

STORMWATER MANAGEMENT REPORT

PARKERS PLACE MULTI-FAMILY DEVELOPMENT
PARK PLACE (MAP 11.1, LOT 11)
EAST LYME, CT

PREPARED FOR

OWNER / APPLICANT
PARKERS PLACE LLC
PO BOX 817
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DATE: SEPTEMBER 29, 2025
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APPLICANT / SITE INFORMATION

OWNER / APPLICANT

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East Lyme, CT 06333

SITE

Map 11.1, Lot 11
Park Place
East Lyme, CT 06357

PROJECT DESCRIPTION AND PURPOSE

Parkers Place LLC is proposing to construct a multi-family development with associated amenities on a 6.98-acre parcel of land located on Park Place in East Lyme, CT. The subject parcel is identified as Map 11.1, Lot 11 on the Town of East Lyme Tax Assessor Mapping and is depicted on a map entitled “Topographic Survey Prepared for Pazz Construction LLC, Park Place – East Lyme, Connecticut”, Date: January 23, 2023 as revised through 1-31-23, Scale: 1” = 50’, prepared by Robert C. Simoni, Licensed Land Surveyor. The above-described parcel is hereinafter referred to as “Site”.

The multi-family development will consist of the construction of 10 townhouse style buildings with a total of 60 residential two-bedroom units. Main access will be provided from the southeast via a driveway connection to Park Place.

The full development will include the following improvements:

- 60 two-bedroom townhouse units in ten residential buildings
- 24' wide primary and secondary access driveways
- Pedestrian sidewalks with connection to Park Place
- 146 parking spaces including garages, driveways, and guest parking
- Pole-mounted area lighting of driveways and parking areas
- Exterior active and passive recreation areas and trails
- Stormwater management system consisting of collection, treatment, retention, and attenuation of peak flow rates to maintain existing drainage patterns and discharge conditions
- Sanitary sewer utility including extension of the existing public main in Park Place to serve the site and a private sanitary main to serve the development
- Private water main to serve the development with connection to the existing water main in Park Place along the parcel frontage.
- Electric and telecommunication utility connections to the overhead utilities in Park Place along the parcel frontage

This stormwater management report has been prepared by a professional engineer licensed in the State of Connecticut and provides a comprehensive evaluation of the fully developed Site as compared to existing (pre-developed) conditions. This report concludes that; drainage patterns will be generally maintained, there will be zero net increase in peak flow rates discharging from the Site, and stormwater will be retained and treated to the maximum extent achievable in accordance with the 2024 Stormwater Quality Manual.

DESCRIPTION OF EXISTING SITE

The existing 6.98-acre site is currently undeveloped. A review of historical aerial images confirms that the parcel has remained undeveloped since at least 1990. The 1934 aerial depicts the southern half of the site as cleared for apparent agricultural uses. The cleared areas are now revegetated and wooded.

TOPOGRAPHY – Natural topography of the parcel slopes from a high point along the northerly boundary in a south and southeasterly direction towards Park Place and West Main Street (Route 1). The northern half of the parcel has moderate to steep slopes ranging from 10% to 20%. The southern half of the parcel flattens into a topographic saddle with gentle to moderate slopes ranging from 2% to 10%.

SOILS – The USDA NRCS Web Soil Survey depicts the Site within Charlton-Chatfield complex soils, very rocky, with slopes ranging from 0% to 45%. These soils are well drained with a Hydrologic Soil Group (HSG) rating of B. See Appendix C.

Deep observation pit testing was performed extensively over the site on three separate dates.

- Test pits 1 through 10 were performed in 2022 by Robert Pfanner, Jr. concentrated on the northerly wooded areas.
- Test pits 111 through 114 were performed in 2023 by Uncas Health District and Yantic River Consultants on the central wooded areas towards the toe of steeper slopes.
- Test pits D1 through D3 were performed in the southerly depression in the location of the proposed retention/detention basin. Witnessed soils consisted of topsoil to 6"-8", orange brown fine sandy loam to 28"-32", gray tan fine to medium sandy loam to 54"-88", and gray fine to medium sand and gravel slightly compact to 88"-96". Roots were witnessed 72" to 78" below grade with no clear indicator of seasonally high groundwater.

VEGETATION – The parcel is wooded with light to moderate undergrowth in southerly areas and moderate to dense undergrowth on the northerly steeper slopes.

DRAINAGE – Stormwater generally flows overland from the north to south on the parcel. Three drainage areas with distinct discharge points at the parcel property lines were identified based on topographic mapping and field confirmation.

- EX-01SW is 5.183 acres and encompasses the north and west portions of the Site with a discharge point at a low point along the southwesterly property line onto the rear yard of a property at 53 West Main Street.
- EX-02E is 1.389 acres and encompasses the southeastern corner of the Site with a discharge point in a depressed area along the easterly property line onto the rear yard of a property at 8 Park Place.
- EX-03S is 0.410 acres and encompasses the frontage portion of the Site with sheet flow discharge to the Park Place ROW.

STORMWATER MANAGEMENT

The following Standards were considered in the analysis and design.

SUMMARY OF APPLICABLE DESIGN CRITERIA

Hydrologic Design Criteria:	TR-55
Hydraulic Design Criteria:	CTDOT Drainage Manual
Climate Change Considerations:	CT DEEP Stormwater Quality Manual
Flood Hazard Areas:	N/A
Aquifer Protection Areas:	N/A
Treatment and Pollutant Removal:	CT DEEP Stormwater Quality Manual
Peak Flow Control Goal:	Zero Net Increase in Peak Flow from Site

SUMMARY OF LID TO REDUCE STORMWATER RUNOFF AND POLLUTANTS

Low Impact Development techniques were implemented to the maximum extent achievable prior to the consideration of structural stormwater best management practices (BMP) in accordance with the 2024 SQM. A list of LID techniques implemented into the design are provided below. It should be noted that as a conservative measure the design of the structural stormwater BMP does not take into consideration the hydrologic benefit of these measures.

- Minimize clearing: The limits of clearing shown are the minimum necessary to accommodate construction and provide adequate separation to each new building. Stumps will remain and native understory plants and shrubs preserved outside of the land disturbance footprint.
- Minimize building footprint: The multi-family building footprints have been reduced to the greatest extent possible while still achieving the purpose of the project.
- Minimize roadways, parking, and impervious surfaces: Parking quantities meet the minimum needs of the proposed use.
- Preserving pre-development times of concentration to the maximum extent achievable.
- Use of low maintenance landscaping on perimeter areas.
- Disconnection of Impervious Surfaces:
 - Disconnection of all rear roof pitches through discharge to grade over vegetated areas.
 - Long and flat vegetated diversion swales to increase local flow path lengths and times of concentration.
 - Vegetated depressions with elevation yard drain grates.
 - Disconnection of impervious surfaces within stormwater collection system through structural stormwater BMPs.

STRUCTURAL STORMATER BMP TREATMENT AND POLLUTANT REMOVAL

The design approach selected for the project consists of a multi-stage collection, treatment, retention, and attenuation system. The stages will consist of the following:

- Disconnect impervious surfaces to the maximum extent achievable prior to entering stormwater structural BMP.
- Install catch basin structures with minimum 2' sumps.

PR-01SW-SUB-A

- First stage treatment: Discharge of stormwater from collections systems through sediment forebay capable of retaining a minimum of 25% of the water quality flow. Excess flows will bypass through a riprap filter berm and weir into the second stage treatment.
- Second stage treatment: Retain the Water Quality Volume (WQV) below the low-level orifice within the outlet structure to promote infiltration and recharge of groundwater for 90% of all storm events during a given year. The bottom of the basin will be excavated to elevation 25.00, which is 3'-4' below existing grade into the witnessed sandy loam soils. A minimal exfiltration rate of 0.3 in/hr was used in the analysis to confirm drain times of the retention area. The NRCS published exfiltration rate (hydraulic conductivity) of the existing sandy loam subsoils is 1.4 in/hr, therefore a quicker drain time and further reduction of peak flow rates is anticipated.
- Final stage: Peak flow control through an outlet structure and weir plate to attenuate peak flow rates for the 1-year to 100-year storm events.

PR-03S

- First stage treatment: Disconnection of impervious surfaces with sheet flow over vegetation surfaces prior to flowing into rain garden.
- Second stage treatment: Retain the Water Quality Volume (WQV) below the low-level perforations in a perforated riser pipe outlet structure to promote infiltration and recharge of groundwater for 90% of all storm events during a given year. The bottom of the basin will be excavated to elevation 26.00, which is 2'-3' below existing grade into the witnessed sandy loam soils. A minimal exfiltration rate of 0.3 in/hr was used in the analysis to confirm drain times of the retention area.

AREA	DA	IA	WQV	WQF	PROPOSED TREATMENT				
					Method	Vol	Flow	Area	Note
PR-01SW-SUB-A	4.266	2.037	0.222	1.9	Sediment Forebay	0.059	N/A	N/A	25% WQV
PR-01SW-SUB-A	4.266	2.037	0.222	1.9	Retention	0.356	N/A	N/A	160% WQV
PR-02E	0.625	0.000	0.000	0.0	N/A	N/A	N/A	N/A	No Impervious
PR-03S	0.581	0.156	0.018	0.2	Rain Garden	0.021	N/A	N/A	100% WQV

TABLE 1: PROPOSED TREATMENT SUMMARY

The proposed Stormwater Management System will retain the calculated WQV from the developed Site in accordance with the 2024 Stormwater Quality Manual.

PEAK FLOW CONTROL

Peak flow rates were calculated using TR-55 methodology. Hydrology Studio 2024 v.3.0.0.38 was used to generate peak flows with the following parameters for existing and proposed conditions:

DRAINAGE AREA: A description of the three drainage areas for existing Site and discharge points at the property lines are provided above. The proposed drainage areas were delineated based on proposed grading and drainage collection system routing. The same general discharge points were maintained for both existing and proposed conditions. See Appendix A for maps.

- PR-01SW is 5.777 acres and encompasses the north and west portions of the developed Site with the same discharge point at a low point along the southwesterly property line. The retention and attenuation basin is located immediately prior to the discharge point.
 - PR-01SW-SUB-A is 4.266 acres and encompasses developed areas draining to the proposed detention basin through the collection system.
 - PR-01SW-SUB-B is 1.511 acres and consists of perimeter undeveloped areas bypassing the proposed detention basin.
- PR-02E is 0.625 acres and encompasses the undisturbed eastern corner of the Site with a discharge point in a depressed area along the easterly property line.
- PR-03S is 0.581 acres and encompasses the frontage portion of the developed Site with sheet flow discharge to a shallow rain garden prior to discharge to the Park Place ROW.
- **RAINFALL:** Precipitation frequency and depth estimates (rainfall data) were obtained from NOAA Atlas 14, Volume 10, Version 3 at the Site geographic location. See Appendix C.
- **CURVE NUMBER:** Composite curve numbers (CN) were calculated based on the land cover types with consideration of the hydrologic soil groups and slopes. Based on USDA NRCS Web Soil Survey, soils within the subject watershed consist of HSG B.
- **TIME OF CONCENTRATION:** Time of concentrations (Tc) were estimated based on a review of topographic and surface runoff conditions for both existing and proposed conditions.

PEAK FLOW CALCULATIONS

A summary of flows (CFS) for existing and proposed conditions is provided below.

STORM	AREA 01 (SW)					AREA 02 (E)			AREA 03 (S)				
	EX	PR	PR SUB	EX vs. PR	EX vs. DET	EX	PR	EX vs. PR	EX	PR	PR DET	EX vs. PR	EX vs. DET
1	0.17	2.50	0.07	2.33	-0.10	0.05	0.03	-0.02	0.01	0.25	0.00	0.24	-0.01
2	0.52	3.89	0.20	3.37	-0.32	0.16	0.09	-0.07	0.05	0.42	0.01	0.37	-0.04
5	1.60	6.45	0.57	4.85	-1.03	0.52	0.28	-0.24	0.17	0.74	0.04	0.57	-0.13
10	2.86	8.77	1.16	5.91	-1.70	0.94	0.49	-0.45	0.30	1.03	0.08	0.73	-0.22
25	4.91	12.07	3.02	7.16	-1.89	1.60	0.82	-0.78	0.51	1.45	0.14	0.94	-0.37
50	6.60	14.62	5.26	8.02	-1.34	2.15	1.09	-1.06	0.68	1.78	0.46	1.10	-0.22
100	8.55	17.41	6.94	8.87	-1.61	2.78	1.39	-1.39	0.88	2.14	1.21	1.26	0.33

TABLE 2: PEAK FLOW COMPARISON

A comparison of peak flow control for each subarea and the entire Site is provided below:

AREA 01: Peak flow rates discharging to the southwest property line of the Site will be reduced for the 1-year to 100-year storm events. The decrease in peak flow rates can be attributed to the retention and attenuation provided by the proposed basin and outlet structure. The proposed basin fully retains the calculated water quality volume (1.3") and the 1-year storm event (2.87") without discharge.

AREA 02: Peak flow rates discharging to the eastern property line will be reduced for the 1-year to 100-year storm events due to the reduction in total area and minimal disturbance of existing vegetation.

AREA 03: Peak flow rates discharging to the Park Place ROW will be reduced for the 1-year to 50-year storm events. There will be a minor increase in peak flow for 100-year storm event. Peak flow reductions can be attributed to the retention and attenuation provided by the proposed rain garden and perforated riser outlet structure.

SITE: Overall peak flow rates discharging from the developed site will be reduced for the 1-year to 100-year storm events as compared to existing (pre-developed) conditions.

As described above, disconnection of impervious surfaces prior to the stormwater structural BMPs were not considered in the analysis as a conservative measure.

PIPE COLLECTION NETWORK

The proposed stormwater collection system improvements will include a network of overland flow, roof leaders, swales, catch basins, and HDPE piping designed to accommodate the 10-year event draining from the developed site. The collection system will discharge through a sediment forebay prior entering a retention/detention basin.

Pipe flow was calculated using the Rational Method based on local drainage areas, runoff coefficients (C), time of concentration (Tc) and rainfall intensity (I). Stormwater Studio 2026 version 3.0.0.40 was used to perform proposed pipe flow calculations based on the following parameters.

- **DRAINAGE AREAS:** Drainage areas were delineated for each inlet structure based on proposed grading. See Appendix A for maps
- **RUNOFF COEFFICIENT:** Composite runoff coefficient (C) values were calculated for local drainage areas based on existing and proposed surface materials. The following values were used in the analysis:
 - Woods/Brush, C = 0.20
 - Grass and Landscape Areas, C = 0.30
 - Impervious and building Areas, C = 0.90
- **RAINFALL INTENSITY:** Precipitation frequency and depth estimates (rainfall data) were obtained from NOAA Atlas 14, Volume 10, Version 3 at the Site geographic location. See Appendix C.
- **TIME OF CONCENTRATION:** Time of concentration (Tc) was estimated for each collection structure based on the SCS method. For smaller areas with short flow paths over impervious

surfaces, a minimum time of concentration (Tc) of 5 minutes was used. For smaller areas consisting of mostly vegetation, a Tc of 10 minutes was used.

PIPE NETWORK SUMMARY

- On-site collection system improvements have been designed to accommodate a 10-year storm event with a 25-year check storm. A tailwater elevation of 28.15 was entered at FE200, which is the flow line elevation of the 4" orifice in the proposed outlet structure. The system adequately conveys stormwater flows to the detention basin for the design and check storms with pipes flowing partially to mostly full.
- A 100-year storm was also evaluated.
 - The system continues to convey flow to the detention basin with most pipes flowing full or under backwater conditions.
 - Gutter and inlet flow conditions were evaluated during the 100-year storm to determine the maximum depth and extent of ponding within the proposed driveways and to identify potential areas where flows may bypass the system entirely and flow off-site. Localized ponding will be concentrated at the low points within the driveway at CB #202, #203, #205, and #206. Ponding depths and extents will be greatest at CB #205 and #206, where bypass flows from areas to the north collect. Ponding depths at these basins will be less than 6" and therefore will not breach the surrounding curbs or landscape and flow off site.

CONCLUSION

The proposed development and stormwater management system reduce peak flow rates discharging from the Site for the 1-year to 100-storm events, thereby meeting the zero net increase in stormwater runoff requirement. There are no anticipated adverse impacts on downstream properties or the Park Place ROW.

CONSTRUCTION EROSION AND SEDIMENT CONTROL

A plan to control construction related impacts, including erosion, sedimentation, and other pollutant sources has been prepared in accordance with the 2023 Connecticut Guidelines for Soil Erosion and Sediment Control. The Erosion and Sediment Control Plan is included in the submitted plan set.

OPERATION AND MAINTENANCE

A long-term operation and maintenance plan has been developed to ensure that stormwater management systems function as designed. The O&M plan is provided on the Grading and Utility Plan as part of the submitted plan set.



PARKERS PLACE MF DEVELOPMENT
PARK PLACE (MAP 11.1, LOT 11)
EAST LYME, CONNECTICUT

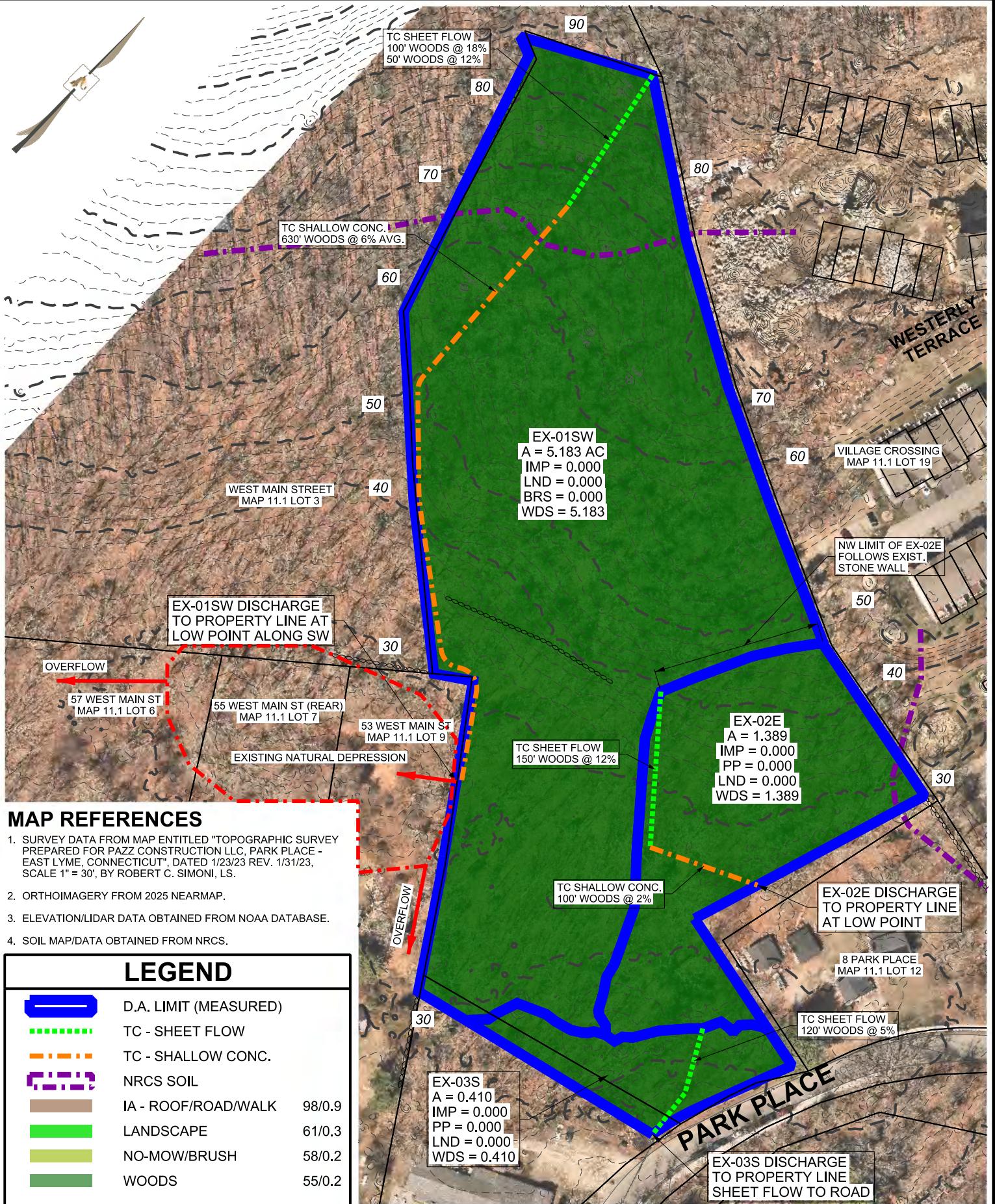
APPENDIX A DRAINAGE AREA MAPS

EXISTING CONDITIONS

PROPOSED CONDITIONS

PROPOSED CONDITIONS – SUBAREA

PROPOSED CONDITIONS – PIPE COLLECTION



SCALE: 1" = 120'
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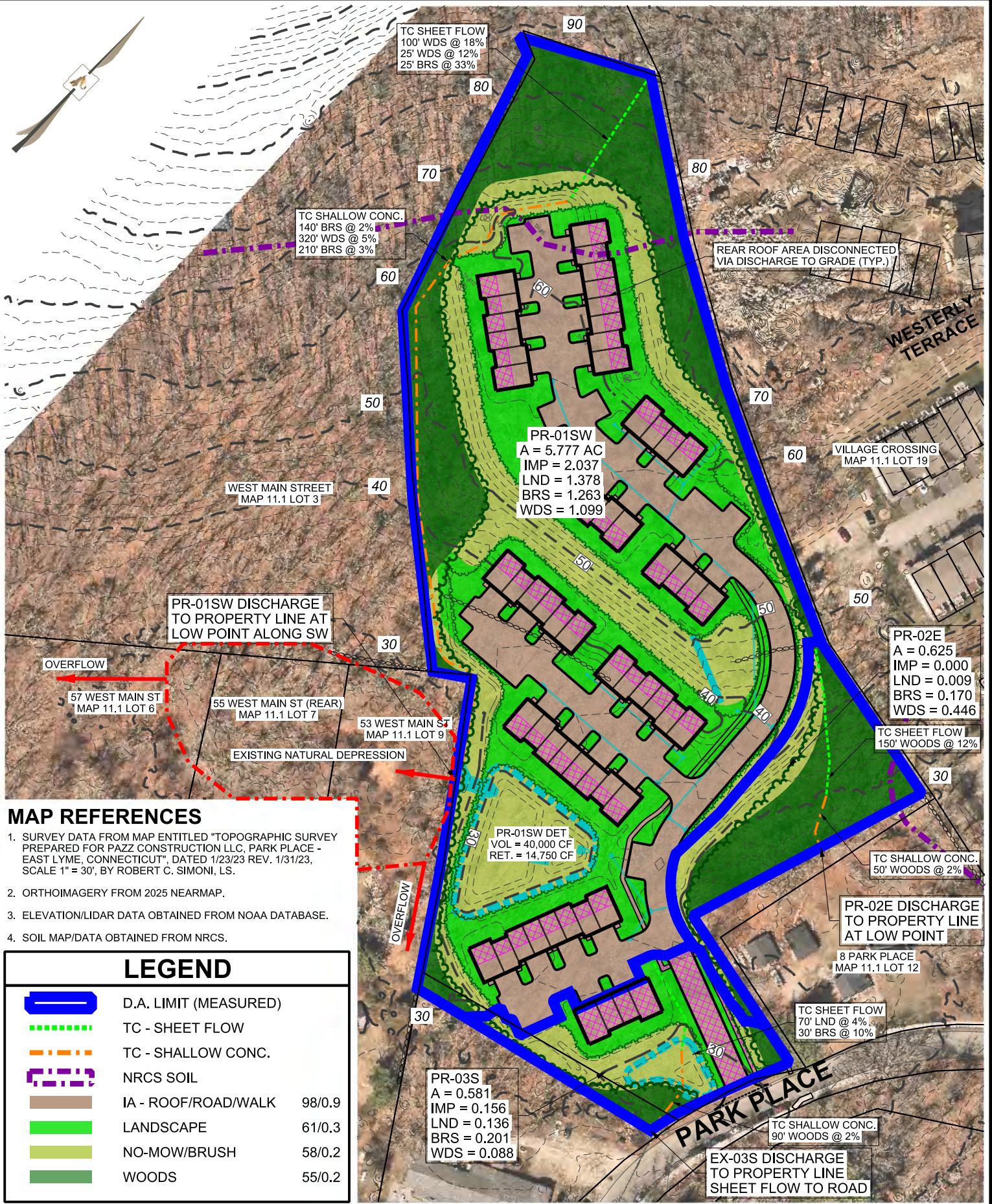
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SITE DEVELOPMENT
PREPARED FOR PARKERS PLACE, LLC
DRAINAGE MAP - EXISTING CONDITIONS
PARK PLACE (MAP 11.1 LOT 11)
EAST LYME, CT



MAP REFERENCES

1. SURVEY DATA FROM MAP ENTITLED "TOPOGRAPHIC SURVEY PREPARED FOR PAZZ CONSTRUCTION LLC, PARK PLACE - EAST LYME, CONNECTICUT" DATED 1/23/23 REV. 1/31/23, SCALE 1" = 30', BY ROBERT C. SIMONI, LS.
2. ORTHOIMAGERY FROM 2025 NEARMAP.
3. ELEVATION/LIDAR DATA OBTAINED FROM NOAA DATABASE.
4. SOIL MAP/DATA OBTAINED FROM NRCS.

LEGEND

—	D.A. LIMIT (MEASURED)
----	TC - SHEET FLOW
---	TC - SHALLOW CONC.
----	NRCS SOIL
----	IA - ROOF/ROAD/WALK 98/0.9
----	LANDSCAPE 61/0.3
----	NO-MOW/BRUSH 58/0.2
----	WOODS 55/0.2

SCALE: 1" = 120'

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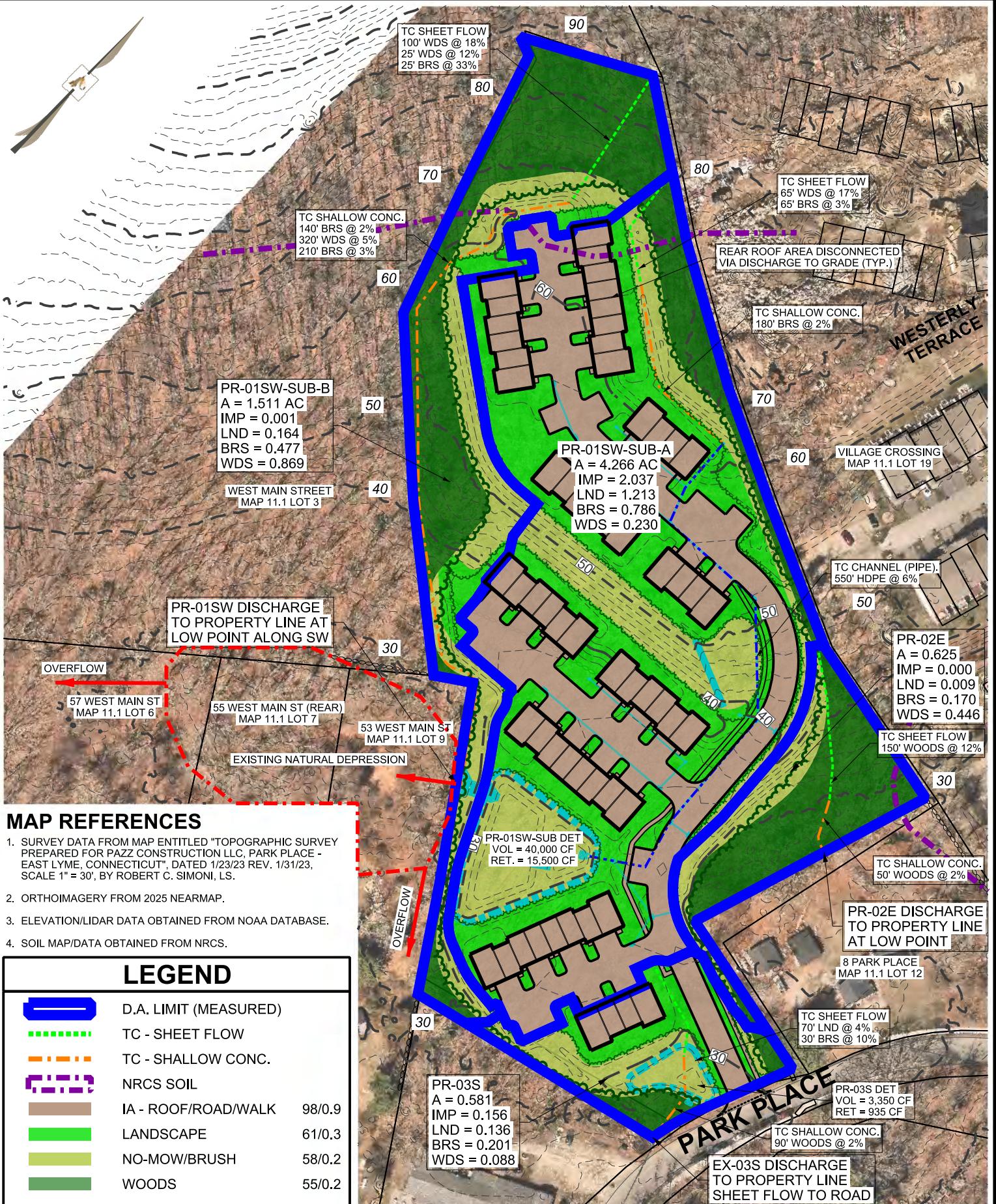
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SITE DEVELOPMENT
PREPARED FOR PARKERS PLACE, LLC
DRAINAGE MAP - PROPOSED CONDITIONS
PARK PLACE (MAP 11.1 LOT 11)
EAST LYME, CT



SCALE: 1" = 120'
 120 0 120

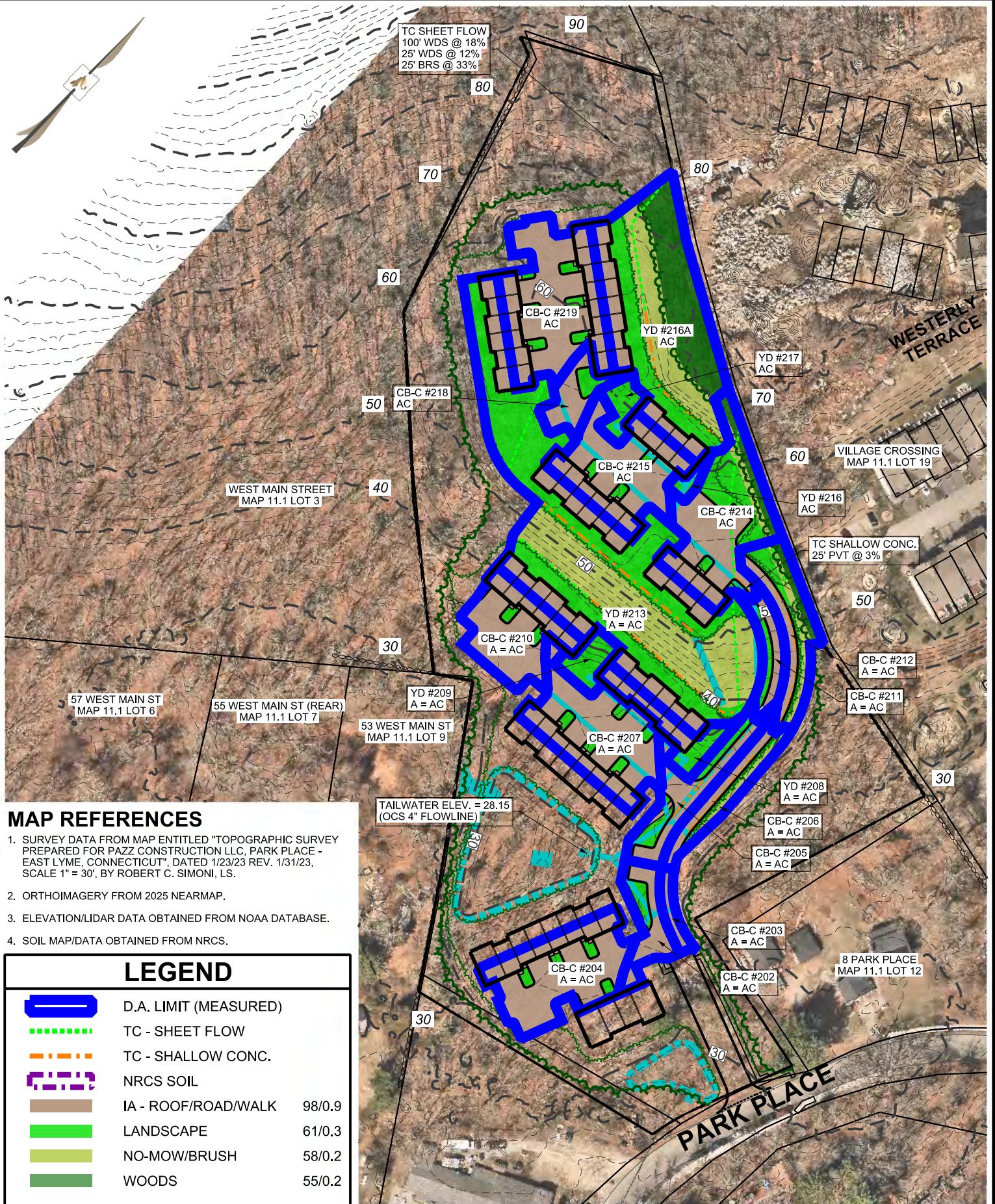
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DA-03



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SITE DEVELOPMENT
PREPARED FOR PARKERS PLACE, LLC
DRAINAGE MAP - PROPOSED SUBAREA
PARK PLACE (MAP 11.1 LOT 11)
EAST LYME, CT



SCALE: 1" = 120'

 120 0 120

DATE **12/22/25** SHEET **DA-04**



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SITE DEVELOPMENT
PREPARED FOR PARKERS PLACE, LLC
DRAINAGE MAP - COLLECTION
PARK PLACE (MAP 11.1 LOT 11)
EAST LYME, CT



PARKERS PLACE MF DEVELOPMENT
PARK PLACE (MAP 11.1, LOT 11)
EAST LYME, CONNECTICUT

APPENDIX B HYDROLOGIC COMPUTATIONS

HYDROLOGY STUDIO REPORT
DEEP SQM TREATMENT CALCULATIONS

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Hydrology Studio v 3.0.0.41

01-15-2026

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50 - Year

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100 - Year

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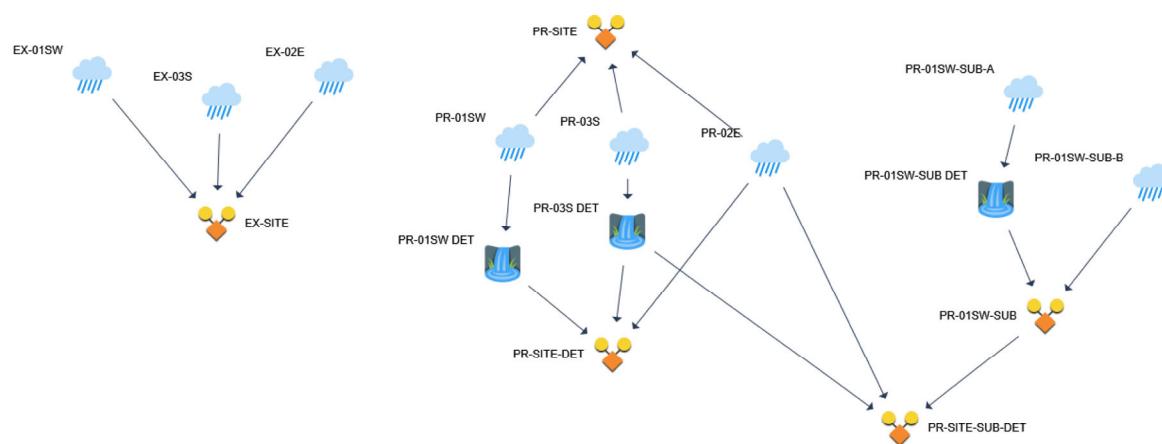
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Basin Model

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026



Hydrograph by Return Period

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Outflow (cfs)							
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
1	NRCS Runoff	EX-01SW	0.166	0.517		1.598	2.863	4.907	6.603	8.545
2	NRCS Runoff	EX-02E	0.046	0.157		0.520	0.942	1.603	2.154	2.784
3	NRCS Runoff	EX-03S	0.013	0.048		0.166	0.299	0.508	0.681	0.879
4	Junction	EX-SITE	0.223	0.692		2.191	3.958	6.756	9.080	11.74
5	NRCS Runoff	PR-01SW	2.501	3.888		6.448	8.771	12.07	14.62	17.41
6	NRCS Runoff	PR-02E	0.026	0.089		0.281	0.491	0.819	1.088	1.394
7	NRCS Runoff	PR-03S	0.254	0.422		0.737	1.029	1.450	1.778	2.140
8	Junction	PR-SITE	2.718	4.301		7.263	9.980	13.87	16.90	20.22
9	NRCS Runoff	PR-01SW-SUB-A	3.248	4.640		7.105	9.277	12.30	14.58	17.06
10	NRCS Runoff	PR-01SW-SUB-B	0.071	0.204		0.573	0.983	1.624	2.149	2.752
11	Pond Route	PR-01SW DET	0.000	0.122		0.366	0.950	3.141	4.133	7.438
12	Pond Route	PR-03S DET	0.000	0.008		0.037	0.075	0.137	0.459	1.210
13	Junction	PR-SITE-DET	0.026	0.139		0.429	1.087	3.458	4.791	8.342
14	Pond Route	PR-01SW-SUB DET	0.000	0.104		0.334	0.616	2.414	3.726	5.036
15	Junction	PR-01SW-SUB	0.071	0.204		0.573	1.158	3.021	5.255	6.935
16	Junction	PR-SITE-SUB-DET	0.096	0.277		0.814	1.483	3.364	6.043	8.692

Hydrograph 1-yr Summary

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	EX-01SW	0.166	12.93	3,061	---		
2	NRCS Runoff	EX-02E	0.046	12.70	823	---		
3	NRCS Runoff	EX-03S	0.013	12.63	238	---		
4	Junction	EX-SITE	0.223	12.92	4,121	1, 2, 3		
5	NRCS Runoff	PR-01SW	2.501	12.38	15,589	---		
6	NRCS Runoff	PR-02E	0.026	12.55	408	---		
7	NRCS Runoff	PR-03S	0.254	12.23	1,283	---		
8	Junction	PR-SITE	2.718	12.38	17,280	5, 6, 7		
9	NRCS Runoff	PR-01SW-SUB-A	3.248	12.28	16,032	---		
10	NRCS Runoff	PR-01SW-SUB-B	0.071	12.77	1,092	---		
11	Pond Route	PR-01SW DET	0.000	0.00	0.000	5	27.83	13,613
12	Pond Route	PR-03S DET	0.000	33.17	0.000	7	26.94	882
13	Junction	PR-SITE-DET	0.026	12.55	408	6, 11, 12		
14	Pond Route	PR-01SW-SUB DET	0.000	10.73	0.000	9	27.88	13,983
15	Junction	PR-01SW-SUB	0.071	12.77	1,092	10, 14		
16	Junction	PR-SITE-SUB-DET	0.096	12.73	1,500	6, 12, 15		

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-01SW

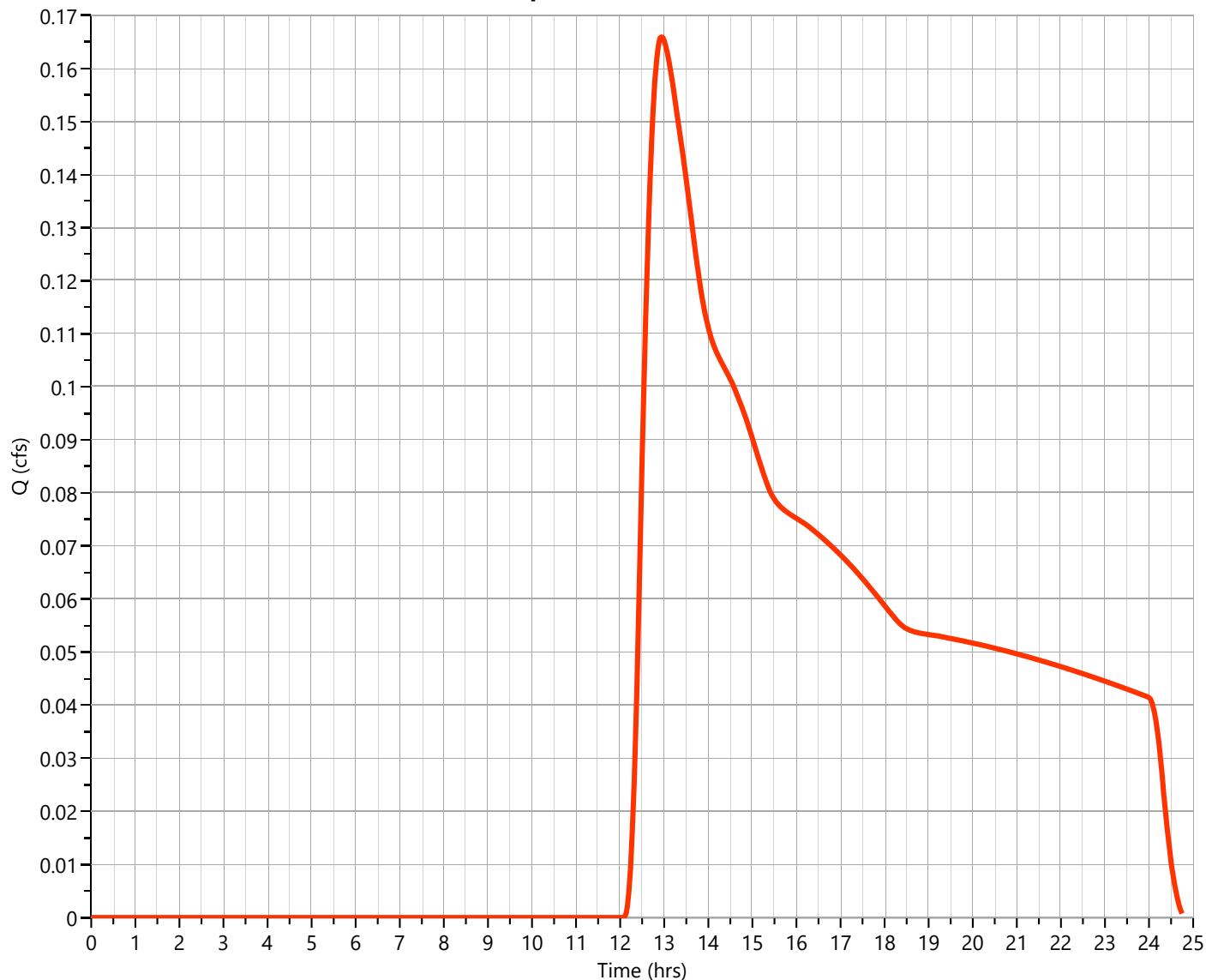
Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.166 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.93 hrs
Time Interval	= 1 min	Runoff Volume	= 3,061 cuft
Drainage Area	= 5.183 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 31.45 min
Total Rainfall	= 2.87 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
5.183	55.00	Woods
5.183	55.00	Weighted CN Method Employed

$Q_p = 0.166 \text{ cfs}$



Tc by TR55 Worksheet

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

EX-01SW NRCS Runoff

Hyd. No. 1

Description	Segments			Tc (min)
	A	B	C	
Sheet Flow				
Description	Woods	Woods		
Manning's n	0.400	0.400	0.013	
Flow Length (ft)	100	50		
2-yr, 24-hr Precip. (in)	3.44	3.44	3.44	
Land Slope (%)	18	12		
Travel Time (min)	8.60	5.81	0.00	14.41
Shallow Concentrated Flow				
Flow Length (ft)	630			
Watercourse Slope (%)	6.00	0.00	0.00	
Surface Description	Forest	Paved	Paved	
Average Velocity (ft/s)	.62			
Travel Time (min)	17.04	0.00	0.00	17.04
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				31.45 min

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-02E

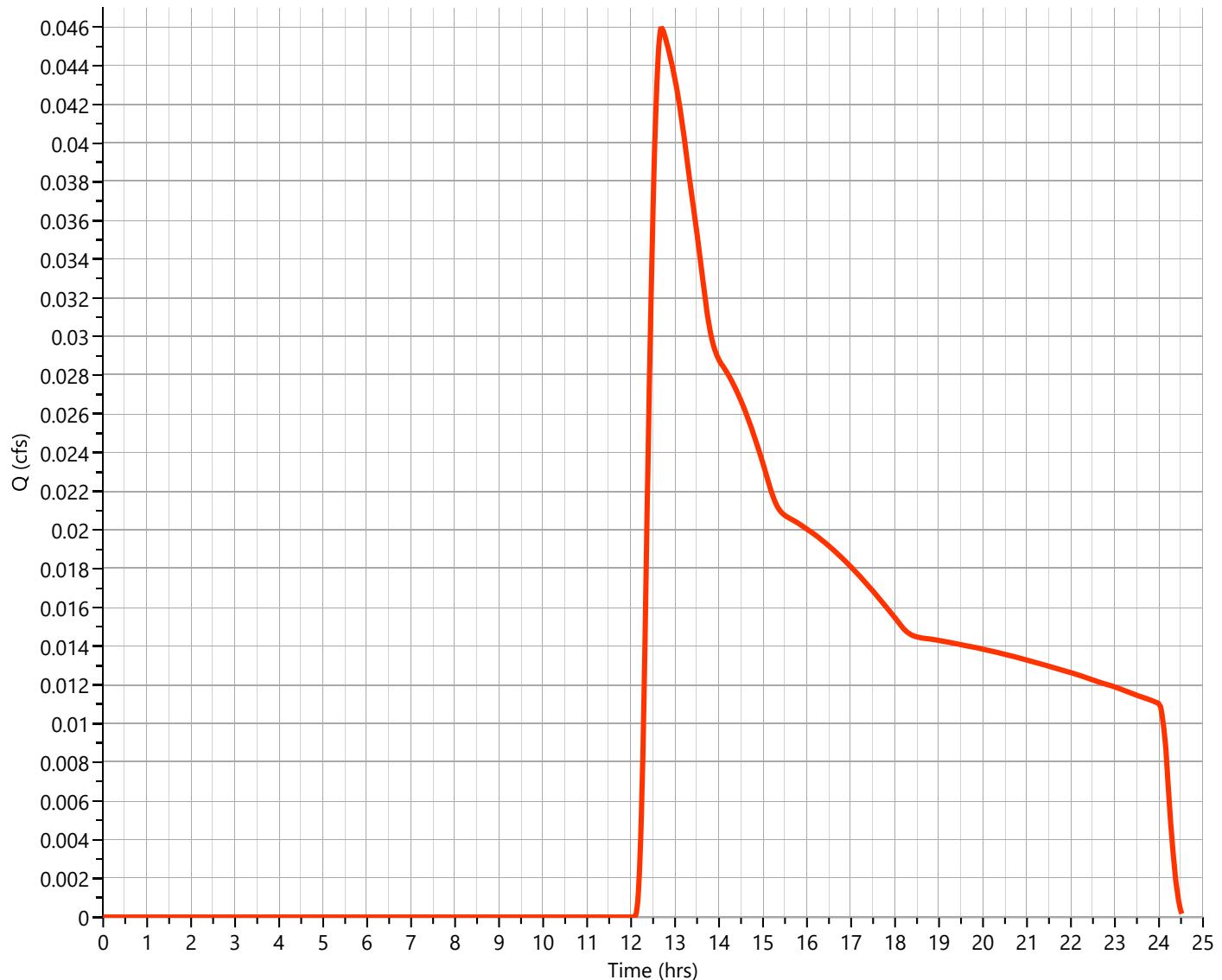
Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.046 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.70 hrs
Time Interval	= 1 min	Runoff Volume	= 823 cuft
Drainage Area	= 1.389 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.61 min
Total Rainfall	= 2.87 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
1.389	55.00	Woods
1.389	55.00	Weighted CN Method Employed

Q_p = 0.046 cfs



Tc by TR55 Worksheet

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

EX-02E

NRCS Runoff

Hyd. No. 2

Description	Segments			Tc (min)
	A	B	C	
Sheet Flow				
Description	Woods	Woods		
Manning's n	0.400	0.400	0.013	
Flow Length (ft)	100	50		
2-yr, 24-hr Precip. (in)	3.44	3.44	3.44	
Land Slope (%)	12	12		
Travel Time (min)	10.11	5.81	0.00	15.92
Shallow Concentrated Flow				
Flow Length (ft)	100			
Watercourse Slope (%)	2.00	0.00	0.00	
Surface Description	Forest	Paved	Paved	
Average Velocity (ft/s)	.36			
Travel Time (min)	4.68	0.00	0.00	4.68
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				20.61 min

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-03S

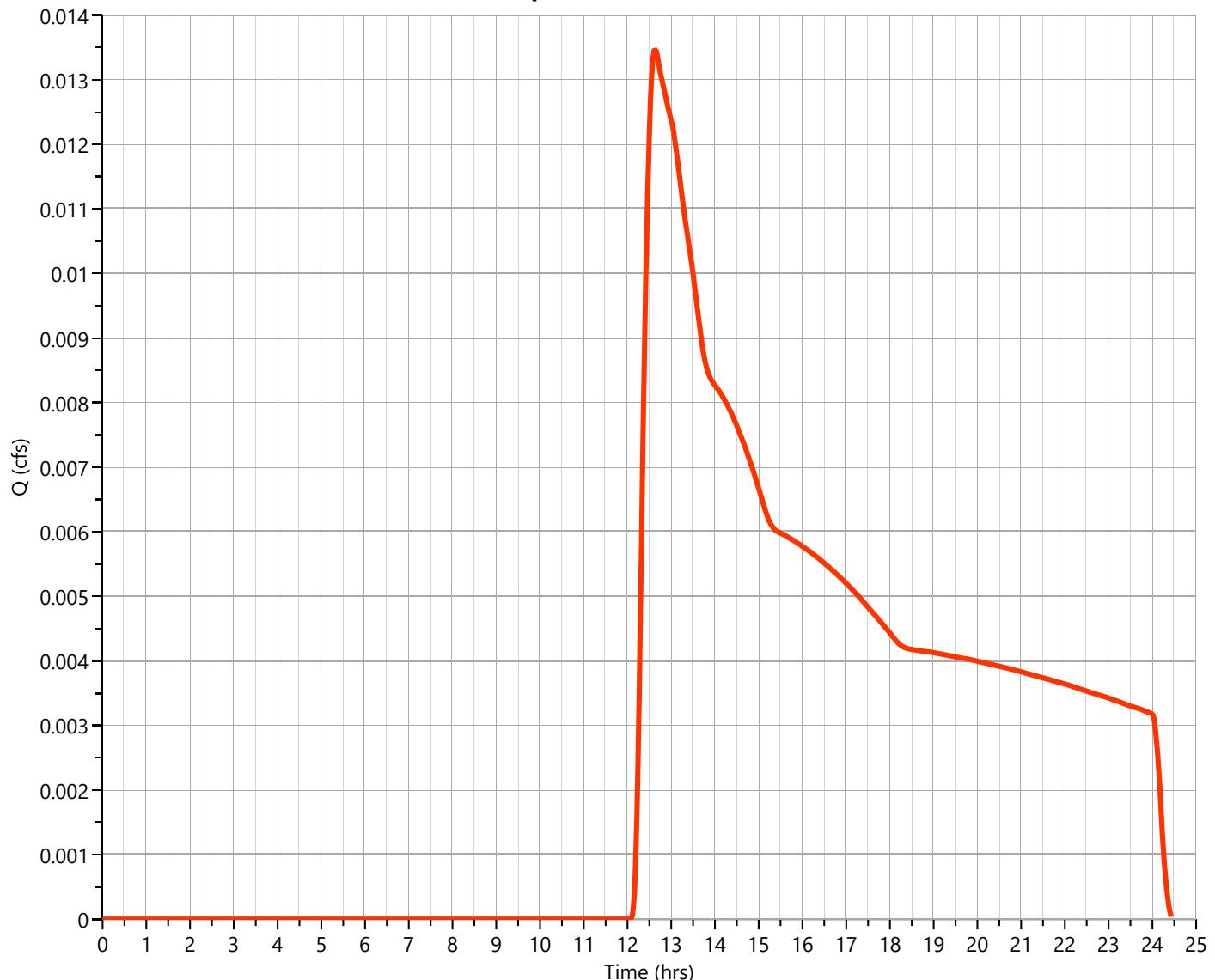
Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.013 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.63 hrs
Time Interval	= 1 min	Runoff Volume	= 238 cuft
Drainage Area	= 0.41 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.32 min
Total Rainfall	= 2.87 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.41	55.00	Woods
0.41	55.00	Weighted CN Method Employed

Q_p = 0.013 cfs



Tc by TR55 Worksheet

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

EX-03S

NRCS Runoff

Hyd. No. 3

Description	Segments			Tc (min)
	A	B	C	
Sheet Flow				
Description	Woods	Woods		
Manning's n	0.400	0.400	0.013	
Flow Length (ft)	100	20		
2-yr, 24-hr Precip. (in)	3.44	3.44	3.44	
Land Slope (%)	5	5		
Travel Time (min)	14.36	3.96	0.00	18.32
Shallow Concentrated Flow				
Flow Length (ft)				
Watercourse Slope (%)	0.00	0.00	0.00	
Surface Description	Paved	Paved	Paved	
Average Velocity (ft/s)				
Travel Time (min)	0.00	0.00	0.00	0.00
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				18.32 min

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

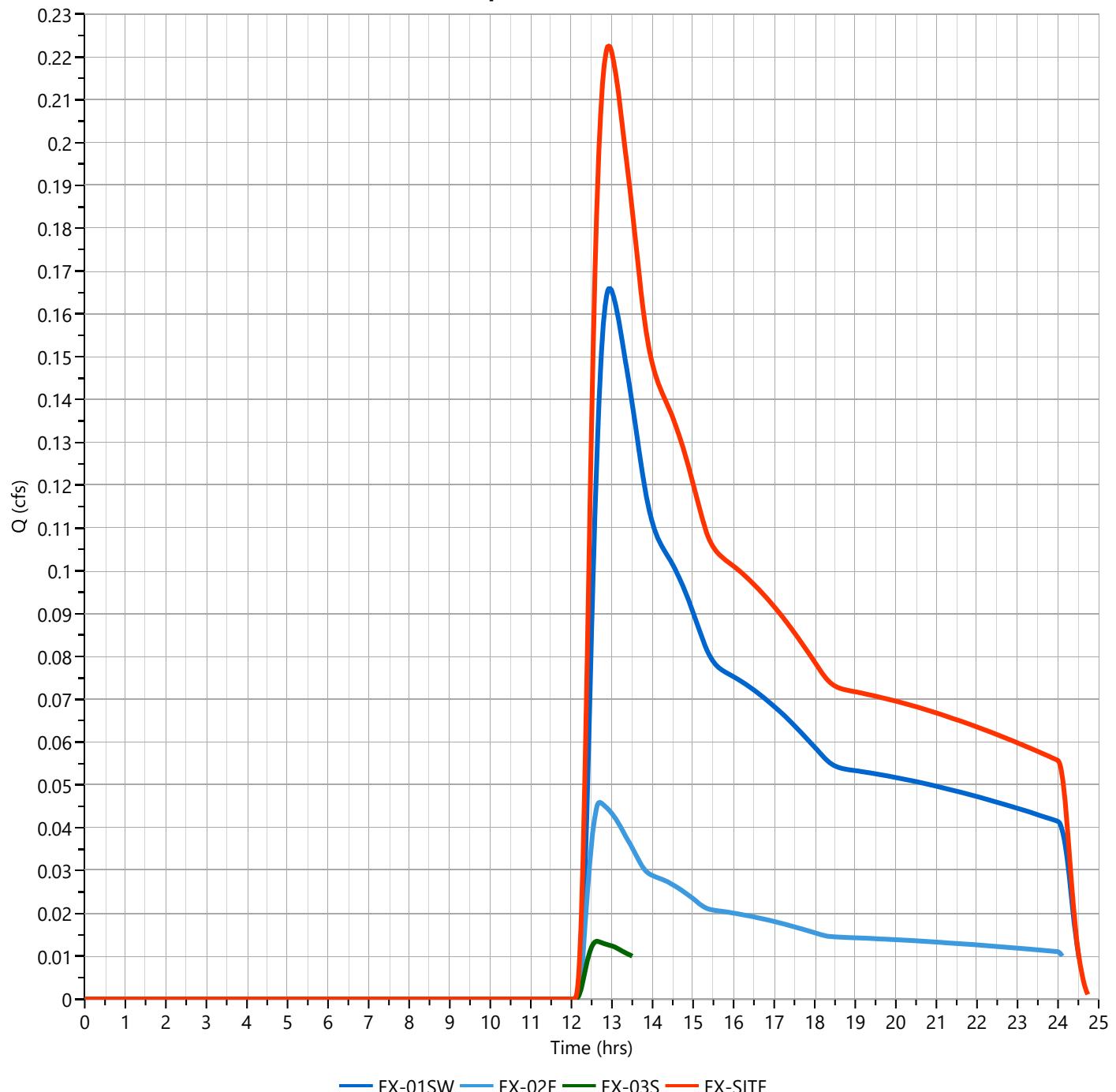
01-15-2026

EX-SITE

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 0.223 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.92 hrs
Time Interval	= 1 min	Hydrograph Volume	= 4,121 cuft
Inflow Hydrographs	= 1, 2, 3	Total Contrib. Area	= 6.982 ac

Q_p = 0.223 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW

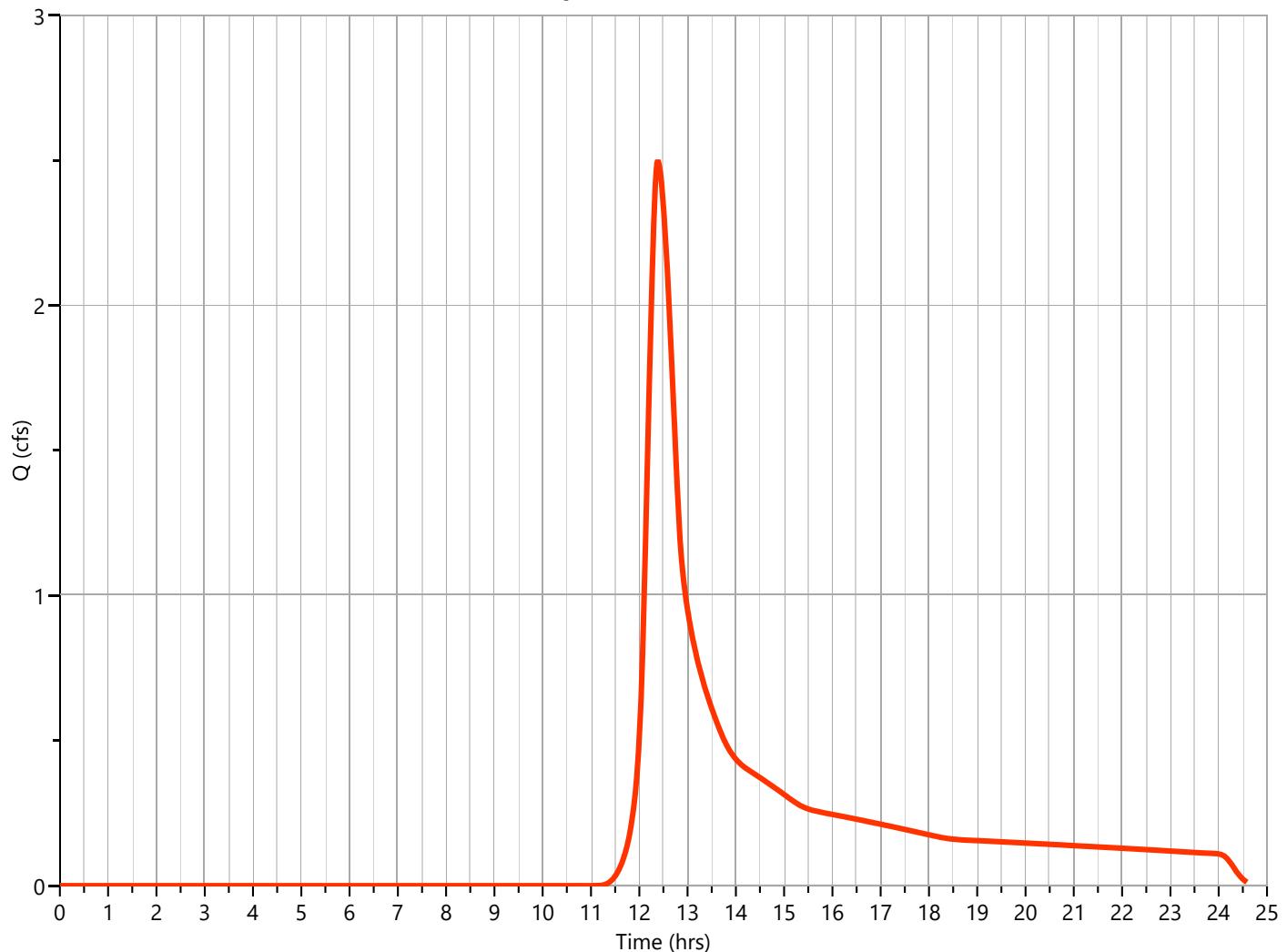
Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.501 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.38 hrs
Time Interval	= 1 min	Runoff Volume	= 15,589 cuft
Drainage Area	= 5.777 ac	Curve Number	= 72.25*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 2.87 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.378	61.00	Landscape
1.263	58.00	Conservation
1.099	55.00	Woods
5.777	72.25	Weighted CN Method Employed

Qp = 2.501 cfs



Tc by TR55 Worksheet

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-01SW NRCS Runoff

Hyd. No. 5

Description	Segments			Tc (min)
	A	B	C	
Sheet Flow				
Description	Woods	Woods	Conservation	
Manning's n	0.400	0.400	0.400	
Flow Length (ft)	100	25	25	
2-yr, 24-hr Precip. (in)	3.44	3.44	3.44	
Land Slope (%)	18	12	33	
Travel Time (min)	8.60	3.34	2.23	14.16
Shallow Concentrated Flow				
Flow Length (ft)	140	320	210	
Watercourse Slope (%)	2.00	5.00	3.00	
Surface Description	Prairie	Forest	Prairie	
Average Velocity (ft/s)	.98	.56	1.21	
Travel Time (min)	2.37	9.48	2.90	14.75
Channel Flow				
X-sectional Flow Area (sqft)	5	11	11	
Wetted Perimeter (ft)	8.3	14.3	14.3	
Channel Slope (%)	2	5	3	
Manning's n	0.100	0.100	0.100	
Velocity (ft/s)	1.5	2.79	2.16	
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				28.92 min

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-02E

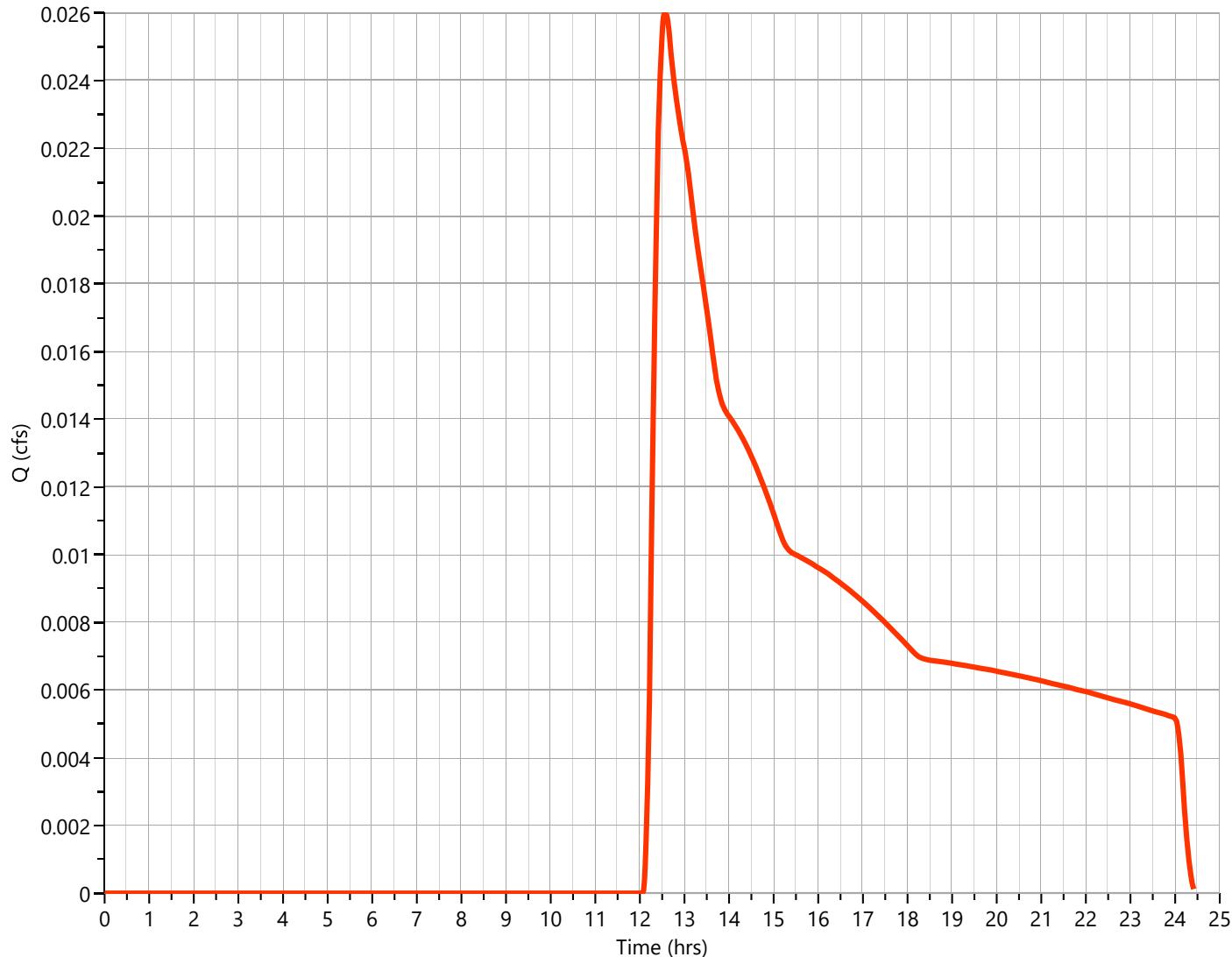
Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.026 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.55 hrs
Time Interval	= 1 min	Runoff Volume	= 408 cuft
Drainage Area	= 0.625 ac	Curve Number	= 55.90*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.27 min
Total Rainfall	= 2.87 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.009	61.00	Landscape
0.17	58.00	Conservation
0.446	55.00	Woods
0.625	55.90	Weighted CN Method Employed

Q_p = 0.026 cfs



Tc by TR55 Worksheet

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-02E

Hyd. No. 6

NRCS Runoff

Description	Segments			Tc (min)
	A	B	C	
Sheet Flow				
Description	Woods	Woods		
Manning's n	0.400	0.400	0.013	
Flow Length (ft)	100	50		
2-yr, 24-hr Precip. (in)	3.44	3.44	3.44	
Land Slope (%)	12	12		
Travel Time (min)	10.11	5.81	0.00	15.92
Shallow Concentrated Flow				
Flow Length (ft)	50			
Watercourse Slope (%)	2.00	0.00	0.00	
Surface Description	Forest	Paved	Paved	
Average Velocity (ft/s)	.36			
Travel Time (min)	2.34	0.00	0.00	2.34
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				18.27 min

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S

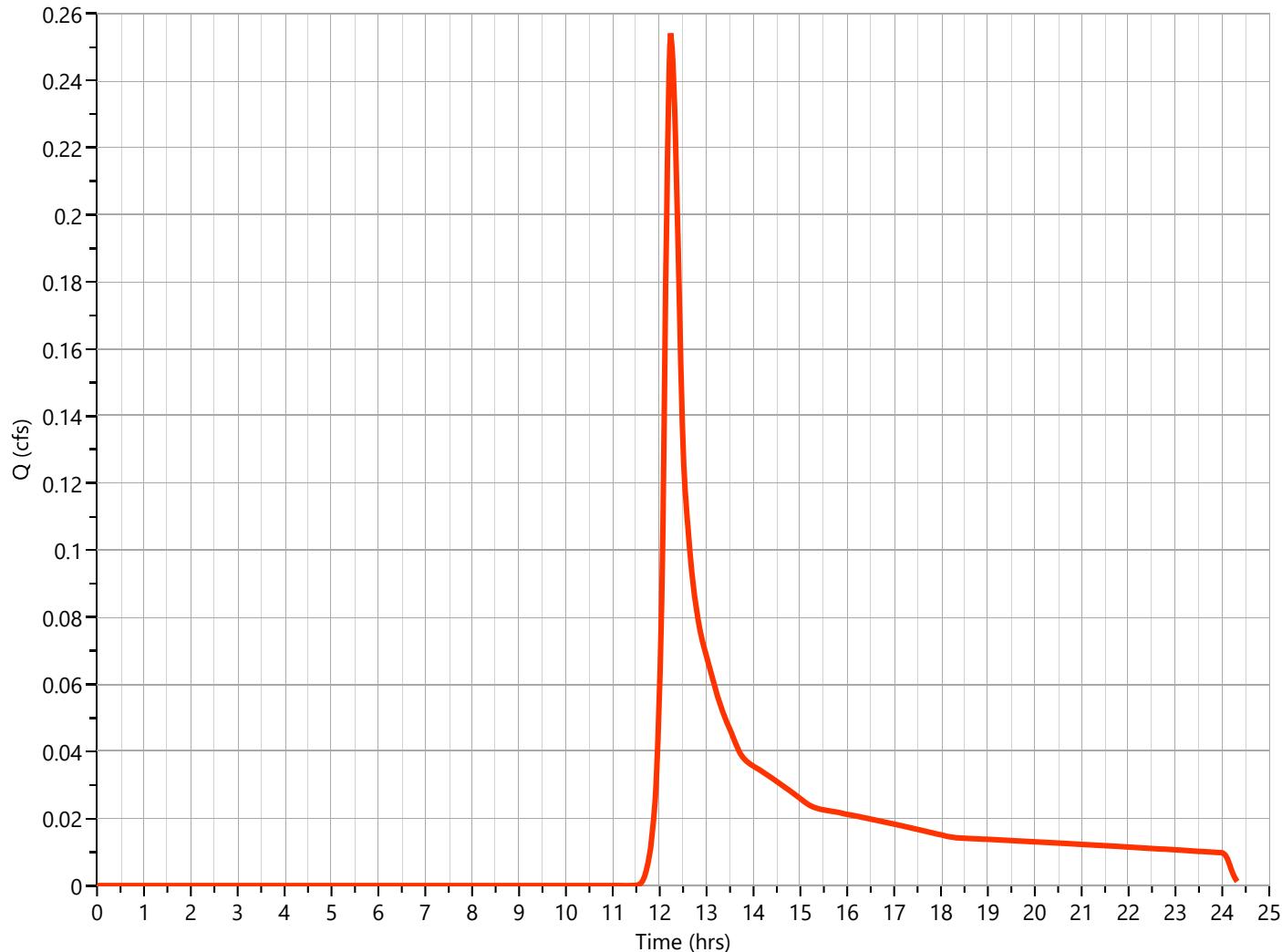
Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.254 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.23 hrs
Time Interval	= 1 min	Runoff Volume	= 1,283 cuft
Drainage Area	= 0.581 ac	Curve Number	= 68.99*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.21 min
Total Rainfall	= 2.87 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.156	98.00	Impervious
0.136	61.00	Landscape
0.201	58.00	Conservation
0.088	55.00	Woods
0.581	68.99	Weighted CN Method Employed

Qp = 0.254 cfs



Tc by TR55 Worksheet

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-03S

Hyd. No. 7

NRCS Runoff

Description	Segments			Tc (min)
	A	B	C	
Sheet Flow				
Description	Landscape	Conservation		
Manning's n	0.240	0.400	0.400	
Flow Length (ft)	70	30		
2-yr, 24-hr Precip. (in)	3.44	3.44	3.44	
Land Slope (%)	4	10		
Travel Time (min)	7.84	4.15	0.00	11.99
Shallow Concentrated Flow				
Flow Length (ft)	90			
Watercourse Slope (%)	2.00	0.00	0.00	
Surface Description	Forest	Paved	Paved	
Average Velocity (ft/s)	.36			
Travel Time (min)	4.22	0.00	0.00	4.22
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				16.21 min

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

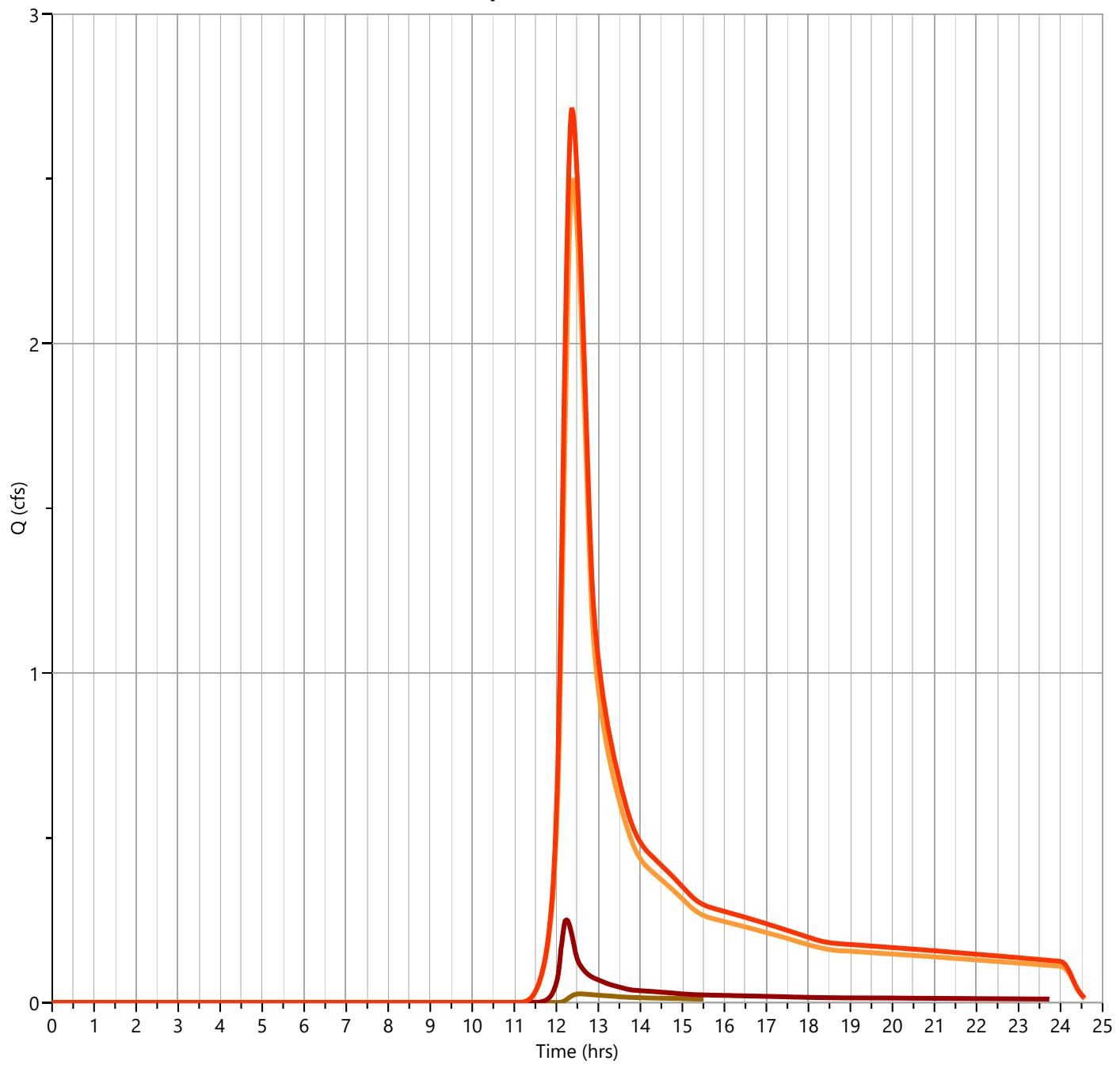
01-15-2026

PR-SITE

Hyd. No. 8

Hydrograph Type	= Junction	Peak Flow	= 2.718 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.38 hrs
Time Interval	= 1 min	Hydrograph Volume	= 17,280 cuft
Inflow Hydrographs	= 5, 6, 7	Total Contrib. Area	= 6.983 ac

Qp = 2.718 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-A

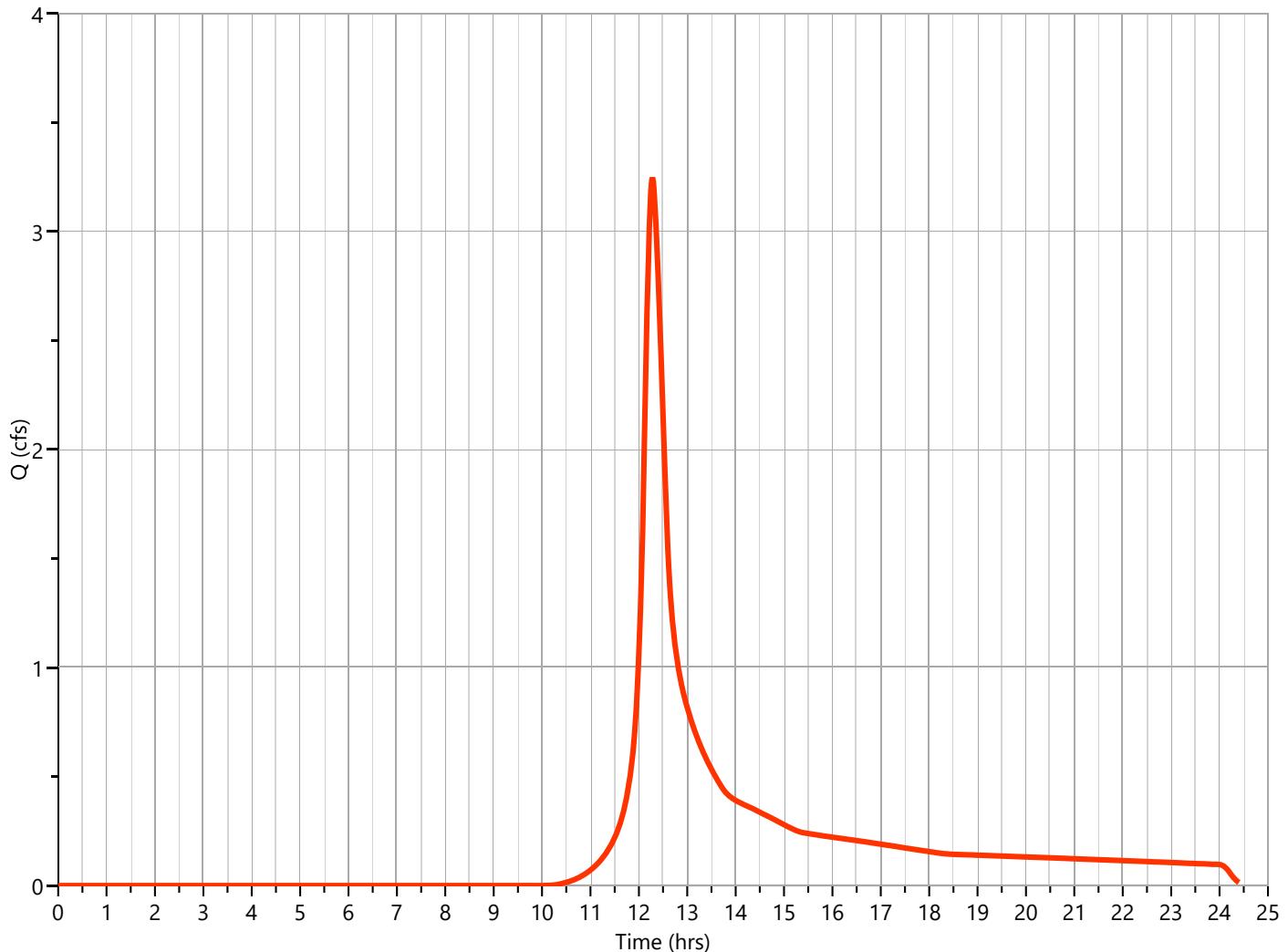
Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.248 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.28 hrs
Time Interval	= 1 min	Runoff Volume	= 16,032 cuft
Drainage Area	= 4.266 ac	Curve Number	= 77.79*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.53 min
Total Rainfall	= 2.87 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.213	61.00	Landscape
0.786	58.00	Conservation
0.23	55.00	Woods
4.266	77.79	Weighted CN Method Employed

Qp = 3.248 cfs



Tc by TR55 Worksheet

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-01SW-SUB-A

Hyd. No. 9

NRCS Runoff

Description	Segments			Tc (min)
	A	B	C	
Sheet Flow				
Description	Woods	Conservation		
Manning's n	0.400	0.400	0.400	
Flow Length (ft)	65	60		
2-yr, 24-hr Precip. (in)	3.44	3.44	3.44	
Land Slope (%)	17	4		
Travel Time (min)	6.23	10.43	0.00	16.66
Shallow Concentrated Flow				
Flow Length (ft)	180			
Watercourse Slope (%)	2.00	0.00	0.00	
Surface Description	Prairie	Unpaved	Paved	
Average Velocity (ft/s)	.98			
Travel Time (min)	3.05	0.00	0.00	3.05
Channel Flow				
X-sectional Flow Area (sqft)	.4			
Wetted Perimeter (ft)	1.57			
Channel Slope (%)	6			
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)	11.23			
Flow Length (ft)	550			
Travel Time (min)	0.82	0.00	0.00	0.82
Total Travel Time				20.53 min

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-B

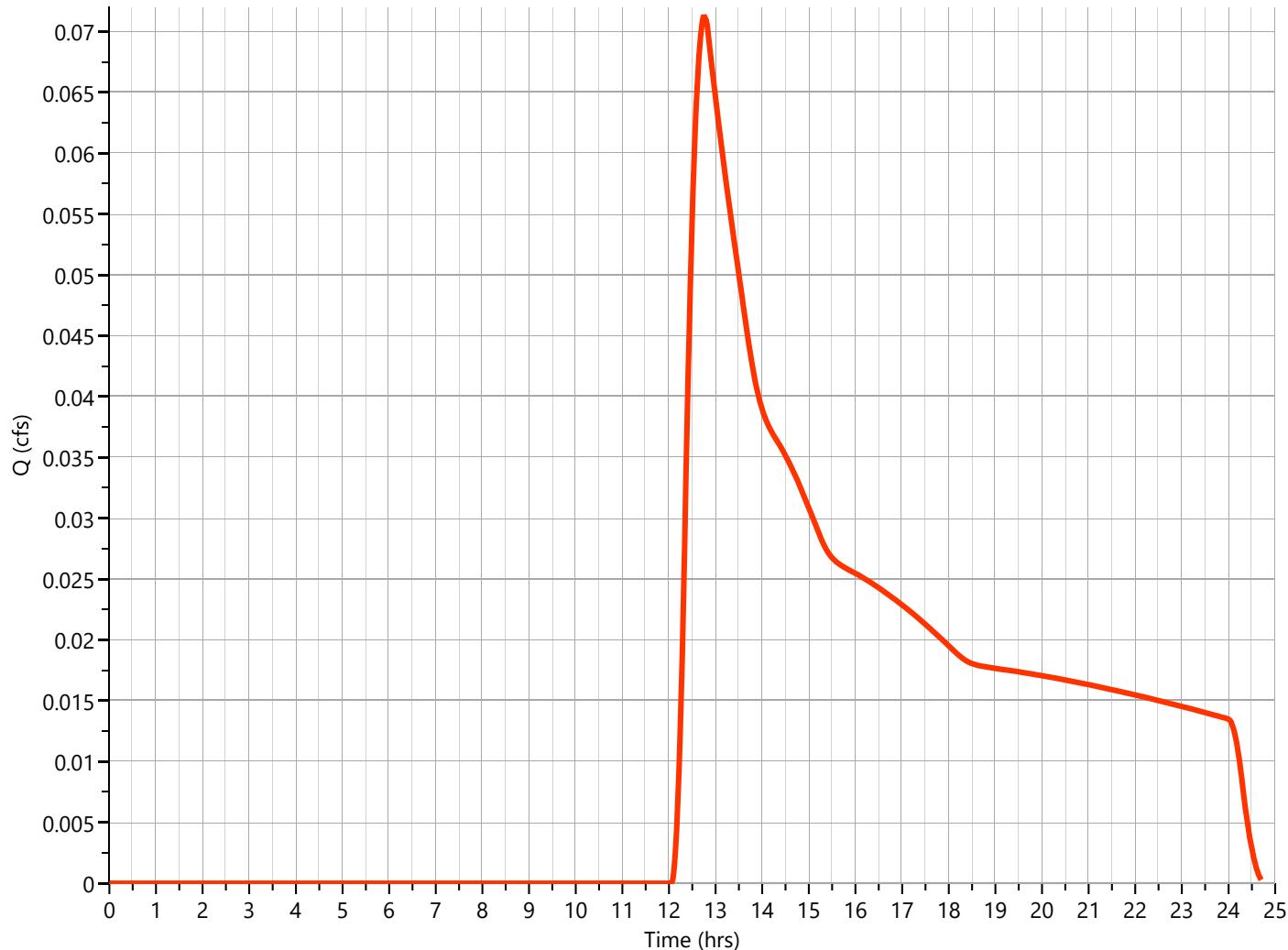
Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.071 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.77 hrs
Time Interval	= 1 min	Runoff Volume	= 1,092 cuft
Drainage Area	= 1.511 ac	Curve Number	= 56.63*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 2.87 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.001	98.00	Impervious
0.164	61.00	Landscape
0.477	58.00	Conservation
0.869	55.00	Woods
1.511	56.63	Weighted CN Method Employed

Qp = 0.071 cfs



Tc by TR55 Worksheet

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-01SW-SUB-B NRCS Runoff

Hyd. No. 10

Description	Segments			Tc (min)
	A	B	C	
Sheet Flow				
Description	Woods	Woods	Conservation	
Manning's n	0.400	0.400	0.400	
Flow Length (ft)	100	25	25	
2-yr, 24-hr Precip. (in)	3.44	3.44	3.44	
Land Slope (%)	18	12	33	
Travel Time (min)	8.60	3.34	2.23	14.16
Shallow Concentrated Flow				
Flow Length (ft)	140	320	210	
Watercourse Slope (%)	2.00	5.00	3.00	
Surface Description	Prairie	Forest	Prairie	
Average Velocity (ft/s)	.98	.56	1.21	
Travel Time (min)	2.37	9.48	2.90	14.75
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.013	0.013	0.013	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				28.92 min

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW DET

Hyd. No. 11

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 0.00 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 5 - PR-01SW	Max. Elevation	= 27.83 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 13,613 cuft

Pond Routing by Storage Indication Method

Qp = 0.000 cfs

Pond Report

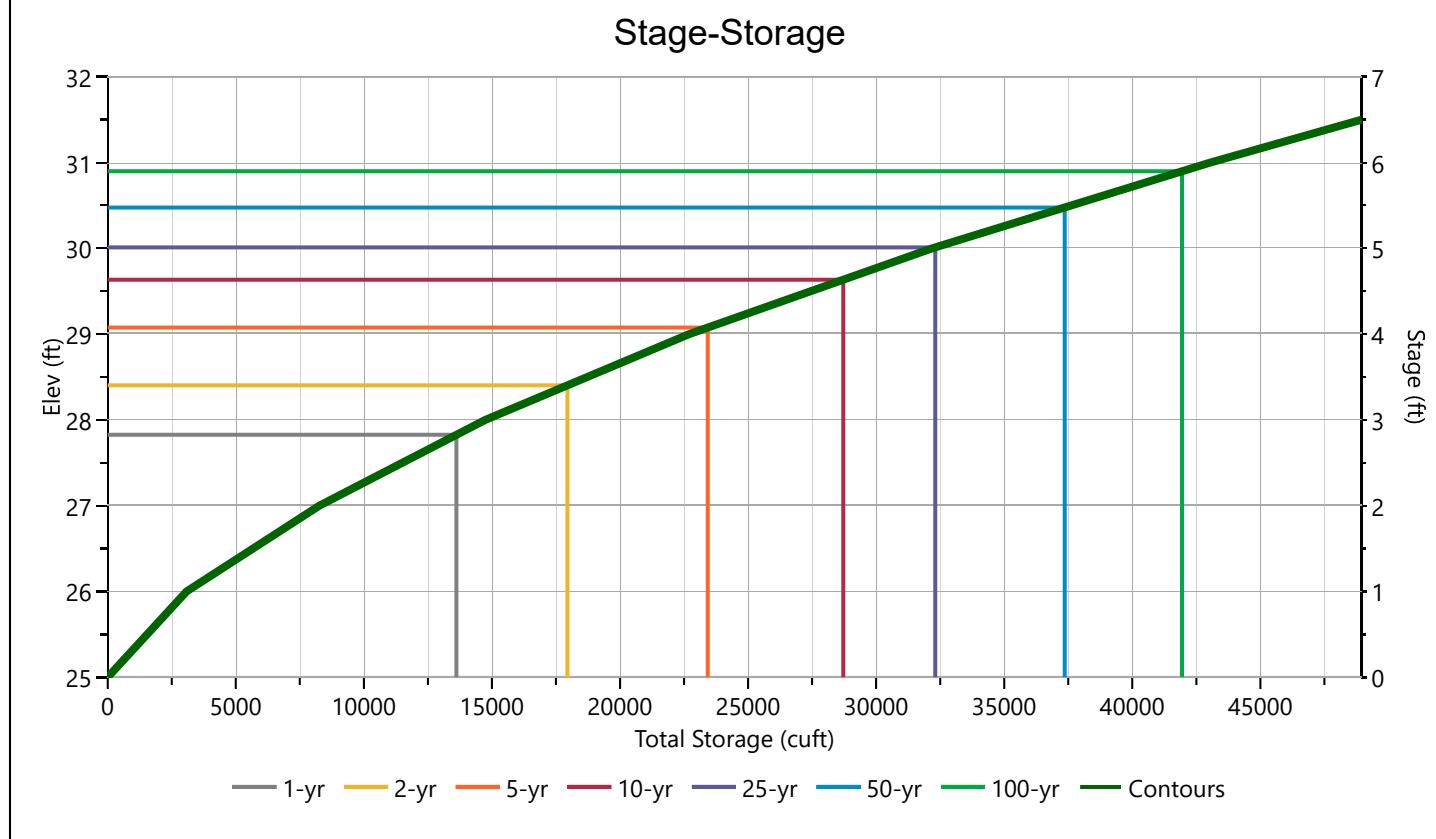
File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-01 DETENTION

Stage-Storage



Pond Report

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

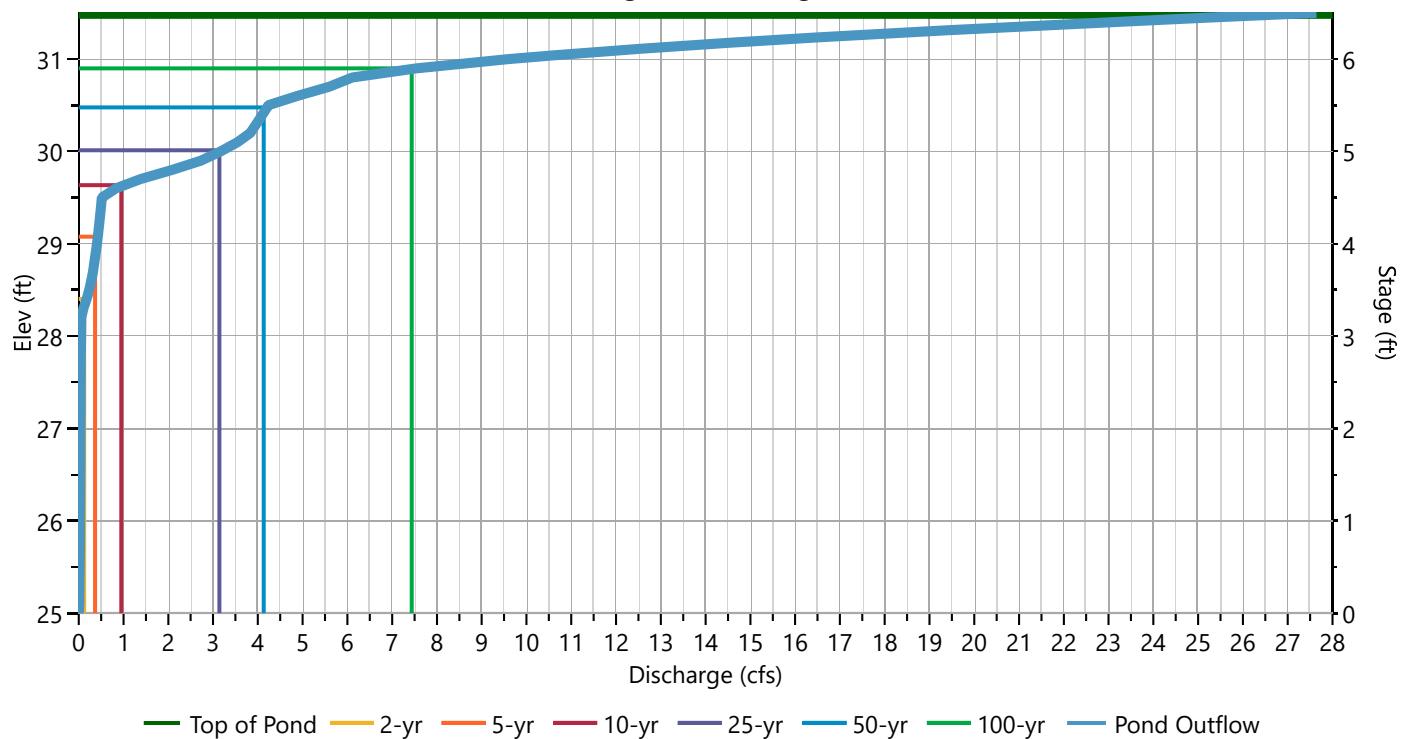
PR-01 DETENTION

Stage-Discharge

Culvert / Orifices	Cir Culvert	Orifice			Orifice Plate
		1 (m)	2 (m)	3	
Rise, in	12	4	4		Orifice Dia, in
Span, in	12	4	36		No. Orifices
No. Barrels	1	1	1		Invert Elevation, ft
Invert Elevation, ft	28.00	28.15	29.50		Height, ft
Orifice Coefficient, Co	0.60	0.60	0.60		Orifice Coefficient, Co
Length, ft	25				
Barrel Slope, %	.5				
N-Value, n	0.013				
Weirs	Riser	Weir			Ancillary
		1 (i)	2	3	
Shape / Type	Box	Broad Crested			Exfiltration, in/hr
Crest Elevation, ft	30.5	30.75			0.30**
Crest Length, ft	14	8			
Angle, deg		18.4 (3:1)			
Weir Coefficient, Cw	3.3	3.3			

m = Flows through Culvert, i = Independent **Exfiltration extracted from outflow hydrograph. Rate applied to contours.

