



AGENDA
REGULAR MEETING OF THE
WINDSOR HEIGHTS CITY COUNCIL
Monday, November 4, 2024 - 6:00 PM
WINDSOR HEIGHTS COUNCIL CHAMBERS - 1133 66th ST
ZOOM: <https://us02web.zoom.us/j/7832856334>
Meeting ID: 783 285 6334

Notice to the Public: If you would like the supporting documents and information, please call City Hall by noon the day of the meeting. Copies of City Council Agendas are free to the public. In consideration of all, if you have a cell phone, please turn it off or put it on silent ring. The use of obscene and vulgar language, hate speech, racial slurs, slanderous comments, and any other disruptive behavior during the Council meeting will not be tolerated and the offender may be barred by the presiding officer from further comment before the Council during the meeting and/or removed from the meeting.

1. **Call to Order/Roll Call/Pledge of Allegiance**
2. **Approval of the Agenda**
3. **Presentation from DART**
 - A. Presentation Materials
4. **Public Forum:** This is time set aside for comments from the public on topics of City business other than those listed on the agenda. No action may be taken. Please come to the podium, state your name and address for the record and keep your comments to no more than 5 minutes.
5. **Consent Agenda:** Any item on the Consent Agenda may be removed for separate consideration.
 - A. Approve Minutes of the Regular Council Meeting on October 21, 2024
 - B. Approve Financial Reports
 - C. Approve Liquor License - Blue Agave Brunch & Dinner - 6587 University Avenue
 - D. Approve and Accept the Termination of Central Iowa Regional Drinking Water Commission
 - E. Approve a No Parking Sign on Sunset Terrace
6. **Action Items:**
 - A. Consider Resolution No. 2024-66 - A Resolution Waiving CC Fees for a Recurring Free-Will Donation Community Yoga Class
 - B. Discussion of Bridges of Iowa Colby Park Bridge Concept
 - C. Consideration of Resolution No. 2024 - 65 - A Resolution Approving The Site Plan For 6301 University Avenue – Windsor Presbyterian Church Parking Lot

The agenda was posted on the official bulletin boards, posted to www.windsorheights.org, and city social media platforms in compliance with the requirements of city ordinances and the open meetings law. Scan the QR Code to visit our online Agenda Center. Select the meeting date and view the agenda packet including supporting documents and staff reports.



7. **Reports:**

A. Mayor, Council Reports and Committee Updates, and Administration Reports

8. **Closed Session** Per Iowa Code §21.5.1 (j): To discuss the purchase of particular real estate only where premature disclosure could be reasonably expected to increase the price the governmental body would have to pay for that property. The minutes and the tape recording of a session closed under this paragraph shall be available for public examination when the transaction discussed is completed.

9. **Adjourn**

The agenda was posted on the official bulletin boards, posted to www.windsorheights.org, and city social media platforms in compliance with the requirements of city ordinances and the open meetings law. Scan the QR Code to visit our online Agenda Center. Select the meeting date and view the agenda packet including supporting documents and staff reports.





**STAFF REPORT
CITY COUNCIL**
November 4, 2024

TO: CITY COUNCIL
FROM: Adam Strait, City Clerk
SUBJECT: Presentation Materials

GENERAL INFORMATION

ATTACHMENTS

1. Windsor Heights City Council

DART in Windsor Heights

Economic Impact of Public Transit &
Our Commitment to Your Community

November 2024

Amanda Wanke, CEO

Public Transit is an Economic Driver

- Local business spending
- Workforce recruitment and retention
- Job creation
- Commercial development



Nearly 9 out of 10 trips on DART are for people to make or spend money.



Public Transit Fosters Social Equity and Well-Being

DART helps people:

- Work
- Get health care
- Go to school
- Earn a college degree
- Afford housing
- Access food

Who uses DART?

Total household income



No valid driver's
license

61%



Regional Public Transit is Important to Compete with Other Midwestern Cities

Corridor communities look toward new public transit opportunities

Regional transit discussed at The Gazette's Iowa Ideas conference

 Megan Woolard

Oct. 10, 2024 6:43 pm, Updated: Oct. 14, 2024 2:59 pm

 Why you can trust The Gazette



Work begins on Omaha streetcar project



POLITICS

Metro's ambitious plan would expand public transit to underserved parts of Omaha

Jessica Wade | Updated May 26, 2023

If Metro's planned projects move forward, there will be a "significant increase" in the amount of transit service operated in the Omaha area, with more than 2,000 additional service hours each week.



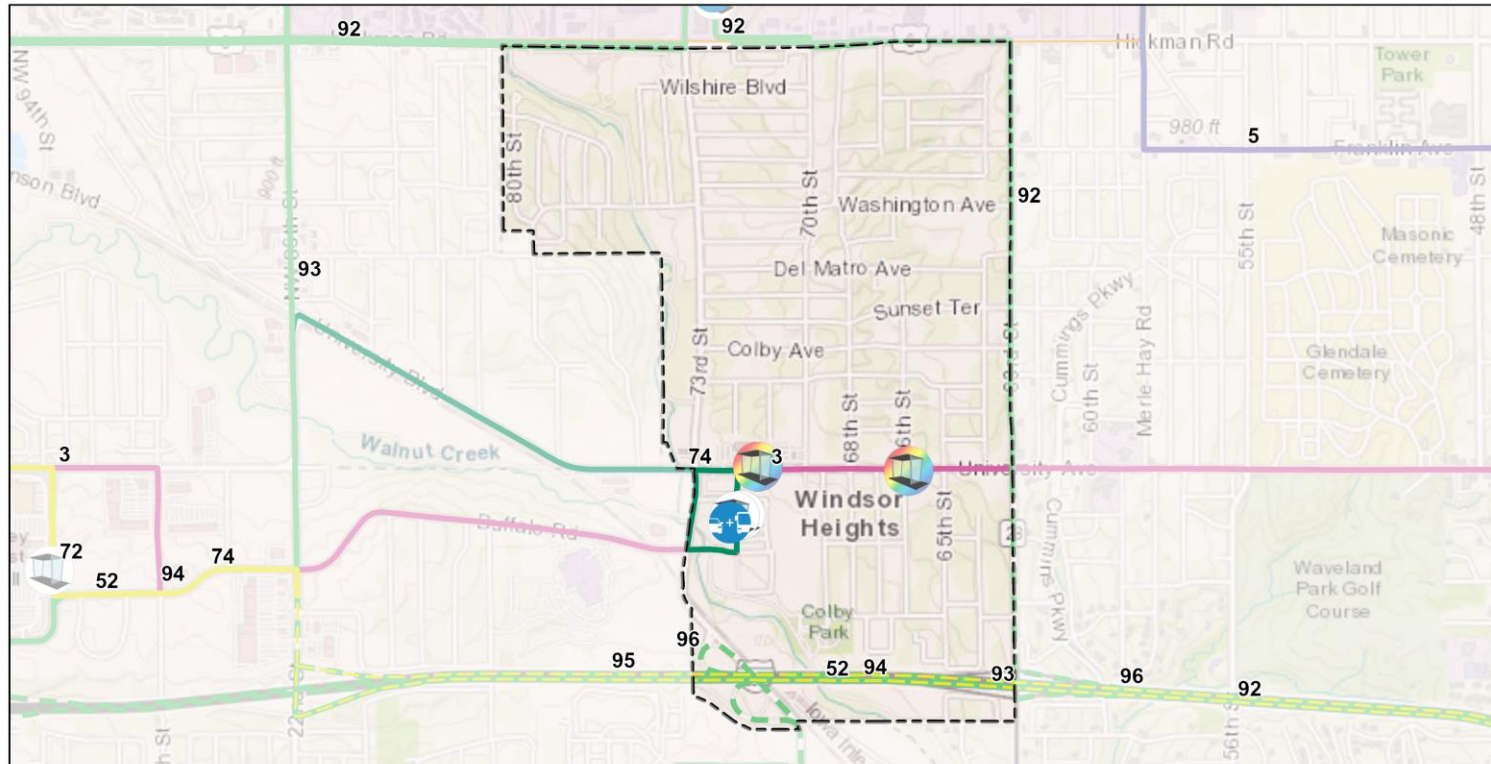
DART Services in Windsor Heights

Core Services

- Local Route 3 – University
- Local Route 74 – NW Urbandale
- Express Route 92 – Hickman
- Paratransit

Other DART Benefits

- Caravan
- Emergency services
- Special events



Legend

- | | | |
|-----------------------------|-----------------------------|-----------------------------|
| Windsor Heights | 52 - Jordan Creek | 93 - NW 86th Express |
| Park and Rides | 52 - Closed Door Service | 92 - Hickman Express |
| Art Shelter | 72 - West Des Moines Valley | Express Closed Door Service |
| 3 - University | 74 - NW Urbandale | Flex Connect |
| 5 - Franklin Ave / Johnston | 96 - EP True Express | DART Bus Plus |
| | 94 - Westtown Express | DART Bus Plus Premium |

FY24 Ridership in Windsor Heights

47,983 Fixed Route Boardings

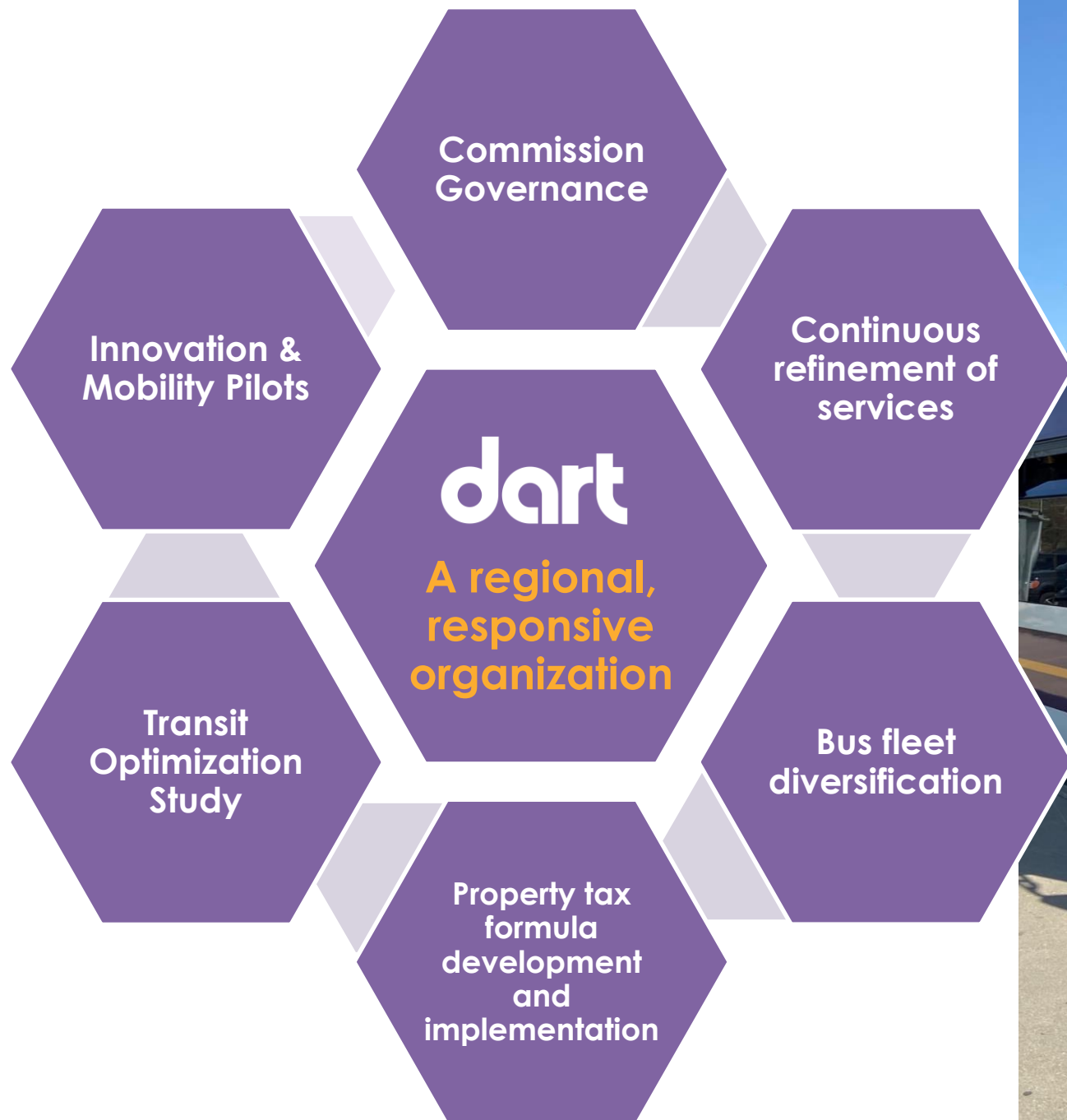
- Top locations:
 - 73rd St./Walmart
 - University Ave./66th St.
 - University Ave./Hy-Vee

4,292 Paratransit trips to or from Windsor Heights

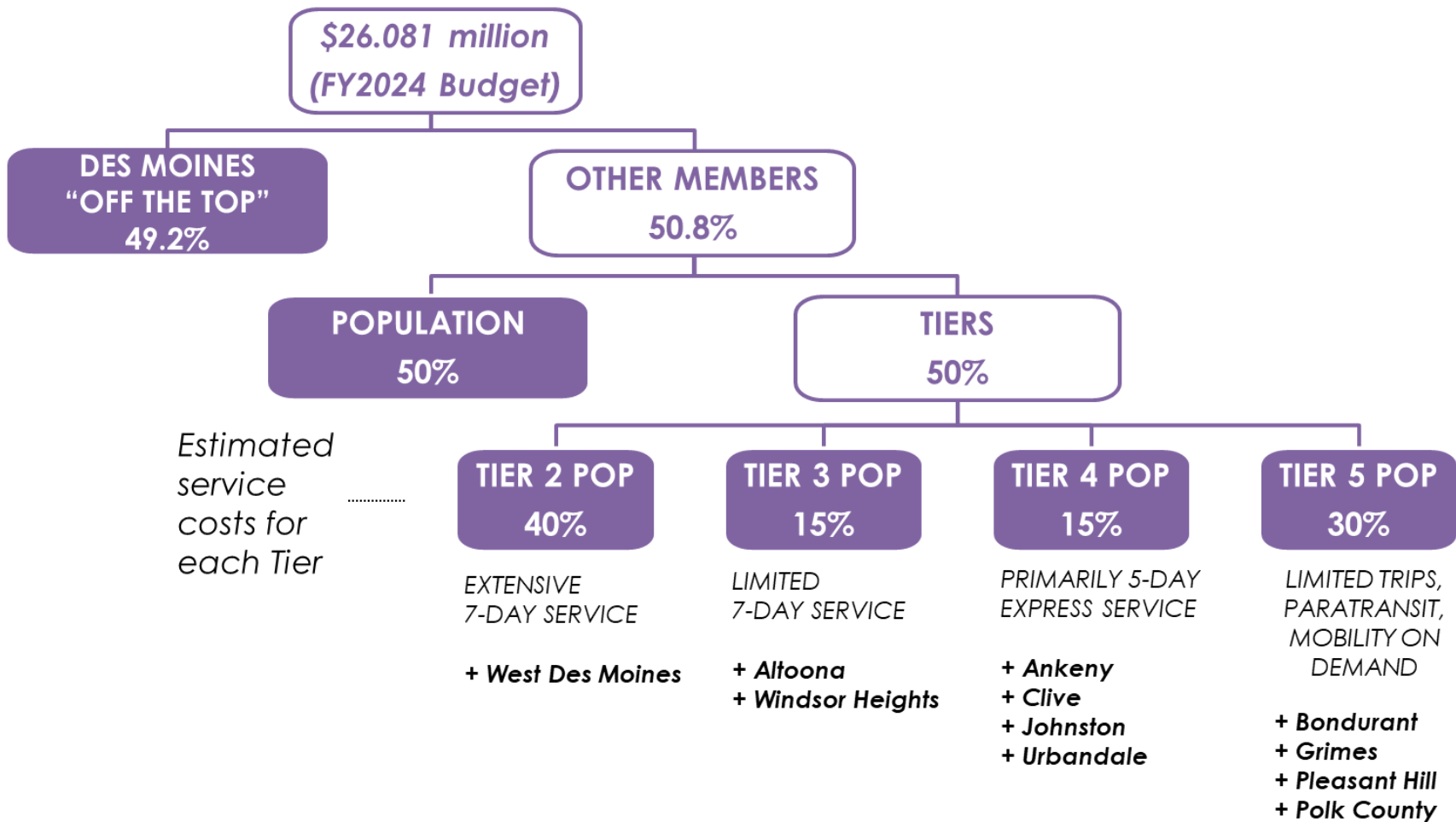
- 152 Paratransit customers (9 residents)
- Top location:
 - Windsor Heights Lutheran Church
 - Walmart/Sam's Club



"Access to public transportation means freedom for me, and it's an **essential part of my daily life**. For me, DART means access to shopping, work and pretty much everything I need to get around town. My favorite thing about the bus is the convenience of the routes and frequency, which makes it **easier for me to get where I need to go.**"

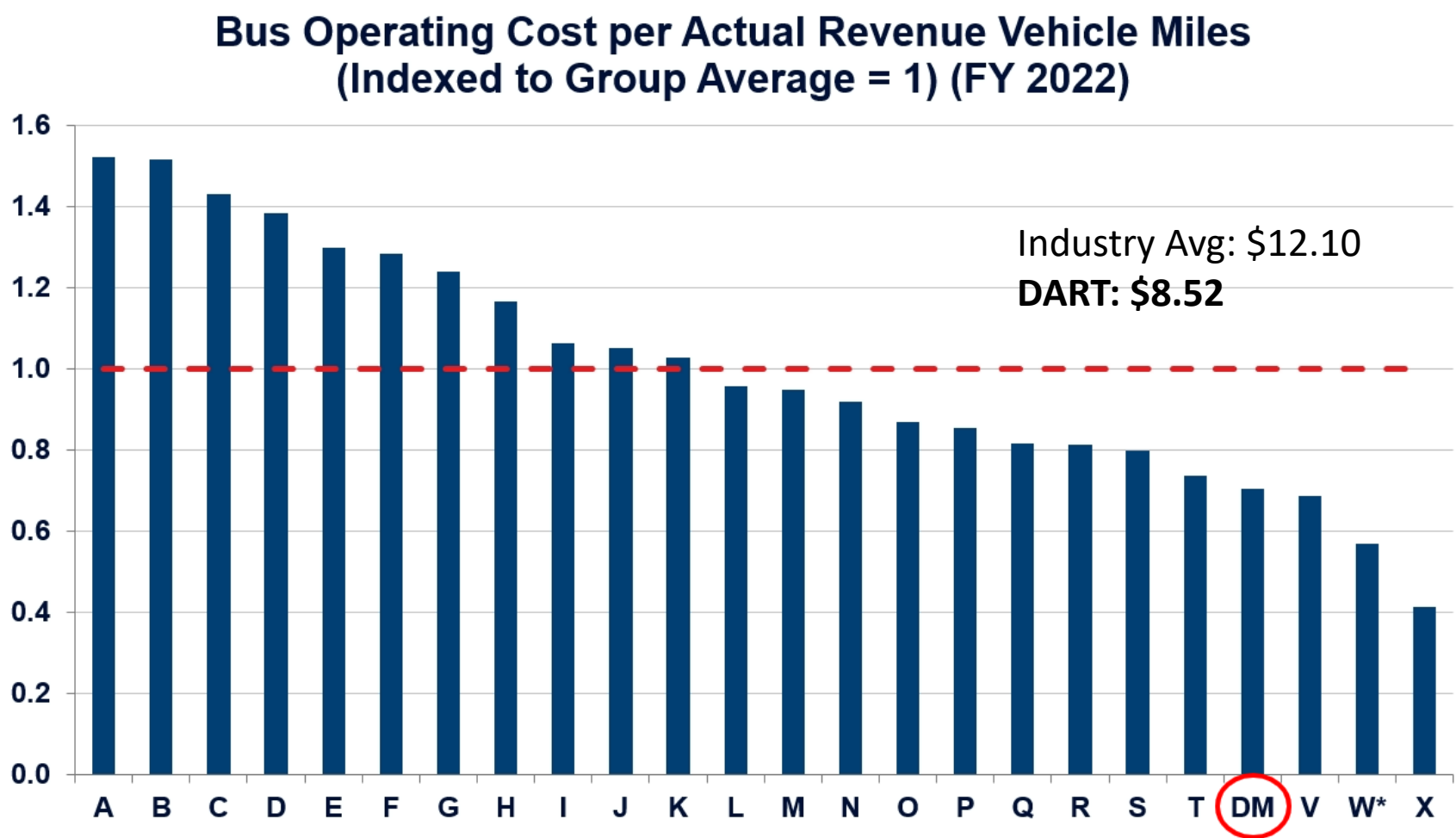


Property Tax Formula & Windsor Height's Investment



- Windsor Height's **contribution has grown** from \$0.95 levy rate in FY21 to \$0.95 levy rate + \$12,334 in FY25.
- A \$200,000 homeowner** in Windsor Heights **contributes \$88.05** to DART in FY25.

Ongoing and Recent Efficiency Efforts



Reduced expenses by nearly \$1 million for FY25

- Cut support positions
- Eliminated Wi-Fi
- Reduced customer service hours



What We've Heard

Transit is essential

Vision for the future

Funding discussion fatigue

Sustainable formula

Business support



Recent survey of elected officials

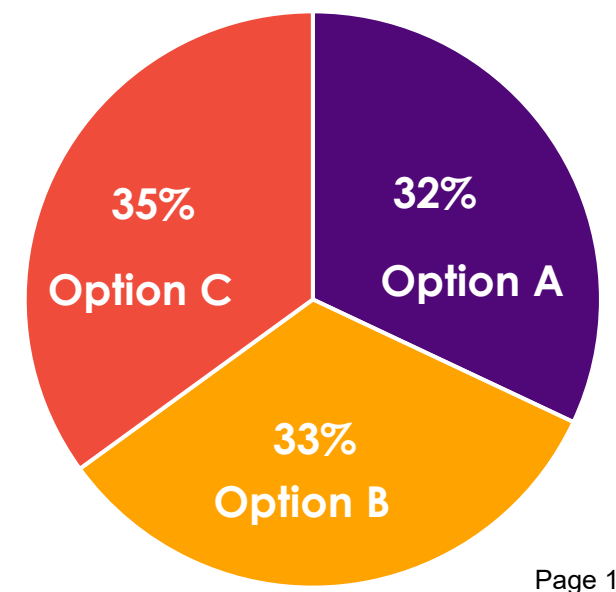
Is there regional consensus?

	YES	NO
Changing transit funding formula?	☐	☒
Regional transit network design ?	☐	☒
Importance of regional transit?	☒	☐

Hypothetical Network A:
Limited transit service. Lower frequency, longer wait times. Only used by individuals who have no other option.

Hypothetical Network B:
Transit services to more places and communities. Some usage by individuals who have other travel options.

Hypothetical Network C:
Extensive transit coverage, high frequency service, shorter wait times and more people choose to use transit over other modes.



What is it?

Reimagine DART



**Regional Buy-in
Around Shared Goals**



**Transit Network
Redesign**



**Public Input &
Engagement**

Key Milestones

**Spring
2025**

Collect feedback on transit priorities

**Aug-Sept
2025**

Collect feedback on draft transit network

Dec 2025

DART Commission to vote on final service plan

**Jan-
March
2026**

DART Commission and staff prepare FY 2027 budget

**Summer
2026**

Begin to implement new transit network



Thank you!

City of Windsor Heights Regular Business Meeting Minutes
Monday, October 21, 2024 - 6:00 PM
WINDSOR HEIGHTS COUNCIL CHAMBERS - 1133 66th ST

1. Call to Order/Roll Call/Pledge of Allegiance

Mayor Mike Jones called the meeting to order at 6:00 PM. Members present: Susan Skeries, Michael Libbie, Lauren Campbell, and Threase Harms. Members absent: Joseph Jones. Staff present: City Administrator Adam Plagge, City Attorney Erin Clanton, City Clerk Adam Strait, Police Chief Pete Roth, Fire Chief Jim Mease, Public Works Director Jason Roberts, Public Works Supervisor Andy Larson, and City Engineer Justin Ernst with Bolton & Menk.

2. Approval of the Agenda

Motion by Michael Libbie to APPROVE. Seconded by Susan Skeries. Motion passed 4-0.

3. Public Forum: This is time set aside for comments from the public on topics of City business other than those listed on the agenda. No action may be taken. Please come to the podium, state your name and address for the record and keep your comments to no more than 5 minutes.

Bob Bishop - 1128 64th St - Spoke about disappointment in the City's response to dealing with standing water at the construction project at 1148 63rd Street. He also spoke against the parkland dedication at the property as well.

4. Consent Agenda: Any item on the Consent Agenda may be removed for separate consideration.

Motion by Susan Skeries to APPROVE Consent Agenda and Amend the Minutes of the Regular Council Meeting on October 7, 2024 to State "120 Pizzas" in Susan Skeries Report. Seconded by Michael Libbie. Motion passed 4-0.

A. Approve Minutes of the Regular Council Meeting on October 7, 2024

B. Approve Financial Reports

C. Approve Liquor License - Aldi - 7100 University Ave

D. Approve 73rd Street Phase 1 STP-U-8477(615)—70-77 Pay Request 5

E. Approve 2023 Colby Park Improvements Pay Request 9

F. Approve Resolution No. 2024-62 - A Resolution Appointing Public Works Director

G. Approve First Responders Day Proclamation

5. Action Items:

A. Consideration of a Retaining Wall at 7254 El Rancho

Adam Plagge presented the item. Discussion took place on the purchase of retaining wall materials for \$1500 to be provided to the resident of 7254 El Rancho, who will install a retaining wall along 73rd Street. The City will install a retaining wall at the corner of El Rancho Ave and 73rd St as deemed necessary by the City's engineer, as part of the 73rd Street Phase One project. The resident was concerned with the grading on his property further south of where the City will place the retaining wall. The resident approached the City proposing he will

install the wall per specifications provided by the City's engineer in exchange for the City providing material. Motion by Susan Skeries to APPROVE the Purchase of Materials for a Retaining Wall at 7254 El Rancho at the Cost of \$1,500 and for the Resident to Sign an Agreement for Installing the Retaining Wall. Seconded by Michael Libbie. Motion passed 4-0.

B. Consideration of Resolution 2024-64 - A Resolution Approving The Creation Of Fire Department Lieutenant

Jim Mease presented the item. The position will supplement a current Fire Department position and not create a new position. The department will review internal applicants in the coming month to help alleviate the workload of the Fire Chief and provide a secondary line of leadership. Threase Harms spoke against the item being presented now and thought it would be better discussed during budget discussions as the position will be created using funds saved by the department from switching a vendor and the position would be a raising payroll cost year over year as opposed to a fixed contract fee. Council was however supportive of the position and creating a second line of command that does not exist in the department. Motion by Susan Skeries to APPROVE Consideration of Resolution 2024-64 - A Resolution Approving The Creation Of Fire Department Lieutenant Amending the Job Description to Add Paramedic Preferred. Seconded by Michael Libbie. Roll call vote: Aye - Susan Skeries, Michael Libbie, Lauren Campbell, Nay - Threase Harms. Motion 3-1.

C. Discussion on 68th St. South Reconstruction

Adam Plagge presented the item. Discussed the upcoming 68th Street Reconstruction project and how to ensure homes remain accessible to residents with accessibility concerns. Staff presented an option of reusable heavy duty mats to create a smooth level walkway. Council was concerned as this would be a novel approach and there was not as well as potentially creating a hurdle for contractors bidding the project. Staff will continue to research alternatives to present to Council before the bid package is approved.

D. Consideration of ATE Engagement Letter and Terms

Erin Clanton presented the item. The letter is to hire Dentons Davis Brown PC to continue to represent the City in an ongoing legal matter associated with speed cameras. Erin saw nothing of concern in the letter or terms. Motion by Threase Harms to APPROVE. Seconded by Susan Skeries. Motion passed 4-0.

E. Consideration of Resolution No. 2024-63 - A Resolution Approving Administrator Compensation for FY 25

Mike Jones presented the item. Motion by Threase Harms to APPROVE Consideration of Resolution No. 2024-63 - A Resolution Approving Administrator Compensation for FY 25 with a 4% base wage increase, \$0 merit bonus, and 0 additional days of PTO. Seconded by Susan Skeries. Motion passed 4-0.

F. Consideration of the 3rd Reading of Ordinance No. 2024-08 - An Ordinance Amending Chapters 153 And 175, Revising Subsection 175.02 To 175.03, Of The Code Of Ordinances For The City Of Windsor Heights, With Regard To Design Elements For On-Premises Signs; and to Adopt and Publish

Adam Plagge presented the item. There were no updates or feedback to the ordinance. Adam stated that the City has a letter prepared to send to all businesses within the city informing them of the ordinance. Motion by Threase Harms to APPROVE. Seconded by Susan Skeries. Motion passed 4-0.

6. **Reports:**

A. Mayor, Council Reports and Committee Updates, and Administration Reports

Threase Harms - No report.

Lauren Campbell - Meet with Susan, Tiffany from the Chamber, and staff today to debrief on

Fall Fest and discuss improvements for next year. Next Monday is the next Reimagine DART. Michael Libbie - No report.

SS - Had a debriefing on Fall Fest today. Have learned from the previous two years and continue to learn. Overall a few things to tweak and handle. Thank you again to all who helped with Fall Fest. Sent an email to everyone who still owes for Windsor Heights merch. Attended the annual Catch Des Moines celebration at Glen Oaks and the Metro Waste Authority employee celebration at the Science Center. Attended the Chambers ribbon cutting for HW CBD. Attended a Metro Waste meeting on the 16th where discussed how to word signs at the cardboard recycling containers so that commercial haulers are not able to dump cardboard. There is a special events committee meeting on Friday. Tracy Beck is unable to continue to be on the committee. Thank you Tracy for your time on the committee. Trick R Treating is this Saturday. The police and fire department will be out in full force to keep our little ghosts and goblins safe. Received an email from the National Guard who is looking for a speaker for our Veterans Day lunch. Have received about 15 RSVPs for the lunch. The event is on November 11 from 11:30AM to 1:30PM at the Community Center. Still looking for volunteers to help during as well as with set up and tear down of the event. Thank you to Firefighter paramedic Brett Merseal, for his many years of devoted service to the residents of Windsor Heights. It is great to see the professional growth in Merseal from when he started as a young professional to where he is now. Although I am sad to see Merseal move on to another metro agency. I am proud of the paramedic firefighter that he has become, and I wish Merseal much success as he starts this newest chapter in his fire career.

Mike Jones - Received a card from a Miss Maher, a Des Moines resident, who stopped by Colby Park. She said it was amazing, really fantastic. And she appreciated the new bike racks in the park. She also said thank you for the traffic-calming bike treatments along university greatly appreciate your support of the biking community.

Adam Plagge - No report.

7. **Adjourn**

Motion by Threase Harms to adjourn at 7:03 PM. Seconded by Susan Skeries. Motion passed 4-0.

Mike Jones, Mayor

Attest: Adam Strait, City Clerk



STAFF REPORT
CITY COUNCIL
November 4, 2024

TO: CITY COUNCIL
FROM: Adam Strait, City Clerk
SUBJECT: Approve Financial Reports

GENERAL INFORMATION

ATTACHMENTS

1. CLAIMS REPORT

Vendor Checks: 10/17/2024-10/31/2024

Payroll Checks: 10/17/2024-10/31/2024

VENDOR NAME	REFERENCE	AMOUNT	VENDOR TOTAL	CHECK CHECK#	DATE
ABSOLUTE CONCRETE CONSTRUCTION	73RD ST PHASE 1 PAY REQUEST #5		660,420.88	57592	10/25/24
AIRGAS	MEDICAL SUPPLIES		66.02	57541	10/18/24
AMAZON CAPITAL SERVICES	SUPPLIES	292.87		57542	10/18/24
AMAZON CAPITAL SERVICES	EVENT SUPPLIES	308.96	601.83	57593	10/25/24
ASCENDANCE TRUCKS MIDWEST, LLC	VEHICLE REPAIR		1,587.12	57594	10/25/24
ASSURITY	ASSURITY		724.60	5247	10/23/24
BARCO MUNICIPAL PRODUCTS	SURVEY FLAGS AND PAINT		477.93	57543	10/18/24
BAUER BUILT TIRE	A553 REPAIRS		2,260.89	57544	10/18/24
BLUESTONE ENGINEERING	CEC SOLAR ENG		750.00	57595	10/25/24
BOLTON & MENK	PLANNING SERVICES		5,382.00	57545	10/18/24
BOUND TREE MEDICAL LLC	MEDICAL SUPPLIES	105.87		57546	10/18/24
BOUND TREE MEDICAL LLC	MEDICAL SUPPLIES	495.06	600.93	57596	10/25/24
BREESE, TAMMY	OCT CELL PHONE		80.00	57547	10/18/24
BULLZEYE, INC	CEC FLOOR RE-COAT		5,300.00	57548	10/18/24
CALIBER CONCRETE LLC	PAY REQUEST #9		1,024,520.69	57597	10/25/24
CAMPBELL, LAUREN	FALL FEST REIMBURSEMENTS		2,940.59	57549	10/18/24
CENTRAL IOWA READY MIX	74TH STREET REPAIRS		2,278.00	57550	10/18/24
CENTURY LINK	TELEPHONE		461.27	57598	10/25/24
CITY OF URBANDALE	SALT STORAGE		1,152.00	57599	10/25/24
CITY OF WEST DES MOINES	CROSSING GUARD		773.76	57551	10/18/24
CLIVE POWER EQUIP.	VEHICLE REPAIR		40.56	57600	10/25/24
CONSTRUCTION MATERIALS TESTING	MAT TESTING		6,256.25	57601	10/25/24
DES MOINES REGISTER	NEWSPAPER DELIVERY		103.98	57552	10/18/24
DES MOINES WATER WORKS	6900 SCHOOL ST		52.06	57553	10/18/24
DIAMOND VOGEL, INC	CEC STAIN		164.35	57554	10/18/24
EMPLOYEE BENEFIT SYSTEMS	HEALTH INS		21,773.52	5215	10/17/24
EO JOHNSON	COPIER LEASE		178.65	57555	10/18/24
FEDERAL TAX DEPOSIT	FED/FICA TAX		30,309.96	5245	10/23/24
FREEDOM TIRE & AUTO CENTER INC	CAR 25 TIRE REPAIR		35.00	57556	10/18/24
FUNES, PEDRO	BILLABLE HOURS		1,000.00	57602	10/25/24
GANNETT IOWA LOCALIQ	PUBLICATIONS		21.25	57557	10/18/24
GOODRICH, WILLIAM	OCT CELL PHONE		80.00	57558	10/18/24
GRIMES ASPHALT & PAVING	STREET MAINTENANCE SUPPLIES	248.25		57559	10/18/24
GRIMES ASPHALT & PAVING	STREET MAINTENANCE SUPPLIES	227.25	475.50	57603	10/25/24
IA LEIN	LEIN CONF		500.00	57560	10/18/24
ICMA RETIREMENT TRUST	ICMA	762.94		5243	10/23/24
ICMA RETIREMENT TRUST	PD	1,879.89	2,642.83	5248	10/24/24
IMAGE 360	SIGN		208.00	57604	10/25/24
INTERSTATE ALL BATTERY	BATTERIES	53.70		57561	10/18/24
INTERSTATE ALL BATTERY	TRAIL CAM BATTERY	29.10	82.80	57605	10/25/24
IOWA DES MOINES SUPPLY	CEC SUPPLIES	340.18		57590	10/21/24
IOWA DES MOINES SUPPLY	SUPPLIES	405.67	745.85	57606	10/25/24
DEPT OF HUMAN SERVICES	NOV STATE SHARE GEMT		4,936.22	57562	10/18/24
IOWA LEAGUE OF CITIES	PLAGEE BUDGET WORKSHOP		100.00	57563	10/18/24
IOWA ONE CALL	LINE LOCATES		222.70	57607	10/25/24
IOWA SOLUTIONS INC	FIREWALL REPLACEMENT		5,179.80	57564	10/18/24
IPERS	PROTECT IPERS		36,260.21	5242	10/23/24
IRLBECK, MICHAEL	OCT CELL PHONE		80.00	57565	10/18/24
ISOLVED BENEFIT SERVICES	FLEX - BENEFITS		1,810.00	5246	10/23/24
JOHNSON, KYLE	OCT CELL PHONE		80.00	57566	10/18/24
LARSON, ANDY	OCT CELL PHONE		80.00	57567	10/18/24
LEUTHOLD, NATE	OCT CELL PHONE		80.00	57568	10/18/24
MANHATTANLIFE	MANHATTAN LIFE		275.08	57591	10/23/24
WINDSOR HEIGHTS MP LLC	10/4 MOVIE IN PARK PIZZA		580.00	57569	10/18/24

Vendor Checks: 10/17/2024-10/31/2024

Payroll Checks: 10/17/2024-10/31/2024

VENDOR NAME	REFERENCE	AMOUNT	VENDOR TOTAL	CHECK CHECK#	CHECK DATE
MEASE, JIM	OCT CELL PHONE		80.00	57570	10/18/24
MENARDS	ROPES/STAKES		908.55	57571	10/18/24
METRO WASTE AUTHORITY	LARGE ITEM STICKERS		250.00	57572	10/18/24
METRONET	INTERNET		585.51	57608	10/25/24
MIDAMERICAN ENERGY	1133 66TH ST	828.37		5219	10/18/24
MIDAMERICAN ENERGY	6900 SCHOOL ST STAGE	16.77		5220	10/18/24
MIDAMERICAN ENERGY	6900 SCHOOL ST CEC	1,033.20		5221	10/18/24
MIDAMERICAN ENERGY	6900 SCHOOL ST	21.01		5222	10/18/24
MIDAMERICAN ENERGY	1145 66TH ST	206.65		5223	10/18/24
MIDAMERICAN ENERGY	7116 UNIV AVE	25.12		5224	10/18/24
MIDAMERICAN ENERGY	6800 SCHOOL ST	224.66		5225	10/18/24
MIDAMERICAN ENERGY	6800 SCHOOL ST	36.19		5226	10/18/24
MIDAMERICAN ENERGY	7001 UNIV AVE	25.85		5227	10/18/24
MIDAMERICAN ENERGY	6300 UNIV AVE	28.80		5228	10/18/24
MIDAMERICAN ENERGY	1601 73RD ST	14.18		5229	10/18/24
MIDAMERICAN ENERGY	951 73RD ST	19.37		5230	10/18/24
MIDAMERICAN ENERGY	1140 73RD ST	27.00		5231	10/18/24
MIDAMERICAN ENERGY	6410 HICKMAN RD	27.42		5232	10/18/24
MIDAMERICAN ENERGY	1804 73RD ST	10.00		5233	10/18/24
MIDAMERICAN ENERGY	1443 73RD ST	10.00		5234	10/18/24
MIDAMERICAN ENERGY	6440 HICKMAN RD	72.67		5235	10/18/24
MIDAMERICAN ENERGY	2227 63RD ST	26.13		5236	10/18/24
MIDAMERICAN ENERGY	6739 UNIV AVE	117.71		5237	10/18/24
MIDAMERICAN ENERGY	7290 UNIV AVE	26.86		5238	10/18/24
MIDAMERICAN ENERGY	6540 UNIV AVE	159.60		5239	10/18/24
MIDAMERICAN ENERGY	801 73RD ST	28.44		5240	10/18/24
MIDAMERICAN ENERGY	STREET LIGHTS	3,212.37		5241	10/18/24
MIDAMERICAN ENERGY	6800 SCHOOL ST	155.05	6,353.42	5249	10/25/24
MURPHY TRACTOR & EQUIP. CO.	REPAIRS		1,843.85	57573	10/18/24
NISSEN, ANDREW	FALL FEST PARADE CANDY		28.68	57609	10/25/24
NORRIS, CHAD	OCT CELL PHONE		80.00	57574	10/18/24
PLAGGE, ADAM	OCT CELL PHONE		80.00	57575	10/18/24
PPG ARCHITECTURAL FINISHES	CEC SUPPLIES		84.45	57576	10/18/24
PREMIER AUTOMOTIVE	C500 OIL CHANGE		37.33	57610	10/25/24
PS INDUSTRIES	SALT SHED		9,017.00	57577	10/18/24
QUALITY STRIPING, Inc.	PAVEMENT MARKINGS		8,550.00	57611	10/25/24
RANGEMASTERS TRAINING CTR	RIFLE TRAINING JACKS		15.00	57612	10/25/24
ROBERTS, JASON	OCT CELL PHONE		80.00	57578	10/18/24
ROTH, PETE	OCT CELL PHONE		80.00	57579	10/18/24
SITEONE LANDSCAPE SUPPLY	PARK REPAIRS		112.16	57580	10/18/24
SKERIES, SUSAN	VETS DAY INVITES REIMBURSEMENT		22.74	57581	10/18/24
STRAIT, ADAM	OCT CELL PHONE		80.00	57582	10/18/24
STREET COLLECTIVE	COLBY PARK PROJECT		16,600.00	57613	10/25/24
STREICHER'S	NISSEN UNIFORM ALLOWANCE		24.00	57614	10/25/24
SWISHER, RACHELLE	OCT CELL PHONE		80.00	57583	10/18/24
TREASURER STATE OF IOWA	STATE TAX		8,981.15	5244	10/23/24
TREES FOREVER	31 TREES PLANTED		13,950.00	57584	10/18/24
ULINE	PARK TRASH CAN LINERS		478.85	57585	10/18/24
UNIVERSITY WEST PET CLINIC	EMBER REG CHECK UP		243.86	57586	10/18/24
VAN WALL EQUIPMENT	REPAIRS		1,225.97	57615	10/25/24
WEST DES MOINES TRUE VALUE	FD FAUCET AND VALVE		394.78	57587	10/18/24
WEX FLEET UNIVERSAL	FUEL		2,554.74	57588	10/18/24
WHITE CAP, L.P.	SALT SHED SUPPLIES		85.58	57616	10/25/24
WRIGHT OUTDOOR SOLUTIONS	BED MAINTENANCE		1,687.70	57617	10/25/24

VENDOR NAME	REFERENCE	AMOUNT	VENDOR TOTAL	CHECK#	CHECK DATE
ZIMCO SUPPLY CO	SUPPLIES		190.00	57618	10/25/24
			=====		
	Accounts Payable Total		1,899,518.40		
Payroll Checks					

	001 GENERAL		67,906.93		
	110 ROAD USE TAX		10,422.97		
	670 LANDFILL/GARBAGE		158.95		
	740 STORM WATER		1,635.70		

	Total Paid On: 10/25/24		80,124.55		
			=====		
	Total Payroll Paid		80,124.55		
			=====		
	Report Total		1,979,642.95		
			=====		

CLAIMS REPORT
CLAIMS FUND SUMMARY

FUND	NAME	AMOUNT
001	GENERAL	174,806.73
110	ROAD USE TAX	55,481.58
112	EMPLOYEE BENEFITS	24,653.41
303	COLBY PARK	1,039,043.24
318	CEC SOLAR PROJECT	750.00
322	73RD STREET PROJECT	660,506.88
327	SALT SHED PROJECT	9,102.58
328	74TH ST PROJECT	6,503.00
350	CAPITAL EQUIPMENT FUND	5,179.80
610	SEWER	111.35
670	LANDFILL/GARBAGE	472.78
740	STORM WATER	3,031.60

	TOTAL FUNDS	1,979,642.95



STAFF REPORT
CITY COUNCIL
November 4, 2024

TO: CITY COUNCIL

FROM: Adam Strait, City Clerk

SUBJECT: Approve Liquor License - Blue Agave Brunch & Dinner - 6587 University Avenue

GENERAL INFORMATION

ATTACHMENTS

None



STAFF REPORT
CITY COUNCIL
November 4, 2024

TO: CITY COUNCIL

FROM: Adam Plagge, City Administrator

SUBJECT: Approve and Accept the Termination of Central Iowa Regional Drinking Water Commission

GENERAL INFORMATION

Central Iowa Water Works, has been formed which will, among other things, will serve to replace all of the functions of Central Iowa Regional Drinking Water Commission (CIRDWC). CIRDWC has not been active in some time with the last dues collected in 2017. No City of Windsor Heights appointments to the CIRDWC Board appear to exist. Upon termination of CIRDWC, the City of Windsor Heights will be paid its pro Rata share of funds in the CIRDWC account which amounts to \$1,895.59.

ATTACHMENTS

1. CIRDWC Termination Document 9-11-24

ACCEPTANCE AND APPROVAL
OF
TERMINATION OF CENTRAL IOWA REGIONAL DRINKING WATER COMMISSION
AND OF
AMENDMENT TO 28E AGREEMENT TO TERMINATE

The public agency named below hereby approves the Resolutions of Termination and Acceptance as attached hereto ("Resolutions") and hereby approves, accepts, and agrees to the termination of the Central Iowa Regional Drinking Water Commission, and to the amendment of the 28E agreement creating such entity to affect such termination, pursuant to the Resolutions.

Further, the public agency hereby agrees: (i) that this Acceptance and Approval shall be deemed to constitute the vote of the representative of this public agency to the CIRDWC Governing Board to adopt the Resolutions; (ii) that it waives any objection to the adoption of the Resolutions without a meeting of the Governing Board; and (iii) that no further action needs to be taken by the Governing Board to approve the Resolutions.

