PLANNING BOARD MEETING
City Hall - 950 Locust St., Carter Lake, Iowa
Monday, December 8, 2025, 7:00 P.M.

AGENDA

Roll Call

Approval of the Agenda

1. New Business
    a. Review preliminary plat for “The Landings” and discuss if PUD (Planned Unit Development) is an option for this area
2. Old Business
    a. Rezoning workshop
3. Comments
4. Adjourn

CARTER LAKE CITY COUNCIL MEETING

Monday, September 15, 2025

Mayor Ronald Cumberledge called the regular meeting to order at 7:00 p.m. Roll call of the council, present: Mayor Ronald Cumberledge, Jackie Wahl, Aaron Grell, Victor Skinner and Jason Gundersen; City Attorney Clint Fichter and Clerk Jackie Carl. Jacob Hanika is absent.

Grell moved to approve the agenda with the addition of new fire member and Ahlers & Cooney proposal, seconded by Gundersen; unanimously approved. Gundersen moved to approve the consent agenda, by Grell, unanimously approved. Consent agenda includes the following: Department head reports from Parks, Library, Community Center, Senior Services, Maintenance, Police, Fire/EMS; City council minutes; overtime and comp-time reports, abstract of claims, receipts and financial reports for August 2025.

Overland Properties, "The Residence" Gundersen moved to accept final plat, seconded by Grell; unanimously approved. Gundersen moved to direct the planning board to have a special meeting for building permit approval on 9/29/25 and authorizing building officials to issue building permit if it meets planning board approval at that meeting, seconded by Skinner; unanimously approved.

Gundersen moved to approve Option #2 to modify plan to shallow the basin, add landscaping and redirect flows to Avenue K system, seconded by Grell; unanimously approved.

Representative from City Motors regarding meeting the requirements for the salvage license. Skinner moved to approve and Grell seconded; unanimously approved.

Gundersen moved to approve new fire department member Carter Dougherty, seconded by Grell, unanimously approved.

Gundersen moved to approve Ahlers & Cooney agreement to represent the City with union negotiations with the Police Union, seconded by Grell; unanimously approved.

Gundersen updated the group on the ongoing water valve project.

City Attorney Fichter provided an update on the dog nuisance case and 122 Carter Lake Club.

Skinner motion to approve pay application #04-final for trail project, 15,509.23, seconded by Grell, unanimously approved. Grell motion to approve pay application #01 for the water valve project, 88,274.76, unanimously approved. Wahl motion to amend ordinances as provided, seconded by Gundersen, roll call: Yes-Gundersen, Wahl, Grell No-Skinner; Gundersen motion to amend signature card for banking and insure one elected official is always one signature, seconded by Grell; unanimously approved. Skinner motion to approve 24/25 FYE budget transfers, seconded by Grell; unanimously approved. Gundersen motion to approve wage resolution for Brandon Tapia at the Community Center, seconded by Grell unanimously approved. Grell moved to approve wage resolution for Cindy Huey, fire department assistant seconded by Gundersen, motion carried. Gundersen moved to approve wage resolution for Jacob Huscroft, police officer Grell; unanimously approved. Gundersen motion to approve wage resolution for Jeremiah Poole, seconded by Grell, unanimously approve; Gundersen motion to approve wage resolution for Julie Urich; seconded by Grell; unanimously approve; Gundersen motion to approve wage resolution for Mark Parson, seconded by Grell unanimously approve. Gundersen motion to approve wage resolution for Phillip Newton; seconded by Grell, unanimously approved.

Adjourn at 8:00 p.m.

Jackie Carl, City Clerk Ronald Cumberledge, Mayor

City of Carter Lake
Regular City Council Meeting
October 20, 2025, Proceedings

The meeting was called to order by Mayor Pro-tem Gundersen at 7:05pm.

Present – Mayor Pro-tem Gundersen, Council members Grell, Hanika, Skinner and Wahl.
Also, present Attorney Clint Fichter, City Administrator Gales and Deputy Clerk Ruehle.
Absent – Mayor Cumberledge.

Gundersen would like to add 4314 N 13th St – property line to the agenda. Grell would like to add city management to the agenda and Gales would like to add the library. Moved by Skinner, seconded by Grell to approve the agenda with the additions. Ayes: Unanimous.

Moved by Skinner seconded by Grell to approve the consent agenda without the overtime and comp time reports for September. Ayes: Unanimous. Moved by Grell seconded by Hanika to approve the liquor license for Slush Up & Drink LLC to sale wine slushies at the Community Center's holiday craft show on November 15, 2025. Ayes: Unanimous.

Moved by Grell seconded by Hanika to approve the Parks Board appointments of Ashley Wilson, Kari Giles, junior member Gracie Moreno and junior member Addileigh Garbez. Ayes: Unanimous.

Library director Tiffany Zuerlein advocates a pay raise for Kaitlynn Watson the circulation manager, based on performance and previous budget discussions. The council discussed the possibility of retroactive pay and will add this to the next meeting for formal approval.

Jim Warner, transportation planner with MAPA explained the Comprehensive Safety Action Plan and the commitment to jurisdiction-level actions to reduce traffic fatalities and serious injuries to zero by the year 2040. He would like the council to adopt the Memorandum of Understanding and participate in the program.

City Administrator Gales discussed a proposal for security upgrades at City Hall. Upgrades include cameras, remote door locks, and key fob entry for a total cost of approximately $9,800. The upgrades are intended to improve safety for staff and visitors. Moved by Hanika seconded by Grell to approve the security upgrades at City Hall. Ayes: Gundersen, Grell, Hanika and Wahl. Nay: Skinner.

Gundersen gave an update on the Water Valve Project and upcoming water shutdowns. There was discussion of the property at 4314 N 13th Street and a possible alley vacation that was not recorded. The City Attorney will prepare the paperwork to move forward with an alley vacation. Moved by Grell seconded by Wahl to allow the property owner to install a fence pending approval from the Building Inspector and City Administrator. Ayes: Unanimous.

City Attorney Fichter gave an update on the court proceedings for 122 Carter Lake Club and the dog nuisance case. There was discussion on urban renewal initiatives related to the senior housing complex and stormwater management. The Overland Group's senior housing project is set to enhance stormwater management, and they would like a tax rebate to cover those costs. The council plans to create a Tax Increment Financing (TIF) district to support the project. Moved by Skinner seconded by Gundersen to approve the resolution of necessity regarding the proposed Urban Renewal Area located at 9th and Avenue K. Ayes: Hanika, Gundersen, Skinner and Wahl. Abstain: Grell.

Moved by Grell seconded by Hanika to approve the local match resolution for the Hazard Mitigation Assistance Program grant application for new generators. Ayes: Unanimous. Moved by Grell seconded by Wahl to approve the resolution to adopt Memorandum of Understanding with MAPA. Ayes: Unanimous. Moved by Skinner seconded by Grell to approve a resolution authorizing check signing

procedures and designation of authorized officers for signatures. Ayes: Unanimous. Moved by Grell seconded by Gundersen to approve a resolution to assess past due water bill collections. Ayes: Unanimous. Council member Grell expressed concerns about the management of the old senior center and its deteriorating condition. He also questioned accountability and the management of city properties. There were discussion of residential sewer installations and the concern that the city may be funding an individual sewer installation, which could set a precedent.

City Administrator Gales stated that we have a new citizen complaint link on the city's website that aims to improve accountability and communication with residents. This will allow issues to be reported and residents to receive updates on resolutions.

Council member Grell discussed the need for experienced personnel in public works and setting safety protocols. There was discussion of having the building inspector handle water and sewer inspections while the supervisor is out on medical leave.

Council member Hanika would like to get a real estate agent to try and sell the old senior center building. Skinner stated there is a proposal to create a city archive in that building to display local memorabilia with a potential collaboration with the library.

Keebie Kessler made a request to remove his name from ball field one and replace it with that of a local coach, Lyle Poldberg. Lyle coached baseball back in the late 60s, early 70s and won three straight state championships. Moved by Grell seconded by Skinner to move Kessler's name to field two and add Lyle Poldberg's name to field one. Ayes: Unanimous.

Kory Stowell was not present to discuss his lot split situation. This item was tabled. The council discussed changes to zoning laws that would address small lots that currently cannot be built on. New state laws allow for smaller lot sizes and changes in setbacks, which could help with potential development. The Planning Board is currently working with the attorney on updating our zoning ordinances.

Tim Mandolpho voiced his concerns about the difficulty in obtaining video records and grievances filed with the police department. The need for better communication and transparency in council operations was emphasized, including the handling of public records requests. Bob Wahl asked if having the water shut off all the time hurt the pipes. Grell replied that improperly turning the water off and on can affect the pipe, but our valves should be actuated regularly. Lisa Fujji discussed the process for applying to volunteer positions, with suggestions for a more transparent system. A call for community support for the elementary school was made, encouraging donations of clothing and supplies for students in need. Ray Pauly commended the ambulance crew and police officer who responded to a recent medical emergency. They were very helpful, very professional, and knew exactly what they were doing, and he was very impressed. A concern was raised regarding electric motorized bikes and scooters ignoring stop signs and blowing through intersections. There should be some type of restrictions and require insurance on certain ebikes and scooters that have certain ratings. It was pointed out the Boys & Girls club has been working with the police department on this.

Gundersen reminded everyone that election day is November 4th from 7:00 a.m. till 8:00 p.m. and wished all the candidate's good luck. There will be a candidate's night held at City Hall on October 29th at 6:00 p.m. Wahl stated that they still need people for the Trunk or Treat at the Community Center on October 23rd. The Boys and Girls Club will have theirs on Halloween night.

The meeting adjourned at 8:30 PM.

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Lisa Ruehle, Deputy Clerk Jason Gundersen, Mayor Pro-tem

City of Carter Lake
Regular City Council Meeting
November 17, 2025
The meeting was called to order by Mayor Ronald Cumberledge at 7:05pm.

Present – Mayor Ronald Cumberledge, Jason Gundersen, Council members Aaron Grell, Jacob Hanika, Victor Skinner and Jackie Wahl. Also, present Attorney Clint Fichter, City Administrator Gales and City Clerk Jackie Carl.

Mayor Cumberledge initiates the meeting with the Pledge of Allegiance and a call for a public hearing regarding the designation of the Urban Renewal Area described in the preamble hereof and on the Urban Renewal Plan. The plan amendment includes adding new territory to the Area, including all the property described as shown below: The entire corporate limits of the City of Carter Lake The proposed amendment to the urban renewal plan brings the property described above under the plan and includes the authorization of a new urban renewal project. There were no written or verbal comments received at this time. Gundersen moved to close hearing and Hanika seconded the motion, unanimously approved.

Gundersen moved for approval of the agenda seconded by Grell, unanimously approved and Gundersen moved to approve consent items, seconded by Skinner; unanimously approved. Carter Lake Elementary School Update Teresa Hamilton and Jacqueline McCloud present updates from Carter Lake Elementary School. Students Blake Christianson, Nora Cooley, Austin, and Fletcher are recognized for their achievements. Teresa Hamilton discusses the school's focus on clear instruction and reduced behavior referrals. The school has improved from a priority school to an acceptable status on the state report card.

Fire Chief Dave Huey discussed the proposed retirement program for volunteer firefighters and EMS personnel. Attorney Fichter provides guidance on filling Jason's vacant seat, including options for a special election or appointment. Gunderson discussed the timing of his resignation and the council's composition. Clerk clarifies after 1/2/26 the four remaining council members will have the option to appoint. Attorney confirms the council has 60 days to make the appointment after Jason's resignation. Wahl motions to approve Cody Walker for the fire department, which is seconded by Grell and approved unanimously.

City Administrator Cameron Gales requests approval to move forward with an on-call RFP for plumbers and snowplow drivers. Grell expresses concerns about subcontracting snow plowing, but he did motion to approve the RFP with the removal of the snowplow contractors, seconded by is approved; Quote of $53,036 for the splash pad, including tear-out and re-running of pipe work. Gunderson motions to approve the splash pad project, which is seconded by Grell, unanimously approved. An update on the meal program, stating it will continue until a new provider is found. The council confirms the senior meal program will not be stopped.
Gunderson provides an update on the valve project, stating all holes will be filled and concreted by the end of the week.

Gundersen, moves to approve the annual road tax report, seconded by Hanika; Clerk Carl presents proposals for future administration software updates, recommending Tyler Technologies, Hanika moved to approve, seconded by Gundersen; Skinner moved to approve wages for Elizabeth Sanders, seconded by Grell; Grell moved to approve wages for Kaitlin Watson, seconded by Wahl, back dated 30 days, and Grell moved to approve wage increase for Nicholas Dargy, seconded by Skinner; All motion carried and unanimously approved.

Skinner moved to approves an ordinance for tax increment financing for the new apartment building on Ninth Street and Avenue K, seconded by Hanika; Gundersen moved to approve an Urban Renewal Plan as presented, which goes along with the tax increment financing ordinance; seconded by Grell and Grell moved to approve a development agreement with Overland Group for the public improvements seconded by Hanika; all motions are unanimously approved.

Public comments include thanks from Lisa Fujii for the Thanksgiving dinner and Janette Banks for the craft show. Tim Mandolfo thanks the council and community for their support during his campaign. The meeting concludes with a reminder of the annual winter festival and a comment on the valve project from Aaron Grell.

7:40 p.m. Grell moved for the council to move into a closed session for real estate transaction Iowa Code 21.5(j), seconded by Hanika. At 8:35 p.m. the council returned to open session and Gundersen moved to adjourn, seconded by Hanika. Unanimously approve.

Permit #	Contractor	Description	Appl Date	Fee(s)
Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot / Issued Date / Expire Date	Valuation / Paid / Amount Due
	COMCONST			
C52-25	QUICK CURRENT-IOWA LLC	TEMPORARY FENCE AROUND	8-11-25	50.00 / 50.00
Issued	OMAHA TRIBE OF NEBRASKA		8-11-25	50.00
Contractor	1306 LOCUST ST	Utility, Miscellaneous	2-07-26	.00
C53-25	OWNER AS GEN CONTRACTOR	3-STORY SENIOR APARTMENTS W/54	8-12-25	5,336,782.26 / 26,087.88
Issued	OVERLAND PROPERTY GROUP		9-30-25	26,087.88
Contractor	944 AVENUE K	Residential, Multiple Family	3-29-26	.00
C54-25	ATWOOD ELECTRIC	REPLACE 7 SIGNS W/ NEW LOGO &	8-19-25	14,281.60 / 314.06
Issued	CASEYS MARKETING CO		8-19-25	314.06
Contractor	1650 LOCUST ST	Utility, Miscellaneous	2-15-26	.00
C55-25	OWNER AS GEN CONTRACTOR	EXPAND EAST SIDE OF BUILDING	9-26-25	2,769,000.00 / 12,231.91
Issued	AMERICAN FENCE/PALMSHIELD		9-26-25	12,231.91
Contractor	300 LOCUST ST	Storage, Low Hazard	3-25-26	.00
		Total COMCONST		8,120,113.86 FEE 38,683.85
	DEMO			
D50-25	K+J EXCAVATING	DEMO ~6000SF CONCRETE/ASPHALT	8-25-25	100.00
Issued	OMAHA TRIBE OF NEBRASKA		8-25-25	100.00
Contractor	13TH ST AND LOCUST		2-21-26	.00
D51-25	K+J EXCAVATING	REMOVE ALL CONCRETE & GRADE	9-08-25	100.00
Issued	OMAHA TRIBE OF NEBRASKA		9-30-25	100.00
Contractor	13TH ST AND LOCUST		3-29-26	.00
D52-25	OWNER AS GEN CONTRACTOR	DEMO SMALL GARAGE	9-18-25	25.00
Issued	SCOTT LINDHORST		9-18-25	25.00
Contractor	1541 WALKER ST		3-17-26	.00
		Total DEMO		FEE 225.00
	DIRTHAUL			
DH19-25	K+J EXCAVATING	HAUL OFF ~5000 CUBIC YARDS	8-21-25	225.00
Issued	OMAHA TRIBE OF NEBRASKA		8-25-25	25.00
Contractor	13TH ST AND LOCUST		2-21-26	200.00
		Total DIRTHAUL		FEE 225.00 PAID 25.00 DUE 200.00
	ELECTRIC			
EL048-25	ACE PROPERTY MAINTENANCE	LOT #328, NEW MOBILE HOME	9-04-25	54.00
Issued	LAKESIDE ESTATES		9-04-25	54.00
Contractor	3510 N 9TH ST	Residential, Multiple Family	8-30-26	.00

Permit #	Contractor	Description	Appl Date	Fee(s)
Status	Owner	Sub-Division Lot	Issued Date	Paid
Appl Type	Location	Type of Use	Expire Date Valuation	Amount Due
EL049-25	ACE PROPERTY MAINTENANCE	LOT #172, NEW MOBILE HOME	9-04-25	54.00
Issued	LAKESIDE ESTATES		9-04-25	54.00
Contractor	3510 N 9TH ST	Residential, Multiple Family	8-30-26	.00
EL050-25	ACE PROPERTY MAINTENANCE	LOT #142, NEW MOBILE HOME	9-04-25	54.00
Issued	LAKESIDE ESTATES		9-04-25	54.00
Contractor	3510 N 9TH ST	Residential, Multiple Family	8-30-26	.00
EL051-25	ACE PROPERTY MAINTENANCE	LOT #47, NEW MOBILE HOME	9-05-25	54.00
Issued	LAKESIDE ESTATES		9-05-25	54.00
Contractor	3510 N 9TH ST	Residential, Multiple Family	8-31-26	.00
EL052-25	ACE PROPERTY MAINTENANCE	LOT #26, NEW MOBILE HOME	9-05-25	54.00
Issued	LAKESIDE ESTATES		9-05-25	54.00
Contractor	3510 N 9TH ST	Residential, Multiple Family	8-31-26	.00
EL053-25	ACE PROPERTY MAINTENANCE	LOT #3, NEW MOBILE HOME	9-05-25	54.00
Issued	LAKESIDE ESTATES		9-05-25	54.00
Contractor	3510 N 9TH ST	Residential, Multiple Family	8-31-26	.00
EL054-25	ACE PROPERTY MAINTENANCE	LOT #36, NEW MOBILE HOME	9-05-25	54.00
Issued	LAKESIDE ESTATES		9-05-25	54.00
Contractor	3510 N 9TH ST	Residential, Multiple Family	8-31-26	.00
EL055-25	ACE PROPERTY MAINTENANCE	LOT #29, NEW MOBILE HOME	9-05-25	54.00
Issued	LAKESIDE ESTATES		9-05-25	54.00
Contractor	3510 N 9TH ST	Residential, Multiple Family	8-31-26	.00
EL056-25	LOESS HILLS ELECTRIC	NEW SFH ELECTRICAL W/ BACKUP	9-05-25	512.39
Issued	LISA PULLUM		9-05-25	512.39
Contractor	1220 SHOAL DR	Residential, Multiple Family	8-31-26	.00
EL057-25	DAVID'S ELECTRIC	LOT #168, REPLACE LUGS IN	9-26-25	54.00
Issued	LAKESIDE ESTATES		9-26-25	54.00
Contractor	3510 N 9TH ST	Residential, Multiple Family	9-21-26	.00
EL058-25	THOMPSON ELECTRIC	POWER OUTAGE FOR WARRANTY	10-27-25	41.70
Issued	PONCA TRIBE OF NE		10-27-25	41.70
Contractor	1031 AVENUE H	Assem,Restaurants,Bars,Halls	10-22-26	.00
EL059-25	HILLER ELECTRIC CO.	REPLACE PANEL/METER SOCKET,ADD	10-29-25	60.95
Issued	JERIMIAH & JESSICA ANNIN		10-29-25	60.95
Contractor	4314 N 13TH ST	Residential, Multiple Family	10-24-26	.00
EL060-25	ACE ELECTRIC LLC	INSTALL 12 540W SOLAR PANELS	10-31-25	48.10
Issued	RIC JENSEN		11-03-25	.00
Contractor	1014 SHOAL DR	Residential, Multiple Family	10-29-26	48.10
		Total ELECTRIC		FEE 1,149.14
				PAID 1,101.04
				DUE 48.10

Permit #	Contractor	Description	Appl Date	Fee(s)
Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot / Issued Date / Expire Date	Valuation / Paid / Amount Due
	FENCE			
FW069-25	OWNER AS GEN CONTRACTOR	NEW 4' X 180' CHAIN LINK FENCE	8-13-25	1,500.00 / 37.50
Issued	BENNETT, BARBARA		8-13-25	37.50
Contractor	107 CARTER LAKE CLB	Residential, Multiple Family	2-09-26	.00
FW070-25	M&T IMPROVEMENT LLC	INSTALL NEW 6' X 234' WOODEN	8-15-25	5,000.00 / 37.50
Denied	JERIMIAH & JESSICA ANNIN			.00
Contractor	4314 N 13TH ST	Residential, Multiple Family		37.50
FW072-25	OWNER AS GEN CONTRACTOR	NEW 5'X102' DECORATIVE	9-04-25	1,100.00 / 37.50
Issued	FRANK CORCORAN		9-04-25	37.50
Contractor	4306 N 7TH ST	Residential, Multiple Family	3-03-26	.00
FW073-25	IN-LAW FENCING	ADD 444' 3' WHITE VINYL FENCE	9-09-25	4,195.22 / 139.06
Issued	LAKESIDE ESTATES		9-22-25	139.06
Contractor	3510 N 9TH ST	Residential, Multiple Family	3-21-26	.00
FW074-25	IN-LAW FENCING	INSTALL 71' OF 4' ORNAMENTAL	10-06-25	5,267.37 / 37.50
Issued	TIM & APRIL PODRAZA		10-07-25	37.50
Contractor	670 KEY CIR	Residential, Multiple Family	4-05-26	.00
FW075-25	IN-LAW FENCING	INSTALL 93' OF 4' ORNAMENTAL	10-06-25	4,502.84 / 37.50
Issued	HOOVESTOL, GRANT & LAURIE		10-07-25	37.50
Contractor	680 KEY CIR	Residential, Multiple Family	4-05-26	.00
FW076-25	OWNER AS GEN CONTRACTOR	MOVE FENCE BACK IN LINE W/REAR	10-09-25	500.00 / 37.50
Issued	AARON SANDS		10-10-25	37.50
Contractor	1321 AVENUE P	Residential, Multiple Family	4-08-26	.00
		Total FENCE		22,065.43 FEE 364.06
				PAID 326.56
				DUE 37.50
	MECH			
M107-25	APOLLO HEATING AND AIR	INSTALL NEW 2 TON A/C	8-05-25	38.20
Issued	CHAD BOEHMER		8-05-25	38.20
Contractor	4330 N 8TH ST		2-01-26	.00
M108-25	A-1 UNITED HEATING & AIR	REPLACE FURNACE & A/C	8-08-25	53.00
Issued	LIVINGSTON, ELLEN		8-08-25	53.00
Contractor	1536 AVENUE P		2-04-26	.00
M109-25	AIRESERV	REPLACE FURNACE & A/C	8-15-25	53.00
Issued	SANDRA BROWN		8-15-25	53.00
Contractor	1209 AVENUE P		2-11-26	.00
M110-25	AIR CARE HEATING AND AIR	NEW FURNACE ELECTRIC TO GAS	8-27-25	65.45
Issued	MICHAEL POLERMO		8-27-25	65.45
Contractor	1406 CEDAR ST		2-23-26	.00

Permit #	Contractor	Description	Appl Date	Fee(s)
Status	Owner	Sub-Division Lot	Issued Date	Paid
Appl Type	Location	Type of Use	Expire Date Valuation	Amount Due
M111-25	A-1 UNITED HEATING & AIR	REPLACE & RECONNECT FURNACE &	8-27-25	53.00
Issued	DANNY BOETTGER		8-28-25	53.00
Contractor	1449 DORENE BLVD		2-24-26	.00
M112-25	SERVICE ONE		9-16-25	23.50
Applied	JAKE MCCLOUD			.00
Contractor	903 CACHELIN DR			23.50
		Total MECH	FEE	286.15
			PAID	262.65
			DUE	23.50
	MISCRES			
MR464-25	FREIGHT TRAIN EXPRESS	LOT#88, SET DOWN NEW 1154SF	8-11-25	114.00
Issued	LAKESIDE ESTATES		8-11-25	114.00
Contractor	3510 N 9TH ST		2-07-26	.00
MR465-25	FREIGHT TRAIN EXPRESS	LOT #66, SET DOWN NEW 1056SF	8-11-25	104.50
Issued	LAKESIDE ESTATES		8-11-25	104.50
Contractor	3510 N 9TH ST		2-07-26	.00
MR466-25	FREIGHT TRAIN EXPRESS	LOT #39, SET DOWN NEW 1056SF	8-11-25	104.50
Issued	LAKESIDE ESTATES		8-11-25	104.50
Contractor	3510 N 9TH ST		2-07-26	.00
MR467-25	FREIGHT TRAIN EXPRESS	LOT #90, SET DOWN NEW 1056SF	8-11-25	104.50
Issued	LAKESIDE ESTATES		8-11-25	104.50
Contractor	3510 N 9TH ST		2-07-26	.00
MR468-25	OWNER AS GEN CONTRACTOR	TEMPORARY DUMPSTER	8-13-25	.00
Issued	LINDA LESLEY		8-13-25	.00
Contractor	1209 WILLOW DR		2-09-26	.00
MR469-25	FREIGHT TRAIN EXPRESS	LOT #285,SET DOWN NEW 924SF	8-21-25	95.00
Issued	LAKESIDE ESTATES		8-22-25	95.00
Contractor	3510 N 9TH ST		2-18-26	.00
MR470-25	FREIGHT TRAIN EXPRESS	LOT #91, SET DOWN NEW 1056SF	8-21-25	104.50
Issued	LAKESIDE ESTATES		8-22-25	104.50
Contractor	3510 N 9TH ST		2-18-26	.00
MR471-25	FREIGHT TRAIN EXPRESS	LOT #56, SET DOWN NEW 1216SF	8-21-25	123.50
Issued	LAKESIDE ESTATES		8-22-25	123.50
Contractor	3510 N 9TH ST		2-18-26	.00
MR472-25	FREIGHT TRAIN EXPRESS	LOT #46, SET DOWN NEW 1216SF	8-21-25	123.50
Issued	LAKESIDE ESTATES		8-22-25	123.50
Contractor	3510 N 9TH ST		2-18-26	.00

Permit #	Contractor	Description	Appl Date	Fee(s)

Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot	Issued Date / Expire Date	Valuation	Paid / Amount Due
MR473-25	FREIGHT TRAIN EXPRESS	LOT #167, SET DOWN NEW 960SF		8-21-25		95.00
Issued	LAKESIDE ESTATES			8-22-25		95.00
Contractor	3510 N 9TH ST			2-18-26		.00
MR474-25	FREIGHT TRAIN EXPRESS	LOT #137, SET DOWN 1056SF		8-21-25		104.50
Issued	LAKESIDE ESTATES			8-22-25		104.50
Contractor	3510 N 9TH ST			2-18-26		.00
MR475-25	FREIGHT TRAIN EXPRESS	LOT #114, SET DOWN 1056SF		8-21-25		104.50
Issued	LAKESIDE ESTATES			8-22-25		104.50
Contractor	3510 N 9TH ST			2-18-26		.00
MR476-25	FREIGHT TRAIN EXPRESS	LOT #14, SET DOWN 1056SF		8-21-25		104.50
Issued	LAKESIDE ESTATES			8-22-25		104.50
Contractor	3510 N 9TH ST			2-18-26		.00
MR477-25	FREIGHT TRAIN EXPRESS	LOT #13, SET DOWN 1056SF		8-21-25		104.50
Issued	LAKESIDE ESTATES			8-22-25		104.50
Contractor	3510 N 9TH ST			2-18-26		.00
MR478-25	FREIGHT TRAIN EXPRESS	LOT #113, SET DOWN 1056SF		8-22-25		104.50
Issued	LAKESIDE ESTATES			8-22-25		104.50
Contractor	3510 N 9TH ST			2-18-26		.00
MR479-25	OWNER AS GEN CONTRACTOR	R/R SIDEWALK & W SIDE OF DW		8-25-25		23.00
Issued	MELANIE DANAHY			8-25-25		23.00
Contractor	1516 STELLA AVE			2-21-26		.00
MR480-25	ZIMMERMAN SALES	EXTEND DW 325SF TO NEW GARAGE&		9-19-25		23.00
Issued	J C GRIFFIN PROPERTIESLL			9-19-25		23.00
Contractor	1013 SILVER LN			3-18-26		.00
MR481-25	SHEARD CONSTRUCTION	INSTALL NEW 69X19' DRIVEWAY &		9-26-25		23.00
Issued	MIKE CHRISTENSEN			9-29-25		23.00
Contractor	4315 N 12TH ST			3-28-26		.00
MR482-25	OWNER AS GEN CONTRACTOR	NEW 20'X20' CONCRETE SLAB		10-01-25		23.00
Issued	DAVID HAMILTON			10-01-25		23.00
Contractor	2638 N 5TH ST			3-30-26		.00
MR483-25	OWNER AS GEN CONTRACTOR	ADD NEW 1700SF CONCRETE		10-07-25		23.00
Issued	DARREN LIND			10-07-25		23.00
Contractor	8 CARTER LAKE CLB			4-05-26		.00
		Total MISCRES			FEE	1,606.50
	PLUMB					
P115-25	AIR CARE HEATING AND AIR	NEW GAS FURNACE W/ GAS		8-27-25		53.25
Issued	MICHAEL POLERMO			8-27-25		53.25
Contractor	1406 CEDAR ST			2-23-26		.00

Permit #	Contractor	Description	Appl Date	Fee(s)
Status	Owner	Sub-Division Lot	Issued Date	Paid
Appl Type	Location	Type of Use	Expire Date Valuation	Amount Due
P116-25	DREW EVERS	NEW SFD PLUMBING & CONNECTIONS	8-28-25	1,555.95
Issued	LISA PULLUM		8-29-25	1,555.95
Contractor	1220 SHOAL DR		2-25-26	.00
P117-25	JASON GUNDERSON	INSTALL NEW WATER/SEWER FROM	9-03-25	52.90
Issued	LISA PULLUM		9-05-25	52.90
Contractor	1220 SHOAL DR		3-04-26	.00
P118-25	JASON GUNDERSON	REPLACE EXISTING SEWER FROM	9-03-25	48.15
Issued	SHAH, DHWANI		9-05-25	48.15
Contractor	1104 CACHELIN DR		3-04-26	.00
P119-25	OWNER AS GEN CONTRACTOR	GAS PRESSURE CHECK FOR LEAK	9-30-25	48.50
Issued	MIKE CHRISTENSEN		9-30-25	48.50
Contractor	4315 N 12TH ST		3-29-26	.00
P120-25	GETZSCHMAN HEATING	LOT #3, NEW MOBILE HOME	10-03-25	79.30
Issued	LAKESIDE ESTATES		10-06-25	79.30
Contractor	3510 N 9TH ST		4-04-26	.00
P121-25	GETZSCHMAN HEATING	LOT #13, NEW MOBILE HOME	10-03-25	79.30
Issued	LAKESIDE ESTATES		10-06-25	79.30
Contractor	3510 N 9TH ST		4-04-26	.00
P122-25	GETZSCHMAN HEATING	LOT #14, NEW MOBILE HOME	10-03-25	79.30
Issued	LAKESIDE ESTATES		10-06-25	79.30
Contractor	3510 N 9TH ST		4-04-26	.00
P123-25	GETZSCHMAN HEATING	LOT #26, NEW MOBILE HOME	10-03-25	79.30
Issued	LAKESIDE ESTATES		10-06-25	79.30
Contractor	3510 N 9TH ST		4-04-26	.00
P124-25	GETZSCHMAN HEATING	LOT #29, NEW MOBILE HOME	10-03-25	79.30
Issued	LAKESIDE ESTATES		10-06-25	79.30
Contractor	3510 N 9TH ST		4-04-26	.00
P125-25	GETZSCHMAN HEATING	LOT #36, NEW MOBILE HOME	10-03-25	79.30
Issued	LAKESIDE ESTATES		10-06-25	79.30
Contractor	3510 N 9TH ST		4-04-26	.00
P126-25	GETZSCHMAN HEATING	LOT #39, NEW MOBILE HOME	10-03-25	79.30
Issued	LAKESIDE ESTATES		10-06-25	79.30
Contractor	3510 N 9TH ST		4-04-26	.00
P127-25	GETZSCHMAN HEATING	LOT #46, NEW MOBILE HOME	10-03-25	79.30
Issued	LAKESIDE ESTATES		10-03-25	79.30
Contractor	3510 N 9TH ST		4-01-26	.00
P128-25	GETZSCHMAN HEATING	LOT #47, NEW MOBILE HOME	10-03-25	79.30
Issued	LAKESIDE ESTATES		10-03-25	79.30
Contractor	3510 N 9TH ST		4-01-26	.00

Permit #	Contractor	Description	Appl Date	Fee(s)

Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot	Issued Date / Expire Date	Valuation	Paid / Amount Due
P129-25	GETZSCHMAN HEATING	LOT #56, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00
P130-25	GETZSCHMAN HEATING	LOT #66, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00
P131-25	GETZSCHMAN HEATING	LOT #88, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00
P132-25	GETZSCHMAN HEATING	LOT #90, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00
P133-25	GETZSCHMAN HEATING	LOT #91, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00
P134-25	GETZSCHMAN HEATING	LOT #113, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00
P135-25	GETZSCHMAN HEATING	LOT #114, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00
P136-25	GETZSCHMAN HEATING	LOT #137, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00
P137-25	GETZSCHMAN HEATING	LOT #141, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00
P138-25	GETZSCHMAN HEATING	LOT #142, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00
P139-25	GETZSCHMAN HEATING	LOT #167, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00
P140-25	GETZSCHMAN HEATING	LOT #172, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00
P141-25	GETZSCHMAN HEATING	LOT #285, NEW MOBILE HOME		10-03-25		79.30
Issued	LAKESIDE ESTATES			10-03-25		79.30
Contractor	3510 N 9TH ST			4-01-26		.00

Permit #	Contractor	Description	Appl Date	Fee(s)

Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot	Issued Date / Expire Date	Valuation		Paid / Amount Due
P142-25	GETZSCHMAN HEATING	LOT #328, NEW MOBILE HOME		10-03-25			79.30
Issued	LAKESIDE ESTATES			10-03-25			79.30
Contractor	3510 N 9TH ST			4-01-26			.00
P143-25	GUNDERSEN GRADING	INSTALL NEW WATER & SEWER		10-20-25			52.90
Issued	MERLYN PROPERTIES LLC			10-20-25			52.90
Contractor	1501 SILVER LN			4-18-26			.00
P144-25	GUNDERSEN GRADING	INSTALL NEW WATER & SEWER		10-20-25			52.90
Issued	MERLYN PROPERTIES LLC			10-20-25			52.90
Contractor	1503 SILVER LN			4-18-26			.00
P145-25	GUNDERSEN GRADING	INSTALL NEW WATER & SEWER		10-20-25			52.90
Issued	MERLYN PROPERTIES LLC			10-20-25			52.90
Contractor	1505 SILVER LN			4-18-26			.00
P146-25	A RAYMOND PLUMBING	GAS PRESSURE TEST		10-20-25			48.50
Issued	TONI & TROY REISIS			10-20-25			48.50
Contractor	4325 N 9TH ST			4-18-26			.00
		Total PLUMB				FEE	3,789.85
	POOL						
SP023-25	PINEAPPLE POOLS LLC	NEW 13'X28' 7471GAL ABOVE		9-09-25			360.58
Issued	KEITH MIDKIFF			9-17-25			360.58
Contractor	3302 N 11TH ST			3-16-26			.00
		Total POOL				FEE	360.58
	RESACCES						
RA077-25	FREIGHT TRAIN EXPRESS	LOT #88, NEW 4' X 4' FRONT		8-11-25	1,200.00		28.75
Issued	LAKESIDE ESTATES			8-12-25			28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-08-26			.00
RA078-25	FREIGHT TRAIN EXPRESS	LOT #66, ADD 2 NEW 4'X4' FRONT		8-11-25	1,200.00		28.75
Issued	LAKESIDE ESTATES			8-12-25			28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-08-26			.00
RA079-25	FREIGHT TRAIN EXPRESS	LOT #39, ADD 2 NEW 4'X4' FRONT		8-11-25	1,200.00		28.75
Issued	LAKESIDE ESTATES			8-12-25			28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-08-26			.00
RA080-25	FREIGHT TRAIN EXPRESS	LOT #90, ADD 2 NEW 4'X4' FRONT		8-11-25	1,200.00		28.75
Issued	LAKESIDE ESTATES			8-12-25			28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-08-26			.00
RA081-25	DREW EVERS	NEW 24'X24' DETACHED GARAGE		8-19-25	25,971.84		502.31
Issued	LYLE PARKER			8-22-25			502.31
Contractor	1113 AVENUE P	Residential, Multiple Family		2-18-26			.00

Permit #	Contractor	Description	Appl Date	Fee(s)

Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot	Issued Date / Expire Date	Valuation	Paid / Amount Due
RA082-25	TERRY CRONIN	NEW 24X24 DETACHED GARAGE		8-20-25	25,791.84	502.31
Issued	KIMBERLY MCLAUGHLIN			8-22-25		502.31
Contractor	1024 REDICK BLVD	Residential, Multiple Family		2-18-26		.00
RA083-25	FREIGHT TRAIN EXPRESS	LOT #285, 2 NEW 4'X4' DECKS IN		8-21-25	1,200.00	28.75
Issued	LAKESIDE ESTATES			8-22-25		28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-18-26		.00
RA084-25	FREIGHT TRAIN EXPRESS	LOT #91, ADD TWO 4'X4' DECKS		8-21-25	1,200.00	28.75
Issued	LAKESIDE ESTATES			8-22-25		28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-18-26		.00
RA085-25	FREIGHT TRAIN EXPRESS	LOT #56, ADD TWO 4'X4' DECKS		8-21-25	1,200.00	28.75
Issued	LAKESIDE ESTATES			8-22-25		28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-18-26		.00
RA086-25	FREIGHT TRAIN EXPRESS	LOT #46, ADD TWO 4'X4' DECKS		8-21-25	1,200.00	28.75
Issued	LAKESIDE ESTATES			8-22-25		28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-18-26		.00
RA087-25	FREIGHT TRAIN EXPRESS	LOT #167, ADD TWO 4'X4' DECKS		8-21-25	1,200.00	28.75
Issued	LAKESIDE ESTATES			8-22-25		28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-18-26		.00
RA088-25	FREIGHT TRAIN EXPRESS	LOT #137, ADD TWO 4'X4' DECKS		8-21-25	1,200.00	28.75
Issued	LAKESIDE ESTATES			8-22-25		28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-18-26		.00
RA089-25	FREIGHT TRAIN EXPRESS	LOT #114, ADD TWO 4'X4' DECKS		8-21-25	1,200.00	28.75
Issued	LAKESIDE ESTATES			8-22-25		28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-18-26		.00
RA090-25	FREIGHT TRAIN EXPRESS	LOT #14, ADD TWO 4'X4' DECKS		8-21-25	1,200.00	28.75
Issued	LAKESIDE ESTATES			8-22-25		28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-18-26		.00
RA091-25	FREIGHT TRAIN EXPRESS	LOT #13, ADD TWO 4'X4' DECKS		8-21-25	1,200.00	28.75
Issued	LAKESIDE ESTATES			8-22-25		28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-18-26		.00
RA092-25	FREIGHT TRAIN EXPRESS	LOT #113, ADD TWO 4'X4' DECKS		8-22-25	1,200.00	28.75
Issued	LAKESIDE ESTATES			8-22-25		28.75
Contractor	3510 N 9TH ST	Residential, Multiple Family		2-18-26		.00
RA093-25	DUSTIN BERGMAN	NEW 6'X6' ELEVATED DECK ON		8-28-25	3,000.00	28.75
Issued	MIKE CHRISTENSEN			11-05-25		.00
Contractor	4315 N 12TH ST	Residential, Multiple Family		5-04-26		28.75
RA094-25	OWNER AS GEN CONTRACTOR	DEMO SMALL GARAGE & REPLACE		9-09-25	32,464.80	590.69
Issued	SCOTT LINDHORST			9-17-25		590.69
Contractor	1541 WALKER ST	Residential, Multiple Family		3-16-26		.00

Permit #	Contractor	Description	Appl Date	Fee(s)
Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot / Issued Date / Expire Date	Valuation / Paid / Amount Due
RA095-25	ZIMMERMAN SALES	ADD 18'X26' GARAGE TO	9-19-25	21,102.12	436.56
Issued	J C GRIFFIN PROPERTIESLL		9-25-25		436.56
Contractor	1013 SILVER LN	Residential, Multiple Family	3-24-26		.00
RA096-25	DREW EVERS	REPLACE OLD DECK W/ NEW 18X12'	10-07-25	3,942.00	121.56
Issued	LYLE PARKER		10-07-25		121.56
Contractor	1113 AVENUE P	Residential, Multiple Family	4-05-26		.00
RA097-25	GREAT PLAINS RENEWABLES	INSTALL SOLAR ARRAY W/	10-31-25	5,577.00	156.56
Issued	RIC JENSEN		11-03-25		.00
Contractor	1014 SHOAL DR	Residential, Multiple Family	5-02-26		156.56
		Total RESACCES		134,649.60	FEE 2,741.24
					PAID 2,555.93
					DUE 185.31
	RESCONST				
RC016-25	OWNER AS GEN CONTRACTOR	EXPAND SUNROOM, ADD REAR	9-09-25	66,095.00	953.44
Issued	WEBSTER, TAMARA		9-17-25		953.44
Contractor	3701 N 17TH ST	Residential, Multiple Family	3-16-26		.00
RC017-25	OWNER AS GEN CONTRACTOR	NEW 1872SF 2-STORY TOWNHOME	10-15-25	177,559.20	1,788.19
Issued	MERLYN PROPERTIES LLC		10-16-25		1,788.19
Contractor	1501 SILVER LN	Residential, Multiple Family	4-14-26		.00
RC018-25	OWNER AS GEN CONTRACTOR	NEW 1593SF 1-STORY TOWNHOME	10-15-25	141,349.05	1,536.19
Issued	MERLYN PROPERTIES LLC		10-16-25		1,536.19
Contractor	1503 SILVER LN	Residential, Multiple Family	4-14-26		.00
RC019-25	OWNER AS GEN CONTRACTOR	NEW 1872SF 2-STORY TOWNHOME	10-15-25	177,559.20	1,788.19
Issued	MERLYN PROPERTIES LLC		10-16-25		1,788.19
Contractor	1505 SILVER LN	Residential, Multiple Family	4-14-26		.00
		Total RESCONST		562,562.45	FEE 6,066.01
	RESEXT				
RE183-25	OWNER AS GEN CONTRACTOR	REPLACE SIDING	8-06-25		30.00
Issued	NICK RAUSCH		8-06-25		30.00
Contractor	106 SHOAL DR	Residential, Multiple Family	2-02-26		.00
RE184-25	1-800-HANSONS	REPLACE 6 WINDOWS S4S	8-06-25		30.00
Issued	CARL LEE		8-07-25		30.00
Contractor	1317 HIATT ST	Utility, Miscellaneous	2-03-26		.00
RE185-25	1-800-HANSONS	STANDARD RE-ROOF, REPLACE	8-12-25		75.00
Issued	LACROIX,LINDA		8-12-25		75.00
Contractor	2 CARTER LAKE CLB	Residential, Multiple Family	2-08-26		.00

Permit #	Contractor	Description	Appl Date	Fee(s)
Status	Owner	Sub-Division Lot	Issued Date	Paid
Appl Type	Location	Type of Use	Expire Date Valuation	Amount Due
RE186-25	1-800-HANSONS	REPLACE 11 WINDOWS S4S	8-12-25	30.00
Issued	WADE, TAMI L TAYLOR		8-12-25	30.00
Contractor	1535 STELLA AVE	Residential, Multiple Family	2-08-26	.00
RE187-25	BULLDOG ROOFING	REMOVE & REPLACE ~19SQ OF ROOF	8-28-25	30.00
Issued	MARTIN, ROBERT & DENICE		8-28-25	30.00
Contractor	1117 MAYPER DR	Residential, Multiple Family	2-24-26	.00
RE188-25	OWNER AS GEN CONTRACTOR	STANDARD RE-ROOF	9-11-25	30.00
Issued	BILL ATHAY		9-11-25	30.00
Contractor	4330 N 15TH ST	Residential, Multiple Family	3-10-26	.00
RE189-25	LEGACY HOME DEVELOPMENT	STANDARD RE-ROOF	9-15-25	30.00
Issued	DAVID INGRAM		9-15-25	30.00
Contractor	4008 N 9TH ST	Residential, Multiple Family	3-14-26	.00
RE190-25	FULL CIRCLE ROOFING	REPLACE 1 WINDOW & 1 DOOR S4S	9-25-25	50.00
Issued	SALLY & GARY HAGAN		9-25-25	50.00
Contractor	1009 SILVER LN	Residential, Multiple Family	3-24-26	.00
RE191-25	STAR POWER EXTERIORS	STANDARD RE-ROOF & REPLACE	9-29-25	50.00
Issued	KATRENA FLANAGAN		9-29-25	50.00
Contractor	1214 REDICK BLVD	Residential, Multiple Family	3-28-26	.00
RE192-25	STAR POWER EXTERIORS	REPLACE SIDING	9-29-25	30.00
Issued	BARNHART, JILL		9-29-25	30.00
Contractor	1302 SILVER LN	Residential, Multiple Family	3-28-26	.00
RE193-25	TERRY CRONIN	STANDARD RE-ROOF	10-07-25	30.00
Issued	SCOTT & KIM MOORE		10-07-25	30.00
Contractor	990 KEY CIR	Residential, Multiple Family	4-05-26	.00
RE194-25	OWNER AS GEN CONTRACTOR	REPLACE 2 DOORS S4S	10-07-25	30.00
Issued	PODRAZA		10-07-25	30.00
Contractor	4430 N 6TH ST	Residential, Multiple Family	4-05-26	.00
RE195-25	SOUTH O ROOFING	REPLACE HOME'S ENTIRE ROOF,	10-15-25	30.00
Issued	CLAPP, CHARLIE		10-15-25	30.00
Contractor	83 CARTER LAKE CLB	Residential, Multiple Family	4-13-26	.00
RE196-25	OWNER AS GEN CONTRACTOR	REPLACE SIDING ON 3 SIDES OF	10-20-25	30.00
Issued	CORONADO PROPERTIES		10-20-25	30.00
Contractor	1322 . LINDWOOD DR	Residential, Multiple Family	4-18-26	.00
RE197-25	PREMIER SYSTEMS ROOFING	STANDARD RE-ROOF	10-23-25	30.00
Issued	BARBARA BRANSON		10-23-25	30.00
Contractor	4204 N 11TH ST	Residential, Multiple Family	4-21-26	.00
		Total RESEXT	FEE	535.00

Permit #	Contractor	Description	Appl Date	Fee(s)
Status	Owner	Sub-Division Lot	Issued Date	Paid
Appl Type	Location	Type of Use	Expire Date Valuation	Amount Due
	RESINTER			
RI012-25	DUSTIN BERGMAN	REMOVE 2 BASEMENT WINDOWS &	9-04-25 738.00	40.81
Issued	MIKE CHRISTENSEN		9-04-25	40.81
Contractor	4315 N 12TH ST	Residential, Multiple Family	3-03-26	.00
		Total RESINTER	738.00 FEE	40.81
	ROW			
ROW173-25	JEFFERS, STEVE	REMOVE/REPLACE DRIVEWAY & SIDE	8-25-25	100.00
Issued	MELANIE DANAHY		8-25-25	100.00
Contractor	1516 STELLA AVE		2-21-26	.00
ROW174-25	BLACK HILLS ENERGY		9-03-25	100.00
Expired	GUNDERSEN, JASON		9-03-25	100.00
Contractor	201 CAROLINA DR		11-02-25	.00
ROW175-25	BLACK HILLS ENERGY		9-03-25	100.00
Expired	TIMOTHY CUDD		9-03-25	100.00
Contractor	816 WOOD AVE		11-02-25	.00
ROW176-25	BLACK HILLS ENERGY		9-03-25	100.00
Expired	YANG, JOSEPH FU SHOU		9-03-25	100.00
Contractor	718 AVENUE K		11-02-25	.00
ROW177-25	BLACK HILLS ENERGY		9-03-25	100.00
Expired	MCPECK, WILLIAM		9-03-25	100.00
Contractor	4104 N 13TH ST		11-02-25	.00
ROW178-25	BLACK HILLS ENERGY		9-03-25	100.00
Expired	JESSICCA MACOSSAY		9-03-25	100.00
Contractor	4106 N 13TH ST		11-02-25	.00
ROW179-25	GUNDERSEN GRADING	CUT OUT AND REPLACE CURBS	9-03-25	100.00
Expired	GUNDERSEN, JASON		9-03-25	100.00
Contractor	201 CAROLINA DR		11-02-25	.00
ROW180-25	GUNDERSEN GRADING	CUT OUT AND REPLACE CURBS	9-03-25	100.00
Expired	JASON GUNDERSON		9-03-25	100.00
Contractor	202 CAROLINA DR		11-02-25	.00
ROW181-25	GUNDERSEN GRADING	INSTALL NEW WATER AND SEWER	9-03-25	100.00
Expired	LISA PULLUM		9-03-25	100.00
Contractor	1220 SHOAL DR		11-02-25	.00
ROW182-25	GUNDERSEN GRADING	SEWER REPAIR	9-03-25	100.00
Expired	SHAH, DHWANI		9-03-25	100.00
Contractor	1104 CACHELIN DR		11-02-25	.00

Permit #	Contractor	Description	Appl Date	Fee(s)

Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot	Issued Date / Expire Date	Valuation	Paid / Amount Due
ROW183-25	COX COMMUNICATIONS	REPLACE COAX IN CONDUIT ALONG		9-04-25		200.00
Expired	CARTER LAKE CITY HALL			9-04-25		200.00
Contractor	950 LOCUST ST			11-03-25		.00
ROW184-25	COX COMMUNICATIONS	BORE NEW FIBER IN CONDUIT		9-17-25		100.00
Expired	NATIONAL FREIGHTWAYS INC			9-17-25		100.00
Contractor	801 WOOD AVE			11-16-25		.00
ROW185-25	SHEARD CONSTRUCTION	Add driveway approach to new		9-29-25		100.00
Expired	MIKE CHRISTENSEN			9-29-25		100.00
Contractor	4315 N 12TH ST			11-28-25		.00
ROW186-25	GUNDERSEN GRADING	REPAIR SEWER CURB TO MAIN		10-14-25		100.00
Issued	KITTY BUCHANAN			10-14-25		100.00
Contractor	4320 N 8TH ST			12-13-25		.00
ROW187-25	BLACK HILLS ENERGY	NEW SERVICE		10-14-25		100.00
Issued	TREY BOWMAN			10-14-25		.00
Contractor	4407 N 6TH ST			12-13-25		100.00
ROW188-25	BLACK HILLS ENERGY	NEW SERVICE		10-14-25		100.00
Issued	LISA PULLUM			10-14-25		.00
Contractor	1220 SHOAL DR			12-13-25		100.00
ROW189-25	BLACK HILLS ENERGY	NEW SERVICE		10-14-25		100.00
Issued	DRISCOLL, JOSH			10-14-25		.00
Contractor	506 REDICK BLVD			12-13-25		100.00
ROW190-25	GUNDERSEN GRADING	INSTALL NEW WATER & SEWER LINE		10-21-25		100.00
Issued	MERLYN PROPERTIES LLC			10-21-25		.00
Contractor	1501 SILVER LN			12-20-25		100.00
ROW191-25	GUNDERSEN GRADING	INSTALL NEW WATER & SEWER LINE		10-21-25		100.00
Issued	MERLYN PROPERTIES LLC			10-21-25		.00
Contractor	1503 SILVER LN			12-20-25		100.00
ROW192-25	GUNDERSEN GRADING	INSTALL NEW WATER & SEWER LINE		10-21-25		100.00
Issued	MERLYN PROPERTIES LLC			10-21-25		.00
Contractor	1505 SILVER LN			12-20-25		100.00

Total ROW

FEE	2,100.00
PAID	1,500.00
DUE	600.00

Permit #	Contractor	Description	Appl Date	Fee(s)

Status / Appl Type	Owner / Location	Sub-Division / Type of Use	Lot	Issued Date / Expire Date	Valuation		Paid / Amount Due
		Total COMCONST		4	8,120,113.86	FEE	38,683.85
		Total DEMO		3		FEE	225.00
		Total DIRTHAUL		1		FEE	225.00
						PAID	25.00
						DUE	200.00
		Total ELECTRIC		13		FEE	1,149.14
						PAID	1,101.04
						DUE	48.10
		Total FENCE		7	22,065.43	FEE	364.06
						PAID	326.56
						DUE	37.50
		Total MECH		6		FEE	286.15
						PAID	262.65
						DUE	23.50
		Total MISCRES		20		FEE	1,606.50
		Total PLUMB		32		FEE	3,789.85
		Total POOL		1		FEE	360.58
		Total RESACCES		21	134,649.60	FEE	2,741.24
						PAID	2,555.93
						DUE	185.31
		Total RESCONST		4	562,562.45	FEE	6,066.01
		Total RESEXT		15		FEE	535.00
		Total RESINTER		1	738.00	FEE	40.81
		Total ROW		20		FEE	2,100.00
						PAID	1,500.00
						DUE	600.00
				========	==========		==========
GRAND TOTAL				148	8,840,129.34	FEE	58,173.19
						PAID	57,078.78
						DUE	1,094.41

TOTAL TYPE	DESCRIPTION	PERMIT COUNT	FEE	AMOUNT PAID	AMOUNT DUE
UNDEFINED	UNDEFINED DESCRIPTION	148	58173.19	57078.78	1094.41

CITY OF CARTER LAKE, IOWA
Building & Zoning Department
950 Locust Street
Carter Lake, IA 51510
Telephone: (712) 847-0535
Fax: (712) 347-5454
Inspection Request: (712) 847-0535

December 5, 2025

City of Carter Lake, IA – Planning Board

RE: New Subdivision – The Landing Reserve LLC./Wavecrest Addition

Project / Site Address: 17th St. & Lagoon Dr. (Parcel # 7544 16 257 001)

Applicant: Laura Tarpinian (The Landing Reserve LLC.)

We have been working with Ms. Tarpinian to create the above parcel located in zoning district R-2, Urban Residential Mixed Density District, into 29 lots. The minimum site development regulations within zoning district R-2 are:

Regulator	1-Family Detached	1-Family Attached (Section 604)	Duplex	Town-house (Section 603)	Other Permitted Uses
Site Area per Housing Unit (square feet)					
In Conventional Development	6,000	5,000	3,000	3,000	
In Planned Developments	5,000	5,000	3,000	2,500	
Minimum Lot Area					
In Conventional Development	6,000	5,000	6,000	3,000	6,000
In Planned Developments	4,000	4,000	6,000	2,500	6,000
Minimum Lot Width (feet)					
In Conventional Development	60	50	75	35	60
In Planned Developments	45	40	65	25	60
Minimum Yards (feet) (Section 605)					
Front Yard	25	25	25	25	25
Side Yard on detached sides	5	10	10	10	10
Street Side Yard	15	15	15	15	15
Rear Yard	25	25	25	25	25
Maximum Height (feet)	35	35	35	35	35
Maximum Building Coverage	45%	45%	45%	45%	45%
Maximum Impervious Coverage	55%	55%	55%	55%	55%
Floor Area Ratio	NA	NA	NA	NA	0.50
Maximum Percentage of Total Parking Located in Street Yard	NA	NA	NA	NA	50%
Minimum Depth of Landscaping Adjacent to Street Right-of-Way Line (feet)	20	20	20	20	20

Following our office's preliminary review of the submitted subdivision plan, we have identified one item of concern pertaining to Lot 11. Based on our calculations, Lot 11 does not meet the minimum lot area requirement of 2,500 square feet as stipulated by current zoning regulations.
To construct the proposed townhouse on Lot 11, along with Lots 10 and 12, Landing Reserve LLC must either:

1. Adjust the lot lines and resubmit the revised plat, or
2. Initiate the process to amend zoning regulations to allow for smaller lot sizes within townhouse planned developments.

All other proposed lots meet or exceed the minimum requirements of 2,500 square feet in area and 25 feet in lot width. In consideration of the applicable City Development Ordinance sections referenced in this report and compliance with zoning and development regulations, we hereby recommend consent approval for this subdivision to proceed, contingent upon resolution of Lot 11.

Respectfully,

Darin Whatcott

Darin Whatcott, *RA CBO*
City Building & Zoning Official

WAVECREST ADDITION PUD

PLANNED UNIT DEVELOPMENT - CARTER LAKE, IA

PROJECT DATA TABLE	
LEGAL	PORTION OF LOT 1, LOT 2, 3, 14, 15, & 16, BLOCK 29, AND ALL OF BLOCK 25 WAVECREST ADDITION
SPECIFICATIONS	CITY OF CARTER LAKE
PROJECT AREA	5.565 ACRES
OWNER	THE LANDING RESERVE, LLC
PROJECT COORDINATION	CITY OF CARTER LAKE
ENGINEER / PREPARER	JAKE VASA, PE - SEH INC.
	15750 DODGE RD SUITE 304, OMAHA, NEBRASKA 68118
SURVEYOR	DANIEL HENNESSY, PLS (IA) - SEH INC.
DENSITY	5.2 UNITS / ACRE

GENERAL SITE NOTES:

1. EXISTING LAGOON DRIVE ROW IS PLATTED AS 40 FOOT WIDE, WITH A PLANNED 28 FOOT WIDE STREET.
2. SHOWN DUPLEX BUILDING OUTLINES ARE CONCEPTUAL AND ARE SUBJECT TO CHANGE.
3. SANITARY SEWER PIPES SHALL BE 8" UNLESS SHOWN OTHERWISE.
4. WATER MAIN PIPES SHALL BE 8" UNLESS SHOWN OTHERWISE.
5. THE CURRENT ZONING IS R-2 URBAN RESIDENTIAL MIXED DENSITY DISTRICT.
6. PROPOSED ZONING IS R-2 RESIDENTIAL DISTRICT PLANNED UNIT DEVELOPMENT.
7. DRAINAGE FROM THE PROPOSED SUBDIVISION WILL BE DIRECTED EITHER OFF SITE TO CARTER LAKE TO THE EAST. DRAINAGE FOLLOWS THE CITY OF CARTER LAKE CITY ORDINANCE CHAPTER 101 STORM WATER CONTROL. OFF SITE RUNOFF AND DRAINAGE DETENTION CALCULATIONS AND REQUIREMENTS WILL BE MET AS SHOWN ON THE DRAINAGE PLAN. ADJUSTMENTS TO THIS PLAN THAT ARE MADE WILL CONFORM TO THE CITY ORDINANCE
8. THE EXISTING FLOODPLAIN IS SHOWN ON THE GRADING/DRAINAGE PLAN. IOWA REQUIRES COMPENSATORY STORAGE FOR ALL FLOODPLAIN FILLED, WHICH IS MET AND REFLECTED ON THE DRAINAGE PLAN. ALL BUILDINGS SHALL BE CONSTRUCTED AT AN ELEVATION ABOVE THE KNOWN BASE FLOOD ELEVATION (BFE) FOR THE CITY OF CARTER LAKE.
9. A FLOODPLAIN FILL PERMIT WILL BE OBTAINED BY IOWA DEPT. OF NATURAL RESOURCES PRIOR TO GRADING OPERATIONS.
10. GRADING OPERATIONS AND EROSION CONTROL MEASURES WILL FOLLOW THE IOWA SUDAS STANDARDS AND GUIDELINES.
11. OUTLOT AREAS ARE INTENDED TO BE MAINTAINED BY THE HOME OWNERS ASSOCIATION (HOA).
12. THE REQUIRED SETBACKS ARE DETERMINED TO BE 25' FRONT YARD SETBACK ON ALL LOTS, 5' SIDEYARD SETBACK ON ALL DETACHED SINGLE FAMILY LOTS, AND 10' ON ALL TOWNHOME OR DUPLEX LOTS, AND 25' REAR YARD SETBACK, UNLESS FURTHER DESCRIBED VIA A WAIVER HEREIN.

FLOOR PLAN KEY:

A	ROSEWATER
B	WATSON
C	BAYWOOD
D	WHITTAKER
E	CAVALLARI
F	KENNESAW

WAIVER REQUEST TABLE	
LOT #	COMMENTS
9	REAR YARD SETBACK - REDUCE TO 7'
10, 11, 12, 13	REAR YARD SETBACK - REDUCE TO 10'
27, 28, 29	REAR YARD SETBACK - REDUCE TO 15'

INDEX

50 0 50 100
scale 25 feet

SITE PLAN

SEH Project	LARES187990	Rev.#	Plan Revision Issue Description	Date	Rev.#	Sheet Revision Issue Description	Date
Drawn By	--	.			.		
Designed By	--	.			.		
Checked By	--	.			.		

WAVECREST ADDITION
CARTER LAKE, IOWA

SITE PLAN
WAVECREST ADDITION

PRELIMINARY PLAT
WAVECREST SUBDIVISION
CARTER LAKE, IOWA

OWNER

THE LANDING RESERVE LLC
2389 AVE M WAY, COUNCIL BLUFFS, IA 51501

DESIGNER

SHORT, ELLIOT, HENDRICKSON INC. (SEH)
15750 WEST DODGE ROAD, SUITE 304
OMAHA, NE 68164

PROPERTY ADDRESS

PARCEL ID 754416257001, NO ADDRESS

ZONING

ZONING DISTRICT: R-2 URBAN RESIDENTIAL MIXED DENSITY DISTRICT
LOT SIZE:
- *WIDTH 45 FT 1-FAMILY DETACHED, 25 FT TOWNHOUSE*
- *SIZE 4,000 SQ FT 1-FAMILY DETACHED*
- *2,500 SQ FT TOWNHOUSE*

SETBACKS:
- *FRONT 25 FT (BOTH)*
- *SIDE 5 FT DETACHED SIDES 1-FAMILY DETACHED*
- *10 FT DETACHED SIDES TOWNHOUSE*
- *15 FT STREET SIDE (BOTH)*
- *REAR 25 FT (BOTH)*

BUILDING REQUIRMENTS:
- *SIZE 5,000 SQ FT 1-FAMILY DETACHED*
- *2,500 SQ FT TOWNHOUSE*
- *MAX HEIGHT 35 FT (BOTH)*
- *MAX COVERAGE 45% (BOTH)*
- *MAX IMPERVIOUS 55% (BOTH)*

LANDSCAPING
- *MIN DEPTH 20 FT (BOTH) ADJACENT TO STREET ROW*

SURVEYOR'S NOTES

(A) AS SHOWN HEREON, 54' OF LOG LANDSCAPING STRADDELES THE PROPERTY LINE.

(B) AS SHOWN HEREON, 35' OF LAGOON DRIVE IS MAXIUM OF 0.3' SOUTH OF PROPERTY LINE.

(C) AS SHOWN HEREON, 120' OF LAGOON DRIVE IS MAXIMUM OF 5.0' SOUTHWEST OF PROPERTY LINE.

NO EXISTING BUILDING LOCATED ON SUDJECT PROPERTY

GROSS LAND AREA

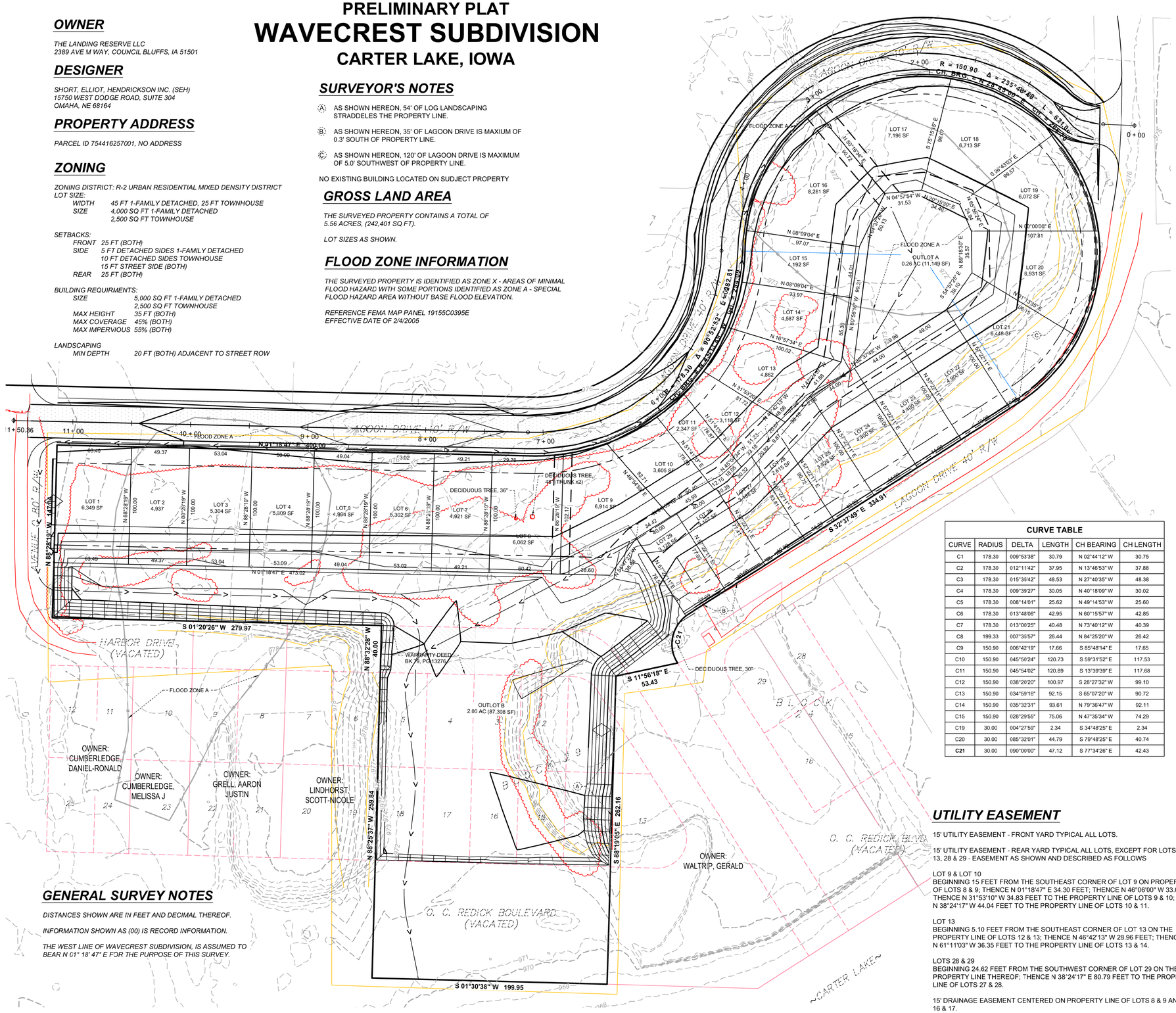
THE SURVEYED PROPERTY CONTAINS A TOTAL OF 5.56 ACRES, (242,401 SQ FT).

LOT SIZES AS SHOWN.

FLOOD ZONE INFORMATION

THE SURVEYED PROPERTY IS IDENTIFIED AS ZONE X - AREAS OF MINIMAL FLOOD HAZARD WITH SOME PORTIONS IDENTIFIED AS ZONE A - SPECIAL FLOOD HAZARD AREA WITHOUT BASE FLOOD ELEVATION.

REFERENCE FEMA MAP PANEL 19155C0395E
EFFECTIVE DATE OF 2/4/2005



GENERAL SURVEY NOTES

DISTANCES SHOWN ARE IN FEET AND DECIMAL THEREOF.

INFORMATION SHOWN AS (00) IS RECORD INFORMATION.

THE WEST LINE OF WAVECREST SUBDIVISION, IS ASSUMED TO BEAR N 01° 18' 47" E FOR THE PURPOSE OF THIS SURVEY.

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CH BEARING	CH LENGTH
C1	178.30	009°53'38"	30.79	N 02°44'12" W	30.75
C2	178.30	012°11'42"	37.95	N 13°46'53" W	37.88
C3	178.30	015°35'42"	48.53	N 27°40'35" W	48.38
C4	178.30	009°39'27"	30.05	N 40°18'09" W	30.02
C5	178.30	008°14'01"	25.62	N 49°14'53" W	25.60
C6	178.30	013°48'06"	42.95	N 60°15'57" W	42.85
C7	178.30	013°00'25"	40.48	N 73°40'12" W	40.39
C8	199.33	007°35'57"	26.44	N 84°25'20" W	26.42
C9	150.90	006°42'19"	17.66	S 85°48'14" E	17.65
C10	150.90	045°50'24"	120.73	S 59°31'52" E	117.53
C11	150.90	045°54'02"	120.89	S 13°39'39" E	117.68
C12	150.90	038°20'20"	100.97	S 28°27'32" W	99.10
C13	150.90	034°59'16"	92.15	S 65°07'20" W	90.72
C14	150.90	035°32'31"	93.61	N 79°36'47" W	92.11
C15	150.90	028°29'55"	75.06	N 47°35'34" W	74.29
C19	30.00	004°27'59"	2.34	S 34°48'25" E	2.34
C20	30.00	085°32'01"	44.79	S 79°48'25" E	40.74
C21	30.00	090°00'00"	47.12	S 77°34'26" E	42.43

UTILITY EASEMENT

15' UTILITY EASEMENT - FRONT YARD TYPICAL ALL LOTS.

15' UTILITY EASEMENT - REAR YARD TYPICAL ALL LOTS, EXCEPT FOR LOTS 9, 10, 13, 28 & 29 - EASEMENT AS SHOWN AND DESCRIBED AS FOLLOWS

LOT 9 & LOT 10
BEGINNING 15 FEET FROM THE SOUTHEAST CORNER OF LOT 9 ON PROPERTY LINE OF LOTS 8 & 9; THENCE N 01°18'47" E 34.30 FEET; THENCE N 46°06'00" W 33.09 FEET; THENCE N 31°53'10" W 34.83 FEET TO THE PROPERTY LINE OF LOTS 9 & 10; THENCE N 38°24'17" W 44.04 FEET TO THE PROPERTY LINE OF LOTS 10 & 11.

LOT 13
BEGINNING 5.10 FEET FROM THE SOUTHEAST CORNER OF LOT 13 ON THE PROPERTY LINE OF LOTS 12 & 13; THENCE N 46°42'13" W 28.96 FEET; THENCE N 61°11'03" W 36.35 FEET TO THE PROPERTY LINE OF LOTS 13 & 14.

LOTS 28 & 29
BEGINNING 24.62 FEET FROM THE SOUTHWEST CORNER OF LOT 29 ON THE SOUTH PROPERTY LINE THEREOF; "THENCE N 38°24'17" E 80.79 FEET TO THE PROPERTY LINE OF LOTS 27 & 28.

15' DRAINAGE EASEMENT CENTERED ON PROPERTY LINE OF LOTS 8 & 9 AND LOTS 16 & 17.

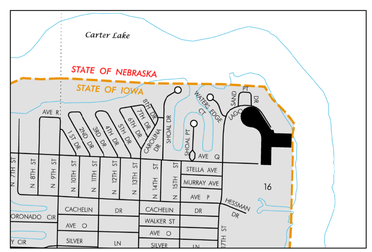
LEGEND

- FOUND IRON MONUMENT, CAST IRON MONUMENT, RANGE POINT AND SECTION CORNER (WR)
- SET 1/2" REBAR W/BLUE PLASTIC CAP STAMPED P28993, SET MAG NAIL
- SURVEY CONTROL POINT, BENCHMARK
- SANITARY MANHOLE, CLEAN OUT, LIFT STATION AND FORCE MAIN MANHOLE
- SANITARY GRAVITY MAINLINE
- SANITARY FORCE MAIN
- SANITARY SERVICE LINE
- STORM MANHOLE AND CATCH BASIN
- STORM SEWER GRAVITY MAINLINE
- STORM SEWER FORCE MAIN
- CULVERT
- TILE LINE
- WATER MANHOLE, GATE VALVE, HYDRANT, CURB STOP AND METER
- WATER MAIN LINE
- WATER SERVICE
- WELL, SPRINKLER HEAD, SPRINKLER CONTROL BOX AND BACK FLOW VALVE
- IRRIGATION WATER LINE
- NON-POTABLE WATER LINE
- POWER PCLE, ANCHOR, LIGHT POLE AND ELECTRIC METER
- BURIED ELECTRIC CABLE
- ELECTRIC PEDESTAL, MANHOLE, SIGN AND VAULT
- OVERHEAD POWER
- TELEPHONE PEDESTAL, SIGN, MANHOLE AND VAULT
- BURIED TELEPHONE CABLE
- CABLE TV PEDESTAL, MANHOLE, SIGN AND VAULT
- BURIED CABLE TV CABLE
- FIBER OPTIC PEDESTAL AND SIGN
- BURIED FIBER OPTIC CABLE
- GAS SIGN, METER, VALVE, RISER AND VAULT
- BURIED GAS LINE
- MAILBOX, FLAG POLE, POST/BOLLARD, PARKING METER
- ROAD SIGN, STREET NAME SIGN, SIGNAL BOX, AND E911 SIGN
- UNIDENTIFIED PEDESTAL, MANHOLE, HAND HOLE AND VAULT
- DECIDUOUS TREE, CONIFEROUS TREE, STUMP AND BUSH
- TREE LINE
- DELINEATED WETLAND
- RAILROAD SIGNAL, DERAILER AND SWITCH STAND
- BOUNDARY LINE
- ADJACENT DEED OR PLAT LINE
- ROAD RIGHT OF WAY LINE
- RAILROAD RIGHT OF WAY LINE
- SECTION LINE
- QUARTER SECTION LINE
- QUARTER-QUARTER SECTION LINE
- PERMANENT EASEMENT LINE
- UTILITY EASEMENT LINE
- FENCE LINE
- CHAIN LINK FENCE
- WOOD BOARD FENCE
- WOVEN WIRE FENCE
- ROAD BEAM GUARD
- ROAD CABLE GUARD
- MAJOR CONTOUR LINE AND LABEL
- MINOR CONTOUR LINE AND LABEL
- BITUMINOUS SURFACE (BIT)
- CONCRETE SURFACE (PCC)
- GRAVEL SURFACE
- BUILDING

ABBREVIATIONS

RCP REINFORCED CONCRETE PIPE
VCP VITRIFIED CLAY PIPE
PVC POLYVINYL CHLORIDE PIPE
HDPE HIGH-DESITY POLYETHYLENE PIPE
(B)PC BLUE PLASTIC CAP(FIRST LETTER INDICATES COLOR)

scale 30 0 30 60 — 15 feet



I HEREBY CERTIFY THAT THIS LAND SURVEYING DOCUMENT WAS PREPARED AND THE RELATED SURVEY WORK WAS PERFORMED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL LAND SURVEYOR UNDER THE LAWS OF THE STATE OF IOWA.

FOR SEH

DRAFT 11/17/2025

DANIEL HENNESSY — DATE
LICENSE NUMBER P28993
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2025
SHEETS COVERED BY THIS SEAL: 1

LICENSED PROFESSIONAL LAND SURVEYOR — DANIEL HENNESSY P28993 — IOWA

SEH Project	HRGRE 175273
Drawn By	DJH
Surveyed By	DJH
Checked By	

Revision Issue Description / Rev.# / Date

SEH
PHONE: 641.424.6344
215 NORTH ADAMS AVENUE
MASON CITY, IA 50401-3119
www.sehinc.com

CARTER LAKE, IOWA

PRELIMINARY PLAT

FILE NO.

