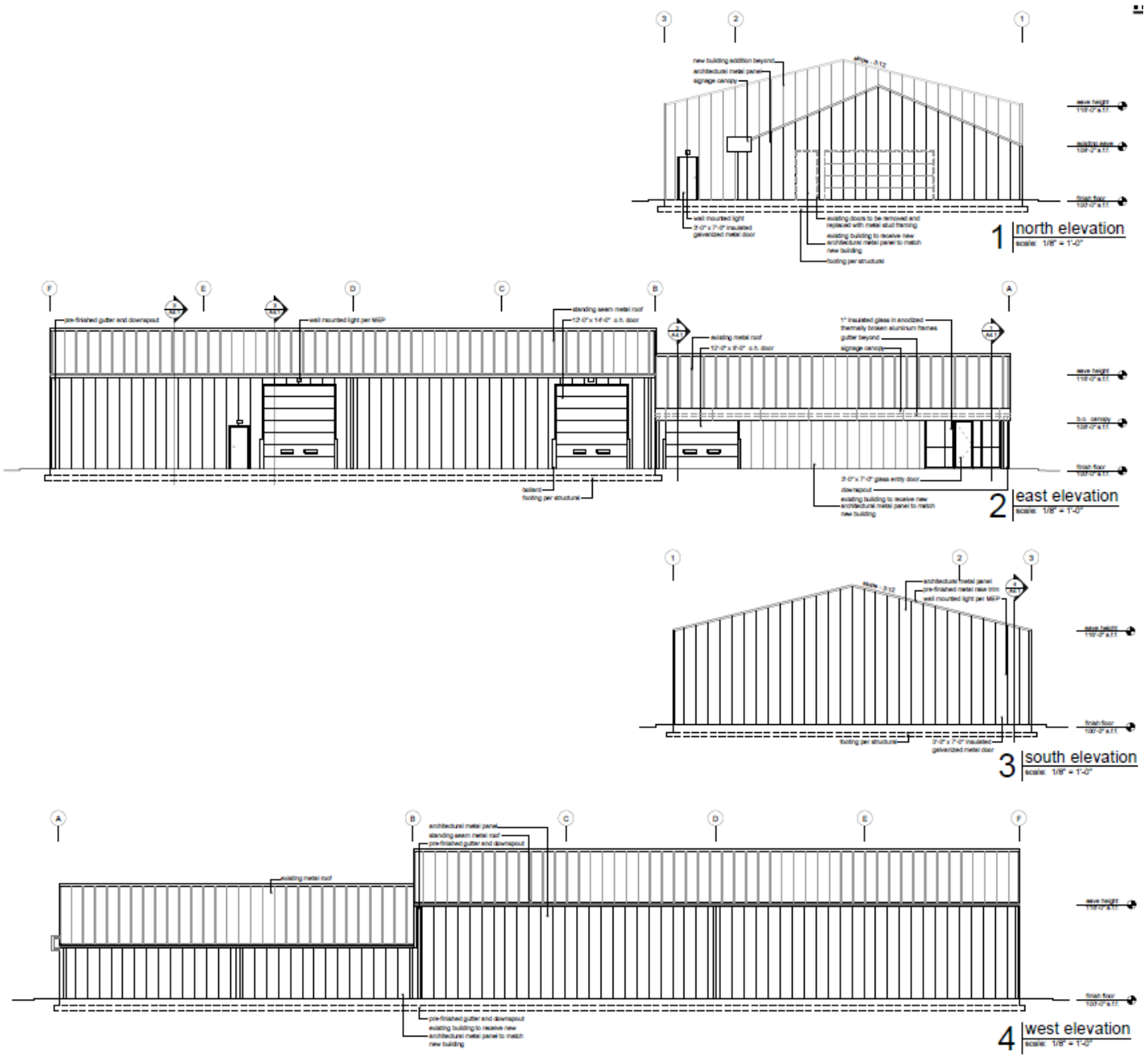


Construction Notes:

1. Construct standard 18" ribbon curb & gutter adjacent to existing asphalt parking lot pavement, where indicated (see legend).
2. Construct standard 4" concrete sidewalk where indicated (see legend)
3. Construct heavy-duty concrete pavement at overhead door access aprons where indicated, (see legend)
4. Construct standard duty asphalt pavement where indicated (see legend).
5. Proposed pavement striping per architectural site plan A1.1, typ.

Building Elevations

Below are the building elevations:



Acknowledgments

The following City of Lansing staff members and consultants reviewed this project and provided information for this report:

- Matthew R. Schmitz – Director, Community & Economic Development
- Michael Spickelmier, P.E – Director, Public Works / City Engineer
- Anthony Zell – Director, Wastewater
- Abby Kinney – Planning Consultant, Gould Evans

Notice of City Codes

The Applicant is subject to all applicable City codes within the Municipal Code – whether specifically stated in this report or not – including, but not limited to, Zoning, Buildings and Construction, Subdivisions, and Sign Code. The Applicant is also subject to all applicable Federal, State, and local laws.

Recommendation

Staff recommends approval of Project # SP-2021-02, Site Plan for Mainstreet Chrysler Dodge Jeep Ram – Paint Shop at 211 Plaza Dr., subject to the following conditions:

1. Outstanding items listed in this Staff Report from Department Heads must be addressed; and
2. All plans must be resubmitted with corrections as shown in this staff report and accompanying markups.

List of Reviewed Plans

Sheet #	Title	Submitted By	Date on Document
C1.2	Site Plan & Drainage Plan	DAE	11-08-2021
L1.1	Landscape Plan	DAE / VSM	11-09-2021
A1.1	Site Plan	DAE	11-15-2021
A2.1	Floor Plan	DAE	11-15-2021
A2.2	Floor Plan	DAE	11-15-2021
A3.1	North, East, South, West Elevations	DAE	11-15-2021

DAE *Davidson Architects & Engineers*
VSM *VSM Landscape Architecture - Planning*

CITY OF LANSING KANSAS

BOARD OF ZONING APPEALS MEETING

Council Chambers, 800 1st Terrace, Lansing, KS 66043
Wednesday, January 05, 2022 at 7:00 PM

MINUTES

CALL TO ORDER- The BZA meeting was called to order by Richard Hannon at 7:01 p.m

ROLL CALL / QUORUM ANNOUNCEMENT- In attendance were Mike Suozzo, Richard Hannon, Frank Campana and Sean Desuzo. Richard Hannon noted there was a quorum present.

BUSINESS

1. **Public Hearing - 211 Plaza Dr. - Variance Request - Case # VR-2022-1**

   This request is for a variance from the Unified Development Ordinance - Article 5, Table 5-2, requiring a ten foot (10') side setback when B-3 abuts a residential district. The request is to reduce this side setback to six feet (6') to match the existing structure on the site. Application submitted by Keegan Amos, acting as agent for the property owner, 555 Main Street Property LLC.

   The public hearing was open at 7:03 pm.

   Keegan Amos- Project Architect, stated that the building is six feet from the property line next to a residential neighborhood. He also stated that they are adding onto the building and would like to maintain that property line.

   The public hearing was closed at 7:04 pm.

   The question was asked as to why the current setback was not 10 feet. It was explained that the building was built many years ago, and setbacks were not in place. At the time the building was built, there were no requirements for a 10-foot setback.

   It was stated that fencing will help with screening and act as a barrier, as well as landscaping.

   Board member Frank Campana asked if there would be any hazardous waste and odors.

   Doug Kenney- Owner, stated that there will not be any hazardous waste. There will be landscaping on the North and the fence will go all around. Overgrown vegetation will be cleaned up as well. The property will be all enclosed and will have proper ventilation to prevent any gases or odors. There will be no smell or odor due to the heating process. Further changes that will be made include the garage on the North side will be taken out and windows will be added. They also plan to make the existing chain link fence into a wood fence.

   There was a vote that took place on the variance, and each condition. All members voted yes to all conditions. The variance request has been approved.

ADJOURNMENT- Meeting was adjourned by acclimation at 7:17 pm.

For information on how to view prior meetings, please visit our website at *https://www.lansingks.org*. If you require any special assistance, please notify the Community and Economic Development Director prior to the meeting.

Respectfully submitted,

Melissa Baker, Secretary

Reviewed by,

Matthew R. Schmitz, Community and Economic Development Director

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Site Plan Application

Community & Economic Development Dept.
730 First Ter. Suite 2
Lansing, KS 66043
(913) 727-5488 • (913) 351-3618 FAX

PROJECT NAME Main Street Dodge Shop Addition

ADDRESS OR VICINITY 555 N Main St

PROPOSED USE Service Bays

CURRENT ZONING B-3

LEGAL DESCRIPTION Refer to Site Plan

REAL ESTATE PARCEL NUMBER 052-106-24-0-10-01-035.01-0

PROPERTY SIZE 0.414 ARCES

APPLICATION FEE *$150 for Admin Site Plan - $250 for full Site Plan*

APPLICANT/DEVELOPER

NAME Keegan Amos CONTACT

ADDRESS 4301 Indian Creek Parkway

CITY Indian Creek Parkway STATE Kansas ZIP 66207

PHONE 913.451.9390 EMAIL keegan@davidsonae.com

OWNER

NAME Douglas Kinney CONTACT

ADDRESS 9613 South Lake Shore Drive

CITY Lake Lotawana STATE Missouri ZIP 64086

PHONE 816.868.8217 EMAIL doug@dakinvestment.com

ARCHITECT/ENGINEER

NAME Same as Applicant CONTACT

ADDRESS

CITY STATE ZIP

PHONE EMAIL

APPLICANT/OWNER SIGNATURE **DATE**

APPLICANT/OWNER (printed name) Keegan Amos

OFFICE USE ONLY

FILE CODE FEE RECEIVED BY DATE

PLANNING COMMISSION MEETING DATE DECISION (circle) Approve or Deny

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Site Plan Application
Community & Economic Development Dept.
730 First Ter. Suite 2
Lansing, KS 66043
(913) 727-5488 • (913) 351-3618 FAX

SITE PLAN SUBMITTAL INFORMATION

See City of Lansing, Unified Development Ordinance
Section 2.05 for Admin Site Plan additional information
Section 2.06 for full Site Plan additional information

A. **SUBMISSION REQUIREMENTS.** The Site Plan shall include the following data, details, and supporting plans, which are found relevant to the proposal. The applicant shall provide six (6) legible and complete site plans, along with a PDF digital copy on a flash drive. The site plans shall be prepared by an architect or engineer licensed in Kansas, at a scale of one inch equals 30 feet for sites of five or fewer acres and be prepared at a scale of one inch equals 40 feet for sites over five acres.

Items required for submission include:

1. Name of project
2. Legal description
3. Date of preparation
4. North arrow
5. Scale 1 inch = 30 feet (five acres or less) or 40 feet (greater than five acres)
6. Name and address of owner of record
7. Name and address of developer
8. Name, address, and phone number(s) of preparer
9. Existing lot lines
10. Existing easements
11. Existing rights-of-way
12. Location and dimensions of all existing structures
13. Location and dimensions of all proposed structures
14. Number of stories of all existing structures
15. Gross floor area of all existing structures
16. Entrances to all existing structures
17. Number of stories of all proposed structures
18. Gross floor area of all proposed structures
19. Entrances to all proposed structures
20. Typical elevations of all proposed structures
21. Building materials of existing structures
22. Building materials of proposed structures
23. Location and dimensions of existing curb cuts

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24. Location and dimensions of proposed curb cuts
25. Location and dimensions of existing aisles
26. Location and dimensions of proposed aisles
27. Location and dimensions of existing off-street parking, loading, and walkways
28. Location and dimensions of proposed off-street parking, loading, and walkways
29. Location, height, and materials for screening walls and fences
30. The type of surfacing and base course for all parking, loading, and walkways
31. A landscape plan showing all existing open space, trees, forest cover, and water sources, and all proposed changes to these features including size and type of plant material. Water sources will include ponds, lakes, brooks, streams, wetlands, flood plains, and drainage retention areas located on the site, proposed by the applicant, or identified by the applicant.
32. The net public area shall be shown for proposed offices and commercial establishments. The proposed use, the required number of off-street parking spaces, and the number of off-street parking spaces shown shall be listed on the site plan. If the exact use is not known at the time a site plan is submitted for review, the number of minimum parking spaces required by the Unified Development Ordinance for the expected use shall calculate the off-street parking requirements.
33. All lighting for multifamily, office, commercial, and industrial uses shall meet the standards as outlined in the Unified Development Ordinance, Section 6.05 Outdoor Lighting.
34. The location, height, size, materials, and design of all proposed signage including subdivision monument entrance signs. All signage must meet the requirements outlined in the Unified Development Ordinance, Article 8 Sign Standards.
35. The location of each outdoor trash storage area and the screening details. Outdoor trash storage must be screened on four sides.
36. Location of existing and proposed utilities as set forth by the Unified Development Ordinance including:
    a. sewer or septic system
    b. water supply system
    c. gas supply system
    d. electric supply system
    e. telephone, cable, or other telecommunications systems
    f. storm drainage system including existing and proposed drain lines, culvert catch basins, head walls, end walls, hydrants, manholes, and drainage swales
37. Plans for erosion and pollution control both during and after construction, excessive runoff, excessive raising or lowering the water table, and flooding of other properties as applicable.
38. Site grading plan including existing and proposed topography at two-foot intervals, and dimensions for all parking lots and sufficient spot elevations on curbs to

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adequately demonstrate proper drainage.

39. Traffic flow patterns within the site, entrances and exits, loading and unloading areas, curb cuts on the site.
    a. The Planning Commission may require a detailed traffic study for large uses, mixed use and multi-tenant developments or for developments in heavy traffic areas. See the Unified Development Ordinance for additional details.

B. STANDARDS OF REVIEW: In addition to the above noted items, site plans will be reviewed by the Director and recommendations forwarded to the Planning Commission on the following standards:

1. The extent to which the proposal conforms to the provisions of the Unified Development Ordinance
2. The extent to which the development would be compatible with the surrounding area
3. The extent to which the proposal conforms to the recommendations of the Lansing Comprehensive Plan
4. The extent to which the proposal conforms to customary engineering standards used in the City
    a. Sanitary sewer plans approved by the Wastewater Utility Director, City Engineer, and KDHE
    b. Storm water plans approved by the Public Works Director / City Engineer
    c. Approval from KDHE and Notice of Intent for storm water runoff from construction activities
5. The extent to which the location of streets, paths, walkways, and driveways are located so as to enhance safety and minimize any adverse traffic impact on the surrounding area
6. The extent to which the location of streets, paths, walkways, driveways, open space (if any), and parking lots have been located to achieve the following objectives:
    a. Preserve existing off-site views and create desirable on-site views
    b. Conserve natural resources and amenities including prime agricultural land
    c. Minimize any adverse flood impact
    d. Ensure that proposed structures are located on suitable soils
    e. Minimize any adverse environmental impact
    f. Minimize any present or future cost to the City and private providers of utilities in order to adequately provide utility service to the site.
7. All structures shall be required to have permanent or continuous footings and foundations.

Submission of Application. *Complete submission of application, including signature by applicant on all documents, is required prior to scheduling on Planning Commission Agenda. All additional information, which is to support the application, must be submitted by the deadline date. Failure to meet the application submittal requirement checklist will result in the application being delayed or rejected.*

north 2 Vicinity Map Aerial n.t.s.

Floodplain Note:

This property lies within Flood Zone Z, defined as areas outside the 0.2% annual chance floodplain, as shown on the Flood Insurance Rate Map, prepared by Federal Emergency Agency's National Flood Insurance Program for the City of Lansing, Leavenworth County, Kansas, Map Number 20103C0144G, dated July 16, 2015.

Utility Legend

———	existing
———	proposed

Linetypes

sanm	sanitary main
sans	sanitary service
	storm sewer (existing)
	storm sewer (solid wall, proposed)
stm	storm sewer (solid wall, proposed)
	storm sewer (perforated, proposed)
wtrm	water main
wtrf	water service (fire)
wtrd	water service (domestic)
wtri	water service (irrigation)
gasm	natural gas main
gass — gass	natural gas service schematic
elpu	underground primary electric
elsu	underground secondary electric
elpo	overhead electric
datu	underground cable/phone/data
datsu	underground cable/phone/data service
	fence–chainlink
	fence–wood
	fence–barbed wire
	treeline

Symbols

S	sanitary manhole
co	service cleanout
fmv	force main release valve
	rectangular structure
	circular structure
	fire hydrant
wv	water valve
M	water meter
BFP	backflow preventer
g	natural gas meter
T	service transformer (pad mount)
S	primary switch gear
	light pole
C	cable/phone/data junction box
	street light
	pedestrian street light
	electric pole
	guy wire
	end section

Property Legend

	right of way
	property lines
	easements
	setbacks

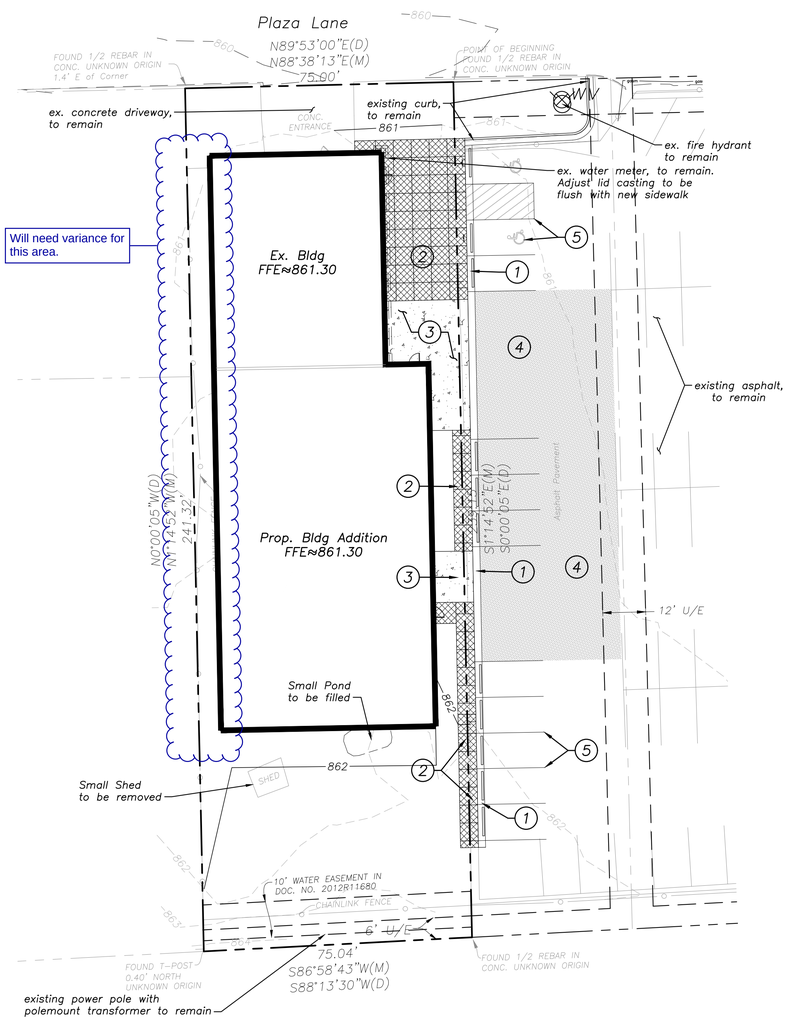
Grading Legend

	existing minor contour
	existing major contour
	proposed minor contour
	proposed major contour

ONE CALL KANSAS 811 Know what's below. Call before you dig.

Americans with Disabilities Act (ADA) Notes:

- *The running and cross slopes for all sidewalks, accessible paths, ramps, designated parking stalls, etc., shall be in compliance with latest Federal ADA guidelines, in addition to any accessibility standards adopted by the governing municipality. Prior to installation/construction, if any discrepancies are found within the plans, the Engineer shall be notified.*
- *All ADA parking areas shall have NO slopes greater than 2% in any direction.*



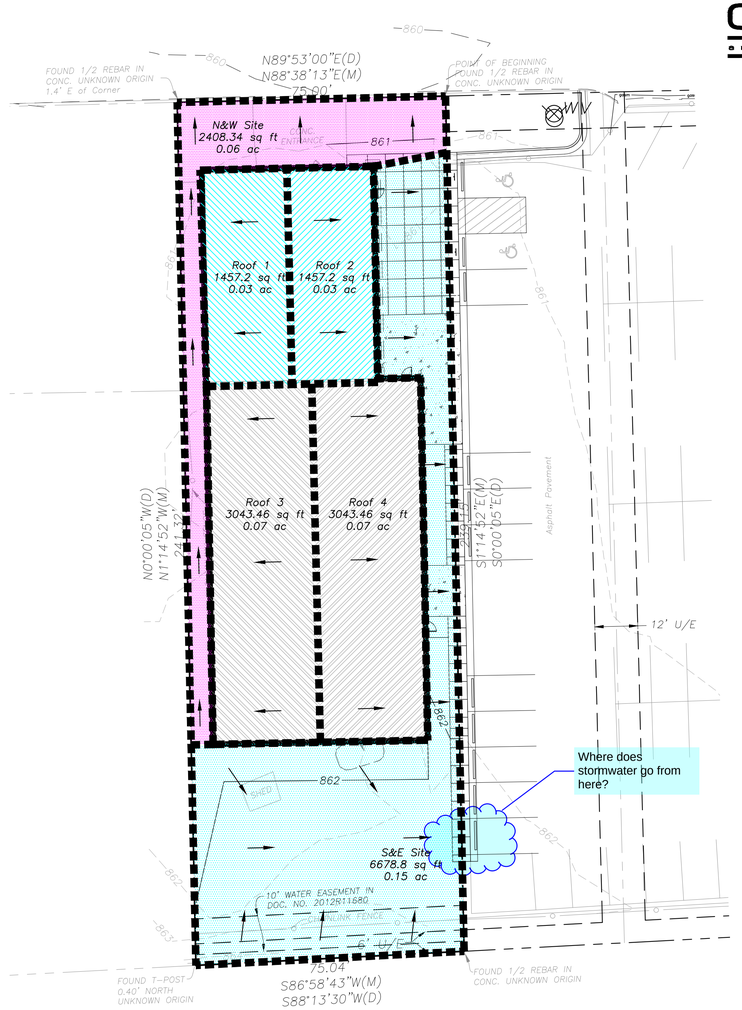
north 1 Site Plan scale: 1:20_XREF 0 10 20 40

Construction Notes:

1. *Construct standard 18" ribbon curb & gutter adjacent to existing asphalt parking lot pavement, where indicated (see legend).*
2. *Construct standard 4" concrete sidewalk where indicated (see legend)*
3. *Construct heavy–duty concrete pavement at overhead door access aprons where indicated, (see legend)*
4. *Construct standard duty asphalt pavement where indicated (see legend).*
5. *Proposed pavement striping per architectural site plan A1.1. typ.*

Construction Legend

	concrete pavement
	standard asphalt
	concrete sidewalk
	24" ribbon curb & gutter



Impervious Area Summary:

Total Site Area: 18,018.5 sq ft. (0.41 ac.)

Existing:
Impervious Area: 3,451.4 sq ft. (0.08 ac.)
Green Space: 14,567.10 sq ft. (0.33 ac.)

Post Construction:
Impervious Area: 11,306.7 sq ft. (0.26 ac.)
Green Space: 6,711.83 sq ft. (0.15 ac.)

Impervious Area Increase: 7,855.3 sq ft. (0.18 ac.)

north 2 Drainage Plan scale: 1:20_XREF 0 10 20 40

1. I do not see the current or proposed on site or future sanitary sewer improvements.
2. Will an existing connection to the sanitary sewer be used?
3. Does the plumbing code require any pretreatment facilities for wastewater/washwater from the painting prep, sanding, or paint cleaning processes?

Reviewed By WW Dept
11/16/2021 8:04:37 AM
By T Zell

Reviewed By PW
12/09/2021 2:22:39 PM
By mspickelmier

Will need stormwater calculations / stormwater plan & Report. This would indicated that 7,855 s.f. of impervious area is being added.

Will need current vs. proposed water flows from site due to increase in impervious area.

Lansing Tech Spec Stormwater Design Criteria apply to increase in impervious area over 5,000 s.f.

Is the plan to sheet flow water onto Plaza Lane to the north? (Plaza Lane is private drive)

is there a designated plan across the asphalt parking lot for the southern water going east?

It might be better to show that the amount of impervious area increase on the 'whole site' vs. this small section. The addition of 7,800 s.f. across the entire parking lot is less of an impact, especially since the stormwater is planned to flow across the asphalt.

Will want this information in a report for the file, that clearly demonstrates that no additional flows will be directed onto adjacent property.

