

CITY OF ST. HELENS PLANNING DEPARTMENT ACTIVITY REPORT



To: City Council
From: Jacob A. Graichen, AICP, City Planner
cc: Planning Commission

Date: 9.29.2022

This report does not indicate all *current planning* activities over the past report period. These are tasks, processing and administration of the Development Code which are a weekly if not daily responsibility. The Planning Commission agenda, available on the City's website, is a good indicator of *current planning* activities. The number of building permits issued is another good indicator as many require Development Code review prior to Building Official review.

ASSOCIATE PLANNER/PROJECT MANAGER—*In addition to routine tasks, the Associate Planner/Community Development Project Manager has been working on: See attached.*

PLANNING ADMINISTRATION—PREAPPLICATIONS MEETINGS

Attended a Columbia County pre-application meeting for a proposal to add a new Quarter Midget Racetrack at the county fairgrounds, which is within St. Helens' Urban Growth Area.

PLANNING ADMINISTRATION—MISC.

Responded to a county referral for improvements to the Family Fun RV property (formerly Bing's restaurant)—*see attached.*

Worked with Public Works to get no parking / fire access signs for Sapphire Court, which is a private drive (except public for pedestrians) and an emergency access point from Pittsburg Road to the Emerald Meadows Subdivision. No parking indicators were required as part of the subdivision, but not installed. It was causing a lack of maneuvering room for the neighbors, which prompted a call to the city shops and then to me. The developer is willing to pay for this, acknowledging it was their responsibility. It was installed the same day as this report!

Back in January CIS Oregon recommended some language changes to our sidewalk use liability language to help protect the city from claims from use of sidewalk. I took the initiative—after nine months—to prepare something this month. Traditionally, January is a good month for this type of thing—but not in 2022!

DEVELOPMENT CODE ENFORCEMENT

In July I mentioned an RV residence complaint related to the St. Helens Community Bible Church on Millard Road. Though it took a little longer than hoped, the issue is resolved.

Making progress with ACSP / Ogrotech (the occupant / owner) of the parcel divided from the St. Helens Industrial Business Park site (1400 Kaster Road) to achieve land use compliance as described in previous reports since December. Met with the site manager to discuss moving a building over a public utility easement. Anticipate full compliance soon.

PLANNING COMMISSION (& *acting* HISTORIC LANDMARKS COMMISSION)

September 13, 2022 meeting (outcome): The Commission approved a sign Variance (Sign Adjustment) for the proposed Burger King at the corner of US30 and Howard Street.

The Commission discussed term expirations on the Commission and the Planning Commission Interview Committee for prospective candidates was selected. We will have two vacancies or potentially three if one of the Commissioner's who is running for a Council position

Per initiative by Councilor Birkle for the agenda item, the Commission expressed desire to receive copies of reports provided to the Council regarding land use matters as part of their desire to be more proactive. Electronic format is acceptable. It's about keeping them included.

The Commission agreed to take Oregon HB 3115 pertaining to homeless camping on public property as their proactive item.

October 11, 2022 meeting (upcoming): At the very least, the Commission will hold a public hearing for development of a couple vacant parcels for mixed use development between the St. Helens Street/Columbia Boulevard couplet along N. 14th and N. 15th Streets.

COUNCIL ACTIONS RELATED TO LAND USE

At their September 21, 2022 meeting, the Council approved the Comstock Planed Development Subdivision. This was a matter denied by the Planning Commission and appealed to the council. Note that as part of the appeal the applicant reduced the number of total lots from 46 to 34 and ensured no lot was less than 7,000 s.f. in size.

ST. HELENS INDUSTRIAL BUSINESS PARK PROPERTY

We received the application packet for the proposed new public safety. Planning Commission will see this within the next few months.

MILLARD ROAD PROPERTY

As mentioned in last month's and May's report, I have been attempting to renew the 2009 agreement that we renewed for an extra two years in 2020 that provides a revocable (due to elapsed time) access easement to the Millard Road property from Chase Road to the west. Based on a recent conversation with the grantor, they state a willingness to extend, though not much initiative to do so. My concern is that without this, the only feasible second access point would be from Maple Street to the north, which would require building a bridge over McNulty Creek. Per Oregon Fire Code Section D107 a residential subdivision could be required to have an automatic sprinkler system for each home. Possible "build a bridge or sprinkle the homes" scenario, which could impact the attractiveness of this property to a developer.

From: [Jennifer Dimsho](#)
To: [Jacob Graichen](#)
Subject: September Planning Department Report
Date: Thursday, September 29, 2022 1:45:03 PM

Here are my additions to the September Planning Department Report.

GRANTS

1. **CDBG- Columbia Pacific Food Bank Project** – Final project closeout letter received from the state! Final Occupancy granted by the Building Official. Final project invoice officially paid last week.
2. **Safe Routes to School - Columbia Blvd. Sidewalk Project** – Culvert project (County) will be a separate project than the sidewalks project. Bidding is anticipated late Fall 2022 with construction in Spring/Summer 2023. Amendment approved to push completion deadline from November 2022 to February 2024. Project cost estimates came in x3 what we budgeted for the project. Working to slim the scope of work as much as possible to be able to still fund the project.
3. **Business Oregon – Infrastructure Finance Authority** – Loan Contract documents finalized for streets/utilities construction and Riverwalk project not covered by OPRD grants. Will submit first reimbursement once design work is complete for Riverwalk project.
4. **Technical Assistance Grant with the Oregon State Marine Board** - To assist with design and permitting of an in-water fishing dock and paddlecraft launch facility at Grey Cliffs Park. Feedback summarized submitted to OSMB to move forward. They would like to hire their environmental permit specialist before starting moving this project forward – waiting to hear back from the state on this.

PROJECTS & MISC

5. **Riverwalk Project (OPRD Grants x2)** – Moving into 90% design, continued regular PM meetings and TAC meetings. For permitting, stage and structure will require architectural review before the PC (anticipated in the early fall with the building permit). LWCF grant contract will be subject to the Build America requirements. Working with Mayer/Reed on an additional scope of work to assist with a waiver application and/or compliance with the Building America requirements. Held grant coordination meeting with the two different OPRD program grant coordinators (LWCF and the LGGP program) in order to discuss reporting requirements
6. **Riverfront Streets/Utilities Design/Engineering** – Construction contract granted to Moore Excavation. Planning for construction start on Nov 1, including a ribbon cutting on Nov 2 and business/resident meetings in October. Assisting project team with outreach efforts.
7. **St. Helens Industrial Business Park (SHIBP) Public Infrastructure Design**– Work Order 1 approved - 30% design for Phase I infrastructure & permitting/grading work for Phase II with Mackenzie. Pre-application meeting scheduled for 10/13 to discuss applications needed for PGE parcellation and new sub-station. Goal is for PGE to be able to buy the parcel from the City.
8. Planned/Registered for **OAPA conference** in Pendleton, OR on 10/26-10/28 and for the **Oregon Mainstreet Conference** in Klamath Falls 10/5-10/7.

9. Met with new Executive Director of the Northwest Housing Authority (NOHA) and toured a future project located at the Gable Park apartments and a triplex they own adjacent to the complex

Jenny Dimsho, AICP

Associate Planner / Community Development Project Manager

City of St. Helens

(503) 366-8207

jdimsho@sthelensoregon.gov

COLUMBIA COUNTY
LAND DEVELOPMENT SERVICES
Planning Division
COURTHOUSE
ST. HELENS, OREGON 97051
Phone: (503) 397-1501 Fax: (503) 366-3902

July 26, 2022

REFERRAL AND ACKNOWLEDGMENT

Responding Agency:

NOTICE IS HEREBY GIVEN that Heather Harrison, representing Family Fun RV has submitted an application for a Design Review and a Non-Conforming Use to have recreational Vehicle sales and maintenance and two food carts. The subject property is located at 58209 Columbia River Highway. The property is zoned General Commercial (C-3). The site contains 4.47 acres and is identified as Tax Map No. 4108-CA-03700

THIS APPLICATION IS FOR: (X) Administrative Review; () Planning Commission, Hearing Date:

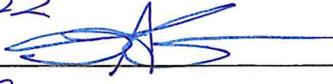
PLEASE RETURN BY: August 4, 2022

Planner: Deborah Jacob

The enclosed application is being referred to you for your information and comment. Your recommendation and suggestions will be used by the County Planning Department and/or the Columbia County Planning Commission in arriving at a decision. Your prompt reply will help us to process this application and will ensure the inclusion of your recommendations in the staff report. Please comment below.

- We have reviewed the enclosed application and have no objection to its approval as submitted.
- Please see attached letter or notes below for our comments.
- We are considering the proposal further, and will have comments to you by _____.
- Our board must meet to consider this; we will return their comments to you by _____.
- Please contact our office so we may discuss this.
- We recommend denial of the application, for the reasons below:

COMMENTS: THERE ARE INCONSISTENCIES WITH THE NARRATIVE, PLANS & ACTUAL FIELD CONDITIONS. PLEASE SEE ATTACHED MEMO DATED SEPT. 14, 2022

Signed:  Printed Name: JACOB GRAFCHEN
Title: CITY PLANNER Date: SEPT. 14, 2022



CITY OF ST. HELENS PLANNING DEPARTMENT
M E M O R A N D U M

TO: Deborah Jacob, Planner, Columbia County
FROM: Jacob A. Graichen, AICP, City Planner
RE: Columbia County file DR 22-06
DATE: September 14, 2022

Please include the following conditions:

- Food carts/trucks shall be prohibited on a temporary or permanent basis until the county has actual standards and procedures to specifically allow such.
- Any sign permit issued by the County shall comply with the city's standards.
- Prior to building permit issuance, revised plans are necessary with the following:
 - Street trees within the first 10 feet of landscaping area along US30. Species subject to agency review and approval, and shall be small to avoid overhead utility conflicts with a minimum 20' spacing.
 - Existing greenspace shall be properly conveyed. No loss of greenspace shall be allowed.
 - Existing parking lot lights. These lights shall not be removed but may be relocated such that their safety enhancement and crime prevention attributes are not reduced.
 - Provisions to prevent parking within vision clearance areas at access points along both US30 and Millard Road.
 - Existing fence location and necessary modifications to ensure the fence is not within a public right-of-way, vision clearance area of a street access point, or on adjacent property.
 - Specifically address trash enclosure requirements.
 - Changes to parking space layout to accommodate all revisions including but not limited to the above.
- Applicant has the burden of proof to demonstrate fence is not within a public right-of-way and is responsible to removing any encroachments.
- All improvements per approved plans shall be required prior to occupancy of new building or any changes to existing building.

-----basis for conditions and other comments/considerations below-----

Zoning/Comprehensive Plan Designation:

The Comprehensive Plan Designation is Unincorporated Highway Commercial. Upon annexation the anticipated St. Helens zoning would be Highway Commercial, HC.

There is a consent to annex recorded in the County Clerk deed records as instrument no. 2009-7700. Annexation proceedings may be initiated once city limits abuts the site (including across rights-of-way).

RV sales, service and repair is a permitted use in the city's HC zone.

Food carts/trucks use. These cannot be allowed.

The County currently has no provisions to allow food carts/trucks. Under the County's C-3 zoning this could fall under eating and drinking establishment (CCZO 822.20), but this is intended for permanent uses.

Because the proposed use includes mobile units, the zoning question is if this fits the intent of the County's code. Being temporary fixtures, this is not typical of the traditional eating and drinking establishment the County code seems to contemplate.

CCZO 201 is very explicit about code compliance. If the County's code doesn't address this very well and since the city currently handles these through its Temporary Use Permit process, I'm concerned about setting a precedence with such ambiguity.

It's clear the county's Temporary Use provisions don't address this kind of use. This begs the question if the use is even allowed by the County's zoning ordinance. Please note, I have no issue with the property, applicant, owner or type of use in general. Rather, the precedence this could set without property legislation and how this could take shape within the County, especially given the consent to annex.

Food carts cannot be allowed by this permit.

Note the applicant did not address the food carts/trucks in their application narrative at all.

In the HC zone, the minimum yard (setback) is 10', which is supposed to be landscaping or pedestrian oriented amenities.

City Utilities:

The property is connected to the city's sanitary sewer system.

Wetlands:

The applicant notes no wetlands but does not provide any findings for that. Perhaps they meant in the developed area (ignoring the open space area along the north side of the property).

In fact, at the pre-application meeting earlier this year the owner noted that they have investigated wetlands and there is just a small one in the corner – DSL allegedly visited site; they have paperwork.

Landscaping:

Street trees would complete the basic frontage improvements along US30. They need to be a small species given overhead power. This is important to be consistent with other development along US30.

Signs:

Any sign permit issued by the County shall comply with the City's standards.

Applicant states no temporary signs will be used, yet staff observed the use of temporary signs.

ROW frontage improvements:

See street tree comment under landscaping above.

Site plan issues:

There is a greenspace along the west property line by the Millard Road access point, which includes the critical root zone of at least one Douglas Fir tree next to the subject property. Having such a large site, there is no reason for this to be impacted for 6 staff parking spaces. This also directly conflicts with the applicant's statement that "the proposed development will not increase the amount of impervious area on the property." It conflicts with CCZO 1563.C. This area provides a buffer for adjacent residential properties.

The site plan does not appear to include the pole lighting within the parking lot. As such, it would be hard for staff to truly determine the applicant's statement that "all parking and loading areas have been designed to allow for turning, maneuvering and parking." The applicant acknowledges the existing lighting in the parking area and notes "these lights will be preserved with this development if possible." Illumination of parking areas is critical for safety and crime prevention. Preservation of parking lot light is essential.

Parking or RV spaces are proposed within the typical visual preservation area at the Millard Road access point. This is not an appropriate place for this and something that dissuades such should be included in the design.

Fence has been recently installed. This is a modification of a commercial site and should be included in this matter. It is not reflected on the provided plans. Needs to be included in revised plans. Need proof it is within property and not within right-of-way or another property. Design

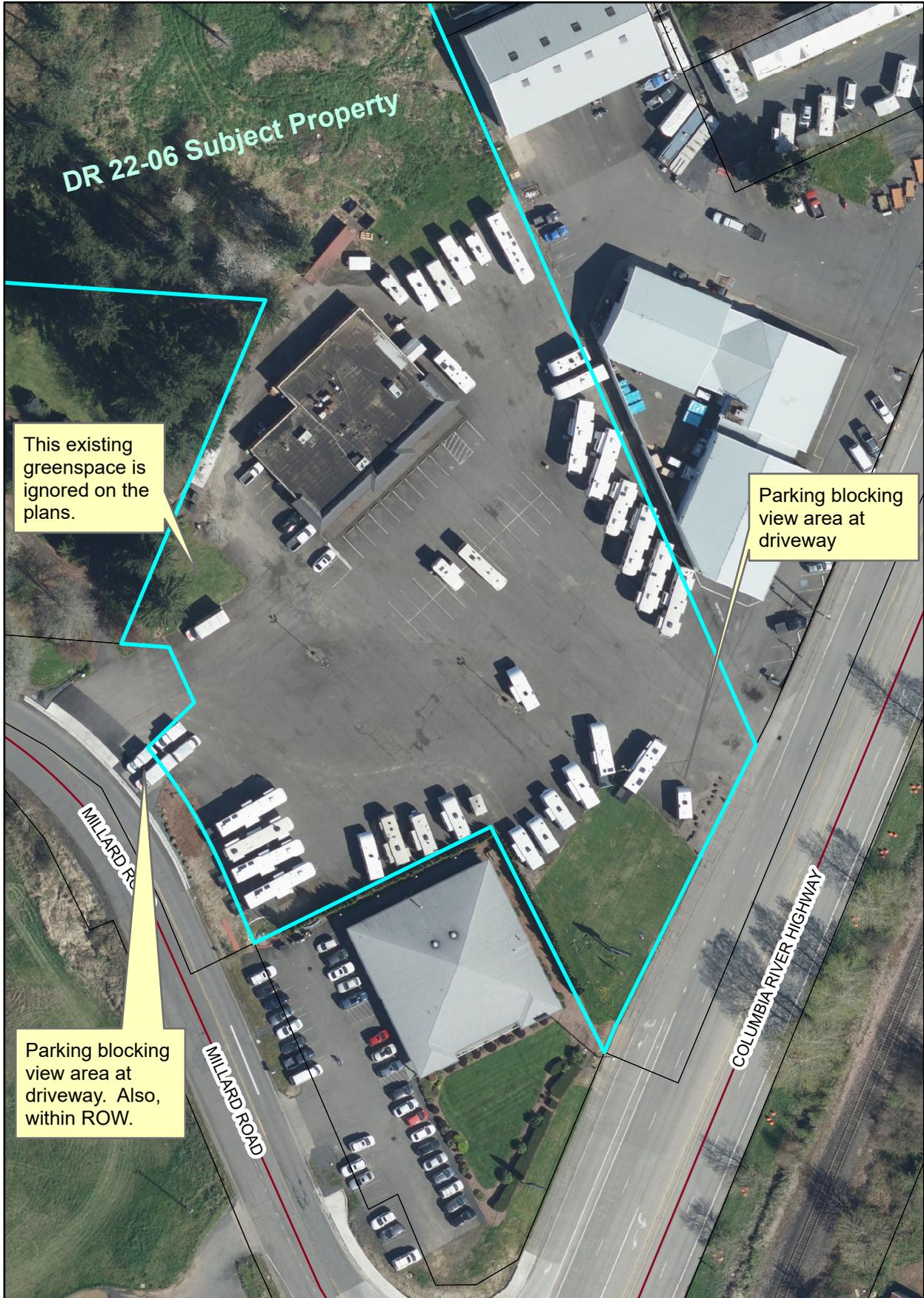
should prevent parking or other obstruction within the vision clearance area of the Millard Road access point.

The applicant discusses screening stating that “the applicant understands that all garbage/trash collection stations, or other similar uses shall be screened within 5 months of occupancy.” The applicant references sheet C-4 despite that sheet not addressing this at all.

Staff observed visible trash containers outside of any screened area visible from the street.

* * * * *

Attachments: Aerial photo exhibit from April 2022



DR 22-06 Subject Property

This existing greenspace is ignored on the plans.

Parking blocking view area at driveway

Parking blocking view area at driveway. Also, within ROW.

MILLARD ROAD

MILLARD ROAD

COLUMBIA RIVER HIGHWAY

July 26, 2022

REFERRAL AND ACKNOWLEDGMENT

Responding Agency:

NOTICE IS HEREBY GIVEN that **Heather Harrison, representing Family Fun RV has submitted an application for a Design Review and a Non-Conforming Use to have recreational Vehicle sales and maintenance and two food carts. The subject property is located at 58209 Columbia River Highway. The property is zoned General Commercial (C-3). The site contains 4.47 acres and is identified as Tax Map No. 4108-CA-03700**

THIS APPLICATION IS FOR: (X) Administrative Review; () Planning Commission, Hearing Date:

PLEASE RETURN BY: **August 4, 2022**

Planner: **Deborah Jacob**

The enclosed application is being referred to you for your information and comment. Your recommendation and suggestions will be used by the County Planning Department and/or the Columbia County Planning Commission in arriving at a decision. Your prompt reply will help us to process this application and will ensure the inclusion of your recommendations in the staff report. Please comment below.

1. _____ We have reviewed the enclosed application and have no objection to its approval as submitted.
2. _____ Please see attached letter or notes below for our comments.
3. _____ We are considering the proposal further, and will have comments to you by _____.
4. _____ Our board must meet to consider this; we will return their comments to you by _____.
5. _____ Please contact our office so we may discuss this.
6. _____ We recommend denial of the application, for the reasons below:

COMMENTS: _____

Signed: _____ Printed Name: _____

Title: _____ Date: _____

chase

192-22-000198-PLNG

COLUMBIA COUNTY
LAND DEVELOPMENT SERVICES

COURTHOUSE
230 STRAND
ST. HELENS, OREGON 97051
(503) 397-1501



File No. DR 22-06

General Application

GENERAL LAND USE PERMIT APPLICATION

TYPE OF PERMIT: Zone Change Temporary Permit
 X Site Design Review Resource Management Plan

Other: _____

APPLICANT: Name: Heather Harrison - Family Fun RV

Mailing address: 58209 Columbia River Highway St. Helens, Oregon 97051

Phone No.: Office (971) 808-7912 Home _____

Are you the ✓ property owner? owner's agent?

PROPERTY OWNER: ✓ same as above, OR:

Name: _____

Mailing Address: _____

PROPERTY ADDRESS (if assigned): 58209 Columbia River Highway St. Helens, Oregon 97051

TAX ACCOUNT NO.: 17046 Acres: 4.47 Zoning: C-3

4108 CA-03700 Acres: _____ Zoning: _____

_____ Acres: _____ Zoning: _____

PRESENT USES: (farm, forest, bush, residential, etc.)

Use: _____ Approx. Acres

Commercial _____ 4.47 Acres

_____ _____

_____ _____

Total acres (must agree with above): 4.47 Acres

PROPOSED USES:

Recreational Vehicle sales, recreational vehicle maintenance, and two food carts.

WATER SUPPLY: _____ Private well.

Is the well installed? ____ Yes ____ No

Community system.

Name McNulty Water

METHOD OF SEWAGE DISPOSAL: Community Sewer. Name City of St. Helens

____ Not applicable.

____ Septic System.

If Septic, does the subject property already have a system? ____ Yes ____ No

If no, is the property approved for a Septic System? ____ Yes ____ No

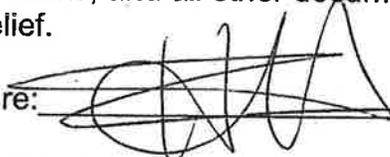
CONTIGUOUS PROPERTY: List all other properties you own which have boundary lines touching this property:

<u>Tax Account No.</u>	<u>Acres</u>	<u>Co-owners (if any)</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>
<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

CERTIFICATION:

I hereby certify that all of the above statements, and all other documents submitted, are accurate and true to the best of my knowledge and belief.

Date: 10-23-2022

Signature: 

NOTE: Please attach an accurate and detailed plot plan, including property lines, existing and proposed structures, location of septic tank and drainfield, farm - forest areas, large natural features (cliffs, streams, etc.).

+++++

Planning Department Use Only

Date Rec'd. _____ Hearing Date: _____
Or: Administrative _____

Receipt No. _____ Stormwater & Erosion Control Fees _____

Zoning: _____ Staff Member: _____

+++++

COLUMBIA COUNTY
LAND DEVELOPMENT SERVICES
COURTHOUSE
230 STRAND
ST. HELENS OREGON 97051
(503) 397-1501

RECEIVED
JUN 23 2022
Land Development Services
File No. _____

General Application

NCU 23-01

GENERAL LAND USE PERMIT APPLICATION

TYPE OF PERMIT: Zone Change Temporary Permit
 Site Design Review Resource Management Plan

Other: NON-CONFORMING USE-Rebuild; Change; Move; Expand
Expansion of NCU.

APPLICANT: Name: Family Fun RV - Heather Harrison

Mailing address: 58209 Columbia River Highway St. Helens, Oregon 97051

Phone No.: Office (971) 808-7912 *work* Home _____

Are you the property owner? owner's agent?

503-807-1049 cell

PROPERTY OWNER: same as above, OR:

Name: _____

Mailing Address: _____

PROPERTY ADDRESS (if assigned): _____

58209 Columbia River Highway St. Helens, Oregon 97051

TAX ACCOUNT NO.: 17046 Acres: 4.47 Zoning: C-3

4108-CA-03700 Acres: _____ Zoning: _____

_____ Acres: _____ Zoning: _____

PRESENT USES: (farm, forest, bush, residential, etc.)

Use:	Approx. Acres
Commercial	4.47

_____	_____
_____	_____

Total acres (must agree with above): 4.47 Acres

PROPOSED USES:

Recreational Vehicle sales, recreational vehicle maintenance, and two food carts.

WATER SUPPLY: _____ Private well Community system

Name of community water system: McNulty Water

SEWAGE DISPOSAL SYSTEM: _____ Subsurface Septic Community

Is the property approved for a subsurface sewage disposal system?

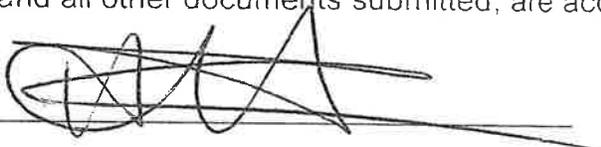
Yes _____ No _____ Not Applicable

CONTIGUOUS PROPERTY: List all other properties you own which have boundary lines touching this property:

<u>Tax Account No.</u>	<u>Acres</u>	<u>Co-owners (if any)</u>
N/A		
N/A		
N/A		

CERTIFICATION:

I hereby certify that all of the above statements, and all other documents submitted, are accurate and true to the best of my knowledge and belief.

Date: 6-23-2022 Signature: 

NOTE: Please attach an accurate and detailed plot plan, including property lines, existing and proposed structures, location of septic tank and drainfield, farm - forest areas, large natural features (cliffs, streams, etc.).

+++++
Planning Department Use Only

Date Rec'd. _____

Hearing Date: _____

Receipt No.: 398878

Administrative: _____
Check #: _____ Cash Credit

Zoning: _____

Staff Member: _____

+++++

NON-CONFORMING USE FACT SHEET

1. Current use of property of buildings: _____
The existing property was historically used as a commerical restaurant, but has been vacant in recent years.

2. If you are enlarging a non-conforming building, please supply the following:
Land area occupied by the existing building: 7,318 square feet.
Land area to be occupied by addition(s): 2,907 square feet.
(Note: this may not be more than 40% of the land area of the existing building)

3. Describe the practical difficulties or public need your proposal will alleviate:
Within the greater columbia county area, there are currently no recreational vehicle sales facilities. In addition, this development proposes for the renovation of the existing building on-site to support a full sales staff, and a new parts department.

4. Describe how your proposal will be no more than is necessary to overcome the practical difficulties or to meet the public need: _____
The proposed development proposes to utilize the existig building for sales and for a parts department. This development does not propose substantial paving/impervious area and utilizes existing servcies to the greatest practical extent. Added impervious area is limited to a new sidewalk which is located to the south of the proposed food carts.

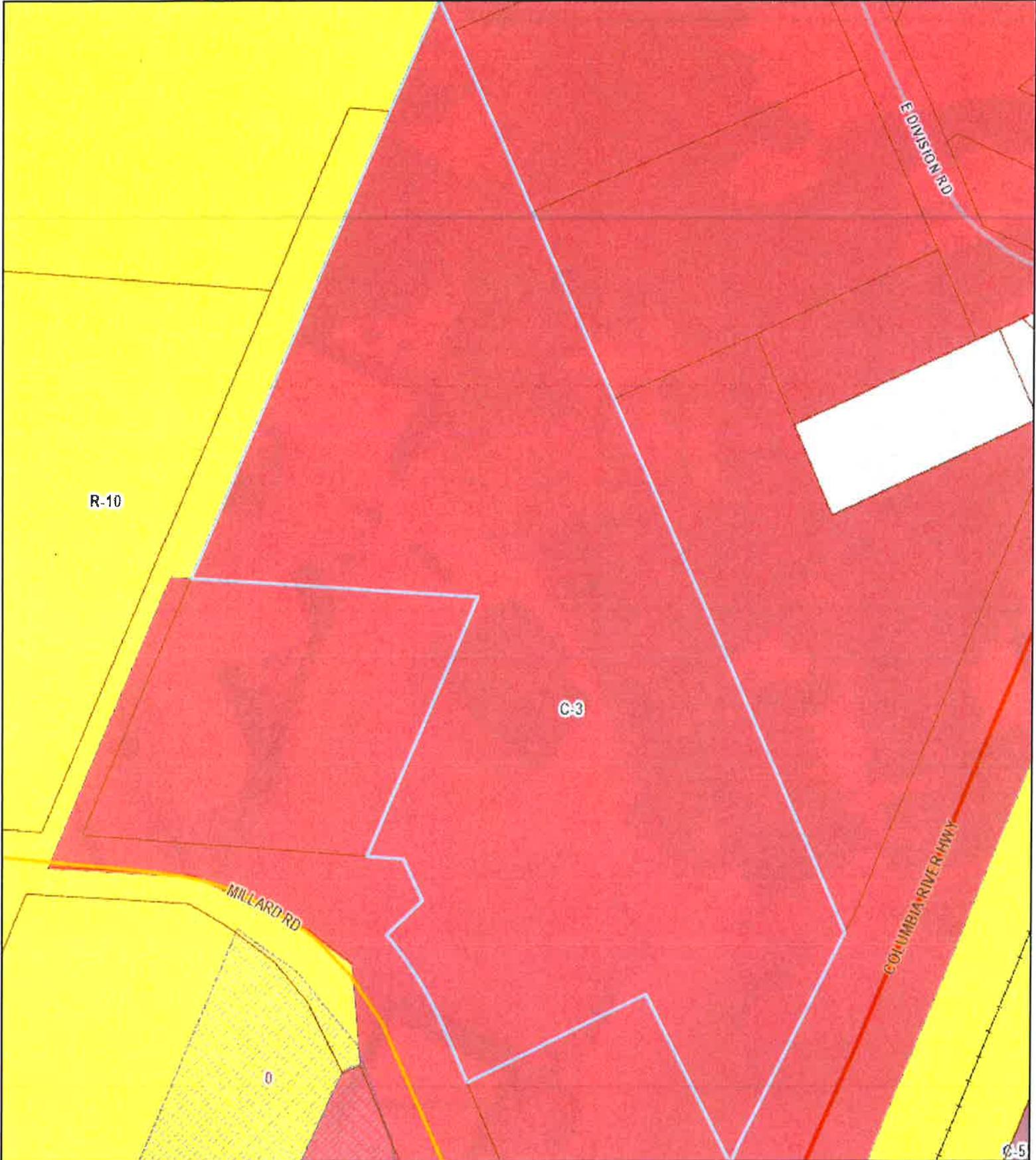
5. Describe how your proposal will not interfere with the use and enjoyment of other properties in the area, nor reduce their property values: **The proposed development has been designed to create an enjoyable experience for those looking to purchase an RV as well as for those looking**

Number 5 Continued:

to have maintenance performed or purchase replacement parts. By renovating the existing building on-site, constructing a new maintenance shop, and including an area for food carts on-site the overall lot will be greatly improved and will provide a great service to the Columbia County area.



