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

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 1:15,800.

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: Western Riverside Area, California
Survey Area Data: Version 13, May 27, 2020

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

Date(s) aerial images were photographed: Apr 17, 2018—Jun 28, 2018

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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AlC	Arbuckle gravelly loam, 2 to 9 percent slopes, dry, MLRA 19	0.1	4.0%
CmC	Cortina cobbly loamy sand, 2 to 8 percent slopes	0.9	64.0%
LpF2	Lodo rocky loam, 25 to 50 percent slopes, eroded	0.4	31.9%
Totals for Area of Interest		**1.4**	**100.0%**

Map Unit Descriptions

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.

Western Riverside Area, California

AIC—Arbuckle gravelly loam, 2 to 9 percent slopes, dry, MLRA 19

Map Unit Setting

National map unit symbol: 2w8cx
Elevation: 690 to 1,470 feet
Mean annual precipitation: 11 to 18 inches
Mean annual air temperature: 64 to 65 degrees F
Frost-free period: 325 to 359 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Arbuckle and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arbuckle

Setting

Landform: Fan remnants
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous, metamorphic and sedimentary rock

Typical profile

Ap - 0 to 6 inches: gravelly loam
A - 6 to 12 inches: gravelly very fine sandy loam
Bw - 12 to 26 inches: gravelly loam
Bt1 - 26 to 30 inches: gravelly clay loam
Bt2 - 30 to 45 inches: gravelly clay loam
C - 45 to 68 inches: very gravelly sandy loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.2 to 0.5 mmhos/cm)
Available water capacity: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: R019XD029CA
Hydric soil rating: No

Minor Components

Perkins
Percent of map unit: 5 percent
Hydric soil rating: No

Garretson
Percent of map unit: 5 percent
Hydric soil rating: No

Cortina
Percent of map unit: 5 percent
Hydric soil rating: No

CmC—Cortina cobbly loamy sand, 2 to 8 percent slopes

Map Unit Setting
National map unit symbol: hcsh
Elevation: 30 to 2,400 feet
Mean annual precipitation: 12 to 40 inches
Mean annual air temperature: 61 to 63 degrees F
Frost-free period: 240 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition
Cortina and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cortina

Setting
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from metasedimentary rock

Typical profile
H1 - 0 to 23 inches: cobbly loamy sand
H2 - 23 to 38 inches: stratified very cobbly loamy sand to very cobbly loam
H3 - 38 to 60 inches: stratified very gravelly sand to very gravelly loamy sand

Properties and qualities
Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: Rare
Frequency of ponding: None
Available water capacity: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A
Ecological site: R019XD069CA - SANDY ALLUVIAL (1975)
Hydric soil rating: No

Minor Components

Riverwash

Percent of map unit: 10 percent
Landform: Channels
Hydric soil rating: Yes

Garretson

Percent of map unit: 5 percent
Hydric soil rating: No

LpF2—Lodo rocky loam, 25 to 50 percent slopes, eroded

Map Unit Setting

National map unit symbol: hcws
Elevation: 300 to 3,500 feet
Mean annual precipitation: 12 to 35 inches
Mean annual air temperature: 59 to 64 degrees F
Frost-free period: 230 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Lodo and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lodo

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Metamorphosed residuum weathered from sandstone

Typical profile

H1 - 0 to 8 inches: gravelly loam
H2 - 8 to 19 inches: unweathered bedrock

Properties and qualities

Slope: 25 to 50 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 1.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: R019XD060CA - SHALLOW LOAMY (1975)
Hydric soil rating: No

Minor Components

Escondido

Percent of map unit: 5 percent
Hydric soil rating: No

Tumescal

Percent of map unit: 5 percent
Hydric soil rating: No

Vallecitos

Percent of map unit: 5 percent
Hydric soil rating: No

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ATTACHMENT C

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APRE2YR12.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Pre-development
1-Hr 2-Yr Storm Event

Drainage Area = 1.32(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 87.50(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.017 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.021 Hr.
Lag time = 1.24 Min.
25% of lag time = 0.31 Min.
40% of lag time = 0.50 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	0.48	0.64

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	1.34	1.77

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.483(In)
Area Averaged 100-Year Rainfall = 1.340(In)

Point rain (area averaged) = 0.483(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.483(In)

Sub-Area Data:

Area(Ac.) Runoff Index Impervious %
1.324 83.00 0.059
Total Area Entered = 1.32(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-2 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
83.0 83.0 0.210 0.059 0.199 1.000 0.199
Sum (F) = 0.199
Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.853

Slope of intensity-duration curve for a 1 hour storm =0.4800

U n i t H y d r o g r a p h
DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	402.223	65.137	0.869
2	0.167	804.446	34.863	0.465
	Sum = 100.000	Sum=	1.334

Storm Event 3 Effective Rainfall = 0.092(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.048	0.199	0.041	0.01
2	0.17	4.50	0.050	0.199	0.042	0.01
3	0.25	5.40	0.059	0.199	0.051	0.01
4	0.33	5.40	0.059	0.199	0.051	0.01
5	0.42	5.70	0.063	0.199	0.054	0.01
6	0.50	6.40	0.070	0.199	0.060	0.01
7	0.58	7.90	0.087	0.199	0.074	0.01
8	0.67	9.10	0.100	0.199	0.086	0.01
9	0.75	12.80	0.141	0.199	0.120	0.02
10	0.83	25.60	0.282	0.199	---	0.08
11	0.92	7.90	0.087	0.199	0.074	0.01
12	1.00	4.90	0.054	0.199	0.046	0.01
Sum =		100.0		Sum =		0.2

Flood volume = Effective rainfall 0.02(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.07(In)
Total soil loss = 0.008(Ac.Ft)
Total rainfall = 0.09(In)
Flood volume = 81.5 Cubic Feet
Total soil loss = 359.5 Cubic Feet

Storm Event 2 Effective Rainfall = 0.174(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.092	0.199	0.078	0.01
2	0.17	4.50	0.094	0.199	0.080	0.01

3	0.25	5.40	0.113	0.199	0.096	0.02
4	0.33	5.40	0.113	0.199	0.096	0.02
5	0.42	5.70	0.119	0.199	0.101	0.02
6	0.50	6.40	0.134	0.199	0.114	0.02
7	0.58	7.90	0.165	0.199	0.141	0.02
8	0.67	9.10	0.190	0.199	0.162	0.03
9	0.75	12.80	0.267	0.199	---	0.07
10	0.83	25.60	0.534	0.199	---	0.34
11	0.92	7.90	0.165	0.199	0.141	0.02
12	1.00	4.90	0.102	0.199	0.087	0.02
Sum =		100.0			Sum =	0.6

Flood volume = Effective rainfall 0.05(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.12(In)
Total soil loss = 0.014(Ac.Ft)
Total rainfall = 0.17(In)
Flood volume = 237.3 Cubic Feet
Total soil loss = 598.3 Cubic Feet

Storm Event 1 Effective Rainfall = 0.483(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.255	0.199	---	0.06
2	0.17	4.50	0.261	0.199	---	0.06
3	0.25	5.40	0.313	0.199	---	0.11
4	0.33	5.40	0.313	0.199	---	0.11
5	0.42	5.70	0.330	0.199	---	0.13
6	0.50	6.40	0.371	0.199	---	0.17
7	0.58	7.90	0.458	0.199	---	0.26
8	0.67	9.10	0.527	0.199	---	0.33
9	0.75	12.80	0.742	0.199	---	0.54
10	0.83	25.60	1.484	0.199	---	1.29
11	0.92	7.90	0.458	0.199	---	0.26
12	1.00	4.90	0.284	0.199	---	0.09
Sum =		100.0			Sum =	3.4

Flood volume = Effective rainfall 0.28(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.20(In)
Total soil loss = 0.022(Ac.Ft)
Total rainfall = 0.48(In)
Flood volume = 1366.5 Cubic Feet
Total soil loss = 954.8 Cubic Feet

Peak flow rate of this hydrograph =

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APRE2YR15.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Pre-development
1-Hr 5-Year Storm Event

Drainage Area = 1.32(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 87.50(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.017 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.021 Hr.
Lag time = 1.24 Min.
25% of lag time = 0.31 Min.
40% of lag time = 0.50 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	0.48	0.64

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	1.34	1.77

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.483(In)
Area Averaged 100-Year Rainfall = 1.340(In)

Point rain (area averaged) = 0.684(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.684(In)

Sub-Area Data:

Area(Ac.) Runoff Index Impervious %
1.324 83.00 0.059
Total Area Entered = 1.32(Ac.)

RI RI Infil. Rate Impervious Adj. Infil. Rate Area% F
AMC2 AMC-2 (In/Hr) (Dec.%) (In/Hr) (Dec.) (In/Hr)
83.0 83.0 0.210 0.059 0.199 1.000 0.199
Sum (F) = 0.199
Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.853

Slope of intensity-duration curve for a 1 hour storm =0.4800

U n i t H y d r o g r a p h
DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	402.223	65.137	0.869
2	0.167	804.446	34.863	0.465
	Sum = 100.000	Sum=	1.334

Storm Event 3 Effective Rainfall = 0.130(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.069	0.199	0.059	0.01
2	0.17	4.50	0.070	0.199	0.060	0.01
3	0.25	5.40	0.084	0.199	0.072	0.01
4	0.33	5.40	0.084	0.199	0.072	0.01
5	0.42	5.70	0.089	0.199	0.076	0.01
6	0.50	6.40	0.100	0.199	0.085	0.01
7	0.58	7.90	0.123	0.199	0.105	0.02
8	0.67	9.10	0.142	0.199	0.121	0.02
9	0.75	12.80	0.200	0.199	---	0.00
10	0.83	25.60	0.399	0.199	---	0.20
11	0.92	7.90	0.123	0.199	0.105	0.02
12	1.00	4.90	0.076	0.199	0.065	0.01
Sum =		100.0		Sum =		0.3

Flood volume = Effective rainfall 0.03(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.10(In)
Total soil loss = 0.011(Ac.Ft)
Total rainfall = 0.13(In)
Flood volume = 137.1 Cubic Feet
Total soil loss = 487.3 Cubic Feet

Storm Event 2 Effective Rainfall = 0.246(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.130	0.199	0.111	0.02
2	0.17	4.50	0.133	0.199	0.113	0.02

3	0.25	5.40	0.159	0.199	0.136	0.02
4	0.33	5.40	0.159	0.199	0.136	0.02
5	0.42	5.70	0.168	0.199	0.144	0.02
6	0.50	6.40	0.189	0.199	0.161	0.03
7	0.58	7.90	0.233	0.199	---	0.03
8	0.67	9.10	0.269	0.199	---	0.07
9	0.75	12.80	0.378	0.199	---	0.18
10	0.83	25.60	0.756	0.199	---	0.56
11	0.92	7.90	0.233	0.199	---	0.03
12	1.00	4.90	0.145	0.199	0.123	0.02
Sum =		100.0		Sum =		1.0

Flood volume = Effective rainfall 0.09(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.16(In)
Total soil loss = 0.018(Ac.Ft)
Total rainfall = 0.25(In)
Flood volume = 414.7 Cubic Feet
Total soil loss = 768.2 Cubic Feet

Storm Event 1 Effective Rainfall = 0.684(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.361	0.199	---	0.16
2	0.17	4.50	0.369	0.199	---	0.17
3	0.25	5.40	0.443	0.199	---	0.24
4	0.33	5.40	0.443	0.199	---	0.24
5	0.42	5.70	0.468	0.199	---	0.27
6	0.50	6.40	0.525	0.199	---	0.33
7	0.58	7.90	0.648	0.199	---	0.45
8	0.67	9.10	0.747	0.199	---	0.55
9	0.75	12.80	1.050	0.199	---	0.85
10	0.83	25.60	2.100	0.199	---	1.90
11	0.92	7.90	0.648	0.199	---	0.45
12	1.00	4.90	0.402	0.199	---	0.20
Sum =		100.0		Sum =		5.8

Flood volume = Effective rainfall 0.49(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.20(In)
Total soil loss = 0.022(Ac.Ft)
Total rainfall = 0.68(In)
Flood volume = 2331.3 Cubic Feet
Total soil loss = 954.8 Cubic Feet

Peak flow rate of this

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APRE2YR110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Pre-development
1-Hr 10-Yr Storm Event

Drainage Area = 1.32(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 87.50(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.017 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.021 Hr.
Lag time = 1.24 Min.
25% of lag time = 0.31 Min.
40% of lag time = 0.50 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	0.48	0.64

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	1.34	1.77

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.483(In)
Area Averaged 100-Year Rainfall = 1.340(In)

Point rain (area averaged) = 0.836(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.836(In)

Sub-Area Data:

```
Area(Ac.)        Runoff Index   Impervious %
   1.324          83.00         0.059
 Total Area Entered =      1.32(Ac.)


RI    RI   Infil. Rate Impervious   Adj. Infil. Rate  Area%     F
AMC2 AMC-2    (In/Hr)   (Dec.%)    (In/Hr)     (Dec.)    (In/Hr)
83.0  83.0     0.210     0.059       0.199       1.000     0.199
                              Sum (F) =   0.199
Area averaged mean soil loss (F) (In/Hr) =  0.199
Minimum soil loss rate ((In/Hr)) =  0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) =   0.853
------------------------------------------------------------------------
Slope of intensity-duration curve for a 1 hour storm =0.4800
------------------------------------------------------------------------

                          U n i t  H y d r o g r a p h
                                DESERT S-Curve
------------------------------------------------------------------------
                          Unit Hydrograph Data
------------------------------------------------------------------------
Unit time period   Time % of lag   Distribution   Unit Hydrograph
   (hrs)              Graph %          (CFS)
------------------------------------------------------------------------
   1   0.083       402.223        65.137            0.869
   2   0.167       804.446        34.863            0.465
                     Sum = 100.000   Sum=      1.334
------------------------------------------------------------------------


 Unit Time   Pattern   Storm Rain    Loss rate(In./Hr)     Effective
    (Hr.)  Percent   (In/Hr)       Max   |   Low       (In/Hr)
 1   0.08     4.40     0.441        0.199      ---         0.24
 2   0.17     4.50     0.451        0.199      ---         0.25
 3   0.25     5.40     0.541        0.199      ---         0.34
 4   0.33     5.40     0.541        0.199      ---         0.34
 5   0.42     5.70     0.572        0.199      ---         0.37
 6   0.50     6.40     0.642        0.199      ---         0.44
 7   0.58     7.90     0.792        0.199      ---         0.59
 8   0.67     9.10     0.912        0.199      ---         0.71
 9   0.75    12.80     1.283        0.199      ---         1.08
10   0.83    25.60     2.567        0.199      ---         2.37
11   0.92     7.90     0.792        0.199      ---         0.59
12   1.00     4.90     0.491        0.199      ---         0.29
  Sum =     100.0                          Sum =     7.6
          Flood volume = Effective rainfall     0.64(In)
           times area      1.3(Ac.)/[(In)/(Ft.)] =      0.1(Ac.Ft)
          Total soil loss =      0.20(In)
          Total soil loss =     0.022(Ac.Ft)
          Total rainfall =      0.84(In)
          Flood volume =        3061.1 Cubic Feet
          Total soil loss =         954.8 Cubic Feet
          ------------------------------------------------------------------
           Peak flow rate of this hydrograph =      2.564(CFS)
          ------------------------------------------------------------------
          ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                       1 - H O U R   S T O R M
                     R u n o f f     H y d r o g r a p h
          ------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

          ------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       2.5       5.0       7.5      10.0
------------------------------------------------------------------------
```

```
  0+ 5     0.0015     0.21  Q       |       |       |       |
  0+10     0.0037     0.33  |QV     |       |       |       |
  0+15     0.0066     0.42  |Q V    |       |       |       |
  0+20     0.0098     0.46  |Q  V   |       |       |       |
  0+25     0.0131     0.48  |Q    V |       |       |       |
  0+30     0.0169     0.56  | Q     V|       |       |       |
  0+35     0.0219     0.72  | Q      | V      |       |       |
  0+40     0.0281     0.90  |  Q     |   V   |       |       |
  0+45     0.0369     1.28  |    Q   |       V       |       |
  0+50     0.0545     2.56  |        Q       |       |V      |
  0+55     0.0657     1.62  |    Q   |       |       |    V  |
  1+ 0     0.0693     0.53  | Q      |       |       |      V|
  1+ 5     0.0703     0.14  Q       |       |       |      V|
--------------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Pre-development
3-Hr 2-Yr Storm Event

Drainage Area = 1.32(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 87.50(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.017 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.021 Hr.
Lag time = 1.24 Min.
25% of lag time = 0.31 Min.
40% of lag time = 0.50 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	0.88	1.16

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	2.20	2.91

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.877(In)
Area Averaged 100-Year Rainfall = 2.200(In)

Point rain (area averaged) = 0.877(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.877(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.324	83.00	0.059

Total Area Entered = 1.32(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.0	83.0	0.210	0.059	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199

Minimum soil loss rate ((In/Hr)) = 0.099

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.853

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	402.223	65.137	0.869
2	0.167	804.446	34.863	0.465

Sum = 100.000 Sum= 1.334

Storm Event 3 Effective Rainfall = 0.167(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.026	0.199	0.022	0.00
2	0.17	1.30	0.026	0.199	0.022	0.00
3	0.25	1.10	0.022	0.199	0.019	0.00
4	0.33	1.50	0.030	0.199	0.026	0.00
5	0.42	1.50	0.030	0.199	0.026	0.00
6	0.50	1.80	0.036	0.199	0.031	0.01
7	0.58	1.50	0.030	0.199	0.026	0.00
8	0.67	1.80	0.036	0.199	0.031	0.01
9	0.75	1.80	0.036	0.199	0.031	0.01
10	0.83	1.50	0.030	0.199	0.026	0.00
11	0.92	1.60	0.032	0.199	0.027	0.00
12	1.00	1.80	0.036	0.199	0.031	0.01
13	1.08	2.20	0.044	0.199	0.038	0.01
14	1.17	2.20	0.044	0.199	0.038	0.01
15	1.25	2.20	0.044	0.199	0.038	0.01
16	1.33	2.00	0.040	0.199	0.034	0.01
17	1.42	2.60	0.052	0.199	0.044	0.01
18	1.50	2.70	0.054	0.199	0.046	0.01
19	1.58	2.40	0.048	0.199	0.041	0.01
20	1.67	2.70	0.054	0.199	0.046	0.01
21	1.75	3.30	0.066	0.199	0.056	0.01
22	1.83	3.10	0.062	0.199	0.053	0.01
23	1.92	2.90	0.058	0.199	0.049	0.01
24	2.00	3.00	0.060	0.199	0.051	0.01
25	2.08	3.10	0.062	0.199	0.053	0.01
26	2.17	4.20	0.084	0.199	0.072	0.01
27	2.25	5.00	0.100	0.199	0.085	0.01
28	2.33	3.50	0.070	0.199	0.060	0.01
29	2.42	6.80	0.136	0.199	0.116	0.02

30	2.50	7.30	0.146	0.199	0.125	0.02
31	2.58	8.20	0.164	0.199	0.140	0.02
32	2.67	5.90	0.118	0.199	0.101	0.02
33	2.75	2.00	0.040	0.199	0.034	0.01
34	2.83	1.80	0.036	0.199	0.031	0.01
35	2.92	1.80	0.036	0.199	0.031	0.01
36	3.00	0.60	0.012	0.199	0.010	0.00
Sum =		100.0			Sum =	0.3

Flood volume = Effective rainfall 0.02(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.14(In)
Total soil loss = 0.016(Ac.Ft)
Total rainfall = 0.17(In)
Flood volume = 117.6 Cubic Feet
Total soil loss = 683.3 Cubic Feet

Storm Event 2 Effective Rainfall = 0.316(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.049	0.199	0.042	0.01
2	0.17	1.30	0.049	0.199	0.042	0.01
3	0.25	1.10	0.042	0.199	0.036	0.01
4	0.33	1.50	0.057	0.199	0.048	0.01
5	0.42	1.50	0.057	0.199	0.048	0.01
6	0.50	1.80	0.068	0.199	0.058	0.01
7	0.58	1.50	0.057	0.199	0.048	0.01
8	0.67	1.80	0.068	0.199	0.058	0.01
9	0.75	1.80	0.068	0.199	0.058	0.01
10	0.83	1.50	0.057	0.199	0.048	0.01
11	0.92	1.60	0.061	0.199	0.052	0.01
12	1.00	1.80	0.068	0.199	0.058	0.01
13	1.08	2.20	0.083	0.199	0.071	0.01
14	1.17	2.20	0.083	0.199	0.071	0.01
15	1.25	2.20	0.083	0.199	0.071	0.01
16	1.33	2.00	0.076	0.199	0.065	0.01
17	1.42	2.60	0.099	0.199	0.084	0.01
18	1.50	2.70	0.102	0.199	0.087	0.02
19	1.58	2.40	0.091	0.199	0.078	0.01
20	1.67	2.70	0.102	0.199	0.087	0.02
21	1.75	3.30	0.125	0.199	0.107	0.02
22	1.83	3.10	0.117	0.199	0.100	0.02
23	1.92	2.90	0.110	0.199	0.094	0.02
24	2.00	3.00	0.114	0.199	0.097	0.02
25	2.08	3.10	0.117	0.199	0.100	0.02
26	2.17	4.20	0.159	0.199	0.136	0.02
27	2.25	5.00	0.189	0.199	0.162	0.03
28	2.33	3.50	0.133	0.199	0.113	0.02
29	2.42	6.80	0.258	0.199	---	0.06
30	2.50	7.30	0.277	0.199	---	0.08
31	2.58	8.20	0.311	0.199	---	0.11
32	2.67	5.90	0.224	0.199	---	0.02
33	2.75	2.00	0.076	0.199	0.065	0.01
34	2.83	1.80	0.068	0.199	0.058	0.01
35	2.92	1.80	0.068	0.199	0.058	0.01
36	3.00	0.60	0.023	0.199	0.019	0.00
Sum =		100.0			Sum =	0.7

Flood volume = Effective rainfall 0.06(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.26(In)
Total soil loss = 0.029(Ac.Ft)
Total rainfall = 0.32(In)
Flood volume = 269.6 Cubic Feet
Total soil loss = 1247.8 Cubic Feet

Storm Event 1 Effective Rainfall = 0.877(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.137	0.199	0.117	0.02
2	0.17	1.30	0.137	0.199	0.117	0.02
3	0.25	1.10	0.116	0.199	0.099	0.02
4	0.33	1.50	0.158	0.199	0.135	0.02
5	0.42	1.50	0.158	0.199	0.135	0.02
6	0.50	1.80	0.189	0.199	0.162	0.03
7	0.58	1.50	0.158	0.199	0.135	0.02
8	0.67	1.80	0.189	0.199	0.162	0.03
9	0.75	1.80	0.189	0.199	0.162	0.03
10	0.83	1.50	0.158	0.199	0.135	0.02
11	0.92	1.60	0.168	0.199	0.144	0.02
12	1.00	1.80	0.189	0.199	0.162	0.03
13	1.08	2.20	0.232	0.199	---	0.03
14	1.17	2.20	0.232	0.199	---	0.03
15	1.25	2.20	0.232	0.199	---	0.03
16	1.33	2.00	0.210	0.199	---	0.01
17	1.42	2.60	0.274	0.199	---	0.07
18	1.50	2.70	0.284	0.199	---	0.09
19	1.58	2.40	0.253	0.199	---	0.05
20	1.67	2.70	0.284	0.199	---	0.09
21	1.75	3.30	0.347	0.199	---	0.15
22	1.83	3.10	0.326	0.199	---	0.13
23	1.92	2.90	0.305	0.199	---	0.11
24	2.00	3.00	0.316	0.199	---	0.12
25	2.08	3.10	0.326	0.199	---	0.13
26	2.17	4.20	0.442	0.199	---	0.24
27	2.25	5.00	0.526	0.199	---	0.33
28	2.33	3.50	0.368	0.199	---	0.17
29	2.42	6.80	0.716	0.199	---	0.52
30	2.50	7.30	0.768	0.199	---	0.57
31	2.58	8.20	0.863	0.199	---	0.66
32	2.67	5.90	0.621	0.199	---	0.42
33	2.75	2.00	0.210	0.199	---	0.01
34	2.83	1.80	0.189	0.199	0.162	0.03
35	2.92	1.80	0.189	0.199	0.162	0.03
36	3.00	0.60	0.063	0.199	0.054	0.01
Sum =		100.0		Sum =		4.3

Flood volume = Effective rainfall 0.36(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.52(In)
Total soil loss = 0.057(Ac.Ft)
Total rainfall = 0.88(In)
Flood volume = 1727.7 Cubic Feet
Total soil loss = 2487.2 Cubic Feet

Peak flow rate of this hydrograph = 0.843(CFS)

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TOTAL OF: 3 3 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0001	0.01	Q	|	|	|	|
0+15	0.0001	0.00	Q	|	|	|	|

0+20	0.0001	0.01	Q	|	|	|	|
0+25	0.0002	0.01	Q	|	|	|	|
0+30	0.0002	0.01	Q	|	|	|	|
0+35	0.0003	0.01	Q	|	|	|	|
0+40	0.0003	0.01	Q	|	|	|	|
0+45	0.0004	0.01	Q	|	|	|	|
0+50	0.0004	0.01	Q	|	|	|	|
0+55	0.0004	0.01	Q	|	|	|	|
1+ 0	0.0005	0.01	Q	|	|	|	|
1+ 5	0.0005	0.01	Q	|	|	|	|
1+10	0.0006	0.01	Q	|	|	|	|
1+15	0.0007	0.01	Q	|	|	|	|
1+20	0.0007	0.01	Q	|	|	|	|
1+25	0.0008	0.01	Q	|	|	|	|
1+30	0.0008	0.01	Q	|	|	|	|
1+35	0.0009	0.01	Q	|	|	|	|
1+40	0.0010	0.01	Q	|	|	|	|
1+45	0.0011	0.01	Q	|	|	|	|
1+50	0.0012	0.01	Q	|	|	|	|
1+55	0.0012	0.01	QV	|	|	|	|
2+ 0	0.0013	0.01	QV	|	|	|	|
2+ 5	0.0014	0.01	QV	|	|	|	|
2+10	0.0015	0.01	QV	|	|	|	|
2+15	0.0016	0.02	QV	|	|	|	|
2+20	0.0017	0.02	QV	|	|	|	|
2+25	0.0019	0.02	QV	|	|	|	|
2+30	0.0021	0.03	QV	|	|	|	|
2+35	0.0023	0.03	QV	|	|	|	|
2+40	0.0025	0.03	Q V	|	|	|	|
2+45	0.0026	0.01	Q V	|	|	|	|
2+50	0.0026	0.01	Q V	|	|	|	|
2+55	0.0027	0.01	Q V	|	|	|	|
3+ 0	0.0027	0.00	Q V	|	|	|	|
3+ 5	0.0027	0.01	Q V	|	|	|	|
3+10	0.0028	0.01	Q V	|	|	|	|
3+15	0.0029	0.01	Q V	|	|	|	|
3+20	0.0029	0.01	Q V	|	|	|	|
3+25	0.0030	0.01	Q V	|	|	|	|
3+30	0.0031	0.01	Q V	|	|	|	|
3+35	0.0032	0.01	Q V	|	|	|	|
3+40	0.0033	0.01	Q V	|	|	|	|
3+45	0.0034	0.01	Q V	|	|	|	|
3+50	0.0034	0.01	Q V	|	|	|	|
3+55	0.0035	0.01	Q V	|	|	|	|
4+ 0	0.0036	0.01	Q V	|	|	|	|
4+ 5	0.0037	0.02	Q V	|	|	|	|
4+10	0.0038	0.02	Q V	|	|	|	|
4+15	0.0039	0.02	Q V	|	|	|	|
4+20	0.0040	0.02	Q V	|	|	|	|
4+25	0.0042	0.02	Q V	|	|	|	|
4+30	0.0043	0.02	Q V	|	|	|	|
4+35	0.0044	0.02	Q V	|	|	|	|
4+40	0.0046	0.02	Q V	|	|	|	|
4+45	0.0047	0.02	Q V	|	|	|	|
4+50	0.0049	0.02	Q V	|	|	|	|
4+55	0.0050	0.02	Q V	|	|	|	|
5+ 0	0.0052	0.02	Q V	|	|	|	|
5+ 5	0.0053	0.02	Q V	|	|	|	|
5+10	0.0055	0.03	Q V	|	|	|	|
5+15	0.0058	0.04	Q V	|	|	|	|
5+20	0.0060	0.03	Q V	|	|	|	|
5+25	0.0064	0.06	Q V	|	|	|	|
5+30	0.0071	0.10	Q V	|	|	|	|
5+35	0.0080	0.13	Q V	|	|	|	|
5+40	0.0085	0.07	Q V	|	|	|	|

```
5+45     0.0086    0.02  Q    V |      |      |      |
5+50     0.0087    0.01  Q    V |      |      |      |
5+55     0.0088    0.01  Q    V |      |      |      |
6+ 0     0.0089    0.01  Q    V |      |      |      |
6+ 5     0.0090    0.02  Q    V |      |      |      |
6+10     0.0092    0.03  Q    V |      |      |      |
6+15     0.0093    0.02  Q    V |      |      |      |
6+20     0.0095    0.03  Q    V |      |      |      |
6+25     0.0097    0.03  Q     V|      |      |      |
6+30     0.0100    0.03  Q     V|      |      |      |
6+35     0.0102    0.03  Q     V|      |      |      |
6+40     0.0105    0.03  Q     V|      |      |      |
6+45     0.0107    0.04  Q     V|      |      |      |
6+50     0.0109    0.03  Q      V|     |      |      |
6+55     0.0112    0.03  Q      V|     |      |      |
7+ 0     0.0114    0.04  Q      V|     |      |      |
7+ 5     0.0117    0.04  Q      V|     |      |      |
7+10     0.0120    0.04  Q      V|     |      |      |
7+15     0.0123    0.04  Q       V     |      |      |
7+20     0.0125    0.03  Q       V     |      |      |
7+25     0.0130    0.07  Q       V     |      |      |
7+30     0.0137    0.11  Q       |V     |      |      |
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APRE2YR35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Pre-development
3-Hr 5-Yr Storm Event

Drainage Area = 1.32(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 87.50(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.017 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.021 Hr.
Lag time = 1.24 Min.
25% of lag time = 0.31 Min.
40% of lag time = 0.50 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	0.88	1.16

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	2.20	2.91

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.877(In)
Area Averaged 100-Year Rainfall = 2.200(In)

Point rain (area averaged) = 1.187(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.187(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.324	83.00	0.059

Total Area Entered = 1.32(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.0	83.0	0.210	0.059	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199

Minimum soil loss rate ((In/Hr)) = 0.099

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.853

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	402.223	65.137	0.869
2	0.167	804.446	34.863	0.465
	Sum = 100.000		Sum=	1.334

Storm Event 3 Effective Rainfall = 0.226(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.035	0.199	0.030	0.01
2	0.17	1.30	0.035	0.199	0.030	0.01
3	0.25	1.10	0.030	0.199	0.025	0.00
4	0.33	1.50	0.041	0.199	0.035	0.01
5	0.42	1.50	0.041	0.199	0.035	0.01
6	0.50	1.80	0.049	0.199	0.042	0.01
7	0.58	1.50	0.041	0.199	0.035	0.01
8	0.67	1.80	0.049	0.199	0.042	0.01
9	0.75	1.80	0.049	0.199	0.042	0.01
10	0.83	1.50	0.041	0.199	0.035	0.01
11	0.92	1.60	0.043	0.199	0.037	0.01
12	1.00	1.80	0.049	0.199	0.042	0.01
13	1.08	2.20	0.060	0.199	0.051	0.01
14	1.17	2.20	0.060	0.199	0.051	0.01
15	1.25	2.20	0.060	0.199	0.051	0.01
16	1.33	2.00	0.054	0.199	0.046	0.01
17	1.42	2.60	0.070	0.199	0.060	0.01
18	1.50	2.70	0.073	0.199	0.062	0.01
19	1.58	2.40	0.065	0.199	0.055	0.01
20	1.67	2.70	0.073	0.199	0.062	0.01
21	1.75	3.30	0.089	0.199	0.076	0.01
22	1.83	3.10	0.084	0.199	0.072	0.01
23	1.92	2.90	0.078	0.199	0.067	0.01
24	2.00	3.00	0.081	0.199	0.069	0.01
25	2.08	3.10	0.084	0.199	0.072	0.01
26	2.17	4.20	0.114	0.199	0.097	0.02
27	2.25	5.00	0.135	0.199	0.115	0.02
28	2.33	3.50	0.095	0.199	0.081	0.01
29	2.42	6.80	0.184	0.199	0.157	0.03

30	2.50	7.30	0.198	0.199	0.169	0.03
31	2.58	8.20	0.222	0.199	---	0.02
32	2.67	5.90	0.160	0.199	0.136	0.02
33	2.75	2.00	0.054	0.199	0.046	0.01
34	2.83	1.80	0.049	0.199	0.042	0.01
35	2.92	1.80	0.049	0.199	0.042	0.01
36	3.00	0.60	0.016	0.199	0.014	0.00
Sum =		100.0			Sum =	0.4

Flood volume = Effective rainfall 0.03(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.19(In)
Total soil loss = 0.021(Ac.Ft)
Total rainfall = 0.23(In)
Flood volume = 155.4 Cubic Feet
Total soil loss = 928.4 Cubic Feet

Storm Event 2 Effective Rainfall = 0.427(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.067	0.199	0.057	0.01
2	0.17	1.30	0.067	0.199	0.057	0.01
3	0.25	1.10	0.056	0.199	0.048	0.01
4	0.33	1.50	0.077	0.199	0.066	0.01
5	0.42	1.50	0.077	0.199	0.066	0.01
6	0.50	1.80	0.092	0.199	0.079	0.01
7	0.58	1.50	0.077	0.199	0.066	0.01
8	0.67	1.80	0.092	0.199	0.079	0.01
9	0.75	1.80	0.092	0.199	0.079	0.01
10	0.83	1.50	0.077	0.199	0.066	0.01
11	0.92	1.60	0.082	0.199	0.070	0.01
12	1.00	1.80	0.092	0.199	0.079	0.01
13	1.08	2.20	0.113	0.199	0.096	0.02
14	1.17	2.20	0.113	0.199	0.096	0.02
15	1.25	2.20	0.113	0.199	0.096	0.02
16	1.33	2.00	0.103	0.199	0.087	0.02
17	1.42	2.60	0.133	0.199	0.114	0.02
18	1.50	2.70	0.138	0.199	0.118	0.02
19	1.58	2.40	0.123	0.199	0.105	0.02
20	1.67	2.70	0.138	0.199	0.118	0.02
21	1.75	3.30	0.169	0.199	0.144	0.02
22	1.83	3.10	0.159	0.199	0.136	0.02
23	1.92	2.90	0.149	0.199	0.127	0.02
24	2.00	3.00	0.154	0.199	0.131	0.02
25	2.08	3.10	0.159	0.199	0.136	0.02
26	2.17	4.20	0.215	0.199	---	0.02
27	2.25	5.00	0.256	0.199	---	0.06
28	2.33	3.50	0.179	0.199	0.153	0.03
29	2.42	6.80	0.349	0.199	---	0.15
30	2.50	7.30	0.374	0.199	---	0.18
31	2.58	8.20	0.420	0.199	---	0.22
32	2.67	5.90	0.303	0.199	---	0.10
33	2.75	2.00	0.103	0.199	0.087	0.02
34	2.83	1.80	0.092	0.199	0.079	0.01
35	2.92	1.80	0.092	0.199	0.079	0.01
36	3.00	0.60	0.031	0.199	0.026	0.00
Sum =		100.0			Sum =	1.2

Flood volume = Effective rainfall 0.10(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.33(In)
Total soil loss = 0.036(Ac.Ft)
Total rainfall = 0.43(In)
Flood volume = 479.3 Cubic Feet
Total soil loss = 1574.2 Cubic Feet

Storm Event 1 Effective Rainfall = 1.187(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1 0.08	1.30	0.185	0.199	0.158	0.03
2 0.17	1.30	0.185	0.199	0.158	0.03
3 0.25	1.10	0.157	0.199	0.134	0.02
4 0.33	1.50	0.214	0.199	---	0.01
5 0.42	1.50	0.214	0.199	---	0.01
6 0.50	1.80	0.256	0.199	---	0.06
7 0.58	1.50	0.214	0.199	---	0.01
8 0.67	1.80	0.256	0.199	---	0.06
9 0.75	1.80	0.256	0.199	---	0.06
10 0.83	1.50	0.214	0.199	---	0.01
11 0.92	1.60	0.228	0.199	---	0.03
12 1.00	1.80	0.256	0.199	---	0.06
13 1.08	2.20	0.313	0.199	---	0.11
14 1.17	2.20	0.313	0.199	---	0.11
15 1.25	2.20	0.313	0.199	---	0.11
16 1.33	2.00	0.285	0.199	---	0.09
17 1.42	2.60	0.370	0.199	---	0.17
18 1.50	2.70	0.385	0.199	---	0.19
19 1.58	2.40	0.342	0.199	---	0.14
20 1.67	2.70	0.385	0.199	---	0.19
21 1.75	3.30	0.470	0.199	---	0.27
22 1.83	3.10	0.442	0.199	---	0.24
23 1.92	2.90	0.413	0.199	---	0.21
24 2.00	3.00	0.427	0.199	---	0.23
25 2.08	3.10	0.442	0.199	---	0.24
26 2.17	4.20	0.598	0.199	---	0.40
27 2.25	5.00	0.712	0.199	---	0.51
28 2.33	3.50	0.498	0.199	---	0.30
29 2.42	6.80	0.968	0.199	---	0.77
30 2.50	7.30	1.040	0.199	---	0.84
31 2.58	8.20	1.168	0.199	---	0.97
32 2.67	5.90	0.840	0.199	---	0.64
33 2.75	2.00	0.285	0.199	---	0.09
34 2.83	1.80	0.256	0.199	---	0.06
35 2.92	1.80	0.256	0.199	---	0.06
36 3.00	0.60	0.085	0.199	0.073	0.01
Sum =	100.0		Sum =	7.4	

Flood volume = Effective rainfall 0.61(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.57(In)
Total soil loss = 0.063(Ac.Ft)
Total rainfall = 1.19(In)
Flood volume = 2948.9 Cubic Feet
Total soil loss = 2755.4 Cubic Feet

Peak flow rate of this hydrograph = 1.234(CFS)

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TOTAL OF: 3 3 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0001	0.01	Q	|	|	|	|
0+15	0.0001	0.01	Q	|	|	|	|

0+20	0.0002	0.01	Q	|	|	|	|
0+25	0.0002	0.01	Q	|	|	|	|
0+30	0.0003	0.01	Q	|	|	|	|
0+35	0.0003	0.01	Q	|	|	|	|
0+40	0.0004	0.01	Q	|	|	|	|
0+45	0.0005	0.01	Q	|	|	|	|
0+50	0.0005	0.01	Q	|	|	|	|
0+55	0.0006	0.01	Q	|	|	|	|
1+ 0	0.0007	0.01	Q	|	|	|	|
1+ 5	0.0007	0.01	Q	|	|	|	|
1+10	0.0008	0.01	Q	|	|	|	|
1+15	0.0009	0.01	Q	|	|	|	|
1+20	0.0010	0.01	Q	|	|	|	|
1+25	0.0011	0.01	Q	|	|	|	|
1+30	0.0011	0.01	Q	|	|	|	|
1+35	0.0012	0.01	Q	|	|	|	|
1+40	0.0013	0.01	Q	|	|	|	|
1+45	0.0014	0.02	Q	|	|	|	|
1+50	0.0016	0.02	Q	|	|	|	|
1+55	0.0017	0.02	Q	|	|	|	|
2+ 0	0.0018	0.02	Q	|	|	|	|
2+ 5	0.0019	0.02	Q	|	|	|	|
2+10	0.0020	0.02	Q	|	|	|	|
2+15	0.0022	0.03	QV	|	|	|	|
2+20	0.0024	0.02	QV	|	|	|	|
2+25	0.0026	0.03	QV	|	|	|	|
2+30	0.0028	0.04	QV	|	|	|	|
2+35	0.0031	0.03	QV	|	|	|	|
2+40	0.0033	0.03	QV	|	|	|	|
2+45	0.0034	0.02	QV	|	|	|	|
2+50	0.0035	0.01	QV	|	|	|	|
2+55	0.0035	0.01	QV	|	|	|	|
3+ 0	0.0036	0.01	QV	|	|	|	|
3+ 5	0.0036	0.01	QV	|	|	|	|
3+10	0.0037	0.01	QV	|	|	|	|
3+15	0.0038	0.01	QV	|	|	|	|
3+20	0.0039	0.01	QV	|	|	|	|
3+25	0.0040	0.02	QV	|	|	|	|
3+30	0.0041	0.02	QV	|	|	|	|
3+35	0.0042	0.02	Q V	|	|	|	|
3+40	0.0043	0.02	Q V	|	|	|	|
3+45	0.0045	0.02	Q V	|	|	|	|
3+50	0.0046	0.02	Q V	|	|	|	|
3+55	0.0047	0.02	Q V	|	|	|	|
4+ 0	0.0048	0.02	Q V	|	|	|	|
4+ 5	0.0049	0.02	Q V	|	|	|	|
4+10	0.0051	0.02	Q V	|	|	|	|
4+15	0.0052	0.02	Q V	|	|	|	|
4+20	0.0054	0.02	Q V	|	|	|	|
4+25	0.0056	0.02	Q V	|	|	|	|
4+30	0.0057	0.03	Q V	|	|	|	|
4+35	0.0059	0.03	Q V	|	|	|	|
4+40	0.0061	0.03	Q V	|	|	|	|
4+45	0.0063	0.03	Q V	|	|	|	|
4+50	0.0065	0.03	Q V	|	|	|	|
4+55	0.0067	0.03	Q V	|	|	|	|
5+ 0	0.0069	0.03	Q V	|	|	|	|
5+ 5	0.0071	0.03	Q V	|	|	|	|
5+10	0.0073	0.03	Q V	|	|	|	|
5+15	0.0077	0.06	Q V	|	|	|	|
5+20	0.0081	0.05	Q V	|	|	|	|
5+25	0.0090	0.14	Q V	|	|	|	|
5+30	0.0106	0.22	Q V	|	|	|	|
5+35	0.0125	0.27	|Q V	|	|	|	|
5+40	0.0138	0.19	Q V	|	|	|	|

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5+45     0.0142    0.06  Q    V  |       |       |       |
5+50     0.0144    0.02  Q    V  |       |       |       |
5+55     0.0145    0.02  Q     V |       |       |       |
6+ 0     0.0145    0.01  Q     V |       |       |       |
6+ 5     0.0147    0.02  Q     V |       |       |       |
6+10     0.0150    0.04  Q     V |       |       |       |
6+15     0.0152    0.03  Q     V |       |       |       |
6+20     0.0153    0.02  Q     V |       |       |       |
6+25     0.0155    0.02  Q     V |       |       |       |
6+30     0.0159    0.06  Q     V |       |       |       |
6+35     0.0162    0.04  Q     V |       |       |       |
6+40     0.0165    0.06  Q      V|       |       |       |
6+45     0.0171    0.08  Q      V|       |       |       |
6+50     0.0174    0.04  Q      V|       |       |       |
6+55     0.0176    0.03  Q      V|       |       |       |
7+ 0     0.0180    0.06  Q     V |       |       |       |
7+ 5     0.0189    0.13  Q      V|       |       |       |
7+10     0.0199    0.15  Q       V|      |       |       |
7+15     0.0210    0.15  Q        V      |       |       |
7+20     0.0219    0.13  Q        V      |       |       |
7+25     0.0232    0.19  Q        |V     |       |       |
7+30     0.0248    0.24  Q        | V    |
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APRE2YR310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

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Area A
Pre-development
3-Hr 10-Yr Storm Event

Drainage Area = 1.32(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 87.50(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.017 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.021 Hr.
Lag time = 1.24 Min.
25% of lag time = 0.31 Min.
40% of lag time = 0.50 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	0.88	1.16

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	2.20	2.91

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.877(In)
Area Averaged 100-Year Rainfall = 2.200(In)

Point rain (area averaged) = 1.421(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.421(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.324	83.00	0.059

Total Area Entered = 1.32(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.0	83.0	0.210	0.059	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199

Minimum soil loss rate ((In/Hr)) = 0.099

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.853

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	402.223	65.137	0.869
2	0.167	804.446	34.863	0.465
		Sum = 100.000	Sum=	1.334

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.222	0.199	---	0.02
2	0.17	1.30	0.222	0.199	---	0.02
3	0.25	1.10	0.188	0.199	0.160	0.03
4	0.33	1.50	0.256	0.199	---	0.06
5	0.42	1.50	0.256	0.199	---	0.06
6	0.50	1.80	0.307	0.199	---	0.11
7	0.58	1.50	0.256	0.199	---	0.06
8	0.67	1.80	0.307	0.199	---	0.11
9	0.75	1.80	0.307	0.199	---	0.11
10	0.83	1.50	0.256	0.199	---	0.06
11	0.92	1.60	0.273	0.199	---	0.07
12	1.00	1.80	0.307	0.199	---	0.11
13	1.08	2.20	0.375	0.199	---	0.18
14	1.17	2.20	0.375	0.199	---	0.18
15	1.25	2.20	0.375	0.199	---	0.18
16	1.33	2.00	0.341	0.199	---	0.14
17	1.42	2.60	0.443	0.199	---	0.24
18	1.50	2.70	0.460	0.199	---	0.26
19	1.58	2.40	0.409	0.199	---	0.21
20	1.67	2.70	0.460	0.199	---	0.26
21	1.75	3.30	0.563	0.199	---	0.36
22	1.83	3.10	0.529	0.199	---	0.33
23	1.92	2.90	0.495	0.199	---	0.30
24	2.00	3.00	0.512	0.199	---	0.31
25	2.08	3.10	0.529	0.199	---	0.33
26	2.17	4.20	0.716	0.199	---	0.52
27	2.25	5.00	0.853	0.199	---	0.65
28	2.33	3.50	0.597	0.199	---	0.40
29	2.42	6.80	1.160	0.199	---	0.96
30	2.50	7.30	1.245	0.199	---	1.05
31	2.58	8.20	1.399	0.199	---	1.20
32	2.67	5.90	1.006	0.199	---	0.81
33	2.75	2.00	0.341	0.199	---	0.14

```
34   2.83    1.80    0.307       0.199     ---         0.11
35   2.92    1.80    0.307       0.199     ---         0.11
36   3.00    0.60    0.102       0.199    0.087        0.02
  Sum =    100.0                          Sum =    10.1
          Flood volume = Effective rainfall     0.84(In)
           times area      1.3(Ac.)/[(In)/(Ft.)] =      0.1(Ac.Ft)
          Total soil loss =     0.58(In)
          Total soil loss =    0.064(Ac.Ft)
          Total rainfall =     1.42(In)
          Flood volume =       4026.6 Cubic Feet
          Total soil loss =    2804.3 Cubic Feet
          ------------------------------------------------------------------------
           Peak flow rate of this hydrograph =     1.530(CFS)
          ------------------------------------------------------------------------
          ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                      3 - H O U R   S T O R M
                    R u n o f f     H y d r o g r a p h
          ------------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

          ------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       2.5      5.0      7.5      10.0
------------------------------------------------------------------------
 0+ 5      0.0001     0.02  Q       |        |        |        |
 0+10      0.0004      0.03  Q       |        |        |        |
 0+15      0.0006      0.03  Q       |        |        |        |
 0+20      0.0010      0.06  Q       |        |        |        |
 0+25      0.0015      0.08  Q       |        |        |        |
 0+30      0.0024      0.12  QV      |        |        |        |
 0+35      0.0031      0.10  QV      |        |        |        |
 0+40      0.0039      0.12  QV      |        |        |        |
 0+45      0.0049      0.14  Q V     |        |        |        |
 0+50      0.0056      0.10  Q V     |        |        |        |
 0+55      0.0062      0.09  Q V     |        |        |        |
 1+ 0      0.0071     0.13  Q  V     |        |        |        |
 1+ 5      0.0085     0.20  Q  V     |        |        |        |
 1+10      0.0101      0.24  Q   V    |        |        |        |
 1+15      0.0118      0.24  Q    V   |        |        |        |
 1+20      0.0132      0.21  Q    V   |        |        |        |
 1+25      0.0151      0.28  |Q    V   |        |        |        |
 1+30      0.0174      0.34  |Q     V  |        |        |        |
 1+35      0.0195      0.31  |Q      V |        |        |        |
 1+40      0.0218      0.33  |Q      V|        |        |        |
 1+45      0.0248      0.44  |Q       V        |        |        |
 1+50      0.0280      0.46  |Q       | V      |        |        |
 1+55      0.0308      0.41  |Q       |  V     |        |        |
 2+ 0      0.0336     0.41  |Q       |   V    |        |        |
 2+ 5      0.0366     0.43  |Q       |    V   |        |        |
 2+10      0.0407      0.60  | Q      |     V  |        |        |
 2+15      0.0463      0.81  |  Q     |      V         |        |
 2+20      0.0508      0.65  | Q      |       |V       |        |
 2+25      0.0578      1.02  |   Q    |       |    V   |        |
 2+30      0.0672      1.36  |    Q   |       |      V|        |
 2+35      0.0777      1.53  |     Q  |       |       |  V     |
 2+40      0.0864      1.26  |    Q   |       |       |     V  |
 2+45      0.0899      0.50  |Q       |       |       |      V |
 2+50      0.0910      0.16  Q        |       |       |      V|
 2+55      0.0920      0.14  Q        |       |       |      V|
 3+ 0      0.0924     0.06  Q        |       |       |      V|
 3+ 5      0.0924     0.01  Q        |       |       |      V|
------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APRE2YR62.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Pre-development
6-Hr 2-Yr Storm Event

Drainage Area = 1.32(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 87.50(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.017 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.021 Hr.
Lag time = 1.24 Min.
25% of lag time = 0.31 Min.
40% of lag time = 0.50 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	1.27	1.68

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	3.12	4.13

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.270(In)
Area Averaged 100-Year Rainfall = 3.120(In)

Point rain (area averaged) = 1.270(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.270(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.324	83.00	0.059

Total Area Entered = 1.32(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.0	83.0	0.210	0.059	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199

Minimum soil loss rate ((In/Hr)) = 0.099

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.853

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	402.223	65.137	0.869
2	0.167	804.446	34.863	0.465
	Sum = 100.000		Sum=	1.334

Storm Event 3 Effective Rainfall = 0.241(In)

	Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.014	0.199	0.012	0.00
2	0.17	0.60	0.017	0.199	0.015	0.00
3	0.25	0.60	0.017	0.199	0.015	0.00
4	0.33	0.60	0.017	0.199	0.015	0.00
5	0.42	0.60	0.017	0.199	0.015	0.00
6	0.50	0.70	0.020	0.199	0.017	0.00
7	0.58	0.70	0.020	0.199	0.017	0.00
8	0.67	0.70	0.020	0.199	0.017	0.00
9	0.75	0.70	0.020	0.199	0.017	0.00
10	0.83	0.70	0.020	0.199	0.017	0.00
11	0.92	0.70	0.020	0.199	0.017	0.00
12	1.00	0.80	0.023	0.199	0.020	0.00
13	1.08	0.80	0.023	0.199	0.020	0.00
14	1.17	0.80	0.023	0.199	0.020	0.00
15	1.25	0.80	0.023	0.199	0.020	0.00
16	1.33	0.80	0.023	0.199	0.020	0.00
17	1.42	0.80	0.023	0.199	0.020	0.00
18	1.50	0.80	0.023	0.199	0.020	0.00
19	1.58	0.80	0.023	0.199	0.020	0.00
20	1.67	0.80	0.023	0.199	0.020	0.00
21	1.75	0.80	0.023	0.199	0.020	0.00
22	1.83	0.80	0.023	0.199	0.020	0.00
23	1.92	0.80	0.023	0.199	0.020	0.00
24	2.00	0.90	0.026	0.199	0.022	0.00
25	2.08	0.80	0.023	0.199	0.020	0.00
26	2.17	0.90	0.026	0.199	0.022	0.00
27	2.25	0.90	0.026	0.199	0.022	0.00
28	2.33	0.90	0.026	0.199	0.022	0.00
29	2.42	0.90	0.026	0.199	0.022	0.00

30	2.50	0.90	0.026	0.199	0.022	0.00
31	2.58	0.90	0.026	0.199	0.022	0.00
32	2.67	0.90	0.026	0.199	0.022	0.00
33	2.75	1.00	0.029	0.199	0.025	0.00
34	2.83	1.00	0.029	0.199	0.025	0.00
35	2.92	1.00	0.029	0.199	0.025	0.00
36	3.00	1.00	0.029	0.199	0.025	0.00
37	3.08	1.00	0.029	0.199	0.025	0.00
38	3.17	1.10	0.032	0.199	0.027	0.00
39	3.25	1.10	0.032	0.199	0.027	0.00
40	3.33	1.10	0.032	0.199	0.027	0.00
41	3.42	1.20	0.035	0.199	0.030	0.01
42	3.50	1.30	0.038	0.199	0.032	0.01
43	3.58	1.40	0.041	0.199	0.035	0.01
44	3.67	1.40	0.041	0.199	0.035	0.01
45	3.75	1.50	0.043	0.199	0.037	0.01
46	3.83	1.50	0.043	0.199	0.037	0.01
47	3.92	1.60	0.046	0.199	0.040	0.01
48	4.00	1.60	0.046	0.199	0.040	0.01
49	4.08	1.70	0.049	0.199	0.042	0.01
50	4.17	1.80	0.052	0.199	0.044	0.01
51	4.25	1.90	0.055	0.199	0.047	0.01
52	4.33	2.00	0.058	0.199	0.049	0.01
53	4.42	2.10	0.061	0.199	0.052	0.01
54	4.50	2.10	0.061	0.199	0.052	0.01
55	4.58	2.20	0.064	0.199	0.054	0.01
56	4.67	2.30	0.067	0.199	0.057	0.01
57	4.75	2.40	0.069	0.199	0.059	0.01
58	4.83	2.40	0.069	0.199	0.059	0.01
59	4.92	2.50	0.072	0.199	0.062	0.01
60	5.00	2.60	0.075	0.199	0.064	0.01
61	5.08	3.10	0.090	0.199	0.077	0.01
62	5.17	3.60	0.104	0.199	0.089	0.02
63	5.25	3.90	0.113	0.199	0.096	0.02
64	5.33	4.20	0.122	0.199	0.104	0.02
65	5.42	4.70	0.136	0.199	0.116	0.02
66	5.50	5.60	0.162	0.199	0.138	0.02
67	5.58	1.90	0.055	0.199	0.047	0.01
68	5.67	0.90	0.026	0.199	0.022	0.00
69	5.75	0.60	0.017	0.199	0.015	0.00
70	5.83	0.50	0.014	0.199	0.012	0.00
71	5.92	0.30	0.009	0.199	0.007	0.00
72	6.00	0.20	0.006	0.199	0.005	0.00
Sum =		100.0			Sum =	0.4

Flood volume = Effective rainfall 0.04(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.21(In)
Total soil loss = 0.023(Ac.Ft)
Total rainfall = 0.24(In)
Flood volume = 170.2 Cubic Feet
Total soil loss = 989.5 Cubic Feet

Storm Event 2 Effective Rainfall = 0.457(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.027	0.199	0.023	0.00
2	0.17	0.60	0.033	0.199	0.028	0.00
3	0.25	0.60	0.033	0.199	0.028	0.00
4	0.33	0.60	0.033	0.199	0.028	0.00
5	0.42	0.60	0.033	0.199	0.028	0.00
6	0.50	0.70	0.038	0.199	0.033	0.01
7	0.58	0.70	0.038	0.199	0.033	0.01
8	0.67	0.70	0.038	0.199	0.033	0.01

9	0.75	0.70	0.038	0.199	0.033	0.01
10	0.83	0.70	0.038	0.199	0.033	0.01
11	0.92	0.70	0.038	0.199	0.033	0.01
12	1.00	0.80	0.044	0.199	0.037	0.01
13	1.08	0.80	0.044	0.199	0.037	0.01
14	1.17	0.80	0.044	0.199	0.037	0.01
15	1.25	0.80	0.044	0.199	0.037	0.01
16	1.33	0.80	0.044	0.199	0.037	0.01
17	1.42	0.80	0.044	0.199	0.037	0.01
18	1.50	0.80	0.044	0.199	0.037	0.01
19	1.58	0.80	0.044	0.199	0.037	0.01
20	1.67	0.80	0.044	0.199	0.037	0.01
21	1.75	0.80	0.044	0.199	0.037	0.01
22	1.83	0.80	0.044	0.199	0.037	0.01
23	1.92	0.80	0.044	0.199	0.037	0.01
24	2.00	0.90	0.049	0.199	0.042	0.01
25	2.08	0.80	0.044	0.199	0.037	0.01
26	2.17	0.90	0.049	0.199	0.042	0.01
27	2.25	0.90	0.049	0.199	0.042	0.01
28	2.33	0.90	0.049	0.199	0.042	0.01
29	2.42	0.90	0.049	0.199	0.042	0.01
30	2.50	0.90	0.049	0.199	0.042	0.01
31	2.58	0.90	0.049	0.199	0.042	0.01
32	2.67	0.90	0.049	0.199	0.042	0.01
33	2.75	1.00	0.055	0.199	0.047	0.01
34	2.83	1.00	0.055	0.199	0.047	0.01
35	2.92	1.00	0.055	0.199	0.047	0.01
36	3.00	1.00	0.055	0.199	0.047	0.01
37	3.08	1.00	0.055	0.199	0.047	0.01
38	3.17	1.10	0.060	0.199	0.051	0.01
39	3.25	1.10	0.060	0.199	0.051	0.01
40	3.33	1.10	0.060	0.199	0.051	0.01
41	3.42	1.20	0.066	0.199	0.056	0.01
42	3.50	1.30	0.071	0.199	0.061	0.01
43	3.58	1.40	0.077	0.199	0.066	0.01
44	3.67	1.40	0.077	0.199	0.066	0.01
45	3.75	1.50	0.082	0.199	0.070	0.01
46	3.83	1.50	0.082	0.199	0.070	0.01
47	3.92	1.60	0.088	0.199	0.075	0.01
48	4.00	1.60	0.088	0.199	0.075	0.01
49	4.08	1.70	0.093	0.199	0.080	0.01
50	4.17	1.80	0.099	0.199	0.084	0.01
51	4.25	1.90	0.104	0.199	0.089	0.02
52	4.33	2.00	0.110	0.199	0.094	0.02
53	4.42	2.10	0.115	0.199	0.098	0.02
54	4.50	2.10	0.115	0.199	0.098	0.02
55	4.58	2.20	0.121	0.199	0.103	0.02
56	4.67	2.30	0.126	0.199	0.108	0.02
57	4.75	2.40	0.132	0.199	0.112	0.02
58	4.83	2.40	0.132	0.199	0.112	0.02
59	4.92	2.50	0.137	0.199	0.117	0.02
60	5.00	2.60	0.143	0.199	0.122	0.02
61	5.08	3.10	0.170	0.199	0.145	0.02
62	5.17	3.60	0.198	0.199	0.169	0.03
63	5.25	3.90	0.214	0.199	---	0.02
64	5.33	4.20	0.230	0.199	---	0.03
65	5.42	4.70	0.258	0.199	---	0.06
66	5.50	5.60	0.307	0.199	---	0.11
67	5.58	1.90	0.104	0.199	0.089	0.02
68	5.67	0.90	0.049	0.199	0.042	0.01
69	5.75	0.60	0.033	0.199	0.028	0.00
70	5.83	0.50	0.027	0.199	0.023	0.00
71	5.92	0.30	0.016	0.199	0.014	0.00
72	6.00	0.20	0.011	0.199	0.009	0.00
	Sum =	100.0			Sum =	0.9

Flood volume = Effective rainfall 0.07(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.38(In)
Total soil loss = 0.042(Ac.Ft)
Total rainfall = 0.46(In)
Flood volume = 349.3 Cubic Feet
Total soil loss = 1848.1 Cubic Feet

Storm Event 1 Effective Rainfall = 1.270(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08 0.50	0.076	0.199	0.065	0.01
2	0.17 0.60	0.091	0.199	0.078	0.01
3	0.25 0.60	0.091	0.199	0.078	0.01
4	0.33 0.60	0.091	0.199	0.078	0.01
5	0.42 0.60	0.091	0.199	0.078	0.01
6	0.50 0.70	0.107	0.199	0.091	0.02
7	0.58 0.70	0.107	0.199	0.091	0.02
8	0.67 0.70	0.107	0.199	0.091	0.02
9	0.75 0.70	0.107	0.199	0.091	0.02
10	0.83 0.70	0.107	0.199	0.091	0.02
11	0.92 0.70	0.107	0.199	0.091	0.02
12	1.00 0.80	0.122	0.199	0.104	0.02
13	1.08 0.80	0.122	0.199	0.104	0.02
14	1.17 0.80	0.122	0.199	0.104	0.02
15	1.25 0.80	0.122	0.199	0.104	0.02
16	1.33 0.80	0.122	0.199	0.104	0.02
17	1.42 0.80	0.122	0.199	0.104	0.02
18	1.50 0.80	0.122	0.199	0.104	0.02
19	1.58 0.80	0.122	0.199	0.104	0.02
20	1.67 0.80	0.122	0.199	0.104	0.02
21	1.75 0.80	0.122	0.199	0.104	0.02
22	1.83 0.80	0.122	0.199	0.104	0.02
23	1.92 0.80	0.122	0.199	0.104	0.02
24	2.00 0.90	0.137	0.199	0.117	0.02
25	2.08 0.80	0.122	0.199	0.104	0.02
26	2.17 0.90	0.137	0.199	0.117	0.02
27	2.25 0.90	0.137	0.199	0.117	0.02
28	2.33 0.90	0.137	0.199	0.117	0.02
29	2.42 0.90	0.137	0.199	0.117	0.02
30	2.50 0.90	0.137	0.199	0.117	0.02
31	2.58 0.90	0.137	0.199	0.117	0.02
32	2.67 0.90	0.137	0.199	0.117	0.02
33	2.75 1.00	0.152	0.199	0.130	0.02
34	2.83 1.00	0.152	0.199	0.130	0.02
35	2.92 1.00	0.152	0.199	0.130	0.02
36	3.00 1.00	0.152	0.199	0.130	0.02
37	3.08 1.00	0.152	0.199	0.130	0.02
38	3.17 1.10	0.168	0.199	0.143	0.02
39	3.25 1.10	0.168	0.199	0.143	0.02
40	3.33 1.10	0.168	0.199	0.143	0.02
41	3.42 1.20	0.183	0.199	0.156	0.03
42	3.50 1.30	0.198	0.199	0.169	0.03
43	3.58 1.40	0.213	0.199	---	0.01
44	3.67 1.40	0.213	0.199	---	0.01
45	3.75 1.50	0.229	0.199	---	0.03
46	3.83 1.50	0.229	0.199	---	0.03
47	3.92 1.60	0.244	0.199	---	0.05
48	4.00 1.60	0.244	0.199	---	0.05
49	4.08 1.70	0.259	0.199	---	0.06
50	4.17 1.80	0.274	0.199	---	0.08
51	4.25 1.90	0.290	0.199	---	0.09
52	4.33 2.00	0.305	0.199	---	0.11

53	4.42	2.10	0.320	0.199	---	0.12
54	4.50	2.10	0.320	0.199	---	0.12
55	4.58	2.20	0.335	0.199	---	0.14
56	4.67	2.30	0.351	0.199	---	0.15
57	4.75	2.40	0.366	0.199	---	0.17
58	4.83	2.40	0.366	0.199	---	0.17
59	4.92	2.50	0.381	0.199	---	0.18
60	5.00	2.60	0.396	0.199	---	0.20
61	5.08	3.10	0.472	0.199	---	0.27
62	5.17	3.60	0.549	0.199	---	0.35
63	5.25	3.90	0.594	0.199	---	0.40
64	5.33	4.20	0.640	0.199	---	0.44
65	5.42	4.70	0.716	0.199	---	0.52
66	5.50	5.60	0.853	0.199	---	0.65
67	5.58	1.90	0.290	0.199	---	0.09
68	5.67	0.90	0.137	0.199	0.117	0.02
69	5.75	0.60	0.091	0.199	0.078	0.01
70	5.83	0.50	0.076	0.199	0.065	0.01
71	5.92	0.30	0.046	0.199	0.039	0.01
72	6.00	0.20	0.030	0.199	0.026	0.00
Sum =		100.0			Sum =	5.3

Flood volume = Effective rainfall 0.44(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.83(In)
Total soil loss = 0.091(Ac.Ft)
Total rainfall = 1.27(In)
Flood volume = 2135.7 Cubic Feet
Total soil loss = 3968.1 Cubic Feet

Peak flow rate of this hydrograph = 0.810(CFS)

++

TOTAL OF: 3 6 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|
0+15	0.0001	0.00	Q	|	|	|	|
0+20	0.0001	0.00	Q	|	|	|	|
0+25	0.0001	0.00	Q	|	|	|	|
0+30	0.0001	0.00	Q	|	|	|	|
0+35	0.0002	0.00	Q	|	|	|	|
0+40	0.0002	0.00	Q	|	|	|	|
0+45	0.0002	0.00	Q	|	|	|	|
0+50	0.0002	0.00	Q	|	|	|	|
0+55	0.0003	0.00	Q	|	|	|	|
1+ 0	0.0003	0.00	Q	|	|	|	|
1+ 5	0.0003	0.00	Q	|	|	|	|
1+10	0.0004	0.00	Q	|	|	|	|
1+15	0.0004	0.00	Q	|	|	|	|
1+20	0.0004	0.00	Q	|	|	|	|
1+25	0.0005	0.00	Q	|	|	|	|
1+30	0.0005	0.00	Q	|	|	|	|
1+35	0.0005	0.00	Q	|	|	|	|
1+40	0.0005	0.00	Q	|	|	|	|
1+45	0.0006	0.00	Q	|	|	|	|
1+50	0.0006	0.00	Q	|	|	|	|
1+55	0.0006	0.00	Q	|	|	|	|
2+ 0	0.0007	0.00	Q	|	|	|	|
2+ 5	0.0007	0.00	Q	|	|	|	|

2+10	0.0007	0.00	Q	|	|	|	|
2+15	0.0008	0.01	Q	|	|	|	|
2+20	0.0008	0.01	Q	|	|	|	|
2+25	0.0008	0.01	Q	|	|	|	|
2+30	0.0009	0.01	Q	|	|	|	|
2+35	0.0009	0.01	Q	|	|	|	|
2+40	0.0010	0.01	Q	|	|	|	|
2+45	0.0010	0.01	Q	|	|	|	|
2+50	0.0010	0.01	Q	|	|	|	|
2+55	0.0011	0.01	Q	|	|	|	|
3+ 0	0.0011	0.01	Q	|	|	|	|
3+ 5	0.0011	0.01	Q	|	|	|	|
3+10	0.0012	0.01	Q	|	|	|	|
3+15	0.0012	0.01	Q	|	|	|	|
3+20	0.0013	0.01	Q	|	|	|	|
3+25	0.0013	0.01	Q	|	|	|	|
3+30	0.0014	0.01	Q	|	|	|	|
3+35	0.0014	0.01	Q	|	|	|	|
3+40	0.0015	0.01	Q	|	|	|	|
3+45	0.0015	0.01	QV	|	|	|	|
3+50	0.0016	0.01	QV	|	|	|	|
3+55	0.0017	0.01	QV	|	|	|	|
4+ 0	0.0017	0.01	QV	|	|	|	|
4+ 5	0.0018	0.01	QV	|	|	|	|
4+10	0.0019	0.01	QV	|	|	|	|
4+15	0.0019	0.01	QV	|	|	|	|
4+20	0.0020	0.01	QV	|	|	|	|
4+25	0.0021	0.01	QV	|	|	|	|
4+30	0.0022	0.01	QV	|	|	|	|
4+35	0.0022	0.01	QV	|	|	|	|
4+40	0.0023	0.01	QV	|	|	|	|
4+45	0.0024	0.01	QV	|	|	|	|
4+50	0.0025	0.01	QV	|	|	|	|
4+55	0.0026	0.01	QV	|	|	|	|
5+ 0	0.0027	0.01	QV	|	|	|	|
5+ 5	0.0028	0.02	QV	|	|	|	|
5+10	0.0030	0.02	QV	|	|	|	|
5+15	0.0031	0.02	Q V	|	|	|	|
5+20	0.0033	0.02	Q V	|	|	|	|
5+25	0.0035	0.03	Q V	|	|	|	|
5+30	0.0037	0.03	Q V	|	|	|	|
5+35	0.0038	0.02	Q V	|	|	|	|
5+40	0.0038	0.01	Q V	|	|	|	|
5+45	0.0039	0.00	Q V	|	|	|	|
5+50	0.0039	0.00	Q V	|	|	|	|
5+55	0.0039	0.00	Q V	|	|	|	|
6+ 0	0.0039	0.00	Q V	|	|	|	|
6+ 5	0.0039	0.00	Q V	|	|	|	|
6+10	0.0040	0.01	Q V	|	|	|	|
6+15	0.0040	0.01	Q V	|	|	|	|
6+20	0.0041	0.01	Q V	|	|	|	|
6+25	0.0041	0.01	Q V	|	|	|	|
6+30	0.0042	0.01	Q V	|	|	|	|
6+35	0.0042	0.01	Q V	|	|	|	|
6+40	0.0043	0.01	Q V	|	|	|	|
6+45	0.0043	0.01	Q V	|	|	|	|
6+50	0.0044	0.01	Q V	|	|	|	|
6+55	0.0044	0.01	Q V	|	|	|	|
7+ 0	0.0045	0.01	Q V	|	|	|	|
7+ 5	0.0045	0.01	Q V	|	|	|	|
7+10	0.0046	0.01	Q V	|	|	|	|
7+15	0.0046	0.01	Q V	|	|	|	|
7+20	0.0047	0.01	Q V	|	|	|	|
7+25	0.0048	0.01	Q V	|	|	|	|
7+30	0.0048	0.01	Q V	|	|	|	|

7+35	0.0049	0.01	Q	V		
7+40	0.0049	0.01	Q	V		
7+45	0.0050	0.01	Q	V		
7+50	0.0051	0.01	Q	V		
7+55	0.0051	0.01	Q	V		
8+ 0	0.0052	0.01	Q	V		
8+ 5	0.0052	0.01	Q	V		
8+10	0.0053	0.01	Q	V		
8+15	0.0054	0.01	Q	V		
8+20	0.0054	0.01	Q	V		
8+25	0.0055	0.01	Q	V		
8+30	0.0056	0.01	Q	V		
8+35	0.0056	0.01	Q	V		
8+40	0.0057	0.01	Q	V		
8+45	0.0058	0.01	Q	V		
8+50	0.0059	0.01	Q	V		
8+55	0.0059	0.01	Q	V		
9+ 0	0.0060	0.01	Q	V		
9+ 5	0.0061	0.01	Q	V		
9+10	0.0062	0.01	Q	V		
9+15	0.0062	0.01	Q	V		
9+20	0.0063	0.01	Q	V		
9+25	0.0064	0.01	Q	V		
9+30	0.0065	0.01	Q	V		
9+35	0.0066	0.01	Q	V		
9+40	0.0067	0.02	Q	V		
9+45	0.0068	0.02	Q	V		
9+50	0.0069	0.02	Q	V		
9+55	0.0070	0.02	Q	V		
10+ 0	0.0072	0.02	Q	V		
10+ 5	0.0073	0.02	Q	V		
10+10	0.0074	0.02	Q	V		
10+15	0.0076	0.02	Q	V		
10+20	0.0077	0.02	Q	V		
10+25	0.0079	0.02	Q	V		
10+30	0.0080	0.02	Q	V		
10+35	0.0082	0.02	Q	V		
10+40	0.0083	0.02	Q	V		
10+45	0.0085	0.03	Q	V		
10+50	0.0087	0.03	Q	V		
10+55	0.0089	0.03	Q	V		
11+ 0	0.0091	0.03	Q	V		
11+ 5	0.0093	0.03	Q	V		
11+10	0.0095	0.04	Q	V		
11+15	0.0097	0.03	Q	V		
11+20	0.0100	0.03	Q	V		
11+25	0.0104	0.07	Q	V		
11+30	0.0112	0.12	Q	V		
11+35	0.0117	0.06	Q	V		
11+40	0.0118	0.01	Q	V		
11+45	0.0118	0.01	Q	V		
11+50	0.0119	0.01	Q	V		
11+55	0.0119	0.00	Q	V		
12+ 0	0.0119	0.00	Q	V		
12+ 5	0.0120	0.01	Q	V		
12+10	0.0121	0.02	Q	V		
12+15	0.0122	0.02	Q	V		
12+20	0.0123	0.02	Q	V		
12+25	0.0125	0.02	Q	V		
12+30	0.0126	0.02	Q	V		
12+35	0.0128	0.02	Q	V		
12+40	0.0129	0.02	Q	V		
12+45	0.0130	0.02	Q	V		
12+50	0.0132	0.02	Q	V		
12+55	0.0133	0.02	Q	V		

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13+ 0     0.0135    0.02  Q     V |       |       |       |
13+ 5     0.0137    0.02  Q     V |       |       |       |
13+10     0.0138    0.02  Q      V|       |       |       |
13+15     0.0140    0.02  Q      V|       |       |       |
13+20     0.0141    0.02  Q      V|       |       |       |
13+25     0.0143    0.02  Q      V|       |       |       |
13+30     0.0145    0.02  Q      V|       |       |       |
13+35     0.0146    0.02  Q      V|       |       |       |
13+40     0.0148    0.02  Q      V|       |       |       |
13+45     0.0150    0.02  Q      V|       |       |       |
13+50     0.0151    0.02  Q      V|       |       |       |
13+55     0.0153    0.02  Q       V       |       |       |
14+ 0     0.0155    0.03  Q       V       |       |       |
14+ 5     0.0156    0.02  Q       V       |       |       |
14+10     0.0158    0.03  Q       V       |       |       |
14+15     0.0160    0.03  Q       V       |       |       |
14+20     0.0162    0.03  Q       V       |       |       |
14+25     0.0164    0.03  Q       V       |       |       |
14+30     0.0166    0.03  Q       V       |       |       |
14+35     0.0167    0.03  Q       V       |       |       |
14+40     0.0169    0.03  Q       |V      |       |       |
14+45     0.0171    0.03  Q       |V      |       |       |
14+50     0.0173    0.03  Q       |V      |       |       |
14+55     0.0175    0.03  Q       |V      |       |       |
15+ 0     0.0178    0.03  Q       |V      |       |       |
15+ 5     0.0180    0.03  Q       |V      |       |       |
15+10     0.0182    0.03  Q       |V      |       |       |
15+15     0.0184    0.03  Q       | V     |       |       |
15+20     0.0186    0.03  Q       | V     |       |       |
15+25     0.0189    0.03  Q       | V     |       |       |
15+30     0.0191    0.04  Q       | V     |       |       |
15+35     0.0193    0.03  Q       | V     |       |       |
15+40     0.0194    0.02  Q       | V     |       |       |
15+45     0.0197    0.03  Q       | V     |       |       |
15+50     0.0199    0.04  Q       |  V    |       |       |
15+55     0.0203    0.05  Q       |  V    |       |       |
16+ 0     0.0207    0.06  Q       |  V    |       |       |
16+ 5     0.0212    0.07  Q       |  V    |       |       |
16+10     0.0219    0.09  Q       |   V   |       |       |
16+15     0.0227    0.11  Q       |   V   |       |       |
16+20     0.0236    0.13  Q       |    V  |       |       |
16+25     0.0247    0.15  Q       |    V  |       |       |
16+30     0.0258    0.16  Q       |    V  |       |       |
16+35     0.0270    0.18  Q       |     V |       |       |
16+40     0.0283    0.20  Q       |     V |       |       |
16+45     0.0298    0.22  Q       |      V|       |       |
16+50     0.0314    0.22  Q       |       V       |       |
16+55     0.0330    0.24  Q       |       |V      |       |
17+ 0     0.0348    0.26  |Q      |       | V     |       |
17+ 5     0.0370    0.33  |Q      |       |  V    |       |
17+10     0.0400    0.43  |Q      |       |    V  |       |
17+15     0.0435    0.51  | Q     |       |     V |       |
17+20     0.0474    0.57  | Q
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APRE2YR65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Pre-development
6-Hr 5-Year Storm Event

Drainage Area = 1.32(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 87.50(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.017 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.021 Hr.
Lag time = 1.24 Min.
25% of lag time = 0.31 Min.
40% of lag time = 0.50 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	1.27	1.68

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	3.12	4.13

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.270(In)
Area Averaged 100-Year Rainfall = 3.120(In)

Point rain (area averaged) = 1.703(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.703(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.324	83.00	0.059

Total Area Entered = 1.32(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.0	83.0	0.210	0.059	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199

Minimum soil loss rate ((In/Hr)) = 0.099

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.853

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	402.223	65.137	0.869
2	0.167	804.446	34.863	0.465
	Sum = 100.000		Sum=	1.334

Storm Event 3 Effective Rainfall = 0.324(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.019	0.199	0.017	0.00
2	0.17	0.60	0.023	0.199	0.020	0.00
3	0.25	0.60	0.023	0.199	0.020	0.00
4	0.33	0.60	0.023	0.199	0.020	0.00
5	0.42	0.60	0.023	0.199	0.020	0.00
6	0.50	0.70	0.027	0.199	0.023	0.00
7	0.58	0.70	0.027	0.199	0.023	0.00
8	0.67	0.70	0.027	0.199	0.023	0.00
9	0.75	0.70	0.027	0.199	0.023	0.00
10	0.83	0.70	0.027	0.199	0.023	0.00
11	0.92	0.70	0.027	0.199	0.023	0.00
12	1.00	0.80	0.031	0.199	0.027	0.00
13	1.08	0.80	0.031	0.199	0.027	0.00
14	1.17	0.80	0.031	0.199	0.027	0.00
15	1.25	0.80	0.031	0.199	0.027	0.00
16	1.33	0.80	0.031	0.199	0.027	0.00
17	1.42	0.80	0.031	0.199	0.027	0.00
18	1.50	0.80	0.031	0.199	0.027	0.00
19	1.58	0.80	0.031	0.199	0.027	0.00
20	1.67	0.80	0.031	0.199	0.027	0.00
21	1.75	0.80	0.031	0.199	0.027	0.00
22	1.83	0.80	0.031	0.199	0.027	0.00
23	1.92	0.80	0.031	0.199	0.027	0.00
24	2.00	0.90	0.035	0.199	0.030	0.01
25	2.08	0.80	0.031	0.199	0.027	0.00
26	2.17	0.90	0.035	0.199	0.030	0.01
27	2.25	0.90	0.035	0.199	0.030	0.01
28	2.33	0.90	0.035	0.199	0.030	0.01
29	2.42	0.90	0.035	0.199	0.030	0.01

30	2.50	0.90	0.035	0.199	0.030	0.01
31	2.58	0.90	0.035	0.199	0.030	0.01
32	2.67	0.90	0.035	0.199	0.030	0.01
33	2.75	1.00	0.039	0.199	0.033	0.01
34	2.83	1.00	0.039	0.199	0.033	0.01
35	2.92	1.00	0.039	0.199	0.033	0.01
36	3.00	1.00	0.039	0.199	0.033	0.01
37	3.08	1.00	0.039	0.199	0.033	0.01
38	3.17	1.10	0.043	0.199	0.036	0.01
39	3.25	1.10	0.043	0.199	0.036	0.01
40	3.33	1.10	0.043	0.199	0.036	0.01
41	3.42	1.20	0.047	0.199	0.040	0.01
42	3.50	1.30	0.050	0.199	0.043	0.01
43	3.58	1.40	0.054	0.199	0.046	0.01
44	3.67	1.40	0.054	0.199	0.046	0.01
45	3.75	1.50	0.058	0.199	0.050	0.01
46	3.83	1.50	0.058	0.199	0.050	0.01
47	3.92	1.60	0.062	0.199	0.053	0.01
48	4.00	1.60	0.062	0.199	0.053	0.01
49	4.08	1.70	0.066	0.199	0.056	0.01
50	4.17	1.80	0.070	0.199	0.060	0.01
51	4.25	1.90	0.074	0.199	0.063	0.01
52	4.33	2.00	0.078	0.199	0.066	0.01
53	4.42	2.10	0.082	0.199	0.070	0.01
54	4.50	2.10	0.082	0.199	0.070	0.01
55	4.58	2.20	0.085	0.199	0.073	0.01
56	4.67	2.30	0.089	0.199	0.076	0.01
57	4.75	2.40	0.093	0.199	0.080	0.01
58	4.83	2.40	0.093	0.199	0.080	0.01
59	4.92	2.50	0.097	0.199	0.083	0.01
60	5.00	2.60	0.101	0.199	0.086	0.01
61	5.08	3.10	0.120	0.199	0.103	0.02
62	5.17	3.60	0.140	0.199	0.119	0.02
63	5.25	3.90	0.151	0.199	0.129	0.02
64	5.33	4.20	0.163	0.199	0.139	0.02
65	5.42	4.70	0.183	0.199	0.156	0.03
66	5.50	5.60	0.217	0.199	---	0.02
67	5.58	1.90	0.074	0.199	0.063	0.01
68	5.67	0.90	0.035	0.199	0.030	0.01
69	5.75	0.60	0.023	0.199	0.020	0.00
70	5.83	0.50	0.019	0.199	0.017	0.00
71	5.92	0.30	0.012	0.199	0.010	0.00
72	6.00	0.20	0.008	0.199	0.007	0.00
Sum =		100.0			Sum =	0.6

Flood volume = Effective rainfall 0.05(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.28(In)
Total soil loss = 0.031(Ac.Ft)
Total rainfall = 0.32(In)
Flood volume = 223.1 Cubic Feet
Total soil loss = 1332.3 Cubic Feet

Storm Event 2 Effective Rainfall = 0.613(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.037	0.199	0.031	0.01
2	0.17	0.60	0.044	0.199	0.038	0.01
3	0.25	0.60	0.044	0.199	0.038	0.01
4	0.33	0.60	0.044	0.199	0.038	0.01
5	0.42	0.60	0.044	0.199	0.038	0.01
6	0.50	0.70	0.052	0.199	0.044	0.01
7	0.58	0.70	0.052	0.199	0.044	0.01
8	0.67	0.70	0.052	0.199	0.044	0.01

9	0.75	0.70	0.052	0.199	0.044	0.01
10	0.83	0.70	0.052	0.199	0.044	0.01
11	0.92	0.70	0.052	0.199	0.044	0.01
12	1.00	0.80	0.059	0.199	0.050	0.01
13	1.08	0.80	0.059	0.199	0.050	0.01
14	1.17	0.80	0.059	0.199	0.050	0.01
15	1.25	0.80	0.059	0.199	0.050	0.01
16	1.33	0.80	0.059	0.199	0.050	0.01
17	1.42	0.80	0.059	0.199	0.050	0.01
18	1.50	0.80	0.059	0.199	0.050	0.01
19	1.58	0.80	0.059	0.199	0.050	0.01
20	1.67	0.80	0.059	0.199	0.050	0.01
21	1.75	0.80	0.059	0.199	0.050	0.01
22	1.83	0.80	0.059	0.199	0.050	0.01
23	1.92	0.80	0.059	0.199	0.050	0.01
24	2.00	0.90	0.066	0.199	0.057	0.01
25	2.08	0.80	0.059	0.199	0.050	0.01
26	2.17	0.90	0.066	0.199	0.057	0.01
27	2.25	0.90	0.066	0.199	0.057	0.01
28	2.33	0.90	0.066	0.199	0.057	0.01
29	2.42	0.90	0.066	0.199	0.057	0.01
30	2.50	0.90	0.066	0.199	0.057	0.01
31	2.58	0.90	0.066	0.199	0.057	0.01
32	2.67	0.90	0.066	0.199	0.057	0.01
33	2.75	1.00	0.074	0.199	0.063	0.01
34	2.83	1.00	0.074	0.199	0.063	0.01
35	2.92	1.00	0.074	0.199	0.063	0.01
36	3.00	1.00	0.074	0.199	0.063	0.01
37	3.08	1.00	0.074	0.199	0.063	0.01
38	3.17	1.10	0.081	0.199	0.069	0.01
39	3.25	1.10	0.081	0.199	0.069	0.01
40	3.33	1.10	0.081	0.199	0.069	0.01
41	3.42	1.20	0.088	0.199	0.075	0.01
42	3.50	1.30	0.096	0.199	0.082	0.01
43	3.58	1.40	0.103	0.199	0.088	0.02
44	3.67	1.40	0.103	0.199	0.088	0.02
45	3.75	1.50	0.110	0.199	0.094	0.02
46	3.83	1.50	0.110	0.199	0.094	0.02
47	3.92	1.60	0.118	0.199	0.100	0.02
48	4.00	1.60	0.118	0.199	0.100	0.02
49	4.08	1.70	0.125	0.199	0.107	0.02
50	4.17	1.80	0.132	0.199	0.113	0.02
51	4.25	1.90	0.140	0.199	0.119	0.02
52	4.33	2.00	0.147	0.199	0.126	0.02
53	4.42	2.10	0.155	0.199	0.132	0.02
54	4.50	2.10	0.155	0.199	0.132	0.02
55	4.58	2.20	0.162	0.199	0.138	0.02
56	4.67	2.30	0.169	0.199	0.144	0.02
57	4.75	2.40	0.177	0.199	0.151	0.03
58	4.83	2.40	0.177	0.199	0.151	0.03
59	4.92	2.50	0.184	0.199	0.157	0.03
60	5.00	2.60	0.191	0.199	0.163	0.03
61	5.08	3.10	0.228	0.199	---	0.03
62	5.17	3.60	0.265	0.199	---	0.07
63	5.25	3.90	0.287	0.199	---	0.09
64	5.33	4.20	0.309	0.199	---	0.11
65	5.42	4.70	0.346	0.199	---	0.15
66	5.50	5.60	0.412	0.199	---	0.21
67	5.58	1.90	0.140	0.199	0.119	0.02
68	5.67	0.90	0.066	0.199	0.057	0.01
69	5.75	0.60	0.044	0.199	0.038	0.01
70	5.83	0.50	0.037	0.199	0.031	0.01
71	5.92	0.30	0.022	0.199	0.019	0.00
72	6.00	0.20	0.015	0.199	0.013	0.00
	Sum =	100.0			Sum =	1.5

Flood volume = Effective rainfall 0.12(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.49(In)
Total soil loss = 0.054(Ac.Ft)
Total rainfall = 0.61(In)
Flood volume = 586.4 Cubic Feet
Total soil loss = 2360.7 Cubic Feet

Storm Event 1 Effective Rainfall = 1.703(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08 0.50	0.102	0.199	0.087	0.02
2	0.17 0.60	0.123	0.199	0.105	0.02
3	0.25 0.60	0.123	0.199	0.105	0.02
4	0.33 0.60	0.123	0.199	0.105	0.02
5	0.42 0.60	0.123	0.199	0.105	0.02
6	0.50 0.70	0.143	0.199	0.122	0.02
7	0.58 0.70	0.143	0.199	0.122	0.02
8	0.67 0.70	0.143	0.199	0.122	0.02
9	0.75 0.70	0.143	0.199	0.122	0.02
10	0.83 0.70	0.143	0.199	0.122	0.02
11	0.92 0.70	0.143	0.199	0.122	0.02
12	1.00 0.80	0.164	0.199	0.140	0.02
13	1.08 0.80	0.164	0.199	0.140	0.02
14	1.17 0.80	0.164	0.199	0.140	0.02
15	1.25 0.80	0.164	0.199	0.140	0.02
16	1.33 0.80	0.164	0.199	0.140	0.02
17	1.42 0.80	0.164	0.199	0.140	0.02
18	1.50 0.80	0.164	0.199	0.140	0.02
19	1.58 0.80	0.164	0.199	0.140	0.02
20	1.67 0.80	0.164	0.199	0.140	0.02
21	1.75 0.80	0.164	0.199	0.140	0.02
22	1.83 0.80	0.164	0.199	0.140	0.02
23	1.92 0.80	0.164	0.199	0.140	0.02
24	2.00 0.90	0.184	0.199	0.157	0.03
25	2.08 0.80	0.164	0.199	0.140	0.02
26	2.17 0.90	0.184	0.199	0.157	0.03
27	2.25 0.90	0.184	0.199	0.157	0.03
28	2.33 0.90	0.184	0.199	0.157	0.03
29	2.42 0.90	0.184	0.199	0.157	0.03
30	2.50 0.90	0.184	0.199	0.157	0.03
31	2.58 0.90	0.184	0.199	0.157	0.03
32	2.67 0.90	0.184	0.199	0.157	0.03
33	2.75 1.00	0.204	0.199	---	0.01
34	2.83 1.00	0.204	0.199	---	0.01
35	2.92 1.00	0.204	0.199	---	0.01
36	3.00 1.00	0.204	0.199	---	0.01
37	3.08 1.00	0.204	0.199	---	0.01
38	3.17 1.10	0.225	0.199	---	0.03
39	3.25 1.10	0.225	0.199	---	0.03
40	3.33 1.10	0.225	0.199	---	0.03
41	3.42 1.20	0.245	0.199	---	0.05
42	3.50 1.30	0.266	0.199	---	0.07
43	3.58 1.40	0.286	0.199	---	0.09
44	3.67 1.40	0.286	0.199	---	0.09
45	3.75 1.50	0.307	0.199	---	0.11
46	3.83 1.50	0.307	0.199	---	0.11
47	3.92 1.60	0.327	0.199	---	0.13
48	4.00 1.60	0.327	0.199	---	0.13
49	4.08 1.70	0.347	0.199	---	0.15
50	4.17 1.80	0.368	0.199	---	0.17
51	4.25 1.90	0.388	0.199	---	0.19
52	4.33 2.00	0.409	0.199	---	0.21

53	4.42	2.10	0.429	0.199	---	0.23
54	4.50	2.10	0.429	0.199	---	0.23
55	4.58	2.20	0.450	0.199	---	0.25
56	4.67	2.30	0.470	0.199	---	0.27
57	4.75	2.40	0.491	0.199	---	0.29
58	4.83	2.40	0.491	0.199	---	0.29
59	4.92	2.50	0.511	0.199	---	0.31
60	5.00	2.60	0.531	0.199	---	0.33
61	5.08	3.10	0.634	0.199	---	0.43
62	5.17	3.60	0.736	0.199	---	0.54
63	5.25	3.90	0.797	0.199	---	0.60
64	5.33	4.20	0.858	0.199	---	0.66
65	5.42	4.70	0.961	0.199	---	0.76
66	5.50	5.60	1.145	0.199	---	0.95
67	5.58	1.90	0.388	0.199	---	0.19
68	5.67	0.90	0.184	0.199	0.157	0.03
69	5.75	0.60	0.123	0.199	0.105	0.02
70	5.83	0.50	0.102	0.199	0.087	0.02
71	5.92	0.30	0.061	0.199	0.052	0.01
72	6.00	0.20	0.041	0.199	0.035	0.01
Sum =		100.0			Sum =	8.7

Flood volume = Effective rainfall 0.73(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.97(In)
Total soil loss = 0.108(Ac.Ft)
Total rainfall = 1.70(In)
Flood volume = 3501.7 Cubic Feet
Total soil loss = 4684.6 Cubic Feet

Peak flow rate of this hydrograph = 1.177(CFS)

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TOTAL OF: 3 6 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|
0+15	0.0001	0.00	Q	|	|	|	|
0+20	0.0001	0.00	Q	|	|	|	|
0+25	0.0001	0.00	Q	|	|	|	|
0+30	0.0002	0.01	Q	|	|	|	|
0+35	0.0002	0.01	Q	|	|	|	|
0+40	0.0002	0.01	Q	|	|	|	|
0+45	0.0003	0.01	Q	|	|	|	|
0+50	0.0003	0.01	Q	|	|	|	|
0+55	0.0004	0.01	Q	|	|	|	|
1+ 0	0.0004	0.01	Q	|	|	|	|
1+ 5	0.0004	0.01	Q	|	|	|	|
1+10	0.0005	0.01	Q	|	|	|	|
1+15	0.0005	0.01	Q	|	|	|	|
1+20	0.0006	0.01	Q	|	|	|	|
1+25	0.0006	0.01	Q	|	|	|	|
1+30	0.0007	0.01	Q	|	|	|	|
1+35	0.0007	0.01	Q	|	|	|	|
1+40	0.0007	0.01	Q	|	|	|	|
1+45	0.0008	0.01	Q	|	|	|	|
1+50	0.0008	0.01	Q	|	|	|	|
1+55	0.0009	0.01	Q	|	|	|	|
2+ 0	0.0009	0.01	Q	|	|	|	|
2+ 5	0.0009	0.01	Q	|	|	|	|

2+10	0.0010	0.01	Q	|	|	|	|
2+15	0.0010	0.01	Q	|	|	|	|
2+20	0.0011	0.01	Q	|	|	|	|
2+25	0.0011	0.01	Q	|	|	|	|
2+30	0.0012	0.01	Q	|	|	|	|
2+35	0.0012	0.01	Q	|	|	|	|
2+40	0.0013	0.01	Q	|	|	|	|
2+45	0.0013	0.01	Q	|	|	|	|
2+50	0.0014	0.01	Q	|	|	|	|
2+55	0.0014	0.01	Q	|	|	|	|
3+ 0	0.0015	0.01	Q	|	|	|	|
3+ 5	0.0015	0.01	Q	|	|	|	|
3+10	0.0016	0.01	Q	|	|	|	|
3+15	0.0017	0.01	Q	|	|	|	|
3+20	0.0017	0.01	Q	|	|	|	|
3+25	0.0018	0.01	Q	|	|	|	|
3+30	0.0018	0.01	Q	|	|	|	|
3+35	0.0019	0.01	Q	|	|	|	|
3+40	0.0020	0.01	Q	|	|	|	|
3+45	0.0021	0.01	Q	|	|	|	|
3+50	0.0021	0.01	Q	|	|	|	|
3+55	0.0022	0.01	Q	|	|	|	|
4+ 0	0.0023	0.01	Q	|	|	|	|
4+ 5	0.0024	0.01	Q	|	|	|	|
4+10	0.0025	0.01	QV	|	|	|	|
4+15	0.0026	0.01	QV	|	|	|	|
4+20	0.0027	0.01	QV	|	|	|	|
4+25	0.0028	0.02	QV	|	|	|	|
4+30	0.0029	0.02	QV	|	|	|	|
4+35	0.0030	0.02	QV	|	|	|	|
4+40	0.0031	0.02	QV	|	|	|	|
4+45	0.0033	0.02	QV	|	|	|	|
4+50	0.0034	0.02	QV	|	|	|	|
4+55	0.0035	0.02	QV	|	|	|	|
5+ 0	0.0036	0.02	QV	|	|	|	|
5+ 5	0.0038	0.02	QV	|	|	|	|
5+10	0.0040	0.03	QV	|	|	|	|
5+15	0.0042	0.03	QV	|	|	|	|
5+20	0.0044	0.03	QV	|	|	|	|
5+25	0.0046	0.03	QV	|	|	|	|
5+30	0.0048	0.03	QV	|	|	|	|
5+35	0.0050	0.02	Q V	|	|	|	|
5+40	0.0050	0.01	Q V	|	|	|	|
5+45	0.0051	0.01	Q V	|	|	|	|
5+50	0.0051	0.00	Q V	|	|	|	|
5+55	0.0051	0.00	Q V	|	|	|	|
6+ 0	0.0051	0.00	Q V	|	|	|	|
6+ 5	0.0051	0.00	Q V	|	|	|	|
6+10	0.0052	0.01	Q V	|	|	|	|
6+15	0.0053	0.01	Q V	|	|	|	|
6+20	0.0053	0.01	Q V	|	|	|	|
6+25	0.0054	0.01	Q V	|	|	|	|
6+30	0.0055	0.01	Q V	|	|	|	|
6+35	0.0055	0.01	Q V	|	|	|	|
6+40	0.0056	0.01	Q V	|	|	|	|
6+45	0.0057	0.01	Q V	|	|	|	|
6+50	0.0057	0.01	Q V	|	|	|	|
6+55	0.0058	0.01	Q V	|	|	|	|
7+ 0	0.0059	0.01	Q V	|	|	|	|
7+ 5	0.0060	0.01	Q V	|	|	|	|
7+10	0.0060	0.01	Q V	|	|	|	|
7+15	0.0061	0.01	Q V	|	|	|	|
7+20	0.0062	0.01	Q V	|	|	|	|
7+25	0.0063	0.01	Q V	|	|	|	|
7+30	0.0064	0.01	Q V	|	|	|	|

7+35	0.0064	0.01	Q	V	|	|	|	|
7+40	0.0065	0.01	Q	V	|	|	|	|
7+45	0.0066	0.01	Q	V	|	|	|	|
7+50	0.0067	0.01	Q	V	|	|	|	|
7+55	0.0067	0.01	Q	V	|	|	|	|
8+ 0	0.0068	0.01	Q	V	|	|	|	|
8+ 5	0.0069	0.01	Q	V	|	|	|	|
8+10	0.0070	0.01	Q	V	|	|	|	|
8+15	0.0071	0.01	Q	V	|	|	|	|
8+20	0.0072	0.01	Q	V	|	|	|	|
8+25	0.0073	0.01	Q	V	|	|	|	|
8+30	0.0074	0.01	Q	V	|	|	|	|
8+35	0.0075	0.01	Q	V	|	|	|	|
8+40	0.0075	0.01	Q	V	|	|	|	|
8+45	0.0076	0.01	Q	V	|	|	|	|
8+50	0.0077	0.01	Q	V	|	|	|	|
8+55	0.0078	0.01	Q	V	|	|	|	|
9+ 0	0.0079	0.01	Q	V	|	|	|	|
9+ 5	0.0080	0.01	Q	V	|	|	|	|
9+10	0.0081	0.02	Q	V	|	|	|	|
9+15	0.0082	0.02	Q	V	|	|	|	|
9+20	0.0084	0.02	Q	V	|	|	|	|
9+25	0.0085	0.02	Q	V	|	|	|	|
9+30	0.0086	0.02	Q	V	|	|	|	|
9+35	0.0087	0.02	Q	V	|	|	|	|
9+40	0.0089	0.02	Q	V	|	|	|	|
9+45	0.0090	0.02	Q	V	|	|	|	|
9+50	0.0092	0.02	Q	V	|	|	|	|
9+55	0.0093	0.02	Q	V	|	|	|	|
10+ 0	0.0095	0.02	Q	V	|	|	|	|
10+ 5	0.0096	0.02	Q	V	|	|	|	|
10+10	0.0098	0.03	Q	V	|	|	|	|
10+15	0.0100	0.03	Q	V	|	|	|	|
10+20	0.0102	0.03	Q	V	|	|	|	|
10+25	0.0104	0.03	Q	V	|	|	|	|
10+30	0.0106	0.03	Q	V	|	|	|	|
10+35	0.0108	0.03	Q	V	|	|	|	|
10+40	0.0111	0.03	Q	V	|	|	|	|
10+45	0.0113	0.03	Q	V	|	|	|	|
10+50	0.0115	0.03	Q	V	|	|	|	|
10+55	0.0118	0.04	Q	V	|	|	|	|
11+ 0	0.0120	0.04	Q	V	|	|	|	|
11+ 5	0.0123	0.04	Q	V	|	|	|	|
11+10	0.0128	0.07	Q	V	|	|	|	|
11+15	0.0135	0.11	Q	V	|	|	|	|
11+20	0.0145	0.14	Q	V	|	|	|	|
11+25	0.0157	0.18	Q	V	|	|	|	|
11+30	0.0175	0.25	|Q	V	|	|	|	|
11+35	0.0183	0.12	Q	V	|	|	|	|
11+40	0.0184	0.02	Q	V	|	|	|	|
11+45	0.0185	0.01	Q	V	|	|	|	|
11+50	0.0185	0.01	Q	V	|	|	|	|
11+55	0.0185	0.01	Q	V	|	|	|	|
12+ 0	0.0186	0.00	Q	V	|	|	|	|
12+ 5	0.0187	0.01	Q	V	|	|	|	|
12+10	0.0188	0.02	Q	V	|	|	|	|
12+15	0.0190	0.02	Q	V	|	|	|	|
12+20	0.0191	0.02	Q	V	|	|	|	|
12+25	0.0193	0.02	Q	V	|	|	|	|
12+30	0.0195	0.03	Q	V	|	|	|	|
12+35	0.0197	0.03	Q	V	|	|	|	|
12+40	0.0199	0.03	Q	V	|	|	|	|
12+45	0.0201	0.03	Q	V	|	|	|	|
12+50	0.0203	0.03	Q	V	|	|	|	|
12+55	0.0205	0.03	Q	V	|	|	|	|

```
13+ 0    0.0207    0.03  Q     V |       |       |       |
13+ 5    0.0209    0.03  Q     V |       |       |       |
13+10    0.0211    0.03  Q     V |       |       |       |
13+15    0.0213    0.03  Q     V |       |       |       |
13+20    0.0216    0.03  Q     V |       |       |       |
13+25    0.0218    0.03  Q     V |       |       |       |
13+30    0.0220    0.03  Q     V |       |       |       |
13+35    0.0222    0.03  Q     V |       |       |       |
13+40    0.0224    0.03  Q      V|       |       |       |
13+45    0.0227    0.03  Q      V|       |       |       |
13+50    0.0229    0.03  Q      V|       |       |       |
13+55    0.0231    0.03  Q      V|       |       |       |
14+ 0    0.0233    0.03  Q      V|       |       |       |
14+ 5    0.0236    0.03  Q      V|       |       |       |
14+10    0.0238    0.03  Q      V|       |       |       |
14+15    0.0241    0.04  Q      V|       |       |       |
14+20    0.0243    0.04  Q      V|       |       |       |
14+25    0.0246    0.04  Q      V|       |       |       |
14+30    0.0248    0.04  Q       V       |       |       |
14+35    0.0251    0.04  Q       V       |       |       |
14+40    0.0253    0.04  Q       V       |       |       |
14+45    0.0254    0.02  Q       V       |       |       |
14+50    0.0255    0.01  Q       V       |       |       |
14+55    0.0255    0.01  Q       V       |       |       |
15+ 0    0.0256    0.01  Q       V       |       |       |
15+ 5    0.0256    0.01  Q       V       |       |       |
15+10    0.0258    0.03  Q       V       |       |       |
15+15    0.0260    0.03  Q       V       |       |       |
15+20    0.0263    0.03  Q       V       |       |       |
15+25    0.0267    0.05  Q       V       |       |       |
15+30    0.0272    0.08  Q       V       |       |       |
15+35    0.0279    0.11  Q       |V      |       |       |
15+40    0.0287    0.12  Q       |V      |       |       |
15+45    0.0297    0.13  Q       |V      |       |       |
15+50    0.0307    0.14  Q       | V     |       |       |
15+55    0.0318    0.16  Q       | V     |       |       |
16+ 0    0.0330    0.17  Q       |  V    |       |       |
16+ 5    0.0343    0.19  Q       |  V    |       |       |
16+10    0.0358    0.22  Q       |   V   |       |       |
16+15    0.0374    0.24  Q       |   V   |       |       |
16+20    0.0393    0.27  |Q      |    V  |       |       |
16+25    0.0414    0.30  |Q      |    V  |       |       |
16+30    0.0435    0.31  |Q      |     V |       |       |
16+35    0.0457    0.33  |Q      |     V |       |       |
16+40    0.0481    0.35  |Q      |      V|       |       |
16+45    0.0508    0.38  |Q      |       V       |       |
16+50    0.0534    0.39  |Q      |       |V      |       |
16+55    0.0563    0.41  |Q      |       | V     |       |
17+ 0    0.0592    0.43  |Q      |       |  V    |       |
17+ 5    0.0629    0.53  | Q     |       |   V   |       |
17+10    0.0675    0.67  | Q     |       |     V |       |
17+15    0.0728    0.77  |  Q    |       |      V|       |
17+20    0.0787
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APRE2YR610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Pre-development
6-Hr 10-Yr Storm Event

Drainage Area = 1.32(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 87.50(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.017 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.021 Hr.
Lag time = 1.24 Min.
25% of lag time = 0.31 Min.
40% of lag time = 0.50 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	1.27	1.68

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	3.12	4.13

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.270(In)
Area Averaged 100-Year Rainfall = 3.120(In)

Point rain (area averaged) = 2.031(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.031(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.324	83.00	0.059

Total Area Entered = 1.32(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.0	83.0	0.210	0.059	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199
Minimum soil loss rate ((In/Hr)) = 0.099
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.853

U n i t H y d r o g r a p h
DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	402.223	65.137	0.869
2	0.167	804.446	34.863	0.465
	Sum = 100.000		Sum=	1.334

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.122	0.199	0.104	0.02
2	0.17	0.60	0.146	0.199	0.125	0.02
3	0.25	0.60	0.146	0.199	0.125	0.02
4	0.33	0.60	0.146	0.199	0.125	0.02
5	0.42	0.60	0.146	0.199	0.125	0.02
6	0.50	0.70	0.171	0.199	0.146	0.03
7	0.58	0.70	0.171	0.199	0.146	0.03
8	0.67	0.70	0.171	0.199	0.146	0.03
9	0.75	0.70	0.171	0.199	0.146	0.03
10	0.83	0.70	0.171	0.199	0.146	0.03
11	0.92	0.70	0.171	0.199	0.146	0.03
12	1.00	0.80	0.195	0.199	0.166	0.03
13	1.08	0.80	0.195	0.199	0.166	0.03
14	1.17	0.80	0.195	0.199	0.166	0.03
15	1.25	0.80	0.195	0.199	0.166	0.03
16	1.33	0.80	0.195	0.199	0.166	0.03
17	1.42	0.80	0.195	0.199	0.166	0.03
18	1.50	0.80	0.195	0.199	0.166	0.03
19	1.58	0.80	0.195	0.199	0.166	0.03
20	1.67	0.80	0.195	0.199	0.166	0.03
21	1.75	0.80	0.195	0.199	0.166	0.03
22	1.83	0.80	0.195	0.199	0.166	0.03
23	1.92	0.80	0.195	0.199	0.166	0.03
24	2.00	0.90	0.219	0.199	---	0.02
25	2.08	0.80	0.195	0.199	0.166	0.03
26	2.17	0.90	0.219	0.199	---	0.02
27	2.25	0.90	0.219	0.199	---	0.02
28	2.33	0.90	0.219	0.199	---	0.02
29	2.42	0.90	0.219	0.199	---	0.02
30	2.50	0.90	0.219	0.199	---	0.02
31	2.58	0.90	0.219	0.199	---	0.02
32	2.67	0.90	0.219	0.199	---	0.02
33	2.75	1.00	0.244	0.199	---	0.05
34	2.83	1.00	0.244	0.199	---	0.05
35	2.92	1.00	0.244	0.199	---	0.05
36	3.00	1.00	0.244	0.199	---	0.05

37	3.08	1.00	0.244	0.199	---	0.05
38	3.17	1.10	0.268	0.199	---	0.07
39	3.25	1.10	0.268	0.199	---	0.07
40	3.33	1.10	0.268	0.199	---	0.07
41	3.42	1.20	0.292	0.199	---	0.09
42	3.50	1.30	0.317	0.199	---	0.12
43	3.58	1.40	0.341	0.199	---	0.14
44	3.67	1.40	0.341	0.199	---	0.14
45	3.75	1.50	0.366	0.199	---	0.17
46	3.83	1.50	0.366	0.199	---	0.17
47	3.92	1.60	0.390	0.199	---	0.19
48	4.00	1.60	0.390	0.199	---	0.19
49	4.08	1.70	0.414	0.199	---	0.22
50	4.17	1.80	0.439	0.199	---	0.24
51	4.25	1.90	0.463	0.199	---	0.26
52	4.33	2.00	0.487	0.199	---	0.29
53	4.42	2.10	0.512	0.199	---	0.31
54	4.50	2.10	0.512	0.199	---	0.31
55	4.58	2.20	0.536	0.199	---	0.34
56	4.67	2.30	0.561	0.199	---	0.36
57	4.75	2.40	0.585	0.199	---	0.39
58	4.83	2.40	0.585	0.199	---	0.39
59	4.92	2.50	0.609	0.199	---	0.41
60	5.00	2.60	0.634	0.199	---	0.44
61	5.08	3.10	0.756	0.199	---	0.56
62	5.17	3.60	0.877	0.199	---	0.68
63	5.25	3.90	0.951	0.199	---	0.75
64	5.33	4.20	1.024	0.199	---	0.83
65	5.42	4.70	1.146	0.199	---	0.95
66	5.50	5.60	1.365	0.199	---	1.17
67	5.58	1.90	0.463	0.199	---	0.26
68	5.67	0.90	0.219	0.199	---	0.02
69	5.75	0.60	0.146	0.199	0.125	0.02
70	5.83	0.50	0.122	0.199	0.104	0.02
71	5.92	0.30	0.073	0.199	0.062	0.01
72	6.00	0.20	0.049	0.199	0.042	0.01
Sum =		100.0			Sum =	11.7

Flood volume = Effective rainfall 0.97(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 1.06(In)
Total soil loss = 0.117(Ac.Ft)
Total rainfall = 2.03(In)
Flood volume = 4670.0 Cubic Feet
Total soil loss = 5091.6 Cubic Feet

Peak flow rate of this hydrograph = 1.455(CFS)