1 of 1

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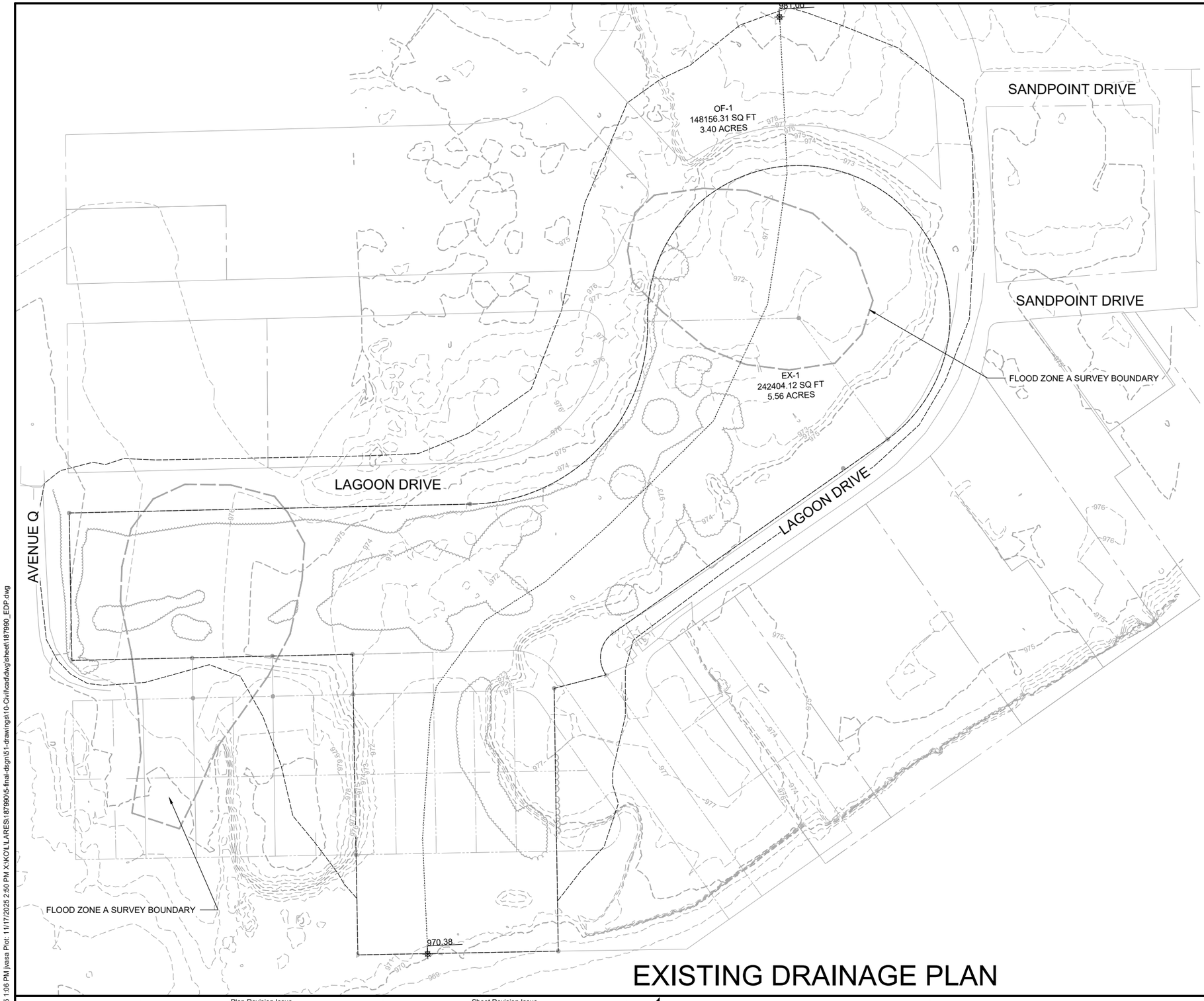
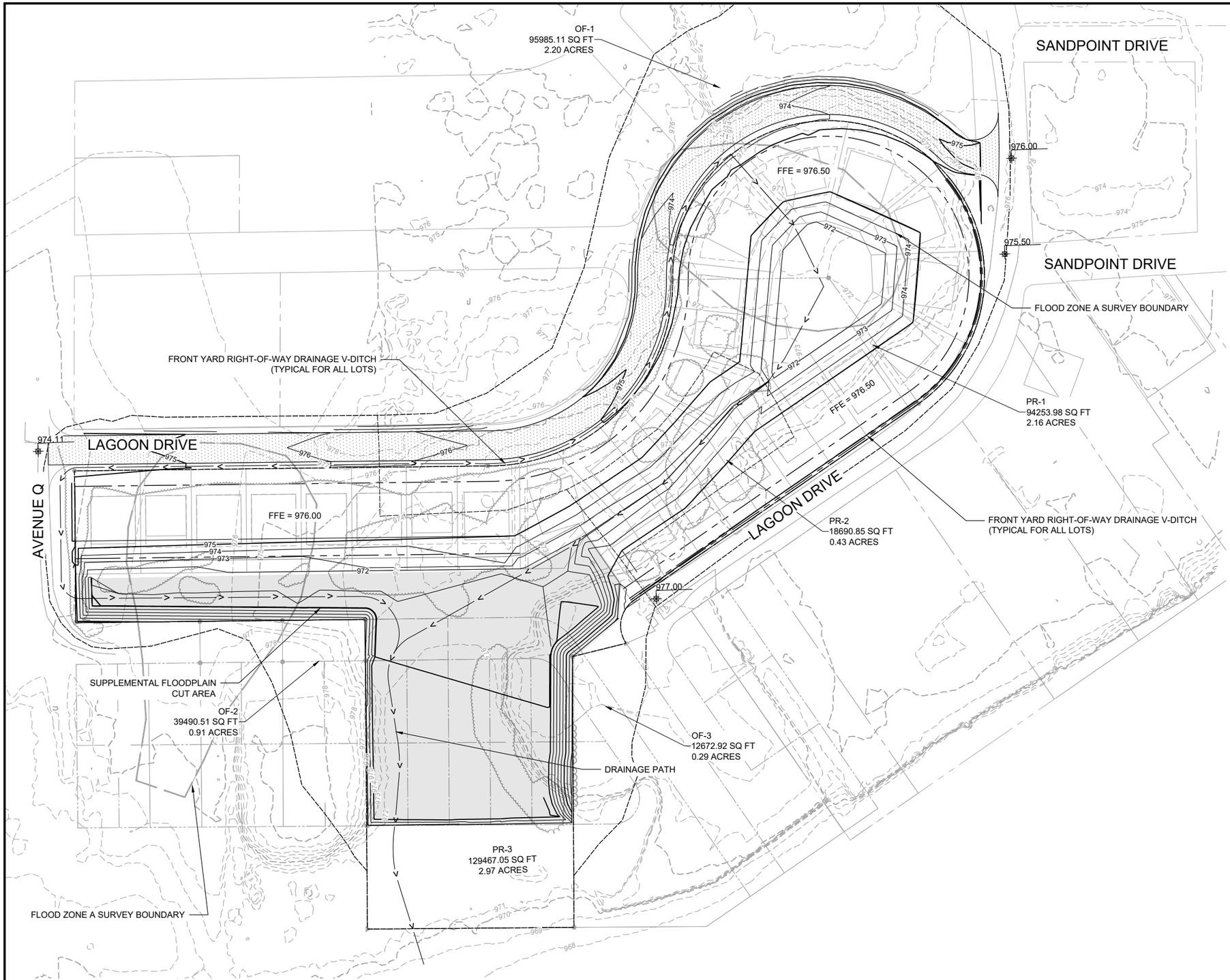


LEGEND

PR#	DRAINAGE AREA LABEL
1150	EXISTING MAJOR CONTOUR
1152	EXISTING MINOR CONTOUR
1150	PROPOSED MAJOR CONTOUR
1152	PROPOSED MINOR CONTOUR

EXISTING DRAINAGE PLAN

SEH Project	LARES187990	Rev.#	Plan Revision Issue Description	Date	Rev.#	Sheet Revision Issue Description	Date	WAVECREST ADDITION CARTER LAKE, IOWA
Drawn By	--	.			.			**EXISTING DRAINAGE PLAN** **WAVECREST ADDITION**
Designed By	--	.			.			
Checked By	--	.			.			



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LEGEND

- PROPOSED STORM SEWER
- PROPOSED DRAINAGE AREA
- PR# DRAINAGE AREA LABEL
- 1150 EXISTING MAJOR CONTOUR
- 1152 EXISTING MINOR CONTOUR
- 1150 PROPOSED MAJOR CONTOUR
- 1152 PROPOSED MINOR CONTOUR

FLOODPLAIN AREA NOTES

FLOOD ZONE A AREA (NORTH) NET FILL:	2,099.29 YD^3
FLOOD ZONE A AREA (SOUTH) NET FILL:	14.19 YD^3
FLOOD PLAIN SUPPLEMENTAL CUT AREA:	9,137.27 YD^3
CHANGE OF FLOODPLAIN RETENTION VOLUME:	(+) 7,023.79 YD^3

DRAINAGE PLAN

SEH Project	LARES187990	Rev.#	Plan Revision Issue Description	Date	Rev.#	Sheet Revision Issue Description	Date
Drawn By	--	.			.		
Designed By	--	.			.		
Checked By	--	.			.		

WAVECREST ADDITION
CARTER LAKE, IOWA

DRAINAGE PLAN
WAVECREST ADDITION

4 of XX

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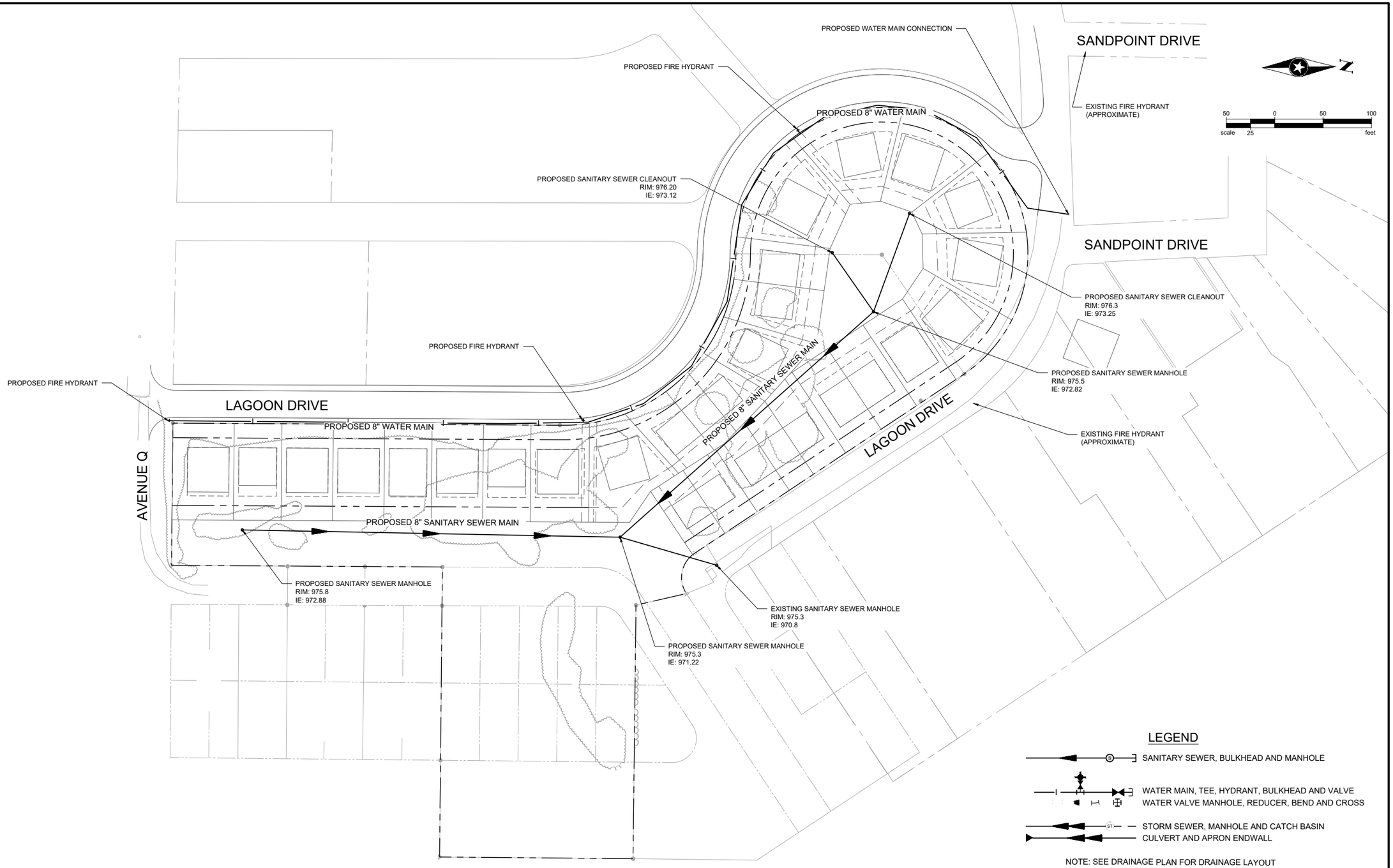

LEGEND

- SANITARY SEWER, BULKHEAD AND MANHOLE
- WATER MAIN, TEE, HYDRANT, BULKHEAD AND VALVE
- WATER VALVE MANHOLE, REDUCER, BEND AND CROSS
- STORM SEWER, MANHOLE AND CATCH BASIN
- CULVERT AND APRON ENDWALL

NOTE: SEE DRAINAGE PLAN FOR DRAINAGE LAYOUT

UTILITY LAYOUT

		Rev.#	Plan Revision Issue Description	Date	Rev.#	Sheet Revision Issue Description	Date
SEH Project	LARES187990	.			.		
Drawn By	--	.			.		
Designed By	--	.			.		
Checked By	--	.			.		

WAVECREST ADDITION
CARTER LAKE, IOWA

UTILITY LAYOUT
WAVECREST ADDITION

5
of 5

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Building a Better World for All of Us®

DRAINAGE REPORT

TO: City of Carter Lake

FROM: Jake Vasa, PE

DATE: November 17, 2025

RE: Wavecrest Addition – Site Design and Drainage Study
Carter Lake, Iowa

This report addresses the site hydrology and stormwater allocation for the Landing Reserve Development located east of 17th Street and bounded by Lagoon Drive.

Background Information
The existing site is approximately 5.57 acres consisting of flat grass terrain dense forested area. The surrounding grassland, wooded area, and existing infrastructure surrounding the site was considered for all potential runoff that will impact the site and for the supporting calculations for the site hydrology. The site exhibits generally well-draining soils and partially lays within a floodplain with FEMA designation Zone 'A' – Special Flood Hazard Area. The majority of the site lays outside Zona 'A' within Zone 'X' – Area of Minimal Flood Hazard, which drains to the south and east towards lower-laying areas near the waterfront of Carter Lake. The following storm events from the NRCS-Rain tables, that were calculated with the SCS TR-20 Runoff Method, for this site runoff were used:

- 2 year storm event – 3.00 inches (24 hour duration)
- 10 year storm event – 4.60 inches (24 hour duration)
- 100 year storm event – 6.70 inches (24 hour duration)

Proposed Site Information
The proposed project is a residential development, consisting of townhouses located along a proposed neighborhood road as part of the development. The proposed site plan will consist of townhouses connected tp access drives abutting Lagoon Drive . The weighted Curve Number (CN) is based on the amount of differing runoff areas and the hydrological soil group (HSG). The entire site is HSG A, consisting of loamy, fine sands, exhibiting characteristically well-draining soils. The weighted CN's are summarized in the attachments. For the time of concentrations calculated that were smaller than the minimum of 5 minutes, the minimum was used in those flow calculations.

Existing Off-Site Conditions
The lands adjacent to the project site include existing infrastructure (single family houses, asphalt pavement) and natural grassy open spaces with wooded areas to the south and west of the proposed construction area. The area located directly north and west of the proposed project area lays on a "shelf" ranging from one foot to a few feet above the site, which provides sheet flow to the site during rainfall events, and generally gets conveyed further south and east towards a natural outlet to Carter Lake. The site is bounded to the west by a densely packed wooded area which lays in a naturally flat area, not providing direct runoff to the site. Existing roadways (Lagoon

Drive and Avenue Q) provide direct runoff from the north and south of the site. Carter Lake is located to the east of the site and only contributes retained water during flood events.

Water Quality / Floodplain Requirements

The proposed water quality measures for the development include pre-detention grassed swales located on the fronts of the lots adjacent to the right-of-way, and general detention and infiltration across the site. From the proposed on-site drainage basins, sheeted runoff traverses from street flow to vegetated swales that provide adequate filtration of sediments and solids and reduce runoff velocity from street flow prior to being deposited into the designated detention area. From the detention area, runoff can collect and infiltrate into lower layers of soil that provides additional filtration of sediments and minerals collected from backyards and open space. These measures aim to promote runoff quality by establishing vegetation that reduces runoff velocity and actively filter any collected sediments and solids, reducing the maintenance time and frequency for the detention area and lower areas where runoff is propagated and released. This also provides natural storage for runoff to be collected from streets and driveways and avoid stagnation. All water quality management practices and maintenance adheres to SUDAS (Iowa Statewide Urban Design and Specifications) standards in accordance with the city of Carter Lake and state of Iowa.

The proposed water floodplain mitigation effort(s) for the site will include grading a section of the site dedicated to supplementing the fill areas from existing FEMA designated floodplain. The proposed site lays partial within two designated FEMA Floodplain locations for the land surrounding Carter Lake, both designated as Zone “A” – Special Flood Hazard Area, one laying more north in the project area and one in the south. The site plan includes grading the proposed building footprint areas to be raised to a finished floor elevation 975.00 - which relative to other residential buildings in the surrounding neighborhood – either matches or exceeds the constructed building elevations out of the floodplain. The proposed fill of these areas interferes with existing floodplain, so to offset the proposed fill made to lands in the designated floodplain, the site grading includes dredging part of the property on the backside of lots abutting the proposed Lagoon Drive and north of Avenue Q to an elevation of 971.00. This proposed cut to the site would provide the volumetric storage of floodwaters equivalent to the existing areas that would be affected by raising land out of the floodplain. Below is a table providing the cut and fill volumes from the existing and proposed floodplain areas.

Floodplain Cut and Fill Volumes			
Name	Existing Area (SY^2)	Proposed Cut Volume (CY^3)	Proposed Fill Volume (CY^3)
North Floodplain	1,215.00	-	+2,099.29
South Floodplain	1,565.00	-	+14.19
Supplemental Floodplain	1,597.00	- 9,137.27	-
		Final Volume Change	(-) 7023.79 (CUT)

The proposed site primarily lays on HSG graded “A” type soils, characterized as “Sarpy loamy fine sand”, which provide adequate drainage across the site and exhibits high hydraulic conductivity with an expectedly low water table. These combining factors contribute to considerably low runoff amounts across the site, both in the existing condition and in the proposed condition. The low water table (80+ inches from FFE) allows for considerable drainage to occur before the soil reaches proper saturation, which prevents accumulation of runoff to be conveyed through the site. The highly conductive soil (189.34 μm/s ≈ 12.00 inches/hr) allows for saturated soils to drain both quickly and constantly across the site. The design of the site allows for any amounting runoff to enter a dry detention basin located on the backside of the residential buildings, which provides temporary detention and accumulation of sediment(s) and other suspended solids to be trapped and filtered before either being released to a grassed swale outlet, or percolating into the soil after being detained. Below are tables that illustrate the capture area for the pre- and post-development conditions of the site and provide runoff figures for the given conditions.

Runoff Flow Summary Tables

EXISTING (To Carter Lake)							
Basin	Storm Event	Duration (hr)	AMC	Storm Depth (in)	Area (ac)	CN	Q (cfs)
PREDEV	2	24	2	3.00	8.96	33	0.00
PREDEV	10	24	2	4.60	8.96	33	0.03
PREDEV	100	24	2	6.70	8.96	33	0.76

PROPOSED (To Broadway Avenue Ditch)							
Basin	Storm Event	Duration (hr)	AMC	Storm Depth (in)	Area (ac)	CN	Q (cfs)
PROPDEV	2	24	2	3.00	8.96	49	0.00
PROPDEV	10	24	2	4.60	8.96	49	0.00
PROPDEV	100	24	2	6.70	8.96	49	0.01

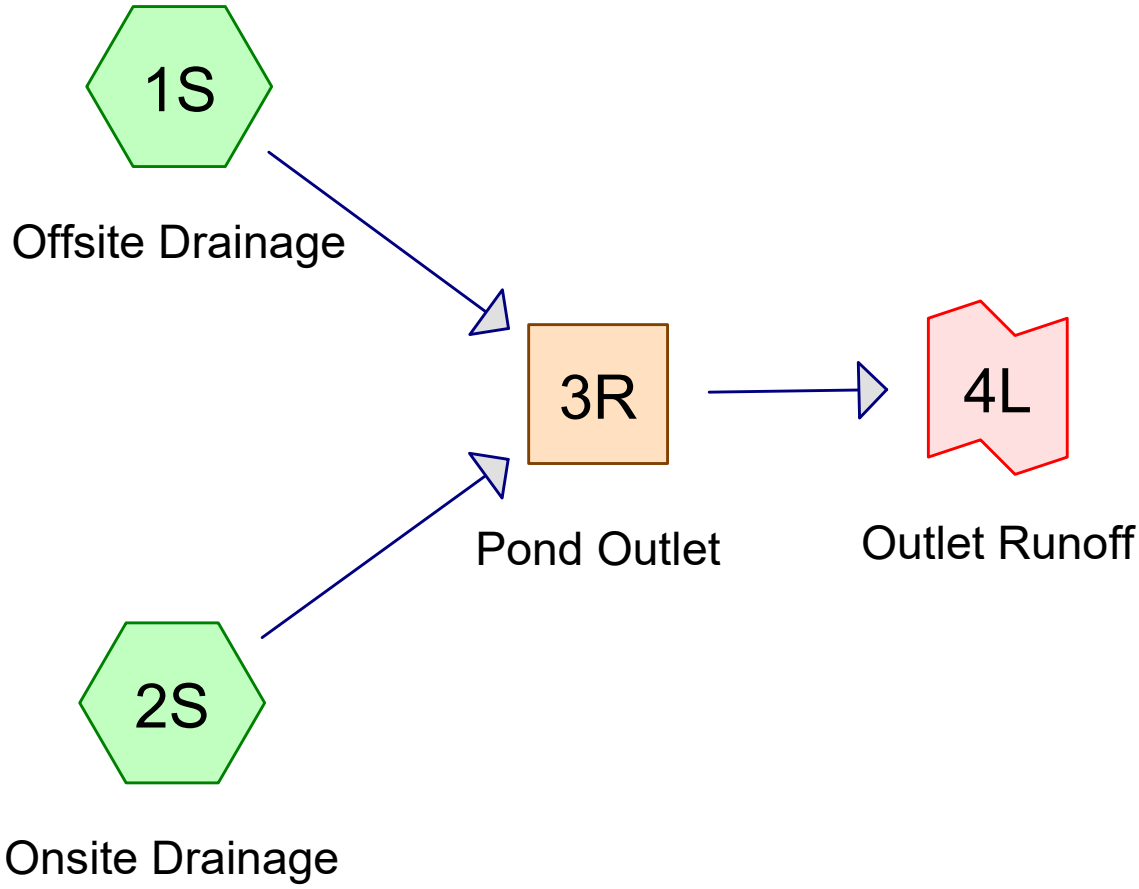
The weighted Curve Number (CN) is for the proposed site shows the addition of impervious structures and the HydroCAD model provides the calculations for runoff routing and infiltration / exfiltration values across the site. The limited runoff potential for the site in the proposed condition allows for additional development to occur, but the primary study for the proposed site is satisfied with the given conditions. Therefore, the management BMP's that are proposed meet the requirements outlined by local and state guidelines.

Attachments:

1. HydroCAD figures depicting the existing subcatchments for the existing offsite flows.
2. HydroCAD figures depicting the proposed subcatchments for the proposed offsite flows.
3. Existing Runoff Exhibit
4. Proposed Runoff Exhibit/Grading Plan
5. Existing vs. Proposed Runoff Tables

Please do not hesitate to contact me if further information is needed. Thank you.
Email: jvasa@sehinc.com
Phone: 402.480.4096

c: Laura Tarpinian, Landing Reserve LLC
x:\fj\i\ihdev\185538\5-final-dsgn\50-final-dsgn\10-civil\memo\7.4.25_site memo.docx



Subcat Reach Pond Link

Routing Diagram for Existing Conditions Carter Lake
Prepared by Short Elliott Hendrickson Inc, Printed 11/5/2025

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Rainfall events imported from "Ida_192nd_PropCond.hcp"
Rainfall events imported from "Ida_192nd_PropCond.hcp"

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	Type II 24-hr		Default	24.00	1	3.00	2
2	10-year	Type II 24-hr		Default	24.00	1	4.60	2
3	100-year	Type II 24-hr		Default	24.00	1	6.70	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.186	98	Paved parking, HSG D (1S)
8.774	32	Woods/grass comb., Good, HSG A (1S, 2S)
8.960	**33**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
8.774	HSG A	1S, 2S
0.000	HSG B	
0.000	HSG C	
0.186	HSG D	1S
0.000	Other	
8.960		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.186	0.000	0.186	Paved parking	1S
8.774	0.000	0.000	0.000	0.000	8.774	Woods/grass comb., Good	1S, 2S
8.774	**0.000**	**0.000**	**0.186**	**0.000**	**8.960**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Offsite Drainage Runoff Area=3.400 ac 5.47% Impervious Runoff Depth=0.00"
Flow Length=50' Slope=0.0050 '/' Tc=12.9 min CN=36 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: Onsite Drainage Runoff Area=5.560 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=1,000' Slope=0.0010 '/' Tc=74.4 min CN=32 Runoff=0.00 cfs 0.000 af

Reach 3R: Pond Outlet Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Link 4L: Outlet Runoff Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 8.960 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
97.92% Pervious = 8.774 ac 2.08% Impervious = 0.186 ac

Summary for Subcatchment 1S: Offsite Drainage

[45] Hint: Runoff=Zero

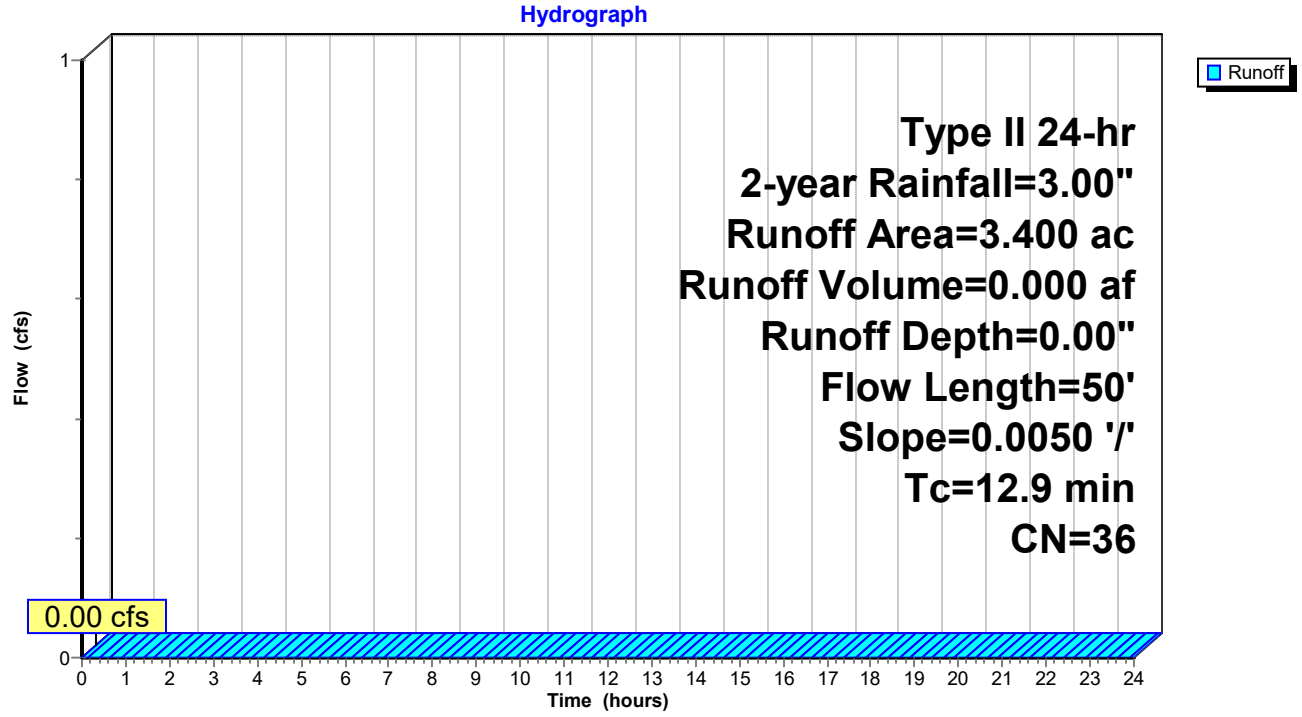
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Reach 3R : Pond Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-year Rainfall=3.00"

Area (ac)	CN	Description
3.214	32	Woods/grass comb., Good, HSG A
0.186	98	Paved parking, HSG D
3.400	36	Weighted Average
3.214		94.53% Pervious Area
0.186		5.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	50	0.0050	0.06		**Sheet Flow, Direct Entry** Grass: Dense n= 0.240 P2= 3.90"

Subcatchment 1S: Offsite Drainage



Summary for Subcatchment 2S: Onsite Drainage

[45] Hint: Runoff=Zero

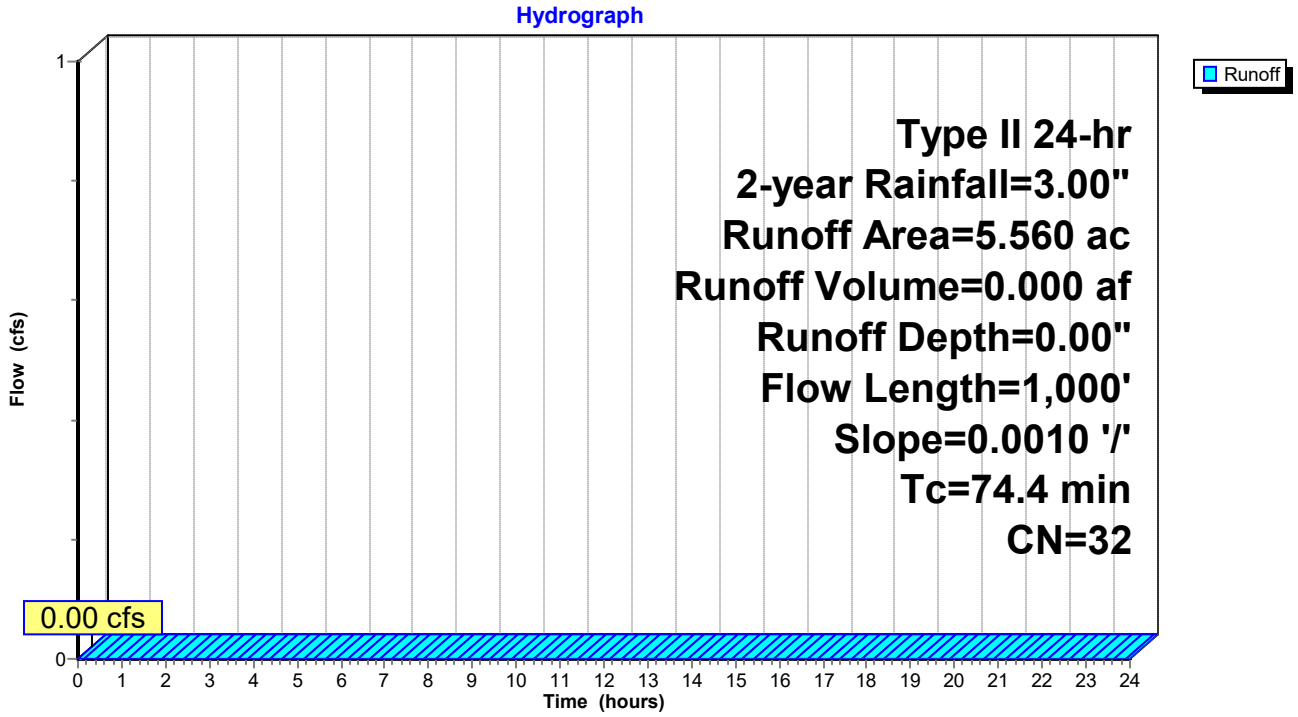
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Reach 3R : Pond Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-year Rainfall=3.00"

Area (ac)	CN	Description
5.560	32	Woods/grass comb., Good, HSG A
5.560		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.8	100	0.0010	0.04		**Sheet Flow, Sheeting to Pool** Grass: Dense n= 0.240 P2= 3.90"
31.6	900	0.0010	0.47		**Shallow Concentrated Flow, Shallow Flow Concentrate** Grassed Waterway Kv= 15.0 fps
74.4	1,000	Total			

Subcatchment 2S: Onsite Drainage



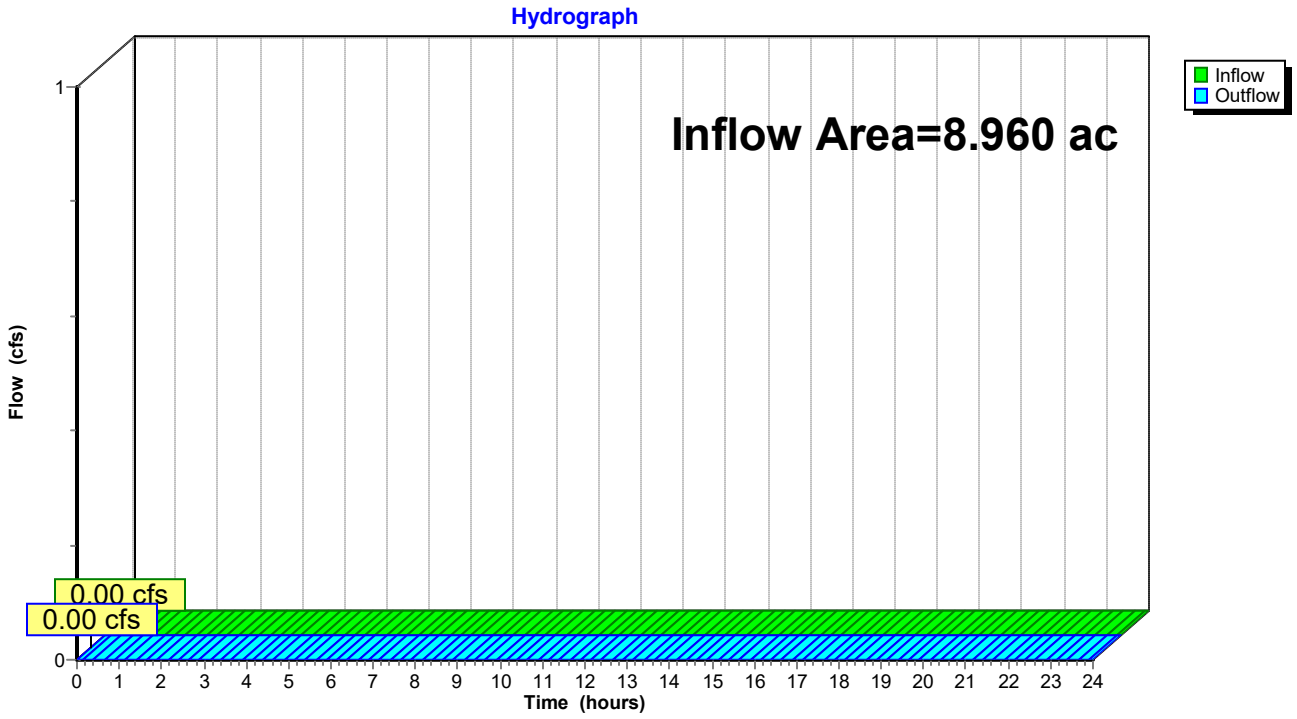
Summary for Reach 3R: Pond Outlet

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

Inflow Area = 8.960 ac, 2.08% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Outlet Runoff

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3R: Pond Outlet

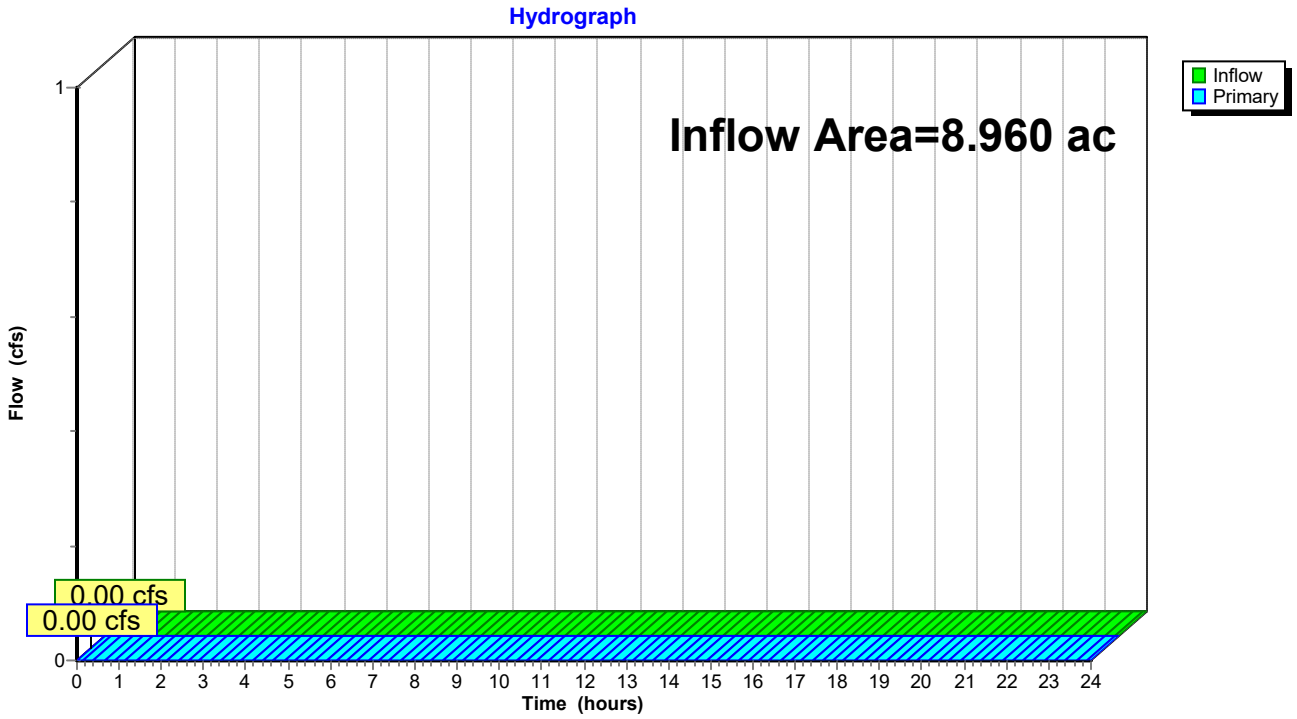


Summary for Link 4L: Outlet Runoff

Inflow Area = 8.960 ac, 2.08% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Outlet Runoff



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Offsite Drainage Runoff Area=3.400 ac 5.47% Impervious Runoff Depth>0.06"
Flow Length=50' Slope=0.0050 '/' Tc=12.9 min CN=36 Runoff=0.02 cfs 0.016 af