DR 22-06 NCU 23-01 Zoning



7/19/2022 9:32 AM

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Disclaimer: This map was produced using Columbia County GIS data. The GIS data is maintained by the County to support its governmental activities and is subject to change without notice. This map should not be used for survey or engineering purposes. Columbia County assumes no responsibility with regard to the selection, performance or use of information on this map



DR 22-06 NCU 23-01 Aerial



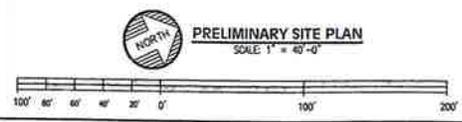
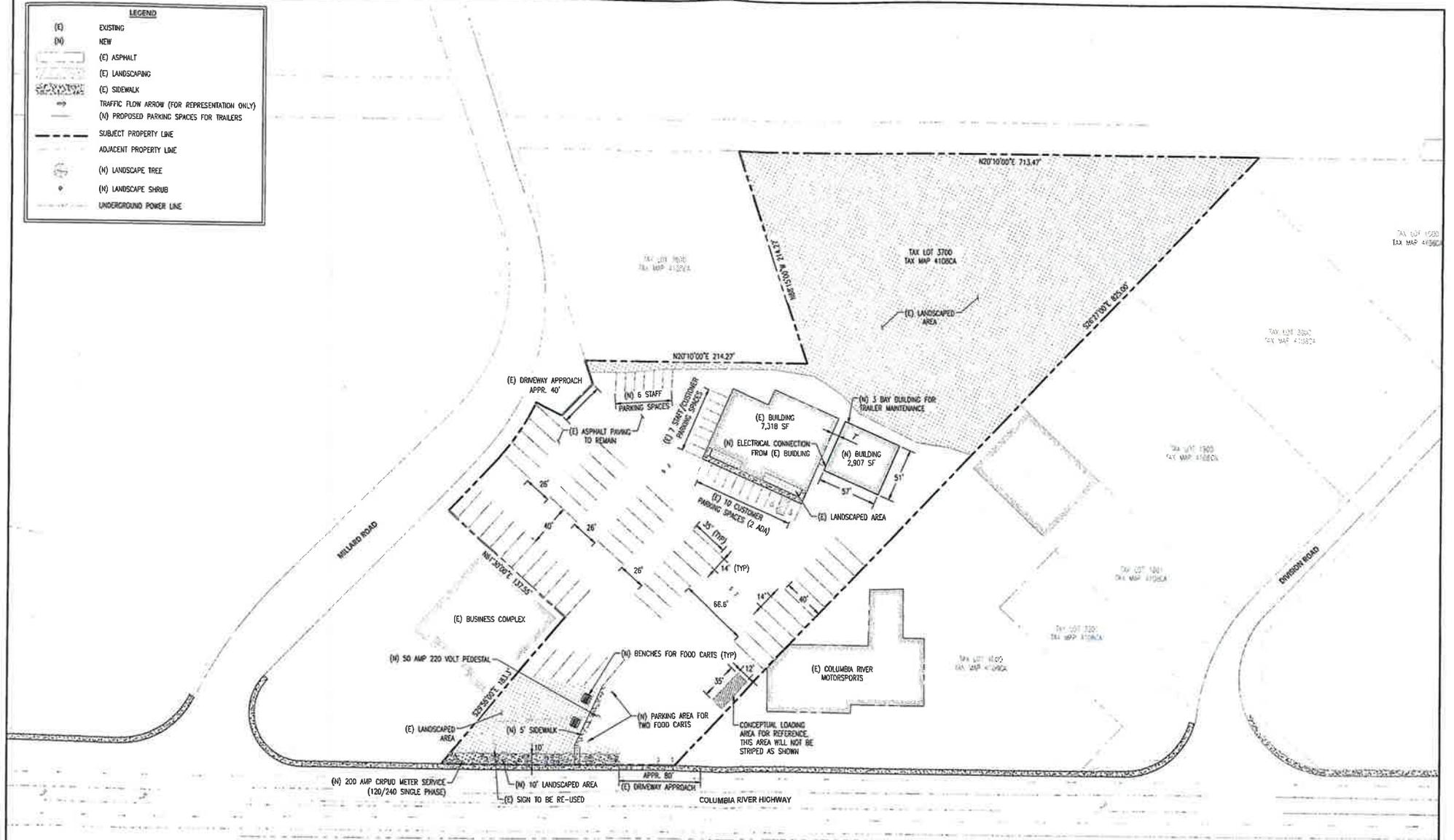
Oregon Statewide Imagery Program (OSIP) - Oregon Imagery Framework Implementation Team

7/19/2022 9:31 AM

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LEGEND	
(E)	EXISTING
(N)	NEW
	(E) ASPHALT
	(E) LANDSCAPING
	(E) SIDEWALK
	TRAFFIC FLOW ARROW (FOR REPRESENTATION ONLY)
	(N) PROPOSED PARKING SPACES FOR TRAILERS
	SUBJECT PROPERTY LINE
	ADJACENT PROPERTY LINE
	(N) LANDSCAPE TREE
	(N) LANDSCAPE SHRUB
	UNDERGROUND POWER LINE



DATE: 04/23/2022
 PRELIMINARY
 NOT
 FOR CONSTRUCTION

REV.	REVISION REQUIRED	DATE

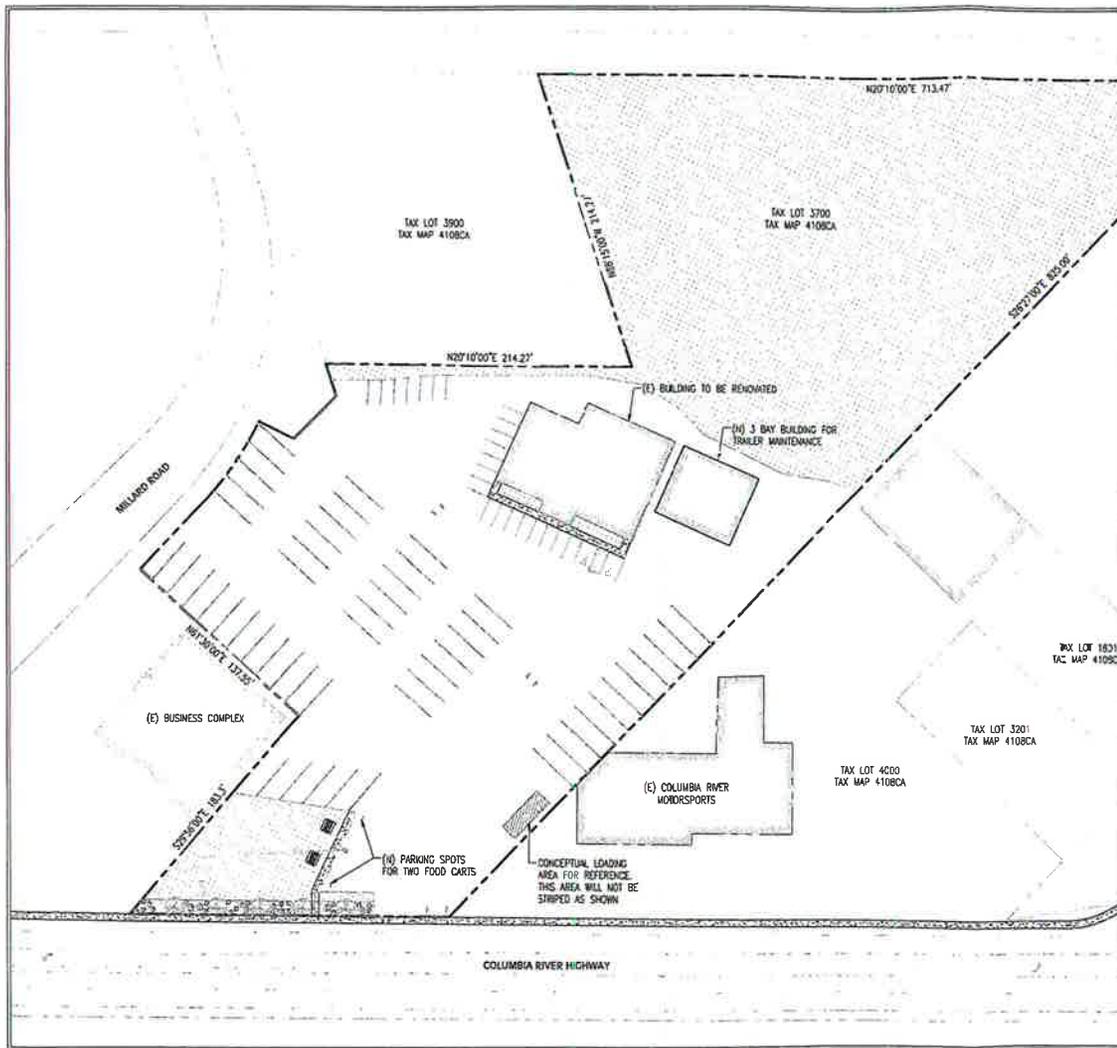


PROJECT NO. 3313	PRELIMINARY SITE PLAN
DESIGNED BY CAB	FAMILY FUN RV
APPROVED BY HEATHER HARRISON	
FILE D-3313-C-2	DATE 02/25/2022

SHEET C-2

FAMILY FUN RV

HEATHER HARRISON
58209 COLUMBIA RIVER HIGHWAY
ST. HELENS, OR 97051



VICINITY MAP
SCALE 1/8" = 100'

PROJECT TEAM

CIVIL ENGINEER
LOWER COLUMBIA ENGINEERING
58540 MCJULITY WAY
ST. HELENS, OR 97051
PHONE: (503) 386-0399

CONTACT: CHASE BERG
chase@lowercolumbiaengr.com

ENGINEER: ANDREW NEUM
andrew@lowercolumbiaengr.com

OWNER
FAMILY FUN RV
58209 COLUMBIA RIVER HIGHWAY
ST. HELENS, OR 97051
PHONE: (971) 803-7912

CONTACT: HEATHER HARRISON
familyfun@outlook.com

GENERAL CONTRACTOR
ROBERT EVANS COMPANY
1922 NW PETTYBORNE STREET
PORTLAND, OR 97209
PHONE: (503) 646-7805

CONTACT: BEN WILEY, P.E.
ben@robertevansco.com

**S/D PARTY CONSULTANTS NOT SHOWN - DEFER TO SUBMITTALS

DEFERRED SUBMITTALS

- ELECTRICAL
- PLUMBING
- MECHANICAL

MASTER LEGEND

(E)	EXISTING
(N)	NEW
- - -	(E) MINOR CONTOUR
- - -	(E) MAJOR CONTOUR
- - -	(N) MINOR CONTOUR
- - -	(N) MAJOR CONTOUR
- - -	EXISTING FENCE
⊕	(E) FIRE HYDRANT
---	PROPERTY LINE
---	ADJACENT PROPERTY LINE
S-41	(E) SANITARY SEWER
W-20	(E) WATER MAIN
---	(E) OVERHEAD WIRE
⊕	(E) SANITARY MANHOLE
⊕	(E) CATCH BASIN
S-41	(N) SANITARY SEWER MAIN
W-20	(N) WATER MAIN
⊕	(N) SANITARY CLEANOUT
⊕	(N) SANITARY MANHOLE
→	DRAINAGE FLOW ARROW
⊕	(N) TREE
▨	CONCRETE
▨	(E) LANDSCAPING
▨	(E) ASPHALT
⊕	(N) LANDSCAPE TREE
⊕	(N) LANDSCAPE SHRUB
---	UNDERGROUND POWER LINE
→	(N) TRAFFIC FLOW ARROW
---	(N) PROPOSED PARKING SPACES FOR TRAILERS

DRAWING INDEX

SHEET	DESCRIPTION
	CIVIL
G-1	PLOT PLAN, VICINITY MAP AND NOTES
C-1	EXISTING CONDITIONS PLAN
C-2	PRELIMINARY SITE PLAN
C-3	STORMWATER AND GRADING PLAN
C-4	LANDSCAPE PLAN
C-5	EXTERNAL ILLUMINATION PLAN
	ARCHITECTURAL
A-1	EXISTING FLOOR PLAN
A-2	PROPOSED FLOOR PLAN
A-3	PROPOSED BUILDING ELEVATIONS

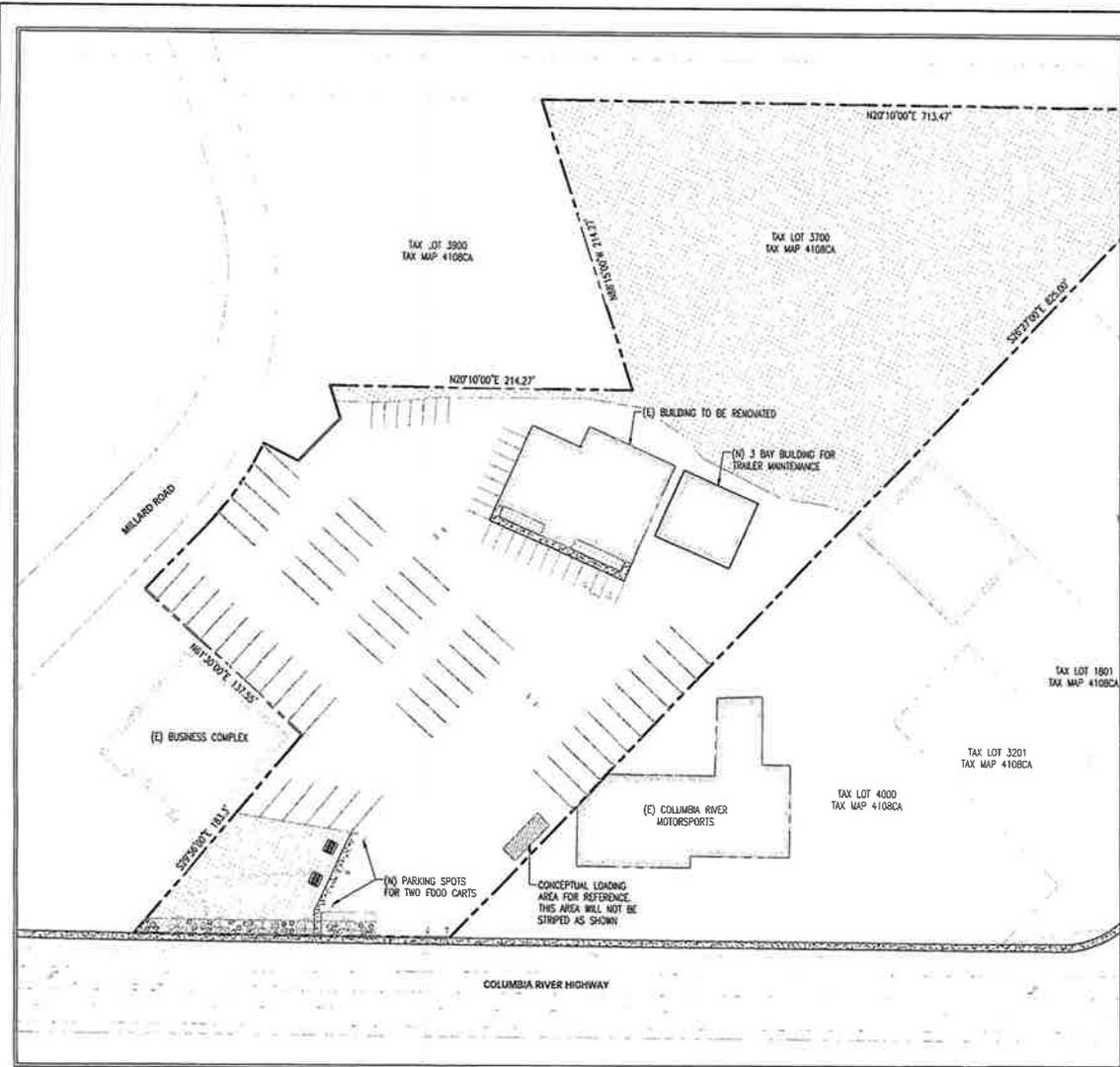


REV.	REVISION RECORD	DATE		St. Helens, Oregon 503 386-0399	PROJECT NO: 3313 DRAWN BY: CAB APPROVED BY: HEATHER HARRISON FILE: D-3513-G-1	PLOT PLAN, VICINITY MAP AND NOTES FAMILY FUN RV HEATHER HARRISON	SHEET G-1
01	DATE: 04/23/2022 PRELIMINARY NOT FOR CONSTRUCTION			DATE: 02/25/2022			

100 80 60 40 20 0 100 200

FAMILY FUN RV

HEATHER HARRISON
58209 COLUMBIA RIVER HIGHWAY
ST. HELENS, OR 97051



VICINITY MAP
SCALE: NTS

PROJECT TEAM

CIVIL ENGINEER
LOWER COLUMBIA ENGINEERING
5840 MCNULTY WAY
ST. HELENS, OR 97051
PHONE: (503) 366-0399
CONTACT: CHASE BERG
chase@lowercolumbiaengr.com

ENGINEER: ANDREW MEMI
andrew@lowercolumbiaengr.com

OWNER
FAMILY FUN RV
58209 COLUMBIA RIVER HIGHWAY
ST. HELENS, OR 97051
PHONE: (971) 803-7912
CONTACT: HEATHER HARRISON
familyfun@boulton.com

GENERAL CONTRACTOR
ROBERT EVANS COMPANY
1922 NW PETTYGROVE STREET
PORTLAND, OR 97209
PHONE: (503) 648-7805
CONTACT: BEN WILEY, P.E.
ben@robertevansco.com

***3RD PARTY CONSULTANTS
NOT SHOWN - REFER TO SUBMITTALS

MASTER LEGEND

(E)	EXISTING
(N)	NEW
(E) MINOR CONTOUR	(E) MAJOR CONTOUR
(N) MINOR CONTOUR	(N) MAJOR CONTOUR
EXISTING FENCE	(E) FIRE HYDRANT
PROPERTY LINE	ADJACENT PROPERTY LINE
(E) SANITARY SEWER	(E) WATER MAIN
(E) OVERHEAD WIRE	(E) SANITARY MANHOLE
(E) CATCH BASIN	(N) SANITARY SEWER MAIN
(N) WATER MAIN	(N) SANITARY CLEANOUT
(N) SANITARY CLEANOUT	(N) SANITARY MANHOLE
(N) SANITARY MANHOLE	DRAINAGE FLOW ARROW
(N) TREE	(N) TREE
CONCRETE	(E) LANDSCAPING
(E) LANDSCAPING	(E) ASPHALT
(N) LANDSCAPE TREE	(N) LANDSCAPE SHRUB
(N) LANDSCAPE SHRUB	UNDERGROUND POWER LINE
UNDERGROUND POWER LINE	(N) TRAFFIC FLOW ARROW
(N) TRAFFIC FLOW ARROW	(N) PROPOSED PARKING SPACES FOR TRAILERS

DRAWING INDEX

SHEET	DESCRIPTION
CIVIL	
G-1	PLOT PLAN, VICINITY MAP AND NOTES
C-1	EXISTING CONDITIONS PLAN
C-2	PRELIMINARY SITE PLAN
C-3	SPERMATEL AND GRADING PLAN
C-4	LANDSCAPE PLAN
C-5	EXTERNAL ILLUMINATION PLAN
ARCHITECTURAL	
A-1	EXISTING FLOOR PLAN
A-2	PROPOSED FLOOR PLAN
A-3	PROPOSED BUILDING ELEVATIONS

DEFERRED SUBMITTALS

- ELECTRICAL
- PLUMBING
- MECHANICAL

PLOT PLAN
SCALE: 1" = 40'-0"



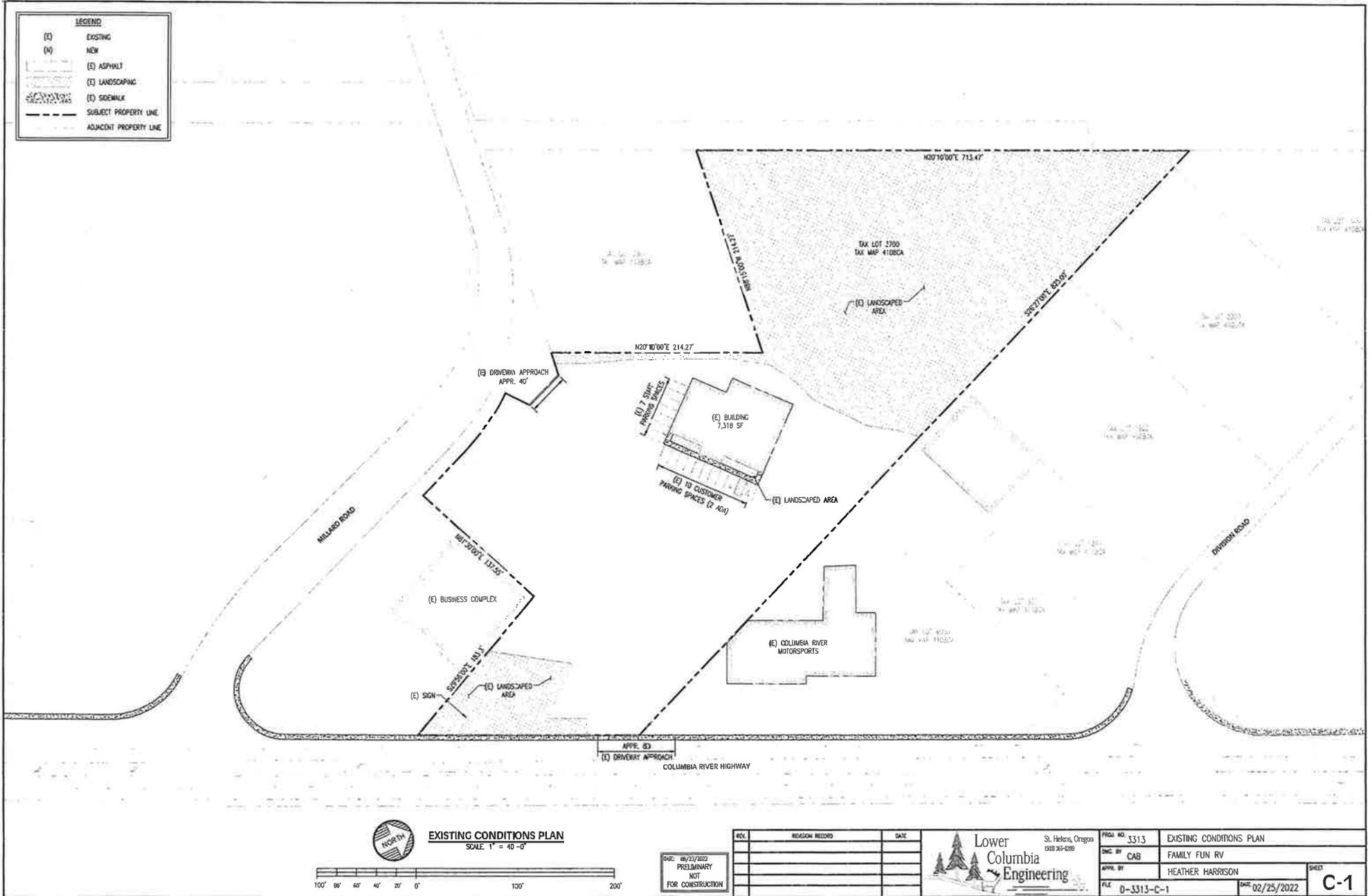
DATE: 04/23/2022
PRELIMINARY
NOT
FOR CONSTRUCTION

REV	REVISION RECORD	DATE

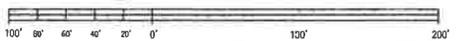


PRJL NO. 3313	PLOT PLAN, VICINITY MAP AND NOTES
ENCL. BY CAB	FAMILY FUN RV
APPL. BY HEATHER HARRISON	SHEET
FILE D-3313-G-1	DATE 02/25/2022

LEGEND	
(E)	EXISTING
(N)	NEW
	(E) ASPHALT
	(E) LANDSCAPING
	(E) SIDEWALK
	SUBJECT PROPERTY LINE
	ADJACENT PROPERTY LINE



EXISTING CONDITIONS PLAN
SCALE 1" = 40'-0"



DATE: 08/21/2022
PRELIMINARY
NOT
FOR CONSTRUCTION

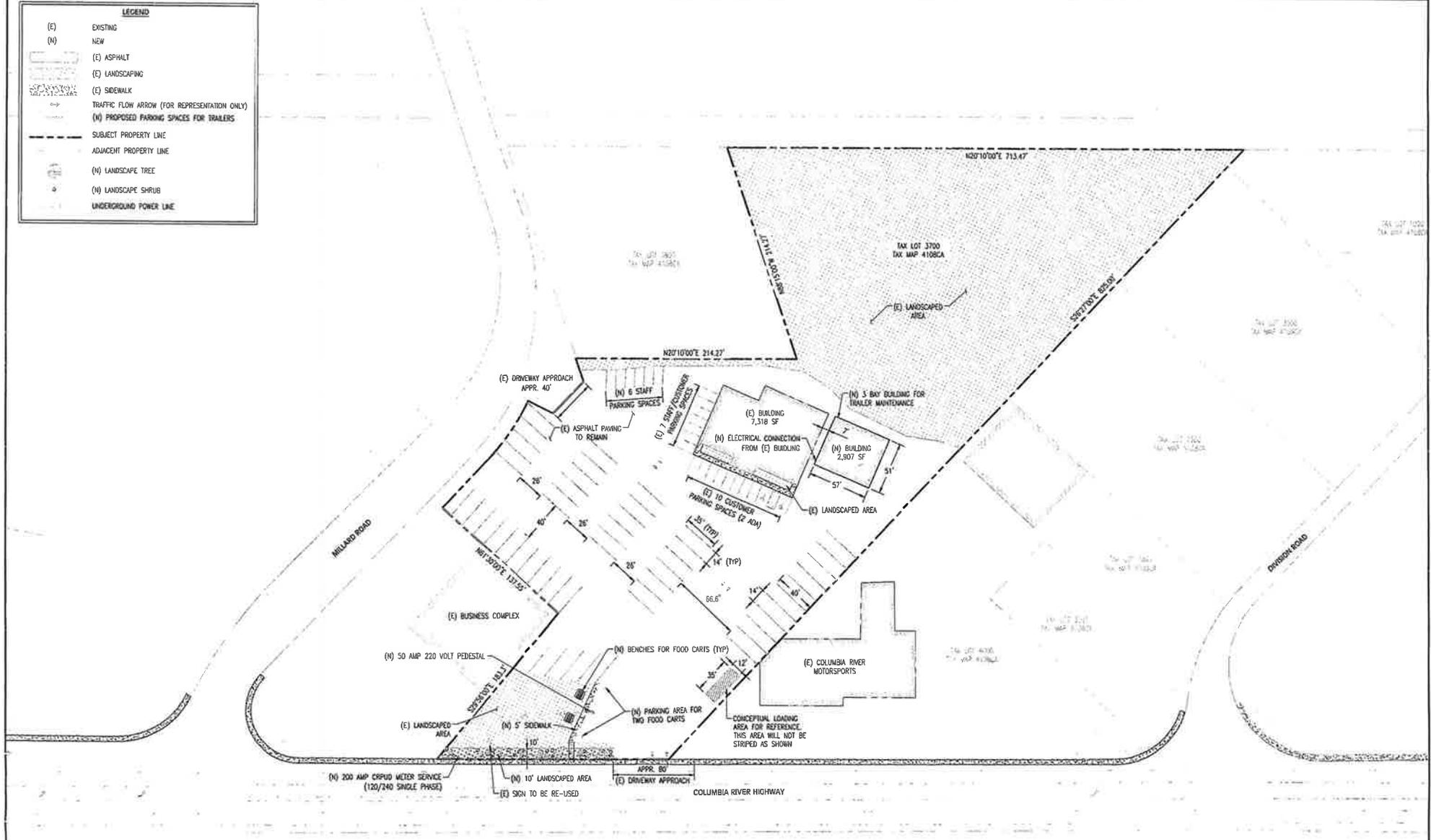
REV.	REVISION RECORD	DATE


 Lower Columbia Engineering
 St. Helens, Oregon
 (503) 365-0209

PROJ. NO.	3313	EXISTING CONDITIONS PLAN
ENG. BY	CAB	FAMILY FUN RV
APP. BY	HEATHER HARRISON	
FILE	D-3313-C-1	DATE: 02/25/2022

C-1

LEGEND	
(E)	EXISTING
(N)	NEW
	(E) ASPHALT
	(E) LANDSCAPING
	(E) SIDEWALK
	TRAFFIC FLOW ARROW (FOR REPRESENTATION ONLY)
	(N) PROPOSED PARKING SPACES FOR TRAILERS
	SUBJECT PROPERTY LINE
	ADJACENT PROPERTY LINE
	(N) LANDSCAPE TREE
	(N) LANDSCAPE SHRUB
	UNDERGROUND POWER LINE



PRELIMINARY SITE PLAN
SCALE: 1" = 40'-0"



DATE: 06/23/2022
NOT FOR CONSTRUCTION

REV.	REVISION RECORD	DATE

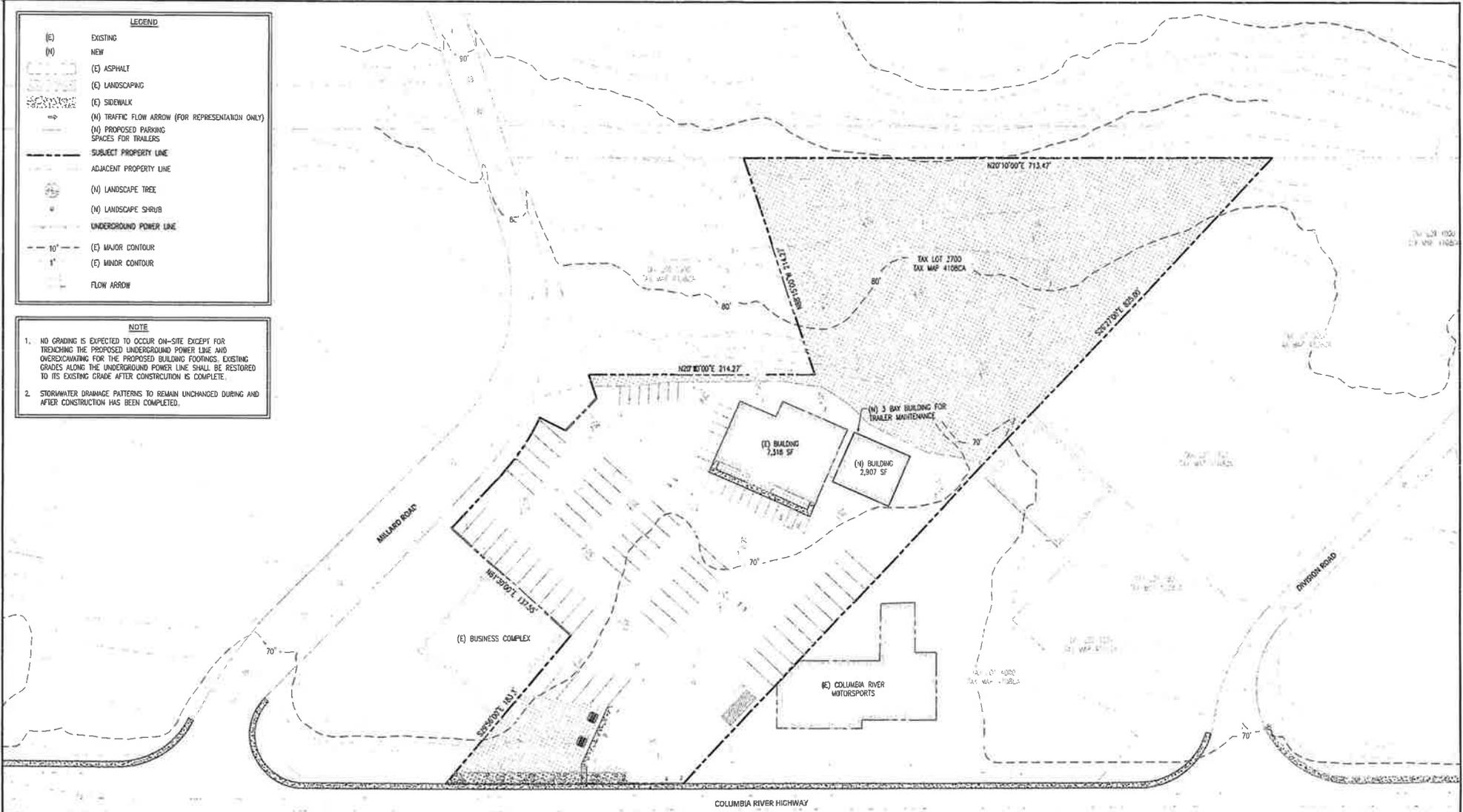


PROJ. NO. 3313	PRELIMINARY SITE PLAN
ENCL. BY CAB	FAMILY FUN RV
APPR. BY HEATHER HARRISON	SHEET
FILE D-3313-C-2	DATE 02/25/2022

LEGEND	
(E)	EXISTING
(N)	NEW
	(E) ASPHALT
	(E) LANDSCAPING
	(E) SIDEWALK
	(N) TRAFFIC FLOW ARROW (FOR REPRESENTATION ONLY)
	(N) PROPOSED PARKING SPACES FOR TRAILERS
	SUBJECT PROPERTY LINE
	ADJACENT PROPERTY LINE
	(N) LANDSCAPE TREE
	(N) LANDSCAPE SHRUB
	UNDERGROUND POWER LINE
	(E) MAJOR CONTOUR
	(E) MINOR CONTOUR
	FLOW ARROW

NOTE

- NO GRADING IS EXPECTED TO OCCUR ON-SITE EXCEPT FOR TRENCHING THE PROPOSED UNDERGROUND POWER LINE AND OVEREXCAVATING FOR THE PROPOSED BUILDING FOOTINGS. EXISTING GRADES ALONG THE UNDERGROUND POWER LINE SHALL BE RESTORED TO ITS EXISTING GRADE AFTER CONSTRUCTION IS COMPLETE.
- STORMWATER DRAINAGE PATTERNS TO REMAIN UNCHANGED DURING AND AFTER CONSTRUCTION HAS BEEN COMPLETED.



STORMWATER AND GRADING PLAN
SCALE 1" = 40'-0"



DATE: 06/22/2022
PRELIMINARY
NOT
FOR CONSTRUCTION

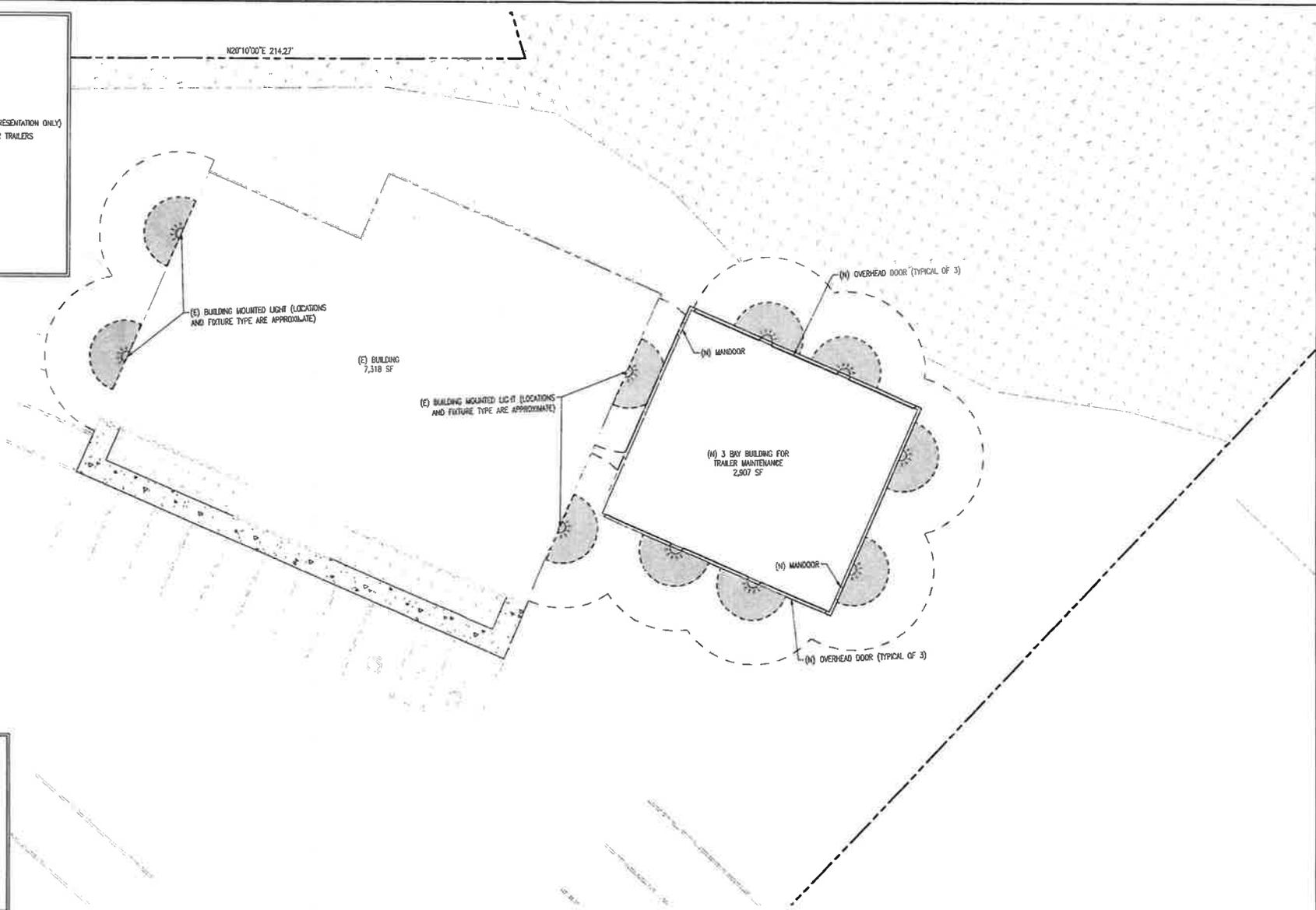
REV.	REVISION RECORD	DATE



PROJECT NO. 3313	STORMWATER AND GRADING PLAN
ENGINEER BY CAB	FAMILY FUN RV
APPROVED BY HEATHER HARRISON	
FILE D-3313-C-3	DATE 02/25/2022

C-3

LEGEND	
(E)	EXISTING
(N)	NEW
	(E) ASPHALT
	(E) LANDSCAPING
	(E) SIDEWALK
	(N) TRAFFIC FLOW ARROW (FOR REPRESENTATION ONLY)
	(N) PROPOSED PARKING SPACES FOR TRAILERS
	SUBJECT PROPERTY LINE
	ADJACENT PROPERTY LINE
	UNDERGROUND POWER LINE
	BOUNDARY OF 1-FOOTCANDLE
	BOUNDARY OF 0.1-FOOTCANDLE
	AREA OF AT LEAST 1-FOOTCANDLE
	AREA OF AT LEAST 0.1-FOOTCANDLE



CONTRACTOR TO PROVIDE FOOTCANDLE (fc) LEVELS AND SHIELDING AS RECOMMENDED BY ILLUMINATING ENGINEERING SOCIETY (I.E.S.), AND AS SHOWN IN OREGON ENERGY TRUST'S LATEST "FOOTCANDLE LIGHTING GUIDE" TO ILLUMINATE AND ASSURE SAFETY AT WALKWAYS, EXTERIOR ACTIVITY AREAS (DELIVERY AND LOADING), PARKING, MAIN ENTRANCE, AND ALL OTHER EXTERIOR ENTRANCES AND EXITS. ASSURE NO LIGHTS INTO PUBLIC RIGHT-OF-WAYS OR NEARBY RESIDENCES.