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6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.02	Q	|	|	|	|
0+10	0.0003	0.03	Q	|	|	|	|
0+15	0.0005	0.03	Q	|	|	|	|
0+20	0.0007	0.03	Q	|	|	|	|
0+25	0.0009	0.03	Q	|	|	|	|
0+30	0.0011	0.03	Q	|	|	|	|
0+35	0.0013	0.03	Q	|	|	|	|
0+40	0.0016	0.03	Q	|	|	|	|
0+45	0.0018	0.03	Q	|	|	|	|

```
 0+50     0.0020     0.03  Q       |       |       |       |
 0+55     0.0023     0.03  Q       |       |       |       |
 1+ 0     0.0025     0.04  Q       |       |       |       |
 1+ 5     0.0028     0.04  QV      |       |       |       |
 1+10     0.0030     0.04  QV      |       |       |       |
 1+15     0.0033     0.04  QV      |       |       |       |
 1+20     0.0036     0.04  QV      |       |       |       |
 1+25     0.0038     0.04  QV      |       |       |       |
 1+30     0.0041     0.04  QV      |       |       |       |
 1+35     0.0043     0.04  QV      |       |       |       |
 1+40     0.0046     0.04  QV      |       |       |       |
 1+45     0.0049     0.04  QV      |       |       |       |
 1+50     0.0051     0.04  QV      |       |       |       |
 1+55     0.0054     0.04  Q V     |       |       |       |
 2+ 0     0.0056     0.03  Q V     |       |       |       |
 2+ 5     0.0059     0.03  Q V     |       |       |       |
 2+10     0.0061     0.03  Q V     |       |       |       |
 2+15     0.0063     0.03  Q V     |       |       |       |
 2+20     0.0065     0.03  Q V     |       |       |       |
 2+25     0.0066     0.03  Q V     |       |       |       |
 2+30     0.0068     0.03  Q V     |       |       |       |
 2+35     0.0070     0.03  Q V     |       |       |       |
 2+40     0.0072     0.03  Q V     |       |       |       |
 2+45     0.0075     0.05  Q V     |       |       |       |
 2+50     0.0080     0.06  Q V     |       |       |       |
 2+55     0.0084     0.06  Q  V    |       |       |       |
 3+ 0     0.0088     0.06  Q  V    |       |       |       |
 3+ 5     0.0092     0.06  Q  V    |       |       |       |
 3+10     0.0098     0.08  Q  V    |       |       |       |
 3+15     0.0104     0.09  Q  V    |       |       |       |
 3+20     0.0110     0.09  Q   V   |       |       |       |
 3+25     0.0118     0.11  Q   V   |       |       |       |
 3+30     0.0128     0.15  Q   V   |       |       |       |
 3+35     0.0141     0.18  Q    V  |       |       |       |
 3+40     0.0154     0.19  Q    V  |       |       |       |
 3+45     0.0168     0.21  Q     V |       |       |       |
 3+50     0.0184     0.22  Q     V |       |       |       |
 3+55     0.0201     0.24  Q     V |       |       |       |
 4+ 0     0.0218     0.26  |Q     V |       |       |       |
 4+ 5     0.0237     0.28  |Q     V |       |       |       |
 4+10     0.0258     0.31  |Q     V|       |       |       |
 4+15     0.0282     0.34  |Q      V       |       |       |
 4+20     0.0308     0.37  |Q      |V      |       |       |
 4+25     0.0336     0.41  |Q      | V     |       |       |
 4+30     0.0365     0.42  |Q      |  V    |       |       |
 4+35     0.0395     0.44  |Q      |   V   |       |       |
 4+40     0.0427     0.47  |Q      |    V  |       |       |
 4+45     0.0462     0.50  | Q     |     V |       |       |
 4+50     0.0498     0.52  | Q     |     V |       |       |
 4+55     0.0535     0.54  | Q     |      V|       |       |
 5+ 0     0.0574     0.57  | Q     |       |V      |       |
 5+ 5     0.0621     0.69  | Q     |       |  V    |       |
 5+10     0.0680     0.85  |  Q    |       |    V  |       |
 5+15     0.0746     0.97  |  Q    |       |     V |       |
 5+20     0.0820     1.07  |   Q   |       |       V       |
 5+25     0.0903     1.21  |   Q   |       |       |  V    |
 5+30     0.1003     1.45  |    Q  |       |       |     V |
 5+35     0.1056     0.77  |  Q    |       |       |      V|
 5+40     0.1066     0.14  Q       |       |       |      V|
 5+45     0.1068     0.03  Q       |       |       |      V|
 5+50     0.1070     0.03  Q       |       |       |      V|
 5+55     0.1071     0.02  Q       |       |       |      V|
 6+ 0     0.1072     0.01  Q       |       |       |      V|
 6+ 5     0.1072     0.00  Q       |       |       |       V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APRE2YR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Pre-development
24-Hr 2-Yr Storm Event

Drainage Area = 1.32(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 87.50(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.017 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.021 Hr.
Lag time = 1.24 Min.
25% of lag time = 0.31 Min.
40% of lag time = 0.50 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	2.43	3.22

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	6.58	8.71

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.430(In)
Area Averaged 100-Year Rainfall = 6.580(In)

Point rain (area averaged) = 2.430(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.430(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.324	83.00	0.059

Total Area Entered = 1.32(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.0	83.0	0.210	0.059	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199

Minimum soil loss rate ((In/Hr)) = 0.099

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.853

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	402.223	65.137	0.869
2	0.167	804.446	34.863	0.465
	Sum = 100.000		Sum=	1.334

Storm Event 3 Effective Rainfall = 0.462(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.004	0.352	0.003	0.00
2	0.17	0.07	0.004	0.351	0.003	0.00
3	0.25	0.07	0.004	0.349	0.003	0.00
4	0.33	0.10	0.006	0.348	0.005	0.00
5	0.42	0.10	0.006	0.347	0.005	0.00
6	0.50	0.10	0.006	0.345	0.005	0.00
7	0.58	0.10	0.006	0.344	0.005	0.00
8	0.67	0.10	0.006	0.343	0.005	0.00
9	0.75	0.10	0.006	0.341	0.005	0.00
10	0.83	0.13	0.007	0.340	0.006	0.00
11	0.92	0.13	0.007	0.339	0.006	0.00
12	1.00	0.13	0.007	0.337	0.006	0.00
13	1.08	0.10	0.006	0.336	0.005	0.00
14	1.17	0.10	0.006	0.335	0.005	0.00
15	1.25	0.10	0.006	0.333	0.005	0.00
16	1.33	0.10	0.006	0.332	0.005	0.00
17	1.42	0.10	0.006	0.331	0.005	0.00
18	1.50	0.10	0.006	0.329	0.005	0.00
19	1.58	0.10	0.006	0.328	0.005	0.00
20	1.67	0.10	0.006	0.327	0.005	0.00
21	1.75	0.10	0.006	0.325	0.005	0.00
22	1.83	0.13	0.007	0.324	0.006	0.00
23	1.92	0.13	0.007	0.323	0.006	0.00
24	2.00	0.13	0.007	0.322	0.006	0.00
25	2.08	0.13	0.007	0.320	0.006	0.00
26	2.17	0.13	0.007	0.319	0.006	0.00
27	2.25	0.13	0.007	0.318	0.006	0.00
28	2.33	0.13	0.007	0.316	0.006	0.00
29	2.42	0.13	0.007	0.315	0.006	0.00

30	2.50	0.13	0.007	0.314	0.006	0.00
31	2.58	0.17	0.009	0.312	0.008	0.00
32	2.67	0.17	0.009	0.311	0.008	0.00
33	2.75	0.17	0.009	0.310	0.008	0.00
34	2.83	0.17	0.009	0.309	0.008	0.00
35	2.92	0.17	0.009	0.307	0.008	0.00
36	3.00	0.17	0.009	0.306	0.008	0.00
37	3.08	0.17	0.009	0.305	0.008	0.00
38	3.17	0.17	0.009	0.304	0.008	0.00
39	3.25	0.17	0.009	0.302	0.008	0.00
40	3.33	0.17	0.009	0.301	0.008	0.00
41	3.42	0.17	0.009	0.300	0.008	0.00
42	3.50	0.17	0.009	0.299	0.008	0.00
43	3.58	0.17	0.009	0.297	0.008	0.00
44	3.67	0.17	0.009	0.296	0.008	0.00
45	3.75	0.17	0.009	0.295	0.008	0.00
46	3.83	0.20	0.011	0.294	0.009	0.00
47	3.92	0.20	0.011	0.292	0.009	0.00
48	4.00	0.20	0.011	0.291	0.009	0.00
49	4.08	0.20	0.011	0.290	0.009	0.00
50	4.17	0.20	0.011	0.289	0.009	0.00
51	4.25	0.20	0.011	0.287	0.009	0.00
52	4.33	0.23	0.013	0.286	0.011	0.00
53	4.42	0.23	0.013	0.285	0.011	0.00
54	4.50	0.23	0.013	0.284	0.011	0.00
55	4.58	0.23	0.013	0.282	0.011	0.00
56	4.67	0.23	0.013	0.281	0.011	0.00
57	4.75	0.23	0.013	0.280	0.011	0.00
58	4.83	0.27	0.015	0.279	0.013	0.00
59	4.92	0.27	0.015	0.278	0.013	0.00
60	5.00	0.27	0.015	0.276	0.013	0.00
61	5.08	0.20	0.011	0.275	0.009	0.00
62	5.17	0.20	0.011	0.274	0.009	0.00
63	5.25	0.20	0.011	0.273	0.009	0.00
64	5.33	0.23	0.013	0.272	0.011	0.00
65	5.42	0.23	0.013	0.270	0.011	0.00
66	5.50	0.23	0.013	0.269	0.011	0.00
67	5.58	0.27	0.015	0.268	0.013	0.00
68	5.67	0.27	0.015	0.267	0.013	0.00
69	5.75	0.27	0.015	0.266	0.013	0.00
70	5.83	0.27	0.015	0.265	0.013	0.00
71	5.92	0.27	0.015	0.263	0.013	0.00
72	6.00	0.27	0.015	0.262	0.013	0.00
73	6.08	0.30	0.017	0.261	0.014	0.00
74	6.17	0.30	0.017	0.260	0.014	0.00
75	6.25	0.30	0.017	0.259	0.014	0.00
76	6.33	0.30	0.017	0.258	0.014	0.00
77	6.42	0.30	0.017	0.256	0.014	0.00
78	6.50	0.30	0.017	0.255	0.014	0.00
79	6.58	0.33	0.018	0.254	0.016	0.00
80	6.67	0.33	0.018	0.253	0.016	0.00
81	6.75	0.33	0.018	0.252	0.016	0.00
82	6.83	0.33	0.018	0.251	0.016	0.00
83	6.92	0.33	0.018	0.250	0.016	0.00
84	7.00	0.33	0.018	0.248	0.016	0.00
85	7.08	0.33	0.018	0.247	0.016	0.00
86	7.17	0.33	0.018	0.246	0.016	0.00
87	7.25	0.33	0.018	0.245	0.016	0.00
88	7.33	0.37	0.020	0.244	0.017	0.00
89	7.42	0.37	0.020	0.243	0.017	0.00
90	7.50	0.37	0.020	0.242	0.017	0.00
91	7.58	0.40	0.022	0.241	0.019	0.00
92	7.67	0.40	0.022	0.240	0.019	0.00
93	7.75	0.40	0.022	0.238	0.019	0.00
94	7.83	0.43	0.024	0.237	0.020	0.00

95	7.92	0.43	0.024	0.236	0.020	0.00
96	8.00	0.43	0.024	0.235	0.020	0.00
97	8.08	0.50	0.028	0.234	0.024	0.00
98	8.17	0.50	0.028	0.233	0.024	0.00
99	8.25	0.50	0.028	0.232	0.024	0.00
100	8.33	0.50	0.028	0.231	0.024	0.00
101	8.42	0.50	0.028	0.230	0.024	0.00
102	8.50	0.50	0.028	0.229	0.024	0.00
103	8.58	0.53	0.030	0.228	0.025	0.00
104	8.67	0.53	0.030	0.226	0.025	0.00
105	8.75	0.53	0.030	0.225	0.025	0.00
106	8.83	0.57	0.031	0.224	0.027	0.00
107	8.92	0.57	0.031	0.223	0.027	0.00
108	9.00	0.57	0.031	0.222	0.027	0.00
109	9.08	0.63	0.035	0.221	0.030	0.01
110	9.17	0.63	0.035	0.220	0.030	0.01
111	9.25	0.63	0.035	0.219	0.030	0.01
112	9.33	0.67	0.037	0.218	0.032	0.01
113	9.42	0.67	0.037	0.217	0.032	0.01
114	9.50	0.67	0.037	0.216	0.032	0.01
115	9.58	0.70	0.039	0.215	0.033	0.01
116	9.67	0.70	0.039	0.214	0.033	0.01
117	9.75	0.70	0.039	0.213	0.033	0.01
118	9.83	0.73	0.041	0.212	0.035	0.01
119	9.92	0.73	0.041	0.211	0.035	0.01
120	10.00	0.73	0.041	0.210	0.035	0.01
121	10.08	0.50	0.028	0.209	0.024	0.00
122	10.17	0.50	0.028	0.208	0.024	0.00
123	10.25	0.50	0.028	0.207	0.024	0.00
124	10.33	0.50	0.028	0.206	0.024	0.00
125	10.42	0.50	0.028	0.205	0.024	0.00
126	10.50	0.50	0.028	0.204	0.024	0.00
127	10.58	0.67	0.037	0.203	0.032	0.01
128	10.67	0.67	0.037	0.202	0.032	0.01
129	10.75	0.67	0.037	0.201	0.032	0.01
130	10.83	0.67	0.037	0.200	0.032	0.01
131	10.92	0.67	0.037	0.199	0.032	0.01
132	11.00	0.67	0.037	0.198	0.032	0.01
133	11.08	0.63	0.035	0.197	0.030	0.01
134	11.17	0.63	0.035	0.196	0.030	0.01
135	11.25	0.63	0.035	0.195	0.030	0.01
136	11.33	0.63	0.035	0.194	0.030	0.01
137	11.42	0.63	0.035	0.193	0.030	0.01
138	11.50	0.63	0.035	0.192	0.030	0.01
139	11.58	0.57	0.031	0.191	0.027	0.00
140	11.67	0.57	0.031	0.190	0.027	0.00
141	11.75	0.57	0.031	0.189	0.027	0.00
142	11.83	0.60	0.033	0.188	0.028	0.00
143	11.92	0.60	0.033	0.187	0.028	0.00
144	12.00	0.60	0.033	0.186	0.028	0.00
145	12.08	0.83	0.046	0.185	0.039	0.01
146	12.17	0.83	0.046	0.185	0.039	0.01
147	12.25	0.83	0.046	0.184	0.039	0.01
148	12.33	0.87	0.048	0.183	0.041	0.01
149	12.42	0.87	0.048	0.182	0.041	0.01
150	12.50	0.87	0.048	0.181	0.041	0.01
151	12.58	0.93	0.052	0.180	0.044	0.01
152	12.67	0.93	0.052	0.179	0.044	0.01
153	12.75	0.93	0.052	0.178	0.044	0.01
154	12.83	0.97	0.054	0.177	0.046	0.01
155	12.92	0.97	0.054	0.176	0.046	0.01
156	13.00	0.97	0.054	0.175	0.046	0.01
157	13.08	1.13	0.063	0.175	0.054	0.01
158	13.17	1.13	0.063	0.174	0.054	0.01
159	13.25	1.13	0.063	0.173	0.054	0.01

160	13.33	1.13	0.063	0.172	0.054	0.01
161	13.42	1.13	0.063	0.171	0.054	0.01
162	13.50	1.13	0.063	0.170	0.054	0.01
163	13.58	0.77	0.042	0.169	0.036	0.01
164	13.67	0.77	0.042	0.168	0.036	0.01
165	13.75	0.77	0.042	0.168	0.036	0.01
166	13.83	0.77	0.042	0.167	0.036	0.01
167	13.92	0.77	0.042	0.166	0.036	0.01
168	14.00	0.77	0.042	0.165	0.036	0.01
169	14.08	0.90	0.050	0.164	0.043	0.01
170	14.17	0.90	0.050	0.163	0.043	0.01
171	14.25	0.90	0.050	0.163	0.043	0.01
172	14.33	0.87	0.048	0.162	0.041	0.01
173	14.42	0.87	0.048	0.161	0.041	0.01
174	14.50	0.87	0.048	0.160	0.041	0.01
175	14.58	0.87	0.048	0.159	0.041	0.01
176	14.67	0.87	0.048	0.158	0.041	0.01
177	14.75	0.87	0.048	0.158	0.041	0.01
178	14.83	0.83	0.046	0.157	0.039	0.01
179	14.92	0.83	0.046	0.156	0.039	0.01
180	15.00	0.83	0.046	0.155	0.039	0.01
181	15.08	0.80	0.044	0.154	0.038	0.01
182	15.17	0.80	0.044	0.154	0.038	0.01
183	15.25	0.80	0.044	0.153	0.038	0.01
184	15.33	0.77	0.042	0.152	0.036	0.01
185	15.42	0.77	0.042	0.151	0.036	0.01
186	15.50	0.77	0.042	0.150	0.036	0.01
187	15.58	0.63	0.035	0.150	0.030	0.01
188	15.67	0.63	0.035	0.149	0.030	0.01
189	15.75	0.63	0.035	0.148	0.030	0.01
190	15.83	0.63	0.035	0.147	0.030	0.01
191	15.92	0.63	0.035	0.147	0.030	0.01
192	16.00	0.63	0.035	0.146	0.030	0.01
193	16.08	0.13	0.007	0.145	0.006	0.00
194	16.17	0.13	0.007	0.144	0.006	0.00
195	16.25	0.13	0.007	0.144	0.006	0.00
196	16.33	0.13	0.007	0.143	0.006	0.00
197	16.42	0.13	0.007	0.142	0.006	0.00
198	16.50	0.13	0.007	0.141	0.006	0.00
199	16.58	0.10	0.006	0.141	0.005	0.00
200	16.67	0.10	0.006	0.140	0.005	0.00
201	16.75	0.10	0.006	0.139	0.005	0.00
202	16.83	0.10	0.006	0.139	0.005	0.00
203	16.92	0.10	0.006	0.138	0.005	0.00
204	17.00	0.10	0.006	0.137	0.005	0.00
205	17.08	0.17	0.009	0.137	0.008	0.00
206	17.17	0.17	0.009	0.136	0.008	0.00
207	17.25	0.17	0.009	0.135	0.008	0.00
208	17.33	0.17	0.009	0.134	0.008	0.00
209	17.42	0.17	0.009	0.134	0.008	0.00
210	17.50	0.17	0.009	0.133	0.008	0.00
211	17.58	0.17	0.009	0.132	0.008	0.00
212	17.67	0.17	0.009	0.132	0.008	0.00
213	17.75	0.17	0.009	0.131	0.008	0.00
214	17.83	0.13	0.007	0.131	0.006	0.00
215	17.92	0.13	0.007	0.130	0.006	0.00
216	18.00	0.13	0.007	0.129	0.006	0.00
217	18.08	0.13	0.007	0.129	0.006	0.00
218	18.17	0.13	0.007	0.128	0.006	0.00
219	18.25	0.13	0.007	0.127	0.006	0.00
220	18.33	0.13	0.007	0.127	0.006	0.00
221	18.42	0.13	0.007	0.126	0.006	0.00
222	18.50	0.13	0.007	0.125	0.006	0.00
223	18.58	0.10	0.006	0.125	0.005	0.00
224	18.67	0.10	0.006	0.124	0.005	0.00

225	18.75	0.10	0.006	0.124	0.005	0.00
226	18.83	0.07	0.004	0.123	0.003	0.00
227	18.92	0.07	0.004	0.122	0.003	0.00
228	19.00	0.07	0.004	0.122	0.003	0.00
229	19.08	0.10	0.006	0.121	0.005	0.00
230	19.17	0.10	0.006	0.121	0.005	0.00
231	19.25	0.10	0.006	0.120	0.005	0.00
232	19.33	0.13	0.007	0.120	0.006	0.00
233	19.42	0.13	0.007	0.119	0.006	0.00
234	19.50	0.13	0.007	0.119	0.006	0.00
235	19.58	0.10	0.006	0.118	0.005	0.00
236	19.67	0.10	0.006	0.117	0.005	0.00
237	19.75	0.10	0.006	0.117	0.005	0.00
238	19.83	0.07	0.004	0.116	0.003	0.00
239	19.92	0.07	0.004	0.116	0.003	0.00
240	20.00	0.07	0.004	0.115	0.003	0.00
241	20.08	0.10	0.006	0.115	0.005	0.00
242	20.17	0.10	0.006	0.114	0.005	0.00
243	20.25	0.10	0.006	0.114	0.005	0.00
244	20.33	0.10	0.006	0.113	0.005	0.00
245	20.42	0.10	0.006	0.113	0.005	0.00
246	20.50	0.10	0.006	0.112	0.005	0.00
247	20.58	0.10	0.006	0.112	0.005	0.00
248	20.67	0.10	0.006	0.111	0.005	0.00
249	20.75	0.10	0.006	0.111	0.005	0.00
250	20.83	0.07	0.004	0.111	0.003	0.00
251	20.92	0.07	0.004	0.110	0.003	0.00
252	21.00	0.07	0.004	0.110	0.003	0.00
253	21.08	0.10	0.006	0.109	0.005	0.00
254	21.17	0.10	0.006	0.109	0.005	0.00
255	21.25	0.10	0.006	0.108	0.005	0.00
256	21.33	0.07	0.004	0.108	0.003	0.00
257	21.42	0.07	0.004	0.108	0.003	0.00
258	21.50	0.07	0.004	0.107	0.003	0.00
259	21.58	0.10	0.006	0.107	0.005	0.00
260	21.67	0.10	0.006	0.106	0.005	0.00
261	21.75	0.10	0.006	0.106	0.005	0.00
262	21.83	0.07	0.004	0.106	0.003	0.00
263	21.92	0.07	0.004	0.105	0.003	0.00
264	22.00	0.07	0.004	0.105	0.003	0.00
265	22.08	0.10	0.006	0.105	0.005	0.00
266	22.17	0.10	0.006	0.104	0.005	0.00
267	22.25	0.10	0.006	0.104	0.005	0.00
268	22.33	0.07	0.004	0.104	0.003	0.00
269	22.42	0.07	0.004	0.103	0.003	0.00
270	22.50	0.07	0.004	0.103	0.003	0.00
271	22.58	0.07	0.004	0.103	0.003	0.00
272	22.67	0.07	0.004	0.102	0.003	0.00
273	22.75	0.07	0.004	0.102	0.003	0.00
274	22.83	0.07	0.004	0.102	0.003	0.00
275	22.92	0.07	0.004	0.102	0.003	0.00
276	23.00	0.07	0.004	0.101	0.003	0.00
277	23.08	0.07	0.004	0.101	0.003	0.00
278	23.17	0.07	0.004	0.101	0.003	0.00
279	23.25	0.07	0.004	0.101	0.003	0.00
280	23.33	0.07	0.004	0.100	0.003	0.00
281	23.42	0.07	0.004	0.100	0.003	0.00
282	23.50	0.07	0.004	0.100	0.003	0.00
283	23.58	0.07	0.004	0.100	0.003	0.00
284	23.67	0.07	0.004	0.100	0.003	0.00
285	23.75	0.07	0.004	0.100	0.003	0.00
286	23.83	0.07	0.004	0.099	0.003	0.00
287	23.92	0.07	0.004	0.099	0.003	0.00
288	24.00	0.07	0.004	0.099	0.003	0.00
	Sum =	100.0			Sum =	0.8

Flood volume = Effective rainfall 0.07(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.39(In)
Total soil loss = 0.043(Ac.Ft)
Total rainfall = 0.46(In)
Flood volume = 325.7 Cubic Feet
Total soil loss = 1893.2 Cubic Feet

Storm Event 2 Effective Rainfall = 0.875(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.007	0.352	0.006	0.00
2	0.17	0.07	0.007	0.351	0.006	0.00
3	0.25	0.07	0.007	0.349	0.006	0.00
4	0.33	0.10	0.010	0.348	0.009	0.00
5	0.42	0.10	0.010	0.347	0.009	0.00
6	0.50	0.10	0.010	0.345	0.009	0.00
7	0.58	0.10	0.010	0.344	0.009	0.00
8	0.67	0.10	0.010	0.343	0.009	0.00
9	0.75	0.10	0.010	0.341	0.009	0.00
10	0.83	0.13	0.014	0.340	0.012	0.00
11	0.92	0.13	0.014	0.339	0.012	0.00
12	1.00	0.13	0.014	0.337	0.012	0.00
13	1.08	0.10	0.010	0.336	0.009	0.00
14	1.17	0.10	0.010	0.335	0.009	0.00
15	1.25	0.10	0.010	0.333	0.009	0.00
16	1.33	0.10	0.010	0.332	0.009	0.00
17	1.42	0.10	0.010	0.331	0.009	0.00
18	1.50	0.10	0.010	0.329	0.009	0.00
19	1.58	0.10	0.010	0.328	0.009	0.00
20	1.67	0.10	0.010	0.327	0.009	0.00
21	1.75	0.10	0.010	0.325	0.009	0.00
22	1.83	0.13	0.014	0.324	0.012	0.00
23	1.92	0.13	0.014	0.323	0.012	0.00
24	2.00	0.13	0.014	0.322	0.012	0.00
25	2.08	0.13	0.014	0.320	0.012	0.00
26	2.17	0.13	0.014	0.319	0.012	0.00
27	2.25	0.13	0.014	0.318	0.012	0.00
28	2.33	0.13	0.014	0.316	0.012	0.00
29	2.42	0.13	0.014	0.315	0.012	0.00
30	2.50	0.13	0.014	0.314	0.012	0.00
31	2.58	0.17	0.017	0.312	0.015	0.00
32	2.67	0.17	0.017	0.311	0.015	0.00
33	2.75	0.17	0.017	0.310	0.015	0.00
34	2.83	0.17	0.017	0.309	0.015	0.00
35	2.92	0.17	0.017	0.307	0.015	0.00
36	3.00	0.17	0.017	0.306	0.015	0.00
37	3.08	0.17	0.017	0.305	0.015	0.00
38	3.17	0.17	0.017	0.304	0.015	0.00
39	3.25	0.17	0.017	0.302	0.015	0.00
40	3.33	0.17	0.017	0.301	0.015	0.00
41	3.42	0.17	0.017	0.300	0.015	0.00
42	3.50	0.17	0.017	0.299	0.015	0.00
43	3.58	0.17	0.017	0.297	0.015	0.00
44	3.67	0.17	0.017	0.296	0.015	0.00
45	3.75	0.17	0.017	0.295	0.015	0.00
46	3.83	0.20	0.021	0.294	0.018	0.00
47	3.92	0.20	0.021	0.292	0.018	0.00
48	4.00	0.20	0.021	0.291	0.018	0.00
49	4.08	0.20	0.021	0.290	0.018	0.00
50	4.17	0.20	0.021	0.289	0.018	0.00
51	4.25	0.20	0.021	0.287	0.018	0.00
52	4.33	0.23	0.024	0.286	0.021	0.00

53	4.42	0.23	0.024	0.285	0.021	0.00
54	4.50	0.23	0.024	0.284	0.021	0.00
55	4.58	0.23	0.024	0.282	0.021	0.00
56	4.67	0.23	0.024	0.281	0.021	0.00
57	4.75	0.23	0.024	0.280	0.021	0.00
58	4.83	0.27	0.028	0.279	0.024	0.00
59	4.92	0.27	0.028	0.278	0.024	0.00
60	5.00	0.27	0.028	0.276	0.024	0.00
61	5.08	0.20	0.021	0.275	0.018	0.00
62	5.17	0.20	0.021	0.274	0.018	0.00
63	5.25	0.20	0.021	0.273	0.018	0.00
64	5.33	0.23	0.024	0.272	0.021	0.00
65	5.42	0.23	0.024	0.270	0.021	0.00
66	5.50	0.23	0.024	0.269	0.021	0.00
67	5.58	0.27	0.028	0.268	0.024	0.00
68	5.67	0.27	0.028	0.267	0.024	0.00
69	5.75	0.27	0.028	0.266	0.024	0.00
70	5.83	0.27	0.028	0.265	0.024	0.00
71	5.92	0.27	0.028	0.263	0.024	0.00
72	6.00	0.27	0.028	0.262	0.024	0.00
73	6.08	0.30	0.031	0.261	0.027	0.00
74	6.17	0.30	0.031	0.260	0.027	0.00
75	6.25	0.30	0.031	0.259	0.027	0.00
76	6.33	0.30	0.031	0.258	0.027	0.00
77	6.42	0.30	0.031	0.256	0.027	0.00
78	6.50	0.30	0.031	0.255	0.027	0.00
79	6.58	0.33	0.035	0.254	0.030	0.01
80	6.67	0.33	0.035	0.253	0.030	0.01
81	6.75	0.33	0.035	0.252	0.030	0.01
82	6.83	0.33	0.035	0.251	0.030	0.01
83	6.92	0.33	0.035	0.250	0.030	0.01
84	7.00	0.33	0.035	0.248	0.030	0.01
85	7.08	0.33	0.035	0.247	0.030	0.01
86	7.17	0.33	0.035	0.246	0.030	0.01
87	7.25	0.33	0.035	0.245	0.030	0.01
88	7.33	0.37	0.038	0.244	0.033	0.01
89	7.42	0.37	0.038	0.243	0.033	0.01
90	7.50	0.37	0.038	0.242	0.033	0.01
91	7.58	0.40	0.042	0.241	0.036	0.01
92	7.67	0.40	0.042	0.240	0.036	0.01
93	7.75	0.40	0.042	0.238	0.036	0.01
94	7.83	0.43	0.045	0.237	0.039	0.01
95	7.92	0.43	0.045	0.236	0.039	0.01
96	8.00	0.43	0.045	0.235	0.039	0.01
97	8.08	0.50	0.052	0.234	0.045	0.01
98	8.17	0.50	0.052	0.233	0.045	0.01
99	8.25	0.50	0.052	0.232	0.045	0.01
100	8.33	0.50	0.052	0.231	0.045	0.01
101	8.42	0.50	0.052	0.230	0.045	0.01
102	8.50	0.50	0.052	0.229	0.045	0.01
103	8.58	0.53	0.056	0.228	0.048	0.01
104	8.67	0.53	0.056	0.226	0.048	0.01
105	8.75	0.53	0.056	0.225	0.048	0.01
106	8.83	0.57	0.059	0.224	0.051	0.01
107	8.92	0.57	0.059	0.223	0.051	0.01
108	9.00	0.57	0.059	0.222	0.051	0.01
109	9.08	0.63	0.066	0.221	0.057	0.01
110	9.17	0.63	0.066	0.220	0.057	0.01
111	9.25	0.63	0.066	0.219	0.057	0.01
112	9.33	0.67	0.070	0.218	0.060	0.01
113	9.42	0.67	0.070	0.217	0.060	0.01
114	9.50	0.67	0.070	0.216	0.060	0.01
115	9.58	0.70	0.073	0.215	0.063	0.01
116	9.67	0.70	0.073	0.214	0.063	0.01
117	9.75	0.70	0.073	0.213	0.063	0.01

118	9.83	0.73	0.077	0.212	0.066	0.01
119	9.92	0.73	0.077	0.211	0.066	0.01
120	10.00	0.73	0.077	0.210	0.066	0.01
121	10.08	0.50	0.052	0.209	0.045	0.01
122	10.17	0.50	0.052	0.208	0.045	0.01
123	10.25	0.50	0.052	0.207	0.045	0.01
124	10.33	0.50	0.052	0.206	0.045	0.01
125	10.42	0.50	0.052	0.205	0.045	0.01
126	10.50	0.50	0.052	0.204	0.045	0.01
127	10.58	0.67	0.070	0.203	0.060	0.01
128	10.67	0.67	0.070	0.202	0.060	0.01
129	10.75	0.67	0.070	0.201	0.060	0.01
130	10.83	0.67	0.070	0.200	0.060	0.01
131	10.92	0.67	0.070	0.199	0.060	0.01
132	11.00	0.67	0.070	0.198	0.060	0.01
133	11.08	0.63	0.066	0.197	0.057	0.01
134	11.17	0.63	0.066	0.196	0.057	0.01
135	11.25	0.63	0.066	0.195	0.057	0.01
136	11.33	0.63	0.066	0.194	0.057	0.01
137	11.42	0.63	0.066	0.193	0.057	0.01
138	11.50	0.63	0.066	0.192	0.057	0.01
139	11.58	0.57	0.059	0.191	0.051	0.01
140	11.67	0.57	0.059	0.190	0.051	0.01
141	11.75	0.57	0.059	0.189	0.051	0.01
142	11.83	0.60	0.063	0.188	0.054	0.01
143	11.92	0.60	0.063	0.187	0.054	0.01
144	12.00	0.60	0.063	0.186	0.054	0.01
145	12.08	0.83	0.087	0.185	0.075	0.01
146	12.17	0.83	0.087	0.185	0.075	0.01
147	12.25	0.83	0.087	0.184	0.075	0.01
148	12.33	0.87	0.091	0.183	0.078	0.01
149	12.42	0.87	0.091	0.182	0.078	0.01
150	12.50	0.87	0.091	0.181	0.078	0.01
151	12.58	0.93	0.098	0.180	0.084	0.01
152	12.67	0.93	0.098	0.179	0.084	0.01
153	12.75	0.93	0.098	0.178	0.084	0.01
154	12.83	0.97	0.101	0.177	0.087	0.01
155	12.92	0.97	0.101	0.176	0.087	0.01
156	13.00	0.97	0.101	0.175	0.087	0.01
157	13.08	1.13	0.119	0.175	0.102	0.02
158	13.17	1.13	0.119	0.174	0.102	0.02
159	13.25	1.13	0.119	0.173	0.102	0.02
160	13.33	1.13	0.119	0.172	0.102	0.02
161	13.42	1.13	0.119	0.171	0.102	0.02
162	13.50	1.13	0.119	0.170	0.102	0.02
163	13.58	0.77	0.080	0.169	0.069	0.01
164	13.67	0.77	0.080	0.168	0.069	0.01
165	13.75	0.77	0.080	0.168	0.069	0.01
166	13.83	0.77	0.080	0.167	0.069	0.01
167	13.92	0.77	0.080	0.166	0.069	0.01
168	14.00	0.77	0.080	0.165	0.069	0.01
169	14.08	0.90	0.094	0.164	0.081	0.01
170	14.17	0.90	0.094	0.163	0.081	0.01
171	14.25	0.90	0.094	0.163	0.081	0.01
172	14.33	0.87	0.091	0.162	0.078	0.01
173	14.42	0.87	0.091	0.161	0.078	0.01
174	14.50	0.87	0.091	0.160	0.078	0.01
175	14.58	0.87	0.091	0.159	0.078	0.01
176	14.67	0.87	0.091	0.158	0.078	0.01
177	14.75	0.87	0.091	0.158	0.078	0.01
178	14.83	0.83	0.087	0.157	0.075	0.01
179	14.92	0.83	0.087	0.156	0.075	0.01
180	15.00	0.83	0.087	0.155	0.075	0.01
181	15.08	0.80	0.084	0.154	0.072	0.01
182	15.17	0.80	0.084	0.154	0.072	0.01

183	15.25	0.80	0.084	0.153	0.072	0.01
184	15.33	0.77	0.080	0.152	0.069	0.01
185	15.42	0.77	0.080	0.151	0.069	0.01
186	15.50	0.77	0.080	0.150	0.069	0.01
187	15.58	0.63	0.066	0.150	0.057	0.01
188	15.67	0.63	0.066	0.149	0.057	0.01
189	15.75	0.63	0.066	0.148	0.057	0.01
190	15.83	0.63	0.066	0.147	0.057	0.01
191	15.92	0.63	0.066	0.147	0.057	0.01
192	16.00	0.63	0.066	0.146	0.057	0.01
193	16.08	0.13	0.014	0.145	0.012	0.00
194	16.17	0.13	0.014	0.144	0.012	0.00
195	16.25	0.13	0.014	0.144	0.012	0.00
196	16.33	0.13	0.014	0.143	0.012	0.00
197	16.42	0.13	0.014	0.142	0.012	0.00
198	16.50	0.13	0.014	0.141	0.012	0.00
199	16.58	0.10	0.010	0.141	0.009	0.00
200	16.67	0.10	0.010	0.140	0.009	0.00
201	16.75	0.10	0.010	0.139	0.009	0.00
202	16.83	0.10	0.010	0.139	0.009	0.00
203	16.92	0.10	0.010	0.138	0.009	0.00
204	17.00	0.10	0.010	0.137	0.009	0.00
205	17.08	0.17	0.017	0.137	0.015	0.00
206	17.17	0.17	0.017	0.136	0.015	0.00
207	17.25	0.17	0.017	0.135	0.015	0.00
208	17.33	0.17	0.017	0.134	0.015	0.00
209	17.42	0.17	0.017	0.134	0.015	0.00
210	17.50	0.17	0.017	0.133	0.015	0.00
211	17.58	0.17	0.017	0.132	0.015	0.00
212	17.67	0.17	0.017	0.132	0.015	0.00
213	17.75	0.17	0.017	0.131	0.015	0.00
214	17.83	0.13	0.014	0.131	0.012	0.00
215	17.92	0.13	0.014	0.130	0.012	0.00
216	18.00	0.13	0.014	0.129	0.012	0.00
217	18.08	0.13	0.014	0.129	0.012	0.00
218	18.17	0.13	0.014	0.128	0.012	0.00
219	18.25	0.13	0.014	0.127	0.012	0.00
220	18.33	0.13	0.014	0.127	0.012	0.00
221	18.42	0.13	0.014	0.126	0.012	0.00
222	18.50	0.13	0.014	0.125	0.012	0.00
223	18.58	0.10	0.010	0.125	0.009	0.00
224	18.67	0.10	0.010	0.124	0.009	0.00
225	18.75	0.10	0.010	0.124	0.009	0.00
226	18.83	0.07	0.007	0.123	0.006	0.00
227	18.92	0.07	0.007	0.122	0.006	0.00
228	19.00	0.07	0.007	0.122	0.006	0.00
229	19.08	0.10	0.010	0.121	0.009	0.00
230	19.17	0.10	0.010	0.121	0.009	0.00
231	19.25	0.10	0.010	0.120	0.009	0.00
232	19.33	0.13	0.014	0.120	0.012	0.00
233	19.42	0.13	0.014	0.119	0.012	0.00
234	19.50	0.13	0.014	0.119	0.012	0.00
235	19.58	0.10	0.010	0.118	0.009	0.00
236	19.67	0.10	0.010	0.117	0.009	0.00
237	19.75	0.10	0.010	0.117	0.009	0.00
238	19.83	0.07	0.007	0.116	0.006	0.00
239	19.92	0.07	0.007	0.116	0.006	0.00
240	20.00	0.07	0.007	0.115	0.006	0.00
241	20.08	0.10	0.010	0.115	0.009	0.00
242	20.17	0.10	0.010	0.114	0.009	0.00
243	20.25	0.10	0.010	0.114	0.009	0.00
244	20.33	0.10	0.010	0.113	0.009	0.00
245	20.42	0.10	0.010	0.113	0.009	0.00
246	20.50	0.10	0.010	0.112	0.009	0.00
247	20.58	0.10	0.010	0.112	0.009	0.00

248	20.67	0.10	0.010	0.111	0.009	0.00
249	20.75	0.10	0.010	0.111	0.009	0.00
250	20.83	0.07	0.007	0.111	0.006	0.00
251	20.92	0.07	0.007	0.110	0.006	0.00
252	21.00	0.07	0.007	0.110	0.006	0.00
253	21.08	0.10	0.010	0.109	0.009	0.00
254	21.17	0.10	0.010	0.109	0.009	0.00
255	21.25	0.10	0.010	0.108	0.009	0.00
256	21.33	0.07	0.007	0.108	0.006	0.00
257	21.42	0.07	0.007	0.108	0.006	0.00
258	21.50	0.07	0.007	0.107	0.006	0.00
259	21.58	0.10	0.010	0.107	0.009	0.00
260	21.67	0.10	0.010	0.106	0.009	0.00
261	21.75	0.10	0.010	0.106	0.009	0.00
262	21.83	0.07	0.007	0.106	0.006	0.00
263	21.92	0.07	0.007	0.105	0.006	0.00
264	22.00	0.07	0.007	0.105	0.006	0.00
265	22.08	0.10	0.010	0.105	0.009	0.00
266	22.17	0.10	0.010	0.104	0.009	0.00
267	22.25	0.10	0.010	0.104	0.009	0.00
268	22.33	0.07	0.007	0.104	0.006	0.00
269	22.42	0.07	0.007	0.103	0.006	0.00
270	22.50	0.07	0.007	0.103	0.006	0.00
271	22.58	0.07	0.007	0.103	0.006	0.00
272	22.67	0.07	0.007	0.102	0.006	0.00
273	22.75	0.07	0.007	0.102	0.006	0.00
274	22.83	0.07	0.007	0.102	0.006	0.00
275	22.92	0.07	0.007	0.102	0.006	0.00
276	23.00	0.07	0.007	0.101	0.006	0.00
277	23.08	0.07	0.007	0.101	0.006	0.00
278	23.17	0.07	0.007	0.101	0.006	0.00
279	23.25	0.07	0.007	0.101	0.006	0.00
280	23.33	0.07	0.007	0.100	0.006	0.00
281	23.42	0.07	0.007	0.100	0.006	0.00
282	23.50	0.07	0.007	0.100	0.006	0.00
283	23.58	0.07	0.007	0.100	0.006	0.00
284	23.67	0.07	0.007	0.100	0.006	0.00
285	23.75	0.07	0.007	0.100	0.006	0.00
286	23.83	0.07	0.007	0.099	0.006	0.00
287	23.92	0.07	0.007	0.099	0.006	0.00
288	24.00	0.07	0.007	0.099	0.006	0.00
Sum =		100.0		Sum =		1.5

Flood volume = Effective rainfall 0.13(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.75(In)
Total soil loss = 0.082(Ac.Ft)
Total rainfall = 0.87(In)
Flood volume = 617.2 Cubic Feet
Total soil loss = 3587.2 Cubic Feet

Storm Event 1 Effective Rainfall = 2.430(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.019	0.352	0.017	0.00
2	0.17	0.07	0.019	0.351	0.017	0.00
3	0.25	0.07	0.019	0.349	0.017	0.00
4	0.33	0.10	0.029	0.348	0.025	0.00
5	0.42	0.10	0.029	0.347	0.025	0.00
6	0.50	0.10	0.029	0.345	0.025	0.00
7	0.58	0.10	0.029	0.344	0.025	0.00
8	0.67	0.10	0.029	0.343	0.025	0.00
9	0.75	0.10	0.029	0.341	0.025	0.00
10	0.83	0.13	0.039	0.340	0.033	0.01

11	0.92	0.13	0.039	0.339	0.033	0.01
12	1.00	0.13	0.039	0.337	0.033	0.01
13	1.08	0.10	0.029	0.336	0.025	0.00
14	1.17	0.10	0.029	0.335	0.025	0.00
15	1.25	0.10	0.029	0.333	0.025	0.00
16	1.33	0.10	0.029	0.332	0.025	0.00
17	1.42	0.10	0.029	0.331	0.025	0.00
18	1.50	0.10	0.029	0.329	0.025	0.00
19	1.58	0.10	0.029	0.328	0.025	0.00
20	1.67	0.10	0.029	0.327	0.025	0.00
21	1.75	0.10	0.029	0.325	0.025	0.00
22	1.83	0.13	0.039	0.324	0.033	0.01
23	1.92	0.13	0.039	0.323	0.033	0.01
24	2.00	0.13	0.039	0.322	0.033	0.01
25	2.08	0.13	0.039	0.320	0.033	0.01
26	2.17	0.13	0.039	0.319	0.033	0.01
27	2.25	0.13	0.039	0.318	0.033	0.01
28	2.33	0.13	0.039	0.316	0.033	0.01
29	2.42	0.13	0.039	0.315	0.033	0.01
30	2.50	0.13	0.039	0.314	0.033	0.01
31	2.58	0.17	0.049	0.312	0.041	0.01
32	2.67	0.17	0.049	0.311	0.041	0.01
33	2.75	0.17	0.049	0.310	0.041	0.01
34	2.83	0.17	0.049	0.309	0.041	0.01
35	2.92	0.17	0.049	0.307	0.041	0.01
36	3.00	0.17	0.049	0.306	0.041	0.01
37	3.08	0.17	0.049	0.305	0.041	0.01
38	3.17	0.17	0.049	0.304	0.041	0.01
39	3.25	0.17	0.049	0.302	0.041	0.01
40	3.33	0.17	0.049	0.301	0.041	0.01
41	3.42	0.17	0.049	0.300	0.041	0.01
42	3.50	0.17	0.049	0.299	0.041	0.01
43	3.58	0.17	0.049	0.297	0.041	0.01
44	3.67	0.17	0.049	0.296	0.041	0.01
45	3.75	0.17	0.049	0.295	0.041	0.01
46	3.83	0.20	0.058	0.294	0.050	0.01
47	3.92	0.20	0.058	0.292	0.050	0.01
48	4.00	0.20	0.058	0.291	0.050	0.01
49	4.08	0.20	0.058	0.290	0.050	0.01
50	4.17	0.20	0.058	0.289	0.050	0.01
51	4.25	0.20	0.058	0.287	0.050	0.01
52	4.33	0.23	0.068	0.286	0.058	0.01
53	4.42	0.23	0.068	0.285	0.058	0.01
54	4.50	0.23	0.068	0.284	0.058	0.01
55	4.58	0.23	0.068	0.282	0.058	0.01
56	4.67	0.23	0.068	0.281	0.058	0.01
57	4.75	0.23	0.068	0.280	0.058	0.01
58	4.83	0.27	0.078	0.279	0.066	0.01
59	4.92	0.27	0.078	0.278	0.066	0.01
60	5.00	0.27	0.078	0.276	0.066	0.01
61	5.08	0.20	0.058	0.275	0.050	0.01
62	5.17	0.20	0.058	0.274	0.050	0.01
63	5.25	0.20	0.058	0.273	0.050	0.01
64	5.33	0.23	0.068	0.272	0.058	0.01
65	5.42	0.23	0.068	0.270	0.058	0.01
66	5.50	0.23	0.068	0.269	0.058	0.01
67	5.58	0.27	0.078	0.268	0.066	0.01
68	5.67	0.27	0.078	0.267	0.066	0.01
69	5.75	0.27	0.078	0.266	0.066	0.01
70	5.83	0.27	0.078	0.265	0.066	0.01
71	5.92	0.27	0.078	0.263	0.066	0.01
72	6.00	0.27	0.078	0.262	0.066	0.01
73	6.08	0.30	0.087	0.261	0.075	0.01
74	6.17	0.30	0.087	0.260	0.075	0.01
75	6.25	0.30	0.087	0.259	0.075	0.01

76	6.33	0.30	0.087	0.258	0.075	0.01
77	6.42	0.30	0.087	0.256	0.075	0.01
78	6.50	0.30	0.087	0.255	0.075	0.01
79	6.58	0.33	0.097	0.254	0.083	0.01
80	6.67	0.33	0.097	0.253	0.083	0.01
81	6.75	0.33	0.097	0.252	0.083	0.01
82	6.83	0.33	0.097	0.251	0.083	0.01
83	6.92	0.33	0.097	0.250	0.083	0.01
84	7.00	0.33	0.097	0.248	0.083	0.01
85	7.08	0.33	0.097	0.247	0.083	0.01
86	7.17	0.33	0.097	0.246	0.083	0.01
87	7.25	0.33	0.097	0.245	0.083	0.01
88	7.33	0.37	0.107	0.244	0.091	0.02
89	7.42	0.37	0.107	0.243	0.091	0.02
90	7.50	0.37	0.107	0.242	0.091	0.02
91	7.58	0.40	0.117	0.241	0.100	0.02
92	7.67	0.40	0.117	0.240	0.100	0.02
93	7.75	0.40	0.117	0.238	0.100	0.02
94	7.83	0.43	0.126	0.237	0.108	0.02
95	7.92	0.43	0.126	0.236	0.108	0.02
96	8.00	0.43	0.126	0.235	0.108	0.02
97	8.08	0.50	0.146	0.234	0.124	0.02
98	8.17	0.50	0.146	0.233	0.124	0.02
99	8.25	0.50	0.146	0.232	0.124	0.02
100	8.33	0.50	0.146	0.231	0.124	0.02
101	8.42	0.50	0.146	0.230	0.124	0.02
102	8.50	0.50	0.146	0.229	0.124	0.02
103	8.58	0.53	0.156	0.228	0.133	0.02
104	8.67	0.53	0.156	0.226	0.133	0.02
105	8.75	0.53	0.156	0.225	0.133	0.02
106	8.83	0.57	0.165	0.224	0.141	0.02
107	8.92	0.57	0.165	0.223	0.141	0.02
108	9.00	0.57	0.165	0.222	0.141	0.02
109	9.08	0.63	0.185	0.221	0.158	0.03
110	9.17	0.63	0.185	0.220	0.158	0.03
111	9.25	0.63	0.185	0.219	0.158	0.03
112	9.33	0.67	0.194	0.218	0.166	0.03
113	9.42	0.67	0.194	0.217	0.166	0.03
114	9.50	0.67	0.194	0.216	0.166	0.03
115	9.58	0.70	0.204	0.215	0.174	0.03
116	9.67	0.70	0.204	0.214	0.174	0.03
117	9.75	0.70	0.204	0.213	0.174	0.03
118	9.83	0.73	0.214	0.212	---	0.00
119	9.92	0.73	0.214	0.211	---	0.00
120	10.00	0.73	0.214	0.210	---	0.00
121	10.08	0.50	0.146	0.209	0.124	0.02
122	10.17	0.50	0.146	0.208	0.124	0.02
123	10.25	0.50	0.146	0.207	0.124	0.02
124	10.33	0.50	0.146	0.206	0.124	0.02
125	10.42	0.50	0.146	0.205	0.124	0.02
126	10.50	0.50	0.146	0.204	0.124	0.02
127	10.58	0.67	0.194	0.203	0.166	0.03
128	10.67	0.67	0.194	0.202	0.166	0.03
129	10.75	0.67	0.194	0.201	0.166	0.03
130	10.83	0.67	0.194	0.200	0.166	0.03
131	10.92	0.67	0.194	0.199	0.166	0.03
132	11.00	0.67	0.194	0.198	0.166	0.03
133	11.08	0.63	0.185	0.197	0.158	0.03
134	11.17	0.63	0.185	0.196	0.158	0.03
135	11.25	0.63	0.185	0.195	0.158	0.03
136	11.33	0.63	0.185	0.194	0.158	0.03
137	11.42	0.63	0.185	0.193	0.158	0.03
138	11.50	0.63	0.185	0.192	0.158	0.03
139	11.58	0.57	0.165	0.191	0.141	0.02
140	11.67	0.57	0.165	0.190	0.141	0.02

141	11.75	0.57	0.165	0.189	0.141	0.02
142	11.83	0.60	0.175	0.188	0.149	0.03
143	11.92	0.60	0.175	0.187	0.149	0.03
144	12.00	0.60	0.175	0.186	0.149	0.03
145	12.08	0.83	0.243	0.185	---	0.06
146	12.17	0.83	0.243	0.185	---	0.06
147	12.25	0.83	0.243	0.184	---	0.06
148	12.33	0.87	0.253	0.183	---	0.07
149	12.42	0.87	0.253	0.182	---	0.07
150	12.50	0.87	0.253	0.181	---	0.07
151	12.58	0.93	0.272	0.180	---	0.09
152	12.67	0.93	0.272	0.179	---	0.09
153	12.75	0.93	0.272	0.178	---	0.09
154	12.83	0.97	0.282	0.177	---	0.10
155	12.92	0.97	0.282	0.176	---	0.11
156	13.00	0.97	0.282	0.175	---	0.11
157	13.08	1.13	0.330	0.175	---	0.16
158	13.17	1.13	0.330	0.174	---	0.16
159	13.25	1.13	0.330	0.173	---	0.16
160	13.33	1.13	0.330	0.172	---	0.16
161	13.42	1.13	0.330	0.171	---	0.16
162	13.50	1.13	0.330	0.170	---	0.16
163	13.58	0.77	0.224	0.169	---	0.05
164	13.67	0.77	0.224	0.168	---	0.06
165	13.75	0.77	0.224	0.168	---	0.06
166	13.83	0.77	0.224	0.167	---	0.06
167	13.92	0.77	0.224	0.166	---	0.06
168	14.00	0.77	0.224	0.165	---	0.06
169	14.08	0.90	0.262	0.164	---	0.10
170	14.17	0.90	0.262	0.163	---	0.10
171	14.25	0.90	0.262	0.163	---	0.10
172	14.33	0.87	0.253	0.162	---	0.09
173	14.42	0.87	0.253	0.161	---	0.09
174	14.50	0.87	0.253	0.160	---	0.09
175	14.58	0.87	0.253	0.159	---	0.09
176	14.67	0.87	0.253	0.158	---	0.09
177	14.75	0.87	0.253	0.158	---	0.10
178	14.83	0.83	0.243	0.157	---	0.09
179	14.92	0.83	0.243	0.156	---	0.09
180	15.00	0.83	0.243	0.155	---	0.09
181	15.08	0.80	0.233	0.154	---	0.08
182	15.17	0.80	0.233	0.154	---	0.08
183	15.25	0.80	0.233	0.153	---	0.08
184	15.33	0.77	0.224	0.152	---	0.07
185	15.42	0.77	0.224	0.151	---	0.07
186	15.50	0.77	0.224	0.150	---	0.07
187	15.58	0.63	0.185	0.150	---	0.04
188	15.67	0.63	0.185	0.149	---	0.04
189	15.75	0.63	0.185	0.148	---	0.04
190	15.83	0.63	0.185	0.147	---	0.04
191	15.92	0.63	0.185	0.147	---	0.04
192	16.00	0.63	0.185	0.146	---	0.04
193	16.08	0.13	0.039	0.145	0.033	0.01
194	16.17	0.13	0.039	0.144	0.033	0.01
195	16.25	0.13	0.039	0.144	0.033	0.01
196	16.33	0.13	0.039	0.143	0.033	0.01
197	16.42	0.13	0.039	0.142	0.033	0.01
198	16.50	0.13	0.039	0.141	0.033	0.01
199	16.58	0.10	0.029	0.141	0.025	0.00
200	16.67	0.10	0.029	0.140	0.025	0.00
201	16.75	0.10	0.029	0.139	0.025	0.00
202	16.83	0.10	0.029	0.139	0.025	0.00
203	16.92	0.10	0.029	0.138	0.025	0.00
204	17.00	0.10	0.029	0.137	0.025	0.00
205	17.08	0.17	0.049	0.137	0.041	0.01

206	17.17	0.17	0.049	0.136	0.041	0.01
207	17.25	0.17	0.049	0.135	0.041	0.01
208	17.33	0.17	0.049	0.134	0.041	0.01
209	17.42	0.17	0.049	0.134	0.041	0.01
210	17.50	0.17	0.049	0.133	0.041	0.01
211	17.58	0.17	0.049	0.132	0.041	0.01
212	17.67	0.17	0.049	0.132	0.041	0.01
213	17.75	0.17	0.049	0.131	0.041	0.01
214	17.83	0.13	0.039	0.131	0.033	0.01
215	17.92	0.13	0.039	0.130	0.033	0.01
216	18.00	0.13	0.039	0.129	0.033	0.01
217	18.08	0.13	0.039	0.129	0.033	0.01
218	18.17	0.13	0.039	0.128	0.033	0.01
219	18.25	0.13	0.039	0.127	0.033	0.01
220	18.33	0.13	0.039	0.127	0.033	0.01
221	18.42	0.13	0.039	0.126	0.033	0.01
222	18.50	0.13	0.039	0.125	0.033	0.01
223	18.58	0.10	0.029	0.125	0.025	0.00
224	18.67	0.10	0.029	0.124	0.025	0.00
225	18.75	0.10	0.029	0.124	0.025	0.00
226	18.83	0.07	0.019	0.123	0.017	0.00
227	18.92	0.07	0.019	0.122	0.017	0.00
228	19.00	0.07	0.019	0.122	0.017	0.00
229	19.08	0.10	0.029	0.121	0.025	0.00
230	19.17	0.10	0.029	0.121	0.025	0.00
231	19.25	0.10	0.029	0.120	0.025	0.00
232	19.33	0.13	0.039	0.120	0.033	0.01
233	19.42	0.13	0.039	0.119	0.033	0.01
234	19.50	0.13	0.039	0.119	0.033	0.01
235	19.58	0.10	0.029	0.118	0.025	0.00
236	19.67	0.10	0.029	0.117	0.025	0.00
237	19.75	0.10	0.029	0.117	0.025	0.00
238	19.83	0.07	0.019	0.116	0.017	0.00
239	19.92	0.07	0.019	0.116	0.017	0.00
240	20.00	0.07	0.019	0.115	0.017	0.00
241	20.08	0.10	0.029	0.115	0.025	0.00
242	20.17	0.10	0.029	0.114	0.025	0.00
243	20.25	0.10	0.029	0.114	0.025	0.00
244	20.33	0.10	0.029	0.113	0.025	0.00
245	20.42	0.10	0.029	0.113	0.025	0.00
246	20.50	0.10	0.029	0.112	0.025	0.00
247	20.58	0.10	0.029	0.112	0.025	0.00
248	20.67	0.10	0.029	0.111	0.025	0.00
249	20.75	0.10	0.029	0.111	0.025	0.00
250	20.83	0.07	0.019	0.111	0.017	0.00
251	20.92	0.07	0.019	0.110	0.017	0.00
252	21.00	0.07	0.019	0.110	0.017	0.00
253	21.08	0.10	0.029	0.109	0.025	0.00
254	21.17	0.10	0.029	0.109	0.025	0.00
255	21.25	0.10	0.029	0.108	0.025	0.00
256	21.33	0.07	0.019	0.108	0.017	0.00
257	21.42	0.07	0.019	0.108	0.017	0.00
258	21.50	0.07	0.019	0.107	0.017	0.00
259	21.58	0.10	0.029	0.107	0.025	0.00
260	21.67	0.10	0.029	0.106	0.025	0.00
261	21.75	0.10	0.029	0.106	0.025	0.00
262	21.83	0.07	0.019	0.106	0.017	0.00
263	21.92	0.07	0.019	0.105	0.017	0.00
264	22.00	0.07	0.019	0.105	0.017	0.00
265	22.08	0.10	0.029	0.105	0.025	0.00
266	22.17	0.10	0.029	0.104	0.025	0.00
267	22.25	0.10	0.029	0.104	0.025	0.00
268	22.33	0.07	0.019	0.104	0.017	0.00
269	22.42	0.07	0.019	0.103	0.017	0.00
270	22.50	0.07	0.019	0.103	0.017	0.00

271	22.58	0.07	0.019	0.103	0.017	0.00
272	22.67	0.07	0.019	0.102	0.017	0.00
273	22.75	0.07	0.019	0.102	0.017	0.00
274	22.83	0.07	0.019	0.102	0.017	0.00
275	22.92	0.07	0.019	0.102	0.017	0.00
276	23.00	0.07	0.019	0.101	0.017	0.00
277	23.08	0.07	0.019	0.101	0.017	0.00
278	23.17	0.07	0.019	0.101	0.017	0.00
279	23.25	0.07	0.019	0.101	0.017	0.00
280	23.33	0.07	0.019	0.100	0.017	0.00
281	23.42	0.07	0.019	0.100	0.017	0.00
282	23.50	0.07	0.019	0.100	0.017	0.00
283	23.58	0.07	0.019	0.100	0.017	0.00
284	23.67	0.07	0.019	0.100	0.017	0.00
285	23.75	0.07	0.019	0.100	0.017	0.00
286	23.83	0.07	0.019	0.099	0.017	0.00
287	23.92	0.07	0.019	0.099	0.017	0.00
288	24.00	0.07	0.019	0.099	0.017	0.00
Sum =		100.0		Sum =		6.5

Flood volume = Effective rainfall 0.54(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 1.89(In)
Total soil loss = 0.208(Ac.Ft)
Total rainfall = 2.43(In)
Flood volume = 2604.3 Cubic Feet
Total soil loss = 9074.5 Cubic Feet

Peak flow rate of this hydrograph = 0.214(CFS)

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TOTAL OF: 3 24 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|
0+15	0.0000	0.00	Q	|	|	|	|
0+20	0.0000	0.00	Q	|	|	|	|
0+25	0.0000	0.00	Q	|	|	|	|
0+30	0.0000	0.00	Q	|	|	|	|
0+35	0.0000	0.00	Q	|	|	|	|
0+40	0.0000	0.00	Q	|	|	|	|
0+45	0.0001	0.00	Q	|	|	|	|
0+50	0.0001	0.00	Q	|	|	|	|
0+55	0.0001	0.00	Q	|	|	|	|
1+ 0	0.0001	0.00	Q	|	|	|	|
1+ 5	0.0001	0.00	Q	|	|	|	|
1+10	0.0001	0.00	Q	|	|	|	|
1+15	0.0001	0.00	Q	|	|	|	|
1+20	0.0001	0.00	Q	|	|	|	|
1+25	0.0001	0.00	Q	|	|	|	|
1+30	0.0001	0.00	Q	|	|	|	|
1+35	0.0001	0.00	Q	|	|	|	|
1+40	0.0001	0.00	Q	|	|	|	|
1+45	0.0002	0.00	Q	|	|	|	|
1+50	0.0002	0.00	Q	|	|	|	|
1+55	0.0002	0.00	Q	|	|	|	|
2+ 0	0.0002	0.00	Q	|	|	|	|
2+ 5	0.0002	0.00	Q	|	|	|	|
2+10	0.0002	0.00	Q	|	|	|	|
2+15	0.0002	0.00	Q	|	|	|	|

2+20	0.0002	0.00	Q	|	|	|	|
2+25	0.0002	0.00	Q	|	|	|	|
2+30	0.0002	0.00	Q	|	|	|	|
2+35	0.0003	0.00	Q	|	|	|	|
2+40	0.0003	0.00	Q	|	|	|	|
2+45	0.0003	0.00	Q	|	|	|	|
2+50	0.0003	0.00	Q	|	|	|	|
2+55	0.0003	0.00	Q	|	|	|	|
3+ 0	0.0003	0.00	Q	|	|	|	|
3+ 5	0.0003	0.00	Q	|	|	|	|
3+10	0.0003	0.00	Q	|	|	|	|
3+15	0.0004	0.00	Q	|	|	|	|
3+20	0.0004	0.00	Q	|	|	|	|
3+25	0.0004	0.00	Q	|	|	|	|
3+30	0.0004	0.00	Q	|	|	|	|
3+35	0.0004	0.00	Q	|	|	|	|
3+40	0.0004	0.00	Q	|	|	|	|
3+45	0.0004	0.00	Q	|	|	|	|
3+50	0.0004	0.00	Q	|	|	|	|
3+55	0.0005	0.00	Q	|	|	|	|
4+ 0	0.0005	0.00	Q	|	|	|	|
4+ 5	0.0005	0.00	Q	|	|	|	|
4+10	0.0005	0.00	Q	|	|	|	|
4+15	0.0005	0.00	Q	|	|	|	|
4+20	0.0005	0.00	Q	|	|	|	|
4+25	0.0006	0.00	Q	|	|	|	|
4+30	0.0006	0.00	Q	|	|	|	|
4+35	0.0006	0.00	Q	|	|	|	|
4+40	0.0006	0.00	Q	|	|	|	|
4+45	0.0006	0.00	Q	|	|	|	|
4+50	0.0006	0.00	Q	|	|	|	|
4+55	0.0007	0.00	Q	|	|	|	|
5+ 0	0.0007	0.00	Q	|	|	|	|
5+ 5	0.0007	0.00	Q	|	|	|	|
5+10	0.0007	0.00	Q	|	|	|	|
5+15	0.0007	0.00	Q	|	|	|	|
5+20	0.0007	0.00	Q	|	|	|	|
5+25	0.0008	0.00	Q	|	|	|	|
5+30	0.0008	0.00	Q	|	|	|	|
5+35	0.0008	0.00	Q	|	|	|	|
5+40	0.0008	0.00	Q	|	|	|	|
5+45	0.0008	0.00	Q	|	|	|	|
5+50	0.0009	0.00	Q	|	|	|	|
5+55	0.0009	0.00	Q	|	|	|	|
6+ 0	0.0009	0.00	Q	|	|	|	|
6+ 5	0.0009	0.00	Q	|	|	|	|
6+10	0.0009	0.00	Q	|	|	|	|
6+15	0.0010	0.00	Q	|	|	|	|
6+20	0.0010	0.00	Q	|	|	|	|
6+25	0.0010	0.00	Q	|	|	|	|
6+30	0.0010	0.00	Q	|	|	|	|
6+35	0.0011	0.00	Q	|	|	|	|
6+40	0.0011	0.00	Q	|	|	|	|
6+45	0.0011	0.00	Q	|	|	|	|
6+50	0.0011	0.00	Q	|	|	|	|
6+55	0.0012	0.00	Q	|	|	|	|
7+ 0	0.0012	0.00	Q	|	|	|	|
7+ 5	0.0012	0.00	Q	|	|	|	|
7+10	0.0012	0.00	Q	|	|	|	|
7+15	0.0013	0.00	Q	|	|	|	|
7+20	0.0013	0.00	Q	|	|	|	|
7+25	0.0013	0.00	Q	|	|	|	|
7+30	0.0013	0.00	Q	|	|	|	|
7+35	0.0014	0.00	Q	|	|	|	|
7+40	0.0014	0.00	Q	|	|	|	|

7+45	0.0014	0.00	Q	|	|	|	|
7+50	0.0015	0.00	Q	|	|	|	|
7+55	0.0015	0.00	Q	|	|	|	|
8+ 0	0.0015	0.00	Q	|	|	|	|
8+ 5	0.0016	0.01	Q	|	|	|	|
8+10	0.0016	0.01	Q	|	|	|	|
8+15	0.0016	0.01	Q	|	|	|	|
8+20	0.0017	0.01	Q	|	|	|	|
8+25	0.0017	0.01	Q	|	|	|	|
8+30	0.0017	0.01	Q	|	|	|	|
8+35	0.0018	0.01	Q	|	|	|	|
8+40	0.0018	0.01	Q	|	|	|	|
8+45	0.0019	0.01	Q	|	|	|	|
8+50	0.0019	0.01	Q	|	|	|	|
8+55	0.0019	0.01	Q	|	|	|	|
9+ 0	0.0020	0.01	Q	|	|	|	|
9+ 5	0.0020	0.01	Q	|	|	|	|
9+10	0.0021	0.01	QV	|	|	|	|
9+15	0.0021	0.01	QV	|	|	|	|
9+20	0.0022	0.01	QV	|	|	|	|
9+25	0.0022	0.01	QV	|	|	|	|
9+30	0.0023	0.01	QV	|	|	|	|
9+35	0.0023	0.01	QV	|	|	|	|
9+40	0.0024	0.01	QV	|	|	|	|
9+45	0.0024	0.01	QV	|	|	|	|
9+50	0.0025	0.01	QV	|	|	|	|
9+55	0.0025	0.01	QV	|	|	|	|
10+ 0	0.0026	0.01	QV	|	|	|	|
10+ 5	0.0026	0.01	QV	|	|	|	|
10+10	0.0027	0.01	QV	|	|	|	|
10+15	0.0027	0.01	QV	|	|	|	|
10+20	0.0028	0.01	QV	|	|	|	|
10+25	0.0028	0.01	QV	|	|	|	|
10+30	0.0028	0.01	QV	|	|	|	|
10+35	0.0029	0.01	QV	|	|	|	|
10+40	0.0029	0.01	QV	|	|	|	|
10+45	0.0030	0.01	QV	|	|	|	|
10+50	0.0030	0.01	QV	|	|	|	|
10+55	0.0031	0.01	QV	|	|	|	|
11+ 0	0.0031	0.01	QV	|	|	|	|
11+ 5	0.0032	0.01	QV	|	|	|	|
11+10	0.0032	0.01	QV	|	|	|	|
11+15	0.0033	0.01	QV	|	|	|	|
11+20	0.0033	0.01	QV	|	|	|	|
11+25	0.0034	0.01	QV	|	|	|	|
11+30	0.0034	0.01	QV	|	|	|	|
11+35	0.0035	0.01	QV	|	|	|	|
11+40	0.0035	0.01	QV	|	|	|	|
11+45	0.0035	0.01	QV	|	|	|	|
11+50	0.0036	0.01	QV	|	|	|	|
11+55	0.0036	0.01	QV	|	|	|	|
12+ 0	0.0037	0.01	QV	|	|	|	|
12+ 5	0.0037	0.01	QV	|	|	|	|
12+10	0.0038	0.01	QV	|	|	|	|
12+15	0.0039	0.01	QV	|	|	|	|
12+20	0.0039	0.01	QV	|	|	|	|
12+25	0.0040	0.01	QV	|	|	|	|
12+30	0.0040	0.01	QV	|	|	|	|
12+35	0.0041	0.01	Q V	|	|	|	|
12+40	0.0042	0.01	Q V	|	|	|	|
12+45	0.0043	0.01	Q V	|	|	|	|
12+50	0.0043	0.01	Q V	|	|	|	|
12+55	0.0044	0.01	Q V	|	|	|	|
13+ 0	0.0045	0.01	Q V	|	|	|	|
13+ 5	0.0045	0.01	Q V	|	|	|	|

13+10	0.0046	0.01	Q	V		
13+15	0.0047	0.01	Q	V		
13+20	0.0048	0.01	Q	V		
13+25	0.0049	0.01	Q	V		
13+30	0.0050	0.01	Q	V		
13+35	0.0050	0.01	Q	V		
13+40	0.0051	0.01	Q	V		
13+45	0.0052	0.01	Q	V		
13+50	0.0052	0.01	Q	V		
13+55	0.0053	0.01	Q	V		
14+ 0	0.0053	0.01	Q	V		
14+ 5	0.0054	0.01	Q	V		
14+10	0.0055	0.01	Q	V		
14+15	0.0055	0.01	Q	V		
14+20	0.0056	0.01	Q	V		
14+25	0.0057	0.01	Q	V		
14+30	0.0057	0.01	Q	V		
14+35	0.0058	0.01	Q	V		
14+40	0.0059	0.01	Q	V		
14+45	0.0059	0.01	Q	V		
14+50	0.0060	0.01	Q	V		
14+55	0.0060	0.01	Q	V		
15+ 0	0.0061	0.01	Q	V		
15+ 5	0.0062	0.01	Q	V		
15+10	0.0062	0.01	Q	V		
15+15	0.0063	0.01	Q	V		
15+20	0.0063	0.01	Q	V		
15+25	0.0064	0.01	Q	V		
15+30	0.0065	0.01	Q	V		
15+35	0.0065	0.01	Q	V		
15+40	0.0066	0.01	Q	V		
15+45	0.0066	0.01	Q	V		
15+50	0.0066	0.01	Q	V		
15+55	0.0067	0.01	Q	V		
16+ 0	0.0067	0.01	Q	V		
16+ 5	0.0068	0.00	Q	V		
16+10	0.0068	0.00	Q	V		
16+15	0.0068	0.00	Q	V		
16+20	0.0068	0.00	Q	V		
16+25	0.0068	0.00	Q	V		
16+30	0.0068	0.00	Q	V		
16+35	0.0068	0.00	Q	V		
16+40	0.0068	0.00	Q	V		
16+45	0.0068	0.00	Q	V		
16+50	0.0068	0.00	Q	V		
16+55	0.0069	0.00	Q	V		
17+ 0	0.0069	0.00	Q	V		
17+ 5	0.0069	0.00	Q	V		
17+10	0.0069	0.00	Q	V		
17+15	0.0069	0.00	Q	V		
17+20	0.0069	0.00	Q	V		
17+25	0.0069	0.00	Q	V		
17+30	0.0069	0.00	Q	V		
17+35	0.0069	0.00	Q	V		
17+40	0.0070	0.00	Q	V		
17+45	0.0070	0.00	Q	V		
17+50	0.0070	0.00	Q	V		
17+55	0.0070	0.00	Q	V		
18+ 0	0.0070	0.00	Q	V		
18+ 5	0.0070	0.00	Q	V		
18+10	0.0070	0.00	Q	V		
18+15	0.0070	0.00	Q	V		
18+20	0.0070	0.00	Q	V		
18+25	0.0071	0.00	Q	V		
18+30	0.0071	0.00	Q	V		

18+35	0.0071	0.00	Q	V	|	|	|	|
18+40	0.0071	0.00	Q	V	|	|	|	|
18+45	0.0071	0.00	Q	V	|	|	|	|
18+50	0.0071	0.00	Q	V	|	|	|	|
18+55	0.0071	0.00	Q	V	|	|	|	|
19+ 0	0.0071	0.00	Q	V	|	|	|	|
19+ 5	0.0071	0.00	Q	V	|	|	|	|
19+10	0.0071	0.00	Q	V	|	|	|	|
19+15	0.0071	0.00	Q	V	|	|	|	|
19+20	0.0071	0.00	Q	V	|	|	|	|
19+25	0.0071	0.00	Q	V	|	|	|	|
19+30	0.0072	0.00	Q	V	|	|	|	|
19+35	0.0072	0.00	Q	V	|	|	|	|
19+40	0.0072	0.00	Q	V	|	|	|	|
19+45	0.0072	0.00	Q	V	|	|	|	|
19+50	0.0072	0.00	Q	V	|	|	|	|
19+55	0.0072	0.00	Q	V	|	|	|	|
20+ 0	0.0072	0.00	Q	V	|	|	|	|
20+ 5	0.0072	0.00	Q	V	|	|	|	|
20+10	0.0072	0.00	Q	V	|	|	|	|
20+15	0.0072	0.00	Q	V	|	|	|	|
20+20	0.0072	0.00	Q	V	|	|	|	|
20+25	0.0072	0.00	Q	V	|	|	|	|
20+30	0.0072	0.00	Q	V	|	|	|	|
20+35	0.0072	0.00	Q	V	|	|	|	|
20+40	0.0073	0.00	Q	V	|	|	|	|
20+45	0.0073	0.00	Q	V	|	|	|	|
20+50	0.0073	0.00	Q	V	|	|	|	|
20+55	0.0073	0.00	Q	V	|	|	|	|
21+ 0	0.0073	0.00	Q	V	|	|	|	|
21+ 5	0.0073	0.00	Q	V	|	|	|	|
21+10	0.0073	0.00	Q	V	|	|	|	|
21+15	0.0073	0.00	Q	V	|	|	|	|
21+20	0.0073	0.00	Q	V	|	|	|	|
21+25	0.0073	0.00	Q	V	|	|	|	|
21+30	0.0073	0.00	Q	V	|	|	|	|
21+35	0.0073	0.00	Q	V	|	|	|	|
21+40	0.0073	0.00	Q	V	|	|	|	|
21+45	0.0073	0.00	Q	V	|	|	|	|
21+50	0.0073	0.00	Q	V	|	|	|	|
21+55	0.0073	0.00	Q	V	|	|	|	|
22+ 0	0.0073	0.00	Q	V	|	|	|	|
22+ 5	0.0074	0.00	Q	V	|	|	|	|
22+10	0.0074	0.00	Q	V	|	|	|	|
22+15	0.0074	0.00	Q	V	|	|	|	|
22+20	0.0074	0.00	Q	V	|	|	|	|
22+25	0.0074	0.00	Q	V	|	|	|	|
22+30	0.0074	0.00	Q	V	|	|	|	|
22+35	0.0074	0.00	Q	V	|	|	|	|
22+40	0.0074	0.00	Q	V	|	|	|	|
22+45	0.0074	0.00	Q	V	|	|	|	|
22+50	0.0074	0.00	Q	V	|	|	|	|
22+55	0.0074	0.00	Q	V	|	|	|	|
23+ 0	0.0074	0.00	Q	V	|	|	|	|
23+ 5	0.0074	0.00	Q	V	|	|	|	|
23+10	0.0074	0.00	Q	V	|	|	|	|
23+15	0.0074	0.00	Q	V	|	|	|	|
23+20	0.0074	0.00	Q	V	|	|	|	|
23+25	0.0074	0.00	Q	V	|	|	|	|
23+30	0.0074	0.00	Q	V	|	|	|	|
23+35	0.0075	0.00	Q	V	|	|	|	|
23+40	0.0075	0.00	Q	V	|	|	|	|
23+45	0.0075	0.00	Q	V	|	|	|	|
23+50	0.0075	0.00	Q	V	|	|	|	|
23+55	0.0075	0.00	Q	V	|	|	|	|

24+ 0	0.0075	0.00	Q	V	| | | |
24+ 5	0.0075	0.00	Q	V	| | | |
24+10	0.0075	0.00	Q	V	| | | |
24+15	0.0075	0.00	Q	V	| | | |
24+20	0.0075	0.00	Q	V	| | | |
24+25	0.0075	0.00	Q	V	| | | |
24+30	0.0075	0.00	Q	V	| | | |
24+35	0.0076	0.00	Q	V	| | | |
24+40	0.0076	0.00	Q	V	| | | |
24+45	0.0076	0.00	Q	V	| | | |
24+50	0.0076	0.00	Q	V	| | | |
24+55	0.0076	0.00	Q	V	| | | |
25+ 0	0.0076	0.00	Q	V	| | | |
25+ 5	0.0077	0.00	Q	V	| | | |
25+10	0.0077	0.00	Q	V	| | | |
25+15	0.0077	0.00	Q	V	| | | |
25+20	0.0077	0.00	Q	V	| | | |
25+25	0.0077	0.00	Q	V	| | | |
25+30	0.0077	0.00	Q	V	| | | |
25+35	0.0077	0.00	Q	V	| | | |
25+40	0.0078	0.00	Q	V	| | | |
25+45	0.0078	0.00	Q	V	| | | |
25+50	0.0078	0.00	Q	V	| | | |
25+55	0.0078	0.00	Q	V	| | | |
26+ 0	0.0078	0.00	Q	V	| | | |
26+ 5	0.0078	0.00	Q	V	| | | |
26+10	0.0079	0.00	Q	V	| | | |
26+15	0.0079	0.00	Q	V	| | | |
26+20	0.0079	0.00	Q	V	| | | |
26+25	0.0079	0.00	Q	V	| | | |
26+30	0.0079	0.00	Q	V	| | | |
26+35	0.0080	0.00	Q	V	| | | |
26+40	0.0080	0.00	Q	V	| | | |
26+45	0.0080	0.00	Q	V	| | | |
26+50	0.0080	0.00	Q	V	| | | |
26+55	0.0081	0.00	Q	V	| | | |
27+ 0	0.0081	0.00	Q	V	| | | |
27+ 5	0.0081	0.00	Q	V	| | | |
27+10	0.0081	0.00	Q	V	| | | |
27+15	0.0081	0.00	Q	V	| | | |
27+20	0.0082	0.00	Q	V	| | | |
27+25	0.0082	0.00	Q	V	| | | |
27+30	0.0082	0.00	Q	V	| | | |
27+35	0.0082	0.00	Q	V	| | | |
27+40	0.0083	0.00	Q	V	| | | |
27+45	0.0083	0.00	Q	V	| | | |
27+50	0.0083	0.00	Q	V	| | | |
27+55	0.0083	0.00	Q	V	| | | |
28+ 0	0.0084	0.00	Q	V	| | | |
28+ 5	0.0084	0.00	Q	V	| | | |
28+10	0.0084	0.00	Q	V	| | | |
28+15	0.0085	0.00	Q	V	| | | |
28+20	0.0085	0.00	Q	V	| | | |
28+25	0.0085	0.00	Q	V	| | | |
28+30	0.0086	0.00	Q	V	| | | |
28+35	0.0086	0.00	Q	V	| | | |
28+40	0.0086	0.00	Q	V	| | | |
28+45	0.0087	0.00	Q	V	| | | |
28+50	0.0087	0.01	Q	V	| | | |
28+55	0.0087	0.01	Q	V	| | | |
29+ 0	0.0088	0.01	Q	V	| | | |
29+ 5	0.0088	0.00	Q	V	| | | |
29+10	0.0088	0.00	Q	V	| | | |
29+15	0.0089	0.00	Q	V	| | | |
29+20	0.0089	0.00	Q	V	| | | |

29+25	0.0089	0.00	Q	V	|	|	|
29+30	0.0090	0.00	Q	V	|	|	|
29+35	0.0090	0.01	Q	V	|	|	|
29+40	0.0090	0.01	Q	V	|	|	|
29+45	0.0091	0.01	Q	V	|	|	|
29+50	0.0091	0.01	Q	V	|	|	|
29+55	0.0091	0.01	Q	V	|	|	|
30+ 0	0.0092	0.01	Q	V	|	|	|
30+ 5	0.0092	0.01	Q	V	|	|	|
30+10	0.0093	0.01	Q	V	|	|	|
30+15	0.0093	0.01	Q	V	|	|	|
30+20	0.0093	0.01	Q	V	|	|	|
30+25	0.0094	0.01	Q	V	|	|	|
30+30	0.0094	0.01	Q	V	|	|	|
30+35	0.0095	0.01	Q	V	|	|	|
30+40	0.0095	0.01	Q	V	|	|	|
30+45	0.0096	0.01	Q	V	|	|	|
30+50	0.0096	0.01	Q	V	|	|	|
30+55	0.0097	0.01	Q	V	|	|	|
31+ 0	0.0097	0.01	Q	V	|	|	|
31+ 5	0.0098	0.01	Q	V	|	|	|
31+10	0.0098	0.01	Q	V	|	|	|
31+15	0.0099	0.01	Q	V	|	|	|
31+20	0.0099	0.01	Q	V	|	|	|
31+25	0.0100	0.01	Q	V	|	|	|
31+30	0.0100	0.01	Q	V	|	|	|
31+35	0.0101	0.01	Q	V	|	|	|
31+40	0.0101	0.01	Q	V	|	|	|
31+45	0.0102	0.01	Q	V	|	|	|
31+50	0.0102	0.01	Q	V	|	|	|
31+55	0.0103	0.01	Q	V	|	|	|
32+ 0	0.0104	0.01	Q	V	|	|	|
32+ 5	0.0104	0.01	Q	V	|	|	|
32+10	0.0105	0.01	Q	V	|	|	|
32+15	0.0106	0.01	Q	V	|	|	|
32+20	0.0106	0.01	Q	V	|	|	|
32+25	0.0107	0.01	Q	V	|	|	|
32+30	0.0108	0.01	Q	V	|	|	|
32+35	0.0109	0.01	Q	V	|	|	|
32+40	0.0109	0.01	Q	V	|	|	|
32+45	0.0110	0.01	Q	V	|	|	|
32+50	0.0111	0.01	Q	V	|	|	|
32+55	0.0112	0.01	Q	V	|	|	|
33+ 0	0.0112	0.01	Q	V	|	|	|
33+ 5	0.0113	0.01	Q	V	|	|	|
33+10	0.0114	0.01	Q	V	|	|	|
33+15	0.0115	0.01	Q	V	|	|	|
33+20	0.0116	0.01	Q	V	|	|	|
33+25	0.0117	0.01	Q	V	|	|	|
33+30	0.0118	0.01	Q	V	|	|	|
33+35	0.0119	0.01	Q	V	|	|	|
33+40	0.0120	0.01	Q	V	|	|	|
33+45	0.0121	0.01	Q	V	|	|	|
33+50	0.0122	0.01	Q	V	|	|	|
33+55	0.0123	0.02	Q	V	|	|	|
34+ 0	0.0124	0.02	Q	V	|	|	|
34+ 5	0.0125	0.01	Q	V	|	|	|
34+10	0.0126	0.01	Q	V	|	|	|
34+15	0.0126	0.01	Q	V	|	|	|
34+20	0.0127	0.01	Q	V	|	|	|
34+25	0.0128	0.01	Q	V	|	|	|
34+30	0.0128	0.01	Q	V	|	|	|
34+35	0.0129	0.01	Q	V	|	|	|
34+40	0.0130	0.01	Q	V	|	|	|
34+45	0.0131	0.01	Q	V	|	|	|

34+50	0.0132	0.01	Q	V	|	|	|	|
34+55	0.0133	0.01	Q	V	|	|	|	|
35+ 0	0.0134	0.01	Q	V	|	|	|	|
35+ 5	0.0135	0.01	Q	V	|	|	|	|
35+10	0.0136	0.01	Q	V	|	|	|	|
35+15	0.0137	0.01	Q	V	|	|	|	|
35+20	0.0138	0.01	Q	V	|	|	|	|
35+25	0.0138	0.01	Q	V	|	|	|	|
35+30	0.0139	0.01	Q	V	|	|	|	|
35+35	0.0140	0.01	Q	V	|	|	|	|
35+40	0.0141	0.01	Q	V	|	|	|	|
35+45	0.0142	0.01	Q	V	|	|	|	|
35+50	0.0143	0.01	Q	V	|	|	|	|
35+55	0.0143	0.01	Q	V	|	|	|	|
36+ 0	0.0144	0.01	Q	V	|	|	|	|
36+ 5	0.0145	0.02	Q	V	|	|	|	|
36+10	0.0147	0.02	Q	V	|	|	|	|
36+15	0.0148	0.02	Q	V	|	|	|	|
36+20	0.0149	0.02	Q	V	|	|	|	|
36+25	0.0150	0.02	Q	V	|	|	|	|
36+30	0.0151	0.02	Q	V	|	|	|	|
36+35	0.0153	0.02	Q	V	|	|	|	|
36+40	0.0154	0.02	Q	V	|	|	|	|
36+45	0.0155	0.02	Q	V	|	|	|	|
36+50	0.0157	0.02	Q	V	|	|	|	|
36+55	0.0158	0.02	Q	V	|	|	|	|
37+ 0	0.0159	0.02	Q	V	|	|	|	|
37+ 5	0.0161	0.02	Q	V	|	|	|	|
37+10	0.0163	0.02	Q	V	|	|	|	|
37+15	0.0164	0.02	Q	V	|	|	|	|
37+20	0.0166	0.02	Q	V	|	|	|	|
37+25	0.0167	0.02	Q	V	|	|	|	|
37+30	0.0169	0.02	Q	V	|	|	|	|
37+35	0.0170	0.02	Q	V	|	|	|	|
37+40	0.0171	0.02	Q	V	|	|	|	|
37+45	0.0172	0.02	Q	V	|	|	|	|
37+50	0.0174	0.02	Q	V	|	|	|	|
37+55	0.0175	0.02	Q	V	|	|	|	|
38+ 0	0.0176	0.02	Q	V	|	|	|	|
38+ 5	0.0177	0.02	Q	V	|	|	|	|
38+10	0.0178	0.02	Q	V	|	|	|	|
38+15	0.0179	0.02	Q	V	|	|	|	|
38+20	0.0181	0.02	Q	V	|	|	|	|
38+25	0.0182	0.02	Q	V	|	|	|	|
38+30	0.0183	0.02	Q	V	|	|	|	|
38+35	0.0184	0.02	Q	V	|	|	|	|
38+40	0.0186	0.02	Q	V	|	|	|	|
38+45	0.0187	0.02	Q	V	|	|	|	|
38+50	0.0188	0.02	Q	V	|	|	|	|
38+55	0.0189	0.02	Q	V	|	|	|	|
39+ 0	0.0190	0.02	Q	V	|	|	|	|
39+ 5	0.0192	0.02	Q	V	|	|	|	|
39+10	0.0193	0.02	Q	V	|	|	|	|
39+15	0.0194	0.02	Q	V	|	|	|	|
39+20	0.0195	0.02	Q	V	|	|	|	|
39+25	0.0196	0.02	Q	V	|	|	|	|
39+30	0.0197	0.02	Q	V	|	|	|	|
39+35	0.0198	0.01	Q	V	|	|	|	|
39+40	0.0199	0.01	Q	V	|	|	|	|
39+45	0.0200	0.01	Q	V	|	|	|	|
39+50	0.0201	0.01	Q	V	|	|	|	|
39+55	0.0202	0.01	Q	V	|	|	|	|
40+ 0	0.0203	0.01	Q	V	|	|	|	|
40+ 5	0.0203	0.01	Q	V	|	|	|	|
40+10	0.0203	0.00	Q	V	|	|	|	|

40+15	0.0203	0.00	Q	V|	|	|	|
40+20	0.0204	0.00	Q	V|	|	|	|
40+25	0.0204	0.00	Q	V	|	|	|
40+30	0.0204	0.00	Q	V	|	|	|
40+35	0.0204	0.00	Q	V	|	|	|
40+40	0.0204	0.00	Q	V	|	|	|
40+45	0.0204	0.00	Q	V	|	|	|
40+50	0.0205	0.00	Q	V	|	|	|
40+55	0.0205	0.00	Q	V	|	|	|
41+ 0	0.0205	0.00	Q	V	|	|	|
41+ 5	0.0205	0.00	Q	V	|	|	|
41+10	0.0205	0.00	Q	V	|	|	|
41+15	0.0205	0.00	Q	V	|	|	|
41+20	0.0206	0.00	Q	V	|	|	|
41+25	0.0206	0.00	Q	V	|	|	|
41+30	0.0206	0.00	Q	V	|	|	|
41+35	0.0206	0.00	Q	V	|	|	|
41+40	0.0207	0.00	Q	V	|	|	|
41+45	0.0207	0.00	Q	V	|	|	|
41+50	0.0207	0.00	Q	V	|	|	|
41+55	0.0207	0.00	Q	V	|	|	|
42+ 0	0.0207	0.00	Q	V	|	|	|
42+ 5	0.0208	0.00	Q	V	|	|	|
42+10	0.0208	0.00	Q	V	|	|	|
42+15	0.0208	0.00	Q	V	|	|	|
42+20	0.0208	0.00	Q	V	|	|	|
42+25	0.0208	0.00	Q	V	|	|	|
42+30	0.0209	0.00	Q	V	|	|	|
42+35	0.0209	0.00	Q	V	|	|	|
42+40	0.0209	0.00	Q	V	|	|	|
42+45	0.0209	0.00	Q	V	|	|	|
42+50	0.0209	0.00	Q	V	|	|	|
42+55	0.0209	0.00	Q	V	|	|	|
43+ 0	0.0209	0.00	Q	V	|	|	|
43+ 5	0.0209	0.00	Q	V	|	|	|
43+10	0.0210	0.00	Q	V	|	|	|
43+15	0.0210	0.00	Q	V	|	|	|
43+20	0.0210	0.00	Q	V	|	|	|
43+25	0.0210	0.00	Q	V	|	|	|
43+30	0.0210	0.00	Q	V	|	|	|
43+35	0.0210	0.00	Q	V	|	|	|
43+40	0.0211	0.00	Q	V	|	|	|
43+45	0.0211	0.00	Q	V	|	|	|
43+50	0.0211	0.00	Q	V	|	|	|
43+55	0.0211	0.00	Q	V	|	|	|
44+ 0	0.0211	0.00	Q	V	|	|	|
44+ 5	0.0211	0.00	Q	V	|	|	|
44+10	0.0211	0.00	Q	V	|	|	|
44+15	0.0211	0.00	Q	V	|	|	|
44+20	0.0212	0.00	Q	V	|	|	|
44+25	0.0212	0.00	Q	V	|	|	|
44+30	0.0212	0.00	Q	V	|	|	|
44+35	0.0212	0.00	Q	V	|	|	|
44+40	0.0212	0.00	Q	V	|	|	|
44+45	0.0212	0.00	Q	V	|	|	|
44+50	0.0212	0.00	Q	V	|	|	|
44+55	0.0213	0.00	Q	V	|	|	|
45+ 0	0.0213	0.00	Q	V	|	|	|
45+ 5	0.0213	0.00	Q	V	|	|	|
45+10	0.0213	0.00	Q	V	|	|	|
45+15	0.0213	0.00	Q	V	|	|	|
45+20	0.0213	0.00	Q	V	|	|	|
45+25	0.0213	0.00	Q	V	|	|	|
45+30	0.0213	0.00	Q	V	|	|	|
45+35	0.0213	0.00	Q	V	|	|	|

45+40	0.0214	0.00	Q	V	|	|	|
45+45	0.0214	0.00	Q	V	|	|	|
45+50	0.0214	0.00	Q	V	|	|	|
45+55	0.0214	0.00	Q	V	|	|	|
46+ 0	0.0214	0.00	Q	V	|	|	|
46+ 5	0.0214	0.00	Q	V	|	|	|
46+10	0.0214	0.00	Q	V	|	|	|
46+15	0.0214	0.00	Q	V	|	|	|
46+20	0.0215	0.00	Q	V	|	|	|
46+25	0.0215	0.00	Q	V	|	|	|
46+30	0.0215	0.00	Q	V	|	|	|
46+35	0.0215	0.00	Q	V	|	|	|
46+40	0.0215	0.00	Q	V	|	|	|
46+45	0.0215	0.00	Q	V	|	|	|
46+50	0.0215	0.00	Q	V	|	|	|
46+55	0.0215	0.00	Q	V	|	|	|
47+ 0	0.0215	0.00	Q	V	|	|	|
47+ 5	0.0215	0.00	Q	V	|	|	|
47+10	0.0215	0.00	Q	V	|	|	|
47+15	0.0216	0.00	Q	V	|	|	|
47+20	0.0216	0.00	Q	V	|	|	|
47+25	0.0216	0.00	Q	V	|	|	|
47+30	0.0216	0.00	Q	V	|	|	|
47+35	0.0216	0.00	Q	V	|	|	|
47+40	0.0216	0.00	Q	V	|	|	|
47+45	0.0216	0.00	Q	V	|	|	|
47+50	0.0216	0.00	Q	V	|	|	|
47+55	0.0216	0.00	Q	V	|	|	|
48+ 0	0.0216	0.00	Q	V	|	|	|
48+ 5	0.0217	0.00	Q	V	|	|	|
48+10	0.0217	0.00	Q	V	|	|	|
48+15	0.0217	0.00	Q	V	|	|	|
48+20	0.0217	0.01	Q	V	|	|	|
48+25	0.0218	0.01	Q	V	|	|	|
48+30	0.0218	0.01	Q	V	|	|	|
48+35	0.0219	0.01	Q	V	|	|	|
48+40	0.0219	0.01	Q	V	|	|	|
48+45	0.0219	0.01	Q	V	|	|	|
48+50	0.0220	0.01	Q	V	|	|	|
48+55	0.0220	0.01	Q	V	|	|	|
49+ 0	0.0221	0.01	Q	V	|	|	|
49+ 5	0.0221	0.01	Q	V	|	|	|
49+10	0.0222	0.01	Q	V	|	|	|
49+15	0.0222	0.01	Q	V	|	|	|
49+20	0.0223	0.01	Q	V	|	|	|
49+25	0.0223	0.01	Q	V	|	|	|
49+30	0.0223	0.01	Q	V	|	|	|
49+35	0.0224	0.01	Q	V	|	|	|
49+40	0.0224	0.01	Q	|V	|	|	|
49+45	0.0225	0.01	Q	|V	|	|	|
49+50	0.0225	0.01	Q	|V	|	|	|
49+55	0.0226	0.01	Q	|V	|	|	|
50+ 0	0.0226	0.01	Q	|V	|	|	|
50+ 5	0.0227	0.01	Q	|V	|	|	|
50+10	0.0227	0.01	Q	|V	|	|	|
50+15	0.0228	0.01	Q	|V	|	|	|
50+20	0.0228	0.01	Q	|V	|	|	|
50+25	0.0229	0.01	Q	|V	|	|	|
50+30	0.0229	0.01	Q	|V	|	|	|
50+35	0.0230	0.01	Q	|V	|	|	|
50+40	0.0230	0.01	Q	|V	|	|	|
50+45	0.0231	0.01	Q	|V	|	|	|
50+50	0.0232	0.01	Q	|V	|	|	|
50+55	0.0232	0.01	Q	|V	|	|	|
51+ 0	0.0233	0.01	Q	|V	|	|	|

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51+ 5    0.0234    0.01  Q      |V      |       |       |
51+10    0.0234    0.01  Q      |V      |       |       |
51+15    0.0235    0.01  Q      |V      |       |       |
51+20    0.0236    0.01  Q      |V      |       |       |
51+25    0.0236    0.01  Q      |V      |       |       |
51+30    0.0237    0.01  Q      |V      |       |       |
51+35    0.0238    0.01  Q      |V      |       |       |
51+40    0.0238    0.01  Q      |V      |       |       |
51+45    0.0239    0.01  Q      |V      |       |       |
51+50    0.0240    0.01  Q      |V      |       |       |
51+55    0.0241    0.01  Q      |V      |       |       |
52+ 0    0.0241    0.01  Q      |V      |       |       |
52+ 5    0.0242    0.01  Q      |V      |       |       |
52+10    0.0243    0.01  Q      |V      |       |       |
52+15    0.0244    0.01  Q      |V      |       |       |
52+20    0.0245    0.01  Q      | V     |       |       |
52+25    0.0245    0.01  Q      | V     |       |       |
52+30    0.0246    0.01  Q      | V     |       |       |
52+35    0.0247    0.01  Q      | V     |       |       |
52+40    0.0248    0.01  Q      | V     |       |       |
52+45    0.0249    0.01  Q      | V     |       |       |
52+50    0.0250    0.01  Q      | V     |       |       |
52+55    0.0251    0.02  Q      | V     |       |       |
53+ 0    0.0252    0.02  Q      | V     |       |       |
53+ 5    0.0253    0.01  Q      | V     |       |       |
53+10    0.0254    0.01  Q      | V     |       |       |
53+15    0.0255    0.01  Q      | V     |       |       |
53+20    0.0256    0.01  Q      | V     |       |       |
53+25    0.0257    0.01  Q      | V     |       |       |
53+30    0.0257    0.01  Q      | V     |       |       |
53+35    0.0258    0.01  Q      | V     |       |       |
53+40    0.0259    0.02  Q      | V     |       |       |
53+45    0.0261    0.02  Q      | V     |       |       |
53+50    0.0262    0.02  Q      | V     |       |       |
53+55    0.0263    0.02  Q      | V     |       |       |
54+ 0    0.0264    0.02  Q      | V     |       |       |
54+ 5    0.0265    0.02  Q      |  V    |       |       |
54+10    0.0266    0.02  Q      |  V    |       |       |
54+15    0.0267    0.02  Q      |  V    |       |       |
54+20    0.0268    0.02  Q      |  V    |       |       |
54+25    0.0270    0.02  Q      |  V    |       |       |
54+30    0.0271    0.02  Q      |  V    |       |       |
54+35    0.0272    0.02  Q      |  V    |       |       |
54+40    0.0273    0.02  Q      |  V    |       |       |
54+45    0.0275    0.02  Q      |  V    |       |       |
54+50    0.0276    0.02  Q      |  V    |       |       |
54+55    0.0277    0.02  Q      |  V    |       |       |
55+ 0    0.0279    0.02  Q      |  V    |       |       |
55+ 5    0.0280    0.02  Q      |  V    |       |       |
55+10    0.0281    0.02  Q      |  V    |       |       |
55+15    0.0282    0.02  Q      |  V    |       |       |
55+20    0.0284    0.02  Q      |  V    |       |       |
55+25    0.0285    0.02  Q      |   V   |       |       |
55+30    0.0287    0.02  Q      |   V   |       |       |
55+35    0.0288    0.02  Q      |   V   |       |       |
55+40    0.0290    0.02  Q      |   V   |       |       |
55+45    0.0291    0.02  Q      |   V   |       |       |
55+50    0.0293    0.02  Q      |   V   |       |       |
55+55    0.0295    0.02  Q      |   V   |       |       |
56+ 0    0.0297    0.02  Q      |   V   |       |       |
56+ 5    0.0298    0.03  Q      |   V   |       |       |
56+10    0.0300    0.03  Q      |   V   |       |       |
56+15    0.0302    0.03  Q      |   V   |       |       |
56+20    0.0304    0.03  Q      |   V   |       |       |
56+25    0.0306    0.03  Q      |    V  |       |       |
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56+30    0.0308    0.03  Q      |   V   |       |       |
56+35    0.0310    0.03  Q      |   V   |       |       |
56+40    0.0312    0.03  Q      |   V   |       |       |
56+45    0.0314    0.03  Q      |   V   |       |       |
56+50    0.0317    0.03  Q      |   V   |       |       |
56+55    0.0319    0.03  Q      |   V   |       |       |
57+ 0    0.0321    0.03  Q      |   V   |       |       |
57+ 5    0.0324    0.03  Q      |   V   |       |       |
57+10    0.0326    0.04  Q      |    V  |       |       |
57+15    0.0329    0.04  Q      |    V  |       |       |
57+20    0.0331    0.04  Q      |    V  |       |       |
57+25    0.0334    0.04  Q      |    V  |       |       |
57+30    0.0336    0.04  Q      |    V  |       |       |
57+35    0.0339    0.04  Q      |    V  |       |       |
57+40    0.0342    0.04  Q      |    V  |       |       |
57+45    0.0345    0.04  Q      |    V  |       |       |
57+50    0.0346    0.02  Q      |    V  |       |       |
57+55    0.0346    0.00  Q      |    V  |       |       |
58+ 0    0.0346    0.00  Q      |    V  |       |       |
58+ 5    0.0348    0.02  Q      |    V  |       |       |
58+10    0.0350    0.03  Q      |    V  |       |       |
58+15    0.0352    0.03  Q      |    V  |       |       |
58+20    0.0354    0.03  Q      |    V  |       |       |
58+25    0.0356    0.03  Q      |    V  |       |       |
58+30    0.0357    0.03  Q      |    V  |       |       |
58+35    0.0360    0.03  Q      |    V  |       |       |
58+40    0.0362    0.04  Q      |    V  |       |       |
58+45    0.0365    0.04  Q      |    V  |       |       |
58+50    0.0368    0.04  Q      |     V |       |       |
58+55    0.0370    0.04  Q      |     V |       |       |
59+ 0    0.0373    0.04  Q      |     V |       |       |
59+ 5    0.0376    0.04  Q      |     V |       |       |
59+10    0.0378    0.04  Q      |     V |       |       |
59+15    0.0381    0.04  Q      |     V |       |       |
59+20    0.0383    0.04  Q      |     V |       |       |
59+25    0.0385    0.04  Q      |     V |       |       |
59+30    0.0388    0.04  Q      |      V|       |       |
59+35    0.0390    0.03  Q      |      V|       |       |
59+40    0.0393    0.03  Q      |      V|       |       |
59+45    0.0395    0.03  Q      |      V|       |       |
59+50    0.0397    0.03  Q      |      V|       |       |
59+55    0.0399    0.03  Q      |      V|       |       |
60+ 0    0.0402    0.03  Q      |      V|       |       |
60+ 5    0.0406    0.06  Q      |      V|       |       |
60+10    0.0411    0.08  Q      |       V       |       |
60+15    0.0417    0.08  Q      |       V       |       |
60+20    0.0423    0.09  Q      |       V       |       |
60+25    0.0429    0.09  Q      |       |V      |       |
60+30    0.0436    0.10  Q      |       |V      |       |
60+35    0.0444    0.11  Q      |       |V      |       |
60+40    0.0452    0.12  Q      |       | V     |       |
60+45    0.0461    0.13  Q      |       | V     |       |
60+50    0.0470    0.13  Q      |       |  V    |       |
60+55    0.0480    0.14  Q      |       |  V    |       |
61+ 0    0.0490    0.14  Q      |       |  V    |       |
61+ 5    0.0502    0.19  Q      |       |  V    |       |
61+10    0.0517    0.21  Q      |       |   V   |       |
61+15    0.0531    0.21  Q      |       |    V  |       |
61+20    0.0546    0.21  Q      |       |    V  |       |
61+25    0.0561    0.21  Q      |       |     V |       |
61+30    0.0575    0.21  Q      |       |     V |       |
61+35    0.0584    0.12  Q      |       |     V |       |
61+40    0.0589    0.07  Q      |       |     V |       |
61+45    0.0594    0.07  Q      |       |      V|       |
61+50    0.0599    0.08  Q      |       |      V|       |
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61+55    0.0604    0.08 Q      |      |      V|      |
62+ 0    0.0610    0.08 Q      |      |     V|      |
62+ 5    0.0617    0.11 Q      |      |      V      |
62+10    0.0626    0.13 Q      |      |      V      |
62+15    0.0636    0.13 Q      |      |      |V     |
62+20    0.0644    0.13 Q      |      |      |V     |
62+25    0.0653    0.12 Q      |      |      | V    |
62+30    0.0661    0.12 Q      |      |      | V    |
62+35    0.0670    0.12 Q      |      |      | V    |
62+40    0.0678    0.13 Q      |      |      |  V   |
62+45    0.0687    0.13 Q      |      |      |  V   |
62+50    0.0695    0.12 Q      |      |      |   V  |
62+55    0.0703    0.12 Q      |      |      |   V  |
63+ 0    0.0711    0.12 Q      |      |      |   V  |
63+ 5    0.0719    0.11 Q      |      |      |   V  |
63+10    0.0726    0.11 Q      |      |      |   V  |
63+15    0.0734    0.11 Q      |      |      |    V |
63+20    0.0740    0.10 Q      |      |      |    V |
63+25    0.0747    0.10 Q      |      |      |    V |
63+30    0.0754    0.10 Q      |      |      |     V|
63+35    0.0758    0.06 Q      |      |      |     V|
63+40    0.0762    0.05 Q      |      |      |     V|
63+45    0.0765    0.05 Q      |      |      |     V|
63+50    0.0768    0.05 Q      |      |      |     V|
63+55    0.0772    0.05 Q      |      |      |     V|
64+ 0    0.0775    0.05 Q      |      |      |     V|
64+ 5    0.0777    0.02 Q      |      |      |     V|
64+10    0.0777    0.01 Q      |      |      |     V|
64+15    0.0778    0.01 Q      |      |      |     V|
64+20    0.0778    0.01 Q      |      |      |     V|
64+25    0.0779    0.01 Q      |      |      |     V|
64+30    0.0779    0.01 Q      |      |      |     V|
64+35    0.0780    0.01 Q      |      |      |     V|
64+40    0.0780    0.01 Q      |      |      |     V|
64+45    0.0781    0.01 Q      |      |      |     V|
64+50    0.0781    0.01 Q      |      |      |     V|
64+55    0.0781    0.01 Q      |      |      |     V|
65+ 0    0.0782    0.01 Q      |      |      |     V|
65+ 5    0.0782    0.01 Q      |      |      |     V|
65+10    0.0783    0.01 Q      |      |      |     V|
65+15    0.0784    0.01 Q      |      |      |     V|
65+20    0.0784    0.01 Q      |      |      |     V|
65+25    0.0785    0.01 Q      |      |      |     V|
65+30    0.0786    0.01 Q      |      |      |     V|
65+35    0.0786    0.01 Q      |      |      |     V|
65+40    0.0787    0.01 Q      |      |      |     V|
65+45    0.0788    0.01 Q      |      |      |     V|
65+50    0.0788    0.01 Q      |      |      |     V|
65+55    0.0789    0.01 Q      |      |      |     V|
66+ 0    0.0789    0.01 Q      |      |      |     V|
66+ 5    0.0790    0.01 Q      |      |      |     V|
66+10    0.0790    0.01 Q      |      |      |     V|
66+15    0.0791    0.01 Q      |      |      |     V|
66+20    0.0791    0.01 Q      |      |      |     V|
66+25    0.0792    0.01 Q      |      |      |     V|
66+30    0.0792    0.01 Q      |      |      |     V|
66+35    0.0793    0.01 Q      |      |      |     V|
66+40    0.0793    0.01 Q      |      |      |     V|
66+45    0.0794    0.01 Q      |      |      |     V|
66+50    0.0794    0.00 Q      |      |      |      V|
66+55    0.0794    0.00 Q      |      |      |      V|
67+ 0    0.0795    0.00 Q      |      |      |      V|
67+ 5    0.0795    0.01 Q      |      |      |      V|
67+10    0.0795    0.01 Q      |      |      |      V|
67+15    0.0796    0.01 Q      |      |      |      V|
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 67+20     0.0796     0.01 Q      |       |       |      V|
 67+25     0.0797     0.01 Q      |       |       |      V|
 67+30     0.0797     0.01 Q      |       |       |      V|
 67+35     0.0798     0.01 Q      |       |       |      V|
 67+40     0.0798     0.01 Q      |       |       |      V|
 67+45     0.0798     0.01 Q      |       |       |      V|
 67+50     0.0799     0.00 Q      |       |       |      V|
 67+55     0.0799     0.00 Q      |       |       |      V|
 68+ 0     0.0799     0.00 Q      |       |       |      V|
 68+ 5     0.0800     0.01 Q      |       |       |      V|
 68+10     0.0800     0.01 Q      |       |       |      V|
 68+15     0.0800     0.01 Q      |       |       |      V|
 68+20     0.0801     0.01 Q      |       |       |      V|
 68+25     0.0801     0.01 Q      |       |       |      V|
 68+30     0.0802     0.01 Q      |       |       |      V|
 68+35     0.0802     0.01 Q      |       |       |      V|
 68+40     0.0802     0.01 Q      |       |       |      V|
 68+45     0.0803     0.01 Q      |       |       |      V|
 68+50     0.0803     0.00 Q      |       |       |      V|
 68+55     0.0803     0.00 Q      |       |       |      V|
 69+ 0     0.0804     0.00 Q      |       |       |      V|
 69+ 5     0.0804     0.01 Q      |       |       |      V|
 69+10     0.0804     0.01 Q      |       |       |      V|
 69+15     0.0805     0.01 Q      |       |       |      V|
 69+20     0.0805     0.00 Q      |       |       |      V|
 69+25     0.0805     0.00 Q      |       |       |      V|
 69+30     0.0806     0.00 Q      |       |       |      V|
 69+35     0.0806     0.01 Q      |       |       |      V|
 69+40     0.0806     0.01 Q      |       |       |      V|
 69+45     0.0807     0.01 Q      |       |       |      V|
 69+50     0.0807     0.00 Q      |       |       |      V|
 69+55     0.0807     0.00 Q      |       |       |      V|
 70+ 0     0.0808     0.00 Q      |       |       |      V|
 70+ 5     0.0808     0.01 Q      |       |       |      V|
 70+10     0.0808     0.01 Q      |       |       |      V|
 70+15     0.0809     0.01 Q      |       |       |      V|
 70+20     0.0809     0.00 Q      |       |       |      V|
 70+25     0.0809     0.00 Q      |       |       |      V|
 70+30     0.0809     0.00 Q      |       |       |      V|
 70+35     0.0810     0.00 Q      |       |       |      V|
 70+40     0.0810     0.00 Q      |       |       |      V|
 70+45     0.0810     0.00 Q      |       |       |      V|
 70+50     0.0811     0.00 Q      |       |       |      V|
 70+55     0.0811     0.00 Q      |       |       |      V|
 71+ 0     0.0811     0.00 Q      |       |       |      V|
 71+ 5     0.0811     0.00 Q      |       |       |      V|
 71+10     0.0812     0.00 Q      |       |       |      V|
 71+15     0.0812     0.00 Q      |       |       |      V|
 71+20     0.0812     0.00 Q      |       |       |      V|
 71+25     0.0812     0.00 Q      |       |       |      V|
 71+30     0.0813     0.00 Q      |       |       |      V|
 71+35     0.0813     0.00 Q      |       |       |      V|
 71+40     0.0813     0.00 Q      |       |       |      V|
 71+45     0.0813     0.00 Q      |       |       |      V|
 71+50     0.0814     0.00 Q      |       |       |      V|
 71+55     0.0814     0.00 Q      |       |       |      V|
 72+ 0     0.0814     0.00 Q      |       |       |      V|
 72+ 5     0.0814     0.00 Q      |       |       |      V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APRE2YR245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Pre-development
24-Hr 5-Year Storm Event

Drainage Area = 1.32(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 87.50(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.017 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.021 Hr.
Lag time = 1.24 Min.
25% of lag time = 0.31 Min.
40% of lag time = 0.50 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	2.43	3.22

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	6.58	8.71

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.430(In)
Area Averaged 100-Year Rainfall = 6.580(In)

Point rain (area averaged) = 3.402(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.402(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.324	83.00	0.059

Total Area Entered = 1.32(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.0	83.0	0.210	0.059	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199

Minimum soil loss rate ((In/Hr)) = 0.099

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.853

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	402.223	65.137	0.869
2	0.167	804.446	34.863	0.465

Sum = 100.000 Sum= 1.334

Storm Event 3 Effective Rainfall = 0.646(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.005	0.352	0.004	0.00
2	0.17	0.07	0.005	0.351	0.004	0.00
3	0.25	0.07	0.005	0.349	0.004	0.00
4	0.33	0.10	0.008	0.348	0.007	0.00
5	0.42	0.10	0.008	0.347	0.007	0.00
6	0.50	0.10	0.008	0.345	0.007	0.00
7	0.58	0.10	0.008	0.344	0.007	0.00
8	0.67	0.10	0.008	0.343	0.007	0.00
9	0.75	0.10	0.008	0.341	0.007	0.00
10	0.83	0.13	0.010	0.340	0.009	0.00
11	0.92	0.13	0.010	0.339	0.009	0.00
12	1.00	0.13	0.010	0.337	0.009	0.00
13	1.08	0.10	0.008	0.336	0.007	0.00
14	1.17	0.10	0.008	0.335	0.007	0.00
15	1.25	0.10	0.008	0.333	0.007	0.00
16	1.33	0.10	0.008	0.332	0.007	0.00
17	1.42	0.10	0.008	0.331	0.007	0.00
18	1.50	0.10	0.008	0.329	0.007	0.00
19	1.58	0.10	0.008	0.328	0.007	0.00
20	1.67	0.10	0.008	0.327	0.007	0.00
21	1.75	0.10	0.008	0.325	0.007	0.00
22	1.83	0.13	0.010	0.324	0.009	0.00
23	1.92	0.13	0.010	0.323	0.009	0.00
24	2.00	0.13	0.010	0.322	0.009	0.00
25	2.08	0.13	0.010	0.320	0.009	0.00
26	2.17	0.13	0.010	0.319	0.009	0.00
27	2.25	0.13	0.010	0.318	0.009	0.00
28	2.33	0.13	0.010	0.316	0.009	0.00
29	2.42	0.13	0.010	0.315	0.009	0.00

30	2.50	0.13	0.010	0.314	0.009	0.00
31	2.58	0.17	0.013	0.312	0.011	0.00
32	2.67	0.17	0.013	0.311	0.011	0.00
33	2.75	0.17	0.013	0.310	0.011	0.00
34	2.83	0.17	0.013	0.309	0.011	0.00
35	2.92	0.17	0.013	0.307	0.011	0.00
36	3.00	0.17	0.013	0.306	0.011	0.00
37	3.08	0.17	0.013	0.305	0.011	0.00
38	3.17	0.17	0.013	0.304	0.011	0.00
39	3.25	0.17	0.013	0.302	0.011	0.00
40	3.33	0.17	0.013	0.301	0.011	0.00
41	3.42	0.17	0.013	0.300	0.011	0.00
42	3.50	0.17	0.013	0.299	0.011	0.00
43	3.58	0.17	0.013	0.297	0.011	0.00
44	3.67	0.17	0.013	0.296	0.011	0.00
45	3.75	0.17	0.013	0.295	0.011	0.00
46	3.83	0.20	0.016	0.294	0.013	0.00
47	3.92	0.20	0.016	0.292	0.013	0.00
48	4.00	0.20	0.016	0.291	0.013	0.00
49	4.08	0.20	0.016	0.290	0.013	0.00
50	4.17	0.20	0.016	0.289	0.013	0.00
51	4.25	0.20	0.016	0.287	0.013	0.00
52	4.33	0.23	0.018	0.286	0.015	0.00
53	4.42	0.23	0.018	0.285	0.015	0.00
54	4.50	0.23	0.018	0.284	0.015	0.00
55	4.58	0.23	0.018	0.282	0.015	0.00
56	4.67	0.23	0.018	0.281	0.015	0.00
57	4.75	0.23	0.018	0.280	0.015	0.00
58	4.83	0.27	0.021	0.279	0.018	0.00
59	4.92	0.27	0.021	0.278	0.018	0.00
60	5.00	0.27	0.021	0.276	0.018	0.00
61	5.08	0.20	0.016	0.275	0.013	0.00
62	5.17	0.20	0.016	0.274	0.013	0.00
63	5.25	0.20	0.016	0.273	0.013	0.00
64	5.33	0.23	0.018	0.272	0.015	0.00
65	5.42	0.23	0.018	0.270	0.015	0.00
66	5.50	0.23	0.018	0.269	0.015	0.00
67	5.58	0.27	0.021	0.268	0.018	0.00
68	5.67	0.27	0.021	0.267	0.018	0.00
69	5.75	0.27	0.021	0.266	0.018	0.00
70	5.83	0.27	0.021	0.265	0.018	0.00
71	5.92	0.27	0.021	0.263	0.018	0.00
72	6.00	0.27	0.021	0.262	0.018	0.00
73	6.08	0.30	0.023	0.261	0.020	0.00
74	6.17	0.30	0.023	0.260	0.020	0.00
75	6.25	0.30	0.023	0.259	0.020	0.00
76	6.33	0.30	0.023	0.258	0.020	0.00
77	6.42	0.30	0.023	0.256	0.020	0.00
78	6.50	0.30	0.023	0.255	0.020	0.00
79	6.58	0.33	0.026	0.254	0.022	0.00
80	6.67	0.33	0.026	0.253	0.022	0.00
81	6.75	0.33	0.026	0.252	0.022	0.00
82	6.83	0.33	0.026	0.251	0.022	0.00
83	6.92	0.33	0.026	0.250	0.022	0.00
84	7.00	0.33	0.026	0.248	0.022	0.00
85	7.08	0.33	0.026	0.247	0.022	0.00
86	7.17	0.33	0.026	0.246	0.022	0.00
87	7.25	0.33	0.026	0.245	0.022	0.00
88	7.33	0.37	0.028	0.244	0.024	0.00
89	7.42	0.37	0.028	0.243	0.024	0.00
90	7.50	0.37	0.028	0.242	0.024	0.00
91	7.58	0.40	0.031	0.241	0.026	0.00
92	7.67	0.40	0.031	0.240	0.026	0.00
93	7.75	0.40	0.031	0.238	0.026	0.00
94	7.83	0.43	0.034	0.237	0.029	0.00

95	7.92	0.43	0.034	0.236	0.029	0.00
96	8.00	0.43	0.034	0.235	0.029	0.00
97	8.08	0.50	0.039	0.234	0.033	0.01
98	8.17	0.50	0.039	0.233	0.033	0.01
99	8.25	0.50	0.039	0.232	0.033	0.01
100	8.33	0.50	0.039	0.231	0.033	0.01
101	8.42	0.50	0.039	0.230	0.033	0.01
102	8.50	0.50	0.039	0.229	0.033	0.01
103	8.58	0.53	0.041	0.228	0.035	0.01
104	8.67	0.53	0.041	0.226	0.035	0.01
105	8.75	0.53	0.041	0.225	0.035	0.01
106	8.83	0.57	0.044	0.224	0.038	0.01
107	8.92	0.57	0.044	0.223	0.038	0.01
108	9.00	0.57	0.044	0.222	0.038	0.01
109	9.08	0.63	0.049	0.221	0.042	0.01
110	9.17	0.63	0.049	0.220	0.042	0.01
111	9.25	0.63	0.049	0.219	0.042	0.01
112	9.33	0.67	0.052	0.218	0.044	0.01
113	9.42	0.67	0.052	0.217	0.044	0.01
114	9.50	0.67	0.052	0.216	0.044	0.01
115	9.58	0.70	0.054	0.215	0.046	0.01
116	9.67	0.70	0.054	0.214	0.046	0.01
117	9.75	0.70	0.054	0.213	0.046	0.01
118	9.83	0.73	0.057	0.212	0.049	0.01
119	9.92	0.73	0.057	0.211	0.049	0.01
120	10.00	0.73	0.057	0.210	0.049	0.01
121	10.08	0.50	0.039	0.209	0.033	0.01
122	10.17	0.50	0.039	0.208	0.033	0.01
123	10.25	0.50	0.039	0.207	0.033	0.01
124	10.33	0.50	0.039	0.206	0.033	0.01
125	10.42	0.50	0.039	0.205	0.033	0.01
126	10.50	0.50	0.039	0.204	0.033	0.01
127	10.58	0.67	0.052	0.203	0.044	0.01
128	10.67	0.67	0.052	0.202	0.044	0.01
129	10.75	0.67	0.052	0.201	0.044	0.01
130	10.83	0.67	0.052	0.200	0.044	0.01
131	10.92	0.67	0.052	0.199	0.044	0.01
132	11.00	0.67	0.052	0.198	0.044	0.01
133	11.08	0.63	0.049	0.197	0.042	0.01
134	11.17	0.63	0.049	0.196	0.042	0.01
135	11.25	0.63	0.049	0.195	0.042	0.01
136	11.33	0.63	0.049	0.194	0.042	0.01
137	11.42	0.63	0.049	0.193	0.042	0.01
138	11.50	0.63	0.049	0.192	0.042	0.01
139	11.58	0.57	0.044	0.191	0.038	0.01
140	11.67	0.57	0.044	0.190	0.038	0.01
141	11.75	0.57	0.044	0.189	0.038	0.01
142	11.83	0.60	0.047	0.188	0.040	0.01
143	11.92	0.60	0.047	0.187	0.040	0.01
144	12.00	0.60	0.047	0.186	0.040	0.01
145	12.08	0.83	0.065	0.185	0.055	0.01
146	12.17	0.83	0.065	0.185	0.055	0.01
147	12.25	0.83	0.065	0.184	0.055	0.01
148	12.33	0.87	0.067	0.183	0.057	0.01
149	12.42	0.87	0.067	0.182	0.057	0.01
150	12.50	0.87	0.067	0.181	0.057	0.01
151	12.58	0.93	0.072	0.180	0.062	0.01
152	12.67	0.93	0.072	0.179	0.062	0.01
153	12.75	0.93	0.072	0.178	0.062	0.01
154	12.83	0.97	0.075	0.177	0.064	0.01
155	12.92	0.97	0.075	0.176	0.064	0.01
156	13.00	0.97	0.075	0.175	0.064	0.01
157	13.08	1.13	0.088	0.175	0.075	0.01
158	13.17	1.13	0.088	0.174	0.075	0.01
159	13.25	1.13	0.088	0.173	0.075	0.01

160	13.33	1.13	0.088	0.172	0.075	0.01
161	13.42	1.13	0.088	0.171	0.075	0.01
162	13.50	1.13	0.088	0.170	0.075	0.01
163	13.58	0.77	0.059	0.169	0.051	0.01
164	13.67	0.77	0.059	0.168	0.051	0.01
165	13.75	0.77	0.059	0.168	0.051	0.01
166	13.83	0.77	0.059	0.167	0.051	0.01
167	13.92	0.77	0.059	0.166	0.051	0.01
168	14.00	0.77	0.059	0.165	0.051	0.01
169	14.08	0.90	0.070	0.164	0.060	0.01
170	14.17	0.90	0.070	0.163	0.060	0.01
171	14.25	0.90	0.070	0.163	0.060	0.01
172	14.33	0.87	0.067	0.162	0.057	0.01
173	14.42	0.87	0.067	0.161	0.057	0.01
174	14.50	0.87	0.067	0.160	0.057	0.01
175	14.58	0.87	0.067	0.159	0.057	0.01
176	14.67	0.87	0.067	0.158	0.057	0.01
177	14.75	0.87	0.067	0.158	0.057	0.01
178	14.83	0.83	0.065	0.157	0.055	0.01
179	14.92	0.83	0.065	0.156	0.055	0.01
180	15.00	0.83	0.065	0.155	0.055	0.01
181	15.08	0.80	0.062	0.154	0.053	0.01
182	15.17	0.80	0.062	0.154	0.053	0.01
183	15.25	0.80	0.062	0.153	0.053	0.01
184	15.33	0.77	0.059	0.152	0.051	0.01
185	15.42	0.77	0.059	0.151	0.051	0.01
186	15.50	0.77	0.059	0.150	0.051	0.01
187	15.58	0.63	0.049	0.150	0.042	0.01
188	15.67	0.63	0.049	0.149	0.042	0.01
189	15.75	0.63	0.049	0.148	0.042	0.01
190	15.83	0.63	0.049	0.147	0.042	0.01
191	15.92	0.63	0.049	0.147	0.042	0.01
192	16.00	0.63	0.049	0.146	0.042	0.01
193	16.08	0.13	0.010	0.145	0.009	0.00
194	16.17	0.13	0.010	0.144	0.009	0.00
195	16.25	0.13	0.010	0.144	0.009	0.00
196	16.33	0.13	0.010	0.143	0.009	0.00
197	16.42	0.13	0.010	0.142	0.009	0.00
198	16.50	0.13	0.010	0.141	0.009	0.00
199	16.58	0.10	0.008	0.141	0.007	0.00
200	16.67	0.10	0.008	0.140	0.007	0.00
201	16.75	0.10	0.008	0.139	0.007	0.00
202	16.83	0.10	0.008	0.139	0.007	0.00
203	16.92	0.10	0.008	0.138	0.007	0.00
204	17.00	0.10	0.008	0.137	0.007	0.00
205	17.08	0.17	0.013	0.137	0.011	0.00
206	17.17	0.17	0.013	0.136	0.011	0.00
207	17.25	0.17	0.013	0.135	0.011	0.00
208	17.33	0.17	0.013	0.134	0.011	0.00
209	17.42	0.17	0.013	0.134	0.011	0.00
210	17.50	0.17	0.013	0.133	0.011	0.00
211	17.58	0.17	0.013	0.132	0.011	0.00
212	17.67	0.17	0.013	0.132	0.011	0.00
213	17.75	0.17	0.013	0.131	0.011	0.00
214	17.83	0.13	0.010	0.131	0.009	0.00
215	17.92	0.13	0.010	0.130	0.009	0.00
216	18.00	0.13	0.010	0.129	0.009	0.00
217	18.08	0.13	0.010	0.129	0.009	0.00
218	18.17	0.13	0.010	0.128	0.009	0.00
219	18.25	0.13	0.010	0.127	0.009	0.00
220	18.33	0.13	0.010	0.127	0.009	0.00
221	18.42	0.13	0.010	0.126	0.009	0.00
222	18.50	0.13	0.010	0.125	0.009	0.00
223	18.58	0.10	0.008	0.125	0.007	0.00
224	18.67	0.10	0.008	0.124	0.007	0.00

225	18.75	0.10	0.008	0.124	0.007	0.00
226	18.83	0.07	0.005	0.123	0.004	0.00
227	18.92	0.07	0.005	0.122	0.004	0.00
228	19.00	0.07	0.005	0.122	0.004	0.00
229	19.08	0.10	0.008	0.121	0.007	0.00
230	19.17	0.10	0.008	0.121	0.007	0.00
231	19.25	0.10	0.008	0.120	0.007	0.00
232	19.33	0.13	0.010	0.120	0.009	0.00
233	19.42	0.13	0.010	0.119	0.009	0.00
234	19.50	0.13	0.010	0.119	0.009	0.00
235	19.58	0.10	0.008	0.118	0.007	0.00
236	19.67	0.10	0.008	0.117	0.007	0.00
237	19.75	0.10	0.008	0.117	0.007	0.00
238	19.83	0.07	0.005	0.116	0.004	0.00
239	19.92	0.07	0.005	0.116	0.004	0.00
240	20.00	0.07	0.005	0.115	0.004	0.00
241	20.08	0.10	0.008	0.115	0.007	0.00
242	20.17	0.10	0.008	0.114	0.007	0.00
243	20.25	0.10	0.008	0.114	0.007	0.00
244	20.33	0.10	0.008	0.113	0.007	0.00
245	20.42	0.10	0.008	0.113	0.007	0.00
246	20.50	0.10	0.008	0.112	0.007	0.00
247	20.58	0.10	0.008	0.112	0.007	0.00
248	20.67	0.10	0.008	0.111	0.007	0.00
249	20.75	0.10	0.008	0.111	0.007	0.00
250	20.83	0.07	0.005	0.111	0.004	0.00
251	20.92	0.07	0.005	0.110	0.004	0.00
252	21.00	0.07	0.005	0.110	0.004	0.00
253	21.08	0.10	0.008	0.109	0.007	0.00
254	21.17	0.10	0.008	0.109	0.007	0.00
255	21.25	0.10	0.008	0.108	0.007	0.00
256	21.33	0.07	0.005	0.108	0.004	0.00
257	21.42	0.07	0.005	0.108	0.004	0.00
258	21.50	0.07	0.005	0.107	0.004	0.00
259	21.58	0.10	0.008	0.107	0.007	0.00
260	21.67	0.10	0.008	0.106	0.007	0.00
261	21.75	0.10	0.008	0.106	0.007	0.00
262	21.83	0.07	0.005	0.106	0.004	0.00
263	21.92	0.07	0.005	0.105	0.004	0.00
264	22.00	0.07	0.005	0.105	0.004	0.00
265	22.08	0.10	0.008	0.105	0.007	0.00
266	22.17	0.10	0.008	0.104	0.007	0.00
267	22.25	0.10	0.008	0.104	0.007	0.00
268	22.33	0.07	0.005	0.104	0.004	0.00
269	22.42	0.07	0.005	0.103	0.004	0.00
270	22.50	0.07	0.005	0.103	0.004	0.00
271	22.58	0.07	0.005	0.103	0.004	0.00
272	22.67	0.07	0.005	0.102	0.004	0.00
273	22.75	0.07	0.005	0.102	0.004	0.00
274	22.83	0.07	0.005	0.102	0.004	0.00
275	22.92	0.07	0.005	0.102	0.004	0.00
276	23.00	0.07	0.005	0.101	0.004	0.00
277	23.08	0.07	0.005	0.101	0.004	0.00
278	23.17	0.07	0.005	0.101	0.004	0.00
279	23.25	0.07	0.005	0.101	0.004	0.00
280	23.33	0.07	0.005	0.100	0.004	0.00
281	23.42	0.07	0.005	0.100	0.004	0.00
282	23.50	0.07	0.005	0.100	0.004	0.00
283	23.58	0.07	0.005	0.100	0.004	0.00
284	23.67	0.07	0.005	0.100	0.004	0.00
285	23.75	0.07	0.005	0.100	0.004	0.00
286	23.83	0.07	0.005	0.099	0.004	0.00
287	23.92	0.07	0.005	0.099	0.004	0.00
288	24.00	0.07	0.005	0.099	0.004	0.00
	Sum =	100.0			Sum =	1.1

Flood volume = Effective rainfall 0.09(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.55(In)
Total soil loss = 0.061(Ac.Ft)
Total rainfall = 0.65(In)
Flood volume = 456.0 Cubic Feet
Total soil loss = 2650.6 Cubic Feet

Storm Event 2 Effective Rainfall = 1.225(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.010	0.352	0.008	0.00
2	0.17	0.07	0.010	0.351	0.008	0.00
3	0.25	0.07	0.010	0.349	0.008	0.00
4	0.33	0.10	0.015	0.348	0.013	0.00
5	0.42	0.10	0.015	0.347	0.013	0.00
6	0.50	0.10	0.015	0.345	0.013	0.00
7	0.58	0.10	0.015	0.344	0.013	0.00
8	0.67	0.10	0.015	0.343	0.013	0.00
9	0.75	0.10	0.015	0.341	0.013	0.00
10	0.83	0.13	0.020	0.340	0.017	0.00
11	0.92	0.13	0.020	0.339	0.017	0.00
12	1.00	0.13	0.020	0.337	0.017	0.00
13	1.08	0.10	0.015	0.336	0.013	0.00
14	1.17	0.10	0.015	0.335	0.013	0.00
15	1.25	0.10	0.015	0.333	0.013	0.00
16	1.33	0.10	0.015	0.332	0.013	0.00
17	1.42	0.10	0.015	0.331	0.013	0.00
18	1.50	0.10	0.015	0.329	0.013	0.00
19	1.58	0.10	0.015	0.328	0.013	0.00
20	1.67	0.10	0.015	0.327	0.013	0.00
21	1.75	0.10	0.015	0.325	0.013	0.00
22	1.83	0.13	0.020	0.324	0.017	0.00
23	1.92	0.13	0.020	0.323	0.017	0.00
24	2.00	0.13	0.020	0.322	0.017	0.00
25	2.08	0.13	0.020	0.320	0.017	0.00
26	2.17	0.13	0.020	0.319	0.017	0.00
27	2.25	0.13	0.020	0.318	0.017	0.00
28	2.33	0.13	0.020	0.316	0.017	0.00
29	2.42	0.13	0.020	0.315	0.017	0.00
30	2.50	0.13	0.020	0.314	0.017	0.00
31	2.58	0.17	0.024	0.312	0.021	0.00
32	2.67	0.17	0.024	0.311	0.021	0.00
33	2.75	0.17	0.024	0.310	0.021	0.00
34	2.83	0.17	0.024	0.309	0.021	0.00
35	2.92	0.17	0.024	0.307	0.021	0.00
36	3.00	0.17	0.024	0.306	0.021	0.00
37	3.08	0.17	0.024	0.305	0.021	0.00
38	3.17	0.17	0.024	0.304	0.021	0.00
39	3.25	0.17	0.024	0.302	0.021	0.00
40	3.33	0.17	0.024	0.301	0.021	0.00
41	3.42	0.17	0.024	0.300	0.021	0.00
42	3.50	0.17	0.024	0.299	0.021	0.00
43	3.58	0.17	0.024	0.297	0.021	0.00
44	3.67	0.17	0.024	0.296	0.021	0.00
45	3.75	0.17	0.024	0.295	0.021	0.00
46	3.83	0.20	0.029	0.294	0.025	0.00
47	3.92	0.20	0.029	0.292	0.025	0.00
48	4.00	0.20	0.029	0.291	0.025	0.00
49	4.08	0.20	0.029	0.290	0.025	0.00
50	4.17	0.20	0.029	0.289	0.025	0.00
51	4.25	0.20	0.029	0.287	0.025	0.00
52	4.33	0.23	0.034	0.286	0.029	0.01

53	4.42	0.23	0.034	0.285	0.029	0.01
54	4.50	0.23	0.034	0.284	0.029	0.01
55	4.58	0.23	0.034	0.282	0.029	0.01
56	4.67	0.23	0.034	0.281	0.029	0.01
57	4.75	0.23	0.034	0.280	0.029	0.01
58	4.83	0.27	0.039	0.279	0.033	0.01
59	4.92	0.27	0.039	0.278	0.033	0.01
60	5.00	0.27	0.039	0.276	0.033	0.01
61	5.08	0.20	0.029	0.275	0.025	0.00
62	5.17	0.20	0.029	0.274	0.025	0.00
63	5.25	0.20	0.029	0.273	0.025	0.00
64	5.33	0.23	0.034	0.272	0.029	0.01
65	5.42	0.23	0.034	0.270	0.029	0.01
66	5.50	0.23	0.034	0.269	0.029	0.01
67	5.58	0.27	0.039	0.268	0.033	0.01
68	5.67	0.27	0.039	0.267	0.033	0.01
69	5.75	0.27	0.039	0.266	0.033	0.01
70	5.83	0.27	0.039	0.265	0.033	0.01
71	5.92	0.27	0.039	0.263	0.033	0.01
72	6.00	0.27	0.039	0.262	0.033	0.01
73	6.08	0.30	0.044	0.261	0.038	0.01
74	6.17	0.30	0.044	0.260	0.038	0.01
75	6.25	0.30	0.044	0.259	0.038	0.01
76	6.33	0.30	0.044	0.258	0.038	0.01
77	6.42	0.30	0.044	0.256	0.038	0.01
78	6.50	0.30	0.044	0.255	0.038	0.01
79	6.58	0.33	0.049	0.254	0.042	0.01
80	6.67	0.33	0.049	0.253	0.042	0.01
81	6.75	0.33	0.049	0.252	0.042	0.01
82	6.83	0.33	0.049	0.251	0.042	0.01
83	6.92	0.33	0.049	0.250	0.042	0.01
84	7.00	0.33	0.049	0.248	0.042	0.01
85	7.08	0.33	0.049	0.247	0.042	0.01
86	7.17	0.33	0.049	0.246	0.042	0.01
87	7.25	0.33	0.049	0.245	0.042	0.01
88	7.33	0.37	0.054	0.244	0.046	0.01
89	7.42	0.37	0.054	0.243	0.046	0.01
90	7.50	0.37	0.054	0.242	0.046	0.01
91	7.58	0.40	0.059	0.241	0.050	0.01
92	7.67	0.40	0.059	0.240	0.050	0.01
93	7.75	0.40	0.059	0.238	0.050	0.01
94	7.83	0.43	0.064	0.237	0.054	0.01
95	7.92	0.43	0.064	0.236	0.054	0.01
96	8.00	0.43	0.064	0.235	0.054	0.01
97	8.08	0.50	0.073	0.234	0.063	0.01
98	8.17	0.50	0.073	0.233	0.063	0.01
99	8.25	0.50	0.073	0.232	0.063	0.01
100	8.33	0.50	0.073	0.231	0.063	0.01
101	8.42	0.50	0.073	0.230	0.063	0.01
102	8.50	0.50	0.073	0.229	0.063	0.01
103	8.58	0.53	0.078	0.228	0.067	0.01
104	8.67	0.53	0.078	0.226	0.067	0.01
105	8.75	0.53	0.078	0.225	0.067	0.01
106	8.83	0.57	0.083	0.224	0.071	0.01
107	8.92	0.57	0.083	0.223	0.071	0.01
108	9.00	0.57	0.083	0.222	0.071	0.01
109	9.08	0.63	0.093	0.221	0.079	0.01
110	9.17	0.63	0.093	0.220	0.079	0.01
111	9.25	0.63	0.093	0.219	0.079	0.01
112	9.33	0.67	0.098	0.218	0.084	0.01
113	9.42	0.67	0.098	0.217	0.084	0.01
114	9.50	0.67	0.098	0.216	0.084	0.01
115	9.58	0.70	0.103	0.215	0.088	0.02
116	9.67	0.70	0.103	0.214	0.088	0.02
117	9.75	0.70	0.103	0.213	0.088	0.02

118	9.83	0.73	0.108	0.212	0.092	0.02
119	9.92	0.73	0.108	0.211	0.092	0.02
120	10.00	0.73	0.108	0.210	0.092	0.02
121	10.08	0.50	0.073	0.209	0.063	0.01
122	10.17	0.50	0.073	0.208	0.063	0.01
123	10.25	0.50	0.073	0.207	0.063	0.01
124	10.33	0.50	0.073	0.206	0.063	0.01
125	10.42	0.50	0.073	0.205	0.063	0.01
126	10.50	0.50	0.073	0.204	0.063	0.01
127	10.58	0.67	0.098	0.203	0.084	0.01
128	10.67	0.67	0.098	0.202	0.084	0.01
129	10.75	0.67	0.098	0.201	0.084	0.01
130	10.83	0.67	0.098	0.200	0.084	0.01
131	10.92	0.67	0.098	0.199	0.084	0.01
132	11.00	0.67	0.098	0.198	0.084	0.01
133	11.08	0.63	0.093	0.197	0.079	0.01
134	11.17	0.63	0.093	0.196	0.079	0.01
135	11.25	0.63	0.093	0.195	0.079	0.01
136	11.33	0.63	0.093	0.194	0.079	0.01
137	11.42	0.63	0.093	0.193	0.079	0.01
138	11.50	0.63	0.093	0.192	0.079	0.01
139	11.58	0.57	0.083	0.191	0.071	0.01
140	11.67	0.57	0.083	0.190	0.071	0.01
141	11.75	0.57	0.083	0.189	0.071	0.01
142	11.83	0.60	0.088	0.188	0.075	0.01
143	11.92	0.60	0.088	0.187	0.075	0.01
144	12.00	0.60	0.088	0.186	0.075	0.01
145	12.08	0.83	0.122	0.185	0.104	0.02
146	12.17	0.83	0.122	0.185	0.104	0.02
147	12.25	0.83	0.122	0.184	0.104	0.02
148	12.33	0.87	0.127	0.183	0.109	0.02
149	12.42	0.87	0.127	0.182	0.109	0.02
150	12.50	0.87	0.127	0.181	0.109	0.02
151	12.58	0.93	0.137	0.180	0.117	0.02
152	12.67	0.93	0.137	0.179	0.117	0.02
153	12.75	0.93	0.137	0.178	0.117	0.02
154	12.83	0.97	0.142	0.177	0.121	0.02
155	12.92	0.97	0.142	0.176	0.121	0.02
156	13.00	0.97	0.142	0.175	0.121	0.02
157	13.08	1.13	0.167	0.175	0.142	0.02
158	13.17	1.13	0.167	0.174	0.142	0.02
159	13.25	1.13	0.167	0.173	0.142	0.02
160	13.33	1.13	0.167	0.172	0.142	0.02
161	13.42	1.13	0.167	0.171	0.142	0.02
162	13.50	1.13	0.167	0.170	0.142	0.02
163	13.58	0.77	0.113	0.169	0.096	0.02
164	13.67	0.77	0.113	0.168	0.096	0.02
165	13.75	0.77	0.113	0.168	0.096	0.02
166	13.83	0.77	0.113	0.167	0.096	0.02
167	13.92	0.77	0.113	0.166	0.096	0.02
168	14.00	0.77	0.113	0.165	0.096	0.02
169	14.08	0.90	0.132	0.164	0.113	0.02
170	14.17	0.90	0.132	0.163	0.113	0.02
171	14.25	0.90	0.132	0.163	0.113	0.02
172	14.33	0.87	0.127	0.162	0.109	0.02
173	14.42	0.87	0.127	0.161	0.109	0.02
174	14.50	0.87	0.127	0.160	0.109	0.02
175	14.58	0.87	0.127	0.159	0.109	0.02
176	14.67	0.87	0.127	0.158	0.109	0.02
177	14.75	0.87	0.127	0.158	0.109	0.02
178	14.83	0.83	0.122	0.157	0.104	0.02
179	14.92	0.83	0.122	0.156	0.104	0.02
180	15.00	0.83	0.122	0.155	0.104	0.02
181	15.08	0.80	0.118	0.154	0.100	0.02
182	15.17	0.80	0.118	0.154	0.100	0.02

183	15.25	0.80	0.118	0.153	0.100	0.02
184	15.33	0.77	0.113	0.152	0.096	0.02
185	15.42	0.77	0.113	0.151	0.096	0.02
186	15.50	0.77	0.113	0.150	0.096	0.02
187	15.58	0.63	0.093	0.150	0.079	0.01
188	15.67	0.63	0.093	0.149	0.079	0.01
189	15.75	0.63	0.093	0.148	0.079	0.01
190	15.83	0.63	0.093	0.147	0.079	0.01
191	15.92	0.63	0.093	0.147	0.079	0.01
192	16.00	0.63	0.093	0.146	0.079	0.01
193	16.08	0.13	0.020	0.145	0.017	0.00
194	16.17	0.13	0.020	0.144	0.017	0.00
195	16.25	0.13	0.020	0.144	0.017	0.00
196	16.33	0.13	0.020	0.143	0.017	0.00
197	16.42	0.13	0.020	0.142	0.017	0.00
198	16.50	0.13	0.020	0.141	0.017	0.00
199	16.58	0.10	0.015	0.141	0.013	0.00
200	16.67	0.10	0.015	0.140	0.013	0.00
201	16.75	0.10	0.015	0.139	0.013	0.00
202	16.83	0.10	0.015	0.139	0.013	0.00
203	16.92	0.10	0.015	0.138	0.013	0.00
204	17.00	0.10	0.015	0.137	0.013	0.00
205	17.08	0.17	0.024	0.137	0.021	0.00
206	17.17	0.17	0.024	0.136	0.021	0.00
207	17.25	0.17	0.024	0.135	0.021	0.00
208	17.33	0.17	0.024	0.134	0.021	0.00
209	17.42	0.17	0.024	0.134	0.021	0.00
210	17.50	0.17	0.024	0.133	0.021	0.00
211	17.58	0.17	0.024	0.132	0.021	0.00
212	17.67	0.17	0.024	0.132	0.021	0.00
213	17.75	0.17	0.024	0.131	0.021	0.00
214	17.83	0.13	0.020	0.131	0.017	0.00
215	17.92	0.13	0.020	0.130	0.017	0.00
216	18.00	0.13	0.020	0.129	0.017	0.00
217	18.08	0.13	0.020	0.129	0.017	0.00
218	18.17	0.13	0.020	0.128	0.017	0.00
219	18.25	0.13	0.020	0.127	0.017	0.00
220	18.33	0.13	0.020	0.127	0.017	0.00
221	18.42	0.13	0.020	0.126	0.017	0.00
222	18.50	0.13	0.020	0.125	0.017	0.00
223	18.58	0.10	0.015	0.125	0.013	0.00
224	18.67	0.10	0.015	0.124	0.013	0.00
225	18.75	0.10	0.015	0.124	0.013	0.00
226	18.83	0.07	0.010	0.123	0.008	0.00
227	18.92	0.07	0.010	0.122	0.008	0.00
228	19.00	0.07	0.010	0.122	0.008	0.00
229	19.08	0.10	0.015	0.121	0.013	0.00
230	19.17	0.10	0.015	0.121	0.013	0.00
231	19.25	0.10	0.015	0.120	0.013	0.00
232	19.33	0.13	0.020	0.120	0.017	0.00
233	19.42	0.13	0.020	0.119	0.017	0.00
234	19.50	0.13	0.020	0.119	0.017	0.00
235	19.58	0.10	0.015	0.118	0.013	0.00
236	19.67	0.10	0.015	0.117	0.013	0.00
237	19.75	0.10	0.015	0.117	0.013	0.00
238	19.83	0.07	0.010	0.116	0.008	0.00
239	19.92	0.07	0.010	0.116	0.008	0.00
240	20.00	0.07	0.010	0.115	0.008	0.00
241	20.08	0.10	0.015	0.115	0.013	0.00
242	20.17	0.10	0.015	0.114	0.013	0.00
243	20.25	0.10	0.015	0.114	0.013	0.00
244	20.33	0.10	0.015	0.113	0.013	0.00
245	20.42	0.10	0.015	0.113	0.013	0.00
246	20.50	0.10	0.015	0.112	0.013	0.00
247	20.58	0.10	0.015	0.112	0.013	0.00

248	20.67	0.10	0.015	0.111	0.013	0.00
249	20.75	0.10	0.015	0.111	0.013	0.00
250	20.83	0.07	0.010	0.111	0.008	0.00
251	20.92	0.07	0.010	0.110	0.008	0.00
252	21.00	0.07	0.010	0.110	0.008	0.00
253	21.08	0.10	0.015	0.109	0.013	0.00
254	21.17	0.10	0.015	0.109	0.013	0.00
255	21.25	0.10	0.015	0.108	0.013	0.00
256	21.33	0.07	0.010	0.108	0.008	0.00
257	21.42	0.07	0.010	0.108	0.008	0.00
258	21.50	0.07	0.010	0.107	0.008	0.00
259	21.58	0.10	0.015	0.107	0.013	0.00
260	21.67	0.10	0.015	0.106	0.013	0.00
261	21.75	0.10	0.015	0.106	0.013	0.00
262	21.83	0.07	0.010	0.106	0.008	0.00
263	21.92	0.07	0.010	0.105	0.008	0.00
264	22.00	0.07	0.010	0.105	0.008	0.00
265	22.08	0.10	0.015	0.105	0.013	0.00
266	22.17	0.10	0.015	0.104	0.013	0.00
267	22.25	0.10	0.015	0.104	0.013	0.00
268	22.33	0.07	0.010	0.104	0.008	0.00
269	22.42	0.07	0.010	0.103	0.008	0.00
270	22.50	0.07	0.010	0.103	0.008	0.00
271	22.58	0.07	0.010	0.103	0.008	0.00
272	22.67	0.07	0.010	0.102	0.008	0.00
273	22.75	0.07	0.010	0.102	0.008	0.00
274	22.83	0.07	0.010	0.102	0.008	0.00
275	22.92	0.07	0.010	0.102	0.008	0.00
276	23.00	0.07	0.010	0.101	0.008	0.00
277	23.08	0.07	0.010	0.101	0.008	0.00
278	23.17	0.07	0.010	0.101	0.008	0.00
279	23.25	0.07	0.010	0.101	0.008	0.00
280	23.33	0.07	0.010	0.100	0.008	0.00
281	23.42	0.07	0.010	0.100	0.008	0.00
282	23.50	0.07	0.010	0.100	0.008	0.00
283	23.58	0.07	0.010	0.100	0.008	0.00
284	23.67	0.07	0.010	0.100	0.008	0.00
285	23.75	0.07	0.010	0.100	0.008	0.00
286	23.83	0.07	0.010	0.099	0.008	0.00
287	23.92	0.07	0.010	0.099	0.008	0.00
288	24.00	0.07	0.010	0.099	0.008	0.00
Sum =	100.0			Sum =	2.2	

Flood volume = Effective rainfall 0.18(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 1.04(In)
Total soil loss = 0.115(Ac.Ft)
Total rainfall = 1.22(In)
Flood volume = 864.1 Cubic Feet
Total soil loss = 5022.1 Cubic Feet

Storm Event 1 Effective Rainfall = 3.402(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.027	0.352	0.023	0.00
2	0.17	0.07	0.027	0.351	0.023	0.00
3	0.25	0.07	0.027	0.349	0.023	0.00
4	0.33	0.10	0.041	0.348	0.035	0.01
5	0.42	0.10	0.041	0.347	0.035	0.01
6	0.50	0.10	0.041	0.345	0.035	0.01
7	0.58	0.10	0.041	0.344	0.035	0.01
8	0.67	0.10	0.041	0.343	0.035	0.01
9	0.75	0.10	0.041	0.341	0.035	0.01
10	0.83	0.13	0.054	0.340	0.046	0.01

11	0.92	0.13	0.054	0.339	0.046	0.01
12	1.00	0.13	0.054	0.337	0.046	0.01
13	1.08	0.10	0.041	0.336	0.035	0.01
14	1.17	0.10	0.041	0.335	0.035	0.01
15	1.25	0.10	0.041	0.333	0.035	0.01
16	1.33	0.10	0.041	0.332	0.035	0.01
17	1.42	0.10	0.041	0.331	0.035	0.01
18	1.50	0.10	0.041	0.329	0.035	0.01
19	1.58	0.10	0.041	0.328	0.035	0.01
20	1.67	0.10	0.041	0.327	0.035	0.01
21	1.75	0.10	0.041	0.325	0.035	0.01
22	1.83	0.13	0.054	0.324	0.046	0.01
23	1.92	0.13	0.054	0.323	0.046	0.01
24	2.00	0.13	0.054	0.322	0.046	0.01
25	2.08	0.13	0.054	0.320	0.046	0.01
26	2.17	0.13	0.054	0.319	0.046	0.01
27	2.25	0.13	0.054	0.318	0.046	0.01
28	2.33	0.13	0.054	0.316	0.046	0.01
29	2.42	0.13	0.054	0.315	0.046	0.01
30	2.50	0.13	0.054	0.314	0.046	0.01
31	2.58	0.17	0.068	0.312	0.058	0.01
32	2.67	0.17	0.068	0.311	0.058	0.01
33	2.75	0.17	0.068	0.310	0.058	0.01
34	2.83	0.17	0.068	0.309	0.058	0.01
35	2.92	0.17	0.068	0.307	0.058	0.01
36	3.00	0.17	0.068	0.306	0.058	0.01
37	3.08	0.17	0.068	0.305	0.058	0.01
38	3.17	0.17	0.068	0.304	0.058	0.01
39	3.25	0.17	0.068	0.302	0.058	0.01
40	3.33	0.17	0.068	0.301	0.058	0.01
41	3.42	0.17	0.068	0.300	0.058	0.01
42	3.50	0.17	0.068	0.299	0.058	0.01
43	3.58	0.17	0.068	0.297	0.058	0.01
44	3.67	0.17	0.068	0.296	0.058	0.01
45	3.75	0.17	0.068	0.295	0.058	0.01
46	3.83	0.20	0.082	0.294	0.070	0.01
47	3.92	0.20	0.082	0.292	0.070	0.01
48	4.00	0.20	0.082	0.291	0.070	0.01
49	4.08	0.20	0.082	0.290	0.070	0.01
50	4.17	0.20	0.082	0.289	0.070	0.01
51	4.25	0.20	0.082	0.287	0.070	0.01
52	4.33	0.23	0.095	0.286	0.081	0.01
53	4.42	0.23	0.095	0.285	0.081	0.01
54	4.50	0.23	0.095	0.284	0.081	0.01
55	4.58	0.23	0.095	0.282	0.081	0.01
56	4.67	0.23	0.095	0.281	0.081	0.01
57	4.75	0.23	0.095	0.280	0.081	0.01
58	4.83	0.27	0.109	0.279	0.093	0.02
59	4.92	0.27	0.109	0.278	0.093	0.02
60	5.00	0.27	0.109	0.276	0.093	0.02
61	5.08	0.20	0.082	0.275	0.070	0.01
62	5.17	0.20	0.082	0.274	0.070	0.01
63	5.25	0.20	0.082	0.273	0.070	0.01
64	5.33	0.23	0.095	0.272	0.081	0.01
65	5.42	0.23	0.095	0.270	0.081	0.01
66	5.50	0.23	0.095	0.269	0.081	0.01
67	5.58	0.27	0.109	0.268	0.093	0.02
68	5.67	0.27	0.109	0.267	0.093	0.02
69	5.75	0.27	0.109	0.266	0.093	0.02
70	5.83	0.27	0.109	0.265	0.093	0.02
71	5.92	0.27	0.109	0.263	0.093	0.02
72	6.00	0.27	0.109	0.262	0.093	0.02
73	6.08	0.30	0.122	0.261	0.104	0.02
74	6.17	0.30	0.122	0.260	0.104	0.02
75	6.25	0.30	0.122	0.259	0.104	0.02

76	6.33	0.30	0.122	0.258	0.104	0.02
77	6.42	0.30	0.122	0.256	0.104	0.02
78	6.50	0.30	0.122	0.255	0.104	0.02
79	6.58	0.33	0.136	0.254	0.116	0.02
80	6.67	0.33	0.136	0.253	0.116	0.02
81	6.75	0.33	0.136	0.252	0.116	0.02
82	6.83	0.33	0.136	0.251	0.116	0.02
83	6.92	0.33	0.136	0.250	0.116	0.02
84	7.00	0.33	0.136	0.248	0.116	0.02
85	7.08	0.33	0.136	0.247	0.116	0.02
86	7.17	0.33	0.136	0.246	0.116	0.02
87	7.25	0.33	0.136	0.245	0.116	0.02
88	7.33	0.37	0.150	0.244	0.128	0.02
89	7.42	0.37	0.150	0.243	0.128	0.02
90	7.50	0.37	0.150	0.242	0.128	0.02
91	7.58	0.40	0.163	0.241	0.139	0.02
92	7.67	0.40	0.163	0.240	0.139	0.02
93	7.75	0.40	0.163	0.238	0.139	0.02
94	7.83	0.43	0.177	0.237	0.151	0.03
95	7.92	0.43	0.177	0.236	0.151	0.03
96	8.00	0.43	0.177	0.235	0.151	0.03
97	8.08	0.50	0.204	0.234	0.174	0.03
98	8.17	0.50	0.204	0.233	0.174	0.03
99	8.25	0.50	0.204	0.232	0.174	0.03
100	8.33	0.50	0.204	0.231	0.174	0.03
101	8.42	0.50	0.204	0.230	0.174	0.03
102	8.50	0.50	0.204	0.229	0.174	0.03
103	8.58	0.53	0.218	0.228	0.186	0.03
104	8.67	0.53	0.218	0.226	0.186	0.03
105	8.75	0.53	0.218	0.225	0.186	0.03
106	8.83	0.57	0.231	0.224	---	0.01
107	8.92	0.57	0.231	0.223	---	0.01
108	9.00	0.57	0.231	0.222	---	0.01
109	9.08	0.63	0.259	0.221	---	0.04
110	9.17	0.63	0.259	0.220	---	0.04
111	9.25	0.63	0.259	0.219	---	0.04
112	9.33	0.67	0.272	0.218	---	0.05
113	9.42	0.67	0.272	0.217	---	0.06
114	9.50	0.67	0.272	0.216	---	0.06
115	9.58	0.70	0.286	0.215	---	0.07
116	9.67	0.70	0.286	0.214	---	0.07
117	9.75	0.70	0.286	0.213	---	0.07
118	9.83	0.73	0.299	0.212	---	0.09
119	9.92	0.73	0.299	0.211	---	0.09
120	10.00	0.73	0.299	0.210	---	0.09
121	10.08	0.50	0.204	0.209	0.174	0.03
122	10.17	0.50	0.204	0.208	0.174	0.03
123	10.25	0.50	0.204	0.207	0.174	0.03
124	10.33	0.50	0.204	0.206	0.174	0.03
125	10.42	0.50	0.204	0.205	0.174	0.03
126	10.50	0.50	0.204	0.204	---	0.00
127	10.58	0.67	0.272	0.203	---	0.07
128	10.67	0.67	0.272	0.202	---	0.07
129	10.75	0.67	0.272	0.201	---	0.07
130	10.83	0.67	0.272	0.200	---	0.07
131	10.92	0.67	0.272	0.199	---	0.07
132	11.00	0.67	0.272	0.198	---	0.07
133	11.08	0.63	0.259	0.197	---	0.06
134	11.17	0.63	0.259	0.196	---	0.06
135	11.25	0.63	0.259	0.195	---	0.06
136	11.33	0.63	0.259	0.194	---	0.06
137	11.42	0.63	0.259	0.193	---	0.07
138	11.50	0.63	0.259	0.192	---	0.07
139	11.58	0.57	0.231	0.191	---	0.04
140	11.67	0.57	0.231	0.190	---	0.04

141	11.75	0.57	0.231	0.189	---	0.04
142	11.83	0.60	0.245	0.188	---	0.06
143	11.92	0.60	0.245	0.187	---	0.06
144	12.00	0.60	0.245	0.186	---	0.06
145	12.08	0.83	0.340	0.185	---	0.15
146	12.17	0.83	0.340	0.185	---	0.16
147	12.25	0.83	0.340	0.184	---	0.16
148	12.33	0.87	0.354	0.183	---	0.17
149	12.42	0.87	0.354	0.182	---	0.17
150	12.50	0.87	0.354	0.181	---	0.17
151	12.58	0.93	0.381	0.180	---	0.20
152	12.67	0.93	0.381	0.179	---	0.20
153	12.75	0.93	0.381	0.178	---	0.20
154	12.83	0.97	0.395	0.177	---	0.22
155	12.92	0.97	0.395	0.176	---	0.22
156	13.00	0.97	0.395	0.175	---	0.22
157	13.08	1.13	0.463	0.175	---	0.29
158	13.17	1.13	0.463	0.174	---	0.29
159	13.25	1.13	0.463	0.173	---	0.29
160	13.33	1.13	0.463	0.172	---	0.29
161	13.42	1.13	0.463	0.171	---	0.29
162	13.50	1.13	0.463	0.170	---	0.29
163	13.58	0.77	0.313	0.169	---	0.14
164	13.67	0.77	0.313	0.168	---	0.14
165	13.75	0.77	0.313	0.168	---	0.15
166	13.83	0.77	0.313	0.167	---	0.15
167	13.92	0.77	0.313	0.166	---	0.15
168	14.00	0.77	0.313	0.165	---	0.15
169	14.08	0.90	0.367	0.164	---	0.20
170	14.17	0.90	0.367	0.163	---	0.20
171	14.25	0.90	0.367	0.163	---	0.20
172	14.33	0.87	0.354	0.162	---	0.19
173	14.42	0.87	0.354	0.161	---	0.19
174	14.50	0.87	0.354	0.160	---	0.19
175	14.58	0.87	0.354	0.159	---	0.19
176	14.67	0.87	0.354	0.158	---	0.20
177	14.75	0.87	0.354	0.158	---	0.20
178	14.83	0.83	0.340	0.157	---	0.18
179	14.92	0.83	0.340	0.156	---	0.18
180	15.00	0.83	0.340	0.155	---	0.19
181	15.08	0.80	0.327	0.154	---	0.17
182	15.17	0.80	0.327	0.154	---	0.17
183	15.25	0.80	0.327	0.153	---	0.17
184	15.33	0.77	0.313	0.152	---	0.16
185	15.42	0.77	0.313	0.151	---	0.16
186	15.50	0.77	0.313	0.150	---	0.16
187	15.58	0.63	0.259	0.150	---	0.11
188	15.67	0.63	0.259	0.149	---	0.11
189	15.75	0.63	0.259	0.148	---	0.11
190	15.83	0.63	0.259	0.147	---	0.11
191	15.92	0.63	0.259	0.147	---	0.11
192	16.00	0.63	0.259	0.146	---	0.11
193	16.08	0.13	0.054	0.145	0.046	0.01
194	16.17	0.13	0.054	0.144	0.046	0.01
195	16.25	0.13	0.054	0.144	0.046	0.01
196	16.33	0.13	0.054	0.143	0.046	0.01
197	16.42	0.13	0.054	0.142	0.046	0.01
198	16.50	0.13	0.054	0.141	0.046	0.01
199	16.58	0.10	0.041	0.141	0.035	0.01
200	16.67	0.10	0.041	0.140	0.035	0.01
201	16.75	0.10	0.041	0.139	0.035	0.01
202	16.83	0.10	0.041	0.139	0.035	0.01
203	16.92	0.10	0.041	0.138	0.035	0.01
204	17.00	0.10	0.041	0.137	0.035	0.01
205	17.08	0.17	0.068	0.137	0.058	0.01

206	17.17	0.17	0.068	0.136	0.058	0.01
207	17.25	0.17	0.068	0.135	0.058	0.01
208	17.33	0.17	0.068	0.134	0.058	0.01
209	17.42	0.17	0.068	0.134	0.058	0.01
210	17.50	0.17	0.068	0.133	0.058	0.01
211	17.58	0.17	0.068	0.132	0.058	0.01
212	17.67	0.17	0.068	0.132	0.058	0.01
213	17.75	0.17	0.068	0.131	0.058	0.01
214	17.83	0.13	0.054	0.131	0.046	0.01
215	17.92	0.13	0.054	0.130	0.046	0.01
216	18.00	0.13	0.054	0.129	0.046	0.01
217	18.08	0.13	0.054	0.129	0.046	0.01
218	18.17	0.13	0.054	0.128	0.046	0.01
219	18.25	0.13	0.054	0.127	0.046	0.01
220	18.33	0.13	0.054	0.127	0.046	0.01
221	18.42	0.13	0.054	0.126	0.046	0.01
222	18.50	0.13	0.054	0.125	0.046	0.01
223	18.58	0.10	0.041	0.125	0.035	0.01
224	18.67	0.10	0.041	0.124	0.035	0.01
225	18.75	0.10	0.041	0.124	0.035	0.01
226	18.83	0.07	0.027	0.123	0.023	0.00
227	18.92	0.07	0.027	0.122	0.023	0.00
228	19.00	0.07	0.027	0.122	0.023	0.00
229	19.08	0.10	0.041	0.121	0.035	0.01
230	19.17	0.10	0.041	0.121	0.035	0.01
231	19.25	0.10	0.041	0.120	0.035	0.01
232	19.33	0.13	0.054	0.120	0.046	0.01
233	19.42	0.13	0.054	0.119	0.046	0.01
234	19.50	0.13	0.054	0.119	0.046	0.01
235	19.58	0.10	0.041	0.118	0.035	0.01
236	19.67	0.10	0.041	0.117	0.035	0.01
237	19.75	0.10	0.041	0.117	0.035	0.01
238	19.83	0.07	0.027	0.116	0.023	0.00
239	19.92	0.07	0.027	0.116	0.023	0.00
240	20.00	0.07	0.027	0.115	0.023	0.00
241	20.08	0.10	0.041	0.115	0.035	0.01
242	20.17	0.10	0.041	0.114	0.035	0.01
243	20.25	0.10	0.041	0.114	0.035	0.01
244	20.33	0.10	0.041	0.113	0.035	0.01
245	20.42	0.10	0.041	0.113	0.035	0.01
246	20.50	0.10	0.041	0.112	0.035	0.01
247	20.58	0.10	0.041	0.112	0.035	0.01
248	20.67	0.10	0.041	0.111	0.035	0.01
249	20.75	0.10	0.041	0.111	0.035	0.01
250	20.83	0.07	0.027	0.111	0.023	0.00
251	20.92	0.07	0.027	0.110	0.023	0.00
252	21.00	0.07	0.027	0.110	0.023	0.00
253	21.08	0.10	0.041	0.109	0.035	0.01
254	21.17	0.10	0.041	0.109	0.035	0.01
255	21.25	0.10	0.041	0.108	0.035	0.01
256	21.33	0.07	0.027	0.108	0.023	0.00
257	21.42	0.07	0.027	0.108	0.023	0.00
258	21.50	0.07	0.027	0.107	0.023	0.00
259	21.58	0.10	0.041	0.107	0.035	0.01
260	21.67	0.10	0.041	0.106	0.035	0.01
261	21.75	0.10	0.041	0.106	0.035	0.01
262	21.83	0.07	0.027	0.106	0.023	0.00
263	21.92	0.07	0.027	0.105	0.023	0.00
264	22.00	0.07	0.027	0.105	0.023	0.00
265	22.08	0.10	0.041	0.105	0.035	0.01
266	22.17	0.10	0.041	0.104	0.035	0.01
267	22.25	0.10	0.041	0.104	0.035	0.01
268	22.33	0.07	0.027	0.104	0.023	0.00
269	22.42	0.07	0.027	0.103	0.023	0.00
270	22.50	0.07	0.027	0.103	0.023	0.00

271	22.58	0.07	0.027	0.103	0.023	0.00
272	22.67	0.07	0.027	0.102	0.023	0.00
273	22.75	0.07	0.027	0.102	0.023	0.00
274	22.83	0.07	0.027	0.102	0.023	0.00
275	22.92	0.07	0.027	0.102	0.023	0.00
276	23.00	0.07	0.027	0.101	0.023	0.00
277	23.08	0.07	0.027	0.101	0.023	0.00
278	23.17	0.07	0.027	0.101	0.023	0.00
279	23.25	0.07	0.027	0.101	0.023	0.00
280	23.33	0.07	0.027	0.100	0.023	0.00
281	23.42	0.07	0.027	0.100	0.023	0.00
282	23.50	0.07	0.027	0.100	0.023	0.00
283	23.58	0.07	0.027	0.100	0.023	0.00
284	23.67	0.07	0.027	0.100	0.023	0.00
285	23.75	0.07	0.027	0.100	0.023	0.00
286	23.83	0.07	0.027	0.099	0.023	0.00
287	23.92	0.07	0.027	0.099	0.023	0.00
288	24.00	0.07	0.027	0.099	0.023	0.00
Sum =		100.0		Sum =		13.0

Flood volume = Effective rainfall 1.08(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 2.32(In)
Total soil loss = 0.256(Ac.Ft)
Total rainfall = 3.40(In)
Flood volume = 5202.2 Cubic Feet
Total soil loss = 11148.3 Cubic Feet

Peak flow rate of this hydrograph = 0.390(CFS)

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TOTAL OF: 3 24 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|
0+15	0.0000	0.00	Q	|	|	|	|
0+20	0.0000	0.00	Q	|	|	|	|
0+25	0.0000	0.00	Q	|	|	|	|
0+30	0.0000	0.00	Q	|	|	|	|
0+35	0.0001	0.00	Q	|	|	|	|
0+40	0.0001	0.00	Q	|	|	|	|
0+45	0.0001	0.00	Q	|	|	|	|
0+50	0.0001	0.00	Q	|	|	|	|
0+55	0.0001	0.00	Q	|	|	|	|
1+ 0	0.0001	0.00	Q	|	|	|	|
1+ 5	0.0001	0.00	Q	|	|	|	|
1+10	0.0001	0.00	Q	|	|	|	|
1+15	0.0002	0.00	Q	|	|	|	|
1+20	0.0002	0.00	Q	|	|	|	|
1+25	0.0002	0.00	Q	|	|	|	|
1+30	0.0002	0.00	Q	|	|	|	|
1+35	0.0002	0.00	Q	|	|	|	|
1+40	0.0002	0.00	Q	|	|	|	|
1+45	0.0002	0.00	Q	|	|	|	|
1+50	0.0002	0.00	Q	|	|	|	|
1+55	0.0002	0.00	Q	|	|	|	|
2+ 0	0.0003	0.00	Q	|	|	|	|
2+ 5	0.0003	0.00	Q	|	|	|	|
2+10	0.0003	0.00	Q	|	|	|	|
2+15	0.0003	0.00	Q	|	|	|	|

2+20	0.0003	0.00	Q	|	|	|	|
2+25	0.0003	0.00	Q	|	|	|	|
2+30	0.0003	0.00	Q	|	|	|	|
2+35	0.0004	0.00	Q	|	|	|	|
2+40	0.0004	0.00	Q	|	|	|	|
2+45	0.0004	0.00	Q	|	|	|	|
2+50	0.0004	0.00	Q	|	|	|	|
2+55	0.0004	0.00	Q	|	|	|	|
3+ 0	0.0004	0.00	Q	|	|	|	|
3+ 5	0.0005	0.00	Q	|	|	|	|
3+10	0.0005	0.00	Q	|	|	|	|
3+15	0.0005	0.00	Q	|	|	|	|
3+20	0.0005	0.00	Q	|	|	|	|
3+25	0.0005	0.00	Q	|	|	|	|
3+30	0.0005	0.00	Q	|	|	|	|
3+35	0.0006	0.00	Q	|	|	|	|
3+40	0.0006	0.00	Q	|	|	|	|
3+45	0.0006	0.00	Q	|	|	|	|
3+50	0.0006	0.00	Q	|	|	|	|
3+55	0.0006	0.00	Q	|	|	|	|
4+ 0	0.0007	0.00	Q	|	|	|	|
4+ 5	0.0007	0.00	Q	|	|	|	|
4+10	0.0007	0.00	Q	|	|	|	|
4+15	0.0007	0.00	Q	|	|	|	|
4+20	0.0007	0.00	Q	|	|	|	|
4+25	0.0008	0.00	Q	|	|	|	|
4+30	0.0008	0.00	Q	|	|	|	|
4+35	0.0008	0.00	Q	|	|	|	|
4+40	0.0008	0.00	Q	|	|	|	|
4+45	0.0009	0.00	Q	|	|	|	|
4+50	0.0009	0.00	Q	|	|	|	|
4+55	0.0009	0.00	Q	|	|	|	|
5+ 0	0.0010	0.00	Q	|	|	|	|
5+ 5	0.0010	0.00	Q	|	|	|	|
5+10	0.0010	0.00	Q	|	|	|	|
5+15	0.0010	0.00	Q	|	|	|	|
5+20	0.0010	0.00	Q	|	|	|	|
5+25	0.0011	0.00	Q	|	|	|	|
5+30	0.0011	0.00	Q	|	|	|	|
5+35	0.0011	0.00	Q	|	|	|	|
5+40	0.0011	0.00	Q	|	|	|	|
5+45	0.0012	0.00	Q	|	|	|	|
5+50	0.0012	0.00	Q	|	|	|	|
5+55	0.0012	0.00	Q	|	|	|	|
6+ 0	0.0013	0.00	Q	|	|	|	|
6+ 5	0.0013	0.00	Q	|	|	|	|
6+10	0.0013	0.00	Q	|	|	|	|
6+15	0.0014	0.00	Q	|	|	|	|
6+20	0.0014	0.00	Q	|	|	|	|
6+25	0.0014	0.00	Q	|	|	|	|
6+30	0.0014	0.00	Q	|	|	|	|
6+35	0.0015	0.00	Q	|	|	|	|
6+40	0.0015	0.01	Q	|	|	|	|
6+45	0.0015	0.01	Q	|	|	|	|
6+50	0.0016	0.01	Q	|	|	|	|
6+55	0.0016	0.01	Q	|	|	|	|
7+ 0	0.0017	0.01	Q	|	|	|	|
7+ 5	0.0017	0.01	Q	|	|	|	|
7+10	0.0017	0.01	Q	|	|	|	|
7+15	0.0018	0.01	Q	|	|	|	|
7+20	0.0018	0.01	Q	|	|	|	|
7+25	0.0018	0.01	Q	|	|	|	|
7+30	0.0019	0.01	Q	|	|	|	|
7+35	0.0019	0.01	Q	|	|	|	|
7+40	0.0020	0.01	Q	|	|	|	|

7+45	0.0020	0.01	Q	|	|	|	|
7+50	0.0020	0.01	Q	|	|	|	|
7+55	0.0021	0.01	Q	|	|	|	|
8+ 0	0.0021	0.01	Q	|	|	|	|
8+ 5	0.0022	0.01	Q	|	|	|	|
8+10	0.0022	0.01	Q	|	|	|	|
8+15	0.0023	0.01	Q	|	|	|	|
8+20	0.0023	0.01	Q	|	|	|	|
8+25	0.0024	0.01	Q	|	|	|	|
8+30	0.0024	0.01	Q	|	|	|	|
8+35	0.0025	0.01	Q	|	|	|	|
8+40	0.0026	0.01	Q	|	|	|	|
8+45	0.0026	0.01	Q	|	|	|	|
8+50	0.0027	0.01	Q	|	|	|	|
8+55	0.0027	0.01	Q	|	|	|	|
9+ 0	0.0028	0.01	Q	|	|	|	|
9+ 5	0.0028	0.01	Q	|	|	|	|
9+10	0.0029	0.01	Q	|	|	|	|
9+15	0.0030	0.01	Q	|	|	|	|
9+20	0.0031	0.01	Q	|	|	|	|
9+25	0.0031	0.01	Q	|	|	|	|
9+30	0.0032	0.01	Q	|	|	|	|
9+35	0.0033	0.01	Q	|	|	|	|
9+40	0.0033	0.01	Q	|	|	|	|
9+45	0.0034	0.01	Q	|	|	|	|
9+50	0.0035	0.01	Q	|	|	|	|
9+55	0.0036	0.01	Q	|	|	|	|
10+ 0	0.0036	0.01	Q	|	|	|	|
10+ 5	0.0037	0.01	Q	|	|	|	|
10+10	0.0038	0.01	QV	|	|	|	|
10+15	0.0038	0.01	QV	|	|	|	|
10+20	0.0039	0.01	QV	|	|	|	|
10+25	0.0039	0.01	QV	|	|	|	|
10+30	0.0040	0.01	QV	|	|	|	|
10+35	0.0040	0.01	QV	|	|	|	|
10+40	0.0041	0.01	QV	|	|	|	|
10+45	0.0042	0.01	QV	|	|	|	|
10+50	0.0042	0.01	QV	|	|	|	|
10+55	0.0043	0.01	QV	|	|	|	|
11+ 0	0.0044	0.01	QV	|	|	|	|
11+ 5	0.0044	0.01	QV	|	|	|	|
11+10	0.0045	0.01	QV	|	|	|	|
11+15	0.0046	0.01	QV	|	|	|	|
11+20	0.0046	0.01	QV	|	|	|	|
11+25	0.0047	0.01	QV	|	|	|	|
11+30	0.0048	0.01	QV	|	|	|	|
11+35	0.0048	0.01	QV	|	|	|	|
11+40	0.0049	0.01	QV	|	|	|	|
11+45	0.0050	0.01	QV	|	|	|	|
11+50	0.0050	0.01	QV	|	|	|	|
11+55	0.0051	0.01	QV	|	|	|	|
12+ 0	0.0051	0.01	QV	|	|	|	|
12+ 5	0.0052	0.01	QV	|	|	|	|
12+10	0.0053	0.01	QV	|	|	|	|
12+15	0.0054	0.01	QV	|	|	|	|
12+20	0.0055	0.01	QV	|	|	|	|
12+25	0.0056	0.01	QV	|	|	|	|
12+30	0.0057	0.01	QV	|	|	|	|
12+35	0.0058	0.01	QV	|	|	|	|
12+40	0.0059	0.01	QV	|	|	|	|
12+45	0.0060	0.01	QV	|	|	|	|
12+50	0.0061	0.01	QV	|	|	|	|
12+55	0.0062	0.01	QV	|	|	|	|
13+ 0	0.0063	0.01	QV	|	|	|	|
13+ 5	0.0064	0.02	QV	|	|	|	|

13+10	0.0065	0.02	Q	V	|	|	|
13+15	0.0066	0.02	Q	V	|	|	|
13+20	0.0067	0.02	Q	V	|	|	|
13+25	0.0068	0.02	Q	V	|	|	|
13+30	0.0070	0.02	Q	V	|	|	|
13+35	0.0071	0.01	Q	V	|	|	|
13+40	0.0071	0.01	Q	V	|	|	|
13+45	0.0072	0.01	Q	V	|	|	|
13+50	0.0073	0.01	Q	V	|	|	|
13+55	0.0074	0.01	Q	V	|	|	|
14+ 0	0.0075	0.01	Q	V	|	|	|
14+ 5	0.0075	0.01	Q	V	|	|	|
14+10	0.0076	0.01	Q	V	|	|	|
14+15	0.0077	0.01	Q	V	|	|	|
14+20	0.0078	0.01	Q	V	|	|	|
14+25	0.0079	0.01	Q	V	|	|	|
14+30	0.0080	0.01	Q	V	|	|	|
14+35	0.0081	0.01	Q	V	|	|	|
14+40	0.0082	0.01	Q	V	|	|	|
14+45	0.0083	0.01	Q	V	|	|	|
14+50	0.0084	0.01	Q	V	|	|	|
14+55	0.0085	0.01	Q	V	|	|	|
15+ 0	0.0085	0.01	Q	V	|	|	|
15+ 5	0.0086	0.01	Q	V	|	|	|
15+10	0.0087	0.01	Q	V	|	|	|
15+15	0.0088	0.01	Q	V	|	|	|
15+20	0.0089	0.01	Q	V	|	|	|
15+25	0.0090	0.01	Q	V	|	|	|
15+30	0.0090	0.01	Q	V	|	|	|
15+35	0.0091	0.01	Q	V	|	|	|
15+40	0.0092	0.01	Q	V	|	|	|
15+45	0.0092	0.01	Q	V	|	|	|
15+50	0.0093	0.01	Q	V	|	|	|
15+55	0.0094	0.01	Q	V	|	|	|
16+ 0	0.0094	0.01	Q	V	|	|	|
16+ 5	0.0095	0.00	Q	V	|	|	|
16+10	0.0095	0.00	Q	V	|	|	|
16+15	0.0095	0.00	Q	V	|	|	|
16+20	0.0095	0.00	Q	V	|	|	|
16+25	0.0095	0.00	Q	V	|	|	|
16+30	0.0095	0.00	Q	V	|	|	|
16+35	0.0096	0.00	Q	V	|	|	|
16+40	0.0096	0.00	Q	V	|	|	|
16+45	0.0096	0.00	Q	V	|	|	|
16+50	0.0096	0.00	Q	V	|	|	|
16+55	0.0096	0.00	Q	V	|	|	|
17+ 0	0.0096	0.00	Q	V	|	|	|
17+ 5	0.0096	0.00	Q	V	|	|	|
17+10	0.0096	0.00	Q	V	|	|	|
17+15	0.0097	0.00	Q	V	|	|	|
17+20	0.0097	0.00	Q	V	|	|	|
17+25	0.0097	0.00	Q	V	|	|	|
17+30	0.0097	0.00	Q	V	|	|	|
17+35	0.0097	0.00	Q	V	|	|	|
17+40	0.0097	0.00	Q	V	|	|	|
17+45	0.0098	0.00	Q	V	|	|	|
17+50	0.0098	0.00	Q	V	|	|	|
17+55	0.0098	0.00	Q	V	|	|	|
18+ 0	0.0098	0.00	Q	V	|	|	|
18+ 5	0.0098	0.00	Q	V	|	|	|
18+10	0.0098	0.00	Q	V	|	|	|
18+15	0.0098	0.00	Q	V	|	|	|
18+20	0.0099	0.00	Q	V	|	|	|
18+25	0.0099	0.00	Q	V	|	|	|
18+30	0.0099	0.00	Q	V	|	|	|

18+35	0.0099	0.00	Q	V	|	|	|
18+40	0.0099	0.00	Q	V	|	|	|
18+45	0.0099	0.00	Q	V	|	|	|
18+50	0.0099	0.00	Q	V	|	|	|
18+55	0.0099	0.00	Q	V	|	|	|
19+ 0	0.0099	0.00	Q	V	|	|	|
19+ 5	0.0100	0.00	Q	V	|	|	|
19+10	0.0100	0.00	Q	V	|	|	|
19+15	0.0100	0.00	Q	V	|	|	|
19+20	0.0100	0.00	Q	V	|	|	|
19+25	0.0100	0.00	Q	V	|	|	|
19+30	0.0100	0.00	Q	V	|	|	|
19+35	0.0100	0.00	Q	V	|	|	|
19+40	0.0100	0.00	Q	V	|	|	|
19+45	0.0100	0.00	Q	V	|	|	|
19+50	0.0101	0.00	Q	V	|	|	|
19+55	0.0101	0.00	Q	V	|	|	|
20+ 0	0.0101	0.00	Q	V	|	|	|
20+ 5	0.0101	0.00	Q	V	|	|	|
20+10	0.0101	0.00	Q	V	|	|	|
20+15	0.0101	0.00	Q	V	|	|	|
20+20	0.0101	0.00	Q	V	|	|	|
20+25	0.0101	0.00	Q	V	|	|	|
20+30	0.0101	0.00	Q	V	|	|	|
20+35	0.0101	0.00	Q	V	|	|	|
20+40	0.0102	0.00	Q	V	|	|	|
20+45	0.0102	0.00	Q	V	|	|	|
20+50	0.0102	0.00	Q	V	|	|	|
20+55	0.0102	0.00	Q	V	|	|	|
21+ 0	0.0102	0.00	Q	V	|	|	|
21+ 5	0.0102	0.00	Q	V	|	|	|
21+10	0.0102	0.00	Q	V	|	|	|
21+15	0.0102	0.00	Q	V	|	|	|
21+20	0.0102	0.00	Q	V	|	|	|
21+25	0.0102	0.00	Q	V	|	|	|
21+30	0.0102	0.00	Q	V	|	|	|
21+35	0.0102	0.00	Q	V	|	|	|
21+40	0.0103	0.00	Q	V	|	|	|
21+45	0.0103	0.00	Q	V	|	|	|
21+50	0.0103	0.00	Q	V	|	|	|
21+55	0.0103	0.00	Q	V	|	|	|
22+ 0	0.0103	0.00	Q	V	|	|	|
22+ 5	0.0103	0.00	Q	V	|	|	|
22+10	0.0103	0.00	Q	V	|	|	|
22+15	0.0103	0.00	Q	V	|	|	|
22+20	0.0103	0.00	Q	V	|	|	|
22+25	0.0103	0.00	Q	V	|	|	|
22+30	0.0103	0.00	Q	V	|	|	|
22+35	0.0103	0.00	Q	V	|	|	|
22+40	0.0104	0.00	Q	V	|	|	|
22+45	0.0104	0.00	Q	V	|	|	|
22+50	0.0104	0.00	Q	V	|	|	|
22+55	0.0104	0.00	Q	V	|	|	|
23+ 0	0.0104	0.00	Q	V	|	|	|
23+ 5	0.0104	0.00	Q	V	|	|	|
23+10	0.0104	0.00	Q	V	|	|	|
23+15	0.0104	0.00	Q	V	|	|	|
23+20	0.0104	0.00	Q	V	|	|	|
23+25	0.0104	0.00	Q	V	|	|	|
23+30	0.0104	0.00	Q	V	|	|	|
23+35	0.0104	0.00	Q	V	|	|	|
23+40	0.0104	0.00	Q	V	|	|	|
23+45	0.0104	0.00	Q	V	|	|	|
23+50	0.0105	0.00	Q	V	|	|	|
23+55	0.0105	0.00	Q	V	|	|	|

24+ 0	0.0105	0.00	Q	V	|	|	|	|
24+ 5	0.0105	0.00	Q	V	|	|	|	|
24+10	0.0105	0.00	Q	V	|	|	|	|
24+15	0.0105	0.00	Q	V	|	|	|	|
24+20	0.0105	0.00	Q	V	|	|	|	|
24+25	0.0105	0.00	Q	V	|	|	|	|
24+30	0.0106	0.00	Q	V	|	|	|	|
24+35	0.0106	0.00	Q	V	|	|	|	|
24+40	0.0106	0.00	Q	V	|	|	|	|
24+45	0.0106	0.00	Q	V	|	|	|	|
24+50	0.0106	0.00	Q	V	|	|	|	|
24+55	0.0107	0.00	Q	V	|	|	|	|
25+ 0	0.0107	0.00	Q	V	|	|	|	|
25+ 5	0.0107	0.00	Q	V	|	|	|	|
25+10	0.0107	0.00	Q	V	|	|	|	|
25+15	0.0108	0.00	Q	V	|	|	|	|
25+20	0.0108	0.00	Q	V	|	|	|	|
25+25	0.0108	0.00	Q	V	|	|	|	|
25+30	0.0108	0.00	Q	V	|	|	|	|
25+35	0.0108	0.00	Q	V	|	|	|	|
25+40	0.0109	0.00	Q	V	|	|	|	|
25+45	0.0109	0.00	Q	V	|	|	|	|
25+50	0.0109	0.00	Q	V	|	|	|	|
25+55	0.0109	0.00	Q	V	|	|	|	|
26+ 0	0.0110	0.00	Q	V	|	|	|	|
26+ 5	0.0110	0.00	Q	V	|	|	|	|
26+10	0.0110	0.00	Q	V	|	|	|	|
26+15	0.0110	0.00	Q	V	|	|	|	|
26+20	0.0111	0.00	Q	V	|	|	|	|
26+25	0.0111	0.00	Q	V	|	|	|	|
26+30	0.0111	0.00	Q	V	|	|	|	|
26+35	0.0111	0.00	Q	V	|	|	|	|
26+40	0.0112	0.00	Q	V	|	|	|	|
26+45	0.0112	0.00	Q	V	|	|	|	|
26+50	0.0112	0.00	Q	V	|	|	|	|
26+55	0.0113	0.00	Q	V	|	|	|	|
27+ 0	0.0113	0.00	Q	V	|	|	|	|
27+ 5	0.0113	0.00	Q	V	|	|	|	|
27+10	0.0114	0.00	Q	V	|	|	|	|
27+15	0.0114	0.00	Q	V	|	|	|	|
27+20	0.0114	0.00	Q	V	|	|	|	|
27+25	0.0115	0.00	Q	V	|	|	|	|
27+30	0.0115	0.00	Q	V	|	|	|	|
27+35	0.0115	0.00	Q	V	|	|	|	|
27+40	0.0116	0.00	Q	V	|	|	|	|
27+45	0.0116	0.00	Q	V	|	|	|	|
27+50	0.0116	0.01	Q	V	|	|	|	|
27+55	0.0117	0.01	Q	V	|	|	|	|
28+ 0	0.0117	0.01	Q	V	|	|	|	|
28+ 5	0.0118	0.01	Q	V	|	|	|	|
28+10	0.0118	0.01	Q	V	|	|	|	|
28+15	0.0118	0.01	Q	V	|	|	|	|
28+20	0.0119	0.01	Q	V	|	|	|	|
28+25	0.0119	0.01	Q	V	|	|	|	|
28+30	0.0120	0.01	Q	V	|	|	|	|
28+35	0.0120	0.01	Q	V	|	|	|	|
28+40	0.0121	0.01	Q	V	|	|	|	|
28+45	0.0121	0.01	Q	V	|	|	|	|
28+50	0.0122	0.01	Q	V	|	|	|	|
28+55	0.0122	0.01	Q	V	|	|	|	|
29+ 0	0.0123	0.01	Q	V	|	|	|	|
29+ 5	0.0123	0.01	Q	V	|	|	|	|
29+10	0.0124	0.01	Q	V	|	|	|	|
29+15	0.0124	0.01	Q	V	|	|	|	|
29+20	0.0124	0.01	Q	V	|	|	|	|

29+25	0.0125	0.01	Q	V		
29+30	0.0125	0.01	Q	V		
29+35	0.0126	0.01	Q	V		
29+40	0.0126	0.01	Q	V		
29+45	0.0127	0.01	Q	V		
29+50	0.0127	0.01	Q	V		
29+55	0.0128	0.01	Q	V		
30+ 0	0.0128	0.01	Q	V		
30+ 5	0.0129	0.01	Q	V		
30+10	0.0130	0.01	Q	V		
30+15	0.0130	0.01	Q	V		
30+20	0.0131	0.01	Q	V		
30+25	0.0131	0.01	Q	V		
30+30	0.0132	0.01	Q	V		
30+35	0.0133	0.01	Q	V		
30+40	0.0133	0.01	Q	V		
30+45	0.0134	0.01	Q	V		
30+50	0.0135	0.01	Q	V		
30+55	0.0135	0.01	Q	V		
31+ 0	0.0136	0.01	Q	V		
31+ 5	0.0137	0.01	Q	V		
31+10	0.0137	0.01	Q	V		
31+15	0.0138	0.01	Q	V		
31+20	0.0139	0.01	Q	V		
31+25	0.0139	0.01	Q	V		
31+30	0.0140	0.01	Q	V		
31+35	0.0141	0.01	Q	V		
31+40	0.0142	0.01	Q	V		
31+45	0.0142	0.01	Q	V		
31+50	0.0143	0.01	Q	V		
31+55	0.0144	0.01	Q	V		
32+ 0	0.0145	0.01	Q	V		
32+ 5	0.0146	0.01	Q	V		
32+10	0.0147	0.01	Q	V		
32+15	0.0148	0.01	Q	V		
32+20	0.0149	0.01	Q	V		
32+25	0.0150	0.01	Q	V		
32+30	0.0151	0.01	Q	V		
32+35	0.0152	0.02	Q	V		
32+40	0.0153	0.02	Q	V		
32+45	0.0154	0.02	Q	V		
32+50	0.0155	0.02	Q	V		
32+55	0.0156	0.02	Q	V		
33+ 0	0.0157	0.02	Q	V		
33+ 5	0.0159	0.02	Q	V		
33+10	0.0160	0.02	Q	V		
33+15	0.0161	0.02	Q	V		
33+20	0.0162	0.02	Q	V		
33+25	0.0164	0.02	Q	V		
33+30	0.0165	0.02	Q	V		
33+35	0.0166	0.02	Q	V		
33+40	0.0168	0.02	Q	V		
33+45	0.0169	0.02	Q	V		
33+50	0.0171	0.02	Q	V		
33+55	0.0172	0.02	Q	V		
34+ 0	0.0174	0.02	Q	V		
34+ 5	0.0175	0.02	Q	V		
34+10	0.0176	0.01	Q	V		
34+15	0.0177	0.01	Q	V		
34+20	0.0178	0.01	Q	V		
34+25	0.0179	0.01	Q	V		
34+30	0.0180	0.01	Q	V		
34+35	0.0181	0.02	Q	V		
34+40	0.0182	0.02	Q	V		
34+45	0.0184	0.02	Q	V		

34+50	0.0185	0.02	Q	V	|	|	|	|
34+55	0.0186	0.02	Q	V	|	|	|	|
35+ 0	0.0188	0.02	Q	V	|	|	|	|
35+ 5	0.0189	0.02	Q	V	|	|	|	|
35+10	0.0190	0.02	Q	V	|	|	|	|
35+15	0.0191	0.02	Q	V	|	|	|	|
35+20	0.0193	0.02	Q	V	|	|	|	|
35+25	0.0194	0.02	Q	V	|	|	|	|
35+30	0.0195	0.02	Q	V	|	|	|	|
35+35	0.0196	0.02	Q	V	|	|	|	|
35+40	0.0197	0.02	Q	V	|	|	|	|
35+45	0.0199	0.02	Q	V	|	|	|	|
35+50	0.0200	0.02	Q	V	|	|	|	|
35+55	0.0201	0.02	Q	V	|	|	|	|
36+ 0	0.0202	0.02	Q	V	|	|	|	|
36+ 5	0.0204	0.02	Q	V	|	|	|	|
36+10	0.0205	0.02	Q	V	|	|	|	|
36+15	0.0207	0.02	Q	V	|	|	|	|
36+20	0.0209	0.02	Q	V	|	|	|	|
36+25	0.0210	0.02	Q	V	|	|	|	|
36+30	0.0212	0.02	Q	V	|	|	|	|
36+35	0.0214	0.03	Q	V	|	|	|	|
36+40	0.0216	0.03	Q	V	|	|	|	|
36+45	0.0217	0.03	Q	V	|	|	|	|
36+50	0.0219	0.03	Q	V	|	|	|	|
36+55	0.0221	0.03	Q	V	|	|	|	|
37+ 0	0.0223	0.03	Q	V	|	|	|	|
37+ 5	0.0225	0.03	Q	V	|	|	|	|
37+10	0.0228	0.03	Q	V	|	|	|	|
37+15	0.0230	0.03	Q	V	|	|	|	|
37+20	0.0232	0.03	Q	V	|	|	|	|
37+25	0.0234	0.03	Q	V	|	|	|	|
37+30	0.0237	0.03	Q	V	|	|	|	|
37+35	0.0238	0.03	Q	V	|	|	|	|
37+40	0.0240	0.02	Q	V	|	|	|	|
37+45	0.0241	0.02	Q	V	|	|	|	|
37+50	0.0243	0.02	Q	V	|	|	|	|
37+55	0.0244	0.02	Q	V	|	|	|	|
38+ 0	0.0246	0.02	Q	V	|	|	|	|
38+ 5	0.0248	0.02	Q	V	|	|	|	|
38+10	0.0249	0.03	Q	V	|	|	|	|
38+15	0.0251	0.03	Q	V	|	|	|	|
38+20	0.0253	0.03	Q	V	|	|	|	|
38+25	0.0255	0.02	Q	V	|	|	|	|
38+30	0.0256	0.02	Q	V	|	|	|	|
38+35	0.0258	0.02	Q	V	|	|	|	|
38+40	0.0260	0.02	Q	V	|	|	|	|
38+45	0.0262	0.02	Q	V	|	|	|	|
38+50	0.0263	0.02	Q	V	|	|	|	|
38+55	0.0265	0.02	Q	V	|	|	|	|
39+ 0	0.0267	0.02	Q	V	|	|	|	|
39+ 5	0.0268	0.02	Q	V	|	|	|	|
39+10	0.0270	0.02	Q	V	|	|	|	|
39+15	0.0271	0.02	Q	V	|	|	|	|
39+20	0.0273	0.02	Q	V	|	|	|	|
39+25	0.0274	0.02	Q	V	|	|	|	|
39+30	0.0276	0.02	Q	V	|	|	|	|
39+35	0.0277	0.02	Q	V	|	|	|	|
39+40	0.0279	0.02	Q	V	|	|	|	|
39+45	0.0280	0.02	Q	V	|	|	|	|
39+50	0.0281	0.02	Q	V	|	|	|	|
39+55	0.0282	0.02	Q	V	|	|	|	|
40+ 0	0.0284	0.02	Q	V	|	|	|	|
40+ 5	0.0284	0.01	Q	V	|	|	|	|
40+10	0.0284	0.00	Q	V	|	|	|	|

40+15	0.0285	0.00	Q	V	|	|	|	|
40+20	0.0285	0.00	Q	V	|	|	|	|
40+25	0.0285	0.00	Q	V	|	|	|	|
40+30	0.0285	0.00	Q	V	|	|	|	|
40+35	0.0286	0.00	Q	V	|	|	|	|
40+40	0.0286	0.00	Q	V	|	|	|	|
40+45	0.0286	0.00	Q	V	|	|	|	|
40+50	0.0286	0.00	Q	V	|	|	|	|
40+55	0.0287	0.00	Q	V	|	|	|	|
41+ 0	0.0287	0.00	Q	V	|	|	|	|
41+ 5	0.0287	0.00	Q	V	|	|	|	|
41+10	0.0287	0.00	Q	V	|	|	|	|
41+15	0.0288	0.00	Q	V	|	|	|	|
41+20	0.0288	0.00	Q	V	|	|	|	|
41+25	0.0288	0.00	Q	V	|	|	|	|
41+30	0.0289	0.00	Q	V	|	|	|	|
41+35	0.0289	0.00	Q	V	|	|	|	|
41+40	0.0289	0.00	Q	V	|	|	|	|
41+45	0.0290	0.00	Q	V	|	|	|	|
41+50	0.0290	0.00	Q	V	|	|	|	|
41+55	0.0290	0.00	Q	V	|	|	|	|
42+ 0	0.0290	0.00	Q	V	|	|	|	|
42+ 5	0.0291	0.00	Q	V	|	|	|	|
42+10	0.0291	0.00	Q	V	|	|	|	|
42+15	0.0291	0.00	Q	V	|	|	|	|
42+20	0.0292	0.00	Q	V	|	|	|	|
42+25	0.0292	0.00	Q	V	|	|	|	|
42+30	0.0292	0.00	Q	V	|	|	|	|
42+35	0.0292	0.00	Q	V	|	|	|	|
42+40	0.0292	0.00	Q	V	|	|	|	|
42+45	0.0293	0.00	Q	V	|	|	|	|
42+50	0.0293	0.00	Q	V	|	|	|	|
42+55	0.0293	0.00	Q	V	|	|	|	|
43+ 0	0.0293	0.00	Q	V	|	|	|	|
43+ 5	0.0293	0.00	Q	V	|	|	|	|
43+10	0.0293	0.00	Q	V	|	|	|	|
43+15	0.0294	0.00	Q	V	|	|	|	|
43+20	0.0294	0.00	Q	V	|	|	|	|
43+25	0.0294	0.00	Q	V	|	|	|	|
43+30	0.0294	0.00	Q	V	|	|	|	|
43+35	0.0295	0.00	Q	V	|	|	|	|
43+40	0.0295	0.00	Q	V	|	|	|	|
43+45	0.0295	0.00	Q	V	|	|	|	|
43+50	0.0295	0.00	Q	V	|	|	|	|
43+55	0.0295	0.00	Q	V	|	|	|	|
44+ 0	0.0295	0.00	Q	V	|	|	|	|
44+ 5	0.0296	0.00	Q	V	|	|	|	|
44+10	0.0296	0.00	Q	V	|	|	|	|
44+15	0.0296	0.00	Q	V	|	|	|	|
44+20	0.0296	0.00	Q	V	|	|	|	|
44+25	0.0296	0.00	Q	V	|	|	|	|
44+30	0.0297	0.00	Q	V	|	|	|	|
44+35	0.0297	0.00	Q	V	|	|	|	|
44+40	0.0297	0.00	Q	V	|	|	|	|
44+45	0.0297	0.00	Q	V	|	|	|	|
44+50	0.0297	0.00	Q	V	|	|	|	|
44+55	0.0298	0.00	Q	V	|	|	|	|
45+ 0	0.0298	0.00	Q	V	|	|	|	|
45+ 5	0.0298	0.00	Q	V	|	|	|	|
45+10	0.0298	0.00	Q	V	|	|	|	|
45+15	0.0298	0.00	Q	V	|	|	|	|
45+20	0.0298	0.00	Q	V	|	|	|	|
45+25	0.0298	0.00	Q	V	|	|	|	|
45+30	0.0299	0.00	Q	V	|	|	|	|
45+35	0.0299	0.00	Q	V	|	|	|	|

45+40	0.0299	0.00	Q	V	|	|	|	|
45+45	0.0299	0.00	Q	V	|	|	|	|
45+50	0.0299	0.00	Q	V	|	|	|	|
45+55	0.0299	0.00	Q	V	|	|	|	|
46+ 0	0.0300	0.00	Q	V	|	|	|	|
46+ 5	0.0300	0.00	Q	V	|	|	|	|
46+10	0.0300	0.00	Q	V	|	|	|	|
46+15	0.0300	0.00	Q	V	|	|	|	|
46+20	0.0300	0.00	Q	V	|	|	|	|
46+25	0.0300	0.00	Q	V	|	|	|	|
46+30	0.0301	0.00	Q	V	|	|	|	|
46+35	0.0301	0.00	Q	V	|	|	|	|
46+40	0.0301	0.00	Q	V	|	|	|	|
46+45	0.0301	0.00	Q	V	|	|	|	|
46+50	0.0301	0.00	Q	V	|	|	|	|
46+55	0.0301	0.00	Q	V	|	|	|	|
47+ 0	0.0301	0.00	Q	V	|	|	|	|
47+ 5	0.0302	0.00	Q	V	|	|	|	|
47+10	0.0302	0.00	Q	V	|	|	|	|
47+15	0.0302	0.00	Q	V	|	|	|	|
47+20	0.0302	0.00	Q	V	|	|	|	|
47+25	0.0302	0.00	Q	V	|	|	|	|
47+30	0.0302	0.00	Q	V	|	|	|	|
47+35	0.0302	0.00	Q	V	|	|	|	|
47+40	0.0302	0.00	Q	V	|	|	|	|
47+45	0.0303	0.00	Q	V	|	|	|	|
47+50	0.0303	0.00	Q	V	|	|	|	|
47+55	0.0303	0.00	Q	V	|	|	|	|
48+ 0	0.0303	0.00	Q	V	|	|	|	|
48+ 5	0.0303	0.00	Q	V	|	|	|	|
48+10	0.0304	0.01	Q	V	|	|	|	|
48+15	0.0304	0.01	Q	V	|	|	|	|
48+20	0.0304	0.01	Q	V	|	|	|	|
48+25	0.0305	0.01	Q	V	|	|	|	|
48+30	0.0306	0.01	Q	V	|	|	|	|
48+35	0.0306	0.01	Q	V	|	|	|	|
48+40	0.0307	0.01	Q	V	|	|	|	|
48+45	0.0307	0.01	Q	V	|	|	|	|
48+50	0.0308	0.01	Q	V	|	|	|	|
48+55	0.0309	0.01	Q	V	|	|	|	|
49+ 0	0.0309	0.01	Q	V	|	|	|	|
49+ 5	0.0310	0.01	Q	V	|	|	|	|
49+10	0.0311	0.01	Q	V	|	|	|	|
49+15	0.0311	0.01	Q	V	|	|	|	|
49+20	0.0312	0.01	Q	V	|	|	|	|
49+25	0.0312	0.01	Q	V	|	|	|	|
49+30	0.0313	0.01	Q	V	|	|	|	|
49+35	0.0313	0.01	Q	V	|	|	|	|
49+40	0.0314	0.01	Q	V	|	|	|	|
49+45	0.0314	0.01	Q	V	|	|	|	|
49+50	0.0315	0.01	Q	V	|	|	|	|
49+55	0.0316	0.01	Q	V	|	|	|	|
50+ 0	0.0317	0.01	Q	V	|	|	|	|
50+ 5	0.0317	0.01	Q	V	|	|	|	|
50+10	0.0318	0.01	Q	V	|	|	|	|
50+15	0.0319	0.01	Q	V	|	|	|	|
50+20	0.0319	0.01	Q	V	|	|	|	|
50+25	0.0320	0.01	Q	V	|	|	|	|
50+30	0.0321	0.01	Q	V	|	|	|	|
50+35	0.0322	0.01	Q	V	|	|	|	|
50+40	0.0323	0.01	Q	V	|	|	|	|
50+45	0.0324	0.01	Q	V	|	|	|	|
50+50	0.0325	0.01	Q	V	|	|	|	|
50+55	0.0325	0.01	Q	V	|	|	|	|
51+ 0	0.0326	0.01	Q	V	|	|	|	|

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51+ 5     0.0327    0.01 Q     V |       |       |       |
51+10     0.0328    0.01 Q      V |      |       |       |
51+15     0.0329    0.01 Q      V |      |       |       |
51+20     0.0330    0.01 Q      V |      |       |       |
51+25     0.0331    0.01 Q      V |      |       |       |
51+30     0.0332    0.01 Q      V |      |       |       |
51+35     0.0333    0.01 Q      V |      |       |       |
51+40     0.0334    0.01 Q      V |      |       |       |
51+45     0.0335    0.01 Q      V |      |       |       |
51+50     0.0336    0.02 Q      V |      |       |       |
51+55     0.0337    0.02 Q      V |      |       |       |
52+ 0     0.0338    0.02 Q      V|       |       |       |
52+ 5     0.0339    0.02 Q      V|       |       |       |
52+10     0.0340    0.02 Q      V|       |       |       |
52+15     0.0341    0.02 Q      V|       |       |       |
52+20     0.0342    0.02 Q      V|       |       |       |
52+25     0.0344    0.02 Q      V|       |       |       |
52+30     0.0345    0.02 Q      V|       |       |       |
52+35     0.0346    0.02 Q      V|       |       |       |
52+40     0.0348    0.02 Q      V|       |       |       |
52+45     0.0349    0.02 Q      V|       |       |       |
52+50     0.0350    0.02 Q      V|       |       |       |
52+55     0.0352    0.02 Q      V|       |       |       |
53+ 0     0.0353    0.02 Q      V|       |       |       |
53+ 5     0.0354    0.02 Q      V|       |       |       |
53+10     0.0356    0.02 Q      V|       |       |       |
53+15     0.0357    0.02 Q      V|       |       |       |
53+20     0.0358    0.02 Q      V|       |       |       |
53+25     0.0359    0.02 Q      V|       |       |       |
53+30     0.0360    0.02 Q      V|       |       |       |
53+35     0.0362    0.02 Q      V|       |       |       |
53+40     0.0363    0.02 Q      V|       |       |       |
53+45     0.0365    0.02 Q      V|       |       |       |
53+50     0.0366    0.02 Q      V|       |       |       |
53+55     0.0368    0.02 Q      V|       |       |       |
54+ 0     0.0369    0.02 Q      V|       |       |       |
54+ 5     0.0371    0.02 Q      V|       |       |       |
54+10     0.0372    0.02 Q      V|       |       |       |
54+15     0.0374    0.02 Q      V|       |       |       |
54+20     0.0376    0.02 Q       V       |       |       |
54+25     0.0377    0.02 Q       V       |       |       |
54+30     0.0379    0.02 Q       V       |       |       |
54+35     0.0381    0.03 Q       V       |       |       |
54+40     0.0383    0.03 Q       V       |       |       |
54+45     0.0384    0.03 Q       V       |       |       |
54+50     0.0386    0.03 Q       V       |       |       |
54+55     0.0388    0.03 Q       V       |       |       |
55+ 0     0.0390    0.03 Q       V       |       |       |
55+ 5     0.0392    0.03 Q       V       |       |       |
55+10     0.0394    0.03 Q       V       |       |       |
55+15     0.0395    0.03 Q       V       |       |       |
55+20     0.0397    0.03 Q       V       |       |       |
55+25     0.0399    0.03 Q       V       |       |       |
55+30     0.0401    0.03 Q       V       |       |       |
55+35     0.0404    0.03 Q       V       |       |       |
55+40     0.0406    0.03 Q       V       |       |       |
55+45     0.0408    0.03 Q       V       |       |       |
55+50     0.0410    0.03 Q       V       |       |       |
55+55     0.0413    0.03 Q       |V      |       |       |
56+ 0     0.0415    0.03 Q       |V      |       |       |
56+ 5     0.0418    0.04 Q       |V      |       |       |
56+10     0.0421    0.04 Q       |V      |       |       |
56+15     0.0423    0.04 Q       |V      |       |       |
56+20     0.0426    0.04 Q       |V      |       |       |
56+25     0.0429    0.04 Q       |V      |       |       |
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56+30    0.0432    0.04  Q      |V      |       |       |
56+35    0.0434    0.04  Q      |V      |       |       |
56+40    0.0437    0.04  Q      |V      |       |       |
56+45    0.0440    0.04  Q      |V      |       |       |
56+50    0.0442    0.02  Q      |V      |       |       |
56+55    0.0442    0.01  Q      |V      |       |       |
57+ 0    0.0443    0.01  Q      |V      |       |       |
57+ 5    0.0446    0.04  Q      |V      |       |       |
57+10    0.0449    0.05  Q      | V     |       |       |
57+15    0.0453    0.05  Q      | V     |       |       |
57+20    0.0457    0.07  Q      | V     |       |       |
57+25    0.0462    0.07  Q      | V     |       |       |
57+30    0.0468    0.07  Q      | V     |       |       |
57+35    0.0474    0.09  Q      | V     |       |       |
57+40    0.0480    0.10  Q      | V     |       |       |
57+45    0.0487    0.10  Q      |  V    |       |       |
57+50    0.0494    0.11  Q      |  V    |       |       |
57+55    0.0503    0.12  Q      |  V    |       |       |
58+ 0    0.0511    0.12  Q      |  V    |       |       |
58+ 5    0.0515    0.07  Q      |  V    |       |       |
58+10    0.0518    0.04  Q      |  V    |       |       |
58+15    0.0521    0.04  Q      |  V    |       |       |
58+20    0.0524    0.04  Q      |  V    |       |       |
58+25    0.0526    0.04  Q      |   V   |       |       |
58+30    0.0527    0.01  Q      |   V   |       |       |
58+35    0.0532    0.06  Q      |   V   |       |       |
58+40    0.0538    0.09  Q      |   V   |       |       |
58+45    0.0545    0.09  Q      |   V   |       |       |
58+50    0.0551    0.10  Q      |   V   |       |       |
58+55    0.0558    0.10  Q      |   V   |       |       |
59+ 0    0.0565    0.10  Q      |   V   |       |       |
59+ 5    0.0571    0.09  Q      |   V   |       |       |
59+10    0.0576    0.08  Q      |   V   |       |       |
59+15    0.0582    0.08  Q      |   V   |       |       |
59+20    0.0588    0.09  Q      |   V   |       |       |
59+25    0.0594    0.09  Q      |   V   |       |       |
59+30    0.0600    0.09  Q      |    V  |       |       |
59+35    0.0605    0.07  Q      |    V  |       |       |
59+40    0.0609    0.05  Q      |    V  |       |       |
59+45    0.0612    0.06  Q      |    V  |       |       |
59+50    0.0617    0.07  Q      |    V  |       |       |
59+55    0.0622    0.08  Q      |    V  |       |       |
60+ 0    0.0628    0.08  Q      |    V  |       |       |
60+ 5    0.0639    0.16  Q      |    V  |       |       |
60+10    0.0653    0.21  Q      |     V |       |       |
60+15    0.0668    0.21  Q      |     V |       |       |
60+20    0.0683    0.22  Q      |     V |       |       |
60+25    0.0699    0.23  Q      |     V |       |       |
60+30    0.0715    0.23  Q      |      V|       |       |
60+35    0.0732    0.26  |Q     |      V|       |       |
60+40    0.0751    0.27  |Q     |       V       |       |
60+45    0.0769    0.27  |Q     |       V       |       |
60+50    0.0789    0.28  |Q     |       |V      |       |
60+55    0.0809    0.29  |Q     |       |V      |       |
61+ 0    0.0829    0.29  |Q     |       | V     |       |
61+ 5    0.0853    0.35  |Q     |       | V     |       |
61+10    0.0880    0.39  |Q     |       |  V    |       |
61+15    0.0906    0.39  |Q     |       |  V    |       |
61+20    0.0933    0.39  |Q     |       |  V    |       |
61+25    0.0960    0.39  |Q     |       |   V   |       |
61+30    0.0987    0.39  |Q     |       |    V  |       |
61+35    0.1005    0.26  |Q     |       |    V  |       |
61+40    0.1018    0.19  Q      |       |    V  |       |
61+45    0.1031    0.19  Q      |       |    V  |       |
61+50    0.1045    0.19  Q      |       |    V  |       |
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61+55    0.1058    0.20 Q      |      |     V |      |
62+ 0    0.1072    0.20 Q      |      |     V |      |
62+ 5    0.1089    0.25 Q      |      |     V|      |
62+10    0.1108    0.27 |Q     |      |     V|      |
62+15    0.1126    0.27 |Q     |      |      V      |
62+20    0.1144    0.26 |Q     |      |      V      |
62+25    0.1162    0.26 |Q     |      |      |V     |
62+30    0.1180    0.26 |Q     |      |      |V     |
62+35    0.1198    0.26 |Q     |      |      | V    |
62+40    0.1216    0.26 |Q     |      |      | V    |
62+45    0.1234    0.26 |Q     |      |      | V    |
62+50    0.1251    0.25 |Q     |      |      |  V   |
62+55    0.1268    0.25 Q      |      |      |  V   |
63+ 0    0.1285    0.25 Q      |      |      |  V   |
63+ 5    0.1301    0.24 Q      |      |      |  V   |
63+10    0.1317    0.23 Q      |      |      |   V  |
63+15    0.1333    0.23 Q      |      |      |   V  |
63+20    0.1348    0.22 Q      |      |      |   V  |
63+25    0.1363    0.22 Q      |      |      |   V  |
63+30    0.1378    0.22 Q      |      |      |   V  |
63+35    0.1390    0.17 Q      |      |      |    V |
63+40    0.1400    0.15 Q      |      |      |    V |
63+45    0.1410    0.15 Q      |      |      |    V |
63+50    0.1420    0.15 Q      |      |      |    V |
63+55    0.1430    0.15 Q      |      |      |    V |
64+ 0    0.1441    0.15 Q      |      |      |    V |
64+ 5    0.1445    0.06 Q      |      |      |    V |
64+10    0.1446    0.01 Q      |      |      |    V |
64+15    0.1446    0.01 Q      |      |      |    V |
64+20    0.1447    0.01 Q      |      |      |    V |
64+25    0.1448    0.01 Q      |      |      |    V |
64+30    0.1449    0.01 Q      |      |      |    V |
64+35    0.1449    0.01 Q      |      |      |    V |
64+40    0.1450    0.01 Q      |      |      |    V |
64+45    0.1450    0.01 Q      |      |      |    V |
64+50    0.1451    0.01 Q      |      |      |    V |
64+55    0.1451    0.01 Q      |      |      |    V |
65+ 0    0.1452    0.01 Q      |      |      |    V |
65+ 5    0.1453    0.01 Q      |      |      |    V |
65+10    0.1454    0.01 Q      |      |      |    V |
65+15    0.1455    0.01 Q      |      |      |    V |
65+20    0.1455    0.01 Q      |      |      |    V |
65+25    0.1456    0.01 Q      |      |      |    V |
65+30    0.1457    0.01 Q      |      |      |    V |
65+35    0.1458    0.01 Q      |      |      |    V |
65+40    0.1459    0.01 Q      |      |      |    V |
65+45    0.1460    0.01 Q      |      |      |    V|
65+50    0.1461    0.01 Q      |      |      |    V|
65+55    0.1462    0.01 Q      |      |      |    V|
66+ 0    0.1462    0.01 Q      |      |      |    V|
66+ 5    0.1463    0.01 Q      |      |      |    V|
66+10    0.1464    0.01 Q      |      |      |    V|
66+15    0.1464    0.01 Q      |      |      |    V|
66+20    0.1465    0.01 Q      |      |      |    V|
66+25    0.1466    0.01 Q      |      |      |    V|
66+30    0.1467    0.01 Q      |      |      |    V|
66+35    0.1467    0.01 Q      |      |      |    V|
66+40    0.1468    0.01 Q      |      |      |    V|
66+45    0.1468    0.01 Q      |      |      |    V|
66+50    0.1469    0.01 Q      |      |      |    V|
66+55    0.1469    0.01 Q      |      |      |    V|
67+ 0    0.1470    0.01 Q      |      |      |    V|
67+ 5    0.1470    0.01 Q      |      |      |    V|
67+10    0.1471    0.01 Q      |      |      |    V|
67+15    0.1471    0.01 Q      |      |      |    V|
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 67+20     0.1472     0.01 Q      |      |      |      V|
 67+25     0.1473     0.01 Q      |      |      |      V|
 67+30     0.1473     0.01 Q      |      |      |      V|
 67+35     0.1474     0.01 Q      |      |      |      V|
 67+40     0.1474     0.01 Q      |      |      |      V|
 67+45     0.1475     0.01 Q      |      |      |      V|
 67+50     0.1475     0.01 Q      |      |      |      V|
 67+55     0.1476     0.01 Q      |      |      |      V|
 68+ 0     0.1476     0.01 Q      |      |      |      V|
 68+ 5     0.1477     0.01 Q      |      |      |      V|
 68+10     0.1477     0.01 Q      |      |      |      V|
 68+15     0.1478     0.01 Q      |      |      |      V|
 68+20     0.1478     0.01 Q      |      |      |      V|
 68+25     0.1479     0.01 Q      |      |      |      V|
 68+30     0.1479     0.01 Q      |      |      |      V|
 68+35     0.1480     0.01 Q      |      |      |      V|
 68+40     0.1481     0.01 Q      |      |      |      V|
 68+45     0.1481     0.01 Q      |      |      |      V|
 68+50     0.1482     0.01 Q      |      |      |      V|
 68+55     0.1482     0.01 Q      |      |      |      V|
 69+ 0     0.1482     0.01 Q      |      |      |      V|
 69+ 5     0.1483     0.01 Q      |      |      |      V|
 69+10     0.1483     0.01 Q      |      |      |      V|
 69+15     0.1484     0.01 Q      |      |      |      V|
 69+20     0.1484     0.01 Q      |      |      |      V|
 69+25     0.1485     0.01 Q      |      |      |      V|
 69+30     0.1485     0.01 Q      |      |      |      V|
 69+35     0.1485     0.01 Q      |      |      |      V|
 69+40     0.1486     0.01 Q      |      |      |      V|
 69+45     0.1487     0.01 Q      |      |      |      V|
 69+50     0.1487     0.01 Q      |      |      |      V|
 69+55     0.1487     0.01 Q      |      |      |      V|
 70+ 0     0.1488     0.01 Q      |      |      |      V|
 70+ 5     0.1488     0.01 Q      |      |      |      V|
 70+10     0.1489     0.01 Q      |      |      |      V|
 70+15     0.1489     0.01 Q      |      |      |      V|
 70+20     0.1490     0.01 Q      |      |      |      V|
 70+25     0.1490     0.01 Q      |      |      |      V|
 70+30     0.1491     0.01 Q      |      |      |      V|
 70+35     0.1491     0.01 Q      |      |      |      V|
 70+40     0.1491     0.01 Q      |      |      |      V|
 70+45     0.1492     0.01 Q      |      |      |      V|
 70+50     0.1492     0.01 Q      |      |      |      V|
 70+55     0.1492     0.01 Q      |      |      |      V|
 71+ 0     0.1493     0.01 Q      |      |      |      V|
 71+ 5     0.1493     0.01 Q      |      |      |      V|
 71+10     0.1493     0.01 Q      |      |      |      V|
 71+15     0.1494     0.01 Q      |      |      |      V|
 71+20     0.1494     0.01 Q      |      |      |      V|
 71+25     0.1495     0.01 Q      |      |      |      V|
 71+30     0.1495     0.01 Q      |      |      |      V|
 71+35     0.1495     0.01 Q      |      |      |      V|
 71+40     0.1496     0.01 Q      |      |      |      V|
 71+45     0.1496     0.01 Q      |      |      |      V|
 71+50     0.1496     0.01 Q      |      |      |      V|
 71+55     0.1497     0.01 Q      |      |      |      V|
 72+ 0     0.1497     0.01 Q      |      |      |      V|
 72+ 5     0.1497     0.00 Q      |      |      |      V
--------------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APRE2YR2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Pre-development
24-Hr 10-Yr Storm Event

Drainage Area = 1.32(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 87.50(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.017 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.021 Hr.
Lag time = 1.24 Min.
25% of lag time = 0.31 Min.
40% of lag time = 0.50 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	2.43	3.22

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.32	6.58	8.71

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.430(In)
Area Averaged 100-Year Rainfall = 6.580(In)

Point rain (area averaged) = 4.137(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 4.137(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.324	83.00	0.059

Total Area Entered = 1.32(Ac.)

RI AMC2	RI AMC-2	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
83.0	83.0	0.210	0.059	0.199	1.000	0.199

Sum (F) = 0.199

Area averaged mean soil loss (F) (In/Hr) = 0.199

Minimum soil loss rate ((In/Hr)) = 0.099

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.853

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	402.223	65.137	0.869
2	0.167	804.446	34.863	0.465

Sum = 100.000 Sum= 1.334

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1 0.08	0.07	0.033	0.352	0.028	0.00
2 0.17	0.07	0.033	0.351	0.028	0.00
3 0.25	0.07	0.033	0.349	0.028	0.00
4 0.33	0.10	0.050	0.348	0.042	0.01
5 0.42	0.10	0.050	0.347	0.042	0.01
6 0.50	0.10	0.050	0.345	0.042	0.01
7 0.58	0.10	0.050	0.344	0.042	0.01
8 0.67	0.10	0.050	0.343	0.042	0.01
9 0.75	0.10	0.050	0.341	0.042	0.01
10 0.83	0.13	0.066	0.340	0.056	0.01
11 0.92	0.13	0.066	0.339	0.056	0.01
12 1.00	0.13	0.066	0.337	0.056	0.01
13 1.08	0.10	0.050	0.336	0.042	0.01
14 1.17	0.10	0.050	0.335	0.042	0.01
15 1.25	0.10	0.050	0.333	0.042	0.01
16 1.33	0.10	0.050	0.332	0.042	0.01
17 1.42	0.10	0.050	0.331	0.042	0.01
18 1.50	0.10	0.050	0.329	0.042	0.01
19 1.58	0.10	0.050	0.328	0.042	0.01
20 1.67	0.10	0.050	0.327	0.042	0.01
21 1.75	0.10	0.050	0.325	0.042	0.01
22 1.83	0.13	0.066	0.324	0.056	0.01
23 1.92	0.13	0.066	0.323	0.056	0.01
24 2.00	0.13	0.066	0.322	0.056	0.01
25 2.08	0.13	0.066	0.320	0.056	0.01
26 2.17	0.13	0.066	0.319	0.056	0.01
27 2.25	0.13	0.066	0.318	0.056	0.01
28 2.33	0.13	0.066	0.316	0.056	0.01
29 2.42	0.13	0.066	0.315	0.056	0.01
30 2.50	0.13	0.066	0.314	0.056	0.01
31 2.58	0.17	0.083	0.312	0.071	0.01
32 2.67	0.17	0.083	0.311	0.071	0.01
33 2.75	0.17	0.083	0.310	0.071	0.01

34	2.83	0.17	0.083	0.309	0.071	0.01
35	2.92	0.17	0.083	0.307	0.071	0.01
36	3.00	0.17	0.083	0.306	0.071	0.01
37	3.08	0.17	0.083	0.305	0.071	0.01
38	3.17	0.17	0.083	0.304	0.071	0.01
39	3.25	0.17	0.083	0.302	0.071	0.01
40	3.33	0.17	0.083	0.301	0.071	0.01
41	3.42	0.17	0.083	0.300	0.071	0.01
42	3.50	0.17	0.083	0.299	0.071	0.01
43	3.58	0.17	0.083	0.297	0.071	0.01
44	3.67	0.17	0.083	0.296	0.071	0.01
45	3.75	0.17	0.083	0.295	0.071	0.01
46	3.83	0.20	0.099	0.294	0.085	0.01
47	3.92	0.20	0.099	0.292	0.085	0.01
48	4.00	0.20	0.099	0.291	0.085	0.01
49	4.08	0.20	0.099	0.290	0.085	0.01
50	4.17	0.20	0.099	0.289	0.085	0.01
51	4.25	0.20	0.099	0.287	0.085	0.01
52	4.33	0.23	0.116	0.286	0.099	0.02
53	4.42	0.23	0.116	0.285	0.099	0.02
54	4.50	0.23	0.116	0.284	0.099	0.02
55	4.58	0.23	0.116	0.282	0.099	0.02
56	4.67	0.23	0.116	0.281	0.099	0.02
57	4.75	0.23	0.116	0.280	0.099	0.02
58	4.83	0.27	0.132	0.279	0.113	0.02
59	4.92	0.27	0.132	0.278	0.113	0.02
60	5.00	0.27	0.132	0.276	0.113	0.02
61	5.08	0.20	0.099	0.275	0.085	0.01
62	5.17	0.20	0.099	0.274	0.085	0.01
63	5.25	0.20	0.099	0.273	0.085	0.01
64	5.33	0.23	0.116	0.272	0.099	0.02
65	5.42	0.23	0.116	0.270	0.099	0.02
66	5.50	0.23	0.116	0.269	0.099	0.02
67	5.58	0.27	0.132	0.268	0.113	0.02
68	5.67	0.27	0.132	0.267	0.113	0.02
69	5.75	0.27	0.132	0.266	0.113	0.02
70	5.83	0.27	0.132	0.265	0.113	0.02
71	5.92	0.27	0.132	0.263	0.113	0.02
72	6.00	0.27	0.132	0.262	0.113	0.02
73	6.08	0.30	0.149	0.261	0.127	0.02
74	6.17	0.30	0.149	0.260	0.127	0.02
75	6.25	0.30	0.149	0.259	0.127	0.02
76	6.33	0.30	0.149	0.258	0.127	0.02
77	6.42	0.30	0.149	0.256	0.127	0.02
78	6.50	0.30	0.149	0.255	0.127	0.02
79	6.58	0.33	0.165	0.254	0.141	0.02
80	6.67	0.33	0.165	0.253	0.141	0.02
81	6.75	0.33	0.165	0.252	0.141	0.02
82	6.83	0.33	0.165	0.251	0.141	0.02
83	6.92	0.33	0.165	0.250	0.141	0.02
84	7.00	0.33	0.165	0.248	0.141	0.02
85	7.08	0.33	0.165	0.247	0.141	0.02
86	7.17	0.33	0.165	0.246	0.141	0.02
87	7.25	0.33	0.165	0.245	0.141	0.02
88	7.33	0.37	0.182	0.244	0.155	0.03
89	7.42	0.37	0.182	0.243	0.155	0.03
90	7.50	0.37	0.182	0.242	0.155	0.03
91	7.58	0.40	0.199	0.241	0.169	0.03
92	7.67	0.40	0.199	0.240	0.169	0.03
93	7.75	0.40	0.199	0.238	0.169	0.03
94	7.83	0.43	0.215	0.237	0.184	0.03
95	7.92	0.43	0.215	0.236	0.184	0.03
96	8.00	0.43	0.215	0.235	0.184	0.03
97	8.08	0.50	0.248	0.234	---	0.01
98	8.17	0.50	0.248	0.233	---	0.02

99	8.25	0.50	0.248	0.232	---	0.02
100	8.33	0.50	0.248	0.231	---	0.02
101	8.42	0.50	0.248	0.230	---	0.02
102	8.50	0.50	0.248	0.229	---	0.02
103	8.58	0.53	0.265	0.228	---	0.04
104	8.67	0.53	0.265	0.226	---	0.04
105	8.75	0.53	0.265	0.225	---	0.04
106	8.83	0.57	0.281	0.224	---	0.06
107	8.92	0.57	0.281	0.223	---	0.06
108	9.00	0.57	0.281	0.222	---	0.06
109	9.08	0.63	0.314	0.221	---	0.09
110	9.17	0.63	0.314	0.220	---	0.09
111	9.25	0.63	0.314	0.219	---	0.10
112	9.33	0.67	0.331	0.218	---	0.11
113	9.42	0.67	0.331	0.217	---	0.11
114	9.50	0.67	0.331	0.216	---	0.12
115	9.58	0.70	0.348	0.215	---	0.13
116	9.67	0.70	0.348	0.214	---	0.13
117	9.75	0.70	0.348	0.213	---	0.13
118	9.83	0.73	0.364	0.212	---	0.15
119	9.92	0.73	0.364	0.211	---	0.15
120	10.00	0.73	0.364	0.210	---	0.15
121	10.08	0.50	0.248	0.209	---	0.04
122	10.17	0.50	0.248	0.208	---	0.04
123	10.25	0.50	0.248	0.207	---	0.04
124	10.33	0.50	0.248	0.206	---	0.04
125	10.42	0.50	0.248	0.205	---	0.04
126	10.50	0.50	0.248	0.204	---	0.04
127	10.58	0.67	0.331	0.203	---	0.13
128	10.67	0.67	0.331	0.202	---	0.13
129	10.75	0.67	0.331	0.201	---	0.13
130	10.83	0.67	0.331	0.200	---	0.13
131	10.92	0.67	0.331	0.199	---	0.13
132	11.00	0.67	0.331	0.198	---	0.13
133	11.08	0.63	0.314	0.197	---	0.12
134	11.17	0.63	0.314	0.196	---	0.12
135	11.25	0.63	0.314	0.195	---	0.12
136	11.33	0.63	0.314	0.194	---	0.12
137	11.42	0.63	0.314	0.193	---	0.12
138	11.50	0.63	0.314	0.192	---	0.12
139	11.58	0.57	0.281	0.191	---	0.09
140	11.67	0.57	0.281	0.190	---	0.09
141	11.75	0.57	0.281	0.189	---	0.09
142	11.83	0.60	0.298	0.188	---	0.11
143	11.92	0.60	0.298	0.187	---	0.11
144	12.00	0.60	0.298	0.186	---	0.11
145	12.08	0.83	0.414	0.185	---	0.23
146	12.17	0.83	0.414	0.185	---	0.23
147	12.25	0.83	0.414	0.184	---	0.23
148	12.33	0.87	0.430	0.183	---	0.25
149	12.42	0.87	0.430	0.182	---	0.25
150	12.50	0.87	0.430	0.181	---	0.25
151	12.58	0.93	0.463	0.180	---	0.28
152	12.67	0.93	0.463	0.179	---	0.28
153	12.75	0.93	0.463	0.178	---	0.29
154	12.83	0.97	0.480	0.177	---	0.30
155	12.92	0.97	0.480	0.176	---	0.30
156	13.00	0.97	0.480	0.175	---	0.30
157	13.08	1.13	0.563	0.175	---	0.39
158	13.17	1.13	0.563	0.174	---	0.39
159	13.25	1.13	0.563	0.173	---	0.39
160	13.33	1.13	0.563	0.172	---	0.39
161	13.42	1.13	0.563	0.171	---	0.39
162	13.50	1.13	0.563	0.170	---	0.39
163	13.58	0.77	0.381	0.169	---	0.21

164	13.67	0.77	0.381	0.168	---	0.21
165	13.75	0.77	0.381	0.168	---	0.21
166	13.83	0.77	0.381	0.167	---	0.21
167	13.92	0.77	0.381	0.166	---	0.21
168	14.00	0.77	0.381	0.165	---	0.22
169	14.08	0.90	0.447	0.164	---	0.28
170	14.17	0.90	0.447	0.163	---	0.28
171	14.25	0.90	0.447	0.163	---	0.28
172	14.33	0.87	0.430	0.162	---	0.27
173	14.42	0.87	0.430	0.161	---	0.27
174	14.50	0.87	0.430	0.160	---	0.27
175	14.58	0.87	0.430	0.159	---	0.27
176	14.67	0.87	0.430	0.158	---	0.27
177	14.75	0.87	0.430	0.158	---	0.27
178	14.83	0.83	0.414	0.157	---	0.26
179	14.92	0.83	0.414	0.156	---	0.26
180	15.00	0.83	0.414	0.155	---	0.26
181	15.08	0.80	0.397	0.154	---	0.24
182	15.17	0.80	0.397	0.154	---	0.24
183	15.25	0.80	0.397	0.153	---	0.24
184	15.33	0.77	0.381	0.152	---	0.23
185	15.42	0.77	0.381	0.151	---	0.23
186	15.50	0.77	0.381	0.150	---	0.23
187	15.58	0.63	0.314	0.150	---	0.16
188	15.67	0.63	0.314	0.149	---	0.17
189	15.75	0.63	0.314	0.148	---	0.17
190	15.83	0.63	0.314	0.147	---	0.17
191	15.92	0.63	0.314	0.147	---	0.17
192	16.00	0.63	0.314	0.146	---	0.17
193	16.08	0.13	0.066	0.145	0.056	0.01
194	16.17	0.13	0.066	0.144	0.056	0.01
195	16.25	0.13	0.066	0.144	0.056	0.01
196	16.33	0.13	0.066	0.143	0.056	0.01
197	16.42	0.13	0.066	0.142	0.056	0.01
198	16.50	0.13	0.066	0.141	0.056	0.01
199	16.58	0.10	0.050	0.141	0.042	0.01
200	16.67	0.10	0.050	0.140	0.042	0.01
201	16.75	0.10	0.050	0.139	0.042	0.01
202	16.83	0.10	0.050	0.139	0.042	0.01
203	16.92	0.10	0.050	0.138	0.042	0.01
204	17.00	0.10	0.050	0.137	0.042	0.01
205	17.08	0.17	0.083	0.137	0.071	0.01
206	17.17	0.17	0.083	0.136	0.071	0.01
207	17.25	0.17	0.083	0.135	0.071	0.01
208	17.33	0.17	0.083	0.134	0.071	0.01
209	17.42	0.17	0.083	0.134	0.071	0.01
210	17.50	0.17	0.083	0.133	0.071	0.01
211	17.58	0.17	0.083	0.132	0.071	0.01
212	17.67	0.17	0.083	0.132	0.071	0.01
213	17.75	0.17	0.083	0.131	0.071	0.01
214	17.83	0.13	0.066	0.131	0.056	0.01
215	17.92	0.13	0.066	0.130	0.056	0.01
216	18.00	0.13	0.066	0.129	0.056	0.01
217	18.08	0.13	0.066	0.129	0.056	0.01
218	18.17	0.13	0.066	0.128	0.056	0.01
219	18.25	0.13	0.066	0.127	0.056	0.01
220	18.33	0.13	0.066	0.127	0.056	0.01
221	18.42	0.13	0.066	0.126	0.056	0.01
222	18.50	0.13	0.066	0.125	0.056	0.01
223	18.58	0.10	0.050	0.125	0.042	0.01
224	18.67	0.10	0.050	0.124	0.042	0.01
225	18.75	0.10	0.050	0.124	0.042	0.01
226	18.83	0.07	0.033	0.123	0.028	0.00
227	18.92	0.07	0.033	0.122	0.028	0.00
228	19.00	0.07	0.033	0.122	0.028	0.00

229	19.08	0.10	0.050	0.121	0.042	0.01
230	19.17	0.10	0.050	0.121	0.042	0.01
231	19.25	0.10	0.050	0.120	0.042	0.01
232	19.33	0.13	0.066	0.120	0.056	0.01
233	19.42	0.13	0.066	0.119	0.056	0.01
234	19.50	0.13	0.066	0.119	0.056	0.01
235	19.58	0.10	0.050	0.118	0.042	0.01
236	19.67	0.10	0.050	0.117	0.042	0.01
237	19.75	0.10	0.050	0.117	0.042	0.01
238	19.83	0.07	0.033	0.116	0.028	0.00
239	19.92	0.07	0.033	0.116	0.028	0.00
240	20.00	0.07	0.033	0.115	0.028	0.00
241	20.08	0.10	0.050	0.115	0.042	0.01
242	20.17	0.10	0.050	0.114	0.042	0.01
243	20.25	0.10	0.050	0.114	0.042	0.01
244	20.33	0.10	0.050	0.113	0.042	0.01
245	20.42	0.10	0.050	0.113	0.042	0.01
246	20.50	0.10	0.050	0.112	0.042	0.01
247	20.58	0.10	0.050	0.112	0.042	0.01
248	20.67	0.10	0.050	0.111	0.042	0.01
249	20.75	0.10	0.050	0.111	0.042	0.01
250	20.83	0.07	0.033	0.111	0.028	0.00
251	20.92	0.07	0.033	0.110	0.028	0.00
252	21.00	0.07	0.033	0.110	0.028	0.00
253	21.08	0.10	0.050	0.109	0.042	0.01
254	21.17	0.10	0.050	0.109	0.042	0.01
255	21.25	0.10	0.050	0.108	0.042	0.01
256	21.33	0.07	0.033	0.108	0.028	0.00
257	21.42	0.07	0.033	0.108	0.028	0.00
258	21.50	0.07	0.033	0.107	0.028	0.00
259	21.58	0.10	0.050	0.107	0.042	0.01
260	21.67	0.10	0.050	0.106	0.042	0.01
261	21.75	0.10	0.050	0.106	0.042	0.01
262	21.83	0.07	0.033	0.106	0.028	0.00
263	21.92	0.07	0.033	0.105	0.028	0.00
264	22.00	0.07	0.033	0.105	0.028	0.00
265	22.08	0.10	0.050	0.105	0.042	0.01
266	22.17	0.10	0.050	0.104	0.042	0.01
267	22.25	0.10	0.050	0.104	0.042	0.01
268	22.33	0.07	0.033	0.104	0.028	0.00
269	22.42	0.07	0.033	0.103	0.028	0.00
270	22.50	0.07	0.033	0.103	0.028	0.00
271	22.58	0.07	0.033	0.103	0.028	0.00
272	22.67	0.07	0.033	0.102	0.028	0.00
273	22.75	0.07	0.033	0.102	0.028	0.00
274	22.83	0.07	0.033	0.102	0.028	0.00
275	22.92	0.07	0.033	0.102	0.028	0.00
276	23.00	0.07	0.033	0.101	0.028	0.00
277	23.08	0.07	0.033	0.101	0.028	0.00
278	23.17	0.07	0.033	0.101	0.028	0.00
279	23.25	0.07	0.033	0.101	0.028	0.00
280	23.33	0.07	0.033	0.100	0.028	0.00
281	23.42	0.07	0.033	0.100	0.028	0.00
282	23.50	0.07	0.033	0.100	0.028	0.00
283	23.58	0.07	0.033	0.100	0.028	0.00
284	23.67	0.07	0.033	0.100	0.028	0.00
285	23.75	0.07	0.033	0.100	0.028	0.00
286	23.83	0.07	0.033	0.099	0.028	0.00
287	23.92	0.07	0.033	0.099	0.028	0.00
288	24.00	0.07	0.033	0.099	0.028	0.00
Sum =		100.0		Sum =		18.9

Flood volume = Effective rainfall 1.58(In)
times area 1.3(Ac.)/[(In)/(Ft.)] = 0.2(Ac.Ft)
Total soil loss = 2.56(In)
Total soil loss = 0.283(Ac.Ft)

Total rainfall = 4.14(In)
Flood volume = 7577.1 Cubic Feet
Total soil loss = 12307.4 Cubic Feet

Peak flow rate of this hydrograph = 0.524(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0001	0.01	Q				
0+15	0.0001	0.01	Q				
0+20	0.0002	0.01	Q				
0+25	0.0002	0.01	Q				
0+30	0.0003	0.01	Q				
0+35	0.0004	0.01	Q				
0+40	0.0004	0.01	Q				
0+45	0.0005	0.01	Q				
0+50	0.0006	0.01	Q				
0+55	0.0007	0.01	Q				
1+ 0	0.0008	0.01	Q				
1+ 5	0.0008	0.01	Q				
1+10	0.0009	0.01	Q				
1+15	0.0010	0.01	Q				
1+20	0.0010	0.01	Q				
1+25	0.0011	0.01	Q				
1+30	0.0012	0.01	Q				
1+35	0.0012	0.01	Q				
1+40	0.0013	0.01	Q				
1+45	0.0014	0.01	Q				
1+50	0.0015	0.01	Q				
1+55	0.0016	0.01	Q				
2+ 0	0.0016	0.01	Q				
2+ 5	0.0017	0.01	Q				
2+10	0.0018	0.01	Q				
2+15	0.0019	0.01	Q				
2+20	0.0020	0.01	Q				
2+25	0.0021	0.01	Q				
2+30	0.0022	0.01	Q				
2+35	0.0023	0.02	Q				
2+40	0.0024	0.02	Q				
2+45	0.0025	0.02	Q				
2+50	0.0026	0.02	Q				
2+55	0.0027	0.02	Q				
3+ 0	0.0028	0.02	Q				
3+ 5	0.0030	0.02	Q				
3+10	0.0031	0.02	Q				
3+15	0.0032	0.02	Q				
3+20	0.0033	0.02	Q				
3+25	0.0034	0.02	Q				
3+30	0.0035	0.02	Q				
3+35	0.0036	0.02	Q				
3+40	0.0037	0.02	Q				
3+45	0.0038	0.02	Q				
3+50	0.0040	0.02	Q				
3+55	0.0041	0.02	Q				
4+ 0	0.0042	0.02	Q				
4+ 5	0.0044	0.02	QV				
4+10	0.0045	0.02	QV				

4+15	0.0046	0.02	QV	|	|	|	|
4+20	0.0048	0.02	QV	|	|	|	|
4+25	0.0049	0.02	QV	|	|	|	|
4+30	0.0051	0.02	QV	|	|	|	|
4+35	0.0053	0.02	QV	|	|	|	|
4+40	0.0054	0.02	QV	|	|	|	|
4+45	0.0056	0.02	QV	|	|	|	|
4+50	0.0057	0.02	QV	|	|	|	|
4+55	0.0059	0.03	QV	|	|	|	|
5+ 0	0.0061	0.03	QV	|	|	|	|
5+ 5	0.0063	0.02	QV	|	|	|	|
5+10	0.0064	0.02	QV	|	|	|	|
5+15	0.0065	0.02	QV	|	|	|	|
5+20	0.0067	0.02	QV	|	|	|	|
5+25	0.0068	0.02	QV	|	|	|	|
5+30	0.0070	0.02	QV	|	|	|	|
5+35	0.0072	0.02	QV	|	|	|	|
5+40	0.0073	0.03	QV	|	|	|	|
5+45	0.0075	0.03	QV	|	|	|	|
5+50	0.0077	0.03	QV	|	|	|	|
5+55	0.0079	0.03	QV	|	|	|	|
6+ 0	0.0080	0.03	QV	|	|	|	|
6+ 5	0.0082	0.03	QV	|	|	|	|
6+10	0.0084	0.03	QV	|	|	|	|
6+15	0.0086	0.03	QV	|	|	|	|
6+20	0.0088	0.03	Q V	|	|	|	|
6+25	0.0090	0.03	Q V	|	|	|	|
6+30	0.0092	0.03	Q V	|	|	|	|
6+35	0.0095	0.03	Q V	|	|	|	|
6+40	0.0097	0.03	Q V	|	|	|	|
6+45	0.0099	0.03	Q V	|	|	|	|
6+50	0.0101	0.03	Q V	|	|	|	|
6+55	0.0104	0.03	Q V	|	|	|	|
7+ 0	0.0106	0.03	Q V	|	|	|	|
7+ 5	0.0108	0.03	Q V	|	|	|	|
7+10	0.0110	0.03	Q V	|	|	|	|
7+15	0.0112	0.03	Q V	|	|	|	|
7+20	0.0115	0.03	Q V	|	|	|	|
7+25	0.0117	0.04	Q V	|	|	|	|
7+30	0.0120	0.04	Q V	|	|	|	|
7+35	0.0122	0.04	Q V	|	|	|	|
7+40	0.0125	0.04	Q V	|	|	|	|
7+45	0.0128	0.04	Q V	|	|	|	|
7+50	0.0131	0.04	Q V	|	|	|	|
7+55	0.0133	0.04	Q V	|	|	|	|
8+ 0	0.0136	0.04	Q V	|	|	|	|
8+ 5	0.0138	0.03	Q V	|	|	|	|
8+10	0.0140	0.02	Q V	|	|	|	|
8+15	0.0141	0.02	Q V	|	|	|	|
8+20	0.0143	0.02	Q V	|	|	|	|
8+25	0.0144	0.02	Q V	|	|	|	|
8+30	0.0146	0.03	Q V	|	|	|	|
8+35	0.0149	0.04	Q V	|	|	|	|
8+40	0.0152	0.05	Q V	|	|	|	|
8+45	0.0156	0.05	Q V	|	|	|	|
8+50	0.0161	0.07	Q V	|	|	|	|
8+55	0.0166	0.08	Q V	|	|	|	|
9+ 0	0.0171	0.08	Q V	|	|	|	|
9+ 5	0.0179	0.11	Q V	|	|	|	|
9+10	0.0188	0.13	Q V	|	|	|	|
9+15	0.0196	0.13	Q V	|	|	|	|
9+20	0.0206	0.14	Q V	|	|	|	|
9+25	0.0217	0.15	Q V	|	|	|	|
9+30	0.0227	0.15	Q V	|	|	|	|
9+35	0.0239	0.17	Q V	|	|	|	|

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 9+40    0.0251    0.18  Q   V   |       |       |       |
 9+45    0.0263    0.18  Q    V  |       |       |       |
 9+50    0.0277    0.20  Q    V  |       |       |       |
 9+55    0.0291    0.20  Q    V  |       |       |       |
10+ 0    0.0305    0.21  Q     V |       |       |       |
10+ 5    0.0312    0.11  Q     V |       |       |       |
10+10    0.0316    0.05  Q     V |       |       |       |
10+15    0.0320    0.05  Q     V |       |       |       |
10+20    0.0324    0.06  Q     V |       |       |       |
10+25    0.0328    0.06  Q     V |       |       |       |
10+30    0.0332    0.06  Q     V |       |       |       |
10+35    0.0341    0.13  Q     V |       |       |       |
10+40    0.0353    0.17  Q      V|       |       |       |
10+45    0.0365    0.17  Q      V|       |       |       |
10+50    0.0377    0.17  Q      V|       |       |       |
10+55    0.0389    0.18  Q      V|       |       |       |
11+ 0    0.0401    0.18  Q      V|       |       |       |
11+ 5    0.0412    0.16  Q      V|       |       |       |
11+10    0.0423    0.16  Q      V|       |       |       |
11+15    0.0434    0.16  Q      V|       |       |       |
11+20    0.0445    0.16  Q       V       |       |       |
11+25    0.0456    0.16  Q       V       |       |       |
11+30    0.0467    0.16  Q       V       |       |       |
11+35    0.0477    0.14  Q       V       |       |       |
11+40    0.0485    0.12  Q       |V      |       |       |
11+45    0.0494    0.12  Q       |V      |       |       |
11+50    0.0503    0.14  Q       |V      |       |       |
11+55    0.0513    0.15  Q       |V      |       |       |
12+ 0    0.0523    0.15  Q       | V     |       |       |
12+ 5    0.0541    0.25  |Q      | V     |       |       |
12+10    0.0562    0.31  |Q      | V     |       |       |
12+15    0.0583    0.31  |Q      |  V    |       |       |
12+20    0.0605    0.32  |Q      |  V    |       |       |
12+25    0.0628    0.33  |Q      |   V   |       |       |
12+30    0.0651    0.33  |Q      |   V   |       |       |
12+35    0.0676    0.36  |Q      |    V  |       |       |
12+40    0.0702    0.38  |Q      |    V  |       |       |
12+45    0.0728    0.38  |Q      |    V  |       |       |
12+50    0.0755    0.40  |Q      |     V |       |       |
12+55    0.0783    0.40  |Q      |     V |       |       |
13+ 0    0.0811    0.41  |Q      |     V |       |       |
13+ 5    0.0844    0.48  |Q      |     V|       |       |
13+10    0.0880    0.52  | Q     |      V      |       |
13+15    0.0916    0.52  | Q     |       |V      |       |
13+20    0.0952    0.52  | Q     |       |V      |       |
13+25    0.0988    0.52  | Q     |       | V     |       |
13+30    0.1024    0.52  | Q     |       |  V    |       |
13+35    0.1049    0.37  |Q      |       |  V    |       |
13+40    0.1068    0.28  |Q      |       |  V    |       |
13+45    0.1088    0.28  |Q      |       |   V   |       |
13+50    0.1108    0.29  |Q      |       |   V   |       |
13+55    0.1127    0.29  |Q      |       |   V   |       |
14+ 0    0.1147    0.29  |Q      |       |   V   |       |
14+ 5    0.1171    0.35  |Q      |       |   V   |       |
14+10    0.1197    0.38  |Q      |       |    V  |       |
14+15    0.1223    0.38  |Q      |       |    V  |       |
14+20    0.1248    0.37  |Q      |       |    V  |       |
14+25    0.1273    0.36  |Q      |       |     V|       |
14+30    0.1298    0.36  |Q      |       |     V|       |
14+35    0.1323    0.36  |Q      |       |      V      |
14+40    0.1348    0.36  |Q      |       |      V      |
14+45    0.1373    0.36  |Q      |       |       |V    |
14+50    0.1397    0.35  |Q      |       |       | V   |
14+55    0.1421    0.34  |Q      |       |       | V   |
15+ 0    0.1444    0.34  |Q      |       |       | V   |
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15+ 5    0.1467    0.33 |Q     |      |      | V    |
15+10    0.1490    0.32 |Q     |      |      |  V   |
15+15    0.1512    0.33 |Q     |      |      |  V   |
15+20    0.1534    0.31 |Q     |      |      |  V   |
15+25    0.1555    0.31 |Q     |      |      |  V   |
15+30    0.1576    0.31 |Q     |      |      |   V  |
15+35    0.1593    0.25 |Q     |      |      |   V  |
15+40    0.1608    0.22 Q      |      |      |   V  |
15+45    0.1624    0.22 Q      |      |      |    V |
15+50    0.1639    0.22 Q      |      |      |    V |
15+55    0.1654    0.22 Q      |      |      |    V |
16+ 0    0.1670    0.22 Q      |      |      |    V |
16+ 5    0.1676    0.09 Q      |      |      |    V |
16+10    0.1677    0.01 Q      |      |      |    V |
16+15    0.1678    0.01 Q      |      |      |    V |
16+20    0.1678    0.01 Q      |      |      |    V |
16+25    0.1679    0.01 Q      |      |      |    V |
16+30    0.1680    0.01 Q      |      |      |    V |
16+35    0.1681    0.01 Q      |      |      |    V |
16+40    0.1682    0.01 Q      |      |      |    V |
16+45    0.1682    0.01 Q      |      |      |    V |
16+50    0.1683    0.01 Q      |      |      |    V |
16+55    0.1684    0.01 Q      |      |      |    V |
17+ 0    0.1684    0.01 Q      |      |      |    V |
17+ 5    0.1685    0.01 Q      |      |      |    V |
17+10    0.1686    0.02 Q      |      |      |    V |
17+15    0.1687    0.02 Q      |      |      |    V |
17+20    0.1689    0.02 Q      |      |      |    V |
17+25    0.1690    0.02 Q      |      |      |    V |
17+30    0.1691    0.02 Q      |      |      |    V |
17+35    0.1692    0.02 Q      |      |      |    V |
17+40    0.1693    0.02 Q      |      |      |    V |
17+45    0.1694    0.02 Q      |      |      |    V |
17+50    0.1695    0.01 Q      |      |      |    V |
17+55    0.1696    0.01 Q      |      |      |    V|
18+ 0    0.1697    0.01 Q      |      |      |    V|
18+ 5    0.1698    0.01 Q      |      |      |    V|
18+10    0.1699    0.01 Q      |      |      |    V|
18+15    0.1700    0.01 Q      |      |      |    V|
18+20    0.1701    0.01 Q      |      |      |    V|
18+25    0.1701    0.01 Q      |      |      |    V|
18+30    0.1702    0.01 Q      |      |      |    V|
18+35    0.1703    0.01 Q      |      |      |    V|
18+40    0.1704    0.01 Q      |      |      |    V|
18+45    0.1704    0.01 Q      |      |      |    V|
18+50    0.1705    0.01 Q      |      |      |    V|
18+55    0.1705    0.01 Q      |      |      |    V|
19+ 0    0.1706    0.01 Q      |      |      |    V|
19+ 5    0.1706    0.01 Q      |      |      |    V|
19+10    0.1707    0.01 Q      |      |      |    V|
19+15    0.1708    0.01 Q      |      |      |    V|
19+20    0.1709    0.01 Q      |      |      |    V|
19+25    0.1709    0.01 Q      |      |      |    V|
19+30    0.1710    0.01 Q      |      |      |    V|
19+35    0.1711    0.01 Q      |      |      |    V|
19+40    0.1712    0.01 Q      |      |      |    V|
19+45    0.1712    0.01 Q      |      |      |    V|
19+50    0.1713    0.01 Q      |      |      |    V|
19+55    0.1713    0.01 Q      |      |      |    V|
20+ 0    0.1714    0.01 Q      |      |      |    V|
20+ 5    0.1714    0.01 Q      |      |      |    V|
20+10    0.1715    0.01 Q      |      |      |    V|
20+15    0.1716    0.01 Q      |      |      |    V|
20+20    0.1716    0.01 Q      |      |      |    V|
20+25    0.1717    0.01 Q      |      |      |    V|
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 20+30     0.1718    0.01 Q      |      |      |     V|
 20+35     0.1718    0.01 Q      |      |      |     V|
 20+40     0.1719    0.01 Q      |      |      |     V|
 20+45     0.1720    0.01 Q      |      |      |     V|
 20+50     0.1720    0.01 Q      |      |      |     V|
 20+55     0.1721    0.01 Q      |      |      |     V|
 21+ 0     0.1721    0.01 Q      |      |      |     V|
 21+ 5     0.1722    0.01 Q      |      |      |     V|
 21+10     0.1722    0.01 Q      |      |      |     V|
 21+15     0.1723    0.01 Q      |      |      |     V|
 21+20     0.1724    0.01 Q      |      |      |     V|
 21+25     0.1724    0.01 Q      |      |      |     V|
 21+30     0.1725    0.01 Q      |      |      |     V|
 21+35     0.1725    0.01 Q      |      |      |     V|
 21+40     0.1726    0.01 Q      |      |      |     V|
 21+45     0.1727    0.01 Q      |      |      |     V|
 21+50     0.1727    0.01 Q      |      |      |     V|
 21+55     0.1727    0.01 Q      |      |      |     V|
 22+ 0     0.1728    0.01 Q      |      |      |     V|
 22+ 5     0.1729    0.01 Q      |      |      |     V|
 22+10     0.1729    0.01 Q      |      |      |     V|
 22+15     0.1730    0.01 Q      |      |      |     V|
 22+20     0.1730    0.01 Q      |      |      |     V|
 22+25     0.1731    0.01 Q      |      |      |     V|
 22+30     0.1731    0.01 Q      |      |      |     V|
 22+35     0.1732    0.01 Q      |      |      |     V|
 22+40     0.1732    0.01 Q      |      |      |     V|
 22+45     0.1733    0.01 Q      |      |      |     V|
 22+50     0.1733    0.01 Q      |      |      |     V|
 22+55     0.1734    0.01 Q      |      |      |     V|
 23+ 0     0.1734    0.01 Q      |      |      |     V|
 23+ 5     0.1734    0.01 Q      |      |      |     V|
 23+10     0.1735    0.01 Q      |      |      |     V|
 23+15     0.1735    0.01 Q      |      |      |     V|
 23+20     0.1736    0.01 Q      |      |      |     V|
 23+25     0.1736    0.01 Q      |      |      |     V|
 23+30     0.1737    0.01 Q      |      |      |     V|
 23+35     0.1737    0.01 Q      |      |      |     V|
 23+40     0.1738    0.01 Q      |      |      |     V|
 23+45     0.1738    0.01 Q      |      |      |     V|
 23+50     0.1738    0.01 Q      |      |      |     V|
 23+55     0.1739    0.01 Q      |      |      |     V|
 24+ 0     0.1739    0.01 Q      |      |      |     V|
 24+ 5     0.1739    0.00 Q      |      |      |     V
-------------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APOST12.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
1-Hr 2-Yr Storm Event

Drainage Area = 0.58(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 345.00(Ft.)
Length along longest watercourse measured to centroid = 97.38(Ft.)
Length along longest watercourse = 0.065 Mi.
Length along longest watercourse measured to centroid = 0.018 Mi.
Difference in elevation = 6.34(Ft.)
Slope along watercourse = 97.0296 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.023 Hr.
Lag time = 1.41 Min.
25% of lag time = 0.35 Min.
40% of lag time = 0.56 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	0.48	0.28

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	1.34	0.78

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.483(In)
Area Averaged 100-Year Rainfall = 1.340(In)

Point rain (area averaged) = 0.483(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.483(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.582	79.00	0.095

Total Area Entered = 0.58(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
79.0	61.8	0.451	0.095	0.412	1.000	0.412

Sum (F) = 0.412

Area averaged mean soil loss (F) (In/Hr) = 0.412

Minimum soil loss rate ((In/Hr)) = 0.206

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.824

Slope of intensity-duration curve for a 1 hour storm =0.4800

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	354.985	61.437	0.360
2	0.167	709.970	35.423	0.208
3	0.250	1064.955	3.140	0.018
		Sum = 100.000	Sum=	0.587

Storm Event 3 Effective Rainfall = 0.092(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.048	0.412	0.040	0.01
2	0.17	4.50	0.050	0.412	0.041	0.01
3	0.25	5.40	0.059	0.412	0.049	0.01
4	0.33	5.40	0.059	0.412	0.049	0.01
5	0.42	5.70	0.063	0.412	0.052	0.01
6	0.50	6.40	0.070	0.412	0.058	0.01
7	0.58	7.90	0.087	0.412	0.072	0.02
8	0.67	9.10	0.100	0.412	0.083	0.02
9	0.75	12.80	0.141	0.412	0.116	0.02
10	0.83	25.60	0.282	0.412	0.232	0.05
11	0.92	7.90	0.087	0.412	0.072	0.02
12	1.00	4.90	0.054	0.412	0.044	0.01
Sum =		100.0		Sum =		0.2

Flood volume = Effective rainfall 0.02(In)

times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.08(In)

Total soil loss = 0.004(Ac.Ft)

Total rainfall = 0.09(In)

Flood volume = 34.1 Cubic Feet

Total soil loss = 159.8 Cubic Feet

Storm Event 2 Effective Rainfall = 0.174(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)

1	0.08	4.40	0.092	0.412	0.076	0.02
2	0.17	4.50	0.094	0.412	0.077	0.02
3	0.25	5.40	0.113	0.412	0.093	0.02
4	0.33	5.40	0.113	0.412	0.093	0.02
5	0.42	5.70	0.119	0.412	0.098	0.02
6	0.50	6.40	0.134	0.412	0.110	0.02
7	0.58	7.90	0.165	0.412	0.136	0.03
8	0.67	9.10	0.190	0.412	0.156	0.03
9	0.75	12.80	0.267	0.412	0.220	0.05
10	0.83	25.60	0.534	0.412	---	0.12
11	0.92	7.90	0.165	0.412	0.136	0.03
12	1.00	4.90	0.102	0.412	0.084	0.02
Sum =		100.0		Sum =		0.4

Flood volume = Effective rainfall 0.03(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.14(In)
Total soil loss = 0.007(Ac.Ft)
Total rainfall = 0.17(In)
Flood volume = 69.5 Cubic Feet
Total soil loss = 297.8 Cubic Feet

Storm Event 1 Effective Rainfall = 0.483(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.255	0.412	0.210	0.04
2	0.17	4.50	0.261	0.412	0.215	0.05
3	0.25	5.40	0.313	0.412	0.258	0.06
4	0.33	5.40	0.313	0.412	0.258	0.06
5	0.42	5.70	0.330	0.412	0.272	0.06
6	0.50	6.40	0.371	0.412	0.306	0.07
7	0.58	7.90	0.458	0.412	---	0.05
8	0.67	9.10	0.527	0.412	---	0.12
9	0.75	12.80	0.742	0.412	---	0.33
10	0.83	25.60	1.484	0.412	---	1.07
11	0.92	7.90	0.458	0.412	---	0.05
12	1.00	4.90	0.284	0.412	0.234	0.05
Sum =		100.0		Sum =		2.0

Flood volume = Effective rainfall 0.17(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.32(In)
Total soil loss = 0.015(Ac.Ft)
Total rainfall = 0.48(In)
Flood volume = 348.9 Cubic Feet
Total soil loss = 671.5 Cubic Feet

Peak flow rate of this hydrograph = 0.457(CFS)

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TOTAL OF: 3 1 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0001	0.00	Q	|	|	|	|
0+15	0.0001	0.01	Q	|	|	|	|
0+20	0.0001	0.01	Q	|	|	|	|
0+25	0.0002	0.01	Q	|	|	|	|
0+30	0.0002	0.01	Q	|	|	|	|
0+35	0.0003	0.01	QV	|	|	|	|

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 0+40     0.0004    0.01 QV      |       |       |       |
 0+45     0.0004    0.01 QV      |       |       |       |
 0+50     0.0006    0.02 Q V     |       |       |       |
 0+55     0.0007    0.02 Q V     |       |       |       |
 1+ 0     0.0008    0.01 Q V     |       |       |       |
 1+ 5     0.0008    0.01 Q  V    |       |       |       |
 1+10     0.0009    0.01 Q  V    |       |       |       |
 1+15     0.0009    0.01 Q  V    |       |       |       |
 1+20     0.0010    0.01 Q  V    |       |       |       |
 1+25     0.0011    0.01 Q   V   |       |       |       |
 1+30     0.0012    0.01 Q   V   |       |       |       |
 1+35     0.0013    0.02 Q    V  |       |       |       |
 1+40     0.0014    0.02 Q    V  |       |       |       |
 1+45     0.0016    0.02 Q     V |       |       |       |
 1+50     0.0020    0.05 Q     V |       |       |       |
 1+55     0.0022    0.04 Q      V|       |       |       |
 2+ 0     0.0023    0.01 Q      V|       |       |       |
 2+ 5     0.0024    0.02 Q      V|       |       |       |
 2+10     0.0026    0.03 Q       V       |       |       |
 2+15     0.0028    0.03 Q       V       |       |       |
 2+20     0.0030    0.03 Q       |V      |       |       |
 2+25     0.0033    0.03 Q       | V     |       |       |
 2+30     0.0035    0.04 Q       |  V    |       |       |
 2+35     0.0037    0.03 Q       |   V   |       |       |
 2+40     0.0041    0.05 Q       |    V  |       |       |
 2+45     0.0051    0.14 Q       |      V|       |       |
 2+50     0.0082    0.46 |Q      |       |       |V      |
 2+55     0.0099    0.25 Q       |       |       |      V|
 3+ 0     0.0103    0.05 Q       |       |       |      V|
 3+ 5     0.0103    0.01 Q       |       |       |      V|
 3+10     0.0103    0.00 Q       |       |       |      V|
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U n i t H y d r o g r a p h A n a l y s i s

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
1-Hr 5-Yr Storm Event

Drainage Area = 0.58(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 345.00(Ft.)
Length along longest watercourse measured to centroid = 97.38(Ft.)
Length along longest watercourse = 0.065 Mi.
Length along longest watercourse measured to centroid = 0.018 Mi.
Difference in elevation = 6.34(Ft.)
Slope along watercourse = 97.0296 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.023 Hr.
Lag time = 1.41 Min.
25% of lag time = 0.35 Min.
40% of lag time = 0.56 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	0.48	0.28

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	1.34	0.78

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.483(In)
Area Averaged 100-Year Rainfall = 1.340(In)

Point rain (area averaged) = 0.684(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.684(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.582	79.00	0.095

Total Area Entered = 0.58(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
79.0	61.8	0.451	0.095	0.412	1.000	0.412

Sum (F) = 0.412

Area averaged mean soil loss (F) (In/Hr) = 0.412

Minimum soil loss rate ((In/Hr)) = 0.206

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.824

Slope of intensity-duration curve for a 1 hour storm =0.4800

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	354.985	61.437	0.360
2	0.167	709.970	35.423	0.208
3	0.250	1064.955	3.140	0.018
		Sum = 100.000	Sum=	0.587

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.361	0.412	0.298	0.06
2	0.17	4.50	0.369	0.412	0.304	0.06
3	0.25	5.40	0.443	0.412	---	0.03
4	0.33	5.40	0.443	0.412	---	0.03
5	0.42	5.70	0.468	0.412	---	0.06
6	0.50	6.40	0.525	0.412	---	0.11
7	0.58	7.90	0.648	0.412	---	0.24
8	0.67	9.10	0.747	0.412	---	0.33
9	0.75	12.80	1.050	0.412	---	0.64
10	0.83	25.60	2.100	0.412	---	1.69
11	0.92	7.90	0.648	0.412	---	0.24
12	1.00	4.90	0.402	0.412	0.331	0.07
Sum =		100.0		Sum =		3.6

Flood volume = Effective rainfall 0.30(In)

times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.39(In)

Total soil loss = 0.019(Ac.Ft)

Total rainfall = 0.68(In)

Flood volume = 627.1 Cubic Feet

Total soil loss = 817.4 Cubic Feet

Peak flow rate of this hydrograph = 0.747(CFS)

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1 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0002	0.02	Q	|	|	|	|
0+10	0.0004	0.04	QV	|	|	|	|
0+15	0.0006	0.03	QV	|	|	|	|
0+20	0.0007	0.02	QV	|	|	|	|
0+25	0.0009	0.03	Q V	|	|	|	|
0+30	0.0013	0.05	Q V	|	|	|	|
0+35	0.0020	0.11	Q V	|	|	|	|
0+40	0.0032	0.17	Q V	|	|	|	|
0+45	0.0053	0.30	|Q	| V	|	|	|
0+50	0.0104	0.75	| Q	|	|	V|	|
0+55	0.0135	0.45	|Q	|	|	|	V |
1+ 0	0.0143	0.11	Q	|	|	|	V|
1+ 5	0.0144	0.02	Q	|	|	|	V|
1+10	0.0144	0.00	Q	|	|	|	V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APOST110.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
1-Hr 10-Yr Storm Event

Drainage Area = 0.58(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 345.00(Ft.)
Length along longest watercourse measured to centroid = 97.38(Ft.)
Length along longest watercourse = 0.065 Mi.
Length along longest watercourse measured to centroid = 0.018 Mi.
Difference in elevation = 6.34(Ft.)
Slope along watercourse = 97.0296 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.023 Hr.
Lag time = 1.41 Min.
25% of lag time = 0.35 Min.
40% of lag time = 0.56 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	0.48	0.28

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	1.34	0.78

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.483(In)
Area Averaged 100-Year Rainfall = 1.340(In)

Point rain (area averaged) = 0.836(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.836(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.582	79.00	0.095

Total Area Entered = 0.58(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
79.0	61.8	0.451	0.095	0.412	1.000	0.412

Sum (F) = 0.412

Area averaged mean soil loss (F) (In/Hr) = 0.412

Minimum soil loss rate ((In/Hr)) = 0.206

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.824

Slope of intensity-duration curve for a 1 hour storm =0.4800

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	354.985	61.437	0.360
2	0.167	709.970	35.423	0.208
3	0.250	1064.955	3.140	0.018
		Sum = 100.000	Sum=	0.587

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.441	0.412	---	0.03
2	0.17	4.50	0.451	0.412	---	0.04
3	0.25	5.40	0.541	0.412	---	0.13
4	0.33	5.40	0.541	0.412	---	0.13
5	0.42	5.70	0.572	0.412	---	0.16
6	0.50	6.40	0.642	0.412	---	0.23
7	0.58	7.90	0.792	0.412	---	0.38
8	0.67	9.10	0.912	0.412	---	0.50
9	0.75	12.80	1.283	0.412	---	0.87
10	0.83	25.60	2.567	0.412	---	2.15
11	0.92	7.90	0.792	0.412	---	0.38
12	1.00	4.90	0.491	0.412	---	0.08
Sum =		100.0	Sum =	5.1		

Flood volume = Effective rainfall 0.42(In)

times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.41(In)

Total soil loss = 0.020(Ac.Ft)

Total rainfall = 0.84(In)

Flood volume = 894.5 Cubic Feet

Total soil loss = 870.8 Cubic Feet

Peak flow rate of this hydrograph = 0.967(CFS)

++

1 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0002	0.02	Q	|	|	|	|
0+15	0.0006	0.06	QV	|	|	|	|
0+20	0.0011	0.07	Q V	|	|	|	|
0+25	0.0017	0.09	Q V	|	|	|	|
0+30	0.0025	0.12	Q V	|	|	|	|
0+35	0.0038	0.19	Q V	|	|	|	|
0+40	0.0056	0.26	|Q V	|	|	|	|
0+45	0.0085	0.43	|Q |	V	|	|	|
0+50	0.0152	0.97	| Q |	|	|	V|	|
0+55	0.0193	0.60	| Q |	|	|	|	V |
1+ 0	0.0204	0.15	Q	|	|	|	V|
1+ 5	0.0205	0.02	Q	|	|	|	V|
1+10	0.0205	0.00	Q	|	|	|	V

U n i t H y d r o g r a p h A n a l y s i s

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
3-Hr 2-Yr Storm Event

Drainage Area = 0.58(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 345.00(Ft.)
Length along longest watercourse measured to centroid = 97.38(Ft.)
Length along longest watercourse = 0.065 Mi.
Length along longest watercourse measured to centroid = 0.018 Mi.
Difference in elevation = 6.34(Ft.)
Slope along watercourse = 97.0296 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.023 Hr.
Lag time = 1.41 Min.
25% of lag time = 0.35 Min.
40% of lag time = 0.56 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	0.88	0.51

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	2.20	1.28

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.877(In)
Area Averaged 100-Year Rainfall = 2.200(In)

Point rain (area averaged) = 0.877(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.877(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.582	79.00	0.095

Total Area Entered = 0.58(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
79.0	61.8	0.451	0.095	0.412	1.000	0.412

Sum (F) = 0.412

Area averaged mean soil loss (F) (In/Hr) = 0.412

Minimum soil loss rate ((In/Hr)) = 0.206

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.824

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	354.985	61.437	0.360
2	0.167	709.970	35.423	0.208
3	0.250	1064.955	3.140	0.018
		Sum = 100.000	Sum=	0.587

Storm Event 3 Effective Rainfall = 0.167(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.026	0.412	0.021	0.00
2	0.17	1.30	0.026	0.412	0.021	0.00
3	0.25	1.10	0.022	0.412	0.018	0.00
4	0.33	1.50	0.030	0.412	0.025	0.01
5	0.42	1.50	0.030	0.412	0.025	0.01
6	0.50	1.80	0.036	0.412	0.030	0.01
7	0.58	1.50	0.030	0.412	0.025	0.01
8	0.67	1.80	0.036	0.412	0.030	0.01
9	0.75	1.80	0.036	0.412	0.030	0.01
10	0.83	1.50	0.030	0.412	0.025	0.01
11	0.92	1.60	0.032	0.412	0.026	0.01
12	1.00	1.80	0.036	0.412	0.030	0.01
13	1.08	2.20	0.044	0.412	0.036	0.01
14	1.17	2.20	0.044	0.412	0.036	0.01
15	1.25	2.20	0.044	0.412	0.036	0.01
16	1.33	2.00	0.040	0.412	0.033	0.01
17	1.42	2.60	0.052	0.412	0.043	0.01
18	1.50	2.70	0.054	0.412	0.044	0.01
19	1.58	2.40	0.048	0.412	0.040	0.01
20	1.67	2.70	0.054	0.412	0.044	0.01
21	1.75	3.30	0.066	0.412	0.054	0.01
22	1.83	3.10	0.062	0.412	0.051	0.01
23	1.92	2.90	0.058	0.412	0.048	0.01
24	2.00	3.00	0.060	0.412	0.049	0.01
25	2.08	3.10	0.062	0.412	0.051	0.01
26	2.17	4.20	0.084	0.412	0.069	0.01
27	2.25	5.00	0.100	0.412	0.082	0.02
28	2.33	3.50	0.070	0.412	0.058	0.01

29	2.42	6.80	0.136	0.412	0.112	0.02
30	2.50	7.30	0.146	0.412	0.120	0.03
31	2.58	8.20	0.164	0.412	0.135	0.03
32	2.67	5.90	0.118	0.412	0.097	0.02
33	2.75	2.00	0.040	0.412	0.033	0.01
34	2.83	1.80	0.036	0.412	0.030	0.01
35	2.92	1.80	0.036	0.412	0.030	0.01
36	3.00	0.60	0.012	0.412	0.010	0.00
Sum =		100.0		Sum =		0.4

Flood volume = Effective rainfall 0.03(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.14(In)
Total soil loss = 0.007(Ac.Ft)
Total rainfall = 0.17(In)
Flood volume = 61.9 Cubic Feet
Total soil loss = 290.1 Cubic Feet

Storm Event 2 Effective Rainfall = 0.316(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.049	0.412	0.041	0.01
2	0.17	1.30	0.049	0.412	0.041	0.01
3	0.25	1.10	0.042	0.412	0.034	0.01
4	0.33	1.50	0.057	0.412	0.047	0.01
5	0.42	1.50	0.057	0.412	0.047	0.01
6	0.50	1.80	0.068	0.412	0.056	0.01
7	0.58	1.50	0.057	0.412	0.047	0.01
8	0.67	1.80	0.068	0.412	0.056	0.01
9	0.75	1.80	0.068	0.412	0.056	0.01
10	0.83	1.50	0.057	0.412	0.047	0.01
11	0.92	1.60	0.061	0.412	0.050	0.01
12	1.00	1.80	0.068	0.412	0.056	0.01
13	1.08	2.20	0.083	0.412	0.069	0.01
14	1.17	2.20	0.083	0.412	0.069	0.01
15	1.25	2.20	0.083	0.412	0.069	0.01
16	1.33	2.00	0.076	0.412	0.062	0.01
17	1.42	2.60	0.099	0.412	0.081	0.02
18	1.50	2.70	0.102	0.412	0.084	0.02
19	1.58	2.40	0.091	0.412	0.075	0.02
20	1.67	2.70	0.102	0.412	0.084	0.02
21	1.75	3.30	0.125	0.412	0.103	0.02
22	1.83	3.10	0.117	0.412	0.097	0.02
23	1.92	2.90	0.110	0.412	0.091	0.02
24	2.00	3.00	0.114	0.412	0.094	0.02
25	2.08	3.10	0.117	0.412	0.097	0.02
26	2.17	4.20	0.159	0.412	0.131	0.03
27	2.25	5.00	0.189	0.412	0.156	0.03
28	2.33	3.50	0.133	0.412	0.109	0.02
29	2.42	6.80	0.258	0.412	0.212	0.05
30	2.50	7.30	0.277	0.412	0.228	0.05
31	2.58	8.20	0.311	0.412	0.256	0.05
32	2.67	5.90	0.224	0.412	0.184	0.04
33	2.75	2.00	0.076	0.412	0.062	0.01
34	2.83	1.80	0.068	0.412	0.056	0.01
35	2.92	1.80	0.068	0.412	0.056	0.01
36	3.00	0.60	0.023	0.412	0.019	0.00
Sum =		100.0		Sum =		0.7

Flood volume = Effective rainfall 0.06(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.26(In)
Total soil loss = 0.013(Ac.Ft)
Total rainfall = 0.32(In)
Flood volume = 117.3 Cubic Feet

Total soil loss = 549.7 Cubic Feet

Storm Event 1 Effective Rainfall = 0.877(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.137	0.412	0.113	0.02
2	0.17	1.30	0.137	0.412	0.113	0.02
3	0.25	1.10	0.116	0.412	0.095	0.02
4	0.33	1.50	0.158	0.412	0.130	0.03
5	0.42	1.50	0.158	0.412	0.130	0.03
6	0.50	1.80	0.189	0.412	0.156	0.03
7	0.58	1.50	0.158	0.412	0.130	0.03
8	0.67	1.80	0.189	0.412	0.156	0.03
9	0.75	1.80	0.189	0.412	0.156	0.03
10	0.83	1.50	0.158	0.412	0.130	0.03
11	0.92	1.60	0.168	0.412	0.139	0.03
12	1.00	1.80	0.189	0.412	0.156	0.03
13	1.08	2.20	0.232	0.412	0.191	0.04
14	1.17	2.20	0.232	0.412	0.191	0.04
15	1.25	2.20	0.232	0.412	0.191	0.04
16	1.33	2.00	0.210	0.412	0.173	0.04
17	1.42	2.60	0.274	0.412	0.226	0.05
18	1.50	2.70	0.284	0.412	0.234	0.05
19	1.58	2.40	0.253	0.412	0.208	0.04
20	1.67	2.70	0.284	0.412	0.234	0.05
21	1.75	3.30	0.347	0.412	0.286	0.06
22	1.83	3.10	0.326	0.412	0.269	0.06
23	1.92	2.90	0.305	0.412	0.252	0.05
24	2.00	3.00	0.316	0.412	0.260	0.06
25	2.08	3.10	0.326	0.412	0.269	0.06
26	2.17	4.20	0.442	0.412	---	0.03
27	2.25	5.00	0.526	0.412	---	0.11
28	2.33	3.50	0.368	0.412	0.304	0.06
29	2.42	6.80	0.716	0.412	---	0.30
30	2.50	7.30	0.768	0.412	---	0.36
31	2.58	8.20	0.863	0.412	---	0.45
32	2.67	5.90	0.621	0.412	---	0.21
33	2.75	2.00	0.210	0.412	0.173	0.04
34	2.83	1.80	0.189	0.412	0.156	0.03
35	2.92	1.80	0.189	0.412	0.156	0.03
36	3.00	0.60	0.063	0.412	0.052	0.01
Sum =		100.0		Sum =		2.6

Flood volume = Effective rainfall 0.22(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.66(In)
Total soil loss = 0.032(Ac.Ft)
Total rainfall = 0.88(In)
Flood volume = 461.5 Cubic Feet
Total soil loss = 1391.3 Cubic Feet

Peak flow rate of this hydrograph = 0.242(CFS)

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TOTAL OF: 3 3 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|

0+15	0.0000	0.00	Q	|	|	|	|
0+20	0.0001	0.00	Q	|	|	|	|
0+25	0.0001	0.00	Q	|	|	|	|
0+30	0.0001	0.00	Q	|	|	|	|
0+35	0.0001	0.00	Q	|	|	|	|
0+40	0.0002	0.00	Q	|	|	|	|
0+45	0.0002	0.00	Q	|	|	|	|
0+50	0.0002	0.00	Q	|	|	|	|
0+55	0.0002	0.00	Q	|	|	|	|
1+ 0	0.0003	0.00	Q	|	|	|	|
1+ 5	0.0003	0.00	Q	|	|	|	|
1+10	0.0003	0.00	Q	|	|	|	|
1+15	0.0003	0.00	Q	|	|	|	|
1+20	0.0004	0.00	QV	|	|	|	|
1+25	0.0004	0.00	QV	|	|	|	|
1+30	0.0004	0.01	QV	|	|	|	|
1+35	0.0005	0.01	QV	|	|	|	|
1+40	0.0005	0.01	QV	|	|	|	|
1+45	0.0006	0.01	QV	|	|	|	|
1+50	0.0006	0.01	QV	|	|	|	|
1+55	0.0006	0.01	QV	|	|	|	|
2+ 0	0.0007	0.01	QV	|	|	|	|
2+ 5	0.0007	0.01	QV	|	|	|	|
2+10	0.0008	0.01	Q V	|	|	|	|
2+15	0.0009	0.01	Q V	|	|	|	|
2+20	0.0009	0.01	Q V	|	|	|	|
2+25	0.0010	0.01	Q V	|	|	|	|
2+30	0.0011	0.01	Q V	|	|	|	|
2+35	0.0012	0.02	Q V	|	|	|	|
2+40	0.0013	0.01	Q V	|	|	|	|
2+45	0.0013	0.01	Q V	|	|	|	|
2+50	0.0014	0.00	Q V	|	|	|	|
2+55	0.0014	0.00	Q V	|	|	|	|
3+ 0	0.0014	0.00	Q V	|	|	|	|
3+ 5	0.0014	0.00	Q V	|	|	|	|
3+10	0.0015	0.00	Q V	|	|	|	|
3+15	0.0015	0.00	Q V	|	|	|	|
3+20	0.0015	0.01	Q V	|	|	|	|
3+25	0.0016	0.01	Q V	|	|	|	|
3+30	0.0016	0.01	Q V	|	|	|	|
3+35	0.0017	0.01	Q V	|	|	|	|
3+40	0.0017	0.01	Q V	|	|	|	|
3+45	0.0018	0.01	Q V	|	|	|	|
3+50	0.0018	0.01	Q V	|	|	|	|
3+55	0.0018	0.01	Q V	|	|	|	|
4+ 0	0.0019	0.01	Q V	|	|	|	|
4+ 5	0.0019	0.01	Q V	|	|	|	|
4+10	0.0020	0.01	Q V	|	|	|	|
4+15	0.0021	0.01	Q V	|	|	|	|
4+20	0.0021	0.01	Q V	|	|	|	|
4+25	0.0022	0.01	Q V	|	|	|	|
4+30	0.0023	0.01	Q V	|	|	|	|
4+35	0.0023	0.01	Q V	|	|	|	|
4+40	0.0024	0.01	Q V	|	|	|	|
4+45	0.0025	0.01	Q V	|	|	|	|
4+50	0.0026	0.01	Q V	|	|	|	|
4+55	0.0026	0.01	Q V	|	|	|	|
5+ 0	0.0027	0.01	Q V	|	|	|	|
5+ 5	0.0028	0.01	Q V	|	|	|	|
5+10	0.0029	0.01	Q V	|	|	|	|
5+15	0.0030	0.02	Q V	|	|	|	|
5+20	0.0031	0.02	Q V	|	|	|	|
5+25	0.0033	0.02	Q V	|	|	|	|
5+30	0.0035	0.03	Q V	|	|	|	|
5+35	0.0037	0.03	Q V	|	|	|	|

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 5+40     0.0039    0.03 Q      V       |       |       |
 5+45     0.0040    0.01 Q      V       |       |       |
 5+50     0.0040    0.01 Q      V       |       |       |
 5+55     0.0041    0.01 Q      |V      |       |       |
 6+ 0     0.0041    0.00 Q      |V      |       |       |
 6+ 5     0.0042    0.01 Q      |V      |       |       |
 6+10     0.0043    0.01 Q      |V      |       |       |
 6+15     0.0043    0.01 Q      |V      |       |       |
 6+20     0.0044    0.01 Q      | V     |       |       |
 6+25     0.0046    0.02 Q      | V     |       |       |
 6+30     0.0047    0.02 Q      | V     |       |       |
 6+35     0.0048    0.02 Q      |  V    |       |       |
 6+40     0.0049    0.02 Q      |  V    |       |       |
 6+45     0.0051    0.02 Q      |  V    |       |       |
 6+50     0.0052    0.02 Q      |   V   |       |       |
 6+55     0.0053    0.02 Q      |   V   |       |       |
 7+ 0     0.0054    0.02 Q      |   V   |       |       |
 7+ 5     0.0056    0.02 Q      |   V   |       |       |
 7+10     0.0057    0.02 Q      |    V  |       |       |
 7+15     0.0059    0.02 Q      |    V  |       |       |
 7+20     0.0061    0.02 Q      |    V  |       |       |
 7+25     0.0062    0.03 Q      |    V  |       |       |
 7+30     0.0064    0.03 Q      |     V |       |       |
 7+35     0.0066    0.03 Q      |     V |       |       |
 7+40     0.0068    0.03 Q      |     V |       |       |
 7+45     0.0071    0.03 Q      |      V|       |       |
 7+50     0.0073    0.03 Q      |      V|       |       |
 7+55     0.0075    0.03 Q      |       V       |       |
 8+ 0     0.0077    0.03 Q      |       |V      |       |
 8+ 5     0.0080    0.03 Q      |       |V      |       |
 8+10     0.0081    0.02 Q      |       | V     |       |
 8+15     0.0085    0.05 Q      |       |  V    |       |
 8+20     0.0088    0.05 Q      |       |  V    |       |
 8+25     0.0096    0.12 Q      |       |    V  |       |
 8+30     0.0110    0.19 Q      |       |     V|       |
 8+35     0.0126    0.24 Q      |       |      |  V    |
 8+40     0.0138    0.18 Q      |       |      |    V  |
 8+45     0.0143    0.07 Q      |       |      |     V |
 8+50     0.0145    0.02 Q      |       |      |      V|
 8+55     0.0146    0.02 Q      |       |      |      V|
 9+ 0     0.0147    0.01 Q      |       |      |      V|
 9+ 5     0.0147    0.00 Q      |       |      |      V|
 9+10     0.0147    0.00 Q      |       |      |       V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APOST35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
3-Hr 5-Yr Storm Event

Drainage Area = 0.58(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 345.00(Ft.)
Length along longest watercourse measured to centroid = 97.38(Ft.)
Length along longest watercourse = 0.065 Mi.
Length along longest watercourse measured to centroid = 0.018 Mi.
Difference in elevation = 6.34(Ft.)
Slope along watercourse = 97.0296 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.023 Hr.
Lag time = 1.41 Min.
25% of lag time = 0.35 Min.
40% of lag time = 0.56 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	0.88	0.51

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	2.20	1.28

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.877(In)
Area Averaged 100-Year Rainfall = 2.200(In)

Point rain (area averaged) = 1.187(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.187(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.582	79.00	0.095

Total Area Entered = 0.58(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
79.0	61.8	0.451	0.095	0.412	1.000	0.412

Sum (F) = 0.412

Area averaged mean soil loss (F) (In/Hr) = 0.412

Minimum soil loss rate ((In/Hr)) = 0.206

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.824

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Graph %	Distribution	Unit Hydrograph (CFS)
1	0.083	354.985	61.437	0.360
2	0.167	709.970	35.423	0.208
3	0.250	1064.955	3.140	0.018
		Sum = 100.000	Sum=	0.587

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.185	0.412	0.153	0.03
2	0.17	1.30	0.185	0.412	0.153	0.03
3	0.25	1.10	0.157	0.412	0.129	0.03
4	0.33	1.50	0.214	0.412	0.176	0.04
5	0.42	1.50	0.214	0.412	0.176	0.04
6	0.50	1.80	0.256	0.412	0.211	0.05
7	0.58	1.50	0.214	0.412	0.176	0.04
8	0.67	1.80	0.256	0.412	0.211	0.05
9	0.75	1.80	0.256	0.412	0.211	0.05
10	0.83	1.50	0.214	0.412	0.176	0.04
11	0.92	1.60	0.228	0.412	0.188	0.04
12	1.00	1.80	0.256	0.412	0.211	0.05
13	1.08	2.20	0.313	0.412	0.258	0.06
14	1.17	2.20	0.313	0.412	0.258	0.06
15	1.25	2.20	0.313	0.412	0.258	0.06
16	1.33	2.00	0.285	0.412	0.235	0.05
17	1.42	2.60	0.370	0.412	0.305	0.07
18	1.50	2.70	0.385	0.412	0.317	0.07
19	1.58	2.40	0.342	0.412	0.282	0.06
20	1.67	2.70	0.385	0.412	0.317	0.07
21	1.75	3.30	0.470	0.412	---	0.06
22	1.83	3.10	0.442	0.412	---	0.03
23	1.92	2.90	0.413	0.412	---	0.00
24	2.00	3.00	0.427	0.412	---	0.02
25	2.08	3.10	0.442	0.412	---	0.03
26	2.17	4.20	0.598	0.412	---	0.19
27	2.25	5.00	0.712	0.412	---	0.30
28	2.33	3.50	0.498	0.412	---	0.09
29	2.42	6.80	0.968	0.412	---	0.56
30	2.50	7.30	1.040	0.412	---	0.63
31	2.58	8.20	1.168	0.412	---	0.76
32	2.67	5.90	0.840	0.412	---	0.43

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33   2.75    2.00     0.285       0.412    0.235       0.05
34   2.83    1.80     0.256       0.412    0.211       0.05
35   2.92    1.80     0.256       0.412    0.211       0.05
36   3.00    0.60     0.085       0.412    0.070       0.02
  Sum =    100.0                          Sum =     4.2
          Flood volume = Effective rainfall     0.35(In)
           times area      0.6(Ac.)/[(In)/(Ft.)] =      0.0(Ac.Ft)
          Total soil loss =      0.84(In)
          Total soil loss =     0.041(Ac.Ft)
          Total rainfall =      1.19(In)
          Flood volume =        733.6 Cubic Feet
          Total soil loss =       1773.9 Cubic Feet
          ---------------------------------------------------------------------
           Peak flow rate of this hydrograph =      0.413(CFS)
          ---------------------------------------------------------------------
          ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                      3 - H O U R   S T O R M
                    R u n o f f     H y d r o g r a p h
          ---------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

          ---------------------------------------------------------------------
 Time(h+m) Volume Ac.Ft   Q(CFS)  0       2.5      5.0      7.5      10.0
 ---------------------------------------------------------------------
  0+ 5      0.0001     0.01  Q       |        |        |        |
  0+10      0.0002      0.02  Q       |        |        |        |
  0+15      0.0003      0.02  Q       |        |        |        |
  0+20      0.0005      0.02  QV      |        |        |        |
  0+25      0.0006      0.02  QV      |        |        |        |
  0+30      0.0008      0.02  QV      |        |        |        |
  0+35      0.0009      0.02  Q V     |        |        |        |
  0+40      0.0011      0.02  Q V     |        |        |        |
  0+45      0.0013      0.03  Q  V     |        |        |        |
  0+50      0.0015      0.02  Q  V     |        |        |        |
  0+55      0.0016      0.02  Q  V     |        |        |        |
  1+ 0      0.0018     0.03  Q   V    |        |        |        |
  1+ 5      0.0020     0.03  Q   V    |        |        |        |
  1+10      0.0022      0.03  Q    V   |        |        |        |
  1+15      0.0024      0.03  Q    V   |        |        |        |
  1+20      0.0027      0.03  Q     V  |        |        |        |
  1+25      0.0029      0.03  Q     V  |        |        |        |
  1+30      0.0032      0.04  Q      V |        |        |        |
  1+35      0.0034      0.04  Q      V |        |        |        |
  1+40      0.0037      0.04  Q      V |        |        |        |
  1+45      0.0039      0.04  Q       V|        |        |        |
  1+50      0.0041      0.02  Q       V|        |        |        |
  1+55      0.0041      0.01  Q       V|        |        |        |
  2+ 0      0.0042     0.01  Q       V|        |        |        |
  2+ 5      0.0043     0.01  Q        V        |        |        |
  2+10      0.0048      0.07  Q        |V       |        |        |
  2+15      0.0058      0.15  Q        | V      |        |        |
  2+20      0.0065      0.10  Q        |   V    |        |        |
  2+25      0.0080      0.22  Q        |       V|        |        |
  2+30      0.0104      0.34  |Q       |        |   V    |        |
  2+35      0.0132      0.41  |Q       |        |        |V       |
  2+40      0.0155      0.32  |Q       |        |        |    V   |
  2+45      0.0163      0.12  Q        |        |        |     V  |
  2+50      0.0165      0.03  Q        |        |        |      V|
  2+55      0.0167      0.03  Q        |        |        |      V|
  3+ 0      0.0168     0.02  Q        |        |        |      V|
  3+ 5      0.0168     0.00  Q        |        |        |      V|
  3+10      0.0168      0.00  Q        |        |        |      V|
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APOST310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
3-Hr 10-Yr Storm Event

Drainage Area = 0.58(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 345.00(Ft.)
Length along longest watercourse measured to centroid = 97.38(Ft.)
Length along longest watercourse = 0.065 Mi.
Length along longest watercourse measured to centroid = 0.018 Mi.
Difference in elevation = 6.34(Ft.)
Slope along watercourse = 97.0296 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.023 Hr.
Lag time = 1.41 Min.
25% of lag time = 0.35 Min.
40% of lag time = 0.56 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	0.88	0.51

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	2.20	1.28

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.877(In)
Area Averaged 100-Year Rainfall = 2.200(In)

Point rain (area averaged) = 1.421(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.421(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.582	79.00	0.095

Total Area Entered = 0.58(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
79.0	61.8	0.451	0.095	0.412	1.000	0.412

Sum (F) = 0.412

Area averaged mean soil loss (F) (In/Hr) = 0.412

Minimum soil loss rate ((In/Hr)) = 0.206

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.824

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	354.985	61.437	0.360
2	0.167	709.970	35.423	0.208
3	0.250	1064.955	3.140	0.018
		Sum = 100.000	Sum=	0.587

	Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.222	0.412	0.183	0.04
2	0.17	1.30	0.222	0.412	0.183	0.04
3	0.25	1.10	0.188	0.412	0.155	0.03
4	0.33	1.50	0.256	0.412	0.211	0.04
5	0.42	1.50	0.256	0.412	0.211	0.04
6	0.50	1.80	0.307	0.412	0.253	0.05
7	0.58	1.50	0.256	0.412	0.211	0.04
8	0.67	1.80	0.307	0.412	0.253	0.05
9	0.75	1.80	0.307	0.412	0.253	0.05
10	0.83	1.50	0.256	0.412	0.211	0.04
11	0.92	1.60	0.273	0.412	0.225	0.05
12	1.00	1.80	0.307	0.412	0.253	0.05
13	1.08	2.20	0.375	0.412	0.309	0.07
14	1.17	2.20	0.375	0.412	0.309	0.07
15	1.25	2.20	0.375	0.412	0.309	0.07
16	1.33	2.00	0.341	0.412	0.281	0.06
17	1.42	2.60	0.443	0.412	---	0.03
18	1.50	2.70	0.460	0.412	---	0.05
19	1.58	2.40	0.409	0.412	0.337	0.07
20	1.67	2.70	0.460	0.412	---	0.05
21	1.75	3.30	0.563	0.412	---	0.15
22	1.83	3.10	0.529	0.412	---	0.12
23	1.92	2.90	0.495	0.412	---	0.08
24	2.00	3.00	0.512	0.412	---	0.10
25	2.08	3.10	0.529	0.412	---	0.12
26	2.17	4.20	0.716	0.412	---	0.30
27	2.25	5.00	0.853	0.412	---	0.44
28	2.33	3.50	0.597	0.412	---	0.18
29	2.42	6.80	1.160	0.412	---	0.75
30	2.50	7.30	1.245	0.412	---	0.83
31	2.58	8.20	1.399	0.412	---	0.99
32	2.67	5.90	1.006	0.412	---	0.59

33	2.75	2.00	0.341	0.412	0.281	0.06
34	2.83	1.80	0.307	0.412	0.253	0.05
35	2.92	1.80	0.307	0.412	0.253	0.05
36	3.00	0.60	0.102	0.412	0.084	0.02
Sum =		100.0		Sum =		5.9

Flood volume = Effective rainfall 0.49(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.93(In)
Total soil loss = 0.045(Ac.Ft)
Total rainfall = 1.42(In)
Flood volume = 1030.7 Cubic Feet
Total soil loss = 1972.0 Cubic Feet

Peak flow rate of this hydrograph = 0.543(CFS)

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3 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0002	0.02	Q	|	|	|	|
0+15	0.0004	0.02	Q	|	|	|	|
0+20	0.0006	0.02	Q	|	|	|	|
0+25	0.0007	0.03	QV	|	|	|	|
0+30	0.0009	0.03	QV	|	|	|	|
0+35	0.0011	0.03	QV	|	|	|	|
0+40	0.0013	0.03	Q V	|	|	|	|
0+45	0.0016	0.03	Q V	|	|	|	|
0+50	0.0018	0.03	Q V	|	|	|	|
0+55	0.0019	0.03	Q V	|	|	|	|
1+ 0	0.0022	0.03	Q V	|	|	|	|
1+ 5	0.0024	0.04	Q V	|	|	|	|
1+10	0.0027	0.04	Q V	|	|	|	|
1+15	0.0029	0.04	Q V	|	|	|	|
1+20	0.0032	0.04	Q V	|	|	|	|
1+25	0.0034	0.02	Q V	|	|	|	|
1+30	0.0035	0.03	Q V	|	|	|	|
1+35	0.0038	0.04	Q V	|	|	|	|
1+40	0.0040	0.03	Q V	|	|	|	|
1+45	0.0045	0.07	Q V	|	|	|	|
1+50	0.0050	0.07	Q V	|	|	|	|
1+55	0.0054	0.06	Q V	|	|	|	|
2+ 0	0.0057	0.06	Q V	|	|	|	|
2+ 5	0.0062	0.06	Q V	|	|	|	|
2+10	0.0071	0.14	Q | V	|	|	|	|
2+15	0.0087	0.22	Q | V	|	|	|	|
2+20	0.0098	0.16	Q | V	|	|	|	|
2+25	0.0120	0.32	|Q	|	V	|	|
2+30	0.0151	0.46	|Q	|	| V	|	|
2+35	0.0189	0.54	| Q	|	|	|V	|
2+40	0.0219	0.43	|Q	|	|	| V	|
2+45	0.0230	0.16	Q	|	|	|	V |
2+50	0.0233	0.04	Q	|	|	|	V|
2+55	0.0235	0.03	Q	|	|	|	V|
3+ 0	0.0236	0.02	Q	|	|	|	V|
3+ 5	0.0237	0.00	Q	|	|	|	V|
3+10	0.0237	0.00	Q	|	|	|	V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APOST62.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
6-Hr 2-Yr Storm Event

Drainage Area = 0.58(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 345.00(Ft.)
Length along longest watercourse measured to centroid = 97.38(Ft.)
Length along longest watercourse = 0.065 Mi.
Length along longest watercourse measured to centroid = 0.018 Mi.
Difference in elevation = 6.34(Ft.)
Slope along watercourse = 97.0296 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.023 Hr.
Lag time = 1.41 Min.
25% of lag time = 0.35 Min.
40% of lag time = 0.56 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	1.27	0.74

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	3.12	1.82

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.270(In)
Area Averaged 100-Year Rainfall = 3.120(In)

Point rain (area averaged) = 1.270(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.270(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.582	79.00	0.095

Total Area Entered = 0.58(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
79.0	61.8	0.451	0.095	0.412	1.000	0.412

Sum (F) = 0.412

Area averaged mean soil loss (F) (In/Hr) = 0.412

Minimum soil loss rate ((In/Hr)) = 0.206

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.824

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	354.985	61.437	0.360
2	0.167	709.970	35.423	0.208
3	0.250	1064.955	3.140	0.018

Sum = 100.000 Sum= 0.587

Storm Event 3 Effective Rainfall = 0.241(In)

Unit Time (Hr.)		Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.014	0.412	0.012	0.00
2	0.17	0.60	0.017	0.412	0.014	0.00
3	0.25	0.60	0.017	0.412	0.014	0.00
4	0.33	0.60	0.017	0.412	0.014	0.00
5	0.42	0.60	0.017	0.412	0.014	0.00
6	0.50	0.70	0.020	0.412	0.017	0.00
7	0.58	0.70	0.020	0.412	0.017	0.00
8	0.67	0.70	0.020	0.412	0.017	0.00
9	0.75	0.70	0.020	0.412	0.017	0.00
10	0.83	0.70	0.020	0.412	0.017	0.00
11	0.92	0.70	0.020	0.412	0.017	0.00
12	1.00	0.80	0.023	0.412	0.019	0.00
13	1.08	0.80	0.023	0.412	0.019	0.00
14	1.17	0.80	0.023	0.412	0.019	0.00
15	1.25	0.80	0.023	0.412	0.019	0.00
16	1.33	0.80	0.023	0.412	0.019	0.00
17	1.42	0.80	0.023	0.412	0.019	0.00
18	1.50	0.80	0.023	0.412	0.019	0.00
19	1.58	0.80	0.023	0.412	0.019	0.00
20	1.67	0.80	0.023	0.412	0.019	0.00
21	1.75	0.80	0.023	0.412	0.019	0.00
22	1.83	0.80	0.023	0.412	0.019	0.00
23	1.92	0.80	0.023	0.412	0.019	0.00
24	2.00	0.90	0.026	0.412	0.021	0.00
25	2.08	0.80	0.023	0.412	0.019	0.00
26	2.17	0.90	0.026	0.412	0.021	0.00
27	2.25	0.90	0.026	0.412	0.021	0.00
28	2.33	0.90	0.026	0.412	0.021	0.00

29	2.42	0.90	0.026	0.412	0.021	0.00
30	2.50	0.90	0.026	0.412	0.021	0.00
31	2.58	0.90	0.026	0.412	0.021	0.00
32	2.67	0.90	0.026	0.412	0.021	0.00
33	2.75	1.00	0.029	0.412	0.024	0.01
34	2.83	1.00	0.029	0.412	0.024	0.01
35	2.92	1.00	0.029	0.412	0.024	0.01
36	3.00	1.00	0.029	0.412	0.024	0.01
37	3.08	1.00	0.029	0.412	0.024	0.01
38	3.17	1.10	0.032	0.412	0.026	0.01
39	3.25	1.10	0.032	0.412	0.026	0.01
40	3.33	1.10	0.032	0.412	0.026	0.01
41	3.42	1.20	0.035	0.412	0.029	0.01
42	3.50	1.30	0.038	0.412	0.031	0.01
43	3.58	1.40	0.041	0.412	0.033	0.01
44	3.67	1.40	0.041	0.412	0.033	0.01
45	3.75	1.50	0.043	0.412	0.036	0.01
46	3.83	1.50	0.043	0.412	0.036	0.01
47	3.92	1.60	0.046	0.412	0.038	0.01
48	4.00	1.60	0.046	0.412	0.038	0.01
49	4.08	1.70	0.049	0.412	0.041	0.01
50	4.17	1.80	0.052	0.412	0.043	0.01
51	4.25	1.90	0.055	0.412	0.045	0.01
52	4.33	2.00	0.058	0.412	0.048	0.01
53	4.42	2.10	0.061	0.412	0.050	0.01
54	4.50	2.10	0.061	0.412	0.050	0.01
55	4.58	2.20	0.064	0.412	0.053	0.01
56	4.67	2.30	0.067	0.412	0.055	0.01
57	4.75	2.40	0.069	0.412	0.057	0.01
58	4.83	2.40	0.069	0.412	0.057	0.01
59	4.92	2.50	0.072	0.412	0.060	0.01
60	5.00	2.60	0.075	0.412	0.062	0.01
61	5.08	3.10	0.090	0.412	0.074	0.02
62	5.17	3.60	0.104	0.412	0.086	0.02
63	5.25	3.90	0.113	0.412	0.093	0.02
64	5.33	4.20	0.122	0.412	0.100	0.02
65	5.42	4.70	0.136	0.412	0.112	0.02
66	5.50	5.60	0.162	0.412	0.134	0.03
67	5.58	1.90	0.055	0.412	0.045	0.01
68	5.67	0.90	0.026	0.412	0.021	0.00
69	5.75	0.60	0.017	0.412	0.014	0.00
70	5.83	0.50	0.014	0.412	0.012	0.00
71	5.92	0.30	0.009	0.412	0.007	0.00
72	6.00	0.20	0.006	0.412	0.005	0.00
Sum =		100.0			Sum =	0.5

Flood volume = Effective rainfall 0.04(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.20(In)
Total soil loss = 0.010(Ac.Ft)
Total rainfall = 0.24(In)
Flood volume = 89.6 Cubic Feet
Total soil loss = 420.2 Cubic Feet

Storm Event 2 Effective Rainfall = 0.457(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.027	0.412	0.023	0.00
2	0.17	0.60	0.033	0.412	0.027	0.01
3	0.25	0.60	0.033	0.412	0.027	0.01
4	0.33	0.60	0.033	0.412	0.027	0.01
5	0.42	0.60	0.033	0.412	0.027	0.01
6	0.50	0.70	0.038	0.412	0.032	0.01
7	0.58	0.70	0.038	0.412	0.032	0.01

8	0.67	0.70	0.038	0.412	0.032	0.01
9	0.75	0.70	0.038	0.412	0.032	0.01
10	0.83	0.70	0.038	0.412	0.032	0.01
11	0.92	0.70	0.038	0.412	0.032	0.01
12	1.00	0.80	0.044	0.412	0.036	0.01
13	1.08	0.80	0.044	0.412	0.036	0.01
14	1.17	0.80	0.044	0.412	0.036	0.01
15	1.25	0.80	0.044	0.412	0.036	0.01
16	1.33	0.80	0.044	0.412	0.036	0.01
17	1.42	0.80	0.044	0.412	0.036	0.01
18	1.50	0.80	0.044	0.412	0.036	0.01
19	1.58	0.80	0.044	0.412	0.036	0.01
20	1.67	0.80	0.044	0.412	0.036	0.01
21	1.75	0.80	0.044	0.412	0.036	0.01
22	1.83	0.80	0.044	0.412	0.036	0.01
23	1.92	0.80	0.044	0.412	0.036	0.01
24	2.00	0.90	0.049	0.412	0.041	0.01
25	2.08	0.80	0.044	0.412	0.036	0.01
26	2.17	0.90	0.049	0.412	0.041	0.01
27	2.25	0.90	0.049	0.412	0.041	0.01
28	2.33	0.90	0.049	0.412	0.041	0.01
29	2.42	0.90	0.049	0.412	0.041	0.01
30	2.50	0.90	0.049	0.412	0.041	0.01
31	2.58	0.90	0.049	0.412	0.041	0.01
32	2.67	0.90	0.049	0.412	0.041	0.01
33	2.75	1.00	0.055	0.412	0.045	0.01
34	2.83	1.00	0.055	0.412	0.045	0.01
35	2.92	1.00	0.055	0.412	0.045	0.01
36	3.00	1.00	0.055	0.412	0.045	0.01
37	3.08	1.00	0.055	0.412	0.045	0.01
38	3.17	1.10	0.060	0.412	0.050	0.01
39	3.25	1.10	0.060	0.412	0.050	0.01
40	3.33	1.10	0.060	0.412	0.050	0.01
41	3.42	1.20	0.066	0.412	0.054	0.01
42	3.50	1.30	0.071	0.412	0.059	0.01
43	3.58	1.40	0.077	0.412	0.063	0.01
44	3.67	1.40	0.077	0.412	0.063	0.01
45	3.75	1.50	0.082	0.412	0.068	0.01
46	3.83	1.50	0.082	0.412	0.068	0.01
47	3.92	1.60	0.088	0.412	0.072	0.02
48	4.00	1.60	0.088	0.412	0.072	0.02
49	4.08	1.70	0.093	0.412	0.077	0.02
50	4.17	1.80	0.099	0.412	0.081	0.02
51	4.25	1.90	0.104	0.412	0.086	0.02
52	4.33	2.00	0.110	0.412	0.090	0.02
53	4.42	2.10	0.115	0.412	0.095	0.02
54	4.50	2.10	0.115	0.412	0.095	0.02
55	4.58	2.20	0.121	0.412	0.099	0.02
56	4.67	2.30	0.126	0.412	0.104	0.02
57	4.75	2.40	0.132	0.412	0.109	0.02
58	4.83	2.40	0.132	0.412	0.109	0.02
59	4.92	2.50	0.137	0.412	0.113	0.02
60	5.00	2.60	0.143	0.412	0.118	0.03
61	5.08	3.10	0.170	0.412	0.140	0.03
62	5.17	3.60	0.198	0.412	0.163	0.03
63	5.25	3.90	0.214	0.412	0.176	0.04
64	5.33	4.20	0.230	0.412	0.190	0.04
65	5.42	4.70	0.258	0.412	0.213	0.05
66	5.50	5.60	0.307	0.412	0.253	0.05
67	5.58	1.90	0.104	0.412	0.086	0.02
68	5.67	0.90	0.049	0.412	0.041	0.01
69	5.75	0.60	0.033	0.412	0.027	0.01
70	5.83	0.50	0.027	0.412	0.023	0.00
71	5.92	0.30	0.016	0.412	0.014	0.00
72	6.00	0.20	0.011	0.412	0.009	0.00

Sum = 100.0 Sum = 1.0

Flood volume = Effective rainfall 0.08(In)

times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.38(In)

Total soil loss = 0.018(Ac.Ft)

Total rainfall = 0.46(In)

Flood volume = 169.8 Cubic Feet

Total soil loss = 796.1 Cubic Feet

Storm Event 1 Effective Rainfall = 1.270(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08 0.50	0.076	0.412	0.063	0.01
2	0.17 0.60	0.091	0.412	0.075	0.02
3	0.25 0.60	0.091	0.412	0.075	0.02
4	0.33 0.60	0.091	0.412	0.075	0.02
5	0.42 0.60	0.091	0.412	0.075	0.02
6	0.50 0.70	0.107	0.412	0.088	0.02
7	0.58 0.70	0.107	0.412	0.088	0.02
8	0.67 0.70	0.107	0.412	0.088	0.02
9	0.75 0.70	0.107	0.412	0.088	0.02
10	0.83 0.70	0.107	0.412	0.088	0.02
11	0.92 0.70	0.107	0.412	0.088	0.02
12	1.00 0.80	0.122	0.412	0.100	0.02
13	1.08 0.80	0.122	0.412	0.100	0.02
14	1.17 0.80	0.122	0.412	0.100	0.02
15	1.25 0.80	0.122	0.412	0.100	0.02
16	1.33 0.80	0.122	0.412	0.100	0.02
17	1.42 0.80	0.122	0.412	0.100	0.02
18	1.50 0.80	0.122	0.412	0.100	0.02
19	1.58 0.80	0.122	0.412	0.100	0.02
20	1.67 0.80	0.122	0.412	0.100	0.02
21	1.75 0.80	0.122	0.412	0.100	0.02
22	1.83 0.80	0.122	0.412	0.100	0.02
23	1.92 0.80	0.122	0.412	0.100	0.02
24	2.00 0.90	0.137	0.412	0.113	0.02
25	2.08 0.80	0.122	0.412	0.100	0.02
26	2.17 0.90	0.137	0.412	0.113	0.02
27	2.25 0.90	0.137	0.412	0.113	0.02
28	2.33 0.90	0.137	0.412	0.113	0.02
29	2.42 0.90	0.137	0.412	0.113	0.02
30	2.50 0.90	0.137	0.412	0.113	0.02
31	2.58 0.90	0.137	0.412	0.113	0.02
32	2.67 0.90	0.137	0.412	0.113	0.02
33	2.75 1.00	0.152	0.412	0.126	0.03
34	2.83 1.00	0.152	0.412	0.126	0.03
35	2.92 1.00	0.152	0.412	0.126	0.03
36	3.00 1.00	0.152	0.412	0.126	0.03
37	3.08 1.00	0.152	0.412	0.126	0.03
38	3.17 1.10	0.168	0.412	0.138	0.03
39	3.25 1.10	0.168	0.412	0.138	0.03
40	3.33 1.10	0.168	0.412	0.138	0.03
41	3.42 1.20	0.183	0.412	0.151	0.03
42	3.50 1.30	0.198	0.412	0.163	0.03
43	3.58 1.40	0.213	0.412	0.176	0.04
44	3.67 1.40	0.213	0.412	0.176	0.04
45	3.75 1.50	0.229	0.412	0.188	0.04
46	3.83 1.50	0.229	0.412	0.188	0.04
47	3.92 1.60	0.244	0.412	0.201	0.04
48	4.00 1.60	0.244	0.412	0.201	0.04
49	4.08 1.70	0.259	0.412	0.214	0.05
50	4.17 1.80	0.274	0.412	0.226	0.05
51	4.25 1.90	0.290	0.412	0.239	0.05

52	4.33	2.00	0.305	0.412	0.251	0.05
53	4.42	2.10	0.320	0.412	0.264	0.06
54	4.50	2.10	0.320	0.412	0.264	0.06
55	4.58	2.20	0.335	0.412	0.276	0.06
56	4.67	2.30	0.351	0.412	0.289	0.06
57	4.75	2.40	0.366	0.412	0.301	0.06
58	4.83	2.40	0.366	0.412	0.301	0.06
59	4.92	2.50	0.381	0.412	0.314	0.07
60	5.00	2.60	0.396	0.412	0.327	0.07
61	5.08	3.10	0.472	0.412	---	0.06
62	5.17	3.60	0.549	0.412	---	0.14
63	5.25	3.90	0.594	0.412	---	0.18
64	5.33	4.20	0.640	0.412	---	0.23
65	5.42	4.70	0.716	0.412	---	0.30
66	5.50	5.60	0.853	0.412	---	0.44
67	5.58	1.90	0.290	0.412	0.239	0.05
68	5.67	0.90	0.137	0.412	0.113	0.02
69	5.75	0.60	0.091	0.412	0.075	0.02
70	5.83	0.50	0.076	0.412	0.063	0.01
71	5.92	0.30	0.046	0.412	0.038	0.01
72	6.00	0.20	0.030	0.412	0.025	0.01
Sum =		100.0		Sum =		3.4

Flood volume = Effective rainfall 0.28(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.99(In)
Total soil loss = 0.048(Ac.Ft)
Total rainfall = 1.27(In)
Flood volume = 591.4 Cubic Feet
Total soil loss = 2091.7 Cubic Feet

Peak flow rate of this hydrograph = 0.227(CFS)

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TOTAL OF: 3 6 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|
0+15	0.0000	0.00	Q	|	|	|	|
0+20	0.0000	0.00	Q	|	|	|	|
0+25	0.0001	0.00	Q	|	|	|	|
0+30	0.0001	0.00	Q	|	|	|	|
0+35	0.0001	0.00	Q	|	|	|	|
0+40	0.0001	0.00	Q	|	|	|	|
0+45	0.0001	0.00	Q	|	|	|	|
0+50	0.0001	0.00	Q	|	|	|	|
0+55	0.0001	0.00	Q	|	|	|	|
1+ 0	0.0002	0.00	Q	|	|	|	|
1+ 5	0.0002	0.00	Q	|	|	|	|
1+10	0.0002	0.00	Q	|	|	|	|
1+15	0.0002	0.00	Q	|	|	|	|
1+20	0.0002	0.00	Q	|	|	|	|
1+25	0.0002	0.00	Q	|	|	|	|
1+30	0.0003	0.00	Q	|	|	|	|
1+35	0.0003	0.00	Q	|	|	|	|
1+40	0.0003	0.00	Q	|	|	|	|
1+45	0.0003	0.00	Q	|	|	|	|
1+50	0.0003	0.00	Q	|	|	|	|
1+55	0.0003	0.00	Q	|	|	|	|
2+ 0	0.0004	0.00	Q	|	|	|	|

2+ 5	0.0004	0.00	Q	|	|	|	|
2+10	0.0004	0.00	Q	|	|	|	|
2+15	0.0004	0.00	Q	|	|	|	|
2+20	0.0004	0.00	Q	|	|	|	|
2+25	0.0004	0.00	Q	|	|	|	|
2+30	0.0005	0.00	Q	|	|	|	|
2+35	0.0005	0.00	Q	|	|	|	|
2+40	0.0005	0.00	QV	|	|	|	|
2+45	0.0005	0.00	QV	|	|	|	|
2+50	0.0005	0.00	QV	|	|	|	|
2+55	0.0006	0.00	QV	|	|	|	|
3+ 0	0.0006	0.00	QV	|	|	|	|
3+ 5	0.0006	0.00	QV	|	|	|	|
3+10	0.0006	0.00	QV	|	|	|	|
3+15	0.0006	0.00	QV	|	|	|	|
3+20	0.0007	0.00	QV	|	|	|	|
3+25	0.0007	0.00	QV	|	|	|	|
3+30	0.0007	0.00	QV	|	|	|	|
3+35	0.0007	0.00	QV	|	|	|	|
3+40	0.0008	0.00	QV	|	|	|	|
3+45	0.0008	0.00	QV	|	|	|	|
3+50	0.0008	0.00	QV	|	|	|	|
3+55	0.0009	0.00	QV	|	|	|	|
4+ 0	0.0009	0.00	QV	|	|	|	|
4+ 5	0.0009	0.00	QV	|	|	|	|
4+10	0.0010	0.01	QV	|	|	|	|
4+15	0.0010	0.01	Q V	|	|	|	|
4+20	0.0011	0.01	Q V	|	|	|	|
4+25	0.0011	0.01	Q V	|	|	|	|
4+30	0.0011	0.01	Q V	|	|	|	|
4+35	0.0012	0.01	Q V	|	|	|	|
4+40	0.0012	0.01	Q V	|	|	|	|
4+45	0.0013	0.01	Q V	|	|	|	|
4+50	0.0013	0.01	Q V	|	|	|	|
4+55	0.0014	0.01	Q V	|	|	|	|
5+ 0	0.0014	0.01	Q V	|	|	|	|
5+ 5	0.0015	0.01	Q V	|	|	|	|
5+10	0.0016	0.01	Q V	|	|	|	|
5+15	0.0016	0.01	Q V	|	|	|	|
5+20	0.0017	0.01	Q V	|	|	|	|
5+25	0.0018	0.01	Q V	|	|	|	|
5+30	0.0019	0.02	Q V	|	|	|	|
5+35	0.0020	0.01	Q V	|	|	|	|
5+40	0.0020	0.00	Q V	|	|	|	|
5+45	0.0020	0.00	Q V	|	|	|	|
5+50	0.0020	0.00	Q V	|	|	|	|
5+55	0.0021	0.00	Q V	|	|	|	|
6+ 0	0.0021	0.00	Q V	|	|	|	|
6+ 5	0.0021	0.00	Q V	|	|	|	|
6+10	0.0021	0.00	Q V	|	|	|	|
6+15	0.0021	0.00	Q V	|	|	|	|
6+20	0.0021	0.00	Q V	|	|	|	|
6+25	0.0022	0.00	Q V	|	|	|	|
6+30	0.0022	0.00	Q V	|	|	|	|
6+35	0.0022	0.00	Q V	|	|	|	|
6+40	0.0022	0.00	Q V	|	|	|	|
6+45	0.0023	0.00	Q V	|	|	|	|
6+50	0.0023	0.00	Q V	|	|	|	|
6+55	0.0023	0.00	Q V	|	|	|	|
7+ 0	0.0024	0.00	Q V	|	|	|	|
7+ 5	0.0024	0.00	Q V	|	|	|	|
7+10	0.0024	0.00	Q V	|	|	|	|
7+15	0.0024	0.00	Q V	|	|	|	|
7+20	0.0025	0.00	Q V	|	|	|	|
7+25	0.0025	0.00	Q V	|	|	|	|

7+30	0.0025	0.00	Q	V	|	|	|	|
7+35	0.0026	0.00	Q	V	|	|	|	|
7+40	0.0026	0.00	Q	V	|	|	|	|
7+45	0.0026	0.00	Q	V	|	|	|	|
7+50	0.0027	0.00	Q	V	|	|	|	|
7+55	0.0027	0.00	Q	V	|	|	|	|
8+ 0	0.0027	0.00	Q	V	|	|	|	|
8+ 5	0.0028	0.00	Q	V	|	|	|	|
8+10	0.0028	0.00	Q	V	|	|	|	|
8+15	0.0028	0.01	Q	V	|	|	|	|
8+20	0.0029	0.01	Q	V	|	|	|	|
8+25	0.0029	0.01	Q	V	|	|	|	|
8+30	0.0029	0.01	Q	V	|	|	|	|
8+35	0.0030	0.01	Q	V	|	|	|	|
8+40	0.0030	0.01	Q	V	|	|	|	|
8+45	0.0030	0.01	Q	V	|	|	|	|
8+50	0.0031	0.01	Q	V	|	|	|	|
8+55	0.0031	0.01	Q	V	|	|	|	|
9+ 0	0.0032	0.01	Q	V	|	|	|	|
9+ 5	0.0032	0.01	Q	V	|	|	|	|
9+10	0.0032	0.01	Q	V	|	|	|	|
9+15	0.0033	0.01	Q	V	|	|	|	|
9+20	0.0033	0.01	Q	V	|	|	|	|
9+25	0.0034	0.01	Q	V	|	|	|	|
9+30	0.0034	0.01	Q	V	|	|	|	|
9+35	0.0035	0.01	Q	V	|	|	|	|
9+40	0.0035	0.01	Q	V	|	|	|	|
9+45	0.0036	0.01	Q	V	|	|	|	|
9+50	0.0036	0.01	Q	V	|	|	|	|
9+55	0.0037	0.01	Q	V	|	|	|	|
10+ 0	0.0038	0.01	Q	V	|	|	|	|
10+ 5	0.0038	0.01	Q	V	|	|	|	|
10+10	0.0039	0.01	Q	V	|	|	|	|
10+15	0.0040	0.01	Q	V	|	|	|	|
10+20	0.0040	0.01	Q	V	|	|	|	|
10+25	0.0041	0.01	Q	V	|	|	|	|
10+30	0.0042	0.01	Q	V	|	|	|	|
10+35	0.0043	0.01	Q	V	|	|	|	|
10+40	0.0044	0.01	Q	V	|	|	|	|
10+45	0.0045	0.01	Q	V	|	|	|	|
10+50	0.0046	0.01	Q	V	|	|	|	|
10+55	0.0047	0.01	Q	V	|	|	|	|
11+ 0	0.0048	0.01	Q	V	|	|	|	|
11+ 5	0.0049	0.02	Q	V	|	|	|	|
11+10	0.0050	0.02	Q	V	|	|	|	|
11+15	0.0052	0.02	Q	V	|	|	|	|
11+20	0.0053	0.02	Q	V	|	|	|	|
11+25	0.0055	0.03	Q	V	|	|	|	|
11+30	0.0057	0.03	Q	V	|	|	|	|
11+35	0.0058	0.02	Q	V	|	|	|	|
11+40	0.0059	0.01	Q	V	|	|	|	|
11+45	0.0059	0.00	Q	V	|	|	|	|
11+50	0.0059	0.00	Q	V	|	|	|	|
11+55	0.0059	0.00	Q	V	|	|	|	|
12+ 0	0.0060	0.00	Q	V	|	|	|	|
12+ 5	0.0060	0.00	Q	V	|	|	|	|
12+10	0.0060	0.01	Q	V	|	|	|	|
12+15	0.0061	0.01	Q	V	|	|	|	|
12+20	0.0062	0.01	Q	V	|	|	|	|
12+25	0.0062	0.01	Q	V	|	|	|	|
12+30	0.0063	0.01	Q	V	|	|	|	|
12+35	0.0064	0.01	Q	V	|	|	|	|
12+40	0.0065	0.01	Q	V	|	|	|	|
12+45	0.0065	0.01	Q	V	|	|	|	|
12+50	0.0066	0.01	Q	V	|	|	|	|

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12+55    0.0067    0.01 Q      | V    |      |      |
13+ 0    0.0068    0.01 Q      | V    |      |      |
13+ 5    0.0069    0.01 Q      |  V   |      |      |
13+10    0.0069    0.01 Q      |  V   |      |      |
13+15    0.0070    0.01 Q      |  V   |      |      |
13+20    0.0071    0.01 Q      |  V   |      |      |
13+25    0.0072    0.01 Q      |  V   |      |      |
13+30    0.0073    0.01 Q      |  V   |      |      |
13+35    0.0074    0.01 Q      |   V  |      |      |
13+40    0.0075    0.01 Q      |   V  |      |      |
13+45    0.0075    0.01 Q      |   V  |      |      |
13+50    0.0076    0.01 Q      |   V  |      |      |
13+55    0.0077    0.01 Q      |   V  |      |      |
14+ 0    0.0078    0.01 Q      |   V  |      |      |
14+ 5    0.0079    0.01 Q      |   V  |      |      |
14+10    0.0080    0.01 Q      |    V |      |      |
14+15    0.0081    0.01 Q      |    V |      |      |
14+20    0.0082    0.01 Q      |    V |      |      |
14+25    0.0083    0.01 Q      |    V |      |      |
14+30    0.0084    0.01 Q      |    V |      |      |
14+35    0.0085    0.01 Q      |    V |      |      |
14+40    0.0086    0.01 Q      |    V |      |      |
14+45    0.0087    0.02 Q      |    V |      |      |
14+50    0.0088    0.02 Q      |     V|      |      |
14+55    0.0089    0.02 Q      |     V|      |      |
15+ 0    0.0090    0.02 Q      |     V|      |      |
15+ 5    0.0091    0.02 Q      |     V|      |      |
15+10    0.0092    0.02 Q      |     V|      |      |
15+15    0.0094    0.02 Q      |      V|      |      |
15+20    0.0095    0.02 Q      |      V|      |      |
15+25    0.0096    0.02 Q      |      V|      |      |
15+30    0.0097    0.02 Q      |      V|      |      |
15+35    0.0099    0.02 Q      |       V      |      |
15+40    0.0100    0.02 Q      |       V      |      |
15+45    0.0102    0.02 Q      |       V      |      |
15+50    0.0104    0.02 Q      |       |V     |      |
15+55    0.0105    0.02 Q      |       |V     |      |
16+ 0    0.0107    0.03 Q      |       |V     |      |
16+ 5    0.0109    0.03 Q      |       | V    |      |
16+10    0.0111    0.03 Q      |       | V    |      |
16+15    0.0113    0.03 Q      |       |  V   |      |
16+20    0.0115    0.03 Q      |       |  V   |      |
16+25    0.0117    0.03 Q      |       |  V   |      |
16+30    0.0119    0.03 Q      |       |   V  |      |
16+35    0.0122    0.03 Q      |       |   V  |      |
16+40    0.0124    0.04 Q      |       |    V |      |
16+45    0.0127    0.04 Q      |       |    V |      |
16+50    0.0129    0.04 Q      |       |     V|      |
16+55    0.0132    0.04 Q      |       |     V|      |
17+ 0    0.0135    0.04 Q      |       |     V|      |
17+ 5    0.0137    0.04 Q      |       |     V|      |
17+10    0.0142    0.06 Q      |       |      V|     |
17+15    0.0148    0.10 Q      |       |       V     |
17+20    0.0157    0.12 Q      |       |       |V    |
17+25    0.0168    0.16 Q      |       |       |  V  |
17+30    0.0183    0.23 Q      |       |       |    V|
17+35    0.0191    0.12 Q      |       |       |     V|
17+40    0.0193    0.03 Q      |       |       |     V|
17+45    0.0194    0.01 Q      |       |       |     V|
17+50    0.0194    0.01 Q      |       |       |     V|
17+55    0.0195    0.01 Q      |       |       |     V|
18+ 0    0.0195    0.00 Q      |       |       |     V|
18+ 5    0.0195    0.00 Q      |       |       |     V|
18+10    0.0195    0.00 Q      |       |       |     V|
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APOST65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
6-Hr 5-Yr Storm Event

Drainage Area = 0.58(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 345.00(Ft.)
Length along longest watercourse measured to centroid = 97.38(Ft.)
Length along longest watercourse = 0.065 Mi.
Length along longest watercourse measured to centroid = 0.018 Mi.
Difference in elevation = 6.34(Ft.)
Slope along watercourse = 97.0296 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.023 Hr.
Lag time = 1.41 Min.
25% of lag time = 0.35 Min.
40% of lag time = 0.56 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	1.27	0.74

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	3.12	1.82

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.270(In)
Area Averaged 100-Year Rainfall = 3.120(In)

Point rain (area averaged) = 1.703(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.703(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.582	79.00	0.095

Total Area Entered = 0.58(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
79.0	61.8	0.451	0.095	0.412	1.000	0.412

Sum (F) = 0.412

Area averaged mean soil loss (F) (In/Hr) = 0.412

Minimum soil loss rate ((In/Hr)) = 0.206

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.824

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	354.985	61.437	0.360
2	0.167	709.970	35.423	0.208
3	0.250	1064.955	3.140	0.018
		Sum = 100.000	Sum=	0.587

Unit Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	0.50	0.102	0.412	0.084	0.02
2	0.17	0.60	0.123	0.412	0.101	0.02
3	0.25	0.60	0.123	0.412	0.101	0.02
4	0.33	0.60	0.123	0.412	0.101	0.02
5	0.42	0.60	0.123	0.412	0.101	0.02
6	0.50	0.70	0.143	0.412	0.118	0.03
7	0.58	0.70	0.143	0.412	0.118	0.03
8	0.67	0.70	0.143	0.412	0.118	0.03
9	0.75	0.70	0.143	0.412	0.118	0.03
10	0.83	0.70	0.143	0.412	0.118	0.03
11	0.92	0.70	0.143	0.412	0.118	0.03
12	1.00	0.80	0.164	0.412	0.135	0.03
13	1.08	0.80	0.164	0.412	0.135	0.03
14	1.17	0.80	0.164	0.412	0.135	0.03
15	1.25	0.80	0.164	0.412	0.135	0.03
16	1.33	0.80	0.164	0.412	0.135	0.03
17	1.42	0.80	0.164	0.412	0.135	0.03
18	1.50	0.80	0.164	0.412	0.135	0.03
19	1.58	0.80	0.164	0.412	0.135	0.03
20	1.67	0.80	0.164	0.412	0.135	0.03
21	1.75	0.80	0.164	0.412	0.135	0.03
22	1.83	0.80	0.164	0.412	0.135	0.03
23	1.92	0.80	0.164	0.412	0.135	0.03
24	2.00	0.90	0.184	0.412	0.152	0.03
25	2.08	0.80	0.164	0.412	0.135	0.03
26	2.17	0.90	0.184	0.412	0.152	0.03
27	2.25	0.90	0.184	0.412	0.152	0.03
28	2.33	0.90	0.184	0.412	0.152	0.03
29	2.42	0.90	0.184	0.412	0.152	0.03
30	2.50	0.90	0.184	0.412	0.152	0.03
31	2.58	0.90	0.184	0.412	0.152	0.03
32	2.67	0.90	0.184	0.412	0.152	0.03

33	2.75	1.00	0.204	0.412	0.168	0.04
34	2.83	1.00	0.204	0.412	0.168	0.04
35	2.92	1.00	0.204	0.412	0.168	0.04
36	3.00	1.00	0.204	0.412	0.168	0.04
37	3.08	1.00	0.204	0.412	0.168	0.04
38	3.17	1.10	0.225	0.412	0.185	0.04
39	3.25	1.10	0.225	0.412	0.185	0.04
40	3.33	1.10	0.225	0.412	0.185	0.04
41	3.42	1.20	0.245	0.412	0.202	0.04
42	3.50	1.30	0.266	0.412	0.219	0.05
43	3.58	1.40	0.286	0.412	0.236	0.05
44	3.67	1.40	0.286	0.412	0.236	0.05
45	3.75	1.50	0.307	0.412	0.253	0.05
46	3.83	1.50	0.307	0.412	0.253	0.05
47	3.92	1.60	0.327	0.412	0.270	0.06
48	4.00	1.60	0.327	0.412	0.270	0.06
49	4.08	1.70	0.347	0.412	0.286	0.06
50	4.17	1.80	0.368	0.412	0.303	0.06
51	4.25	1.90	0.388	0.412	0.320	0.07
52	4.33	2.00	0.409	0.412	0.337	0.07
53	4.42	2.10	0.429	0.412	---	0.02
54	4.50	2.10	0.429	0.412	---	0.02
55	4.58	2.20	0.450	0.412	---	0.04
56	4.67	2.30	0.470	0.412	---	0.06
57	4.75	2.40	0.491	0.412	---	0.08
58	4.83	2.40	0.491	0.412	---	0.08
59	4.92	2.50	0.511	0.412	---	0.10
60	5.00	2.60	0.531	0.412	---	0.12
61	5.08	3.10	0.634	0.412	---	0.22
62	5.17	3.60	0.736	0.412	---	0.32
63	5.25	3.90	0.797	0.412	---	0.38
64	5.33	4.20	0.858	0.412	---	0.45
65	5.42	4.70	0.961	0.412	---	0.55
66	5.50	5.60	1.145	0.412	---	0.73
67	5.58	1.90	0.388	0.412	0.320	0.07
68	5.67	0.90	0.184	0.412	0.152	0.03
69	5.75	0.60	0.123	0.412	0.101	0.02
70	5.83	0.50	0.102	0.412	0.084	0.02
71	5.92	0.30	0.061	0.412	0.051	0.01
72	6.00	0.20	0.041	0.412	0.034	0.01
Sum =		100.0		Sum =		5.2

Flood volume = Effective rainfall 0.43(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 1.27(In)
Total soil loss = 0.062(Ac.Ft)
Total rainfall = 1.70(In)
Flood volume = 912.8 Cubic Feet
Total soil loss = 2685.7 Cubic Feet

Peak flow rate of this hydrograph = 0.386(CFS)

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6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.01	Q	|	|	|	|
0+10	0.0001	0.01	Q	|	|	|	|
0+15	0.0002	0.01	Q	|	|	|	|
0+20	0.0003	0.01	Q	|	|	|	|
0+25	0.0004	0.01	Q	|	|	|	|

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0+30     0.0005    0.01 Q       |       |       |       |
0+35     0.0006    0.01 QV      |       |       |       |
0+40     0.0007    0.01 QV      |       |       |       |
0+45     0.0008    0.01 QV      |       |       |       |
0+50     0.0009    0.01 QV      |       |       |       |
0+55     0.0010    0.01 QV      |       |       |       |
1+ 0     0.0011    0.02 Q V     |       |       |       |
1+ 5     0.0012    0.02 Q V     |       |       |       |
1+10     0.0013    0.02 Q V     |       |       |       |
1+15     0.0014    0.02 Q V     |       |       |       |
1+20     0.0016    0.02 Q V     |       |       |       |
1+25     0.0017    0.02 Q  V    |       |       |       |
1+30     0.0018    0.02 Q  V    |       |       |       |
1+35     0.0019    0.02 Q  V    |       |       |       |
1+40     0.0020    0.02 Q  V    |       |       |       |
1+45     0.0021    0.02 Q   V   |       |       |       |
1+50     0.0023    0.02 Q   V   |       |       |       |
1+55     0.0024    0.02 Q   V   |       |       |       |
2+ 0     0.0025    0.02 Q   V   |       |       |       |
2+ 5     0.0026    0.02 Q   V   |       |       |       |
2+10     0.0027    0.02 Q   V   |       |       |       |
2+15     0.0029    0.02 Q   V   |       |       |       |
2+20     0.0030    0.02 Q   V   |       |       |       |
2+25     0.0031    0.02 Q   V   |       |       |       |
2+30     0.0033    0.02 Q    V  |       |       |       |
2+35     0.0034    0.02 Q    V  |       |       |       |
2+40     0.0035    0.02 Q    V  |       |       |       |
2+45     0.0037    0.02 Q     V |       |       |       |
2+50     0.0038    0.02 Q     V |       |       |       |
2+55     0.0040    0.02 Q     V |       |       |       |
3+ 0     0.0041    0.02 Q     V |       |       |       |
3+ 5     0.0043    0.02 Q     V |       |       |       |
3+10     0.0044    0.02 Q      V|       |       |       |
3+15     0.0046    0.02 Q      V|       |       |       |
3+20     0.0047    0.02 Q      V|       |       |       |
3+25     0.0049    0.02 Q      V|       |       |       |
3+30     0.0051    0.03 Q      V|       |       |       |
3+35     0.0053    0.03 Q       V       |       |       |
3+40     0.0055    0.03 Q       V       |       |       |
3+45     0.0057    0.03 Q       V       |       |       |
3+50     0.0059    0.03 Q       |V      |       |       |
3+55     0.0061    0.03 Q       |V      |       |       |
4+ 0     0.0064    0.03 Q       | V     |       |       |
4+ 5     0.0066    0.04 Q       | V     |       |       |
4+10     0.0069    0.04 Q       |  V    |       |       |
4+15     0.0071    0.04 Q       |  V    |       |       |
4+20     0.0074    0.04 Q       |   V   |       |       |
4+25     0.0076    0.02 Q       |   V   |       |       |
4+30     0.0076    0.01 Q       |   V   |       |       |
4+35     0.0078    0.02 Q       |   V   |       |       |
4+40     0.0080    0.03 Q       |   V   |       |       |
4+45     0.0082    0.04 Q       |   V   |       |       |
4+50     0.0086    0.05 Q       |    V  |       |       |
4+55     0.0089    0.05 Q       |     V |       |       |
5+ 0     0.0094    0.06 Q       |     V |       |       |
5+ 5     0.0101    0.11 Q       |      V|       |       |
5+10     0.0112    0.16 Q       |       |V      |       |
5+15     0.0127    0.21 Q       |       |  V    |       |
5+20     0.0144    0.25 Q       |       |    V  |       |
5+25     0.0164    0.30 |Q      |       |       |V      |
5+30     0.0191    0.39 |Q      |       |       |   V   |
5+35     0.0204    0.19 Q       |       |       |    V  |
5+40     0.0207    0.04 Q       |       |       |     V |
5+45     0.0208    0.02 Q       |       |       |     V |
5+50     0.0209    0.01 Q       |       |       |     V |
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  5+55      0.0209     0.01  Q       |       |       |       V|
  6+ 0      0.0209     0.01  Q       |       |       |       V|
  6+ 5      0.0210     0.00  Q       |       |       |       V|
  6+10      0.0210     0.00  Q       |       |       |       V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APOST610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
6-Hr 10-Yr Storm Event

Drainage Area = 0.58(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 345.00(Ft.)
Length along longest watercourse measured to centroid = 97.38(Ft.)
Length along longest watercourse = 0.065 Mi.
Length along longest watercourse measured to centroid = 0.018 Mi.
Difference in elevation = 6.34(Ft.)
Slope along watercourse = 97.0296 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.023 Hr.
Lag time = 1.41 Min.
25% of lag time = 0.35 Min.
40% of lag time = 0.56 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	1.27	0.74

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	3.12	1.82

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.270(In)
Area Averaged 100-Year Rainfall = 3.120(In)

Point rain (area averaged) = 2.031(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.031(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.582	79.00	0.095

Total Area Entered = 0.58(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
79.0	61.8	0.451	0.095	0.412	1.000	0.412

Sum (F) = 0.412

Area averaged mean soil loss (F) (In/Hr) = 0.412

Minimum soil loss rate ((In/Hr)) = 0.206

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.824

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	354.985	61.437	0.360
2	0.167	709.970	35.423	0.208
3	0.250	1064.955	3.140	0.018

Sum = 100.000 Sum= 0.587

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.122	0.412	0.100	0.02
2	0.17	0.60	0.146	0.412	0.121	0.03
3	0.25	0.60	0.146	0.412	0.121	0.03
4	0.33	0.60	0.146	0.412	0.121	0.03
5	0.42	0.60	0.146	0.412	0.121	0.03
6	0.50	0.70	0.171	0.412	0.141	0.03
7	0.58	0.70	0.171	0.412	0.141	0.03
8	0.67	0.70	0.171	0.412	0.141	0.03
9	0.75	0.70	0.171	0.412	0.141	0.03
10	0.83	0.70	0.171	0.412	0.141	0.03
11	0.92	0.70	0.171	0.412	0.141	0.03
12	1.00	0.80	0.195	0.412	0.161	0.03
13	1.08	0.80	0.195	0.412	0.161	0.03
14	1.17	0.80	0.195	0.412	0.161	0.03
15	1.25	0.80	0.195	0.412	0.161	0.03
16	1.33	0.80	0.195	0.412	0.161	0.03
17	1.42	0.80	0.195	0.412	0.161	0.03
18	1.50	0.80	0.195	0.412	0.161	0.03
19	1.58	0.80	0.195	0.412	0.161	0.03
20	1.67	0.80	0.195	0.412	0.161	0.03
21	1.75	0.80	0.195	0.412	0.161	0.03
22	1.83	0.80	0.195	0.412	0.161	0.03
23	1.92	0.80	0.195	0.412	0.161	0.03
24	2.00	0.90	0.219	0.412	0.181	0.04
25	2.08	0.80	0.195	0.412	0.161	0.03
26	2.17	0.90	0.219	0.412	0.181	0.04
27	2.25	0.90	0.219	0.412	0.181	0.04
28	2.33	0.90	0.219	0.412	0.181	0.04
29	2.42	0.90	0.219	0.412	0.181	0.04
30	2.50	0.90	0.219	0.412	0.181	0.04
31	2.58	0.90	0.219	0.412	0.181	0.04
32	2.67	0.90	0.219	0.412	0.181	0.04

33	2.75	1.00	0.244	0.412	0.201	0.04
34	2.83	1.00	0.244	0.412	0.201	0.04
35	2.92	1.00	0.244	0.412	0.201	0.04
36	3.00	1.00	0.244	0.412	0.201	0.04
37	3.08	1.00	0.244	0.412	0.201	0.04
38	3.17	1.10	0.268	0.412	0.221	0.05
39	3.25	1.10	0.268	0.412	0.221	0.05
40	3.33	1.10	0.268	0.412	0.221	0.05
41	3.42	1.20	0.292	0.412	0.241	0.05
42	3.50	1.30	0.317	0.412	0.261	0.06
43	3.58	1.40	0.341	0.412	0.281	0.06
44	3.67	1.40	0.341	0.412	0.281	0.06
45	3.75	1.50	0.366	0.412	0.301	0.06
46	3.83	1.50	0.366	0.412	0.301	0.06
47	3.92	1.60	0.390	0.412	0.321	0.07
48	4.00	1.60	0.390	0.412	0.321	0.07
49	4.08	1.70	0.414	0.412	---	0.00
50	4.17	1.80	0.439	0.412	---	0.03
51	4.25	1.90	0.463	0.412	---	0.05
52	4.33	2.00	0.487	0.412	---	0.08
53	4.42	2.10	0.512	0.412	---	0.10
54	4.50	2.10	0.512	0.412	---	0.10
55	4.58	2.20	0.536	0.412	---	0.12
56	4.67	2.30	0.561	0.412	---	0.15
57	4.75	2.40	0.585	0.412	---	0.17
58	4.83	2.40	0.585	0.412	---	0.17
59	4.92	2.50	0.609	0.412	---	0.20
60	5.00	2.60	0.634	0.412	---	0.22
61	5.08	3.10	0.756	0.412	---	0.34
62	5.17	3.60	0.877	0.412	---	0.47
63	5.25	3.90	0.951	0.412	---	0.54
64	5.33	4.20	1.024	0.412	---	0.61
65	5.42	4.70	1.146	0.412	---	0.73
66	5.50	5.60	1.365	0.412	---	0.95
67	5.58	1.90	0.463	0.412	---	0.05
68	5.67	0.90	0.219	0.412	0.181	0.04
69	5.75	0.60	0.146	0.412	0.121	0.03
70	5.83	0.50	0.122	0.412	0.100	0.02
71	5.92	0.30	0.073	0.412	0.060	0.01
72	6.00	0.20	0.049	0.412	0.040	0.01
Sum =		100.0		Sum =		7.1

Flood volume = Effective rainfall 0.59(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 1.44(In)
Total soil loss = 0.070(Ac.Ft)
Total rainfall = 2.03(In)
Flood volume = 1250.1 Cubic Feet
Total soil loss = 3040.9 Cubic Feet

Peak flow rate of this hydrograph = 0.507(CFS)

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6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0001	0.01	Q	|	|	|	|
0+15	0.0003	0.02	Q	|	|	|	|
0+20	0.0004	0.02	Q	|	|	|	|
0+25	0.0005	0.02	Q	|	|	|	|

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0+30    0.0006    0.02  Q       |       |       |       |
0+35    0.0007    0.02  Q       |       |       |       |
0+40    0.0008    0.02  QV      |       |       |       |
0+45    0.0009    0.02  QV      |       |       |       |
0+50    0.0011    0.02  QV      |       |       |       |
0+55    0.0012    0.02  QV      |       |       |       |
1+ 0    0.0013    0.02  QV      |       |       |       |
1+ 5    0.0014    0.02  Q V     |       |       |       |
1+10    0.0016    0.02  Q V     |       |       |       |
1+15    0.0017    0.02  Q V     |       |       |       |
1+20    0.0019    0.02  Q V     |       |       |       |
1+25    0.0020    0.02  Q V     |       |       |       |
1+30    0.0021    0.02  Q V     |       |       |       |
1+35    0.0023    0.02  Q  V    |       |       |       |
1+40    0.0024    0.02  Q  V    |       |       |       |
1+45    0.0026    0.02  Q  V    |       |       |       |
1+50    0.0027    0.02  Q  V    |       |       |       |
1+55    0.0028    0.02  Q  V    |       |       |       |
2+ 0    0.0030    0.02  Q   V   |       |       |       |
2+ 5    0.0031    0.02  Q   V   |       |       |       |
2+10    0.0033    0.02  Q   V   |       |       |       |
2+15    0.0034    0.02  Q   V   |       |       |       |
2+20    0.0036    0.02  Q    V  |       |       |       |
2+25    0.0037    0.02  Q    V  |       |       |       |
2+30    0.0039    0.02  Q    V  |       |       |       |
2+35    0.0041    0.02  Q    V  |       |       |       |
2+40    0.0042    0.02  Q    V  |       |       |       |
2+45    0.0044    0.02  Q     V |       |       |       |
2+50    0.0046    0.03  Q     V |       |       |       |
2+55    0.0047    0.03  Q     V |       |       |       |
3+ 0    0.0049    0.03  Q     V |       |       |       |
3+ 5    0.0051    0.03  Q     V |       |       |       |
3+10    0.0053    0.03  Q     V |       |       |       |
3+15    0.0054    0.03  Q     V |       |       |       |
3+20    0.0056    0.03  Q     V |       |       |       |
3+25    0.0058    0.03  Q      V|       |       |       |
3+30    0.0061    0.03  Q      V|       |       |       |
3+35    0.0063    0.03  Q      V|       |       |       |
3+40    0.0065    0.04  Q      V|       |       |       |
3+45    0.0068    0.04  Q      V|       |       |       |
3+50    0.0070    0.04  Q      V|       |       |       |
3+55    0.0073    0.04  Q       V       |       |       |
4+ 0    0.0076    0.04  Q       V       |       |       |
4+ 5    0.0077    0.02  Q       V       |       |       |
4+10    0.0078    0.01  Q       V       |       |       |
4+15    0.0079    0.02  Q       |V      |       |       |
4+20    0.0082    0.04  Q       |V      |       |       |
4+25    0.0086    0.05  Q       |V      |       |       |
4+30    0.0090    0.06  Q       | V     |       |       |
4+35    0.0094    0.07  Q       |  V    |       |       |
4+40    0.0100    0.08  Q       |  V    |       |       |
4+45    0.0107    0.10  Q       |   V   |       |       |
4+50    0.0113    0.10  Q       |   V   |       |       |
4+55    0.0121    0.11  Q       |    V  |       |       |
5+ 0    0.0130    0.12  Q       |     V |       |       |
5+ 5    0.0142    0.17  Q       |      V|       |       |
5+10    0.0158    0.24  Q       |       | V     |       |
5+15    0.0179    0.30  |Q      |       |  V    |       |
5+20    0.0202    0.34  |Q      |       |     V |       |
5+25    0.0230    0.40  |Q      |       |       | V     |
5+30    0.0265    0.51  | Q     |       |       |   V   |
5+35    0.0281    0.23  Q       |       |       |     V|
5+40    0.0284    0.04  Q       |       |       |     V|
5+45    0.0285    0.02  Q       |       |       |     V|
5+50    0.0286    0.01  Q       |       |       |     V|
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  5+55      0.0286     0.01  Q        |        |        |       V|
  6+ 0      0.0287     0.01  Q        |        |        |       V|
  6+ 5      0.0287     0.00  Q        |        |        |       V|
  6+10      0.0287     0.00  Q        |        |        |       V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APOST242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
24-Hr 2-Yr Storm Event

Drainage Area = 0.58(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 345.00(Ft.)
Length along longest watercourse measured to centroid = 97.38(Ft.)
Length along longest watercourse = 0.065 Mi.
Length along longest watercourse measured to centroid = 0.018 Mi.
Difference in elevation = 6.34(Ft.)
Slope along watercourse = 97.0296 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.023 Hr.
Lag time = 1.41 Min.
25% of lag time = 0.35 Min.
40% of lag time = 0.56 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	2.43	1.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	6.58	3.83

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.430(In)
Area Averaged 100-Year Rainfall = 6.580(In)

Point rain (area averaged) = 2.430(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.430(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.582	79.00	0.095

Total Area Entered = 0.58(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
79.0	61.8	0.451	0.095	0.412	1.000	0.412

Sum (F) = 0.412

Area averaged mean soil loss (F) (In/Hr) = 0.412

Minimum soil loss rate ((In/Hr)) = 0.206

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.824

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	354.985	61.437	0.360
2	0.167	709.970	35.423	0.208
3	0.250	1064.955	3.140	0.018
		Sum = 100.000	Sum=	0.587

Storm Event 3 Effective Rainfall = 0.462(In)

	Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.004	0.731	0.003	0.00
2	0.17	0.07	0.004	0.728	0.003	0.00
3	0.25	0.07	0.004	0.725	0.003	0.00
4	0.33	0.10	0.006	0.722	0.005	0.00
5	0.42	0.10	0.006	0.719	0.005	0.00
6	0.50	0.10	0.006	0.717	0.005	0.00
7	0.58	0.10	0.006	0.714	0.005	0.00
8	0.67	0.10	0.006	0.711	0.005	0.00
9	0.75	0.10	0.006	0.708	0.005	0.00
10	0.83	0.13	0.007	0.705	0.006	0.00
11	0.92	0.13	0.007	0.703	0.006	0.00
12	1.00	0.13	0.007	0.700	0.006	0.00
13	1.08	0.10	0.006	0.697	0.005	0.00
14	1.17	0.10	0.006	0.694	0.005	0.00
15	1.25	0.10	0.006	0.692	0.005	0.00
16	1.33	0.10	0.006	0.689	0.005	0.00
17	1.42	0.10	0.006	0.686	0.005	0.00
18	1.50	0.10	0.006	0.683	0.005	0.00
19	1.58	0.10	0.006	0.681	0.005	0.00
20	1.67	0.10	0.006	0.678	0.005	0.00
21	1.75	0.10	0.006	0.675	0.005	0.00
22	1.83	0.13	0.007	0.672	0.006	0.00
23	1.92	0.13	0.007	0.670	0.006	0.00
24	2.00	0.13	0.007	0.667	0.006	0.00
25	2.08	0.13	0.007	0.664	0.006	0.00
26	2.17	0.13	0.007	0.662	0.006	0.00
27	2.25	0.13	0.007	0.659	0.006	0.00
28	2.33	0.13	0.007	0.656	0.006	0.00

29	2.42	0.13	0.007	0.654	0.006	0.00
30	2.50	0.13	0.007	0.651	0.006	0.00
31	2.58	0.17	0.009	0.648	0.008	0.00
32	2.67	0.17	0.009	0.646	0.008	0.00
33	2.75	0.17	0.009	0.643	0.008	0.00
34	2.83	0.17	0.009	0.640	0.008	0.00
35	2.92	0.17	0.009	0.638	0.008	0.00
36	3.00	0.17	0.009	0.635	0.008	0.00
37	3.08	0.17	0.009	0.632	0.008	0.00
38	3.17	0.17	0.009	0.630	0.008	0.00
39	3.25	0.17	0.009	0.627	0.008	0.00
40	3.33	0.17	0.009	0.625	0.008	0.00
41	3.42	0.17	0.009	0.622	0.008	0.00
42	3.50	0.17	0.009	0.619	0.008	0.00
43	3.58	0.17	0.009	0.617	0.008	0.00
44	3.67	0.17	0.009	0.614	0.008	0.00
45	3.75	0.17	0.009	0.612	0.008	0.00
46	3.83	0.20	0.011	0.609	0.009	0.00
47	3.92	0.20	0.011	0.606	0.009	0.00
48	4.00	0.20	0.011	0.604	0.009	0.00
49	4.08	0.20	0.011	0.601	0.009	0.00
50	4.17	0.20	0.011	0.599	0.009	0.00
51	4.25	0.20	0.011	0.596	0.009	0.00
52	4.33	0.23	0.013	0.594	0.011	0.00
53	4.42	0.23	0.013	0.591	0.011	0.00
54	4.50	0.23	0.013	0.589	0.011	0.00
55	4.58	0.23	0.013	0.586	0.011	0.00
56	4.67	0.23	0.013	0.584	0.011	0.00
57	4.75	0.23	0.013	0.581	0.011	0.00
58	4.83	0.27	0.015	0.579	0.012	0.00
59	4.92	0.27	0.015	0.576	0.012	0.00
60	5.00	0.27	0.015	0.574	0.012	0.00
61	5.08	0.20	0.011	0.571	0.009	0.00
62	5.17	0.20	0.011	0.569	0.009	0.00
63	5.25	0.20	0.011	0.566	0.009	0.00
64	5.33	0.23	0.013	0.564	0.011	0.00
65	5.42	0.23	0.013	0.561	0.011	0.00
66	5.50	0.23	0.013	0.559	0.011	0.00
67	5.58	0.27	0.015	0.556	0.012	0.00
68	5.67	0.27	0.015	0.554	0.012	0.00
69	5.75	0.27	0.015	0.551	0.012	0.00
70	5.83	0.27	0.015	0.549	0.012	0.00
71	5.92	0.27	0.015	0.546	0.012	0.00
72	6.00	0.27	0.015	0.544	0.012	0.00
73	6.08	0.30	0.017	0.542	0.014	0.00
74	6.17	0.30	0.017	0.539	0.014	0.00
75	6.25	0.30	0.017	0.537	0.014	0.00
76	6.33	0.30	0.017	0.534	0.014	0.00
77	6.42	0.30	0.017	0.532	0.014	0.00
78	6.50	0.30	0.017	0.530	0.014	0.00
79	6.58	0.33	0.018	0.527	0.015	0.00
80	6.67	0.33	0.018	0.525	0.015	0.00
81	6.75	0.33	0.018	0.523	0.015	0.00
82	6.83	0.33	0.018	0.520	0.015	0.00
83	6.92	0.33	0.018	0.518	0.015	0.00
84	7.00	0.33	0.018	0.515	0.015	0.00
85	7.08	0.33	0.018	0.513	0.015	0.00
86	7.17	0.33	0.018	0.511	0.015	0.00
87	7.25	0.33	0.018	0.508	0.015	0.00
88	7.33	0.37	0.020	0.506	0.017	0.00
89	7.42	0.37	0.020	0.504	0.017	0.00
90	7.50	0.37	0.020	0.501	0.017	0.00
91	7.58	0.40	0.022	0.499	0.018	0.00
92	7.67	0.40	0.022	0.497	0.018	0.00
93	7.75	0.40	0.022	0.495	0.018	0.00

94	7.83	0.43	0.024	0.492	0.020	0.00
95	7.92	0.43	0.024	0.490	0.020	0.00
96	8.00	0.43	0.024	0.488	0.020	0.00
97	8.08	0.50	0.028	0.486	0.023	0.00
98	8.17	0.50	0.028	0.483	0.023	0.00
99	8.25	0.50	0.028	0.481	0.023	0.00
100	8.33	0.50	0.028	0.479	0.023	0.00
101	8.42	0.50	0.028	0.477	0.023	0.00
102	8.50	0.50	0.028	0.474	0.023	0.00
103	8.58	0.53	0.030	0.472	0.024	0.01
104	8.67	0.53	0.030	0.470	0.024	0.01
105	8.75	0.53	0.030	0.468	0.024	0.01
106	8.83	0.57	0.031	0.465	0.026	0.01
107	8.92	0.57	0.031	0.463	0.026	0.01
108	9.00	0.57	0.031	0.461	0.026	0.01
109	9.08	0.63	0.035	0.459	0.029	0.01
110	9.17	0.63	0.035	0.457	0.029	0.01
111	9.25	0.63	0.035	0.454	0.029	0.01
112	9.33	0.67	0.037	0.452	0.030	0.01
113	9.42	0.67	0.037	0.450	0.030	0.01
114	9.50	0.67	0.037	0.448	0.030	0.01
115	9.58	0.70	0.039	0.446	0.032	0.01
116	9.67	0.70	0.039	0.444	0.032	0.01
117	9.75	0.70	0.039	0.442	0.032	0.01
118	9.83	0.73	0.041	0.439	0.033	0.01
119	9.92	0.73	0.041	0.437	0.033	0.01
120	10.00	0.73	0.041	0.435	0.033	0.01
121	10.08	0.50	0.028	0.433	0.023	0.00
122	10.17	0.50	0.028	0.431	0.023	0.00
123	10.25	0.50	0.028	0.429	0.023	0.00
124	10.33	0.50	0.028	0.427	0.023	0.00
125	10.42	0.50	0.028	0.425	0.023	0.00
126	10.50	0.50	0.028	0.423	0.023	0.00
127	10.58	0.67	0.037	0.421	0.030	0.01
128	10.67	0.67	0.037	0.419	0.030	0.01
129	10.75	0.67	0.037	0.417	0.030	0.01
130	10.83	0.67	0.037	0.415	0.030	0.01
131	10.92	0.67	0.037	0.412	0.030	0.01
132	11.00	0.67	0.037	0.410	0.030	0.01
133	11.08	0.63	0.035	0.408	0.029	0.01
134	11.17	0.63	0.035	0.406	0.029	0.01
135	11.25	0.63	0.035	0.404	0.029	0.01
136	11.33	0.63	0.035	0.402	0.029	0.01
137	11.42	0.63	0.035	0.400	0.029	0.01
138	11.50	0.63	0.035	0.398	0.029	0.01
139	11.58	0.57	0.031	0.396	0.026	0.01
140	11.67	0.57	0.031	0.394	0.026	0.01
141	11.75	0.57	0.031	0.393	0.026	0.01
142	11.83	0.60	0.033	0.391	0.027	0.01
143	11.92	0.60	0.033	0.389	0.027	0.01
144	12.00	0.60	0.033	0.387	0.027	0.01
145	12.08	0.83	0.046	0.385	0.038	0.01
146	12.17	0.83	0.046	0.383	0.038	0.01
147	12.25	0.83	0.046	0.381	0.038	0.01
148	12.33	0.87	0.048	0.379	0.040	0.01
149	12.42	0.87	0.048	0.377	0.040	0.01
150	12.50	0.87	0.048	0.375	0.040	0.01
151	12.58	0.93	0.052	0.373	0.043	0.01
152	12.67	0.93	0.052	0.371	0.043	0.01
153	12.75	0.93	0.052	0.370	0.043	0.01
154	12.83	0.97	0.054	0.368	0.044	0.01
155	12.92	0.97	0.054	0.366	0.044	0.01
156	13.00	0.97	0.054	0.364	0.044	0.01
157	13.08	1.13	0.063	0.362	0.052	0.01
158	13.17	1.13	0.063	0.360	0.052	0.01

159	13.25	1.13	0.063	0.358	0.052	0.01
160	13.33	1.13	0.063	0.357	0.052	0.01
161	13.42	1.13	0.063	0.355	0.052	0.01
162	13.50	1.13	0.063	0.353	0.052	0.01
163	13.58	0.77	0.042	0.351	0.035	0.01
164	13.67	0.77	0.042	0.349	0.035	0.01
165	13.75	0.77	0.042	0.348	0.035	0.01
166	13.83	0.77	0.042	0.346	0.035	0.01
167	13.92	0.77	0.042	0.344	0.035	0.01
168	14.00	0.77	0.042	0.342	0.035	0.01
169	14.08	0.90	0.050	0.341	0.041	0.01
170	14.17	0.90	0.050	0.339	0.041	0.01
171	14.25	0.90	0.050	0.337	0.041	0.01
172	14.33	0.87	0.048	0.335	0.040	0.01
173	14.42	0.87	0.048	0.334	0.040	0.01
174	14.50	0.87	0.048	0.332	0.040	0.01
175	14.58	0.87	0.048	0.330	0.040	0.01
176	14.67	0.87	0.048	0.329	0.040	0.01
177	14.75	0.87	0.048	0.327	0.040	0.01
178	14.83	0.83	0.046	0.325	0.038	0.01
179	14.92	0.83	0.046	0.324	0.038	0.01
180	15.00	0.83	0.046	0.322	0.038	0.01
181	15.08	0.80	0.044	0.320	0.037	0.01
182	15.17	0.80	0.044	0.319	0.037	0.01
183	15.25	0.80	0.044	0.317	0.037	0.01
184	15.33	0.77	0.042	0.315	0.035	0.01
185	15.42	0.77	0.042	0.314	0.035	0.01
186	15.50	0.77	0.042	0.312	0.035	0.01
187	15.58	0.63	0.035	0.311	0.029	0.01
188	15.67	0.63	0.035	0.309	0.029	0.01
189	15.75	0.63	0.035	0.307	0.029	0.01
190	15.83	0.63	0.035	0.306	0.029	0.01
191	15.92	0.63	0.035	0.304	0.029	0.01
192	16.00	0.63	0.035	0.303	0.029	0.01
193	16.08	0.13	0.007	0.301	0.006	0.00
194	16.17	0.13	0.007	0.300	0.006	0.00
195	16.25	0.13	0.007	0.298	0.006	0.00
196	16.33	0.13	0.007	0.297	0.006	0.00
197	16.42	0.13	0.007	0.295	0.006	0.00
198	16.50	0.13	0.007	0.294	0.006	0.00
199	16.58	0.10	0.006	0.292	0.005	0.00
200	16.67	0.10	0.006	0.291	0.005	0.00
201	16.75	0.10	0.006	0.289	0.005	0.00
202	16.83	0.10	0.006	0.288	0.005	0.00
203	16.92	0.10	0.006	0.286	0.005	0.00
204	17.00	0.10	0.006	0.285	0.005	0.00
205	17.08	0.17	0.009	0.283	0.008	0.00
206	17.17	0.17	0.009	0.282	0.008	0.00
207	17.25	0.17	0.009	0.280	0.008	0.00
208	17.33	0.17	0.009	0.279	0.008	0.00
209	17.42	0.17	0.009	0.278	0.008	0.00
210	17.50	0.17	0.009	0.276	0.008	0.00
211	17.58	0.17	0.009	0.275	0.008	0.00
212	17.67	0.17	0.009	0.273	0.008	0.00
213	17.75	0.17	0.009	0.272	0.008	0.00
214	17.83	0.13	0.007	0.271	0.006	0.00
215	17.92	0.13	0.007	0.269	0.006	0.00
216	18.00	0.13	0.007	0.268	0.006	0.00
217	18.08	0.13	0.007	0.267	0.006	0.00
218	18.17	0.13	0.007	0.265	0.006	0.00
219	18.25	0.13	0.007	0.264	0.006	0.00
220	18.33	0.13	0.007	0.263	0.006	0.00
221	18.42	0.13	0.007	0.262	0.006	0.00
222	18.50	0.13	0.007	0.260	0.006	0.00
223	18.58	0.10	0.006	0.259	0.005	0.00

224	18.67	0.10	0.006	0.258	0.005	0.00
225	18.75	0.10	0.006	0.257	0.005	0.00
226	18.83	0.07	0.004	0.255	0.003	0.00
227	18.92	0.07	0.004	0.254	0.003	0.00
228	19.00	0.07	0.004	0.253	0.003	0.00
229	19.08	0.10	0.006	0.252	0.005	0.00
230	19.17	0.10	0.006	0.251	0.005	0.00
231	19.25	0.10	0.006	0.249	0.005	0.00
232	19.33	0.13	0.007	0.248	0.006	0.00
233	19.42	0.13	0.007	0.247	0.006	0.00
234	19.50	0.13	0.007	0.246	0.006	0.00
235	19.58	0.10	0.006	0.245	0.005	0.00
236	19.67	0.10	0.006	0.244	0.005	0.00
237	19.75	0.10	0.006	0.243	0.005	0.00
238	19.83	0.07	0.004	0.241	0.003	0.00
239	19.92	0.07	0.004	0.240	0.003	0.00
240	20.00	0.07	0.004	0.239	0.003	0.00
241	20.08	0.10	0.006	0.238	0.005	0.00
242	20.17	0.10	0.006	0.237	0.005	0.00
243	20.25	0.10	0.006	0.236	0.005	0.00
244	20.33	0.10	0.006	0.235	0.005	0.00
245	20.42	0.10	0.006	0.234	0.005	0.00
246	20.50	0.10	0.006	0.233	0.005	0.00
247	20.58	0.10	0.006	0.232	0.005	0.00
248	20.67	0.10	0.006	0.231	0.005	0.00
249	20.75	0.10	0.006	0.230	0.005	0.00
250	20.83	0.07	0.004	0.229	0.003	0.00
251	20.92	0.07	0.004	0.228	0.003	0.00
252	21.00	0.07	0.004	0.227	0.003	0.00
253	21.08	0.10	0.006	0.227	0.005	0.00
254	21.17	0.10	0.006	0.226	0.005	0.00
255	21.25	0.10	0.006	0.225	0.005	0.00
256	21.33	0.07	0.004	0.224	0.003	0.00
257	21.42	0.07	0.004	0.223	0.003	0.00
258	21.50	0.07	0.004	0.222	0.003	0.00
259	21.58	0.10	0.006	0.221	0.005	0.00
260	21.67	0.10	0.006	0.221	0.005	0.00
261	21.75	0.10	0.006	0.220	0.005	0.00
262	21.83	0.07	0.004	0.219	0.003	0.00
263	21.92	0.07	0.004	0.218	0.003	0.00
264	22.00	0.07	0.004	0.218	0.003	0.00
265	22.08	0.10	0.006	0.217	0.005	0.00
266	22.17	0.10	0.006	0.216	0.005	0.00
267	22.25	0.10	0.006	0.216	0.005	0.00
268	22.33	0.07	0.004	0.215	0.003	0.00
269	22.42	0.07	0.004	0.214	0.003	0.00
270	22.50	0.07	0.004	0.214	0.003	0.00
271	22.58	0.07	0.004	0.213	0.003	0.00
272	22.67	0.07	0.004	0.212	0.003	0.00
273	22.75	0.07	0.004	0.212	0.003	0.00
274	22.83	0.07	0.004	0.211	0.003	0.00
275	22.92	0.07	0.004	0.211	0.003	0.00
276	23.00	0.07	0.004	0.210	0.003	0.00
277	23.08	0.07	0.004	0.210	0.003	0.00
278	23.17	0.07	0.004	0.209	0.003	0.00
279	23.25	0.07	0.004	0.209	0.003	0.00
280	23.33	0.07	0.004	0.208	0.003	0.00
281	23.42	0.07	0.004	0.208	0.003	0.00
282	23.50	0.07	0.004	0.208	0.003	0.00
283	23.58	0.07	0.004	0.207	0.003	0.00
284	23.67	0.07	0.004	0.207	0.003	0.00
285	23.75	0.07	0.004	0.207	0.003	0.00
286	23.83	0.07	0.004	0.206	0.003	0.00
287	23.92	0.07	0.004	0.206	0.003	0.00
288	24.00	0.07	0.004	0.206	0.003	0.00

Sum = 100.0 Sum = 1.0

Flood volume = Effective rainfall 0.08(In)

times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.38(In)

Total soil loss = 0.018(Ac.Ft)

Total rainfall = 0.46(In)

Flood volume = 171.5 Cubic Feet

Total soil loss = 803.9 Cubic Feet

Storm Event 2 Effective Rainfall = 0.875(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.007	0.731	0.006	0.00
2	0.17	0.07	0.007	0.728	0.006	0.00
3	0.25	0.07	0.007	0.725	0.006	0.00
4	0.33	0.10	0.010	0.722	0.009	0.00
5	0.42	0.10	0.010	0.719	0.009	0.00
6	0.50	0.10	0.010	0.717	0.009	0.00
7	0.58	0.10	0.010	0.714	0.009	0.00
8	0.67	0.10	0.010	0.711	0.009	0.00
9	0.75	0.10	0.010	0.708	0.009	0.00
10	0.83	0.13	0.014	0.705	0.012	0.00
11	0.92	0.13	0.014	0.703	0.012	0.00
12	1.00	0.13	0.014	0.700	0.012	0.00
13	1.08	0.10	0.010	0.697	0.009	0.00
14	1.17	0.10	0.010	0.694	0.009	0.00
15	1.25	0.10	0.010	0.692	0.009	0.00
16	1.33	0.10	0.010	0.689	0.009	0.00
17	1.42	0.10	0.010	0.686	0.009	0.00
18	1.50	0.10	0.010	0.683	0.009	0.00
19	1.58	0.10	0.010	0.681	0.009	0.00
20	1.67	0.10	0.010	0.678	0.009	0.00
21	1.75	0.10	0.010	0.675	0.009	0.00
22	1.83	0.13	0.014	0.672	0.012	0.00
23	1.92	0.13	0.014	0.670	0.012	0.00
24	2.00	0.13	0.014	0.667	0.012	0.00
25	2.08	0.13	0.014	0.664	0.012	0.00
26	2.17	0.13	0.014	0.662	0.012	0.00
27	2.25	0.13	0.014	0.659	0.012	0.00
28	2.33	0.13	0.014	0.656	0.012	0.00
29	2.42	0.13	0.014	0.654	0.012	0.00
30	2.50	0.13	0.014	0.651	0.012	0.00
31	2.58	0.17	0.017	0.648	0.014	0.00
32	2.67	0.17	0.017	0.646	0.014	0.00
33	2.75	0.17	0.017	0.643	0.014	0.00
34	2.83	0.17	0.017	0.640	0.014	0.00
35	2.92	0.17	0.017	0.638	0.014	0.00
36	3.00	0.17	0.017	0.635	0.014	0.00
37	3.08	0.17	0.017	0.632	0.014	0.00
38	3.17	0.17	0.017	0.630	0.014	0.00
39	3.25	0.17	0.017	0.627	0.014	0.00
40	3.33	0.17	0.017	0.625	0.014	0.00
41	3.42	0.17	0.017	0.622	0.014	0.00
42	3.50	0.17	0.017	0.619	0.014	0.00
43	3.58	0.17	0.017	0.617	0.014	0.00
44	3.67	0.17	0.017	0.614	0.014	0.00
45	3.75	0.17	0.017	0.612	0.014	0.00
46	3.83	0.20	0.021	0.609	0.017	0.00
47	3.92	0.20	0.021	0.606	0.017	0.00
48	4.00	0.20	0.021	0.604	0.017	0.00
49	4.08	0.20	0.021	0.601	0.017	0.00
50	4.17	0.20	0.021	0.599	0.017	0.00
51	4.25	0.20	0.021	0.596	0.017	0.00

52	4.33	0.23	0.024	0.594	0.020	0.00
53	4.42	0.23	0.024	0.591	0.020	0.00
54	4.50	0.23	0.024	0.589	0.020	0.00
55	4.58	0.23	0.024	0.586	0.020	0.00
56	4.67	0.23	0.024	0.584	0.020	0.00
57	4.75	0.23	0.024	0.581	0.020	0.00
58	4.83	0.27	0.028	0.579	0.023	0.00
59	4.92	0.27	0.028	0.576	0.023	0.00
60	5.00	0.27	0.028	0.574	0.023	0.00
61	5.08	0.20	0.021	0.571	0.017	0.00
62	5.17	0.20	0.021	0.569	0.017	0.00
63	5.25	0.20	0.021	0.566	0.017	0.00
64	5.33	0.23	0.024	0.564	0.020	0.00
65	5.42	0.23	0.024	0.561	0.020	0.00
66	5.50	0.23	0.024	0.559	0.020	0.00
67	5.58	0.27	0.028	0.556	0.023	0.00
68	5.67	0.27	0.028	0.554	0.023	0.00
69	5.75	0.27	0.028	0.551	0.023	0.00
70	5.83	0.27	0.028	0.549	0.023	0.00
71	5.92	0.27	0.028	0.546	0.023	0.00
72	6.00	0.27	0.028	0.544	0.023	0.00
73	6.08	0.30	0.031	0.542	0.026	0.01
74	6.17	0.30	0.031	0.539	0.026	0.01
75	6.25	0.30	0.031	0.537	0.026	0.01
76	6.33	0.30	0.031	0.534	0.026	0.01
77	6.42	0.30	0.031	0.532	0.026	0.01
78	6.50	0.30	0.031	0.530	0.026	0.01
79	6.58	0.33	0.035	0.527	0.029	0.01
80	6.67	0.33	0.035	0.525	0.029	0.01
81	6.75	0.33	0.035	0.523	0.029	0.01
82	6.83	0.33	0.035	0.520	0.029	0.01
83	6.92	0.33	0.035	0.518	0.029	0.01
84	7.00	0.33	0.035	0.515	0.029	0.01
85	7.08	0.33	0.035	0.513	0.029	0.01
86	7.17	0.33	0.035	0.511	0.029	0.01
87	7.25	0.33	0.035	0.508	0.029	0.01
88	7.33	0.37	0.038	0.506	0.032	0.01
89	7.42	0.37	0.038	0.504	0.032	0.01
90	7.50	0.37	0.038	0.501	0.032	0.01
91	7.58	0.40	0.042	0.499	0.035	0.01
92	7.67	0.40	0.042	0.497	0.035	0.01
93	7.75	0.40	0.042	0.495	0.035	0.01
94	7.83	0.43	0.045	0.492	0.037	0.01
95	7.92	0.43	0.045	0.490	0.037	0.01
96	8.00	0.43	0.045	0.488	0.037	0.01
97	8.08	0.50	0.052	0.486	0.043	0.01
98	8.17	0.50	0.052	0.483	0.043	0.01
99	8.25	0.50	0.052	0.481	0.043	0.01
100	8.33	0.50	0.052	0.479	0.043	0.01
101	8.42	0.50	0.052	0.477	0.043	0.01
102	8.50	0.50	0.052	0.474	0.043	0.01
103	8.58	0.53	0.056	0.472	0.046	0.01
104	8.67	0.53	0.056	0.470	0.046	0.01
105	8.75	0.53	0.056	0.468	0.046	0.01
106	8.83	0.57	0.059	0.465	0.049	0.01
107	8.92	0.57	0.059	0.463	0.049	0.01
108	9.00	0.57	0.059	0.461	0.049	0.01
109	9.08	0.63	0.066	0.459	0.055	0.01
110	9.17	0.63	0.066	0.457	0.055	0.01
111	9.25	0.63	0.066	0.454	0.055	0.01
112	9.33	0.67	0.070	0.452	0.058	0.01
113	9.42	0.67	0.070	0.450	0.058	0.01
114	9.50	0.67	0.070	0.448	0.058	0.01
115	9.58	0.70	0.073	0.446	0.061	0.01
116	9.67	0.70	0.073	0.444	0.061	0.01

117	9.75	0.70	0.073	0.442	0.061	0.01
118	9.83	0.73	0.077	0.439	0.063	0.01
119	9.92	0.73	0.077	0.437	0.063	0.01
120	10.00	0.73	0.077	0.435	0.063	0.01
121	10.08	0.50	0.052	0.433	0.043	0.01
122	10.17	0.50	0.052	0.431	0.043	0.01
123	10.25	0.50	0.052	0.429	0.043	0.01
124	10.33	0.50	0.052	0.427	0.043	0.01
125	10.42	0.50	0.052	0.425	0.043	0.01
126	10.50	0.50	0.052	0.423	0.043	0.01
127	10.58	0.67	0.070	0.421	0.058	0.01
128	10.67	0.67	0.070	0.419	0.058	0.01
129	10.75	0.67	0.070	0.417	0.058	0.01
130	10.83	0.67	0.070	0.415	0.058	0.01
131	10.92	0.67	0.070	0.412	0.058	0.01
132	11.00	0.67	0.070	0.410	0.058	0.01
133	11.08	0.63	0.066	0.408	0.055	0.01
134	11.17	0.63	0.066	0.406	0.055	0.01
135	11.25	0.63	0.066	0.404	0.055	0.01
136	11.33	0.63	0.066	0.402	0.055	0.01
137	11.42	0.63	0.066	0.400	0.055	0.01
138	11.50	0.63	0.066	0.398	0.055	0.01
139	11.58	0.57	0.059	0.396	0.049	0.01
140	11.67	0.57	0.059	0.394	0.049	0.01
141	11.75	0.57	0.059	0.393	0.049	0.01
142	11.83	0.60	0.063	0.391	0.052	0.01
143	11.92	0.60	0.063	0.389	0.052	0.01
144	12.00	0.60	0.063	0.387	0.052	0.01
145	12.08	0.83	0.087	0.385	0.072	0.02
146	12.17	0.83	0.087	0.383	0.072	0.02
147	12.25	0.83	0.087	0.381	0.072	0.02
148	12.33	0.87	0.091	0.379	0.075	0.02
149	12.42	0.87	0.091	0.377	0.075	0.02
150	12.50	0.87	0.091	0.375	0.075	0.02
151	12.58	0.93	0.098	0.373	0.081	0.02
152	12.67	0.93	0.098	0.371	0.081	0.02
153	12.75	0.93	0.098	0.370	0.081	0.02
154	12.83	0.97	0.101	0.368	0.084	0.02
155	12.92	0.97	0.101	0.366	0.084	0.02
156	13.00	0.97	0.101	0.364	0.084	0.02
157	13.08	1.13	0.119	0.362	0.098	0.02
158	13.17	1.13	0.119	0.360	0.098	0.02
159	13.25	1.13	0.119	0.358	0.098	0.02
160	13.33	1.13	0.119	0.357	0.098	0.02
161	13.42	1.13	0.119	0.355	0.098	0.02
162	13.50	1.13	0.119	0.353	0.098	0.02
163	13.58	0.77	0.080	0.351	0.066	0.01
164	13.67	0.77	0.080	0.349	0.066	0.01
165	13.75	0.77	0.080	0.348	0.066	0.01
166	13.83	0.77	0.080	0.346	0.066	0.01
167	13.92	0.77	0.080	0.344	0.066	0.01
168	14.00	0.77	0.080	0.342	0.066	0.01
169	14.08	0.90	0.094	0.341	0.078	0.02
170	14.17	0.90	0.094	0.339	0.078	0.02
171	14.25	0.90	0.094	0.337	0.078	0.02
172	14.33	0.87	0.091	0.335	0.075	0.02
173	14.42	0.87	0.091	0.334	0.075	0.02
174	14.50	0.87	0.091	0.332	0.075	0.02
175	14.58	0.87	0.091	0.330	0.075	0.02
176	14.67	0.87	0.091	0.329	0.075	0.02
177	14.75	0.87	0.091	0.327	0.075	0.02
178	14.83	0.83	0.087	0.325	0.072	0.02
179	14.92	0.83	0.087	0.324	0.072	0.02
180	15.00	0.83	0.087	0.322	0.072	0.02
181	15.08	0.80	0.084	0.320	0.069	0.01

182	15.17	0.80	0.084	0.319	0.069	0.01
183	15.25	0.80	0.084	0.317	0.069	0.01
184	15.33	0.77	0.080	0.315	0.066	0.01
185	15.42	0.77	0.080	0.314	0.066	0.01
186	15.50	0.77	0.080	0.312	0.066	0.01
187	15.58	0.63	0.066	0.311	0.055	0.01
188	15.67	0.63	0.066	0.309	0.055	0.01
189	15.75	0.63	0.066	0.307	0.055	0.01
190	15.83	0.63	0.066	0.306	0.055	0.01
191	15.92	0.63	0.066	0.304	0.055	0.01
192	16.00	0.63	0.066	0.303	0.055	0.01
193	16.08	0.13	0.014	0.301	0.012	0.00
194	16.17	0.13	0.014	0.300	0.012	0.00
195	16.25	0.13	0.014	0.298	0.012	0.00
196	16.33	0.13	0.014	0.297	0.012	0.00
197	16.42	0.13	0.014	0.295	0.012	0.00
198	16.50	0.13	0.014	0.294	0.012	0.00
199	16.58	0.10	0.010	0.292	0.009	0.00
200	16.67	0.10	0.010	0.291	0.009	0.00
201	16.75	0.10	0.010	0.289	0.009	0.00
202	16.83	0.10	0.010	0.288	0.009	0.00
203	16.92	0.10	0.010	0.286	0.009	0.00
204	17.00	0.10	0.010	0.285	0.009	0.00
205	17.08	0.17	0.017	0.283	0.014	0.00
206	17.17	0.17	0.017	0.282	0.014	0.00
207	17.25	0.17	0.017	0.280	0.014	0.00
208	17.33	0.17	0.017	0.279	0.014	0.00
209	17.42	0.17	0.017	0.278	0.014	0.00
210	17.50	0.17	0.017	0.276	0.014	0.00
211	17.58	0.17	0.017	0.275	0.014	0.00
212	17.67	0.17	0.017	0.273	0.014	0.00
213	17.75	0.17	0.017	0.272	0.014	0.00
214	17.83	0.13	0.014	0.271	0.012	0.00
215	17.92	0.13	0.014	0.269	0.012	0.00
216	18.00	0.13	0.014	0.268	0.012	0.00
217	18.08	0.13	0.014	0.267	0.012	0.00
218	18.17	0.13	0.014	0.265	0.012	0.00
219	18.25	0.13	0.014	0.264	0.012	0.00
220	18.33	0.13	0.014	0.263	0.012	0.00
221	18.42	0.13	0.014	0.262	0.012	0.00
222	18.50	0.13	0.014	0.260	0.012	0.00
223	18.58	0.10	0.010	0.259	0.009	0.00
224	18.67	0.10	0.010	0.258	0.009	0.00
225	18.75	0.10	0.010	0.257	0.009	0.00
226	18.83	0.07	0.007	0.255	0.006	0.00
227	18.92	0.07	0.007	0.254	0.006	0.00
228	19.00	0.07	0.007	0.253	0.006	0.00
229	19.08	0.10	0.010	0.252	0.009	0.00
230	19.17	0.10	0.010	0.251	0.009	0.00
231	19.25	0.10	0.010	0.249	0.009	0.00
232	19.33	0.13	0.014	0.248	0.012	0.00
233	19.42	0.13	0.014	0.247	0.012	0.00
234	19.50	0.13	0.014	0.246	0.012	0.00
235	19.58	0.10	0.010	0.245	0.009	0.00
236	19.67	0.10	0.010	0.244	0.009	0.00
237	19.75	0.10	0.010	0.243	0.009	0.00
238	19.83	0.07	0.007	0.241	0.006	0.00
239	19.92	0.07	0.007	0.240	0.006	0.00
240	20.00	0.07	0.007	0.239	0.006	0.00
241	20.08	0.10	0.010	0.238	0.009	0.00
242	20.17	0.10	0.010	0.237	0.009	0.00
243	20.25	0.10	0.010	0.236	0.009	0.00
244	20.33	0.10	0.010	0.235	0.009	0.00
245	20.42	0.10	0.010	0.234	0.009	0.00
246	20.50	0.10	0.010	0.233	0.009	0.00

247	20.58	0.10	0.010	0.232	0.009	0.00
248	20.67	0.10	0.010	0.231	0.009	0.00
249	20.75	0.10	0.010	0.230	0.009	0.00
250	20.83	0.07	0.007	0.229	0.006	0.00
251	20.92	0.07	0.007	0.228	0.006	0.00
252	21.00	0.07	0.007	0.227	0.006	0.00
253	21.08	0.10	0.010	0.227	0.009	0.00
254	21.17	0.10	0.010	0.226	0.009	0.00
255	21.25	0.10	0.010	0.225	0.009	0.00
256	21.33	0.07	0.007	0.224	0.006	0.00
257	21.42	0.07	0.007	0.223	0.006	0.00
258	21.50	0.07	0.007	0.222	0.006	0.00
259	21.58	0.10	0.010	0.221	0.009	0.00
260	21.67	0.10	0.010	0.221	0.009	0.00
261	21.75	0.10	0.010	0.220	0.009	0.00
262	21.83	0.07	0.007	0.219	0.006	0.00
263	21.92	0.07	0.007	0.218	0.006	0.00
264	22.00	0.07	0.007	0.218	0.006	0.00
265	22.08	0.10	0.010	0.217	0.009	0.00
266	22.17	0.10	0.010	0.216	0.009	0.00
267	22.25	0.10	0.010	0.216	0.009	0.00
268	22.33	0.07	0.007	0.215	0.006	0.00
269	22.42	0.07	0.007	0.214	0.006	0.00
270	22.50	0.07	0.007	0.214	0.006	0.00
271	22.58	0.07	0.007	0.213	0.006	0.00
272	22.67	0.07	0.007	0.212	0.006	0.00
273	22.75	0.07	0.007	0.212	0.006	0.00
274	22.83	0.07	0.007	0.211	0.006	0.00
275	22.92	0.07	0.007	0.211	0.006	0.00
276	23.00	0.07	0.007	0.210	0.006	0.00
277	23.08	0.07	0.007	0.210	0.006	0.00
278	23.17	0.07	0.007	0.209	0.006	0.00
279	23.25	0.07	0.007	0.209	0.006	0.00
280	23.33	0.07	0.007	0.208	0.006	0.00
281	23.42	0.07	0.007	0.208	0.006	0.00
282	23.50	0.07	0.007	0.208	0.006	0.00
283	23.58	0.07	0.007	0.207	0.006	0.00
284	23.67	0.07	0.007	0.207	0.006	0.00
285	23.75	0.07	0.007	0.207	0.006	0.00
286	23.83	0.07	0.007	0.206	0.006	0.00
287	23.92	0.07	0.007	0.206	0.006	0.00
288	24.00	0.07	0.007	0.206	0.006	0.00
Sum =		100.0		Sum =		1.8

Flood volume = Effective rainfall 0.15(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.72(In)
Total soil loss = 0.035(Ac.Ft)
Total rainfall = 0.87(In)
Flood volume = 324.9 Cubic Feet
Total soil loss = 1523.2 Cubic Feet

Storm Event 1 Effective Rainfall = 2.430(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.019	0.731	0.016	0.00
2	0.17	0.07	0.019	0.728	0.016	0.00
3	0.25	0.07	0.019	0.725	0.016	0.00
4	0.33	0.10	0.029	0.722	0.024	0.01
5	0.42	0.10	0.029	0.719	0.024	0.01
6	0.50	0.10	0.029	0.717	0.024	0.01
7	0.58	0.10	0.029	0.714	0.024	0.01
8	0.67	0.10	0.029	0.711	0.024	0.01
9	0.75	0.10	0.029	0.708	0.024	0.01

10	0.83	0.13	0.039	0.705	0.032	0.01
11	0.92	0.13	0.039	0.703	0.032	0.01
12	1.00	0.13	0.039	0.700	0.032	0.01
13	1.08	0.10	0.029	0.697	0.024	0.01
14	1.17	0.10	0.029	0.694	0.024	0.01
15	1.25	0.10	0.029	0.692	0.024	0.01
16	1.33	0.10	0.029	0.689	0.024	0.01
17	1.42	0.10	0.029	0.686	0.024	0.01
18	1.50	0.10	0.029	0.683	0.024	0.01
19	1.58	0.10	0.029	0.681	0.024	0.01
20	1.67	0.10	0.029	0.678	0.024	0.01
21	1.75	0.10	0.029	0.675	0.024	0.01
22	1.83	0.13	0.039	0.672	0.032	0.01
23	1.92	0.13	0.039	0.670	0.032	0.01
24	2.00	0.13	0.039	0.667	0.032	0.01
25	2.08	0.13	0.039	0.664	0.032	0.01
26	2.17	0.13	0.039	0.662	0.032	0.01
27	2.25	0.13	0.039	0.659	0.032	0.01
28	2.33	0.13	0.039	0.656	0.032	0.01
29	2.42	0.13	0.039	0.654	0.032	0.01
30	2.50	0.13	0.039	0.651	0.032	0.01
31	2.58	0.17	0.049	0.648	0.040	0.01
32	2.67	0.17	0.049	0.646	0.040	0.01
33	2.75	0.17	0.049	0.643	0.040	0.01
34	2.83	0.17	0.049	0.640	0.040	0.01
35	2.92	0.17	0.049	0.638	0.040	0.01
36	3.00	0.17	0.049	0.635	0.040	0.01
37	3.08	0.17	0.049	0.632	0.040	0.01
38	3.17	0.17	0.049	0.630	0.040	0.01
39	3.25	0.17	0.049	0.627	0.040	0.01
40	3.33	0.17	0.049	0.625	0.040	0.01
41	3.42	0.17	0.049	0.622	0.040	0.01
42	3.50	0.17	0.049	0.619	0.040	0.01
43	3.58	0.17	0.049	0.617	0.040	0.01
44	3.67	0.17	0.049	0.614	0.040	0.01
45	3.75	0.17	0.049	0.612	0.040	0.01
46	3.83	0.20	0.058	0.609	0.048	0.01
47	3.92	0.20	0.058	0.606	0.048	0.01
48	4.00	0.20	0.058	0.604	0.048	0.01
49	4.08	0.20	0.058	0.601	0.048	0.01
50	4.17	0.20	0.058	0.599	0.048	0.01
51	4.25	0.20	0.058	0.596	0.048	0.01
52	4.33	0.23	0.068	0.594	0.056	0.01
53	4.42	0.23	0.068	0.591	0.056	0.01
54	4.50	0.23	0.068	0.589	0.056	0.01
55	4.58	0.23	0.068	0.586	0.056	0.01
56	4.67	0.23	0.068	0.584	0.056	0.01
57	4.75	0.23	0.068	0.581	0.056	0.01
58	4.83	0.27	0.078	0.579	0.064	0.01
59	4.92	0.27	0.078	0.576	0.064	0.01
60	5.00	0.27	0.078	0.574	0.064	0.01
61	5.08	0.20	0.058	0.571	0.048	0.01
62	5.17	0.20	0.058	0.569	0.048	0.01
63	5.25	0.20	0.058	0.566	0.048	0.01
64	5.33	0.23	0.068	0.564	0.056	0.01
65	5.42	0.23	0.068	0.561	0.056	0.01
66	5.50	0.23	0.068	0.559	0.056	0.01
67	5.58	0.27	0.078	0.556	0.064	0.01
68	5.67	0.27	0.078	0.554	0.064	0.01
69	5.75	0.27	0.078	0.551	0.064	0.01
70	5.83	0.27	0.078	0.549	0.064	0.01
71	5.92	0.27	0.078	0.546	0.064	0.01
72	6.00	0.27	0.078	0.544	0.064	0.01
73	6.08	0.30	0.087	0.542	0.072	0.02
74	6.17	0.30	0.087	0.539	0.072	0.02

75	6.25	0.30	0.087	0.537	0.072	0.02
76	6.33	0.30	0.087	0.534	0.072	0.02
77	6.42	0.30	0.087	0.532	0.072	0.02
78	6.50	0.30	0.087	0.530	0.072	0.02
79	6.58	0.33	0.097	0.527	0.080	0.02
80	6.67	0.33	0.097	0.525	0.080	0.02
81	6.75	0.33	0.097	0.523	0.080	0.02
82	6.83	0.33	0.097	0.520	0.080	0.02
83	6.92	0.33	0.097	0.518	0.080	0.02
84	7.00	0.33	0.097	0.515	0.080	0.02
85	7.08	0.33	0.097	0.513	0.080	0.02
86	7.17	0.33	0.097	0.511	0.080	0.02
87	7.25	0.33	0.097	0.508	0.080	0.02
88	7.33	0.37	0.107	0.506	0.088	0.02
89	7.42	0.37	0.107	0.504	0.088	0.02
90	7.50	0.37	0.107	0.501	0.088	0.02
91	7.58	0.40	0.117	0.499	0.096	0.02
92	7.67	0.40	0.117	0.497	0.096	0.02
93	7.75	0.40	0.117	0.495	0.096	0.02
94	7.83	0.43	0.126	0.492	0.104	0.02
95	7.92	0.43	0.126	0.490	0.104	0.02
96	8.00	0.43	0.126	0.488	0.104	0.02
97	8.08	0.50	0.146	0.486	0.120	0.03
98	8.17	0.50	0.146	0.483	0.120	0.03
99	8.25	0.50	0.146	0.481	0.120	0.03
100	8.33	0.50	0.146	0.479	0.120	0.03
101	8.42	0.50	0.146	0.477	0.120	0.03
102	8.50	0.50	0.146	0.474	0.120	0.03
103	8.58	0.53	0.156	0.472	0.128	0.03
104	8.67	0.53	0.156	0.470	0.128	0.03
105	8.75	0.53	0.156	0.468	0.128	0.03
106	8.83	0.57	0.165	0.465	0.136	0.03
107	8.92	0.57	0.165	0.463	0.136	0.03
108	9.00	0.57	0.165	0.461	0.136	0.03
109	9.08	0.63	0.185	0.459	0.152	0.03
110	9.17	0.63	0.185	0.457	0.152	0.03
111	9.25	0.63	0.185	0.454	0.152	0.03
112	9.33	0.67	0.194	0.452	0.160	0.03
113	9.42	0.67	0.194	0.450	0.160	0.03
114	9.50	0.67	0.194	0.448	0.160	0.03
115	9.58	0.70	0.204	0.446	0.168	0.04
116	9.67	0.70	0.204	0.444	0.168	0.04
117	9.75	0.70	0.204	0.442	0.168	0.04
118	9.83	0.73	0.214	0.439	0.176	0.04
119	9.92	0.73	0.214	0.437	0.176	0.04
120	10.00	0.73	0.214	0.435	0.176	0.04
121	10.08	0.50	0.146	0.433	0.120	0.03
122	10.17	0.50	0.146	0.431	0.120	0.03
123	10.25	0.50	0.146	0.429	0.120	0.03
124	10.33	0.50	0.146	0.427	0.120	0.03
125	10.42	0.50	0.146	0.425	0.120	0.03
126	10.50	0.50	0.146	0.423	0.120	0.03
127	10.58	0.67	0.194	0.421	0.160	0.03
128	10.67	0.67	0.194	0.419	0.160	0.03
129	10.75	0.67	0.194	0.417	0.160	0.03
130	10.83	0.67	0.194	0.415	0.160	0.03
131	10.92	0.67	0.194	0.412	0.160	0.03
132	11.00	0.67	0.194	0.410	0.160	0.03
133	11.08	0.63	0.185	0.408	0.152	0.03
134	11.17	0.63	0.185	0.406	0.152	0.03
135	11.25	0.63	0.185	0.404	0.152	0.03
136	11.33	0.63	0.185	0.402	0.152	0.03
137	11.42	0.63	0.185	0.400	0.152	0.03
138	11.50	0.63	0.185	0.398	0.152	0.03
139	11.58	0.57	0.165	0.396	0.136	0.03

140	11.67	0.57	0.165	0.394	0.136	0.03
141	11.75	0.57	0.165	0.393	0.136	0.03
142	11.83	0.60	0.175	0.391	0.144	0.03
143	11.92	0.60	0.175	0.389	0.144	0.03
144	12.00	0.60	0.175	0.387	0.144	0.03
145	12.08	0.83	0.243	0.385	0.200	0.04
146	12.17	0.83	0.243	0.383	0.200	0.04
147	12.25	0.83	0.243	0.381	0.200	0.04
148	12.33	0.87	0.253	0.379	0.208	0.04
149	12.42	0.87	0.253	0.377	0.208	0.04
150	12.50	0.87	0.253	0.375	0.208	0.04
151	12.58	0.93	0.272	0.373	0.224	0.05
152	12.67	0.93	0.272	0.371	0.224	0.05
153	12.75	0.93	0.272	0.370	0.224	0.05
154	12.83	0.97	0.282	0.368	0.232	0.05
155	12.92	0.97	0.282	0.366	0.232	0.05
156	13.00	0.97	0.282	0.364	0.232	0.05
157	13.08	1.13	0.330	0.362	0.272	0.06
158	13.17	1.13	0.330	0.360	0.272	0.06
159	13.25	1.13	0.330	0.358	0.272	0.06
160	13.33	1.13	0.330	0.357	0.272	0.06
161	13.42	1.13	0.330	0.355	0.272	0.06
162	13.50	1.13	0.330	0.353	0.272	0.06
163	13.58	0.77	0.224	0.351	0.184	0.04
164	13.67	0.77	0.224	0.349	0.184	0.04
165	13.75	0.77	0.224	0.348	0.184	0.04
166	13.83	0.77	0.224	0.346	0.184	0.04
167	13.92	0.77	0.224	0.344	0.184	0.04
168	14.00	0.77	0.224	0.342	0.184	0.04
169	14.08	0.90	0.262	0.341	0.216	0.05
170	14.17	0.90	0.262	0.339	0.216	0.05
171	14.25	0.90	0.262	0.337	0.216	0.05
172	14.33	0.87	0.253	0.335	0.208	0.04
173	14.42	0.87	0.253	0.334	0.208	0.04
174	14.50	0.87	0.253	0.332	0.208	0.04
175	14.58	0.87	0.253	0.330	0.208	0.04
176	14.67	0.87	0.253	0.329	0.208	0.04
177	14.75	0.87	0.253	0.327	0.208	0.04
178	14.83	0.83	0.243	0.325	0.200	0.04
179	14.92	0.83	0.243	0.324	0.200	0.04
180	15.00	0.83	0.243	0.322	0.200	0.04
181	15.08	0.80	0.233	0.320	0.192	0.04
182	15.17	0.80	0.233	0.319	0.192	0.04
183	15.25	0.80	0.233	0.317	0.192	0.04
184	15.33	0.77	0.224	0.315	0.184	0.04
185	15.42	0.77	0.224	0.314	0.184	0.04
186	15.50	0.77	0.224	0.312	0.184	0.04
187	15.58	0.63	0.185	0.311	0.152	0.03
188	15.67	0.63	0.185	0.309	0.152	0.03
189	15.75	0.63	0.185	0.307	0.152	0.03
190	15.83	0.63	0.185	0.306	0.152	0.03
191	15.92	0.63	0.185	0.304	0.152	0.03
192	16.00	0.63	0.185	0.303	0.152	0.03
193	16.08	0.13	0.039	0.301	0.032	0.01
194	16.17	0.13	0.039	0.300	0.032	0.01
195	16.25	0.13	0.039	0.298	0.032	0.01
196	16.33	0.13	0.039	0.297	0.032	0.01
197	16.42	0.13	0.039	0.295	0.032	0.01
198	16.50	0.13	0.039	0.294	0.032	0.01
199	16.58	0.10	0.029	0.292	0.024	0.01
200	16.67	0.10	0.029	0.291	0.024	0.01
201	16.75	0.10	0.029	0.289	0.024	0.01
202	16.83	0.10	0.029	0.288	0.024	0.01
203	16.92	0.10	0.029	0.286	0.024	0.01
204	17.00	0.10	0.029	0.285	0.024	0.01

205	17.08	0.17	0.049	0.283	0.040	0.01
206	17.17	0.17	0.049	0.282	0.040	0.01
207	17.25	0.17	0.049	0.280	0.040	0.01
208	17.33	0.17	0.049	0.279	0.040	0.01
209	17.42	0.17	0.049	0.278	0.040	0.01
210	17.50	0.17	0.049	0.276	0.040	0.01
211	17.58	0.17	0.049	0.275	0.040	0.01
212	17.67	0.17	0.049	0.273	0.040	0.01
213	17.75	0.17	0.049	0.272	0.040	0.01
214	17.83	0.13	0.039	0.271	0.032	0.01
215	17.92	0.13	0.039	0.269	0.032	0.01
216	18.00	0.13	0.039	0.268	0.032	0.01
217	18.08	0.13	0.039	0.267	0.032	0.01
218	18.17	0.13	0.039	0.265	0.032	0.01
219	18.25	0.13	0.039	0.264	0.032	0.01
220	18.33	0.13	0.039	0.263	0.032	0.01
221	18.42	0.13	0.039	0.262	0.032	0.01
222	18.50	0.13	0.039	0.260	0.032	0.01
223	18.58	0.10	0.029	0.259	0.024	0.01
224	18.67	0.10	0.029	0.258	0.024	0.01
225	18.75	0.10	0.029	0.257	0.024	0.01
226	18.83	0.07	0.019	0.255	0.016	0.00
227	18.92	0.07	0.019	0.254	0.016	0.00
228	19.00	0.07	0.019	0.253	0.016	0.00
229	19.08	0.10	0.029	0.252	0.024	0.01
230	19.17	0.10	0.029	0.251	0.024	0.01
231	19.25	0.10	0.029	0.249	0.024	0.01
232	19.33	0.13	0.039	0.248	0.032	0.01
233	19.42	0.13	0.039	0.247	0.032	0.01
234	19.50	0.13	0.039	0.246	0.032	0.01
235	19.58	0.10	0.029	0.245	0.024	0.01
236	19.67	0.10	0.029	0.244	0.024	0.01
237	19.75	0.10	0.029	0.243	0.024	0.01
238	19.83	0.07	0.019	0.241	0.016	0.00
239	19.92	0.07	0.019	0.240	0.016	0.00
240	20.00	0.07	0.019	0.239	0.016	0.00
241	20.08	0.10	0.029	0.238	0.024	0.01
242	20.17	0.10	0.029	0.237	0.024	0.01
243	20.25	0.10	0.029	0.236	0.024	0.01
244	20.33	0.10	0.029	0.235	0.024	0.01
245	20.42	0.10	0.029	0.234	0.024	0.01
246	20.50	0.10	0.029	0.233	0.024	0.01
247	20.58	0.10	0.029	0.232	0.024	0.01
248	20.67	0.10	0.029	0.231	0.024	0.01
249	20.75	0.10	0.029	0.230	0.024	0.01
250	20.83	0.07	0.019	0.229	0.016	0.00
251	20.92	0.07	0.019	0.228	0.016	0.00
252	21.00	0.07	0.019	0.227	0.016	0.00
253	21.08	0.10	0.029	0.227	0.024	0.01
254	21.17	0.10	0.029	0.226	0.024	0.01
255	21.25	0.10	0.029	0.225	0.024	0.01
256	21.33	0.07	0.019	0.224	0.016	0.00
257	21.42	0.07	0.019	0.223	0.016	0.00
258	21.50	0.07	0.019	0.222	0.016	0.00
259	21.58	0.10	0.029	0.221	0.024	0.01
260	21.67	0.10	0.029	0.221	0.024	0.01
261	21.75	0.10	0.029	0.220	0.024	0.01
262	21.83	0.07	0.019	0.219	0.016	0.00
263	21.92	0.07	0.019	0.218	0.016	0.00
264	22.00	0.07	0.019	0.218	0.016	0.00
265	22.08	0.10	0.029	0.217	0.024	0.01
266	22.17	0.10	0.029	0.216	0.024	0.01
267	22.25	0.10	0.029	0.216	0.024	0.01
268	22.33	0.07	0.019	0.215	0.016	0.00
269	22.42	0.07	0.019	0.214	0.016	0.00

270	22.50	0.07	0.019	0.214	0.016	0.00
271	22.58	0.07	0.019	0.213	0.016	0.00
272	22.67	0.07	0.019	0.212	0.016	0.00
273	22.75	0.07	0.019	0.212	0.016	0.00
274	22.83	0.07	0.019	0.211	0.016	0.00
275	22.92	0.07	0.019	0.211	0.016	0.00
276	23.00	0.07	0.019	0.210	0.016	0.00
277	23.08	0.07	0.019	0.210	0.016	0.00
278	23.17	0.07	0.019	0.209	0.016	0.00
279	23.25	0.07	0.019	0.209	0.016	0.00
280	23.33	0.07	0.019	0.208	0.016	0.00
281	23.42	0.07	0.019	0.208	0.016	0.00
282	23.50	0.07	0.019	0.208	0.016	0.00
283	23.58	0.07	0.019	0.207	0.016	0.00
284	23.67	0.07	0.019	0.207	0.016	0.00
285	23.75	0.07	0.019	0.207	0.016	0.00
286	23.83	0.07	0.019	0.206	0.016	0.00
287	23.92	0.07	0.019	0.206	0.016	0.00
288	24.00	0.07	0.019	0.206	0.016	0.00
Sum =		100.0		Sum =		5.1

Flood volume = Effective rainfall 0.43(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 2.00(In)
Total soil loss = 0.097(Ac.Ft)
Total rainfall = 2.43(In)
Flood volume = 902.5 Cubic Feet
Total soil loss = 4231.2 Cubic Feet

Peak flow rate of this hydrograph = 0.034(CFS)

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TOTAL OF: 3 24 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|
0+15	0.0000	0.00	Q	|	|	|	|
0+20	0.0000	0.00	Q	|	|	|	|
0+25	0.0000	0.00	Q	|	|	|	|
0+30	0.0000	0.00	Q	|	|	|	|
0+35	0.0000	0.00	Q	|	|	|	|
0+40	0.0000	0.00	Q	|	|	|	|
0+45	0.0000	0.00	Q	|	|	|	|
0+50	0.0000	0.00	Q	|	|	|	|
0+55	0.0000	0.00	Q	|	|	|	|
1+ 0	0.0000	0.00	Q	|	|	|	|
1+ 5	0.0000	0.00	Q	|	|	|	|
1+10	0.0001	0.00	Q	|	|	|	|
1+15	0.0001	0.00	Q	|	|	|	|
1+20	0.0001	0.00	Q	|	|	|	|
1+25	0.0001	0.00	Q	|	|	|	|
1+30	0.0001	0.00	Q	|	|	|	|
1+35	0.0001	0.00	Q	|	|	|	|
1+40	0.0001	0.00	Q	|	|	|	|
1+45	0.0001	0.00	Q	|	|	|	|
1+50	0.0001	0.00	Q	|	|	|	|
1+55	0.0001	0.00	Q	|	|	|	|
2+ 0	0.0001	0.00	Q	|	|	|	|
2+ 5	0.0001	0.00	Q	|	|	|	|
2+10	0.0001	0.00	Q	|	|	|	|

2+15	0.0001	0.00	Q	|	|	|	|
2+20	0.0001	0.00	Q	|	|	|	|
2+25	0.0001	0.00	Q	|	|	|	|
2+30	0.0001	0.00	Q	|	|	|	|
2+35	0.0001	0.00	Q	|	|	|	|
2+40	0.0001	0.00	Q	|	|	|	|
2+45	0.0001	0.00	Q	|	|	|	|
2+50	0.0002	0.00	Q	|	|	|	|
2+55	0.0002	0.00	Q	|	|	|	|
3+ 0	0.0002	0.00	Q	|	|	|	|
3+ 5	0.0002	0.00	Q	|	|	|	|
3+10	0.0002	0.00	Q	|	|	|	|
3+15	0.0002	0.00	Q	|	|	|	|
3+20	0.0002	0.00	Q	|	|	|	|
3+25	0.0002	0.00	Q	|	|	|	|
3+30	0.0002	0.00	Q	|	|	|	|
3+35	0.0002	0.00	Q	|	|	|	|
3+40	0.0002	0.00	Q	|	|	|	|
3+45	0.0002	0.00	Q	|	|	|	|
3+50	0.0002	0.00	Q	|	|	|	|
3+55	0.0002	0.00	Q	|	|	|	|
4+ 0	0.0002	0.00	Q	|	|	|	|
4+ 5	0.0003	0.00	Q	|	|	|	|
4+10	0.0003	0.00	Q	|	|	|	|
4+15	0.0003	0.00	Q	|	|	|	|
4+20	0.0003	0.00	Q	|	|	|	|
4+25	0.0003	0.00	Q	|	|	|	|
4+30	0.0003	0.00	Q	|	|	|	|
4+35	0.0003	0.00	Q	|	|	|	|
4+40	0.0003	0.00	Q	|	|	|	|
4+45	0.0003	0.00	Q	|	|	|	|
4+50	0.0003	0.00	Q	|	|	|	|
4+55	0.0003	0.00	Q	|	|	|	|
5+ 0	0.0004	0.00	Q	|	|	|	|
5+ 5	0.0004	0.00	Q	|	|	|	|
5+10	0.0004	0.00	Q	|	|	|	|
5+15	0.0004	0.00	Q	|	|	|	|
5+20	0.0004	0.00	Q	|	|	|	|
5+25	0.0004	0.00	Q	|	|	|	|
5+30	0.0004	0.00	Q	|	|	|	|
5+35	0.0004	0.00	Q	|	|	|	|
5+40	0.0004	0.00	Q	|	|	|	|
5+45	0.0004	0.00	Q	|	|	|	|
5+50	0.0005	0.00	Q	|	|	|	|
5+55	0.0005	0.00	Q	|	|	|	|
6+ 0	0.0005	0.00	Q	|	|	|	|
6+ 5	0.0005	0.00	Q	|	|	|	|
6+10	0.0005	0.00	Q	|	|	|	|
6+15	0.0005	0.00	Q	|	|	|	|
6+20	0.0005	0.00	Q	|	|	|	|
6+25	0.0005	0.00	Q	|	|	|	|
6+30	0.0005	0.00	Q	|	|	|	|
6+35	0.0006	0.00	Q	|	|	|	|
6+40	0.0006	0.00	Q	|	|	|	|
6+45	0.0006	0.00	Q	|	|	|	|
6+50	0.0006	0.00	Q	|	|	|	|
6+55	0.0006	0.00	Q	|	|	|	|
7+ 0	0.0006	0.00	Q	|	|	|	|
7+ 5	0.0006	0.00	Q	|	|	|	|
7+10	0.0006	0.00	Q	|	|	|	|
7+15	0.0007	0.00	Q	|	|	|	|
7+20	0.0007	0.00	Q	|	|	|	|
7+25	0.0007	0.00	Q	|	|	|	|
7+30	0.0007	0.00	Q	|	|	|	|
7+35	0.0007	0.00	Q	|	|	|	|

7+40	0.0007	0.00	Q	|	|	|	|
7+45	0.0007	0.00	Q	|	|	|	|
7+50	0.0008	0.00	Q	|	|	|	|
7+55	0.0008	0.00	Q	|	|	|	|
8+ 0	0.0008	0.00	Q	|	|	|	|
8+ 5	0.0008	0.00	QV	|	|	|	|
8+10	0.0008	0.00	QV	|	|	|	|
8+15	0.0009	0.00	QV	|	|	|	|
8+20	0.0009	0.00	QV	|	|	|	|
8+25	0.0009	0.00	QV	|	|	|	|
8+30	0.0009	0.00	QV	|	|	|	|
8+35	0.0009	0.00	QV	|	|	|	|
8+40	0.0010	0.00	QV	|	|	|	|
8+45	0.0010	0.00	QV	|	|	|	|
8+50	0.0010	0.00	QV	|	|	|	|
8+55	0.0010	0.00	QV	|	|	|	|
9+ 0	0.0010	0.00	QV	|	|	|	|
9+ 5	0.0011	0.00	QV	|	|	|	|
9+10	0.0011	0.00	QV	|	|	|	|
9+15	0.0011	0.00	QV	|	|	|	|
9+20	0.0011	0.00	QV	|	|	|	|
9+25	0.0012	0.00	QV	|	|	|	|
9+30	0.0012	0.00	QV	|	|	|	|
9+35	0.0012	0.00	QV	|	|	|	|
9+40	0.0013	0.00	QV	|	|	|	|
9+45	0.0013	0.00	QV	|	|	|	|
9+50	0.0013	0.00	QV	|	|	|	|
9+55	0.0013	0.00	QV	|	|	|	|
10+ 0	0.0014	0.00	QV	|	|	|	|
10+ 5	0.0014	0.00	QV	|	|	|	|
10+10	0.0014	0.00	QV	|	|	|	|
10+15	0.0014	0.00	QV	|	|	|	|
10+20	0.0014	0.00	QV	|	|	|	|
10+25	0.0015	0.00	QV	|	|	|	|
10+30	0.0015	0.00	QV	|	|	|	|
10+35	0.0015	0.00	QV	|	|	|	|
10+40	0.0015	0.00	QV	|	|	|	|
10+45	0.0016	0.00	QV	|	|	|	|
10+50	0.0016	0.00	QV	|	|	|	|
10+55	0.0016	0.00	Q V	|	|	|	|
11+ 0	0.0016	0.00	Q V	|	|	|	|
11+ 5	0.0017	0.00	Q V	|	|	|	|
11+10	0.0017	0.00	Q V	|	|	|	|
11+15	0.0017	0.00	Q V	|	|	|	|
11+20	0.0017	0.00	Q V	|	|	|	|
11+25	0.0018	0.00	Q V	|	|	|	|
11+30	0.0018	0.00	Q V	|	|	|	|
11+35	0.0018	0.00	Q V	|	|	|	|
11+40	0.0018	0.00	Q V	|	|	|	|
11+45	0.0019	0.00	Q V	|	|	|	|
11+50	0.0019	0.00	Q V	|	|	|	|
11+55	0.0019	0.00	Q V	|	|	|	|
12+ 0	0.0019	0.00	Q V	|	|	|	|
12+ 5	0.0020	0.00	Q V	|	|	|	|
12+10	0.0020	0.00	Q V	|	|	|	|
12+15	0.0020	0.00	Q V	|	|	|	|
12+20	0.0021	0.00	Q V	|	|	|	|
12+25	0.0021	0.00	Q V	|	|	|	|
12+30	0.0021	0.00	Q V	|	|	|	|
12+35	0.0022	0.01	Q V	|	|	|	|
12+40	0.0022	0.01	Q V	|	|	|	|
12+45	0.0022	0.01	Q V	|	|	|	|
12+50	0.0023	0.01	Q V	|	|	|	|
12+55	0.0023	0.01	Q V	|	|	|	|
13+ 0	0.0024	0.01	Q V	|	|	|	|

13+ 5	0.0024	0.01	Q	V	|	|	|	|
13+10	0.0024	0.01	Q	V	|	|	|	|
13+15	0.0025	0.01	Q	V	|	|	|	|
13+20	0.0025	0.01	Q	V	|	|	|	|
13+25	0.0026	0.01	Q	V	|	|	|	|
13+30	0.0026	0.01	Q	V	|	|	|	|
13+35	0.0027	0.01	Q	V	|	|	|	|
13+40	0.0027	0.00	Q	V	|	|	|	|
13+45	0.0027	0.00	Q	V	|	|	|	|
13+50	0.0027	0.00	Q	V	|	|	|	|
13+55	0.0028	0.00	Q	V	|	|	|	|
14+ 0	0.0028	0.00	Q	V	|	|	|	|
14+ 5	0.0028	0.00	Q	V	|	|	|	|
14+10	0.0029	0.01	Q	V	|	|	|	|
14+15	0.0029	0.01	Q	V	|	|	|	|
14+20	0.0029	0.01	Q	V	|	|	|	|
14+25	0.0030	0.00	Q	V	|	|	|	|
14+30	0.0030	0.00	Q	V	|	|	|	|
14+35	0.0030	0.00	Q	V	|	|	|	|
14+40	0.0031	0.00	Q	V	|	|	|	|
14+45	0.0031	0.00	Q	V	|	|	|	|
14+50	0.0031	0.00	Q	V	|	|	|	|
14+55	0.0032	0.00	Q	V	|	|	|	|
15+ 0	0.0032	0.00	Q	V	|	|	|	|
15+ 5	0.0032	0.00	Q	V	|	|	|	|
15+10	0.0033	0.00	Q	V	|	|	|	|
15+15	0.0033	0.00	Q	V	|	|	|	|
15+20	0.0033	0.00	Q	V	|	|	|	|
15+25	0.0034	0.00	Q	V	|	|	|	|
15+30	0.0034	0.00	Q	V	|	|	|	|
15+35	0.0034	0.00	Q	V	|	|	|	|
15+40	0.0034	0.00	Q	V	|	|	|	|
15+45	0.0035	0.00	Q	V	|	|	|	|
15+50	0.0035	0.00	Q	V	|	|	|	|
15+55	0.0035	0.00	Q	V	|	|	|	|
16+ 0	0.0035	0.00	Q	V	|	|	|	|
16+ 5	0.0036	0.00	Q	V	|	|	|	|
16+10	0.0036	0.00	Q	V	|	|	|	|
16+15	0.0036	0.00	Q	V	|	|	|	|
16+20	0.0036	0.00	Q	V	|	|	|	|
16+25	0.0036	0.00	Q	V	|	|	|	|
16+30	0.0036	0.00	Q	V	|	|	|	|
16+35	0.0036	0.00	Q	V	|	|	|	|
16+40	0.0036	0.00	Q	V	|	|	|	|
16+45	0.0036	0.00	Q	V	|	|	|	|
16+50	0.0036	0.00	Q	V	|	|	|	|
16+55	0.0036	0.00	Q	V	|	|	|	|
17+ 0	0.0036	0.00	Q	V	|	|	|	|
17+ 5	0.0036	0.00	Q	V	|	|	|	|
17+10	0.0036	0.00	Q	V	|	|	|	|
17+15	0.0036	0.00	Q	V	|	|	|	|
17+20	0.0036	0.00	Q	V	|	|	|	|
17+25	0.0036	0.00	Q	V	|	|	|	|
17+30	0.0037	0.00	Q	V	|	|	|	|
17+35	0.0037	0.00	Q	V	|	|	|	|
17+40	0.0037	0.00	Q	V	|	|	|	|
17+45	0.0037	0.00	Q	V	|	|	|	|
17+50	0.0037	0.00	Q	V	|	|	|	|
17+55	0.0037	0.00	Q	V	|	|	|	|
18+ 0	0.0037	0.00	Q	V	|	|	|	|
18+ 5	0.0037	0.00	Q	V	|	|	|	|
18+10	0.0037	0.00	Q	V	|	|	|	|
18+15	0.0037	0.00	Q	V	|	|	|	|
18+20	0.0037	0.00	Q	V	|	|	|	|
18+25	0.0037	0.00	Q	V	|	|	|	|

18+30	0.0037	0.00	Q	V	|	|	|	|
18+35	0.0037	0.00	Q	V	|	|	|	|
18+40	0.0037	0.00	Q	V	|	|	|	|
18+45	0.0037	0.00	Q	V	|	|	|	|
18+50	0.0037	0.00	Q	V	|	|	|	|
18+55	0.0037	0.00	Q	V	|	|	|	|
19+ 0	0.0037	0.00	Q	V	|	|	|	|
19+ 5	0.0037	0.00	Q	V	|	|	|	|
19+10	0.0037	0.00	Q	V	|	|	|	|
19+15	0.0037	0.00	Q	V	|	|	|	|
19+20	0.0038	0.00	Q	V	|	|	|	|
19+25	0.0038	0.00	Q	V	|	|	|	|
19+30	0.0038	0.00	Q	V	|	|	|	|
19+35	0.0038	0.00	Q	V	|	|	|	|
19+40	0.0038	0.00	Q	V	|	|	|	|
19+45	0.0038	0.00	Q	V	|	|	|	|
19+50	0.0038	0.00	Q	V	|	|	|	|
19+55	0.0038	0.00	Q	V	|	|	|	|
20+ 0	0.0038	0.00	Q	V	|	|	|	|
20+ 5	0.0038	0.00	Q	V	|	|	|	|
20+10	0.0038	0.00	Q	V	|	|	|	|
20+15	0.0038	0.00	Q	V	|	|	|	|
20+20	0.0038	0.00	Q	V	|	|	|	|
20+25	0.0038	0.00	Q	V	|	|	|	|
20+30	0.0038	0.00	Q	V	|	|	|	|
20+35	0.0038	0.00	Q	V	|	|	|	|
20+40	0.0038	0.00	Q	V	|	|	|	|
20+45	0.0038	0.00	Q	V	|	|	|	|
20+50	0.0038	0.00	Q	V	|	|	|	|
20+55	0.0038	0.00	Q	V	|	|	|	|
21+ 0	0.0038	0.00	Q	V	|	|	|	|
21+ 5	0.0038	0.00	Q	V	|	|	|	|
21+10	0.0038	0.00	Q	V	|	|	|	|
21+15	0.0038	0.00	Q	V	|	|	|	|
21+20	0.0038	0.00	Q	V	|	|	|	|
21+25	0.0038	0.00	Q	V	|	|	|	|
21+30	0.0038	0.00	Q	V	|	|	|	|
21+35	0.0039	0.00	Q	V	|	|	|	|
21+40	0.0039	0.00	Q	V	|	|	|	|
21+45	0.0039	0.00	Q	V	|	|	|	|
21+50	0.0039	0.00	Q	V	|	|	|	|
21+55	0.0039	0.00	Q	V	|	|	|	|
22+ 0	0.0039	0.00	Q	V	|	|	|	|
22+ 5	0.0039	0.00	Q	V	|	|	|	|
22+10	0.0039	0.00	Q	V	|	|	|	|
22+15	0.0039	0.00	Q	V	|	|	|	|
22+20	0.0039	0.00	Q	V	|	|	|	|
22+25	0.0039	0.00	Q	V	|	|	|	|
22+30	0.0039	0.00	Q	V	|	|	|	|
22+35	0.0039	0.00	Q	V	|	|	|	|
22+40	0.0039	0.00	Q	V	|	|	|	|
22+45	0.0039	0.00	Q	V	|	|	|	|
22+50	0.0039	0.00	Q	V	|	|	|	|
22+55	0.0039	0.00	Q	V	|	|	|	|
23+ 0	0.0039	0.00	Q	V	|	|	|	|
23+ 5	0.0039	0.00	Q	V	|	|	|	|
23+10	0.0039	0.00	Q	V	|	|	|	|
23+15	0.0039	0.00	Q	V	|	|	|	|
23+20	0.0039	0.00	Q	V	|	|	|	|
23+25	0.0039	0.00	Q	V	|	|	|	|
23+30	0.0039	0.00	Q	V	|	|	|	|
23+35	0.0039	0.00	Q	V	|	|	|	|
23+40	0.0039	0.00	Q	V	|	|	|	|
23+45	0.0039	0.00	Q	V	|	|	|	|
23+50	0.0039	0.00	Q	V	|	|	|	|

23+55	0.0039	0.00	Q	V	|	|	|	|
24+ 0	0.0039	0.00	Q	V	|	|	|	|
24+ 5	0.0039	0.00	Q	V	|	|	|	|
24+10	0.0039	0.00	Q	V	|	|	|	|
24+15	0.0039	0.00	Q	V	|	|	|	|
24+20	0.0040	0.00	Q	V	|	|	|	|
24+25	0.0040	0.00	Q	V	|	|	|	|
24+30	0.0040	0.00	Q	V	|	|	|	|
24+35	0.0040	0.00	Q	V	|	|	|	|
24+40	0.0040	0.00	Q	V	|	|	|	|
24+45	0.0040	0.00	Q	V	|	|	|	|
24+50	0.0040	0.00	Q	V	|	|	|	|
24+55	0.0040	0.00	Q	V	|	|	|	|
25+ 0	0.0040	0.00	Q	V	|	|	|	|
25+ 5	0.0040	0.00	Q	V	|	|	|	|
25+10	0.0040	0.00	Q	V	|	|	|	|
25+15	0.0040	0.00	Q	V	|	|	|	|
25+20	0.0041	0.00	Q	V	|	|	|	|
25+25	0.0041	0.00	Q	V	|	|	|	|
25+30	0.0041	0.00	Q	V	|	|	|	|
25+35	0.0041	0.00	Q	V	|	|	|	|
25+40	0.0041	0.00	Q	V	|	|	|	|
25+45	0.0041	0.00	Q	V	|	|	|	|
25+50	0.0041	0.00	Q	V	|	|	|	|
25+55	0.0041	0.00	Q	V	|	|	|	|
26+ 0	0.0041	0.00	Q	V	|	|	|	|
26+ 5	0.0041	0.00	Q	V	|	|	|	|
26+10	0.0041	0.00	Q	V	|	|	|	|
26+15	0.0041	0.00	Q	V	|	|	|	|
26+20	0.0042	0.00	Q	V	|	|	|	|
26+25	0.0042	0.00	Q	V	|	|	|	|
26+30	0.0042	0.00	Q	V	|	|	|	|
26+35	0.0042	0.00	Q	V	|	|	|	|
26+40	0.0042	0.00	Q	V	|	|	|	|
26+45	0.0042	0.00	Q	V	|	|	|	|
26+50	0.0042	0.00	Q	V	|	|	|	|
26+55	0.0042	0.00	Q	V	|	|	|	|
27+ 0	0.0043	0.00	Q	V	|	|	|	|
27+ 5	0.0043	0.00	Q	V	|	|	|	|
27+10	0.0043	0.00	Q	V	|	|	|	|
27+15	0.0043	0.00	Q	V	|	|	|	|
27+20	0.0043	0.00	Q	V	|	|	|	|
27+25	0.0043	0.00	Q	V	|	|	|	|
27+30	0.0043	0.00	Q	V	|	|	|	|
27+35	0.0043	0.00	Q	V	|	|	|	|
27+40	0.0044	0.00	Q	V	|	|	|	|
27+45	0.0044	0.00	Q	V	|	|	|	|
27+50	0.0044	0.00	Q	V	|	|	|	|
27+55	0.0044	0.00	Q	V	|	|	|	|
28+ 0	0.0044	0.00	Q	V	|	|	|	|
28+ 5	0.0044	0.00	Q	V	|	|	|	|
28+10	0.0044	0.00	Q	V	|	|	|	|
28+15	0.0045	0.00	Q	V	|	|	|	|
28+20	0.0045	0.00	Q	V	|	|	|	|
28+25	0.0045	0.00	Q	V	|	|	|	|
28+30	0.0045	0.00	Q	V	|	|	|	|
28+35	0.0045	0.00	Q	V	|	|	|	|
28+40	0.0045	0.00	Q	V	|	|	|	|
28+45	0.0046	0.00	Q	V	|	|	|	|
28+50	0.0046	0.00	Q	V	|	|	|	|
28+55	0.0046	0.00	Q	V	|	|	|	|
29+ 0	0.0046	0.00	Q	V	|	|	|	|
29+ 5	0.0046	0.00	Q	V	|	|	|	|
29+10	0.0046	0.00	Q	V	|	|	|	|
29+15	0.0047	0.00	Q	V	|	|	|	|

29+20	0.0047	0.00	Q	V	|	|	|	|
29+25	0.0047	0.00	Q	V	|	|	|	|
29+30	0.0047	0.00	Q	V	|	|	|	|
29+35	0.0047	0.00	Q	V	|	|	|	|
29+40	0.0048	0.00	Q	V	|	|	|	|
29+45	0.0048	0.00	Q	V	|	|	|	|
29+50	0.0048	0.00	Q	V	|	|	|	|
29+55	0.0048	0.00	Q	V	|	|	|	|
30+ 0	0.0048	0.00	Q	V	|	|	|	|
30+ 5	0.0049	0.00	Q	V	|	|	|	|
30+10	0.0049	0.00	Q	V	|	|	|	|
30+15	0.0049	0.00	Q	V	|	|	|	|
30+20	0.0049	0.00	Q	V	|	|	|	|
30+25	0.0049	0.00	Q	V	|	|	|	|
30+30	0.0050	0.00	Q	V	|	|	|	|
30+35	0.0050	0.00	Q	V	|	|	|	|
30+40	0.0050	0.00	Q	V	|	|	|	|
30+45	0.0050	0.00	Q	V	|	|	|	|
30+50	0.0051	0.00	Q	V	|	|	|	|
30+55	0.0051	0.00	Q	V	|	|	|	|
31+ 0	0.0051	0.00	Q	V	|	|	|	|
31+ 5	0.0051	0.00	Q	V	|	|	|	|
31+10	0.0052	0.00	Q	V	|	|	|	|
31+15	0.0052	0.00	Q	V	|	|	|	|
31+20	0.0052	0.00	Q	V	|	|	|	|
31+25	0.0052	0.00	Q	V	|	|	|	|
31+30	0.0053	0.00	Q	V	|	|	|	|
31+35	0.0053	0.00	Q	V	|	|	|	|
31+40	0.0053	0.00	Q	V	|	|	|	|
31+45	0.0054	0.00	Q	V	|	|	|	|
31+50	0.0054	0.00	Q	V	|	|	|	|
31+55	0.0054	0.00	Q	V	|	|	|	|
32+ 0	0.0055	0.00	Q	V	|	|	|	|
32+ 5	0.0055	0.01	Q	V	|	|	|	|
32+10	0.0055	0.01	Q	V	|	|	|	|
32+15	0.0056	0.01	Q	V	|	|	|	|
32+20	0.0056	0.01	Q	V	|	|	|	|
32+25	0.0056	0.01	Q	V	|	|	|	|
32+30	0.0057	0.01	Q	V	|	|	|	|
32+35	0.0057	0.01	Q	V	|	|	|	|
32+40	0.0058	0.01	Q	V	|	|	|	|
32+45	0.0058	0.01	Q	V	|	|	|	|
32+50	0.0058	0.01	Q	V	|	|	|	|
32+55	0.0059	0.01	Q	V	|	|	|	|
33+ 0	0.0059	0.01	Q	V	|	|	|	|
33+ 5	0.0060	0.01	Q	V	|	|	|	|
33+10	0.0060	0.01	Q	V	|	|	|	|
33+15	0.0061	0.01	Q	V	|	|	|	|
33+20	0.0061	0.01	Q	V	|	|	|	|
33+25	0.0062	0.01	Q	V	|	|	|	|
33+30	0.0062	0.01	Q	V	|	|	|	|
33+35	0.0063	0.01	Q	V	|	|	|	|
33+40	0.0063	0.01	Q	V	|	|	|	|
33+45	0.0064	0.01	Q	V	|	|	|	|
33+50	0.0064	0.01	Q	V	|	|	|	|
33+55	0.0065	0.01	Q	V	|	|	|	|
34+ 0	0.0065	0.01	Q	V	|	|	|	|
34+ 5	0.0066	0.01	Q	V	|	|	|	|
34+10	0.0066	0.01	Q	V	|	|	|	|
34+15	0.0066	0.01	Q	V	|	|	|	|
34+20	0.0067	0.01	Q	V	|	|	|	|
34+25	0.0067	0.01	Q	V	|	|	|	|
34+30	0.0068	0.01	Q	V	|	|	|	|
34+35	0.0068	0.01	Q	V	|	|	|	|
34+40	0.0068	0.01	Q	V	|	|	|	|

34+45	0.0069	0.01	Q	V	|	|	|	|
34+50	0.0069	0.01	Q	V	|	|	|	|
34+55	0.0070	0.01	Q	V	|	|	|	|
35+ 0	0.0070	0.01	Q	V	|	|	|	|
35+ 5	0.0071	0.01	Q	V	|	|	|	|
35+10	0.0071	0.01	Q	V	|	|	|	|
35+15	0.0072	0.01	Q	V	|	|	|	|
35+20	0.0072	0.01	Q	V	|	|	|	|
35+25	0.0073	0.01	Q	V	|	|	|	|
35+30	0.0073	0.01	Q	V	|	|	|	|
35+35	0.0074	0.01	Q	V	|	|	|	|
35+40	0.0074	0.01	Q	V	|	|	|	|
35+45	0.0075	0.01	Q	V	|	|	|	|
35+50	0.0075	0.01	Q	V	|	|	|	|
35+55	0.0075	0.01	Q	V	|	|	|	|
36+ 0	0.0076	0.01	Q	V	|	|	|	|
36+ 5	0.0076	0.01	Q	V	|	|	|	|
36+10	0.0077	0.01	Q	V	|	|	|	|
36+15	0.0078	0.01	Q	V	|	|	|	|
36+20	0.0078	0.01	Q	V	|	|	|	|
36+25	0.0079	0.01	Q	V	|	|	|	|
36+30	0.0080	0.01	Q	V	|	|	|	|
36+35	0.0080	0.01	Q	V	|	|	|	|
36+40	0.0081	0.01	Q	V	|	|	|	|
36+45	0.0082	0.01	Q	V	|	|	|	|
36+50	0.0082	0.01	Q	V	|	|	|	|
36+55	0.0083	0.01	Q	V	|	|	|	|
37+ 0	0.0084	0.01	Q	V	|	|	|	|
37+ 5	0.0085	0.01	Q	V	|	|	|	|
37+10	0.0086	0.01	Q	V	|	|	|	|
37+15	0.0086	0.01	Q	V	|	|	|	|
37+20	0.0087	0.01	Q	V	|	|	|	|
37+25	0.0088	0.01	Q	V	|	|	|	|
37+30	0.0089	0.01	Q	|V	|	|	|	|
37+35	0.0090	0.01	Q	|V	|	|	|	|
37+40	0.0090	0.01	Q	|V	|	|	|	|
37+45	0.0091	0.01	Q	|V	|	|	|	|
37+50	0.0091	0.01	Q	|V	|	|	|	|
37+55	0.0092	0.01	Q	|V	|	|	|	|
38+ 0	0.0092	0.01	Q	|V	|	|	|	|
38+ 5	0.0093	0.01	Q	|V	|	|	|	|
38+10	0.0094	0.01	Q	|V	|	|	|	|
38+15	0.0094	0.01	Q	|V	|	|	|	|
38+20	0.0095	0.01	Q	|V	|	|	|	|
38+25	0.0096	0.01	Q	|V	|	|	|	|
38+30	0.0096	0.01	Q	| V	|	|	|	|
38+35	0.0097	0.01	Q	| V	|	|	|	|
38+40	0.0098	0.01	Q	| V	|	|	|	|
38+45	0.0098	0.01	Q	| V	|	|	|	|
38+50	0.0099	0.01	Q	| V	|	|	|	|
38+55	0.0100	0.01	Q	| V	|	|	|	|
39+ 0	0.0100	0.01	Q	| V	|	|	|	|
39+ 5	0.0101	0.01	Q	| V	|	|	|	|
39+10	0.0101	0.01	Q	| V	|	|	|	|
39+15	0.0102	0.01	Q	| V	|	|	|	|
39+20	0.0103	0.01	Q	| V	|	|	|	|
39+25	0.0103	0.01	Q	| V	|	|	|	|
39+30	0.0104	0.01	Q	| V	|	|	|	|
39+35	0.0104	0.01	Q	| V	|	|	|	|
39+40	0.0105	0.01	Q	| V	|	|	|	|
39+45	0.0105	0.01	Q	| V	|	|	|	|
39+50	0.0106	0.01	Q	| V	|	|	|	|
39+55	0.0106	0.01	Q	| V	|	|	|	|
40+ 0	0.0107	0.01	Q	| V	|	|	|	|
40+ 5	0.0107	0.00	Q	| V	|	|	|	|

40+10	0.0107	0.00	Q	| V	|	|	|
40+15	0.0107	0.00	Q	| V	|	|	|
40+20	0.0107	0.00	Q	| V	|	|	|
40+25	0.0107	0.00	Q	| V	|	|	|
40+30	0.0107	0.00	Q	| V	|	|	|
40+35	0.0107	0.00	Q	| V	|	|	|
40+40	0.0107	0.00	Q	| V	|	|	|
40+45	0.0108	0.00	Q	| V	|	|	|
40+50	0.0108	0.00	Q	| V	|	|	|
40+55	0.0108	0.00	Q	| V	|	|	|
41+ 0	0.0108	0.00	Q	| V	|	|	|
41+ 5	0.0108	0.00	Q	| V	|	|	|
41+10	0.0108	0.00	Q	| V	|	|	|
41+15	0.0108	0.00	Q	| V	|	|	|
41+20	0.0108	0.00	Q	| V	|	|	|
41+25	0.0108	0.00	Q	| V	|	|	|
41+30	0.0109	0.00	Q	| V	|	|	|
41+35	0.0109	0.00	Q	| V	|	|	|
41+40	0.0109	0.00	Q	| V	|	|	|
41+45	0.0109	0.00	Q	| V	|	|	|
41+50	0.0109	0.00	Q	| V	|	|	|
41+55	0.0109	0.00	Q	| V	|	|	|
42+ 0	0.0109	0.00	Q	| V	|	|	|
42+ 5	0.0109	0.00	Q	| V	|	|	|
42+10	0.0109	0.00	Q	| V	|	|	|
42+15	0.0110	0.00	Q	| V	|	|	|
42+20	0.0110	0.00	Q	| V	|	|	|
42+25	0.0110	0.00	Q	| V	|	|	|
42+30	0.0110	0.00	Q	| V	|	|	|
42+35	0.0110	0.00	Q	| V	|	|	|
42+40	0.0110	0.00	Q	| V	|	|	|
42+45	0.0110	0.00	Q	| V	|	|	|
42+50	0.0110	0.00	Q	| V	|	|	|
42+55	0.0110	0.00	Q	| V	|	|	|
43+ 0	0.0110	0.00	Q	| V	|	|	|
43+ 5	0.0110	0.00	Q	| V	|	|	|
43+10	0.0110	0.00	Q	| V	|	|	|
43+15	0.0110	0.00	Q	| V	|	|	|
43+20	0.0110	0.00	Q	| V	|	|	|
43+25	0.0111	0.00	Q	| V	|	|	|
43+30	0.0111	0.00	Q	| V	|	|	|
43+35	0.0111	0.00	Q	| V	|	|	|
43+40	0.0111	0.00	Q	| V	|	|	|
43+45	0.0111	0.00	Q	| V	|	|	|
43+50	0.0111	0.00	Q	| V	|	|	|
43+55	0.0111	0.00	Q	| V	|	|	|
44+ 0	0.0111	0.00	Q	| V	|	|	|
44+ 5	0.0111	0.00	Q	| V	|	|	|
44+10	0.0111	0.00	Q	| V	|	|	|
44+15	0.0111	0.00	Q	| V	|	|	|
44+20	0.0111	0.00	Q	| V	|	|	|
44+25	0.0111	0.00	Q	| V	|	|	|
44+30	0.0112	0.00	Q	| V	|	|	|
44+35	0.0112	0.00	Q	| V	|	|	|
44+40	0.0112	0.00	Q	| V	|	|	|
44+45	0.0112	0.00	Q	| V	|	|	|
44+50	0.0112	0.00	Q	| V	|	|	|
44+55	0.0112	0.00	Q	| V	|	|	|
45+ 0	0.0112	0.00	Q	| V	|	|	|
45+ 5	0.0112	0.00	Q	| V	|	|	|
45+10	0.0112	0.00	Q	| V	|	|	|
45+15	0.0112	0.00	Q	| V	|	|	|
45+20	0.0112	0.00	Q	| V	|	|	|
45+25	0.0112	0.00	Q	| V	|	|	|
45+30	0.0112	0.00	Q	| V	|	|	|

45+35	0.0112	0.00	Q	| V	|	|	|
45+40	0.0112	0.00	Q	| V	|	|	|
45+45	0.0112	0.00	Q	| V	|	|	|
45+50	0.0113	0.00	Q	| V	|	|	|
45+55	0.0113	0.00	Q	| V	|	|	|
46+ 0	0.0113	0.00	Q	| V	|	|	|
46+ 5	0.0113	0.00	Q	| V	|	|	|
46+10	0.0113	0.00	Q	| V	|	|	|
46+15	0.0113	0.00	Q	| V	|	|	|
46+20	0.0113	0.00	Q	| V	|	|	|
46+25	0.0113	0.00	Q	| V	|	|	|
46+30	0.0113	0.00	Q	| V	|	|	|
46+35	0.0113	0.00	Q	| V	|	|	|
46+40	0.0113	0.00	Q	| V	|	|	|
46+45	0.0113	0.00	Q	| V	|	|	|
46+50	0.0113	0.00	Q	| V	|	|	|
46+55	0.0113	0.00	Q	| V	|	|	|
47+ 0	0.0113	0.00	Q	| V	|	|	|
47+ 5	0.0113	0.00	Q	| V	|	|	|
47+10	0.0113	0.00	Q	| V	|	|	|
47+15	0.0113	0.00	Q	| V	|	|	|
47+20	0.0114	0.00	Q	| V	|	|	|
47+25	0.0114	0.00	Q	| V	|	|	|
47+30	0.0114	0.00	Q	| V	|	|	|
47+35	0.0114	0.00	Q	| V	|	|	|
47+40	0.0114	0.00	Q	| V	|	|	|
47+45	0.0114	0.00	Q	| V	|	|	|
47+50	0.0114	0.00	Q	| V	|	|	|
47+55	0.0114	0.00	Q	| V	|	|	|
48+ 0	0.0114	0.00	Q	| V	|	|	|
48+ 5	0.0114	0.00	Q	| V	|	|	|
48+10	0.0114	0.00	Q	| V	|	|	|
48+15	0.0114	0.00	Q	| V	|	|	|
48+20	0.0114	0.00	Q	| V	|	|	|
48+25	0.0115	0.00	Q	| V	|	|	|
48+30	0.0115	0.00	Q	| V	|	|	|
48+35	0.0115	0.00	Q	| V	|	|	|
48+40	0.0115	0.00	Q	| V	|	|	|
48+45	0.0115	0.00	Q	| V	|	|	|
48+50	0.0116	0.00	Q	| V	|	|	|
48+55	0.0116	0.00	Q	| V	|	|	|
49+ 0	0.0116	0.00	Q	| V	|	|	|
49+ 5	0.0117	0.00	Q	| V	|	|	|
49+10	0.0117	0.00	Q	| V	|	|	|
49+15	0.0117	0.00	Q	| V	|	|	|
49+20	0.0117	0.00	Q	| V	|	|	|
49+25	0.0117	0.00	Q	| V	|	|	|
49+30	0.0118	0.00	Q	| V	|	|	|
49+35	0.0118	0.00	Q	| V	|	|	|
49+40	0.0118	0.00	Q	| V	|	|	|
49+45	0.0118	0.00	Q	| V	|	|	|
49+50	0.0118	0.00	Q	| V	|	|	|
49+55	0.0119	0.00	Q	| V	|	|	|
50+ 0	0.0119	0.00	Q	| V	|	|	|
50+ 5	0.0119	0.00	Q	| V	|	|	|
50+10	0.0120	0.00	Q	| V	|	|	|
50+15	0.0120	0.00	Q	| V	|	|	|
50+20	0.0120	0.00	Q	| V	|	|	|
50+25	0.0120	0.00	Q	| V	|	|	|
50+30	0.0121	0.00	Q	| V	|	|	|
50+35	0.0121	0.00	Q	| V	|	|	|
50+40	0.0121	0.00	Q	| V	|	|	|
50+45	0.0122	0.01	Q	| V	|	|	|
50+50	0.0122	0.01	Q	| V	|	|	|
50+55	0.0122	0.01	Q	| V	|	|	|