Subcatchment 2S: Onsite Drainage Runoff Area=5.560 ac 0.00% Impervious Runoff Depth>0.00"
Flow Length=1,000' Slope=0.0010 '/' Tc=74.4 min CN=32 Runoff=0.01 cfs 0.002 af

Reach 3R: Pond Outlet Inflow=0.03 cfs 0.018 af
Outflow=0.03 cfs 0.018 af

Link 4L: Outlet Runoff Inflow=0.03 cfs 0.018 af
Primary=0.03 cfs 0.018 af

Total Runoff Area = 8.960 ac Runoff Volume = 0.018 af Average Runoff Depth = 0.02"
97.92% Pervious = 8.774 ac 2.08% Impervious = 0.186 ac

Summary for Subcatchment 1S: Offsite Drainage

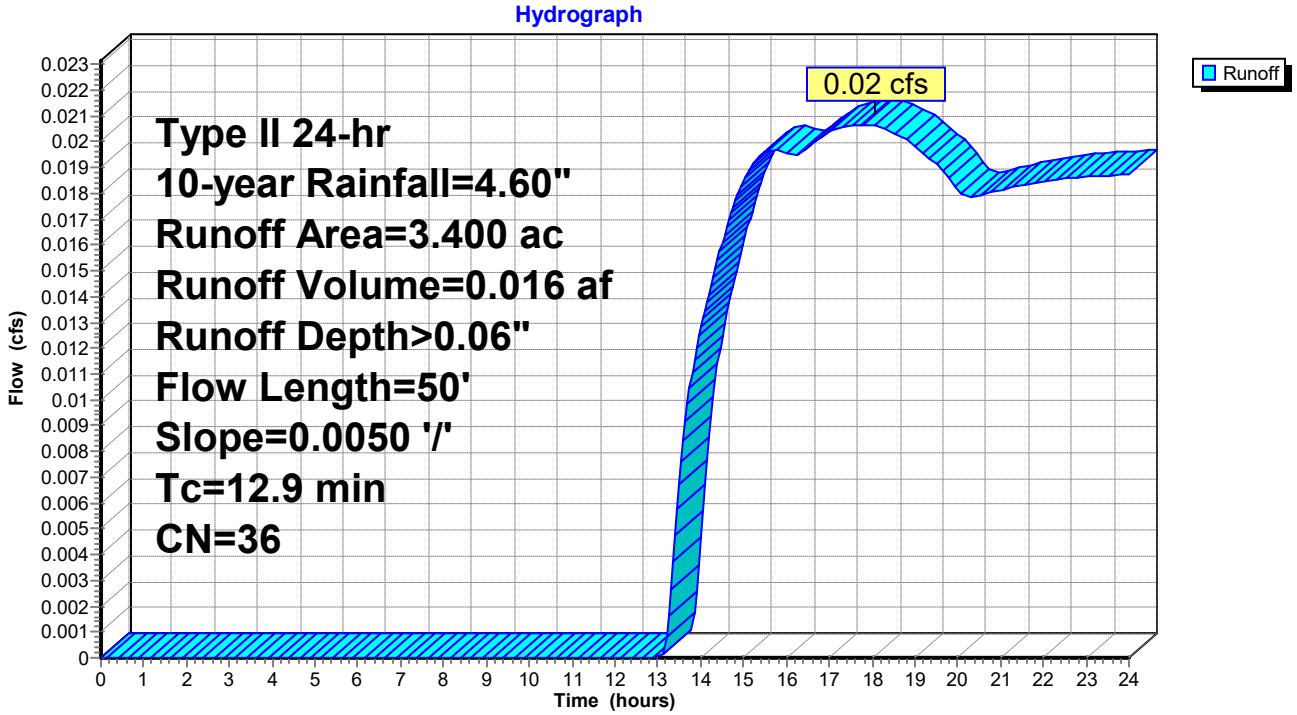
Runoff = 0.02 cfs @ 17.76 hrs, Volume= 0.016 af, Depth> 0.06"
Routed to Reach 3R : Pond Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=4.60"

Area (ac)	CN	Description
3.214	32	Woods/grass comb., Good, HSG A
0.186	98	Paved parking, HSG D
3.400	36	Weighted Average
3.214		94.53% Pervious Area
0.186		5.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	50	0.0050	0.06		**Sheet Flow, Direct Entry** Grass: Dense n= 0.240 P2= 3.90"

Subcatchment 1S: Offsite Drainage



Summary for Subcatchment 2S: Onsite Drainage

[73] Warning: Peak may fall outside time span

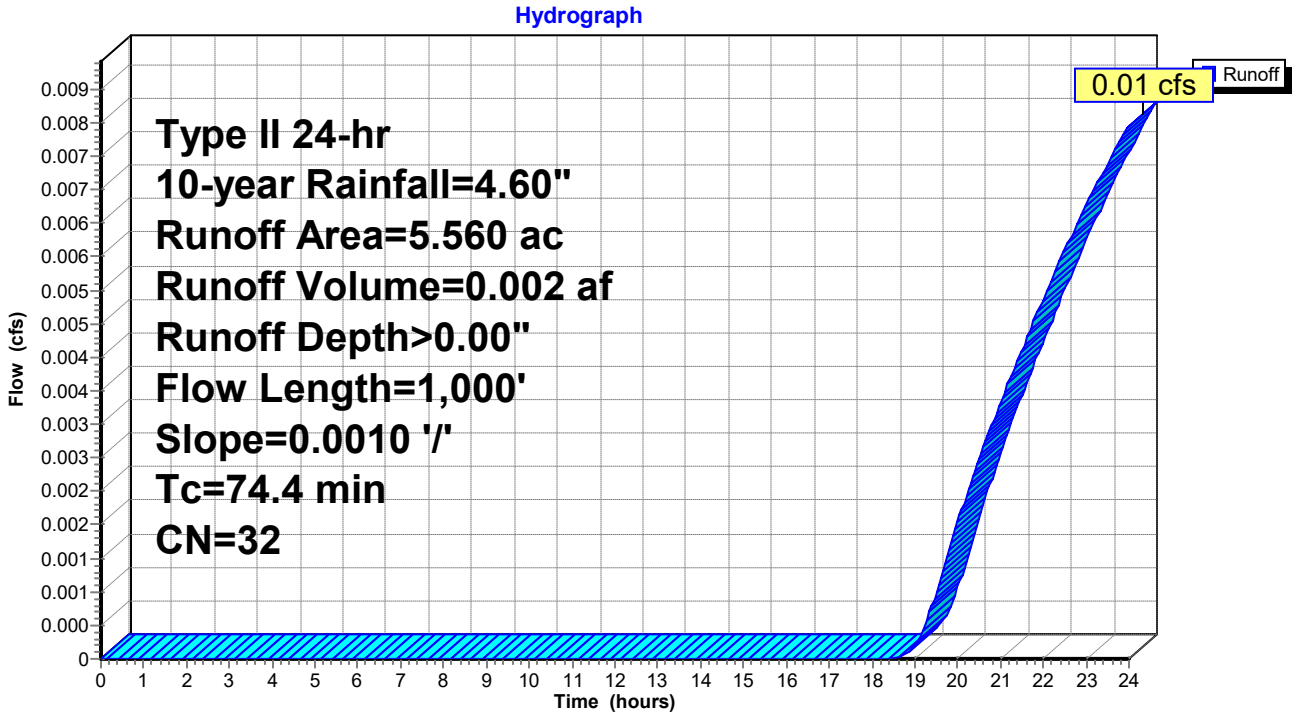
Runoff = 0.01 cfs @ 24.00 hrs, Volume= 0.002 af, Depth> 0.00"
Routed to Reach 3R : Pond Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=4.60"

Area (ac)	CN	Description
5.560	32	Woods/grass comb., Good, HSG A
5.560		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.8	100	0.0010	0.04		**Sheet Flow, Sheeting to Pool** Grass: Dense n= 0.240 P2= 3.90"
31.6	900	0.0010	0.47		**Shallow Concentrated Flow, Shallow Flow Concentrate** Grassed Waterway Kv= 15.0 fps
74.4	1,000	Total			

Subcatchment 2S: Onsite Drainage



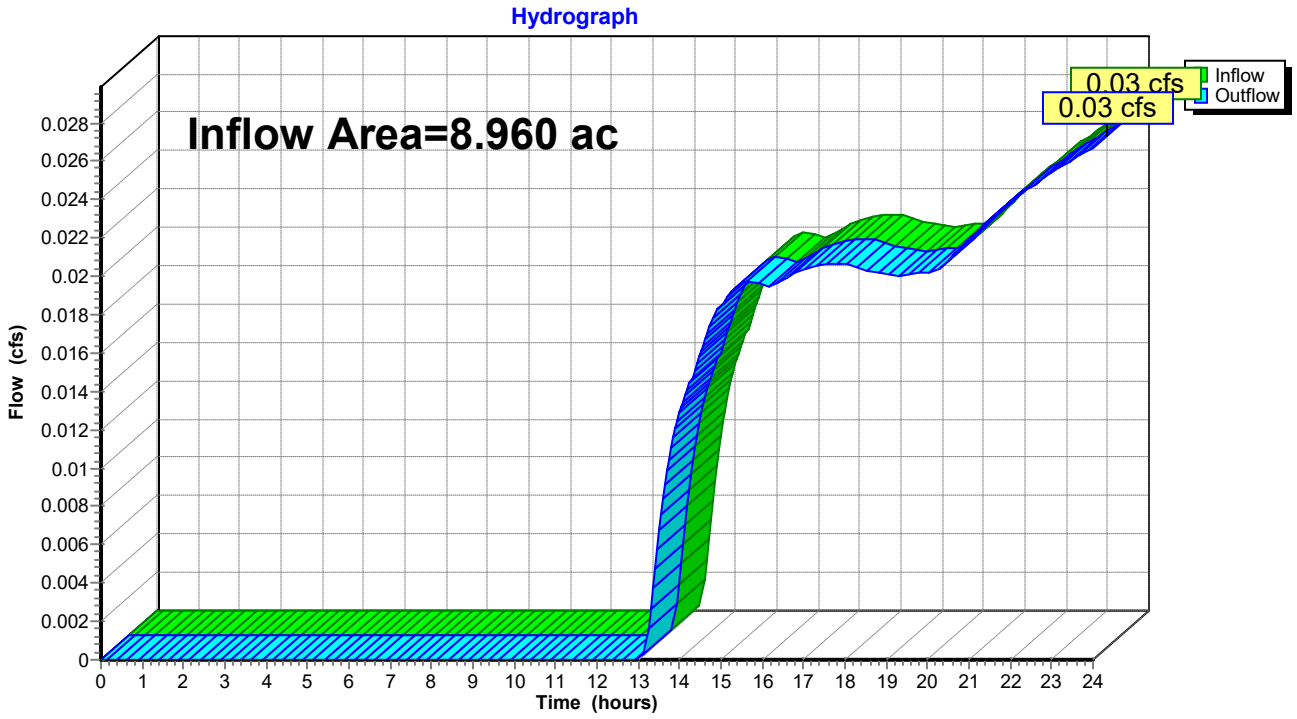
Summary for Reach 3R: Pond Outlet

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

Inflow Area = 8.960 ac, 2.08% Impervious, Inflow Depth > 0.02" for 10-year event
Inflow = 0.03 cfs @ 24.00 hrs, Volume= 0.018 af
Outflow = 0.03 cfs @ 24.00 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Outlet Runoff

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3R: Pond Outlet

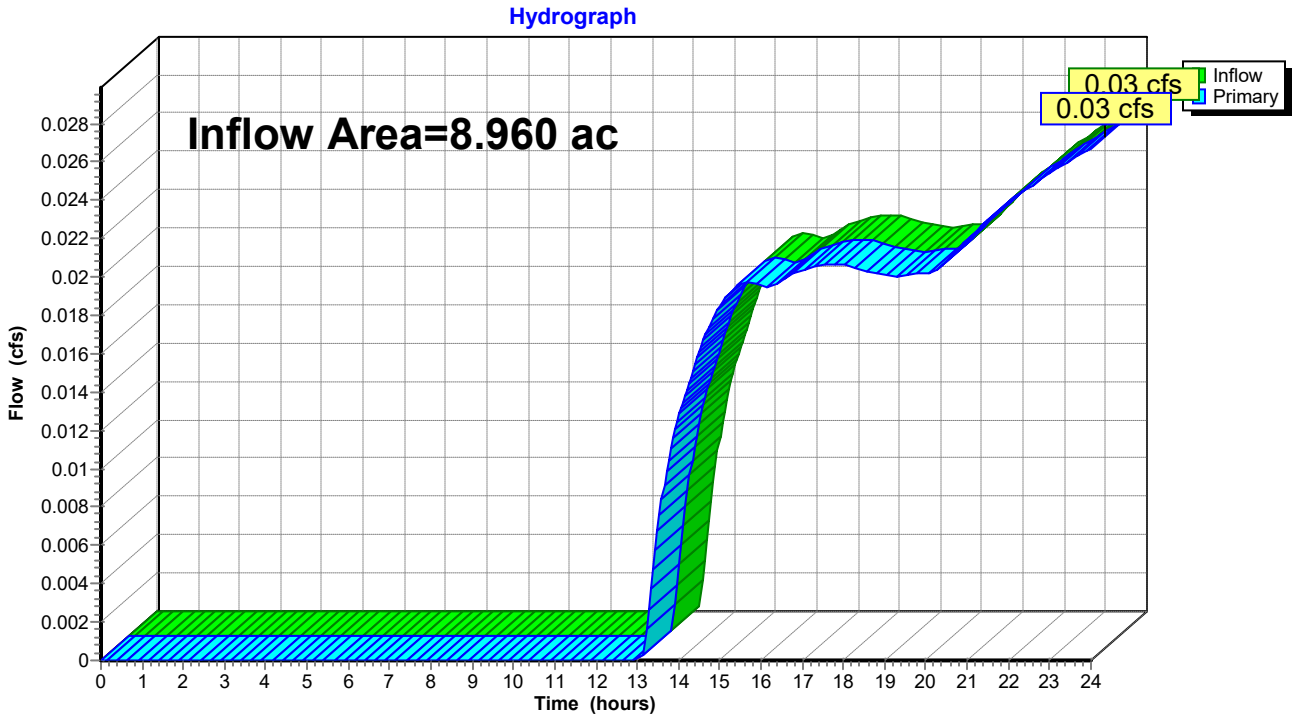


Summary for Link 4L: Outlet Runoff

Inflow Area = 8.960 ac, 2.08% Impervious, Inflow Depth > 0.02" for 10-year event
Inflow = 0.03 cfs @ 24.00 hrs, Volume= 0.018 af
Primary = 0.03 cfs @ 24.00 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Outlet Runoff



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Offsite Drainage Runoff Area=3.400 ac 5.47% Impervious Runoff Depth>0.47"
Flow Length=50' Slope=0.0050 '/' Tc=12.9 min CN=36 Runoff=0.76 cfs 0.133 af

Subcatchment 2S: Onsite Drainage Runoff Area=5.560 ac 0.00% Impervious Runoff Depth>0.24"
Flow Length=1,000' Slope=0.0010 '/' Tc=74.4 min CN=32 Runoff=0.18 cfs 0.110 af

Reach 3R: Pond Outlet Inflow=0.76 cfs 0.243 af
Outflow=0.76 cfs 0.243 af

Link 4L: Outlet Runoff Inflow=0.76 cfs 0.243 af
Primary=0.76 cfs 0.243 af

Total Runoff Area = 8.960 ac Runoff Volume = 0.243 af Average Runoff Depth = 0.32"
97.92% Pervious = 8.774 ac 2.08% Impervious = 0.186 ac

Summary for Subcatchment 1S: Offsite Drainage

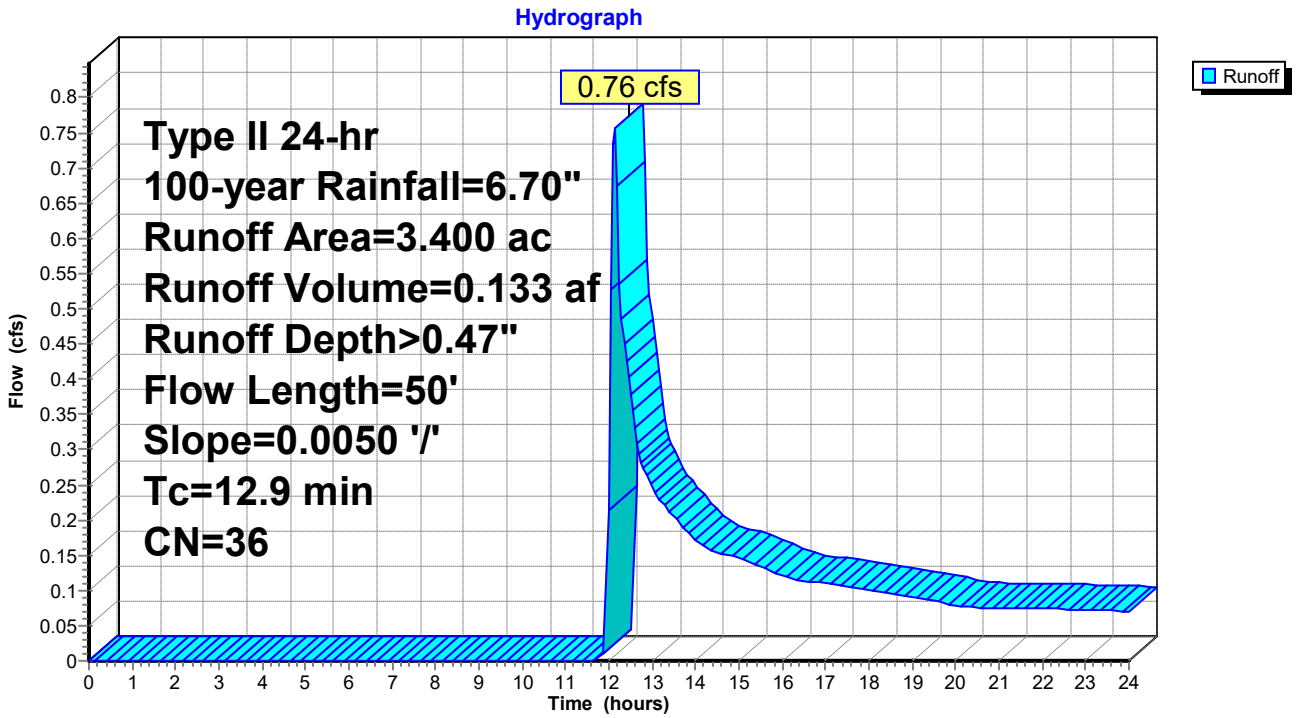
Runoff = 0.76 cfs @ 12.12 hrs, Volume= 0.133 af, Depth> 0.47"
Routed to Reach 3R : Pond Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.70"

Area (ac)	CN	Description
3.214	32	Woods/grass comb., Good, HSG A
0.186	98	Paved parking, HSG D
3.400	36	Weighted Average
3.214		94.53% Pervious Area
0.186		5.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	50	0.0050	0.06		**Sheet Flow, Direct Entry** Grass: Dense n= 0.240 P2= 3.90"

Subcatchment 1S: Offsite Drainage



Summary for Subcatchment 2S: Onsite Drainage

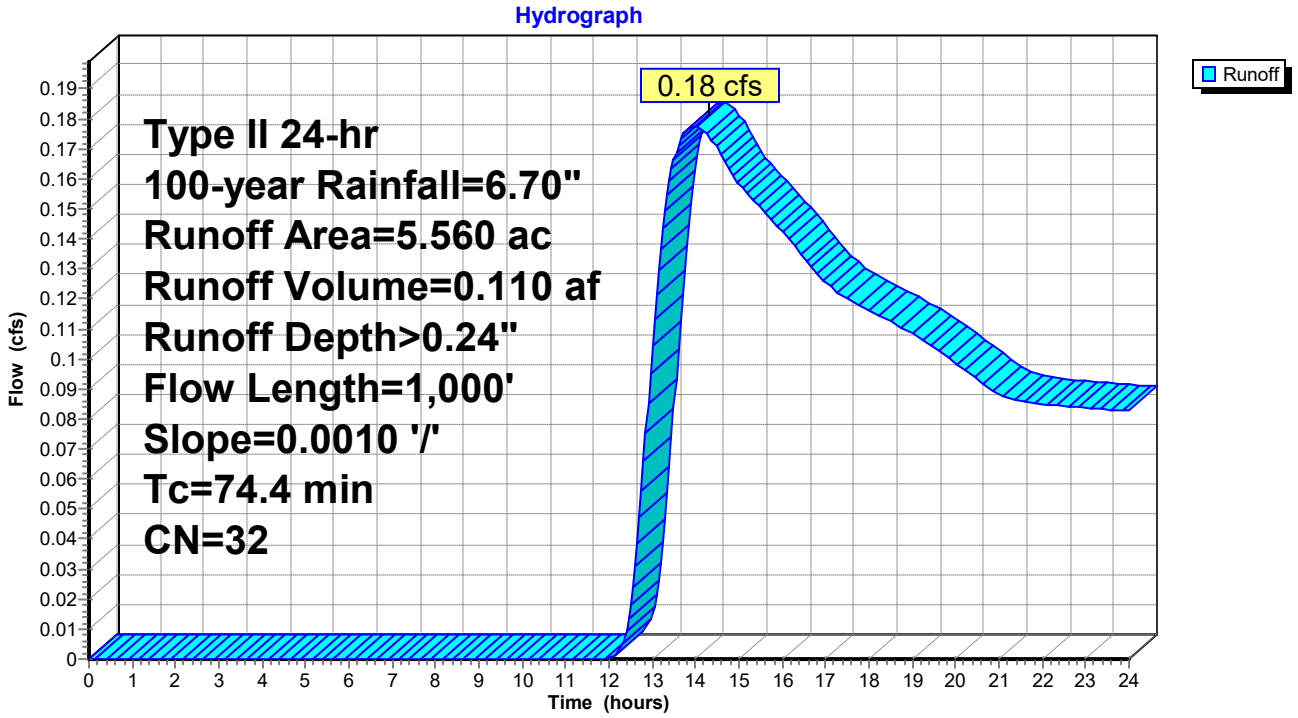
Runoff = 0.18 cfs @ 13.97 hrs, Volume= 0.110 af, Depth> 0.24"
Routed to Reach 3R : Pond Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.70"

Area (ac)	CN	Description
5.560	32	Woods/grass comb., Good, HSG A
5.560		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.8	100	0.0010	0.04		**Sheet Flow, Sheeting to Pool** Grass: Dense n= 0.240 P2= 3.90"
31.6	900	0.0010	0.47		**Shallow Concentrated Flow, Shallow Flow Concentrate** Grassed Waterway Kv= 15.0 fps
74.4	1,000	Total			

Subcatchment 2S: Onsite Drainage



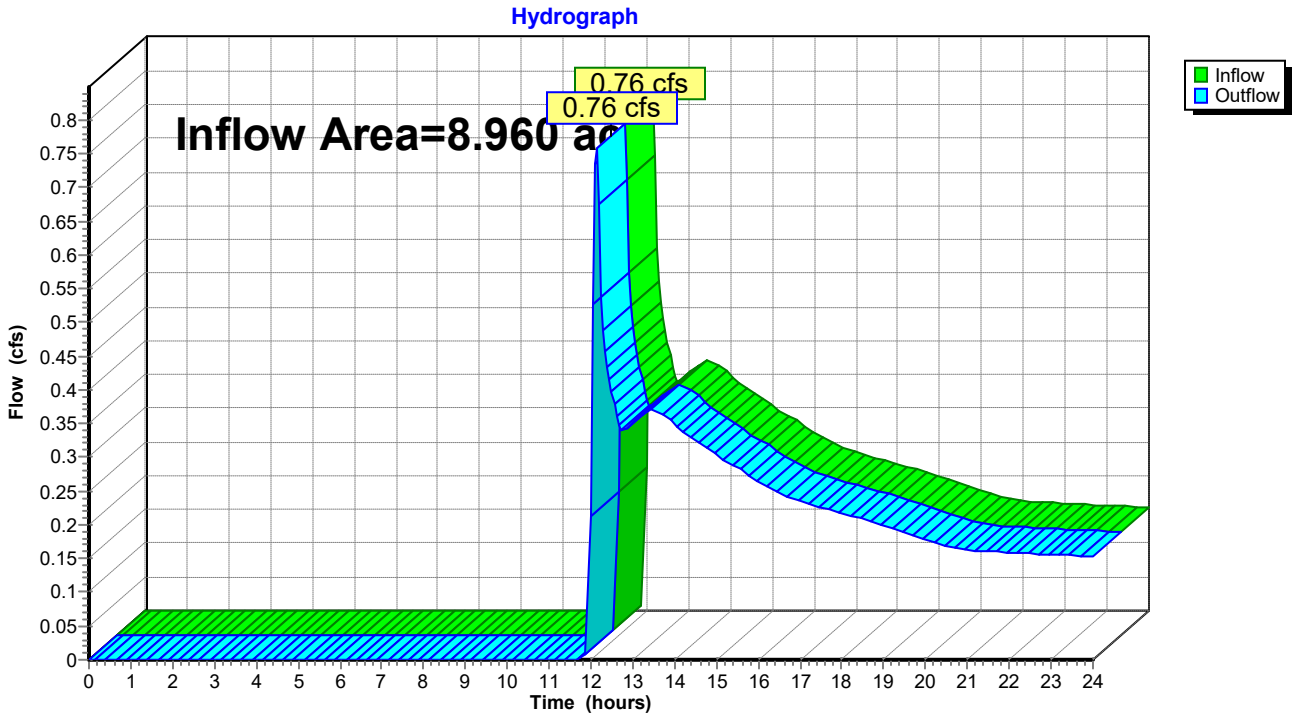
Summary for Reach 3R: Pond Outlet

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

Inflow Area = 8.960 ac, 2.08% Impervious, Inflow Depth > 0.32" for 100-year event
Inflow = 0.76 cfs @ 12.12 hrs, Volume= 0.243 af
Outflow = 0.76 cfs @ 12.12 hrs, Volume= 0.243 af, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Outlet Runoff

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Reach 3R: Pond Outlet

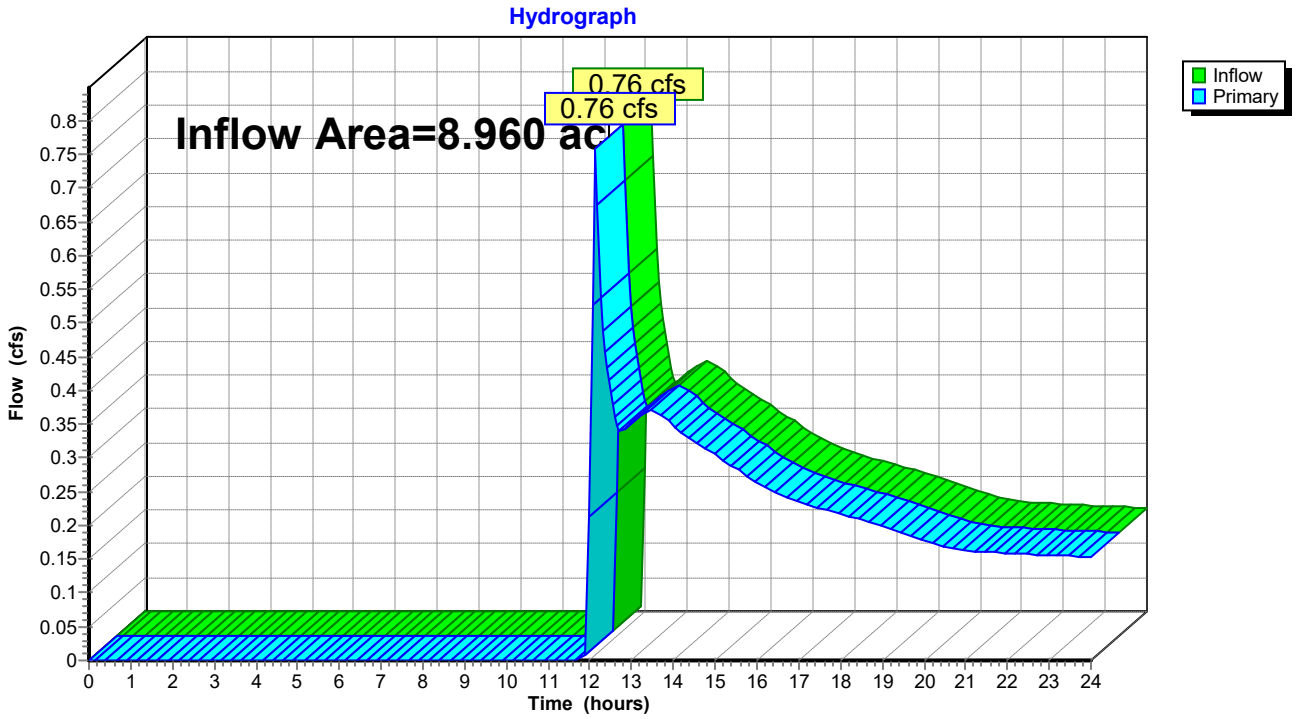


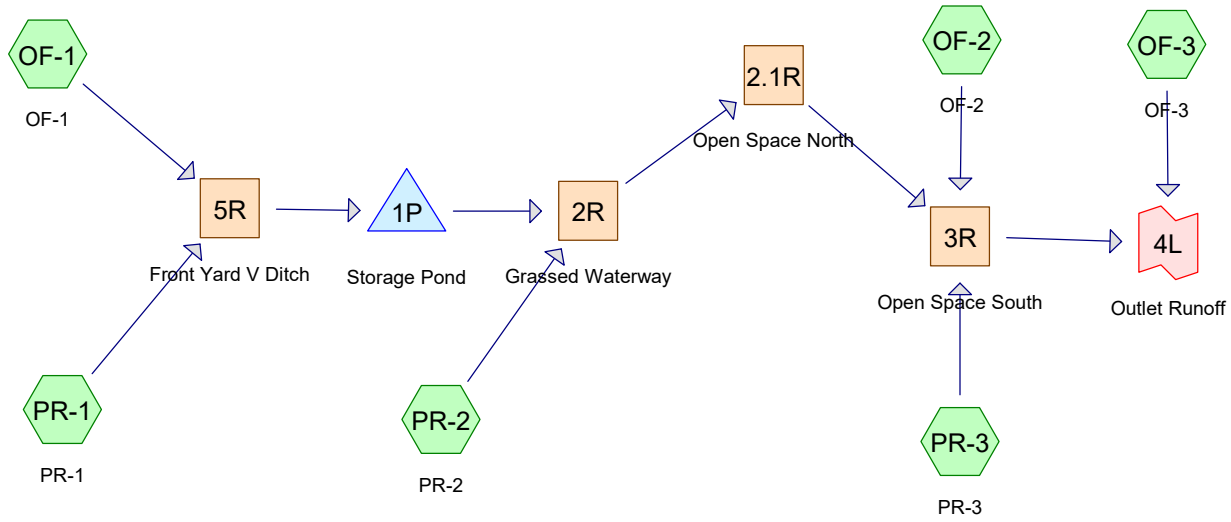
Summary for Link 4L: Outlet Runoff

Inflow Area = 8.960 ac, 2.08% Impervious, Inflow Depth > 0.32" for 100-year event
Inflow = 0.76 cfs @ 12.12 hrs, Volume= 0.243 af
Primary = 0.76 cfs @ 12.12 hrs, Volume= 0.243 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Outlet Runoff





Subcat Reach Pond Link

Routing Diagram for Proposed Conditions Carter Lake
Prepared by Short Elliott Hendrickson Inc, Printed 11/16/2025

Project Notes

Rainfall events imported from "Existing Conditions Carter Lake.hcp"
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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	Type II 24-hr		Default	24.00	1	3.00	2
2	10-year	Type II 24-hr		Default	24.00	1	4.60	2
3	100-year	Type II 24-hr		Default	24.00	1	6.70	2

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.630	39	>75% Grass cover, Good, HSG A (PR-1, PR-2, PR-3)
0.200	98	Paved parking, HSG D (OF-2)
0.722	98	Paved roads w/curbs & sewers, HSG A (OF-1)
0.637	98	Unconnected roofs, HSG A (PR-1, PR-2)
0.293	98	Unconnected roofs, HSG D (PR-3)
2.478	32	Woods/grass comb., Good, HSG A (OF-1, OF-2, OF-3)
8.960	**49**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
8.467	HSG A	OF-1, OF-2, OF-3, PR-1, PR-2, PR-3
0.000	HSG B	
0.000	HSG C	
0.493	HSG D	OF-2, PR-3
0.000	Other	
8.960		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
4.630	0.000	0.000	0.000	0.000	4.630	>75% Grass cover, Good	PR-1, PR-2, PR-3
0.000	0.000	0.000	0.200	0.000	0.200	Paved parking	OF-2
0.722	0.000	0.000	0.000	0.000	0.722	Paved roads w/curbs & sewers	OF-1
0.637	0.000	0.000	0.293	0.000	0.930	Unconnected roofs	PR-1, PR-2, PR-3
2.478	0.000	0.000	0.000	0.000	2.478	Woods/grass comb., Good	OF-1, OF-2, OF-3
8.467	**0.000**	**0.000**	**0.493**	**0.000**	**8.960**	**TOTAL AREA**	

Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment OF-1: OF-1 Runoff Area=2.200 ac 32.82% Impervious Runoff Depth>0.17"
Flow Length=615' Slope=0.0050 '/' Tc=12.0 min CN=54 Runoff=0.12 cfs 0.031 af

Subcatchment OF-2: OF-2 Runoff Area=0.910 ac 21.98% Impervious Runoff Depth>0.04"
Flow Length=775' Tc=64.9 min CN=47 Runoff=0.00 cfs 0.003 af

Subcatchment OF-3: OF-3 Runoff Area=0.290 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=50' Slope=0.0100 '/' Tc=14.7 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment PR-1: PR-1 Runoff Area=2.160 ac 24.17% Impervious Runoff Depth>0.03"
Flow Length=1,275' Tc=11.2 min UI Adjusted CN=46 Runoff=0.01 cfs 0.006 af

Subcatchment PR-2: PR-2 Runoff Area=0.430 ac 26.74% Impervious Runoff Depth>0.05"
Flow Length=225' Tc=3.6 min UI Adjusted CN=47 Runoff=0.00 cfs 0.002 af

Subcatchment PR-3: PR-3 Runoff Area=2.970 ac 9.87% Impervious Runoff Depth>0.00"
Flow Length=750' Tc=60.6 min UI Adjusted CN=42 Runoff=0.00 cfs 0.001 af

Reach 2.1R: Open Space North Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.025 L=65.0' S=0.0077 '/' Capacity=2,142.78 cfs Outflow=0.00 cfs 0.000 af

Reach 2R: Grassed Waterway Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.025 L=400.0' S=0.0025 '/' Capacity=396.42 cfs Outflow=0.00 cfs 0.000 af

Reach 3R: Open Space South Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.025 L=250.0' S=0.0060 '/' Capacity=1,206.31 cfs Outflow=0.00 cfs 0.000 af

Reach 5R: Front Yard V Ditch Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.018 L=400.0' S=0.0050 '/' Capacity=5.77 cfs Outflow=0.00 cfs 0.000 af

Pond 1P: Storage Pond Peak Elev=972.00' Storage=0.000 af Inflow=0.00 cfs 0.000 af
Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Link 4L: Outlet Runoff Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 8.960 ac Runoff Volume = 0.043 af Average Runoff Depth = 0.06"
79.33% Pervious = 7.108 ac 20.67% Impervious = 1.852 ac

Summary for Subcatchment OF-1: OF-1

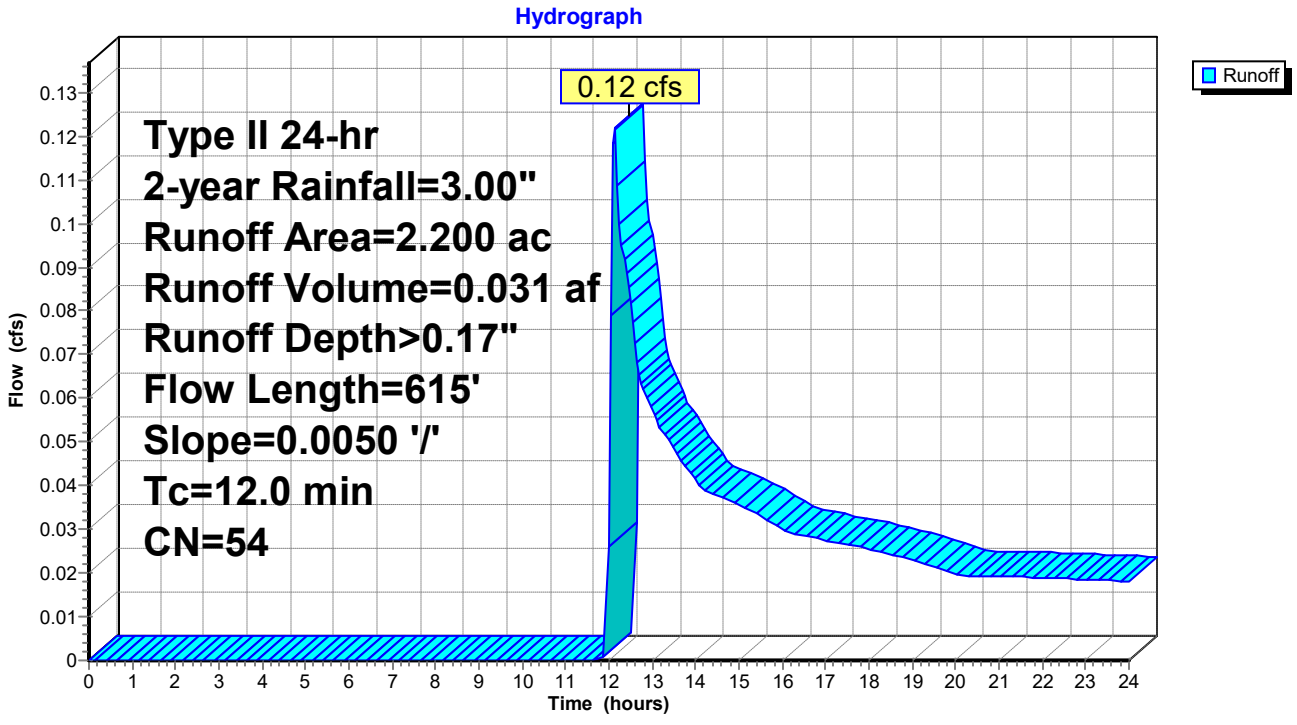
Runoff = 0.12 cfs @ 12.14 hrs, Volume= 0.031 af, Depth> 0.17"
Routed to Reach 5R : Front Yard V Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-year Rainfall=3.00"