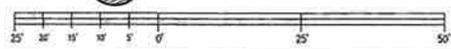
HORIZONTAL (fc)
 BUILDING EXTERIOR:
 AVERAGE MAINTAINED (fc) 0.8 fc
 RANGE OF MAINTAINED (fc) .5 - 2 fc

PROVIDE CUT OFF SHIELDS AT EACH LIGHT FIXTURE AS REQUIRED TO COMPLY WITH I.E.S. STANDARDS.

LIGHTING FIXTURE LEGEND

WAC LIGHTING COMPANY - MODERN FORMS
 SUSPENSE MODEL WS-181911 AT 14'-11" ABOVE
 FINISH FLOOR TO CENTERLINE OF FIXTURE

EXTERNAL ILLUMINATION PLAN
 SCALE: 1" = 10'-0"



DATE: 02/23/2022
 PRELIMINARY
 NOT
 FOR CONSTRUCTION

REV.	REVISION RECORD	DATE

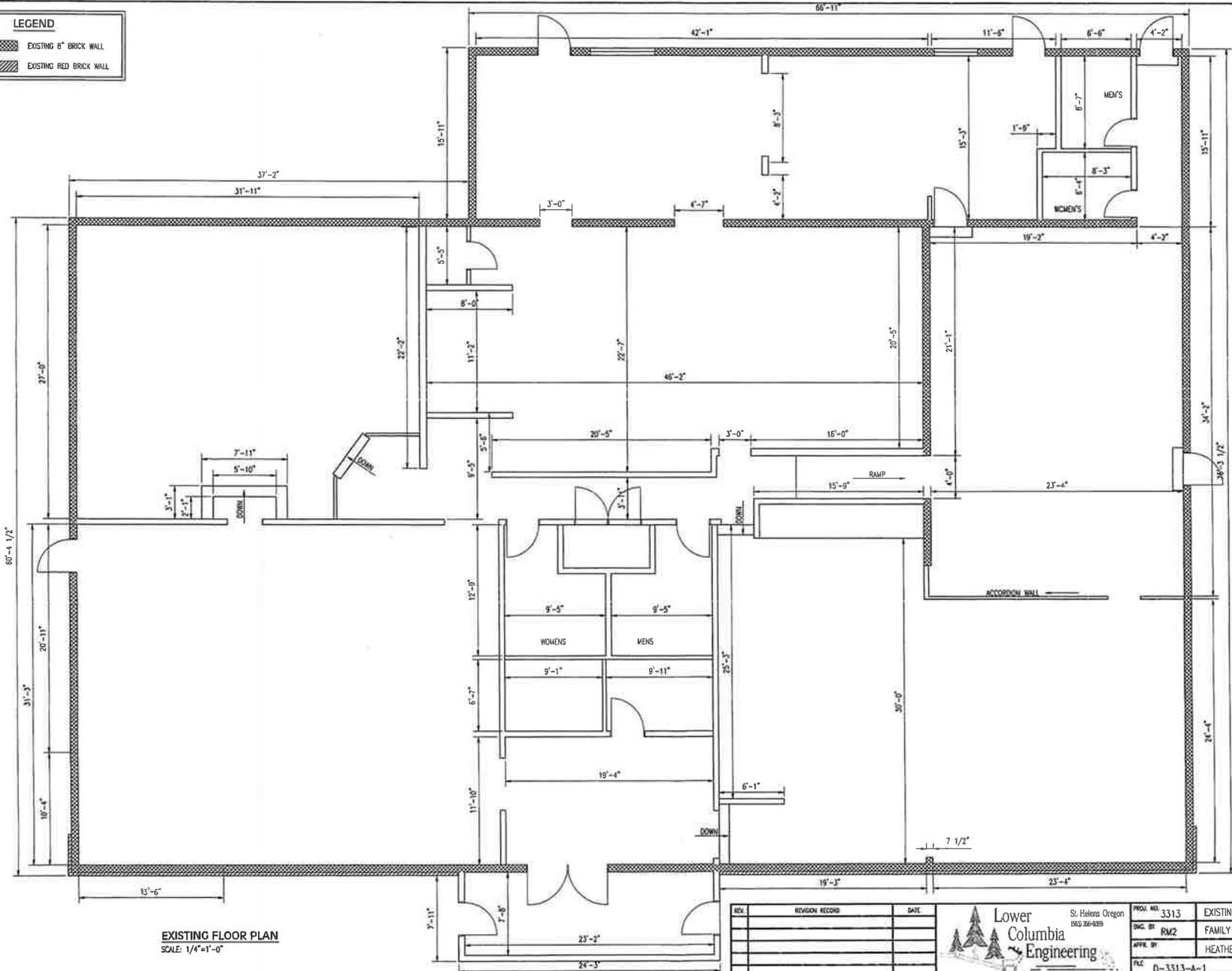
Lower Columbia Engineering
 St. Helens, Oregon
 503-366-0282

PROJ. NO. 3313	EXTERNAL ILLUMINATION PLAN	SHEET C-5
DWG. BY: CAB	FAMILY FUN RV	
APP. BY: HEATHER HARRISON		
FILE: D-3313-C-5	DATE: 02/25/2022	

LEGEND

EXISTING 8" BRICK WALL

EXISTING RED BRICK WALL



EXISTING FLOOR PLAN
SCALE: 1/4"=1'-0"

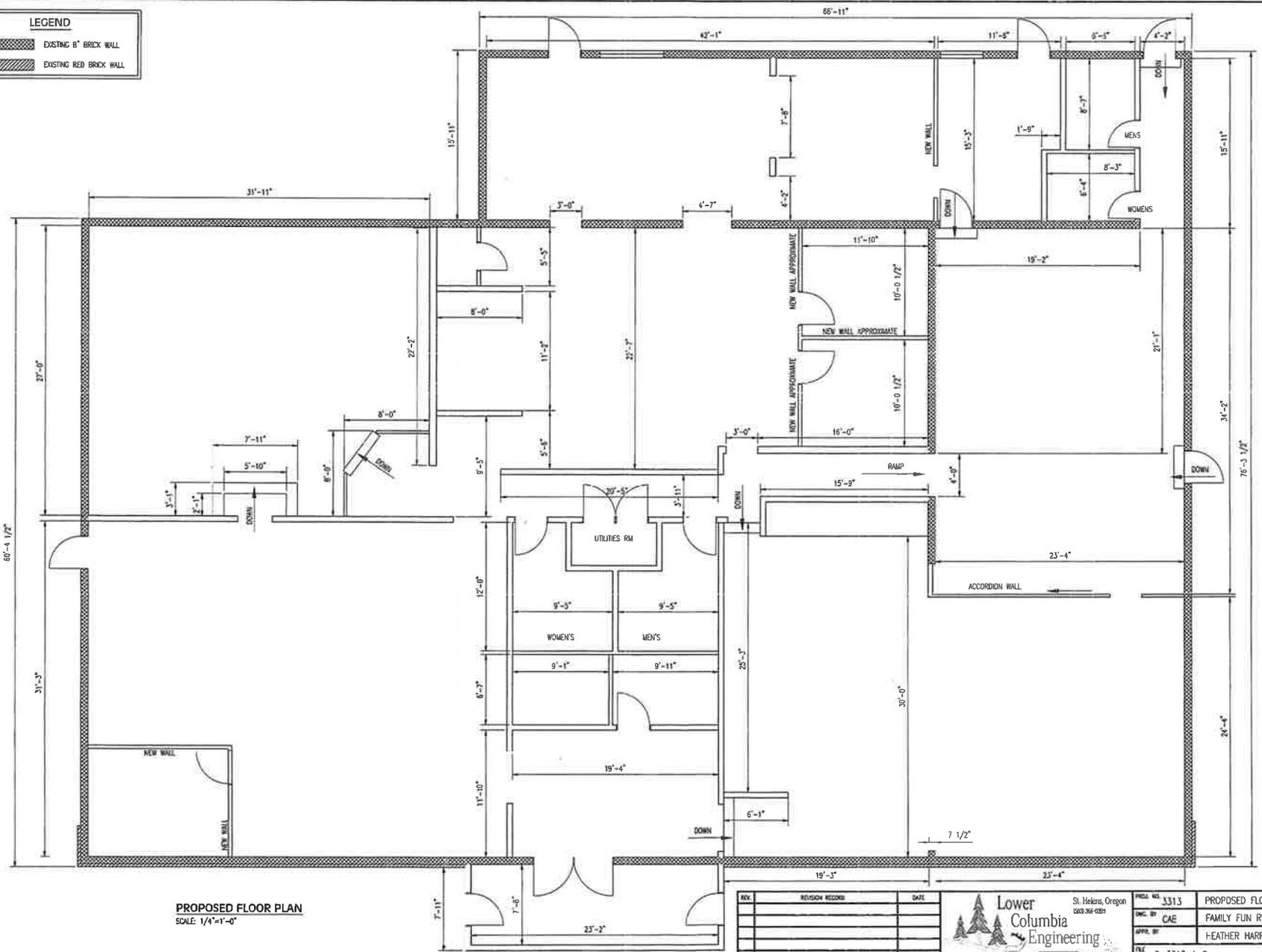
DATE: 04/23/2022
PRELIMINARY
NOT FOR CONSTRUCTION

REV.	REVISION RECORD	DATE

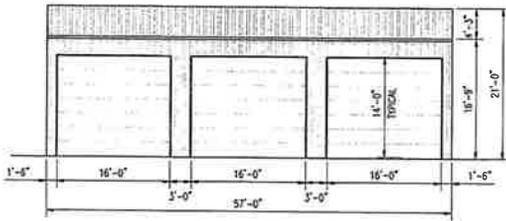
Lower Columbia Engineering
St. Helens Oregon
503.366.0029

PROJ. NO. 3313	EXISTING FLOOR PLAN	SHEET
ENG. BY: RM2	FAMILY FUN RV	NOT
APPR. BY: HEATHER HARRISON		FOR CONSTRUCTION
PAC: D-3313-A-1	DATE: 02/25/2022	A-1

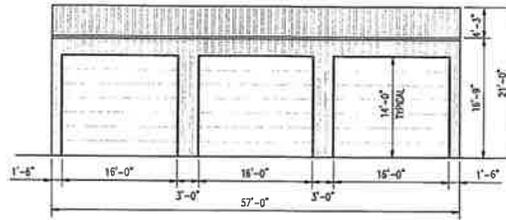
LEGEND	
	EXISTING 6" BRICK WALL
	EXISTING RED BRICK WALL



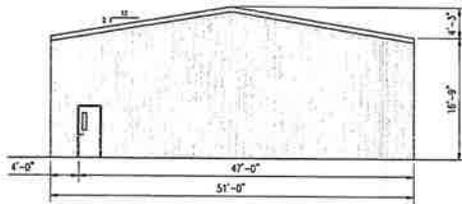
DATE: 02/25/2022
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 FOR CONSTRUCTION



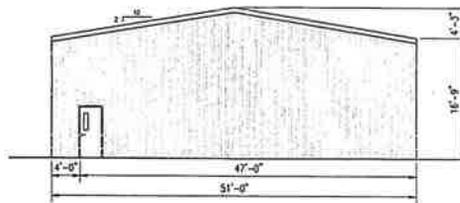
SOUTHEAST ELEVATION
SCALE: 1/8"=1'-0"



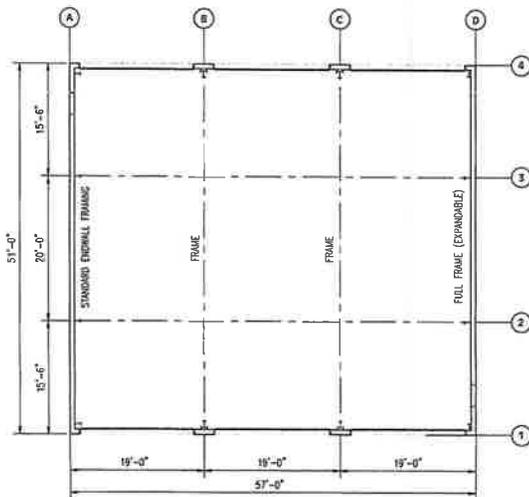
NORTHWEST ELEVATION
SCALE: 1/8"=1'-0"



SOUTHWEST ELEVATION
SCALE: 1/8"=1'-0"



NORTHEAST ELEVATION
SCALE: 1/8"=1'-0"



FRAMING LAYOUT
SCALE: 1/8"=1'-0"



PRE-ENGINEERED METAL BUILDING SPECIFICATIONS

1. APPLICABLE GOVERNING CODES
 - A. 2019 OREGON STRUCTURAL SPECIALTY CODE
 - B. CURRENT AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL OF STEEL CONSTRUCTION-I
 - C. AMERICAN WELDING SOCIETY D11.1
 - D. ALL LOCAL CODES SHALL BE FOLLOWED AND VERIFIED BY BUILDING MANUFACTURER.
2. DESIGN CRITERIA (TO BE VERIFIED BY BUILDING ENGINEER)
 - A. MINIMUM ROOF & GROUND SNOW LOAD = 25 POUNDS PER SQUARE FOOT
 - B. BUILDING IS HEATED
 - C. COLLATERAL ROOF DEAD LOAD = 5 POUNDS PER SQUARE FOOT
 - D. BASIC WIND SPEED = 120 MPH PER HOUR (3-SECOND GUST)
 - E. WIND EXPOSURE = C
 - F. CATEGORY CLASSIFICATION FOR IMPORTANCE FACTOR = II
 - G. SEISMIC DESIGN CATEGORY D & THE FOLLOWING FACTORS
 - $S_a = 0.841$
 - $S_s = 0.408$
3. PRIMARY STRUCTURE
 - A. ALL STRUCTURAL STEEL PLATE SHALL CONFORM TO ASTM A529, A572 OR A1011 GRADE 50.
 - B. ALL HOT ROLLED WELD SHAPES SHALL CONFORM TO ASTM A36 OR A572.
 - C. ALL SQUARE AND RECTANGULAR TUBING SHALL CONFORM TO ASTM A500 GRADE B.
 - D. ALL ROUND PIPE SHALL CONFORM TO ASTM A53 OR A500 GRADE B.
 - E. ALL FRAMES SHALL RECEIVE 3.5 MILS OF PUST INHIBITIVE PRIMER AFTER CLEANING OF OIL, DIRT, LOOSE SCALE AND FOREIGN WATER. EXPOSED STEEL SHALL BE TOUCHED UP WITH MATCHING PRIMER TO PREVENT CORROSION.
 - F. FRAMES SHALL BE DESIGNED SUCH THAT OWNER IS NOT RESTRICTED FROM WELDING TO THEM.
4. SECONDARY ROOF FRAMING
 - A. ALL COLD FORMED LIGHT GAGE SHAPES SHALL CONFORM TO ASTM A1011 GRADE 55.
 - B. ALL SECONDARY ROOF FRAMING SHALL BE DESIGNED WITH A MAXIMUM DEFLECTION OF 1/240 UNDER THE MOST SEVERE LOADING COMBINATIONS.
 - C. ALL PURLINS SHALL BE 14 GAGE MINIMUM.
 - D. PROVIDE PRICING OPTION FOR GALVANIZED ROOF PURLINS.
 - E. ROOF PANELS SHALL BE ATTACHED TO PURLINS WITH SSR CLIPS WITH MOVABLE TABS WHICH INTERLOCK WITH SEALED SSR PANEL RIBS AND PROVIDE FOR 1/2 INCHES OF PANEL MOVEMENT IN EITHER DIRECTION FROM CENTER OF CLIP TO COMPENSATE FOR THERMAL EFFECTS. INSTALLATION SETTING SHALL ALLOW FOR CURRENT TEMPERATURE.
5. WALL FRAMING
 - A. ALL COLD FORMED LIGHT GAGE SHAPES SHALL CONFORM TO ASTM A1011 GRADE 55.
 - B. ALL WALL GIRTS SHALL BE 14 GAGE MINIMUM.
 - C. ALL GIRT SPANS IN EXCESS OF 25 FEET SHALL HAVE SAG BRACING AT CENTER POINT.
 - D. INSIDE LIP OF ALL WALL GIRTS SHALL BE TURNED DOWN TO PREVENT ACCUMULATION OF DEBRIS.
 - E. PROVIDE PRICING OPTION FOR GALVANIZED WALL GIRTS.
6. BOLTS
 - A. ALL BOLTS SHALL CONFORM TO ASTM A307, A325 OR A490, AS REQUIRED PER THE LATEST EDITION OF THE AISC DESIGN MANUAL.
 - B. ALL BOLTS SHALL BE FULLY TENSIONED AND INSPECTED IN ACCORDANCE WITH THE LATEST AISC/RCS "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" AND THE APPLICABLE BUILDING CODE.
 - C. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY PROPER BOLT TIGHTNESS.
7. SIDING AND ROOFING
 - A. ALL SIDING AND ROOFING SHALL CONFORM TO ASTM A553 OR A792 GRADE 50, 28 GAGE MINIMUM AND BE PRE-PRIMED AND FINISH COATED PER OWNER'S STANDARD COLOR. OWNER SHALL APPROVE ACTUAL COLOR FROM SAMPLE.
 - B. ROOF SYSTEM SHALL BE SSR TESTED AND CERTIFIED TO MEET UNDERWRITERS LABORATORIES 90 WIND UPLIFT RATING.
 - C. SIDING, ROOFING AND NECESSARY FLASHING SHALL BE CONFIGURED TO PREVENT WIND AND RAIN FROM ENTERING THE BUILDING, EVEN UNDER EXTREME WEATHER CONDITIONS.
 - D. ROOF SYSTEM SHALL ACCOMMODATE PROPER VENTILATION PER ALL APPLICABLE CODES.
8. BRACING
 - A. ALL BRACE RODS SHALL CONFORM TO ASTM A572 GRADE 65.
 - B. ALL STRUCTURAL CABLES SHALL CONFORM TO ASTM A475 GRADE EHS.
 - C. ALL BRACING SYSTEMS SHALL INCLUDE MEANS FOR TIGHTENING.
 - D. NO BRACING SHALL BE SPECIFIED WITHIN THE PRESCRIBED WALL OPENINGS.
 - E. NO BRACING SHALL EXTEND INTO BUILDING SPACE BEYOND THE MAIN BUILDING FRAMES.
9. INSULATION
 - A. INSULATION SHALL CONFORM TO WMAA 202-96.
 - B. ENTIRE ROOF SHALL BE COVERED WITH 18 G FIBERGLASS BLANKET INSULATION WITH A VINYL REINFORCED VAPOR BARRIER ON THE INSIDE, WITH A MINIMUM THICKNESS OF .0032". PROVIDE R30 FIBERGLASS BLANKET INSULATION IN WALLS.
 - C. ANY TEARS OR DAMAGE TO VAPOR BARRIER AND INSULATION SHALL BE APPROPRIATELY REPAIRED PRIOR TO JOB COMPLETION.
10. GUTTER SYSTEM
 - A. GUTTER SYSTEM SHALL BE DESIGNED TO HANDLE A 100 YEAR ONE HOUR EVENT UNDERGROUND COLLECTOR SYSTEM.
 - B. GUTTERS SYSTEM SHALL BE CAPABLE OF WITHSTANDING LOADING FROM SNOW AND/OR ICE SLIDING OFF OF THE ROOF SYSTEM.
 - C. SECTION Baffles SHALL NOT BE LEFT IN PLACE THAT RESTRICTS FLOW.
 - D. ZINC COATING IS NOT ALLOWED.
11. DOORS
 - A. ALL DOORS SHALL CONFORM TO THE STEEL DOOR INSTITUTE 100, GRADE I, MODEL I, 1 3/4" THICK WITH 20 GA. STEEL FACE SHEETS.
 - B. FRAMES SHALL INCLUDE 4 3/4" MINIMUM JAMB DEPTH WITH A MINIMUM THICKNESS OF 16 GAGE.
 - C. FINISH SHALL BE TWO COATS OF BAKED ON PAINT ON ALL EXPOSED SURFACES, APPLY AFTER CHEMICAL TREATMENT FOR CORROSION RESISTANCE AND PAINT ADHESION WITH OWNER'S STANDARD COLOR.
12. SPECIAL CONDITIONS
 - A. BASE BID SHALL BE SUBMITTED IN ACCORDANCE WITH ALL SPECIFICATIONS AND COMMON INDUSTRY STANDARDS. OPTIONS THAT ARE SUGGESTED AS IMPROVEMENTS TO PERFORMANCE OR PRICE ARE WELCOME. SUCH OPTIONS SHALL BE CLEARLY IDENTIFIED, EXPLAINED AND ACCOMPANIED WITH THE APPROPRIATE PRICE ADDITION OR DEDUCTION FROM THE BASE BID.
 - B. ANY CHANGES TO THESE SPECIFICATIONS WILL BE BY WRITTEN ADDENDUM ONLY.
 - C. NO ADDITIONAL WORK SHALL BE DONE WITHOUT A WRITTEN CHANGE ORDER THAT HAS BEEN APPROVED BY THE OWNER AND CONTRACTOR.

DATE: 02/25/2022 PRELIMINARY NOT FOR CONSTRUCTION	REV.	REVISION REQUIRED	DATE		St. Helens, Oregon 503-966-6280	PROJ. NO: 3313 PROPOSED BUILDING ELEVATIONS
					DWG. BY: FAMILY FUN RV	
					APPR. BY: HEATHER HARRISON	SHEET: A-3
					FILE: 0-3313-A-3	DATE: 02/25/2022

Family Fun RV

SITE DESIGN REVIEW NARRATIVE

Civil Engineer:

Lower Columbia Engineering, LLC
58640 McNulty Way
Saint Helens, OR 97051
Phone: (503) 366-0399
Engineer: Andrew Niemi
Email: andrew@lowercolumbiaengr.com
Contact: Chase Berg
Email: chase@lowercolumbiaengr.com

Client:

Family Fun RV
58209 Columbia River Highway
St. Helens, Oregon 97051
Contact: Heather Harrison
Phone: (971) 803-7912

Project Type: Commercial
Project Location: St. Helens, Oregon

June 2022

LCE Project No. 3313





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The approval criteria and requirements addressed in this document for the Site Design Review application were referenced from sections 820, 1313, 1400, 1506, and 1550 of the Columbia County Zoning Ordinance.



Project Narrative

A. Name of the Project

The name of this project is Family Fun RV.

B. Who

The property is currently owned by JH Rental LLC and is being developed by Family Fun RV. The primary contact for this project is Heather Harrison with Family Fun RV. Chase Berg with Lower Columbia Engineering is also the applicant's representative and is available to be contacted with any questions.

C. What

The extents of this project are to provide a space for the sales of recreational vehicles. In order to accomplish this goal, the existing building on-site will be renovated to accommodate sales staff as well as a parts department.

D. When

A building permit application has been filled out with the county and has been approved to remodel the existing building on-site. The permit number for this is 22-00018-STR and was issued on February 10th, 2022. On-site improvements are expected to begin in October 2022 and are expected to end around June 2023.

E. Where

The proposed property is within the City of St. Helens urban growth boundary, but is located outside of city limits. The project is located at 58209 Columbia River Highway St. Helens, Oregon 97051. The tax account number for this property is 17046.

F. How

Heather Harrison with Family Fun RV has contracted Lower Columbia Engineering for both the civil engineering and for building elevations/footing design. Robert Evans Company has also been contracted as the on-site contractor. Lastly, Peak Electric has been involved for all electrical installation.



Section 820 CCZO: General Commercial (C-3)

[...]

822 Permitted Uses:

[...]

24. *Automotive and Truck Sales Area*

Response: The proposed development is for recreational vehicles (RV) sales. In addition, this development proposes for the construction of a new building to allow for RV's to be serviced. The existing building will be renovated to accommodate sales staff and a parts department.

823 Uses Subject to Administrative Review: *The following uses are permitted, subject to review and approval under prescriptive standards specified herein and as may otherwise be indicated by federal, state and local permits or regulations using the process in Section 1601.*

1. *Signs subject to the provisions outlined in Section 1300.*

Response: There is an existing sign near the entrance onto Columbia River Highway. For more information, please see section 1300 within this narrative.

2. *Off-street parking subject to the provisions outlined in Section 1400.*

Response: Off-street parking is provided around the existing building. For more information see section 1400 within this narrative or the site plan.

3. *Marijuana retailing subject to standards in Section 1803.*

Response: No marijuana retailing is proposed as part of this development.

[...]

825 Standards:

1. *The standards which apply in the C-4 District shall apply in the C-3 District.*

[...]

Section 810 CCZO: Neighborhood Commercial (C-4)

[...]

814 Criteria for Approval of all Permitted and Conditional Uses:

1. *The use shall be served by public sewer and public water.*

Response: This property is served by McNulty Water Association, City of St. Helens Sewer, and Columbia River Fire and Rescue.

2. *The use shall be on an arterial or collector street.*

Response: The subject property has frontage along Millard Road which is a county Arterial Road. Additionally, the property has frontage along Columbia River Highway which is a principal arterial road owned by the Oregon Department of Transportation (ODOT).

3. *Signs shall be in accordance with Section 1300.*



Response: There is an existing sign near the entrance onto Columbia River Highway. For more information, please see sections 1300 and 1313 within this narrative.

4. *Off-Street parking shall be in accordance with Section 1400.*

Response: Off-street parking is provided around the existing building. For more information see section 1400 within this narrative or the site plan.

5. *The use shall be reviewed by the Design Review Board or Planning Commission and shall comply with any and all conditions found necessary to protect adjacent property owners from incompatible uses.*

Response: The applicant understands that the application shall be reviewed by the Design Review Board or Planning Commission and shall comply with any and all conditions found necessary to protect adjacent property owners from incompatible uses.

815 Prohibited Uses:

1. *Marijuana retailing*

Response: *Marijuana retailing is not proposed as part of this development.*

816 Standards:

1. Lot or Parcel Size and Coverage:

- A. *The maximum lot or parcel size shall be 40,000 square feet.*

Response: The lot size for the subject property is 4.47 acres, which is greater than 40,000 square feet, but this lot size is considered an existing condition.

- B. *The maximum floor space for a single use shall be 5,000 square feet.*

Response: As part of this application, a non-conforming use application will be filled out. The proposed development requests an additional building to be added to the site. Under CCZO 816.1(B), a maximum of 5,000 square feet of floor space is allowed for a single use. Under sections 1506.5 and 1506.9 of the CCZO, an expansion is allowed up to 40% of the square footage of existing buildings. After field exploration was completed, the existing building was found to be 7,318 square feet which would allow for an expansion up to 2,927.2 square feet. The proposed building is currently 2,907 square feet which is under the allowed maximum.

2. *Setbacks*

- A. *Front yard setbacks shall be a minimum of 20 feet, unless a previous building line less than this has been established, in which case the minimum front yard for interior lots or parcels shall be the average of the setbacks of the main structures on abutting lots or parcels on either side if both lots or parcels are occupied. If one lot or parcel is occupied and the other vacant, the setback shall be the setback of the occupied lot or parcel, plus one-half the remaining distance to the required 20-foot setback. If neither of the abutting side lots or tracts are occupied by a structure, the setback shall be 20 feet.*

Response: Both the existing and proposed structures are setback much further than the minimum front yard setback required.

- B. *Side yard setback: None, except property abutting a residential or apartment district, in which case the side yard on the abutting side shall be the same as the abutting property.*



On a corner lot or parcel, the side abutting the street shall have a minimum setback of 10 feet.

Response: Both the existing and proposed structures are setback much further than the minimum side yard setback required. The proposed building has been designed to allow for further expansion to the north, but in no way will be less than the minimum required side yard setback if the building is expanded further north.

- C. *Rear yard setback: None, except property abutting a residential or apartment district, in which case the rear yard shall be the same as the abutting property.*

Response: Both the existing and proposed structures are setback much further than the minimum rear setback required.

- D. *Setbacks for insufficient right-of-way: The minimum front, side, or other setbacks as stated herein shall be increased where such yard or setback abuts a street having insufficient right-of-way width to serve the area. The Commission shall determine the necessary right-of-way widths and the additional yard or setback requirements in such cases.*

Response: Both the existing and proposed structures are near the middle of the property and are far away from any right-of-way. The applicant understands that additional setbacks may be necessary if the Commission determines that there is insufficient right-of-way serving the area.

3. Height Limitation: *The maximum height of a structure shall be 35 feet or 2-1/2 stories, whichever is less.*

Response: The design of the proposed building has a single-story building height of 21 feet. In the instance that this building height changes, the applicant understands that the structure shall be 35 feet or 2-1/2 stories tall, whichever is less.

4. Off-Street Parking: *Off-street parking shall be provided as required in Section 1400.*

Response: Off street parking has been provided on-site surrounding the existing building. For more information on off-street parking see section 1400 within this narrative.

5. Landscaping: *Landscaping and screening will be provided on each site and shall satisfy the following requirements:*

- A. *All areas of the site not occupied by paved roadways, walkways, patios, or buildings shall be landscaped with ground covers, shrubs, and decorative or ornamental trees.*

Response: A landscaping plan has been provided within this application. All areas not occupied by paved roadways, walkways, patios, or buildings have been landscaped. For more information see sheet C-4.

- B. *It shall be the owner's responsibility to maintain the landscaping installed on the site.*

Response: The applicant understands that it is the owner's responsibility to maintain the landscaping installed on the site.

- C. *Screen planting, masonry walls, or fencing shall be provided to screen objectionable views within 5 months of occupancy of a related building. Views to be screened include garbage and trash collection stations and other similar uses.*



Response: The applicant understands that all garbage/trash collection stations, or other similar uses shall be screened within 5 months of occupancy. All information pertaining to landscaping and screening can be found on sheet C-4.

6. Access: *No more than one 45-foot-wide curb cut driveway per 150 feet of street frontage, or fraction thereof, shall be permitted per site.*

Response: The current driveway access's off of Columbia River Highway and Millard Road are not proposed to be improved as part of this development.

817 Lots of Record: *Lots or parcels lawfully created by a subdivision plat, or by a deed or a sales contract, and of record in the County Clerk's office, shall be eligible to receive a building permit for any use permitted in this District, if such permit would have been issued otherwise but for the lot or parcel width, depth, or area, but subject to all other regulations of this zone.*

Response: The applicant understands that a legal lot of record is needed in order to receive a building permit for any use permitted in this District.

818 Subdivisions and Partitions: *All subdivision and partition requests shall conform to the applicable standards set out in the Subdivision and Partitioning Ordinance.*

Response: *The proposed development is not a subdivision or a partition, this is not applicable.*

Section 1300 CCZO: Signs

[...]

Section 1313 CCZO: Commercial and Industrial Districts:

1. Signs Permitted: *Signs shall be permitted in Commercial and Industrial zoning districts subject to the provisions of this Section, except to the extent such provisions conflict with the specific development standards for signs in the underlying zoning district.*

Response: As a sign exists on the property, it is understood that signs will be held to the specific development standards.

2. Limit on Sign Area: *Except as otherwise permitted in Section 1302.5, no sign having a sign area greater than 200 square feet shall be permitted.*

Response: The existing sign area on-site has an area of approximately 72 square feet on each side. As this sign has two sides, the total square footage of sign is approximately 144 square feet. This total is less than the maximum of 200 square feet.

3. Aggregate Sign Area Per Parcel:

- A. *Except as otherwise provided herein, the maximum permitted area of all signs, including the total area of each face of a double-faced sign, or the sole face of a single faced sign for each parcel, is as follows: 40 square feet; plus*

Response: The face of each sign has an area of approximately 72 square feet. As described in the sections below, the allowable sign area is approximately 180 square feet taking into consideration the Millard and Columbia River Highway Frontages.



- 1) *For the first fifty (50) linear feet of building frontage on a public road, an additional square foot of sign area per linear foot of building frontage on such public road; plus*

Response: The subject site has building frontages on two public roads; the first being Columbia River Highway and the second being Millard Road. Millard Road has a frontage length of approximately 76 linear feet while Columbia River Highway has a frontage length of approximately 104 linear feet. With these two frontage lengths, and taking into consideration 1313.3.A.2, the total permissible sign area is approximately 180 square feet. The existing sign on-site will be renovated to have a total area of approximately 144 square feet, which is under the maximum area permitted.

- 2) *For the next two hundred and twenty (220) linear feet of building frontage on a public road, an additional one-half (1/2) square foot of sign area per linear foot of building frontage on such public road.*

Response: The subject site has building frontages on two public roads; the first being Columbia River Highway and the second being Millard Road. Millard Road has a frontage length of approximately 76 linear feet while Columbia River Highway has a frontage length of approximately 104 linear feet. With these two frontage lengths, the total permissible sign area is approximately 180 square feet. The existing sign on-site will be renovated to have a total area of approximately 144 square feet, which is under the maximum area permitted.

- B. *For the purpose of this section, "building frontage" means the linear length of a building facing a public right of way or the linear length of the public right of way facing a building, whichever is smaller.*

Response: It is understood that building frontage is defined as the linear length of a building facing a public right of way or the linear length of the public right of way facing a building, whichever is smaller.

- C. *The area of any legal non-conforming sign which is greater than 200 square feet in size shall not be included in the calculation of maximum sign area per parcel under this Section.*

Response: No non-conforming signs are present on the subject property. All signs are under the allowed 180 square feet.

- D. *The area of any temporary sign permitted under 1313.7 shall not be included in the calculation of maximum sign area per parcel under this section.*

Response: No temporary signs are proposed with this development.

4. Free Standing Signs: *Free standing signs, including ground mounted signs, must comply with the following additional standards:*

Response: An existing free-standing sign is present on the subject property and is proposed to be renovated as part of this development.

- A. Height: *Free standing signs shall not exceed 20 feet in height above grade or above road grade, whichever is higher.*

Response: The existing sign is under the maximum height of 20 feet.



