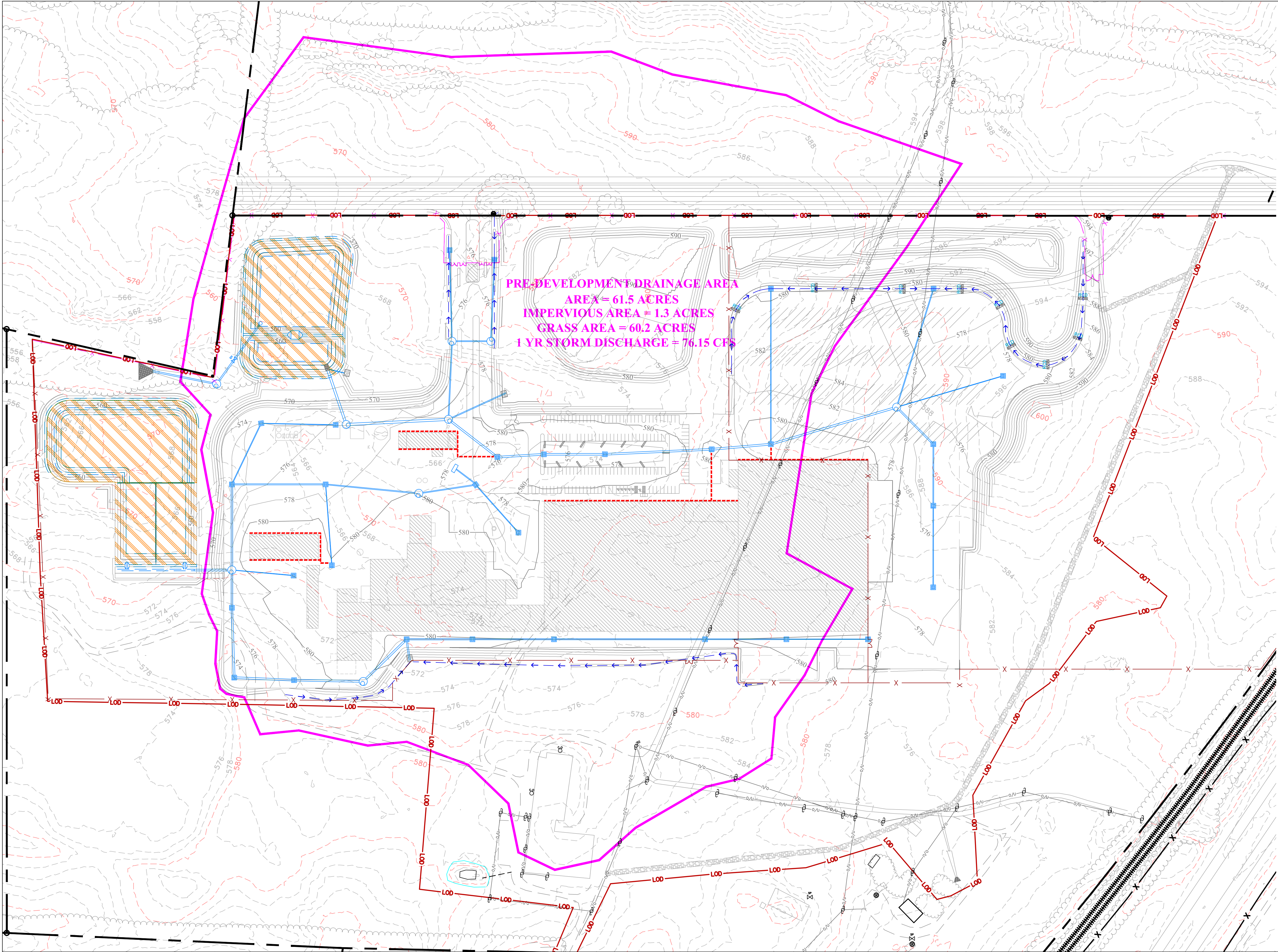
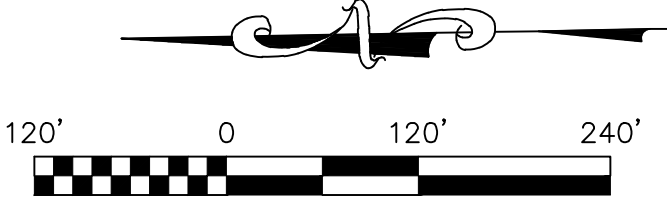




PLAN LEGEND

- PROPERTY LINE
- PROPOSED CONTOURS MAJOR / MINOR
- EXISTING CONTOURS MAJOR / MINOR
- DROP INLET
- MANHOLE
- HDPE PIPE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED DITCH
- WATERSHED BOUNDARY
- PROPOSED ROCK CHECK DAM
- PROPOSED ROOF DRAIN COLLECTION PIPES (TO BE PART OF THE BUILDING DESIGN)



LAYOUT TAB: WATERSHED BOUNDARY

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NO.	BY	DATE	DESCRIPTION



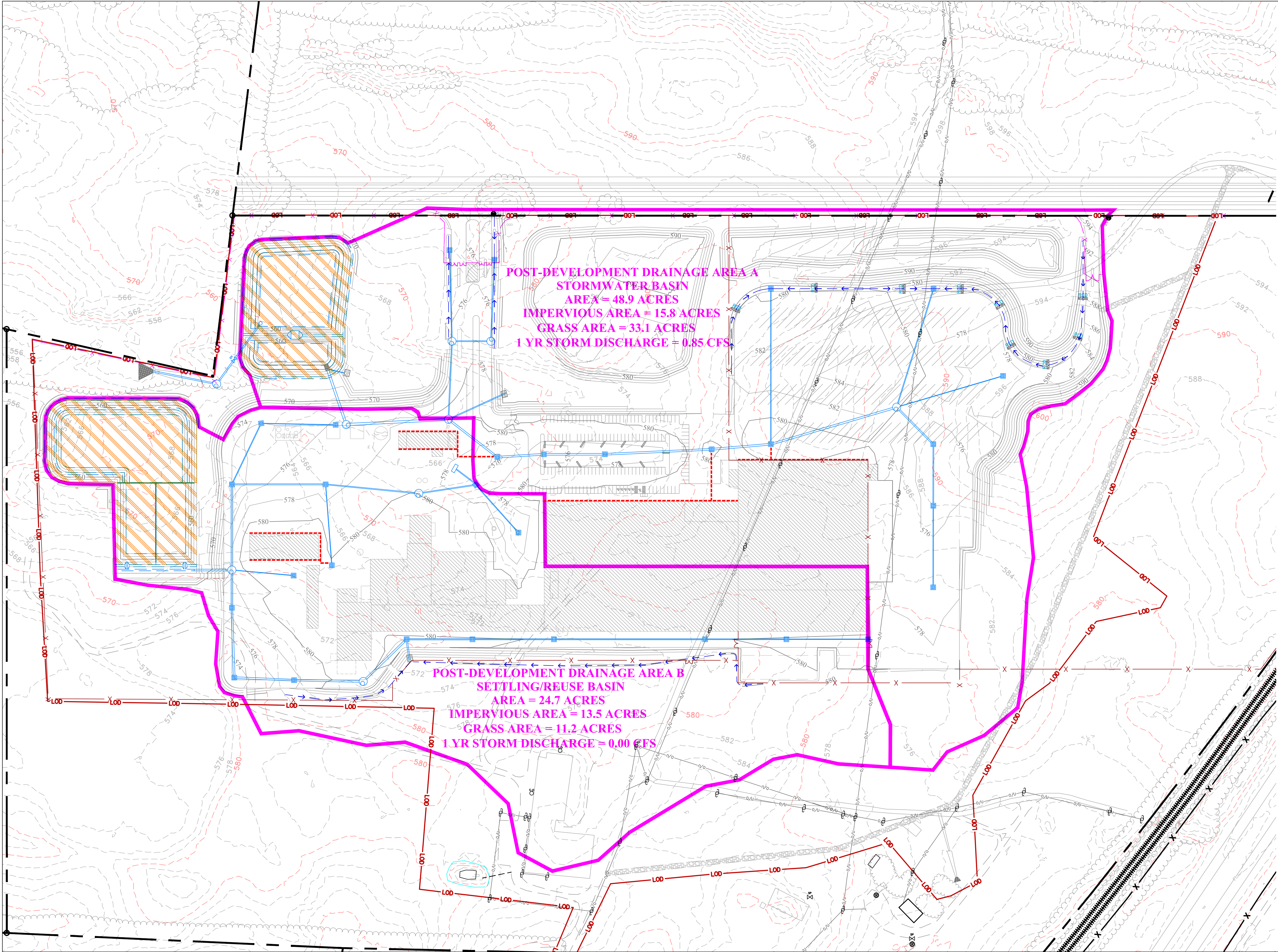
SCALE:	DATE: 8/8/17
DRAWN: WSH	CHECKED: DATE:
SURVEY DATE: 4/12/17	APPROVED: DATE:
SURVEY BY:	
FIELD BOOK No.:	