Area (ac)	CN	Description
1.478	32	Woods/grass comb., Good, HSG A
0.722	98	Paved roads w/curbs & sewers, HSG A
2.200	54	Weighted Average
1.478		67.18% Pervious Area
0.722		32.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	25	0.0050	0.08		**Sheet Flow, Grassed Sheeting** Grass: Short n= 0.150 P2= 3.90"
6.9	590	0.0050	1.44		**Shallow Concentrated Flow, Paved Conc** Paved Kv= 20.3 fps
12.0	615	Total			

Subcatchment OF-1: OF-1



Summary for Subcatchment OF-2: OF-2

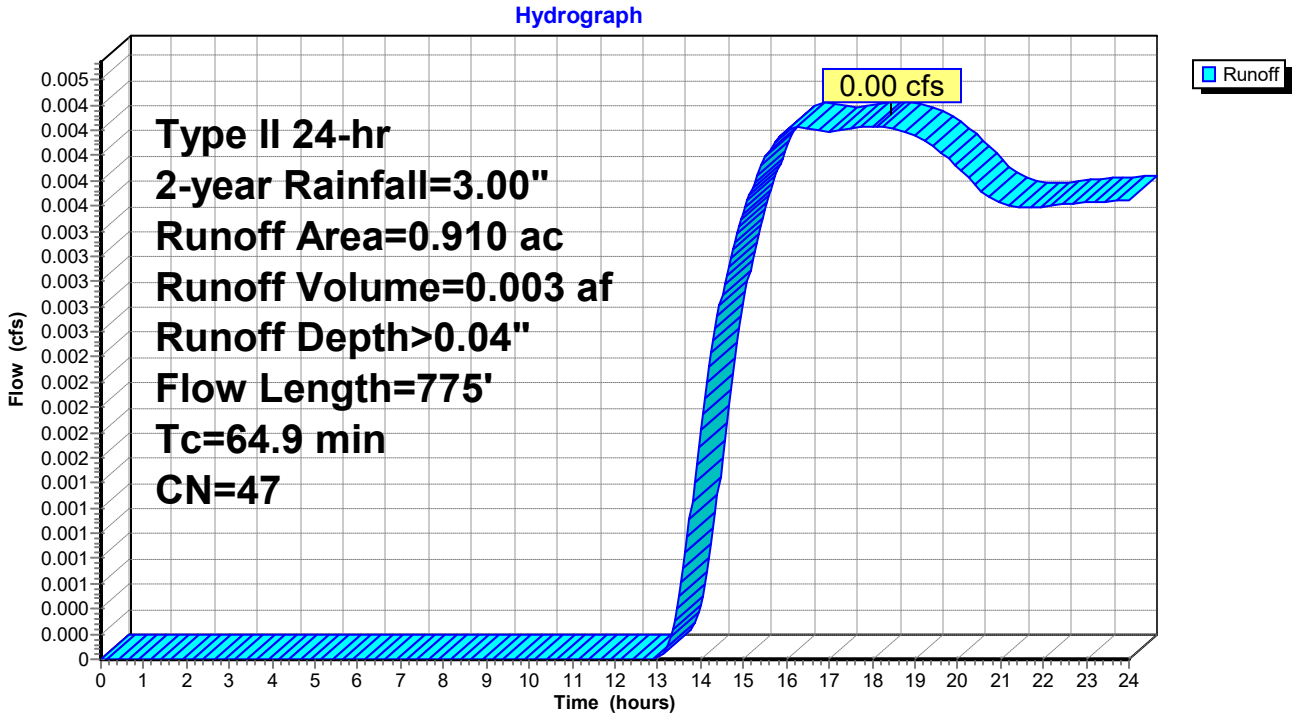
Runoff = 0.00 cfs @ 18.10 hrs, Volume= 0.003 af, Depth> 0.04"
Routed to Reach 3R : Open Space South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-year Rainfall=3.00"

Area (ac)	CN	Description
0.710	32	Woods/grass comb., Good, HSG A
0.200	98	Paved parking, HSG D
0.910	47	Weighted Average
0.710		78.02% Pervious Area
0.200		21.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	25	0.0100	0.11		**Sheet Flow, Grassed Sheeting** Grass: Short n= 0.150 P2= 3.90"
3.4	350	0.0073	1.73		**Shallow Concentrated Flow, Paved Conc** Paved Kv= 20.3 fps
3.4	100	0.0050	0.49		**Shallow Concentrated Flow, Grassed ROW** Short Grass Pasture Kv= 7.0 fps
54.2	300	0.0050	0.09		**Sheet Flow, Open Space** Grass: Dense n= 0.240 P2= 3.90"
64.9	775	Total			

Subcatchment OF-2: OF-2



Summary for Subcatchment OF-3: OF-3

[45] Hint: Runoff=Zero

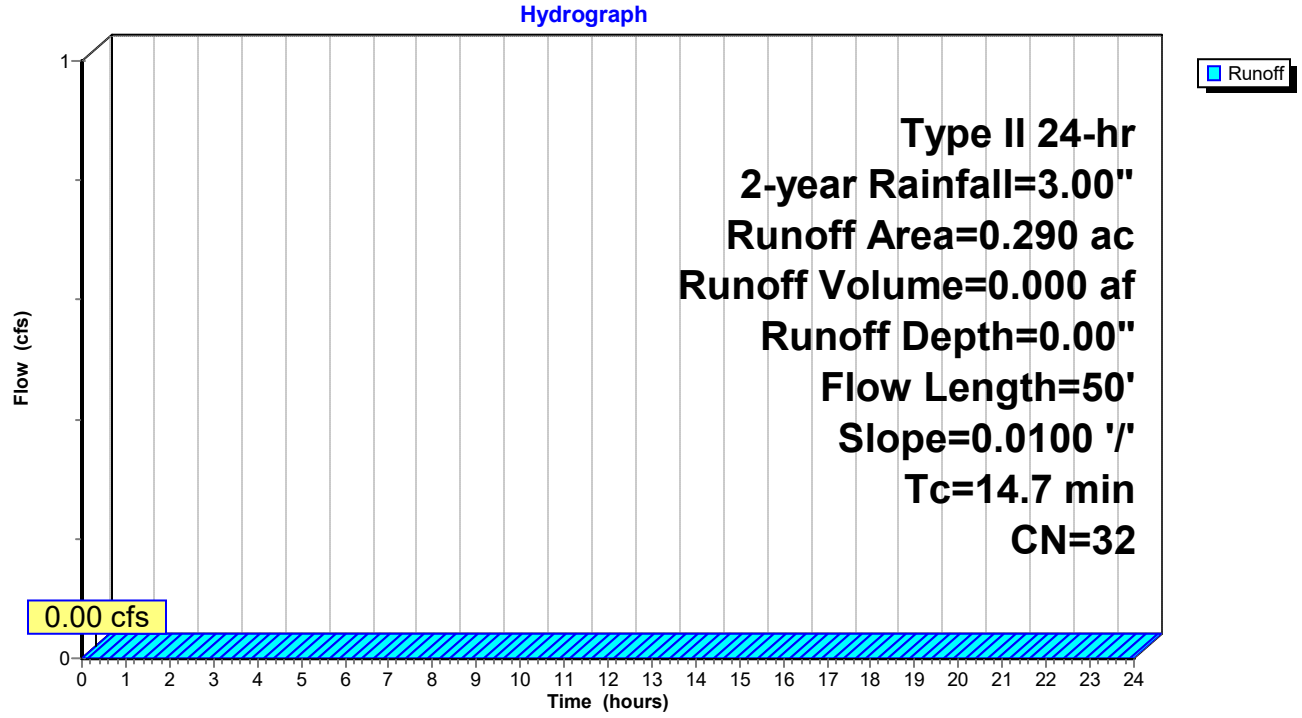
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link 4L : Outlet Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-year Rainfall=3.00"

Area (ac)	CN	Description
0.290	32	Woods/grass comb., Good, HSG A
0.290		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0100	0.06		**Sheet Flow, Grassed Sheeting** Woods: Light underbrush n= 0.400 P2= 3.90"

Subcatchment OF-3: OF-3



Summary for Subcatchment PR-1: PR-1

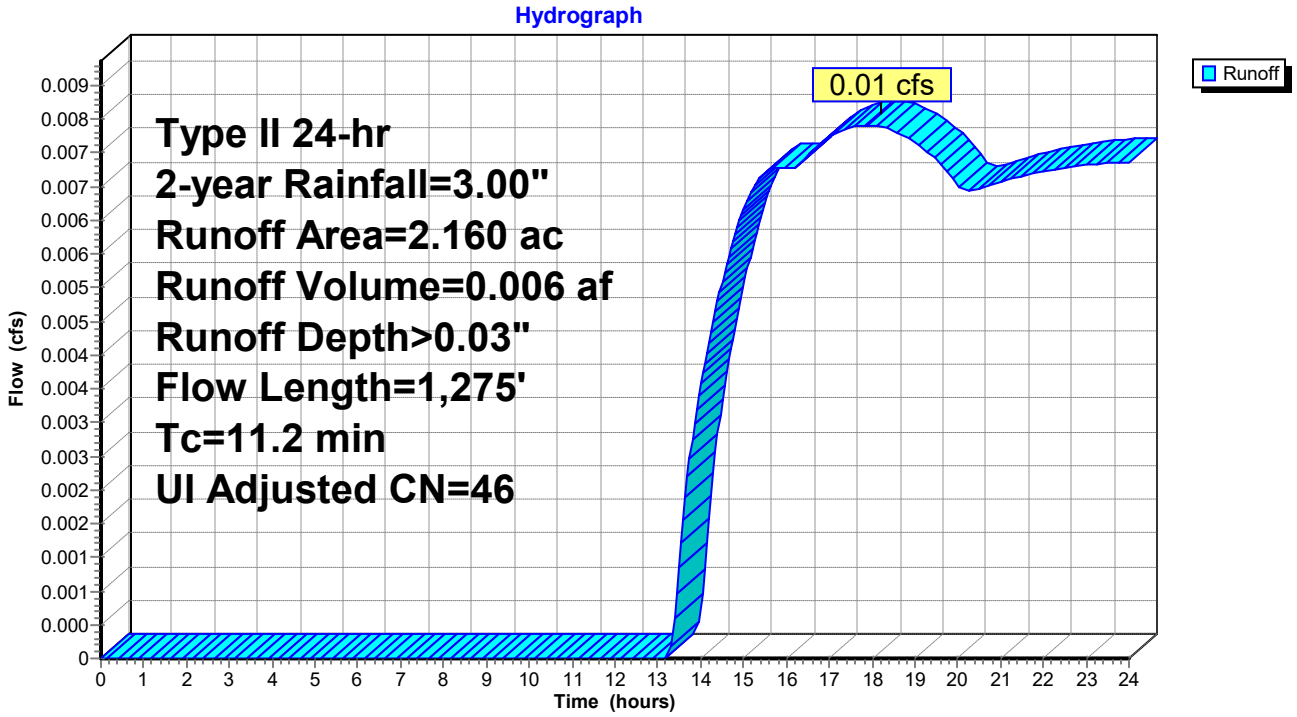
Runoff = 0.01 cfs @ 17.89 hrs, Volume= 0.006 af, Depth> 0.03"
Routed to Reach 5R : Front Yard V Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-year Rainfall=3.00"

Area (ac)	CN	Adj	Description
0.522	98		Unconnected roofs, HSG A
1.638	39		>75% Grass cover, Good, HSG A
2.160	53	46	Weighted Average, UI Adjusted
1.638			75.83% Pervious Area
0.522			24.17% Impervious Area
0.522			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	25	0.1000	2.19		**Sheet Flow, Roof Sheeting** Smooth surfaces n= 0.011 P2= 3.90"
4.5	550	0.0100	2.03		**Shallow Concentrated Flow, Paved Shallow Conc** Paved Kv= 20.3 fps
0.9	100	0.0150	1.84		**Shallow Concentrated Flow, Swale Flow** Grassed Waterway Kv= 15.0 fps
5.6	600		1.79		**Lake or Reservoir, Pond Travel** Mean Depth= 0.10'
11.2	1,275	Total			

Subcatchment PR-1: PR-1



Summary for Subcatchment PR-2: PR-2

[49] Hint: Tc<2dt may require smaller dt

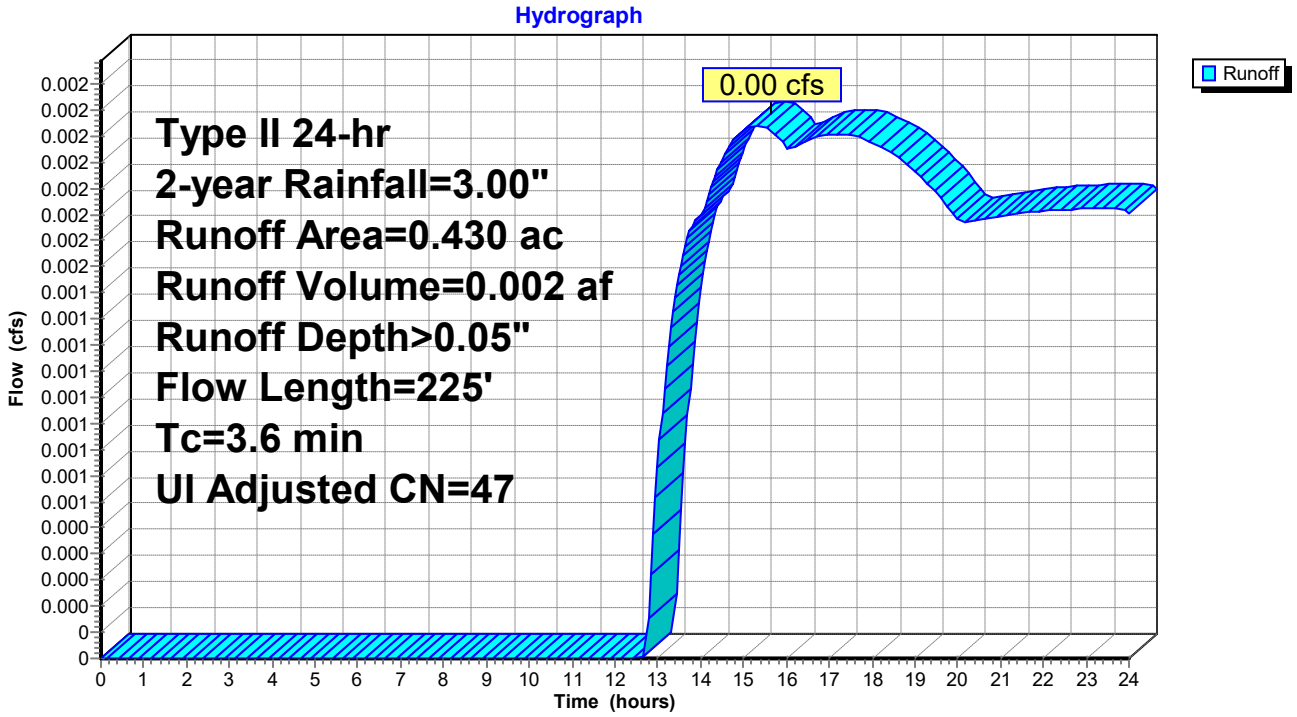
Runoff = 0.00 cfs @ 15.31 hrs, Volume= 0.002 af, Depth> 0.05"
Routed to Reach 2R : Grassed Waterway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-year Rainfall=3.00"

Area (ac)	CN	Adj	Description
0.115	98		Unconnected roofs, HSG A
0.315	39		>75% Grass cover, Good, HSG A
0.430	55	47	Weighted Average, UI Adjusted
0.315			73.26% Pervious Area
0.115			26.74% Impervious Area
0.115			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	25	0.0100	0.87		**Sheet Flow, Roof Sheeting** Smooth surfaces n= 0.011 P2= 3.90"
1.7	50	0.3000	0.48		**Sheet Flow, Grassed Sheeting** Grass: Short n= 0.150 P2= 3.90"
1.4	150	0.0150	1.84		**Shallow Concentrated Flow, Grassed Waterway** Grassed Waterway Kv= 15.0 fps
3.6	225	Total			

Subcatchment PR-2: PR-2



Summary for Subcatchment PR-3: PR-3

[73] Warning: Peak may fall outside time span

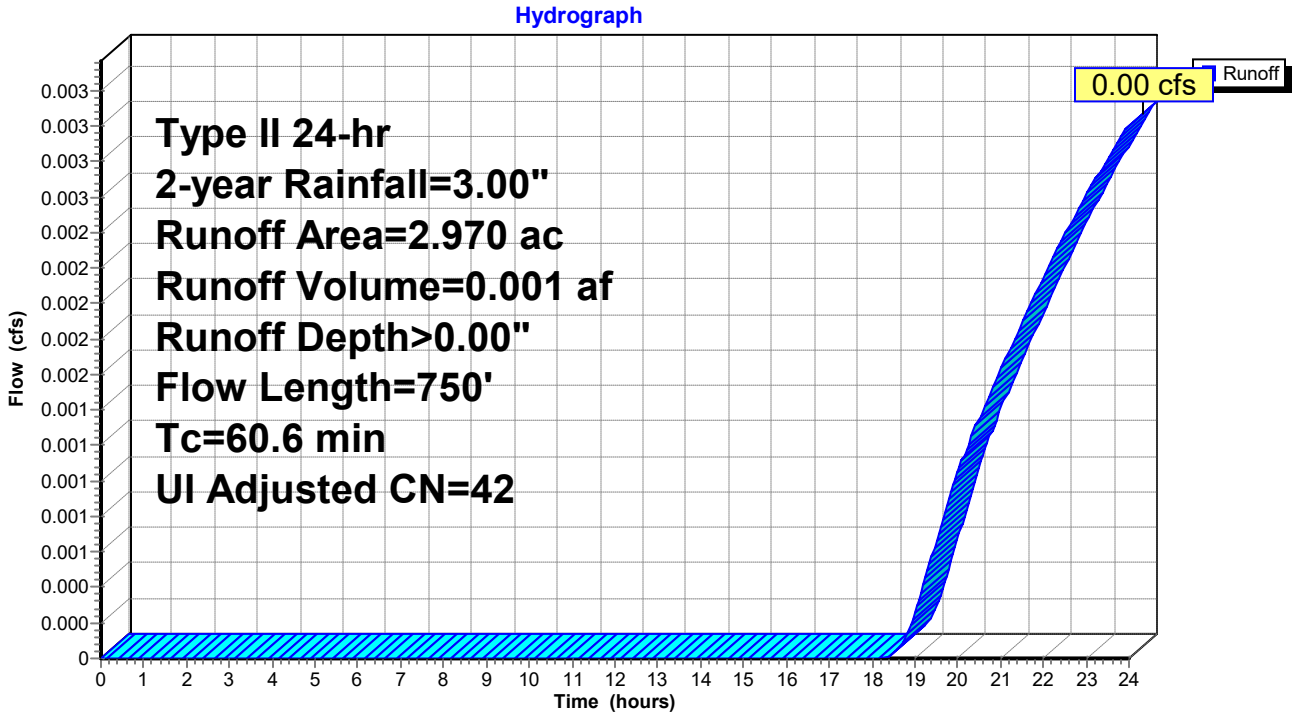
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.001 af, Depth> 0.00"
Routed to Reach 3R : Open Space South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 2-year Rainfall=3.00"

Area (ac)	CN	Adj	Description
0.293	98		Unconnected roofs, HSG D
2.677	39		>75% Grass cover, Good, HSG A
2.970	45	42	Weighted Average, UI Adjusted
2.677			90.13% Pervious Area
0.293			9.87% Impervious Area
0.293			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	25	0.0100	0.87		**Sheet Flow, Roof Sheeting** Smooth surfaces n= 0.011 P2= 3.90"
1.5	25	0.1000	0.27		**Sheet Flow, Grassed Sheeting** Grass: Short n= 0.150 P2= 3.90"
2.8	300	0.0075	1.76		**Shallow Concentrated Flow, Paved Shallow Conc** Paved Kv= 20.3 fps
1.6	100	0.0050	1.06		**Shallow Concentrated Flow, Grassed Waterway** Grassed Waterway Kv= 15.0 fps
54.2	300	0.0050	0.09		**Sheet Flow, Open Space** Grass: Dense n= 0.240 P2= 3.90"
60.6	750	Total			

Subcatchment PR-3: PR-3



Summary for Reach 2.1R: Open Space North

0.65 cfs exfilltration loss for Wetted Perimeter at 10-year storm,

x cfs / sf * 43,200 = in / hr exfiltration rate conversion

x cfs / (2,340 sf WP at 10 year storm) * 43,200 = ~ 12.00 in / hr (exfiltration rate from hydraulic conductivy rating of local soil survey)

= 0.65 cfs for 10-year storm event.

Inflow Area = 4.790 ac, 28.37% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Incl. 0.65 cfs Inflow Loss
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : Open Space South

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 4.00' Flow Area= 192.0 sf, Capacity= 2,142.78 cfs

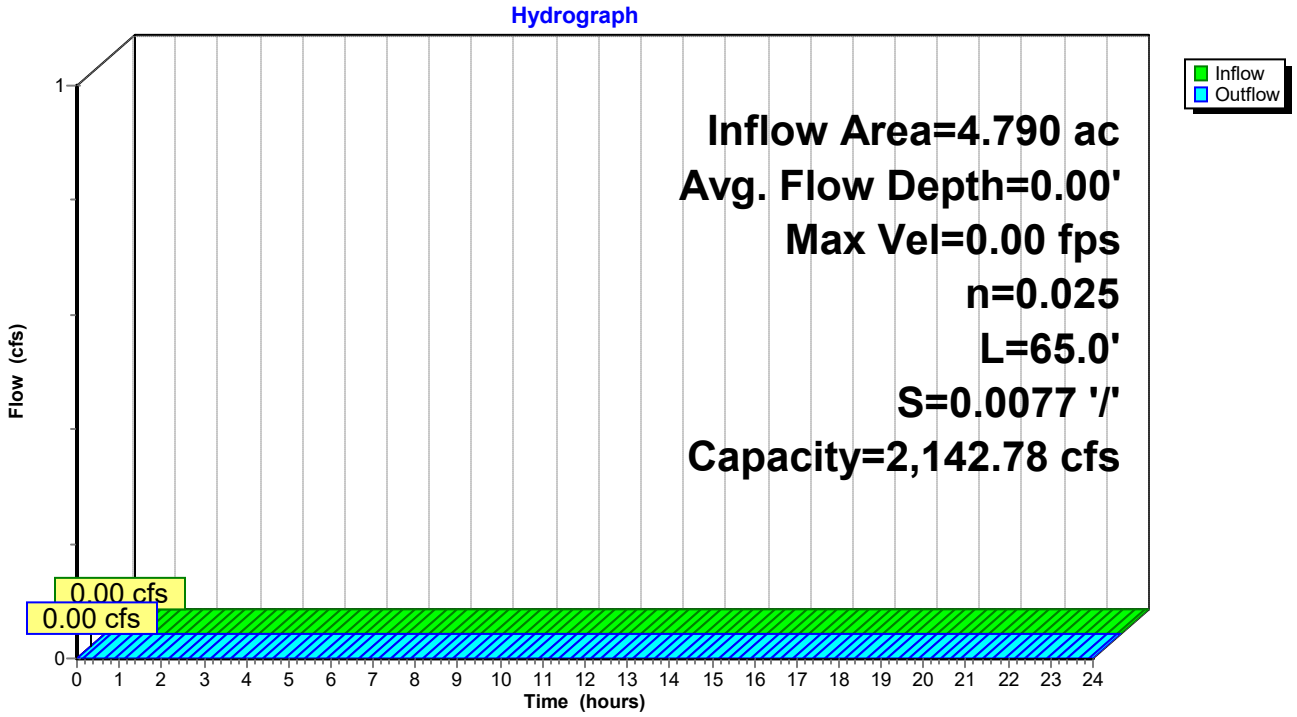
Custom cross-section, Length= 65.0' Slope= 0.0077 '/'
Constant n= 0.025 Short grass
Inlet Invert= 972.00', Outlet Invert= 971.50'

‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	976.00	0.00
12.00	972.00	4.00
48.00	972.00	4.00
60.00	976.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Width (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	36.0	0.0	0	0.00
4.00	192.0	61.3	60.0	12,480	2,142.78

Reach 2.1R: Open Space North



Summary for Reach 2R: Grassed Waterway

0.56 cfs exfilltration loss for Wetted Perimeter at 10-year storm,

x cfs / sf * 43,200 = in / hr exfiltration rate conversion

x cfs / (2,016 sf WP at 10 year storm) * 43,200 = ~ 12.00 in / hr (exfiltration rate from hydraulic conductivy rating of local soil survey)

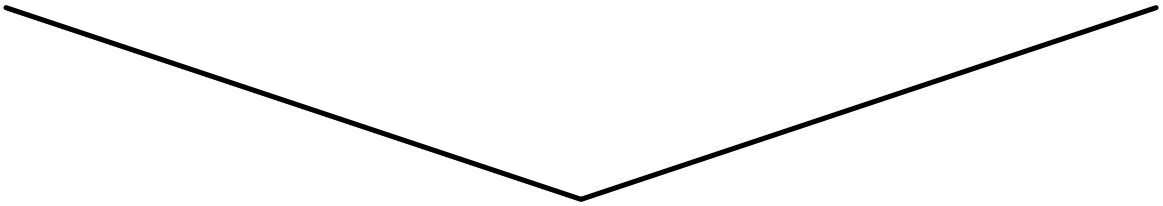
= 0.56 cfs for 10-year storm event.

Inflow Area = 4.790 ac, 28.37% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Incl. 0.56 cfs Inflow Loss
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 2.1R : Open Space North

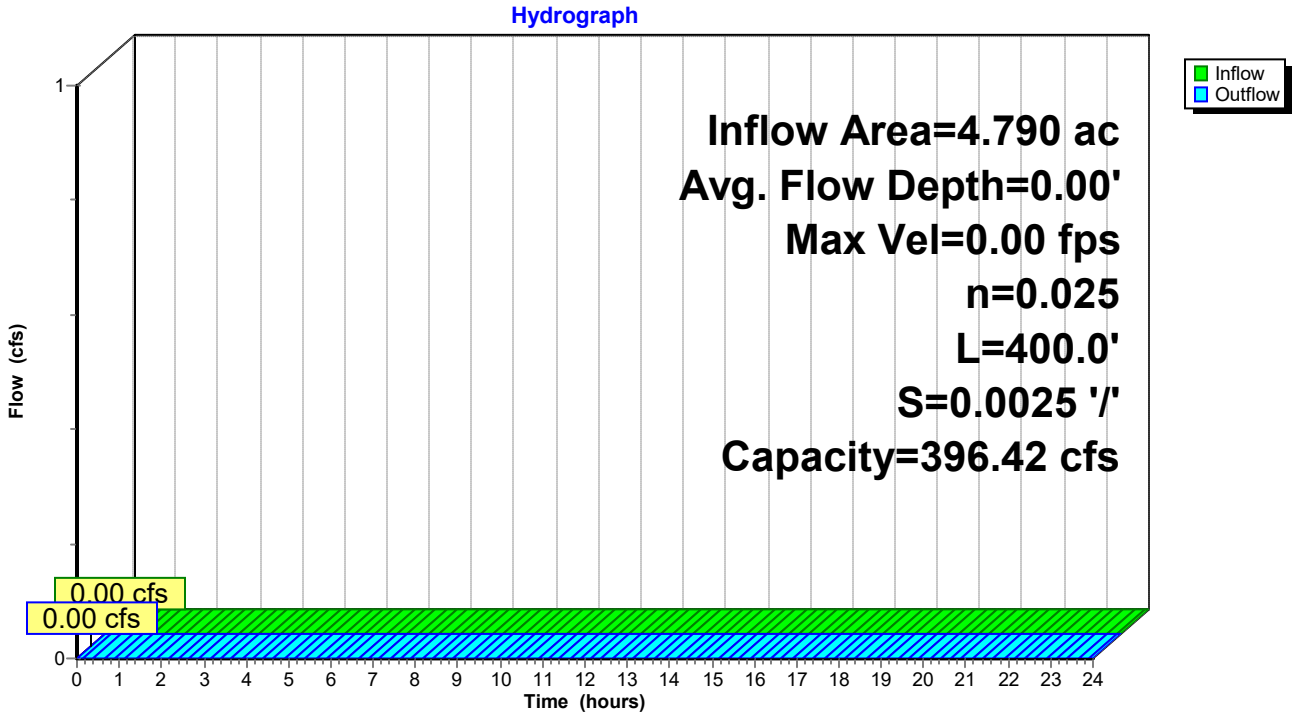
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 5.00' Flow Area= 75.0 sf, Capacity= 396.42 cfs

0.00' x 5.00' deep channel, n= 0.025 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 30.00'
Length= 400.0' Slope= 0.0025 '/'
Inlet Invert= 973.00', Outlet Invert= 972.00'



Reach 2R: Grassed Waterway



Summary for Reach 3R: Open Space South

3.64 cfs exfilltration loss for Wetted Perimeter at 10-year storm,

x cfs / sf * 43,200 = in / hr exfiltration rate conversion

x cfs / (13,125 sf WP at 10 year storm) * 43,200 = ~ 12.00 in / hr (exfiltration rate from hydraulic conductivy rating of local soil survey)

= 3.64 cfs for 10-year storm event.

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[63] Warning: Exceeded Reach 2.1R INLET depth by 3.00' @ 0.00 hrs

Inflow Area = 8.670 ac, 21.36% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Incl. 3.64 cfs Inflow Loss
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Outlet Runoff

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 2.50' Flow Area= 159.4 sf, Capacity= 1,206.31 cfs

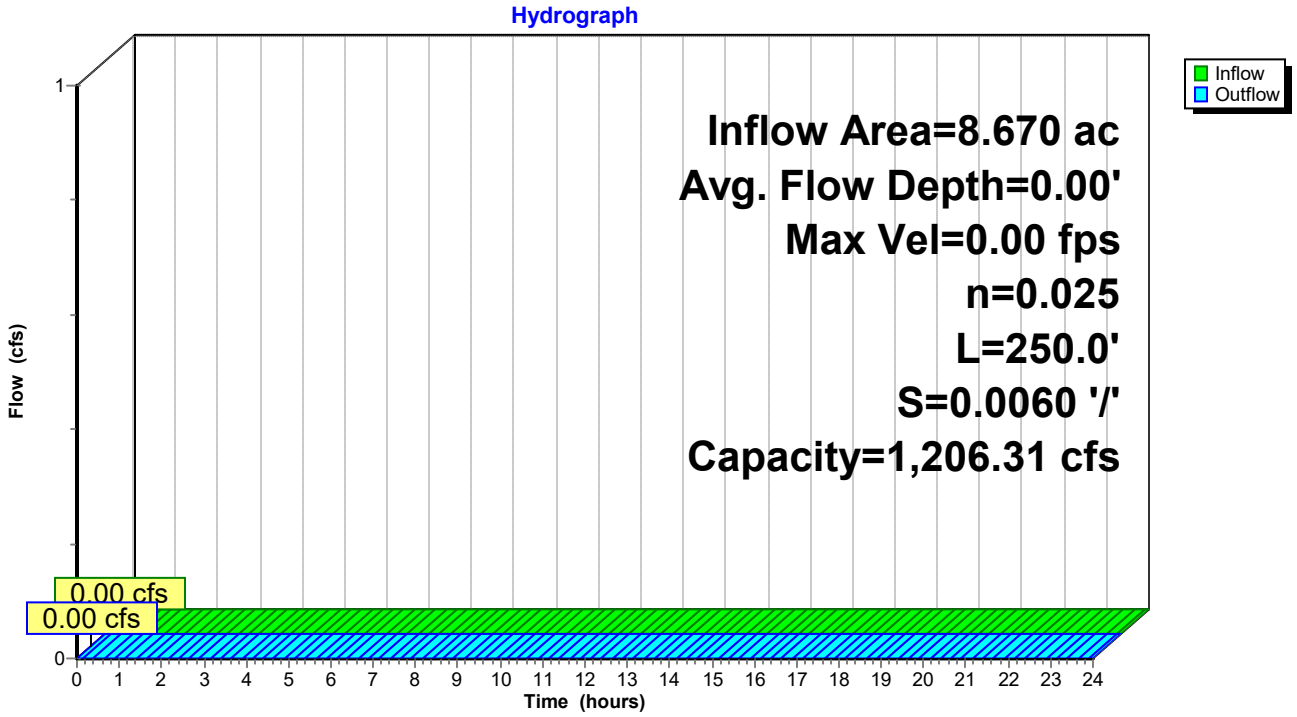
Custom cross-section, Length= 250.0' Slope= 0.0060 '/'
Constant n= 0.025 Short grass
Inlet Invert= 975.00', Outlet Invert= 973.50'

‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	976.00	0.00
7.50	973.50	2.50
60.00	973.50	2.50
75.00	976.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Width (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	52.5	0.0	0	0.00
2.50	159.4	75.6	75.0	39,844	1,206.31

Reach 3R: Open Space South



Summary for Reach 5R: Front Yard V Ditch

0.44 cfs exfilltration loss for Wetted Perimeter at 10-year storm,

x cfs / sf * 43,200 = in / hr exfiltration rate conversion

x cfs / (1,600 sf WP at 10 year storm) * 43,200 = ~ 12.00 in / hr (exfiltration rate from hydraulic conductivy rating of local soil survey)

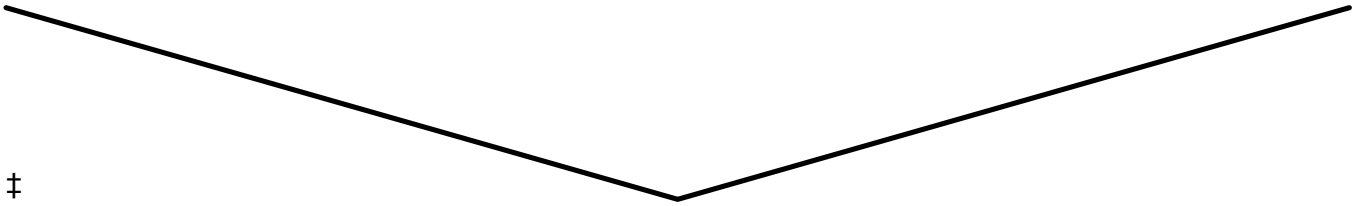
= 0.56 cfs for 10-year storm event.