- B. *Total Area*: The total sign area of all freestanding signs allowed by this section plus the area of all other allowed signs on the parcel shall not exceed the aggregate sign limits for the parcel as provided in Section 1313.3.

Response: As referenced in section 1313.3, the maximum allowed sign area is approximately 180 square feet due to the Columbia River Highway frontage and the Millard Road frontage. The existing sign is under the allowable sign area as described in section 1313.3.

- C. *Center/Complex Signs*: Only one freestanding sign shall be allowed for a center/complex even when there is more than one parcel in or owner of the center/complex, unless one additional sign is needed to provide identification of the development at a major public access point on a different road. No more than two freestanding signs will be allowed. For purposes of this Section, "Center/Complex" means any number of businesses greater than one which share the same site using common points of ingress and egress and/or common parking facilities. Legal nonconforming signs shall not be included in the calculation of the number of freestanding signs per parcel under this Section.

Response: Only one existing sign exists on the subject property. No additional signs are proposed as part of this development.

- D. *Illumination*: Free standing signs may be illuminated subject to subsection 1302.4.

Response: The existing sign on the subject property has interior illumination and meets the criteria depicted in subsection 1302.4.

5. *Building Mounted Signs*: Signs mounted or painted on buildings must comply with the following additional standards:
- A. *Area*. The total sign area of all building mounted signs allowed pursuant to this section in addition to the area of all other allowed signs per parcel shall not exceed the aggregate sign limits for the parcel as provided in section 1313.3.
 - B. *Height*. Building mounted signs shall not extend more than four (4) feet above the roof of the building on which it is mounted.
 - C. *Illumination*. Building mounted signs may be illuminated subject to the illumination standards set forth in subsection 1302.4.

Response: No building mounted signs are proposed with this development.

6. *Traffic Control/Directional Signs*: On-site traffic control and directional identification signs shall be required as may be necessary, commensurate with the size and use of the site, in conjunction with site design review, if such review is required. Centers/ complexes combining several uses shall provide tenant directories, or building identification and directional signing oriented toward on- site vehicle and pedestrian circulation.

Response: As the proposed use of the subject property is for a single use; no on-site traffic control or directional identification signs are proposed with this development. As seen on the site plan, sheet C-2, directional arrows are shown to represent flow of traffic. These directional arrows are for representation and will not be striped as shown.

7. *Temporary Signs*. Signs of a temporary nature may be allowed provided they meet the following standards. For purposes of this section, "temporary" shall mean not to exceed one year.
- A. The temporary sign area shall not exceed 60 square feet.
 - B. The temporary sign shall observe the setback provisions under subsection 1302.2.



- C. Only one temporary sign shall be permitted per parcel.
- D. The temporary sign shall not be artificially illuminated.
- E. The temporary sign shall be removed from the premises after the one-year temporary sign period has expired.

Response: No temporary signs are proposed with this development.

- 8. *Animated or Video Signs Prohibited:* No sign shall contain, include, or be illuminated by any flashing, intermittent, revolving, rotating, or moving light or move or have any animated or moving parts except that this Section shall not apply to:

Response: No animated or video signs are proposed with this development.

- A. *Traffic control signs.*

Response: No traffic control signs are proposed with this development.

- B. *Signs, displays, devices, or portions thereof with lights that may be changed at intermittent intervals by electronic process or remote control. The maximum size of the display area for such changing numbers or letters is ten (10) square feet.*

Response: Although the existing sign has internal illumination, the internal illumination does not have the capability of being changed at intermittent intervals by electric process or remote control.

Section 1314 CCZO: Calculating Sign Area: [Amended by Ordinance 2002-02, eff. 6/12/02]. The structure supporting or appearing to support a freestanding sign shall not be included in the area of the sign, unless such structural element is typically used to carry signage. In calculating the square footage of a sign, the width shall be measured at the widest part of the sign, including any cut-outs, and the length shall be measured at the longest part of the sign, including any cut-outs. The maximum square footage limitation of the sign shall be calculated such that no cutouts or other Copy shall be permitted outside of the size limitation.

Response: When calculating the area of the sign, the square footage of the sign does not include the structure supporting the free-standing sign and includes the areas of cut outs.

Section 1315 CCZO: Copy Area. [Amended by Ordinance 2002-02, eff. 6/12/02]. Copy is allowed only in the face of the sign. Copy is prohibited in the ledger area of the sign, on the post of the sign, or other structure of the sign, except to the extent that the sign owner's logo or other disclosure is required by law to be placed on the ledger, post or other structure of the sign. For purposes of this Section, "copy" is defined as any text or image.

Response: The renovated sign proposed to only use "copy" on the face of the sign and will not have "copy" on the ledger or on the post of the sign.

Section 1313 CCZO: Commercial and Industrial Districts

- 1. *Signs Permitted:* Signs shall be permitted in Commercial and Industrial zoning districts subject to the provisions of this Section, except to the extent such provisions conflict with the specific development standards for signs in the underlying zoning district.

Response: As a sign exists on the property, it is understood that signs will be held to the specific development standards.



2. *Limit on Sign Area: Except as otherwise permitted in Section 1302.5, no sign having a sign area greater than 200 square feet shall be permitted.*

Response: The existing sign area on-site has an area of approximately 72 square feet on each side. As this sign has two sides, the total square footage of sign is approximately 144 square feet. This total is less than the maximum of 200 square feet.

3. *Aggregate Sign Area Per Parcel.*

- A. *Except as otherwise provided herein, the maximum permitted area of all signs, including the total area of each face of a double-faced sign, or the sole face of a single faced sign for each parcel, is as follows: 40 square feet; plus*

Response: The face of each sign has an area of approximately 72 square feet. As described in the sections below, the allowable sign area is approximately 180 square feet taking into consideration the Millard and Columbia River Highway Frontages.

- 1) *For the first fifty (50) linear feet of building frontage on a public road, an additional square foot of sign area per linear foot of building frontage on such public road; plus*

Response: The subject site has building frontages on two public roads; the first being Columbia River Highway and the second being Millard Road. Millard Road has a frontage length of approximately 76 linear feet while Columbia River Highway has a frontage length of approximately 104 linear feet. With these two frontage lengths, and taking into consideration 1313.3.A.2, the total permissible sign area is approximately 180 square feet. The existing sign on-site will be renovated to have a total area of approximately 144 square feet, which is under the maximum area permitted.

- 2) *For the next two hundred and twenty (220) linear feet of building frontage on a public road, an additional one-half (1/2) square foot of sign area per linear foot of building frontage on such public road.*

Response: The subject site has building frontages on two public roads; the first being Columbia River Highway and the second being Millard Road. Millard Road has a frontage length of approximately 76 linear feet while Columbia River Highway has a frontage length of approximately 104 linear feet. With these two frontage lengths, the total permissible sign area is approximately 180 square feet. The existing sign on-site will be renovated to have a total area of approximately 144 square feet, which is under the maximum area permitted.

- B. *For the purpose of this section, "building frontage" means the linear length of a building facing a public right of way or the linear length of the public right of way facing a building, whichever is smaller.*

Response: It is understood that building frontage is defined as the linear length of a building facing a public right of way or the linear length of the public right of way facing a building, whichever is smaller.

- C. *The area of any legal non-conforming sign which is greater than 200 square feet in size shall not be included in the calculation of maximum sign area per parcel under this Section.*



Response: No non-conforming signs are present on the subject property. All signs are under the allowed 180 square feet.

- D. The area of any temporary sign permitted under 1313.7 shall not be included in the calculation of maximum sign area per parcel under this section.*

Response: No temporary signs are proposed with this development.

- 4. Free Standing Signs: Free standing signs, including ground mounted signs, must comply with the following additional standards:*

Response: An existing free-standing sign is present on the subject property and is proposed to be renovated as part of this development.

- A. Height: Free standing signs shall not exceed 20 feet in height above grade or above road grade, whichever is higher.*

Response: The existing sign is under the maximum height of 20 feet.

- B. Total Area: The total sign area of all freestanding signs allowed by this section plus the area of all other allowed signs on the parcel shall not exceed the aggregate sign limits for the parcel as provided in Section 1313.3.*

Response: As referenced in section 1313.3, the maximum allowed sign area is approximately 180 square feet due to the Columbia River Highway frontage and the Millard Road frontage. The existing sign is under the allowable sign area as described in section 1313.3.

- C. Center/Complex Signs: Only one freestanding sign shall be allowed for a center/complex even when there is more than one parcel in or owner of the center/complex, unless one additional sign is needed to provide identification of the development at a major public access point on a different roads. No more than two freestanding signs will be allowed. For purposes of this Section, "Center/Complex" means any number of businesses greater than one which share the same site using common points of ingress and egress and/or common parking facilities. Legal non-conforming signs shall not be included in the calculation of the number of freestanding signs per parcel under this Section.*

Response: Only one existing sign exists on the subject property. No additional signs are proposed as part of this development.

- D. Illumination: Free standing signs may be illuminated subject to subsection 1302.4.*

Response: The existing sign on the subject property has interior illumination and meets the criteria depicted in subsection 1302.4.

- 5. Building Mounted Signs: Signs mounted or painted on buildings must comply with the following additional standards:*

- A. Area. The total sign area of all building mounted signs allowed pursuant to this section in addition to the area of all other allowed signs per parcel shall not exceed the aggregate sign limits for the parcel as provided in section 1313.3.*



- B. *Height. Building mounted signs shall not extend more than four (4) feet above the roof of the building on which it is mounted.*
- C. *Illumination. Building mounted signs may be illuminated subject to the illumination standards set forth in subsection 1302.4.*

Response: No building mounted signs are proposed with this development.

- 6. *Traffic Control/Directional Signs: On-site traffic control and directional identification signs shall be required as may be necessary, commensurate with the size and use of the site, in conjunction with site design review, if such review is required. Centers/ complexes combining several uses shall provide tenant directories, or building identification and directional signing oriented toward on-site vehicle and pedestrian circulation.*

Response: As the proposed use of the subject property is for a single use; no on-site traffic control or directional identification signs are proposed with this development. As seen on the site plan, sheet C-2, directional arrows are shown to represent flow of traffic. These directional arrows are for representation and will not be striped as shown.

- 7. *Temporary Signs. Signs of a temporary nature may be allowed provided they meet the following standards. For purposes of this section, "temporary" shall mean not to exceed one year.*
 - A. *The temporary sign area shall not exceed 60 square feet.*
 - B. *The temporary sign shall observe the setback provisions under subsection 1302.2.*
 - C. *Only one temporary sign shall be permitted per parcel.*
 - D. *The temporary sign shall not be artificially illuminated.*
 - E. *The temporary sign shall be removed from the premises after the one-year temporary sign period has expired.*

Response: No temporary signs are proposed with this development.

- 8. *Animated or Video Signs Prohibited: No sign shall contain, include, or be illuminated by any flashing, intermittent, revolving, rotating, or moving light or move or have any animated or moving parts except that this Section shall not apply to:*

Response: No animated or video signs are proposed with this development.

- A. *Traffic Control Signs*

Response: No traffic control signs are proposed with this development.

- B. *Signs, displays, devices, or portions thereof with lights that may be changed at intermittent intervals by electronic process or remote control. The maximum size of the display area for such changing numbers or letters is ten (10) square feet.*

Response: Although the existing sign has internal illumination, the internal illumination does not have the capability of being changed at intermittent intervals by electric process or remote control.



Section 1400 CCZO: Off Street Parking and Loading Requirements

[...]

Section 1406 Location:

1. *Spaces required by this section shall be provided on the site of the primary uses, provided that, when practical difficulties prevent their establishment upon the same site, the Planning Director may permit the facility to be located within 300 feet therefrom, measured in a straight line (including streets and alleys) from the nearest property line to the nearest parking space; but in any case, the location shall meet all provisions of this ordinance which apply.*

Response: The applicant understands that parking requirements must be met unless practical difficulties prevent their establishment upon the same site.

2. *Loading spaces and maneuvering area shall be located only on or abutting the property served.*

Response: As seen on the site plan, sheet C-2, an area for loading has been shown, but it will not be striped as shown. This loading area is shown for representational purposes only. In instances where loading is necessary, trucks will be able to park in the area shown on sheet C-2 or anywhere else on the subject property as there are large areas of un-occupied space. In addition, unoccupied RV spaces can be used for loading areas.

Section 1407 *Change of Use*: *In case of enlargement or change of use, the number of parking or loading spaces required shall be based upon the total area involved in the enlargement or change in use.*

Response: The applicant understands that in the case of enlargement or change of use, the number of parking or loading spaces required may change with the enlargement or change in use.

Section 1408 Design Standards:

1. *Scope:*
 - a. *These design standards shall apply to all parking, loading, and maneuvering areas except those for single and two-family residential dwellings on individual lots.*

Response: The design standards described below will be met and can be seen on the site plan, sheet C-2.

- b. *All parking and loading areas shall provide for the turning, maneuvering, and parking of all vehicles on the lots.*

Response: All parking and loading areas have been designed to allow for turning, maneuvering and parking of all vehicles on the lot.

Section 1409 Loading Spaces:

1. *Apartment: Each required space shall be at least 12 feet in width and 25 feet in length.*

Response: This development does not propose apartments, this criterion is not applicable.

2. *Commercial: Each required space shall be at least 12 feet in width and 35 feet in length.*

Response: No permanent designated loading spaces are proposed with this development, however, when loading is necessary, the site has large areas of un-occupied space. In addition, unoccupied RV spaces can be used for loading areas. At a minimum, on-site RV spaces are shown to be 14 feet in width and 35 feet in length. A conceptual location for where loading activities can occur can be seen on the site plan, sheet C-2.



3. *Industrial: Each required space shall be at least 12 feet in width and 60 feet in length.*

Response: This development is not an industrial development; this criterion is not applicable.

4. *Clearance: The height of each required loading space shall provide a minimum vertical clearance of 13 feet.*

Response: No designated loading spaces are shown on the plans, however, when loading is necessary, all available loading spaces have a minimum of 13 feet of vertical clearance.

Section 1410 Size:

1. *The standard size of a parking space shall be 9 feet by 18 feet.*

Response: Existing parking spaces surrounding the existing building are being re-used. All existing parking spaces, except for handicapped parking spaces, shall be 9 feet by 18 feet.

2. *Handicapped parking spaces shall be 12 feet by 18 feet.*

Response: Two (2) handicapped parking spaces are provided and are at a minimum 12 feet by 18 feet.

3. *Parallel parking, the length of the parking space shall be increased to 22 feet*

Response: No parallel parking spaces are proposed with this development.

[...]

Section 1416 Minimum Required Off-Street Parking Spaces:

[...]

3. *Retail Uses*

Service and Repair shop and retail store handling bulky merchandise such as automobiles and furniture: One space for each 600 square feet of gross floor area plus 1 space for each 2 employees.

Response: The existing building on-site has a building area of 7,318 sf and the proposed building has a building area of 2,907 sf. Together, the total building area is 10,225 sf. In addition, Family Fun RV employees approximately 20 employees, but only 10 employees are assumed to work at any given time. From these numbers, there are a total of 23 required parking spaces. The proposed development is able to re-use 17 parking spaces and proposes an additional 6 parking spaces in order to meet the minimum required parking.

[...]

Section 1418 Minimum Required Off-Street Loading Spaces:

Response: Utilizing the table provided 1418.1 the required number of off-street loading spaces is 1 space. This space has been provided and can be seen on the site plan, sheet C-2.

Section 1506 CCZO: Non-Conforming Uses

1. **Continuation of Non-Conforming Uses or Structures:** Except as provided in this section, a Non-Conforming Use or structure may be continued, even though it is not in conformity with the use, height, area, and all other regulations for the district in which it is located.



Response: The applicant understands that non-conforming structures may be continued, even though it is not in conformity of the use.

2. Normal Maintenance and Repairs: Normal maintenance of a Non-Conforming Use is permitted, including structural alterations to the bearing walls, foundation, columns, beams, or girders, provided that:
 - a. No change in the basic use of the building occurs that would make the use less conforming to the district.

Response: The existing building on-site is proposed to be renovated, but will be in conformance with the zoning district.

3. A Non-Conforming Use may be changed to a use allowable under the underlying district. After a Non-Conforming Use changes to a conforming use, it shall not thereafter be changed back to a Non-Conforming Use.

Response: The applicant understands that after a non-conforming use changes to a conforming use, it shall not be changed back to a non-conforming use.

4. Reinstatement of a Discontinued Use: A Non-Conforming Use may be resumed if the discontinuation is for a period less than 1 year. If the discontinuance is for a period greater than 1 year, the building or land shall thereafter be occupied and used only for a conforming use.

Response: The applicant understands that a non-conforming use may be resumed if the discontinuation is for a period less than 1 year. It is also understood that if the discontinuance period is greater than 1 year the building shall therefore be occupied and used only for a conforming use.

5. Rebuilding, Change, Moving, or Use Expansion: A Non-Conforming building or use may be rebuilt, moved, or changed in use to a use of the same restrictive classification or expanded, subject to the provisions outlined herein, if upon review in accordance with Section 1601 the Director finds all the following to exist:
 - a. That such modifications are necessary because of practical difficulties or public need;
 - b. That such modifications are not greater than are necessary to overcome the practical difficulties or meet the public need;
 - c. That such modifications will not significantly interfere with the use and enjoyment of other land in the vicinity, nor detract from the property value thereof;
 - d. That such modifications will not endanger the public health, safety, and general welfare.

Response: The applicant understands that a non-conforming building or use may be rebuilt, moved, or changed subject to the items listed above. It is also understood that the director must approve these changes.

6. Rebuilding: When a building or structure is damaged by fire or any other cause beyond the control of the owner, it may be rebuilt

Response: It is understood that in the unfortunate circumstance that a building is damaged by fire or any other cause the building may be rebuilt.

7. Change of Use: A Non-Conforming Use may be changed to a use of the same or a more restrictive classification but not to a use of a less restrictive classification, pursuant to subsection 1506.5.



Response: The applicant understands that a non-confirming use may be changed to a use of the same or more restrictive classification, but not to a less restrictive classification.

8. Moving: A Non-Conforming Use may be moved to another location on its lot or parcel provided the height and yard requirements of the district in which it is located are met, pursuant to Section 1506.5.

Response: The applicant understands that a non-confirming use may be moved to another location on the subject property as long as the criteria within 1506.5 and the height and yard requirements are met.

9. Expansion: A Non-Conforming Use may be expanded one time only. This expansion shall not exceed 40% of the square footage on the ground level of the existing structure, pursuant to Section 1506.5.

Response: The applicant understands that a non-confirming use may be expanded one time only. The applicant proposes to add an additional building to the subject property, but not exceeding 40% of the existing structure square footage.

Section 1550 CCZO: Site Design Review

The Site Design Review process shall apply to all new development, redevelopment, expansion, or improvement of all community, governmental, institutional, commercial, industrial and multi-family residential (4 or more units) uses in the County.

1551. Types of Site Design Review:

- A. *Type 1: Projects, developments and building expansions which meet any of the following criteria:*
 1. *Are less than 5,000 sq.ft., and are less than 10% of the square footage of an existing structure.*
 2. *Increase the number of dwelling units in a multi-family project.*
 3. *Increase the height of an existing building.*
- B. *Type 2: Projects, developments and building expansions which meet any of the following criteria:*
 1. *Have an area of 5,000 sq.ft. or more, or are 10% or more of the square footage of an existing structure.*
 2. *Change the category of use (e.g., commercial to industrial, etc.).*
 3. *New off-site advertising signs or billboards.*
 4. *Any project meeting any of the Type 2 criteria shall be deemed a Type 2 Design Review application.*

Response: From the list above, the proposed development is subject to a type 2 Site Design Review. The proposed building adjacent to the existing building is approximately 40% of the existing building floor area.

[...]

1563. Standards for Approval:

The Planning Commission or Director shall make a finding with respect to each of the following criteria when approving, approving with conditions, or denying an application:



A. *Flood Hazard Areas: See CCZO §1100, Flood Hazard Overlay Zone. All development in Flood Hazard Areas must comply with State and Federal Guidelines.*

Response: No flood hazard overlay zones are found within the subject property.

B. *Wetlands and Riparian Areas: Alteration of wetlands and riparian areas shall be in compliance with State and Federal laws.*

Response: No wetlands or riparian areas are within the subject property.

C. *Natural Areas and Features: To the greatest practical extent possible, natural areas and features of the site shall be preserved.*

Response: The proposed development has preserved natural areas and features to the greatest extent possible. This has been accomplished by utilizing the existing parking lot, and building. The proposed development will not increase the amount of impervious area on the property.

D. *Historic and Cultural sites and structures: All historic and culturally significant sites and structures identified in the 1984 Comprehensive Plan, or identified for inclusion in the County Periodic Review, shall be protected if they still exist.*

Response: No historic or culturally significant sites or structures are known to exist on the subject property. It is understood that if such site or structures are identified, they shall be protected to the greatest extent possible.

E. *Lighting: All outdoor lights shall be shielded so as to not shine directly on adjacent properties and roads.*

Response: All outdoor lighting will be shielded to protect adjacent properties and road from glare. The proposed development proposes new lights to be mounted onto the new building. With this being said, the property does have existing lights within the parking lot area as well as building mounted lights on the existing building. These lights will be preserved with this development if possible.

F. *Energy Conservation: Buildings should be oriented to take advantage of natural energy saving elements such as the sun, landscaping and land forms.*

Response: The proposed building has been oriented to best serve the existing site. An additional consideration when designing the proposed building was to take advantage of the natural energy saving elements such as the sun.

G. *Transportation Facilities: Off-site auto and pedestrian facilities may be required by the Planning Commission, Planning Director or Public Works Director consistent with the ColumbiaCountyRoadStandardsandtheColumbiaCountyTransportationSystemsPlan.*

Response: The applicant understands that there is the possibility that the Planning Commission, Planning Director, or Public Works Director may require off-site auto and pedestrian facilities.

Family Fun RV

STORMWATER REPORT

Applicant:

Heather Harrison – Family Fun RV
58209 Columbia River Highway
St. Helens, Oregon 97051
Contact: Heather Harrison
Phone: (971) 803-7912

Project Type: Commercial Recreational Vehicle Dealership
Project Location: St. Helens, Oregon

Prepared By:

Lower Columbia Engineering, LLC
58640 McNulty Way
Saint Helens, OR 97051
Phone: (503) 366-0399
Engineer: Andrew Niemi, P.E.
Email: andrew@lowercolumbiaengr.com
Contact: Chase Berg
Email: chase@lowercolumbiaengr.com

June 2022
LCE # 3313





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This report pertains to the proposed private improvements described below based on specific requests by our clients. Lower Columbia Engineering is not responsible for complying with any conditions of approval or adjacent storm drainage issues that are outside of the project area. Contact Lower Columbia Engineering with any questions or uncertainties. Maintenance of this system and verification of property line locations are the responsibility of others.



Stormwater Narrative

Project Description

This stormwater design involves the construction of a new shop and the renovation of an existing building located in St. Helens, Oregon. The project is centered at 45.840439N, 122.837764W and occupies a total of 4.47 acres over tax lot 3700 of tax map 040108CA. Within the tax lot, there is approximately 104,320.25 square feet of impervious area and 90,392.95 square feet of pervious area. Constructing the new shop and renovating the existing building will not create any additional impervious area except for a proposed sidewalk on the southern portion of the site adjacent to the proposed food cart locations.

Stormwater Analysis

Stormwater events for this project were calculated using the SBUH method given a Type IA storm type within the HydroCAD software system. The Columbia County Stormwater and Erosion control 24-hour table was utilized to develop rainfall depths for each stormwater event. The values utilized are as follows:

Event	Rainfall Amount (Inches)
Water Quality	0.67
2-Year	2.0
5-Year	2.5
10-Year	3.0
25-Year	3.4
50-Year	3.6
100-Year	4.0

A Soil Survey Map was created from NRCS to determine the site's soil compositions. As seen in attachment A, a majority of the soil on-site is loam with a hydrologic soil group of C.

Stormwater Management Design

Stormwater runoff from the proposed development has not altered existing drainage patterns. Currently, on-site stormwater sheet flows from existing parking areas towards highway 30 and eventually reaches highway 30 entering the ODOT system or infiltrates naturally into the ground if it is able to reach a permeable surface. With the addition of a new shop next to the existing building, gutters have been designed to collect stormwater from the roof and discharge stormwater water onto the existing asphalt with gutters and drain spouts. The new sidewalk located to the south of the proposed food carts will be graded to shed water to the south to allow for stormwater to naturally infiltrate into the ground.

Operations and Maintenance Overview

The proper implementation and maintenance of the proposed on-site facilities is the responsibility of the property owners. It is critical that stormwater infrastructure be kept free of debris in order to facilitate effective conveyance and longevity of the system. Paved surfaces shall be cleaned regularly to remove debris and oily residue.

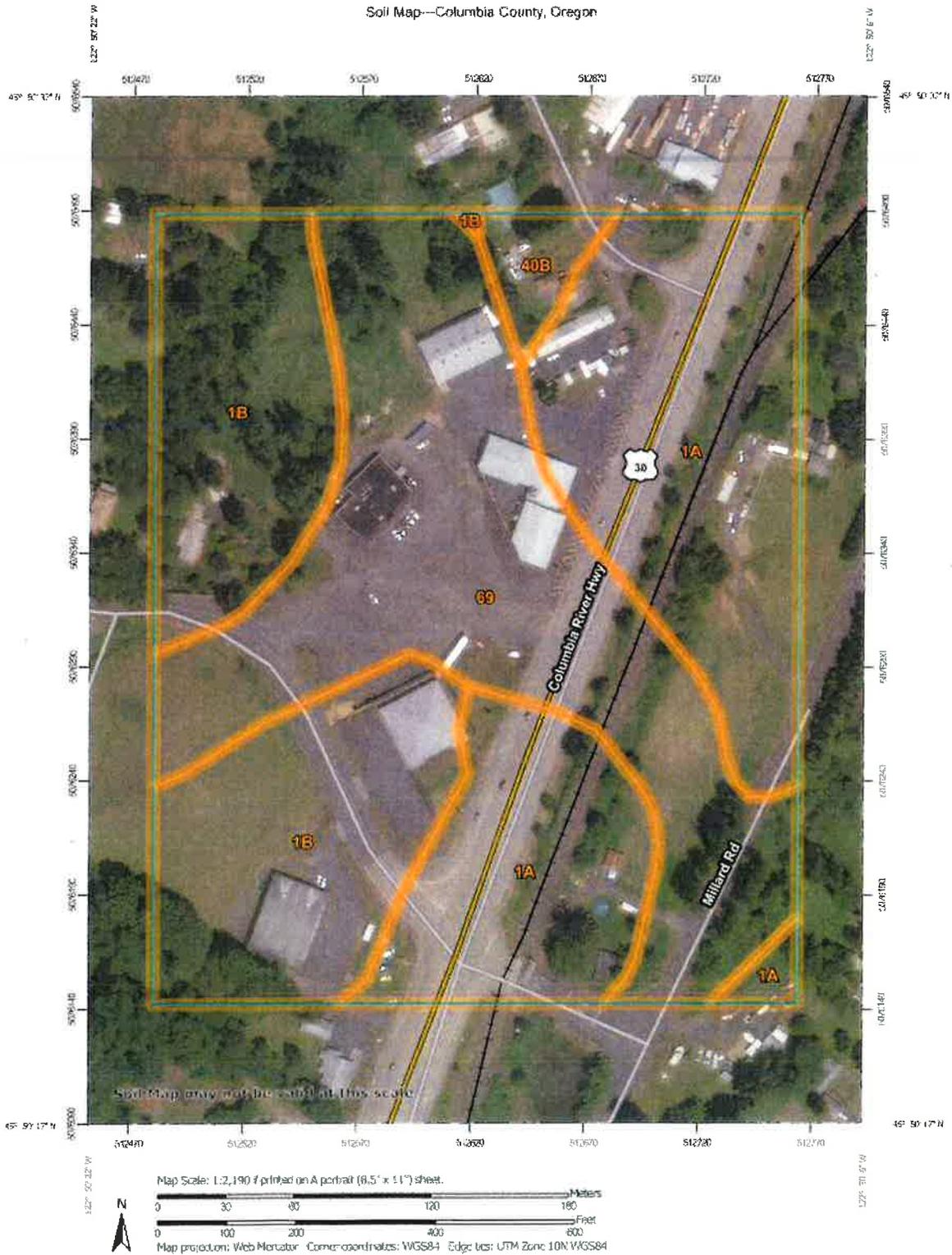
Conclusion

On-site stormwater will be managed to mimic existing drainage patterns for Family Fun RV by allowing stormwater runoff from the new shop to be transferred by gutters and drain spouts and discharge onto the existing asphalt. The new sidewalk located to the south of the proposed food carts will be graded to shed to the south to allow for stormwater to naturally infiltrate into the ground.



Attachment A - Soil Survey

Soil Map—Columbia County, Oregon





Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1A	Aloha silt loam, 0 to 3 percent slopes	8.5	34.9%
1B	Aloha silt loam, 3 to 8 percent slopes	7.0	28.7%
40B	Quatama silt loam, 3 to 8 percent slopes	0.5	2.2%
69	Wollent silt loam	8.3	34.1%
Totals for Area of Interest		24.4	100.0%



Attachment B - Stormwater Calculations



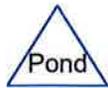
Impervious Area



Pervious Area



ODOT Right-of-Way



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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.075	79	50-75% Grass cover, Fair, HSG C (3S)
2.395	98	Paved parking, HSG C (1S)
4.470	89	TOTAL AREA

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Type IA 24-hr 2-yr 24-hr Rainfall=2.00"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area Runoff Area=104,321 sf 100.00% Impervious Runoff Depth=1.77"
Tc=0.0 min CN=0/98 Runoff=1.11 cfs 0.354 af

Subcatchment3S: Pervious Area Runoff Area=90,393 sf 0.00% Impervious Runoff Depth=0.52"
Tc=0.0 min CN=79/0 Runoff=0.18 cfs 0.090 af

Pond 5P: ODOT Right-of-Way Inflow=1.26 cfs 0.444 af
Primary=1.26 cfs 0.444 af

Total Runoff Area = 4.470 ac Runoff Volume = 0.444 af Average Runoff Depth = 1.19"
46.42% Pervious = 2.075 ac 53.58% Impervious = 2.395 ac

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Type IA 24-hr 2-yr 24-hr Rainfall=2.00"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

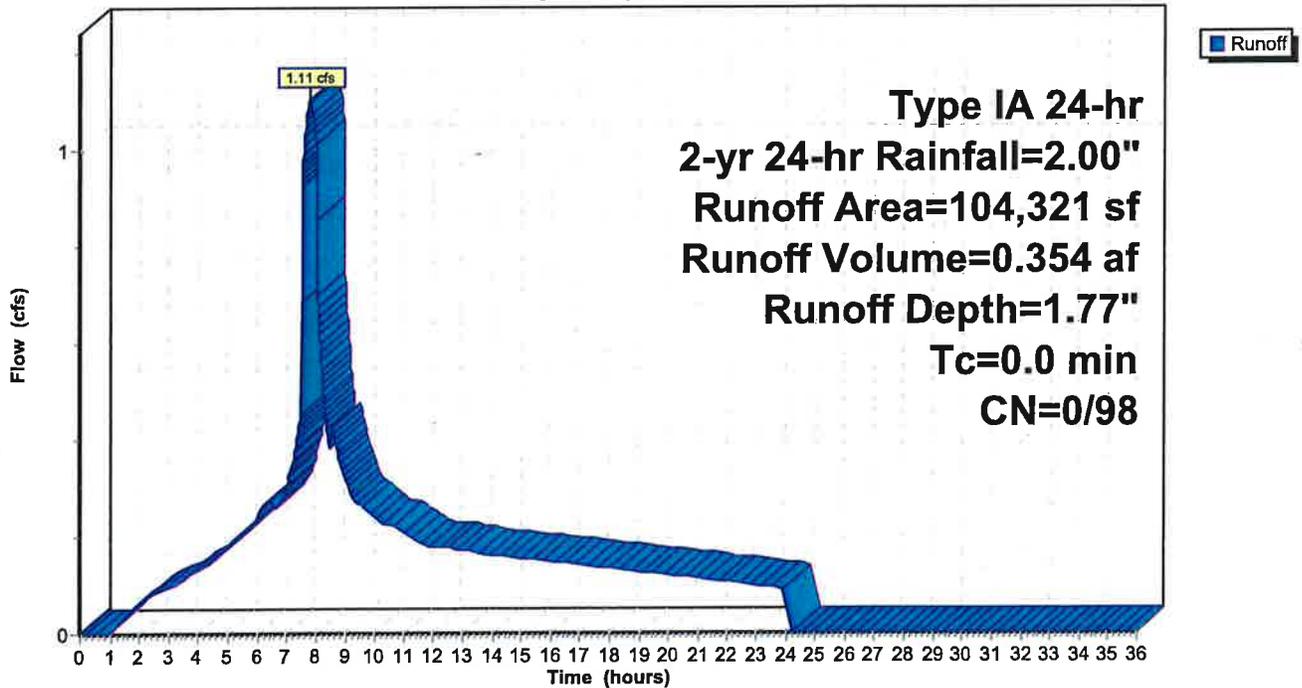
Runoff = 1.11 cfs @ 7.79 hrs, Volume= 0.354 af, Depth= 1.77"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr 24-hr Rainfall=2.00"

Area (sf)	CN	Description
104,321	98	Paved parking, HSG C
104,321	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



Summary for Subcatchment 3S: Pervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