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THE THRASHER GROUP INC.
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600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330
PHONE (304) 624-4108 • FAX (304) 624-7831

PHASE No.
CONTRACT No.
PROJECT No.
101-030-3203

ROXUL USA INC.
CITY OF RANSON SITE PLAN APPLICATION
RAN 5 PROJECT
JEFFERSON COUNTY, WEST VIRGINIA
PRE-DEVELOPMENT WATERSHED MAP

SHEET No.
1

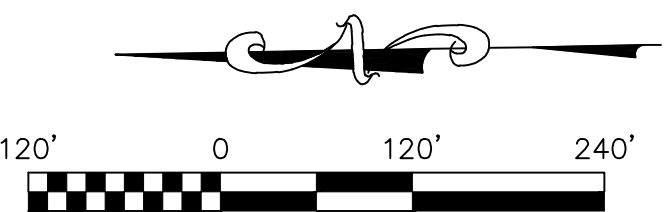


PLAN LEGEND

- PROPERTY LINE
- PROPOSED CONTOURS MAJOR / MINOR
- EXISTING CONTOURS MAJOR / MINOR
- DROP INLET
- MANHOLE
- HDPE PIPE
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- PROPOSED ROCK CHECK DAM
- PROPOSED ROOF DRAIN COLLECTION PIPES (TO BE PART OF THE BUILDING DESIGN)

POST-DEVELOPMENT DRAINAGE AREA A
STORMWATER BASIN
AREA = 48.9 ACRES
IMPERVIOUS AREA = 15.8 ACRES
GRASS AREA = 33.1 ACRES
1 YR STORM DISCHARGE = 0.85 CFS

POST-DEVELOPMENT DRAINAGE AREA B
SETTLING/REUSE BASIN
AREA = 24.7 ACRES
IMPERVIOUS AREA = 13.5 ACRES
GRASS AREA = 11.2 ACRES
1 YR STORM DISCHARGE = 0.00 CFS



LAYOUT TAB: WATERSHED BOUNDARY

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NO.	BY	DATE	DESCRIPTION



SCALE:	DATE: 8/8/17
DRAWN: WSH	CHECKED: DATE:
SURVEY DATE: 4/12/17	APPROVED: DATE:
SURVEY BY:	
FIELD BOOK No.:	

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101-030-3203

ROXUL USA INC.
CITY OF RANSON SITE PLAN APPLICATION
RAN 5 PROJECT
JEFFERSON COUNTY, WEST VIRGINIA
POST DEVELOPMENT WATERSHED MAP

SHEET No.
2

Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

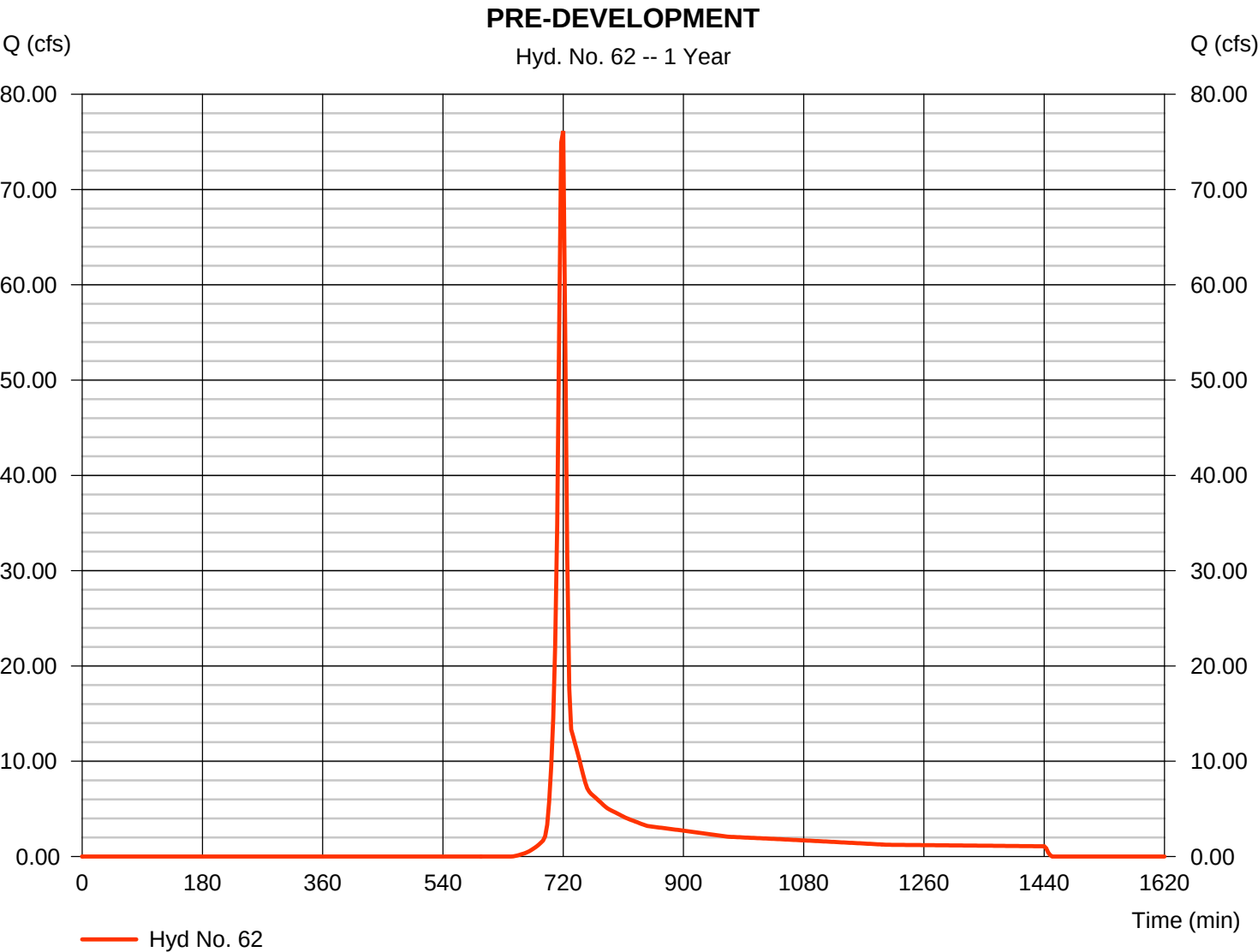
Thursday, 10 / 5 / 2017

Hyd. No. 62

PRE-DEVELOPMENT

Hydrograph type	=	SCS Runoff	Peak discharge	=	76.15 cfs
Storm frequency	=	1 yrs	Time to peak	=	720 min
Time interval	=	3 min	Hyd. volume	=	175,267 cuft
Drainage area	=	61.500 ac	Curve number	=	79*
Basin Slope	=	0.0 %	Hydraulic length	=	0 ft
Tc method	=	User	Time of conc. (Tc)	=	6.00 min
Total precip.	=	2.50 in	Distribution	=	Type II
Storm duration	=	24 hrs	Shape factor	=	484

