AGENDA

MOLALLA PLANNING COMMISSION MEETING

December 07, 2022

6:30 PM
Molalla Adult Center
315 Kennel Ave., Molalla, OR 97038

Chairman Rae Lynn Botsford

Commissioner Steve Deller
Commissioner Debbie Lumb
Commissioner Doug Eaglebear
Commissioner Jennifer Satter
Commissioner Connie Farrens
Commissioner Jacob Giberson

CALL TO ORDER

Convene Meeting and Roll Call
Pledge of Allegiance

PUBLIC COMMENT/COMMUNICATIONS AND PRESENTATIONS

(Citizens are allowed up to 3 minutes to present information relevant to the City but not listed as an item on the agenda. Prior to speaking, citizens shall complete a comment form and deliver it to the City Recorder. The City Council does not generically engage in dialog with those making comments but may refer the issue to the City Manager. Complaints shall first be addressed at the department level prior to addressing the City Council.)

ADOPTION OF AGENDA

CONSENT AGENDA

1. EnterTextHere

PUBLIC HEARING

NEW BUSINESS

OLD BUSINESS

REPORTS AND ANNOUNCEMENTS

ADJOURN

Agenda posted at City Hall, Senior Center, Library and the City Website at http//www.cityofmolalla.com/meetings
This meeting location is wheelchair accessible. Disabled individuals requiring other assistance must make their request known 48 hours preceding the meeting by contacting the City Recorder's Office at 503-829-6855

Community Development Department
315 Kennel Ave/PO Box 248
Molalla, OR 97038
Phone 503.759.0205
www.cityofmolalla.com

AGENDA
Molalla Planning Commission
6:30 PM, December 7, 2022

The Planning Commission Meeting will begin at 6:30pm. The Planning Commission has adopted Public Participation Rules. Copies of these rules and public comment cards are available at the entry desk. Public comment cards must be turned in prior to the start of the Commission meeting. The City will endeavor to provide a qualified bilingual interpreter, at no cost, if requested at least 48 hours prior to the meeting. To obtain services call the City Recorder at (503) 829-6855.

I. CALL TO ORDER

II. FLAG SALUTE AND ROLL CALL

III. PUBLIC COMMENT – Limited to 3 minutes per person

IV. MINUTES:

November 2, 2022, Planning Commission Meeting

V. QUASI-JUDICIAL HEARING:

SDR05-2022 AND CUP03-2022 (1400 Fountain way) Food Cart

VI. REPORTS AND ANNOUNCEMENTS

- Planners Report

VII. ADJOURNMENT

Community Development Department
315 Kennel Ave/PO Box 248
Molalla, OR 97038
Phone 503.759.0205
www.cityofmolalla.com

Molalla Planning Commission
MINUTES
Nov 2, 2022

The November 2nd, 2022, meeting of the Molalla Planning Commission was called to order by Chair Rae Botsford at 6:35 pm.

COMMISSIONER ATTENDANCE:

Chair Rae Lynn Botsford – Present
Commissioner Rick Deaton – Present
Commissioner Doug Eaglebear – Present
Commissioner Jennifer Satter – Absent (sick)
Commissioner Connie Sharp – Present
Commissioner Clint Ancell – Present

STAFF IN ATTENDANCE:

Mac Corthell, Planning Director - Present
Dan Zinder, Associate Planner – Present
Ronda Lee, Support Specialist - Present
Sam Miller, Senior Engineer - Present

AGENDA:

I. CALL TO ORDER

II. FLAG SALUTE AND ROLL CALL

III. PUBLIC COMMENT – Limited to 3 minutes per person

Char Pennie spoke against a "homeless" tax upon citizens (something she heard Portland was doing)

IV. MINUTES

October 5th, Planning Commission Meeting – Vote: 5-0-0 (Satter not present for vote)

V. QUASI-JUDICIAL HEARING

A. Senior Planner, Dan Zinder, presented the staff report and material for planning files SDR02-2022/CUP04-2022 a proposal for a new fastfood w/drive thru at 1522 W Main St.

After discussion, Commissioner Sharp, made a motion to approve SDR02-2022/CUP04-2022, Commissioner Ancell made a second motion.
Motion passed: 5/0/0.

VI. DISCUSSION ITEM

None

VII. REPORTS AND ANNOUNCEMENTS

None

VIII. ADJOURNMENT

Meeting adjourned at 7:40 pm

PLANNING COMMISSION MEETING CAN BE VIEWED IN ITS ENTIRIETY HERE:
https://www.youtube.com/watch?v=E9WQhEcelEo

_____ _____
Chair Rae Lynn Botsford Date

Attested by: _____ _____
MCC Director, Mac Corthell Date

INTRODUCTION

Now is the time set for public hearings to consider a quasi-judicial land use application. The application, SDR05-2022, is a New Food Cart Pod Use, Event Suite, and Site Improvements.

Now we will proceed with the Quasi-Judicial Land Use Public Hearing starting with an introduction to the procedures for the hearing.

I will introduce the applicable substantive criteria upon which each case will be decided. Our Senior Planner, Dan Zinder, will provide a staff report. When the staff report has been presented, I will open the public hearing to public testimony. Members of the public who want to testify are asked to sign in and indicate that they will testify on the sign in sheet, come up to the podium when called, and give their name, address, and city of residence for the record before they testify. We ask for your address so that we can notify you of the City's final decision. If you have any written testimony or other evidence to submit, please give that to staff so it can be entered into the record. When public testimony has been concluded I will close the public hearing and open Planning Commission discussion and deliberation.
After the Commission has deliberated, we will need a motion to approve, modify or deny the application.

Are there any questions among the Commission about the process?

Oregon land use law requires several items be read into the record at the beginning of a Quasi-Judicial public hearing:

Conflicts of Interest/Ex-Parte Contacts/Bias

The Commission is required to disclose any conflicts of interest and ex-parte contacts that we may have with the Land Use Application or applicant — this is whether we have any financial or other personal interest in a proposal and whether we have spoken with anybody or have other information about a proposal gathered outside of this hearing. Also, Commissioners may only participate if they can do so without un-due bias either for or against an application.

Do any Councilors wish to make disclosures?

Are there any challenges from the audience as to conflicts of interest, ex-parte contacts, or bias related to any member of the Commission?

Required Statements **SDR05-2002 AND CUP03-2022**

The applicable procedural and substantive criteria upon which SDR05-2022 and CUP03-2022 will be decided are found in Molalla Municipal Code Sections 17-4.2.030, and 17-4.2.050.

Your testimony, arguments, and evidence must be directed toward these criteria or other criteria in the comprehensive plan or development code that you believe apply per ORS 197.763(5)(b).

Failure to raise an issue accompanied by statements or evidence sufficient to afford the decision maker and the parties an opportunity to respond may preclude appeal of a decision on this application based on that issue per ORS 197.763(5)(c).

Failure of the applicant to raise constitutional or other issues relating to proposed conditions of approval with sufficient specificity to allow the local government or its designee to respond to the issue precludes an action for damages in circuit court per ORS 197.796(3)(b).

Public Hearing **SDR05-2002 AND CUP03-2022**

I now open the Public Hearing for application # SDR05-2022 and CUP03-2022
at_____ PM.

I call on Senior Planner, Dan Zinder to present the staff report for the first application.

Zinder reviews Staff report.

All persons speaking before the City Council must state their name and address for the record.

1. Is there any written public comment for the record?
   Staff provides written comment to the commission for the record.

2. I invite the Applicant to present their case;
3. I invite those in support of the application to speak;
4. I invite those opposed to the application to speak;
5. I invite those who are neither for nor against the application to speak;
6. I invite public agencies to comment;
7. I invite the Applicant to present any rebuttal to the testimony presented;

I close the Public Hearing for application # SDR05-2022 and CUP03-2022
at _____ PM.

Is there a request to keep the record open?

See page 3 if you have a request to keep the record open. Hearing will be closed, but record will be left open for the submission of additional written evidence and testimony.

If there is no request to keep the record open

Now it is time for Commission deliberation and discussion.

** NOTE: Only questions asked of staff are allowed after the hearing is closed.*

MOTION TO APPROVE: *I move to approve SDR05-2022 and CUP03-2022, subject to the conditions of approval as set forth in the staff report, and to authorize the Chair to sign a final decision approving application SDR05-2022 and CUP03-2022 and incorporating the findings from the staff report.*

***OR* MOTION TO APPROVE WITH MODIFICATIONS:** *I move to approve SDR05-2022 and CUP03-2022, **as modified to reflect the changes made by the Planning Commission**, subject to the conditions of approval as set forth in the Staff Report and to authorize the Chair to sign a final decision of approval. *Note: The Commission will need to make alternative findings to the ones in the staff report that were found "not satisfied."*

OR MOTION TO DENY: *I move that SDR05-2022 and CUP03-2022 be denied consistent with the findings in the staff report, and to incorporate the findings therein. *Note: The Commissioner making the motion to deny needs to state the reasons for denial.*

Keeping the Record Open

The Hearing will be closed, but record will be left open for the submission of additional written evidence and testimony.

[READ THE FOLLOWING ONLY IF YOU HAVE A REQUEST TO LEAVE THE RECORD OPEN FOR A QUASI-JUDICIAL APPLICATION]

Rules Regarding Leaving the Record Open. ORS 197.763(6).

Before the conclusion of the initial evidentiary hearing, any participant may request an opportunity to present additional evidence, arguments or testimony regarding the application. The City shall then keep the record open at least seven (7) days from the date of the initial evidentiary hearing (set the date and time for the closing of the open record period that is at least 7 days in the future). Persons may present and rebut new evidence, arguments or testimony by submitting materials to City Hall. Materials must be received at City Hall before the expiration of the open record period. If new written evidence is submitted, any person may request, prior to the conclusion of the open record period, that the record be left open for an additional seven (7) days to submit additional written evidence, arguments or testimony for the purpose of responding to the new written evidence. At the conclusion of the open record period, unless waived, the applicant has 7 days after the close of the record to provide final legal argument. (ORS 197.763(6)(e).) Once the open record period is closed, the Council will deliberate and make a decision on the application.

Planning & Land Use

City of Molalla
315 Kennel Avenue
PO Box 248
Molalla, Oregon 97038
Phone: (503) 759-0205
Email: communityplanner@cityofmolalla.com
Web: www.cityofmolalla.com/planning

CITY OF MOLALLA STAFF REPORT

Consolidated Review for SDR05-2022 and CUP03-2022 – New Food Cart Pod Use, Event Suite, and Site Improvements

Date:	November 30, 2022 for the December 7, 2022 Planning Commission Meeting
File No.:	Consolidated Review for SDR05-2022 and CUP03-2022
Proposal:	New Food Cart Pod Use, Event Suite, and Site Improvements
Address:	1400 Fountain Way
Tax Lot:	Taxlot 1901 of Clackamas County Taxmap 52E07A
Owner/Applicant:	Al Borromeo 1515 W Main ST, Suite Q Molalla, OR 97267 Application prepared by Kelli Grover of Firwood Design
Applicable Standards:	**Applicable Standards**: **Molalla Municipal Code, Title 17, Development Code** **Division II, Zoning Regulations** *Section 17-2.2.030 Allowed Uses* *Section 17-2.2.040 Lot and Development Standards* *Section 17-2.3.220 Mobile Food Units* **Division III, Community Design Standards** *Chapter 17-3.3 Access and Circulation* *Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting* *Chapter 17-3.5 Parking and Loading* *Chapter 17-3.6 Public Facilities* **Division IV, Application Review Procedures and Approval Standards**

Section 17-4.1.040 Type III Procedure (Quasi-Judicial Review – Public Hearing)
Section 17-4.2.050 Approval Standards (Site Design Review)
Section 17-4.4.040 Criteria, Standards, and Conditions of Approval (Conditional Use)

TABLE OF CONTENTS:

EXHIBITS:

I. EXECUTIVE SUMMARY

Proposal:
The Applicant seeks land use approval for a new mobile food unit pod consisting of six mobile food unit pads and land use approval for site modifications that include development of new parking areas and associated public and private infrastructure. Additionally, the Applicant proposes to use an existing structure on the site that was previously used as a sleep therapy clinic for event space. This subject parcel is a 3.3 acre parcel addressed at 1400 Fountain Way in Molalla.

Site Description:
The subject site is located on a 3.3 acre parcel of General Commercial (C-2) zoned land on OR 211. The parcel has several existing buildings that provide food service, including a tap room, brewery building, and sleep health related business. The property takes access from Industrial Way, which extends from OR-211 abutting the eastern portion of the property. The roadway is improved with ¾ street improvements to roughly halfway up the parcel within the dedicated right-of-way. The property is generally flat with a slight slope to the northeast towards Bear Creek. The western border of the property has a line of trees of varying thickness and a landscape island containing many trees cuts through the middle of the property.

No zone change is proposed or required for this application.

Surrounding Zoning and Land Uses:
To the west and southwest, the parcel is surrounded by General Commercial zoned land (C-2) that contains a non-conforming single-family home and a dental office. To the north is an undeveloped Public Semi-Public zoned parcel owned by the City that creates a buffer around Bear Creek. To the east of Industrial Way, a non-conforming single-family home sits upon a large parcel of M-1 Light Industrial zoned land. To the south across OR-211 is non-conforming Heavy Industrial zoned land (M-2) with a smattering of non-conforming dwellings and abandoned uses.

Public Agency Notice & Responses:
Staff circulated notice of the project to the City's Public Works Director, Molalla Fire District, and Oregon Department of Transportation (ODOT) on October 27, 2022. The City has included responses from Public Works and Molalla Fire as Exhibits D and E respectively. Public Works and Molalla Fire comments are integrated into the proposed findings and conditions of this decision. As the access from OR-211 is already built out ODOT declined to comment.

Public Notice & Comments:
Per MMC 17-4.1.040, notice of the public hearing was sent to all property owners within 300 feet of the subject properties and to a group of interested parties on

October 25, 2022. Notice was published in the *Molalla Pioneer* on November 2, 2022. Signage containing public notice information was posted on the property on November 18, 2022. As of November 30, 2022 staff had received no written public comment on the application.

II. Recommendation

Based on the application materials and findings demonstrating present or conditioned compliance with the applicable standards, staff recommends approval of Site Design Review SDR05-2022 and Conditional Use Permit CUP03-2022 subject to the conditions of approval that follow this recommendation. This approval is based on the Applicant's written narrative, site plans, and supplemental application materials. Any modifications to the approved plans other than those required by the conditions of this decision will require a new land use application and approval.

III. Conditions of Approval

1. Subsequent Required Approvals and Improvements:

a. Per Molalla Municipal Code (hereinafter MMC) 17-4.2.070, upon approval of this Site Design Review, the applicant must submit for Engineering Plan Review from Molalla Public Works. Per MMC 17-4.2.070, this site design review has an approval period of 1-year from the date of approval. The Applicant/owner shall submit for Civil Plan Review through the City of Molalla Public Works Department within the 1-year approval period. Extension requests for the 1-year period are subject to the Code provisions of MMC 17-4.2.070, B.

b. Per MMC 17-2.3.220 all mobile food units shall apply for a mobile food unit permit with the City of Molalla prior to operation

c. Per MMC 17-3.3.030 Applicant shall contact Public Works regarding a new access permit for the proposed parking area from Industrial Way and closure of the existing permit from Industrial Way.

d. All approved public and private improvements must be completed or otherwise bonded prior to issuance of any mobile food unit permitting for any mobile food unit within the proposed pod.

2. Conditions Pertaining to Onsite Improvements

a. Crosswalks shall meet standards of MMC 17-3.3.040, 4.

b. Applicant shall provide trees in landscaping areas between proposed parking lots and roadway/private drive to provide visual relief screening. All planted trees shall be installed with root barriers.

c. Fence height along Industrial Way shall be limited to 4 ft within setback areas.

3. Conditions Pertaining to Mobile Food Units

a. Mobile food units associated with the proposed pod shall sell primarily food items.

b. Mobile food units associated with the proposed pod shall not sell cannabis in any form.

c. All mobile food units within this pod must have a valid Clackamas County mobile food unit license.

d. All mobile food units within this pod must have a valid City of Molalla business license and maintain continuous compliance with applicable federal, state, county, and city standards.

e. No sanitary sewerage waste shall be discarded anywhere onsite except for the proposed private sanitary sewerage line.

f. Applicant shall ensure all mobile food units and property thereon are maintained in good condition in accordance with MMC 17-2.3.220 B, 14 and 15.

4. Conditions Pertaining to Civil Plan Approvals From The Molalla Public Works Department:

From the materials submitted, it appears that the storm drain, domestic water, and sanitary sewer facilities will be obtained from main line connections and/or extensions. Separate engineering drawings reflecting the installation of these public utilities will be required. No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved

by Staff, all fees have been paid, all necessary permits, bonding, right-of-way, and easements have been obtained and approved by staff, and Staff is notified a minimum of 24 hours in advance. All public utility/improvement plans submitted for review shall be based upon a 22"x 34" format and shall be prepared in accordance with the City of Molalla Public Work's Standards.

Staff reserves the right to require revisions/modifications to the public improvement construction plans and completed street improvements, if additional modifications or expansion of the sight distance onto adjacent streets is required.

i. Applicant will be required to construct street road improvements to City standards and meeting City of Molalla Transportation System Plan (TSP) for pavement, curb, and gutter, 6-foot curb tight sidewalk and Streetlight from Fountain Way to the northern driveway entrance. Improvements shall consist of 31.5 feet of pavement, curb & gutter, and 6-foot curb tight sidewalk on the west side of the street. Street shall be signed no parking on east sides until street is improved to full width. Dead-end streets shall be design in accordance and specifications meeting the Molalla Public Work Standards.

ii. The northern approach Parking area off of Industrial Way shall be designated as ingress only and the southern approach shall be designated as egress only. Striping/arrows shall be utilized to demarcate traffic flow. The section off Industrial Way between the new proposed ingress and egress points shall be designated as one way northbound until parcels to the east develop.

iii. The Applicant shall extend the proposed sidewalk to the north of the dead end on Industrial Way to connect with the existing pedestrian pathway. Dead end to be constructed in conformance with Molalla Public Works Standards.

iv. Applicants propose to connect to existing on-site sanitary system. Pod units shall make connection by individual laterals services and connect to an oil water separator. Oil Water separator shall make connection on the downstream end of the sewer line prior to main line connection per MMC 13.08 Sanitary Sewer and Molalla Standards Specifications for Public Works Construction.

v. Applicant shall extend 8-inch main on Industrial Way to the north end of the project. Water line shall meet Public Works size requirements and all fire hydrant locations shall be approved by the Fire Marshall.

vi. All water services shall be connected to internal water system and service

meter size shall be based on the use requirements to the property served. Any deviation from the prescribed procedures must be approved by Public Works.

vii. Should Fire Department regulations require additional fire flow that results in looping the water line through the site, then applicants engineer shall coordinate with Public Works for the extension of a public water line, and dedication of easements.

viii. An 18-inch storm main exists along the east side of Industrial Way. Applicant proposes to install new additional storm detention that will connected to the exist onsite storm system. Applicant will be required to provide storm calculations downstream of discharge, to ensure system is properly sized to convey projected stormwater to public facilities. If oversizing is required, then applicant will upsize storm line at their cost. Likewise Applicant will be required to provide stormwater calcs for proposed and existing onsite detention is properly sized to convey projected stormwater to public facilities.

ix. The Applicant shall confirm that the turning radius for the new parking area and Industrial Way extension can accommodate fire apparatus with Molalla Fire in their engineering plan review process.

x. All approaches and driveways shall meet ADA accessibility requirements where they coincide with an accessible route.

xi. Temporary driveways providing access to a construction site or staging area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets.

xii. All utilities to the project shall be served underground services. No overhead crossings of public right of way shall be approved by the city.

xiii. The applicant shall submit a lighting/photometrics plan that meets the standards of MMC 17-3.4.050 with engineering plans.

xiv. Proposed public sidewalk shall be raised 6” from vehicle maneuvering areas and curbed with the exception of drive aisle crossings.

xv. All driveway approaches shall be designed and constructed consistent with the current version of the Molalla Public Works Design Standards, Molalla Transportation Systems Plan, and ODOT standards.

xvi. Plans submitted for review shall meet the requirements described in Section 1 of the Molalla Standard Specifications for Public Works Construction.

xvii. All survey monuments on the subject site or that may be subject to disturbance within the construction area, or the construction of any off-site improvements shall be adequately referenced and protected prior to commencement of any construction activity. If the survey monuments are disturbed, moved, relocated, or destroyed as a result of any construction, the project shall, at its cost, retain the services of a registered professional land surveyor in the State of Oregon to restore the monument to its original condition and file the necessary surveys as required by Oregon State law. A copy of any recorded survey shall be submitted to Staff.

xviii. The applicant shall contact the Oregon Water Resources Department and inform them of any existing wells located on the subject site. Any existing well shall be limited to irrigation purposes only. Proper separation, in conformance with applicable State standards, shall be maintained between irrigation systems, public water systems, and public sanitary systems. Should the project abandon any existing wells, they shall be properly abandoned in conformance with State standards and supply the City with a copy of the final document.

xix. All utilities will be stubbed out to the far end of each street for future extension. The project shall utilize existing water, sewer, and storm water 'stub-outs' wherever possible. Water for domestic and fire protection shall be looped through the proposed site. Any 'stub-outs' determined to be not needed for the proposed development or any future development of the subject property shall be abandoned in accordance with the Molalla Standard Specifications for Public Works Construction.

xx. All public improvement designs shall meet the requirements of the Molalla Standard Specifications for Public Works Construction as amended by the Public Works Division Manager.

xxi. General Easements – A 10-foot-wide public utility easement shall be dedicated to the City adjacent to all public right-of-way and no structures are allowed to encroach into the easement. Applicant shall be required to submit a legal description and exhibit map for review and sign City easements. Once

completed, applicant will be required to record easements with the County Recorder's Office and return the original document to the City prior to final occupancy.

xxii. General Wetland Requirements – The applicant will be required to provide Public Works with a letter of concurrence from the Department of State Lands regarding any wetlands on the subject property.

xxiii. General Erosion Control – The applicant shall install, operate, and maintain adequate erosion control measures in conformance with the standards adopted by the City of Molalla and DEQ during the construction of any public/private utility and building improvements until such time as approved permanent vegetative materials have been installed. Applicant or Applicant's Contractor shall be responsible for all erosion control requirements under the 1200-C permit and shall coordinate directly with DEQ for questions related to 1200-C permit compliance.

5. Conditions To Be Met Prior To Construction

a. Temporary driveways providing access to a construction site or staging area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets (MMC 17-3.3.030 D 20).

6. Ongoing Conditions:

a. This approval applies to the six proposed mobile food unit pad and no more than six mobile food units may receive permits to operate onsite at any one time. Operation of more than six mobile food units onsite at any one time will require modification to this decision or site design review, as applicable.

b. All contractors and subcontractors performing work on this property shall obtain and maintain a valid, current business license with the City of Molalla.

c. Access to public streets shall be limited to the location identified on the application materials.

d. all walkways shall be designed and constructed consistent with ADA requirements, as required (MMC 17-3.2.040 D). All approaches and driveways shall meet ADA accessibility requirements where they coincide with an accessible route (MMC 17-3.3.030 D 15). Parking shall be provided consistent with ADA requirements (MMC 17-3.5.030 H).

e. No visual obstructions shall be placed in vision clearance areas (MMC 17-3.3.030 G).

f. No proposed fencing shall be made of prohibited materials, as detailed in MMC 17-3.4.

g. All landscaping shall be maintained in good condition, or otherwise replaced by the property owner (MMC 17-3.4.030 G).

h. Fences and walls shall be maintained in good condition, or otherwise replaced by the property owner (MMC 17-3.4.040 F).

i. All outdoor lighting shall be maintained in good condition, or otherwise replaced by the property owner (MMC 17-3.4.050 C).

Exhibit A:

City Staff's Findings of Fact for SDR05-2022

Per MMC 17-4.2.050, an application for Site Design Review shall be approved if the proposal meets all of the following criteria. The Planning Official, in approving the application, may impose reasonable conditions of approval, consistent with the applicable criteria;

A. The application is complete, in accordance with Section 17-4.2.040;

Findings: The City received the Applicant's proposal on May 4, 2022 and deemed it complete in accordance with Section 17-4.2.040 on October 12, 2022.

B. The application complies with all of the applicable provisions of the underlying Zoning District (Division II), including, but not limited to, building and yard setbacks, lot area and dimensions, density and floor area, lot coverage, building height, building orientation, architecture, and other applicable standards;

17-2.2.030 Allowed Uses

Findings: The Applicant proposes new uses of a new food cart pod and event space. The fast food portion meets the "Commercial Retail Sales and Services" use category and the drive thru use category is a conditional use in the C-2 General Commercial zone. The Applicant submitted a Conditional Use Permit in concurrence with this application. The standard is met.

17-2.2.040 Lot and Development Standards

Findings:

Minimum Lot Area – There is no minimum lot size in commercial zones. The proposed lots are of adequate size to accommodate commercial development. This standard is met.

Minimum Lot Width and Depth – There is no minimum lot width or depth in commercial zones. The proposed lots are of adequate size to accommodate commercial development. This standard is met.

Building and Structure Height – No new structures are proposed with this development. This standard does not apply.

Maximum Lot Coverage - Maximum foundation plane coverage in the C-2 zone is 100%. No new structures are proposed with this development and existing structures cover less than 100% of the lot. This standard is met.

Minimum Landscape Area % (includes required parking lot, landscaping, and required screening) Minimum landscaped area in the C-2 zone is 5%. Applicant's submitted application shows substantially more than 5% landscaping area. This standard is met.

Minimum Setbacks - 6

Front Setback Requirement: 0ft – This standard is met.
Garage Setback Requirement: 20ft – No garages are proposed. This standard does not apply.
Alley: 3ft - This property does not abut an alley. This standard does not apply.
Adjacent to R Districts: 10ft – This proposal is not adjacent to any residential districts. This standard does not apply.

Build to Line: 0ft – No new structures are proposed with this development. This standard does not apply.

17-2.3.220 Mobile Food Units (Special Use Standards)

A. **Applicability.** No mobile food unit may operate within the city limits of Molalla except as permitted in this chapter, or as authorized by an event permit issued by the City of Molalla.

Findings: These standards apply to this application for a mobile food unit pod. Applicant is seeking appropriate land use approval through this application.

B. **General Requirements.** The following standards apply to all mobile food units operating within the City of Molalla, except as authorized by an event permit issued by the City of Molalla.

1. Mobile food units shall be permitted as an accessory use in all zones in which they are "Permitted Subject to Special Use Standards (S)."

Findings: This standard is met subject to a condition of approval. Applicant's submitted application is for a food cart pod within the C-2 zone. The use would be accessory to the existing brewery and taproom uses. As a condition of approval, all mobile food units shall apply for a mobile food unit permit with the City of Molalla prior to operation.

2. Mobile food units shall primarily sell food items.

Findings: This standard is met subject to a condition of approval. The applicant has proposed that carts within the proposed pod will sell primarily food items. As a condition of approval, mobile food units associated with the proposed pod shall sell primarily food items.

3. Mobile food units may not sell, offer, provide or in any way transfer cannabis in any form.

Findings: This standard is met subject to a condition of approval. The applicant has proposed that carts within the proposed pod will sell primarily food items. As a condition of approval, mobile food units associated with the proposed pod shall not sell cannabis in any form.

4. Mobile food units are subject to inspection by City of Molalla Code Enforcement and Molalla Fire District personnel on official business.

Findings: City of Molalla Code enforcement and Fire District may inspect food units as applicable.

5. All mobile food units must have a valid Clackamas County mobile food unit license.

Findings: This standard is met subject to a condition of approval. As a condition of approval, all mobile food units within this pod must have a valid Clackamas County mobile food unit license.

6. All mobile food units must have a valid City of Molalla business license.

Findings: This standard is met subject to a condition of approval. As a condition of approval, all mobile food units within this pod must have a valid City of Molalla business license.

7. Mobile food units shall maintain continuous compliance with applicable federal, state, county, and city standards.

Findings: This standard is met subject to a condition of approval. As a condition of approval, all mobile food units within this pod must maintain continuous compliance with applicable federal, state, county, and city standards.

8. Discharge or leakage draining into the stormwater or wastewater system is prohibited. Wastewater shall not be dumped or spilled onto or into the ground, streets, stormwater, or wastewater systems. All liquid waste from the waste tank or from cleaning activities shall be captured and properly disposed of.

Findings: This standard is met subject to a condition of approval. Per MMC 17-2.3.220 mobile food unit pods may connect to City sewer systems. The Applicant proposes a new private sanitary sewer line that will connect to each proposed mobile food unit. As a condition of approval, no sanitary sewerage waste shall be discarded anywhere onsite except for the proposed private sanitary sewerage line.

9. All permanent utility lines shall be placed underground. Temporary utilities, lines and tanks shall be placed underground or otherwise screened, covered, or hidden from view from the right-of-way as to minimize visual impacts and prevent unsafe conditions.

Findings: The Applicant proposes to serve the mobile food unit pod with new, underground sanitary sewerage, water, and power lines. This standard is met

10. Power connections may not be connected by overhead wires to the individual mobile food units.

Findings: The Applicant proposes to serve the mobile food unit pod with new, underground power connections. This standard is met

11. Additional impervious surfaces must comply with stormwater and grading design standards.

Findings: This standard is met subject to a condition of approval. The Applicant has proposed new stormwater facilities to connect new impervious surfaces with existing onsite stormwater detention facilities and ODOT facilities to the south respectively. A 18-inch storm main exists along the east side of Industrial Way. Applicant proposes to install new additional storm detention that will connected to the exist onsite storm system. Applicant will be required to provide storm calculations downstream of discharge, to ensure system is properly sized to

convey projected stormwater to public facilities. If oversizing is required, then applicant will upsize storm line at their cost. Likewise Applicant will be required to provide stormwater calcs for proposed and existing onsite detention is properly sized to convey projected stormwater to public facilities.

12. Mobile food units, equipment, customer service areas, or any other associated object may not be located within the public right-of-way.

Findings: The Applicant's submitted site plans show that all proposed mobile food units are located internal to the site. This standard is met

13. Mobile food unit owners are responsible for maintaining the mobile food unit in a neat and clean condition, including, but not limited to: an exterior that is clean and free from rust, peeling paint, and visibly worn or broken exterior equipment (including accessory equipment) and any other defect that reasonably detracts from the public's aesthetic appreciation of the unit or accessories thereto.

14. Mobile food unit owners and property owners are responsible for maintaining the property upon which a mobile food unit operates in a neat and clean condition, including, but not limited to: free from trash, waste, broken or visibly worn equipment and furnishings, or any other defect that reasonably detracts from the public's aesthetic appreciation of the site.

Findings: These standards are met subject to a condition of approval. As a condition of approval Applicant shall ensure all mobile food units and property thereon are maintained in good condition in accordance with MMC 17-2.3.220 B, 14 and 15.

15. Mobile food units must be self-contained and connect to individual wastewater and potable water holding tanks at all times, except as authorized in this chapter for a mobile food unit pod.

Findings: The Applicant proposes a mobile food unit pod and proposes that all mobile food unit pads be served by a private onsite sewage line. This standard is met

C. Design and Operation Standards.

1. **Temporary Mobile Food Units.** Mobile food units that operate on a property for eight hours or less in a 24-hour period shall comply with the following:
2. **Single or Double Permanent Mobile Food Units.** Mobile food units that operate on a property that is approved for two or less permanent mobile food units, for more than eight hours in a 24-hour period shall comply with the following:

Findings: The Applicant has proposed a permanent mobile food unit pod. These standards do not apply.

3. **Mobile Food Unit Pods.** A site that is approved for three or more food units to operates on the property for more than eight hours in a 24-hour period shall comply with the following:
    a. Site, Unit, and Accessory Standards.
        (1) Except as outlined in this ordinance, all mobile food unit pods shall comply with the applicable provisions of MMC Title 17 for commercial activities classified as retail sales and commercial services.
        (2) Shall be fully enclosed by a fence, wall, exterior building wall, or combination thereof.

            i. Notwithstanding MMC Section 17-3.4.040, the design and dimensions of fences or walls used to satisfy the requirement of this section are subject to approval by the Planning Official.
            ii. The Planning Official shall base their approval of a proposed wall or fence on a balance of the Community Design Standards in MMC Section 17-3.4.040, the location of the parcel and surrounding uses, and the aesthetics of the proposal.

Findings: The Applicant's submitted application states that the mobile food unit pod shall be screened from Industrial Way by a fence meeting community design standards 17-3.4.040. Due to existing onsite screening between adjacent properties and the roadway by vegetation and existing buildings, Staff determines this will be sufficient. These standards are met.

        (3) Must supply at least one public on-site restroom facility for every two mobile food units, these may be portable, part of an existing building on site, or constructed in accordance with the State of Oregon Building Code.

Findings: The Applicant proposes that the existing 5 onsite bathrooms between the existing brewery, tap house, and sleep health office will be available for use between the 6 proposed mobile food unit pads. This standard is met.

(4) A pod may choose to connect to city water, city sewer, or a combination thereof, but the entire pod must be uniform in this election.

Findings: The Applicant has proposed connection to City water for all mobile food units via an extension of the existing private sanitary sewer line. This standard is met.

(5) A pod must connect to a permanent power supply, generators are prohibited unless for emergency use.

Findings: The Applicant has proposed connection to existing onsite power. This standard is met.

D. Process.

3. Mobile food unit pods and single or double mobile food units that are the primary use on a property are subject to Type II or Type III Site Design Review in accordance with MMC Chapter 17-4.2.
   a. A copy of Clackamas County Health Department mobile food unit application and permit must be attached to your application.

Findings: The Applicant has proposed connection to City water for all mobile food units via an extension of the existing private sanitary sewer line. This standard is met.

b. System development charges are applicable to mobile food unit pods and single or double mobile food units that are the primary use on a property.

Findings: SDC charges will be applied in accordance with the impacts with Molalla RESOLUTION NO. 2022-04.

E. The proposal includes required upgrades, if any, to existing development that does not comply with the applicable zoning district standards, pursuant to Chapter 17-1.4 Nonconforming Situations;

Findings: Staff will be requiring updates to existing paved surfaces and sidewalk location along Industrial Way to current standards in accordance with Chapter 17-3.6.020. Stormwater upgrades as necessary.

F. The proposal complies with all the Development and Design Standards of Division III, as applicable:

Findings: Applicable Standards under Division III. Community Design Standards for this project include:

Chapter 17-3.3 Access and Circulation
Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting
Chapter 17-3.5 Parking and Loading
Chapter 17-3.6 Public Facilities

17-3.3.030 Vehicular Access and Circulation

A. **Purpose and Intent.** Section 17-3.3.030 implements the street access policies of the City of Molalla Transportation System Plan. It is intended to promote safe vehicle access and egress to properties, while maintaining traffic operations in conformance with adopted standards. "Safety," for the purposes of this chapter, extends to all modes of transportation.

B. **Permit Required.** Vehicular access to a public street (e.g., a new or modified driveway connection to a street or highway) requires an approach permit approved by the applicable roadway authority.

Findings: This standard is met subject to a condition of approval. Industrial Way is a public right-of-way under jurisdiction of the City of Molalla. The Applicants submitted application proposes to utilize existing access from Industrial Way and private drive "Fountain Way" as access points. Applicant shall contact Public Works regarding a new access permit for the proposed parking area from Industrial Way and closure of the existing permit from Industrial Way.

C. **Traffic Study Requirements.** The City, in reviewing a development proposal or other action requiring an approach permit, may require a traffic impact analysis, pursuant to Section 17-3.6.020, to determine compliance with this Code.

Findings: The Applicant submitted a Traffic Impact Study prepared by a Registered Engineer addressing the appropriate standards as part of the application package. This standard is met.

D. **Approach and Driveway Development Standards.** Approaches and driveways shall conform to all of the following development standards:

1. The number of approaches on higher classification streets (e.g., collector and arterial streets) shall be minimized; where practicable, access shall be taken first from a lower classification street.

Findings: The subject property's only street frontage is on Industrial Way, from which the Applicant proposes access. This standard is met.

2. Approaches shall conform to the spacing standards of subsections E and F, below, and shall conform to minimum sight distance and channelization standards of the roadway authority.

Findings: Industrial Way is classified as a neighborhood street in the Molalla Transportation Systems Plan. Neighborhood Streets require 100 ft of spacing between access points. The Applicant's submitted application proposes relocating parking areas adjacent to the existing brewery and tap room to a point further north along Industrial Way. Existing access points from Industrial Way will be closed. Spacing between Fountain Way and the new parking access to the north exceeds 100 ft in spacing. This standard is met subject to a condition of approval.

3. Driveways shall be paved and meet applicable construction standards. Where permeable paving surfaces are allowed or required, such surfaces shall conform to applicable Public Works Design Standards.

Findings: The Applicant has proposed paved driveways and shall be designed to meet all Molalla Public Works Design Standards. This standard is met.

4. The City Engineer may limit the number or location of connections to a street, or limit directional travel at an approach to one-way, right-turn only, or other restrictions, where the roadway authority requires mitigation to alleviate safety or traffic operations concerns.

Findings: This standard is met subject to a condition of approval. As a condition of approval, for the parking area off of Industrial Way northern approach shall be designated as ingress only and the southern approach shall be designated as egress only. Striping/arrows shall be utilized to demarcate traffic flow. The section of Industrial Way between the new proposed ingress and egress points shall be designated as one way northbound until parcels to the east develop.

5. Where the spacing standards of the roadway authority limit the number or location of connections to a street or highway, the City Engineer may require a driveway extend to one or more edges of a parcel and be designed to allow for future extension and inter-parcel circulation as adjacent properties develop. The City Engineer may also require the owner(s) of the subject site to record an access easement for future joint use of the approach and driveway as the adjacent property(ies) develop(s).

Findings: The subject property abuts S Industrial Way, the right-of-way for which extends to the north end of the property. The right-of-way north of the proposed egress to the parking lot has been utilized by the City as a pedestrian only pathway and the City opts to keep this arrangement at the present time. No driveway extension to the north is required and access easements are already provided to the parcel to the southwest. This standard does not apply.

6. Where applicable codes require emergency vehicle access, approaches and driveways shall be designed and constructed to accommodate emergency vehicle apparatus and shall conform to applicable fire protection requirements. The City Engineer may restrict parking, require signage, or require other public safety improvements pursuant to the recommendations of an emergency service provider.

Findings: This standard is met subject to a condition of approval. The Applicant's submitted application states that the proposed parking lots provide adequate space for emergency vehicle turnaround. As a condition of approval, the Applicant shall confirm that the turning radius for the new parking area and Industrial Way extension can accommodate fire apparatus with Molalla Fire in their engineering plan review process.

7. As applicable, approaches and driveways shall be designed and constructed to accommodate truck/trailer-turning movements.

Findings: Truck traffic is not anticipated with this development. This standard does not apply.

8. Except where the City Engineer and roadway authority, as applicable, permit an open access with perpendicular or angled parking, driveways shall accommodate all projected vehicular traffic on-site without vehicles stacking or backing up onto a street.
9. Driveways shall be designed so that vehicle areas, including, but not limited to, drive-up and drive-through facilities and vehicle storage and service areas, do not obstruct any public right-of-way.

Findings: All proposed off-street parking and mobile food unit pads are located interior to the site. These standards are met.

10. Approaches and driveways shall not be wider than necessary to safely accommodate projected peak hour trips and turning movements, and shall be designed to minimize crossing distances for pedestrians.

Findings: The Applicant's submitted application shows a 25.4' wide approach to the proposed southern parking area. The northern approaches are 32.1' wide for the southern end and 30' wide for the northern end respectively. These approaches are designed to accommodate emergency vehicles and are consistent with Molalla Public Works Standards. This standard is met.

11. As it deems necessary for pedestrian safety, the City Engineer, in consultation with the roadway authority, as applicable, may require that traffic-calming features, textured driveway surfaces (e.g., pavers or similar devices), curb extensions, signage or traffic control devices, or other features, be installed on or in the vicinity of a site as a condition of development approval.

Findings: Neither the City Engineer nor the roadway authority recommend any traffic calming features, nor are any proposed. This standard is met.

12. Construction of approaches along acceleration or deceleration lanes, and along tapered (reduced width) portions of a roadway, shall be avoided; except where no reasonable alternative exists and the approach does not create safety or traffic operations concern.

Findings: The Applicant's proposal does not include construction of approaches along acceleration or deceleration lanes or along tapered portions of the roadway. This standard does not apply.

13. Approaches and driveways shall be located and designed to allow for safe maneuvering in and around loading areas, while avoiding conflicts with pedestrians, parking, landscaping, and buildings.

Findings: The Applicant's submitted site plan shows separation between pedestrian and vehicular circulation areas. Loading areas are likewise separated to reduce conflict. This standard is met.

14. Where sidewalks or walkways occur adjacent to a roadway, driveway aprons constructed of concrete shall be installed between the driveway and roadway edge. The roadway authority may require the driveway apron be installed outside the required sidewalk or walkway surface, consistent with Americans with Disabilities Act (ADA) requirements, and to manage surface water runoff and protect the roadway surface.

Findings: The Applicant's proposal includes a new sidewalk and driveway apron within the right-of-way that meets City and ODOT standards for materials and width. This standard is met.

15. Where an accessible route is required pursuant to ADA, approaches and driveways shall meet accessibility requirements where they coincide with an accessible route.

Findings: This standard is met subject to a condition of approval. As a condition of approval, all approaches and driveways shall meet ADA accessibility requirements where they coincide with an accessible route.

16. The City Engineer may require changes to the proposed configuration and design of an approach, including the number of drive aisles or lanes, surfacing, traffic-calming features, allowable turning movements, and other changes or mitigation, to ensure traffic safety and operations.

Findings: With the potential exception of approach modifications to accommodate truck and emergency vehicle movements mentioned above, no changes are required to the proposed configuration and design of the approach. This standard is met.

17. Where a new approach onto a state highway or a change of use adjacent to a state highway requires ODOT approval, the applicant is responsible for obtaining ODOT approval. The City Engineer may approve a development conditionally, requiring the applicant first obtain required ODOT permit(s) before commencing development, in which case the City will work cooperatively with the applicant and ODOT to avoid unnecessary delays.

Findings: The subject site abuts City of Molalla right-of-way. ODOT permitting will not be required.

18. Where an approach or driveway crosses a drainage ditch, canal, railroad, or other feature that is under the jurisdiction of another agency, the applicant is responsible for obtaining all required approvals and permits from that agency prior to commencing development.
19. Where a proposed driveway crosses a culvert or drainage ditch, the City Engineer may require the developer to install a culvert extending under and beyond the edges of the driveway on both sides of it, pursuant to applicable Public Works Design Standards.

Findings: The Applicants proposed approach does not cross a feature under the jurisdiction of another agency, including a drainage culvert or ditch. These criteria do not apply.

20. Except as otherwise required by the applicable roadway authority or waived by the City Engineer temporary driveways providing access to a construction site or staging

area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets.

Findings: These standards are met subject to a condition of approval. As a condition of approval, temporary driveways providing access to a construction site or staging area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets.

21. Development that increases impervious surface area shall conform to the storm drainage and surface water management requirements of Section 17-3.6.050.

Findings: These standards are met subject to conditions of approval. Applicant will be required to submit stormwater calculations with their engineering plan submittals. Onsite private storm system shall comply with plumbing code requirements. The detention and flow control facilities shall be reviewed, permitted, and inspected by Molalla Public Works. The onsite storm conveyance system shall be reviewed and inspected by Clackamas County Building under a plumbing permit, in accordance with MMC 13.13 Surface Water Management. Additional stormwater analysis is provided in Staff responses to Section 17-3.6.050.

E. **Approach Separation from Street Intersections.** Except as provided by subsection H, minimum distances shall be maintained between approaches and street intersections consistent with the current version of the Public Works Design Standards and Transportation System Plan.

F. **Approach Spacing.** Except as provided by subsection H or as required to maintain street operations and safety, the following minimum distances shall be maintained between approaches consistent with the current version of the Public Works Design Standards and Transportation System Plan.

Findings: Industrial Way is classified as a neighborhood street in the Molalla Transportation Systems Plan. Neighborhood Streets require 100 ft of spacing between access points. The Applicant's submitted application proposes relocating parking areas adjacent to the existing brewery and tap room to a point further north along Industrial Way. Existing access points become relegated to loading areas for the mobile food units, emergency access, and pedestrian access. Spacing between Fountain Way and the new parking access to the north exceeds 100 ft in spacing. This standard is met subject to a condition of approval. This standard is met.

G. **Vision Clearance.** No visual obstruction (e.g., sign, structure, solid fence, or shrub vegetation) greater than 2.5 feet in height shall be placed in "vision clearance areas" at street intersections.. The minimum vision clearance area may be modified by the Planning Official through a Type I procedure, upon finding that more or less sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.). Placement of light poles, utility poles, and tree trunks should be avoided within vision clearance areas.

Findings: This standard is met subject to conditions of approval. As an ongoing condition of approval, no visual obstructions shall be placed in vision clearance areas.

H. **Exceptions and Adjustments.** The City Engineer may approve adjustments to the spacing standards of subsections E and F, above, where an existing connection to a City street does not meet the standards of the roadway authority and the proposed development moves in the direction of code compliance. The Planning Official through a Type II procedure may also approve a deviation to the spacing standards on City streets where it finds that mitigation measures (removal of one access), joint use driveways (more than one property uses same access), directional limitations (e.g., one-way), turning restrictions (e.g., right-in/ right-out only), or other mitigation alleviate all traffic operations and safety concerns.

Findings: The Applicant has not submitted any requests for exceptions and adjustment to access and spacing standards and none are requested by City Staff.

I. **Joint Use Access Easement and Maintenance Agreement.** Where the City approves a joint use driveway, the property owners shall record an easement with the deed allowing joint use of and cross access between adjacent properties. The owners of the properties agreeing to joint use of the driveway shall record a joint maintenance agreement with the deed, defining maintenance responsibilities of property owners. The applicant shall provide a fully executed copy of the agreement to the City for its records, but the City is not responsible for maintaining the driveway or resolving any dispute between property owners.

Findings: Staff finds that there is an existing joint access agreement between the subject site and Taxlot 01902 to the southwest. Staff requires no additional easements. This standard is met.

17-3.3.040 Pedestrian Access and Circulation

B. **Standards.** Developments shall conform to all of the following standards for pedestrian access and circulation as generally illustrated in Figure 17-3.3-3:

1. **Continuous Walkway System.** A pedestrian walkway system shall extend throughout the development site and connect to adjacent sidewalks, if any, and to all future phases of the development, as applicable.

Findings: This standard is met subject to a condition of approval. Applicant's submitted site plan shows a continuous walkway system including the public sidewalk along the OR-211 frontage and up Industrial Way frontages and private walkways connecting all existing and

proposed uses between this lot and taxlot 01902 to the southwest. The Applicant proposes to extend the existing sidewalk along Industrial Way to the north end of the proposed parking lot.

The proposed network does not directly connect to the the pedestrian path within the right-of-way to the north that crosses Bear Creek. As a condition of approval, the Applicant shall extend the proposed sidewalk to the north of the dead end to connect with the existing pedestrian pathway. Dead end to be constructed in conformance with Molalla Public Works Standards.

2. **Safe, Direct, and Convenient.** Walkways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas, playgrounds, and public rights-of way conforming to the following standards:

    a. The walkway is reasonably direct when it follows a route that does not deviate unnecessarily from a straight line or it does not involve a significant amount of out-of-direction travel.

    b. The walkway is designed primarily for pedestrian safety and convenience, meaning it is reasonably free from hazards and provides a reasonably smooth and consistent surface and direct route of travel between destinations. The Planning Official may require landscape buffering between walkways and adjacent parking lots or driveways to mitigate safety concerns.

    c. The walkway network connects to all primary building entrances, consistent with the building design standards of Chapter 17-3.2 and, where required, Americans with Disabilities Act (ADA) requirements.

Findings: These standards are met subject to a condition of approval. Proposed sidewalks form a direct connection between the roadway, buildings, and parking. Proposed walkways promote vehicle/pedestrian separation to the extent practicable and are free of hazards.

As a condition of approval, all walkways shall be designed and constructed consistent with ADA requirements, as required.

3. **Vehicle/Walkway Separation.** Except as required for crosswalks, per subsection 4, below, where a walkway abuts a driveway or street it shall be raised six inches and curbed along the edge of the driveway or street. Alternatively, the Planning Official may approve a walkway abutting a driveway at the same grade as the driveway if the walkway is physically separated from all vehicle-maneuvering areas. An example of such separation is a row of bollards (designed for use in parking areas) with adequate minimum spacing between them to prevent vehicles from entering the walkway.

Findings: This standard is met subject to a condition of approval. The Applicant's submitted site plan does not specify the design of the proposed walkway. Proposed public sidewalk shall be raised 6" from vehicle maneuvering areas and curbed with the exception of drive aisle crossings.

4. **Crosswalks.** Where a walkway crosses a parking area or driveway ("crosswalk"), it shall be clearly marked with contrasting paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrasting material). The crosswalk may be part of a speed table to improve driver-visibility of pedestrians. Painted or thermo-plastic striping and similar types of non-permanent applications are discouraged, but may be approved for lesser used crosswalks not exceeding 24 feet in length.

Response: This standard is met subject to a condition of approval. The Applicant's submitted site plan shows three new crosswalks across proposed approaches to the parking areas. Crosswalks shall meet standards of MMC 17-3.3.040, 4.

5. **Walkway Width and Surface.** Walkways, including access ways required for subdivisions pursuant to Chapter 17-4.3, shall be constructed of concrete, asphalt, brick or masonry pavers, or other durable surface, as approved by the City Engineer, and not less than six feet wide. Multi-use paths (i.e., designed for shared use by bicyclists and pedestrians) shall be concrete or asphalt and shall conform to the current version of the Public Works Design Standards and Transportation System Plan.

6. **Walkway Construction (Private).** Walkway surfaces may be concrete, asphalt, brick or masonry pavers, or other City-approved durable surface meeting ADA requirements. Walkways shall be not less than six feet in width in commercial and mixed use developments and where access ways are required for subdivisions under Division IV.

Findings: The Applicant's submitted application shows proposed sidewalks and walkways that are at least 6ft in width and states that materials will match standards. Standard is met.

7. **Multi-Use Pathways.** Multi-use pathways, where approved, shall be a minimum width and constructed of materials consistent with the current version of the Public Works Design Standards and Transportation System Plan.

Findings: No multi-use pathways are proposed. This standard does not apply.

Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting

17-3.4.030 Landscaping and Screening

A. **General Landscape Standard.** All portions of a lot not otherwise developed with buildings, accessory structures, vehicle maneuvering areas, or parking shall be landscaped.

Findings: The Applicant's submitted landscaping plan shows that all areas of the subject parcel that are not developed with buildings, vehicular areas or pedestrian areas will be landscaped. This standard is met.

B. **Minimum Landscape Area.** All lots shall conform to the minimum landscape area standards of the applicable zoning district, as contained in Tables 17-2.2.040.D and 17-2.2.040.E. The Planning Official, consistent with the purposes in Section 17-3.4.010, may allow credit toward the minimum landscape area for existing vegetation that is retained in the development.

Findings: Applicant's submitted application shows a landscaping area greater than 5%. This standard is met.

C. **Plant Selection.** A combination of deciduous and evergreen trees, shrubs, and ground covers shall be used for all planted areas, the selection of which shall be based on local climate, exposure, water availability, and drainage conditions, among other factors. When new vegetation is planted, soils shall be amended and irrigation shall be provided, as necessary, to allow for healthy plant growth. The selection of plants shall be based on all of the following standards and guidelines:

1. Use plants that are appropriate to the local climate, exposure, and water availability. The presence of utilities and drainage conditions shall also be considered.
2. Plant species that do not require irrigation once established (naturalized) are preferred over species that require irrigation.
3. Trees shall be not less than two-inch caliper for street trees and one and one-half-inch caliper for other trees at the time of planting. Trees to be planted under or near power lines shall be selected so as to not conflict with power lines at maturity.
4. Shrubs shall be planted from five-gallon containers, minimum, where they are for required screens or buffers, and two-gallon containers minimum elsewhere.
5. Shrubs shall be spaced in order to provide the intended screen or canopy cover within two years of planting.
6. All landscape areas, whether required or not, that are not planted with trees and shrubs or covered with allowable non-plant material, shall have ground cover plants that are sized and spaced to achieve plant coverage of not less than 75 percent at maturity.

7. Bark dust, chips, aggregate, or other non-plant ground covers may be used, but shall cover not more than 35 percent of any landscape area. Non-plant ground covers cannot be a substitute for required ground cover plants.
8. Where stormwater retention or detention, or water quality treatment facilities are proposed, they shall meet the requirements of the current version of the Public Works Design Standards.
9. Existing mature trees that can thrive in a developed area and that do not conflict with other provisions of this Code shall be retained where specimens are in good health, have desirable aesthetic characteristics, and do not present a hazard.
10. Landscape plans shall avoid conflicts between plants and buildings, streets, walkways, utilities, and other features of the built environment.
11. Evergreen plants shall be used where a sight-obscuring landscape screen is required.
12. Deciduous trees should be used where summer shade and winter sunlight is desirable.
13. Landscape plans should provide focal points within a development, for example, by preserving large or unique trees or groves or by using flowering plants or trees with fall color.
14. Landscape plans should use a combination of plants for seasonal variation in color and yearlong interest.
15. Where plants are used to screen outdoor storage or mechanical equipment, the selected plants shall have growth characteristics that are compatible with such features.
16. Landscape plans shall provide for both temporary and permanent erosion control measures, which shall include plantings where cuts or fills, including berms, swales, stormwater detention facilities, and similar grading, is proposed.
17. When new vegetation is planted, soils shall be amended and irrigation provided, as necessary, until the plants are naturalized and able to grow on their own.

Findings: Applicant's submitted landscaping plan shows locally adapted plants that meet size specifications. The submitted landscaping plan is compliant with coverage specifications. Standard is met.

D. Central Commercial C-1 District Streetscape Standard. Developers of projects within the Central Commercial C-1 zoning district can meet the landscape area requirement of subsection B, in part, by installing street trees in front of their projects. The Planning Official shall grant credit toward the landscape area requirement using a ratio of 1:1, where one square foot of planted area (e.g., tree well or planter surface area) receives one square foot of credit. The Planning Official may grant additional landscape area credit by the same ratio where the developer widens the sidewalk or creates a plaza or other civic space pursuant to Section 17-3.2.050.

Findings: The subject property is not in the C-1 zone. These standards do not apply.

E. **Parking Lot Landscaping.** All of the following standards shall be met for parking lots. If a development contains multiple parking lots, then the standards shall be evaluated separately for each parking lot.

1. A minimum of 10 percent of the total surface area of all parking areas, as measured around the perimeter of all parking spaces and maneuvering areas, shall be landscaped. Such landscaping shall consist of shade trees distributed throughout the parking area. A combination of deciduous and evergreen trees, shrubs, and ground cover plants is required. The trees shall be planned so that they provide a partial canopy cover over the parking lot within five years. At a minimum, one tree per 12 parking spaces on average shall be planted over and around the parking area.

Findings: Applicant's submitted application shows 625 SF of landscaping on the northern lot for 6424 SF of total area and 553 SF of landscaping for 5526 SF of total area on the southern lot. This standard is met.

2. All parking areas with more than 20 spaces shall provide landscape islands with trees that break up the parking area into rows of not more than 10 contiguous parking spaces. Landscape islands and planters shall have dimensions of not less than 48 square feet of area and no dimension of less than six feet, to ensure adequate soil, water, and space for healthy plant growth.

Findings: Neither lot has more than 20 spaces. This standard does not apply.

3. All required parking lot landscape areas not otherwise planted with trees must contain a combination of shrubs and groundcover plants so that, within two years of planting, not less than 50 percent of that area is covered with living plants.

Findings: This standard is met per Applicant's submitted narrative.

4. Wheel stops, curbs, bollards, or other physical barriers are required along the edges of all vehicle-maneuvering areas to protect landscaping from being damaged by vehicles. Trees shall be planted not less than two feet from any such barrier.

Findings: The Applicant's submitted site plan states that areas around parking stalls will have curbs to protect landscaping areas. This standard is met.

5. Trees planted in tree wells within sidewalks or other paved areas shall be installed with root barriers, consistent with applicable nursery standards.

Findings: This standard is met subject to a condition of approval. As a condition of approval all planted trees shall be installed with root barriers.

F. **Screening Requirements.** Screening is required for outdoor storage areas, unenclosed uses, and parking lots, and may be required in other situations as determined by the Planning Official. Landscaping shall be provided pursuant to the standards of subsections F.1 through 3. (See also Figure 17-3.4-4.)

1. **Outdoor Storage and Unenclosed Uses.** All areas of a site containing or proposed to contain outdoor storage of goods, materials, equipment, and vehicles (other than required parking lots and service and delivery areas, per Site Design Review), and areas containing junk, salvage materials, or similar contents, shall be screened from view from adjacent rights-of-way and residential uses by a sight-obscuring fence, wall, landscape screen, or combination of screening methods. See also Section 17-3.4.040 for related fence and wall standards.

Findings: No outdoor storage areas are proposed. This standard does not apply.

2. **Parking Lots.** The edges of parking lots shall be screened to minimize vehicle headlights shining into adjacent rights-of-way and residential yards. Parking lots abutting a sidewalk or walkway shall be screened using a low-growing hedge or low garden wall to a height of between three feet and four feet.

Findings: The Applicant's submitted application states that all parking areas are screened by vegetation. This standard is met.

3. Other Uses Requiring Screening. The Planning Official may require screening in other situations as authorized by this Code, including, but not limited to, outdoor storage areas, blank walls, Special Uses pursuant to Chapter 17-2.3, flag lots, and as mitigation where an applicant has requested an adjustment pursuant to Chapter 17-4.7.

Findings: This standard is met subject to a condition of approval. Applicant shall provide trees in landscaping areas between proposed parking lots and roadway/private drive to provide visual relief screening.

G. **Maintenance.** All landscaping shall be maintained in good condition, or otherwise replaced by the property owner.

Findings: This standard can be met with a condition of approval. As an ongoing condition of approval all landscaping shall be maintained in good condition, or otherwise replaced by the property owner.

17-3.4.040 Fences and Walls

A. **Purpose.** This section provides general development standards for fences, and walls that are not part of a building, such as screening walls and retaining walls.

B. **Applicability.** Section 17-3.4.040 applies to all fences, and to walls that are not part of a building, including modifications to existing fences and walls.

Findings: Applicant has proposed fencing along Industrial Way for mobile food unit pod screening. This section applies.

C. **Height.**

1. **Residential Zones.**

Findings: The Applicant's proposal is in a non-residential zone. These standards do not apply.

2. **Non-Residential Zones.** Fences and freestanding walls (i.e., exclusive of building walls) for non-residential uses shall not exceed the following height above grade, where grade is measured from the base of the subject fence or wall.
   a. Within Front or Street-Facing Side Yard Setback. Four feet, except the following additional height is allowed for properties located within an industrial, public, or institutional zone:
      (1) Where approved by the City Planning Official, a fence constructed of open chain link or other "see-through" composition that allows 90 percent light transmission may reach a height of up to eight feet.

   b. Within an Interior Side or Rear Yard Setback. Eight feet; except the fence or wall height, as applicable, shall not exceed the distance from the fence or wall line to the nearest primary structure on an adjacent property.

Findings: Applicant has proposed fencing along Industrial Way for mobile food unit pod screening. Fence height along Industrial Way shall be limited to 4 ft within setback areas.

3. **All Zones.** Fences and walls shall comply with the vision clearance standards of Section 17-3.3.030.G. Other provisions of this Code, or the requirements of the roadway authority, may limit allowable height of a fence or wall below the height limits of this section.

Findings: No fences and walls are proposed in vision clearance areas as a part of this application. This standard is met.

D. **Materials.** Prohibited fence and wall materials include straw bales, tarps, barbed or razor wire (except in the M-2 Heavy Industrial zone); scrap lumber, untreated wood (except cedar or redwood), corrugated metal, sheet metal, scrap materials; dead, diseased, or dying plants; and materials similar to those listed herein.

Findings: Applicant's submitted application states fencing shall consist of allowed materials. Standard is met.

E. **Permitting.** A Type I approval is required to install a fence of six feet or less in height, or a wall that is four feet or less in height. All other walls and fences require review and approval by the Planning Official through a Type II procedure. The Planning Official may require installation of walls or fences as a condition of approval for development, as provided by other Code sections. A building permit may be required for some fences and walls, pursuant to applicable building codes. Walls greater than four feet in height shall be designed by a Professional Engineer licensed in the State of Oregon.

Findings: Staff recommends approval of the proposed fencing along Industrial Way as part of this site design review.

F. **Maintenance.** Fences and walls shall be maintained in good condition, or otherwise replaced by the property owner. (Ord. 2017-08 §1)

Findings: This standard is met subject to a condition of approval. As an ongoing condition of approval, fences and walls shall be maintained in good condition, or otherwise replaced by the property owner.

17-3.4.050 Outdoor Lighting

A. **Purpose.** This section contains regulations requiring adequate levels of outdoor lighting while minimizing negative impacts of light pollution.
B. **Applicability.** All outdoor lighting shall comply with the standards of this section.
C. **Standards.**
    1. Light poles, except as required by a roadway authority or public safety agency, shall not exceed a height of 20 feet; pedestal- or bollard-style lighting shall be used to illuminate walkways. Flag poles, utility poles, and streetlights are exempt from this requirement.

Findings: Per MMC 17-3.4.050 lighting is required for parking areas. Applicant showed light poles for new parking areas but did not show illumination levels on a photometrics lighting plan. As a condition of approval, the applicant shall submit a lighting/photometrics plan that meets the standards of MMC 17-3.4.050 with engineering plan.

    2. Where a light standard is placed over a sidewalk or walkway, a minimum vertical clearance of eight feet shall be maintained.

Findings: See discussion above.

    3. Outdoor lighting levels shall be subject to review and approval through Site Design Review. As a guideline, lighting levels shall be no greater than necessary to provide for pedestrian safety, property or business identification, and crime prevention.

Findings: See discussion above.

Except as provided for up-lighting of flags and permitted building-mounted signs, all outdoor light fixtures shall be directed downward, and have full cutoff and full shielding to preserve views of the night sky and to minimize excessive light spillover onto adjacent properties.

Findings: See discussion above.

    4. Lighting shall be installed where it will not obstruct public ways, driveways, or walkways.

Findings: See discussion above.

    5. Walkway lighting in private areas shall have a minimum average illumination of not less than 0.2 foot-candles. Lighting along public walkways shall meet the current version of the Public Works Design Standards and AASHTO lighting requirements.

Findings: See discussion above.

    6. Active building entrances shall have a minimum average illumination of not less than two foot-candles.

Findings: See discussion above.

7. Surfaces of signs shall have an illumination level of not more than two foot-candles.

Findings: The Applicant has not submitted signage with this application. This standard does not apply. Proposed signs will be held to this standard as submitted.

8. Parking lots and outdoor services areas, including quick vehicle service areas, shall have a minimum illumination of not less than 0.2 foot-candles, average illumination of approximately 0.8 foot-candles, and a uniformity ratio (maximum-to-minimum ratio) of not more than 20:1.

Findings: See discussion above.

9. Where illumination grid lighting plans cannot be reviewed or if fixtures do not provide photometrics and bulbs are under 2,000 lumens, use the following guidelines:
    a. Poles should be no greater in height than four times the distance to the property line.
    b. Maximum lumen levels should be based on fixture height.
    c. Private illumination shall not be used to light adjoining public right-of-way.

Findings: Applicant is expected to submit a lighting plan.

10. Where a light standard is placed within a walkway, an unobstructed pedestrian through zone not less than 48 inches wide shall be maintained.

Findings: See discussion above.

11. Lighting subject to this section shall consist of materials approved for outdoor use and shall be installed according to the manufacturer's specifications.

Findings: See discussion above.

D. Permitting. A Type I approval is required to install or replace outdoor lighting. The Planning Official may require lighting as a condition of approval for some projects, pursuant to other Code requirements.
E. Maintenance. For public health and safety, outdoor lighting shall be maintained in good condition, or otherwise replaced by the property owner. (Ord. 2017-08 §1)

Findings: These standards are met subject to a condition of approval. As an ongoing condition of approval, all outdoor lighting shall be maintained in good condition, or otherwise replaced by the property owner.

Chapter 17-3.5 Parking and Loading

Section 17-3.5.020 Applicability and General Regulations

A. **Where the Regulations Apply.** The regulations of this chapter apply to all parking areas in all zones, at all times, whether parking is required by this Code or put in for the convenience of property owners or users.

B. **Occupancy.** All required parking areas must be developed in accordance with the requirements of this Code prior to occupancy of any structure on the subject site. Where landscaping, screening, or other improvements are required pursuant to this Code, all such improvements must be installed and approved by the Planning Official prior to occupancy.

Findings: These standards are met subject to a condition of approval. As a condition of approval, all landscaping, parking, lighting, and other improvements shall be installed by the Applicant and approved by the Planning Official prior to permit issuance for mobile food units.

C. **Calculations of Amounts of Required and Allowed Parking.**

1. When computing parking spaces based on floor area, parking structures and non-leasable floor spaces, such as storage closets, mechanical equipment rooms, and similar spaces, are not counted.
2. The number of parking spaces is computed based on the primary uses on the site except as stated in subsection C.3. When there are two or more separate primary uses on a site, the minimum and maximum parking for the site is the sum of the required or allowed parking for the individual primary uses. For shared parking, see Section 17-3.5.030.D.
3. When more than 50 percent of the floor area on a site is in an accessory use, the required or allowed parking is calculated separately for the accessory use. An example would be a 10,000 square foot building with a 7,000 square foot warehouse and a 3,000 square foot accessory retail area. The minimum and maximum parking would be computed separately for the retail and warehouse uses.
4. Required parking spaces periodically used for the storage of equipment or goods may be counted toward meeting minimum parking standards, provided that such storage is an allowed use under Section 17-2.2.030, and is permitted as a Temporary Use under Section 17-2.3.160.

Findings: Applicant proposes (35) parking spaces in the two new lots and to remove 5 spaces from the mobile food unit area. this exceeds the minimum required parking of 32

spaces for 3751 SF of food service use and approximately 2500 SF of outdoor seating space. Standard is met.

D. **Use of Required Parking Spaces.** Except as otherwise provided by this section, required parking spaces must be available for residents, customers, or employees of the use. Fees may be charged for the use of required parking spaces. Required parking spaces may not be assigned in any way to a use on another site, except for shared parking pursuant to Section 17-3.5.030.D.