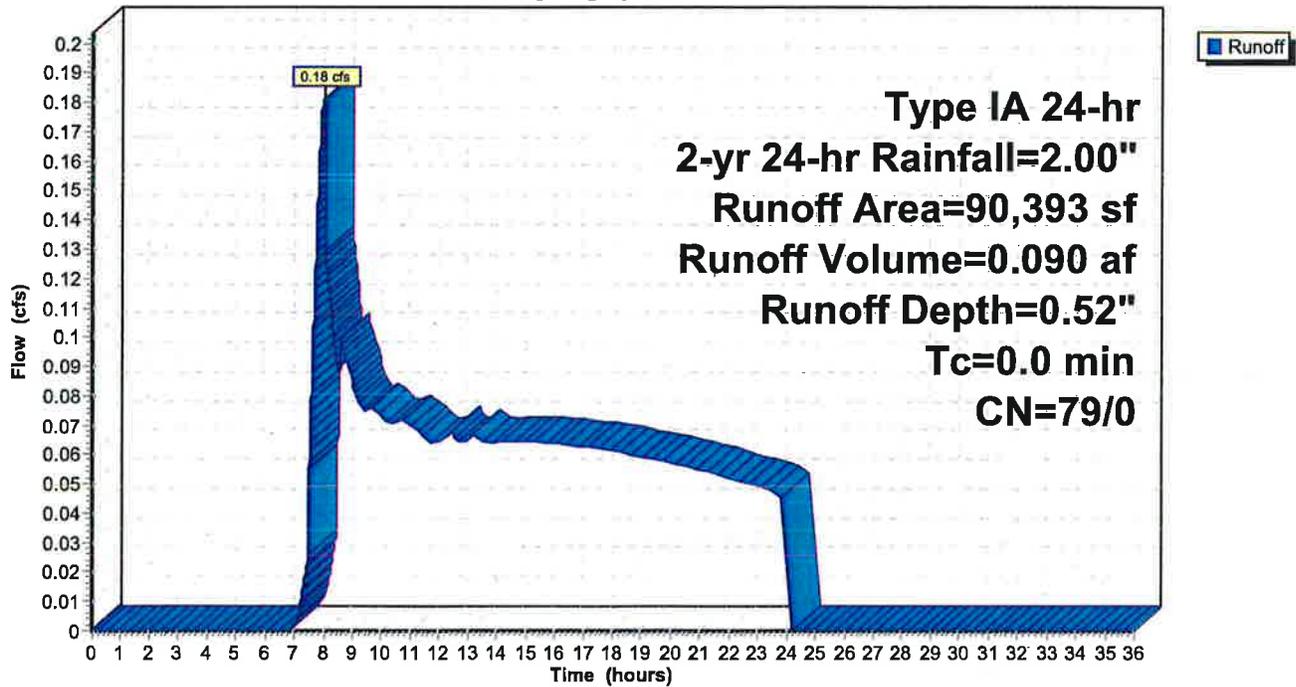
Runoff = 0.18 cfs @ 8.00 hrs, Volume= 0.090 af, Depth= 0.52"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Type IA 24-hr 2-yr 24-hr Rainfall=2.00"

Area (sf)	CN	Description
90,393	79	50-75% Grass cover, Fair, HSG C
90,393	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



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Type IA 24-hr 2-yr 24-hr Rainfall=2.00"

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Summary for Pond 5P: ODOT Right-of-Way

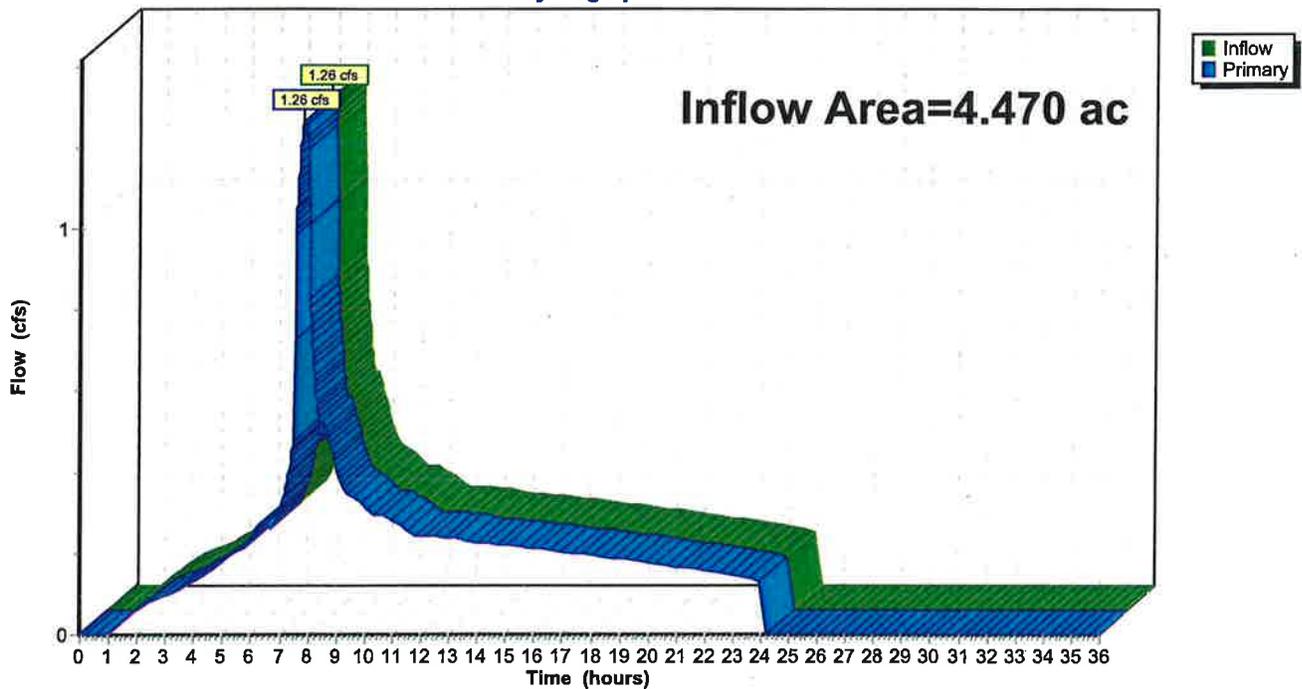
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.58% Impervious, Inflow Depth = 1.19" for 2-yr 24-hr event
Inflow = 1.26 cfs @ 7.84 hrs, Volume= 0.444 af
Primary = 1.26 cfs @ 7.84 hrs, Volume= 0.444 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph



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Type IA 24-hr 5-Yr-24hr Rainfall=2.50"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area Runoff Area=104,321 sf 100.00% Impervious Runoff Depth=2.27"
Tc=0.0 min CN=0/98 Runoff=1.41 cfs 0.453 af

Subcatchment3S: Pervious Area Runoff Area=90,393 sf 0.00% Impervious Runoff Depth=0.84"
Tc=0.0 min CN=79/0 Runoff=0.34 cfs 0.145 af

Pond 5P: ODOT Right-of-Way Inflow=1.73 cfs 0.598 af
Primary=1.73 cfs 0.598 af

Total Runoff Area = 4.470 ac Runoff Volume = 0.598 af Average Runoff Depth = 1.61"
46.42% Pervious = 2.075 ac 53.58% Impervious = 2.395 ac

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Type IA 24-hr 5-Yr-24hr Rainfall=2.50"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

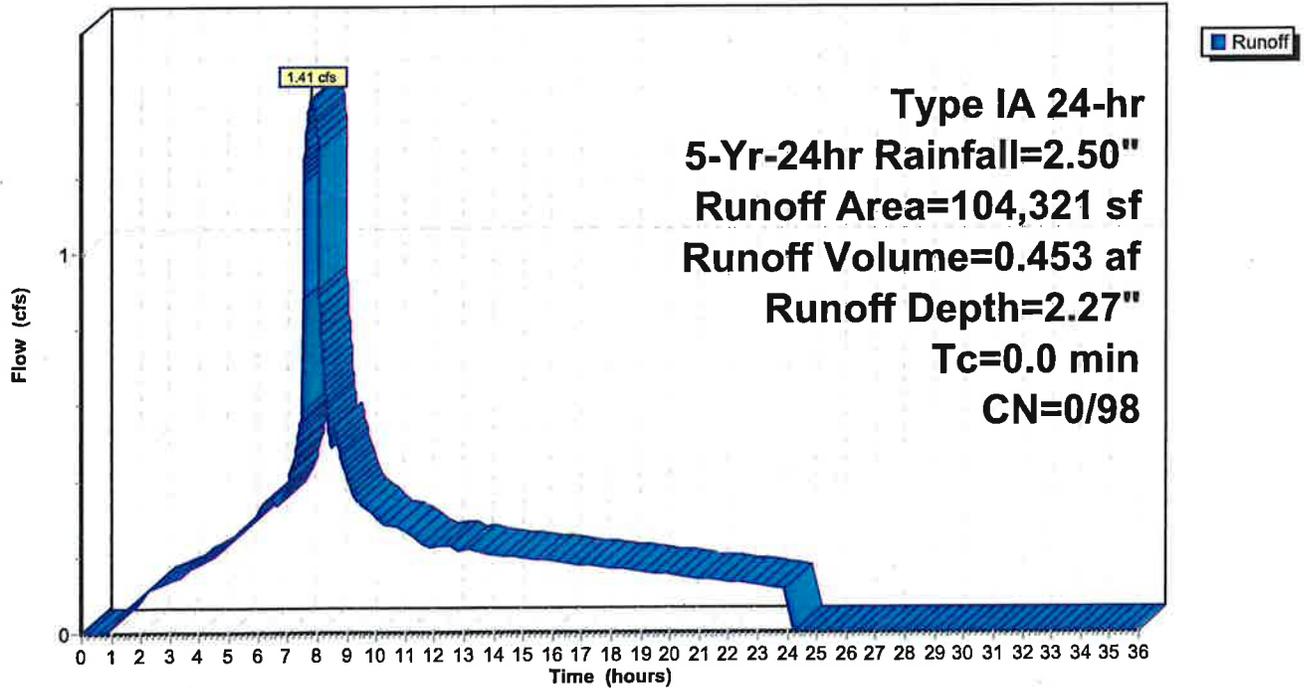
Runoff = 1.41 cfs @ 7.79 hrs, Volume= 0.453 af, Depth= 2.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-Yr-24hr Rainfall=2.50"

Area (sf)	CN	Description
104,321	98	Paved parking, HSG C
104,321	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



Summary for Subcatchment 3S: Pervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

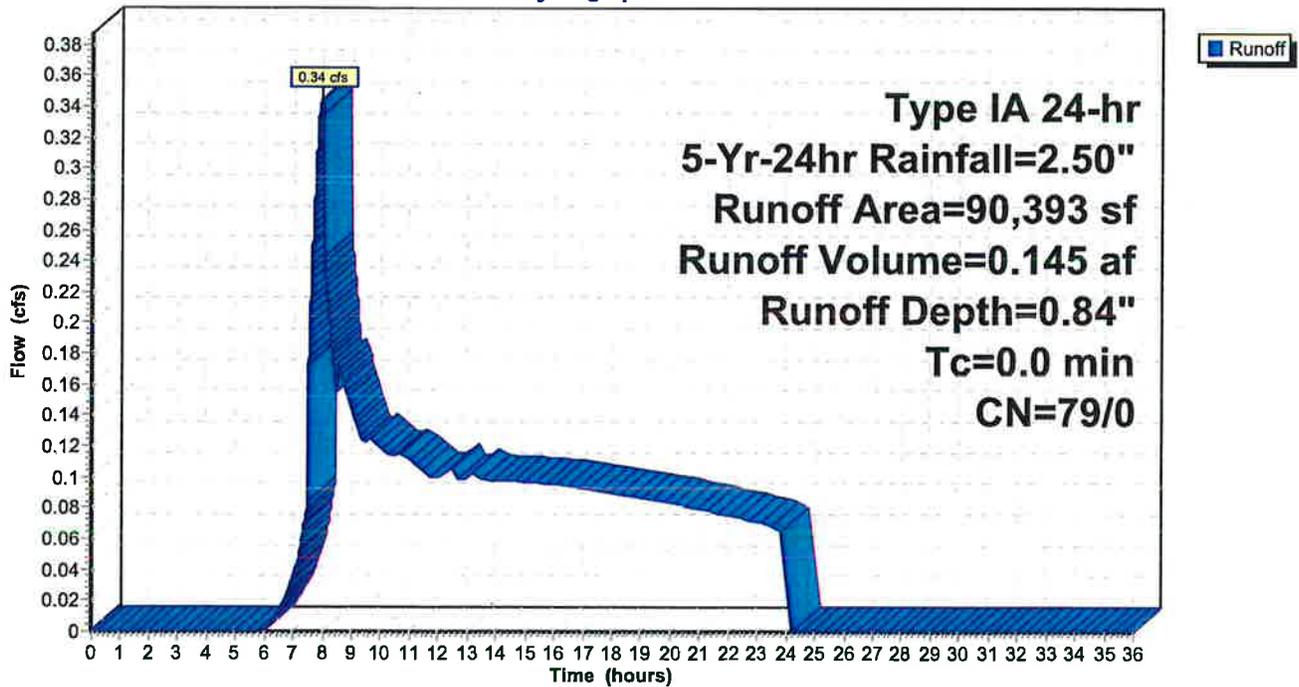
Runoff = 0.34 cfs @ 7.96 hrs, Volume= 0.145 af, Depth= 0.84"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs; dt= 0.01 hrs
 Type IA 24-hr 5-Yr-24hr Rainfall=2.50"

Area (sf)	CN	Description
90,393	79	50-75% Grass cover, Fair, HSG C
90,393	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



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Type IA 24-hr 5-Yr-24hr Rainfall=2.50"

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Summary for Pond 5P: ODOT Right-of-Way

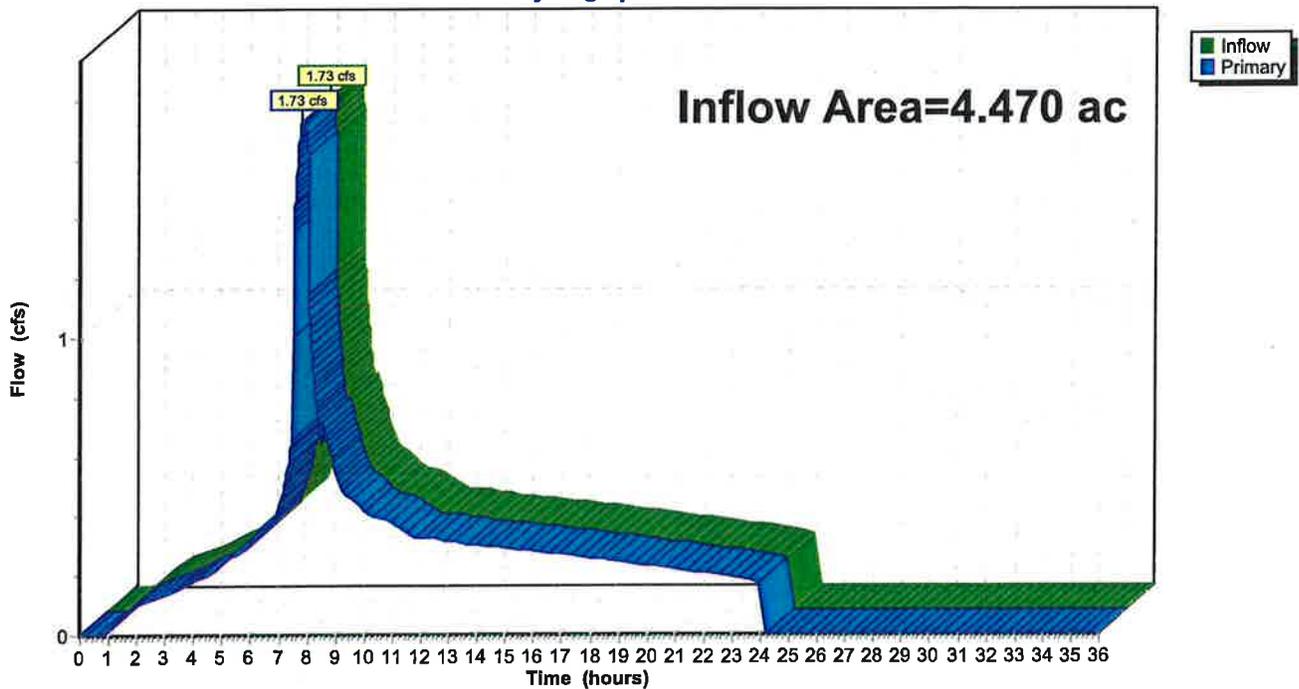
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.58% Impervious, Inflow Depth = 1.61" for 5-Yr-24hr event
Inflow = 1.73 cfs @ 7.83 hrs, Volume= 0.598 af
Primary = 1.73 cfs @ 7.83 hrs, Volume= 0.598 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph



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Type IA 24-hr 10-yr 24-hr Rainfall=3.00"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area Runoff Area=104,321 sf 100.00% Impervious Runoff Depth=2.77"
Tc=0.0 min CN=0/98 Runoff=1.70 cfs 0.552 af

Subcatchment3S: Pervious Area Runoff Area=90,393 sf 0.00% Impervious Runoff Depth=1.19"
Tc=0.0 min CN=79/0 Runoff=0.53 cfs 0.206 af

Pond 5P: ODOT Right-of-Way Inflow=2.21 cfs 0.758 af
Primary=2.21 cfs 0.758 af

Total Runoff Area = 4.470 ac Runoff Volume = 0.758 af Average Runoff Depth = 2.03"
46.42% Pervious = 2.075 ac 53.58% Impervious = 2.395 ac

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Type IA 24-hr 10-yr 24-hr Rainfall=3.00"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

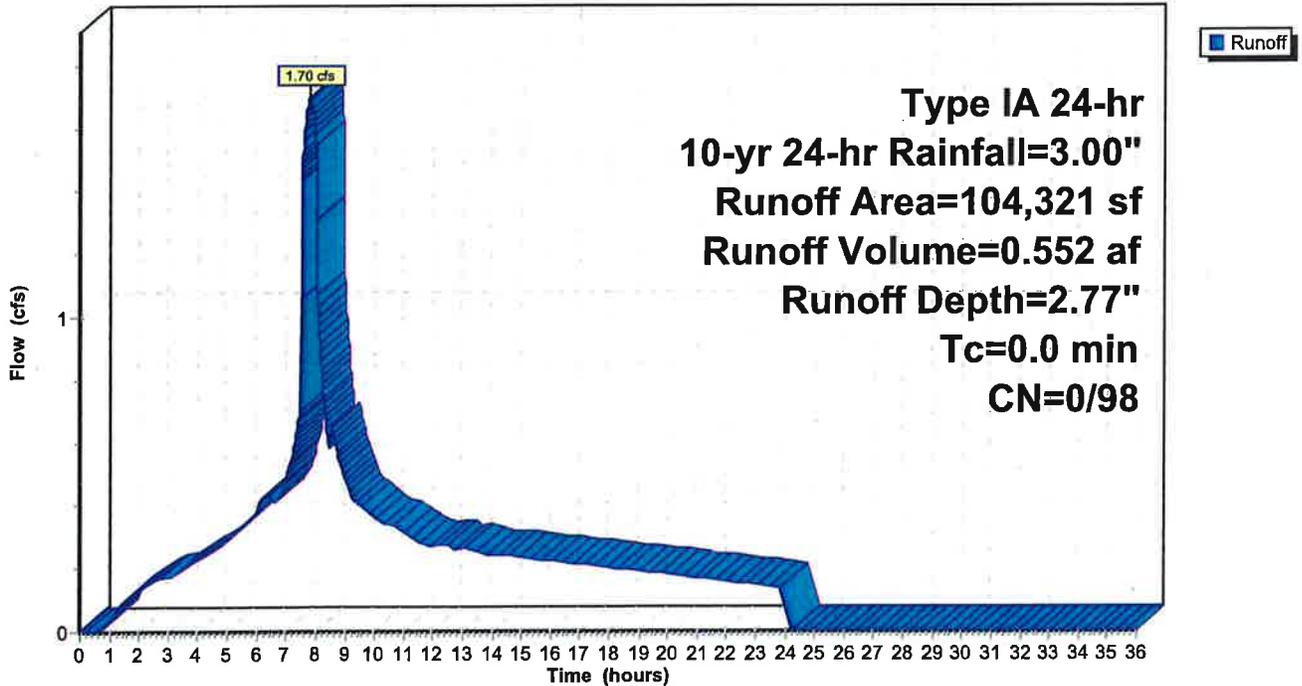
Runoff = 1.70 cfs @ 7.79 hrs, Volume= 0.552 af, Depth= 2.77"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr 24-hr Rainfall=3.00"

Area (sf)	CN	Description
104,321	98	Paved parking, HSG C
104,321	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



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Type IA 24-hr 10-yr 24-hr Rainfall=3.00"

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Summary for Subcatchment 3S: Pervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

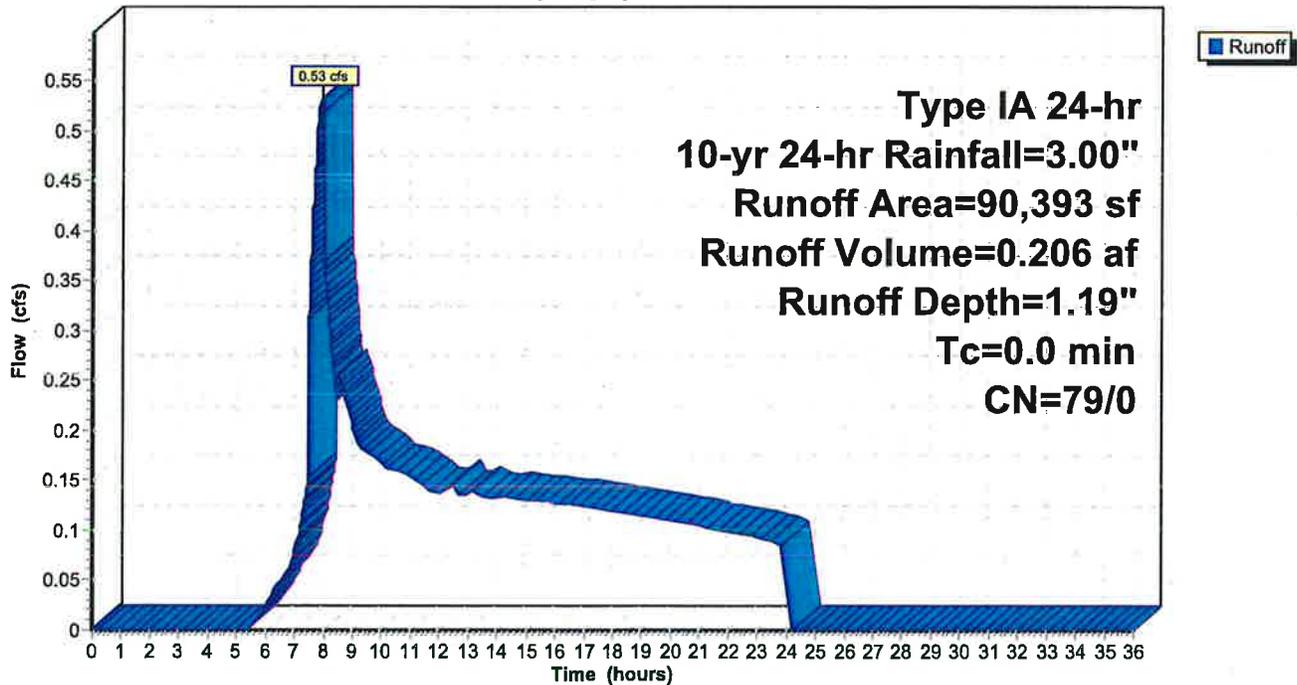
Runoff = 0.53 cfs @ 7.93 hrs, Volume= 0.206 af, Depth= 1.19"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr 24-hr Rainfall=3.00"

Area (sf)	CN	Description
90,393	79	50-75% Grass cover, Fair, HSG C
90,393	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



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Type IA 24-hr 10-yr 24-hr Rainfall=3.00"

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Summary for Pond 5P: ODOT Right-of-Way

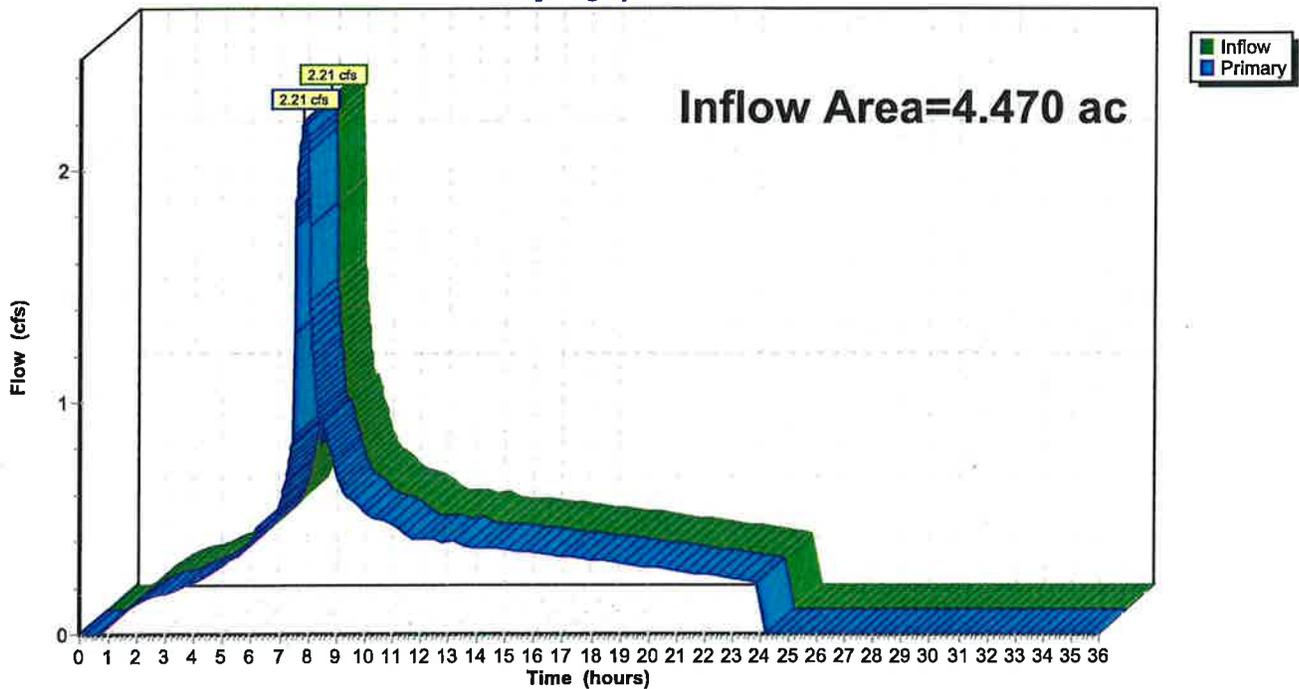
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.58% Impervious, Inflow Depth = 2.03" for 10-yr 24-hr event
Inflow = 2.21 cfs @ 7.83 hrs, Volume= 0.758 af
Primary = 2.21 cfs @ 7.83 hrs, Volume= 0.758 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph



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Type IA 24-hr 25-yr 24-hr Rainfall=3.40"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area Runoff Area=104,321 sf 100.00% Impervious Runoff Depth=3.17"
Tc=0.0 min CN=0/98 Runoff=1.94 cfs 0.632 af

Subcatchment3S: Pervious Area Runoff Area=90,393 sf 0.00% Impervious Runoff Depth=1.49"
Tc=0.0 min CN=79/0 Runoff=0.70 cfs 0.257 af

Pond 5P: ODOT Right-of-Way Inflow=2.62 cfs 0.889 af
Primary=2.62 cfs 0.889 af

Total Runoff Area = 4.470 ac Runoff Volume = 0.889 af Average Runoff Depth = 2.39"
46.42% Pervious = 2.075 ac 53.58% Impervious = 2.395 ac

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Type IA 24-hr 25-yr 24-hr Rainfall=3.40"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

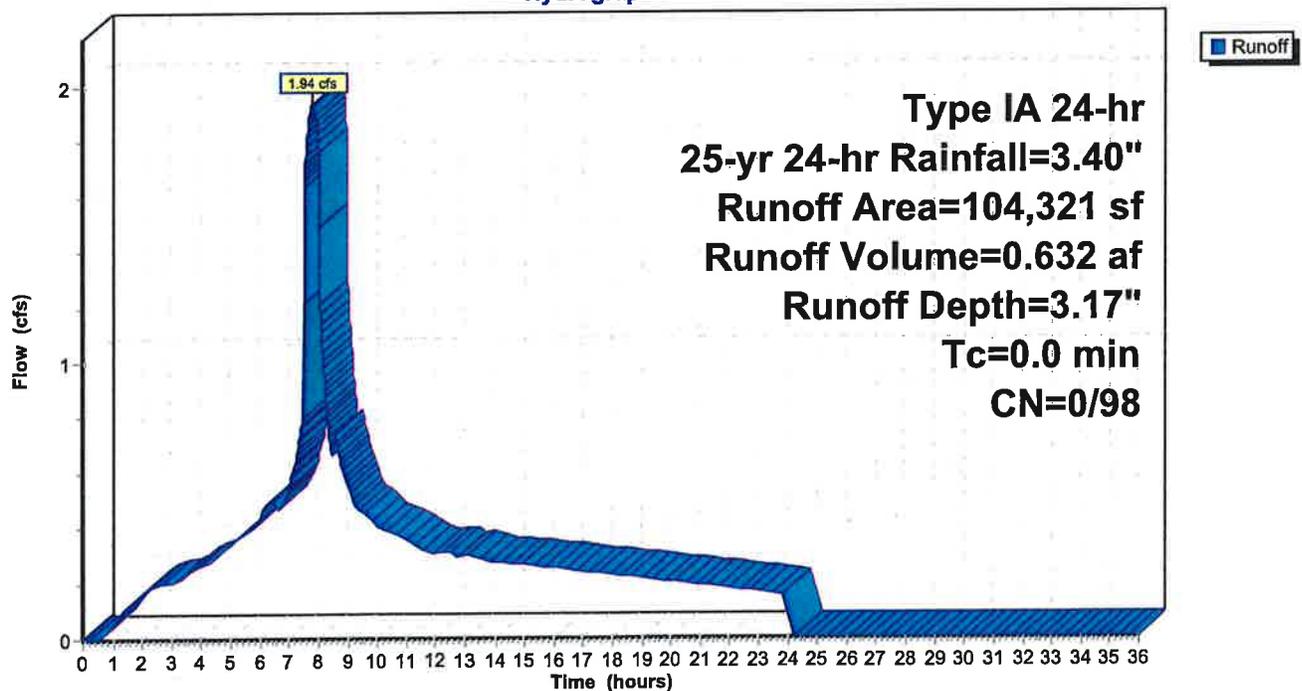
Runoff = 1.94 cfs @ 7.78 hrs, Volume= 0.632 af, Depth= 3.17"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr 24-hr Rainfall=3.40"

Area (sf)	CN	Description
104,321	98	Paved parking, HSG C
104,321	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



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Type IA 24-hr 25-yr 24-hr Rainfall=3.40"

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Summary for Subcatchment 3S: Pervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

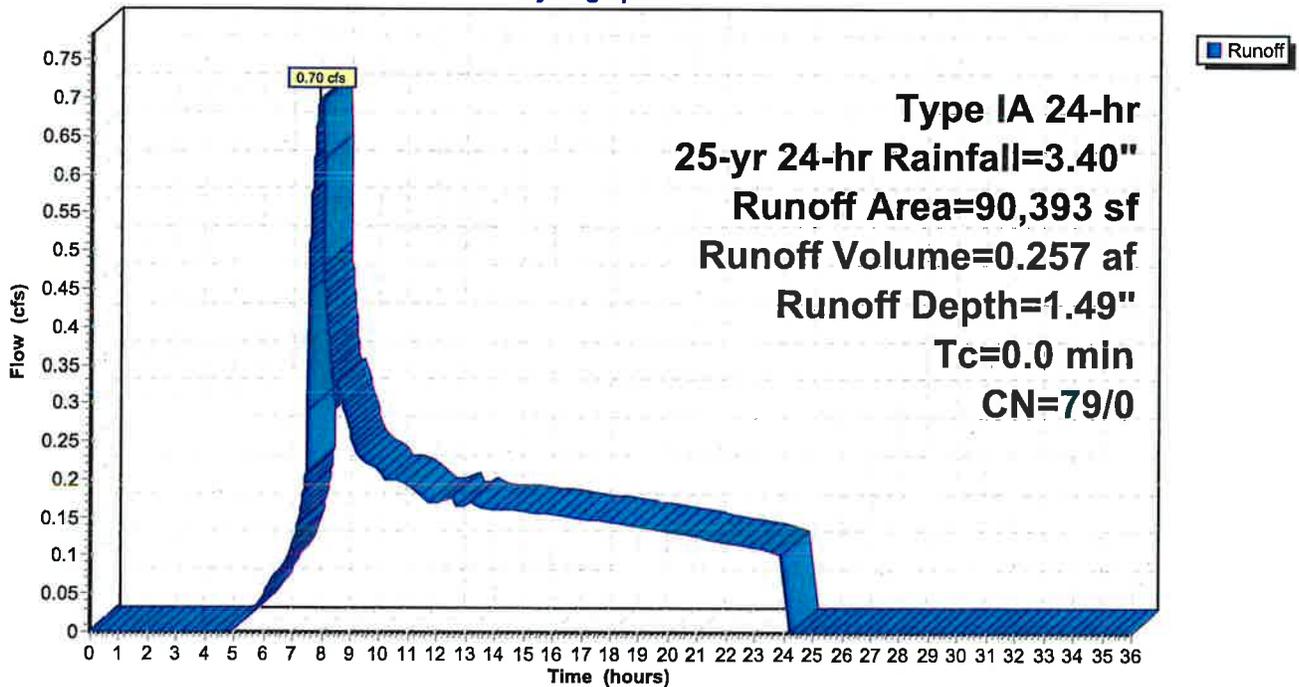
Runoff = 0.70 cfs @ 7.91 hrs, Volume= 0.257 af, Depth= 1.49"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr 24-hr Rainfall=3.40"

Area (sf)	CN	Description
90,393	79	50-75% Grass cover, Fair, HSG C
90,393	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