* Composite (Area/CN) = [(60.200 x 79) + (1.300 x 98)] / 61.500



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

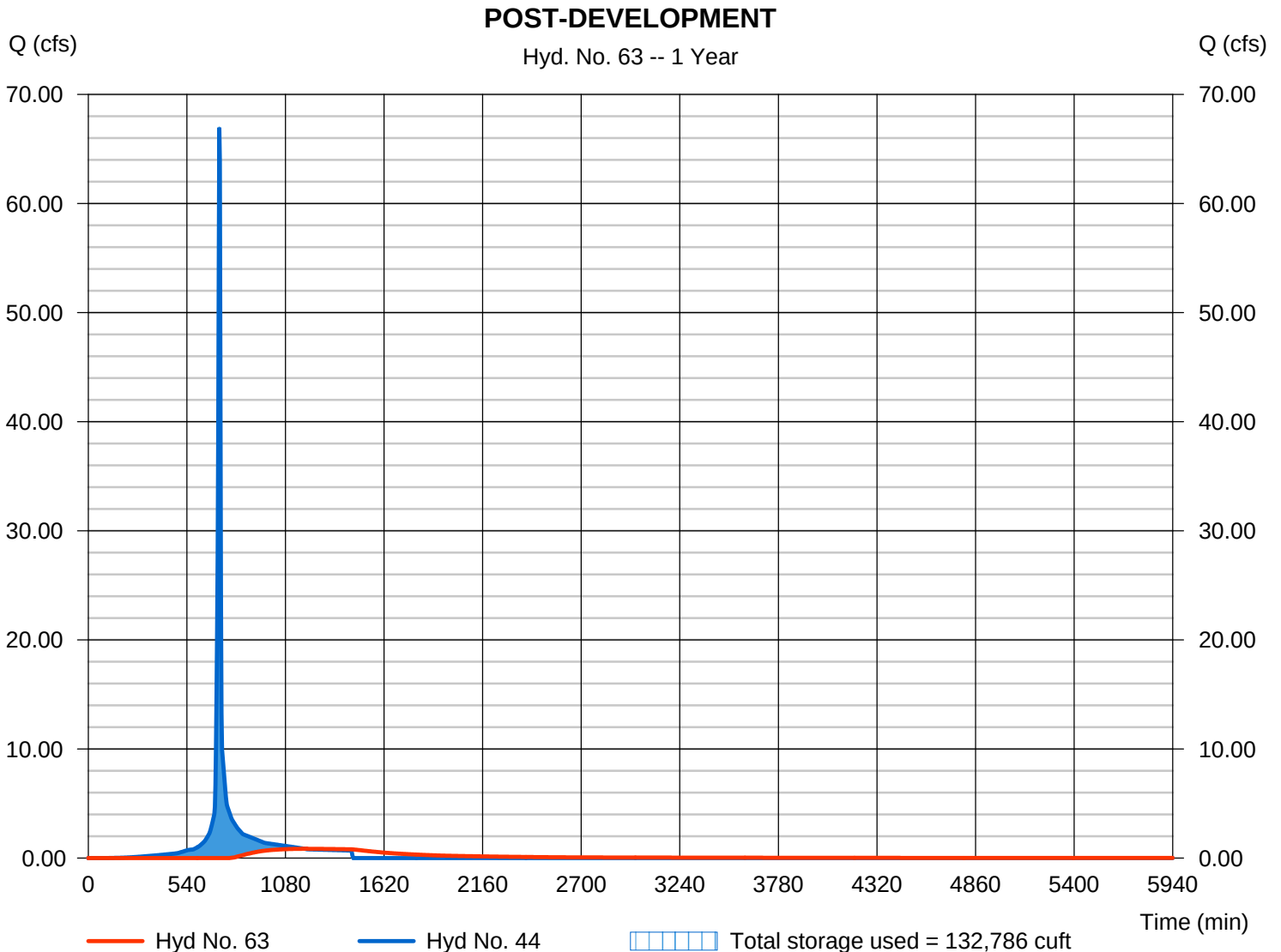
Thursday, 10 / 5 / 2017

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 0.850 cfs
Storm frequency	= 1 yrs	Time to peak	= 1185 min
Time interval	= 3 min	Hyd. volume	= 52,049 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 559.66 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 132,786 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Thursday, 10 / 5 / 2017

Hyd. No. 62

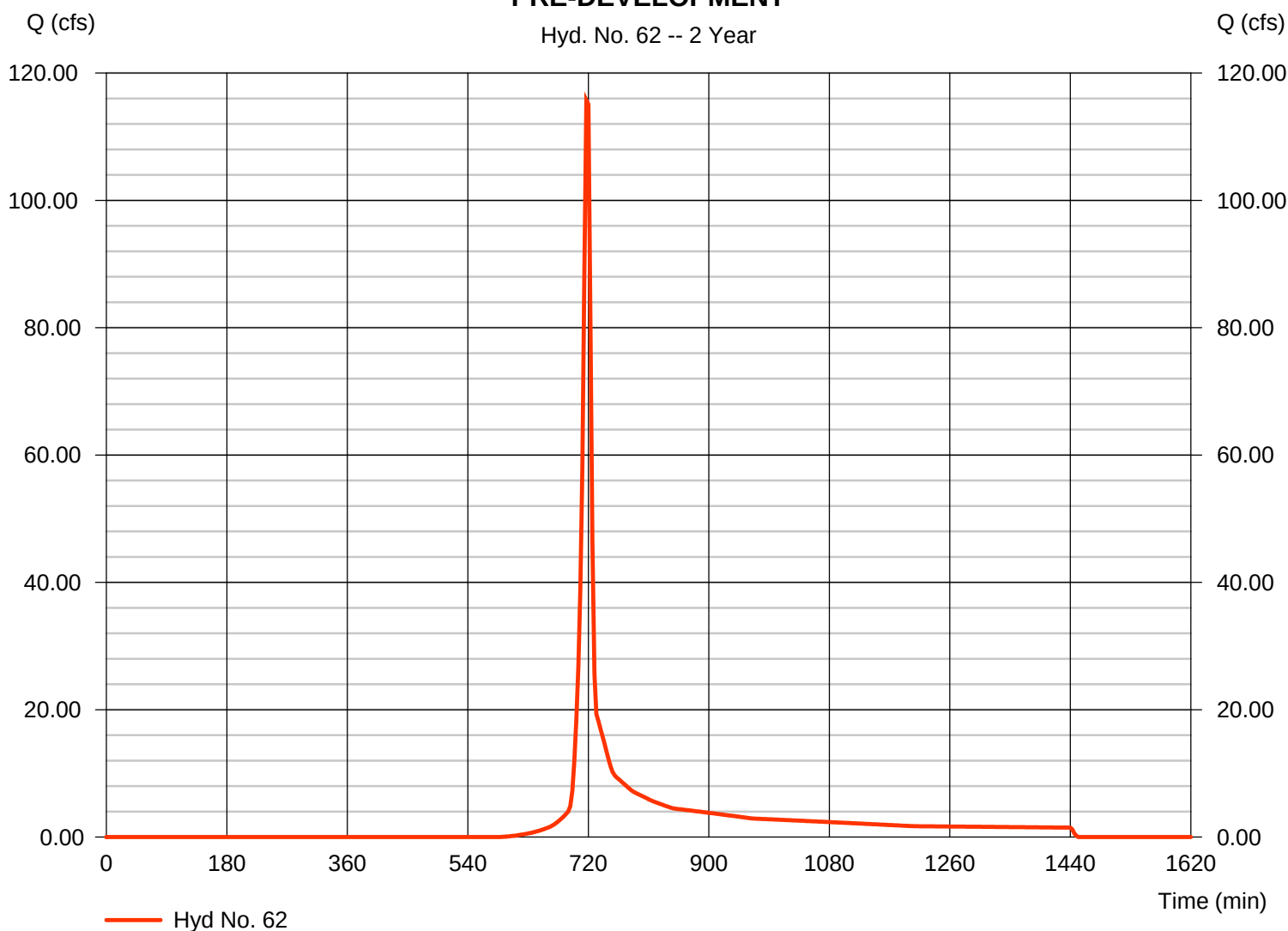
PRE-DEVELOPMENT

Hydrograph type	= SCS Runoff	Peak discharge	= 115.72 cfs
Storm frequency	= 2 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 264,147 cuft
Drainage area	= 61.500 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 3.10 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(60.200 \times 79) + (1.300 \times 98)] / 61.500$