```
51+ 0     0.0123    0.01 Q     |  V  |     |     |
51+ 5     0.0123    0.01 Q     |  V  |     |     |
51+10     0.0123    0.01 Q     |  V  |     |     |
51+15     0.0124    0.01 Q     |  V  |     |     |
51+20     0.0124    0.01 Q     |  V  |     |     |
51+25     0.0124    0.01 Q     |  V  |     |     |
51+30     0.0125    0.01 Q     |  V  |     |     |
51+35     0.0125    0.01 Q     |  V  |     |     |
51+40     0.0125    0.01 Q     |  V  |     |     |
51+45     0.0126    0.01 Q     |  V  |     |     |
51+50     0.0126    0.01 Q     |  V  |     |     |
51+55     0.0127    0.01 Q     |  V  |     |     |
52+ 0     0.0127    0.01 Q     |  V  |     |     |
52+ 5     0.0127    0.01 Q     |  V  |     |     |
52+10     0.0128    0.01 Q     |  V  |     |     |
52+15     0.0128    0.01 Q     |  V  |     |     |
52+20     0.0129    0.01 Q     |   V |     |     |
52+25     0.0129    0.01 Q     |   V |     |     |
52+30     0.0130    0.01 Q     |   V |     |     |
52+35     0.0130    0.01 Q     |   V |     |     |
52+40     0.0131    0.01 Q     |   V |     |     |
52+45     0.0131    0.01 Q     |   V |     |     |
52+50     0.0132    0.01 Q     |   V |     |     |
52+55     0.0132    0.01 Q     |   V |     |     |
53+ 0     0.0133    0.01 Q     |  V  |     |     |
53+ 5     0.0133    0.01 Q     |  V  |     |     |
53+10     0.0134    0.01 Q     |   V |     |     |
53+15     0.0134    0.01 Q     |   V |     |     |
53+20     0.0135    0.01 Q     |   V |     |     |
53+25     0.0135    0.01 Q     |   V |     |     |
53+30     0.0135    0.01 Q     |   V |     |     |
53+35     0.0136    0.01 Q     |   V |     |     |
53+40     0.0137    0.01 Q     |   V |     |     |
53+45     0.0137    0.01 Q     |   V |     |     |
53+50     0.0138    0.01 Q     |   V |     |     |
53+55     0.0138    0.01 Q     |   V |     |     |
54+ 0     0.0139    0.01 Q     |   V |     |     |
54+ 5     0.0139    0.01 Q     |   V |     |     |
54+10     0.0140    0.01 Q     |   V |     |     |
54+15     0.0141    0.01 Q     |   V |     |     |
54+20     0.0141    0.01 Q     |   V |     |     |
54+25     0.0142    0.01 Q     |   V |     |     |
54+30     0.0142    0.01 Q     |   V |     |     |
54+35     0.0143    0.01 Q     |   V |     |     |
54+40     0.0144    0.01 Q     |   V |     |     |
54+45     0.0145    0.01 Q     |    V|     |     |
54+50     0.0145    0.01 Q     |    V|     |     |
54+55     0.0146    0.01 Q     |    V|     |     |
55+ 0     0.0147    0.01 Q     |   V |     |     |
55+ 5     0.0147    0.01 Q     |   V |     |     |
55+10     0.0148    0.01 Q     |    V|     |     |
55+15     0.0149    0.01 Q     |    V|     |     |
55+20     0.0149    0.01 Q     |    V|     |     |
55+25     0.0150    0.01 Q     |    V|     |     |
55+30     0.0151    0.01 Q     |    V|     |     |
55+35     0.0152    0.01 Q     |    V|     |     |
55+40     0.0153    0.01 Q     |    V|     |     |
55+45     0.0153    0.01 Q     |    V|     |     |
55+50     0.0154    0.01 Q     |    V|     |     |
55+55     0.0155    0.01 Q     |    V|     |     |
56+ 0     0.0156    0.01 Q     |    V|     |     |
56+ 5     0.0157    0.01 Q     |    V|     |     |
56+10     0.0158    0.01 Q     |    V|     |     |
56+15     0.0159    0.02 Q     |    V|     |     |
56+20     0.0160    0.02 Q     |    V|     |     |
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56+25	0.0161	0.02	Q	|	V | |
56+30	0.0162	0.02	Q	|	V | |
56+35	0.0163	0.02	Q	|	V | |
56+40	0.0164	0.02	Q	|	V | |
56+45	0.0165	0.02	Q	|	V | |
56+50	0.0167	0.02	Q	|	V | |
56+55	0.0168	0.02	Q	|	V | |
57+ 0	0.0169	0.02	Q	|	|V | |
57+ 5	0.0170	0.02	Q	|	|V | |
57+10	0.0172	0.02	Q	|	|V | |
57+15	0.0173	0.02	Q	|	|V | |
57+20	0.0174	0.02	Q	|	|V | |
57+25	0.0176	0.02	Q	|	|V | |
57+30	0.0177	0.02	Q	|	| V | |
57+35	0.0178	0.02	Q	|	| V | |
57+40	0.0180	0.02	Q	|	| V | |
57+45	0.0181	0.02	Q	|	| V | |
57+50	0.0183	0.02	Q	|	| V | |
57+55	0.0184	0.02	Q	|	| V | |
58+ 0	0.0186	0.02	Q	|	| V | |
58+ 5	0.0187	0.02	Q	|	| V | |
58+10	0.0188	0.02	Q	|	| V | |
58+15	0.0189	0.02	Q	|	| V | |
58+20	0.0190	0.02	Q	|	| V | |
58+25	0.0191	0.02	Q	|	| V | |
58+30	0.0192	0.02	Q	|	| V | |
58+35	0.0193	0.02	Q	|	| V | |
58+40	0.0195	0.02	Q	|	| V | |
58+45	0.0196	0.02	Q	|	| V | |
58+50	0.0198	0.02	Q	|	| V | |
58+55	0.0199	0.02	Q	|	| V | |
59+ 0	0.0200	0.02	Q	|	| V | |
59+ 5	0.0202	0.02	Q	|	| V | |
59+10	0.0203	0.02	Q	|	| V | |
59+15	0.0204	0.02	Q	|	| V | |
59+20	0.0206	0.02	Q	|	| V | |
59+25	0.0207	0.02	Q	|	| V | |
59+30	0.0208	0.02	Q	|	| V | |
59+35	0.0209	0.02	Q	|	| V | |
59+40	0.0211	0.02	Q	|	| V | |
59+45	0.0212	0.02	Q	|	| V | |
59+50	0.0213	0.02	Q	|	| V | |
59+55	0.0214	0.02	Q	|	| V | |
60+ 0	0.0216	0.02	Q	|	| V | |
60+ 5	0.0217	0.02	Q	|	| V | |
60+10	0.0219	0.02	Q	|	| V | |
60+15	0.0221	0.03	Q	|	| V | |
60+20	0.0222	0.03	Q	|	| V | |
60+25	0.0224	0.03	Q	|	| V | |
60+30	0.0226	0.03	Q	|	| V | |
60+35	0.0228	0.03	Q	|	| V | |
60+40	0.0230	0.03	Q	|	| V | |
60+45	0.0232	0.03	Q	|	| V | |
60+50	0.0234	0.03	Q	|	| V| |
60+55	0.0236	0.03	Q	|	| V| |
61+ 0	0.0238	0.03	Q	|	| V| |
61+ 5	0.0240	0.03	Q	|	| V| |
61+10	0.0242	0.03	Q	|	| V |
61+15	0.0245	0.03	Q	|	| V |
61+20	0.0247	0.03	Q	|	| V |
61+25	0.0249	0.03	Q	|	| |V |
61+30	0.0252	0.03	Q	|	| |V |
61+35	0.0253	0.03	Q	|	| |V |
61+40	0.0255	0.02	Q	|	| |V |
61+45	0.0257	0.02	Q	|	| |V |