Reviewed By CED
12/10/2021 3:07:50 PM
By mschmitz

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a proposed retail building for
MainStreet of Lansing
555 N Main Street
Lansing, KS 66043

date
11.08.2021
drawn by
DAE
checked by
LDM
revisions

sheet number
C1.2
drawing type
preliminary
project number
21148

PLANT SCHEDULE

Existing Vegetation to remain

Large Decliduous tree

Evergreen Tree

Shrubs / Grasses

LANDSCAPE CALCULATIONS:

PER SECTION 6 OF THE LANSING, KANSAS UDO, THE FOLLOWING LANDSCAPE IS REQUIRED:

Street Trees
Required 1 Large Tree per 40'
Provided 1 Existing Tree to remain

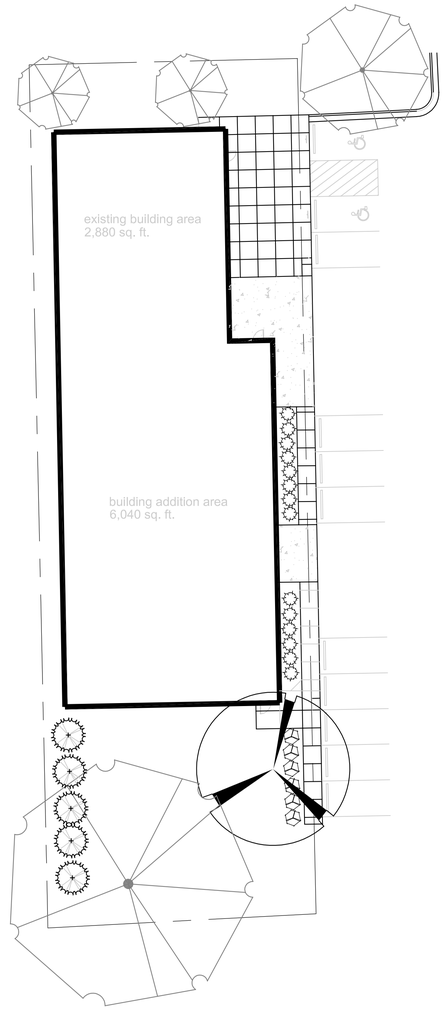
Foundation Planting
Required 1 Ornamental Tree and 5 Shrubs per 25'
Provided 2 Existing Ornamental Trees and 14 Proposed Shrubs and Grasses

Perimeter Parking
Required 1 Large Tree per 40' and 5 shrubs per 25'
Provided 1 Large Tree and 6 Shrubs

Buffer
Provided 6 Evergreen Trees

LANDSCAPE NOTES:

1. LANDSCAPE NOTES SHALL APPLY TO ALL LANDSCAPE DRAWINGS.
2. LOCATION OF ALL UTILITIES ARE APPROXIMATE. THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS PRIOR TO COMMENCEMENT OF CONSTRUCTION OPERATIONS.
3. LIMITS OF CONSTRUCTION ARE THE PROPERTY LINES, UNLESS OTHERWISE NOTED ON THE PLANS, EXCEPT WHERE ACCESS BEYOND IS REQUIRED FOR CONSTRUCTION RELATED TO UTILITY INSTALLATION AND EQUIPMENT ACCESS TO THE SITE.
4. REFER TO CIVIL DRAWINGS FOR ALL GRADING AND BERMING, EROSION CONTROL, STORM DRAINAGE, UTILITIES AND SITE LAYOUT.
5. THE CONTRACTOR SHALL ARRANGE AND CONDUCT A PRE-CONSTRUCTION MEETING ONSITE WITH LANDSCAPE ARCHITECT PRIOR TO ALL WORK.
6. PLANT QUANTITIES ARE FOR INFORMATION ONLY. DRAWING SHALL PREVAIL IF CONFLICT OCCURS. CONTRACTOR IS RESPONSIBLE FOR CALCULATING OWN QUANTITIES AND BID ACCORDINGLY.
7. THE CONTRACTOR IS TO NOTIFY LANDSCAPE ARCHITECT AFTER STAKING IS COMPLETED AND BEFORE PLANT PITS ARE EXCAVATED.
8. THE CONTRACTOR SHALL PLACE SHREDDED HARDWOOD BARK MULCH AROUND ALL TREES TO A DEPTH OF 3", AND IN ALL PLANTING BEDS TO A DEPTH OF 2". WALNUT PRODUCTS ARE PROHIBITED.
9. TREE LOCATIONS IN AREAS ADJACENT TO DRIVES, WALKS, WALLS AND LIGHT FIXTURES MAY BE FIELD ADJUSTED AS APPROVED BY THE LANDSCAPE ARCHITECT.
10. KIND, SIZE AND QUALITY OF PLANT MATERIAL SHALL CONFORM TO AMERICAN STANDARD FOR NURSERY STOCK, ANSI-260-2004, OR MOST RECENT EDITION.
11. THE CONTRACTOR SHALL REPORT SUBSURFACE SOIL OR DRAINAGE PROBLEMS TO THE LANDSCAPE ARCHITECT.
12. THE PLAN IS SUBJECT TO CHANGES BASED ON PLANT SIZE AND MATERIAL AVAILABILITY. ALL CHANGES OR SUBSTITUTIONS MUST BE APPROVED BY THE CITY OF LANSING, KANSAS AND THE LANDSCAPE ARCHITECT.
13. PLANTING OF TREES, SHRUBS, SODDED AND SEEDED TURFGRASS SHALL BE COMMENCED DURING EITHER THE SPRING (APRIL 15-JUNE 15) OR FALL (SEPTEMBER 1-NOVEMBER 15) PLANTING SEASON AND WITH WATER AVAILABLE FOR IRRIGATION PURPOSES.
14. STEEL EDGING TO BE USED ON ALL LANDSCAPE BEDS ABUTTING SODDED AREAS.
15. LANDSCAPE CONTRACTOR IS TO BE RESPONSIBLE FOR WATERING ALL PLANT MATERIALS UNTIL THE TIME THE PERMANENT IRRIGATION SYSTEM IS FULLY FUNCTIONAL AND ACCEPTANCE OF THE PROJECT HAS TAKEN PLACE. ANY MATERIAL WHICH DIES, DEFOLIATES (PRIOR TO ACCEPTANCE OF THE WORK) WILL BE PROMPTLY REMOVED AND REPLACE.
16. THE CONTRACTOR SHALL SHOW PROOF OF PROCUREMENT, SOURCES, QUANTITIES AND VARIETIES FOR ALL SHRUBS, PERENNIALS, ORNAMENTAL GRASSES AND ANNUALS WITHIN 21 DAYS FOLLOWING THE AWARD OF THE CONTRACT.
17. ALL TREES SHALL BE CALLIPERED AND UNDERSIZED TREES SHALL BE REJECTED. ALL PLANT MATERIAL SHALL BE NURSERY GROWN, SOUND, HEALTHY, VIGOROUS AND FREE FROM INSECTS, DISEASE AND INJURIES, WITH HABIT OF GROWTH THAT IS NORMAL FOR THE SPECIES. SIZES SHALL BE EQUAL TO OR EXCEEDING SIZES INDICATED ON THE PLANT LIST. THE CONTRACTOR SHALL SUPPLY PLANTS IN QUANTITY AS SHOWN ON THE DRAWINGS.
18. STAKE OR PLACE ALL PLANTS IN FIELD AS INDICATED ON THE DRAWINGS OR AS DIRECTED BY THE LANDSCAPE ARCHITECT FOR APPROVAL BY THE OWNER PRIOR TO PLANTING.
19. ALL DISTURBED AREAS, INCLUDING RIGHTS OF WAY, NOT OTHERWISE COVERED BY BUILDING, PAVEMENT AND LANDSCAPE BEDS SHALL BE SODDED WITH TURF TYPE TALL FESCUE AND IRRIGATED UNLESS OTHERWISE INDICATED BY THE OWNER.
20. ALL EXTERIOR GROUND OR BUILDING MOUNTED EQUIPMENT, INCLUDING BUT NOT LIMITED TO MECHANICAL EQUIPMENT AND UTILITY METER BANKS SHALL BE SCREENED FROM PUBLIC VIEW WITH EVERGREEN LANDSCAPING THAT IS 6" TALLER THAN THE EQUIPMENT BEING SCREENED AT THE TIME OF PLANTING.
21. PREPARE PLANTING BEDS BY INCORPORATING AN APPROVED COMPOSTED ORGANIC SOIL INTO EXISTING SOIL FOR ALL SHRUB, PERENNIAL AND ANNUAL PLANTING BEDS AT A MINIMUM DEPTH OF 6". THOROUGHLY MIX ORGANIC MATERIAL INTO THE EXISTING SOIL BY ROTOTILLING OR OTHER APPROVED METHOD TO A MINIMUM DEPTH OF 12".
22. APPLY A COMMERCIAL ROOT STIMULATOR (APPROVED BY LANDSCAPE ARCHITECT PRIOR TO USE) TO ALL SHRUBS AND GROUND COVERS AT RATES RECOMMENDED BY MANUFACTURER DURING FIRST PLANT WATERING FOLLOWING INSTALLATION.
23. ALL LANDSCAPE AREAS SHALL BE IRRIGATED WITH A HIGH EFFICIENCY AUTOMATIC IRRIGATION SYSTEM ACHIEVING 100% EVEN COVERAGE OF ALL LANDSCAPE AREAS. IRRIGATION SYSTEM SHALL BE DESIGN-BUILD TO MEET ALL CITY REQUIREMENTS.
24. TREE PROTECTION FENCING SHALL BE INSTALLED AND APPROVED BY THE CITY FORESTER PRIOR TO ANY LAND DISTURBANCE. TREE PROTECTION FENCING SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION IS COMPLETE ON THE PROJECT. NO PARKING OF VEHICLES, MATERIAL STORAGE, WASHOUTS OR GRADING ARE ALLOWED WITHIN THE FENCING. IF THE FENCING MUST BE REMOVED OR RELOCATED, THE CITY FORESTER SHALL BE CONTACTED FOR PRIOR APPROVAL.
25. A CERTIFIED ARBORIST SHALL PRUNE ALL EXISTING TREES TO REMAIN. TREES CONFLICTING WITH BUILDING OR OVERLAPPING LANDSCAPE BEDS SHALL BE PRUNED UP TO ALLOW FOR 12' OF CLEARANCE UNDER CANOPY.
26. ALL LAWN AREAS SHALL RECEIVE A MINIMUM OF 6-INCH DEPTH TOPSOIL COMPACTED TO 85% MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT.
27. THE ENTIRE SURFACE TO BE SODDED SHALL BE REASONABLY SMOOTH AND FREE FROM STONES, ROOTS, OR OTHER DEBRIS.
28. SOD SHALL BE MACHINE STRIPPED AT A UNIFORM SOIL THICKNESS OF APPROXIMATELY ONE INCH (PLUS OR MINUS 1/4 INCH). THE MEASUREMENT FOR THICKNESS SHALL EXCLUDE TOP GROWTH AND THATCH, AND SHALL BE DETERMINED AT THE TIME OF CUTTING IN THE FIELD. PRECAUTIONS SHALL BE TAKEN TO PREVENT DRYING AND HEATING. SOD DAMAGED BY HEAT AND DRY CONDITIONS, SOD CUT MORE THAN 18 HOURS BEFORE BEING INCORPORATED INTO THE WORK SHALL NOT BE USED.
29. HANDLING OF SOD SHALL BE DONE IN A MANNER THAT WILL PREVENT TEARING, BREAKING, DRYING AND OTHER DAMAGE. PROTECT EXPOSED ROOTS FROM DEHYDRATION. DO NOT DELIVER MORE SOD THAN CAN BE LAID WITHIN 24 HOURS.
30. MOISTEN PREPARED SURFACE IMMEDIATELY PRIOR TO LAYING SOD. WATER THOROUGHLY AND ALLOW SURFACE TO DRY BEFORE INSTALLING SOD. FERTILIZE, HARROW OR RAKE FERTILIZER INTO TOP 1-1/2-INCHES OF TOPSOIL, AT A UNIFORM RATE OF ONE POUND OF NITROGEN PER 100 SF.
31. SOD SHALL BE CAREFULLY PLACED IN THE DIRECTION PARALLEL WITH THE SLOPE OF THE AREA TO BE SODDED. SOD STRIPS SHALL BE BUTTED TOGETHER BUT NOT OVERLAPPED WITH THE SEAMS STAGGERED ON EACH ROW.
32. FERTILIZER SHALL BE 10-10-5 COMMERCIAL FERTILIZER OF THE GRADE, TYPE AND FORM SPECIFIED AND SHALL COMPLY WITH THE RULES OF THE STATE OF KANSAS DEPARTMENT OF AGRICULTURE. FERTILIZER SHALL BE IDENTIFIED ACCORDING TO THE PERCENT N, P, K, IN THAT ORDER.
33. SATURATE SOD WITH FINE WATER SPRAY WITHIN TWO HOURS OF PLANTING. DURING FIRST WEEK AFTER PLANTING, WATER DAILY OR MORE FREQUENTLY AS NECESSARY TO MAINTAIN MOIST SOIL TO A MINIMUM DEPTH OF FOUR INCHES BELOW SOD.
34. CONTRACTOR SHALL PROVIDE FULL MAINTENANCE FOR SODDED TURF GRASS FOR A PERIOD OF 30 DAYS AFTER THE DATE OF FINAL ACCEPTANCE. AT THE END OF THE MAINTENANCE PERIOD, A HEALTHY, WELL-ROOTED, EVEN-COLORED, VIABLE TURF MUST BE ESTABLISHED. THE TURF GRASS SHALL BE FREE OF WEEDS, OPEN JOINTS, BARE AREAS AND SURFACE IRREGULARITIES.
35. IN THE EVENT OF WORK IN OR ON THE JCW SANITARY MAIN, ANY TREES OR PLANTINGS PLACED WITHIN THE SEWER EASEMENT MAY BE REMOVED WITHOUT REPLACEMENT OR COMPENSATION THERE-OF AND SHALL BE REPLACED BY THE PROPERTY OWNER AS REQUIRED BY THE CITY.
36. LANDSCAPE ADJACENT TO THE FIRE DEPARTMENT CONNECTION AND FIRE HYDRANT SHALL ALLOW FOR UNOBSTRUCTED VISIBILITY AND ACCESS, WITH NO SHRUBS OR TREES WITH IN A 3' RADIUS OF THE FIRE DEPARTMENT CONNECTION OR FIRE HYDRANT.



1 Landscape Plan
scale: 1" = 20'-0"

north

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VSM
landscape architecture · planning

A Proposed Body Shop Addition and Remodel for
MainStreet of Lansing
555 N Main Street
Lansing, KS 66043

date
11.09.2021
drawn by
klv
checked by
VSM
revisions

sheet number
L1.1
drawing type
preliminary
project number
21148

project location:

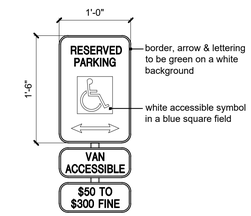
legal description:

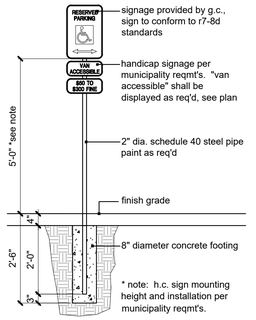
a tract of land in lot 34, block2, holiday hills addition to the city of lansing, leavenworth county, kansas, more fully described as follows: beginning at a point 502.80 feet south and 706.87 feet west of the northeast corner of section 24, township 9 south, range 22 east of the 6th p.m., thence south 00°00'05" west for a distance of 241.32 feet to the south right-of-way line of plaza lane, thence north 89°53'00" east for a distance of 75.00 feet to the point of beginning.

site synopsis:

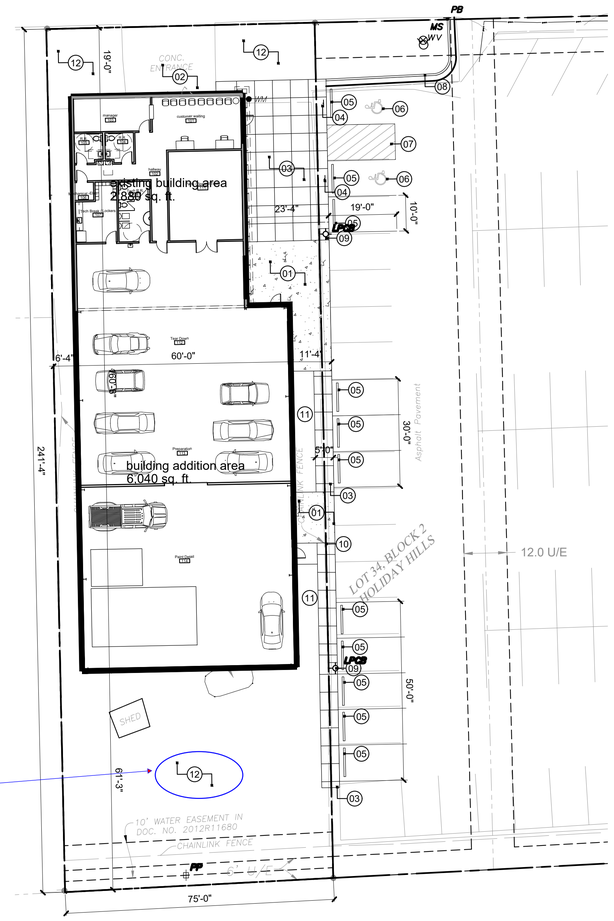
governing municipality:	Lansing, Kansas
site area:	+/- 18,019 sq.ft. (+/- 0.414 acres)
building stories:	one (existing and proposed)
building area(existing):	2,880 sq.ft.
building area(addition):	6,040 sq.ft.
total building area:	8,920 sq.ft.
floor area ratio:	.495
parking requirements:	1 per employee (10) & 2 per service bay (3) = 16 spaces req'd
new parking provided:	9 stalls + 2 handicap stalls

*all parking will be provided on adjacent lot that has the same owner.





2 handicap signage
scale: not to scale



Any stormwater storage?

1 site plan
scale: 1" = 30'-0" north

construction notes: (##)

1. furnish and install concrete pavement, to abutt to existing asphalt pavement per civil.
2. existing drive to remain.
3. concrete sidewalk, 4" thick with 6x6 10/10 wwf steel mesh. control joints at 5'-0" o.c. broom finish for non-slip surface. to abutt to existing asphalt pavement per civil.
4. furnish and install handicap parking signage.
5. furnish and install parking stop.
6. handicap striping and universal symbol painted with 4" stroke.
7. parking lot striping to be white with 4" stroke.
8. existing concrete curb and gutter to remain.
9. existing parking lot lighting. concrete to not be poured against pole, block out around as shown on site plan.
10. existing fence to removed on east side of building.
11. green space.
12. existing green space.

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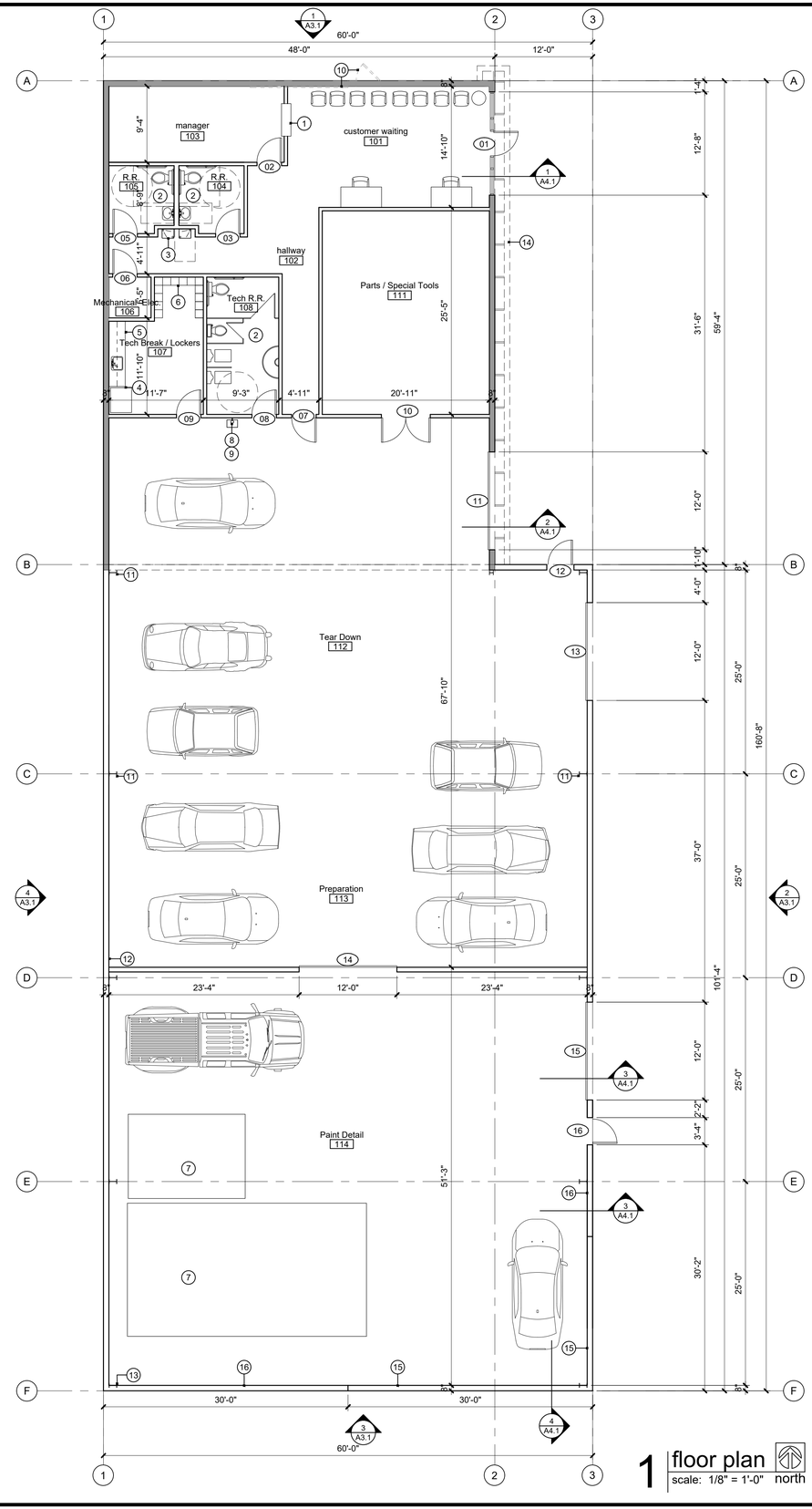
A Proposed Body Shop Addition and Remodel for

MainStreet of Lansing

555 N Main Street
Lansing, KS 66043

date
11.15.2021
drawn by
kka
checked by
dae
revisions

sheet number
A1.1
drawing type
preliminary
project number
21148



construction notes: (##)

1. casework per details.
2. furnish and install floor drain with clean out basket per MEP.
3. high-low drinking fountain with bottle filler per MEP. install per ADA requirements.
4. furnish and install adequate power for refrigerator and microwave.
5. furnish and install lower casework and countertop per interior elevations and details.
6. furnish and install lockers per owner requirements.
7. furnish and install owner provided Paint Mix Room and Pit Down Draf Booth. power and venting requirements per MEP. verify final location and layout with owner.
8. furnish and install emergency eye wash station per MEP drawings.
9. furnish and install emergency pull chain shower per MEP drawings.
10. existing overhead door and man door to be removed and patched to match interior and exterior wall.
11. furnish and install air drop, 110 outlet, coordinate with MEP and owner.
12. furnish and install 220 outlet per MEP.
13. furnish and install air compressor per owner requirements, MEP to provide power. verify final location with owner.
14. signage canopy above.
15. 18" retaining wall per structural.
16. 12" retaining wall per structural.

1 floor plan
scale: 1/8" = 1'-0" north

building area:

net office area:	1,347 s.f.
net shop area:	7,257 s.f.
overall area:	8,928 s.f.

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A Proposed Body Shop Addition and Remodel for

Main Street of Lansing

555 N Main Street
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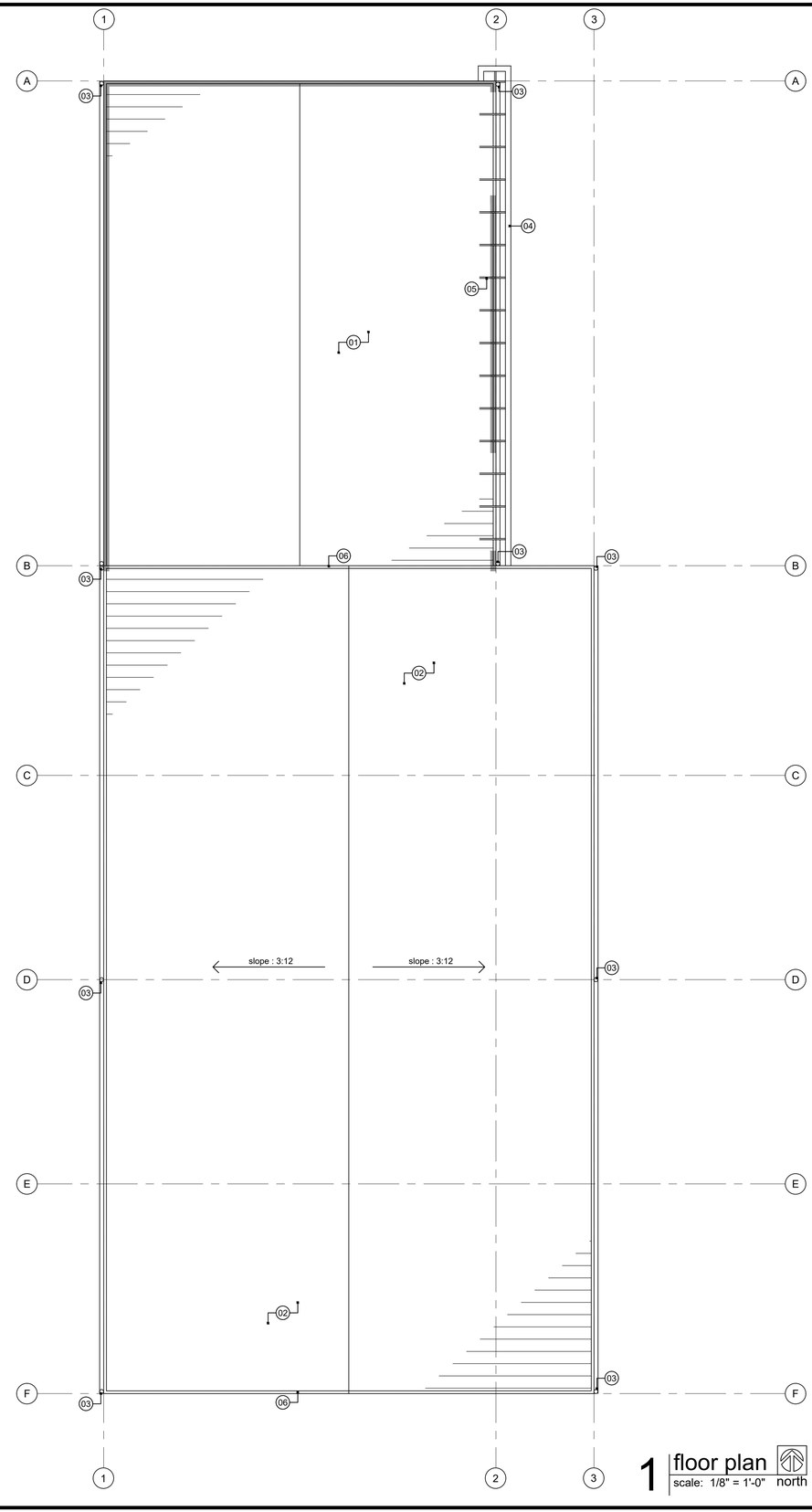

1 floor plan
scale: 1/8" = 1'-0" north

construction notes: (##)

1. existing roof to remain.
2. standing seam metal roof per PEMB supplier.
3. downspout and gutter per PEMB supplier.
4. signage canopy pre-finished metal cap flashing.
5. signage canopy support framing to tie back into existing roof per structural.
6. pre-finished rake trim per PEMB supplier.

building area:

net office area:	1,347 s.f.
net shop area:	7,257 s.f.
overall area:	8,928 s.f.

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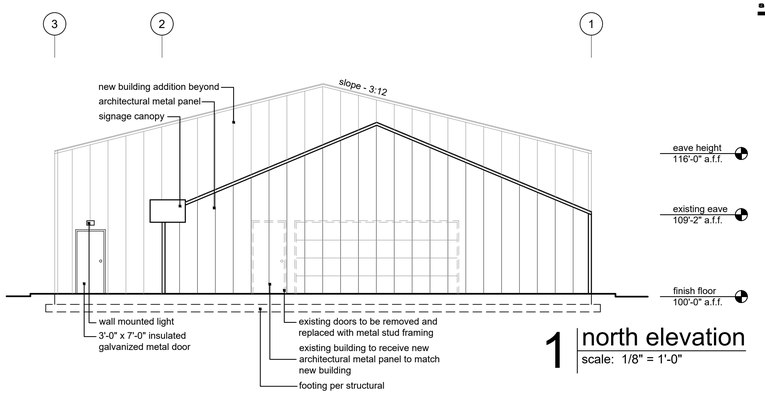
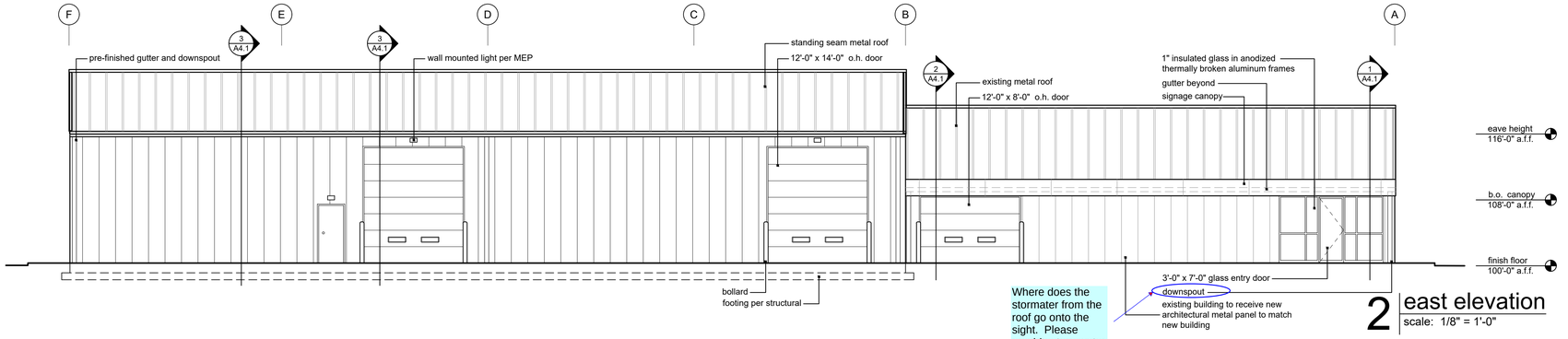
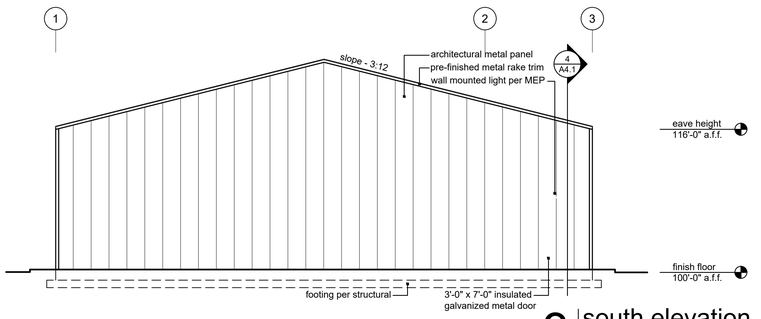


1 north elevation
scale: 1/8" = 1'-0"

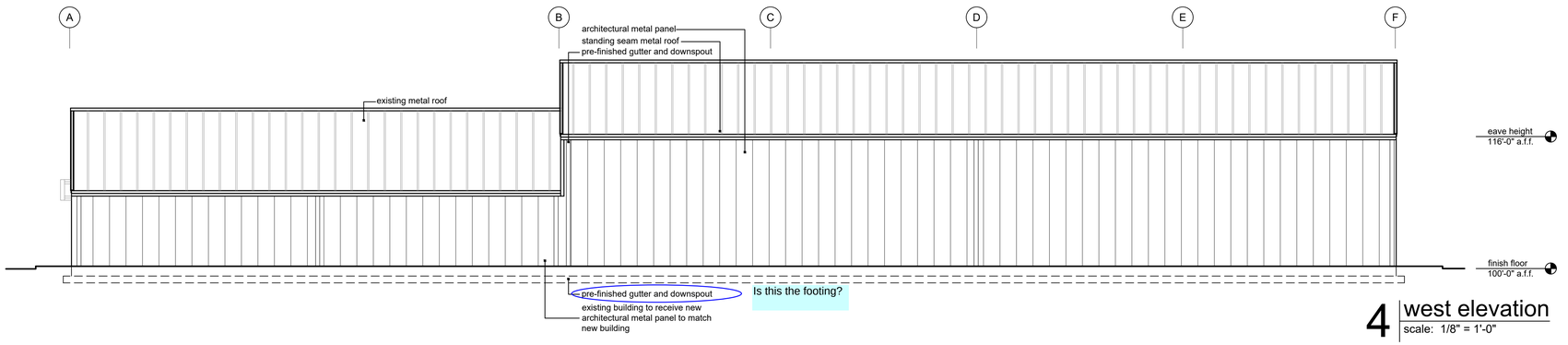


2 east elevation
scale: 1/8" = 1'-0"

Where does the stormater from the roof go onto the sight. Please provide stormwater report.