PRE-DEVELOPMENT

Hyd. No. 62 -- 2 Year



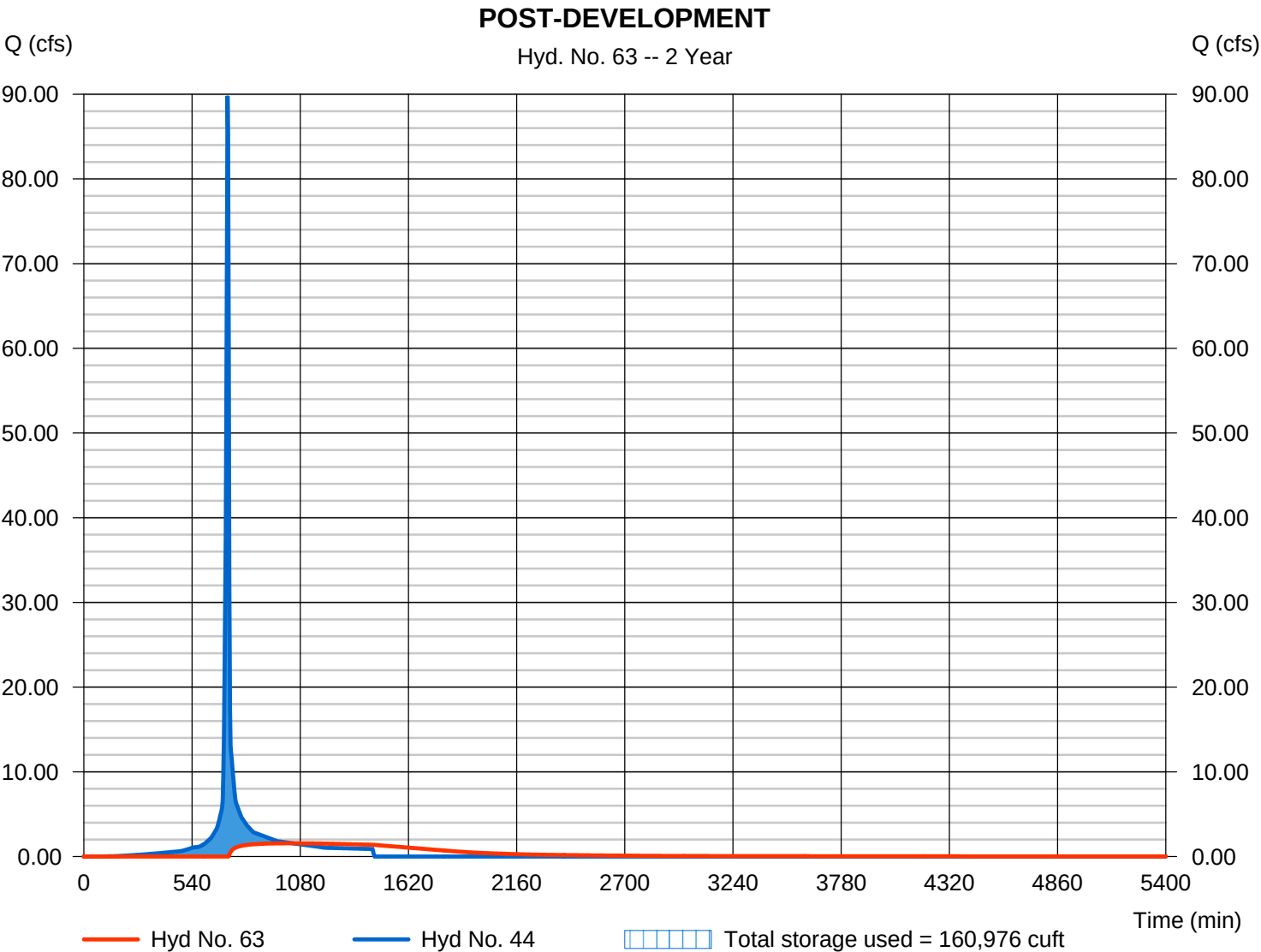
Hydrograph Report

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 1.564 cfs
Storm frequency	= 2 yrs	Time to peak	= 1041 min
Time interval	= 3 min	Hyd. volume	= 106,928 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 560.13 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 160,976 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

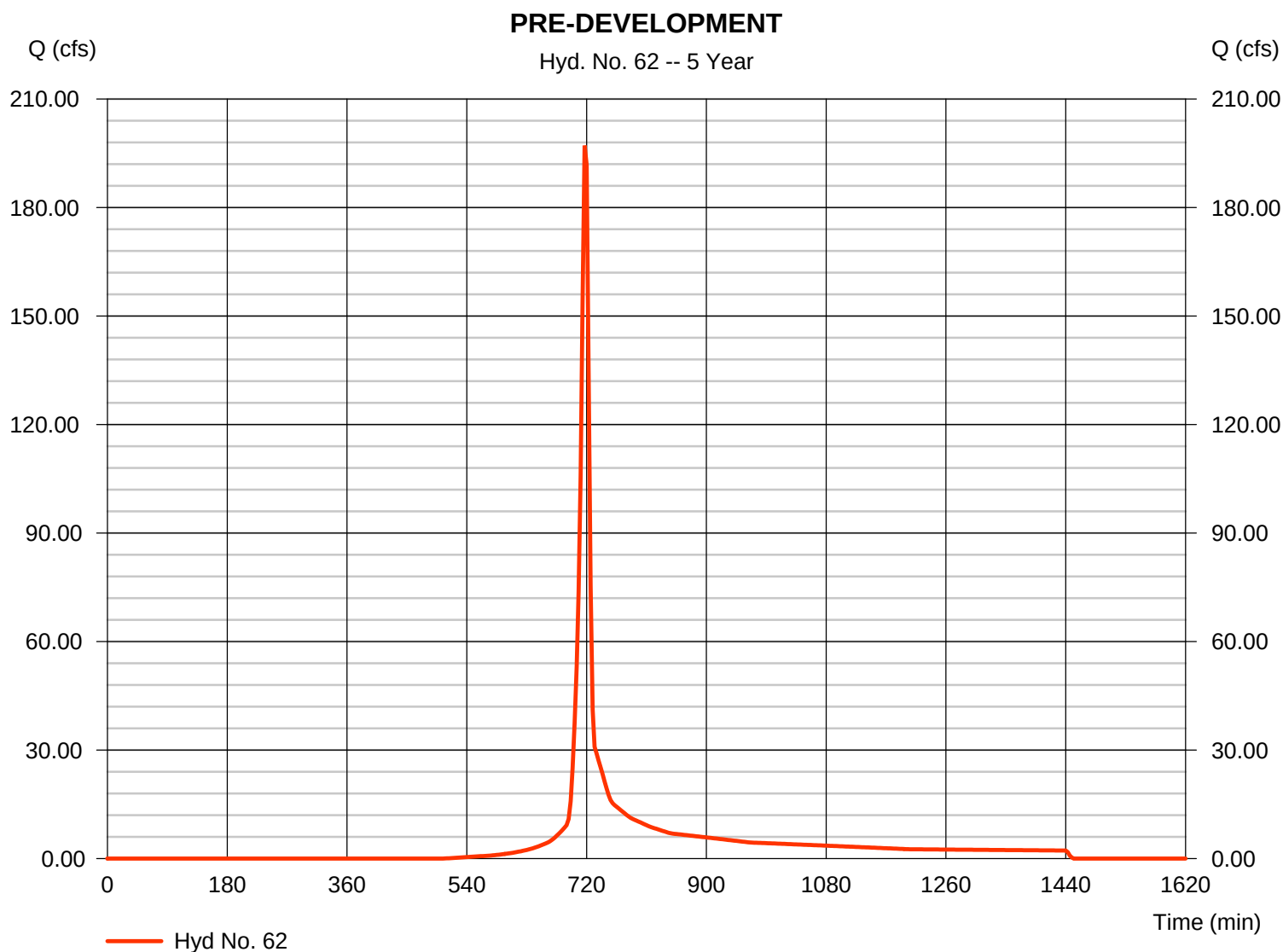
Thursday, 10 / 5 / 2017

Hyd. No. 62

PRE-DEVELOPMENT

Hydrograph type	= SCS Runoff	Peak discharge	= 197.13 cfs
Storm frequency	= 5 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 445,171 cuft
Drainage area	= 61.500 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.20 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(60.200 \times 79) + (1.300 \times 98)] / 61.500$