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61+50    0.0258    0.02 Q     |      |      | V     |
61+55    0.0260    0.02 Q     |      |      | V     |
62+ 0    0.0261    0.02 Q     |      |      | V     |
62+ 5    0.0263    0.03 Q     |      |      | V     |
62+10    0.0265    0.03 Q     |      |      |  V    |
62+15    0.0267    0.03 Q     |      |      |  V    |
62+20    0.0269    0.03 Q     |      |      |  V    |
62+25    0.0270    0.03 Q     |      |      |  V    |
62+30    0.0272    0.03 Q     |      |      |  V    |
62+35    0.0274    0.03 Q     |      |      |   V   |
62+40    0.0276    0.03 Q     |      |      |   V   |
62+45    0.0278    0.03 Q     |      |      |   V   |
62+50    0.0279    0.03 Q     |      |      |   V   |
62+55    0.0281    0.03 Q     |      |      |    V  |
63+ 0    0.0283    0.03 Q     |      |      |    V  |
63+ 5    0.0285    0.02 Q     |      |      |    V  |
63+10    0.0286    0.02 Q     |      |      |    V  |
63+15    0.0288    0.02 Q     |      |      |    V  |
63+20    0.0290    0.02 Q     |      |      |     V |
63+25    0.0291    0.02 Q     |      |      |     V |
63+30    0.0293    0.02 Q     |      |      |     V |
63+35    0.0294    0.02 Q     |      |      |     V |
63+40    0.0295    0.02 Q     |      |      |     V |
63+45    0.0297    0.02 Q     |      |      |     V |
63+50    0.0298    0.02 Q     |      |      |     V |
63+55    0.0299    0.02 Q     |      |      |     V |
64+ 0    0.0301    0.02 Q     |      |      |     V |
64+ 5    0.0301    0.01 Q     |      |      |     V |
64+10    0.0302    0.00 Q     |      |      |     V |
64+15    0.0302    0.00 Q     |      |      |     V |
64+20    0.0302    0.00 Q     |      |      |     V |
64+25    0.0302    0.00 Q     |      |      |     V |
64+30    0.0303    0.00 Q     |      |      |     V |
64+35    0.0303    0.00 Q     |      |      |     V |
64+40    0.0303    0.00 Q     |      |      |     V |
64+45    0.0303    0.00 Q     |      |      |     V |
64+50    0.0304    0.00 Q     |      |      |     V |
64+55    0.0304    0.00 Q     |      |      |     V |
65+ 0    0.0304    0.00 Q     |      |      |     V |
65+ 5    0.0304    0.00 Q     |      |      |     V |
65+10    0.0305    0.00 Q     |      |      |     V |
65+15    0.0305    0.01 Q     |      |      |     V |
65+20    0.0305    0.01 Q     |      |      |     V |
65+25    0.0306    0.01 Q     |      |      |     V |
65+30    0.0306    0.01 Q     |      |      |     V |
65+35    0.0306    0.01 Q     |      |      |     V |
65+40    0.0307    0.01 Q     |      |      |     V |
65+45    0.0307    0.01 Q     |      |      |     V |
65+50    0.0307    0.00 Q     |      |      |     V |
65+55    0.0308    0.00 Q     |      |      |     V |
66+ 0    0.0308    0.00 Q     |      |      |     V |
66+ 5    0.0308    0.00 Q     |      |      |     V |
66+10    0.0308    0.00 Q     |      |      |     V |
66+15    0.0309    0.00 Q     |      |      |     V |
66+20    0.0309    0.00 Q     |      |      |     V |
66+25    0.0309    0.00 Q     |      |      |     V |
66+30    0.0310    0.00 Q     |      |      |     V |
66+35    0.0310    0.00 Q     |      |      |     V |
66+40    0.0310    0.00 Q     |      |      |     V |
66+45    0.0310    0.00 Q     |      |      |     V |
66+50    0.0310    0.00 Q     |      |      |     V |
66+55    0.0311    0.00 Q     |      |      |     V |
67+ 0    0.0311    0.00 Q     |      |      |     V |
67+ 5    0.0311    0.00 Q     |      |      |     V |
67+10    0.0311    0.00 Q     |      |      |     V |
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67+15	0.0311	0.00	Q	|	|	|	V |
67+20	0.0312	0.00	Q	|	|	|	V |
67+25	0.0312	0.00	Q	|	|	|	V |
67+30	0.0312	0.00	Q	|	|	|	V |
67+35	0.0312	0.00	Q	|	|	|	V |
67+40	0.0313	0.00	Q	|	|	|	V |
67+45	0.0313	0.00	Q	|	|	|	V |
67+50	0.0313	0.00	Q	|	|	|	V |
67+55	0.0313	0.00	Q	|	|	|	V |
68+ 0	0.0313	0.00	Q	|	|	|	V|
68+ 5	0.0313	0.00	Q	|	|	|	V|
68+10	0.0314	0.00	Q	|	|	|	V|
68+15	0.0314	0.00	Q	|	|	|	V|
68+20	0.0314	0.00	Q	|	|	|	V|
68+25	0.0314	0.00	Q	|	|	|	V|
68+30	0.0314	0.00	Q	|	|	|	V|
68+35	0.0315	0.00	Q	|	|	|	V|
68+40	0.0315	0.00	Q	|	|	|	V|
68+45	0.0315	0.00	Q	|	|	|	V|
68+50	0.0315	0.00	Q	|	|	|	V|
68+55	0.0315	0.00	Q	|	|	|	V|
69+ 0	0.0315	0.00	Q	|	|	|	V|
69+ 5	0.0316	0.00	Q	|	|	|	V|
69+10	0.0316	0.00	Q	|	|	|	V|
69+15	0.0316	0.00	Q	|	|	|	V|
69+20	0.0316	0.00	Q	|	|	|	V|
69+25	0.0316	0.00	Q	|	|	|	V|
69+30	0.0316	0.00	Q	|	|	|	V|
69+35	0.0317	0.00	Q	|	|	|	V|
69+40	0.0317	0.00	Q	|	|	|	V|
69+45	0.0317	0.00	Q	|	|	|	V|
69+50	0.0317	0.00	Q	|	|	|	V|
69+55	0.0317	0.00	Q	|	|	|	V|
70+ 0	0.0318	0.00	Q	|	|	|	V|
70+ 5	0.0318	0.00	Q	|	|	|	V|
70+10	0.0318	0.00	Q	|	|	|	V|
70+15	0.0318	0.00	Q	|	|	|	V|
70+20	0.0318	0.00	Q	|	|	|	V|
70+25	0.0318	0.00	Q	|	|	|	V|
70+30	0.0319	0.00	Q	|	|	|	V|
70+35	0.0319	0.00	Q	|	|	|	V|
70+40	0.0319	0.00	Q	|	|	|	V|
70+45	0.0319	0.00	Q	|	|	|	V|
70+50	0.0319	0.00	Q	|	|	|	V|
70+55	0.0319	0.00	Q	|	|	|	V|
71+ 0	0.0319	0.00	Q	|	|	|	V|
71+ 5	0.0320	0.00	Q	|	|	|	V|
71+10	0.0320	0.00	Q	|	|	|	V|
71+15	0.0320	0.00	Q	|	|	|	V|
71+20	0.0320	0.00	Q	|	|	|	V|
71+25	0.0320	0.00	Q	|	|	|	V|
71+30	0.0320	0.00	Q	|	|	|	V|
71+35	0.0320	0.00	Q	|	|	|	V|
71+40	0.0321	0.00	Q	|	|	|	V|
71+45	0.0321	0.00	Q	|	|	|	V|
71+50	0.0321	0.00	Q	|	|	|	V|
71+55	0.0321	0.00	Q	|	|	|	V|
72+ 0	0.0321	0.00	Q	|	|	|	V|
72+ 5	0.0321	0.00	Q	|	|	|	V|
72+10	0.0321	0.00	Q	|	|	|	V|