E. **Proximity of Parking to Use.** Required parking spaces for residential uses must be located on the site of the use or on a parcel or tract owned in common by all the owners of the properties that will use the parking area. Required parking spaces for nonresidential uses must be located on the site of the use or in a parking area that has its closest pedestrian access point within 800 feet of the site.

Findings: Staff finds that the proposed parking spaces are provided for customers and employees of the site and that the proposed parking lot is on site and closer than 800 ft from primary pedestrian entrances. These standards are met.

F. **Improvement of Parking Areas.** Motorized vehicle parking is allowed only on streets with an improved shoulder of sufficient width; within garages, carports, and other approved structures; and on driveways or parking lots that have been developed in conformance with this Code. For applicable design standards, see Chapter 17-3.2 Building Orientation and Design; Chapter 17-3.3 Access and Circulation; Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting and Chapter 17-3.6 Public Facilities. (Ord. 2017-08 §1)

Findings: Applicant has proposed onsite parking only. Staff will be requiring the buildout of Industrial Way to the eastern property line. Per TSP standards, this will allow for a one-way lane of traffic travel and a parking lane. This standard is met.

Section 17-3.5.030 Automobile Parking

A. **Minimum Number of Off-Street Automobile Parking Spaces.** Except as provided by this subsection A, or as required for Americans with Disabilities Act compliance under subsection G, off-street parking shall be provided pursuant to one of the following three standards:

1. The standards in Table 17-3.5.030.A;

2. A standard from Table 17-3.5.030.A for a use that the Planning Official determines is similar to the proposed use; or
3. Subsection B Exceptions, which includes a Parking Demand Analysis option.

Findings: Staff finds that the Applicant is providing parking for 3,751 SF of restaurant space and approximately 2,500 SF of outdoor seating. Minimum parking allowances for the site are 32 vehicular stalls. The Applicant's proposal includes 35 vehicular stalls. These standards are met.

B. **Carpool and Vanpool Parking Requirements.**
   2. Carpool and vanpool parking spaces shall be identified for the following uses:
      a. New commercial and industrial developments with 50 or more parking spaces;
      b. New institutional or public assembly uses; and
      c. Transit park-and-ride facilities with 50 or more parking spaces.
   3. Of the total spaces available for employee, student, and commuter parking, at least five percent, but not fewer than two, shall be designated for exclusive carpool and vanpool parking.
   4. Carpool and vanpool parking spaces shall be located closer to the main employee, student or commuter entrance than all other parking spaces with the exception of ADA parking spaces.
   5. Required carpool/vanpool spaces shall be clearly marked "Reserved—Carpool/Vanpool Only."

Findings: The submitted proposal is for a commercial use with fewer than 50 parking spaces. No carpool or vanpool spaces have been proposed. This standard does not apply.

C. **Exceptions and Reductions to Off-Street Parking.**

Findings: The Applicant has not requested any off-street parking exceptions nor are any required. This standard is met.

D. **Maximum Number of Off-Street Automobile Parking Spaces.** The maximum number of off-street automobile parking spaces allowed per site equals the minimum number of required spaces for the use pursuant to Table 17-3.5.030.A, times a factor of:
   1. 1.2 spaces for uses fronting a street with adjacent on-street parking spaces; or
   2. 1.5 spaces, for uses fronting no street with adjacent on-street parking; or
   3. A factor based on applicant's projected parking demand, subject to City approval.

Findings: Staff finds that the required buildout of Industrial Way to Molalla TSP Neighborhood Street Standards will add onstreet parking to Industrial Way. Due to the provision of onstreet parking, the standard allows for a maximum number of parking stalls that is 1.2x minimum requirements. The proposal is allowed 38 parking spaces at maximum. The Applicant proposes 35 vehicular stalls. This standard is met.

E. **Shared Parking.** Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or operators show that the need for parking facilities does not materially overlap (e.g., uses primarily of a daytime versus nighttime nature; weekday uses versus weekend uses), and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument establishing the joint use. Shared parking requests shall be subject to review and approval through a Type I Review.

Findings: The Applicant has not requested any shared parking arrangements. This standard does not apply.

F. **Parking Stall Design and Minimum Dimensions.** Where a new off-street parking area is proposed, or an existing off-street parking area is proposed for expansion, the entire parking area shall be improved in conformance with this Code. At a minimum the parking spaces and drive aisles shall be paved with asphalt, concrete, or other City-approved materials, provided the Americans with Disabilities Act requirements are met, and shall conform to the minimum dimensions in Table 17-3.5.030.F and the figures below. All off-street parking areas shall contain wheel stops, perimeter curbing, bollards, or other edging as required to prevent vehicles from damaging buildings or encroaching into walkways, sidewalks, landscapes, or the public right-of-way. Parking areas shall also provide for surface water management, pursuant to Section 17-3.6.050.

Findings: All 35 proposed parking spaces are proposed at 90-degree angles from the drive aisle. MMC Table 17-3.5.030 F requires that 90 degree angled spaces, as proposed, have at least:

18’ stall depth.

8.5’ stall curb width

23’ drive aisle (1 way).

The Applicant proposes parking stalls with 18’ depth, 10’ width, and a 23’ drive aisle in the

proposed lot from Fountain Way. The Applicant proposes parking stalls with 20' depth, 10' width, and a 30' drive aisle in the proposed lot from S Industrial Way. These standards are met.

G. **Adjustments to Parking Area Dimensions.** The dimensions in subsection E are minimum standards. The Planning Official, through a Type II procedure, may adjust the dimensions based on evidence that a particular use will require more or less maneuvering area. For example, the Planning Official may approve an adjustment where an attendant will be present to move vehicles, as with valet parking. In such cases, a form of guarantee must be filed with the City ensuring that an attendant will always be present when the lot is in operation.

Findings: The Applicant has not requested any modifications to parking area dimensions nor are any required. This standard does not apply.

H. **Americans with Disabilities Act (ADA).** Parking shall be provided consistent with ADA requirements, including, but not limited to, the minimum number of spaces for automobiles, van-accessible spaces, location of spaces relative to building entrances, accessible routes between parking areas and building entrances, identification signs, lighting, and other design and construction requirements.

Findings: This standard is met subject to a condition of approval. As a condition of approval, parking shall be provided consistent with ADA requirements.

I. **Electric Charging Stations.** Charging stations for electric vehicles are allowed as an accessory use to parking areas developed in conformance with this Code, provided the charging station complies with applicable building codes and any applicable state or federal requirements.

Findings: No electric charging stations are proposed. This standard does not apply.

17-3.5.040 Bicycle Parking

A. **Standards.** Bicycle parking spaces shall be provided with new development and, where a change of use occurs, at a minimum, shall follow the standards in Table 17-3.5.040.A. Where an application is subject to Conditional Use Permit approval or the applicant has

requested a reduction to an automobile-parking standard, pursuant to Section 17-3.5.030.C, the Planning Official may require bicycle parking spaces in addition to those in Table 17-3.5.040.A.

B. **Design.** Bicycle parking shall consist of staple-design steel racks or other City-approved racks, lockers, or storage lids providing a safe and secure means of storing a bicycle, consistent with the Public Works Design Standards.

C. **Exemptions.** This section does not apply to single-family and duplex housing, home occupations, and agricultural uses.

D. **Hazards.** Bicycle parking shall not impede or create a hazard to pedestrians or vehicles and shall be located to not conflict with the vision clearance standards of Section 17-3.3.030.G.

Findings: The Applicant's submitted site plan shows 4 staple racks which will provide 8 bicycle parking spaces. The rack is provided onsite, just northeast of the existing tap room. With 35 on-site vehicle spaces allowed, minimum parking for 7 bicycles is required. The proposed bicycle parking area does not impede pedestrian traffic nor does it impede vision. These standards are met.

17-3.5.040 Loading Areas

A. **Purpose.** The purpose of Section 17-3.5.050 is to provide adequate loading areas for commercial and industrial uses that do not interfere with the operation of adjacent streets.

B. **Applicability.** Section 17-3.5.050 applies to uses that are expected to have service or delivery truck visits. It applies only to uses visited by trucks with a 40-foot or longer wheelbase, at a frequency of one or more vehicles per week. The Planning Official shall determine through a Type I review the number, size, and location of required loading areas, if any.

C. **Standard**. Where an off-street loading space is required, it shall be large enough to accommodate the largest vehicle that is expected to serve the use without obstructing vehicles or pedestrian traffic on adjacent streets and driveways. The Planning Official may restrict the use of other public rights-of-way, so applicants are advised to provide complete and accurate information about the potential need for loading spaces.

D. **Placement, Setbacks, and Landscaping.** Loading areas shall conform to the standards of Chapter 17-3.2 Building Orientation and Design; Chapter 17-3.3 Access and Circulation; and Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting. Where parking areas are prohibited between a building and the street, loading areas are also prohibited.

E. **Exceptions and Adjustments.** The Planning Official, through a Type I Review, may approve a loading area adjacent to or within a street right-of-way where it finds that loading and unloading operations are short in duration (i.e., less than one hour), infrequent, do not obstruct traffic during peak traffic hours, do not interfere with emergency response services, and are acceptable to the applicable roadway authority. (Ord. 2017-08 §1)

Findings: The Applicant does not propose any loading areas. Standard does not apply.

Chapter 17-3.6 Public Facilities

17-3.6.20 ansportation Standards

Findings: Transportation standards are met subject to conditions of approval.

The Site Design Review will not require a traffic impact analysis update. The Applicant submitted a traffic analysis letter (TAL) with their application. The proposed development will add a total of 15.4 PHPM trips and the threshold for a traffic impact analysis is 25 AM or PM PH trips.

Industrial Way: Industrial Way is a neighborhood street under City of Molalla jurisdiction. Current right-of-way width is 38 feet and current street is partially improved with approximate pavement width of 24 feet and unimproved gravel of varying width. Neighborhood streets (w/TL, w/PK) require 50 feet of right-of-way and 34 feet of pavement. No street dedication is required, dedication was covered under Partition Plat No. 2020-007. Applicant will be required to construct street road improvements to City standards and meeting City of Molalla Transportation System Plan (TSP) for pavement, curb, and gutter, 6-foot curb tight sidewalk and Streetlight from Fountain Way to the northern driveway entrance. Improvements shall consist of 31.5 feet of pavement, curb & gutter, and 6-foot curb tight sidewalk on the west side of the street. Street shall be signed no parking on east sides until street is improved to full width. Dead-end streets shall be design in accordance and specifications meeting the Molalla Public Work Standards.

Applicant shall contact Public Works regarding a new access permit for the proposed parking area from Industrial Way and closure of the existing permitted access off Industrial Way. Access to public streets shall be limited to these locations and all accesses shall be constructed in such a manner as to eliminate turning conflicts. Access spacing shall conform to the Transportation Systems Plan. The proposed width of accesses shall meet the Molalla Standard Specifications for Public Works Construction.

The northern approach Parking area off of Industrial Way shall be designated as ingress only and the southern approach shall be designated as egress only. Striping/arrows shall be utilized to demarcate traffic flow. The section off Industrial Way between the new proposed ingress and egress points shall be designated as one way northbound until parcels to the east develop.

Transportation SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from transportation SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

17-3.6.030 Public Use Areas

Findings: The portion of the Industrial Way right-of-way north of the proposed parking lot and dead end is currently utilized as a pedestrian accessway to points north. Applicant will be required to connect the proposed public sidewalk to the existing Industrial Way walkway.

17-3.6.040 Sanitary Sewer and Water Service Improvements

Findings: Sanitary Sewer and Water Service Improvement Standards are met subject to conditions of approval.

Sanitary:

Applicants propose to connect to existing on-site sanitary system. Pod units shall make connection by individual laterals services and connect to an oil water separator. Oil Water separator shall make connection on the downstream end of the sewer line prior to main line connection per MMC 13.08 Sanitary Sewer and Molalla Standards Specifications for Public Works Construction.

Sanitary SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from sanitary SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

Water:

Applicant shall extend 8-inch main on Industrial Way to the north end of the project. Water line shall meet Public Works size requirements and all fire hydrant locations shall be approved by the Fire Marshall.

All water services shall be connected to internal water system and service meter size shall be based on the use requirements to the property served. Any deviation from the prescribed procedures must be approved by Public Works.

Should Fire Department regulations require additional fire flow that results in looping the water line through the site, then applicants engineer shall coordinate with Public Works for the extension of a public water line, and dedication of easements.

Water SDC's – The applicant did not propose any line upsizing with their application. In accordance with MMC 13.14 this design review does not increase the impacts to the public improvement facility and is therefore is exempt from water SDC charges. SDC's shall be calculated in accordance with the SDC methodology. If the applicant proposes upsizing water SDC charges will apply.

17-3.6.050 Storm Drainage and Surface Water Management Facilities

Findings: Sanitary Sewer and Water Service Improvement Standards are met subject to conditions of approval.

Industrial Way: A 18-inch storm main exists along the east side of Industrial Way. Applicant proposes to install new additional storm detention that will connected to the exist onsite storm system. Applicant will be required to provide storm calculations downstream of discharge, to ensure system is properly sized to convey design storm. If oversizing is required, then applicant will upsize storm line at their cost. Applicant will be required to provide stormwater calculations for proposed and existing onsite detention is properly sized to convey projected stormwater to public facilities.

Stormwater SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from stormwater SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

17-3.6.060 Utilities

Findings: All utilities to the project shall be served underground services. No overhead crossings of public right of way shall be approved by the city.

17-3.6.070 Easements

Findings: Should Fire Department regulations require additional fire flow that results in looping the water line through the site, then applicants engineer shall coordinate with Public Works for the extension of a public water line, and dedication of easements.

17-3.6.80 Construction Plan Approval

Findings: Construction Plan Approval standards are met subject to conditions of approval.

For commercial and industrial development projects, no building permit may be issued until all required public facility improvements are in place and approved by the City Engineer, or otherwise bonded, in conformance with the provision of the Code and the Public Works Design Standards in accordance with MMC 17-3.6 Public Facilities. All public improvements shall be completed and accepted by the Public Works Department prior to issuance of any occupancy.

From the materials submitted, it appears that the storm drain, domestic water, and sanitary sewer facilities will be obtained from main line connections and/or extensions. Separate engineering drawings reflecting the installation of these public utilities will be required. No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved by Staff, all fees have been paid, all necessary permits, bonding, right-of-way, and easements have been obtained and approved by staff, and Staff is notified a minimum of 24 hours in advance. All public utility/improvement plans submitted for review shall be based upon a 22”x 34” format and shall be prepared in accordance with the City of Molalla Public Work’s Standards.

Staff reserves the right to require revisions/modifications to the public improvement construction plans and completed street improvements, if additional modifications or expansion of the sight distance onto adjacent streets is required.

City of Molalla Construction plan approval requirements include:

A. All survey monuments on the subject site or that may be subject to disturbance within the construction area, or the construction of any off-site improvements shall be adequately referenced and protected prior to commencement of any construction activity. If the survey monuments are disturbed, moved, relocated, or destroyed as a

result of any construction, the project shall, at its cost, retain the services of a registered professional land surveyor in the State of Oregon to restore the monument to its original condition and file the necessary surveys as required by Oregon State law. A copy of any recorded survey shall be submitted to Staff.

B. Plans submitted for review shall meet the requirements described in Section 1 of the Molalla Standard Specifications for Public Works Construction.

C. The applicant shall contact the Oregon Water Resources Department and inform them of any existing wells located on the subject site. Any existing well shall be limited to irrigation purposes only. Proper separation, in conformance with applicable State standards, shall be maintained between irrigation systems, public water systems, and public sanitary systems. Should the project abandon any existing wells, they shall be properly abandoned in conformance with State standards and supply the City with a copy of the final document.

D. All utilities will be stubbed out to the far end of each street for future extension. The project shall utilize existing water, sewer, and storm water 'stub-outs' wherever possible. Water for domestic and fire protection shall be looped through the proposed site. Any 'stub-outs' determined to be not needed for the proposed development or any future development of the subject property shall be abandoned in accordance with the Molalla Standard Specifications for Public Works Construction.

E. All public improvement designs shall meet the requirements of the Molalla Standard Specifications for Public Works Construction as amended by the Public Works Director.

F. General Erosion Control – The applicant shall install, operate, and maintain adequate erosion control measures in conformance with the standards adopted by the City of Molalla and DEQ during the construction of any public/private utility and building improvements until such time as approved permanent vegetative materials have been installed. Applicant or Applicant's Contractor shall be responsible for all erosion control requirements under the 1200-C permit and shall coordinate directly with DEQ for questions related to 1200-C permit compliance.

H. For non-residential uses, all adverse impacts to adjacent properties, such as light, glare, noise, odor, vibration, smoke, dust, or visual impact, are avoided; or where impacts cannot be avoided, they are minimized; and

Findings: The Applicant's submitted application shows landscaping abutting parking areas that limits headlight glare onto adjacent properties. Staff does not anticipate additional adverse impacts to adjacent properties pending the required lighting plan submission meeting standards of MMC 17-3.4.050. Standard is met.

I. The proposal meets all existing conditions of approval for the site or use, as required by prior land use decision(s), as applicable. Note: Compliance with other City codes and requirements, though not applicable land use standards, may be required prior to issuance of building permits. (Ord. 2017-08 §1)

Findings: Proposed improvements to the parking lot, public sidewalk, and Industrial Way satisfy outstanding conditions of previous projects developing this site; P07-2015 and the unnumbered site design review for Fountain Valley. This standard is met.

Exhibit B:

Findings of Fact for CUP03-2022

17-4.4.040 Criteria, Standards, and Conditions of Approval

Findings: The Applicant's submitted application is for a new mobile food unit pod, event space, and new parking. The unenclosed outdoor seating and event space require a conditional use permit. The Applicant's conditional use permit may be granted approval in conjunction with the site design review. Applicable criteria for inclusion and staff responses are as follows:

The Planning Commission shall approve, approve with conditions, or deny an application for a conditional use, including requests to enlarge or alter a conditional use, based on findings of fact with respect to all of the criteria and standards in subsections A and B.

A. **Use Criteria.**

1. The site size, dimensions, location, topography, and access are adequate for the needs of the proposed use, considering the proposed building mass, parking, traffic, noise, vibration, exhaust/emissions, light, glare, erosion, odor, dust, visibility, safety, and aesthetic considerations;

Findings: The Applicant's proposed design met all applicable zoning and design criteria subject to the conditions found in Exhibit A of this staff report. Staff finds the site suitable for the proposed development.

2. The negative impacts of the proposed use, if any, on adjacent properties and on the public can be mitigated through application of other code standards, or other reasonable conditions of approval;

Findings: The Applicant has proposed vegetative screening between vehicle maneuvering areas and parking areas and adjacent properties to limit impacts of glare. The Applicant submitted a Traffic Impact Letter showing that the proposed development would not cause substantial stress to existing roadways and intersections. Staff does not anticipate additional impacts from this use but recommends "as necessary" review after one year of issuance of this conditional use permit to address concerns that may arise within the community.

3. All required public facilities, including water, sanitary sewer, and streets, have adequate capacity or are to be improved to serve the proposal, consistent with City standards; and

Findings: The Applicant's proposed public improvements met all applicable criteria for utilities and streets subject to the conditions found in Exhibit A of this staff report.

4. A conditional use permit shall not allow a use that is prohibited or not expressly allowed under Division II; nor shall a conditional use permit grant a variance without a variance application being reviewed with the conditional use application.

Findings: The Applicant's proposed outdoor seating and unenclosed event space is a conditional use under MMC Chapter 17, Division II within the General Commercial, C-2 zone.

B. **Conditions of Approval.** The City may impose conditions that are found necessary to ensure that the use is compatible with other uses in the vicinity, and that the negative impact of the proposed use on the surrounding uses and public facilities is minimized. These conditions include, but are not limited to, one or more of the following:

Findings: The subject property is surrounded by general commercial (C-2) and heavy industrial (M-2) zoned land and Staff does not anticipate that the proposed use will create adverse effects on existing land uses that would require additional mitigation to conditions required through the site design review process (Exhibit A) and mitigation measures proposed by the Applicant.

Exhibit C:

Consolidated Application Package For SDR05-2022 and CUP03-2022

Planning & Community Development
315 N. Kennel Avenue
Molalla, OR. 97038
(503) 759-0205
communityplanner@cityofmolalla.com

FOR OFFICE USE ONLY:	
Planning File No. : _____	*City Approval:* _____
Date Received: _____ **Fee:** _____	*Title* _____
Land Use Type: II	*Date:* _____
Received by: _____	*Fee Paid:* _____

APPLICATION FOR LAND USE ACTION

Type of Land Use Action Requested: (check all that apply)

- ☐ Annexation
- ☐ Plan Amendment (Proposed Zone_____)
- ☐ Planned Unit Development
- ☒ Site Design Review
- ☐ Variance (list standards to be varied in description
- ☐ Conditional Use
- ☐ Partition (# of lots _____)
- ☐ Subdivision (# of lots _____)
- ☐ Other: _____

Owner/Applicant:

Applicant: AL BORROMEO (503) 793-4195 Phone:

Applicant Address: 1515 W MAIN ST SUITE Q MOLALLA OR 97038 Email:

Owner: AL BORROMEO (503) 793-4195 Phone:

Owner Address: 1515 W MAIN ST SUITE Q MOLALLA OR Email: ALBORROMEO007@GMAIL.COM

Contact for additional info: _____

Property Information:

Address: 1400 FOUNTAIN WAY MOLALLA OR 97038

Assessors Map/Taxlot #: T5S R2E S07 TAX LOT # 1901

Current Use of Site: PARKING LOT

Zoning Designation: C-2

Intended Use: FOOD CART POD

Proposed Action:

- MODIFY EXISTING PARKING AREA TO ACCOMODATE A FOOD CART POD
- CONSTRUCT NEW PARKING AREAS

Proposed Use: FOOD CART POD

Proposed No. of Phases (one each year): _____

Authorizing Signatures:

I hereby certify that the information on this application and attachments are correct and that the property affected by this application is in the exclusive ownership or control of the applicant, or that the applicant has the consent of all partners in ownership of the affected property. An authorization letter from the property owner has been attached in the event that the owner's signature has not been provided below.

Property Owner(s):

Print or Type	Signature
Print or Type	Signature

Applicant(s) or Authorized Agent:

Print or Type	Signature
Print or Type	Signature

The following materials must be submitted with your application or it will not be accepted at the counter. Once taken at the counter, the City has up to 30 days to review the materials submitted to determine if we have everything we need to complete the review. Applicant can verify submittal includes specific materials necessary for the application per checklist.

☐ **3 Copies of Application Form*** completely filled out and signed by the property owner (or person with authority to make decisions on the property.

☐ **Copy of Deed** to verify ownership, easements, etc.

☐ **At least 3 folded** sets of plans*

☐ **At least 3 copies** of narrative addressing application criteria*

☐ **Fee** (along with calculations utilized to determine fee if applicable)

***Please Note** that the required numbers of copies identified on the checklist are required for completeness; however, upon initial submittal applicants are encouraged to submit only 3 copies for completeness review. Prior to completeness, the required number of copies identified on the checklist and one full electronic copy will be required to be submitted.

10-5-22

Dan Zinder, Associate Planner
City of Molalla
117 N Molalla Avenue
PO Box 248
Molalla, Oregon 97038

Dear Mr. Zinder,

The following is a response to the staff comments from the Incompleteness Letter for SDR05-2022 dated May 27, 2022.

MMC 17-4.0.040.B.1 Site Analysis Map

a) The applicant's entire property and the surrounding property to a distance sufficient to determine the location of the development in the city, and the relationship between the proposed development site and adjacent property and development. The property boundaries, dimensions, and gross area shall be identified;

Staff Comments: Show property line of property to the east.

Response: The property line for Tax Lot 1804, Tax Lot 1803, and Tax Lot 1800 have been added to the plan set.

(d) The location and width of all public and private streets, drives, sidewalks, pathways, rights-of-way, and easements on the site and adjoining the site;

Staff Comments: Show locations of existing ped path and bridge.

Response: Location of existing pedestrian path and foot bridge over Bear Creek have been added to the plan set.

MMC 17-4.0.040.B.2 Proposed Site Plan

a) The proposed development site, including boundaries dimensions and gross areas;

Staff Comments: I'm assuming that the applicant intends to define the site as the entire parcel? If not, MMC 17-5.1.020 spells out how site areas may be defined and it should be identified on the site plan.

Include site gross area calcs on the site plan sheet.

Response: Applicant will define the site as the entire 3.30 Acre Parcel. Gross Area Calculations have been added to the Site Plan Sheet.

d) The location and dimensions of all proposed public and private streets, drives, rights-of-way, and easements:

Staff Comments: Identify approach width for all parking areas and widths for Fountain Way.

Response: Dimension for all parking approaches have been add to the site plan. Width for Fountain Way have been added to the site plan.

e) he location and dimensions of all existing and proposed structures, utilities, pavement, and other improvements on the site. Setback dimensions for all existing and proposed buildings shall be provided on the site plan;

Staff Comments: Are all proposed pads the same size? Pad #6 measures out at different dimensions from the other ones. Identify dimensions of Pad #6 if different from the others.

Response: Pad #6 is the same dimension as other proposed food carts. This adjustment has been corrected in the plan set.

(j)Outdoor recreation spaces, common areas, plazas, outdoor seating, street furniture, and similar improvements;

Staff Comments: Generally identify outdoor seating areas? Will there be additional seating along the corridor with the food carts? Add landscaping square footage and proposed plantings for added landscaping areas and also include calcs (size) for existing landscaped area in site area**.**

Response: General outdoor seating area and a preliminary planting plan has been added to the site plan. Square footage of existing and proposed landscaping has been added to the gross area calcs on the site plan.

(k)Location, type, and height of outdoor lighting;

Staff Comments: Outdoor lighting will be required for parking areas and walkways. Existing/proposed outdoor lighting should be identified on the site plan.

Response: Existing lighting has been added to the existing conditions sheet. Proposed light poles for parking and wall mounted lights for the food cart pod have been added to the site plan.

MMC 17-4.0.040.B.9 Other information determined by Planning Official

Staff Comments: Due to the proposed outdoor uses a conditional use permit (CUP) is required with this application. Applicant did not submit narrative nor fee materials for the CUP. See provided notes from the pre-app PRE15-2021 for requirements.

Response: A CUP narrative is enclosed in this resubmittal for incompleteness and fee materials will be paid by the owner.

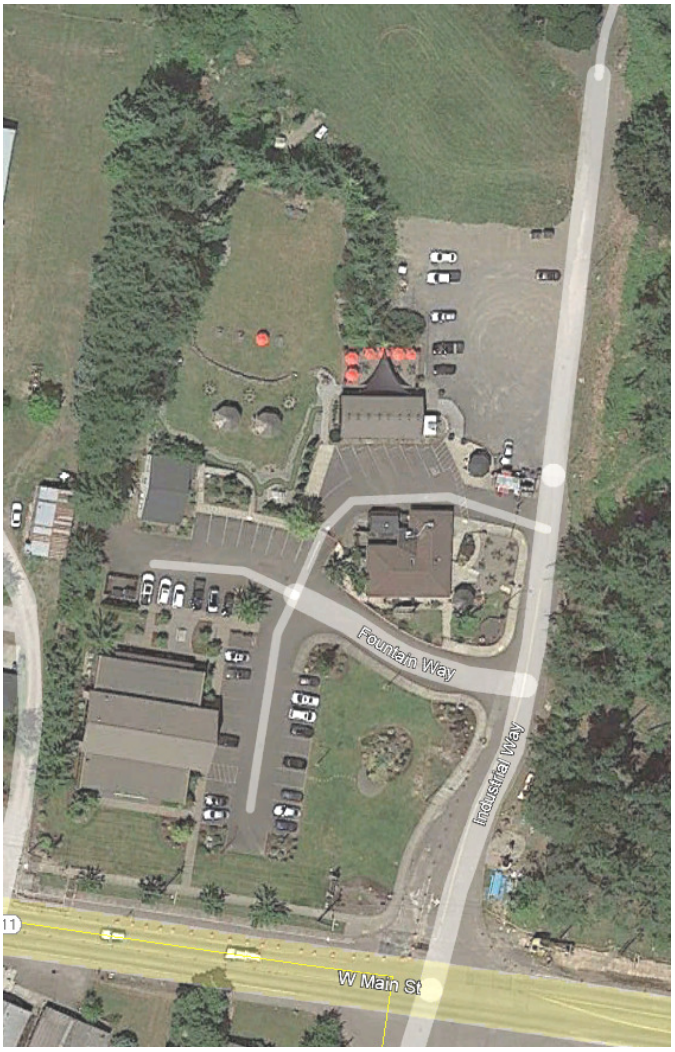
Best regards,

Kelli A. Grover, P.E.

Project Narrative
for

Fountain Way Food Cart Pod and Parking

1400 W Main
Molalla, OR 97038

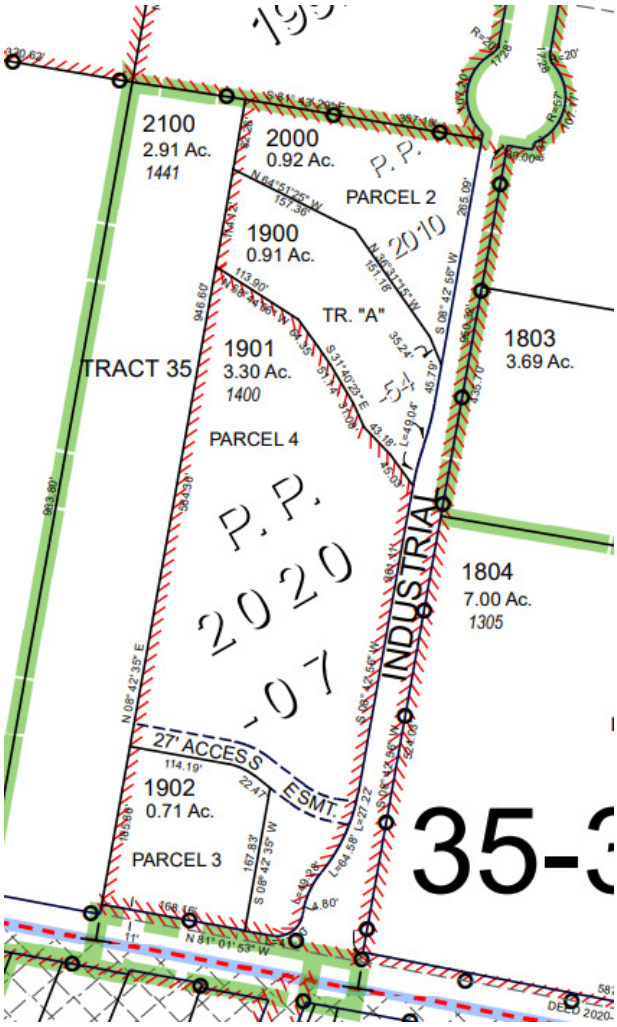


Owner Originally Submitted: 4/29/22

Table of Contents

I. Property and Project Description

The project site is located within a portion of the property located at 1400 West Main Street, Molalla. (Township 5 South, Range 2 East, Section 7A, tax lot 1901) of the Willamette Meridian). The site is zoned C-2, General Commercial which allows for food carts as a conditional use 17-2.2.030. The project site has several existing buildings that offer food services including a tap room and a brewery building and a sleep health related business. Additionally there is one existing food cart on the premises. The project site has existing parking and site improvements associated with these existing businesses.



The applicant proposes to add up to five new mobile food cart units that are generally 18ft long by 8ft wide each. No site permanent buildings are proposed on the site. Additional parking is required per code 17.-3.5. The applicant proposed to add two new parking areas. One parking lot at the south easterly corner of the parcel will have 16 new parking spaces,

and the second parking lot will be north east of the existing tap room and will have 17 new parking spaces.

The mobile food cart units are proposed to be located within the gated interior area between the existing tap room building and brewery building, see enclosed site plans. This area is paved and currently provides vehicular parking for the existing businesses. This parking will be replaced with the new parking areas.

II. Application Approval Requests

Consistent with SDC 17.50.00, "Intent" of the I-2 zone which acknowledges that the I-2 zone does not depend on high-visibility uses and where the Design Standards are less restrictive than those applied to other zones. Therefore, the applicant has requested Design Deviations to those mandatory Design Standards that are inapplicable to the proposed use and because of its location at the rear of the property.

The applicant requests the following approvals with this application:

- Type III Site Design Review per 17-4.2.050
- Conditional Use Permit per 17-4.2.030

III. Items Submitted With This Application

- Exhibit A - Project Narrative
- Exhibit B – Site Plans
- Exhibit C – Preliminary Stormwater Report
- Exhibit D- Traffic Analysis Letter

IV. Review of Applicable Approval Criteria

Development applications are required to meet standards set forth in the Molalla Development Code, codified as Title 17 of the Municipal Code.

17-4.2.050 Approval Criteria

An application for Site Design Review shall be approved if the proposal meets all of the following criteria. The Planning Official, in approving the application, may impose reasonable conditions of approval, consistent with the applicable criteria.

A. The application is complete, in accordance with Section 17-4.2.040;

Response: Application forms and information along with the plan set as required within MMC section 17-4.2.040 are provided with this submittal.

B. The application complies with all of the applicable provisions of the underlying Zoning District (Division II), including, but not limited to, building and yard setbacks, lot area and dimensions, density and floor area, lot coverage, building height, building orientation, architecture, and other applicable standards;

Response: The proposed structures are mobile and generally standards for buildings do not apply to the proposed food carts, however the proposed improvements comply with Zoning District C-2 (General Commercial) standards as set forth MMC Division 2.

C. The proposal includes required upgrades, if any, to existing development that does not comply with the applicable zoning district standards, pursuant to Chapter 17-1.4 Nonconforming Situations;

Response: The applicant does not anticipate any Nonconforming Situations.

D. The proposal complies with all of the Development and Design Standards of Division III, as applicable, including, but not limited to:

1. Chapter 17-3.3 Access and Circulation,
2. Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting,
3. Chapter 17-3.5 Parking and Loading,
4. Chapter 17-3.6 Public Facilities, and
5. Chapter 17-3.7 Signs;

Response: Compliance with these Division 3 Design Standards is outlined below.

E. For non-residential uses, all adverse impacts to adjacent properties, such as light, glare, noise, odor, vibration, smoke, dust, or visual impact, are avoided; or where impacts cannot be avoided, they are minimized; and

Response: Due to location of proposed food cart pod the project is not anticipating any adverse impacts to the adjacent properties.

F. The proposal meets all existing conditions of approval for the site or use, as required by prior land use decision(s), as applicable

17-4.4.030 Application Submission Requirements

In addition to the submission requirements for a Type III review under Section 17-4.1.040, applications for conditional use permits shall include a description of existing conditions, a site plan, and information on any existing and any proposed restrictions or covenants. (For a more detailed description of each item, please refer to Section 17-4.2.040 Application Submission Requirements.) An application for a conditional use permit shall also contain a narrative report or letter responding to the applicable approval criteria in Section 17-4.4.040. (Ord. 2017-08 §1)

Response: The application presented herein includes plan sets and documents which meet the submission requirements per the respective code sections.

Title 17 Division 2 Zoning Regulations

17-2.2.030 Allowed Uses

A. Uses Allowed in Base Zones. Allowed uses include those that are permitted, those that are permitted subject to special use standards, and those that are allowed subject to approval of a conditional use permit, as identified by Table 17-2.2.030. Allowed uses fall into four general categories: Residential, Public and Institutional, Commercial, and Other. If Table 17-2.2.030 does not list a specific use, and Division V Definitions does not identify the use or include it as an example of an allowed use, the City may find that use is allowed, or is not allowed, by following the procedures of Section 17-1.5.010 Code Interpretations. Uses not listed in Table 17-2.2.030 and not found to be similar to an allowed use are prohibited.

Response: Per Table 17-2.2.030 "Mobile Food Units, Permanent" are "Permitted with Special Use Standards" within the General Commercial C-2 Zone.

B. Permitted Uses and Uses Permitted Subject to Special Use Standards. Uses listed as "Permitted (P)" are allowed provided they conform to Section 17-2.2.040 Lot and Development Standards. Uses listed as "Permitted Subject to Special Use Standards (S)" are allowed, provided they conform to the Chapter 17-2.3 Special Use Standards and Section 17-2.2.040 Lot and Development Standards. Uses listed as "Not Allowed (N)" are prohibited. Uses not listed but similar to those allowed may be permitted pursuant to Section 17-1.5.010.

Response: Per Table 17-2.2.030 "Mobile Food Units, Permanent" are "Permitted with Special Use Standards" within the General Commercial C-2 Zone.

C. Conditional Uses. Uses listed as "Conditional Use Permit Required (CU)" are allowed subject to the requirements of Chapter 17-4.4 Conditional Use Permits.

Response: Per Preapplication meeting notes and MMC Section 17-2.2.030 Allowed Uses Item H "Outdoor uses and Enclosed activities" a Conditional Use Permit is Required.

D. Uses Regulated by Overlay Zones. Notwithstanding the provisions of Chapter 17-2.2, additional standards may apply to uses within overlay zones. In addition, an overlay zone may allow exceptions to some standards of the underlying zone. See Chapter 17-2.4.

Response: Site is not known to be in an applicable overlay zone, criteria does not apply.

E. Master Planned Developments. Uses that are not otherwise allowed by the underlying zone may be permitted through the Master Planned Development procedure under Chapter 17-4.8.

Response: This criteria does not apply.

F. Accessory Uses. Uses identified as "Permitted (P)" are permitted as primary uses and as accessory uses. For information on other uses that are customarily allowed as accessory, please refer to the description of the Use Categories in Division V Definitions.

Response: Per Table 17-2.2.030 "Mobile Food Units, Permanent" are "Permitted with Special Use Standards" within the General Commercial C-2 Zone.

G. Mixed-Use. Uses allowed individually are also allowed in combination with one another, in the same structure, or on the same site, provided all applicable development standards and building code requirements are met.

Response: Proposed Food Cart Pod will share site with existing onsite restaurants.

H. Outdoor Uses and Unenclosed Activities. Notwithstanding the provisions of Table 17-2.2.030, any use, except for an allowed accessory use, that occurs primarily outside (i.e., not within a permitted building) requires a Conditional Use Permit under Chapter 17-4.4. Examples of outdoor uses and unenclosed activities that may or may not be considered accessory uses, depending on their location and size relative to other uses on the same property, include, but are not limited to, automotive services, vehicle and equipment repair, fueling, drive-in restaurants, drive-up windows and similar drive-through facilities, automatic teller machines, kiosks, outdoor assembly and theaters, outdoor markets, and similar uses.

Response: Per Preapplication meeting notes and MMC Section 17-2.2.030 Allowed Uses Item H "Outdoor uses and Enclosed activities" a Conditional Use Permit is Required.

I. Temporary Uses. Temporary uses occur for not longer than 45 days, in any calendar year. Uses may be permitted on a temporary basis, subject to review and approval under Chapter 17-4.2 Site Design Review. Special Use Standards listed in Chapter 17.2.3 may also apply to temporary uses.

Response: This criteria is not applicable

J. Disclaimer. Property owners are responsible for verifying whether a specific use is allowed on a particular site. Submittal of a Zoning Checklist for review and approval by the Planning Official shall be required in order to determine whether a use is allowed on a given site, and whether further land use review is required.

Response: Per Table 17-2.2.030 "Mobile Food Units, Permanent" are "Permitted with Special Use Standards" within the General Commercial C-2 Zone. Applicant will obtain a City of Molalla "Zoning Verification Letter" from the Planning Department.

17-2.2.040 Lot and Development Standards

A. Development Standards. Section 17-2.2.040 provides the general lot and development standards for each of the City's base zoning districts. The standards of Section 17-2.2.040 are organized into two tables: Table 17-2.2.040.D applies to residential zones, and Table 17-2.2.040.E applies to non-residential zones.

Response: Where applicable the proposed project will conform to the standards set for "C Zones" in Table 17-2.2.040.E of the MMC.

B. Design Standards. City standards for Access, Circulation, Site and Building Design, Parking, Landscaping, Fences and Screening, and Public Improvements, among others, are located in Division III. Notwithstanding the provisions of Section 17-2.2.040 and Division III, different standards may apply in specific locations, such as at street intersections, within overlay zones, adjacent to natural features, and other areas as may be regulated by this Code or subject to state or federal requirements. For requirements applicable to the City's overlay zones, please refer to Chapter 17-2.4.

Response: The proposed project will conform to the City standards for Access, Circulation, Parking, Landscaping, Fences and Screening, and Public Improvements as set out in Division 3.

C. Disclaimer. Property owners are responsible for verifying whether a proposed development meets the applicable standards of this Code. Submittal of a Zoning Checklist for review and approval by the Planning Official may be required in order to determine whether use is allowed on a given site, and whether further land use review is required.

Response: Disclaimer has been noted and upon request a Zoning Checklist shall be submitted. Per Table 17-2.2.030 "Mobile Food Units, Permanent" are "Permitted with Special Use Standards" within the General Commercial C-2 Zone. Applicant will obtain a City of Molalla "Zoning Verification Letter" from the Planning Department

D. Lot and Development Standards for Residential Districts. The development standards in Table 17-2.2.040.D apply to all new development as of November 10, 2017 in residential zones.

Response: This criteria is not applicable.

E. Lot and Development Standards for Non-Residential Districts. The development standards in Table 17-2.2.040.E apply to all new development as of November 10, 2017 in the City's non-residential zones, as follows.

Response: Where applicable this project will conform to the standards set for "C Zones" in Table 17-2.2.040.E of MMC.

17-2.3.220 Mobile Food Units

A. Applicability. No mobile food unit may operate within the city limits of Molalla except as permitted in this chapter, or as authorized by an event permit issued by the City of Molalla.

B. General Requirements. The following standards apply to all mobile food units operating within the City of Molalla, except as authorized by an event permit issued by the City of Molalla.

1. Mobile food units shall be permitted as an accessory use in all zones in which they are "Permitted Subject to Special Use Standards (S)."

Response: Per Table 17-2.2.030 "Mobile Food Units, Permanent" are "Permitted with Special Use Standards" within the General Commercial C-2 Zone, criteria is met.

2. Mobile food units shall primarily sell food items.

Response: The proposed food cart pod will adhere to this standard, this criteria can be satisfied through condition of approval.

3. Mobile food units may not sell, offer, provide or in any way transfer cannabis in any form.

Response: The proposed food cart pod will adhere to this standard, this criteria can be satisfied through condition of approval.

4. Mobile food units are subject to inspection by City of Molalla Code Enforcement and Molalla Fire District personnel on official business.

Response: Applicant acknowledges this standard., this criteria can be satisfied through condition of approval.

5. All mobile food units must have a valid Clackamas County mobile food unit license.

Response: The proposed food cart pod will adhere to this standard, this criteria can be satisfied through condition of approval.

6. All mobile food units must have a valid City of Molalla business license.

Response: The proposed food cart pod will adhere to this standard, this criteria can be satisfied through condition of approval.

7. Mobile food units shall maintain continuous compliance with applicable federal, state, county, and city standards.

Response: The proposed food cart pod will adhere to this standard, this criteria can be satisfied through condition of approval.

8. Discharge or leakage draining into the stormwater or wastewater system is prohibited. Wastewater shall not be dumped or spilled onto or into the ground, streets, stormwater, or wastewater systems. All liquid waste from the waste tank or from cleaning activities shall be captured and properly disposed of.

Response: Proposed food carts will be connected to existing on site sanitary sewer system. A new waste waterline will extend through the proposed pod with individual laterals connections and an oil water separator will be located on the downstream end of the sewer line before connecting into the existing private sewer, this criteria can be satisfied through condition of approval.

9. All permanent utility lines shall be placed underground. Temporary utilities, lines and tanks shall be placed underground or otherwise screened, covered, or hidden from view from the right-of-way as to minimize visual impacts and prevent unsafe conditions.

Response: New permanent sewer and water utility lines will be installed underground as indicated on the plans. Proposed food cart pod will use existing on site power. All other utility connections to carts will concealed, from the right of way per this regulation, this criteria can be satisfied through condition of approval.

10. Power connections may not be connected by overhead wires to the individual mobile food units

Response: Power connections will not be connected via overhead wires, this criteria can be satisfied through condition of approval.

11. Additional impervious surfaces must comply with stormwater and grading design standards.

Response: Proposed new impervious areas conform to the stormwater and grading standards as set out in the 2020 Molalla Standards Specifications for Public Works Construction, this criteria can be satisfied through condition of approval.

12. Mobile food units, equipment, customer service areas, or any other associated object may not be located within the public right-of-way.

Response: No new proposed carts will be in the right-of-way, this criteria can be satisfied through condition of approval.

13. Mobile food unit owners are responsible for maintaining the mobile food unit in a neat and clean condition, including, but not limited to: an exterior that is clean and free from rust, peeling paint, and visibly worn or broken exterior equipment (including accessory equipment) and any other defect that reasonably detracts from the public's aesthetic appreciation of the unit or accessories thereto.

Response: The proposed food cart pod will adhere to this standard, this criteria can be satisfied through condition of approval.

14. Mobile food unit owners and property owners are responsible for maintaining the property upon which a mobile food unit operates in a neat and clean condition, including, but not limited to: free from trash, waste, broken or visibly worn equipment and furnishings, or any other defect that reasonably detracts from the public's aesthetic appreciation of the site.

Response: Owner and the proposed food cart pod will adhere to this standard, this criteria can be satisfied through condition of approval.

15. Mobile food units must be self-contained and connect to individual wastewater and potable water holding tanks at all times, except as authorized in this chapter for a mobile food unit pod.

Response: This project is a mobile food pod and proposes that each unit will connect to on site water and wastewater system.

C. Design and Operation Standards.

1. Temporary Mobile Food Units. Mobile food units that operate on a property for eight hours or less in a 24-hour period shall comply with the following:

2. Single or Double Permanent Mobile Food Units. Mobile food units that operate on a property that is approved for two or less permanent mobile food units, for more than eight hours in a 24-hour period shall comply with the following:

Response: Sections 1 and 2 listed above are not applicable to this Project

3. Mobile Food Unit Pods. A site that is approved for three or more food units to operates on the property for more than eight hours in a 24-hour period shall comply with the following:

a. Site, Unit, and Accessory Standards.

(1) Except as outlined in this ordinance, all mobile food unit pods shall comply with the applicable provisions of MMC Title 17 for commercial activities classified as retail sales and commercial services.

(2) Shall be fully enclosed by a fence, wall, exterior building wall, or combination thereof.

i. Notwithstanding MMC Section 17-3.4.040, the design and dimensions of fences or walls used to satisfy the requirement of this section are subject to approval by the Planning Official.

ii. The Planning Official shall base their approval of a proposed wall or fence on a balance of the Community Design Standards in MMC Section 17-3.4.040, the location of the parcel and surrounding uses, and the aesthetics of the proposal.

Response: Proposed site is enclosed by existing fences and existing build. The existing driveway will be converted to sidewalk upon completion of the project and fencing will be put in place along Industrial Way for the food cart section of the road to screen the right-of-way side of project. The proposed improvements will satisfy this criteria. Criteria is met.

(3) Must supply at least one public on-site restroom facility for every two mobile food units, these may be portable, part of an existing building on site, or constructed in accordance with the State of Oregon Building Code.

Response: Proposed Food Cart Pod will have a total of 6 carts. Food cart users will have access to 5 existing His/Hers facilities located within the existing Brewery, Tap House and Sleep Health Office, this criteria is satisfied.

(4) A pod may choose to connect to city water, city sewer, or a combination thereof, but the entire pod must be uniform in this election.

Response: Project will connect to the onsite water service and connect to the existing sanitary line on site. The section of the sanitary sewer servicing the units will be constructed with a grease interceptor. This criteria is satisfied.

(5) A pod must connect to a permanent power supply, generators are prohibited unless for emergency use.

Response: Food Cart will connect to existing onsite power. This criteria is satisfied.

D. Process.

1. Temporary mobile food units are subject to Type I Site Plan and Design Review for each property upon which they operate.

Response: This section and related Subsections are N/A to this project.

2. Single or double mobile food units that are accessory to a primary use are subject to Type I Site Plan and Design Review.

Response: This section and related Subsections are N/A to this project.

3. Mobile food unit pods and single or double mobile food units that are the primary use on a property are subject to Type II or Type III Site Design Review in accordance with MMC Chapter 17-4.2.

Response: Applicant has submitted site design review application.

a. A copy of Clackamas County Health Department mobile food unit application and permit must be attached to your application.

Response: This criteria can be satisfied through condition.

b. System development charges are applicable to mobile food unit pods and single or double mobile food units that are the primary use on a property.

Response: Project will replace existing onsite meter with a new meter if required by Oregon Specialty Plumbing Code, this criteria can be satisfied through condition.

E. **Fees.** Fees will be set by resolution of the City Council from time to time.

F. **Enforcement and Penalties.** Violations of this section are subject to the enforcement and penalty provisions of MMC Title 17.

G. **Severability.** In the event any provisions of this section shall be held invalid or unenforceable by any court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision.

Title 17 Division 3 Community design Standards

17-3.3.030 Vehicular Access and Circulation

B. **Permit Required.** Vehicular access to a public street (e.g., a new or modified driveway connection to a street or highway) requires an approach permit approved by the applicable roadway authority.

Response: The applicant requests a concurrent review under the Type III Design Review for the proposed access to the north easterly parking lot from S. Industrial Way. Criteria can be satisfied through condition.

C. **Traffic Study Requirements.** The City, in reviewing a development proposal or other action requiring an approach permit, may require a traffic impact analysis, pursuant to Section 17-3.6.020, to determine compliance with this Code.

Response: Per Pre-Application Meeting City will require a Traffic Analysis Letter (TAL) in place of a Traffic Impact Analysis. Will meet requirements set out in section 17-3.6.020 of the Molalla City Code.

D. **Approach and Driveway Development Standards.** Approaches and driveways shall conform to all of the following development standards:

1. The number of approaches on higher classification streets (e.g., collector and arterial streets) shall be minimized; where practicable, access shall be taken first from a lower classification street.

Response: N/A. Per City of Molalla TSP Figure 8: Functional Classification Plan, Industrial Way is Classified as a Neighborhood Street, the proposed access meets the driveway separation requirements for this classification of road.

2. Approaches shall conform to the spacing standards of subsections E and F, below, and shall conform to minimum sight distance and channelization standards of the roadway authority.

Response: N/A. Per City of Molalla TSP Figure 8: Functional Classification Plan, Industrial Way is Classified as a Neighborhood Street

3. Driveways shall be paved and meet applicable construction standards. Where permeable paving surfaces are allowed or required, such surfaces shall conform to applicable Public Works Design Standards.

Response: Proposed driveway design adheres to the standards set forth Section 2.2 of the Molalla Public Work Design Standards. This criteria is met.

4. The City Engineer may limit the number or location of connections to a street, or limit directional travel at an approach to one-way, right-turn only, or other restrictions, where the roadway authority requires mitigation to alleviate safety or traffic operations concerns.

Response: Per the pre-application notes one access is allowed on Industrial Way as proposed in the attached plans. This criteria is met.

5. Where the spacing standards of the roadway authority limit the number or location of connections to a street or highway, the City Engineer may require a driveway extend to one or more edges of a parcel and be designed to allow for future extension and inter-parcel circulation as adjacent properties develop. The City Engineer may also require the owner(s) of the subject site to record an access easement for future joint use of the approach and driveway as the adjacent property(ies) develop(s).

Response: N/A

6. Where applicable codes require emergency vehicle access, approaches and driveways shall be designed and constructed to accommodate emergency vehicle apparatus and shall conform to applicable fire protection requirements. The City Engineer may restrict parking, require signage, or require other public safety improvements pursuant to the recommendations of an emergency service provider.

Response: Existing access to Fountain Way from Industrial Way has adequate space to accommodate emergency vehicle apparatus turn around. This criteria is met.

7. As applicable, approaches and driveways shall be designed and constructed to accommodate truck/trailer-turning movements.

Response: N/A

8. Except where the City Engineer and roadway authority, as applicable, permit an open access with perpendicular or angled parking, driveways shall accommodate all projected vehicular traffic on-site without vehicles stacking or backing up onto a street.

Response: All proposed parking will be perpendicular and will meet minimum parking requirements as set forth in section. This criteria is met.

9. Driveways shall be designed so that vehicle areas, including, but not limited to, drive-up and drive-through facilities and vehicle storage and service areas, do not obstruct any public right-of-way.

Response: Proposed parking will not obstruct public right-of-way. This criteria is met.

10. Approaches and driveways shall not be wider than necessary to safely accommodate projected peak hour trips and turning movements, and shall be designed to minimize crossing distances for pedestrians.

Response: Proposed driveway will not be wider than maximum commercial driveway width as set forth in the Molalla Public Work Design Standards. This criteria is met.

11. As it deems necessary for pedestrian safety, the City Engineer, in consultation with the roadway authority, as applicable, may require that traffic-calming features, textured driveway surfaces (e.g., pavers or similar devices), curb extensions, signage or traffic control devices, or other features, be installed on or in the vicinity of a site as a condition of development approval.

Response: No additional pedestrian safety feature are anticipated for this project.

12. Construction of approaches along acceleration or deceleration lanes, and along tapered (reduced width) portions of a roadway, shall be avoided; except where no reasonable alternative exists and the approach does not create safety or traffic operations concern.

Response: N/A

13. Approaches and driveways shall be located and designed to allow for safe maneuvering in and around loading areas, while avoiding conflicts with pedestrians, parking, landscaping, and buildings.

Response: Proposed project does not propose any loading areas, this criteria is not applicable.

14. Where sidewalks or walkways occur adjacent to a roadway, driveway aprons constructed of concrete shall be installed between the driveway and roadway edge. The roadway authority may require the driveway apron be installed outside the required sidewalk or walkway surface, consistent with Americans with Disabilities Act (ADA) requirements, and to manage surface water runoff and protect the roadway surface.

Response: Proposed approach on Industrial Way will be fitted with a concrete apron and be consistent with current ADA requirements. This criteria is met.

15. Where an accessible route is required pursuant to ADA, approaches and driveways shall meet accessibility requirements where they coincide with an accessible route.

Response: Proposed access and driveways will be consistent with current ADA accessibility requirements. This criteria is met.

16. The City Engineer may require changes to the proposed configuration and design of an approach, including the number of drive aisles or lanes, surfacing, traffic-calming features, allowable turning movements, and other changes or mitigation, to ensure traffic safety and operations.

Response: This criteria can be satisfied through condition of approval.

17. Where a new approach onto a state highway or a change of use adjacent to a state highway requires ODOT approval, the applicant is responsible for obtaining ODOT approval. The City Engineer may approve a development conditionally, requiring the applicant first obtain required ODOT permit(s) before commencing development, in which case the City will work cooperatively with the applicant and ODOT to avoid unnecessary delays.

Response: Proposed approaches and driveways are not situated on State Highways. This criteria is met.

18. Where an approach or driveway crosses a drainage ditch, canal, railroad, or other feature that is under the jurisdiction of another agency, the applicant is responsible for obtaining all required approvals and permits from that agency prior to commencing development.

Response: Proposed approaches and driveways do not cross features mention above. This criteria is met.

19. Where a proposed driveway crosses a culvert or drainage ditch, the City Engineer may require the developer to install a culvert extending under and beyond the edges of the driveway on both sides of it, pursuant to applicable Public Works Design Standards.

Response: Proposed approaches and driveways do not cross a culvert of drainage ditch. This criteria is met.

20. Except as otherwise required by the applicable roadway authority or waived by the City Engineer temporary driveways providing access to a construction site or staging area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets.

Response: Project will follow all erosion control standards set forth in section 1.18.4 of the Molalla Public Work Design Standards, including use of temporary construction entrances. This criteria is met.

21. Development that increases impervious surface area shall conform to the storm drainage and surface water management requirements of Section 17-3.6.05

Response: Project will construct new impervious parking areas which adhere to this standard.

E. **Approach Separation from Street Intersections.** Except as provided by subsection H, minimum distances shall be maintained between approaches and street intersections consistent with the current version of the Public Works Design Standards and Transportation System Plan.

Response: Commercial or Industrial developments, driveway access shall be a minimum of 100 feet from the nearest intersection (as measured from the centerline of drive way to the near face of curb at intersection) unless otherwise approved by in writing by the City's authorized representative. The centerline of the proposed driveway is 145 feet form the inner curb of Fountain Way; therefore, this code is satisfied.

F. **Approach Spacing.** Except as provided by subsection H or as required to maintain street operations and safety, the following minimum distances shall be maintained between approaches consistent with the current version of the Public Works Design Standards and Transportation System Plan.

Response: 2.2.26.i.3 (DRIVEWAYS) of the 2020 Molalla Standard Design Standards and Standard Detail R-1095: Minimum and maximum driveway widths for a Commercial driveway are 30' and 40' respectively. The proposed driveway width is 30 feet; therefore, this code is satisfied.

G. **Vision Clearance.** No visual obstruction (e.g., sign, structure, solid fence, or shrub vegetation) greater than 2.5 feet in height shall be placed in "vision clearance areas" at street intersections.. The minimum vision clearance area may be modified by the Planning Official through a Type I procedure, upon finding that more or less sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.). Placement of light poles, utility poles, and tree trunks should be avoided within vision clearance areas.

Response: Proposed approaches will meet this standard. This criteria is met.

H. **Exceptions and Adjustments.** The City Engineer may approve adjustments to the spacing standards of subsections E and F, above, where an existing connection to a City street does not meet the standards of the roadway authority and the proposed development moves in the direction of code compliance. The Planning Official through a Type II procedure may also approve a deviation to the spacing standards on City streets where it finds that mitigation measures, such as consolidated access (removal of one access), joint use driveways (more than one property uses same access), directional limitations (e.g., one-way), turning restrictions (e.g., right-in/right-out only), or other mitigation alleviate all traffic operations and safety concerns.

Response: The proposed project does not anticipate the need for any exceptions or adjustments.

I. **Joint Use Access Easement and Maintenance Agreement.** Where the City approves a joint use driveway, the property owners shall record an easement with the deed allowing joint use of and cross access between adjacent properties. The owners of the properties agreeing to joint use of the driveway shall record a joint maintenance agreement with the deed, defining maintenance responsibilities of property owners. The applicant shall provide a fully executed copy of the agreement to the City for its records, but the City is not responsible for maintaining the driveway or resolving any dispute between property owners. (Ord. 2017-08 §1)

Response: The proposed area to be used for the food cart pod is under common ownership with the remaining portions of the parcel. No Joint Use or Access agreement is proposed. This criteria is not applicable.

17-3.3.040 Pedestrian Access and Circulation

B. Standards. Developments shall conform to all of the following standards for pedestrian access and circulation as generally illustrated in Figure 17-3.3-3:

1. Continuous Walkway System. A pedestrian walkway system shall extend throughout the development site and connect to adjacent sidewalks, if any, and to all future phases of the development, as applicable

Response: Project will use existing site on circulation walkways with a new pedestrian walkway attached to the proposed parking.

2. Safe, Direct, and Convenient. Walkways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas, playgrounds, and public rights-of-way conforming to the following standards:

a. The walkway is reasonably direct when it follows a route that does not deviate unnecessarily from a straight line or it does not involve a significant amount of out-of-direction travel.

b. The walkway is designed primarily for pedestrian safety and convenience, meaning it is reasonably free from hazards and provides a reasonably smooth and consistent surface and direct route of travel between destinations. The Planning Official may require landscape buffering between walkways and adjacent parking lots or driveways to mitigate safety concerns.

c. The walkway network connects to all primary building entrances, consistent with the building design standards of Chapter 17-3.2 and, where required, Americans with Disabilities Act (ADA) requirements.

Response: Project will use existing site on circulation walkways with a new pedestrian walkway attached to the proposed parking. New site walkways will adhere to these standards, Criteria can be satisfied through condition.

3. Vehicle/Walkway Separation. Except as required for crosswalks, per subsection 4, below, where a walkway abuts a driveway or street it shall be raised six inches and curbed along the edge of the driveway or street. Alternatively, the Planning Official may approve a walkway abutting a driveway at the same grade as the driveway if the walkway is physically separated from all vehicle-maneuvering areas. An example of such separation is a row of bollards (designed for use in parking areas) with adequate minimum spacing between them to prevent vehicles from entering the walkway.

Response: Criteria can be satisfied through condition if necessary.

4. Crosswalks. Where a walkway crosses a parking area or driveway ("crosswalk"), it shall be clearly marked with contrasting paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrasting material). The crosswalk may be part of a speed table to improve driver-visibility of pedestrians. Painted or thermo-plastic striping and similar types of non-permanent applications are discouraged, but may be approved for lesser used crosswalks not exceeding 24 feet in length.

Response: Project has no planned sidewalks this criteria is .

5. Walkway Width and Surface. Walkways, including access ways required for subdivisions pursuant to Chapter 17-4.3, shall be constructed of concrete, asphalt, brick or masonry pavers, or other durable surface, as approved by the City Engineer, and not less than six feet wide. Multi-use paths (i.e., designed for shared use by bicyclists and pedestrians) shall be concrete or asphalt and shall conform to the current version of the Public Works Design Standards and Transportation System Plan.

Response: No additional proposed walkways are proposed on the interior site. This criteria does not apply.

6. Walkway Construction (Private). Walkway surfaces may be concrete, asphalt, brick or masonry pavers, or other City-approved durable surface meeting ADA requirements. Walkways shall be not less than six feet in width in commercial and mixed use developments and where access ways are required for subdivisions under Division IV.

Response: Proposed walk will adhere to this standard and current ADA requirements.

7. Multi-Use Pathways. Multi-use pathways, where approved, shall be a minimum width and constructed of materials consistent with the current version of the Public Works Design Standards and Transportation System Plan.

Response: N/A no multi use paths are proposed for this project.

17-3.4.030 Landscaping and Screening

A. General Landscape Standard. All portions of a lot not otherwise developed with buildings, accessory structures, vehicle maneuvering areas, or parking shall be landscaped.

Response: Proposed areas outside planned parking will be landscaped in accordance with these standards .

B. Minimum Landscape Area. All lots shall conform to the minimum landscape area standards of the applicable zoning district, as contained in Tables 17-2.2.040.D and 17-2.2.040.E. The Planning Official, consistent with the purposes in Section 17-3.4.010, may allow credit toward the minimum landscape area for existing vegetation that is retained in the development.

Response: Per Table 17-2.040.E. this project will have a minimum of 5% site area landscaping.

C. Plant Selection. A combination of deciduous and evergreen trees, shrubs, and ground covers shall be used for all planted areas, the selection of which shall be based on local climate, exposure, water availability, and drainage conditions, among other factors. When new vegetation is planted, soils shall be amended and irrigation shall be provided, as necessary, to allow for healthy plant growth. The selection of plants shall be based on all of the following standards and guidelines:

1. Use plants that are appropriate to the local climate, exposure, and water availability. The presence of utilities and drainage conditions shall also be considered.

2. Plant species that do not require irrigation once established (naturalized) are preferred over species that require irrigation.

3. Trees shall be not less than two-inch caliper for street trees and one and one-half-inch caliper for other trees at the time of planting. Trees to be planted under or near power lines shall be selected so as to not conflict with power lines at maturity.

4. Shrubs shall be planted from five-gallon containers, minimum, where they are for required screens or buffers, and two-gallon containers minimum elsewhere.

5. Shrubs shall be spaced in order to provide the intended screen or canopy cover within two years of planting.

6. All landscape areas, whether required or not, that are not planted with trees and shrubs or covered with allowable non-plant material, shall have ground cover plants that are sized and spaced to achieve plant coverage of not less than 75 percent at maturity.

7. Bark dust, chips, aggregate, or other non-plant ground covers may be used, but shall cover not more than 35 percent of any landscape area. Non-plant ground covers cannot be a substitute for required ground cover plants.

8. Where stormwater retention or detention, or water quality treatment facilities are proposed, they shall meet the requirements of the current version of the Public Works Design Standards.

9. Existing mature trees that can thrive in a developed area and that do not conflict with other provisions of this Code shall be retained where specimens are in good health, have desirable aesthetic characteristics, and do not present a hazard.

10. Landscape plans shall avoid conflicts between plants and buildings, streets, walkways, utilities, and other features of the built environment.

11. Evergreen plants shall be used where a sight-obscuring landscape screen is required.

12. Deciduous trees should be used where summer shade and winter sunlight is desirable.

13. Landscape plans should provide focal points within a development, for example, by preserving large or unique trees or groves or by using flowering plants or trees with fall color.

14. Landscape plans should use a combination of plants for seasonal variation in color and yearlong interest.

15. Where plants are used to screen outdoor storage or mechanical equipment, the selected plants shall have growth characteristics that are compatible with such features.

16. Landscape plans shall provide for both temporary and permanent erosion control measures, which shall include plantings where cuts or fills, including berms, swales, stormwater detention facilities, and similar grading, is proposed.

17. When new vegetation is planted, soils shall be amended and irrigation provided, as necessary, until the plants are naturalized and able to grow on their own.

Response: Site wide landscaping and storm faculties following planting guidelines as set forth in the above section.

D. Central Commercial C-1 District Streetscape Standard. Developers of projects within the Central Commercial C-1 zoning district can meet the landscape area requirement of subsection B, in part, by

installing street trees in front of their projects. The Planning Official shall grant credit toward the landscape area requirement using a ratio of 1:1, where one square foot of planted area (e.g., tree well or planter surface area) receives one square foot of credit. The Planning Official may grant additional landscape area credit by the same ratio where the developer widens the sidewalk or creates a plaza or other civic space pursuant to Section 17-3.2.050.

Response: N/A project is in C-2 Zoning.

E. Parking Lot Landscaping. All of the following standards shall be met for parking lots. If a development contains multiple parking lots, then the standards shall be evaluated separately for each parking lot.

Response: Project proposed two sperate parking lots. A 17 space lot to the north off Industrial Way and a 16 space lot to the south off Fountain Ave.

1. A minimum of 10 percent of the total surface area of all parking areas, as measured around the perimeter of all parking spaces and maneuvering areas, shall be landscaped. Such landscaping shall consist of shade trees distributed throughout the parking area. A combination of deciduous and evergreen trees, shrubs, and ground cover plants is required. The trees shall be planned so that they provide a partial canopy cover over the parking lot within five years. At a minimum, one tree per 12 parking spaces on average shall be planted over and around the parking area.

Response: Proposed lot to the north has a total area of 6424 Sf and will accommodate at a minimum of 625 sf of landscaping around the perimeter and 2 trees for the 16 planned spots. The lot the south has a total area of 5526 sf and will accommodate a minimum of 553 sf of landscape area and 2 trees for the 15 planned spots.