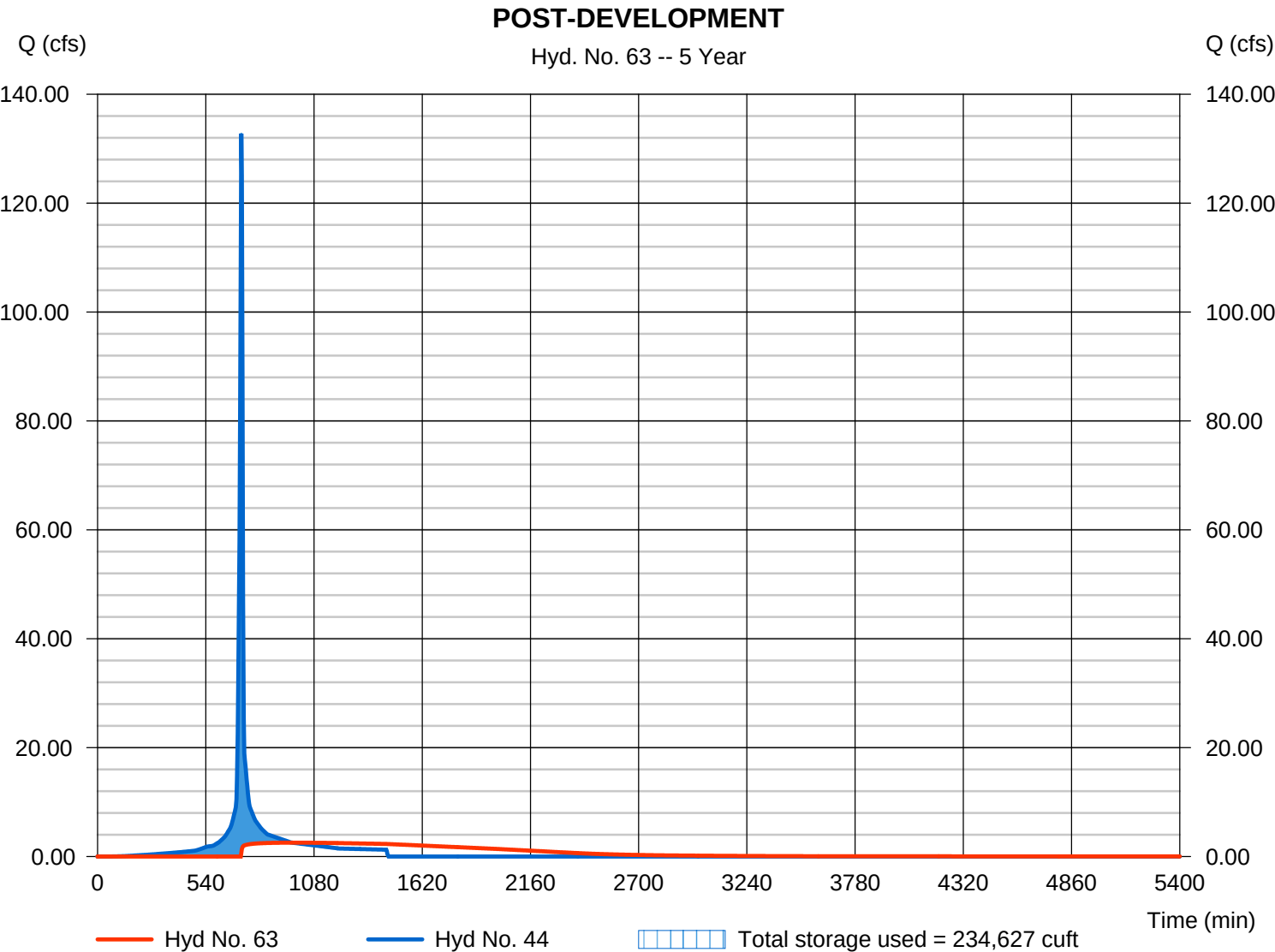
Hydrograph Report

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 2.544 cfs
Storm frequency	= 5 yrs	Time to peak	= 972 min
Time interval	= 3 min	Hyd. volume	= 211,911 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 561.26 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 234,627 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Thursday, 10 / 5 / 2017

Hyd. No. 62

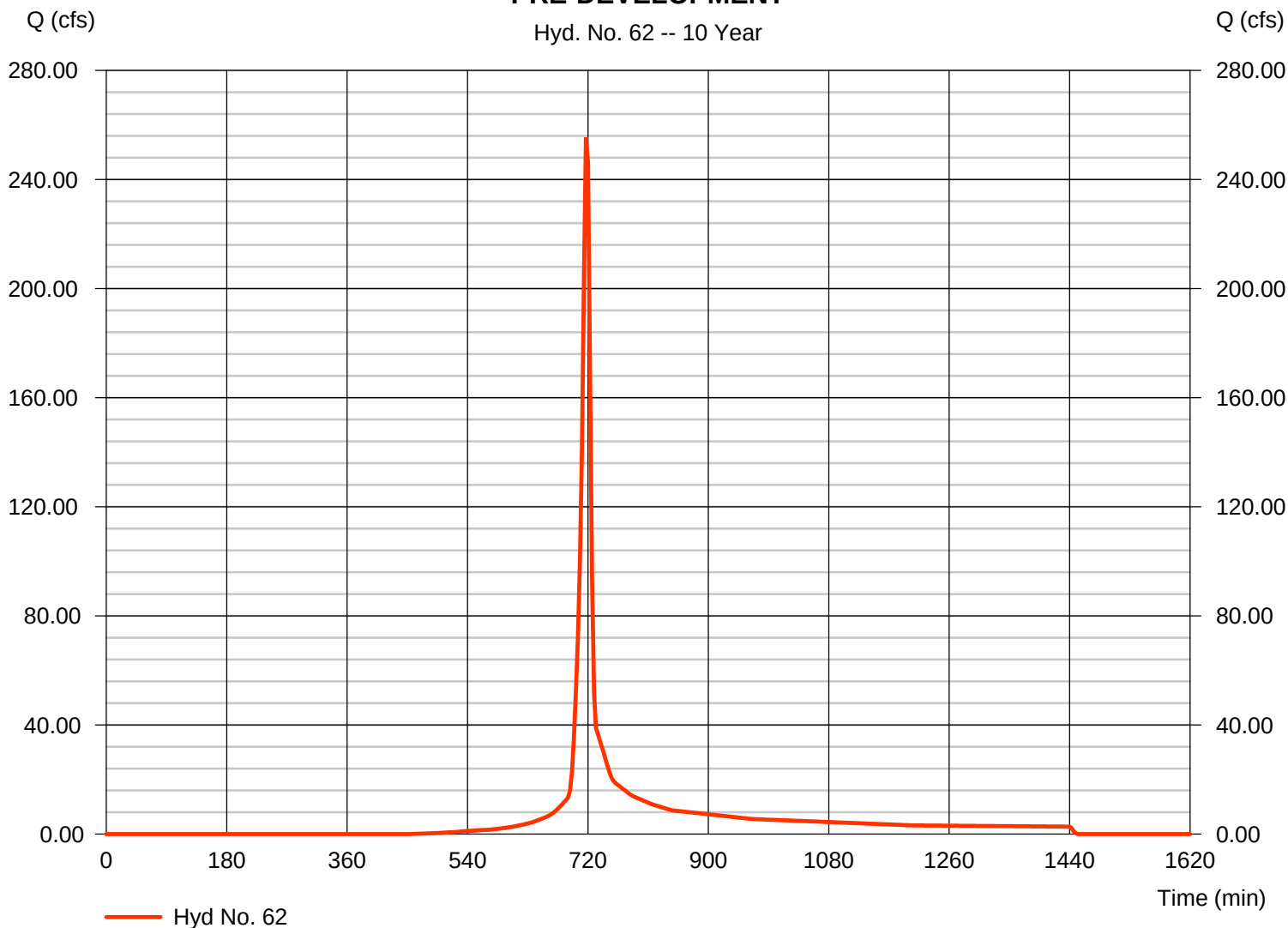
PRE-DEVELOPMENT

Hydrograph type	= SCS Runoff	Peak discharge	= 255.37 cfs
Storm frequency	= 10 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 577,365 cuft
Drainage area	= 61.500 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 4.95 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(60.200 \times 79) + (1.300 \times 98)] / 61.500$