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APOST245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
24-Hr 5-Yr Storm Event

Drainage Area = 0.58(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 345.00(Ft.)
Length along longest watercourse measured to centroid = 97.38(Ft.)
Length along longest watercourse = 0.065 Mi.
Length along longest watercourse measured to centroid = 0.018 Mi.
Difference in elevation = 6.34(Ft.)
Slope along watercourse = 97.0296 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.023 Hr.
Lag time = 1.41 Min.
25% of lag time = 0.35 Min.
40% of lag time = 0.56 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	2.43	1.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	6.58	3.83

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.430(In)
Area Averaged 100-Year Rainfall = 6.580(In)

Point rain (area averaged) = 3.402(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.402(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.582	79.00	0.095

Total Area Entered = 0.58(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
79.0	61.8	0.451	0.095	0.412	1.000	0.412

Sum (F) = 0.412

Area averaged mean soil loss (F) (In/Hr) = 0.412

Minimum soil loss rate ((In/Hr)) = 0.206

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.824

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	354.985	61.437	0.360
2	0.167	709.970	35.423	0.208
3	0.250	1064.955	3.140	0.018
		Sum = 100.000	Sum=	0.587

Unit Time		Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.027	0.731	0.022	0.00
2	0.17	0.07	0.027	0.728	0.022	0.00
3	0.25	0.07	0.027	0.725	0.022	0.00
4	0.33	0.10	0.041	0.722	0.034	0.01
5	0.42	0.10	0.041	0.719	0.034	0.01
6	0.50	0.10	0.041	0.717	0.034	0.01
7	0.58	0.10	0.041	0.714	0.034	0.01
8	0.67	0.10	0.041	0.711	0.034	0.01
9	0.75	0.10	0.041	0.708	0.034	0.01
10	0.83	0.13	0.054	0.705	0.045	0.01
11	0.92	0.13	0.054	0.703	0.045	0.01
12	1.00	0.13	0.054	0.700	0.045	0.01
13	1.08	0.10	0.041	0.697	0.034	0.01
14	1.17	0.10	0.041	0.694	0.034	0.01
15	1.25	0.10	0.041	0.692	0.034	0.01
16	1.33	0.10	0.041	0.689	0.034	0.01
17	1.42	0.10	0.041	0.686	0.034	0.01
18	1.50	0.10	0.041	0.683	0.034	0.01
19	1.58	0.10	0.041	0.681	0.034	0.01
20	1.67	0.10	0.041	0.678	0.034	0.01
21	1.75	0.10	0.041	0.675	0.034	0.01
22	1.83	0.13	0.054	0.672	0.045	0.01
23	1.92	0.13	0.054	0.670	0.045	0.01
24	2.00	0.13	0.054	0.667	0.045	0.01
25	2.08	0.13	0.054	0.664	0.045	0.01
26	2.17	0.13	0.054	0.662	0.045	0.01
27	2.25	0.13	0.054	0.659	0.045	0.01
28	2.33	0.13	0.054	0.656	0.045	0.01
29	2.42	0.13	0.054	0.654	0.045	0.01
30	2.50	0.13	0.054	0.651	0.045	0.01
31	2.58	0.17	0.068	0.648	0.056	0.01
32	2.67	0.17	0.068	0.646	0.056	0.01

33	2.75	0.17	0.068	0.643	0.056	0.01
34	2.83	0.17	0.068	0.640	0.056	0.01
35	2.92	0.17	0.068	0.638	0.056	0.01
36	3.00	0.17	0.068	0.635	0.056	0.01
37	3.08	0.17	0.068	0.632	0.056	0.01
38	3.17	0.17	0.068	0.630	0.056	0.01
39	3.25	0.17	0.068	0.627	0.056	0.01
40	3.33	0.17	0.068	0.625	0.056	0.01
41	3.42	0.17	0.068	0.622	0.056	0.01
42	3.50	0.17	0.068	0.619	0.056	0.01
43	3.58	0.17	0.068	0.617	0.056	0.01
44	3.67	0.17	0.068	0.614	0.056	0.01
45	3.75	0.17	0.068	0.612	0.056	0.01
46	3.83	0.20	0.082	0.609	0.067	0.01
47	3.92	0.20	0.082	0.606	0.067	0.01
48	4.00	0.20	0.082	0.604	0.067	0.01
49	4.08	0.20	0.082	0.601	0.067	0.01
50	4.17	0.20	0.082	0.599	0.067	0.01
51	4.25	0.20	0.082	0.596	0.067	0.01
52	4.33	0.23	0.095	0.594	0.079	0.02
53	4.42	0.23	0.095	0.591	0.079	0.02
54	4.50	0.23	0.095	0.589	0.079	0.02
55	4.58	0.23	0.095	0.586	0.079	0.02
56	4.67	0.23	0.095	0.584	0.079	0.02
57	4.75	0.23	0.095	0.581	0.079	0.02
58	4.83	0.27	0.109	0.579	0.090	0.02
59	4.92	0.27	0.109	0.576	0.090	0.02
60	5.00	0.27	0.109	0.574	0.090	0.02
61	5.08	0.20	0.082	0.571	0.067	0.01
62	5.17	0.20	0.082	0.569	0.067	0.01
63	5.25	0.20	0.082	0.566	0.067	0.01
64	5.33	0.23	0.095	0.564	0.079	0.02
65	5.42	0.23	0.095	0.561	0.079	0.02
66	5.50	0.23	0.095	0.559	0.079	0.02
67	5.58	0.27	0.109	0.556	0.090	0.02
68	5.67	0.27	0.109	0.554	0.090	0.02
69	5.75	0.27	0.109	0.551	0.090	0.02
70	5.83	0.27	0.109	0.549	0.090	0.02
71	5.92	0.27	0.109	0.546	0.090	0.02
72	6.00	0.27	0.109	0.544	0.090	0.02
73	6.08	0.30	0.122	0.542	0.101	0.02
74	6.17	0.30	0.122	0.539	0.101	0.02
75	6.25	0.30	0.122	0.537	0.101	0.02
76	6.33	0.30	0.122	0.534	0.101	0.02
77	6.42	0.30	0.122	0.532	0.101	0.02
78	6.50	0.30	0.122	0.530	0.101	0.02
79	6.58	0.33	0.136	0.527	0.112	0.02
80	6.67	0.33	0.136	0.525	0.112	0.02
81	6.75	0.33	0.136	0.523	0.112	0.02
82	6.83	0.33	0.136	0.520	0.112	0.02
83	6.92	0.33	0.136	0.518	0.112	0.02
84	7.00	0.33	0.136	0.515	0.112	0.02
85	7.08	0.33	0.136	0.513	0.112	0.02
86	7.17	0.33	0.136	0.511	0.112	0.02
87	7.25	0.33	0.136	0.508	0.112	0.02
88	7.33	0.37	0.150	0.506	0.123	0.03
89	7.42	0.37	0.150	0.504	0.123	0.03
90	7.50	0.37	0.150	0.501	0.123	0.03
91	7.58	0.40	0.163	0.499	0.135	0.03
92	7.67	0.40	0.163	0.497	0.135	0.03
93	7.75	0.40	0.163	0.495	0.135	0.03
94	7.83	0.43	0.177	0.492	0.146	0.03
95	7.92	0.43	0.177	0.490	0.146	0.03
96	8.00	0.43	0.177	0.488	0.146	0.03
97	8.08	0.50	0.204	0.486	0.168	0.04

98	8.17	0.50	0.204	0.483	0.168	0.04
99	8.25	0.50	0.204	0.481	0.168	0.04
100	8.33	0.50	0.204	0.479	0.168	0.04
101	8.42	0.50	0.204	0.477	0.168	0.04
102	8.50	0.50	0.204	0.474	0.168	0.04
103	8.58	0.53	0.218	0.472	0.179	0.04
104	8.67	0.53	0.218	0.470	0.179	0.04
105	8.75	0.53	0.218	0.468	0.179	0.04
106	8.83	0.57	0.231	0.465	0.191	0.04
107	8.92	0.57	0.231	0.463	0.191	0.04
108	9.00	0.57	0.231	0.461	0.191	0.04
109	9.08	0.63	0.259	0.459	0.213	0.05
110	9.17	0.63	0.259	0.457	0.213	0.05
111	9.25	0.63	0.259	0.454	0.213	0.05
112	9.33	0.67	0.272	0.452	0.224	0.05
113	9.42	0.67	0.272	0.450	0.224	0.05
114	9.50	0.67	0.272	0.448	0.224	0.05
115	9.58	0.70	0.286	0.446	0.236	0.05
116	9.67	0.70	0.286	0.444	0.236	0.05
117	9.75	0.70	0.286	0.442	0.236	0.05
118	9.83	0.73	0.299	0.439	0.247	0.05
119	9.92	0.73	0.299	0.437	0.247	0.05
120	10.00	0.73	0.299	0.435	0.247	0.05
121	10.08	0.50	0.204	0.433	0.168	0.04
122	10.17	0.50	0.204	0.431	0.168	0.04
123	10.25	0.50	0.204	0.429	0.168	0.04
124	10.33	0.50	0.204	0.427	0.168	0.04
125	10.42	0.50	0.204	0.425	0.168	0.04
126	10.50	0.50	0.204	0.423	0.168	0.04
127	10.58	0.67	0.272	0.421	0.224	0.05
128	10.67	0.67	0.272	0.419	0.224	0.05
129	10.75	0.67	0.272	0.417	0.224	0.05
130	10.83	0.67	0.272	0.415	0.224	0.05
131	10.92	0.67	0.272	0.412	0.224	0.05
132	11.00	0.67	0.272	0.410	0.224	0.05
133	11.08	0.63	0.259	0.408	0.213	0.05
134	11.17	0.63	0.259	0.406	0.213	0.05
135	11.25	0.63	0.259	0.404	0.213	0.05
136	11.33	0.63	0.259	0.402	0.213	0.05
137	11.42	0.63	0.259	0.400	0.213	0.05
138	11.50	0.63	0.259	0.398	0.213	0.05
139	11.58	0.57	0.231	0.396	0.191	0.04
140	11.67	0.57	0.231	0.394	0.191	0.04
141	11.75	0.57	0.231	0.393	0.191	0.04
142	11.83	0.60	0.245	0.391	0.202	0.04
143	11.92	0.60	0.245	0.389	0.202	0.04
144	12.00	0.60	0.245	0.387	0.202	0.04
145	12.08	0.83	0.340	0.385	0.280	0.06
146	12.17	0.83	0.340	0.383	0.280	0.06
147	12.25	0.83	0.340	0.381	0.280	0.06
148	12.33	0.87	0.354	0.379	0.292	0.06
149	12.42	0.87	0.354	0.377	0.292	0.06
150	12.50	0.87	0.354	0.375	0.292	0.06
151	12.58	0.93	0.381	0.373	---	0.01
152	12.67	0.93	0.381	0.371	---	0.01
153	12.75	0.93	0.381	0.370	---	0.01
154	12.83	0.97	0.395	0.368	---	0.03
155	12.92	0.97	0.395	0.366	---	0.03
156	13.00	0.97	0.395	0.364	---	0.03
157	13.08	1.13	0.463	0.362	---	0.10
158	13.17	1.13	0.463	0.360	---	0.10
159	13.25	1.13	0.463	0.358	---	0.10
160	13.33	1.13	0.463	0.357	---	0.11
161	13.42	1.13	0.463	0.355	---	0.11
162	13.50	1.13	0.463	0.353	---	0.11

163	13.58	0.77	0.313	0.351	0.258	0.06
164	13.67	0.77	0.313	0.349	0.258	0.06
165	13.75	0.77	0.313	0.348	0.258	0.06
166	13.83	0.77	0.313	0.346	0.258	0.06
167	13.92	0.77	0.313	0.344	0.258	0.06
168	14.00	0.77	0.313	0.342	0.258	0.06
169	14.08	0.90	0.367	0.341	---	0.03
170	14.17	0.90	0.367	0.339	---	0.03
171	14.25	0.90	0.367	0.337	---	0.03
172	14.33	0.87	0.354	0.335	---	0.02
173	14.42	0.87	0.354	0.334	---	0.02
174	14.50	0.87	0.354	0.332	---	0.02
175	14.58	0.87	0.354	0.330	---	0.02
176	14.67	0.87	0.354	0.329	---	0.03
177	14.75	0.87	0.354	0.327	---	0.03
178	14.83	0.83	0.340	0.325	---	0.01
179	14.92	0.83	0.340	0.324	---	0.02
180	15.00	0.83	0.340	0.322	---	0.02
181	15.08	0.80	0.327	0.320	---	0.01
182	15.17	0.80	0.327	0.319	---	0.01
183	15.25	0.80	0.327	0.317	---	0.01
184	15.33	0.77	0.313	0.315	0.258	0.06
185	15.42	0.77	0.313	0.314	0.258	0.06
186	15.50	0.77	0.313	0.312	---	0.00
187	15.58	0.63	0.259	0.311	0.213	0.05
188	15.67	0.63	0.259	0.309	0.213	0.05
189	15.75	0.63	0.259	0.307	0.213	0.05
190	15.83	0.63	0.259	0.306	0.213	0.05
191	15.92	0.63	0.259	0.304	0.213	0.05
192	16.00	0.63	0.259	0.303	0.213	0.05
193	16.08	0.13	0.054	0.301	0.045	0.01
194	16.17	0.13	0.054	0.300	0.045	0.01
195	16.25	0.13	0.054	0.298	0.045	0.01
196	16.33	0.13	0.054	0.297	0.045	0.01
197	16.42	0.13	0.054	0.295	0.045	0.01
198	16.50	0.13	0.054	0.294	0.045	0.01
199	16.58	0.10	0.041	0.292	0.034	0.01
200	16.67	0.10	0.041	0.291	0.034	0.01
201	16.75	0.10	0.041	0.289	0.034	0.01
202	16.83	0.10	0.041	0.288	0.034	0.01
203	16.92	0.10	0.041	0.286	0.034	0.01
204	17.00	0.10	0.041	0.285	0.034	0.01
205	17.08	0.17	0.068	0.283	0.056	0.01
206	17.17	0.17	0.068	0.282	0.056	0.01
207	17.25	0.17	0.068	0.280	0.056	0.01
208	17.33	0.17	0.068	0.279	0.056	0.01
209	17.42	0.17	0.068	0.278	0.056	0.01
210	17.50	0.17	0.068	0.276	0.056	0.01
211	17.58	0.17	0.068	0.275	0.056	0.01
212	17.67	0.17	0.068	0.273	0.056	0.01
213	17.75	0.17	0.068	0.272	0.056	0.01
214	17.83	0.13	0.054	0.271	0.045	0.01
215	17.92	0.13	0.054	0.269	0.045	0.01
216	18.00	0.13	0.054	0.268	0.045	0.01
217	18.08	0.13	0.054	0.267	0.045	0.01
218	18.17	0.13	0.054	0.265	0.045	0.01
219	18.25	0.13	0.054	0.264	0.045	0.01
220	18.33	0.13	0.054	0.263	0.045	0.01
221	18.42	0.13	0.054	0.262	0.045	0.01
222	18.50	0.13	0.054	0.260	0.045	0.01
223	18.58	0.10	0.041	0.259	0.034	0.01
224	18.67	0.10	0.041	0.258	0.034	0.01
225	18.75	0.10	0.041	0.257	0.034	0.01
226	18.83	0.07	0.027	0.255	0.022	0.00
227	18.92	0.07	0.027	0.254	0.022	0.00

228	19.00	0.07	0.027	0.253	0.022	0.00
229	19.08	0.10	0.041	0.252	0.034	0.01
230	19.17	0.10	0.041	0.251	0.034	0.01
231	19.25	0.10	0.041	0.249	0.034	0.01
232	19.33	0.13	0.054	0.248	0.045	0.01
233	19.42	0.13	0.054	0.247	0.045	0.01
234	19.50	0.13	0.054	0.246	0.045	0.01
235	19.58	0.10	0.041	0.245	0.034	0.01
236	19.67	0.10	0.041	0.244	0.034	0.01
237	19.75	0.10	0.041	0.243	0.034	0.01
238	19.83	0.07	0.027	0.241	0.022	0.00
239	19.92	0.07	0.027	0.240	0.022	0.00
240	20.00	0.07	0.027	0.239	0.022	0.00
241	20.08	0.10	0.041	0.238	0.034	0.01
242	20.17	0.10	0.041	0.237	0.034	0.01
243	20.25	0.10	0.041	0.236	0.034	0.01
244	20.33	0.10	0.041	0.235	0.034	0.01
245	20.42	0.10	0.041	0.234	0.034	0.01
246	20.50	0.10	0.041	0.233	0.034	0.01
247	20.58	0.10	0.041	0.232	0.034	0.01
248	20.67	0.10	0.041	0.231	0.034	0.01
249	20.75	0.10	0.041	0.230	0.034	0.01
250	20.83	0.07	0.027	0.229	0.022	0.00
251	20.92	0.07	0.027	0.228	0.022	0.00
252	21.00	0.07	0.027	0.227	0.022	0.00
253	21.08	0.10	0.041	0.227	0.034	0.01
254	21.17	0.10	0.041	0.226	0.034	0.01
255	21.25	0.10	0.041	0.225	0.034	0.01
256	21.33	0.07	0.027	0.224	0.022	0.00
257	21.42	0.07	0.027	0.223	0.022	0.00
258	21.50	0.07	0.027	0.222	0.022	0.00
259	21.58	0.10	0.041	0.221	0.034	0.01
260	21.67	0.10	0.041	0.221	0.034	0.01
261	21.75	0.10	0.041	0.220	0.034	0.01
262	21.83	0.07	0.027	0.219	0.022	0.00
263	21.92	0.07	0.027	0.218	0.022	0.00
264	22.00	0.07	0.027	0.218	0.022	0.00
265	22.08	0.10	0.041	0.217	0.034	0.01
266	22.17	0.10	0.041	0.216	0.034	0.01
267	22.25	0.10	0.041	0.216	0.034	0.01
268	22.33	0.07	0.027	0.215	0.022	0.00
269	22.42	0.07	0.027	0.214	0.022	0.00
270	22.50	0.07	0.027	0.214	0.022	0.00
271	22.58	0.07	0.027	0.213	0.022	0.00
272	22.67	0.07	0.027	0.212	0.022	0.00
273	22.75	0.07	0.027	0.212	0.022	0.00
274	22.83	0.07	0.027	0.211	0.022	0.00
275	22.92	0.07	0.027	0.211	0.022	0.00
276	23.00	0.07	0.027	0.210	0.022	0.00
277	23.08	0.07	0.027	0.210	0.022	0.00
278	23.17	0.07	0.027	0.209	0.022	0.00
279	23.25	0.07	0.027	0.209	0.022	0.00
280	23.33	0.07	0.027	0.208	0.022	0.00
281	23.42	0.07	0.027	0.208	0.022	0.00
282	23.50	0.07	0.027	0.208	0.022	0.00
283	23.58	0.07	0.027	0.207	0.022	0.00
284	23.67	0.07	0.027	0.207	0.022	0.00
285	23.75	0.07	0.027	0.207	0.022	0.00
286	23.83	0.07	0.027	0.206	0.022	0.00
287	23.92	0.07	0.027	0.206	0.022	0.00
288	24.00	0.07	0.027	0.206	0.022	0.00
Sum =		100.0			Sum =	6.3

Flood volume = Effective rainfall 0.53(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 2.87(In)

Total soil loss = 0.139(Ac.Ft)
Total rainfall = 3.40(In)
Flood volume = 1117.7 Cubic Feet
Total soil loss = 6069.7 Cubic Feet

Peak flow rate of this hydrograph = 0.064(CFS)

++

24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 2.5 5.0 7.5 10.0
0+ 5	0.0000	0.00	Q
0+10	0.0000	0.00	Q
0+15	0.0000	0.00	Q
0+20	0.0001	0.00	Q
0+25	0.0001	0.00	Q
0+30	0.0001	0.00	Q
0+35	0.0002	0.00	Q
0+40	0.0002	0.00	Q
0+45	0.0002	0.00	Q
0+50	0.0003	0.01	Q
0+55	0.0003	0.01	Q
1+ 0	0.0003	0.01	Q
1+ 5	0.0004	0.00	Q
1+10	0.0004	0.00	Q
1+15	0.0004	0.00	Q
1+20	0.0005	0.00	Q
1+25	0.0005	0.00	Q
1+30	0.0005	0.00	Q
1+35	0.0005	0.00	Q
1+40	0.0006	0.00	Q
1+45	0.0006	0.00	Q
1+50	0.0006	0.01	Q
1+55	0.0007	0.01	QV
2+ 0	0.0007	0.01	QV
2+ 5	0.0007	0.01	QV
2+10	0.0008	0.01	QV
2+15	0.0008	0.01	QV
2+20	0.0009	0.01	QV
2+25	0.0009	0.01	QV
2+30	0.0009	0.01	QV
2+35	0.0010	0.01	QV
2+40	0.0010	0.01	QV
2+45	0.0011	0.01	QV
2+50	0.0011	0.01	QV
2+55	0.0012	0.01	QV
3+ 0	0.0012	0.01	QV
3+ 5	0.0013	0.01	QV
3+10	0.0013	0.01	Q V
3+15	0.0014	0.01	Q V
3+20	0.0014	0.01	Q V
3+25	0.0015	0.01	Q V
3+30	0.0015	0.01	Q V
3+35	0.0016	0.01	Q V
3+40	0.0016	0.01	Q V
3+45	0.0017	0.01	Q V
3+50	0.0017	0.01	Q V
3+55	0.0018	0.01	Q V
4+ 0	0.0018	0.01	Q V
4+ 5	0.0019	0.01	Q V

4+10	0.0019	0.01	Q	V	|	|	|	|
4+15	0.0020	0.01	Q	V	|	|	|	|
4+20	0.0021	0.01	Q	V	|	|	|	|
4+25	0.0021	0.01	Q	V	|	|	|	|
4+30	0.0022	0.01	Q	V	|	|	|	|
4+35	0.0023	0.01	Q	V	|	|	|	|
4+40	0.0023	0.01	Q	V	|	|	|	|
4+45	0.0024	0.01	Q	V	|	|	|	|
4+50	0.0025	0.01	Q	V	|	|	|	|
4+55	0.0026	0.01	Q	V	|	|	|	|
5+ 0	0.0026	0.01	Q	V	|	|	|	|
5+ 5	0.0027	0.01	Q	V	|	|	|	|
5+10	0.0028	0.01	Q	V	|	|	|	|
5+15	0.0028	0.01	Q	V	|	|	|	|
5+20	0.0029	0.01	Q	V	|	|	|	|
5+25	0.0029	0.01	Q	V	|	|	|	|
5+30	0.0030	0.01	Q	V	|	|	|	|
5+35	0.0031	0.01	Q	V	|	|	|	|
5+40	0.0032	0.01	Q	V	|	|	|	|
5+45	0.0032	0.01	Q	V	|	|	|	|
5+50	0.0033	0.01	Q	V	|	|	|	|
5+55	0.0034	0.01	Q	V	|	|	|	|
6+ 0	0.0035	0.01	Q	V	|	|	|	|
6+ 5	0.0036	0.01	Q	V	|	|	|	|
6+10	0.0036	0.01	Q	V	|	|	|	|
6+15	0.0037	0.01	Q	V	|	|	|	|
6+20	0.0038	0.01	Q	V	|	|	|	|
6+25	0.0039	0.01	Q	V	|	|	|	|
6+30	0.0040	0.01	Q	V	|	|	|	|
6+35	0.0041	0.01	Q	V	|	|	|	|
6+40	0.0042	0.01	Q	V	|	|	|	|
6+45	0.0043	0.01	Q	V	|	|	|	|
6+50	0.0044	0.01	Q	V	|	|	|	|
6+55	0.0045	0.01	Q	V	|	|	|	|
7+ 0	0.0046	0.01	Q	V	|	|	|	|
7+ 5	0.0047	0.01	Q	V	|	|	|	|
7+10	0.0048	0.01	Q	V	|	|	|	|
7+15	0.0049	0.01	Q	V	|	|	|	|
7+20	0.0050	0.01	Q	V	|	|	|	|
7+25	0.0051	0.02	Q	V	|	|	|	|
7+30	0.0052	0.02	Q	V	|	|	|	|
7+35	0.0053	0.02	Q	V	|	|	|	|
7+40	0.0054	0.02	Q	V	|	|	|	|
7+45	0.0055	0.02	Q	V	|	|	|	|
7+50	0.0056	0.02	Q	V	|	|	|	|
7+55	0.0058	0.02	Q	V	|	|	|	|
8+ 0	0.0059	0.02	Q	V	|	|	|	|
8+ 5	0.0060	0.02	Q	V	|	|	|	|
8+10	0.0062	0.02	Q	V	|	|	|	|
8+15	0.0063	0.02	Q	V	|	|	|	|
8+20	0.0065	0.02	Q	V	|	|	|	|
8+25	0.0066	0.02	Q	V	|	|	|	|
8+30	0.0068	0.02	Q	V	|	|	|	|
8+35	0.0069	0.02	Q	V	|	|	|	|
8+40	0.0071	0.02	Q	|	V	|	|	|
8+45	0.0072	0.02	Q	|	V	|	|	|
8+50	0.0074	0.02	Q	|	V	|	|	|
8+55	0.0075	0.02	Q	|	V	|	|	|
9+ 0	0.0077	0.02	Q	|	V	|	|	|
9+ 5	0.0079	0.03	Q	|	V	|	|	|
9+10	0.0081	0.03	Q	|	V	|	|	|
9+15	0.0082	0.03	Q	|	V	|	|	|
9+20	0.0084	0.03	Q	|	V	|	|	|
9+25	0.0086	0.03	Q	|	V	|	|	|
9+30	0.0088	0.03	Q	|	V	|	|	|