Dated: _____, 2024

Name of Public Agency: _____

By: _____

Attest: _____

Resolutions of Termination and Amendment

WHEREAS, Central Iowa Regional Drinking Water Commission ("CIRDWC") is an entity created and existing under Ch. 28E, Iowa Code, pursuant to an "Amended and Restated 28E Agreement" (the "CIRDWC 28E Agreement") filed with the Iowa Secretary of State as agreement M504123 and formed for the purpose of regional planning and promoting cooperation among drinking water utilities in Central Iowa;

WHEREAS, a new entity, Central Iowa Water Works, has been formed which will, among other things, serve to replace all of the functions of CIRDWC; and

WHEREAS, it is appropriate to terminate the existence of CIRDWC and to distribute its assets as provided in the CIRDWC 28E Agreement.

NOW THEREFOR IT IS HEREBY RESOLVED, that the existence of the Central Iowa Regional Drinking Water Commission shall be terminated effective as of December 31, 2024, or upon the filing of a termination agreement with the Iowa Secretary of State, whichever last occurs (the "Termination Date"), and that the CIRDWC 28E Agreement shall be deemed amended as of such date to effect such termination subject to the contingency that not less than a majority of the Members shall have previously executed and delivered to the Recording Secretary a written acceptance and approval of such termination and amendment.

FURTHER RESOLVED, that upon receipt of written acceptances and agreements of these Resolutions by at least a majority of the Members, the Recording Secretary shall execute a Statement of Termination and Amendment with respect to the CIRDWC 28E Agreement, in the form attached hereto as Exhibit 1 and file it with the Iowa Secretary of State.

FURTHER RESOLVED, that the assets of CIRDWC consist entirely of the sum of \$63,705.78 in cash, and that such sum shall be distributed to the Members pro rata in proportion to the annual dues last assessed in 2017 in the particulars as attached hereto as Exhibit 2, and that receipt and deposit of such funds by a Member shall be deemed to constitute the Member's agreement to the termination of CIRDWC and a waiver of any and all objection thereto.

Exhibit 1

STATEMENT OF TERMINATION AND AMENDMENT
OF
28E AGREEMENT
OF
CENTRAL IOWA REGIONAL DRINKING WATER COMMISSION

Central Iowa Regional Drinking Water Commission ("CIRDWC") is an entity created and existing under Ch. 28E, Iowa Code, pursuant to an "Amended and Restated 28E Agreement" (the "CIRDWC 28E Agreement") filed with the Iowa Secretary of State as agreement M504123.

By authority of a majority of its Members:

1. The existence of CIRDWC shall be, and hereby is, terminated.
2. The CIRDWC 28E Agreement shall be, and hereby is, amended to effect such termination.
3. Such termination and amendment shall be effective as of December 31, 2024, or the date of filing of this Statement with the Iowa Secretary of State whichever last occurs.
4. This statement is executed by the Recording Secretary of CIRDWC pursuant to a Resolution approved by a majority of its Members.

Dated: _____, 2024

Amy Kahler, Recording Secretary

Exhibit 2

ALLOCATION OF SHARES OF THE ASSETS OF CENTRAL IOWA REGIONAL DRINKING WATER COMMISSION UPON TERMINATION

Membership Dues 2017-2018	Amount Paid	Date Paid	Date Deposited	Pro Rata %	Amount to be Distributed
Altoona	\$158.00	8/10/2017	8/17/2017	3.89%	\$ 2,475.23
Ankeny	\$300.00	8/13/2018	8/29/2018	7.38%	\$ 4,699.80
Bondurant	\$120.00	8/10/2017	8/17/2017	2.95%	\$ 1,879.92
Carlisle	\$115.00	8/22/2017	8/22/2017	2.83%	\$ 1,801.59
Clive	\$158.00	8/14/2017	8/17/2017	3.89%	\$ 2,475.23
Cumming	\$101.50	8/18/2017	8/22/2017	2.50%	\$ 1,590.10
Johnston	\$168.00	8/24/2017	9/5/2017	4.13%	\$ 2,631.89
Mitchellville	\$106.00	8/14/2017	8/17/2017	2.61%	\$ 1,660.60
New Virginia	Converted to non-voting, non dues paying member			0.00%	\$ -
Norwalk	\$136.00	8/9/2017	8/17/2017	3.34%	\$ 2,130.58
Pleasant Hill	\$131.00	8/14/2017	8/17/2017	3.22%	\$ 2,052.25
Polk City	\$117.00	8/17/2017	8/17/2017	2.88%	\$ 1,832.92
St. Charles	\$103.00	8/17/2017	8/17/2017	2.53%	\$ 1,613.60
Waukee	\$162.00	8/10/2017	8/17/2017	3.98%	\$ 2,537.89
Windsor Heights	\$121.00	8/10/2017	8/17/2017	2.98%	\$ 1,895.59
Des Moines Water Works	\$785.00	8/7/2017	8/7/2017	19.30%	\$ 12,297.81
Indianola Municipal Utilities	\$155.00	2/9/2018	2/20/2018	3.81%	\$ 2,428.23
Polk County	\$170.00	8/14/2017	8/17/2017	4.18%	\$ 2,663.22
Urbandale Water Utility	\$255.00	8/18/2017	8/22/2017	6.27%	\$ 3,994.83
Warren Rural Water	\$170.00	8/4/2017	8/7/2017	4.18%	\$ 2,663.22
West Des Moines Water Works	\$340.00	8/28/2017	9/5/2017	8.36%	\$ 5,326.44
Xenia Rural Water	\$195.00	8/7/2017	8/7/2017	4.80%	\$ 3,054.87
Total	\$4,066.50			100.00%	\$ 63,705.78



STAFF REPORT
CITY COUNCIL
November 4, 2024

TO: CITY COUNCIL

FROM: Adam Plagge, City Administrator

SUBJECT: Approve a No Parking Sign on Sunset Terrace

GENERAL INFORMATION

A resident called expressing concern about vehicles parking on the north side of Sunset Terrace between 6301 Sunset Terrace and 63rd St. Particularly when school is getting out, vehicles will queue at the stop sign trying to get onto 63rd Street. This queue, in conjunction with the parked vehicles, restricts vehicles from turning onto Sunset Terrace from 63rd St. resulting in the backing up of 63rd St. traffic and frustrating drivers. Subject to City Council approval, a No Parking sign shall be placed on the north side of Sunset Terrace between 6301 Sunset Terrace and 63rd Street. The proposed no parking zone is depicted with a red line in the graphic below.



ATTACHMENTS

None



STAFF REPORT
CITY COUNCIL
November 4, 2024

TO: CITY COUNCIL

FROM: Nate Leuthold, Deputy City Clerk

SUBJECT: Consider Resolution No. 2024-66 - A Resolution Waiving CC Fees for a Recurring Free-Will Donation Community Yoga Class

GENERAL INFORMATION

Beth Gookin and Ben Spellman have requested access to the Community Event Center each weekday morning for a free-will donation community yoga class led by Ben as Good Vibes Movement Yoga. Beth presented the concept to the Special Events Committee, who supported the idea to be brought before Council. Ben ran a similar concept in the CEC prior to the COVID pandemic. Ben and Beth look forward to bringing this valuable service back to the Windsor Heights community. Beth and potentially Ben intend to attend City Council to answer any questions.

Good Vibes Movement Yoga has requested access to the CEC each morning, Monday to Friday, from 5:45 AM to 7:15 AM. Should anyone rent the Center during this period, or should the City require the space for an event (such as Fall Fest or Windsor Wonderland), Good Vibes Movement Yoga would be informed, and yoga would be canceled for that date. Good Vibes Movement Yoga shall be responsible for any cleaning of the space and returning it to the pre event configuration. Rubber mats shall be made available for use at entrances for instances of snow/rain. The standard rental agreement shall be signed which includes the below language:

In consideration for use of the facility, the renter agrees that they will use the facility and equipment at renters sole risk. Renter further agrees that Windsor Heights will not be responsible for any or all injury illness loss theft or damage to renter, renters property or renters guests before during or after the event while on the facility premises. Renter agrees to indemnify and hold harmless Windsor Heights for any and all loss damage, injury or costs renter or renter's guests may sustain during or after their presence at the community center and/or participation in the event. Renter agrees to indemnify and holds harmless Windsor Heights from and against any loss, damage, injury or costs caused by renters' acts or omissions, negligence or otherwise, including any costs and attorney fees incurred thereby arising out of renter presence at the facility or participation in the event. Renter agrees that the foregoing

release, waiver and indemnity agreement is intended to be as broad and inclusive as is permitted by the law of Iowa and that if any portion thereof is held invalid it is agreed that the balance shall, notwithstanding, continue in full legal force and effect.

Good Vibes Movement Yoga has committed to returning the event space to the state in which it was found each morning. They are requesting that all rental and cleaning fees be waived. They will not charge for the classes but will accept free-will donations.

Staff recommends granting this request, with an end date of November 3rd, 2025. Good Vibes Movement Yoga could then make the same request for the next year; staff simply wants to ensure that Council revisits this request annually and does not grant an indefinite agreement.

ATTACHMENTS

1. Resolution No. 2024-66 - A Resolution Waiving CEC Fees for Good Vibes Movement Yoga on a Recurring Basis Every Monday Through Friday Morning Through 1

RESOLUTION NO. 2024-66

**A RESOLUTION WAIVING CEC FEES FOR A RECURRING FREE-WILL
DONATION COMMUNITY YOGA CLASS**

WHEREAS, Good Vibes Movement Yoga will be hosting a free-will donation community yoga class each Monday through Friday morning from 5:45 AM to 7:15 PM through November 3rd, 2025, as long as the Windsor Heights Community Event Center is not rented or set aside for City use; and

WHEREAS, Good Vibes Movement Yoga will be using the Windsor Heights Community Event Center for these events; and

WHEREAS, Good Vibes Movement Yoga is requesting that the City waive all fees for these events; and

WHEREAS, the Special Events Committee reviewed and recommends approval of this request.

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY
OF WINDSOR HEIGHTS, IOWA:**

That rental fees associated with the described rental of the Windsor Heights Community Event Center by Good Vibes Movement Yoga be waived.

Passed and approved this 4th day of November, 2024.

Mike Jones, Mayor

Adam Strait, City Clerk



STAFF REPORT
CITY COUNCIL
November 4, 2024

TO: CITY COUNCIL

FROM: Adam Plagge, City Administrator

SUBJECT: Discussion of Bridges of Iowa Colby Park Bridge Concept

GENERAL INFORMATION

Bridges of Iowa has provided the attached document with their organization's background and a preliminary concept for an artistic bridge installation at Colby Park. The conceptual bridge would replace the existing wooden bridge over the parking lot's bioswale. Bridges of Iowa intends to have some representatives in attendance to answer any questions City Council might have about this informational discussion. Council discussion and feedback on the bridge proposal will help inform city staff on how to proceed with discussions with Bridges of Iowa. Additionally, Council feedback will be used by staff in assembling plans for the reconstruction of the bioswale that would be under the bridge and for an estimated \$200,000 project to resurface the park's parking lot which would tie-into the potential bridge. Both the bioswale and parking lot, particularly after construction in the park this year, are in poor condition and repairs will need to be considered for incorporation into the Capital Improvement Plan as part of upcoming budget discussions. Parking lot resurfacing is not currently in the Capital Improvement Plan.



Liz Lidgett, who is leading the City's Public Art Plan, has been advised of this potential project. Liz is currently drafting a community survey for inclusion in the upcoming City Newsletter and will be presenting a Public Art Plan update to City Council in the near future.

ATTACHMENTS

1. Bridges Of Iowa Information



To: Adam Plagge, City Administrator
Windsor Heights

Fr.: Jamie Buelte and Pat Coughlin, Bridges of Iowa

Re: Colby Park Public Art Installation

October 16, 2024

We thank you for this opportunity to share with you and the City of Windsor Heights our vision for a public art project to be built and placed at Colby Park. We believe the installation can serve as a welcoming feature for the entire park, combining functionality, storytelling and education as well as compelling craftsmanship and artistry.

Background

Bridges of Iowa is a long-term addiction treatment program founded in 2000 by Don and Charlene Lamberti. Dedicated to those without resources or prospects, Bridges has helped thousands of Iowans and their families overcome drug and alcohol addiction and **cross the bridge to a better life**. In 2025, Bridges marks 25 years of changing lives and seeks to commemorate this milestone with a public art installation that celebrates the joy of recovery, honors the vision of our founders, raises awareness in the community, and serves as a touchstone to those in recovery and those who still need help.

Themes and Concepts

Overarching Theme: “*Bridge to a Better Life.*” While this phrase signifies the major tenet of the Bridges treatment program, the message of walking across the bridge to play, run, bike, or attend an event, resonates with everyone who comes to Colby Park.

Conceptually Speaking: Our installation will be a welcoming, functional bridge over the bioretention area linking the two northside parking areas of Colby Park. The structure of the bridge is simple, with arched sides. The bridge design becomes the canvas for stories of recovery, which will be orchestrated by Amy Putney Koenig, an artist well-known for her 30-year contribution to Sticks. The bioretention would be returned to native flowers, plants and grasses.

We would add a signature sign about the bridge and accompanying art near the project, similar to the current sign regarding the “bioretention cell.” Our sign would include a QR code for more information and how to get help.



The area for the bridge art is shown below.



The graphic below is a placeholder for Amy's vibrant and inspirational design, which will be forthcoming once the location is finalized, and we come to agreement with Windsor Heights and Colby Park public art representatives.



Materials

The size of the bridge is approximately 8 feet by 16 feet. The pedestrian markings extending from the bridge could also be part of the project with complementary pavement mural art. Materials for the project that have been discussed include polymer-treated wood and possibly fabricated metals with painted with images and story lines. All precautions will be taken to ensure durability, and the bridge will meet ADA requirements and codes for structure and safety.

Cost and Maintenance

The full cost of the bridge and art will be provided by Bridges and its funding sources, which includes grants and contributions. Bridges will maintain the bridge for an agreed upon time.

Timeline

- Present concept to Windsor Heights City Council and public art committee.
- Finalize agreement with Windsor Heights by December 31, 2024.
- Announce the project January 2025.
- Unveil the finished project in October 2025 with a public ceremony.



STAFF REPORT
CITY COUNCIL
November 4, 2024

TO: CITY COUNCIL

FROM: Trey Rouse

SUBJECT: Consideration of Resolution No. 2024 - 65 - A Resolution Approving The Site Plan For 6301 University Avenue – Windsor Presbyterian Church Parking Lot

GENERAL INFORMATION

ATTACHMENTS

1. 11.4.24 6301 University Avenue - Windsor Presbyterian Church Staff Report
2. Site Plan Windsor Heights Presbyterian Church Parking Lot
3. Storm Water Management Plan
4. Stormwater Management Report
5. E9213 LANDSCAPE EXHIBIT
6. Public Notice 10-23-2024
7. Resolution No. 2024-65 6301 University Site Plan

STAFF REPORT

Date: November 4th, 2024
To: Windsor Heights City Council
From: Trey Rouse
Subject: Site Plan: 6301 University Avenue – Windsor Presbyterian Church

General Information

Applicant: Shane Devick
2400 86th Street, Suite 12
Urbandale, IA 50322
Property Owner: Windsor Presbyterian Church
Current Use: Civic Organization
Zoning: UC (Urban Center District)
Location: 6301 University Avenue

Summary

The applicant, Shane Devick representing Windsor Presbyterian Church, is requesting to expand the existing parking lot available to the Windsor Presbyterian Church to the north in the UC District (Urban Center District). The applicant has acquired the three homes and parcels directly north of the Windsor Presbyterian Church (1214, 1220, and 1228 University Avenue) and will utilize that area to be the expanded parking lot. The UC District (Urban Center District) allows for the Civic Organization use within the UC District by right. This development would be a part of the existing Civic Organization use on the property 6301 University Avenue and include ADA compliant parking spaces, ramps, landscaped/screened to the north and west sides of the parking lot with landscaped islands within the parking lot, and access onto 63rd Street approved by the Iowa Department of Transportation (DOT).

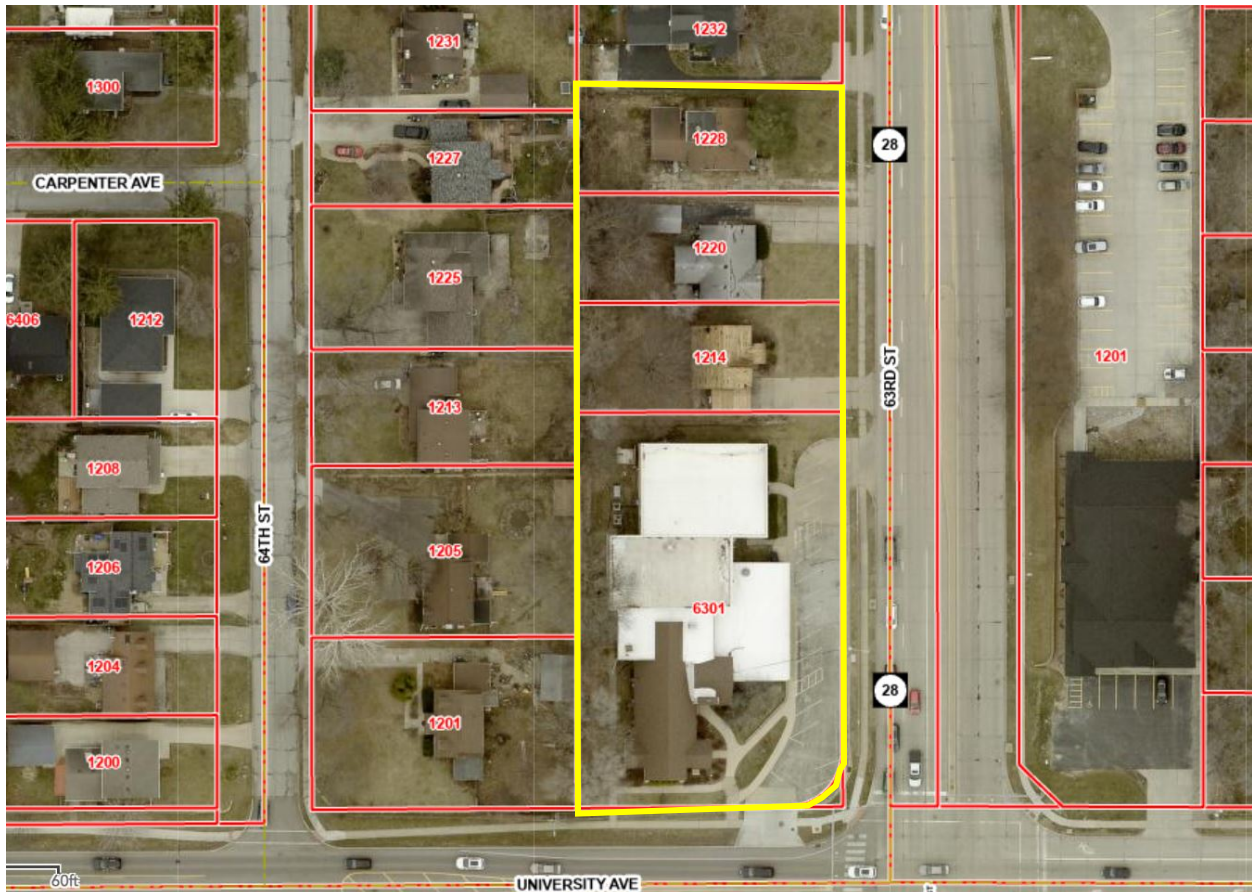
City Staff has completed a review of the documentation submitted by the applicant. The submitted application materials are attached to this report.

Existing Conditions

The existing conditions for each of the parcels in questions is as follows and labeled as such within the following aerial image of the properties.

1. 6301 University Avenue – Windsor Community Presbyterian Church
 - a. 0.66 Acre Lot
 - b. Currently a contiguous and connected building at the scale of 11,460 sq. ft.

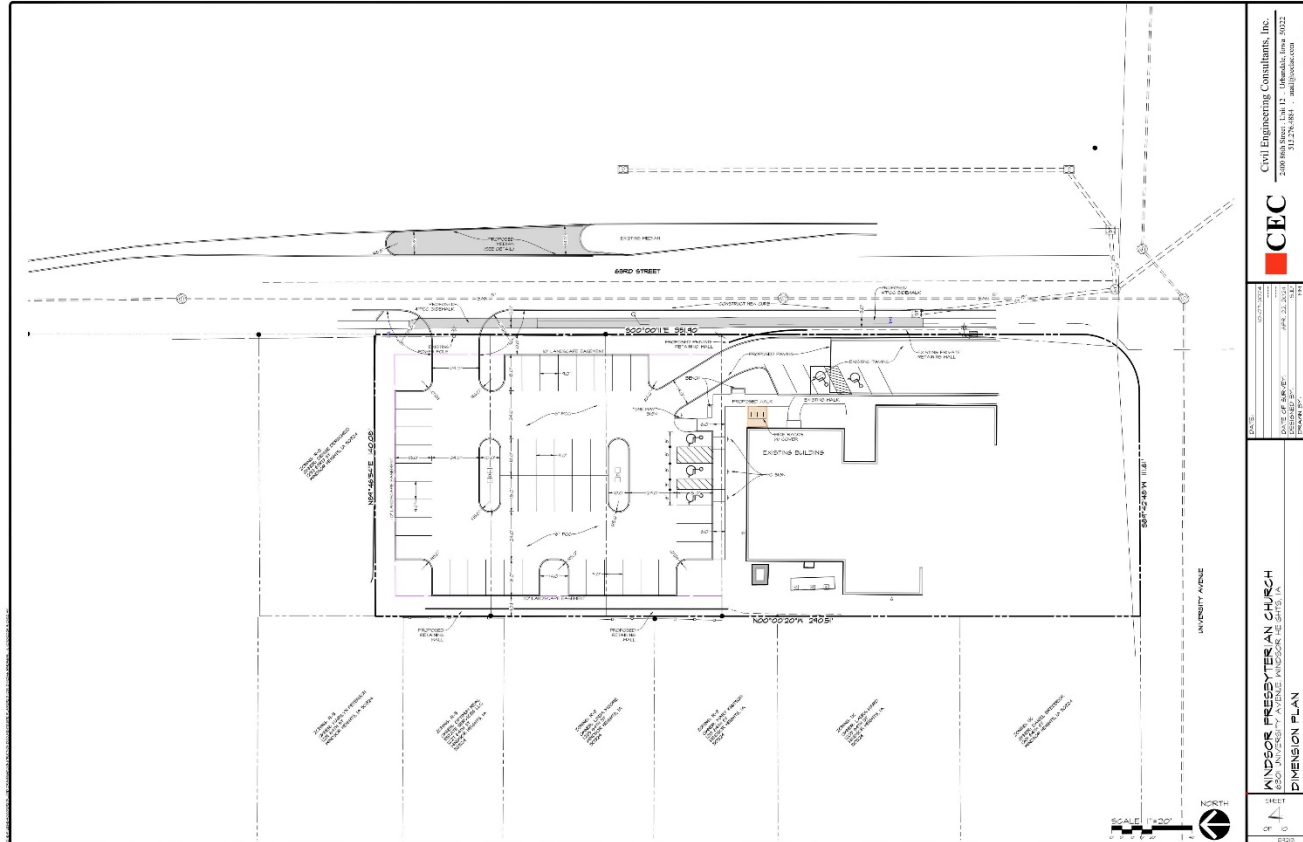
- c. Parking lot on the east side of the property with 11 angled-parking spaces (3 of them being handicap accessible) and 1 parallel parking space
 - d. Sidewalk access to all entrances to the existing building on the property
- 2. 1214 University Avenue
 - a. 0.185 Acre Lot
 - b. Driveway with access to 63rd Street
- 3. 1220 University Avenue
 - a. 0.185 Acre Lot
 - b. Driveway with access to 63rd Street
- 4. 1228 University Avenue
 - a. 0.185 Acre Lot
 - b. Driveway with access to 63rd Street



Legal Description

LOT 8 & -EX BEG SE COR THN N 28.45F SWLY 44.72F E
 28.45F TO POB- LOT 9 & E 40F LOT 10 EVERGREEN
 HEIGHTS

Site Plan for Development



63rd Street is at the top and University Avenue is on the right side of the Site Plan plan sheet

Background of Parcel/Lot

Currently the parcels are going through the process of combining and/or creating a lot tie agreement to allow for development across the parcels. This will be necessary to have either one parcel or combined and connected parcels for development as off-street parking is not permitted use within the UC (Urban Center) Zoning district.

Adjacent Land Use

Direction	Zoning	Use
North	R-3 Multiple-Family Residential District	Residential, Single Family
South	Urban Center District (UC)	Residential, Multi-Family
East	N/A (Outside City Limits)	Commercial
West	Urban Center District (UC)	Residential, Single Family

Zoning Bulk Regulations

Category	UC
Lot Area	5,000 sq.ft.
Lot Width	25 ft
Front Yard Setback	0 ft
Side Yard Setback	0 ft
Rear Yard Setback	10 ft (When abutting Residential Zoning District, must have fully landscaped or visual buffer)

Traffic Information

There was no traffic study requested by the City for the development of this project. The number of access points to 63rd Street decreased, and the amount of traffic based upon the use would not change with the development of the proposed project.

The Iowa DOT signed off and released an Entrance Permit for the proposed access that can be seen within the Site Plan.

Parkland Dedication

This development does not require parkland dedication.

City staff took no further action on this review section.

Landscaping and Plantings

The applicant has provided a landscaping plan within the site plan (sheet 7 of 9) to illustrate the planting locations and types of plantings that will be on the development. The plantings provided and shown meet the requirements of the landscaping chapter of the Zoning Code by numbers and utilize plants on the approved Windsor Heights Tree/Plant list. The required number of trees and shrubs based upon the size of development are 7 trees (1/2000 sq. ft. of pervious area) and 35 shrubs (5/2000 sq. ft. of pervious area).

This requirement has been met as the applicant shows in the site plan to provide 34 trees in total (utilizing 7 existing trees) and 44 shrubs.

Building Façade

With the proposed development, there is no change to the building or façade of the building. The UC (Urban Center) Zoning District does have façade material requirements, but due to the scope of the project no requirements are needed for the project.

City staff took no further action within this review.

Stormwater/Drainage

The applicant has provided a Stormwater Plan to address the stormwater drainage on the proposed site and to address the stormwater requirements that are outlined within the City Code. The applicant has met these requirements through updating stormwater utilities, underground detention, and landscaping for permeable surfaces on the property. The updated stormwater utilities partially lie within the right-of-way, permission was granted by the City and Iowa DOT for these to be placed in their proposed locations.

The Stormwater Management Plan is attached.

Parking Requirements

Based upon the proposed site and development, minimum parking requirements have been established by the City of Windsor Heights.

Parking requirements for a Civic Organization use is parking space per 1,000 sq. ft. of building space. This would require 12 parking spaces based upon the size of the building/primary structure on the property. This includes a minimum of 1 of those ADA compliant and accessible parking spaces. The applicant meets this parking requirement as the property currently exists and will then exceed it with the proposed development. The proposed project will include 47 new parking spaces with 3 of those being ADA accessible spaces.

Bike parking is required at the proposed development as well. Short-term and Long-term bike parking are considered to be separate and are required in different capacities. 1 Short-term bike parking stall is required for every 4,000 sq. ft. of building space for Civic uses. 1 Long-term bike parking stall is required for every 10,000 sq. ft. of building space for Civic uses. This creates the requirements of 3 short-term bike parking stalls and 2 long-term bike parking stalls. The applicant meets this requirement by providing a combination of six (6) total bike parking stalls that meet the requirements of both short- and long-term bike parking stalls.

Screenings and Buffers

Screening and buffers are required to protect less intensive uses found in the R-1, R-2, and R-3 Districts from more intense uses that are commonly found in the UC, CC, and LI Districts. The Windsor Presbyterian Church Parking lot expansion project is located within the UC District and considered a more intensive district compared to surrounding Zoning Districts. This project abuts the R-3 District on its northern and western site boundary, so it is required to have a minimum of a 10 ft. fully opaque buffer according to Table 173.05-03-Screened Buffer Yard Requirements.

Table 173.05-03 – Screened Buffer Yard Requirements

		Less Intensive Adjacent District
		R-1*, R-2*, & R-3
More Intensive District	UC, CC	10 Feet
	LI	20 Feet
*Applies to residential uses only.		

The following requirements need to be met for the opaque buffer between the Zoning Districts:

2. Opaque Barrier. An opaque barrier shall be provided which visually screens the conditions listed in subsection 1 from less intensive uses by employing one or more of the following in any combination to obtain a solid barrier of at least 6' in height:

- a. A solid wood and/or masonry fence or wall at least six feet in height.
- b. A landscaped screen, using a minimum of 50% evergreen plant material, capable of providing a substantially opaque, hedge-like barrier and attaining a minimum height of six feet within three years of planting. (Note: All planting materials shall conform to the minimum caliper/size requirements set in Table 173-02)
- c. A landscaped earth berm with a maximum slope of three to one, rising no less than six feet above the existing grade of the lot line separating the zoning districts.
- d. Any combination of these methods that achieves a cumulative height of six feet.

The applicant is meeting this requirement with a fully landscaped buffer to create the required opaque residential buffer with approved planting materials as listed in Table 173-02. The inclusion of retaining walls, approved by the City and Iowa DOT (for the one located within the right-of-way on 63rd Street) assist in creating this buffer as well.

Lighting

The applicant was required to provide a lighting plan for the proposed development as it is required with any major update or change to a parcel or lot. The applicant provided a lighting plan that was reviewed by City Staff. The lighting plan shows central overhead lighting within the center of the parking lot that cascades to the rest of the parking lot. The lighting proposed and system of lighting follows the guidelines set forth within the Zoning Code.

A requirement of the lighting code is to have 1-footcandle or less spread onto adjoining properties. This lighting plan shows that 0.5-footcandles or less spread onto the adjoining properties to the north and west and to the right-of-way to the east.

Comprehensive Plan Review

The Windsor Heights Comprehensive Plan has been reviewed by City Staff to make sure that this project aligns with the goals and ideals of the Comprehensive Plan. The proposed Windsor Apartment development project meets one of the goals identified and outlined within the Comprehensive Plan and addresses the following goal as determined by the City Staff. The Comprehensive Plan supports the proposed project as it is presented.

Economic Development:

1. Support strategic redevelopment along key corridors, including University Avenue, Hickman Road, 73rd Street, and 63rd Street.
 - a. This project is supporting strategic redevelopment along both 63rd Street. With the updates to the area the UC (Urban Center) Zoning District is going through in expanding housing and commercial opportunities, developing close by parking opportunities that benefit from connectivity is essential to promising economic development.

Future Land Use Map

The future land use map should be used as guidance for areas throughout the City. The map identifies this location as Civic, which is defined on page 40 of the Windsor Heights 2017 Comprehensive Plan. “Civic Use. These areas include religious buildings, public facilities, schools and other public and semi-public uses.”

The proposed project conforms to the vision that has been laid out by the Comprehensive Plan Future Land Use Map.

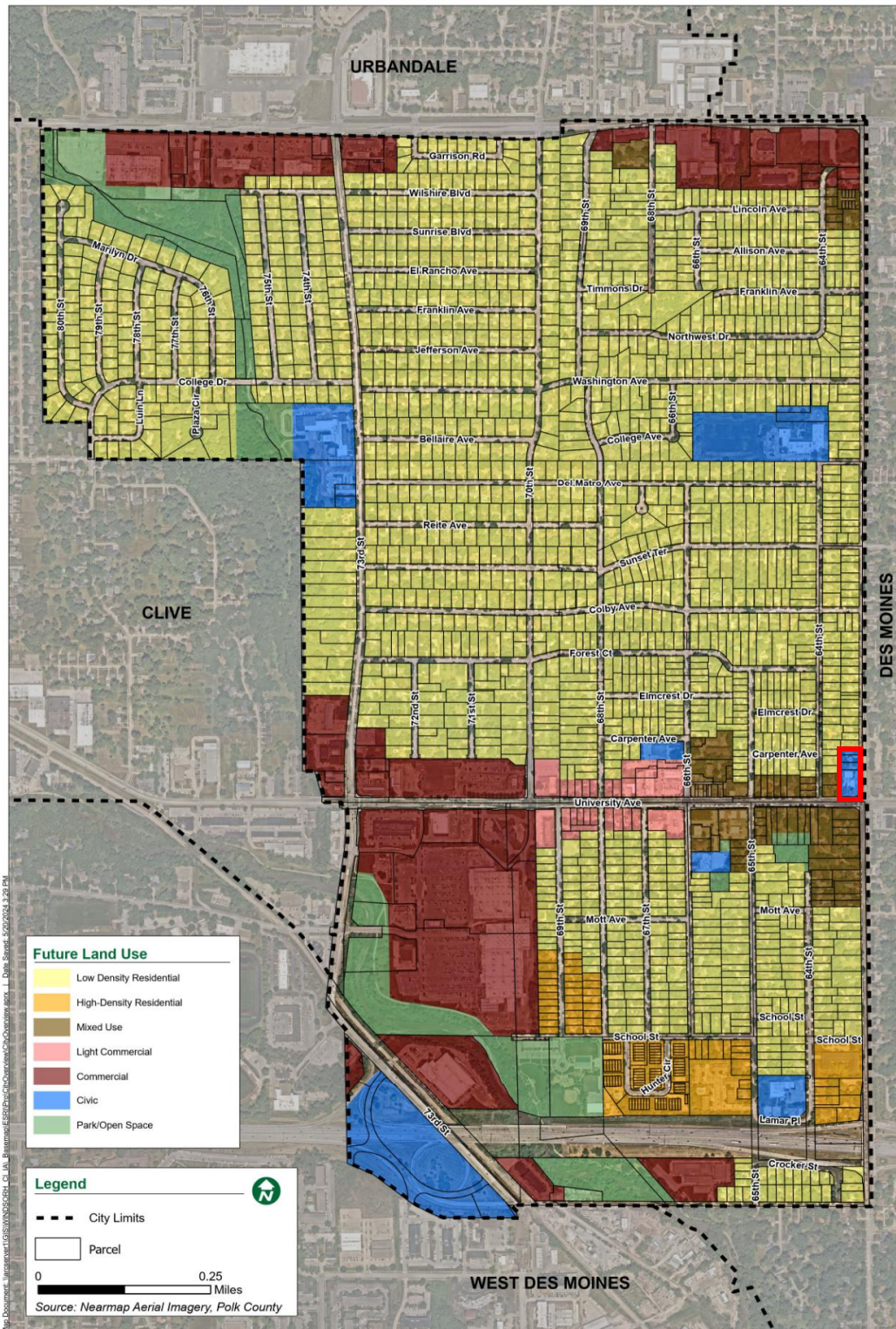


Figure 1: Current Future Land Use Map

Zoning Map

The parcels are currently zoned for Urban Center District which is defined in [Table 168-1 Purposes of Zoning Districts](#) as “This district recognizes the mixed-use character primarily along the University Avenue corridor, which is the principal route through central Windsor Heights. This district contains a combination of residential, commercial, and office uses and is known for its walkability and main street feel.”

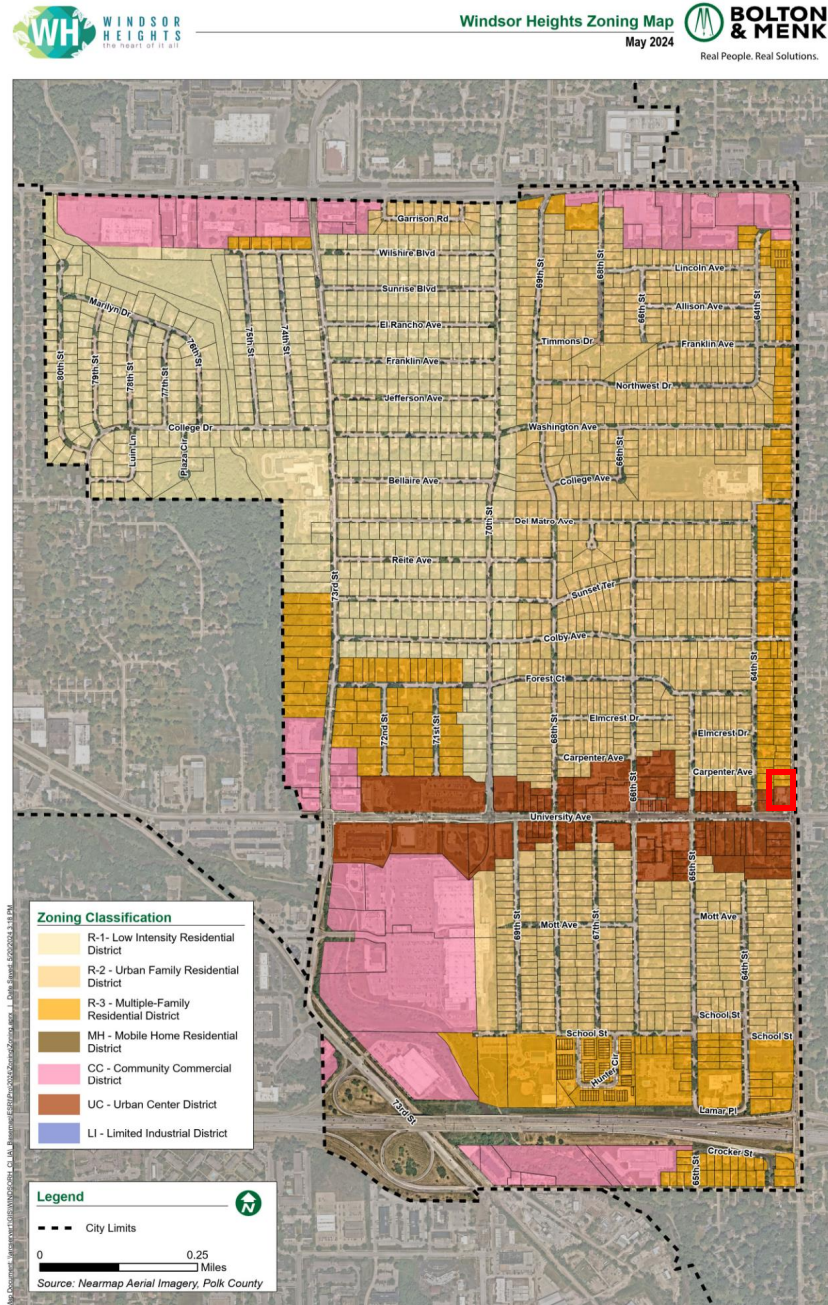


Figure 2: Current Zoning Map

Public Comments Received

During the Public Hearing for the Planning and Zoning Commission meeting on October 23rd, 2024, there were three (3) members of the public that spoke about the project. The concerns raised were:

1. Lack of communication between the developer/church and neighboring properties about the project taking place.
2. Concerns on lighting of the parking lot not being enough and allowing a non-lit gathering space.
3. Concerns on lighting being too bright on the edge of the parking lot and going into neighboring properties.
4. The required landscaping bufferyard to the north being trees that drop leaves and those leaves being blown onto the property north of the parking lot. Effectively making it the north property owner's job to maintain.

Discussion was had on each of the comments and addressed by the applicant or City Staff when necessary. The applicant, in good faith, agreed to work with the property owner to the north on the proposed trees placed for the required landscape buffer. The current landscaping buffer proposed meets the Zoning Code and trees proposed are a part of the permitted trees list within the Zoning Code as well.

Current Work Done at Site

The work done at the site has been the demolition of the three (3) single-family homes that previously existed on the lots acquired by Windsor Presbyterian Church.

City Staff Conclusion and Recommendation

After reviewing all of the documentation submitted by the applicant by City Staff and all City Departments, Staff compared the project to the goals and vision of the Comprehensive Plan and other City plans. After review and comparison, Staff came to their recommendation.

The staff recommends to the City Council that they approve the site plan with the following conditions to the City Council.

City Staff Recommended Motion

Motion to recommend for approval of the 6301 University Avenue Site Plan (Windsor Presbyterian Church Parking Lot expansion) with the conditions of approval laid out by City Staff to the City Council.

Planning and Zoning Commission Recommendation

The Planning and Zoning Commission held a meeting with a Public Hearing on October 23rd, 2024, for the site plan for 6301 University Avenue. After review of the documents, listening to public comment, and consideration of Staff's recommendation, the Planning and Zoning Commission came to their recommendation for the City Council.

The Planning and Zoning Commission recommends to the City Council that they approve the Site Plan for 6301 University Avenue with the conditions provided by City Staff.

Conditions:

All of the following conditions will be met, reviewed by the city department assigned, and deemed complete before approval of the site plan and before any development can take place.

General Comments

1. All permits related to the project will be held and released concurrently at the approval of the following:
 - a. Approval of signs and utility from Safe Building.
 - b. Revision of site plan application in accordance with the comment letter and all corresponding comments from each City Department.
 - c. Professional Signatures on Final Site Plan including Licensed Surveyor (Chapter 170.10)
 - d. City Council approval of site plan.

Engineering Comments

1. Obtain a Construction Site Erosion & Sediment Control Ordinance Permit or COSESCO Permit from City.
2. Provide performance security or bond per 161.11 of the City's Code.
3. Provide maintenance performance security or bond per 161.12 of the City's Code
4. Provide Maintenance and Repair Easement per 161.14 of the City's Code.
5. Complete Stormwater Maintenance Agreement and submit per instructions.

Planning Comments

1. Combine all lots to become one contiguous lot/parcel or develop and solidify a lot tie agreement that allows for development across the lots.

Attachments

1. Application Materials (as submitted)
2. Easement Submittal Documents
3. Entrance Permit from DOT
4. Stormwater Management Plan

SITE PLAN
OF
WINDSOR PRESBYTERIAN CHURCH

6301 UNIVERSITY AVENUE, WINDSOR HEIGHTS, IA

SHEET LIST TABLE

SHEET #	SHEET TITLE
1	COVER
2	OVERALL PLAN
3	DEMOLITION PLAN
4	DIMENSION PLAN
5	GRADING PLAN
6	UTILITY PLAN
7	LANDSCAPE PLAN
8	PHOTOMETRIC PLAN

PROPERTY OWNER:
WINDSOR PRESBYTERIAN CHURCH
6301 UNIVERSITY AVENUE
WINDSOR HEIGHTS, IOWA 50324
515-277-8374

PROJECT MANAGER:
SHANE DEVICK
CIVIL ENGINEERING CONSULTANTS INC.
DES MOINES, IOWA 50322
515-276-4884
devick@cecinc.com

APPLICANT:
WINDSOR PRESBYTERIAN CHURCH
6301 UNIVERSITY AVENUE
WINDSOR HEIGHTS, IOWA 50324
515-277-8374

SETBACKS:
FRONT YARD = 35 FEET
STREET SIDE YARD = 35 FEET

LEGAL DESCRIPTION:
LOTS 5, 6 AND 7 EVERGREEN HEIGHTS, AN OFFICIAL PLAT, IN BOOK J, PAGE 168, CITY
OF WINDSOR HEIGHTS, POLK COUNTY, IOWA.

ZONING:
R-3 URBAN FAMILY RESIDENTIAL DISTRICT

AREAS:		
BUILDING	= 13,874 SF	26%
PAVING	= 22,985 SF	43%
OPEN SPACE	= 16,284 SF	31%
TOTAL	= 53,143 SF	100%

IMPERVIOUS: 39,691 SF (75%)
PERVIOUS: 13,452 SF (25%)

PARKING
BUILDING = 13,874 SF
1 SPACE / 200 SF

BUFFER REQUIREMENTS
1 TREE PER 50 LF

TOTAL SITE AREA
1.22 ACRES (53,143 SF)

PROPOSED SITE USE
CHURCH & PARKING LOT

PARKING
REQUIRED
1 SPACE PER 6 SEATS

PROPOSED
60 SPACES REQUIRED



VICINITY SKETCH



GENERAL LEGEND		EXISTING	
-----	PROPOSED PLAT BOUNDARY	---	LOT LINE
----	SECTION LINE	○	SANITARY/STORM MANHOLE
----	LOT LINE	⋈	WATER VALVE
----	CENTERLINE	⋈	FIRE HYDRANT
----	EASEMENT LINE	□	STORM SEWER SINGLE INTAKE
◁	FLARED END SECTION	□	STORM SEWER DOUBLE INTAKE
⊙	DRAIN BASIN OR SEDIMENT RISER	⊙	STORM SEWER ROUND INTAKE
⊙	DRAIN BASIN WITH SOLID GRATE	▷	FLARED END SECTION
⋈	WATER VALVE	⊙	DECIDUOUS TREE
⋈	FIRE HYDRANT ASSEMBLY	⊙	CONIFEROUS TREE
⋈	BLOW-OFF HYDRANT	⊙	SHRUB
⋈	SCOUR STOP MAT	⊙	POWER POLE
⋈	TURF REINFORCEMENT MAT	⊙	STREET LIGHT
ST 15"	STORM SEWER WITH SIZE	⊙	GUY ANCHOR
W 8"	WATER SEWER WITH SIZE	⊙	ELECTRIC TRANSFORMER
W	WATER SERVICE	⊙	GAS METER
926	PROPOSED CONTOUR	⊙	TELEPHONE RISER
X-X	SILT FENCE	⊙	SIGN
1234	ADDRESS	⊙	UNDERGROUND TELEVISION
⊙	RIPRAP	⊙	UNDERGROUND ELECTRIC
		⊙	UNDERGROUND GAS
		⊙	UNDERGROUND FIBER OPTIC
		⊙	UNDERGROUND TELEPHONE
		⊙	OVERHEAD ELECTRIC
		⊙	SANITARY SEWER WITH SIZE
		⊙	STORM SEWER WITH SIZE
		⊙	WATER MAIN WITH SIZE
		⊙	EXISTING CONTOUR
		⊙	TREELINE
		⊙	BUILDING SETBACK LINE
		⊙	PUBLIC UTILITY EASEMENT
		⊙	MINIMUM OPENING ELEVATION

GRADING NOTES

- FINISHED GRADE ON ALL NON-PAVED AREAS SHALL BE WITHIN 0.20 FOOT OF PLAN GRADE. PAVED AREAS SHALL BE WITHIN 0.10 FOOT.
- THE CONTRACTOR SHALL VERIFY THE LOCATION AND PROTECT ALL EXISTING UTILITIES AND STRUCTURES. DAMAGE TO UTILITIES AND STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE, TO THE SATISFACTION OF THE UTILITY OWNER.
- TOPSOIL SHALL BE SPREAD TO A MINIMUM THICKNESS OF 6-INCHES ON ALL LANDSCAPED AREAS.
- BACKFILL TO THE TOP OF ALL CURBS.
- ALL ELEVATIONS ARE TO THE GUTTER GRADE UNLESS NOTED OTHERWISE.
- COVER AND/OR FILTER SOCK AROUND ALL INTAKES PRIOR TO PAVING TO PREVENT SEDIMENTATION FROM ENTERING THE STORM SEWER.
- ALL DEBRIS SPILLED ON CITY R.O.W. AND ADJOINING PROPERTY SHALL BE REMOVED BY CONTRACTOR IN A TIMELY FASHION.