Inflow Area = 4.360 ac, 28.53% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Incl. 0.44 cfs Inflow Loss
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 1P : Storage Pond

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 0.50' Flow Area= 2.5 sf, Capacity= 5.77 cfs

0.00' x 0.50' deep channel, n= 0.018 Earth, clean & straight
Side Slope Z-value= 10.0 '/' Top Width= 10.00'
Length= 400.0' Slope= 0.0050 '/'
Inlet Invert= 975.00', Outlet Invert= 973.00'



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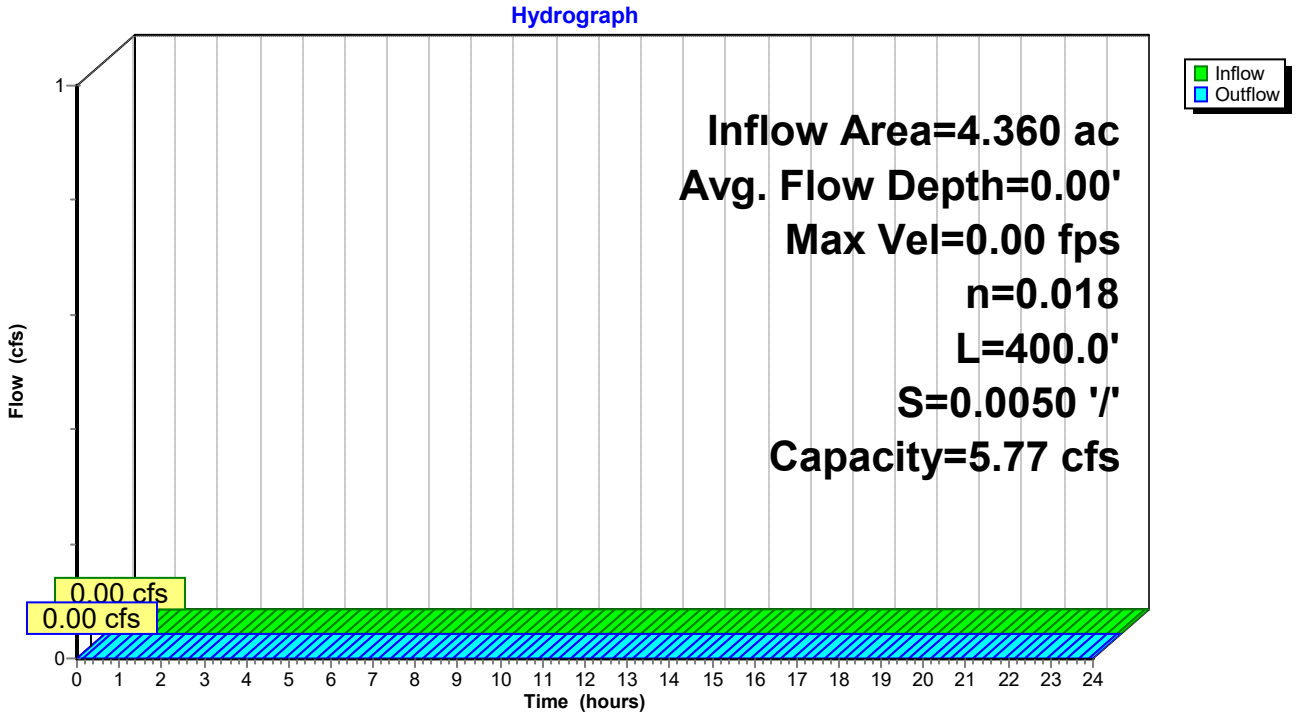
Reach 5R: Front Yard V Ditch



Summary for Pond 1P: Storage Pond

[92] Warning: Device #1 is above defined storage

Inflow Area = 4.360 ac, 28.53% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 2R : Grassed Waterway

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 972.00' @ 0.00 hrs Surf.Area= 0.240 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	972.00'	0.293 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

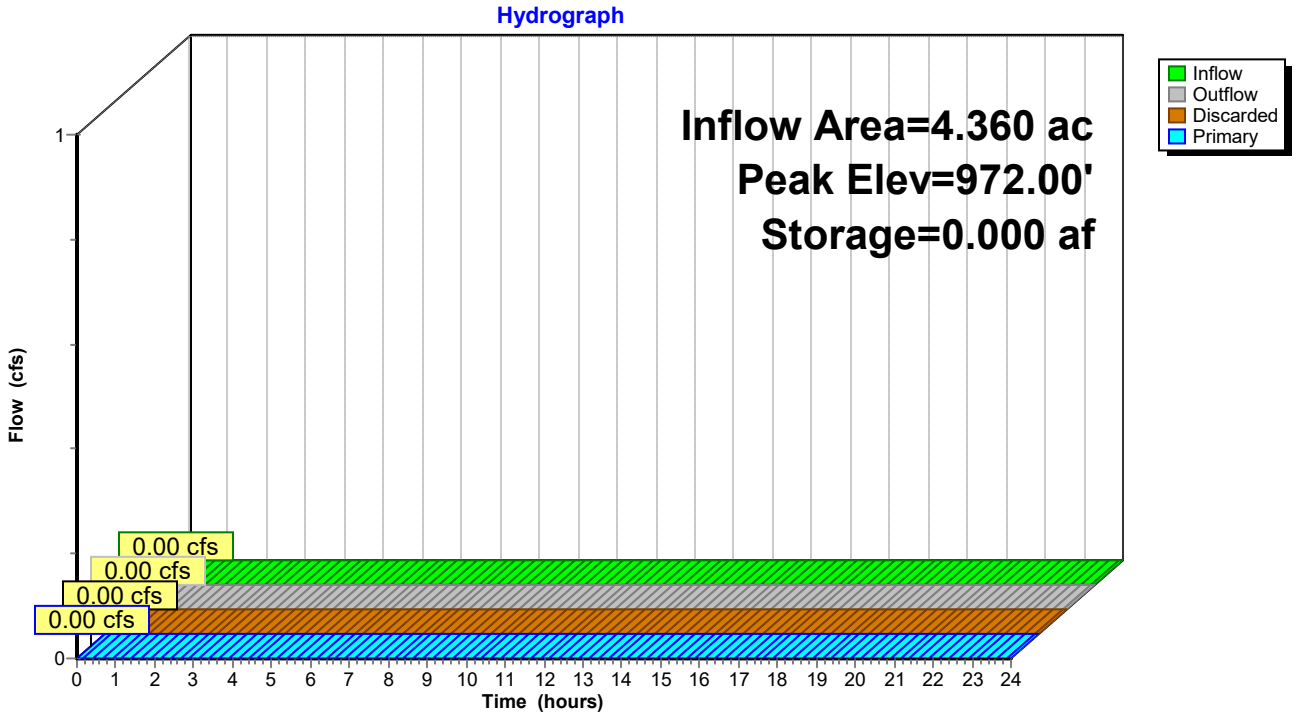
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
972.00	0.240	0.000	0.000
973.00	0.345	0.293	0.293

Device	Routing	Invert	Outlet Devices
#1	Primary	973.00'	**120.0 deg x 24.0' long x 3.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.48 (C= 3.10)
#2	Discarded	972.00'	**12.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 966.00'

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=972.00' (Free Discharge)
↑—**2=Exfiltration** (Passes 0.00 cfs of 2.90 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=972.00' (Free Discharge)
↑—**1=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Pond 1P: Storage Pond

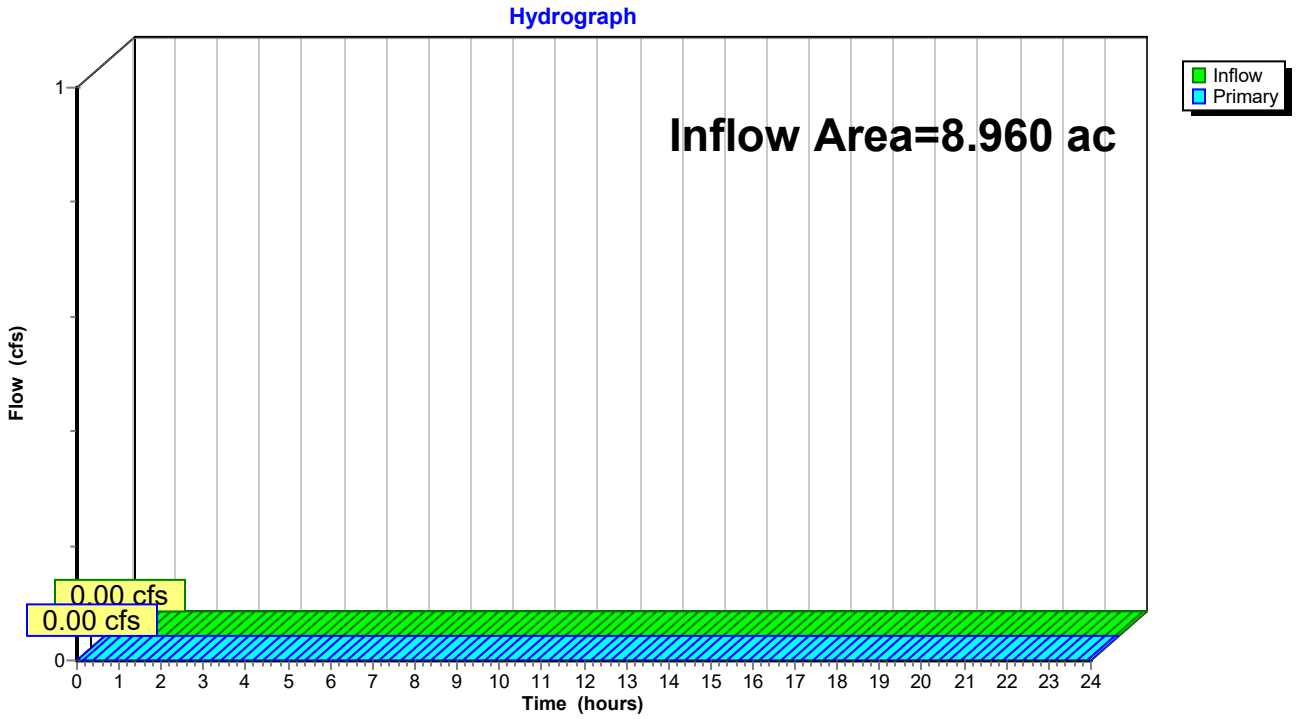


Summary for Link 4L: Outlet Runoff

Inflow Area = 8.960 ac, 20.67% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Outlet Runoff



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment OF-1: OF-1 Runoff Area=2.200 ac 32.82% Impervious Runoff Depth>0.73"
Flow Length=615' Slope=0.0050 '/' Tc=12.0 min CN=54 Runoff=1.79 cfs 0.134 af

Subcatchment OF-2: OF-2 Runoff Area=0.910 ac 21.98% Impervious Runoff Depth>0.39"
Flow Length=775' Tc=64.9 min CN=47 Runoff=0.09 cfs 0.029 af

Subcatchment OF-3: OF-3 Runoff Area=0.290 ac 0.00% Impervious Runoff Depth>0.01"
Flow Length=50' Slope=0.0100 '/' Tc=14.7 min CN=32 Runoff=0.00 cfs 0.000 af

Subcatchment PR-1: PR-1 Runoff Area=2.160 ac 24.17% Impervious Runoff Depth>0.36"
Flow Length=1,275' Tc=11.2 min UI Adjusted CN=46 Runoff=0.47 cfs 0.065 af

Subcatchment PR-2: PR-2 Runoff Area=0.430 ac 26.74% Impervious Runoff Depth>0.40"
Flow Length=225' Tc=3.6 min UI Adjusted CN=47 Runoff=0.19 cfs 0.014 af

Subcatchment PR-3: PR-3 Runoff Area=2.970 ac 9.87% Impervious Runoff Depth>0.21"
Flow Length=750' Tc=60.6 min UI Adjusted CN=42 Runoff=0.10 cfs 0.051 af

Reach 2.1R: Open Space North Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.025 L=65.0' S=0.0077 '/' Capacity=2,142.78 cfs Outflow=0.00 cfs 0.000 af

Reach 2R: Grassed Waterway Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.025 L=400.0' S=0.0025 '/' Capacity=396.42 cfs Outflow=0.00 cfs 0.000 af

Reach 3R: Open Space South Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.025 L=250.0' S=0.0060 '/' Capacity=1,206.31 cfs Outflow=0.00 cfs 0.000 af

Reach 5R: Front Yard V Ditch Avg. Flow Depth=0.30' Max Vel=1.64 fps Inflow=1.80 cfs 0.037 af
n=0.018 L=400.0' S=0.0050 '/' Capacity=5.77 cfs Outflow=1.46 cfs 0.037 af

Pond 1P: Storage Pond Peak Elev=972.02' Storage=0.004 af Inflow=1.46 cfs 0.037 af
Discarded=1.34 cfs 0.037 af Primary=0.00 cfs 0.000 af Outflow=1.34 cfs 0.037 af

Link 4L: Outlet Runoff Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 8.960 ac Runoff Volume = 0.294 af Average Runoff Depth = 0.39"
79.33% Pervious = 7.108 ac 20.67% Impervious = 1.852 ac

Summary for Subcatchment OF-1: OF-1

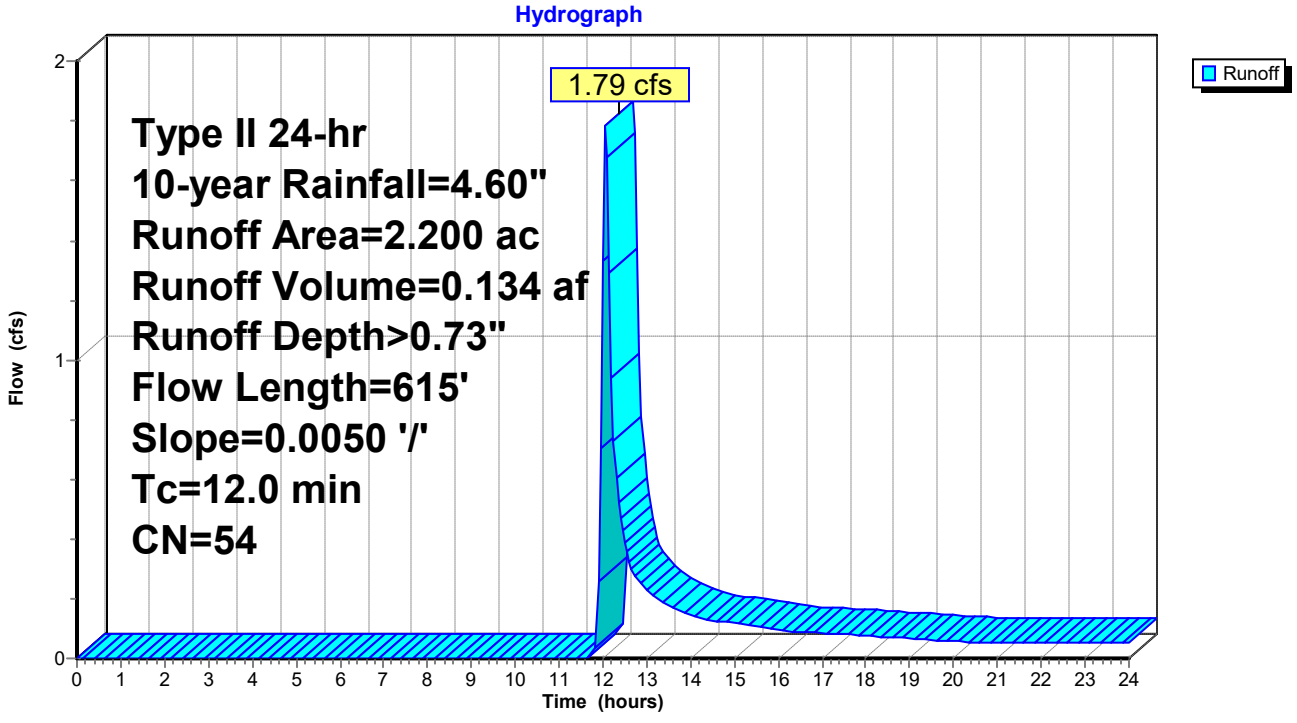
Runoff = 1.79 cfs @ 12.07 hrs, Volume= 0.134 af, Depth> 0.73"
Routed to Reach 5R : Front Yard V Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=4.60"

Area (ac)	CN	Description
1.478	32	Woods/grass comb., Good, HSG A
0.722	98	Paved roads w/curbs & sewers, HSG A
2.200	54	Weighted Average
1.478		67.18% Pervious Area
0.722		32.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	25	0.0050	0.08		**Sheet Flow, Grassed Sheeting** Grass: Short n= 0.150 P2= 3.90"
6.9	590	0.0050	1.44		**Shallow Concentrated Flow, Paved Conc** Paved Kv= 20.3 fps
12.0	615	Total			

Subcatchment OF-1: OF-1



Summary for Subcatchment OF-2: OF-2

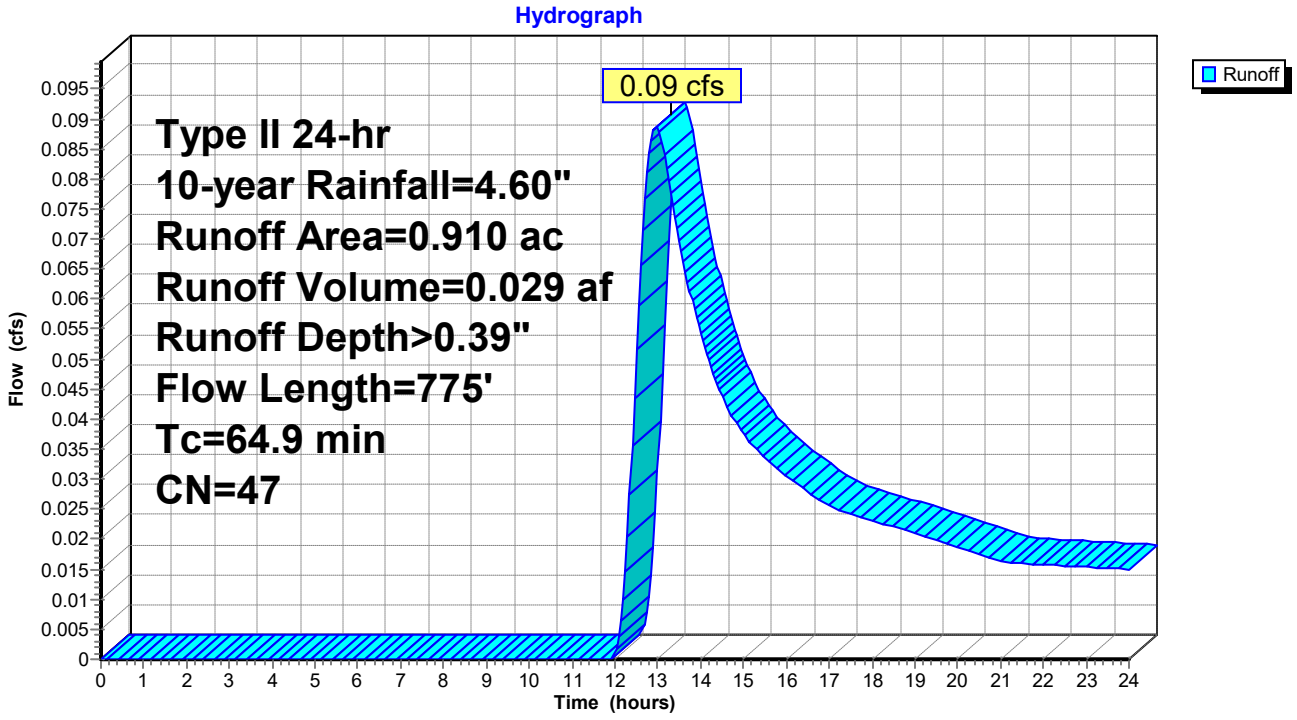
Runoff = 0.09 cfs @ 12.97 hrs, Volume= 0.029 af, Depth> 0.39"
Routed to Reach 3R : Open Space South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=4.60"

Area (ac)	CN	Description
0.710	32	Woods/grass comb., Good, HSG A
0.200	98	Paved parking, HSG D
0.910	47	Weighted Average
0.710		78.02% Pervious Area
0.200		21.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	25	0.0100	0.11		**Sheet Flow, Grassed Sheeting** Grass: Short n= 0.150 P2= 3.90"
3.4	350	0.0073	1.73		**Shallow Concentrated Flow, Paved Conc** Paved Kv= 20.3 fps
3.4	100	0.0050	0.49		**Shallow Concentrated Flow, Grassed ROW** Short Grass Pasture Kv= 7.0 fps
54.2	300	0.0050	0.09		**Sheet Flow, Open Space** Grass: Dense n= 0.240 P2= 3.90"
64.9	775	Total			

Subcatchment OF-2: OF-2



Summary for Subcatchment OF-3: OF-3

[73] Warning: Peak may fall outside time span

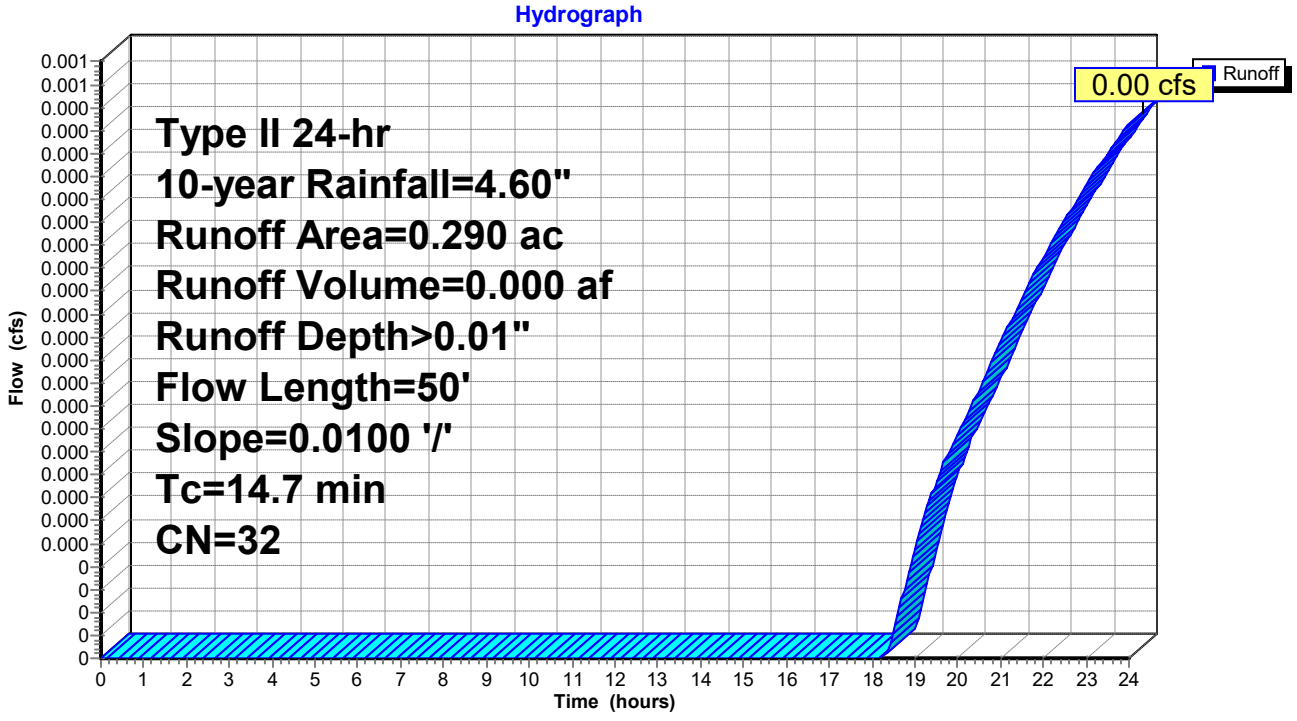
Runoff = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Depth> 0.01"
Routed to Link 4L : Outlet Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=4.60"

Area (ac)	CN	Description
0.290	32	Woods/grass comb., Good, HSG A
0.290		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0100	0.06		**Sheet Flow, Grassed Sheeting** Woods: Light underbrush n= 0.400 P2= 3.90"

Subcatchment OF-3: OF-3



Summary for Subcatchment PR-1: PR-1

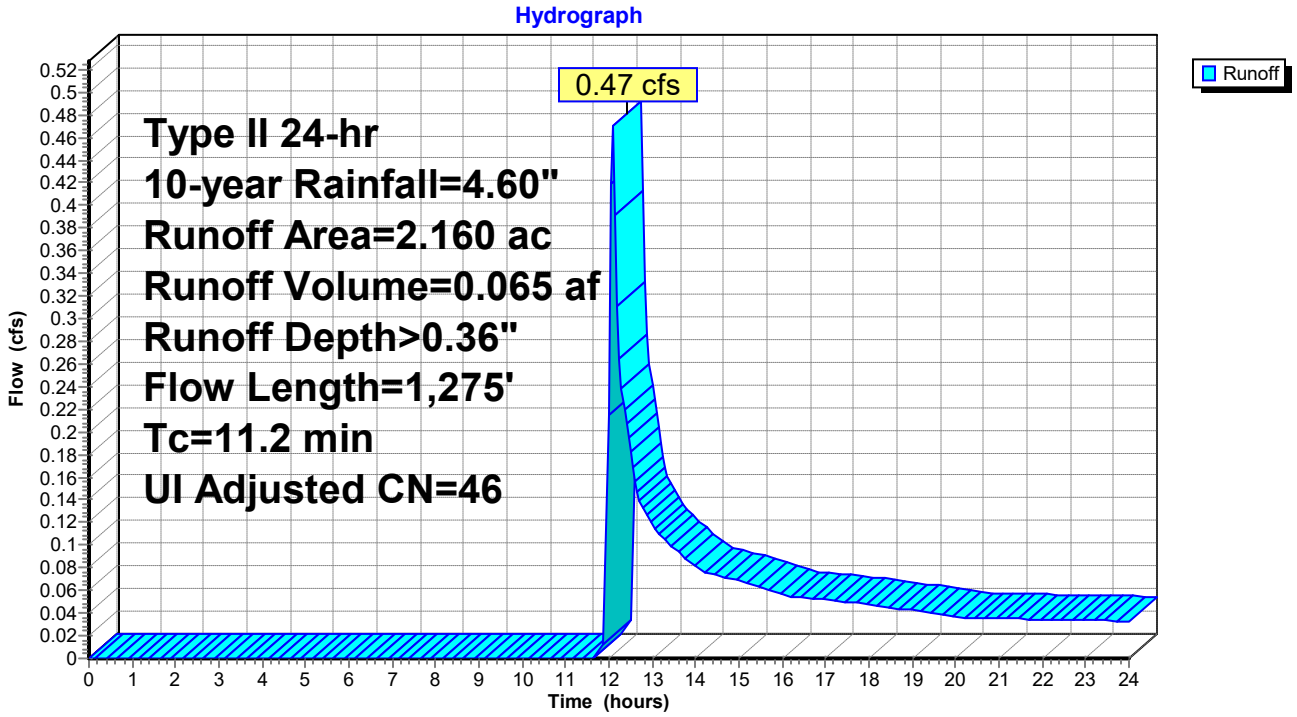
Runoff = 0.47 cfs @ 12.09 hrs, Volume= 0.065 af, Depth> 0.36"
Routed to Reach 5R : Front Yard V Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=4.60"

Area (ac)	CN	Adj	Description
0.522	98		Unconnected roofs, HSG A
1.638	39		>75% Grass cover, Good, HSG A
2.160	53	46	Weighted Average, UI Adjusted
1.638			75.83% Pervious Area
0.522			24.17% Impervious Area
0.522			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	25	0.1000	2.19		**Sheet Flow, Roof Sheeting** Smooth surfaces n= 0.011 P2= 3.90"
4.5	550	0.0100	2.03		**Shallow Concentrated Flow, Paved Shallow Conc** Paved Kv= 20.3 fps
0.9	100	0.0150	1.84		**Shallow Concentrated Flow, Swale Flow** Grassed Waterway Kv= 15.0 fps
5.6	600		1.79		**Lake or Reservoir, Pond Travel** Mean Depth= 0.10'
11.2	1,275	Total			

Subcatchment PR-1: PR-1



Summary for Subcatchment PR-2: PR-2

[49] Hint: Tc<2dt may require smaller dt

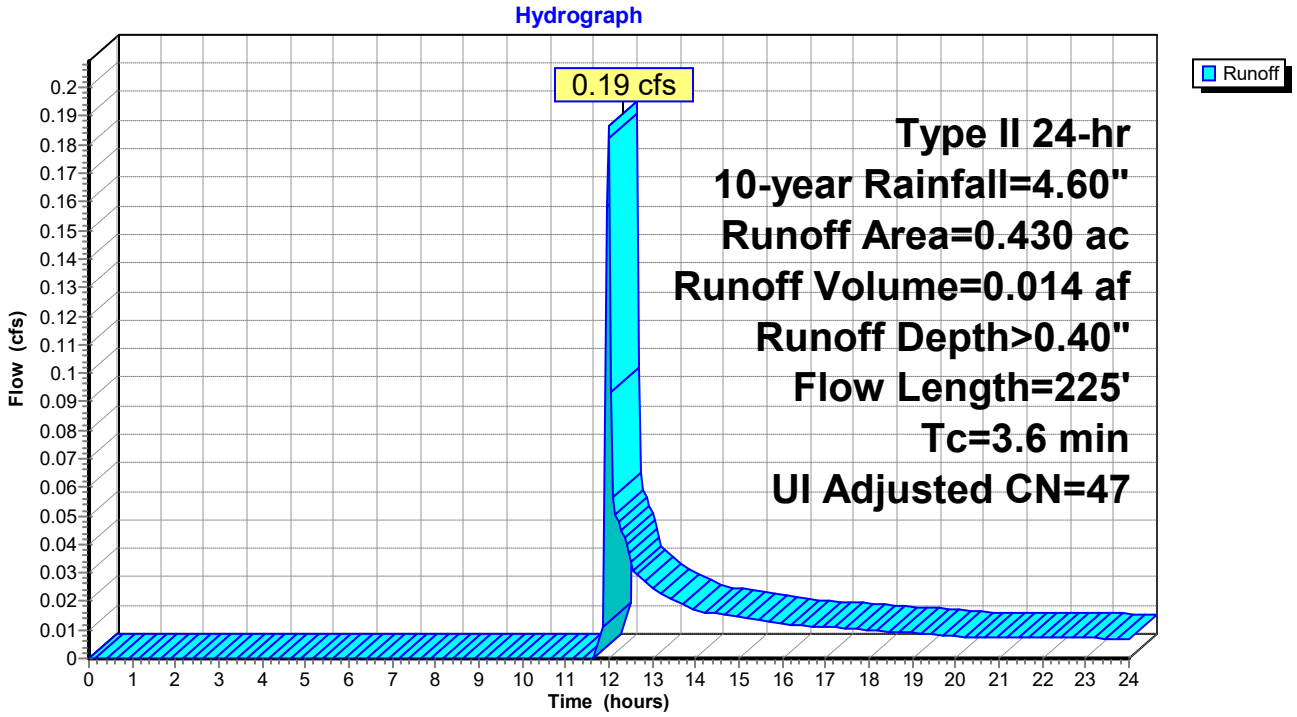
Runoff = 0.19 cfs @ 11.99 hrs, Volume= 0.014 af, Depth> 0.40"
Routed to Reach 2R : Grassed Waterway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=4.60"

Area (ac)	CN	Adj	Description
0.115	98		Unconnected roofs, HSG A
0.315	39		>75% Grass cover, Good, HSG A
0.430	55	47	Weighted Average, UI Adjusted
0.315			73.26% Pervious Area
0.115			26.74% Impervious Area
0.115			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	25	0.0100	0.87		**Sheet Flow, Roof Sheeting** Smooth surfaces n= 0.011 P2= 3.90"
1.7	50	0.3000	0.48		**Sheet Flow, Grassed Sheeting** Grass: Short n= 0.150 P2= 3.90"
1.4	150	0.0150	1.84		**Shallow Concentrated Flow, Grassed Waterway** Grassed Waterway Kv= 15.0 fps
3.6	225	Total			

Subcatchment PR-2: PR-2



Summary for Subcatchment PR-3: PR-3

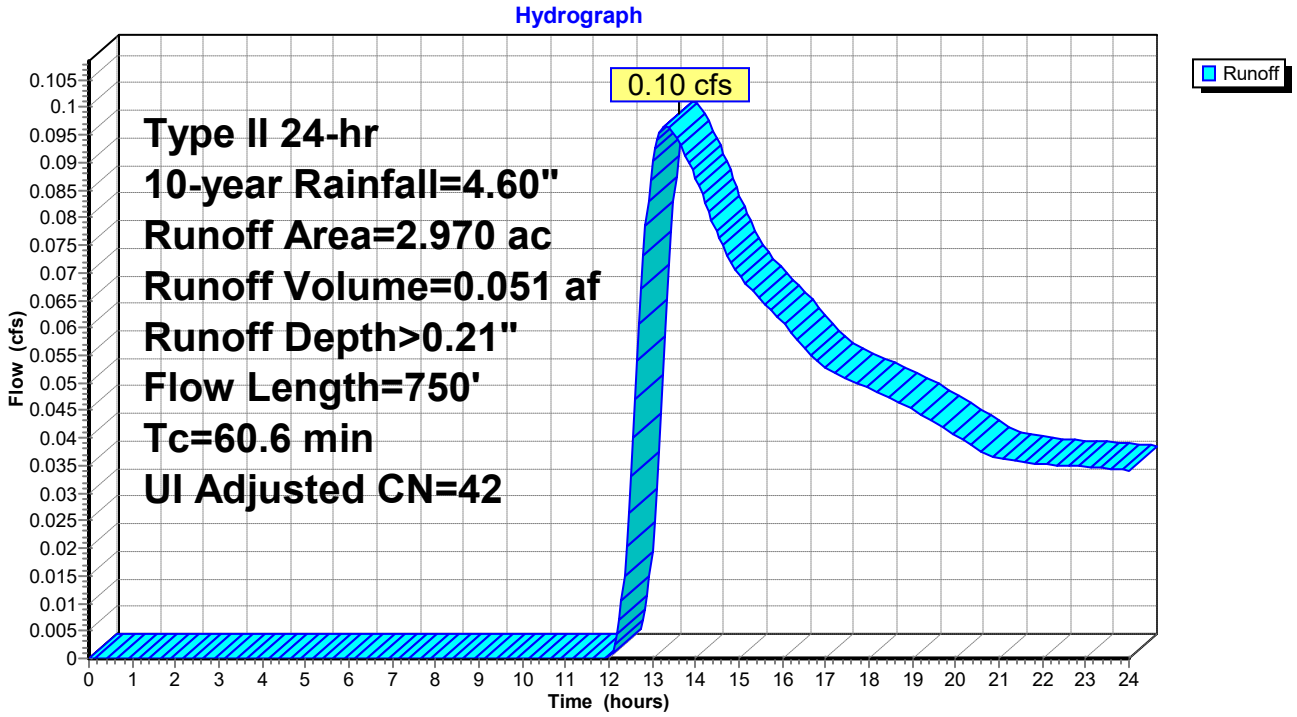
Runoff = 0.10 cfs @ 13.30 hrs, Volume= 0.051 af, Depth> 0.21"
Routed to Reach 3R : Open Space South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-year Rainfall=4.60"

Area (ac)	CN	Adj	Description
0.293	98		Unconnected roofs, HSG D
2.677	39		>75% Grass cover, Good, HSG A
2.970	45	42	Weighted Average, UI Adjusted
2.677			90.13% Pervious Area
0.293			9.87% Impervious Area
0.293			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	25	0.0100	0.87		**Sheet Flow, Roof Sheeting** Smooth surfaces n= 0.011 P2= 3.90"
1.5	25	0.1000	0.27		**Sheet Flow, Grassed Sheeting** Grass: Short n= 0.150 P2= 3.90"
2.8	300	0.0075	1.76		**Shallow Concentrated Flow, Paved Shallow Conc** Paved Kv= 20.3 fps
1.6	100	0.0050	1.06		**Shallow Concentrated Flow, Grassed Waterway** Grassed Waterway Kv= 15.0 fps
54.2	300	0.0050	0.09		**Sheet Flow, Open Space** Grass: Dense n= 0.240 P2= 3.90"
60.6	750	Total			

Subcatchment PR-3: PR-3



Summary for Reach 2.1R: Open Space North

0.65 cfs exfilltration loss for Wetted Perimeter at 10-year storm,

x cfs / sf * 43,200 = in / hr exfiltration rate conversion

x cfs / (2,340 sf WP at 10 year storm) * 43,200 = ~ 12.00 in / hr (exfiltration rate from hydraulic conductivy rating of local soil survey)

= 0.65 cfs for 10-year storm event.

Inflow Area = 4.790 ac, 28.37% Impervious, Inflow Depth = 0.00" for 10-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Incl. 0.65 cfs Inflow Loss
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : Open Space South

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 4.00' Flow Area= 192.0 sf, Capacity= 2,142.78 cfs

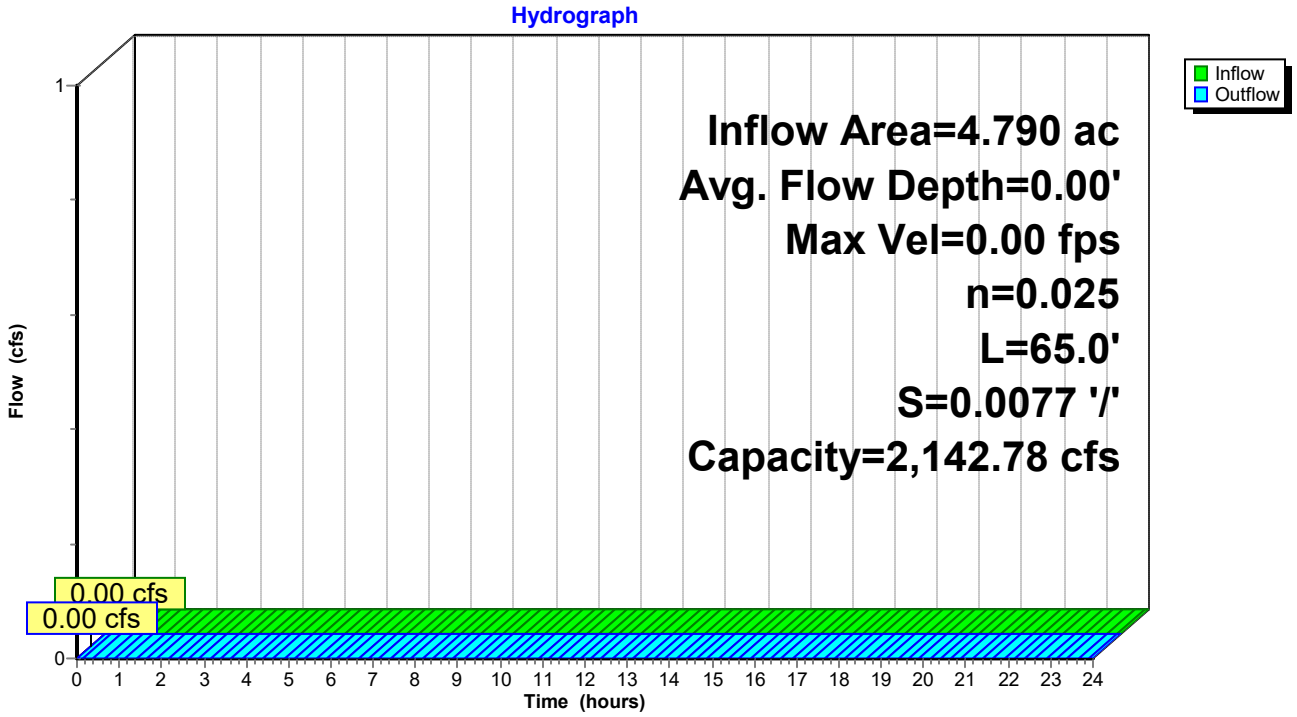
Custom cross-section, Length= 65.0' Slope= 0.0077 '/'
Constant n= 0.025 Short grass
Inlet Invert= 972.00', Outlet Invert= 971.50'

‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	976.00	0.00
12.00	972.00	4.00
48.00	972.00	4.00
60.00	976.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Width (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	36.0	0.0	0	0.00
4.00	192.0	61.3	60.0	12,480	2,142.78

Reach 2.1R: Open Space North



Summary for Reach 2R: Grassed Waterway

0.56 cfs exfilltration loss for Wetted Perimeter at 10-year storm,

x cfs / sf * 43,200 = in / hr exfiltration rate conversion

x cfs / (2,016 sf WP at 10 year storm) * 43,200 = ~ 12.00 in / hr (exfiltration rate from hydraulic conductivy rating of local soil survey)

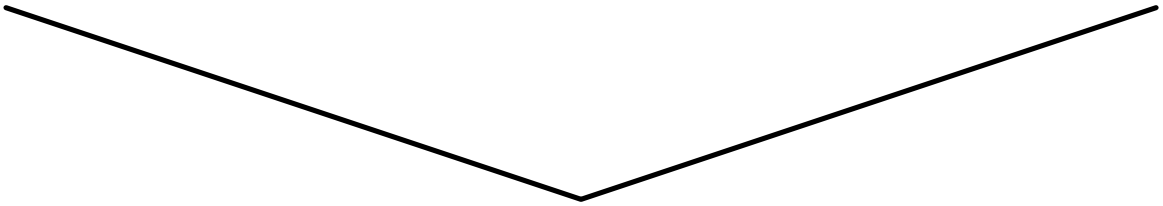
= 0.56 cfs for 10-year storm event.