9+35	0.0090	0.03	Q	| V |	|	|
9+40	0.0092	0.03	Q	| V |	|	|
9+45	0.0094	0.03	Q	| V |	|	|
9+50	0.0096	0.03	Q	| V |	|	|
9+55	0.0099	0.03	Q	| V |	|	|
10+ 0	0.0101	0.03	Q	| V |	|	|
10+ 5	0.0102	0.02	Q	| V |	|	|
10+10	0.0104	0.02	Q	| V |	|	|
10+15	0.0105	0.02	Q	| V |	|	|
10+20	0.0107	0.02	Q	| V |	|	|
10+25	0.0108	0.02	Q	| V |	|	|
10+30	0.0110	0.02	Q	| V |	|	|
10+35	0.0111	0.03	Q	| V |	|	|
10+40	0.0113	0.03	Q	| V |	|	|
10+45	0.0115	0.03	Q	| V |	|	|
10+50	0.0117	0.03	Q	| V |	|	|
10+55	0.0119	0.03	Q	| V |	|	|
11+ 0	0.0121	0.03	Q	| V |	|	|
11+ 5	0.0123	0.03	Q	| V |	|	|
11+10	0.0125	0.03	Q	| V |	|	|
11+15	0.0127	0.03	Q	| V |	|	|
11+20	0.0128	0.03	Q	| V |	|	|
11+25	0.0130	0.03	Q	| V |	|	|
11+30	0.0132	0.03	Q	| V |	|	|
11+35	0.0134	0.02	Q	| V |	|	|
11+40	0.0135	0.02	Q	| |V |	|	|
11+45	0.0137	0.02	Q	| |V |	|	|
11+50	0.0139	0.02	Q	| |V |	|	|
11+55	0.0141	0.03	Q	| |V |	|	|
12+ 0	0.0142	0.03	Q	| | V |	|	|
12+ 5	0.0144	0.03	Q	| | V |	|	|
12+10	0.0147	0.03	Q	| | V |	|	|
12+15	0.0149	0.04	Q	| | V |	|	|
12+20	0.0152	0.04	Q	| | V |	|	|
12+25	0.0154	0.04	Q	| | V |	|	|
12+30	0.0157	0.04	Q	| | V |	|	|
12+35	0.0158	0.02	Q	| | V |	|	|
12+40	0.0158	0.01	Q	| | V |	|	|
12+45	0.0159	0.01	Q	| | V |	|	|
12+50	0.0160	0.01	Q	| | V |	|	|
12+55	0.0161	0.02	Q	| | V |	|	|
13+ 0	0.0162	0.02	Q	| | V |	|	|
13+ 5	0.0165	0.04	Q	| | V |	|	|
13+10	0.0169	0.06	Q	| | V |	|	|
13+15	0.0173	0.06	Q	| | V |	|	|
13+20	0.0177	0.06	Q	| | V |	|	|
13+25	0.0182	0.06	Q	| | V |	|	|
13+30	0.0186	0.06	Q	| | V |	|	|
13+35	0.0189	0.04	Q	| | V |	|	|
13+40	0.0191	0.03	Q	| | V |	|	|
13+45	0.0194	0.03	Q	| | V |	|	|
13+50	0.0196	0.03	Q	| | V |	|	|
13+55	0.0198	0.03	Q	| | V |	|	|
14+ 0	0.0200	0.03	Q	| | |V |	|	|
14+ 5	0.0202	0.02	Q	| | |V |	|	|
14+10	0.0203	0.02	Q	| | |V |	|	|
14+15	0.0204	0.02	Q	| | |V |	|	|
14+20	0.0205	0.01	Q	| | |V |	|	|
14+25	0.0206	0.01	Q	| | | V |	|	|
14+30	0.0207	0.01	Q	| | | V |	|	|
14+35	0.0208	0.01	Q	| | | V |	|	|
14+40	0.0209	0.01	Q	| | | V |	|	|
14+45	0.0210	0.02	Q	| | | V |	|	|
14+50	0.0211	0.01	Q	| | | V |	|	|
14+55	0.0211	0.01	Q	| | | V |	|	|

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15+ 0    0.0212    0.01  Q      |      |      | V    |
15+ 5    0.0212    0.01  Q      |      |      | V    |
15+10    0.0213    0.00  Q      |      |      | V    |
15+15    0.0213    0.01  Q      |      |      | V    |
15+20    0.0215    0.02  Q      |      |      | V    |
15+25    0.0217    0.03  Q      |      |      | V    |
15+30    0.0218    0.01  Q      |      |      | V    |
15+35    0.0219    0.02  Q      |      |      |  V   |
15+40    0.0221    0.03  Q      |      |      |  V   |
15+45    0.0222    0.03  Q      |      |      |  V   |
15+50    0.0224    0.03  Q      |      |      |  V   |
15+55    0.0226    0.03  Q      |      |      |   V  |
16+ 0    0.0228    0.03  Q      |      |      |   V  |
16+ 5    0.0229    0.01  Q      |      |      |   V  |
16+10    0.0229    0.01  Q      |      |      |   V  |
16+15    0.0230    0.01  Q      |      |      |   V  |
16+20    0.0230    0.01  Q      |      |      |   V  |
16+25    0.0231    0.01  Q      |      |      |   V  |
16+30    0.0231    0.01  Q      |      |      |   V  |
16+35    0.0231    0.00  Q      |      |      |    V |
16+40    0.0232    0.00  Q      |      |      |    V |
16+45    0.0232    0.00  Q      |      |      |    V |
16+50    0.0232    0.00  Q      |      |      |    V |
16+55    0.0232    0.00  Q      |      |      |    V |
17+ 0    0.0233    0.00  Q      |      |      |    V |
17+ 5    0.0233    0.01  Q      |      |      |    V |
17+10    0.0234    0.01  Q      |      |      |    V |
17+15    0.0234    0.01  Q      |      |      |    V |
17+20    0.0235    0.01  Q      |      |      |    V |
17+25    0.0235    0.01  Q      |      |      |    V |
17+30    0.0235    0.01  Q      |      |      |    V |
17+35    0.0236    0.01  Q      |      |      |    V |
17+40    0.0236    0.01  Q      |      |      |    V |
17+45    0.0237    0.01  Q      |      |      |    V |
17+50    0.0237    0.01  Q      |      |      |     V |
17+55    0.0238    0.01  Q      |      |      |     V |
18+ 0    0.0238    0.01  Q      |      |      |     V |
18+ 5    0.0239    0.01  Q      |      |      |     V |
18+10    0.0239    0.01  Q      |      |      |     V |
18+15    0.0239    0.01  Q      |      |      |     V |
18+20    0.0240    0.01  Q      |      |      |     V |
18+25    0.0240    0.01  Q      |      |      |     V |
18+30    0.0240    0.01  Q      |      |      |     V |
18+35    0.0241    0.00  Q      |      |      |     V |
18+40    0.0241    0.00  Q      |      |      |     V |
18+45    0.0241    0.00  Q      |      |      |     V |
18+50    0.0242    0.00  Q      |      |      |     V |
18+55    0.0242    0.00  Q      |      |      |     V |
19+ 0    0.0242    0.00  Q      |      |      |     V |
19+ 5    0.0242    0.00  Q      |      |      |     V |
19+10    0.0243    0.00  Q      |      |      |     V |
19+15    0.0243    0.00  Q      |      |      |     V |
19+20    0.0243    0.01  Q      |      |      |     V |
19+25    0.0244    0.01  Q      |      |      |     V |
19+30    0.0244    0.01  Q      |      |      |     V |
19+35    0.0244    0.00  Q      |      |      |     V |
19+40    0.0245    0.00  Q      |      |      |     V |
19+45    0.0245    0.00  Q      |      |      |     V |
19+50    0.0245    0.00  Q      |      |      |     V |
19+55    0.0245    0.00  Q      |      |      |     V |
20+ 0    0.0245    0.00  Q      |      |      |     V |
20+ 5    0.0246    0.00  Q      |      |      |     V |
20+10    0.0246    0.00  Q      |      |      |     V |
20+15    0.0246    0.00  Q      |      |      |     V |
20+20    0.0247    0.00  Q      |      |      |     V |
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 20+25     0.0247     0.00 Q       |       |       |      V |
 20+30     0.0247     0.00 Q       |       |       |      V |
 20+35     0.0247     0.00 Q       |       |       |      V |
 20+40     0.0248     0.00 Q       |       |       |      V |
 20+45     0.0248     0.00 Q       |       |       |      V |
 20+50     0.0248     0.00 Q       |       |       |      V |
 20+55     0.0248     0.00 Q       |       |       |      V |
 21+ 0     0.0249     0.00 Q       |       |       |      V |
 21+ 5     0.0249     0.00 Q       |       |       |      V |
 21+10     0.0249     0.00 Q       |       |       |      V |
 21+15     0.0249     0.00 Q       |       |       |      V |
 21+20     0.0250     0.00 Q       |       |       |      V |
 21+25     0.0250     0.00 Q       |       |       |      V |
 21+30     0.0250     0.00 Q       |       |       |      V |
 21+35     0.0250     0.00 Q       |       |       |      V|
 21+40     0.0251     0.00 Q       |       |       |      V|
 21+45     0.0251     0.00 Q       |       |       |      V|
 21+50     0.0251     0.00 Q       |       |       |      V|
 21+55     0.0251     0.00 Q       |       |       |      V|
 22+ 0     0.0252     0.00 Q       |       |       |      V|
 22+ 5     0.0252     0.00 Q       |       |       |      V|
 22+10     0.0252     0.00 Q       |       |       |      V|
 22+15     0.0252     0.00 Q       |       |       |      V|
 22+20     0.0253     0.00 Q       |       |       |      V|
 22+25     0.0253     0.00 Q       |       |       |      V|
 22+30     0.0253     0.00 Q       |       |       |      V|
 22+35     0.0253     0.00 Q       |       |       |      V|
 22+40     0.0253     0.00 Q       |       |       |      V|
 22+45     0.0254     0.00 Q       |       |       |      V|
 22+50     0.0254     0.00 Q       |       |       |      V|
 22+55     0.0254     0.00 Q       |       |       |      V|
 23+ 0     0.0254     0.00 Q       |       |       |      V|
 23+ 5     0.0254     0.00 Q       |       |       |      V|
 23+10     0.0255     0.00 Q       |       |       |      V|
 23+15     0.0255     0.00 Q       |       |       |      V|
 23+20     0.0255     0.00 Q       |       |       |      V|
 23+25     0.0255     0.00 Q       |       |       |      V|
 23+30     0.0255     0.00 Q       |       |       |      V|
 23+35     0.0256     0.00 Q       |       |       |      V|
 23+40     0.0256     0.00 Q       |       |       |      V|
 23+45     0.0256     0.00 Q       |       |       |      V|
 23+50     0.0256     0.00 Q       |       |       |      V|
 23+55     0.0256     0.00 Q       |       |       |      V|
 24+ 0     0.0256     0.00 Q       |       |       |      V|
 24+ 5     0.0257     0.00 Q       |       |       |      V|
 24+10     0.0257     0.00 Q       |       |       |      V|
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: APOST2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
24-Hr 10-Yr Storm Event

Drainage Area = 0.58(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 345.00(Ft.)
Length along longest watercourse measured to centroid = 97.38(Ft.)
Length along longest watercourse = 0.065 Mi.
Length along longest watercourse measured to centroid = 0.018 Mi.
Difference in elevation = 6.34(Ft.)
Slope along watercourse = 97.0296 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.023 Hr.
Lag time = 1.41 Min.
25% of lag time = 0.35 Min.
40% of lag time = 0.56 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	2.43	1.41

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.58	6.58	3.83

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.430(In)
Area Averaged 100-Year Rainfall = 6.580(In)

Point rain (area averaged) = 4.137(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 4.137(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.582	79.00	0.095

Total Area Entered = 0.58(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
79.0	61.8	0.451	0.095	0.412	1.000	0.412

Sum (F) = 0.412

Area averaged mean soil loss (F) (In/Hr) = 0.412

Minimum soil loss rate ((In/Hr)) = 0.206

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.824

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)		Time % of lag Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	354.985	61.437	0.360
2	0.167	709.970	35.423	0.208
3	0.250	1064.955	3.140	0.018
		Sum = 100.000	Sum=	0.587

Unit Time		Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.033	0.731	0.027	0.01
2	0.17	0.07	0.033	0.728	0.027	0.01
3	0.25	0.07	0.033	0.725	0.027	0.01
4	0.33	0.10	0.050	0.722	0.041	0.01
5	0.42	0.10	0.050	0.719	0.041	0.01
6	0.50	0.10	0.050	0.717	0.041	0.01
7	0.58	0.10	0.050	0.714	0.041	0.01
8	0.67	0.10	0.050	0.711	0.041	0.01
9	0.75	0.10	0.050	0.708	0.041	0.01
10	0.83	0.13	0.066	0.705	0.055	0.01
11	0.92	0.13	0.066	0.703	0.055	0.01
12	1.00	0.13	0.066	0.700	0.055	0.01
13	1.08	0.10	0.050	0.697	0.041	0.01
14	1.17	0.10	0.050	0.694	0.041	0.01
15	1.25	0.10	0.050	0.692	0.041	0.01
16	1.33	0.10	0.050	0.689	0.041	0.01
17	1.42	0.10	0.050	0.686	0.041	0.01
18	1.50	0.10	0.050	0.683	0.041	0.01
19	1.58	0.10	0.050	0.681	0.041	0.01
20	1.67	0.10	0.050	0.678	0.041	0.01
21	1.75	0.10	0.050	0.675	0.041	0.01
22	1.83	0.13	0.066	0.672	0.055	0.01
23	1.92	0.13	0.066	0.670	0.055	0.01
24	2.00	0.13	0.066	0.667	0.055	0.01
25	2.08	0.13	0.066	0.664	0.055	0.01
26	2.17	0.13	0.066	0.662	0.055	0.01
27	2.25	0.13	0.066	0.659	0.055	0.01
28	2.33	0.13	0.066	0.656	0.055	0.01
29	2.42	0.13	0.066	0.654	0.055	0.01
30	2.50	0.13	0.066	0.651	0.055	0.01
31	2.58	0.17	0.083	0.648	0.068	0.01
32	2.67	0.17	0.083	0.646	0.068	0.01

33	2.75	0.17	0.083	0.643	0.068	0.01
34	2.83	0.17	0.083	0.640	0.068	0.01
35	2.92	0.17	0.083	0.638	0.068	0.01
36	3.00	0.17	0.083	0.635	0.068	0.01
37	3.08	0.17	0.083	0.632	0.068	0.01
38	3.17	0.17	0.083	0.630	0.068	0.01
39	3.25	0.17	0.083	0.627	0.068	0.01
40	3.33	0.17	0.083	0.625	0.068	0.01
41	3.42	0.17	0.083	0.622	0.068	0.01
42	3.50	0.17	0.083	0.619	0.068	0.01
43	3.58	0.17	0.083	0.617	0.068	0.01
44	3.67	0.17	0.083	0.614	0.068	0.01
45	3.75	0.17	0.083	0.612	0.068	0.01
46	3.83	0.20	0.099	0.609	0.082	0.02
47	3.92	0.20	0.099	0.606	0.082	0.02
48	4.00	0.20	0.099	0.604	0.082	0.02
49	4.08	0.20	0.099	0.601	0.082	0.02
50	4.17	0.20	0.099	0.599	0.082	0.02
51	4.25	0.20	0.099	0.596	0.082	0.02
52	4.33	0.23	0.116	0.594	0.095	0.02
53	4.42	0.23	0.116	0.591	0.095	0.02
54	4.50	0.23	0.116	0.589	0.095	0.02
55	4.58	0.23	0.116	0.586	0.095	0.02
56	4.67	0.23	0.116	0.584	0.095	0.02
57	4.75	0.23	0.116	0.581	0.095	0.02
58	4.83	0.27	0.132	0.579	0.109	0.02
59	4.92	0.27	0.132	0.576	0.109	0.02
60	5.00	0.27	0.132	0.574	0.109	0.02
61	5.08	0.20	0.099	0.571	0.082	0.02
62	5.17	0.20	0.099	0.569	0.082	0.02
63	5.25	0.20	0.099	0.566	0.082	0.02
64	5.33	0.23	0.116	0.564	0.095	0.02
65	5.42	0.23	0.116	0.561	0.095	0.02
66	5.50	0.23	0.116	0.559	0.095	0.02
67	5.58	0.27	0.132	0.556	0.109	0.02
68	5.67	0.27	0.132	0.554	0.109	0.02
69	5.75	0.27	0.132	0.551	0.109	0.02
70	5.83	0.27	0.132	0.549	0.109	0.02
71	5.92	0.27	0.132	0.546	0.109	0.02
72	6.00	0.27	0.132	0.544	0.109	0.02
73	6.08	0.30	0.149	0.542	0.123	0.03
74	6.17	0.30	0.149	0.539	0.123	0.03
75	6.25	0.30	0.149	0.537	0.123	0.03
76	6.33	0.30	0.149	0.534	0.123	0.03
77	6.42	0.30	0.149	0.532	0.123	0.03
78	6.50	0.30	0.149	0.530	0.123	0.03
79	6.58	0.33	0.165	0.527	0.136	0.03
80	6.67	0.33	0.165	0.525	0.136	0.03
81	6.75	0.33	0.165	0.523	0.136	0.03
82	6.83	0.33	0.165	0.520	0.136	0.03
83	6.92	0.33	0.165	0.518	0.136	0.03
84	7.00	0.33	0.165	0.515	0.136	0.03
85	7.08	0.33	0.165	0.513	0.136	0.03
86	7.17	0.33	0.165	0.511	0.136	0.03
87	7.25	0.33	0.165	0.508	0.136	0.03
88	7.33	0.37	0.182	0.506	0.150	0.03
89	7.42	0.37	0.182	0.504	0.150	0.03
90	7.50	0.37	0.182	0.501	0.150	0.03
91	7.58	0.40	0.199	0.499	0.164	0.03
92	7.67	0.40	0.199	0.497	0.164	0.03
93	7.75	0.40	0.199	0.495	0.164	0.03
94	7.83	0.43	0.215	0.492	0.177	0.04
95	7.92	0.43	0.215	0.490	0.177	0.04
96	8.00	0.43	0.215	0.488	0.177	0.04
97	8.08	0.50	0.248	0.486	0.205	0.04

98	8.17	0.50	0.248	0.483	0.205	0.04
99	8.25	0.50	0.248	0.481	0.205	0.04
100	8.33	0.50	0.248	0.479	0.205	0.04
101	8.42	0.50	0.248	0.477	0.205	0.04
102	8.50	0.50	0.248	0.474	0.205	0.04
103	8.58	0.53	0.265	0.472	0.218	0.05
104	8.67	0.53	0.265	0.470	0.218	0.05
105	8.75	0.53	0.265	0.468	0.218	0.05
106	8.83	0.57	0.281	0.465	0.232	0.05
107	8.92	0.57	0.281	0.463	0.232	0.05
108	9.00	0.57	0.281	0.461	0.232	0.05
109	9.08	0.63	0.314	0.459	0.259	0.06
110	9.17	0.63	0.314	0.457	0.259	0.06
111	9.25	0.63	0.314	0.454	0.259	0.06
112	9.33	0.67	0.331	0.452	0.273	0.06
113	9.42	0.67	0.331	0.450	0.273	0.06
114	9.50	0.67	0.331	0.448	0.273	0.06
115	9.58	0.70	0.348	0.446	0.286	0.06
116	9.67	0.70	0.348	0.444	0.286	0.06
117	9.75	0.70	0.348	0.442	0.286	0.06
118	9.83	0.73	0.364	0.439	0.300	0.06
119	9.92	0.73	0.364	0.437	0.300	0.06
120	10.00	0.73	0.364	0.435	0.300	0.06
121	10.08	0.50	0.248	0.433	0.205	0.04
122	10.17	0.50	0.248	0.431	0.205	0.04
123	10.25	0.50	0.248	0.429	0.205	0.04
124	10.33	0.50	0.248	0.427	0.205	0.04
125	10.42	0.50	0.248	0.425	0.205	0.04
126	10.50	0.50	0.248	0.423	0.205	0.04
127	10.58	0.67	0.331	0.421	0.273	0.06
128	10.67	0.67	0.331	0.419	0.273	0.06
129	10.75	0.67	0.331	0.417	0.273	0.06
130	10.83	0.67	0.331	0.415	0.273	0.06
131	10.92	0.67	0.331	0.412	0.273	0.06
132	11.00	0.67	0.331	0.410	0.273	0.06
133	11.08	0.63	0.314	0.408	0.259	0.06
134	11.17	0.63	0.314	0.406	0.259	0.06
135	11.25	0.63	0.314	0.404	0.259	0.06
136	11.33	0.63	0.314	0.402	0.259	0.06
137	11.42	0.63	0.314	0.400	0.259	0.06
138	11.50	0.63	0.314	0.398	0.259	0.06
139	11.58	0.57	0.281	0.396	0.232	0.05
140	11.67	0.57	0.281	0.394	0.232	0.05
141	11.75	0.57	0.281	0.393	0.232	0.05
142	11.83	0.60	0.298	0.391	0.246	0.05
143	11.92	0.60	0.298	0.389	0.246	0.05
144	12.00	0.60	0.298	0.387	0.246	0.05
145	12.08	0.83	0.414	0.385	---	0.03
146	12.17	0.83	0.414	0.383	---	0.03
147	12.25	0.83	0.414	0.381	---	0.03
148	12.33	0.87	0.430	0.379	---	0.05
149	12.42	0.87	0.430	0.377	---	0.05
150	12.50	0.87	0.430	0.375	---	0.06
151	12.58	0.93	0.463	0.373	---	0.09
152	12.67	0.93	0.463	0.371	---	0.09
153	12.75	0.93	0.463	0.370	---	0.09
154	12.83	0.97	0.480	0.368	---	0.11
155	12.92	0.97	0.480	0.366	---	0.11
156	13.00	0.97	0.480	0.364	---	0.12
157	13.08	1.13	0.563	0.362	---	0.20
158	13.17	1.13	0.563	0.360	---	0.20
159	13.25	1.13	0.563	0.358	---	0.20
160	13.33	1.13	0.563	0.357	---	0.21
161	13.42	1.13	0.563	0.355	---	0.21
162	13.50	1.13	0.563	0.353	---	0.21

163	13.58	0.77	0.381	0.351	---	0.03
164	13.67	0.77	0.381	0.349	---	0.03
165	13.75	0.77	0.381	0.348	---	0.03
166	13.83	0.77	0.381	0.346	---	0.03
167	13.92	0.77	0.381	0.344	---	0.04
168	14.00	0.77	0.381	0.342	---	0.04
169	14.08	0.90	0.447	0.341	---	0.11
170	14.17	0.90	0.447	0.339	---	0.11
171	14.25	0.90	0.447	0.337	---	0.11
172	14.33	0.87	0.430	0.335	---	0.09
173	14.42	0.87	0.430	0.334	---	0.10
174	14.50	0.87	0.430	0.332	---	0.10
175	14.58	0.87	0.430	0.330	---	0.10
176	14.67	0.87	0.430	0.329	---	0.10
177	14.75	0.87	0.430	0.327	---	0.10
178	14.83	0.83	0.414	0.325	---	0.09
179	14.92	0.83	0.414	0.324	---	0.09
180	15.00	0.83	0.414	0.322	---	0.09
181	15.08	0.80	0.397	0.320	---	0.08
182	15.17	0.80	0.397	0.319	---	0.08
183	15.25	0.80	0.397	0.317	---	0.08
184	15.33	0.77	0.381	0.315	---	0.07
185	15.42	0.77	0.381	0.314	---	0.07
186	15.50	0.77	0.381	0.312	---	0.07
187	15.58	0.63	0.314	0.311	---	0.00
188	15.67	0.63	0.314	0.309	---	0.01
189	15.75	0.63	0.314	0.307	---	0.01
190	15.83	0.63	0.314	0.306	---	0.01
191	15.92	0.63	0.314	0.304	---	0.01
192	16.00	0.63	0.314	0.303	---	0.01
193	16.08	0.13	0.066	0.301	0.055	0.01
194	16.17	0.13	0.066	0.300	0.055	0.01
195	16.25	0.13	0.066	0.298	0.055	0.01
196	16.33	0.13	0.066	0.297	0.055	0.01
197	16.42	0.13	0.066	0.295	0.055	0.01
198	16.50	0.13	0.066	0.294	0.055	0.01
199	16.58	0.10	0.050	0.292	0.041	0.01
200	16.67	0.10	0.050	0.291	0.041	0.01
201	16.75	0.10	0.050	0.289	0.041	0.01
202	16.83	0.10	0.050	0.288	0.041	0.01
203	16.92	0.10	0.050	0.286	0.041	0.01
204	17.00	0.10	0.050	0.285	0.041	0.01
205	17.08	0.17	0.083	0.283	0.068	0.01
206	17.17	0.17	0.083	0.282	0.068	0.01
207	17.25	0.17	0.083	0.280	0.068	0.01
208	17.33	0.17	0.083	0.279	0.068	0.01
209	17.42	0.17	0.083	0.278	0.068	0.01
210	17.50	0.17	0.083	0.276	0.068	0.01
211	17.58	0.17	0.083	0.275	0.068	0.01
212	17.67	0.17	0.083	0.273	0.068	0.01
213	17.75	0.17	0.083	0.272	0.068	0.01
214	17.83	0.13	0.066	0.271	0.055	0.01
215	17.92	0.13	0.066	0.269	0.055	0.01
216	18.00	0.13	0.066	0.268	0.055	0.01
217	18.08	0.13	0.066	0.267	0.055	0.01
218	18.17	0.13	0.066	0.265	0.055	0.01
219	18.25	0.13	0.066	0.264	0.055	0.01
220	18.33	0.13	0.066	0.263	0.055	0.01
221	18.42	0.13	0.066	0.262	0.055	0.01
222	18.50	0.13	0.066	0.260	0.055	0.01
223	18.58	0.10	0.050	0.259	0.041	0.01
224	18.67	0.10	0.050	0.258	0.041	0.01
225	18.75	0.10	0.050	0.257	0.041	0.01
226	18.83	0.07	0.033	0.255	0.027	0.01
227	18.92	0.07	0.033	0.254	0.027	0.01

228	19.00	0.07	0.033	0.253	0.027	0.01
229	19.08	0.10	0.050	0.252	0.041	0.01
230	19.17	0.10	0.050	0.251	0.041	0.01
231	19.25	0.10	0.050	0.249	0.041	0.01
232	19.33	0.13	0.066	0.248	0.055	0.01
233	19.42	0.13	0.066	0.247	0.055	0.01
234	19.50	0.13	0.066	0.246	0.055	0.01
235	19.58	0.10	0.050	0.245	0.041	0.01
236	19.67	0.10	0.050	0.244	0.041	0.01
237	19.75	0.10	0.050	0.243	0.041	0.01
238	19.83	0.07	0.033	0.241	0.027	0.01
239	19.92	0.07	0.033	0.240	0.027	0.01
240	20.00	0.07	0.033	0.239	0.027	0.01
241	20.08	0.10	0.050	0.238	0.041	0.01
242	20.17	0.10	0.050	0.237	0.041	0.01
243	20.25	0.10	0.050	0.236	0.041	0.01
244	20.33	0.10	0.050	0.235	0.041	0.01
245	20.42	0.10	0.050	0.234	0.041	0.01
246	20.50	0.10	0.050	0.233	0.041	0.01
247	20.58	0.10	0.050	0.232	0.041	0.01
248	20.67	0.10	0.050	0.231	0.041	0.01
249	20.75	0.10	0.050	0.230	0.041	0.01
250	20.83	0.07	0.033	0.229	0.027	0.01
251	20.92	0.07	0.033	0.228	0.027	0.01
252	21.00	0.07	0.033	0.227	0.027	0.01
253	21.08	0.10	0.050	0.227	0.041	0.01
254	21.17	0.10	0.050	0.226	0.041	0.01
255	21.25	0.10	0.050	0.225	0.041	0.01
256	21.33	0.07	0.033	0.224	0.027	0.01
257	21.42	0.07	0.033	0.223	0.027	0.01
258	21.50	0.07	0.033	0.222	0.027	0.01
259	21.58	0.10	0.050	0.221	0.041	0.01
260	21.67	0.10	0.050	0.221	0.041	0.01
261	21.75	0.10	0.050	0.220	0.041	0.01
262	21.83	0.07	0.033	0.219	0.027	0.01
263	21.92	0.07	0.033	0.218	0.027	0.01
264	22.00	0.07	0.033	0.218	0.027	0.01
265	22.08	0.10	0.050	0.217	0.041	0.01
266	22.17	0.10	0.050	0.216	0.041	0.01
267	22.25	0.10	0.050	0.216	0.041	0.01
268	22.33	0.07	0.033	0.215	0.027	0.01
269	22.42	0.07	0.033	0.214	0.027	0.01
270	22.50	0.07	0.033	0.214	0.027	0.01
271	22.58	0.07	0.033	0.213	0.027	0.01
272	22.67	0.07	0.033	0.212	0.027	0.01
273	22.75	0.07	0.033	0.212	0.027	0.01
274	22.83	0.07	0.033	0.211	0.027	0.01
275	22.92	0.07	0.033	0.211	0.027	0.01
276	23.00	0.07	0.033	0.210	0.027	0.01
277	23.08	0.07	0.033	0.210	0.027	0.01
278	23.17	0.07	0.033	0.209	0.027	0.01
279	23.25	0.07	0.033	0.209	0.027	0.01
280	23.33	0.07	0.033	0.208	0.027	0.01
281	23.42	0.07	0.033	0.208	0.027	0.01
282	23.50	0.07	0.033	0.208	0.027	0.01
283	23.58	0.07	0.033	0.207	0.027	0.01
284	23.67	0.07	0.033	0.207	0.027	0.01
285	23.75	0.07	0.033	0.207	0.027	0.01
286	23.83	0.07	0.033	0.206	0.027	0.01
287	23.92	0.07	0.033	0.206	0.027	0.01
288	24.00	0.07	0.033	0.206	0.027	0.01
Sum =		100.0		Sum =		9.1

Flood volume = Effective rainfall 0.76(In)
times area 0.6(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 3.38(In)

Total soil loss = 0.164(Ac.Ft)
Total rainfall = 4.14(In)
Flood volume = 1605.3 Cubic Feet
Total soil loss = 7135.5 Cubic Feet

Peak flow rate of this hydrograph = 0.123(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0 2.5 5.0 7.5 10.0
0+ 5	0.0000	0.00	Q
0+10	0.0000	0.00	Q
0+15	0.0001	0.00	Q
0+20	0.0001	0.00	Q
0+25	0.0001	0.01	Q
0+30	0.0002	0.01	Q
0+35	0.0002	0.01	Q
0+40	0.0002	0.01	Q
0+45	0.0003	0.01	Q
0+50	0.0003	0.01	Q
0+55	0.0004	0.01	Q
1+ 0	0.0004	0.01	Q
1+ 5	0.0004	0.01	Q
1+10	0.0005	0.01	Q
1+15	0.0005	0.01	Q
1+20	0.0005	0.01	Q
1+25	0.0006	0.01	Q
1+30	0.0006	0.01	Q
1+35	0.0007	0.01	Q
1+40	0.0007	0.01	Q
1+45	0.0007	0.01	Q
1+50	0.0008	0.01	Q
1+55	0.0008	0.01	Q
2+ 0	0.0009	0.01	Q
2+ 5	0.0009	0.01	Q
2+10	0.0010	0.01	QV
2+15	0.0010	0.01	QV
2+20	0.0011	0.01	QV
2+25	0.0011	0.01	QV
2+30	0.0011	0.01	QV
2+35	0.0012	0.01	QV
2+40	0.0013	0.01	QV
2+45	0.0013	0.01	QV
2+50	0.0014	0.01	QV
2+55	0.0014	0.01	QV
3+ 0	0.0015	0.01	QV
3+ 5	0.0016	0.01	QV
3+10	0.0016	0.01	QV
3+15	0.0017	0.01	QV
3+20	0.0017	0.01	QV
3+25	0.0018	0.01	QV
3+30	0.0018	0.01	Q V
3+35	0.0019	0.01	Q V
3+40	0.0020	0.01	Q V
3+45	0.0020	0.01	Q V
3+50	0.0021	0.01	Q V
3+55	0.0022	0.01	Q V
4+ 0	0.0022	0.01	Q V
4+ 5	0.0023	0.01	Q V

4+10	0.0024	0.01	Q	V	|	|	|	|
4+15	0.0024	0.01	Q	V	|	|	|	|
4+20	0.0025	0.01	Q	V	|	|	|	|
4+25	0.0026	0.01	Q	V	|	|	|	|
4+30	0.0027	0.01	Q	V	|	|	|	|
4+35	0.0028	0.01	Q	V	|	|	|	|
4+40	0.0028	0.01	Q	V	|	|	|	|
4+45	0.0029	0.01	Q	V	|	|	|	|
4+50	0.0030	0.01	Q	V	|	|	|	|
4+55	0.0031	0.01	Q	V	|	|	|	|
5+ 0	0.0032	0.01	Q	V	|	|	|	|
5+ 5	0.0033	0.01	Q	V	|	|	|	|
5+10	0.0034	0.01	Q	V	|	|	|	|
5+15	0.0034	0.01	Q	V	|	|	|	|
5+20	0.0035	0.01	Q	V	|	|	|	|
5+25	0.0036	0.01	Q	V	|	|	|	|
5+30	0.0037	0.01	Q	V	|	|	|	|
5+35	0.0038	0.01	Q	V	|	|	|	|
5+40	0.0039	0.01	Q	V	|	|	|	|
5+45	0.0039	0.01	Q	V	|	|	|	|
5+50	0.0040	0.01	Q	V	|	|	|	|
5+55	0.0041	0.01	Q	V	|	|	|	|
6+ 0	0.0042	0.01	Q	V	|	|	|	|
6+ 5	0.0043	0.01	Q	V	|	|	|	|
6+10	0.0044	0.02	Q	V	|	|	|	|
6+15	0.0045	0.02	Q	V	|	|	|	|
6+20	0.0046	0.02	Q	V	|	|	|	|
6+25	0.0048	0.02	Q	V	|	|	|	|
6+30	0.0049	0.02	Q	V	|	|	|	|
6+35	0.0050	0.02	Q	V	|	|	|	|
6+40	0.0051	0.02	Q	V	|	|	|	|
6+45	0.0052	0.02	Q	V	|	|	|	|
6+50	0.0053	0.02	Q	V	|	|	|	|
6+55	0.0054	0.02	Q	V	|	|	|	|
7+ 0	0.0056	0.02	Q	V	|	|	|	|
7+ 5	0.0057	0.02	Q	V	|	|	|	|
7+10	0.0058	0.02	Q	V	|	|	|	|
7+15	0.0059	0.02	Q	V	|	|	|	|
7+20	0.0060	0.02	Q	V	|	|	|	|
7+25	0.0062	0.02	Q	V	|	|	|	|
7+30	0.0063	0.02	Q	V	|	|	|	|
7+35	0.0064	0.02	Q	V	|	|	|	|
7+40	0.0066	0.02	Q	V	|	|	|	|
7+45	0.0067	0.02	Q	V	|	|	|	|
7+50	0.0069	0.02	Q	V	|	|	|	|
7+55	0.0070	0.02	Q	V	|	|	|	|
8+ 0	0.0072	0.02	Q	V	|	|	|	|
8+ 5	0.0073	0.02	Q	V	|	|	|	|
8+10	0.0075	0.03	Q	V	|	|	|	|
8+15	0.0077	0.03	Q	V	|	|	|	|
8+20	0.0079	0.03	Q	V	|	|	|	|
8+25	0.0080	0.03	Q	V	|	|	|	|
8+30	0.0082	0.03	Q	V	|	|	|	|
8+35	0.0084	0.03	Q	V	|	|	|	|
8+40	0.0086	0.03	Q	V	|	|	|	|
8+45	0.0088	0.03	Q	V	|	|	|	|
8+50	0.0090	0.03	Q	V	|	|	|	|
8+55	0.0092	0.03	Q	V	|	|	|	|
9+ 0	0.0094	0.03	Q	V	|	|	|	|
9+ 5	0.0096	0.03	Q	V	|	|	|	|
9+10	0.0098	0.03	Q	V	|	|	|	|
9+15	0.0100	0.03	Q	V	|	|	|	|
9+20	0.0103	0.03	Q	V	|	|	|	|
9+25	0.0105	0.03	Q	V	|	|	|	|
9+30	0.0107	0.03	Q	V	|	|	|	|

9+35	0.0110	0.04	Q	|V	|	|	|
9+40	0.0112	0.04	Q	| V	|	|	|
9+45	0.0115	0.04	Q	| V	|	|	|
9+50	0.0117	0.04	Q	| V	|	|	|
9+55	0.0120	0.04	Q	| V	|	|	|
10+ 0	0.0122	0.04	Q	| V	|	|	|
10+ 5	0.0124	0.03	Q	| V	|	|	|
10+10	0.0126	0.03	Q	| V	|	|	|
10+15	0.0128	0.03	Q	| V	|	|	|
10+20	0.0130	0.03	Q	| V	|	|	|
10+25	0.0132	0.03	Q	| V	|	|	|
10+30	0.0133	0.03	Q	| V	|	|	|
10+35	0.0135	0.03	Q	| V	|	|	|
10+40	0.0138	0.03	Q	| V	|	|	|
10+45	0.0140	0.03	Q	| V	|	|	|
10+50	0.0142	0.03	Q	| V	|	|	|
10+55	0.0145	0.03	Q	| V	|	|	|
11+ 0	0.0147	0.03	Q	| V	|	|	|
11+ 5	0.0149	0.03	Q	| V	|	|	|
11+10	0.0152	0.03	Q	| V	|	|	|
11+15	0.0154	0.03	Q	| V	|	|	|
11+20	0.0156	0.03	Q	| V	|	|	|
11+25	0.0158	0.03	Q	| V	|	|	|
11+30	0.0161	0.03	Q	| V	|	|	|
11+35	0.0163	0.03	Q	| V	|	|	|
11+40	0.0165	0.03	Q	| V	|	|	|
11+45	0.0167	0.03	Q	| V	|	|	|
11+50	0.0169	0.03	Q	| V	|	|	|
11+55	0.0171	0.03	Q	| V	|	|	|
12+ 0	0.0173	0.03	Q	| V	|	|	|
12+ 5	0.0175	0.02	Q	| V	|	|	|
12+10	0.0176	0.02	Q	| V	|	|	|
12+15	0.0177	0.02	Q	| V	|	|	|
12+20	0.0179	0.03	Q	| V	|	|	|
12+25	0.0181	0.03	Q	| V	|	|	|
12+30	0.0183	0.03	Q	| V	|	|	|
12+35	0.0186	0.04	Q	| V	|	|	|
12+40	0.0190	0.05	Q	| V	|	|	|
12+45	0.0194	0.05	Q	| |V	|	|	|
12+50	0.0198	0.06	Q	| |V	|	|	|
12+55	0.0202	0.07	Q	| |V	|	|	|
13+ 0	0.0207	0.07	Q	| | V	|	|	|
13+ 5	0.0214	0.10	Q	| | V	|	|	|
13+10	0.0222	0.12	Q	| | V	|	|	|
13+15	0.0230	0.12	Q	| | V	|	|	|
13+20	0.0238	0.12	Q	| | V	|	|	|
13+25	0.0247	0.12	Q	| | V	|	|	|
13+30	0.0255	0.12	Q	| | V	|	|	|
13+35	0.0259	0.06	Q	| | V	|	|	|
13+40	0.0261	0.02	Q	| | V	|	|	|
13+45	0.0262	0.02	Q	| | V	|	|	|
13+50	0.0263	0.02	Q	| | V	|	|	|
13+55	0.0265	0.02	Q	| | V	|	|	|
14+ 0	0.0266	0.02	Q	| | V	|	|	|
14+ 5	0.0270	0.05	Q	| | V	|	|	|
14+10	0.0274	0.06	Q	| | V	|	|	|
14+15	0.0278	0.06	Q	| | V	|	|	|
14+20	0.0282	0.06	Q	| | V	|	|	|
14+25	0.0286	0.06	Q	| | V	|	|	|
14+30	0.0290	0.06	Q	| | V	|	|	|
14+35	0.0294	0.06	Q	| | V	|	|	|
14+40	0.0298	0.06	Q	| | V	|	|	|
14+45	0.0302	0.06	Q	| | V	|	|	|
14+50	0.0306	0.06	Q	| | V	|	|	|
14+55	0.0310	0.05	Q	| | V	|	|	|

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15+ 0    0.0314    0.05 Q     |     |     | V   |
15+ 5    0.0317    0.05 Q     |     |     | V   |
15+10    0.0320    0.05 Q     |     |     | V   |
15+15    0.0323    0.05 Q     |     |     |  V  |
15+20    0.0326    0.04 Q     |     |     |  V  |
15+25    0.0329    0.04 Q     |     |     |  V  |
15+30    0.0332    0.04 Q     |     |     |  V  |
15+35    0.0333    0.02 Q     |     |     |   V |
15+40    0.0333    0.00 Q     |     |     |   V |
15+45    0.0333    0.00 Q     |     |     |   V |
15+50    0.0334    0.00 Q     |     |     |   V |
15+55    0.0334    0.01 Q     |     |     |   V |
16+ 0    0.0334    0.01 Q     |     |     |   V |
16+ 5    0.0335    0.01 Q     |     |     |   V |
16+10    0.0335    0.01 Q     |     |     |   V |
16+15    0.0336    0.01 Q     |     |     |   V |
16+20    0.0336    0.01 Q     |     |     |   V |
16+25    0.0337    0.01 Q     |     |     |   V |
16+30    0.0337    0.01 Q     |     |     |   V |
16+35    0.0338    0.01 Q     |     |     |   V |
16+40    0.0338    0.01 Q     |     |     |   V |
16+45    0.0338    0.01 Q     |     |     |   V |
16+50    0.0339    0.01 Q     |     |     |   V |
16+55    0.0339    0.01 Q     |     |     |   V |
17+ 0    0.0339    0.01 Q     |     |     |   V |
17+ 5    0.0340    0.01 Q     |     |     |   V |
17+10    0.0341    0.01 Q     |     |     |   V |
17+15    0.0341    0.01 Q     |     |     |   V |
17+20    0.0342    0.01 Q     |     |     |   V |
17+25    0.0342    0.01 Q     |     |     |   V |
17+30    0.0343    0.01 Q     |     |     |   V |
17+35    0.0343    0.01 Q     |     |     |   V |
17+40    0.0344    0.01 Q     |     |     |   V |
17+45    0.0345    0.01 Q     |     |     |   V |
17+50    0.0345    0.01 Q     |     |     |   V |
17+55    0.0346    0.01 Q     |     |     |   V |
18+ 0    0.0346    0.01 Q     |     |     |   V |
18+ 5    0.0347    0.01 Q     |     |     |   V |
18+10    0.0347    0.01 Q     |     |     |   V |
18+15    0.0348    0.01 Q     |     |     |   V |
18+20    0.0348    0.01 Q     |     |     |   V |
18+25    0.0348    0.01 Q     |     |     |   V |
18+30    0.0349    0.01 Q     |     |     |   V |
18+35    0.0349    0.01 Q     |     |     |   V |
18+40    0.0350    0.01 Q     |     |     |   V |
18+45    0.0350    0.01 Q     |     |     |   V |
18+50    0.0350    0.00 Q     |     |     |    V|
18+55    0.0351    0.00 Q     |     |     |    V|
19+ 0    0.0351    0.00 Q     |     |     |    V|
19+ 5    0.0351    0.00 Q     |     |     |    V|
19+10    0.0351    0.01 Q     |     |     |    V|
19+15    0.0352    0.01 Q     |     |     |    V|
19+20    0.0352    0.01 Q     |     |     |    V|
19+25    0.0353    0.01 Q     |     |     |    V|
19+30    0.0353    0.01 Q     |     |     |    V|
19+35    0.0354    0.01 Q     |     |     |    V|
19+40    0.0354    0.01 Q     |     |     |    V|
19+45    0.0354    0.01 Q     |     |     |    V|
19+50    0.0355    0.00 Q     |     |     |    V|
19+55    0.0355    0.00 Q     |     |     |    V|
20+ 0    0.0355    0.00 Q     |     |     |    V|
20+ 5    0.0355    0.00 Q     |     |     |    V|
20+10    0.0356    0.01 Q     |     |     |    V|
20+15    0.0356    0.01 Q     |     |     |    V|
20+20    0.0356    0.01 Q     |     |     |    V|
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 20+25     0.0357    0.01 Q      |       |       |     V |
 20+30     0.0357    0.01 Q      |       |       |     V |
 20+35     0.0357    0.01 Q      |       |       |     V |
 20+40     0.0358    0.01 Q      |       |       |     V |
 20+45     0.0358    0.01 Q      |       |       |     V |
 20+50     0.0358    0.00 Q      |       |       |     V |
 20+55     0.0359    0.00 Q      |       |       |     V |
 21+ 0     0.0359    0.00 Q      |       |       |     V |
 21+ 5     0.0359    0.00 Q      |       |       |     V |
 21+10     0.0360    0.01 Q      |       |       |     V|
 21+15     0.0360    0.01 Q      |       |       |     V|
 21+20     0.0360    0.00 Q      |       |       |     V|
 21+25     0.0360    0.00 Q      |       |       |     V|
 21+30     0.0361    0.00 Q      |       |       |     V|
 21+35     0.0361    0.00 Q      |       |       |     V|
 21+40     0.0361    0.01 Q      |       |       |     V|
 21+45     0.0362    0.01 Q      |       |       |     V|
 21+50     0.0362    0.00 Q      |       |       |     V|
 21+55     0.0362    0.00 Q      |       |       |     V|
 22+ 0     0.0362    0.00 Q      |       |       |     V|
 22+ 5     0.0363    0.00 Q      |       |       |     V|
 22+10     0.0363    0.01 Q      |       |       |     V|
 22+15     0.0363    0.01 Q      |       |       |     V|
 22+20     0.0364    0.00 Q      |       |       |     V|
 22+25     0.0364    0.00 Q      |       |       |     V|
 22+30     0.0364    0.00 Q      |       |       |     V|
 22+35     0.0364    0.00 Q      |       |       |     V|
 22+40     0.0365    0.00 Q      |       |       |     V|
 22+45     0.0365    0.00 Q      |       |       |     V|
 22+50     0.0365    0.00 Q      |       |       |     V|
 22+55     0.0365    0.00 Q      |       |       |     V|
 23+ 0     0.0366    0.00 Q      |       |       |     V|
 23+ 5     0.0366    0.00 Q      |       |       |     V|
 23+10     0.0366    0.00 Q      |       |       |     V|
 23+15     0.0366    0.00 Q      |       |       |     V|
 23+20     0.0367    0.00 Q      |       |       |     V|
 23+25     0.0367    0.00 Q      |       |       |     V|
 23+30     0.0367    0.00 Q      |       |       |     V|
 23+35     0.0367    0.00 Q      |       |       |     V|
 23+40     0.0367    0.00 Q      |       |       |     V|
 23+45     0.0368    0.00 Q      |       |       |     V|
 23+50     0.0368    0.00 Q      |       |       |     V|
 23+55     0.0368    0.00 Q      |       |       |     V|
 24+ 0     0.0368    0.00 Q      |       |       |     V|
 24+ 5     0.0369    0.00 Q      |       |       |     V|
 24+10     0.0369    0.00 Q      |       |       |      V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: BPOST12.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
1-Hr 2-Yr Storm Event

Drainage Area = 0.74(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 284.00(Ft.)
Length along longest watercourse measured to centroid = 86.63(Ft.)
Length along longest watercourse = 0.054 Mi.
Length along longest watercourse measured to centroid = 0.016 Mi.
Difference in elevation = 1.69(Ft.)
Slope along watercourse = 31.4197 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.013 Hr.
Lag time = 0.78 Min.
25% of lag time = 0.19 Min.
40% of lag time = 0.31 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	0.48	0.36

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	1.34	0.99

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.483(In)
Area Averaged 100-Year Rainfall = 1.340(In)

Point rain (area averaged) = 0.483(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.483(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.742	55.00	0.792

Total Area Entered = 0.74(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
55.0	35.0	0.715	0.792	0.205	1.000	0.205

Sum (F) = 0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205

Minimum soil loss rate ((In/Hr)) = 0.103

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.266

Slope of intensity-duration curve for a 1 hour storm =0.4800

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	645.077	77.129	0.577
2	0.167	1290.154	22.871	0.171

Sum = 100.000 Sum= 0.748

Storm Event 3 Effective Rainfall = 0.092(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.048	0.205	0.013	0.04
2	0.17	4.50	0.050	0.205	0.013	0.04
3	0.25	5.40	0.059	0.205	0.016	0.04
4	0.33	5.40	0.059	0.205	0.016	0.04
5	0.42	5.70	0.063	0.205	0.017	0.05
6	0.50	6.40	0.070	0.205	0.019	0.05
7	0.58	7.90	0.087	0.205	0.023	0.06
8	0.67	9.10	0.100	0.205	0.027	0.07
9	0.75	12.80	0.141	0.205	0.038	0.10
10	0.83	25.60	0.282	0.205	---	0.08
11	0.92	7.90	0.087	0.205	0.023	0.06
12	1.00	4.90	0.054	0.205	0.014	0.04
Sum =		100.0		Sum =		0.7

Flood volume = Effective rainfall 0.06(In)

times area 0.7(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.04(In)

Total soil loss = 0.002(Ac.Ft)

Total rainfall = 0.09(In)

Flood volume = 152.1 Cubic Feet

Total soil loss = 95.0 Cubic Feet

Storm Event 2 Effective Rainfall = 0.174(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.092	0.205	0.024	0.07

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 2   0.17    4.50     0.094       0.205    0.025       0.07
 3   0.25    5.40     0.113       0.205    0.030       0.08
 4   0.33    5.40     0.113       0.205    0.030       0.08
 5   0.42    5.70     0.119       0.205    0.032       0.09
 6   0.50    6.40     0.134       0.205    0.036       0.10
 7   0.58    7.90     0.165       0.205    0.044       0.12
 8   0.67    9.10     0.190       0.205    0.051       0.14
 9   0.75   12.80     0.267       0.205     ---        0.06
10   0.83   25.60     0.534       0.205     ---        0.33
11   0.92    7.90     0.165       0.205    0.044       0.12
12   1.00    4.90     0.102       0.205    0.027       0.08
  Sum =    100.0                          Sum =    1.3
          Flood volume = Effective rainfall     0.11(In)
           times area      0.7(Ac.)/[(In)/(Ft.)] =      0.0(Ac.Ft)
          Total soil loss =     0.06(In)
          Total soil loss =    0.004(Ac.Ft)
          Total rainfall =     0.17(In)
          Flood volume =       299.4 Cubic Feet
          Total soil loss =       169.0 Cubic Feet
---------------------------------------------------------------------------
             Storm Event 1   Effective Rainfall =   0.483(In)
---------------------------------------------------------------------------

 Unit Time   Pattern   Storm Rain    Loss rate(In./Hr)    Effective
    (Hr.)  Percent   (In/Hr)       Max   |   Low       (In/Hr)
 1   0.08    4.40     0.255       0.205     ---        0.05
 2   0.17    4.50     0.261       0.205     ---        0.06
 3   0.25    5.40     0.313       0.205     ---        0.11
 4   0.33    5.40     0.313       0.205     ---        0.11
 5   0.42    5.70     0.330       0.205     ---        0.13
 6   0.50    6.40     0.371       0.205     ---        0.17
 7   0.58    7.90     0.458       0.205     ---        0.25
 8   0.67    9.10     0.527       0.205     ---        0.32
 9   0.75   12.80     0.742       0.205     ---        0.54
10   0.83   25.60     1.484       0.205     ---        1.28
11   0.92    7.90     0.458       0.205     ---        0.25
12   1.00    4.90     0.284       0.205     ---        0.08
  Sum =    100.0                          Sum =    3.3
          Flood volume = Effective rainfall     0.28(In)
           times area      0.7(Ac.)/[(In)/(Ft.)] =      0.0(Ac.Ft)
          Total soil loss =     0.21(In)
          Total soil loss =    0.013(Ac.Ft)
          Total rainfall =     0.48(In)
          Flood volume =       748.2 Cubic Feet
          Total soil loss =       552.7 Cubic Feet
          ---------------------------------------------------------------------
           Peak flow rate of this hydrograph =      0.830(CFS)
          ---------------------------------------------------------------------
          ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
           TOTAL OF: 3      1 - H O U R   S T O R M  E V E N T S
                    R u n o f f     H y d r o g r a p h
          ---------------------------------------------------------------------
                  Hydrograph in   5   Minute intervals ((CFS))

          ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       2.5      5.0      7.5      10.0
---------------------------------------------------------------------------
  0+ 5      0.0001     0.02  Q       |        |        |        |
  0+10      0.0003     0.03  Q       |        |        |        |
  0+15      0.0005     0.03  Q       |        |        |        |
  0+20      0.0008     0.03  QV      |        |        |        |
  0+25      0.0010     0.03  QV      |        |        |        |
  0+30      0.0013     0.04  QV      |        |        |        |
  0+35      0.0016     0.05  Q V     |        |        |        |
  0+40      0.0019     0.05  Q V     |        |        |        |
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0+45     0.0024    0.07 Q V    |       |       |       |
0+50     0.0029    0.06 Q  V   |       |       |       |
0+55     0.0032    0.05 Q  V   |       |       |       |
1+ 0     0.0034    0.03 Q   V  |       |       |       |
1+ 5     0.0037    0.04 Q   V  |       |       |       |
1+10     0.0041    0.05 Q    V |       |       |       |
1+15     0.0045    0.06 Q    V |       |       |       |
1+20     0.0049    0.06 Q    V |       |       |       |
1+25     0.0053    0.06 Q    V |       |       |       |
1+30     0.0058    0.07 Q     V|       |       |       |
1+35     0.0064    0.09 Q     V|       |       |       |
1+40     0.0071    0.10 Q      V       |       |       |
1+45     0.0075    0.06 Q      |V      |       |       |
1+50     0.0089    0.20 Q      | V     |       |       |
1+55     0.0098    0.13 Q      |  V    |       |       |
2+ 0     0.0102    0.06 Q      |   V   |       |       |
2+ 5     0.0104    0.03 Q      |   V   |       |       |
2+10     0.0107    0.04 Q      |    V  |       |       |
2+15     0.0112    0.07 Q      |    V  |       |       |
2+20     0.0118    0.08 Q      |     V |       |       |
2+25     0.0124    0.09 Q      |     V |       |       |
2+30     0.0132    0.12 Q      |      V|       |       |
2+35     0.0144    0.17 Q      |       V       |       |
2+40     0.0160    0.23 Q      |       | V     |       |
2+45     0.0185    0.36 |Q     |       |    V  |       |
2+50     0.0242    0.83 |  Q   |       |       |   V   |
2+55     0.0267    0.36 |Q     |       |       |     V |
3+ 0     0.0273    0.09 Q      |       |       |      V|
3+ 5     0.0274    0.01 Q      |       |       |       V
-------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
1-Hr 5-Yr Storm Event

Drainage Area = 0.74(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 284.00(Ft.)
Length along longest watercourse measured to centroid = 86.63(Ft.)
Length along longest watercourse = 0.054 Mi.
Length along longest watercourse measured to centroid = 0.016 Mi.
Difference in elevation = 1.69(Ft.)
Slope along watercourse = 31.4197 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.013 Hr.
Lag time = 0.78 Min.
25% of lag time = 0.19 Min.
40% of lag time = 0.31 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	0.48	0.36

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	1.34	0.99

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.483(In)
Area Averaged 100-Year Rainfall = 1.340(In)

Point rain (area averaged) = 0.684(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.684(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.742	55.00	0.792

Total Area Entered = 0.74(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
55.0	35.0	0.715	0.792	0.205	1.000	0.205

Sum (F) = 0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205

Minimum soil loss rate ((In/Hr)) = 0.103

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.266

Slope of intensity-duration curve for a 1 hour storm =0.4800

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	645.077	77.129	0.577
2	0.167	1290.154	22.871	0.171

Sum = 100.000 Sum= 0.748

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.361	0.205	---	0.16
2	0.17	4.50	0.369	0.205	---	0.16
3	0.25	5.40	0.443	0.205	---	0.24
4	0.33	5.40	0.443	0.205	---	0.24
5	0.42	5.70	0.468	0.205	---	0.26
6	0.50	6.40	0.525	0.205	---	0.32
7	0.58	7.90	0.648	0.205	---	0.44
8	0.67	9.10	0.747	0.205	---	0.54
9	0.75	12.80	1.050	0.205	---	0.84
10	0.83	25.60	2.100	0.205	---	1.90
11	0.92	7.90	0.648	0.205	---	0.44
12	1.00	4.90	0.402	0.205	---	0.20
Sum =		100.0		Sum =		5.7

Flood volume = Effective rainfall 0.48(In)

times area 0.7(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.21(In)

Total soil loss = 0.013(Ac.Ft)

Total rainfall = 0.68(In)

Flood volume = 1288.8 Cubic Feet

Total soil loss = 552.7 Cubic Feet

Peak flow rate of this hydrograph = 1.238(CFS)

++

1 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0

```
---------------------------------------------------------------------------
  0+ 5     0.0006     0.09  Q       |       |       |       |
  0+10     0.0015     0.12  QV      |       |       |       |
  0+15     0.0026     0.17  Q V     |       |       |       |
  0+20     0.0038     0.18  Q   V   |       |       |       |
  0+25     0.0051     0.19  Q    V  |       |       |       |
  0+30     0.0067     0.23  Q      V|       |       |       |
  0+35     0.0089     0.31  |Q      |V      |       |       |
  0+40     0.0115     0.39  |Q      |   V   |       |       |
  0+45     0.0155     0.58  | Q     |       V       |       |
  0+50     0.0241     1.24  |   Q   |       |       | V     |
  0+55     0.0281     0.58  | Q     |       |       |    V  |
  1+ 0     0.0294     0.19  Q       |       |       |      V|
  1+ 5     0.0296     0.03  Q       |       |       |       V
---------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
1-Hr 10-Yr Storm Event

Drainage Area = 0.74(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 284.00(Ft.)
Length along longest watercourse measured to centroid = 86.63(Ft.)
Length along longest watercourse = 0.054 Mi.
Length along longest watercourse measured to centroid = 0.016 Mi.
Difference in elevation = 1.69(Ft.)
Slope along watercourse = 31.4197 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.013 Hr.
Lag time = 0.78 Min.
25% of lag time = 0.19 Min.
40% of lag time = 0.31 Min.
Unit time = 5.00 Min.
Duration of storm = 1 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	0.48	0.36

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	1.34	0.99

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.483(In)
Area Averaged 100-Year Rainfall = 1.340(In)

Point rain (area averaged) = 0.836(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.836(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.742	55.00	0.792

Total Area Entered = 0.74(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
55.0	35.0	0.715	0.792	0.205	1.000	0.205

Sum (F) = 0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205

Minimum soil loss rate ((In/Hr)) = 0.103

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.266

Slope of intensity-duration curve for a 1 hour storm =0.4800

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	645.077	77.129	0.577
2	0.167	1290.154	22.871	0.171

Sum = 100.000 Sum= 0.748

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	4.40	0.441	0.205	---	0.24
2	0.17	4.50	0.451	0.205	---	0.25
3	0.25	5.40	0.541	0.205	---	0.34
4	0.33	5.40	0.541	0.205	---	0.34
5	0.42	5.70	0.572	0.205	---	0.37
6	0.50	6.40	0.642	0.205	---	0.44
7	0.58	7.90	0.792	0.205	---	0.59
8	0.67	9.10	0.912	0.205	---	0.71
9	0.75	12.80	1.283	0.205	---	1.08
10	0.83	25.60	2.567	0.205	---	2.36
11	0.92	7.90	0.792	0.205	---	0.59
12	1.00	4.90	0.491	0.205	---	0.29
Sum =		100.0		Sum =		7.6

Flood volume = Effective rainfall 0.63(In)

times area 0.7(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)

Total soil loss = 0.21(In)

Total soil loss = 0.013(Ac.Ft)

Total rainfall = 0.84(In)

Flood volume = 1697.8 Cubic Feet

Total soil loss = 552.7 Cubic Feet

Peak flow rate of this hydrograph = 1.547(CFS)

++

1 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0

```
---------------------------------------------------------------------------
 0+ 5     0.0009     0.14  Q       |       |       |       |
 0+10     0.0022     0.18  Q V     |       |       |       |
 0+15     0.0038     0.24  Q  V    |       |       |       |
 0+20     0.0056     0.25  |Q   V   |       |       |       |
 0+25     0.0074     0.27  |Q    V  |       |       |       |
 0+30     0.0096     0.31  |Q     V|       |       |       |
 0+35     0.0124     0.41  |Q      | V     |       |       |
 0+40     0.0159     0.51  | Q     |    V  |       |       |
 0+45     0.0210     0.74  | Q     |       |V      |       |
 0+50     0.0317     1.55  |    Q  |       |       | V     |
 0+55     0.0368     0.74  | Q     |       |       |    V  |
 1+ 0     0.0386     0.27  |Q      |       |       |      V|
 1+ 5     0.0390     0.05  Q       |       |       |      V|
---------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
3-Hr 2-Yr Storm Event

Drainage Area = 0.74(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 284.00(Ft.)
Length along longest watercourse measured to centroid = 86.63(Ft.)
Length along longest watercourse = 0.054 Mi.
Length along longest watercourse measured to centroid = 0.016 Mi.
Difference in elevation = 1.69(Ft.)
Slope along watercourse = 31.4197 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.013 Hr.
Lag time = 0.78 Min.
25% of lag time = 0.19 Min.
40% of lag time = 0.31 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	0.88	0.65

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	2.20	1.63

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 0.877(In)
Area Averaged 100-Year Rainfall = 2.200(In)

Point rain (area averaged) = 0.877(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 0.877(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.742	55.00	0.792

Total Area Entered = 0.74(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
55.0	35.0	0.715	0.792	0.205	1.000	0.205

Sum (F) = 0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205

Minimum soil loss rate ((In/Hr)) = 0.103

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.266

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	645.077	77.129	0.577
2	0.167	1290.154	22.871	0.171

Sum = 100.000 Sum= 0.748

Storm Event 3 Effective Rainfall = 0.167(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.026	0.205	0.007	0.02
2	0.17	1.30	0.026	0.205	0.007	0.02
3	0.25	1.10	0.022	0.205	0.006	0.02
4	0.33	1.50	0.030	0.205	0.008	0.02
5	0.42	1.50	0.030	0.205	0.008	0.02
6	0.50	1.80	0.036	0.205	0.010	0.03
7	0.58	1.50	0.030	0.205	0.008	0.02
8	0.67	1.80	0.036	0.205	0.010	0.03
9	0.75	1.80	0.036	0.205	0.010	0.03
10	0.83	1.50	0.030	0.205	0.008	0.02
11	0.92	1.60	0.032	0.205	0.009	0.02
12	1.00	1.80	0.036	0.205	0.010	0.03
13	1.08	2.20	0.044	0.205	0.012	0.03
14	1.17	2.20	0.044	0.205	0.012	0.03
15	1.25	2.20	0.044	0.205	0.012	0.03
16	1.33	2.00	0.040	0.205	0.011	0.03
17	1.42	2.60	0.052	0.205	0.014	0.04
18	1.50	2.70	0.054	0.205	0.014	0.04
19	1.58	2.40	0.048	0.205	0.013	0.04
20	1.67	2.70	0.054	0.205	0.014	0.04
21	1.75	3.30	0.066	0.205	0.018	0.05
22	1.83	3.10	0.062	0.205	0.017	0.05
23	1.92	2.90	0.058	0.205	0.015	0.04
24	2.00	3.00	0.060	0.205	0.016	0.04
25	2.08	3.10	0.062	0.205	0.017	0.05
26	2.17	4.20	0.084	0.205	0.022	0.06
27	2.25	5.00	0.100	0.205	0.027	0.07
28	2.33	3.50	0.070	0.205	0.019	0.05
29	2.42	6.80	0.136	0.205	0.036	0.10

30	2.50	7.30	0.146	0.205	0.039	0.11
31	2.58	8.20	0.164	0.205	0.044	0.12
32	2.67	5.90	0.118	0.205	0.031	0.09
33	2.75	2.00	0.040	0.205	0.011	0.03
34	2.83	1.80	0.036	0.205	0.010	0.03
35	2.92	1.80	0.036	0.205	0.010	0.03
36	3.00	0.60	0.012	0.205	0.003	0.01
Sum =		100.0		Sum =		1.5

Flood volume = Effective rainfall 0.12(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.04(In)
Total soil loss = 0.003(Ac.Ft)
Total rainfall = 0.17(In)
Flood volume = 329.3 Cubic Feet
Total soil loss = 119.5 Cubic Feet

Storm Event 2 Effective Rainfall = 0.316(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.049	0.205	0.013	0.04
2	0.17	1.30	0.049	0.205	0.013	0.04
3	0.25	1.10	0.042	0.205	0.011	0.03
4	0.33	1.50	0.057	0.205	0.015	0.04
5	0.42	1.50	0.057	0.205	0.015	0.04
6	0.50	1.80	0.068	0.205	0.018	0.05
7	0.58	1.50	0.057	0.205	0.015	0.04
8	0.67	1.80	0.068	0.205	0.018	0.05
9	0.75	1.80	0.068	0.205	0.018	0.05
10	0.83	1.50	0.057	0.205	0.015	0.04
11	0.92	1.60	0.061	0.205	0.016	0.04
12	1.00	1.80	0.068	0.205	0.018	0.05
13	1.08	2.20	0.083	0.205	0.022	0.06
14	1.17	2.20	0.083	0.205	0.022	0.06
15	1.25	2.20	0.083	0.205	0.022	0.06
16	1.33	2.00	0.076	0.205	0.020	0.06
17	1.42	2.60	0.099	0.205	0.026	0.07
18	1.50	2.70	0.102	0.205	0.027	0.08
19	1.58	2.40	0.091	0.205	0.024	0.07
20	1.67	2.70	0.102	0.205	0.027	0.08
21	1.75	3.30	0.125	0.205	0.033	0.09
22	1.83	3.10	0.117	0.205	0.031	0.09
23	1.92	2.90	0.110	0.205	0.029	0.08
24	2.00	3.00	0.114	0.205	0.030	0.08
25	2.08	3.10	0.117	0.205	0.031	0.09
26	2.17	4.20	0.159	0.205	0.042	0.12
27	2.25	5.00	0.189	0.205	0.050	0.14
28	2.33	3.50	0.133	0.205	0.035	0.10
29	2.42	6.80	0.258	0.205	---	0.05
30	2.50	7.30	0.277	0.205	---	0.07
31	2.58	8.20	0.311	0.205	---	0.11
32	2.67	5.90	0.224	0.205	---	0.02
33	2.75	2.00	0.076	0.205	0.020	0.06
34	2.83	1.80	0.068	0.205	0.018	0.05
35	2.92	1.80	0.068	0.205	0.018	0.05
36	3.00	0.60	0.023	0.205	0.006	0.02
Sum =		100.0		Sum =		2.2

Flood volume = Effective rainfall 0.19(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.13(In)
Total soil loss = 0.008(Ac.Ft)
Total rainfall = 0.32(In)
Flood volume = 503.5 Cubic Feet
Total soil loss = 346.8 Cubic Feet

Storm Event 1 Effective Rainfall = 0.877(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.137	0.205	0.036	0.10
2	0.17	1.30	0.137	0.205	0.036	0.10
3	0.25	1.10	0.116	0.205	0.031	0.08
4	0.33	1.50	0.158	0.205	0.042	0.12
5	0.42	1.50	0.158	0.205	0.042	0.12
6	0.50	1.80	0.189	0.205	0.050	0.14
7	0.58	1.50	0.158	0.205	0.042	0.12
8	0.67	1.80	0.189	0.205	0.050	0.14
9	0.75	1.80	0.189	0.205	0.050	0.14
10	0.83	1.50	0.158	0.205	0.042	0.12
11	0.92	1.60	0.168	0.205	0.045	0.12
12	1.00	1.80	0.189	0.205	0.050	0.14
13	1.08	2.20	0.232	0.205	---	0.03
14	1.17	2.20	0.232	0.205	---	0.03
15	1.25	2.20	0.232	0.205	---	0.03
16	1.33	2.00	0.210	0.205	---	0.01
17	1.42	2.60	0.274	0.205	---	0.07
18	1.50	2.70	0.284	0.205	---	0.08
19	1.58	2.40	0.253	0.205	---	0.05
20	1.67	2.70	0.284	0.205	---	0.08
21	1.75	3.30	0.347	0.205	---	0.14
22	1.83	3.10	0.326	0.205	---	0.12
23	1.92	2.90	0.305	0.205	---	0.10
24	2.00	3.00	0.316	0.205	---	0.11
25	2.08	3.10	0.326	0.205	---	0.12
26	2.17	4.20	0.442	0.205	---	0.24
27	2.25	5.00	0.526	0.205	---	0.32
28	2.33	3.50	0.368	0.205	---	0.16
29	2.42	6.80	0.716	0.205	---	0.51
30	2.50	7.30	0.768	0.205	---	0.56
31	2.58	8.20	0.863	0.205	---	0.66
32	2.67	5.90	0.621	0.205	---	0.42
33	2.75	2.00	0.210	0.205	---	0.01
34	2.83	1.80	0.189	0.205	0.050	0.14
35	2.92	1.80	0.189	0.205	0.050	0.14
36	3.00	0.60	0.063	0.205	0.017	0.05
Sum =		100.0		Sum =		5.6

Flood volume = Effective rainfall 0.46(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.41(In)
Total soil loss = 0.025(Ac.Ft)
Total rainfall = 0.88(In)
Flood volume = 1252.1 Cubic Feet
Total soil loss = 1110.1 Cubic Feet

Peak flow rate of this hydrograph = 0.476(CFS)

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TOTAL OF: 3 3 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q	|	|	|	|
0+10	0.0002	0.01	Q	|	|	|	|
0+15	0.0003	0.01	Q	|	|	|	|

0+20	0.0004	0.02	Q	|	|	|	|
0+25	0.0005	0.02	Q	|	|	|	|
0+30	0.0006	0.02	Q	|	|	|	|
0+35	0.0007	0.02	Q	|	|	|	|
0+40	0.0009	0.02	Q	|	|	|	|
0+45	0.0010	0.02	Q	|	|	|	|
0+50	0.0011	0.02	Q	|	|	|	|
0+55	0.0012	0.02	QV	|	|	|	|
1+ 0	0.0014	0.02	QV	|	|	|	|
1+ 5	0.0015	0.02	QV	|	|	|	|
1+10	0.0017	0.02	QV	|	|	|	|
1+15	0.0019	0.02	QV	|	|	|	|
1+20	0.0020	0.02	QV	|	|	|	|
1+25	0.0022	0.03	QV	|	|	|	|
1+30	0.0024	0.03	Q V	|	|	|	|
1+35	0.0026	0.03	Q V	|	|	|	|
1+40	0.0028	0.03	Q V	|	|	|	|
1+45	0.0030	0.03	Q V	|	|	|	|
1+50	0.0033	0.03	Q V	|	|	|	|
1+55	0.0035	0.03	Q V	|	|	|	|
2+ 0	0.0037	0.03	Q V	|	|	|	|
2+ 5	0.0039	0.03	Q V	|	|	|	|
2+10	0.0042	0.04	Q V	|	|	|	|
2+15	0.0046	0.05	Q V	|	|	|	|
2+20	0.0049	0.04	Q V	|	|	|	|
2+25	0.0054	0.07	Q V	|	|	|	|
2+30	0.0059	0.08	Q V	|	|	|	|
2+35	0.0065	0.09	Q V	|	|	|	|
2+40	0.0070	0.07	Q V	|	|	|	|
2+45	0.0072	0.03	Q V	|	|	|	|
2+50	0.0073	0.02	Q V	|	|	|	|
2+55	0.0075	0.02	Q V	|	|	|	|
3+ 0	0.0075	0.01	Q V	|	|	|	|
3+ 5	0.0077	0.02	Q V	|	|	|	|
3+10	0.0079	0.03	Q V	|	|	|	|
3+15	0.0080	0.02	Q V	|	|	|	|
3+20	0.0082	0.03	Q V	|	|	|	|
3+25	0.0085	0.03	Q V	|	|	|	|
3+30	0.0087	0.04	Q V	|	|	|	|
3+35	0.0089	0.03	Q V	|	|	|	|
3+40	0.0092	0.04	Q V	|	|	|	|
3+45	0.0094	0.04	Q V	|	|	|	|
3+50	0.0097	0.03	Q V	|	|	|	|
3+55	0.0099	0.03	Q V	|	|	|	|
4+ 0	0.0101	0.04	Q V	|	|	|	|
4+ 5	0.0104	0.04	Q V	|	|	|	|
4+10	0.0108	0.05	Q V	|	|	|	|
4+15	0.0111	0.05	Q V	|	|	|	|
4+20	0.0114	0.04	Q V	|	|	|	|
4+25	0.0117	0.05	Q V	|	|	|	|
4+30	0.0121	0.06	Q V	|	|	|	|
4+35	0.0125	0.05	Q V	|	|	|	|
4+40	0.0128	0.05	Q V	|	|	|	|
4+45	0.0133	0.07	Q V	|	|	|	|
4+50	0.0137	0.07	Q V	|	|	|	|
4+55	0.0142	0.06	Q V	|	|	|	|
5+ 0	0.0146	0.06	Q V	|	|	|	|
5+ 5	0.0150	0.06	Q V	|	|	|	|
5+10	0.0156	0.08	Q V	|	|	|	|
5+15	0.0163	0.10	Q V	|	|	|	|
5+20	0.0168	0.08	Q V	|	|	|	|
5+25	0.0172	0.05	Q V	|	|	|	|
5+30	0.0175	0.05	Q V	|	|	|	|
5+35	0.0180	0.07	Q V	|	|	|	|
5+40	0.0182	0.03	Q V	|	|	|	|

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  5+45     0.0184    0.04  Q      |   V   |       |       |
  5+50     0.0187    0.04  Q      |   V   |       |       |
  5+55     0.0190    0.04  Q      |   V   |       |       |
  6+ 0     0.0191    0.02  Q      |   V   |       |       |
  6+ 5     0.0195    0.06  Q      |   V   |       |       |
  6+10     0.0200    0.08  Q      |    V  |       |       |
  6+15     0.0205    0.07  Q      |    V  |       |       |
  6+20     0.0210    0.08  Q      |    V  |       |       |
  6+25     0.0216    0.09  Q      |     V |       |       |
  6+30     0.0223    0.10  Q      |     V |       |       |
  6+35     0.0229    0.09  Q      |     V|       |       |
  6+40     0.0236    0.10  Q      |     V|       |       |
  6+45     0.0243    0.10  Q      |      V       |       |
  6+50     0.0250    0.09  Q      |      V       |       |
  6+55     0.0256    0.09  Q      |      |V      |       |
  7+ 0     0.0263    0.10  Q      |      |V      |       |
  7+ 5     0.0266    0.04  Q      |      | V     |       |
  7+10     0.0267    0.02  Q      |      | V     |       |
  7+15     0.0268    0.02  Q      |      | V     |       |
  7+20     0.0269    0.01  Q      |      | V     |       |
  7+25     0.0272    0.04  Q      |      | V     |       |
  7+30     0.0275    0.06  Q      |      |  V    |       |
  7+35     0.0278    0.04  Q      |      |  V    |       |
  7+40     0.0282    0.05  Q      |      |  V    |       |
  7+45     0.0289    0.10  Q      |      |   V   |       |
  7+50     0.0295    0.09  Q      |      |   V   |       |
  7+55     0.0300    0.08  Q      |      |   V   |       |
  8+ 0     0.0306    0.08  Q      |      |   V   |       |
  8+ 5     0.0312    0.09  Q      |      |   V   |       |
  8+10     0.0323    0.16  Q      |      |    V  |       |
  8+15     0.0339    0.23  Q      |      |    V  |       |
  8+20     0.0349    0.15  Q      |      |     V|       |
  8+25     0.0371    0.32  |Q     |      |      |V      |
  8+30     0.0399    0.41  |Q     |      |      |  V    |
  8+35     0.0432    0.48  |Q     |      |      |   V   |
  8+40     0.0456    0.35  |Q     |      |      |    V  |
  8+45     0.0462    0.07  Q      |      |      |    V  |
  8+50     0.0467    0.08  Q      |      |      |     V|
  8+55     0.0474    0.10  Q      |      |      |     V|
  9+ 0     0.0478    0.05  Q      |      |      |     V|
  9+ 5     0.0478    0.01  Q      |      |      |      V
--------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: BPOST35.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
3-Hr 5-Yr Storm Event

Drainage Area = 0.74(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 284.00(Ft.)
Length along longest watercourse measured to centroid = 86.63(Ft.)
Length along longest watercourse = 0.054 Mi.
Length along longest watercourse measured to centroid = 0.016 Mi.
Difference in elevation = 1.69(Ft.)
Slope along watercourse = 31.4197 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.013 Hr.
Lag time = 0.78 Min.
25% of lag time = 0.19 Min.
40% of lag time = 0.31 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	0.88	0.65

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	2.20	1.63

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 0.877(In)
Area Averaged 100-Year Rainfall = 2.200(In)

Point rain (area averaged) = 1.187(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.187(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.742	55.00	0.792

Total Area Entered = 0.74(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
55.0	35.0	0.715	0.792	0.205	1.000	0.205

Sum (F) = 0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205

Minimum soil loss rate ((In/Hr)) = 0.103

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.266

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	645.077	77.129	0.577
2	0.167	1290.154	22.871	0.171
	Sum = 100.000		Sum=	0.748

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.185	0.205	0.049	0.14
2	0.17	1.30	0.185	0.205	0.049	0.14
3	0.25	1.10	0.157	0.205	0.042	0.11
4	0.33	1.50	0.214	0.205	---	0.01
5	0.42	1.50	0.214	0.205	---	0.01
6	0.50	1.80	0.256	0.205	---	0.05
7	0.58	1.50	0.214	0.205	---	0.01
8	0.67	1.80	0.256	0.205	---	0.05
9	0.75	1.80	0.256	0.205	---	0.05
10	0.83	1.50	0.214	0.205	---	0.01
11	0.92	1.60	0.228	0.205	---	0.02
12	1.00	1.80	0.256	0.205	---	0.05
13	1.08	2.20	0.313	0.205	---	0.11
14	1.17	2.20	0.313	0.205	---	0.11
15	1.25	2.20	0.313	0.205	---	0.11
16	1.33	2.00	0.285	0.205	---	0.08
17	1.42	2.60	0.370	0.205	---	0.17
18	1.50	2.70	0.385	0.205	---	0.18
19	1.58	2.40	0.342	0.205	---	0.14
20	1.67	2.70	0.385	0.205	---	0.18
21	1.75	3.30	0.470	0.205	---	0.26
22	1.83	3.10	0.442	0.205	---	0.24
23	1.92	2.90	0.413	0.205	---	0.21
24	2.00	3.00	0.427	0.205	---	0.22
25	2.08	3.10	0.442	0.205	---	0.24
26	2.17	4.20	0.598	0.205	---	0.39
27	2.25	5.00	0.712	0.205	---	0.51
28	2.33	3.50	0.498	0.205	---	0.29
29	2.42	6.80	0.968	0.205	---	0.76
30	2.50	7.30	1.040	0.205	---	0.83
31	2.58	8.20	1.168	0.205	---	0.96
32	2.67	5.90	0.840	0.205	---	0.64
33	2.75	2.00	0.285	0.205	---	0.08

```
34   2.83    1.80     0.256       0.205     ---         0.05
35   2.92    1.80     0.256       0.205     ---         0.05
36   3.00    0.60     0.085       0.205     0.023       0.06
  Sum =    100.0                          Sum =    7.5
          Flood volume = Effective rainfall     0.63(In)
           times area      0.7(Ac.)/[(In)/(Ft.)] =      0.0(Ac.Ft)
          Total soil loss =     0.56(In)
          Total soil loss =    0.035(Ac.Ft)
          Total rainfall =     1.19(In)
          Flood volume =       1686.2 Cubic Feet
          Total soil loss =    1510.6 Cubic Feet
          --------------------------------------------------------------------
           Peak flow rate of this hydrograph =     0.698(CFS)
          --------------------------------------------------------------------
          ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                      3 - H O U R   S T O R M
                    R u n o f f     H y d r o g r a p h
          --------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

          --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       2.5      5.0      7.5      10.0
-------------------------------------------------------------------------
 0+ 5      0.0005     0.08  Q       |        |        |        |
 0+10      0.0012      0.10  QV      |        |        |        |
 0+15      0.0019      0.09  QV      |        |        |        |
 0+20      0.0020      0.02  Q V     |        |        |        |
 0+25      0.0021      0.01  Q V     |        |        |        |
 0+30      0.0023      0.03  Q V     |        |        |        |
 0+35      0.0024      0.01  Q V     |        |        |        |
 0+40      0.0026      0.03  Q V     |        |        |        |
 0+45      0.0029      0.04  Q V     |        |        |        |
 0+50      0.0029      0.01  Q  V     |        |        |        |
 0+55      0.0030      0.01  Q  V     |        |        |        |
 1+ 0      0.0033     0.03  Q  V     |        |        |        |
 1+ 5      0.0038     0.07  Q  V     |        |        |        |
 1+10      0.0043      0.08  Q   V     |        |        |        |
 1+15      0.0049      0.08  Q    V    |        |        |        |
 1+20      0.0053      0.06  Q    V    |        |        |        |
 1+25      0.0061      0.11  Q     V   |        |        |        |
 1+30      0.0070      0.13  Q      V  |        |        |        |
 1+35      0.0077      0.11  Q      V  |        |        |        |
 1+40      0.0086      0.13  Q       V |        |        |        |
 1+45      0.0099      0.18  Q        V       |        |        |
 1+50      0.0111      0.18  Q       |V       |        |        |
 1+55      0.0122      0.16  Q       | V      |        |        |
 2+ 0      0.0134     0.16  Q       |  V     |        |        |
 2+ 5      0.0146     0.17  Q       |    V   |        |        |
 2+10      0.0164      0.27  |Q      |     V   |        |        |
 2+15      0.0189      0.36  |Q      |       V|        |        |
 2+20      0.0206      0.26  |Q      |        |V       |        |
 2+25      0.0240      0.49  |Q      |        |   V    |        |
 2+30      0.0282      0.61  | Q     |        |       V|        |
 2+35      0.0330      0.70  | Q     |        |        |   V    |
 2+40      0.0367      0.53  | Q     |        |        |     V  |
 2+45      0.0378      0.15  Q       |        |        |      V|
 2+50      0.0381      0.04  Q       |        |        |      V|
 2+55      0.0383      0.04  Q       |        |        |      V|
 3+ 0      0.0386     0.04  Q       |        |        |      V|
 3+ 5      0.0387     0.01  Q       |        |        |       V
-------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: BPOST310.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
3-Hr 10-Yr Storm Event

Drainage Area = 0.74(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 284.00(Ft.)
Length along longest watercourse measured to centroid = 86.63(Ft.)
Length along longest watercourse = 0.054 Mi.
Length along longest watercourse measured to centroid = 0.016 Mi.
Difference in elevation = 1.69(Ft.)
Slope along watercourse = 31.4197 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.013 Hr.
Lag time = 0.78 Min.
25% of lag time = 0.19 Min.
40% of lag time = 0.31 Min.
Unit time = 5.00 Min.
Duration of storm = 3 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	0.88	0.65

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	2.20	1.63

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 0.877(In)
Area Averaged 100-Year Rainfall = 2.200(In)

Point rain (area averaged) = 1.421(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.421(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.742	55.00	0.792

Total Area Entered = 0.74(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
55.0	35.0	0.715	0.792	0.205	1.000	0.205

Sum (F) = 0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205

Minimum soil loss rate ((In/Hr)) = 0.103

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.266

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	645.077	77.129	0.577
2	0.167	1290.154	22.871	0.171
	Sum = 100.000		Sum=	0.748

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	1.30	0.222	0.205	---	0.02
2	0.17	1.30	0.222	0.205	---	0.02
3	0.25	1.10	0.188	0.205	0.050	0.14
4	0.33	1.50	0.256	0.205	---	0.05
5	0.42	1.50	0.256	0.205	---	0.05
6	0.50	1.80	0.307	0.205	---	0.10
7	0.58	1.50	0.256	0.205	---	0.05
8	0.67	1.80	0.307	0.205	---	0.10
9	0.75	1.80	0.307	0.205	---	0.10
10	0.83	1.50	0.256	0.205	---	0.05
11	0.92	1.60	0.273	0.205	---	0.07
12	1.00	1.80	0.307	0.205	---	0.10
13	1.08	2.20	0.375	0.205	---	0.17
14	1.17	2.20	0.375	0.205	---	0.17
15	1.25	2.20	0.375	0.205	---	0.17
16	1.33	2.00	0.341	0.205	---	0.14
17	1.42	2.60	0.443	0.205	---	0.24
18	1.50	2.70	0.460	0.205	---	0.26
19	1.58	2.40	0.409	0.205	---	0.20
20	1.67	2.70	0.460	0.205	---	0.26
21	1.75	3.30	0.563	0.205	---	0.36
22	1.83	3.10	0.529	0.205	---	0.32
23	1.92	2.90	0.495	0.205	---	0.29
24	2.00	3.00	0.512	0.205	---	0.31
25	2.08	3.10	0.529	0.205	---	0.32
26	2.17	4.20	0.716	0.205	---	0.51
27	2.25	5.00	0.853	0.205	---	0.65
28	2.33	3.50	0.597	0.205	---	0.39
29	2.42	6.80	1.160	0.205	---	0.95
30	2.50	7.30	1.245	0.205	---	1.04
31	2.58	8.20	1.399	0.205	---	1.19
32	2.67	5.90	1.006	0.205	---	0.80
33	2.75	2.00	0.341	0.205	---	0.14

```
34   2.83    1.80    0.307       0.205     ---         0.10
35   2.92    1.80    0.307       0.205     ---         0.10
36   3.00    0.60    0.102       0.205    0.027        0.08
  Sum =    100.0                          Sum =    10.0
          Flood volume = Effective rainfall     0.83(In)
           times area      0.7(Ac.)/[(In)/(Ft.)] =      0.1(Ac.Ft)
          Total soil loss =     0.59(In)
          Total soil loss =    0.036(Ac.Ft)
          Total rainfall =     1.42(In)
          Flood volume =       2244.7 Cubic Feet
          Total soil loss =       1583.5 Cubic Feet
          ---------------------------------------------------------------------
           Peak flow rate of this hydrograph =     0.867(CFS)
          ---------------------------------------------------------------------
          ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                      3 - H O U R   S T O R M
                    R u n o f f     H y d r o g r a p h
          ---------------------------------------------------------------------
                   Hydrograph in   5   Minute intervals ((CFS))