UTILITY NOTES

- ALL UTILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SUDAS 2014 "URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS".
- THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES OR STRUCTURES AT THE SITE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNERS OF UTILITIES OR STRUCTURES CONCERNED BEFORE STARTING WORK. THE CONTRACTOR SHALL NOTIFY THE PROPER UTILITY IMMEDIATELY UPON BREAKING OR DAMAGE TO ANY UTILITY LINE OR APPURTENANCE, OR THE INTERRUPTION OF THEIR SERVICE. IF EXISTING UTILITY LINES ARE ENCOUNTERED THAT CONFLICT IN LOCATION WITH NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT MAY BE RESOLVED.
- ALL SERVICES SHALL BE CONSTRUCTED TO WITHIN 5 FEET OF THE OUTSIDE OF THE BUILDING WALLS.
- ALL EXISTING TILE LINES ENCOUNTERED SHALL BE RESTORED OR ROUTED TO A STORM SEWER WHETHER ACTIVE OR NOT.
- COORDINATE ALL UTILITY SERVICE LOCATIONS & SIZES WITH BUILDING MECHANICAL DRAWINGS.

PLANTING NOTES

- ALL SITE WORK, SODDING AND LANDSCAPING SHALL MEET THE REQUIREMENTS OF THE STATEWIDE URBAN DESIGN AND SPECIFICATIONS (SUDAS).
- ALL PLANT MATERIAL SHALL AT LEAST MEET MINIMUM REQUIREMENTS SHOWN IN THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1-2004).
- CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF ONE YEAR FROM DATE OF INSTALLATION.
- THE CONTRACTOR SHALL REMOVE THE TREE STAKES ONE YEAR AFTER INSTALLATION.
- NO PLANT MATERIAL SHALL BE SUBSTITUTED WITHOUT AUTHORIZATION OF THE LANDSCAPE ARCHITECT.
- ALL TREES, SHRUBS, BEDS & GROUND COVERS SHALL BE MULCHED WITH AT LEAST 3" SHREDDED BARK MULCH.
- THE CONTRACTOR SHALL VERIFY THE LOCATION AND PROTECT ALL UTILITIES AND STRUCTURES. DAMAGE TO UTILITIES AND STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER OF THE UTILITY.
- ONE WEEK PRIOR TO INSTALLATION, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT.
- NO STAKING OF STREET TREES IS ALLOWED IN THE R.O.W.
- REMOVE ALL WIRE, TWINE AND BURLAP FROM THE ROOTBALLS OF STREET TREES.
- TOPSOIL SHALL BE A LOAM, SANDY LOAM, CLAY LOAM, SILT LOAM, SANDY CLAY LOAM, LOAMY SAND. OTHER SOILS MAY BE USED IF RECOMMENDED BY AN AGRONOMIST OR SOIL SCIENTIST AND APPROVED BY DPS. REGARDLESS, TOPSOIL SHALL NOT BE A MIXTURE OF CONTRASTING TEXTURED SUBSOILS, AND SHALL CONTAIN LESS THAN 5% BY VOLUME OF CINDERS, STONES, SLAG, COARSE FRAGMENTS, GRAVEL, STICKS, ROOTS, TRASH, OR OTHER MATERIALS LARGER THAN 1 1/2" IN DIAMETER.
- ALL DISTURBED AREAS SHALL BE SEEDED OR SODDED.
- SHRUB SHALL CONTAIN 3 INCHES OF ORGANIC OR INORGANIC MULCH.

CERTIFICATION

	I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA. PRELIMINARY SHANE J. DEVICK, IOWA LIC. NO. 16507 DATE MY LICENSE RENEWAL DATE IS DECEMBER 31, 2024 PAGES OR SHEETS COVERED BY THIS SEAL:
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Civil Engineering Consultants, Inc.
2400 86th Street, Unit 12 · Urbandale, Iowa 50322
515.276.4884 · mail@cecinc.com



DATE:	04-06-2024	DATE OF SURVEY:	APR. 22, 2024	DESIGNED BY:	SJD	DRAWN BY:	MM
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WINDSOR PRESBYTERIAN CHURCH
6301 UNIVERSITY AVENUE, WINDSOR HEIGHTS, IA

COVER

SHEET
OF 9

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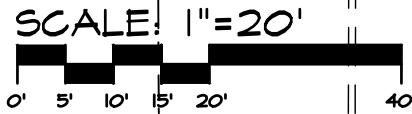
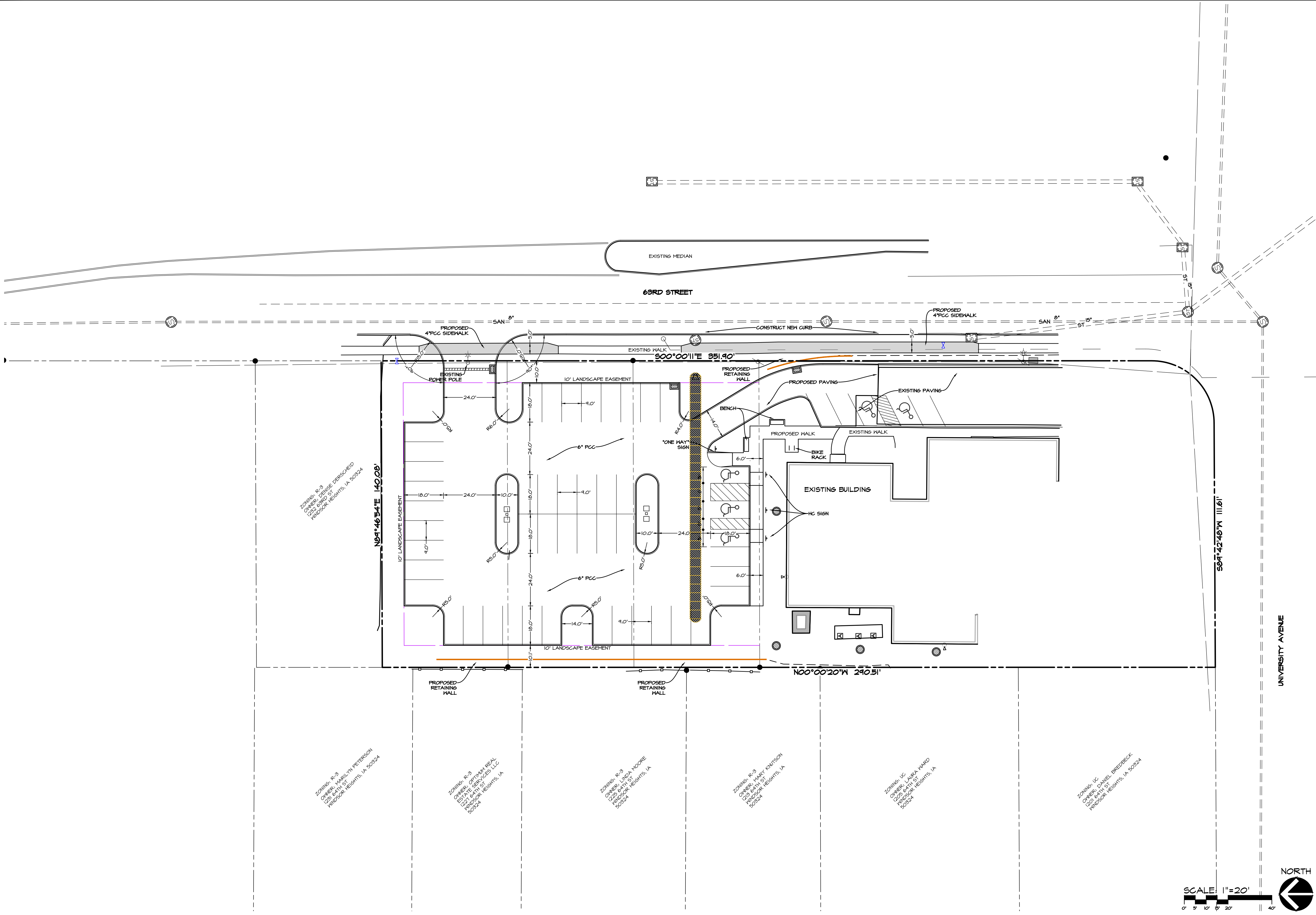
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		04-06-2024	
		DATE OF SURVEY:	APR. 22, 2024
		DESIGNED BY:	SJD
		DRAWN BY:	MM

Civil Engineering Consultants, Inc.

2400 86th Street, Unit 12 · Urbandale, Iowa 50322
515.276.4884 · mail@cecinc.com

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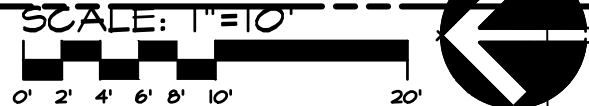
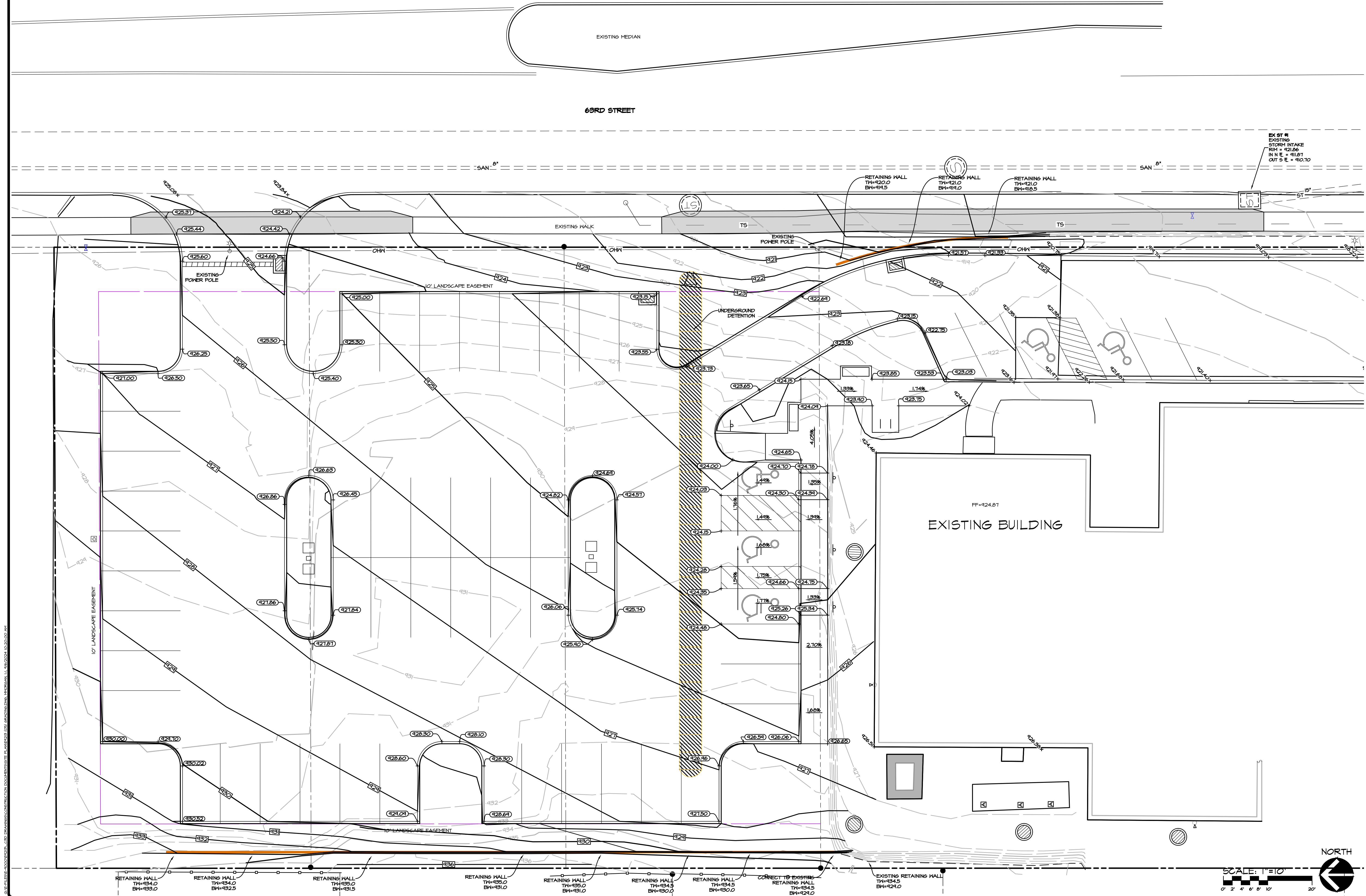
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DATE: 04-06-2024		CIVIL ENGINEERING CONSULTANTS, INC.	
DATE OF SURVEY: APR. 22, 2024		2400 86th Street, Unit 12, Urbandale, Iowa 50322	
DESIGNED BY: SJD		515.276.4884	
DRAWN BY: MM		mail@cecinc.com	

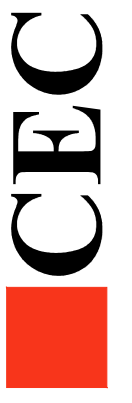
WINDSOR PRESBYTERIAN CHURCH	
6801 UNIVERSITY AVENUE, WINDSOR HEIGHTS, IA	
DIMENSION PLAN	
SHEET 4	OF 9
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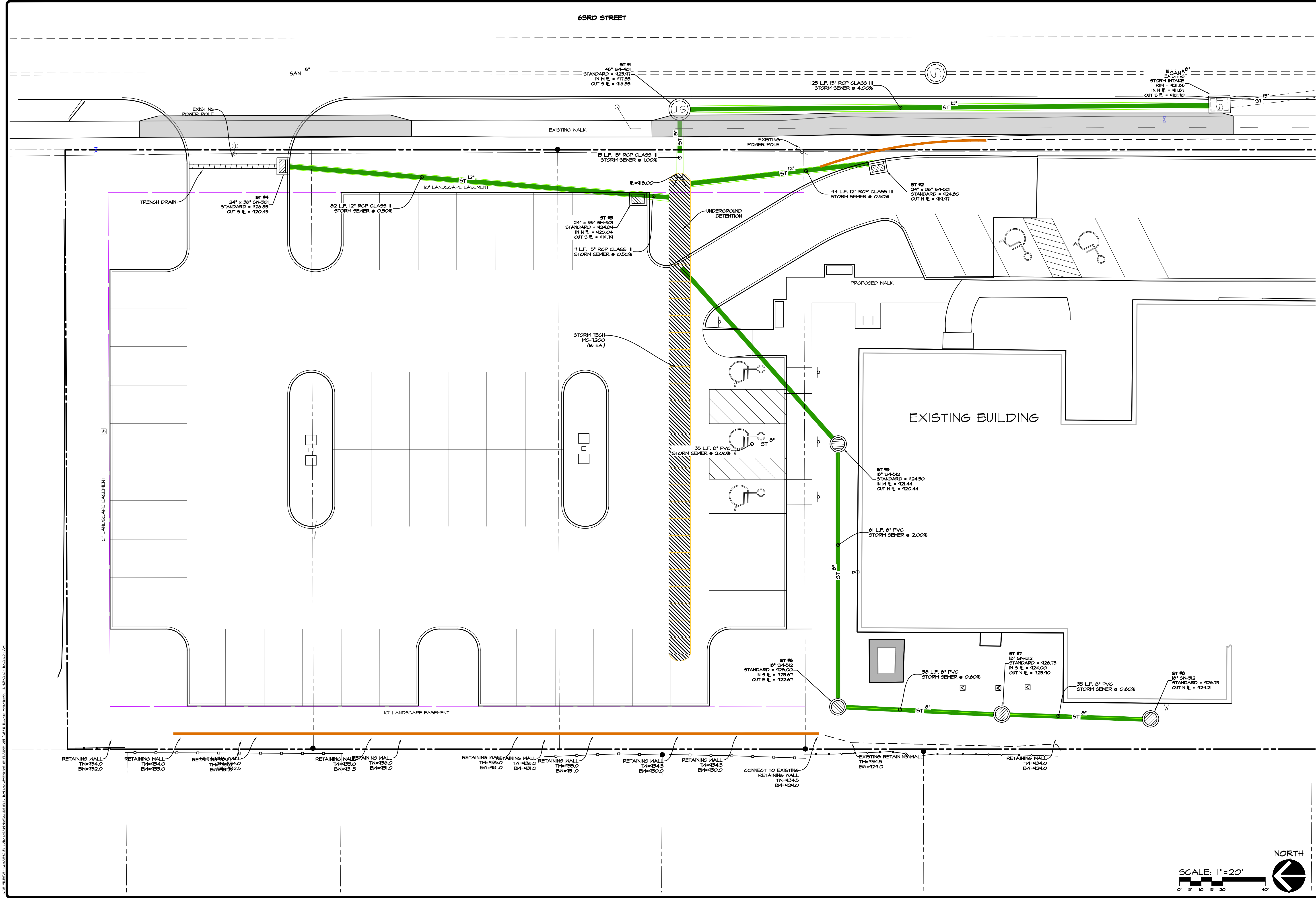


DATE:	04-06-2024
DATE OF SURVEY:	APR. 22, 2024
DESIGNED BY:	SJD
DRAWN BY:	MM

WINDSOR PRESBYTERIAN CHURCH
6301 UNIVERSITY AVENUE, WINDSOR HEIGHTS, IA
GRADING PLAN



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**CEC**

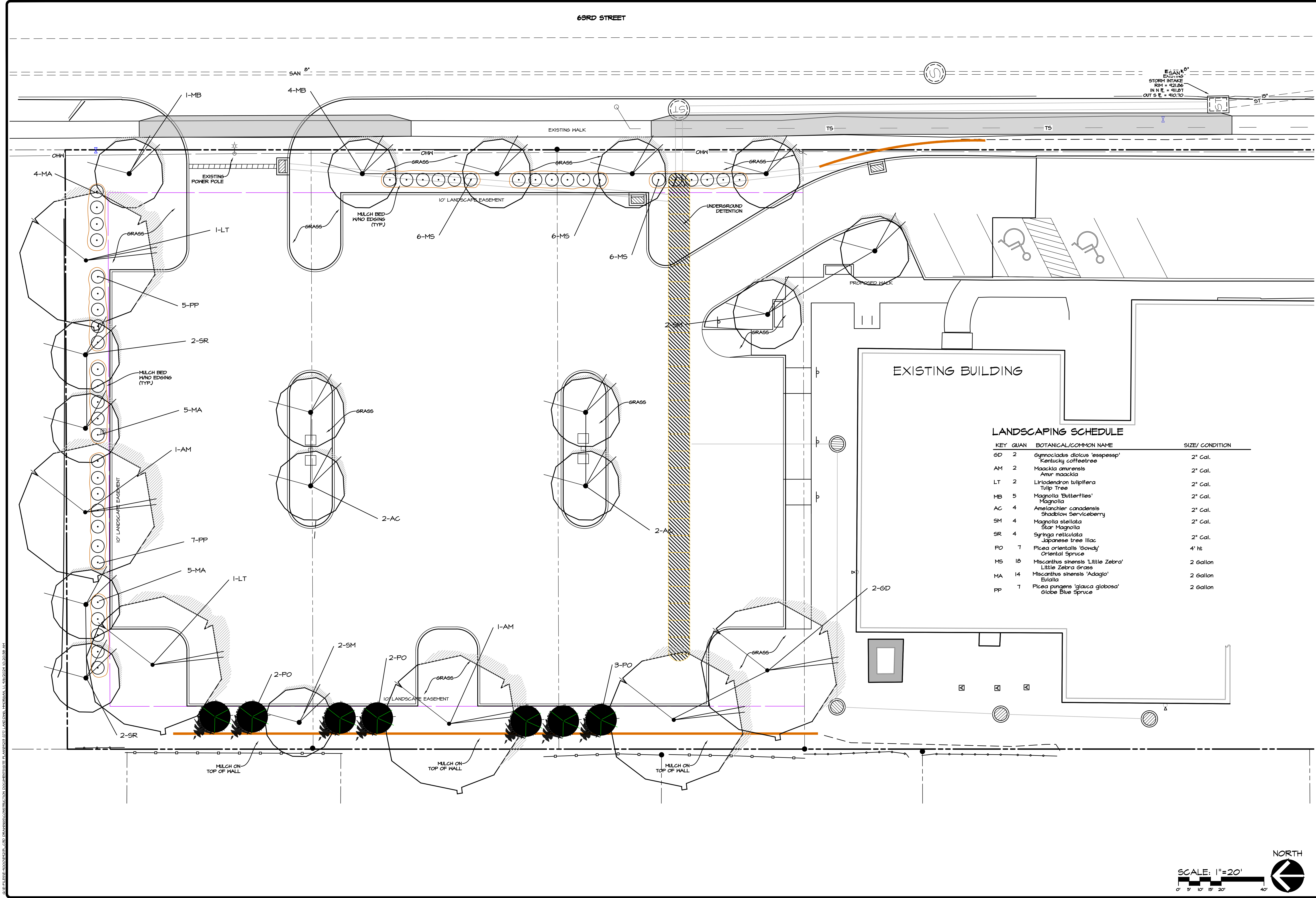
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DATE OF SURVEY:	APR. 22, 2024
DESIGNED BY:	SJD
DRAWN BY:	MM

WINDSOR PRESBYTERIAN CHURCH
6301 UNIVERSITY AVENUE, WINDSOR HEIGHTS, IA

UTILITY PLAN

SHEET	9
OF	9
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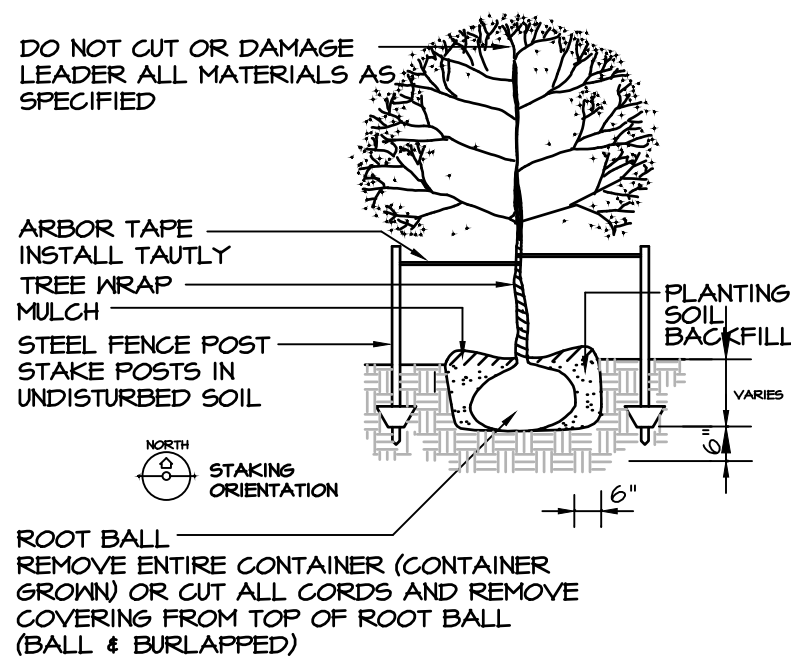
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2400 86th Street, Unit 12 · Urbandale, Iowa 50322
515.276.4884 · mail@cecinc.com

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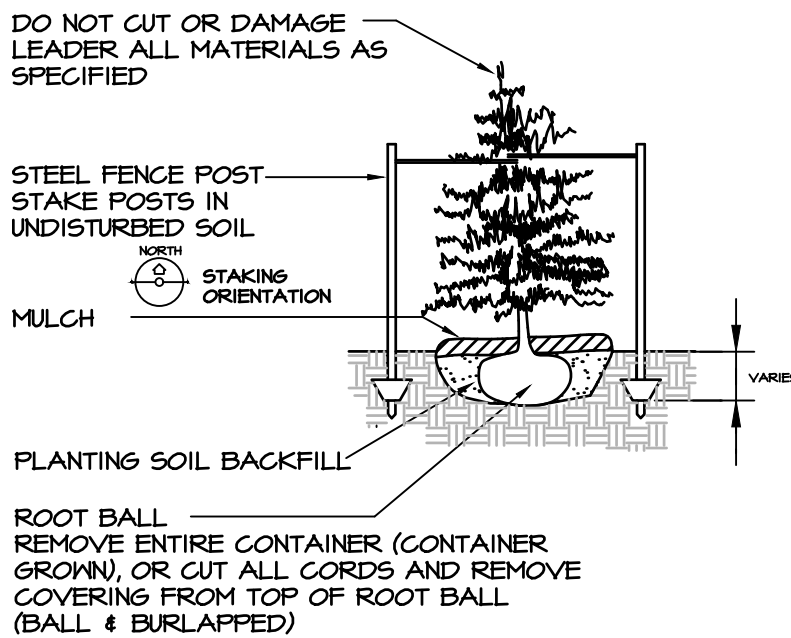
DATE: 04-06-2024
DATE OF SURVEY: APR. 22, 2024
DESIGNED BY: SJD
DRAWN BY: MM

WINDSOR PRESBYTERIAN CHURCH
6301 UNIVERSITY AVENUE, WINDSOR HEIGHTS, IA
LANDSCAPE PLAN

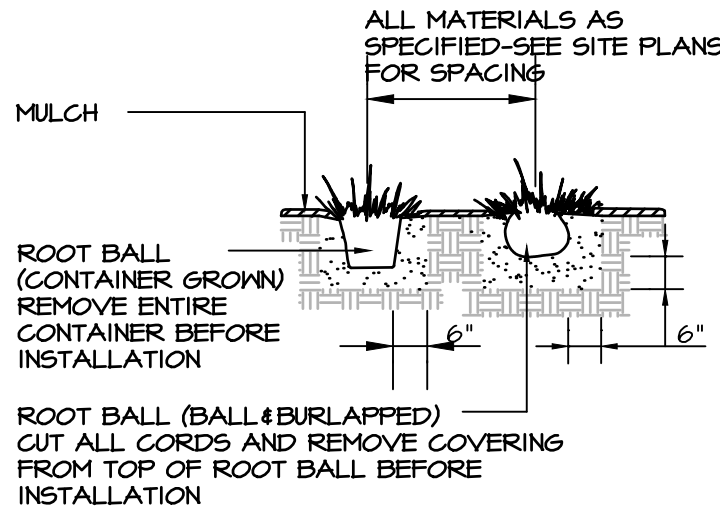
SHEET 9 OF 9
E9213



**DECIDUOUS TREE
PLANTING AND STAKING DETAIL**
NO SCALE



**EVERGREEN TREE
PLANTING AND STAKING DETAIL**
NO SCALE



SHRUB PLANTING DETAIL
NO SCALE

PLANTING NOTES

1. ALL SITEWORK, SODDING AND LANDSCAPING SHALL BE IN ACCORDANCE WITH WINDSOR HEIGHTS STANDARD SPECIFICATIONS UNLESS SPECIFIED OTHERWISE.
2. ALL PLANT MATERIAL SHALL AT LEAST MEET MINIMUM REQUIREMENTS SHOWN IN THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1-1986).
3. CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF ONE YEAR FROM DATE OF INSTALLATION.
4. NO PLANT MATERIAL SHALL BE SUBSTITUTED WITHOUT AUTHORIZATION OF LANDSCAPE ARCHITECT AND THE CITY.
5. 2" TO 3" CALIFER DECIDUOUS TREES SHALL BE STAKED (2 STAKES) AND WRAPPED IMMEDIATELY AFTER PLANTING. ALL CONIFERS SHALL BE STAKED (2 STAKES).
6. ALL TREES, SHRUBS, BEDS & GROUND COVERS SHALL BE MULCHED WITH AT LEAST 3" SHREDDED BARK MULCH.
7. PLANT QUANTITIES ARE FOR CONTRACTORS CONVENIENCE, DRAWING SHALL PREVAIL WHERE CONFLICT OCCURS.
8. ONE WEEK PRIOR TO INSTALLATION, THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AT CIVIL ENGINEERING CONSULTANTS, INC. (TELEPHONE 515/276- 4884).
9. ALL DECIDUOUS TREES SHALL BE PLANTED AT LEAST 5' FROM R.O.W. AND CONIFEROUS TREES AT LEAST 10' FROM R.O.W.
10. ALL DISTURBED AREAS SHALL BE SODDED.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF IDENTIFICATION TAGS, CONTAINERS, AND BURLAP CORDS ON ALL PLANT MATERIAL PRIOR TO COMPLETION OF THE CONTRACT.

DATE:	SEP. 6, 2024
DATE OF SURVEY:	APR. 22, 2024
DESIGNED BY:	SJD
DRAWN BY:	MM

WINDSOR PRESBYTERIAN CHURCH
6801 UNIVERSITY AVENUE, WINDSOR HEIGHTS, IA

DETAILS

SHEET
OF 4

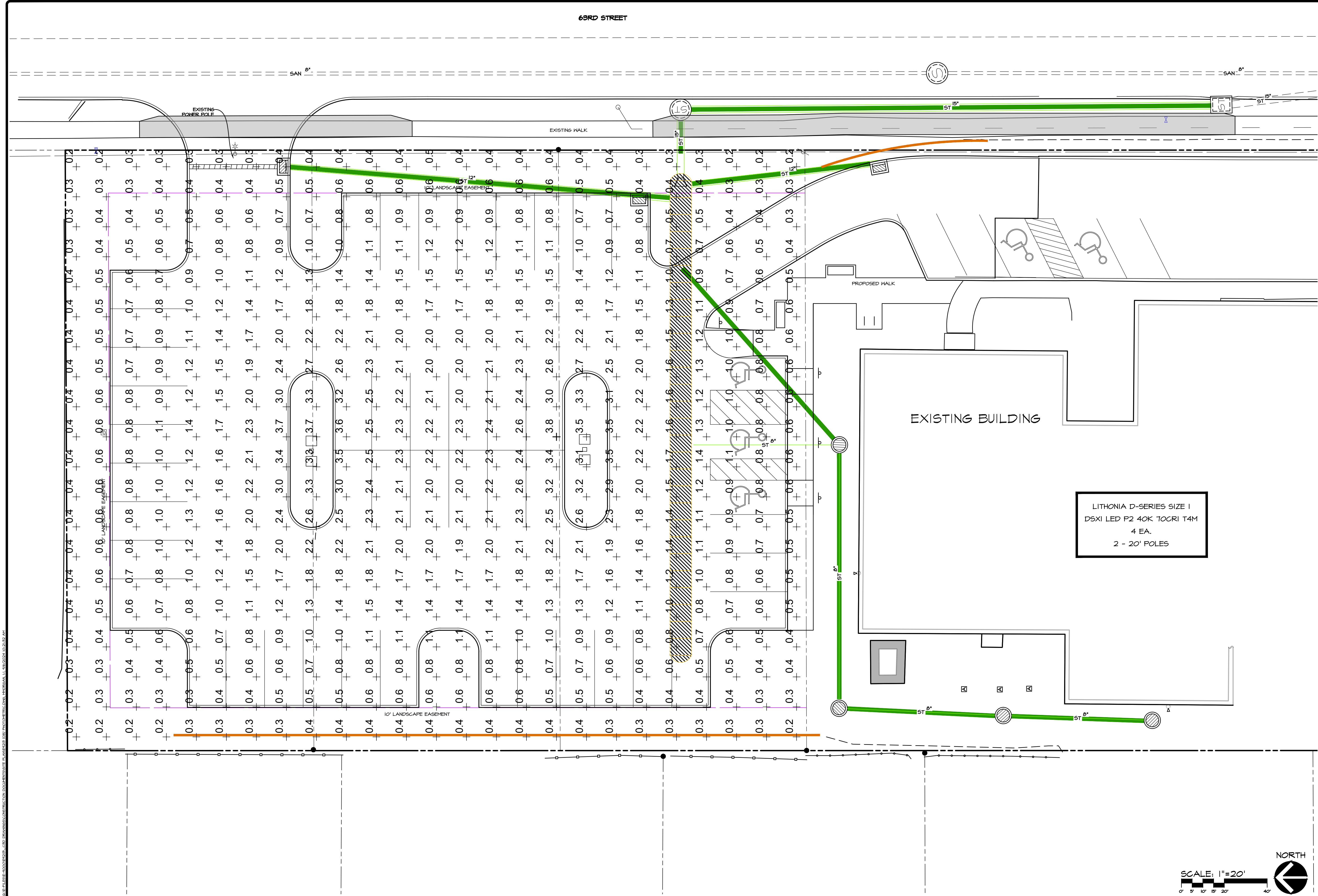
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WINDSOR PRESBYTERIAN CHURCH 6301 UNIVERSITY AVENUE, WINDSOR HEIGHTS, IA	DATE:	04-06-2024
	DATE OF SURVEY:	APR. 22, 2024
	DESIGNED BY:	SJD
	DRAWN BY:	MM
PHOTOMETRIC PLAN	SHEET	OF 9
E9213		

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Storm Water Management Plan

Windsor Presbyterian Church
6301 University Ave, Windsor Heights IA

4-24-24

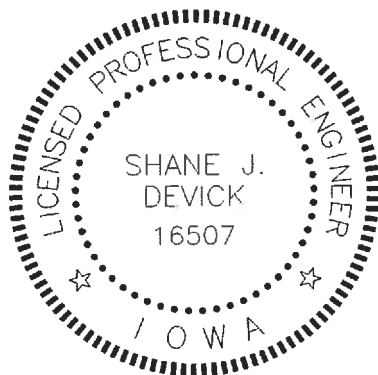
CEC job # E9213

By:



Civil Engineering Consultants, Inc.

Civil Engineering Consultants, Inc.
2400 86th Street, Suite 12
Urbandale, IA 50322
515-276-4884



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT
WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL
SUPERVISION AND THAT I AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE
STATE OF IOWA.

SHANE J. DEVICK, IOWA LIC. NO. 16507 DATE
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2024
PAGES OR SHEETS COVERED BY THIS SEAL:

E9213
4-24-24

PRE-DEVELOPMENT CONDITIONS

This site is located in the northwest quadrant of the intersection of University Avenue and 63rd St., City of Windsor Heights. The address is 6301 University Ave.

Currently the site has three existing residences.

The site is approximately 0.55 acres. The existing homes will be demolished.

POST-DEVELOPMENT CONDITIONS

The purpose of the proposed project is to construct a parking lot for the Church directly adjacent to the south.

CONTRIBUTING OFF-SITE DRAINAGE

There is 0.9 acres offsite pass through flows from the west.

WETLANDS

There are no wetlands associated with this project. Reference the National Wetlands Inventory included at the end of this report.

FLOODWAYS AND FLOODPLAINS

There are no floodplains located within this property. Reference the included FEMA print at the end of this report.

PRE-DEVELOPMENT RUNOFF ANALYSIS

WATERSHED AREA

The watershed is 0.55 acres. A drainage area map is included.

TIME OF CONCENTRATION

The time of concentration is calculated at 9.6 minutes. See included Worksheet 2B-3.01

PRECIPITATION MODEL

The rainfall duration is inputted from the Rainfall Intensity Duration Frequency Curve tables provided in SUDAS. The modelling is achieved with the HydroFlow software.

RAINFALL LOSS METHOD

Runoff coefficients and Curve Numbers used:

HYDROLOGIC SOIL GROUP

The site is a combination of the below soil types:
4138C – Clarion-Urban land complex, 100.0% of soils, type B Hydrologic
Soil Group

Supporting documents are included at the end of this report.

RUNOFF MODEL

Routing of the storms is necessary for determination of the peak storms and volumes. The HydroFlow program, AutoCAD based, was used for the routing calculations.

PRE-DEVELOPED ALLOWED RUNOFF

See included hydrograph output

5 year storm = 1.00 cfs

PASS THROUGH FLOWS

See included pass through flows map

A = 0.9 acres

Composite C value:

Area of impervious: 0.27 acres, C = 0.98

Area of pervious: 0.63 acres, C = 0.35

Comp. C = 0.54

Q100 = 4.13 cfs

METHODOLOGY FOR DETENTION

See included drainage area map.

The maximum release rate is equal to the 5 year storm + 100 year pass through.

Rate = 1.00 cfs + 4.13 = 5.13

POST-DEVELOPMENT RUNOFF ANALYSIS

WATERSHED AREA

The watershed is 0.55 acres for both pre and post development. A drainage area map is included.

TIME OF CONCENTRATION

The time of concentration is calculated at 4.2 minutes. See attached worksheets.

Hydrograph Report

Hyd. No. 1

Existing Conditions

Hydrograph type	= Rational	Peak discharge	= 1.007 cfs
Storm frequency	= 5 yrs	Time to peak	= 10 min
Time interval	= 1 min	Hyd. volume	= 604 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.35
Intensity	= 5.232 in/hr	Tc by User	= 10.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Monday, 05 / 13 / 2024

Hyd. No. 3

Pass through

Hydrograph type	= Rational	Peak discharge	= 4.132 cfs
Storm frequency	= 100 yrs	Time to peak	= 12 min
Time interval	= 1 min	Hyd. volume	= 2,975 cuft
Drainage area	= 0.900 ac	Runoff coeff.	= 0.54
Intensity	= 8.503 in/hr	Tc by User	= 12.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

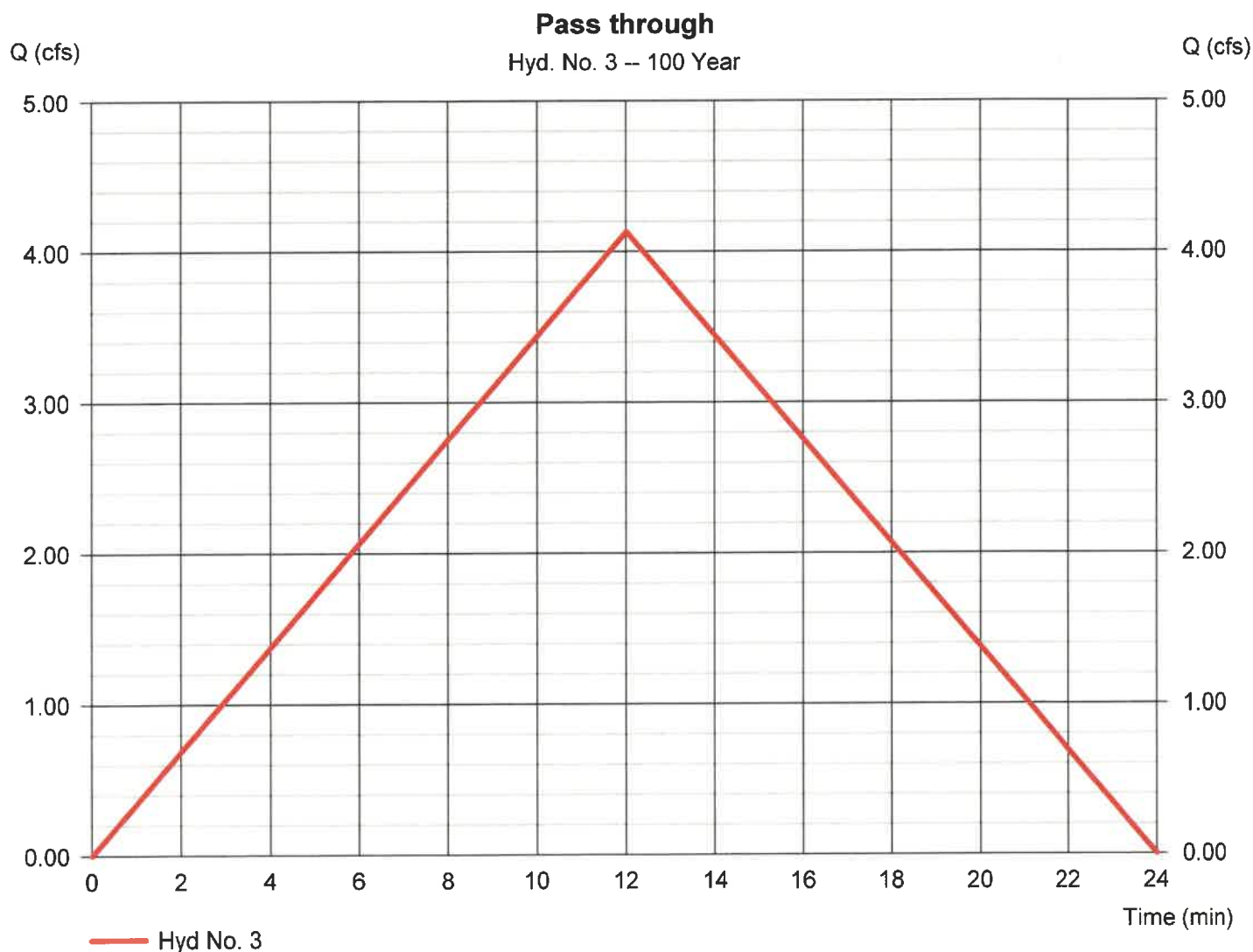


Table 2B-4.01: Runoff Coefficients for the Rational Method

Cover Type and Hydrologic Condition	Runoff Coefficients for Hydrologic Soil Group											
	A			B			C			D		
	5	10	100	5	10	100	5	10	100	5	10	100
Open Space (lawns, parks, golf courses, cemeteries, etc.)												
Poor condition (grass cover < 50%)	.25	.30	.50	.45	.55	.65	.65	.70	.80	.70	.75	.85
Fair condition (grass cover 50% to 75%)	.10	.10	.15	.25	.30	.50	.45	.55	.65	.60	.65	.75
Good condition (grass cover > 75%)	.05	.05	.10	.15	.20	.35	.35	.40	.55	.50	.55	.65
Impervious Areas												
Parking lots, roofs, driveways, etc. (excluding ROW)	.95	.95	.98	.95	.95	.98	.95	.95	.98	.95	.95	.98
Streets and roads:												
Paved; curbs & storm sewers (excluding ROW)	.95	.95	.98	.95	.95	.98	.95	.95	.98	.95	.95	.98
Paved; open ditches (including ROW)	---	---	---	.70	.75	.85	.80	.85	.90	.80	.85	.90
Gravel (including ROW)	---	---	---	.60	.65	.75	.70	.75	.85	.75	.80	.85
Dirt (including ROW)	---	---	---	.55	.60	.70	.65	.70	.80	.70	.75	.85
Urban Districts (excluding ROW)												
Commercial and business (85% impervious)	---	---	---	---	---	---	.85	.85	.90	.90	.90	.95
Industrial (72% impervious)	---	---	---	---	---	---	.80	.80	.85	.80	.85	.90
Residential Districts by Average Lot Size (excluding ROW)¹												
1/8 acre (36% impervious)	---	---	---	---	---	---	.55	.60	.70	.65	.70	.75
1/4 acre (36% impervious)	---	---	---	---	---	---	.55	.60	.70	.65	.70	.75
1/3 acre (33% impervious)	---	---	---	---	---	---	.55	.60	.70	.65	.70	.75
1/2 acre (20% impervious)	---	---	---	---	---	---	.45	.50	.65	.60	.65	.70
1 acre (11% impervious)	---	---	---	---	---	---	.40	.45	.60	.55	.60	.65
2 acres (11% impervious)	---	---	---	---	---	---	.40	.45	.60	.55	.60	.65
Newly Graded Areas (pervious areas only, no vegetation)												
Agricultural and Undeveloped												
Meadow - protected from grazing (pre-settlement).....	.10	.10	.25	.10	.15	.30	.30	.35	.55	.45	.50	.65
Straight Row Crops												
Straight Row (SR)	Poor Condition	.33	.39	.55	.52	.58	.71	.70	.74	.84	.78	.89
	Good Condition	.24	.30	.46	.45	.51	.66	.62	.67	.78	.73	.86
SR + Crop Residue (CR).....	Poor Condition	.31	.37	.54	.50	.56	.70	.67	.72	.82	.75	.87
	Good Condition	.19	.25	.41	.38	.45	.61	.55	.60	.73	.62	.78
Contoured (C)	Poor Condition	.29	.35	.52	.47	.53	.70	.60	.65	.77	.70	.84
	Good Condition	.21	.26	.43	.38	.45	.61	.55	.60	.73	.65	.80
C+CR	Poor Condition	.27	.33	.50	.45	.51	.66	.57	.63	.75	.67	.82
	Good Condition	.19	.25	.41	.36	.43	.59	.52	.58	.71	.62	.78
Contoured & Terraced (C&T).....	Poor Condition	.22	.28	.45	.36	.43	.59	.50	.56	.70	.55	.73
	Good Condition	.16	.22	.38	.31	.37	.54	.45	.51	.66	.52	.71
C&T + CR	Poor Condition	.13	.19	.35	.31	.37	.54	.45	.51	.66	.52	.71
	Good Condition	.10	.16	.32	.27	.33	.50	.43	.49	.65	.50	.70

¹ The average percent impervious area shown was used to develop composite coefficients.