PRE-DEVELOPMENT

Hyd. No. 62 -- 10 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

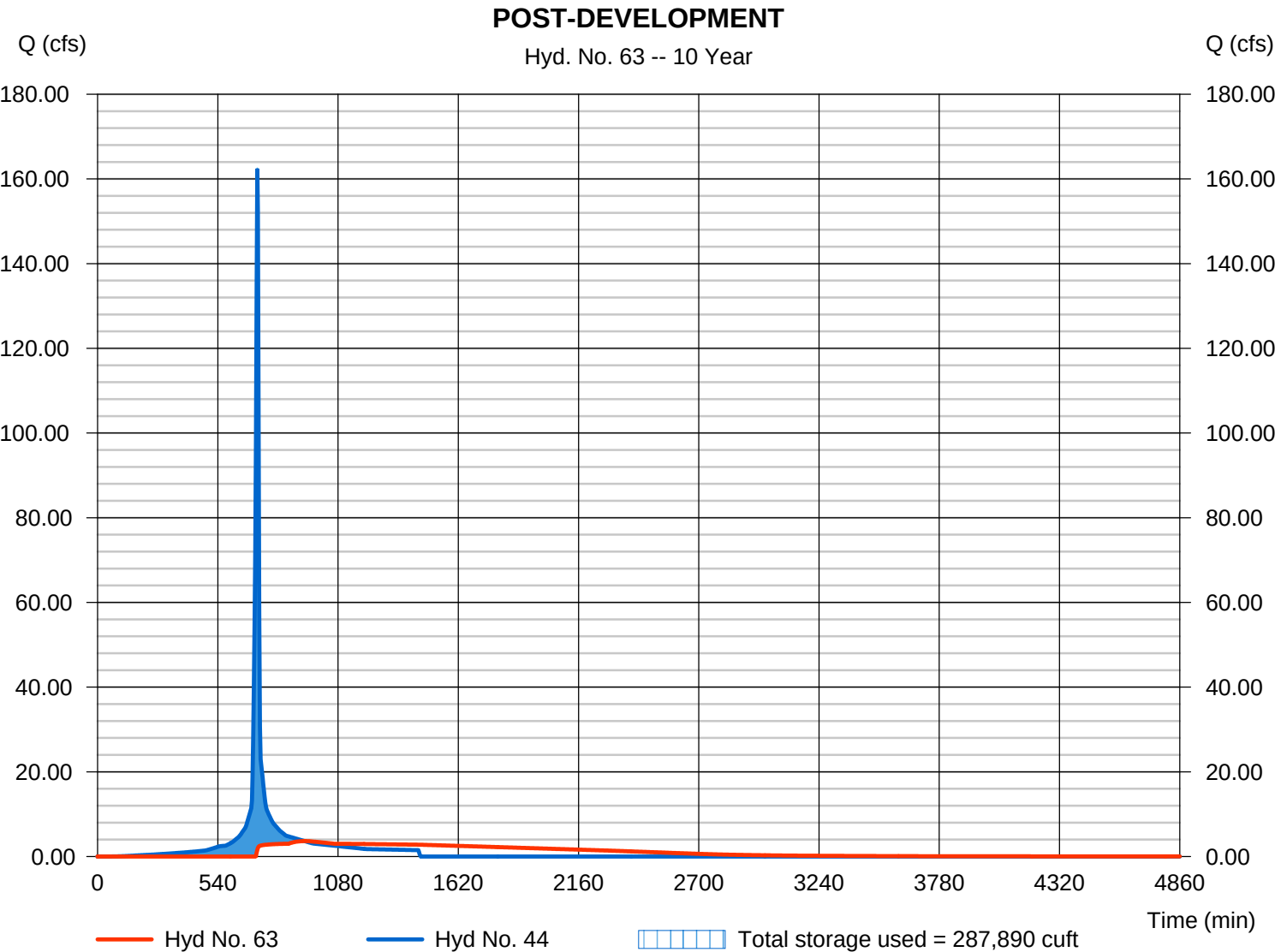
Thursday, 10 / 5 / 2017

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 3.646 cfs
Storm frequency	= 10 yrs	Time to peak	= 930 min
Time interval	= 3 min	Hyd. volume	= 285,534 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 562.05 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 287,890 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

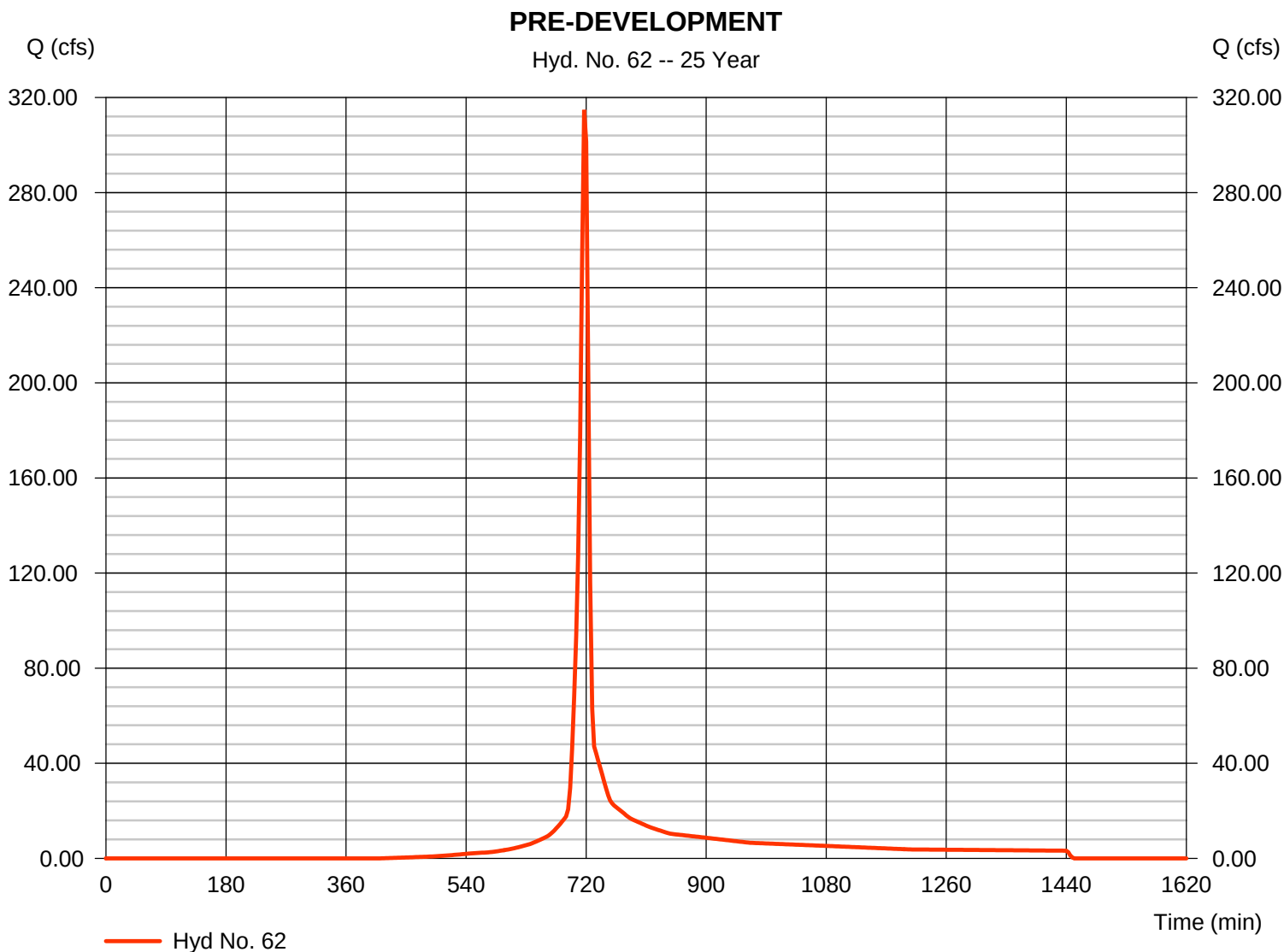
Thursday, 10 / 5 / 2017

Hyd. No. 62

PRE-DEVELOPMENT

Hydrograph type	= SCS Runoff	Peak discharge	= 314.79 cfs
Storm frequency	= 25 yrs	Time to peak	= 717 min
Time interval	= 3 min	Hyd. volume	= 714,308 cuft
Drainage area	= 61.500 ac	Curve number	= 79*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 6.00 min
Total precip.	= 5.70 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = $[(60.200 \times 79) + (1.300 \times 98)] / 61.500$