Summary for Pond 5P: ODOT Right-of-Way

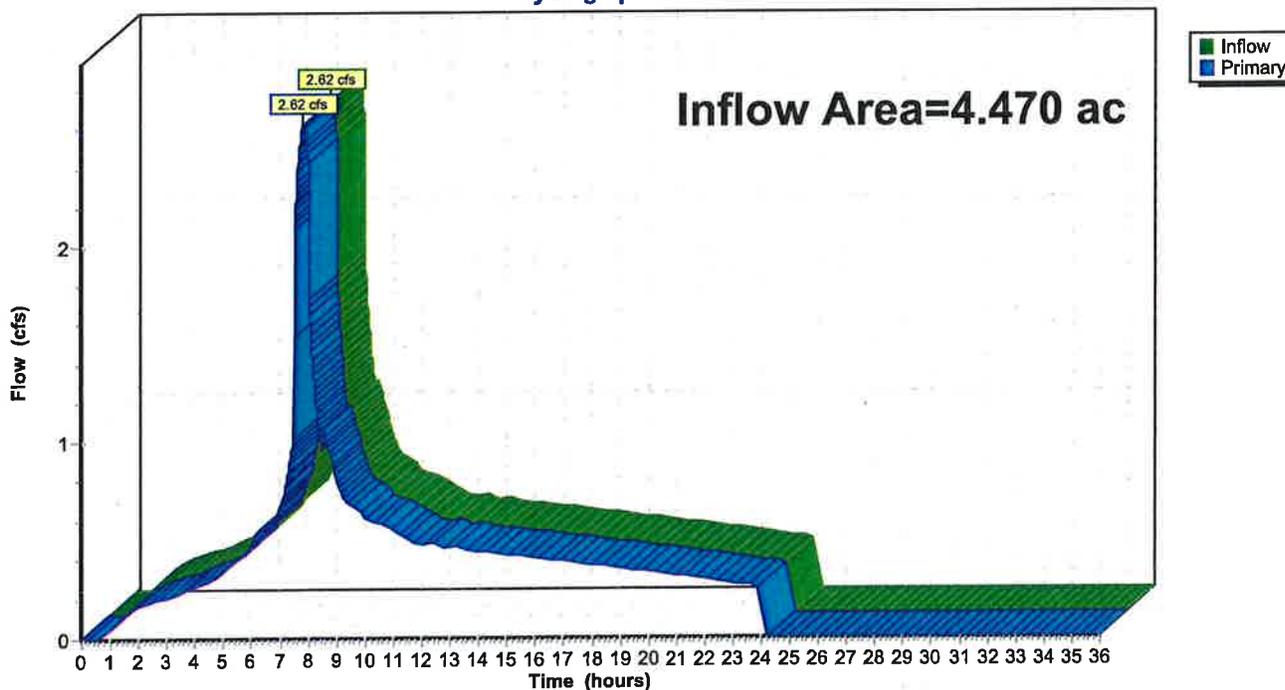
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.58% Impervious, Inflow Depth = 2.39" for 25-yr 24-hr event
Inflow = 2.62 cfs @ 7.83 hrs, Volume= 0.889 af
Primary = 2.62 cfs @ 7.83 hrs, Volume= 0.889 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph



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Type IA 24-hr 50-yr 24-hr Rainfall=3.60"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area Runoff Area=104,321 sf 100.00% Impervious Runoff Depth=3.37"
Tc=0.0 min CN=0/98 Runoff=2.06 cfs 0.672 af

Subcatchment3S: Pervious Area Runoff Area=90,393 sf 0.00% Impervious Runoff Depth=1.64"
Tc=0.0 min CN=79/0 Runoff=0.79 cfs 0.284 af

Pond 5P: ODOT Right-of-Way Inflow=2.82 cfs 0.956 af
Primary=2.82 cfs 0.956 af

Total Runoff Area = 4.470 ac Runoff Volume = 0.956 af Average Runoff Depth = 2.57"
46.42% Pervious = 2.075 ac 53.58% Impervious = 2.395 ac

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Type IA 24-hr 50-yr 24-hr Rainfall=3.60"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

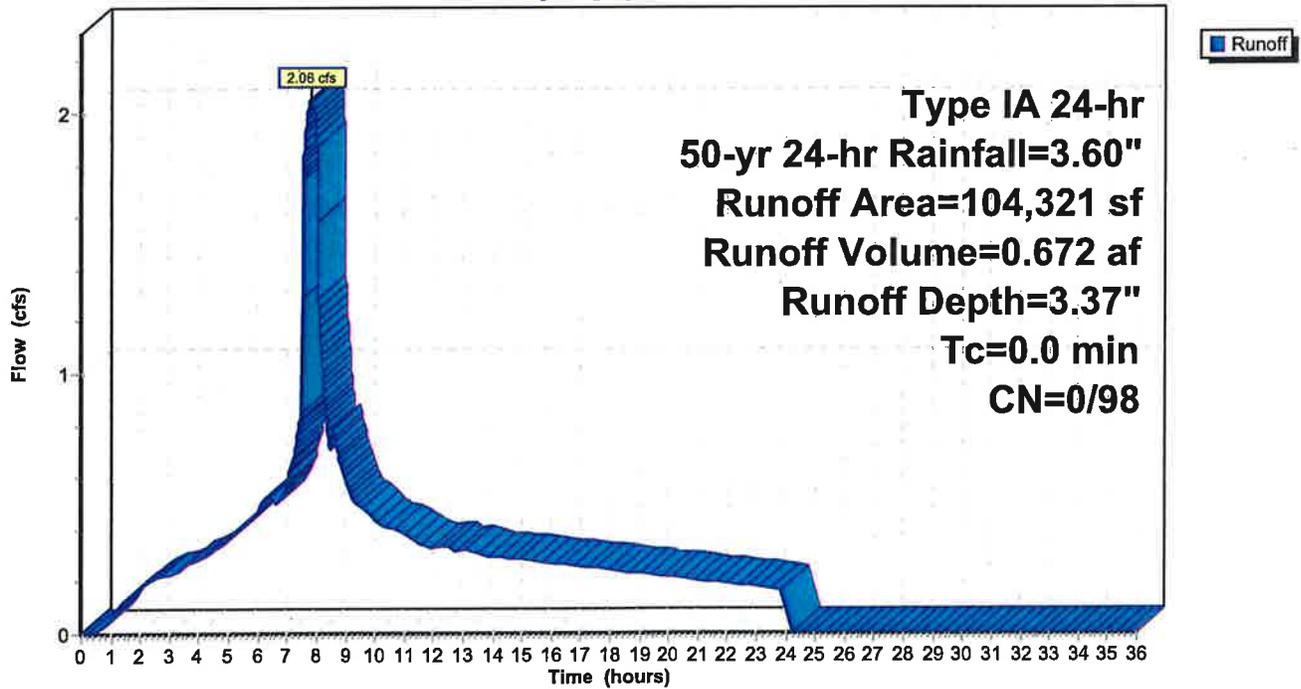
Runoff = 2.06 cfs @ 7.78 hrs, Volume= 0.672 af, Depth= 3.37"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr 24-hr Rainfall=3.60"

Area (sf)	CN	Description
104,321	98	Paved parking, HSG C
104,321	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



Summary for Subcatchment 3S: Pervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

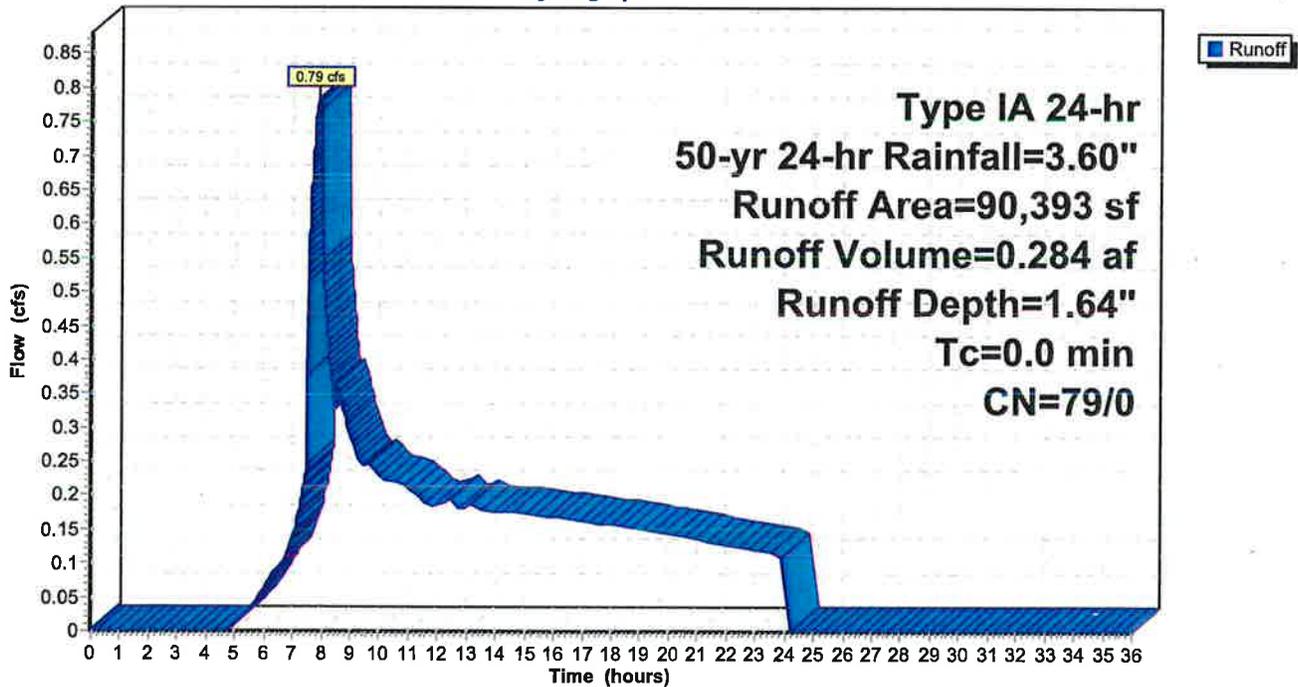
Runoff = 0.79 cfs @ 7.91 hrs, Volume= 0.284 af, Depth= 1.64"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr 24-hr Rainfall=3.60"

Area (sf)	CN	Description
90,393	79	50-75% Grass cover, Fair, HSG C
90,393	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



Summary for Pond 5P: ODOT Right-of-Way

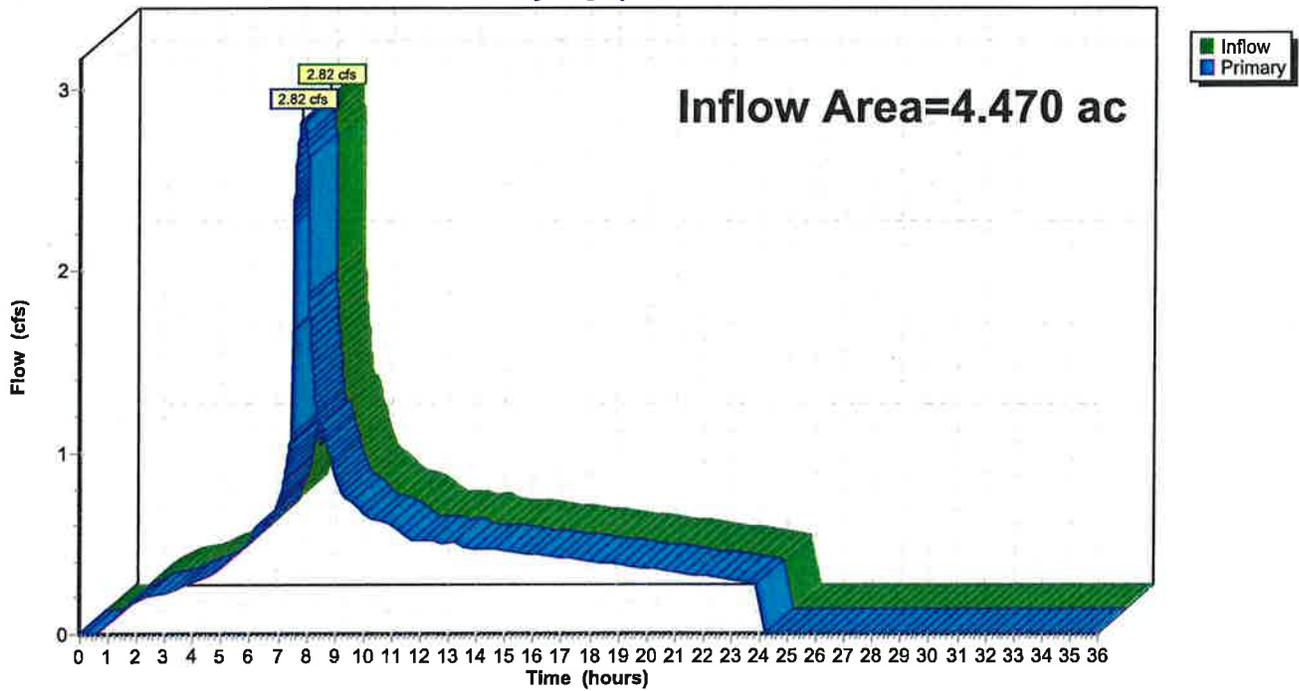
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.58% Impervious, Inflow Depth = 2.57" for 50-yr 24-hr event
Inflow = 2.82 cfs @ 7.82 hrs, Volume= 0.956 af
Primary = 2.82 cfs @ 7.82 hrs, Volume= 0.956 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph



3313 Stormwater Pre

Type IA 24-hr 100-yr 24-hr Rainfall=4.00"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area Runoff Area=104,321 sf 100.00% Impervious Runoff Depth=3.77"
Tc=0.0 min CN=0/98 Runoff=2.30 cfs 0.751 af

Subcatchment3S: Pervious Area Runoff Area=90,393 sf 0.00% Impervious Runoff Depth=1.96"
Tc=0.0 min CN=79/0 Runoff=0.96 cfs 0.340 af

Pond 5P: ODOT Right-of-Way Inflow=3.24 cfs 1.091 af
Primary=3.24 cfs 1.091 af

Total Runoff Area = 4.470 ac Runoff Volume = 1.091 af Average Runoff Depth = 2.93"
46.42% Pervious = 2.075 ac 53.58% Impervious = 2.395 ac

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Type IA 24-hr 100-yr 24-hr Rainfall=4.00"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

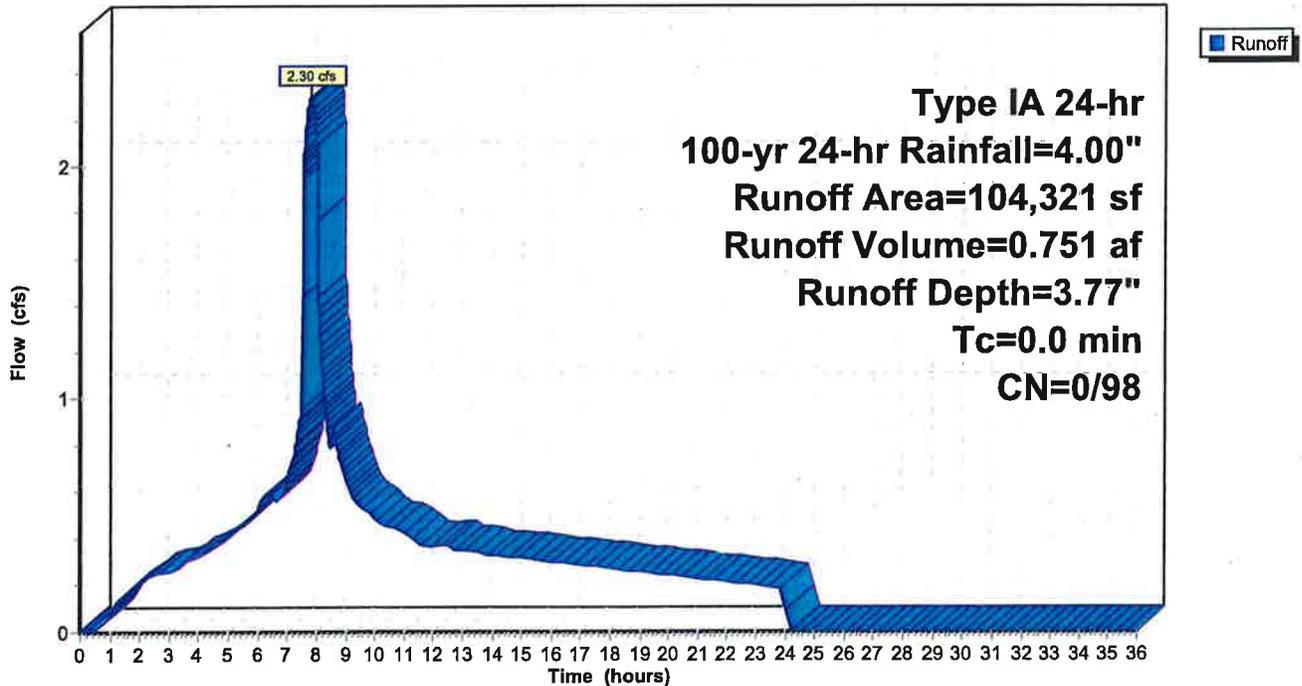
Runoff = 2.30 cfs @ 7.78 hrs, Volume= 0.751 af, Depth= 3.77"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr 24-hr Rainfall=4.00"

Area (sf)	CN	Description
104,321	98	Paved parking, HSG C
104,321	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



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Type IA 24-hr 100-yr 24-hr Rainfall=4.00"

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Summary for Subcatchment 3S: Pervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

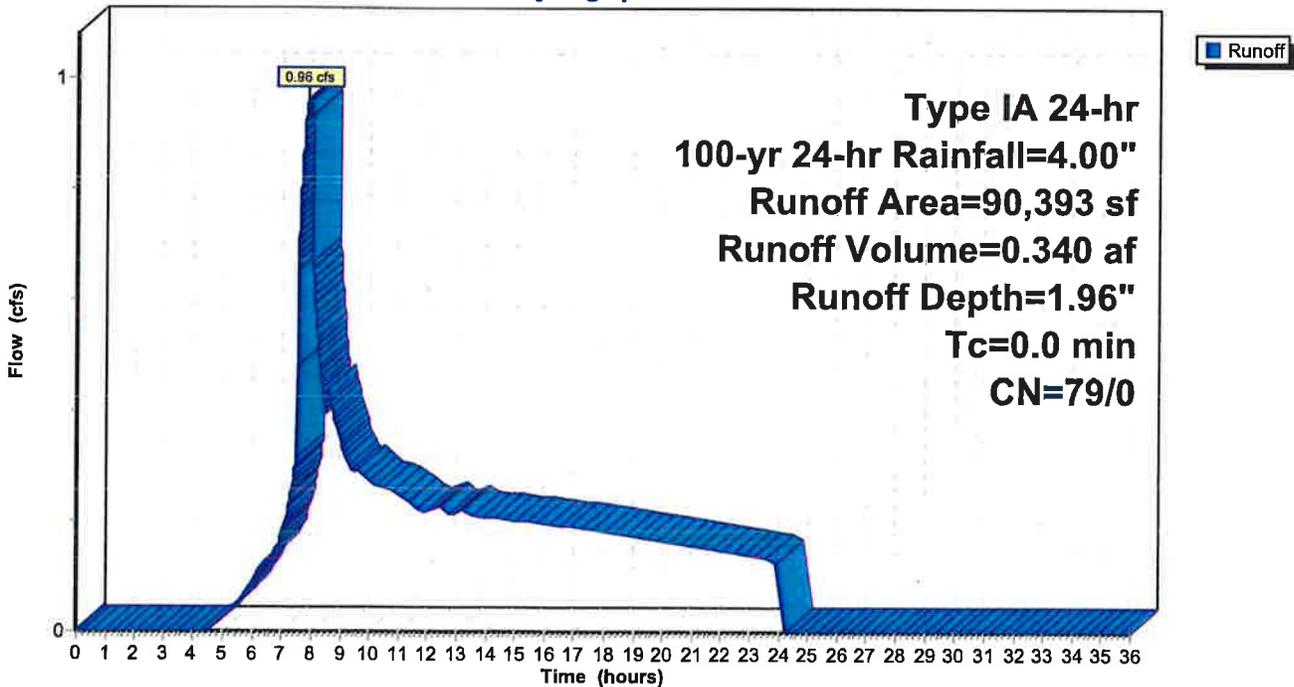
Runoff = 0.96 cfs @ 7.89 hrs, Volume= 0.340 af, Depth= 1.96"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr 24-hr Rainfall=4.00"

Area (sf)	CN	Description
90,393	79	50-75% Grass cover, Fair, HSG C
90,393	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



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Type IA 24-hr 100-yr 24-hr Rainfall=4.00"

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Summary for Pond 5P: ODOT Right-of-Way

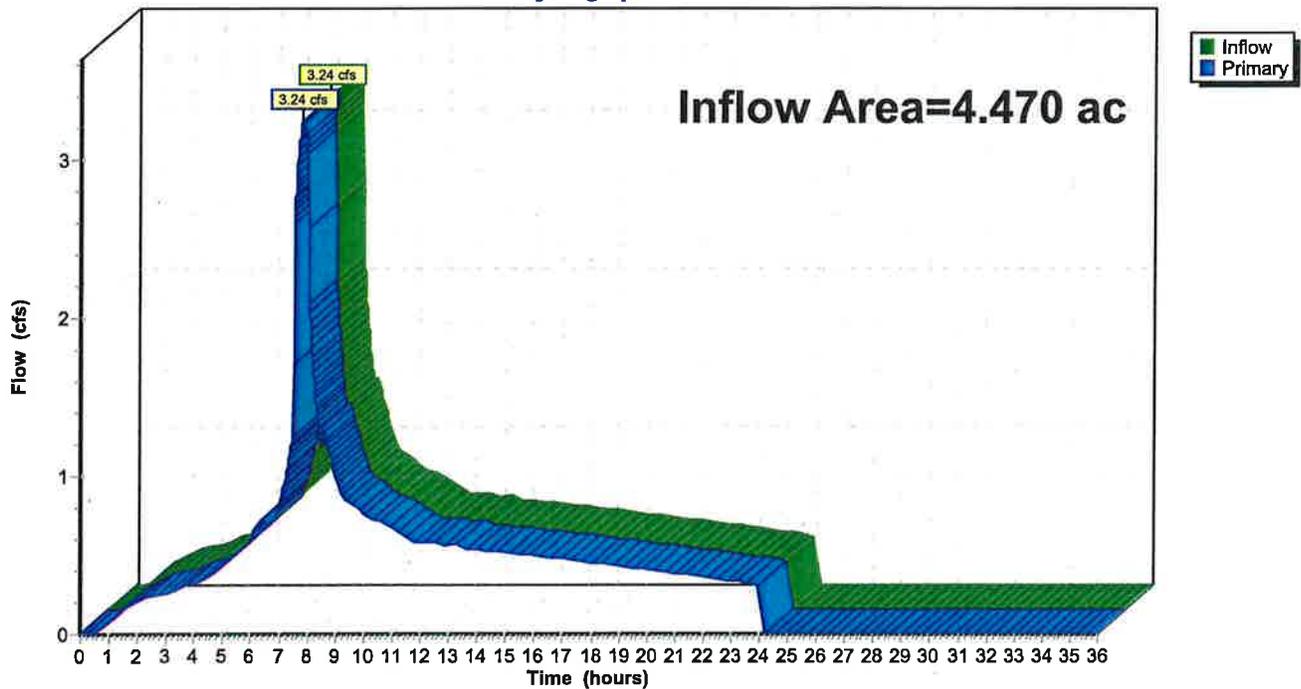
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.58% Impervious, Inflow Depth = 2.93" for 100-yr 24-hr event
Inflow = 3.24 cfs @ 7.82 hrs, Volume= 1.091 af
Primary = 3.24 cfs @ 7.82 hrs, Volume= 1.091 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph



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Type IA 24-hr Water Quality Rainfall=0.67"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area Runoff Area=104,321 sf 100.00% Impervious Runoff Depth=0.48"
Tc=0.0 min CN=0/98 Runoff=0.30 cfs 0.095 af

Subcatchment3S: Pervious Area Runoff Area=90,393 sf 0.00% Impervious Runoff Depth=0.01"
Tc=0.0 min CN=79/0 Runoff=0.00 cfs 0.001 af

Pond 5P: ODOT Right-of-Way Inflow=0.30 cfs 0.096 af
Primary=0.30 cfs 0.096 af

Total Runoff Area = 4.470 ac Runoff Volume = 0.096 af Average Runoff Depth = 0.26"
46.42% Pervious = 2.075 ac 53.58% Impervious = 2.395 ac

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Type IA 24-hr Water Quality Rainfall=0.67"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

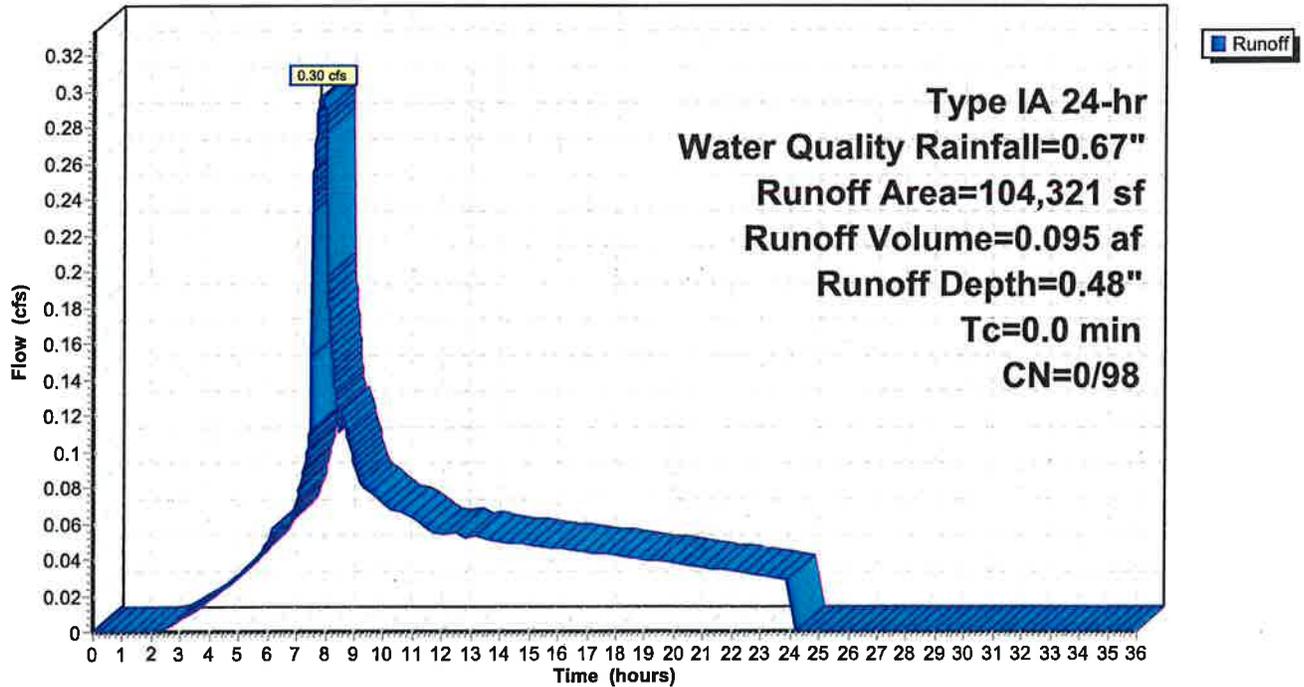
Runoff = 0.30 cfs @ 7.83 hrs, Volume= 0.095 af, Depth= 0.48"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr Water Quality Rainfall=0.67"

Area (sf)	CN	Description
104,321	98	Paved parking, HSG C
104,321	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



Summary for Subcatchment 3S: Pervious Area

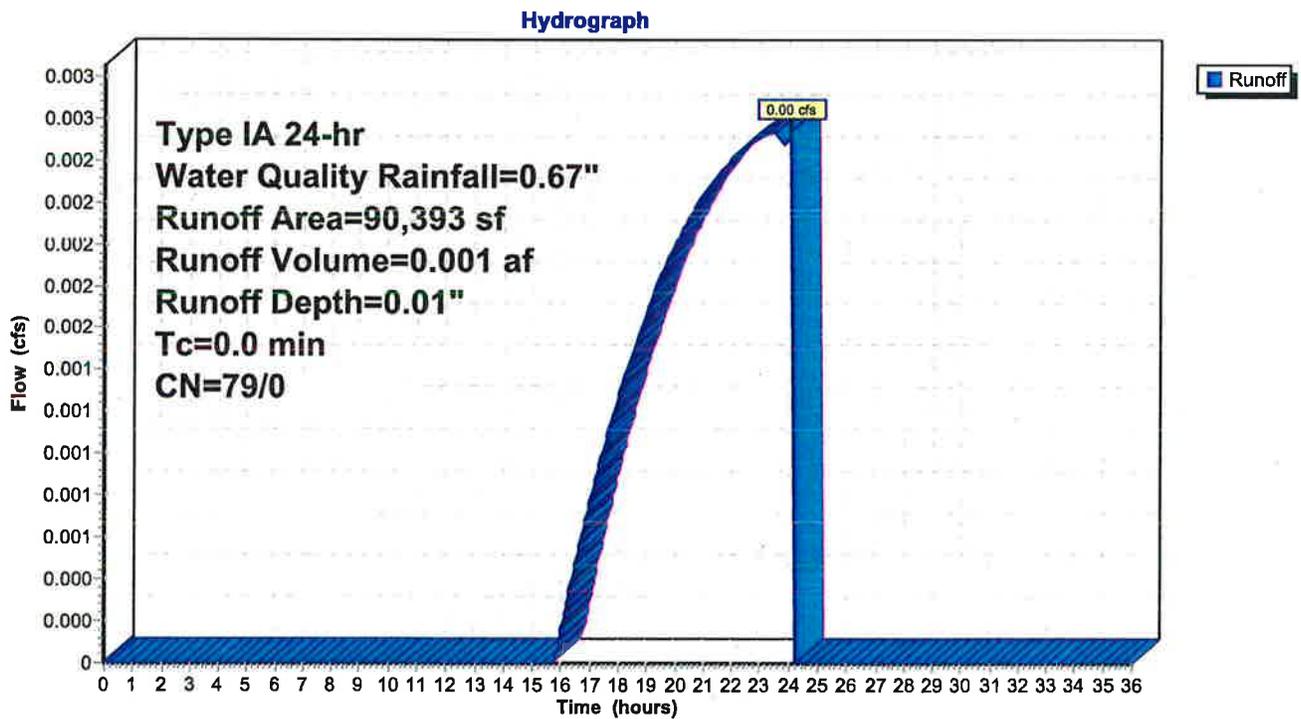
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
 Type IA 24-hr Water Quality Rainfall=0.67"

Area (sf)	CN	Description
90,393	79	50-75% Grass cover, Fair, HSG C
90,393	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area



Summary for Pond 5P: ODOT Right-of-Way

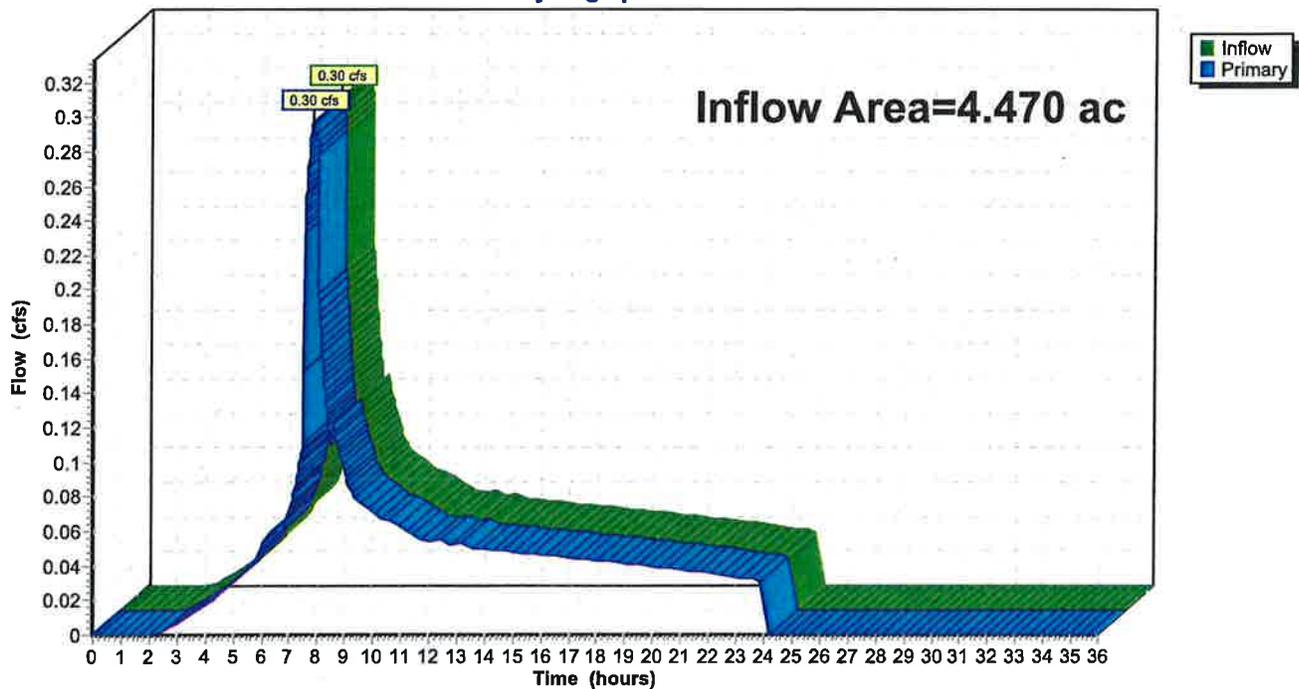
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.58% Impervious, Inflow Depth = 0.26" for Water Quality event
Inflow = 0.30 cfs @ 7.83 hrs, Volume= 0.096 af
Primary = 0.30 cfs @ 7.83 hrs, Volume= 0.096 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph





Impervious Area



Pervious Area



ODOT Right-of-Way



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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.066	79	50-75% Grass cover, Fair, HSG C (3S)
2.404	98	Paved parking, HSG C (1S)
4.470	89	TOTAL AREA

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Type IA 24-hr 2-yr 24-hr Rainfall=2.00"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area Runoff Area=104,721 sf 100.00% Impervious Runoff Depth=1.77"
Tc=0.0 min CN=0/98 Runoff=1.11 cfs 0.355 af

Subcatchment3S: Pervious Area Runoff Area=89,993 sf 0.00% Impervious Runoff Depth=0.52"
Tc=0.0 min CN=79/0 Runoff=0.18 cfs 0.090 af

Pond 5P: ODOT Right-of-Way Inflow=1.27 cfs 0.445 af
Primary=1.27 cfs 0.445 af

Total Runoff Area = 4.470 ac Runoff Volume = 0.445 af Average Runoff Depth = 1.20"
46.22% Pervious = 2.066 ac 53.78% Impervious = 2.404 ac

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Type IA 24-hr 2-yr 24-hr Rainfall=2.00"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