Note: Rational coefficients were derived from SCS CN method

- b. Composite Runoff Analysis:** Care should be taken not to average runoff coefficients for large segments that have multiple land uses of a wide variety (i.e., business to agriculture). However, within similar land uses, it is often desirable to develop a composite runoff coefficient based on the percentage of different types of surface in the drainage area. The composite procedure can be applied to an entire drainage area, or to typical sample blocks as a guide to selection of reasonable values of the coefficient for an entire area.

Worksheet 2B-3.01: Time of Concentration (T_c) or Travel Time (T_t)

Project Windsor Presbyterian By SID Date 5-13-24
Location 63rd & University Checked _____ Date _____

Circle one: Present Developed

Circle one: T_c T_t through subarea

Notes: Space for as many as two segments per flow type can be used for each worksheet.

Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to T_c only)

1. Surface description (Table 2B-3.01).....
2. Manning's roughness coeff., n (Table 2B-3.01).....
3. Flow Length, L (Total L less than or equal to 300')...
4. Two year, 24 hour rainfall, P₂.....
5. Land slope,
s.....
6. $T_t = \frac{0.007(nL)^{0.8}}{(\sqrt{P_2} s^{0.4})}$ Compute T_t.....

Segment ID

ent ID			
	Dense Grass		
	0.24		
ft	100		
in	3.08		
ft / ft	0.45		
hr	- 18	+	
			= .18

Shallow concentrated flow

7. Surface description (paved or unpaved).....
8. Flow length,
L.....
9. Watercourse slope, s.....
10. Average velocity, V (Figure 2B-3.01).....
11. $T_1 = \frac{L}{3600V}$ Compute T_1

Segment ID

cent ID			
ft	1.50		
ft / ft	.073		
ft / s	1.85		
hr	.02	+	
			= .02

Open channel / pipe flow

12. Cross sectional flow area, a
13. Wetted perimeter, P_w
14. Hydraulic radius, $r = \frac{a}{P_w}$ Compute r
15. Channel slope, s
16. Manning's roughness coeff., n
17. $V = \frac{1.49r^{2/3}s^{1/2}}{n}$ Compute V
18. Flow length,
 L
19. $T_t = \frac{L}{3600V}$ Compute T_t
20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11 and 19)

Segment ID

cent ID			
ft ²			
ft			
ft			
ft / ft			
ft / s			
ft			
hr		+	

+

=

.20

hr

.20

12 min.

Project Windsor Presbyterian By SSD Date 4/24/24
 Location 63rd & University Checked _____ Date _____
 Circle one: ☒ Present ☐ Developed

Notes: Space for as many as two segments per flow type can be used for each worksheet.

Segment ID

- | | | |
|---------|------------------------|---|
| ent ID | | |
| | Dense grass | |
| | 0.24 | |
| ft | 100 | |
| in | 3.08 | |
| ft / ft | .06 | |
| hr | .15 | + |
- =

Segment ID

- | | | | |
|---------|-----|---|--|
| ent ID | | | |
| | | | |
| ft | 43 | | |
| ft / ft | .07 | | |
| ft / s | 1.8 | | |
| hr | .01 | + | |
- =

Segment ID

- | | | |
|-----------------|--|--|
| cent ID | | |
| ft ² | | |
| ft | | |
| ft | | |
| ft / ft | | |
| | | |
| ft / s | | |
| ft | | |
| hr | | |
-
- hr

$$= 9.6 \text{ min}$$

Project Windsor Church By SSD Date 4/28/24
Location 6300 E University Checked _____ Date _____

Circle one: T_c T_t through subarea

Notes: Space for as many as two segments per flow type can be used for each worksheet.

Include a map, schematic, or description of flow segments.

Segment ID

1. Surface description (Table 2B-3.01).....
2. Manning's roughness coeff, n (Table 2B-3.01).....
3. Flow Length, L (Total L less than or equal to 300')...
4. Two year, 24 hour rainfall, P₂.....
5. Land slope,
s.....
6. $T_t = \frac{0.007(nL)^{0.8}}{(\sqrt{P_2 s^{0.4}})}$ Compute T_t.....

ent ID		
	Dague Grass	
	0.24	
ft	20	
in	3.08	
ft / ft	.1	
hr	.06	+ =

Segment ID

7. Surface description (paved or unpaved).....
8. Flow length,
L.....
9. Watercourse slope, s.....
10. Average velocity, V (Figure 2B-3.01).....
11. $T_t = \frac{L}{3600V}$ Compute T_t

ent ID		
ft	188	
ft / ft	.04	
ft / s	4	
hr	.01	+ =

Segment ID

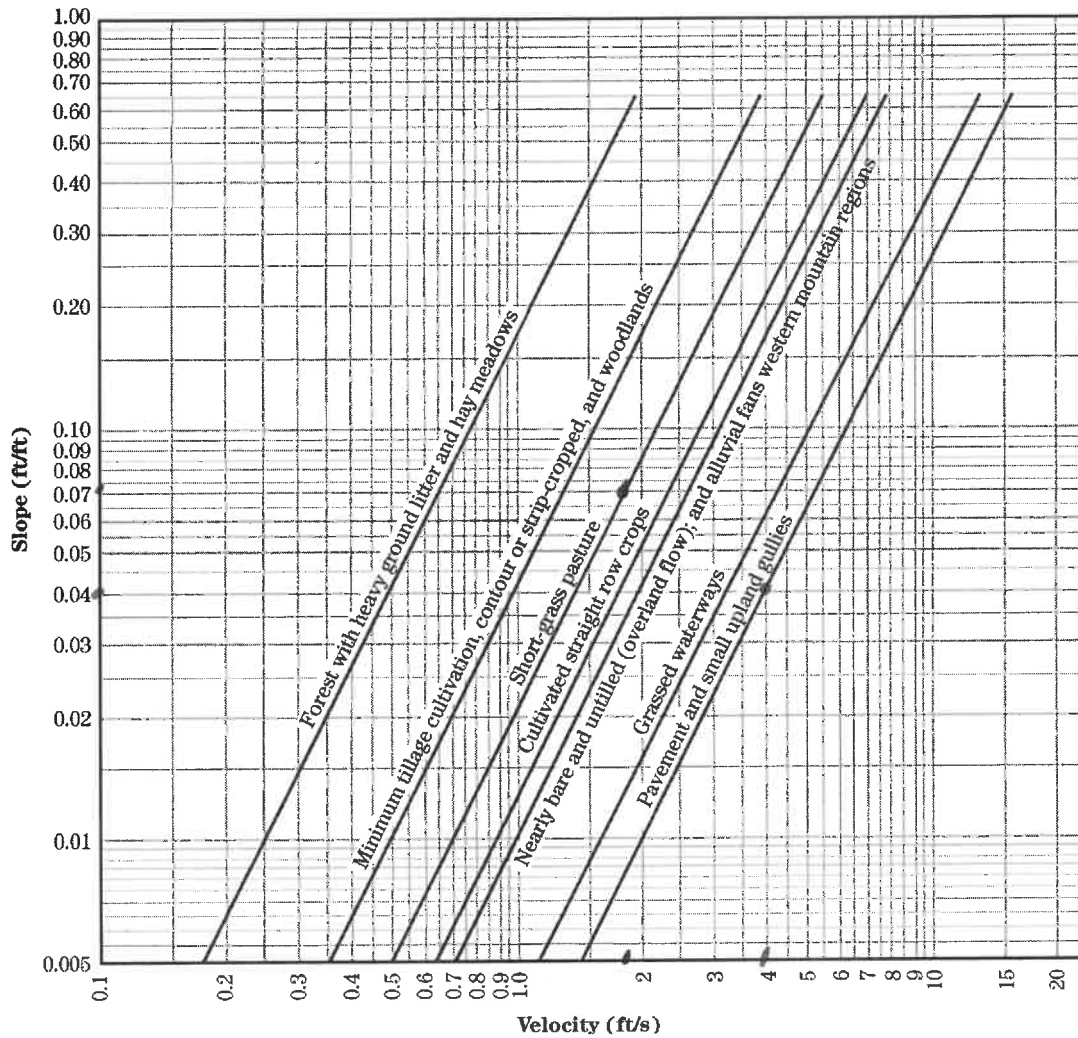
12. Cross sectional flow area, a
13. Wetted perimeter, P_w
14. Hydraulic radius, $r = \frac{a}{P_w}$ Compute r
15. Channel slope, s
16. Manning's roughness coeff, n
17. $V = \frac{1.49r^{2/3}s^{1/2}}{n}$ Compute V
18. Flow length,
 L
19. $T_t = \frac{L}{3600V}$ Compute T_t
20. Watershed or subarea T_c or T_t (add T_t in steps 6, 11 and 19)

cent ID		
ft ²		
ft		
ft		
ft / ft		
ft / s		
ft		
hr	+	=

.....

hr 1.07

4.2 with

Figure 2B-3.01: Velocity Versus Slope for Shallow Concentrated Flow

Source: NRCS National Engineering Handbook, Part 630, Chapter 15

Table 2B-3.02: Equations and Assumptions Developed from Figure 2B-3.01

Flow Type	Depth (feet)	Manning's n	Velocity Equation (ft/s)
Pavement and small upland gullies	0.2	0.025	$V = 20.238(s)^{0.5}$
Grassed waterways (and unpaved urban areas)	0.4	0.050	$V = 16.135(s)^{0.5}$
Nearly bare and untilled (overland flow); and alluvial fans	0.2	0.051	$V = 9.965(s)^{0.5}$
Cultivated straight row crops	0.2	0.058	$V = 8.762(s)^{0.5}$
Short-grass prairie	0.2	0.073	$V = 6.962(s)^{0.5}$
Minimum tillage cultivation, contour or strip-cropped, and woodlands	0.2	0.101	$V = 5.032(s)^{0.5}$
Forest with heavy ground litter and hay meadows	0.2	0.202	$V = 2.516(s)^{0.5}$

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
4138C	Clarion-Urban land complex, 5 to 9 percent slopes	0.5	100.0%
Totals for Area of Interest		0.5	100.0%

Soil Map—Polk County, Iowa



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

4/24/2024
Page 1 of 3

Page 75 of 173

MAP LEGEND

Area of Interest (AOI)		Area of Interest (AOI)	
Soils	  	Soil Map Unit Polygons	
	  	Soil Map Unit Lines	
	  	Soil Map Unit Points	
Special Point Features	   	Special Line Features	
Water Features	   	Streams and Canals	
Transportation	   	Rails	
	   	Interstate Highways	
	   	US Routes	
	   	Major Roads	
	   	Local Roads	
Background	   	Aerial Photography	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.
Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Polk County, Iowa
Survey Area Data: Version 26, Sep 12, 2023

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

Date(s) aerial Images were photographed: May 29, 2020—Jun 12, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Polk County, Iowa

4138C—Clarion-Urban land complex, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: fvnn
Elevation: 950 to 1,500 feet
Mean annual precipitation: 23 to 35 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 165 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Clarion and similar soils: 60 percent
Urban land: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Clarion

Setting

Landform: Ground moraines
Landform position (two-dimensional): Shoulder, backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy supraglacial till

Typical profile

Ap - 0 to 7 inches: loam
A1,A2 - 7 to 18 inches: loam
Bw1,Bw2 - 18 to 36 inches: loam
C1,C2 - 36 to 60 inches: loam

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 11.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R103XY004MN - Loamy Upland Prairies

Hydric soil rating: No

Data Source Information

Soil Survey Area: Polk County, Iowa
Survey Area Data: Version 26, Sep 12, 2023

National Flood Hazard Layer FIRMette

93°42'34"W 41°36'17"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE)
Zone A, V, X
- With BFE or Depth *Zone AE, AH, VE, AP*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Area of 1% Annual Chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes, *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN
- Area of Minimal Flood Hazard *Zone X*
- Effective LOMRS
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- Cross Sections with 1% Annual Chance
- Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

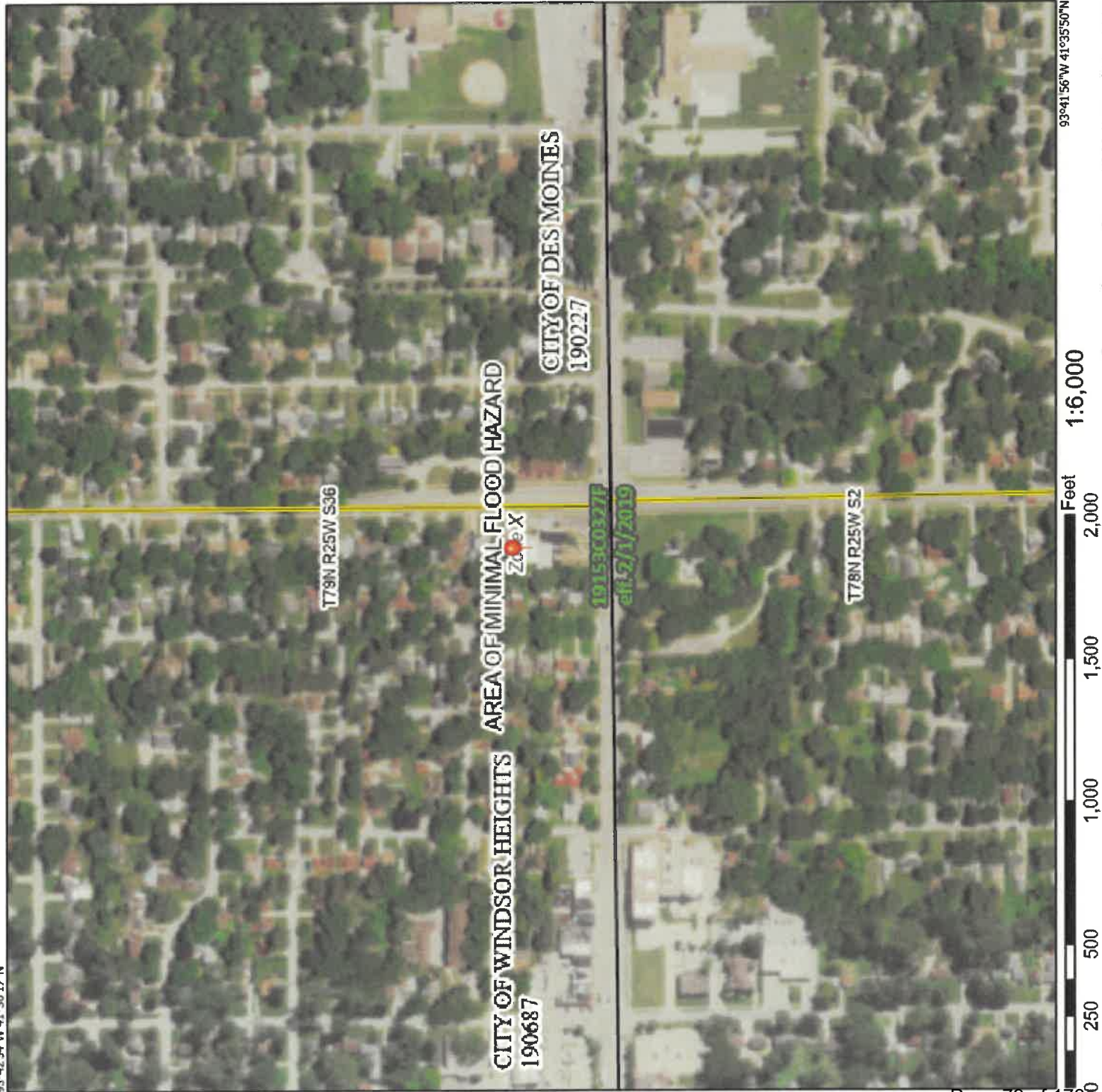
- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/24/2024 at 5:00 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

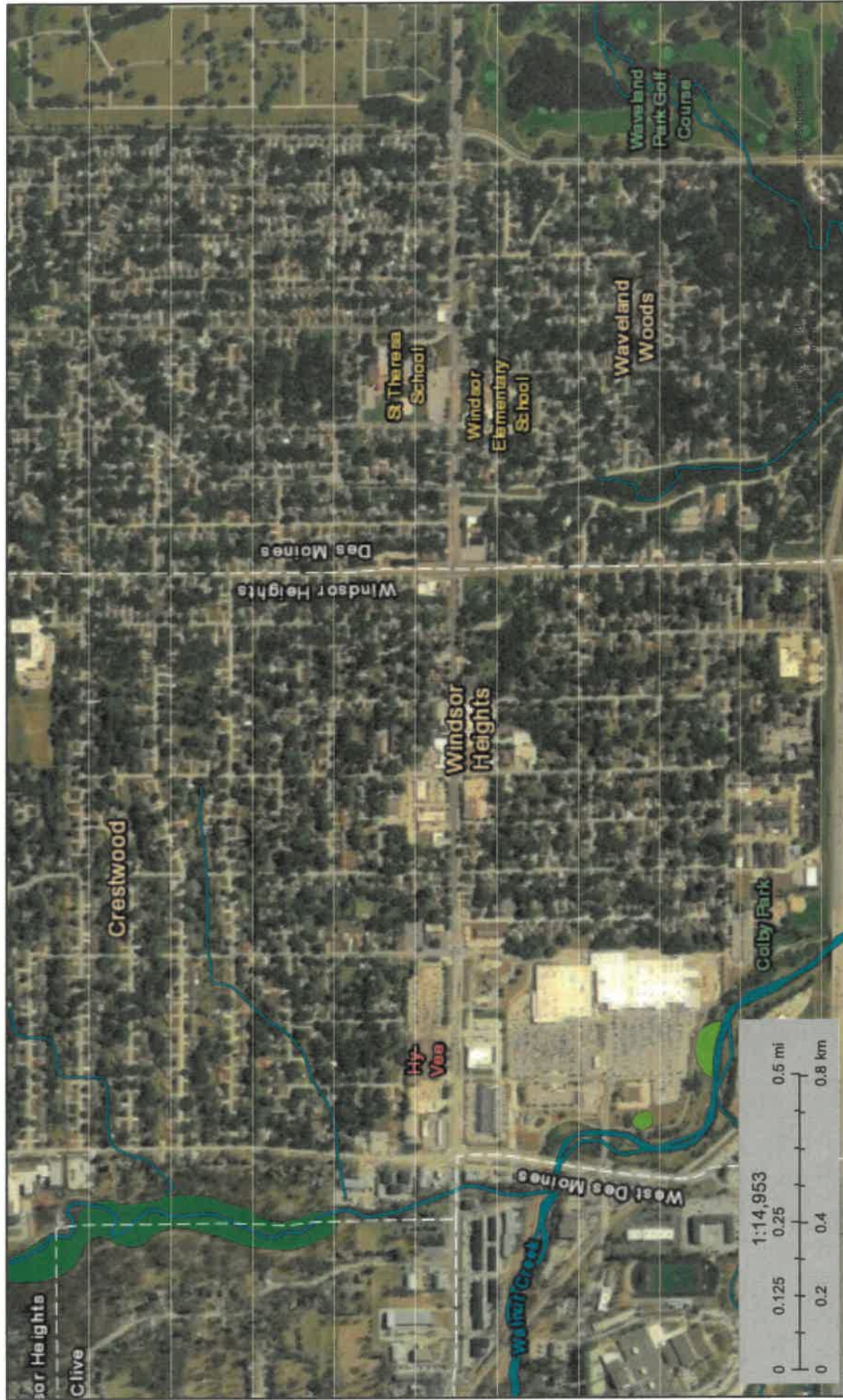




U.S. Fish and Wildlife Service

National Wetlands Inventory

Wetlands



April 24, 2024

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

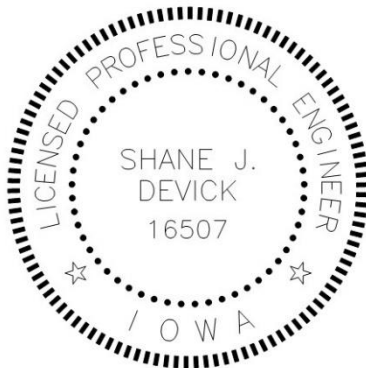
STORMWATER MANAGEMENT REPORT

Project: Windsor Presbyterian Church
6301 University Avenue, Windsor Heights IA
Prepared By: Shane Devick, P.E.
Austin Roemer, E.I.T.



Civil Engineering Consultants, Inc.

Date: September 6, 2024
Revised:
Project No: E9213



I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT
WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL
SUPERVISION AND THAT I AM A DULY LICENSED
PROFESSIONAL ENGINEER UNDER THE LAWS OF THE
STATE OF IOWA.

SHANE J. DEVICK, IOWA LIC. NO. 16507 DATE _____
MY LICENSE RENEWAL DATE IS DECEMBER 31, 2024
PAGES OR SHEETS COVERED BY THIS SEAL:

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1. Site Characteristics

a. Pre-development Conditions

This site is located in the northwest quadrant of the intersection of University Avenue and 63rd St., City of Windsor Heights. The address is 6301 University Ave.

Currently the site has three existing residences.

The site is approximately 0.55 acres. The existing homes will be demolished.

The existing soils consist 100.0% of 4138C – Clarion-Urban land complex, Hydrologic Soil Group B. Hydrologic Soils Group B have a moderate infiltration rate when thoroughly wet and a moderate rate of water transmission. See Appendix for USDA Hydrologic Soils Report.

b. Post-development Conditions

The purpose of the proposed project is to construct a parking lot for the Church directly adjacent to the south.

Stormwater detention will be provided with underground storage chambers. The total allowed release rate during the developed 100-year rain event will be limited to the peak stormwater runoff rate of the 5-year rain event with existing conditions in addition to the peak stormwater runoff from offsite areas during the 100-year rain event. Additionally, water quality and channel protection shall be provided.

Stormwater Runoff Rate Summary								
Area Description	Area (Acres)	Runoff Rate, cfs						
		1-year	2-year	5-year	10-year	25-year	50-year	100-year
EXISTING DA	0.55	0.97	1.14	1.42	1.65	1.98	2.24	2.51
OFFSITE (PASS-THRU)	0.90	1.43	1.68	2.09	2.43	2.92	3.30	3.70
DEVELOPED DA	0.55	1.30	1.52	1.89	2.20	2.64	2.99	3.35
UNDERGROUND POND	0.55	0.00	0.00	0.00	0.06	0.31	0.51	0.72
UNDERGROUND POND + PASS-THRU	1.45	0.36	0.62	1.07	1.45	1.97	2.35	2.68

c. Contributing Off-site Drainage

There is 0.9 acres of offsite area draining to the site from the west. This offsite area will be treated as pass-thru.

d. Floodways, Floodplains and Wetlands

Please see Appendix for Wetlands map and FIRM Panel Number 19153C0327F.

2. Pre-development Runoff Analysis

1) Watershed Area

Sub-Area Identifier	Land Use	Hydrologic Soil Group	Area (ac)	Runoff Coefficient (C)
Existing DA	Open Space (Good Cond.)	B	0.33	0.35
	Impervious	B	0.22	0.98
Total Area / Weighted Runoff Coefficient			0.55	0.60
			=====	===

2) Time of Concentration

TIME OF CONCENTRATION		
SUBAREA		
Existing DA		
SHEET FLOW	n (Manning's "n")	0.150
	L (length of flow)	100.0
	P2 (two year, 24 hr rainfall)	3.08
	S (slope in ft/ft)	6.86%
	T _{SF} (MINUTES)	6.10
SHALLOW CONCENTRATED FLOW	L (length of flow in feet)	42.6
	S (slope in ft/ft)	16.87%
	Ground Cover	SHORT-GRASS
	Velocity Coefficient (TABLE 2-B-3.02)	6.96
	V (ft/sec)	2.86
	T _{CF} (MINUTES)	0.25
CHANNEL FLOW	n (mannings "n")	N/A
	A (cross sectional area)	N/A
	P (wetted perimeter)	N/A
	S (slope ft/ft)	N/A
	V (velocity ft/sec)	N/A
	L (Length of flow in feet)	N/A
	T _{CF} (MINUTES)	N/A
TIME OF CONCENTRATION (MINUTES)		6.35

The time of concentration is below the minimum of 15.0 minutes.
A time of concentration of 15.0 minutes will be used.

3) **Precipitation Model.** Rainfall Intensity Duration Frequency (IDF) Curve.

Rainfall Depth by Rainfall Return Period

1-Yr (in)	2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)
2.67	3.08	3.81	4.46	5.44	6.26	7.12

Storm Data Source: new NOAA-14 data

Rainfall Distribution Type: Type II

Dimensionless Unit Hydrograph: <standard>

4) **Runoff Model**

Hydraflow was used to predict existing runoff using Rational method.

5) **Summary of Pre-Development Stormwater Runoff**

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period						
	1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)

SUBAREAS

Existing DA	0.97	1.14	1.42	1.65	1.98	2.24	2.51
--------------------	------	------	-------------	------	------	------	------

3. Offsite Runoff Analysis

1) Watershed Area

Sub-Area Identifier	Land Use	Hydrologic Soil Group	Area (ac)	Runoff Coefficient (C)
Offsite	Open Space (Good Cond.)	B	0.63	0.35
(Pass-Thru)	Impervious	B	0.27	0.98
Total Area / Weighted Runoff Coefficient			0.90	0.54
			=====	===

2) Time of Concentration

		TIME OF CONCENTRATION
		SUBAREA
		Offsite
SHEET FLOW	n (Manning's "n")	0.150
	L (length of flow)	100.0
	P2 (two year, 24 hr rainfall)	3.08
	S (slope in ft/ft)	4.61%
	T _{SF} (MINUTES)	7.15
SHALLOW CONCENTRATED FLOW	L (length of flow in feet)	250.3
	S (slope in ft/ft)	6.14%
	Ground Cover	SHORT-GRASS
	Velocity Coefficient (TABLE 2-B-3.02)	6.96
	V (ft/sec)	1.72
	T _{CF} (MINUTES)	2.42
CHANNEL FLOW	n (mannings "n")	N/A
	A (cross sectional area)	N/A
	P (wetted perimter)	N/A
	S (slope ft/ft)	N/A
	V (velocity ft/sec)	N/A
	L (Length of flow in feet)	N/A
	T _{CF} (MINUTES)	N/A
TIME OF CONCENTRATION (MINUTES)		9.57

The time of concentration is below the minimum of 15.0 minutes.

A time of concentration of 15.0 minutes will be used.

3) **Precipitation Model.** Rainfall Intensity Duration Frequency (IDF) Curve.

Rainfall Depth by Rainfall Return Period						
1-Yr (in)	2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)
2.67	3.08	3.81	4.46	5.44	6.26	7.12

Storm Data Source: new NOAA-14 data

Rainfall Distribution Type: Type II

Dimensionless Unit Hydrograph: <standard>

4) **Runoff Model**

Hydraflow was used to predict predevelopment runoff using Rational method.

5) **Summary of Offsite Stormwater Runoff**

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period						
	1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)

SUBAREAS							
Offsite	0.25 11.93	0.29 11.93	0.36 11.93	0.42 11.93	0.52 11.93	0.60 11.93	0.68 11.93

4. Post-development Runoff Analysis

1) Watershed Area

Sub-Area Identifier	Land Use	Hydrologic Soil Group	Area (ac)	Runoff Coefficient (C)
Developed DA	Open Space (Good Cond.)	B	0.16	0.35
	Impervious	B	0.39	0.98
Total Area / Weighted Runoff Coefficient			0.55	0.80
			=====	===

2) Time of Concentration

		TIME OF CONCENTRATION
		SUBAREA
		Developed DA
SHEET FLOW	n (Manning's "n")	0.052
	L (length of flow)	100.0
	P2 (two year, 24 hr rainfall)	3.08
	S (slope in ft/ft)	6.85%
	T _{SF} (MINUTES)	2.60
SHALLOW CONCENTRATED FLOW	L (length of flow in feet)	106.6
	S (slope in ft/ft)	4.96%
	Ground Cover	PAVEMENT
	Velocity Coefficient (TABLE 2-B-3.02)	20.24
	V (ft/sec)	4.51
	T _{CF} (MINUTES)	0.39
CHANNEL FLOW	n (mannings "n")	N/A
	A (cross sectional area)	N/A
	P (wetted perimter)	N/A
	S (slope ft/ft)	N/A
	V (velocity ft/sec)	N/A
	L (Length of flow in feet)	N/A
	T _{CF} (MINUTES)	N/A
TIME OF CONCENTRATION (MINUTES)		3.00

The time of concentration is below the minimum of 15.0 minutes.
A time of concentration of 15.0 minutes will be used.

3) **Precipitation Model.** Rainfall Intensity Duration Frequency (IDF) Curve.

Rainfall Depth by Rainfall Return Period						
1-Yr (in)	2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)
2.67	3.08	3.81	4.46	5.44	6.26	7.12

Storm Data Source: new NOAA-14 data

Rainfall Distribution Type: Type II

Dimensionless Unit Hydrograph: <standard>

4) **Runoff Model**

Hydraflow was used to predict predevelopment runoff using Rational method.

5) **Summary of Post-Development Stormwater Runoff**

Hydrograph Peak/Peak Time Table

Sub-Area or Reach Identifier	Peak Flow and Peak Time (hr) by Rainfall Return Period						
	1-Yr	2-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr
	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)	(cfs) (hr)
SUBAREAS							
DEV Central	1.30	1.52	1.89	2.20	2.64	2.99	3.35

5. Stormwater Conveyance Design

a. Design Information

The Rational Method was used to determine design flows. Manning’s Equation was used to determine pipe capacities.
Intakes were located to provide bypass flows below the maximum 50% bypass flow for the 5-YR event. (See Figure 5.1 Storm Sewer Intake Calculations)
Low point intakes were designed to intercept the 100-YR storm event. Pipes downstream from Low point intakes were designed to convey 100-YR flows.
Cleansing velocities within storm sewer pipes were calculated using ½ full pipes. All cleansing velocities were between 3 fps and 15 fps

b. Intake Calculations

Storm Sewer Calculations for Windsor Presbyterian Church																													
* LP or CG= intake is at a low point or continuous grade																													
n = 0.016 Broom Finish Concrete (typical for most streets)																													
INTAKE CHART																													
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	O	P	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI
DRAINAGE AREA IDENTIFIER	Area (ac)	Imperv. Area (ac)	I5 (in/hr)	I10 (in/hr)	I100 (in/hr)	c5	c10	c100	Q5 (cfs)	Q10 (cfs)	Q100 (cfs)	q5 + bypass	q10 + bypass	q100 + bypass	* CG LP	INT. Type SW-	Qi5 (cfs)	Qi10 (cfs)	Qi100 (cfs)	d5 ft	d10 ft	d100 (ft)	Qb5 (cfs)	Qb10 (cfs)	Qb100 (cfs)	%Capture 5Yr	%Capture 10Yr	%Capture 100Yr	Bypasses To Intake
Intakes																													
ST #8	0.01	0.00	4.12	4.82	7.44	0.15	0.20	0.35	0.01	0.01	0.03	0.01	0.01	0.03	0	TYPE 4A 18	0.01	0.01	0.03	0.01	0.01	0.02	0.00	0.00	0.00	100%	100%	100%	LP
ST #7	0.01	0.00	4.12	4.82	7.44	0.15	0.20	0.35	0.01	0.01	0.03	0.01	0.01	0.03	0	TYPE 4A 18	0.01	0.01	0.03	0.01	0.01	0.02	0.00	0.00	0.00	100%	100%	100%	LP
ST #6	0.01	0.00	4.12	4.82	7.44	0.15	0.20	0.35	0.01	0.01	0.03	0.01	0.01	0.03	0	TYPE 4A 18	0.01	0.01	0.03	0.01	0.01	0.02	0.00	0.00	0.00	100%	100%	100%	LP
ST #5	0.01	0.00	4.12	4.82	7.44	0.15	0.20	0.35	0.01	0.01	0.03	0.01	0.01	0.03	0	TYPE 4A 18	0.01	0.01	0.03	0.01	0.01	0.02	0.00	0.00	0.00	100%	100%	100%	LP
ST #4	0.67	0.23	4.12	4.82	7.44	0.42	0.46	0.57	1.17	1.48	2.82	1.17	1.48	2.82	1	501	0.95	1.20	2.07	0.12	0.12	0.12	0.22	0.28	0.76	81%	81%	73%	OFFSITE
ST #3	0.44	0.27	4.12	4.82	7.44	0.64	0.66	0.74	1.16	1.40	2.41	1.16	1.40	2.41	0	501	1.16	1.40	2.41	0.20	0.23	0.33	0.00	0.00	0.00	100%	100%	100%	LP
ST #2	0.30	0.16	4.12	4.82	7.44	0.58	0.60	0.69	0.71	0.87	1.53	0.71	0.87	1.53	1	501	0.60	0.71	1.12	0.11	0.12	0.12	0.12	0.16	0.41	84%	81%	73%	OFFSITE
Outlet Release																													
UG CHAMBER	1.45	0.66							1.07	1.45	2.68	1.07	1.45	2.68	3	MANHOLE	1.07	1.45	2.68	NA	NA	NA	0.00	0.00	0.00	100%	100%	100%	MANHOLE

c. Storm Sewer Calculations

PIPE CHART																
(All Minimum Pipe Slopes are based on using RCP)																
Structure	to	Structure	Cumm Q ₅ pipe cfs	Cumm Q ₁₀ pipe cfs	Cumm Q ₁₀₀ pipe cfs	DESIGN STORM	DESIGN	MINIMUM PIPE SIZE (INCHES) AND SLOPE (%)					PIPE DESIGN			
							FLOW (cfs)									
								24	18	15	12	8	PIPE SIZE (inches)	SLOPE (%)	PIPE CAPACITY (cfs)	1/2 FULL PIPE VELOCITY (FPS)
ST #8	to	ST #7	0.01	0.01	0.03	Q10pipe cfs	0.01	0.00%	0.00%	0.00%	0.00%	0.00%	8	0.60%	1.45	3.87
ST #7	to	ST #6	0.01	0.02	0.05	Q10pipe cfs	0.02	0.00%	0.00%	0.00%	0.00%	0.00%	8	0.60%	1.45	3.87
ST #6	to	ST #5	0.02	0.03	0.08	Q10pipe cfs	0.03	0.00%	0.00%	0.00%	0.00%	0.00%	8	2.00%	2.66	7.07
ST #5	to	UG CHAMBER	0.02	0.04	0.10	Q100pipe cfs	0.10	0.00%	0.00%	0.00%	0.00%	0.00%	8	2.00%	2.66	7.07
ST #4	to	ST #3	0.95	1.20	2.07	Q10pipe cfs	1.20	0.00%	0.01%	0.03%	0.11%	0.47%	12	0.50%	2.71	3.21
ST #3	to	UG CHAMBER	2.12	2.60	4.48	Q100pipe cfs	4.48	0.04%	0.18%	0.48%	1.57%	6.54%	15	0.50%	4.91	3.72
ST #2	to	UG CHAMBER	0.60	0.71	1.12	Q100pipe cfs	1.12	0.00%	0.01%	0.03%	0.10%	0.41%	12	0.50%	2.71	3.21
UG CHAMBER	to	ST #1	1.07	1.45	2.68	Q100pipe cfs	2.68	0.01%	0.06%	0.17%	0.56%	2.34%	15	1.00%	6.95	5.26
ST #1	to	EX ST #1	1.07	1.45	2.68	Q100pipe cfs	2.68	0.01%	0.06%	0.17%	0.56%	2.34%	15	4.00%	13.90	10.53

6. Stormwater Facilities Design

a. *Release Rate: Site Only*

The allowed release rate of the developed site during the 100-year rain event will be limited to the peak stormwater runoff rate of the 5-year rain event with existing conditions.

$$Q_{\text{ALLOWABLE RELEASE}} = Q_{\text{5-YR EX SITE}}$$

$$Q_{\text{ALLOWABLE RELEASE}} = 1.42 \text{ cfs}$$

$$Q_{\text{100 WETLANDS POND}} = 0.72 \text{ cfs (See Hydrograph 3)}$$

As shown in the Hydrograph reports in the Appendix, the proposed detention basin will meet the required release rate.

b. *Release Rate: Site + Pass-Thru*

The allowed release rate of the developed site with pass-thru during the 100-year rain event will be limited to the peak stormwater runoff rate of the 5-year rain event with existing conditions plus the 100-year release rate for the offsite area.

$$Q_{\text{ALLOWABLE RELEASE}} = Q_{\text{5-YR EX SITE}} + Q_{\text{100-YR PASS-THRU}}$$

$$Q_{\text{ALLOWABLE RELEASE}} = 1.42 \text{ cfs} + 3.70 \text{ cfs} = 5.12 \text{ cfs}$$

$$Q_{\text{100 DEVELOPED+PASS-THRU}} = 2.68 \text{ cfs (See Hydrograph 6)}$$

As shown in the Hydrograph reports in the Appendix, the proposed detention basin will meet the required release rate with pass-thru.

c. *Underground Storage Chambers*

1) Underground Storage Chambers Design & Performance

The developed drainage basin and offsite pass-thru area was routed through a typical dry-bottom pond in order to find the necessary storage volume for the underground detention that will be used onsite. The underground detention will consist of underground chambers under the parking lot of the site. The outlet structure for the Hydrograph pond consists of a 15-inch RCP, which will likely be a similar outlet to what will be used for the underground storage.

3.0 feet of depth was used for storage height, with the bottom of 'pond' elevation set at 918.00. The invert elevation of the outlet pipe was set at an elevation of 919.75, in order to provide the required Water Quality and Channel Protection storage for the site. The Water Quality and Channel Protection calculations can be found in the subsequent sections. Subdrains connecting to the outlet will be used in the bottom of the storage chamber to slowly release water quality and channel protection stormwater over the subsequent 24-hour period.

The top of 'pond' was set at an elevation of 921.00. The 100-year storm event required a storage volume of 4,530 cf. A minimum of storage of 4,600 cf will be used in design of the underground storage chambers.

The Hydroflow Hydrographs reports can be found in the Appendix.

2) Water Quality Design

WINDSOR PRESBYTERIAN CHURCH					
Water Quality Volume (WQv): Iowa Stormwater Manual 2B-1 Section C					
& 2C-6 Section B					
$WQv = \frac{P(in) \times Rv \times A(ac)}{12(in/ft)} \times 43,560 (ft^2/ac)$					
Modified CN = $\frac{1000}{[10+5P+10Q_n]-10[Q_n^2+1.25Q_nP]^{\frac{1}{2}}}$					
$P = 1.25" \text{ for Iowa}$		$P = 1.25 \text{ in}$			
$Rv = 0.05 + 0.009 \times (I)$		$Rv = 0.688$			
$I = \% \text{ impervious area}$		$I = 70.9\%$			
$A = \text{Area (acres)}$		$A = 0.55 \text{ acres}$			
		$A_{(impervious)} = 0.39 \text{ acres}$			
WQv=		1,717	cf		
WQv=		0.860	inches		
Modified CN		96			
$q_{allow} =$		0.040	cfs		

Water Quality Volume

E9213 Underground Chambers					
Storage Volume					
	ELEV	Height (ft)	Cont. Area (sf)	Inc. Storage (cf)	Total Storage (cf)
	918.00	0.00	20	-	-
	919.00	1.00	1,120	570.00	570
Invert Elev.	919.75	1.75	1,960	1,155.00	1,725
	920.00	2.00	2,240	525.00	2,250
	921.00	3.00	3,360	2,800.00	5,050

The Water Quality Hydrographs report can be seen below.

**Note: In the hydrograph report, the '3-yr' storm is used to designate the 1.25" rainfall event.*

Hydrograph Report

1

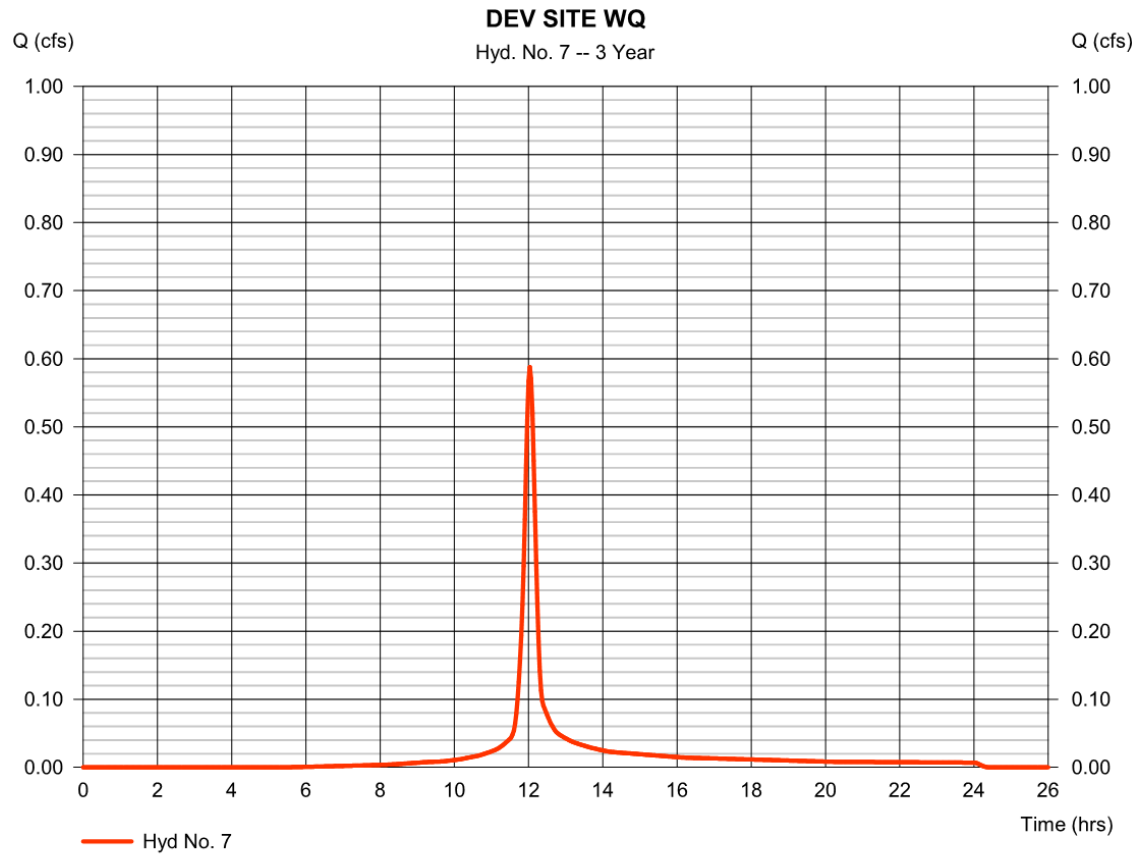
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 09 / 6 / 2024

Hyd. No. 7

DEV SITE WQ

Hydrograph type	= SCS Runoff	Peak discharge	= 0.588 cfs
Storm frequency	= 3 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 1,673 cuft
Drainage area	= 0.550 ac	Curve number	= 96
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 15.00 min
Total precip.	= 1.25 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

2

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

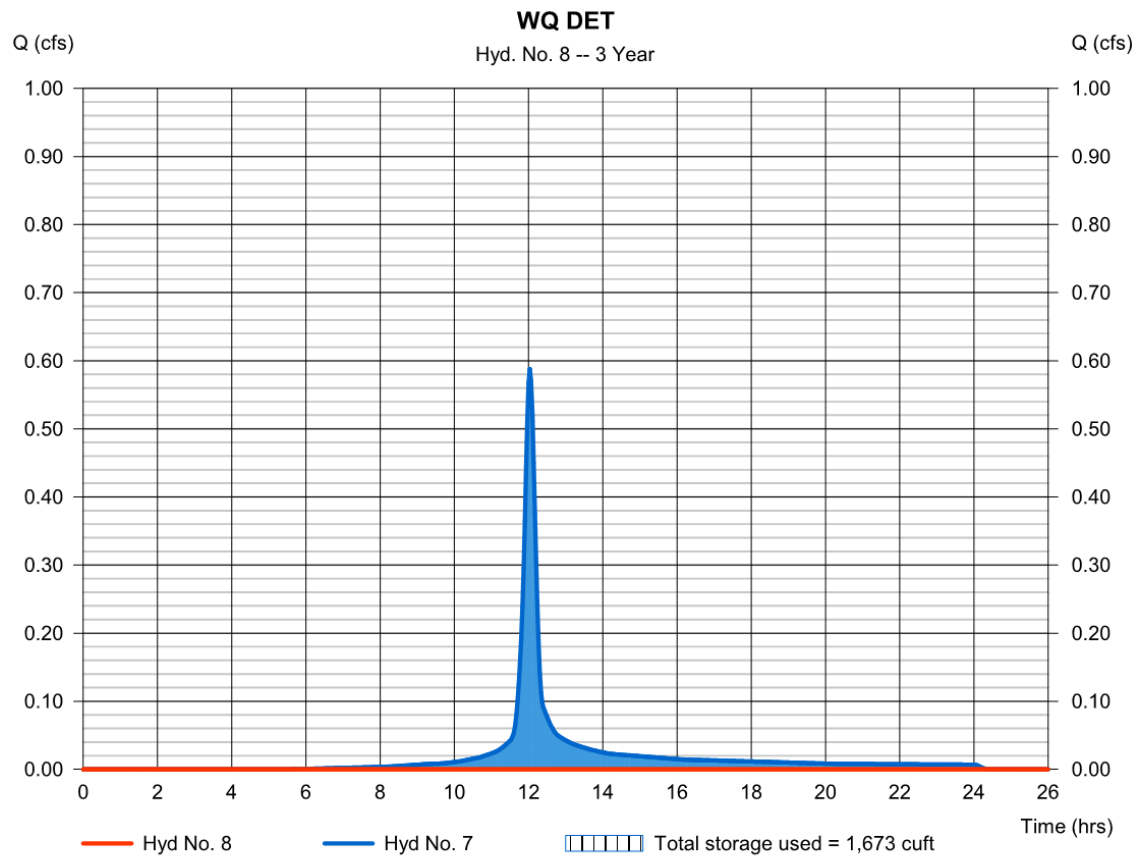
Friday, 09 / 6 / 2024

Hyd. No. 8

WQ DET

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 3 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 7 - DEV SITE WQ	Max. Elevation	= 919.72 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 1,673 cuft

Storage Indication method used.