2. All parking areas with more than 20 spaces shall provide landscape islands with trees that break up the parking area into rows of not more than 10 contiguous parking spaces. Landscape islands and planters shall have dimensions of not less than 48 square feet of area and no dimension of less than six feet, to ensure adequate soil, water, and space for healthy plant growth.

Response: N/A parking for both lots are less than 20.

3. All required parking lot landscape areas not otherwise planted with trees must contain a combination of shrubs and groundcover plants so that, within two years of planting, not less than 50 percent of that area is covered with living plants.

Response: Parking lot landscaping will follow this standard for both proposed lots.

4. Wheel stops, curbs, bollards, or other physical barriers are required along the edges of all vehicle-maneuvering areas to protect landscaping from being damaged by vehicles. Trees shall be planted not less than two feet from any such barrier.

Response: Edges or all parking areas will be curbed, this criteria is met.

5. Trees planted in tree wells within sidewalks or other paved areas shall be installed with root barriers, consistent with applicable nursery standards.

Response: N/A no trees to be planted in wells

F. Screening Requirements. Screening is required for outdoor storage areas, unenclosed uses, and parking lots, and may be required in other situations as determined by the Planning Official. Landscaping shall be provided pursuant to the standards of subsections F.1 through 3. (See also Figure 17-3.4-4.)

1. Outdoor Storage and Unenclosed Uses. All areas of a site containing or proposed to contain outdoor storage of goods, materials, equipment, and vehicles (other than required parking lots and service and delivery areas, per Site Design Review), and areas containing junk, salvage materials, or similar contents, shall be screened from view from adjacent rights-of-way and residential uses by a sight-obscuring fence, wall, landscape screen, or combination of screening methods. See also Section 17-3.4.040 for related fence and wall standards.

Response: N/A no outdoor storage area planned

2. Parking Lots. The edges of parking lots shall be screened to minimize vehicle headlights shining into adjacent rights-of-way and residential yards. Parking lots abutting a sidewalk or walkway shall be screened using a low-growing hedge or low garden wall to a height of between three feet and four feet.

Response: Landscaping on the east side of the proposed north parking off Industrial Way will be screened. Land scaping to the east and south off Fountain way will be screened.

3. Other Uses Requiring Screening. The Planning Official may require screening in other situations as authorized by this Code, including, but not limited to, outdoor storage areas, blank walls, Special Uses pursuant to Chapter 17-2.3, flag lots, and as mitigation where an applicant has requested an adjustment pursuant to Chapter 17-4.7.

G. Maintenance. All landscaping shall be maintained in good condition, or otherwise replaced by the property owner.

Response: This standard can be met by condition.

17-3.4.040 Fences and Walls

A. Purpose. This section provides general development standards for fences, and walls that are not part of a building, such as screening walls and retaining walls.

B. Applicability. Section 17-3.4.040 applies to all fences, and to walls that are not part of a building, including modifications to existing fences and walls.

C. Height.

1. Residential Zones. Fences and freestanding walls (i.e., exclusive of building walls) for residential uses shall not exceed the following heights above grade, where grade is measured from the base of the subject fence or wall.

a. Within Front or Street-Facing Side Yard Setback. Four feet; except the following additional height is allowed:

(1) A fence may be constructed to a maximum height of six feet where it is located on a street-facing side yard.

(2) A fence may be constructed to a maximum height of six feet where the fence is of open chain link or other "see-through" composition that allows 90 percent light transmission.

(3) One incidental garden structure (e.g., arbor or gate) not exceeding eight feet in height and six feet in width is allowed within a front or street-facing yard provided it does not encroach into a required vision clearance area.

b. Within an Interior Side or Rear Yard Setback. Six feet; except the fence or wall height, as applicable, shall not exceed the distance from the fence or wall line to the nearest primary structure on an adjacent property.

Response: Above Section C.1 is N/A.

2. Non-Residential Zones. Fences and freestanding walls (i.e., exclusive of building walls) for non-residential uses shall not exceed the following height above grade, where grade is measured from the base of the subject fence or wall.

a. Within Front or Street-Facing Side Yard Setback. Four feet, except the following additional height is allowed for properties located within an industrial, public, or institutional zone:

(1) Where approved by the City Planning Official, a fence constructed of open chain link or other "see-through" composition that allows 90 percent light transmission may reach a height of up to eight feet.

b. Within an Interior Side or Rear Yard Setback. Eight feet; except the fence or wall height, as applicable, shall not exceed the distance from the fence or wall line to the nearest primary structure on an adjacent property.

Response: Height Screening/Fencing along Industrial Way will be at a height of f feet an met the above setback requirements.

3. All Zones. Fences and walls shall comply with the vision clearance standards of Section 17-3.3.030.G. Other provisions of this Code, or the requirements of the roadway authority, may limit allowable height of a fence or wall below the height limits of this section.

Response: Proposed fence will not affect the vision clearance standards for the proposed new parking area entrance.

D. Materials. Prohibited fence and wall materials include straw bales, tarps, barbed or razor wire (except in the M-2 Heavy Industrial zone); scrap lumber, untreated wood (except cedar or redwood), corrugated metal, sheet metal, scrap materials; dead, diseased, or dying plants; and materials similar to those listed herein.

Response: Proposed fencing will be of acceptable materials

E. Permitting. A Type I approval is required to install a fence of six feet or less in height, or a wall that is four feet or less in height. All other walls and fences require review and approval by

the Planning Official through a Type II procedure. The Planning Official may require installation of walls or fences as a condition of approval for development, as provided by other Code sections. A building permit may be required for some fences and walls, pursuant to applicable building codes. Walls greater than four feet in height shall be designed by a Professional Engineer licensed in the State of Oregon.

Response: Proposed fence will be at a min of 6ft in height, the applicant requests a concurrent review and approval with this application.

F. Maintenance. Fences and walls shall be maintained in good condition, or otherwise replaced by the property owner. (Ord. 2017-08 §1)

Response: Property owner will adhere to this standard.

17-3.4.050 Outdoor Lighting

A. Purpose. This section contains regulations requiring adequate levels of outdoor lighting while minimizing negative impacts of light pollution.

B. Applicability. All outdoor lighting shall comply with the standards of this section.

C. Standards.

1. Light poles, except as required by a roadway authority or public safety agency, shall not exceed a height of 20 feet; pedestal- or bollard-style lighting shall be used to illuminate walkways. Flag poles, utility poles, and streetlights are exempt from this requirement.

2. Where a light standard is placed over a sidewalk or walkway, a minimum vertical clearance of eight feet shall be maintained.

3. Outdoor lighting levels shall be subject to review and approval through Site Design Review. As a guideline, lighting levels shall be no greater than necessary to provide for pedestrian safety, property or business identification, and crime prevention.

4. Except as provided for up-lighting of flags and permitted building-mounted signs, all outdoor light fixtures shall be directed downward, and have full cutoff and full shielding to preserve views of the night sky and to minimize excessive light spillover onto adjacent properties.

5. Lighting shall be installed where it will not obstruct public ways, driveways, or walkways.

6. Walkway lighting in private areas shall have a minimum average illumination of not less than 0.2 foot-candles. Lighting along public walkways shall meet the current version of the Public Works Design Standards and AASHTO lighting requirements.

7. Active building entrances shall have a minimum average illumination of not less than two foot-candles.

8. Surfaces of signs shall have an illumination level of not more than two foot-candles.

9. Parking lots and outdoor services areas, including quick vehicle service areas, shall have a minimum illumination of not less than 0.2 foot-candles, average illumination of

approximately 0.8 foot-candles, and a uniformity ratio (maximum-to-minimum ratio) of not more than 20:1.

10. Where illumination grid lighting plans cannot be reviewed or if fixtures do not provide photometrics and bulbs are under 2,000 lumens, use the following guidelines:

a. Poles should be no greater in height than four times the distance to the property line.

b. Maximum lumen levels should be based on fixture height.

c. Private illumination shall not be used to light adjoining public right-of-way.

11. Where a light standard is placed within a walkway, an unobstructed pedestrian through zone not less than 48 inches wide shall be maintained.

12. Lighting subject to this section shall consist of materials approved for outdoor use and shall be installed according to the manufacturer's specifications.

Response: Proposed removal and replacement of light pole on Fountain Way will adhere to the above standards. No other outdoor lighting is proposed under this application.

D. Permitting. A Type I approval is required to install or replace outdoor lighting. The Planning Official may require lighting as a condition of approval for some projects, pursuant to other Code requirements.

Response: For proposed parking off Fountain Way removal and replacement of existing light pole will be required.

E. Maintenance. For public health and safety, outdoor lighting shall be maintained in good condition, or otherwise replaced by the property owner. (Ord. 2017-08 §1)

Response: Property owner is aware of this Standard.

Chapter 17-3.5 PARKING AND LOADING

17-3.5.020 Applicability and General Regulations

B. Occupancy. All required parking areas must be developed in accordance with the requirements of this Code prior to occupancy of any structure on the subject site. Where landscaping, screening, or other improvements are required pursuant to this Code, all such improvements must be installed and approved by the Planning Official prior to occupancy.

C. Calculations of Amounts of Required and Allowed Parking.

1. When computing parking spaces based on floor area, parking structures and non-leasable floor spaces, such as storage closets, mechanical equipment rooms, and similar spaces, are not counted.

2. The number of parking spaces is computed based on the primary uses on the site except as stated in subsection C.3. When there are two or more separate primary uses on a site, the minimum and maximum parking for the site is the sum of the required or allowed parking for the individual primary uses. For shared parking, see Section 17-3.5.030.D.

3. When more than 50 percent of the floor area on a site is in an accessory use, the required or allowed parking is calculated separately for the accessory use. An example would be a 10,000 square foot building with a 7,000 square foot warehouse and a 3,000 square foot accessory retail area. The minimum and maximum parking would be computed separately for the retail and warehouse uses.

4. Required parking spaces periodically used for the storage of equipment or goods may be counted toward meeting minimum parking standards, provided that such storage is an allowed use under Section 17-2.2.030, and is permitted as a Temporary Use under Section 17-2.3.160.

D. Use of Required Parking Spaces. Except as otherwise provided by this section, required parking spaces must be available for residents, customers, or employees of the use. Fees may be charged for the use of required parking spaces. Required parking spaces may not be assigned in any way to a use on another site, except for shared parking pursuant to Section 17-3.5.030.D.

E. Proximity of Parking to Use. Required parking spaces for residential uses must be located on the site of the use or on a parcel or tract owned in common by all the owners of the properties that will use the parking area. Required parking spaces for nonresidential uses must be located on the site of the use or in a parking area that has its closest pedestrian access point within 800 feet of the site.

Response: Closest pedestrian access point form proposed parking on Fountain Way is approximability 45 feet. Proposed Parking off Industrial Way will be connected to the site.

F. Improvement of Parking Areas. Motorized vehicle parking is allowed only on streets with an improved shoulder of sufficient width; within garages, carports, and other approved structures; and on driveways or parking lots that have been developed in conformance with this Code. For applicable design standards, see Chapter 17-3.2 Building Orientation and Design; Chapter 17-3.3 Access and Circulation; Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting and Chapter 17-3.6 Public Facilities. (Ord. 2017-08 §1)

Response: Proposed parking lot off Fountain Way and Industrial Way will meet the above standards.

B. Carpool and Vanpool Parking Requirements.

1. Carpool and vanpool parking spaces shall be identified for the following uses:

a. New commercial and industrial developments with 50 or more parking spaces;

Response: N/A Proposed site will have 38 total parking spots including existing 5 and 33 new spaces.

Minimum Number of Off-Street Automobile Parking Spaces. Except as provided by this subsection A, or as required for Americans with Disabilities Act compliance under subsection G, off-street parking shall be provided pursuant to one of the following three standards:

Retail Sales and Commercial Service Retail- Restaurants and Bars: 1 space per 200 sq. ft. floor area

Response: Proposed site will include total of 38 parking space including 33 new spaces. This will satisfy the minimum 19 parking space requirement for the 720 square feet for the 5 proposed food carts (144 square feet per cart) and 3031 square feet existing building floor space.

D. Maximum Number of Off-Street Automobile Parking Spaces. The maximum number of off-street automobile parking spaces allowed per site equals the minimum number of required spaces for the use pursuant to Table 17-3.5.030.A, times a factor of:

1. 1.2 spaces for uses fronting a street with adjacent on-street parking spaces; or
2. 1.5 spaces, for uses fronting no street with adjacent on-street parking; or
3. A factor based on applicant's projected parking demand, subject to City approval

Response: Proposed new parking exceeds the maximum parking of 28.5 (rounded to 29) by four spaces. As the applicant proposed that the farmers market will utilize the parking for a public gathering the applicant requests that D.3. above is invoked to allow four extra spaces above maximum.

E. Shared Parking. Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or operators show that the need for parking facilities does not materially overlap (e.g., uses primarily of a daytime versus nighttime nature; weekday uses versus weekend uses), and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument establishing the joint use. Shared parking requests shall be subject to review and approval through a Type I Review.

Response: Site does not require shared parking this criteria is not applicable

F. Parking Stall Design and Minimum Dimensions. Where a new off-street parking area is proposed, or an existing off-street parking area is proposed for expansion, the entire parking area shall be improved in conformance with this Code. At a minimum the parking spaces and drive aisles shall be paved with asphalt, concrete, or other City-approved materials, provided the Americans with Disabilities Act requirements are met, and shall conform to the minimum dimensions in Table 17-3.5.030.F and the figures below. All off-street parking areas shall contain wheel stops, perimeter curbing, bollards, or other edging as required to prevent vehicles from damaging buildings or encroaching into walkways, sidewalks, landscapes, or the public right-of-way. Parking areas shall also provide for surface water management, pursuant to Section 17-3.6.050.

PARKING ANGLE < °	CURB LENGTH	STALL DEPTH		AISLE WIDTH		BAY WIDTH		STRIPE LENGTH
		SINGLE D1	DOUBLE D2	ONE WAY A1	TWO WAY A2	ONE WAY B1	TWO WAY B2	
90°	8'-6"	18'	36'	23'	23'	59'	59'	18'
60°	10'	20'	40'	17'	18'	57'	58'	23'
45°	12'	18'-6"	37'	13'	18'	50'	55'	26'-6"
30°	17'	16'-6"	33'	12'	18'	45'	51'	32'-8"
0°	22'	8'-6"	17'	12'	18'	29'	35'	8'-6"

* **See Figure 17-3.5-18.** See also Chapter 17-3.2 Building Orientation and Design for parking location requirements for some types of development; Chapter 17-3.3 Access and Circulation for driveway standards; and Chapter 17-3.4 for requirements related to Landscaping, Screening, Fences, Walls, and Outdoor Lighting.

Response: All proposed parking on south side of Fountain Way and in the proposed parking lot off of Industrial Way will consist of 90 ° parking stalls. All Stalls meet the minimum requirements as shown in the above table. This criteria is met.

H. Americans with Disabilities Act (ADA). Parking shall be provided consistent with ADA requirements, including, but not limited to, the minimum number of spaces for automobiles, van-accessible spaces, location of spaces relative to building entrances, accessible routes between parking areas and building entrances, identification signs, lighting, and other design and construction requirements.

Response: Per ADA Compliance 30 spaces requires 2 ADA spaces, the proposed site plan adheres to this requirement, this criteria is met.

17-3.5.040 Bicycle Parking

Bicycle parking spaces shall be provided with new development and, where a change of use occurs, at a minimum, shall follow the standards in Table 17-3.5.040.A. Where an application is subject to Conditional Use Permit approval or the applicant has requested a reduction to an automobile-parking standard, pursuant to Section 17-3.5.030.C, the Planning Official may require bicycle parking spaces in addition to those in Table 17-3.5.040.A.

Commercial	2 bike spaces per primary use or 1 per 5 vehicle spaces, whichever is greater

Response: This is project proposing to add 33 new parking spots and 8 bikes spaces.

A. Design. Bicycle parking shall consist of staple-design steel racks or other City-approved racks, lockers, or storage lids providing a safe and secure means of storing a bicycle, consistent with the Public Works Design Standards.

17-3.5.050 Loading Areas

B. Applicability. Section 17-3.5.050 applies to uses that are expected to have service or delivery truck visits. It applies only to uses visited by trucks with a 40-foot or longer wheelbase, at a frequency of one or more vehicles per week. The Planning Official shall determine through a Type I review the number, size, and location of required loading areas, if any.

Response: This project does not anticipate the need for a loading area.

17-3.6.020 Transportation Standards

Determining the Required Level of Transportation Analysis and Documentation. A Transportation Impact Analysis (TIA) is required for developments that are expected to have an impact on the transportation system. The analysis shall be based upon the latest edition of the ITE Trip Generation Manual or an agreed-upon alternative methodology where credible data is available to support the alternative methodology. When specific criteria generally associated with small developments are met, a Transportation Analysis Letter (TAL) may be substituted for the required TIA. At the discretion of the City Engineer, a TAL may satisfy the City's transportation analysis requirements, in lieu of a TIA when a development meets all the following criteria:

(1) The development generates fewer than 25 peak hour trips during either the AM or PM peak hour. (Two examples of common developments generating fewer trips than these threshold levels are: a subdivision containing 25 or fewer single-family residences or a general office building less than 15,000 square feet.)

(2) The development is not expected to impact intersections that currently fail to meet the City's level of service standards or intersections that are operating near the limits of the acceptable level of service thresholds during a peak operating hour.

(3) The development is not expected to significantly impact adjacent roadways and intersections that are high accident locations, areas that contain an identified safety concern, or high concentration of pedestrians or bicyclists such as school zones.

(4) The development generates an increase in use of adjacent streets by vehicles exceeding the 20,000-pound gross vehicle weights by less than 10 vehicles per day.

A. Dedication of Public Use Areas.

1. Where a proposed park, playground, or other public use shown in a plan adopted by the City is located in whole or in part in a subdivision, the City may require the dedication or reservation of this area on the final plat for the subdivision, provided that the impact of the development on the City park system is roughly proportionate to the dedication or reservation being made.

2. The City may purchase or accept voluntary dedication or reservation of areas within the subdivision that are suitable for the development of parks and other public uses; however, the City is under no obligation to accept such areas offered for dedication or sale.

B. System Development Charge Credit. Dedication of land to the City for public use areas, voluntary or otherwise, may be eligible as a credit toward any required system development charge for parks. (Ord. 2017-08 §

17-3.6.40 Sanitary Sewer and Water Service Improvements

A. Sewers and Water Mains Required. All new development is required to connect to City water and sanitary sewer systems. Sanitary sewer and water system improvements shall be installed to serve each new development and to connect developments to existing mains in accordance with the adopted facility master plans and applicable Public Works Design Standards. Where streets are required to be stubbed to the edge of the subdivision, sewer and water system improvements and other utilities shall also be stubbed with the streets, except as may be waived by the City Engineer where alternate alignment(s) are provided.

Response: Food pod will be connected to existing sanitary sewer lines on site. Connection to exist onsite will be fitted with a grease interceptor. Existing Water service will be replaced and fitted with a new service if required under plumbing code for the site. This criteria can be satisfied through condition of approval.

B. Sewer and Water Plan Approval. Development permits for sewer and water improvements shall not be issued until the City Engineer has approved all sanitary sewer and water plans in conformance with City standards.

17-3.6.050 Storm Drainage and Surface Water Management Facilities

A. General Provisions. The City shall issue a development permit only where adequate provisions for stormwater runoff have been made in conformance with the requirements of the current version of the Public Works Design Standards and Stormwater Master Plan.

B. Accommodation of Upstream Drainage. Culverts and other drainage facilities shall be large enough to accommodate existing and potential future runoff from the entire upstream drainage area, whether inside or outside the development. Such facilities shall be subject to review and approval by the City Engineer.

C. Effect on Downstream Drainage. Where it is anticipated by the City Engineer that the additional runoff resulting from the development will overload an existing drainage facility, the City shall withhold approval of the development until provisions have been made for improvement of the potential condition or until provisions have been made for storage of additional runoff caused by the development in accordance with City standards.

17-3.6.060 Utilities

The following standards apply to new development where extension of electric power, gas, or communication lines is required:

A. General Provision. The developer of a property is responsible for coordinating the development plan with the applicable utility providers and paying for the extension and installation of utilities not otherwise available to the subject property.

B. Underground Utilities.

1. General Requirement. The requirements of the utility service provider shall be met. All utility lines in new subdivisions, including, but not limited to, those required for electric, communication, and lighting, and related facilities, shall be placed underground, except where the City Engineer determines that placing utilities underground would adversely impact adjacent land uses. The Planning Official may require screening and buffering of above ground facilities to protect the public health, safety, or welfare.

17-3.6.070 Easements

A. Provision. The developer shall make arrangements with the City and applicable utility providers for each utility franchise for the provision and dedication of utility easements necessary to provide full services to the development.

B. Standard. Utility easements shall conform to the requirements of the utility service provider. All other easements shall conform to the City of Molalla Public Works Design Standards.

C. Recordation. All easements for sewers, storm drainage and water quality facilities, water mains, electric lines, or other utilities shall be recorded and referenced on a survey or final plat, as applicable. See Chapter 17-4.2 Site Design Review, and Chapter 17-4.3 Land Divisions and Property Line Adjustments. (Ord. 2017-08 §1)

Response: N/A Proposed project has no planed easements as is will use existing site utilities.

17-3.6.080 Construction Plan Approval

No development, including sanitary sewers, water, streets, parking areas, buildings, or other development, shall commence without plans having been approved by the City of Molalla Public

Works Department and permits issued. Permit fees are required to defray the cost and expenses incurred by the City for construction and other services in connection with the improvement. Permit fees are as set by City Council resolution. (Ord. 2017-08 §1)

17-3.6.090 Facility Installation

A. Conformance Required. Improvements installed by the developer, either as a requirement of these regulations or at the developer's option, shall conform to the requirements of this chapter, approved construction plans, and to improvement standards and specifications adopted by the City.

B. Adopted Installation Standards. The City of Molalla has adopted Public Works Design Standards for public improvements and private utility installation within the public right-of-way.

C. Commencement. Work in a public right-of-way shall not begin until all applicable agency permits have been approved and issued.

D. Resumption. If work is discontinued for more than six months, it shall not be resumed until the Public Works Director is notified in writing and grants approval of an extension.

E. City Inspection. Improvements shall be constructed under the inspection of the City Engineer. The City Engineer may approve minor changes in typical sections and details if unusual conditions arising during construction warrant such changes in the public interest, except that substantive changes to the approved design shall be subject to review under Chapter 17-4.5 Modifications to Approved Plans and Conditions of Approval. Any survey monuments that are disturbed before all improvements are completed by the developer or subdivider shall be replaced at the developer or subdivider's expense prior to final acceptance of the improvements.

F. Engineer's Certification and As-Built Plans. In accordance with the current version of the Public Works Design Standards, a registered civil engineer shall provide written certification in a form required by the City that all improvements, workmanship, and materials meet current and standard engineering and construction practices, conform to approved plans and conditions of approval, and are of high grade, prior to City's acceptance of the public improvements, or any portion thereof, for operation and maintenance. The developer's engineer shall also provide two sets of "as-built" plans, one paper set and one electronic set for permanent filing with the City. If required by the City, the developer or subdivider shall provide a warranty bond pursuant to Section 17-3.6.100. (Ord. 2017-08 §1)

17-3.6.100 Performance Guarantee and Warranty

A. Performance Guarantee Required. The City at its discretion may approve a final plat or building permit when it determines that all of the public improvements required for the site development or land division, or phase thereof, are complete and the applicant has an acceptable assurance for the balance of said improvements. The applicant shall provide a performance and payment bond in accordance with the current version of the Public Works Design Standards.

B. Determination of Sum. The assurance of performance shall be for a sum determined by the City Engineer as required to cover the cost of the improvements and repairs, including related engineering and incidental expenses, plus reasonable inflationary costs. The assurance shall not be less than 150 percent of the estimated improvement costs.

C. Itemized Improvement Estimate. The applicant shall furnish to the City an itemized improvement estimate, certified by a registered civil engineer, to assist the City in calculating the amount of the performance assurance.

D. Agreement. A written agreement between the City and applicant shall be signed recorded. The agreement may include a provision for the construction of the improvements in stages and for the extension of time under specific conditions. The agreement shall contain all of the following:

1. The period within which all required improvements and repairs shall be completed;

2. A provision that if work is not completed within the period specified, the City may complete the work and recover the full cost and expenses from the applicant;

3. The required improvement fees and deposits.

E. When Applicant Fails to Perform. In the event the applicant fails to carry out all provisions of the agreement and the City has un-reimbursed costs or expenses resulting from such failure, the City shall call on the bond, cash deposit, or letter of credit for reimbursement.

F. Termination of Performance Guarantee. The applicant shall not cause termination, nor allow expiration, of the guarantee without first securing written authorization from the City.

G. Warranty Bond. A warranty bond good for two years is required on all public improvements and landscaping when installed in the public right-of-way. The warranty bond shall equal 120 percent of the total cost of improvements and begin upon acceptance of said improvements by the City. (Ord. 2017-08 §1)

17-4.4 CONDITIONAL USE PERMITS

MMC 17-4.4.030 Application Submission Requirements

In addition to the submission requirements for a Type III review under Section 17-4.1.040, applications for conditional use permits shall include a description of existing conditions, a site plan, and information on any existing and any proposed restrictions or covenants. (For a more detailed description of each item, please refer to Section 17-4.2.040 Application Submission Requirements.) An application for a conditional use permit shall also contain a narrative report or letter responding to the applicable approval criteria in Section 17-4.4.040. (Ord. 2017-08 §1)

MMC 17-4.4.040 Criteria, Standards, and Conditions of Approval

The Planning Commission shall approve, approve with conditions, or deny an application for a conditional use, including requests to enlarge or alter a conditional use, based on findings of fact with respect to all of the criteria and standards in subsections A and B.

A. Use Criteria.

1. The site size, dimensions, location, topography, and access are adequate for the needs of the proposed use, considering the proposed building mass, parking, traffic, noise, vibration, exhaust/emissions, light, glare, erosion, odor, dust, visibility, safety, and aesthetic considerations;

Response: Project site meets the size, dimensions, location and topography as allowed by the City of Molalla Development Code 17.2.2.030 (Allowed Uses) . Site will be accessed through an existing public right of way (Industrial Way). The proposed use will not create a significant or substantial increase of light glare, odors, noise, or dust from the current use.

2. The negative impacts of the proposed use, if any, on adjacent properties and on the public can be mitigated through application of other code standards, or other reasonable conditions of approval;

Response: Project does anticipate any negative impacts on adjacent properties or on the public.

3. All required public facilities, including water, sanitary sewer, and streets, have adequate capacity or are to be improved to serve the proposal, consistent with City standards; and

Response: Project will connect to the onsite water service and connect to the existing sanitary line on site. The section of the sanitary sewer servicing the carts will be connect to an existing onsite grease interceptor connected to the existing tap room. Project will replace existing onsite meter with a new meter if required by Oregon Specialty Plumbing Code. Private plumber to verify size of new meter.

The public facilities proposed to be improved include a half street extension of Industrial Way including sidewalks along the frontage of the proposed improvements and adding a new fire hydrant.

4. A conditional use permit shall not allow a use that is prohibited or not expressly allowed under Division II; nor shall a conditional use permit grant a variance without a variance application being reviewed with the conditional use application.

Response: Applicant is aware of this standard no variances are requested.

B. **Conditions of Approval.**

The City may impose conditions that are found necessary to ensure that the use is compatible with other uses in the vicinity, and that the negative impact of the proposed use on the surrounding uses and public facilities is minimized. These conditions include, but are not limited to, one or more of the following:

1. Limiting the hours, days, place, and/or manner of operation;

2. Requiring site or architectural design features which minimize environmental impacts such as noise, vibration, exhaust/emissions, light, glare, erosion, odor, and/or dust;

3. Requiring larger setback areas, lot area, and/or lot depth or width;

4. Limiting the building or structure height, size, lot coverage, and/or location on the site;

5. Designating the size, number, location, and/or design of vehicle access points or parking and loading areas;

6. Requiring street right-of-way to be dedicated and street improvements made, or the installation of pathways or sidewalks, as applicable;

7. Requiring landscaping, screening, drainage, water quality facilities, and/or improvement of parking and loading areas;

8. Limiting the number, size, location, height, and/or lighting of signs;

9. Limiting or setting standards for the location, type, design, and/or intensity of outdoor lighting;

10. Requiring berms, screening, or landscaping and the establishment of standards for their installation and maintenance;

11. Requiring and designating the size, height, location, and/or materials for fences;

12. Requiring the protection and preservation of existing trees, soils, vegetation, watercourses, habitat areas, drainage areas, historic resources, cultural resources, and/or sensitive lands;

13. Requiring improvements to water, sanitary sewer, or storm drainage systems, in conformance with City standards; and

14. The Planning Commission may require review and renewal of conditional use permits annually or in accordance with another timetable. Where applicable, the timetable shall provide for periodic review and renewal, or expiration, of the conditional use permit to ensure compliance with conditions of approval; such period review may occur through a Type III review process, except where the Planning Commission delegates authority to the Planning Official to issue renewals, who shall do so through a Type I or Type II procedure (see Chapter 17-4.1 for review procedures). (Ord. 2017-08 §1)

Response: Applicant is aware of these conditions.

NEW FOOD CART POD AND PARKING

1400 FOUNTAIN WAY

MOLALLA, OR 97038

OWNER / APPLICANT:

AL BORROMEO 33217 S ADAMS ROAD
MOLALLA, OR 97038
EMAIL: alborromeo007@gmail.com
PHONE: (503) 793-4195

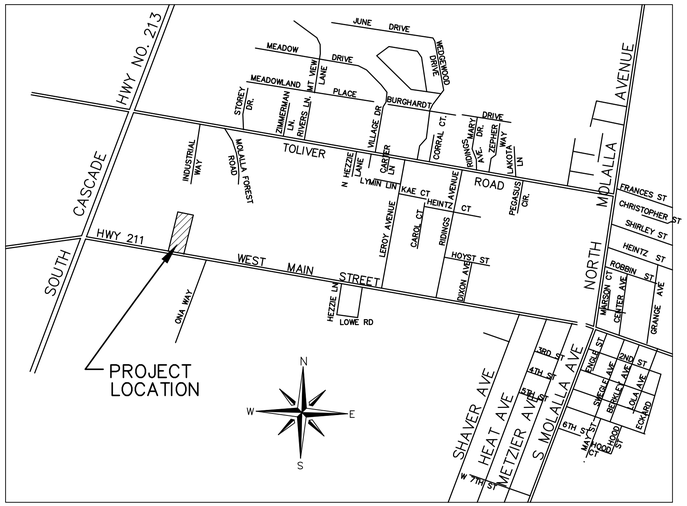
ENGINEER OF RECORD:

FIRWOOD DESIGN GROUP, LLC
KELLI A. GROVER, P.E.
359 E. HISTORIC COLUMBIA RIVER HWY.
TROUTDALE, OR 97060
PHONE: (503) 668-3737
EMAIL: kg@firwooddesign.com

LEGAL DESCRIPTION:

TAX LOT 1900 & 1901, ASSESSOR'S MAP 5 2E 7A,
SITUATED IN THE NORTHEAST ¼ OF SECTION 9
TOWNSHIP 5 SOUTH, RANGE 2 EAST,
WILLAMETTE MERIDIAN CITY OF MOLALLA,
CLACKAMAS COUNTY, OREGON.

(LOCATED IN TRACT 35, "THE SHAVER PLACE",
CLACKAMAS COUNTY PLAT NO.360)



VICINITY MAP
N.T.S.

SHEET 1 – COVER SHEET

SHEET 2 – EXISTING CONDITIONS/DEMO PLAN

SHEET 3 – SITE PLAN

SHEET 4 – PRELIMINARY GRADING PLAN

SHEET 5 – DETAILS

DATE:	NO.	REVISION

DRAWN: | DESIGNED: | CHECKED:
SCALE: AS SHOWN | DATE: FEB 2022
PROJECT NO. E20-082

FIRWOOD DESIGN GROUP
359 EAST HISTORIC COLUMBIA RIVER HIGHWAY
TROUTDALE, OREGON 97060
BUS: (503) 668-3737 ✦ FAX: (503) 668-3788

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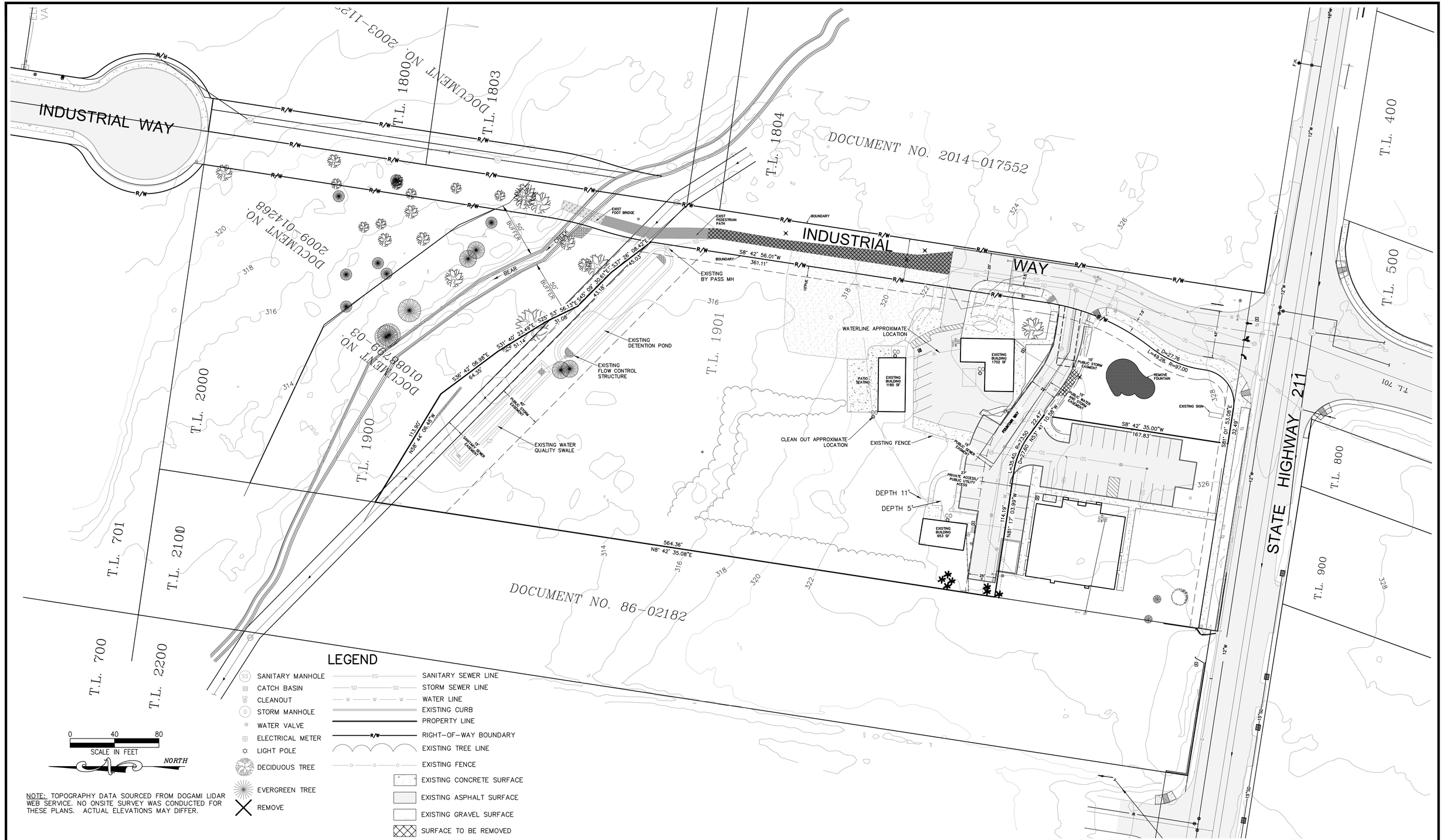
503-793-4195

COVER SHEET
1400 FOUNTAIN WAY
MOLALLA, OREGON

1/5



LEGEND

- SANITARY MANHOLE
- CATCH BASIN
- CLEANOUT
- STORM MANHOLE
- WATER VALVE
- ELECTRICAL METER
- LIGHT POLE
- DECIDUOUS TREE
- EVERGREEN TREE
- REMOVE
- SANITARY SEWER LINE
- STORM SEWER LINE
- WATER LINE
- EXISTING CURB
- PROPERTY LINE
- RIGHT-OF-WAY BOUNDARY
- EXISTING TREE LINE
- EXISTING FENCE
- EXISTING CONCRETE SURFACE
- EXISTING ASPHALT SURFACE
- EXISTING GRAVEL SURFACE
- SURFACE TO BE REMOVED

0 40 80
SCALE IN FEET
NORTH

NOTE: TOPOGRAPHY DATA SOURCED FROM DOGAMI LIDAR WEB SERVICE. NO ONSITE SURVEY WAS CONDUCTED FOR THESE PLANS. ACTUAL ELEVATIONS MAY DIFFER.

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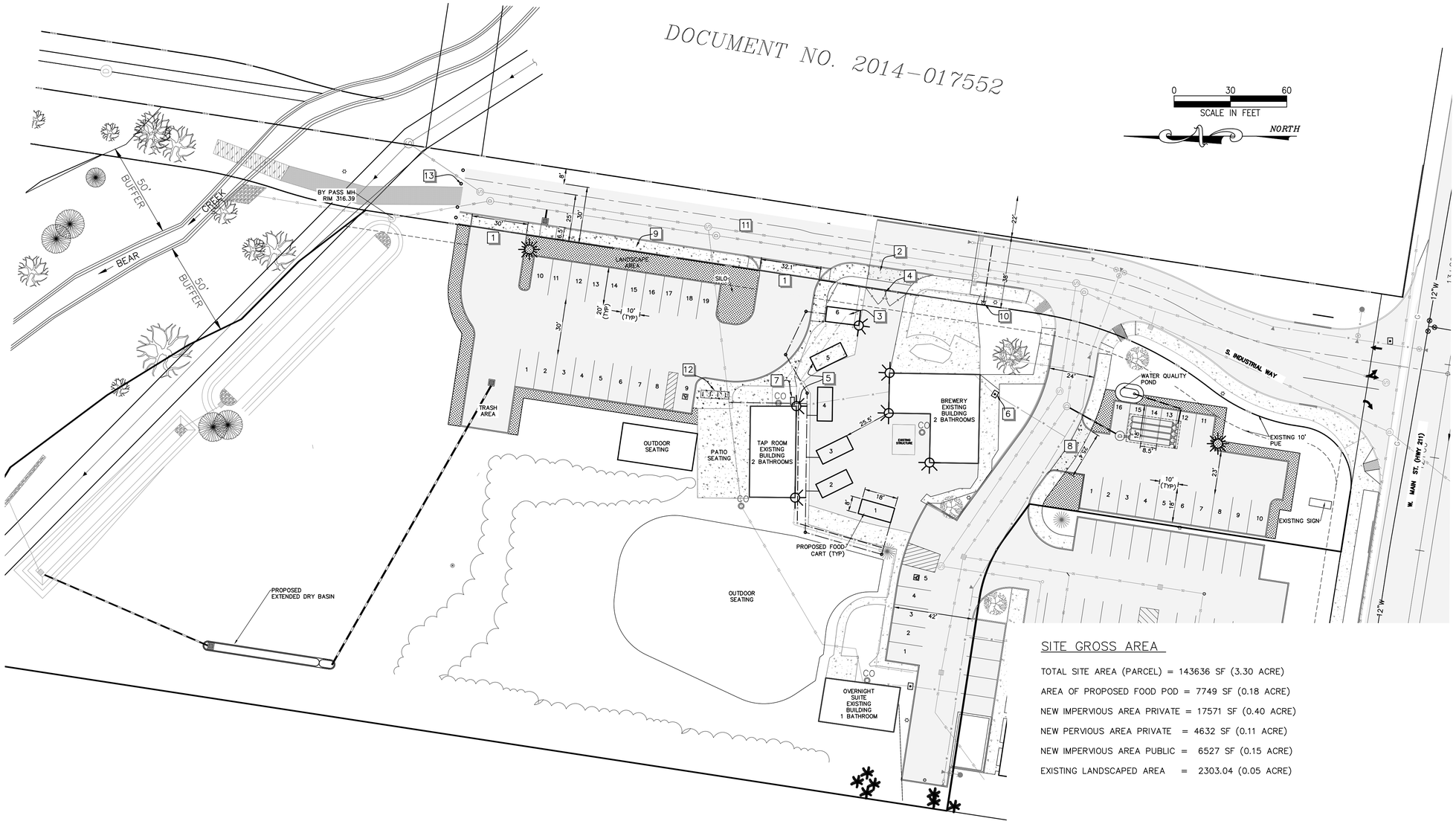
EXISTING CONDITIONS/DEMO PLAN
1400 FOUNTAIN WAY
MOLALLA, OREGON

2/5

DOCUMENT NO. 2014-017552



LEGEND

- PROPOSED WATER LINE
- PROPOSED SEWER LINE
- PROPOSED STORM LINE
- PROPOSED CURB
- PROPOSED SEWER CLEANOUT
- PROPOSED ASPHALT SURFACE
- PROPOSED SIDEWALK SURFACE
- PROPOSED LANDSCAPE SURFACE
- PROPOSED LIGHT POLE
- PROPOSED WALL MOUNTED LIGHT
- PROPOSED BOLLARD

KEY NOTES

1. NEW 30-FT WIDE COMMERCIAL DRIVEWAY ENTRANCE PER DETAIL R-1095 ON SHEET 5.
2. REMOVE EXISTING DRIVE ENTRANCE AND MATCH EXISTING WALK PER DETAIL R-1075 ON SHEET 5.
3. EXISTING FOOD CART TO BE RELOCATED OUT OF PUE.
4. ADD 6-FT HIGH FENCING WITH GATE FOR SCREENING ALONG ENTRANCE.
5. TAP EXISTING WATER LINE FOR FOOD CART WATER CONNECTION LINE.
6. REPLACE EXISTING WATER METER WITH NEW 1". PRIVATE PLUMBER TO VERIFY SIZE.
7. CONNECT FOOD POD WASTEWATER LINE TO EXISTING GREASE AND OIL INTERCEPTOR.
8. REMOVE EXISTING SIDE WALK, INSTALL NEW 23' DRIVE.
9. NEW 6.5 FT SIDEWALK.
10. INSTALL NEW FIRE HYDRANT.
11. PROPOSED NEW 23FT WIDE ASPHALT PAVED STREET PER CITY NEIGHBORHOOD STREET SECTION STANDARDS.
12. INSTALL 4 BIKE PARKING LOOPS PER DETAIL ON SHEET 5.
13. INSTALL BOLLARDS AT TERMINUS OF ROAD.

SITE GROSS AREA

TOTAL SITE AREA (PARCEL) = 143636 SF (3.30 ACRE)

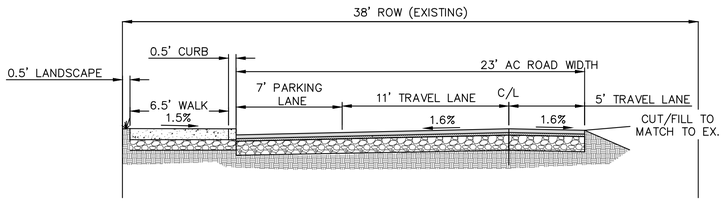
AREA OF PROPOSED FOOD POD = 7749 SF (0.18 ACRE)

NEW IMPERVIOUS AREA PRIVATE = 17571 SF (0.40 ACRE)

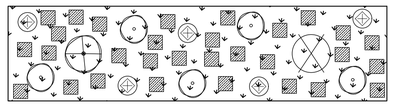
NEW PERVIOUS AREA PRIVATE = 4632 SF (0.11 ACRE)

NEW IMPERVIOUS AREA PUBLIC = 6527 SF (0.15 ACRE)

EXISTING LANDSCAPED AREA = 2303.04 (0.05 ACRE)



INDUSTRIAL WAY TYPICAL SECTION
SCALE: N.T.S.



TYPICAL LANDSCAPE PLANTING PLAN

PLANTING LEGEND

- DECIDUOUS TREE
- CONIIFEROUS TREE
- SMALL SHRUB
- LARGE SHRUB
- GROUND COVER

PLANTING NOTES:

1. ALL PLANTS AND PLANTINGS SHALL CONFORM TO CITY OF MOLALLA MUNICIPAL CODE AS DESCRIBED IN SECTION 17-3.4.030
2. CONTRACTOR IS RESPONSIBLE FOR VERIFYING PLANT SELECTION.
3. HATCHED AREAS ARE MEANT TO CONVEY GENERAL PLANT LOCATION. ADJUST AS NECESSARY TO AVOID CONFLICTS WITH UTILITIES, LIGHTS, EXISTING VEGETATION, ETC.

DATE:	NO.	REVISION

DRAWN: | DESIGNED: | CHECKED:
SCALE: AS SHOWN | DATE: FEB 2022
PROJECT NO. E20-082

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359 EAST HISTORIC COLUMBIA RIVER HIGHWAY
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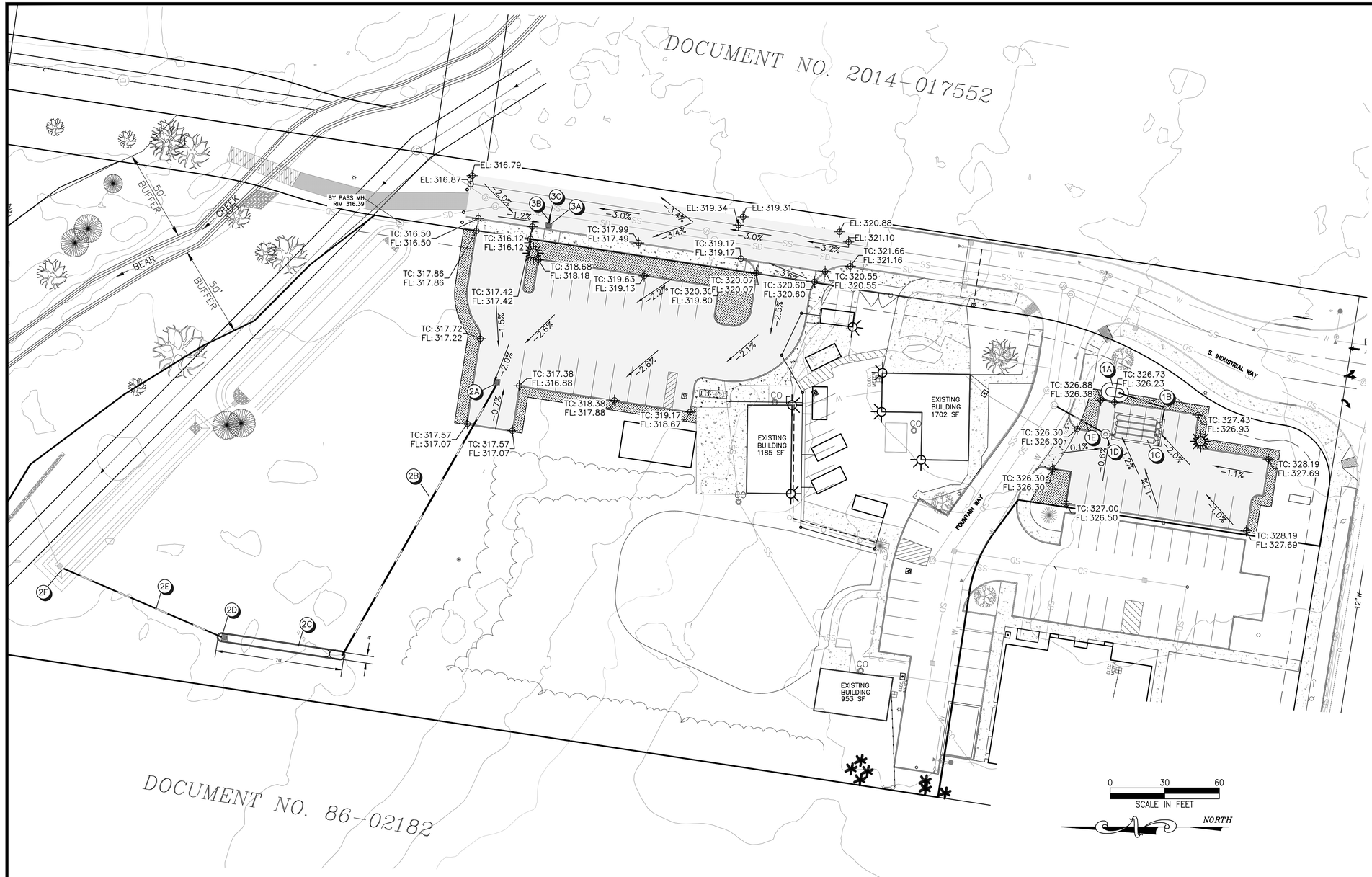
SITE PLAN
1400 FOUNTAIN WAY
MOLALLA, OREGON

3/5



KEY NOTES

(1A) CONSTRUCT 4.75' X 15.0' X 3.33' WATER QUALITY POND.
TOP OF POND = 326.23
OVERFLOW 6" = 325.73
IE OUT (6") = 322.90

(1B) ROUTE OVERFLOW TO SC-310 STORMTECH CHAMBERS.
32.5 LF 6" HDPE. S= 0.012

(1C) INSTALL 12 STORMTECH SC-310 CHAMBERS (80 L.F.) IN A SERIES OF 22-FT LENGTHS.
6" IN = 322.5

(1D) INSTALL FLOW CONTROL MANHOLE.
RIM = 326.26
6" OUT = 319.90

(1E) ROUTE TO EXISTING MANHOLE. 28 LF 6" HDPE S=0.0025

(2A) INSTALL AREA DRAIN.
RIM = 316.88
10" OUT = 313.86

(2B) ROUTE TO EXTENDED DRY POND.
171.0 LF 10" HDPE S=0.01

(2C) CONSTRUCT 4.0'X 70.0' X 2.5' EXTENDED DRY POND
TOP OF POND 312.17
BOTTOM OF POND 309.67

(2D) INSTALL DRAIN TO EXISTING SWALE
8" OUT = 309.67

(2E) ROUTE TO EXISTING SWALE
95.9 LF 6" HDPE. S=0.02

(2F) 8" HDPE OUTLET TO EXISTING SWALE
IE = 307.75

(3A) INSTALL CATCH BASIN
RIM = 316.01
8" OUT = 314.01

(3B) ROUTE TO EXISTING STORM PIPE
4.5 LF

(3C) CONNECT TO EXISTING STORM PIPE

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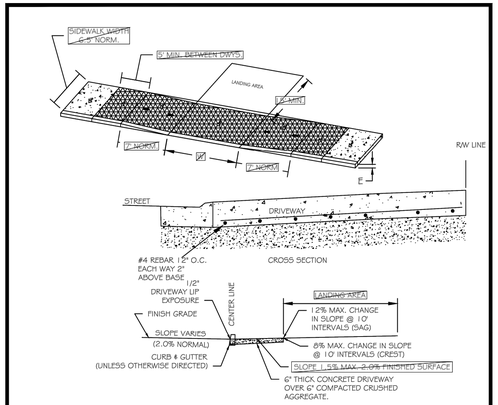
PRELIMINARY GRADING PLAN
1400 FOUNTAIN WAY
MOLALLA, OREGON

4/5



NOTES:

1. CONCRETE SHALL HAVE A MINIMUM BREAKING STRENGTH OF 3000 PSI. AFTER 28 DAYS, 6 SACK MIX.
2. CURB JOINT SHALL BE A TROWELED JOINT WITH A MIN. 1/2" RADIUS ALONG THE BACK OF CURB.
3. CONTRACTION JOINT SPACING SHALL NOT EXCEED 10 FEET AND SHALL BE CONSTRUCTED FLUSH.
4. USE EXISTING CURB EXPANSION JOINT OR SAW CUT AND PLACE COLD JOINT.
5. SIDEWALK THICKNESS SHALL BE 6 INCHES MINIMUM AND EXTEND TO AT LEAST ONE SIDEWALK PANEL BEYOND DRIVEWAY APRON.
6. COMMERCIAL: 30'-40', ONE DRIVEWAY PER PARCEL OR DEVELOPMENT.
6. INDUSTRIAL: 30'-40', ONE DRIVEWAY PER PARCEL OR DEVELOPMENT.
7. LANDING AREA SHALL BE CONCRETE OR HMAC.

SIDEWALK

DRIVEWAY PAY LIMIT (IF MONOLITHIC, INCLUDE ADJACENT CURB)

SLOPE 1.5% MAX.
(MAX. 2.0% FINISHED SURFACE SLOPE)
(NORMAL SIDEWALK CROSS SLOPE)

SLOPE 7.5% MAX.
(MAX 8.3% FINISHED SURFACE SLOPE)
(RAMP LENGTH 15' MAX., MEASURED ALONG FINISHED SURFACE SLOPE)

W WIDTH OF DRIVEWAY

CURB EXPOSURE

Detail Drawing may not be altered or changed in any manner except by the Public Works Director. It is the responsibility of the user to acquire the most current version.

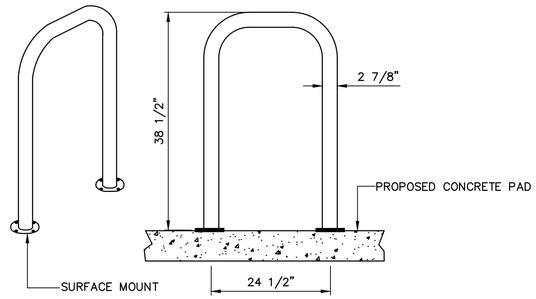
CITY OF MOLALLA
DEPARTMENT OF PUBLIC WORKS

COMMERCIAL DRIVEWAY

DRAWN BY	PW	08/2020	R-1095
CHECKED BY	GF	08/2020	

NOTES:

- 24 1/2" CENTER TO CENTER OVERALL WIDTH WITH A TOTAL HEIGHT OF 38 1/2"
- MADE OF 2 7/8" 12 GAUGE GALVINIZED STEEL TUBING.
- COATED WITH THERMO PLASTIC COATING TO PREVENT RUST AND SCRATCHES
- COLOR TO BE BLACK
- INSTALL PER MANUFACTURERS INSTRUCTIONS



SURFACE MOUNT "LOOP" BIKE RACK

N.T.S.

"HIGHLAND PRODUCTS GROUP LLC" OR EQUIVALENT

DATE:	NO.	REVISION

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FIRWOOD DESIGN GROUP
359 EAST HISTORIC COLUMBIA RIVER HIGHWAY
TROUTDALE, OREGON 97060
BUS: (503) 668-3737 ✦ FAX: (503) 668-3788

AL BORROMEO, DDS
33217 S. ADAMS ROAD
MOLLALLA, OR 97038
503-793-4195

DETAILS
1400 FOUNTAIN WAY
MOLALLA, OREGON

5/5

FIRWOOD
DESIGN GROUP
Reliable Engineering Solutions

April 29, 2022

Mac Corthell
Community Development Director
City of Molalla
PO Box 248
Molalla, OR 97038

RE: Fountain Way Food Carts Parking Area - Traffic Analysis Letter

Dear Mr. Corthell,

This letter is prepared for the proposed new food cart pod parking area to be located just north of the Molalla River Brewing Company at 180 Industrial Way in Molalla, OR. The proposed food cart pod will consist of six food carts, five of which will be new to the site. A site plan showing the location of the proposed food carts, parking lot and private driveway access is provided on sheet 3 of the application plan set.

Per section 2.2.26.i.3 (DRIVEWAYS) of the 2020 Molalla Standard Design Standards and Standard Detail R-1095: Minimum and maximum driveway widths for a Commercial driveway are 30' and 40' respectively. The proposed driveway width is 30 feet; therefore, this code is satisfied.

Per Section 2.2.26.c: Commercial or Industrial developments, driveway access shall be a minimum of 100 feet from the nearest intersection (as measured from the centerline of drive way to the near face of curb at intersection) unless otherwise approved by in writing by the City's authorized representative. The centerline of the proposed driveway is 145 feet form the inner curb of Fountain Way; therefore, this code is satisfied.

Per AASHTO intersection sight distance requirements for a local road with a posted speed of 35mph, a sight distance of 350 lineal feet is required. The proposed driveway location on Industrial Way sits in a relatively flat portion of the street, with no physical obstructions to the line of sight at the proposed driveway location to the south. Road is not anticipated to continue north past the proposed driveway at a distance greater than 350 feet. The requisite sight distance is met at the proposed driveway location. The location, width and slope of the proposed driveway does not pose any inherent safety issues.

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Per the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, for the assigned Land Use 926: Food Cart Pod, the weekday peak PM hour trips generated per Food Cart is 3.08 Trips. The proposed Food Cart Pod Will introduce 5 carts, the trips generated in the weekday peak PM hours is 15.4. Food Cart Pod will not be open during the AM peak and therefore will not produce any new AM peak hour trips.

The location, width and slope of the proposed driveway does not pose any inherent safety issues.

We have reviewed the City's Transportation System Plan (TSP) and the proposed driveway access complies with the applicable standards.

Feel free to contact me with any questions or clarifications.

Best Regards,

Kelli A. Grover, P.E.
Project Engineer

359 E Historic Columbia River Hwy Troutdale, Oregon 97060 Tel: 503-668-3737 Fax: 503-668-3788

Fountain Way Food Cart Pod
1400 Fountain Way

PRELIMINARY
STORM DRAINAGE CALCULATIONS

Prepared By:

~~April 2022~~
September 2022
FDG Project No. E20-082

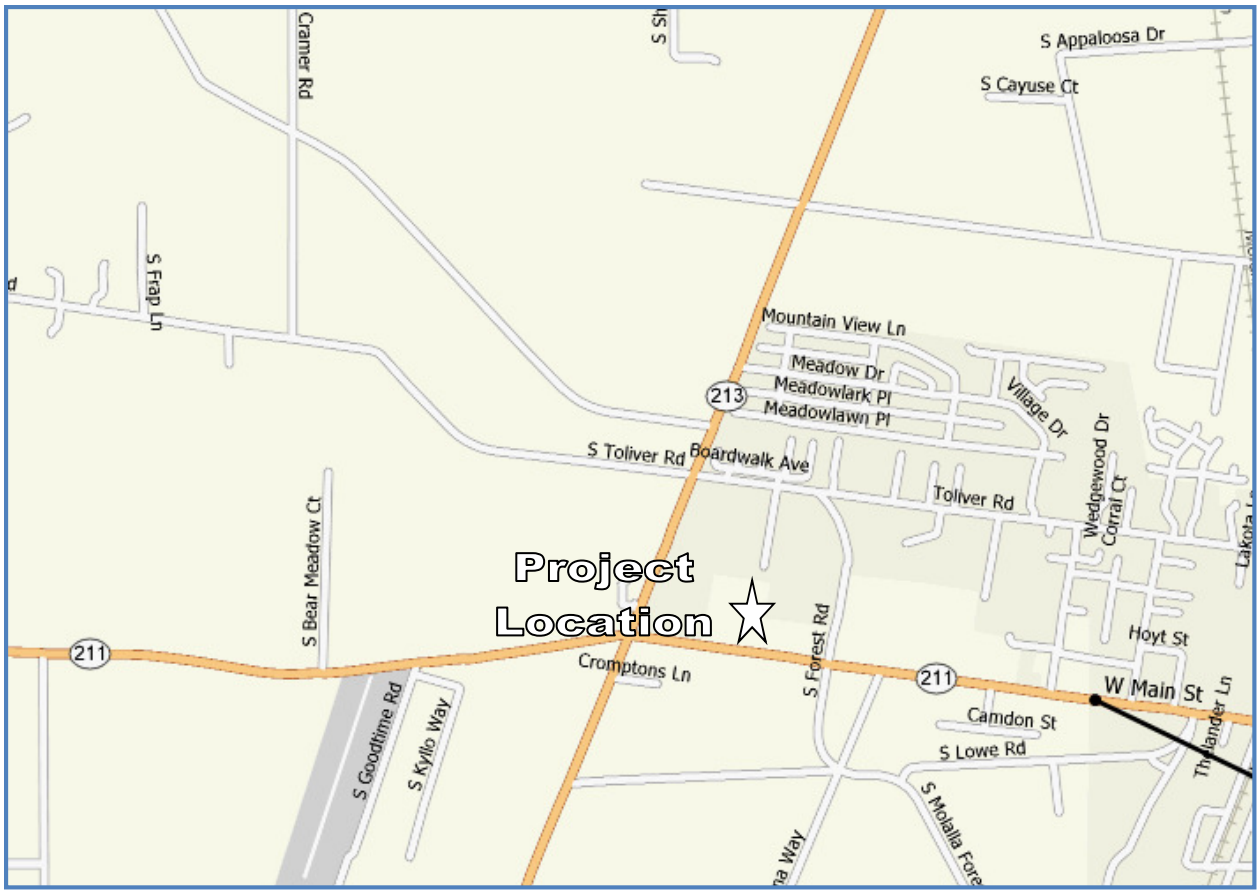
359 E. Historic Columbia River Highway
Troutdale, OR 97060
503.668.3737- fax 503.668.3788

Table of Contents

1.0 LOCATION

The Project is located in the Northeast ¼ of Section 7 Township 5 South, Range 2 East, Willamette Meridian and encompasses all of Tax Lot 1901. In the City of Molalla Oregon refer to the vicinity map below.

Figure 1 – Vicinity Map



2.0 SITE DESCRIPTION

The current site consists of an existing parking lots which serves an onsite Brewery, tap house and a sleep health office. There are various site improvements including sidewalks, fences, landscaping, patio areas, etc.

2.1 SOILS

The area (Figure 2- Area 1) south of the project site that is proposed for future parking is an existing grassy landscaped field with a rock fountain near its center which gently

slopes to the north. This grass field is enclosed by sidewalks to the north, east, and south, with existing parking lot to the east. The site soils in this area is characterized as Amity silt loam as identified in the USDA Natural Resources Conservation Service (NRCS), soil survey of Clackamas County (see Appendix A) in the upper portion of the site. This soil falls within the soil hydrologic group "C/D". Hydrologic Group "C/D" exhibit low infiltration rates when thoroughly wetted and consist primarily of soils having a layer that impedes downward movement of water and soils of moderately fine to fine texture. These soils have a slow rate of water transmission with a range of 0.20 in/hr to 0.57 in/hr as shown in the attached soil report. Because of the poorly draining soils infiltration was not selected as a viable management method for this area.

The area just north of the project site (Figure 2- Area 2) is an existing gravel parking area and grass field with flat slopes which with runoff in the area flowing north towards Bear Creek and existing storage facility. Soils in this area are characterized as Wapato silt clay loam (84) as identified in the USDA Natural Resource Conservation Services (NRCS), soil survey of Clackamas County (see Appendix A). This soil falls within the soil hydrological group "C/D". Hydrologic Group "C/D" are defined as having a very slow infiltration rate when thoroughly wet. Consisting chiefly of clays that have high shrink-swell potential, soils that have a highwater table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a slow rate of water transmission with a range of 0.20 in/hr to 0.57 in/hr as shown in the attached soil report. Because of the poorly draining soils infiltration was not selected as a viable management method for this area.

Figure 2 - Aerial of Property

In 2009 there were several site improvements constructed with the new construction of the existing dental office on tax lot 1902. New stormwater management facilities were constructed in association with these improvements. This included a new detention pond and treatment swale constructed in series at the north end of the subject parcel. Our office prepared the design and calculations for the improvements and stormwater management facilities, therefore we had the information related to these facilities readily

available for reference. In reviewing these calculations the stormwater facility was oversized and runoff from the proposed street improvements is proposed to be directed into this facility.

3.0 PROJECT DESCRIPTION – STORM MANAGEMENT APPROACH

Project proposes establishing a Food Cart Pod within the existing parking lot serving the Brewery and Restaurant. The existing gravel parking to the north and landscaped are to the south will be converted to new paved parking areas.

Parking improvements to the north will be treated extended dry detention basin which will discharge into a flow control structure before discharging to the existing storm system outfall constructed in 2009. This facility will manage both the stormwater quality and quantity from the proposed northerly parking lot impervious area per Molalla design standards.

Parking improvements to the south will be treated in an onsite water quality vegetated basin with overflow from the basin being directed to a series of Storm Tech SC-310 chambers installed beneath the paved area. These StormTech chambers will discharge to a flow control manhole before discharging into an existing manhole on Industrial way.

4.0 HYDROLOGY

The detention facilities for this site have been designed in a manner that will ensure the runoff generated for the post-development peak run-off rates of the 2-Yr, 10-Yr, and 25-yr such that do not exceed those of the pre-development 2-Yr, 10-Yr, and 25-yr peak run of rates.

To evaluate estimated pre-development and post-development flows, the Santa Barbara Urban Hydrograph (SBUH) methodology is applied. The variables utilized in this methodology include the pervious and impervious land areas, the time of concentration calculations, and the runoff curve numbers (CN) applicable to the site. The design storm hydrograph applied is the Natural Resource Conservation Service (SCS) Type 1A, 24 hour storm event.

Table 1 - Storm Frequency

Frequency	*Duration*	*Rainfall*
2-year	24hr	2.50 inches
10-year	24 hr	3.45 inches
25-year	24 hr	3.90 inches
Water Quality	4 hr	0.36 inches

A CN of:

- 98 was used to model the post-construction impervious area.
- 76 was used to model the pre-construction pervious area, modeling HSG C soils with fair condition woods cover.

Two Basins were derived for the proposed post-development areas with Basin 1 representing the southern new impervious areas and Basin 2 the proposed northern new impervious areas. The following summarizes CN values and the corresponding pervious or impervious areas for the pre and post development conditions:

Table 2 - Curve Number Summary Basin 1

		Total Area	*CN*
Pre-Dev.			
Basin 1	Pervious	5472 Sq-ft	76
	Subtotal	**5472 Sq-ft**	
Post-Dev.			
Basin 1	Impervious	5472 Sq-ft	98
	Subtotal	**5472 Sq-ft**	

The basin under consideration (Basin 1) includes the entire area effected by the construction of the proposed new parking impervious area. The topography and site improvements dictate the estimated time of concentration for a theoretical drop of water to travel from the furthest point in the drainage basin to the point of discharge.

To model the collection of stormwater runoff from the impervious areas to their respective discharge point for post-construction conditions, a minimum time of concentration of 6 minutes was used.

Table 3 - Curve Number Summary Basin 2

		Total Area	*CN*
Pre-Dev.			
Basin 1	Pervious	13044 Sq-ft	76
	Subtotal	**13044 Sq-ft**	
Post-Dev.			
Basin 1	Impervious	13044 Sq-ft	98
	Subtotal	**13044 Sq-ft**	

The basin under consideration (Basin 2) includes the entire area effected by the construction of the proposed new parking impervious area, along with the proposed new garbage storage area and access drive. The topography and site improvements dictate

the estimated time of concentration for a theoretical drop of water to travel from the furthest point in the drainage basin to the point of discharge.