3 south elevation
scale: 1/8" = 1'-0"



Is this the footing?

4 west elevation
scale: 1/8" = 1'-0"

A Proposed Body Shop Addition and Remodel for

Main Street Dodge

555 Main Street
Lansing, Kansas

date
11.15.2021
drawn by
kka
checked by
dae
revisions

sheet number
A3.1
drawing type
preliminary
project number
21148

project location:

legal description:

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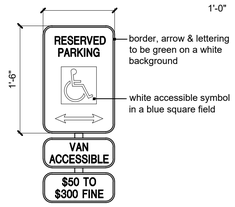
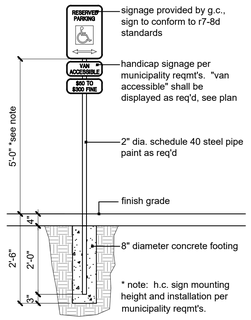
site synopsis:

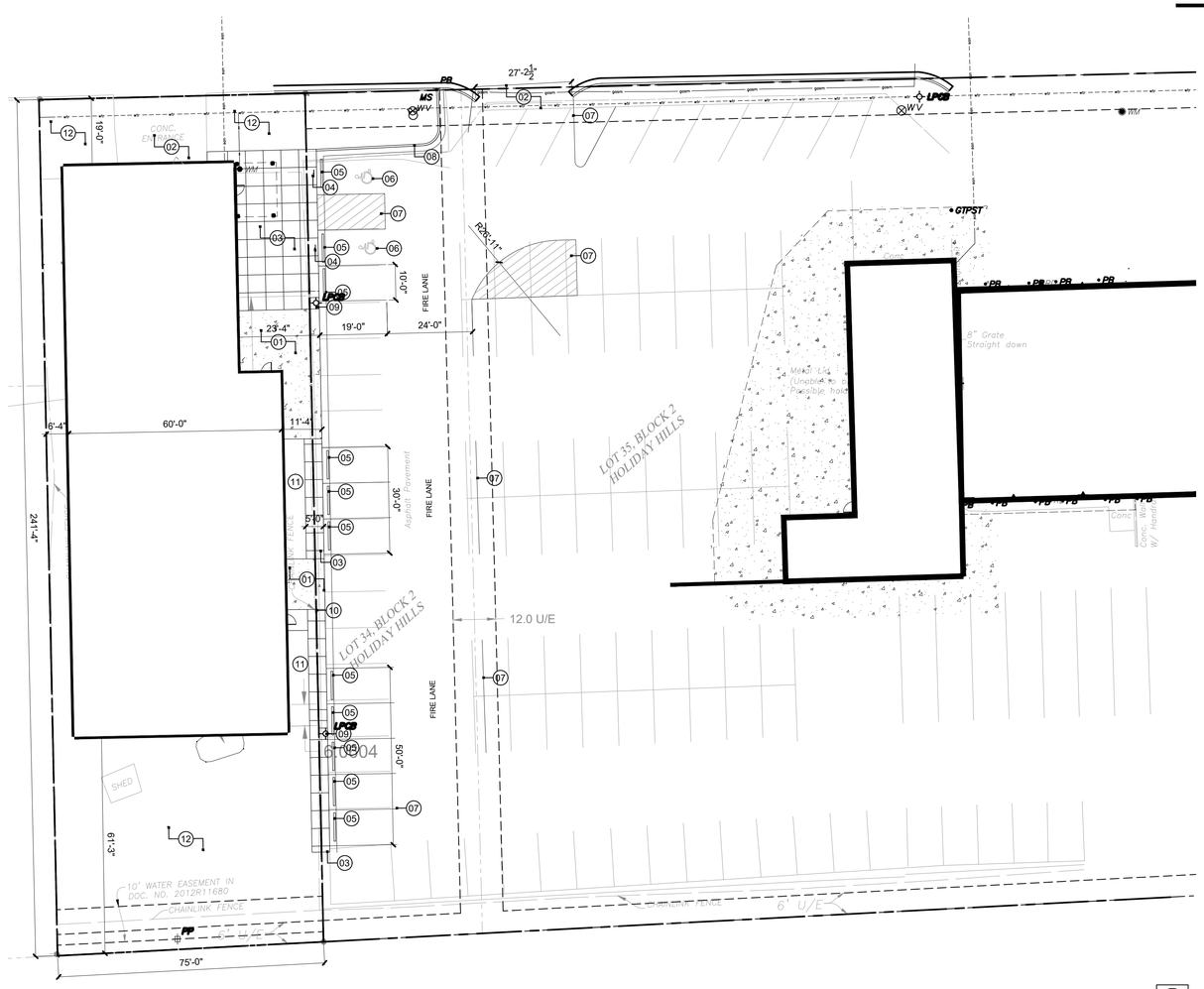
governing municipality:	Lansing, Kansas
site area:	+/- 18,019 sq.ft. (+/- 0.414 acres)
building stories:	one (existing and proposed)
building area(existing):	2,844 sq.ft.
building area(addition):	6,080 sq.ft.
total building area:	8,924 sq.ft.
floor area ratio:	.495
parking requirements:	1 per employee (10) & 2 per service bay (3) = 16 spaces req'd
new parking provided:	9 stalls + 2 handicap stalls

*all parking will be provided on adjacent lot that has the same owner.

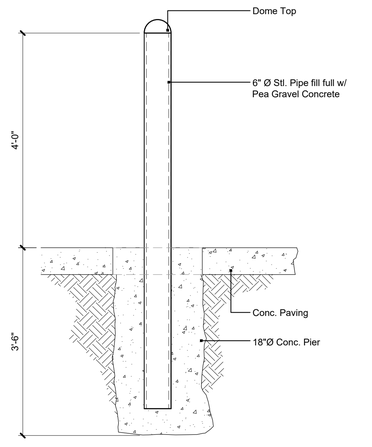


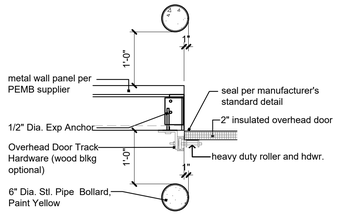


2 handicap signage
scale: not to scale



1 site plan
scale: 1" = 30'-0"
north





3 detail - bollard
scale: 3/4" = 1'-0"

construction notes: (##)

1. furnish and install concrete pavement, to abutt to existing asphalt pavement per civil.
2. existing drive to remain.
3. concrete sidewalk, 4" thick with 6x6 10/10 wwf steel mesh. control joints at 5'-0" o.c. broom finish for non-slip surface. to abutt to existing asphalt pavement per civil.
4. furnish and install handicap parking signage.
5. furnish and install parking stop.
6. handicap striping and universal symbol painted with 4" stroke.
7. parking lot striping to be white with 4" stroke.
8. existing concrete curb and gutter to remain.
9. existing parking lot lighting. concrete to not be poured against pole, block out around as shown on site plan.
10. existing fence to removed on east side of building.
11. green space.
12. existing green space.

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JOHN EDWARD DAVIDSON JR LICENSED 4089 KANSAS PROFESSIONAL ARCHITECT

A Proposed Body Shop Addition and Remodel for

MainStreet of Lansing

555 N Main Street
Lansing, KS 66043

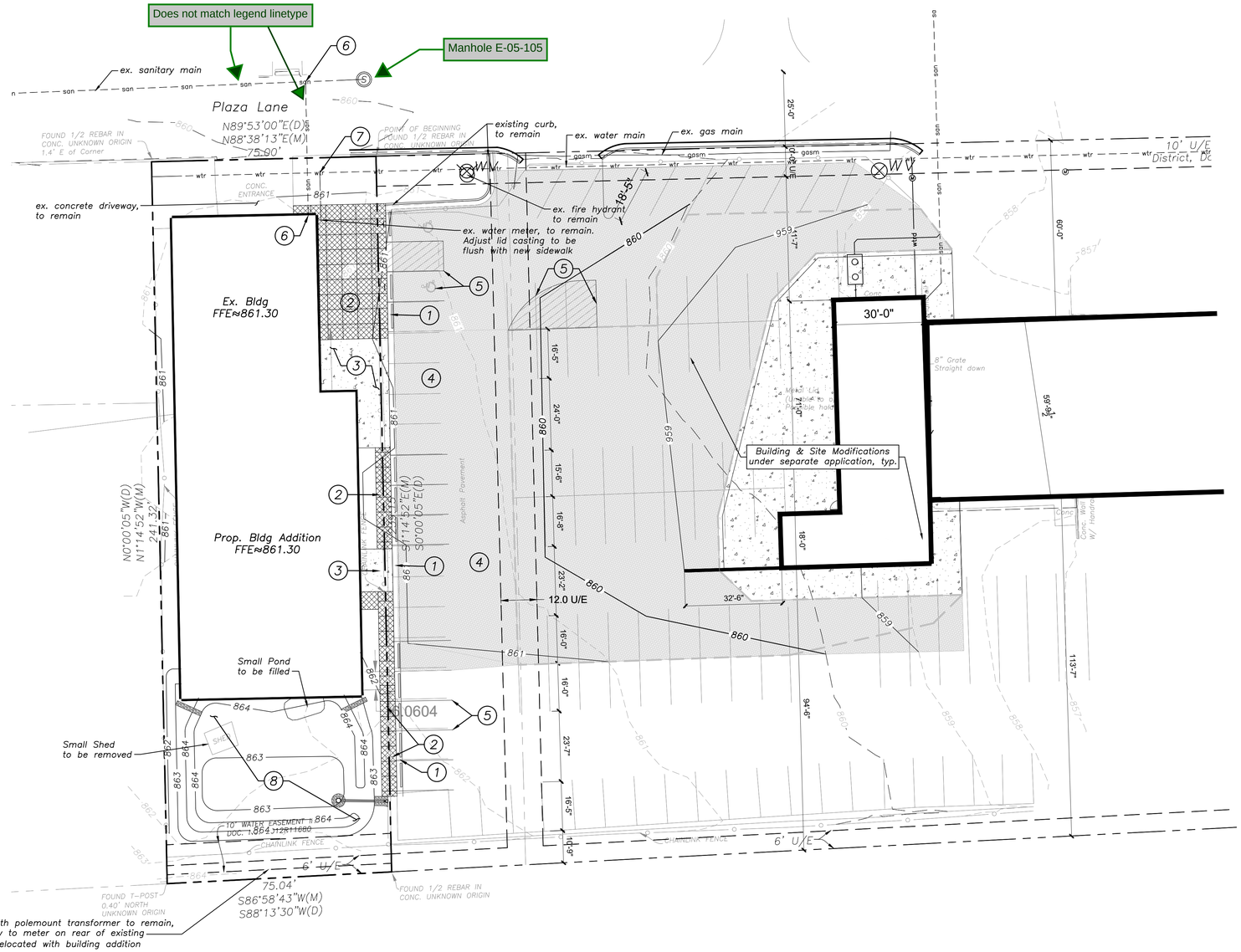
date
11.08.2021
drawn by
kka
checked by
dae
revisions
01.14.2022 — 01

sheet number
A1.1
drawing type
preliminary
project number
21148

north 2 Vicinity Map Aerial
n.t.s.

Does not match legend linetype

Manhole E-05-105



existing power pole with polemount transformer to remain, underground secondary to meter on rear of existing building to be reset/relocated with building addition

Floodplain Note:

This property lies within Flood Zone Z, defined as areas outside the 0.2% annual chance floodplain, as shown on the Flood Insurance Rate Map, prepared by Federal Emergency Agency's National Flood Insurance Program for the City of Lansing, Leavenworth County, Kansas, Map Number 20103C0144G, dated July 16, 2015.

Utility Legend

———	existing
———	proposed

Linetypes

sanm	sanitary main
sans	sanitary service
	storm sewer (existing)
	storm sewer (solid wall, proposed)
stm	storm sewer (solid wall, proposed)
	storm sewer (perforated, proposed)
wtrm	water main
wtrf	water service (fire)
wtrd	water service (domestic)
wtri	water service (irrigation)
gasm	natural gas main
gass	natural gas service schematic
elpu	underground primary electric
elsu	underground secondary electric
elpo	overhead electric
datu	underground cable/phone/data
datsu	underground cable/phone/data service
	fence–chainlink
	fence–wood
	fence–barbed wire
	treeline

Symbols

S	sanitary manhole
co	service cleanout
fmv	force main release valve
	rectangular structure
	circular structure
	fire hydrant
wv	water valve
M	water meter
BFP	backflow preventer
g	natural gas meter
T	service transformer (pad mount)
S	primary switch gear
	light pole
C	cable/phone/data junction box
	street light
	pedestrian street light
	electric pole
	guy wire
	end section

Property Legend

———	right of way
— — —	property lines
- - - -	easements
	setbacks

Grading Legend

	existing minor contour
	existing major contour
	proposed minor contour
	proposed major contour

Construction Notes:

1. Construct standard 18" ribbon curb & gutter adjacent to existing asphalt parking lot pavement, where indicated (see legend).
2. Construct standard 4" concrete sidewalk where indicated (see legend)
3. Construct heavy-duty concrete pavement at overhead door access aprons where indicated, (see legend)
4. Construct standard duty asphalt pavement where indicated (see legend).
5. Proposed pavement striping per architectural site plan A1.1, typ.
6. Existing 4" sanitary service to be field verified for depth & condition
7. Existing water meter and 3/4" domestic service connection.
8. Proposed stormwater dry detention basin.

1

north 1 Site Plan
scale: 1:20 XREF
0 10 20 40

ONE CALL KANSAS 811
Know what's below. Call before you dig.

Americans with Disabilities Act (ADA) Notes:

- *The running and cross slopes for all sidewalks, accessible paths, ramps, designated parking stalls, etc., shall be in compliance with latest Federal ADA guidelines, in addition to any accessibility standards adopted by the governing municipality. Prior to installation/construction, if any discrepancies are found within the plans, the Engineer shall be notified.*
- *All ADA parking areas shall have NO slopes greater than 2% in any direction.*

Construction Legend

	concrete pavement
	standard asphalt
	concrete sidewalk
	24" ribbon curb & gutter

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Reviewed By WW Dept
01/14/2022 1:18:24 PM
By T Zell

A Proposed Body Shop Addition and Remodel for MainStreet of Lansing

555 N Main Street
Lansing, KS 66043

date 11.08.2021
drawn by DAE
checked by LDM
revisions

1	01.14.2022

sheet number **C1.2**
drawing type preliminary
project number 21148

davidson
ARCHITECTURE + ENGINEERING

Micro Stormwater Study

for:

Main Street of Lansing Paint Shop Addition

211 Plaza Drive
Lansing, Jackson County, Kansas 66043
Section 24 – T09S – R22E

Prepared for:
Main Street of Lansing
555 N Main St
Lansing, KS 66043
844-514-8469

Prepared by:
Davidson Architecture & Engineering, LLC
Luke McIntosh, P.E.
4301 Indian Creek Parkway
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913.451.9390 (phone)
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January 4th, 2022

Table of Contents

Appendices

General Information

The project property is located at 211 Plaza Drive, immediately adjacent to the MainStreet of Lansing automotive dealership located at 555 N Main Street.

The site is located within Sections 24 and 35, T09S, R22E. The project will consist of a 6,080 sq. ft. addition to an existing 2,844 sq. ft. metal building, with associated new sidewalks and concrete door aprons. Refer to Figure 1 for location map.

The project is located within the Little Blue River watershed. The majority of the site (95%) is hydrological soil group C and is classified as Sharpsburg silty clay loam complex with 1 to 4 percent slopes.

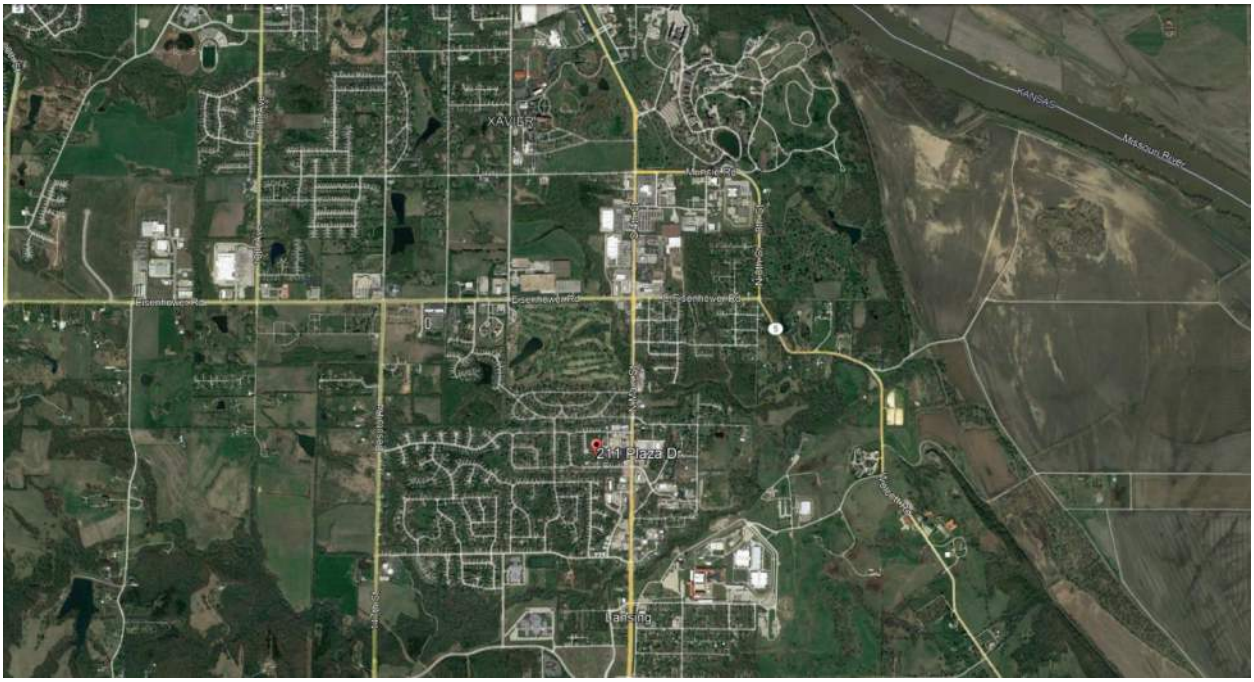


Figure 1 – Location Map (no scale)

Methodology

Existing and Proposed conditions were modeled and analyzed using Hydraflow Hydrographs Extension for AutoCAD Civil 3D 2020 (Hydraflow). Hydraflow Hydrographs Extension for AutoCAD 2021 is used to determine runoff flow amounts for existing and proposed site conditions. Hydraflow computes the rational method runoff hydrographs by convoluting a rainfall hyetograph through a unit hydrograph. Convolution is known as linear superpositioning and means that each ordinate of the rainfall hyetograph is multiplied by each ordinate of the unit hydrograph, thus creating a series of hydrographs. These hydrographs are then summed to form the final runoff hydrograph.

Existing Condition Analysis

The existing metal building is located near the north edge of the project property with an access drive connection to the private Plaza Drive. There is no onsite storm water runoff collection infrastructure. Runoff from the small site generally sheet flows in multiple directions away from the existing building onto adjacent private property. The existing **0.41**-acre project property is 20% impervious (C=0.41).

Soils encountered near the site are primarily (95.0%) Sharpsburg silty clay loam complex, 1 to 4 percent slopes, hydrological soil group C. A small portion (5%) of the site is classified as Sharpsburg silty clay loam with 4 to 8 percent slopes, hydrological soil group C. See Appendix A.

The site lies within Flood Zone X, areas determined to be outside the 0.2% annual chance floodplain, as depicted on the FEMA Flood Insurance Rate Map (FIRM) Map No. 20103C0144G, Effective Date: 7/16/2015. The Flood Insurance Rate Map is included in Appendix A.

Table 1: Existing Runoff Comparison

	Drainage Area (Ac.)	10-year event (cfs)	25-year event (cfs)	100-year event (cfs)	10-year volume (cu. ft.)	25-year vol. (cu. ft.)	100-year vol. (cu. ft.)
Ex. Area A-1	0.41	1.33	1.62	2.08	479	582	748

Proposed Condition Analysis

The proposed development consists of a 6,080 sq. ft. metal building addition with associated sidewalks and concrete door aprons. The proposed runoff was analyzed using the Rational Method. The proposed **0.41**-acre building addition site was analyzed with 0.26-acre of impervious area and 0.15-acre of pervious area (C=0.68). Weighted impervious values were calculated for each area, and Rational "C" coefficients were then determined from the weighted imperviousness.

The increase in hydrograph volume from existing to proposed conditions is addressed by the proposed extended dry detention. See the Pond Report included on page 11 of Appendix D.

Table 2: Proposed Runoff Comparison (Gross totals, no detention factored in)

	Drainage Area (Ac.)	10-year (cfs)	25-year (cfs)	100-year (cfs)	10-year volume (cu. ft.)	25-year vol. (cu. ft.)	100-year vol. (cu. ft.)
Onsite Detained	0.23	1.18	1.43	1.85	426	517	665
Onsite Undetained	0.18	0.99	1.20	1.55	357	433	557
Onsite Total**	**0.41**	**2.17**	**2.64**	**3.40**	**782**	**951**	**1,222**

See Appendix C for Hydraflow results.

Table 3: Existing and Proposed Peak Runoff Comparison

		Drainage Area (ac)	10-year event (cfs)	25-year event(cfs)	100-year event (cfs)
Existing	Onsite Area Peak Q	0.41	1.33	1.62	2.10
Proposed	Onsite Area Peak Q	0.41	2.17	2.64	3.40

Detention and water quality measures are required as the total imperviousness of the project site was increased by approximately 0.18-acres.

The drainage map, provided in Appendix B, depicts the existing and proposed drainage patterns for the site.

Table 4: Existing and Proposed Hydrograph Volume Comparison

	Onsite Area, 0.41 Acres		
	10-year volume	25-year volume	100-year volume
Existing	479	582	748
Proposed	782	951	1,222
Difference	**303**	**369**	**474**

The western half of the building roof (existing & addition) will be collected via gutters & downspouts and released above grade to the proposed detention basin located to the south of the building. The basin will be constructed with a Nyloplast drain basin outlet perforated riser structure with 3x 1" diameter orifice holes leading to the 6" diameter lower primary outlet pipe (862.50') to provide the necessary temporary detention and metered release of accumulated runoff storage. A 10' emergency spillway will be located just beyond the primary outlet structure to release accumulated runoff storage beyond the 100-year storm event. The 10' long emergency spillway will be at an elevation of 863.60. The eastern half of the roof will also be collected via gutters and released to daylight above grade – the southern 0.3-acre portion of the east roof will be directed into the basin; the remainder will not be detained. This outlet structure has been designed to detain accumulated runoff to discharge at a peak flow rate, that when combined with the site's undetained runoff, is less than or equal to the existing conditions, see Table 7.

This runoff will be released to sheet flow on the adjacent existing paved parking lot. The adjacent paved parking lot is a ±3.46 ac. and is essentially 100% impervious with roofs, concrete, & asphalt. The existing flow pattern is generally west-to-east and diverts to each side of the existing dealership building. There is no apparent on site storm water infrastructure; Overland sheet flow eventually makes it way to the K-7 (Main Street) right-of-way before being captured by the public storm sewer infrastructure network.

Table 5: Extended Dry Detention Stage vs Storage

Elevation	Contour Area, S.F.	Incremental Storage, C.F.	Total Storage, C.F.
862.50	1	0	0
863.0	793	137	137
863.60*	2,268	880	1,017

*Emergency Spillway Elevation

Table 6: Extended Dry Detention Peak Q vs Max Storage

Storm Event	Peak Flow Out, Q, CFS	Max Elevation, Ft.	Max Storage, C.F.
10 Yr	0.42	863.08	261
25 Yr	0.48	863.13	329
100 Yr	0.56	863.21	439

Table 7: Overall Existing and Proposed Peak Runoff Comparison with Detention

		Drainage Area (ac)	10-year event (cfs)	25-year event(cfs)	100-year event (cfs)
Existing	Onsite Area Peak Q	0.41	1.33	1.62	2.1
Proposed	Onsite Area Peak Q	0.41	1.33	1.58	1.98

Summary

The onsite existing flow patterns will be modified as the large building addition and majority of roof square footage will be rerouted to a new dry detention basin to be constructed on the south green area of the property. The on-site increase in stormwater runoff peak flow due to added impervious area (roof, sidewalk, drive apron, etc.) will be offset by the proposed on-site dry detention basin that will temporarily detain the excess stormwater flow and act to reduce the overall site peak flow runoff to less than, or equal to, existing conditions. Temporary erosion and sediment controls will be implemented and maintained throughout construction.