Pond Report

3

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 09 / 6 / 2024

Pond No. 1 - UNDERGROUND STORAGE

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 918.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	918.00	20	0	0
1.00	919.00	1,120	570	570
1.75	919.75	1,960	1,155	1,725
2.00	920.00	2,240	525	2,250
3.00	921.00	3,360	2,800	5,050

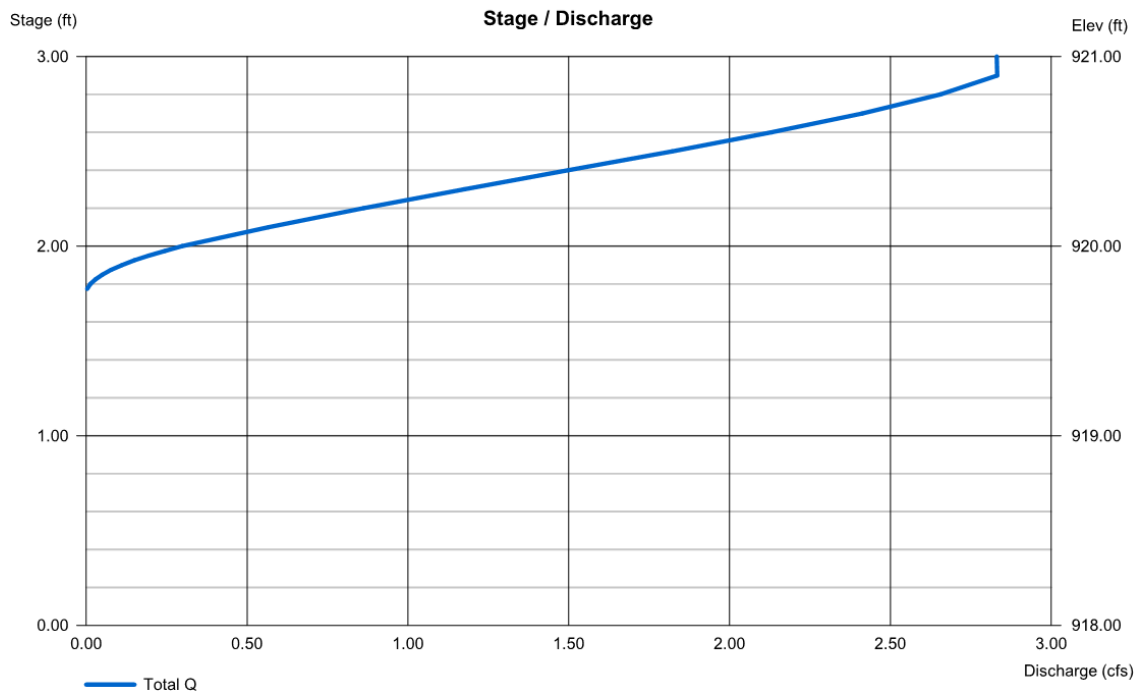
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	0.00	0.00	0.00
Span (in)	= 15.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 919.75	0.00	0.00	0.00
Length (ft)	= 40.00	0.00	0.00	0.00
Slope (%)	= 0.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



3) Channel Protection Design

Channel Protection design for Developed DA.

Graphical Peak Discharge method

Given Input Data:

Rainfall distribution Type II

Frequency 1 years

Rainfall, P (24-hours) 2.67 in

Drainage area 0.55 ac

Runoff curve number, CN 87

Time of concentration, Tc 0.250 hrs

Win TR-55 Computed Results:

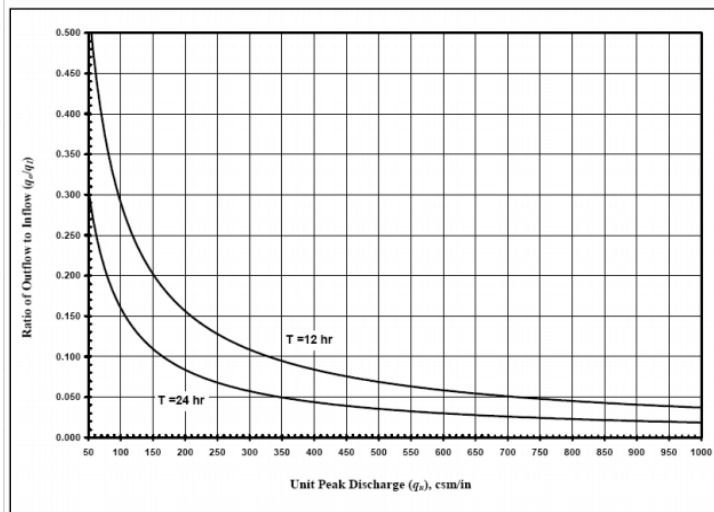
Unit peak discharge, q_u 433.32 csm/in

Runoff, Q 0.960 in

Peak discharge, q_p 0.99 cfs

Windsor Presbyterian Church			
Channel Protection Volume (Cp): Iowa Stormwater Manual 2C-6 Section C			
Cp is determined for the 1-yr, 24-hr storm			
Rainfall distribution: Type II		Tc = 0.250 hrs	
Drainage Area =		0.55 ac	Weighted CN = 87
$q_i = \frac{D_{1-yr}(in) \times A(ac)}{12(in/ft) \times 3,600(sec/hr)} \times 43,560(ft^2/ac)$			
I _{1-yr, 24-hr} =		2.67 in	
q _i =	0.99	cfs	From Win TR-55
Qa ₂ =	0.960	=Vr	watershed-in
q _u = unit peak discharge		q _u =	433.32 cfs/mi ² /in

Figure 1: Detention time vs. discharge ratios (q_o/q_i)



$$q_o/q_i = 0.042$$

$$q_o = 0.04$$

$$Vs/V_r = 0.683 - 1.43(q_o/q_i) + 1.64(q_o/q_i)^2 - 0.804(q_o/q_i)^3$$

$$Vs/V_r = 0.626$$

$$CP_v = 0.028 \text{ acre-ft} \quad 1,199 \text{ cf}$$

Hydrograph Report

1

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

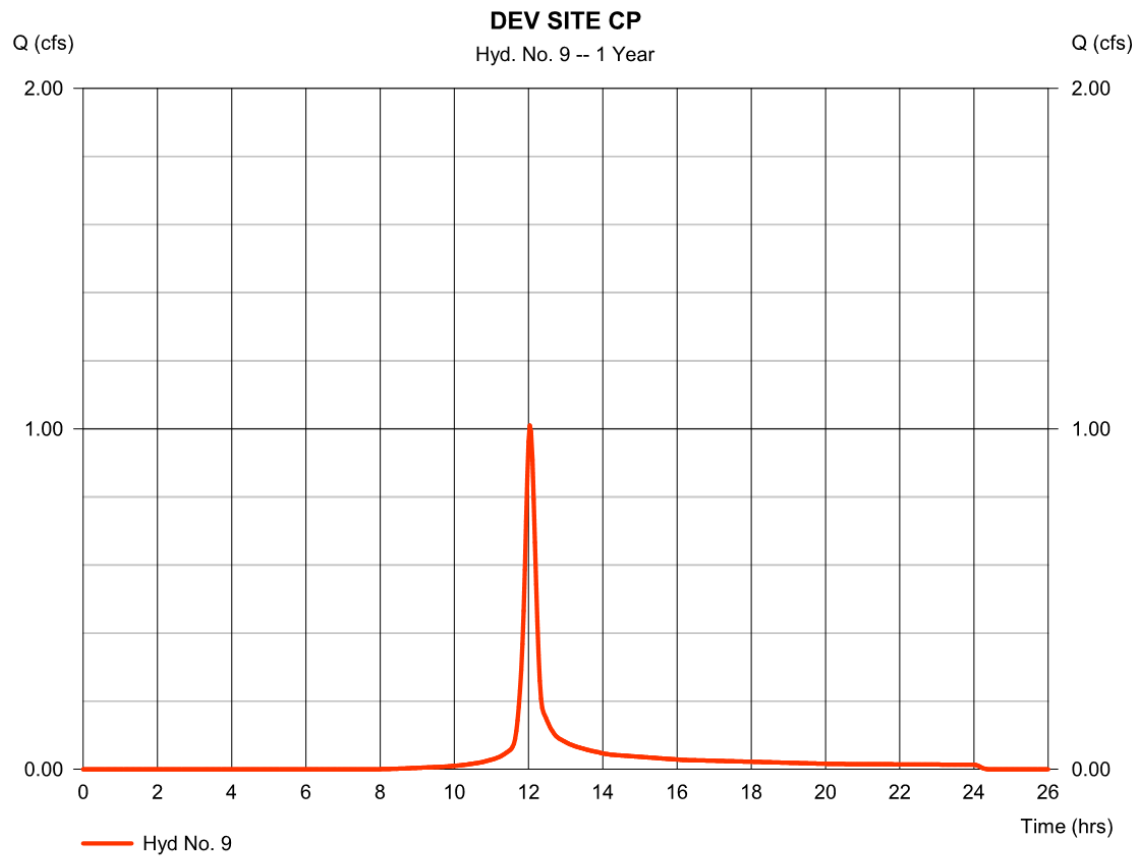
Friday, 09 / 6 / 2024

Hyd. No. 9

DEV SITE CP

Hydrograph type = SCS Runoff
Storm frequency = 1 yrs
Time interval = 2 min
Drainage area = 0.550 ac
Basin Slope = 0.0 %
Tc method = User
Total precip. = 2.67 in
Storm duration = 24 hrs

Peak discharge = 1.010 cfs
Time to peak = 12.03 hrs
Hyd. volume = 2,831 cuft
Curve number = 87
Hydraulic length = 0 ft
Time of conc. (Tc) = 15.00 min
Distribution = Type II
Shape factor = 484



Hydrograph Report

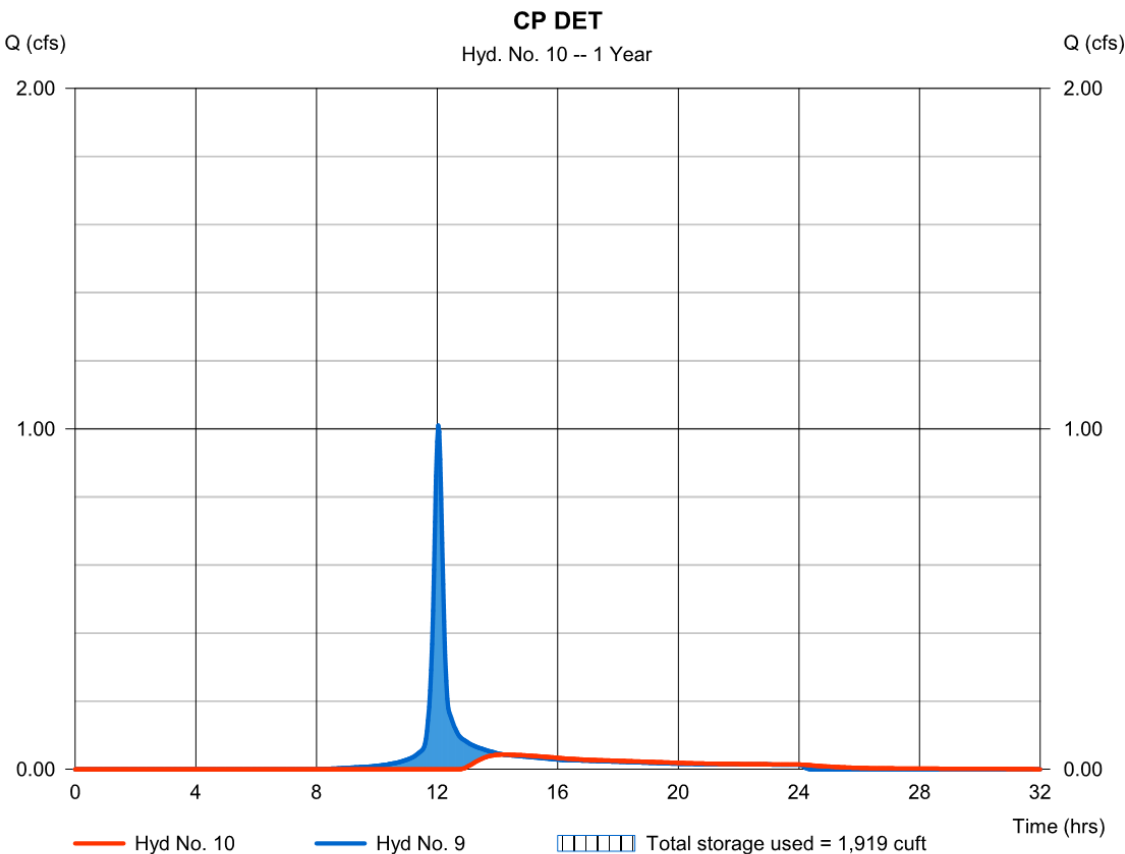
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022 Friday, 09 / 6 / 2024

Hyd. No. 10

CP DET

Hydrograph type	= Reservoir	Peak discharge	= 0.043 cfs
Storm frequency	= 1 yrs	Time to peak	= 14.20 hrs
Time interval	= 2 min	Hyd. volume	= 1,089 cuft
Inflow hyd. No.	= 9 - DEV SITE CP	Max. Elevation	= 919.84 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 1,919 cuft

Storage Indication method used.



Pond Report

Pond No. 1 - UNDERGROUND STORAGE

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 918.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	918.00	20	0	0
1.00	919.00	1,120	570	570
1.75	919.75	1,960	1,155	1,725
2.00	920.00	2,240	525	2,250
3.00	921.00	3,360	2,800	5,050

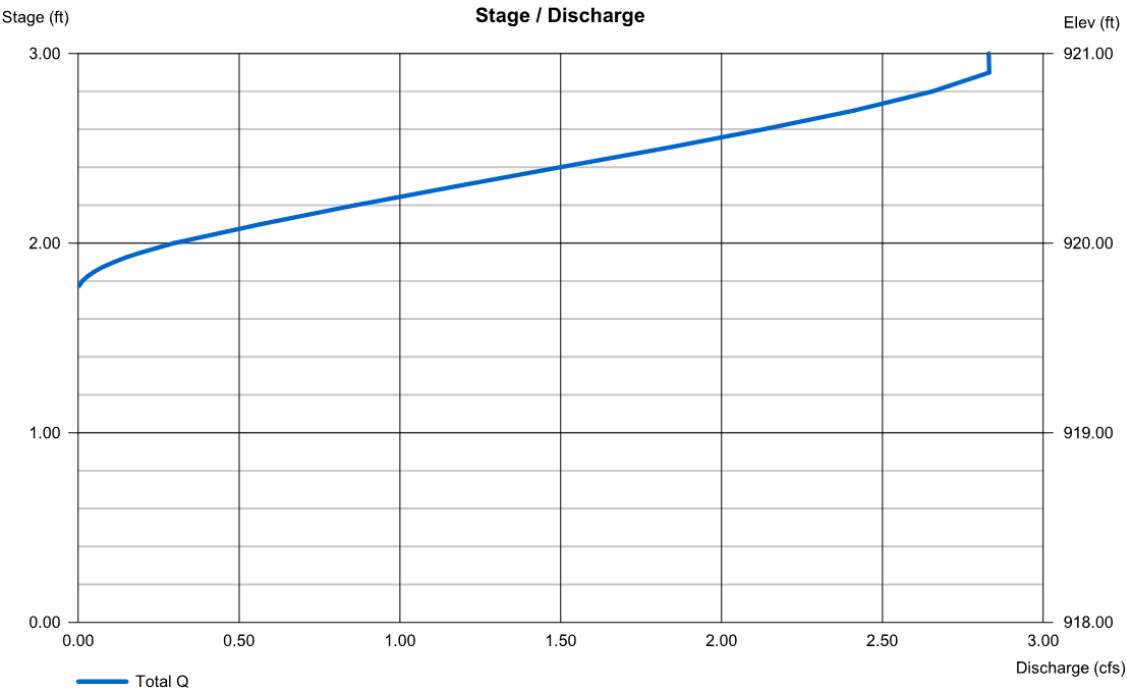
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	0.00	0.00	0.00
Span (in)	= 15.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 919.75	0.00	0.00	0.00
Length (ft)	= 40.00	0.00	0.00	0.00
Slope (%)	= 0.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



7. Appendix

a. Drainage Maps

a. Drainage Maps

a. Drainage Maps

IMPERVIOUS:
9,470 SF
≈ 0.22 AC

EXISTING
DA
0.55 AC



a. Drainage Maps



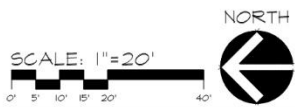
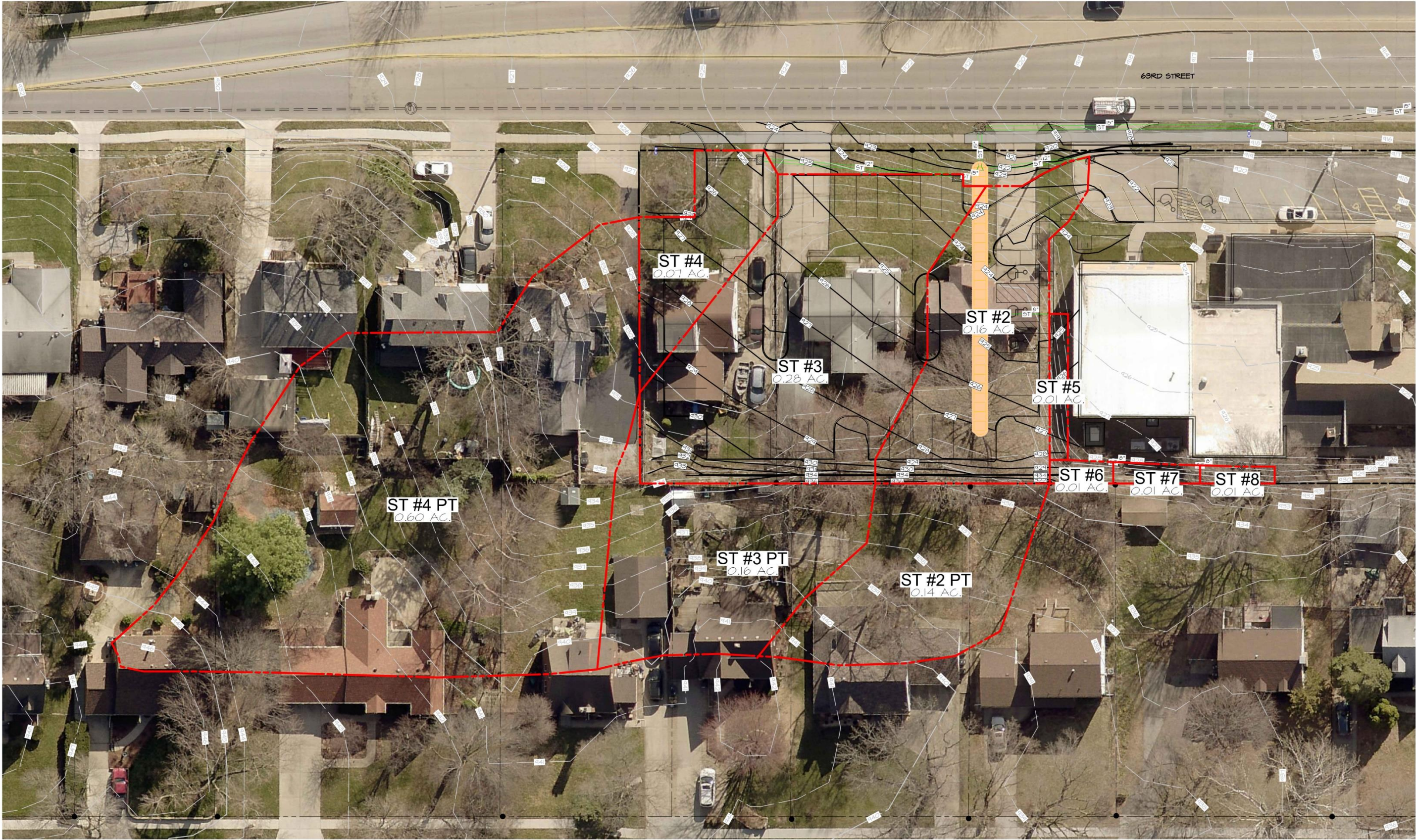
DATE:	Aug. 13, 2024
DESIGNED BY:	#####
DRAWN BY:	###

Civil Engineering Consultants, Inc.
2400 86th Street, Unit 12 · Urbandale, Iowa 50322
515.276.4884 · mail@cecinc.com



WINDSOR PRESBYTERIAN CHURCH
6301 UNIVERSITY AVENUE, WINDSOR HEIGHTS, IA
OFFSITE DRAINAGE MAP

SHEET
OF 1
E9213



DATE: Sep. 6, 2024

3RD SUB

2ND SUB

1ST SUB

DATE OF SURVEY: APR. 22, 2024

DESIGNED BY: SJD

DRAWN BY: MH

WINDSOR PRESBYTERIAN CHURCH

6301 UNIVERSITY AVENUE, WINDSOR HEIGHTS, IA

INTAKE DRAINAGE MAP

SHEET

OF 1

E9213

CEC

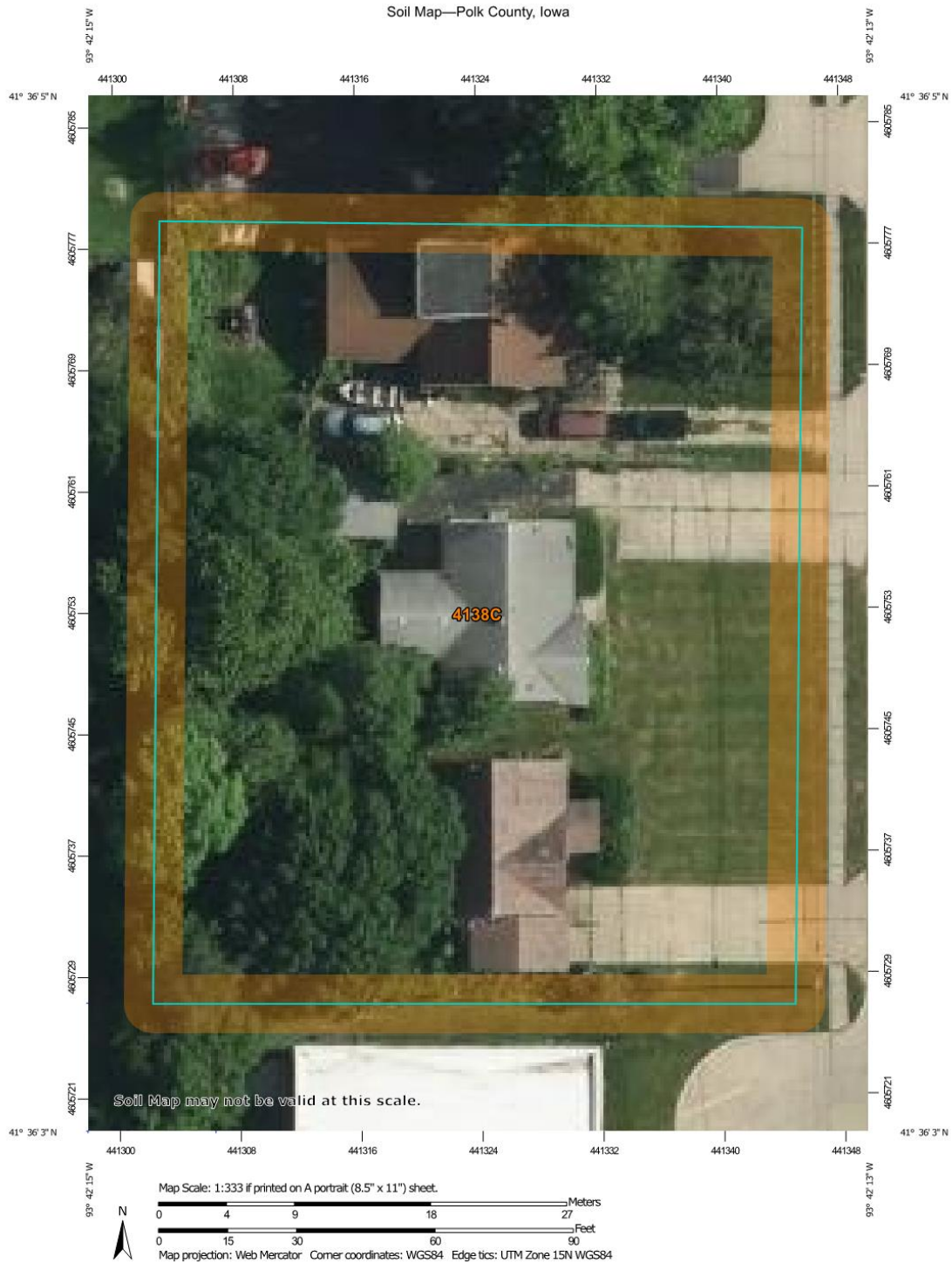
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b. Hydrologic Soils Map



USDA
Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

4/24/2024
Page 1 of 3

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
4138C	Clarion-Urban land complex, 5 to 9 percent slopes	0.5	100.0%
Totals for Area of Interest		0.5	100.0%



Hydric soil rating: No

Data Source Information

Soil Survey Area: Polk County, Iowa
Survey Area Data: Version 26, Sep 12, 2023



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

4/24/2024
Page 2 of 2

Polk County, Iowa

4138C—Clarion-Urban land complex, 5 to 9 percent slopes

Map Unit Setting

National map unit symbol: fvnn
Elevation: 950 to 1,500 feet
Mean annual precipitation: 23 to 35 inches
Mean annual air temperature: 43 to 50 degrees F
Frost-free period: 165 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Clarion and similar soils: 60 percent
Urban land: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Clarion

Setting

Landform: Ground moraines
Landform position (two-dimensional): Shoulder, backslope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy supraglacial till

Typical profile

Ap - 0 to 7 inches: loam
A1,A2 - 7 to 18 inches: loam
Bw1,Bw2 - 18 to 36 inches: loam
C1,C2 - 36 to 60 inches: loam

Properties and qualities

Slope: 5 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Available water supply, 0 to 60 inches: High (about 11.3 inches)

Interpretive groups

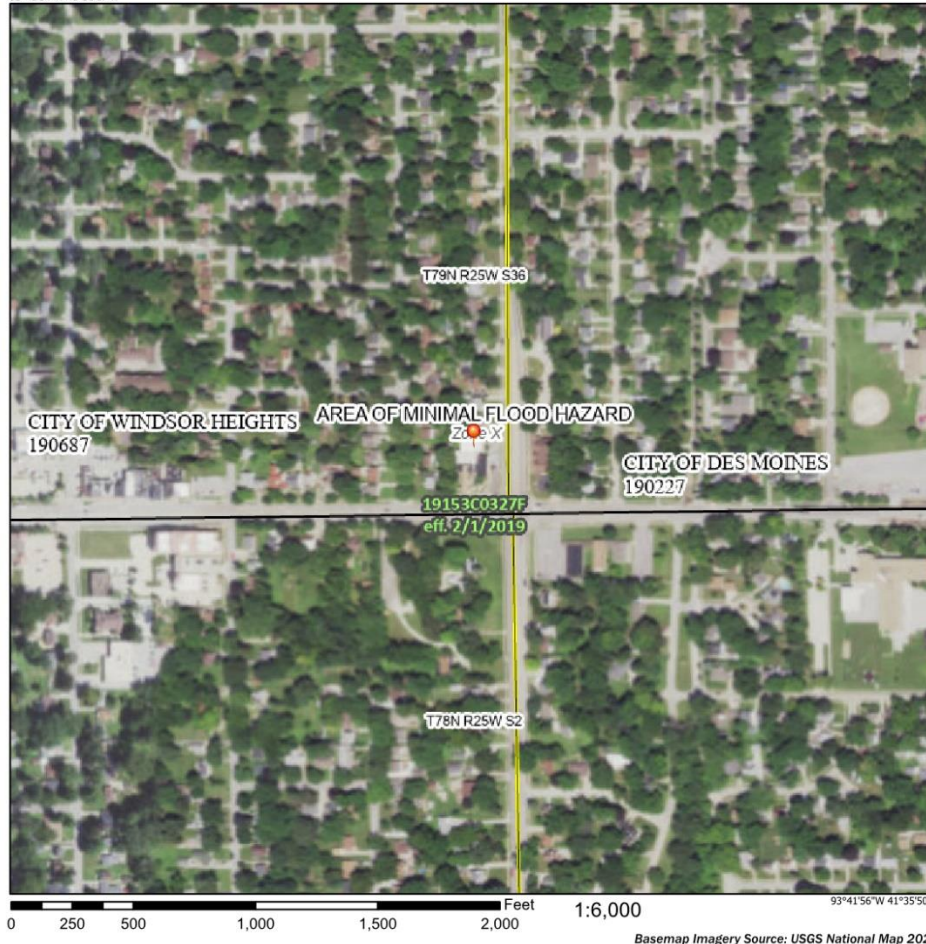
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: R103XY004MN - Loamy Upland Prairies

c. **FEMA Map**

National Flood Hazard Layer FIRMette

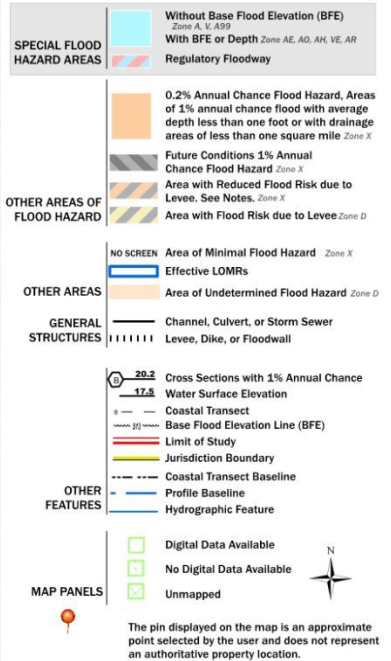


93°42'34"W 41°36'17"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

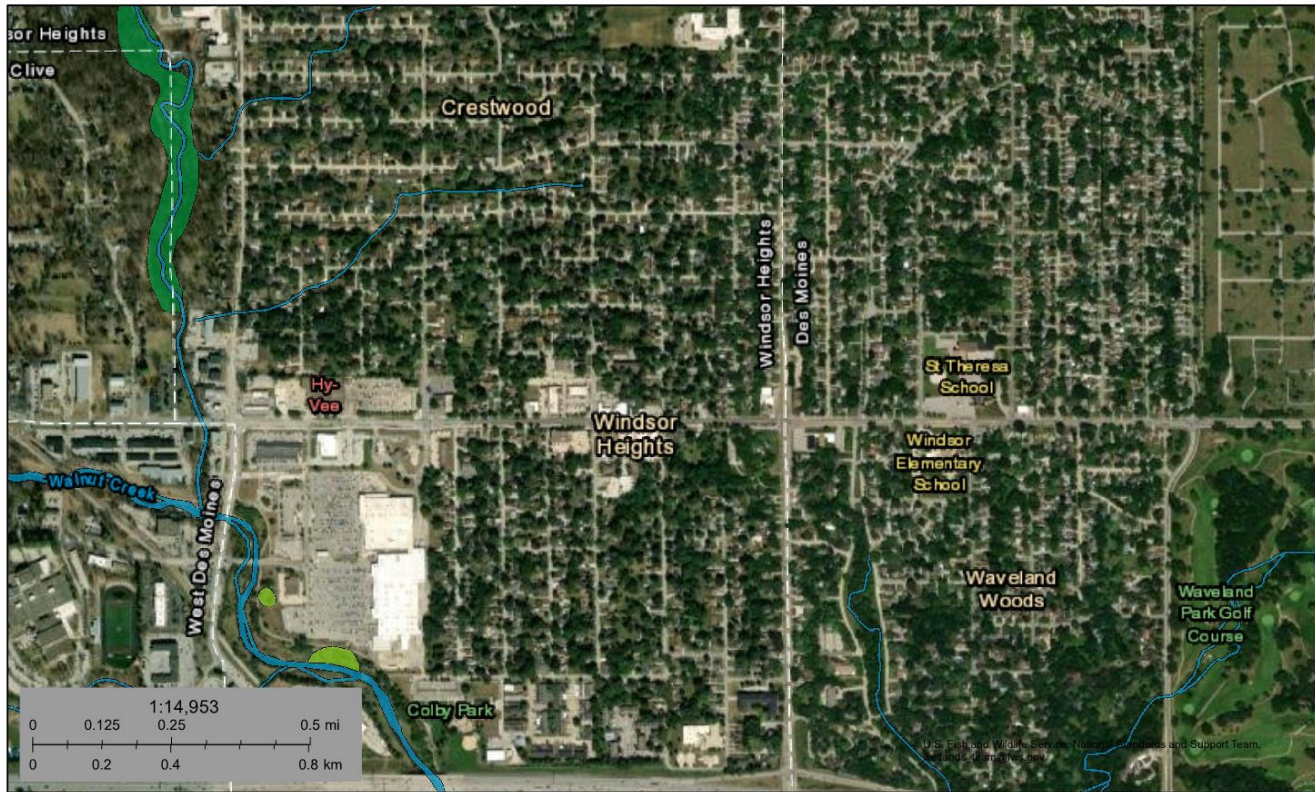
The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/24/2024 at 5:00 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

d. Wetlands Map



Wetlands



April 24, 2024

Wetlands

Estuarine and Marine Deepwater	Freshwater Emergent Wetland	Lake
Estuarine and Marine Wetland	Freshwater Forested/Shrub Wetland	Other
	Freshwater Pond	Riverine

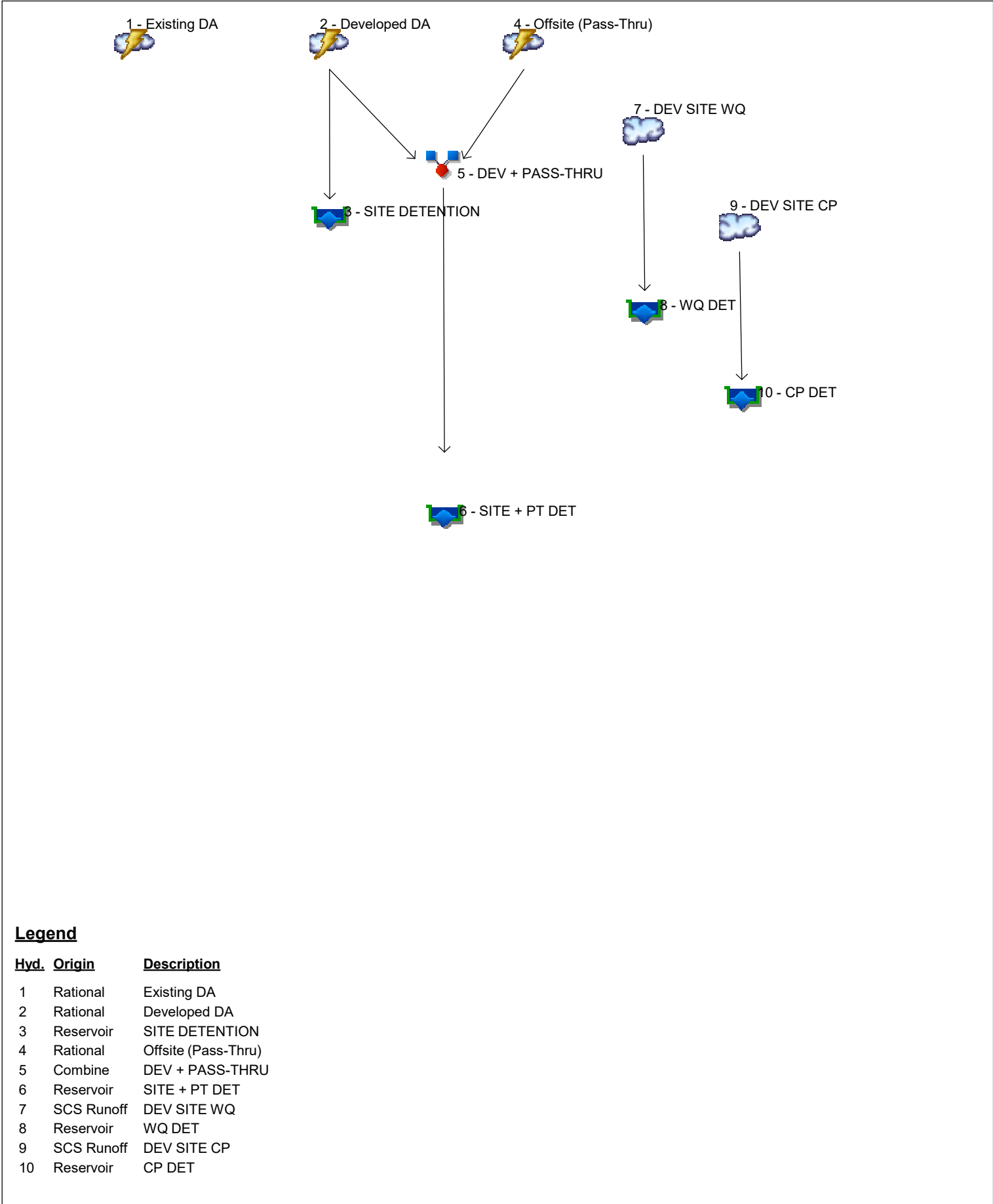
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

e. Hydrographs Report

Watershed Model Schematic

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022



Legend

Hyd.	Origin	Description
1	Rational	Existing DA
2	Rational	Developed DA
3	Reservoir	SITE DETENTION
4	Rational	Offsite (Pass-Thru)
5	Combine	DEV + PASS-THRU
6	Reservoir	SITE + PT DET
7	SCS Runoff	DEV SITE WQ
8	Reservoir	WQ DET
9	SCS Runoff	DEV SITE CP
10	Reservoir	CP DET

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	0.971	1	15	874	-----	-----	-----	Existing DA
2	Rational	1.295	1	15	1,165	-----	-----	-----	Developed DA
3	Reservoir	0.000	1	n/a	0	2	919.39	1,165	SITE DETENTION
4	Rational	1.430	1	15	1,287	-----	-----	-----	Offsite (Pass-Thru)
5	Combine	2.725	1	15	2,453	2, 4	-----	-----	DEV + PASS-THRU
6	Reservoir	0.360	1	28	710	5	920.02	2,314	SITE + PT DET
7	SCS Runoff	1.453	2	722	4,337	-----	-----	-----	DEV SITE WQ
8	Reservoir	0.464	2	736	2,595	7	920.06	2,423	WQ DET
9	SCS Runoff	1.010	2	722	2,831	-----	-----	-----	DEV SITE CP
10	Reservoir	0.043	2	852	1,089	9	919.84	1,919	CP DET
base.gpw					Return Period: 1 Year			Friday, 09 / 6 / 2024	

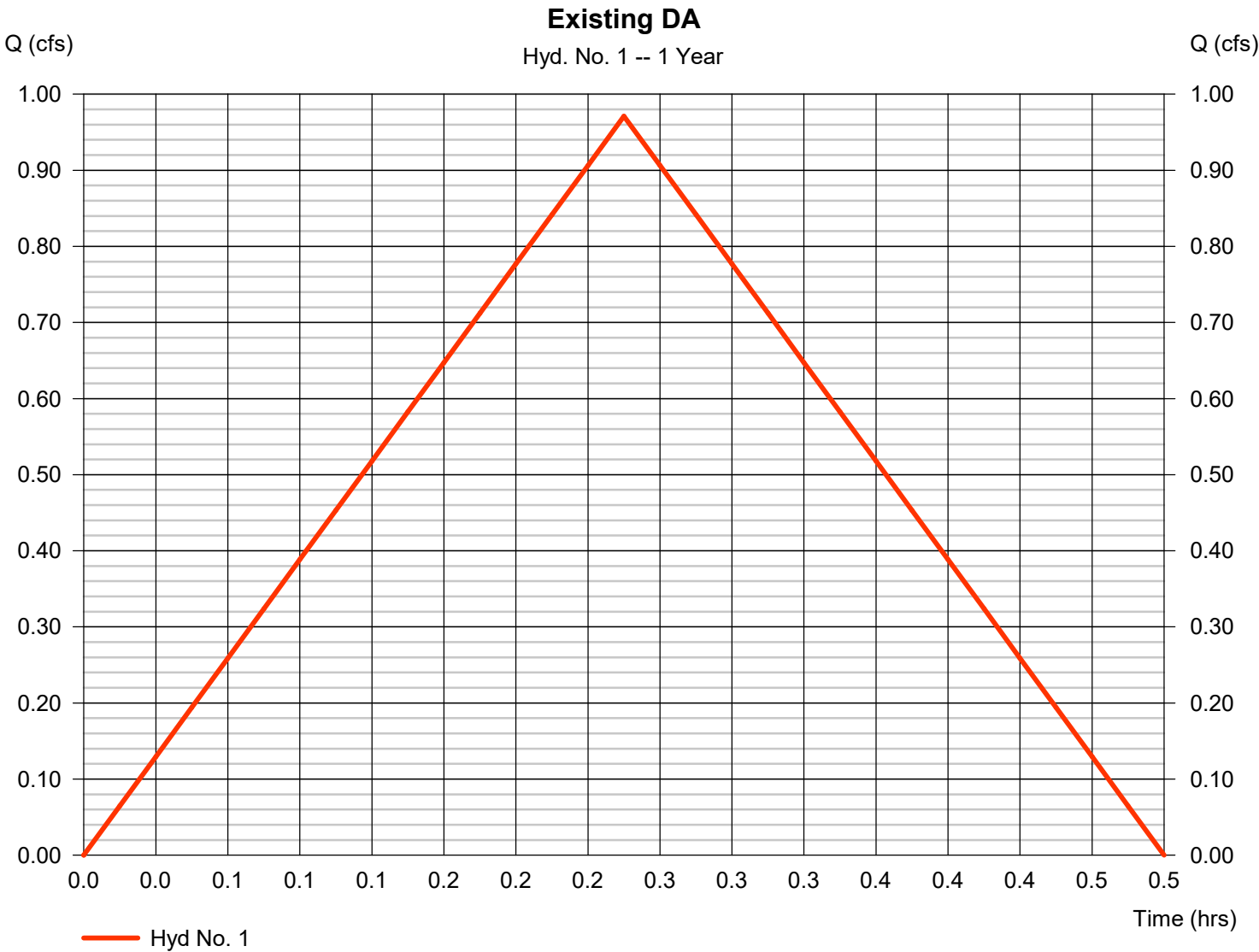
Hydrograph Report

Hyd. No. 1

Existing DA

Hydrograph type	= Rational	Peak discharge	= 0.971 cfs
Storm frequency	= 1 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 874 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.6*
Intensity	= 2.943 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.330 x 0.35) + (0.220 x 0.98)] / 0.550



Hydrograph Report

Hyd. No. 2

Developed DA

Hydrograph type	= Rational	Peak discharge	= 1.295 cfs
Storm frequency	= 1 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 1,165 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.8*
Intensity	= 2.943 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.160 x 0.35) + (0.390 x 0.98)] / 0.550



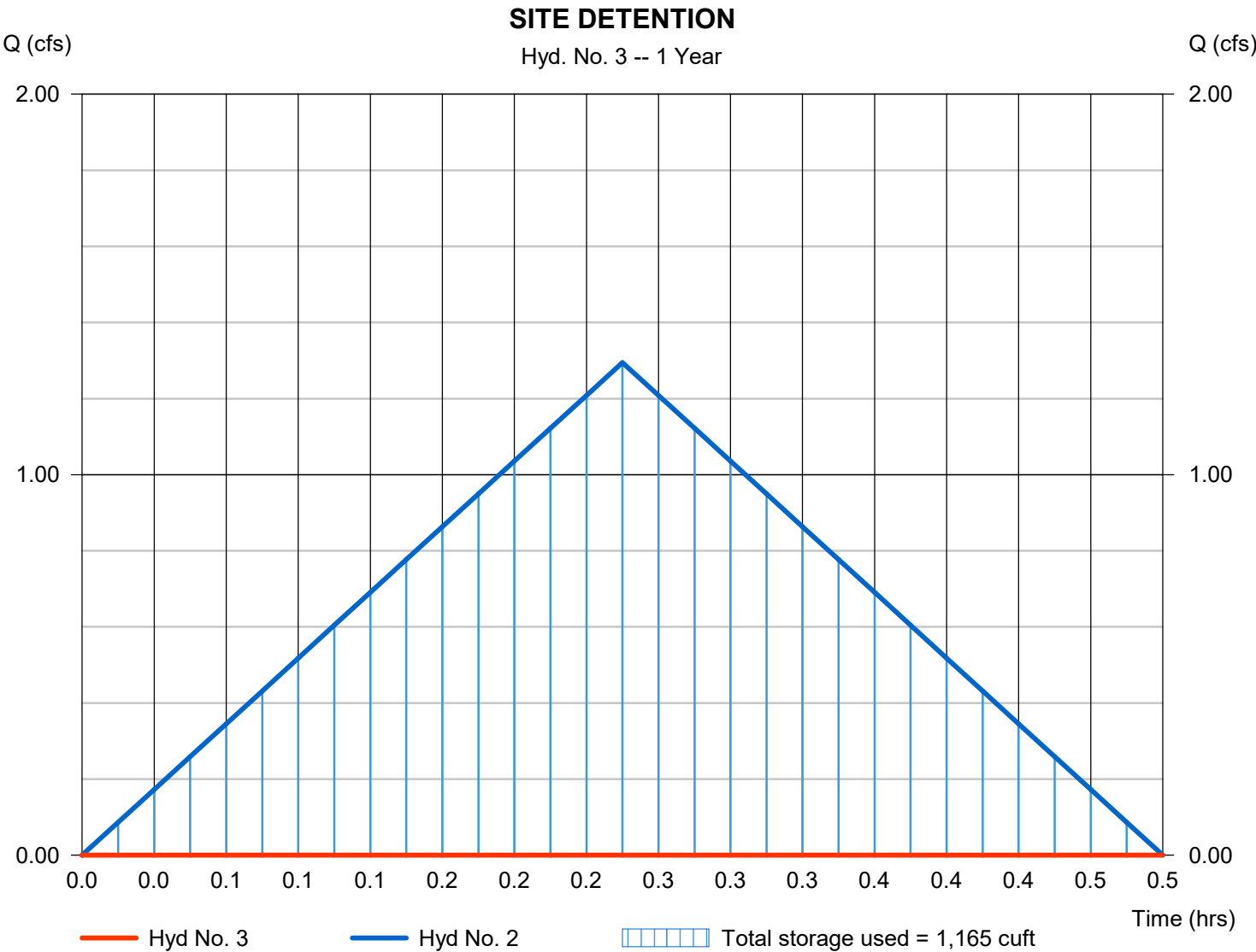
Hydrograph Report

Hyd. No. 3

SITE DETENTION

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 1 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 2 - Developed DA	Max. Elevation	= 919.39 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 1,165 cuft

Storage Indication method used.