To model the collection of stormwater runoff from the impervious areas to their respective discharge point for post-construction conditions, a minimum time of concentration of 6 minutes was used.

5. PRIVATE PARKING AREAS

5.1 Basin 1 South Parking Area

The pre-developed Basin 1 area are defined as the entire impervious area affected by the proposed new parking. The area occupied by the proposed parking is modeled to establish both the pre-development and post developed peak flow rates. Per the King County Surface Water Design C soils, a CN value of 76 is applied assuming the entire area consists of pre-development fair wooded grassy area.

5.2 Basin 1 Water Quantity

The stormwater quantity control for Basin 1 will rely on the utilizing twelve StormTech SC-310 Chambers and flow control manhole to reduce the post-development peak run-off rates of the 2-Yr, 10-Yr, and 25-yr such that they do not exceed those of the pre-development 2-Yr, 10-Yr, and 25-yr peak run of rates.

Table 4 summarizes the pre and post development peak flow rates for Basin 1. The complete HydroCAD data output for each basin and storm event can be found in Appendix B.

Table 4 – Basin 1 Peak Flow Summary

Design Storm	Pre-Development Peak Flow (cfs)	Post-Developed Peak Flow (cfs)
2-yr	0.01	0.01
10-yr	0.03	0.03
25-yr	0.05	0.04

5.3 Basin 1 Water Quality

A Water Quality Planter is designed to fully contain the stormwater runoff from Basin 1 for a Water Quality storm depth of 0.36inches distributed over a 4hr duration. Table 5 below show the post-development runoff to and from the proposed basin.

Table 5 – Basin 1 Water Quality Storm Flow Summary

Design Storm	Peak In Flow (cfs)	Peak Out Flow (cfs)
WQ	0.01	0.00

The water quality pond is sized to adequately sized to detain 25-year 24-hr storm event with 0.4-foot of freeboard as demonstrated in the HYDROCAD calculations included in the appendices.

5.4 Basin 2 North Parking Area

The pre-developed Basin 2 area are defined as the entire impervious area affected by the proposed new parking, concrete walkways, and concrete garbage area. The area occupied by the proposed by these areas is modeled to establish both the pre-development and post developed peak flow rates. Per the King County Surface Water Design C soils, a CN value of 76 is applied assuming the entire area consists of pre-development fair wooded grassy area.

5.5 Basin 2 Water Quantity

The stormwater quantity control for Basin 1 will rely on the utilizing a extended dry Detention Pond and flow control inlet to capture and reduce the post-development peak run-off rates of the 2-Yr, 10-Yr, and 25-yr such that they do not exceed those of the pre-development 2-Yr, 10-Yr, and 25-yr peak run of rates.

Table 6 summarizes the pre and post development peak flow rates for Basin 2. The complete HydroCAD data output for each basin and storm event can be found in Appendix B.

Table 6 – Basin 2 Peak Flow Summary

Design Storm	Pre-Development Peak Flow (cfs)	Post-Developed Peak Flow (cfs)
2-yr	0.03	0.03
10-yr	0.08	0.08
25-yr	0.11	0.10

5.6 Basin 2 Water Quality

The extended dry detention pond is designed to accommodate the stormwater runoff from the entire Basin 2 for a Water Quality storm depth of 0.36inches distributed over a 4hr duration. The diagram below is an exhibit from the HydroCAD calculations showing

an average depth of flow in the swale of 0.28ft with an minimum 110 minute residence time for the water quality event.

The complete HydroCAD data output for each basin and storm event can be found in Appendix B.

6.0 PUBLIC STREET IMPERVIOUS

The runoff from the majority of the new impervious area within the right of way will be collected in a proposed catch basin at the terminus of the dead end road. A small portion of the road that sheds from the crown to the partial improvement will flow to the vegetated shoulder of the road and overland.

The new catch basin will convey the flows to the existing stormwater system in the street. The downstream by-pass manhole structure that will be slightly modified to ensure the same by pass flows to the creek are the same flows as it currently operates based on the original calculations and modeling.

6.1 WATER QUANTITY

The existing detention and swale structure that was constructed in 2009 was sized to detain flows such that the 25 year post development flow matched the 10-year pre-development flow per the City standards in place at that time. Currently the standards require the post development 25-year storm to match the pre-development 25 year storm so this requires less detention than the 2009 standards. As such the existing detention facility is oversized and can be used to detain the public right of way run-off without modification to the outlet flow control structure orifices.

Table 7 summarizes the pre and post development peak flow rates for proposed road extension. The original Hydro CAD model for the 2009 development with the weir and orifice modifications is included in the Appendices for reference.

Table 7 – New Road Extension Peak Flow Summary

Design Storm	Pre-Development Peak Flow (cfs)	Post-Developed Peak Flow (cfs)
2-yr	0.46	0.44
10-yr	0.80	0.78
25-yr	0.93	0.85

6.2 WATER QUALITY

The existing swale constructed under the 2009 improvements will be used to treat the runoff for the proposed road extension. The water quality flow for the new impervious area associated with the right of way improvements is 0.02cfs. The original water quality design flow for the 2009 development was 0.09cfs with an average depth at peak

storage in the pond of 0.04ft. The new flow is 0.10cfs and the average depth at peak storage in the pond of 0.25ft, this is a nominal change that doesn't impact the function of the swale to treat and meets the City design standards, therefore the existing facility is adequate without modification.

7.0 CONCLUSION

The proposed new parking areas will each have individual private stormwater management facilities. The facilities have been designed in consideration of the available discharge point elevations and site constraints. Both facilities provide water quality treatment and quality control that meet the City's standards.

The proposed new street improvement in Industrial Way will be managed via minor modification of the existing by-pass weir in the by-pass manhole. The proposed modifications will provide water quality treatment and quality control that meet the City's standards for the right of way impervious area.

APPENDIX A

Clackamas County Area, Oregon

3—Amity silt loam

Map Unit Setting

National map unit symbol: 2247
Elevation: 150 to 400 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Amity and similar soils: 85 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Amity

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Stratified glaciolacustrine deposits

Typical profile

H1 - 0 to 22 inches: silt loam
H2 - 22 to 62 inches: silty clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: R002XC007OR - Valley Swale Group
Forage suitability group: Somewhat Poorly Drained (G002XY005OR)
Other vegetative classification: Somewhat Poorly Drained (G002XY005OR)
Hydric soil rating: No

Minor Components

Dayton

Percent of map unit: 3 percent
Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Poorly Drained (G002XY006OR)
Hydric soil rating: Yes

Huberly

Percent of map unit: 2 percent
Landform: Swales on terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Other vegetative classification: Poorly Drained (G002XY006OR)
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 18, Oct 27, 2021

Clackamas County Area, Oregon

84—Wapato silty clay loam

Map Unit Setting

National map unit symbol: 227j
Elevation: 100 to 1,500 feet
Mean annual precipitation: 40 to 60 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 165 to 210 days
Farmland classification: Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Wapato and similar soils: 85 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wapato

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 18 inches: silty clay loam
H2 - 18 to 45 inches: silty clay loam
H3 - 45 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F002XC002OR - Backswamp Group
Forage suitability group: Poorly Drained (G002XY006OR)
Other vegetative classification: Poorly Drained (G002XY006OR)

Hydric soil rating: Yes

Minor Components

Cove

Percent of map unit: 6 percent
Landform: Flood plains
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

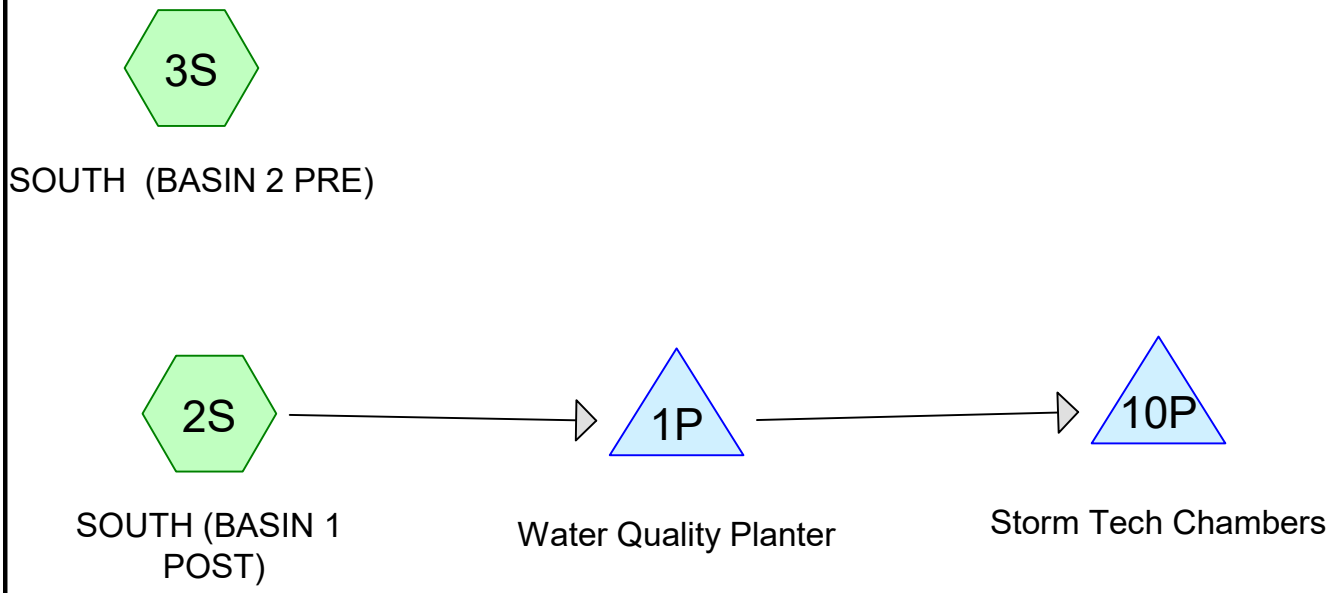
Humaquepts

Percent of map unit: 4 percent
Landform: Flood plains
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 18, Oct 27, 2021

APPENDIX B



Subcat Reach Pond Link

Routing Diagram for South Lot Storm Chambers
Prepared by Blake Davis @ FDG, Printed 4/29/2022
HydroCAD® 10.10-6a s/n 04664 © 2020 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-YEAR	Type IA 24-hr		Default	24.00	1	2.50	2
2	10-YEAR	Type IA 24-hr		Default	24.00	1	3.45	2
3	25-YEAR	Type IA 24-hr		Default	24.00	1	3.90	2
4	WQ	Type IA 24-hr		Trim	4.00	1	0.36	2

Summary for Subcatchment 2S: SOUTH (BASIN 1 POST)

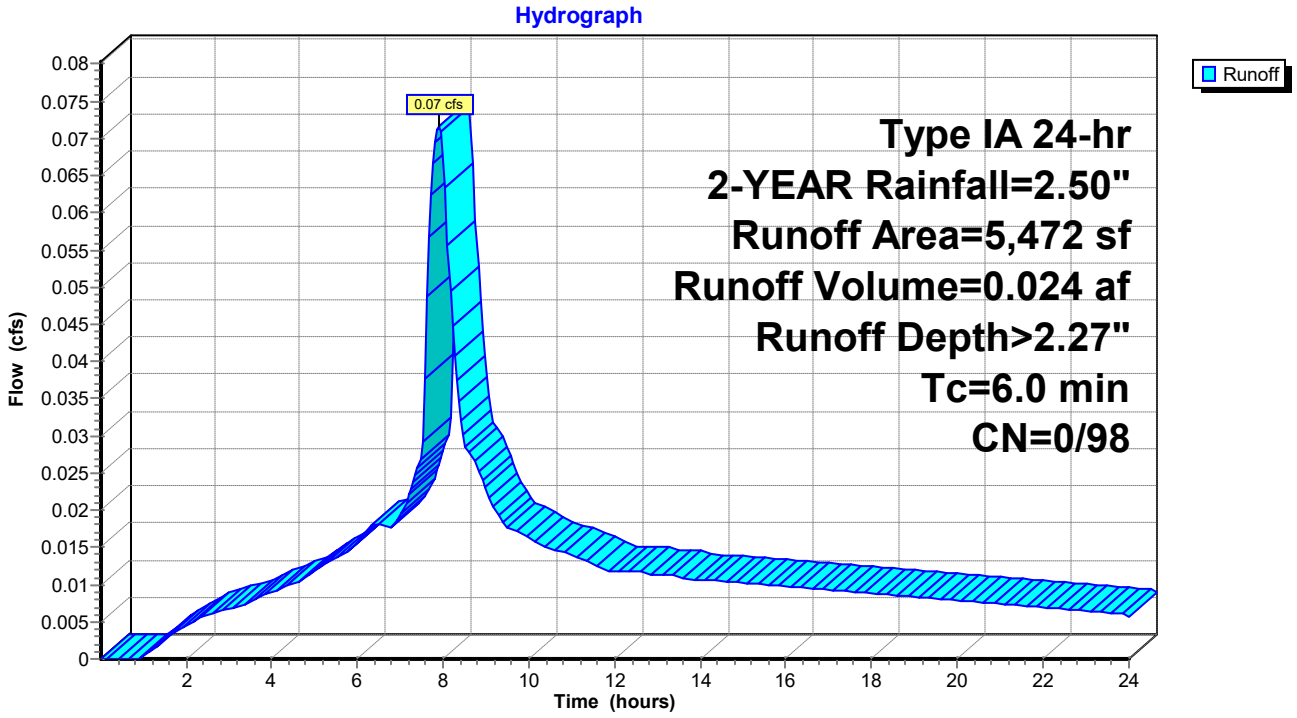
Runoff = 0.07 cfs @ 7.92 hrs, Volume= 0.024 af, Depth> 2.27"
Routed to Pond 1P : Water Quality Planter

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Type IA 24-hr 2-YEAR Rainfall=2.50"

	Area (sf)	CN	Description
*	5,472	98	
	5,472	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 2S: SOUTH (BASIN 1 POST)



Hydrograph for Subcatchment 2S: SOUTH (BASIN 1 POST)

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.01	0.00	**0.00**	0.00	0.00
0.51	0.03	0.00	0.00	0.00
1.01	0.05	0.00	0.00	0.00
1.51	0.09	0.00	0.01	0.00
2.01	0.13	0.00	0.02	0.00
2.51	0.17	0.00	0.05	0.01
3.01	0.21	0.00	0.07	0.01
3.51	0.25	0.00	0.10	0.01
4.01	0.29	0.00	0.14	0.01
4.51	0.34	0.00	0.18	0.01
5.01	0.39	0.00	0.22	0.01
5.51	0.45	0.00	0.27	0.01
6.01	0.52	0.00	0.33	0.02
6.51	0.59	0.00	0.40	0.02
7.01	0.67	0.00	0.48	0.02
7.51	0.78	0.00	0.58	**0.03**
8.01	1.07	0.00	0.86	**0.07**
8.51	1.20	0.00	0.99	0.03
9.01	1.30	0.00	1.09	0.02
9.51	1.38	0.00	1.16	0.02
10.01	1.44	0.00	1.22	0.02
10.51	1.50	0.00	1.28	0.01
11.01	1.56	0.00	1.34	0.01
11.51	1.61	0.00	1.39	0.01
12.01	1.66	0.00	1.44	0.01
12.51	1.71	0.00	1.49	0.01
13.01	1.75	0.00	1.53	0.01
13.51	1.80	0.00	1.57	0.01
14.01	1.84	0.00	1.62	0.01
14.51	1.88	0.00	1.66	0.01
15.01	1.92	0.00	1.70	0.01
15.51	1.96	0.00	1.74	0.01
16.01	2.00	0.00	1.78	0.01
16.51	2.04	0.00	1.82	0.01
17.01	2.08	0.00	1.85	0.01
17.51	2.11	0.00	1.89	0.01
18.01	2.15	0.00	1.92	0.01
18.51	2.18	0.00	1.96	0.01
19.01	2.22	0.00	1.99	0.01
19.51	2.25	0.00	2.02	0.01
20.01	2.28	0.00	2.05	0.01
20.51	2.31	0.00	2.08	0.01
21.01	2.34	0.00	2.11	0.01
21.51	2.37	0.00	2.14	0.01
22.01	2.40	0.00	2.17	0.01
22.51	2.43	0.00	2.20	0.01
23.01	2.45	0.00	2.22	0.01
23.51	2.48	0.00	2.25	0.01
24.01	**2.50**	0.00	**2.27**	0.01

Summary for Subcatchment 3S: SOUTH (BASIN 2 PRE)

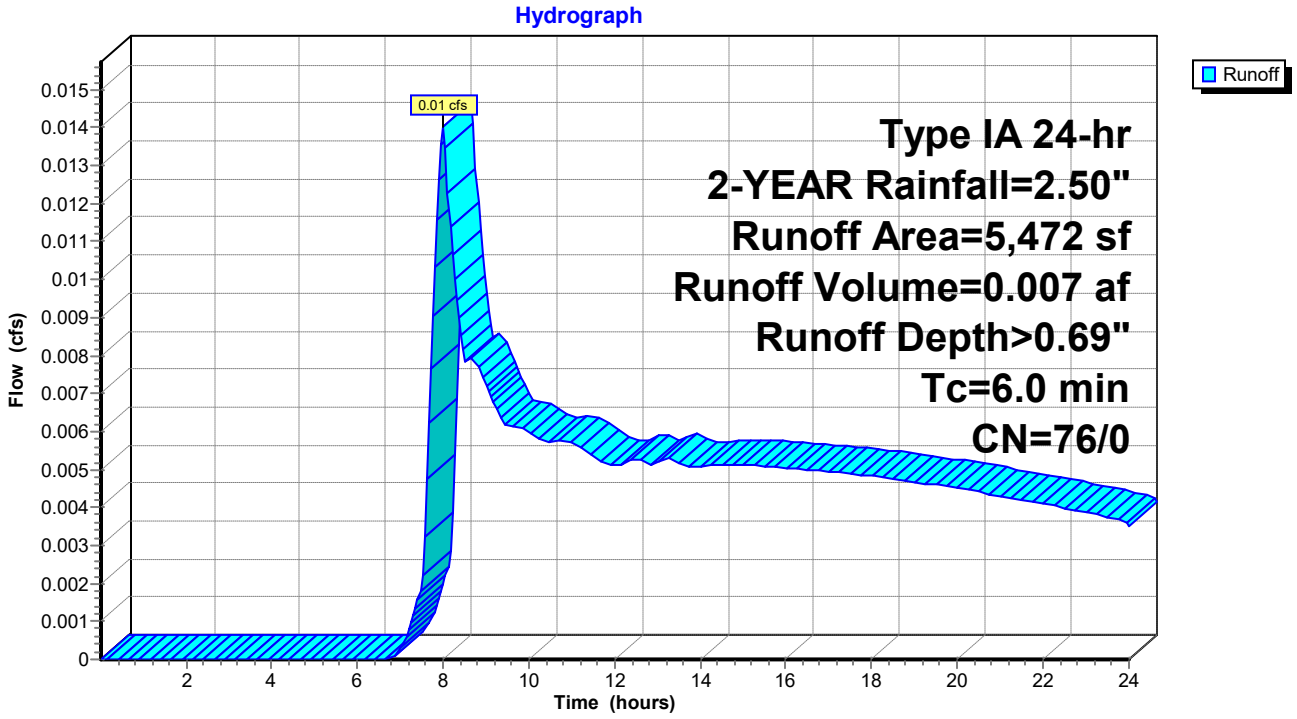
Runoff = 0.01 cfs @ 8.01 hrs, Volume= 0.007 af, Depth> 0.69"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Type IA 24-hr 2-YEAR Rainfall=2.50"

Area (sf)	CN	Description
5,472	76	Woods/grass comb., Fair, HSG C
5,472	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 3S: SOUTH (BASIN 2 PRE)



Hydrograph for Subcatchment 3S: SOUTH (BASIN 2 PRE)

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	**0.00**	0.00
0.51	0.03	0.00	0.00	0.00
1.01	0.05	0.00	0.00	0.00
1.51	0.09	0.00	0.00	0.00
2.01	0.13	0.00	0.00	0.00
2.51	0.17	0.00	0.00	0.00
3.01	0.21	0.00	0.00	0.00
3.51	0.25	0.00	0.00	0.00
4.01	0.29	0.00	0.00	0.00
4.51	0.34	0.00	0.00	0.00
5.01	0.39	0.00	0.00	0.00
5.51	0.45	0.00	0.00	0.00
6.01	0.52	0.00	0.00	0.00
6.51	0.59	0.00	0.00	0.00
7.01	0.67	0.00	0.00	0.00
7.51	0.78	0.01	0.00	0.00
8.01	1.07	0.05	0.00	**0.01**
8.51	1.20	0.09	0.00	0.01
9.01	1.30	0.12	0.00	0.01
9.51	1.38	0.14	0.00	0.01
10.01	1.44	0.17	0.00	0.01
10.51	1.50	0.19	0.00	0.01
11.01	1.56	0.21	0.00	0.01
11.51	1.61	0.23	0.00	0.01
12.01	1.66	0.25	0.00	0.01
12.51	1.71	0.27	0.00	0.01
13.01	1.75	0.29	0.00	0.01
13.51	1.80	0.31	0.00	0.01
14.01	1.84	0.33	0.00	0.01
14.51	1.88	0.36	0.00	0.01
15.01	1.92	0.38	0.00	0.01
15.51	1.96	0.40	0.00	0.01
16.01	2.00	0.42	0.00	0.01
16.51	2.04	0.44	0.00	0.01
17.01	2.08	0.45	0.00	0.00
17.51	2.11	0.47	0.00	0.00
18.01	2.15	0.49	0.00	0.00
18.51	2.18	0.51	0.00	0.00
19.01	2.22	0.53	0.00	0.00
19.51	2.25	0.55	0.00	0.00
20.01	2.28	0.57	0.00	0.00
20.51	2.31	0.58	0.00	0.00
21.01	2.34	0.60	0.00	0.00
21.51	2.37	0.62	0.00	0.00
22.01	2.40	0.63	0.00	0.00
22.51	2.43	0.65	0.00	0.00
23.01	2.45	0.67	0.00	0.00
23.51	2.48	0.68	0.00	0.00
24.01	**2.50**	**0.69**	0.00	0.00

Summary for Pond 1P: Water Quality Planter

Inflow Area = 0.126 ac,100.00% Impervious, Inflow Depth > 2.27" for 2-YEAR event
Inflow = 0.07 cfs @ 7.92 hrs, Volume= 0.024 af
Outflow = 0.07 cfs @ 7.94 hrs, Volume= 0.022 af, Atten= 0%, Lag= 1.0 min
Primary = 0.07 cfs @ 7.94 hrs, Volume= 0.022 af
Routed to Pond 10P : Storm Tech Chambers

Routing by Stor-Ind method, Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Peak Elev= 325.81' @ 7.94 hrs Surf.Area= 268 sf Storage= 98 cf

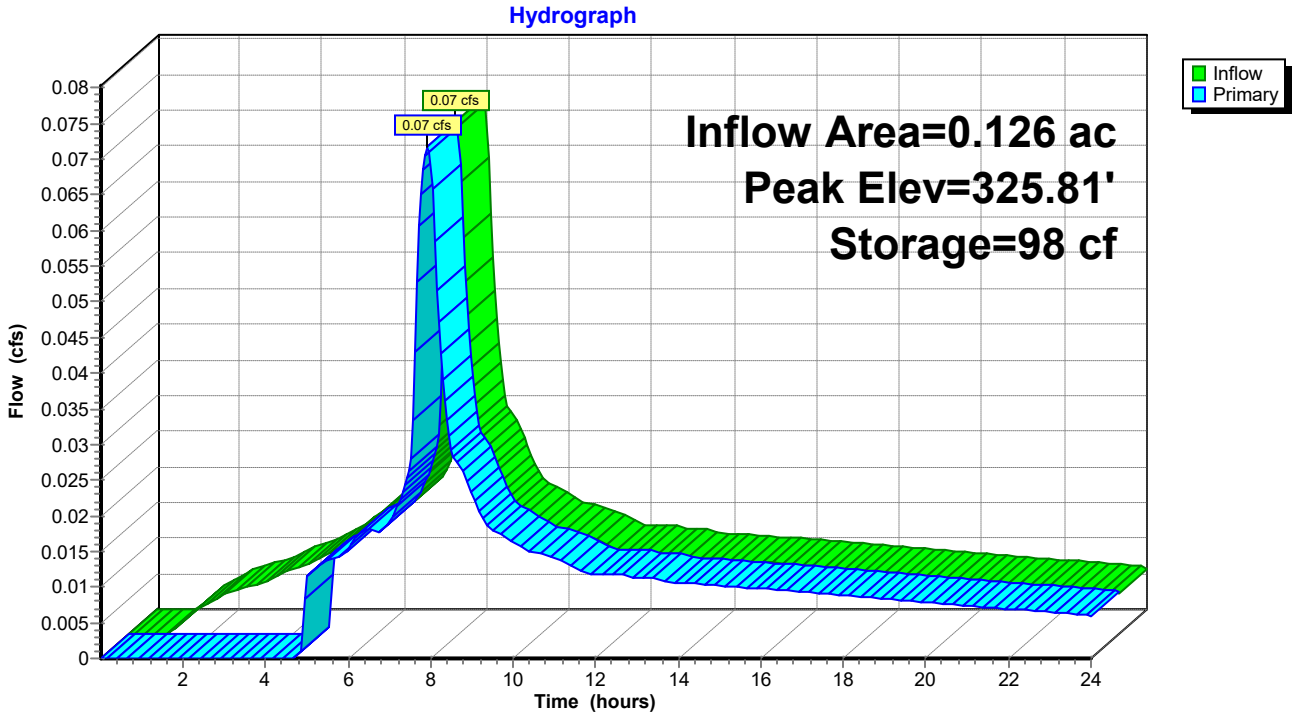
Plug-Flow detention time= 109.6 min calculated for 0.022 af (91% of inflow)
Center-of-Mass det. time= 46.5 min (719.9 - 673.3)

Volume	Invert	Avail.Storage	Storage Description
#1	322.90'	36 cf	**4.75'W x 15.00'L x 1.25'H Drainage Rock** 89 cf Overall x 40.0% Voids
#2	324.15'	22 cf	**4.75'W x 15.00'L x 1.25'H Growing Medium** 89 cf Overall x 25.0% Voids
#3	325.40'	107 cf	**4.75'W x 15.00'L x 0.83'H Prismatoid Z=3.0**
		165 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	325.75'	**6.0" Horiz. Overflow Orifice** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.07 cfs @ 7.94 hrs HW=325.81' (Free Discharge)
1=Overflow Orifice (Weir Controls 0.07 cfs @ 0.78 fps)

Pond 1P: Water Quality Planter



Hydrograph for Pond 1P: Water Quality Planter

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.01	0.00	0	322.90	0.00
0.51	0.00	0	322.90	0.00
1.01	0.00	0	322.90	0.00
1.51	0.00	3	323.00	0.00
2.01	0.00	9	323.23	0.00
2.51	0.01	19	323.56	0.00
3.01	0.01	31	323.97	0.00
3.51	0.01	43	324.59	0.00
4.01	0.01	59	325.41	0.00
4.51	0.01	76	325.61	0.00
5.01	0.01	93	325.77	0.01
5.51	0.01	93	325.77	0.01
6.01	0.02	93	325.77	0.02
6.51	0.02	93	325.77	0.02
7.01	0.02	93	325.77	0.02
7.51	**0.03**	**94**	**325.78**	**0.03**
8.01	**0.07**	**97**	**325.81**	**0.07**
8.51	0.03	94	325.78	0.03
9.01	0.02	94	325.77	0.02
9.51	0.02	93	325.77	0.02
10.01	0.02	93	325.77	0.02
10.51	0.01	93	325.77	0.01
11.01	0.01	93	325.77	0.01
11.51	0.01	93	325.77	0.01
12.01	0.01	93	325.77	0.01
12.51	0.01	93	325.77	0.01
13.01	0.01	92	325.77	0.01
13.51	0.01	92	325.77	0.01
14.01	0.01	92	325.77	0.01
14.51	0.01	92	325.77	0.01
15.01	0.01	92	325.77	0.01
15.51	0.01	92	325.77	0.01
16.01	0.01	92	325.76	0.01
16.51	0.01	92	325.76	0.01
17.01	0.01	92	325.76	0.01
17.51	0.01	92	325.76	0.01
18.01	0.01	92	325.76	0.01
18.51	0.01	92	325.76	0.01
19.01	0.01	92	325.76	0.01
19.51	0.01	92	325.76	0.01
20.01	0.01	92	325.76	0.01
20.51	0.01	92	325.76	0.01
21.01	0.01	92	325.76	0.01
21.51	0.01	92	325.76	0.01
22.01	0.01	92	325.76	0.01
22.51	0.01	92	325.76	0.01
23.01	0.01	92	325.76	0.01
23.51	0.01	92	325.76	0.01
24.01	0.01	92	325.76	0.01

Summary for Pond 10P: Storm Tech Chambers

Inflow Area = 0.126 ac,100.00% Impervious, Inflow Depth > 2.07" for 2-YEAR event
Inflow = 0.07 cfs @ 7.94 hrs, Volume= 0.022 af
Outflow = 0.01 cfs @ 10.92 hrs, Volume= 0.019 af, Atten= 80%, Lag= 179.1 min
Primary = 0.01 cfs @ 10.92 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Peak Elev= 321.16' @ 10.92 hrs Surf.Area= 408 sf Storage= 288 cf

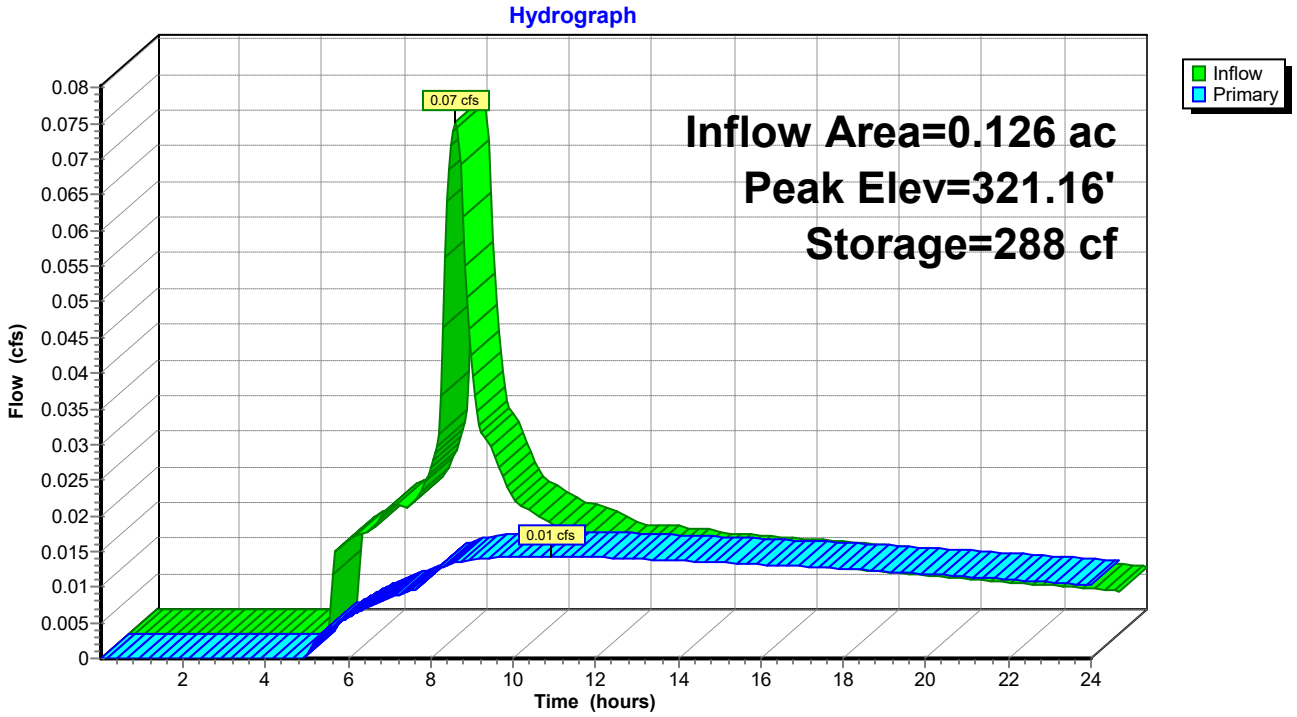
Plug-Flow detention time= 257.9 min calculated for 0.019 af (86% of inflow)
Center-of-Mass det. time= 169.1 min (888.9 - 719.9)

Volume	Invert	Avail.Storage	Storage Description
#1	319.90'	309 cf	**14.83'W x 27.50'L x 2.33'H Prismatoid** 950 cf Overall - 177 cf Embedded = 773 cf x 40.0% Voids
#2	320.40'	177 cf	**ADS_StormTech RC-310 +Cap** x 12 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 4 Rows
		486 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	319.90'	**0.7" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	321.40'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	322.05'	**6.0" Vert. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.01 cfs @ 10.92 hrs HW=321.16' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 5.35 fps)
- **2=Orifice/Grate** (Controls 0.00 cfs)
- **3=Overflow** (Controls 0.00 cfs)

Pond 10P: Storm Tech Chambers



Hydrograph for Pond 10P: Storm Tech Chambers

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.01	0.00	0	319.90	0.00
0.51	0.00	0	319.90	0.00
1.01	0.00	0	319.90	0.00
1.51	0.00	0	319.90	0.00
2.01	0.00	0	319.90	0.00
2.51	0.00	0	319.90	0.00
3.01	0.00	0	319.90	0.00
3.51	0.00	0	319.90	0.00
4.01	0.00	0	319.90	0.00
4.51	0.00	0	319.90	0.00
5.01	0.01	3	319.92	0.00
5.51	0.01	21	320.03	0.00
6.01	0.02	38	320.13	0.01
6.51	0.02	57	320.25	0.01
7.01	0.02	76	320.36	0.01
7.51	**0.03**	100	320.47	0.01
8.01	**0.07**	187	320.77	0.01
8.51	0.03	246	321.00	0.01
9.01	0.02	269	321.09	0.01
9.51	0.02	280	321.13	0.01
10.01	0.02	285	321.15	0.01
10.51	0.01	**287**	**321.16**	**0.01**
11.01	0.01	**288**	**321.16**	**0.01**
11.51	0.01	286	321.16	0.01
12.01	0.01	283	321.14	0.01
12.51	0.01	279	321.12	0.01
13.01	0.01	274	321.11	0.01
13.51	0.01	269	321.09	0.01
14.01	0.01	264	321.07	0.01
14.51	0.01	258	321.04	0.01
15.01	0.01	253	321.02	0.01
15.51	0.01	247	321.00	0.01
16.01	0.01	241	320.98	0.01
16.51	0.01	235	320.95	0.01
17.01	0.01	228	320.93	0.01
17.51	0.01	222	320.90	0.01
18.01	0.01	215	320.88	0.01
18.51	0.01	209	320.85	0.01
19.01	0.01	202	320.83	0.01
19.51	0.01	195	320.80	0.01
20.01	0.01	188	320.78	0.01
20.51	0.01	181	320.75	0.01
21.01	0.01	173	320.72	0.01
21.51	0.01	166	320.70	0.01
22.01	0.01	159	320.67	0.01
22.51	0.01	151	320.64	0.01
23.01	0.01	144	320.62	0.01
23.51	0.01	136	320.59	0.01
24.01	0.01	128	320.56	0.01

Summary for Subcatchment 2S: SOUTH (BASIN 1 POST)

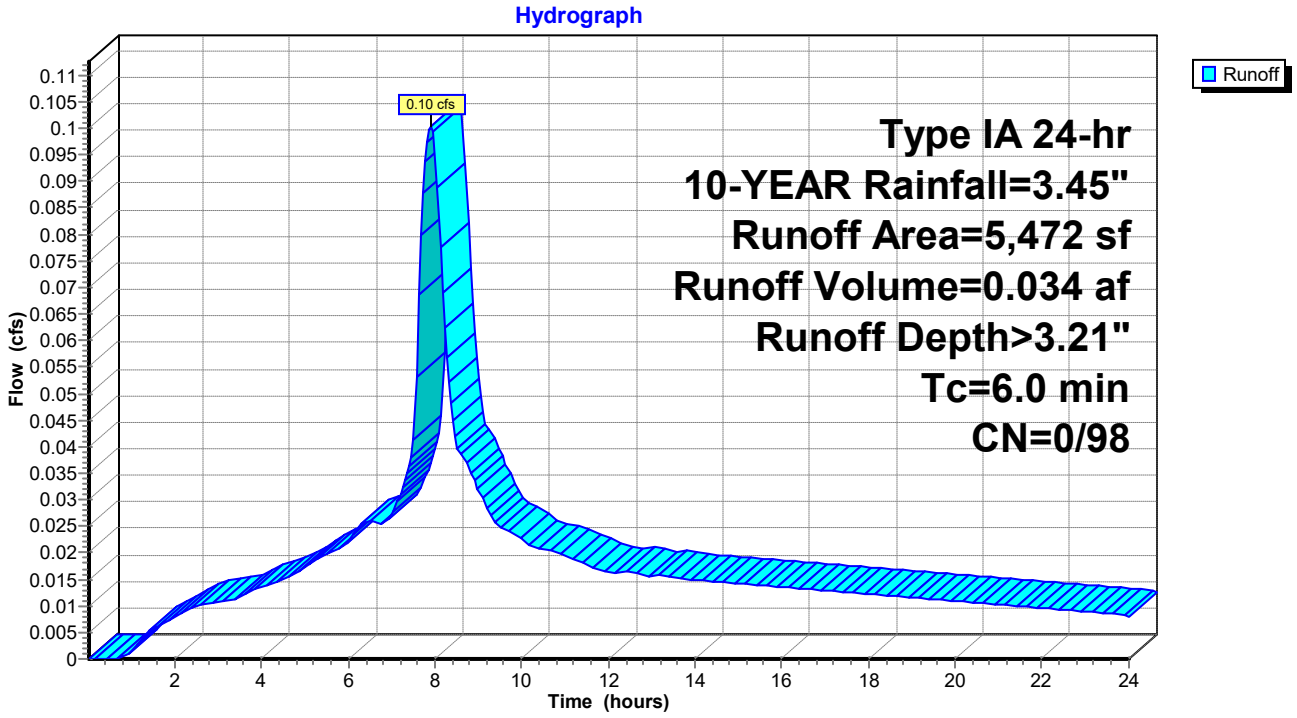
Runoff = 0.10 cfs @ 7.92 hrs, Volume= 0.034 af, Depth> 3.21"
Routed to Pond 1P : Water Quality Planter

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YEAR Rainfall=3.45"

	Area (sf)	CN	Description
*	5,472	98	
	5,472	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 2S: SOUTH (BASIN 1 POST)



Hydrograph for Subcatchment 2S: SOUTH (BASIN 1 POST)

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.01	0.00	**0.00**	0.00	0.00
0.51	0.04	0.00	0.00	0.00
1.01	0.07	0.00	0.00	0.00
1.51	0.12	0.00	0.02	0.01
2.01	0.17	0.00	0.05	0.01
2.51	0.23	0.00	0.09	0.01
3.01	0.28	0.00	0.13	0.01
3.51	0.34	0.00	0.18	0.01
4.01	0.40	0.00	0.23	0.01
4.51	0.47	0.00	0.29	0.02
5.01	0.54	0.00	0.35	0.02
5.51	0.62	0.00	0.43	0.02
6.01	0.71	0.00	0.52	0.02
6.51	0.82	0.00	0.62	0.03
7.01	0.93	0.00	0.72	0.03
7.51	1.08	0.00	0.87	**0.04**
8.01	1.47	0.00	1.25	**0.10**
8.51	1.66	0.00	1.44	0.04
9.01	1.80	0.00	1.57	0.03
9.51	1.90	0.00	1.67	0.02
10.01	1.99	0.00	1.77	0.02
10.51	2.08	0.00	1.85	0.02
11.01	2.15	0.00	1.93	0.02
11.51	2.23	0.00	2.00	0.02
12.01	2.29	0.00	2.06	0.02
12.51	2.36	0.00	2.13	0.02
13.01	2.42	0.00	2.19	0.02
13.51	2.48	0.00	2.25	0.02
14.01	2.54	0.00	2.31	0.01
14.51	2.60	0.00	2.37	0.01
15.01	2.65	0.00	2.42	0.01
15.51	2.71	0.00	2.48	0.01
16.01	2.76	0.00	2.53	0.01
16.51	2.82	0.00	2.59	0.01
17.01	2.87	0.00	2.64	0.01
17.51	2.92	0.00	2.69	0.01
18.01	2.97	0.00	2.74	0.01
18.51	3.01	0.00	2.78	0.01
19.01	3.06	0.00	2.83	0.01
19.51	3.11	0.00	2.87	0.01
20.01	3.15	0.00	2.92	0.01
20.51	3.19	0.00	2.96	0.01
21.01	3.23	0.00	3.00	0.01
21.51	3.27	0.00	3.04	0.01
22.01	3.31	0.00	3.08	0.01
22.51	3.35	0.00	3.11	0.01
23.01	3.38	0.00	3.15	0.01
23.51	3.42	0.00	3.18	0.01
24.01	**3.45**	0.00	**3.22**	0.01

Summary for Subcatchment 3S: SOUTH (BASIN 2 PRE)

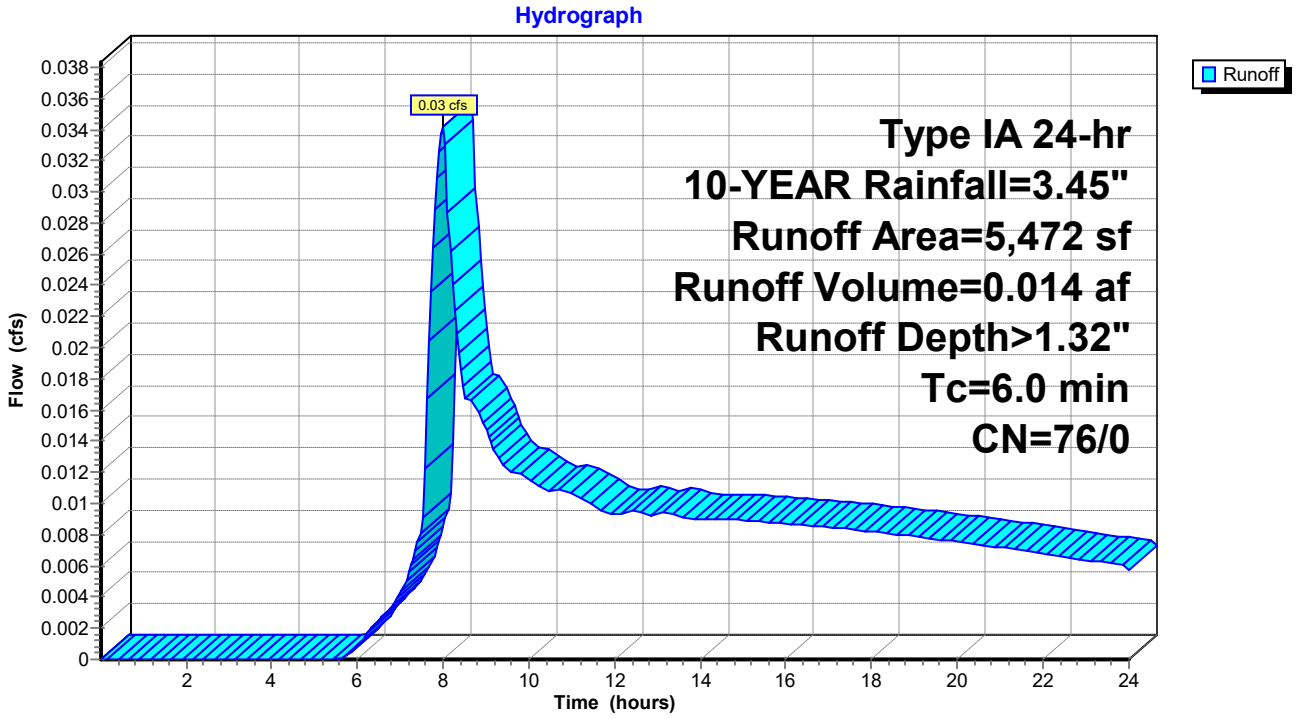
Runoff = 0.03 cfs @ 7.99 hrs, Volume= 0.014 af, Depth> 1.32"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Type IA 24-hr 10-YEAR Rainfall=3.45"

Area (sf)	CN	Description
5,472	76	Woods/grass comb., Fair, HSG C
5,472	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 3S: SOUTH (BASIN 2 PRE)



Hydrograph for Subcatchment 3S: SOUTH (BASIN 2 PRE)

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	**0.00**	0.00
0.51	0.04	0.00	0.00	0.00
1.01	0.07	0.00	0.00	0.00
1.51	0.12	0.00	0.00	0.00
2.01	0.17	0.00	0.00	0.00
2.51	0.23	0.00	0.00	0.00
3.01	0.28	0.00	0.00	0.00
3.51	0.34	0.00	0.00	0.00
4.01	0.40	0.00	0.00	0.00
4.51	0.47	0.00	0.00	0.00
5.01	0.54	0.00	0.00	0.00
5.51	0.62	0.00	0.00	0.00
6.01	0.71	0.00	0.00	0.00
6.51	0.82	0.01	0.00	0.00
7.01	0.93	0.03	0.00	0.00
7.51	1.08	0.05	0.00	0.01
8.01	1.47	0.18	0.00	**0.03**
8.51	1.66	0.25	0.00	0.02
9.01	1.80	0.31	0.00	0.01
9.51	1.90	0.36	0.00	0.01
10.01	1.99	0.41	0.00	0.01
10.51	2.08	0.45	0.00	0.01
11.01	2.15	0.50	0.00	0.01
11.51	2.23	0.54	0.00	0.01
12.01	2.29	0.57	0.00	0.01
12.51	2.36	0.61	0.00	0.01
13.01	2.42	0.65	0.00	0.01
13.51	2.48	0.68	0.00	0.01
14.01	2.54	0.72	0.00	0.01
14.51	2.60	0.75	0.00	0.01
15.01	2.65	0.79	0.00	0.01
15.51	2.71	0.83	0.00	0.01
16.01	2.76	0.86	0.00	0.01
16.51	2.82	0.89	0.00	0.01
17.01	2.87	0.93	0.00	0.01
17.51	2.92	0.96	0.00	0.01
18.01	2.97	0.99	0.00	0.01
18.51	3.01	1.03	0.00	0.01
19.01	3.06	1.06	0.00	0.01
19.51	3.11	1.09	0.00	0.01
20.01	3.15	1.12	0.00	0.01
20.51	3.19	1.15	0.00	0.01
21.01	3.23	1.17	0.00	0.01
21.51	3.27	1.20	0.00	0.01
22.01	3.31	1.23	0.00	0.01
22.51	3.35	1.26	0.00	0.01
23.01	3.38	1.28	0.00	0.01
23.51	3.42	1.31	0.00	0.01
24.01	**3.45**	**1.33**	0.00	0.01

Summary for Pond 1P: Water Quality Planter

Inflow Area = 0.126 ac,100.00% Impervious, Inflow Depth > 3.21" for 10-YEAR event
Inflow = 0.10 cfs @ 7.92 hrs, Volume= 0.034 af
Outflow = 0.10 cfs @ 7.93 hrs, Volume= 0.031 af, Atten= 0%, Lag= 1.1 min
Primary = 0.10 cfs @ 7.93 hrs, Volume= 0.031 af
Routed to Pond 10P : Storm Tech Chambers

Routing by Stor-Ind method, Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Peak Elev= 325.82' @ 7.93 hrs Surf.Area= 270 sf Storage= 99 cf

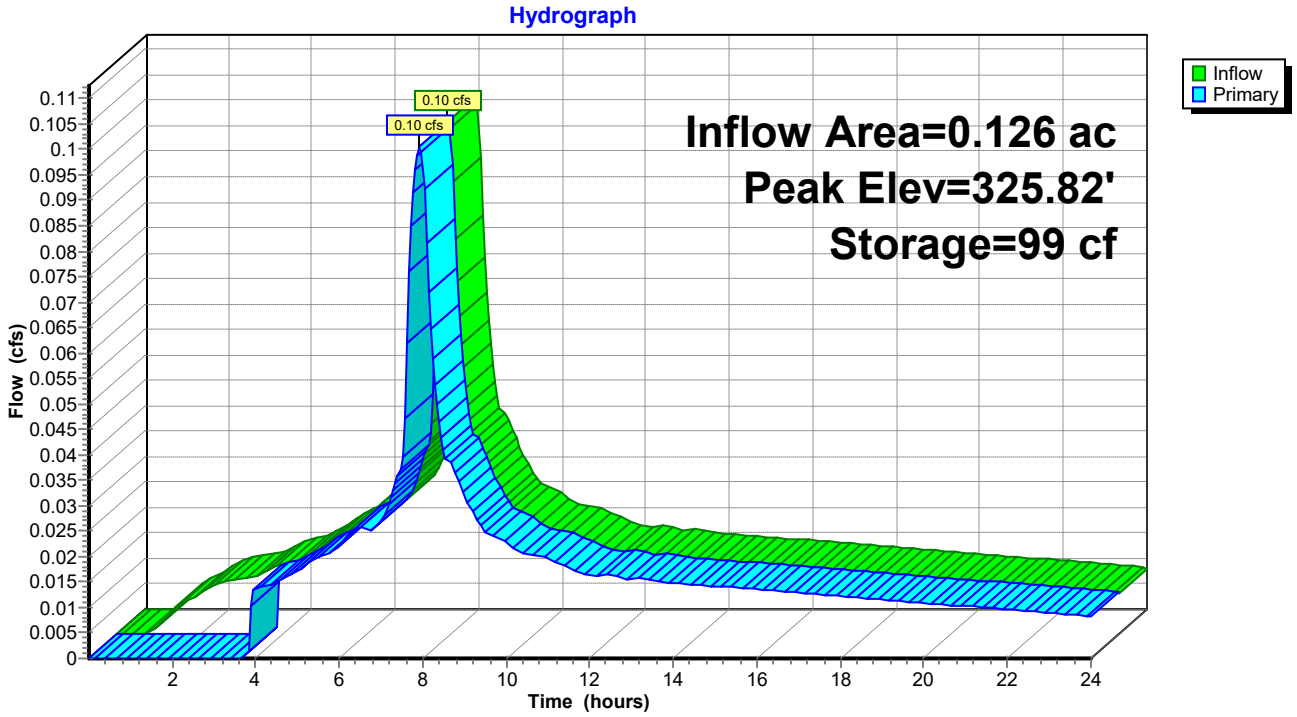
Plug-Flow detention time= 80.9 min calculated for 0.031 af (94% of inflow)
Center-of-Mass det. time= 34.6 min (698.6 - 663.9)

Volume	Invert	Avail.Storage	Storage Description
#1	322.90'	36 cf	**4.75'W x 15.00'L x 1.25'H Drainage Rock** 89 cf Overall x 40.0% Voids
#2	324.15'	22 cf	**4.75'W x 15.00'L x 1.25'H Growing Medium** 89 cf Overall x 25.0% Voids
#3	325.40'	107 cf	**4.75'W x 15.00'L x 0.83'H Prismatoid Z=3.0**
		165 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	325.75'	**6.0" Horiz. Overflow Orifice** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.10 cfs @ 7.93 hrs HW=325.82' (Free Discharge)
1=Overflow Orifice (Weir Controls 0.10 cfs @ 0.88 fps)

Pond 1P: Water Quality Planter



Hydrograph for Pond 1P: Water Quality Planter

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.01	0.00	0	322.90	0.00
0.51	0.00	0	322.90	0.00
1.01	0.00	1	322.93	0.00
1.51	0.01	8	323.17	0.00
2.01	0.01	20	323.61	0.00
2.51	0.01	37	324.20	0.00
3.01	0.01	55	325.26	0.00
3.51	0.01	76	325.61	0.00
4.01	0.01	93	325.77	0.01
4.51	0.02	93	325.77	0.02
5.01	0.02	93	325.77	0.02
5.51	0.02	93	325.77	0.02
6.01	0.02	93	325.77	0.02
6.51	0.03	94	325.78	0.03
7.01	0.03	94	325.78	0.03
7.51	**0.04**	**95**	**325.79**	**0.04**
8.01	**0.10**	**99**	**325.82**	**0.10**
8.51	0.04	95	325.79	0.04
9.01	0.03	94	325.78	0.03
9.51	0.02	94	325.78	0.02
10.01	0.02	94	325.77	0.02
10.51	0.02	93	325.77	0.02
11.01	0.02	93	325.77	0.02
11.51	0.02	93	325.77	0.02
12.01	0.02	93	325.77	0.02
12.51	0.02	93	325.77	0.02
13.01	0.02	93	325.77	0.02
13.51	0.02	93	325.77	0.02
14.01	0.01	93	325.77	0.01
14.51	0.01	93	325.77	0.01
15.01	0.01	93	325.77	0.01
15.51	0.01	93	325.77	0.01
16.01	0.01	93	325.77	0.01
16.51	0.01	93	325.77	0.01
17.01	0.01	93	325.77	0.01
17.51	0.01	93	325.77	0.01
18.01	0.01	93	325.77	0.01
18.51	0.01	93	325.77	0.01
19.01	0.01	93	325.77	0.01
19.51	0.01	92	325.77	0.01
20.01	0.01	92	325.77	0.01
20.51	0.01	92	325.77	0.01
21.01	0.01	92	325.77	0.01
21.51	0.01	92	325.77	0.01
22.01	0.01	92	325.76	0.01
22.51	0.01	92	325.76	0.01
23.01	0.01	92	325.76	0.01
23.51	0.01	92	325.76	0.01
24.01	0.01	92	325.76	0.01

Summary for Pond 10P: Storm Tech Chambers

Inflow Area = 0.126 ac,100.00% Impervious, Inflow Depth > 3.01" for 10-YEAR event
Inflow = 0.10 cfs @ 7.93 hrs, Volume= 0.031 af
Outflow = 0.03 cfs @ 9.12 hrs, Volume= 0.026 af, Atten= 70%, Lag= 71.3 min
Primary = 0.03 cfs @ 9.12 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Peak Elev= 321.68' @ 9.12 hrs Surf.Area= 408 sf Storage= 397 cf

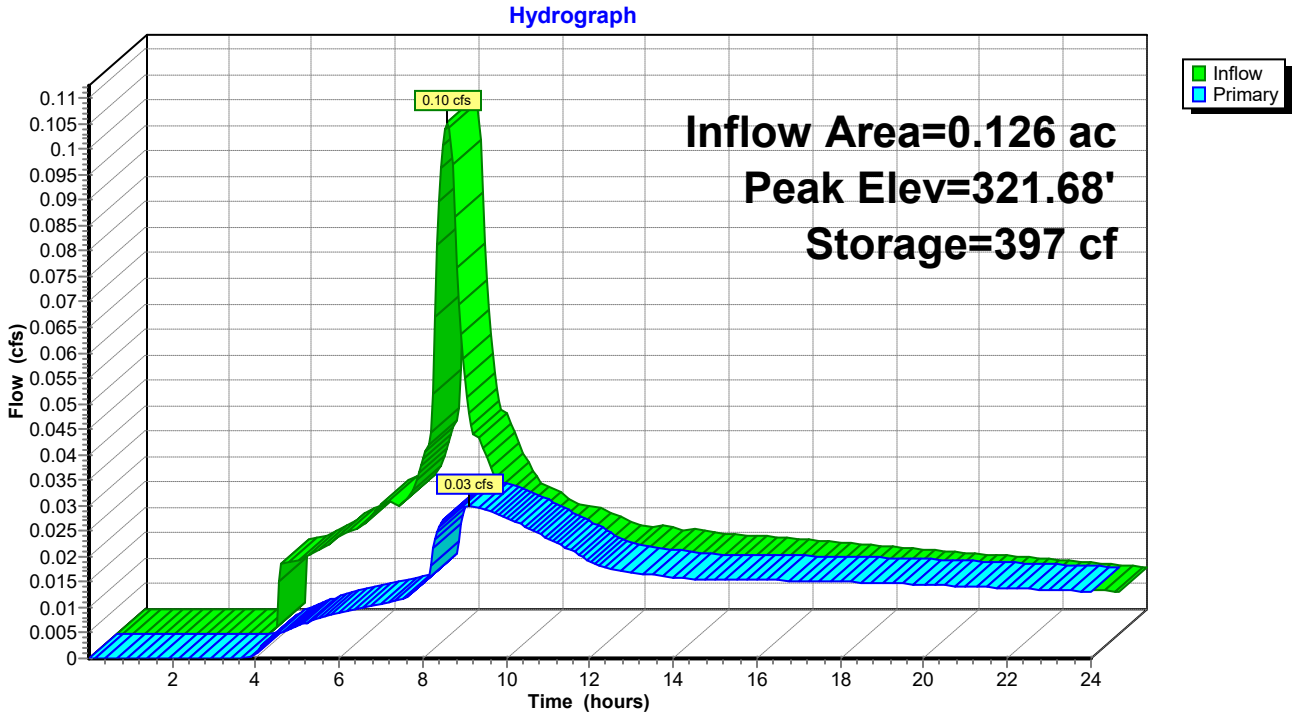
Plug-Flow detention time= 255.6 min calculated for 0.026 af (83% of inflow)
Center-of-Mass det. time= 143.6 min (842.2 - 698.6)

Volume	Invert	Avail.Storage	Storage Description
#1	319.90'	309 cf	**14.83'W x 27.50'L x 2.33'H Prismatoid** 950 cf Overall - 177 cf Embedded = 773 cf x 40.0% Voids
#2	320.40'	177 cf	**ADS_StormTech RC-310 +Cap** x 12 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 4 Rows
		486 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	319.90'	**0.7" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	321.40'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	322.05'	**6.0" Vert. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.03 cfs @ 9.12 hrs HW=321.68' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.02 cfs @ 6.38 fps)
└**2=Orifice/Grate** (Orifice Controls 0.01 cfs @ 2.37 fps)
└**3=Overflow** (Controls 0.00 cfs)

Pond 10P: Storm Tech Chambers



Hydrograph for Pond 10P: Storm Tech Chambers

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.01	0.00	0	319.90	0.00
0.51	0.00	0	319.90	0.00
1.01	0.00	0	319.90	0.00
1.51	0.00	0	319.90	0.00
2.01	0.00	0	319.90	0.00
2.51	0.00	0	319.90	0.00
3.01	0.00	0	319.90	0.00
3.51	0.00	0	319.90	0.00
4.01	0.01	6	319.94	0.00
4.51	0.02	26	320.06	0.00
5.01	0.02	45	320.17	0.01
5.51	0.02	65	320.30	0.01
6.01	0.02	87	320.42	0.01
6.51	0.03	115	320.52	0.01
7.01	0.03	142	320.61	0.01
7.51	**0.04**	180	320.75	0.01
8.01	**0.10**	306	321.24	0.01
8.51	0.04	382	321.60	0.03
9.01	0.03	**397**	**321.68**	**0.03**
9.51	0.02	**393**	**321.66**	**0.03**
10.01	0.02	385	321.61	0.03
10.51	0.02	376	321.56	0.03
11.01	0.02	368	321.52	0.02
11.51	0.02	361	321.48	0.02
12.01	0.02	355	321.46	0.02
12.51	0.02	352	321.44	0.02
13.01	0.02	350	321.43	0.02
13.51	0.02	348	321.42	0.02
14.01	0.01	346	321.41	0.02
14.51	0.01	344	321.40	0.02
15.01	0.01	342	321.39	0.02
15.51	0.01	339	321.38	0.02
16.01	0.01	336	321.37	0.02
16.51	0.01	332	321.35	0.02
17.01	0.01	328	321.33	0.02
17.51	0.01	324	321.31	0.02
18.01	0.01	319	321.29	0.02
18.51	0.01	314	321.27	0.01
19.01	0.01	308	321.25	0.01
19.51	0.01	302	321.22	0.01
20.01	0.01	296	321.20	0.01
20.51	0.01	290	321.17	0.01
21.01	0.01	283	321.14	0.01
21.51	0.01	276	321.11	0.01
22.01	0.01	268	321.08	0.01
22.51	0.01	260	321.05	0.01
23.01	0.01	252	321.02	0.01
23.51	0.01	244	320.99	0.01
24.01	0.01	236	320.96	0.01

Summary for Subcatchment 2S: SOUTH (BASIN 1 POST)

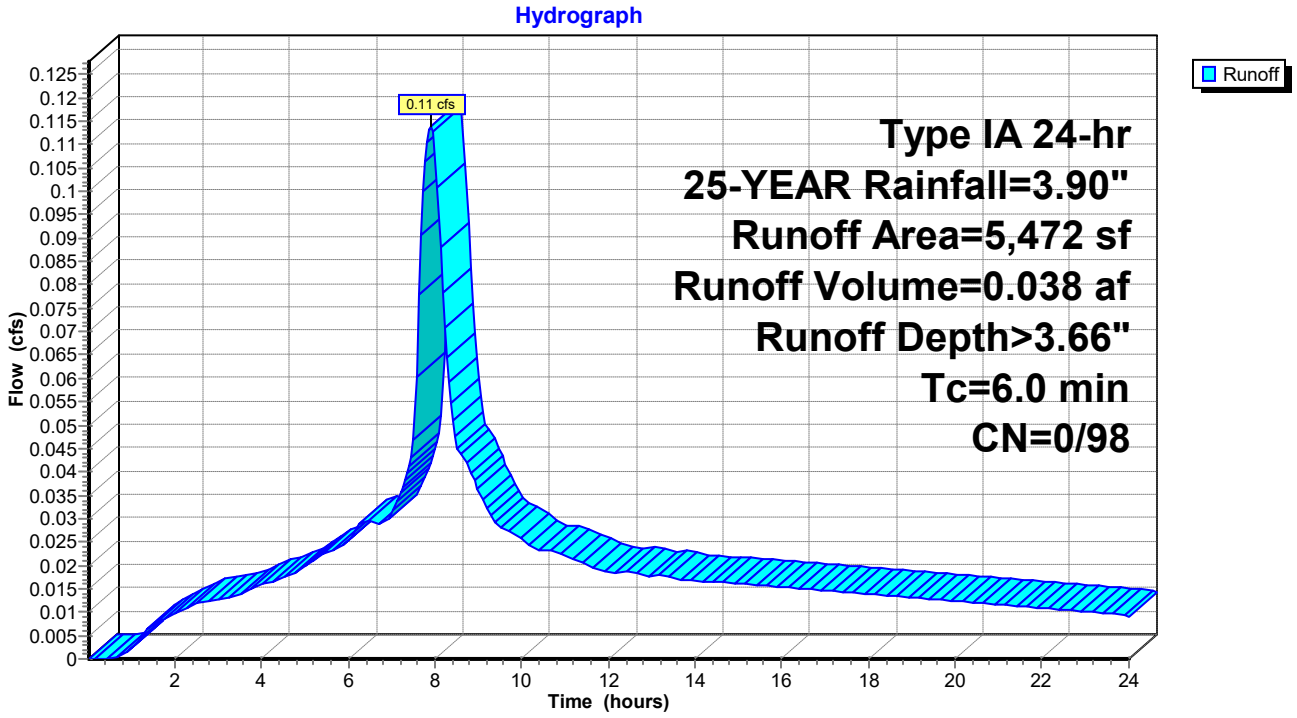
Runoff = 0.11 cfs @ 7.92 hrs, Volume= 0.038 af, Depth> 3.66"
Routed to Pond 1P : Water Quality Planter

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Type IA 24-hr 25-YEAR Rainfall=3.90"

	Area (sf)	CN	Description
*	5,472	98	
	5,472	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 2S: SOUTH (BASIN 1 POST)



Hydrograph for Subcatchment 2S: SOUTH (BASIN 1 POST)

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.01	0.00	**0.00**	0.00	0.00
0.51	0.04	0.00	0.00	0.00
1.01	0.08	0.00	0.01	0.00
1.51	0.14	0.00	0.03	0.01
2.01	0.20	0.00	0.07	0.01
2.51	0.26	0.00	0.11	0.01
3.01	0.32	0.00	0.16	0.01
3.51	0.38	0.00	0.21	0.01
4.01	0.45	0.00	0.28	0.02
4.51	0.53	0.00	0.34	0.02
5.01	0.61	0.00	0.42	0.02
5.51	0.70	0.00	0.51	0.02
6.01	0.81	0.00	0.60	0.03
6.51	0.93	0.00	0.72	0.03
7.01	1.05	0.00	0.84	0.03
7.51	1.22	0.00	1.00	**0.05**
8.01	1.66	0.00	1.44	**0.11**
8.51	1.88	0.00	1.65	0.04
9.01	2.03	0.00	1.80	0.04
9.51	2.15	0.00	1.92	0.03
10.01	2.25	0.00	2.02	0.03
10.51	2.35	0.00	2.12	0.02
11.01	2.44	0.00	2.21	0.02
11.51	2.52	0.00	2.29	0.02
12.01	2.59	0.00	2.36	0.02
12.51	2.67	0.00	2.43	0.02
13.01	2.74	0.00	2.50	0.02
13.51	2.81	0.00	2.57	0.02
14.01	2.87	0.00	2.64	0.02
14.51	2.94	0.00	2.71	0.02
15.01	3.00	0.00	2.77	0.02
15.51	3.06	0.00	2.83	0.02
16.01	3.12	0.00	2.89	0.02
16.51	3.18	0.00	2.95	0.01
17.01	3.24	0.00	3.01	0.01
17.51	3.30	0.00	3.07	0.01
18.01	3.35	0.00	3.12	0.01
18.51	3.41	0.00	3.17	0.01
19.01	3.46	0.00	3.23	0.01
19.51	3.51	0.00	3.28	0.01
20.01	3.56	0.00	3.33	0.01
20.51	3.61	0.00	3.37	0.01
21.01	3.65	0.00	3.42	0.01
21.51	3.70	0.00	3.46	0.01
22.01	3.74	0.00	3.51	0.01
22.51	3.78	0.00	3.55	0.01
23.01	3.82	0.00	3.59	0.01
23.51	3.86	0.00	3.63	0.01
24.01	**3.90**	0.00	**3.67**	0.01

Summary for Subcatchment 3S: SOUTH (BASIN 2 PRE)