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

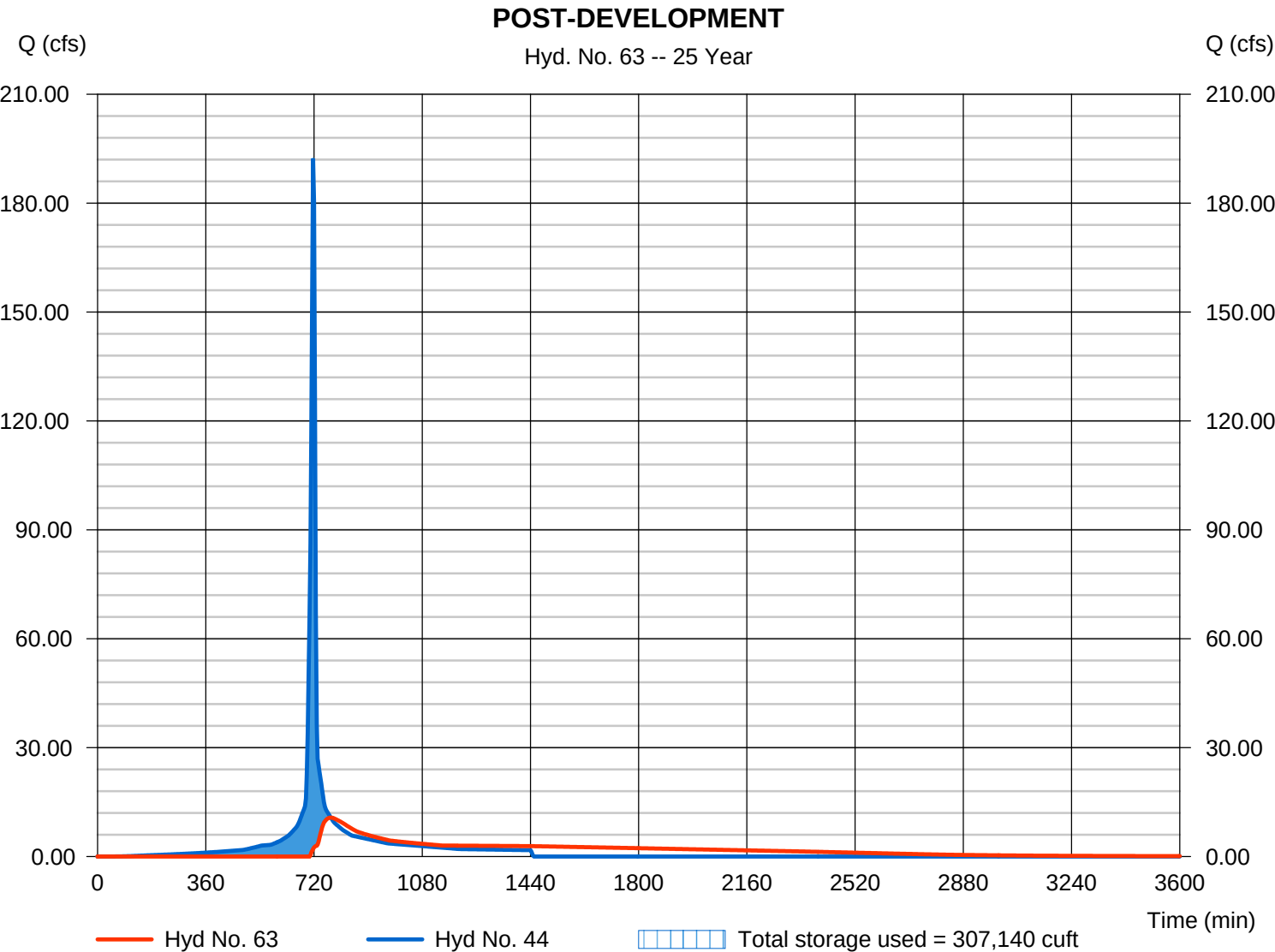
Thursday, 10 / 5 / 2017

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 10.72 cfs
Storm frequency	= 25 yrs	Time to peak	= 777 min
Time interval	= 3 min	Hyd. volume	= 360,271 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 562.32 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 307,140 cuft

Storage Indication method used.



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Thursday, 10 / 5 / 2017

Hyd. No. 62

PRE-DEVELOPMENT

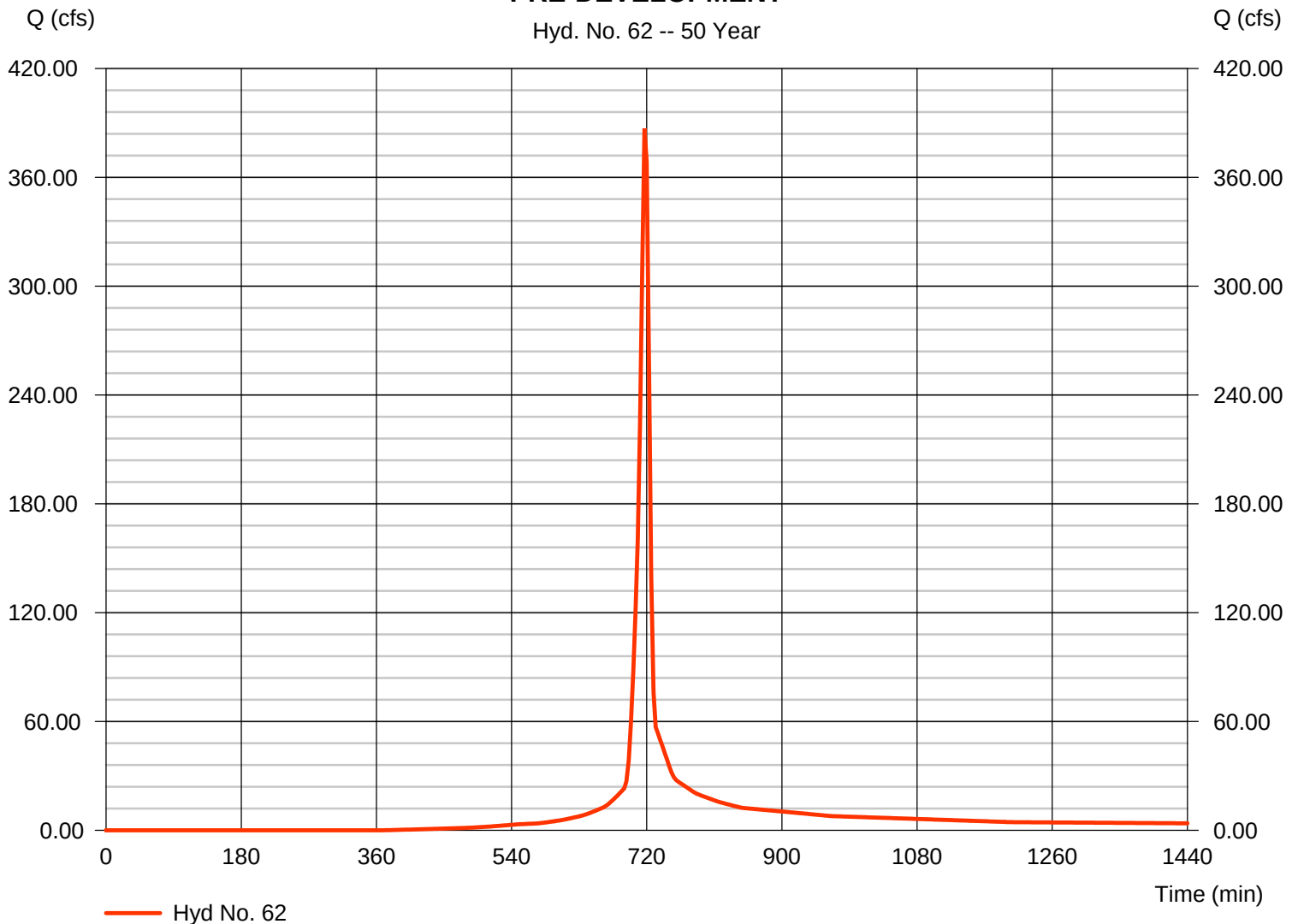
Hydrograph type = SCS Runoff
 Storm frequency = 50 yrs
 Time interval = 3 min
 Drainage area = 61.500 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 6.60 in
 Storm duration = 24 hrs

Peak discharge = 386.96 cfs
 Time to peak = 717 min
 Hyd. volume = 883,183 cuft
 Curve number = 79*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(60.200 \times 79) + (1.300 \times 98)] / 61.500$

PRE-DEVELOPMENT

Hyd. No. 62 -- 50 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Thursday, 10 / 5 / 2017