Pond No. 1 - UNDERGROUND STORAGE

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 918.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	918.00	20	0	0
1.00	919.00	1,120	570	570
1.75	919.75	1,960	1,155	1,725
2.00	920.00	2,240	525	2,250
3.00	921.00	3,360	2,800	5,050

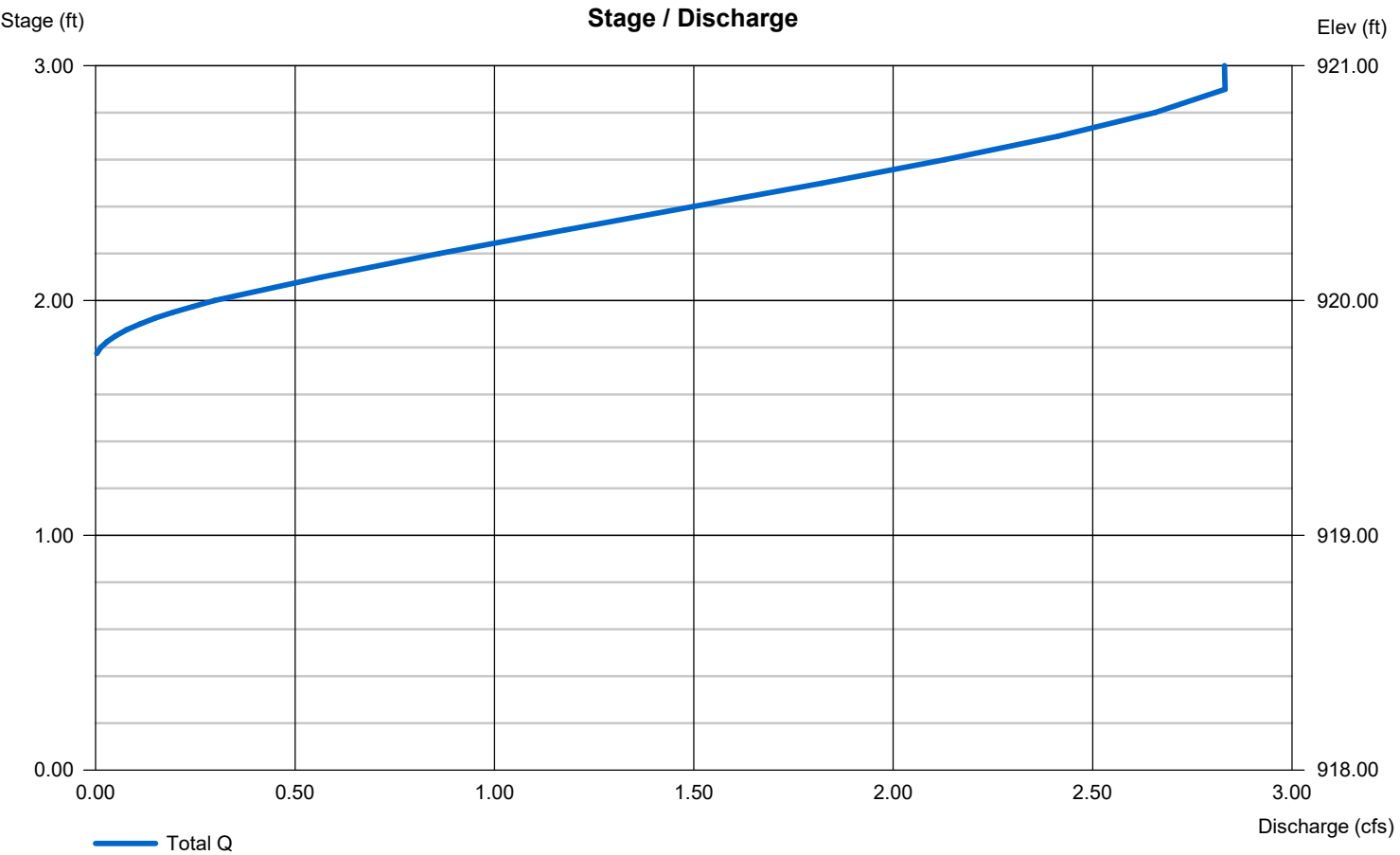
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	0.00	0.00	0.00
Span (in)	= 15.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 919.75	0.00	0.00	0.00
Length (ft)	= 40.00	0.00	0.00	0.00
Slope (%)	= 0.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Report

Hyd. No. 4

Offsite (Pass-Thru)

Hydrograph type	= Rational	Peak discharge	= 1.430 cfs
Storm frequency	= 1 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 1,287 cuft
Drainage area	= 0.900 ac	Runoff coeff.	= 0.54*
Intensity	= 2.943 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.630 x 0.35) + (0.270 x 0.98)] / 0.900

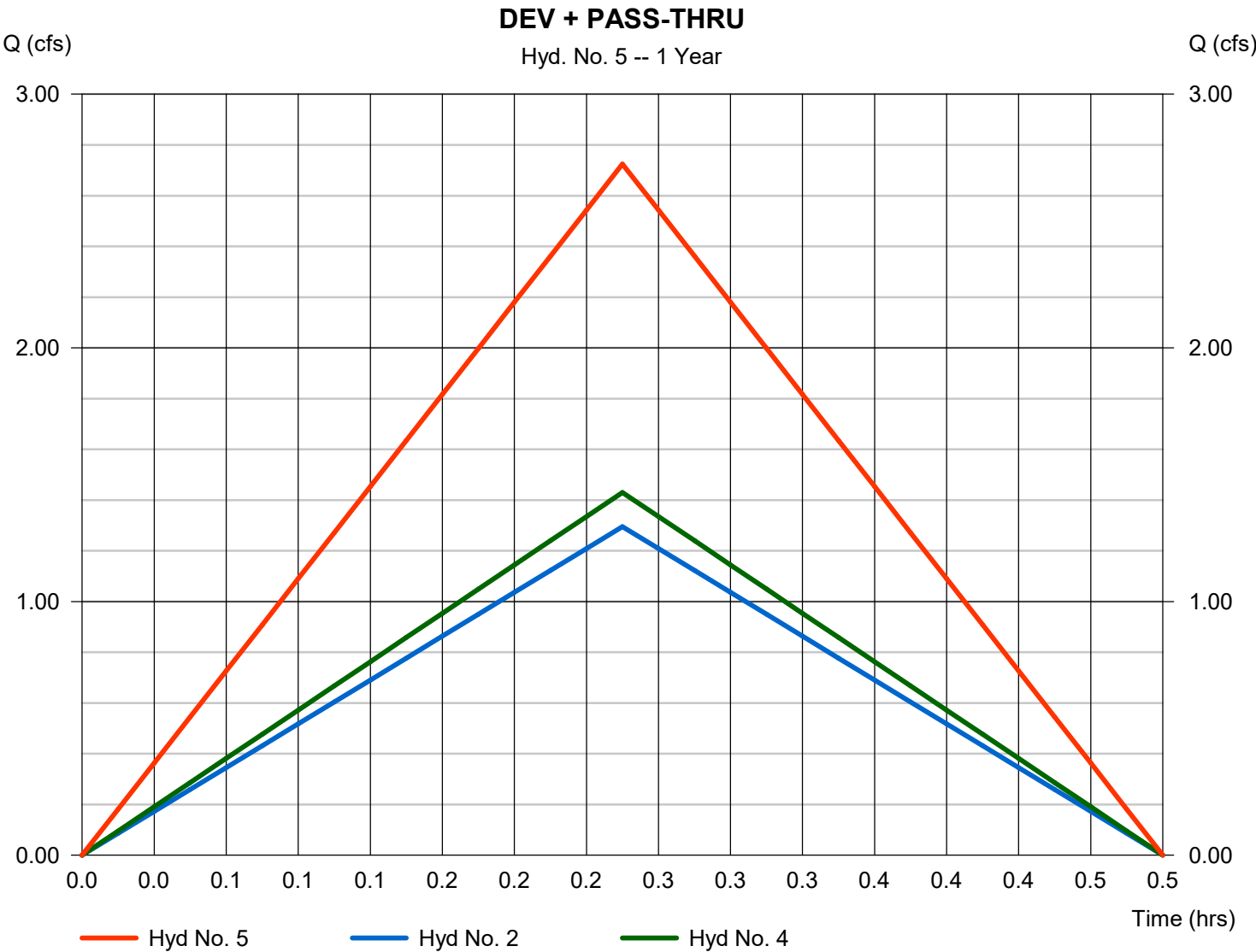


Hydrograph Report

Hyd. No. 5

DEV + PASS-THRU

Hydrograph type	= Combine	Peak discharge	= 2.725 cfs
Storm frequency	= 1 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 2,453 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 1.450 ac



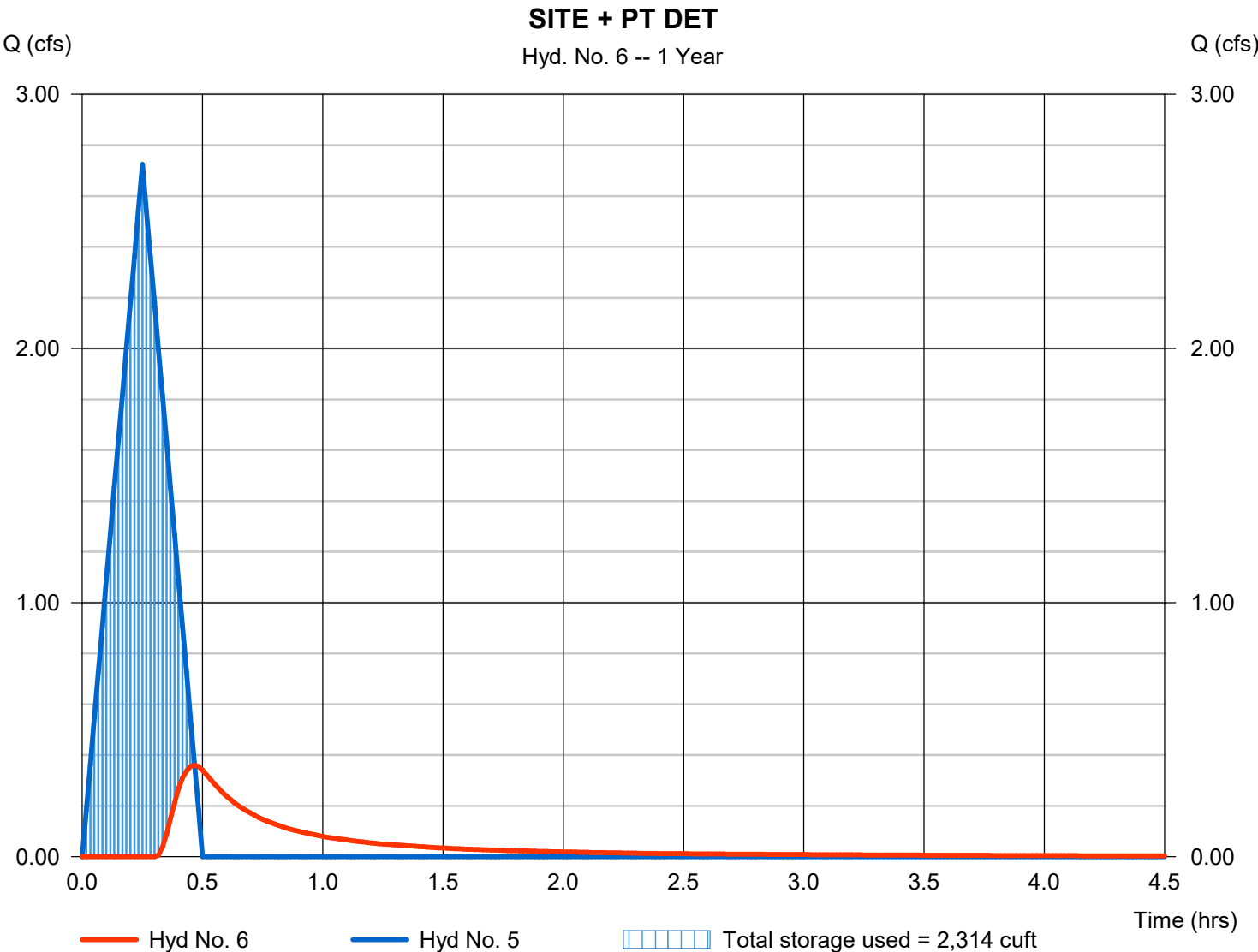
Hydrograph Report

Hyd. No. 6

SITE + PT DET

Hydrograph type	= Reservoir	Peak discharge	= 0.360 cfs
Storm frequency	= 1 yrs	Time to peak	= 0.47 hrs
Time interval	= 1 min	Hyd. volume	= 710 cuft
Inflow hyd. No.	= 5 - DEV + PASS-THRU	Max. Elevation	= 920.02 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 2,314 cuft

Storage Indication method used.



Pond No. 1 - UNDERGROUND STORAGE

Pond Data

Contours -User-defined contour areas. Average end area method used for volume calculation. Beginning Elevation = 918.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	918.00	20	0	0
1.00	919.00	1,120	570	570
1.75	919.75	1,960	1,155	1,725
2.00	920.00	2,240	525	2,250
3.00	921.00	3,360	2,800	5,050

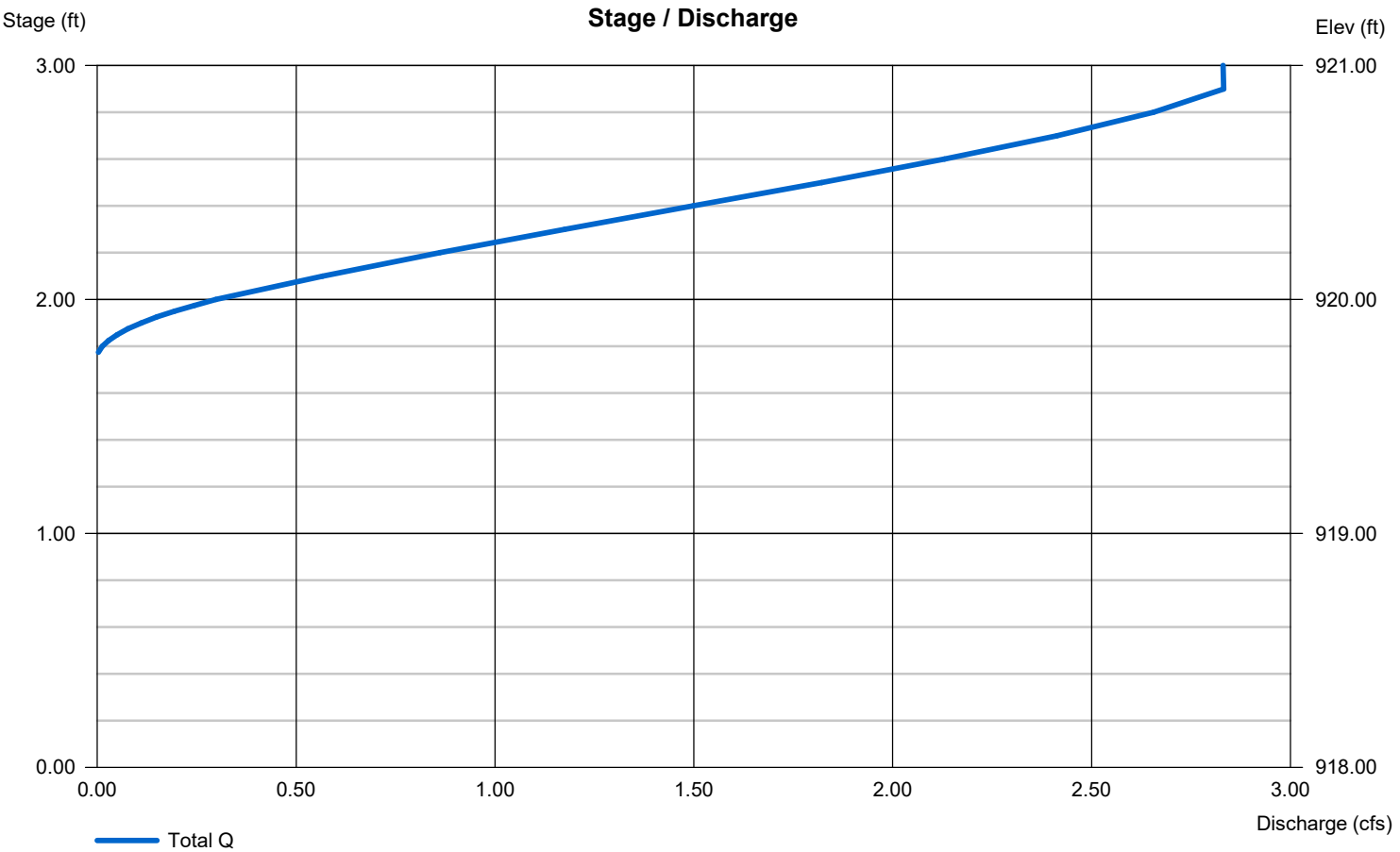
Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 15.00	0.00	0.00	0.00
Span (in)	= 15.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 919.75	0.00	0.00	0.00
Length (ft)	= 40.00	0.00	0.00	0.00
Slope (%)	= 0.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000 (by Wet area)			
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.137	1	15	1,024	-----	-----	-----	Existing DA
2	Rational	1.516	1	15	1,365	-----	-----	-----	Developed DA
3	Reservoir	0.000	1	n/a	0	2	919.52	1,365	SITE DETENTION
4	Rational	1.675	1	15	1,507	-----	-----	-----	Offsite (Pass-Thru)
5	Combine	3.191	1	15	2,872	2, 4	-----	-----	DEV + PASS-THRU
6	Reservoir	0.623	1	27	1,130	5	920.12	2,583	SITE + PT DET
7	SCS Runoff	1.699	2	722	5,121	-----	-----	-----	DEV SITE WQ
8	Reservoir	0.728	2	734	3,379	7	920.15	2,684	WQ DET
9	SCS Runoff	1.254	2	722	3,522	-----	-----	-----	DEV SITE CP
10	Reservoir	0.114	2	766	1,780	9	919.90	2,045	CP DET
base.gpw					Return Period: 2 Year			Friday, 09 / 6 / 2024	

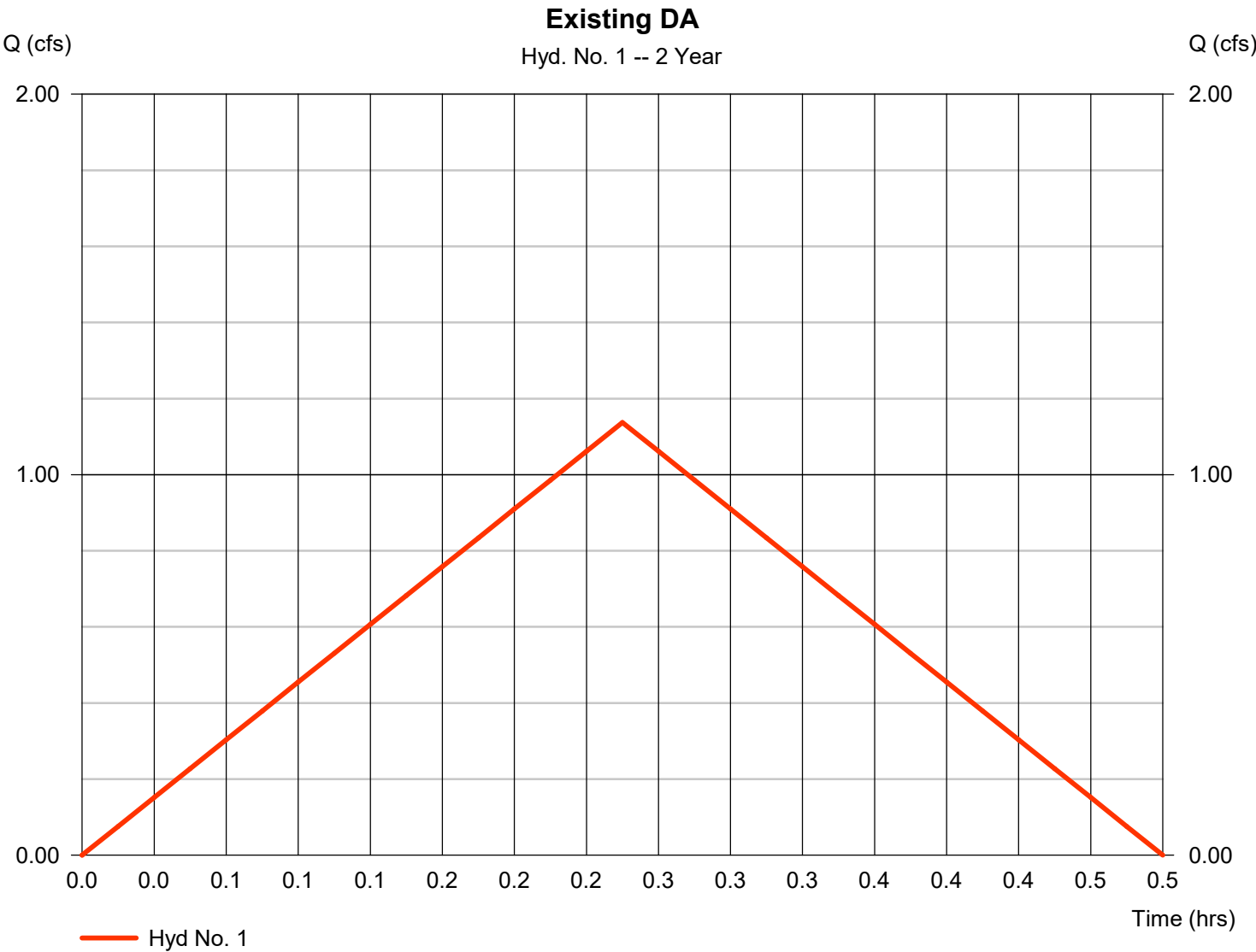
Hydrograph Report

Hyd. No. 1

Existing DA

Hydrograph type	= Rational	Peak discharge	= 1.137 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 1,024 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.6*
Intensity	= 3.446 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.330 x 0.35) + (0.220 x 0.98)] / 0.550



Hydrograph Report

Hyd. No. 2

Developed DA

Hydrograph type	= Rational	Peak discharge	= 1.516 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 1,365 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.8*
Intensity	= 3.446 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.160 x 0.35) + (0.390 x 0.98)] / 0.550



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

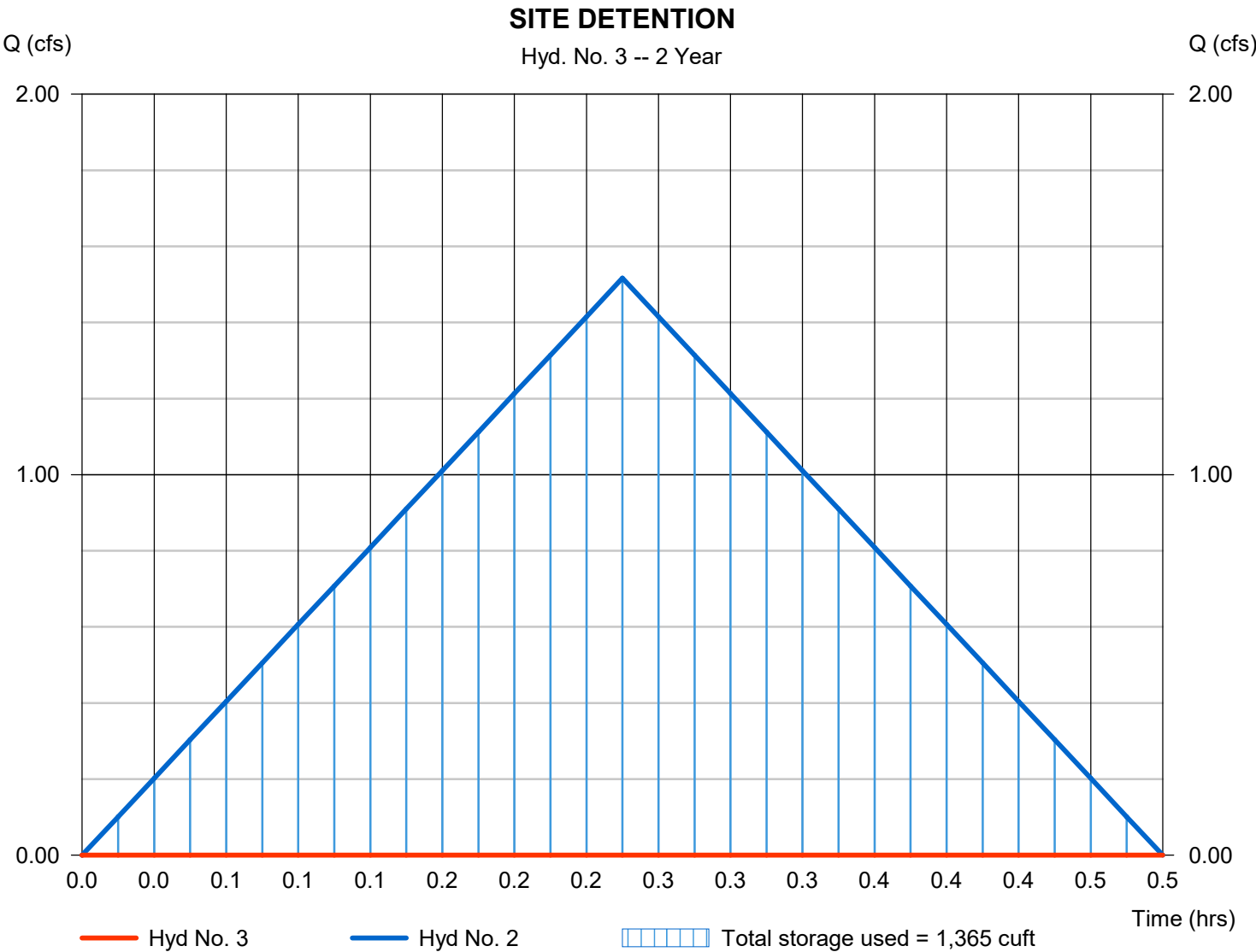
Friday, 09 / 6 / 2024

Hyd. No. 3

SITE DETENTION

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 2 - Developed DA	Max. Elevation	= 919.52 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 1,365 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 09 / 6 / 2024

Hyd. No. 4

Offsite (Pass-Thru)

Hydrograph type	= Rational	Peak discharge	= 1.675 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 1,507 cuft
Drainage area	= 0.900 ac	Runoff coeff.	= 0.54*
Intensity	= 3.446 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.630 x 0.35) + (0.270 x 0.98)] / 0.900



Hydrograph Report

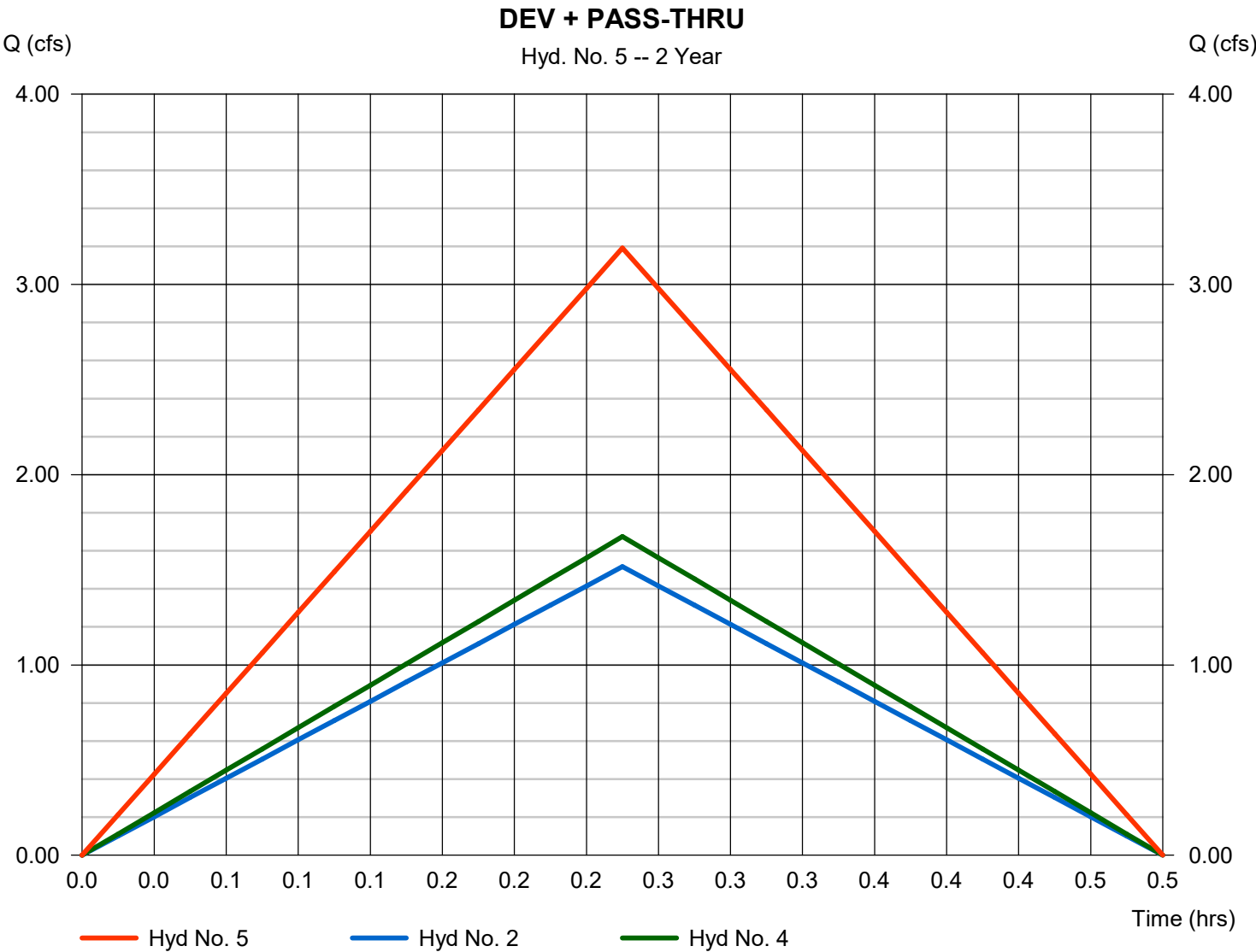
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 09 / 6 / 2024

Hyd. No. 5

DEV + PASS-THRU

Hydrograph type	= Combine	Peak discharge	= 3.191 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 2,872 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 1.450 ac



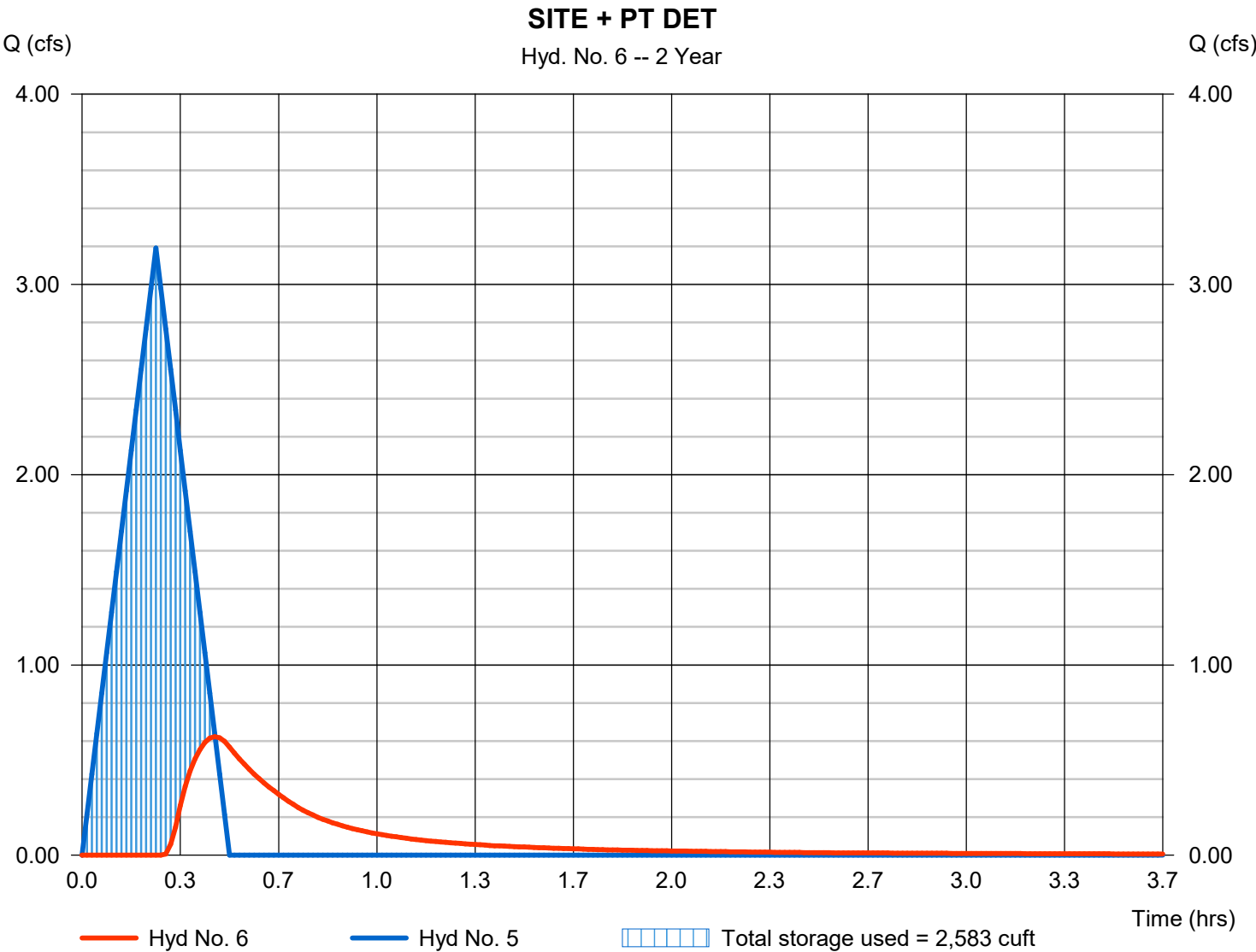
Hydrograph Report

Hyd. No. 6

SITE + PT DET

Hydrograph type	= Reservoir	Peak discharge	= 0.623 cfs
Storm frequency	= 2 yrs	Time to peak	= 0.45 hrs
Time interval	= 1 min	Hyd. volume	= 1,130 cuft
Inflow hyd. No.	= 5 - DEV + PASS-THRU	Max. Elevation	= 920.12 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 2,583 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.416	1	15	1,274	-----	-----	-----	Existing DA
2	Rational	1.888	1	15	1,699	-----	-----	-----	Developed DA
3	Reservoir	0.000	1	n/a	0	2	919.73	1,699	SITE DETENTION
4	Rational	2.085	1	15	1,877	-----	-----	-----	Offsite (Pass-Thru)
5	Combine	3.973	1	15	3,575	2, 4	-----	-----	DEV + PASS-THRU
6	Reservoir	1.073	1	26	1,833	5	920.27	2,999	SITE + PT DET
7	SCS Runoff	2.135	2	722	6,525	-----	-----	-----	DEV SITE WQ
8	Reservoir	1.179	2	732	4,783	7	920.30	3,094	WQ DET
9	SCS Runoff	1.697	2	722	4,794	-----	-----	-----	DEV SITE CP
10	Reservoir	0.476	2	738	3,052	9	920.07	2,436	CP DET
base.gpw					Return Period: 5 Year			Friday, 09 / 6 / 2024	

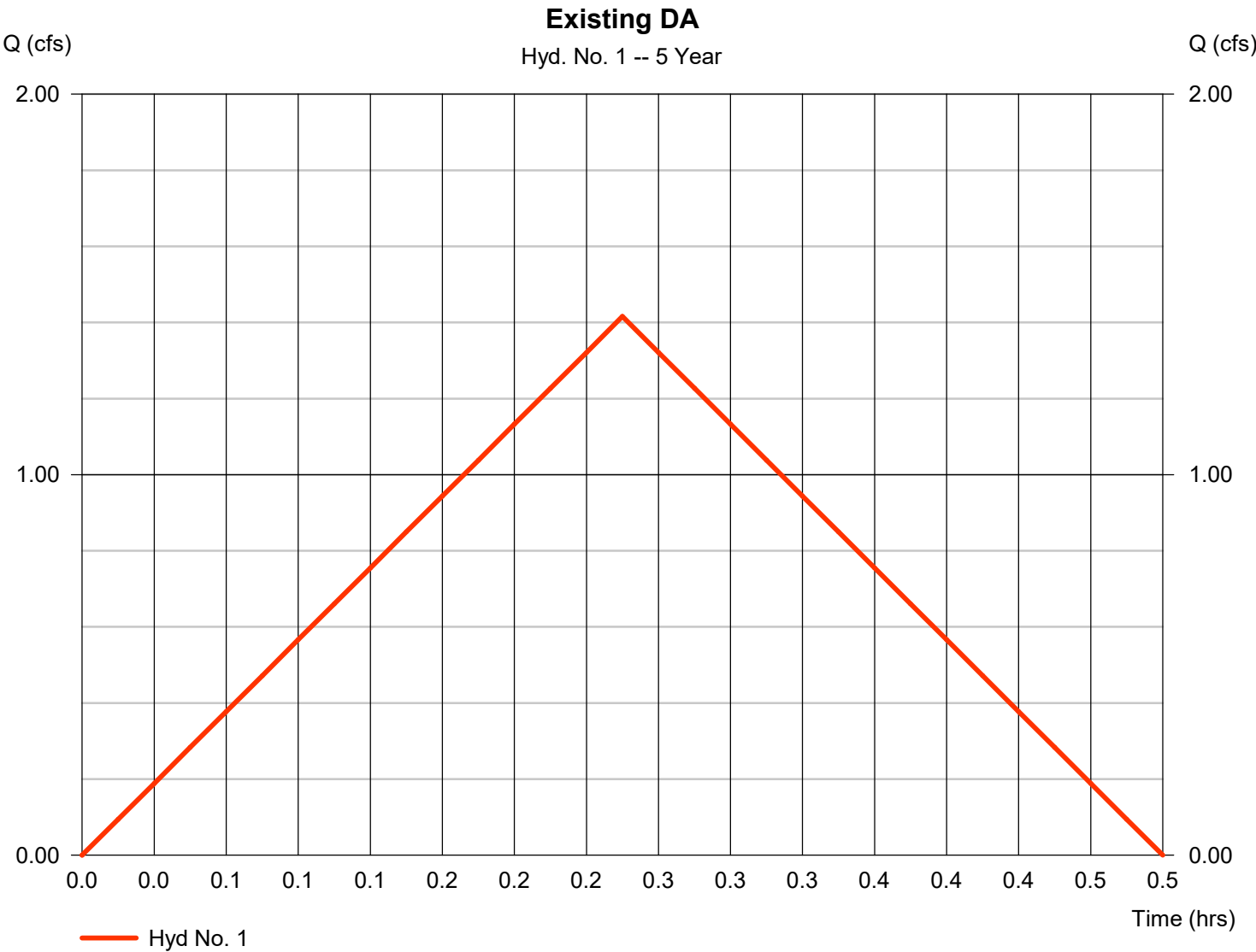
Hydrograph Report

Hyd. No. 1

Existing DA

Hydrograph type	= Rational	Peak discharge	= 1.416 cfs
Storm frequency	= 5 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 1,274 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.6*
Intensity	= 4.290 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.330 x 0.35) + (0.220 x 0.98)] / 0.550



Hydrograph Report

Hyd. No. 2

Developed DA

Hydrograph type	= Rational	Peak discharge	= 1.888 cfs
Storm frequency	= 5 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 1,699 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.8*
Intensity	= 4.290 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.160 x 0.35) + (0.390 x 0.98)] / 0.550



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

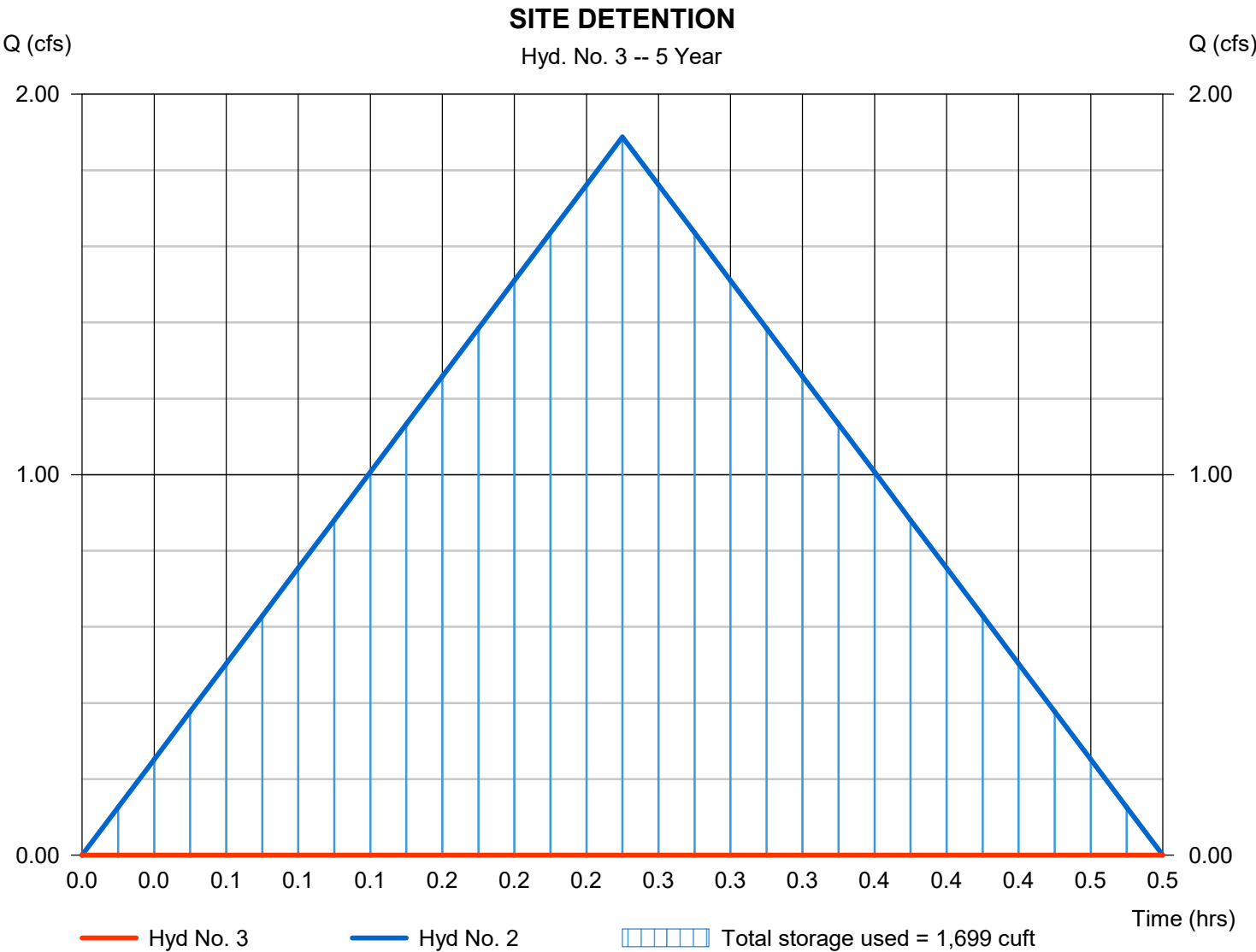
Friday, 09 / 6 / 2024

Hyd. No. 3

SITE DETENTION

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 5 yrs	Time to peak	= n/a
Time interval	= 1 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 2 - Developed DA	Max. Elevation	= 919.73 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 1,699 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 09 / 6 / 2024