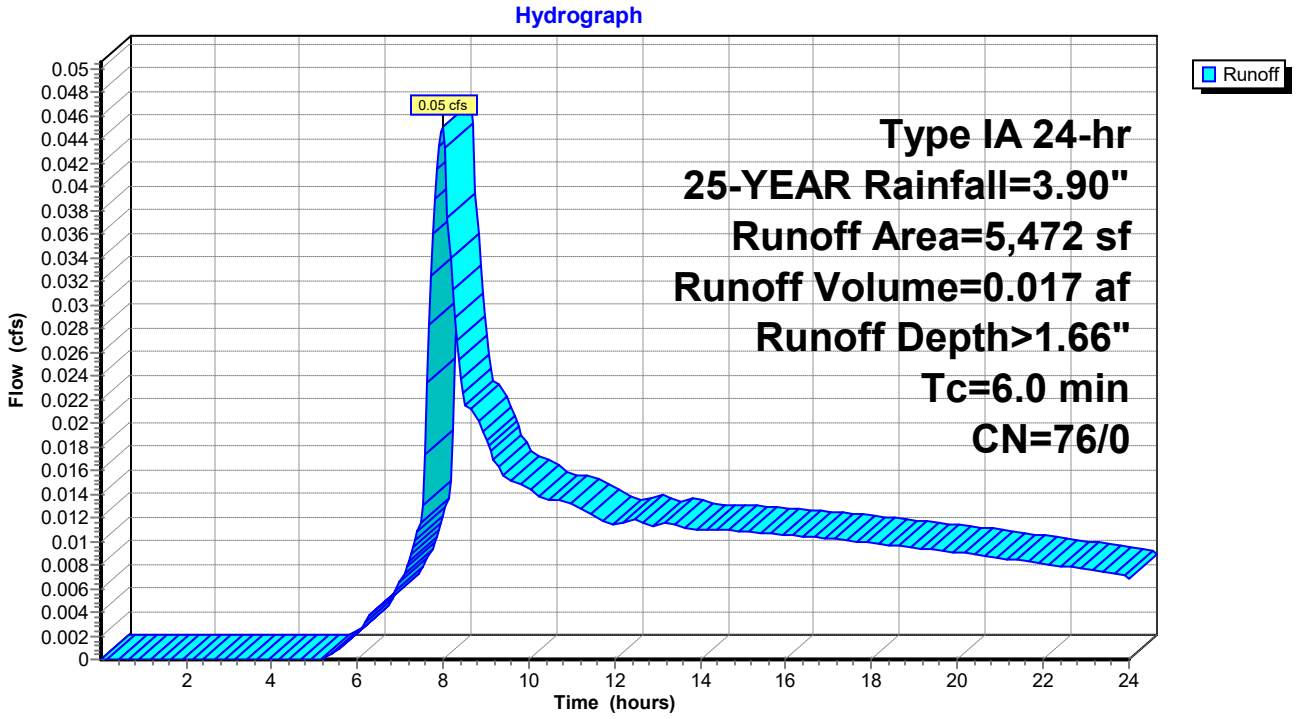
Runoff = 0.05 cfs @ 7.99 hrs, Volume= 0.017 af, Depth> 1.66"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Type IA 24-hr 25-YEAR Rainfall=3.90"

Area (sf)	CN	Description
5,472	76	Woods/grass comb., Fair, HSG C
5,472	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 3S: SOUTH (BASIN 2 PRE)



Hydrograph for Subcatchment 3S: SOUTH (BASIN 2 PRE)

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.01	0.00	0.00	**0.00**	0.00
0.51	0.04	0.00	0.00	0.00
1.01	0.08	0.00	0.00	0.00
1.51	0.14	0.00	0.00	0.00
2.01	0.20	0.00	0.00	0.00
2.51	0.26	0.00	0.00	0.00
3.01	0.32	0.00	0.00	0.00
3.51	0.38	0.00	0.00	0.00
4.01	0.45	0.00	0.00	0.00
4.51	0.53	0.00	0.00	0.00
5.01	0.61	0.00	0.00	0.00
5.51	0.70	0.00	0.00	0.00
6.01	0.81	0.01	0.00	0.00
6.51	0.93	0.03	0.00	0.00
7.01	1.05	0.05	0.00	0.01
7.51	1.22	0.09	0.00	0.01
8.01	1.66	0.25	0.00	**0.04**
8.51	1.88	0.35	0.00	0.02
9.01	2.03	0.43	0.00	0.02
9.51	2.15	0.49	0.00	0.02
10.01	2.25	0.55	0.00	0.01
10.51	2.35	0.60	0.00	0.01
11.01	2.44	0.66	0.00	0.01
11.51	2.52	0.70	0.00	0.01
12.01	2.59	0.75	0.00	0.01
12.51	2.67	0.80	0.00	0.01
13.01	2.74	0.84	0.00	0.01
13.51	2.81	0.89	0.00	0.01
14.01	2.87	0.93	0.00	0.01
14.51	2.94	0.97	0.00	0.01
15.01	3.00	1.02	0.00	0.01
15.51	3.06	1.06	0.00	0.01
16.01	3.12	1.10	0.00	0.01
16.51	3.18	1.14	0.00	0.01
17.01	3.24	1.18	0.00	0.01
17.51	3.30	1.22	0.00	0.01
18.01	3.35	1.26	0.00	0.01
18.51	3.41	1.30	0.00	0.01
19.01	3.46	1.34	0.00	0.01
19.51	3.51	1.37	0.00	0.01
20.01	3.56	1.41	0.00	0.01
20.51	3.61	1.44	0.00	0.01
21.01	3.65	1.48	0.00	0.01
21.51	3.70	1.51	0.00	0.01
22.01	3.74	1.54	0.00	0.01
22.51	3.78	1.57	0.00	0.01
23.01	3.82	1.61	0.00	0.01
23.51	3.86	1.63	0.00	0.01
24.01	**3.90**	**1.66**	0.00	0.01

Summary for Pond 1P: Water Quality Planter

Inflow Area = 0.126 ac,100.00% Impervious, Inflow Depth > 3.66" for 25-YEAR event
Inflow = 0.11 cfs @ 7.92 hrs, Volume= 0.038 af
Outflow = 0.11 cfs @ 7.93 hrs, Volume= 0.036 af, Atten= 0%, Lag= 1.1 min
Primary = 0.11 cfs @ 7.93 hrs, Volume= 0.036 af
Routed to Pond 10P : Storm Tech Chambers

Routing by Stor-Ind method, Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Peak Elev= 325.83' @ 7.93 hrs Surf.Area= 271 sf Storage= 100 cf

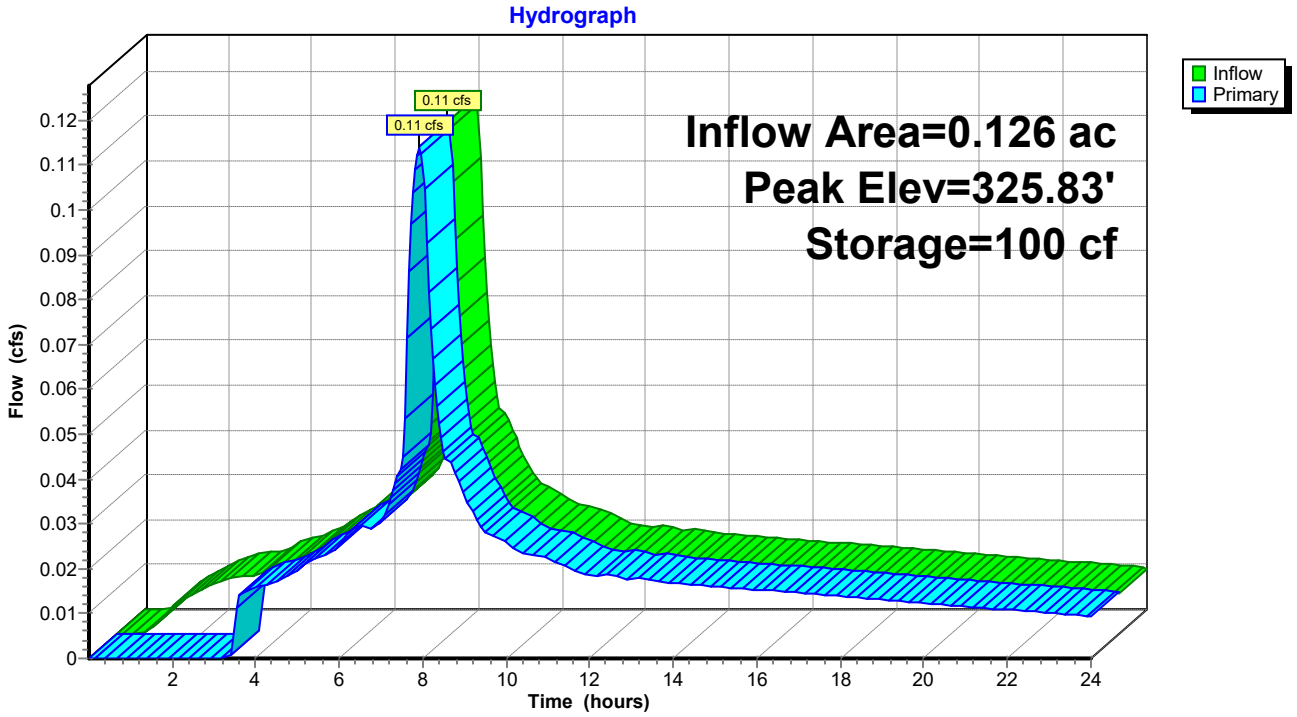
Plug-Flow detention time= 71.9 min calculated for 0.036 af (94% of inflow)
Center-of-Mass det. time= 31.0 min (691.8 - 660.9)

Volume	Invert	Avail.Storage	Storage Description
#1	322.90'	36 cf	**4.75'W x 15.00'L x 1.25'H Drainage Rock** 89 cf Overall x 40.0% Voids
#2	324.15'	22 cf	**4.75'W x 15.00'L x 1.25'H Growing Medium** 89 cf Overall x 25.0% Voids
#3	325.40'	107 cf	**4.75'W x 15.00'L x 0.83'H Prismatoid Z=3.0**
		165 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	325.75'	**6.0" Horiz. Overflow Orifice** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.11 cfs @ 7.93 hrs HW=325.83' (Free Discharge)
1=Overflow Orifice (Weir Controls 0.11 cfs @ 0.92 fps)

Pond 1P: Water Quality Planter



Hydrograph for Pond 1P: Water Quality Planter

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.01	0.00	0	322.90	0.00
0.51	0.00	0	322.90	0.00
1.01	0.00	2	322.96	0.00
1.51	0.01	11	323.28	0.00
2.01	0.01	26	323.82	0.00
2.51	0.01	46	324.73	0.00
3.01	0.01	68	325.53	0.00
3.51	0.01	91	325.76	0.00
4.01	0.02	93	325.77	0.02
4.51	0.02	93	325.77	0.02
5.01	0.02	93	325.77	0.02
5.51	0.02	94	325.77	0.02
6.01	0.03	94	325.78	0.03
6.51	0.03	94	325.78	0.03
7.01	0.03	94	325.78	0.03
7.51	**0.05**	**96**	**325.79**	**0.04**
8.01	**0.11**	**100**	**325.83**	**0.11**
8.51	0.04	96	325.79	0.05
9.01	0.04	95	325.78	0.04
9.51	0.03	94	325.78	0.03
10.01	0.03	94	325.78	0.03
10.51	0.02	94	325.77	0.02
11.01	0.02	93	325.77	0.02
11.51	0.02	93	325.77	0.02
12.01	0.02	93	325.77	0.02
12.51	0.02	93	325.77	0.02
13.01	0.02	93	325.77	0.02
13.51	0.02	93	325.77	0.02
14.01	0.02	93	325.77	0.02
14.51	0.02	93	325.77	0.02
15.01	0.02	93	325.77	0.02
15.51	0.02	93	325.77	0.02
16.01	0.02	93	325.77	0.02
16.51	0.01	93	325.77	0.01
17.01	0.01	93	325.77	0.01
17.51	0.01	93	325.77	0.01
18.01	0.01	93	325.77	0.01
18.51	0.01	93	325.77	0.01
19.01	0.01	93	325.77	0.01
19.51	0.01	93	325.77	0.01
20.01	0.01	93	325.77	0.01
20.51	0.01	93	325.77	0.01
21.01	0.01	93	325.77	0.01
21.51	0.01	92	325.77	0.01
22.01	0.01	92	325.77	0.01
22.51	0.01	92	325.77	0.01
23.01	0.01	92	325.77	0.01
23.51	0.01	92	325.76	0.01
24.01	0.01	92	325.76	0.01

Summary for Pond 10P: Storm Tech Chambers

Inflow Area = 0.126 ac,100.00% Impervious, Inflow Depth > 3.46" for 25-YEAR event
Inflow = 0.11 cfs @ 7.93 hrs, Volume= 0.036 af
Outflow = 0.04 cfs @ 8.97 hrs, Volume= 0.030 af, Atten= 67%, Lag= 62.0 min
Primary = 0.04 cfs @ 8.97 hrs, Volume= 0.030 af

Routing by Stor-Ind method, Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Peak Elev= 321.97' @ 8.97 hrs Surf.Area= 408 sf Storage= 443 cf

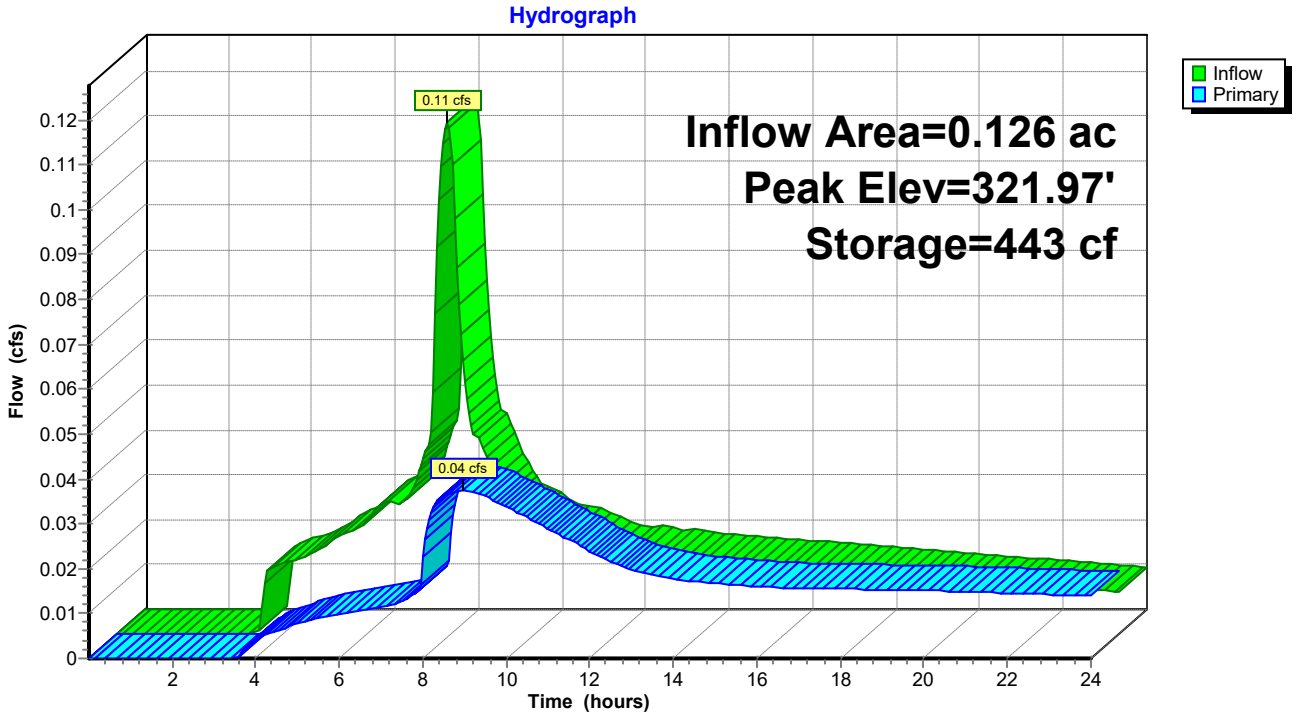
Plug-Flow detention time= 238.9 min calculated for 0.030 af (83% of inflow)
Center-of-Mass det. time= 126.6 min (818.5 - 691.8)

Volume	Invert	Avail.Storage	Storage Description
#1	319.90'	309 cf	**14.83'W x 27.50'L x 2.33'H Prismatoid** 950 cf Overall - 177 cf Embedded = 773 cf x 40.0% Voids
#2	320.40'	177 cf	**ADS_StormTech RC-310 +Cap** x 12 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 4 Rows
		486 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	319.90'	**0.7" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	321.40'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	322.05'	**6.0" Vert. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.04 cfs @ 8.97 hrs HW=321.97' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.02 cfs @ 6.87 fps)
└**2=Orifice/Grate** (Orifice Controls 0.02 cfs @ 3.49 fps)
└**3=Overflow** (Controls 0.00 cfs)

Pond 10P: Storm Tech Chambers



Hydrograph for Pond 10P: Storm Tech Chambers

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.01	0.00	0	319.90	0.00
0.51	0.00	0	319.90	0.00
1.01	0.00	0	319.90	0.00
1.51	0.00	0	319.90	0.00
2.01	0.00	0	319.90	0.00
2.51	0.00	0	319.90	0.00
3.01	0.00	0	319.90	0.00
3.51	0.00	0	319.90	0.00
4.01	0.02	22	320.03	0.00
4.51	0.02	42	320.16	0.01
5.01	0.02	63	320.29	0.01
5.51	0.02	86	320.42	0.01
6.01	0.03	112	320.51	0.01
6.51	0.03	144	320.62	0.01
7.01	0.03	177	320.74	0.01
7.51	**0.04**	221	320.90	0.01
8.01	**0.11**	364	321.50	0.02
8.51	0.05	**435**	**321.92**	**0.04**
9.01	0.04	**443**	**321.97**	**0.04**
9.51	0.03	434	321.91	0.04
10.01	0.03	420	321.82	0.03
10.51	0.02	405	321.73	0.03
11.01	0.02	391	321.65	0.03
11.51	0.02	380	321.58	0.03
12.01	0.02	369	321.53	0.02
12.51	0.02	361	321.49	0.02
13.01	0.02	357	321.46	0.02
13.51	0.02	354	321.45	0.02
14.01	0.02	352	321.44	0.02
14.51	0.02	351	321.43	0.02
15.01	0.02	349	321.43	0.02
15.51	0.02	348	321.42	0.02
16.01	0.02	347	321.42	0.02
16.51	0.01	345	321.41	0.02
17.01	0.01	344	321.40	0.02
17.51	0.01	342	321.39	0.02
18.01	0.01	339	321.38	0.02
18.51	0.01	336	321.36	0.02
19.01	0.01	332	321.35	0.02
19.51	0.01	328	321.33	0.02
20.01	0.01	323	321.31	0.02
20.51	0.01	318	321.29	0.01
21.01	0.01	312	321.26	0.01
21.51	0.01	306	321.24	0.01
22.01	0.01	300	321.21	0.01
22.51	0.01	293	321.18	0.01
23.01	0.01	285	321.15	0.01
23.51	0.01	278	321.12	0.01
24.01	0.01	270	321.09	0.01

Summary for Subcatchment 2S: SOUTH (BASIN 1 POST)

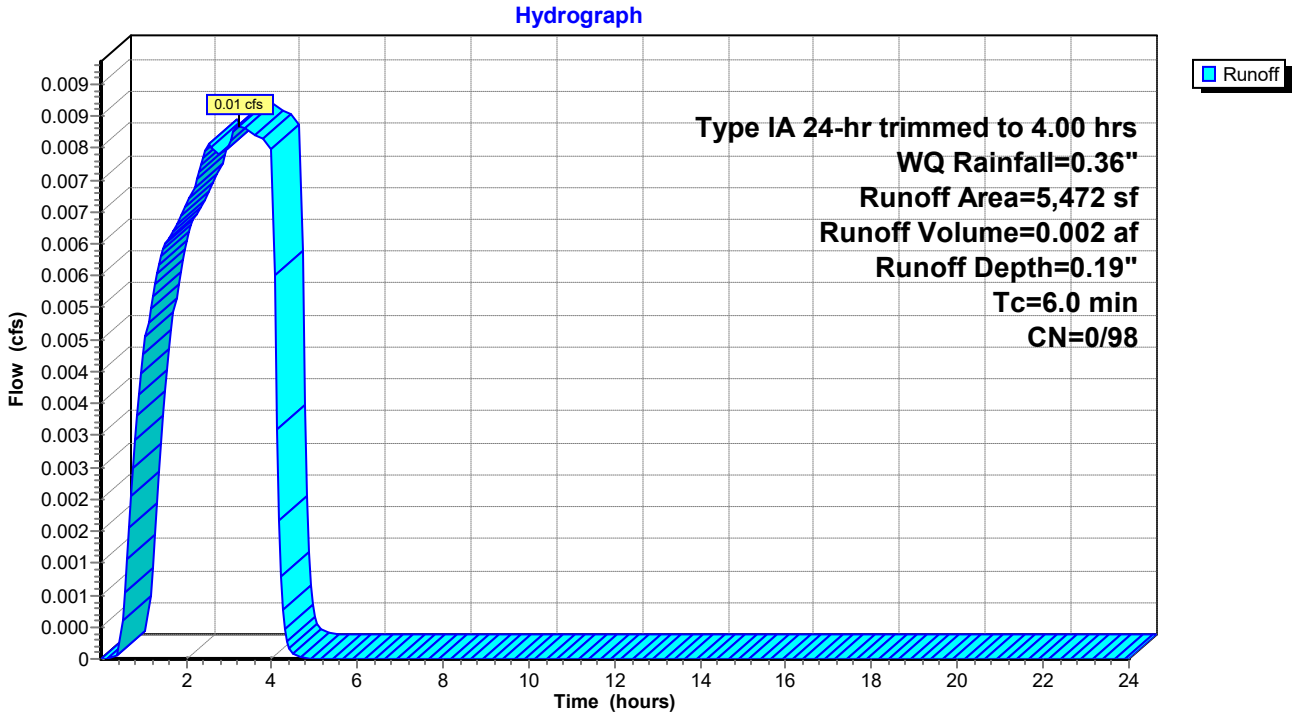
Runoff = 0.01 cfs @ 3.23 hrs, Volume= 0.002 af, Depth= 0.19"
Routed to Pond 1P : Water Quality Planter

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Type IA 24-hr trimmed to 4.00 hrs WQ Rainfall=0.36"

	Area (sf)	CN	Description
*	5,472	98	
	5,472	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 2S: SOUTH (BASIN 1 POST)



Hydrograph for Subcatchment 2S: SOUTH (BASIN 1 POST)

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.01	0.00	**0.00**	0.00	0.00
0.51	0.06	0.00	0.00	0.00
1.01	0.11	0.00	0.02	0.00
1.51	0.15	0.00	0.04	0.01
2.01	0.20	0.00	0.07	0.01
2.51	0.24	0.00	0.10	0.01
3.01	0.28	0.00	0.13	**0.01**
3.51	0.32	0.00	0.16	**0.01**
4.01	**0.36**	0.00	**0.19**	0.01
4.51	0.36	0.00	0.19	0.00
5.01	0.36	0.00	0.19	0.00
5.51	0.36	0.00	0.19	0.00
6.01	0.36	0.00	0.19	0.00
6.51	0.36	0.00	0.19	0.00
7.01	0.36	0.00	0.19	0.00
7.51	0.36	0.00	0.19	0.00
8.01	0.36	0.00	0.19	0.00
8.51	0.36	0.00	0.19	0.00
9.01	0.36	0.00	0.19	0.00
9.51	0.36	0.00	0.19	0.00
10.01	0.36	0.00	0.19	0.00
10.51	0.36	0.00	0.19	0.00
11.01	0.36	0.00	0.19	0.00
11.51	0.36	0.00	0.19	0.00
12.01	0.36	0.00	0.19	0.00
12.51	0.36	0.00	0.19	0.00
13.01	0.36	0.00	0.19	0.00
13.51	0.36	0.00	0.19	0.00
14.01	0.36	0.00	0.19	0.00
14.51	0.36	0.00	0.19	0.00
15.01	0.36	0.00	0.19	0.00
15.51	0.36	0.00	0.19	0.00
16.01	0.36	0.00	0.19	0.00
16.51	0.36	0.00	0.19	0.00
17.01	0.36	0.00	0.19	0.00
17.51	0.36	0.00	0.19	0.00
18.01	0.36	0.00	0.19	0.00
18.51	0.36	0.00	0.19	0.00
19.01	0.36	0.00	0.19	0.00
19.51	0.36	0.00	0.19	0.00
20.01	0.36	0.00	0.19	0.00
20.51	0.36	0.00	0.19	0.00
21.01	0.36	0.00	0.19	0.00
21.51	0.36	0.00	0.19	0.00
22.01	0.36	0.00	0.19	0.00
22.51	0.36	0.00	0.19	0.00
23.01	0.36	0.00	0.19	0.00
23.51	0.36	0.00	0.19	0.00
24.01	0.36	0.00	0.19	0.00

Summary for Subcatchment 3S: SOUTH (BASIN 2 PRE)

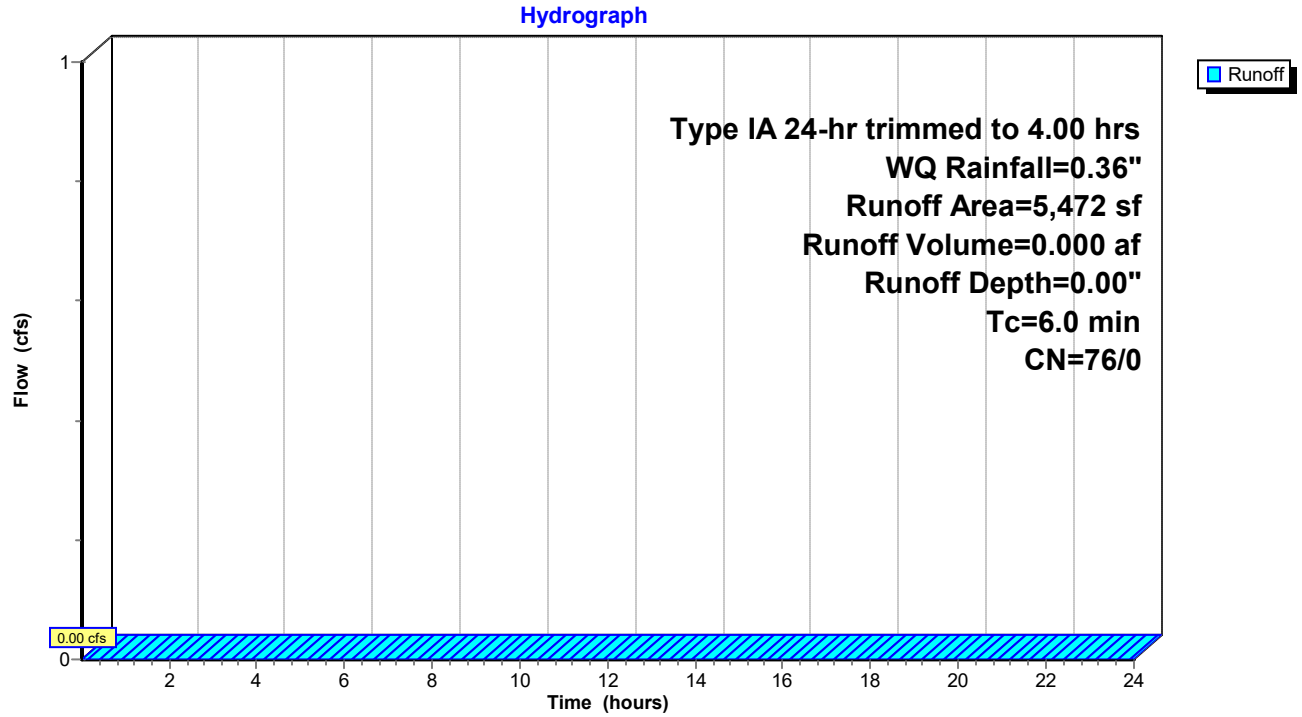
Runoff = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Type IA 24-hr trimmed to 4.00 hrs WQ Rainfall=0.36"

Area (sf)	CN	Description
5,472	76	Woods/grass comb., Fair, HSG C
5,472	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 3S: SOUTH (BASIN 2 PRE)



Hydrograph for Subcatchment 3S: SOUTH (BASIN 2 PRE)

Time (hours)	Precip. (inches)	Perv.Excess (inches)	Imp.Excess (inches)	Runoff (cfs)
0.01	0.00	**0.00**	**0.00**	**0.00**
0.51	0.06	0.00	0.00	0.00
1.01	0.11	0.00	0.00	0.00
1.51	0.15	0.00	0.00	0.00
2.01	0.20	0.00	0.00	0.00
2.51	0.24	0.00	0.00	0.00
3.01	0.28	0.00	0.00	0.00
3.51	0.32	0.00	0.00	0.00
4.01	**0.36**	0.00	0.00	0.00
4.51	0.36	0.00	0.00	0.00
5.01	0.36	0.00	0.00	0.00
5.51	0.36	0.00	0.00	0.00
6.01	0.36	0.00	0.00	0.00
6.51	0.36	0.00	0.00	0.00
7.01	0.36	0.00	0.00	0.00
7.51	0.36	0.00	0.00	0.00
8.01	0.36	0.00	0.00	0.00
8.51	0.36	0.00	0.00	0.00
9.01	0.36	0.00	0.00	0.00
9.51	0.36	0.00	0.00	0.00
10.01	0.36	0.00	0.00	0.00
10.51	0.36	0.00	0.00	0.00
11.01	0.36	0.00	0.00	0.00
11.51	0.36	0.00	0.00	0.00
12.01	0.36	0.00	0.00	0.00
12.51	0.36	0.00	0.00	0.00
13.01	0.36	0.00	0.00	0.00
13.51	0.36	0.00	0.00	0.00
14.01	0.36	0.00	0.00	0.00
14.51	0.36	0.00	0.00	0.00
15.01	0.36	0.00	0.00	0.00
15.51	0.36	0.00	0.00	0.00
16.01	0.36	0.00	0.00	0.00
16.51	0.36	0.00	0.00	0.00
17.01	0.36	0.00	0.00	0.00
17.51	0.36	0.00	0.00	0.00
18.01	0.36	0.00	0.00	0.00
18.51	0.36	0.00	0.00	0.00
19.01	0.36	0.00	0.00	0.00
19.51	0.36	0.00	0.00	0.00
20.01	0.36	0.00	0.00	0.00
20.51	0.36	0.00	0.00	0.00
21.01	0.36	0.00	0.00	0.00
21.51	0.36	0.00	0.00	0.00
22.01	0.36	0.00	0.00	0.00
22.51	0.36	0.00	0.00	0.00
23.01	0.36	0.00	0.00	0.00
23.51	0.36	0.00	0.00	0.00
24.01	0.36	0.00	0.00	0.00

Summary for Pond 1P: Water Quality Planter

Inflow Area = 0.126 ac,100.00% Impervious, Inflow Depth = 0.19" for WQ event
Inflow = 0.01 cfs @ 3.23 hrs, Volume= 0.002 af
Outflow = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
Routed to Pond 10P : Storm Tech Chambers

Routing by Stor-Ind method, Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Peak Elev= 325.73' @ 6.71 hrs Surf.Area= 257 sf Storage= 89 cf

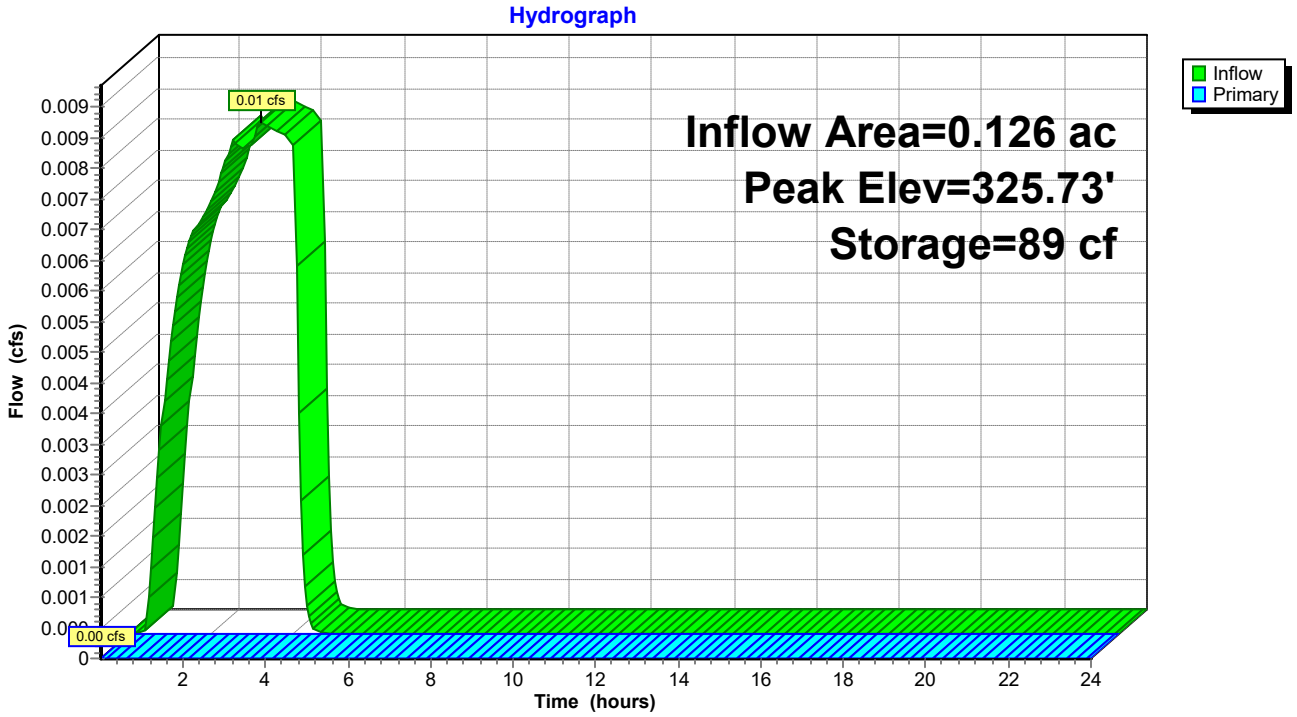
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	322.90'	36 cf	**4.75'W x 15.00'L x 1.25'H Drainage Rock** 89 cf Overall x 40.0% Voids
#2	324.15'	22 cf	**4.75'W x 15.00'L x 1.25'H Growing Medium** 89 cf Overall x 25.0% Voids
#3	325.40'	107 cf	**4.75'W x 15.00'L x 0.83'H Prismatoid Z=3.0**
		165 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	325.75'	**6.0" Horiz. Overflow Orifice** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.01 hrs HW=322.90' (Free Discharge)
1=Overflow Orifice (Controls 0.00 cfs)

Pond 1P: Water Quality Planter



Hydrograph for Pond 1P: Water Quality Planter

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.01	0.00	0	322.90	**0.00**
0.51	0.00	0	322.90	0.00
1.01	0.00	5	323.09	0.00
1.51	0.01	16	323.45	0.00
2.01	0.01	28	323.88	0.00
2.51	0.01	41	324.48	0.00
3.01	**0.01**	56	325.28	0.00
3.51	**0.01**	71	325.56	0.00
4.01	0.01	85	325.70	0.00
4.51	0.00	89	325.73	0.00
5.01	0.00	89	325.73	0.00
5.51	0.00	89	325.73	0.00
6.01	0.00	89	325.73	0.00
6.51	0.00	89	**325.73**	0.00
7.01	0.00	**89**	**325.73**	0.00
7.51	0.00	**89**	325.73	0.00
8.01	0.00	89	325.73	0.00
8.51	0.00	89	325.73	0.00
9.01	0.00	89	325.73	0.00
9.51	0.00	89	325.73	0.00
10.01	0.00	89	325.73	0.00
10.51	0.00	89	325.73	0.00
11.01	0.00	89	325.73	0.00
11.51	0.00	89	325.73	0.00
12.01	0.00	89	325.73	0.00
12.51	0.00	89	325.73	0.00
13.01	0.00	89	325.73	0.00
13.51	0.00	89	325.73	0.00
14.01	0.00	89	325.73	0.00
14.51	0.00	89	325.73	0.00
15.01	0.00	89	325.73	0.00
15.51	0.00	89	325.73	0.00
16.01	0.00	89	325.73	0.00
16.51	0.00	89	325.73	0.00
17.01	0.00	89	325.73	0.00
17.51	0.00	89	325.73	0.00
18.01	0.00	89	325.73	0.00
18.51	0.00	89	325.73	0.00
19.01	0.00	89	325.73	0.00
19.51	0.00	89	325.73	0.00
20.01	0.00	89	325.73	0.00
20.51	0.00	89	325.73	0.00
21.01	0.00	89	325.73	0.00
21.51	0.00	89	325.73	0.00
22.01	0.00	89	325.73	0.00
22.51	0.00	89	325.73	0.00
23.01	0.00	89	325.73	0.00
23.51	0.00	89	325.73	0.00
24.01	0.00	89	325.73	0.00

Summary for Pond 10P: Storm Tech Chambers

Inflow Area = 0.126 ac,100.00% Impervious, Inflow Depth = 0.00" for WQ event
Inflow = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.01 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.01-24.01 hrs, dt= 0.05 hrs
Peak Elev= 319.90' @ 0.01 hrs Surf.Area= 408 sf Storage= 0 cf

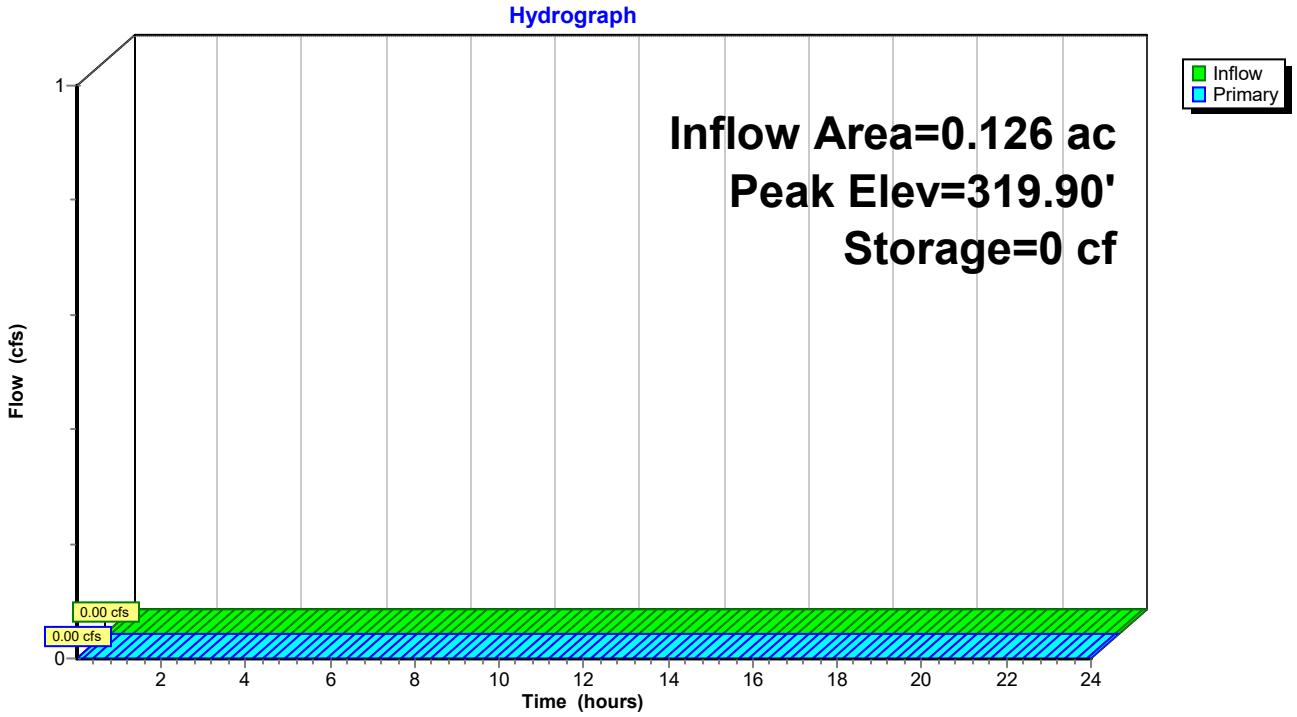
Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	319.90'	309 cf	**14.83'W x 27.50'L x 2.33'H Prismatoid** 950 cf Overall - 177 cf Embedded = 773 cf x 40.0% Voids
#2	320.40'	177 cf	**ADS_StormTech RC-310 +Cap** x 12 Inside #1 Effective Size= 28.9"W x 16.0"H => 2.07 sf x 7.12'L = 14.7 cf Overall Size= 34.0"W x 16.0"H x 7.56'L with 0.44' Overlap 12 Chambers in 4 Rows
		486 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	319.90'	**0.7" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	321.40'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	322.05'	**6.0" Vert. Overflow** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.01 hrs HW=319.90' (Free Discharge)
- **1=Orifice/Grate** (Controls 0.00 cfs)
- **2=Orifice/Grate** (Controls 0.00 cfs)
- **3=Overflow** (Controls 0.00 cfs)

Pond 10P: Storm Tech Chambers



Hydrograph for Pond 10P: Storm Tech Chambers

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)	Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.01	**0.00**	**319.90**	**0.00**	13.01	0.00	319.90	0.00
0.26	0.00	319.90	0.00	13.26	0.00	319.90	0.00
0.51	0.00	319.90	0.00	13.51	0.00	319.90	0.00
0.76	0.00	319.90	0.00	13.76	0.00	319.90	0.00
1.01	0.00	319.90	0.00	14.01	0.00	319.90	0.00
1.26	0.00	319.90	0.00	14.26	0.00	319.90	0.00
1.51	0.00	319.90	0.00	14.51	0.00	319.90	0.00
1.76	0.00	319.90	0.00	14.76	0.00	319.90	0.00
2.01	0.00	319.90	0.00	15.01	0.00	319.90	0.00
2.26	0.00	319.90	0.00	15.26	0.00	319.90	0.00
2.51	0.00	319.90	0.00	15.51	0.00	319.90	0.00
2.76	0.00	319.90	0.00	15.76	0.00	319.90	0.00
3.01	0.00	319.90	0.00	16.01	0.00	319.90	0.00
3.26	0.00	319.90	0.00	16.26	0.00	319.90	0.00
3.51	0.00	319.90	0.00	16.51	0.00	319.90	0.00
3.76	0.00	319.90	0.00	16.76	0.00	319.90	0.00
4.01	0.00	319.90	0.00	17.01	0.00	319.90	0.00
4.26	0.00	319.90	0.00	17.26	0.00	319.90	0.00
4.51	0.00	319.90	0.00	17.51	0.00	319.90	0.00
4.76	0.00	319.90	0.00	17.76	0.00	319.90	0.00
5.01	0.00	319.90	0.00	18.01	0.00	319.90	0.00
5.26	0.00	319.90	0.00	18.26	0.00	319.90	0.00
5.51	0.00	319.90	0.00	18.51	0.00	319.90	0.00
5.76	0.00	319.90	0.00	18.76	0.00	319.90	0.00
6.01	0.00	319.90	0.00	19.01	0.00	319.90	0.00
6.26	0.00	319.90	0.00	19.26	0.00	319.90	0.00
6.51	0.00	319.90	0.00	19.51	0.00	319.90	0.00
6.76	0.00	319.90	0.00	19.76	0.00	319.90	0.00
7.01	0.00	319.90	0.00	20.01	0.00	319.90	0.00
7.26	0.00	319.90	0.00	20.26	0.00	319.90	0.00
7.51	0.00	319.90	0.00	20.51	0.00	319.90	0.00
7.76	0.00	319.90	0.00	20.76	0.00	319.90	0.00
8.01	0.00	319.90	0.00	21.01	0.00	319.90	0.00
8.26	0.00	319.90	0.00	21.26	0.00	319.90	0.00
8.51	0.00	319.90	0.00	21.51	0.00	319.90	0.00
8.76	0.00	319.90	0.00	21.76	0.00	319.90	0.00
9.01	0.00	319.90	0.00	22.01	0.00	319.90	0.00
9.26	0.00	319.90	0.00	22.26	0.00	319.90	0.00
9.51	0.00	319.90	0.00	22.51	0.00	319.90	0.00
9.76	0.00	319.90	0.00	22.76	0.00	319.90	0.00
10.01	0.00	319.90	0.00	23.01	0.00	319.90	0.00
10.26	0.00	319.90	0.00	23.26	0.00	319.90	0.00
10.51	0.00	319.90	0.00	23.51	0.00	319.90	0.00
10.76	0.00	319.90	0.00	23.76	0.00	319.90	0.00
11.01	0.00	319.90	0.00	24.01	0.00	319.90	0.00
11.26	0.00	319.90	0.00				
11.51	0.00	319.90	0.00				
11.76	0.00	319.90	0.00				
12.01	0.00	319.90	0.00				
12.26	0.00	319.90	0.00				
12.51	0.00	319.90	0.00				
12.76	0.00	319.90	0.00				

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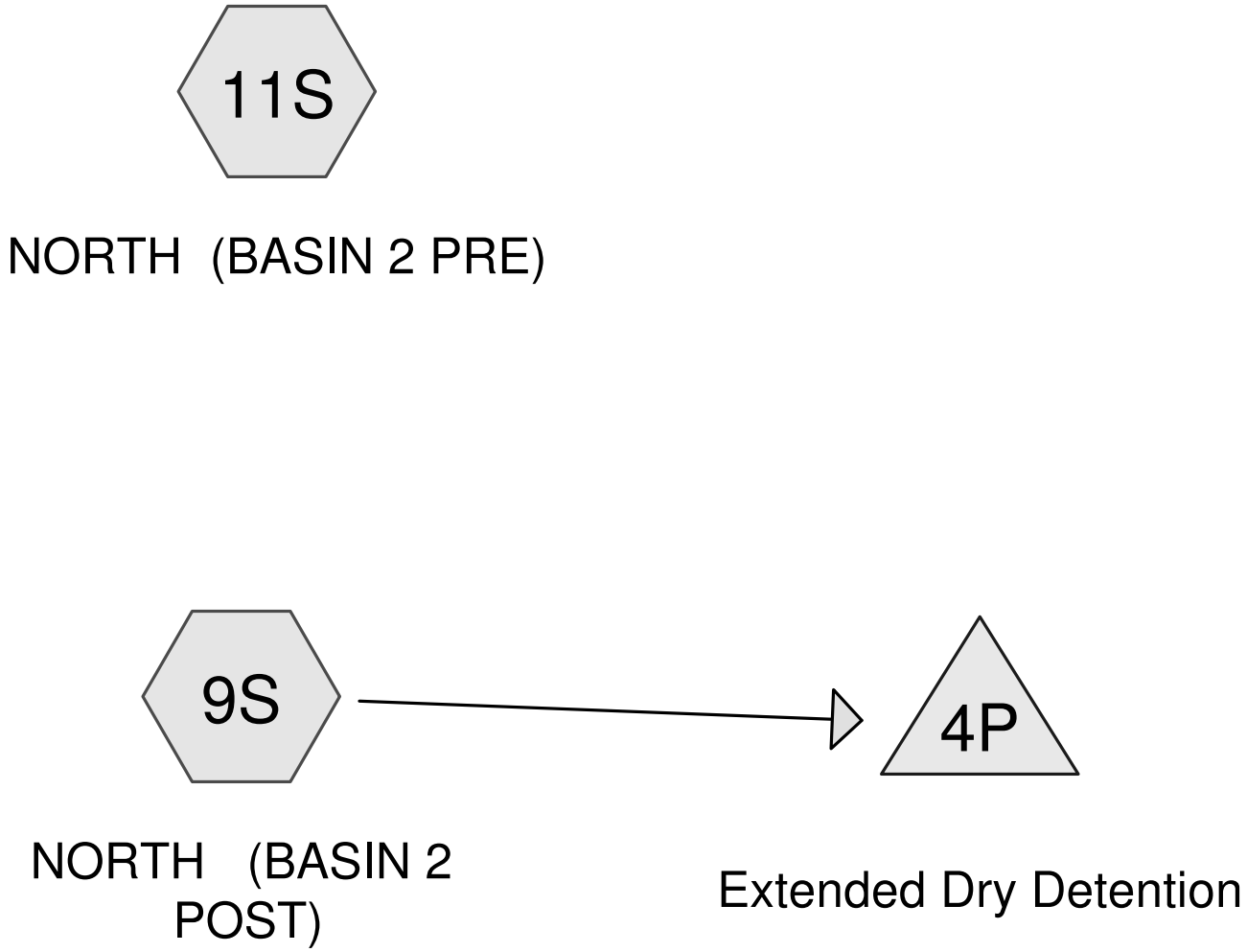


Subcat Reach Pond Link

Routing Diagram for North Lot Swale and Pond KAG
Prepared by Firwood Design Storm, Printed 10/6/2022
HydroCAD® 10.10-7a s/n 04664 © 2021 HydroCAD Software Solutions LLC

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-YEAR	Type IA 24-hr		Default	24.00	1	2.50	2
2	10-YEAR	Type IA 24-hr		Default	24.00	1	3.45	2
3	25-YEAR	Type IA 24-hr		Default	24.00	1	3.90	2
4	WQ	Type IA 24-hr		Trim	4.00	1	0.36	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.299	98	Paved parking, HSG C (9S)
0.299	76	Woods/grass comb., Fair, HSG C (11S)
0.599	**87**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.599	HSG C	9S, 11S
0.000	HSG D	
0.000	Other	
0.599		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.299	0.000	0.000	0.299	Paved parking	9S
0.000	0.000	0.299	0.000	0.000	0.299	Woods/grass comb., Fair	11S
0.000	**0.000**	**0.599**	**0.000**	**0.000**	**0.599**	**TOTAL AREA**	

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 9S: NORTH (BASIN 2 Runoff Area=13,044 sf 100.00% Impervious Runoff Depth=2.27"
Tc=6.0 min CN=0/98 Runoff=0.17 cfs 0.057 af

Subcatchment 11S: NORTH (BASIN 2 PRE) Runoff Area=13,044 sf 0.00% Impervious Runoff Depth=0.69"
Tc=6.0 min CN=76/0 Runoff=0.03 cfs 0.017 af

Pond 4P: Extended Dry Detention Peak Elev=1.24' Storage=843 cf Inflow=0.17 cfs 0.057 af
Outflow=0.03 cfs 0.057 af

Total Runoff Area = 0.599 ac Runoff Volume = 0.074 af Average Runoff Depth = 1.48"
50.00% Pervious = 0.299 ac 50.00% Impervious = 0.299 ac

Summary for Subcatchment 9S: NORTH (BASIN 2 POST)

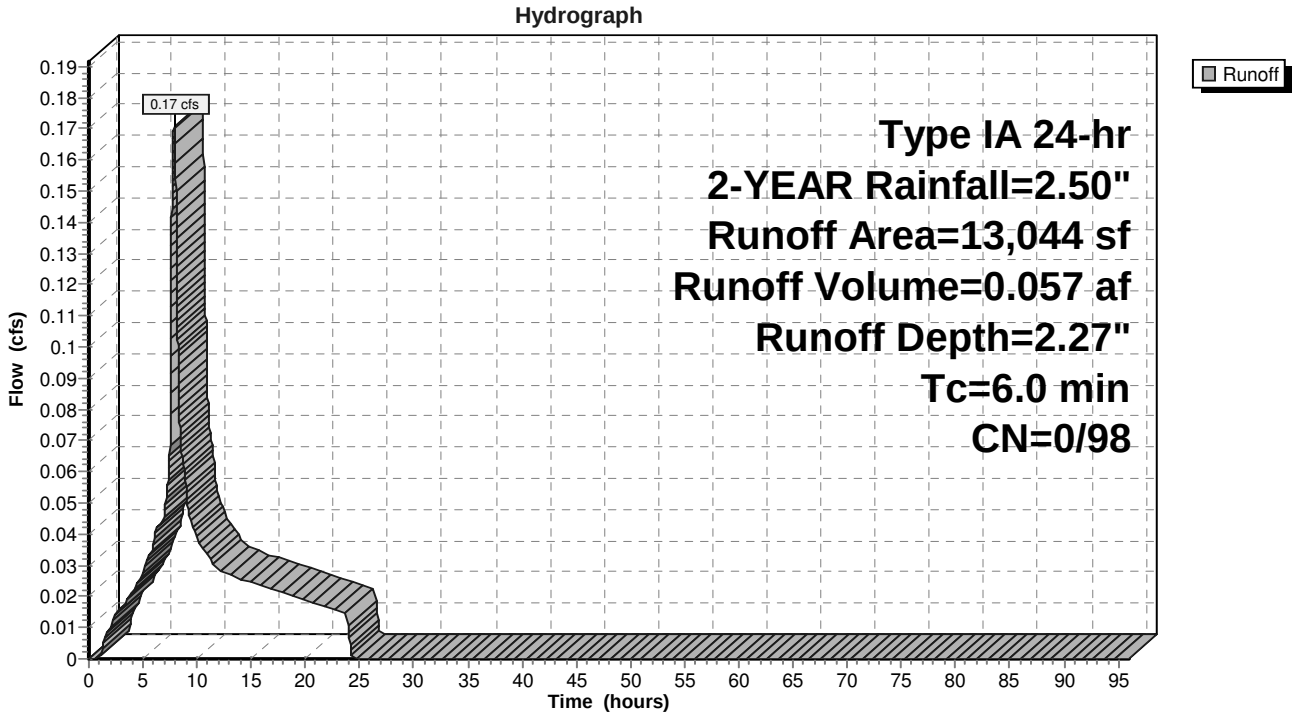
Runoff = 0.17 cfs @ 7.90 hrs, Volume= 0.057 af, Depth= 2.27"
Routed to Pond 4P : Extended Dry Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-YEAR Rainfall=2.50"

Area (sf)	CN	Description
13,044	98	Paved parking, HSG C
13,044	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 9S: NORTH (BASIN 2 POST)



Summary for Subcatchment 11S: NORTH (BASIN 2 PRE)

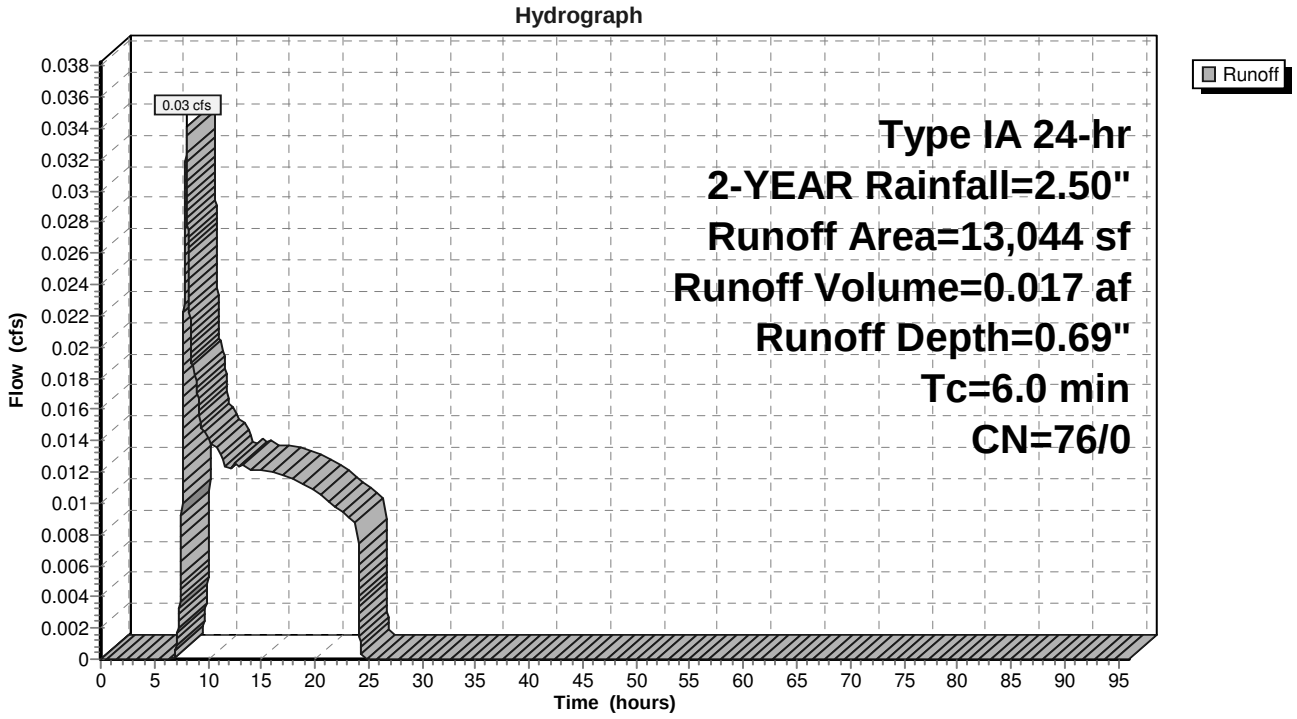
Runoff = 0.03 cfs @ 8.00 hrs, Volume= 0.017 af, Depth= 0.69"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-YEAR Rainfall=2.50"

Area (sf)	CN	Description
13,044	76	Woods/grass comb., Fair, HSG C
13,044	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 11S: NORTH (BASIN 2 PRE)



Summary for Pond 4P: Extended Dry Detention

[92] Warning: Device #3 is above defined storage

Inflow Area = 0.299 ac,100.00% Impervious, Inflow Depth = 2.27" for 2-YEAR event
Inflow = 0.17 cfs @ 7.90 hrs, Volume= 0.057 af
Outflow = 0.03 cfs @ 11.73 hrs, Volume= 0.057 af, Atten= 83%, Lag= 229.6 min
Primary = 0.03 cfs @ 11.73 hrs, Volume= 0.057 af
Routed to nonexistent node 8P

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 1.24' @ 11.73 hrs Surf.Area= 1,113 sf Storage= 843 cf

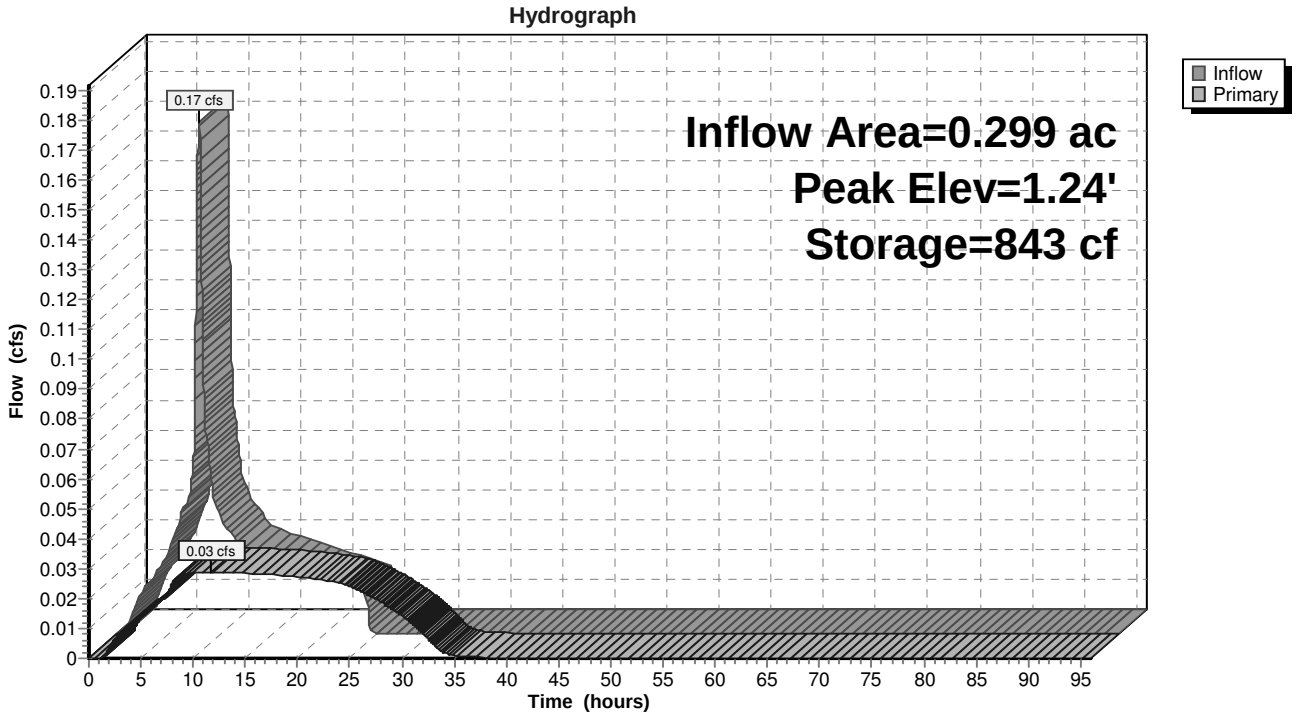
Plug-Flow detention time= 369.4 min calculated for 0.057 af (100% of inflow)
Center-of-Mass det. time= 369.5 min (1,043.1 - 673.6)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	1,158 cf	**4.00'W x 70.00'L x 1.50'H Prismatoid Z=4.0**

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**1.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	1.24'	**2.5" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	1.50'	**6.0" Vert. OVERFLOW** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.03 cfs @ 11.73 hrs HW=1.24' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.27 fps)
└**2=Orifice/Grate** (Orifice Controls 0.00 cfs @ 0.07 fps)
└**3=OVERFLOW** (Controls 0.00 cfs)

Pond 4P: Extended Dry Detention



Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 9S: NORTH (BASIN 2 Runoff Area=13,044 sf 100.00% Impervious Runoff Depth=3.22"
Tc=6.0 min CN=0/98 Runoff=0.24 cfs 0.080 af

Subcatchment 11S: NORTH (BASIN 2 PRE) Runoff Area=13,044 sf 0.00% Impervious Runoff Depth=1.33"
Tc=6.0 min CN=76/0 Runoff=0.08 cfs 0.033 af

Pond 4P: Extended Dry Detention Peak Elev=1.42' Storage=1,055 cf Inflow=0.24 cfs 0.080 af
Outflow=0.08 cfs 0.080 af

Total Runoff Area = 0.599 ac Runoff Volume = 0.113 af Average Runoff Depth = 2.27"
50.00% Pervious = 0.299 ac 50.00% Impervious = 0.299 ac

Summary for Subcatchment 9S: NORTH (BASIN 2 POST)

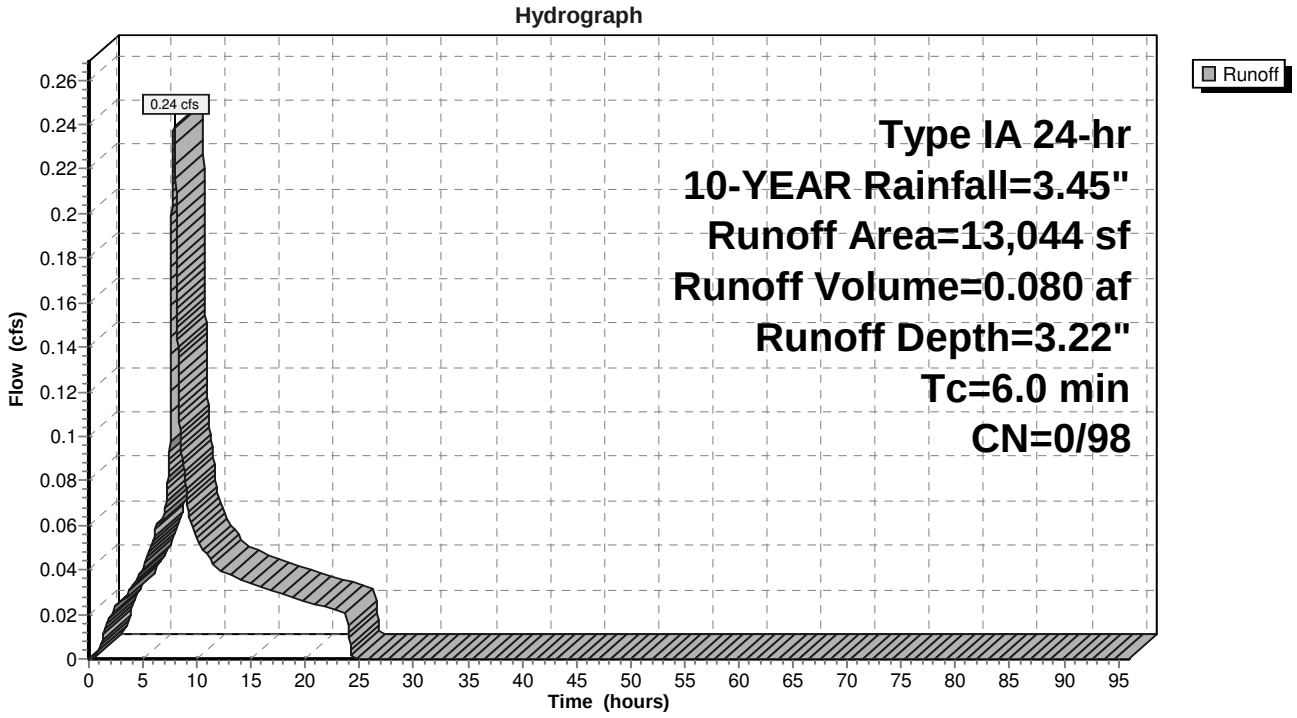
Runoff = 0.24 cfs @ 7.90 hrs, Volume= 0.080 af, Depth= 3.22"
Routed to Pond 4P : Extended Dry Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-YEAR Rainfall=3.45"

Area (sf)	CN	Description
13,044	98	Paved parking, HSG C
13,044	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 9S: NORTH (BASIN 2 POST)



Summary for Subcatchment 11S: NORTH (BASIN 2 PRE)