Hyd. No. 63

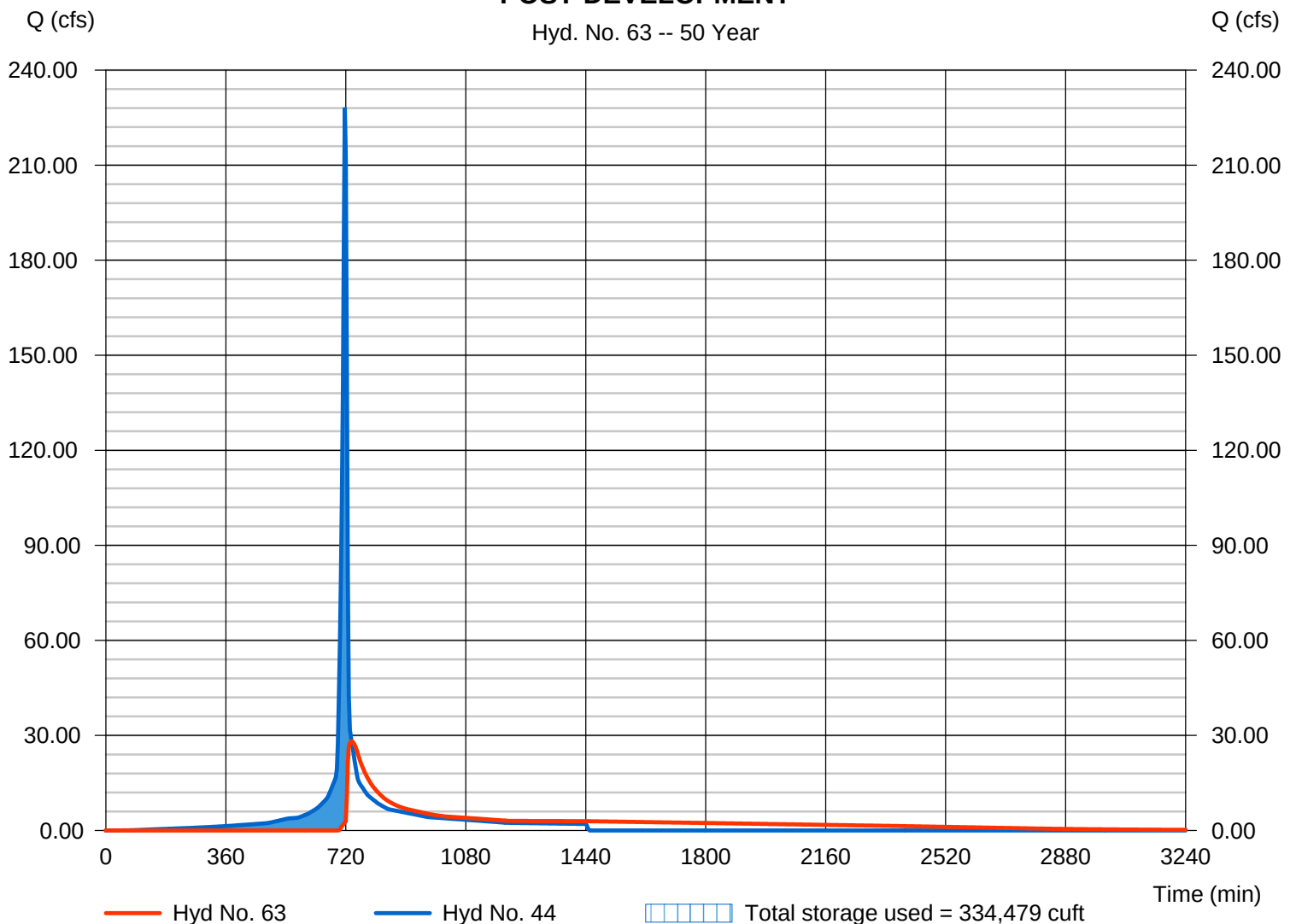
POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 28.11 cfs
Storm frequency	= 50 yrs	Time to peak	= 738 min
Time interval	= 3 min	Hyd. volume	= 450,967 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 562.70 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 334,479 cuft

Storage Indication method used.

POST-DEVELOPMENT

Hyd. No. 63 -- 50 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Thursday, 10 / 5 / 2017

Hyd. No. 62

PRE-DEVELOPMENT

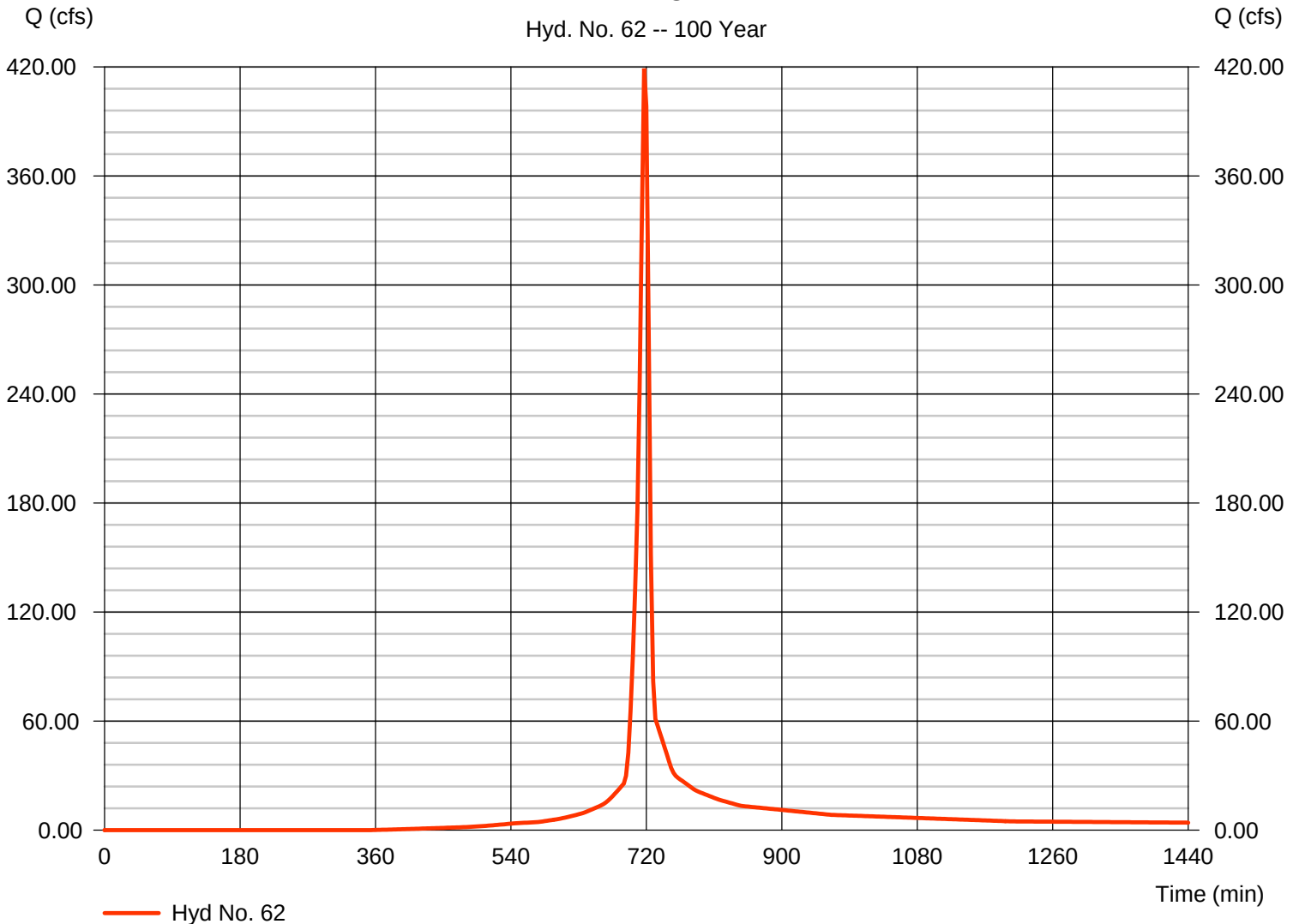
Hydrograph type = SCS Runoff
 Storm frequency = 100 yrs
 Time interval = 3 min
 Drainage area = 61.500 ac
 Basin Slope = 0.0 %
 Tc method = User
 Total precip. = 7.00 in
 Storm duration = 24 hrs

Peak discharge = 419.20 cfs
 Time to peak = 717 min
 Hyd. volume = 959,472 cuft
 Curve number = 79*
 Hydraulic length = 0 ft
 Time of conc. (Tc) = 6.00 min
 Distribution = Type II
 Shape factor = 484

* Composite (Area/CN) = $[(60.200 \times 79) + (1.300 \times 98)] / 61.500$

PRE-DEVELOPMENT

Hyd. No. 62 -- 100 Year



Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2016 by Autodesk, Inc. v11

Thursday, 10 / 5 / 2017

Hyd. No. 63

POST-DEVELOPMENT

Hydrograph type	= Reservoir	Peak discharge	= 41.07 cfs
Storm frequency	= 100 yrs	Time to peak	= 729 min
Time interval	= 3 min	Hyd. volume	= 491,549 cuft
Inflow hyd. No.	= 44 - TOTAL CLEAN WATER STORAGE	Max. Elevation	= 562.94 ft
Reservoir name	= STORMWATER DETENTION POND	Max. Storage	= 350,781 cuft

Storage Indication method used.

POST-DEVELOPMENT

Hyd. No. 63 -- 100 Year