Appendix A:

NRCS Web Soil Survey Information

FIRM Map

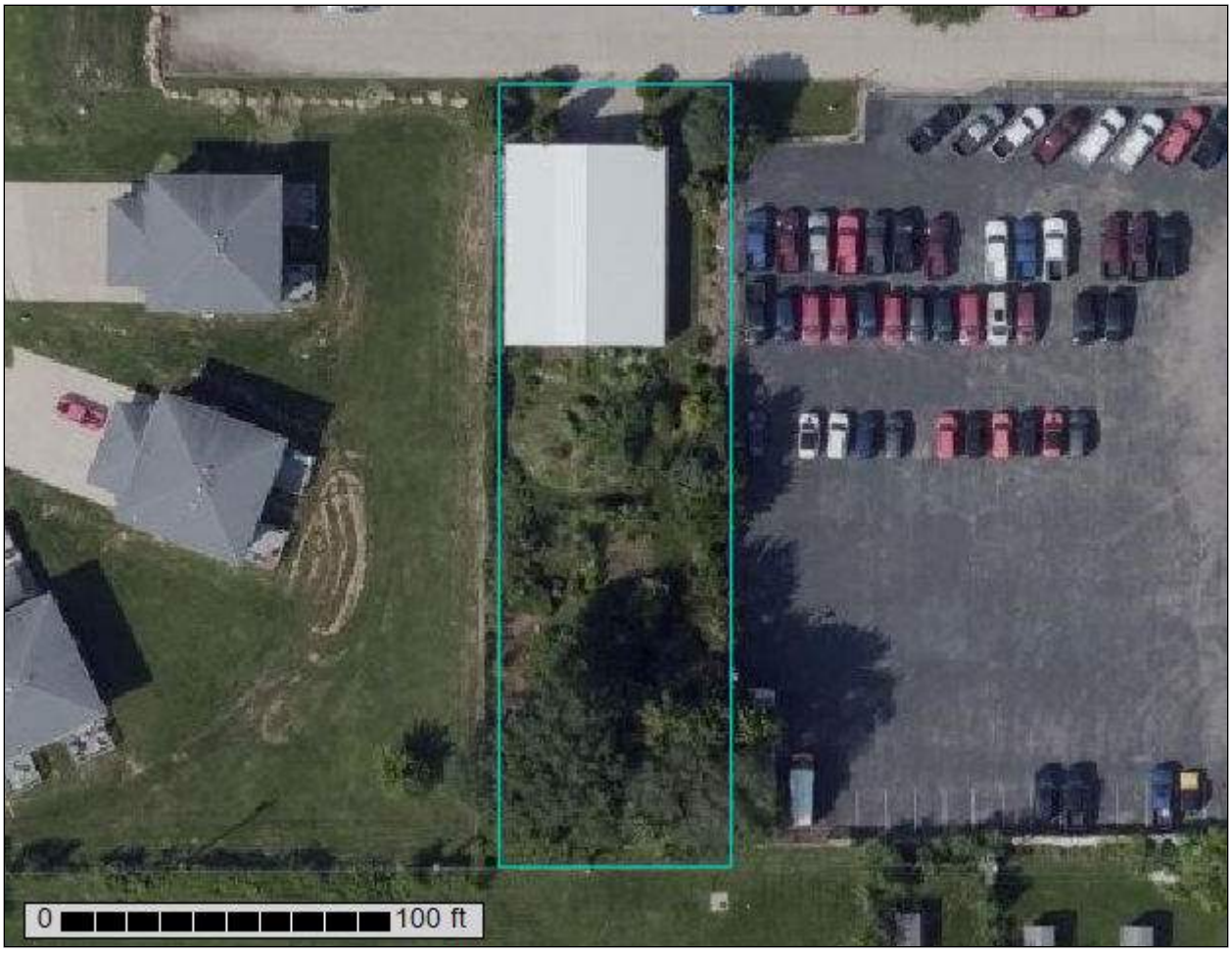
United States Department of Agriculture

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 Leavenworth County, Kansas



Preface

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

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

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

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

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

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

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Contents

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.

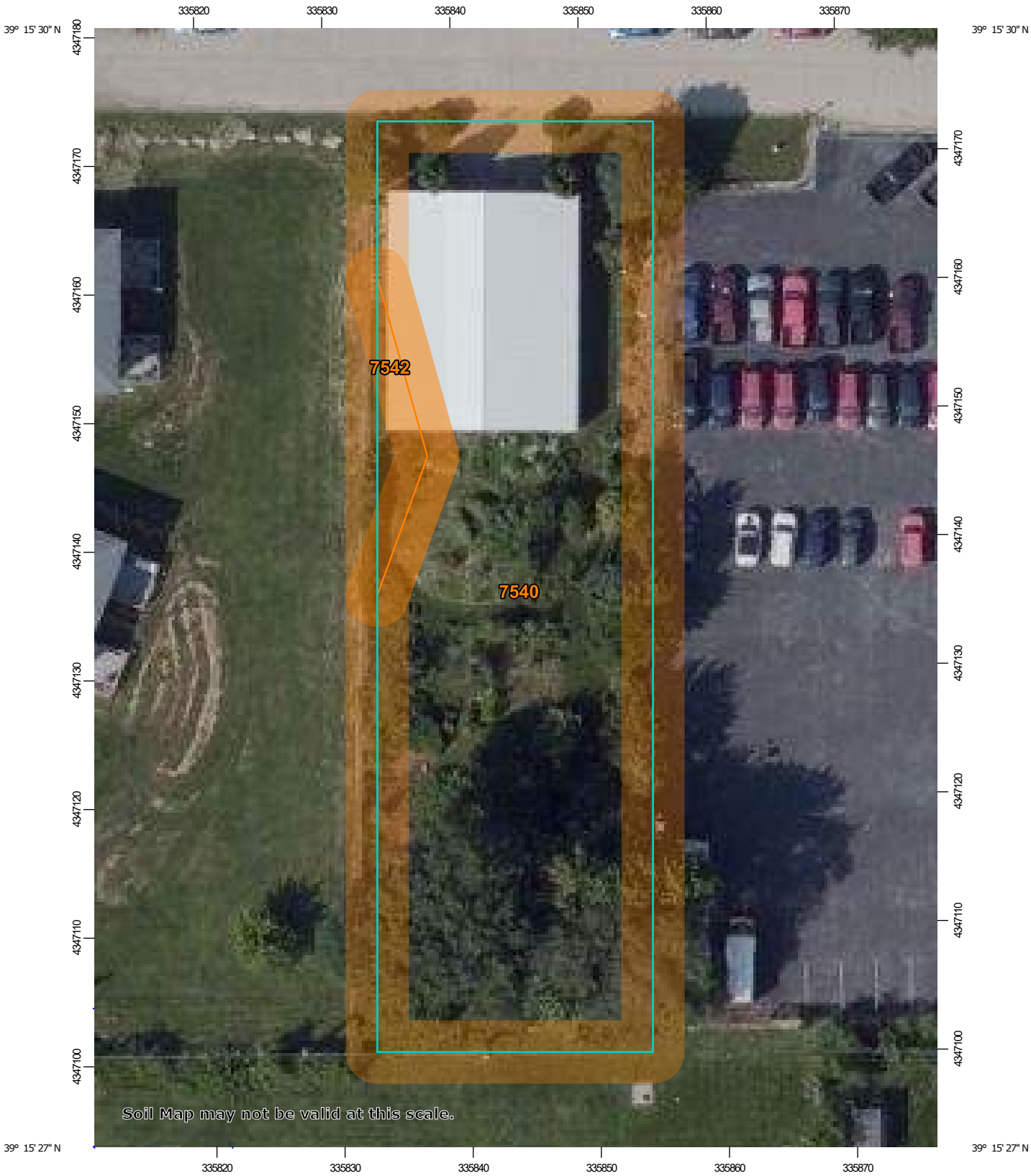
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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



Map Scale: 1:424 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

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: Leavenworth County, Kansas
Survey Area Data: Version 16, Sep 14, 2021

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

Date(s) aerial images were photographed: Jul 16, 2019—Sep 23, 2019

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
7540	Sharpsburg silty clay loam, 1 to 4 percent slopes	0.4	96.9%
7542	Sharpsburg silty clay loam, 4 to 8 percent slopes, eroded	0.0	3.1%
Totals for Area of Interest		**0.4**	**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.

Leavenworth County, Kansas

7540—Sharpsburg silty clay loam, 1 to 4 percent slopes

Map Unit Setting

National map unit symbol: 2q4rw
Elevation: 980 to 1,660 feet
Mean annual precipitation: 28 to 39 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 158 to 203 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sharpsburg and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sharpsburg

Setting

Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess

Typical profile

Ap - 0 to 6 inches: silty clay loam
A - 6 to 12 inches: silty clay loam
Bt1 - 12 to 18 inches: silty clay loam
Bt2 - 18 to 46 inches: silty clay loam
BC - 46 to 58 inches: silty clay loam
C - 58 to 79 inches: silty clay loam

Properties and qualities

Slope: 1 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
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 45 to 50 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: R106XY015KS - Loamy Upland (PE 30-37)
Forage suitability group: Loam (G106XY100NE)

Other vegetative classification: Loam (G106XY100NE)
Hydric soil rating: No

Minor Components

Wymore
Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: R106XY007KS - Clay Upland (PE 30-37)
Other vegetative classification: Clayey Subsoil (G106XY210NE)
Hydric soil rating: No

Pawnee
Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R106XY007KS - Clay Upland (PE 30-37)
Other vegetative classification: Clayey Subsoil (G106XY210NE)
Hydric soil rating: No

Sarcoxie
Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear, convex
Across-slope shape: Linear
Ecological site: R106XY015KS - Loamy Upland (PE 30-37)
Other vegetative classification: Loam (G106XY100NE)
Hydric soil rating: No

7542—Sharpsburg silty clay loam, 4 to 8 percent slopes, eroded

Map Unit Setting
National map unit symbol: 2q4rx
Elevation: 980 to 1,660 feet
Mean annual precipitation: 28 to 39 inches
Mean annual air temperature: 50 to 55 degrees F
Frost-free period: 158 to 203 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Sharpsburg, eroded, and similar soils: 85 percent

Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sharpsburg, Eroded

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess

Typical profile

Ap - 0 to 6 inches: silty clay loam
A - 6 to 10 inches: silty clay loam
Bt1 - 10 to 14 inches: silty clay loam
Bt2 - 14 to 46 inches: silty clay loam
BC - 46 to 58 inches: silty clay loam
C - 58 to 79 inches: silty clay loam

Properties and qualities

Slope: 4 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
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 45 to 50 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.6 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R106XY015KS - Loamy Upland (PE 30-37)
Forage suitability group: Loam (G106XY100NE)
Other vegetative classification: Loam (G106XY100NE)
Hydric soil rating: No

Minor Components

Sarcoxie, eroded

Percent of map unit: 8 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R106XY015KS - Loamy Upland (PE 30-37)
Other vegetative classification: Loam (G106XY100NE)
Hydric soil rating: No

Shelby, eroded

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R106XY015KS - Loamy Upland (PE 30-37)
Other vegetative classification: Loam (G106XY100NE)
Hydric soil rating: No

Grundy, eroded

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R106XY007KS - Clay Upland (PE 30-37)
Other vegetative classification: Clayey Subsoil (G106XY210NE)
Hydric soil rating: No

Soil Information for All Uses

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

AOI Inventory

This folder contains a collection of tabular reports that present a variety of soil information. Included are various map unit description reports, special soil interpretation reports, and data summary reports.

Map Unit Description (Brief, Generated) (211 Plaza Dr Paint Shop)

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 in this report, along with the maps, provide information on the composition of map units and properties of their components.

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.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous

areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated) (211 Plaza Dr Paint Shop)

Leavenworth County, Kansas

Map Unit: 7540—Sharpsburg silty clay loam, 1 to 4 percent slopes

Component: Sharpsburg (85%)

The Sharpsburg component makes up 85 percent of the map unit. Slopes are 1 to 4 percent. This component is on hillslopes on uplands. The parent material consists of loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 47 inches during February, March, April, May. Organic matter content in the surface horizon is about 3 percent. This component is in the R106XY015KS Loamy Upland (PE 30-37) ecological site. Nonirrigated land capability classification is 2e. Irrigated land capability classification is 3e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Wymore (5%)

Generated brief soil descriptions are created for major soil components. The Wymore soil is a minor component.

Component: Pawnee (5%)

Generated brief soil descriptions are created for major soil components. The Pawnee soil is a minor component.

Component: Sarcoxie (5%)

Generated brief soil descriptions are created for major soil components. The Sarcoxie soil is a minor component.

Map Unit: 7542—Sharpsburg silty clay loam, 4 to 8 percent slopes, eroded

Component: Sharpsburg, eroded (85%)

The Sharpsburg, eroded component makes up 85 percent of the map unit. Slopes are 4 to 8 percent. This component is on hillslopes on uplands. The parent material consists of loess. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is high. Shrink-swell potential is high. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 47 inches during February, March, April, May. Organic matter content in the surface horizon is about 3 percent. This component is in the R106XY015KS Loamy Upland (PE 30-37) ecological site. Nonirrigated land capability classification is 3e. Irrigated land capability classification is 4e. This soil does not meet hydric criteria. There are no saline horizons within 30 inches of the soil surface.

Component: Sarcoxie, eroded (8%)

Generated brief soil descriptions are created for major soil components. The Sarcoxie, eroded soil is a minor component.

Component: Shelby, eroded (5%)

Generated brief soil descriptions are created for major soil components. The Shelby, eroded soil is a minor component.

Component: Grundy, eroded (2%)

Generated brief soil descriptions are created for major soil components. The Grundy, eroded soil is a minor component.

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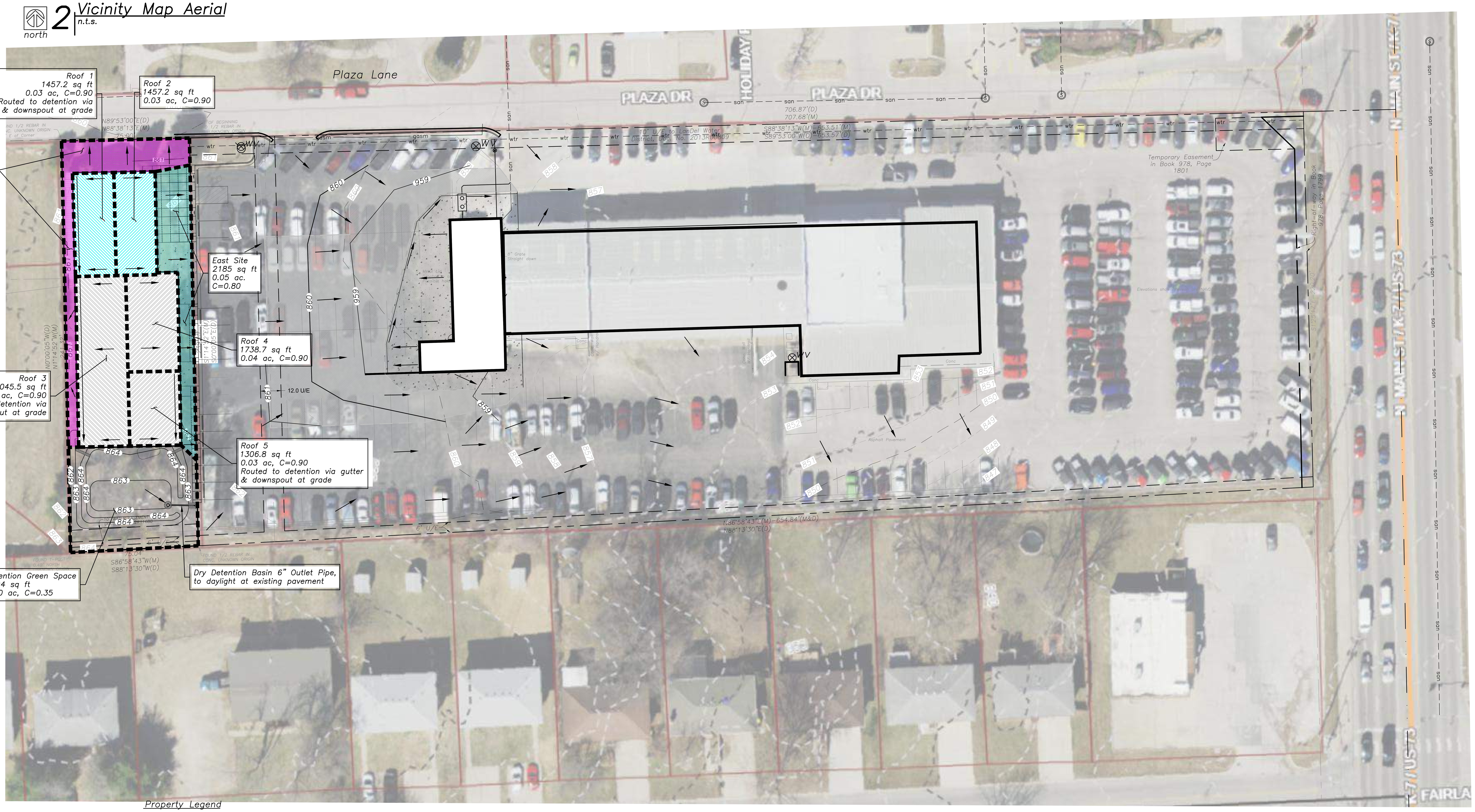
Appendix B:

Existing Condition Drainage Map
Proposed Condition Drainage Map

Agenda Item 2.

2 Vicinity Map Aerial
n.t.s.
north



1 Drainage Plan
1" = 30'
0 15 30 60
north

Property Legend

- right of way
- property lines
- easements
- setbacks

Grading Legend

- existing minor contour
- existing major contour
- proposed minor contour
- proposed major contour

Floodplain Note:

This property lies within Flood Zone X, defined as areas outside the 0.2% annual chance floodplain, as shown on the Flood Insurance Rate Map, prepared by Federal Emergency Agency's National Flood Insurance Program for the City of Lansing, Leavenworth County, Kansas, Map Number 20103C0144G, dated July 16, 2015.

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A Proposed Body Shop Addition and Remodel for
MainStreet of Lansing
555 N Main Street
Lansing, KS 66043

date
11.08.2021
drawn by
DAE
checked by
LDM
revisions

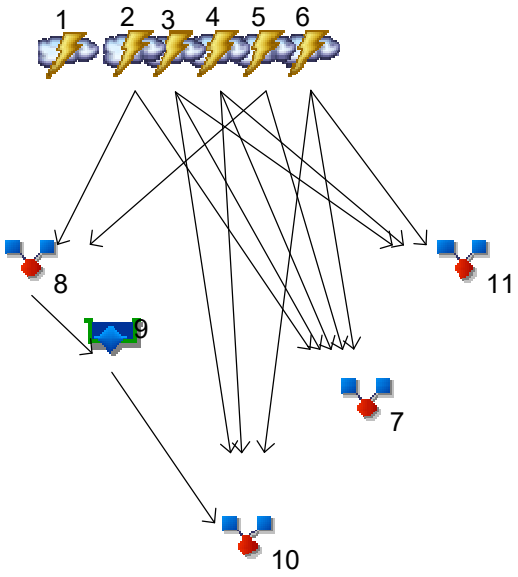
sheet number
C3.1
drawing type
preliminary
project number
21148

Appendix C:

Hydraflow Output Data

Hydraflow Table of Contents

Watershed Model Schematic



Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	------	0.764	0.900	-------	1.134	1.331	1.617	1.845	2.078	ExCon
2	Rational	------	0.519	0.612	-------	0.770	0.904	1.099	1.253	1.412	Roofs to Detention
3	Rational	------	0.279	0.329	-------	0.415	0.487	0.592	0.675	0.760	Roofs to Daylight
4	Rational	------	0.112	0.132	-------	0.166	0.195	0.237	0.270	0.304	NW Undetained
5	Rational	------	0.160	0.188	-------	0.237	0.279	0.339	0.386	0.435	South Green Space Basin
6	Rational	------	0.177	0.209	-------	0.263	0.309	0.376	0.428	0.483	east side undetained
7	Combine	2, 3, 4, 5, 6	1.247	1.470	-------	1.852	2.173	2.642	3.013	3.395	Post Dev Gross
8	Combine	2, 5,	0.679	0.800	-------	1.008	1.183	1.437	1.640	1.847	to basin
9	Reservoir	8	0.303	0.333	-------	0.385	0.424	0.478	0.518	0.558	Basin
10	Combine	3, 4, 6, 9	0.805	0.948	-------	1.152	1.325	1.578	1.775	1.976	Post Dev Net
11	Combine	3, 4, 6,	0.569	0.670	-------	0.844	0.991	1.204	1.373	1.547	undetained

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

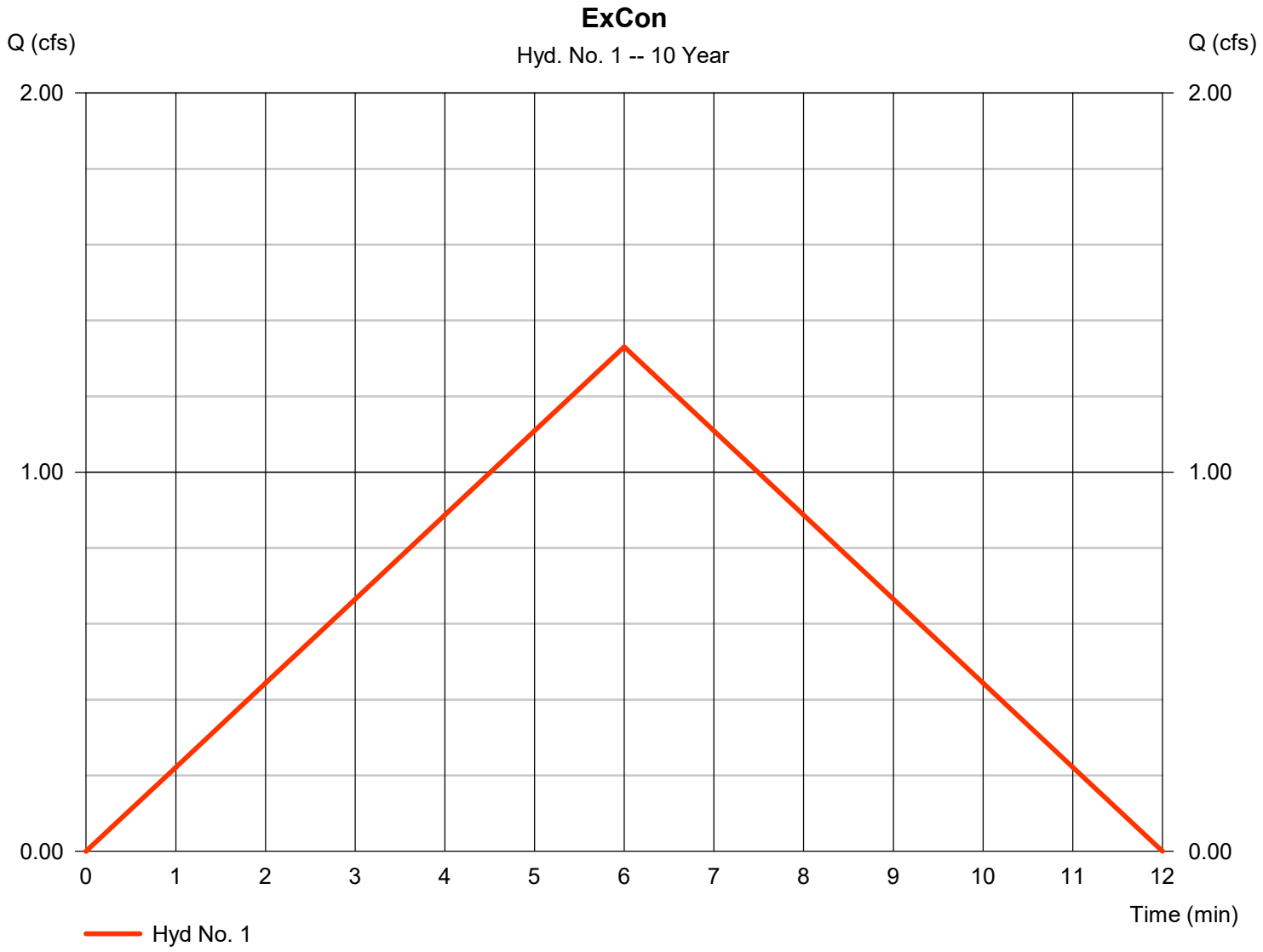
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.331	1	6	479	------	------	------	ExCon
2	Rational	0.904	1	6	325	------	------	------	Roofs to Detention
3	Rational	0.487	1	6	175	------	------	------	Roofs to Daylight
4	Rational	0.195	1	6	70	------	------	------	NW Undetained
5	Rational	0.279	1	6	100	------	------	------	South Green Space Basin
6	Rational	0.309	1	6	111	------	------	------	east side undetained
7	Combine	2.173	1	6	782	2, 3, 4, 5, 6	------	------	Post Dev Gross
8	Combine	1.183	1	6	426	2, 5,	------	------	to basin
9	Reservoir	0.424	1	10	424	8	863.08	261	Basin
10	Combine	1.325	1	6	781	3, 4, 6, 9	------	------	Post Dev Net
11	Combine	0.991	1	6	357	3, 4, 6,	------	------	undetained

Hydrograph Report

Hyd. No. 1

ExCon

Hydrograph type	=	Rational	Peak discharge	=	1.331 cfs
Storm frequency	=	10 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	479 cuft
Drainage area	=	0.410 ac	Runoff coeff.	=	0.42
Intensity	=	7.727 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1

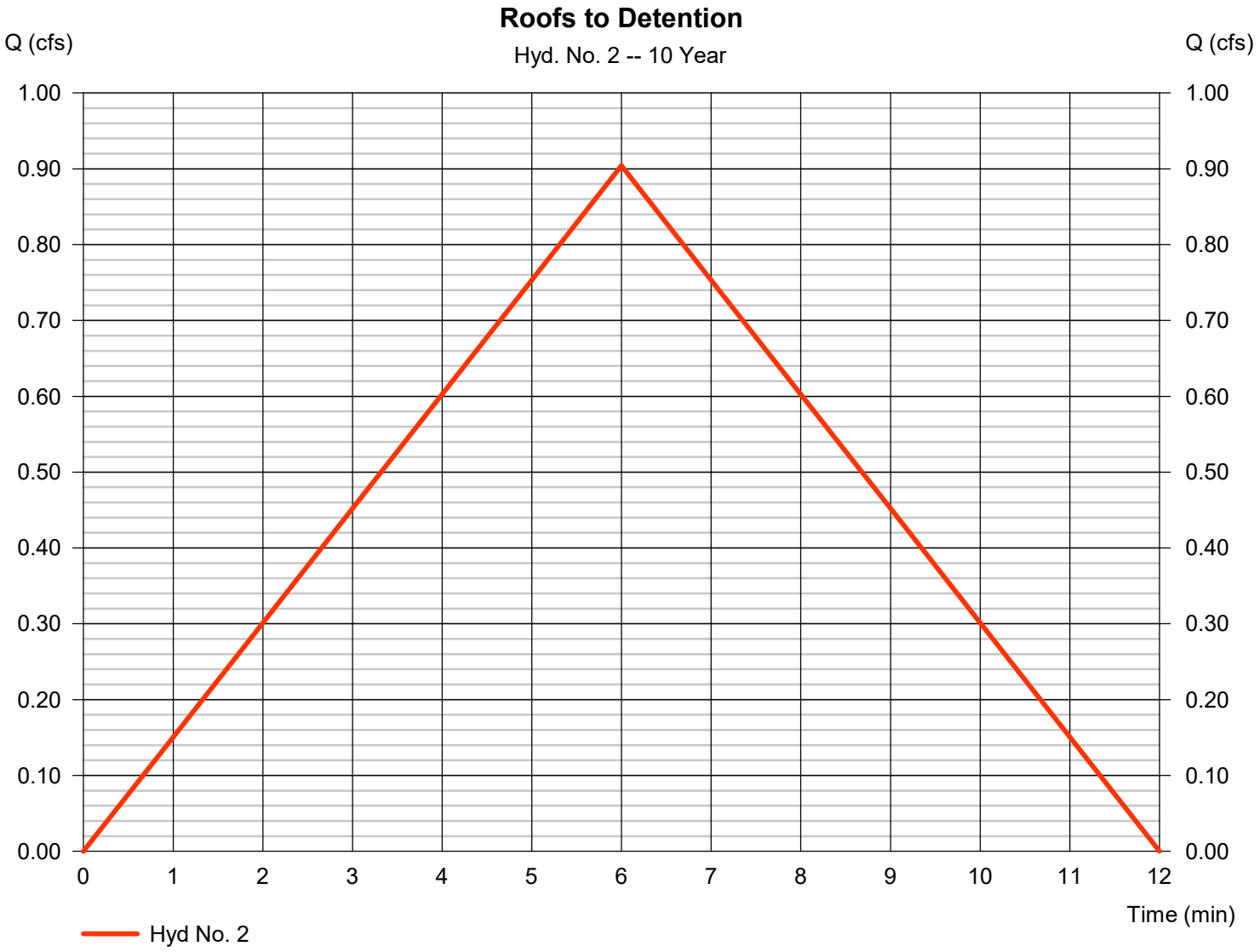


Hydrograph Report

Hyd. No. 2

Roofs to Detention

Hydrograph type	= Rational	Peak discharge	= 0.904 cfs
Storm frequency	= 10 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 325 cuft
Drainage area	= 0.130 ac	Runoff coeff.	= 0.9
Intensity	= 7.727 in/hr	Tc by User	= 6.00 min
IDF Curve	= Lansing KS.IDF	Asc/Rec limb fact	= 1/1