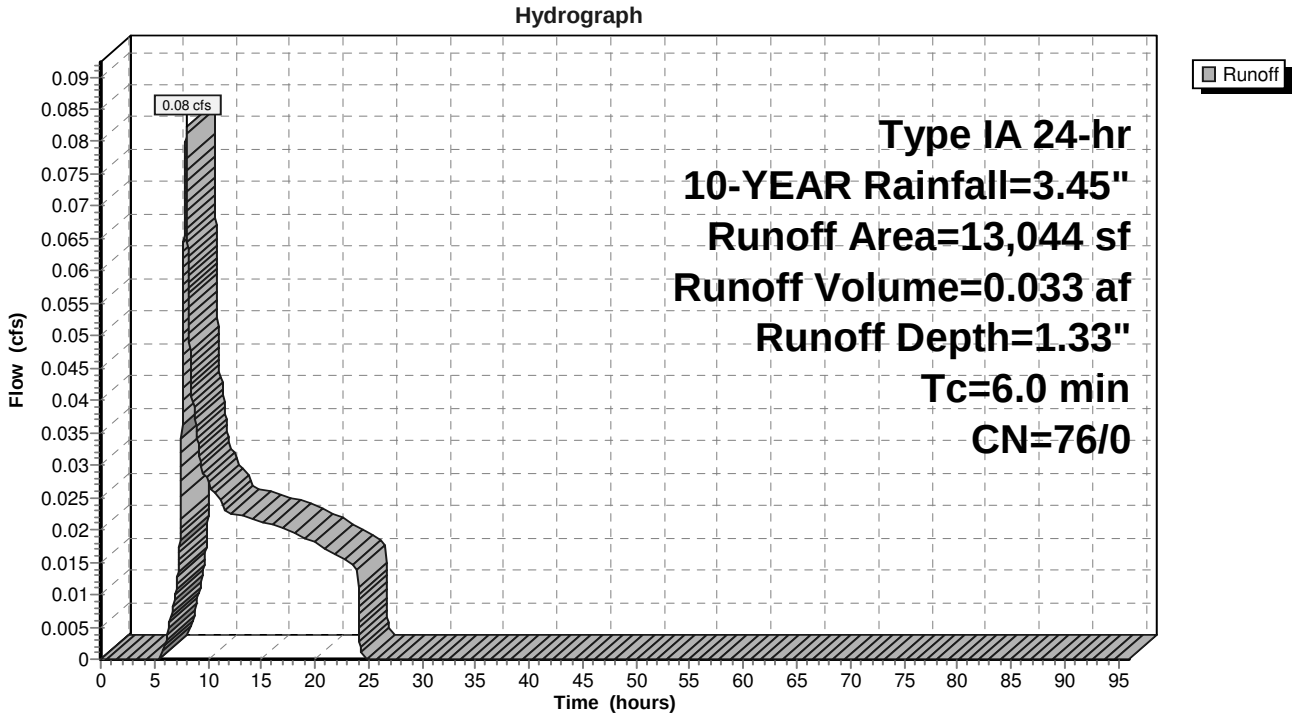
Runoff = 0.08 cfs @ 8.00 hrs, Volume= 0.033 af, Depth= 1.33"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-YEAR Rainfall=3.45"

Area (sf)	CN	Description
13,044	76	Woods/grass comb., Fair, HSG C
13,044	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 11S: NORTH (BASIN 2 PRE)



Summary for Pond 4P: Extended Dry Detention

[92] Warning: Device #3 is above defined storage

Inflow Area = 0.299 ac,100.00% Impervious, Inflow Depth = 3.22" for 10-YEAR event
Inflow = 0.24 cfs @ 7.90 hrs, Volume= 0.080 af
Outflow = 0.08 cfs @ 8.98 hrs, Volume= 0.080 af, Atten= 68%, Lag= 65.3 min
Primary = 0.08 cfs @ 8.98 hrs, Volume= 0.080 af
Routed to nonexistent node 8P

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 1.42' @ 8.98 hrs Surf.Area= 1,249 sf Storage= 1,055 cf

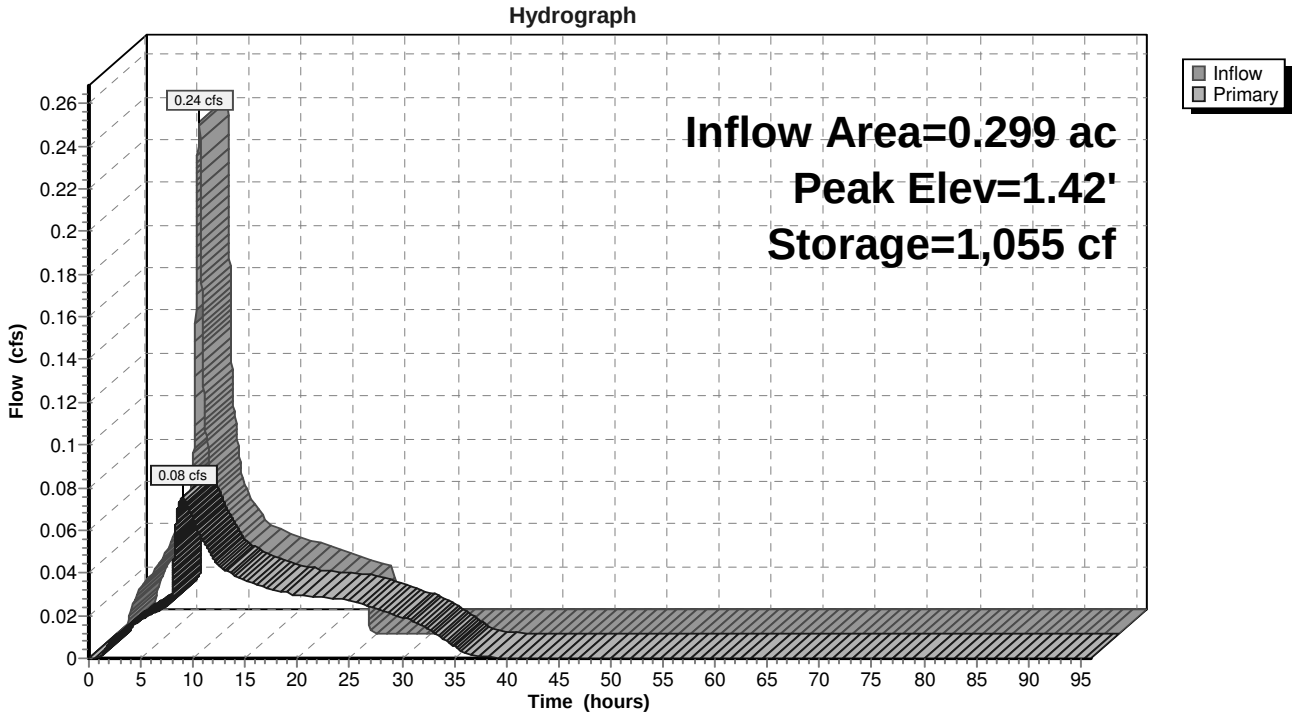
Plug-Flow detention time= 341.4 min calculated for 0.080 af (100% of inflow)
Center-of-Mass det. time= 341.5 min (1,005.7 - 664.2)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	1,158 cf	**4.00'W x 70.00'L x 1.50'H Prismatoid Z=4.0**

Device	Routing	Invert	Outlet Devices		
#1	Primary	0.00'	**1.0" Vert. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#2	Primary	1.24'	**2.5" Vert. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#3	Primary	1.50'	**6.0" Vert. OVERFLOW**	C= 0.600	Limited to weir flow at low heads

Primary OutFlow Max=0.08 cfs @ 8.98 hrs HW=1.42' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.65 fps)
- **2=Orifice/Grate** (Orifice Controls 0.04 cfs @ 1.44 fps)
- **3=OVERFLOW** (Controls 0.00 cfs)

Pond 4P: Extended Dry Detention



Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 9S: NORTH (BASIN 2 Runoff Area=13,044 sf 100.00% Impervious Runoff Depth=3.67"
Tc=6.0 min CN=0/98 Runoff=0.27 cfs 0.091 af

Subcatchment 11S: NORTH (BASIN 2 PRE) Runoff Area=13,044 sf 0.00% Impervious Runoff Depth=1.66"
Tc=6.0 min CN=76/0 Runoff=0.11 cfs 0.041 af

Pond 4P: Extended Dry Detention Peak Elev=1.53' Storage=1,158 cf Inflow=0.27 cfs 0.091 af
Outflow=0.10 cfs 0.091 af

Total Runoff Area = 0.599 ac Runoff Volume = 0.133 af Average Runoff Depth = 2.66"
50.00% Pervious = 0.299 ac 50.00% Impervious = 0.299 ac

Summary for Subcatchment 9S: NORTH (BASIN 2 POST)

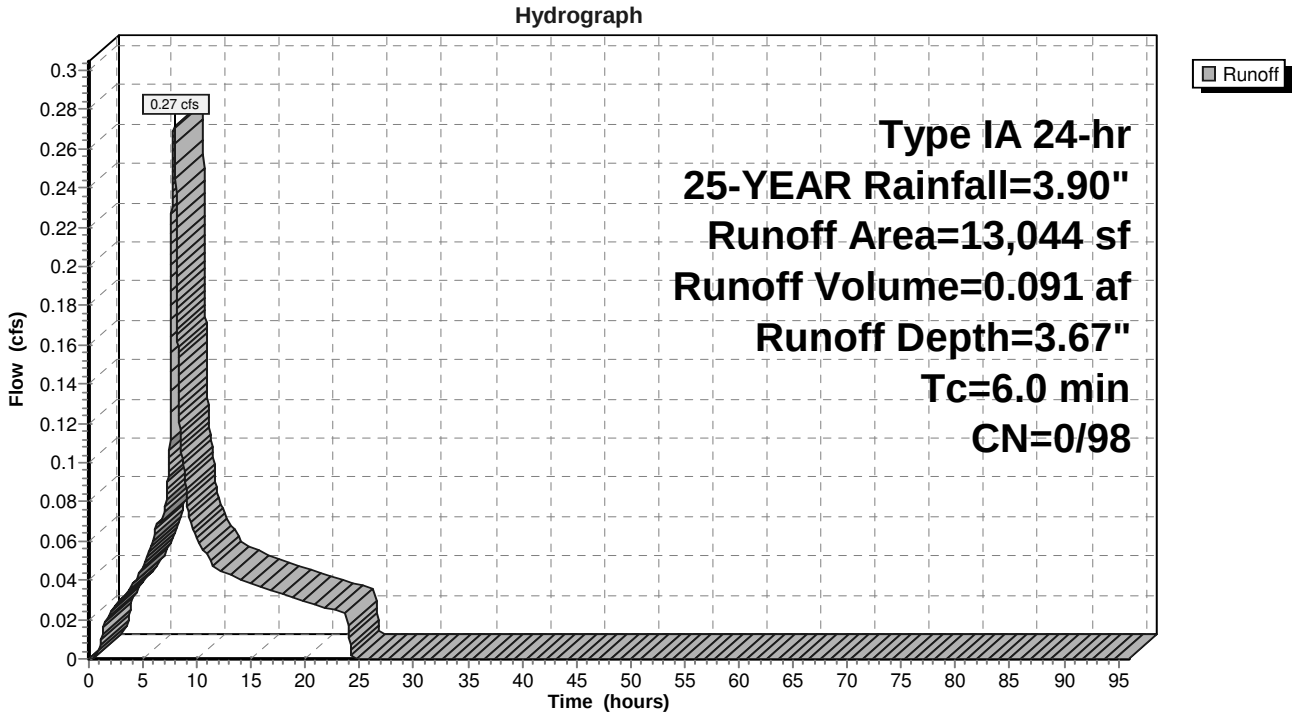
Runoff = 0.27 cfs @ 7.90 hrs, Volume= 0.091 af, Depth= 3.67"
Routed to Pond 4P : Extended Dry Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-YEAR Rainfall=3.90"

Area (sf)	CN	Description
13,044	98	Paved parking, HSG C
13,044	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 9S: NORTH (BASIN 2 POST)



Summary for Subcatchment 11S: NORTH (BASIN 2 PRE)

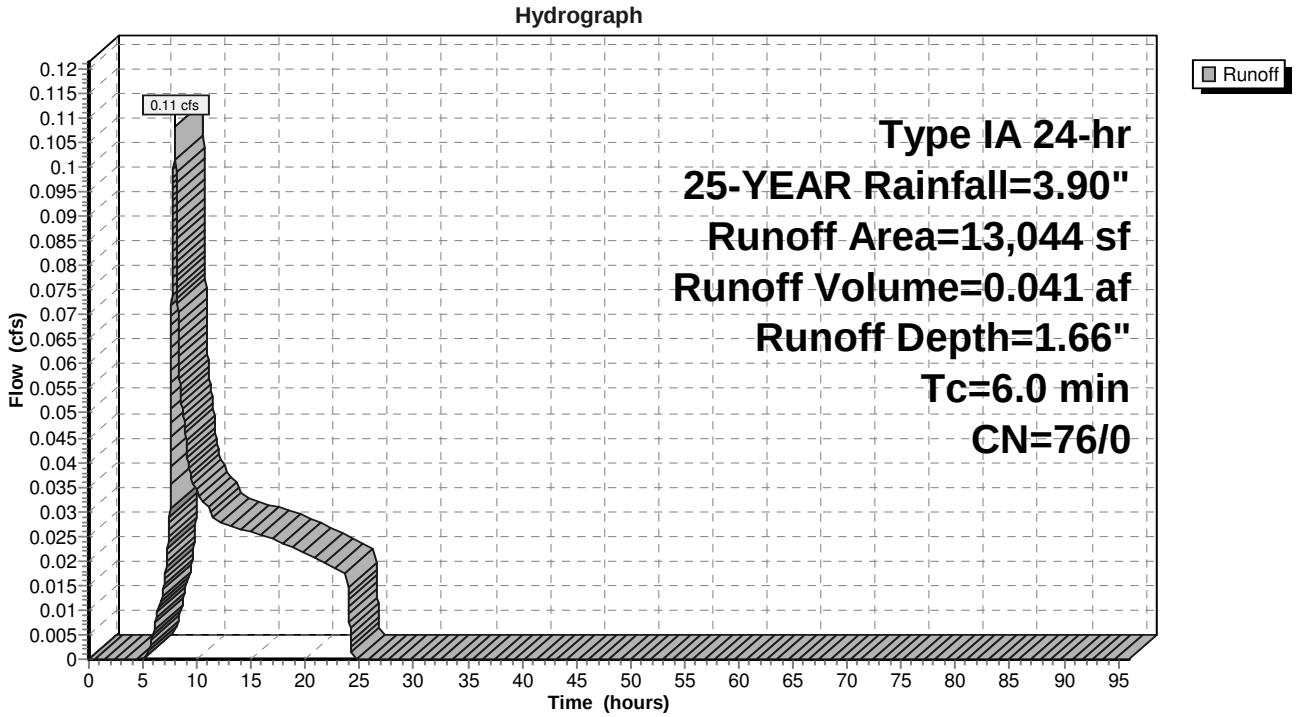
Runoff = 0.11 cfs @ 8.00 hrs, Volume= 0.041 af, Depth= 1.66"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-YEAR Rainfall=3.90"

Area (sf)	CN	Description
13,044	76	Woods/grass comb., Fair, HSG C
13,044	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 11S: NORTH (BASIN 2 PRE)



Summary for Pond 4P: Extended Dry Detention

[92] Warning: Device #3 is above defined storage
[93] Warning: Storage range exceeded by 0.03'
[85] Warning: Oscillations may require smaller dt or Finer Routing (severity=1)

Inflow Area = 0.299 ac,100.00% Impervious, Inflow Depth = 3.67" for 25-YEAR event
Inflow = 0.27 cfs @ 7.90 hrs, Volume= 0.091 af
Outflow = 0.10 cfs @ 8.67 hrs, Volume= 0.091 af, Atten= 61%, Lag= 46.5 min
Primary = 0.10 cfs @ 8.67 hrs, Volume= 0.091 af
Routed to nonexistent node 8P

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 1.53' @ 8.67 hrs Surf.Area= 1,312 sf Storage= 1,158 cf

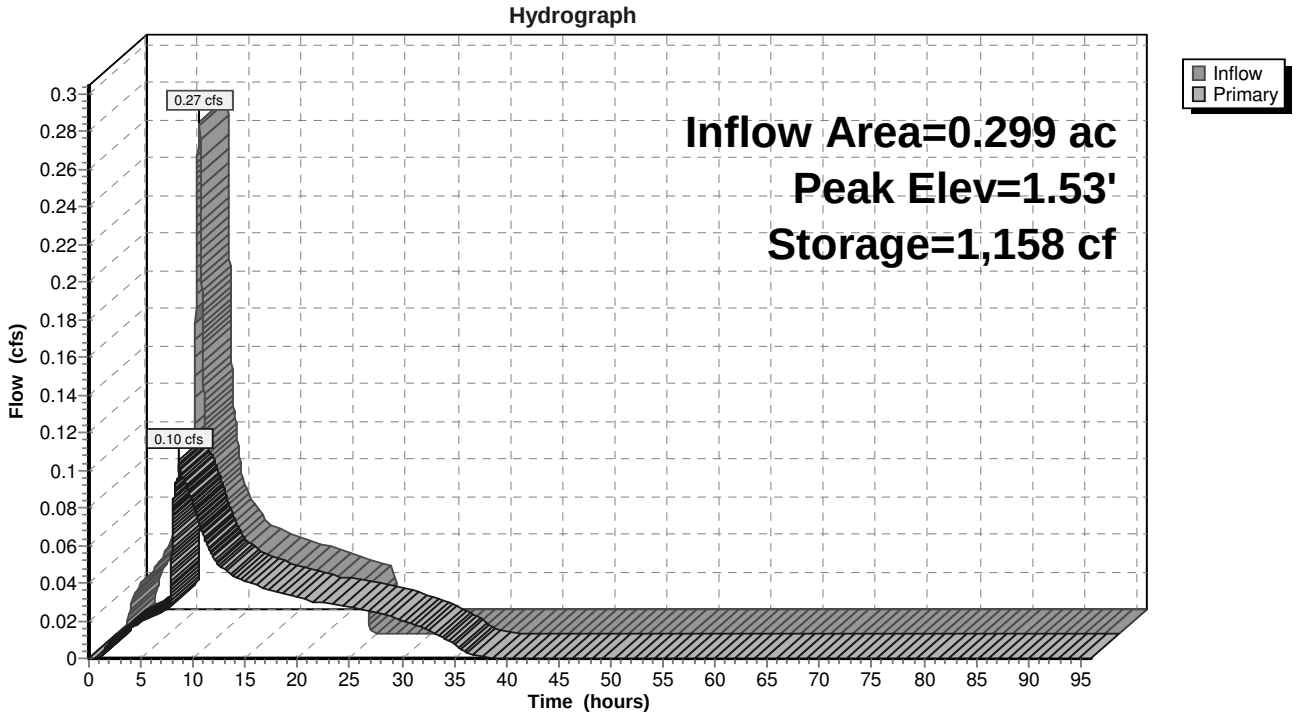
Plug-Flow detention time= 319.8 min calculated for 0.091 af (100% of inflow)
Center-of-Mass det. time= 319.9 min (981.1 - 661.1)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	1,158 cf	**4.00'W x 70.00'L x 1.50'H Prismatoid Z=4.0**

Device	Routing	Invert	Outlet Devices		
#1	Primary	0.00'	**1.0" Vert. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#2	Primary	1.24'	**2.5" Vert. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#3	Primary	1.50'	**6.0" Vert. OVERFLOW**	C= 0.600	Limited to weir flow at low heads

Primary OutFlow Max=0.10 cfs @ 8.67 hrs HW=1.53' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.03 cfs @ 5.86 fps)
- **2=Orifice/Grate** (Orifice Controls 0.07 cfs @ 2.05 fps)
- **3=OVERFLOW** (Orifice Controls 0.00 cfs @ 0.54 fps)

Pond 4P: Extended Dry Detention



Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 9S: NORTH (BASIN 2 Runoff Area=13,044 sf 100.00% Impervious Runoff Depth=0.19"
Tc=6.0 min CN=0/98 Runoff=0.02 cfs 0.005 af

Subcatchment 11S: NORTH (BASIN 2 PRE) Runoff Area=13,044 sf 0.00% Impervious Runoff Depth=0.00"
Tc=6.0 min CN=76/0 Runoff=0.00 cfs 0.000 af

Pond 4P: Extended Dry Detention Peak Elev=0.28' Storage=104 cf Inflow=0.02 cfs 0.005 af
Outflow=0.01 cfs 0.005 af

Total Runoff Area = 0.599 ac Runoff Volume = 0.005 af Average Runoff Depth = 0.10"
50.00% Pervious = 0.299 ac 50.00% Impervious = 0.299 ac

Summary for Subcatchment 9S: NORTH (BASIN 2 POST)

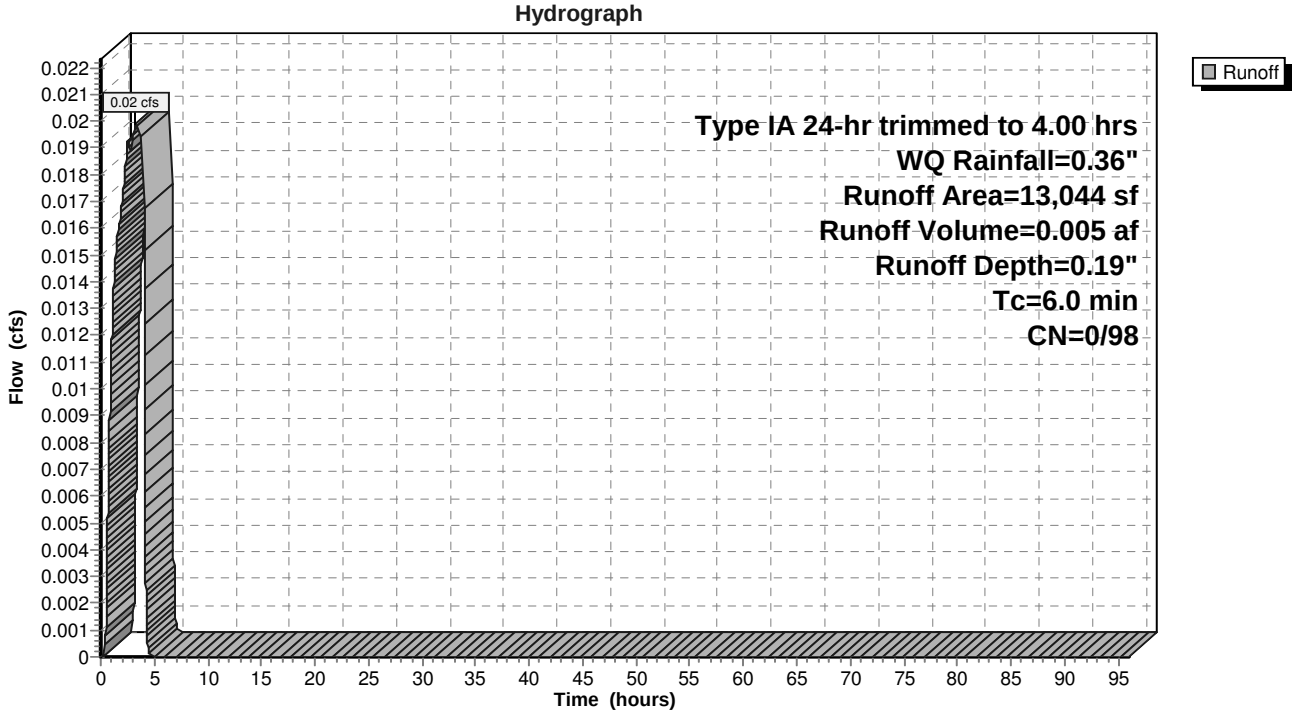
Runoff = 0.02 cfs @ 3.21 hrs, Volume= 0.005 af, Depth= 0.19"
Routed to Pond 4P : Extended Dry Detention

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr trimmed to 4.00 hrs WQ Rainfall=0.36"

Area (sf)	CN	Description
13,044	98	Paved parking, HSG C
13,044	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 9S: NORTH (BASIN 2 POST)



Summary for Subcatchment 11S: NORTH (BASIN 2 PRE)

[45] Hint: Runoff=Zero

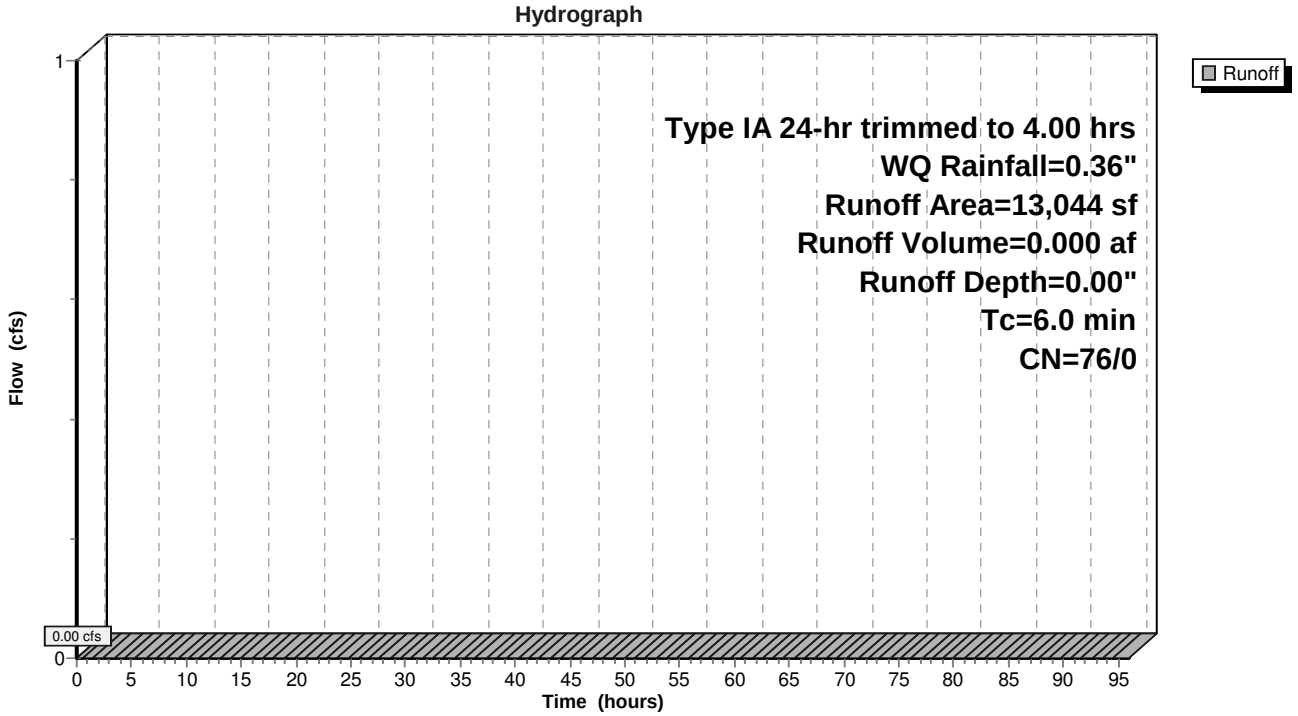
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr trimmed to 4.00 hrs WQ Rainfall=0.36"

Area (sf)	CN	Description
13,044	76	Woods/grass comb., Fair, HSG C
13,044	76	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 11S: NORTH (BASIN 2 PRE)



Summary for Pond 4P: Extended Dry Detention

[92] Warning: Device #3 is above defined storage

Inflow Area = 0.299 ac,100.00% Impervious, Inflow Depth = 0.19" for WQ event
Inflow = 0.02 cfs @ 3.21 hrs, Volume= 0.005 af
Outflow = 0.01 cfs @ 4.05 hrs, Volume= 0.005 af, Atten= 35%, Lag= 50.4 min
Primary = 0.01 cfs @ 4.05 hrs, Volume= 0.005 af
Routed to nonexistent node 8P

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 0.28' @ 4.05 hrs Surf.Area= 454 sf Storage= 104 cf

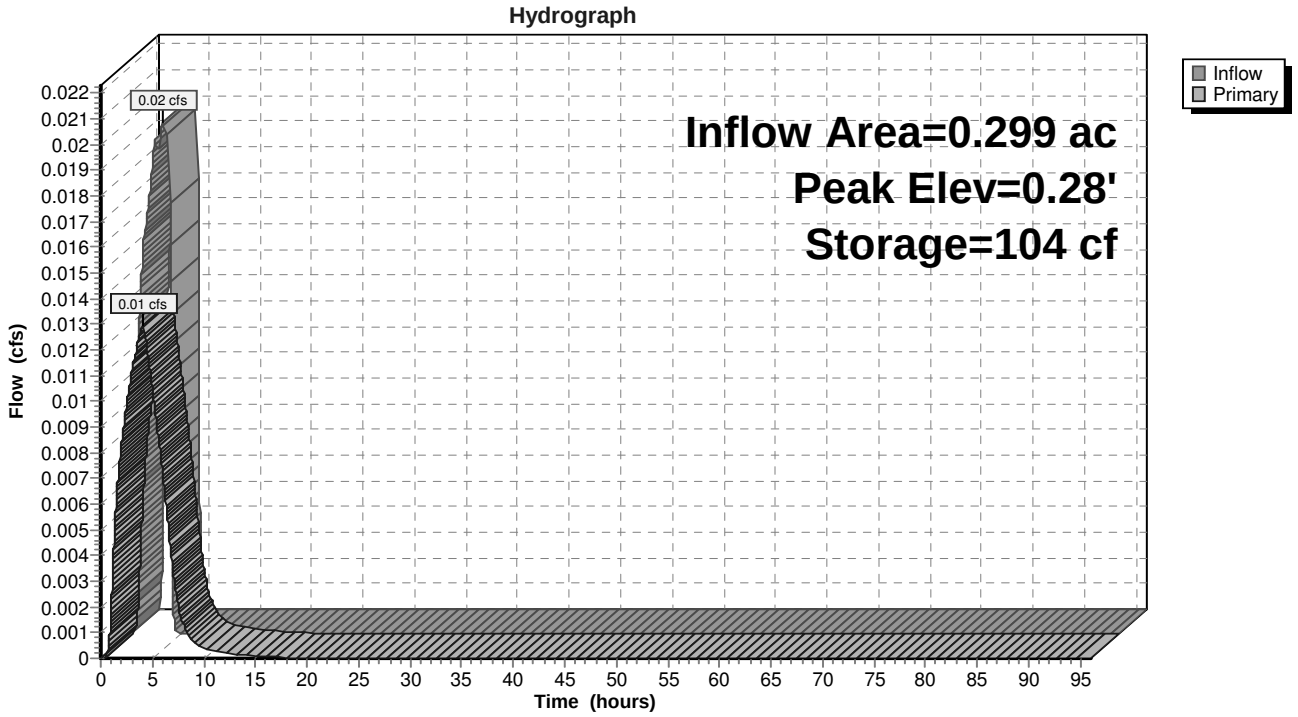
Plug-Flow detention time= 110.9 min calculated for 0.005 af (100% of inflow)
Center-of-Mass det. time= 110.7 min (263.0 - 152.3)

Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	1,158 cf	**4.00'W x 70.00'L x 1.50'H Prismatoid Z=4.0**

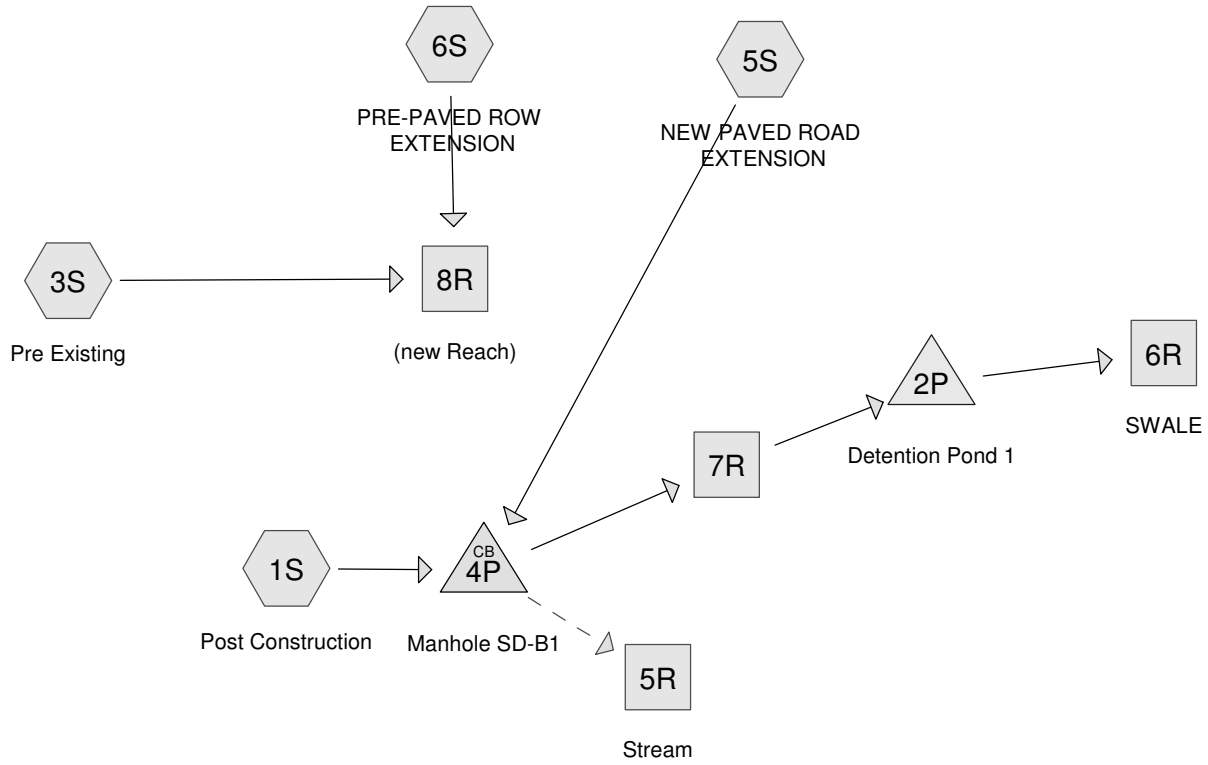
Device	Routing	Invert	Outlet Devices		
#1	Primary	0.00'	**1.0" Vert. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#2	Primary	1.24'	**2.5" Vert. Orifice/Grate**	C= 0.600	Limited to weir flow at low heads
#3	Primary	1.50'	**6.0" Vert. OVERFLOW**	C= 0.600	Limited to weir flow at low heads

Primary OutFlow Max=0.01 cfs @ 4.05 hrs HW=0.28' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.01 cfs @ 2.37 fps)
- **2=Orifice/Grate** (Controls 0.00 cfs)
- **3=OVERFLOW** (Controls 0.00 cfs)

Pond 4P: Extended Dry Detention



APPENDIX C



Subcat Reach Pond Link

Routing Diagram for E08-001 MODIFIED REVdetention calcs
Prepared by Firwood Design Storm, Printed 10/6/2022
HydroCAD® 10.10-7a s/n 04664 © 2021 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2YR	Type IA 24-hr		Default	24.00	1	2.50	2
2	10 year	Type IA 24-hr		Default	24.00	1	3.45	2
3	25 year	Type IA 24-hr		Default	24.00	1	3.90	2
4	WATER QUALITY	Type IA 24-hr		Scale	4.00	1	0.36	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.150	98	(5S)
0.300	89	Gravel roads, HSG C (3S, 6S)
0.570	86	LANDSCAPE AREAS (1S)
1.530	86	Pasture/grassland/range HSG C (3S)
1.220	98	ROAD AND SIDEWALKS (1S)
0.110	98	exisiting asphalt (3S)
3.880	**91**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
1.830	HSG C	3S, 6S
0.000	HSG D	
2.050	Other	1S, 3S, 5S
3.880		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	0.150	0.150		5S
0.000	0.000	0.300	0.000	0.000	0.300	Gravel roads	3S, 6S
0.000	0.000	0.000	0.000	0.570	0.570	LANDSCAPE AREAS	1S
0.000	0.000	1.530	0.000	0.000	1.530	Pasture/grassland/range	3S
0.000	0.000	0.000	0.000	1.220	1.220	ROAD AND SIDEWALKS	1S
0.000	0.000	0.000	0.000	0.110	0.110	exisiting asphalt	3S
0.000	**0.000**	**1.830**	**0.000**	**2.050**	**3.880**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	7R	0.00	-0.17	33.0	0.0052	0.012	0.0	12.0	0.0
2	8R	0.00	-1.00	50.0	0.0200	0.009	0.0	36.0	0.0

Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Post Construction Runoff Area=1.790 ac 68.16% Impervious Runoff Depth=1.94"
Tc=5.0 min CN=86/98 Runoff=0.87 cfs 0.290 af

Subcatchment 3S: Pre Existing Runoff Area=1.790 ac 6.15% Impervious Runoff Depth=1.31"
Flow Length=500' Tc=24.5 min CN=86/98 Runoff=0.41 cfs 0.195 af

Subcatchment 5S: NEW PAVED ROAD Runoff Area=6,527 sf 100.00% Impervious Runoff Depth=2.27"
Tc=6.0 min CN=0/98 Runoff=0.09 cfs 0.028 af

Subcatchment 6S: PRE-PAVED ROW Runoff Area=6,527 sf 0.00% Impervious Runoff Depth=1.45"
Tc=6.0 min CN=89/0 Runoff=0.05 cfs 0.018 af

Reach 5R: Stream Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 6R: SWALE Avg. Flow Depth=0.11' Max Vel=0.92 fps Inflow=0.44 cfs 0.318 af
n=0.025 L=100.0' S=0.0050 '/' Capacity=1.78 cfs Outflow=0.44 cfs 0.318 af

Reach 7R: Avg. Flow Depth=0.40' Max Vel=3.20 fps Inflow=0.95 cfs 0.318 af
12.0" Round Pipe n=0.012 L=33.0' S=0.0052 '/' Capacity=2.77 cfs Outflow=0.95 cfs 0.318 af

Reach 8R: (new Reach) Avg. Flow Depth=0.13' Max Vel=4.48 fps Inflow=0.46 cfs 0.213 af
36.0" Round Pipe n=0.009 L=50.0' S=0.0200 '/' Capacity=136.25 cfs Outflow=0.46 cfs 0.213 af

Pond 2P: Detention Pond 1 Peak Elev=1.26' Storage=1,706 cf Inflow=0.95 cfs 0.318 af
Outflow=0.44 cfs 0.318 af

Pond 4P: Manhole SD-B1 Peak Elev=0.32' Inflow=0.95 cfs 0.318 af
Primary=0.95 cfs 0.318 af Secondary=0.00 cfs 0.000 af Outflow=0.95 cfs 0.318 af

Total Runoff Area = 3.880 ac Runoff Volume = 0.531 af Average Runoff Depth = 1.64"
61.86% Pervious = 2.400 ac 38.14% Impervious = 1.480 ac

Summary for Subcatchment 1S: Post Construction

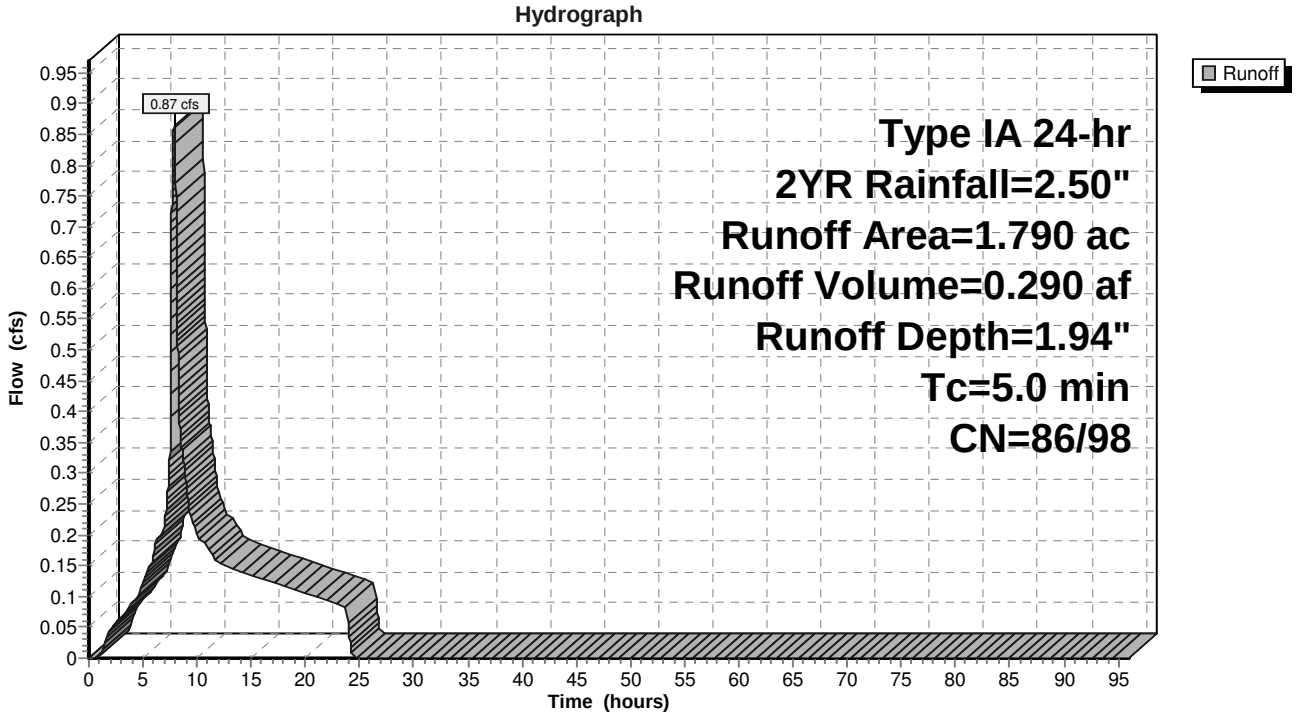
Runoff = 0.87 cfs @ 7.90 hrs, Volume= 0.290 af, Depth= 1.94"
Routed to Pond 4P : Manhole SD-B1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2YR Rainfall=2.50"

	Area (ac)	CN	Description
*	1.220	98	ROAD AND SIDEWALKS
	0.570	86	LANDSCAPE AREAS
	1.790	94	Weighted Average
	0.570		31.84% Pervious Area
	1.220		68.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minium**

Subcatchment 1S: Post Construction



Summary for Subcatchment 3S: Pre Existing

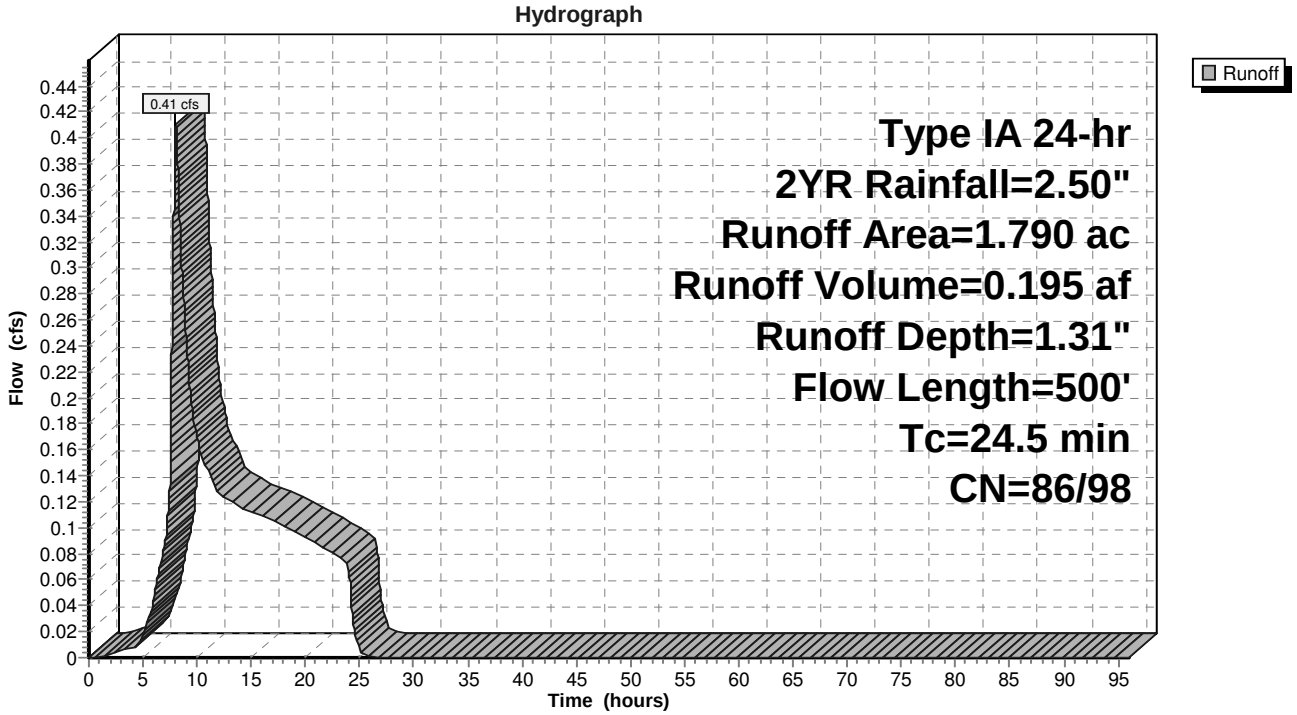
Runoff = 0.41 cfs @ 8.01 hrs, Volume= 0.195 af, Depth= 1.31"
Routed to Reach 8R : (new Reach)

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2YR Rainfall=2.50"

	Area (ac)	CN	Description
	1.530	86	Pasture/grassland/range HSG C
	0.150	89	Gravel roads, HSG C
*	0.110	98	exisiting asphalt
	1.790	87	Weighted Average
	1.680		93.85% Pervious Area
	0.110		6.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	250	0.0180	0.19		**Sheet Flow,** Range n= 0.130 P2= 2.50"
3.0	250	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.5	500	Total			

Subcatchment 3S: Pre Existing



Summary for Subcatchment 5S: NEW PAVED ROAD EXTENSION

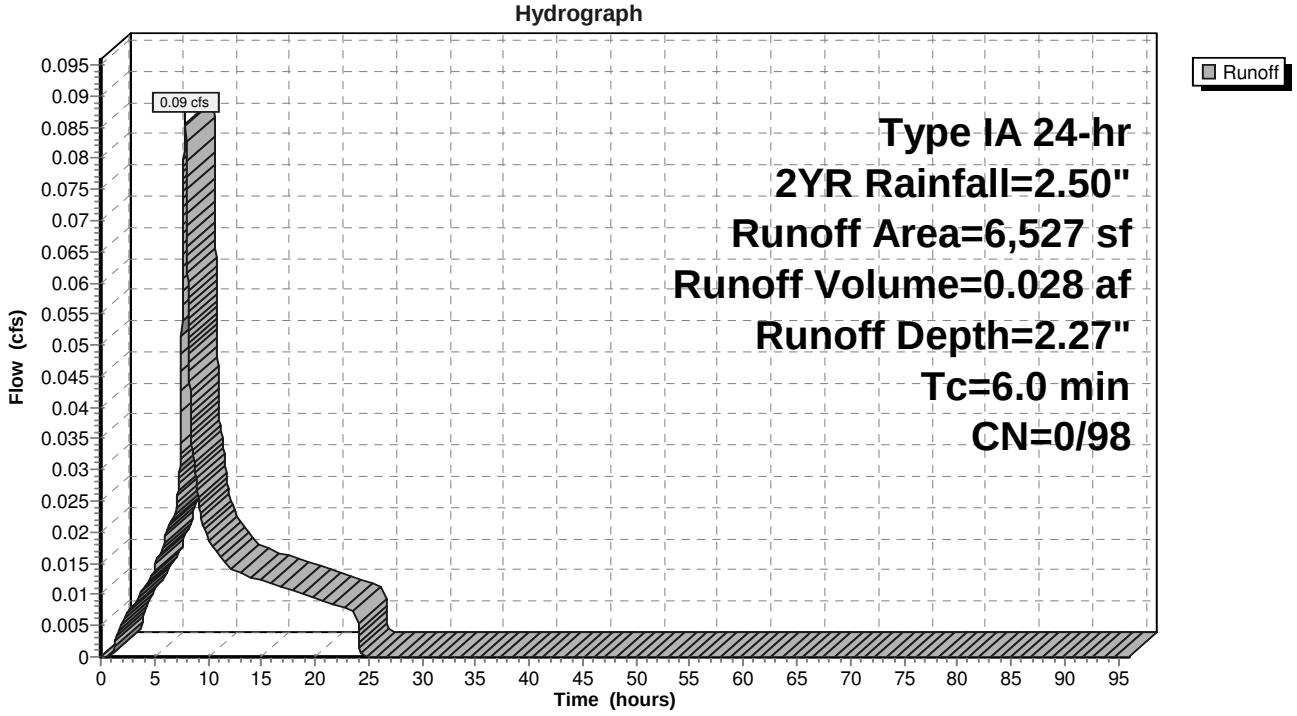
Runoff = 0.09 cfs @ 7.90 hrs, Volume= 0.028 af, Depth= 2.27"
Routed to Pond 4P : Manhole SD-B1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2YR Rainfall=2.50"

	Area (sf)	CN	Description
*	6,527	98	
	6,527		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 5S: NEW PAVED ROAD EXTENSION



Summary for Subcatchment 6S: PRE-PAVED ROW EXTENSION

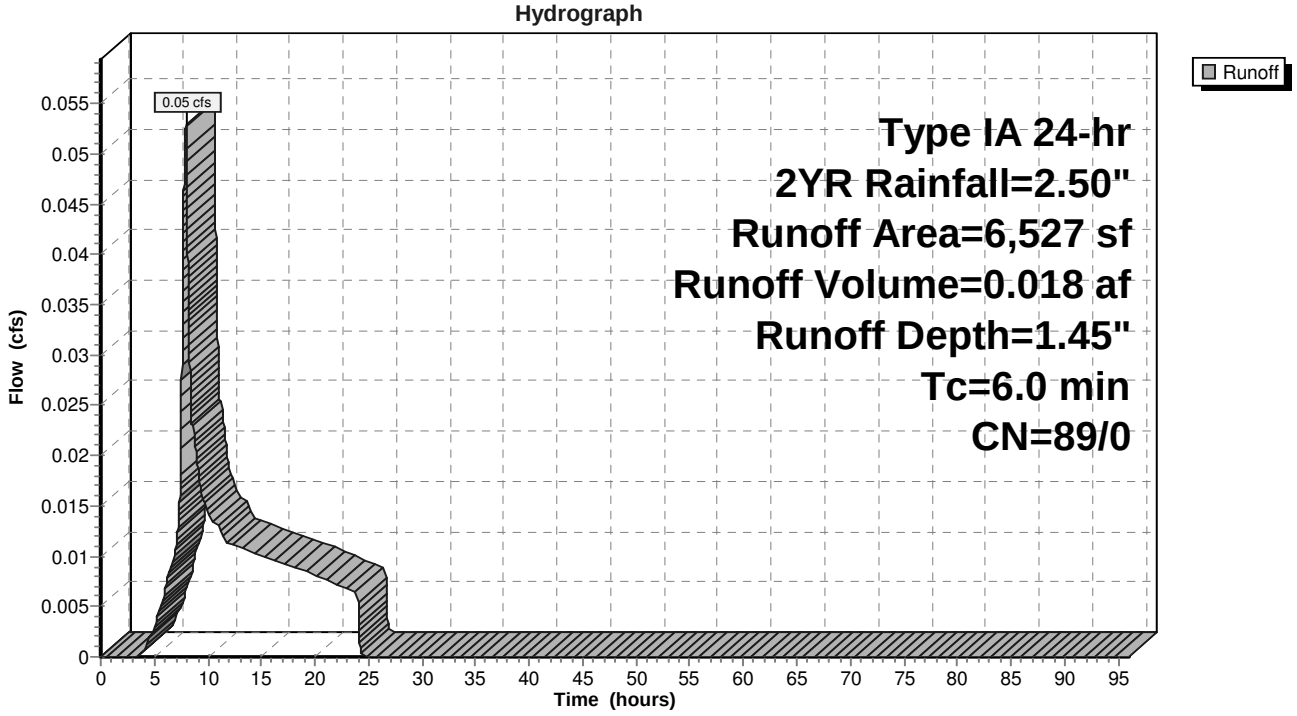
Runoff = 0.05 cfs @ 7.96 hrs, Volume= 0.018 af, Depth= 1.45"
Routed to Reach 8R : (new Reach)

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2YR Rainfall=2.50"

Area (sf)	CN	Description
6,527	89	Gravel roads, HSG C
6,527		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 6S: PRE-PAVED ROW EXTENSION

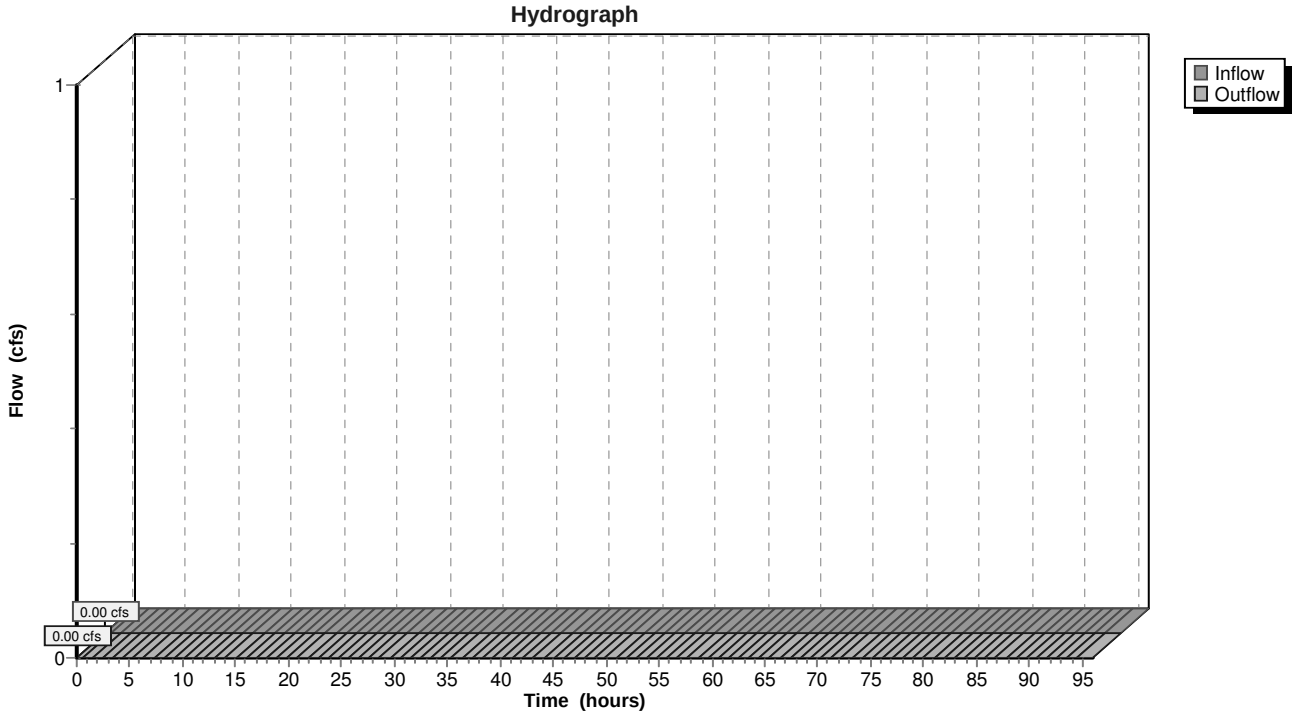


Summary for Reach 5R: Stream

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Reach 5R: Stream



Summary for Reach 6R: SWALE

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 1.97" for 2YR event
Inflow = 0.44 cfs @ 8.36 hrs, Volume= 0.318 af
Outflow = 0.44 cfs @ 8.41 hrs, Volume= 0.318 af, Atten= 0%, Lag= 3.0 min

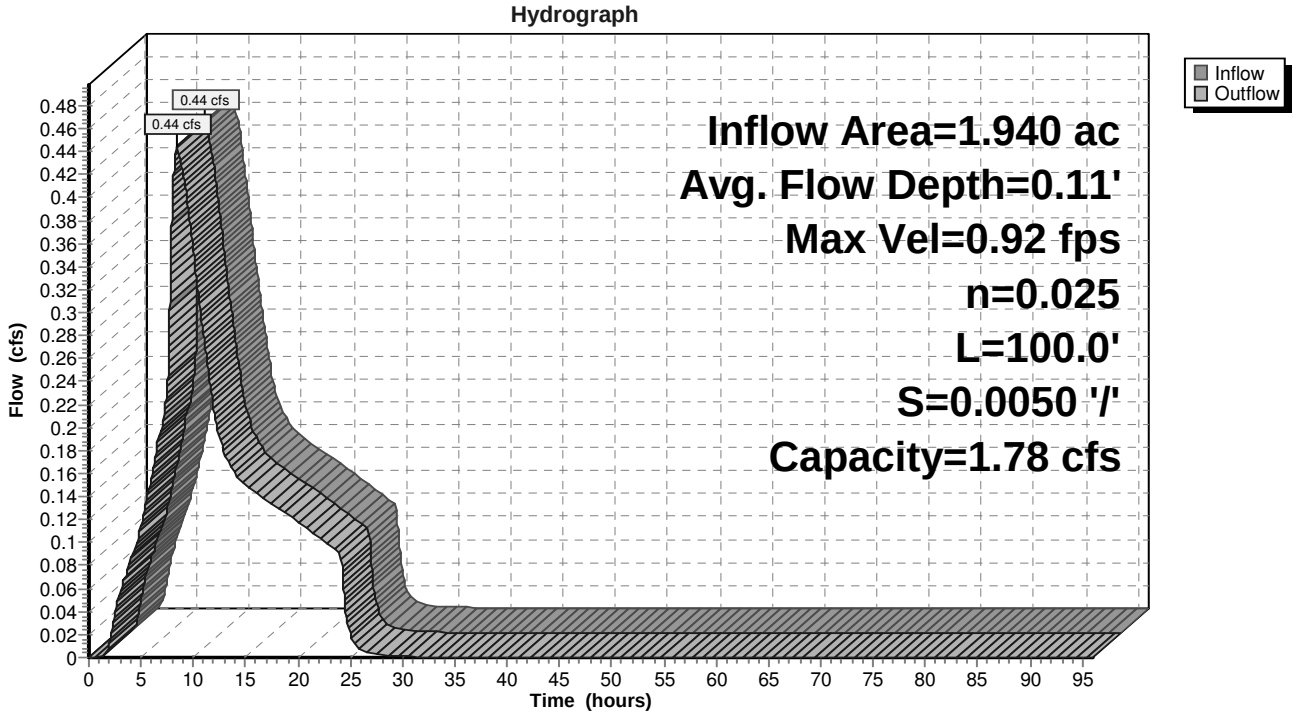
Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.92 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 0.31 fps, Avg. Travel Time= 5.4 min

Peak Storage= 48 cf @ 8.38 hrs
Average Depth at Peak Storage= 0.11' , Surface Width= 4.67'
Bank-Full Depth= 0.25' Flow Area= 1.2 sf, Capacity= 1.78 cfs

4.00' x 0.25' deep channel, n= 0.025 Short grass
Side Slope Z-value= 3.0 '/' Top Width= 5.50'
Length= 100.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.50'

‡

Reach 6R: SWALE



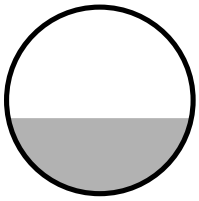
Summary for Reach 7R:

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 1.97" for 2YR event
Inflow = 0.95 cfs @ 7.90 hrs, Volume= 0.318 af
Outflow = 0.95 cfs @ 7.90 hrs, Volume= 0.318 af, Atten= 0%, Lag= 0.3 min
Routed to Pond 2P : Detention Pond 1

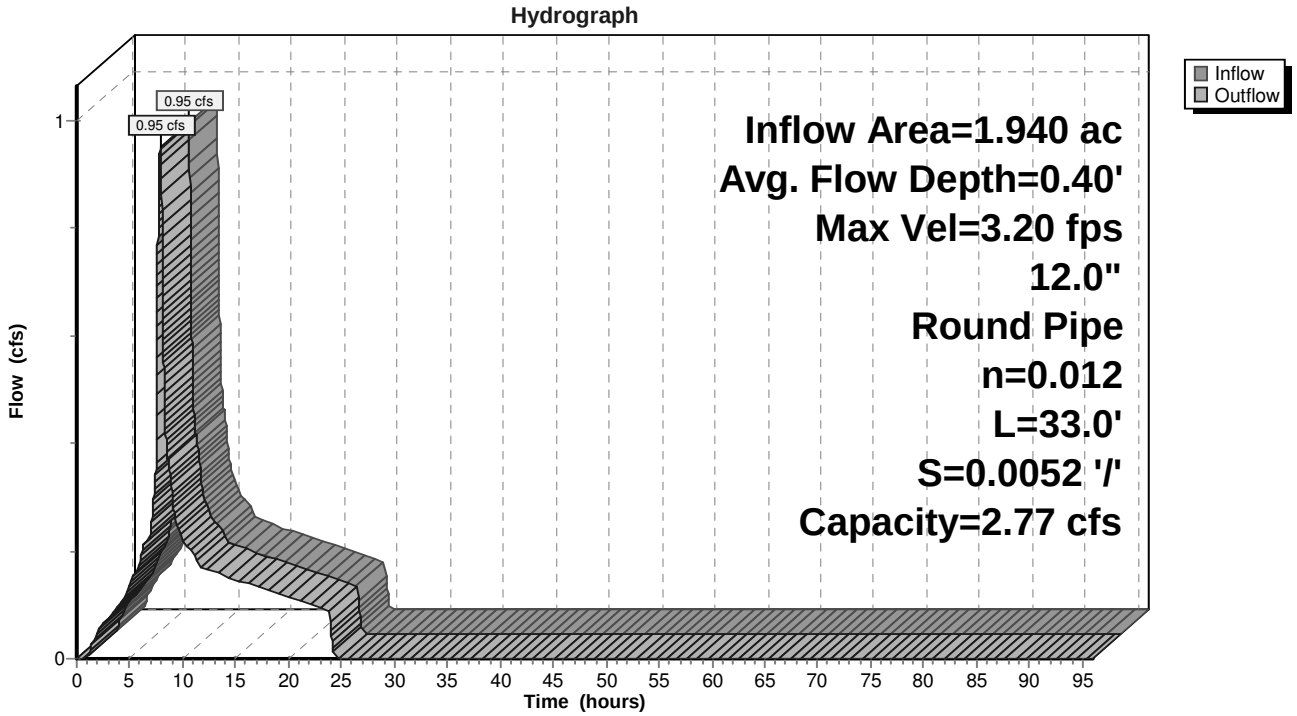
Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.20 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.82 fps, Avg. Travel Time= 0.3 min

Peak Storage= 10 cf @ 7.90 hrs
Average Depth at Peak Storage= 0.40' , Surface Width= 0.98'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.77 cfs

12.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 33.0' Slope= 0.0052 '/'
Inlet Invert= 0.00', Outlet Invert= -0.17'



Reach 7R:



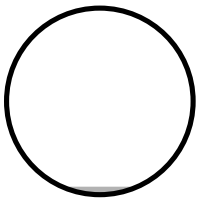
Summary for Reach 8R: (new Reach)

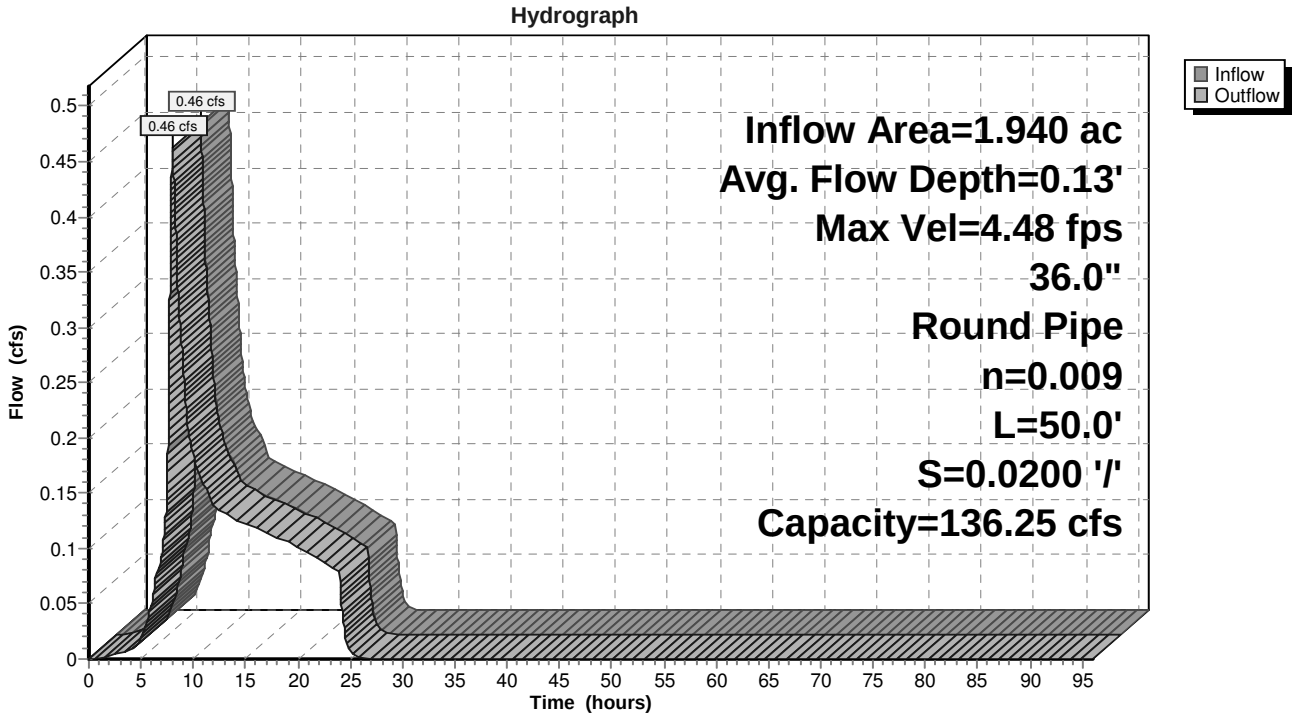
Inflow Area = 1.940 ac, 5.67% Impervious, Inflow Depth = 1.32" for 2YR event
Inflow = 0.46 cfs @ 8.01 hrs, Volume= 0.213 af
Outflow = 0.46 cfs @ 8.01 hrs, Volume= 0.213 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Max. Velocity= 4.48 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.69 fps, Avg. Travel Time= 0.3 min

Peak Storage= 5 cf @ 8.01 hrs
Average Depth at Peak Storage= 0.13' , Surface Width= 1.21'
Bank-Full Depth= 3.00' Flow Area= 7.1 sf, Capacity= 136.25 cfs

36.0" Round Pipe
n= 0.009 PVC, smooth interior
Length= 50.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -1.00'