Stage-Discharge



Pond Report

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-01 DETENTION

Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	25.00	0.000	0.000	0.000	0.000		0.000	0.000			0.000		0.000	
1.00	26.00	3,080	0.000	0.000	0.000		0.000	0.000			0.032		0.032	
2.00	27.00	8,263	0.000	0.000	0.000		0.000	0.000			0.040		0.040	
3.00	28.00	14,745	0.000	0.000	0.000		0.000	0.000			0.050		0.050	
4.00	29.00	22,702	0.347 oc	0.347	0.000		0.000	0.000			0.061		0.408	
5.00	30.00	32,186	3.099 oc	0.319	2.780		0.000	0.000			0.071		3.170	
6.00	31.00	43,044	5.979 ic	0.000	0.000		0.000	3.548			0.080		9.606	
6.50	31.50	48,947	6.549 ic	0.000	0.000		0.000	21.01			0.084		27.64	

Pond Report

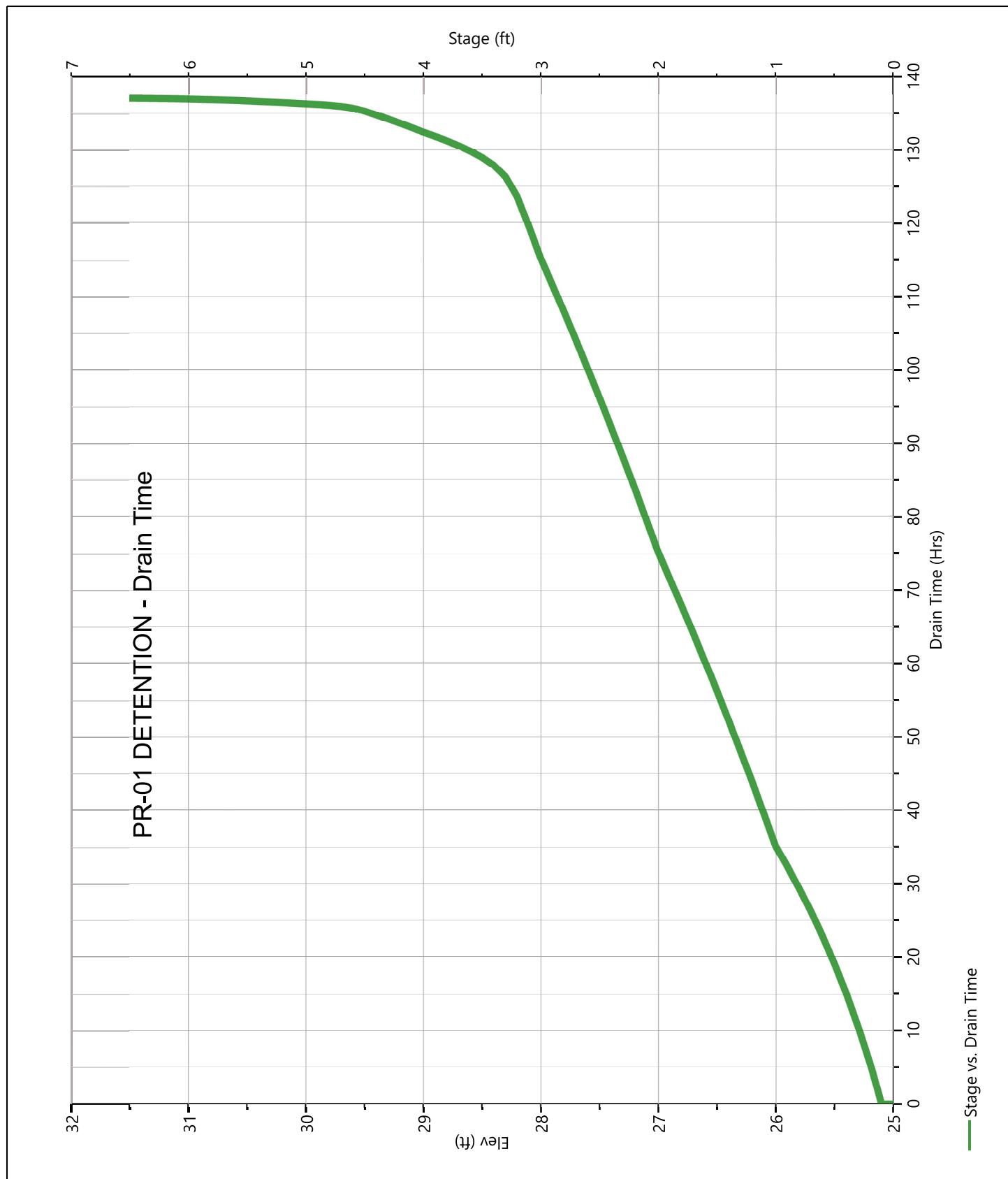
File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-01 DETENTION

Pond Drawdown



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

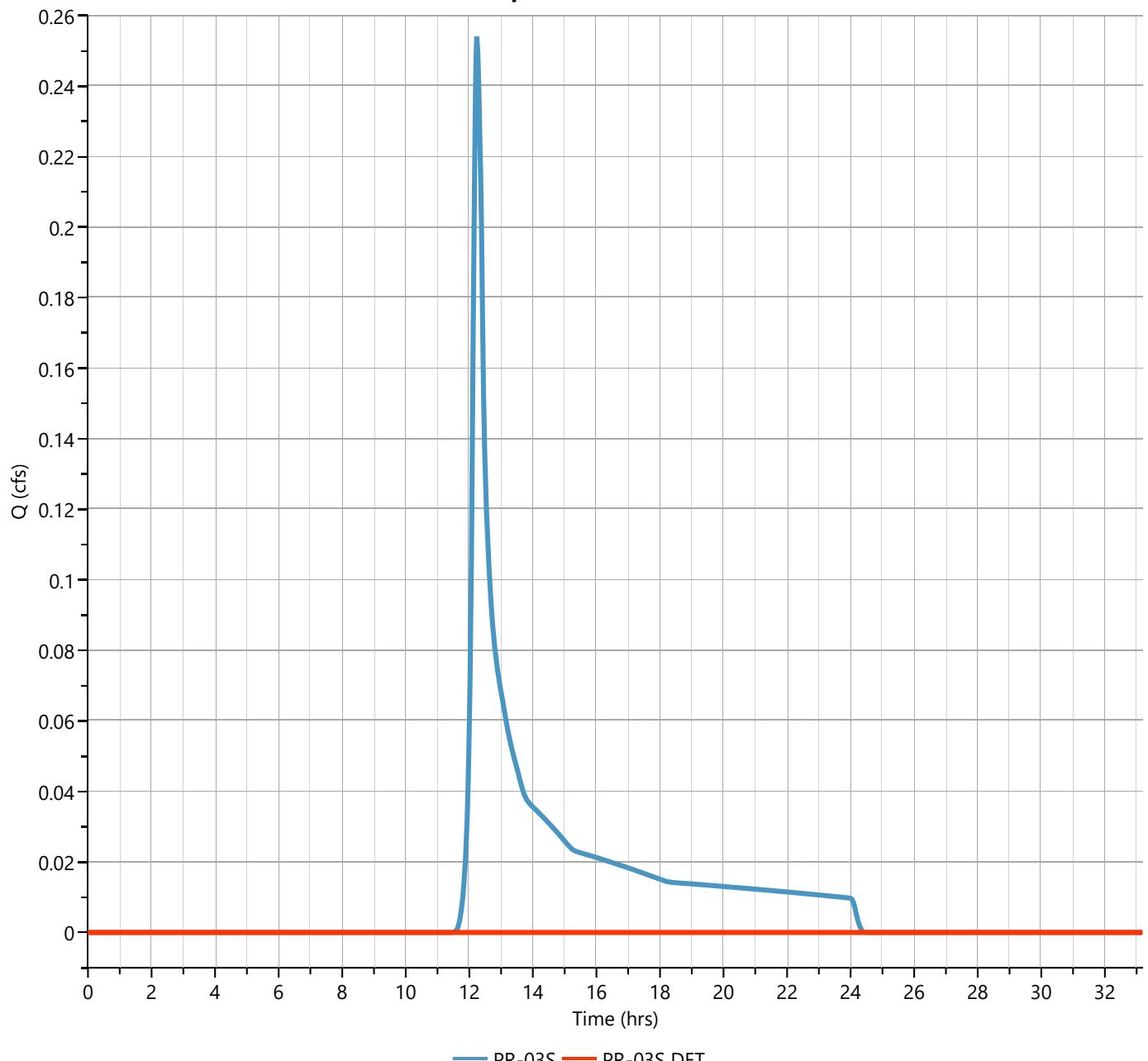
PR-03S DET

Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 33.17 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 7 - PR-03S	Max. Elevation	= 26.94 ft
Pond Name	= PR-03S RAIN GARDEN	Max. Storage	= 882 cuft

Pond Routing by Storage Indication Method

$Q_p = 0.000 \text{ cfs}$



Pond Report

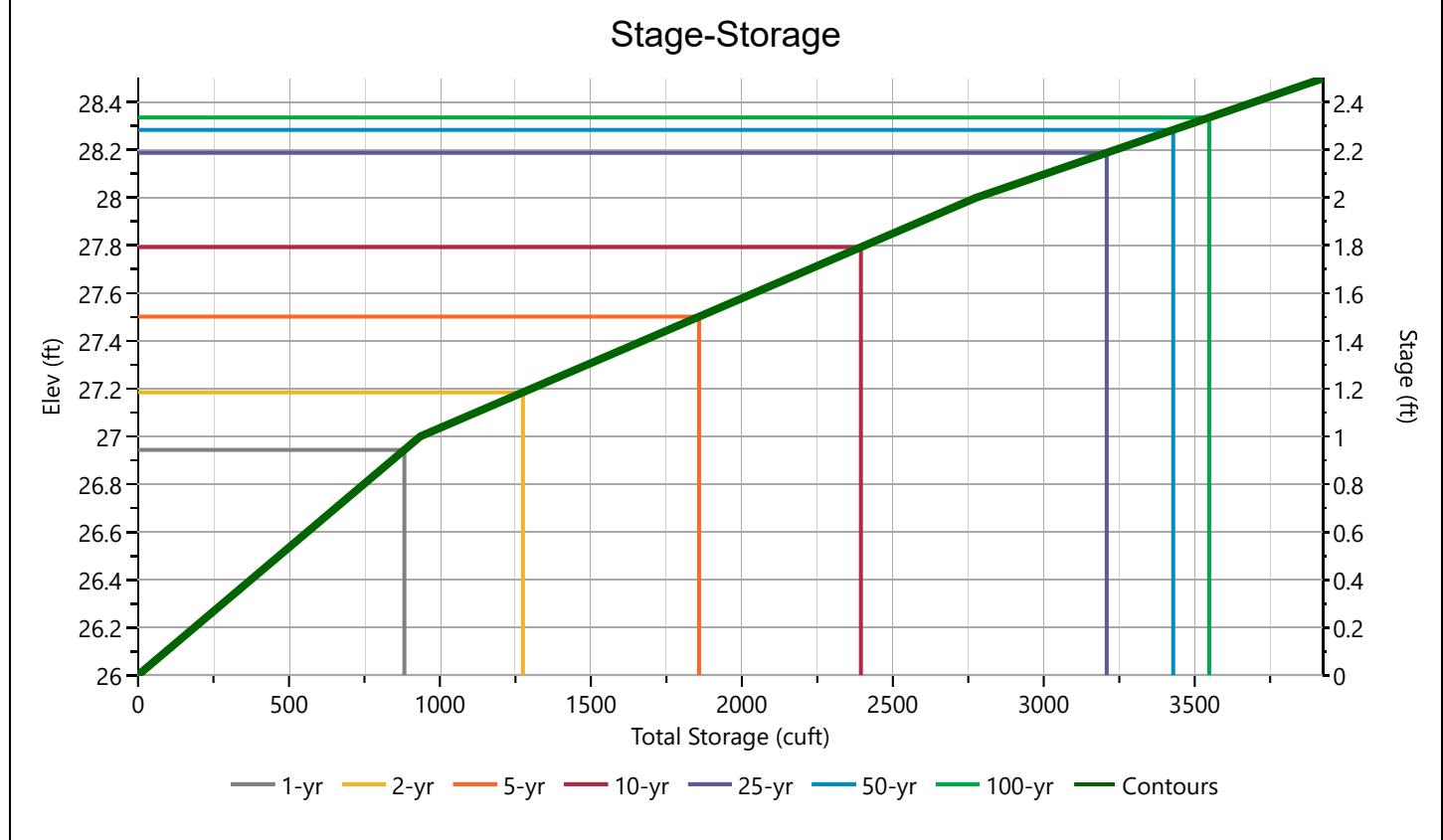
File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-03S RAIN GARDEN

Stage-Storage



Pond Report

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

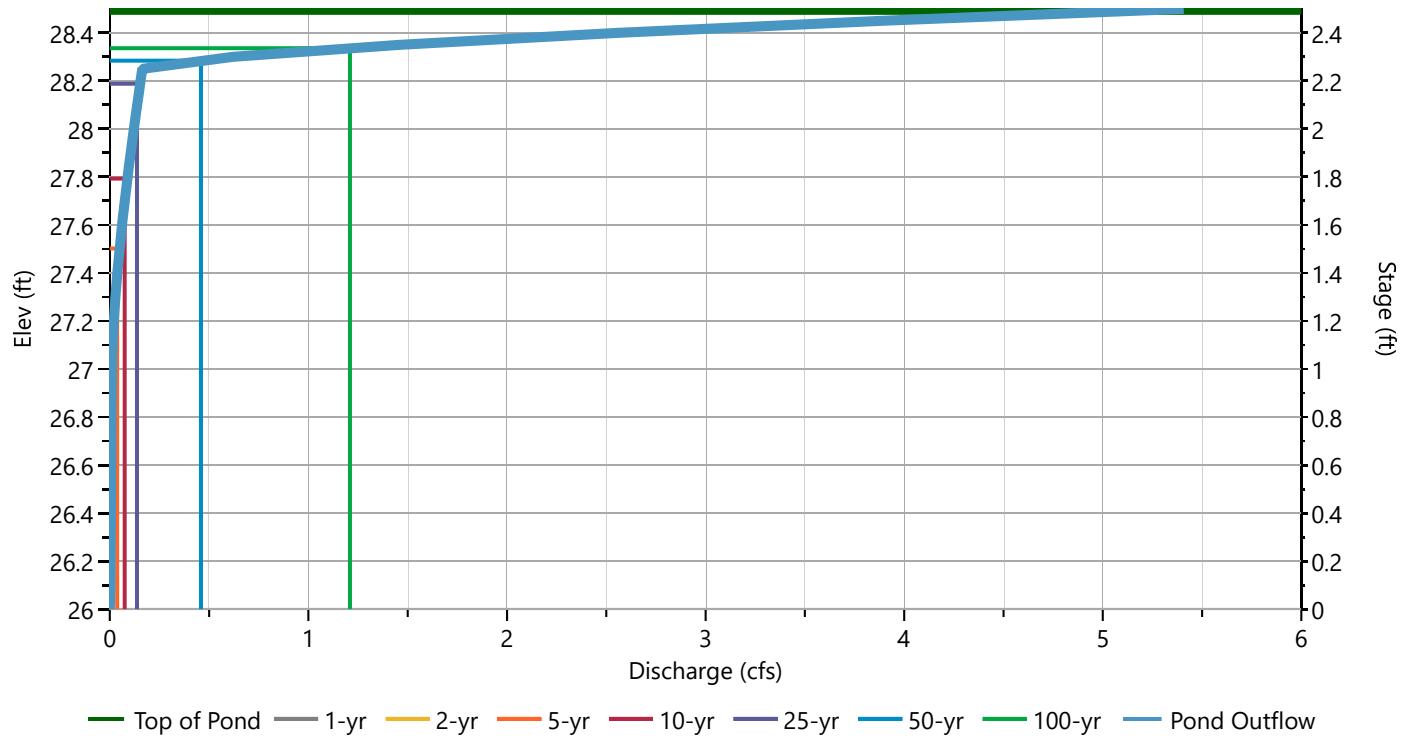
PR-03S RAIN GARDEN

Stage-Discharge

Culvert / Orifices	Cir Culvert	Orifice			Perforated Riser (m)
		1	2	3	
Rise, in	6				Hole Diameter, in
Span, in	6				No. holes
No. Barrels	1				Invert Elevation, ft
Invert Elevation, ft	27.00				Height, ft
Orifice Coefficient, Co	0.60				Orifice Coefficient, Co
Length, ft	15				
Barrel Slope, %	.5				
N-Value, n	0.013				
Weirs	Riser	Weir			Ancillary
		1 (i)	2	3	
Shape / Type		Broad Crested			Exfiltration, in/hr
Crest Elevation, ft		28.25			0.30**
Crest Length, ft		12			
Angle, deg		18.4 (3:1)			
Weir Coefficient, Cw		3.3			

m = Flows through Culvert, i = Independent **Exfiltration extracted from outflow hydrograph. Rate applied to contours.

Stage-Discharge



Pond Report

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-03S RAIN GARDEN

Stage-Storage-Discharge Summary

Pond Report

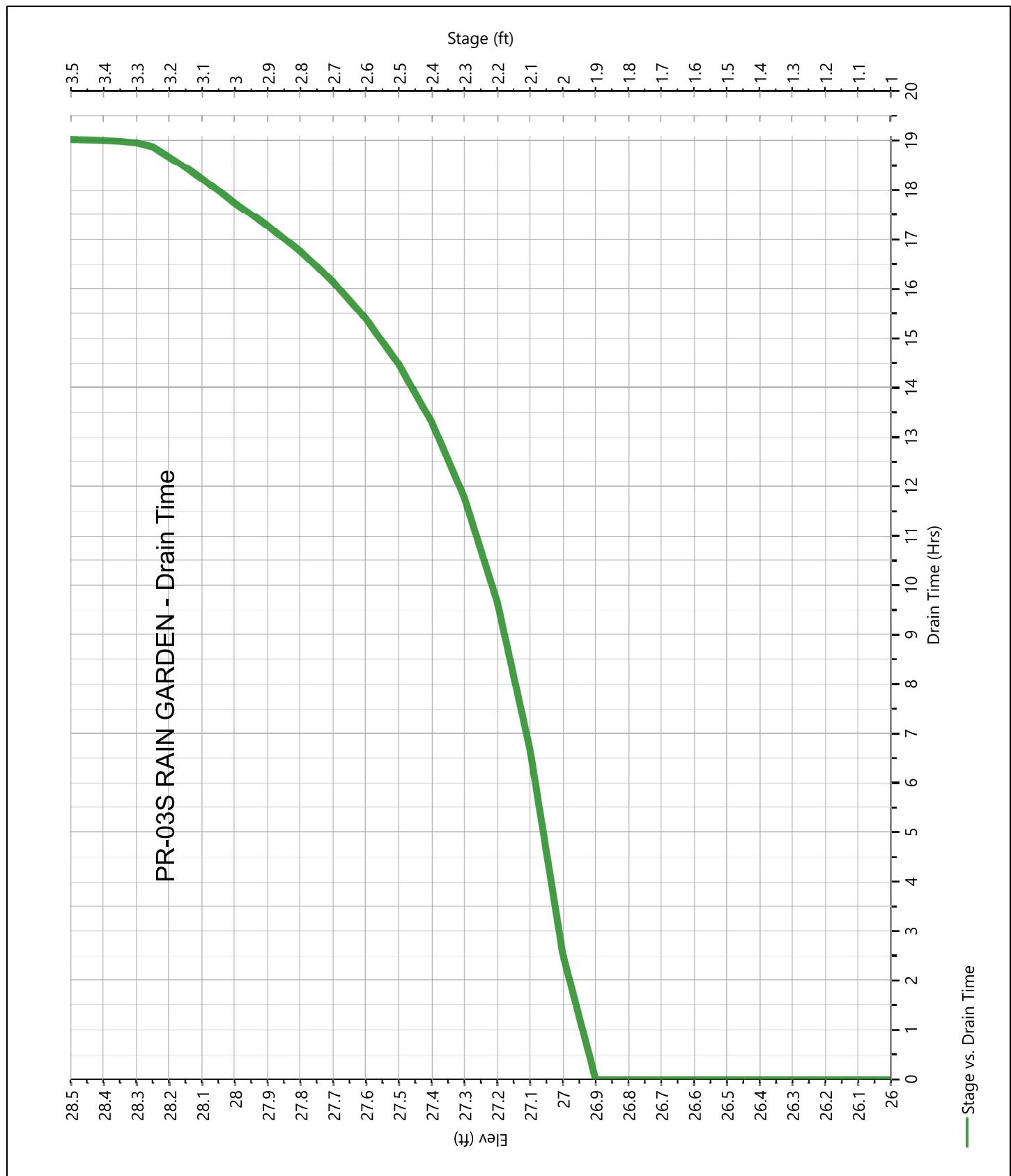
File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-03S RAIN GARDEN

Pond Drawdown



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

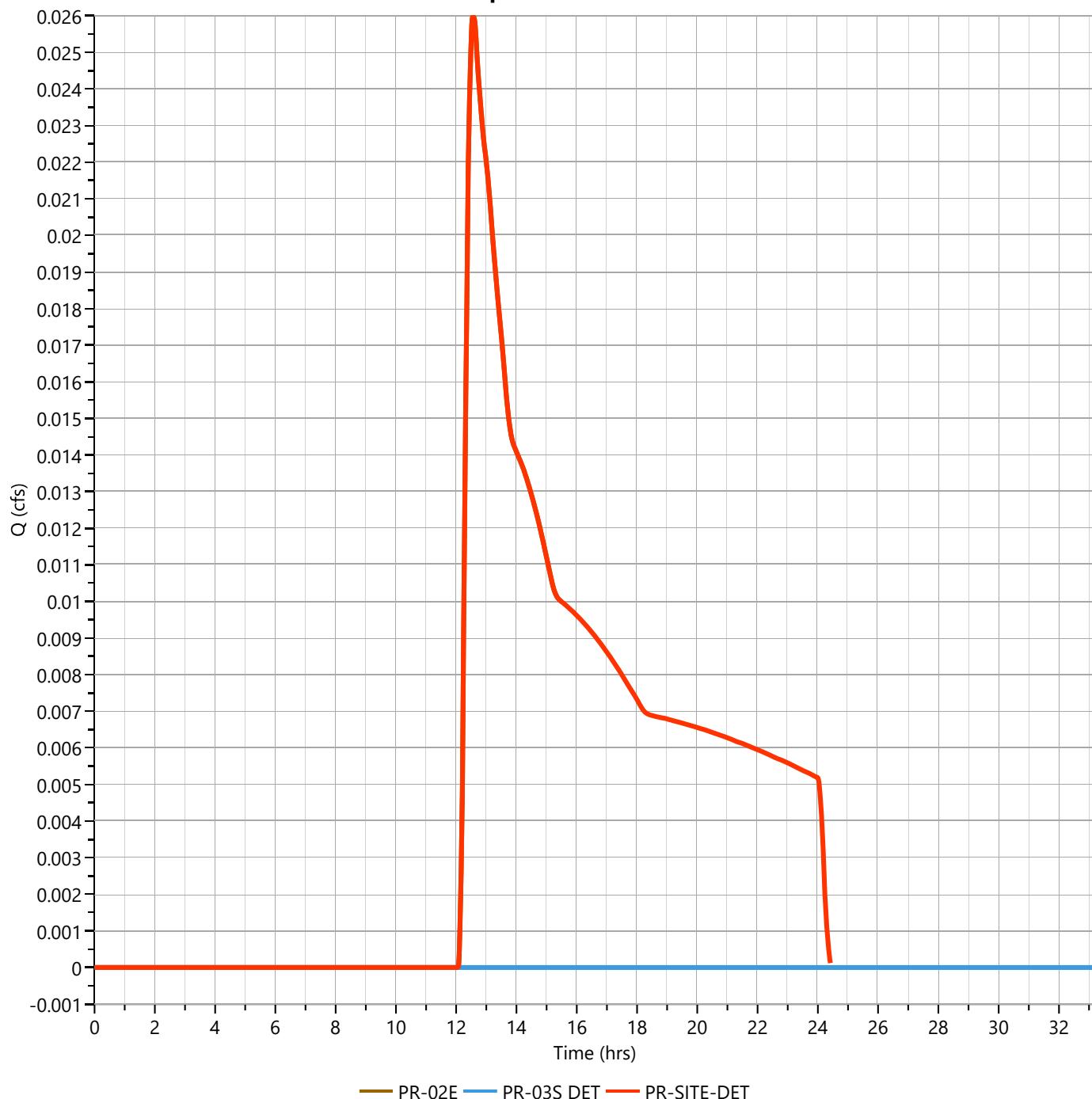
01-15-2026

PR-SITE-DET

Hyd. No. 13

Hydrograph Type	= Junction	Peak Flow	= 0.026 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.55 hrs
Time Interval	= 1 min	Hydrograph Volume	= 408 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Q_p = 0.026 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

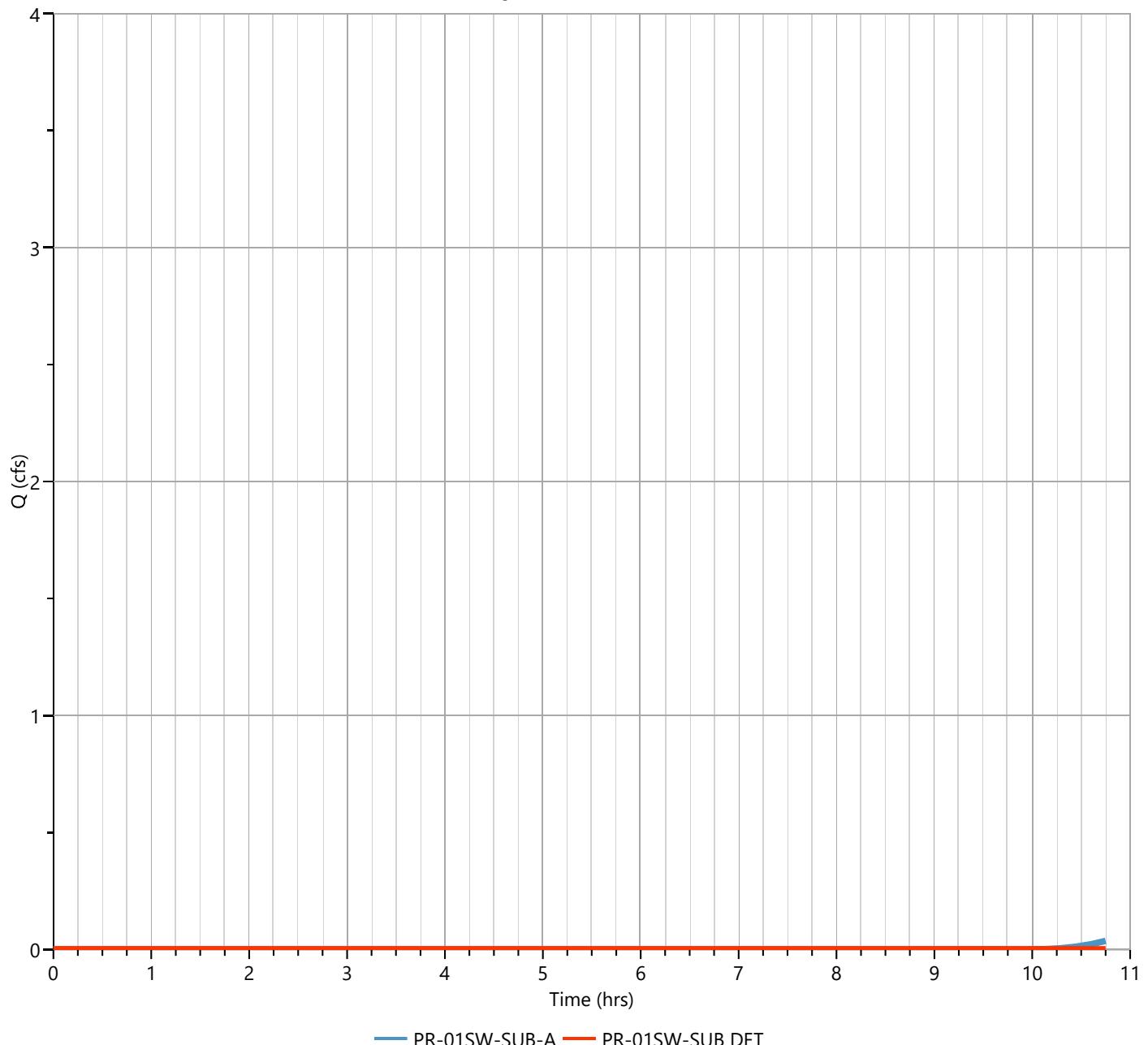
PR-01SW-SUB DET

Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 0.000 cfs
Storm Frequency	= 1-yr	Time to Peak	= 10.73 hrs
Time Interval	= 1 min	Hydrograph Volume	= 0.000 cuft
Inflow Hydrograph	= 9 - PR-01SW-SUB-A	Max. Elevation	= 27.88 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 13,983 cuft

Pond Routing by Storage Indication Method

Q_p = 0.000 cfs



Pond Report

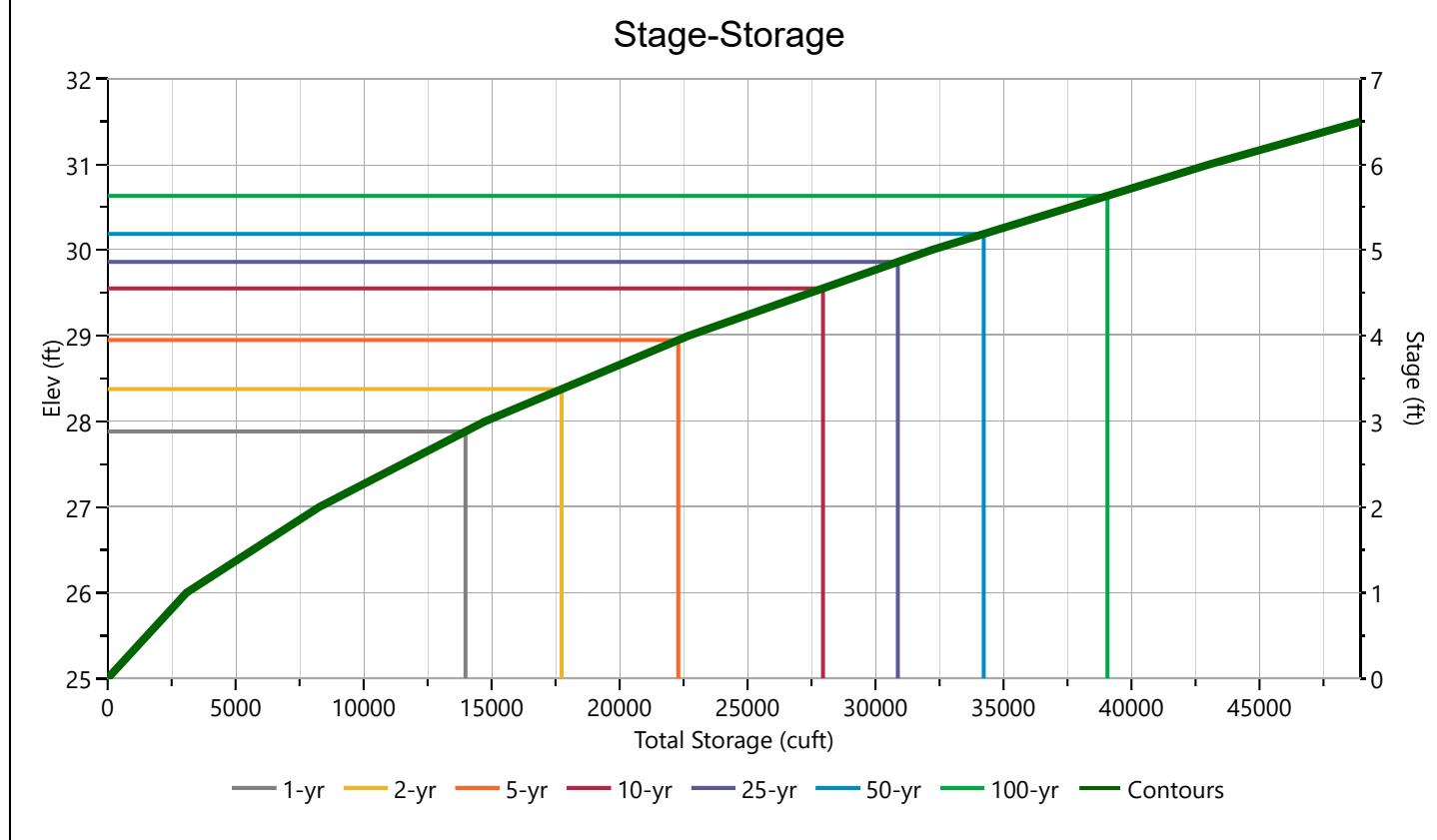
File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-01 DETENTION

Stage-Storage



Pond Report

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

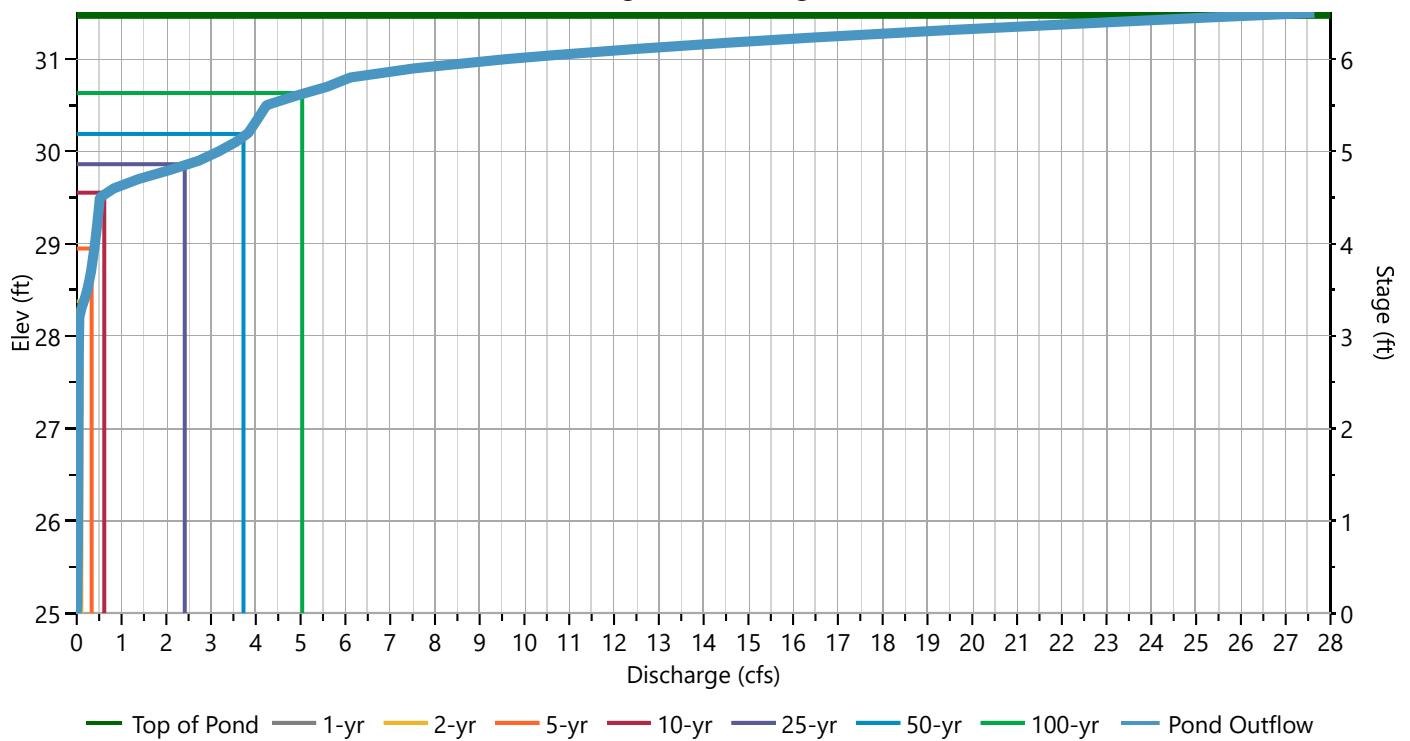
PR-01 DETENTION

Stage-Discharge

Culvert / Orifices	Cir Culvert	Orifice			Orifice Plate
		1 (m)	2 (m)	3	
Rise, in	12	4	4		Orifice Dia, in
Span, in	12	4	36		No. Orifices
No. Barrels	1	1	1		Invert Elevation, ft
Invert Elevation, ft	28.00	28.15	29.50		Height, ft
Orifice Coefficient, Co	0.60	0.60	0.60		Orifice Coefficient, Co
Length, ft	25				
Barrel Slope, %	.5				
N-Value, n	0.013				
Weirs	Riser	Weir			Ancillary
		1 (i)	2	3	
Shape / Type	Box	Broad Crested			Exfiltration, in/hr
Crest Elevation, ft	30.5	30.75			0.30**
Crest Length, ft	14	8			
Angle, deg		18.4 (3:1)			
Weir Coefficient, Cw	3.3	3.3			

m = Flows through Culvert, i = Independent **Exfiltration extracted from outflow hydrograph. Rate applied to contours.

Stage-Discharge



Pond Report

File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-01 DETENTION

Stage-Storage-Discharge Summary

Stage (ft)	Elev. (ft)	Storage (cuft)	Culvert (cfs)	Orifices, cfs			Riser (cfs)	Weirs, cfs			Pf Riser (cfs)	Exfil (cfs)	User (cfs)	Total (cfs)
				1	2	3		1	2	3				
0.00	25.00	0.000	0.000	0.000	0.000		0.000	0.000			0.000		0.000	
1.00	26.00	3,080	0.000	0.000	0.000		0.000	0.000			0.032		0.032	
2.00	27.00	8,263	0.000	0.000	0.000		0.000	0.000			0.040		0.040	
3.00	28.00	14,745	0.000	0.000	0.000		0.000	0.000			0.050		0.050	
4.00	29.00	22,702	0.347 oc	0.347	0.000		0.000	0.000			0.061		0.408	
5.00	30.00	32,186	3.099 oc	0.319	2.780		0.000	0.000			0.071		3.170	
6.00	31.00	43,044	5.979 ic	0.000	0.000		0.000	3.548			0.080		9.606	
6.50	31.50	48,947	6.549 ic	0.000	0.000		0.000	21.01			0.084		27.64	

Pond Report

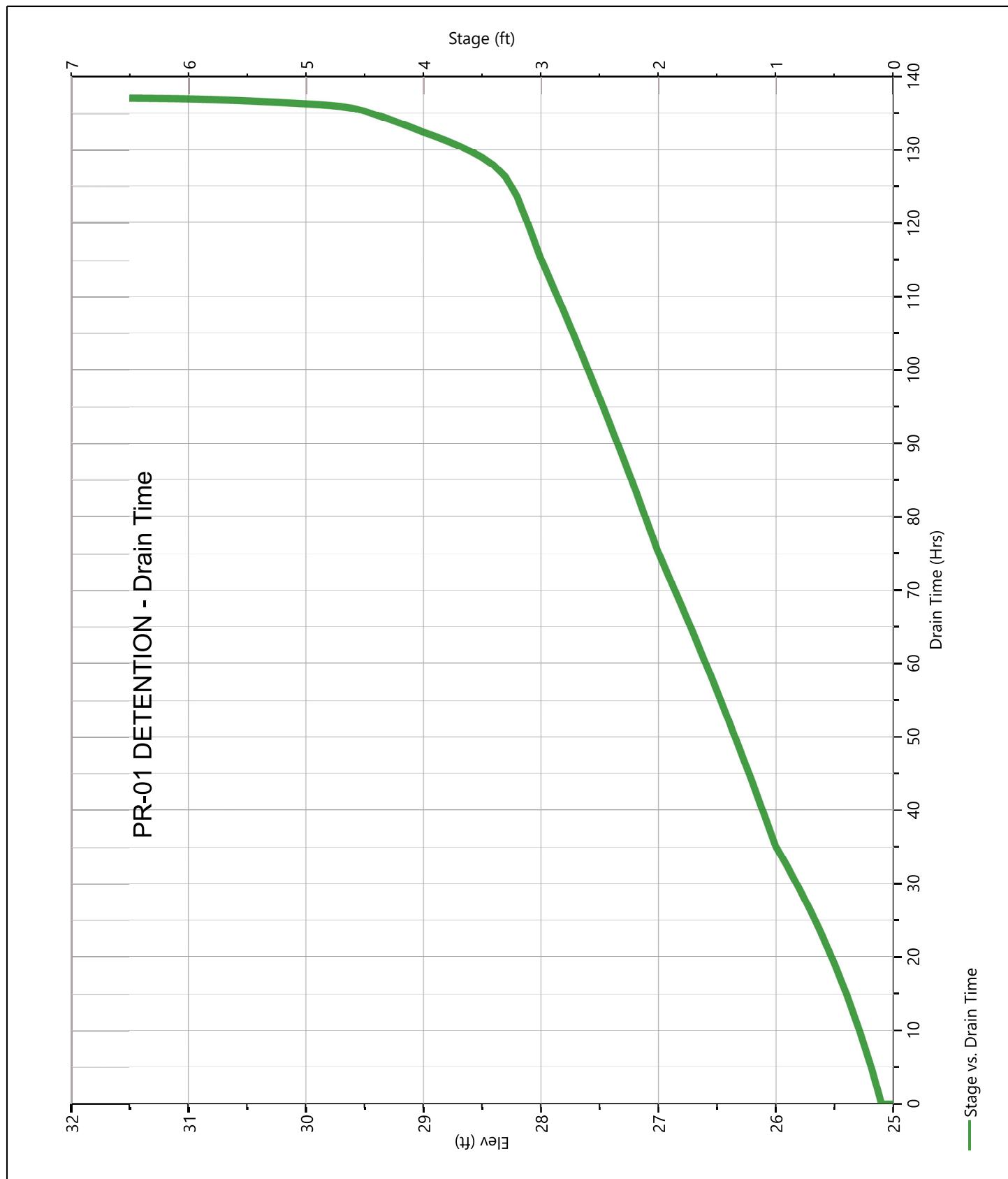
File: 20251222PARKERS PLACE Hydrology.hys

Hydrology Studio v 3.0.0.41

01-15-2026

PR-01 DETENTION

Pond Drawdown



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

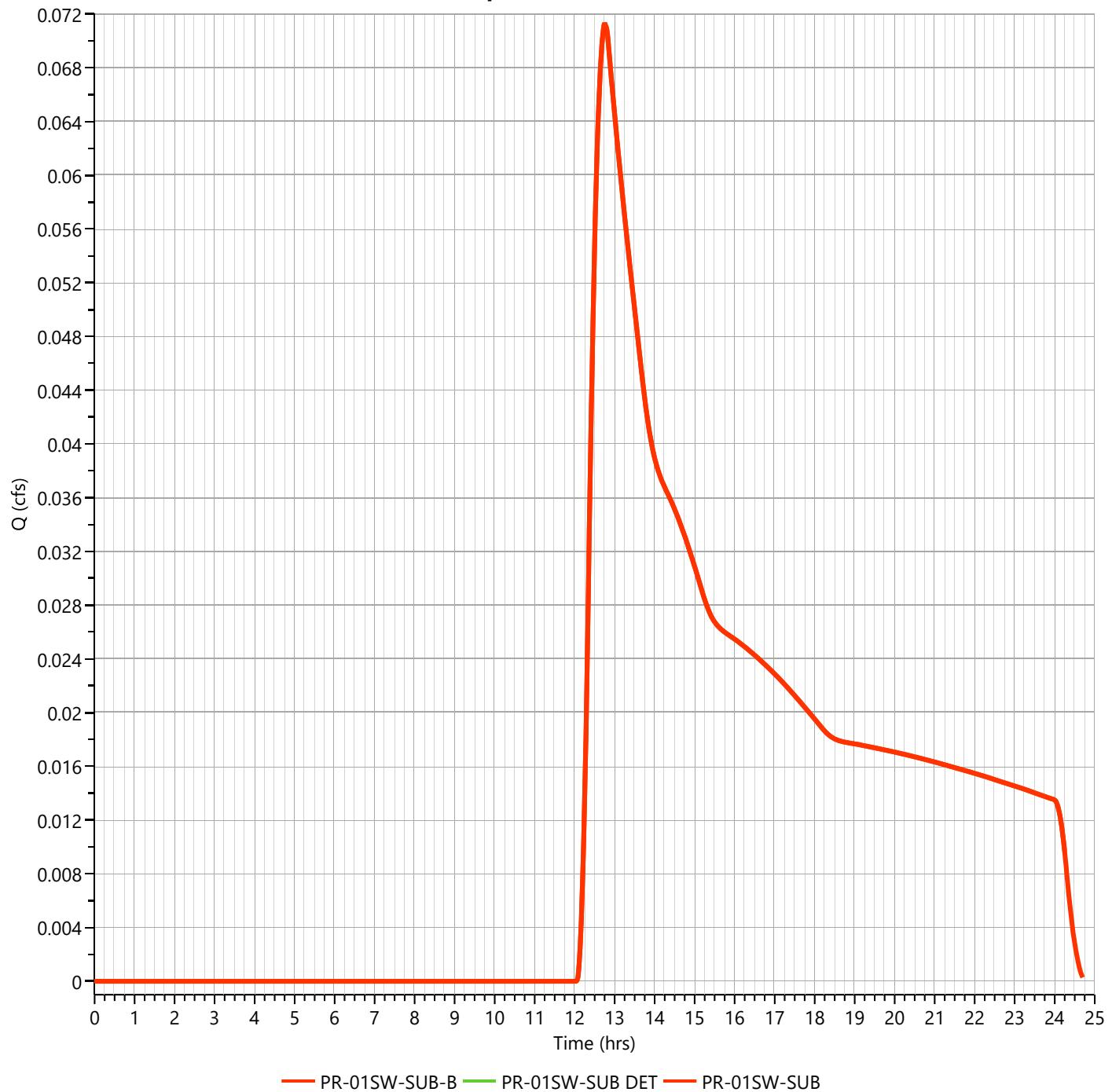
01-15-2026

PR-01SW-SUB

Hyd. No. 15

Hydrograph Type	= Junction	Peak Flow	= 0.071 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.77 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,092 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 1.511 ac

Qp = 0.071 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

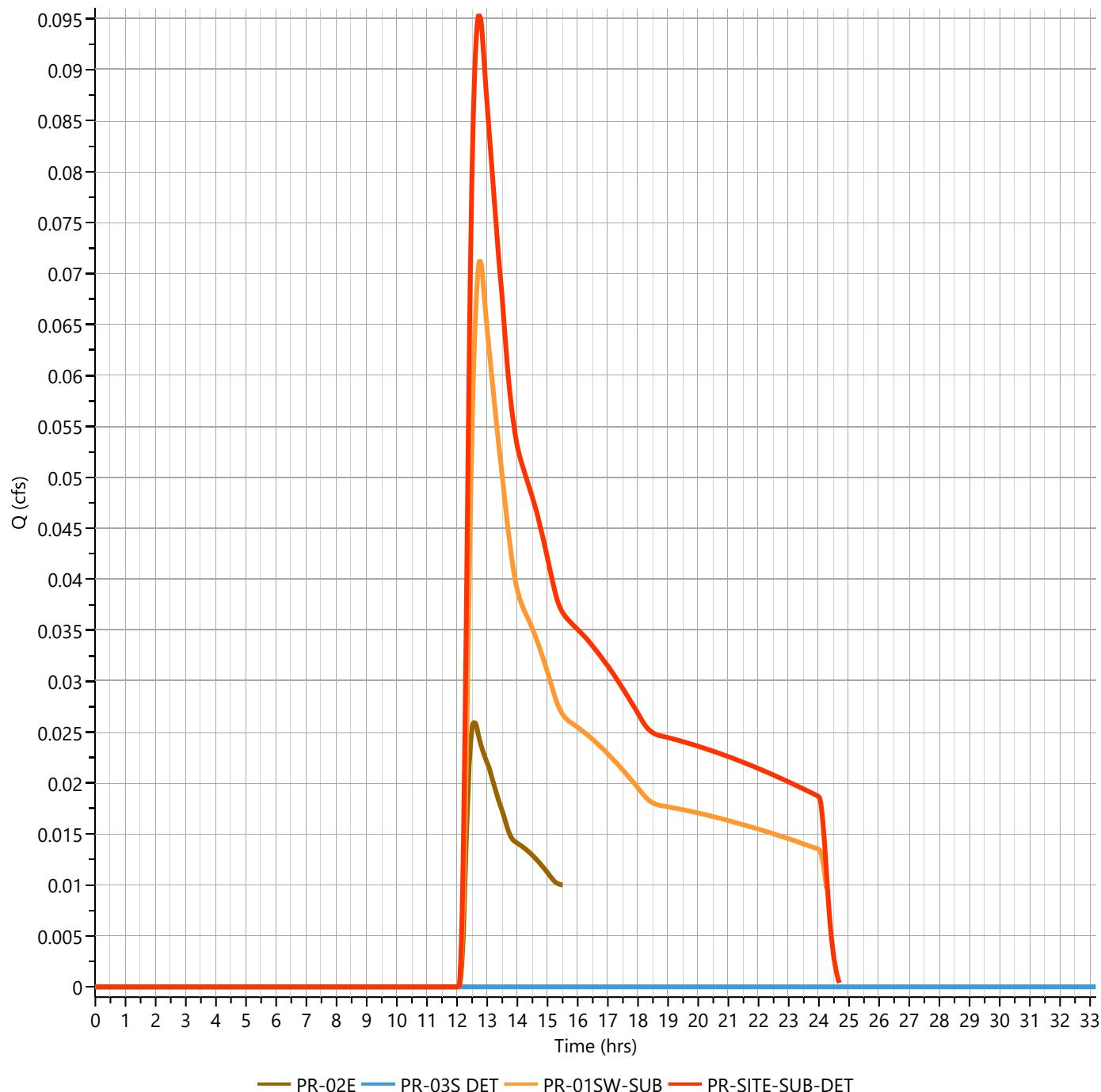
01-15-2026

PR-SITE-SUB-DET

Hyd. No. 16

Hydrograph Type	= Junction	Peak Flow	= 0.096 cfs
Storm Frequency	= 1-yr	Time to Peak	= 12.73 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,500 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Q_p = 0.096 cfs



Design Storm Report

Custom Storm filename:

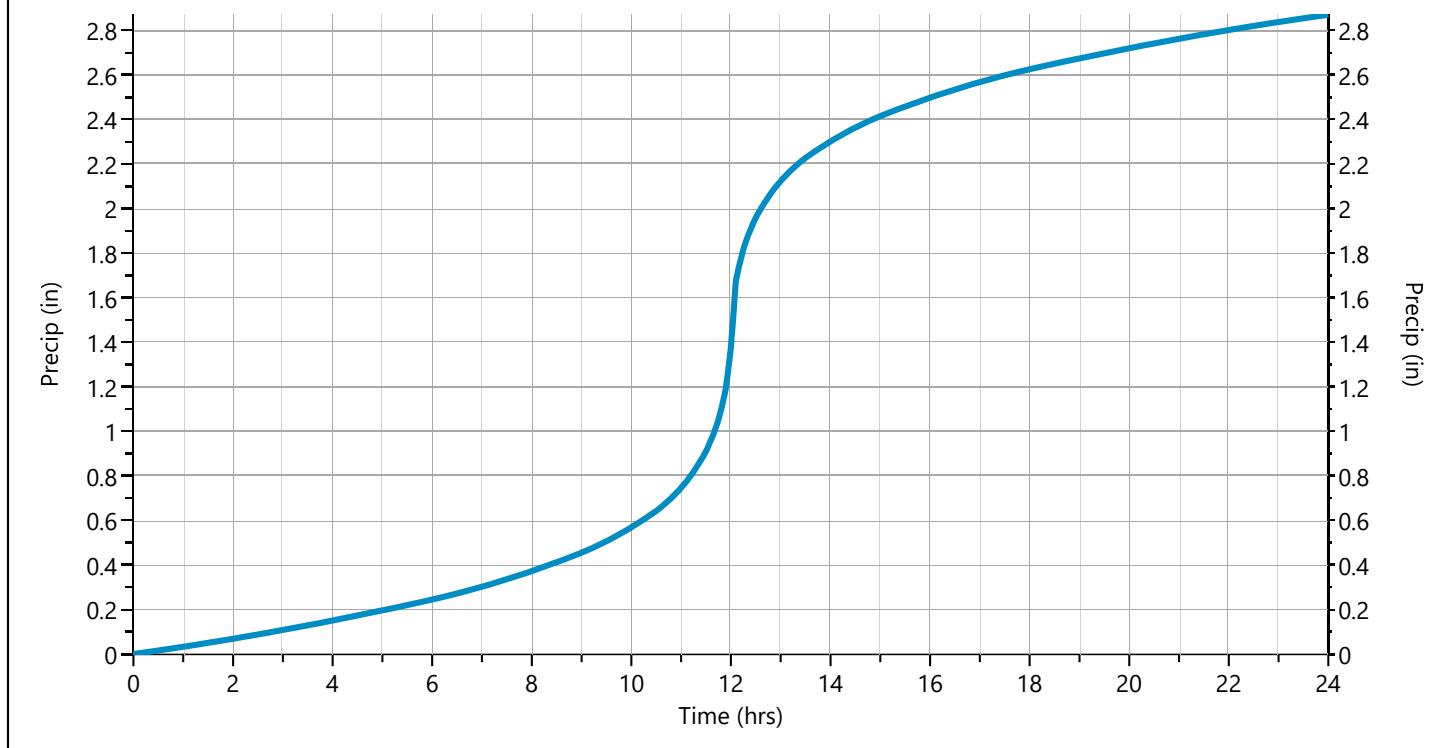
Hydrology Studio v 3.0.0.41

01-15-2026

Storm Distribution: NOAA-D, 24-hr

Storm Duration	Total Rainfall Volume (in)							
	<input checked="" type="checkbox"/> 1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
24 hrs	2.87	3.44	0.00	4.38	5.17	6.24	7.04	7.90

Incremental Rainfall Distribution, 1-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.60	0.008658	11.78	0.012499	11.97	0.029919	12.15	0.017344	12.33	0.009113
11.62	0.009112	11.80	0.012500	11.98	0.029921	12.17	0.017344	12.35	0.009112
11.63	0.009112	11.82	0.017344	12.00	0.029918	12.18	0.017345	12.37	0.009113
11.65	0.009113	11.83	0.017345	12.02	0.049922	12.20	0.017344	12.38	0.009112
11.67	0.009112	11.85	0.017344	12.03	0.049925	12.22	0.012499	12.40	0.009113
11.68	0.009113	11.87	0.017344	12.05	0.049922	12.23	0.012499	12.42	0.008658
11.70	0.009112	11.88	0.017345	12.07	0.049925	12.25	0.012499	12.43	0.008658
11.72	0.012499	11.90	0.017344	12.08	0.049922	12.27	0.012499	12.45	0.008658
11.73	0.012499	11.92	0.029920	12.10	0.049925	12.28	0.012499	12.47	0.008658
11.75	0.012499	11.93	0.029919	12.12	0.017344	12.30	0.012498	12.48	0.008658
11.77	0.012499	11.95	0.029921	12.13	0.017345	12.32	0.009112	12.50	0.008658



Hydrograph 2-yr Summary

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	EX-01SW	0.517	12.67	6,169	---		
2	NRCS Runoff	EX-02E	0.157	12.47	1,658	---		
3	NRCS Runoff	EX-03S	0.048	12.38	479	---		
4	Junction	EX-SITE	0.692	12.58	8,307	1, 2, 3		
5	NRCS Runoff	PR-01SW	3.888	12.38	22,986	---		
6	NRCS Runoff	PR-02E	0.089	12.37	798	---		
7	NRCS Runoff	PR-03S	0.422	12.23	1,960	---		
8	Junction	PR-SITE	4.301	12.37	25,744	5, 6, 7		
9	NRCS Runoff	PR-01SW-SUB-A	4.640	12.28	22,482	---		
10	NRCS Runoff	PR-01SW-SUB-B	0.204	12.57	2,088	---		
11	Pond Route	PR-01SW DET	0.122	21.78	3,582	5	28.40	17,951
12	Pond Route	PR-03S DET	0.008	18.92	299	7	27.18	1,275
13	Junction	PR-SITE-DET	0.139	21.53	4,679	6, 11, 12		
14	Pond Route	PR-01SW-SUB DET	0.104	21.20	3,100	9	28.38	17,739
15	Junction	PR-01SW-SUB	0.204	12.57	5,188	10, 14		
16	Junction	PR-SITE-SUB-DET	0.277	12.47	6,285	6, 12, 15		

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-01SW

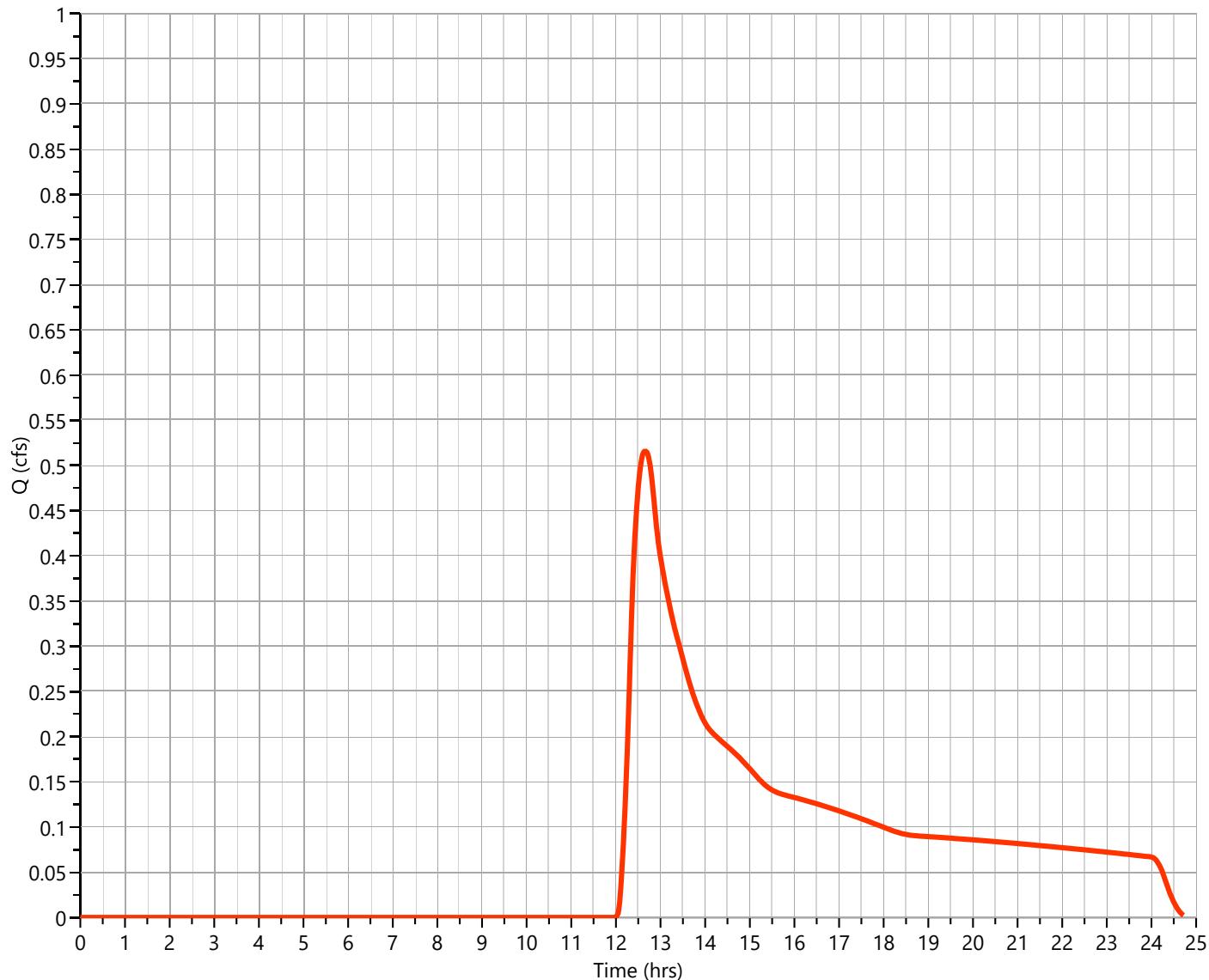
Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.517 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.67 hrs
Time Interval	= 1 min	Runoff Volume	= 6,169 cuft
Drainage Area	= 5.183 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 31.45 min
Total Rainfall	= 3.44 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
5.183	55.00	Woods
5.183	55.00	Weighted CN Method Employed

$Q_p = 0.517 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-02E

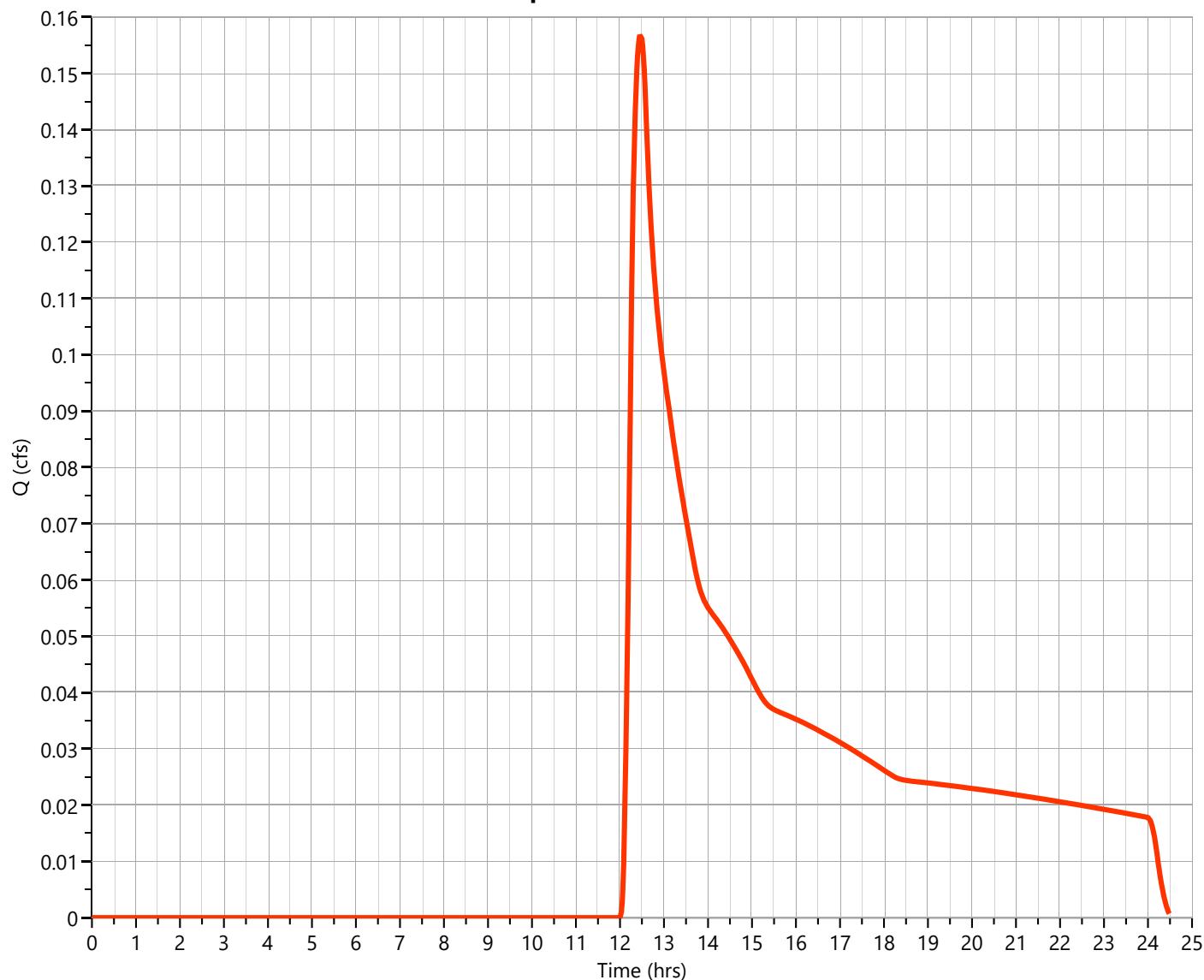
Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.157 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.47 hrs
Time Interval	= 1 min	Runoff Volume	= 1,658 cuft
Drainage Area	= 1.389 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.61 min
Total Rainfall	= 3.44 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
1.389	55.00	Woods
1.389	55.00	Weighted CN Method Employed

$Q_p = 0.157 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-03S

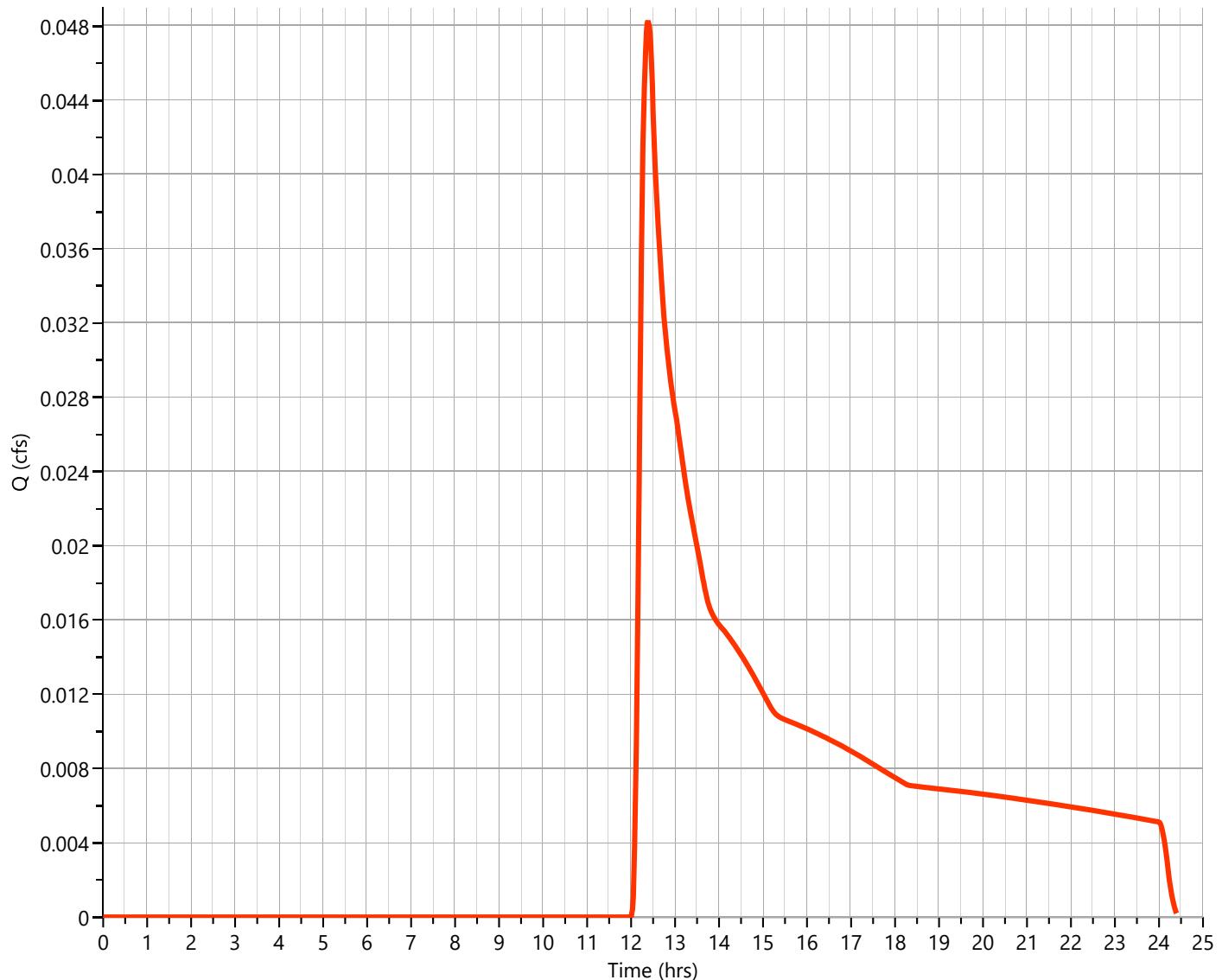
Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.048 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.38 hrs
Time Interval	= 1 min	Runoff Volume	= 479 cuft
Drainage Area	= 0.41 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.32 min
Total Rainfall	= 3.44 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.41	55.00	Woods
0.41	55.00	Weighted CN Method Employed

Q_p = 0.048 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

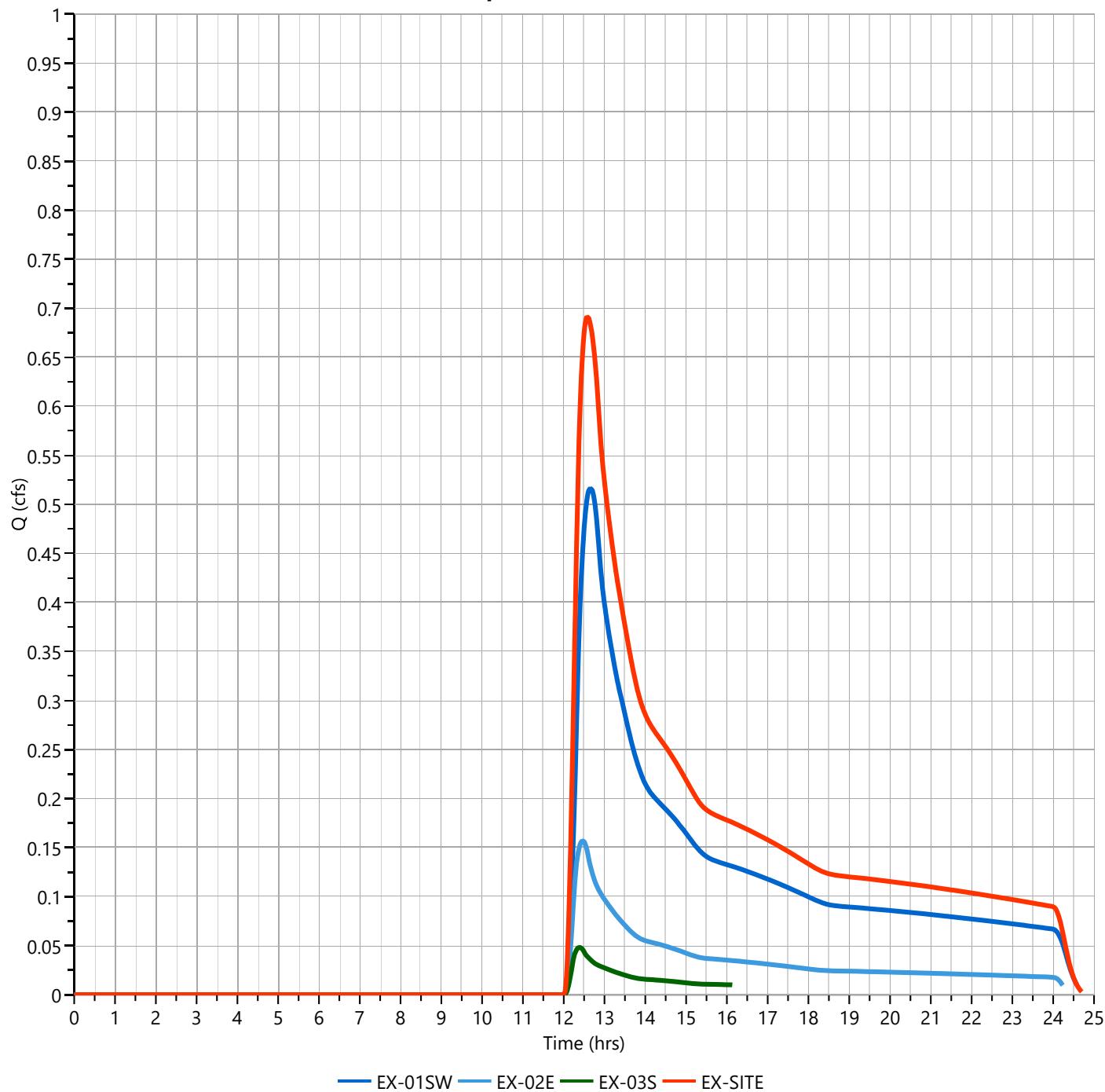
01-15-2026

EX-SITE

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 0.692 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.58 hrs
Time Interval	= 1 min	Hydrograph Volume	= 8,307 cuft
Inflow Hydrographs	= 1, 2, 3	Total Contrib. Area	= 6.982 ac

Q_p = 0.692 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW

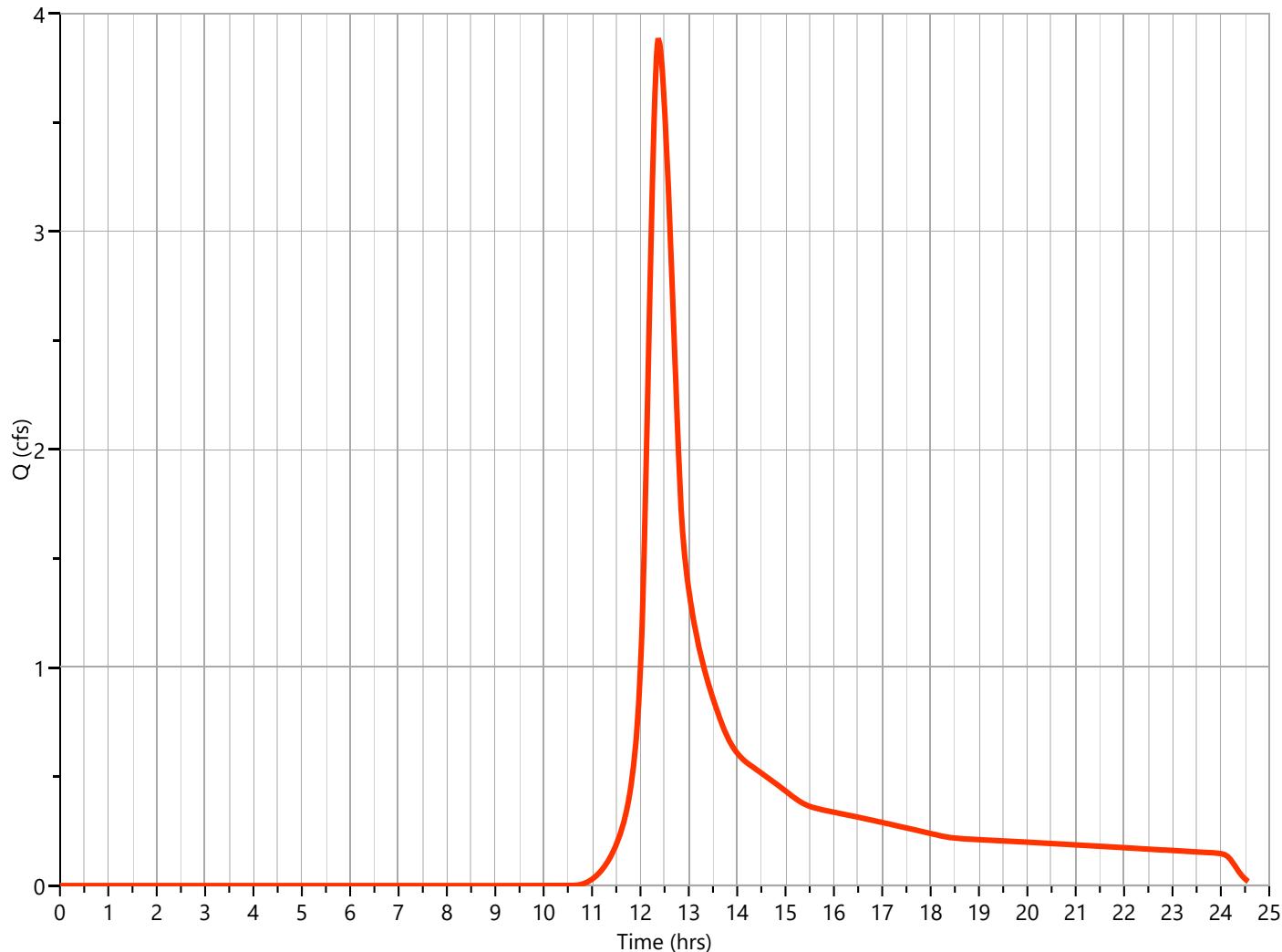
Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 3.888 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.38 hrs
Time Interval	= 1 min	Runoff Volume	= 22,986 cuft
Drainage Area	= 5.777 ac	Curve Number	= 72.25*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 3.44 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.378	61.00	Landscape
1.263	58.00	Conservation
1.099	55.00	Woods
5.777	72.25	Weighted CN Method Employed

Qp = 3.888 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-02E

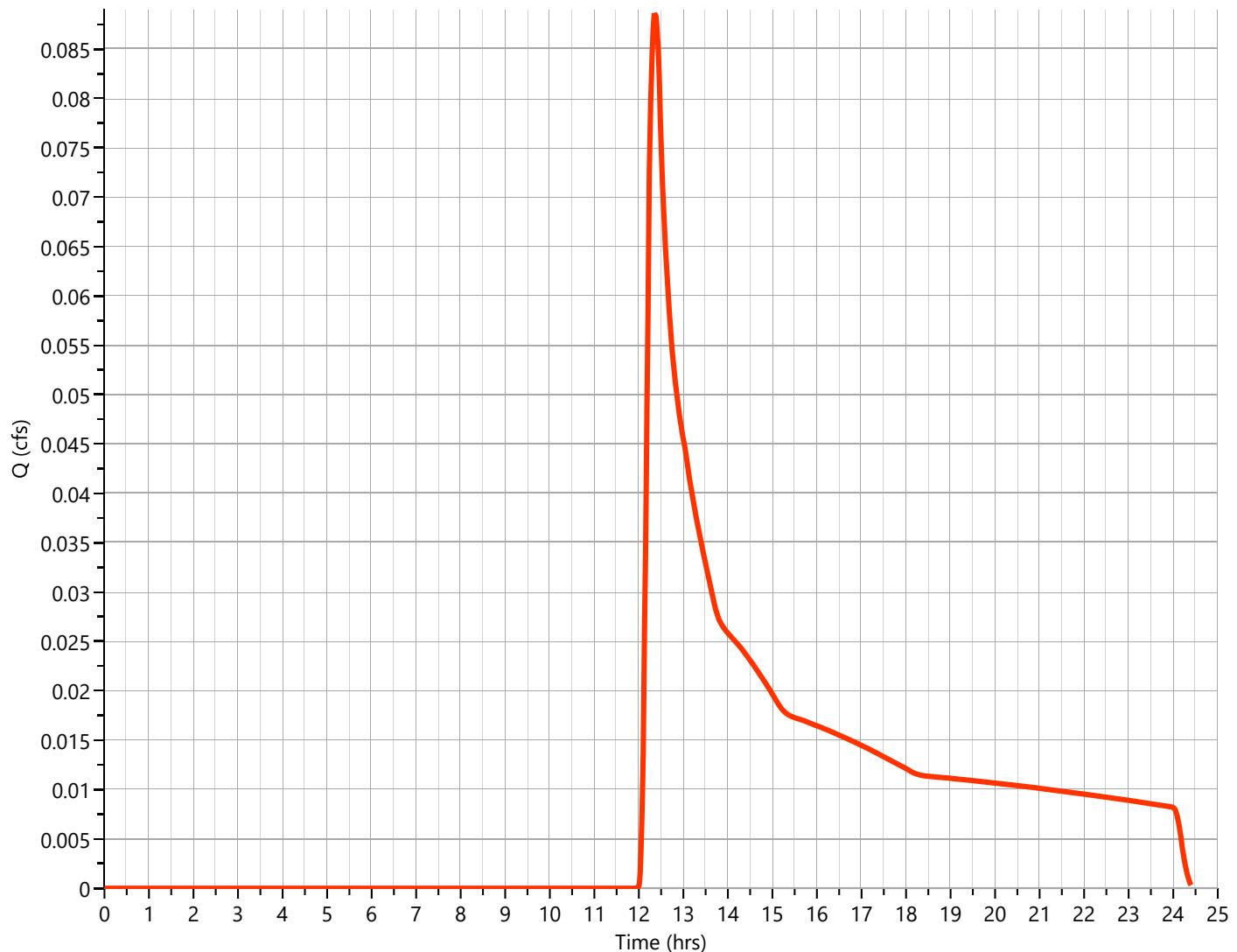
Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.089 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.37 hrs
Time Interval	= 1 min	Runoff Volume	= 798 cuft
Drainage Area	= 0.625 ac	Curve Number	= 55.90*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.27 min
Total Rainfall	= 3.44 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.009	61.00	Landscape
0.17	58.00	Conservation
0.446	55.00	Woods
0.625	55.90	Weighted CN Method Employed

Q_p = 0.089 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S

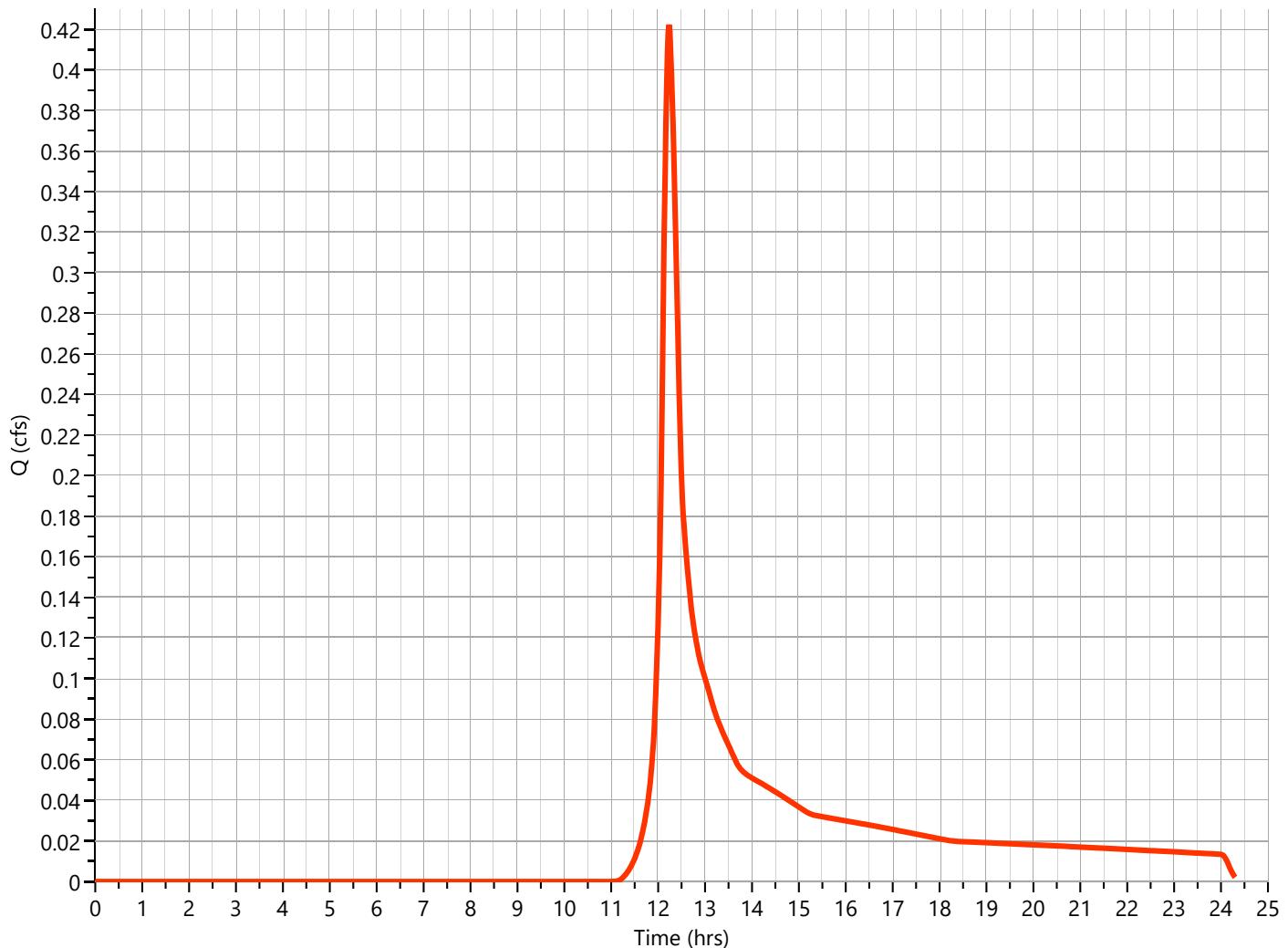
Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.422 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.23 hrs
Time Interval	= 1 min	Runoff Volume	= 1,960 cuft
Drainage Area	= 0.581 ac	Curve Number	= 68.99*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.21 min
Total Rainfall	= 3.44 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.156	98.00	Impervious
0.136	61.00	Landscape
0.201	58.00	Conservation
0.088	55.00	Woods
0.581	68.99	Weighted CN Method Employed