Hyd. No. 4

Offsite (Pass-Thru)

Hydrograph type	= Rational	Peak discharge	= 2.085 cfs
Storm frequency	= 5 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 1,877 cuft
Drainage area	= 0.900 ac	Runoff coeff.	= 0.54*
Intensity	= 4.290 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.630 x 0.35) + (0.270 x 0.98)] / 0.900



Hydrograph Report

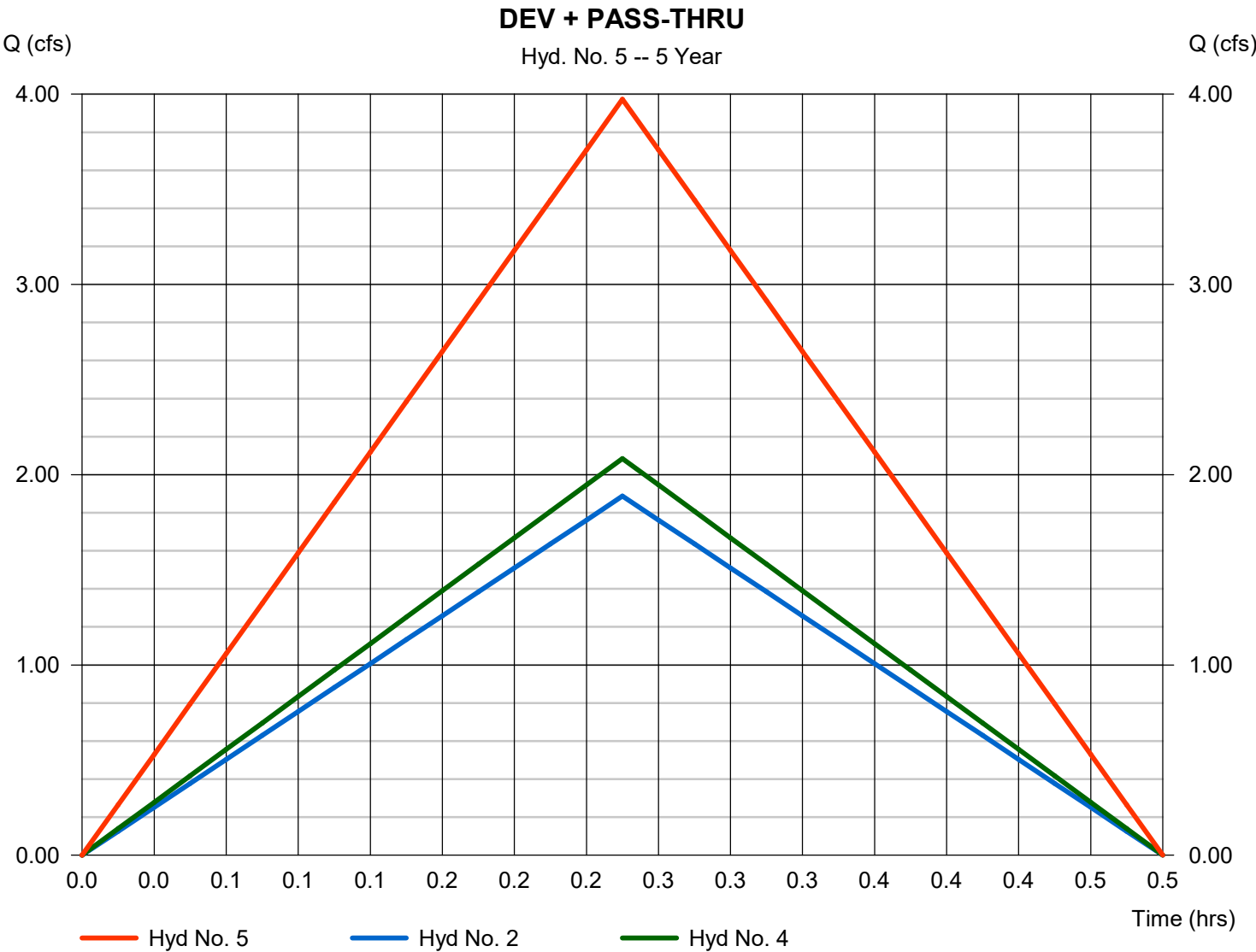
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 09 / 6 / 2024

Hyd. No. 5

DEV + PASS-THRU

Hydrograph type	= Combine	Peak discharge	= 3.973 cfs
Storm frequency	= 5 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 3,575 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 1.450 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

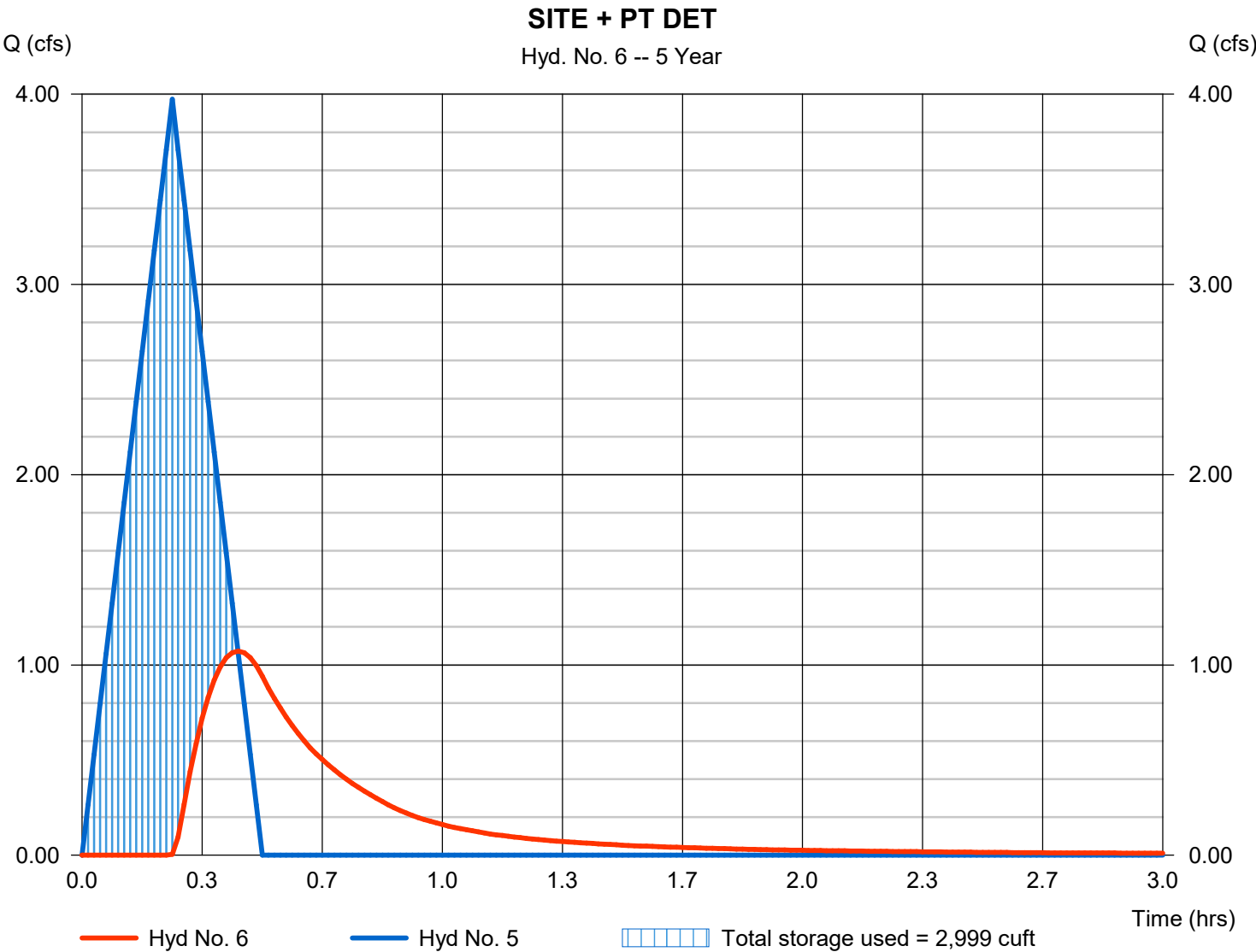
Friday, 09 / 6 / 2024

Hyd. No. 6

SITE + PT DET

Hydrograph type	= Reservoir	Peak discharge	= 1.073 cfs
Storm frequency	= 5 yrs	Time to peak	= 0.43 hrs
Time interval	= 1 min	Hyd. volume	= 1,833 cuft
Inflow hyd. No.	= 5 - DEV + PASS-THRU	Max. Elevation	= 920.27 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 2,999 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.647	1	15	1,482	-----	-----	-----	Existing DA
2	Rational	2.196	1	15	1,977	-----	-----	-----	Developed DA
3	Reservoir	0.063	1	30	234	2	919.86	1,960	SITE DETENTION
4	Rational	2.426	1	15	2,183	-----	-----	-----	Offsite (Pass-Thru)
5	Combine	4.622	1	15	4,160	2, 4	-----	-----	DEV + PASS-THRU
6	Reservoir	1.447	1	25	2,418	5	920.38	3,326	SITE + PT DET
7	SCS Runoff	2.521	2	722	7,779	-----	-----	-----	DEV SITE WQ
8	Reservoir	1.550	2	730	6,037	7	920.42	3,415	WQ DET
9	SCS Runoff	2.095	2	722	5,960	-----	-----	-----	DEV SITE CP
10	Reservoir	0.865	2	734	4,218	9	920.20	2,813	CP DET
base.gpw					Return Period: 10 Year			Friday, 09 / 6 / 2024	

Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

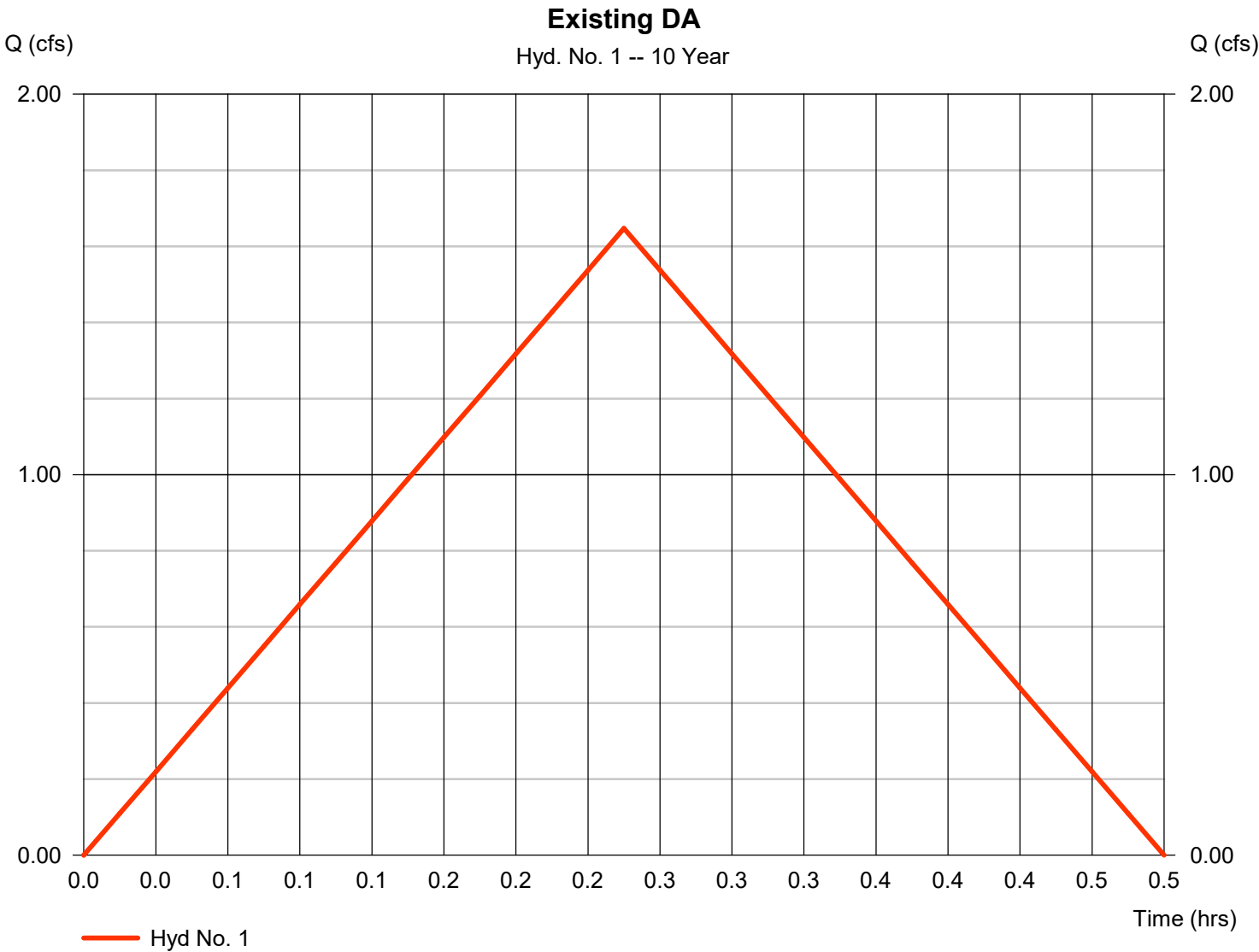
Friday, 09 / 6 / 2024

Hyd. No. 1

Existing DA

Hydrograph type	= Rational	Peak discharge	= 1.647 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 1,482 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.6*
Intensity	= 4.991 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.330 x 0.35) + (0.220 x 0.98)] / 0.550



Hydrograph Report

Hyd. No. 2

Developed DA

Hydrograph type	= Rational	Peak discharge	= 2.196 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 1,977 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.8*
Intensity	= 4.991 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.160 x 0.35) + (0.390 x 0.98)] / 0.550



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

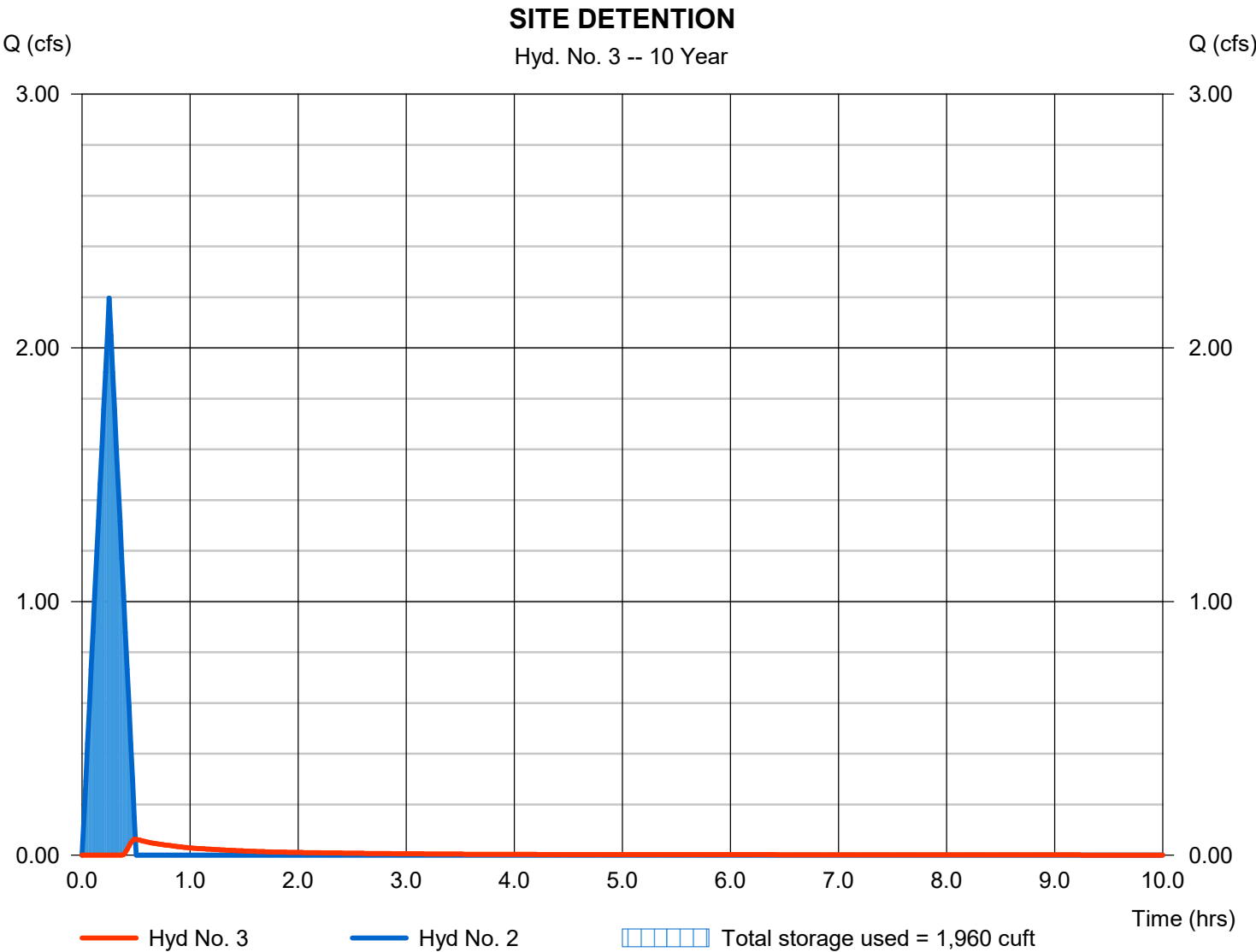
Friday, 09 / 6 / 2024

Hyd. No. 3

SITE DETENTION

Hydrograph type	= Reservoir	Peak discharge	= 0.063 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.50 hrs
Time interval	= 1 min	Hyd. volume	= 234 cuft
Inflow hyd. No.	= 2 - Developed DA	Max. Elevation	= 919.86 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 1,960 cuft

Storage Indication method used.



Hydrograph Report

Hyd. No. 4

Offsite (Pass-Thru)

Hydrograph type	= Rational	Peak discharge	= 2.426 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 2,183 cuft
Drainage area	= 0.900 ac	Runoff coeff.	= 0.54*
Intensity	= 4.991 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.630 x 0.35) + (0.270 x 0.98)] / 0.900



Hydrograph Report

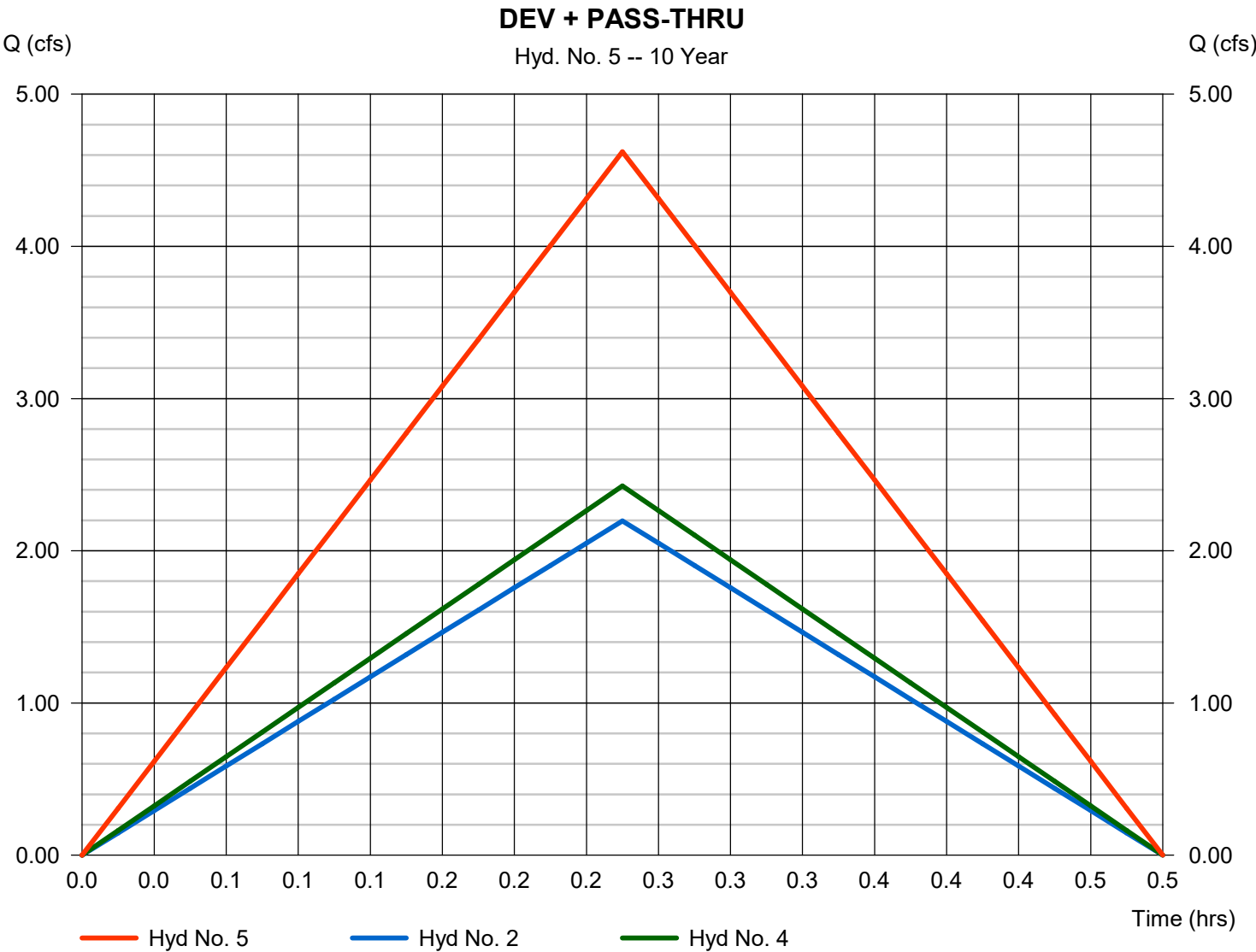
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 09 / 6 / 2024

Hyd. No. 5

DEV + PASS-THRU

Hydrograph type	= Combine	Peak discharge	= 4.622 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 4,160 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 1.450 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

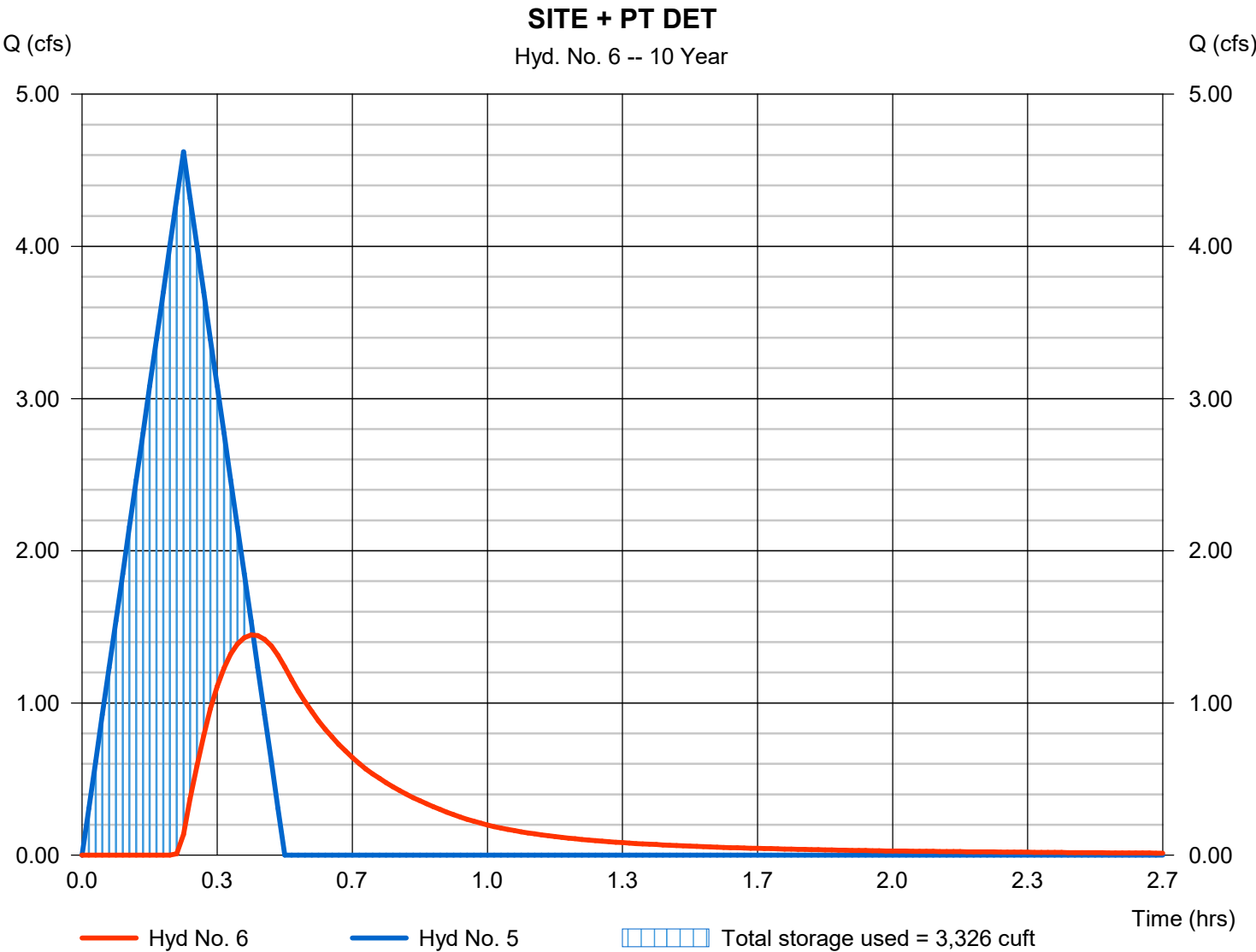
Friday, 09 / 6 / 2024

Hyd. No. 6

SITE + PT DET

Hydrograph type	= Reservoir	Peak discharge	= 1.447 cfs
Storm frequency	= 10 yrs	Time to peak	= 0.42 hrs
Time interval	= 1 min	Hyd. volume	= 2,418 cuft
Inflow hyd. No.	= 5 - DEV + PASS-THRU	Max. Elevation	= 920.38 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 3,326 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	1.981	1	15	1,783	-----	-----	-----	Existing DA
2	Rational	2.642	1	15	2,378	-----	-----	-----	Developed DA
3	Reservoir	0.312	1	28	636	2	920.01	2,264	SITE DETENTION
4	Rational	2.918	1	15	2,626	-----	-----	-----	Offsite (Pass-Thru)
5	Combine	5.560	1	15	5,004	2, 4	-----	-----	DEV + PASS-THRU
6	Reservoir	1.971	1	25	3,262	5	920.55	3,786	SITE + PT DET
7	SCS Runoff	3.101	2	722	9,675	-----	-----	-----	DEV SITE WQ
8	Reservoir	2.012	2	730	7,933	7	920.56	3,823	WQ DET
9	SCS Runoff	2.696	2	722	7,754	-----	-----	-----	DEV SITE CP
10	Reservoir	1.451	2	732	6,012	9	920.39	3,329	CP DET
base.gpw					Return Period: 25 Year			Friday, 09 / 6 / 2024	

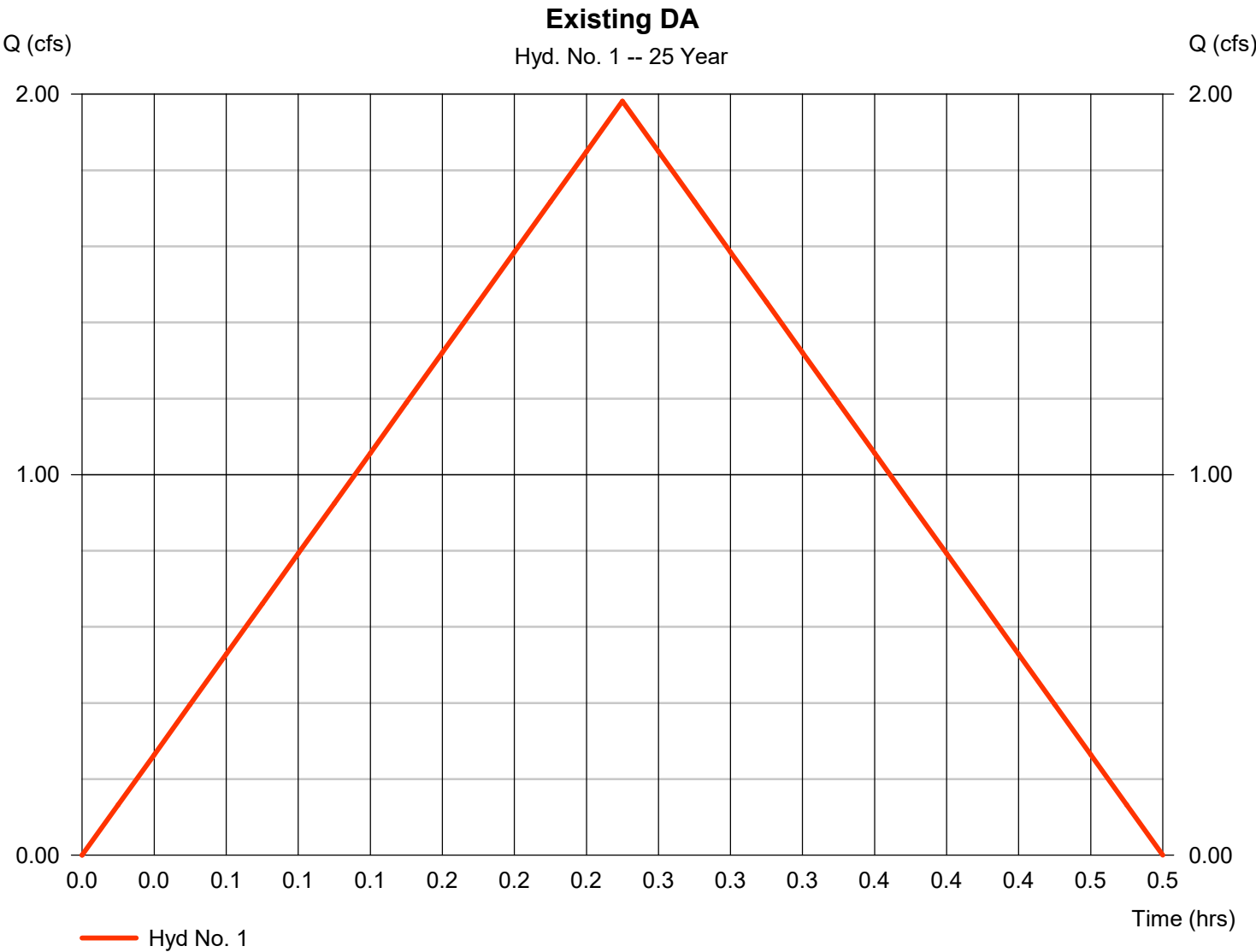
Hydrograph Report

Hyd. No. 1

Existing DA

Hydrograph type	= Rational	Peak discharge	= 1.981 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 1,783 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.6*
Intensity	= 6.004 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.330 x 0.35) + (0.220 x 0.98)] / 0.550



Hydrograph Report

Hyd. No. 2

Developed DA

Hydrograph type	= Rational	Peak discharge	= 2.642 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 2,378 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.8*
Intensity	= 6.004 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.160 x 0.35) + (0.390 x 0.98)] / 0.550



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

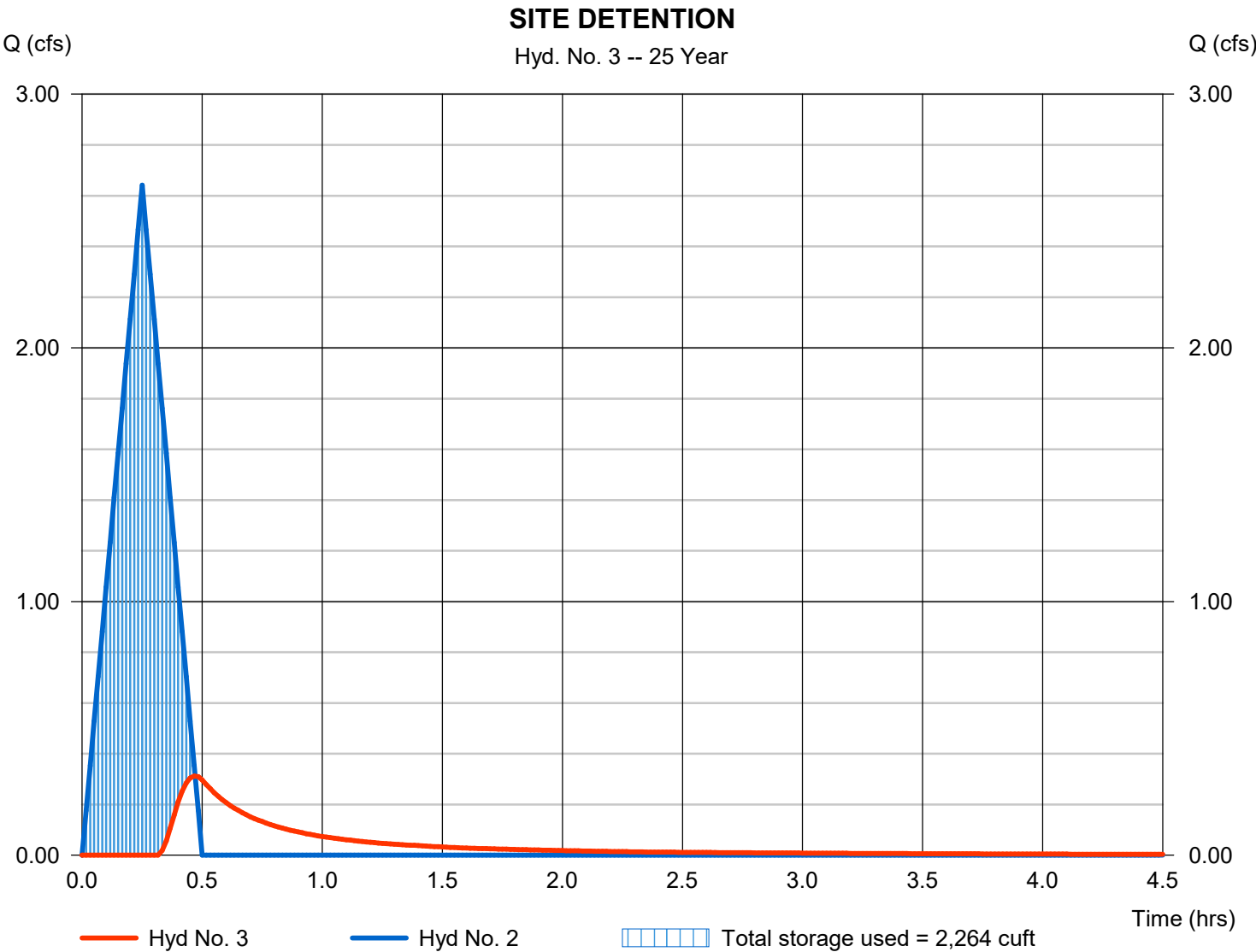
Friday, 09 / 6 / 2024

Hyd. No. 3

SITE DETENTION

Hydrograph type	= Reservoir	Peak discharge	= 0.312 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.47 hrs
Time interval	= 1 min	Hyd. volume	= 636 cuft
Inflow hyd. No.	= 2 - Developed DA	Max. Elevation	= 920.01 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 2,264 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 09 / 6 / 2024

Hyd. No. 4

Offsite (Pass-Thru)

Hydrograph type	= Rational	Peak discharge	= 2.918 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 2,626 cuft
Drainage area	= 0.900 ac	Runoff coeff.	= 0.54*
Intensity	= 6.004 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.630 x 0.35) + (0.270 x 0.98)] / 0.900



Hydrograph Report

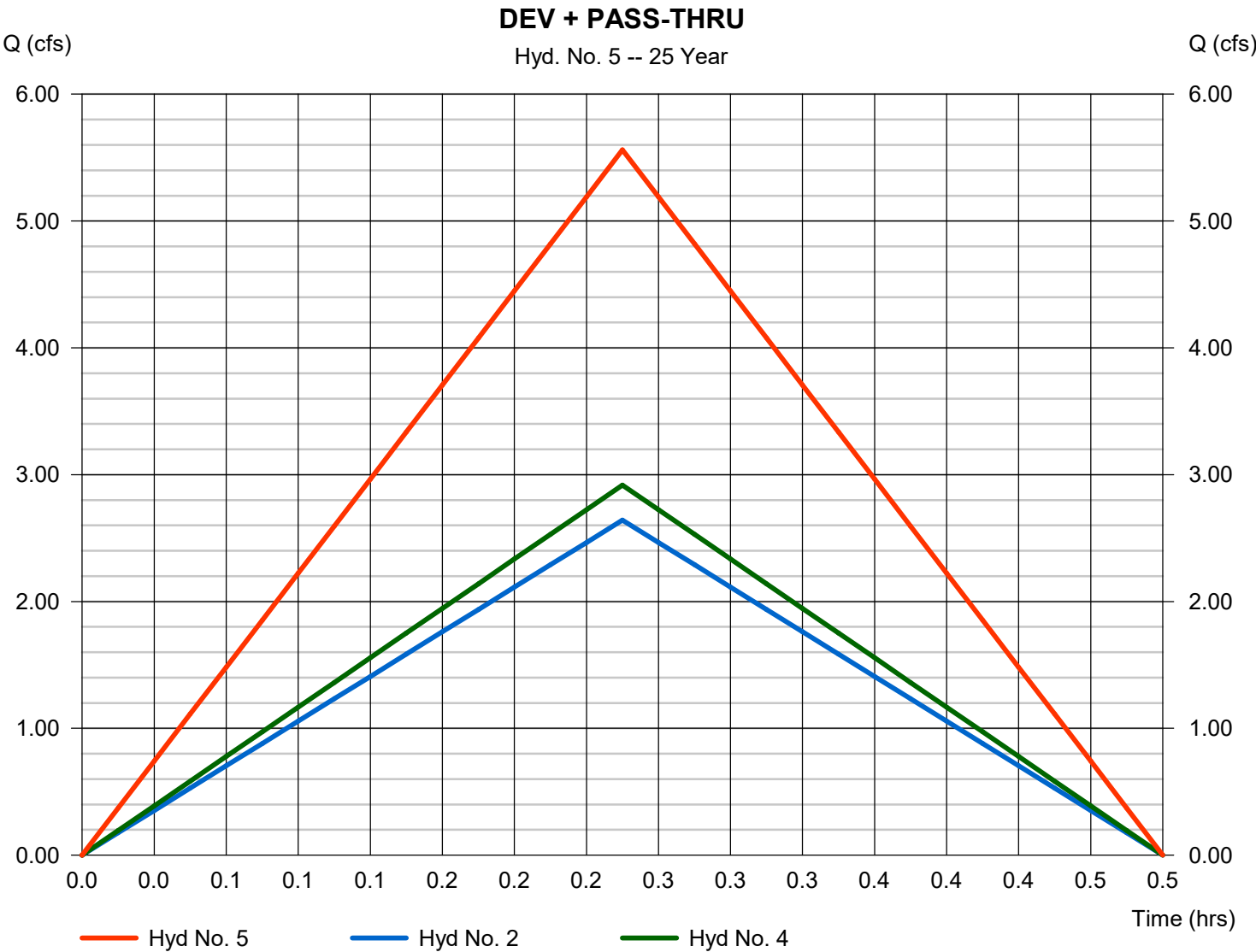
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 09 / 6 / 2024

Hyd. No. 5

DEV + PASS-THRU

Hydrograph type	= Combine	Peak discharge	= 5.560 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 5,004 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 1.450 ac



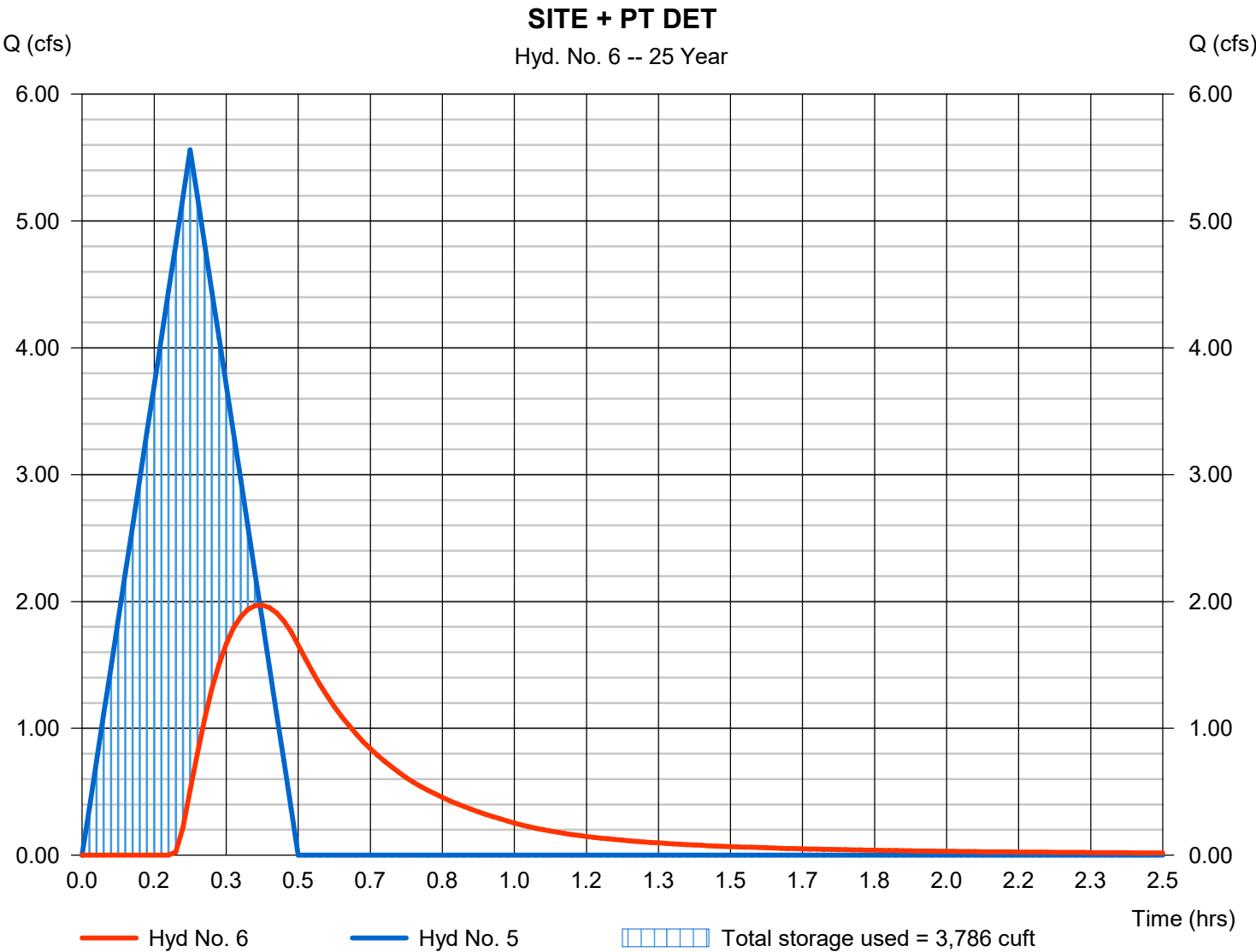
Hydrograph Report

Hyd. No. 6

SITE + PT DET

Hydrograph type	= Reservoir	Peak discharge	= 1.971 cfs
Storm frequency	= 25 yrs	Time to peak	= 0.42 hrs
Time interval	= 1 min	Hyd. volume	= 3,262 cuft
Inflow hyd. No.	= 5 - DEV + PASS-THRU	Max. Elevation	= 920.55 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 3,786 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	2.244	1	15	2,019	-----	-----	-----	Existing DA
2	Rational	2.992	1	15	2,692	-----	-----	-----	Developed DA
3	Reservoir	0.508	1	27	950	2	920.08	2,469	SITE DETENTION
4	Rational	3.304	1	15	2,974	-----	-----	-----	Offsite (Pass-Thru)
5	Combine	6.296	1	15	5,666	2, 4	-----	-----	DEV + PASS-THRU
6	Reservoir	2.349	1	24	3,924	5	920.68	4,147	SITE + PT DET
7	SCS Runoff	3.584	2	722	11,264	-----	-----	-----	DEV SITE WQ
8	Reservoir	2.331	2	730	9,521	7	920.67	4,128	WQ DET
9	SCS Runoff	3.198	2	722	9,278	-----	-----	-----	DEV SITE CP
10	Reservoir	1.905	2	730	7,536	9	920.53	3,725	CP DET
base.gpw					Return Period: 50 Year			Friday, 09 / 6 / 2024	