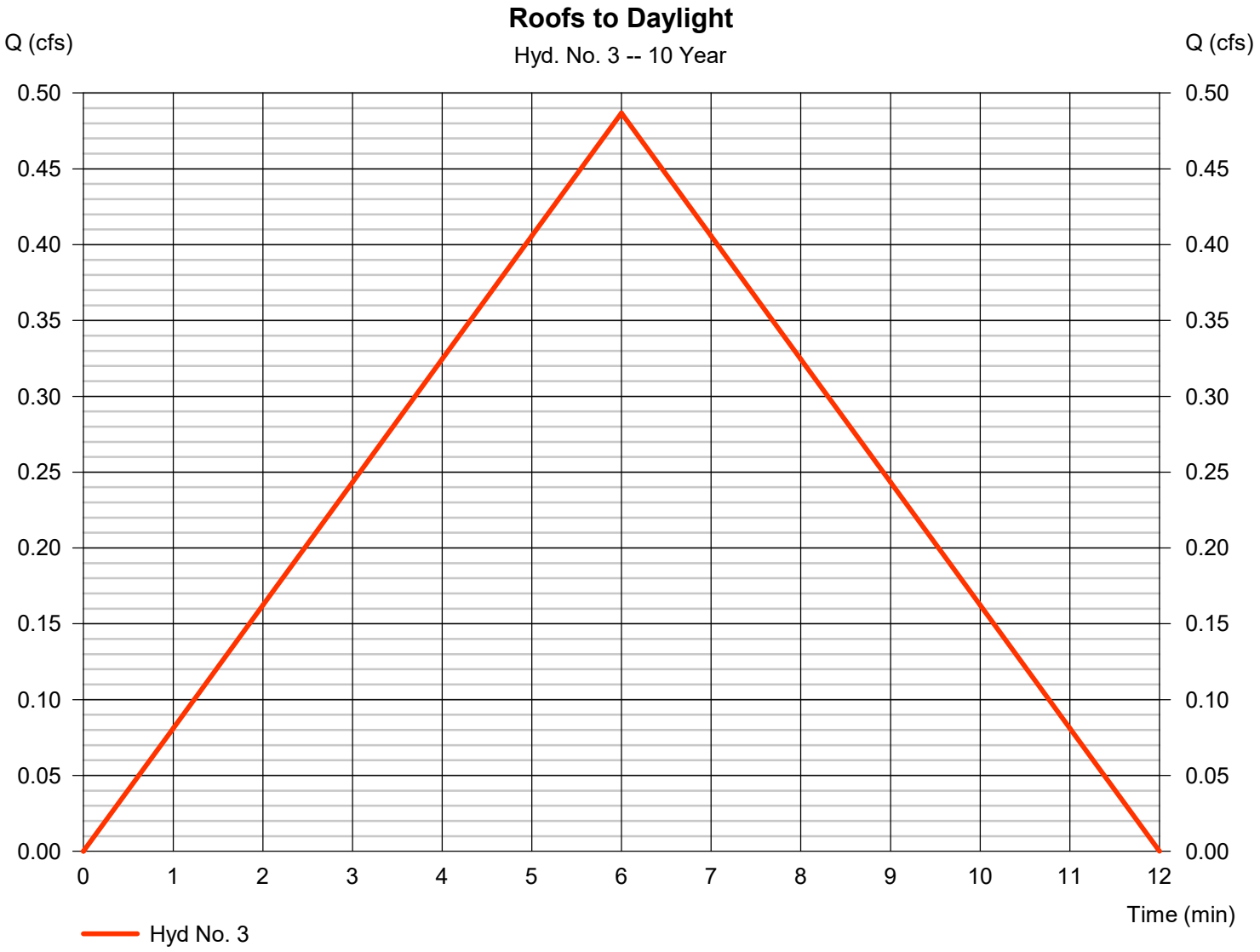


Hydrograph Report

Hyd. No. 3

Roofs to Daylight

Hydrograph type	= Rational	Peak discharge	= 0.487 cfs
Storm frequency	= 10 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 175 cuft
Drainage area	= 0.070 ac	Runoff coeff.	= 0.9
Intensity	= 7.727 in/hr	Tc by User	= 6.00 min
IDF Curve	= Lansing KS.IDF	Asc/Rec limb fact	= 1/1

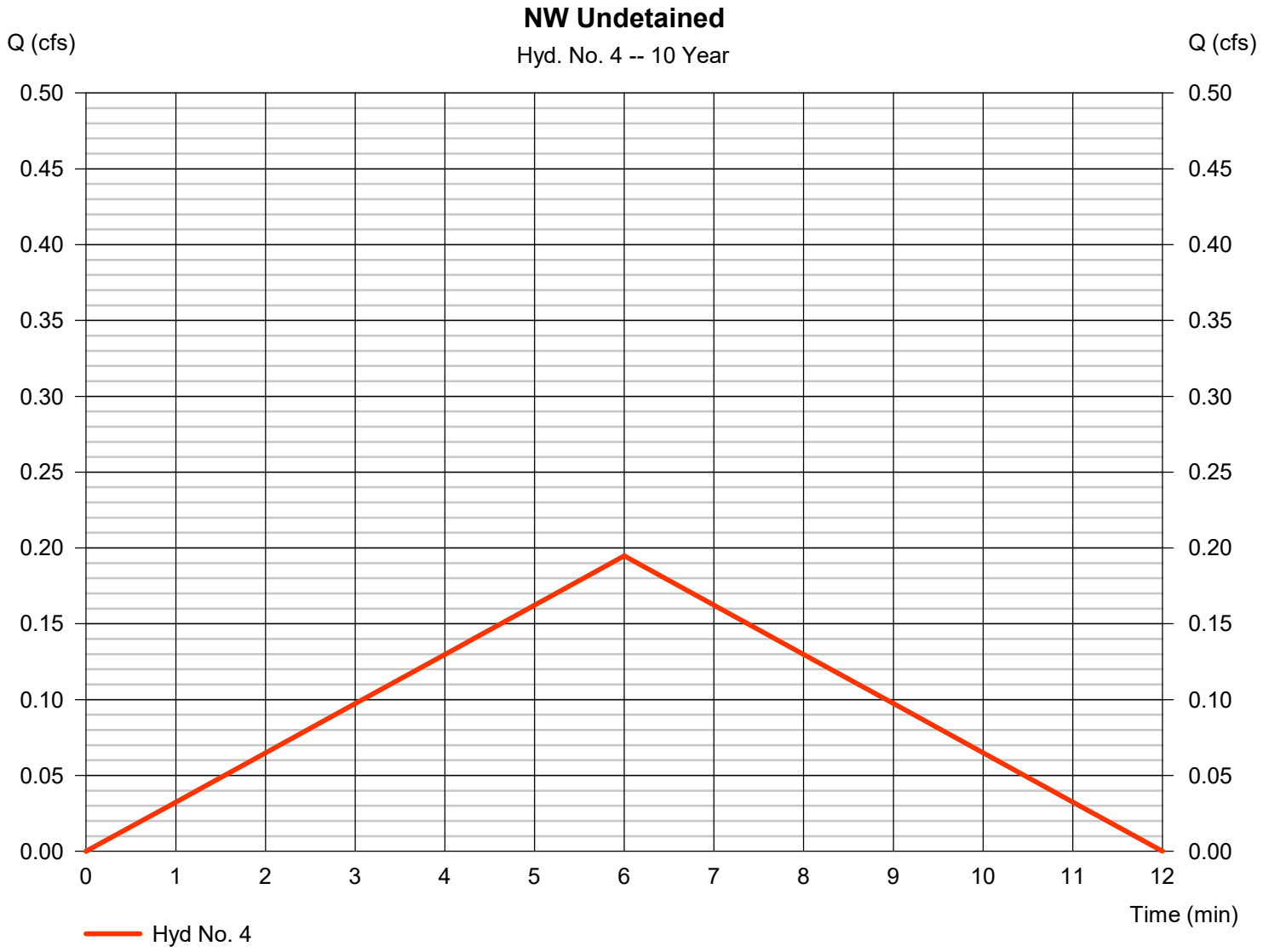


Hydrograph Report

Hyd. No. 4

NW Undetained

Hydrograph type	=	Rational	Peak discharge	=	0.195 cfs
Storm frequency	=	10 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	70 cuft
Drainage area	=	0.060 ac	Runoff coeff.	=	0.42
Intensity	=	7.727 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1

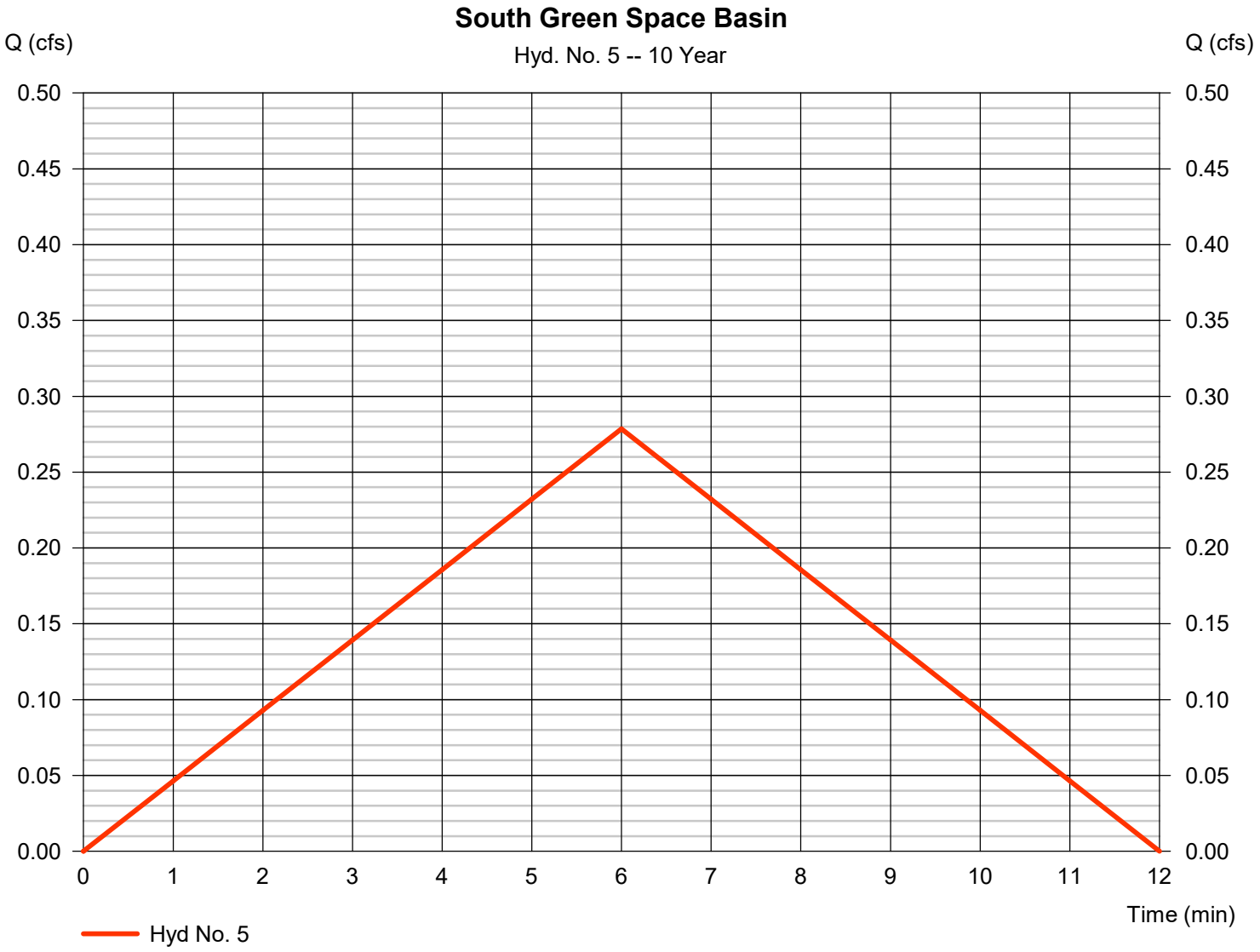


Hydrograph Report

Hyd. No. 5

South Green Space Basin

Hydrograph type	=	Rational	Peak discharge	=	0.279 cfs
Storm frequency	=	10 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	100 cuft
Drainage area	=	0.103 ac	Runoff coeff.	=	0.35
Intensity	=	7.727 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1



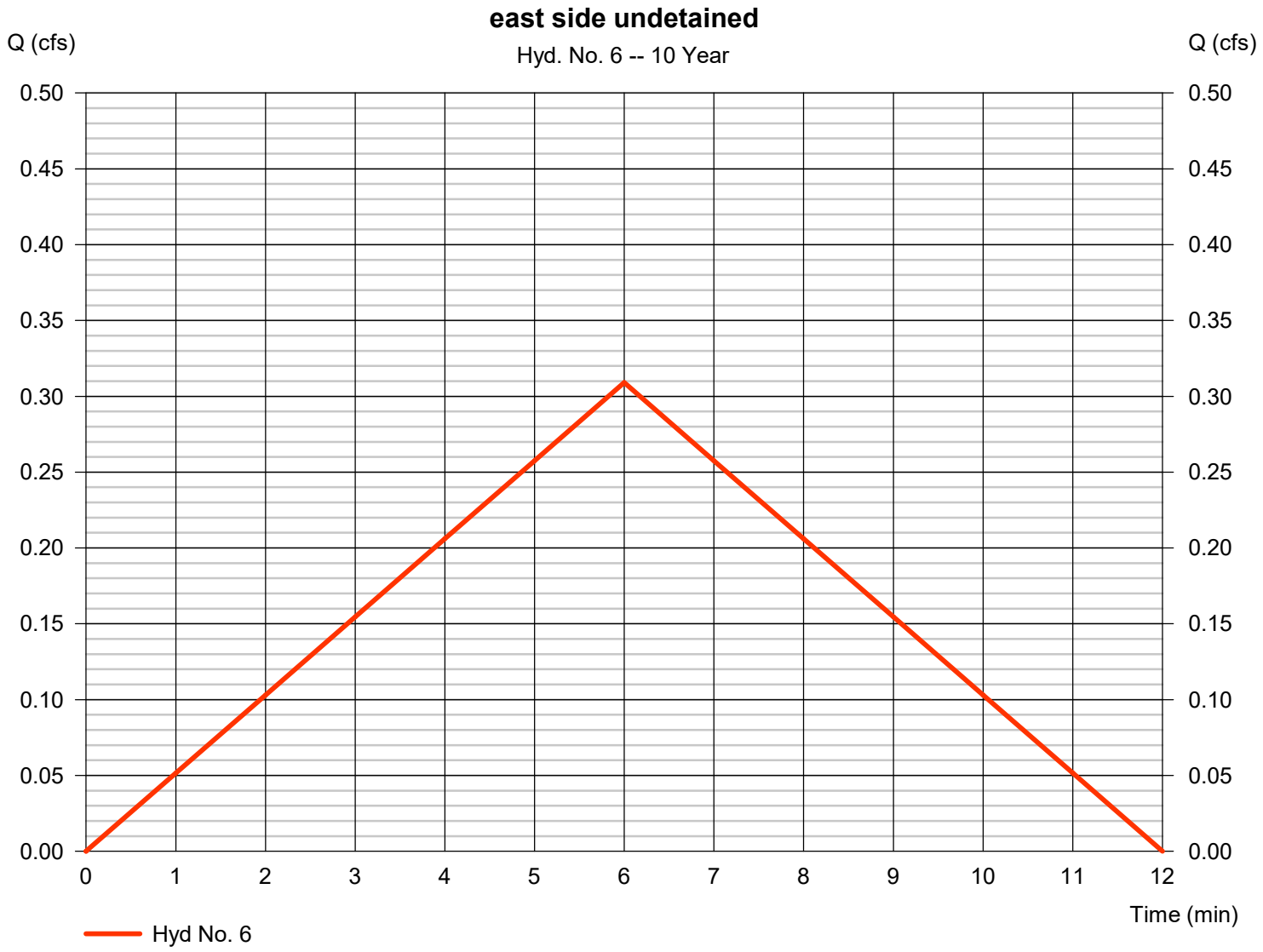
Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021 Thursday, 12 / 30 / 2021

Hyd. No. 6

east side undetained

Hydrograph type	=	Rational	Peak discharge	=	0.309 cfs
Storm frequency	=	10 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	111 cuft
Drainage area	=	0.050 ac	Runoff coeff.	=	0.8
Intensity	=	7.727 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1

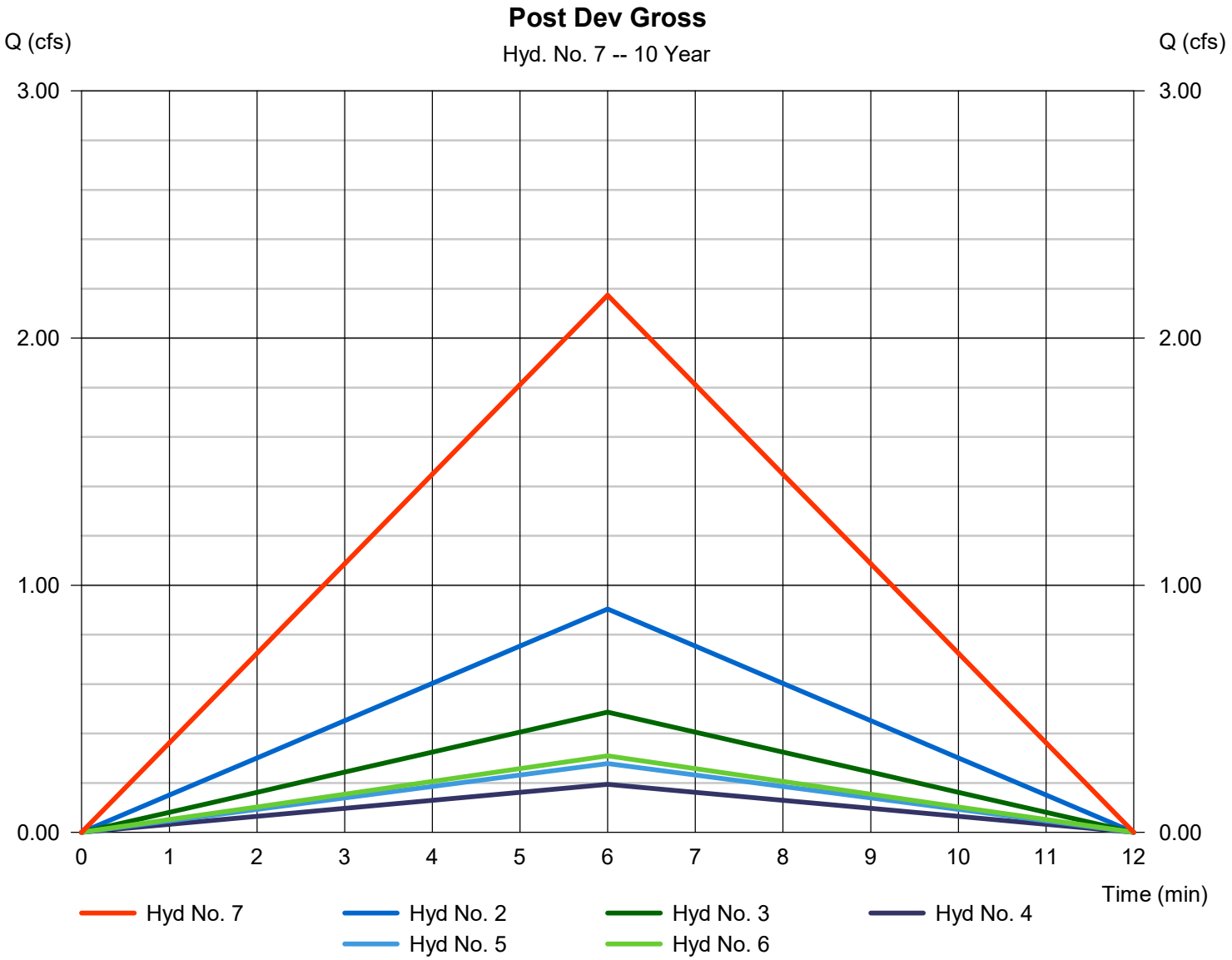


Hydrograph Report

Hyd. No. 7

Post Dev Gross

Hydrograph type	= Combine	Peak discharge	= 2.173 cfs
Storm frequency	= 10 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 782 cuft
Inflow hyds.	= 2, 3, 4, 5, 6	Contrib. drain. area	= 0.413 ac

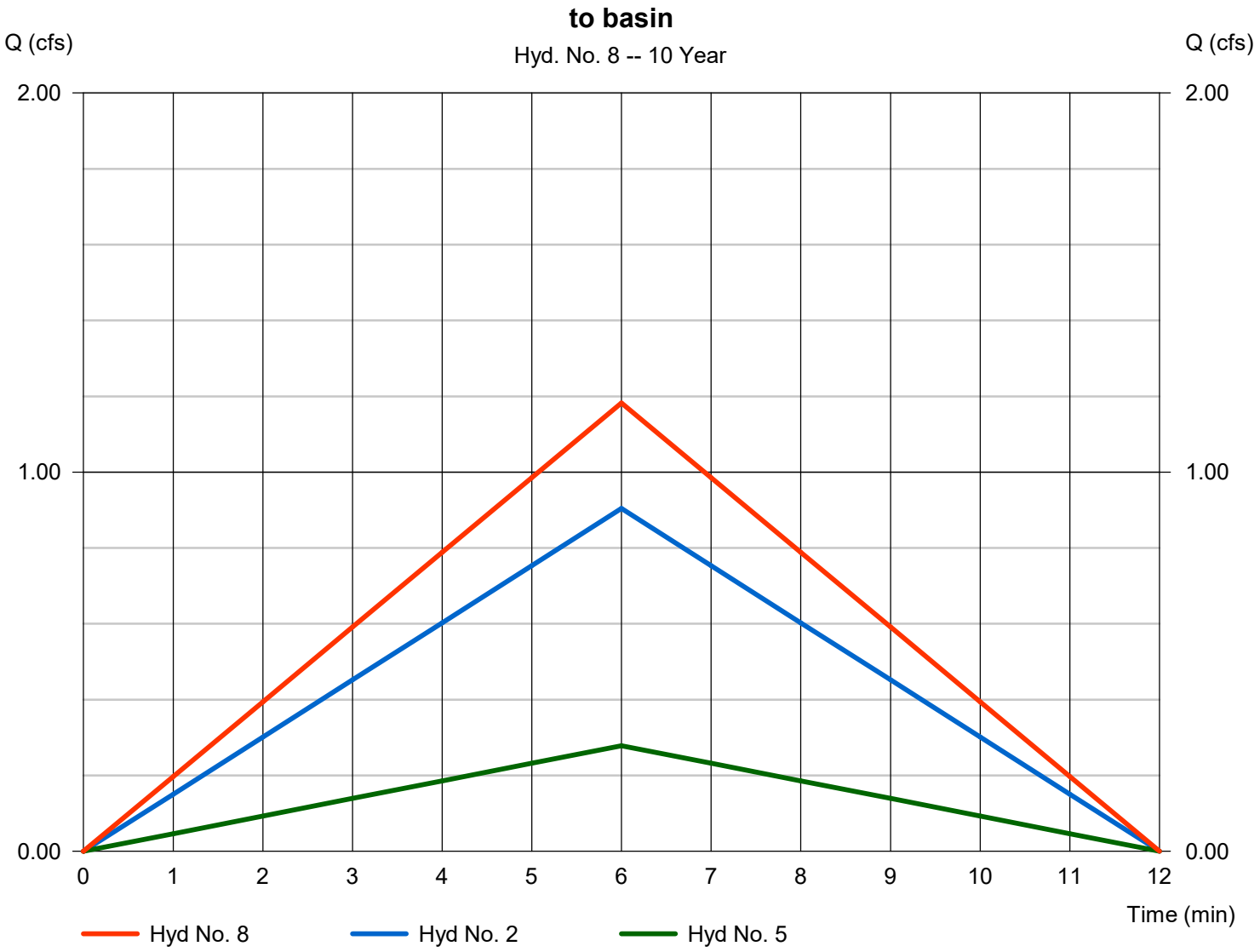


Hydrograph Report

Hyd. No. 8

to basin

Hydrograph type	= Combine	Peak discharge	= 1.183 cfs
Storm frequency	= 10 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 426 cuft
Inflow hyds.	= 2, 5	Contrib. drain. area	= 0.233 ac



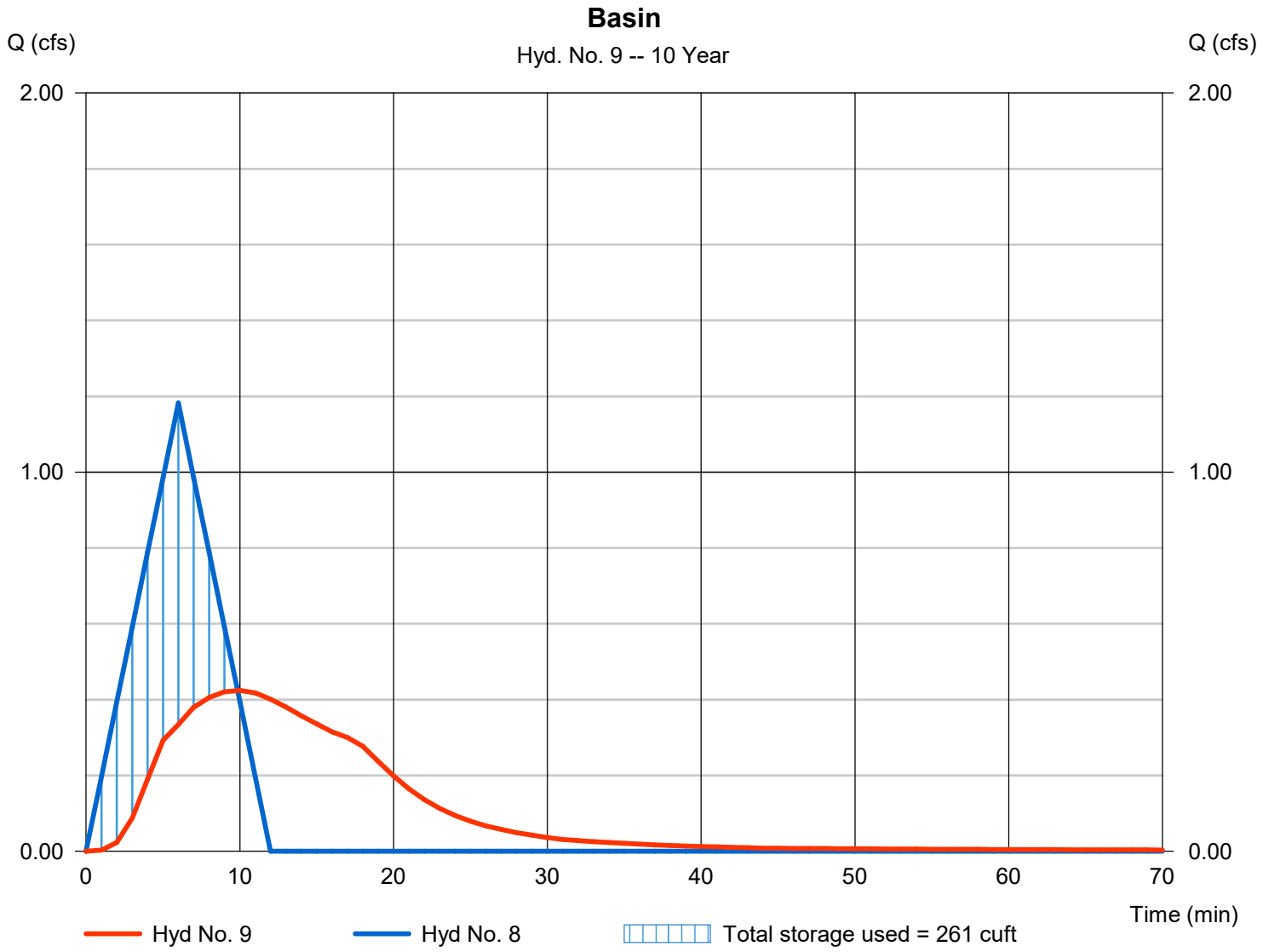
Hydrograph Report

Hyd. No. 9

Basin

Hydrograph type	=	Reservoir	Peak discharge	=	0.424 cfs
Storm frequency	=	10 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	424 cuft
Inflow hyd. No.	=	8 - to basin	Max. Elevation	=	863.08 ft
Reservoir name	=	South Basin	Max. Storage	=	261 cuft

Storage Indication method used.