Qp = 0.422 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

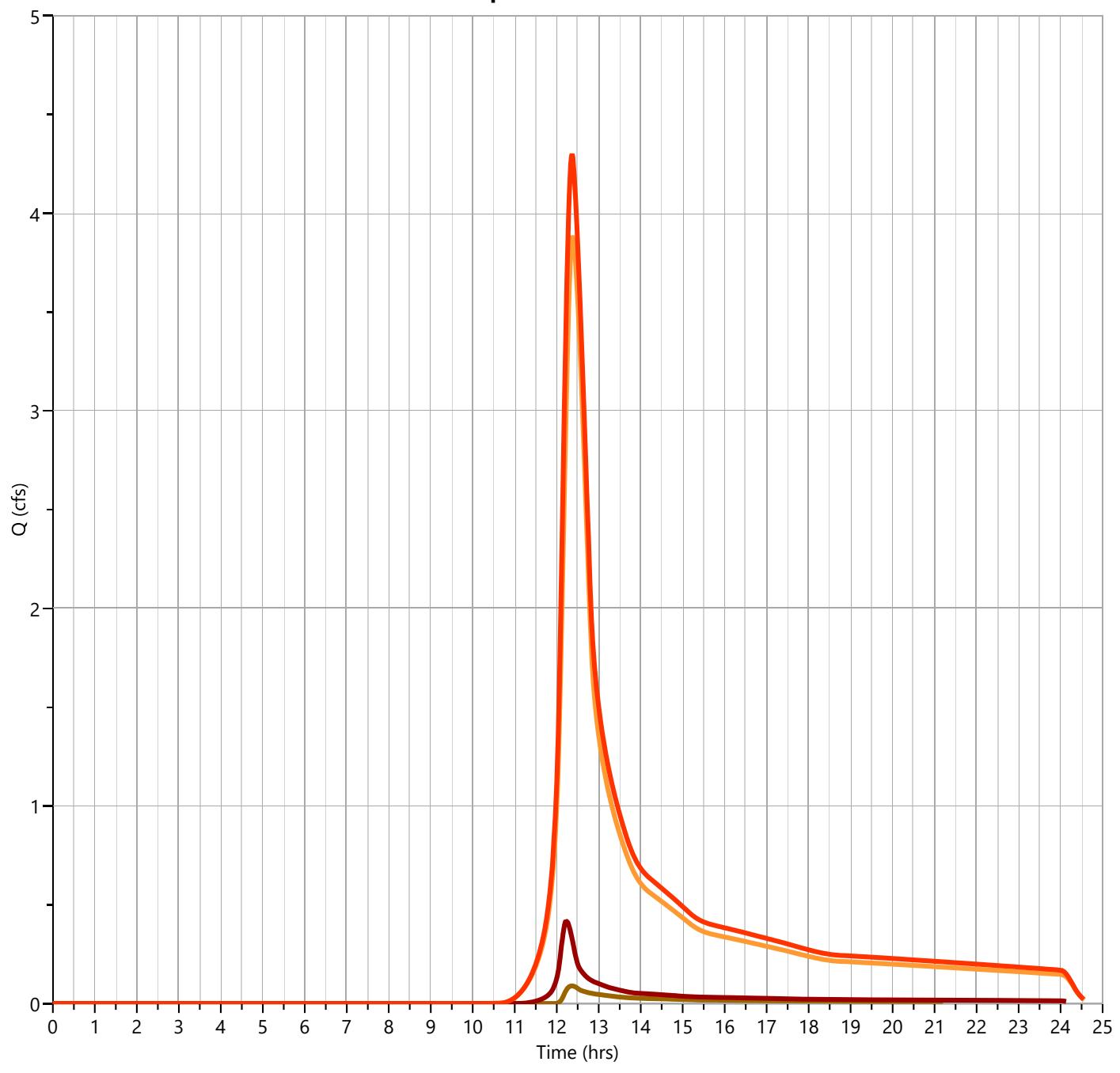
01-15-2026

PR-SITE

Hyd. No. 8

Hydrograph Type	= Junction	Peak Flow	= 4.301 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.37 hrs
Time Interval	= 1 min	Hydrograph Volume	= 25,744 cuft
Inflow Hydrographs	= 5, 6, 7	Total Contrib. Area	= 6.983 ac

Qp = 4.301 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-A

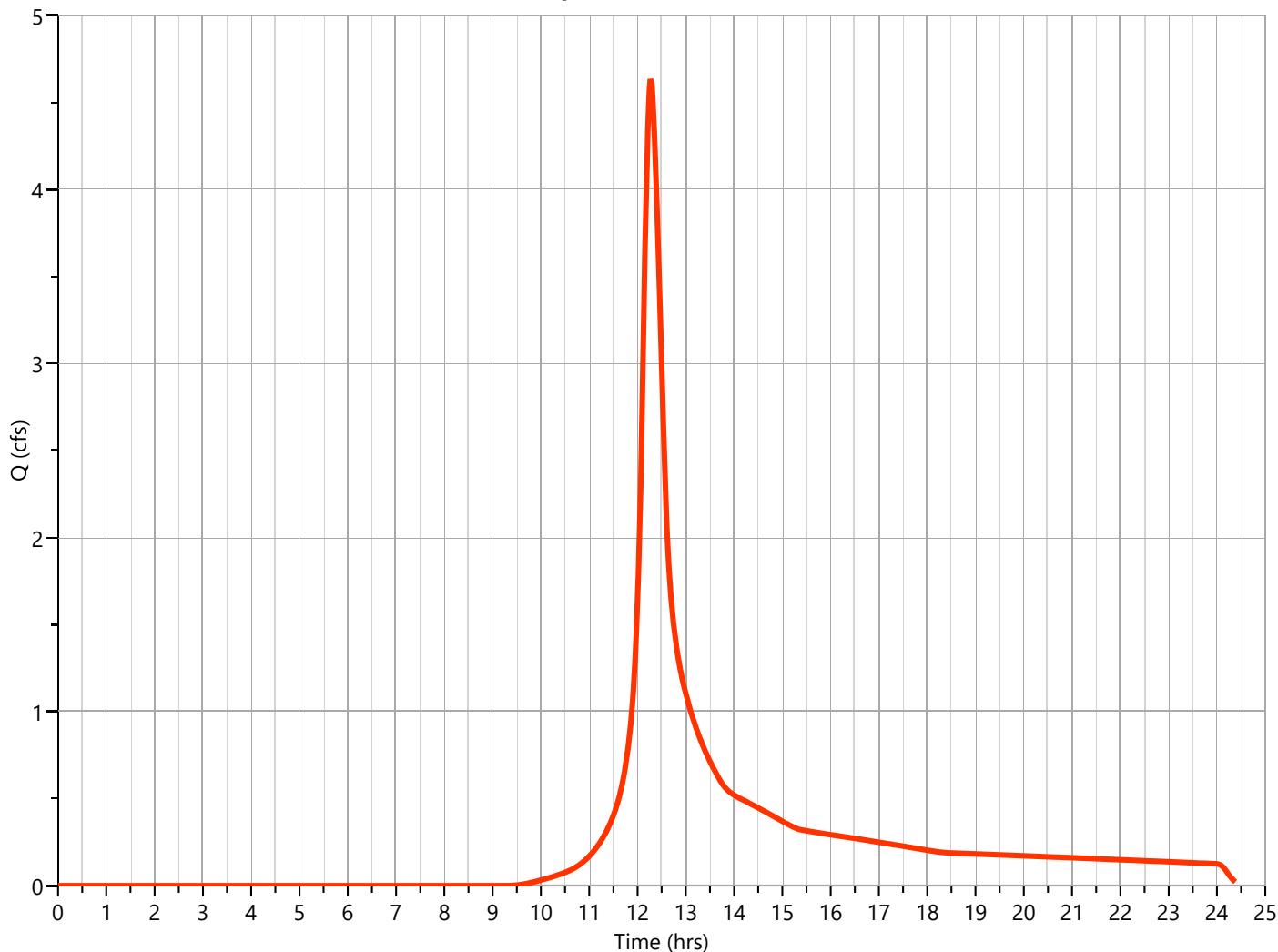
Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 4.640 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.28 hrs
Time Interval	= 1 min	Runoff Volume	= 22,482 cuft
Drainage Area	= 4.266 ac	Curve Number	= 77.79*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.53 min
Total Rainfall	= 3.44 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.213	61.00	Landscape
0.786	58.00	Conservation
0.23	55.00	Woods
4.266	77.79	Weighted CN Method Employed

Qp = 4.640 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-B

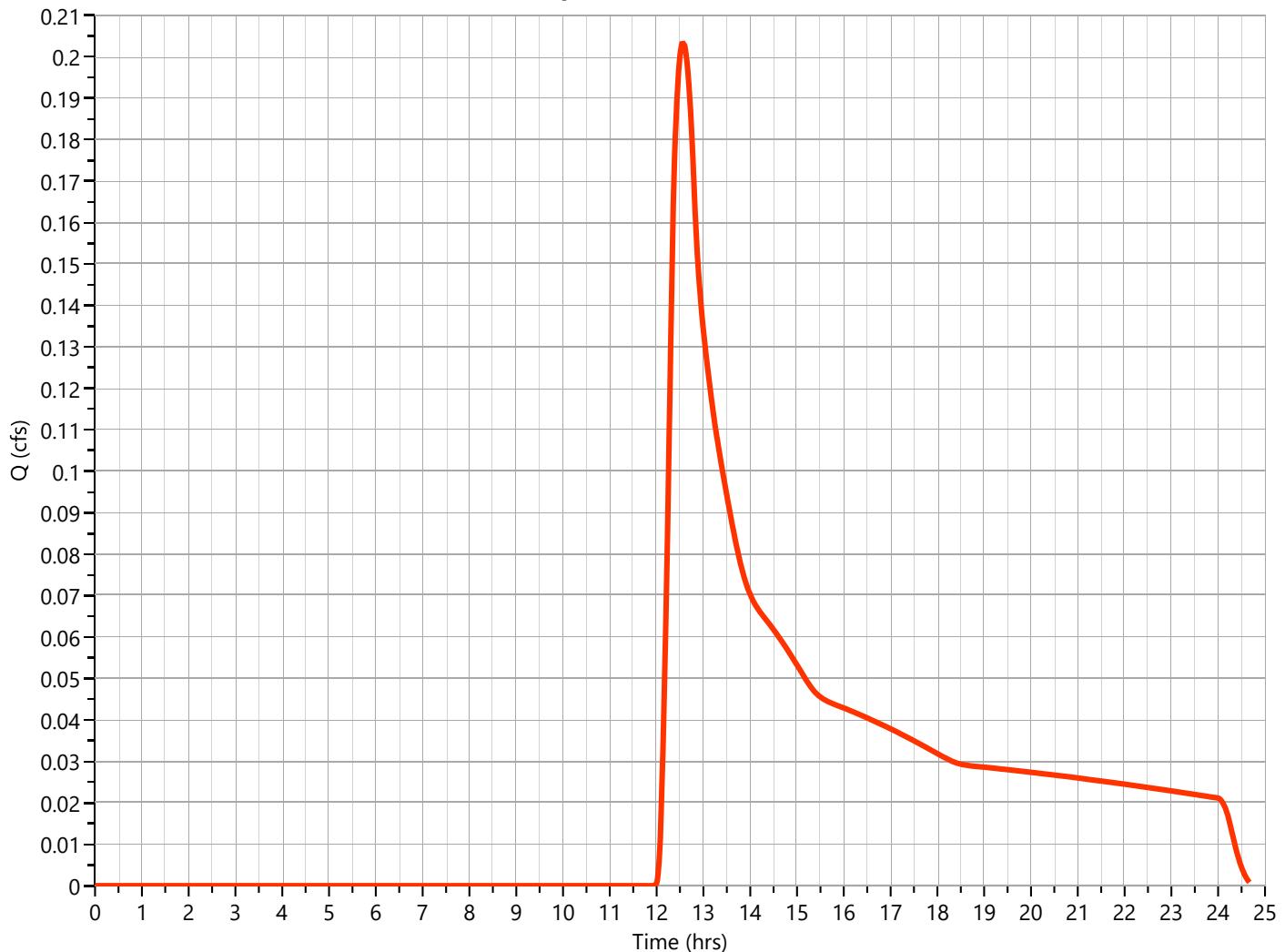
Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.204 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.57 hrs
Time Interval	= 1 min	Runoff Volume	= 2,088 cuft
Drainage Area	= 1.511 ac	Curve Number	= 56.63*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 3.44 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.001	98.00	Impervious
0.164	61.00	Landscape
0.477	58.00	Conservation
0.869	55.00	Woods
1.511	56.63	Weighted CN Method Employed

Qp = 0.204 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW DET

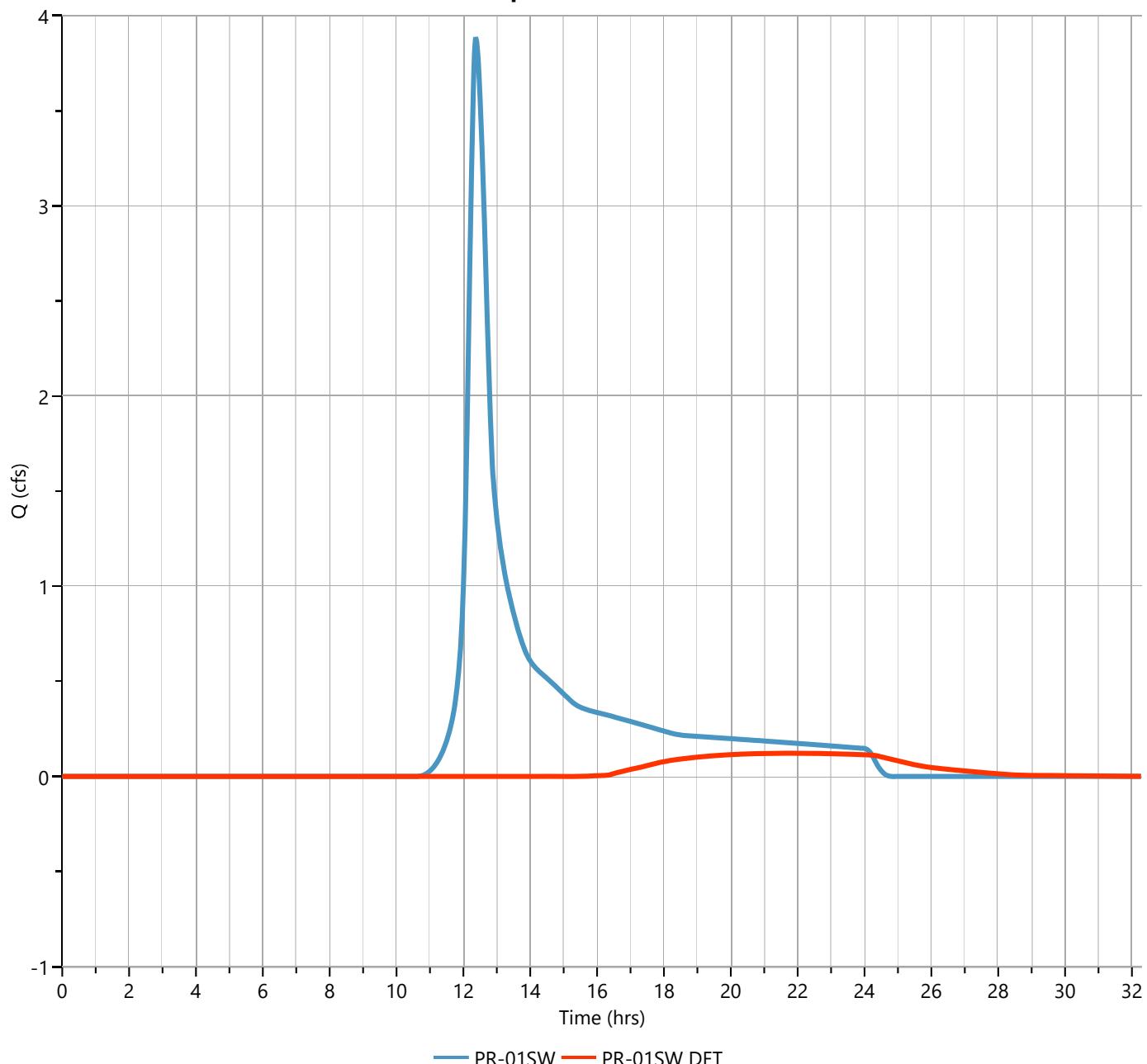
Hyd. No. 11

Hydrograph Type	= Pond Route	Peak Flow	= 0.122 cfs
Storm Frequency	= 2-yr	Time to Peak	= 21.78 hrs
Time Interval	= 1 min	Hydrograph Volume	= 3,582 cuft
Inflow Hydrograph	= 5 - PR-01SW	Max. Elevation	= 28.40 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 17,951 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 7.08 hrs

$Q_p = 0.122 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S DET

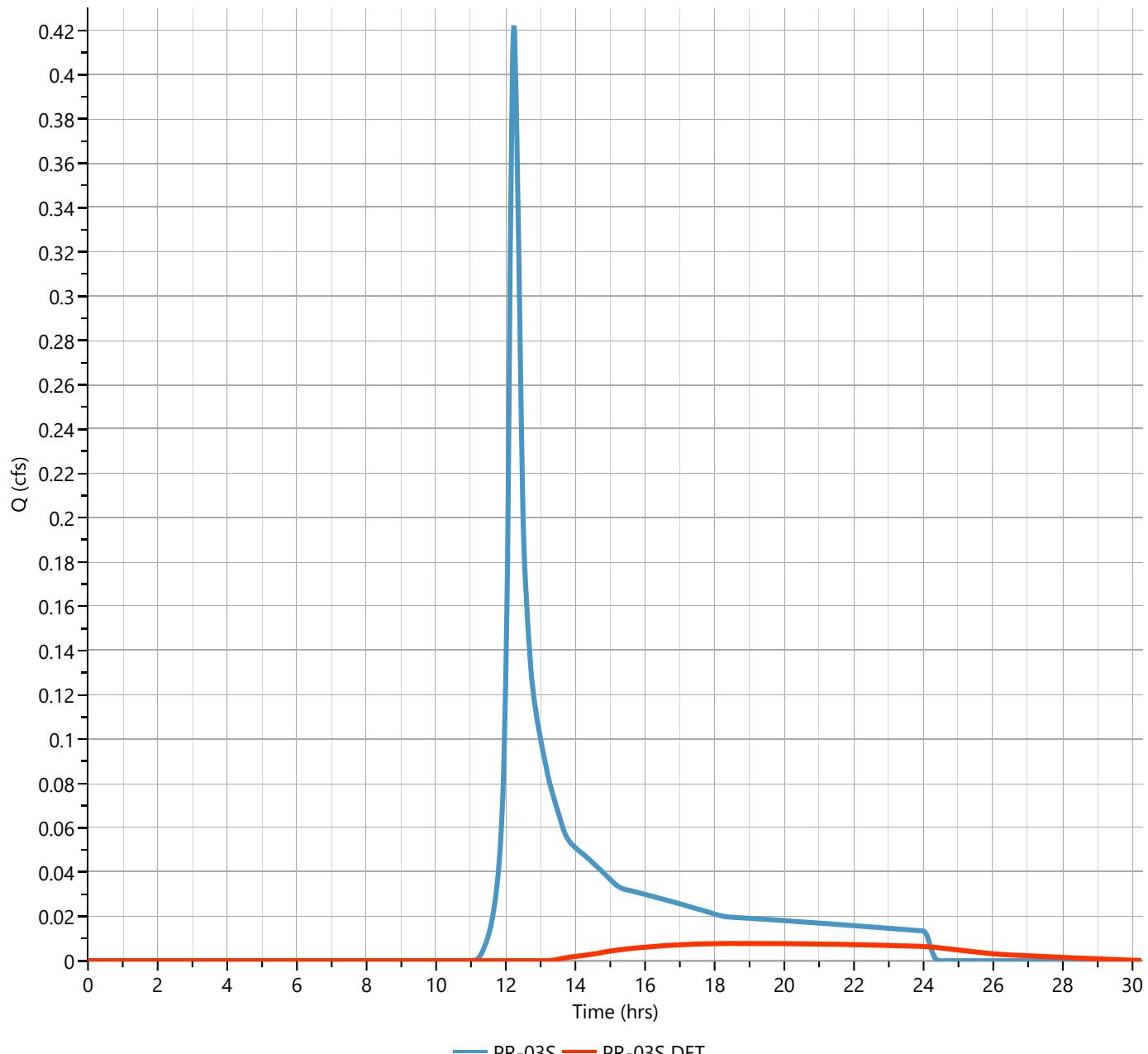
Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.008 cfs
Storm Frequency	= 2-yr	Time to Peak	= 18.92 hrs
Time Interval	= 1 min	Hydrograph Volume	= 299 cuft
Inflow Hydrograph	= 7 - PR-03S	Max. Elevation	= 27.18 ft
Pond Name	= PR-03S RAIN GARDEN	Max. Storage	= 1,275 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 5.65 hrs

$Q_p = 0.008 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

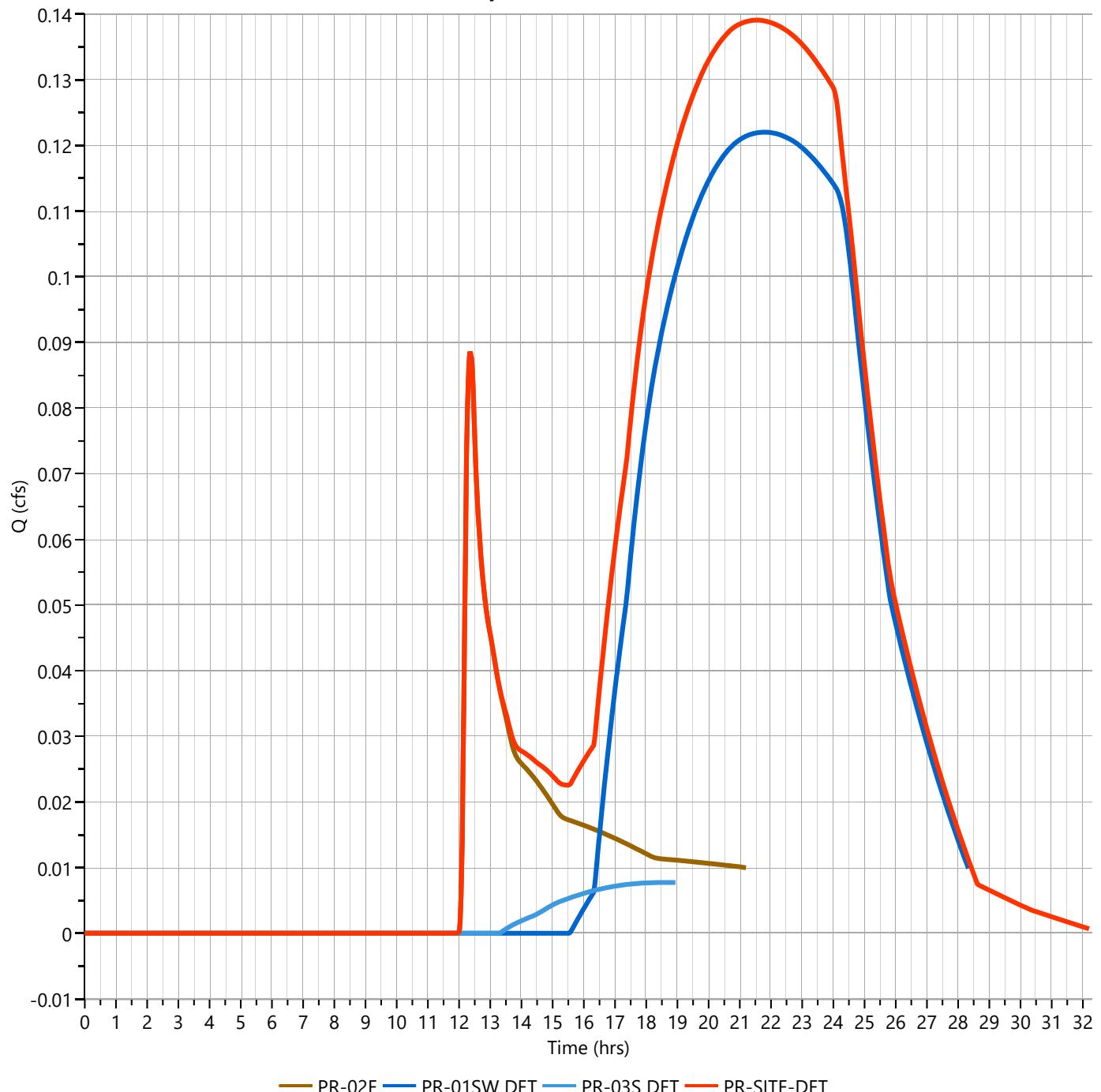
01-15-2026

PR-SITE-DET

Hyd. No. 13

Hydrograph Type	= Junction	Peak Flow	= 0.139 cfs
Storm Frequency	= 2-yr	Time to Peak	= 21.53 hrs
Time Interval	= 1 min	Hydrograph Volume	= 4,679 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Qp = 0.139 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB DET

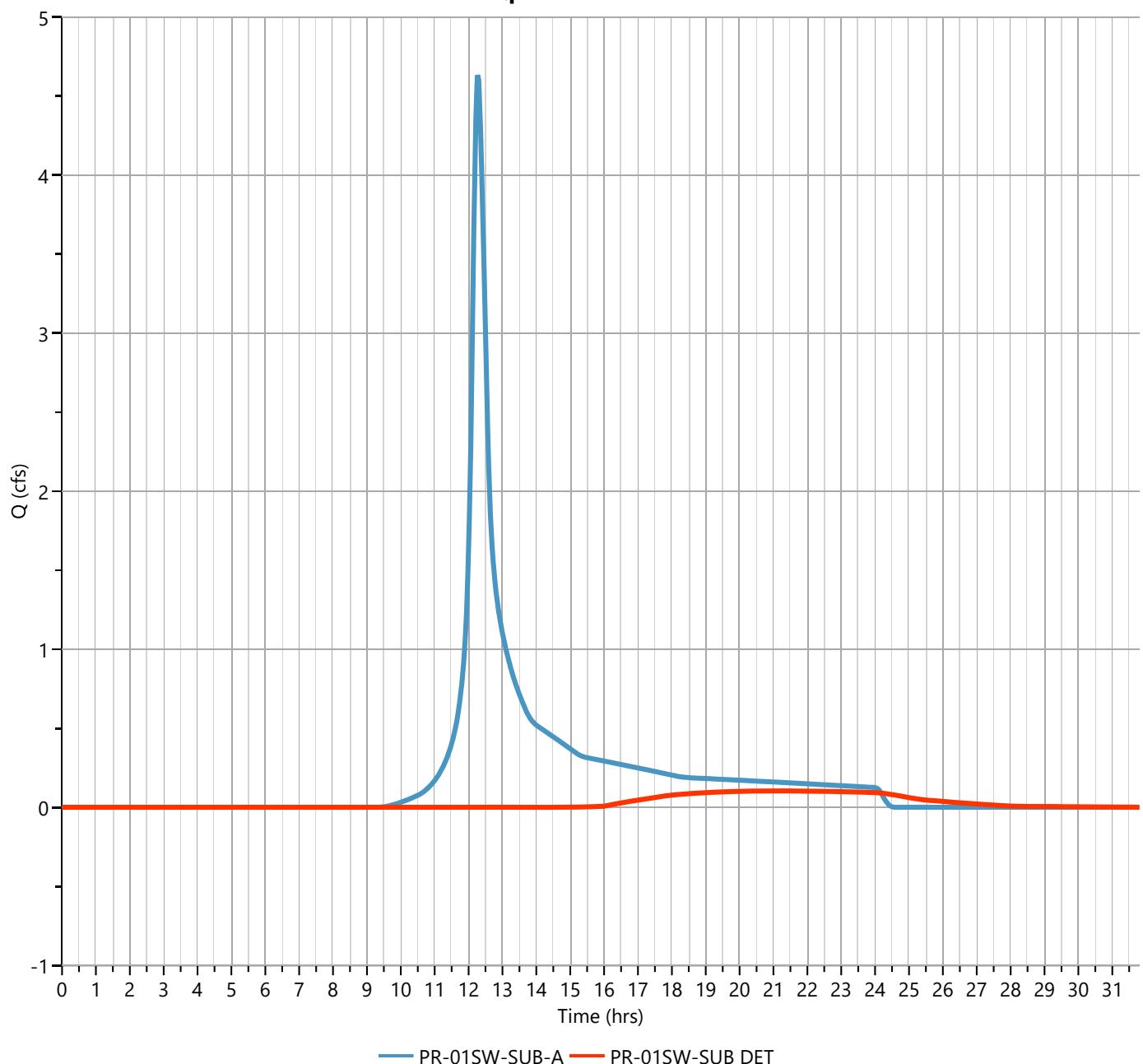
Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 0.104 cfs
Storm Frequency	= 2-yr	Time to Peak	= 21.20 hrs
Time Interval	= 1 min	Hydrograph Volume	= 3,100 cuft
Inflow Hydrograph	= 9 - PR-01SW-SUB-A	Max. Elevation	= 28.38 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 17,739 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 7.16 hrs

Q_p = 0.104 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

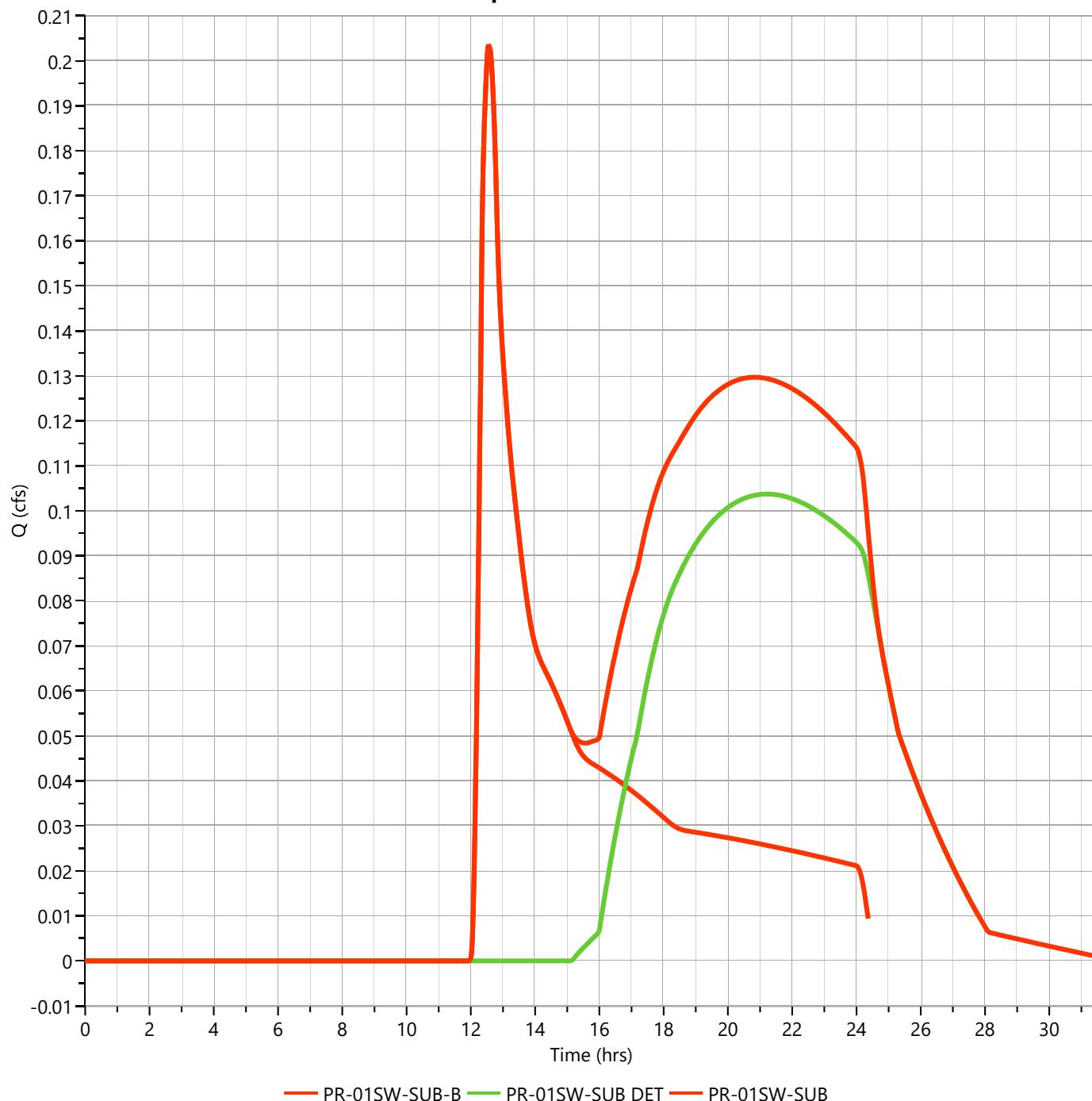
01-15-2026

PR-01SW-SUB

Hyd. No. 15

Hydrograph Type	= Junction	Peak Flow	= 0.204 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.57 hrs
Time Interval	= 1 min	Hydrograph Volume	= 5,188 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 1.511 ac

Q_p = 0.204 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

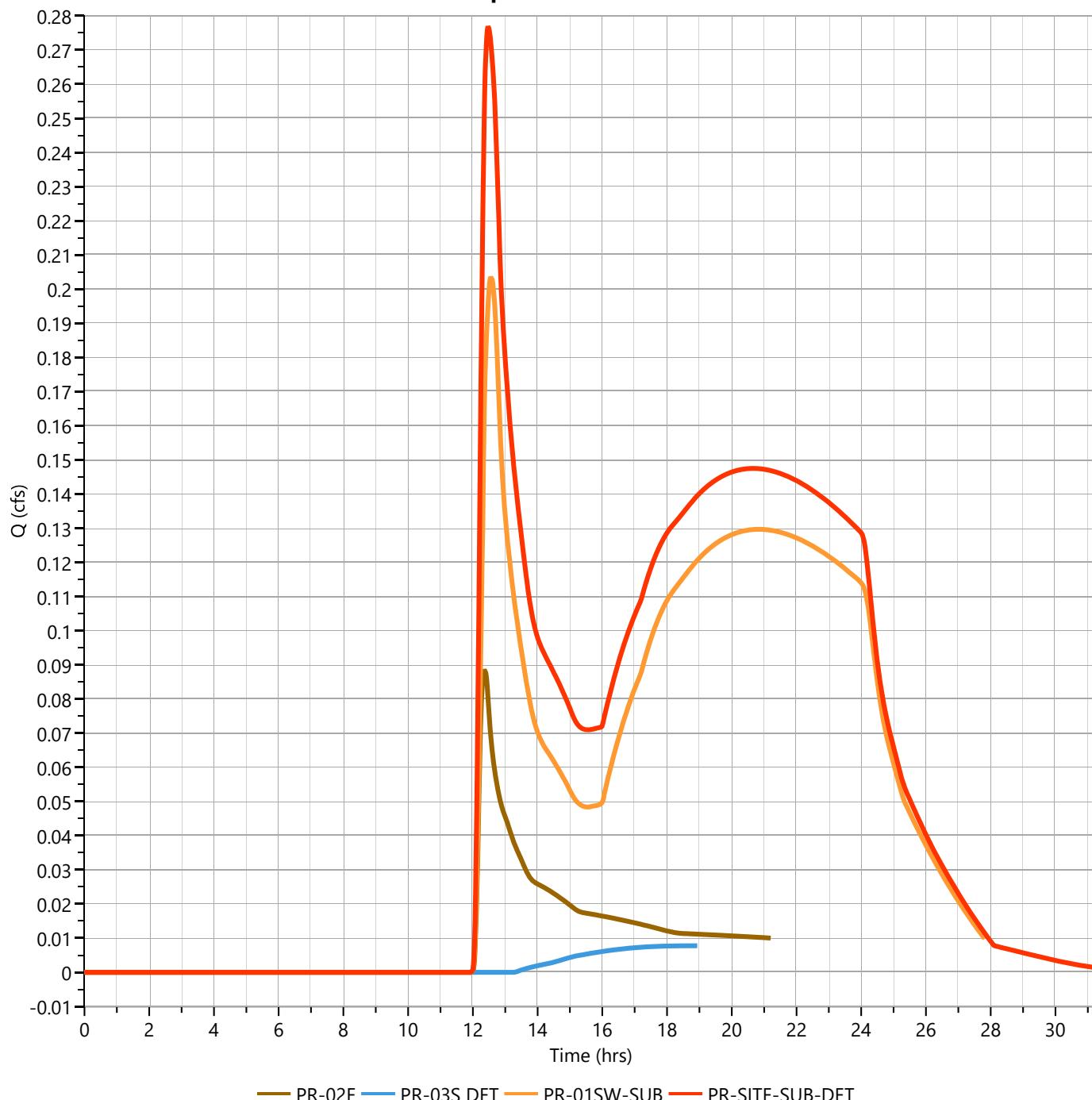
01-15-2026

PR-SITE-SUB-DET

Hyd. No. 16

Hydrograph Type	= Junction	Peak Flow	= 0.277 cfs
Storm Frequency	= 2-yr	Time to Peak	= 12.47 hrs
Time Interval	= 1 min	Hydrograph Volume	= 6,285 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Q_p = 0.277 cfs



Design Storm Report

Custom Storm filename:

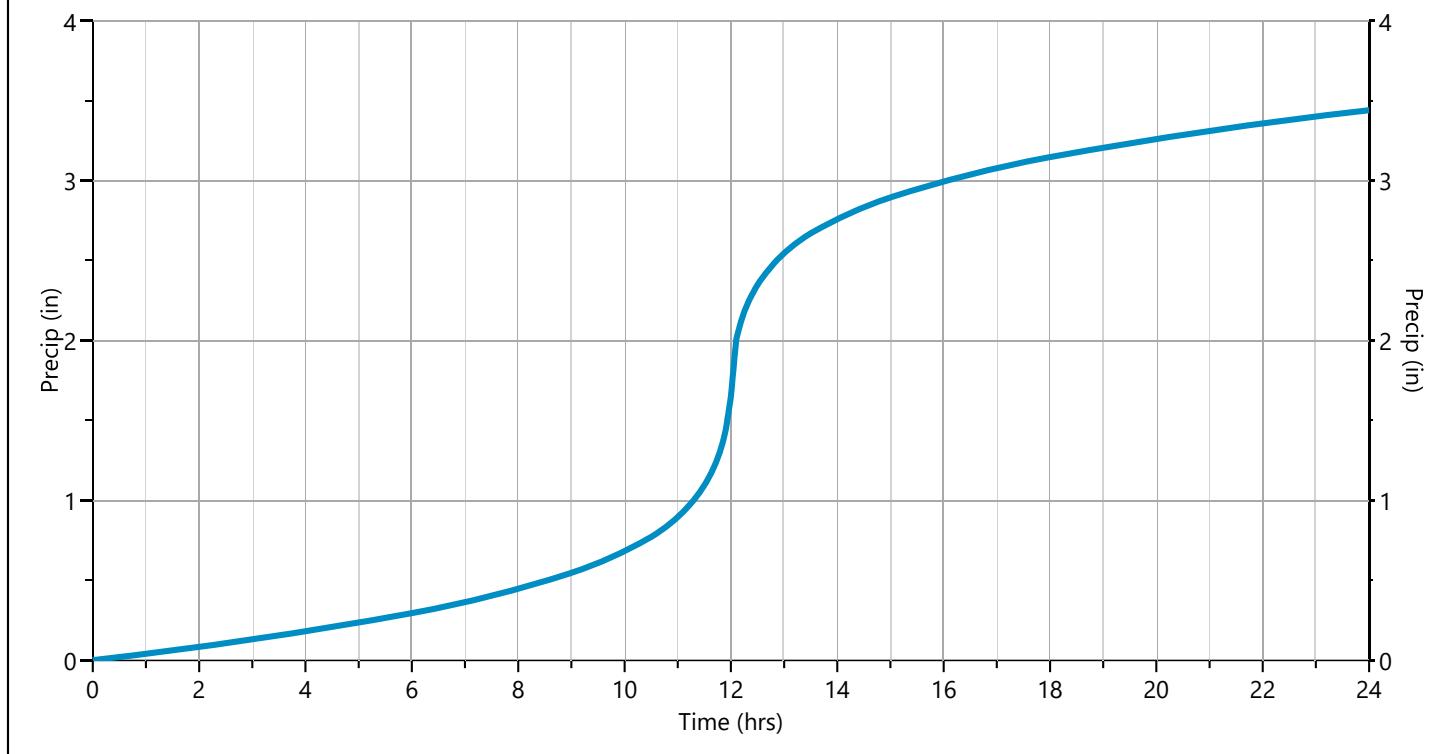
Hydrology Studio v 3.0.0.41

01-15-2026

Storm Distribution: NOAA-D, 24-hr

Storm Duration	Total Rainfall Volume (in)							
	1-yr	✓ 2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
24 hrs	2.87	3.44	0.00	4.38	5.17	6.24	7.04	7.90

Incremental Rainfall Distribution, 2-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.60	0.010377	11.78	0.014981	11.97	0.035861	12.15	0.020789	12.33	0.010922
11.62	0.010922	11.80	0.014982	11.98	0.035863	12.17	0.020788	12.35	0.010921
11.63	0.010922	11.82	0.020789	12.00	0.035860	12.18	0.020790	12.37	0.010922
11.65	0.010922	11.83	0.020790	12.02	0.059837	12.20	0.020788	12.38	0.010922
11.67	0.010922	11.85	0.020789	12.03	0.059841	12.22	0.014981	12.40	0.010923
11.68	0.010922	11.87	0.020788	12.05	0.059837	12.23	0.014981	12.42	0.010377
11.70	0.010921	11.88	0.020790	12.07	0.059841	12.25	0.014982	12.43	0.010378
11.72	0.014981	11.90	0.020789	12.08	0.059837	12.27	0.014981	12.45	0.010377
11.73	0.014982	11.92	0.035863	12.10	0.059841	12.28	0.014982	12.47	0.010377
11.75	0.014981	11.93	0.035861	12.12	0.020789	12.30	0.014981	12.48	0.010378
11.77	0.014982	11.95	0.035863	12.13	0.020790	12.32	0.010922	12.50	0.010377



Hydrograph 5-yr Summary

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	EX-01SW	1.598	12.50	13,048	---		
2	NRCS Runoff	EX-02E	0.520	12.33	3,507	---		
3	NRCS Runoff	EX-03S	0.166	12.27	1,014	---		
4	Junction	EX-SITE	2.191	12.42	17,569	1, 2, 3		
5	NRCS Runoff	PR-01SW	6.448	12.37	36,707	---		
6	NRCS Runoff	PR-02E	0.281	12.27	1,647	---		
7	NRCS Runoff	PR-03S	0.737	12.23	3,244	---		
8	Junction	PR-SITE	7.263	12.35	41,599	5, 6, 7		
9	NRCS Runoff	PR-01SW-SUB-A	7.105	12.27	34,038	---		
10	NRCS Runoff	PR-01SW-SUB-B	0.573	12.43	4,235	---		
11	Pond Route	PR-01SW DET	0.366	16.92	16,283	5	29.08	23,428
12	Pond Route	PR-03S DET	0.037	15.30	1,374	7	27.50	1,858
13	Junction	PR-SITE-DET	0.429	16.22	19,304	6, 11, 12		
14	Pond Route	PR-01SW-SUB DET	0.334	16.28	13,811	9	28.95	22,294
15	Junction	PR-01SW-SUB	0.573	12.43	18,046	10, 14		
16	Junction	PR-SITE-SUB-DET	0.814	12.38	21,068	6, 12, 15		

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-01SW

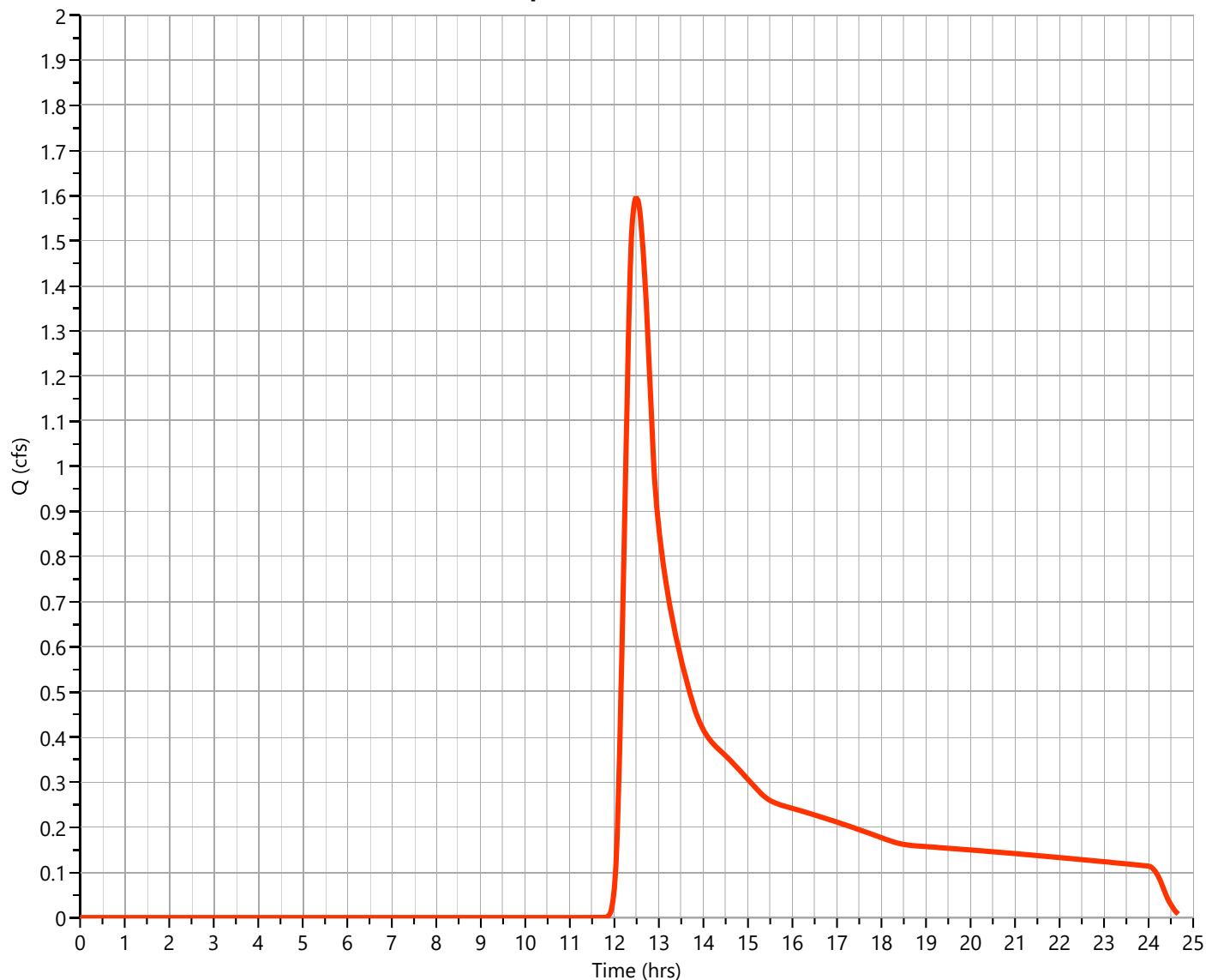
Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.598 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.50 hrs
Time Interval	= 1 min	Runoff Volume	= 13,048 cuft
Drainage Area	= 5.183 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 31.45 min
Total Rainfall	= 4.38 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
5.183	55.00	Woods
5.183	55.00	Weighted CN Method Employed

$Q_p = 1.598 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-02E

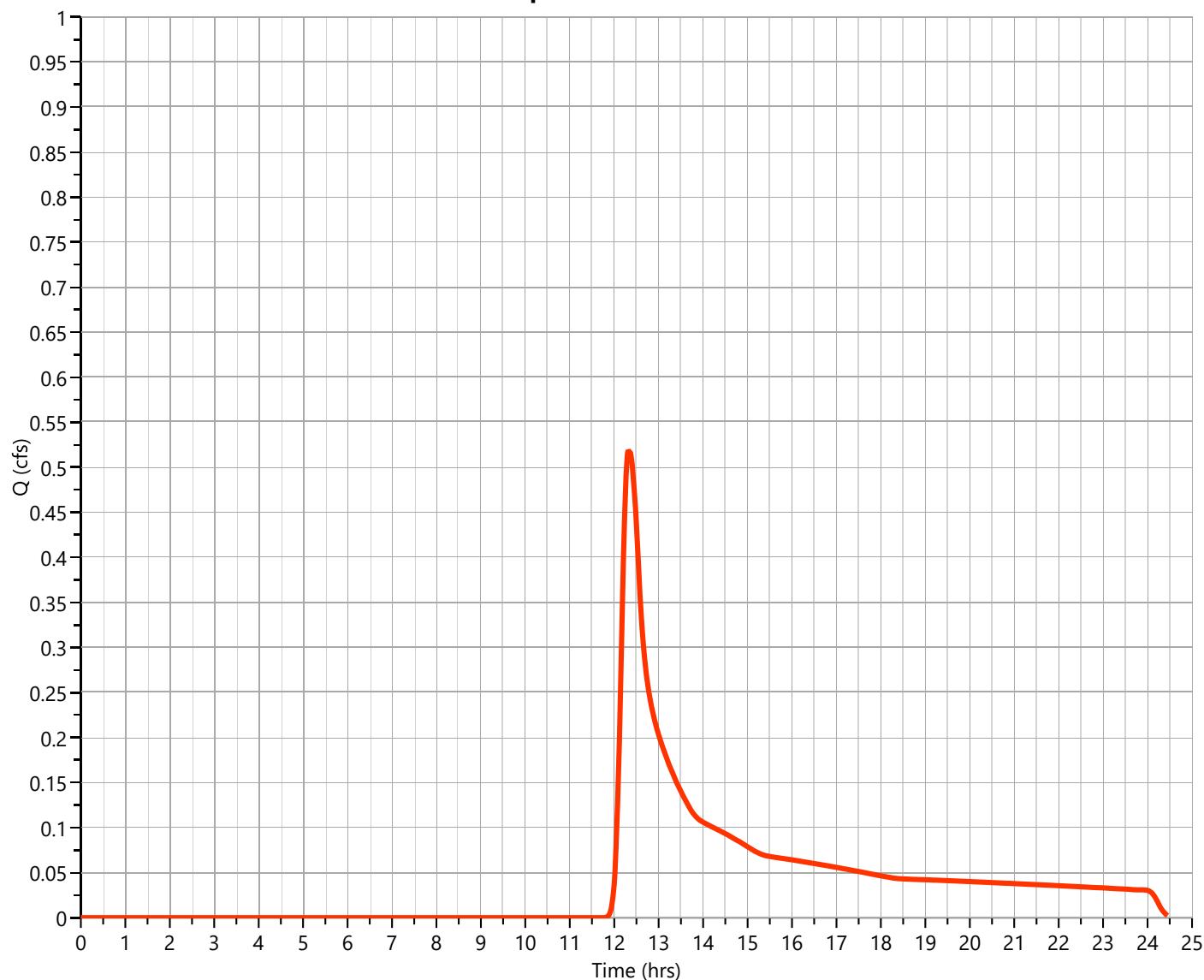
Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.520 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.33 hrs
Time Interval	= 1 min	Runoff Volume	= 3,507 cuft
Drainage Area	= 1.389 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.61 min
Total Rainfall	= 4.38 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
1.389	55.00	Woods
1.389	55.00	Weighted CN Method Employed

$Q_p = 0.520 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-03S

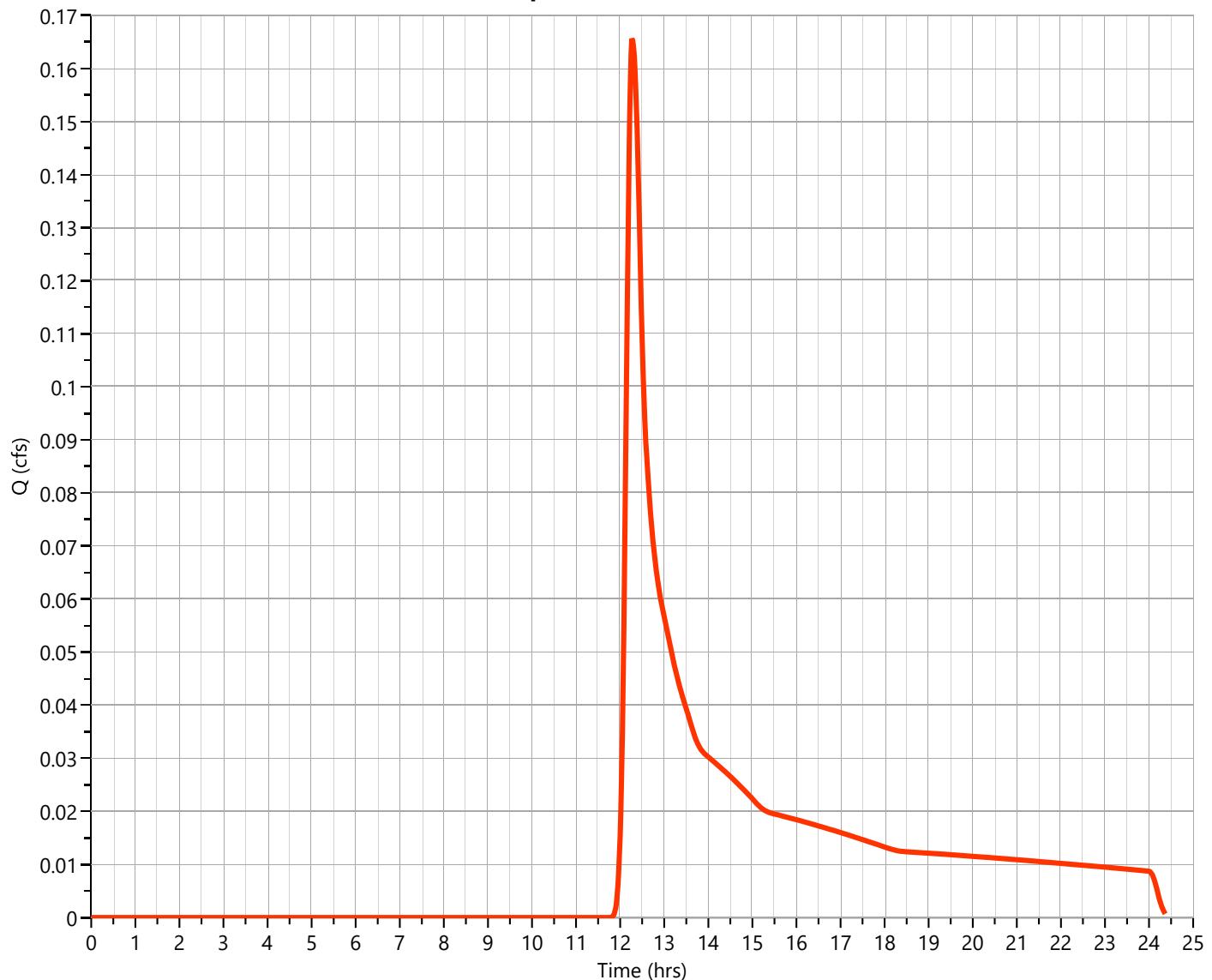
Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.166 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.27 hrs
Time Interval	= 1 min	Runoff Volume	= 1,014 cuft
Drainage Area	= 0.41 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.32 min
Total Rainfall	= 4.38 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.41	55.00	Woods
0.41	55.00	Weighted CN Method Employed

$Q_p = 0.166 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

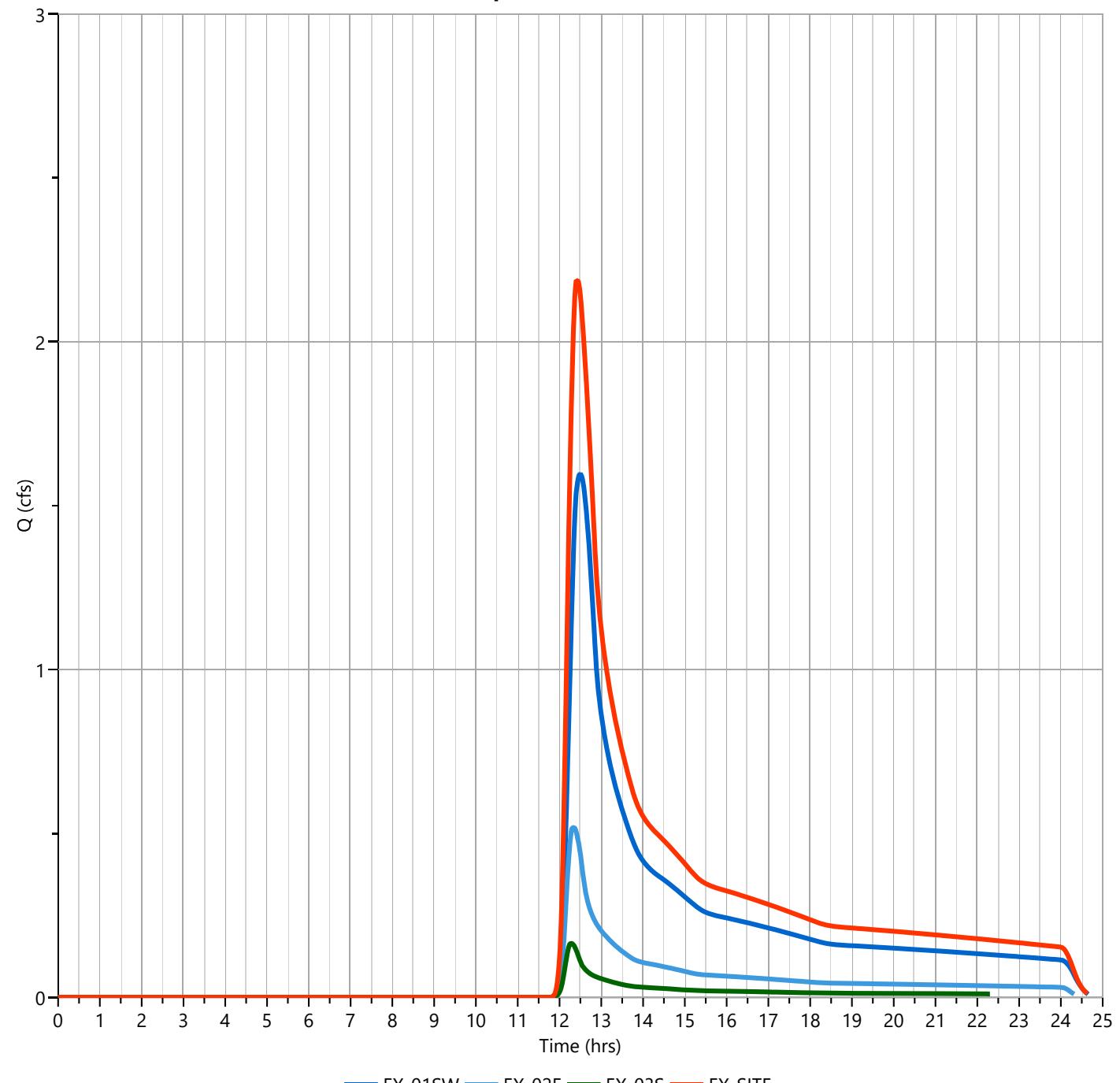
01-15-2026

EX-SITE

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 2.191 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.42 hrs
Time Interval	= 1 min	Hydrograph Volume	= 17,569 cuft
Inflow Hydrographs	= 1, 2, 3	Total Contrib. Area	= 6.982 ac

Qp = 2.191 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW

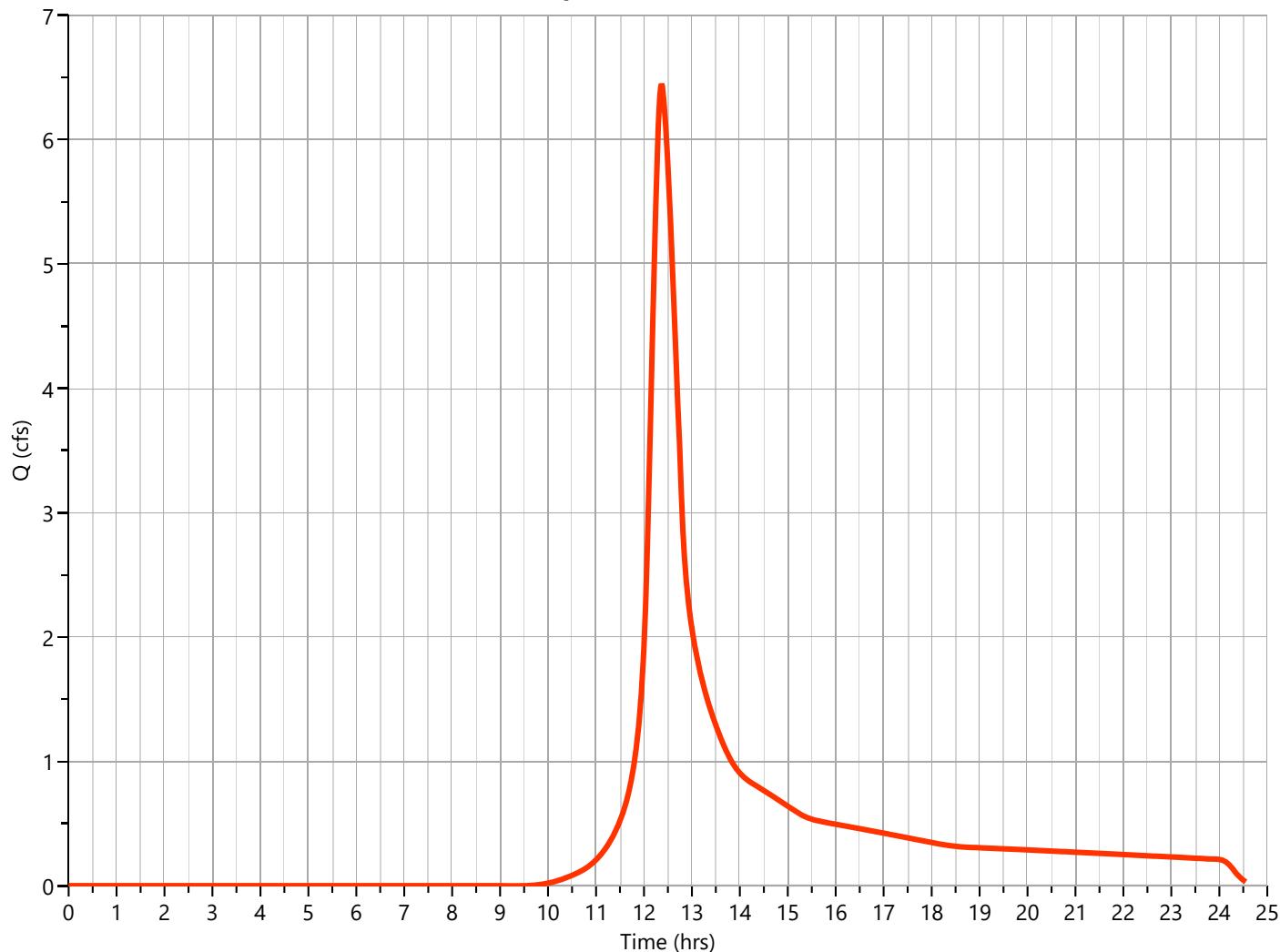
Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 6.448 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.37 hrs
Time Interval	= 1 min	Runoff Volume	= 36,707 cuft
Drainage Area	= 5.777 ac	Curve Number	= 72.25*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 4.38 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.378	61.00	Landscape
1.263	58.00	Conservation
1.099	55.00	Woods
5.777	72.25	Weighted CN Method Employed

Qp = 6.448 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-02E

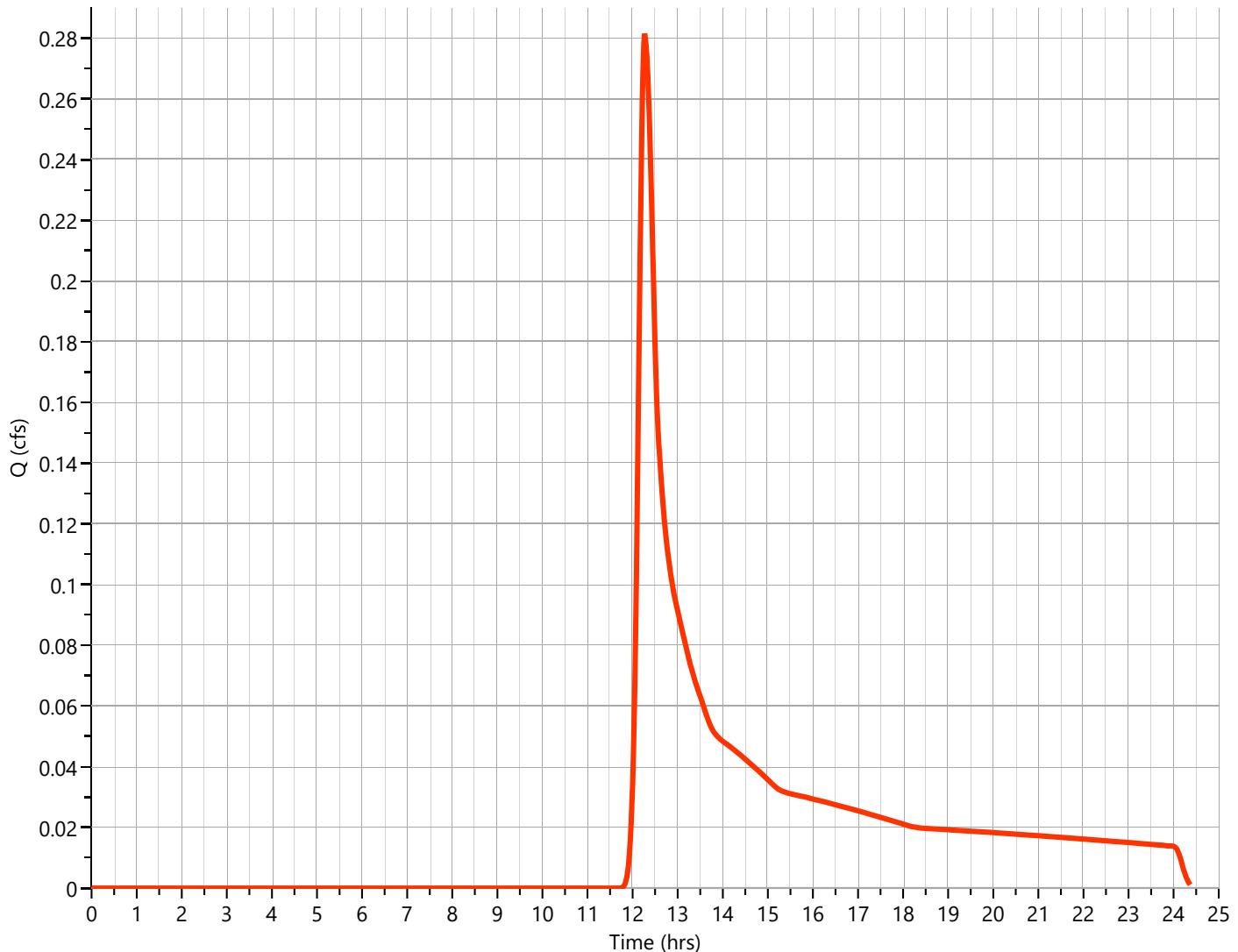
Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.281 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.27 hrs
Time Interval	= 1 min	Runoff Volume	= 1,647 cuft
Drainage Area	= 0.625 ac	Curve Number	= 55.90*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.27 min
Total Rainfall	= 4.38 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.009	61.00	Landscape
0.17	58.00	Conservation
0.446	55.00	Woods
0.625	55.90	Weighted CN Method Employed

Qp = 0.281 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S

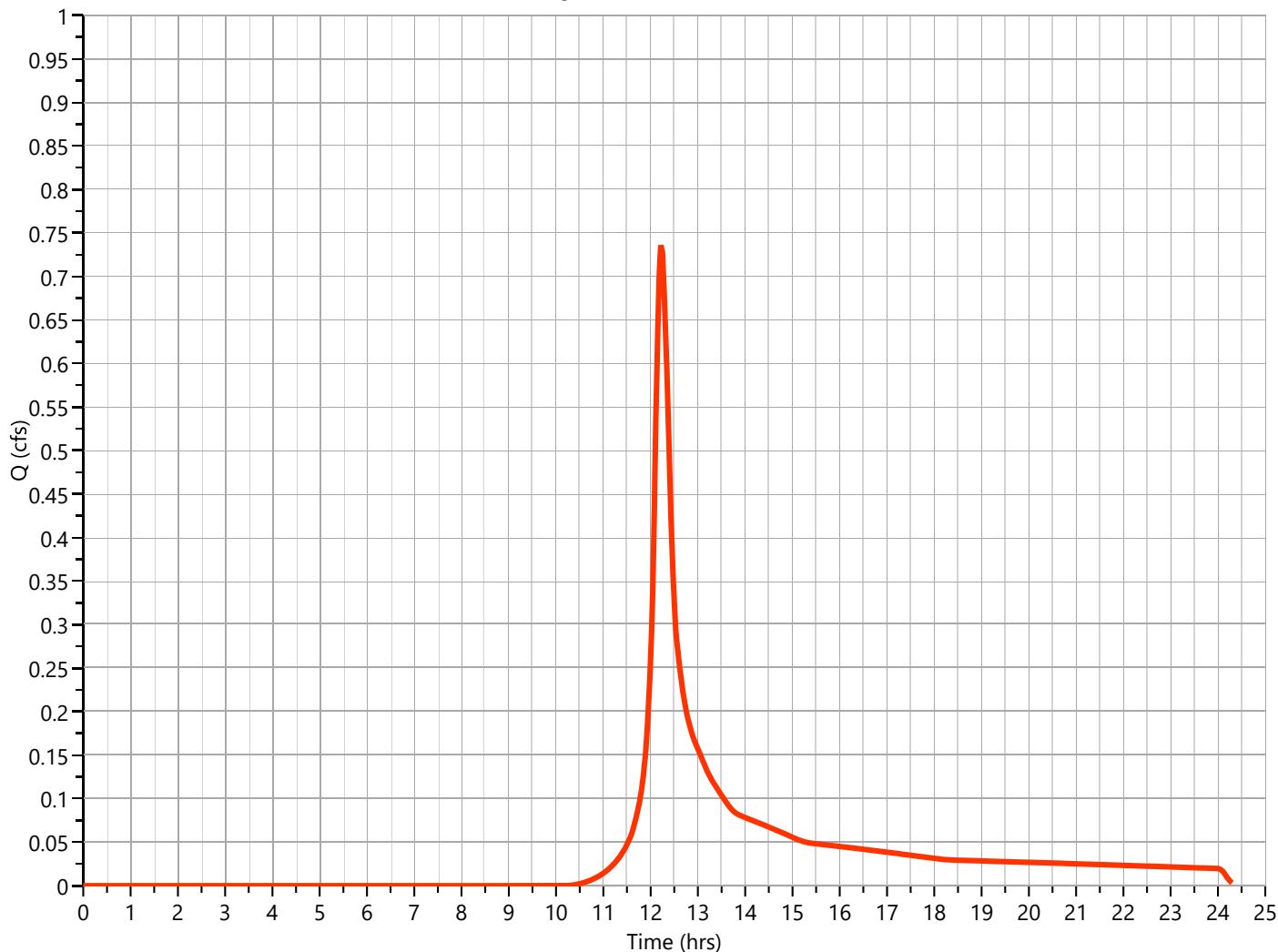
Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.737 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.23 hrs
Time Interval	= 1 min	Runoff Volume	= 3,244 cuft
Drainage Area	= 0.581 ac	Curve Number	= 68.99*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.21 min
Total Rainfall	= 4.38 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.156	98.00	Impervious
0.136	61.00	Landscape
0.201	58.00	Conservation
0.088	55.00	Woods
0.581	68.99	Weighted CN Method Employed

Qp = 0.737 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

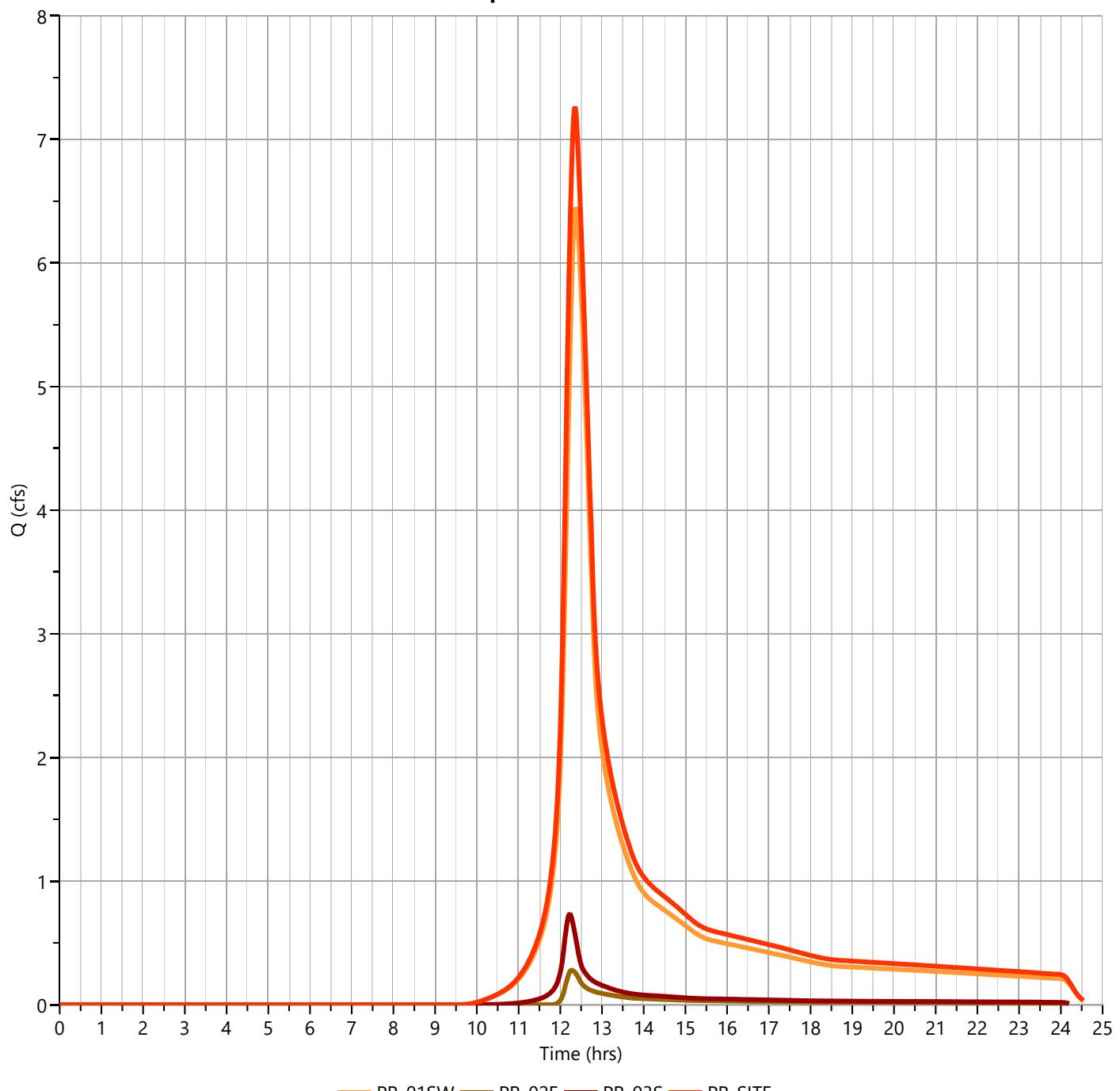
01-15-2026

PR-SITE

Hyd. No. 8

Hydrograph Type	= Junction	Peak Flow	= 7.263 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.35 hrs
Time Interval	= 1 min	Hydrograph Volume	= 41,599 cuft
Inflow Hydrographs	= 5, 6, 7	Total Contrib. Area	= 6.983 ac

Q_p = 7.263 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-A

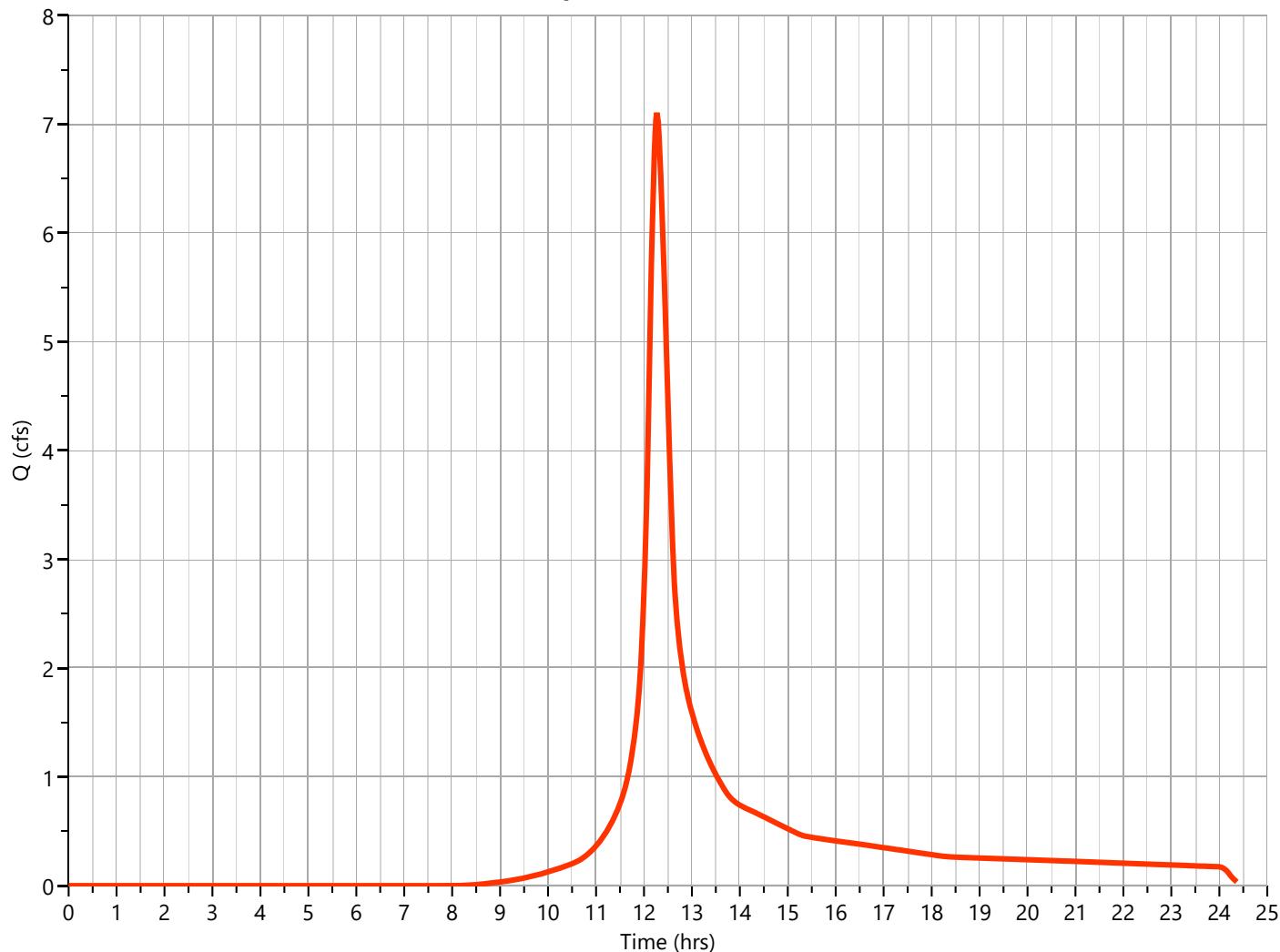
Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 7.105 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.27 hrs
Time Interval	= 1 min	Runoff Volume	= 34,038 cuft
Drainage Area	= 4.266 ac	Curve Number	= 77.79*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.53 min
Total Rainfall	= 4.38 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.213	61.00	Landscape
0.786	58.00	Conservation
0.23	55.00	Woods
4.266	77.79	Weighted CN Method Employed

Q_p = 7.105 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-B

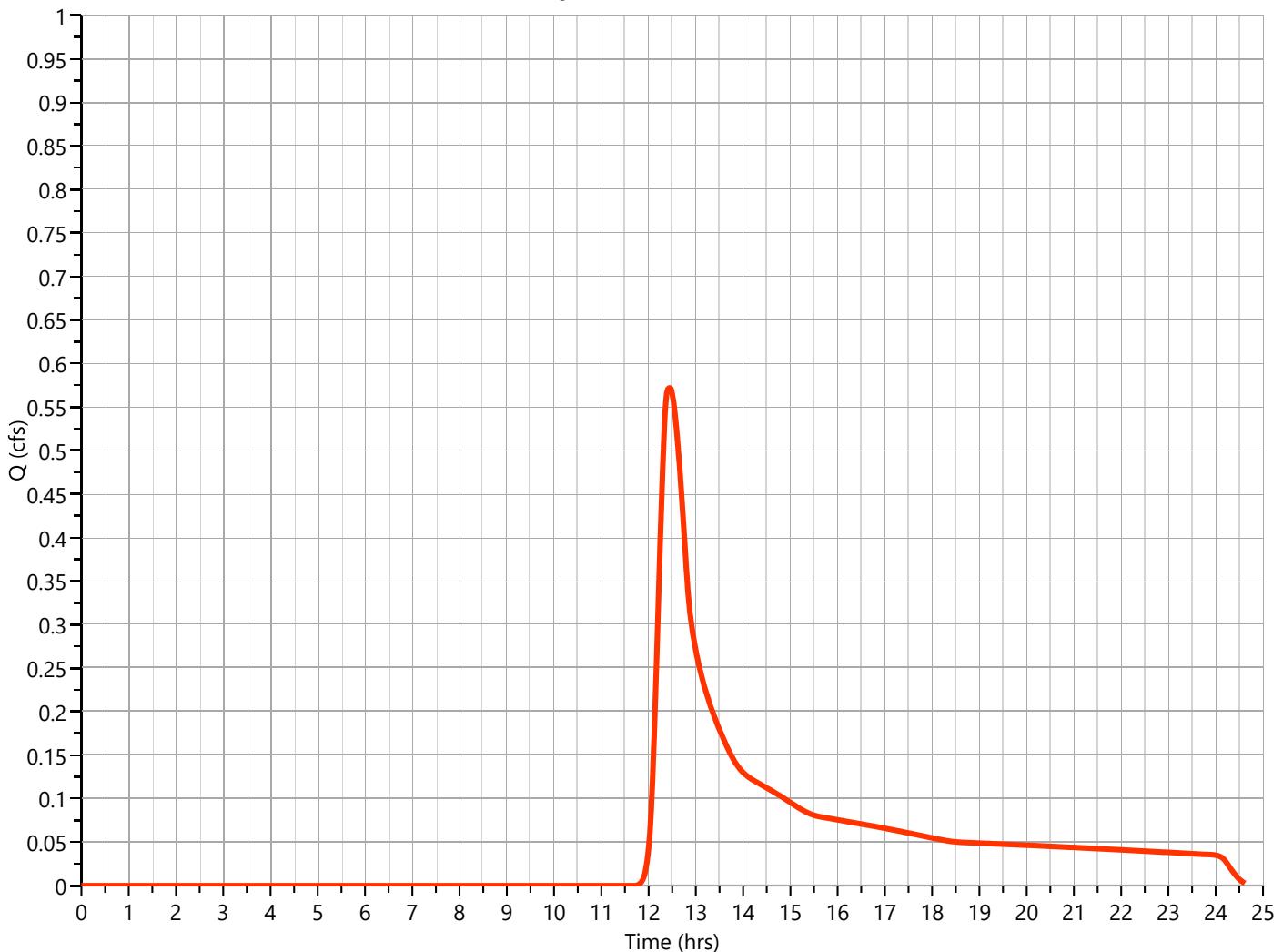
Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.573 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.43 hrs
Time Interval	= 1 min	Runoff Volume	= 4,235 cuft
Drainage Area	= 1.511 ac	Curve Number	= 56.63*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 4.38 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.001	98.00	Impervious
0.164	61.00	Landscape
0.477	58.00	Conservation
0.869	55.00	Woods
1.511	56.63	Weighted CN Method Employed

Qp = 0.573 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW DET

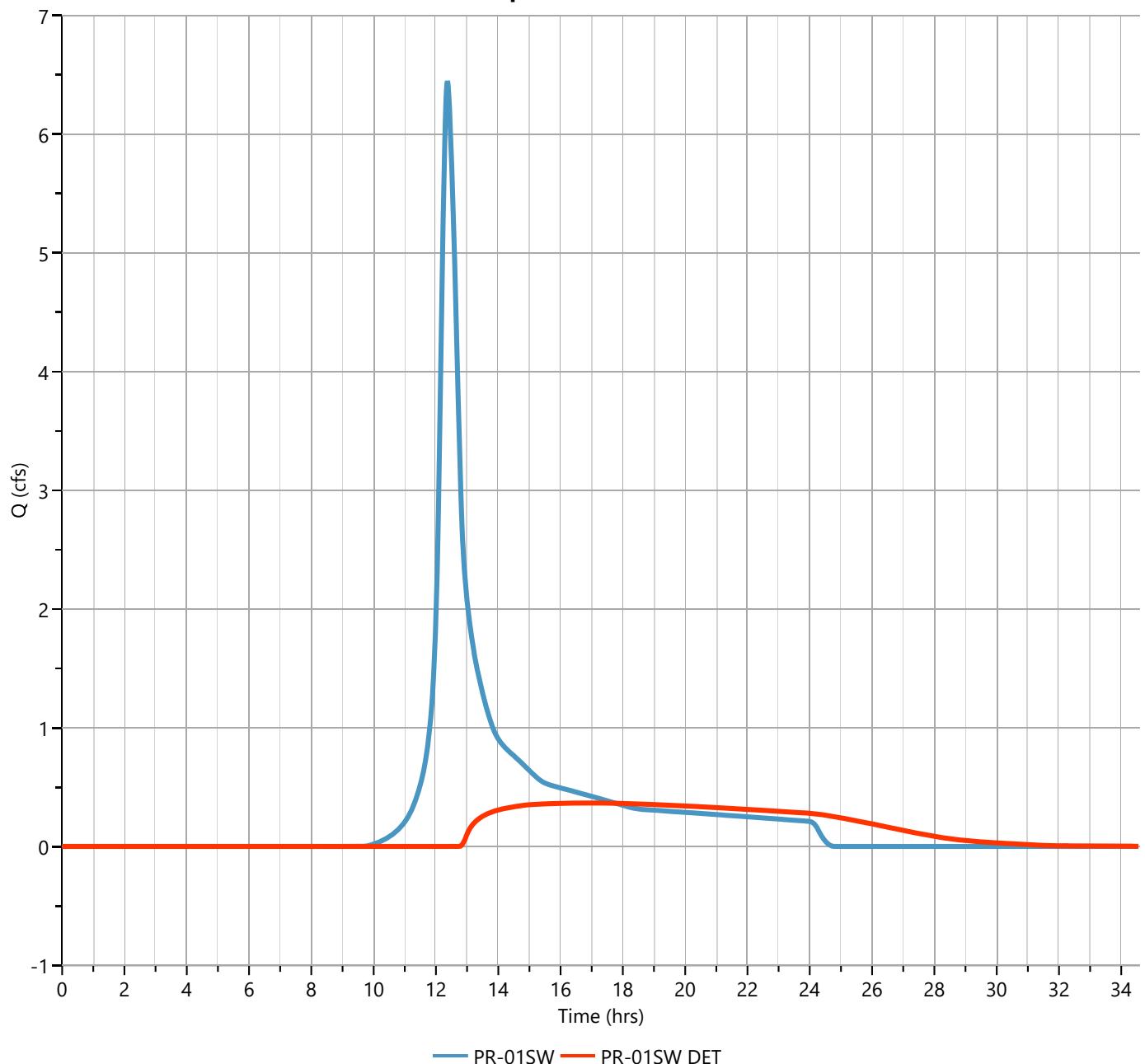
Hyd. No. 11

Hydrograph Type	= Pond Route	Peak Flow	= 0.366 cfs
Storm Frequency	= 5-yr	Time to Peak	= 16.92 hrs
Time Interval	= 1 min	Hydrograph Volume	= 16,283 cuft
Inflow Hydrograph	= 5 - PR-01SW	Max. Elevation	= 29.08 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 23,428 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 5.41 hrs