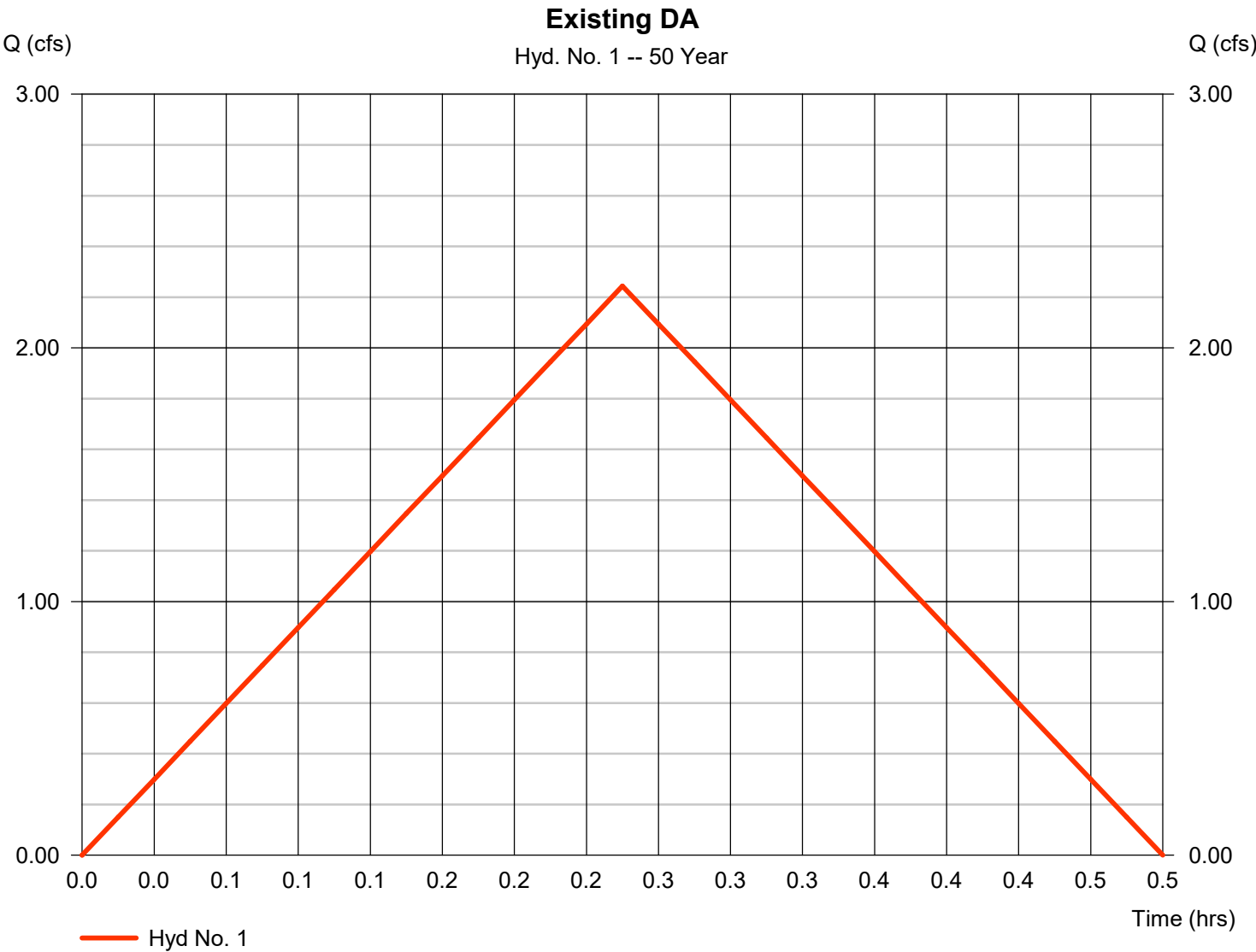
Hydrograph Report

Hyd. No. 1

Existing DA

Hydrograph type	= Rational	Peak discharge	= 2.244 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 2,019 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.6*
Intensity	= 6.799 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.330 x 0.35) + (0.220 x 0.98)] / 0.550



Hydrograph Report

Hyd. No. 2

Developed DA

Hydrograph type	= Rational	Peak discharge	= 2.992 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 2,692 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.8*
Intensity	= 6.799 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.160 x 0.35) + (0.390 x 0.98)] / 0.550



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

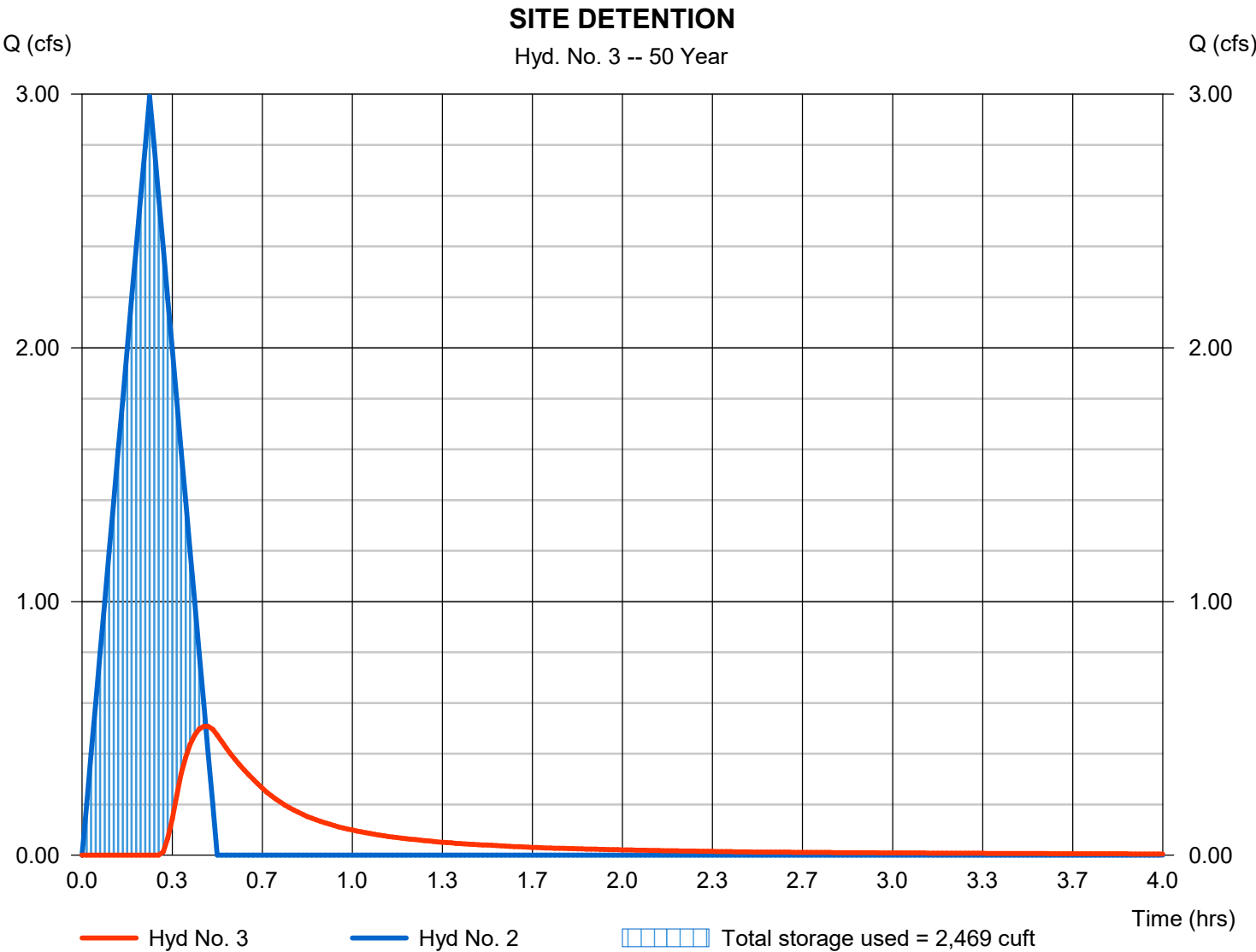
Friday, 09 / 6 / 2024

Hyd. No. 3

SITE DETENTION

Hydrograph type	= Reservoir	Peak discharge	= 0.508 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.45 hrs
Time interval	= 1 min	Hyd. volume	= 950 cuft
Inflow hyd. No.	= 2 - Developed DA	Max. Elevation	= 920.08 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 2,469 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 09 / 6 / 2024

Hyd. No. 4

Offsite (Pass-Thru)

Hydrograph type	= Rational	Peak discharge	= 3.304 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 2,974 cuft
Drainage area	= 0.900 ac	Runoff coeff.	= 0.54*
Intensity	= 6.799 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.630 x 0.35) + (0.270 x 0.98)] / 0.900



Hydrograph Report

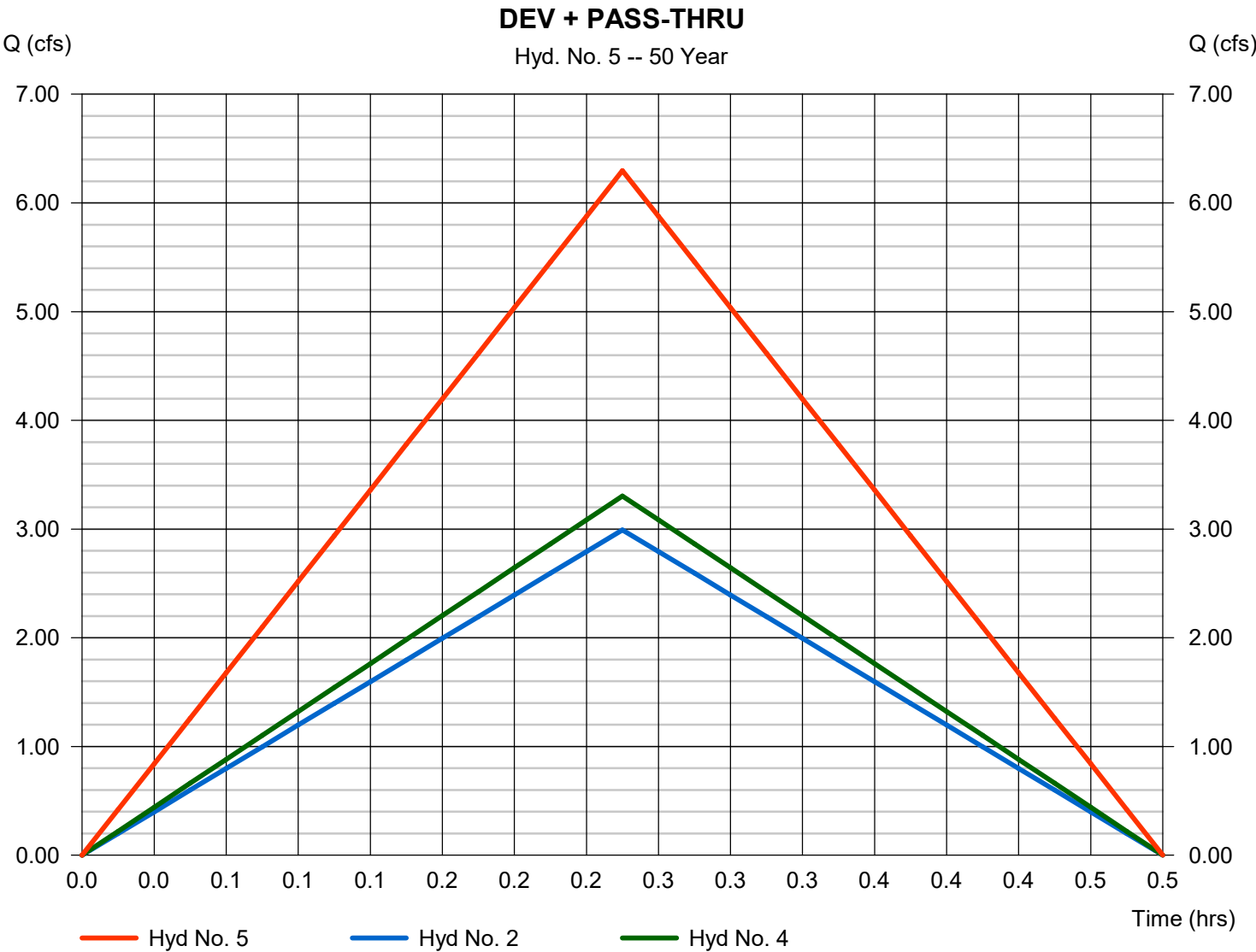
Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 09 / 6 / 2024

Hyd. No. 5

DEV + PASS-THRU

Hydrograph type	= Combine	Peak discharge	= 6.296 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 5,666 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 1.450 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

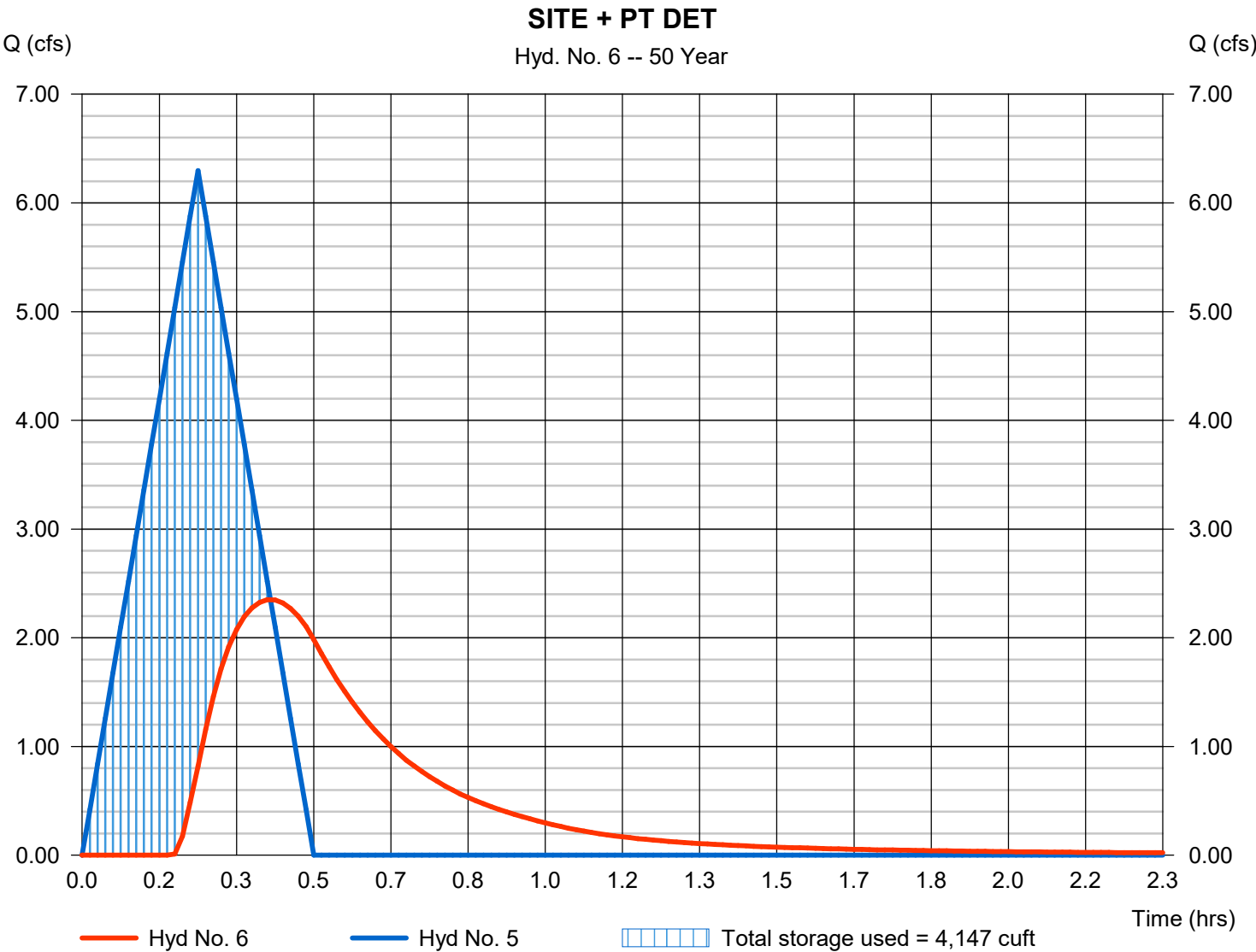
Friday, 09 / 6 / 2024

Hyd. No. 6

SITE + PT DET

Hydrograph type	= Reservoir	Peak discharge	= 2.349 cfs
Storm frequency	= 50 yrs	Time to peak	= 0.40 hrs
Time interval	= 1 min	Hyd. volume	= 3,924 cuft
Inflow hyd. No.	= 5 - DEV + PASS-THRU	Max. Elevation	= 920.68 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 4,147 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	Rational	2.513	1	15	2,262	-----	-----	-----	Existing DA
2	Rational	3.351	1	15	3,016	-----	-----	-----	Developed DA
3	Reservoir	0.715	1	27	1,274	2	920.15	2,671	SITE DETENTION
4	Rational	3.701	1	15	3,331	-----	-----	-----	Offsite (Pass-Thru)
5	Combine	7.052	1	15	6,347	2, 4	-----	-----	DEV + PASS-THRU
6	Reservoir	2.681	1	24	4,605	5	920.81	4,530	SITE + PT DET
7	SCS Runoff	4.089	2	722	12,932	-----	-----	-----	DEV SITE WQ
8	Reservoir	2.621	2	730	11,190	7	920.79	4,449	WQ DET
9	SCS Runoff	3.723	2	722	10,892	-----	-----	-----	DEV SITE CP
10	Reservoir	2.322	2	730	9,150	9	920.67	4,120	CP DET
base.gpw					Return Period: 100 Year			Friday, 09 / 6 / 2024	

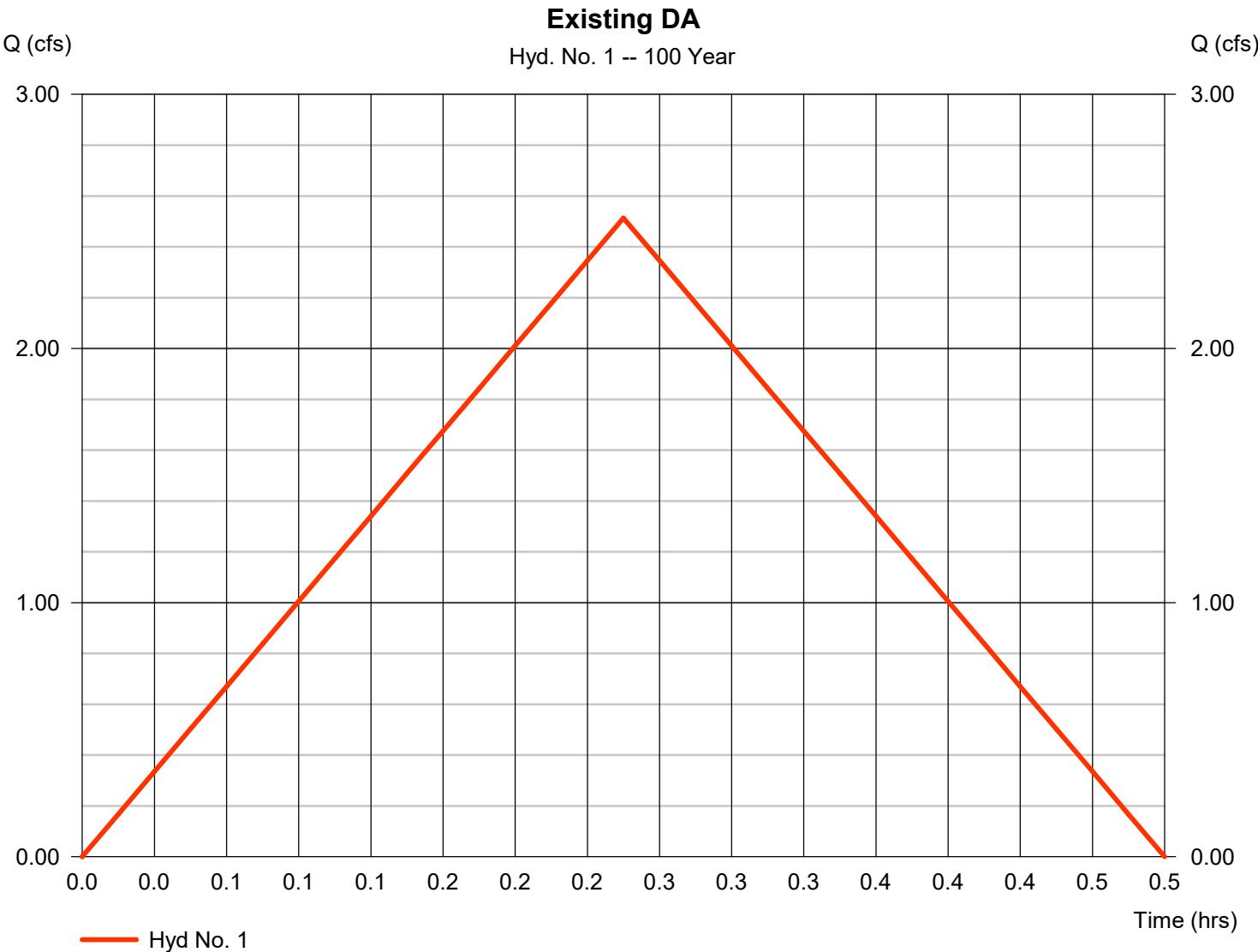
Hydrograph Report

Hyd. No. 1

Existing DA

Hydrograph type	= Rational	Peak discharge	= 2.513 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 2,262 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.6*
Intensity	= 7.616 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.330 x 0.35) + (0.220 x 0.98)] / 0.550



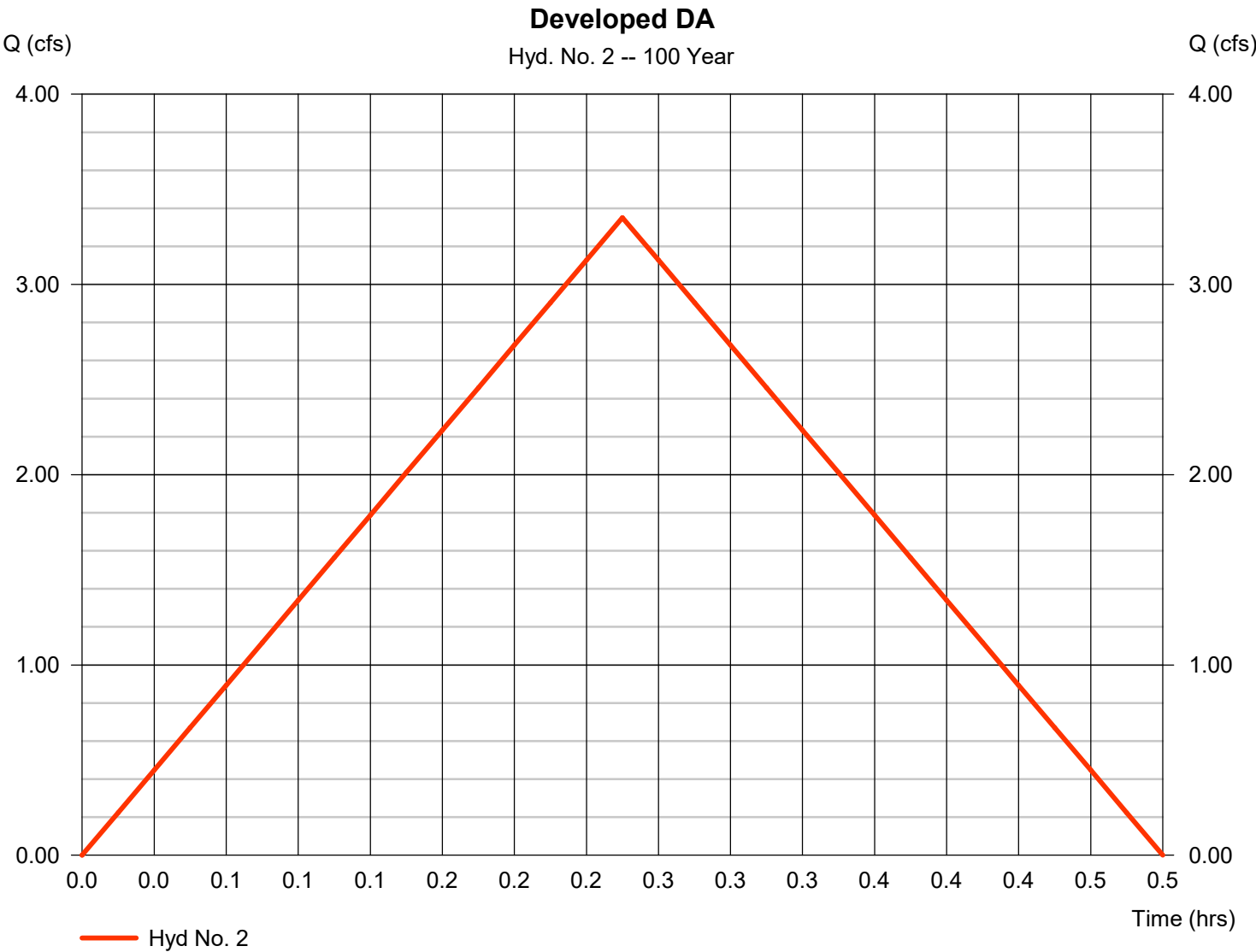
Hydrograph Report

Hyd. No. 2

Developed DA

Hydrograph type	= Rational	Peak discharge	= 3.351 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 3,016 cuft
Drainage area	= 0.550 ac	Runoff coeff.	= 0.8*
Intensity	= 7.616 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.160 x 0.35) + (0.390 x 0.98)] / 0.550



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

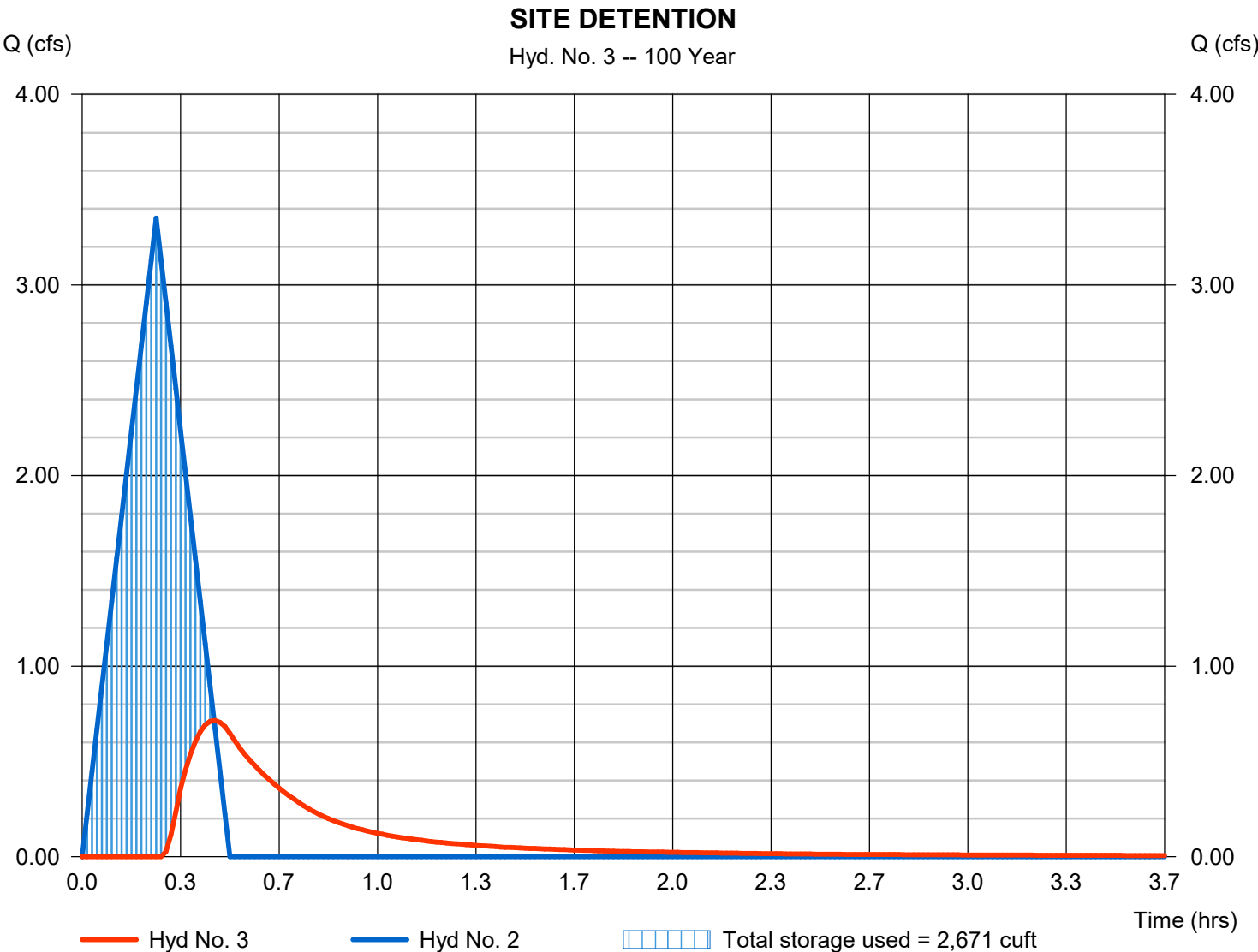
Friday, 09 / 6 / 2024

Hyd. No. 3

SITE DETENTION

Hydrograph type	= Reservoir	Peak discharge	= 0.715 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.45 hrs
Time interval	= 1 min	Hyd. volume	= 1,274 cuft
Inflow hyd. No.	= 2 - Developed DA	Max. Elevation	= 920.15 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 2,671 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

Friday, 09 / 6 / 2024

Hyd. No. 4

Offsite (Pass-Thru)

Hydrograph type	= Rational	Peak discharge	= 3.701 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 3,331 cuft
Drainage area	= 0.900 ac	Runoff coeff.	= 0.54*
Intensity	= 7.616 in/hr	Tc by User	= 15.00 min
IDF Curve	= SampleFHA.idf	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(0.630 x 0.35) + (0.270 x 0.98)] / 0.900

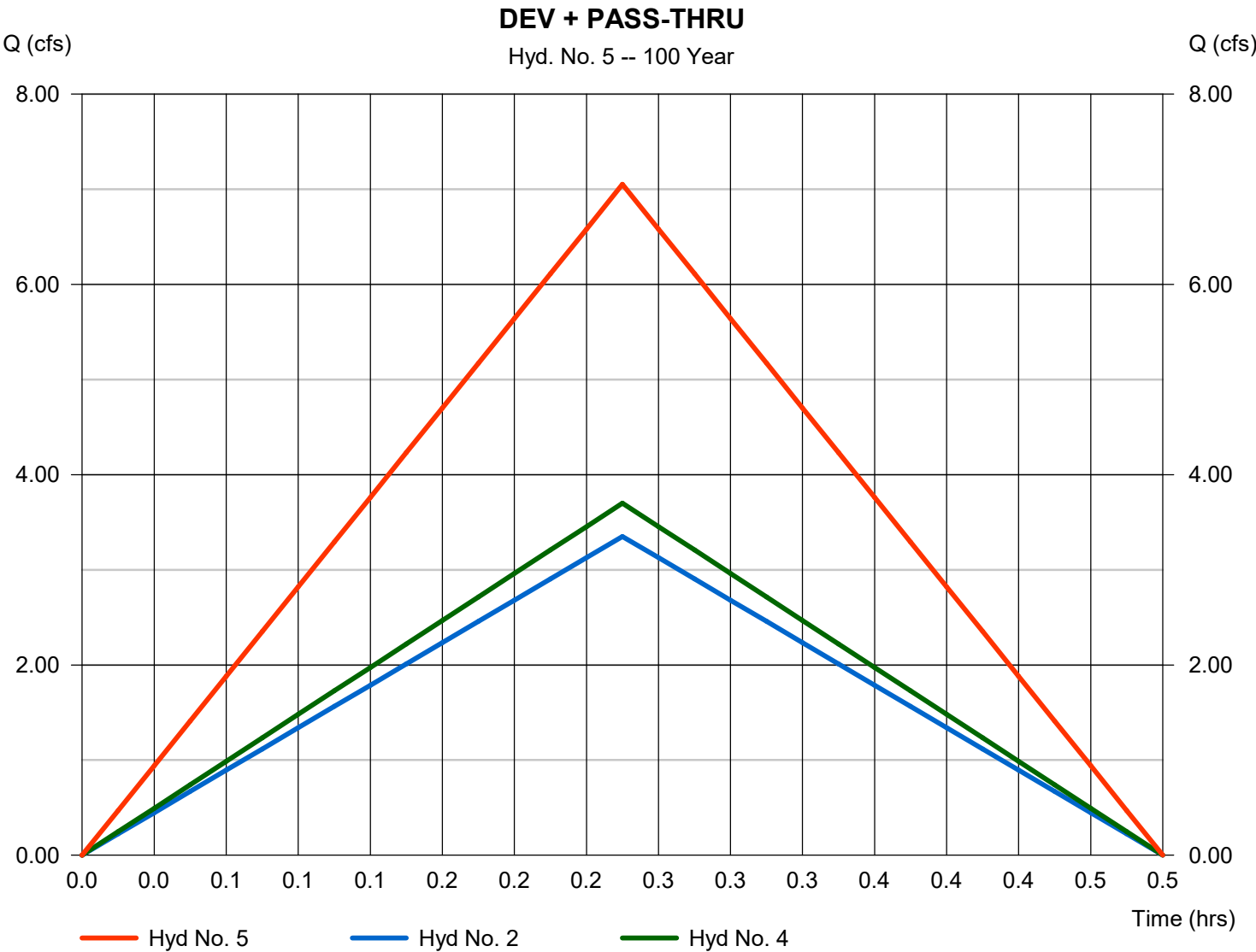


Hydrograph Report

Hyd. No. 5

DEV + PASS-THRU

Hydrograph type	= Combine	Peak discharge	= 7.052 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.25 hrs
Time interval	= 1 min	Hyd. volume	= 6,347 cuft
Inflow hyds.	= 2, 4	Contrib. drain. area	= 1.450 ac



Hydrograph Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2022

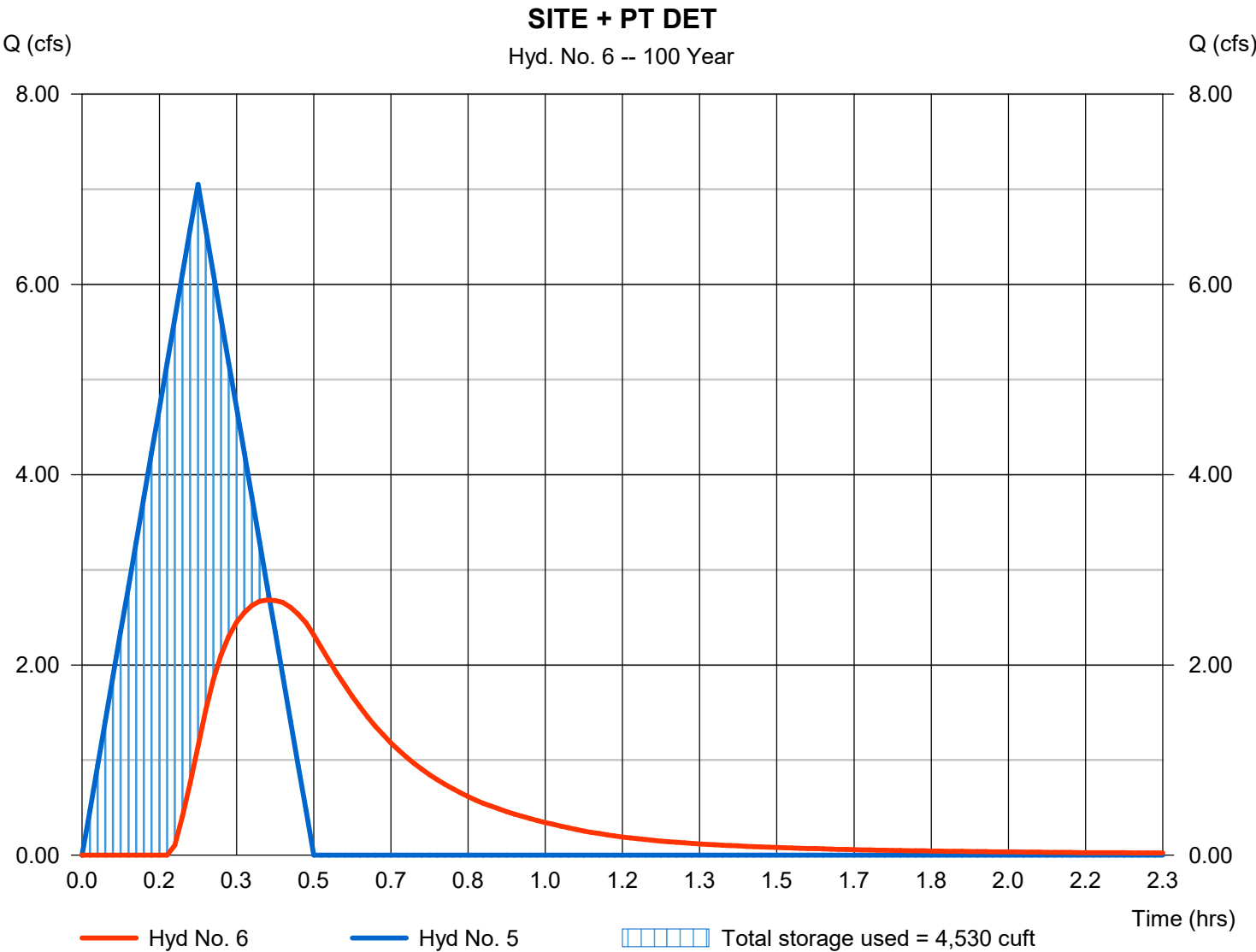
Friday, 09 / 6 / 2024

Hyd. No. 6

SITE + PT DET

Hydrograph type	= Reservoir	Peak discharge	= 2.681 cfs
Storm frequency	= 100 yrs	Time to peak	= 0.40 hrs
Time interval	= 1 min	Hyd. volume	= 4,605 cuft
Inflow hyd. No.	= 5 - DEV + PASS-THRU	Max. Elevation	= 920.81 ft
Reservoir name	= UNDERGROUND STORAGE	Max. Storage	= 4,530 cuft

Storage Indication method used.



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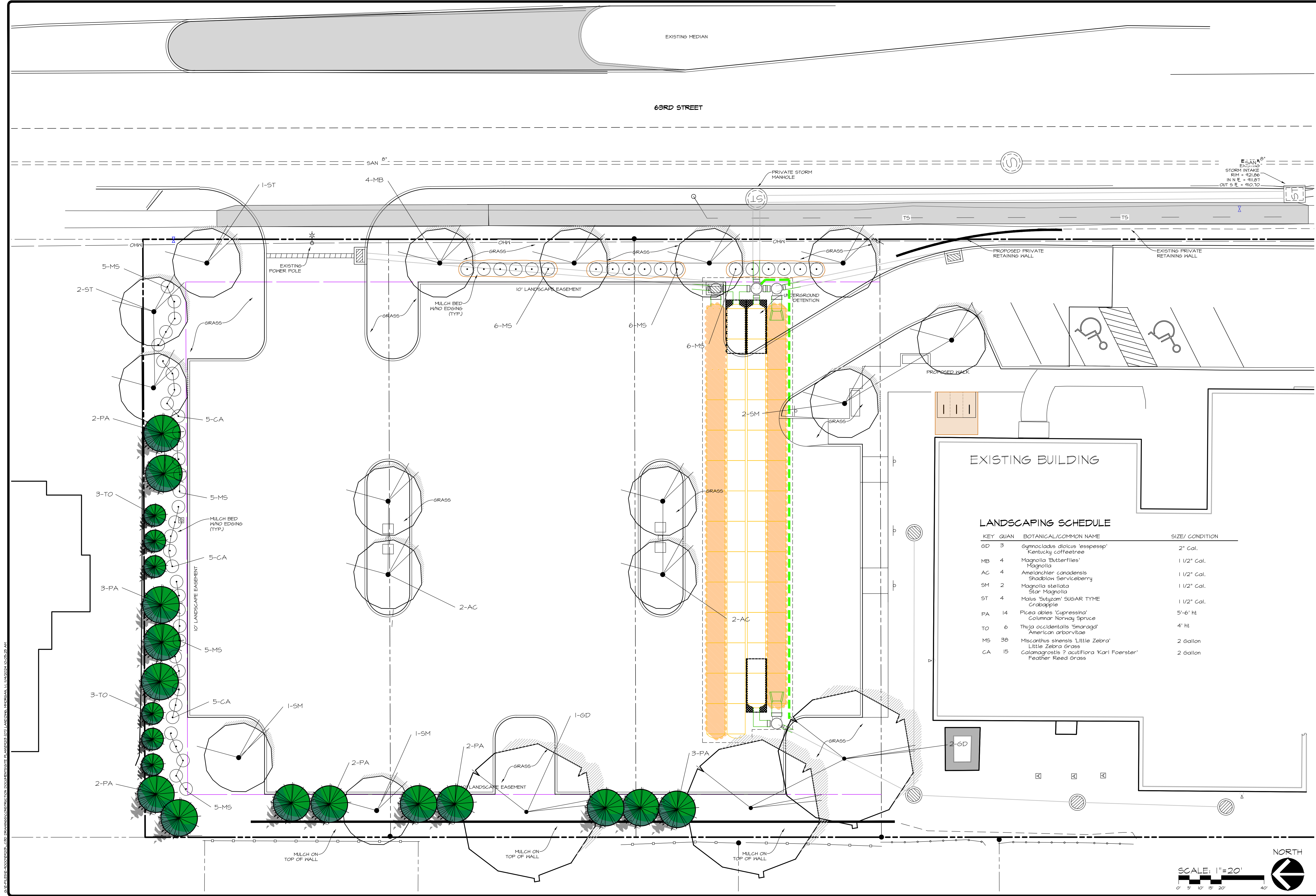
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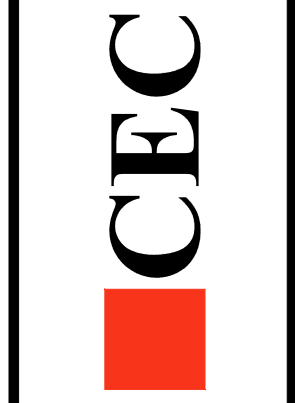
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DATE:	11-04-2024
DATE OF SURVEY:	APR. 22, 2024
DESIGNED BY:	SJD
DRAWN BY:	MM

WINDSOR PRESBYTERIAN CHURCH
6301 UNIVERSITY AVENUE, WINDSOR HEIGHTS, IA
LANDSCAPE PLAN





WINDSOR HEIGHTS PLANNING AND ZONING COMMISSION MEETING

The City of Windsor Heights Planning and Zoning Commission will meet Wednesday, October 23rd, 2024 at 5:30 PM at Council Chambers at 1133 66th St., in the City and via Zoom (Meeting ID: 783 285 6334) to hold a public hearing and consider a site plan for a the Windsor Presbyterian Church Parking Lot Expansion at 6301 University Ave. All interested parties will be given an opportunity to be heard. You have received this notice due to the proximity of your property to the proposed project.

If you should have any questions or would like to submit comments in writing, please contact Nate Leuthold at nleuthold@windsorheights.org.

Nate Leuthold
Deputy City Clerk
515-645-6826
nleuthold@windsorheights.org

RESOLUTION 2024-65

A RESOLUTION APPROVING THE SITE PLAN FOR 6301 UNIVERSITY AVENUE – WINDSOR PRESBYTERIAN CHURCH PARKING LOT

WHEREAS, on October 23, 2024, upon proper publication of notice, the Planning and Zoning Commission held a public hearing, notice of which was given to property owners within 200 feet; and

WHEREAS, the Planning & Zoning Commission has reviewed this request during its regular meeting on October 23, 2024, and forwarded to City Council with a recommendation of approval; and,

WHEREAS, the City Engineer has reviewed the Site Plan and recommends approval with the noted conditions; and

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF WINDSOR HEIGHTS, IOWA, that the Site Plan for 6301 University Avenue – Windsor Presbyterian Church Parking Lot is hereby approved subject to the following conditions:

1. All of the following conditions will be met, reviewed by the city department assigned, and deemed complete before approval of the site plan and before any development can take place.

General Comments

1. All permits related to the project will be held and released concurrently at the approval of the following:
 - a. Approval of signs and utility from Safe Building.
 - b. Revision of site plan application in accordance with the comment letter and all corresponding comments from each City Department.
 - c. Professional Signatures on Final Site Plan including Licensed Surveyor (Chapter 170.10)
 - d. City Council approval of site plan.

Engineering Comments

1. Obtain a Construction Site Erosion & Sediment Control Ordinance Permit or COSESCO Permit from City.
2. Provide performance security or bond per 161.11 of the City's Code.
3. Provide maintenance performance security or bond per 161.12 of the City's Code
4. Provide Maintenance and Repair Easement per 161.14 of the City's Code.
5. Complete Stormwater Maintenance Agreement and submit per instructions.

Planning Comments

1. Combine all lots to become one contiguous lot/parcel or develop and solidify a lot tie agreement that allows for development across the lots.

PASSED AND APPROVED this 4th day of November, 2024.

MIKE JONES, MAYOR

ADAM STRAIT, CITY CLERK



STAFF REPORT
CITY COUNCIL
November 4, 2024

TO: CITY COUNCIL

FROM:

SUBJECT: Mayor, Council Reports and Committee Updates, and Administration Reports

GENERAL INFORMATION

ATTACHMENTS

None