Inflow Area = 4.790 ac, 28.37% Impervious, Inflow Depth = 0.00" for 10-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Incl. 0.56 cfs Inflow Loss
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 2.1R : Open Space North

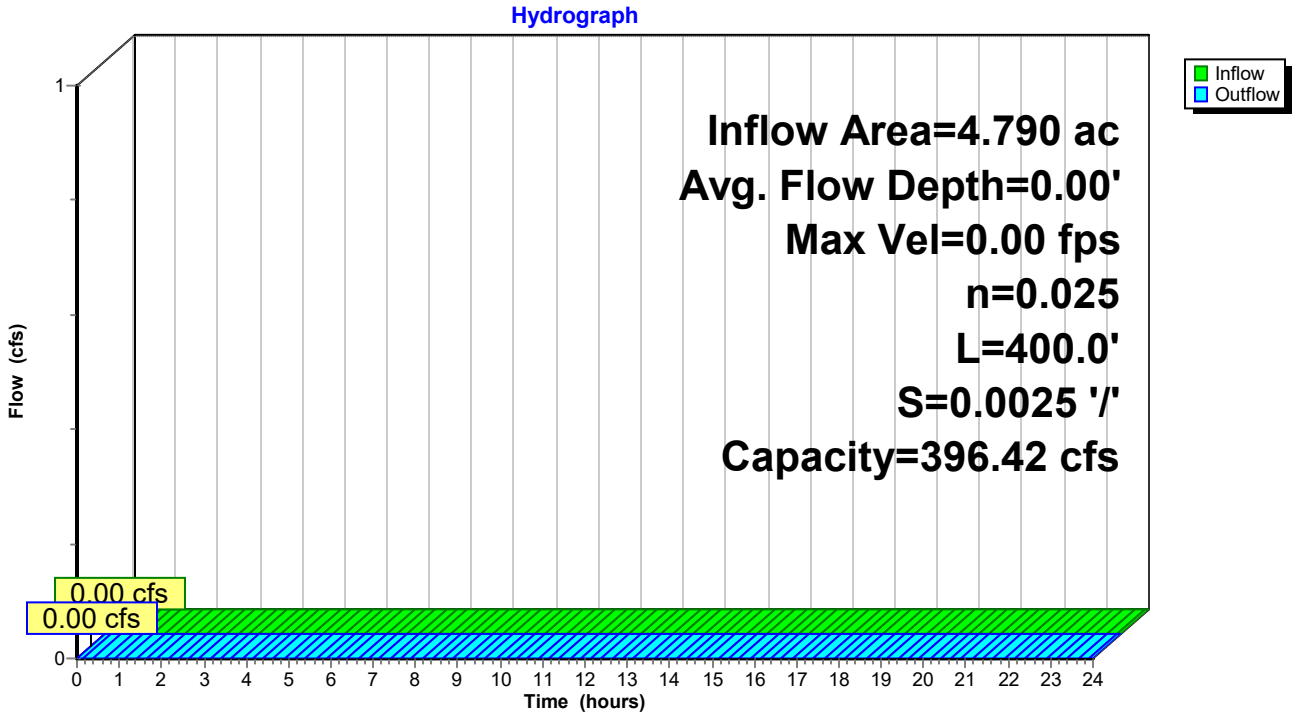
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 5.00' Flow Area= 75.0 sf, Capacity= 396.42 cfs

0.00' x 5.00' deep channel, n= 0.025 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 30.00'
Length= 400.0' Slope= 0.0025 '/'
Inlet Invert= 973.00', Outlet Invert= 972.00'



Reach 2R: Grassed Waterway



Summary for Reach 3R: Open Space South

3.64 cfs exfilltration loss for Wetted Perimeter at 10-year storm,

x cfs / sf * 43,200 = in / hr exfiltration rate conversion

x cfs / (13,125 sf WP at 10 year storm) * 43,200 = ~ 12.00 in / hr (exfiltration rate from hydraulic conductivy rating of local soil survey)

= 3.64 cfs for 10-year storm event.

---

[63] Warning: Exceeded Reach 2.1R INLET depth by 3.00' @ 0.00 hrs

Inflow Area = 8.670 ac, 21.36% Impervious, Inflow Depth = 0.00" for 10-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Incl. 3.64 cfs Inflow Loss
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Outlet Runoff

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 2.50' Flow Area= 159.4 sf, Capacity= 1,206.31 cfs

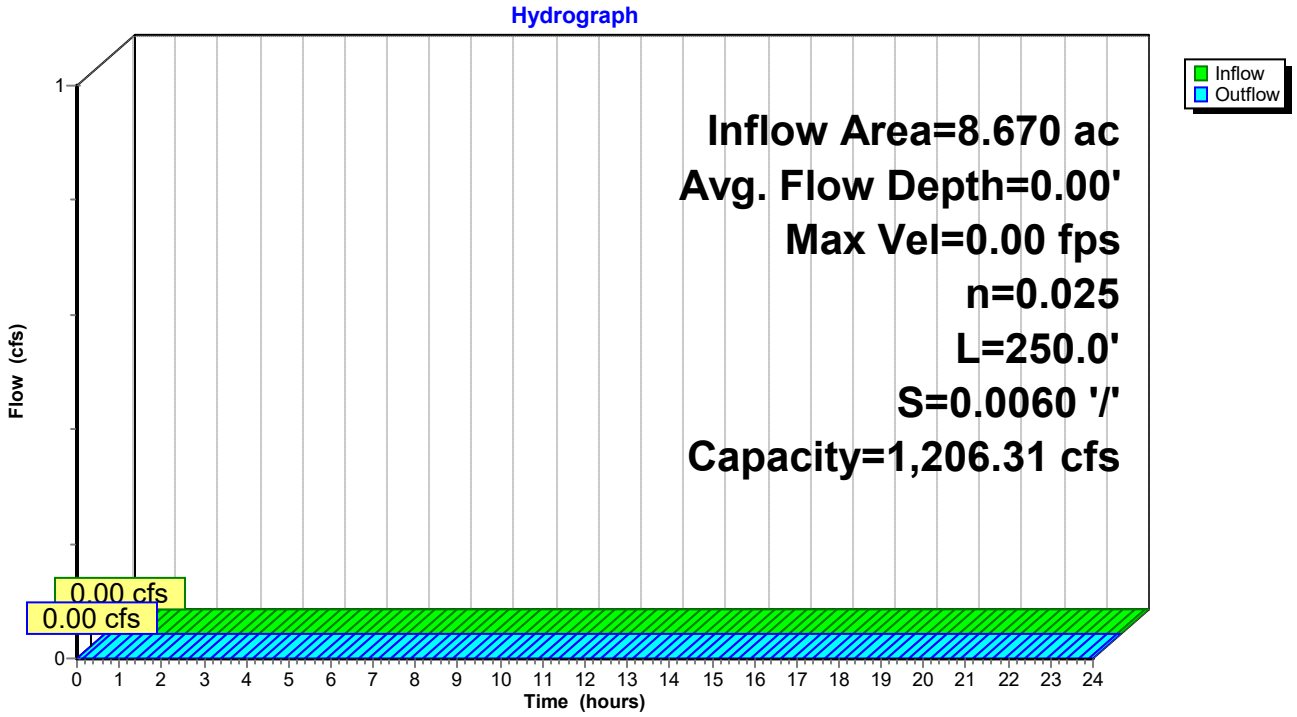
Custom cross-section, Length= 250.0' Slope= 0.0060 '/'
Constant n= 0.025 Short grass
Inlet Invert= 975.00', Outlet Invert= 973.50'

‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	976.00	0.00
7.50	973.50	2.50
60.00	973.50	2.50
75.00	976.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Width (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	52.5	0.0	0	0.00
2.50	159.4	75.6	75.0	39,844	1,206.31

Reach 3R: Open Space South



Summary for Reach 5R: Front Yard V Ditch

0.44 cfs exfilltration loss for Wetted Perimeter at 10-year storm,

x cfs / sf * 43,200 = in / hr exfiltration rate conversion

x cfs / (1,600 sf WP at 10 year storm) * 43,200 = ~ 12.00 in / hr (exfiltration rate from hydraulic conductivy rating of local soil survey)

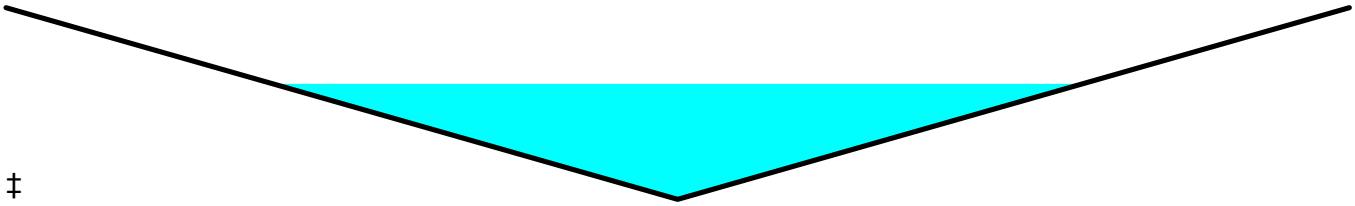
= 0.56 cfs for 10-year storm event.

Inflow Area = 4.360 ac, 28.53% Impervious, Inflow Depth = 0.10" for 10-year event
Inflow = 1.80 cfs @ 12.07 hrs, Volume= 0.037 af, Incl. 0.44 cfs Inflow Loss
Outflow = 1.46 cfs @ 12.20 hrs, Volume= 0.037 af, Atten= 19%, Lag= 7.7 min
Routed to Pond 1P : Storage Pond

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.64 fps, Min. Travel Time= 4.1 min
Avg. Velocity = 0.39 fps, Avg. Travel Time= 17.2 min

Peak Storage= 363 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.30' , Surface Width= 6.02'
Bank-Full Depth= 0.50' Flow Area= 2.5 sf, Capacity= 5.77 cfs

0.00' x 0.50' deep channel, n= 0.018 Earth, clean & straight
Side Slope Z-value= 10.0 '/' Top Width= 10.00'
Length= 400.0' Slope= 0.0050 '/'
Inlet Invert= 975.00', Outlet Invert= 973.00'



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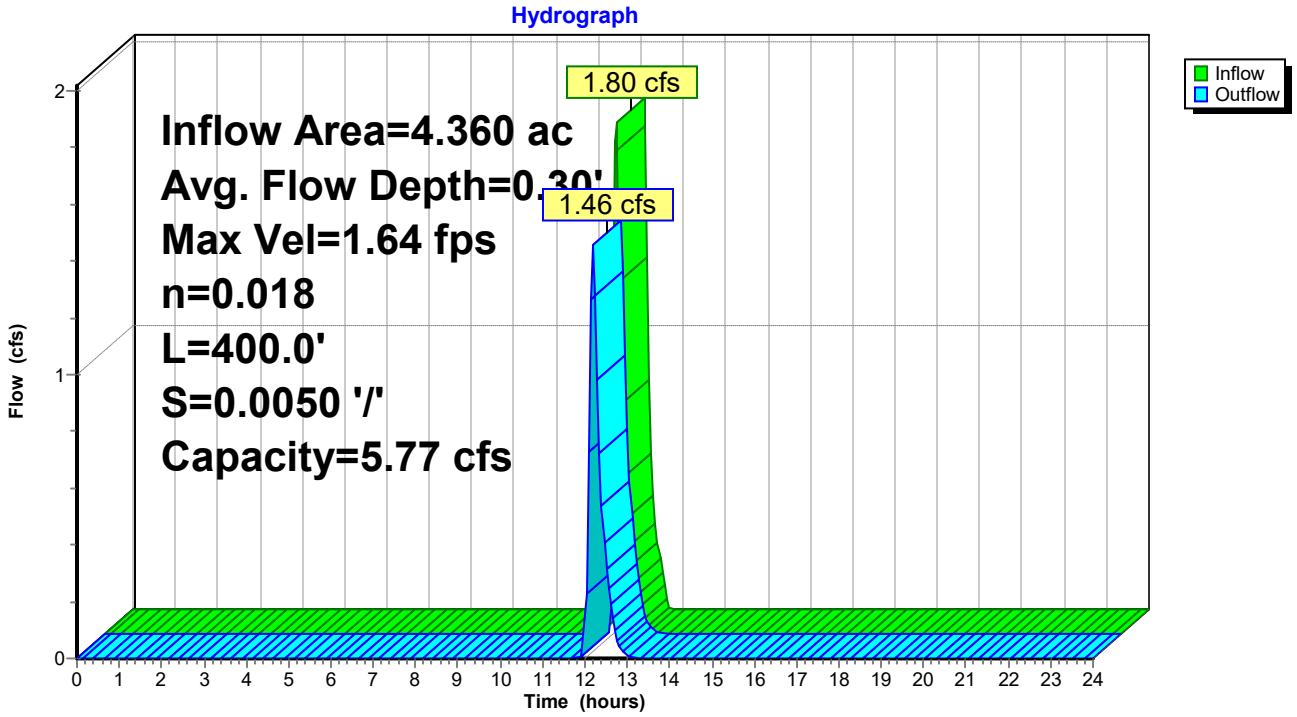
Reach 5R: Front Yard V Ditch



Summary for Pond 1P: Storage Pond

[92] Warning: Device #1 is above defined storage

Inflow Area = 4.360 ac, 28.53% Impervious, Inflow Depth = 0.10" for 10-year event
Inflow = 1.46 cfs @ 12.20 hrs, Volume= 0.037 af
Outflow = 1.34 cfs @ 12.24 hrs, Volume= 0.037 af, Atten= 8%, Lag= 2.5 min
Discarded = 1.34 cfs @ 12.24 hrs, Volume= 0.037 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 2R : Grassed Waterway

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 972.02' @ 12.24 hrs Surf.Area= 0.242 ac Storage= 0.004 af

Plug-Flow detention time= 2.4 min calculated for 0.036 af (100% of inflow)
Center-of-Mass det. time= 2.4 min (740.0 - 737.7)

Volume	Invert	Avail.Storage	Storage Description
#1	972.00'	0.293 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

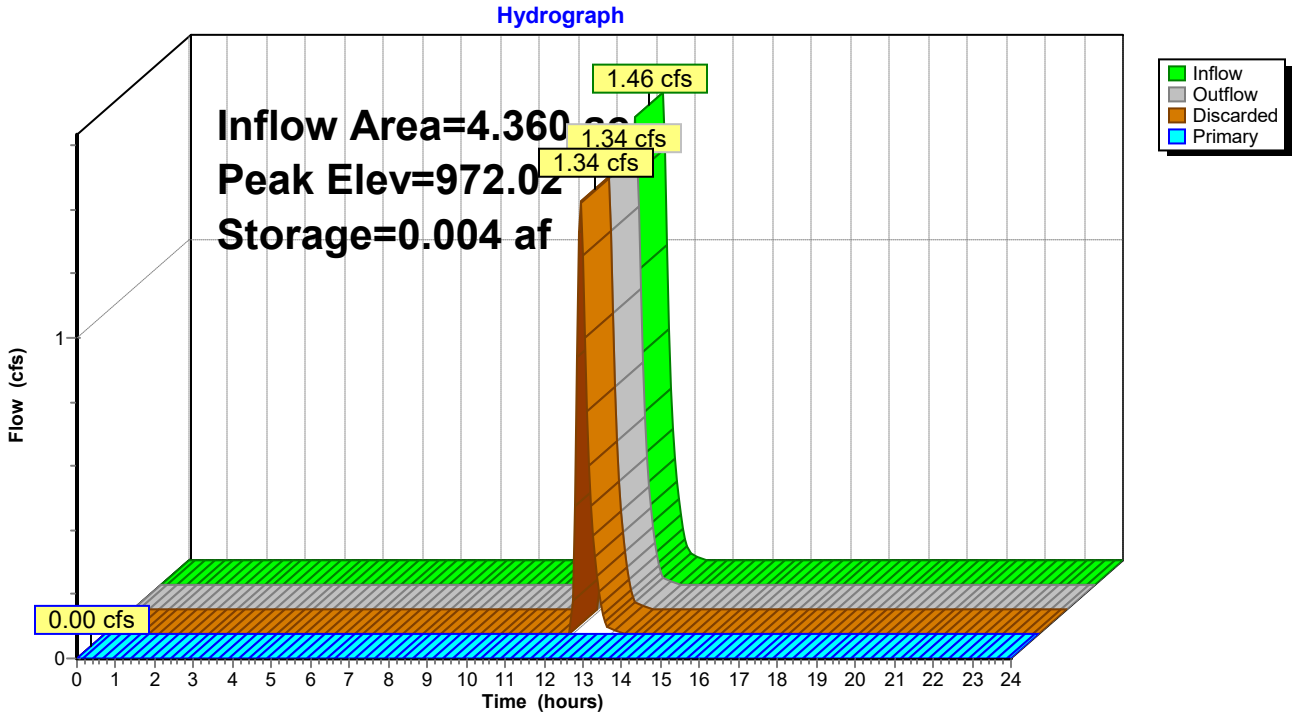
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
972.00	0.240	0.000	0.000
973.00	0.345	0.293	0.293

Device	Routing	Invert	Outlet Devices
#1	Primary	973.00'	**120.0 deg x 24.0' long x 3.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.48 (C= 3.10)
#2	Discarded	972.00'	**12.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 966.00'

Discarded OutFlow Max=2.94 cfs @ 12.24 hrs HW=972.02' (Free Discharge)
↑—**2=Exfiltration** (Controls 2.94 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=972.00' (Free Discharge)
↑—**1=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Pond 1P: Storage Pond

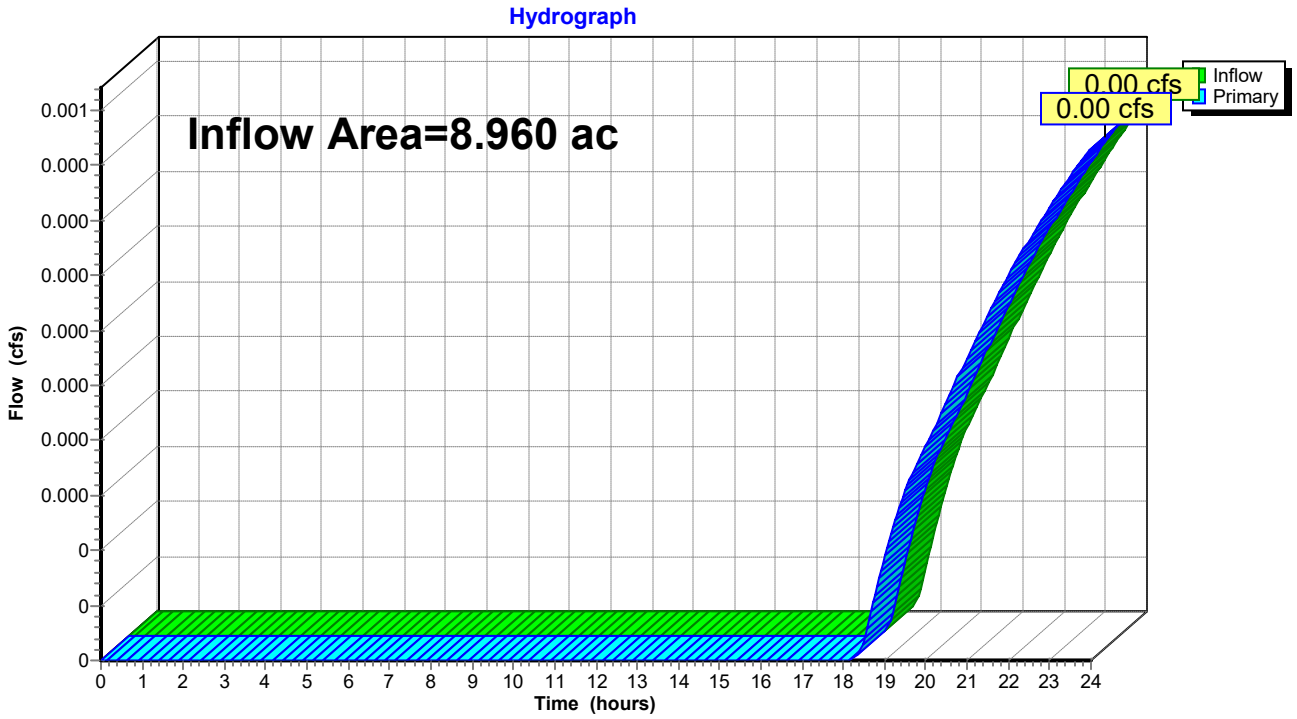


Summary for Link 4L: Outlet Runoff

Inflow Area = 8.960 ac, 20.67% Impervious, Inflow Depth > 0.00" for 10-year event
Inflow = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Outlet Runoff



Time span=0.00-24.00 hrs, dt=0.05 hrs, 481 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment OF-1: OF-1 Runoff Area=2.200 ac 32.82% Impervious Runoff Depth>1.84"
Flow Length=615' Slope=0.0050 '/' Tc=12.0 min CN=54 Runoff=5.45 cfs 0.337 af

Subcatchment OF-2: OF-2 Runoff Area=0.910 ac 21.98% Impervious Runoff Depth>1.22"
Flow Length=775' Tc=64.9 min CN=47 Runoff=0.43 cfs 0.093 af

Subcatchment OF-3: OF-3 Runoff Area=0.290 ac 0.00% Impervious Runoff Depth>0.25"
Flow Length=50' Slope=0.0100 '/' Tc=14.7 min CN=32 Runoff=0.01 cfs 0.006 af

Subcatchment PR-1: PR-1 Runoff Area=2.160 ac 24.17% Impervious Runoff Depth>1.17"
Flow Length=1,275' Tc=11.2 min UI Adjusted CN=46 Runoff=3.06 cfs 0.211 af

Subcatchment PR-2: PR-2 Runoff Area=0.430 ac 26.74% Impervious Runoff Depth>1.26"
Flow Length=225' Tc=3.6 min UI Adjusted CN=47 Runoff=0.94 cfs 0.045 af

Subcatchment PR-3: PR-3 Runoff Area=2.970 ac 9.87% Impervious Runoff Depth>0.85"
Flow Length=750' Tc=60.6 min UI Adjusted CN=42 Runoff=0.85 cfs 0.210 af

Reach 2.1R: Open Space North Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.025 L=65.0' S=0.0077 '/' Capacity=2,142.78 cfs Outflow=0.00 cfs 0.000 af

Reach 2R: Grassed Waterway Avg. Flow Depth=0.25' Max Vel=0.71 fps Inflow=0.38 cfs 0.003 af
n=0.025 L=400.0' S=0.0025 '/' Capacity=396.42 cfs Outflow=0.13 cfs 0.003 af

Reach 3R: Open Space South Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
n=0.025 L=250.0' S=0.0060 '/' Capacity=1,206.31 cfs Outflow=0.00 cfs 0.000 af

Reach 5R: Front Yard V Ditch Avg. Flow Depth=0.56' Max Vel=2.45 fps Inflow=8.07 cfs 0.244 af
n=0.018 L=400.0' S=0.0050 '/' Capacity=5.77 cfs Outflow=7.41 cfs 0.244 af

Pond 1P: Storage Pond Peak Elev=972.26' Storage=0.066 af Inflow=7.41 cfs 0.244 af
Discarded=3.37 cfs 0.244 af Primary=0.00 cfs 0.000 af Outflow=3.37 cfs 0.244 af

Link 4L: Outlet Runoff Inflow=0.01 cfs 0.006 af
Primary=0.01 cfs 0.006 af

Total Runoff Area = 8.960 ac Runoff Volume = 0.901 af Average Runoff Depth = 1.21"
79.33% Pervious = 7.108 ac 20.67% Impervious = 1.852 ac

Summary for Subcatchment OF-1: OF-1

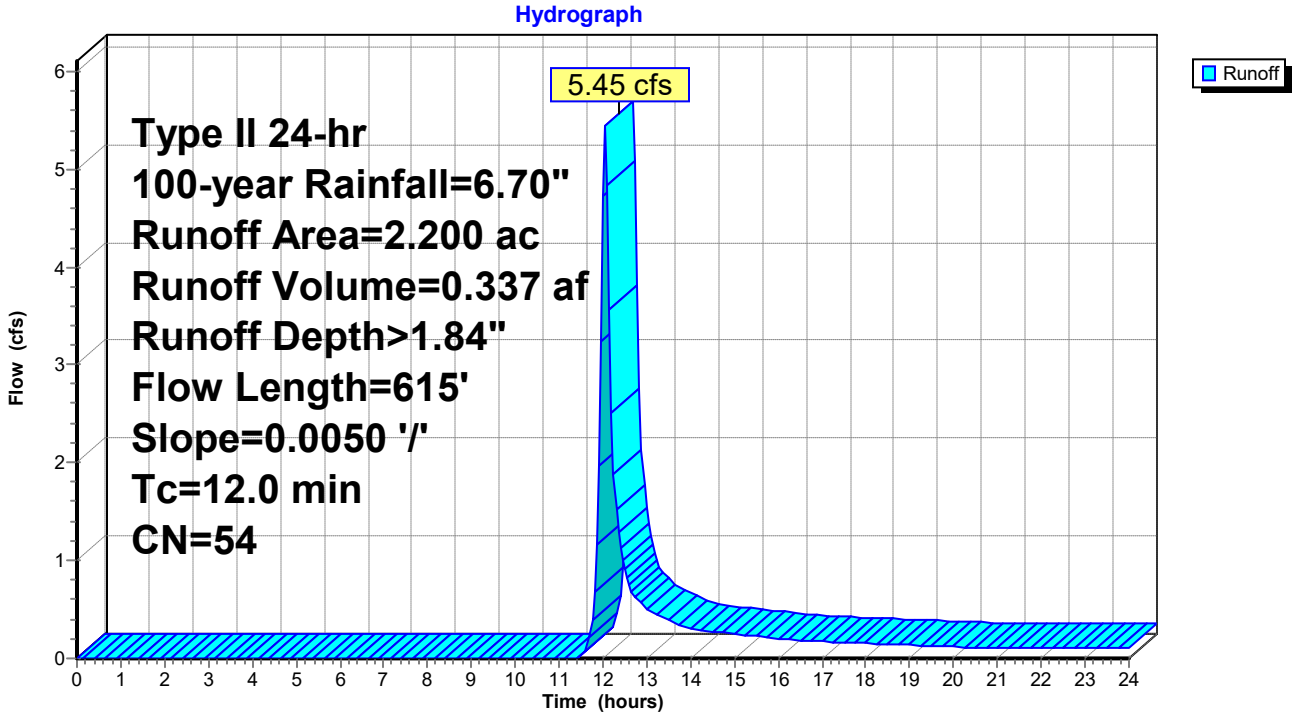
Runoff = 5.45 cfs @ 12.05 hrs, Volume= 0.337 af, Depth> 1.84"
Routed to Reach 5R : Front Yard V Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.70"

Area (ac)	CN	Description
1.478	32	Woods/grass comb., Good, HSG A
0.722	98	Paved roads w/curbs & sewers, HSG A
2.200	54	Weighted Average
1.478		67.18% Pervious Area
0.722		32.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	25	0.0050	0.08		**Sheet Flow, Grassed Sheeting** Grass: Short n= 0.150 P2= 3.90"
6.9	590	0.0050	1.44		**Shallow Concentrated Flow, Paved Conc** Paved Kv= 20.3 fps
12.0	615	Total			

Subcatchment OF-1: OF-1



Summary for Subcatchment OF-2: OF-2

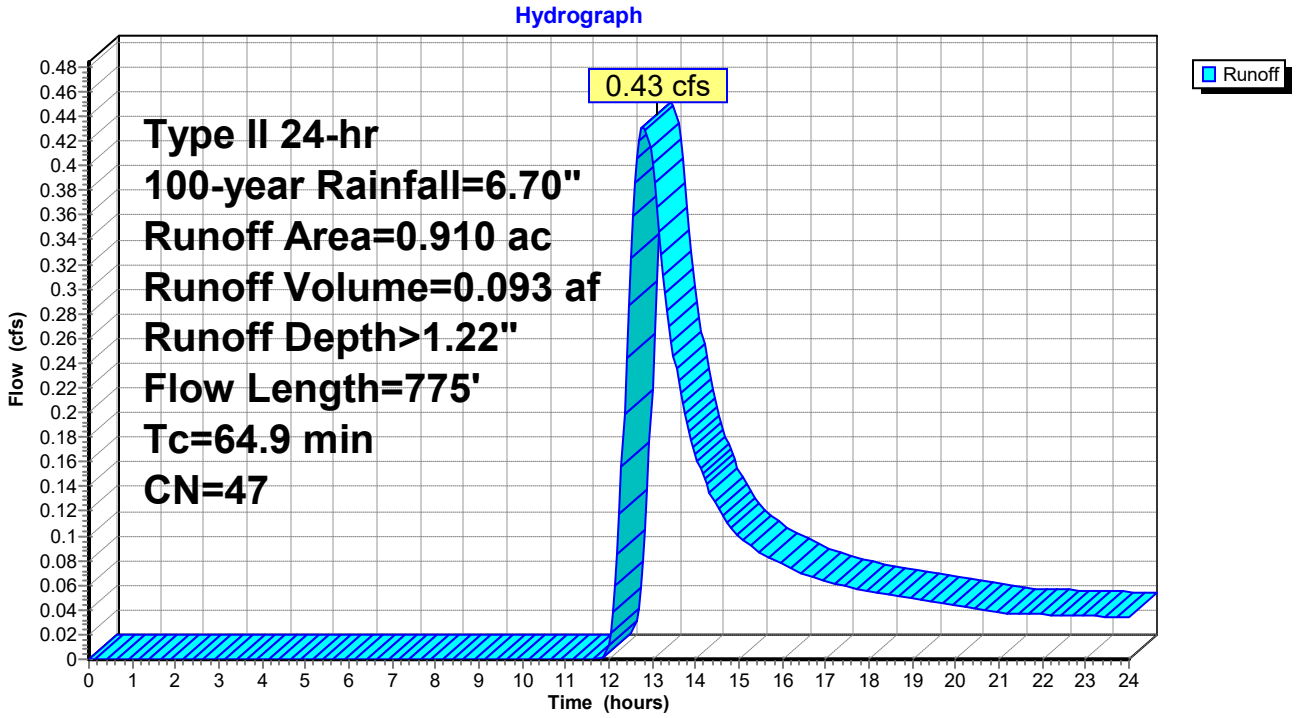
Runoff = 0.43 cfs @ 12.80 hrs, Volume= 0.093 af, Depth> 1.22"
Routed to Reach 3R : Open Space South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.70"

Area (ac)	CN	Description
0.710	32	Woods/grass comb., Good, HSG A
0.200	98	Paved parking, HSG D
0.910	47	Weighted Average
0.710		78.02% Pervious Area
0.200		21.98% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	25	0.0100	0.11		**Sheet Flow, Grassed Sheeting** Grass: Short n= 0.150 P2= 3.90"
3.4	350	0.0073	1.73		**Shallow Concentrated Flow, Paved Conc** Paved Kv= 20.3 fps
3.4	100	0.0050	0.49		**Shallow Concentrated Flow, Grassed ROW** Short Grass Pasture Kv= 7.0 fps
54.2	300	0.0050	0.09		**Sheet Flow, Open Space** Grass: Dense n= 0.240 P2= 3.90"
64.9	775	Total			

Subcatchment OF-2: OF-2



Summary for Subcatchment OF-3: OF-3

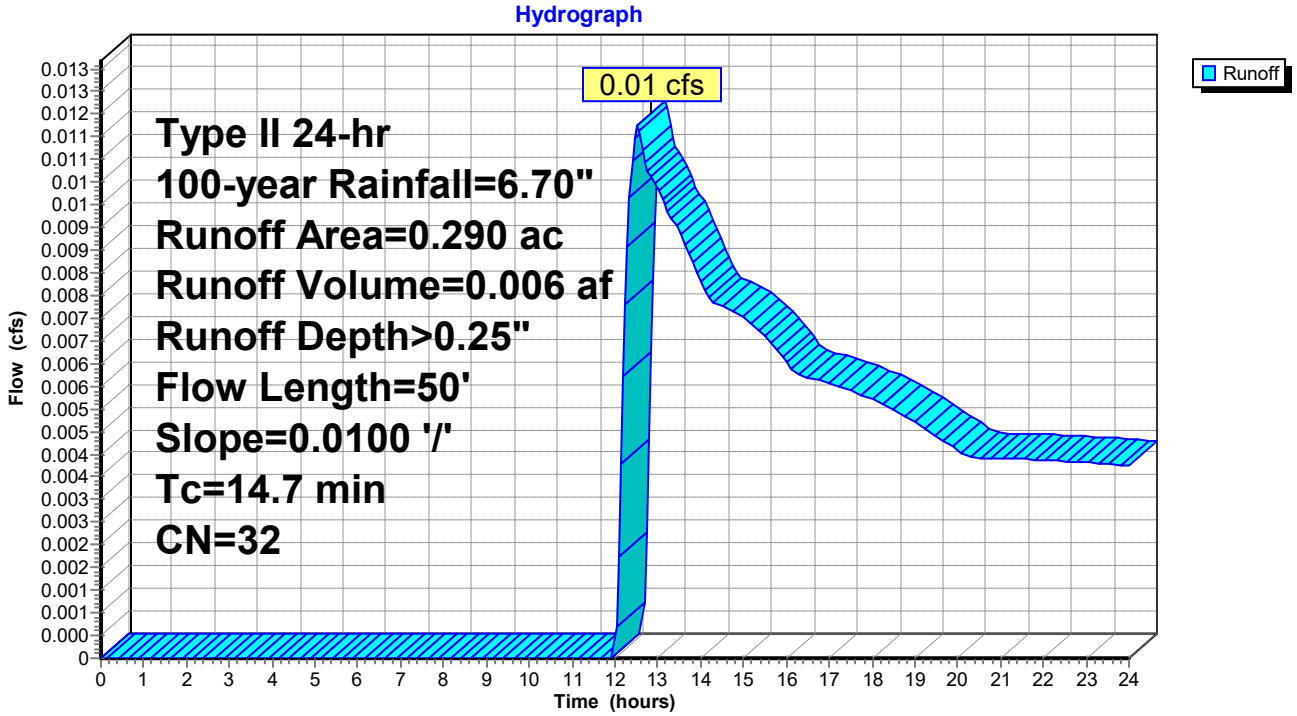
Runoff = 0.01 cfs @ 12.52 hrs, Volume= 0.006 af, Depth> 0.25"
Routed to Link 4L : Outlet Runoff

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.70"

Area (ac)	CN	Description
0.290	32	Woods/grass comb., Good, HSG A
0.290		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0100	0.06		**Sheet Flow, Grassed Sheeting** Woods: Light underbrush n= 0.400 P2= 3.90"

Subcatchment OF-3: OF-3



Summary for Subcatchment PR-1: PR-1

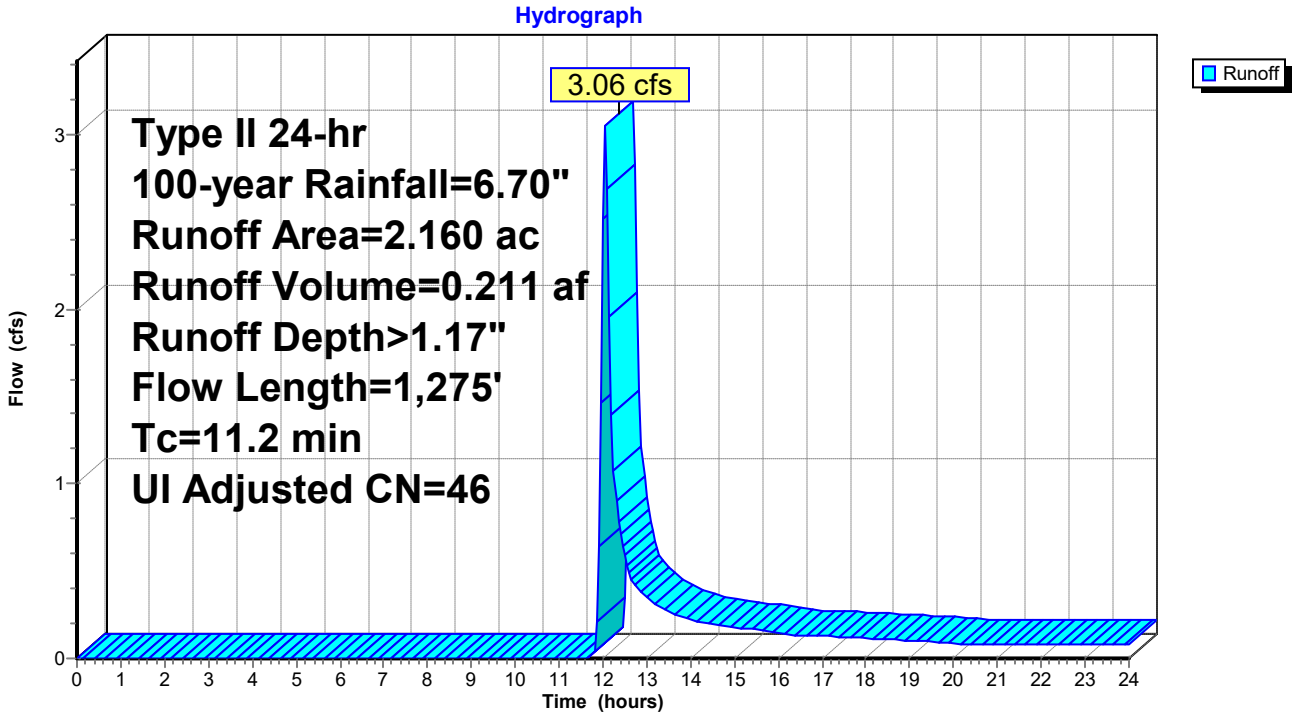
Runoff = 3.06 cfs @ 12.05 hrs, Volume= 0.211 af, Depth> 1.17"
Routed to Reach 5R : Front Yard V Ditch

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.70"

Area (ac)	CN	Adj	Description
0.522	98		Unconnected roofs, HSG A
1.638	39		>75% Grass cover, Good, HSG A
2.160	53	46	Weighted Average, UI Adjusted
1.638			75.83% Pervious Area
0.522			24.17% Impervious Area
0.522			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	25	0.1000	2.19		**Sheet Flow, Roof Sheeting** Smooth surfaces n= 0.011 P2= 3.90"
4.5	550	0.0100	2.03		**Shallow Concentrated Flow, Paved Shallow Conc** Paved Kv= 20.3 fps
0.9	100	0.0150	1.84		**Shallow Concentrated Flow, Swale Flow** Grassed Waterway Kv= 15.0 fps
5.6	600		1.79		**Lake or Reservoir, Pond Travel** Mean Depth= 0.10'
11.2	1,275	Total			