$Q_p = 0.366 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S DET

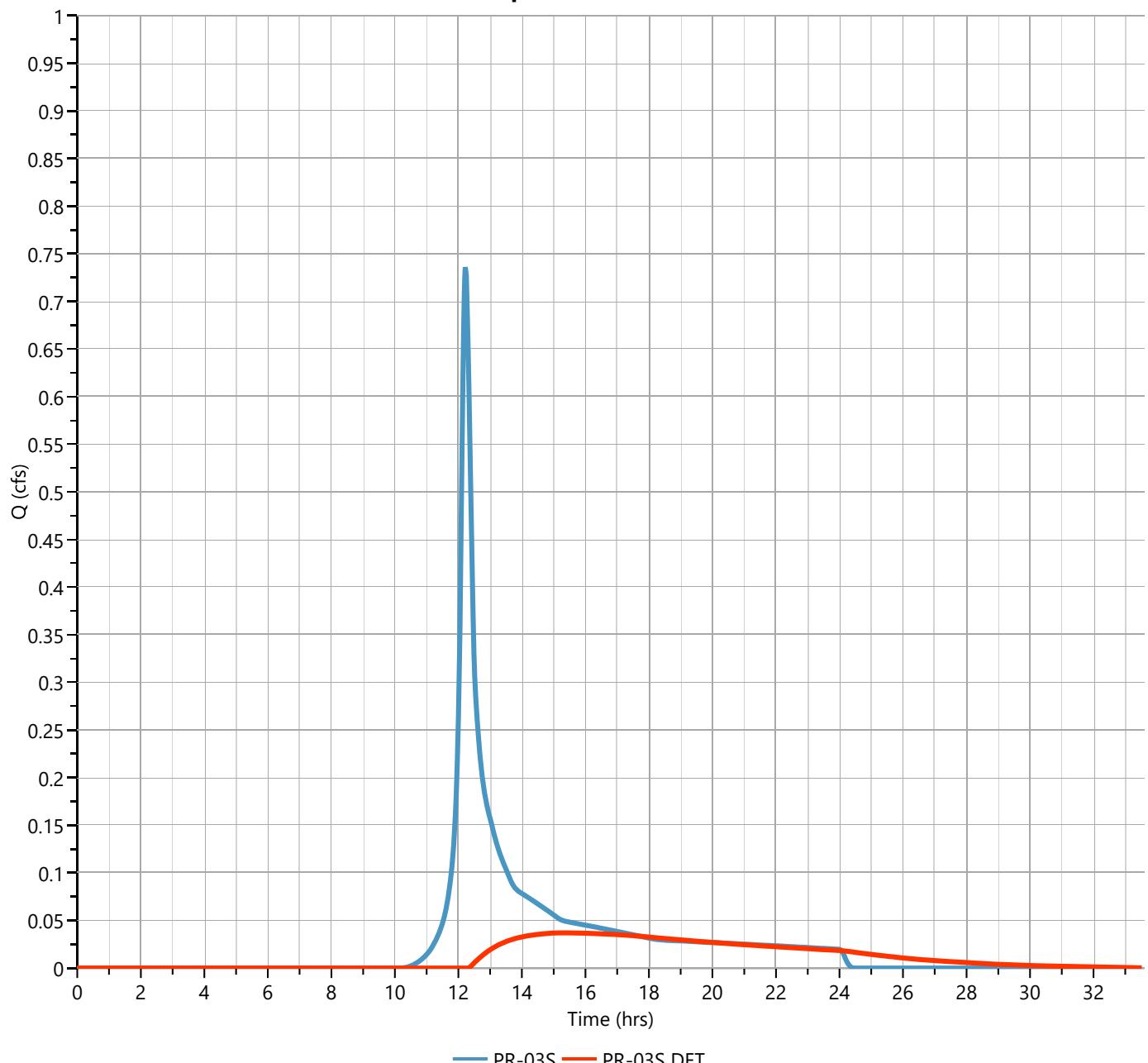
Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.037 cfs
Storm Frequency	= 5-yr	Time to Peak	= 15.30 hrs
Time Interval	= 1 min	Hydrograph Volume	= 1,374 cuft
Inflow Hydrograph	= 7 - PR-03S	Max. Elevation	= 27.50 ft
Pond Name	= PR-03S RAIN GARDEN	Max. Storage	= 1,858 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 4.57 hrs

$Q_p = 0.037 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

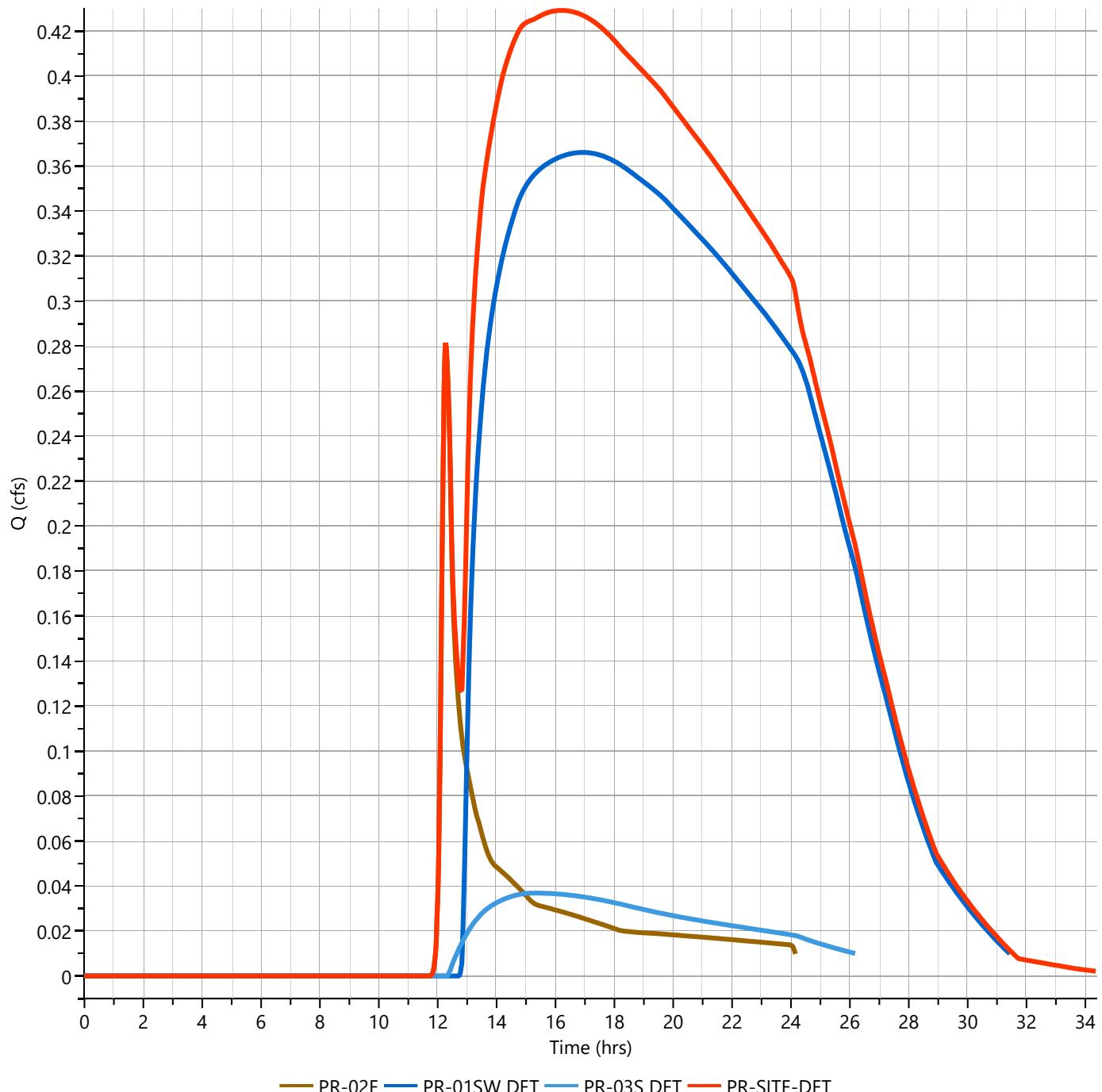
01-15-2026

PR-SITE-DET

Hyd. No. 13

Hydrograph Type	= Junction	Peak Flow	= 0.429 cfs
Storm Frequency	= 5-yr	Time to Peak	= 16.22 hrs
Time Interval	= 1 min	Hydrograph Volume	= 19,304 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Q_p = 0.429 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB DET

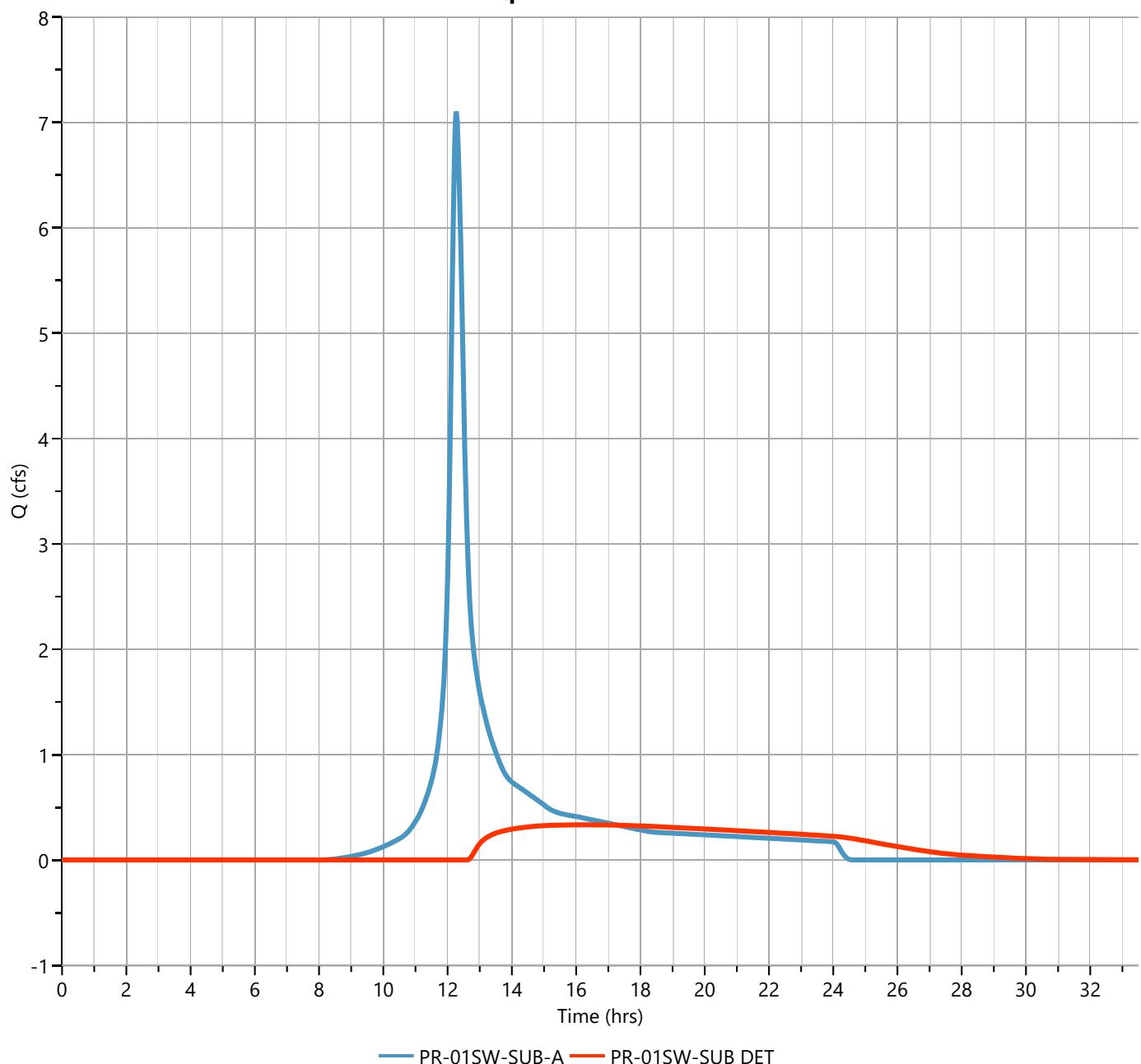
Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 0.334 cfs
Storm Frequency	= 5-yr	Time to Peak	= 16.28 hrs
Time Interval	= 1 min	Hydrograph Volume	= 13,811 cuft
Inflow Hydrograph	= 9 - PR-01SW-SUB-A	Max. Elevation	= 28.95 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 22,294 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 5.24 hrs

Q_p = 0.334 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

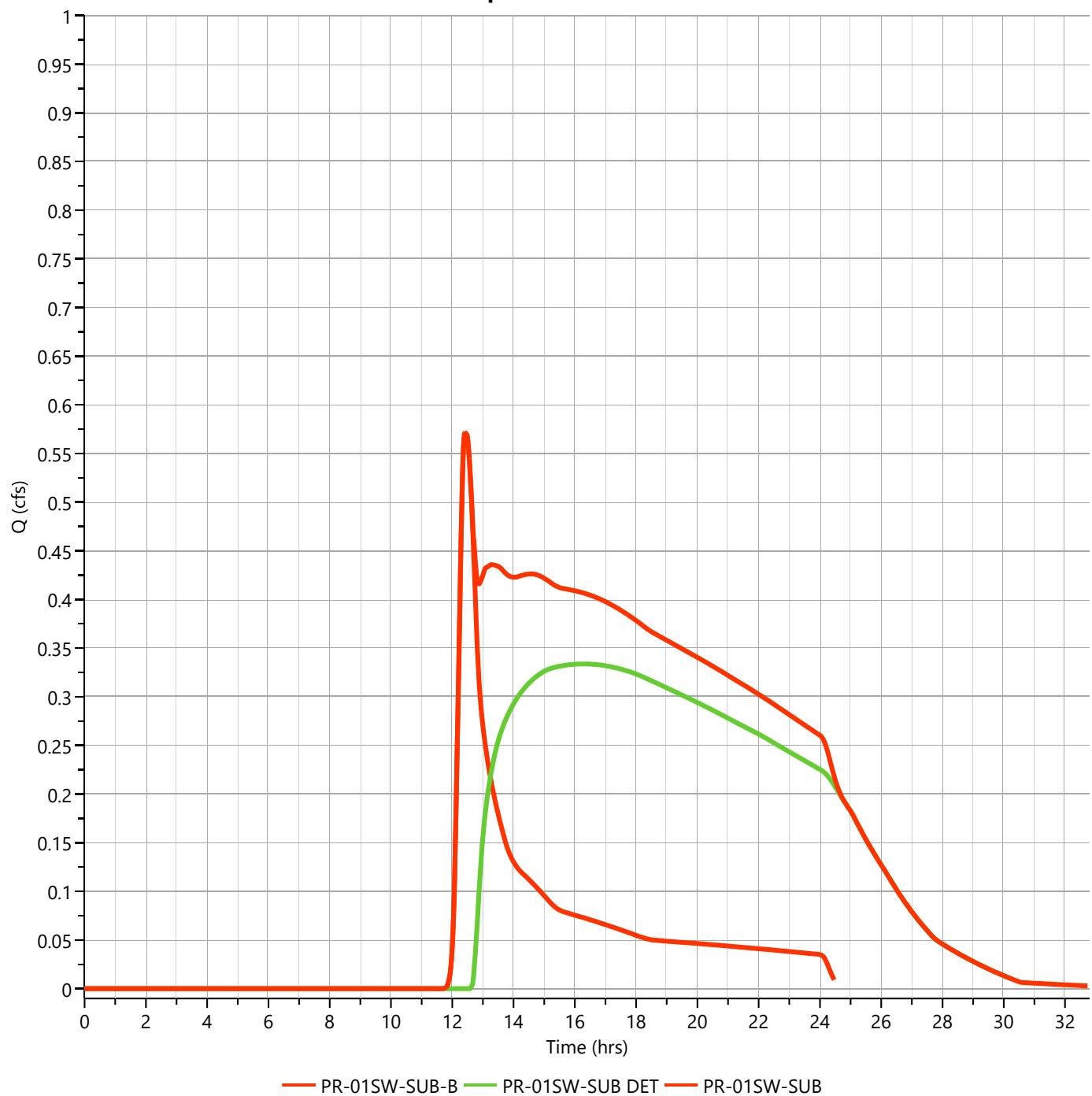
01-15-2026

PR-01SW-SUB

Hyd. No. 15

Hydrograph Type	= Junction	Peak Flow	= 0.573 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.43 hrs
Time Interval	= 1 min	Hydrograph Volume	= 18,046 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 1.511 ac

Q_p = 0.573 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

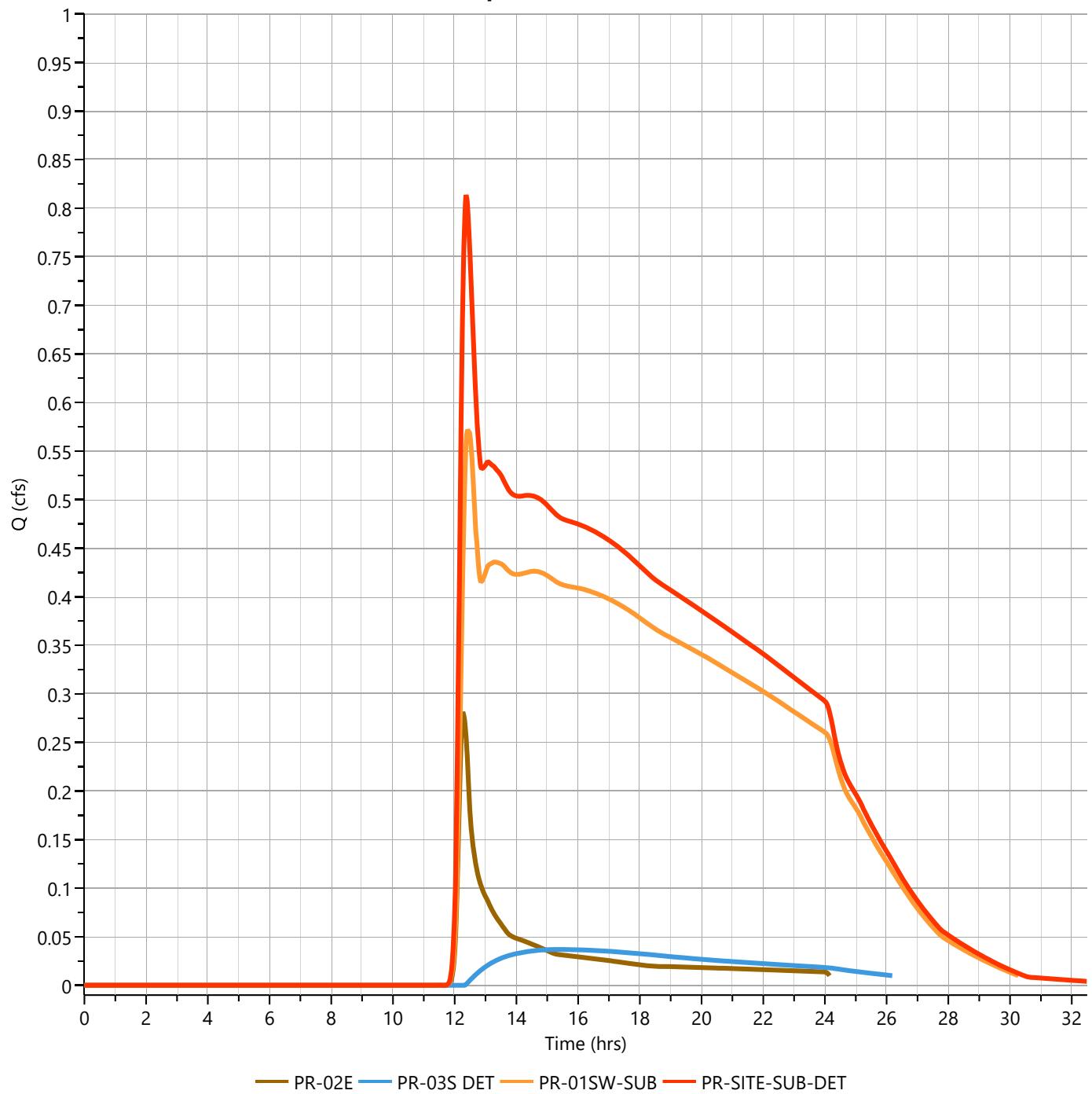
01-15-2026

PR-SITE-SUB-DET

Hyd. No. 16

Hydrograph Type	= Junction	Peak Flow	= 0.814 cfs
Storm Frequency	= 5-yr	Time to Peak	= 12.38 hrs
Time Interval	= 1 min	Hydrograph Volume	= 21,068 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Q_p = 0.814 cfs



Design Storm Report

Custom Storm filename:

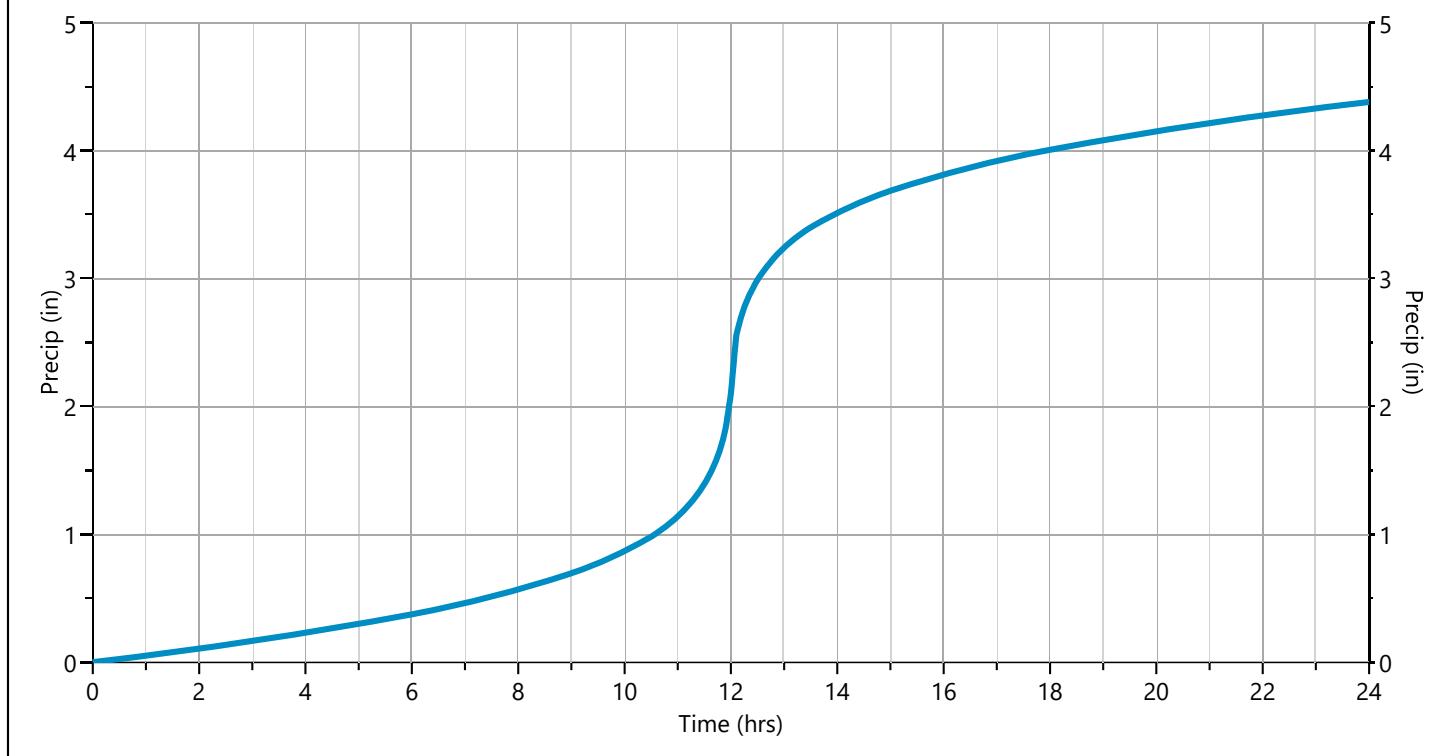
Hydrology Studio v 3.0.0.41

01-15-2026

Storm Distribution: NOAA-D, 24-hr

Storm Duration	Total Rainfall Volume (in)							
	1-yr	2-yr	3-yr	✓ 5-yr	10-yr	25-yr	50-yr	100-yr
24 hrs	2.87	3.44	0.00	4.38	5.17	6.24	7.04	7.90

Incremental Rainfall Distribution, 5-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.60	0.013213	11.78	0.019074	11.97	0.045660	12.15	0.026469	12.33	0.013907
11.62	0.013907	11.80	0.019077	11.98	0.045663	12.17	0.026469	12.35	0.013906
11.63	0.013906	11.82	0.026469	12.00	0.045659	12.18	0.026470	12.37	0.013907
11.65	0.013907	11.83	0.026471	12.02	0.076188	12.20	0.026469	12.38	0.013906
11.67	0.013906	11.85	0.026469	12.03	0.076192	12.22	0.019075	12.40	0.013907
11.68	0.013907	11.87	0.026469	12.05	0.076188	12.23	0.019074	12.42	0.013213
11.70	0.013906	11.88	0.026471	12.07	0.076192	12.25	0.019075	12.43	0.013214
11.72	0.019075	11.90	0.026469	12.08	0.076188	12.27	0.019074	12.45	0.013213
11.73	0.019075	11.92	0.045663	12.10	0.076193	12.28	0.019076	12.47	0.013213
11.75	0.019074	11.93	0.045660	12.12	0.026469	12.30	0.019074	12.48	0.013214
11.77	0.019076	11.95	0.045663	12.13	0.026471	12.32	0.013906	12.50	0.013212



Hydrograph 10-yr Summary

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	EX-01SW	2.863	12.43	20,185	---		
2	NRCS Runoff	EX-02E	0.942	12.30	5,426	---		
3	NRCS Runoff	EX-03S	0.299	12.27	1,568	---		
4	Junction	EX-SITE	3.958	12.38	27,178	1, 2, 3		
5	NRCS Runoff	PR-01SW	8.771	12.37	49,296	---		
6	NRCS Runoff	PR-02E	0.491	12.25	2,521	---		
7	NRCS Runoff	PR-03S	1.029	12.22	4,444	---		
8	Junction	PR-SITE	9.980	12.35	56,260	5, 6, 7		
9	NRCS Runoff	PR-01SW-SUB-A	9.277	12.27	44,362	---		
10	NRCS Runoff	PR-01SW-SUB-B	0.983	12.38	6,427	---		
11	Pond Route	PR-01SW DET	0.950	14.38	28,036	5	29.63	28,715
12	Pond Route	PR-03S DET	0.075	14.47	2,468	7	27.79	2,394
13	Junction	PR-SITE-DET	1.087	14.35	33,025	6, 11, 12		
14	Pond Route	PR-01SW-SUB DET	0.616	14.90	23,245	9	29.55	27,947
15	Junction	PR-01SW-SUB	1.158	12.52	29,672	10, 14		
16	Junction	PR-SITE-SUB-DET	1.483	12.47	34,661	6, 12, 15		

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-01SW

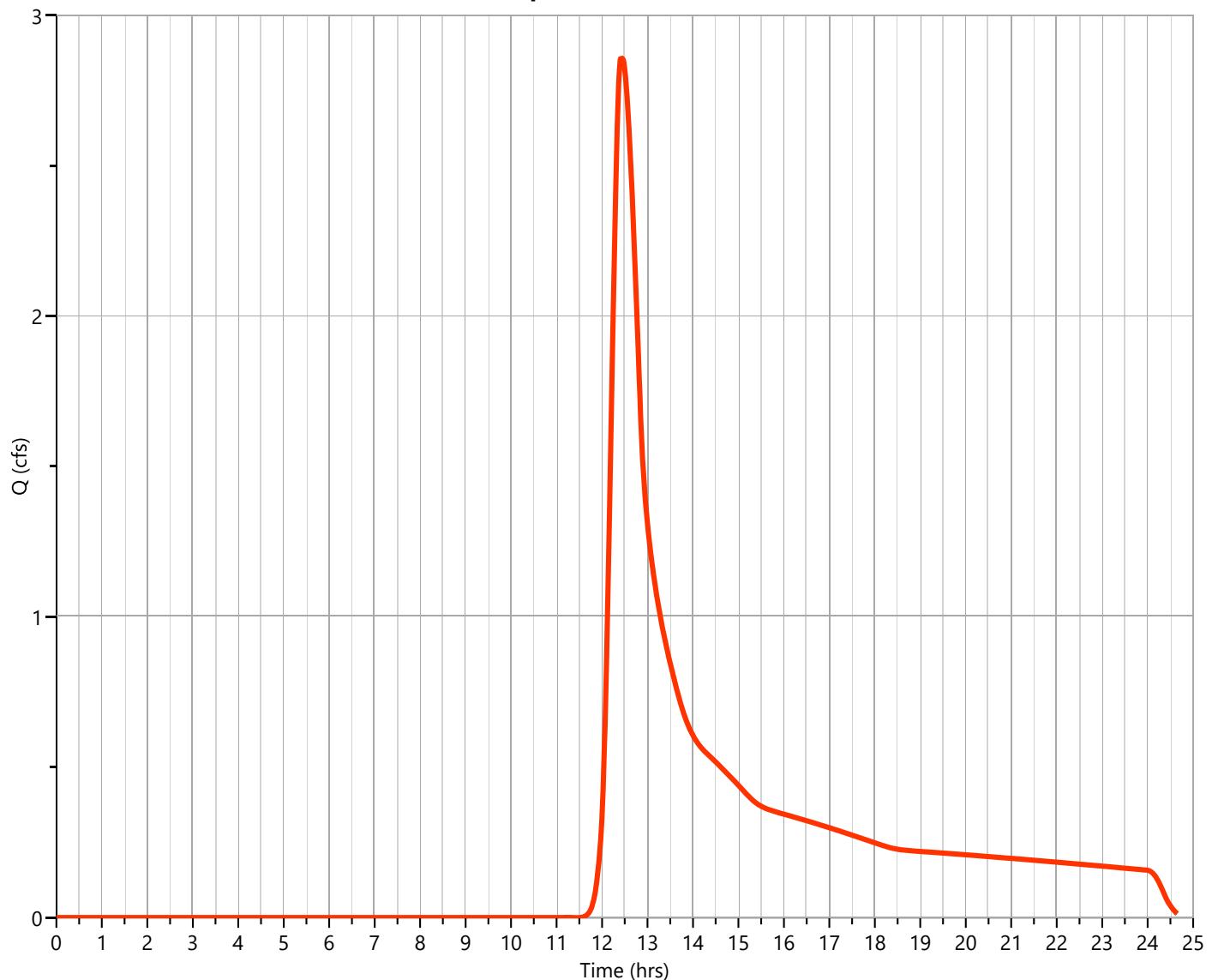
Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.863 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.43 hrs
Time Interval	= 1 min	Runoff Volume	= 20,185 cuft
Drainage Area	= 5.183 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 31.45 min
Total Rainfall	= 5.17 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
5.183	55.00	Woods
5.183	55.00	Weighted CN Method Employed

Q_p = 2.863 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-02E

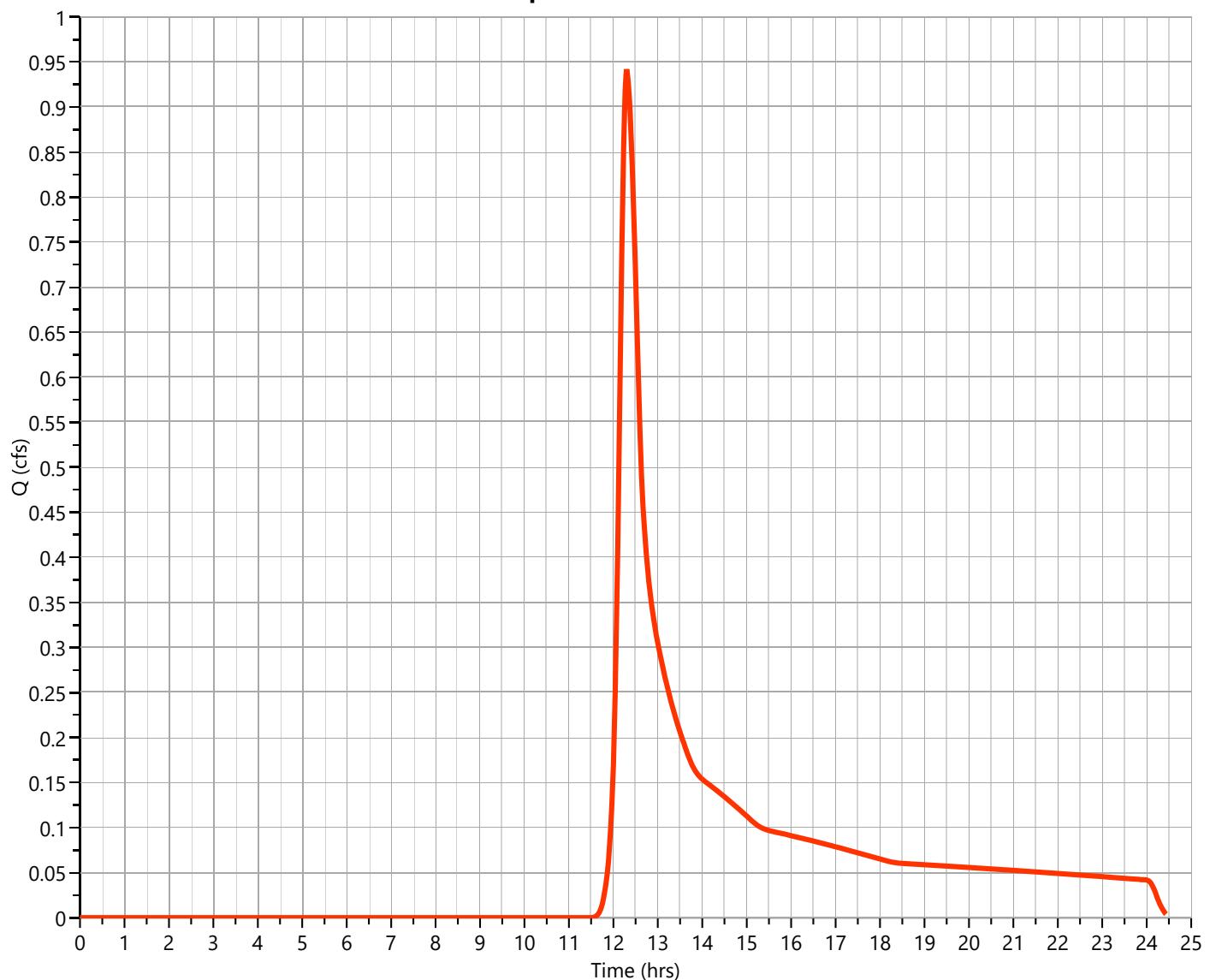
Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.942 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.30 hrs
Time Interval	= 1 min	Runoff Volume	= 5,426 cuft
Drainage Area	= 1.389 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.61 min
Total Rainfall	= 5.17 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
1.389	55.00	Woods
1.389	55.00	Weighted CN Method Employed

$Q_p = 0.942 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-03S

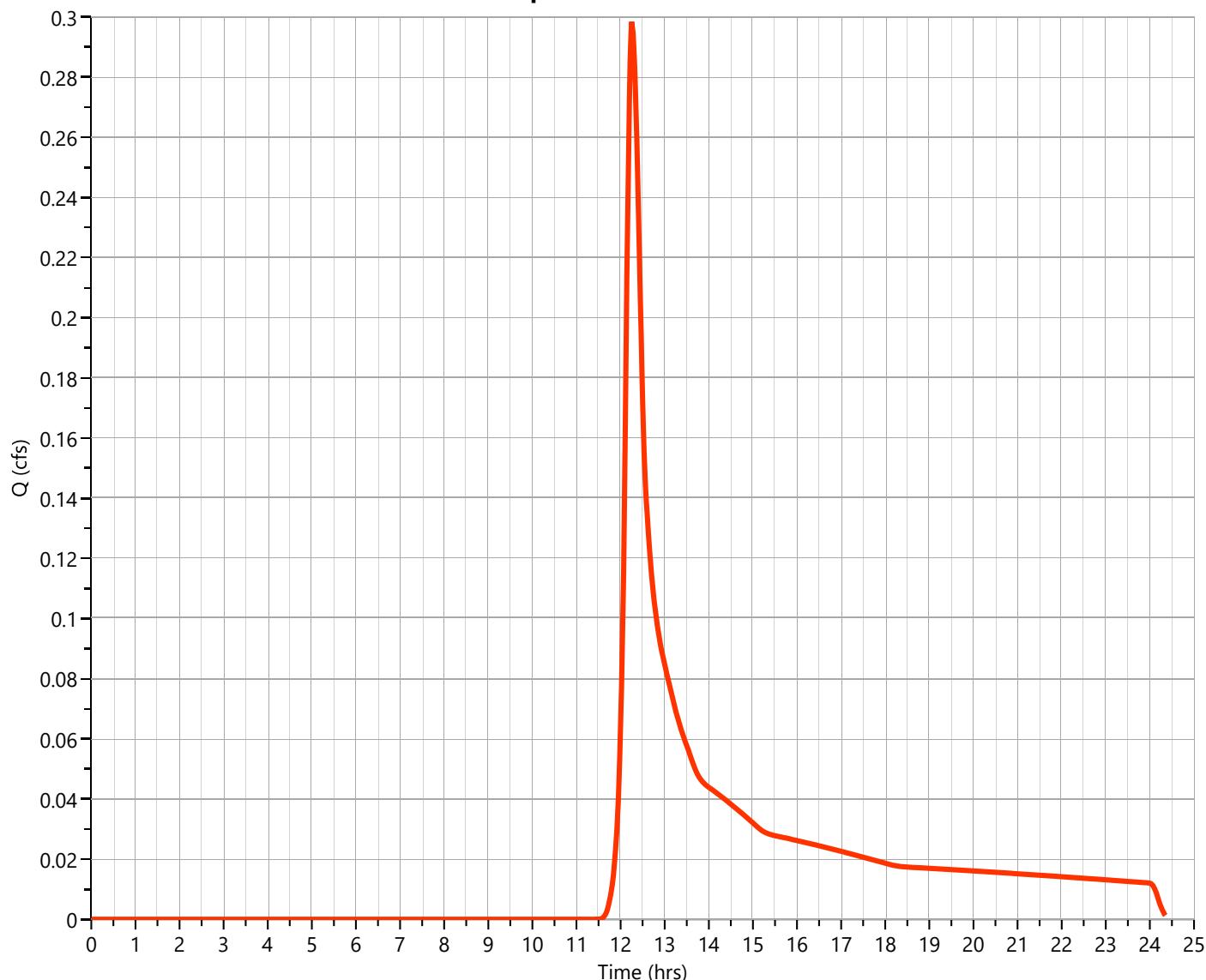
Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.299 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.27 hrs
Time Interval	= 1 min	Runoff Volume	= 1,568 cuft
Drainage Area	= 0.41 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.32 min
Total Rainfall	= 5.17 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.41	55.00	Woods
0.41	55.00	Weighted CN Method Employed

$Q_p = 0.299 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

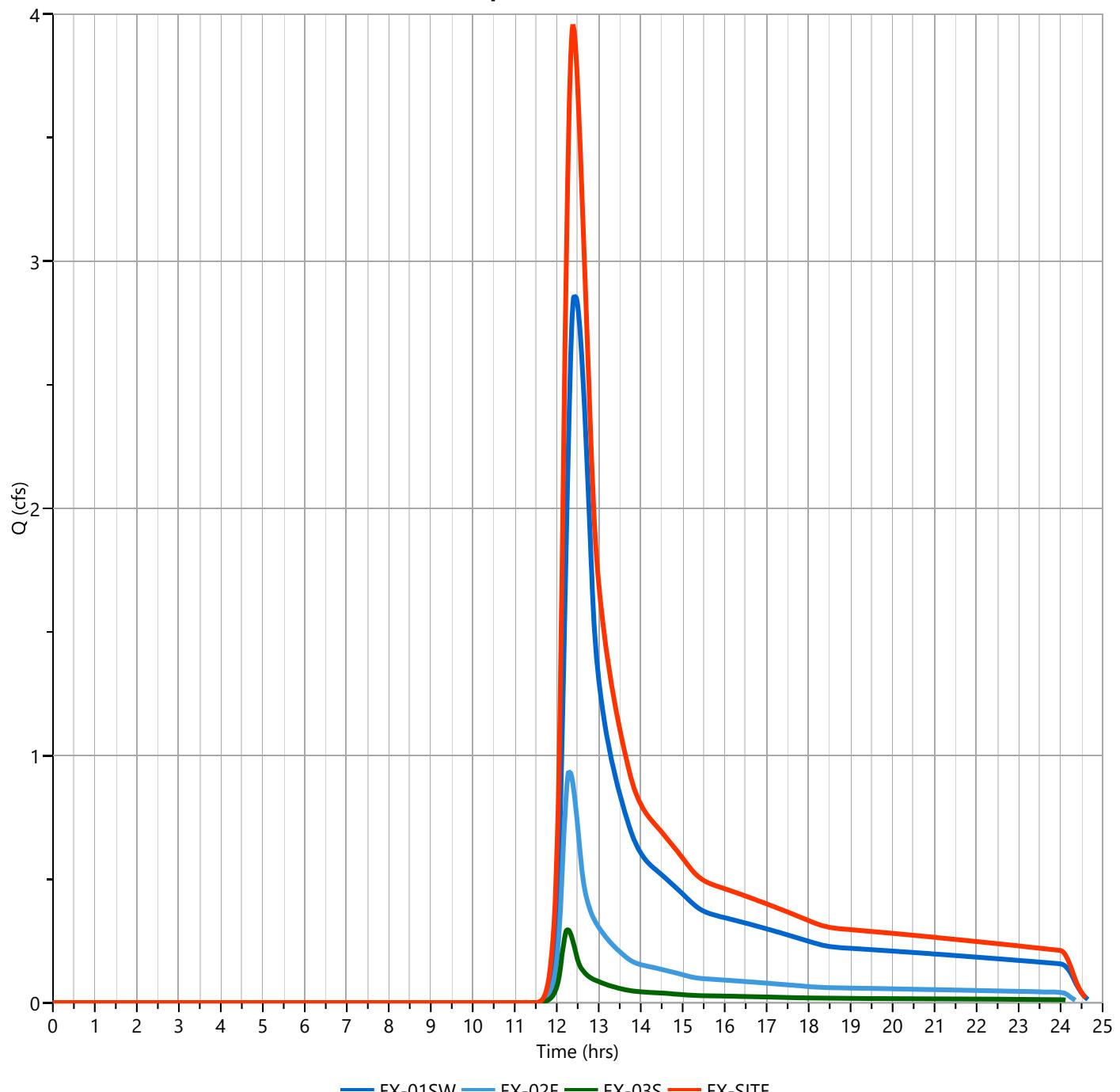
01-15-2026

EX-SITE

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 3.958 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.38 hrs
Time Interval	= 1 min	Hydrograph Volume	= 27,178 cuft
Inflow Hydrographs	= 1, 2, 3	Total Contrib. Area	= 6.982 ac

Q_p = 3.958 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW

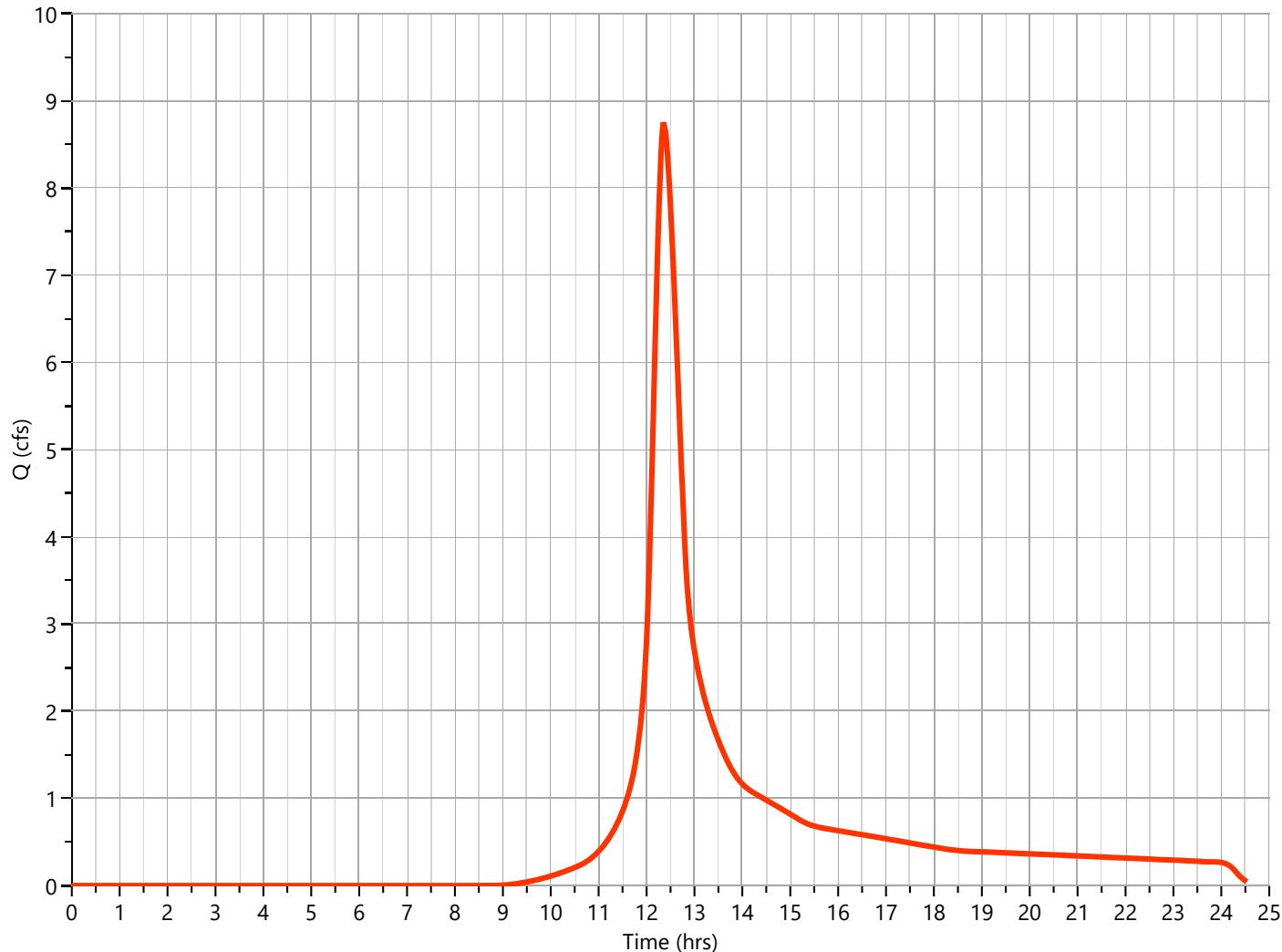
Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 8.771 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.37 hrs
Time Interval	= 1 min	Runoff Volume	= 49,296 cuft
Drainage Area	= 5.777 ac	Curve Number	= 72.25*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 5.17 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.378	61.00	Landscape
1.263	58.00	Conservation
1.099	55.00	Woods
5.777	72.25	Weighted CN Method Employed

Qp = 8.771 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-02E

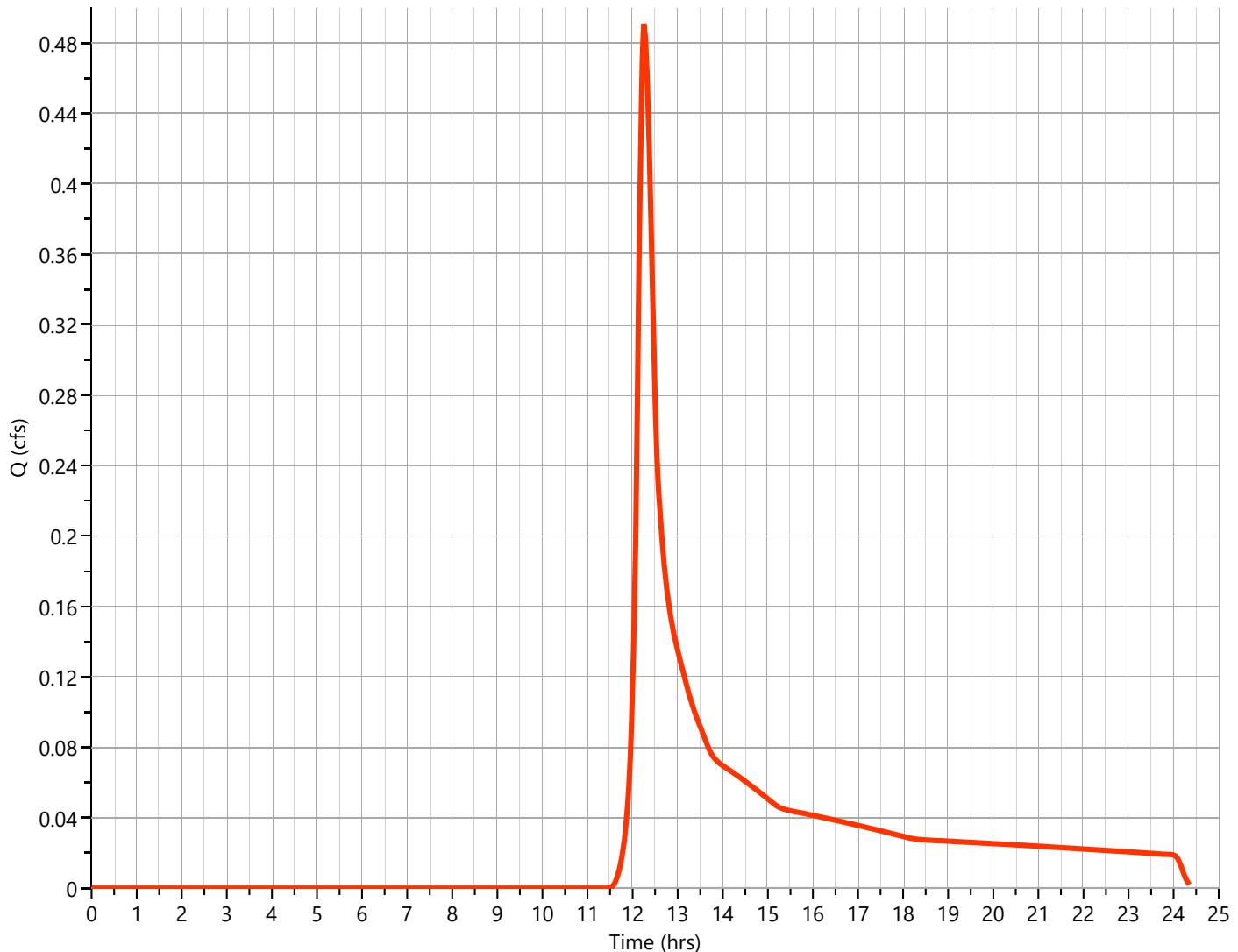
Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.491 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.25 hrs
Time Interval	= 1 min	Runoff Volume	= 2,521 cuft
Drainage Area	= 0.625 ac	Curve Number	= 55.90*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.27 min
Total Rainfall	= 5.17 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.009	61.00	Landscape
0.17	58.00	Conservation
0.446	55.00	Woods
0.625	55.90	Weighted CN Method Employed

Q_p = 0.491 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S

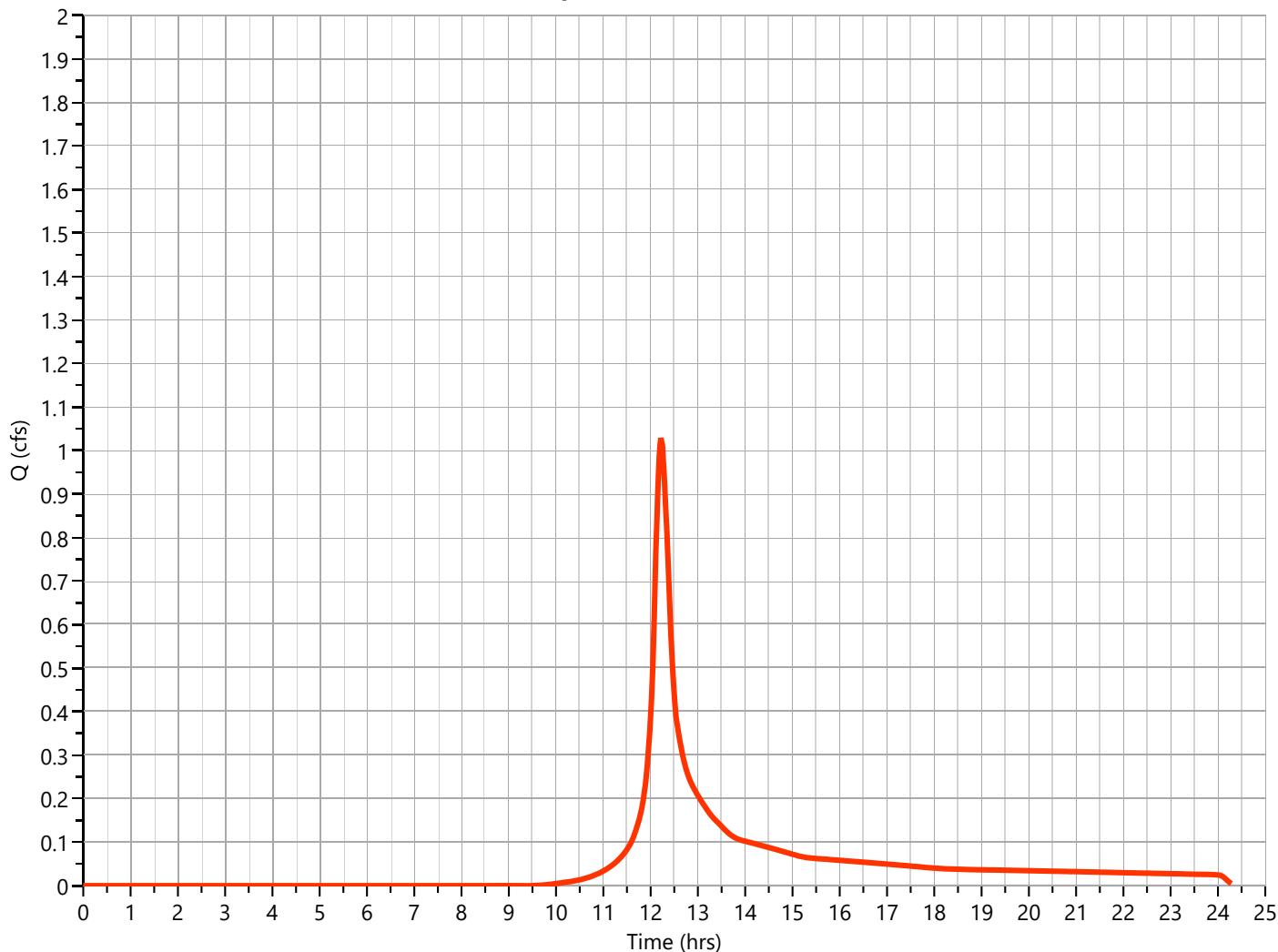
Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.029 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.22 hrs
Time Interval	= 1 min	Runoff Volume	= 4,444 cuft
Drainage Area	= 0.581 ac	Curve Number	= 68.99*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.21 min
Total Rainfall	= 5.17 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.156	98.00	Impervious
0.136	61.00	Landscape
0.201	58.00	Conservation
0.088	55.00	Woods
0.581	68.99	Weighted CN Method Employed

Qp = 1.029 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

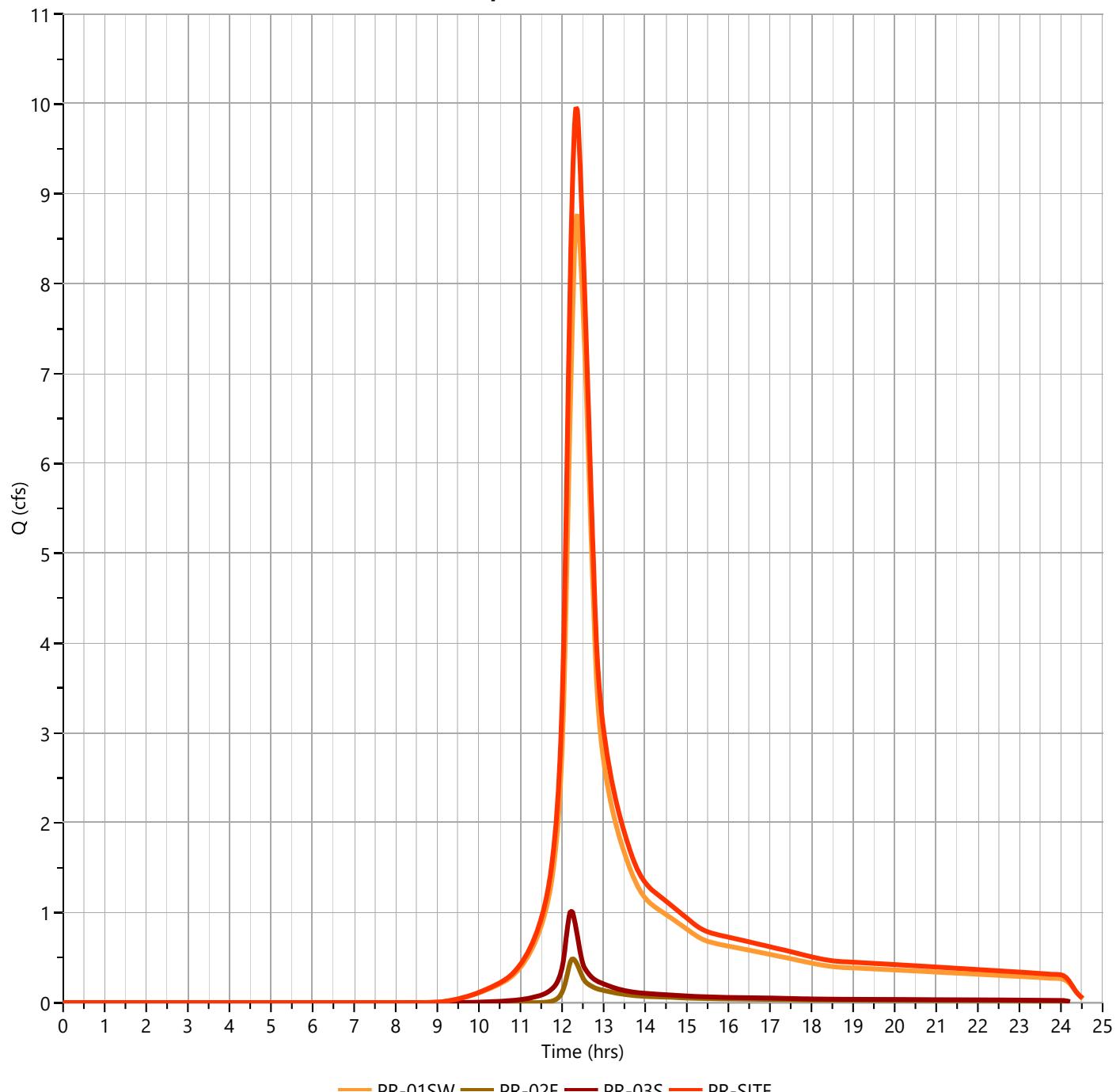
01-15-2026

PR-SITE

Hyd. No. 8

Hydrograph Type	= Junction	Peak Flow	= 9.980 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.35 hrs
Time Interval	= 1 min	Hydrograph Volume	= 56,260 cuft
Inflow Hydrographs	= 5, 6, 7	Total Contrib. Area	= 6.983 ac

Qp = 9.980 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-A

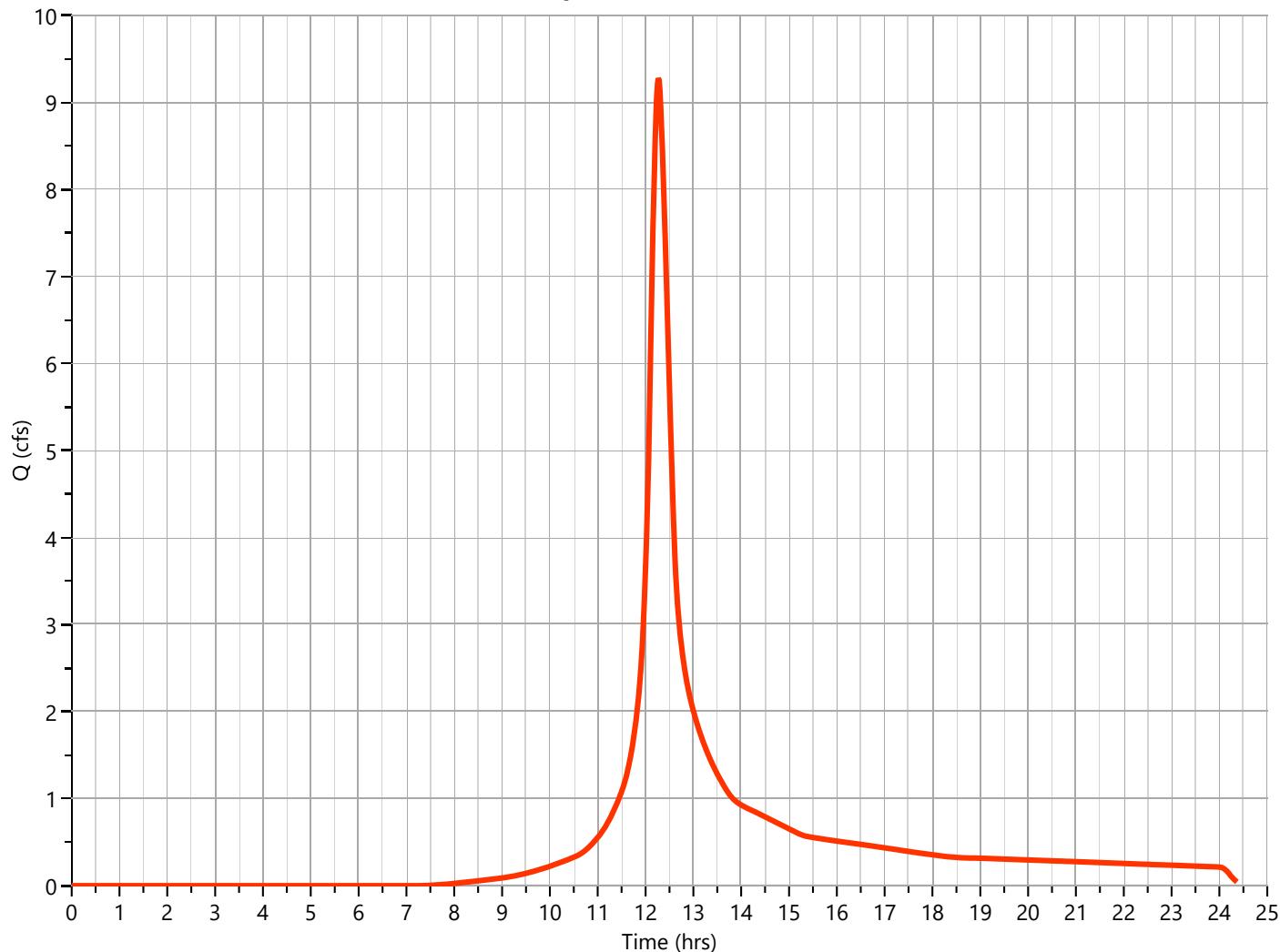
Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 9.277 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.27 hrs
Time Interval	= 1 min	Runoff Volume	= 44,362 cuft
Drainage Area	= 4.266 ac	Curve Number	= 77.79*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.53 min
Total Rainfall	= 5.17 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.213	61.00	Landscape
0.786	58.00	Conservation
0.23	55.00	Woods
4.266	77.79	Weighted CN Method Employed

Qp = 9.277 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-B

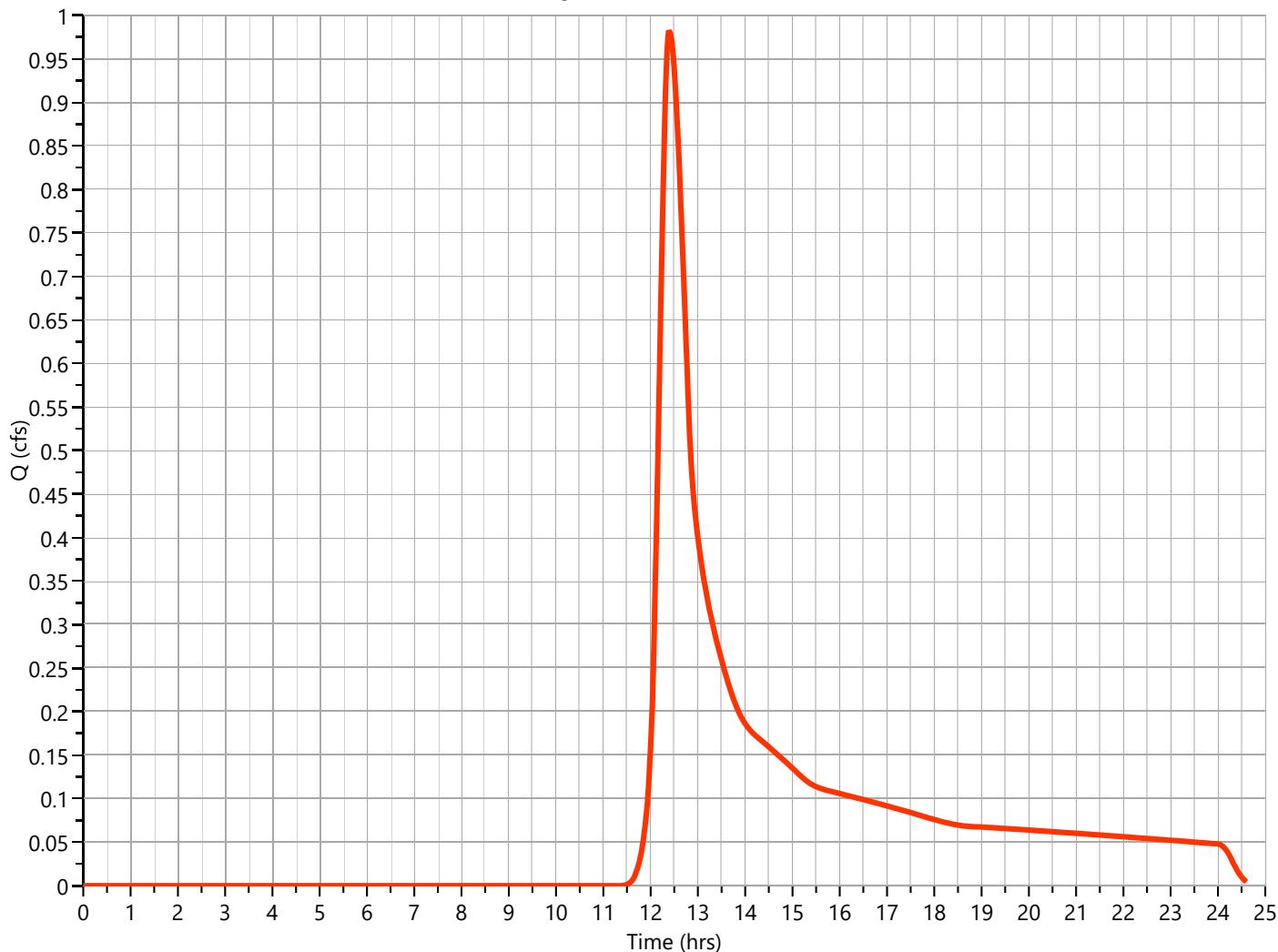
Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.983 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.38 hrs
Time Interval	= 1 min	Runoff Volume	= 6,427 cuft
Drainage Area	= 1.511 ac	Curve Number	= 56.63*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 5.17 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.001	98.00	Impervious
0.164	61.00	Landscape
0.477	58.00	Conservation
0.869	55.00	Woods
1.511	56.63	Weighted CN Method Employed

Qp = 0.983 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW DET

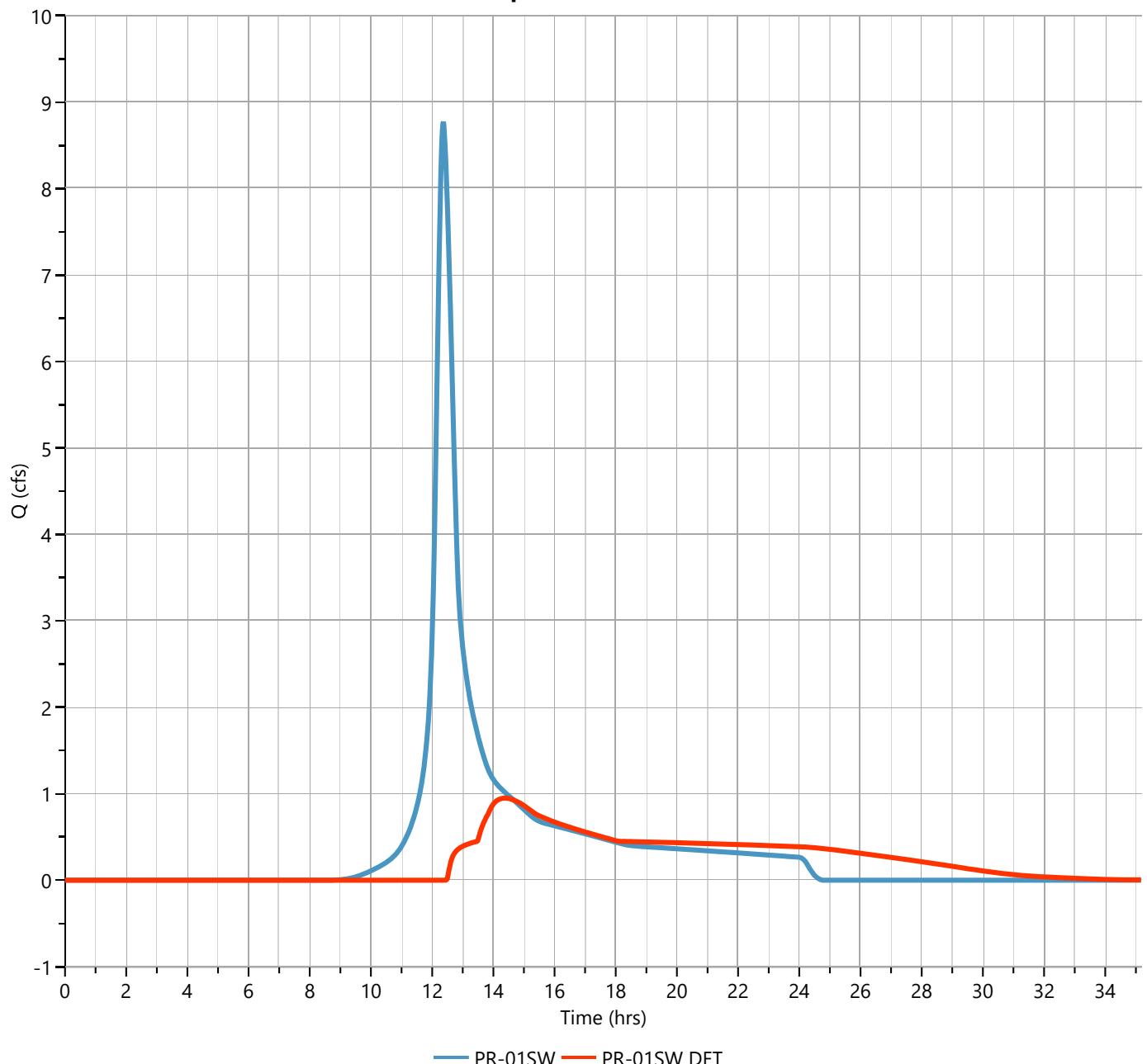
Hyd. No. 11

Hydrograph Type	= Pond Route	Peak Flow	= 0.950 cfs
Storm Frequency	= 10-yr	Time to Peak	= 14.38 hrs
Time Interval	= 1 min	Hydrograph Volume	= 28,036 cuft
Inflow Hydrograph	= 5 - PR-01SW	Max. Elevation	= 29.63 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 28,715 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 5.28 hrs

$Q_p = 0.950 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S DET

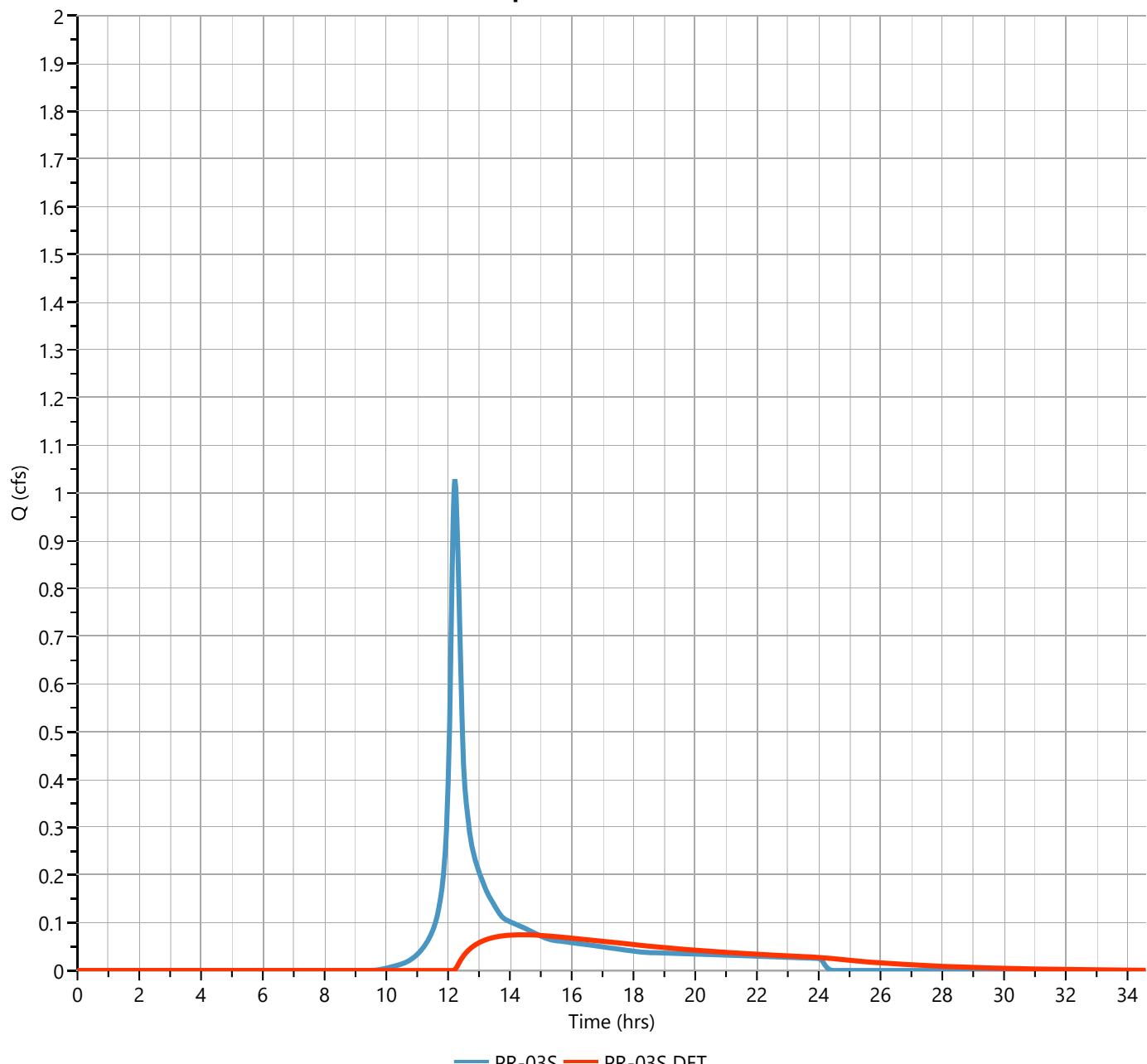
Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.075 cfs
Storm Frequency	= 10-yr	Time to Peak	= 14.47 hrs
Time Interval	= 1 min	Hydrograph Volume	= 2,468 cuft
Inflow Hydrograph	= 7 - PR-03S	Max. Elevation	= 27.79 ft
Pond Name	= PR-03S RAIN GARDEN	Max. Storage	= 2,394 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 4.11 hrs

$Q_p = 0.075 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

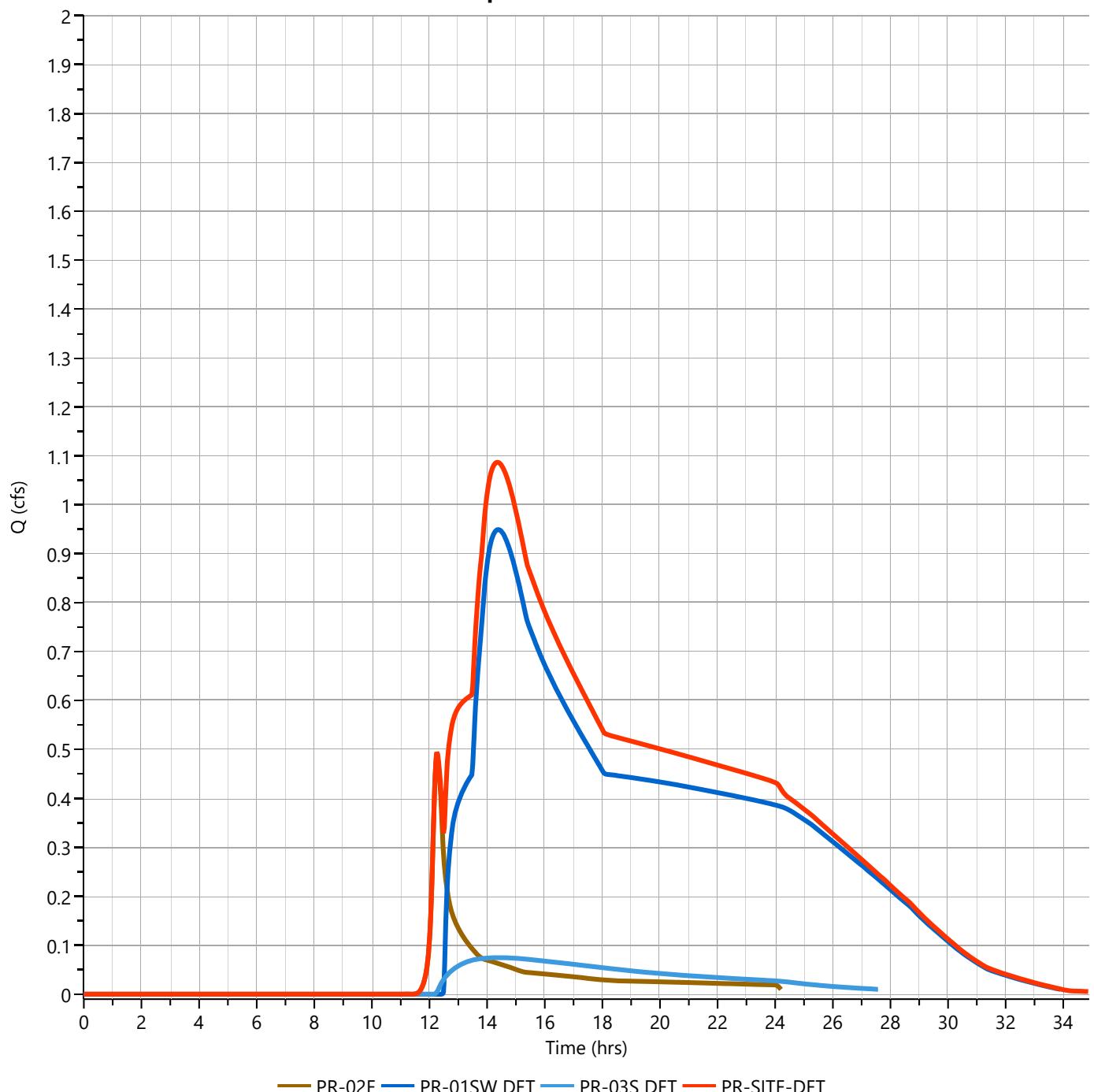
01-15-2026

PR-SITE-DET

Hyd. No. 13

Hydrograph Type	= Junction	Peak Flow	= 1.087 cfs
Storm Frequency	= 10-yr	Time to Peak	= 14.35 hrs
Time Interval	= 1 min	Hydrograph Volume	= 33,025 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Q_p = 1.087 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB DET

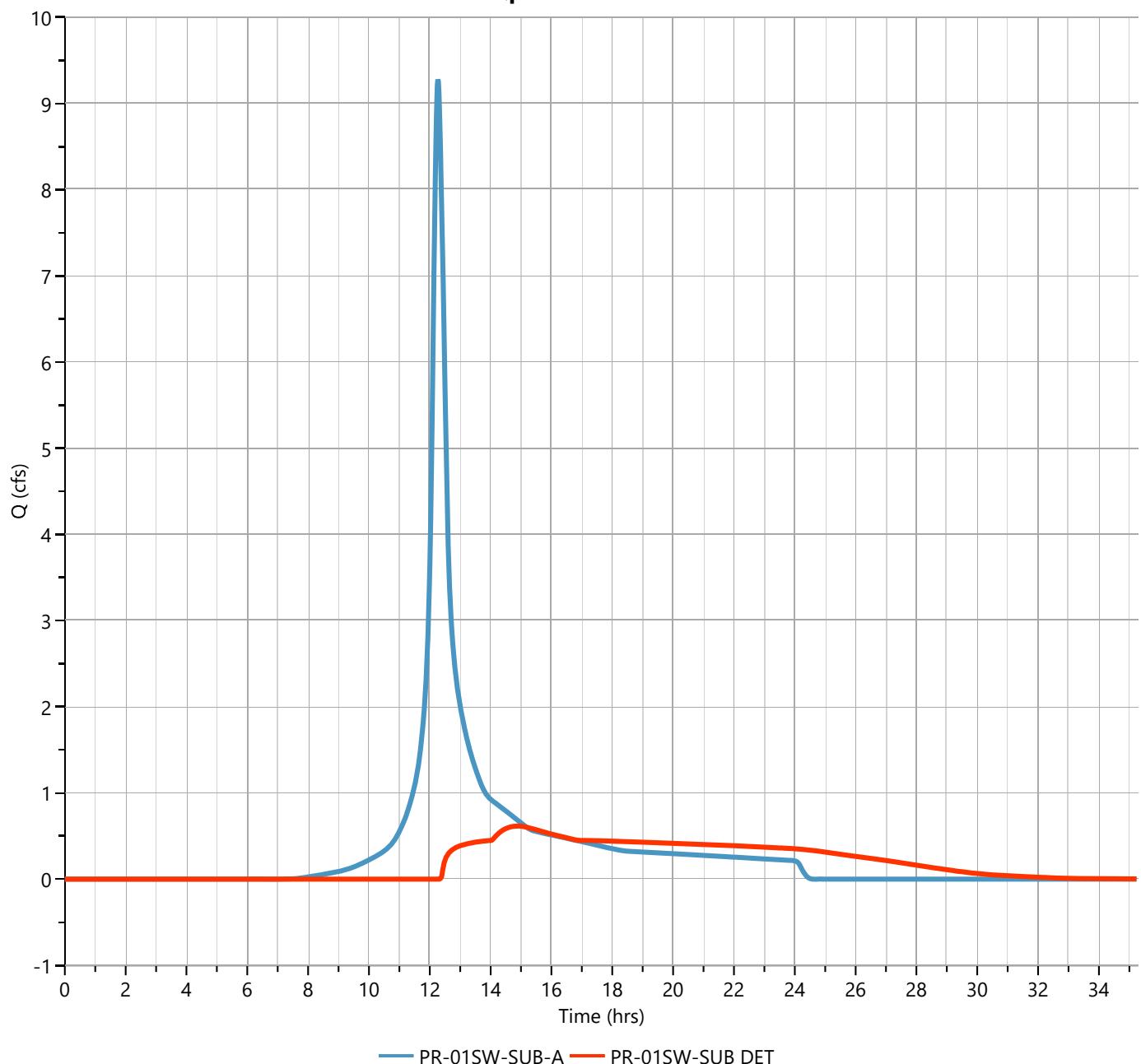
Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 0.616 cfs
Storm Frequency	= 10-yr	Time to Peak	= 14.90 hrs
Time Interval	= 1 min	Hydrograph Volume	= 23,245 cuft
Inflow Hydrograph	= 9 - PR-01SW-SUB-A	Max. Elevation	= 29.55 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 27,947 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 5.72 hrs

$Q_p = 0.616 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

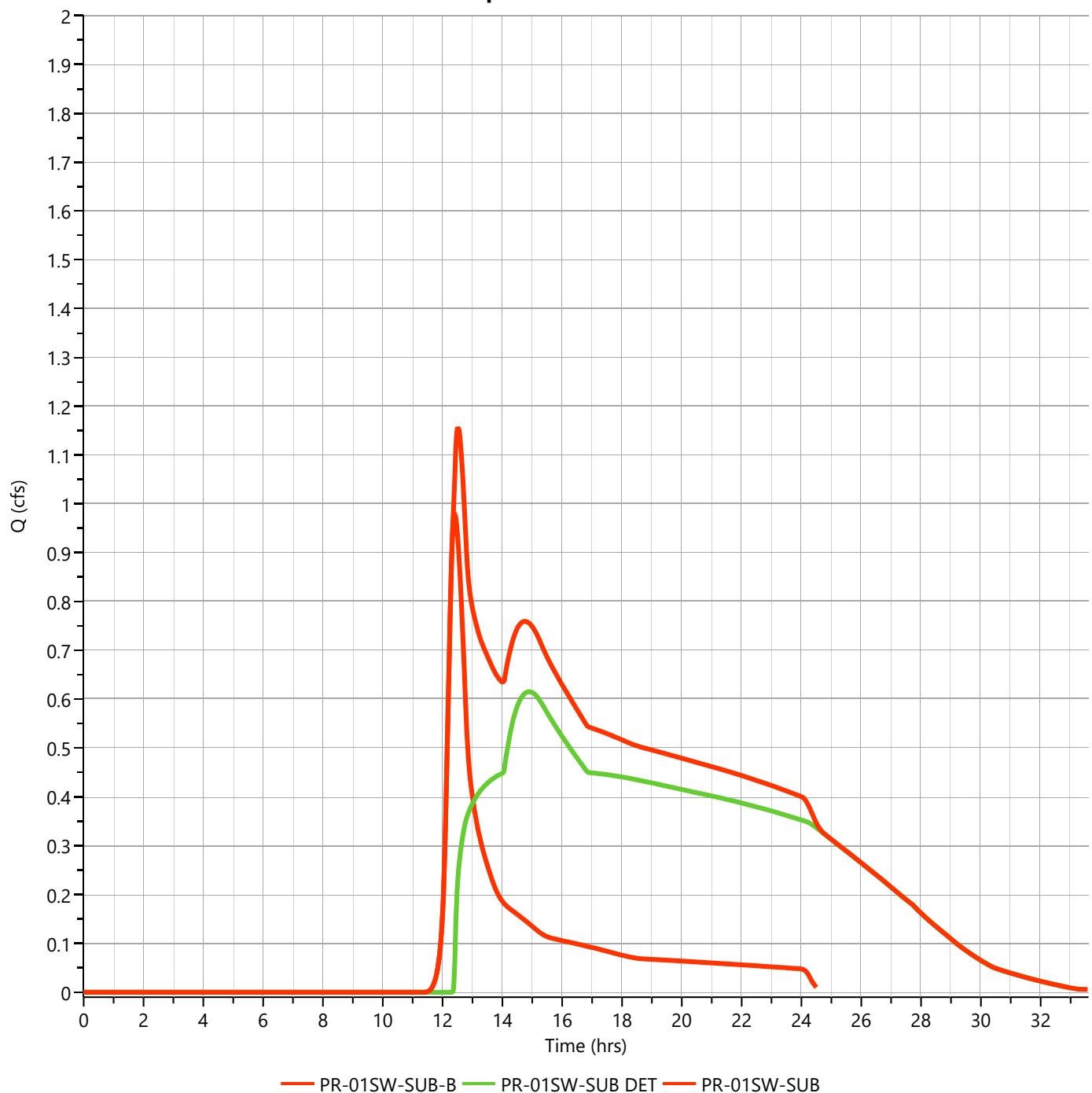
01-15-2026

PR-01SW-SUB

Hyd. No. 15

Hydrograph Type	= Junction	Peak Flow	= 1.158 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.52 hrs
Time Interval	= 1 min	Hydrograph Volume	= 29,672 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 1.511 ac

Q_p = 1.158 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

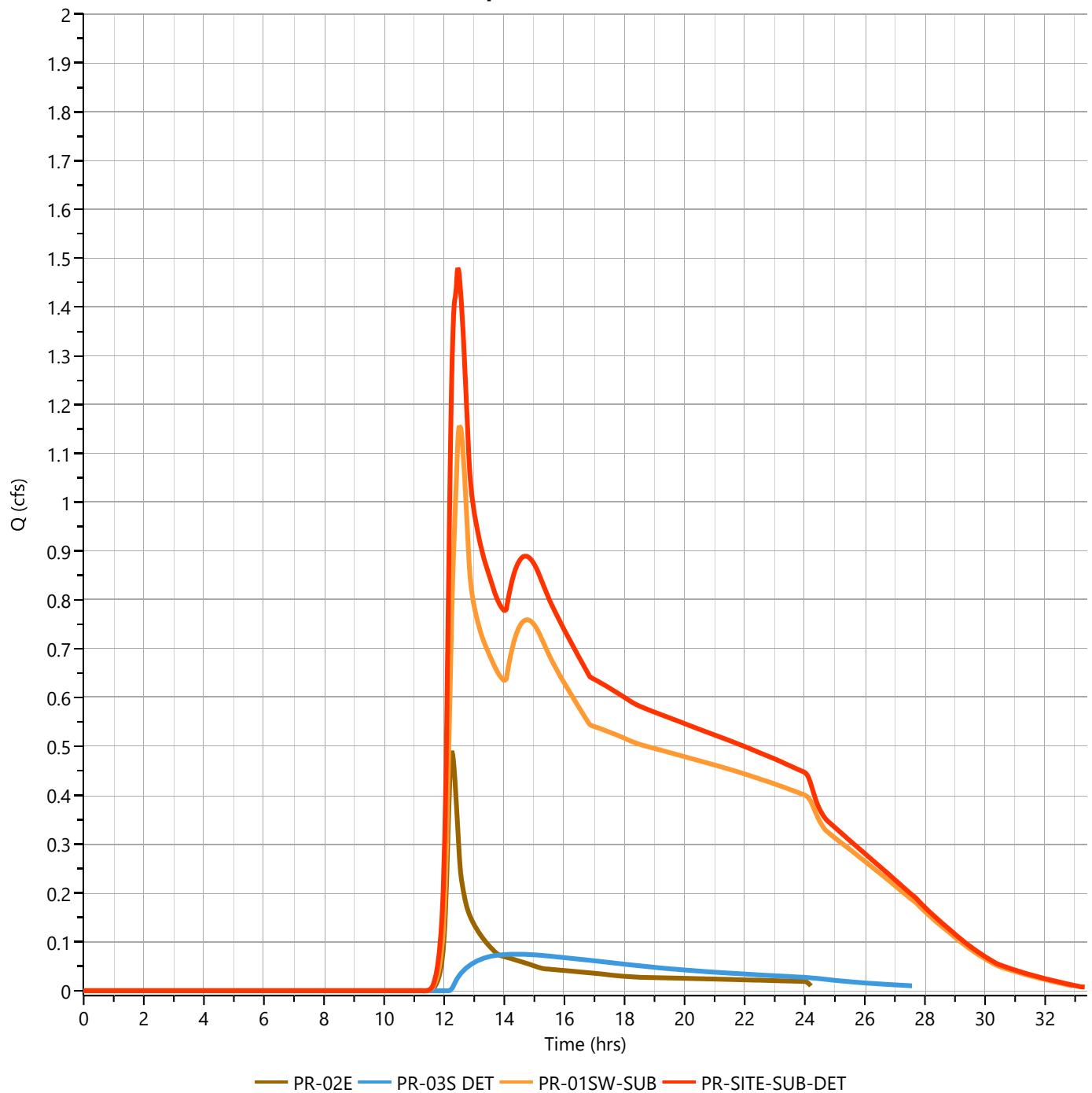
01-15-2026

PR-SITE-SUB-DET

Hyd. No. 16

Hydrograph Type	= Junction	Peak Flow	= 1.483 cfs
Storm Frequency	= 10-yr	Time to Peak	= 12.47 hrs
Time Interval	= 1 min	Hydrograph Volume	= 34,661 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Q_p = 1.483 cfs