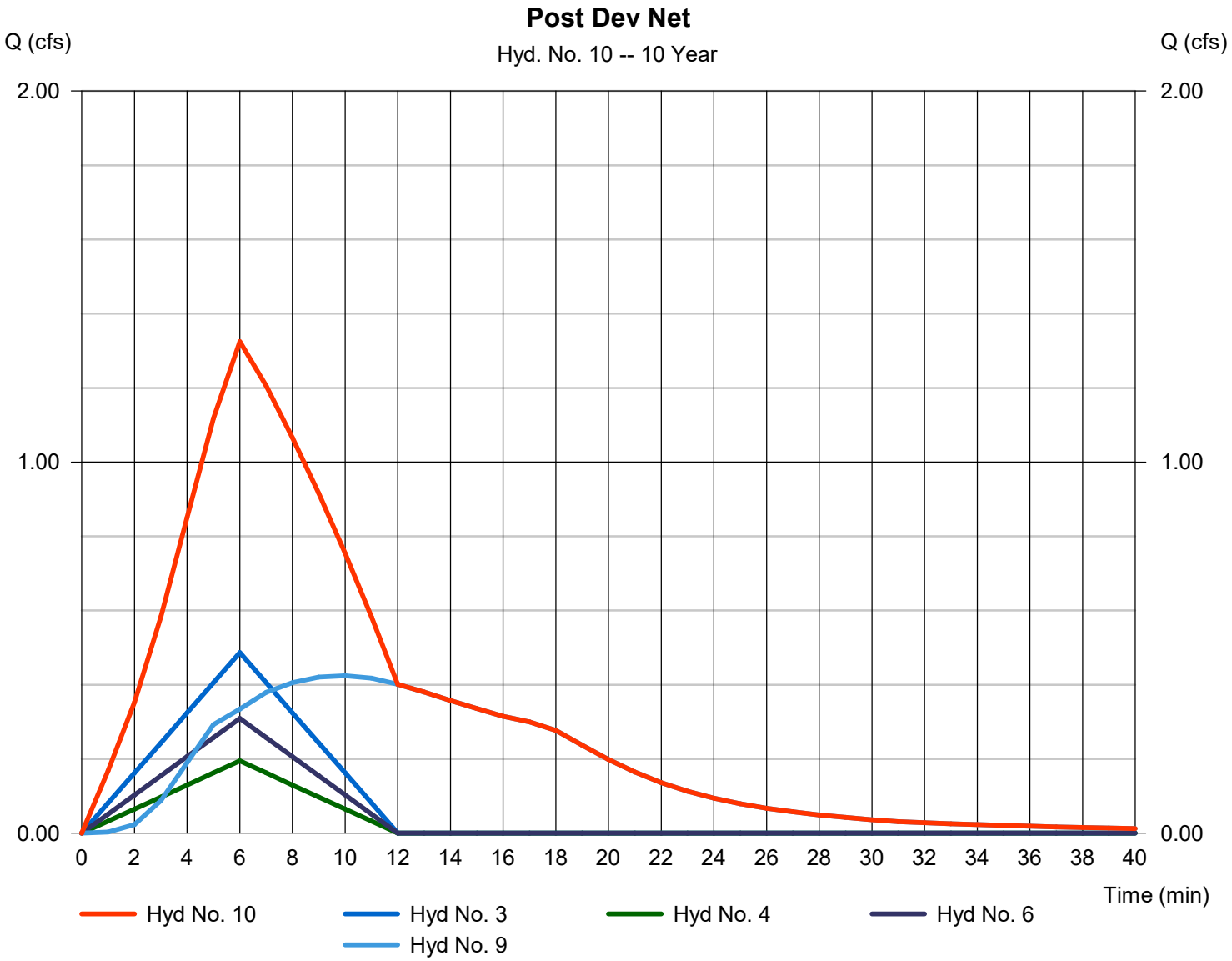


Hydrograph Report

Hyd. No. 10

Post Dev Net

Hydrograph type	= Combine	Peak discharge	= 1.325 cfs
Storm frequency	= 10 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 781 cuft
Inflow hyds.	= 3, 4, 6, 9	Contrib. drain. area	= 0.180 ac

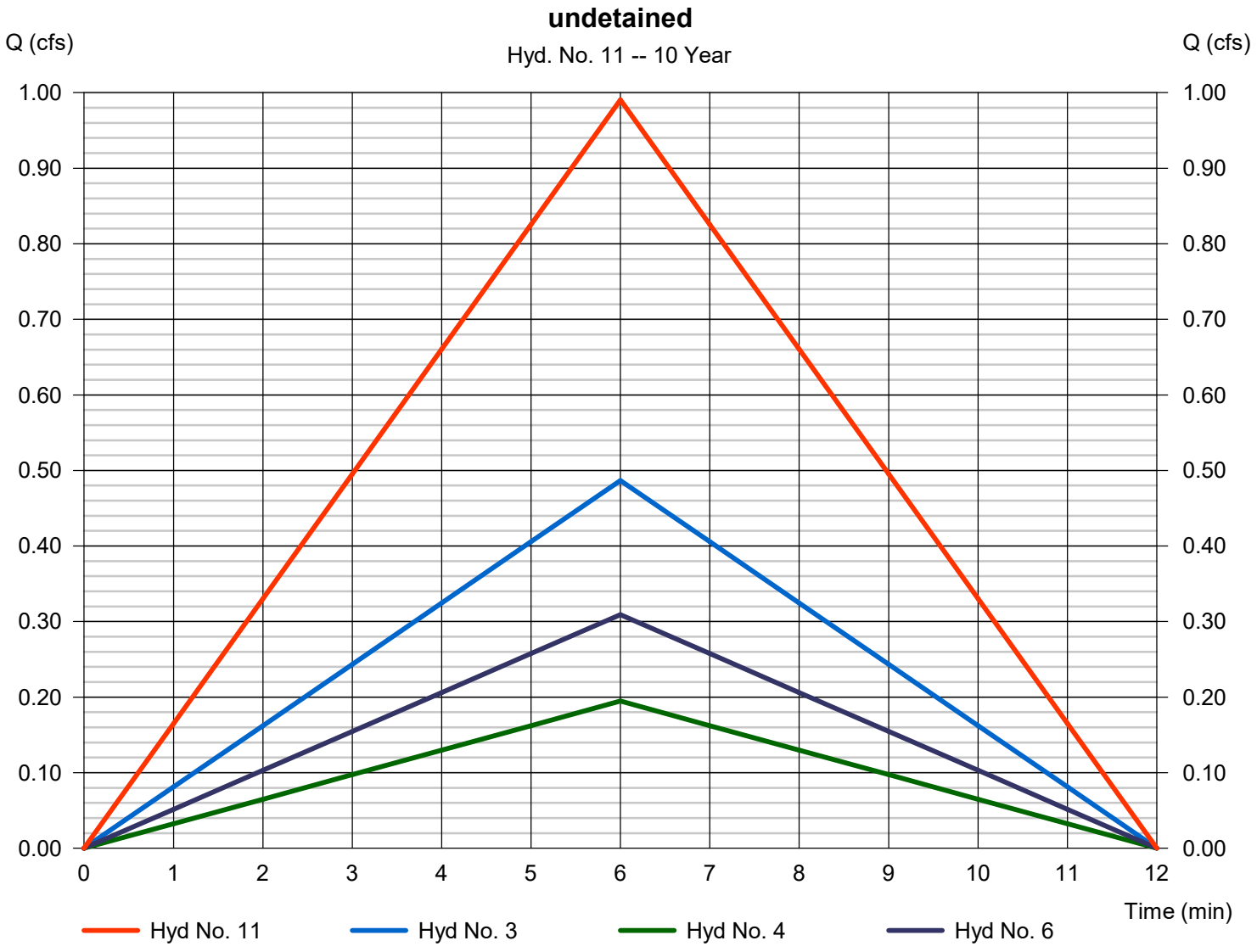


Hydrograph Report

Hyd. No. 11

undetained

Hydrograph type	=	Combine	Peak discharge	=	0.991 cfs
Storm frequency	=	10 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	357 cuft
Inflow hyds.	=	3, 4, 6	Contrib. drain. area	=	0.180 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	1.617	1	6	582	------	------	------	ExCon
2	Rational	1.099	1	6	396	------	------	------	Roofs to Detention
3	Rational	0.592	1	6	213	------	------	------	Roofs to Daylight
4	Rational	0.237	1	6	85	------	------	------	NW Undetained
5	Rational	0.339	1	6	122	------	------	------	South Green Space Basin
6	Rational	0.376	1	6	135	------	------	------	east side undetained
7	Combine	2.642	1	6	951	2, 3, 4, 5, 6	------	------	Post Dev Gross
8	Combine	1.437	1	6	517	2, 5,	------	------	to basin
9	Reservoir	0.478	1	10	516	8	863.13	329	Basin
10	Combine	1.578	1	6	949	3, 4, 6, 9	------	------	Post Dev Net
11	Combine	1.204	1	6	433	3, 4, 6,	------	------	undetained

Hydrograph Report

Hyd. No. 1

ExCon

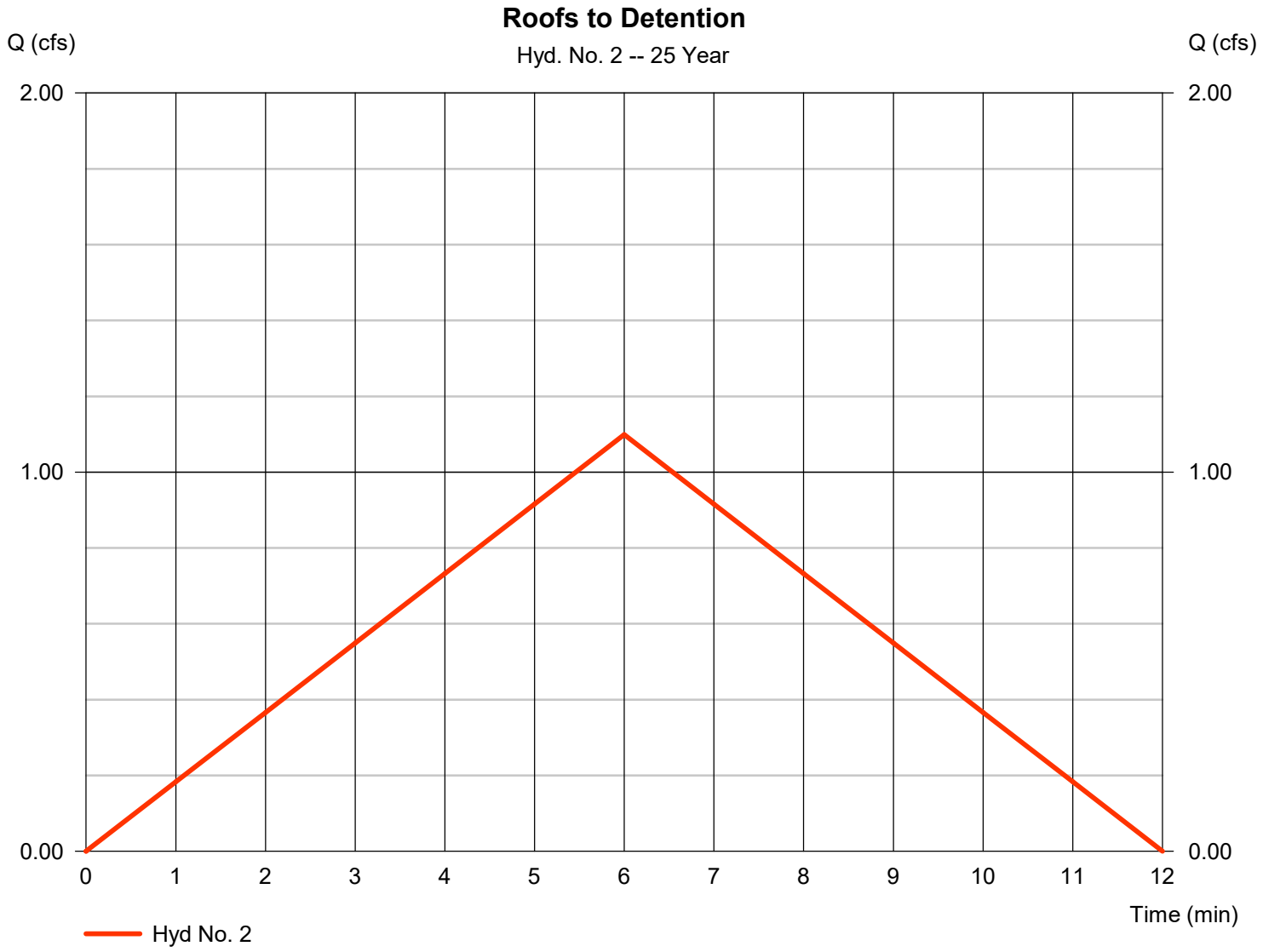
Hydrograph type	=	Rational	Peak discharge	=	1.617 cfs
Storm frequency	=	25 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	582 cuft
Drainage area	=	0.410 ac	Runoff coeff.	=	0.42
Intensity	=	9.392 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1

Hydrograph Report

Hyd. No. 2

Roofs to Detention

Hydrograph type	=	Rational	Peak discharge	=	1.099 cfs
Storm frequency	=	25 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	396 cuft
Drainage area	=	0.130 ac	Runoff coeff.	=	0.9
Intensity	=	9.392 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1

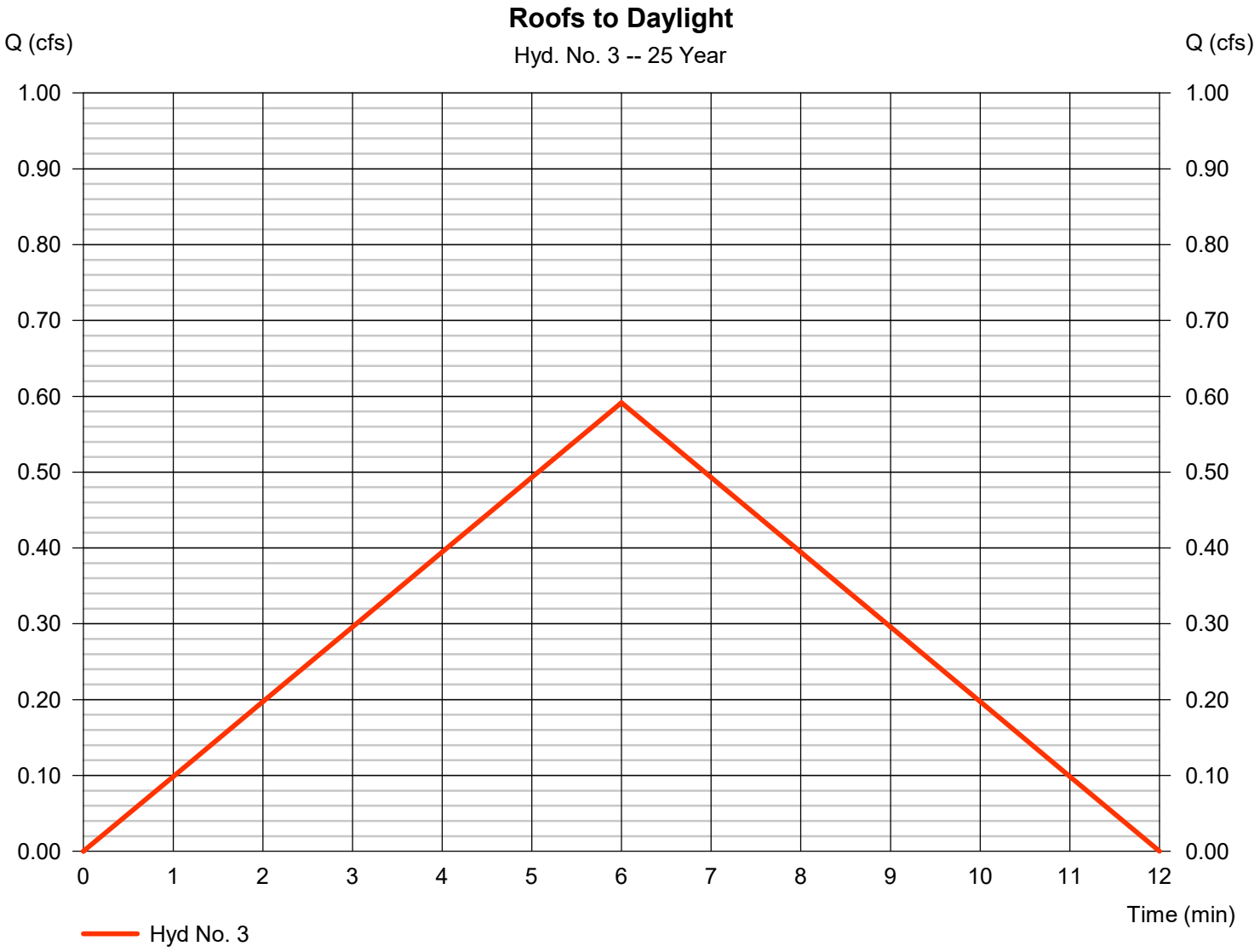


Hydrograph Report

Hyd. No. 3

Roofs to Daylight

Hydrograph type	= Rational	Peak discharge	= 0.592 cfs
Storm frequency	= 25 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 213 cuft
Drainage area	= 0.070 ac	Runoff coeff.	= 0.9
Intensity	= 9.392 in/hr	Tc by User	= 6.00 min
IDF Curve	= Lansing KS.IDF	Asc/Rec limb fact	= 1/1

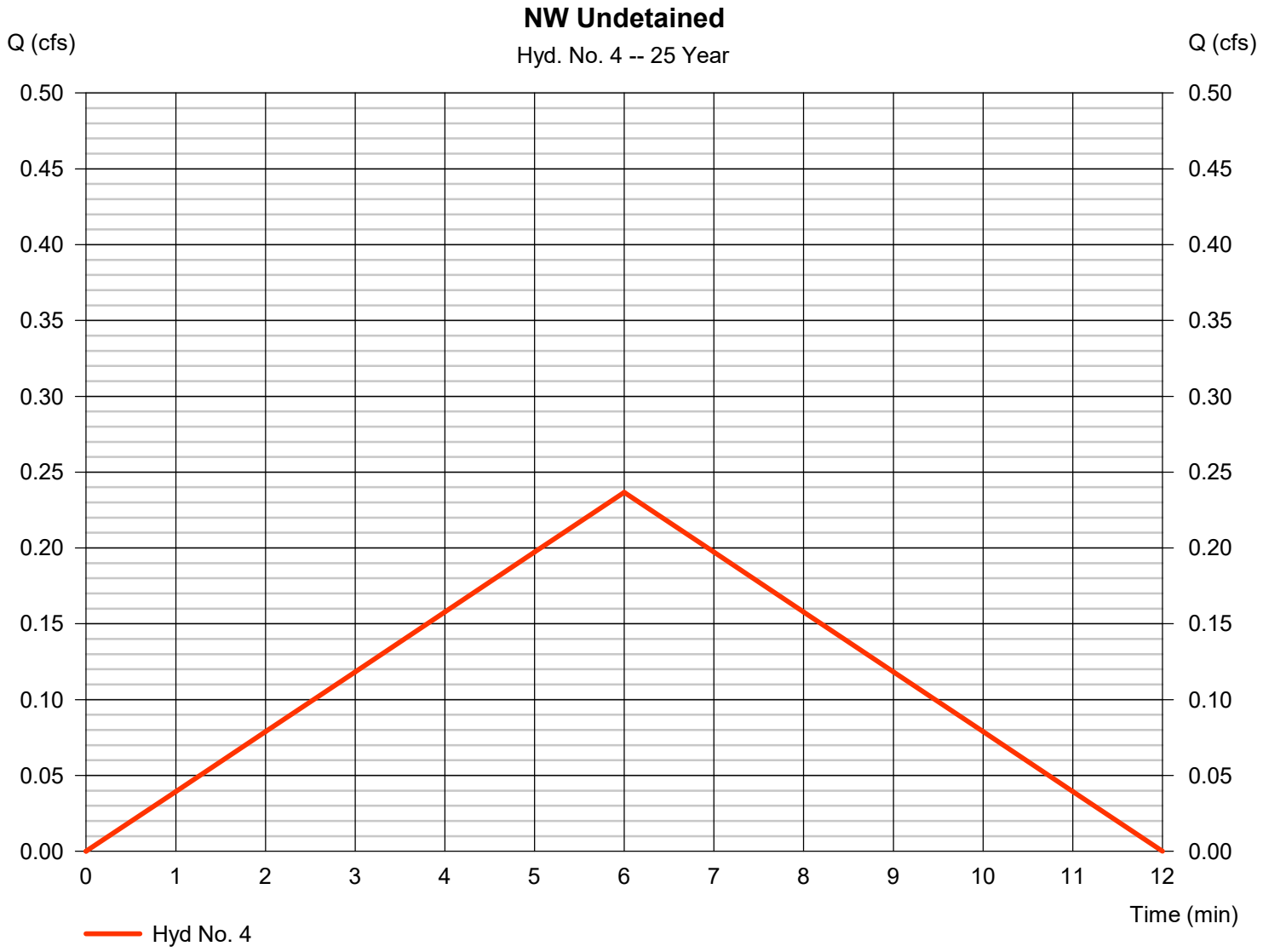


Hydrograph Report

Hyd. No. 4

NW Undetained

Hydrograph type	=	Rational	Peak discharge	=	0.237 cfs
Storm frequency	=	25 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	85 cuft
Drainage area	=	0.060 ac	Runoff coeff.	=	0.42
Intensity	=	9.392 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1

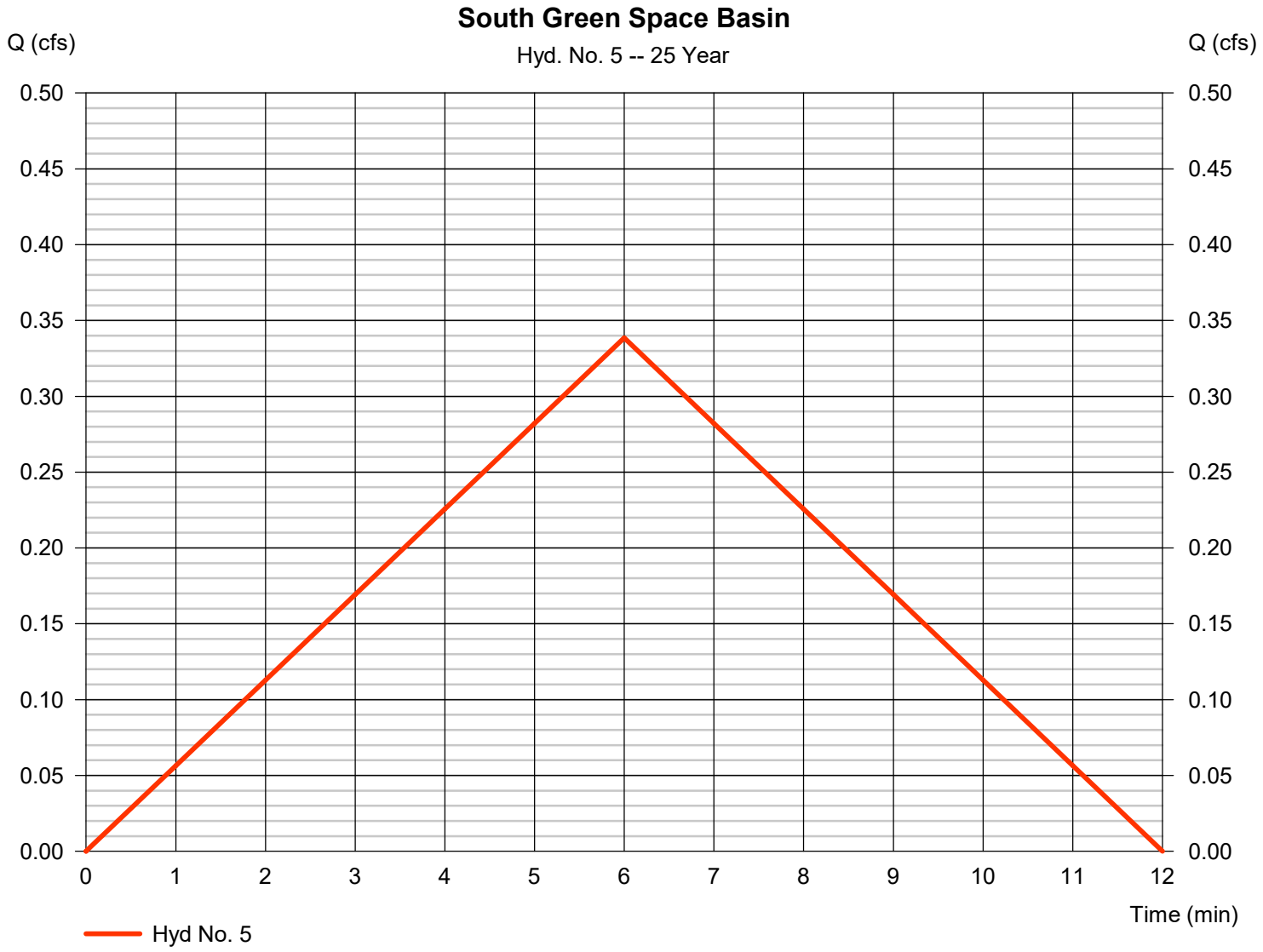


Hydrograph Report

Hyd. No. 5

South Green Space Basin

Hydrograph type	=	Rational	Peak discharge	=	0.339 cfs
Storm frequency	=	25 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	122 cuft
Drainage area	=	0.103 ac	Runoff coeff.	=	0.35
Intensity	=	9.392 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1

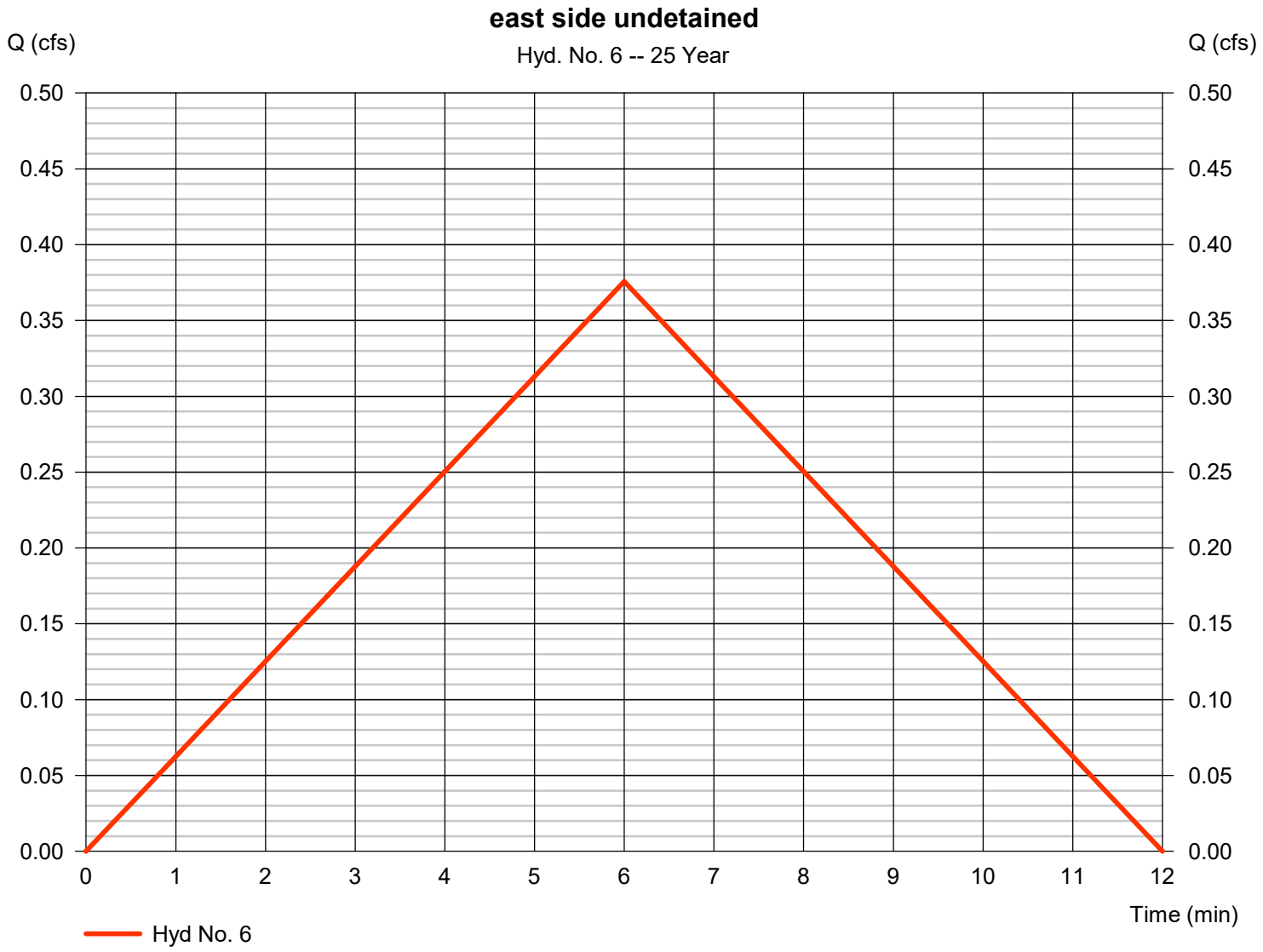


Hydrograph Report

Hyd. No. 6

east side undetained

Hydrograph type	=	Rational	Peak discharge	=	0.376 cfs
Storm frequency	=	25 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	135 cuft
Drainage area	=	0.050 ac	Runoff coeff.	=	0.8
Intensity	=	9.392 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1