Summary for Pond 2P: Detention Pond 1

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 1.97" for 2YR event
Inflow = 0.95 cfs @ 7.90 hrs, Volume= 0.318 af
Outflow = 0.44 cfs @ 8.36 hrs, Volume= 0.318 af, Atten= 53%, Lag= 27.1 min
Primary = 0.44 cfs @ 8.36 hrs, Volume= 0.318 af
Routed to Reach 6R : SWALE

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 1.26' @ 8.36 hrs Surf.Area= 1,689 sf Storage= 1,706 cf

Plug-Flow detention time= 44.9 min calculated for 0.318 af (100% of inflow)
Center-of-Mass det. time= 45.0 min (742.1 - 697.1)

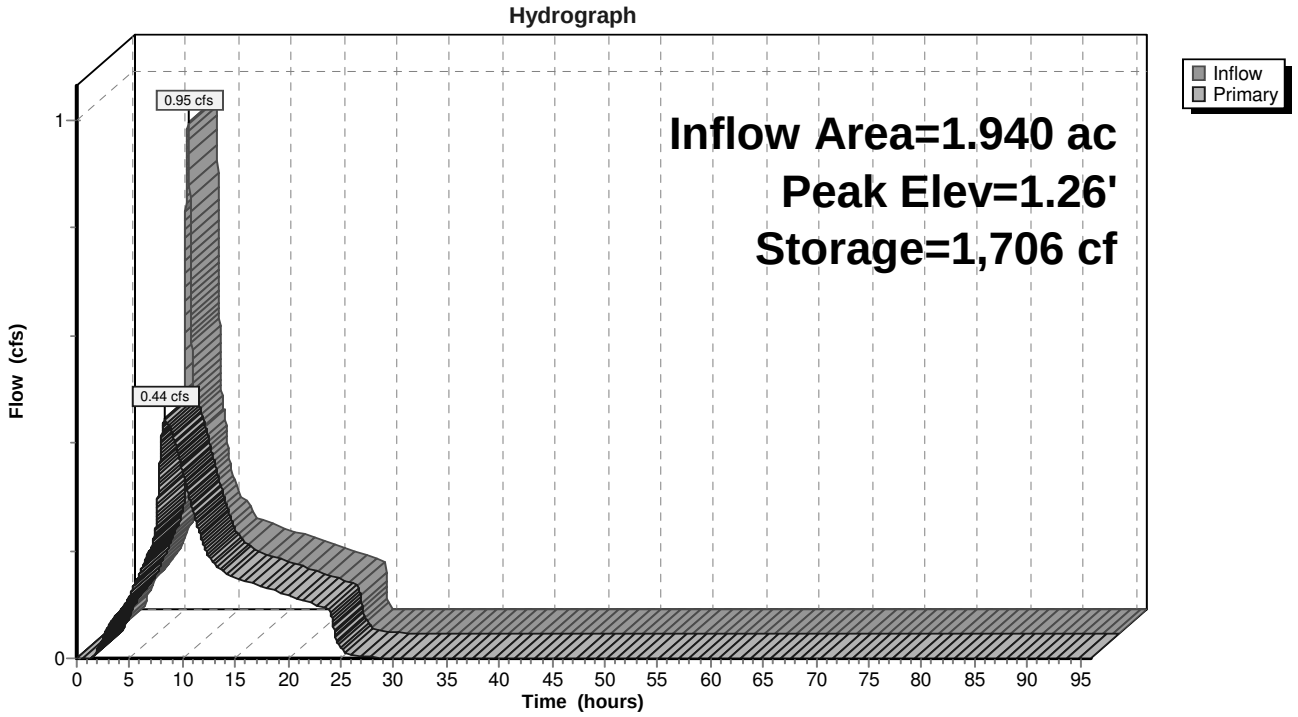
Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,098 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	1,014	0	0
2.00	2,084	3,098	3,098

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	1.25'	**3.9" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.44 cfs @ 8.36 hrs HW=1.26' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.44 cfs @ 5.04 fps)
└**2=Orifice/Grate** (Weir Controls 0.00 cfs @ 0.36 fps)

Pond 2P: Detention Pond 1



Summary for Pond 4P: Manhole SD-B1

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 1.97" for 2YR event
Inflow = 0.95 cfs @ 7.90 hrs, Volume= 0.318 af
Outflow = 0.95 cfs @ 7.90 hrs, Volume= 0.318 af, Atten= 0%, Lag= 0.0 min
Primary = 0.95 cfs @ 7.90 hrs, Volume= 0.318 af
Routed to Reach 7R :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 5R : Stream

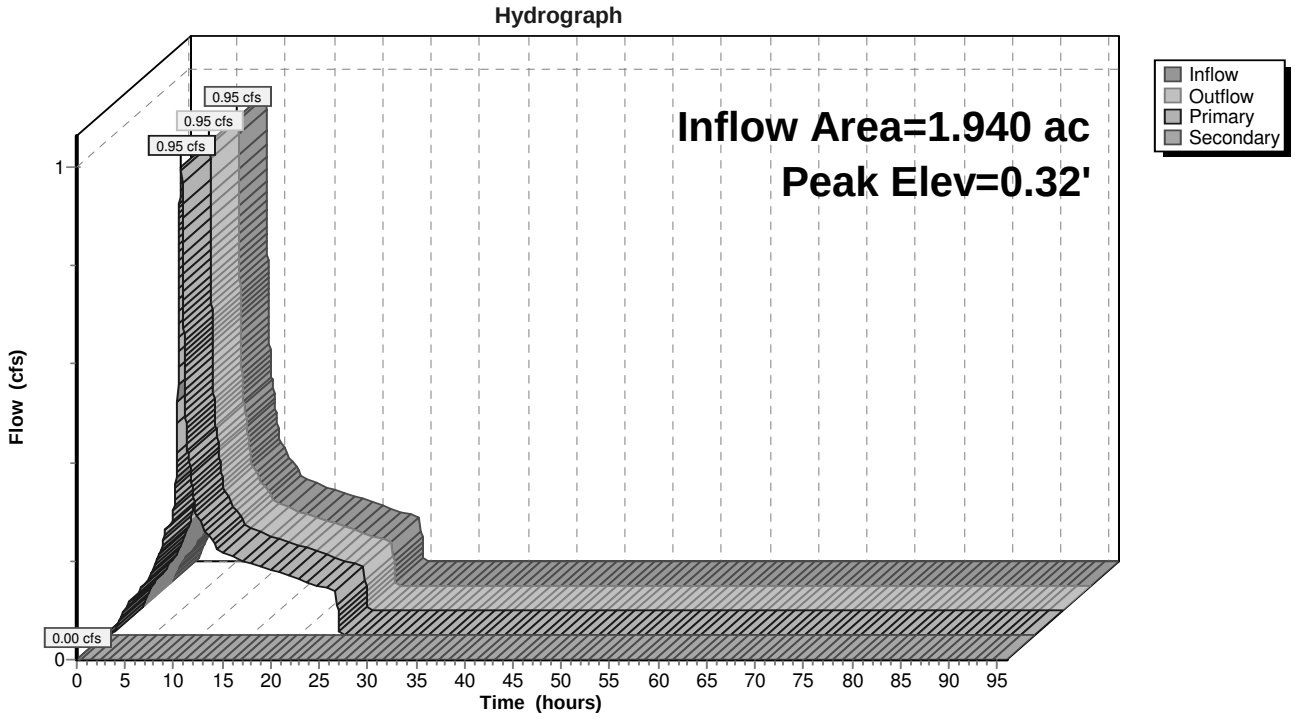
Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 0.32' @ 7.90 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**8.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Secondary	0.62'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.95 cfs @ 7.90 hrs HW=0.32' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.95 cfs @ 2.72 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 4P: Manhole SD-B1



Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Post Construction Runoff Area=1.790 ac 68.16% Impervious Runoff Depth=2.85"
Tc=5.0 min CN=86/98 Runoff=1.27 cfs 0.425 af

Subcatchment 3S: Pre Existing Runoff Area=1.790 ac 6.15% Impervious Runoff Depth=2.13"
Flow Length=500' Tc=24.5 min CN=86/98 Runoff=0.72 cfs 0.317 af

Subcatchment 5S: NEW PAVED ROAD Runoff Area=6,527 sf 100.00% Impervious Runoff Depth=3.22"
Tc=6.0 min CN=0/98 Runoff=0.12 cfs 0.040 af

Subcatchment 6S: PRE-PAVED ROW Runoff Area=6,527 sf 0.00% Impervious Runoff Depth=2.31"
Tc=6.0 min CN=89/0 Runoff=0.09 cfs 0.029 af

Reach 5R: Stream Inflow=0.04 cfs 0.001 af
Outflow=0.04 cfs 0.001 af

Reach 6R: SWALE Avg. Flow Depth=0.15' Max Vel=1.13 fps Inflow=0.78 cfs 0.464 af
n=0.025 L=100.0' S=0.0050 '/' Capacity=1.78 cfs Outflow=0.78 cfs 0.464 af

Reach 7R: Avg. Flow Depth=0.49' Max Vel=3.50 fps Inflow=1.35 cfs 0.464 af
12.0" Round Pipe n=0.012 L=33.0' S=0.0052 '/' Capacity=2.77 cfs Outflow=1.35 cfs 0.464 af

Reach 8R: (new Reach) Avg. Flow Depth=0.16' Max Vel=5.29 fps Inflow=0.80 cfs 0.346 af
36.0" Round Pipe n=0.009 L=50.0' S=0.0200 '/' Capacity=136.25 cfs Outflow=0.80 cfs 0.346 af

Pond 2P: Detention Pond 1 Peak Elev=1.68' Storage=2,457 cf Inflow=1.35 cfs 0.464 af
Outflow=0.78 cfs 0.464 af

Pond 4P: Manhole SD-B1 Peak Elev=0.64' Inflow=1.39 cfs 0.465 af
Primary=1.35 cfs 0.464 af Secondary=0.04 cfs 0.001 af Outflow=1.39 cfs 0.465 af

Total Runoff Area = 3.880 ac Runoff Volume = 0.811 af Average Runoff Depth = 2.51"
61.86% Pervious = 2.400 ac 38.14% Impervious = 1.480 ac

Summary for Subcatchment 1S: Post Construction

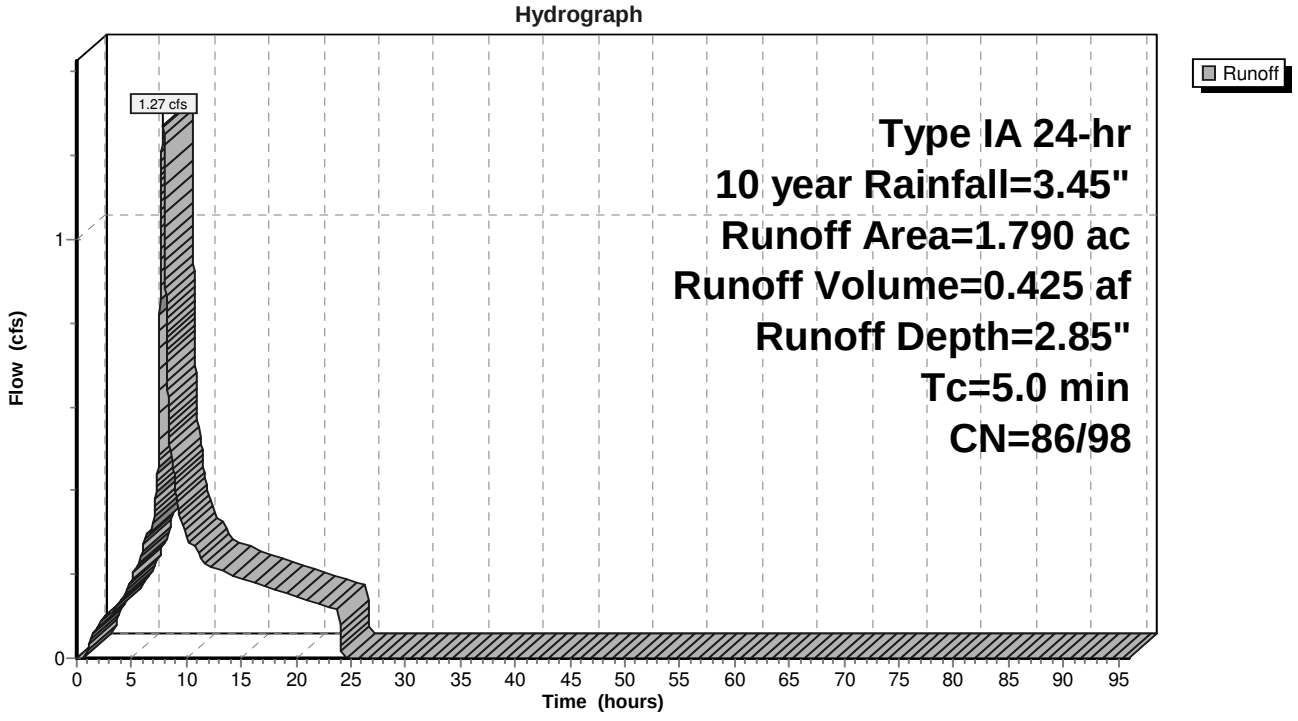
Runoff = 1.27 cfs @ 7.89 hrs, Volume= 0.425 af, Depth= 2.85"
Routed to Pond 4P : Manhole SD-B1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 year Rainfall=3.45"

	Area (ac)	CN	Description
*	1.220	98	ROAD AND SIDEWALKS
	0.570	86	LANDSCAPE AREAS
	1.790	94	Weighted Average
	0.570		31.84% Pervious Area
	1.220		68.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minium**

Subcatchment 1S: Post Construction



Summary for Subcatchment 3S: Pre Existing

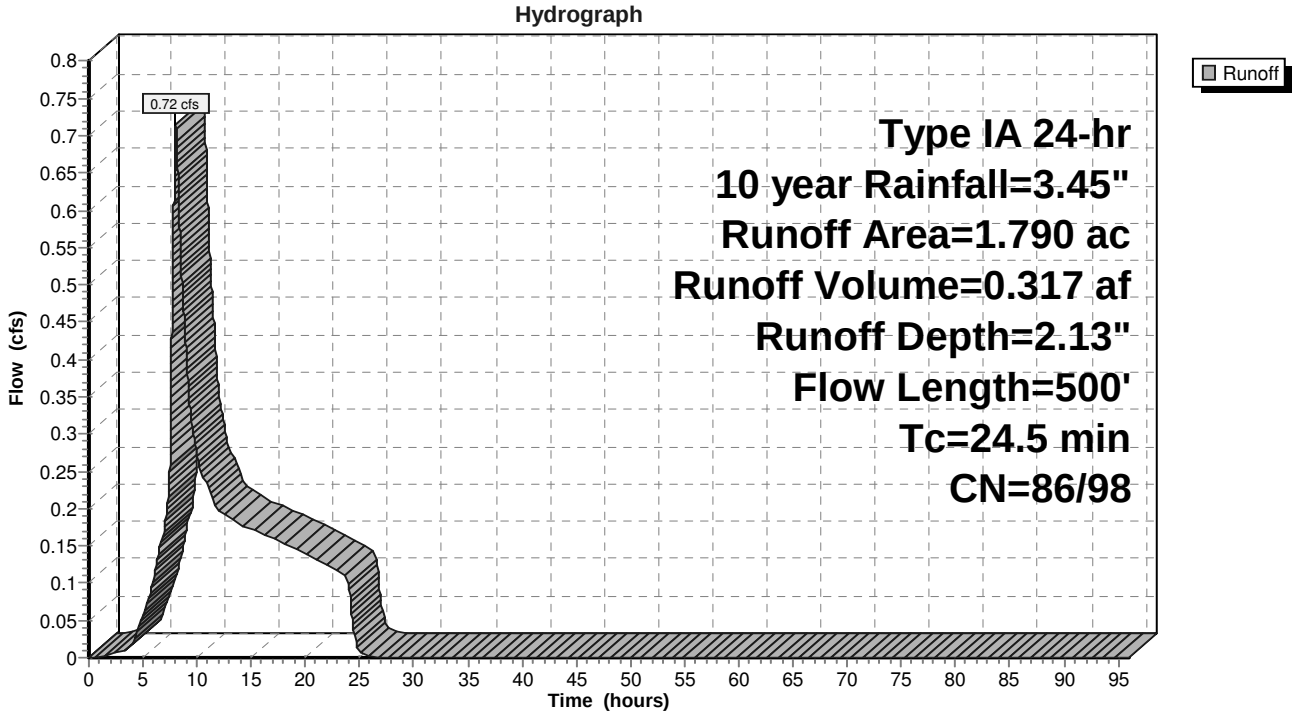
Runoff = 0.72 cfs @ 8.01 hrs, Volume= 0.317 af, Depth= 2.13"
Routed to Reach 8R : (new Reach)

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 year Rainfall=3.45"

	Area (ac)	CN	Description
	1.530	86	Pasture/grassland/range HSG C
	0.150	89	Gravel roads, HSG C
*	0.110	98	exisiting asphalt
	1.790	87	Weighted Average
	1.680		93.85% Pervious Area
	0.110		6.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	250	0.0180	0.19		**Sheet Flow,** Range n= 0.130 P2= 2.50"
3.0	250	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.5	500	Total			

Subcatchment 3S: Pre Existing



Summary for Subcatchment 5S: NEW PAVED ROAD EXTENSION

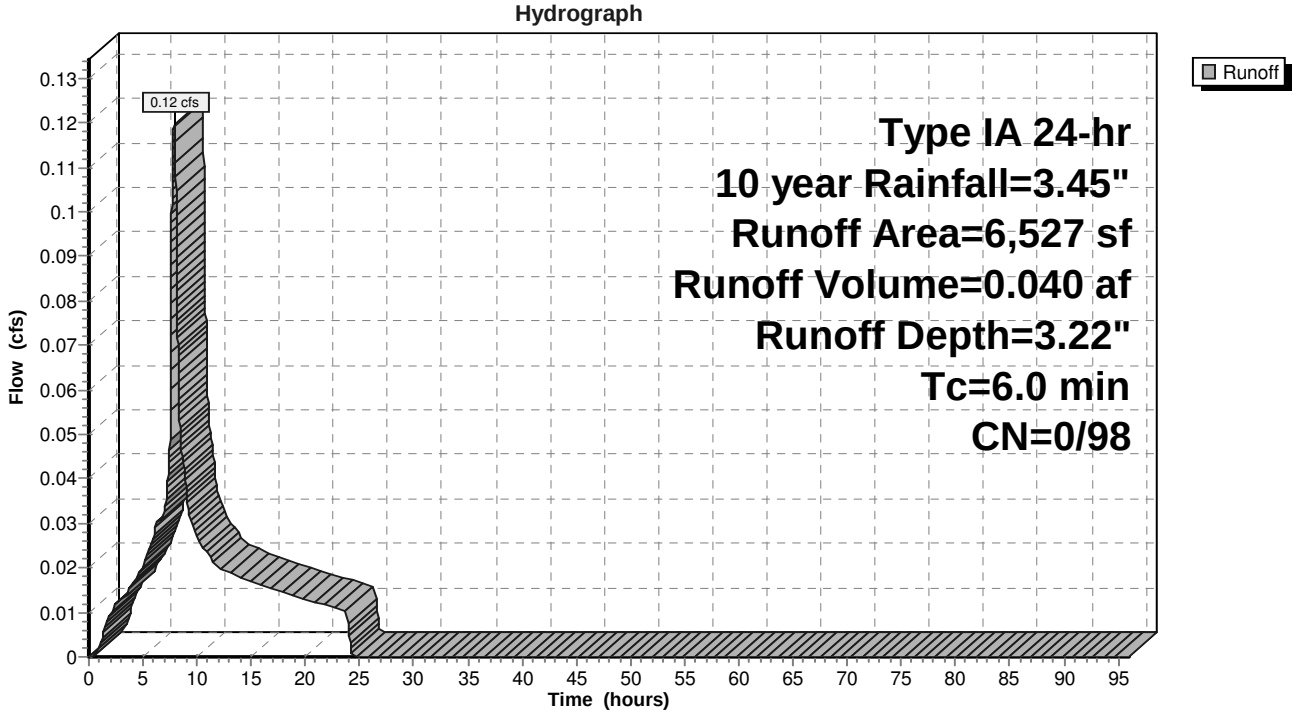
Runoff = 0.12 cfs @ 7.90 hrs, Volume= 0.040 af, Depth= 3.22"
Routed to Pond 4P : Manhole SD-B1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 year Rainfall=3.45"

	Area (sf)	CN	Description
*	6,527	98	
	6,527		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 5S: NEW PAVED ROAD EXTENSION



Summary for Subcatchment 6S: PRE-PAVED ROW EXTENSION

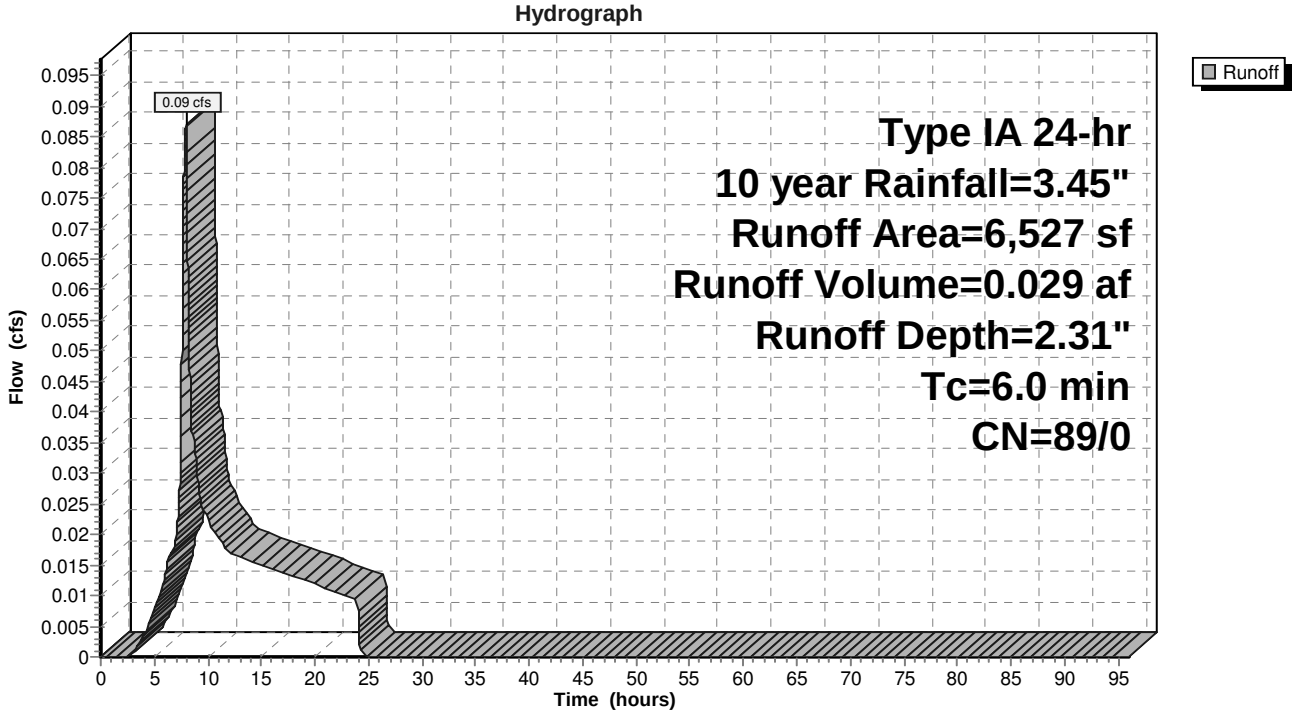
Runoff = 0.09 cfs @ 7.94 hrs, Volume= 0.029 af, Depth= 2.31"
Routed to Reach 8R : (new Reach)

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 year Rainfall=3.45"

Area (sf)	CN	Description
6,527	89	Gravel roads, HSG C
6,527		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 6S: PRE-PAVED ROW EXTENSION

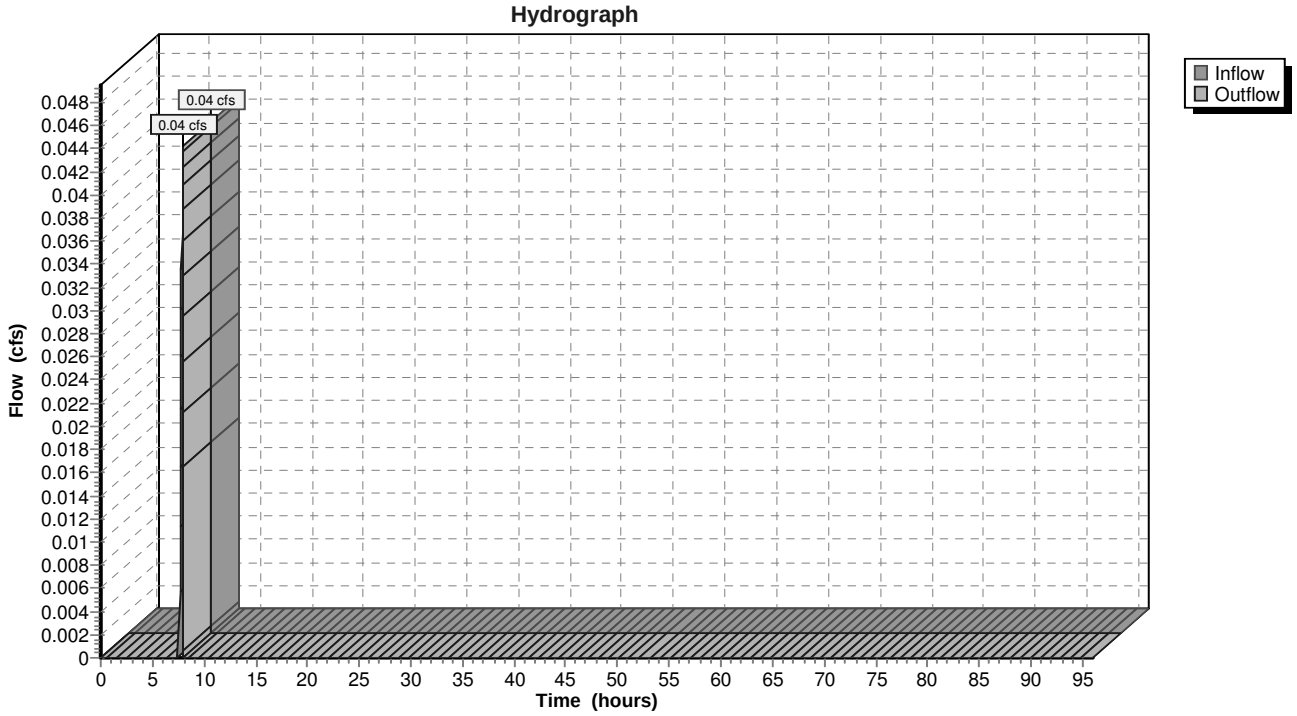


Summary for Reach 5R: Stream

Inflow = 0.04 cfs @ 7.89 hrs, Volume= 0.001 af
Outflow = 0.04 cfs @ 7.89 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Reach 5R: Stream



Summary for Reach 6R: SWALE

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 2.87" for 10 year event
Inflow = 0.78 cfs @ 8.24 hrs, Volume= 0.464 af
Outflow = 0.78 cfs @ 8.28 hrs, Volume= 0.464 af, Atten= 0%, Lag= 2.5 min

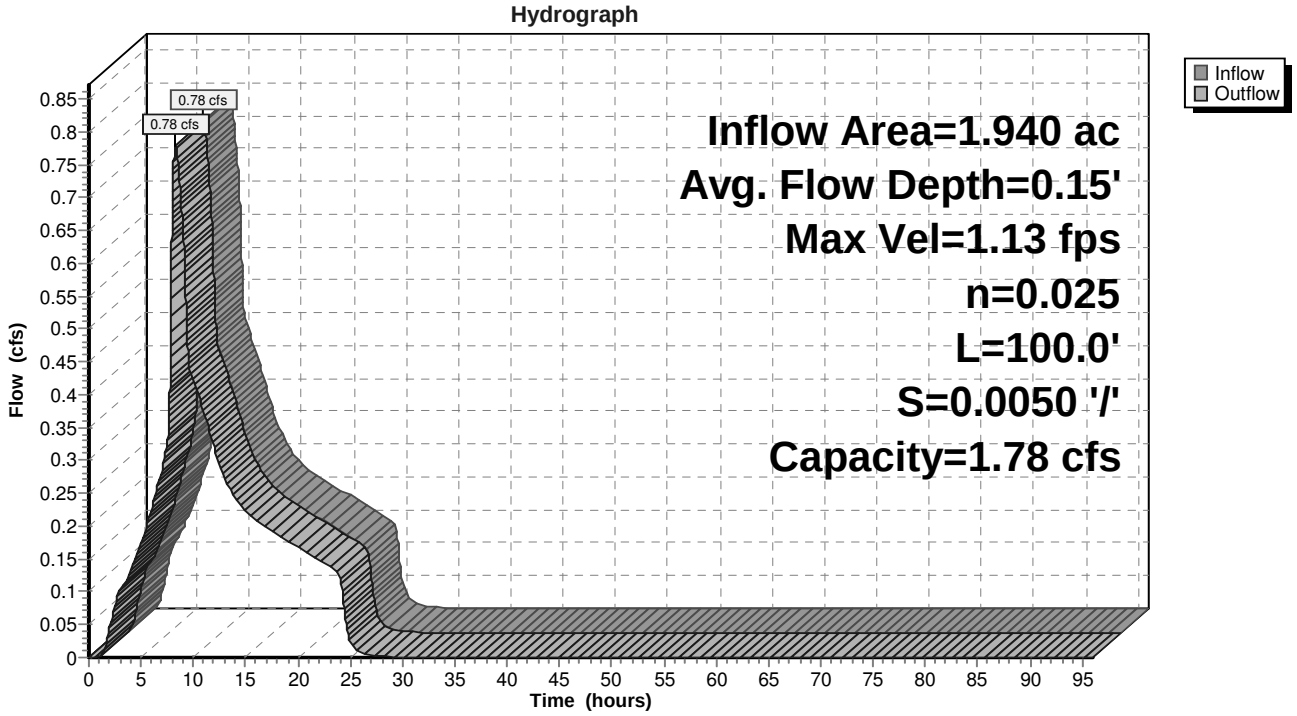
Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.13 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 0.35 fps, Avg. Travel Time= 4.8 min

Peak Storage= 69 cf @ 8.25 hrs
Average Depth at Peak Storage= 0.15' , Surface Width= 4.93'
Bank-Full Depth= 0.25' Flow Area= 1.2 sf, Capacity= 1.78 cfs

4.00' x 0.25' deep channel, n= 0.025 Short grass
Side Slope Z-value= 3.0 '/' Top Width= 5.50'
Length= 100.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.50'

‡

Reach 6R: SWALE



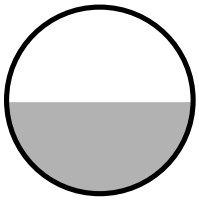
Summary for Reach 7R:

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 2.87" for 10 year event
Inflow = 1.35 cfs @ 7.89 hrs, Volume= 0.464 af
Outflow = 1.35 cfs @ 7.90 hrs, Volume= 0.464 af, Atten= 0%, Lag= 0.3 min
Routed to Pond 2P : Detention Pond 1

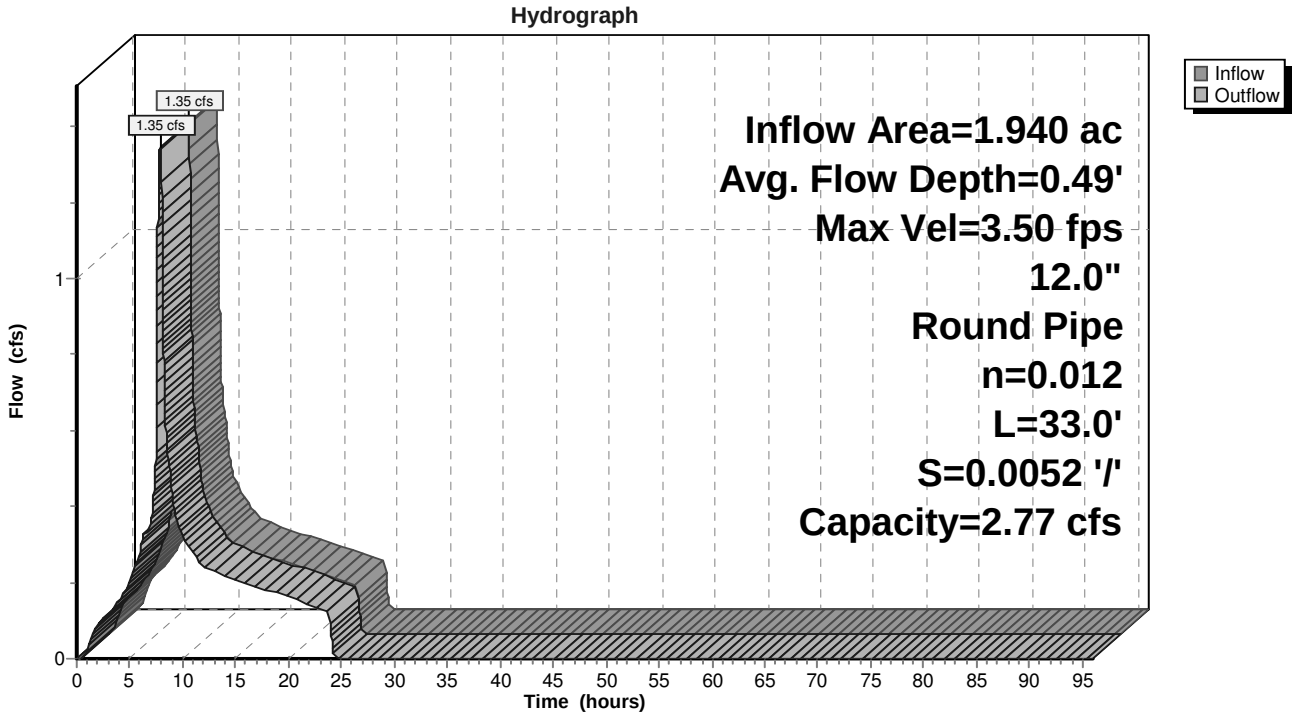
Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.50 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.02 fps, Avg. Travel Time= 0.3 min

Peak Storage= 13 cf @ 7.90 hrs
Average Depth at Peak Storage= 0.49' , Surface Width= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.77 cfs

12.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 33.0' Slope= 0.0052 '/'
Inlet Invert= 0.00', Outlet Invert= -0.17'



Reach 7R:



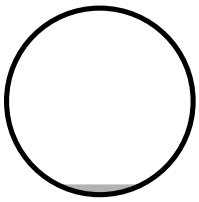
Summary for Reach 8R: (new Reach)

Inflow Area = 1.940 ac, 5.67% Impervious, Inflow Depth = 2.14" for 10 year event
Inflow = 0.80 cfs @ 8.01 hrs, Volume= 0.346 af
Outflow = 0.80 cfs @ 8.01 hrs, Volume= 0.346 af, Atten= 0%, Lag= 0.3 min

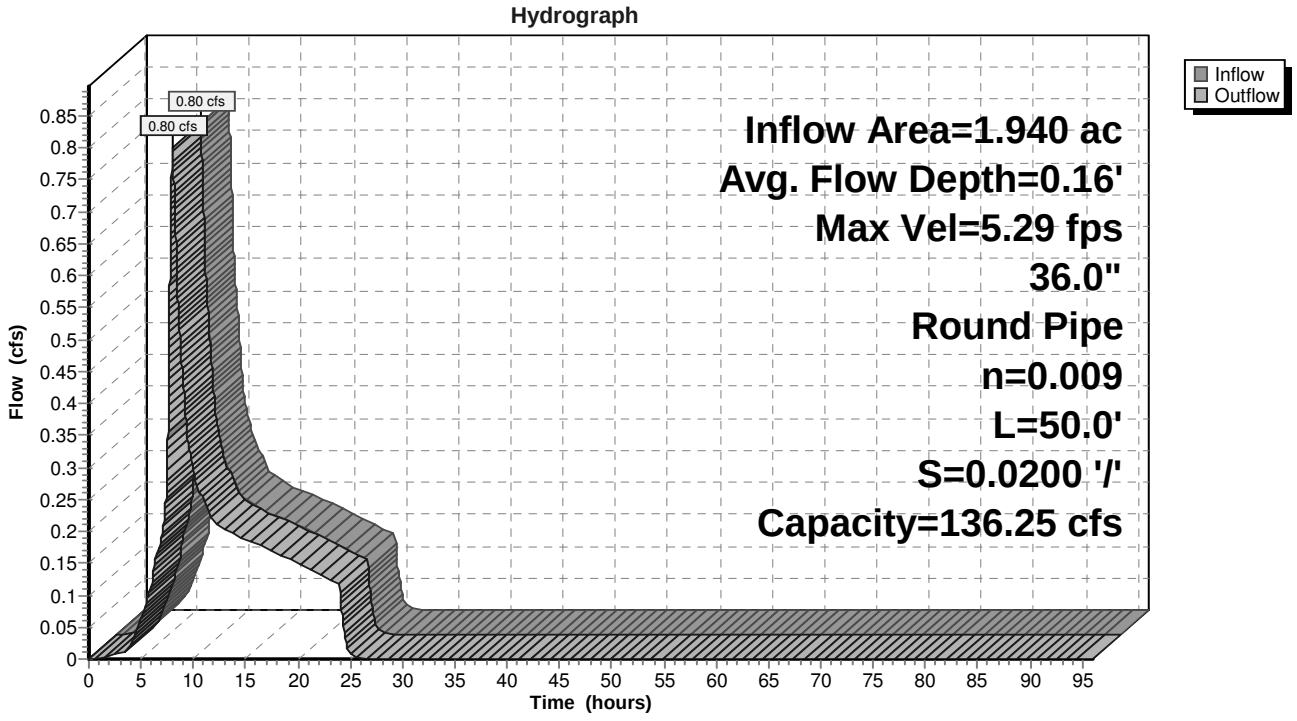
Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.29 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.04 fps, Avg. Travel Time= 0.3 min

Peak Storage= 8 cf @ 8.01 hrs
Average Depth at Peak Storage= 0.16' , Surface Width= 1.36'
Bank-Full Depth= 3.00' Flow Area= 7.1 sf, Capacity= 136.25 cfs

36.0" Round Pipe
n= 0.009 PVC, smooth interior
Length= 50.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -1.00'



Reach 8R: (new Reach)



Summary for Pond 2P: Detention Pond 1

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 2.87" for 10 year event
Inflow = 1.35 cfs @ 7.90 hrs, Volume= 0.464 af
Outflow = 0.78 cfs @ 8.24 hrs, Volume= 0.464 af, Atten= 42%, Lag= 20.3 min
Primary = 0.78 cfs @ 8.24 hrs, Volume= 0.464 af
Routed to Reach 6R : SWALE

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 1.68' @ 8.24 hrs Surf.Area= 1,912 sf Storage= 2,457 cf

Plug-Flow detention time= 45.9 min calculated for 0.464 af (100% of inflow)
Center-of-Mass det. time= 45.7 min (732.5 - 686.7)

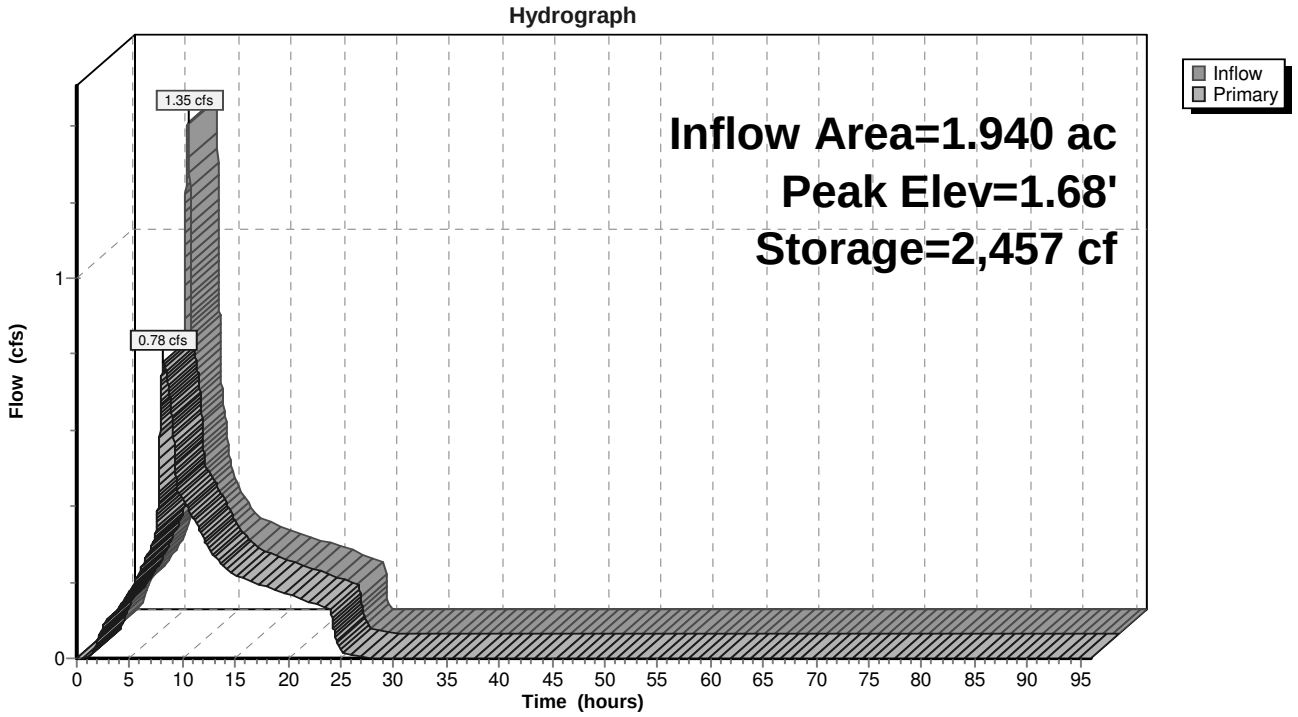
Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,098 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	1,014	0	0
2.00	2,084	3,098	3,098

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	1.25'	**3.9" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.78 cfs @ 8.24 hrs HW=1.68' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.52 cfs @ 5.92 fps)
└**2=Orifice/Grate** (Orifice Controls 0.26 cfs @ 3.15 fps)

Pond 2P: Detention Pond 1



Summary for Pond 4P: Manhole SD-B1

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 2.88" for 10 year event
Inflow = 1.39 cfs @ 7.89 hrs, Volume= 0.465 af
Outflow = 1.39 cfs @ 7.89 hrs, Volume= 0.465 af, Atten= 0%, Lag= 0.0 min
Primary = 1.35 cfs @ 7.89 hrs, Volume= 0.464 af
Routed to Reach 7R :
Secondary = 0.04 cfs @ 7.89 hrs, Volume= 0.001 af
Routed to Reach 5R : Stream

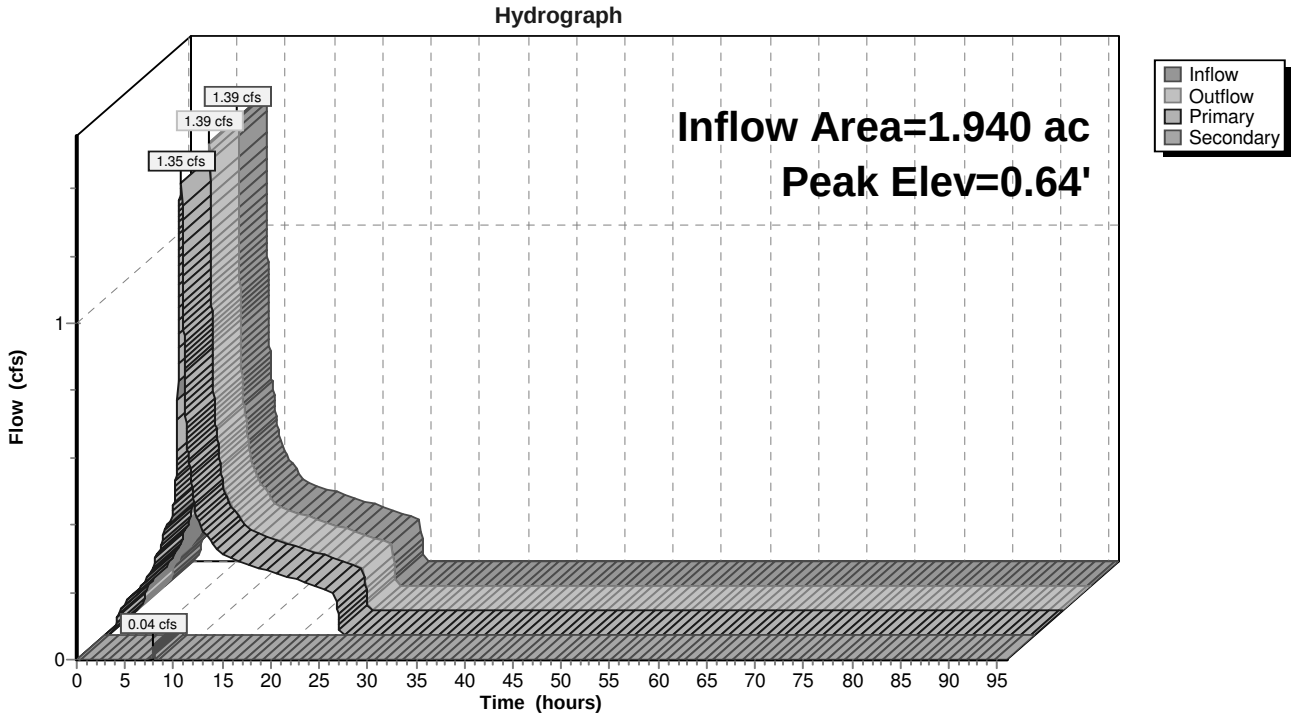
Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 0.64' @ 7.89 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**8.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Secondary	0.62'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.35 cfs @ 7.89 hrs HW=0.64' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 1.35 cfs @ 3.86 fps)

Secondary OutFlow Max=0.04 cfs @ 7.89 hrs HW=0.64' (Free Discharge)
└**2=Sharp-Crested Rectangular Weir** (Weir Controls 0.04 cfs @ 0.49 fps)

Pond 4P: Manhole SD-B1



Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Post Construction Runoff Area=1.790 ac 68.16% Impervious Runoff Depth=3.28"
Tc=5.0 min CN=86/98 Runoff=1.47 cfs 0.489 af

Subcatchment 3S: Pre Existing Runoff Area=1.790 ac 6.15% Impervious Runoff Depth=2.53"
Flow Length=500' Tc=24.5 min CN=86/98 Runoff=0.87 cfs 0.377 af

Subcatchment 5S: NEW PAVED ROAD Runoff Area=6,527 sf 100.00% Impervious Runoff Depth=3.67"
Tc=6.0 min CN=0/98 Runoff=0.14 cfs 0.046 af

Subcatchment 6S: PRE-PAVED ROW Runoff Area=6,527 sf 0.00% Impervious Runoff Depth=2.73"
Tc=6.0 min CN=89/0 Runoff=0.10 cfs 0.034 af

Reach 5R: Stream Inflow=0.21 cfs 0.005 af
Outflow=0.21 cfs 0.005 af

Reach 6R: SWALE Avg. Flow Depth=0.16' Max Vel=1.16 fps Inflow=0.85 cfs 0.530 af
n=0.025 L=100.0' S=0.0050 '/' Capacity=1.78 cfs Outflow=0.85 cfs 0.530 af

Reach 7R: Avg. Flow Depth=0.50' Max Vel=3.53 fps Inflow=1.39 cfs 0.530 af
12.0" Round Pipe n=0.012 L=33.0' S=0.0052 '/' Capacity=2.77 cfs Outflow=1.39 cfs 0.530 af

Reach 8R: (new Reach) Avg. Flow Depth=0.18' Max Vel=5.58 fps Inflow=0.97 cfs 0.412 af
36.0" Round Pipe n=0.009 L=50.0' S=0.0200 '/' Capacity=136.25 cfs Outflow=0.97 cfs 0.412 af

Pond 2P: Detention Pond 1 Peak Elev=1.83' Storage=2,758 cf Inflow=1.39 cfs 0.530 af
Outflow=0.85 cfs 0.530 af

Pond 4P: Manhole SD-B1 Peak Elev=0.68' Inflow=1.60 cfs 0.535 af
Primary=1.39 cfs 0.530 af Secondary=0.21 cfs 0.005 af Outflow=1.60 cfs 0.535 af

Total Runoff Area = 3.880 ac Runoff Volume = 0.947 af Average Runoff Depth = 2.93"
61.86% Pervious = 2.400 ac 38.14% Impervious = 1.480 ac

Summary for Subcatchment 1S: Post Construction

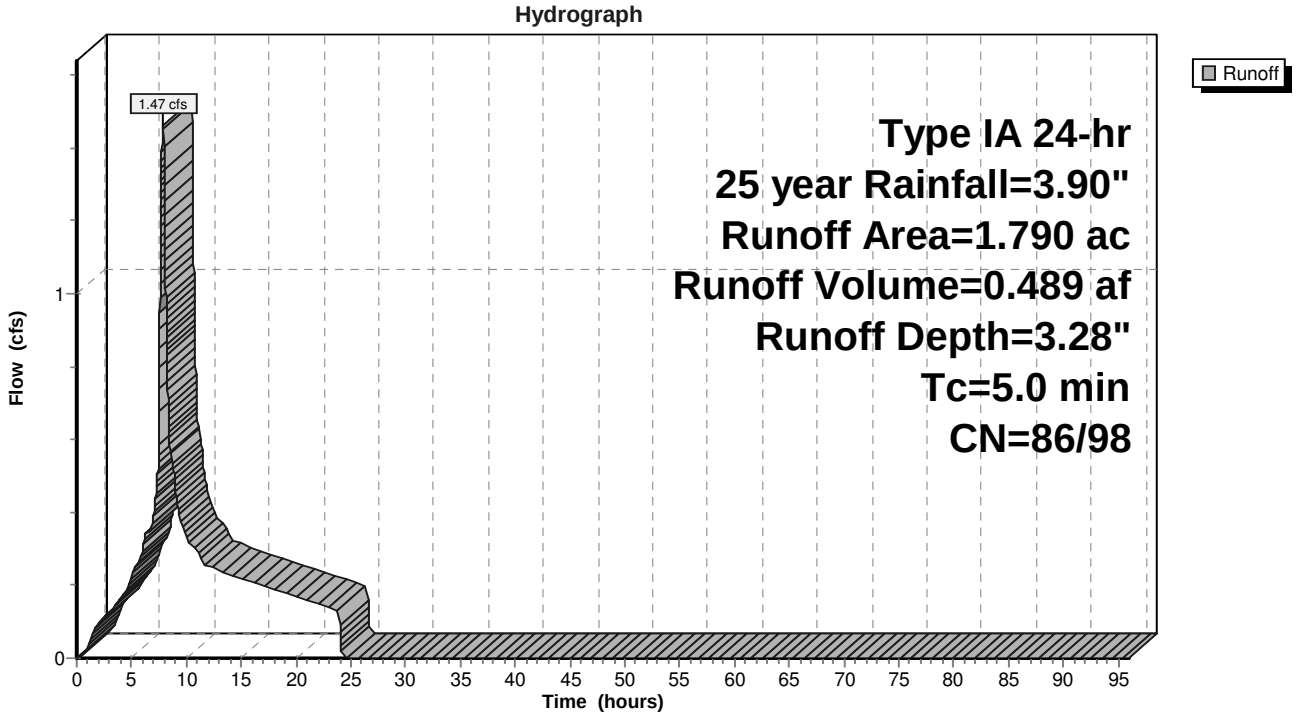
Runoff = 1.47 cfs @ 7.89 hrs, Volume= 0.489 af, Depth= 3.28"
Routed to Pond 4P : Manhole SD-B1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 year Rainfall=3.90"

	Area (ac)	CN	Description
*	1.220	98	ROAD AND SIDEWALKS
	0.570	86	LANDSCAPE AREAS
	1.790	94	Weighted Average
	0.570		31.84% Pervious Area
	1.220		68.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minium**

Subcatchment 1S: Post Construction



Summary for Subcatchment 3S: Pre Existing

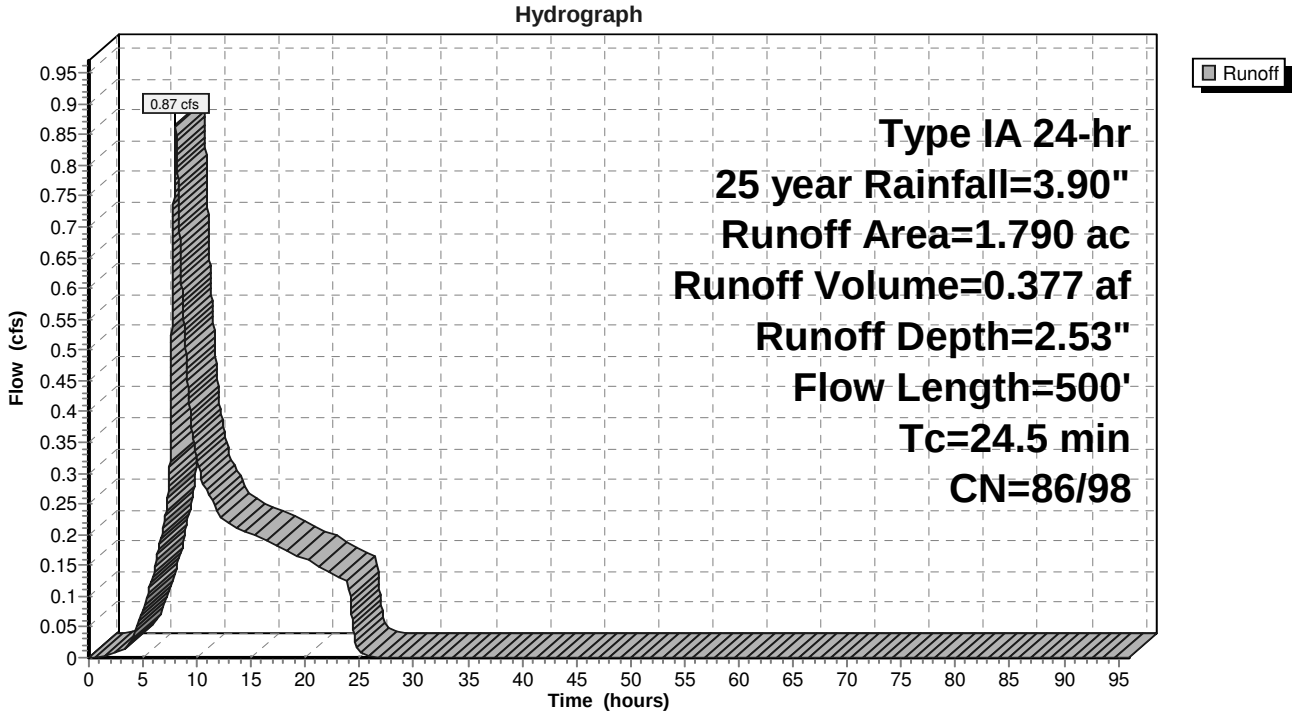
Runoff = 0.87 cfs @ 8.01 hrs, Volume= 0.377 af, Depth= 2.53"
Routed to Reach 8R : (new Reach)

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 year Rainfall=3.90"

	Area (ac)	CN	Description
	1.530	86	Pasture/grassland/range HSG C
	0.150	89	Gravel roads, HSG C
*	0.110	98	exisiting asphalt
	1.790	87	Weighted Average
	1.680		93.85% Pervious Area
	0.110		6.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	250	0.0180	0.19		**Sheet Flow,** Range n= 0.130 P2= 2.50"
3.0	250	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.5	500	Total			

Subcatchment 3S: Pre Existing



Summary for Subcatchment 5S: NEW PAVED ROAD EXTENSION

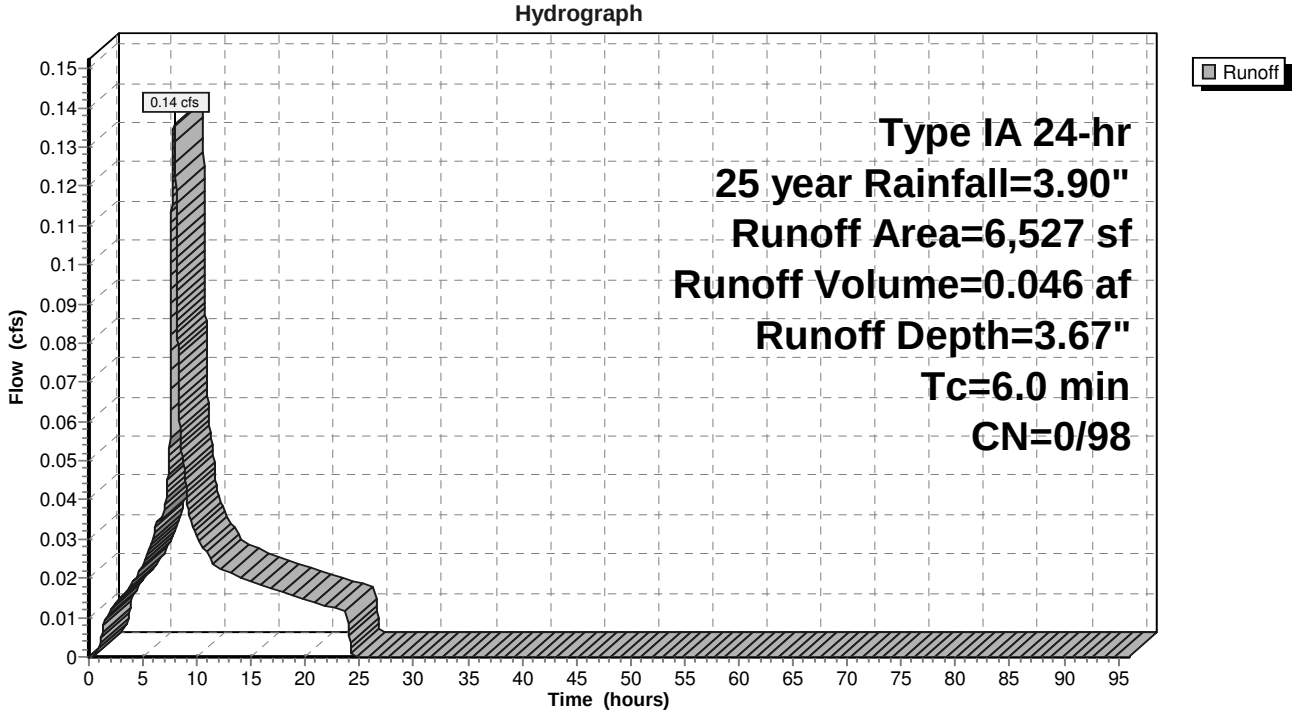
Runoff = 0.14 cfs @ 7.90 hrs, Volume= 0.046 af, Depth= 3.67"
Routed to Pond 4P : Manhole SD-B1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 year Rainfall=3.90"

	Area (sf)	CN	Description
*	6,527	98	
	6,527		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 5S: NEW PAVED ROAD EXTENSION



Summary for Subcatchment 6S: PRE-PAVED ROW EXTENSION

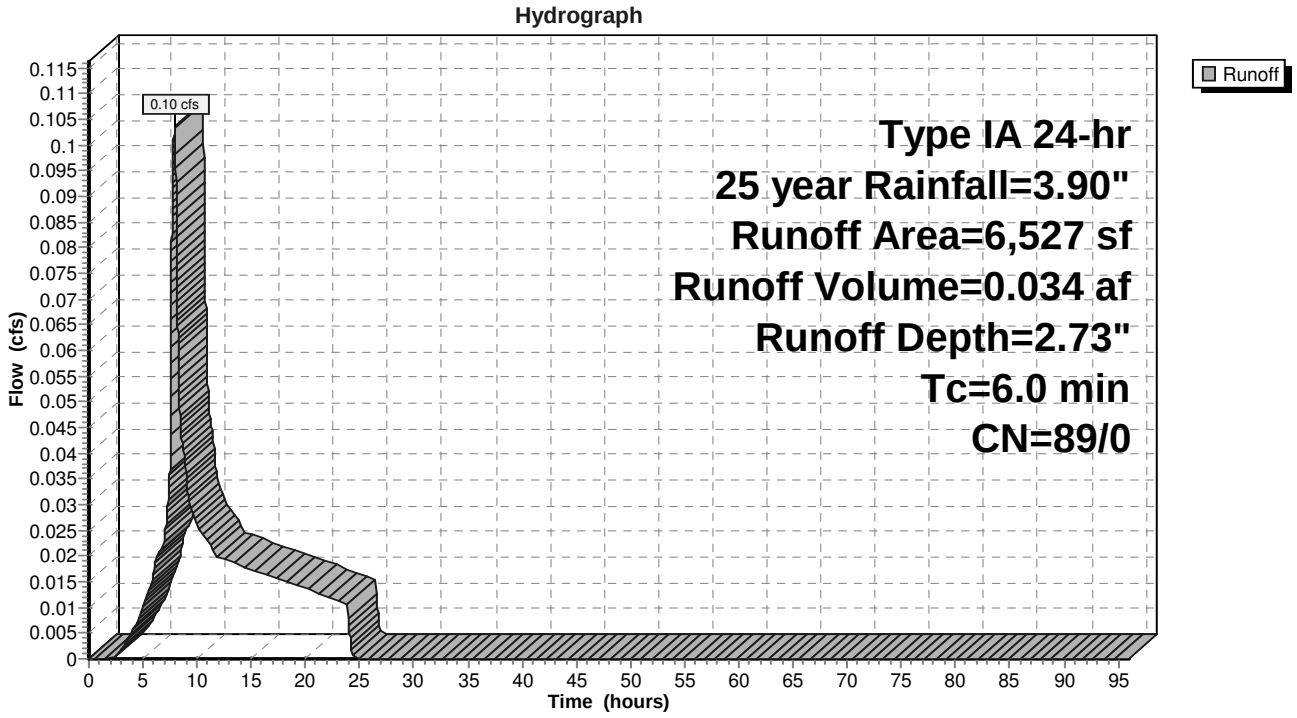
Runoff = 0.10 cfs @ 7.94 hrs, Volume= 0.034 af, Depth= 2.73"
Routed to Reach 8R : (new Reach)

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 year Rainfall=3.90"

Area (sf)	CN	Description
6,527	89	Gravel roads, HSG C
6,527		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 6S: PRE-PAVED ROW EXTENSION

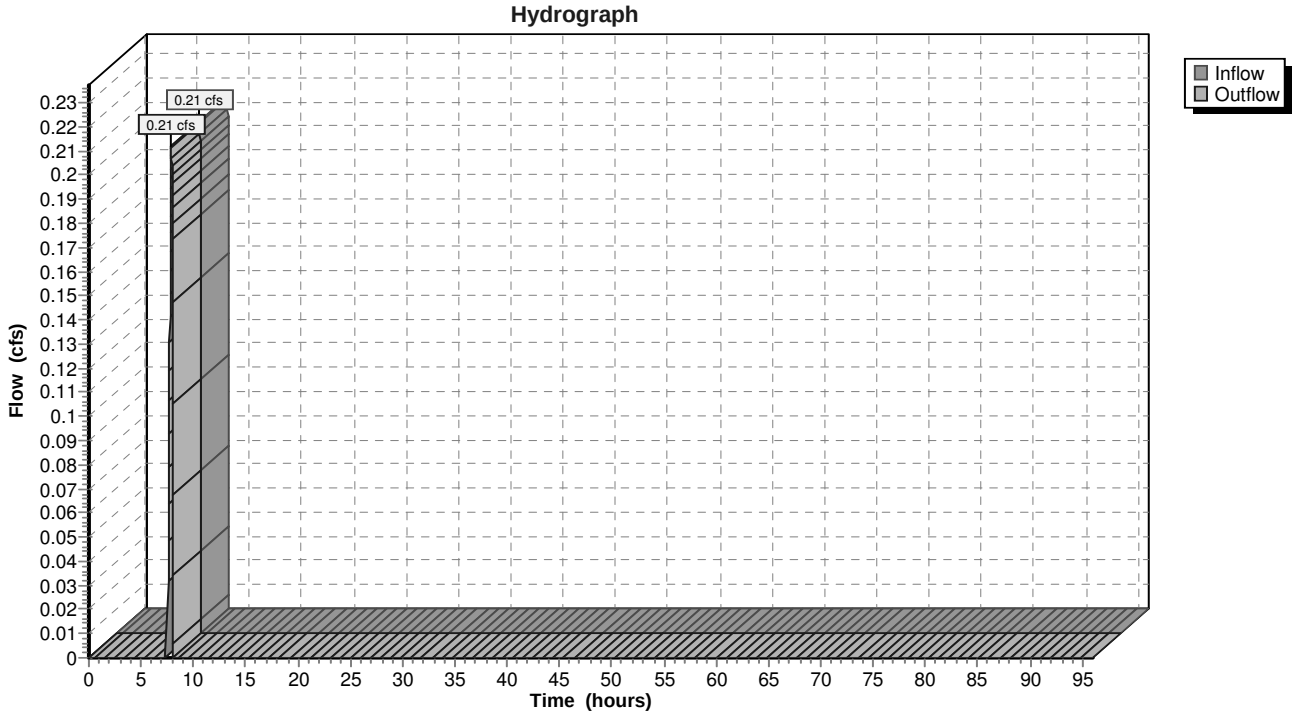


Summary for Reach 5R: Stream

Inflow = 0.21 cfs @ 7.89 hrs, Volume= 0.005 af
Outflow = 0.21 cfs @ 7.89 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Reach 5R: Stream



Summary for Reach 6R: SWALE

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 3.28" for 25 year event
Inflow = 0.85 cfs @ 8.27 hrs, Volume= 0.530 af
Outflow = 0.85 cfs @ 8.31 hrs, Volume= 0.530 af, Atten= 0%, Lag= 2.4 min