Design Storm Report

Custom Storm filename:

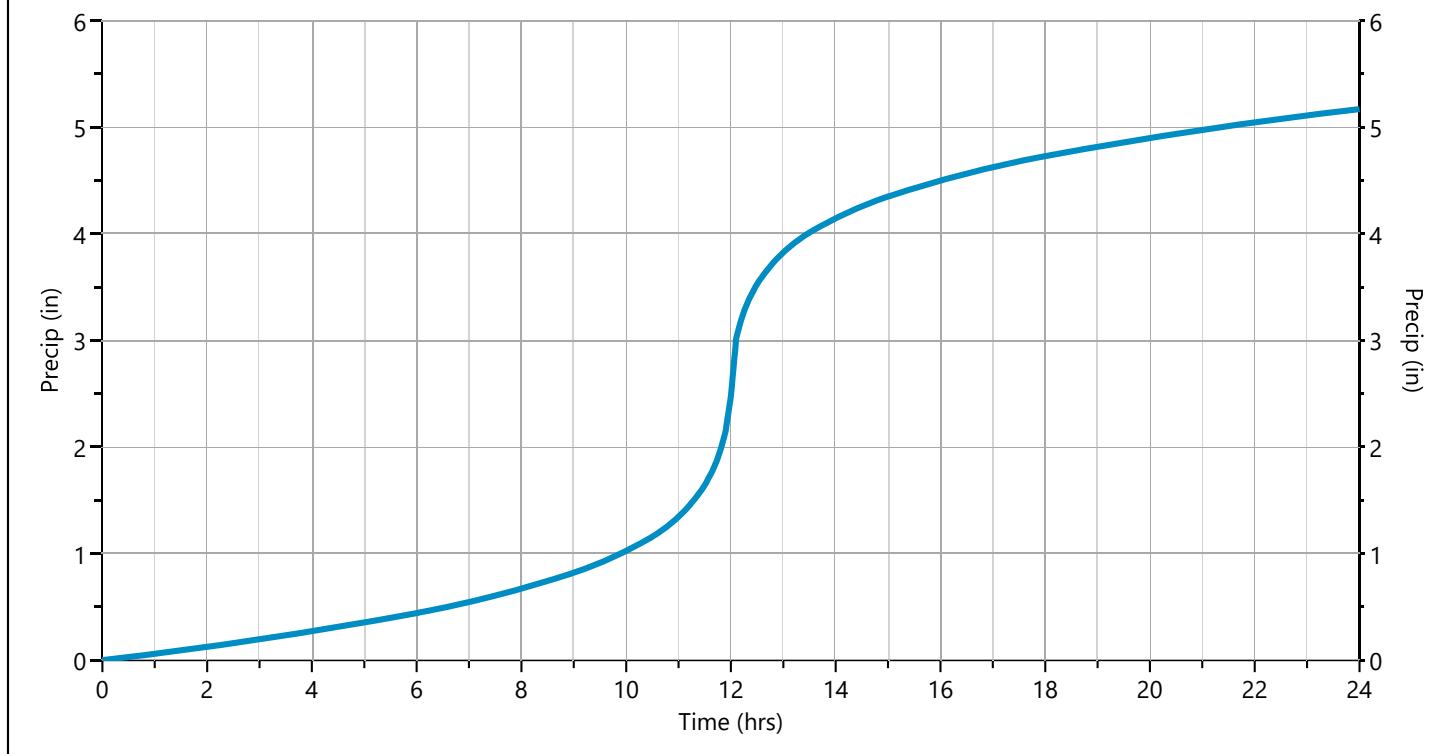
Hydrology Studio v 3.0.0.41

01-15-2026

Storm Distribution: NOAA-D, 24-hr

Storm Duration	Total Rainfall Volume (in)							
	1-yr	2-yr	3-yr	5-yr	<input checked="" type="checkbox"/> 10-yr	25-yr	50-yr	100-yr
24 hrs	2.87	3.44	0.00	4.38	5.17	6.24	7.04	7.90

Incremental Rainfall Distribution, 10-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.60	0.015596	11.78	0.022515	11.97	0.053896	12.15	0.031243	12.33	0.016415
11.62	0.016415	11.80	0.022517	11.98	0.053899	12.17	0.031243	12.35	0.016414
11.63	0.016414	11.82	0.031243	12.00	0.053895	12.18	0.031245	12.37	0.016415
11.65	0.016415	11.83	0.031245	12.02	0.089930	12.20	0.031243	12.38	0.016414
11.67	0.016414	11.85	0.031243	12.03	0.089935	12.22	0.022516	12.40	0.016416
11.68	0.016415	11.87	0.031243	12.05	0.089930	12.23	0.022515	12.42	0.015596
11.70	0.016414	11.88	0.031245	12.07	0.089935	12.25	0.022516	12.43	0.015597
11.72	0.022515	11.90	0.031244	12.08	0.089930	12.27	0.022515	12.45	0.015596
11.73	0.022516	11.92	0.053898	12.10	0.089935	12.28	0.022516	12.47	0.015596
11.75	0.022515	11.93	0.053896	12.12	0.031243	12.30	0.022514	12.48	0.015597
11.77	0.022516	11.95	0.053899	12.13	0.031245	12.32	0.016414	12.50	0.015596



Hydrograph 25-yr Summary

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	EX-01SW	4.907	12.40	31,392	---		
2	NRCS Runoff	EX-02E	1.603	12.28	8,438	---		
3	NRCS Runoff	EX-03S	0.508	12.25	2,439	---		
4	Junction	EX-SITE	6.756	12.37	42,269	1, 2, 3		
5	NRCS Runoff	PR-01SW	12.07	12.37	67,422	---		
6	NRCS Runoff	PR-02E	0.819	12.25	3,884	---		
7	NRCS Runoff	PR-03S	1.450	12.22	6,193	---		
8	Junction	PR-SITE	13.87	12.33	77,499	5, 6, 7		
9	NRCS Runoff	PR-01SW-SUB-A	12.30	12.27	58,945	---		
10	NRCS Runoff	PR-01SW-SUB-B	1.624	12.38	9,832	---		
11	Pond Route	PR-01SW DET	3.141	13.08	45,750	5	30.01	32,309
12	Pond Route	PR-03S DET	0.137	13.70	4,103	7	28.19	3,208
13	Junction	PR-SITE-DET	3.458	13.07	53,737	6, 11, 12		
14	Pond Route	PR-01SW-SUB DET	2.414	13.03	37,417	9	29.86	30,872
15	Junction	PR-01SW-SUB	3.021	12.92	47,249	10, 14		
16	Junction	PR-SITE-SUB-DET	3.364	12.82	55,237	6, 12, 15		

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-01SW

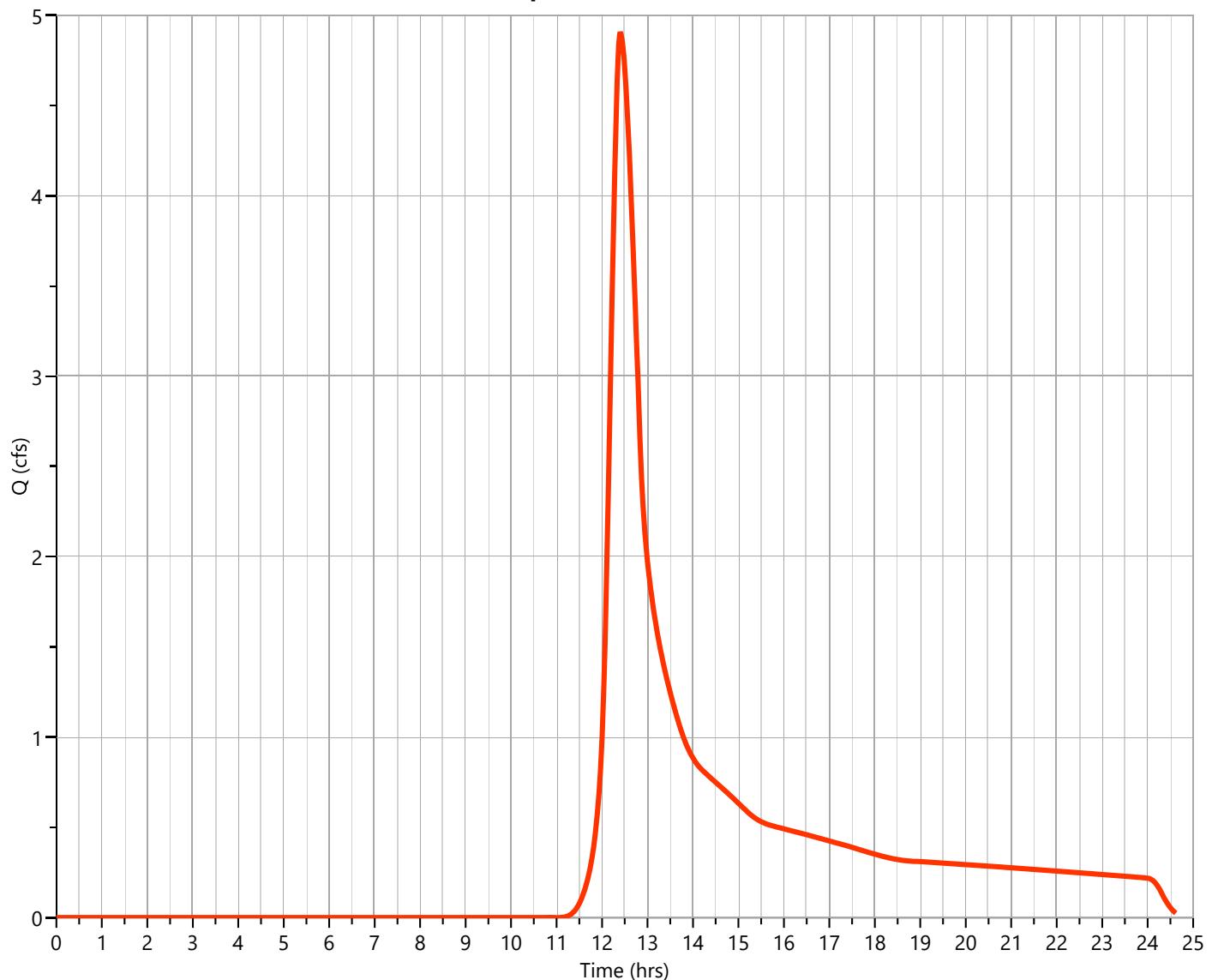
Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 4.907 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.40 hrs
Time Interval	= 1 min	Runoff Volume	= 31,392 cuft
Drainage Area	= 5.183 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 31.45 min
Total Rainfall	= 6.24 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
5.183	55.00	Woods
5.183	55.00	Weighted CN Method Employed

Q_p = 4.907 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-02E

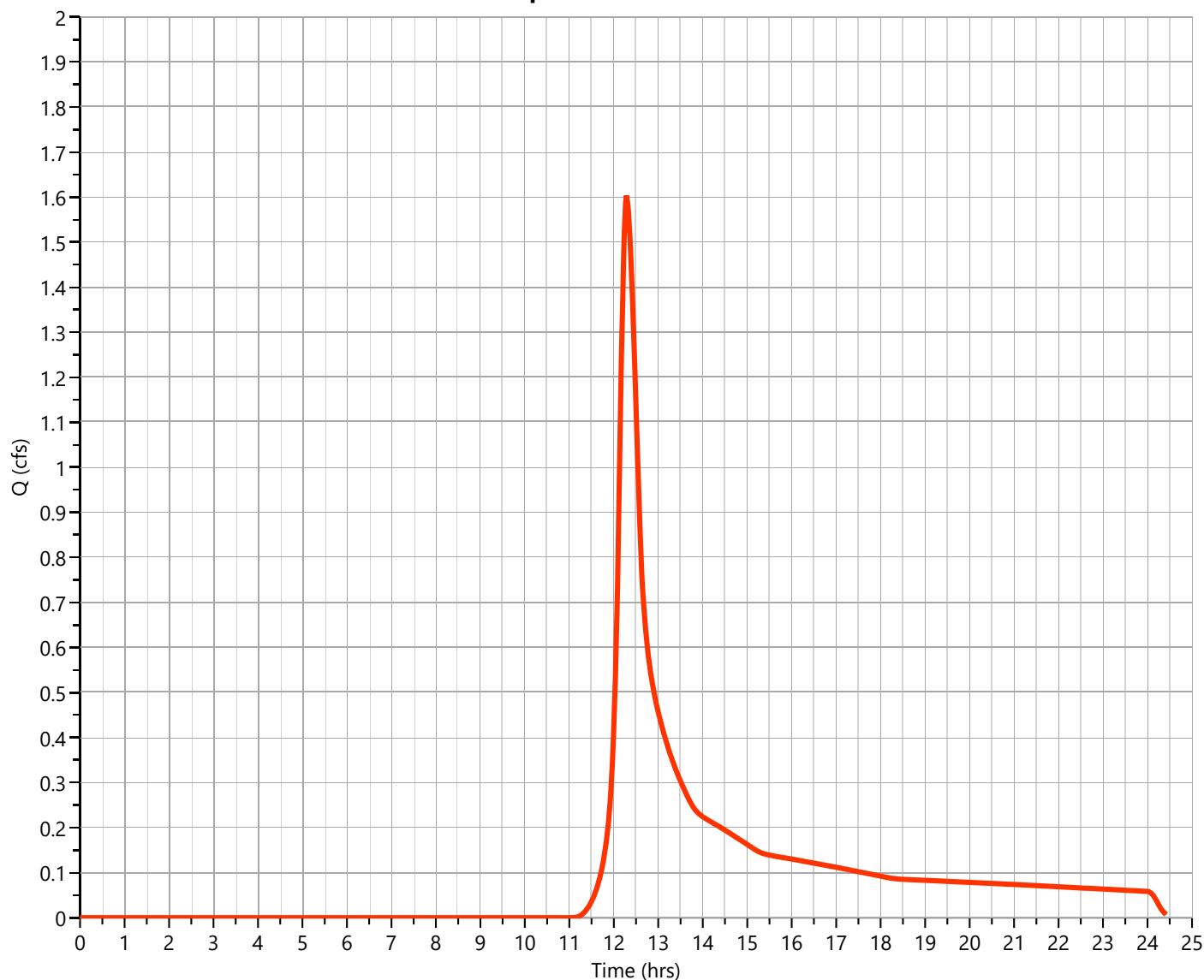
Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.603 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.28 hrs
Time Interval	= 1 min	Runoff Volume	= 8,438 cuft
Drainage Area	= 1.389 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.61 min
Total Rainfall	= 6.24 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
1.389	55.00	Woods
1.389	55.00	Weighted CN Method Employed

$Q_p = 1.603 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-03S

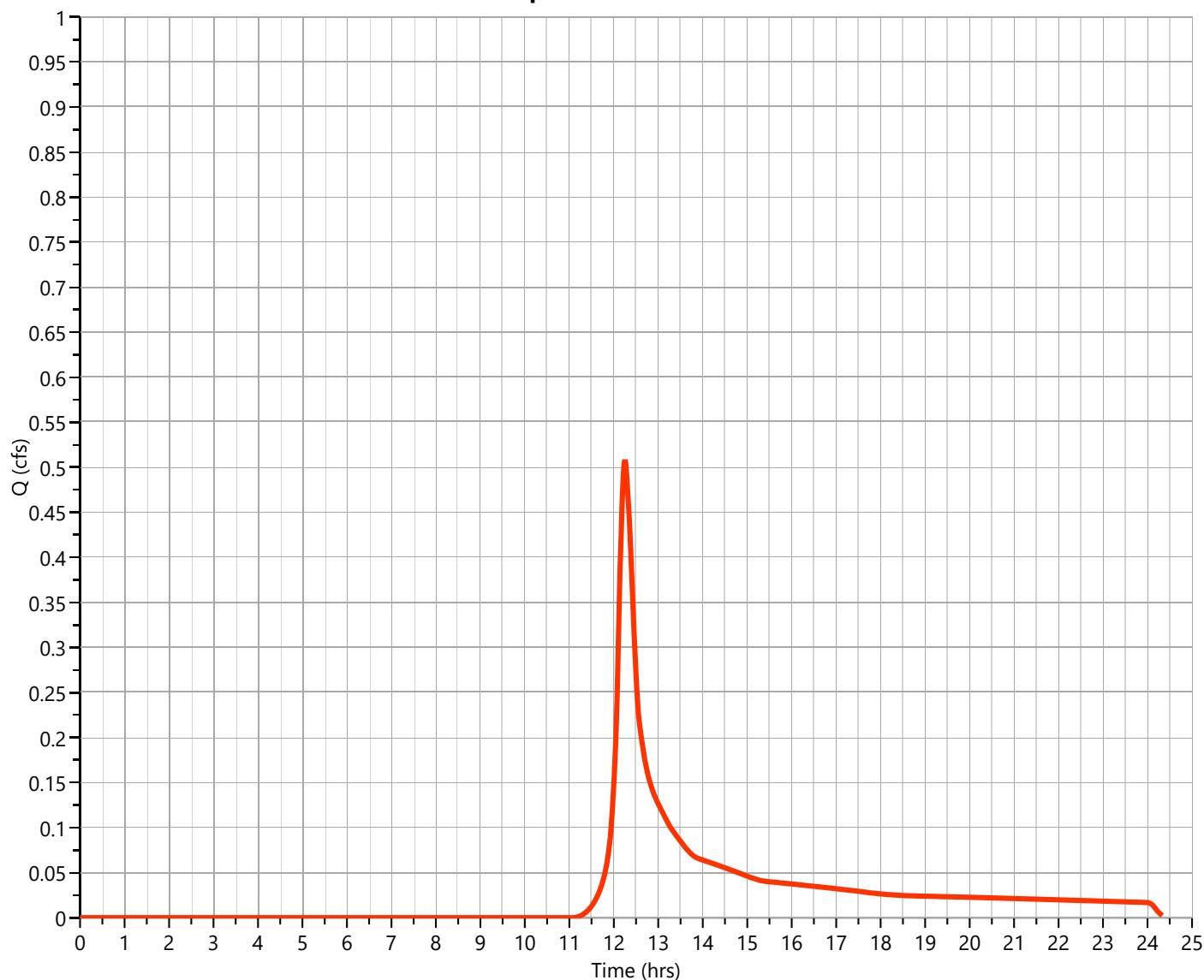
Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.508 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.25 hrs
Time Interval	= 1 min	Runoff Volume	= 2,439 cuft
Drainage Area	= 0.41 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.32 min
Total Rainfall	= 6.24 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.41	55.00	Woods
0.41	55.00	Weighted CN Method Employed

$Q_p = 0.508 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

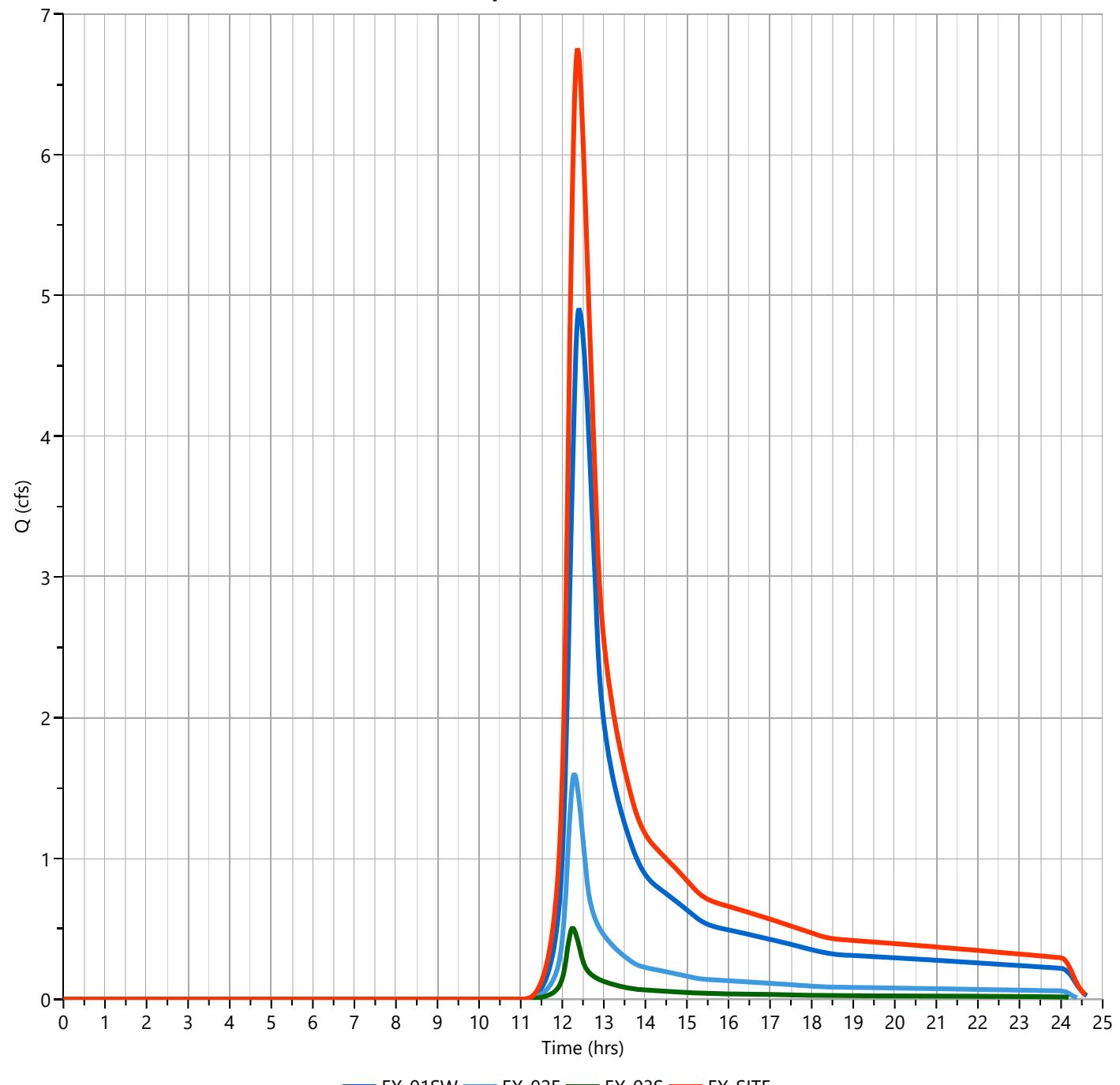
01-15-2026

EX-SITE

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 6.756 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.37 hrs
Time Interval	= 1 min	Hydrograph Volume	= 42,269 cuft
Inflow Hydrographs	= 1, 2, 3	Total Contrib. Area	= 6.982 ac

Qp = 6.756 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW

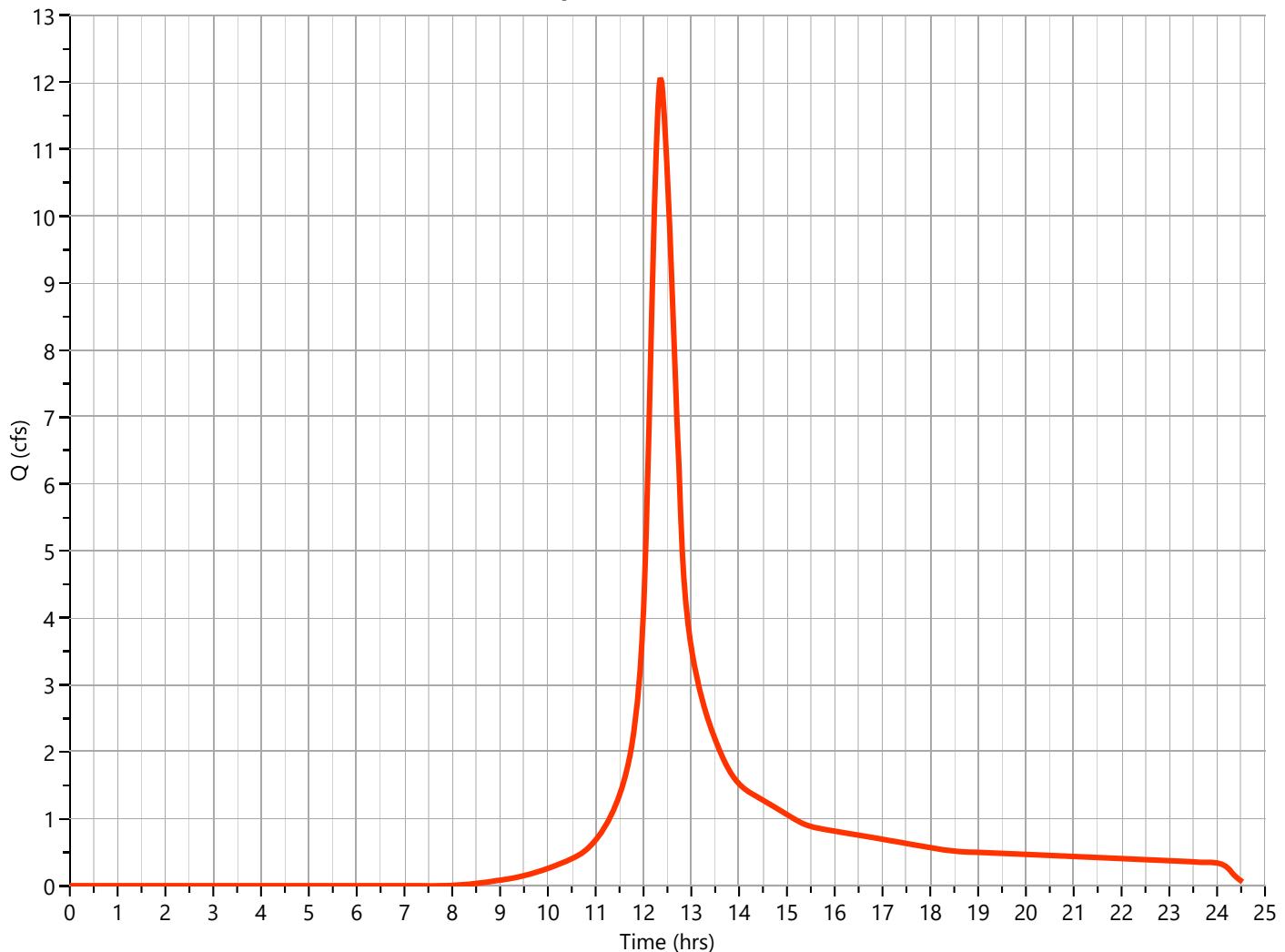
Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 12.07 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.37 hrs
Time Interval	= 1 min	Runoff Volume	= 67,422 cuft
Drainage Area	= 5.777 ac	Curve Number	= 72.25*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 6.24 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.378	61.00	Landscape
1.263	58.00	Conservation
1.099	55.00	Woods
5.777	72.25	Weighted CN Method Employed

Qp = 12.07 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-02E

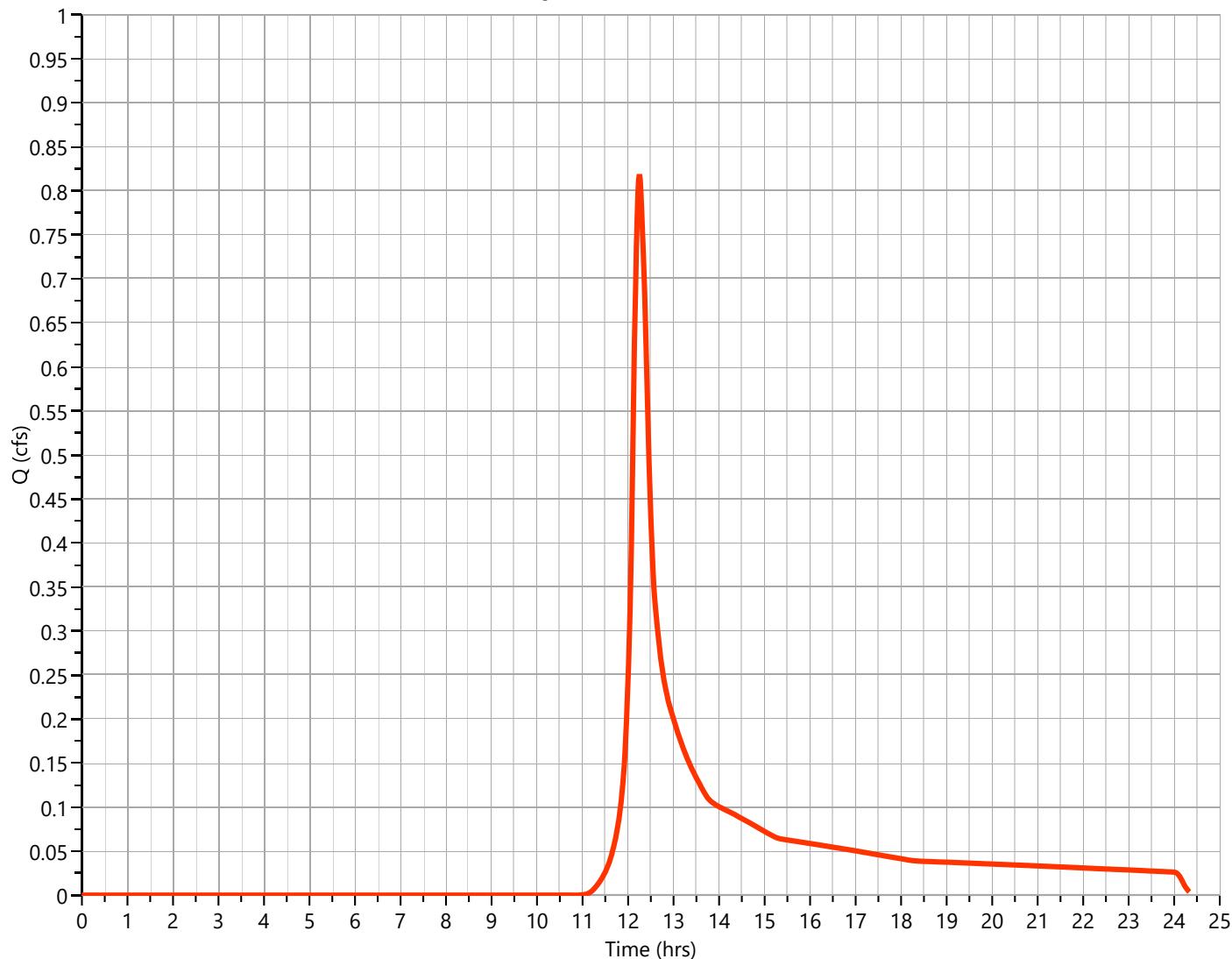
Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.819 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.25 hrs
Time Interval	= 1 min	Runoff Volume	= 3,884 cuft
Drainage Area	= 0.625 ac	Curve Number	= 55.90*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.27 min
Total Rainfall	= 6.24 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.009	61.00	Landscape
0.17	58.00	Conservation
0.446	55.00	Woods
0.625	55.90	Weighted CN Method Employed

Qp = 0.819 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S

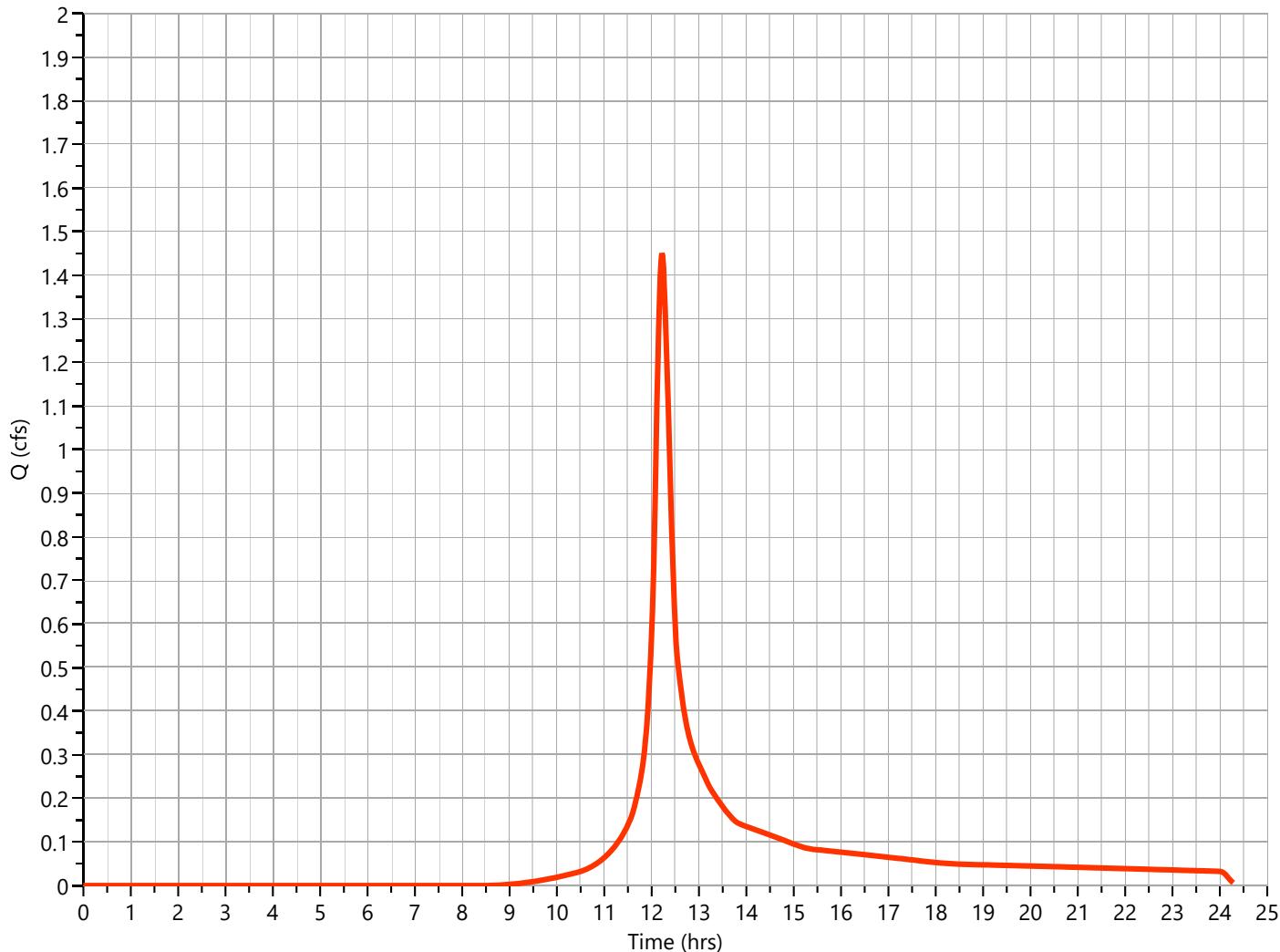
Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.450 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.22 hrs
Time Interval	= 1 min	Runoff Volume	= 6,193 cuft
Drainage Area	= 0.581 ac	Curve Number	= 68.99*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.21 min
Total Rainfall	= 6.24 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.156	98.00	Impervious
0.136	61.00	Landscape
0.201	58.00	Conservation
0.088	55.00	Woods
0.581	68.99	Weighted CN Method Employed

Qp = 1.450 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

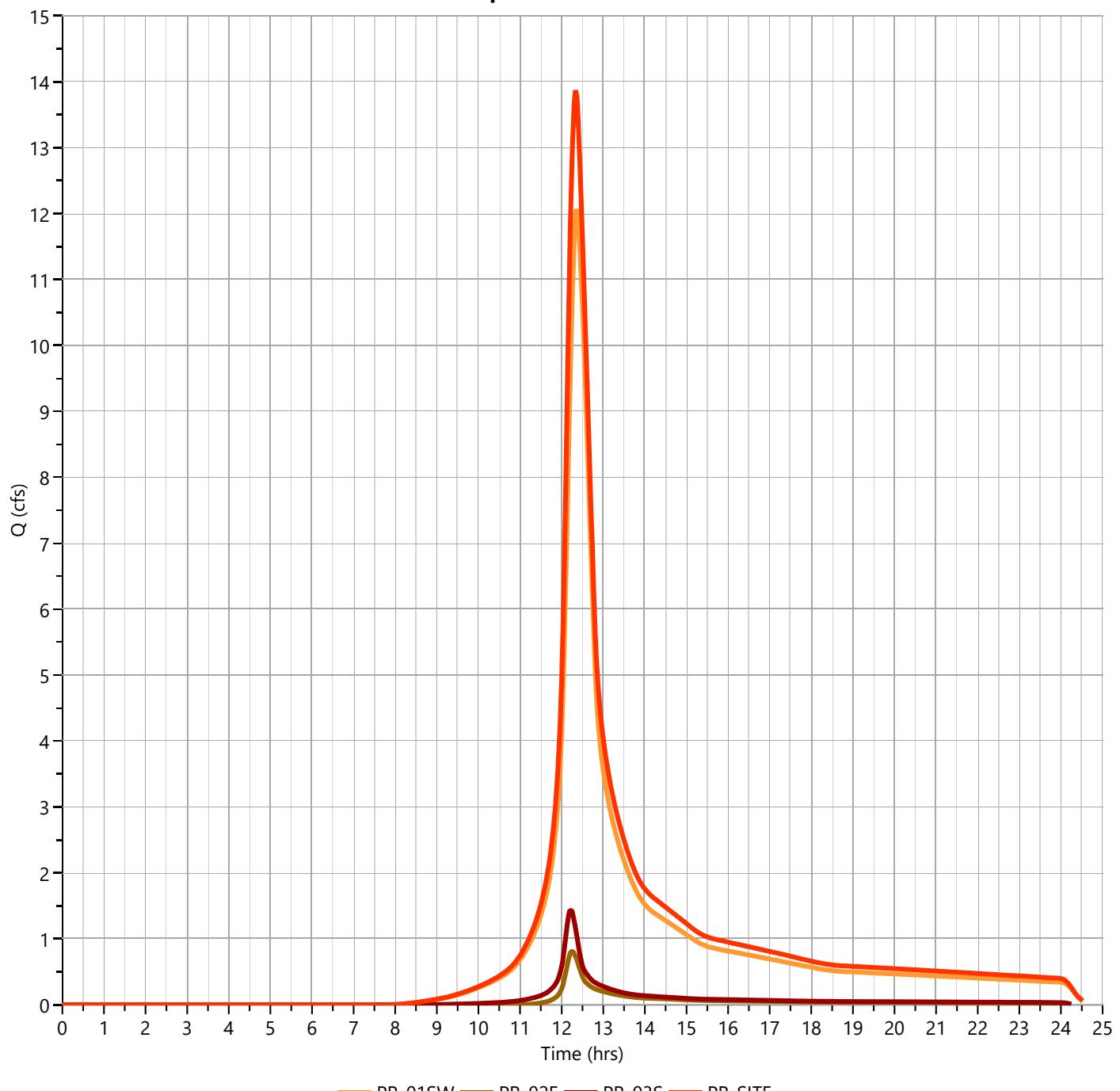
01-15-2026

PR-SITE

Hyd. No. 8

Hydrograph Type	= Junction	Peak Flow	= 13.87 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.33 hrs
Time Interval	= 1 min	Hydrograph Volume	= 77,499 cuft
Inflow Hydrographs	= 5, 6, 7	Total Contrib. Area	= 6.983 ac

Q_p = 13.87 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-A

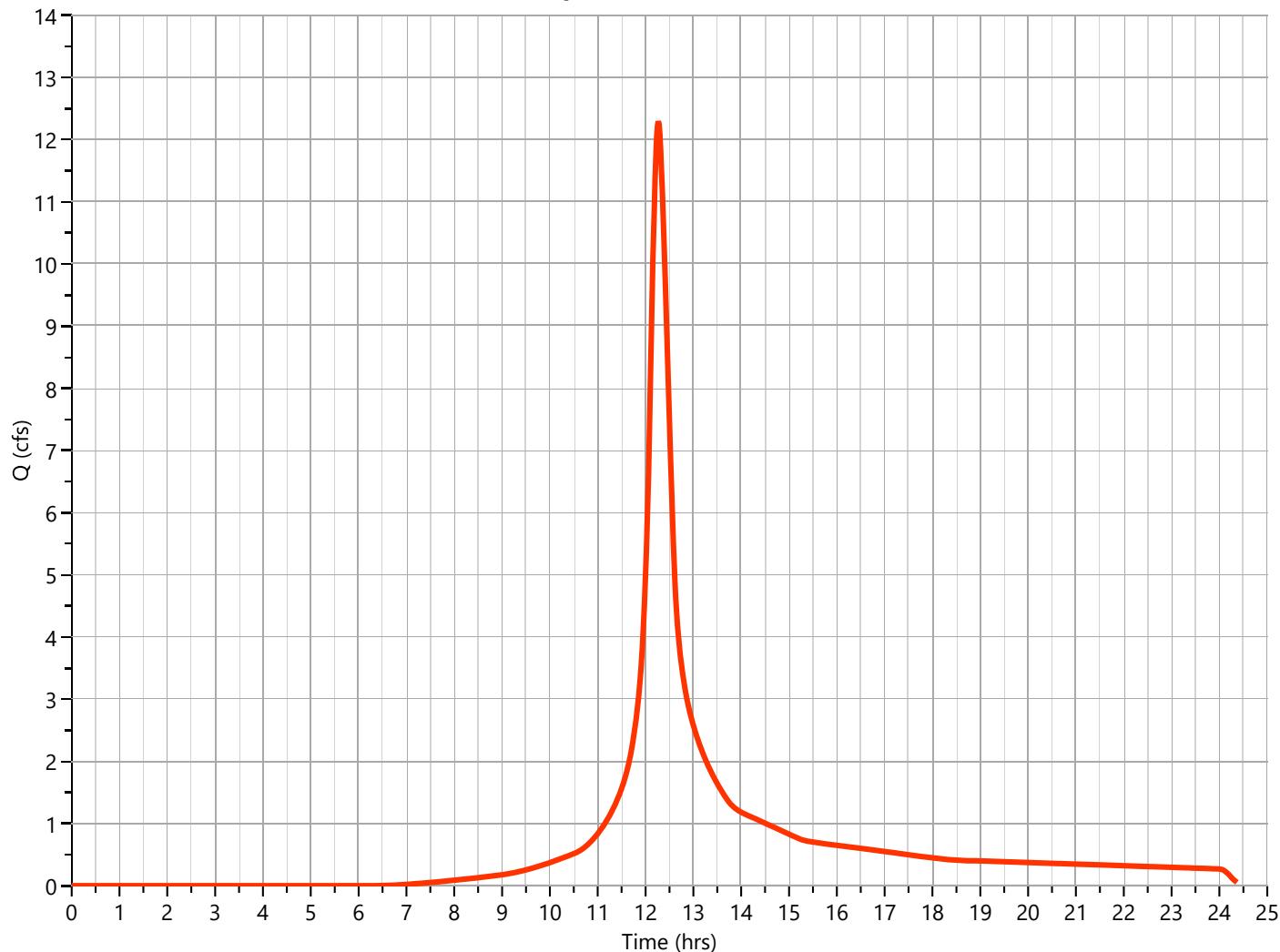
Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 12.30 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.27 hrs
Time Interval	= 1 min	Runoff Volume	= 58,945 cuft
Drainage Area	= 4.266 ac	Curve Number	= 77.79*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.53 min
Total Rainfall	= 6.24 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.213	61.00	Landscape
0.786	58.00	Conservation
0.23	55.00	Woods
4.266	77.79	Weighted CN Method Employed

Qp = 12.30 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-B

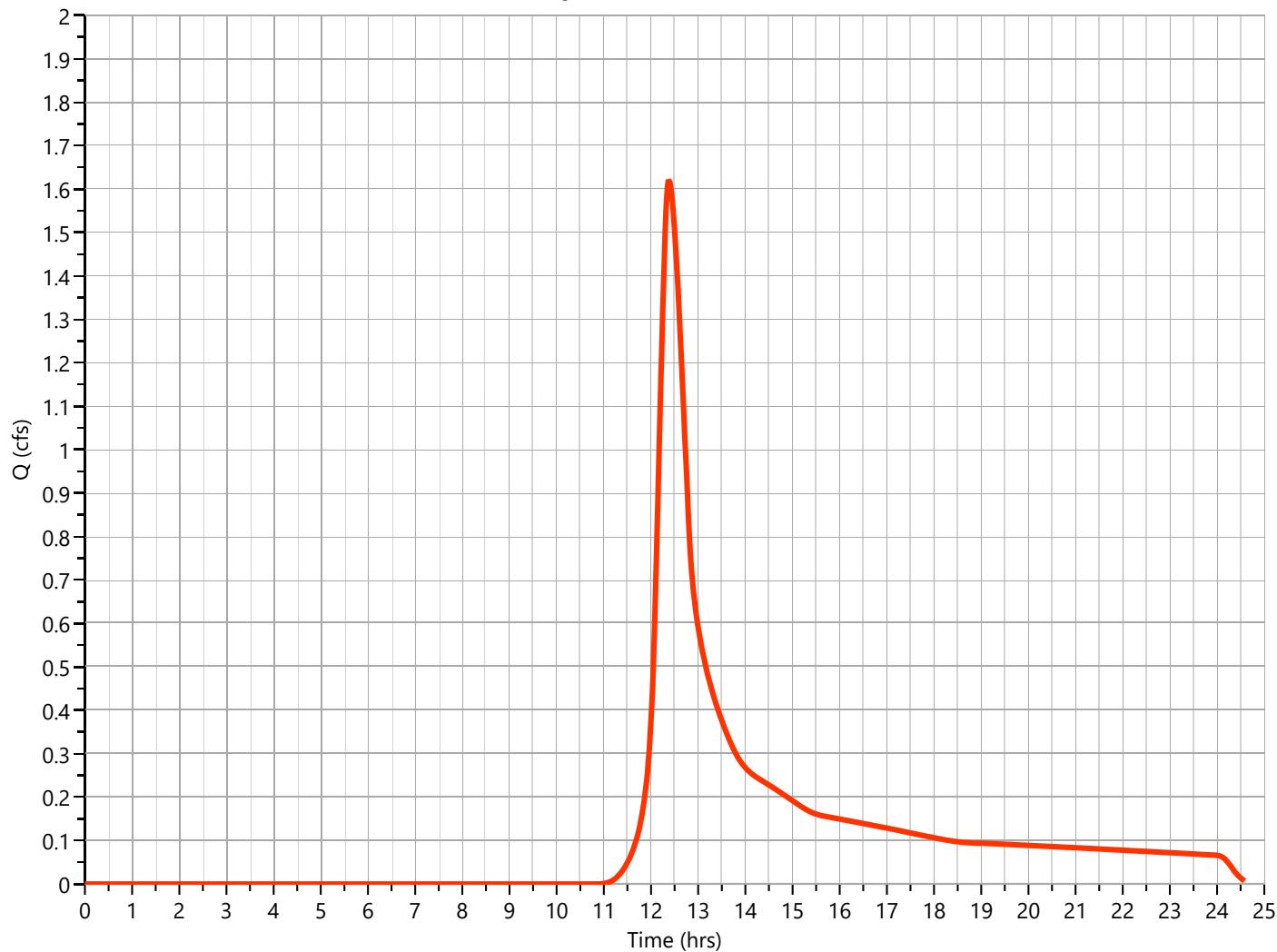
Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.624 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.38 hrs
Time Interval	= 1 min	Runoff Volume	= 9,832 cuft
Drainage Area	= 1.511 ac	Curve Number	= 56.63*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 6.24 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.001	98.00	Impervious
0.164	61.00	Landscape
0.477	58.00	Conservation
0.869	55.00	Woods
1.511	56.63	Weighted CN Method Employed

Qp = 1.624 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW DET

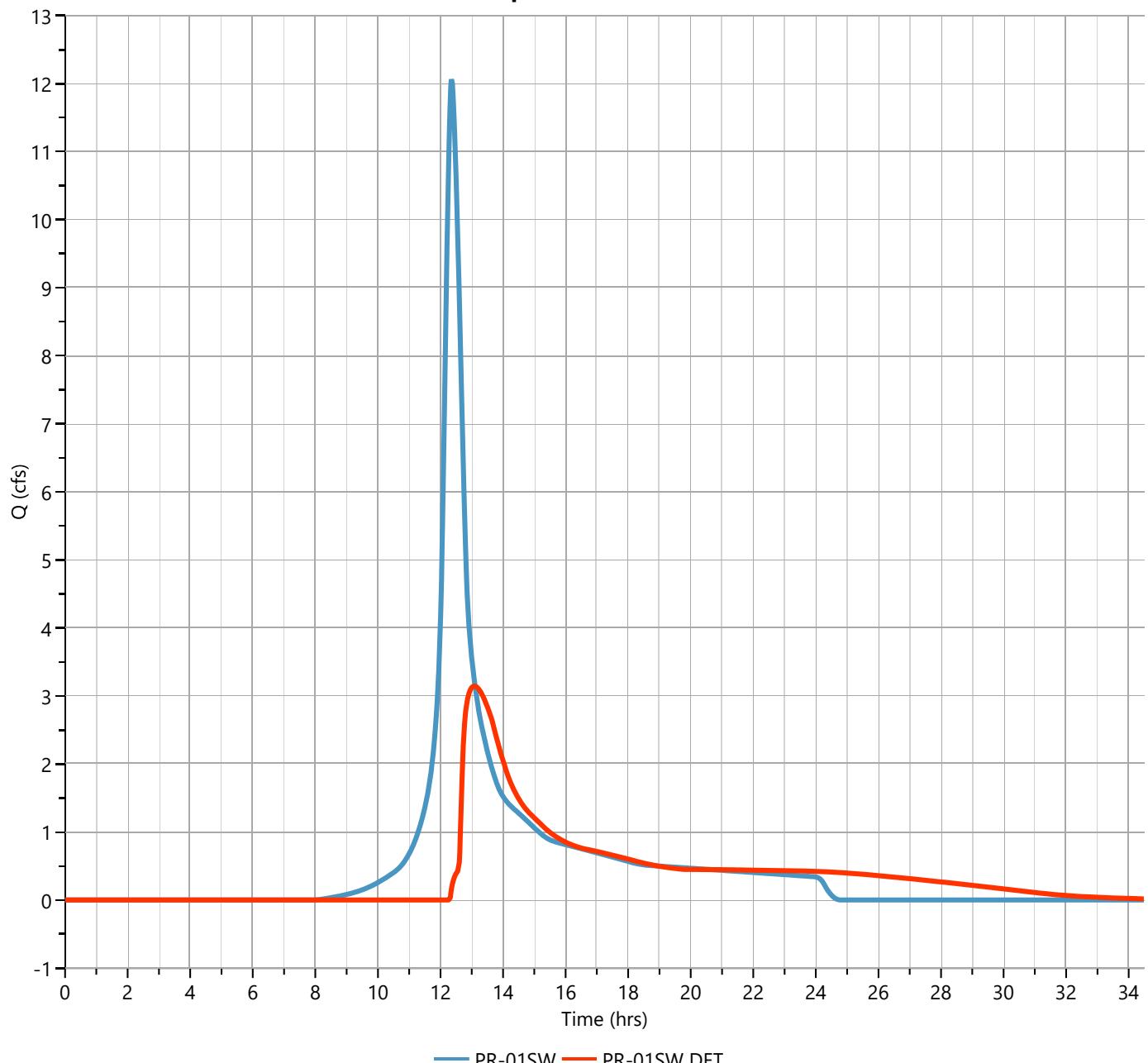
Hyd. No. 11

Hydrograph Type	= Pond Route	Peak Flow	= 3.141 cfs
Storm Frequency	= 25-yr	Time to Peak	= 13.08 hrs
Time Interval	= 1 min	Hydrograph Volume	= 45,750 cuft
Inflow Hydrograph	= 5 - PR-01SW	Max. Elevation	= 30.01 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 32,309 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 3.73 hrs

Q_p = 3.141 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S DET

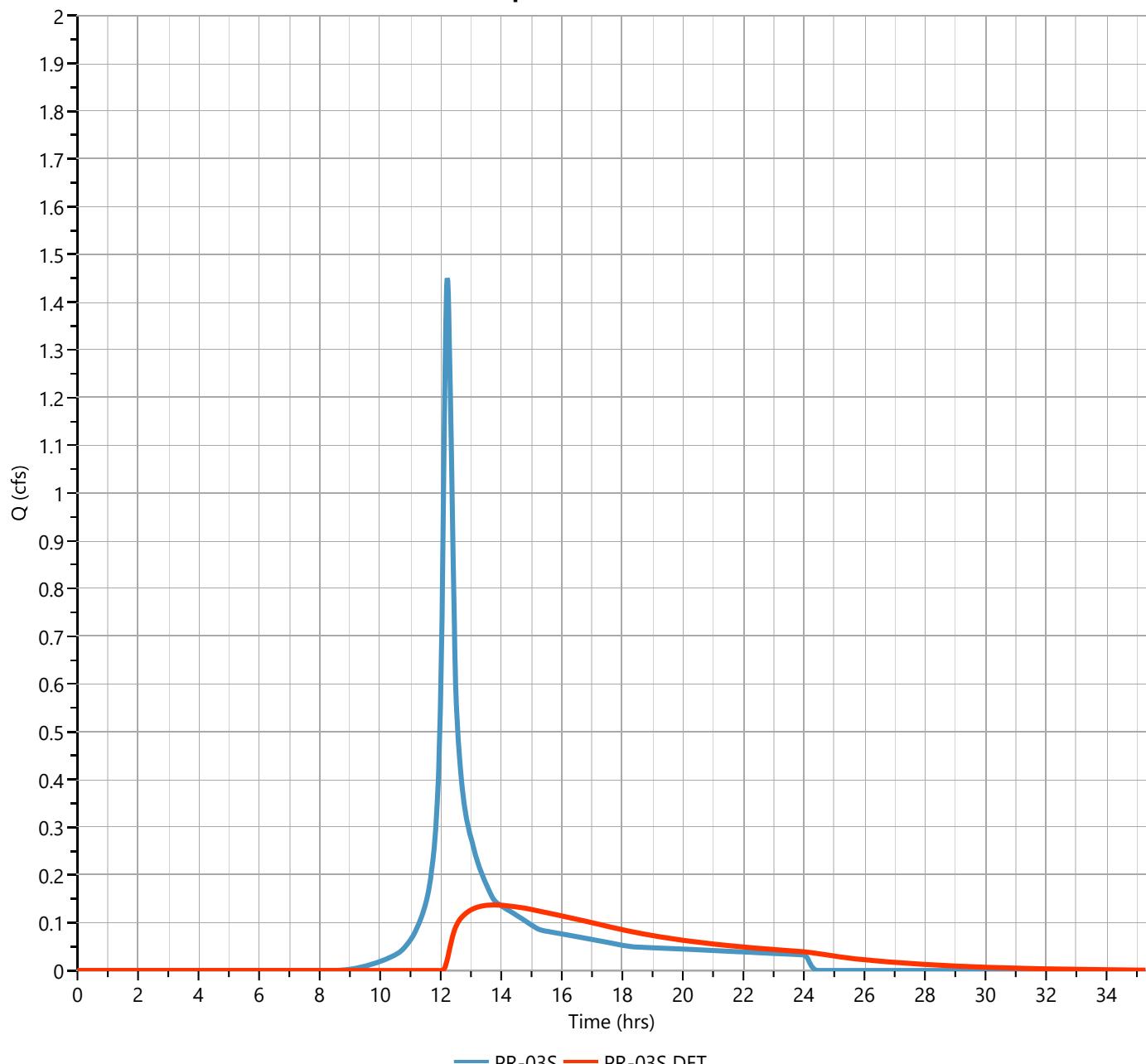
Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.137 cfs
Storm Frequency	= 25-yr	Time to Peak	= 13.70 hrs
Time Interval	= 1 min	Hydrograph Volume	= 4,103 cuft
Inflow Hydrograph	= 7 - PR-03S	Max. Elevation	= 28.19 ft
Pond Name	= PR-03S RAIN GARDEN	Max. Storage	= 3,208 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 3.79 hrs

$Q_p = 0.137 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

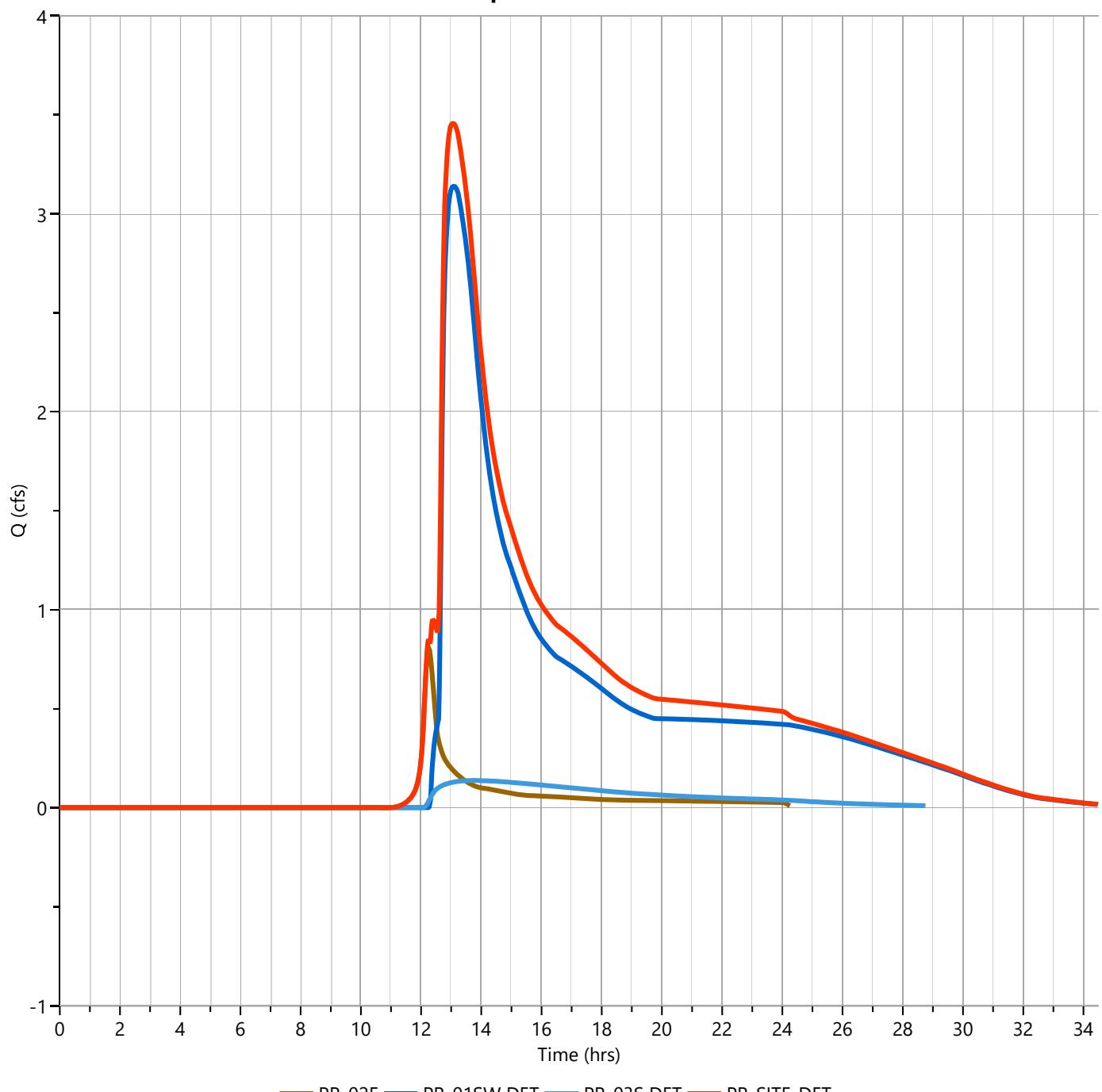
01-15-2026

PR-SITE-DET

Hyd. No. 13

Hydrograph Type	= Junction	Peak Flow	= 3.458 cfs
Storm Frequency	= 25-yr	Time to Peak	= 13.07 hrs
Time Interval	= 1 min	Hydrograph Volume	= 53,737 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Qp = 3.458 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB DET

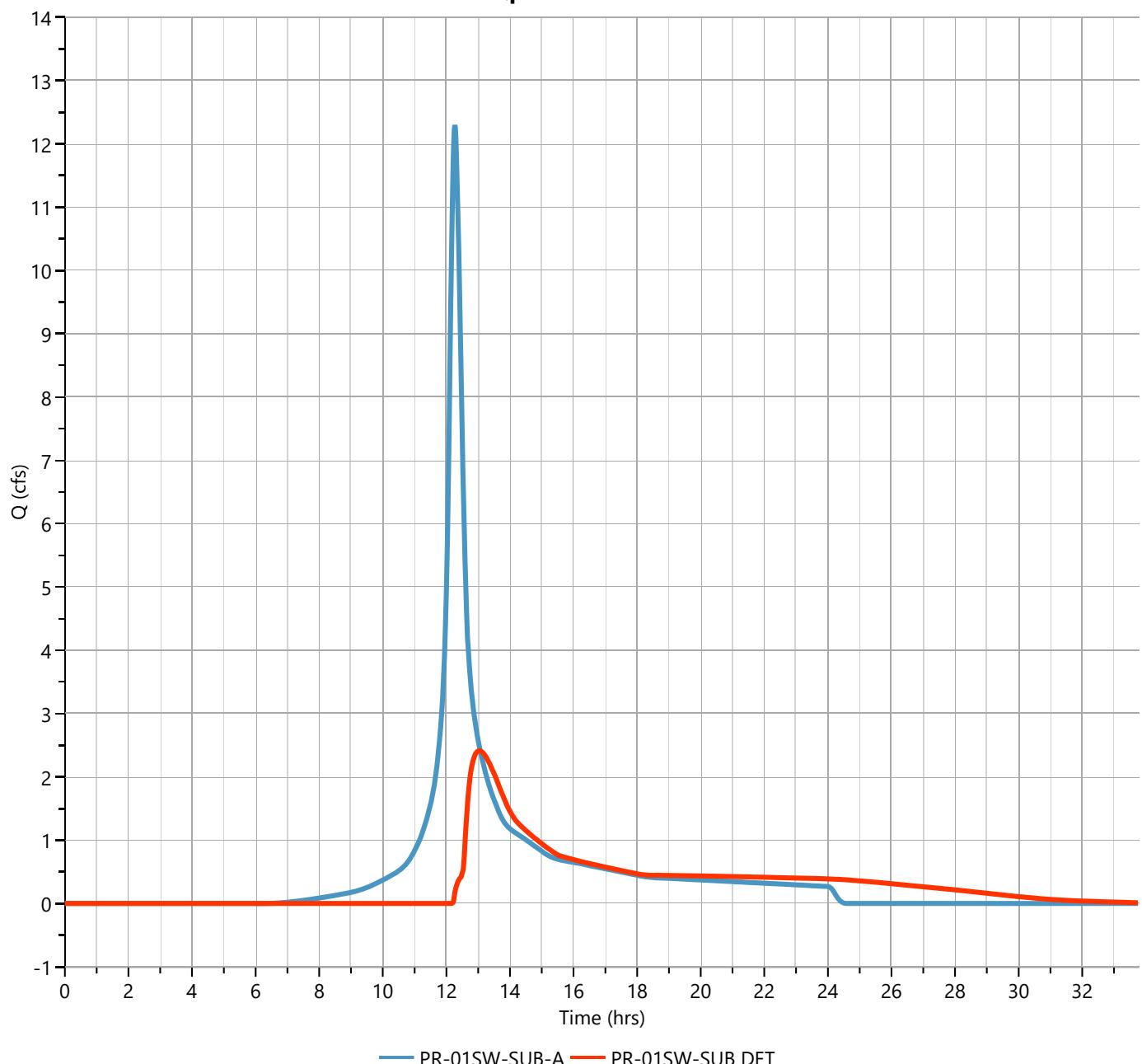
Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 2.414 cfs
Storm Frequency	= 25-yr	Time to Peak	= 13.03 hrs
Time Interval	= 1 min	Hydrograph Volume	= 37,417 cuft
Inflow Hydrograph	= 9 - PR-01SW-SUB-A	Max. Elevation	= 29.86 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 30,872 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 4.19 hrs

$Q_p = 2.414 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

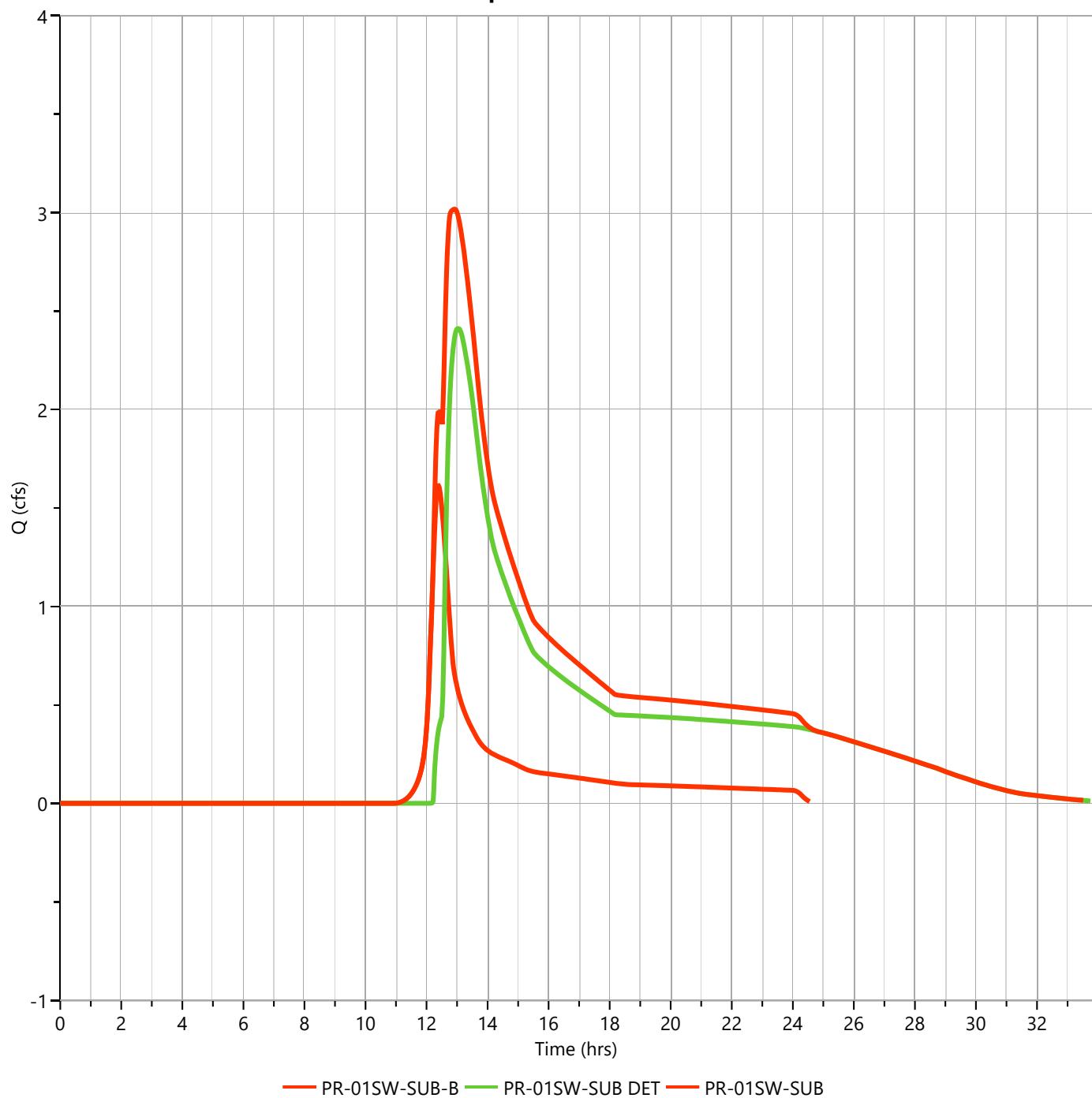
01-15-2026

PR-01SW-SUB

Hyd. No. 15

Hydrograph Type	= Junction	Peak Flow	= 3.021 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.92 hrs
Time Interval	= 1 min	Hydrograph Volume	= 47,249 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 1.511 ac

Qp = 3.021 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

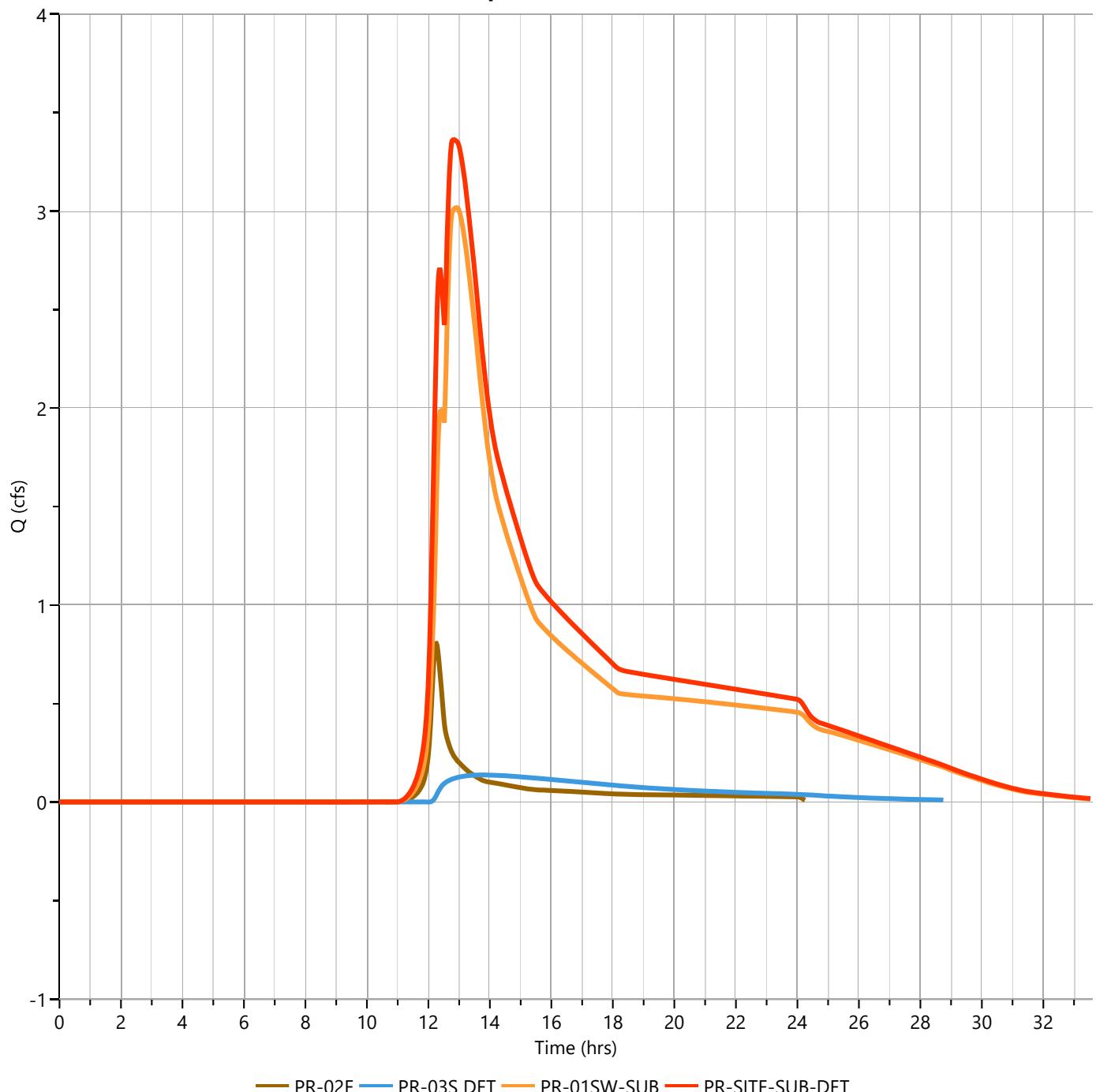
01-15-2026

PR-SITE-SUB-DET

Hyd. No. 16

Hydrograph Type	= Junction	Peak Flow	= 3.364 cfs
Storm Frequency	= 25-yr	Time to Peak	= 12.82 hrs
Time Interval	= 1 min	Hydrograph Volume	= 55,237 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Qp = 3.364 cfs



Design Storm Report

Custom Storm filename:

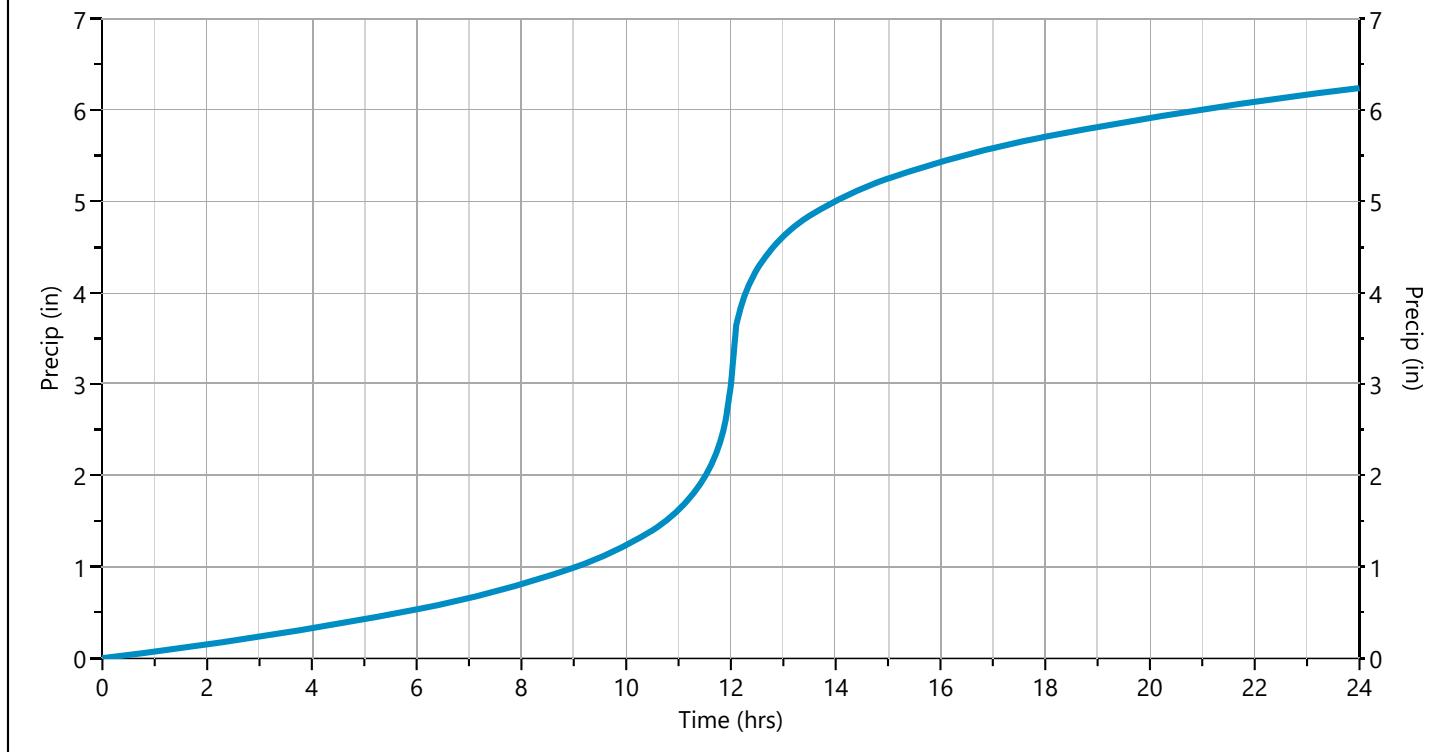
Hydrology Studio v 3.0.0.41

01-15-2026

Storm Distribution: NOAA-D, 24-hr

Storm Duration	Total Rainfall Volume (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	✓ 25-yr	50-yr	100-yr
24 hrs	2.87	3.44	0.00	4.38	5.17	6.24	7.04	7.90

Incremental Rainfall Distribution, 25-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.60	0.018824	11.78	0.027174	11.97	0.065050	12.15	0.037709	12.33	0.019813
11.62	0.019812	11.80	0.027178	11.98	0.065054	12.17	0.037709	12.35	0.019811
11.63	0.019812	11.82	0.037709	12.00	0.065049	12.18	0.037712	12.37	0.019813
11.65	0.019813	11.83	0.037712	12.02	0.108542	12.20	0.037709	12.38	0.019811
11.67	0.019811	11.85	0.037709	12.03	0.108548	12.22	0.027175	12.40	0.019814
11.68	0.019813	11.87	0.037709	12.05	0.108542	12.23	0.027174	12.42	0.018823
11.70	0.019811	11.88	0.037711	12.07	0.108548	12.25	0.027176	12.43	0.018825
11.72	0.027174	11.90	0.037710	12.08	0.108542	12.27	0.027175	12.45	0.018824
11.73	0.027176	11.92	0.065053	12.10	0.108548	12.28	0.027176	12.47	0.018824
11.75	0.027175	11.93	0.065050	12.12	0.037709	12.30	0.027174	12.48	0.018825
11.77	0.027176	11.95	0.065054	12.13	0.037712	12.32	0.019812	12.50	0.018824



Hydrograph 50-yr Summary

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	EX-01SW	6.603	12.40	40,704	---		
2	NRCS Runoff	EX-02E	2.154	12.28	10,941	---		
3	NRCS Runoff	EX-03S	0.681	12.25	3,162	---		
4	Junction	EX-SITE	9.080	12.37	54,807	1, 2, 3		
5	NRCS Runoff	PR-01SW	14.62	12.35	81,570	---		
6	NRCS Runoff	PR-02E	1.088	12.25	5,012	---		
7	NRCS Runoff	PR-03S	1.778	12.22	7,572	---		
8	Junction	PR-SITE	16.90	12.33	94,154	5, 6, 7		
9	NRCS Runoff	PR-01SW-SUB-A	14.58	12.27	70,169	---		
10	NRCS Runoff	PR-01SW-SUB-B	2.149	12.38	12,639	---		
11	Pond Route	PR-01SW DET	4.133	13.00	59,656	5	30.48	37,364
12	Pond Route	PR-03S DET	0.459	12.68	5,426	7	28.28	3,429
13	Junction	PR-SITE-DET	4.791	12.80	70,094	6, 11, 12		
14	Pond Route	PR-01SW-SUB DET	3.726	12.80	48,387	9	30.19	34,229
15	Junction	PR-01SW-SUB	5.255	12.58	61,027	10, 14		
16	Junction	PR-SITE-SUB-DET	6.043	12.62	71,465	6, 12, 15		

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-01SW

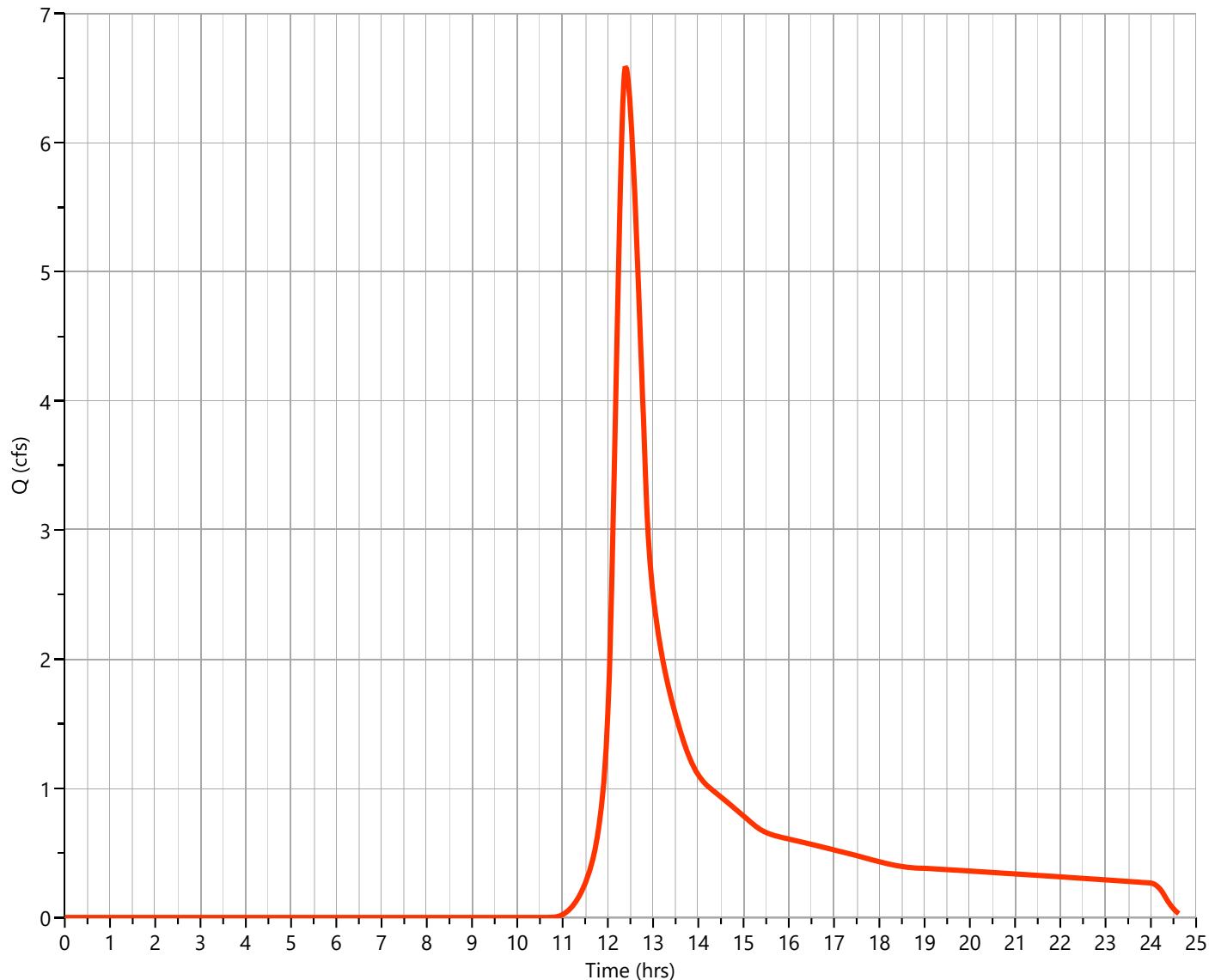
Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 6.603 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.40 hrs
Time Interval	= 1 min	Runoff Volume	= 40,704 cuft
Drainage Area	= 5.183 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 31.45 min
Total Rainfall	= 7.04 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
5.183	55.00	Woods
5.183	55.00	Weighted CN Method Employed

Q_p = 6.603 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-02E

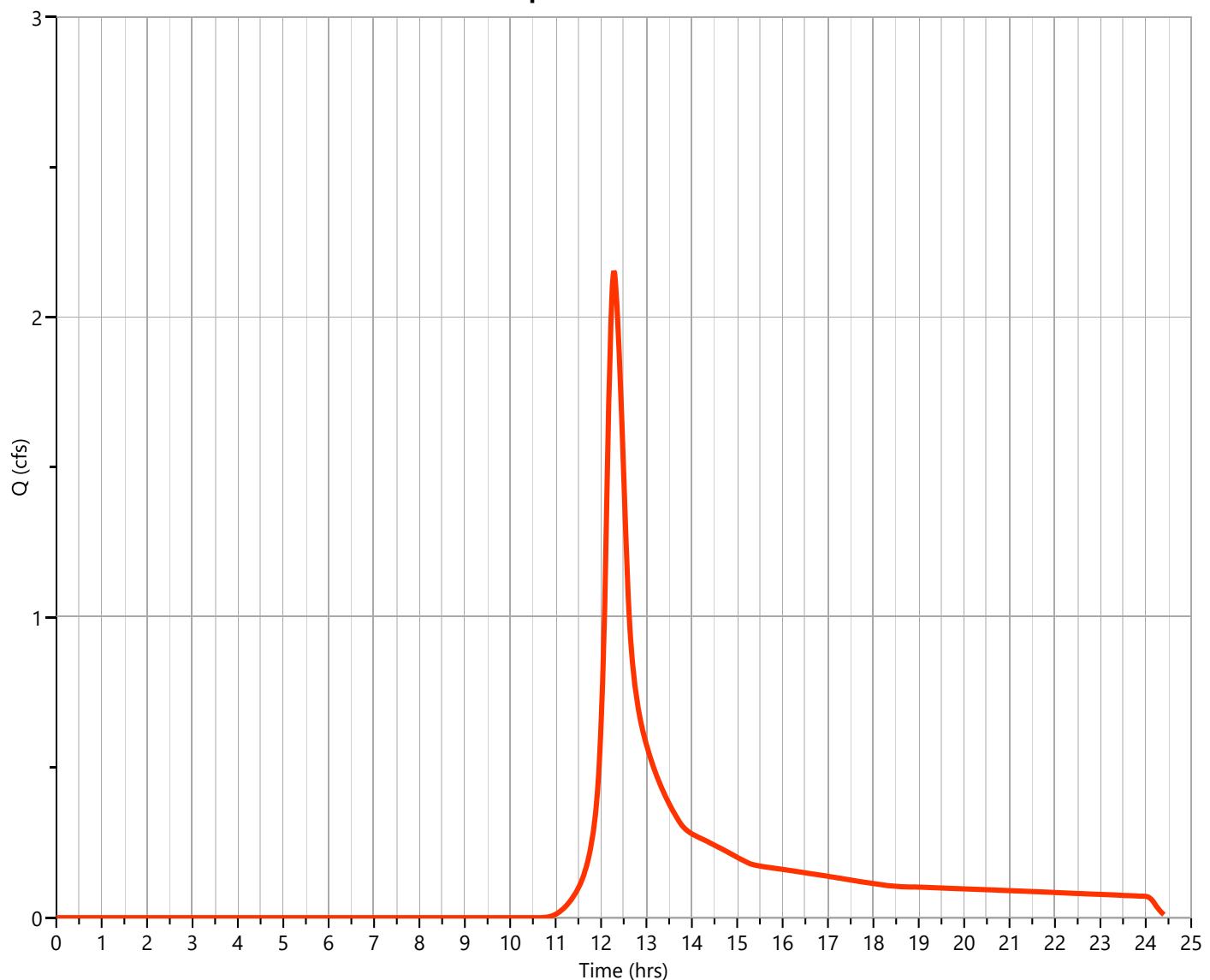
Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.154 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.28 hrs
Time Interval	= 1 min	Runoff Volume	= 10,941 cuft
Drainage Area	= 1.389 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.61 min
Total Rainfall	= 7.04 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
1.389	55.00	Woods
1.389	55.00	Weighted CN Method Employed

Qp = 2.154 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-03S

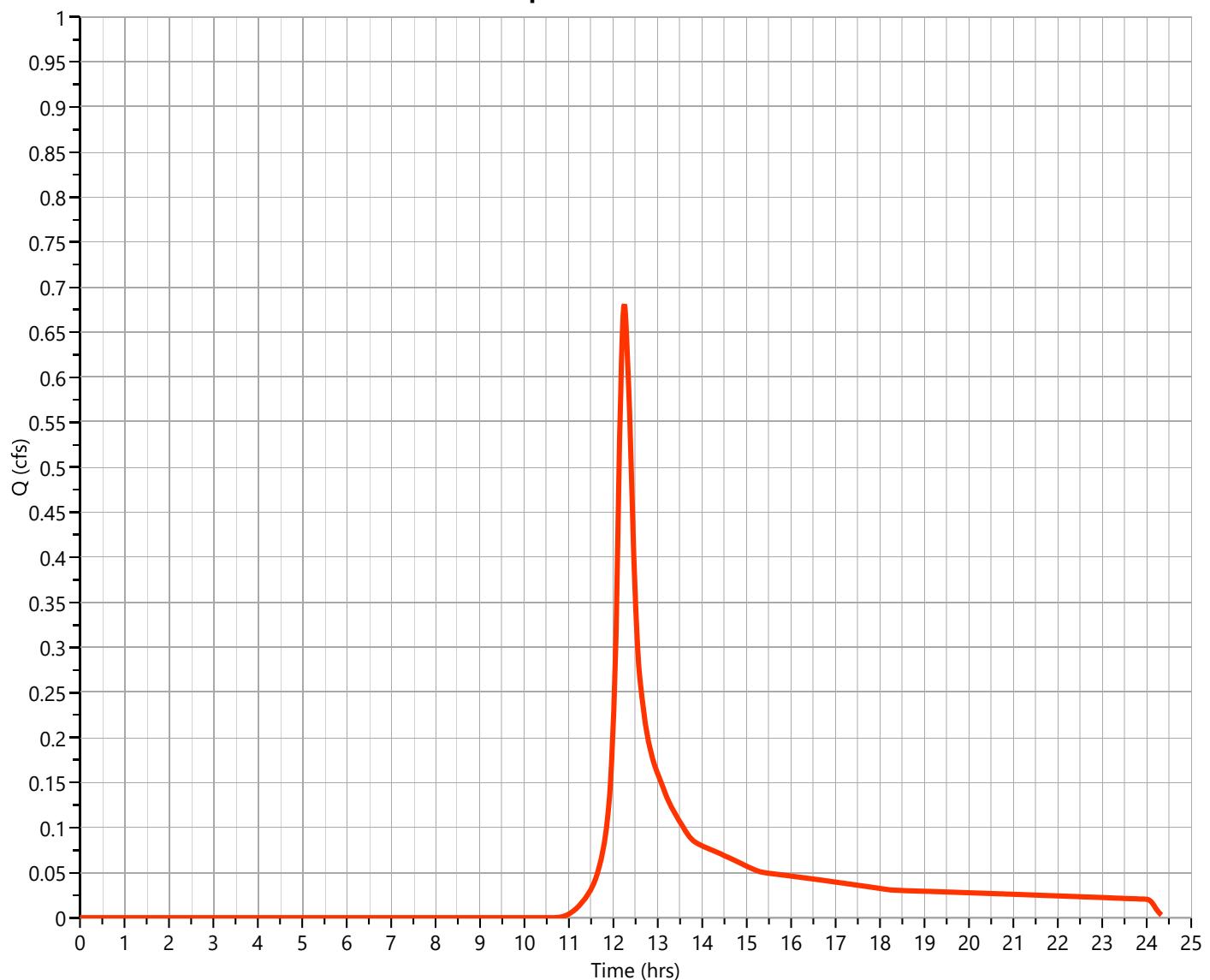
Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.681 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.25 hrs
Time Interval	= 1 min	Runoff Volume	= 3,162 cuft
Drainage Area	= 0.41 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.32 min
Total Rainfall	= 7.04 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.41	55.00	Woods
0.41	55.00	Weighted CN Method Employed