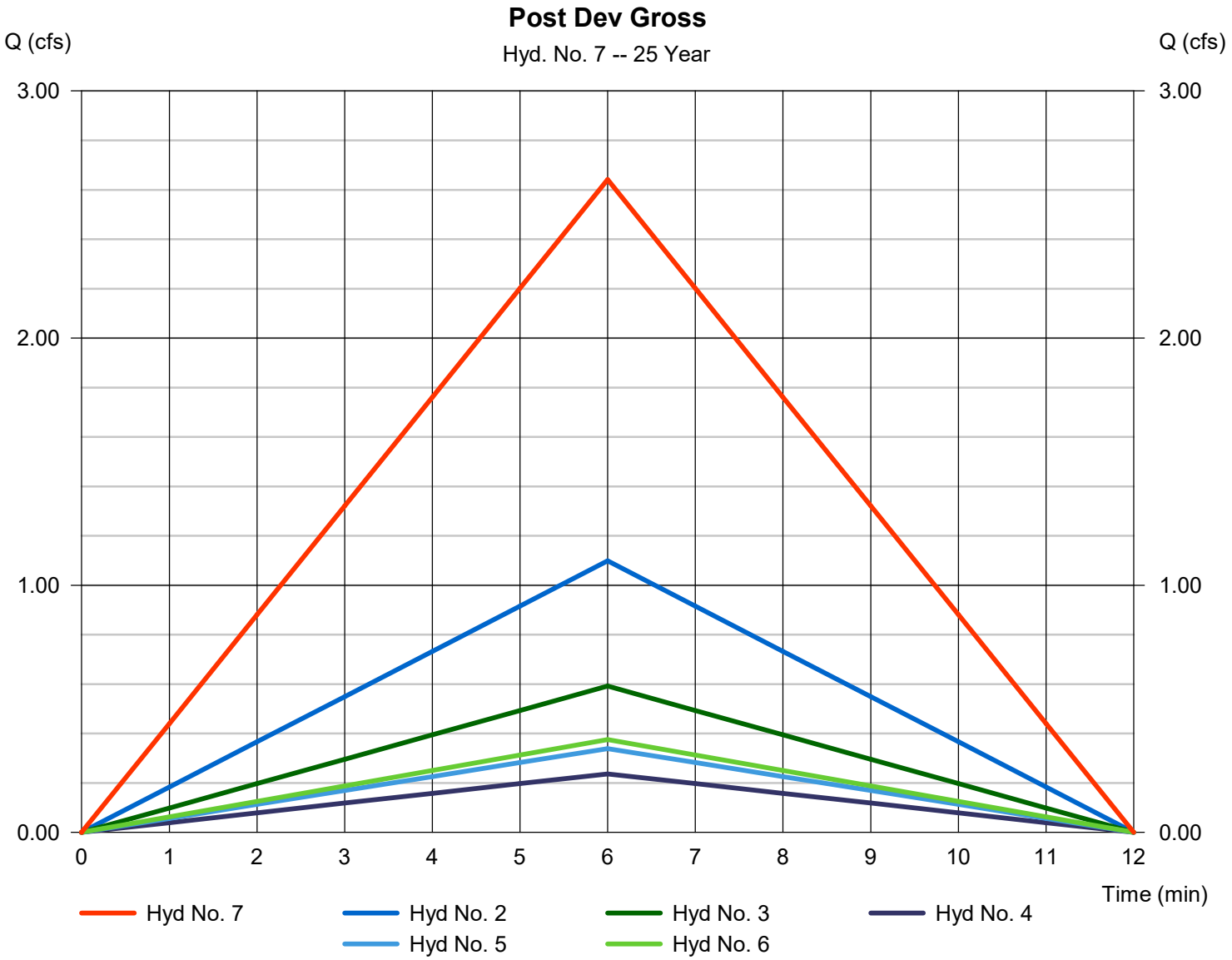


Hydrograph Report

Hyd. No. 7

Post Dev Gross

Hydrograph type	= Combine	Peak discharge	= 2.642 cfs
Storm frequency	= 25 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 951 cuft
Inflow hyds.	= 2, 3, 4, 5, 6	Contrib. drain. area	= 0.413 ac

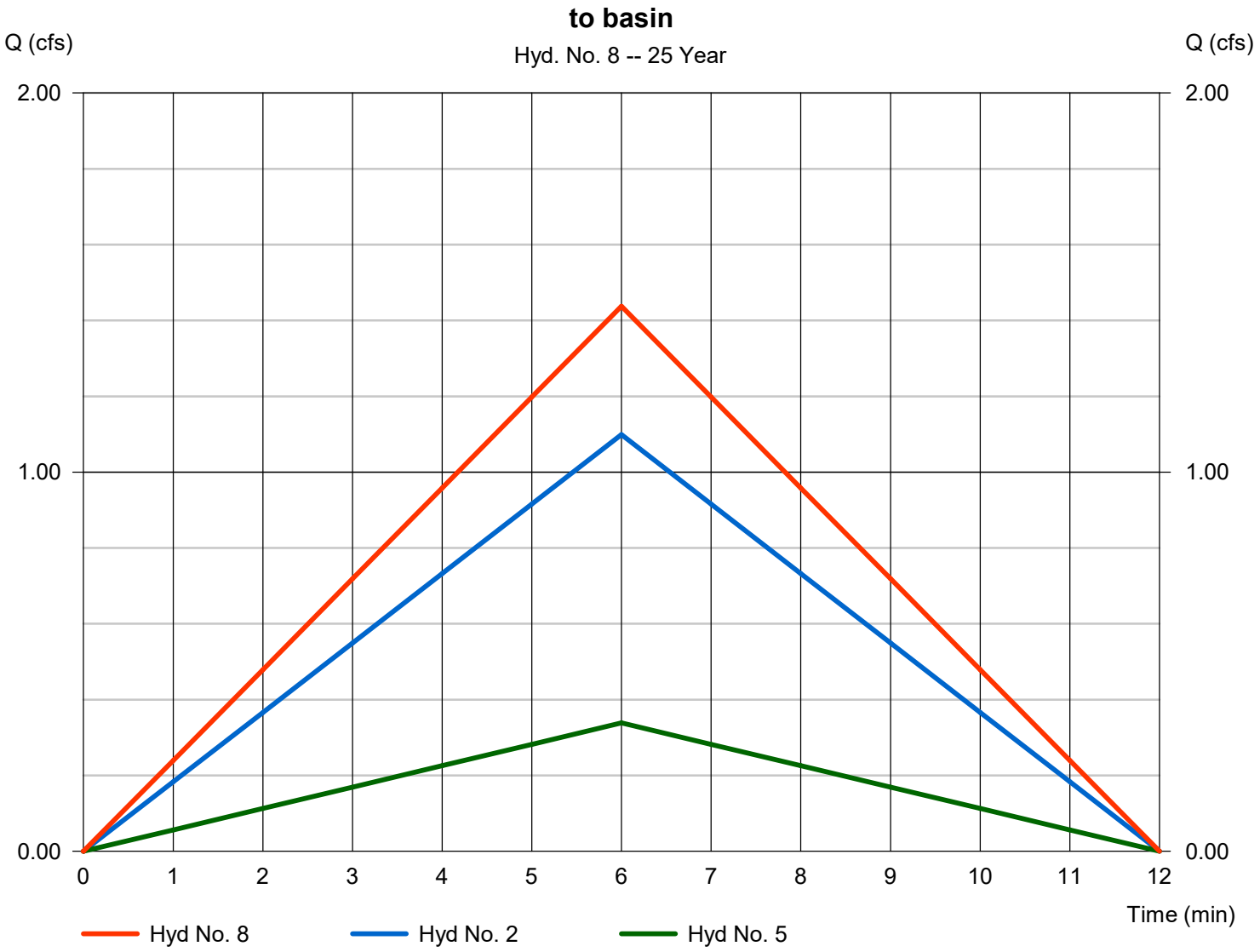


Hydrograph Report

Hyd. No. 8

to basin

Hydrograph type	= Combine	Peak discharge	= 1.437 cfs
Storm frequency	= 25 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 517 cuft
Inflow hyds.	= 2, 5	Contrib. drain. area	= 0.233 ac



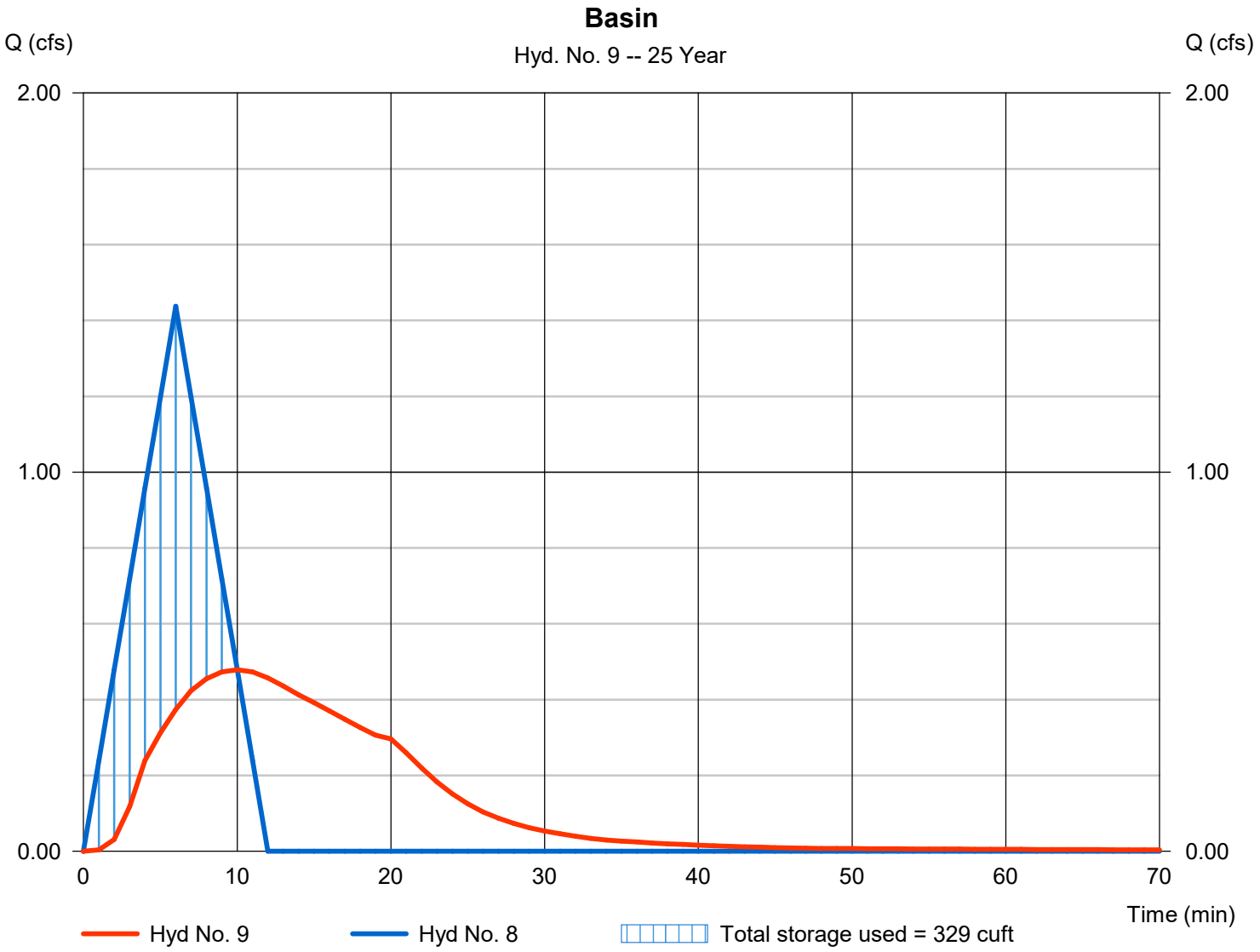
Hydrograph Report

Hyd. No. 9

Basin

Hydrograph type	=	Reservoir	Peak discharge	=	0.478 cfs
Storm frequency	=	25 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	516 cuft
Inflow hyd. No.	=	8 - to basin	Max. Elevation	=	863.13 ft
Reservoir name	=	South Basin	Max. Storage	=	329 cuft

Storage Indication method used.

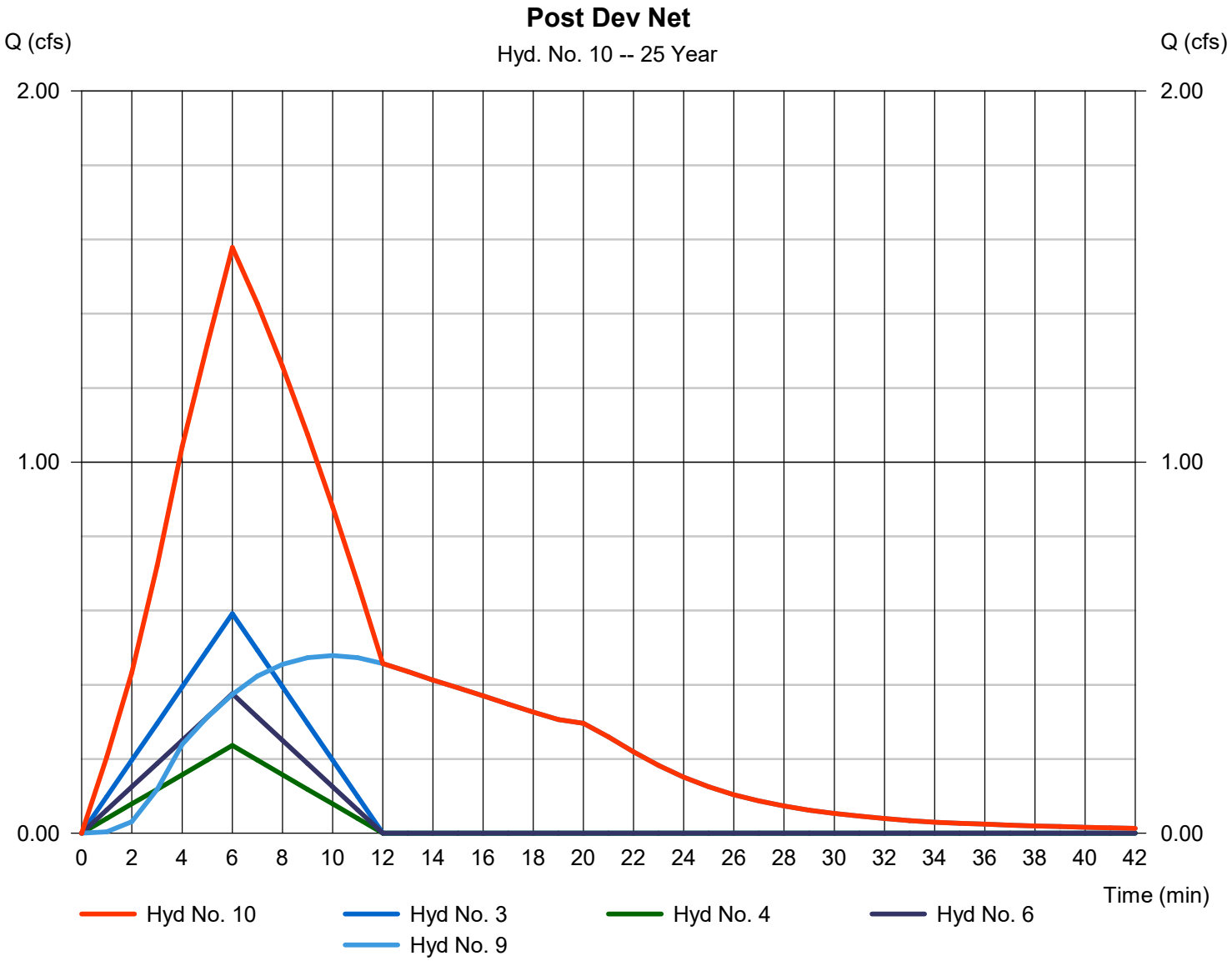


Hydrograph Report

Hyd. No. 10

Post Dev Net

Hydrograph type	= Combine	Peak discharge	= 1.578 cfs
Storm frequency	= 25 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 949 cuft
Inflow hyds.	= 3, 4, 6, 9	Contrib. drain. area	= 0.180 ac

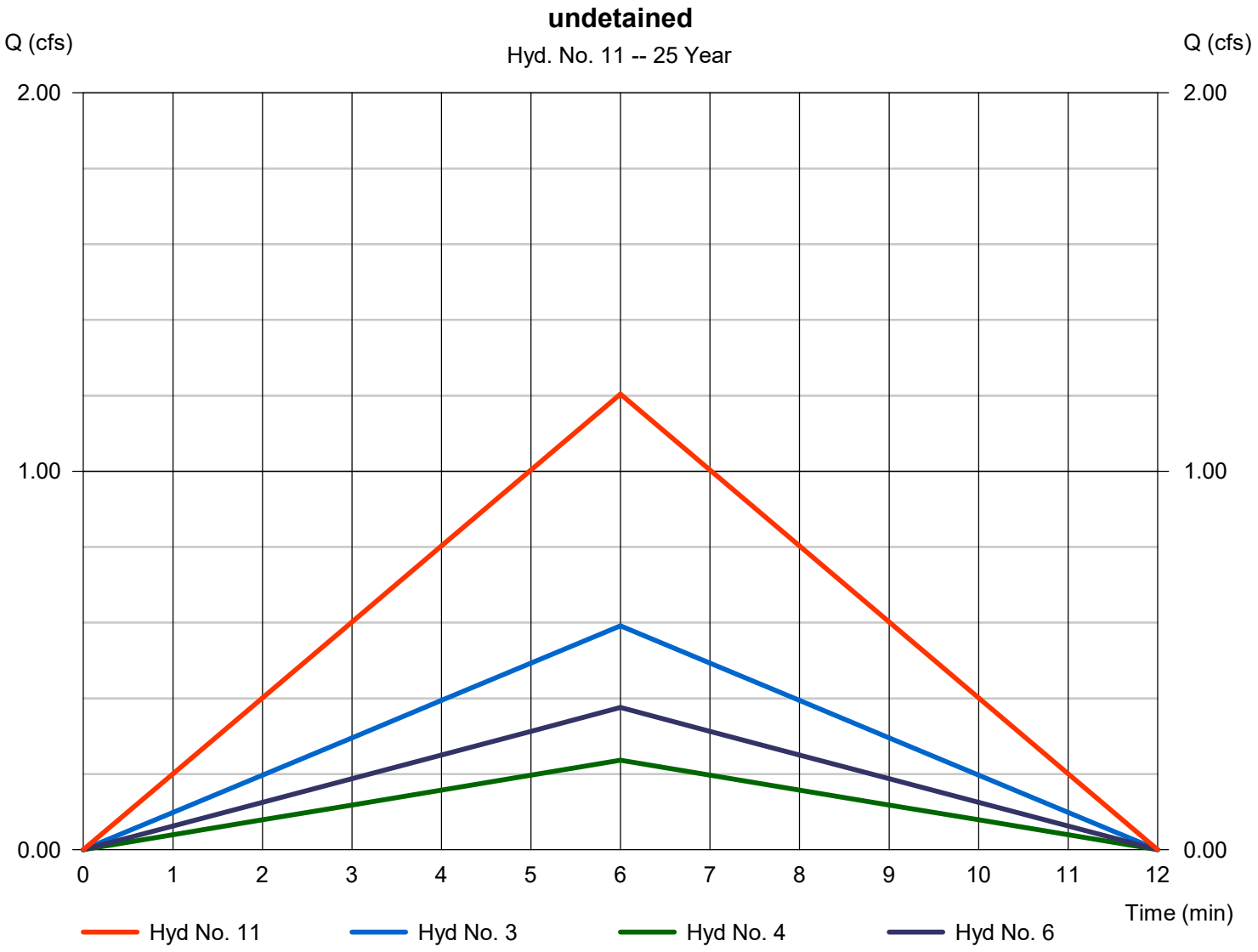


Hydrograph Report

Hyd. No. 11

undetained

Hydrograph type	= Combine	Peak discharge	= 1.204 cfs
Storm frequency	= 25 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 433 cuft
Inflow hyds.	= 3, 4, 6	Contrib. drain. area	= 0.180 ac



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

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	2.078	1	6	748	------	------	------	ExCon
2	Rational	1.412	1	6	508	------	------	------	Roofs to Detention
3	Rational	0.760	1	6	274	------	------	------	Roofs to Daylight
4	Rational	0.304	1	6	109	------	------	------	NW Undetained
5	Rational	0.435	1	6	157	------	------	------	South Green Space Basin
6	Rational	0.483	1	6	174	------	------	------	east side undetained
7	Combine	3.395	1	6	1,222	2, 3, 4, 5, 6	------	------	Post Dev Gross
8	Combine	1.847	1	6	665	2, 5,	------	------	to basin
9	Reservoir	0.558	1	10	663	8	863.21	439	Basin
10	Combine	1.976	1	6	1,220	3, 4, 6, 9	------	------	Post Dev Net
11	Combine	1.547	1	6	557	3, 4, 6,	------	------	undetained

Hydrograph Report

Hyd. No. 1

ExCon

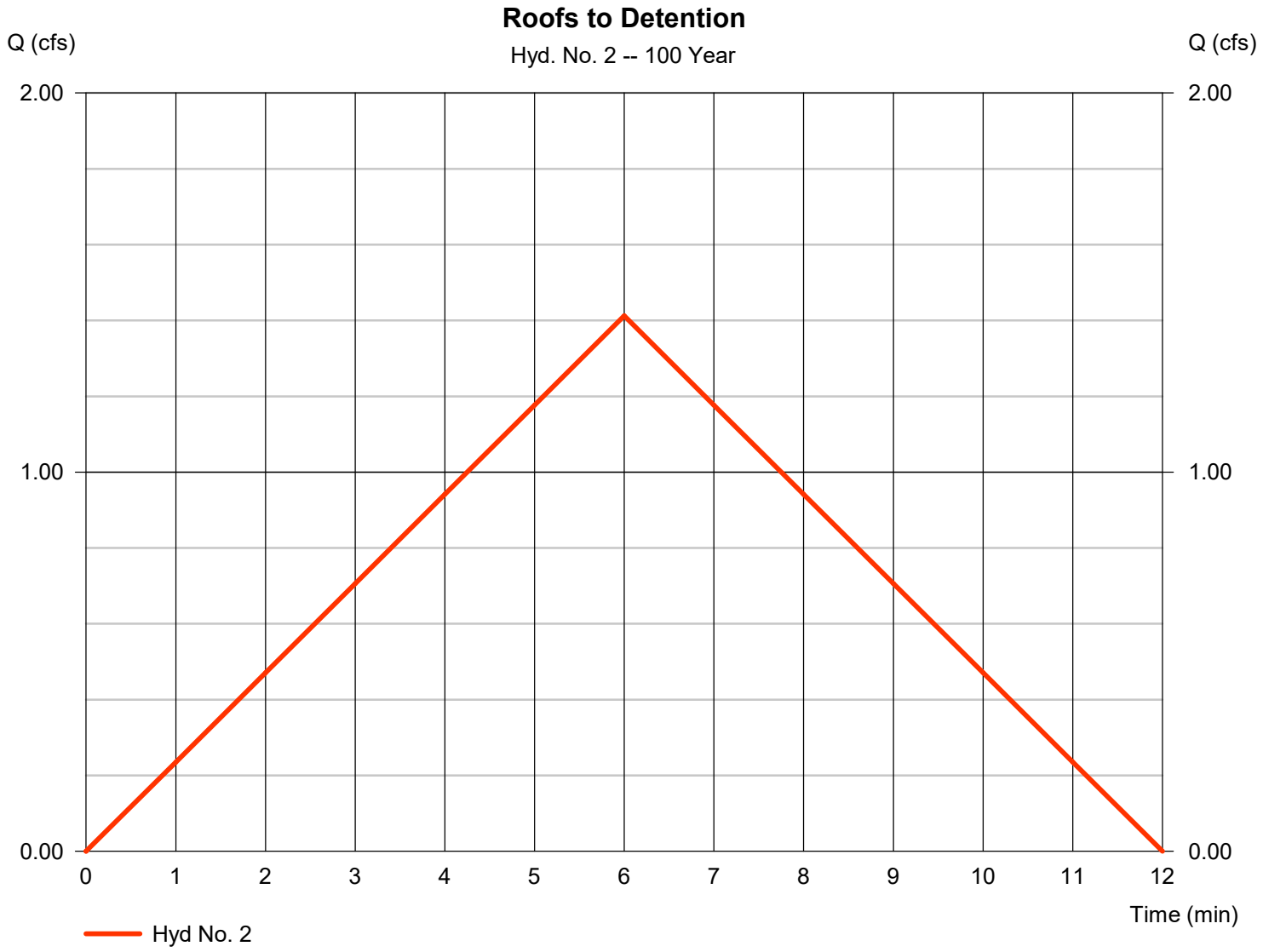
Hydrograph type	=	Rational	Peak discharge	=	2.078 cfs
Storm frequency	=	100 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	748 cuft
Drainage area	=	0.410 ac	Runoff coeff.	=	0.42
Intensity	=	12.069 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1

Hydrograph Report

Hyd. No. 2

Roofs to Detention

Hydrograph type	=	Rational	Peak discharge	=	1.412 cfs
Storm frequency	=	100 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	508 cuft
Drainage area	=	0.130 ac	Runoff coeff.	=	0.9
Intensity	=	12.069 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1