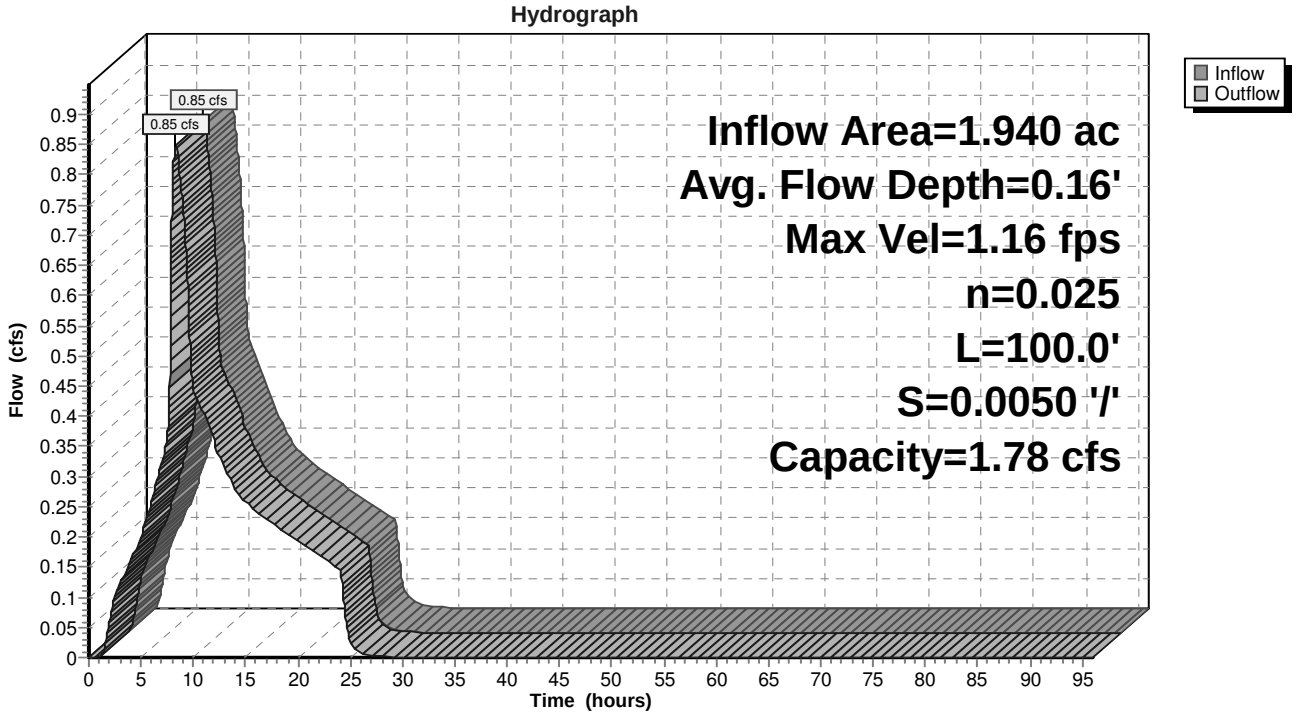
Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.16 fps, Min. Travel Time= 1.4 min
Avg. Velocity = 0.36 fps, Avg. Travel Time= 4.6 min

Peak Storage= 73 cf @ 8.28 hrs
Average Depth at Peak Storage= 0.16' , Surface Width= 4.98'
Bank-Full Depth= 0.25' Flow Area= 1.2 sf, Capacity= 1.78 cfs

4.00' x 0.25' deep channel, n= 0.025 Short grass
Side Slope Z-value= 3.0 '/' Top Width= 5.50'
Length= 100.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.50'

‡

Reach 6R: SWALE



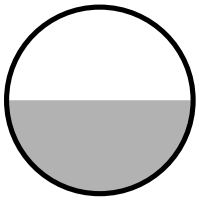
Summary for Reach 7R:

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 3.28" for 25 year event
Inflow = 1.39 cfs @ 7.89 hrs, Volume= 0.530 af
Outflow = 1.39 cfs @ 7.90 hrs, Volume= 0.530 af, Atten= 0%, Lag= 0.3 min
Routed to Pond 2P : Detention Pond 1

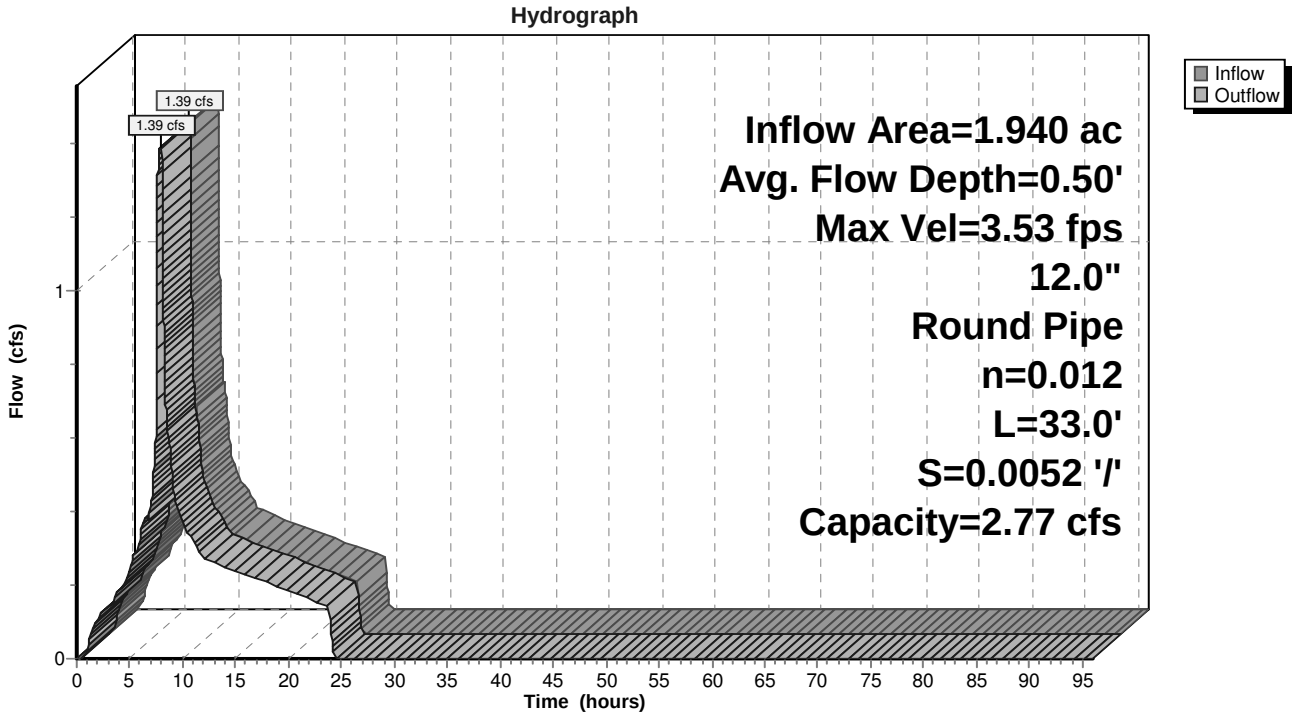
Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Max. Velocity= 3.53 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.10 fps, Avg. Travel Time= 0.3 min

Peak Storage= 13 cf @ 7.89 hrs
Average Depth at Peak Storage= 0.50' , Surface Width= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.77 cfs

12.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 33.0' Slope= 0.0052 '/'
Inlet Invert= 0.00', Outlet Invert= -0.17'



Reach 7R:



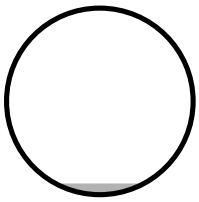
Summary for Reach 8R: (new Reach)

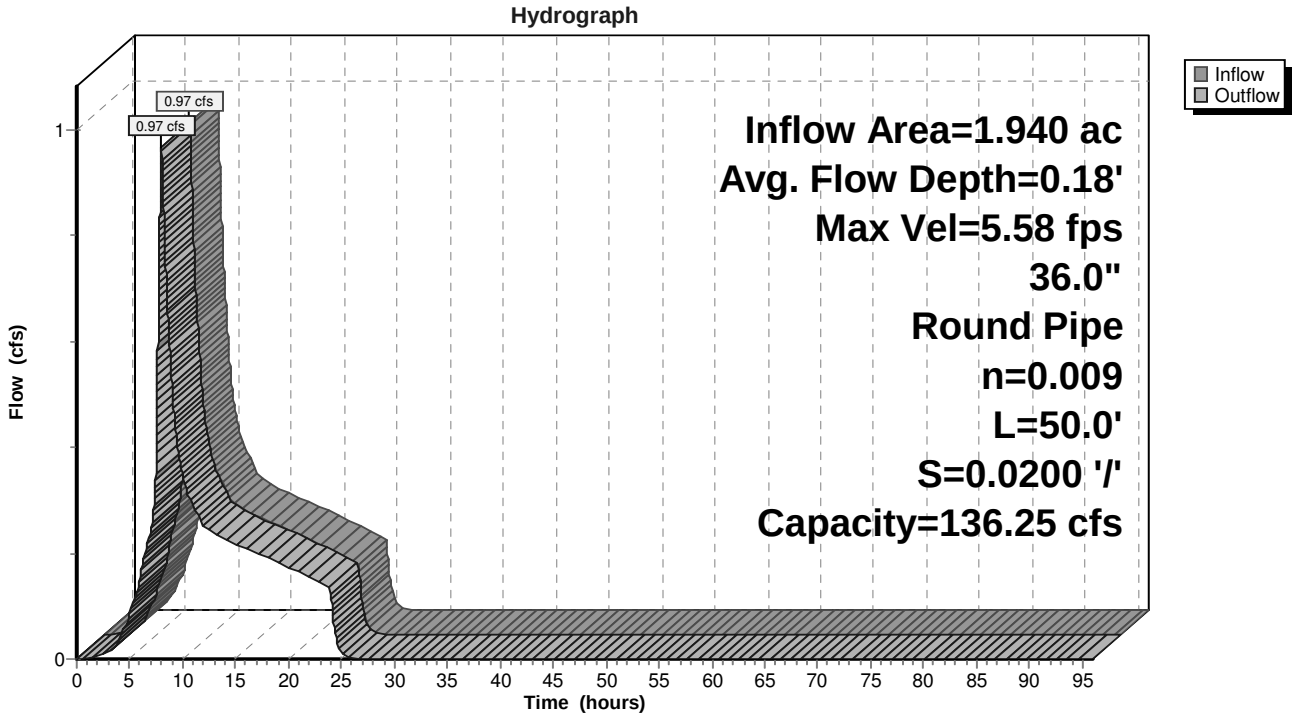
Inflow Area = 1.940 ac, 5.67% Impervious, Inflow Depth = 2.55" for 25 year event
Inflow = 0.97 cfs @ 8.00 hrs, Volume= 0.412 af
Outflow = 0.97 cfs @ 8.01 hrs, Volume= 0.412 af, Atten= 0%, Lag= 0.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Max. Velocity= 5.58 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 3.18 fps, Avg. Travel Time= 0.3 min

Peak Storage= 9 cf @ 8.01 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 1.43'
Bank-Full Depth= 3.00' Flow Area= 7.1 sf, Capacity= 136.25 cfs

36.0" Round Pipe
n= 0.009 PVC, smooth interior
Length= 50.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -1.00'





Summary for Pond 2P: Detention Pond 1

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 3.28" for 25 year event
Inflow = 1.39 cfs @ 7.90 hrs, Volume= 0.530 af
Outflow = 0.85 cfs @ 8.27 hrs, Volume= 0.530 af, Atten= 39%, Lag= 22.3 min
Primary = 0.85 cfs @ 8.27 hrs, Volume= 0.530 af
Routed to Reach 6R : SWALE

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 1.83' @ 8.27 hrs Surf.Area= 1,995 sf Storage= 2,758 cf

Plug-Flow detention time= 46.9 min calculated for 0.530 af (100% of inflow)
Center-of-Mass det. time= 47.0 min (731.6 - 684.7)

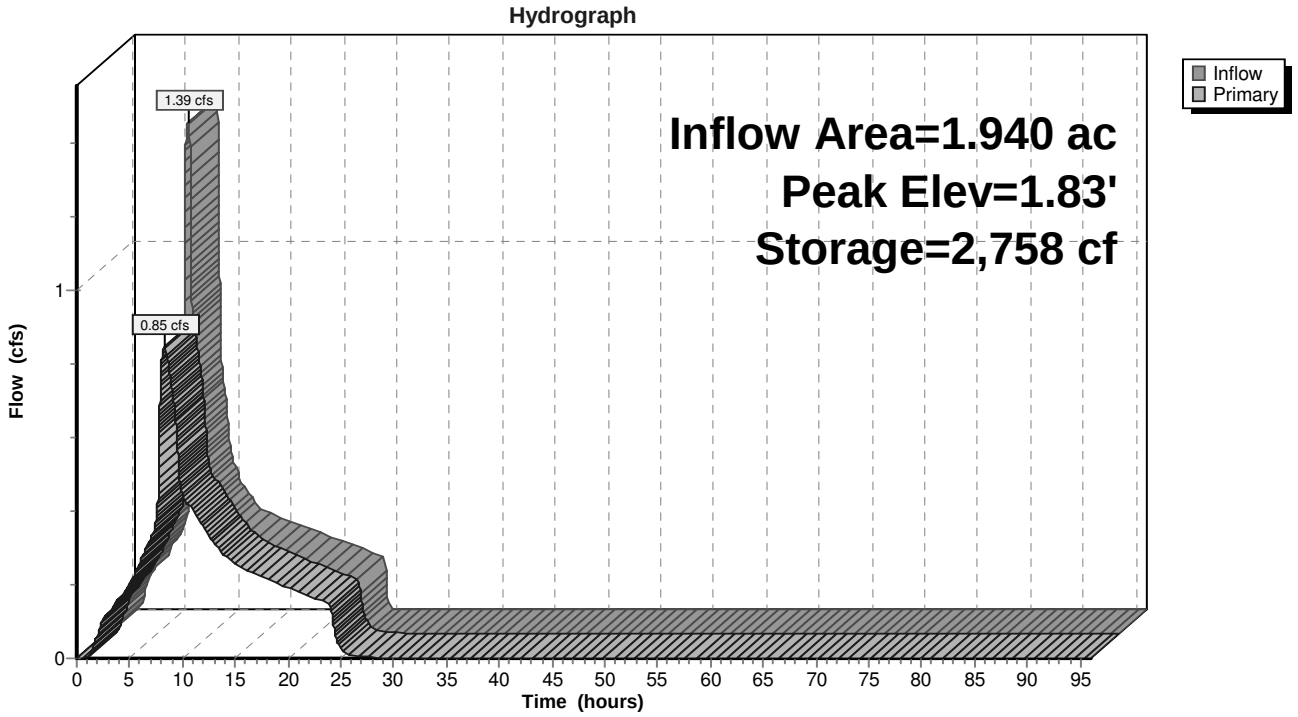
Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,098 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	1,014	0	0
2.00	2,084	3,098	3,098

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	1.25'	**3.9" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.85 cfs @ 8.27 hrs HW=1.83' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.54 cfs @ 6.22 fps)
└**2=Orifice/Grate** (Orifice Controls 0.31 cfs @ 3.68 fps)

Pond 2P: Detention Pond 1



Summary for Pond 4P: Manhole SD-B1

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 3.31" for 25 year event
Inflow = 1.60 cfs @ 7.89 hrs, Volume= 0.535 af
Outflow = 1.60 cfs @ 7.89 hrs, Volume= 0.535 af, Atten= 0%, Lag= 0.0 min
Primary = 1.39 cfs @ 7.89 hrs, Volume= 0.530 af
Routed to Reach 7R :
Secondary = 0.21 cfs @ 7.89 hrs, Volume= 0.005 af
Routed to Reach 5R : Stream

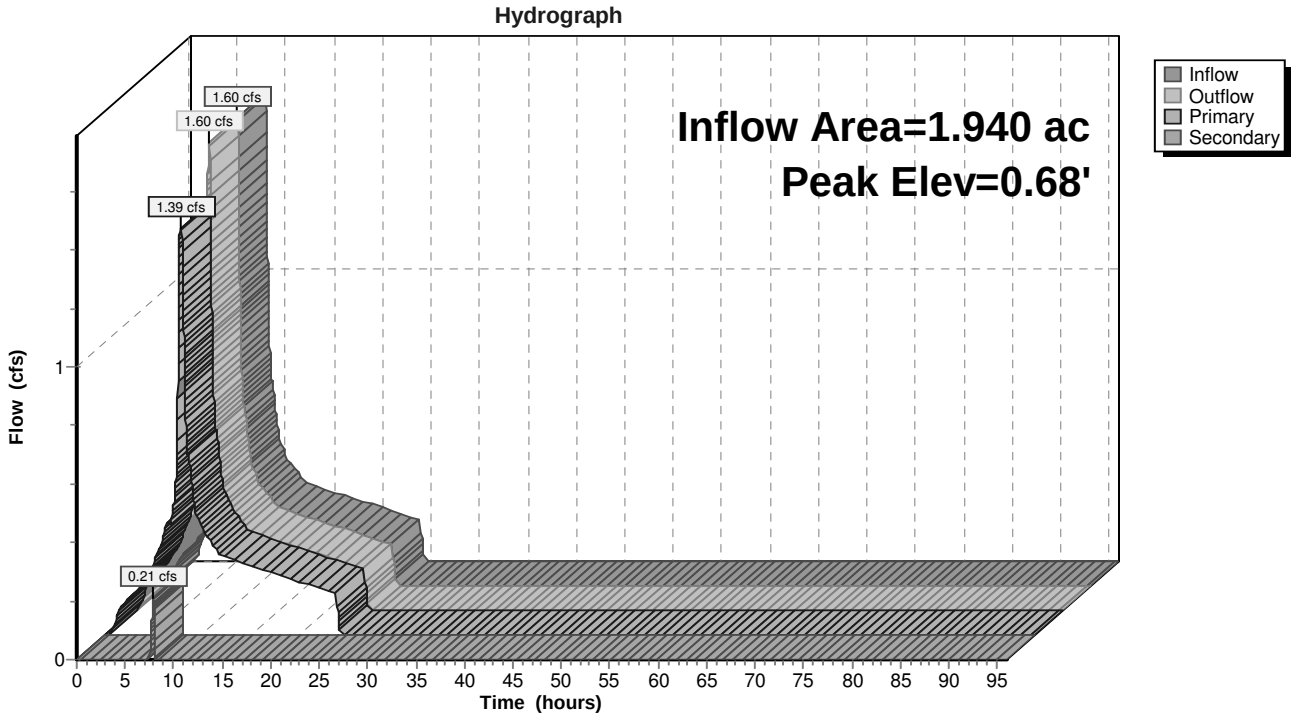
Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 0.68' @ 7.89 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**8.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Secondary	0.62'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.39 cfs @ 7.89 hrs HW=0.68' (Free Discharge)
1=Orifice/Grate (Orifice Controls 1.39 cfs @ 3.98 fps)

Secondary OutFlow Max=0.21 cfs @ 7.89 hrs HW=0.68' (Free Discharge)
2=Sharp-Crested Rectangular Weir (Weir Controls 0.21 cfs @ 0.83 fps)

Pond 4P: Manhole SD-B1



Time span=0.00-96.00 hrs, dt=0.01 hrs, 9601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Post Construction Runoff Area=1.790 ac 68.16% Impervious Runoff Depth=0.13"
Tc=5.0 min CN=86/98 Runoff=0.24 cfs 0.020 af

Subcatchment 3S: Pre Existing Runoff Area=1.790 ac 6.15% Impervious Runoff Depth=0.01"
Flow Length=500' Tc=24.5 min CN=86/98 Runoff=0.01 cfs 0.002 af

Subcatchment 5S: NEW PAVED ROAD Runoff Area=6,527 sf 100.00% Impervious Runoff Depth=0.19"
Tc=6.0 min CN=0/98 Runoff=0.03 cfs 0.002 af

Subcatchment 6S: PRE-PAVED ROW Runoff Area=6,527 sf 0.00% Impervious Runoff Depth=0.01"
Tc=6.0 min CN=89/0 Runoff=0.00 cfs 0.000 af

Reach 5R: Stream Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 6R: SWALE Avg. Flow Depth=0.05' Max Vel=0.53 fps Inflow=0.10 cfs 0.022 af
n=0.025 L=100.0' S=0.0050 '/' Capacity=1.78 cfs Outflow=0.10 cfs 0.022 af

Reach 7R: Avg. Flow Depth=0.21' Max Vel=2.22 fps Inflow=0.26 cfs 0.022 af
12.0" Round Pipe n=0.012 L=33.0' S=0.0052 '/' Capacity=2.77 cfs Outflow=0.26 cfs 0.022 af

Reach 8R: (new Reach) Avg. Flow Depth=0.01' Max Vel=1.72 fps Inflow=0.01 cfs 0.002 af
36.0" Round Pipe n=0.009 L=50.0' S=0.0200 '/' Capacity=136.25 cfs Outflow=0.01 cfs 0.002 af

Pond 2P: Detention Pond 1 Peak Elev=0.23' Storage=244 cf Inflow=0.26 cfs 0.022 af
Outflow=0.10 cfs 0.022 af

Pond 4P: Manhole SD-B1 Peak Elev=0.11' Inflow=0.26 cfs 0.022 af
Primary=0.26 cfs 0.022 af Secondary=0.00 cfs 0.000 af Outflow=0.26 cfs 0.022 af

Total Runoff Area = 3.880 ac Runoff Volume = 0.024 af Average Runoff Depth = 0.08"
61.86% Pervious = 2.400 ac 38.14% Impervious = 1.480 ac

Summary for Subcatchment 1S: Post Construction

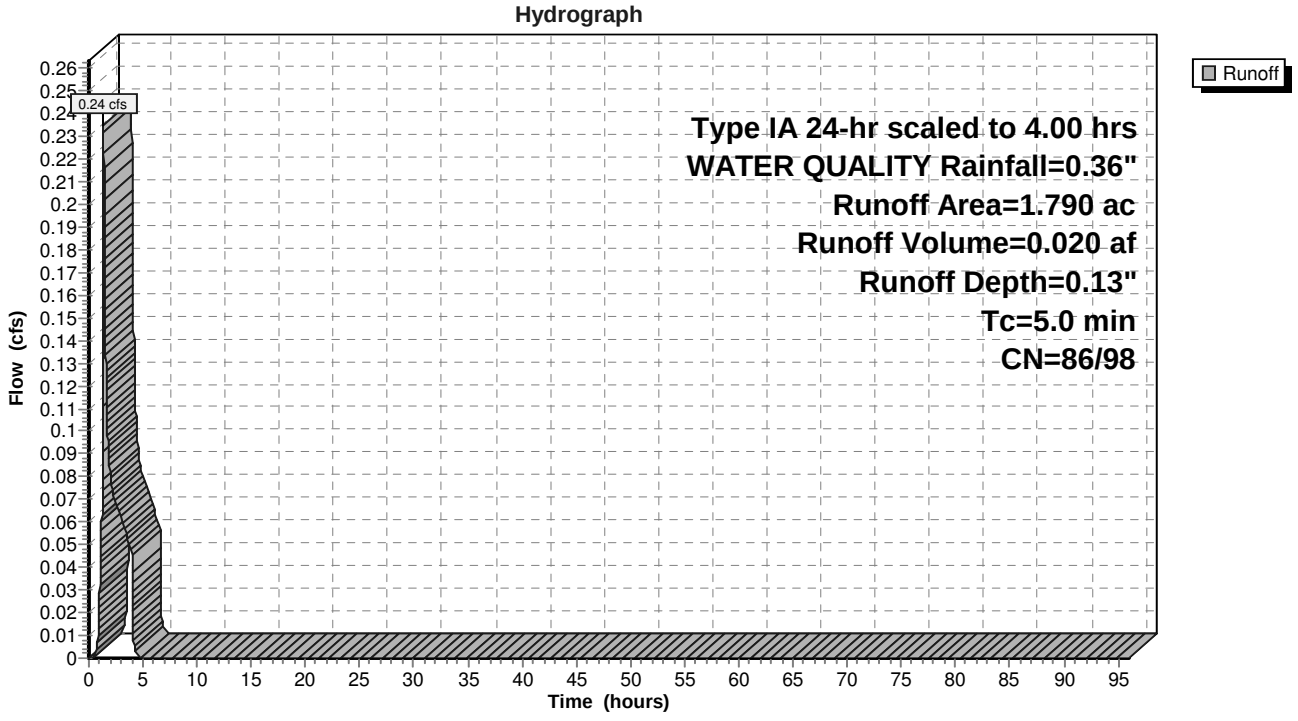
Runoff = 0.24 cfs @ 1.35 hrs, Volume= 0.020 af, Depth= 0.13"
Routed to Pond 4P : Manhole SD-B1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr scaled to 4.00 hrs WATER QUALITY Rainfall=0.36"

	Area (ac)	CN	Description
*	1.220	98	ROAD AND SIDEWALKS
	0.570	86	LANDSCAPE AREAS
	1.790	94	Weighted Average
	0.570		31.84% Pervious Area
	1.220		68.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, Minium**

Subcatchment 1S: Post Construction



Summary for Subcatchment 3S: Pre Existing

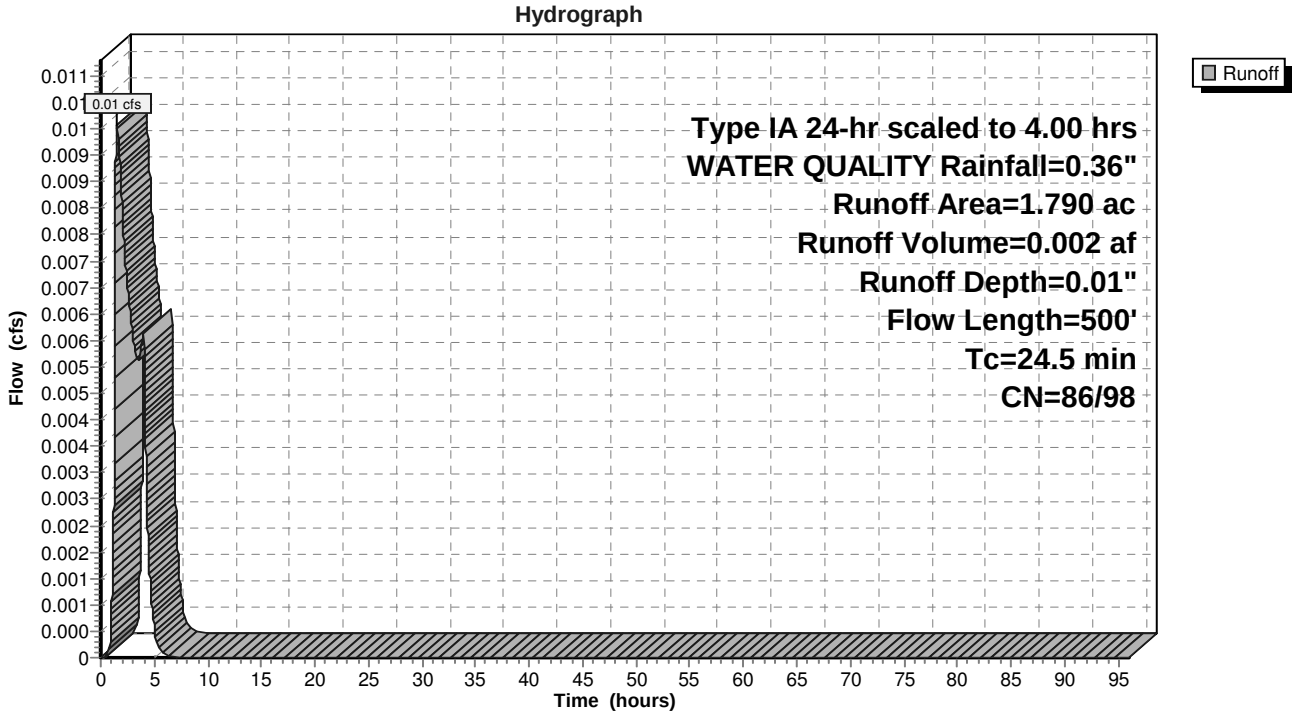
Runoff = 0.01 cfs @ 1.53 hrs, Volume= 0.002 af, Depth= 0.01"
Routed to Reach 8R : (new Reach)

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr scaled to 4.00 hrs WATER QUALITY Rainfall=0.36"

	Area (ac)	CN	Description
	1.530	86	Pasture/grassland/range HSG C
	0.150	89	Gravel roads, HSG C
*	0.110	98	exisiting asphalt
	1.790	87	Weighted Average
	1.680		93.85% Pervious Area
	0.110		6.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.5	250	0.0180	0.19		**Sheet Flow,** Range n= 0.130 P2= 2.50"
3.0	250	0.0400	1.40		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.5	500	Total			

Subcatchment 3S: Pre Existing



Summary for Subcatchment 5S: NEW PAVED ROAD EXTENSION

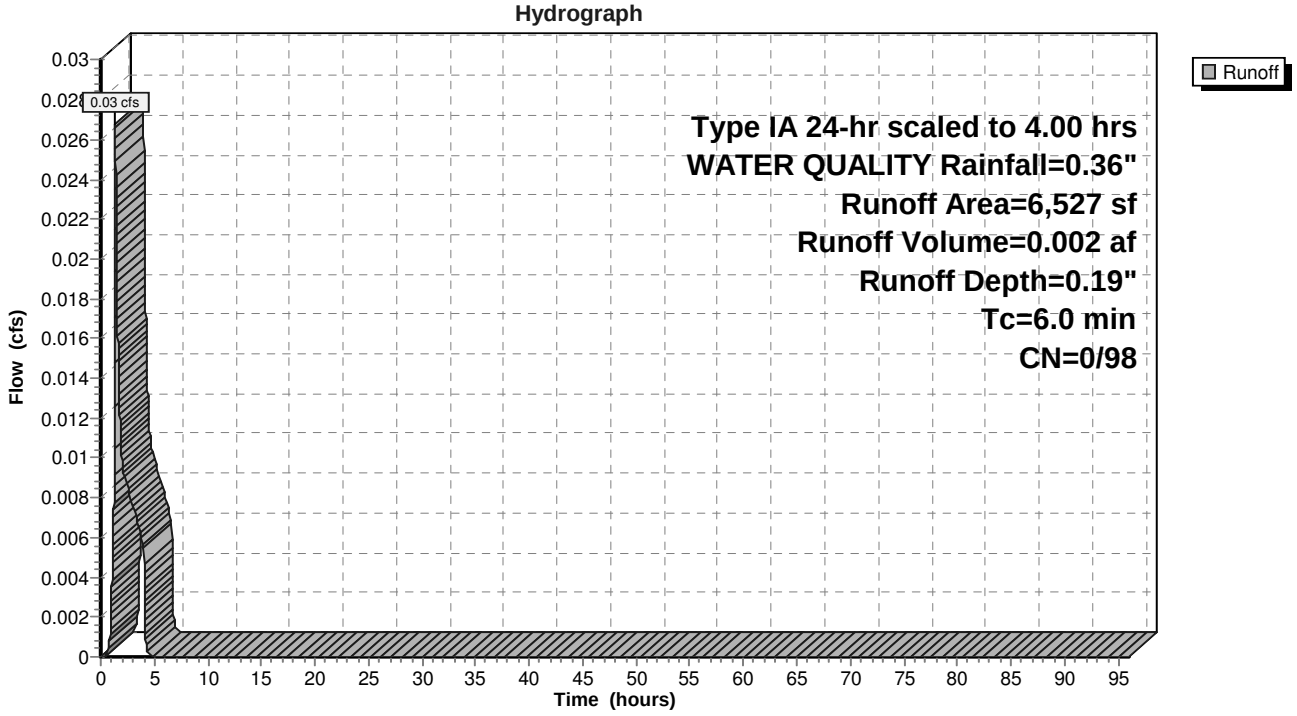
Runoff = 0.03 cfs @ 1.35 hrs, Volume= 0.002 af, Depth= 0.19"
Routed to Pond 4P : Manhole SD-B1

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr scaled to 4.00 hrs WATER QUALITY Rainfall=0.36"

	Area (sf)	CN	Description
*	6,527	98	
	6,527		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 5S: NEW PAVED ROAD EXTENSION



Summary for Subcatchment 6S: PRE-PAVED ROW EXTENSION

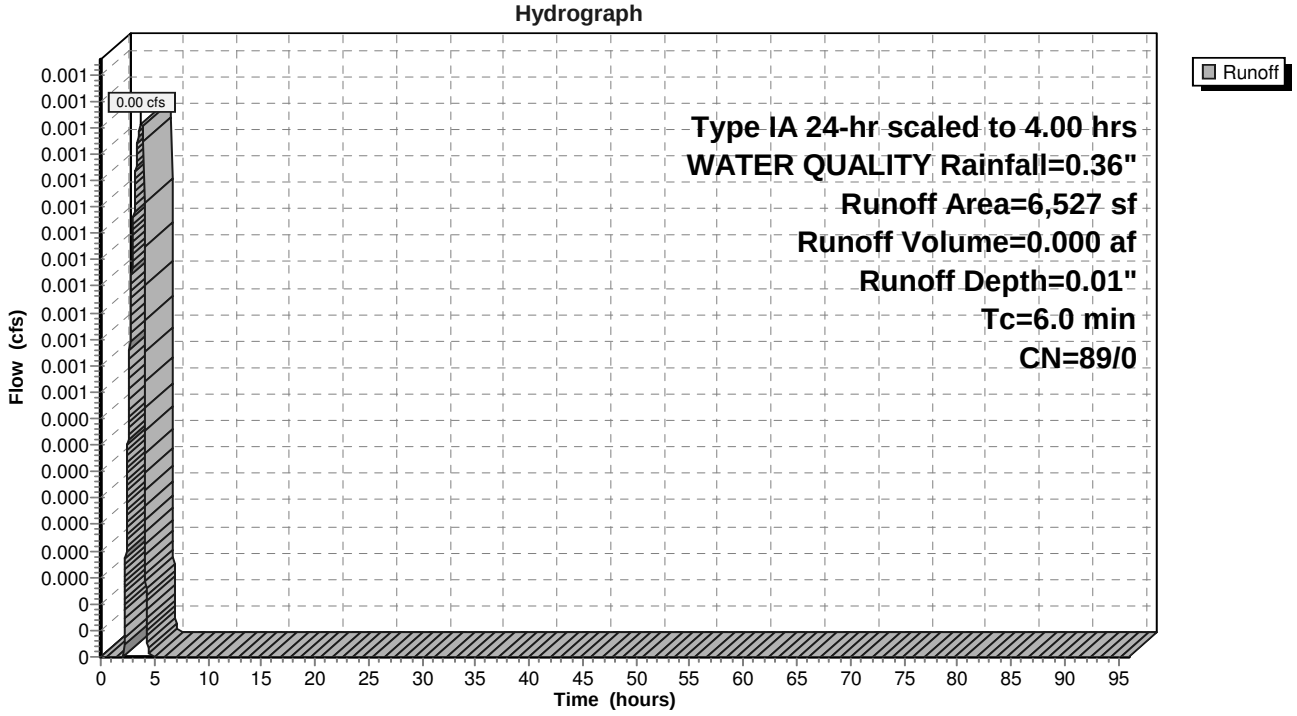
Runoff = 0.00 cfs @ 3.79 hrs, Volume= 0.000 af, Depth= 0.01"
Routed to Reach 8R : (new Reach)

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Type IA 24-hr scaled to 4.00 hrs WATER QUALITY Rainfall=0.36"

Area (sf)	CN	Description
6,527	89	Gravel roads, HSG C
6,527		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 6S: PRE-PAVED ROW EXTENSION

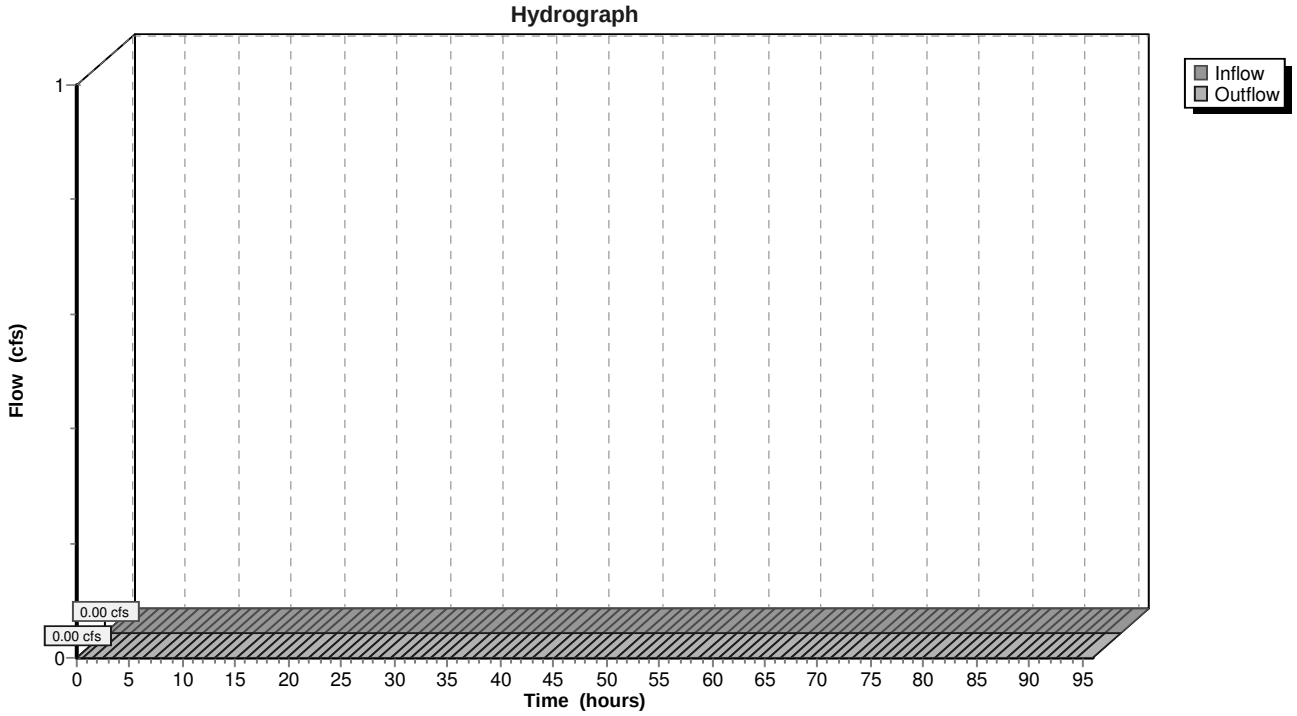


Summary for Reach 5R: Stream

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

Reach 5R: Stream



Summary for Reach 6R: SWALE

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 0.14" for WATER QUALITY event
Inflow = 0.10 cfs @ 1.84 hrs, Volume= 0.022 af
Outflow = 0.10 cfs @ 1.92 hrs, Volume= 0.022 af, Atten= 0%, Lag= 5.2 min

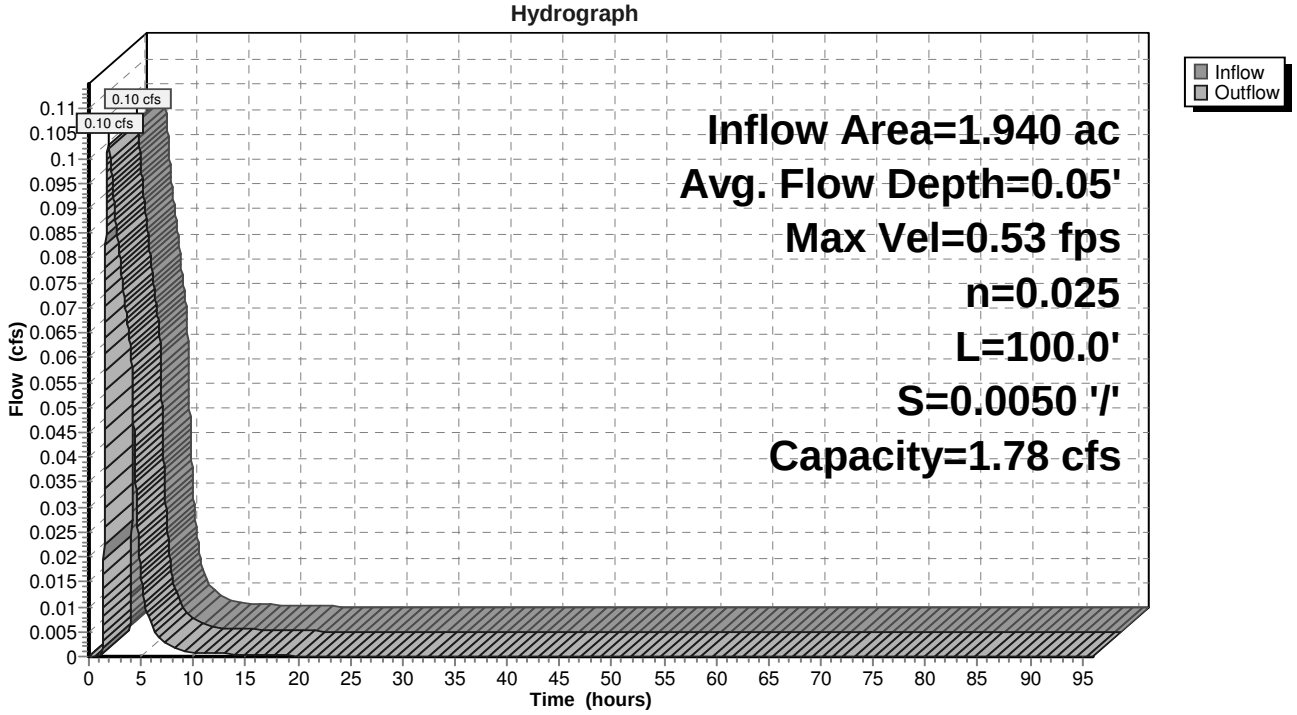
Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Max. Velocity= 0.53 fps, Min. Travel Time= 3.1 min
Avg. Velocity = 0.12 fps, Avg. Travel Time= 13.5 min

Peak Storage= 19 cf @ 1.87 hrs
Average Depth at Peak Storage= 0.05' , Surface Width= 4.28'
Bank-Full Depth= 0.25' Flow Area= 1.2 sf, Capacity= 1.78 cfs

4.00' x 0.25' deep channel, n= 0.025 Short grass
Side Slope Z-value= 3.0 '/' Top Width= 5.50'
Length= 100.0' Slope= 0.0050 '/'
Inlet Invert= 0.00', Outlet Invert= -0.50'

‡

Reach 6R: SWALE



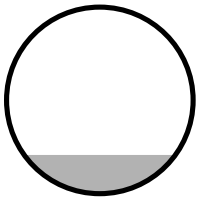
Summary for Reach 7R:

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 0.14" for WATER QUALITY event
Inflow = 0.26 cfs @ 1.35 hrs, Volume= 0.022 af
Outflow = 0.26 cfs @ 1.36 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.5 min
Routed to Pond 2P : Detention Pond 1

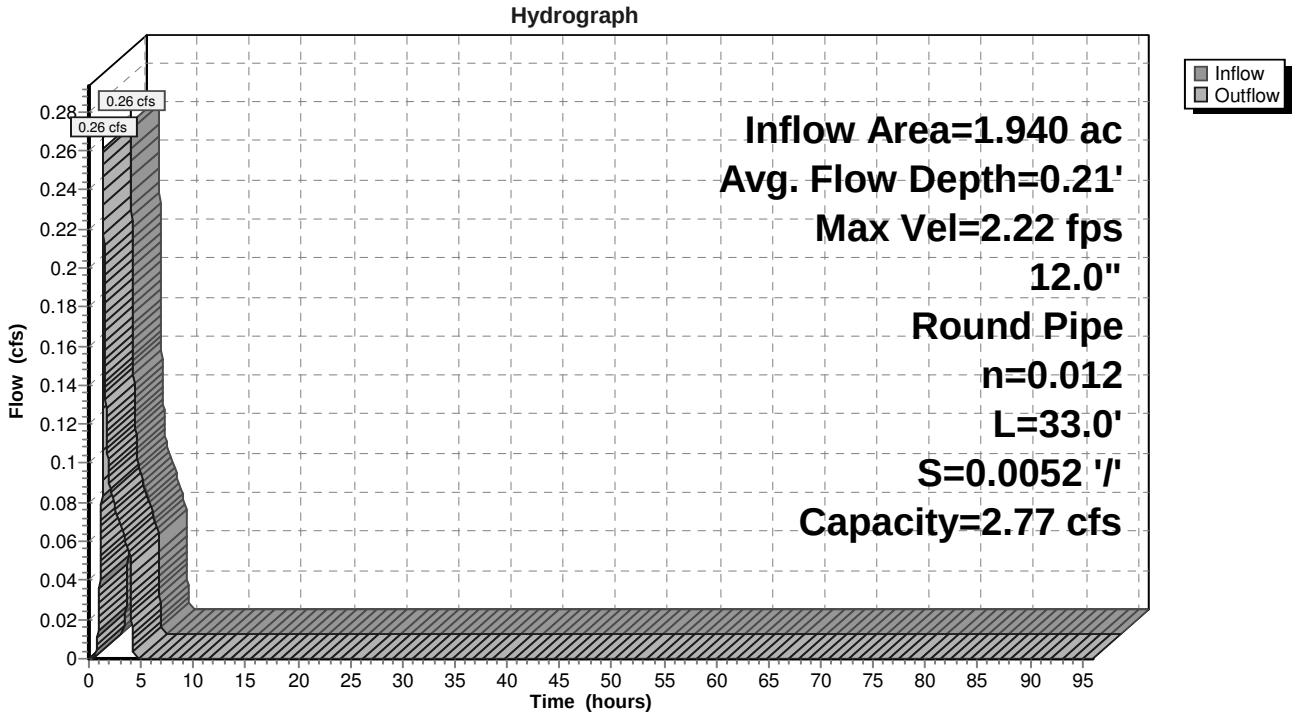
Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.22 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 1.34 fps, Avg. Travel Time= 0.4 min

Peak Storage= 4 cf @ 1.35 hrs
Average Depth at Peak Storage= 0.21' , Surface Width= 0.81'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 2.77 cfs

12.0" Round Pipe
n= 0.012 Concrete pipe, finished
Length= 33.0' Slope= 0.0052 '/'
Inlet Invert= 0.00', Outlet Invert= -0.17'



Reach 7R:



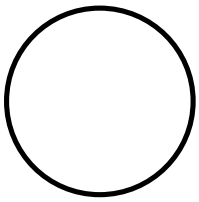
Summary for Reach 8R: (new Reach)

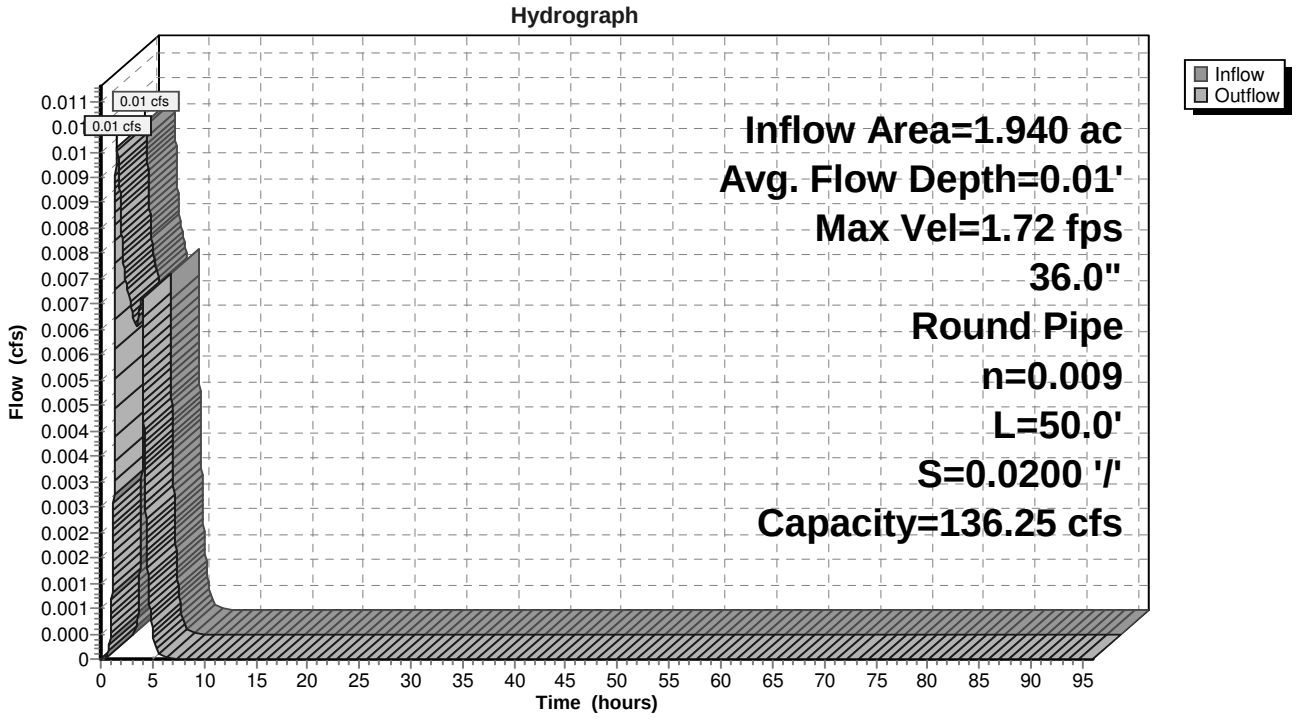
Inflow Area = 1.940 ac, 5.67% Impervious, Inflow Depth = 0.01" for WATER QUALITY event
Inflow = 0.01 cfs @ 1.53 hrs, Volume= 0.002 af
Outflow = 0.01 cfs @ 1.54 hrs, Volume= 0.002 af, Atten= 0%, Lag= 1.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Max. Velocity= 1.72 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.72 fps, Avg. Travel Time= 0.5 min

Peak Storage= 0 cf @ 1.53 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 0.42'
Bank-Full Depth= 3.00' Flow Area= 7.1 sf, Capacity= 136.25 cfs

36.0" Round Pipe
n= 0.009 PVC, smooth interior
Length= 50.0' Slope= 0.0200 '/'
Inlet Invert= 0.00', Outlet Invert= -1.00'





Summary for Pond 2P: Detention Pond 1

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 0.14" for WATER QUALITY event
Inflow = 0.26 cfs @ 1.36 hrs, Volume= 0.022 af
Outflow = 0.10 cfs @ 1.84 hrs, Volume= 0.022 af, Atten= 61%, Lag= 28.7 min
Primary = 0.10 cfs @ 1.84 hrs, Volume= 0.022 af
Routed to Reach 6R : SWALE

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 0.23' @ 1.84 hrs Surf.Area= 1,135 sf Storage= 244 cf

Plug-Flow detention time= 58.6 min calculated for 0.022 af (100% of inflow)
Center-of-Mass det. time= 58.8 min (195.4 - 136.6)

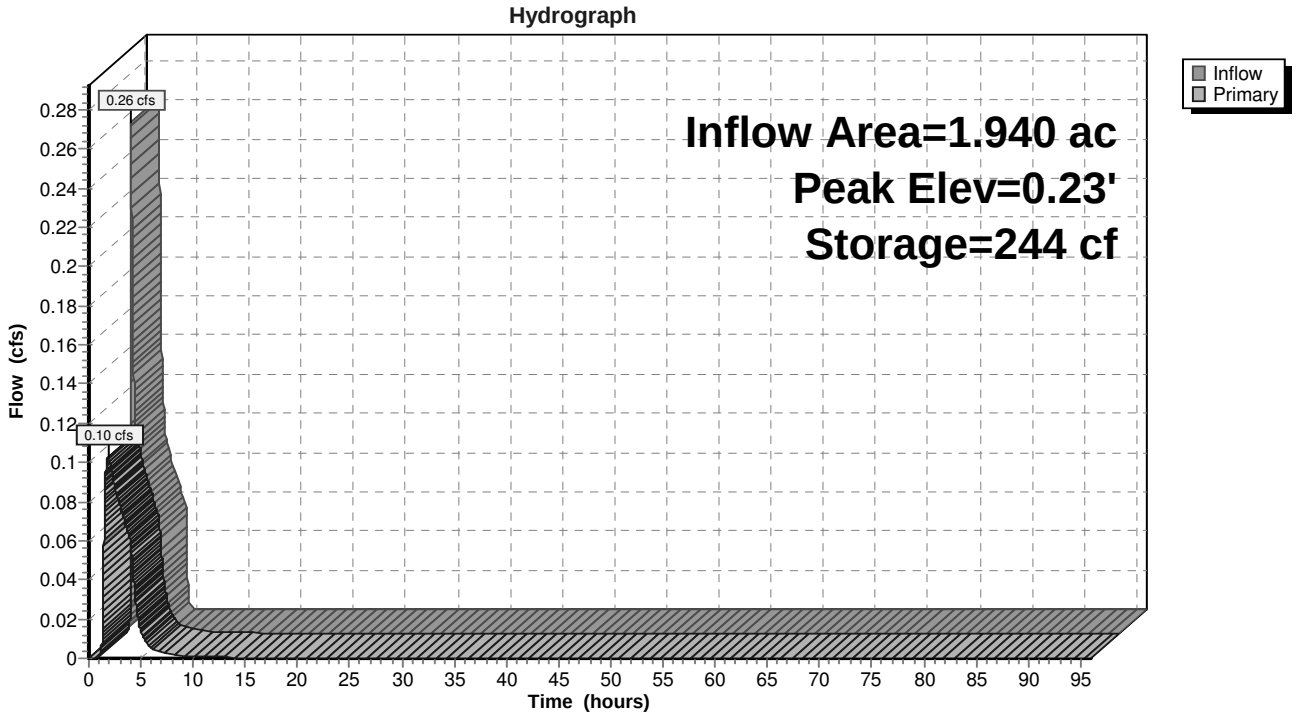
Volume	Invert	Avail.Storage	Storage Description
#1	0.00'	3,098 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
0.00	1,014	0	0
2.00	2,084	3,098	3,098

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**4.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Primary	1.25'	**3.9" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.10 cfs @ 1.84 hrs HW=0.23' (Free Discharge)
└**1=Orifice/Grate** (Orifice Controls 0.10 cfs @ 1.62 fps)
└**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 2P: Detention Pond 1



Summary for Pond 4P: Manhole SD-B1

Inflow Area = 1.940 ac, 70.62% Impervious, Inflow Depth = 0.14" for WATER QUALITY event
Inflow = 0.26 cfs @ 1.35 hrs, Volume= 0.022 af
Outflow = 0.26 cfs @ 1.35 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min
Primary = 0.26 cfs @ 1.35 hrs, Volume= 0.022 af
Routed to Reach 7R :
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 5R : Stream

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 0.11' @ 1.35 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	0.00'	**8.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#2	Secondary	0.62'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=0.26 cfs @ 1.35 hrs HW=0.11' (Free Discharge)
1=Orifice/Grate (Weir Controls 0.26 cfs @ 1.10 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' (Free Discharge)
2=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Pond 4P: Manhole SD-B1

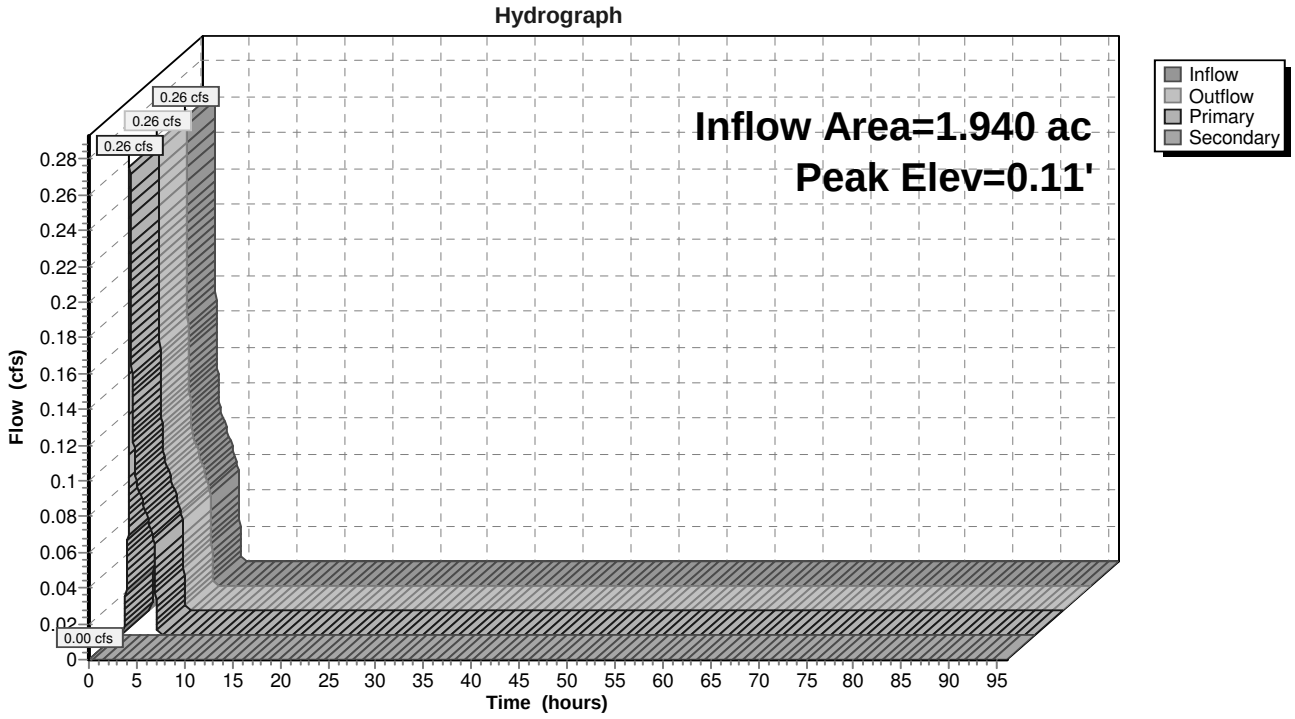


Exhibit D:

Public Works Comments

Community Development Department
315 Kennel Ave/PO Box 248
Molalla, OR 97038
Phone 503.759.0205
www.cityofmolalla.com

November 29, 2022

TO: Mac Corthell, Community Developer Director
Dan Zinder, Planning Director
Ronda Lee, Planning Specialist

FROM: Sam Miller, Sr Engineer Tech.

RE: SDR05-2022 – 1400 Fountain Way

Based on a review of the materials submitted, Staff has prepared the following comments. These comments are applicable to the subject application; any subsequent modifications may require amendments and/or additions. These conditions do not include requirements already set forth in the municipal code.

CONDITIONS

1. Specific Requirements To This Site:
   A. Transportation – in accordance with MMC 17-3.6.020 Transportation Standards:

      1. The Site Design Review will not require a traffic impact analysis update. The Applicant submit a traffic analysis letter (TAL) with their application. The proposed development will add a total of 15.4 PHPM trips and the threshold for a traffic impact analysis is 25 AM or PM PH trips.

      2. Industrial Way: Industrial Way is a neighborhood street under City of Molalla jurisdiction. Current right-of-way width is 38 feet and current street is partially improved with approximate pavement width of 24 feet and unimproved gravel of varying width. Neighborhood streets (w/TL, w/PK) require 50 feet of right-of-way and 34 feet of pavement. No street dedication is required, dedication was covered under Partition Plat No. 2020-007. Applicant will be required to construct street road improvements to City standards and meeting City of Molalla Transportation System Plan (TSP) for pavement, curb, and gutter, 6-foot curb tight sidewalk and Streetlight.

      3. Proposed Street “Industrial Way” Applicant will be required to construct street improvement along Industrial Way from Fountain Way to the northern driveway entrance. Improvements shall consist of 31.5 feet of pavement, curb & gutter, and 6-foot curb tight sidewalk on the west side of the street. Street shall be signed no parking on east sides until street is improved to full width. Dead-end streets shall be design in accordance and specifications meeting the Molalla Public Work Standards.

4. Applicant shall contact Public Works regarding a new access permit for the proposed parking area from Industrial Way and closure of the existing permitted access off Industrial Way. Applicant may maintain access form Fountain Way private drive for mobile food units, emergency, and pedestrian access. Access to public streets shall be limited to the following locations and all accesses shall be constructed in such a manner as to eliminate turning conflicts. Access spacing shall conform to the Transportation Systems Plan. The proposed width of accesses shall meet the Molalla Standard Specifications for Public Works Construction.

5. Parking area off of Industrial Way northern approach shall be designated as ingress only and the southern approach shall be designated as egress only. Striping/arrows shall be utilized to demarcate traffic flow. The section off Industrial Way between the new proposed ingress and egress points shall be designated as one way northbound until parcels to the east develop.

6. Transportation SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from transportation SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

B. Storm - in Accordance with MMC 17-3.6.050 Storm Drainage and Surface Water Management:

1. Industrial Way: A 18-inch storm main exists along the east side of Industrial Way. Applicant proposes to install new additional storm detention that will connected to the exist onsite storm system. Applicant will be required to provide storm calculations downstream of discharge, to ensure system is properly sized to convey design storm. If oversizing is required, then applicant will upsize storm line at their cost. Applicant will be required to provide stormwater calculations for proposed and existing onsite detention is properly sized to convey projected stormwater to public facilities.

2. Stormwater SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from stormwater SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

C. Sanitary- in accordance with MMC 17-3.6.040 Sanitary Sewer Service Improvements:

1. Applicants propose to connect to existing on-site sanitary system. Pod units shall make connection by individual laterals services and connect to an oil water separator. Oil Water separator shall make connection on the downstream end of the sewer line prior to main line connection per MMC 13.08 Sanitary Sewer and Molalla Standards Specifications for Public Works Construction.

2. Sanitary SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from sanitary SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

D. Water- in accordance with MMC 17-3.6.040 Water Service Improvements:

1. All water services shall be connected to internal water system and service meter size shall be based on the use requirements to the property served. Any deviation from the prescribed procedures must be approved by Public Works.

2. Applicant shall be required to extend 8-inch main on Industrial Way to the north end of the project. Water line shall meet Public Works size requirements and all fire hydrant locations shall be approved by the Fire Marshall.

3. Should Fire Department regulations require additional fire flow that results in looping the water line through the site, then applicants engineer shall coordinate with Public Works for the extension of a public water line, and dedication of easements.

4. Water SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from water SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

E. Parks:

1. Parks SDC's – In accordance with SMC 13.70.110 this commercial design review is exempt from parks SDC charges.

F. Franchise Utility Services:

1. All utilities to the project shall be served underground services. No overhead crossings of public right of way shall be approved by the city.

DESIGN REQUIREMENTS & POLICIES

1. General Requirements:

A. For commercial and industrial development projects, No building permit may be issued until all required public facility improvements are in place and approved by the City Engineer, or otherwise bonded, in conformance with the provision of the Code and the Public Works Design Standards in accordance with MMC 17-3.6 Public Facilities. All public facilities shall be completed and accepted by the Public Works Department prior to issuance of final occupancy.

B. From the materials submitted, it appears that the storm drain, domestic water, and sanitary sewer facilities will be obtained from main line connections and/or extensions. Separate engineering drawings reflecting the installation of these public utilities will be required.

C. No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved by Staff, all fees have been paid, all necessary permits, bonding, right-of-way, and easements have been obtained and approved by staff, and Staff is notified a minimum of 24 hours in advance.

D. Staff reserves the right to require revisions/modifications to the public improvement construction plans and completed street improvements, if additional modifications or expansion of the sight distance onto adjacent streets is required.

E. All public utility/improvement plans submitted for review shall be based upon a 22"x 34" format and shall be prepared in accordance with the City of Molalla Public Work's Standards.

F. All survey monuments on the subject site or that may be subject to disturbance within the construction area, or the construction of any off-site improvements shall be adequately referenced and protected prior to commencement of any construction activity. If the survey monuments are disturbed, moved, relocated, or destroyed as a result of any construction, the project shall, at its cost, retain the services of a registered professional land surveyor in the State of Oregon to restore the monument to its original condition and file the necessary surveys as required by Oregon State law. A copy of any recorded survey shall be submitted to Staff.

G. Plans submitted for review shall meet the requirements described in Section 1 of the Molalla Standard Specifications for Public Works Construction.

H. The applicant shall contact the Oregon Water Resources Department and inform them of any existing wells located on the subject site. Any existing well shall be limited to irrigation purposes only. Proper separation, in conformance with applicable State standards, shall be maintained between irrigation systems, public water systems, and public sanitary systems. Should the project abandon any existing wells, they shall be properly abandoned in conformance with State standards and supply the City with a copy of the final document.

I. Sanitary sewer designs require review by Oregon Department of Environmental Quality. Applicant shall be responsible for submission of plans to state agency and all associated fees. Applicant's Engineer will be required to submit final report to DEQ and provide a copy of the report to the City.

J. All utilities will be stubbed out to the far end of each street for future extension. The project shall utilize existing water, sewer, and storm water 'stub-outs' wherever possible. Water for domestic and fire protection shall be looped through the proposed site. Any 'stub-outs' determined to be not needed for the proposed development or any future development of the subject property shall be abandoned in accordance with the Molalla Standard Specifications for Public Works Construction.

K. All public improvement designs shall meet the requirements of the Molalla Standard Specifications for Public Works Construction as amended by the Public Works Director.

L. General Easements – A 10-foot-wide public utility easement shall be dedicated to the City adjacent to all public right-of-way and no structures are allowed to encroach into the easement. Applicant shall be required to submit a legal description and exhibit map for review and sign City easements. Once completed, applicant will be required to record easements with the County Recorder's Office and return the original document to the City prior to final occupancy.

M. General Wetland Requirements – The applicant will be required to provide Public Works with a letter of concurrence from the Department of State Lands regarding any wetlands on the subject property.

N. General Erosion Control – The applicant shall install, operate, and maintain adequate erosion control measures in conformance with the standards adopted by the City of Molalla and DEQ during the construction of any public/private utility and building improvements until such time

as approved permanent vegetative materials have been installed. Applicant or Applicant's Contractor shall be responsible for all erosion control requirements under the 1200-C permit and shall coordinate directly with DEQ for questions related to 1200-C permit compliance.

Exhibit E:

Molalla Fire District Comments

Community Development Department
315 Kennel Ave/PO Box 248
Molalla, OR 97038
Phone 503.759.0205
www.cityofmolalla.com

AGENDA
Molalla Planning Commission
6:30 PM, December 7, 2022

The Planning Commission Meeting will begin at 6:30pm. The Planning Commission has adopted Public Participation Rules. Copies of these rules and public comment cards are available at the entry desk. Public comment cards must be turned in prior to the start of the Commission meeting. The City will endeavor to provide a qualified bilingual interpreter, at no cost, if requested at least 48 hours prior to the meeting. To obtain services call the City Recorder at (503) 829-6855.

I. CALL TO ORDER

II. FLAG SALUTE AND ROLL CALL

III. PUBLIC COMMENT – Limited to 3 minutes per person

IV. MINUTES:

November 2, 2022, Planning Commission Meeting

V. QUASI-JUDICIAL HEARING:

SDR05-2022 AND CUP03-2022 (1400 Fountain way) Food Cart

VI. REPORTS AND ANNOUNCEMENTS

- Planners Report

VII. ADJOURNMENT