$Q_p = 0.681 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

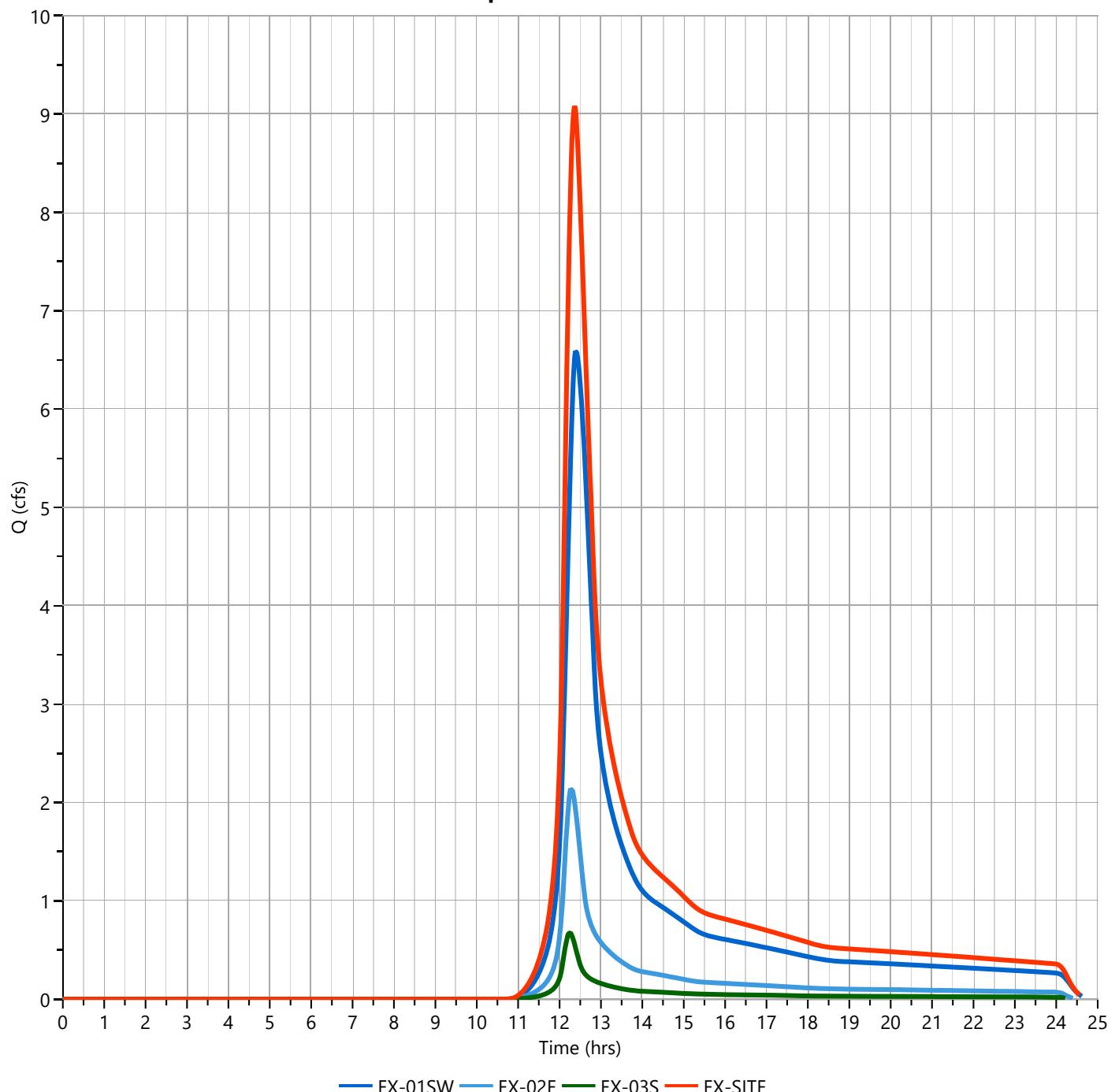
01-15-2026

EX-SITE

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 9.080 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.37 hrs
Time Interval	= 1 min	Hydrograph Volume	= 54,807 cuft
Inflow Hydrographs	= 1, 2, 3	Total Contrib. Area	= 6.982 ac

Qp = 9.080 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW

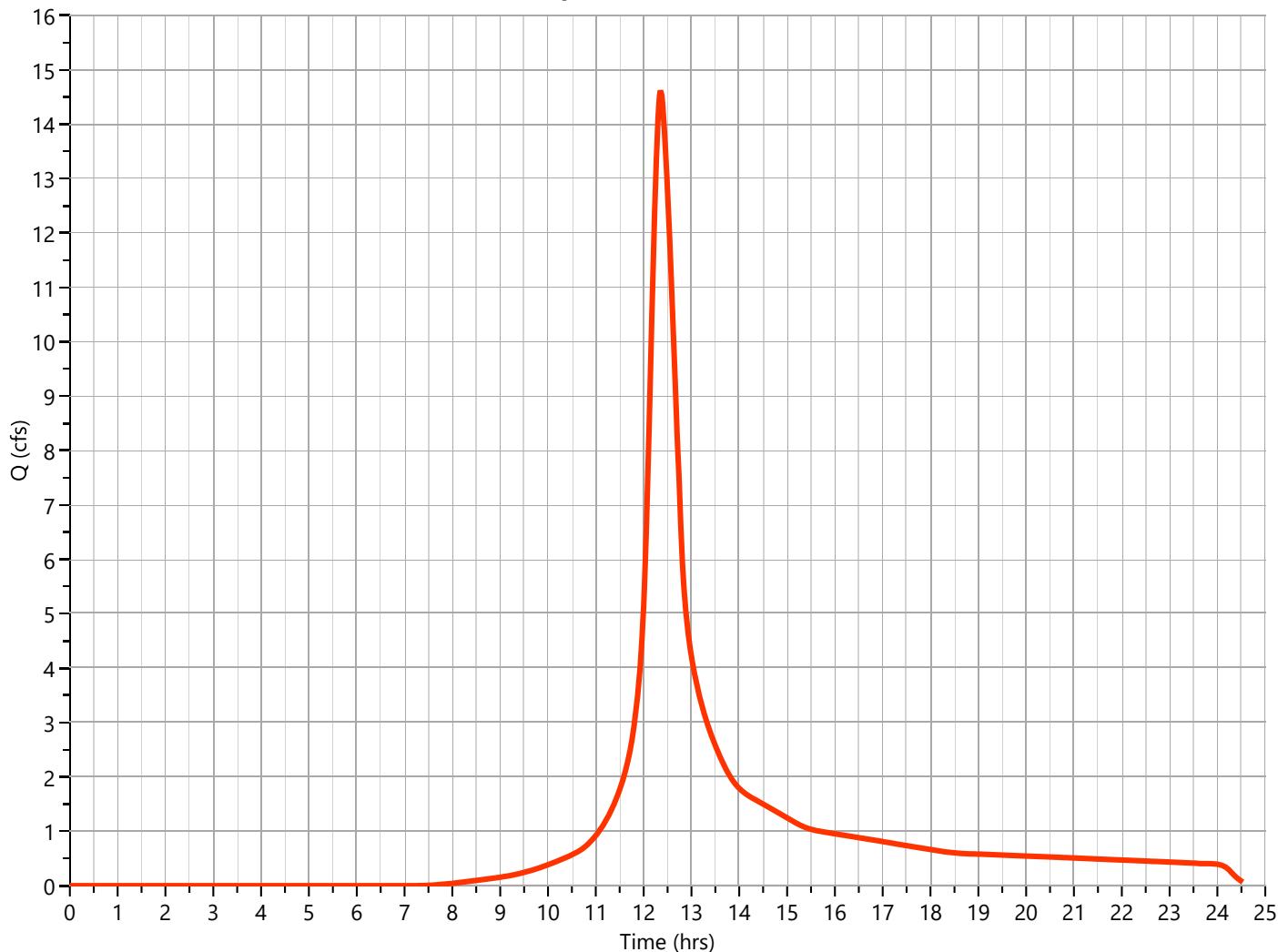
Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 14.62 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.35 hrs
Time Interval	= 1 min	Runoff Volume	= 81,570 cuft
Drainage Area	= 5.777 ac	Curve Number	= 72.25*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 7.04 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.378	61.00	Landscape
1.263	58.00	Conservation
1.099	55.00	Woods
5.777	72.25	Weighted CN Method Employed

Qp = 14.62 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-02E

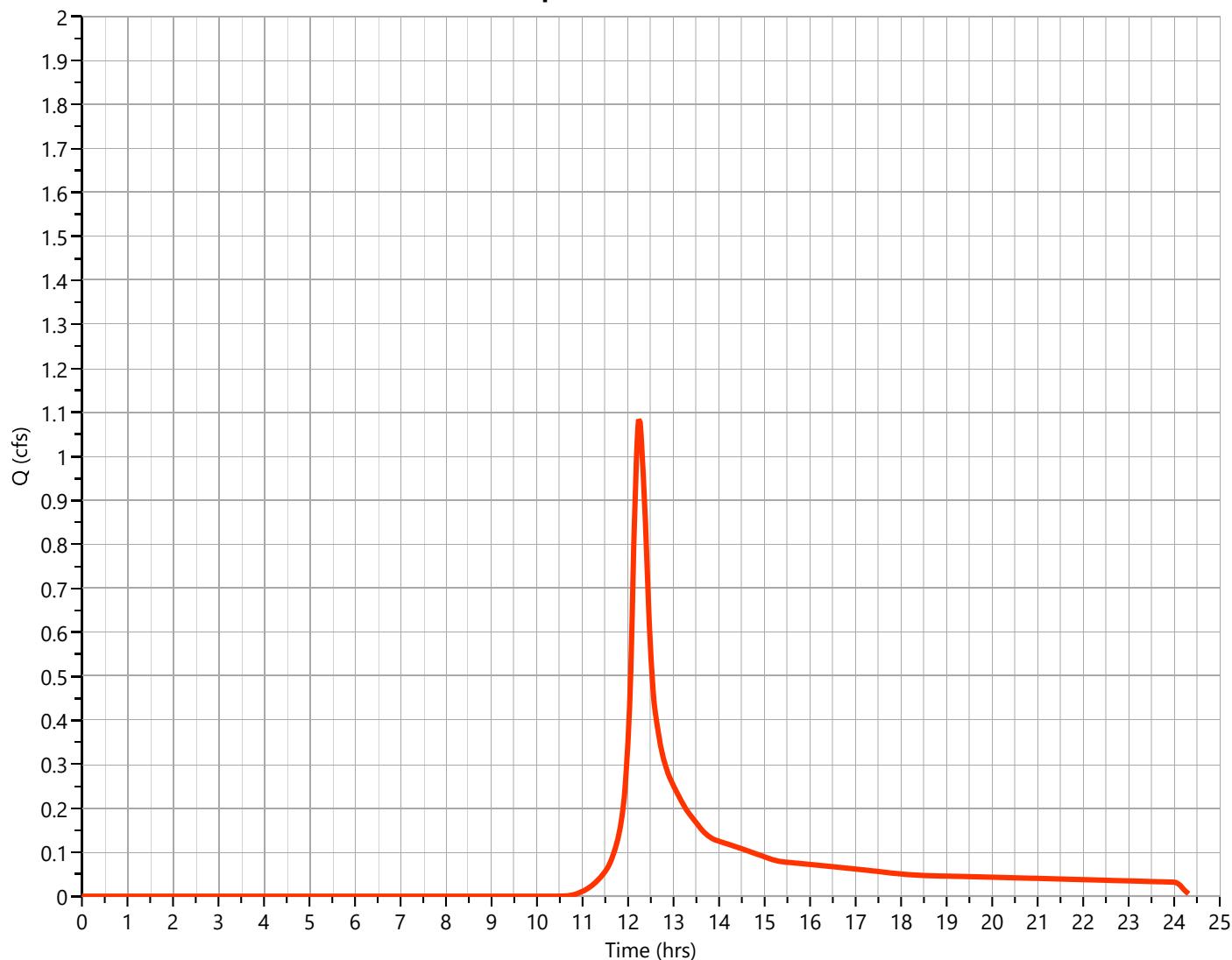
Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.088 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.25 hrs
Time Interval	= 1 min	Runoff Volume	= 5,012 cuft
Drainage Area	= 0.625 ac	Curve Number	= 55.90*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.27 min
Total Rainfall	= 7.04 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.009	61.00	Landscape
0.17	58.00	Conservation
0.446	55.00	Woods
0.625	55.90	Weighted CN Method Employed

Qp = 1.088 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S

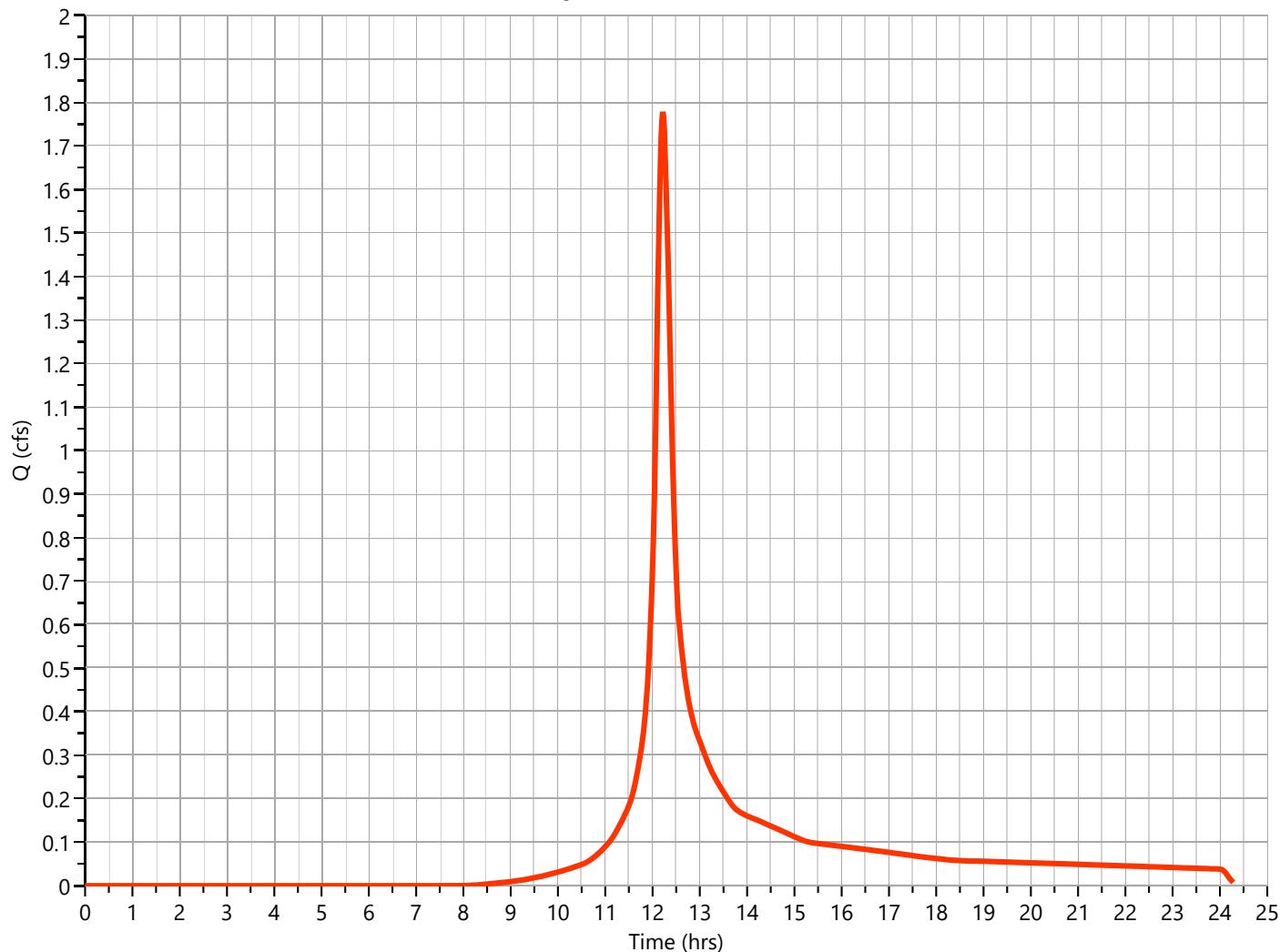
Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.778 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.22 hrs
Time Interval	= 1 min	Runoff Volume	= 7,572 cuft
Drainage Area	= 0.581 ac	Curve Number	= 68.99*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.21 min
Total Rainfall	= 7.04 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.156	98.00	Impervious
0.136	61.00	Landscape
0.201	58.00	Conservation
0.088	55.00	Woods
0.581	68.99	Weighted CN Method Employed

Qp = 1.778 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

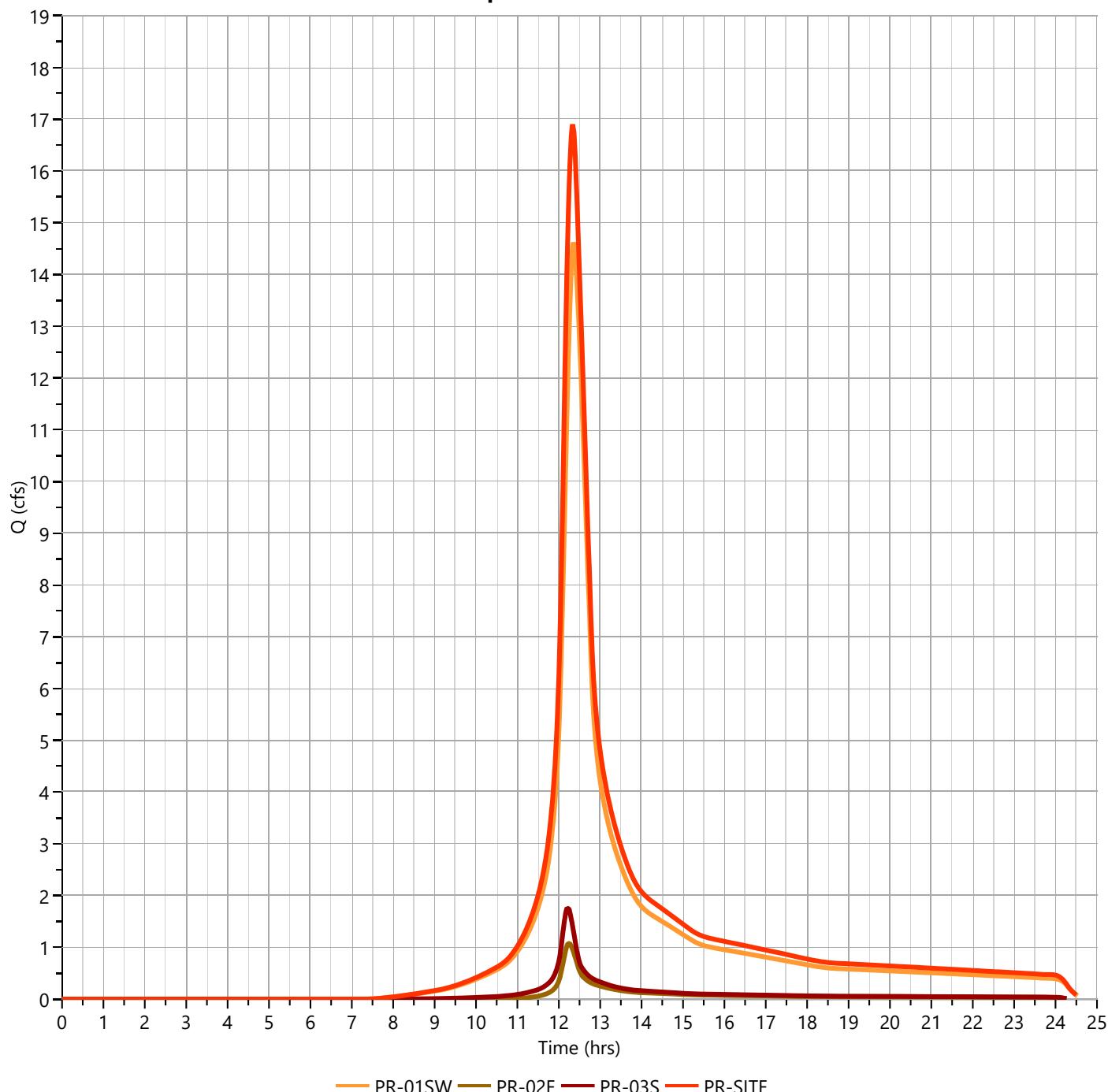
01-15-2026

PR-SITE

Hyd. No. 8

Hydrograph Type	= Junction	Peak Flow	= 16.90 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.33 hrs
Time Interval	= 1 min	Hydrograph Volume	= 94,154 cuft
Inflow Hydrographs	= 5, 6, 7	Total Contrib. Area	= 6.983 ac

Q_p = 16.90 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-A

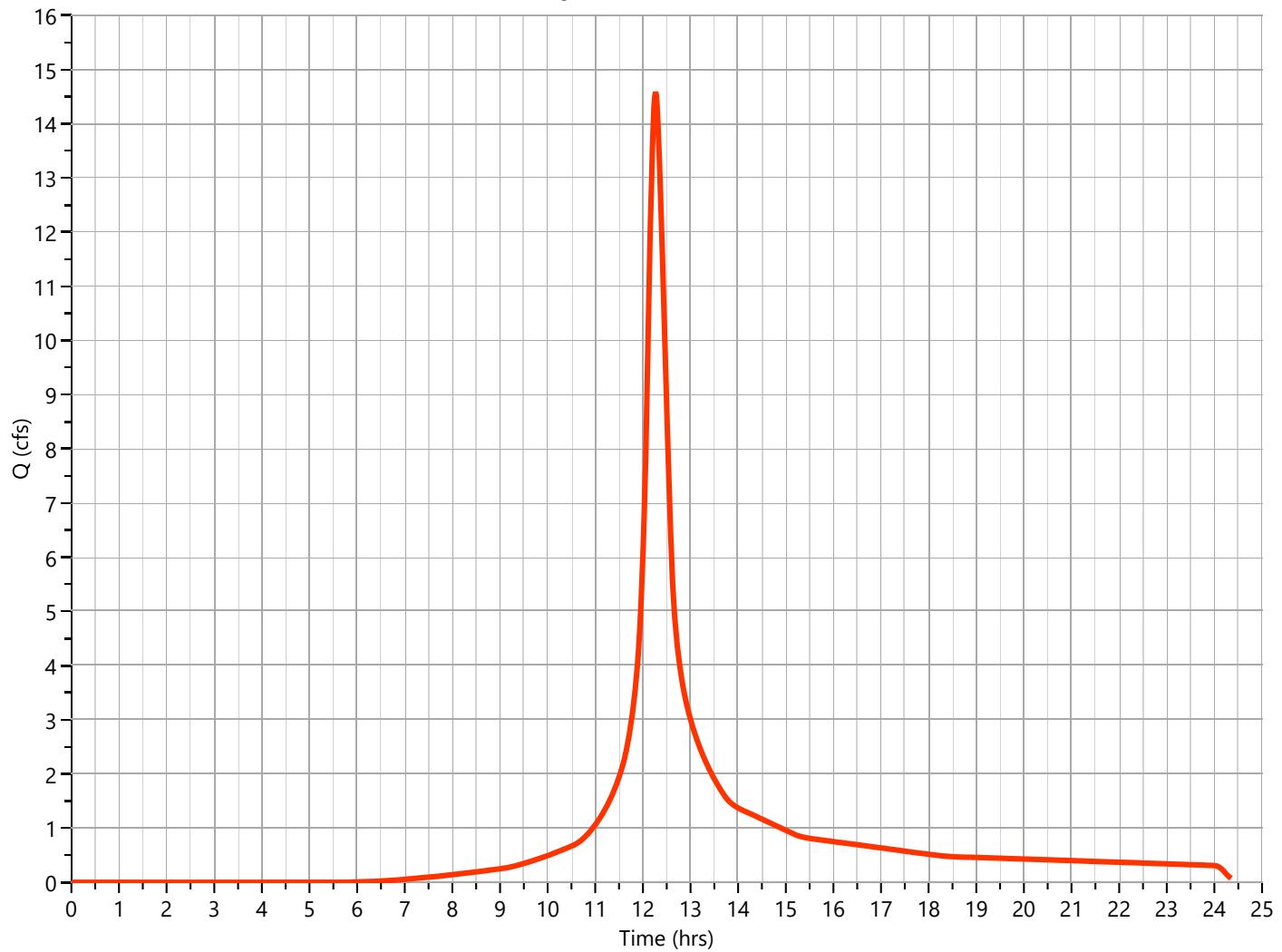
Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 14.58 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.27 hrs
Time Interval	= 1 min	Runoff Volume	= 70,169 cuft
Drainage Area	= 4.266 ac	Curve Number	= 77.79*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.53 min
Total Rainfall	= 7.04 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.213	61.00	Landscape
0.786	58.00	Conservation
0.23	55.00	Woods
4.266	77.79	Weighted CN Method Employed

Qp = 14.58 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-B

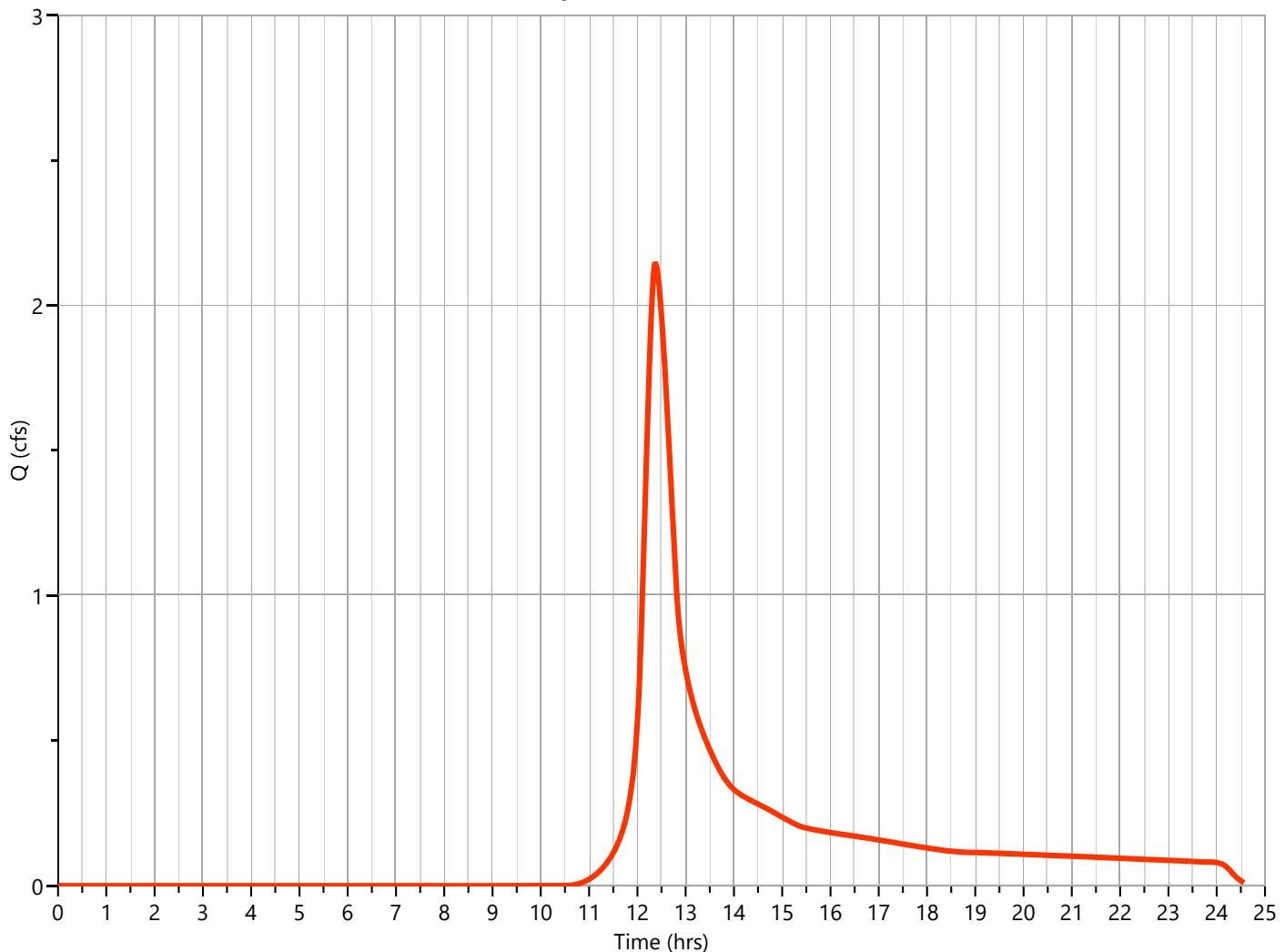
Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.149 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.38 hrs
Time Interval	= 1 min	Runoff Volume	= 12,639 cuft
Drainage Area	= 1.511 ac	Curve Number	= 56.63*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 7.04 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.001	98.00	Impervious
0.164	61.00	Landscape
0.477	58.00	Conservation
0.869	55.00	Woods
1.511	56.63	Weighted CN Method Employed

Qp = 2.149 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW DET

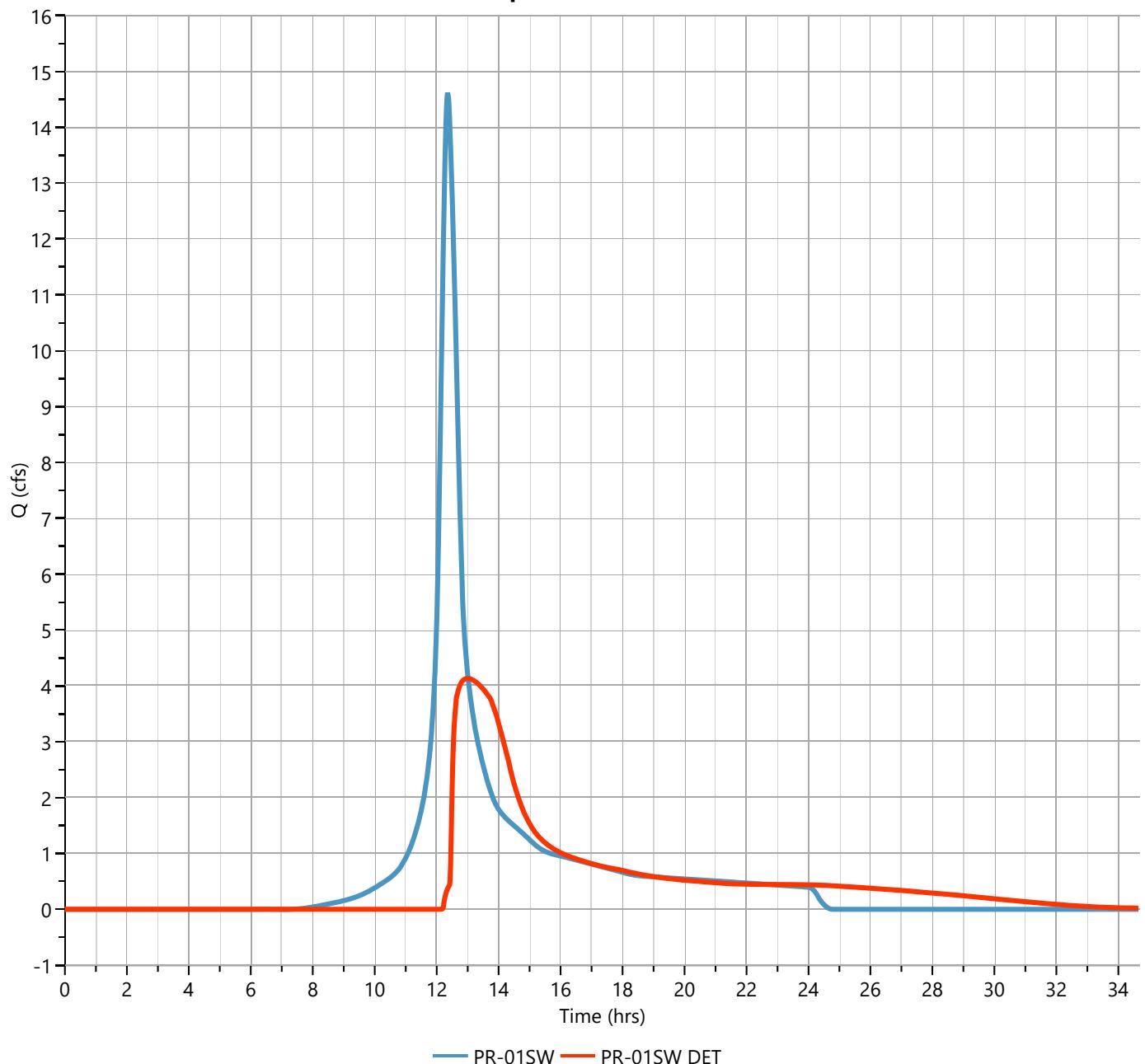
Hyd. No. 11

Hydrograph Type	= Pond Route	Peak Flow	= 4.133 cfs
Storm Frequency	= 50-yr	Time to Peak	= 13.00 hrs
Time Interval	= 1 min	Hydrograph Volume	= 59,656 cuft
Inflow Hydrograph	= 5 - PR-01SW	Max. Elevation	= 30.48 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 37,364 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 3.14 hrs

Q_p = 4.133 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S DET

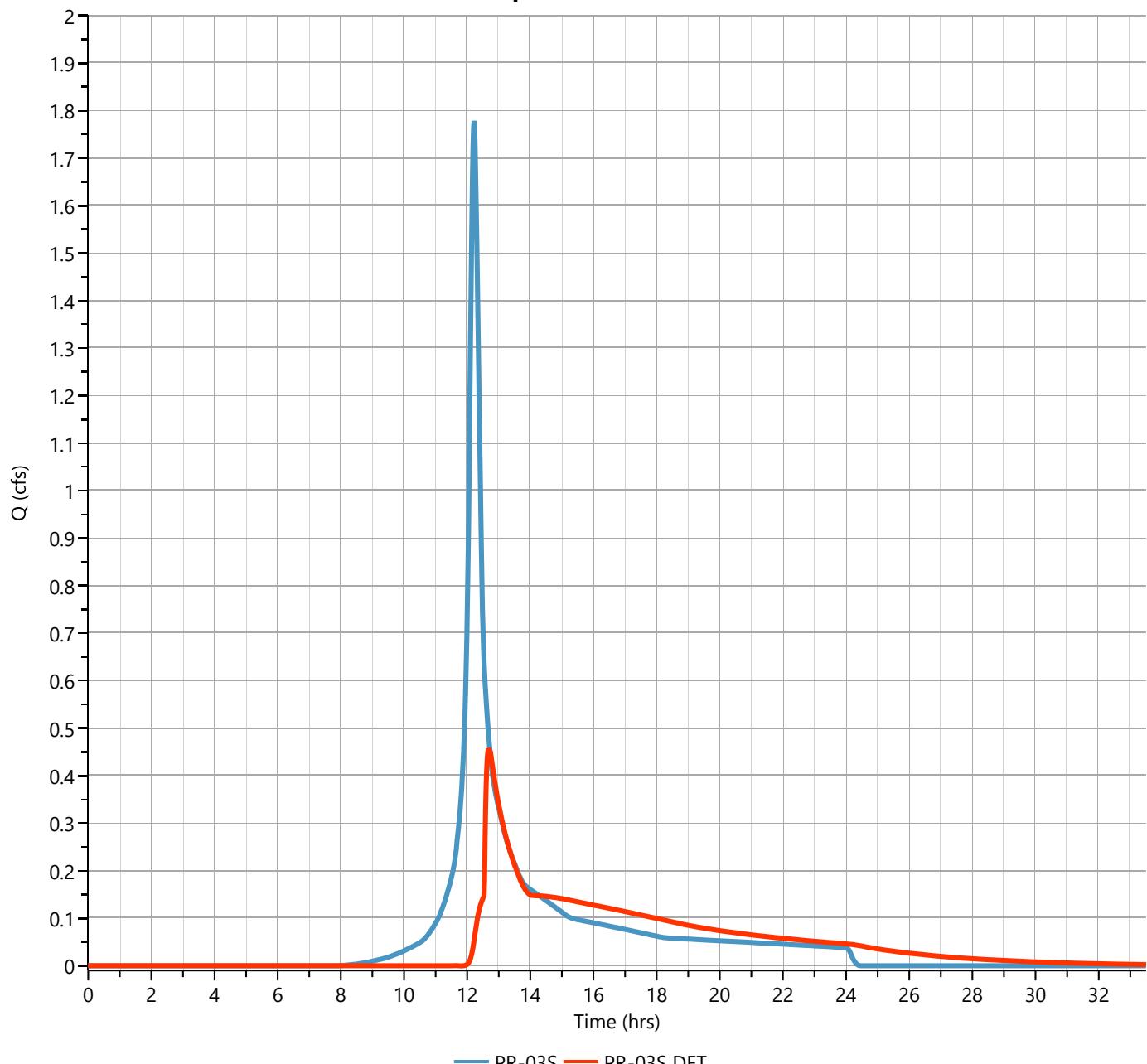
Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 0.459 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.68 hrs
Time Interval	= 1 min	Hydrograph Volume	= 5,426 cuft
Inflow Hydrograph	= 7 - PR-03S	Max. Elevation	= 28.28 ft
Pond Name	= PR-03S RAIN GARDEN	Max. Storage	= 3,429 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 3.20 hrs

$Q_p = 0.459 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

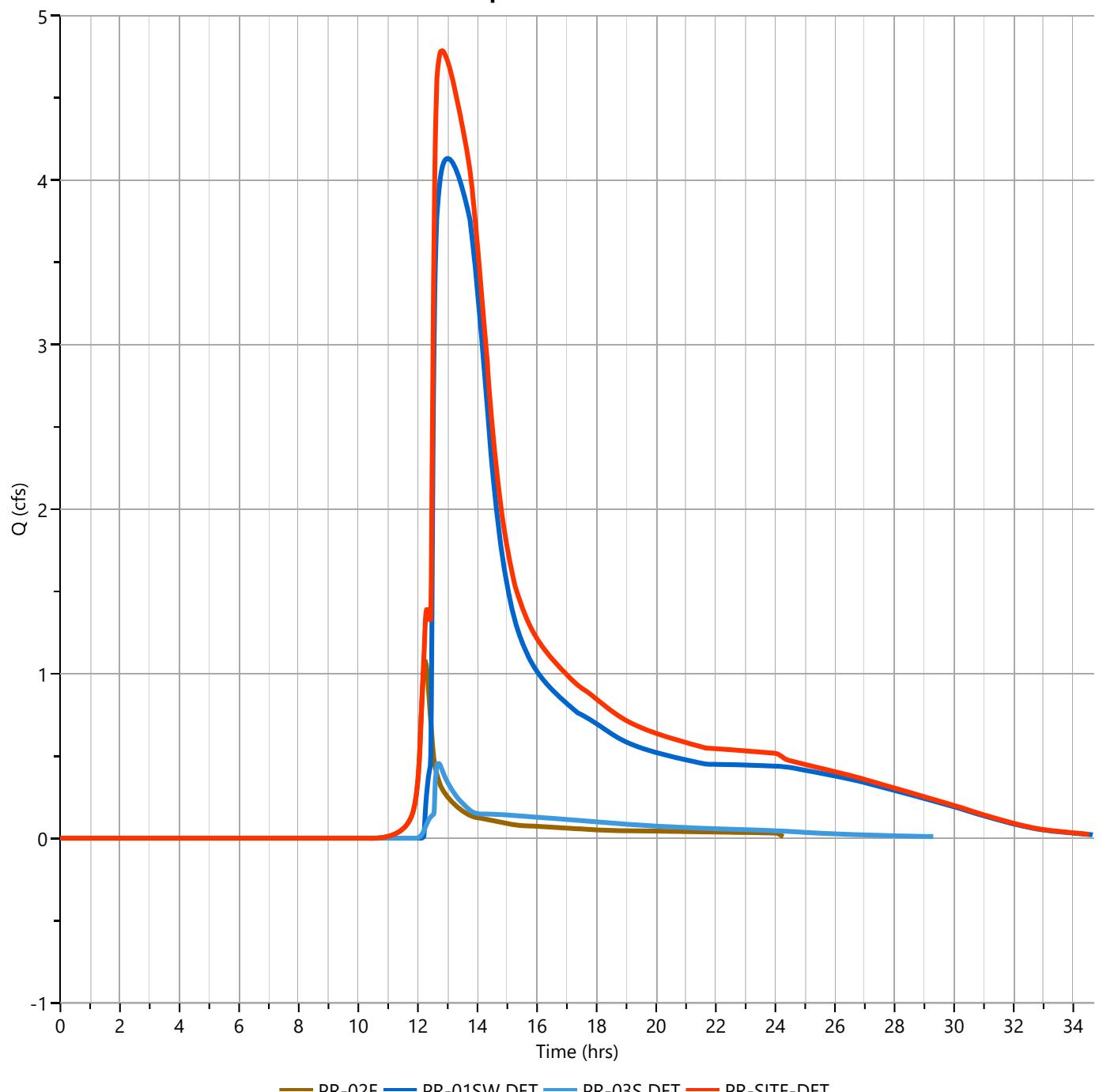
01-15-2026

PR-SITE-DET

Hyd. No. 13

Hydrograph Type	= Junction	Peak Flow	= 4.791 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.80 hrs
Time Interval	= 1 min	Hydrograph Volume	= 70,094 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Q_p = 4.791 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB DET

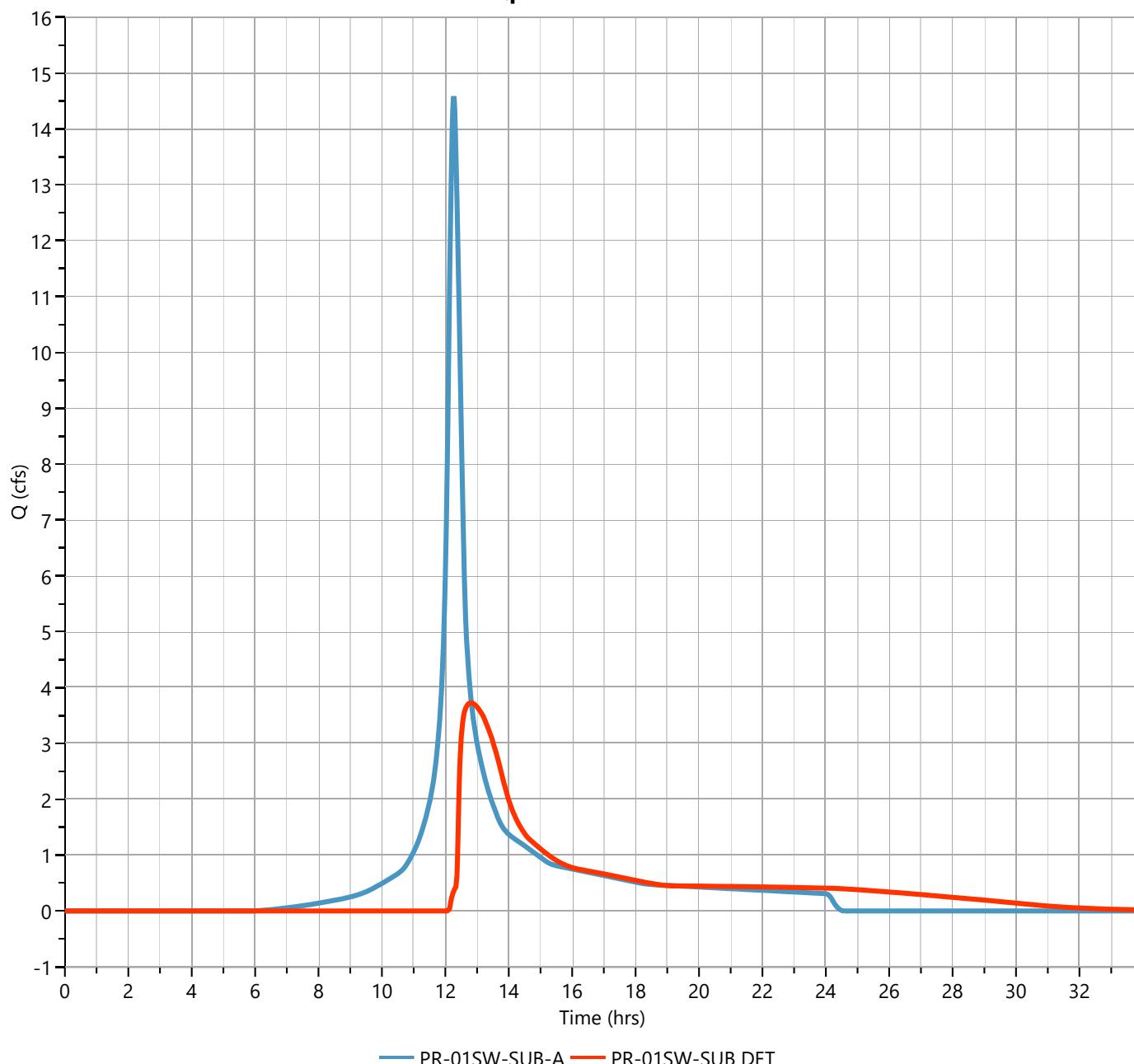
Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 3.726 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.80 hrs
Time Interval	= 1 min	Hydrograph Volume	= 48,387 cuft
Inflow Hydrograph	= 9 - PR-01SW-SUB-A	Max. Elevation	= 30.19 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 34,229 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 3.53 hrs

$Q_p = 3.726 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

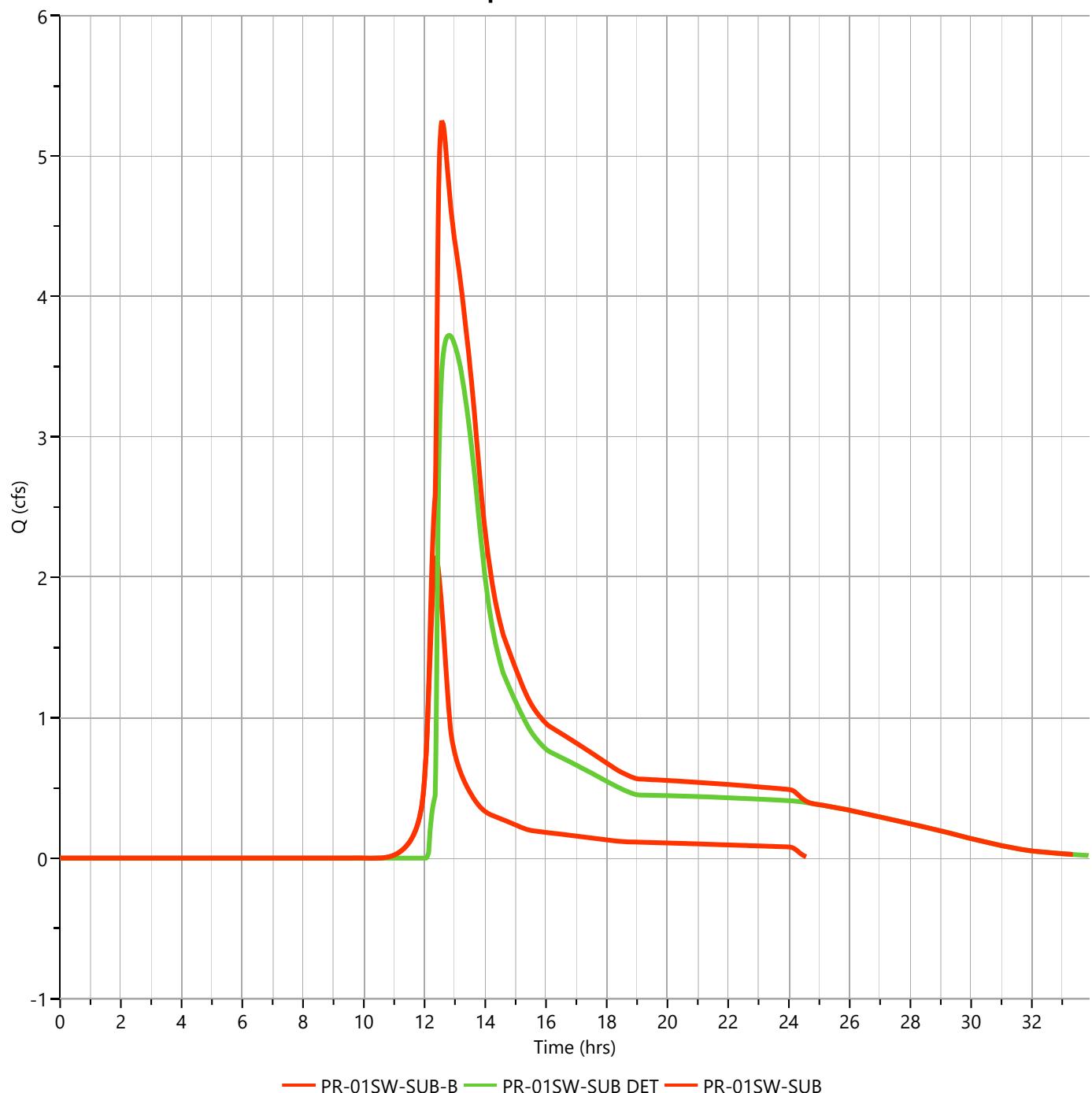
01-15-2026

PR-01SW-SUB

Hyd. No. 15

Hydrograph Type	= Junction	Peak Flow	= 5.255 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.58 hrs
Time Interval	= 1 min	Hydrograph Volume	= 61,027 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 1.511 ac

Q_p = 5.255 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

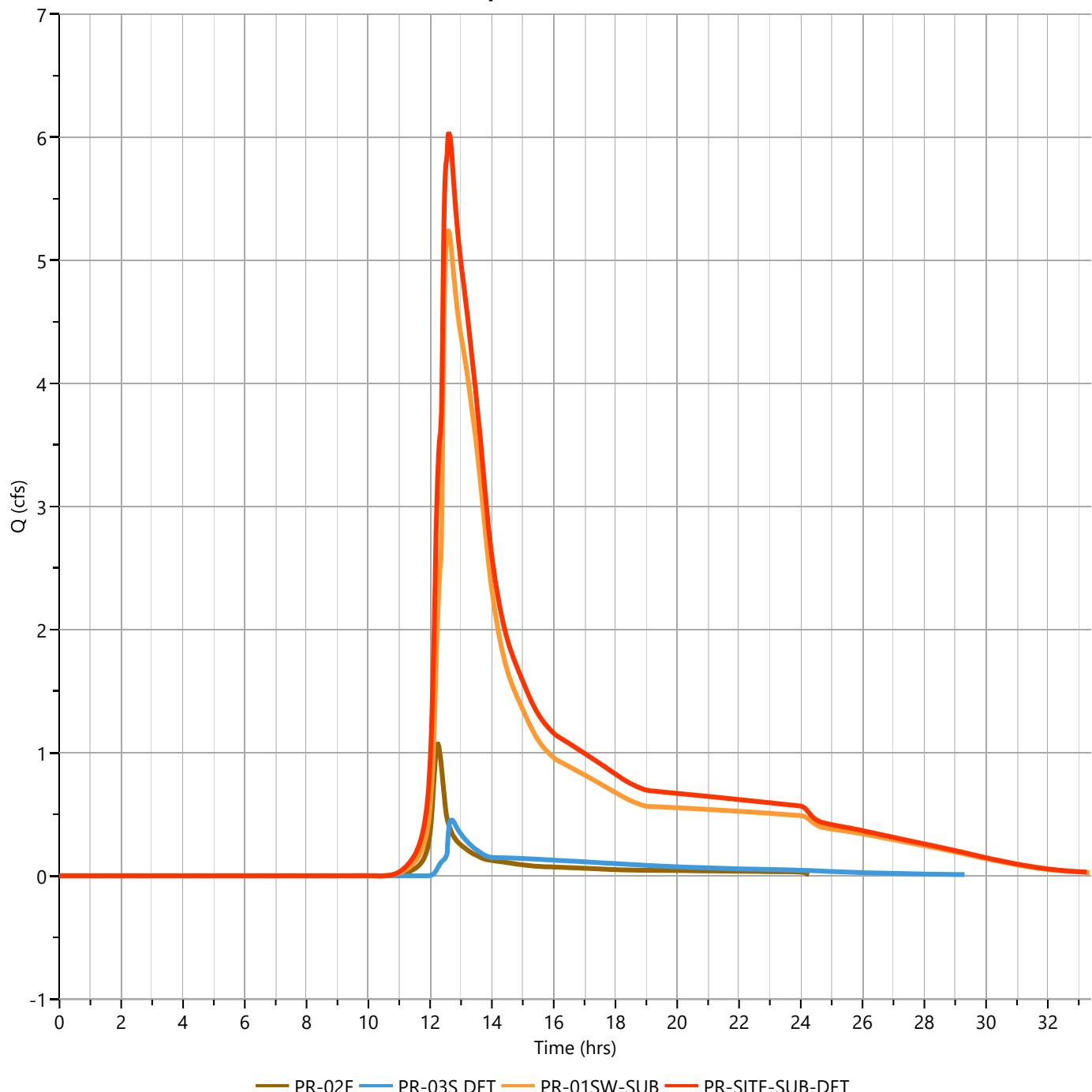
01-15-2026

PR-SITE-SUB-DET

Hyd. No. 16

Hydrograph Type	= Junction	Peak Flow	= 6.043 cfs
Storm Frequency	= 50-yr	Time to Peak	= 12.62 hrs
Time Interval	= 1 min	Hydrograph Volume	= 71,465 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Qp = 6.043 cfs



Design Storm Report

Custom Storm filename:

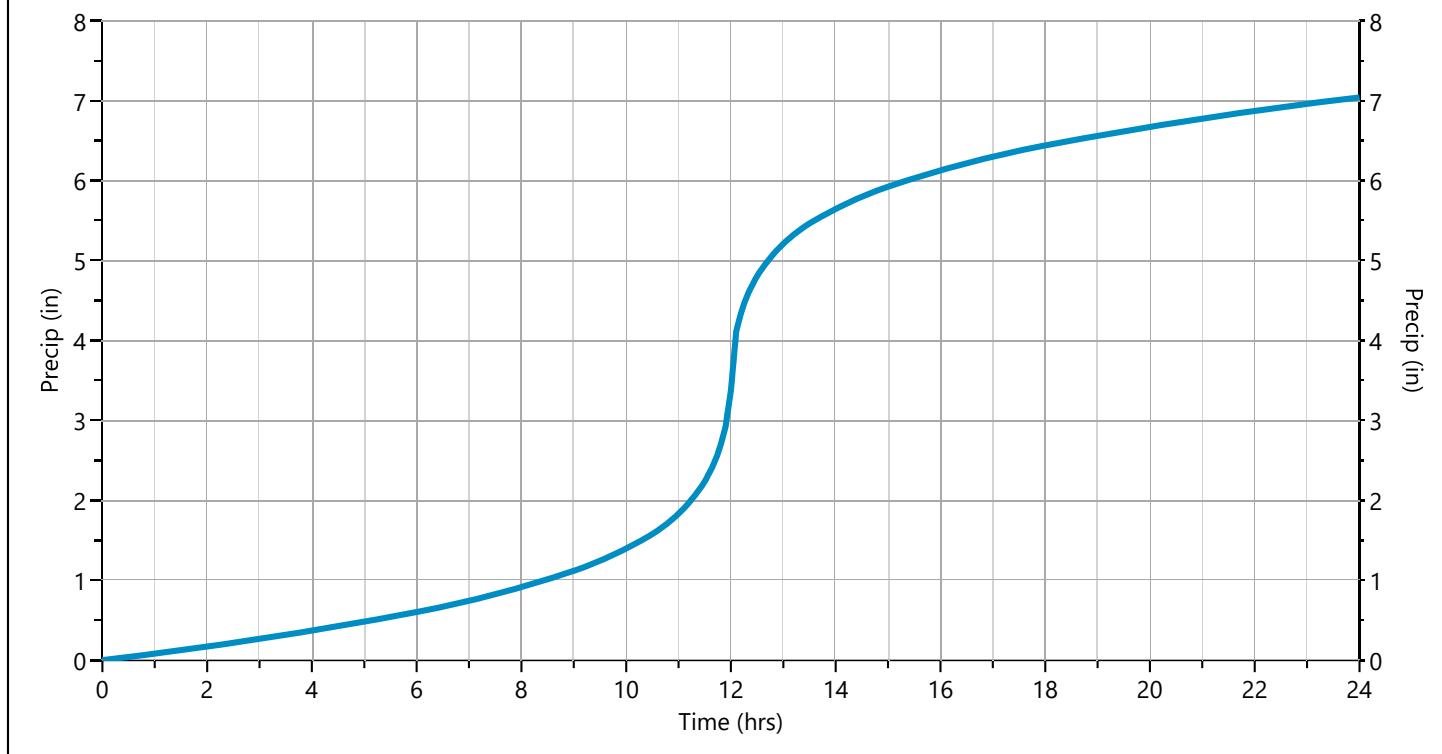
Hydrology Studio v 3.0.0.41

01-15-2026

Storm Distribution: NOAA-D, 24-hr

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	✓ 50-yr	100-yr	
24 hrs	2.87	3.44	0.00	4.38	5.17	6.24	7.04	7.90	

Incremental Rainfall Distribution, 50-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.60	0.021237	11.78	0.030658	11.97	0.073390	12.15	0.042544	12.33	0.022353
11.62	0.022352	11.80	0.030662	11.98	0.073394	12.17	0.042544	12.35	0.022351
11.63	0.022352	11.82	0.042544	12.00	0.073389	12.18	0.042546	12.37	0.022353
11.65	0.022353	11.83	0.042546	12.02	0.122458	12.20	0.042544	12.38	0.022351
11.67	0.022351	11.85	0.042544	12.03	0.122464	12.22	0.030659	12.40	0.022353
11.68	0.022353	11.87	0.042544	12.05	0.122458	12.23	0.030658	12.42	0.021237
11.70	0.022351	11.88	0.042546	12.07	0.122464	12.25	0.030660	12.43	0.021238
11.72	0.030658	11.90	0.042544	12.08	0.122458	12.27	0.030659	12.45	0.021237
11.73	0.030660	11.92	0.073394	12.10	0.122465	12.28	0.030660	12.47	0.021237
11.75	0.030658	11.93	0.073390	12.12	0.042544	12.30	0.030658	12.48	0.021238
11.77	0.030660	11.95	0.073394	12.13	0.042547	12.32	0.022351	12.50	0.021236



Hydrograph 100-yr Summary

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

Hyd. No.	Hydrograph Type	Hydrograph Name	Peak Flow (cfs)	Time to Peak (hrs)	Hydrograph Volume (cuft)	Inflow Hyd(s)	Maximum Elevation (ft)	Maximum Storage (cuft)
1	NRCS Runoff	EX-01SW	8.545	12.40	51,435	---		
2	NRCS Runoff	EX-02E	2.784	12.28	13,826	---		
3	NRCS Runoff	EX-03S	0.879	12.25	3,996	---		
4	Junction	EX-SITE	11.74	12.37	69,257	1, 2, 3		
5	NRCS Runoff	PR-01SW	17.41	12.35	97,207	---		
6	NRCS Runoff	PR-02E	1.394	12.25	6,308	---		
7	NRCS Runoff	PR-03S	2.140	12.22	9,105	---		
8	Junction	PR-SITE	20.22	12.33	112,620	5, 6, 7		
9	NRCS Runoff	PR-01SW-SUB-A	17.06	12.27	82,461	---		
10	NRCS Runoff	PR-01SW-SUB-B	2.752	12.37	15,858	---		
11	Pond Route	PR-01SW DET	7.438	12.78	75,103	5	30.90	41,940
12	Pond Route	PR-03S DET	1.210	12.42	6,912	7	28.34	3,548
13	Junction	PR-SITE-DET	8.342	12.78	88,324	6, 11, 12		
14	Pond Route	PR-01SW-SUB DET	5.036	12.72	60,435	9	30.63	39,059
15	Junction	PR-01SW-SUB	6.935	12.62	76,293	10, 14		
16	Junction	PR-SITE-SUB-DET	8.692	12.42	89,514	6, 12, 15		

Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-01SW

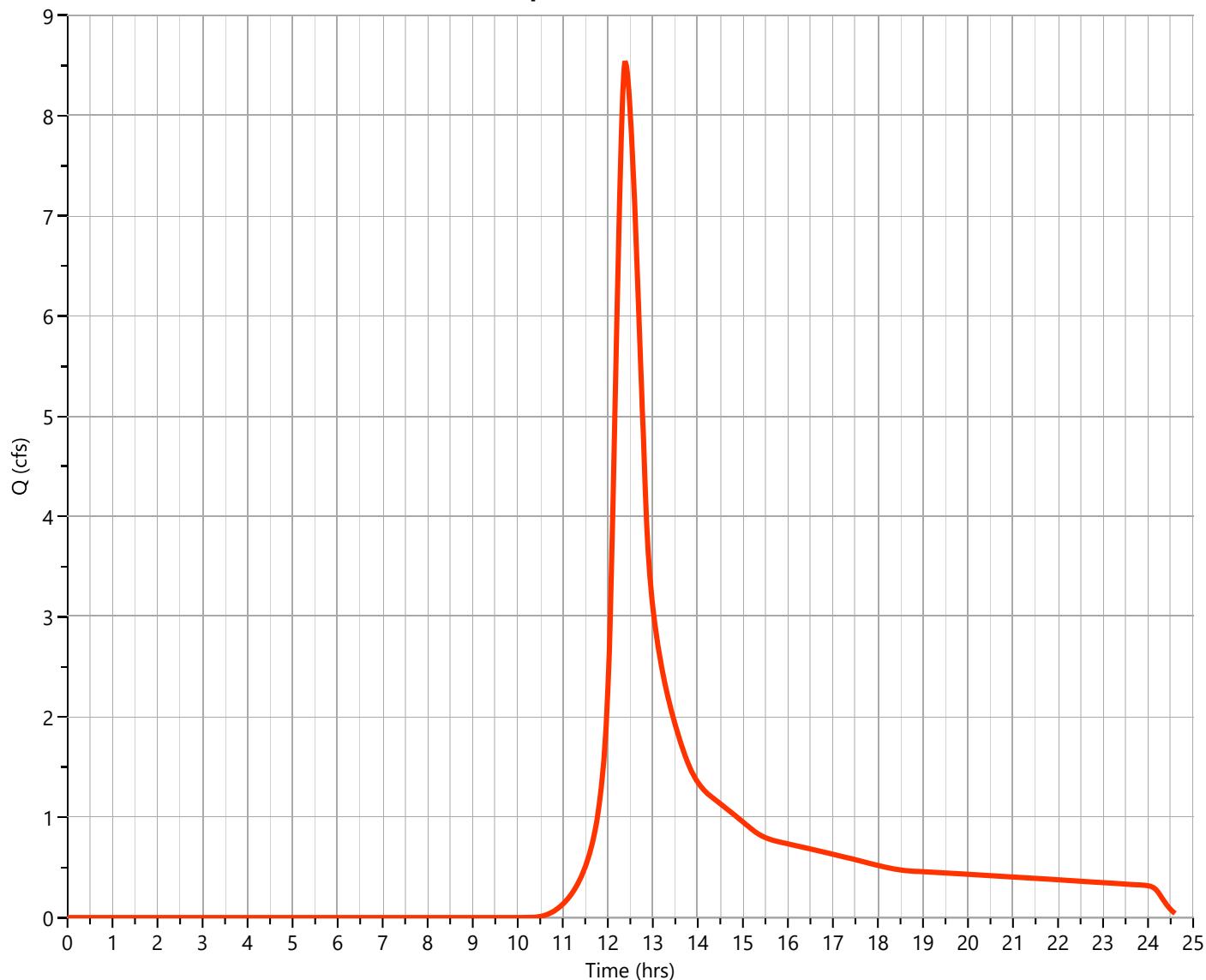
Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 8.545 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.40 hrs
Time Interval	= 1 min	Runoff Volume	= 51,435 cuft
Drainage Area	= 5.183 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 31.45 min
Total Rainfall	= 7.90 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
5.183	55.00	Woods
5.183	55.00	Weighted CN Method Employed

$Q_p = 8.545 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-02E

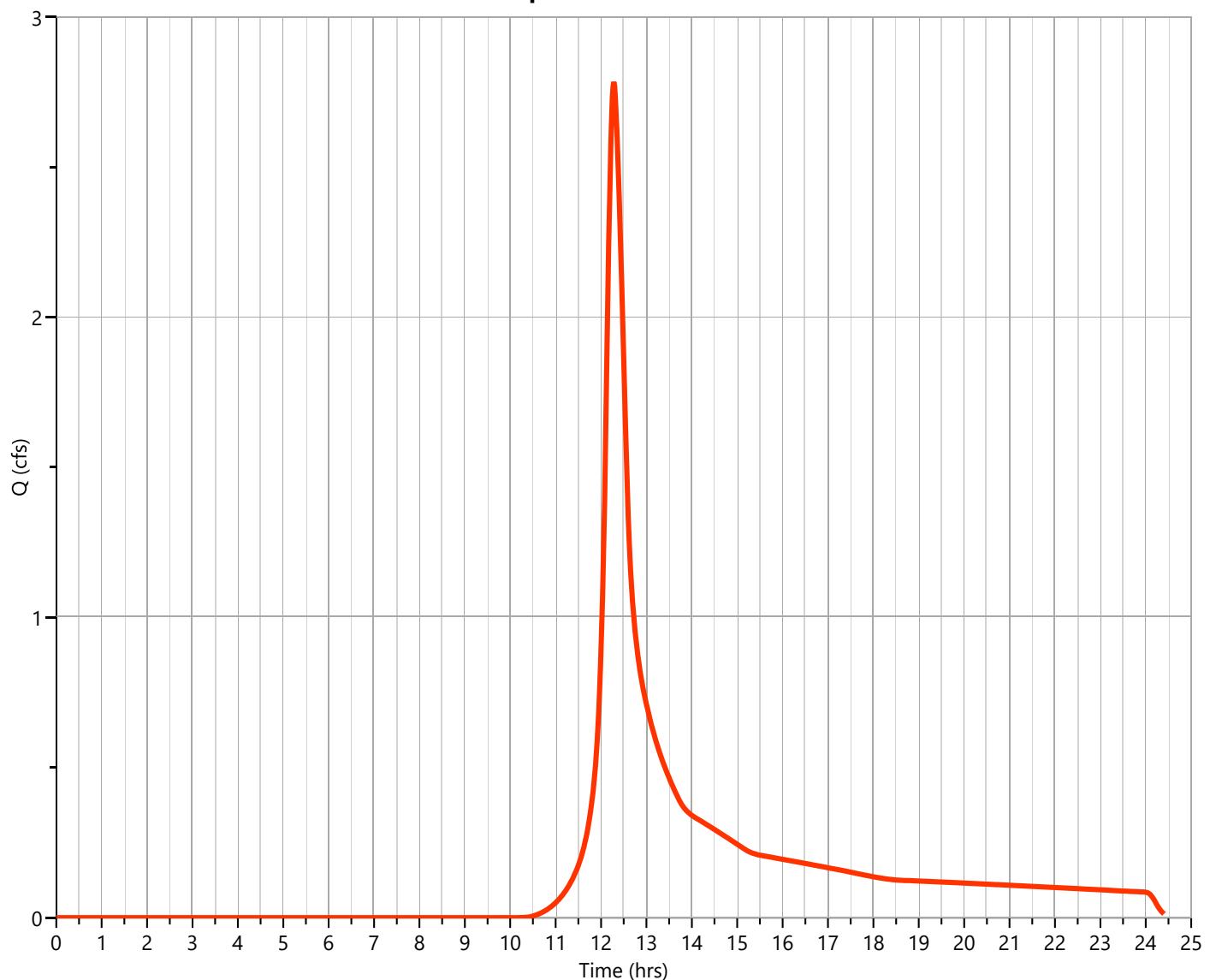
Hyd. No. 2

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.784 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.28 hrs
Time Interval	= 1 min	Runoff Volume	= 13,826 cuft
Drainage Area	= 1.389 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.61 min
Total Rainfall	= 7.90 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
1.389	55.00	Woods
1.389	55.00	Weighted CN Method Employed

Q_p = 2.784 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

EX-03S

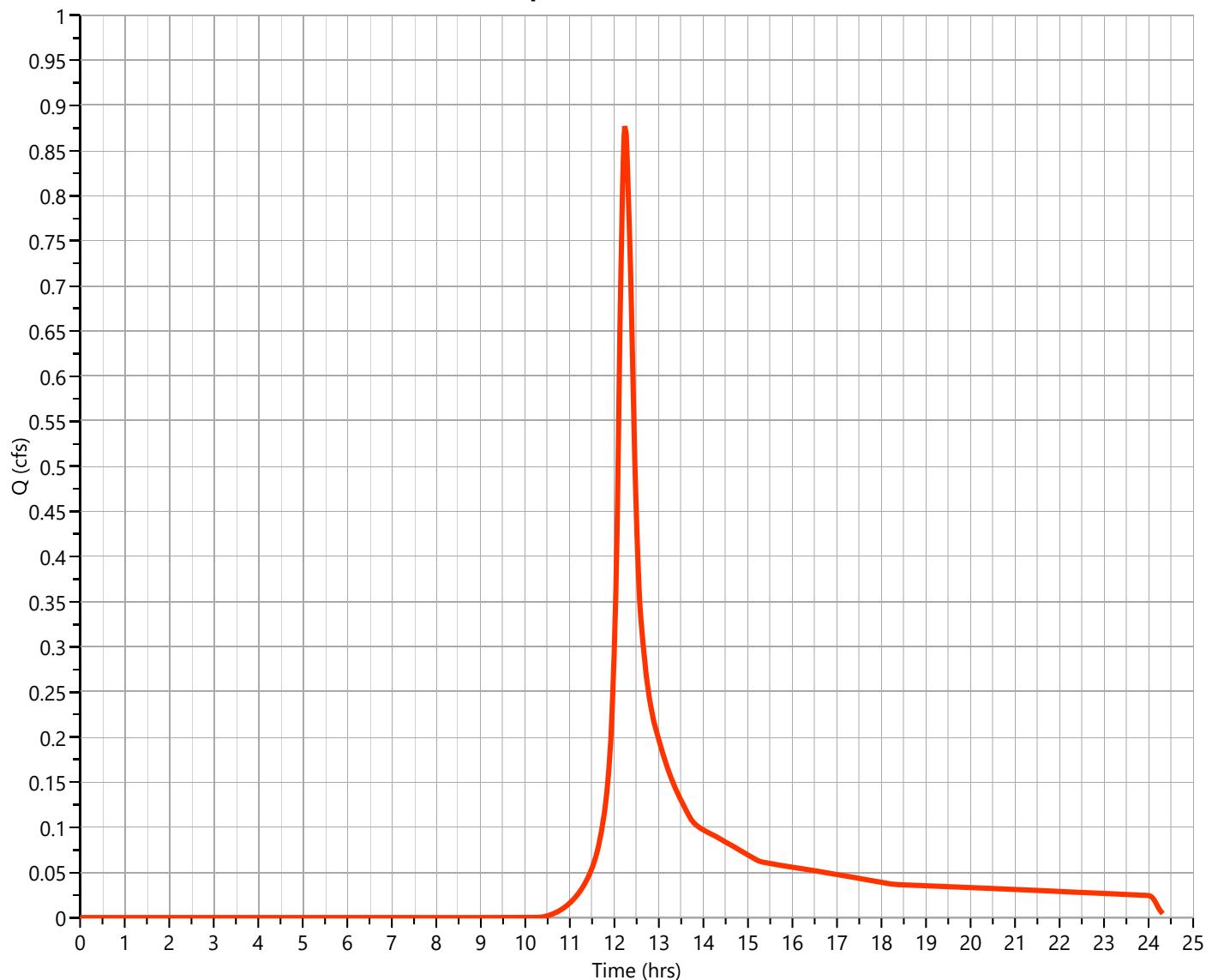
Hyd. No. 3

Hydrograph Type	= NRCS Runoff	Peak Flow	= 0.879 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.25 hrs
Time Interval	= 1 min	Runoff Volume	= 3,996 cuft
Drainage Area	= 0.41 ac	Curve Number	= 55.00*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.32 min
Total Rainfall	= 7.90 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.41	55.00	Woods
0.41	55.00	Weighted CN Method Employed

$Q_p = 0.879 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

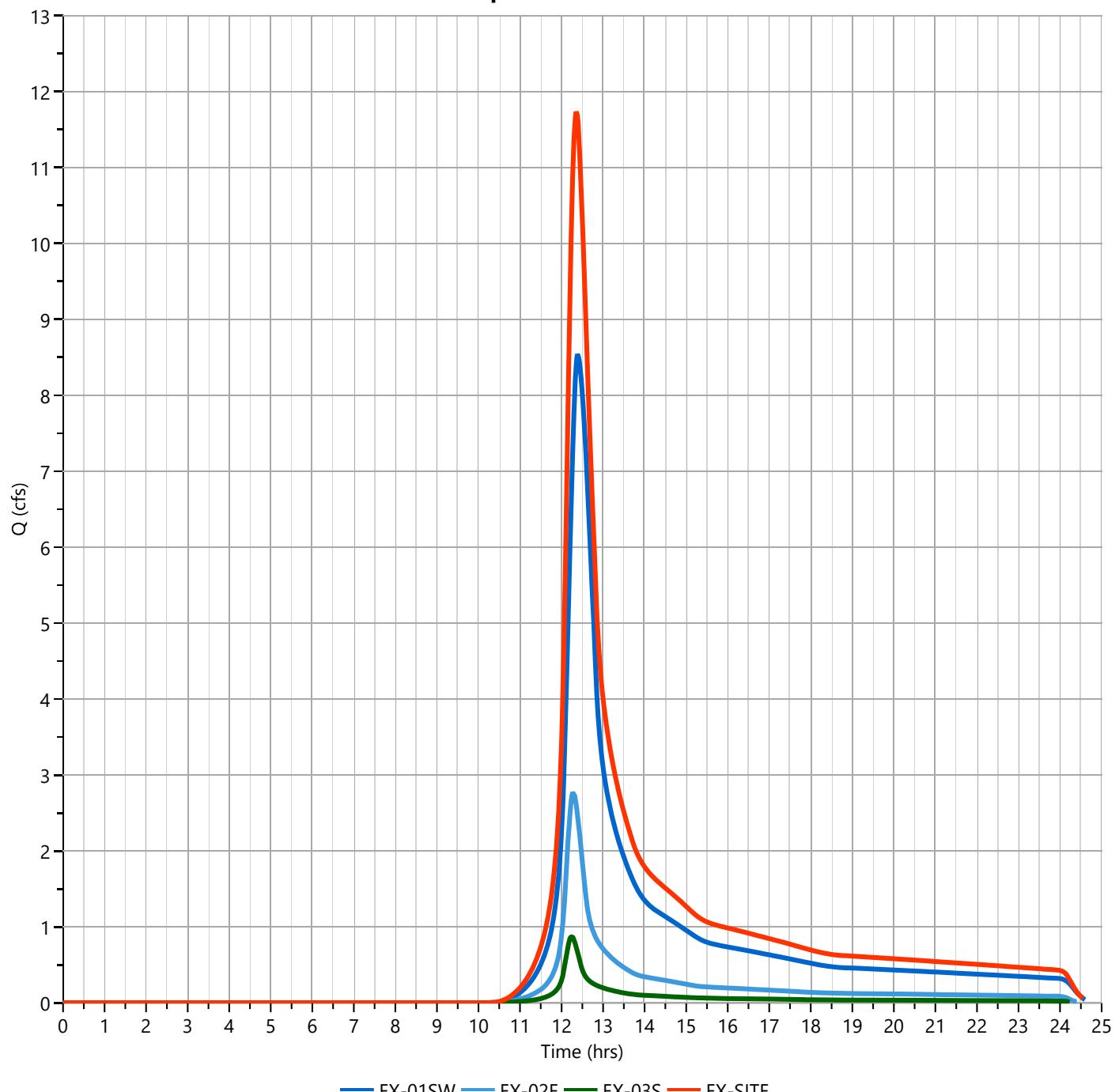
01-15-2026

EX-SITE

Hyd. No. 4

Hydrograph Type	= Junction	Peak Flow	= 11.74 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.37 hrs
Time Interval	= 1 min	Hydrograph Volume	= 69,257 cuft
Inflow Hydrographs	= 1, 2, 3	Total Contrib. Area	= 6.982 ac

Qp = 11.74 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW

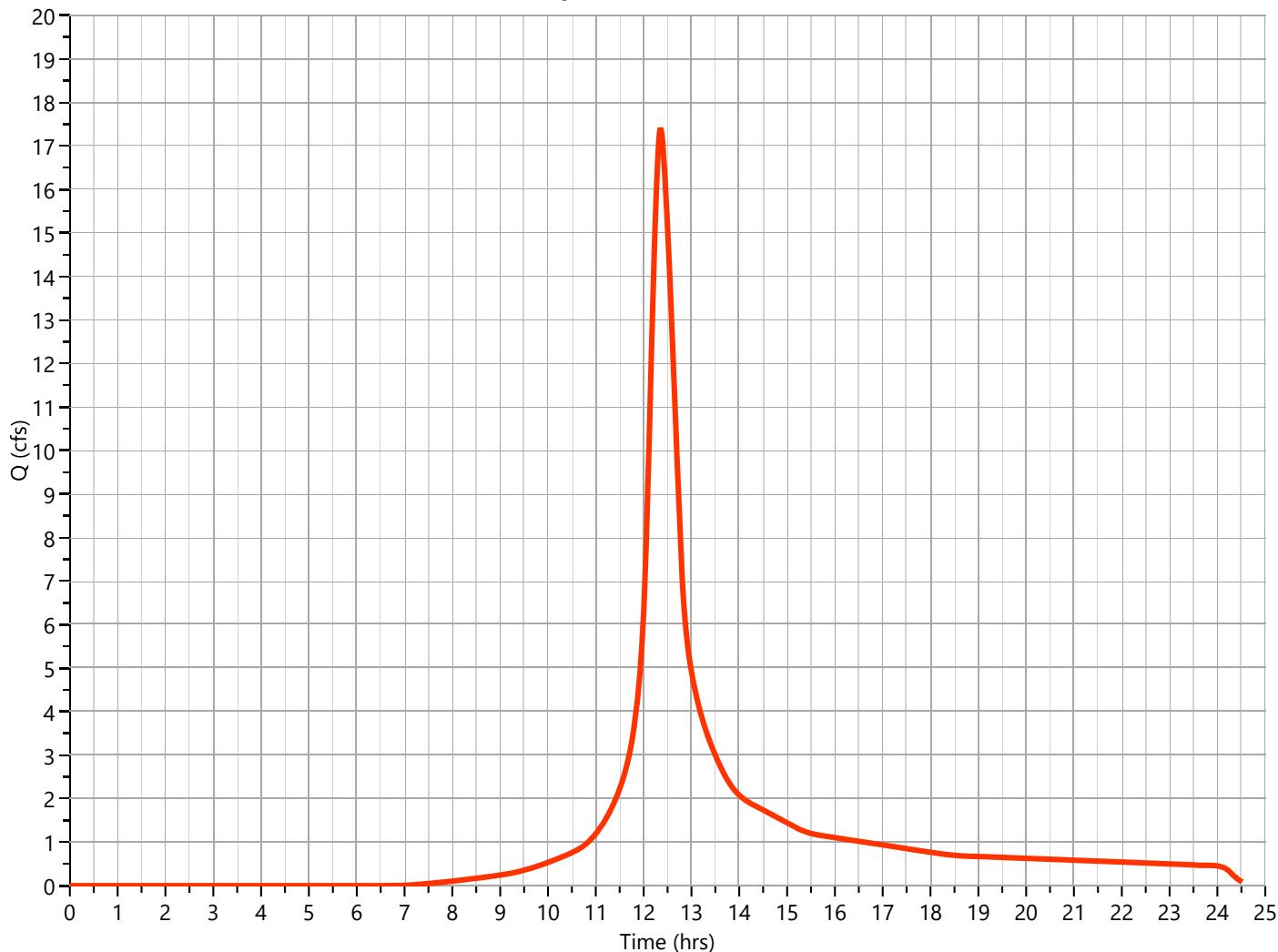
Hyd. No. 5

Hydrograph Type	= NRCS Runoff	Peak Flow	= 17.41 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.35 hrs
Time Interval	= 1 min	Runoff Volume	= 97,207 cuft
Drainage Area	= 5.777 ac	Curve Number	= 72.25*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 7.90 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.378	61.00	Landscape
1.263	58.00	Conservation
1.099	55.00	Woods
5.777	72.25	Weighted CN Method Employed

Qp = 17.41 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-02E

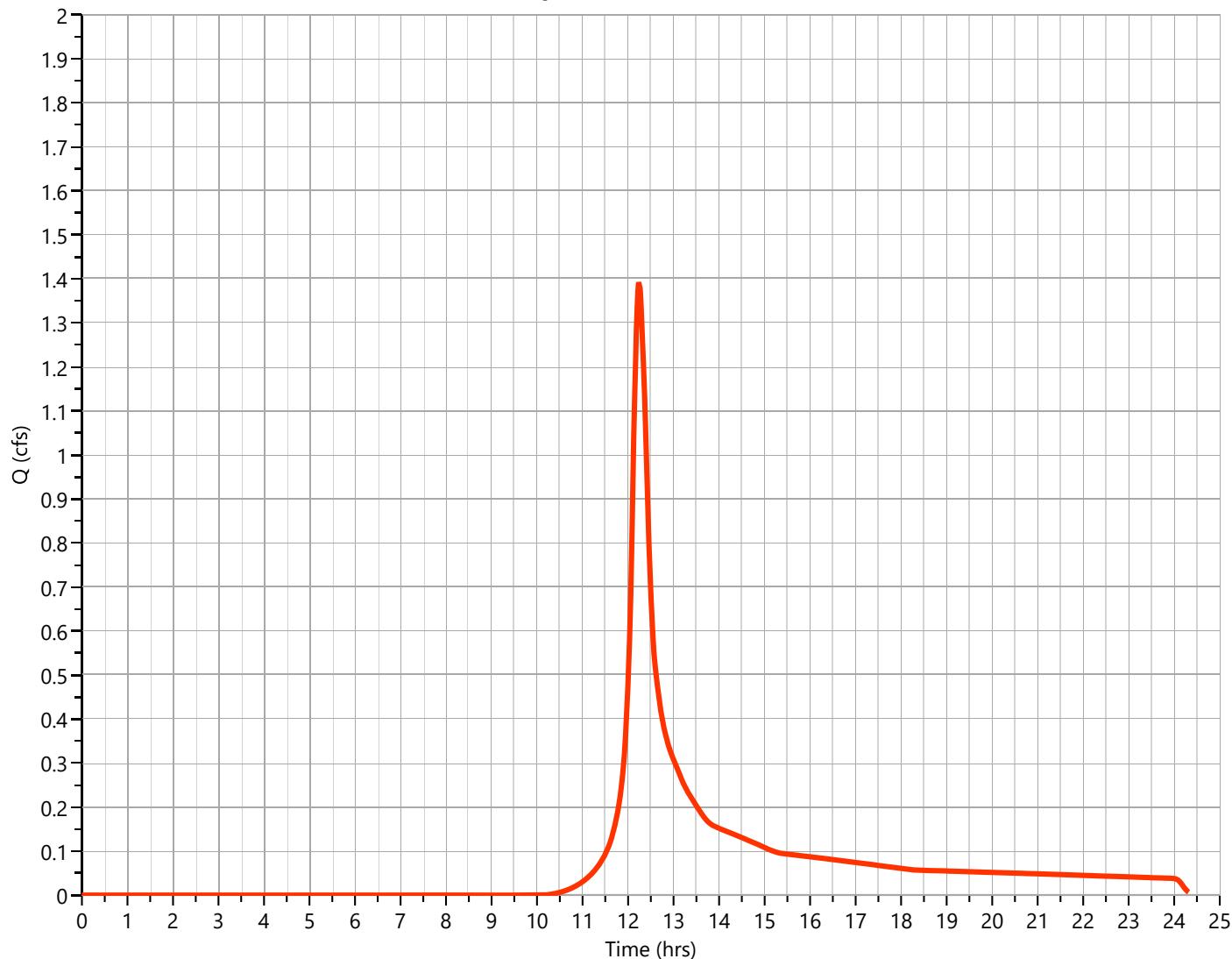
Hyd. No. 6

Hydrograph Type	= NRCS Runoff	Peak Flow	= 1.394 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.25 hrs
Time Interval	= 1 min	Runoff Volume	= 6,308 cuft
Drainage Area	= 0.625 ac	Curve Number	= 55.90*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 18.27 min
Total Rainfall	= 7.90 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.009	61.00	Landscape
0.17	58.00	Conservation
0.446	55.00	Woods
0.625	55.90	Weighted CN Method Employed

Qp = 1.394 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S

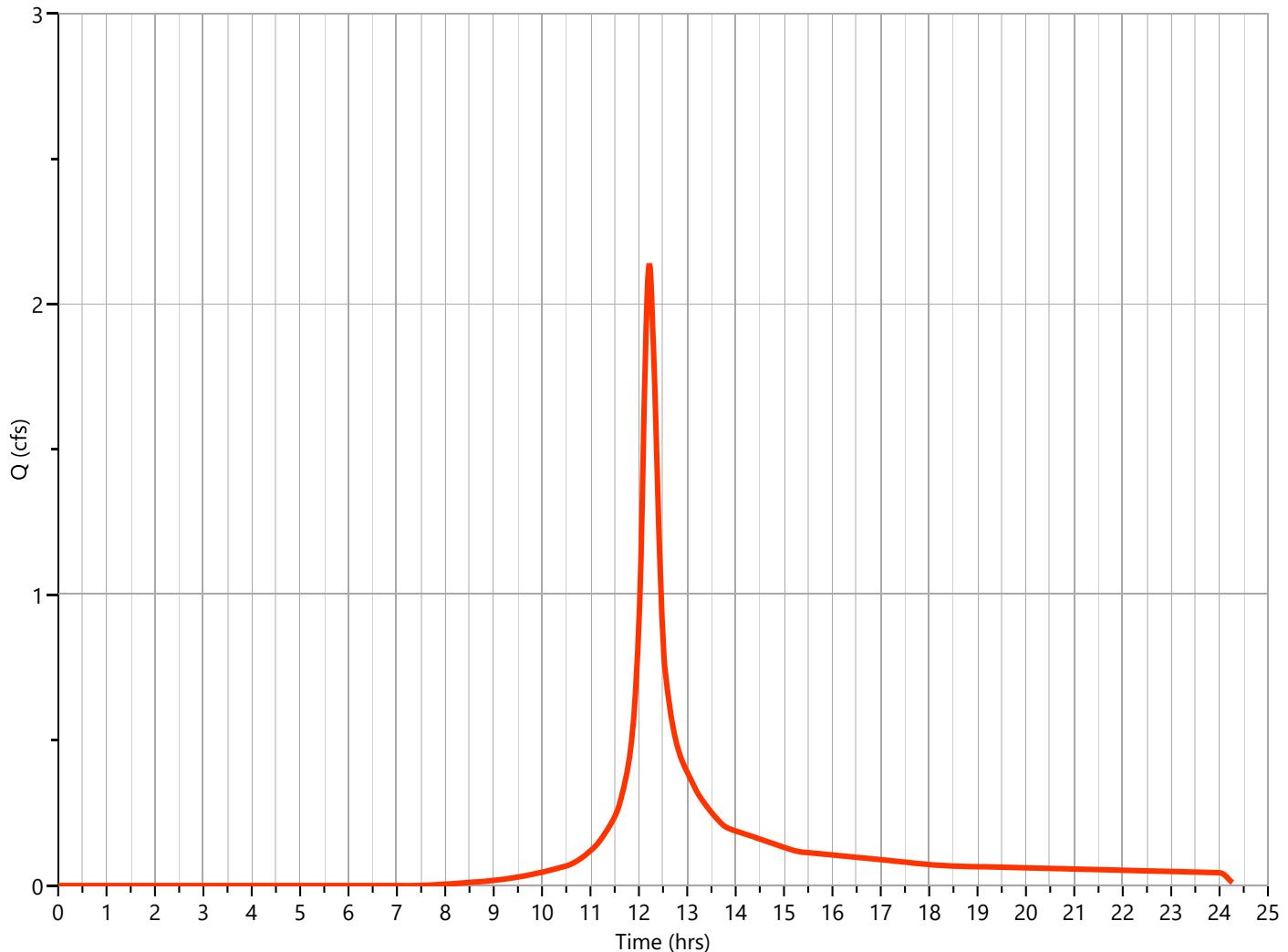
Hyd. No. 7

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.140 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.22 hrs
Time Interval	= 1 min	Runoff Volume	= 9,105 cuft
Drainage Area	= 0.581 ac	Curve Number	= 68.99*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 16.21 min
Total Rainfall	= 7.90 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