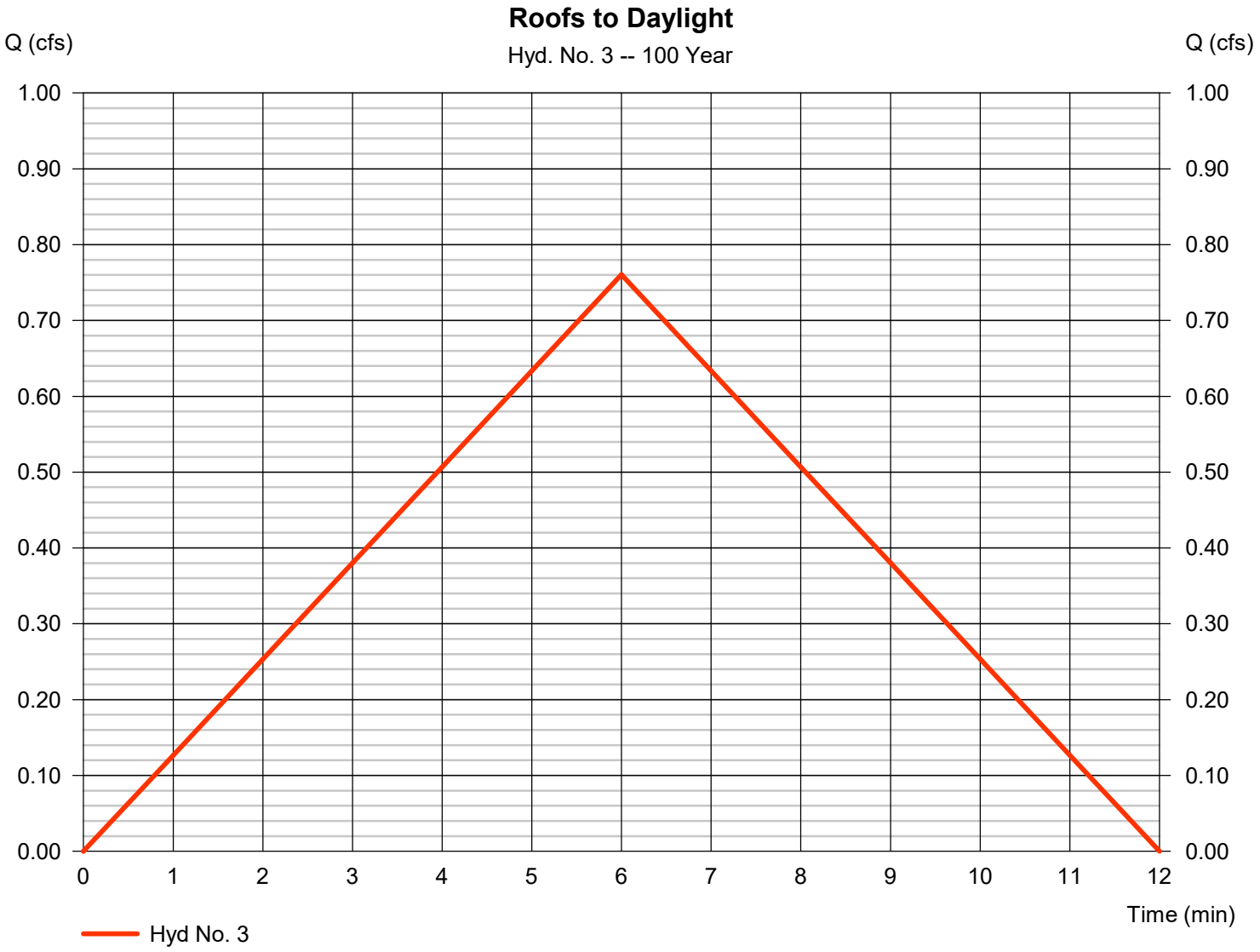


Hydrograph Report

Hyd. No. 3

Roofs to Daylight

Hydrograph type	= Rational	Peak discharge	= 0.760 cfs
Storm frequency	= 100 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 274 cuft
Drainage area	= 0.070 ac	Runoff coeff.	= 0.9
Intensity	= 12.069 in/hr	Tc by User	= 6.00 min
IDF Curve	= Lansing KS.IDF	Asc/Rec limb fact	= 1/1



Hydrograph Report

Hyd. No. 4

NW Undetained

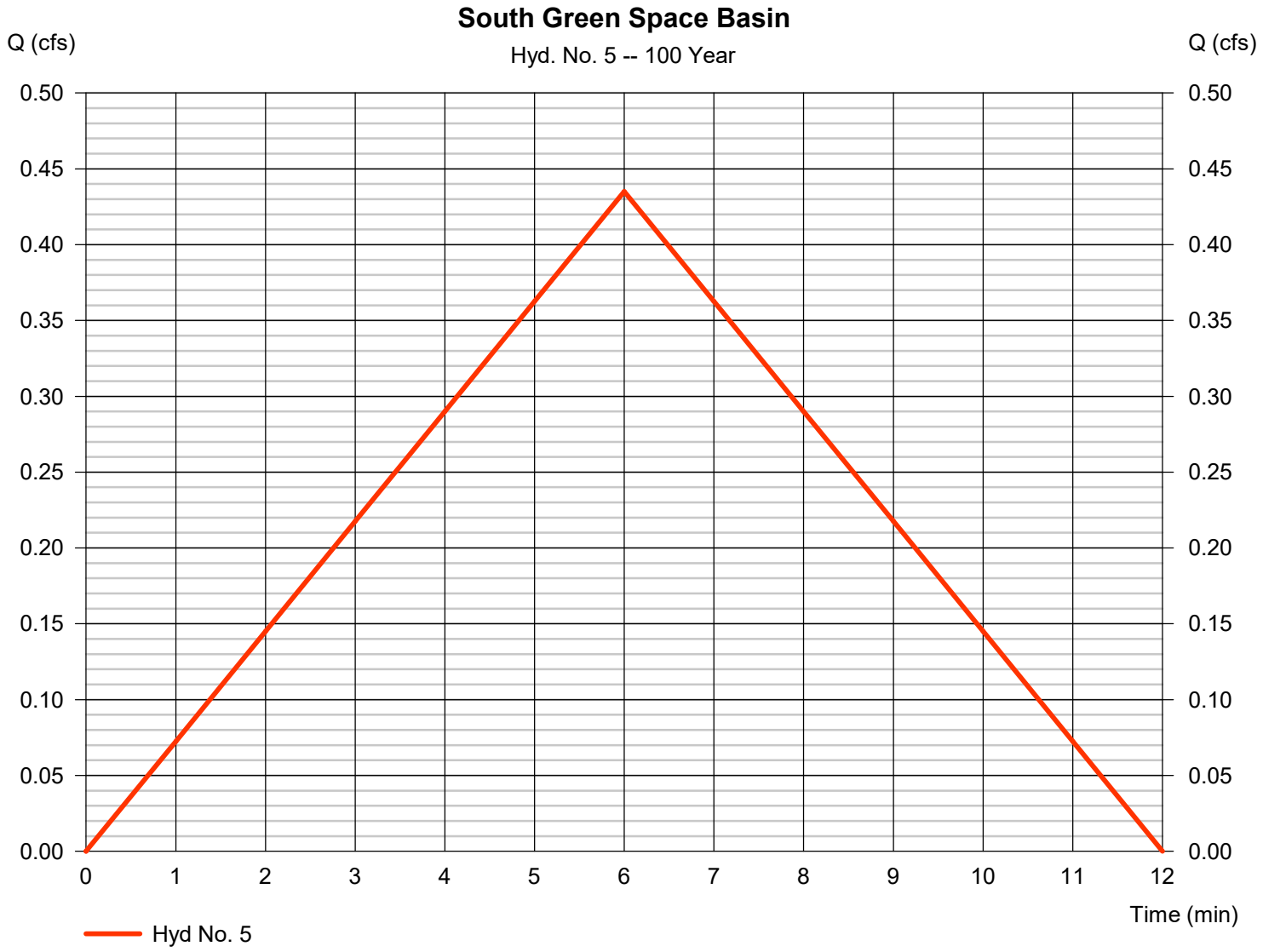
Hydrograph type	= Rational	Peak discharge	= 0.304 cfs
Storm frequency	= 100 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 109 cuft
Drainage area	= 0.060 ac	Runoff coeff.	= 0.42
Intensity	= 12.069 in/hr	Tc by User	= 6.00 min
IDF Curve	= Lansing KS.IDF	Asc/Rec limb fact	= 1/1

Hydrograph Report

Hyd. No. 5

South Green Space Basin

Hydrograph type	=	Rational	Peak discharge	=	0.435 cfs
Storm frequency	=	100 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	157 cuft
Drainage area	=	0.103 ac	Runoff coeff.	=	0.35
Intensity	=	12.069 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1

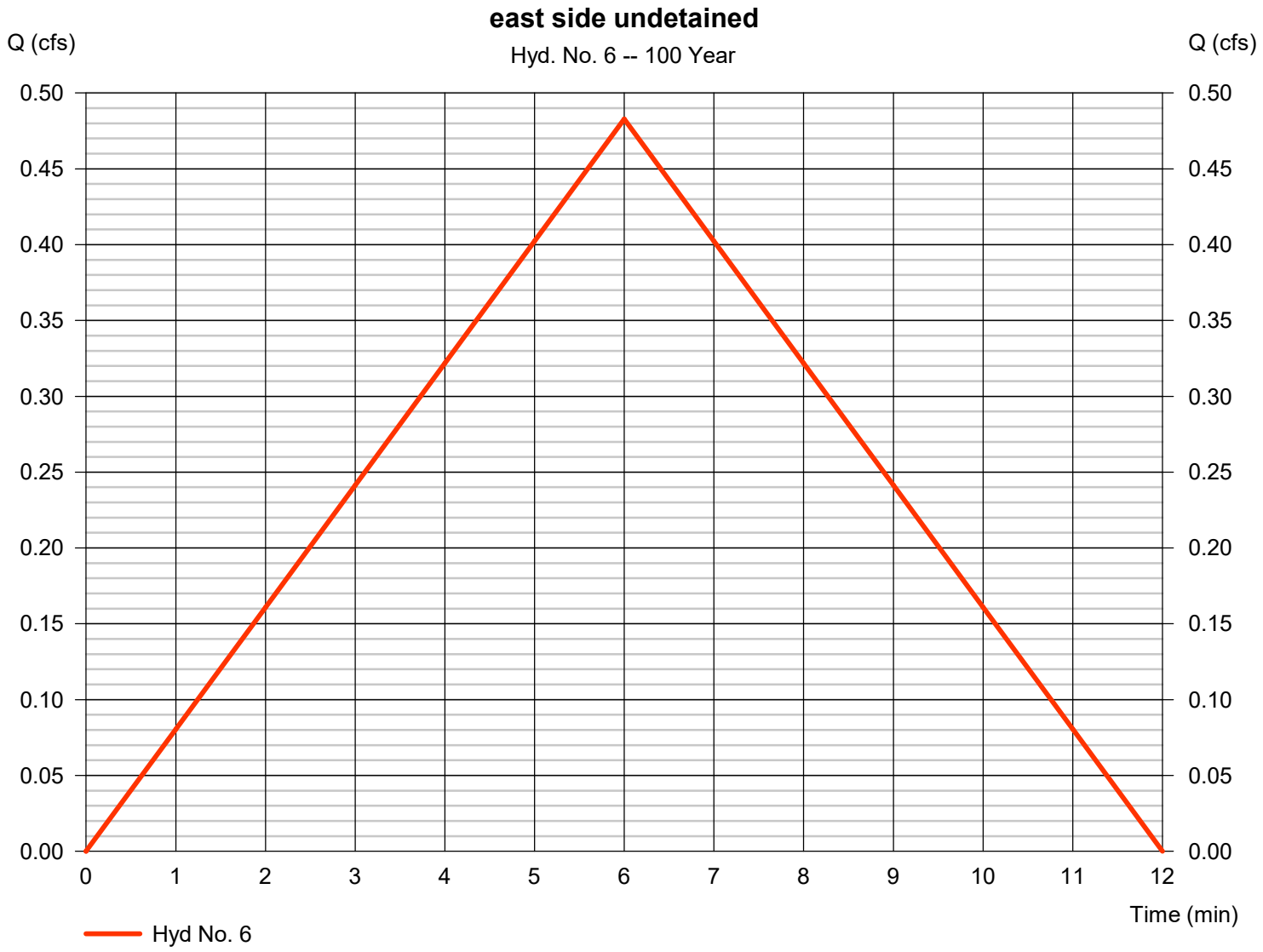


Hydrograph Report

Hyd. No. 6

east side undetained

Hydrograph type	=	Rational	Peak discharge	=	0.483 cfs
Storm frequency	=	100 yrs	Time to peak	=	6 min
Time interval	=	1 min	Hyd. volume	=	174 cuft
Drainage area	=	0.050 ac	Runoff coeff.	=	0.8
Intensity	=	12.069 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Lansing KS.IDF	Asc/Rec limb fact	=	1/1

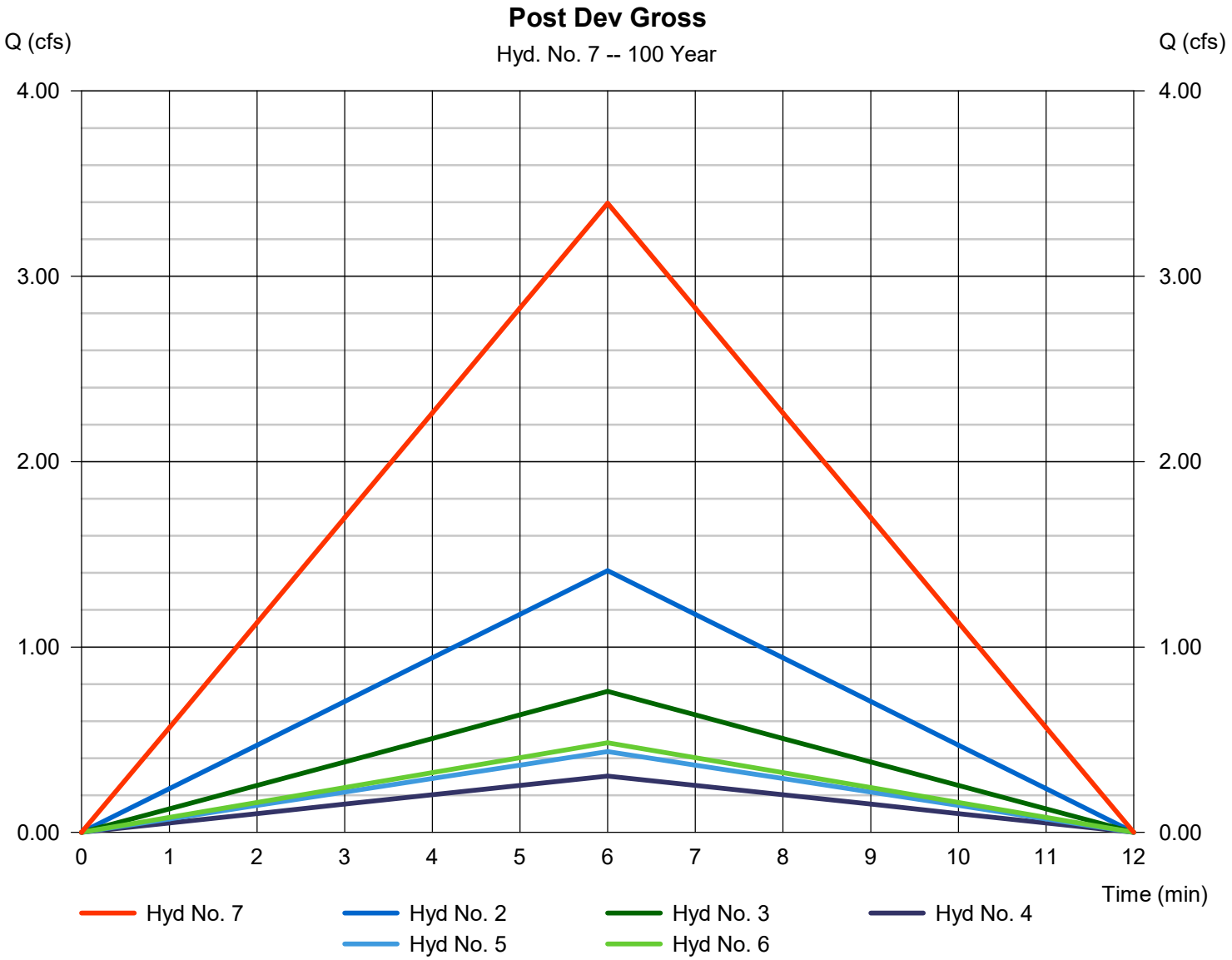


Hydrograph Report

Hyd. No. 7

Post Dev Gross

Hydrograph type	= Combine	Peak discharge	= 3.395 cfs
Storm frequency	= 100 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 1,222 cuft
Inflow hyds.	= 2, 3, 4, 5, 6	Contrib. drain. area	= 0.413 ac

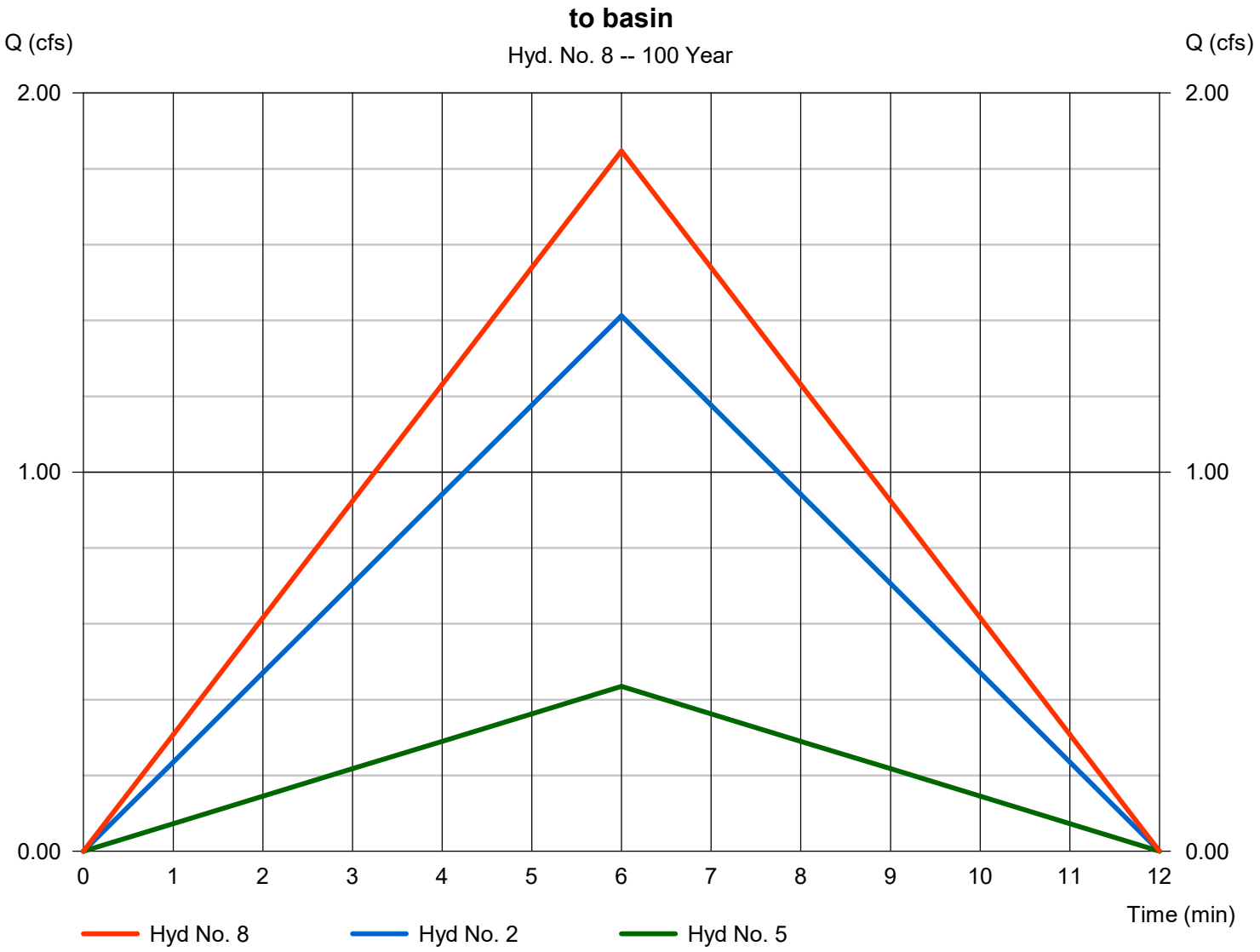


Hydrograph Report

Hyd. No. 8

to basin

Hydrograph type	= Combine	Peak discharge	= 1.847 cfs
Storm frequency	= 100 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 665 cuft
Inflow hyds.	= 2, 5	Contrib. drain. area	= 0.233 ac



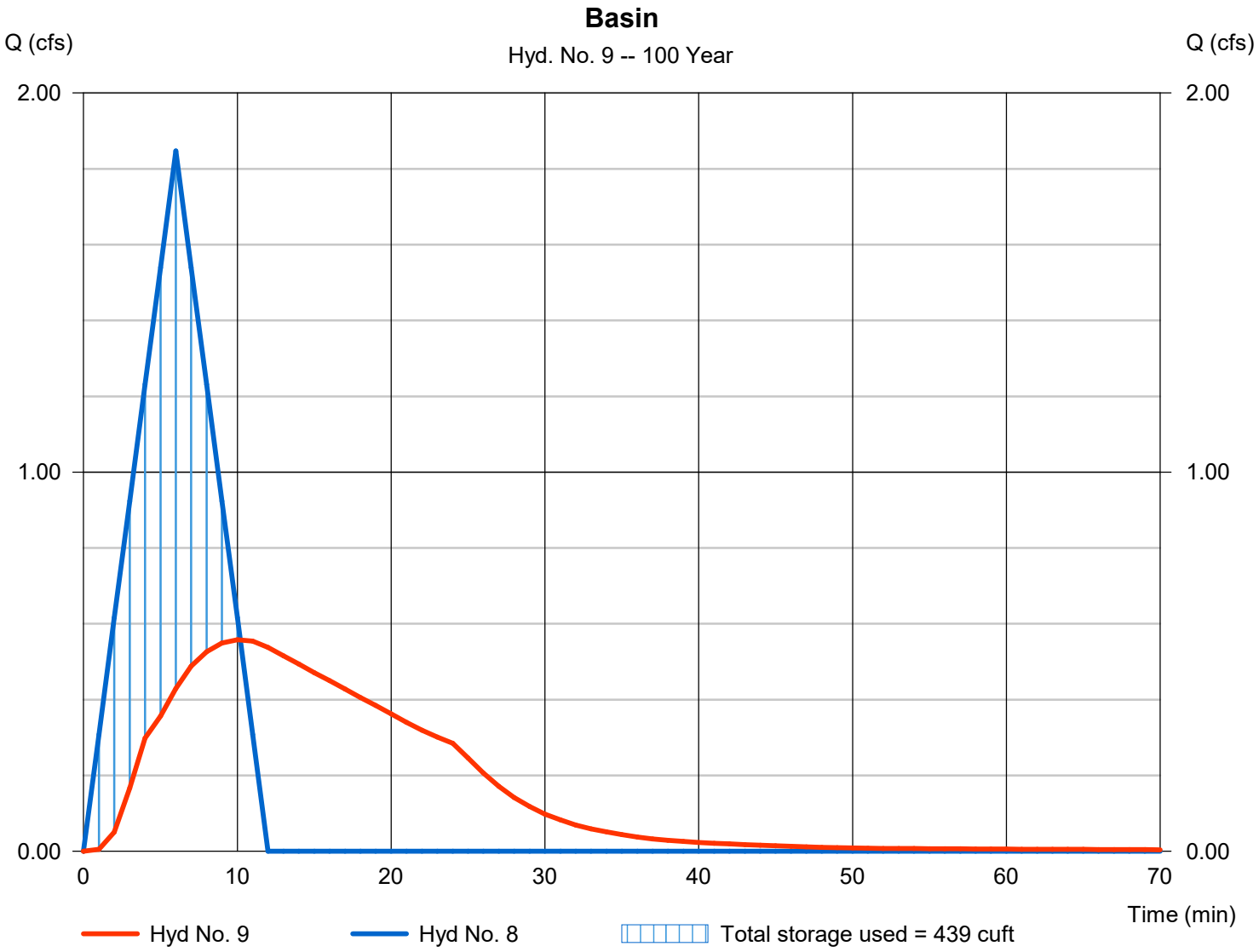
Hydrograph Report

Hyd. No. 9

Basin

Hydrograph type	=	Reservoir	Peak discharge	=	0.558 cfs
Storm frequency	=	100 yrs	Time to peak	=	10 min
Time interval	=	1 min	Hyd. volume	=	663 cuft
Inflow hyd. No.	=	8 - to basin	Max. Elevation	=	863.21 ft
Reservoir name	=	South Basin	Max. Storage	=	439 cuft

Storage Indication method used.

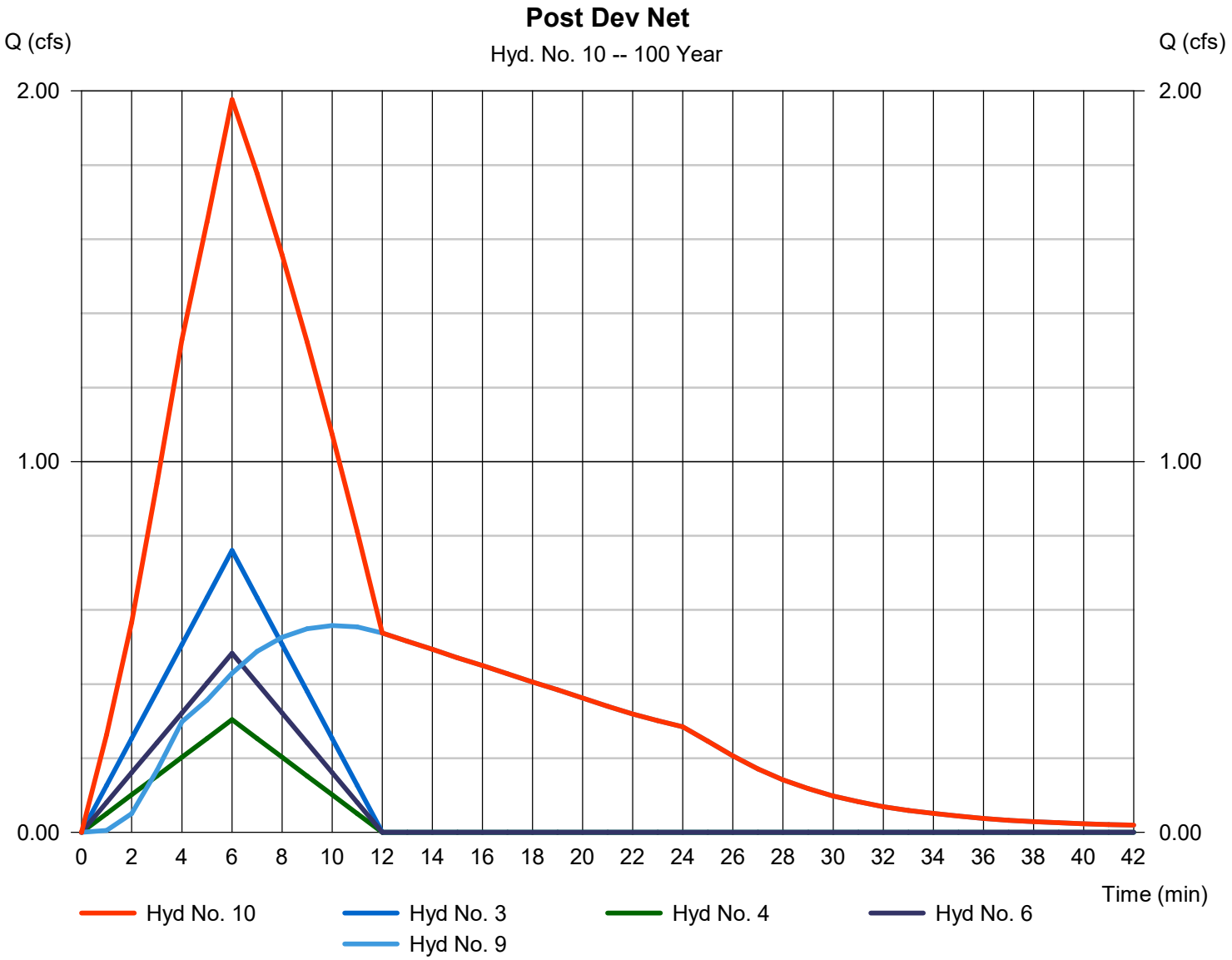


Hydrograph Report

Hyd. No. 10

Post Dev Net

Hydrograph type	= Combine	Peak discharge	= 1.976 cfs
Storm frequency	= 100 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 1,220 cuft
Inflow hyds.	= 3, 4, 6, 9	Contrib. drain. area	= 0.180 ac



Hydrograph Report

Hyd. No. 11

undetained

Hydrograph type	= Combine	Peak discharge	= 1.547 cfs
Storm frequency	= 100 yrs	Time to peak	= 6 min
Time interval	= 1 min	Hyd. volume	= 557 cuft
Inflow hyds.	= 3, 4, 6	Contrib. drain. area	= 0.180 ac