          ---------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       2.5      5.0      7.5      10.0
---------------------------------------------------------------------------
 0+ 5      0.0001     0.01  Q       |        |        |        |
 0+10      0.0002      0.01  Q       |        |        |        |
 0+15      0.0007      0.08  Q       |        |        |        |
 0+20      0.0011      0.05  Q       |        |        |        |
 0+25      0.0013      0.04  QV      |        |        |        |
 0+30      0.0018      0.07  QV      |        |        |        |
 0+35      0.0021      0.05  QV      |        |        |        |
 0+40      0.0026      0.07  Q V     |        |        |        |
 0+45      0.0031      0.08  Q V     |        |        |        |
 0+50      0.0034      0.05  Q V     |        |        |        |
 0+55      0.0038      0.05  Q V     |        |        |        |
 1+ 0      0.0042     0.07  Q  V     |        |        |        |
 1+ 5      0.0050     0.12  Q  V     |        |        |        |
 1+10      0.0059      0.13  Q   V    |        |        |        |
 1+15      0.0068      0.13  Q   V    |        |        |        |
 1+20      0.0075      0.11  Q   V    |        |        |        |
 1+25      0.0086      0.16  Q    V   |        |        |        |
 1+30      0.0099      0.19  Q     V  |        |        |        |
 1+35      0.0111      0.16  Q     V  |        |        |        |
 1+40      0.0123      0.18  Q      V|        |        |        |
 1+45      0.0140      0.25  |Q      V        |        |        |
 1+50      0.0157      0.25  Q       | V      |        |        |
 1+55      0.0173      0.22  Q       |  V     |        |        |
 2+ 0      0.0188     0.23  Q       |   V    |        |        |
 2+ 5      0.0205     0.24  Q       |    V   |        |        |
 2+10      0.0229      0.35  |Q      |     V  |        |        |
 2+15      0.0261      0.46  |Q      |       V        |        |
 2+20      0.0284      0.34  |Q      |        | V      |        |
 2+25      0.0326      0.62  | Q     |        |    V   |        |
 2+30      0.0379      0.76  |  Q    |        |       V|        |
 2+35      0.0439      0.87  |  Q    |        |        |   V    |
 2+40      0.0485      0.67  | Q     |        |        |     V  |
 2+45      0.0499      0.22  Q       |        |        |      V |
 2+50      0.0505      0.08  Q       |        |        |       V|
 2+55      0.0510      0.08  Q       |        |        |       V|
 3+ 0      0.0514     0.06  Q       |        |        |       V|
 3+ 5      0.0515     0.01  Q       |        |        |        V
---------------------------------------------------------------------------
```

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: BPOST62.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
6-Hr 2-Yr Storm Event

Drainage Area = 0.74(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 284.00(Ft.)
Length along longest watercourse measured to centroid = 86.63(Ft.)
Length along longest watercourse = 0.054 Mi.
Length along longest watercourse measured to centroid = 0.016 Mi.
Difference in elevation = 1.69(Ft.)
Slope along watercourse = 31.4197 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.013 Hr.
Lag time = 0.78 Min.
25% of lag time = 0.19 Min.
40% of lag time = 0.31 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	1.27	0.94

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	3.12	2.32

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 1.270(In)
Area Averaged 100-Year Rainfall = 3.120(In)

Point rain (area averaged) = 1.270(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.270(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.742	55.00	0.792

Total Area Entered = 0.74(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
55.0	35.0	0.715	0.792	0.205	1.000	0.205

Sum (F) = 0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205

Minimum soil loss rate ((In/Hr)) = 0.103

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.266

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	645.077	77.129	0.577
2	0.167	1290.154	22.871	0.171

Sum = 100.000 Sum= 0.748

Storm Event 3 Effective Rainfall = 0.241(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.014	0.205	0.004	0.01
2	0.17	0.60	0.017	0.205	0.005	0.01
3	0.25	0.60	0.017	0.205	0.005	0.01
4	0.33	0.60	0.017	0.205	0.005	0.01
5	0.42	0.60	0.017	0.205	0.005	0.01
6	0.50	0.70	0.020	0.205	0.005	0.01
7	0.58	0.70	0.020	0.205	0.005	0.01
8	0.67	0.70	0.020	0.205	0.005	0.01
9	0.75	0.70	0.020	0.205	0.005	0.01
10	0.83	0.70	0.020	0.205	0.005	0.01
11	0.92	0.70	0.020	0.205	0.005	0.01
12	1.00	0.80	0.023	0.205	0.006	0.02
13	1.08	0.80	0.023	0.205	0.006	0.02
14	1.17	0.80	0.023	0.205	0.006	0.02
15	1.25	0.80	0.023	0.205	0.006	0.02
16	1.33	0.80	0.023	0.205	0.006	0.02
17	1.42	0.80	0.023	0.205	0.006	0.02
18	1.50	0.80	0.023	0.205	0.006	0.02
19	1.58	0.80	0.023	0.205	0.006	0.02
20	1.67	0.80	0.023	0.205	0.006	0.02
21	1.75	0.80	0.023	0.205	0.006	0.02
22	1.83	0.80	0.023	0.205	0.006	0.02
23	1.92	0.80	0.023	0.205	0.006	0.02
24	2.00	0.90	0.026	0.205	0.007	0.02
25	2.08	0.80	0.023	0.205	0.006	0.02
26	2.17	0.90	0.026	0.205	0.007	0.02
27	2.25	0.90	0.026	0.205	0.007	0.02
28	2.33	0.90	0.026	0.205	0.007	0.02
29	2.42	0.90	0.026	0.205	0.007	0.02

30	2.50	0.90	0.026	0.205	0.007	0.02
31	2.58	0.90	0.026	0.205	0.007	0.02
32	2.67	0.90	0.026	0.205	0.007	0.02
33	2.75	1.00	0.029	0.205	0.008	0.02
34	2.83	1.00	0.029	0.205	0.008	0.02
35	2.92	1.00	0.029	0.205	0.008	0.02
36	3.00	1.00	0.029	0.205	0.008	0.02
37	3.08	1.00	0.029	0.205	0.008	0.02
38	3.17	1.10	0.032	0.205	0.008	0.02
39	3.25	1.10	0.032	0.205	0.008	0.02
40	3.33	1.10	0.032	0.205	0.008	0.02
41	3.42	1.20	0.035	0.205	0.009	0.03
42	3.50	1.30	0.038	0.205	0.010	0.03
43	3.58	1.40	0.041	0.205	0.011	0.03
44	3.67	1.40	0.041	0.205	0.011	0.03
45	3.75	1.50	0.043	0.205	0.012	0.03
46	3.83	1.50	0.043	0.205	0.012	0.03
47	3.92	1.60	0.046	0.205	0.012	0.03
48	4.00	1.60	0.046	0.205	0.012	0.03
49	4.08	1.70	0.049	0.205	0.013	0.04
50	4.17	1.80	0.052	0.205	0.014	0.04
51	4.25	1.90	0.055	0.205	0.015	0.04
52	4.33	2.00	0.058	0.205	0.015	0.04
53	4.42	2.10	0.061	0.205	0.016	0.04
54	4.50	2.10	0.061	0.205	0.016	0.04
55	4.58	2.20	0.064	0.205	0.017	0.05
56	4.67	2.30	0.067	0.205	0.018	0.05
57	4.75	2.40	0.069	0.205	0.019	0.05
58	4.83	2.40	0.069	0.205	0.019	0.05
59	4.92	2.50	0.072	0.205	0.019	0.05
60	5.00	2.60	0.075	0.205	0.020	0.06
61	5.08	3.10	0.090	0.205	0.024	0.07
62	5.17	3.60	0.104	0.205	0.028	0.08
63	5.25	3.90	0.113	0.205	0.030	0.08
64	5.33	4.20	0.122	0.205	0.032	0.09
65	5.42	4.70	0.136	0.205	0.036	0.10
66	5.50	5.60	0.162	0.205	0.043	0.12
67	5.58	1.90	0.055	0.205	0.015	0.04
68	5.67	0.90	0.026	0.205	0.007	0.02
69	5.75	0.60	0.017	0.205	0.005	0.01
70	5.83	0.50	0.014	0.205	0.004	0.01
71	5.92	0.30	0.009	0.205	0.002	0.01
72	6.00	0.20	0.006	0.205	0.002	0.00
Sum =		100.0			Sum =	2.1

Flood volume = Effective rainfall 0.18(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.06(In)
Total soil loss = 0.004(Ac.Ft)
Total rainfall = 0.24(In)
Flood volume = 476.9 Cubic Feet
Total soil loss = 173.1 Cubic Feet

Storm Event 2 Effective Rainfall = 0.457(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.027	0.205	0.007	0.02
2	0.17	0.60	0.033	0.205	0.009	0.02
3	0.25	0.60	0.033	0.205	0.009	0.02
4	0.33	0.60	0.033	0.205	0.009	0.02
5	0.42	0.60	0.033	0.205	0.009	0.02
6	0.50	0.70	0.038	0.205	0.010	0.03
7	0.58	0.70	0.038	0.205	0.010	0.03
8	0.67	0.70	0.038	0.205	0.010	0.03

9	0.75	0.70	0.038	0.205	0.010	0.03
10	0.83	0.70	0.038	0.205	0.010	0.03
11	0.92	0.70	0.038	0.205	0.010	0.03
12	1.00	0.80	0.044	0.205	0.012	0.03
13	1.08	0.80	0.044	0.205	0.012	0.03
14	1.17	0.80	0.044	0.205	0.012	0.03
15	1.25	0.80	0.044	0.205	0.012	0.03
16	1.33	0.80	0.044	0.205	0.012	0.03
17	1.42	0.80	0.044	0.205	0.012	0.03
18	1.50	0.80	0.044	0.205	0.012	0.03
19	1.58	0.80	0.044	0.205	0.012	0.03
20	1.67	0.80	0.044	0.205	0.012	0.03
21	1.75	0.80	0.044	0.205	0.012	0.03
22	1.83	0.80	0.044	0.205	0.012	0.03
23	1.92	0.80	0.044	0.205	0.012	0.03
24	2.00	0.90	0.049	0.205	0.013	0.04
25	2.08	0.80	0.044	0.205	0.012	0.03
26	2.17	0.90	0.049	0.205	0.013	0.04
27	2.25	0.90	0.049	0.205	0.013	0.04
28	2.33	0.90	0.049	0.205	0.013	0.04
29	2.42	0.90	0.049	0.205	0.013	0.04
30	2.50	0.90	0.049	0.205	0.013	0.04
31	2.58	0.90	0.049	0.205	0.013	0.04
32	2.67	0.90	0.049	0.205	0.013	0.04
33	2.75	1.00	0.055	0.205	0.015	0.04
34	2.83	1.00	0.055	0.205	0.015	0.04
35	2.92	1.00	0.055	0.205	0.015	0.04
36	3.00	1.00	0.055	0.205	0.015	0.04
37	3.08	1.00	0.055	0.205	0.015	0.04
38	3.17	1.10	0.060	0.205	0.016	0.04
39	3.25	1.10	0.060	0.205	0.016	0.04
40	3.33	1.10	0.060	0.205	0.016	0.04
41	3.42	1.20	0.066	0.205	0.018	0.05
42	3.50	1.30	0.071	0.205	0.019	0.05
43	3.58	1.40	0.077	0.205	0.020	0.06
44	3.67	1.40	0.077	0.205	0.020	0.06
45	3.75	1.50	0.082	0.205	0.022	0.06
46	3.83	1.50	0.082	0.205	0.022	0.06
47	3.92	1.60	0.088	0.205	0.023	0.06
48	4.00	1.60	0.088	0.205	0.023	0.06
49	4.08	1.70	0.093	0.205	0.025	0.07
50	4.17	1.80	0.099	0.205	0.026	0.07
51	4.25	1.90	0.104	0.205	0.028	0.08
52	4.33	2.00	0.110	0.205	0.029	0.08
53	4.42	2.10	0.115	0.205	0.031	0.08
54	4.50	2.10	0.115	0.205	0.031	0.08
55	4.58	2.20	0.121	0.205	0.032	0.09
56	4.67	2.30	0.126	0.205	0.034	0.09
57	4.75	2.40	0.132	0.205	0.035	0.10
58	4.83	2.40	0.132	0.205	0.035	0.10
59	4.92	2.50	0.137	0.205	0.037	0.10
60	5.00	2.60	0.143	0.205	0.038	0.10
61	5.08	3.10	0.170	0.205	0.045	0.12
62	5.17	3.60	0.198	0.205	0.053	0.14
63	5.25	3.90	0.214	0.205	---	0.01
64	5.33	4.20	0.230	0.205	---	0.03
65	5.42	4.70	0.258	0.205	---	0.05
66	5.50	5.60	0.307	0.205	---	0.10
67	5.58	1.90	0.104	0.205	0.028	0.08
68	5.67	0.90	0.049	0.205	0.013	0.04
69	5.75	0.60	0.033	0.205	0.009	0.02
70	5.83	0.50	0.027	0.205	0.007	0.02
71	5.92	0.30	0.016	0.205	0.004	0.01
72	6.00	0.20	0.011	0.205	0.003	0.01
	Sum =	100.0			Sum =	3.5

Flood volume = Effective rainfall 0.29(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.17(In)
Total soil loss = 0.010(Ac.Ft)
Total rainfall = 0.46(In)
Flood volume = 779.6 Cubic Feet
Total soil loss = 451.8 Cubic Feet

Storm Event 1 Effective Rainfall = 1.270(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08 0.50	0.076	0.205	0.020	0.06
2	0.17 0.60	0.091	0.205	0.024	0.07
3	0.25 0.60	0.091	0.205	0.024	0.07
4	0.33 0.60	0.091	0.205	0.024	0.07
5	0.42 0.60	0.091	0.205	0.024	0.07
6	0.50 0.70	0.107	0.205	0.028	0.08
7	0.58 0.70	0.107	0.205	0.028	0.08
8	0.67 0.70	0.107	0.205	0.028	0.08
9	0.75 0.70	0.107	0.205	0.028	0.08
10	0.83 0.70	0.107	0.205	0.028	0.08
11	0.92 0.70	0.107	0.205	0.028	0.08
12	1.00 0.80	0.122	0.205	0.032	0.09
13	1.08 0.80	0.122	0.205	0.032	0.09
14	1.17 0.80	0.122	0.205	0.032	0.09
15	1.25 0.80	0.122	0.205	0.032	0.09
16	1.33 0.80	0.122	0.205	0.032	0.09
17	1.42 0.80	0.122	0.205	0.032	0.09
18	1.50 0.80	0.122	0.205	0.032	0.09
19	1.58 0.80	0.122	0.205	0.032	0.09
20	1.67 0.80	0.122	0.205	0.032	0.09
21	1.75 0.80	0.122	0.205	0.032	0.09
22	1.83 0.80	0.122	0.205	0.032	0.09
23	1.92 0.80	0.122	0.205	0.032	0.09
24	2.00 0.90	0.137	0.205	0.037	0.10
25	2.08 0.80	0.122	0.205	0.032	0.09
26	2.17 0.90	0.137	0.205	0.037	0.10
27	2.25 0.90	0.137	0.205	0.037	0.10
28	2.33 0.90	0.137	0.205	0.037	0.10
29	2.42 0.90	0.137	0.205	0.037	0.10
30	2.50 0.90	0.137	0.205	0.037	0.10
31	2.58 0.90	0.137	0.205	0.037	0.10
32	2.67 0.90	0.137	0.205	0.037	0.10
33	2.75 1.00	0.152	0.205	0.041	0.11
34	2.83 1.00	0.152	0.205	0.041	0.11
35	2.92 1.00	0.152	0.205	0.041	0.11
36	3.00 1.00	0.152	0.205	0.041	0.11
37	3.08 1.00	0.152	0.205	0.041	0.11
38	3.17 1.10	0.168	0.205	0.045	0.12
39	3.25 1.10	0.168	0.205	0.045	0.12
40	3.33 1.10	0.168	0.205	0.045	0.12
41	3.42 1.20	0.183	0.205	0.049	0.13
42	3.50 1.30	0.198	0.205	0.053	0.15
43	3.58 1.40	0.213	0.205	---	0.01
44	3.67 1.40	0.213	0.205	---	0.01
45	3.75 1.50	0.229	0.205	---	0.02
46	3.83 1.50	0.229	0.205	---	0.02
47	3.92 1.60	0.244	0.205	---	0.04
48	4.00 1.60	0.244	0.205	---	0.04
49	4.08 1.70	0.259	0.205	---	0.05
50	4.17 1.80	0.274	0.205	---	0.07
51	4.25 1.90	0.290	0.205	---	0.08
52	4.33 2.00	0.305	0.205	---	0.10

53	4.42	2.10	0.320	0.205	---	0.11
54	4.50	2.10	0.320	0.205	---	0.11
55	4.58	2.20	0.335	0.205	---	0.13
56	4.67	2.30	0.351	0.205	---	0.15
57	4.75	2.40	0.366	0.205	---	0.16
58	4.83	2.40	0.366	0.205	---	0.16
59	4.92	2.50	0.381	0.205	---	0.18
60	5.00	2.60	0.396	0.205	---	0.19
61	5.08	3.10	0.472	0.205	---	0.27
62	5.17	3.60	0.549	0.205	---	0.34
63	5.25	3.90	0.594	0.205	---	0.39
64	5.33	4.20	0.640	0.205	---	0.43
65	5.42	4.70	0.716	0.205	---	0.51
66	5.50	5.60	0.853	0.205	---	0.65
67	5.58	1.90	0.290	0.205	---	0.08
68	5.67	0.90	0.137	0.205	0.037	0.10
69	5.75	0.60	0.091	0.205	0.024	0.07
70	5.83	0.50	0.076	0.205	0.020	0.06
71	5.92	0.30	0.046	0.205	0.012	0.03
72	6.00	0.20	0.030	0.205	0.008	0.02
Sum =		100.0			Sum =	8.6

Flood volume = Effective rainfall 0.71(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.56(In)
Total soil loss = 0.034(Ac.Ft)
Total rainfall = 1.27(In)
Flood volume = 1923.0 Cubic Feet
Total soil loss = 1497.7 Cubic Feet

Peak flow rate of this hydrograph = 0.462(CFS)

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TOTAL OF: 3 6 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.01 Q	|	|	|	|	
0+10	0.0001	0.01 Q	|	|	|	|	
0+15	0.0002	0.01 Q	|	|	|	|	
0+20	0.0002	0.01 Q	|	|	|	|	
0+25	0.0003	0.01 Q	|	|	|	|	
0+30	0.0004	0.01 Q	|	|	|	|	
0+35	0.0005	0.01 Q	|	|	|	|	
0+40	0.0005	0.01 Q	|	|	|	|	
0+45	0.0006	0.01 Q	|	|	|	|	
0+50	0.0007	0.01 Q	|	|	|	|	
0+55	0.0008	0.01 Q	|	|	|	|	
1+ 0	0.0008	0.01 Q	|	|	|	|	
1+ 5	0.0009	0.01 Q	|	|	|	|	
1+10	0.0010	0.01 Q	|	|	|	|	
1+15	0.0011	0.01 Q	|	|	|	|	
1+20	0.0012	0.01 Q	|	|	|	|	
1+25	0.0013	0.01 Q	|	|	|	|	
1+30	0.0014	0.01 Q	|	|	|	|	
1+35	0.0015	0.01 Q	|	|	|	|	
1+40	0.0015	0.01 Q	|	|	|	|	
1+45	0.0016	0.01 Q	|	|	|	|	
1+50	0.0017	0.01 Q	|	|	|	|	
1+55	0.0018	0.01 Q	|	|	|	|	
2+ 0	0.0019	0.01 QV	|	|	|	|	
2+ 5	0.0020	0.01 QV	|	|	|	|	

2+10	0.0021	0.01	QV	|	|	|	|
2+15	0.0022	0.01	QV	|	|	|	|
2+20	0.0023	0.01	QV	|	|	|	|
2+25	0.0024	0.01	QV	|	|	|	|
2+30	0.0025	0.01	QV	|	|	|	|
2+35	0.0026	0.01	QV	|	|	|	|
2+40	0.0027	0.01	QV	|	|	|	|
2+45	0.0028	0.02	QV	|	|	|	|
2+50	0.0029	0.02	QV	|	|	|	|
2+55	0.0030	0.02	QV	|	|	|	|
3+ 0	0.0031	0.02	QV	|	|	|	|
3+ 5	0.0032	0.02	QV	|	|	|	|
3+10	0.0033	0.02	QV	|	|	|	|
3+15	0.0035	0.02	QV	|	|	|	|
3+20	0.0036	0.02	QV	|	|	|	|
3+25	0.0037	0.02	Q V	|	|	|	|
3+30	0.0039	0.02	Q V	|	|	|	|
3+35	0.0040	0.02	Q V	|	|	|	|
3+40	0.0042	0.02	Q V	|	|	|	|
3+45	0.0043	0.02	Q V	|	|	|	|
3+50	0.0045	0.02	Q V	|	|	|	|
3+55	0.0047	0.03	Q V	|	|	|	|
4+ 0	0.0048	0.03	Q V	|	|	|	|
4+ 5	0.0050	0.03	Q V	|	|	|	|
4+10	0.0052	0.03	Q V	|	|	|	|
4+15	0.0054	0.03	Q V	|	|	|	|
4+20	0.0056	0.03	Q V	|	|	|	|
4+25	0.0059	0.03	Q V	|	|	|	|
4+30	0.0061	0.03	Q V	|	|	|	|
4+35	0.0063	0.03	Q V	|	|	|	|
4+40	0.0066	0.04	Q V	|	|	|	|
4+45	0.0068	0.04	Q V	|	|	|	|
4+50	0.0071	0.04	Q V	|	|	|	|
4+55	0.0074	0.04	Q V	|	|	|	|
5+ 0	0.0077	0.04	Q V	|	|	|	|
5+ 5	0.0080	0.05	Q V	|	|	|	|
5+10	0.0084	0.06	Q V	|	|	|	|
5+15	0.0088	0.06	Q V	|	|	|	|
5+20	0.0092	0.07	Q V	|	|	|	|
5+25	0.0097	0.07	Q V	|	|	|	|
5+30	0.0103	0.09	Q V	|	|	|	|
5+35	0.0106	0.04	Q V	|	|	|	|
5+40	0.0107	0.02	Q V	|	|	|	|
5+45	0.0108	0.01	Q V	|	|	|	|
5+50	0.0109	0.01	Q V	|	|	|	|
5+55	0.0109	0.01	Q V	|	|	|	|
6+ 0	0.0109	0.00	Q V	|	|	|	|
6+ 5	0.0110	0.01	Q V	|	|	|	|
6+10	0.0111	0.02	Q V	|	|	|	|
6+15	0.0113	0.02	Q V	|	|	|	|
6+20	0.0114	0.02	Q V	|	|	|	|
6+25	0.0115	0.02	Q V	|	|	|	|
6+30	0.0117	0.02	Q V	|	|	|	|
6+35	0.0118	0.02	Q V	|	|	|	|
6+40	0.0119	0.02	Q V	|	|	|	|
6+45	0.0121	0.02	Q V	|	|	|	|
6+50	0.0122	0.02	Q V	|	|	|	|
6+55	0.0124	0.02	Q V	|	|	|	|
7+ 0	0.0125	0.02	Q V	|	|	|	|
7+ 5	0.0127	0.02	Q V	|	|	|	|
7+10	0.0129	0.02	Q V	|	|	|	|
7+15	0.0130	0.02	Q V	|	|	|	|
7+20	0.0132	0.02	Q V	|	|	|	|
7+25	0.0134	0.02	Q V	|	|	|	|
7+30	0.0135	0.02	Q V	|	|	|	|

7+35	0.0137	0.02	Q	V	|	|	|	|
7+40	0.0139	0.02	Q	V	|	|	|	|
7+45	0.0140	0.02	Q	V	|	|	|	|
7+50	0.0142	0.02	Q	V	|	|	|	|
7+55	0.0144	0.02	Q	V	|	|	|	|
8+ 0	0.0145	0.03	Q	V	|	|	|	|
8+ 5	0.0147	0.02	Q	V	|	|	|	|
8+10	0.0149	0.03	Q	V	|	|	|	|
8+15	0.0151	0.03	Q	V	|	|	|	|
8+20	0.0153	0.03	Q	V	|	|	|	|
8+25	0.0155	0.03	Q	V	|	|	|	|
8+30	0.0156	0.03	Q	V	|	|	|	|
8+35	0.0158	0.03	Q	V	|	|	|	|
8+40	0.0160	0.03	Q	V	|	|	|	|
8+45	0.0162	0.03	Q	V	|	|	|	|
8+50	0.0164	0.03	Q	V	|	|	|	|
8+55	0.0166	0.03	Q	V	|	|	|	|
9+ 0	0.0168	0.03	Q	V	|	|	|	|
9+ 5	0.0171	0.03	Q	V	|	|	|	|
9+10	0.0173	0.03	Q	V	|	|	|	|
9+15	0.0175	0.03	Q	V	|	|	|	|
9+20	0.0177	0.03	Q	V	|	|	|	|
9+25	0.0180	0.04	Q	V	|	|	|	|
9+30	0.0182	0.04	Q	V	|	|	|	|
9+35	0.0185	0.04	Q	V	|	|	|	|
9+40	0.0188	0.04	Q	V	|	|	|	|
9+45	0.0191	0.04	Q	V	|	|	|	|
9+50	0.0194	0.05	Q	V	|	|	|	|
9+55	0.0198	0.05	Q	V	|	|	|	|
10+ 0	0.0201	0.05	Q	|V	|	|	|	|
10+ 5	0.0204	0.05	Q	|V	|	|	|	|
10+10	0.0208	0.05	Q	|V	|	|	|	|
10+15	0.0212	0.06	Q	|V	|	|	|	|
10+20	0.0216	0.06	Q	|V	|	|	|	|
10+25	0.0220	0.06	Q	| V	|	|	|	|
10+30	0.0225	0.06	Q	| V	|	|	|	|
10+35	0.0229	0.07	Q	| V	|	|	|	|
10+40	0.0234	0.07	Q	| V	|	|	|	|
10+45	0.0239	0.07	Q	| V	|	|	|	|
10+50	0.0244	0.07	Q	| V	|	|	|	|
10+55	0.0249	0.07	Q	| V	|	|	|	|
11+ 0	0.0254	0.08	Q	| V	|	|	|	|
11+ 5	0.0261	0.09	Q	| V	|	|	|	|
11+10	0.0268	0.10	Q	| V	|	|	|	|
11+15	0.0270	0.03	Q	| V	|	|	|	|
11+20	0.0271	0.02	Q	| V	|	|	|	|
11+25	0.0273	0.03	Q	| V	|	|	|	|
11+30	0.0278	0.07	Q	| V	|	|	|	|
11+35	0.0282	0.06	Q	| V	|	|	|	|
11+40	0.0285	0.03	Q	| V	|	|	|	|
11+45	0.0286	0.02	Q	| V	|	|	|	|
11+50	0.0287	0.02	Q	| V	|	|	|	|
11+55	0.0288	0.01	Q	| V	|	|	|	|
12+ 0	0.0288	0.01	Q	| V	|	|	|	|
12+ 5	0.0291	0.03	Q	| V	|	|	|	|
12+10	0.0294	0.05	Q	| V	|	|	|	|
12+15	0.0297	0.05	Q	| V	|	|	|	|
12+20	0.0301	0.05	Q	| V	|	|	|	|
12+25	0.0304	0.05	Q	| V	|	|	|	|
12+30	0.0308	0.06	Q	| V	|	|	|	|
12+35	0.0312	0.06	Q	| V	|	|	|	|
12+40	0.0316	0.06	Q	| V	|	|	|	|
12+45	0.0320	0.06	Q	| V	|	|	|	|
12+50	0.0324	0.06	Q	| V	|	|	|	|
12+55	0.0328	0.06	Q	| V	|	|	|	|

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13+ 0     0.0333    0.07 Q      |     V |       |       |
13+ 5     0.0337    0.07 Q      |     V |       |       |
13+10     0.0342    0.07 Q      |      V |      |       |
13+15     0.0347    0.07 Q      |      V |      |       |
13+20     0.0351    0.07 Q      |       V|      |       |
13+25     0.0356    0.07 Q      |       V|      |       |
13+30     0.0360    0.07 Q      |       V|      |       |
13+35     0.0365    0.07 Q      |        V      |       |
13+40     0.0370    0.07 Q      |        V      |       |
13+45     0.0374    0.07 Q      |        V      |       |
13+50     0.0379    0.07 Q      |        V      |       |
13+55     0.0383    0.07 Q      |       |V      |       |
14+ 0     0.0389    0.07 Q      |       |V      |       |
14+ 5     0.0393    0.07 Q      |       |V      |       |
14+10     0.0398    0.07 Q      |       |V      |       |
14+15     0.0403    0.08 Q      |       | V     |       |
14+20     0.0409    0.08 Q      |       | V     |       |
14+25     0.0414    0.08 Q      |       | V     |       |
14+30     0.0419    0.08 Q      |       | V     |       |
14+35     0.0424    0.08 Q      |       |  V    |       |
14+40     0.0429    0.08 Q      |       |  V    |       |
14+45     0.0435    0.08 Q      |       |  V    |       |
14+50     0.0441    0.08 Q      |       |   V   |       |
14+55     0.0447    0.08 Q      |       |   V   |       |
15+ 0     0.0452    0.08 Q      |       |   V   |       |
15+ 5     0.0458    0.08 Q      |       |   V   |       |
15+10     0.0464    0.09 Q      |       |    V  |       |
15+15     0.0471    0.09 Q      |       |    V  |       |
15+20     0.0477    0.09 Q      |       |     V |       |
15+25     0.0484    0.10 Q      |       |     V |       |
15+30     0.0491    0.11 Q      |       |     V |       |
15+35     0.0493    0.03 Q      |       |     V |       |
15+40     0.0494    0.01 Q      |       |     V |       |
15+45     0.0495    0.01 Q      |       |     V |       |
15+50     0.0496    0.02 Q      |       |     V |       |
15+55     0.0498    0.03 Q      |       |     V |       |
16+ 0     0.0500    0.03 Q      |       |     V |       |
16+ 5     0.0502    0.04 Q      |       |     V |       |
16+10     0.0506    0.05 Q      |       |     V |       |
16+15     0.0510    0.06 Q      |       |     V |       |
16+20     0.0515    0.07 Q      |       |     V |       |
16+25     0.0520    0.08 Q      |       |     V |       |
16+30     0.0526    0.09 Q      |       |     V |       |
16+35     0.0533    0.09 Q      |       |      V|       |
16+40     0.0540    0.11 Q      |       |      V|       |
16+45     0.0548    0.12 Q      |       |       V       |
16+50     0.0557    0.12 Q      |       |       V       |
16+55     0.0565    0.13 Q      |       |       V       |
17+ 0     0.0575    0.14 Q      |       |       |V      |
17+ 5     0.0588    0.19 Q      |       |       | V     |
17+10     0.0605    0.24 Q      |       |       |  V    |
17+15     0.0624    0.28 |Q     |       |       |   V   |
17+20     0.0646    0.32 |Q     |       |       |   V   |
17+25     0.0672    0.37 |Q     |       |       |    V  |
17+30     0.0703    0.46 |Q     |       |       |     V |
17+35     0.0714    0.16 Q      |       |       |     V|
17+40     0.0719    0.07 Q      |       |       |     V|
17+45     0.0723    0.06 Q      |       |       |     V|
17+50     0.0726    0.04 Q      |       |       |     V|
17+55     0.0728    0.03 Q      |       |       |     V|
18+ 0     0.0729    0.02 Q      |       |       |     V|
18+ 5     0.0730    0.00 Q      |       |       |      V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: BPOST65.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
6-Hr 5-Yr Storm Event

Drainage Area = 0.74(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 284.00(Ft.)
Length along longest watercourse measured to centroid = 86.63(Ft.)
Length along longest watercourse = 0.054 Mi.
Length along longest watercourse measured to centroid = 0.016 Mi.
Difference in elevation = 1.69(Ft.)
Slope along watercourse = 31.4197 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.013 Hr.
Lag time = 0.78 Min.
25% of lag time = 0.19 Min.
40% of lag time = 0.31 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	1.27	0.94

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	3.12	2.32

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 1.270(In)
Area Averaged 100-Year Rainfall = 3.120(In)

Point rain (area averaged) = 1.703(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 1.703(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.742	55.00	0.792

Total Area Entered = 0.74(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
55.0	35.0	0.715	0.792	0.205	1.000	0.205

Sum (F) = 0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205

Minimum soil loss rate ((In/Hr)) = 0.103

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.266

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	645.077	77.129	0.577
2	0.167	1290.154	22.871	0.171
	Sum = 100.000		Sum=	0.748

Unit Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	0.50	0.102	0.205	0.027	0.07
2	0.17	0.60	0.123	0.205	0.033	0.09
3	0.25	0.60	0.123	0.205	0.033	0.09
4	0.33	0.60	0.123	0.205	0.033	0.09
5	0.42	0.60	0.123	0.205	0.033	0.09
6	0.50	0.70	0.143	0.205	0.038	0.10
7	0.58	0.70	0.143	0.205	0.038	0.10
8	0.67	0.70	0.143	0.205	0.038	0.10
9	0.75	0.70	0.143	0.205	0.038	0.10
10	0.83	0.70	0.143	0.205	0.038	0.10
11	0.92	0.70	0.143	0.205	0.038	0.10
12	1.00	0.80	0.164	0.205	0.044	0.12
13	1.08	0.80	0.164	0.205	0.044	0.12
14	1.17	0.80	0.164	0.205	0.044	0.12
15	1.25	0.80	0.164	0.205	0.044	0.12
16	1.33	0.80	0.164	0.205	0.044	0.12
17	1.42	0.80	0.164	0.205	0.044	0.12
18	1.50	0.80	0.164	0.205	0.044	0.12
19	1.58	0.80	0.164	0.205	0.044	0.12
20	1.67	0.80	0.164	0.205	0.044	0.12
21	1.75	0.80	0.164	0.205	0.044	0.12
22	1.83	0.80	0.164	0.205	0.044	0.12
23	1.92	0.80	0.164	0.205	0.044	0.12
24	2.00	0.90	0.184	0.205	0.049	0.13
25	2.08	0.80	0.164	0.205	0.044	0.12
26	2.17	0.90	0.184	0.205	0.049	0.13
27	2.25	0.90	0.184	0.205	0.049	0.13
28	2.33	0.90	0.184	0.205	0.049	0.13
29	2.42	0.90	0.184	0.205	0.049	0.13
30	2.50	0.90	0.184	0.205	0.049	0.13
31	2.58	0.90	0.184	0.205	0.049	0.13
32	2.67	0.90	0.184	0.205	0.049	0.13
33	2.75	1.00	0.204	0.205	0.054	0.15

34	2.83	1.00	0.204	0.205	0.054	0.15
35	2.92	1.00	0.204	0.205	0.054	0.15
36	3.00	1.00	0.204	0.205	0.054	0.15
37	3.08	1.00	0.204	0.205	0.054	0.15
38	3.17	1.10	0.225	0.205	---	0.02
39	3.25	1.10	0.225	0.205	---	0.02
40	3.33	1.10	0.225	0.205	---	0.02
41	3.42	1.20	0.245	0.205	---	0.04
42	3.50	1.30	0.266	0.205	---	0.06
43	3.58	1.40	0.286	0.205	---	0.08
44	3.67	1.40	0.286	0.205	---	0.08
45	3.75	1.50	0.307	0.205	---	0.10
46	3.83	1.50	0.307	0.205	---	0.10
47	3.92	1.60	0.327	0.205	---	0.12
48	4.00	1.60	0.327	0.205	---	0.12
49	4.08	1.70	0.347	0.205	---	0.14
50	4.17	1.80	0.368	0.205	---	0.16
51	4.25	1.90	0.388	0.205	---	0.18
52	4.33	2.00	0.409	0.205	---	0.20
53	4.42	2.10	0.429	0.205	---	0.22
54	4.50	2.10	0.429	0.205	---	0.22
55	4.58	2.20	0.450	0.205	---	0.24
56	4.67	2.30	0.470	0.205	---	0.26
57	4.75	2.40	0.491	0.205	---	0.29
58	4.83	2.40	0.491	0.205	---	0.29
59	4.92	2.50	0.511	0.205	---	0.31
60	5.00	2.60	0.531	0.205	---	0.33
61	5.08	3.10	0.634	0.205	---	0.43
62	5.17	3.60	0.736	0.205	---	0.53
63	5.25	3.90	0.797	0.205	---	0.59
64	5.33	4.20	0.858	0.205	---	0.65
65	5.42	4.70	0.961	0.205	---	0.76
66	5.50	5.60	1.145	0.205	---	0.94
67	5.58	1.90	0.388	0.205	---	0.18
68	5.67	0.90	0.184	0.205	0.049	0.13
69	5.75	0.60	0.123	0.205	0.033	0.09
70	5.83	0.50	0.102	0.205	0.027	0.07
71	5.92	0.30	0.061	0.205	0.016	0.04
72	6.00	0.20	0.041	0.205	0.011	0.03
Sum =		100.0		Sum =		12.5

Flood volume = Effective rainfall 1.04(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.66(In)
Total soil loss = 0.041(Ac.Ft)
Total rainfall = 1.70(In)
Flood volume = 2812.5 Cubic Feet
Total soil loss = 1775.3 Cubic Feet

Peak flow rate of this hydrograph = 0.671(CFS)

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6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0003	0.04	Q	|	|	|	|
0+10	0.0007	0.06	Q	|	|	|	|
0+15	0.0012	0.07	Q	|	|	|	|
0+20	0.0017	0.07	QV	|	|	|	|
0+25	0.0021	0.07	QV	|	|	|	|
0+30	0.0027	0.08	QV	|	|	|	|

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0+35    0.0032    0.08  QV      |       |       |       |
0+40    0.0037    0.08  Q V     |       |       |       |
0+45    0.0043    0.08  Q V     |       |       |       |
0+50    0.0048    0.08  Q V     |       |       |       |
0+55    0.0054    0.08  Q  V    |       |       |       |
1+ 0    0.0060    0.09  Q  V    |       |       |       |
1+ 5    0.0066    0.09  Q   V   |       |       |       |
1+10    0.0072    0.09  Q   V   |       |       |       |
1+15    0.0078    0.09  Q   V   |       |       |       |
1+20    0.0084    0.09  Q    V  |       |       |       |
1+25    0.0091    0.09  Q    V  |       |       |       |
1+30    0.0097    0.09  Q    V  |       |       |       |
1+35    0.0103    0.09  Q     V |       |       |       |
1+40    0.0109    0.09  Q     V |       |       |       |
1+45    0.0115    0.09  Q     V |       |       |       |
1+50    0.0121    0.09  Q     V |       |       |       |
1+55    0.0128    0.09  Q     V |       |       |       |
2+ 0    0.0134    0.10  Q     V |       |       |       |
2+ 5    0.0141    0.09  Q     V |       |       |       |
2+10    0.0148    0.10  Q      V|       |       |       |
2+15    0.0155    0.10  Q      V|       |       |       |
2+20    0.0161    0.10  Q       V       |       |       |
2+25    0.0168    0.10  Q       V       |       |       |
2+30    0.0175    0.10  Q       V       |       |       |
2+35    0.0182    0.10  Q       |V      |       |       |
2+40    0.0189    0.10  Q       |V      |       |       |
2+45    0.0197    0.11  Q       | V     |       |       |
2+50    0.0205    0.11  Q       | V     |       |       |
2+55    0.0212    0.11  Q       |  V    |       |       |
3+ 0    0.0220    0.11  Q       |  V    |       |       |
3+ 5    0.0228    0.11  Q       |   V   |       |       |
3+10    0.0230    0.04  Q       |   V   |       |       |
3+15    0.0231    0.01  Q       |   V   |       |       |
3+20    0.0232    0.01  Q       |   V   |       |       |
3+25    0.0234    0.03  Q       |   V   |       |       |
3+30    0.0237    0.04  Q       |   V   |       |       |
3+35    0.0241    0.06  Q       |   V   |       |       |
3+40    0.0245    0.06  Q       |    V  |       |       |
3+45    0.0250    0.07  Q       |    V  |       |       |
3+50    0.0255    0.08  Q       |    V  |       |       |
3+55    0.0261    0.09  Q       |     V |       |       |
4+ 0    0.0268    0.09  Q       |     V |       |       |
4+ 5    0.0275    0.10  Q       |     V |       |       |
4+10    0.0283    0.12  Q       |      V|       |       |
4+15    0.0292    0.13  Q       |      V|       |       |
4+20    0.0302    0.15  Q       |      V|       |       |
4+25    0.0314    0.16  Q       |       V       |       |
4+30    0.0325    0.17  Q       |       V       |       |
4+35    0.0338    0.18  Q       |       V       |       |
4+40    0.0351    0.19  Q       |       |V      |       |
4+45    0.0365    0.21  Q       |       | V     |       |
4+50    0.0380    0.21  Q       |       |  V    |       |
4+55    0.0396    0.23  Q       |       |   V   |       |
5+ 0    0.0412    0.24  Q       |       |    V  |       |
5+ 5    0.0433    0.30  |Q      |       |     V |       |
5+10    0.0459    0.38  |Q      |       |      V|       |
5+15    0.0489    0.43  |Q      |       |       V       |
5+20    0.0522    0.48  |Q      |       |       | V     |
5+25    0.0560    0.55  | Q     |       |       |  V    |
5+30    0.0606    0.67  | Q     |       |       |     V |
5+35    0.0624    0.27  |Q      |       |       |      V|
5+40    0.0632    0.11  Q       |       |       |      V|
5+45    0.0637    0.08  Q       |       |       |      V|
5+50    0.0641    0.06  Q       |       |       |      V|
5+55    0.0644    0.04  Q       |       |       |      V|
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  6+ 0     0.0645    0.03  Q        |        |        |       V|
  6+ 5     0.0646    0.01  Q        |        |        |        V
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: BPOST610.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
6-Hr 10-Yr Storm Event

Drainage Area = 0.74(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 284.00(Ft.)
Length along longest watercourse measured to centroid = 86.63(Ft.)
Length along longest watercourse = 0.054 Mi.
Length along longest watercourse measured to centroid = 0.016 Mi.
Difference in elevation = 1.69(Ft.)
Slope along watercourse = 31.4197 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.013 Hr.
Lag time = 0.78 Min.
25% of lag time = 0.19 Min.
40% of lag time = 0.31 Min.
Unit time = 5.00 Min.
Duration of storm = 6 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	1.27	0.94

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	3.12	2.32

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 1.270(In)
Area Averaged 100-Year Rainfall = 3.120(In)

Point rain (area averaged) = 2.031(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.031(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.742	55.00	0.792

Total Area Entered = 0.74(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
55.0	35.0	0.715	0.792	0.205	1.000	0.205

Sum (F) = 0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205

Minimum soil loss rate ((In/Hr)) = 0.103

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.266

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	645.077	77.129	0.577
2	0.167	1290.154	22.871	0.171
		Sum = 100.000	Sum=	0.748

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.50	0.122	0.205	0.032	0.09
2	0.17	0.60	0.146	0.205	0.039	0.11
3	0.25	0.60	0.146	0.205	0.039	0.11
4	0.33	0.60	0.146	0.205	0.039	0.11
5	0.42	0.60	0.146	0.205	0.039	0.11
6	0.50	0.70	0.171	0.205	0.045	0.13
7	0.58	0.70	0.171	0.205	0.045	0.13
8	0.67	0.70	0.171	0.205	0.045	0.13
9	0.75	0.70	0.171	0.205	0.045	0.13
10	0.83	0.70	0.171	0.205	0.045	0.13
11	0.92	0.70	0.171	0.205	0.045	0.13
12	1.00	0.80	0.195	0.205	0.052	0.14
13	1.08	0.80	0.195	0.205	0.052	0.14
14	1.17	0.80	0.195	0.205	0.052	0.14
15	1.25	0.80	0.195	0.205	0.052	0.14
16	1.33	0.80	0.195	0.205	0.052	0.14
17	1.42	0.80	0.195	0.205	0.052	0.14
18	1.50	0.80	0.195	0.205	0.052	0.14
19	1.58	0.80	0.195	0.205	0.052	0.14
20	1.67	0.80	0.195	0.205	0.052	0.14
21	1.75	0.80	0.195	0.205	0.052	0.14
22	1.83	0.80	0.195	0.205	0.052	0.14
23	1.92	0.80	0.195	0.205	0.052	0.14
24	2.00	0.90	0.219	0.205	---	0.01
25	2.08	0.80	0.195	0.205	0.052	0.14
26	2.17	0.90	0.219	0.205	---	0.01
27	2.25	0.90	0.219	0.205	---	0.01
28	2.33	0.90	0.219	0.205	---	0.01
29	2.42	0.90	0.219	0.205	---	0.01
30	2.50	0.90	0.219	0.205	---	0.01
31	2.58	0.90	0.219	0.205	---	0.01
32	2.67	0.90	0.219	0.205	---	0.01
33	2.75	1.00	0.244	0.205	---	0.04

34	2.83	1.00	0.244	0.205	---	0.04
35	2.92	1.00	0.244	0.205	---	0.04
36	3.00	1.00	0.244	0.205	---	0.04
37	3.08	1.00	0.244	0.205	---	0.04
38	3.17	1.10	0.268	0.205	---	0.06
39	3.25	1.10	0.268	0.205	---	0.06
40	3.33	1.10	0.268	0.205	---	0.06
41	3.42	1.20	0.292	0.205	---	0.09
42	3.50	1.30	0.317	0.205	---	0.11
43	3.58	1.40	0.341	0.205	---	0.14
44	3.67	1.40	0.341	0.205	---	0.14
45	3.75	1.50	0.366	0.205	---	0.16
46	3.83	1.50	0.366	0.205	---	0.16
47	3.92	1.60	0.390	0.205	---	0.18
48	4.00	1.60	0.390	0.205	---	0.18
49	4.08	1.70	0.414	0.205	---	0.21
50	4.17	1.80	0.439	0.205	---	0.23
51	4.25	1.90	0.463	0.205	---	0.26
52	4.33	2.00	0.487	0.205	---	0.28
53	4.42	2.10	0.512	0.205	---	0.31
54	4.50	2.10	0.512	0.205	---	0.31
55	4.58	2.20	0.536	0.205	---	0.33
56	4.67	2.30	0.561	0.205	---	0.36
57	4.75	2.40	0.585	0.205	---	0.38
58	4.83	2.40	0.585	0.205	---	0.38
59	4.92	2.50	0.609	0.205	---	0.40
60	5.00	2.60	0.634	0.205	---	0.43
61	5.08	3.10	0.756	0.205	---	0.55
62	5.17	3.60	0.877	0.205	---	0.67
63	5.25	3.90	0.951	0.205	---	0.75
64	5.33	4.20	1.024	0.205	---	0.82
65	5.42	4.70	1.146	0.205	---	0.94
66	5.50	5.60	1.365	0.205	---	1.16
67	5.58	1.90	0.463	0.205	---	0.26
68	5.67	0.90	0.219	0.205	---	0.01
69	5.75	0.60	0.146	0.205	0.039	0.11
70	5.83	0.50	0.122	0.205	0.032	0.09
71	5.92	0.30	0.073	0.205	0.019	0.05
72	6.00	0.20	0.049	0.205	0.013	0.04
Sum =		100.0			Sum =	14.1

Flood volume = Effective rainfall 1.18(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.86(In)
Total soil loss = 0.053(Ac.Ft)
Total rainfall = 2.03(In)
Flood volume = 3165.7 Cubic Feet
Total soil loss = 2305.0 Cubic Feet

Peak flow rate of this hydrograph = 0.830(CFS)

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6 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0004	0.05	Q	|	|	|	|
0+10	0.0009	0.08	Q	|	|	|	|
0+15	0.0014	0.08	Q	|	|	|	|
0+20	0.0020	0.08	QV	|	|	|	|
0+25	0.0025	0.08	QV	|	|	|	|
0+30	0.0032	0.09	QV	|	|	|	|

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0+35     0.0038    0.09  Q V     |       |       |       |
0+40     0.0045    0.09  Q V     |       |       |       |
0+45     0.0051    0.09  Q V     |       |       |       |
0+50     0.0057    0.09  Q  V    |       |       |       |
0+55     0.0064    0.09  Q  V    |       |       |       |
1+ 0     0.0071    0.10  Q  V    |       |       |       |
1+ 5     0.0078    0.11  Q   V   |       |       |       |
1+10     0.0086    0.11  Q   V   |       |       |       |
1+15     0.0093    0.11  Q    V  |       |       |       |
1+20     0.0101    0.11  Q    V  |       |       |       |
1+25     0.0108    0.11  Q    V  |       |       |       |
1+30     0.0115    0.11  Q     V |       |       |       |
1+35     0.0123    0.11  Q     V |       |       |       |
1+40     0.0130    0.11  Q     V |       |       |       |
1+45     0.0137    0.11  Q     V |       |       |       |
1+50     0.0145    0.11  Q     V |       |       |       |
1+55     0.0152    0.11  Q      V|       |       |       |
2+ 0     0.0154    0.03  Q      V|       |       |       |
2+ 5     0.0160    0.08  Q      V|       |       |       |
2+10     0.0163    0.03  Q      V|       |       |       |
2+15     0.0163    0.01  Q      V|       |       |       |
2+20     0.0164    0.01  Q       V|      |       |       |
2+25     0.0165    0.01  Q       V|      |       |       |
2+30     0.0165    0.01  Q       V|      |       |       |
2+35     0.0166    0.01  Q       V|      |       |       |
2+40     0.0167    0.01  Q       V|      |       |       |
2+45     0.0169    0.02  Q       V|      |       |       |
2+50     0.0171    0.03  Q       V|      |       |       |
2+55     0.0173    0.03  Q       V|      |       |       |
3+ 0     0.0175    0.03  Q       V|      |       |       |
3+ 5     0.0177    0.03  Q       V|      |       |       |
3+10     0.0180    0.04  Q       V|      |       |       |
3+15     0.0183    0.05  Q        V      |       |       |
3+20     0.0186    0.05  Q        V      |       |       |
3+25     0.0190    0.06  Q        V      |       |       |
3+30     0.0196    0.08  Q        V      |       |       |
3+35     0.0202    0.10  Q       |V      |       |       |
3+40     0.0209    0.10  Q       |V      |       |       |
3+45     0.0217    0.12  Q       |V      |       |       |
3+50     0.0226    0.12  Q       | V     |       |       |
3+55     0.0235    0.13  Q       | V     |       |       |
4+ 0     0.0244    0.14  Q       |  V    |       |       |
4+ 5     0.0255    0.15  Q       |   V   |       |       |
4+10     0.0267    0.17  Q       |   V   |       |       |
4+15     0.0280    0.19  Q       |    V  |       |       |
4+20     0.0294    0.21  Q       |    V  |       |       |
4+25     0.0309    0.23  Q       |     V |       |       |
4+30     0.0325    0.23  Q       |     V |       |       |
4+35     0.0342    0.24  Q       |      V|       |       |
4+40     0.0360    0.26  |Q      |      V|       |       |
4+45     0.0379    0.28  |Q      |       V       |       |
4+50     0.0399    0.28  |Q      |       |V      |       |
4+55     0.0419    0.30  |Q      |       | V     |       |
5+ 0     0.0441    0.32  |Q      |       |  V    |       |
5+ 5     0.0468    0.39  |Q      |       |   V   |       |
5+10     0.0501    0.48  |Q      |       |     V |       |
5+15     0.0539    0.55  | Q     |       |      V|       |
5+20     0.0580    0.60  | Q     |       |       |V      |
5+25     0.0627    0.68  | Q     |       |       |  V    |
5+30     0.0684    0.83  |  Q    |       |       |    V  |
5+35     0.0708    0.35  |Q      |       |       |     V |
5+40     0.0712    0.05  Q       |       |       |      V|
5+45     0.0716    0.06  Q       |       |       |      V|
5+50     0.0721    0.07  Q       |       |       |      V|
5+55     0.0724    0.05  Q       |       |       |      V|
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   6+ 0      0.0726     0.03  Q        |        |        |       V|
   6+ 5      0.0727     0.01  Q        |        |        |       V|
-------------------------------------------------------------------------------
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: BPOST242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
24-Hr 2-Yr Storm Event

Drainage Area = 0.74(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 284.00(Ft.)
Length along longest watercourse measured to centroid = 86.63(Ft.)
Length along longest watercourse = 0.054 Mi.
Length along longest watercourse measured to centroid = 0.016 Mi.
Difference in elevation = 1.69(Ft.)
Slope along watercourse = 31.4197 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.013 Hr.
Lag time = 0.78 Min.
25% of lag time = 0.19 Min.
40% of lag time = 0.31 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	2.43	1.80

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	6.58	4.88

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.430(In)
Area Averaged 100-Year Rainfall = 6.580(In)

Point rain (area averaged) = 2.430(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.430(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.742	55.00	0.792

Total Area Entered = 0.74(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
55.0	35.0	0.715	0.792	0.205	1.000	0.205

Sum (F) = 0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205

Minimum soil loss rate ((In/Hr)) = 0.103

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.266

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	645.077	77.129	0.577
2	0.167	1290.154	22.871	0.171

Sum = 100.000 Sum= 0.748

Storm Event 3 Effective Rainfall = 0.462(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.004	0.364	0.001	0.00
2	0.17	0.07	0.004	0.362	0.001	0.00
3	0.25	0.07	0.004	0.361	0.001	0.00
4	0.33	0.10	0.006	0.360	0.001	0.00
5	0.42	0.10	0.006	0.358	0.001	0.00
6	0.50	0.10	0.006	0.357	0.001	0.00
7	0.58	0.10	0.006	0.355	0.001	0.00
8	0.67	0.10	0.006	0.354	0.001	0.00
9	0.75	0.10	0.006	0.353	0.001	0.00
10	0.83	0.13	0.007	0.351	0.002	0.01
11	0.92	0.13	0.007	0.350	0.002	0.01
12	1.00	0.13	0.007	0.348	0.002	0.01
13	1.08	0.10	0.006	0.347	0.001	0.00
14	1.17	0.10	0.006	0.346	0.001	0.00
15	1.25	0.10	0.006	0.344	0.001	0.00
16	1.33	0.10	0.006	0.343	0.001	0.00
17	1.42	0.10	0.006	0.342	0.001	0.00
18	1.50	0.10	0.006	0.340	0.001	0.00
19	1.58	0.10	0.006	0.339	0.001	0.00
20	1.67	0.10	0.006	0.338	0.001	0.00
21	1.75	0.10	0.006	0.336	0.001	0.00
22	1.83	0.13	0.007	0.335	0.002	0.01
23	1.92	0.13	0.007	0.333	0.002	0.01
24	2.00	0.13	0.007	0.332	0.002	0.01
25	2.08	0.13	0.007	0.331	0.002	0.01
26	2.17	0.13	0.007	0.329	0.002	0.01
27	2.25	0.13	0.007	0.328	0.002	0.01
28	2.33	0.13	0.007	0.327	0.002	0.01
29	2.42	0.13	0.007	0.325	0.002	0.01

30	2.50	0.13	0.007	0.324	0.002	0.01
31	2.58	0.17	0.009	0.323	0.002	0.01
32	2.67	0.17	0.009	0.321	0.002	0.01
33	2.75	0.17	0.009	0.320	0.002	0.01
34	2.83	0.17	0.009	0.319	0.002	0.01
35	2.92	0.17	0.009	0.318	0.002	0.01
36	3.00	0.17	0.009	0.316	0.002	0.01
37	3.08	0.17	0.009	0.315	0.002	0.01
38	3.17	0.17	0.009	0.314	0.002	0.01
39	3.25	0.17	0.009	0.312	0.002	0.01
40	3.33	0.17	0.009	0.311	0.002	0.01
41	3.42	0.17	0.009	0.310	0.002	0.01
42	3.50	0.17	0.009	0.308	0.002	0.01
43	3.58	0.17	0.009	0.307	0.002	0.01
44	3.67	0.17	0.009	0.306	0.002	0.01
45	3.75	0.17	0.009	0.305	0.002	0.01
46	3.83	0.20	0.011	0.303	0.003	0.01
47	3.92	0.20	0.011	0.302	0.003	0.01
48	4.00	0.20	0.011	0.301	0.003	0.01
49	4.08	0.20	0.011	0.299	0.003	0.01
50	4.17	0.20	0.011	0.298	0.003	0.01
51	4.25	0.20	0.011	0.297	0.003	0.01
52	4.33	0.23	0.013	0.296	0.003	0.01
53	4.42	0.23	0.013	0.294	0.003	0.01
54	4.50	0.23	0.013	0.293	0.003	0.01
55	4.58	0.23	0.013	0.292	0.003	0.01
56	4.67	0.23	0.013	0.291	0.003	0.01
57	4.75	0.23	0.013	0.289	0.003	0.01
58	4.83	0.27	0.015	0.288	0.004	0.01
59	4.92	0.27	0.015	0.287	0.004	0.01
60	5.00	0.27	0.015	0.286	0.004	0.01
61	5.08	0.20	0.011	0.284	0.003	0.01
62	5.17	0.20	0.011	0.283	0.003	0.01
63	5.25	0.20	0.011	0.282	0.003	0.01
64	5.33	0.23	0.013	0.281	0.003	0.01
65	5.42	0.23	0.013	0.279	0.003	0.01
66	5.50	0.23	0.013	0.278	0.003	0.01
67	5.58	0.27	0.015	0.277	0.004	0.01
68	5.67	0.27	0.015	0.276	0.004	0.01
69	5.75	0.27	0.015	0.275	0.004	0.01
70	5.83	0.27	0.015	0.273	0.004	0.01
71	5.92	0.27	0.015	0.272	0.004	0.01
72	6.00	0.27	0.015	0.271	0.004	0.01
73	6.08	0.30	0.017	0.270	0.004	0.01
74	6.17	0.30	0.017	0.268	0.004	0.01
75	6.25	0.30	0.017	0.267	0.004	0.01
76	6.33	0.30	0.017	0.266	0.004	0.01
77	6.42	0.30	0.017	0.265	0.004	0.01
78	6.50	0.30	0.017	0.264	0.004	0.01
79	6.58	0.33	0.018	0.263	0.005	0.01
80	6.67	0.33	0.018	0.261	0.005	0.01
81	6.75	0.33	0.018	0.260	0.005	0.01
82	6.83	0.33	0.018	0.259	0.005	0.01
83	6.92	0.33	0.018	0.258	0.005	0.01
84	7.00	0.33	0.018	0.257	0.005	0.01
85	7.08	0.33	0.018	0.255	0.005	0.01
86	7.17	0.33	0.018	0.254	0.005	0.01
87	7.25	0.33	0.018	0.253	0.005	0.01
88	7.33	0.37	0.020	0.252	0.005	0.01
89	7.42	0.37	0.020	0.251	0.005	0.01
90	7.50	0.37	0.020	0.250	0.005	0.01
91	7.58	0.40	0.022	0.249	0.006	0.02
92	7.67	0.40	0.022	0.247	0.006	0.02
93	7.75	0.40	0.022	0.246	0.006	0.02
94	7.83	0.43	0.024	0.245	0.006	0.02

95	7.92	0.43	0.024	0.244	0.006	0.02
96	8.00	0.43	0.024	0.243	0.006	0.02
97	8.08	0.50	0.028	0.242	0.007	0.02
98	8.17	0.50	0.028	0.241	0.007	0.02
99	8.25	0.50	0.028	0.239	0.007	0.02
100	8.33	0.50	0.028	0.238	0.007	0.02
101	8.42	0.50	0.028	0.237	0.007	0.02
102	8.50	0.50	0.028	0.236	0.007	0.02
103	8.58	0.53	0.030	0.235	0.008	0.02
104	8.67	0.53	0.030	0.234	0.008	0.02
105	8.75	0.53	0.030	0.233	0.008	0.02
106	8.83	0.57	0.031	0.232	0.008	0.02
107	8.92	0.57	0.031	0.231	0.008	0.02
108	9.00	0.57	0.031	0.230	0.008	0.02
109	9.08	0.63	0.035	0.228	0.009	0.03
110	9.17	0.63	0.035	0.227	0.009	0.03
111	9.25	0.63	0.035	0.226	0.009	0.03
112	9.33	0.67	0.037	0.225	0.010	0.03
113	9.42	0.67	0.037	0.224	0.010	0.03
114	9.50	0.67	0.037	0.223	0.010	0.03
115	9.58	0.70	0.039	0.222	0.010	0.03
116	9.67	0.70	0.039	0.221	0.010	0.03
117	9.75	0.70	0.039	0.220	0.010	0.03
118	9.83	0.73	0.041	0.219	0.011	0.03
119	9.92	0.73	0.041	0.218	0.011	0.03
120	10.00	0.73	0.041	0.217	0.011	0.03
121	10.08	0.50	0.028	0.216	0.007	0.02
122	10.17	0.50	0.028	0.215	0.007	0.02
123	10.25	0.50	0.028	0.214	0.007	0.02
124	10.33	0.50	0.028	0.213	0.007	0.02
125	10.42	0.50	0.028	0.212	0.007	0.02
126	10.50	0.50	0.028	0.210	0.007	0.02
127	10.58	0.67	0.037	0.209	0.010	0.03
128	10.67	0.67	0.037	0.208	0.010	0.03
129	10.75	0.67	0.037	0.207	0.010	0.03
130	10.83	0.67	0.037	0.206	0.010	0.03
131	10.92	0.67	0.037	0.205	0.010	0.03
132	11.00	0.67	0.037	0.204	0.010	0.03
133	11.08	0.63	0.035	0.203	0.009	0.03
134	11.17	0.63	0.035	0.202	0.009	0.03
135	11.25	0.63	0.035	0.201	0.009	0.03
136	11.33	0.63	0.035	0.200	0.009	0.03
137	11.42	0.63	0.035	0.199	0.009	0.03
138	11.50	0.63	0.035	0.198	0.009	0.03
139	11.58	0.57	0.031	0.197	0.008	0.02
140	11.67	0.57	0.031	0.196	0.008	0.02
141	11.75	0.57	0.031	0.195	0.008	0.02
142	11.83	0.60	0.033	0.194	0.009	0.02
143	11.92	0.60	0.033	0.193	0.009	0.02
144	12.00	0.60	0.033	0.193	0.009	0.02
145	12.08	0.83	0.046	0.192	0.012	0.03
146	12.17	0.83	0.046	0.191	0.012	0.03
147	12.25	0.83	0.046	0.190	0.012	0.03
148	12.33	0.87	0.048	0.189	0.013	0.04
149	12.42	0.87	0.048	0.188	0.013	0.04
150	12.50	0.87	0.048	0.187	0.013	0.04
151	12.58	0.93	0.052	0.186	0.014	0.04
152	12.67	0.93	0.052	0.185	0.014	0.04
153	12.75	0.93	0.052	0.184	0.014	0.04
154	12.83	0.97	0.054	0.183	0.014	0.04
155	12.92	0.97	0.054	0.182	0.014	0.04
156	13.00	0.97	0.054	0.181	0.014	0.04
157	13.08	1.13	0.063	0.180	0.017	0.05
158	13.17	1.13	0.063	0.179	0.017	0.05
159	13.25	1.13	0.063	0.178	0.017	0.05

160	13.33	1.13	0.063	0.178	0.017	0.05
161	13.42	1.13	0.063	0.177	0.017	0.05
162	13.50	1.13	0.063	0.176	0.017	0.05
163	13.58	0.77	0.042	0.175	0.011	0.03
164	13.67	0.77	0.042	0.174	0.011	0.03
165	13.75	0.77	0.042	0.173	0.011	0.03
166	13.83	0.77	0.042	0.172	0.011	0.03
167	13.92	0.77	0.042	0.171	0.011	0.03
168	14.00	0.77	0.042	0.170	0.011	0.03
169	14.08	0.90	0.050	0.170	0.013	0.04
170	14.17	0.90	0.050	0.169	0.013	0.04
171	14.25	0.90	0.050	0.168	0.013	0.04
172	14.33	0.87	0.048	0.167	0.013	0.04
173	14.42	0.87	0.048	0.166	0.013	0.04
174	14.50	0.87	0.048	0.165	0.013	0.04
175	14.58	0.87	0.048	0.164	0.013	0.04
176	14.67	0.87	0.048	0.164	0.013	0.04
177	14.75	0.87	0.048	0.163	0.013	0.04
178	14.83	0.83	0.046	0.162	0.012	0.03
179	14.92	0.83	0.046	0.161	0.012	0.03
180	15.00	0.83	0.046	0.160	0.012	0.03
181	15.08	0.80	0.044	0.159	0.012	0.03
182	15.17	0.80	0.044	0.159	0.012	0.03
183	15.25	0.80	0.044	0.158	0.012	0.03
184	15.33	0.77	0.042	0.157	0.011	0.03
185	15.42	0.77	0.042	0.156	0.011	0.03
186	15.50	0.77	0.042	0.155	0.011	0.03
187	15.58	0.63	0.035	0.155	0.009	0.03
188	15.67	0.63	0.035	0.154	0.009	0.03
189	15.75	0.63	0.035	0.153	0.009	0.03
190	15.83	0.63	0.035	0.152	0.009	0.03
191	15.92	0.63	0.035	0.151	0.009	0.03
192	16.00	0.63	0.035	0.151	0.009	0.03
193	16.08	0.13	0.007	0.150	0.002	0.01
194	16.17	0.13	0.007	0.149	0.002	0.01
195	16.25	0.13	0.007	0.148	0.002	0.01
196	16.33	0.13	0.007	0.148	0.002	0.01
197	16.42	0.13	0.007	0.147	0.002	0.01
198	16.50	0.13	0.007	0.146	0.002	0.01
199	16.58	0.10	0.006	0.145	0.001	0.00
200	16.67	0.10	0.006	0.145	0.001	0.00
201	16.75	0.10	0.006	0.144	0.001	0.00
202	16.83	0.10	0.006	0.143	0.001	0.00
203	16.92	0.10	0.006	0.142	0.001	0.00
204	17.00	0.10	0.006	0.142	0.001	0.00
205	17.08	0.17	0.009	0.141	0.002	0.01
206	17.17	0.17	0.009	0.140	0.002	0.01
207	17.25	0.17	0.009	0.140	0.002	0.01
208	17.33	0.17	0.009	0.139	0.002	0.01
209	17.42	0.17	0.009	0.138	0.002	0.01
210	17.50	0.17	0.009	0.138	0.002	0.01
211	17.58	0.17	0.009	0.137	0.002	0.01
212	17.67	0.17	0.009	0.136	0.002	0.01
213	17.75	0.17	0.009	0.135	0.002	0.01
214	17.83	0.13	0.007	0.135	0.002	0.01
215	17.92	0.13	0.007	0.134	0.002	0.01
216	18.00	0.13	0.007	0.133	0.002	0.01
217	18.08	0.13	0.007	0.133	0.002	0.01
218	18.17	0.13	0.007	0.132	0.002	0.01
219	18.25	0.13	0.007	0.132	0.002	0.01
220	18.33	0.13	0.007	0.131	0.002	0.01
221	18.42	0.13	0.007	0.130	0.002	0.01
222	18.50	0.13	0.007	0.130	0.002	0.01
223	18.58	0.10	0.006	0.129	0.001	0.00
224	18.67	0.10	0.006	0.128	0.001	0.00

225	18.75	0.10	0.006	0.128	0.001	0.00
226	18.83	0.07	0.004	0.127	0.001	0.00
227	18.92	0.07	0.004	0.127	0.001	0.00
228	19.00	0.07	0.004	0.126	0.001	0.00
229	19.08	0.10	0.006	0.125	0.001	0.00
230	19.17	0.10	0.006	0.125	0.001	0.00
231	19.25	0.10	0.006	0.124	0.001	0.00
232	19.33	0.13	0.007	0.124	0.002	0.01
233	19.42	0.13	0.007	0.123	0.002	0.01
234	19.50	0.13	0.007	0.122	0.002	0.01
235	19.58	0.10	0.006	0.122	0.001	0.00
236	19.67	0.10	0.006	0.121	0.001	0.00
237	19.75	0.10	0.006	0.121	0.001	0.00
238	19.83	0.07	0.004	0.120	0.001	0.00
239	19.92	0.07	0.004	0.120	0.001	0.00
240	20.00	0.07	0.004	0.119	0.001	0.00
241	20.08	0.10	0.006	0.119	0.001	0.00
242	20.17	0.10	0.006	0.118	0.001	0.00
243	20.25	0.10	0.006	0.118	0.001	0.00
244	20.33	0.10	0.006	0.117	0.001	0.00
245	20.42	0.10	0.006	0.117	0.001	0.00
246	20.50	0.10	0.006	0.116	0.001	0.00
247	20.58	0.10	0.006	0.116	0.001	0.00
248	20.67	0.10	0.006	0.115	0.001	0.00
249	20.75	0.10	0.006	0.115	0.001	0.00
250	20.83	0.07	0.004	0.114	0.001	0.00
251	20.92	0.07	0.004	0.114	0.001	0.00
252	21.00	0.07	0.004	0.113	0.001	0.00
253	21.08	0.10	0.006	0.113	0.001	0.00
254	21.17	0.10	0.006	0.112	0.001	0.00
255	21.25	0.10	0.006	0.112	0.001	0.00
256	21.33	0.07	0.004	0.112	0.001	0.00
257	21.42	0.07	0.004	0.111	0.001	0.00
258	21.50	0.07	0.004	0.111	0.001	0.00
259	21.58	0.10	0.006	0.110	0.001	0.00
260	21.67	0.10	0.006	0.110	0.001	0.00
261	21.75	0.10	0.006	0.109	0.001	0.00
262	21.83	0.07	0.004	0.109	0.001	0.00
263	21.92	0.07	0.004	0.109	0.001	0.00
264	22.00	0.07	0.004	0.108	0.001	0.00
265	22.08	0.10	0.006	0.108	0.001	0.00
266	22.17	0.10	0.006	0.108	0.001	0.00
267	22.25	0.10	0.006	0.107	0.001	0.00
268	22.33	0.07	0.004	0.107	0.001	0.00
269	22.42	0.07	0.004	0.107	0.001	0.00
270	22.50	0.07	0.004	0.106	0.001	0.00
271	22.58	0.07	0.004	0.106	0.001	0.00
272	22.67	0.07	0.004	0.106	0.001	0.00
273	22.75	0.07	0.004	0.105	0.001	0.00
274	22.83	0.07	0.004	0.105	0.001	0.00
275	22.92	0.07	0.004	0.105	0.001	0.00
276	23.00	0.07	0.004	0.105	0.001	0.00
277	23.08	0.07	0.004	0.104	0.001	0.00
278	23.17	0.07	0.004	0.104	0.001	0.00
279	23.25	0.07	0.004	0.104	0.001	0.00
280	23.33	0.07	0.004	0.104	0.001	0.00
281	23.42	0.07	0.004	0.104	0.001	0.00
282	23.50	0.07	0.004	0.103	0.001	0.00
283	23.58	0.07	0.004	0.103	0.001	0.00
284	23.67	0.07	0.004	0.103	0.001	0.00
285	23.75	0.07	0.004	0.103	0.001	0.00
286	23.83	0.07	0.004	0.103	0.001	0.00
287	23.92	0.07	0.004	0.103	0.001	0.00
288	24.00	0.07	0.004	0.103	0.001	0.00
	Sum =	100.0			Sum =	4.1

Flood volume = Effective rainfall 0.34(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.12(In)
Total soil loss = 0.008(Ac.Ft)
Total rainfall = 0.46(In)
Flood volume = 912.4 Cubic Feet
Total soil loss = 331.2 Cubic Feet

Storm Event 2 Effective Rainfall = 0.875(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.007	0.364	0.002	0.01
2	0.17	0.07	0.007	0.362	0.002	0.01
3	0.25	0.07	0.007	0.361	0.002	0.01
4	0.33	0.10	0.010	0.360	0.003	0.01
5	0.42	0.10	0.010	0.358	0.003	0.01
6	0.50	0.10	0.010	0.357	0.003	0.01
7	0.58	0.10	0.010	0.355	0.003	0.01
8	0.67	0.10	0.010	0.354	0.003	0.01
9	0.75	0.10	0.010	0.353	0.003	0.01
10	0.83	0.13	0.014	0.351	0.004	0.01
11	0.92	0.13	0.014	0.350	0.004	0.01
12	1.00	0.13	0.014	0.348	0.004	0.01
13	1.08	0.10	0.010	0.347	0.003	0.01
14	1.17	0.10	0.010	0.346	0.003	0.01
15	1.25	0.10	0.010	0.344	0.003	0.01
16	1.33	0.10	0.010	0.343	0.003	0.01
17	1.42	0.10	0.010	0.342	0.003	0.01
18	1.50	0.10	0.010	0.340	0.003	0.01
19	1.58	0.10	0.010	0.339	0.003	0.01
20	1.67	0.10	0.010	0.338	0.003	0.01
21	1.75	0.10	0.010	0.336	0.003	0.01
22	1.83	0.13	0.014	0.335	0.004	0.01
23	1.92	0.13	0.014	0.333	0.004	0.01
24	2.00	0.13	0.014	0.332	0.004	0.01
25	2.08	0.13	0.014	0.331	0.004	0.01
26	2.17	0.13	0.014	0.329	0.004	0.01
27	2.25	0.13	0.014	0.328	0.004	0.01
28	2.33	0.13	0.014	0.327	0.004	0.01
29	2.42	0.13	0.014	0.325	0.004	0.01
30	2.50	0.13	0.014	0.324	0.004	0.01
31	2.58	0.17	0.017	0.323	0.005	0.01
32	2.67	0.17	0.017	0.321	0.005	0.01
33	2.75	0.17	0.017	0.320	0.005	0.01
34	2.83	0.17	0.017	0.319	0.005	0.01
35	2.92	0.17	0.017	0.318	0.005	0.01
36	3.00	0.17	0.017	0.316	0.005	0.01
37	3.08	0.17	0.017	0.315	0.005	0.01
38	3.17	0.17	0.017	0.314	0.005	0.01
39	3.25	0.17	0.017	0.312	0.005	0.01
40	3.33	0.17	0.017	0.311	0.005	0.01
41	3.42	0.17	0.017	0.310	0.005	0.01
42	3.50	0.17	0.017	0.308	0.005	0.01
43	3.58	0.17	0.017	0.307	0.005	0.01
44	3.67	0.17	0.017	0.306	0.005	0.01
45	3.75	0.17	0.017	0.305	0.005	0.01
46	3.83	0.20	0.021	0.303	0.006	0.02
47	3.92	0.20	0.021	0.302	0.006	0.02
48	4.00	0.20	0.021	0.301	0.006	0.02
49	4.08	0.20	0.021	0.299	0.006	0.02
50	4.17	0.20	0.021	0.298	0.006	0.02
51	4.25	0.20	0.021	0.297	0.006	0.02
52	4.33	0.23	0.024	0.296	0.007	0.02

53	4.42	0.23	0.024	0.294	0.007	0.02
54	4.50	0.23	0.024	0.293	0.007	0.02
55	4.58	0.23	0.024	0.292	0.007	0.02
56	4.67	0.23	0.024	0.291	0.007	0.02
57	4.75	0.23	0.024	0.289	0.007	0.02
58	4.83	0.27	0.028	0.288	0.007	0.02
59	4.92	0.27	0.028	0.287	0.007	0.02
60	5.00	0.27	0.028	0.286	0.007	0.02
61	5.08	0.20	0.021	0.284	0.006	0.02
62	5.17	0.20	0.021	0.283	0.006	0.02
63	5.25	0.20	0.021	0.282	0.006	0.02
64	5.33	0.23	0.024	0.281	0.007	0.02
65	5.42	0.23	0.024	0.279	0.007	0.02
66	5.50	0.23	0.024	0.278	0.007	0.02
67	5.58	0.27	0.028	0.277	0.007	0.02
68	5.67	0.27	0.028	0.276	0.007	0.02
69	5.75	0.27	0.028	0.275	0.007	0.02
70	5.83	0.27	0.028	0.273	0.007	0.02
71	5.92	0.27	0.028	0.272	0.007	0.02
72	6.00	0.27	0.028	0.271	0.007	0.02
73	6.08	0.30	0.031	0.270	0.008	0.02
74	6.17	0.30	0.031	0.268	0.008	0.02
75	6.25	0.30	0.031	0.267	0.008	0.02
76	6.33	0.30	0.031	0.266	0.008	0.02
77	6.42	0.30	0.031	0.265	0.008	0.02
78	6.50	0.30	0.031	0.264	0.008	0.02
79	6.58	0.33	0.035	0.263	0.009	0.03
80	6.67	0.33	0.035	0.261	0.009	0.03
81	6.75	0.33	0.035	0.260	0.009	0.03
82	6.83	0.33	0.035	0.259	0.009	0.03
83	6.92	0.33	0.035	0.258	0.009	0.03
84	7.00	0.33	0.035	0.257	0.009	0.03
85	7.08	0.33	0.035	0.255	0.009	0.03
86	7.17	0.33	0.035	0.254	0.009	0.03
87	7.25	0.33	0.035	0.253	0.009	0.03
88	7.33	0.37	0.038	0.252	0.010	0.03
89	7.42	0.37	0.038	0.251	0.010	0.03
90	7.50	0.37	0.038	0.250	0.010	0.03
91	7.58	0.40	0.042	0.249	0.011	0.03
92	7.67	0.40	0.042	0.247	0.011	0.03
93	7.75	0.40	0.042	0.246	0.011	0.03
94	7.83	0.43	0.045	0.245	0.012	0.03
95	7.92	0.43	0.045	0.244	0.012	0.03
96	8.00	0.43	0.045	0.243	0.012	0.03
97	8.08	0.50	0.052	0.242	0.014	0.04
98	8.17	0.50	0.052	0.241	0.014	0.04
99	8.25	0.50	0.052	0.239	0.014	0.04
100	8.33	0.50	0.052	0.238	0.014	0.04
101	8.42	0.50	0.052	0.237	0.014	0.04
102	8.50	0.50	0.052	0.236	0.014	0.04
103	8.58	0.53	0.056	0.235	0.015	0.04
104	8.67	0.53	0.056	0.234	0.015	0.04
105	8.75	0.53	0.056	0.233	0.015	0.04
106	8.83	0.57	0.059	0.232	0.016	0.04
107	8.92	0.57	0.059	0.231	0.016	0.04
108	9.00	0.57	0.059	0.230	0.016	0.04
109	9.08	0.63	0.066	0.228	0.018	0.05
110	9.17	0.63	0.066	0.227	0.018	0.05
111	9.25	0.63	0.066	0.226	0.018	0.05
112	9.33	0.67	0.070	0.225	0.019	0.05
113	9.42	0.67	0.070	0.224	0.019	0.05
114	9.50	0.67	0.070	0.223	0.019	0.05
115	9.58	0.70	0.073	0.222	0.020	0.05
116	9.67	0.70	0.073	0.221	0.020	0.05
117	9.75	0.70	0.073	0.220	0.020	0.05

118	9.83	0.73	0.077	0.219	0.021	0.06
119	9.92	0.73	0.077	0.218	0.021	0.06
120	10.00	0.73	0.077	0.217	0.021	0.06
121	10.08	0.50	0.052	0.216	0.014	0.04
122	10.17	0.50	0.052	0.215	0.014	0.04
123	10.25	0.50	0.052	0.214	0.014	0.04
124	10.33	0.50	0.052	0.213	0.014	0.04
125	10.42	0.50	0.052	0.212	0.014	0.04
126	10.50	0.50	0.052	0.210	0.014	0.04
127	10.58	0.67	0.070	0.209	0.019	0.05
128	10.67	0.67	0.070	0.208	0.019	0.05
129	10.75	0.67	0.070	0.207	0.019	0.05
130	10.83	0.67	0.070	0.206	0.019	0.05
131	10.92	0.67	0.070	0.205	0.019	0.05
132	11.00	0.67	0.070	0.204	0.019	0.05
133	11.08	0.63	0.066	0.203	0.018	0.05
134	11.17	0.63	0.066	0.202	0.018	0.05
135	11.25	0.63	0.066	0.201	0.018	0.05
136	11.33	0.63	0.066	0.200	0.018	0.05
137	11.42	0.63	0.066	0.199	0.018	0.05
138	11.50	0.63	0.066	0.198	0.018	0.05
139	11.58	0.57	0.059	0.197	0.016	0.04
140	11.67	0.57	0.059	0.196	0.016	0.04
141	11.75	0.57	0.059	0.195	0.016	0.04
142	11.83	0.60	0.063	0.194	0.017	0.05
143	11.92	0.60	0.063	0.193	0.017	0.05
144	12.00	0.60	0.063	0.193	0.017	0.05
145	12.08	0.83	0.087	0.192	0.023	0.06
146	12.17	0.83	0.087	0.191	0.023	0.06
147	12.25	0.83	0.087	0.190	0.023	0.06
148	12.33	0.87	0.091	0.189	0.024	0.07
149	12.42	0.87	0.091	0.188	0.024	0.07
150	12.50	0.87	0.091	0.187	0.024	0.07
151	12.58	0.93	0.098	0.186	0.026	0.07
152	12.67	0.93	0.098	0.185	0.026	0.07
153	12.75	0.93	0.098	0.184	0.026	0.07
154	12.83	0.97	0.101	0.183	0.027	0.07
155	12.92	0.97	0.101	0.182	0.027	0.07
156	13.00	0.97	0.101	0.181	0.027	0.07
157	13.08	1.13	0.119	0.180	0.032	0.09
158	13.17	1.13	0.119	0.179	0.032	0.09
159	13.25	1.13	0.119	0.178	0.032	0.09
160	13.33	1.13	0.119	0.178	0.032	0.09
161	13.42	1.13	0.119	0.177	0.032	0.09
162	13.50	1.13	0.119	0.176	0.032	0.09
163	13.58	0.77	0.080	0.175	0.021	0.06
164	13.67	0.77	0.080	0.174	0.021	0.06
165	13.75	0.77	0.080	0.173	0.021	0.06
166	13.83	0.77	0.080	0.172	0.021	0.06
167	13.92	0.77	0.080	0.171	0.021	0.06
168	14.00	0.77	0.080	0.170	0.021	0.06
169	14.08	0.90	0.094	0.170	0.025	0.07
170	14.17	0.90	0.094	0.169	0.025	0.07
171	14.25	0.90	0.094	0.168	0.025	0.07
172	14.33	0.87	0.091	0.167	0.024	0.07
173	14.42	0.87	0.091	0.166	0.024	0.07
174	14.50	0.87	0.091	0.165	0.024	0.07
175	14.58	0.87	0.091	0.164	0.024	0.07
176	14.67	0.87	0.091	0.164	0.024	0.07
177	14.75	0.87	0.091	0.163	0.024	0.07
178	14.83	0.83	0.087	0.162	0.023	0.06
179	14.92	0.83	0.087	0.161	0.023	0.06
180	15.00	0.83	0.087	0.160	0.023	0.06
181	15.08	0.80	0.084	0.159	0.022	0.06
182	15.17	0.80	0.084	0.159	0.022	0.06

183	15.25	0.80	0.084	0.158	0.022	0.06
184	15.33	0.77	0.080	0.157	0.021	0.06
185	15.42	0.77	0.080	0.156	0.021	0.06
186	15.50	0.77	0.080	0.155	0.021	0.06
187	15.58	0.63	0.066	0.155	0.018	0.05
188	15.67	0.63	0.066	0.154	0.018	0.05
189	15.75	0.63	0.066	0.153	0.018	0.05
190	15.83	0.63	0.066	0.152	0.018	0.05
191	15.92	0.63	0.066	0.151	0.018	0.05
192	16.00	0.63	0.066	0.151	0.018	0.05
193	16.08	0.13	0.014	0.150	0.004	0.01
194	16.17	0.13	0.014	0.149	0.004	0.01
195	16.25	0.13	0.014	0.148	0.004	0.01
196	16.33	0.13	0.014	0.148	0.004	0.01
197	16.42	0.13	0.014	0.147	0.004	0.01
198	16.50	0.13	0.014	0.146	0.004	0.01
199	16.58	0.10	0.010	0.145	0.003	0.01
200	16.67	0.10	0.010	0.145	0.003	0.01
201	16.75	0.10	0.010	0.144	0.003	0.01
202	16.83	0.10	0.010	0.143	0.003	0.01
203	16.92	0.10	0.010	0.142	0.003	0.01
204	17.00	0.10	0.010	0.142	0.003	0.01
205	17.08	0.17	0.017	0.141	0.005	0.01
206	17.17	0.17	0.017	0.140	0.005	0.01
207	17.25	0.17	0.017	0.140	0.005	0.01
208	17.33	0.17	0.017	0.139	0.005	0.01
209	17.42	0.17	0.017	0.138	0.005	0.01
210	17.50	0.17	0.017	0.138	0.005	0.01
211	17.58	0.17	0.017	0.137	0.005	0.01
212	17.67	0.17	0.017	0.136	0.005	0.01
213	17.75	0.17	0.017	0.135	0.005	0.01
214	17.83	0.13	0.014	0.135	0.004	0.01
215	17.92	0.13	0.014	0.134	0.004	0.01
216	18.00	0.13	0.014	0.133	0.004	0.01
217	18.08	0.13	0.014	0.133	0.004	0.01
218	18.17	0.13	0.014	0.132	0.004	0.01
219	18.25	0.13	0.014	0.132	0.004	0.01
220	18.33	0.13	0.014	0.131	0.004	0.01
221	18.42	0.13	0.014	0.130	0.004	0.01
222	18.50	0.13	0.014	0.130	0.004	0.01
223	18.58	0.10	0.010	0.129	0.003	0.01
224	18.67	0.10	0.010	0.128	0.003	0.01
225	18.75	0.10	0.010	0.128	0.003	0.01
226	18.83	0.07	0.007	0.127	0.002	0.01
227	18.92	0.07	0.007	0.127	0.002	0.01
228	19.00	0.07	0.007	0.126	0.002	0.01
229	19.08	0.10	0.010	0.125	0.003	0.01
230	19.17	0.10	0.010	0.125	0.003	0.01
231	19.25	0.10	0.010	0.124	0.003	0.01
232	19.33	0.13	0.014	0.124	0.004	0.01
233	19.42	0.13	0.014	0.123	0.004	0.01
234	19.50	0.13	0.014	0.122	0.004	0.01
235	19.58	0.10	0.010	0.122	0.003	0.01
236	19.67	0.10	0.010	0.121	0.003	0.01
237	19.75	0.10	0.010	0.121	0.003	0.01
238	19.83	0.07	0.007	0.120	0.002	0.01
239	19.92	0.07	0.007	0.120	0.002	0.01
240	20.00	0.07	0.007	0.119	0.002	0.01
241	20.08	0.10	0.010	0.119	0.003	0.01
242	20.17	0.10	0.010	0.118	0.003	0.01
243	20.25	0.10	0.010	0.118	0.003	0.01
244	20.33	0.10	0.010	0.117	0.003	0.01
245	20.42	0.10	0.010	0.117	0.003	0.01
246	20.50	0.10	0.010	0.116	0.003	0.01
247	20.58	0.10	0.010	0.116	0.003	0.01

248	20.67	0.10	0.010	0.115	0.003	0.01
249	20.75	0.10	0.010	0.115	0.003	0.01
250	20.83	0.07	0.007	0.114	0.002	0.01
251	20.92	0.07	0.007	0.114	0.002	0.01
252	21.00	0.07	0.007	0.113	0.002	0.01
253	21.08	0.10	0.010	0.113	0.003	0.01
254	21.17	0.10	0.010	0.112	0.003	0.01
255	21.25	0.10	0.010	0.112	0.003	0.01
256	21.33	0.07	0.007	0.112	0.002	0.01
257	21.42	0.07	0.007	0.111	0.002	0.01
258	21.50	0.07	0.007	0.111	0.002	0.01
259	21.58	0.10	0.010	0.110	0.003	0.01
260	21.67	0.10	0.010	0.110	0.003	0.01
261	21.75	0.10	0.010	0.109	0.003	0.01
262	21.83	0.07	0.007	0.109	0.002	0.01
263	21.92	0.07	0.007	0.109	0.002	0.01
264	22.00	0.07	0.007	0.108	0.002	0.01
265	22.08	0.10	0.010	0.108	0.003	0.01
266	22.17	0.10	0.010	0.108	0.003	0.01
267	22.25	0.10	0.010	0.107	0.003	0.01
268	22.33	0.07	0.007	0.107	0.002	0.01
269	22.42	0.07	0.007	0.107	0.002	0.01
270	22.50	0.07	0.007	0.106	0.002	0.01
271	22.58	0.07	0.007	0.106	0.002	0.01
272	22.67	0.07	0.007	0.106	0.002	0.01
273	22.75	0.07	0.007	0.105	0.002	0.01
274	22.83	0.07	0.007	0.105	0.002	0.01
275	22.92	0.07	0.007	0.105	0.002	0.01
276	23.00	0.07	0.007	0.105	0.002	0.01
277	23.08	0.07	0.007	0.104	0.002	0.01
278	23.17	0.07	0.007	0.104	0.002	0.01
279	23.25	0.07	0.007	0.104	0.002	0.01
280	23.33	0.07	0.007	0.104	0.002	0.01
281	23.42	0.07	0.007	0.104	0.002	0.01
282	23.50	0.07	0.007	0.103	0.002	0.01
283	23.58	0.07	0.007	0.103	0.002	0.01
284	23.67	0.07	0.007	0.103	0.002	0.01
285	23.75	0.07	0.007	0.103	0.002	0.01
286	23.83	0.07	0.007	0.103	0.002	0.01
287	23.92	0.07	0.007	0.103	0.002	0.01
288	24.00	0.07	0.007	0.103	0.002	0.01
Sum =	100.0			Sum =	7.7	

Flood volume = Effective rainfall 0.64(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 0.23(In)
Total soil loss = 0.014(Ac.Ft)
Total rainfall = 0.87(In)
Flood volume = 1728.8 Cubic Feet
Total soil loss = 627.5 Cubic Feet

Storm Event 1 Effective Rainfall = 2.430(In)

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.019	0.364	0.005	0.01
2	0.17	0.07	0.019	0.362	0.005	0.01
3	0.25	0.07	0.019	0.361	0.005	0.01
4	0.33	0.10	0.029	0.360	0.008	0.02
5	0.42	0.10	0.029	0.358	0.008	0.02
6	0.50	0.10	0.029	0.357	0.008	0.02
7	0.58	0.10	0.029	0.355	0.008	0.02
8	0.67	0.10	0.029	0.354	0.008	0.02
9	0.75	0.10	0.029	0.353	0.008	0.02
10	0.83	0.13	0.039	0.351	0.010	0.03

11	0.92	0.13	0.039	0.350	0.010	0.03
12	1.00	0.13	0.039	0.348	0.010	0.03
13	1.08	0.10	0.029	0.347	0.008	0.02
14	1.17	0.10	0.029	0.346	0.008	0.02
15	1.25	0.10	0.029	0.344	0.008	0.02
16	1.33	0.10	0.029	0.343	0.008	0.02
17	1.42	0.10	0.029	0.342	0.008	0.02
18	1.50	0.10	0.029	0.340	0.008	0.02
19	1.58	0.10	0.029	0.339	0.008	0.02
20	1.67	0.10	0.029	0.338	0.008	0.02
21	1.75	0.10	0.029	0.336	0.008	0.02
22	1.83	0.13	0.039	0.335	0.010	0.03
23	1.92	0.13	0.039	0.333	0.010	0.03
24	2.00	0.13	0.039	0.332	0.010	0.03
25	2.08	0.13	0.039	0.331	0.010	0.03
26	2.17	0.13	0.039	0.329	0.010	0.03
27	2.25	0.13	0.039	0.328	0.010	0.03
28	2.33	0.13	0.039	0.327	0.010	0.03
29	2.42	0.13	0.039	0.325	0.010	0.03
30	2.50	0.13	0.039	0.324	0.010	0.03
31	2.58	0.17	0.049	0.323	0.013	0.04
32	2.67	0.17	0.049	0.321	0.013	0.04
33	2.75	0.17	0.049	0.320	0.013	0.04
34	2.83	0.17	0.049	0.319	0.013	0.04
35	2.92	0.17	0.049	0.318	0.013	0.04
36	3.00	0.17	0.049	0.316	0.013	0.04
37	3.08	0.17	0.049	0.315	0.013	0.04
38	3.17	0.17	0.049	0.314	0.013	0.04
39	3.25	0.17	0.049	0.312	0.013	0.04
40	3.33	0.17	0.049	0.311	0.013	0.04
41	3.42	0.17	0.049	0.310	0.013	0.04
42	3.50	0.17	0.049	0.308	0.013	0.04
43	3.58	0.17	0.049	0.307	0.013	0.04
44	3.67	0.17	0.049	0.306	0.013	0.04
45	3.75	0.17	0.049	0.305	0.013	0.04
46	3.83	0.20	0.058	0.303	0.016	0.04
47	3.92	0.20	0.058	0.302	0.016	0.04
48	4.00	0.20	0.058	0.301	0.016	0.04
49	4.08	0.20	0.058	0.299	0.016	0.04
50	4.17	0.20	0.058	0.298	0.016	0.04
51	4.25	0.20	0.058	0.297	0.016	0.04
52	4.33	0.23	0.068	0.296	0.018	0.05
53	4.42	0.23	0.068	0.294	0.018	0.05
54	4.50	0.23	0.068	0.293	0.018	0.05
55	4.58	0.23	0.068	0.292	0.018	0.05
56	4.67	0.23	0.068	0.291	0.018	0.05
57	4.75	0.23	0.068	0.289	0.018	0.05
58	4.83	0.27	0.078	0.288	0.021	0.06
59	4.92	0.27	0.078	0.287	0.021	0.06
60	5.00	0.27	0.078	0.286	0.021	0.06
61	5.08	0.20	0.058	0.284	0.016	0.04
62	5.17	0.20	0.058	0.283	0.016	0.04
63	5.25	0.20	0.058	0.282	0.016	0.04
64	5.33	0.23	0.068	0.281	0.018	0.05
65	5.42	0.23	0.068	0.279	0.018	0.05
66	5.50	0.23	0.068	0.278	0.018	0.05
67	5.58	0.27	0.078	0.277	0.021	0.06
68	5.67	0.27	0.078	0.276	0.021	0.06
69	5.75	0.27	0.078	0.275	0.021	0.06
70	5.83	0.27	0.078	0.273	0.021	0.06
71	5.92	0.27	0.078	0.272	0.021	0.06
72	6.00	0.27	0.078	0.271	0.021	0.06
73	6.08	0.30	0.087	0.270	0.023	0.06
74	6.17	0.30	0.087	0.268	0.023	0.06
75	6.25	0.30	0.087	0.267	0.023	0.06

76	6.33	0.30	0.087	0.266	0.023	0.06
77	6.42	0.30	0.087	0.265	0.023	0.06
78	6.50	0.30	0.087	0.264	0.023	0.06
79	6.58	0.33	0.097	0.263	0.026	0.07
80	6.67	0.33	0.097	0.261	0.026	0.07
81	6.75	0.33	0.097	0.260	0.026	0.07
82	6.83	0.33	0.097	0.259	0.026	0.07
83	6.92	0.33	0.097	0.258	0.026	0.07
84	7.00	0.33	0.097	0.257	0.026	0.07
85	7.08	0.33	0.097	0.255	0.026	0.07
86	7.17	0.33	0.097	0.254	0.026	0.07
87	7.25	0.33	0.097	0.253	0.026	0.07
88	7.33	0.37	0.107	0.252	0.028	0.08
89	7.42	0.37	0.107	0.251	0.028	0.08
90	7.50	0.37	0.107	0.250	0.028	0.08
91	7.58	0.40	0.117	0.249	0.031	0.09
92	7.67	0.40	0.117	0.247	0.031	0.09
93	7.75	0.40	0.117	0.246	0.031	0.09
94	7.83	0.43	0.126	0.245	0.034	0.09
95	7.92	0.43	0.126	0.244	0.034	0.09
96	8.00	0.43	0.126	0.243	0.034	0.09
97	8.08	0.50	0.146	0.242	0.039	0.11
98	8.17	0.50	0.146	0.241	0.039	0.11
99	8.25	0.50	0.146	0.239	0.039	0.11
100	8.33	0.50	0.146	0.238	0.039	0.11
101	8.42	0.50	0.146	0.237	0.039	0.11
102	8.50	0.50	0.146	0.236	0.039	0.11
103	8.58	0.53	0.156	0.235	0.041	0.11
104	8.67	0.53	0.156	0.234	0.041	0.11
105	8.75	0.53	0.156	0.233	0.041	0.11
106	8.83	0.57	0.165	0.232	0.044	0.12
107	8.92	0.57	0.165	0.231	0.044	0.12
108	9.00	0.57	0.165	0.230	0.044	0.12
109	9.08	0.63	0.185	0.228	0.049	0.14
110	9.17	0.63	0.185	0.227	0.049	0.14
111	9.25	0.63	0.185	0.226	0.049	0.14
112	9.33	0.67	0.194	0.225	0.052	0.14
113	9.42	0.67	0.194	0.224	0.052	0.14
114	9.50	0.67	0.194	0.223	0.052	0.14
115	9.58	0.70	0.204	0.222	0.054	0.15
116	9.67	0.70	0.204	0.221	0.054	0.15
117	9.75	0.70	0.204	0.220	0.054	0.15
118	9.83	0.73	0.214	0.219	0.057	0.16
119	9.92	0.73	0.214	0.218	0.057	0.16
120	10.00	0.73	0.214	0.217	0.057	0.16
121	10.08	0.50	0.146	0.216	0.039	0.11
122	10.17	0.50	0.146	0.215	0.039	0.11
123	10.25	0.50	0.146	0.214	0.039	0.11
124	10.33	0.50	0.146	0.213	0.039	0.11
125	10.42	0.50	0.146	0.212	0.039	0.11
126	10.50	0.50	0.146	0.210	0.039	0.11
127	10.58	0.67	0.194	0.209	0.052	0.14
128	10.67	0.67	0.194	0.208	0.052	0.14
129	10.75	0.67	0.194	0.207	0.052	0.14
130	10.83	0.67	0.194	0.206	0.052	0.14
131	10.92	0.67	0.194	0.205	0.052	0.14
132	11.00	0.67	0.194	0.204	0.052	0.14
133	11.08	0.63	0.185	0.203	0.049	0.14
134	11.17	0.63	0.185	0.202	0.049	0.14
135	11.25	0.63	0.185	0.201	0.049	0.14
136	11.33	0.63	0.185	0.200	0.049	0.14
137	11.42	0.63	0.185	0.199	0.049	0.14
138	11.50	0.63	0.185	0.198	0.049	0.14
139	11.58	0.57	0.165	0.197	0.044	0.12
140	11.67	0.57	0.165	0.196	0.044	0.12

141	11.75	0.57	0.165	0.195	0.044	0.12
142	11.83	0.60	0.175	0.194	0.047	0.13
143	11.92	0.60	0.175	0.193	0.047	0.13
144	12.00	0.60	0.175	0.193	0.047	0.13
145	12.08	0.83	0.243	0.192	---	0.05
146	12.17	0.83	0.243	0.191	---	0.05
147	12.25	0.83	0.243	0.190	---	0.05
148	12.33	0.87	0.253	0.189	---	0.06
149	12.42	0.87	0.253	0.188	---	0.06
150	12.50	0.87	0.253	0.187	---	0.07
151	12.58	0.93	0.272	0.186	---	0.09
152	12.67	0.93	0.272	0.185	---	0.09
153	12.75	0.93	0.272	0.184	---	0.09
154	12.83	0.97	0.282	0.183	---	0.10
155	12.92	0.97	0.282	0.182	---	0.10
156	13.00	0.97	0.282	0.181	---	0.10
157	13.08	1.13	0.330	0.180	---	0.15
158	13.17	1.13	0.330	0.179	---	0.15
159	13.25	1.13	0.330	0.178	---	0.15
160	13.33	1.13	0.330	0.178	---	0.15
161	13.42	1.13	0.330	0.177	---	0.15
162	13.50	1.13	0.330	0.176	---	0.15
163	13.58	0.77	0.224	0.175	---	0.05
164	13.67	0.77	0.224	0.174	---	0.05
165	13.75	0.77	0.224	0.173	---	0.05
166	13.83	0.77	0.224	0.172	---	0.05
167	13.92	0.77	0.224	0.171	---	0.05
168	14.00	0.77	0.224	0.170	---	0.05
169	14.08	0.90	0.262	0.170	---	0.09
170	14.17	0.90	0.262	0.169	---	0.09
171	14.25	0.90	0.262	0.168	---	0.09
172	14.33	0.87	0.253	0.167	---	0.09
173	14.42	0.87	0.253	0.166	---	0.09
174	14.50	0.87	0.253	0.165	---	0.09
175	14.58	0.87	0.253	0.164	---	0.09
176	14.67	0.87	0.253	0.164	---	0.09
177	14.75	0.87	0.253	0.163	---	0.09
178	14.83	0.83	0.243	0.162	---	0.08
179	14.92	0.83	0.243	0.161	---	0.08
180	15.00	0.83	0.243	0.160	---	0.08
181	15.08	0.80	0.233	0.159	---	0.07
182	15.17	0.80	0.233	0.159	---	0.07
183	15.25	0.80	0.233	0.158	---	0.08
184	15.33	0.77	0.224	0.157	---	0.07
185	15.42	0.77	0.224	0.156	---	0.07
186	15.50	0.77	0.224	0.155	---	0.07
187	15.58	0.63	0.185	0.155	---	0.03
188	15.67	0.63	0.185	0.154	---	0.03
189	15.75	0.63	0.185	0.153	---	0.03
190	15.83	0.63	0.185	0.152	---	0.03
191	15.92	0.63	0.185	0.151	---	0.03
192	16.00	0.63	0.185	0.151	---	0.03
193	16.08	0.13	0.039	0.150	0.010	0.03
194	16.17	0.13	0.039	0.149	0.010	0.03
195	16.25	0.13	0.039	0.148	0.010	0.03
196	16.33	0.13	0.039	0.148	0.010	0.03
197	16.42	0.13	0.039	0.147	0.010	0.03
198	16.50	0.13	0.039	0.146	0.010	0.03
199	16.58	0.10	0.029	0.145	0.008	0.02
200	16.67	0.10	0.029	0.145	0.008	0.02
201	16.75	0.10	0.029	0.144	0.008	0.02
202	16.83	0.10	0.029	0.143	0.008	0.02
203	16.92	0.10	0.029	0.142	0.008	0.02
204	17.00	0.10	0.029	0.142	0.008	0.02
205	17.08	0.17	0.049	0.141	0.013	0.04

206	17.17	0.17	0.049	0.140	0.013	0.04
207	17.25	0.17	0.049	0.140	0.013	0.04
208	17.33	0.17	0.049	0.139	0.013	0.04
209	17.42	0.17	0.049	0.138	0.013	0.04
210	17.50	0.17	0.049	0.138	0.013	0.04
211	17.58	0.17	0.049	0.137	0.013	0.04
212	17.67	0.17	0.049	0.136	0.013	0.04
213	17.75	0.17	0.049	0.135	0.013	0.04
214	17.83	0.13	0.039	0.135	0.010	0.03
215	17.92	0.13	0.039	0.134	0.010	0.03
216	18.00	0.13	0.039	0.133	0.010	0.03
217	18.08	0.13	0.039	0.133	0.010	0.03
218	18.17	0.13	0.039	0.132	0.010	0.03
219	18.25	0.13	0.039	0.132	0.010	0.03
220	18.33	0.13	0.039	0.131	0.010	0.03
221	18.42	0.13	0.039	0.130	0.010	0.03
222	18.50	0.13	0.039	0.130	0.010	0.03
223	18.58	0.10	0.029	0.129	0.008	0.02
224	18.67	0.10	0.029	0.128	0.008	0.02
225	18.75	0.10	0.029	0.128	0.008	0.02
226	18.83	0.07	0.019	0.127	0.005	0.01
227	18.92	0.07	0.019	0.127	0.005	0.01
228	19.00	0.07	0.019	0.126	0.005	0.01
229	19.08	0.10	0.029	0.125	0.008	0.02
230	19.17	0.10	0.029	0.125	0.008	0.02
231	19.25	0.10	0.029	0.124	0.008	0.02
232	19.33	0.13	0.039	0.124	0.010	0.03
233	19.42	0.13	0.039	0.123	0.010	0.03
234	19.50	0.13	0.039	0.122	0.010	0.03
235	19.58	0.10	0.029	0.122	0.008	0.02
236	19.67	0.10	0.029	0.121	0.008	0.02
237	19.75	0.10	0.029	0.121	0.008	0.02
238	19.83	0.07	0.019	0.120	0.005	0.01
239	19.92	0.07	0.019	0.120	0.005	0.01
240	20.00	0.07	0.019	0.119	0.005	0.01
241	20.08	0.10	0.029	0.119	0.008	0.02
242	20.17	0.10	0.029	0.118	0.008	0.02
243	20.25	0.10	0.029	0.118	0.008	0.02
244	20.33	0.10	0.029	0.117	0.008	0.02
245	20.42	0.10	0.029	0.117	0.008	0.02
246	20.50	0.10	0.029	0.116	0.008	0.02
247	20.58	0.10	0.029	0.116	0.008	0.02
248	20.67	0.10	0.029	0.115	0.008	0.02
249	20.75	0.10	0.029	0.115	0.008	0.02
250	20.83	0.07	0.019	0.114	0.005	0.01
251	20.92	0.07	0.019	0.114	0.005	0.01
252	21.00	0.07	0.019	0.113	0.005	0.01
253	21.08	0.10	0.029	0.113	0.008	0.02
254	21.17	0.10	0.029	0.112	0.008	0.02
255	21.25	0.10	0.029	0.112	0.008	0.02
256	21.33	0.07	0.019	0.112	0.005	0.01
257	21.42	0.07	0.019	0.111	0.005	0.01
258	21.50	0.07	0.019	0.111	0.005	0.01
259	21.58	0.10	0.029	0.110	0.008	0.02
260	21.67	0.10	0.029	0.110	0.008	0.02
261	21.75	0.10	0.029	0.109	0.008	0.02
262	21.83	0.07	0.019	0.109	0.005	0.01
263	21.92	0.07	0.019	0.109	0.005	0.01
264	22.00	0.07	0.019	0.108	0.005	0.01
265	22.08	0.10	0.029	0.108	0.008	0.02
266	22.17	0.10	0.029	0.108	0.008	0.02
267	22.25	0.10	0.029	0.107	0.008	0.02
268	22.33	0.07	0.019	0.107	0.005	0.01
269	22.42	0.07	0.019	0.107	0.005	0.01
270	22.50	0.07	0.019	0.106	0.005	0.01

271	22.58	0.07	0.019	0.106	0.005	0.01
272	22.67	0.07	0.019	0.106	0.005	0.01
273	22.75	0.07	0.019	0.105	0.005	0.01
274	22.83	0.07	0.019	0.105	0.005	0.01
275	22.92	0.07	0.019	0.105	0.005	0.01
276	23.00	0.07	0.019	0.105	0.005	0.01
277	23.08	0.07	0.019	0.104	0.005	0.01
278	23.17	0.07	0.019	0.104	0.005	0.01
279	23.25	0.07	0.019	0.104	0.005	0.01
280	23.33	0.07	0.019	0.104	0.005	0.01
281	23.42	0.07	0.019	0.104	0.005	0.01
282	23.50	0.07	0.019	0.103	0.005	0.01
283	23.58	0.07	0.019	0.103	0.005	0.01
284	23.67	0.07	0.019	0.103	0.005	0.01
285	23.75	0.07	0.019	0.103	0.005	0.01
286	23.83	0.07	0.019	0.103	0.005	0.01
287	23.92	0.07	0.019	0.103	0.005	0.01
288	24.00	0.07	0.019	0.103	0.005	0.01
Sum =		100.0			Sum =	16.4

Flood volume = Effective rainfall 1.37(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 1.06(In)
Total soil loss = 0.066(Ac.Ft)
Total rainfall = 2.43(In)
Flood volume = 3682.5 Cubic Feet
Total soil loss = 2862.6 Cubic Feet

Peak flow rate of this hydrograph = 0.117(CFS)

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TOTAL OF: 3 24 - H O U R S T O R M E V E N T S
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q	|	|	|	|
0+10	0.0000	0.00	Q	|	|	|	|
0+15	0.0000	0.00	Q	|	|	|	|
0+20	0.0001	0.00	Q	|	|	|	|
0+25	0.0001	0.00	Q	|	|	|	|
0+30	0.0001	0.00	Q	|	|	|	|
0+35	0.0001	0.00	Q	|	|	|	|
0+40	0.0001	0.00	Q	|	|	|	|
0+45	0.0002	0.00	Q	|	|	|	|
0+50	0.0002	0.00	Q	|	|	|	|
0+55	0.0002	0.00	Q	|	|	|	|
1+ 0	0.0002	0.00	Q	|	|	|	|
1+ 5	0.0003	0.00	Q	|	|	|	|
1+10	0.0003	0.00	Q	|	|	|	|
1+15	0.0003	0.00	Q	|	|	|	|
1+20	0.0003	0.00	Q	|	|	|	|
1+25	0.0004	0.00	Q	|	|	|	|
1+30	0.0004	0.00	Q	|	|	|	|
1+35	0.0004	0.00	Q	|	|	|	|
1+40	0.0004	0.00	Q	|	|	|	|
1+45	0.0004	0.00	Q	|	|	|	|
1+50	0.0005	0.00	Q	|	|	|	|
1+55	0.0005	0.00	Q	|	|	|	|
2+ 0	0.0005	0.00	Q	|	|	|	|
2+ 5	0.0005	0.00	Q	|	|	|	|
2+10	0.0006	0.00	Q	|	|	|	|
2+15	0.0006	0.00	Q	|	|	|	|

2+20	0.0006	0.00	Q	|	|	|	|
2+25	0.0007	0.00	Q	|	|	|	|
2+30	0.0007	0.00	Q	|	|	|	|
2+35	0.0007	0.00	Q	|	|	|	|
2+40	0.0008	0.01	Q	|	|	|	|
2+45	0.0008	0.01	Q	|	|	|	|
2+50	0.0008	0.01	Q	|	|	|	|
2+55	0.0009	0.01	Q	|	|	|	|
3+ 0	0.0009	0.01	Q	|	|	|	|
3+ 5	0.0009	0.01	Q	|	|	|	|
3+10	0.0010	0.01	Q	|	|	|	|
3+15	0.0010	0.01	Q	|	|	|	|
3+20	0.0010	0.01	Q	|	|	|	|
3+25	0.0011	0.01	Q	|	|	|	|
3+30	0.0011	0.01	Q	|	|	|	|
3+35	0.0011	0.01	Q	|	|	|	|
3+40	0.0012	0.01	Q	|	|	|	|
3+45	0.0012	0.01	Q	|	|	|	|
3+50	0.0012	0.01	Q	|	|	|	|
3+55	0.0013	0.01	Q	|	|	|	|
4+ 0	0.0013	0.01	Q	|	|	|	|
4+ 5	0.0014	0.01	Q	|	|	|	|
4+10	0.0014	0.01	Q	|	|	|	|
4+15	0.0015	0.01	Q	|	|	|	|
4+20	0.0015	0.01	Q	|	|	|	|
4+25	0.0016	0.01	Q	|	|	|	|
4+30	0.0016	0.01	Q	|	|	|	|
4+35	0.0017	0.01	Q	|	|	|	|
4+40	0.0017	0.01	Q	|	|	|	|
4+45	0.0017	0.01	Q	|	|	|	|
4+50	0.0018	0.01	Q	|	|	|	|
4+55	0.0019	0.01	Q	|	|	|	|
5+ 0	0.0019	0.01	Q	|	|	|	|
5+ 5	0.0020	0.01	Q	|	|	|	|
5+10	0.0020	0.01	Q	|	|	|	|
5+15	0.0020	0.01	Q	|	|	|	|
5+20	0.0021	0.01	Q	|	|	|	|
5+25	0.0021	0.01	Q	|	|	|	|
5+30	0.0022	0.01	Q	|	|	|	|
5+35	0.0022	0.01	Q	|	|	|	|
5+40	0.0023	0.01	Q	|	|	|	|
5+45	0.0024	0.01	Q	|	|	|	|
5+50	0.0024	0.01	Q	|	|	|	|
5+55	0.0025	0.01	Q	|	|	|	|
6+ 0	0.0025	0.01	Q	|	|	|	|
6+ 5	0.0026	0.01	Q	|	|	|	|
6+10	0.0026	0.01	Q	|	|	|	|
6+15	0.0027	0.01	Q	|	|	|	|
6+20	0.0028	0.01	Q	|	|	|	|
6+25	0.0028	0.01	Q	|	|	|	|
6+30	0.0029	0.01	Q	|	|	|	|
6+35	0.0030	0.01	Q	|	|	|	|
6+40	0.0030	0.01	Q	|	|	|	|
6+45	0.0031	0.01	Q	|	|	|	|
6+50	0.0032	0.01	Q	|	|	|	|
6+55	0.0032	0.01	Q	|	|	|	|
7+ 0	0.0033	0.01	Q	|	|	|	|
7+ 5	0.0034	0.01	Q	|	|	|	|
7+10	0.0035	0.01	Q	|	|	|	|
7+15	0.0035	0.01	Q	|	|	|	|
7+20	0.0036	0.01	Q	|	|	|	|
7+25	0.0037	0.01	QV	|	|	|	|
7+30	0.0038	0.01	QV	|	|	|	|
7+35	0.0038	0.01	QV	|	|	|	|
7+40	0.0039	0.01	QV	|	|	|	|

7+45	0.0040	0.01	QV	|	|	|	|
7+50	0.0041	0.01	QV	|	|	|	|
7+55	0.0042	0.01	QV	|	|	|	|
8+ 0	0.0043	0.01	QV	|	|	|	|
8+ 5	0.0044	0.01	QV	|	|	|	|
8+10	0.0045	0.02	QV	|	|	|	|
8+15	0.0046	0.02	QV	|	|	|	|
8+20	0.0047	0.02	QV	|	|	|	|
8+25	0.0048	0.02	QV	|	|	|	|
8+30	0.0049	0.02	QV	|	|	|	|
8+35	0.0050	0.02	QV	|	|	|	|
8+40	0.0051	0.02	QV	|	|	|	|
8+45	0.0052	0.02	QV	|	|	|	|
8+50	0.0053	0.02	QV	|	|	|	|
8+55	0.0055	0.02	QV	|	|	|	|
9+ 0	0.0056	0.02	QV	|	|	|	|
9+ 5	0.0057	0.02	QV	|	|	|	|
9+10	0.0058	0.02	QV	|	|	|	|
9+15	0.0060	0.02	QV	|	|	|	|
9+20	0.0061	0.02	QV	|	|	|	|
9+25	0.0063	0.02	QV	|	|	|	|
9+30	0.0064	0.02	QV	|	|	|	|
9+35	0.0065	0.02	QV	|	|	|	|
9+40	0.0067	0.02	QV	|	|	|	|
9+45	0.0068	0.02	QV	|	|	|	|
9+50	0.0070	0.02	QV	|	|	|	|
9+55	0.0071	0.02	QV	|	|	|	|
10+ 0	0.0073	0.02	Q V	|	|	|	|
10+ 5	0.0074	0.02	Q V	|	|	|	|
10+10	0.0075	0.02	Q V	|	|	|	|
10+15	0.0076	0.02	Q V	|	|	|	|
10+20	0.0077	0.02	Q V	|	|	|	|
10+25	0.0078	0.02	Q V	|	|	|	|
10+30	0.0079	0.02	Q V	|	|	|	|
10+35	0.0081	0.02	Q V	|	|	|	|
10+40	0.0082	0.02	Q V	|	|	|	|
10+45	0.0083	0.02	Q V	|	|	|	|
10+50	0.0085	0.02	Q V	|	|	|	|
10+55	0.0086	0.02	Q V	|	|	|	|
11+ 0	0.0088	0.02	Q V	|	|	|	|
11+ 5	0.0089	0.02	Q V	|	|	|	|
11+10	0.0090	0.02	Q V	|	|	|	|
11+15	0.0092	0.02	Q V	|	|	|	|
11+20	0.0093	0.02	Q V	|	|	|	|
11+25	0.0094	0.02	Q V	|	|	|	|
11+30	0.0096	0.02	Q V	|	|	|	|
11+35	0.0097	0.02	Q V	|	|	|	|
11+40	0.0098	0.02	Q V	|	|	|	|
11+45	0.0099	0.02	Q V	|	|	|	|
11+50	0.0100	0.02	Q V	|	|	|	|
11+55	0.0102	0.02	Q V	|	|	|	|
12+ 0	0.0103	0.02	Q V	|	|	|	|
12+ 5	0.0105	0.02	Q V	|	|	|	|
12+10	0.0106	0.03	Q V	|	|	|	|
12+15	0.0108	0.03	Q V	|	|	|	|
12+20	0.0110	0.03	Q V	|	|	|	|
12+25	0.0112	0.03	Q V	|	|	|	|
12+30	0.0114	0.03	Q V	|	|	|	|
12+35	0.0115	0.03	Q V	|	|	|	|
12+40	0.0117	0.03	Q V	|	|	|	|
12+45	0.0119	0.03	Q V	|	|	|	|
12+50	0.0121	0.03	Q V	|	|	|	|
12+55	0.0123	0.03	Q V	|	|	|	|
13+ 0	0.0125	0.03	Q V	|	|	|	|
13+ 5	0.0128	0.03	Q V	|	|	|	|

13+10	0.0130	0.03	Q	V	|	|	|	|
13+15	0.0132	0.03	Q	V	|	|	|	|
13+20	0.0135	0.03	Q	V	|	|	|	|
13+25	0.0137	0.03	Q	V	|	|	|	|
13+30	0.0140	0.03	Q	V	|	|	|	|
13+35	0.0141	0.03	Q	V	|	|	|	|
13+40	0.0143	0.02	Q	V	|	|	|	|
13+45	0.0145	0.02	Q	V	|	|	|	|
13+50	0.0146	0.02	Q	V	|	|	|	|
13+55	0.0148	0.02	Q	V	|	|	|	|
14+ 0	0.0149	0.02	Q	V	|	|	|	|
14+ 5	0.0151	0.03	Q	V	|	|	|	|
14+10	0.0153	0.03	Q	V	|	|	|	|
14+15	0.0155	0.03	Q	V	|	|	|	|
14+20	0.0157	0.03	Q	V	|	|	|	|
14+25	0.0159	0.03	Q	V	|	|	|	|
14+30	0.0160	0.03	Q	V	|	|	|	|
14+35	0.0162	0.03	Q	V	|	|	|	|
14+40	0.0164	0.03	Q	V	|	|	|	|
14+45	0.0166	0.03	Q	V	|	|	|	|
14+50	0.0168	0.03	Q	V	|	|	|	|
14+55	0.0169	0.03	Q	V	|	|	|	|
15+ 0	0.0171	0.03	Q	V	|	|	|	|
15+ 5	0.0173	0.02	Q	V	|	|	|	|
15+10	0.0175	0.02	Q	V	|	|	|	|
15+15	0.0176	0.02	Q	V	|	|	|	|
15+20	0.0178	0.02	Q	V	|	|	|	|
15+25	0.0179	0.02	Q	V	|	|	|	|
15+30	0.0181	0.02	Q	V	|	|	|	|
15+35	0.0182	0.02	Q	V	|	|	|	|
15+40	0.0184	0.02	Q	V	|	|	|	|
15+45	0.0185	0.02	Q	V	|	|	|	|
15+50	0.0186	0.02	Q	V	|	|	|	|
15+55	0.0188	0.02	Q	V	|	|	|	|
16+ 0	0.0189	0.02	Q	V	|	|	|	|
16+ 5	0.0190	0.01	Q	V	|	|	|	|
16+10	0.0190	0.00	Q	V	|	|	|	|
16+15	0.0190	0.00	Q	V	|	|	|	|
16+20	0.0190	0.00	Q	V	|	|	|	|
16+25	0.0191	0.00	Q	V	|	|	|	|
16+30	0.0191	0.00	Q	V	|	|	|	|
16+35	0.0191	0.00	Q	V	|	|	|	|
16+40	0.0191	0.00	Q	V	|	|	|	|
16+45	0.0192	0.00	Q	V	|	|	|	|
16+50	0.0192	0.00	Q	V	|	|	|	|
16+55	0.0192	0.00	Q	V	|	|	|	|
17+ 0	0.0192	0.00	Q	V	|	|	|	|
17+ 5	0.0193	0.00	Q	V	|	|	|	|
17+10	0.0193	0.01	Q	V	|	|	|	|
17+15	0.0193	0.01	Q	V	|	|	|	|
17+20	0.0194	0.01	Q	V	|	|	|	|
17+25	0.0194	0.01	Q	V	|	|	|	|
17+30	0.0194	0.01	Q	V	|	|	|	|
17+35	0.0195	0.01	Q	V	|	|	|	|
17+40	0.0195	0.01	Q	V	|	|	|	|
17+45	0.0195	0.01	Q	V	|	|	|	|
17+50	0.0196	0.00	Q	V	|	|	|	|
17+55	0.0196	0.00	Q	V	|	|	|	|
18+ 0	0.0196	0.00	Q	V	|	|	|	|
18+ 5	0.0196	0.00	Q	V	|	|	|	|
18+10	0.0197	0.00	Q	V	|	|	|	|
18+15	0.0197	0.00	Q	V	|	|	|	|
18+20	0.0197	0.00	Q	V	|	|	|	|
18+25	0.0198	0.00	Q	V	|	|	|	|
18+30	0.0198	0.00	Q	V	|	|	|	|

18+35	0.0198	0.00	Q	V	|	|	|
18+40	0.0198	0.00	Q	V	|	|	|
18+45	0.0199	0.00	Q	V	|	|	|
18+50	0.0199	0.00	Q	V	|	|	|
18+55	0.0199	0.00	Q	V	|	|	|
19+ 0	0.0199	0.00	Q	V	|	|	|
19+ 5	0.0199	0.00	Q	V	|	|	|
19+10	0.0199	0.00	Q	V	|	|	|
19+15	0.0200	0.00	Q	V	|	|	|
19+20	0.0200	0.00	Q	V	|	|	|
19+25	0.0200	0.00	Q	V	|	|	|
19+30	0.0200	0.00	Q	V	|	|	|
19+35	0.0201	0.00	Q	V	|	|	|
19+40	0.0201	0.00	Q	V	|	|	|
19+45	0.0201	0.00	Q	V	|	|	|
19+50	0.0201	0.00	Q	V	|	|	|
19+55	0.0201	0.00	Q	V	|	|	|
20+ 0	0.0201	0.00	Q	V	|	|	|
20+ 5	0.0202	0.00	Q	V	|	|	|
20+10	0.0202	0.00	Q	V	|	|	|
20+15	0.0202	0.00	Q	V	|	|	|
20+20	0.0202	0.00	Q	V	|	|	|
20+25	0.0202	0.00	Q	V	|	|	|
20+30	0.0203	0.00	Q	V	|	|	|
20+35	0.0203	0.00	Q	V	|	|	|
20+40	0.0203	0.00	Q	V	|	|	|
20+45	0.0203	0.00	Q	V	|	|	|
20+50	0.0203	0.00	Q	V	|	|	|
20+55	0.0204	0.00	Q	V	|	|	|
21+ 0	0.0204	0.00	Q	V	|	|	|
21+ 5	0.0204	0.00	Q	V	|	|	|
21+10	0.0204	0.00	Q	V	|	|	|
21+15	0.0204	0.00	Q	V	|	|	|
21+20	0.0205	0.00	Q	V	|	|	|
21+25	0.0205	0.00	Q	V	|	|	|
21+30	0.0205	0.00	Q	V	|	|	|
21+35	0.0205	0.00	Q	V	|	|	|
21+40	0.0205	0.00	Q	V	|	|	|
21+45	0.0205	0.00	Q	V	|	|	|
21+50	0.0206	0.00	Q	V	|	|	|
21+55	0.0206	0.00	Q	V	|	|	|
22+ 0	0.0206	0.00	Q	V	|	|	|
22+ 5	0.0206	0.00	Q	V	|	|	|
22+10	0.0206	0.00	Q	V	|	|	|
22+15	0.0206	0.00	Q	V	|	|	|
22+20	0.0207	0.00	Q	V	|	|	|
22+25	0.0207	0.00	Q	V	|	|	|
22+30	0.0207	0.00	Q	V	|	|	|
22+35	0.0207	0.00	Q	V	|	|	|
22+40	0.0207	0.00	Q	V	|	|	|
22+45	0.0207	0.00	Q	V	|	|	|
22+50	0.0207	0.00	Q	V	|	|	|
22+55	0.0208	0.00	Q	V	|	|	|
23+ 0	0.0208	0.00	Q	V	|	|	|
23+ 5	0.0208	0.00	Q	V	|	|	|
23+10	0.0208	0.00	Q	V	|	|	|
23+15	0.0208	0.00	Q	V	|	|	|
23+20	0.0208	0.00	Q	V	|	|	|
23+25	0.0208	0.00	Q	V	|	|	|
23+30	0.0209	0.00	Q	V	|	|	|
23+35	0.0209	0.00	Q	V	|	|	|
23+40	0.0209	0.00	Q	V	|	|	|
23+45	0.0209	0.00	Q	V	|	|	|
23+50	0.0209	0.00	Q	V	|	|	|
23+55	0.0209	0.00	Q	V	|	|	|

24+ 0	0.0209	0.00	Q	V	|	|	|	|
24+ 5	0.0210	0.00	Q	V	|	|	|	|
24+10	0.0210	0.00	Q	V	|	|	|	|
24+15	0.0210	0.00	Q	V	|	|	|	|
24+20	0.0211	0.01	Q	V	|	|	|	|
24+25	0.0211	0.01	Q	V	|	|	|	|
24+30	0.0211	0.01	Q	V	|	|	|	|
24+35	0.0212	0.01	Q	V	|	|	|	|
24+40	0.0212	0.01	Q	V	|	|	|	|
24+45	0.0213	0.01	Q	V	|	|	|	|
24+50	0.0213	0.01	Q	V	|	|	|	|
24+55	0.0214	0.01	Q	V	|	|	|	|
25+ 0	0.0214	0.01	Q	V	|	|	|	|
25+ 5	0.0214	0.01	Q	V	|	|	|	|
25+10	0.0215	0.01	Q	V	|	|	|	|
25+15	0.0215	0.01	Q	V	|	|	|	|
25+20	0.0216	0.01	Q	V	|	|	|	|
25+25	0.0216	0.01	Q	V	|	|	|	|
25+30	0.0216	0.01	Q	V	|	|	|	|
25+35	0.0217	0.01	Q	V	|	|	|	|
25+40	0.0217	0.01	Q	V	|	|	|	|
25+45	0.0218	0.01	Q	V	|	|	|	|
25+50	0.0218	0.01	Q	V	|	|	|	|
25+55	0.0219	0.01	Q	V	|	|	|	|
26+ 0	0.0219	0.01	Q	V	|	|	|	|
26+ 5	0.0220	0.01	Q	V	|	|	|	|
26+10	0.0220	0.01	Q	V	|	|	|	|
26+15	0.0221	0.01	Q	V	|	|	|	|
26+20	0.0221	0.01	Q	V	|	|	|	|
26+25	0.0222	0.01	Q	V	|	|	|	|
26+30	0.0222	0.01	Q	V	|	|	|	|
26+35	0.0223	0.01	Q	V	|	|	|	|
26+40	0.0224	0.01	Q	V	|	|	|	|
26+45	0.0224	0.01	Q	V	|	|	|	|
26+50	0.0225	0.01	Q	V	|	|	|	|
26+55	0.0226	0.01	Q	V	|	|	|	|
27+ 0	0.0226	0.01	Q	V	|	|	|	|
27+ 5	0.0227	0.01	Q	V	|	|	|	|
27+10	0.0228	0.01	Q	V	|	|	|	|
27+15	0.0228	0.01	Q	V	|	|	|	|
27+20	0.0229	0.01	Q	V	|	|	|	|
27+25	0.0230	0.01	Q	V	|	|	|	|
27+30	0.0230	0.01	Q	V	|	|	|	|
27+35	0.0231	0.01	Q	V	|	|	|	|
27+40	0.0232	0.01	Q	V	|	|	|	|
27+45	0.0232	0.01	Q	V	|	|	|	|
27+50	0.0233	0.01	Q	V	|	|	|	|
27+55	0.0234	0.01	Q	V	|	|	|	|
28+ 0	0.0235	0.01	Q	V	|	|	|	|
28+ 5	0.0235	0.01	Q	V	|	|	|	|
28+10	0.0236	0.01	Q	V	|	|	|	|
28+15	0.0237	0.01	Q	V	|	|	|	|
28+20	0.0238	0.01	Q	V	|	|	|	|
28+25	0.0239	0.01	Q	V	|	|	|	|
28+30	0.0240	0.01	Q	V	|	|	|	|
28+35	0.0241	0.01	Q	V	|	|	|	|
28+40	0.0242	0.01	Q	V	|	|	|	|
28+45	0.0243	0.01	Q	V	|	|	|	|
28+50	0.0244	0.01	Q	V	|	|	|	|
28+55	0.0245	0.02	Q	V	|	|	|	|
29+ 0	0.0246	0.02	Q	V	|	|	|	|
29+ 5	0.0247	0.01	Q	V	|	|	|	|
29+10	0.0247	0.01	Q	V	|	|	|	|
29+15	0.0248	0.01	Q	V	|	|	|	|
29+20	0.0249	0.01	Q	V	|	|	|	|

29+25	0.0250	0.01	Q	V	|	|	|	|
29+30	0.0251	0.01	Q	V	|	|	|	|
29+35	0.0252	0.01	Q	V	|	|	|	|
29+40	0.0253	0.02	Q	V	|	|	|	|
29+45	0.0254	0.02	Q	V	|	|	|	|
29+50	0.0255	0.02	Q	V	|	|	|	|
29+55	0.0256	0.02	Q	V	|	|	|	|
30+ 0	0.0257	0.02	Q	V	|	|	|	|
30+ 5	0.0258	0.02	Q	V	|	|	|	|
30+10	0.0260	0.02	Q	V	|	|	|	|
30+15	0.0261	0.02	Q	V	|	|	|	|
30+20	0.0262	0.02	Q	V	|	|	|	|
30+25	0.0263	0.02	Q	V	|	|	|	|
30+30	0.0264	0.02	Q	V	|	|	|	|
30+35	0.0266	0.02	Q	V	|	|	|	|
30+40	0.0267	0.02	Q	V	|	|	|	|
30+45	0.0268	0.02	Q	V	|	|	|	|
30+50	0.0270	0.02	Q	V	|	|	|	|
30+55	0.0271	0.02	Q	V	|	|	|	|
31+ 0	0.0272	0.02	Q	V	|	|	|	|
31+ 5	0.0274	0.02	Q	V	|	|	|	|
31+10	0.0275	0.02	Q	V	|	|	|	|
31+15	0.0276	0.02	Q	V	|	|	|	|
31+20	0.0278	0.02	Q	V	|	|	|	|
31+25	0.0279	0.02	Q	V	|	|	|	|
31+30	0.0281	0.02	Q	V	|	|	|	|
31+35	0.0282	0.02	Q	V	|	|	|	|
31+40	0.0284	0.02	Q	V	|	|	|	|
31+45	0.0285	0.02	Q	V	|	|	|	|
31+50	0.0287	0.02	Q	V	|	|	|	|
31+55	0.0289	0.02	Q	V	|	|	|	|
32+ 0	0.0290	0.02	Q	V	|	|	|	|
32+ 5	0.0292	0.03	Q	V	|	|	|	|
32+10	0.0294	0.03	Q	V	|	|	|	|
32+15	0.0296	0.03	Q	V	|	|	|	|
32+20	0.0298	0.03	Q	V	|	|	|	|
32+25	0.0300	0.03	Q	V	|	|	|	|
32+30	0.0302	0.03	Q	V	|	|	|	|
32+35	0.0304	0.03	Q	V	|	|	|	|
32+40	0.0306	0.03	Q	V	|	|	|	|
32+45	0.0309	0.03	Q	V	|	|	|	|
32+50	0.0311	0.03	Q	V	|	|	|	|
32+55	0.0313	0.03	Q	V	|	|	|	|
33+ 0	0.0315	0.03	Q	V	|	|	|	|
33+ 5	0.0318	0.04	Q	V	|	|	|	|
33+10	0.0320	0.04	Q	V	|	|	|	|
33+15	0.0323	0.04	Q	V	|	|	|	|
33+20	0.0325	0.04	Q	V	|	|	|	|
33+25	0.0328	0.04	Q	V	|	|	|	|
33+30	0.0331	0.04	Q	V	|	|	|	|
33+35	0.0333	0.04	Q	V	|	|	|	|
33+40	0.0336	0.04	Q	V	|	|	|	|
33+45	0.0339	0.04	Q	V	|	|	|	|
33+50	0.0342	0.04	Q	V	|	|	|	|
33+55	0.0345	0.04	Q	V	|	|	|	|
34+ 0	0.0348	0.04	Q	V	|	|	|	|
34+ 5	0.0350	0.03	Q	V	|	|	|	|
34+10	0.0352	0.03	Q	V	|	|	|	|
34+15	0.0354	0.03	Q	V	|	|	|	|
34+20	0.0356	0.03	Q	V	|	|	|	|
34+25	0.0358	0.03	Q	V	|	|	|	|
34+30	0.0360	0.03	Q	V	|	|	|	|
34+35	0.0362	0.04	Q	V	|	|	|	|
34+40	0.0365	0.04	Q	V	|	|	|	|
34+45	0.0368	0.04	Q	V	|	|	|	|

34+50	0.0370	0.04	Q	V	|	|	|
34+55	0.0373	0.04	Q	V	|	|	|
35+ 0	0.0376	0.04	Q	V	|	|	|
35+ 5	0.0378	0.04	Q	V	|	|	|
35+10	0.0381	0.04	Q	V	|	|	|
35+15	0.0383	0.04	Q	V	|	|	|
35+20	0.0386	0.04	Q	V	|	|	|
35+25	0.0388	0.04	Q	V	|	|	|
35+30	0.0391	0.04	Q	V	|	|	|
35+35	0.0393	0.03	Q	V	|	|	|
35+40	0.0395	0.03	Q	V	|	|	|
35+45	0.0397	0.03	Q	V	|	|	|
35+50	0.0400	0.03	Q	|V	|	|	|
35+55	0.0402	0.03	Q	|V	|	|	|
36+ 0	0.0405	0.03	Q	|V	|	|	|
36+ 5	0.0408	0.04	Q	|V	|	|	|
36+10	0.0411	0.05	Q	|V	|	|	|
36+15	0.0414	0.05	Q	|V	|	|	|
36+20	0.0418	0.05	Q	|V	|	|	|
36+25	0.0421	0.05	Q	|V	|	|	|
36+30	0.0425	0.05	Q	|V	|	|	|
36+35	0.0428	0.05	Q	|V	|	|	|
36+40	0.0432	0.05	Q	|V	|	|	|
36+45	0.0436	0.05	Q	| V	|	|	|
36+50	0.0439	0.06	Q	| V	|	|	|
36+55	0.0443	0.06	Q	| V	|	|	|
37+ 0	0.0447	0.06	Q	| V	|	|	|
37+ 5	0.0451	0.06	Q	| V	|	|	|
37+10	0.0456	0.07	Q	| V	|	|	|
37+15	0.0460	0.07	Q	| V	|	|	|
37+20	0.0465	0.07	Q	| V	|	|	|
37+25	0.0469	0.07	Q	| V	|	|	|
37+30	0.0474	0.07	Q	| V	|	|	|
37+35	0.0477	0.05	Q	| V	|	|	|
37+40	0.0480	0.04	Q	| V	|	|	|
37+45	0.0483	0.04	Q	| V	|	|	|
37+50	0.0486	0.04	Q	| V	|	|	|
37+55	0.0489	0.04	Q	| V	|	|	|
38+ 0	0.0492	0.04	Q	| V	|	|	|
38+ 5	0.0496	0.05	Q	| V	|	|	|
38+10	0.0500	0.05	Q	| V	|	|	|
38+15	0.0503	0.05	Q	| V	|	|	|
38+20	0.0507	0.05	Q	| V	|	|	|
38+25	0.0510	0.05	Q	| V	|	|	|
38+30	0.0513	0.05	Q	| V	|	|	|
38+35	0.0517	0.05	Q	| V	|	|	|
38+40	0.0520	0.05	Q	| V	|	|	|
38+45	0.0524	0.05	Q	| V	|	|	|
38+50	0.0527	0.05	Q	| V	|	|	|
38+55	0.0530	0.05	Q	| V	|	|	|
39+ 0	0.0534	0.05	Q	| V	|	|	|
39+ 5	0.0537	0.05	Q	| V	|	|	|
39+10	0.0540	0.05	Q	| V	|	|	|
39+15	0.0543	0.05	Q	| V	|	|	|
39+20	0.0546	0.04	Q	| V	|	|	|
39+25	0.0549	0.04	Q	| V	|	|	|
39+30	0.0552	0.04	Q	| V	|	|	|
39+35	0.0555	0.04	Q	| V	|	|	|
39+40	0.0558	0.04	Q	| V	|	|	|
39+45	0.0560	0.04	Q	| V	|	|	|
39+50	0.0563	0.04	Q	| V	|	|	|
39+55	0.0565	0.04	Q	| V	|	|	|
40+ 0	0.0568	0.04	Q	| V	|	|	|
40+ 5	0.0569	0.01	Q	| V	|	|	|
40+10	0.0569	0.01	Q	| V	|	|	|

40+15	0.0570	0.01	Q	| V |	|	|
40+20	0.0570	0.01	Q	| V |	|	|
40+25	0.0571	0.01	Q	| V |	|	|
40+30	0.0571	0.01	Q	| V |	|	|
40+35	0.0572	0.01	Q	| V |	|	|
40+40	0.0572	0.01	Q	| V |	|	|
40+45	0.0572	0.01	Q	| V |	|	|
40+50	0.0573	0.01	Q	| V |	|	|
40+55	0.0573	0.01	Q	| V |	|	|
41+ 0	0.0574	0.01	Q	| V |	|	|
41+ 5	0.0574	0.01	Q	| V |	|	|
41+10	0.0575	0.01	Q	| V |	|	|
41+15	0.0576	0.01	Q	| V |	|	|
41+20	0.0576	0.01	Q	| V |	|	|
41+25	0.0577	0.01	Q	| V |	|	|
41+30	0.0578	0.01	Q	| V |	|	|
41+35	0.0578	0.01	Q	| V |	|	|
41+40	0.0579	0.01	Q	| V |	|	|
41+45	0.0580	0.01	Q	| V |	|	|
41+50	0.0580	0.01	Q	| V |	|	|
41+55	0.0581	0.01	Q	| V |	|	|
42+ 0	0.0581	0.01	Q	| V |	|	|
42+ 5	0.0582	0.01	Q	| V |	|	|
42+10	0.0582	0.01	Q	| V |	|	|
42+15	0.0583	0.01	Q	| V |	|	|
42+20	0.0583	0.01	Q	| V |	|	|
42+25	0.0584	0.01	Q	| V |	|	|
42+30	0.0584	0.01	Q	| V |	|	|
42+35	0.0585	0.01	Q	| V |	|	|
42+40	0.0585	0.01	Q	| V |	|	|
42+45	0.0586	0.01	Q	| V |	|	|
42+50	0.0586	0.00	Q	| V |	|	|
42+55	0.0586	0.00	Q	| V |	|	|
43+ 0	0.0586	0.00	Q	| V |	|	|
43+ 5	0.0587	0.01	Q	| V |	|	|
43+10	0.0587	0.01	Q	| V |	|	|
43+15	0.0588	0.01	Q	| V |	|	|
43+20	0.0588	0.01	Q	| V |	|	|
43+25	0.0589	0.01	Q	| V |	|	|
43+30	0.0589	0.01	Q	| V |	|	|
43+35	0.0590	0.01	Q	| V |	|	|
43+40	0.0590	0.01	Q	| V |	|	|
43+45	0.0590	0.01	Q	| V |	|	|
43+50	0.0591	0.00	Q	| V |	|	|
43+55	0.0591	0.00	Q	| V |	|	|
44+ 0	0.0591	0.00	Q	| V |	|	|
44+ 5	0.0592	0.01	Q	| V |	|	|
44+10	0.0592	0.01	Q	| V |	|	|
44+15	0.0592	0.01	Q	| V |	|	|
44+20	0.0593	0.01	Q	| V |	|	|
44+25	0.0593	0.01	Q	| V |	|	|
44+30	0.0594	0.01	Q	| V |	|	|
44+35	0.0594	0.01	Q	| V |	|	|
44+40	0.0594	0.01	Q	| V |	|	|
44+45	0.0595	0.01	Q	| V |	|	|
44+50	0.0595	0.00	Q	| V |	|	|
44+55	0.0595	0.00	Q	| V |	|	|
45+ 0	0.0596	0.00	Q	| V |	|	|
45+ 5	0.0596	0.01	Q	| V |	|	|
45+10	0.0596	0.01	Q	| V |	|	|
45+15	0.0597	0.01	Q	| V |	|	|
45+20	0.0597	0.00	Q	| V |	|	|
45+25	0.0597	0.00	Q	| V |	|	|
45+30	0.0598	0.00	Q	| V |	|	|
45+35	0.0598	0.01	Q	| V |	|	|

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45+40    0.0598    0.01 Q      |   V  |      |      |
45+45    0.0599    0.01 Q      |   V  |      |      |
45+50    0.0599    0.00 Q      |   V  |      |      |
45+55    0.0599    0.00 Q      |   V  |      |      |
46+ 0    0.0599    0.00 Q      |   V  |      |      |
46+ 5    0.0600    0.01 Q      |   V  |      |      |
46+10    0.0600    0.01 Q      |   V  |      |      |
46+15    0.0601    0.01 Q      |   V  |      |      |
46+20    0.0601    0.00 Q      |   V  |      |      |
46+25    0.0601    0.00 Q      |   V  |      |      |
46+30    0.0601    0.00 Q      |   V  |      |      |
46+35    0.0602    0.00 Q      |   V  |      |      |
46+40    0.0602    0.00 Q      |   V  |      |      |
46+45    0.0602    0.00 Q      |   V  |      |      |
46+50    0.0603    0.00 Q      |   V  |      |      |
46+55    0.0603    0.00 Q      |   V  |      |      |
47+ 0    0.0603    0.00 Q      |   V  |      |      |
47+ 5    0.0603    0.00 Q      |   V  |      |      |
47+10    0.0604    0.00 Q      |   V  |      |      |
47+15    0.0604    0.00 Q      |   V  |      |      |
47+20    0.0604    0.00 Q      |   V  |      |      |
47+25    0.0604    0.00 Q      |   V  |      |      |
47+30    0.0605    0.00 Q      |   V  |      |      |
47+35    0.0605    0.00 Q      |   V  |      |      |
47+40    0.0605    0.00 Q      |   V  |      |      |
47+45    0.0605    0.00 Q      |   V  |      |      |
47+50    0.0606    0.00 Q      |   V  |      |      |
47+55    0.0606    0.00 Q      |   V  |      |      |
48+ 0    0.0606    0.00 Q      |   V  |      |      |
48+ 5    0.0607    0.01 Q      |   V  |      |      |
48+10    0.0608    0.01 Q      |   V  |      |      |
48+15    0.0608    0.01 Q      |   V  |      |      |
48+20    0.0609    0.01 Q      |   V  |      |      |
48+25    0.0610    0.02 Q      |   V  |      |      |
48+30    0.0611    0.02 Q      |   V  |      |      |
48+35    0.0613    0.02 Q      |   V  |      |      |
48+40    0.0614    0.02 Q      |   V  |      |      |
48+45    0.0615    0.02 Q      |   V  |      |      |
48+50    0.0616    0.02 Q      |   V  |      |      |
48+55    0.0618    0.02 Q      |    V |      |      |
49+ 0    0.0619    0.02 Q      |   V  |      |      |
49+ 5    0.0620    0.02 Q      |   V  |      |      |
49+10    0.0621    0.02 Q      |    V |      |      |
49+15    0.0623    0.02 Q      |    V |      |      |
49+20    0.0624    0.02 Q      |    V |      |      |
49+25    0.0625    0.02 Q      |    V |      |      |
49+30    0.0626    0.02 Q      |    V |      |      |
49+35    0.0627    0.02 Q      |    V |      |      |
49+40    0.0628    0.02 Q      |    V |      |      |
49+45    0.0629    0.02 Q      |    V |      |      |
49+50    0.0631    0.02 Q      |    V |      |      |
49+55    0.0632    0.02 Q      |    V |      |      |
50+ 0    0.0633    0.02 Q      |   V  |      |      |
50+ 5    0.0635    0.02 Q      |   V  |      |      |
50+10    0.0636    0.02 Q      |    V |      |      |
50+15    0.0638    0.02 Q      |    V |      |      |
50+20    0.0639    0.02 Q      |    V |      |      |
50+25    0.0641    0.02 Q      |    V |      |      |
50+30    0.0642    0.02 Q      |    V |      |      |
50+35    0.0644    0.03 Q      |    V |      |      |
50+40    0.0646    0.03 Q      |    V |      |      |
50+45    0.0648    0.03 Q      |    V |      |      |
50+50    0.0650    0.03 Q      |    V |      |      |
50+55    0.0651    0.03 Q      |    V |      |      |
51+ 0    0.0653    0.03 Q      |   V  |      |      |
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51+ 5    0.0655    0.03  Q      |     V |       |       |
51+10    0.0657    0.03  Q      |      V |      |       |
51+15    0.0659    0.03  Q      |      V |      |       |
51+20    0.0661    0.03  Q      |      V |      |       |
51+25    0.0662    0.03  Q      |      V |      |       |
51+30    0.0664    0.03  Q      |      V |      |       |
51+35    0.0666    0.03  Q      |      V |      |       |
51+40    0.0668    0.03  Q      |      V |      |       |
51+45    0.0670    0.03  Q      |      V |      |       |
51+50    0.0672    0.03  Q      |      V |      |       |
51+55    0.0674    0.03  Q      |      V |      |       |
52+ 0    0.0676    0.03  Q      |     V |       |       |
52+ 5    0.0678    0.03  Q      |     V |       |       |
52+10    0.0681    0.03  Q      |      V |      |       |
52+15    0.0683    0.03  Q      |      V |      |       |
52+20    0.0685    0.04  Q      |      V |      |       |
52+25    0.0688    0.04  Q      |      V |      |       |
52+30    0.0691    0.04  Q      |      V|       |       |
52+35    0.0693    0.04  Q      |      V|       |       |
52+40    0.0696    0.04  Q      |      V|       |       |
52+45    0.0698    0.04  Q      |      V|       |       |
52+50    0.0701    0.04  Q      |      V|       |       |
52+55    0.0704    0.04  Q      |      V|       |       |
53+ 0    0.0707    0.04  Q      |     V|       |       |
53+ 5    0.0709    0.03  Q      |     V|       |       |
53+10    0.0712    0.03  Q      |      V|       |       |
53+15    0.0714    0.03  Q      |      V|       |       |
53+20    0.0716    0.04  Q      |      V|       |       |
53+25    0.0719    0.04  Q      |      V|       |       |
53+30    0.0721    0.04  Q      |      V|       |       |
53+35    0.0724    0.04  Q      |      V|       |       |
53+40    0.0727    0.04  Q      |       V       |       |
53+45    0.0730    0.04  Q      |       V       |       |
53+50    0.0733    0.04  Q      |       V       |       |
53+55    0.0736    0.04  Q      |       V       |       |
54+ 0    0.0739    0.04  Q      |       V       |       |
54+ 5    0.0742    0.05  Q      |       V       |       |
54+10    0.0745    0.05  Q      |       V       |       |
54+15    0.0749    0.05  Q      |       V       |       |
54+20    0.0752    0.05  Q      |       V       |       |
54+25    0.0755    0.05  Q      |       V       |       |
54+30    0.0759    0.05  Q      |       V       |       |
54+35    0.0762    0.05  Q      |       |V      |       |
54+40    0.0766    0.05  Q      |       |V      |       |
54+45    0.0770    0.05  Q      |       |V      |       |
54+50    0.0773    0.05  Q      |       |V      |       |
54+55    0.0777    0.05  Q      |       |V      |       |
55+ 0    0.0781    0.05  Q      |       |V      |       |
55+ 5    0.0784    0.05  Q      |       |V      |       |
55+10    0.0788    0.05  Q      |       |V      |       |
55+15    0.0792    0.05  Q      |       |V      |       |
55+20    0.0796    0.06  Q      |       |V      |       |
55+25    0.0800    0.06  Q      |       | V     |       |
55+30    0.0804    0.06  Q      |       | V     |       |
55+35    0.0808    0.06  Q      |       | V     |       |
55+40    0.0812    0.06  Q      |       | V     |       |
55+45    0.0817    0.06  Q      |       | V     |       |
55+50    0.0822    0.07  Q      |       | V     |       |
55+55    0.0826    0.07  Q      |       | V     |       |
56+ 0    0.0831    0.07  Q      |       | V     |       |
56+ 5    0.0836    0.08  Q      |       |  V    |       |
56+10    0.0842    0.08  Q      |       |  V    |       |
56+15    0.0848    0.08  Q      |       |  V    |       |
56+20    0.0853    0.08  Q      |       |  V    |       |
56+25    0.0859    0.08  Q      |       |  V    |       |
```