* Composite CN Worksheet

AREA (ac)	CN	DESCRIPTION
0.156	98.00	Impervious
0.136	61.00	Landscape
0.201	58.00	Conservation
0.088	55.00	Woods
0.581	68.99	Weighted CN Method Employed

Qp = 2.140 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

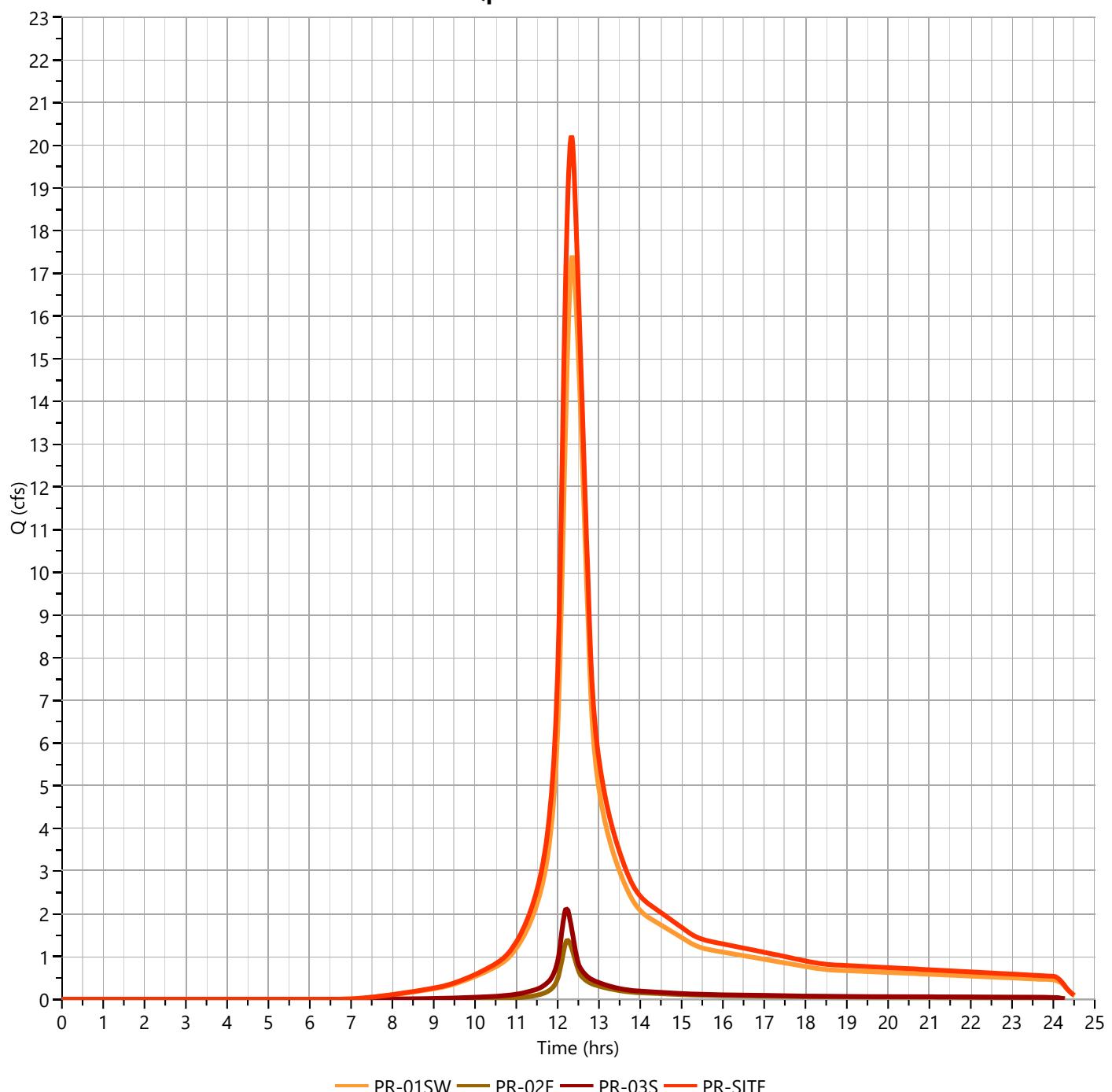
01-15-2026

PR-SITE

Hyd. No. 8

Hydrograph Type	= Junction	Peak Flow	= 20.22 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.33 hrs
Time Interval	= 1 min	Hydrograph Volume	= 112,620 cuft
Inflow Hydrographs	= 5, 6, 7	Total Contrib. Area	= 6.983 ac

Qp = 20.22 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-A

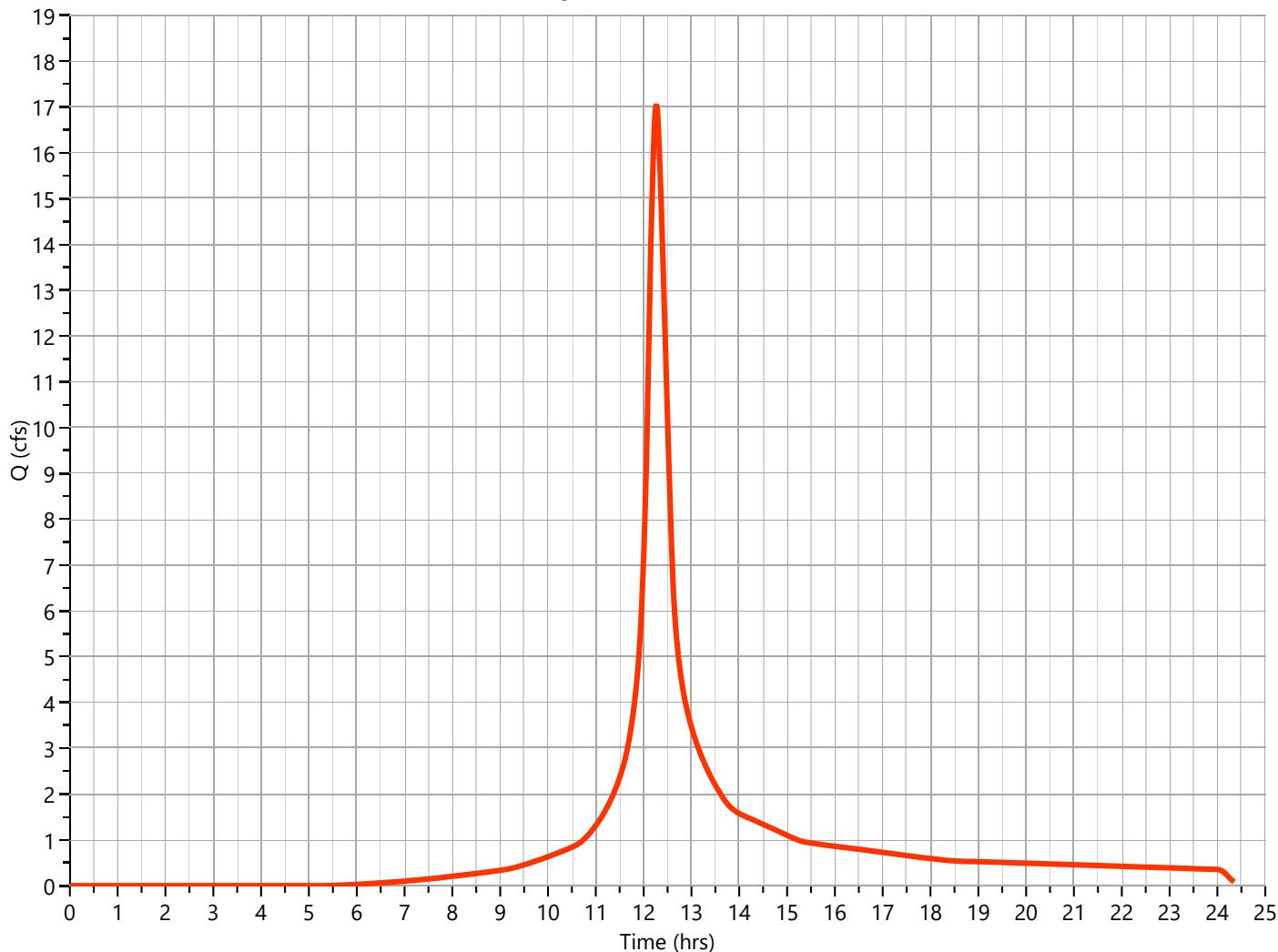
Hyd. No. 9

Hydrograph Type	= NRCS Runoff	Peak Flow	= 17.06 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.27 hrs
Time Interval	= 1 min	Runoff Volume	= 82,461 cuft
Drainage Area	= 4.266 ac	Curve Number	= 77.79*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 20.53 min
Total Rainfall	= 7.90 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
2.037	98.00	Impervious
1.213	61.00	Landscape
0.786	58.00	Conservation
0.23	55.00	Woods
4.266	77.79	Weighted CN Method Employed

Qp = 17.06 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB-B

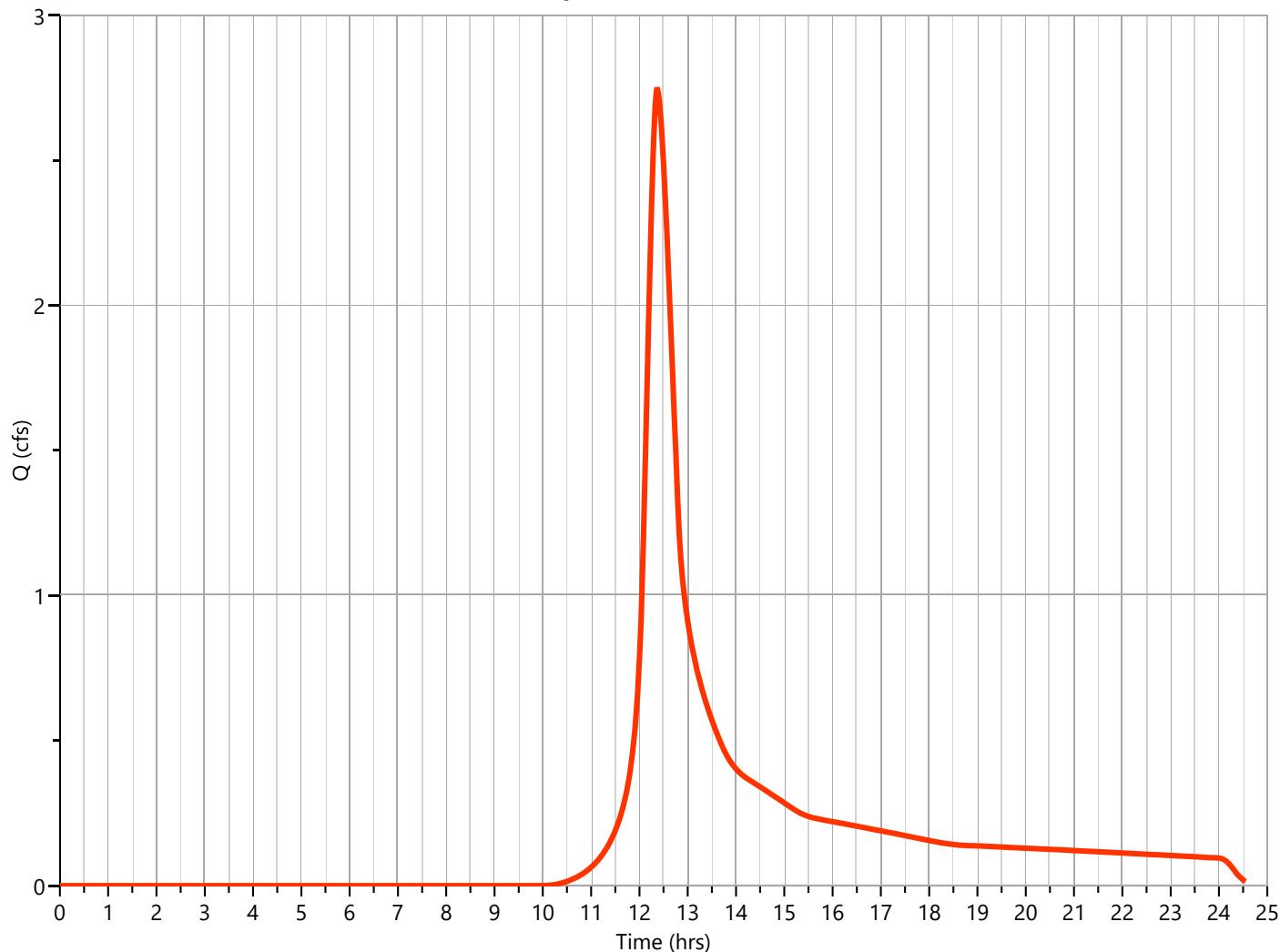
Hyd. No. 10

Hydrograph Type	= NRCS Runoff	Peak Flow	= 2.752 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.37 hrs
Time Interval	= 1 min	Runoff Volume	= 15,858 cuft
Drainage Area	= 1.511 ac	Curve Number	= 56.63*
Tc Method	= TR55 (See Worksheet)	Time of Conc. (Tc)	= 28.92 min
Total Rainfall	= 7.90 in	Design Storm	= NOAA-D
Storm Duration	= 24 hrs	Shape Factor	= 484

*** Composite CN Worksheet**

AREA (ac)	CN	DESCRIPTION
0.001	98.00	Impervious
0.164	61.00	Landscape
0.477	58.00	Conservation
0.869	55.00	Woods
1.511	56.63	Weighted CN Method Employed

Qp = 2.752 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW DET

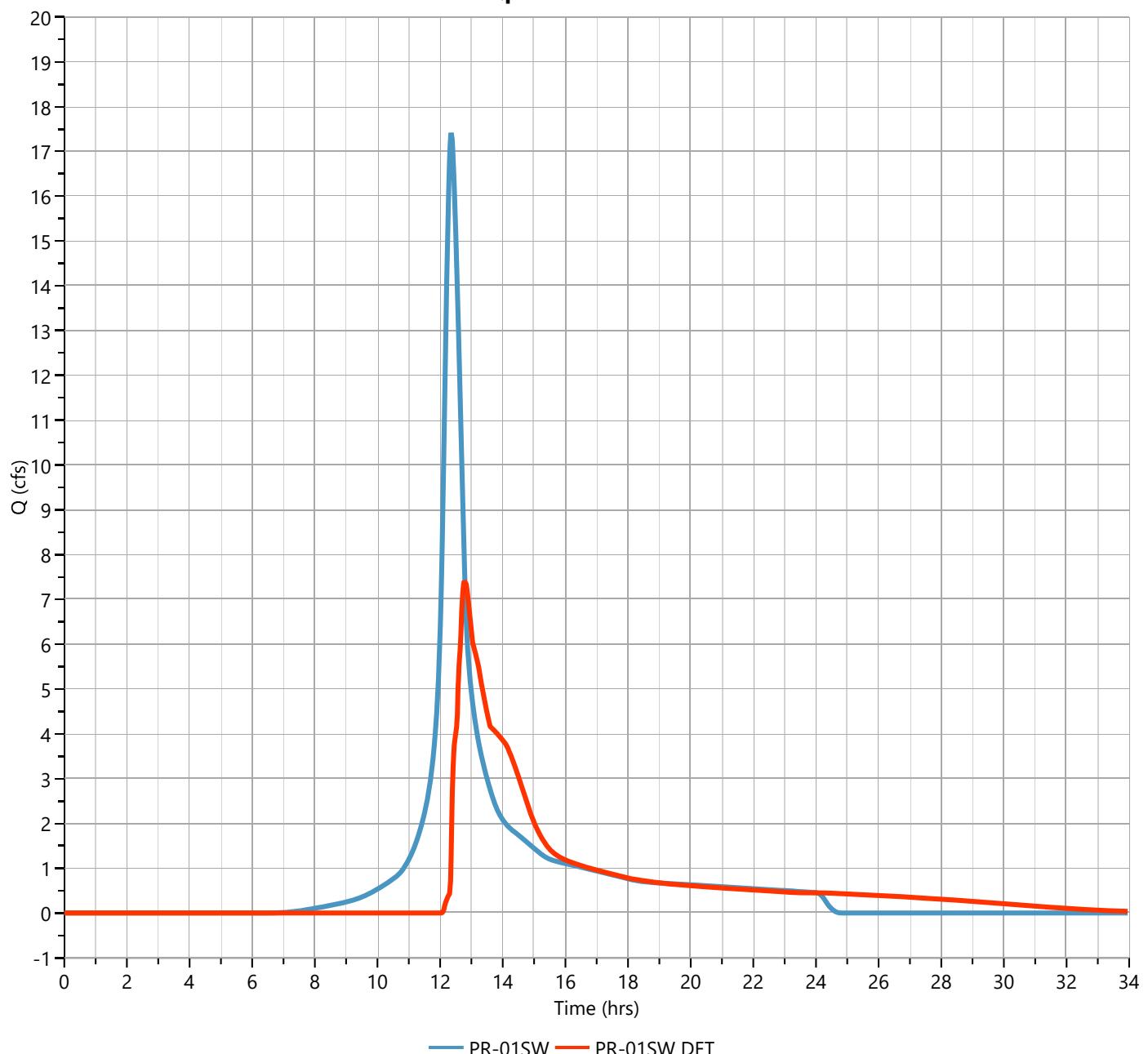
Hyd. No. 11

Hydrograph Type	= Pond Route	Peak Flow	= 7.438 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.78 hrs
Time Interval	= 1 min	Hydrograph Volume	= 75,103 cuft
Inflow Hydrograph	= 5 - PR-01SW	Max. Elevation	= 30.90 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 41,940 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 2.66 hrs

$Q_p = 7.438 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-03S DET

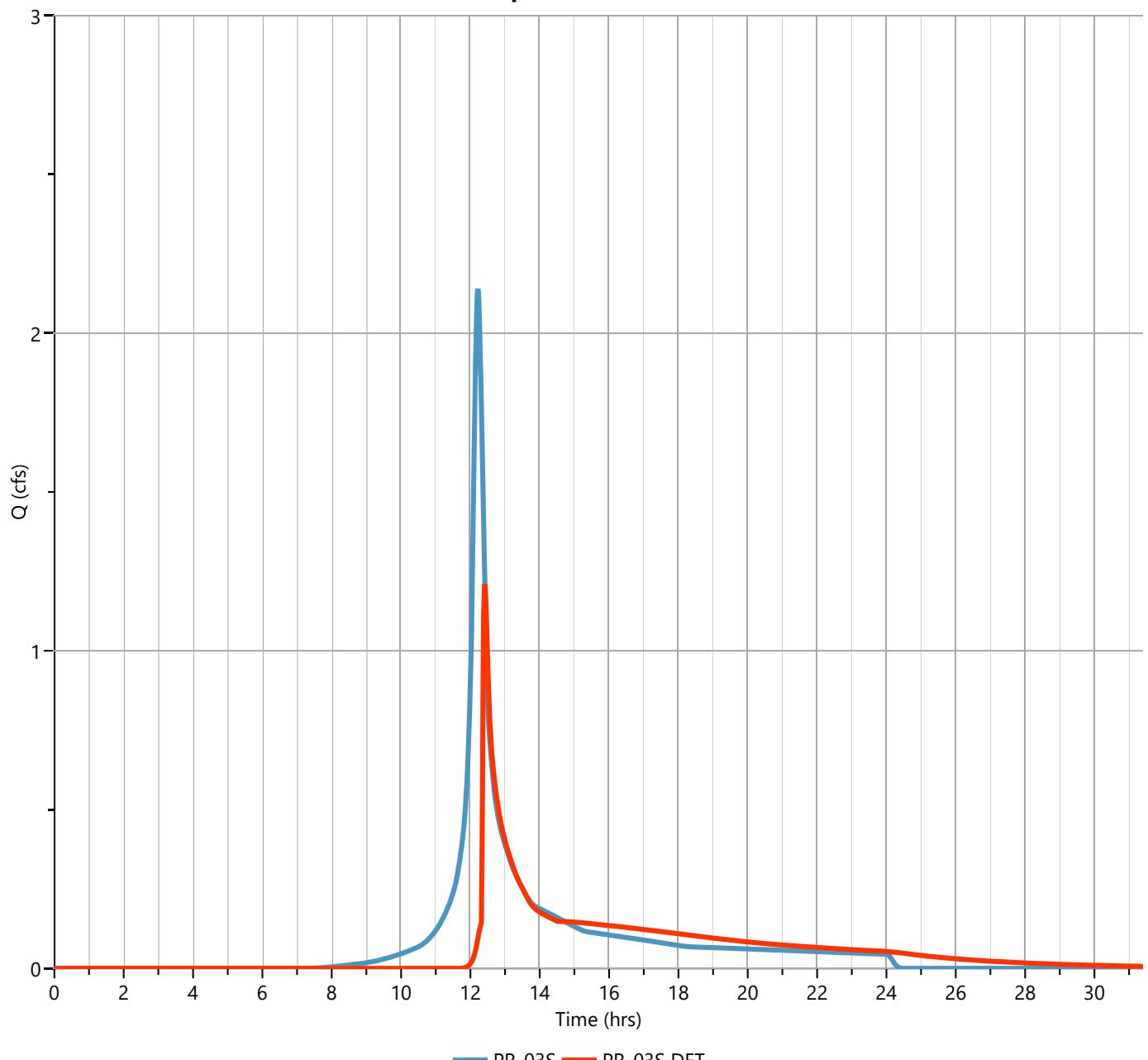
Hyd. No. 12

Hydrograph Type	= Pond Route	Peak Flow	= 1.210 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.42 hrs
Time Interval	= 1 min	Hydrograph Volume	= 6,912 cuft
Inflow Hydrograph	= 7 - PR-03S	Max. Elevation	= 28.34 ft
Pond Name	= PR-03S RAIN GARDEN	Max. Storage	= 3,548 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 2.56 hrs

Q_p = 1.210 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

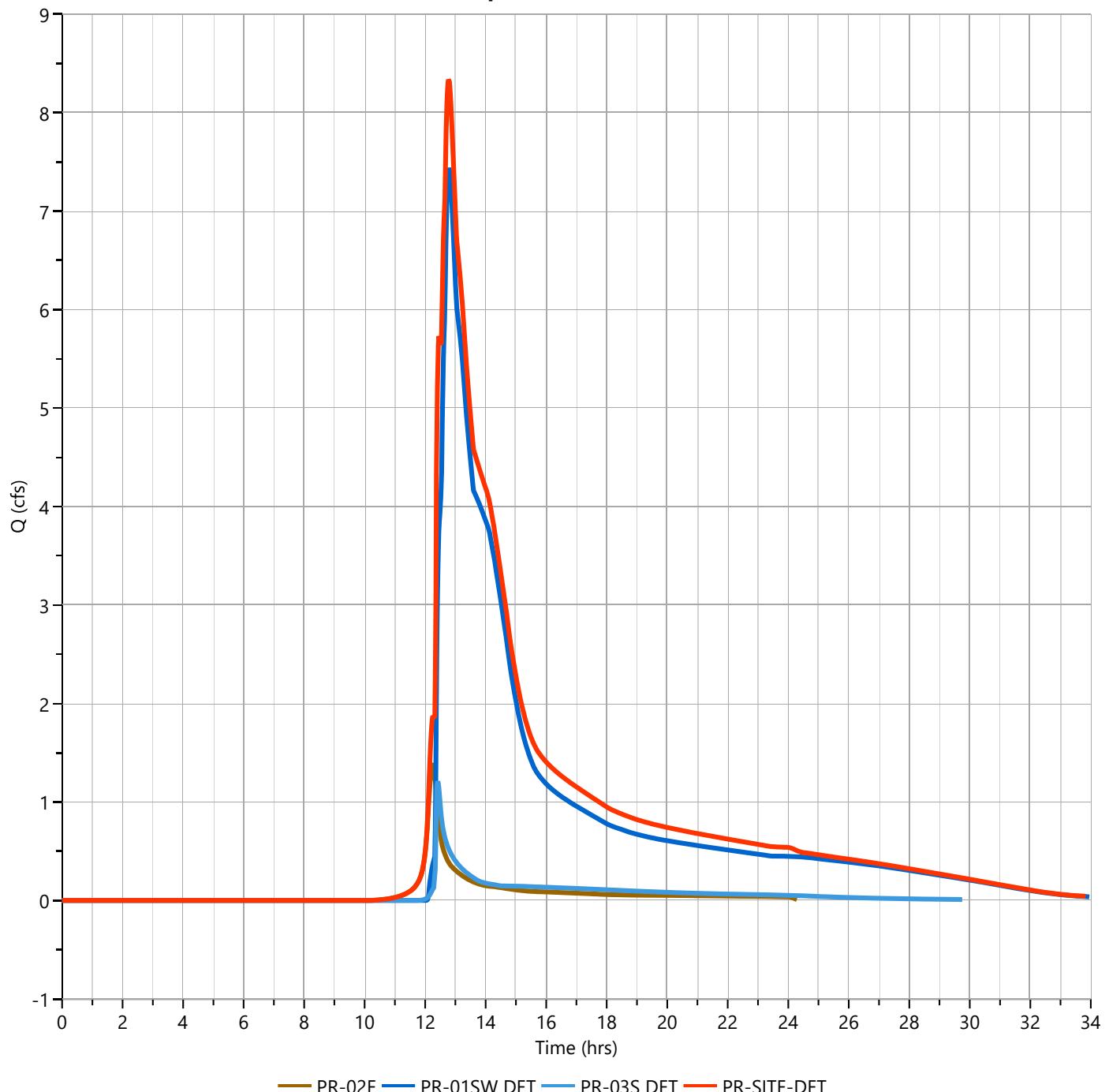
01-15-2026

PR-SITE-DET

Hyd. No. 13

Hydrograph Type	= Junction	Peak Flow	= 8.342 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.78 hrs
Time Interval	= 1 min	Hydrograph Volume	= 88,324 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Qp = 8.342 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

01-15-2026

PR-01SW-SUB DET

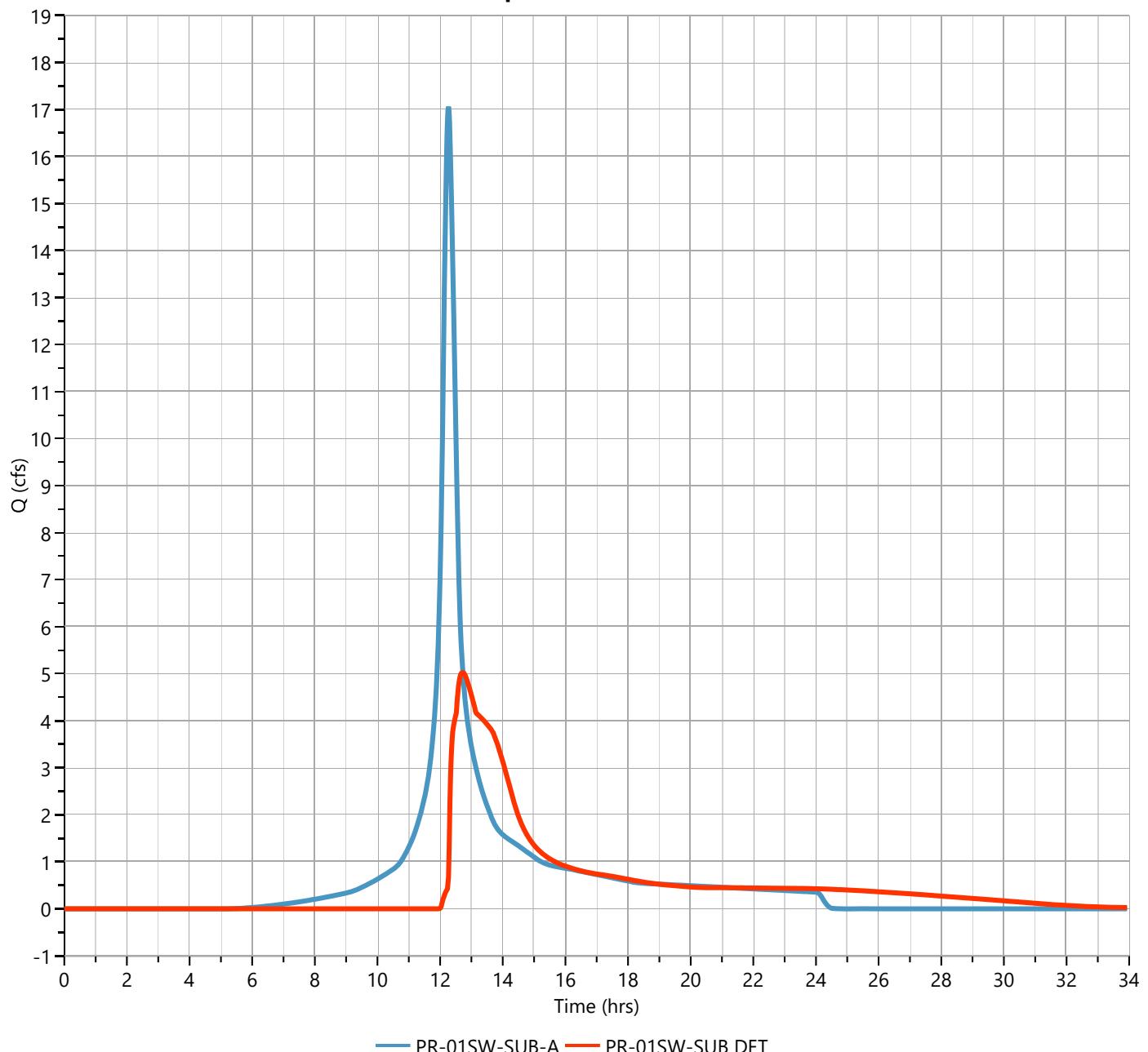
Hyd. No. 14

Hydrograph Type	= Pond Route	Peak Flow	= 5.036 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.72 hrs
Time Interval	= 1 min	Hydrograph Volume	= 60,435 cuft
Inflow Hydrograph	= 9 - PR-01SW-SUB-A	Max. Elevation	= 30.63 ft
Pond Name	= PR-01 DETENTION	Max. Storage	= 39,059 cuft

Pond Routing by Storage Indication Method

Center of mass detention time = 3.11 hrs

$Q_p = 5.036 \text{ cfs}$



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

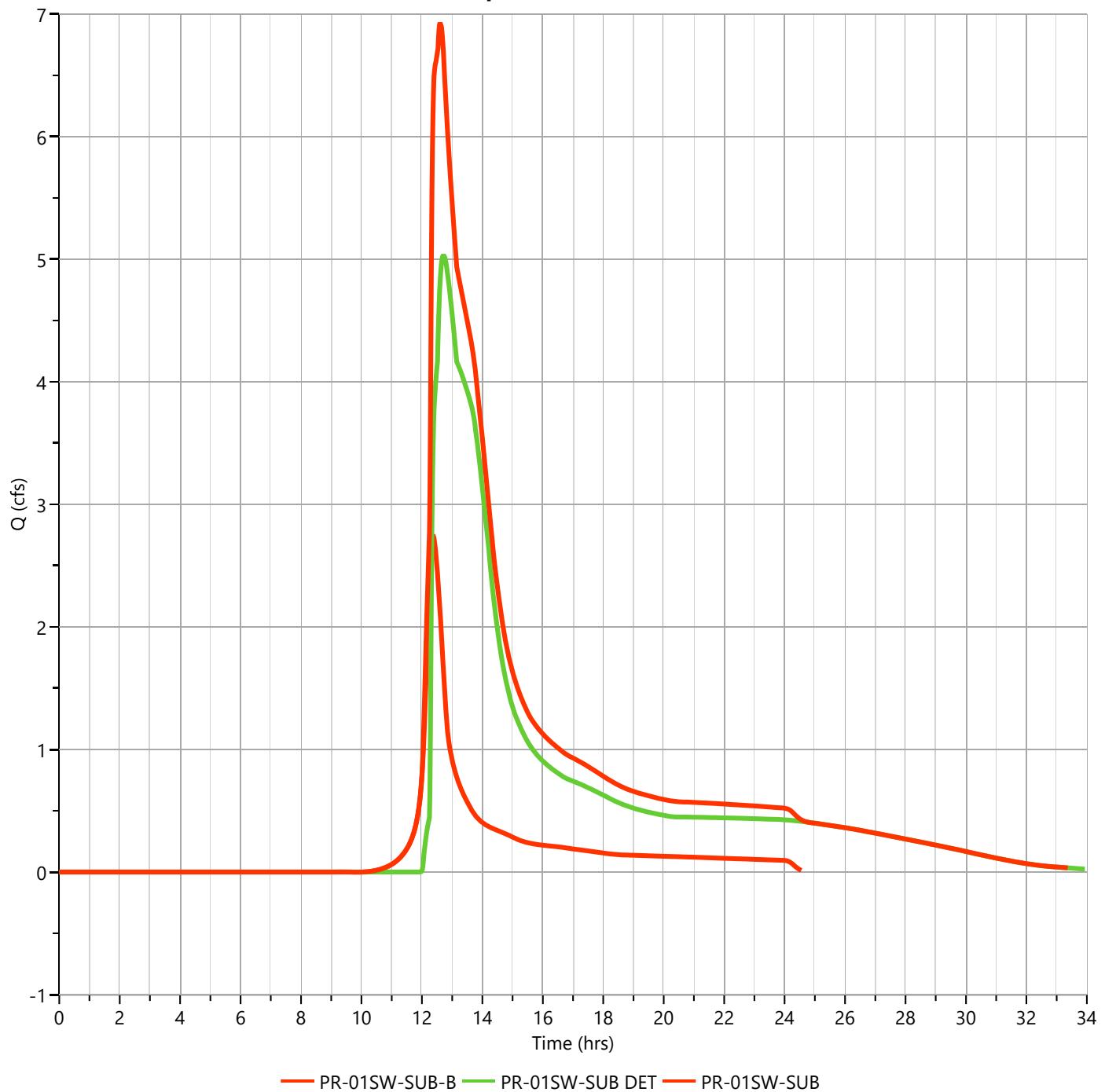
01-15-2026

PR-01SW-SUB

Hyd. No. 15

Hydrograph Type	= Junction	Peak Flow	= 6.935 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.62 hrs
Time Interval	= 1 min	Hydrograph Volume	= 76,293 cuft
Inflow Hydrographs	= 10	Total Contrib. Area	= 1.511 ac

Qp = 6.935 cfs



Hydrograph Report

Hydrology Studio v 3.0.0.41

File: 20251222PARKERS PLACE Hydrology.hys

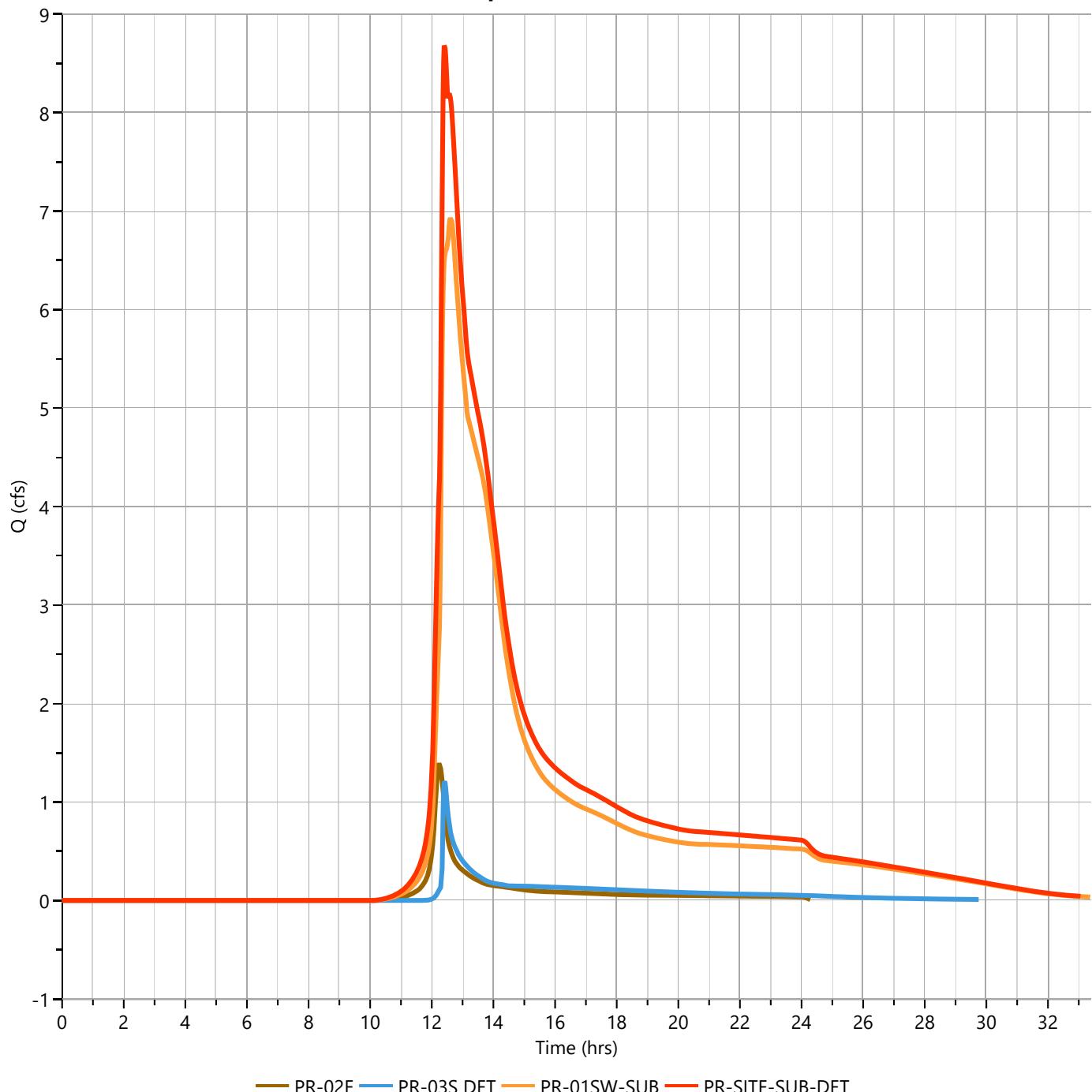
01-15-2026

PR-SITE-SUB-DET

Hyd. No. 16

Hydrograph Type	= Junction	Peak Flow	= 8.692 cfs
Storm Frequency	= 100-yr	Time to Peak	= 12.42 hrs
Time Interval	= 1 min	Hydrograph Volume	= 89,514 cuft
Inflow Hydrographs	= 6	Total Contrib. Area	= 0.625 ac

Qp = 8.692 cfs



Design Storm Report

Custom Storm filename:

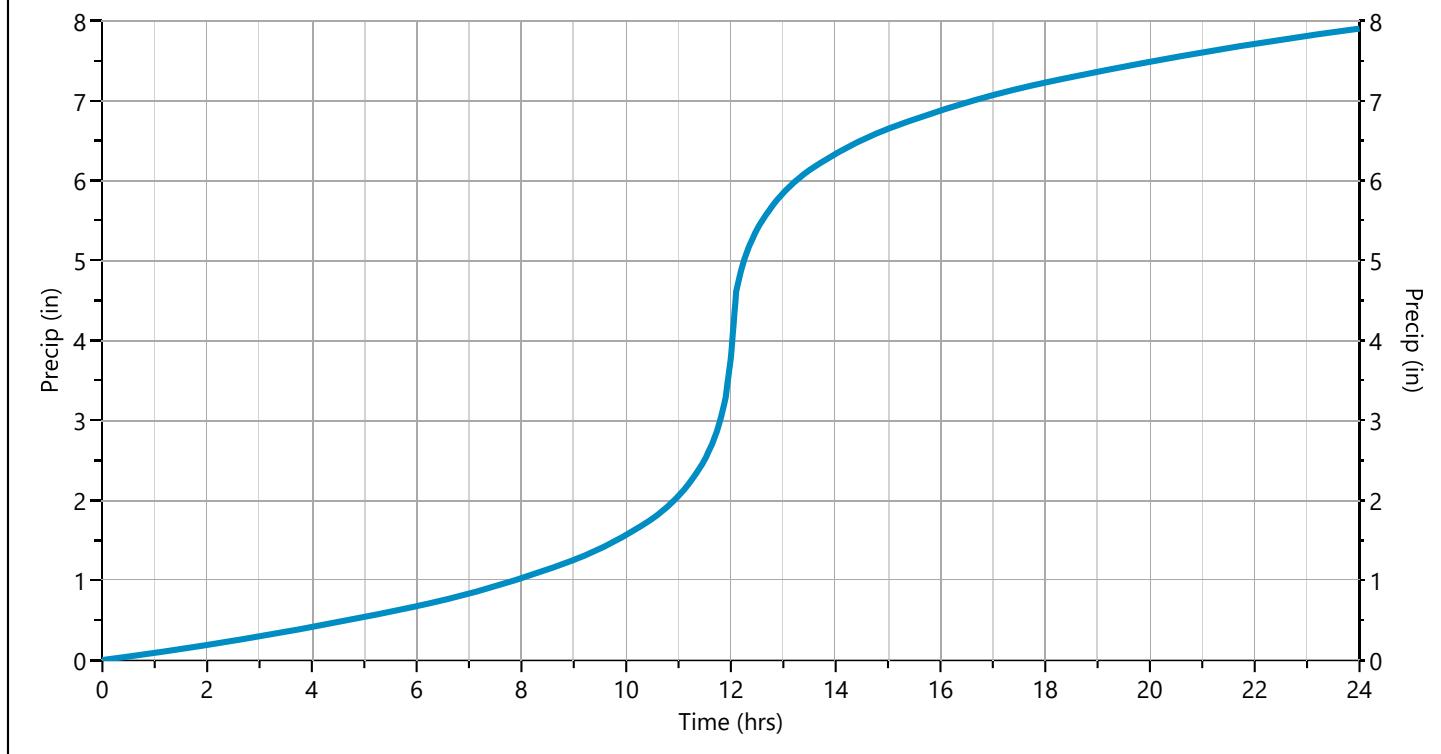
Hydrology Studio v 3.0.0.41

01-15-2026

Storm Distribution: NOAA-D, 24-hr

Storm Duration	Total Rainfall Volume (in)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	✓ 100-yr	
24 hrs	2.87	3.44	0.00	4.38	5.17	6.24	7.04	7.90	

Incremental Rainfall Distribution, 100-yr									
Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)	Time (hrs)	Precip (in)
11.60	0.023831	11.78	0.034404	11.97	0.082356	12.15	0.047741	12.33	0.025084
11.62	0.025083	11.80	0.034408	11.98	0.082360	12.17	0.047741	12.35	0.025082
11.63	0.025082	11.82	0.047741	12.00	0.082354	12.18	0.047744	12.37	0.025084
11.65	0.025083	11.83	0.047744	12.02	0.137417	12.20	0.047741	12.38	0.025082
11.67	0.025082	11.85	0.047741	12.03	0.137425	12.22	0.034404	12.40	0.025085
11.68	0.025083	11.87	0.047741	12.05	0.137417	12.23	0.034404	12.42	0.023831
11.70	0.025081	11.88	0.047744	12.07	0.137425	12.25	0.034406	12.43	0.023833
11.72	0.034404	11.90	0.047741	12.08	0.137417	12.27	0.034403	12.45	0.023831
11.73	0.034405	11.92	0.082359	12.10	0.137425	12.28	0.034406	12.47	0.023831
11.75	0.034404	11.93	0.082356	12.12	0.047741	12.30	0.034402	12.48	0.023833
11.77	0.034405	11.95	0.082360	12.13	0.047744	12.32	0.025082	12.50	0.023831



IDF Report

IDF filename: 20250924PARKERS PLACE NOAA IDF.idf

Hydrology Studio v 3.0.0.41

01-15-2026

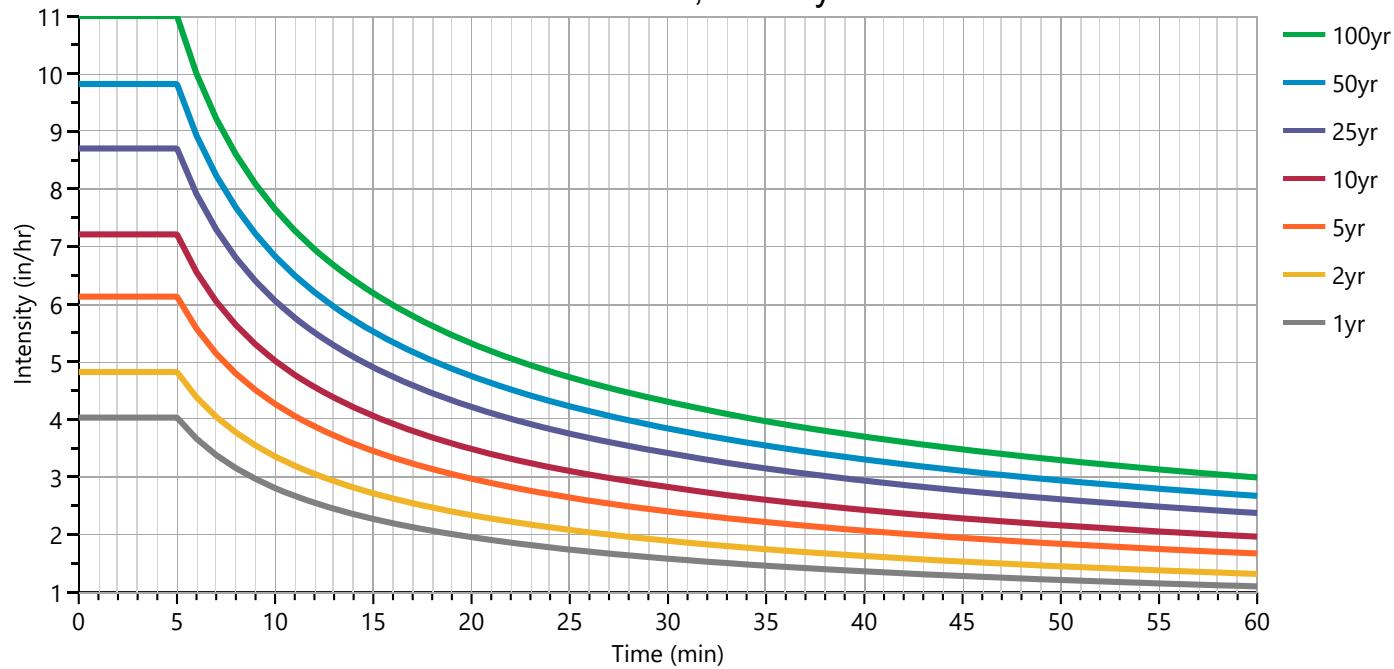
Equation Coefficients	Intensity = B / (Tc + D)^E (in/hr)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
B	9.3449	11.1753	0.0000	14.2321	16.7547	20.1787	22.8243	25.5746
D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.5226	0.5225	0.0000	0.5234	0.5239	0.5227	0.5240	0.5242

Minimum Tc = 5 minutes

Tc (min)	Intensity Values (in/hr)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Cf	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5	4.03	4.82	0	6.13	7.21	8.70	9.82	11.00
10	2.81	3.36	0	4.26	5.01	6.06	6.83	7.65
15	2.27	2.71	0	3.45	4.05	4.90	5.52	6.18
20	1.95	2.34	0	2.97	3.49	4.22	4.75	5.32
25	1.74	2.08	0	2.64	3.10	3.75	4.22	4.73
30	1.58	1.89	0	2.40	2.82	3.41	3.84	4.30
35	1.46	1.74	0	2.21	2.60	3.15	3.54	3.97
40	1.36	1.63	0	2.06	2.43	2.93	3.30	3.70
45	1.28	1.53	0	1.94	2.28	2.76	3.10	3.48
50	1.21	1.45	0	1.84	2.16	2.61	2.94	3.29
55	1.15	1.38	0	1.75	2.05	2.48	2.80	3.13
60	1.10	1.32	0	1.67	1.96	2.37	2.67	2.99

Cf = Correction Factor applied to Rational Method runoff coefficient.

Park Place, East Lyme



Precipitation Report

Precipitation filename: 20250924PARKERS PLACE NOAA Precipitation.pcp

Hydrology Studio v 3.0.0.41 (Rainfall totals in Inches)

01-15-2026

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active		✓	✓		✓	✓	✓	✓	✓
SCS Storms	> SCS Dimensionless Storms								
SCS 6hr		1.97	2.36	0	2.99	3.51	4.24	4.77	5.35
Type I, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
Type IA, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
Type II, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
Type II FL, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
Type III, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
Synthetic Storms	> IDF-Based Synthetic Storms								
1-hr		1.10	1.32	0	1.67	1.96	2.37	2.67	2.99
2-hr		1.53	1.83	0	2.32	2.73	3.30	3.71	4.16
3-hr		1.86	2.22	0	2.82	3.31	4.01	4.50	5.04
6-hr		2.59	3.10	0	3.92	4.60	5.58	6.27	7.01
12-hr		3.60	4.31	0	5.46	6.40	7.77	8.71	9.75
24-hr		5.02	6.00	0	7.60	8.90	10.82	12.12	13.56
Huff Distribution	> 1st Quartile (0 to 6 hrs)								
1-hr		1.02	1.22	0	1.55	1.82	2.20	2.48	2.78
2-hr		1.34	1.60	0	2.03	2.39	2.89	3.26	3.65
3-hr		1.55	1.86	0	2.36	2.78	3.35	3.78	4.23
6-hr		1.97	2.36	0	2.99	3.51	4.24	4.77	5.35
Huff Distribution	> 2nd Quartile (>6 to 12 hrs)								
8-hr		0	0	0	0	0	0	0	0
12-hr		2.45	2.92	0	3.70	4.34	5.23	5.89	6.59
Huff Distribution	> 3rd Quartile (>12 to 24 hrs)								
18-hr		0	0	0	0	0	0	0	0
24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
Custom Storms	> Custom Storm Distributions								
My Custom Storm 1		0	0	0	0	0	0	0	0
My Custom Storm 2		0	0	0	0	0	0	0	0
My Custom Storm 3		0	0	0	0	0	0	0	0
My Custom Storm 4		0	0	0	0	0	0	0	0
My Custom Storm 5		0	0	0	0	0	0	0	0
My Custom Storm 6		0	0	0	0	0	0	0	0
My Custom Storm 7		0	0	0	0	0	0	0	0
My Custom Storm 8		0	0	0	0	0	0	0	0
My Custom Storm 9		0	0	0	0	0	0	0	0
My Custom Storm 10		0	0	0	0	0	0	0	0

Precipitation Report Cont'd

Precipitation filename: 20250924PARKERS PLACE NOAA Precipitation.pcp

Rainfall totals in Inches

01-15-2026

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active		✓	✓		✓	✓	✓	✓	✓
Huff Indiana	> Indianapolis								
30-min		0.79	0.95	0	1.20	1.41	1.70	1.92	2.15
1-hr		1.02	1.22	0	1.55	1.82	2.20	2.48	2.78
2-hr		1.34	1.60	0	2.03	2.39	2.89	3.26	3.65
3-hr		1.55	1.86	0	2.36	2.78	3.35	3.78	4.23
6-hr		1.97	2.36	0	2.99	3.51	4.24	4.77	5.35
12-hr		2.45	2.92	0	3.70	4.34	5.23	5.89	6.59
24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
Huff Indiana	> Evansville								
30-min		0.79	0.95	0	1.20	1.41	1.70	1.92	2.15
1-hr		1.02	1.22	0	1.55	1.82	2.20	2.48	2.78
2-hr		1.34	1.60	0	2.03	2.39	2.89	3.26	3.65
3-hr		1.55	1.86	0	2.36	2.78	3.35	3.78	4.23
6-hr		1.97	2.36	0	2.99	3.51	4.24	4.77	5.35
12-hr		2.45	2.92	0	3.70	4.34	5.23	5.89	6.59
24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
Huff Indiana	> Fort Wayne								
30-min		0.79	0.95	0	1.20	1.41	1.70	1.92	2.15
1-hr		1.02	1.22	0	1.55	1.82	2.20	2.48	2.78
2-hr		1.34	1.60	0	2.03	2.39	2.89	3.26	3.65
3-hr		1.55	1.86	0	2.36	2.78	3.35	3.78	4.23
6-hr		1.97	2.36	0	2.99	3.51	4.24	4.77	5.35
12-hr		2.45	2.92	0	3.70	4.34	5.23	5.89	6.59
24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
Huff Indiana	> South Bend								
30-min		0.79	0.95	0	1.20	1.41	1.70	1.92	2.15
1-hr		1.02	1.22	0	1.55	1.82	2.20	2.48	2.78
2-hr		1.34	1.60	0	2.03	2.39	2.89	3.26	3.65
3-hr		1.55	1.86	0	2.36	2.78	3.35	3.78	4.23
6-hr		1.97	2.36	0	2.99	3.51	4.24	4.77	5.35
12-hr		2.45	2.92	0	3.70	4.34	5.23	5.89	6.59
24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90

Precipitation Report Cont'd

Precipitation filename: 20250924PARKERS PLACE NOAA Precipitation.pcp

Rainfall totals in Inches

01-15-2026

	Active	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
Active		✓	✓		✓	✓	✓	✓	✓
NRCS Storms	> NRCS Dimensionless Storms								
NRCS MSE1, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NRCS MSE2, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NRCS MSE3, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NRCS MSE4, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NRCS MSE5, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NRCS MSE6, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NOAA-A, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NOAA-B, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NOAA-C, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NOAA-D, 24-hr	✓	2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NRCC-A, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NRCC-B, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NRCC-C, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
NRCC-D, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
CA-1, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
CA-2, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
CA-3, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
CA-4, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
CA-5, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
CA-6, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
FDOT Storms	> Florida DOT Storms								
FDOT, 1-hr		1.02	1.22	0	1.55	1.82	2.20	2.48	2.78
FDOT, 2-hr		1.34	1.60	0	2.03	2.39	2.89	3.26	3.65
FDOT, 4-hr		0	0	0	0	0	0	0	0
FDOT, 8-hr		0	0	0	0	0	0	0	0
FDOT, 24-hr		2.87	3.44	0	4.38	5.17	6.24	7.04	7.90
FDOT, 72-hr		0	0	0	0	0	0	0	0
SFWMD, 72-hr		0	0	0	0	0	0	0	0
Austin Storms	> Austin Frequency Storms								
Austin Zone 1, 24-hr		0	0	0	0	0	0	0	0
Austin Zone 2, 24-hr		0	0	0	0	0	0	0	0

STORMWATER TREATMENT CALCULATIONS [PR-01SW-SUB-A]

Compute Water Quality Volume

$$WQV = \frac{(P)(R)(A)}{12}$$

WQV = Water Quality Volume (acre-feet)
 P = 1.3" (90th percentile rainfall event)
 R = Volumetric Runoff Coefficient, 0.050 + 0.009(I)
 I = Percent Impervious Cover, Impervious Area / Total Area
 DA = **4.266** acres
 DA = Drainage Area (Acres)
 DCIA = **2.037** acres
 DCIA = Directly Connected Impervious Area (Acres)

Determine Percent Impervious Cover (I)

$$I = **48\%**$$

$$R = **0.48**$$

Calculate Volumetric Runoff Coefficient (R)

Calculate WQV			Calculate Sediment Forebay Volume			
ac-ft	V(req) cf	V(prop) cf	Required	Percent	V(req) cf	V(prop) cf
WQV = 0.222	= 9658	15500	Yes	25%	2414	2580

Compute Runoff Depth

$$Q = \frac{WQV}{DA}$$

Q = Runoff Depth (in watershed inches)
 WQV = Water Quality Volume (acre-feet)
 DA = Drainage Area (acres)

$$Q_{(in)} = **0.62** \text{ watershed inches}$$

Determine NCRS Curve Number (CN)

$$Q_{(in)} = **0.62** \text{ watershed inches}$$

$$P = **1.3** \text{ in}$$

TR-55 Figure 2-1

$$CN = **91**$$

Determine Initial Abstraction (I_a)

TR-55 Table 4-1

$$I_a = **0.198** \text{ inches}$$

Determine Unit Peak Discharge (q_u)Time of Concentration (T_c), referenced from Pipe Flow Calculation Worksheet

$$T_c = **0.33** \text{ hours}$$

$$I_a/P = **0.15**$$

TR-55 Exhibit 4-III

$$q_u = **460** \text{ csm/in}$$

Compute Water Quality Flow

$$WQF = (q_u)(DA)(Q)$$

WQF = Water Quality Flow (cfs)
 q_u = unit peak discharge (cfs/mi²/inch)
 DA = drainage area (mi²)
 Q(in) = runoff depth (watershed inches)

$$WQF = **1.912** \text{ cfs}$$

Figure 2-1 Solution of Runoff Equation

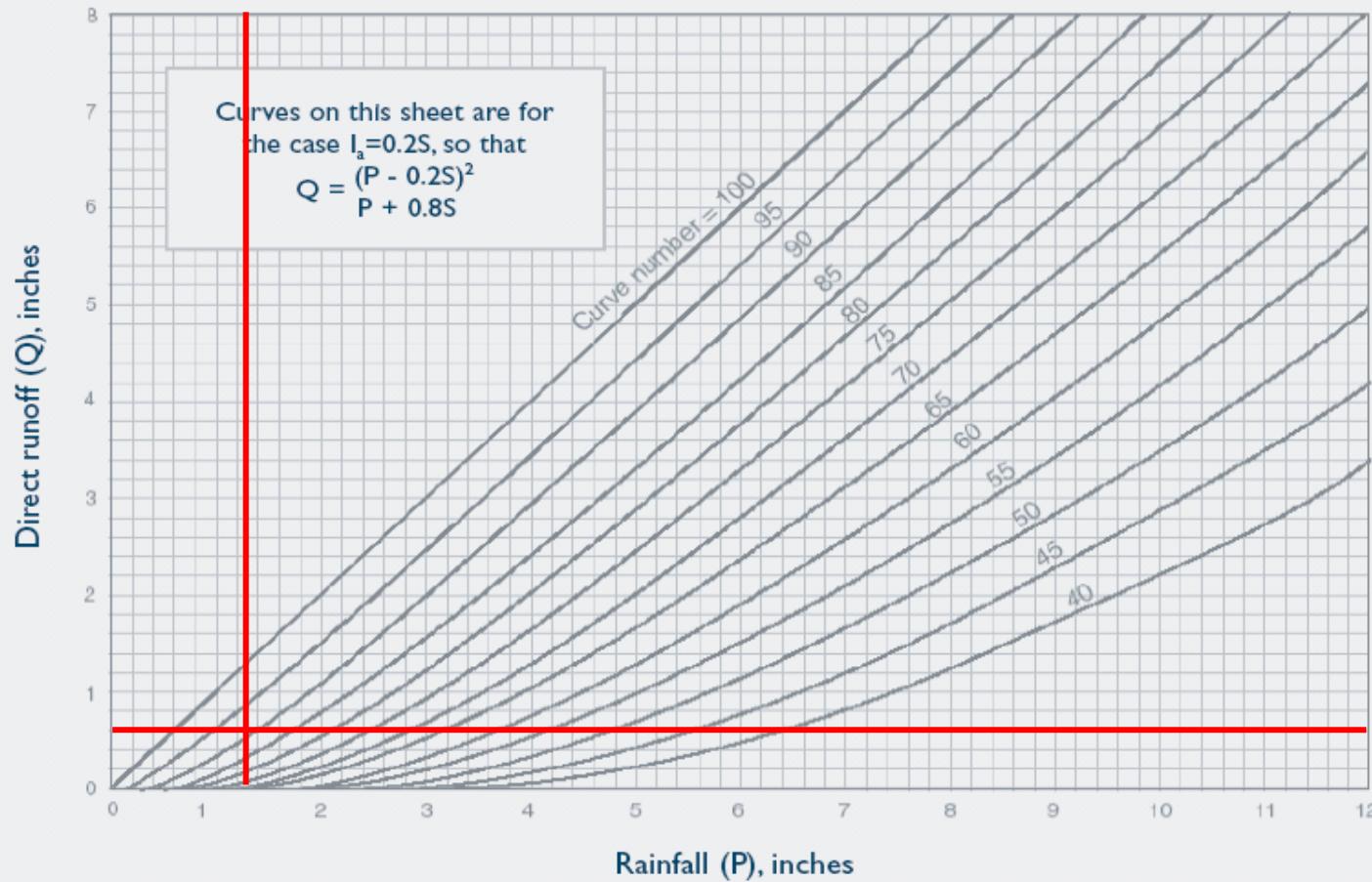
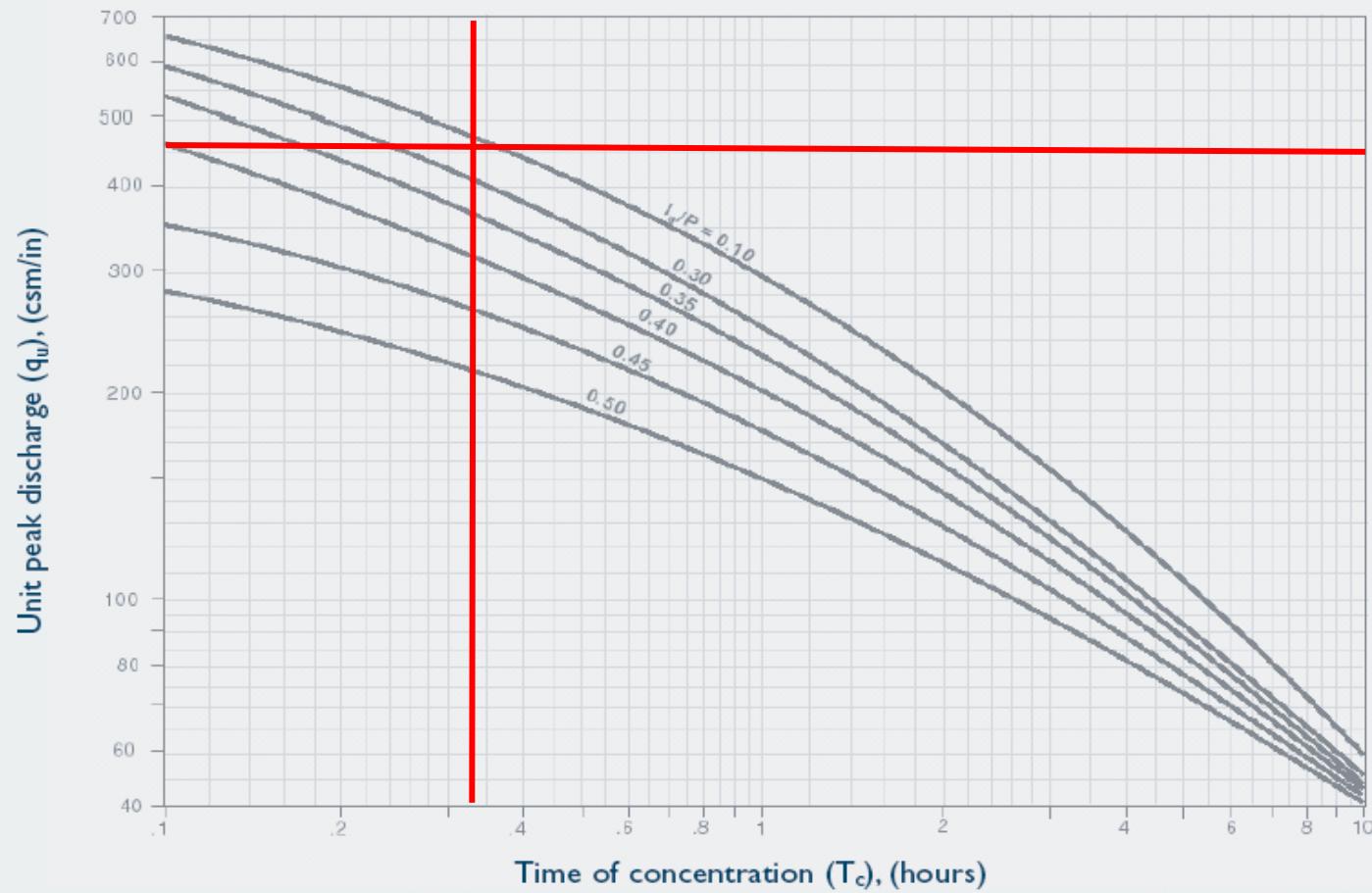


Table 4-1 I_a values for runoff curve numbers

Curve number	I_a (in)						
40	3.000	55	1.636	70	0.857	85	0.353
41	2.878	56	1.571	71	0.817	86	0.326
42	2.762	57	1.509	72	0.778	87	0.299
43	2.651	58	1.448	73	0.740	88	0.273
44	2.545	59	1.390	74	0.703	89	0.247
45	2.444	60	1.333	75	0.667	90	0.222
46	2.348	61	1.279	76	0.632	91	0.198
47	2.255	62	1.226	77	0.597	92	0.174
48	2.167	63	1.175	78	0.564	93	0.151
49	2.082	64	1.125	79	0.532	94	0.128
50	2.000	65	1.077	80	0.500	95	0.105
51	1.922	66	1.030	81	0.469	96	0.083
52	1.846	67	0.985	82	0.439	97	0.062
53	1.774	68	0.941	83	0.410	98	0.041
54	1.704	69	0.899	84	0.381		

Exhibit 4-111 Unit peak discharge (q_u) for NRCS (SCS) type III rainfall distribution



[Return to Outlet Treatment Summary](#)

STORMWATER TREATMENT CALCULATIONS [PR-03S]

Compute Water Quality Volume

$$WQV = \frac{(P)(R)(A)}{12}$$

WQV = Water Quality Volume (acre-feet)

P = 1.3" (90th percentile rainfall event)

R = Volumetric Runoff Coefficient, 0.050 + 0.009(I)

I = Percent Impervious Cover, Impervious Area / Total Area

DA = **0.581** acres

DA = Drainage Area (Acres)

DCIA = **0.156** acres

DCIA = Directly Connected Impervious Area (Acres)

Determine Percent Impervious Cover (I)

I = **27%**

R = **0.29**

Calculate Volumetric Runoff Coefficient (R)

Calculate WQV			Calculate Sediment Forebay Volume			
ac-ft	V(req) cf	V(prop) cf	Required	Percent	V(req) cf	V(prop) cf
WQV = 0.018	= 800	935	No	0%	0	0

Compute Runoff Depth

$$Q = \frac{WQV}{DA}$$

Q = Runoff Depth (in watershed inches)

WQV = Water Quality Volume (acre-feet)

DA = Drainage Area (acres)

Q_(in) = **0.38** watershed inches

Determine NCFS Curve Number (CN)

Q_(in) = **0.38** watershed inches

P = **1.3** in

TR-55 Figure 2-1

CN = **89**

Determine Initial Abstraction (I_a)

TR-55 Table 4-1

I_a = **0.326** inches

Determine Unit Peak Discharge (q_u)Time of Concentration (T_c), referenced from Pipe Flow Calculation Worksheet

T_c = **0.27** hours

I_a/P = **0.25**

TR-55 Exhibit 4-III

q_u = **460** csm/in

Compute Water Quality Flow

WQF = (qu)(DA)(Q)

WQF = Water Quality Flow (cfs)

qu = unit peak discharge (cfs/mi²/inch)DA = drainage area (mi²)

Q(in) = runoff depth (watershed inches)

WQF = **0.158** cfs

Figure 2-1 Solution of Runoff Equation

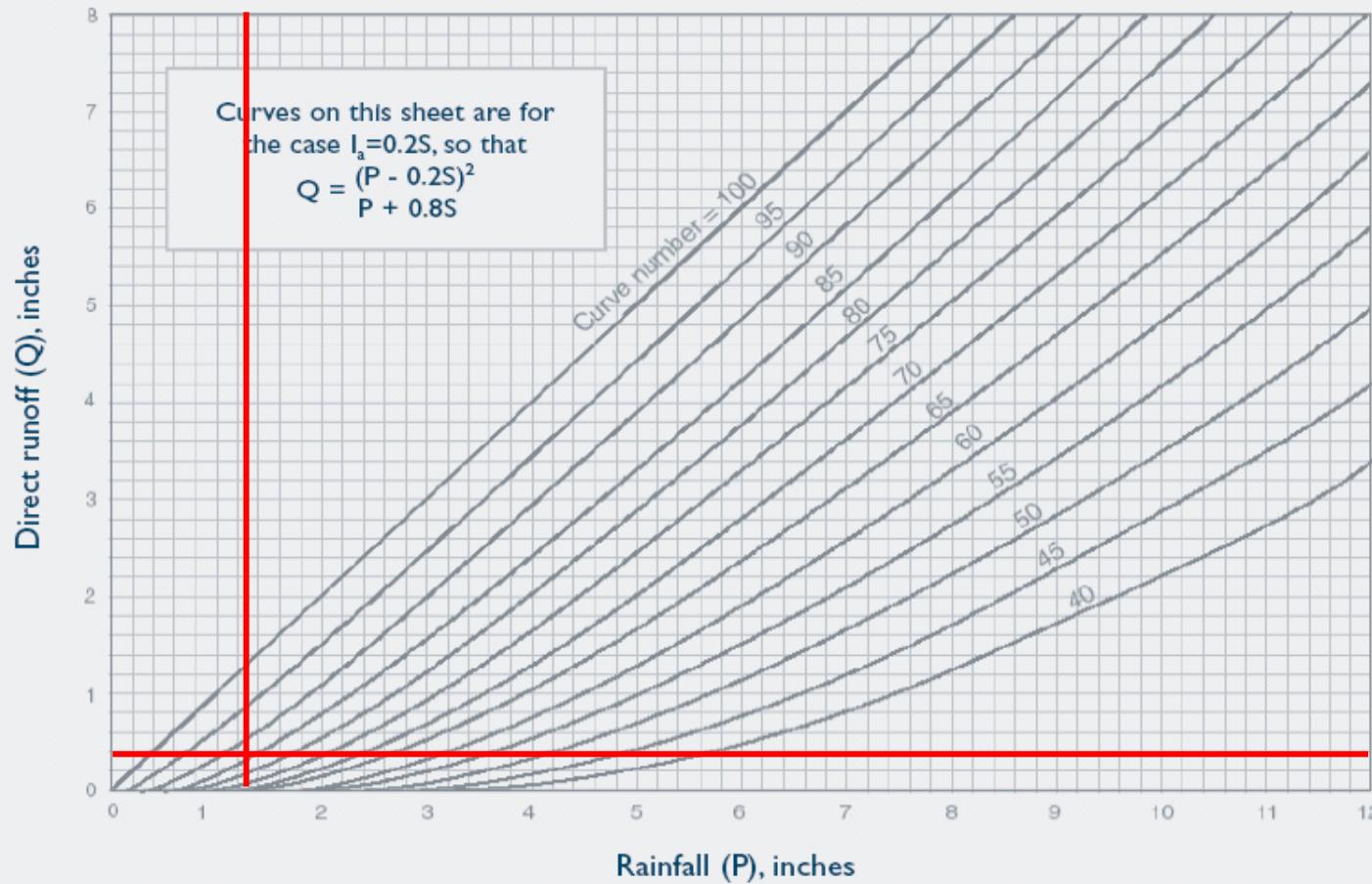
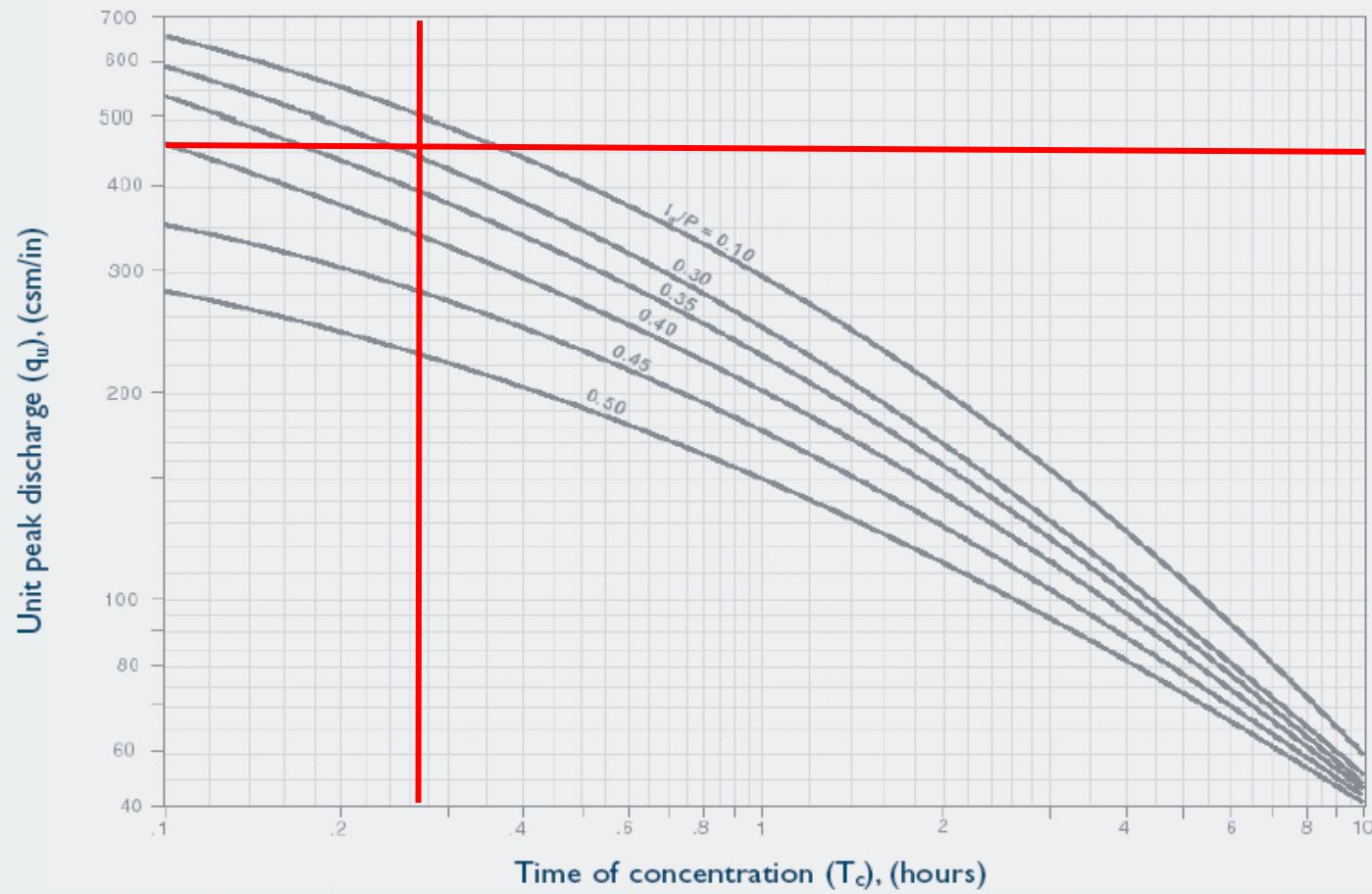


Table 4-1 I_a values for runoff curve numbers

Curve number	I_a (in)						
40	3.000	55	1.636	70	0.857	85	0.353
41	2.878	56	1.571	71	0.817	86	0.326
42	2.762	57	1.509	72	0.778	87	0.299
43	2.651	58	1.448	73	0.740	88	0.273
44	2.545	59	1.390	74	0.703	89	0.247
45	2.444	60	1.333	75	0.667	90	0.222
46	2.348	61	1.279	76	0.632	91	0.198
47	2.255	62	1.226	77	0.597	92	0.174
48	2.167	63	1.175	78	0.564	93	0.151
49	2.082	64	1.125	79	0.532	94	0.128
50	2.000	65	1.077	80	0.500	95	0.105
51	1.922	66	1.030	81	0.469	96	0.083
52	1.846	67	0.985	82	0.439	97	0.062
53	1.774	68	0.941	83	0.410	98	0.041
54	1.704	69	0.899	84	0.381		

Exhibit 4-111 Unit peak discharge (q_u) for NRCS (SCS) type III rainfall distribution



[Return to Outlet Treatment Summary](#)



PARKERS PLACE MF DEVELOPMENT
PARK PLACE (MAP 11.1, LOT 11)
EAST LYME, CONNECTICUT

APPENDIX C PIPE FLOW CALCULATIONS

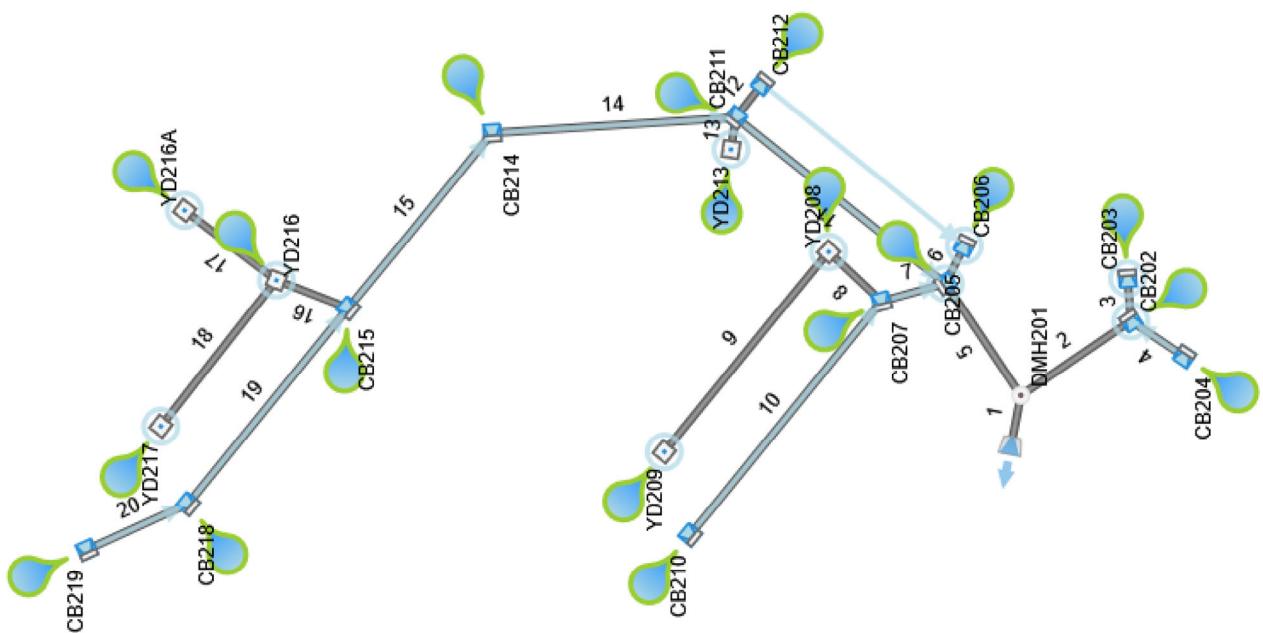
STORMWATER STUDIO PLAN
10-YEAR RESULTS & PROFILES
25-YEAR PROFILES
100-YEAR INLET REPORT
IDF REPORT

Plan View

Stormwater Studio 2026 v 3.0.0.40

Project Name: PARKERS PLACE

01-15-2026



Storm Sewer Tabulation

Stormwater Studio 2026 v 3.0.0.40

Project Name: PARKERS PLACE

01-15-2026

Line ID	Length (ft)	Drng Area		C x A		Tc		Intensity (in/hr)	Capacity (cfs)	Velocity (ft/s)	Line		Invert Elev		HGL Elev		Surface Elev		Line No		
		Incr (ft)	Total (ac)	Incr (C)	Total (C)	Inlet (min)	Syst (min)				Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)			
FE200-DMH201	20.00	0.000	3.577	0.00	2.15	0.0	18.99	3.58	7.71	15.99	4.35	24	0.50	27.10	27.00	28.16	28.15	32.00	30.00	1	
DMH201-CB202	62.00	0.082	0.333	0.80	0.07	0.28	5.0	5.15	7.10	2.00	6.61	1.82	15	1.05	27.75	27.10	28.69	28.65	31.90	32.00	2
CB202-CB203	20.00	0.025	0.025	0.88	0.02	0.02	5.0	5.00	7.21	0.16	3.56	0.21	12	1.00	27.95	27.75	28.79	28.79	31.90	31.90	3
CB202-CB204	30.00	0.226	0.226	0.86	0.19	0.19	5.0	5.00	7.21	1.40	5.04	2.67	12	2.00	28.35	27.75	28.85	28.76	32.65	31.90	4
DMH201-CB205	63.00	0.132	3.244	0.73	0.10	1.87	5.0	18.80	3.60	6.74	8.88	4.29	18	0.71	27.55	27.10	28.68	28.53	31.90	32.00	5
CB205-CB206	20.00	0.090	0.090	0.61	0.05	0.05	5.0	5.00	7.21	0.40	3.56	0.50	12	1.00	27.95	27.75	29.23	29.23	31.90	31.90	6
CB205-CB207	31.00	0.237	0.522	0.85	0.20	0.41	5.0	11.19	4.73	1.93	11.30	2.21	15	3.06	28.50	27.55	29.17	29.21	32.65	31.90	7
CB207-YD208	34.00	0.076	0.120	0.65	0.05	0.06	5.0	11.04	4.76	0.30	5.56	1.29	12	2.44	29.33	28.50	29.56	29.36	32.33	32.65	8
YD208-YD209	121.00	0.044	0.044	0.31	0.01	0.01	10.0	10.00	5.01	0.07	1.27	0.99	8	1.11	30.67	29.33	30.79	30.79	33.67	33.67	9
CB207-CB210	141.00	0.165	0.165	0.87	0.14	0.14	5.0	5.00	7.21	1.03	4.93	2.33	12	1.91	31.20	28.50	31.63	29.34	35.50	32.65	10
CB205-CB211	125.00	0.061	2.500	0.65	0.04	1.31	5.0	18.58	3.62	4.75	7.09	6.21	12	3.96	32.50	27.55	33.41	28.89	40.00	31.90	11
CB211-CB212	20.00	0.135	0.135	0.48	0.06	0.06	10.0	10.00	5.01	0.32	3.56	2.42	12	1.00	36.00	35.80	36.24	36.02	40.00	40.00	12
CB211-YD213	15.00	0.915	0.915	0.40	0.37	0.37	15.7	15.71	3.96	1.45	6.17	4.35	12	3.00	36.00	35.55	36.51	35.94	39.00	40.00	13
CB211-CB214	114.00	0.266	1.389	0.60	0.16	0.84	10.0	18.42	3.64	3.06	11.26	8.22	12	10.00	46.95	35.55	47.69	35.92	52.25	40.00	14
CB214-CB215	106.00	0.217	1.123	0.87	0.19	0.68	5.0	18.20	3.66	2.50	6.92	6.07	12	3.77	50.95	46.95	51.62	47.38	55.25	52.25	15
CB215-YD216	36.00	0.017	0.545	0.34	0.01	0.19	10.0	18.09	3.68	0.70	6.56	1.85	12	3.39	52.17	50.95	52.52	51.92	55.17	55.25	16
YD216-YD216A	54.00	0.490	0.490	0.35	0.17	0.17	18.0	17.98	3.69	0.63	12.03	5.11	12	11.41	58.83	52.67	59.17	52.83	62.33	55.17	17
CB215-CB218	87.00	0.038	0.038	0.32	0.01	0.01	10.0	10.00	5.01	0.06	1.39	0.86	8	1.33	53.33	52.17	53.45	52.65	55.83	55.17	18
CB218-CB219	118.00	0.069	0.361	0.75	0.05	0.30	5.0	5.15	7.10	2.15	5.03	3.55	12	1.99	53.30	50.95	53.92	51.84	57.60	55.25	19
CB218-CB219	52.00	0.292	0.292	0.86	0.25	0.25	5.0	5.00	7.21	1.81	4.81	3.27	12	1.83	54.25	53.30	54.82	54.12	58.55	57.60	20

Notes: IDF File = 20251222PARKERS PLACE Rainfall Intensity.idf, Return Period = 10-yr.

Project File: 20260113PARKERS PLACE Pipe Flow.sws

TR55 Worksheet

Project Name: PARKERS PLACE

Stormwater Studio 2026 v 3.0.0.40

01-15-2026

Line No. 10

CB210

Description	Segments			Tc (min)
	A	B	C	
Sheet Flow				
Description				
Manning's n	0.013	0.000	0.000	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.440	3.440	3.440	
Land Slope (%)	2			
Travel Time (min)	1.34	0.00	0.00	1.34
Shallow Concentrated Flow				
Flow Length (ft)				
Watercourse Slope (%)				
Surface Description	Paved	Paved	Paved	
Average Velocity (ft/s)				
Travel Time (min)	0.00	0.00	0.00	0.00
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				5 min

TR55 Worksheet

Project Name: PARKERS PLACE

Stormwater Studio 2026 v 3.0.0.40

01-15-2026

Line No. 13

YD213

Description	Segments			Tc (min)
	A	B	C	
Sheet Flow				
Description				
Manning's n	0.240	0.000	0.000	
Flow Length (ft)	100			
2-yr, 24-hr Precip. (in)	3.440	3.440	3.440	
Land Slope (%)	2			
Travel Time (min)	13.76	0.00	0.00	13.76
Shallow Concentrated Flow				
Flow Length (ft)	240	80		
Watercourse Slope (%)	2	18		
Surface Description	Unpaved	Unpaved	Paved	
Average Velocity (ft/s)	2.28	6.85		
Travel Time (min)	1.75	0.19	0.00	1.95
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				15.71 min

TR55 Worksheet

Project Name: PARKERS PLACE

Stormwater Studio 2026 v 3.0.0.40

01-15-2026

Line No. 17

YD216A

Description	Segments			Tc (min)
	A	B	C	
Sheet Flow				
Description				
Manning's n	0.400	0.400	0.000	
Flow Length (ft)	65	60		
2-yr, 24-hr Precip. (in)	3.440	3.440	3.440	
Land Slope (%)	17	4		
Travel Time (min)	6.23	10.43	0.00	16.66
Shallow Concentrated Flow				
Flow Length (ft)	180			
Watercourse Slope (%)	2			
Surface Description	Unpaved	Paved	Paved	
Average Velocity (ft/s)	2.28			
Travel Time (min)	1.31	0.00	0.00	1.31
Channel Flow				
X-sectional Flow Area (sqft)				
Wetted Perimeter (ft)				
Channel Slope (%)				
Manning's n	0.000	0.000	0.000	
Velocity (ft/s)				
Flow Length (ft)				
Travel Time (min)	0.00	0.00	0.00	0.00
Total Travel Time				17.98 min

Composite C Worksheet

Project Name: PARKERS PLACE

Stormwater Studio 2026 v 3.0.0.40

01-15-2026

Line No	Description	Drainage Area (ac)	Runoff Coeff (C)	C x A	Composite (C)	Structure ID
2	Impervious	0.068	0.90	0.061		CB202
	Landscape	0.014	0.30	0.004		
	Totals		0.082		0.065	0.80
3	Impervious	0.024	0.90	0.022		CB203
	Landscape	0.001	0.30			
	Totals		0.025		0.022	0.88
4	Impervious	0.210	0.90	0.189		CB204
	Landscape	0.016	0.30	0.005		
	Totals		0.226		0.194	0.86
5	Impervious	0.095	0.90	0.085		CB205
	Landscape	0.037	0.30	0.011		
	Totals		0.132		0.097	0.73
6	Impervious	0.051	0.90	0.046		CB206
	Landscape	0.012	0.30	0.004		
	Brush/Woods	0.027	0.20	0.005		
	Totals		0.090		0.055	0.61
7	Impervious	0.219	0.90	0.197		CB207
	Landscape	0.018	0.30	0.005		
	Totals		0.237		0.203	0.85
8	Impervious	0.044	0.90	0.040		YD208
	Landscape	0.032	0.30	0.010		
	Totals		0.076		0.049	0.65
9	Impervious	0.001	0.90	0.001		YD209
	Landscape	0.043	0.30	0.013		
	Totals		0.044		0.014	0.31

Composite C Worksheet

Project Name: PARKERS PLACE

Stormwater Studio 2026 v 3.0.0.40

01-15-2026

Line No	Description	Drainage Area (ac)	Runoff Coeff (C)	C x A	Composite (C)	Structure ID
10	Impervious	0.156	0.90	0.140		CB210
	Landscape	0.009	0.30	0.003		
	Totals	0.165		0.143	0.87	
11	Impervious	0.036	0.90	0.032		CB211
	Landscape	0.025	0.30	0.008		
	Totals	0.061		0.040	0.65	
12	Impervious	0.050	0.90	0.045		CB212
	Landscape	0.028	0.30	0.008		
	Brush/Woods	0.057	0.20	0.011		
	Totals	0.135		0.065	0.48	
13	Impervious	0.205	0.90	0.185		YD213
	Landscape	0.428	0.30	0.128		
	Brush/Woods	0.282	0.20	0.056		
	Totals	0.915		0.369	0.40	
14	Impervious	0.143	0.90	0.129		CB214
	Landscape	0.065	0.30	0.020		
	Brush/Woods	0.058	0.20	0.012		
	Totals	0.266		0.160	0.60	
15	Impervious	0.207	0.90	0.186		CB215
	Landscape	0.010	0.30	0.003		
	Totals	0.217		0.189	0.87	
16	Impervious	0.001	0.90	0.001		YD216
	Landscape	0.016	0.30	0.005		
	Totals	0.017		0.006	0.34	
17	Impervious	0.087	0.90	0.078		YD216A
	Landscape	0.105	0.30	0.032		
	Brush/Woods	0.298	0.20	0.060		
	Totals	0.490		0.169	0.35	

Composite C Worksheet

Project Name: PARKERS PLACE

Stormwater Studio 2026 v 3.0.0.40

01-15-2026

Line No	Description	Drainage Area (ac)	Runoff Coeff (C)	C x A	Composite (C)	Structure ID
18	Impervious	0.001	0.90	0.001		YD217
	Landscape	0.037	0.30	0.011		
	Totals		0.038		0.012	0.32
19	Impervious	0.052	0.90	0.047		CB218
	Landscape	0.017	0.30	0.005		
	Totals		0.069		0.052	0.75
20	Impervious	0.271	0.90	0.244		CB219
	Landscape	0.021	0.30	0.006		
	Totals		0.292		0.250	0.86

Inlet Report

Stormwater Studio 2026 v 3.0.0.40

Project Name: PARKERS PLACE

01-15-2026

Line No	Inlet		Q			Curb			Grate			Gutter			Inlet		Byp Line No				
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft/ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (in)	
1	DMH201	Manhole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	CB202	Combination	0.47	0.64	1.11	0.00	4.0	2.67	3.15	1.64	3.13	Sag	2.00	0.020	0.013	0.12	5.86	0.20	5.86	1.0	1
3	CB203	Combination	0.16	0.00	0.16	0.00	4.0	2.67	3.15	1.64	3.13	Sag	2.00	0.020	0.013	0.02	0.86	0.10	1.63	1.0	2
4	CB204	Combination	1.40	0.00	0.76	0.64	4.0	2.67	3.15	1.64	-	0.015	2.00	0.020	0.013	0.14	7.05	0.20	5.98	1.0	2
5	CB205	Combination	0.69	1.40	2.09	0.00	4.0	2.67	3.15	1.64	3.13	Sag	2.00	0.020	0.013	0.20	9.86	0.28	9.86	1.0	1
6	CB206	Combination	0.40	0.05	0.45	0.00	4.0	2.67	3.15	1.64	3.13	Sag	2.00	0.020	0.013	0.06	2.86	0.14	2.86	1.0	5
7	CB207	Combination	1.45	0.43	0.93	0.95	4.0	2.67	3.15	1.64	-	0.020	2.00	0.020	0.013	0.15	7.45	0.21	6.43	1.0	5
8	YD208	Drop Grate	0.36	0.00	0.36	0.00	-	-	2.00	2.40	Sag	4.00	0.020	0.020	0.013	0.06	10.03	0.06	10.03	1.0	7
9	YD209	Drop Grate	0.07	0.00	0.07	0.00	-	-	2.00	2.40	Sag	4.00	0.020	0.020	0.013	0.12	5.95	0.18	4.68	1.0	7
10	CB210	Combination	1.03	0.00	0.61	0.43	4.0	2.67	3.15	1.64	-	0.020	2.00	0.020	0.013	0.12	6.01	0.02	6.01	1.0	8
11	CB211	Combination	0.29	0.88	0.71	0.45	4.0	2.67	3.15	1.64	-	0.090	2.00	0.020	0.013	0.09	4.70	0.14	2.98	1.0	5
12	CB212	Combination	0.32	0.00	0.27	0.05	4.0	2.67	3.15	1.64	-	0.090	2.00	0.020	0.013	0.06	2.95	0.09	1.44	1.0	6
13	YD213	Drop Grate	1.45	0.00	1.45	0.00	-	-	2.00	2.40	Sag	12.00	0.330	0.013	0.15	12.93	0.15	12.93	1.0	11	
14	CB214	Combination	0.80	0.98	0.90	0.88	4.0	2.67	3.15	1.64	-	0.030	2.00	0.020	0.013	0.14	6.80	0.20	5.63	1.0	11
15	CB215	Combination	1.36	0.57	0.95	0.98	4.0	2.67	3.15	1.64	-	0.020	2.00	0.020	0.013	0.15	7.55	0.21	6.53	1.0	14
16	YD216	Drop Grate	0.03	0.00	0.03	0.00	-	-	2.00	2.40	Sag	8.00	0.083	0.013	0.01	8.27	0.01	8.27	1.0	15	
17	YD216A	Drop Grate	0.63	0.00	0.63	0.00	-	-	2.00	2.40	Sag	8.00	0.330	0.013	0.09	8.54	0.09	8.54	1.0	16	
18	YD217	Drop Grate	0.06	0.00	0.06	0.00	-	-	2.00	2.40	Sag	8.00	0.083	0.013	0.02	8.45	0.02	8.45	1.0	16	
19	CB218	Combination	0.37	0.90	0.71	0.57	4.0	2.67	3.15	1.64	-	0.020	2.00	0.020	0.013	0.13	6.45	0.19	5.23	1.0	15
20	CB219	Combination	1.81	0.00	0.91	0.90	4.0	2.67	3.15	1.64	-	0.020	2.00	0.020	0.013	0.15	7.35	0.21	6.33	1.0	19

Notes: Return Period = 10-yr. All curb inlets are Horiz throat.