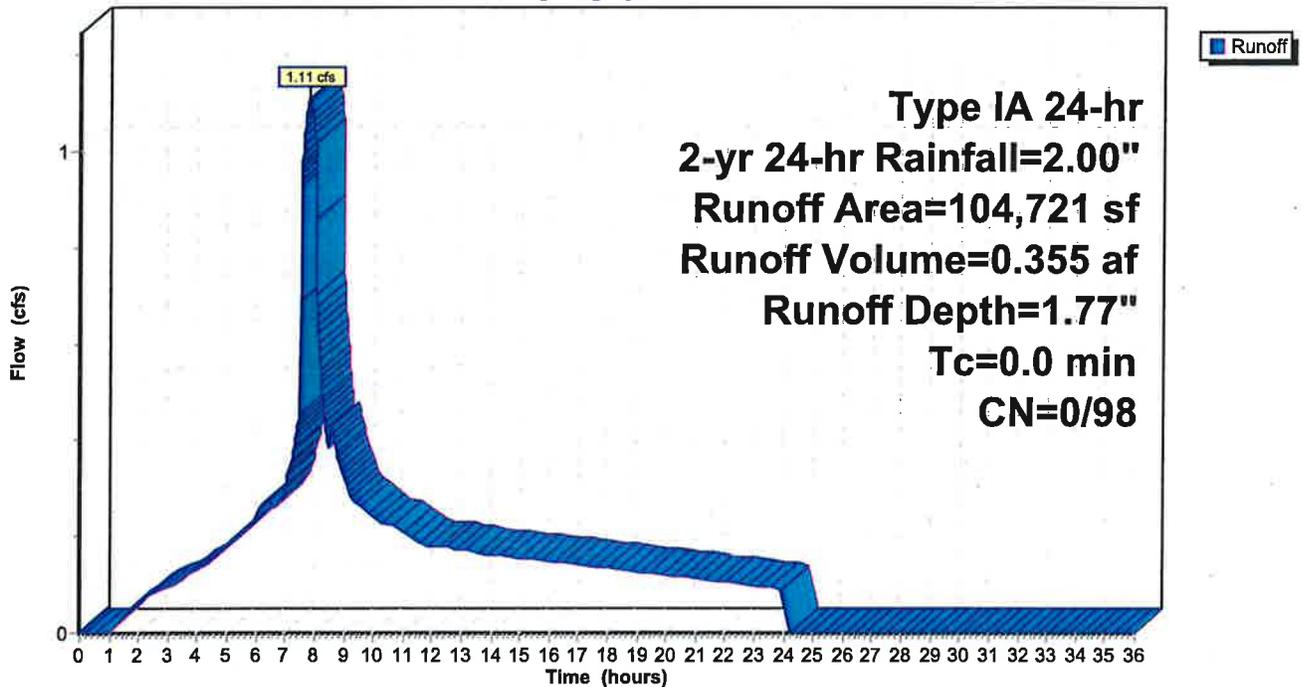
Runoff = 1.11 cfs @ 7.79 hrs, Volume= 0.355 af, Depth= 1.77"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr 24-hr Rainfall=2.00"

Area (sf)	CN	Description
104,721	98	Paved parking, HSG C
104,721	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



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Type IA 24-hr 2-yr 24-hr Rainfall=2.00"

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Summary for Subcatchment 3S: Pervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

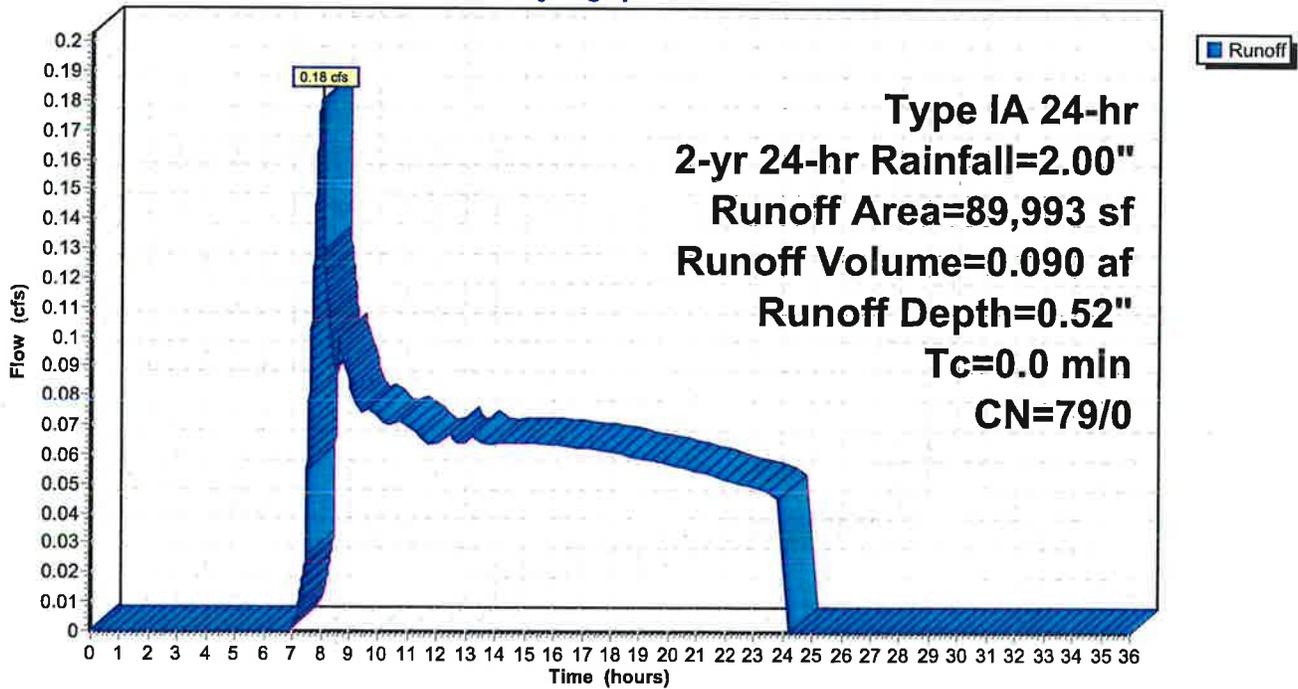
Runoff = 0.18 cfs @ 8.00 hrs, Volume= 0.090 af, Depth= 0.52"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2-yr 24-hr Rainfall=2.00"

Area (sf)	CN	Description
89,993	79	50-75% Grass cover, Fair, HSG C
89,993	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



Summary for Pond 5P: ODOT Right-of-Way

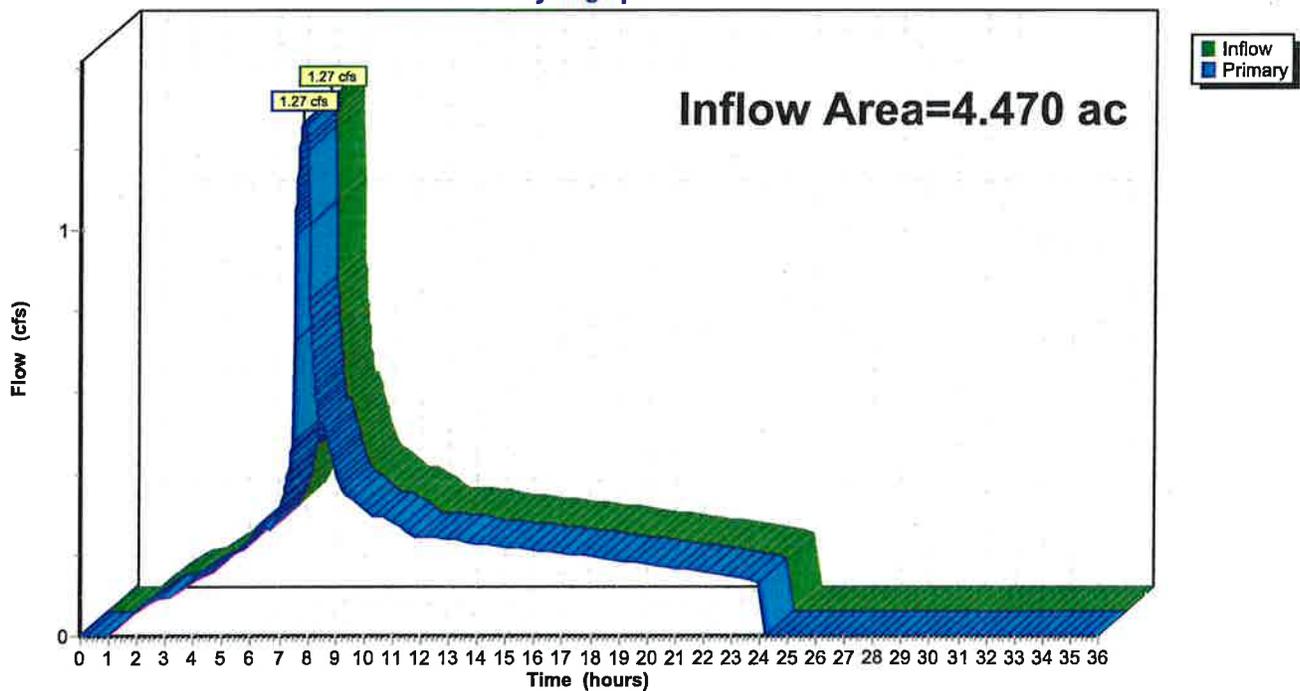
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.78% Impervious, Inflow Depth = 1.20" for 2-yr 24-hr event
Inflow = 1.27 cfs @ 7.84 hrs, Volume= 0.445 af
Primary = 1.27 cfs @ 7.84 hrs, Volume= 0.445 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph



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Type IA 24-hr 5-Yr-24hr Rainfall=2.50"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area

Runoff Area=104,721 sf 100.00% Impervious Runoff Depth=2.27"
Tc=0.0 min CN=0/98 Runoff=1.41 cfs 0.455 af

Subcatchment3S: Pervious Area

Runoff Area=89,993 sf 0.00% Impervious Runoff Depth=0.84"
Tc=0.0 min CN=79/0 Runoff=0.34 cfs 0.144 af

Pond 5P: ODOT Right-of-Way

Inflow=1.73 cfs 0.599 af
Primary=1.73 cfs 0.599 af

Total Runoff Area = 4.470 ac Runoff Volume = 0.599 af Average Runoff Depth = 1.61"
46.22% Pervious = 2.066 ac 53.78% Impervious = 2.404 ac

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Type IA 24-hr 5-Yr-24hr Rainfall=2.50"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

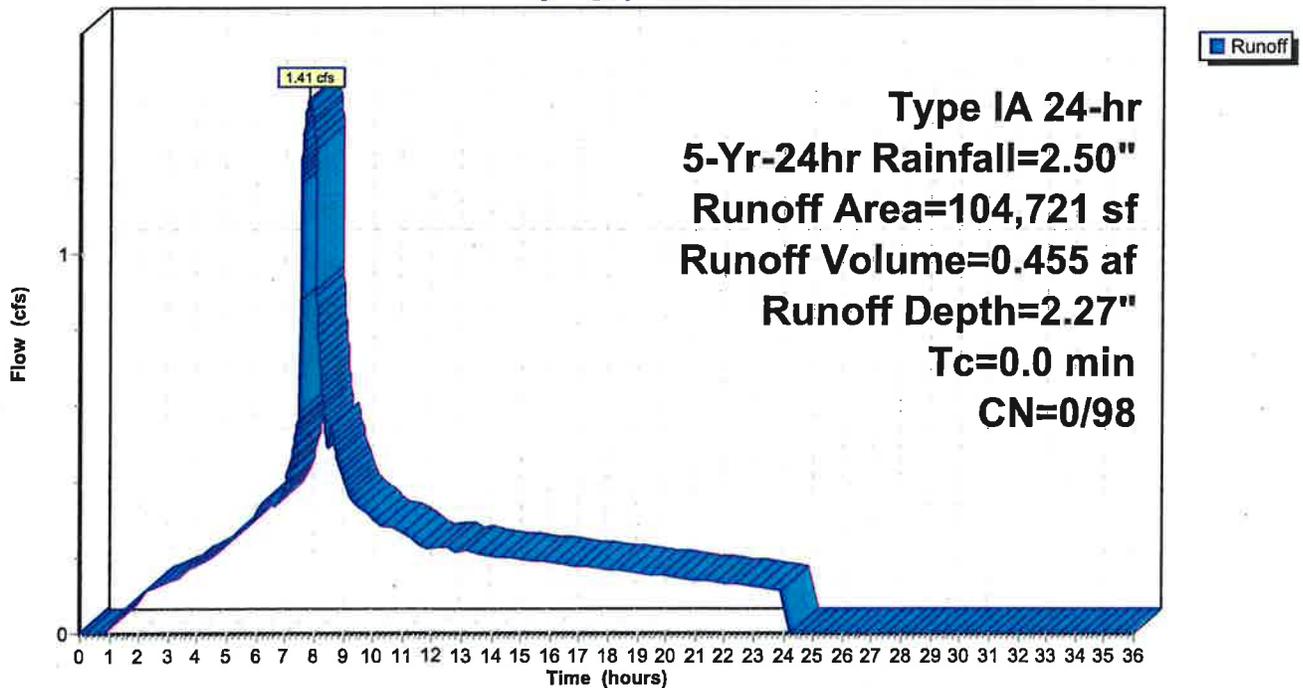
Runoff = 1.41 cfs @ 7.79 hrs, Volume= 0.455 af, Depth= 2.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-Yr-24hr Rainfall=2.50"

Area (sf)	CN	Description
104,721	98	Paved parking, HSG C
104,721	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



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Type IA 24-hr 5-Yr-24hr Rainfall=2.50"

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Summary for Subcatchment 3S: Pervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

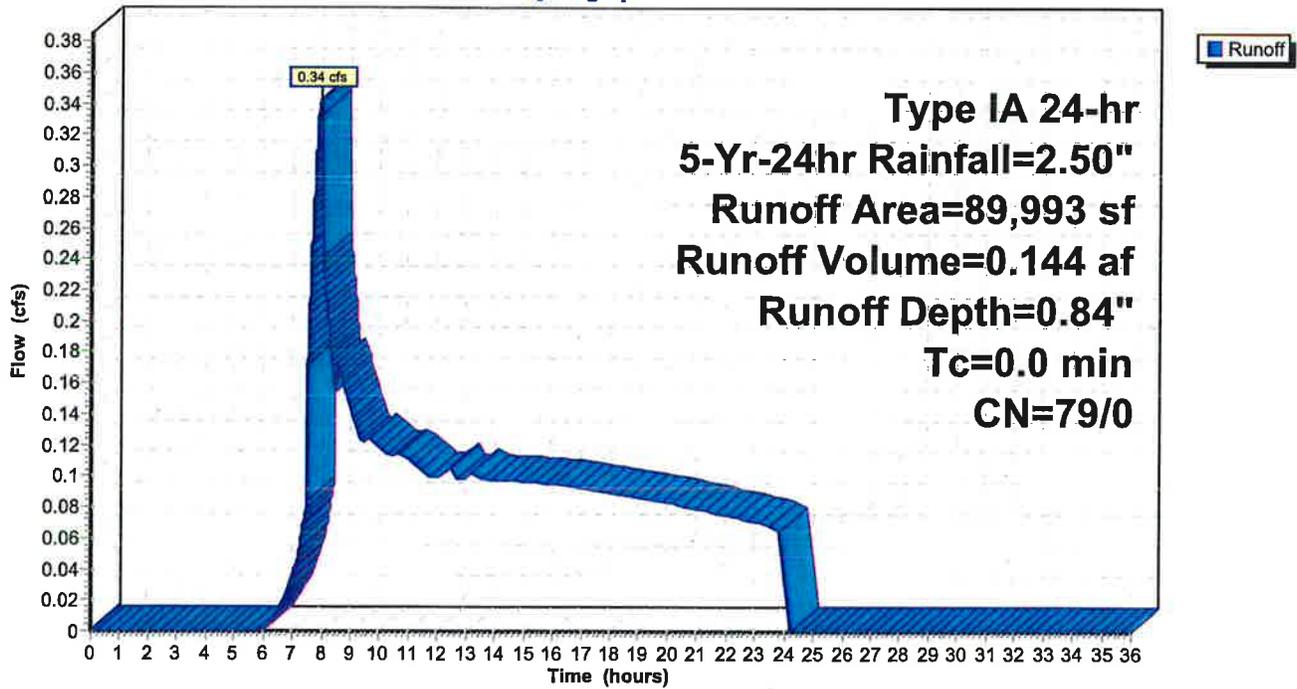
Runoff = 0.34 cfs @ 7.96 hrs, Volume= 0.144 af, Depth= 0.84"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 5-Yr-24hr Rainfall=2.50"

Area (sf)	CN	Description
89,993	79	50-75% Grass cover, Fair, HSG C
89,993	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



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Type IA 24-hr 5-Yr-24hr Rainfall=2.50"

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Summary for Pond 5P: ODOT Right-of-Way

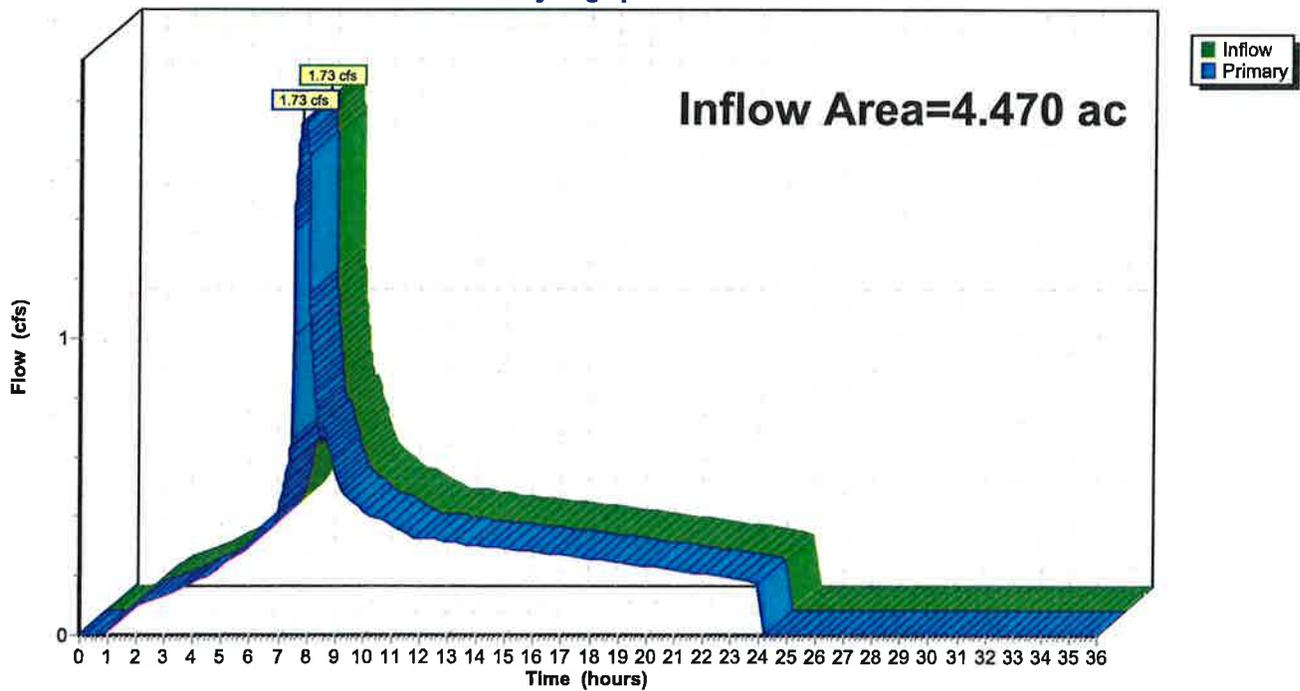
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.78% Impervious, Inflow Depth = 1.61" for 5-Yr-24hr event
Inflow = 1.73 cfs @ 7.83 hrs, Volume= 0.599 af
Primary = 1.73 cfs @ 7.83 hrs, Volume= 0.599 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph



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Type IA 24-hr 10-yr 24-hr Rainfall=3.00"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area Runoff Area=104,721 sf 100.00% Impervious Runoff Depth=2.77"
Tc=0.0 min CN=0/98 Runoff=1.71 cfs 0.555 af

Subcatchment3S: Pervious Area Runoff Area=89,993 sf 0.00% Impervious Runoff Depth=1.19"
Tc=0.0 min CN=79/0 Runoff=0.53 cfs 0.205 af

Pond 5P: ODOT Right-of-Way Inflow=2.22 cfs 0.759 af
Primary=2.22 cfs 0.759 af

Total Runoff Area = 4.470 ac Runoff Volume = 0.759 af Average Runoff Depth = 2.04"
46.22% Pervious = 2.066 ac 53.78% Impervious = 2.404 ac

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Type IA 24-hr 10-yr 24-hr Rainfall=3.00"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

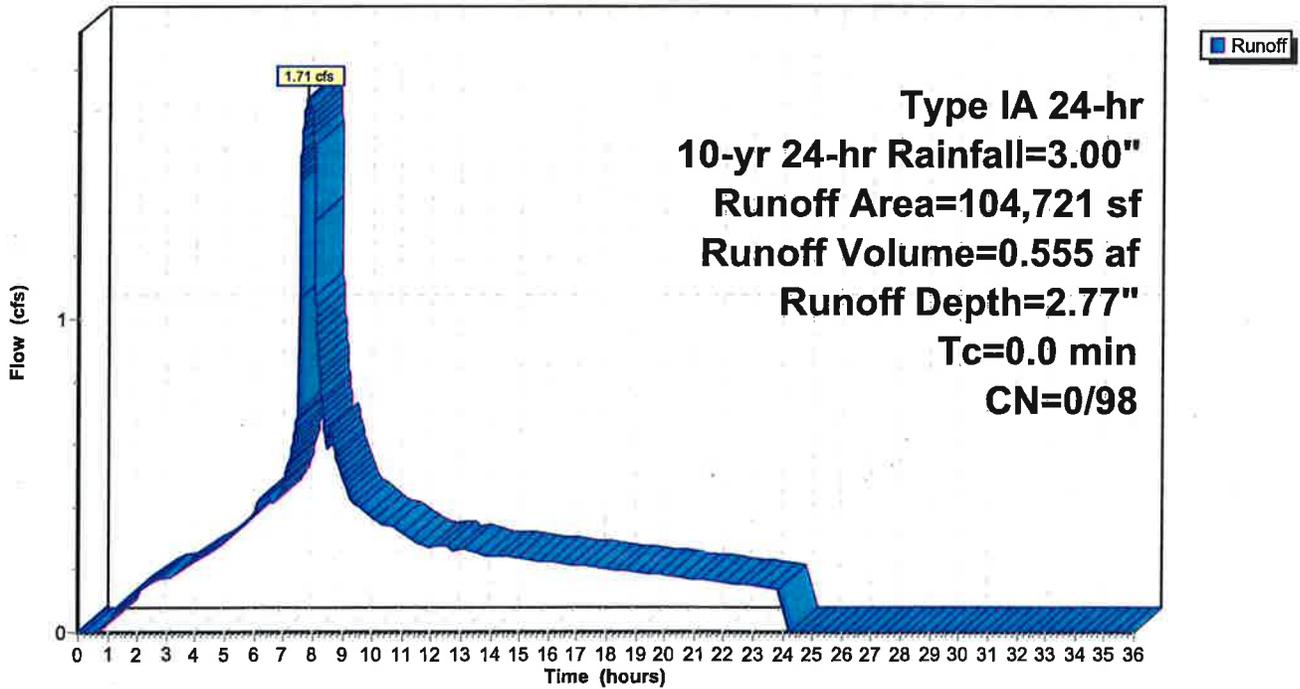
Runoff = 1.71 cfs @ 7.79 hrs, Volume= 0.555 af, Depth= 2.77"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr 24-hr Rainfall=3.00"

Area (sf)	CN	Description
104,721	98	Paved parking, HSG C
104,721	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



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Type IA 24-hr 10-yr 24-hr Rainfall=3.00"

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Summary for Subcatchment 3S: Pervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

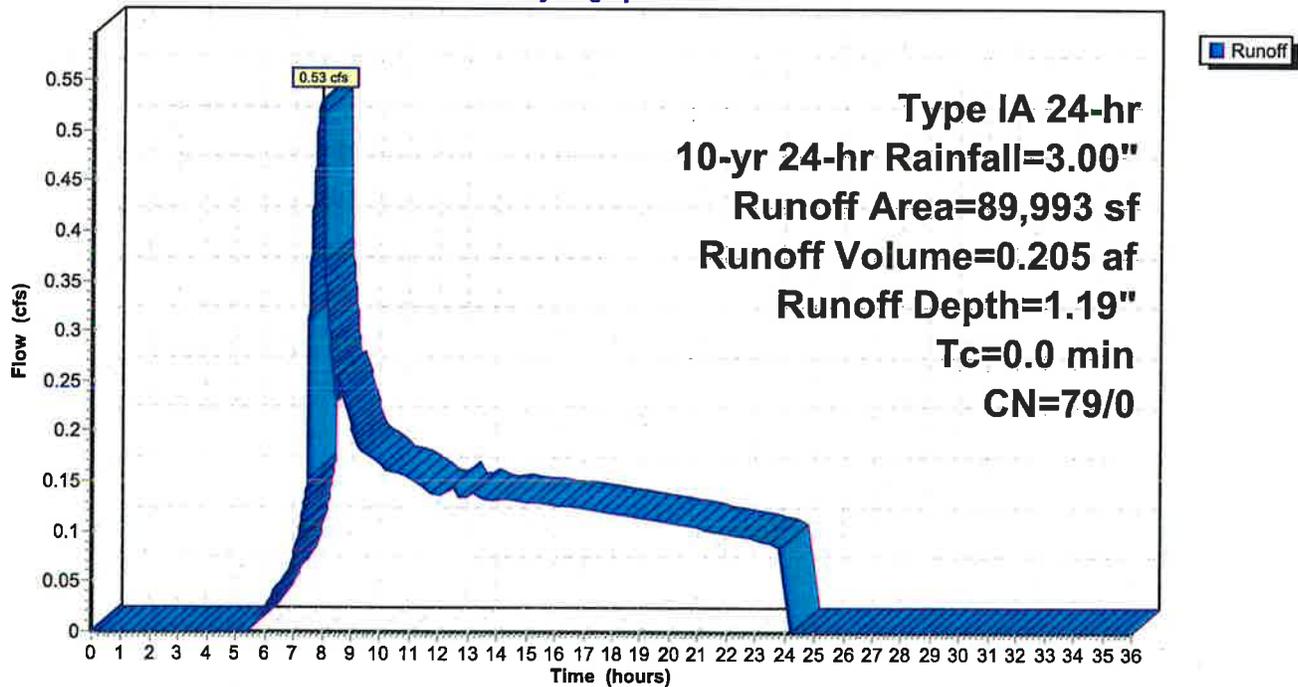
Runoff = 0.53 cfs @ 7.93 hrs, Volume= 0.205 af, Depth= 1.19"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10-yr 24-hr Rainfall=3.00"

Area (sf)	CN	Description
89,993	79	50-75% Grass cover, Fair, HSG C
89,993	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



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Type IA 24-hr 10-yr 24-hr Rainfall=3.00"

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Summary for Pond 5P: ODOT Right-of-Way

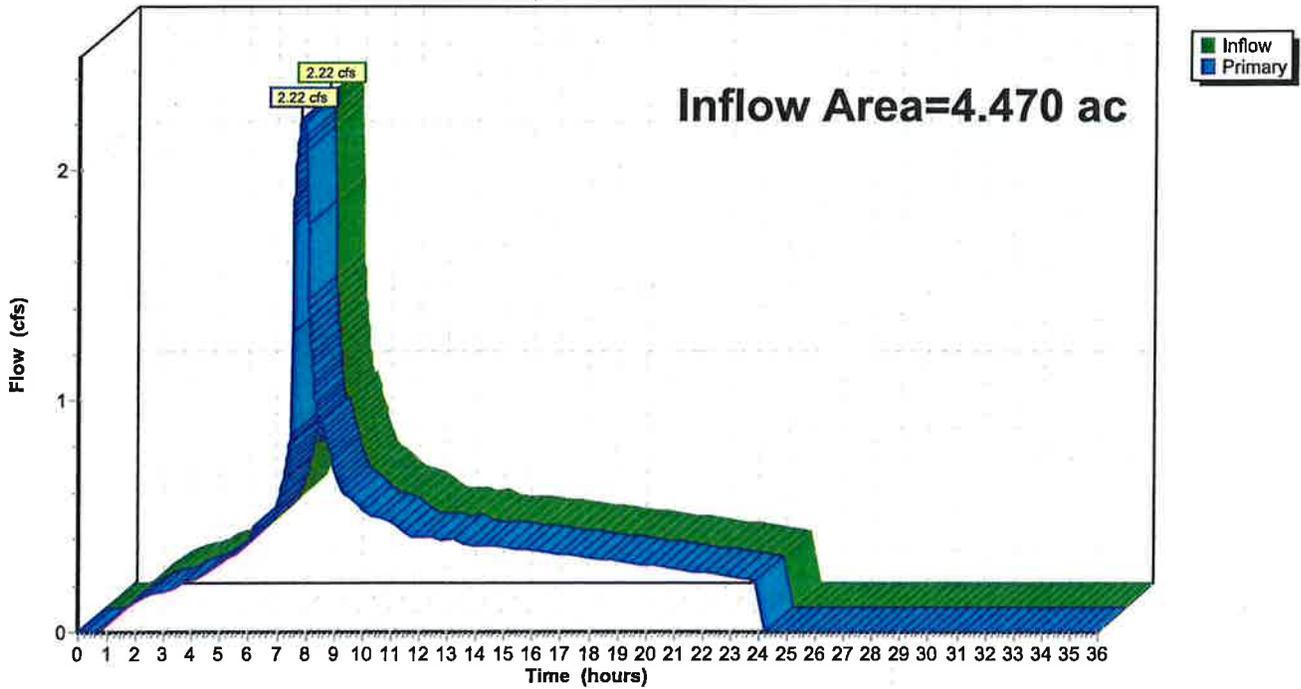
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.78% Impervious, Inflow Depth = 2.04" for 10-yr 24-hr event
Inflow = 2.22 cfs @ 7.83 hrs, Volume= 0.759 af
Primary = 2.22 cfs @ 7.83 hrs, Volume= 0.759 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph



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Type IA 24-hr 25-yr 24-hr Rainfall=3.40"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area Runoff Area=104,721 sf 100.00% Impervious Runoff Depth=3.17"
Tc=0.0 min CN=0/98 Runoff=1.95 cfs 0.634 af

Subcatchment3S: Pervious Area Runoff Area=89,993 sf 0.00% Impervious Runoff Depth=1.49"
Tc=0.0 min CN=79/0 Runoff=0.70 cfs 0.256 af

Pond 5P: ODOT Right-of-Way Inflow=2.62 cfs 0.891 af
Primary=2.62 cfs 0.891 af

Total Runoff Area = 4.470 ac Runoff Volume = 0.891 af Average Runoff Depth = 2.39"
46.22% Pervious = 2.066 ac 53.78% Impervious = 2.404 ac

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Type IA 24-hr 25-yr 24-hr Rainfall=3.40"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

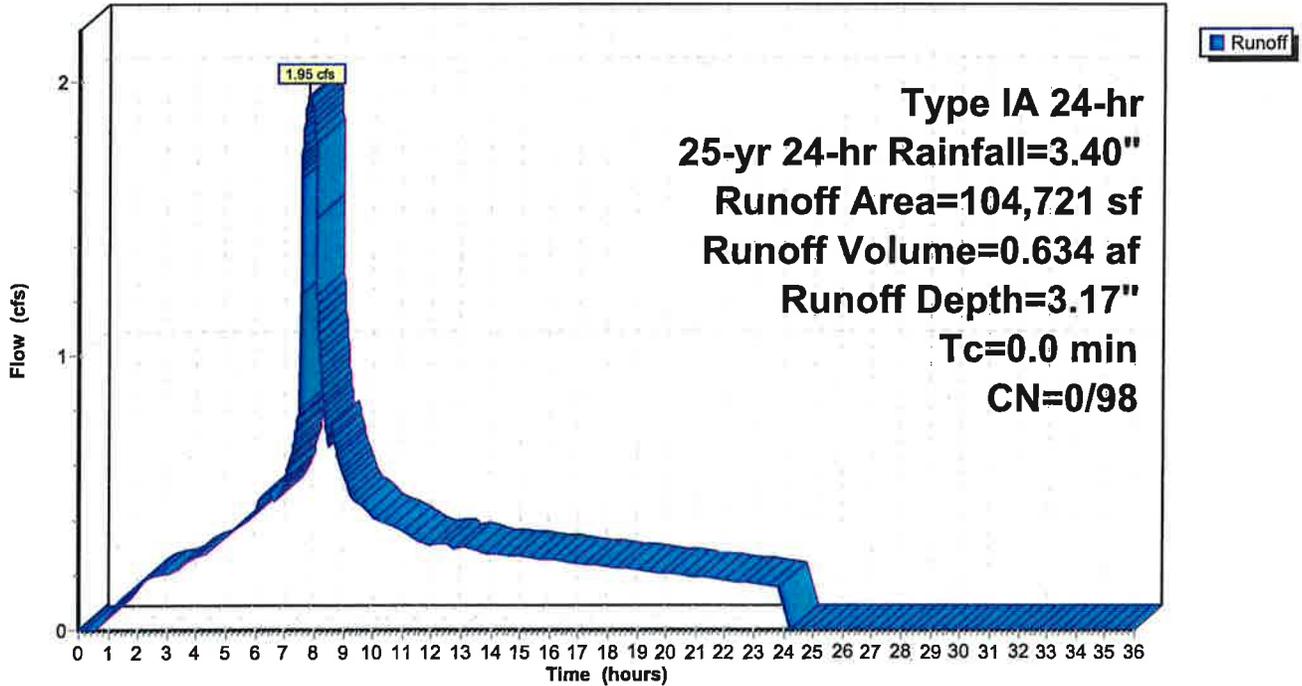
Runoff = 1.95 cfs @ 7.78 hrs, Volume= 0.634 af, Depth= 3.17"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr 24-hr Rainfall=3.40"

Area (sf)	CN	Description
104,721	98	Paved parking, HSG C
104,721	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

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Type IA 24-hr 25-yr 24-hr Rainfall=3.40"

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Summary for Subcatchment 3S: Pervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