Subcatchment PR-1: PR-1



Summary for Subcatchment PR-2: PR-2

[49] Hint: Tc<2dt may require smaller dt

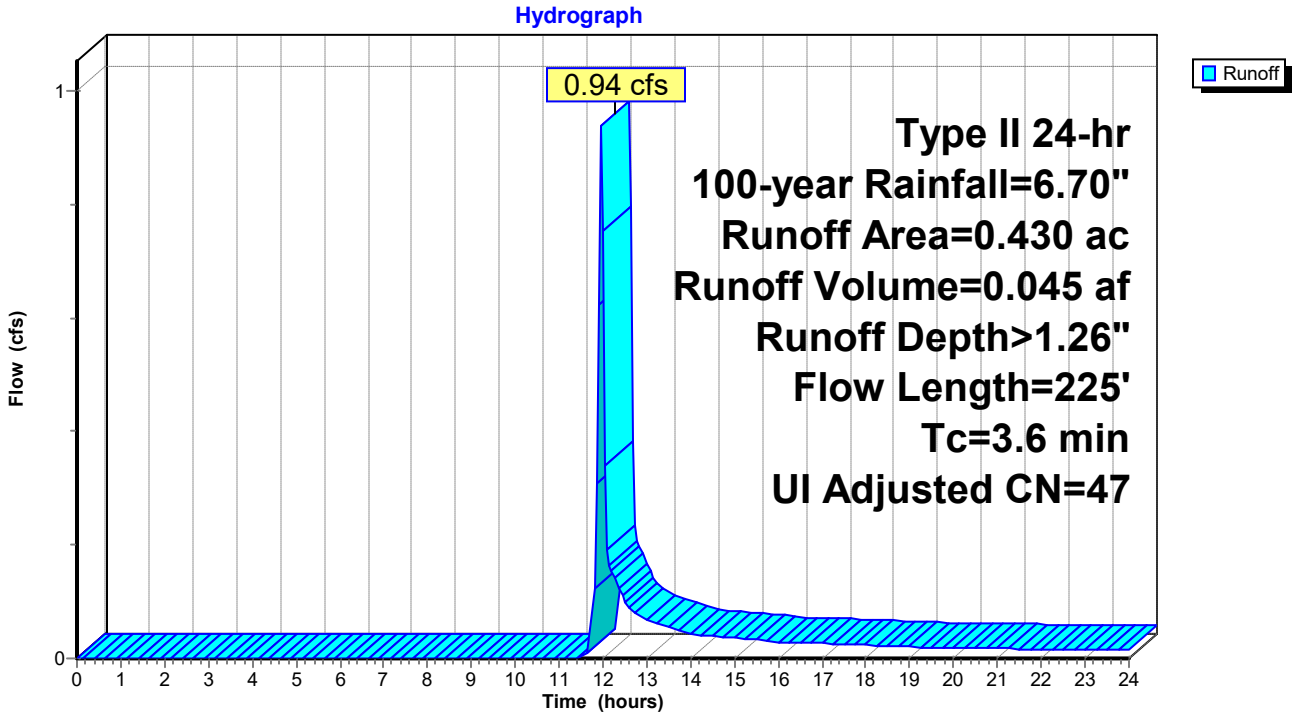
Runoff = 0.94 cfs @ 11.96 hrs, Volume= 0.045 af, Depth> 1.26"
Routed to Reach 2R : Grassed Waterway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.70"

Area (ac)	CN	Adj	Description
0.115	98		Unconnected roofs, HSG A
0.315	39		>75% Grass cover, Good, HSG A
0.430	55	47	Weighted Average, UI Adjusted
0.315			73.26% Pervious Area
0.115			26.74% Impervious Area
0.115			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	25	0.0100	0.87		**Sheet Flow, Roof Sheeting** Smooth surfaces n= 0.011 P2= 3.90"
1.7	50	0.3000	0.48		**Sheet Flow, Grassed Sheeting** Grass: Short n= 0.150 P2= 3.90"
1.4	150	0.0150	1.84		**Shallow Concentrated Flow, Grassed Waterway** Grassed Waterway Kv= 15.0 fps
3.6	225	Total			

Subcatchment PR-2: PR-2



Summary for Subcatchment PR-3: PR-3

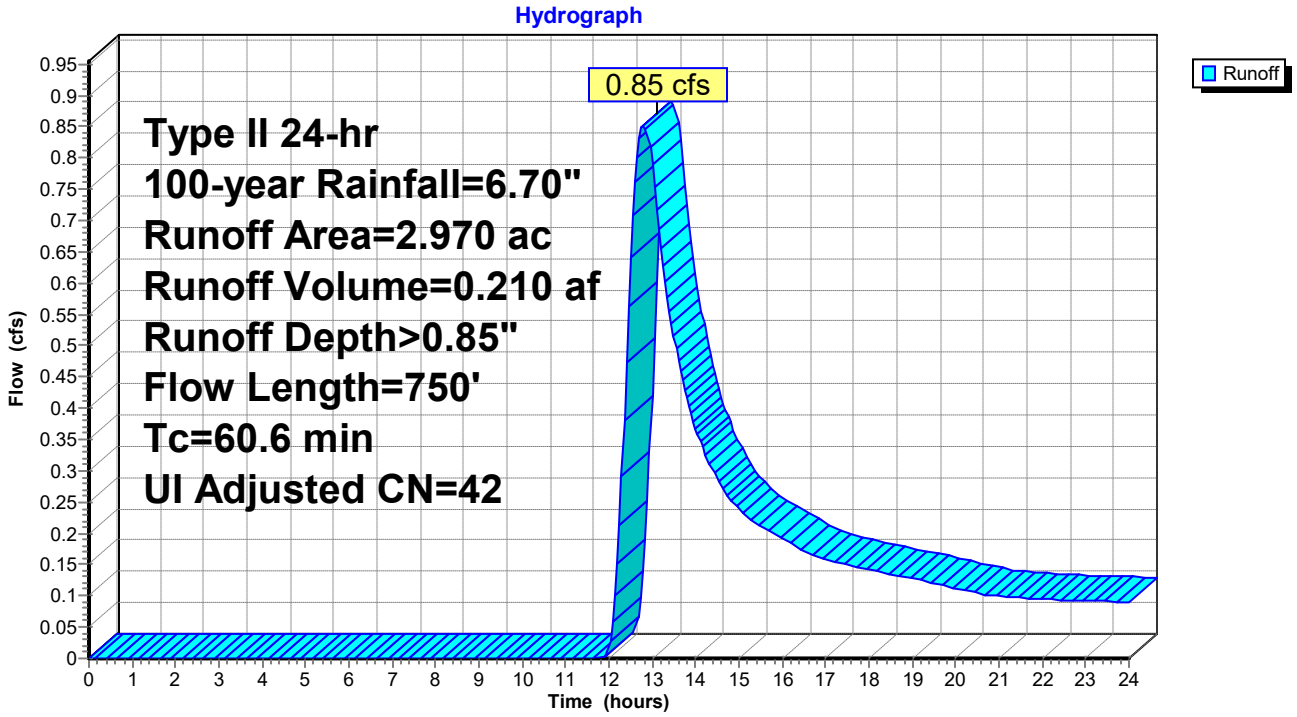
Runoff = 0.85 cfs @ 12.80 hrs, Volume= 0.210 af, Depth> 0.85"
Routed to Reach 3R : Open Space South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-year Rainfall=6.70"

Area (ac)	CN	Adj	Description
0.293	98		Unconnected roofs, HSG D
2.677	39		>75% Grass cover, Good, HSG A
2.970	45	42	Weighted Average, UI Adjusted
2.677			90.13% Pervious Area
0.293			9.87% Impervious Area
0.293			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	25	0.0100	0.87		**Sheet Flow, Roof Sheeting** Smooth surfaces n= 0.011 P2= 3.90"
1.5	25	0.1000	0.27		**Sheet Flow, Grassed Sheeting** Grass: Short n= 0.150 P2= 3.90"
2.8	300	0.0075	1.76		**Shallow Concentrated Flow, Paved Shallow Conc** Paved Kv= 20.3 fps
1.6	100	0.0050	1.06		**Shallow Concentrated Flow, Grassed Waterway** Grassed Waterway Kv= 15.0 fps
54.2	300	0.0050	0.09		**Sheet Flow, Open Space** Grass: Dense n= 0.240 P2= 3.90"
60.6	750	Total			

Subcatchment PR-3: PR-3



Summary for Reach 2.1R: Open Space North

0.65 cfs exfilltration loss for Wetted Perimeter at 10-year storm,

x cfs / sf * 43,200 = in / hr exfiltration rate conversion

x cfs / (2,340 sf WP at 10 year storm) * 43,200 = ~ 12.00 in / hr (exfiltration rate from hydraulic conductivy rating of local soil survey)

= 0.65 cfs for 10-year storm event.

Inflow Area = 4.790 ac, 28.37% Impervious, Inflow Depth = 0.00" for 100-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Incl. 0.65 cfs Inflow Loss
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach 3R : Open Space South

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 4.00' Flow Area= 192.0 sf, Capacity= 2,142.78 cfs

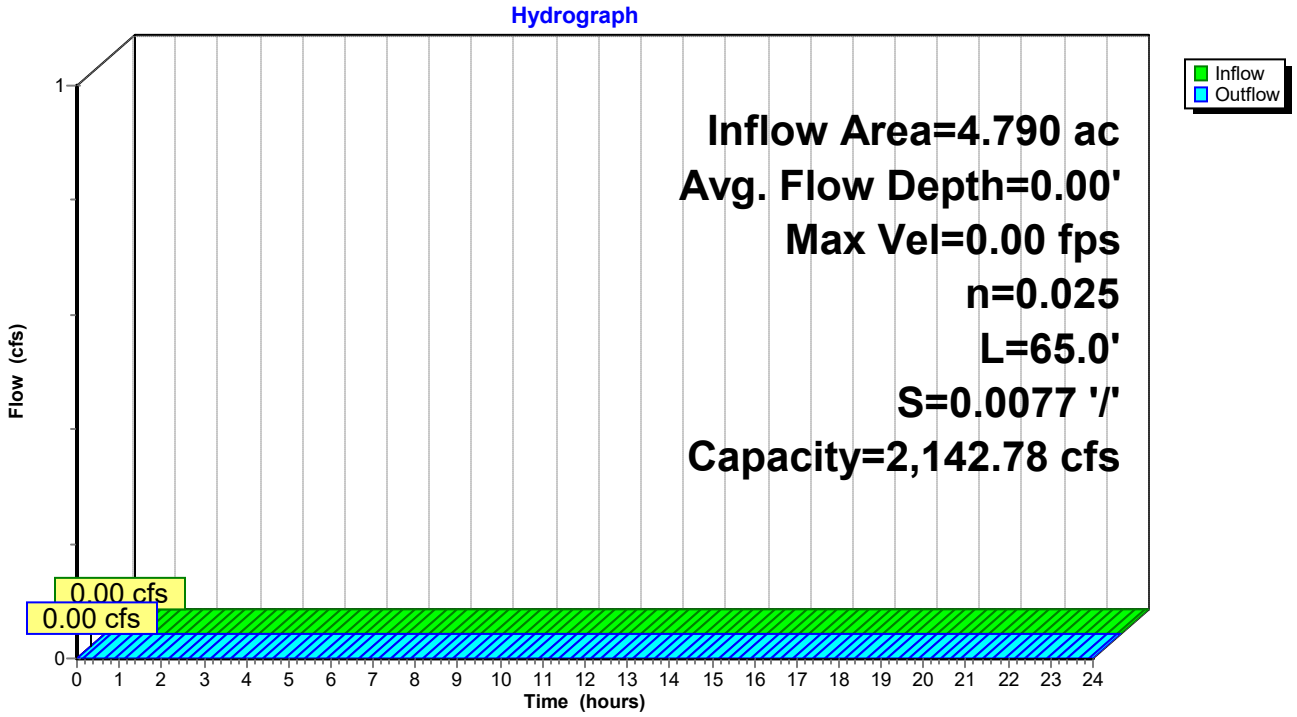
Custom cross-section, Length= 65.0' Slope= 0.0077 '/'
Constant n= 0.025 Short grass
Inlet Invert= 972.00', Outlet Invert= 971.50'

‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	976.00	0.00
12.00	972.00	4.00
48.00	972.00	4.00
60.00	976.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Width (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	36.0	0.0	0	0.00
4.00	192.0	61.3	60.0	12,480	2,142.78

Reach 2.1R: Open Space North



Summary for Reach 2R: Grassed Waterway

0.56 cfs exfilltration loss for Wetted Perimeter at 10-year storm,

x cfs / sf * 43,200 = in / hr exfiltration rate conversion

x cfs / (2,016 sf WP at 10 year storm) * 43,200 = ~ 12.00 in / hr (exfiltration rate from hydraulic conductivy rating of local soil survey)

= 0.56 cfs for 10-year storm event.

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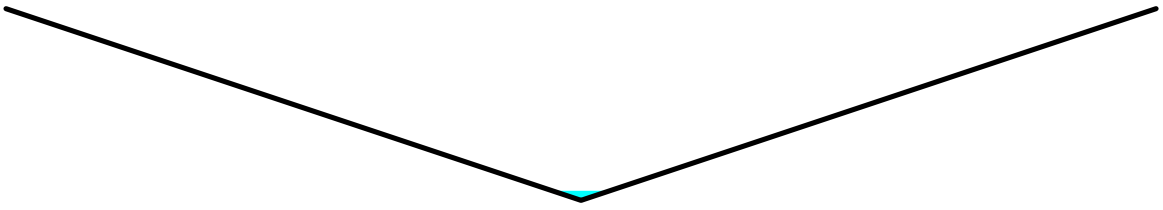
[81] Warning: Exceeded Pond 1P by 1.23' @ 12.00 hrs

Inflow Area = 4.790 ac, 28.37% Impervious, Inflow Depth = 0.01" for 100-year event
Inflow = 0.38 cfs @ 11.96 hrs, Volume= 0.003 af, Incl. 0.56 cfs Inflow Loss
Outflow = 0.13 cfs @ 12.17 hrs, Volume= 0.003 af, Atten= 66%, Lag= 13.0 min
Routed to Reach 2.1R : Open Space North

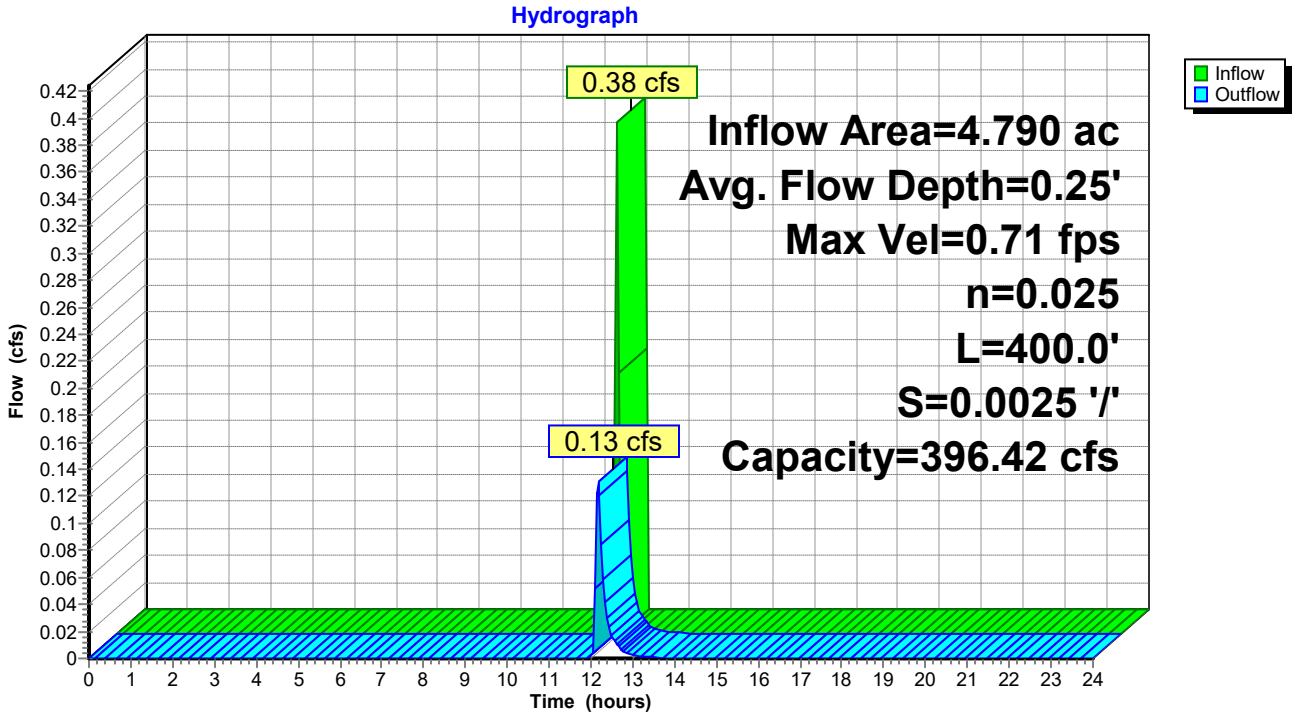
Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.71 fps, Min. Travel Time= 9.3 min
Avg. Velocity = 0.31 fps, Avg. Travel Time= 21.4 min

Peak Storage= 76 cf @ 12.02 hrs
Average Depth at Peak Storage= 0.25' , Surface Width= 1.51'
Bank-Full Depth= 5.00' Flow Area= 75.0 sf, Capacity= 396.42 cfs

0.00' x 5.00' deep channel, n= 0.025 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 30.00'
Length= 400.0' Slope= 0.0025 '/'
Inlet Invert= 973.00', Outlet Invert= 972.00'



Reach 2R: Grassed Waterway



Summary for Reach 3R: Open Space South

3.64 cfs exfilltration loss for Wetted Perimeter at 10-year storm,

x cfs / sf * 43,200 = in / hr exfiltration rate conversion

x cfs / (13,125 sf WP at 10 year storm) * 43,200 = ~ 12.00 in / hr (exfiltration rate from hydraulic conductivy rating of local soil survey)

= 3.64 cfs for 10-year storm event.

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[63] Warning: Exceeded Reach 2.1R INLET depth by 3.00' @ 0.00 hrs

Inflow Area = 8.670 ac, 21.36% Impervious, Inflow Depth = 0.00" for 100-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Incl. 3.64 cfs Inflow Loss
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Outlet Runoff

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 2.50' Flow Area= 159.4 sf, Capacity= 1,206.31 cfs

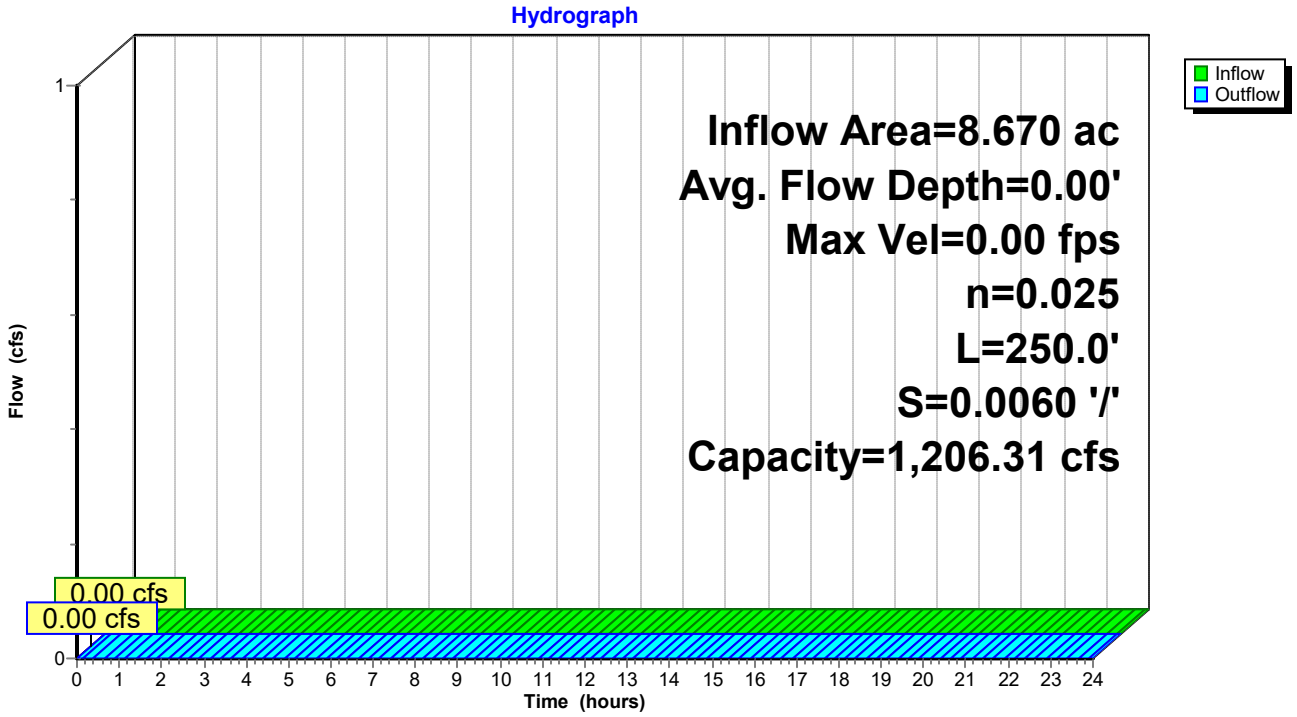
Custom cross-section, Length= 250.0' Slope= 0.0060 '/'
Constant n= 0.025 Short grass
Inlet Invert= 975.00', Outlet Invert= 973.50'

‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	976.00	0.00
7.50	973.50	2.50
60.00	973.50	2.50
75.00	976.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Width (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	52.5	0.0	0	0.00
2.50	159.4	75.6	75.0	39,844	1,206.31

Reach 3R: Open Space South



Summary for Reach 5R: Front Yard V Ditch

0.44 cfs exfilltration loss for Wetted Perimeter at 10-year storm,

x cfs / sf * 43,200 = in / hr exfiltration rate conversion

x cfs / (1,600 sf WP at 10 year storm) * 43,200 = ~ 12.00 in / hr (exfiltration rate from hydraulic conductivy rating of local soil survey)

= 0.56 cfs for 10-year storm event.

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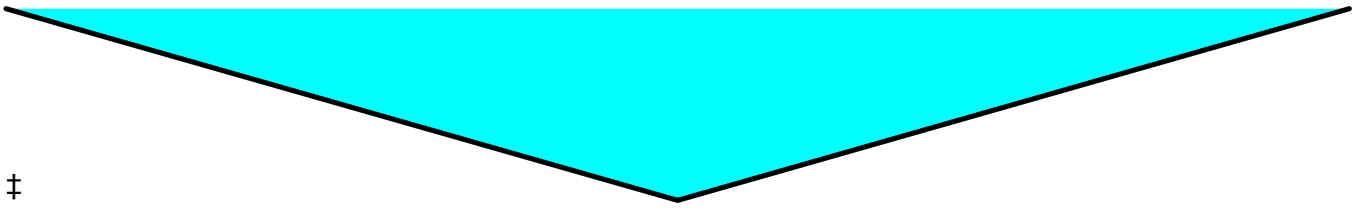
[91] Warning: Storage range exceeded by 0.06'
[55] Hint: Peak inflow is 140% of Manning's capacity

Inflow Area = 4.360 ac, 28.53% Impervious, Inflow Depth = 0.67" for 100-year event
Inflow = 8.07 cfs @ 12.05 hrs, Volume= 0.244 af, Incl. 0.44 cfs Inflow Loss
Outflow = 7.41 cfs @ 12.14 hrs, Volume= 0.244 af, Atten= 8%, Lag= 5.0 min
Routed to Pond 1P : Storage Pond

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.45 fps, Min. Travel Time= 2.7 min
Avg. Velocity = 0.67 fps, Avg. Travel Time= 10.0 min

Peak Storage= 1,224 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.56' , Surface Width= 11.12'
Bank-Full Depth= 0.50' Flow Area= 2.5 sf, Capacity= 5.77 cfs

0.00' x 0.50' deep channel, n= 0.018 Earth, clean & straight
Side Slope Z-value= 10.0 '/' Top Width= 10.00'
Length= 400.0' Slope= 0.0050 '/'
Inlet Invert= 975.00', Outlet Invert= 973.00'



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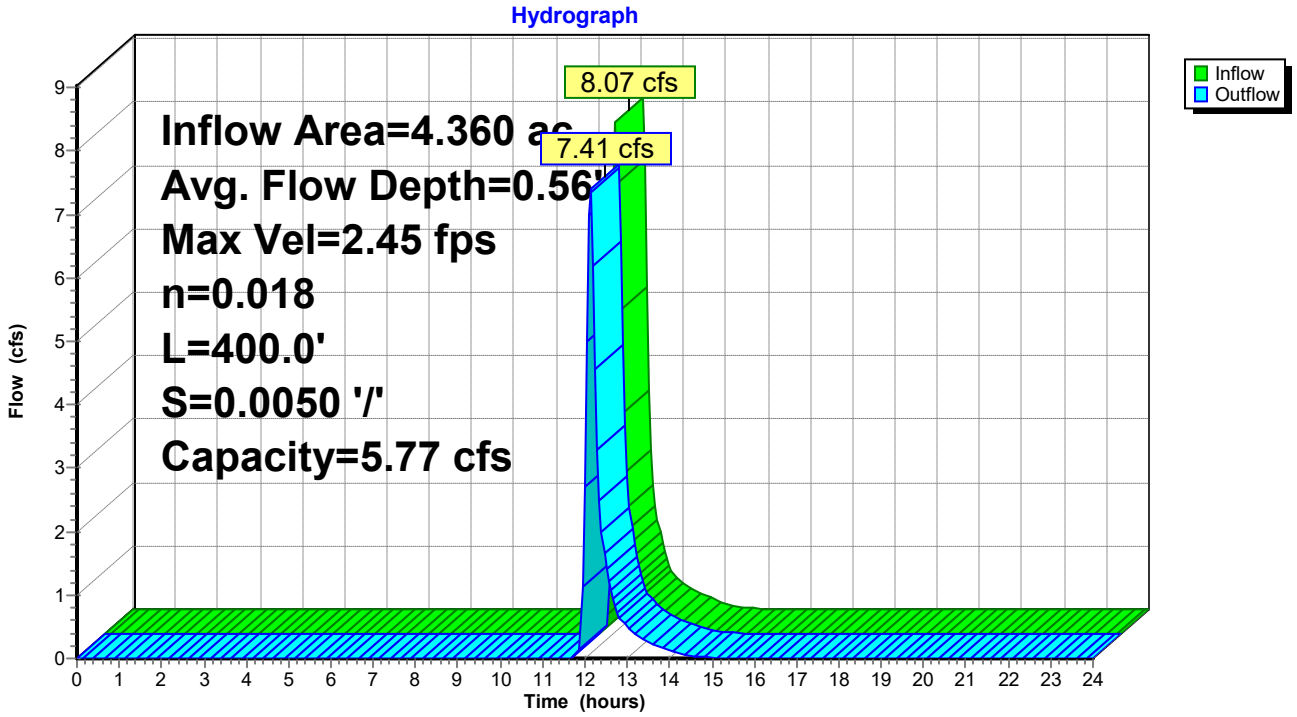
Reach 5R: Front Yard V Ditch



Summary for Pond 1P: Storage Pond

[92] Warning: Device #1 is above defined storage

Inflow Area = 4.360 ac, 28.53% Impervious, Inflow Depth = 0.67" for 100-year event
Inflow = 7.41 cfs @ 12.14 hrs, Volume= 0.244 af
Outflow = 3.37 cfs @ 12.30 hrs, Volume= 0.244 af, Atten= 55%, Lag= 9.9 min
Discarded = 3.37 cfs @ 12.30 hrs, Volume= 0.244 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 2R : Grassed Waterway

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 972.26' @ 12.30 hrs Surf.Area= 0.267 ac Storage= 0.066 af

Plug-Flow detention time= 7.8 min calculated for 0.244 af (100% of inflow)
Center-of-Mass det. time= 7.8 min (752.0 - 744.2)

Volume	Invert	Avail.Storage	Storage Description
#1	972.00'	0.293 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

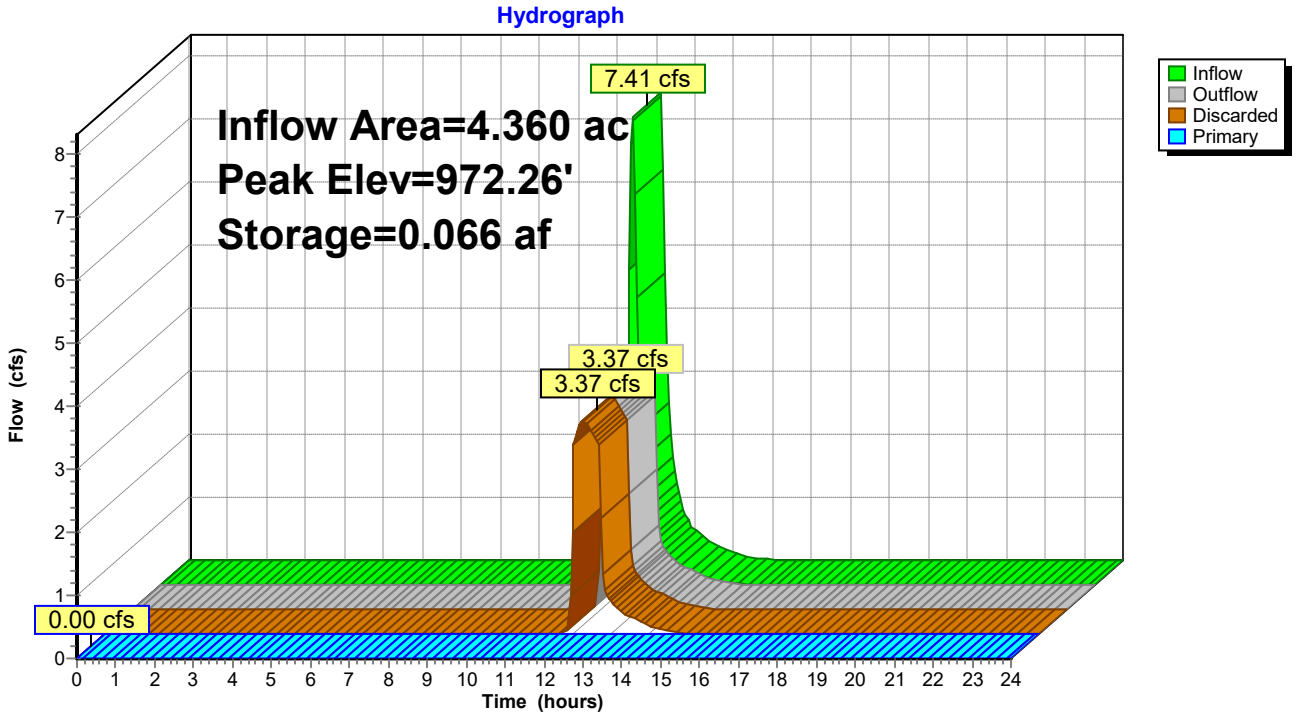
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
972.00	0.240	0.000	0.000
973.00	0.345	0.293	0.293

Device	Routing	Invert	Outlet Devices
#1	Primary	973.00'	**120.0 deg x 24.0' long x 3.00' rise Sharp-Crested Vee/Trap Weir** Cv= 2.48 (C= 3.10)
#2	Discarded	972.00'	**12.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 966.00'

Discarded OutFlow Max=3.37 cfs @ 12.30 hrs HW=972.26' (Free Discharge)
↑—**2=Exfiltration** (Controls 3.37 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=972.00' (Free Discharge)
↑—**1=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

Pond 1P: Storage Pond

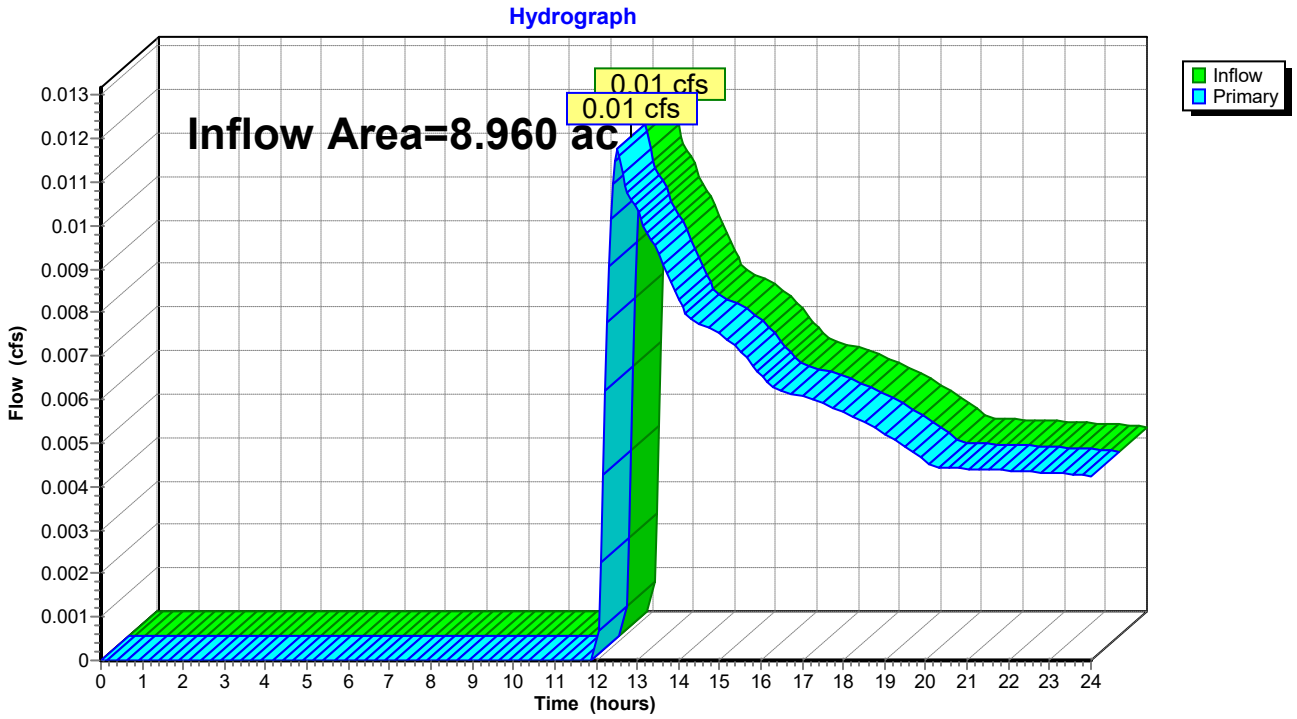


Summary for Link 4L: Outlet Runoff

Inflow Area = 8.960 ac, 20.67% Impervious, Inflow Depth > 0.01" for 100-year event
Inflow = 0.01 cfs @ 12.52 hrs, Volume= 0.006 af
Primary = 0.01 cfs @ 12.52 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Link 4L: Outlet Runoff



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166.42 PLANNED UNIT DEVELOPMENT DISTRICT (PUD).

1. Purpose. The Planned Unit Development (PUD) Overlay District is intended to provide flexibility in the design of planned projects; to permit innovation in project design that incorporates open space and other amenities; and to insure compatibility of developments with the surrounding urban environment. The PUD District may be used in combination with any base district specified in this ordinance. The PUD District, which is adopted by the Council with the recommendation of the Planning and Zoning Commission, assures specific development standards for each designated project.

2. Permitted Uses. Uses permitted in a PUD Overlay District are those permitted in the underlying base district. A PUD also may be combined with an MU Mixed Use District to allow a combination of use types not anticipated by conventional base districts.

3. Site Development Regulations. Site development regulations are developed individually for each Planned Unit Development District, but must comply with the minimum or maximum standards established for the base district, with the following exceptions:

A. Lot area and lot width are not restricted, provided that the maximum density allowed for each base district is not exceeded.

B. Maximum building coverage shall be the smaller of the allowed building coverage in the base district, or 60 percent.

C. Setback requirements may be varied according to the specific Planned Unit Development plan.

4. Access to Public Streets. Each PUD District must abut a public street or other public right-of-way for at least 100 feet and allow access from that street.

5. Application Process. The application for a Planned Unit Development District shall include the following information:

A. A detailed site map, including:

(1) A boundary survey.

(2) Site dimensions.

(3) Contour lines at no greater than one-foot intervals.

(4) Adjacent public rights-of-way, transportation routes, and pedestrian or bicycle systems.

(5) Description of adjacent land uses.

(6) Utility service to the site and easements through the site.

(7) Description of other site features, including drainage, soils, or other considerations that may affect development.

B. A development plan, including:

(1) A land use plan designating specific uses for the site and establishing site development regulations, including setback, height, building coverage, impervious coverage, density, and floor area ratio requirements.

(2) A site layout, including the location of proposed buildings, parking, open space, and other facilities.

(3) Location, capacity, and conceptual design of parking facilities.

(4) Description of the use of individual buildings.

(5) Schematic architectural plans and elevations sufficient to indicate a building height, bulk, materials, and general architectural design.

(6) A site development and landscaping plan, showing building locations, or building envelopes; site improvements; public or common open spaces; community facilities; significant visual features; and typical landscape plans.

(7) Vehicular and pedestrian circulation plan, including relationship to external transportation systems.

(8) Schematic building elevations and sections if required to describe the project.

(9) Grading plans.

(10) Proposed sewer and utility improvements.

(11) Location, sizes, and types of all proposed signage.

C. A statistical summary of the project, including gross site area, net site area, number of housing units by type, gross floor area of other uses, total amount of parking, and building and impervious surface percentages.

6 Adoption of District.

A. The Planning and Zoning Commission and Council shall review and evaluate each Planned Unit Development application. The City may impose reasonable conditions, as deemed necessary to ensure that a PUD shall be compatible with adjacent land uses, will not overburden public services and facilities and will not be detrimental to public health, safety, and welfare.

B. The Planning and Zoning Commission, after proper notice, shall hold a public hearing and act upon each application.

C. The Planning and Zoning Commission may recommend amendments to PUD district applications.

D. The recommendation of the Planning and Zoning Commission shall be transmitted to the Council for final action.

E. The Council, after proper notice, shall hold a public hearing and act upon any ordinance establishing a PUD Planned Unit Development Overlay District. Proper notice shall mean the same notice established for any other zoning amendment.

F. An ordinance adopting a Planned Unit Development Overlay Zoning District shall require a favorable simple majority of the Council for approval.

G. Upon approval by the Council, the development plan shall become a part of the ordinance creating or amending the PUD District. All approved plans shall be filed with the Clerk.

7. Amendment Procedure. Major amendments to the development plan must be approved according to the same procedure set forth in Section 165.10.

8. Building Permits. The City shall not issue a Building Permit, certificate of occupancy, or other permit for a building, structure, or use within a PUD District unless it is in compliance with the approved development plan and any approved amendments.

9. Termination of PUD District. If no substantial development has taken place in a Planned Unit Development District for three years following approval of the district, the Planning and Zoning Commission shall reconsider the zoning of the property and may, on its own motion, initiate an application for rezoning the property.