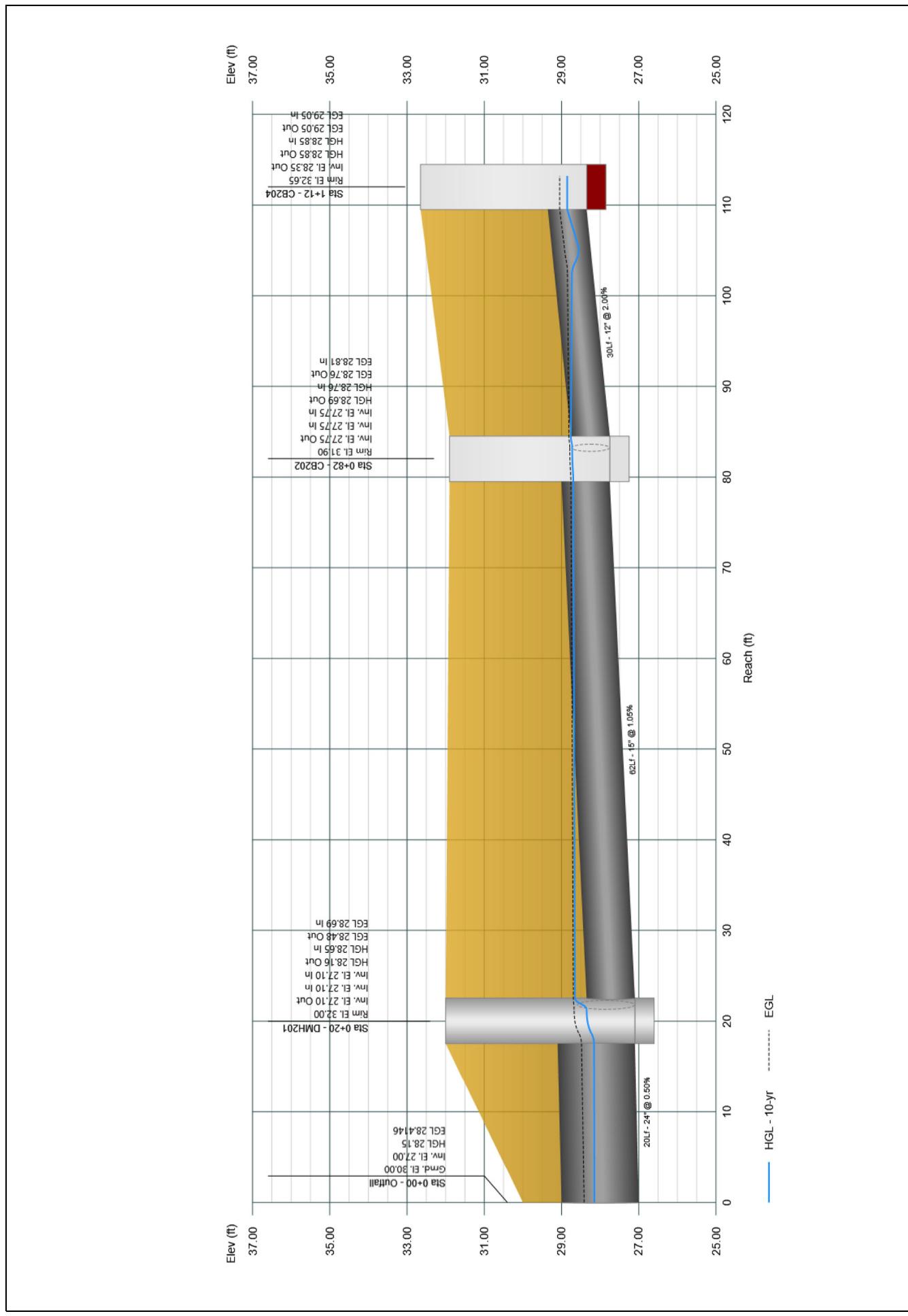
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Profile View

Stormwater Studio 2026 v 3.0.0.40

Project Name: PARKERS PLACE

01-15-2026

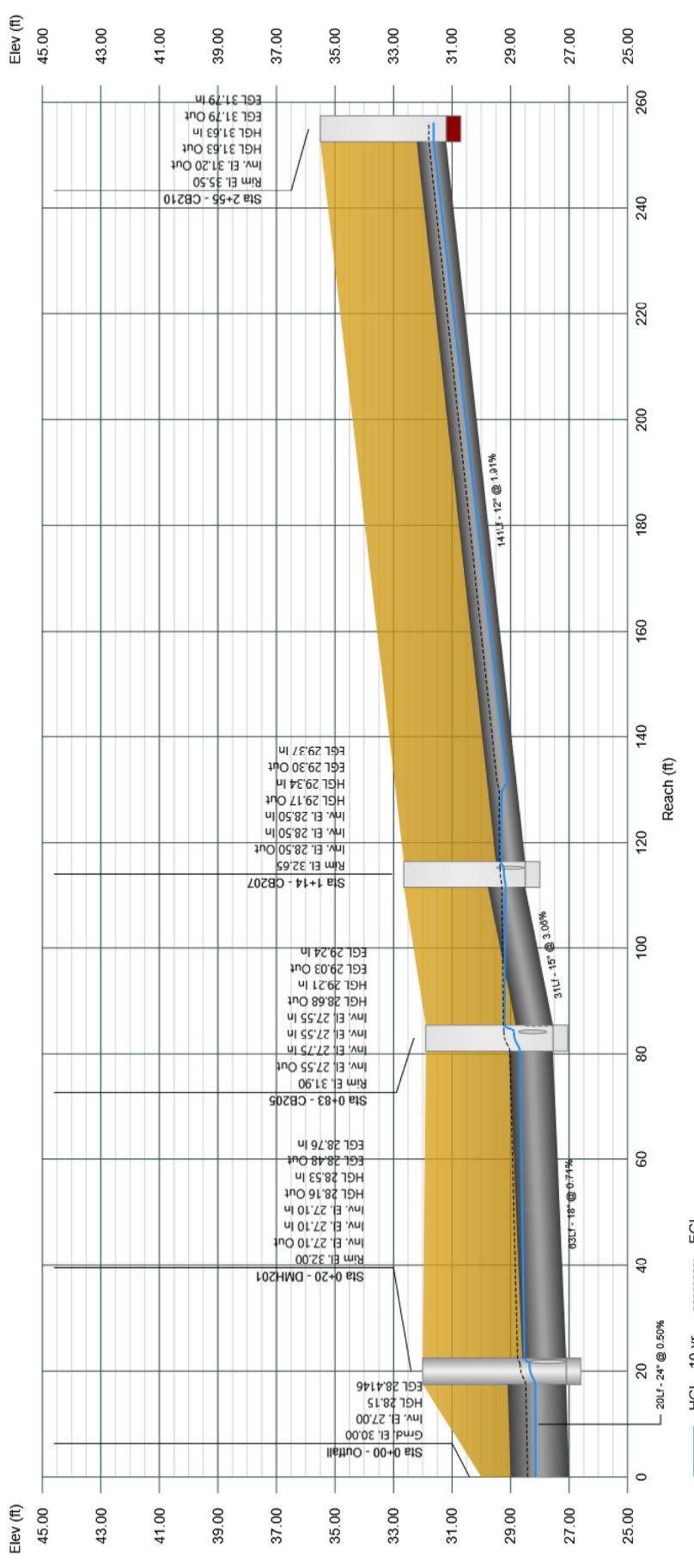


Profile View

Stormwater Studio 2026 v 3.0.0.40

Project Name: PARKERS PLACE

01-15-2026

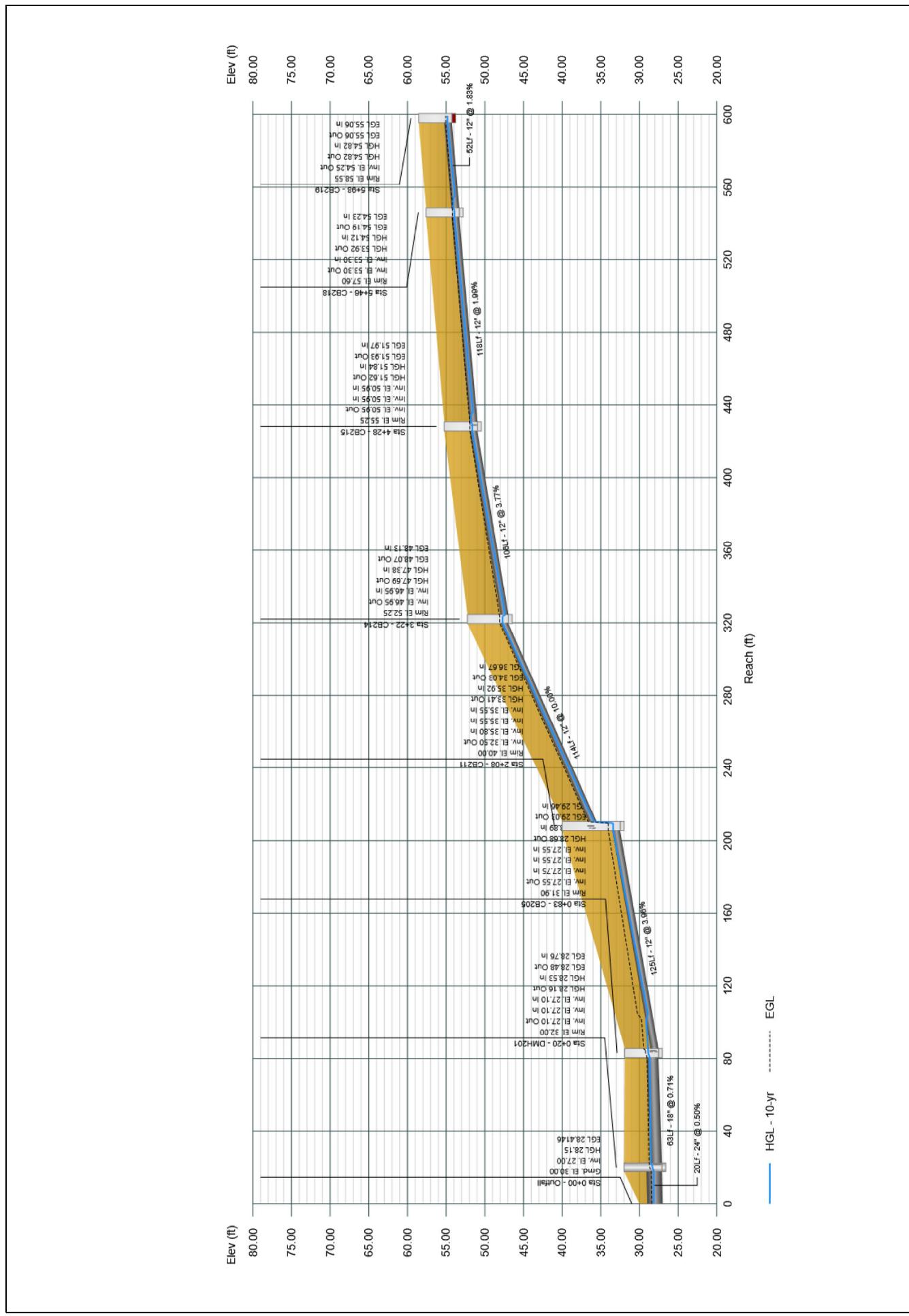


Profile View

Stormwater Studio 2026 v 3.0.0.40

Project Name: PARKERS PLACE

01-15-2026

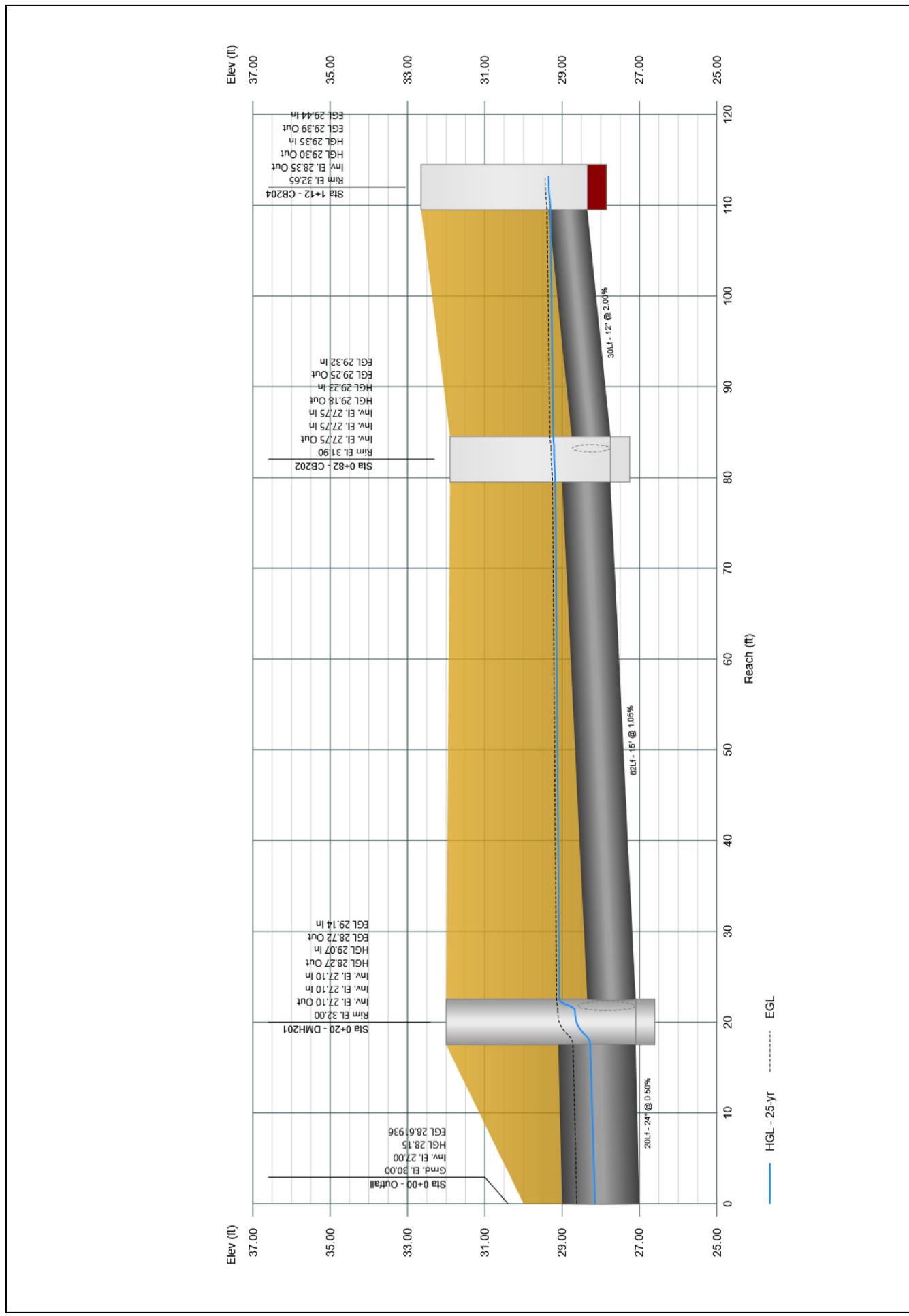


Profile View

Stormwater Studio 2026 v 3.0.0.40

Project Name: PARKERS PLACE

01-15-2026

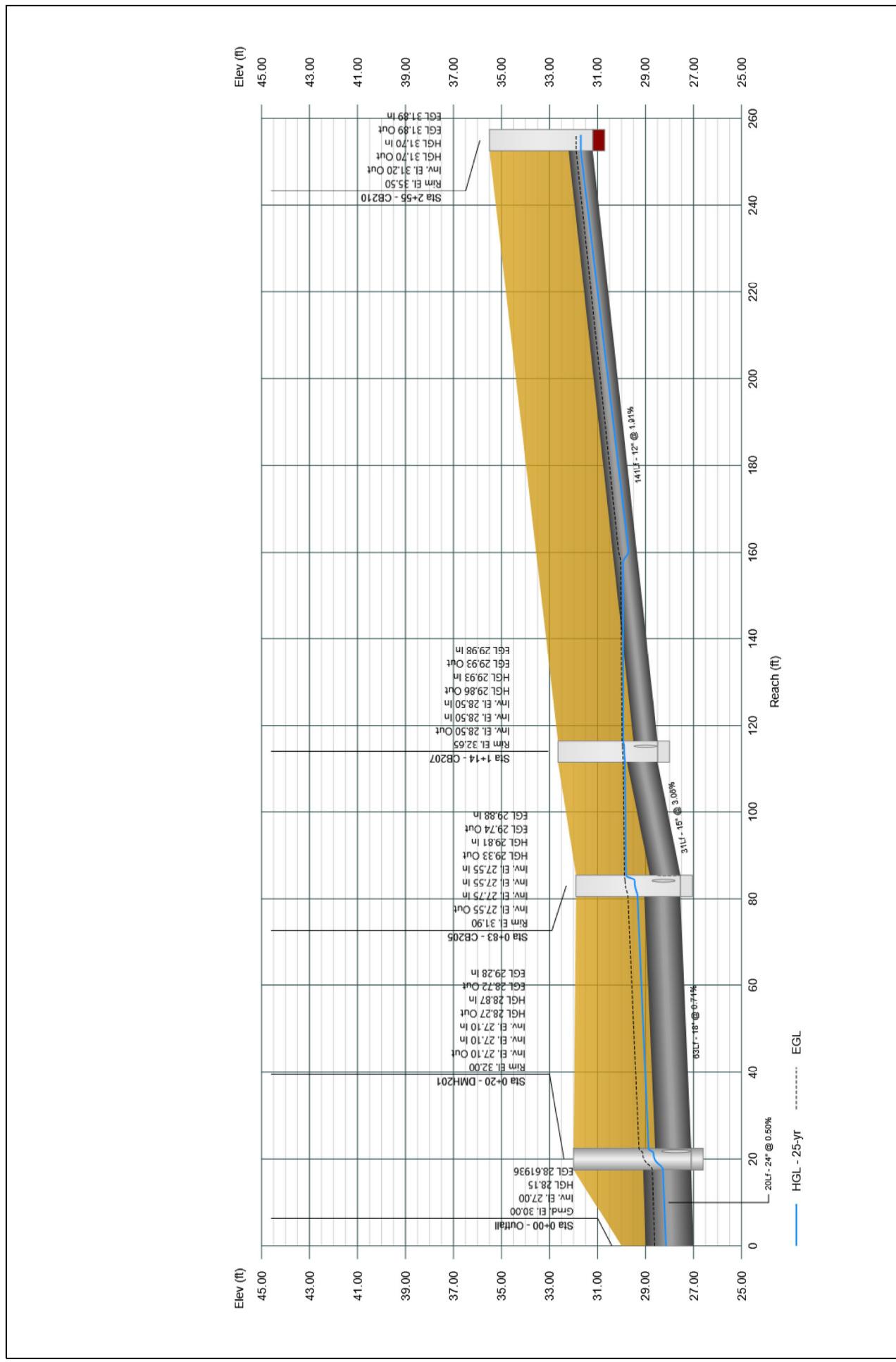


Profile View

Stormwater Studio 2026 v 3.0.0.40

Project Name: PARKERS PLACE

01-15-2026

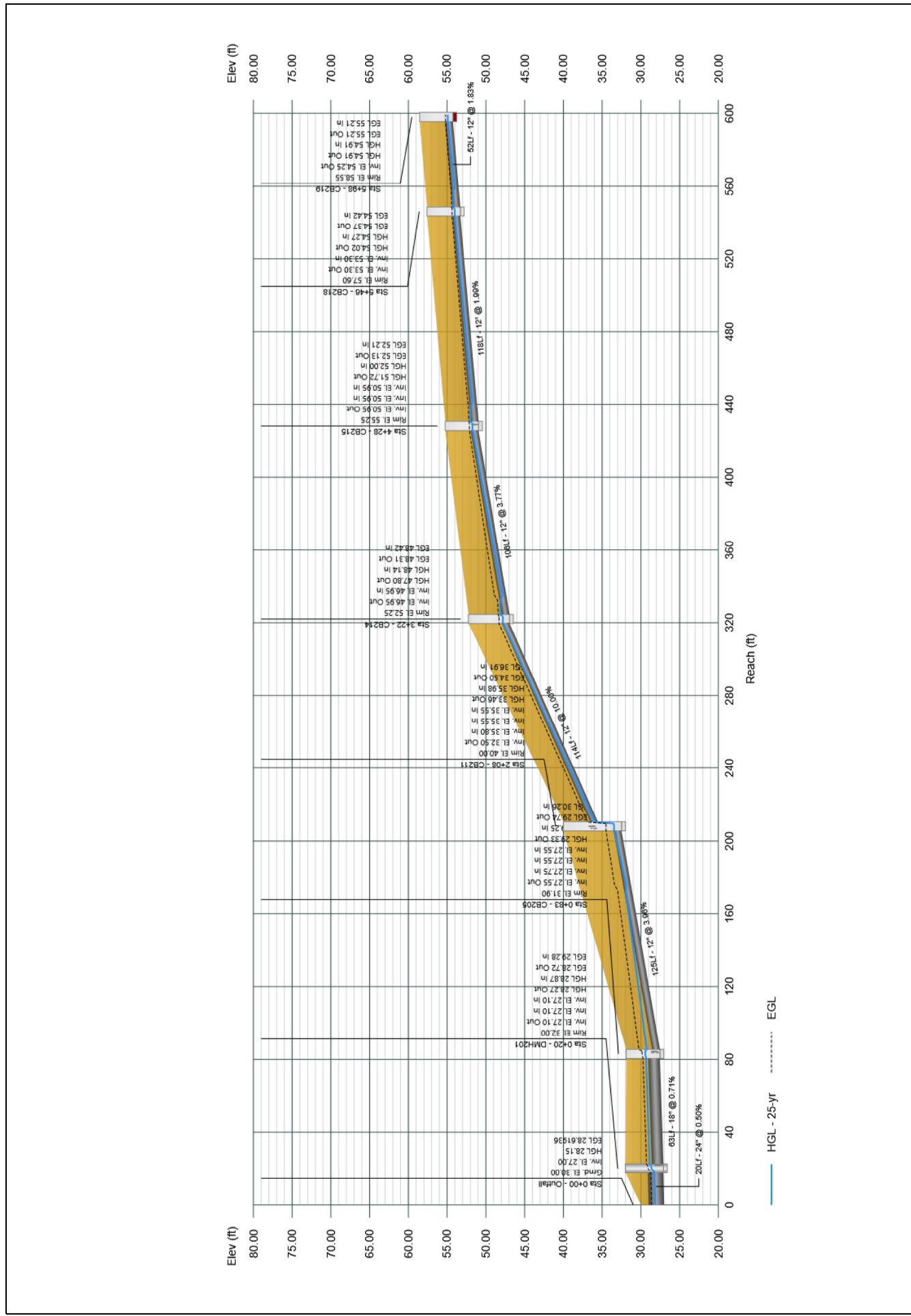


Profile View

Stormwater Studio 2026 v 3.0.0.40

Project Name: PARKERS PLACE

01-15-2026



Inlet Report

Stormwater Studio 2026 v 3.0.0.40

Project Name: PARKERS PLACE

01-15-2026

Line No	Inlet		Q			Curb			Grate			Gutter			Inlet		Byp Line No				
	Id	Type	Catch (cfs)	Carry (cfs)	Capt (cfs)	Byp (cfs)	Ht (in)	L (ft)	W (ft)	Area (sqft)	So (ft/ft)	W (ft/ft)	Sw (ft/ft)	Sx (ft/ft)	n	Depth (ft)	Spread (ft)	Depth (ft)	Spread (ft)	Depth (in)	
1	DMH201	Manhole	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	CB202	Combination	0.90	1.34	2.24	0.00	4.0	2.67	3.15	1.64	3.13	Sag	2.00	0.020	0.013	0.21	10.36	0.29	10.36	1.0	1
3	CB203	Combination	0.28	0.00	0.28	0.00	4.0	2.67	3.15	1.64	3.13	Sag	2.00	0.020	0.013	0.03	1.36	0.11	1.79	1.0	2
4	CB204	Combination	2.49	0.00	1.14	1.34	4.0	2.67	3.15	1.64	-	0.015	2.00	0.020	0.013	0.18	8.75	0.24	7.88	1.0	2
5	CB205	Combination	1.32	3.56	4.89	0.00	4.0	2.67	3.15	1.64	3.13	Sag	2.00	0.020	0.013	0.38	18.86	0.46	18.86	1.0	1
6	CB206	Combination	0.75	0.17	0.93	0.00	4.0	2.67	3.15	1.64	3.13	Sag	2.00	0.020	0.013	0.11	5.36	0.19	5.36	1.0	5
7	CB207	Combination	2.61	0.90	1.44	2.07	4.0	2.67	3.15	1.64	-	0.020	2.00	0.020	0.013	0.19	9.40	0.26	8.63	1.0	5
8	YD208	Drop Grate	0.68	0.00	0.68	0.00	-	-	2.00	2.40	Sag	4.00	0.020	0.020	0.013	0.09	13.28	0.09	13.28	1.0	7
9	YD209	Drop Grate	0.13	0.00	0.13	0.00	-	-	2.00	2.40	Sag	4.00	0.020	0.020	0.013	0.15	7.35	0.21	6.33	1.0	7
10	CB210	Combination	1.82	0.00	0.91	0.90	4.0	2.67	3.15	1.64	-	0.020	2.00	0.020	0.013	0.15	7.35	0.21	6.33	1.0	7
11	CB211	Combination	0.55	2.28	1.33	1.49	4.0	2.67	3.15	1.64	-	0.090	2.00	0.020	0.013	0.13	6.55	0.19	5.38	1.0	5
12	CB212	Combination	0.62	0.00	0.45	0.17	4.0	2.67	3.15	1.64	-	0.090	2.00	0.020	0.013	0.07	3.75	0.11	1.83	1.0	6
13	YD213	Drop Grate	2.76	0.00	2.76	0.00	-	-	2.00	2.40	Sag	12.00	0.330	0.013	0.24	13.43	0.24	13.43	1.0	11	
14	CB214	Combination	1.53	2.27	1.52	2.28	4.0	2.67	3.15	1.64	-	0.030	2.00	0.020	0.013	0.18	9.00	0.25	8.18	1.0	11
15	CB215	Combination	2.39	1.41	1.52	2.27	4.0	2.67	3.15	1.64	-	0.020	2.00	0.020	0.013	0.19	9.70	0.26	8.93	1.0	14
16	YD216	Drop Grate	0.06	0.00	0.06	0.00	-	-	2.00	2.40	Sag	8.00	0.083	0.083	0.013	0.02	8.42	0.02	8.42	1.0	15
17	YD216A	Drop Grate	1.21	0.00	1.21	0.00	-	-	2.00	2.40	Sag	8.00	0.330	0.330	0.013	0.14	8.82	0.14	8.82	1.0	16
18	YD217	Drop Grate	0.12	0.00	0.12	0.00	-	-	2.00	2.40	Sag	8.00	0.083	0.083	0.013	0.03	8.69	0.03	8.69	1.0	16
19	CB218	Combination	0.71	1.86	1.16	1.41	4.0	2.67	3.15	1.64	-	0.020	2.00	0.020	0.013	0.17	8.40	0.23	7.48	1.0	15
20	CB219	Combination	3.21	0.00	1.36	1.86	4.0	2.67	3.15	1.64	-	0.020	2.00	0.020	0.013	0.18	9.10	0.25	8.28	1.0	19

Notes: Return Period = 100-yr. All curb inlets are Horiz throat,

Project File: 20260113PARKERS PLACE Pipe Flow.sws

IDF Report

Stormwater Studio 2026 v 3.0.0.40

IDF filename: 20251222PARKERS PLACE Rainfall Intensity.idf

01-15-2026

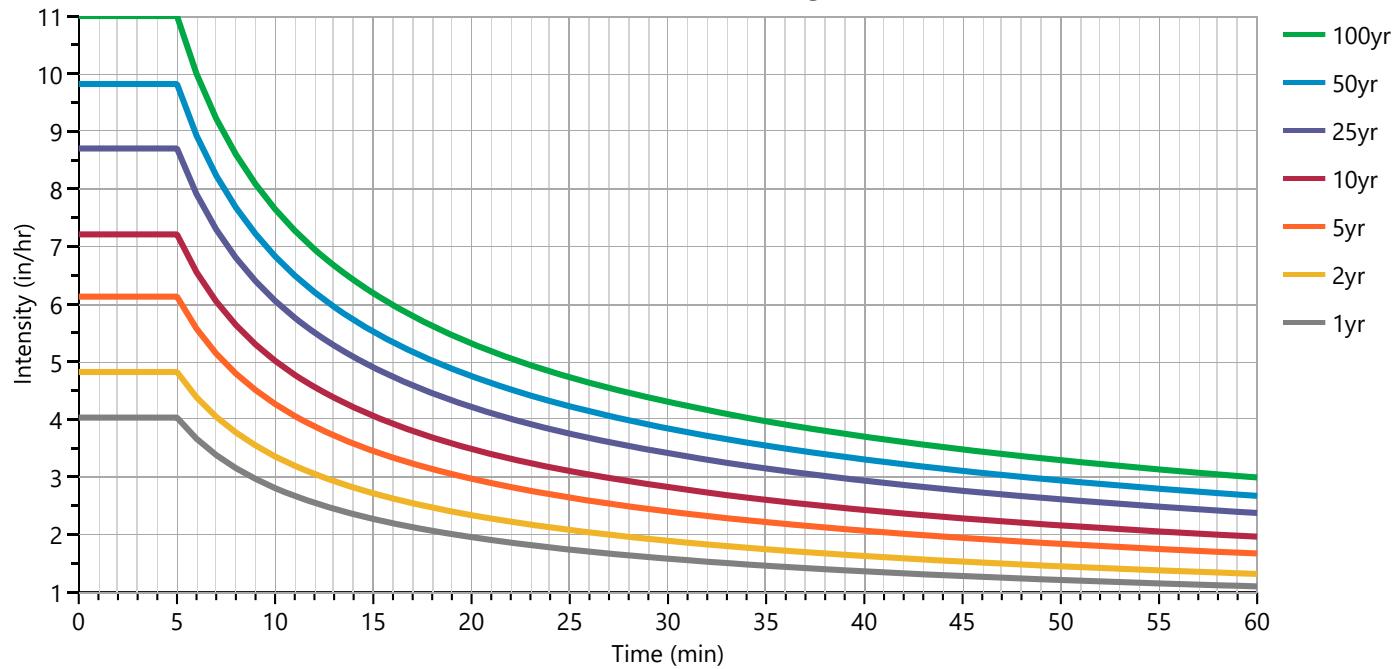
Equation Coefficients	Intensity = B / (Tc + D)^E (in/hr)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
B	9.3449	11.1753	0.0000	14.2321	16.7547	20.1787	22.8243	25.5746	
D	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
E	0.5226	0.5225	0.0000	0.5234	0.5239	0.5227	0.5240	0.5242	

Minimum Tc = 5 minutes

Tc (min)	Intensity Values (in/hr)								
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
Cf	1.00	1.00	1.00	1.00	1.00	1.10	1.20	1.25	
5	4.03	4.82	0	6.13	7.21	8.70	9.82	11.00	
10	2.81	3.36	0	4.26	5.01	6.06	6.83	7.65	
15	2.27	2.71	0	3.45	4.05	4.90	5.52	6.18	
20	1.95	2.34	0	2.97	3.49	4.22	4.75	5.32	
25	1.74	2.08	0	2.64	3.10	3.75	4.22	4.73	
30	1.58	1.89	0	2.40	2.82	3.41	3.84	4.30	
35	1.46	1.74	0	2.21	2.60	3.15	3.54	3.97	
40	1.36	1.63	0	2.06	2.43	2.93	3.30	3.70	
45	1.28	1.53	0	1.94	2.28	2.76	3.10	3.48	
50	1.21	1.45	0	1.84	2.16	2.61	2.94	3.29	
55	1.15	1.38	0	1.75	2.05	2.48	2.80	3.13	
60	1.10	1.32	0	1.67	1.96	2.37	2.67	2.99	

Cf = Correction Factor applied to Rational Method runoff coefficient.

PARKERS PLACE





PARKERS PLACE MF DEVELOPMENT
PARK PLACE (MAP 11.1, LOT 11)
EAST LYME, CONNECTICUT

APPENDIX D

NRCS SOIL DATA
NOAA RAINFALL DATA



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for State of Connecticut, Eastern Part

PARKERS PLACE



Preface

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

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

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

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

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

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

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units).

Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

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

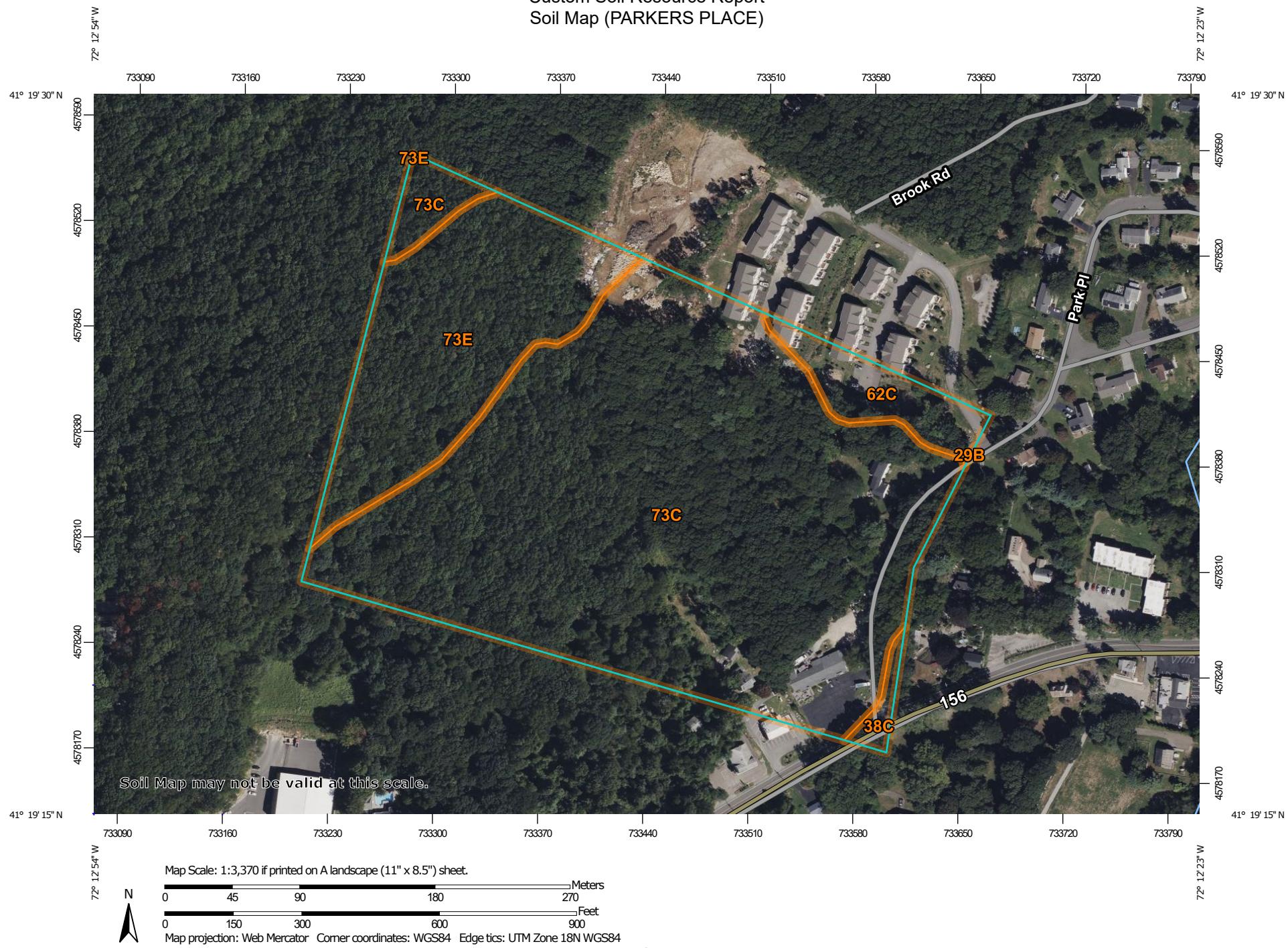
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

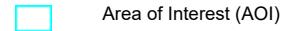
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (PARKERS PLACE)



MAP LEGEND

Area of Interest (AOI)



Area of Interest (AOI)

Soils



Soil Map Unit Polygons



Soil Map Unit Lines



Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot

Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other

Special Line Features



Streams and Canals

Water Features



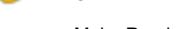
Rails



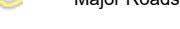
Interstate Highways



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: State of Connecticut, Eastern Part

Survey Area Data: Version 2, Aug 30, 2024

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

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

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

Map Unit Legend (PARKERS PLACE)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
29B	Agawam fine sandy loam, 3 to 8 percent slopes	0.0	0.0%
38C	Hinckley loamy sand, 3 to 15 percent slopes	0.2	0.9%
62C	Charlton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	1.2	4.6%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	19.6	74.1%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	5.4	20.3%
Totals for Area of Interest		26.4	100.0%

Map Unit Descriptions (PARKERS PLACE)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not

mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

State of Connecticut, Eastern Part

29B—Agawam fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyqx

Elevation: 0 to 820 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 250 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Agawam and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Agawam

Setting

Landform: Outwash terraces

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Coarse-loamy eolian deposits over sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist and/or phyllite

Typical profile

Ap - 0 to 11 inches: fine sandy loam

Bw1 - 11 to 16 inches: fine sandy loam

Bw2 - 16 to 26 inches: fine sandy loam

2C1 - 26 to 45 inches: loamy fine sand

2C2 - 45 to 55 inches: loamy fine sand

2C3 - 55 to 65 inches: loamy sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: 15 to 35 inches to strongly contrasting textural stratification

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: B

Ecological site: F145XY008MA - Dry Outwash

Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 5 percent

Landform: Outwash terraces

Landform position (three-dimensional): Riser, tread

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F145XY008MA - Dry Outwash

Hydric soil rating: No

Ninigret

Percent of map unit: 4 percent

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Concave

Hydric soil rating: No

Hinckley

Percent of map unit: 3 percent

Landform: Eskers

Landform position (three-dimensional): Side slope

Down-slope shape: Convex

Across-slope shape: Convex

Ecological site: F145XY008MA - Dry Outwash

Hydric soil rating: No

Walpole

Percent of map unit: 3 percent

Landform: Deltas, depressions, outwash terraces, depressions, outwash plains

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread, talus, dip

Down-slope shape: Concave

Across-slope shape: Concave

Hydric soil rating: Yes

38C—Hinckley loamy sand, 3 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svmb

Elevation: 0 to 1,290 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Hinckley and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces

Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope, summit

Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser, tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

A - 1 to 8 inches: loamy sand

Bw1 - 8 to 11 inches: gravelly loamy sand

Bw2 - 11 to 16 inches: gravelly loamy sand

BC - 16 to 19 inches: very gravelly loamy sand

C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: A

Ecological site: F144AY022MA - Dry Outwash

Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 5 percent

Landform: Kames, outwash plains, outwash terraces, moraines, eskers

Landform position (two-dimensional): Backslope, footslope, shoulder, toeslope, summit

Landform position (three-dimensional): Side slope, crest, head slope, nose slope, riser, tread

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Windsor

Percent of map unit: 5 percent

Landform: Moraines, eskers, kames, outwash deltas, outwash terraces, outwash plains, kame terraces

Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope, summit

Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser, tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Hydric soil rating: No

Agawam

Percent of map unit: 3 percent

Landform: Outwash deltas, outwash terraces, moraines, eskers, kames, outwash plains, kame terraces

Landform position (two-dimensional): Shoulder, backslope, toeslope, summit, footslope

Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser, tread

Down-slope shape: Concave, convex, linear

Across-slope shape: Convex, linear, concave

Hydric soil rating: No

Sudbury

Percent of map unit: 2 percent

Landform: Outwash deltas, moraines, outwash plains, kame terraces, outwash terraces

Landform position (two-dimensional): Backslope, footslope

Landform position (three-dimensional): Base slope, tread

Down-slope shape: Concave, linear

Across-slope shape: Concave, linear

Hydric soil rating: No

62C—Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2wks7

Elevation: 0 to 1,310 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days

Farmland classification: Not prime farmland

Map Unit Composition

Canton, extremely stony, and similar soils: 50 percent

Charlton, extremely stony, and similar soils: 35 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton, Extremely Stony

Setting

Landform: Moraines, hills, ridges

Landform position (two-dimensional): Backslope, shoulder, summit

Landform position (three-dimensional): Side slope, crest, nose slope

Down-slope shape: Convex, linear

Across-slope shape: Convex

Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Oi - 0 to 2 inches: slightly decomposed plant material

A - 2 to 5 inches: fine sandy loam

Bw1 - 5 to 16 inches: fine sandy loam

Bw2 - 16 to 22 inches: gravelly fine sandy loam

2C - 22 to 67 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 15 percent

Surface area covered with cobbles, stones or boulders: 9.0 percent

Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: B

Ecological site: F144AY034CT - Well Drained Till Uplands

Hydric soil rating: No

Description of Charlton, Extremely Stony

Setting

Landform: Ridges, ground moraines, hills

Landform position (two-dimensional): Backslope, shoulder, summit

Landform position (three-dimensional): Side slope, crest

Down-slope shape: Convex, linear

Across-slope shape: Convex

Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material

A - 2 to 4 inches: fine sandy loam

Bw - 4 to 27 inches: gravelly fine sandy loam

C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent

Surface area covered with cobbles, stones or boulders: 9.0 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: B

Ecological site: F144AY034CT - Well Drained Till Uplands

Hydric soil rating: No

Minor Components

Chatfield, extremely stony

Percent of map unit: 5 percent

Landform: Ridges, hills

Landform position (two-dimensional): Backslope, shoulder, summit

Landform position (three-dimensional): Nose slope, side slope, crest

Down-slope shape: Convex

Across-slope shape: Linear, convex

Hydric soil rating: No

Leicester, extremely stony

Percent of map unit: 5 percent

Landform: Hills, drainageways, depressions, ground moraines

Landform position (two-dimensional): Toeslope, footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear

Across-slope shape: Concave

Hydric soil rating: Yes

Sutton, extremely stony

Percent of map unit: 5 percent

Landform: Ground moraines, hills

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

73C—Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky

Map Unit Setting

National map unit symbol: 2w698

Elevation: 0 to 1,550 feet

Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 140 to 240 days

Farmland classification: Not prime farmland

Map Unit Composition

Charlton, very stony, and similar soils: 50 percent

Chatfield, very stony, and similar soils: 30 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton, Very Stony

Setting

Landform: Ridges, hills

Landform position (two-dimensional): Backslope, shoulder, summit

Landform position (three-dimensional): Side slope, crest, nose slope

Down-slope shape: Convex, linear

Across-slope shape: Convex

Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material

A - 2 to 4 inches: fine sandy loam

Bw - 4 to 27 inches: gravelly fine sandy loam

C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 15 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.14 to 14.17 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: B

Ecological site: F144AY034CT - Well Drained Till Uplands

Hydric soil rating: No

Description of Chatfield, Very Stony

Setting

Landform: Hills, ridges

Landform position (two-dimensional): Backslope, summit, shoulder

Landform position (three-dimensional): Nose slope, side slope, crest

Down-slope shape: Convex

Across-slope shape: Linear, convex

Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material

A - 1 to 2 inches: fine sandy loam

Bw - 2 to 30 inches: gravelly fine sandy loam

2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 3 to 15 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent

Depth to restrictive feature: 20 to 41 inches to lithic bedrock

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: B

Ecological site: F144AY034CT - Well Drained Till Uplands

Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 5 percent

Hydric soil rating: No

Hollis, very stony

Percent of map unit: 5 percent

Landform: Hills, ridges

Landform position (two-dimensional): Backslope, shoulder, summit

Landform position (three-dimensional): Crest, side slope, nose slope

Down-slope shape: Convex

Across-slope shape: Linear, convex

Hydric soil rating: No

Leicester, very stony

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Sutton, very stony

Percent of map unit: 5 percent
Landform: Ground moraines, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

73E—Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky

Map Unit Setting

National map unit symbol: 9qlq
Elevation: 0 to 1,200 feet
Mean annual precipitation: 43 to 56 inches
Mean annual air temperature: 45 to 55 degrees F
Frost-free period: 140 to 185 days
Farmland classification: Not prime farmland

Map Unit Composition

Charlton and similar soils: 45 percent
Chatfield and similar soils: 30 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton

Setting

Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Ap - 0 to 4 inches: fine sandy loam
Bw1 - 4 to 7 inches: fine sandy loam
Bw2 - 7 to 19 inches: fine sandy loam
Bw3 - 19 to 27 inches: gravelly fine sandy loam
C - 27 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 15 to 45 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: B

Ecological site: F144AY034CT - Well Drained Till Uplands

Hydric soil rating: No

Description of Chatfield

Setting

Landform: Ridges, hills

Down-slope shape: Convex

Across-slope shape: Linear

Parent material: Coarse-loamy melt-out till derived from granite and/or schist and/or gneiss

Typical profile

Oa - 0 to 1 inches: highly decomposed plant material

A - 1 to 6 inches: gravelly fine sandy loam

Bw1 - 6 to 15 inches: gravelly fine sandy loam

Bw2 - 15 to 29 inches: gravelly fine sandy loam

2R - 29 to 80 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 45 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Drainage class: Well drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Low to high (0.01 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: B

Ecological site: F144AY034CT - Well Drained Till Uplands

Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 10 percent

Hydric soil rating: No

Leicester

Percent of map unit: 5 percent

Landform: Drainageways, depressions

Down-slope shape: Linear

Across-slope shape: Concave

Hydric soil rating: Yes

Sutton, very stony

Percent of map unit: 5 percent

Landform: Drainageways, depressions

Down-slope shape: Concave

Across-slope shape: Linear

Hydric soil rating: No

Hollis

Percent of map unit: 3 percent

Landform: Ridges, hills

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Unnamed, sandy subsoil

Percent of map unit: 1 percent

Hydric soil rating: No

Unnamed, red parent material

Percent of map unit: 1 percent

Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Physical Properties

Soil Physical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil physical properties include percent clay, organic matter, saturated hydraulic conductivity, available water capacity, and bulk density.

Saturated Hydraulic Conductivity (Ksat), Standard Classes (PARKERS PLACE)

Saturated hydraulic conductivity (Ksat) refers to the ease with which pores in a saturated soil transmit water. The estimates are expressed in terms of micrometers per second. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Saturated hydraulic conductivity is considered in the design of soil drainage systems and septic tank absorption fields.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

The numeric Ksat values have been grouped according to standard Ksat class limits. The classes are:

Very low: 0.00 to 0.01

Low: 0.01 to 0.1

Custom Soil Resource Report

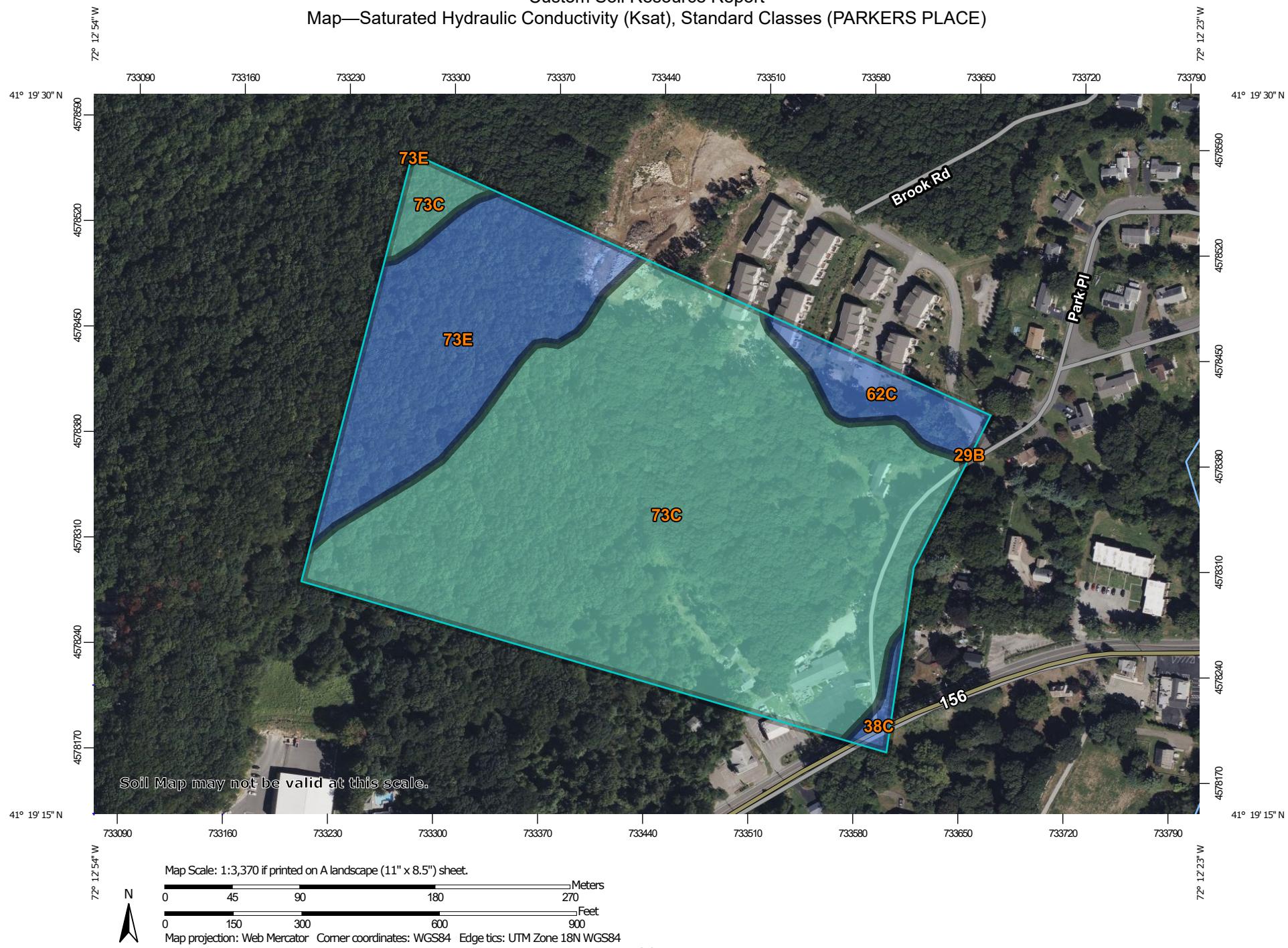
Moderately low: 0.1 to 1.0

Moderately high: 1 to 10

High: 10 to 100

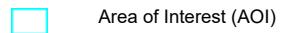
Very high: 100 to 705

Custom Soil Resource Report
Map—Saturated Hydraulic Conductivity (Ksat), Standard Classes (PARKERS PLACE)



MAP LEGEND

Area of Interest (AOI)



Area of Interest (AOI)

Soils

Soil Rating Polygons

- █ Very Low (0.0 - 0.01)
- █ Low (0.01 - 0.1)
- █ Moderately Low (0.1 - 1)
- █ Moderately High (1 - 10)
- █ High (10 - 100)
- █ Very High (100 - 705)
- █ Not rated or not available

Soil Rating Lines

- Very Low (0.0 - 0.01)
- Low (0.01 - 0.1)
- Moderately Low (0.1 - 1)
- Moderately High (1 - 10)
- High (10 - 100)
- Very High (100 - 705)
- Not rated or not available

Soil Rating Points

- Very Low (0.0 - 0.01)
- Low (0.01 - 0.1)
- Moderately Low (0.1 - 1)
- Moderately High (1 - 10)
- High (10 - 100)
- Very High (100 - 705)

Water Features

- ~ Streams and Canals
- ++ 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: State of Connecticut, Eastern Part

Survey Area Data: Version 2, Aug 30, 2024

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

Date(s) aerial images were photographed: Jun 14, 2022—Oct 6, 2022

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.

Table—Saturated Hydraulic Conductivity (Ksat), Standard Classes (PARKERS PLACE)

Map unit symbol	Map unit name	Rating (micrometers per second)	Acres in AOI	Percent of AOI
29B	Agawam fine sandy loam, 3 to 8 percent slopes	73.4426	0.0	0.0%
38C	Hinckley loamy sand, 3 to 15 percent slopes	100.0000	0.2	0.9%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	57.2131	1.2	4.6%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	10.0000	19.6	74.1%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	23.0000	5.4	20.3%
Totals for Area of Interest			26.4	100.0%

Rating Options—Saturated Hydraulic Conductivity (Ksat), Standard Classes (PARKERS PLACE)*Units of Measure:* micrometers per second*Aggregation Method:* Dominant Component*Component Percent Cutoff:* None Specified*Tie-break Rule:* Fastest*Interpret Nulls as Zero:* No*Layer Options (Horizon Aggregation Method):* Depth Range (Weighted Average)*Top Depth:* 12*Bottom Depth:* 60*Units of Measure:* Inches**Soil Qualities and Features**

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features

include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group (PARKERS PLACE)

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

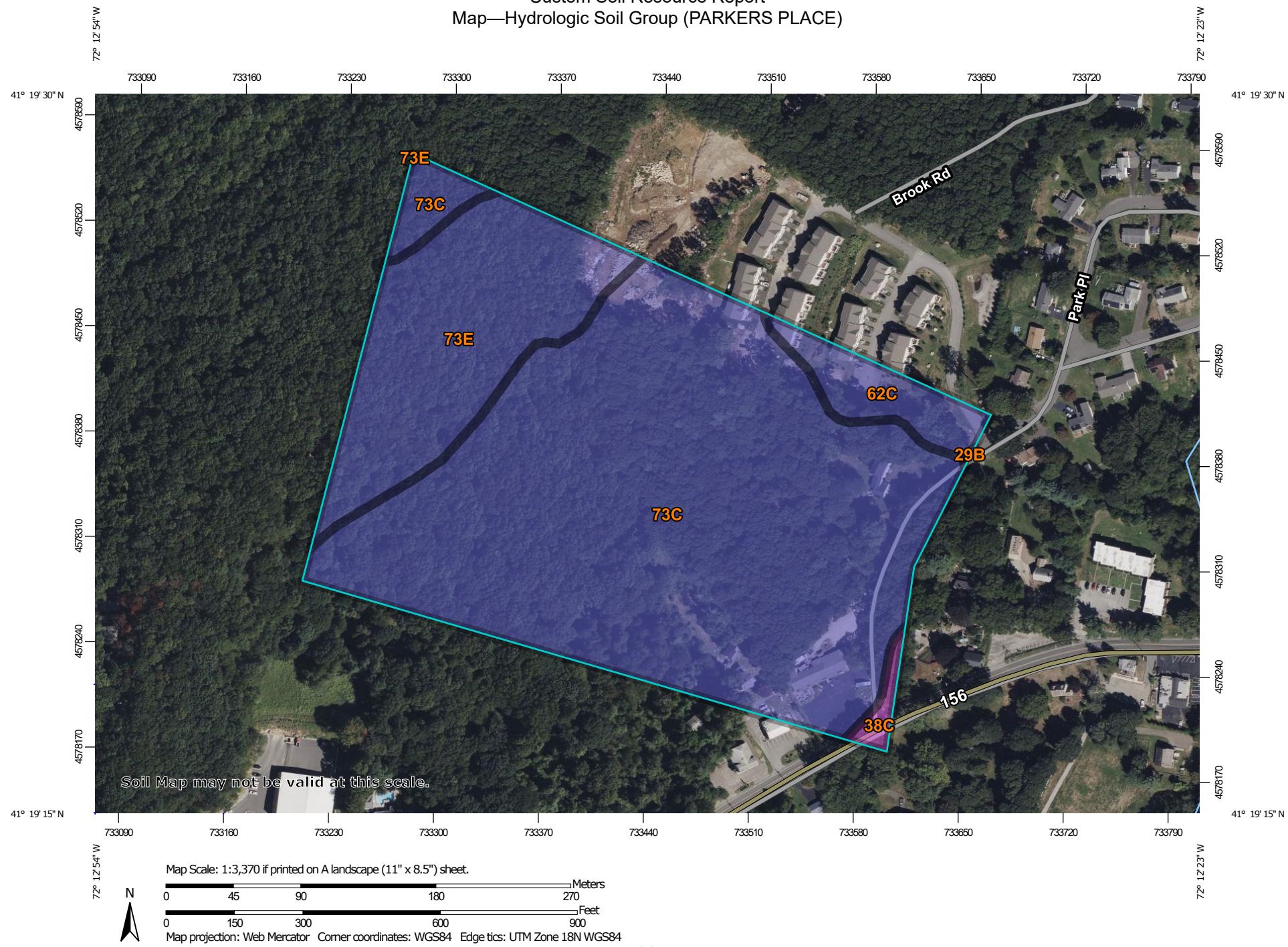
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

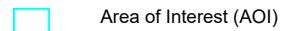
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group (PARKERS PLACE)



MAP LEGEND

Area of Interest (AOI)



Soils

Soil Rating Polygons

	A
	A/D
	B
	B/D
	C
	C/D
	D
	Not rated or not available

Soil Rating Lines

	A
	A/D
	B
	B/D
	C
	C/D
	D
	Not rated or not available

Soil Rating Points

	A
	A/D
	B
	B/D

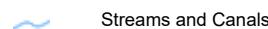
C

C/D

D

Not rated or not available

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.

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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: State of Connecticut, Eastern Part

Survey Area Data: Version 2, Aug 30, 2024

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

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Table—Hydrologic Soil Group (PARKERS PLACE)

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29B	Agawam fine sandy loam, 3 to 8 percent slopes	B	0.0	0.0%
38C	Hinckley loamy sand, 3 to 15 percent slopes	A	0.2	0.9%
62C	Canton and Charlton fine sandy loams, 3 to 15 percent slopes, extremely stony	B	1.2	4.6%
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	19.6	74.1%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	5.4	20.3%
Totals for Area of Interest			26.4	100.0%

Rating Options—Hydrologic Soil Group (PARKERS PLACE)*Aggregation Method:* Dominant Condition*Component Percent Cutoff:* None Specified*Tie-break Rule:* Higher

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NOAA Atlas 14, Volume 10, Version 3
Location name: Niantic, Connecticut, USA*
Latitude: 41.3226°, Longitude: -72.2093°

Elevation: 32 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches) ¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.336 (0.259-0.427)	0.402 (0.310-0.512)	0.511 (0.393-0.651)	0.601 (0.459-0.770)	0.725 (0.538-0.962)	0.818 (0.595-1.10)	0.916 (0.650-1.28)	1.03 (0.691-1.45)	1.19 (0.772-1.72)	1.33 (0.841-1.95)
10-min	0.476 (0.367-0.605)	0.570 (0.439-0.725)	0.724 (0.556-0.923)	0.851 (0.650-1.09)	1.03 (0.762-1.36)	1.16 (0.843-1.56)	1.30 (0.920-1.81)	1.46 (0.979-2.05)	1.69 (1.09-2.44)	1.88 (1.19-2.76)
15-min	0.560 (0.432-0.712)	0.671 (0.517-0.853)	0.852 (0.654-1.09)	1.00 (0.765-1.28)	1.21 (0.897-1.60)	1.36 (0.993-1.84)	1.53 (1.08-2.12)	1.71 (1.15-2.41)	1.99 (1.29-2.87)	2.21 (1.40-3.25)
30-min	0.790 (0.609-1.00)	0.946 (0.729-1.20)	1.20 (0.922-1.53)	1.41 (1.08-1.81)	1.70 (1.26-2.26)	1.92 (1.40-2.59)	2.15 (1.52-2.99)	2.41 (1.62-3.40)	2.80 (1.81-4.04)	3.11 (1.97-4.57)
60-min	1.02 (0.787-1.30)	1.22 (0.941-1.55)	1.55 (1.19-1.98)	1.82 (1.39-2.33)	2.20 (1.63-2.91)	2.48 (1.80-3.34)	2.78 (1.97-3.86)	3.11 (2.09-4.38)	3.60 (2.33-5.21)	4.01 (2.54-5.89)
2-hr	1.34 (1.04-1.68)	1.60 (1.24-2.02)	2.03 (1.58-2.57)	2.39 (1.84-3.04)	2.89 (2.16-3.80)	3.26 (2.39-4.36)	3.65 (2.61-5.04)	4.10 (2.77-5.73)	4.78 (3.10-6.84)	5.34 (3.39-7.76)
3-hr	1.55 (1.21-1.94)	1.86 (1.45-2.33)	2.36 (1.84-2.97)	2.78 (2.15-3.51)	3.35 (2.52-4.39)	3.78 (2.78-5.03)	4.23 (3.04-5.82)	4.76 (3.22-6.61)	5.55 (3.62-7.91)	6.21 (3.96-8.99)
6-hr	1.97 (1.56-2.45)	2.36 (1.86-2.94)	2.99 (2.35-3.73)	3.51 (2.74-4.40)	4.24 (3.21-5.50)	4.77 (3.55-6.31)	5.35 (3.86-7.29)	6.02 (4.10-8.28)	7.01 (4.59-9.90)	7.85 (5.02-11.2)
12-hr	2.45 (1.95-3.02)	2.92 (2.32-3.61)	3.70 (2.93-4.58)	4.34 (3.42-5.39)	5.23 (3.99-6.73)	5.89 (4.41-7.71)	6.59 (4.80-8.90)	7.41 (5.08-10.1)	8.62 (5.68-12.1)	9.64 (6.20-13.7)
24-hr	2.87 (2.30-3.51)	3.44 (2.76-4.21)	4.38 (3.51-5.38)	5.17 (4.11-6.36)	6.24 (4.81-7.97)	7.04 (5.31-9.15)	7.90 (5.80-10.6)	8.91 (6.14-12.0)	10.4 (6.90-14.4)	11.7 (7.56-16.4)
2-day	3.20 (2.60-3.88)	3.88 (3.15-4.71)	5.00 (4.04-6.08)	5.93 (4.76-7.24)	7.21 (5.60-9.14)	8.15 (6.21-10.5)	9.18 (6.81-12.3)	10.4 (7.22-13.9)	12.3 (8.20-16.9)	14.0 (9.06-19.4)
3-day	3.47 (2.83-4.18)	4.20 (3.42-5.07)	5.41 (4.39-6.54)	6.41 (5.17-7.78)	7.78 (6.08-9.82)	8.80 (6.74-11.3)	9.90 (7.38-13.2)	11.2 (7.81-15.0)	13.3 (8.87-18.2)	15.1 (9.81-20.9)
4-day	3.72 (3.05-4.47)	4.49 (3.67-5.40)	5.75 (4.68-6.93)	6.79 (5.50-8.22)	8.22 (6.45-10.3)	9.29 (7.13-11.9)	10.4 (7.79-13.8)	11.8 (8.24-15.7)	14.0 (9.33-19.0)	15.8 (10.3-21.8)
7-day	4.44 (3.66-5.29)	5.26 (4.34-6.29)	6.62 (5.43-7.92)	7.74 (6.31-9.30)	9.28 (7.32-11.6)	10.4 (8.05-13.2)	11.7 (8.73-15.2)	13.1 (9.19-17.2)	15.3 (10.3-20.6)	17.2 (11.2-23.5)
10-day	5.14 (4.26-6.10)	6.00 (4.97-7.13)	7.41 (6.11-8.83)	8.58 (7.03-10.3)	10.2 (8.06-12.6)	11.4 (8.80-14.3)	12.7 (9.48-16.4)	14.1 (9.94-18.5)	16.3 (11.0-21.9)	18.1 (11.9-24.6)
20-day	7.28 (6.10-8.58)	8.21 (6.86-9.67)	9.72 (8.10-11.5)	11.0 (9.08-13.0)	12.7 (10.1-15.5)	14.0 (10.9-17.3)	15.4 (11.5-19.5)	16.8 (11.9-21.7)	18.8 (12.7-24.9)	20.3 (13.4-27.4)
30-day	9.08 (7.64-10.6)	10.0 (8.45-11.8)	11.6 (9.74-13.7)	12.9 (10.8-15.3)	14.8 (11.8-17.8)	16.1 (12.6-19.8)	17.5 (13.1-21.9)	18.9 (13.5-24.3)	20.7 (14.1-27.3)	22.1 (14.6-29.5)
45-day	11.3 (9.57-13.2)	12.3 (10.4-14.4)	14.0 (11.8-16.4)	15.4 (12.9-18.1)	17.3 (13.9-20.8)	18.8 (14.7-22.8)	20.3 (15.1-25.0)	21.6 (15.4-27.5)	23.2 (15.9-30.4)	24.4 (16.1-32.4)
60-day	13.2 (11.2-15.3)	14.2 (12.1-16.5)	16.0 (13.5-18.6)	17.5 (14.7-20.4)	19.5 (15.7-23.2)	21.1 (16.5-25.4)	22.6 (16.9-27.7)	23.9 (17.1-30.3)	25.4 (17.4-33.1)	26.4 (17.5-34.9)

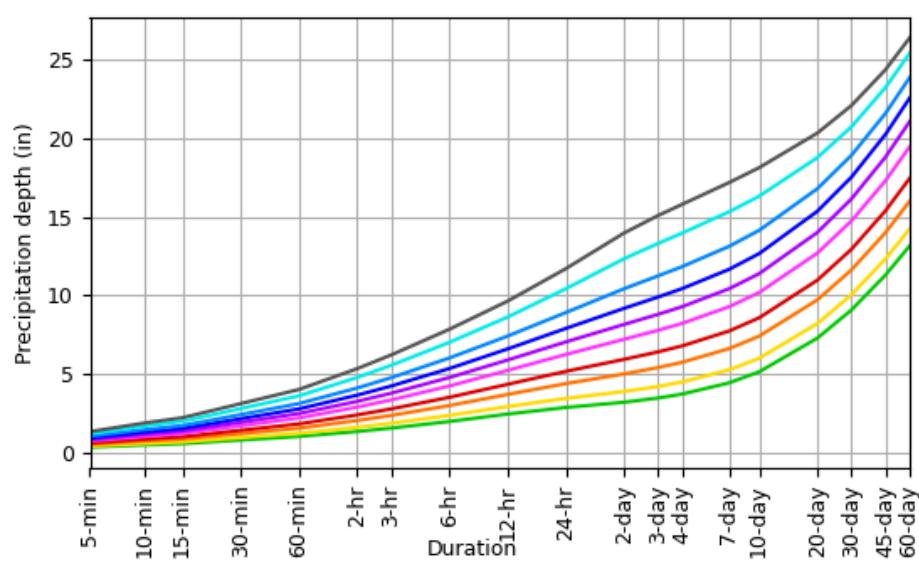
¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

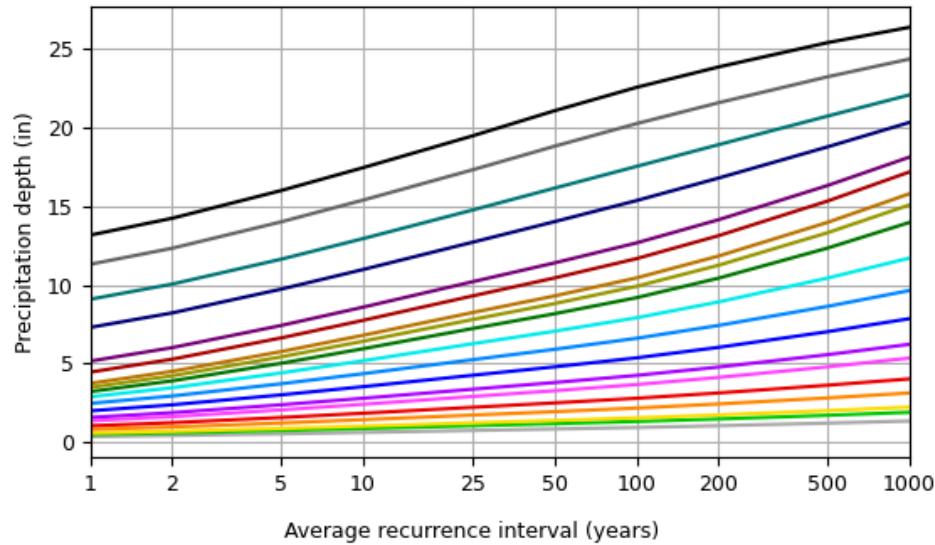
[Back to Top](#)

PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 41.3226°, Longitude: -72.2093°



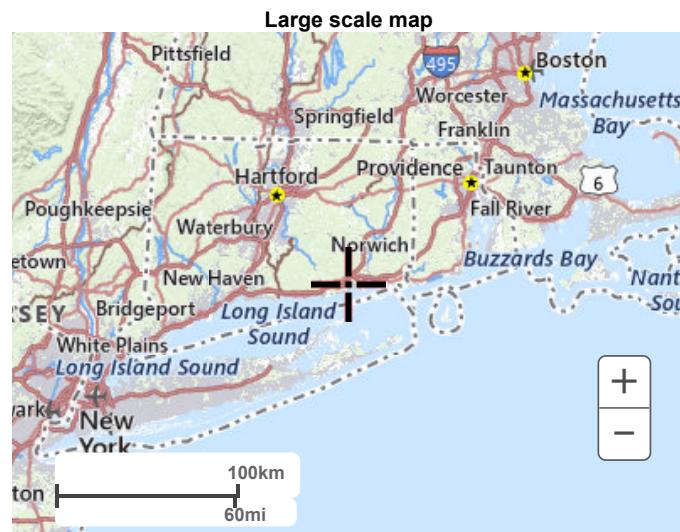
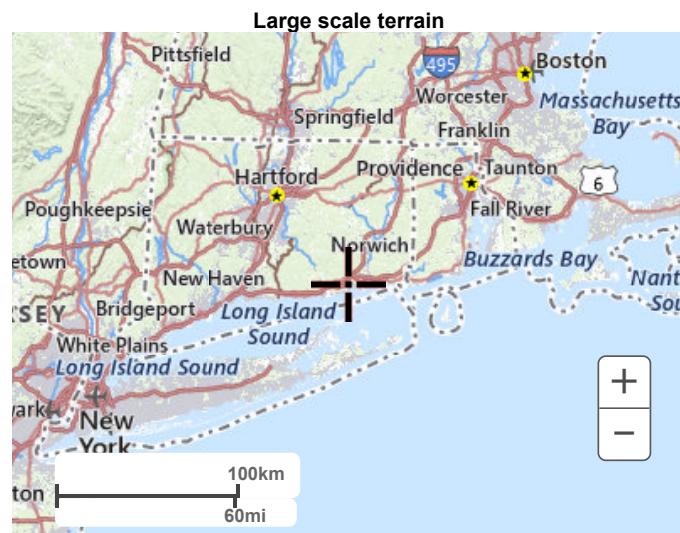
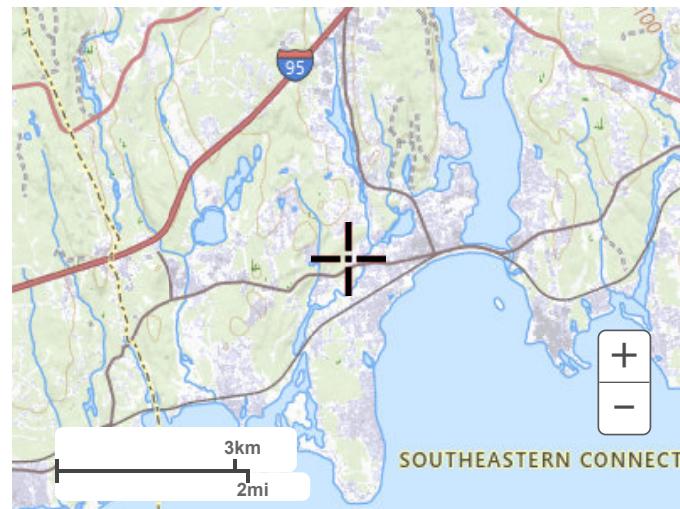
Average recurrence interval (years)
1
2
5
10
25
50
100
200
500
1000



Duration	
5-min	2-day
10-min	3-day
15-min	4-day
30-min	7-day
60-min	10-day
2-hr	10-day
3-hr	20-day
6-hr	30-day
12-hr	45-day
24-hr	60-day

Maps & aerials

[Small scale terrain](#)



Large scale aerial

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[National Weather Service](#)
[National Water Center](#)
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

[Disclaimer](#)



NOAA Atlas 14, Volume 10, Version 3
Location name: Niantic, Connecticut, USA*
Latitude: 41.3226°, Longitude: -72.2093°

Elevation: 32 ft**

* source: ESRI Maps

** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerials](#)

PF tabular

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	4.03 (3.11-5.12)	4.82 (3.72-6.14)	6.13 (4.72-7.81)	7.21 (5.51-9.24)	8.70 (6.46-11.5)	9.82 (7.14-13.2)	11.0 (7.80-15.3)	12.3 (8.29-17.4)	14.3 (9.26-20.7)	15.9 (10.1-23.4)
10-min	2.86 (2.20-3.63)	3.42 (2.63-4.35)	4.34 (3.34-5.54)	5.11 (3.90-6.54)	6.16 (4.57-8.18)	6.95 (5.06-9.38)	7.79 (5.52-10.8)	8.74 (5.87-12.3)	10.1 (6.56-14.7)	11.3 (7.15-16.6)
15-min	2.24 (1.73-2.85)	2.68 (2.07-3.41)	3.41 (2.62-4.34)	4.01 (3.06-5.14)	4.84 (3.59-6.42)	5.46 (3.97-7.36)	6.11 (4.33-8.50)	6.86 (4.60-9.66)	7.95 (5.14-11.5)	8.86 (5.60-13.0)
30-min	1.58 (1.22-2.01)	1.89 (1.46-2.41)	2.40 (1.84-3.06)	2.82 (2.16-3.62)	3.41 (2.53-4.52)	3.84 (2.80-5.18)	4.30 (3.05-5.98)	4.83 (3.24-6.80)	5.59 (3.62-8.09)	6.22 (3.94-9.15)
60-min	1.02 (0.787-1.30)	1.22 (0.941-1.55)	1.55 (1.19-1.98)	1.82 (1.39-2.33)	2.20 (1.63-2.91)	2.48 (1.80-3.34)	2.78 (1.97-3.86)	3.11 (2.09-4.38)	3.60 (2.33-5.21)	4.01 (2.54-5.89)
2-hr	0.668 (0.520-0.842)	0.800 (0.622-1.01)	1.02 (0.788-1.29)	1.20 (0.921-1.52)	1.44 (1.08-1.90)	1.63 (1.19-2.18)	1.82 (1.30-2.52)	2.05 (1.38-2.86)	2.39 (1.55-3.42)	2.67 (1.70-3.88)
3-hr	0.516 (0.403-0.647)	0.618 (0.483-0.776)	0.785 (0.611-0.989)	0.924 (0.715-1.17)	1.11 (0.837-1.46)	1.26 (0.926-1.68)	1.41 (1.01-1.94)	1.59 (1.07-2.20)	1.85 (1.20-2.63)	2.07 (1.32-2.99)
6-hr	0.329 (0.260-0.409)	0.393 (0.310-0.490)	0.499 (0.392-0.623)	0.586 (0.458-0.735)	0.707 (0.535-0.918)	0.797 (0.592-1.05)	0.892 (0.645-1.22)	1.00 (0.684-1.38)	1.17 (0.767-1.65)	1.31 (0.838-1.88)
12-hr	0.203 (0.161-0.250)	0.242 (0.192-0.299)	0.306 (0.243-0.379)	0.360 (0.283-0.447)	0.433 (0.331-0.558)	0.488 (0.365-0.639)	0.547 (0.398-0.738)	0.615 (0.421-0.838)	0.715 (0.471-1.00)	0.799 (0.514-1.14)
24-hr	0.119 (0.096-0.146)	0.143 (0.115-0.175)	0.182 (0.146-0.224)	0.215 (0.171-0.265)	0.260 (0.200-0.332)	0.293 (0.221-0.381)	0.329 (0.241-0.441)	0.371 (0.255-0.501)	0.434 (0.287-0.601)	0.487 (0.314-0.685)
2-day	0.066 (0.054-0.080)	0.080 (0.065-0.098)	0.104 (0.084-0.126)	0.123 (0.099-0.150)	0.150 (0.116-0.190)	0.169 (0.129-0.219)	0.191 (0.141-0.255)	0.217 (0.150-0.290)	0.256 (0.170-0.352)	0.291 (0.188-0.404)
3-day	0.048 (0.039-0.058)	0.058 (0.047-0.070)	0.075 (0.060-0.090)	0.088 (0.071-0.108)	0.108 (0.084-0.136)	0.122 (0.093-0.156)	0.137 (0.102-0.182)	0.156 (0.108-0.207)	0.184 (0.123-0.252)	0.209 (0.136-0.289)
4-day	0.038 (0.031-0.046)	0.046 (0.038-0.056)	0.059 (0.048-0.072)	0.070 (0.057-0.085)	0.085 (0.067-0.107)	0.096 (0.074-0.123)	0.108 (0.081-0.143)	0.123 (0.085-0.163)	0.145 (0.097-0.197)	0.164 (0.107-0.226)
7-day	0.026 (0.021-0.031)	0.031 (0.025-0.037)	0.039 (0.032-0.047)	0.046 (0.037-0.055)	0.055 (0.043-0.068)	0.062 (0.047-0.078)	0.069 (0.051-0.090)	0.078 (0.054-0.102)	0.091 (0.061-0.122)	0.102 (0.066-0.139)
10-day	0.021 (0.017-0.025)	0.024 (0.020-0.029)	0.030 (0.025-0.036)	0.035 (0.029-0.042)	0.042 (0.033-0.052)	0.047 (0.036-0.059)	0.052 (0.039-0.068)	0.058 (0.041-0.076)	0.068 (0.045-0.091)	0.075 (0.049-0.102)
20-day	0.015 (0.012-0.017)	0.017 (0.014-0.020)	0.020 (0.016-0.023)	0.022 (0.018-0.027)	0.026 (0.021-0.032)	0.029 (0.022-0.036)	0.032 (0.023-0.040)	0.034 (0.024-0.045)	0.039 (0.026-0.051)	0.042 (0.027-0.057)
30-day	0.012 (0.010-0.014)	0.013 (0.011-0.016)	0.016 (0.013-0.018)	0.017 (0.014-0.021)	0.020 (0.016-0.024)	0.022 (0.017-0.027)	0.024 (0.018-0.030)	0.026 (0.018-0.033)	0.028 (0.019-0.037)	0.030 (0.020-0.040)
45-day	0.010 (0.008-0.012)	0.011 (0.009-0.013)	0.012 (0.010-0.015)	0.014 (0.011-0.016)	0.016 (0.012-0.019)	0.017 (0.013-0.021)	0.018 (0.014-0.023)	0.019 (0.014-0.025)	0.021 (0.014-0.028)	0.022 (0.014-0.029)
60-day	0.009 (0.007-0.010)	0.009 (0.008-0.011)	0.011 (0.009-0.012)	0.012 (0.010-0.014)	0.013 (0.010-0.016)	0.014 (0.011-0.017)	0.015 (0.011-0.019)	0.016 (0.011-0.021)	0.017 (0.012-0.022)	0.018 (0.012-0.024)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

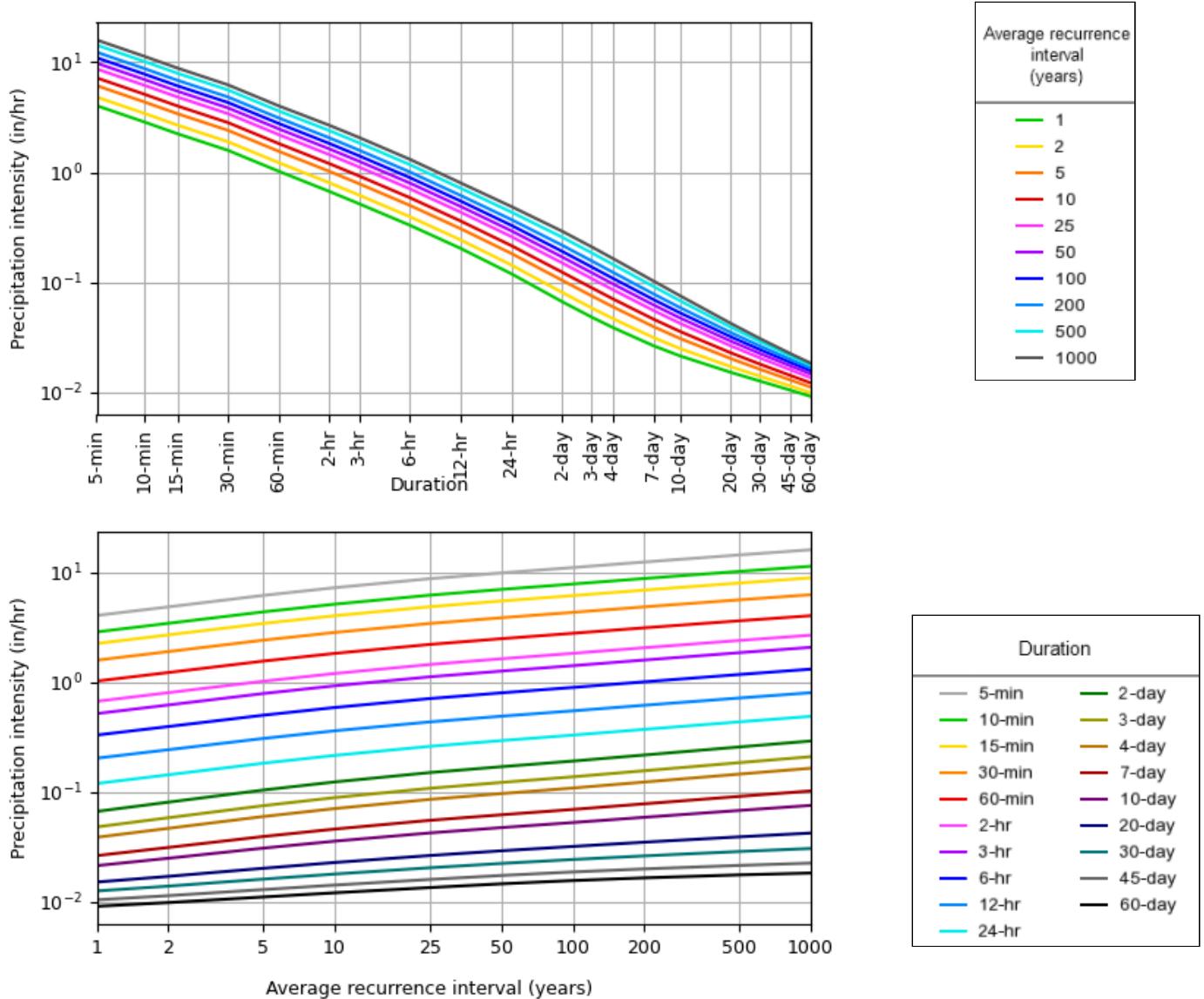
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

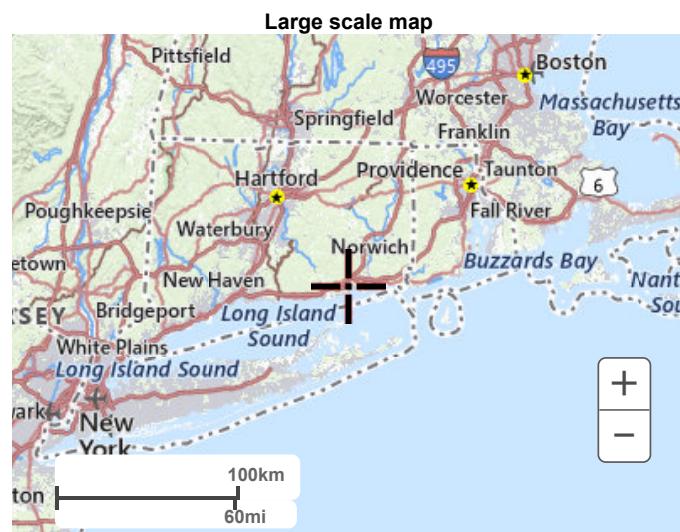
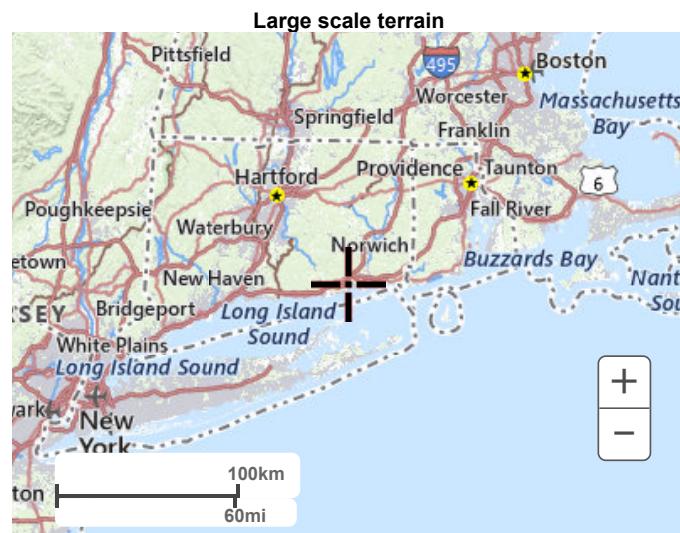
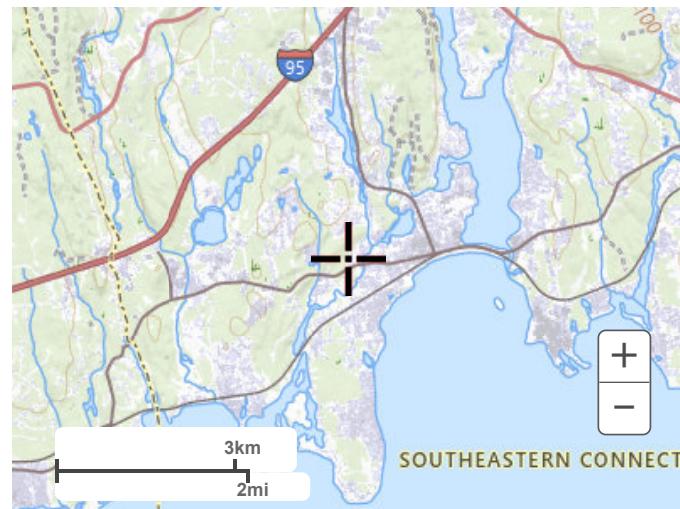
Please refer to NOAA Atlas 14 document for more information.

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PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 41.3226°, Longitude: -72.2093°

**Maps & aerials****Small scale terrain**



Large scale aerial

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