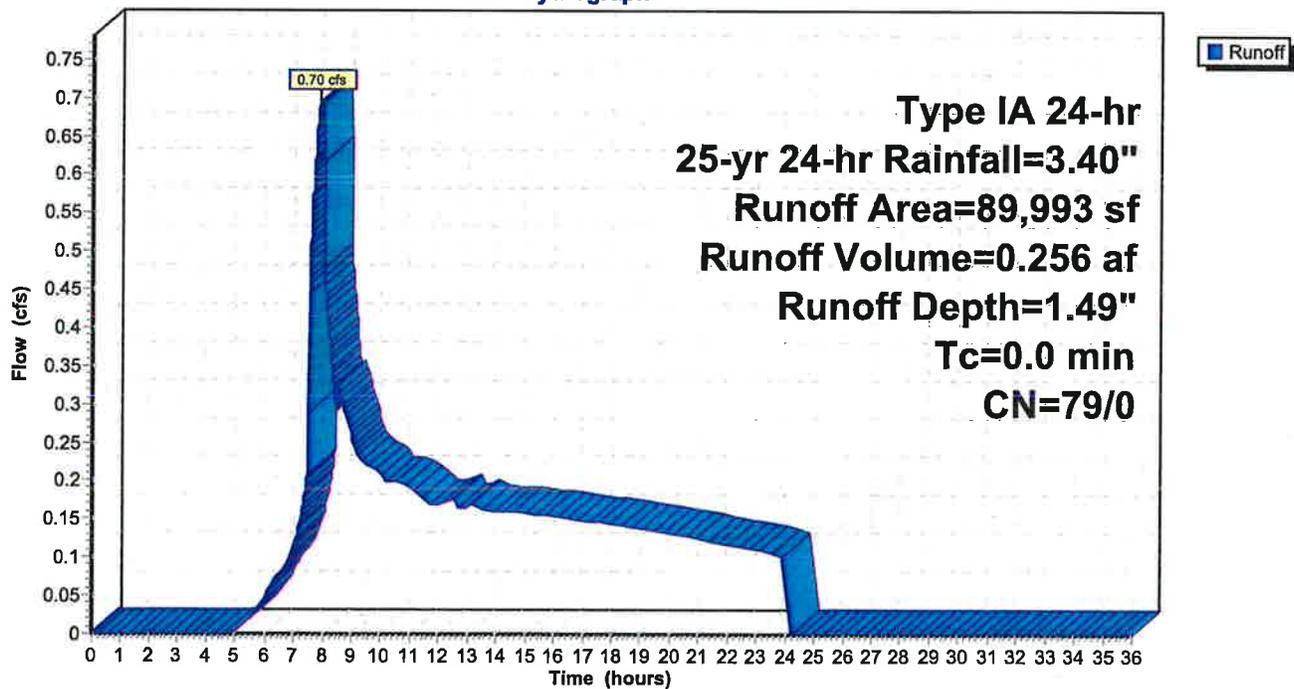
Runoff = 0.70 cfs @ 7.91 hrs, Volume= 0.256 af, Depth= 1.49"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25-yr 24-hr Rainfall=3.40"

Area (sf)	CN	Description
89,993	79	50-75% Grass cover, Fair, HSG C
89,993	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



3313 Stormwater Post

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Type IA 24-hr 25-yr 24-hr Rainfall=3.40"

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Summary for Pond 5P: ODOT Right-of-Way

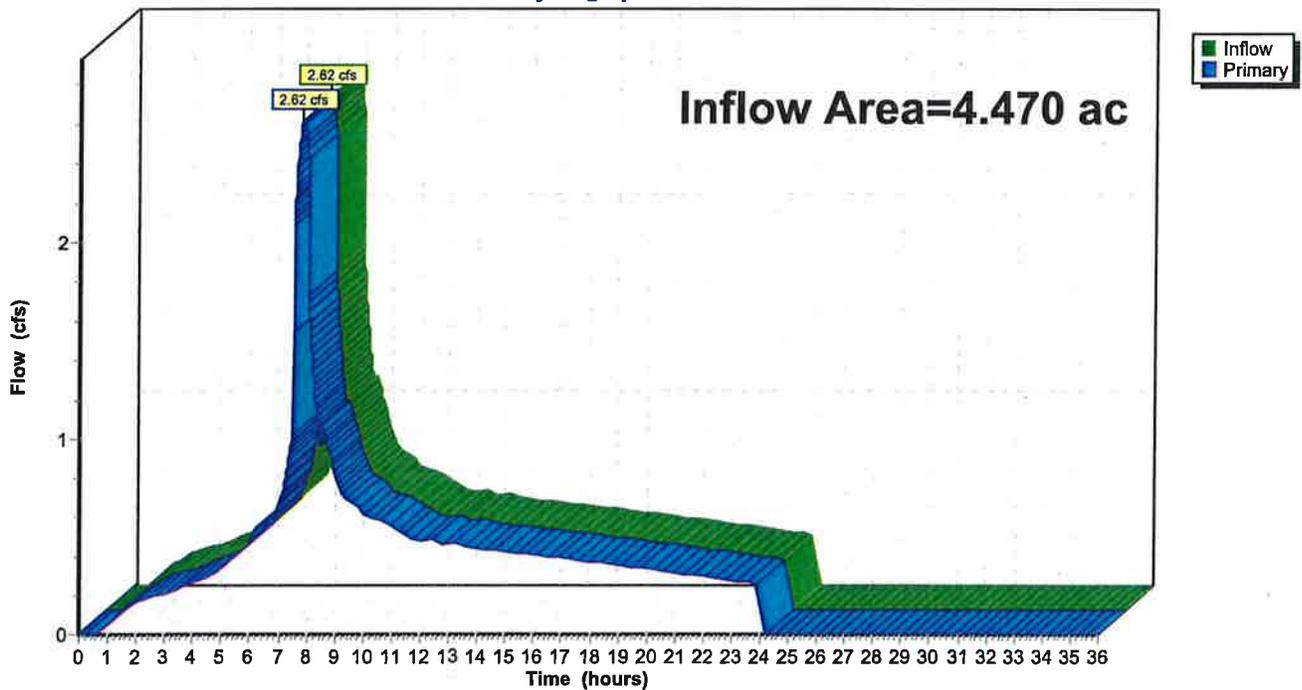
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.78% Impervious, Inflow Depth = 2.39" for 25-yr 24-hr event
Inflow = 2.62 cfs @ 7.83 hrs, Volume= 0.891 af
Primary = 2.62 cfs @ 7.83 hrs, Volume= 0.891 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph



3313 Stormwater Post

Type IA 24-hr 50-yr 24-hr Rainfall=3.60"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area Runoff Area=104,721 sf 100.00% Impervious Runoff Depth=3.37"
Tc=0.0 min CN=0/98 Runoff=2.07 cfs 0.674 af

Subcatchment3S: Pervious Area Runoff Area=89,993 sf 0.00% Impervious Runoff Depth=1.64"
Tc=0.0 min CN=79/0 Runoff=0.78 cfs 0.283 af

Pond 5P: ODOT Right-of-Way Inflow=2.83 cfs 0.957 af
Primary=2.83 cfs 0.957 af

Total Runoff Area = 4.470 ac Runoff Volume = 0.957 af Average Runoff Depth = 2.57"
46.22% Pervious = 2.066 ac 53.78% Impervious = 2.404 ac

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Type IA 24-hr 50-yr 24-hr Rainfall=3.60"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

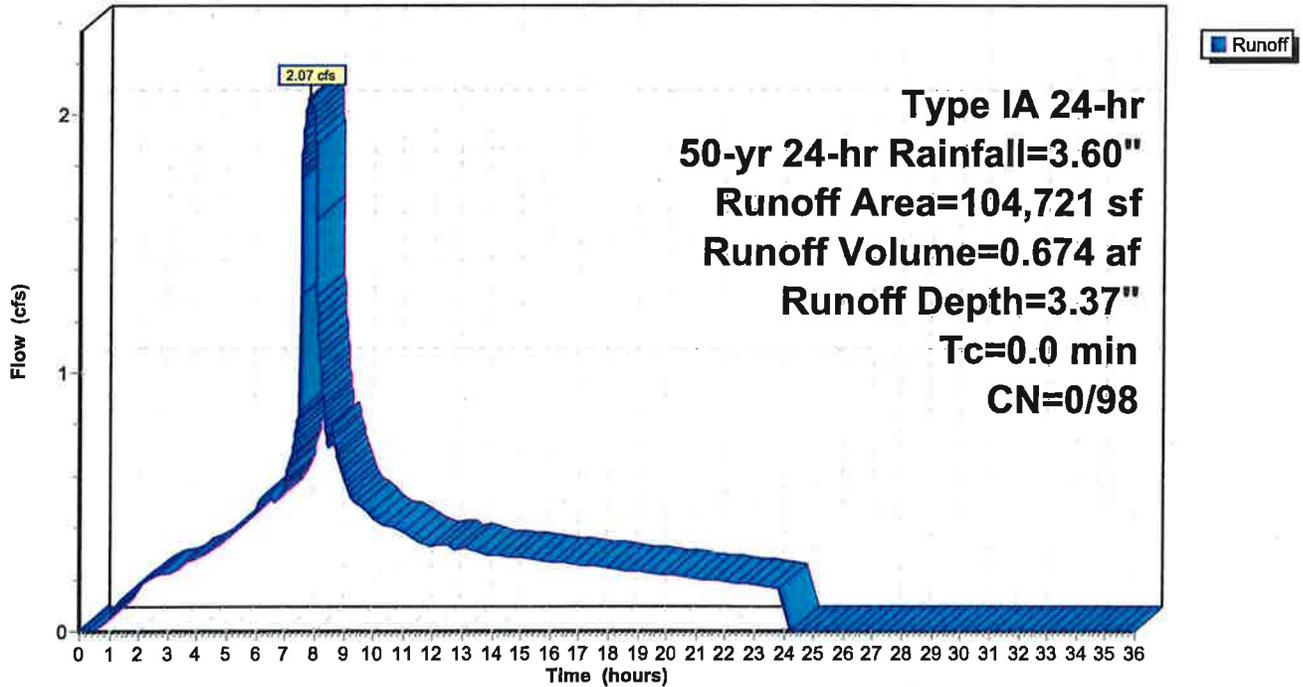
Runoff = 2.07 cfs @ 7.78 hrs, Volume= 0.674 af, Depth= 3.37"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr 24-hr Rainfall=3.60"

Area (sf)	CN	Description
104,721	98	Paved parking, HSG C
104,721	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



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Type IA 24-hr 50-yr 24-hr Rainfall=3.60"

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Summary for Subcatchment 3S: Pervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

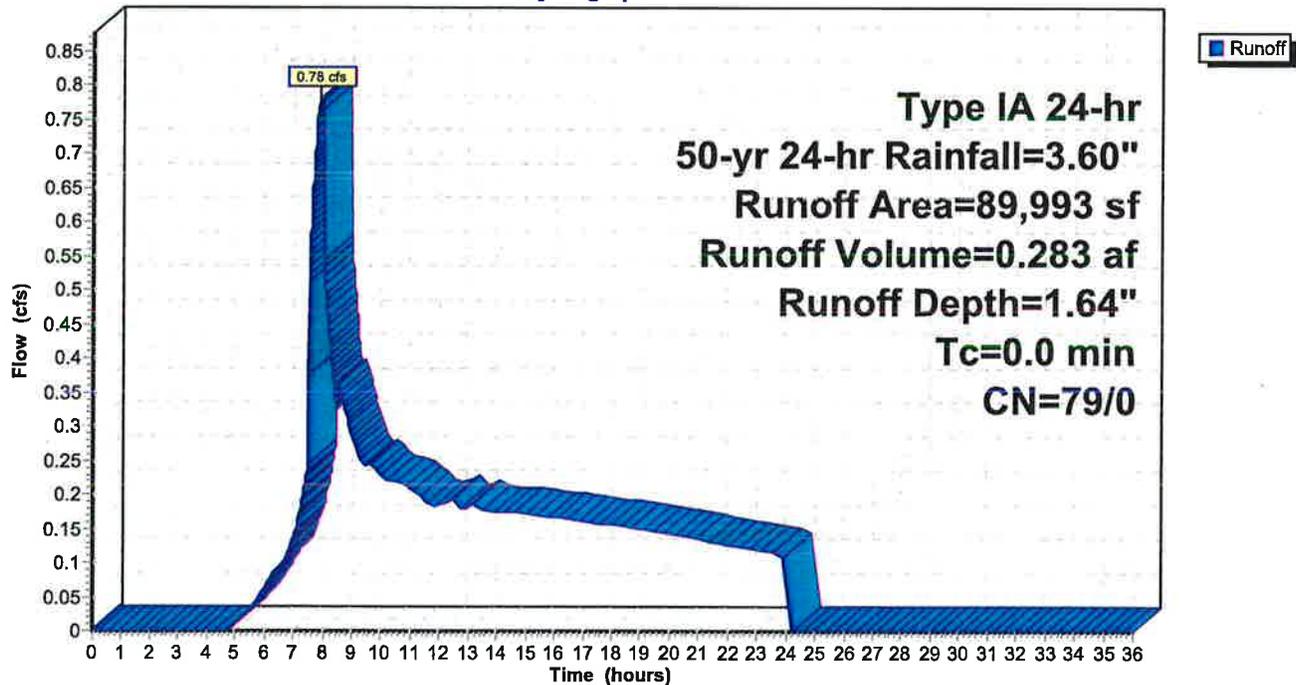
Runoff = 0.78 cfs @ 7.91 hrs, Volume= 0.283 af, Depth= 1.64"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 50-yr 24-hr Rainfall=3.60"

Area (sf)	CN	Description
89,993	79	50-75% Grass cover, Fair, HSG C
89,993	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



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Type IA 24-hr 50-yr 24-hr Rainfall=3.60"

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Summary for Pond 5P: ODOT Right-of-Way

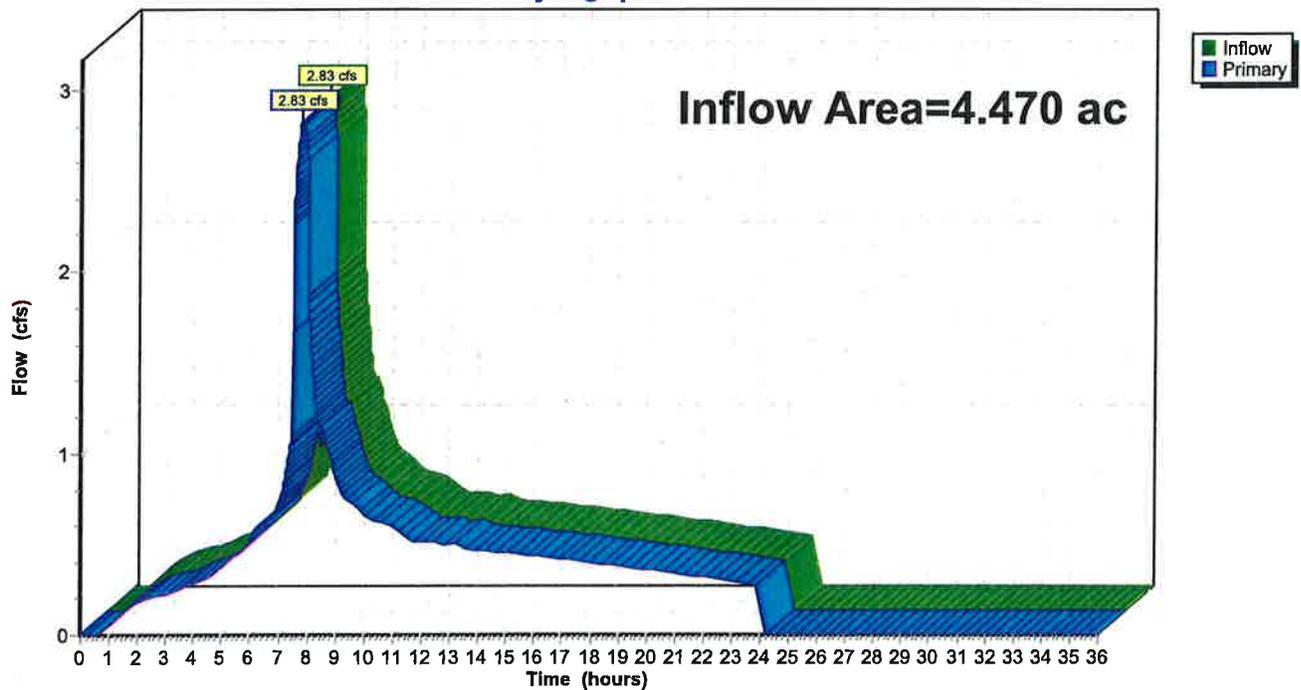
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.78% Impervious, Inflow Depth = 2.57" for 50-yr 24-hr event
Inflow = 2.83 cfs @ 7.82 hrs, Volume= 0.957 af
Primary = 2.83 cfs @ 7.82 hrs, Volume= 0.957 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph



3313 Stormwater Post

Type IA 24-hr 100-yr 24-hr Rainfall=4.00"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area Runoff Area=104,721 sf 100.00% Impervious Runoff Depth=3.77"
Tc=0.0 min CN=0/98 Runoff=2.31 cfs 0.754 af

Subcatchment3S: Pervious Area Runoff Area=89,993 sf 0.00% Impervious Runoff Depth=1.96"
Tc=0.0 min CN=79/0 Runoff=0.96 cfs 0.338 af

Pond 5P: ODOT Right-of-Way Inflow=3.24 cfs 1.092 af
Primary=3.24 cfs 1.092 af

Total Runoff Area = 4.470 ac Runoff Volume = 1.092 af Average Runoff Depth = 2.93"
46.22% Pervious = 2.066 ac 53.78% Impervious = 2.404 ac

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Type IA 24-hr 100-yr 24-hr Rainfall=4.00"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

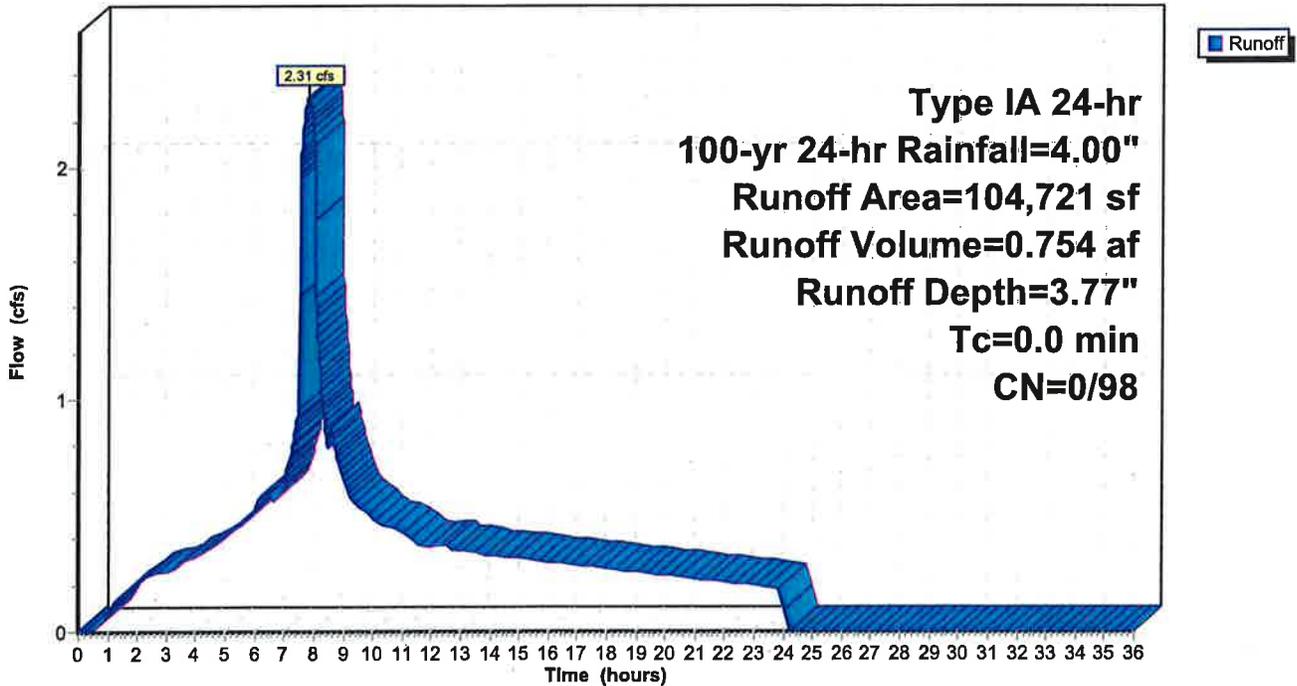
Runoff = 2.31 cfs @ 7.78 hrs, Volume= 0.754 af, Depth= 3.77"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr 24-hr Rainfall=4.00"

Area (sf)	CN	Description
104,721	98	Paved parking, HSG C
104,721	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



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Type IA 24-hr 100-yr 24-hr Rainfall=4.00"

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Summary for Subcatchment 3S: Pervious Area

[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

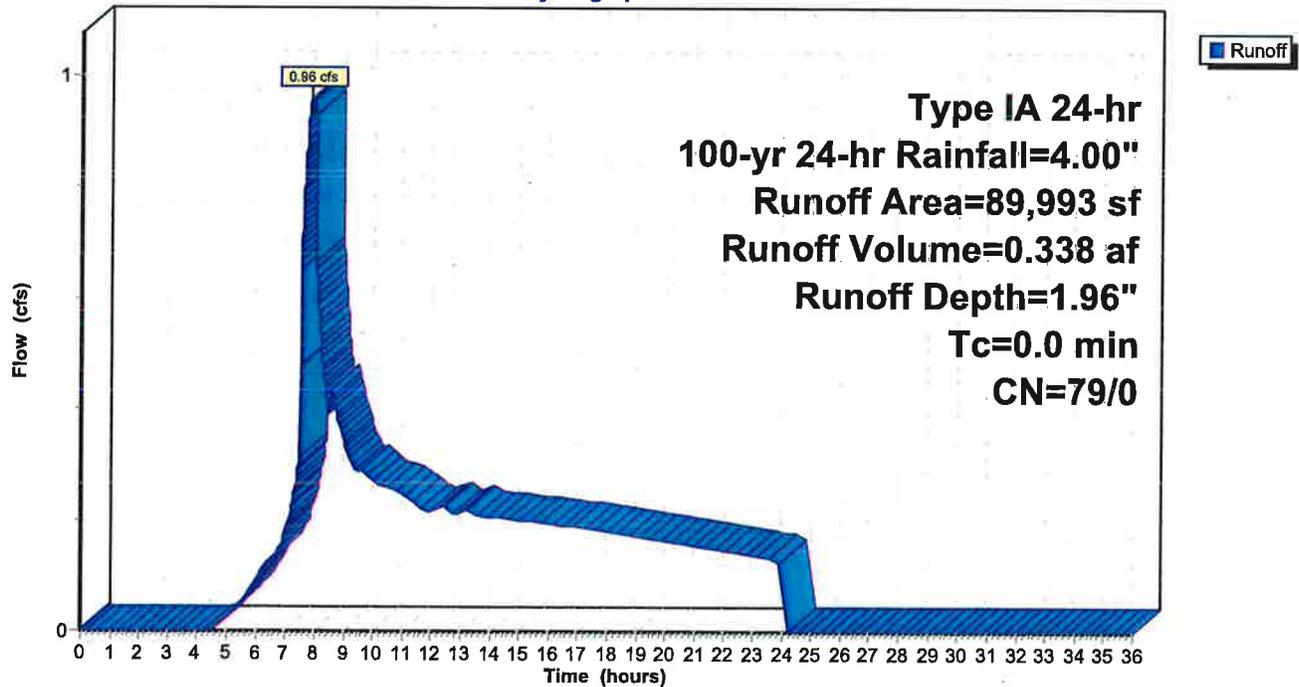
Runoff = 0.96 cfs @ 7.89 hrs, Volume= 0.338 af, Depth= 1.96"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100-yr 24-hr Rainfall=4.00"

Area (sf)	CN	Description
89,993	79	50-75% Grass cover, Fair, HSG C
89,993	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



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Type IA 24-hr 100-yr 24-hr Rainfall=4.00"

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Summary for Pond 5P: ODOT Right-of-Way

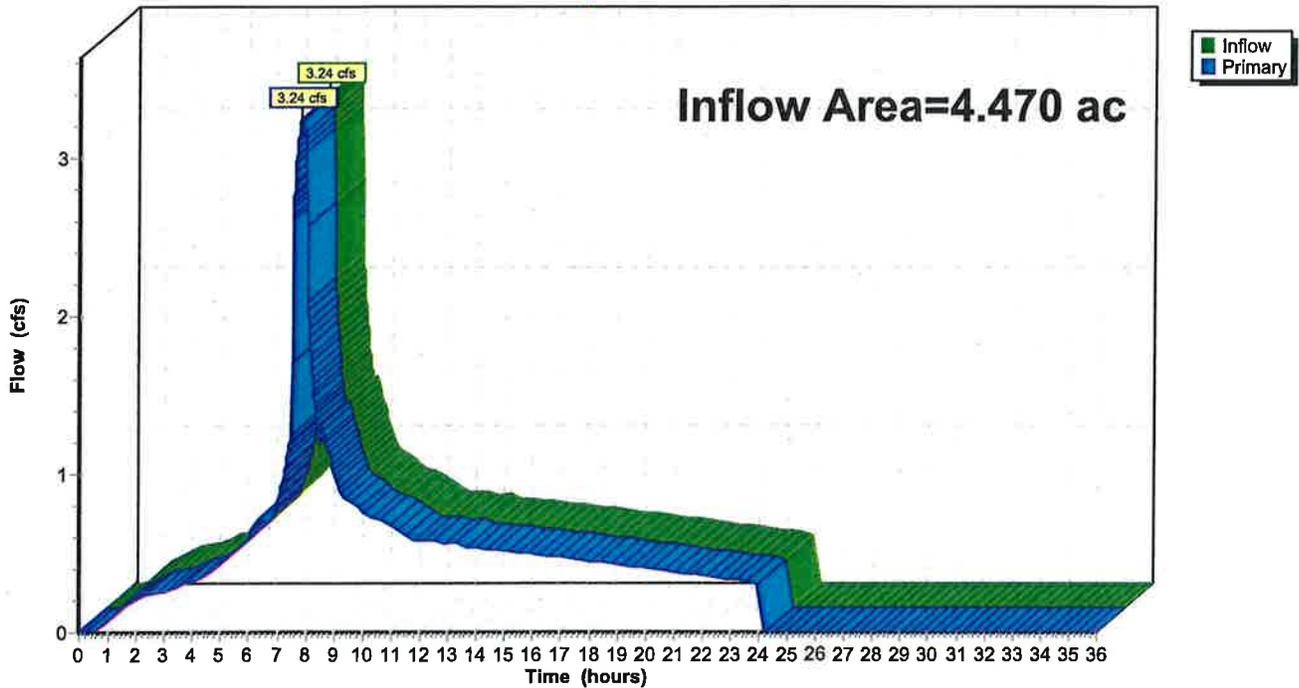
[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.78% Impervious, Inflow Depth = 2.93" for 100-yr 24-hr event
Inflow = 3.24 cfs @ 7.82 hrs, Volume= 1.092 af
Primary = 3.24 cfs @ 7.82 hrs, Volume= 1.092 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph



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Type IA 24-hr Water Quality Rainfall=0.67"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SBUH method, Split Pervious/Imperv.

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Impervious Area

Runoff Area=104,721 sf 100.00% Impervious Runoff Depth=0.48"
Tc=0.0 min CN=0/98 Runoff=0.30 cfs 0.095 af

Subcatchment3S: Pervious Area

Runoff Area=89,993 sf 0.00% Impervious Runoff Depth=0.01"
Tc=0.0 min CN=79/0 Runoff=0.00 cfs 0.001 af

Pond 5P: ODOT Right-of-Way

Inflow=0.30 cfs 0.096 af
Primary=0.30 cfs 0.096 af

Total Runoff Area = 4.470 ac Runoff Volume = 0.096 af Average Runoff Depth = 0.26"
46.22% Pervious = 2.066 ac 53.78% Impervious = 2.404 ac

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Type IA 24-hr Water Quality Rainfall=0.67"

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Summary for Subcatchment 1S: Impervious Area

[46] Hint: $T_c=0$ (Instant runoff peak depends on dt)

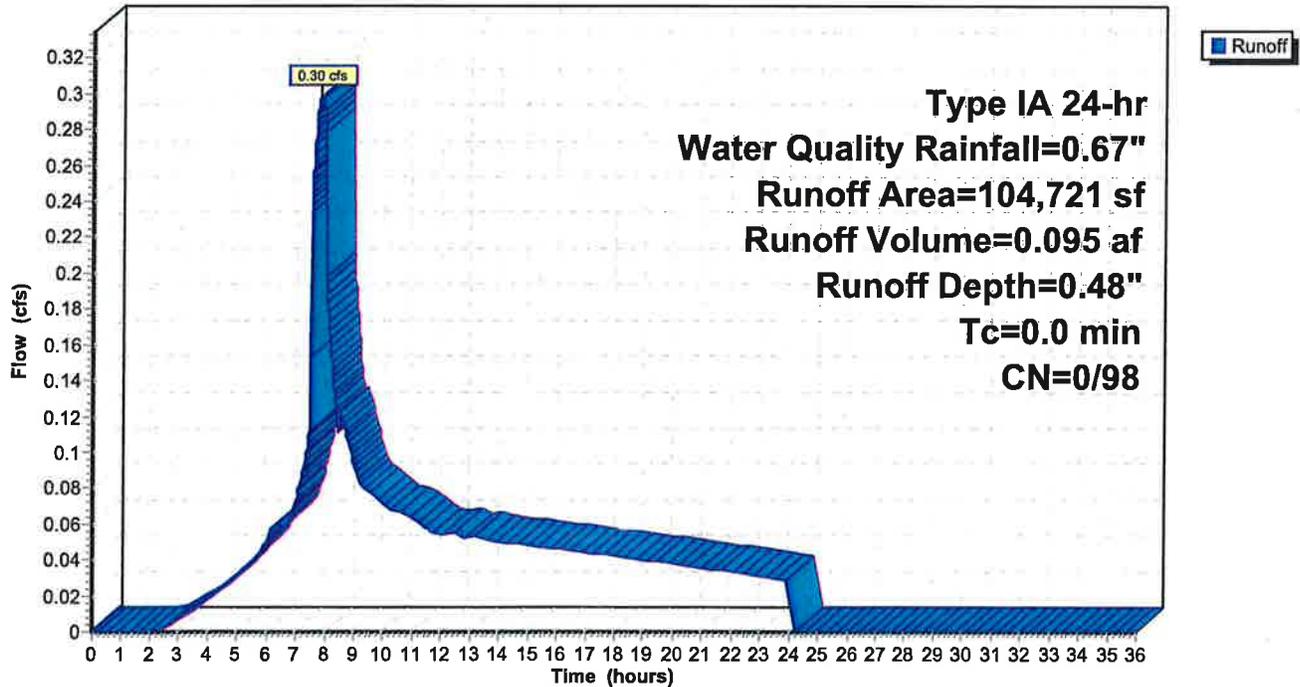
Runoff = 0.30 cfs @ 7.83 hrs, Volume= 0.095 af, Depth= 0.48"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr Water Quality Rainfall=0.67"

Area (sf)	CN	Description
104,721	98	Paved parking, HSG C
104,721	98	100.00% Impervious Area

Subcatchment 1S: Impervious Area

Hydrograph



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Type IA 24-hr Water Quality Rainfall=0.67"

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Summary for Subcatchment 3S: Pervious Area

[46] Hint: Tc=0 (Instant runoff peak depends on dt)

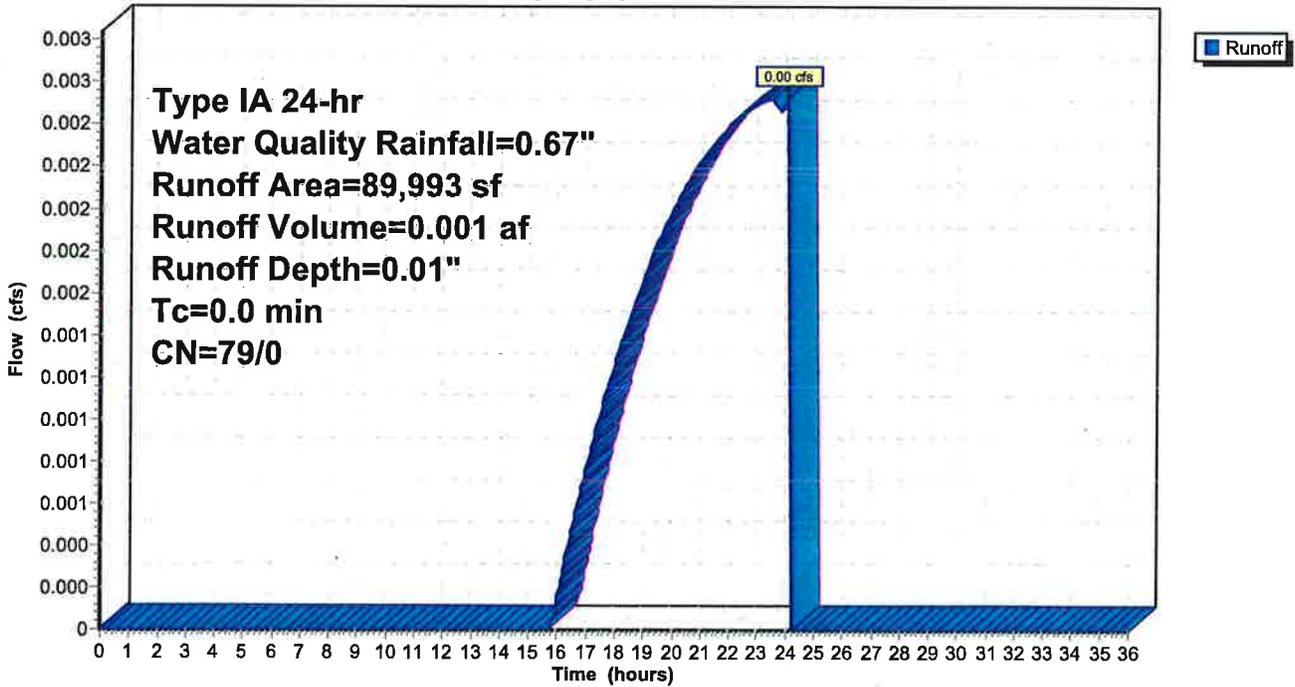
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type IA 24-hr Water Quality Rainfall=0.67"

Area (sf)	CN	Description
89,993	79	50-75% Grass cover, Fair, HSG C
89,993	79	100.00% Pervious Area

Subcatchment 3S: Pervious Area

Hydrograph



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Type IA 24-hr Water Quality Rainfall=0.67"

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Summary for Pond 5P: ODOT Right-of-Way

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 4.470 ac, 53.78% Impervious, Inflow Depth = 0.26" for Water Quality event
Inflow = 0.30 cfs @ 7.83 hrs, Volume= 0.096 af
Primary = 0.30 cfs @ 7.83 hrs, Volume= 0.096 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Pond 5P: ODOT Right-of-Way

Hydrograph