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56+30    0.0864    0.08 Q      |      | V    |      |
56+35    0.0870    0.08 Q      |      | V    |      |
56+40    0.0876    0.09 Q      |      |  V   |      |
56+45    0.0882    0.09 Q      |      |  V   |      |
56+50    0.0888    0.09 Q      |      |  V   |      |
56+55    0.0894    0.09 Q      |      |  V   |      |
57+ 0    0.0900    0.09 Q      |      |  V   |      |
57+ 5    0.0907    0.10 Q      |      |  V   |      |
57+10    0.0914    0.10 Q      |      |   V  |      |
57+15    0.0921    0.10 Q      |      |   V  |      |
57+20    0.0928    0.11 Q      |      |   V  |      |
57+25    0.0936    0.11 Q      |      |   V  |      |
57+30    0.0943    0.11 Q      |      |   V  |      |
57+35    0.0951    0.11 Q      |      |    V |      |
57+40    0.0958    0.11 Q      |      |    V |      |
57+45    0.0966    0.11 Q      |      |    V |      |
57+50    0.0974    0.12 Q      |      |    V |      |
57+55    0.0982    0.12 Q      |      |    V |      |
58+ 0    0.0990    0.12 Q      |      |    V |      |
58+ 5    0.0996    0.09 Q      |      |    V |      |
58+10    0.1002    0.08 Q      |      |    V |      |
58+15    0.1007    0.08 Q      |      |    V |      |
58+20    0.1013    0.08 Q      |      |    V |      |
58+25    0.1018    0.08 Q      |      |     V|      |
58+30    0.1024    0.08 Q      |      |     V|      |
58+35    0.1031    0.10 Q      |      |     V|      |
58+40    0.1038    0.11 Q      |      |     V|      |
58+45    0.1046    0.11 Q      |      |     V|      |
58+50    0.1053    0.11 Q      |      |      V|     |
58+55    0.1060    0.11 Q      |      |      V|     |
59+ 0    0.1068    0.11 Q      |      |     V|      |
59+ 5    0.1075    0.10 Q      |      |     V|      |
59+10    0.1082    0.10 Q      |      |      V|     |
59+15    0.1089    0.10 Q      |      |      V|     |
59+20    0.1096    0.10 Q      |      |       V     |
59+25    0.1103    0.10 Q      |      |       V     |
59+30    0.1110    0.10 Q      |      |       V     |
59+35    0.1116    0.09 Q      |      |       V     |
59+40    0.1122    0.09 Q      |      |       V     |
59+45    0.1128    0.09 Q      |      |      |V     |
59+50    0.1135    0.09 Q      |      |      |V     |
59+55    0.1142    0.10 Q      |      |      |V     |
60+ 0    0.1148    0.10 Q      |      |     |V     |
60+ 5    0.1152    0.05 Q      |      |     |V     |
60+10    0.1154    0.04 Q      |      |      |V     |
60+15    0.1157    0.04 Q      |      |      |V     |
60+20    0.1160    0.05 Q      |      |      |V     |
60+25    0.1164    0.05 Q      |      |      | V    |
60+30    0.1167    0.05 Q      |      |      | V    |
60+35    0.1171    0.06 Q      |      |      | V    |
60+40    0.1176    0.07 Q      |      |      | V    |
60+45    0.1180    0.07 Q      |      |      | V    |
60+50    0.1185    0.07 Q      |      |      | V    |
60+55    0.1190    0.07 Q      |      |      | V    |
61+ 0    0.1196    0.08 Q      |      |     | V    |
61+ 5    0.1203    0.10 Q      |      |     |  V   |
61+10    0.1211    0.11 Q      |      |      |  V   |
61+15    0.1218    0.11 Q      |      |      |  V   |
61+20    0.1226    0.11 Q      |      |      |  V   |
61+25    0.1234    0.11 Q      |      |      |   V  |
61+30    0.1242    0.12 Q      |      |      |   V  |
61+35    0.1246    0.05 Q      |      |      |   V  |
61+40    0.1248    0.04 Q      |      |      |   V  |
61+45    0.1251    0.04 Q      |      |      |   V  |
61+50    0.1254    0.04 Q      |      |      |   V  |
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61+55    0.1256    0.04 Q     |      |      |  V    |
62+ 0    0.1259    0.04 Q     |      |      |  V    |
62+ 5    0.1263    0.06 Q     |      |      |  V    |
62+10    0.1268    0.07 Q     |      |      |  V    |
62+15    0.1273    0.07 Q     |      |      |   V   |
62+20    0.1278    0.07 Q     |      |      |   V   |
62+25    0.1282    0.06 Q     |      |      |   V   |
62+30    0.1286    0.07 Q     |      |      |   V   |
62+35    0.1291    0.07 Q     |      |      |   V   |
62+40    0.1296    0.07 Q     |      |      |   V   |
62+45    0.1300    0.07 Q     |      |      |   V   |
62+50    0.1305    0.06 Q     |      |      |   V   |
62+55    0.1309    0.06 Q     |      |      |    V  |
63+ 0    0.1313    0.06 Q     |      |      |   V   |
63+ 5    0.1317    0.06 Q     |      |      |   V   |
63+10    0.1321    0.06 Q     |      |      |    V  |
63+15    0.1325    0.06 Q     |      |      |    V  |
63+20    0.1328    0.05 Q     |      |      |    V  |
63+25    0.1332    0.05 Q     |      |      |    V  |
63+30    0.1335    0.05 Q     |      |      |    V  |
63+35    0.1337    0.03 Q     |      |      |    V  |
63+40    0.1339    0.02 Q     |      |      |    V  |
63+45    0.1340    0.02 Q     |      |      |    V  |
63+50    0.1342    0.02 Q     |      |      |    V  |
63+55    0.1344    0.02 Q     |      |      |    V  |
64+ 0    0.1345    0.03 Q     |      |      |    V  |
64+ 5    0.1347    0.02 Q     |      |      |    V  |
64+10    0.1348    0.02 Q     |      |      |    V  |
64+15    0.1350    0.02 Q     |      |      |    V  |
64+20    0.1351    0.02 Q     |      |      |    V  |
64+25    0.1353    0.02 Q     |      |      |    V  |
64+30    0.1354    0.02 Q     |      |      |    V  |
64+35    0.1355    0.02 Q     |      |      |    V  |
64+40    0.1357    0.02 Q     |      |      |    V  |
64+45    0.1358    0.02 Q     |      |      |    V  |
64+50    0.1359    0.02 Q     |      |      |    V  |
64+55    0.1360    0.02 Q     |      |      |    V  |
65+ 0    0.1361    0.02 Q     |      |      |    V  |
65+ 5    0.1363    0.02 Q     |      |      |    V  |
65+10    0.1364    0.03 Q     |      |      |    V  |
65+15    0.1366    0.03 Q     |      |      |    V  |
65+20    0.1368    0.03 Q     |      |      |    V  |
65+25    0.1370    0.03 Q     |      |      |    V  |
65+30    0.1372    0.03 Q     |      |      |    V  |
65+35    0.1374    0.03 Q     |      |      |    V  |
65+40    0.1375    0.03 Q     |      |      |    V  |
65+45    0.1377    0.03 Q     |      |      |    V  |
65+50    0.1379    0.02 Q     |      |      |    V  |
65+55    0.1380    0.02 Q     |      |      |    V  |
66+ 0    0.1382    0.02 Q     |      |      |    V  |
66+ 5    0.1383    0.02 Q     |      |      |    V  |
66+10    0.1385    0.02 Q     |      |      |    V  |
66+15    0.1386    0.02 Q     |      |      |    V  |
66+20    0.1388    0.02 Q     |      |      |    V  |
66+25    0.1389    0.02 Q     |      |      |    V  |
66+30    0.1391    0.02 Q     |      |      |    V  |
66+35    0.1392    0.02 Q     |      |      |    V  |
66+40    0.1393    0.02 Q     |      |      |    V  |
66+45    0.1394    0.02 Q     |      |      |    V  |
66+50    0.1395    0.01 Q     |      |      |    V  |
66+55    0.1396    0.01 Q     |      |      |    V  |
67+ 0    0.1396    0.01 Q     |      |      |    V  |
67+ 5    0.1397    0.01 Q     |      |      |    V  |
67+10    0.1398    0.02 Q     |      |      |    V  |
67+15    0.1400    0.02 Q     |      |      |    V  |
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67+20	0.1401	0.02	Q	|	|	|	V |
67+25	0.1402	0.02	Q	|	|	|	V |
67+30	0.1404	0.02	Q	|	|	|	V |
67+35	0.1405	0.02	Q	|	|	|	V |
67+40	0.1406	0.02	Q	|	|	|	V |
67+45	0.1407	0.02	Q	|	|	|	V |
67+50	0.1408	0.01	Q	|	|	|	V |
67+55	0.1409	0.01	Q	|	|	|	V |
68+ 0	0.1410	0.01	Q	|	|	|	V |
68+ 5	0.1411	0.01	Q	|	|	|	V |
68+10	0.1412	0.02	Q	|	|	|	V |
68+15	0.1413	0.02	Q	|	|	|	V |
68+20	0.1414	0.02	Q	|	|	|	V |
68+25	0.1415	0.02	Q	|	|	|	V |
68+30	0.1416	0.02	Q	|	|	|	V|
68+35	0.1417	0.02	Q	|	|	|	V|
68+40	0.1418	0.02	Q	|	|	|	V|
68+45	0.1419	0.02	Q	|	|	|	V|
68+50	0.1420	0.01	Q	|	|	|	V|
68+55	0.1421	0.01	Q	|	|	|	V|
69+ 0	0.1422	0.01	Q	|	|	|	V|
69+ 5	0.1423	0.01	Q	|	|	|	V|
69+10	0.1424	0.02	Q	|	|	|	V|
69+15	0.1425	0.02	Q	|	|	|	V|
69+20	0.1426	0.01	Q	|	|	|	V|
69+25	0.1426	0.01	Q	|	|	|	V|
69+30	0.1427	0.01	Q	|	|	|	V|
69+35	0.1428	0.01	Q	|	|	|	V|
69+40	0.1429	0.02	Q	|	|	|	V|
69+45	0.1430	0.02	Q	|	|	|	V|
69+50	0.1431	0.01	Q	|	|	|	V|
69+55	0.1432	0.01	Q	|	|	|	V|
70+ 0	0.1433	0.01	Q	|	|	|	V|
70+ 5	0.1434	0.01	Q	|	|	|	V|
70+10	0.1435	0.02	Q	|	|	|	V|
70+15	0.1436	0.02	Q	|	|	|	V|
70+20	0.1437	0.01	Q	|	|	|	V|
70+25	0.1437	0.01	Q	|	|	|	V|
70+30	0.1438	0.01	Q	|	|	|	V|
70+35	0.1439	0.01	Q	|	|	|	V|
70+40	0.1440	0.01	Q	|	|	|	V|
70+45	0.1440	0.01	Q	|	|	|	V|
70+50	0.1441	0.01	Q	|	|	|	V|
70+55	0.1442	0.01	Q	|	|	|	V|
71+ 0	0.1443	0.01	Q	|	|	|	V|
71+ 5	0.1443	0.01	Q	|	|	|	V|
71+10	0.1444	0.01	Q	|	|	|	V|
71+15	0.1445	0.01	Q	|	|	|	V|
71+20	0.1446	0.01	Q	|	|	|	V|
71+25	0.1446	0.01	Q	|	|	|	V|
71+30	0.1447	0.01	Q	|	|	|	V|
71+35	0.1448	0.01	Q	|	|	|	V|
71+40	0.1449	0.01	Q	|	|	|	V|
71+45	0.1449	0.01	Q	|	|	|	V|
71+50	0.1450	0.01	Q	|	|	|	V|
71+55	0.1451	0.01	Q	|	|	|	V|
72+ 0	0.1451	0.01	Q	|	|	|	V|
72+ 5	0.1452	0.00	Q	|	|	|	V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: BPOST245.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
24-Hr 5-Yr Storm Event

Drainage Area = 0.74(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 284.00(Ft.)
Length along longest watercourse measured to centroid = 86.63(Ft.)
Length along longest watercourse = 0.054 Mi.
Length along longest watercourse measured to centroid = 0.016 Mi.
Difference in elevation = 1.69(Ft.)
Slope along watercourse = 31.4197 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.013 Hr.
Lag time = 0.78 Min.
25% of lag time = 0.19 Min.
40% of lag time = 0.31 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	2.43	1.80

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	6.58	4.88

STORM EVENT (YEAR) = 5.00
Area Averaged 2-Year Rainfall = 2.430(In)
Area Averaged 100-Year Rainfall = 6.580(In)

Point rain (area averaged) = 3.402(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 3.402(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.742	55.00	0.792

Total Area Entered = 0.74(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
55.0	35.0	0.715	0.792	0.205	1.000	0.205

Sum (F) = 0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205

Minimum soil loss rate ((In/Hr)) = 0.103

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.266

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	645.077	77.129	0.577
2	0.167	1290.154	22.871	0.171
	Sum = 100.000		Sum=	0.748

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.027	0.364	0.007	0.02
2	0.17	0.07	0.027	0.362	0.007	0.02
3	0.25	0.07	0.027	0.361	0.007	0.02
4	0.33	0.10	0.041	0.360	0.011	0.03
5	0.42	0.10	0.041	0.358	0.011	0.03
6	0.50	0.10	0.041	0.357	0.011	0.03
7	0.58	0.10	0.041	0.355	0.011	0.03
8	0.67	0.10	0.041	0.354	0.011	0.03
9	0.75	0.10	0.041	0.353	0.011	0.03
10	0.83	0.13	0.054	0.351	0.014	0.04
11	0.92	0.13	0.054	0.350	0.014	0.04
12	1.00	0.13	0.054	0.348	0.014	0.04
13	1.08	0.10	0.041	0.347	0.011	0.03
14	1.17	0.10	0.041	0.346	0.011	0.03
15	1.25	0.10	0.041	0.344	0.011	0.03
16	1.33	0.10	0.041	0.343	0.011	0.03
17	1.42	0.10	0.041	0.342	0.011	0.03
18	1.50	0.10	0.041	0.340	0.011	0.03
19	1.58	0.10	0.041	0.339	0.011	0.03
20	1.67	0.10	0.041	0.338	0.011	0.03
21	1.75	0.10	0.041	0.336	0.011	0.03
22	1.83	0.13	0.054	0.335	0.014	0.04
23	1.92	0.13	0.054	0.333	0.014	0.04
24	2.00	0.13	0.054	0.332	0.014	0.04
25	2.08	0.13	0.054	0.331	0.014	0.04
26	2.17	0.13	0.054	0.329	0.014	0.04
27	2.25	0.13	0.054	0.328	0.014	0.04
28	2.33	0.13	0.054	0.327	0.014	0.04
29	2.42	0.13	0.054	0.325	0.014	0.04
30	2.50	0.13	0.054	0.324	0.014	0.04
31	2.58	0.17	0.068	0.323	0.018	0.05
32	2.67	0.17	0.068	0.321	0.018	0.05
33	2.75	0.17	0.068	0.320	0.018	0.05

34	2.83	0.17	0.068	0.319	0.018	0.05
35	2.92	0.17	0.068	0.318	0.018	0.05
36	3.00	0.17	0.068	0.316	0.018	0.05
37	3.08	0.17	0.068	0.315	0.018	0.05
38	3.17	0.17	0.068	0.314	0.018	0.05
39	3.25	0.17	0.068	0.312	0.018	0.05
40	3.33	0.17	0.068	0.311	0.018	0.05
41	3.42	0.17	0.068	0.310	0.018	0.05
42	3.50	0.17	0.068	0.308	0.018	0.05
43	3.58	0.17	0.068	0.307	0.018	0.05
44	3.67	0.17	0.068	0.306	0.018	0.05
45	3.75	0.17	0.068	0.305	0.018	0.05
46	3.83	0.20	0.082	0.303	0.022	0.06
47	3.92	0.20	0.082	0.302	0.022	0.06
48	4.00	0.20	0.082	0.301	0.022	0.06
49	4.08	0.20	0.082	0.299	0.022	0.06
50	4.17	0.20	0.082	0.298	0.022	0.06
51	4.25	0.20	0.082	0.297	0.022	0.06
52	4.33	0.23	0.095	0.296	0.025	0.07
53	4.42	0.23	0.095	0.294	0.025	0.07
54	4.50	0.23	0.095	0.293	0.025	0.07
55	4.58	0.23	0.095	0.292	0.025	0.07
56	4.67	0.23	0.095	0.291	0.025	0.07
57	4.75	0.23	0.095	0.289	0.025	0.07
58	4.83	0.27	0.109	0.288	0.029	0.08
59	4.92	0.27	0.109	0.287	0.029	0.08
60	5.00	0.27	0.109	0.286	0.029	0.08
61	5.08	0.20	0.082	0.284	0.022	0.06
62	5.17	0.20	0.082	0.283	0.022	0.06
63	5.25	0.20	0.082	0.282	0.022	0.06
64	5.33	0.23	0.095	0.281	0.025	0.07
65	5.42	0.23	0.095	0.279	0.025	0.07
66	5.50	0.23	0.095	0.278	0.025	0.07
67	5.58	0.27	0.109	0.277	0.029	0.08
68	5.67	0.27	0.109	0.276	0.029	0.08
69	5.75	0.27	0.109	0.275	0.029	0.08
70	5.83	0.27	0.109	0.273	0.029	0.08
71	5.92	0.27	0.109	0.272	0.029	0.08
72	6.00	0.27	0.109	0.271	0.029	0.08
73	6.08	0.30	0.122	0.270	0.033	0.09
74	6.17	0.30	0.122	0.268	0.033	0.09
75	6.25	0.30	0.122	0.267	0.033	0.09
76	6.33	0.30	0.122	0.266	0.033	0.09
77	6.42	0.30	0.122	0.265	0.033	0.09
78	6.50	0.30	0.122	0.264	0.033	0.09
79	6.58	0.33	0.136	0.263	0.036	0.10
80	6.67	0.33	0.136	0.261	0.036	0.10
81	6.75	0.33	0.136	0.260	0.036	0.10
82	6.83	0.33	0.136	0.259	0.036	0.10
83	6.92	0.33	0.136	0.258	0.036	0.10
84	7.00	0.33	0.136	0.257	0.036	0.10
85	7.08	0.33	0.136	0.255	0.036	0.10
86	7.17	0.33	0.136	0.254	0.036	0.10
87	7.25	0.33	0.136	0.253	0.036	0.10
88	7.33	0.37	0.150	0.252	0.040	0.11
89	7.42	0.37	0.150	0.251	0.040	0.11
90	7.50	0.37	0.150	0.250	0.040	0.11
91	7.58	0.40	0.163	0.249	0.043	0.12
92	7.67	0.40	0.163	0.247	0.043	0.12
93	7.75	0.40	0.163	0.246	0.043	0.12
94	7.83	0.43	0.177	0.245	0.047	0.13
95	7.92	0.43	0.177	0.244	0.047	0.13
96	8.00	0.43	0.177	0.243	0.047	0.13
97	8.08	0.50	0.204	0.242	0.054	0.15
98	8.17	0.50	0.204	0.241	0.054	0.15

99	8.25	0.50	0.204	0.239	0.054	0.15
100	8.33	0.50	0.204	0.238	0.054	0.15
101	8.42	0.50	0.204	0.237	0.054	0.15
102	8.50	0.50	0.204	0.236	0.054	0.15
103	8.58	0.53	0.218	0.235	0.058	0.16
104	8.67	0.53	0.218	0.234	0.058	0.16
105	8.75	0.53	0.218	0.233	0.058	0.16
106	8.83	0.57	0.231	0.232	0.062	0.17
107	8.92	0.57	0.231	0.231	---	0.00
108	9.00	0.57	0.231	0.230	---	0.00
109	9.08	0.63	0.259	0.228	---	0.03
110	9.17	0.63	0.259	0.227	---	0.03
111	9.25	0.63	0.259	0.226	---	0.03
112	9.33	0.67	0.272	0.225	---	0.05
113	9.42	0.67	0.272	0.224	---	0.05
114	9.50	0.67	0.272	0.223	---	0.05
115	9.58	0.70	0.286	0.222	---	0.06
116	9.67	0.70	0.286	0.221	---	0.06
117	9.75	0.70	0.286	0.220	---	0.07
118	9.83	0.73	0.299	0.219	---	0.08
119	9.92	0.73	0.299	0.218	---	0.08
120	10.00	0.73	0.299	0.217	---	0.08
121	10.08	0.50	0.204	0.216	0.054	0.15
122	10.17	0.50	0.204	0.215	0.054	0.15
123	10.25	0.50	0.204	0.214	0.054	0.15
124	10.33	0.50	0.204	0.213	0.054	0.15
125	10.42	0.50	0.204	0.212	0.054	0.15
126	10.50	0.50	0.204	0.210	0.054	0.15
127	10.58	0.67	0.272	0.209	---	0.06
128	10.67	0.67	0.272	0.208	---	0.06
129	10.75	0.67	0.272	0.207	---	0.06
130	10.83	0.67	0.272	0.206	---	0.07
131	10.92	0.67	0.272	0.205	---	0.07
132	11.00	0.67	0.272	0.204	---	0.07
133	11.08	0.63	0.259	0.203	---	0.06
134	11.17	0.63	0.259	0.202	---	0.06
135	11.25	0.63	0.259	0.201	---	0.06
136	11.33	0.63	0.259	0.200	---	0.06
137	11.42	0.63	0.259	0.199	---	0.06
138	11.50	0.63	0.259	0.198	---	0.06
139	11.58	0.57	0.231	0.197	---	0.03
140	11.67	0.57	0.231	0.196	---	0.03
141	11.75	0.57	0.231	0.195	---	0.04
142	11.83	0.60	0.245	0.194	---	0.05
143	11.92	0.60	0.245	0.193	---	0.05
144	12.00	0.60	0.245	0.193	---	0.05
145	12.08	0.83	0.340	0.192	---	0.15
146	12.17	0.83	0.340	0.191	---	0.15
147	12.25	0.83	0.340	0.190	---	0.15
148	12.33	0.87	0.354	0.189	---	0.17
149	12.42	0.87	0.354	0.188	---	0.17
150	12.50	0.87	0.354	0.187	---	0.17
151	12.58	0.93	0.381	0.186	---	0.20
152	12.67	0.93	0.381	0.185	---	0.20
153	12.75	0.93	0.381	0.184	---	0.20
154	12.83	0.97	0.395	0.183	---	0.21
155	12.92	0.97	0.395	0.182	---	0.21
156	13.00	0.97	0.395	0.181	---	0.21
157	13.08	1.13	0.463	0.180	---	0.28
158	13.17	1.13	0.463	0.179	---	0.28
159	13.25	1.13	0.463	0.178	---	0.28
160	13.33	1.13	0.463	0.178	---	0.29
161	13.42	1.13	0.463	0.177	---	0.29
162	13.50	1.13	0.463	0.176	---	0.29
163	13.58	0.77	0.313	0.175	---	0.14

164	13.67	0.77	0.313	0.174	---	0.14
165	13.75	0.77	0.313	0.173	---	0.14
166	13.83	0.77	0.313	0.172	---	0.14
167	13.92	0.77	0.313	0.171	---	0.14
168	14.00	0.77	0.313	0.170	---	0.14
169	14.08	0.90	0.367	0.170	---	0.20
170	14.17	0.90	0.367	0.169	---	0.20
171	14.25	0.90	0.367	0.168	---	0.20
172	14.33	0.87	0.354	0.167	---	0.19
173	14.42	0.87	0.354	0.166	---	0.19
174	14.50	0.87	0.354	0.165	---	0.19
175	14.58	0.87	0.354	0.164	---	0.19
176	14.67	0.87	0.354	0.164	---	0.19
177	14.75	0.87	0.354	0.163	---	0.19
178	14.83	0.83	0.340	0.162	---	0.18
179	14.92	0.83	0.340	0.161	---	0.18
180	15.00	0.83	0.340	0.160	---	0.18
181	15.08	0.80	0.327	0.159	---	0.17
182	15.17	0.80	0.327	0.159	---	0.17
183	15.25	0.80	0.327	0.158	---	0.17
184	15.33	0.77	0.313	0.157	---	0.16
185	15.42	0.77	0.313	0.156	---	0.16
186	15.50	0.77	0.313	0.155	---	0.16
187	15.58	0.63	0.259	0.155	---	0.10
188	15.67	0.63	0.259	0.154	---	0.10
189	15.75	0.63	0.259	0.153	---	0.11
190	15.83	0.63	0.259	0.152	---	0.11
191	15.92	0.63	0.259	0.151	---	0.11
192	16.00	0.63	0.259	0.151	---	0.11
193	16.08	0.13	0.054	0.150	0.014	0.04
194	16.17	0.13	0.054	0.149	0.014	0.04
195	16.25	0.13	0.054	0.148	0.014	0.04
196	16.33	0.13	0.054	0.148	0.014	0.04
197	16.42	0.13	0.054	0.147	0.014	0.04
198	16.50	0.13	0.054	0.146	0.014	0.04
199	16.58	0.10	0.041	0.145	0.011	0.03
200	16.67	0.10	0.041	0.145	0.011	0.03
201	16.75	0.10	0.041	0.144	0.011	0.03
202	16.83	0.10	0.041	0.143	0.011	0.03
203	16.92	0.10	0.041	0.142	0.011	0.03
204	17.00	0.10	0.041	0.142	0.011	0.03
205	17.08	0.17	0.068	0.141	0.018	0.05
206	17.17	0.17	0.068	0.140	0.018	0.05
207	17.25	0.17	0.068	0.140	0.018	0.05
208	17.33	0.17	0.068	0.139	0.018	0.05
209	17.42	0.17	0.068	0.138	0.018	0.05
210	17.50	0.17	0.068	0.138	0.018	0.05
211	17.58	0.17	0.068	0.137	0.018	0.05
212	17.67	0.17	0.068	0.136	0.018	0.05
213	17.75	0.17	0.068	0.135	0.018	0.05
214	17.83	0.13	0.054	0.135	0.014	0.04
215	17.92	0.13	0.054	0.134	0.014	0.04
216	18.00	0.13	0.054	0.133	0.014	0.04
217	18.08	0.13	0.054	0.133	0.014	0.04
218	18.17	0.13	0.054	0.132	0.014	0.04
219	18.25	0.13	0.054	0.132	0.014	0.04
220	18.33	0.13	0.054	0.131	0.014	0.04
221	18.42	0.13	0.054	0.130	0.014	0.04
222	18.50	0.13	0.054	0.130	0.014	0.04
223	18.58	0.10	0.041	0.129	0.011	0.03
224	18.67	0.10	0.041	0.128	0.011	0.03
225	18.75	0.10	0.041	0.128	0.011	0.03
226	18.83	0.07	0.027	0.127	0.007	0.02
227	18.92	0.07	0.027	0.127	0.007	0.02
228	19.00	0.07	0.027	0.126	0.007	0.02

229	19.08	0.10	0.041	0.125	0.011	0.03
230	19.17	0.10	0.041	0.125	0.011	0.03
231	19.25	0.10	0.041	0.124	0.011	0.03
232	19.33	0.13	0.054	0.124	0.014	0.04
233	19.42	0.13	0.054	0.123	0.014	0.04
234	19.50	0.13	0.054	0.122	0.014	0.04
235	19.58	0.10	0.041	0.122	0.011	0.03
236	19.67	0.10	0.041	0.121	0.011	0.03
237	19.75	0.10	0.041	0.121	0.011	0.03
238	19.83	0.07	0.027	0.120	0.007	0.02
239	19.92	0.07	0.027	0.120	0.007	0.02
240	20.00	0.07	0.027	0.119	0.007	0.02
241	20.08	0.10	0.041	0.119	0.011	0.03
242	20.17	0.10	0.041	0.118	0.011	0.03
243	20.25	0.10	0.041	0.118	0.011	0.03
244	20.33	0.10	0.041	0.117	0.011	0.03
245	20.42	0.10	0.041	0.117	0.011	0.03
246	20.50	0.10	0.041	0.116	0.011	0.03
247	20.58	0.10	0.041	0.116	0.011	0.03
248	20.67	0.10	0.041	0.115	0.011	0.03
249	20.75	0.10	0.041	0.115	0.011	0.03
250	20.83	0.07	0.027	0.114	0.007	0.02
251	20.92	0.07	0.027	0.114	0.007	0.02
252	21.00	0.07	0.027	0.113	0.007	0.02
253	21.08	0.10	0.041	0.113	0.011	0.03
254	21.17	0.10	0.041	0.112	0.011	0.03
255	21.25	0.10	0.041	0.112	0.011	0.03
256	21.33	0.07	0.027	0.112	0.007	0.02
257	21.42	0.07	0.027	0.111	0.007	0.02
258	21.50	0.07	0.027	0.111	0.007	0.02
259	21.58	0.10	0.041	0.110	0.011	0.03
260	21.67	0.10	0.041	0.110	0.011	0.03
261	21.75	0.10	0.041	0.109	0.011	0.03
262	21.83	0.07	0.027	0.109	0.007	0.02
263	21.92	0.07	0.027	0.109	0.007	0.02
264	22.00	0.07	0.027	0.108	0.007	0.02
265	22.08	0.10	0.041	0.108	0.011	0.03
266	22.17	0.10	0.041	0.108	0.011	0.03
267	22.25	0.10	0.041	0.107	0.011	0.03
268	22.33	0.07	0.027	0.107	0.007	0.02
269	22.42	0.07	0.027	0.107	0.007	0.02
270	22.50	0.07	0.027	0.106	0.007	0.02
271	22.58	0.07	0.027	0.106	0.007	0.02
272	22.67	0.07	0.027	0.106	0.007	0.02
273	22.75	0.07	0.027	0.105	0.007	0.02
274	22.83	0.07	0.027	0.105	0.007	0.02
275	22.92	0.07	0.027	0.105	0.007	0.02
276	23.00	0.07	0.027	0.105	0.007	0.02
277	23.08	0.07	0.027	0.104	0.007	0.02
278	23.17	0.07	0.027	0.104	0.007	0.02
279	23.25	0.07	0.027	0.104	0.007	0.02
280	23.33	0.07	0.027	0.104	0.007	0.02
281	23.42	0.07	0.027	0.104	0.007	0.02
282	23.50	0.07	0.027	0.103	0.007	0.02
283	23.58	0.07	0.027	0.103	0.007	0.02
284	23.67	0.07	0.027	0.103	0.007	0.02
285	23.75	0.07	0.027	0.103	0.007	0.02
286	23.83	0.07	0.027	0.103	0.007	0.02
287	23.92	0.07	0.027	0.103	0.007	0.02
288	24.00	0.07	0.027	0.103	0.007	0.02
Sum =		100.0		Sum =		21.7

Flood volume = Effective rainfall 1.81(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 1.59(In)
Total soil loss = 0.098(Ac.Ft)

Total rainfall = 3.40(In)
Flood volume = 4879.0 Cubic Feet
Total soil loss = 4284.2 Cubic Feet

Peak flow rate of this hydrograph = 0.215(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q				
0+10	0.0002	0.01	Q				
0+15	0.0003	0.01	Q				
0+20	0.0004	0.02	Q				
0+25	0.0006	0.02	Q				
0+30	0.0007	0.02	Q				
0+35	0.0009	0.02	Q				
0+40	0.0010	0.02	Q				
0+45	0.0012	0.02	Q				
0+50	0.0014	0.03	Q				
0+55	0.0016	0.03	Q				
1+ 0	0.0018	0.03	Q				
1+ 5	0.0020	0.02	Q				
1+10	0.0021	0.02	Q				
1+15	0.0023	0.02	Q				
1+20	0.0024	0.02	Q				
1+25	0.0026	0.02	Q				
1+30	0.0027	0.02	Q				
1+35	0.0029	0.02	QV				
1+40	0.0031	0.02	QV				
1+45	0.0032	0.02	QV				
1+50	0.0034	0.03	QV				
1+55	0.0036	0.03	QV				
2+ 0	0.0038	0.03	QV				
2+ 5	0.0040	0.03	QV				
2+10	0.0042	0.03	QV				
2+15	0.0044	0.03	QV				
2+20	0.0046	0.03	QV				
2+25	0.0048	0.03	QV				
2+30	0.0050	0.03	QV				
2+35	0.0053	0.04	QV				
2+40	0.0055	0.04	QV				
2+45	0.0058	0.04	Q V				
2+50	0.0061	0.04	Q V				
2+55	0.0063	0.04	Q V				
3+ 0	0.0066	0.04	Q V				
3+ 5	0.0068	0.04	Q V				
3+10	0.0071	0.04	Q V				
3+15	0.0073	0.04	Q V				
3+20	0.0076	0.04	Q V				
3+25	0.0079	0.04	Q V				
3+30	0.0081	0.04	Q V				
3+35	0.0084	0.04	Q V				
3+40	0.0086	0.04	Q V				
3+45	0.0089	0.04	Q V				
3+50	0.0092	0.04	Q V				
3+55	0.0095	0.04	Q V				
4+ 0	0.0098	0.04	Q V				
4+ 5	0.0101	0.04	Q V				
4+10	0.0104	0.04	Q V				

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4+15    0.0107    0.04  Q  V    |      |      |      |
4+20    0.0111    0.05  Q  V    |      |      |      |
4+25    0.0114    0.05  Q   V   |      |      |      |
4+30    0.0118    0.05  Q   V   |      |      |      |
4+35    0.0122    0.05  Q   V   |      |      |      |
4+40    0.0125    0.05  Q   V   |      |      |      |
4+45    0.0129    0.05  Q   V   |      |      |      |
4+50    0.0133    0.06  Q   V   |      |      |      |
4+55    0.0137    0.06  Q   V   |      |      |      |
5+ 0    0.0141    0.06  Q    V  |      |      |      |
5+ 5    0.0144    0.05  Q    V  |      |      |      |
5+10    0.0147    0.04  Q    V  |      |      |      |
5+15    0.0151    0.04  Q    V  |      |      |      |
5+20    0.0154    0.05  Q    V  |      |      |      |
5+25    0.0158    0.05  Q    V  |      |      |      |
5+30    0.0161    0.05  Q    V  |      |      |      |
5+35    0.0165    0.06  Q    V  |      |      |      |
5+40    0.0169    0.06  Q     V |      |      |      |
5+45    0.0173    0.06  Q     V |      |      |      |
5+50    0.0178    0.06  Q     V |      |      |      |
5+55    0.0182    0.06  Q     V |      |      |      |
6+ 0    0.0186    0.06  Q     V |      |      |      |
6+ 5    0.0190    0.07  Q     V |      |      |      |
6+10    0.0195    0.07  Q     V |      |      |      |
6+15    0.0200    0.07  Q     V |      |      |      |
6+20    0.0204    0.07  Q     V |      |      |      |
6+25    0.0209    0.07  Q     V |      |      |      |
6+30    0.0213    0.07  Q     V |      |      |      |
6+35    0.0219    0.07  Q     V |      |      |      |
6+40    0.0224    0.07  Q     V |      |      |      |
6+45    0.0229    0.07  Q     V |      |      |      |
6+50    0.0234    0.07  Q     V |      |      |      |
6+55    0.0239    0.07  Q     V |      |      |      |
7+ 0    0.0244    0.07  Q     V |      |      |      |
7+ 5    0.0249    0.07  Q     V |      |      |      |
7+10    0.0255    0.07  Q      V|      |      |      |
7+15    0.0260    0.07  Q      V|      |      |      |
7+20    0.0265    0.08  Q      V|      |      |      |
7+25    0.0271    0.08  Q      V|      |      |      |
7+30    0.0277    0.08  Q      V|      |      |      |
7+35    0.0283    0.09  Q       V      |      |      |
7+40    0.0289    0.09  Q       V      |      |      |
7+45    0.0295    0.09  Q       V      |      |      |
7+50    0.0301    0.10  Q       V      |      |      |
7+55    0.0308    0.10  Q       |V     |      |      |
8+ 0    0.0315    0.10  Q       |V     |      |      |
8+ 5    0.0322    0.11  Q       |V     |      |      |
8+10    0.0330    0.11  Q       |V     |      |      |
8+15    0.0338    0.11  Q       | V    |      |      |
8+20    0.0346    0.11  Q       | V    |      |      |
8+25    0.0353    0.11  Q       | V    |      |      |
8+30    0.0361    0.11  Q       | V    |      |      |
8+35    0.0369    0.12  Q       |  V   |      |      |
8+40    0.0377    0.12  Q       |  V   |      |      |
8+45    0.0386    0.12  Q       |  V   |      |      |
8+50    0.0394    0.13  Q       |   V  |      |      |
8+55    0.0396    0.03  Q       |   V  |      |      |
9+ 0    0.0396    0.00  Q       |   V  |      |      |
9+ 5    0.0397    0.02  Q       |   V  |      |      |
9+10    0.0399    0.02  Q       |   V  |      |      |
9+15    0.0401    0.02  Q       |   V  |      |      |
9+20    0.0403    0.03  Q       |   V  |      |      |
9+25    0.0405    0.04  Q       |   V  |      |      |
9+30    0.0408    0.04  Q       |   V  |      |      |
9+35    0.0411    0.05  Q       |   V  |      |      |
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9+40	0.0414	0.05	Q	| V |	|	|
9+45	0.0418	0.05	Q	| V |	|	|
9+50	0.0422	0.06	Q	| V |	|	|
9+55	0.0426	0.06	Q	| V |	|	|
10+ 0	0.0430	0.06	Q	| V |	|	|
10+ 5	0.0437	0.10	Q	| V |	|	|
10+10	0.0445	0.11	Q	| V |	|	|
10+15	0.0453	0.11	Q	| V |	|	|
10+20	0.0460	0.11	Q	| V |	|	|
10+25	0.0468	0.11	Q	| V |	|	|
10+30	0.0476	0.11	Q	| V |	|	|
10+35	0.0480	0.06	Q	| V |	|	|
10+40	0.0483	0.05	Q	| V |	|	|
10+45	0.0487	0.05	Q	| V |	|	|
10+50	0.0490	0.05	Q	| V |	|	|
10+55	0.0493	0.05	Q	| V |	|	|
11+ 0	0.0497	0.05	Q	| V |	|	|
11+ 5	0.0500	0.04	Q	| V |	|	|
11+10	0.0503	0.04	Q	| V |	|	|
11+15	0.0506	0.04	Q	| V |	|	|
11+20	0.0509	0.04	Q	| V |	|	|
11+25	0.0512	0.04	Q	| V |	|	|
11+30	0.0515	0.04	Q	| V |	|	|
11+35	0.0517	0.03	Q	| V |	|	|
11+40	0.0519	0.03	Q	| V |	|	|
11+45	0.0520	0.03	Q	| V |	|	|
11+50	0.0523	0.04	Q	| V |	|	|
11+55	0.0526	0.04	Q	| V |	|	|
12+ 0	0.0528	0.04	Q	| V |	|	|
12+ 5	0.0535	0.09	Q	| V|	|	|
12+10	0.0542	0.11	Q	| V|	|	|
12+15	0.0550	0.11	Q	| V|	|	|
12+20	0.0558	0.12	Q	| V|	|	|
12+25	0.0567	0.12	Q	| V |	|	|
12+30	0.0576	0.12	Q	| V |	|	|
12+35	0.0585	0.14	Q	| V |	|	|
12+40	0.0595	0.15	Q	| |V |	|	|
12+45	0.0606	0.15	Q	| |V |	|	|
12+50	0.0616	0.16	Q	| | V |	|	|
12+55	0.0627	0.16	Q	| | V |	|	|
13+ 0	0.0638	0.16	Q	| | V |	|	|
13+ 5	0.0652	0.20	Q	| | V |	|	|
13+10	0.0667	0.21	Q	| | V |	|	|
13+15	0.0681	0.21	Q	| | V |	|	|
13+20	0.0696	0.21	Q	| | V |	|	|
13+25	0.0711	0.21	Q	| | V |	|	|
13+30	0.0725	0.21	Q	| | V |	|	|
13+35	0.0734	0.13	Q	| | V |	|	|
13+40	0.0741	0.10	Q	| | V |	|	|
13+45	0.0749	0.10	Q	| | V |	|	|
13+50	0.0756	0.11	Q	| | V |	|	|
13+55	0.0763	0.11	Q	| | V |	|	|
14+ 0	0.0770	0.11	Q	| | V |	|	|
14+ 5	0.0780	0.14	Q	| | V |	|	|
14+10	0.0790	0.15	Q	| | V |	|	|
14+15	0.0801	0.15	Q	| | V |	|	|
14+20	0.0810	0.14	Q	| | V |	|	|
14+25	0.0820	0.14	Q	| | V|	|	|
14+30	0.0830	0.14	Q	| | V|	|	|
14+35	0.0839	0.14	Q	| | V|	|	|
14+40	0.0849	0.14	Q	| | V |	|	|
14+45	0.0859	0.14	Q	| | V |	|	|
14+50	0.0868	0.14	Q	| | |V |	|	|
14+55	0.0878	0.13	Q	| | |V |	|	|
15+ 0	0.0887	0.13	Q	| | |V |	|	|

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15+ 5    0.0896    0.13  Q      |      |      |V      |
15+10    0.0904    0.13  Q      |      |      | V     |
15+15    0.0913    0.13  Q      |      |      | V     |
15+20    0.0921    0.12  Q      |      |      | V     |
15+25    0.0929    0.12  Q      |      |      |  V    |
15+30    0.0937    0.12  Q      |      |      |  V    |
15+35    0.0943    0.09  Q      |      |      |  V    |
15+40    0.0949    0.08  Q      |      |      |  V    |
15+45    0.0954    0.08  Q      |      |      |   V   |
15+50    0.0960    0.08  Q      |      |      |   V   |
15+55    0.0965    0.08  Q      |      |      |   V   |
16+ 0    0.0971    0.08  Q      |      |      |   V   |
16+ 5    0.0973    0.04  Q      |      |      |   V   |
16+10    0.0976    0.03  Q      |      |      |   V   |
16+15    0.0978    0.03  Q      |      |      |   V   |
16+20    0.0980    0.03  Q      |      |      |   V   |
16+25    0.0982    0.03  Q      |      |      |    V  |
16+30    0.0984    0.03  Q      |      |      |    V  |
16+35    0.0985    0.02  Q      |      |      |    V  |
16+40    0.0987    0.02  Q      |      |      |    V  |
16+45    0.0989    0.02  Q      |      |      |    V  |
16+50    0.0990    0.02  Q      |      |      |    V  |
16+55    0.0992    0.02  Q      |      |      |    V  |
17+ 0    0.0993    0.02  Q      |      |      |    V  |
17+ 5    0.0995    0.03  Q      |      |      |    V  |
17+10    0.0998    0.04  Q      |      |      |    V  |
17+15    0.1001    0.04  Q      |      |      |    V  |
17+20    0.1003    0.04  Q      |      |      |    V  |
17+25    0.1006    0.04  Q      |      |      |    V  |
17+30    0.1008    0.04  Q      |      |      |     V |
17+35    0.1011    0.04  Q      |      |      |     V |
17+40    0.1013    0.04  Q      |      |      |     V |
17+45    0.1016    0.04  Q      |      |      |     V |
17+50    0.1018    0.03  Q      |      |      |     V |
17+55    0.1020    0.03  Q      |      |      |     V |
18+ 0    0.1022    0.03  Q      |      |      |    V  |
18+ 5    0.1024    0.03  Q      |      |      |    V  |
18+10    0.1026    0.03  Q      |      |      |     V |
18+15    0.1029    0.03  Q      |      |      |     V |
18+20    0.1031    0.03  Q      |      |      |     V |
18+25    0.1033    0.03  Q      |      |      |     V |
18+30    0.1035    0.03  Q      |      |      |     V |
18+35    0.1036    0.02  Q      |      |      |     V |
18+40    0.1038    0.02  Q      |      |      |     V |
18+45    0.1039    0.02  Q      |      |      |     V |
18+50    0.1041    0.02  Q      |      |      |     V |
18+55    0.1042    0.01  Q      |      |      |     V |
19+ 0    0.1043    0.01  Q      |      |      |     V |
19+ 5    0.1044    0.02  Q      |      |      |     V |
19+10    0.1046    0.02  Q      |      |      |     V |
19+15    0.1047    0.02  Q      |      |      |     V |
19+20    0.1049    0.03  Q      |      |      |     V |
19+25    0.1051    0.03  Q      |      |      |     V |
19+30    0.1053    0.03  Q      |      |      |     V |
19+35    0.1055    0.02  Q      |      |      |     V |
19+40    0.1056    0.02  Q      |      |      |     V |
19+45    0.1058    0.02  Q      |      |      |     V |
19+50    0.1059    0.02  Q      |      |      |     V |
19+55    0.1060    0.01  Q      |      |      |     V |
20+ 0    0.1061    0.01  Q      |      |      |     V |
20+ 5    0.1063    0.02  Q      |      |      |     V |
20+10    0.1064    0.02  Q      |      |      |      V|
20+15    0.1066    0.02  Q      |      |      |      V|
20+20    0.1067    0.02  Q      |      |      |      V|
20+25    0.1069    0.02  Q      |      |      |      V|
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 20+30     0.1070     0.02  Q       |       |       |      V |
 20+35     0.1072     0.02  Q       |       |       |      V |
 20+40     0.1073     0.02  Q       |       |       |      V |
 20+45     0.1075     0.02  Q       |       |       |      V |
 20+50     0.1076     0.02  Q       |       |       |      V |
 20+55     0.1077     0.01  Q       |       |       |      V |
 21+ 0     0.1078     0.01  Q       |       |       |      V |
 21+ 5     0.1080     0.02  Q       |       |       |      V |
 21+10     0.1081     0.02  Q       |       |       |      V |
 21+15     0.1083     0.02  Q       |       |       |      V |
 21+20     0.1084     0.02  Q       |       |       |      V |
 21+25     0.1085     0.01  Q       |       |       |      V |
 21+30     0.1086     0.01  Q       |       |       |      V |
 21+35     0.1087     0.02  Q       |       |       |      V |
 21+40     0.1089     0.02  Q       |       |       |      V |
 21+45     0.1090     0.02  Q       |       |       |      V |
 21+50     0.1092     0.02  Q       |       |       |      V |
 21+55     0.1093     0.01  Q       |       |       |      V|
 22+ 0     0.1094     0.01  Q       |       |       |      V|
 22+ 5     0.1095     0.02  Q       |       |       |      V|
 22+10     0.1097     0.02  Q       |       |       |      V|
 22+15     0.1098     0.02  Q       |       |       |      V|
 22+20     0.1099     0.02  Q       |       |       |      V|
 22+25     0.1100     0.01  Q       |       |       |      V|
 22+30     0.1101     0.01  Q       |       |       |      V|
 22+35     0.1102     0.01  Q       |       |       |      V|
 22+40     0.1103     0.01  Q       |       |       |      V|
 22+45     0.1104     0.01  Q       |       |       |      V|
 22+50     0.1105     0.01  Q       |       |       |      V|
 22+55     0.1106     0.01  Q       |       |       |      V|
 23+ 0     0.1107     0.01  Q       |       |       |      V|
 23+ 5     0.1109     0.01  Q       |       |       |      V|
 23+10     0.1110     0.01  Q       |       |       |      V|
 23+15     0.1111     0.01  Q       |       |       |      V|
 23+20     0.1112     0.01  Q       |       |       |      V|
 23+25     0.1113     0.01  Q       |       |       |      V|
 23+30     0.1114     0.01  Q       |       |       |      V|
 23+35     0.1115     0.01  Q       |       |       |      V|
 23+40     0.1116     0.01  Q       |       |       |      V|
 23+45     0.1117     0.01  Q       |       |       |      V|
 23+50     0.1118     0.01  Q       |       |       |      V|
 23+55     0.1119     0.01  Q       |       |       |      V|
 24+ 0     0.1120     0.01  Q       |       |       |      V|
 24+ 5     0.1120     0.00  Q       |       |       |      V|
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U n i t H y d r o g r a p h A n a l y s i s

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Study date 09/23/20 File: BPOST2410.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
24-Hr 10-Yr Storm Event

Drainage Area = 0.74(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 284.00(Ft.)
Length along longest watercourse measured to centroid = 86.63(Ft.)
Length along longest watercourse = 0.054 Mi.
Length along longest watercourse measured to centroid = 0.016 Mi.
Difference in elevation = 1.69(Ft.)
Slope along watercourse = 31.4197 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.013 Hr.
Lag time = 0.78 Min.
25% of lag time = 0.19 Min.
40% of lag time = 0.31 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	2.43	1.80

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.74	6.58	4.88

STORM EVENT (YEAR) = 10.00
Area Averaged 2-Year Rainfall = 2.430(In)
Area Averaged 100-Year Rainfall = 6.580(In)

Point rain (area averaged) = 4.137(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 4.137(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.742	55.00	0.792

Total Area Entered = 0.74(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
55.0	35.0	0.715	0.792	0.205	1.000	0.205

Sum (F) = 0.205

Area averaged mean soil loss (F) (In/Hr) = 0.205

Minimum soil loss rate ((In/Hr)) = 0.103

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.266

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag Graph %	Distribution (CFS)	Unit Hydrograph
1	0.083	645.077	77.129	0.577
2	0.167	1290.154	22.871	0.171
	Sum = 100.000		Sum=	0.748

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.033	0.364	0.009	0.02
2	0.17	0.07	0.033	0.362	0.009	0.02
3	0.25	0.07	0.033	0.361	0.009	0.02
4	0.33	0.10	0.050	0.360	0.013	0.04
5	0.42	0.10	0.050	0.358	0.013	0.04
6	0.50	0.10	0.050	0.357	0.013	0.04
7	0.58	0.10	0.050	0.355	0.013	0.04
8	0.67	0.10	0.050	0.354	0.013	0.04
9	0.75	0.10	0.050	0.353	0.013	0.04
10	0.83	0.13	0.066	0.351	0.018	0.05
11	0.92	0.13	0.066	0.350	0.018	0.05
12	1.00	0.13	0.066	0.348	0.018	0.05
13	1.08	0.10	0.050	0.347	0.013	0.04
14	1.17	0.10	0.050	0.346	0.013	0.04
15	1.25	0.10	0.050	0.344	0.013	0.04
16	1.33	0.10	0.050	0.343	0.013	0.04
17	1.42	0.10	0.050	0.342	0.013	0.04
18	1.50	0.10	0.050	0.340	0.013	0.04
19	1.58	0.10	0.050	0.339	0.013	0.04
20	1.67	0.10	0.050	0.338	0.013	0.04
21	1.75	0.10	0.050	0.336	0.013	0.04
22	1.83	0.13	0.066	0.335	0.018	0.05
23	1.92	0.13	0.066	0.333	0.018	0.05
24	2.00	0.13	0.066	0.332	0.018	0.05
25	2.08	0.13	0.066	0.331	0.018	0.05
26	2.17	0.13	0.066	0.329	0.018	0.05
27	2.25	0.13	0.066	0.328	0.018	0.05
28	2.33	0.13	0.066	0.327	0.018	0.05
29	2.42	0.13	0.066	0.325	0.018	0.05
30	2.50	0.13	0.066	0.324	0.018	0.05
31	2.58	0.17	0.083	0.323	0.022	0.06
32	2.67	0.17	0.083	0.321	0.022	0.06
33	2.75	0.17	0.083	0.320	0.022	0.06

34	2.83	0.17	0.083	0.319	0.022	0.06
35	2.92	0.17	0.083	0.318	0.022	0.06
36	3.00	0.17	0.083	0.316	0.022	0.06
37	3.08	0.17	0.083	0.315	0.022	0.06
38	3.17	0.17	0.083	0.314	0.022	0.06
39	3.25	0.17	0.083	0.312	0.022	0.06
40	3.33	0.17	0.083	0.311	0.022	0.06
41	3.42	0.17	0.083	0.310	0.022	0.06
42	3.50	0.17	0.083	0.308	0.022	0.06
43	3.58	0.17	0.083	0.307	0.022	0.06
44	3.67	0.17	0.083	0.306	0.022	0.06
45	3.75	0.17	0.083	0.305	0.022	0.06
46	3.83	0.20	0.099	0.303	0.026	0.07
47	3.92	0.20	0.099	0.302	0.026	0.07
48	4.00	0.20	0.099	0.301	0.026	0.07
49	4.08	0.20	0.099	0.299	0.026	0.07
50	4.17	0.20	0.099	0.298	0.026	0.07
51	4.25	0.20	0.099	0.297	0.026	0.07
52	4.33	0.23	0.116	0.296	0.031	0.08
53	4.42	0.23	0.116	0.294	0.031	0.08
54	4.50	0.23	0.116	0.293	0.031	0.08
55	4.58	0.23	0.116	0.292	0.031	0.08
56	4.67	0.23	0.116	0.291	0.031	0.08
57	4.75	0.23	0.116	0.289	0.031	0.08
58	4.83	0.27	0.132	0.288	0.035	0.10
59	4.92	0.27	0.132	0.287	0.035	0.10
60	5.00	0.27	0.132	0.286	0.035	0.10
61	5.08	0.20	0.099	0.284	0.026	0.07
62	5.17	0.20	0.099	0.283	0.026	0.07
63	5.25	0.20	0.099	0.282	0.026	0.07
64	5.33	0.23	0.116	0.281	0.031	0.08
65	5.42	0.23	0.116	0.279	0.031	0.08
66	5.50	0.23	0.116	0.278	0.031	0.08
67	5.58	0.27	0.132	0.277	0.035	0.10
68	5.67	0.27	0.132	0.276	0.035	0.10
69	5.75	0.27	0.132	0.275	0.035	0.10
70	5.83	0.27	0.132	0.273	0.035	0.10
71	5.92	0.27	0.132	0.272	0.035	0.10
72	6.00	0.27	0.132	0.271	0.035	0.10
73	6.08	0.30	0.149	0.270	0.040	0.11
74	6.17	0.30	0.149	0.268	0.040	0.11
75	6.25	0.30	0.149	0.267	0.040	0.11
76	6.33	0.30	0.149	0.266	0.040	0.11
77	6.42	0.30	0.149	0.265	0.040	0.11
78	6.50	0.30	0.149	0.264	0.040	0.11
79	6.58	0.33	0.165	0.263	0.044	0.12
80	6.67	0.33	0.165	0.261	0.044	0.12
81	6.75	0.33	0.165	0.260	0.044	0.12
82	6.83	0.33	0.165	0.259	0.044	0.12
83	6.92	0.33	0.165	0.258	0.044	0.12
84	7.00	0.33	0.165	0.257	0.044	0.12
85	7.08	0.33	0.165	0.255	0.044	0.12
86	7.17	0.33	0.165	0.254	0.044	0.12
87	7.25	0.33	0.165	0.253	0.044	0.12
88	7.33	0.37	0.182	0.252	0.048	0.13
89	7.42	0.37	0.182	0.251	0.048	0.13
90	7.50	0.37	0.182	0.250	0.048	0.13
91	7.58	0.40	0.199	0.249	0.053	0.15
92	7.67	0.40	0.199	0.247	0.053	0.15
93	7.75	0.40	0.199	0.246	0.053	0.15
94	7.83	0.43	0.215	0.245	0.057	0.16
95	7.92	0.43	0.215	0.244	0.057	0.16
96	8.00	0.43	0.215	0.243	0.057	0.16
97	8.08	0.50	0.248	0.242	---	0.01
98	8.17	0.50	0.248	0.241	---	0.01

99	8.25	0.50	0.248	0.239	---	0.01
100	8.33	0.50	0.248	0.238	---	0.01
101	8.42	0.50	0.248	0.237	---	0.01
102	8.50	0.50	0.248	0.236	---	0.01
103	8.58	0.53	0.265	0.235	---	0.03
104	8.67	0.53	0.265	0.234	---	0.03
105	8.75	0.53	0.265	0.233	---	0.03
106	8.83	0.57	0.281	0.232	---	0.05
107	8.92	0.57	0.281	0.231	---	0.05
108	9.00	0.57	0.281	0.230	---	0.05
109	9.08	0.63	0.314	0.228	---	0.09
110	9.17	0.63	0.314	0.227	---	0.09
111	9.25	0.63	0.314	0.226	---	0.09
112	9.33	0.67	0.331	0.225	---	0.11
113	9.42	0.67	0.331	0.224	---	0.11
114	9.50	0.67	0.331	0.223	---	0.11
115	9.58	0.70	0.348	0.222	---	0.13
116	9.67	0.70	0.348	0.221	---	0.13
117	9.75	0.70	0.348	0.220	---	0.13
118	9.83	0.73	0.364	0.219	---	0.15
119	9.92	0.73	0.364	0.218	---	0.15
120	10.00	0.73	0.364	0.217	---	0.15
121	10.08	0.50	0.248	0.216	---	0.03
122	10.17	0.50	0.248	0.215	---	0.03
123	10.25	0.50	0.248	0.214	---	0.03
124	10.33	0.50	0.248	0.213	---	0.04
125	10.42	0.50	0.248	0.212	---	0.04
126	10.50	0.50	0.248	0.210	---	0.04
127	10.58	0.67	0.331	0.209	---	0.12
128	10.67	0.67	0.331	0.208	---	0.12
129	10.75	0.67	0.331	0.207	---	0.12
130	10.83	0.67	0.331	0.206	---	0.12
131	10.92	0.67	0.331	0.205	---	0.13
132	11.00	0.67	0.331	0.204	---	0.13
133	11.08	0.63	0.314	0.203	---	0.11
134	11.17	0.63	0.314	0.202	---	0.11
135	11.25	0.63	0.314	0.201	---	0.11
136	11.33	0.63	0.314	0.200	---	0.11
137	11.42	0.63	0.314	0.199	---	0.12
138	11.50	0.63	0.314	0.198	---	0.12
139	11.58	0.57	0.281	0.197	---	0.08
140	11.67	0.57	0.281	0.196	---	0.08
141	11.75	0.57	0.281	0.195	---	0.09
142	11.83	0.60	0.298	0.194	---	0.10
143	11.92	0.60	0.298	0.193	---	0.10
144	12.00	0.60	0.298	0.193	---	0.11
145	12.08	0.83	0.414	0.192	---	0.22
146	12.17	0.83	0.414	0.191	---	0.22
147	12.25	0.83	0.414	0.190	---	0.22
148	12.33	0.87	0.430	0.189	---	0.24
149	12.42	0.87	0.430	0.188	---	0.24
150	12.50	0.87	0.430	0.187	---	0.24
151	12.58	0.93	0.463	0.186	---	0.28
152	12.67	0.93	0.463	0.185	---	0.28
153	12.75	0.93	0.463	0.184	---	0.28
154	12.83	0.97	0.480	0.183	---	0.30
155	12.92	0.97	0.480	0.182	---	0.30
156	13.00	0.97	0.480	0.181	---	0.30
157	13.08	1.13	0.563	0.180	---	0.38
158	13.17	1.13	0.563	0.179	---	0.38
159	13.25	1.13	0.563	0.178	---	0.38
160	13.33	1.13	0.563	0.178	---	0.39
161	13.42	1.13	0.563	0.177	---	0.39
162	13.50	1.13	0.563	0.176	---	0.39
163	13.58	0.77	0.381	0.175	---	0.21

164	13.67	0.77	0.381	0.174	---	0.21
165	13.75	0.77	0.381	0.173	---	0.21
166	13.83	0.77	0.381	0.172	---	0.21
167	13.92	0.77	0.381	0.171	---	0.21
168	14.00	0.77	0.381	0.170	---	0.21
169	14.08	0.90	0.447	0.170	---	0.28
170	14.17	0.90	0.447	0.169	---	0.28
171	14.25	0.90	0.447	0.168	---	0.28
172	14.33	0.87	0.430	0.167	---	0.26
173	14.42	0.87	0.430	0.166	---	0.26
174	14.50	0.87	0.430	0.165	---	0.26
175	14.58	0.87	0.430	0.164	---	0.27
176	14.67	0.87	0.430	0.164	---	0.27
177	14.75	0.87	0.430	0.163	---	0.27
178	14.83	0.83	0.414	0.162	---	0.25
179	14.92	0.83	0.414	0.161	---	0.25
180	15.00	0.83	0.414	0.160	---	0.25
181	15.08	0.80	0.397	0.159	---	0.24
182	15.17	0.80	0.397	0.159	---	0.24
183	15.25	0.80	0.397	0.158	---	0.24
184	15.33	0.77	0.381	0.157	---	0.22
185	15.42	0.77	0.381	0.156	---	0.22
186	15.50	0.77	0.381	0.155	---	0.23
187	15.58	0.63	0.314	0.155	---	0.16
188	15.67	0.63	0.314	0.154	---	0.16
189	15.75	0.63	0.314	0.153	---	0.16
190	15.83	0.63	0.314	0.152	---	0.16
191	15.92	0.63	0.314	0.151	---	0.16
192	16.00	0.63	0.314	0.151	---	0.16
193	16.08	0.13	0.066	0.150	0.018	0.05
194	16.17	0.13	0.066	0.149	0.018	0.05
195	16.25	0.13	0.066	0.148	0.018	0.05
196	16.33	0.13	0.066	0.148	0.018	0.05
197	16.42	0.13	0.066	0.147	0.018	0.05
198	16.50	0.13	0.066	0.146	0.018	0.05
199	16.58	0.10	0.050	0.145	0.013	0.04
200	16.67	0.10	0.050	0.145	0.013	0.04
201	16.75	0.10	0.050	0.144	0.013	0.04
202	16.83	0.10	0.050	0.143	0.013	0.04
203	16.92	0.10	0.050	0.142	0.013	0.04
204	17.00	0.10	0.050	0.142	0.013	0.04
205	17.08	0.17	0.083	0.141	0.022	0.06
206	17.17	0.17	0.083	0.140	0.022	0.06
207	17.25	0.17	0.083	0.140	0.022	0.06
208	17.33	0.17	0.083	0.139	0.022	0.06
209	17.42	0.17	0.083	0.138	0.022	0.06
210	17.50	0.17	0.083	0.138	0.022	0.06
211	17.58	0.17	0.083	0.137	0.022	0.06
212	17.67	0.17	0.083	0.136	0.022	0.06
213	17.75	0.17	0.083	0.135	0.022	0.06
214	17.83	0.13	0.066	0.135	0.018	0.05
215	17.92	0.13	0.066	0.134	0.018	0.05
216	18.00	0.13	0.066	0.133	0.018	0.05
217	18.08	0.13	0.066	0.133	0.018	0.05
218	18.17	0.13	0.066	0.132	0.018	0.05
219	18.25	0.13	0.066	0.132	0.018	0.05
220	18.33	0.13	0.066	0.131	0.018	0.05
221	18.42	0.13	0.066	0.130	0.018	0.05
222	18.50	0.13	0.066	0.130	0.018	0.05
223	18.58	0.10	0.050	0.129	0.013	0.04
224	18.67	0.10	0.050	0.128	0.013	0.04
225	18.75	0.10	0.050	0.128	0.013	0.04
226	18.83	0.07	0.033	0.127	0.009	0.02
227	18.92	0.07	0.033	0.127	0.009	0.02
228	19.00	0.07	0.033	0.126	0.009	0.02

229	19.08	0.10	0.050	0.125	0.013	0.04
230	19.17	0.10	0.050	0.125	0.013	0.04
231	19.25	0.10	0.050	0.124	0.013	0.04
232	19.33	0.13	0.066	0.124	0.018	0.05
233	19.42	0.13	0.066	0.123	0.018	0.05
234	19.50	0.13	0.066	0.122	0.018	0.05
235	19.58	0.10	0.050	0.122	0.013	0.04
236	19.67	0.10	0.050	0.121	0.013	0.04
237	19.75	0.10	0.050	0.121	0.013	0.04
238	19.83	0.07	0.033	0.120	0.009	0.02
239	19.92	0.07	0.033	0.120	0.009	0.02
240	20.00	0.07	0.033	0.119	0.009	0.02
241	20.08	0.10	0.050	0.119	0.013	0.04
242	20.17	0.10	0.050	0.118	0.013	0.04
243	20.25	0.10	0.050	0.118	0.013	0.04
244	20.33	0.10	0.050	0.117	0.013	0.04
245	20.42	0.10	0.050	0.117	0.013	0.04
246	20.50	0.10	0.050	0.116	0.013	0.04
247	20.58	0.10	0.050	0.116	0.013	0.04
248	20.67	0.10	0.050	0.115	0.013	0.04
249	20.75	0.10	0.050	0.115	0.013	0.04
250	20.83	0.07	0.033	0.114	0.009	0.02
251	20.92	0.07	0.033	0.114	0.009	0.02
252	21.00	0.07	0.033	0.113	0.009	0.02
253	21.08	0.10	0.050	0.113	0.013	0.04
254	21.17	0.10	0.050	0.112	0.013	0.04
255	21.25	0.10	0.050	0.112	0.013	0.04
256	21.33	0.07	0.033	0.112	0.009	0.02
257	21.42	0.07	0.033	0.111	0.009	0.02
258	21.50	0.07	0.033	0.111	0.009	0.02
259	21.58	0.10	0.050	0.110	0.013	0.04
260	21.67	0.10	0.050	0.110	0.013	0.04
261	21.75	0.10	0.050	0.109	0.013	0.04
262	21.83	0.07	0.033	0.109	0.009	0.02
263	21.92	0.07	0.033	0.109	0.009	0.02
264	22.00	0.07	0.033	0.108	0.009	0.02
265	22.08	0.10	0.050	0.108	0.013	0.04
266	22.17	0.10	0.050	0.108	0.013	0.04
267	22.25	0.10	0.050	0.107	0.013	0.04
268	22.33	0.07	0.033	0.107	0.009	0.02
269	22.42	0.07	0.033	0.107	0.009	0.02
270	22.50	0.07	0.033	0.106	0.009	0.02
271	22.58	0.07	0.033	0.106	0.009	0.02
272	22.67	0.07	0.033	0.106	0.009	0.02
273	22.75	0.07	0.033	0.105	0.009	0.02
274	22.83	0.07	0.033	0.105	0.009	0.02
275	22.92	0.07	0.033	0.105	0.009	0.02
276	23.00	0.07	0.033	0.105	0.009	0.02
277	23.08	0.07	0.033	0.104	0.009	0.02
278	23.17	0.07	0.033	0.104	0.009	0.02
279	23.25	0.07	0.033	0.104	0.009	0.02
280	23.33	0.07	0.033	0.104	0.009	0.02
281	23.42	0.07	0.033	0.104	0.009	0.02
282	23.50	0.07	0.033	0.103	0.009	0.02
283	23.58	0.07	0.033	0.103	0.009	0.02
284	23.67	0.07	0.033	0.103	0.009	0.02
285	23.75	0.07	0.033	0.103	0.009	0.02
286	23.83	0.07	0.033	0.103	0.009	0.02
287	23.92	0.07	0.033	0.103	0.009	0.02
288	24.00	0.07	0.033	0.103	0.009	0.02
Sum =		100.0		Sum =		27.1

Flood volume = Effective rainfall 2.26(In)
times area 0.7(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 1.88(In)
Total soil loss = 0.116(Ac.Ft)

Total rainfall = 4.14(In)
Flood volume = 6081.8 Cubic Feet
Total soil loss = 5062.0 Cubic Feet

Peak flow rate of this hydrograph = 0.289(CFS)

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24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q				
0+10	0.0002	0.02	Q				
0+15	0.0003	0.02	Q				
0+20	0.0005	0.03	Q				
0+25	0.0007	0.03	Q				
0+30	0.0009	0.03	Q				
0+35	0.0011	0.03	Q				
0+40	0.0013	0.03	Q				
0+45	0.0015	0.03	Q				
0+50	0.0017	0.03	Q				
0+55	0.0019	0.04	Q				
1+ 0	0.0022	0.04	Q				
1+ 5	0.0024	0.03	Q				
1+10	0.0026	0.03	Q				
1+15	0.0028	0.03	Q				
1+20	0.0030	0.03	Q				
1+25	0.0031	0.03	Q				
1+30	0.0033	0.03	Q				
1+35	0.0035	0.03	QV				
1+40	0.0037	0.03	QV				
1+45	0.0039	0.03	QV				
1+50	0.0041	0.03	QV				
1+55	0.0044	0.04	QV				
2+ 0	0.0046	0.04	QV				
2+ 5	0.0049	0.04	QV				
2+10	0.0051	0.04	QV				
2+15	0.0054	0.04	QV				
2+20	0.0056	0.04	QV				
2+25	0.0059	0.04	QV				
2+30	0.0061	0.04	QV				
2+35	0.0064	0.04	QV				
2+40	0.0067	0.05	QV				
2+45	0.0071	0.05	Q V				
2+50	0.0074	0.05	Q V				
2+55	0.0077	0.05	Q V				
3+ 0	0.0080	0.05	Q V				
3+ 5	0.0083	0.05	Q V				
3+10	0.0086	0.05	Q V				
3+15	0.0089	0.05	Q V				
3+20	0.0093	0.05	Q V				
3+25	0.0096	0.05	Q V				
3+30	0.0099	0.05	Q V				
3+35	0.0102	0.05	Q V				
3+40	0.0105	0.05	Q V				
3+45	0.0108	0.05	Q V				
3+50	0.0112	0.05	Q V				
3+55	0.0116	0.05	Q V				
4+ 0	0.0119	0.05	Q V				
4+ 5	0.0123	0.05	Q V				
4+10	0.0127	0.05	Q V				

4+15	0.0131	0.05	Q	V	|	|	|	|
4+20	0.0135	0.06	Q	V	|	|	|	|
4+25	0.0139	0.06	Q	V	|	|	|	|
4+30	0.0144	0.06	Q	V	|	|	|	|
4+35	0.0148	0.06	Q	V	|	|	|	|
4+40	0.0152	0.06	Q	V	|	|	|	|
4+45	0.0157	0.06	Q	V	|	|	|	|
4+50	0.0162	0.07	Q	V	|	|	|	|
4+55	0.0167	0.07	Q	V	|	|	|	|
5+ 0	0.0172	0.07	Q	V	|	|	|	|
5+ 5	0.0176	0.06	Q	V	|	|	|	|
5+10	0.0179	0.05	Q	V	|	|	|	|
5+15	0.0183	0.05	Q	V	|	|	|	|
5+20	0.0187	0.06	Q	V	|	|	|	|
5+25	0.0192	0.06	Q	V	|	|	|	|
5+30	0.0196	0.06	Q	V	|	|	|	|
5+35	0.0201	0.07	Q	V	|	|	|	|
5+40	0.0206	0.07	Q	V	|	|	|	|
5+45	0.0211	0.07	Q	V	|	|	|	|
5+50	0.0216	0.07	Q	V	|	|	|	|
5+55	0.0221	0.07	Q	V	|	|	|	|
6+ 0	0.0226	0.07	Q	V	|	|	|	|
6+ 5	0.0231	0.08	Q	V	|	|	|	|
6+10	0.0237	0.08	Q	V	|	|	|	|
6+15	0.0243	0.08	Q	V	|	|	|	|
6+20	0.0248	0.08	Q	V	|	|	|	|
6+25	0.0254	0.08	Q	V	|	|	|	|
6+30	0.0260	0.08	Q	V	|	|	|	|
6+35	0.0266	0.09	Q	V	|	|	|	|
6+40	0.0272	0.09	Q	V	|	|	|	|
6+45	0.0278	0.09	Q	V	|	|	|	|
6+50	0.0284	0.09	Q	V	|	|	|	|
6+55	0.0291	0.09	Q	V	|	|	|	|
7+ 0	0.0297	0.09	Q	V	|	|	|	|
7+ 5	0.0303	0.09	Q	V	|	|	|	|
7+10	0.0310	0.09	Q	V	|	|	|	|
7+15	0.0316	0.09	Q	V	|	|	|	|
7+20	0.0323	0.10	Q	V	|	|	|	|
7+25	0.0329	0.10	Q	V	|	|	|	|
7+30	0.0336	0.10	Q	V	|	|	|	|
7+35	0.0344	0.11	Q	V	|	|	|	|
7+40	0.0351	0.11	Q	V	|	|	|	|
7+45	0.0359	0.11	Q	V	|	|	|	|
7+50	0.0367	0.12	Q	V	|	|	|	|
7+55	0.0375	0.12	Q	V	|	|	|	|
8+ 0	0.0383	0.12	Q	V	|	|	|	|
8+ 5	0.0385	0.03	Q	|V	|	|	|	|
8+10	0.0385	0.01	Q	|V	|	|	|	|
8+15	0.0386	0.01	Q	|V	|	|	|	|
8+20	0.0386	0.01	Q	|V	|	|	|	|
8+25	0.0387	0.01	Q	|V	|	|	|	|
8+30	0.0388	0.01	Q	|V	|	|	|	|
8+35	0.0389	0.02	Q	|V	|	|	|	|
8+40	0.0390	0.02	Q	|V	|	|	|	|
8+45	0.0392	0.02	Q	|V	|	|	|	|
8+50	0.0394	0.03	Q	|V	|	|	|	|
8+55	0.0397	0.04	Q	|V	|	|	|	|
9+ 0	0.0400	0.04	Q	|V	|	|	|	|
9+ 5	0.0404	0.06	Q	|V	|	|	|	|
9+10	0.0408	0.06	Q	|V	|	|	|	|
9+15	0.0413	0.07	Q	|V	|	|	|	|
9+20	0.0418	0.08	Q	|V	|	|	|	|
9+25	0.0423	0.08	Q	| V	|	|	|	|
9+30	0.0429	0.08	Q	| V	|	|	|	|
9+35	0.0435	0.09	Q	| V	|	|	|	|

```
 9+40    0.0442    0.09  Q      | V     |       |       |
 9+45    0.0448    0.10  Q      | V     |       |       |
 9+50    0.0456    0.11  Q      |  V    |       |       |
 9+55    0.0463    0.11  Q      |  V    |       |       |
10+ 0    0.0471    0.11  Q      |  V    |       |       |
10+ 5    0.0474    0.04  Q      |  V    |       |       |
10+10    0.0475    0.02  Q      |  V    |       |       |
10+15    0.0477    0.03  Q      |  V    |       |       |
10+20    0.0479    0.03  Q      |  V    |       |       |
10+25    0.0481    0.03  Q      |  V    |       |       |
10+30    0.0483    0.03  Q      |  V    |       |       |
10+35    0.0488    0.08  Q      |  V    |       |       |
10+40    0.0494    0.09  Q      |   V   |       |       |
10+45    0.0501    0.09  Q      |   V   |       |       |
10+50    0.0507    0.09  Q      |   V   |       |       |
10+55    0.0514    0.09  Q      |   V   |       |       |
11+ 0    0.0520    0.09  Q      |   V   |       |       |
11+ 5    0.0526    0.09  Q      |   V   |       |       |
11+10    0.0532    0.08  Q      |    V  |       |       |
11+15    0.0538    0.08  Q      |    V  |       |       |
11+20    0.0544    0.09  Q      |    V  |       |       |
11+25    0.0549    0.09  Q      |    V  |       |       |
11+30    0.0555    0.09  Q      |    V  |       |       |
11+35    0.0560    0.07  Q      |     V |       |       |
11+40    0.0564    0.06  Q      |     V |       |       |
11+45    0.0569    0.06  Q      |     V |       |       |
11+50    0.0574    0.07  Q      |     V |       |       |
11+55    0.0579    0.08  Q      |     V |       |       |
12+ 0    0.0585    0.08  Q      |    V  |       |       |
12+ 5    0.0595    0.15  Q      |    V  |       |       |
12+10    0.0606    0.17  Q      |     V |       |       |
12+15    0.0618    0.17  Q      |     V |       |       |
12+20    0.0630    0.18  Q      |      V|       |       |
12+25    0.0643    0.18  Q      |      V|       |       |
12+30    0.0655    0.18  Q      |      V|       |       |
12+35    0.0669    0.20  Q      |       V|      |       |
12+40    0.0683    0.21  Q      |       V|      |       |
12+45    0.0698    0.21  Q      |       V|      |       |
12+50    0.0713    0.22  Q      |        V      |       |
12+55    0.0728    0.22  Q      |        V      |       |
13+ 0    0.0744    0.22  Q      |       |V      |       |
13+ 5    0.0762    0.27  |Q     |       |V      |       |
13+10    0.0782    0.29  |Q     |       | V     |       |
13+15    0.0802    0.29  |Q     |       | V     |       |
13+20    0.0822    0.29  |Q     |       |  V    |       |
13+25    0.0842    0.29  |Q     |       |   V   |       |
13+30    0.0861    0.29  |Q     |       |   V   |       |
13+35    0.0874    0.18  Q      |       |   V   |       |
13+40    0.0885    0.15  Q      |       |   V   |       |
13+45    0.0896    0.16  Q      |       |   V   |       |
13+50    0.0906    0.16  Q      |       |   V   |       |
13+55    0.0917    0.16  Q      |       |    V  |       |
14+ 0    0.0928    0.16  Q      |       |    V  |       |
14+ 5    0.0941    0.20  Q      |       |    V  |       |
14+10    0.0956    0.21  Q      |       |     V |       |
14+15    0.0970    0.21  Q      |       |     V |       |
14+20    0.0984    0.20  Q      |       |      V|       |
14+25    0.0997    0.20  Q      |       |      V|       |
14+30    0.1011    0.20  Q      |       |      V|       |
14+35    0.1025    0.20  Q      |       |       V|      |
14+40    0.1038    0.20  Q      |       |       V|      |
14+45    0.1052    0.20  Q      |       |        V      |
14+50    0.1065    0.19  Q      |       |        V      |
14+55    0.1078    0.19  Q      |       |        V      |
15+ 0    0.1091    0.19  Q      |       |       |V      |
```

```
15+ 5    0.1104    0.18  Q      |      |      |V      |
15+10    0.1116    0.18  Q      |      |      |V      |
15+15    0.1128    0.18  Q      |      |      | V     |
15+20    0.1140    0.17  Q      |      |      | V     |
15+25    0.1152    0.17  Q      |      |      | V     |
15+30    0.1163    0.17  Q      |      |      |  V    |
15+35    0.1172    0.13  Q      |      |      |  V    |
15+40    0.1181    0.12  Q      |      |      |  V    |
15+45    0.1189    0.12  Q      |      |      |   V   |
15+50    0.1197    0.12  Q      |      |      |   V   |
15+55    0.1206    0.12  Q      |      |      |   V   |
16+ 0    0.1214    0.12  Q      |      |      |  V    |
16+ 5    0.1218    0.06  Q      |      |      |  V    |
16+10    0.1220    0.04  Q      |      |      |   V   |
16+15    0.1223    0.04  Q      |      |      |   V   |
16+20    0.1225    0.04  Q      |      |      |   V   |
16+25    0.1228    0.04  Q      |      |      |   V   |
16+30    0.1230    0.04  Q      |      |      |   V   |
16+35    0.1232    0.03  Q      |      |      |   V   |
16+40    0.1234    0.03  Q      |      |      |   V   |
16+45    0.1236    0.03  Q      |      |      |   V   |
16+50    0.1238    0.03  Q      |      |      |   V   |
16+55    0.1240    0.03  Q      |      |      |   V   |
17+ 0    0.1242    0.03  Q      |      |      |   V   |
17+ 5    0.1245    0.04  Q      |      |      |   V   |
17+10    0.1248    0.05  Q      |      |      |   V   |
17+15    0.1251    0.05  Q      |      |      |   V   |
17+20    0.1254    0.05  Q      |      |      |   V   |
17+25    0.1257    0.05  Q      |      |      |    V  |
17+30    0.1260    0.05  Q      |      |      |    V  |
17+35    0.1263    0.05  Q      |      |      |    V  |
17+40    0.1267    0.05  Q      |      |      |    V  |
17+45    0.1270    0.05  Q      |      |      |    V  |
17+50    0.1272    0.04  Q      |      |      |    V  |
17+55    0.1275    0.04  Q      |      |      |    V  |
18+ 0    0.1277    0.04  Q      |      |      |   V   |
18+ 5    0.1280    0.04  Q      |      |      |   V   |
18+10    0.1282    0.04  Q      |      |      |    V  |
18+15    0.1285    0.04  Q      |      |      |    V  |
18+20    0.1287    0.04  Q      |      |      |    V  |
18+25    0.1290    0.04  Q      |      |      |    V  |
18+30    0.1292    0.04  Q      |      |      |    V  |
18+35    0.1294    0.03  Q      |      |      |    V  |
18+40    0.1296    0.03  Q      |      |      |    V  |
18+45    0.1298    0.03  Q      |      |      |    V  |
18+50    0.1300    0.02  Q      |      |      |    V  |
18+55    0.1301    0.02  Q      |      |      |    V  |
19+ 0    0.1302    0.02  Q      |      |      |    V  |
19+ 5    0.1304    0.03  Q      |      |      |    V  |
19+10    0.1306    0.03  Q      |      |      |    V  |
19+15    0.1308    0.03  Q      |      |      |    V  |
19+20    0.1310    0.03  Q      |      |      |    V  |
19+25    0.1312    0.04  Q      |      |      |    V  |
19+30    0.1315    0.04  Q      |      |      |    V  |
19+35    0.1317    0.03  Q      |      |      |    V  |
19+40    0.1319    0.03  Q      |      |      |    V  |
19+45    0.1321    0.03  Q      |      |      |    V  |
19+50    0.1322    0.02  Q      |      |      |    V  |
19+55    0.1323    0.02  Q      |      |      |    V  |
20+ 0    0.1325    0.02  Q      |      |      |    V  |
20+ 5    0.1326    0.03  Q      |      |      |    V  |
20+10    0.1328    0.03  Q      |      |      |     V |
20+15    0.1330    0.03  Q      |      |      |     V |
20+20    0.1332    0.03  Q      |      |      |     V |
20+25    0.1334    0.03  Q      |      |      |     V |
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 20+30     0.1336     0.03  Q      |       |       |      V |
 20+35     0.1338     0.03  Q      |       |       |      V |
 20+40     0.1339     0.03  Q      |       |       |      V |
 20+45     0.1341     0.03  Q      |       |       |      V |
 20+50     0.1343     0.02  Q      |       |       |      V |
 20+55     0.1344     0.02  Q      |       |       |      V |
 21+ 0     0.1345     0.02  Q      |       |       |      V |
 21+ 5     0.1347     0.03  Q      |       |       |      V |
 21+10     0.1349     0.03  Q      |       |       |      V |
 21+15     0.1351     0.03  Q      |       |       |      V |
 21+20     0.1352     0.02  Q      |       |       |      V |
 21+25     0.1353     0.02  Q      |       |       |      V |
 21+30     0.1355     0.02  Q      |       |       |      V |
 21+35     0.1356     0.03  Q      |       |       |      V |
 21+40     0.1358     0.03  Q      |       |       |      V |
 21+45     0.1360     0.03  Q      |       |       |      V |
 21+50     0.1361     0.02  Q      |       |       |      V|
 21+55     0.1363     0.02  Q      |       |       |      V|
 22+ 0     0.1364     0.02  Q      |       |       |      V|
 22+ 5     0.1366     0.03  Q      |       |       |      V|
 22+10     0.1368     0.03  Q      |       |       |      V|
 22+15     0.1369     0.03  Q      |       |       |      V|
 22+20     0.1371     0.02  Q      |       |       |      V|
 22+25     0.1372     0.02  Q      |       |       |      V|
 22+30     0.1373     0.02  Q      |       |       |      V|
 22+35     0.1375     0.02  Q      |       |       |      V|
 22+40     0.1376     0.02  Q      |       |       |      V|
 22+45     0.1377     0.02  Q      |       |       |      V|
 22+50     0.1378     0.02  Q      |       |       |      V|
 22+55     0.1380     0.02  Q      |       |       |      V|
 23+ 0     0.1381     0.02  Q      |       |       |      V|
 23+ 5     0.1382     0.02  Q      |       |       |      V|
 23+10     0.1383     0.02  Q      |       |       |      V|
 23+15     0.1385     0.02  Q      |       |       |      V|
 23+20     0.1386     0.02  Q      |       |       |      V|
 23+25     0.1387     0.02  Q      |       |       |      V|
 23+30     0.1388     0.02  Q      |       |       |      V|
 23+35     0.1390     0.02  Q      |       |       |      V|
 23+40     0.1391     0.02  Q      |       |       |      V|
 23+45     0.1392     0.02  Q      |       |       |      V|
 23+50     0.1393     0.02  Q      |       |       |      V|
 23+55     0.1395     0.02  Q      |       |       |      V|
 24+ 0     0.1396     0.02  Q      |       |       |      V|
 24+ 5     0.1396     0.00  Q      |       |       |      V|
-------------------------------------------------------------------------------
```

ATTACHMENT D

AREA "A"
1.324 AC.
SOIL TYPE A

SOIL TYPE C

SOIL TYPE D

N 89°51'00" E 643.66'
250.00'
152.00
177.68'
S 52°51'16" E
63.78'
N 13°49'41" E 43.27'
N 76°10'19" W 50.00'
L = 409 FT
R=2300.00' Δ=12°13'14" L=490.66'
C L IMP RTE 74
R=2450.00' Δ=22°06'32" L=945.39'
302.00'
N 01°01'29" E
246.23'
N 01°01'29" E 364.39'
S 45°58'33" E
150.00'
30.00'
FOUND 1" IRON PIPE W/PLASTIC PLUG LS 4430", PER R/S 123/94-10/B.
1377.90 EG
1394.24 EG
50.00'
R=20.00' Δ=90°15'27" L=31.51'
N 72°42'54" W 50.00'
N 36°29'44" E 14.33'
111.01'
N 76°05'30" W 32.53'
RIM=379.24
33.82'
116.36'
126.14'
N 89°51'00" E 250.00'
S 88°58'31" E 30.00'
R=200.00' Δ=21°19'57" L=74.46'
R=200.00' Δ=26°06'59" L=91.16'
341.29'
32.38'
Δ=6°01'46" L=55.12'
R=573.69' Δ=51°04'49" L=511.46'
Δ=15°53'09" L=411.78'
R=452.69' Δ=51°04'49" L=466.88'
CENTRAL AVENUE
STATE HIGHWAY 74
ARDENWOOD WAY
MEDIO MEDIO
SOUTH SOUTH
PARCEL MAP 9086 P.M.B. 48/72 PARCEL 4
PARCEL MAP 9086 P.M.B. 48/72 PARCEL 3
PARCEL MAP 9086 P.M.B. 48/72 PARCEL 2
PARCEL MAP 9086 P.M.B. 48/72 PARCEL 1
FOUND SPIKE IN CONCRETE

20' 10' 0 20' 40'
GRAPHIC SCALE : 1" = 20'

LEGEND:

- DRAINAGE FLOW
- ROOF
- CONCRETE
- LANDSCAPE OR NATURAL GROUND
- CATCHMENT BOUNDARY
- SOIL TYPE BOUNDARY
- X.XXAC — AREA, IN ACRES
- CP 2 / XXX / XXX / XXX / XXX — CONTROL POINT ID; TIME OF CONCENTRATION, IN MINS.; 2 YR. FLOW, IN CFS; 10 YR. FLOW, IN CFS; 100 YR. FLOW, IN CFS

TOTAL AREA	:	1.324 AC
TOTAL PERVIOUS AREA	:	1.266 AC
TOTAL IMPERVIOUS AREA	:	0.059 AC
SOIL TYPE A	:	0.869 AC
SOIL TYPE C	:	0.053 AC
SOIL TYPE D	:	0.401 AC

TOTAL IMPERVIOUS AREA	= 0.059 AC
TOTAL PERVIOUS AREA	= 1.266 AC
TOTAL AREA	= 1.324 AC

PRE-DEVELOPMENT HYDROLOGY MAP

MARK	REVISIONS	APPR.	DATE

THESE PLANS HAVE BEEN REVIEWED FOR COMPLIANCE WITH THE APPROPRIATE CONDITIONS OF DEVELOPMENT AND/OR CITY AND STATE LAWS AND A PERMIT MAY BE ISSUED

BRAD FAGRELL, RCE No. 43920
CITY ENGINEER
CITY OF LAKE ELSINORE — DATE

PREPARED BY:
KARAKI | Western States
A DESIGN-BUILD COMPANY
4887 E. LA PALMA STE. 707
ANAHEIM, CA 92807
TEL: (714)695-9300 FAX: (714)693-1002
www.westernsec.com
KAMAL McHANTAF, RCE C051050 — DATE

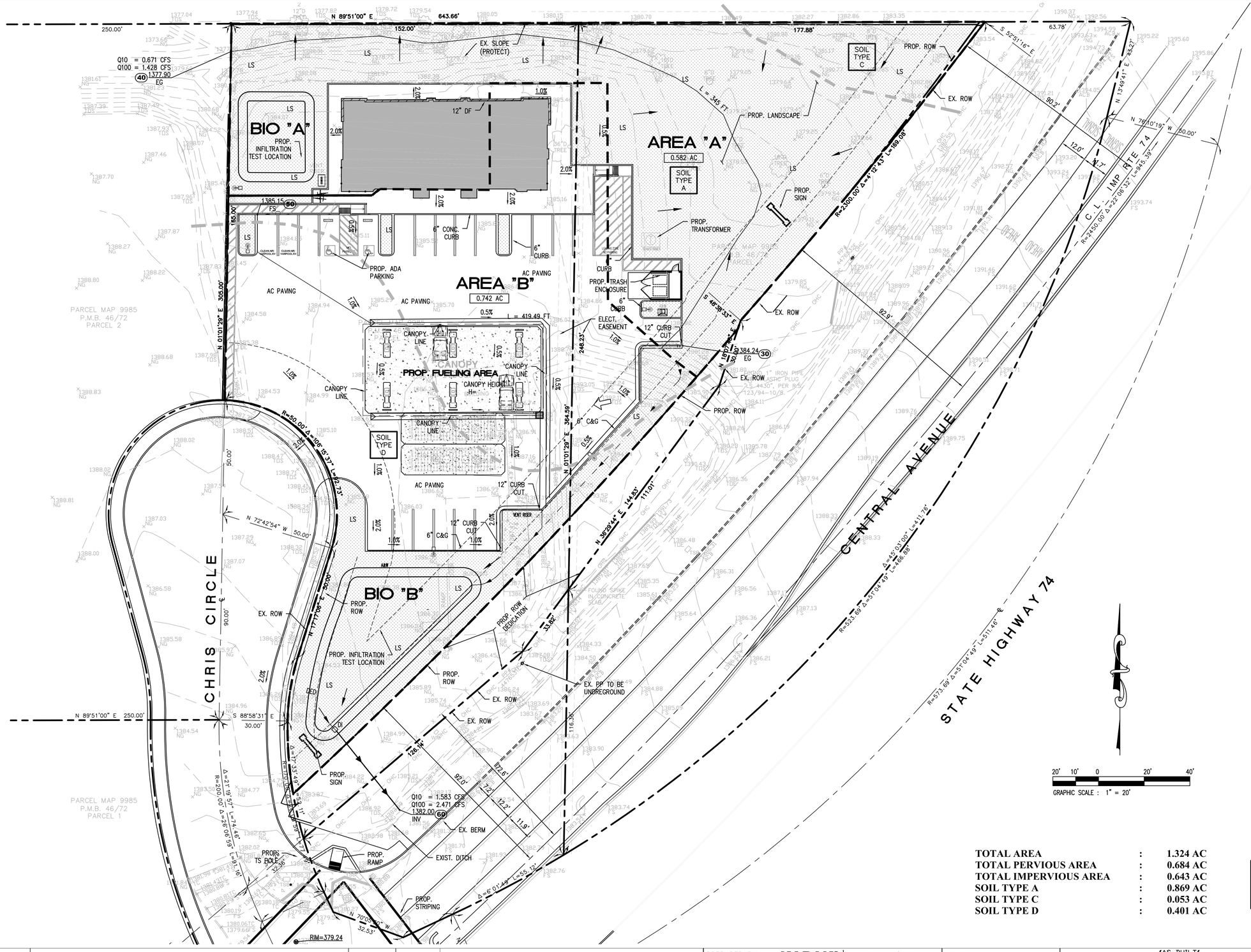
SEAL
REGISTERED PROFESSIONAL ENGINEER — KAMAL B. McHANTAF — No. C051050 Exp. 9-30-21 — CIVIL — STATE OF CALIFORNIA

"AS-BUILT"
RCE _____ EXP _____ DATE:
REVIEWED BY:
INSPECTOR _____ DATE
SCALE : AS NOTED
DATE: AUGUST 30, 2020
BENCH MARK: SEE ABOVE

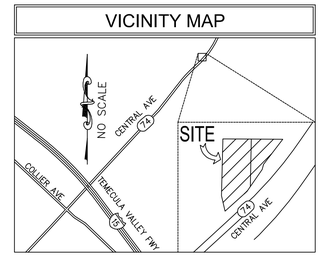
CITY OF LAKE ELSINORE

EXISTING HYDROLOGY MAP
28771 CENTRAL 74 HWY,
LAKE ELSINORE, CA
APN:

SHEET 1 OF 2 SHEETS
FILE No.



VICINITY MAP



VICINITY MAP
NTS

LEGEND:

- DRAINAGE FLOW DIRECTION (PIPE)
- DRAINAGE FLOW
- ROOF
- ASPHALT
- CONCRETE
- LANDSCAPE OR NATURAL GROUND
- CATCHMENT BOUNDARY
- SOIL TYPE BOUNDARY
- X.XXAC — AREA, IN ACRES
- CP 2 — CONTROL POINT ID
- XXX — TIME OF CONCENTRATION, IN MINS.
- XXX — 2 YR. FLOW, IN CFS
- XXX — 10 YR. FLOW, IN CFS
- XXX — 100 YR. FLOW, IN CFS

TOTAL AREA	**:**	**1.324 AC**
TOTAL PERVIOUS AREA	**:**	**0.684 AC**
TOTAL IMPERVIOUS AREA	**:**	**0.643 AC**
SOIL TYPE A	**:**	**0.869 AC**
SOIL TYPE C	**:**	**0.053 AC**
SOIL TYPE D	**:**	**0.401 AC**

TOTAL IMPERVIOUS AREA	= 0.643 AC
TOTAL PERVIOUS AREA	= 0.681 AC
TOTAL AREA	= 1.324 AC

POST-DEVELOPMENT HYDROLOGY MAP

MARK	REVISIONS	APPR.	DATE

THESE PLANS HAVE BEEN REVIEWED FOR COMPLIANCE WITH THE APPROPRIATE CONDITIONS OF DEVELOPMENT AND/OR CITY AND STATE LAWS AND A PERMIT MAY BE ISSUED

BRAD FAGRELL, RCE No. 43920
CITY ENGINEER
CITY OF LAKE ELSINORE — DATE

PREPARED BY:

KARAKI | Western States
A DESIGN-BUILD COMPANY
4887 E. LA PALMA STE. 707
ANAHEIM, CA 92807
TEL: (714)695-9300 FAX: (714)693-1002
www.westernsec.com

KAMAL McHANTAF, RCE C051050 — DATE

SEAL

REGISTERED PROFESSIONAL ENGINEER — KAMAL B. McHANTAF — No. C051050 Exp. 9-30-21 — CIVIL — STATE OF CALIFORNIA

"AS-BUILT"
RCE _____ EXP _____ DATE:
REVIEWED BY:
INSPECTOR — DATE

SCALE : AS NOTED
DATE: JANUARY 18, 2020
BENCH MARK: SEE ABOVE

CITY OF LAKE ELSINORE

PROPOSED HYDROLOGY MAP
28771 CENTRAL 74 HWY,
LAKE ELSINORE, CA
CUP200043

SHEET 2
OF 2 SHEETS
FILE No.

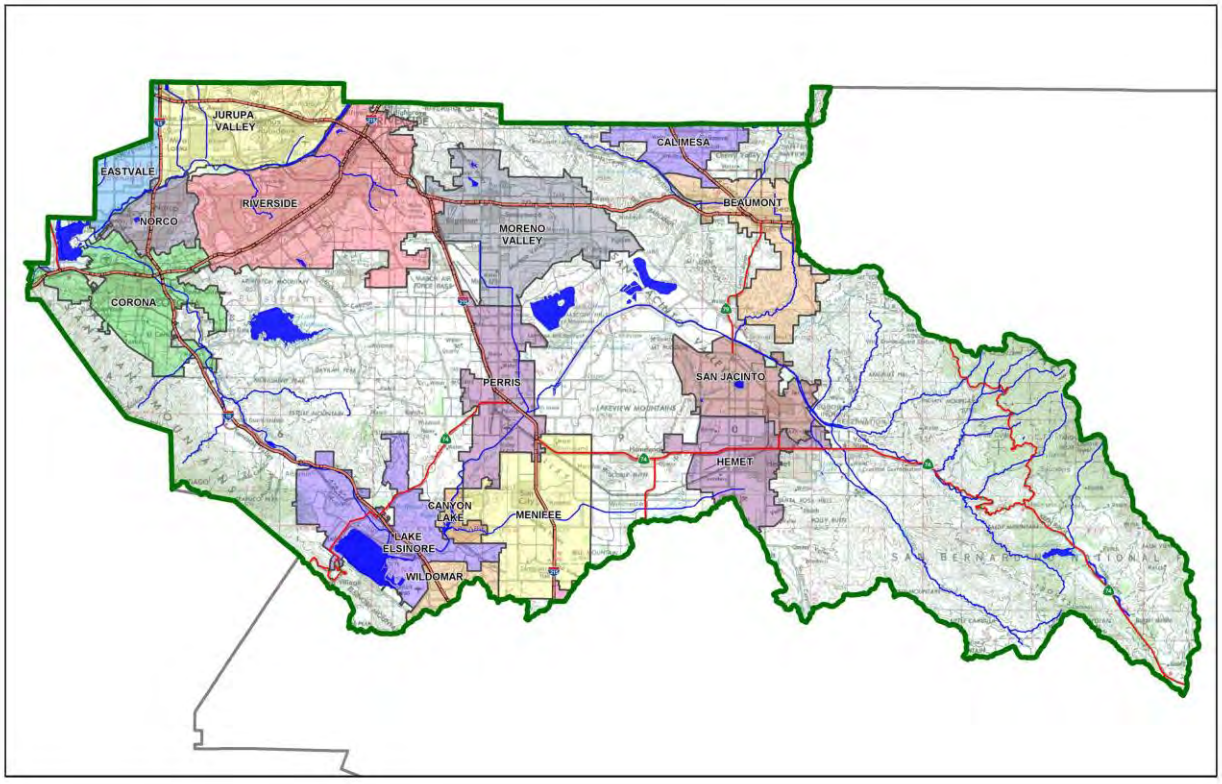
Project Specific Water Quality Management Plan

*A Template for Projects located within the **Santa Ana Watershed** Region of Riverside County*

Project Title: 28771 Central Avenue Gas Station

Development No: Insert text here

Design Review/Case No: PPT210016



Contact Information:

Prepared for:
Daher Oil Inc.
19851 Esperanza Road Yorba Linda, California 92878

☒ **Preliminary**
☐ **Final**

Original Date Prepared: September 23, 2020

Revision Date(s): May 3, 2021

Prepared for Compliance with
Regional Board Order No. **R8-2010-0033**
Template revised June 30, 2016

Prepared by:
Western States Engineering, Inc.
4887 E. La Palma, Ste. 707 Anaheim, Oceanside, California 92807
(714) 695-9300

OWNER'S CERTIFICATION

This Project-Specific Water Quality Management Plan (WQMP) has been prepared for Daher Oil Inc. by Western States Engineering, Inc. for the 28771 Central Avenue Gasoline Station and Convenience Store project.

This WQMP is intended to comply with the requirements of Country of Riverside for R8-2010-0033 which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater BMPs until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under Riverside Water Quality Ordinance Water Quality Ordinance (Municipal Code SectionR8-2010-0033).

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner's Signature	Date
Salim S. Daher	President
Owner's Printed Name	Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control measures in this plan meet the requirements of Regional Water Quality Control Board Order No. **R8-2010-0033** and any subsequent amendments thereto."

Preparer's Signature	5/3/21 Date
Kamal B. Mchantaf	Owner
Preparer's Printed Name	Preparer's Title/Position

Preparer's Licensure:

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Section A: Project and Site Information

PROJECT INFORMATION		
Type of Project:	Commercial	
Planning Area:	C-P-S	
Community Name:	Warm Springs	
Development Name:	28771 Central Avenue Gasoline Station and Convenience Store	
PROJECT LOCATION		
Latitude & Longitude (DMS): 33°42'11"N, 117°19'35"W		
Project Watershed and Sub-Watershed: Santa Ana River Watershed, Temescal Creek		
Gross Acres: 1.448 APN(s): 347130029 Map Book and Page No.: PM 46/72		
PROJECT CHARACTERISTICS		
Proposed or Potential Land Use(s)	Commercial	
Proposed or Potential SIC Code(s)	44711	
Area of Impervious Project Footprint (SF)	34,888	
Total Area of proposed Impervious Surfaces within the Project Footprint (SF)/or Replacement	34,888	
Does the project consist of offsite road improvements?	☒ Y	☐ N
Does the project propose to construct unpaved roads?	☐ Y	☒ N
Is the project part of a larger common plan of development (phased project)?	☐ Y	☒ N
EXISTING SITE CHARACTERISTICS		
Total area of existing Impervious Surfaces within the Project limits Footprint (SF)	2,549	
Is the project located within any MSHCP Criteria Cell?	☐ Y	☒ N
If so, identify the Cell number:	N/A	
Are there any natural hydrologic features on the project site?	☐ Y	☒ N
Is a Geotechnical Report attached?	☒ Y	☐ N
If no Geotech. Report, list the NRCS soils type(s) present on the site (A, B, C and/or D)	N/A	
What is the Water Quality Design Storm Depth for the project?	0.65	

A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the local vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas
- Proposed Structural BMPs
- Drainage Path
- Drainage Infrastructure, Inlets, Overflows
- Source Control BMPs
- Buildings, Roof Lines, Downspouts
- Impervious Surfaces
- Standard Labeling
- BMP Locations (Lat/Long)

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Co-Permittee plan reviewer must be able to easily analyze your project utilizing this template and its associated site plans and maps.

A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the receiving waters that the project site is tributary to. Continue to fill each row with the Receiving Water's 303(d) listed impairments (if any), designated beneficial uses, and proximity, if any, to a RARE beneficial use. Include a map of the receiving waters in Appendix 1.

Table A.1 Identification of Receiving Waters

Receiving Waters	EPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
Temescal Creek Reach 5	None	GWR, REC1, REC2, WARM, WILD	N/A
Santa Ana River Reach 3	Indicator Bacteria	AGR, GWR, REC1, REC2	N/A

A.3 Additional Permits/Approvals required for the Project:

Table A.2 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N
State Water Resources Control Board, Clean Water Act (CWA) Section 401 Water Quality Cert.	☐ Y	☒ N
US Army Corps of Engineers, CWA Section 404 Permit	☐ Y	☒ N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	☐ Y	☒ N
Statewide Construction General Permit Coverage	☐ Y	☒ N
Statewide Industrial General Permit Coverage	☐ Y	☒ N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☐ Y	☒ N
Other *(please list in the space below as required)* City of Riverside Conditional Use Permit	☒ Y	☐ N

If yes is answered to any of the questions above, the Co-Permittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

Section B: Optimize Site Utilization (LID Principles)

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?

Portion of the development (DMA A) shall preserve the existing drainage pattern although the areas (DMA B) near the Central Avenue will be allowed to drain to the said road's drainage system. The runoff from the area will eventually drain into the Temascal Creek Reach 5.

Did you identify and protect existing vegetation? If so, how? If not, why?

Yes. *Areas within the improvement will be graded while the portions to be left from proposed gasoline station and convenience store shall be left ungraded along with the existing vegetation.*

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?

Yes. Proposed bio-retention basins will be used without any impervious liners. This will allow captured volume to be infiltrated on-site.

Did you identify and minimize impervious area? If so, how? If not, why?

Yes. The project proposes to construct the gasoline station, convenient store and associated development into only a portion of the parcel while leaving a large portion of the project area as undeveloped and ungraded.

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?

DMA A will be allowed to drain into the natural pervious area by placing the bioretention basin next to it. Any overflow of the captured volume for DMA A will be able to drain to this area that was naturally where the entire project site eventually drains to.

The overflow of DMA B shall drain towards the storm drain system along the Central Avenue. The flows will find its way to the Temascal Creek Reach 5.

Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

Table C.1 DMA Classifications

DMA Name or ID	Surface Type(s)[1][2]	Area (Sq. Ft.)	DMA Type
A-1	Roof	2,519.08	Type D
A-2	Asphalt/Concrete Pavement	877.78	Type D
A-3	Landscape	2,083.87	Type D
B-1	Roof	4,268.86	Type D
B-2	Asphalt/Concrete Pavement	27,221.98	Type D
B-3	Landscape	7,571.49	Type D

[1]*Reference Table 2-1 in the WQMP Guidance Document to populate this column*
[2]*If multi-surface provide back-up*

Table C.2 Type 'A', Self-Treating Areas

DMA Name or ID	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)
C-1	18,547.21	N/A	None

Table C.3 Type 'B', Self-Retaining Areas

Self-Retaining Area				**Type 'C' DMAs that are draining to the Self-Retaining Area**		
DMA Name/ ID	Post-project surface type	Area (square feet) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas

DMA					Receiving Self-Retaining DMA		
DMA Name/ ID	Area (square feet)	Post-project surface type	Impervious fraction	Product		Area (square feet)	Ratio
	[A]		[B]	[C] = [A] x [B]	DMA name /ID	[D]	[C]/[D]

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
A-1 to A-3	Bioretention BIO-A
B-1 to B-3	Bioretention BIO- B

Note: More than one drainage management area can drain to a single LID BMP, however, one drainage management area may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

Is there an approved downstream 'Highest and Best Use' for stormwater runoff (see discussion in Chapter 2.4.4 of the WQMP Guidance Document for further details)? ☐ Y ☒ N

If yes has been checked, Infiltration BMPs shall not be used for the site; proceed to section D.3

If no, continue working through this section to implement your LID BMPs. It is recommended that you contact your Co-Permittee to verify whether or not your project discharges to an approved downstream 'Highest and Best Use' feature.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Co-Permittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☒ Y ☐ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.4.5. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?		X
If Yes, list affected DMAs:		
…have any DMAs located within 100 feet of a water supply well?		X
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		X
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?		X
If Yes, list affected DMAs:		
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?		X
If Yes, list affected DMAs:		
…geotechnical report identify other site-specific factors that would preclude effective and safe infiltration?		X
Describe here:		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.

D.2 Harvest and Use Assessment

Please check what applies*:*

☐ Reclaimed water will be used for the non-potable water demands for the project.

☐Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☐The Design Capture Volume will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the Design Capture Volume will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If none of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

Total Area of Irrigated Landscape: 0.217 Acres

Type of Landscaping (Conservation Design or Active Turf): Conservative Design (to be confirmed by landscape architect).

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: 0.639 Acres

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-3 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

Enter your EIATIA factor: 0.65

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

Minimum required irrigated area: 0.415 Acres

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

Minimum required irrigated area (Step 4)	Available Irrigated Landscape (Step 1)
0.415 Acres	0.217 Acres

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users: 150

Project Type: Commercial

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: 0.639 Acres

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-2 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor: 141

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

Minimum number of toilet users: 90

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required Toilet Users (Step 4)	Projected number of toilet users (Step 1)
90	150

Other Non-Potable Use Feasibility

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

N/A

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the wet season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand: N/A

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: N/A

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-4 in Chapter 2 to determine the minimum demand for non-potable uses per tributary impervious acre.

Enter the factor from Table 2-4: N/A

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of gallons per day of non-potable use that would be required.

Minimum required use: N/A

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the project by comparing the projected average daily use (Step 1) to the minimum required non-potable use (Step 4).

Minimum required non-potable use (Step 4)	**Projected average daily use (Step 1)**
N/A	N/A

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment per Section 3.4.2 of the WQMP Guidance Document.

D.3 Bioretention and Biotreatment Assessment

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.4.7 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

Select one of the following:

☐ LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the project as noted below in Section D.4 (note the requirements of Section 3.4.2 in the WQMP Guidance Document).

☐ A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee to discuss this option. Proceed to Section E to document your alternative compliance measures.

D.4 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.2 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.2 LID Prioritization Summary Matrix

DMA Name/ID	LID BMP Hierarchy				No LID (Alternative Compliance)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	
A	☐	☐	☒	☐	☐
B	☐	☐	☒	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐
	☐	☐	☐	☐	☐

For those DMAs where LID BMPs are not feasible, provide a brief narrative below summarizing why they are not feasible, include your technical infeasibility criteria in Appendix 5, and proceed to Section E below to document Alternative Compliance measures for those DMAs. Recall that each proposed DMA must pass through the LID BMP hierarchy before alternative compliance measures may be considered.

D.5 LID BMP Sizing

Each LID BMP must be designed to ensure that the Design Capture Volume will be addressed by the selected BMPs. First**,** calculate the Design Capture Volume for each LID BMP using the V_{BMP} worksheet in Appendix F of the LID BMP Design Handbook. Second**,** design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.3 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.3 DCV Calculations for LID BMPs

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Areas x Runoff Factor**	***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]			
A-1	*2,519.08*	*Roofs*	*1*	*0.89*	*2,247*	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
A-2	*877.78*	*Concrete or Asphalt*	*1*	*0.89*	*783*			
A-3	*2,083.87*	*Ornamental Landscaping*	*0.1*	*0.11*	*230.2*			
	5,480.73				***3,260.2***	***0.65***	***176.6***	***934***

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document
[E] is obtained from Exhibit A in the WQMP Guidance Document
[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Table D.4 DCV Calculations for LID BMPs

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*BIO-B*		
	[A]		[B]	[C]	[A] x [C]			
B-1	*4,268.86*	*Roofs*	*1*	*0.89*	*3,807.8*	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
B-2	*27,221.98*	*Concrete or Asphalt*	*1*	*0.89*	*24,282*			
B-3	*7,571.49*	*Ornamental Landscaping*	*0.1*	*0.11*	*836.3*			
	39,062.33				***28,926.1***	***0.65***	***1,566.8***	***3,173***

[B], [C] is obtained as described in Section 2.3.1 of the WQMP Guidance Document
[E] is obtained from Exhibit A in the WQMP Guidance Document
[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Section E: Alternative Compliance (LID Waiver Program)

LID BMPs are expected to be feasible on virtually all projects. Where LID BMPs have been demonstrated to be infeasible as documented in Section D, other Treatment Control BMPs must be used (subject to LID waiver approval by the Copermittee). Check one of the following Boxes:

☒ LID Principles and LID BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- *Or* -

☐ The following Drainage Management Areas are unable to be addressed using LID BMPs. A site-specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Co-Permittee and included in Appendix 5. Additionally, no downstream regional and/or sub-regional LID BMPs exist or are available for use by the project. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated.

E.1 Identify Pollutants of Concern

Utilizing Table A.1 from Section A above which noted your project's receiving waters and their associated EPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table E.1 below. If the identified General Pollutant Categories are the same as those listed for your receiving waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

Table E.1 Potential Pollutants by Land Use Type

Priority Development Project Categories and/or Project Features (check those that apply)	General Pollutant Categories							
	Bacterial Indicators	Metals	Nutrients	Pesticides	Toxic Organic Compounds	Sediments	Trash & Debris	Oil & Grease
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☐ Attached Residential Development	P	N	P	P	N	P	P	P(2)
☒ Commercial/Industrial Development	P(3)	P	P(1)	P(1)	P(5)	P(1)	P	P
☐ Automotive Repair Shops	N	P	N	N	P(4, 5)	N	P	P
☐ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☐ Parking Lots (>5,000 ft^2)	P(6)	P	P(1)	P(1)	P(4)	P(1)	P	P
☒ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☒	☐	☐	☐	☐	☐	☐	☐

P = Potential

N = Not Potential

(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected

(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected

(3) A potential Pollutant is land use involving animal waste

(4) Specifically petroleum hydrocarbons

(5) Specifically solvents

(6) Bacterial indicators are routinely detected in pavement runoff

E.2 Stormwater Credits

Projects that cannot implement LID BMPs but nevertheless implement smart growth principles are potentially eligible for Stormwater Credits. Utilize Table 3-8 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table E.2 Water Quality Credits

Qualifying Project Categories	Credit Percentage[2]
Total Credit Percentage[1]	

[1]*Cannot Exceed 50%*

[2]*Obtain corresponding data from Table 3-8 in the WQMP Guidance Document*

E.3 Sizing Criteria

After you appropriately considered Stormwater Credits for your project, utilize Table E.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.2 of the WQMP Guidance Document for further information.

Table E.3 Treatment Control BMP Sizing

DMA Type/ID	**DMA Area (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA Area x Runoff Factor**		***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]				
						Design Storm Depth (in)	*Minimum Design Capture Volume or Design Flow Rate (cubic feet or cfs)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*
	A_T = Σ[A]				Σ= [D]	[E]	$[F] = \frac{[D]x[E]}{[G]}$	[F] X (1-[H])	[I]

[B], [C] is obtained as described in Section 2.3.1 from the WQMP Guidance Document

[E] is for Flow-Based Treatment Control BMPs [E] = .2, for Volume-Based Control Treatment BMPs, [E] obtained from Exhibit A in the WQMP Guidance Document

[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12

[H] is from the Total Credit Percentage as Calculated from Table E.2 above

[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

E.4 Treatment Control BMP Selection

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High**: equal to or greater than 80% removal efficiency
- **Medium**: between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

Table E.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]

[1] Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.

[2] Cross Reference Table E.1 above to populate this column.

[3] As documented in a Co-Permittee Approved Study and provided in Appendix 6.

Section F: Hydromodification

F.1 Hydrologic Conditions of Concern (HCOC) Analysis

Once you have determined that the LID design is adequate to address water quality requirements, you will need to assess if the proposed LID Design may still create a HCOC. Review Chapters 2 and 3 (including Figure 3-7) of the WQMP Guidance Document to determine if your project must mitigate for Hydromodification impacts. If your project meets one of the following criteria which will be indicated by the check boxes below, you do not need to address Hydromodification at this time. However, if the project does not qualify for Exemptions 1, 2 or 3, then additional measures must be added to the design to comply with HCOC criteria. This is discussed in further detail below in Section F.2.

HCOC EXEMPTION 1: The Priority Development Project disturbs less than one acre. The Copermittee has the discretion to require a Project-Specific WQMP to address HCOCs on projects less than one acre on a case by case basis. The disturbed area calculation should include all disturbances associated with larger common plans of development.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply.

HCOC EXEMPTION 2: The volume and time of concentration[1] of storm water runoff for the post-development condition is not significantly different from the pre-development condition for a 2-year return frequency storm (a difference of 5% or less is considered insignificant) using one of the following methods to calculate:

- Riverside County Hydrology Manual
- Technical Release 55 (TR-55): Urban Hydrology for Small Watersheds (NRCS 1986), or derivatives thereof, such as the Santa Barbara Urban Hydrograph Method
- Other methods acceptable to the Co-Permittee

Does the project qualify for this HCOC Exemption? ☒ Y ☐ N

If Yes, report results in Table F.1 below and provide your substantiated hydrologic analysis in Appendix 7.

Table F.1 Hydrologic Conditions of Concern Summary

	2 year – 24 hour		
	Pre-condition	**Post-condition**	**% Difference**
Time of Concentration	11.17	8.9	20.32
Volume (Cubic Feet)	1,787.5	7,498.5	319

[1] Time of concentration is defined as the time after the beginning of the rainfall when all portions of the drainage basin are contributing to flow at the outlet.

HCOC EXEMPTION 3: All downstream conveyance channels to an adequate sump (for example, Prado Dam, Lake Elsinore, Canyon Lake, Santa Ana River, or other lake, reservoir or naturally erosion resistant feature) that will receive runoff from the project are engineered and regularly maintained to ensure design flow capacity; no sensitive stream habitat areas will be adversely affected; or are not identified on the Co-Permittees Hydromodification Susceptibility Maps.

Does the project qualify for this HCOC Exemption? ☐ Y ☒ N

If Yes, HCOC criteria do not apply and note below which adequate sump applies to this HCOC qualifier:

F.2 HCOC Mitigation

If none of the above HCOC Exemption Criteria are applicable, HCOC criteria is considered mitigated if they meet one of the following conditions:

☐ a. Additional LID BMPS are implemented onsite or offsite to mitigate potential erosion or habitat impacts as a result of HCOCs. This can be conducted by an evaluation of site-specific conditions utilizing accepted professional methodologies published by entities such as the California Stormwater Quality Association (CASQA), the Southern California Coastal Water Research Project (SCCRWP), or other Co-Permittee approved methodologies for site-specific HCOC analysis.

☐ b. The project is developed consistent with an approved Watershed Action Plan that addresses HCOC in Receiving Waters.

☒ c. Mimicking the pre-development hydrograph with the post-development hydrograph, for a 2-year return frequency storm. Generally, the hydrologic conditions of concern are not significant, if the post-development hydrograph is no more than 10% greater than pre-development hydrograph. In cases where excess volume cannot be infiltrated or captured and reused, discharge from the site must be limited to a flow rate no greater than 110% of the pre-development 2-year peak flow.

Be sure to include all pertinent documentation used in your analysis of the items a, b or c in Appendix 7.

For the pre-development stage, a portion of the proposed Chris Circle drains to the southwest corner although this is too small of an area so the calculations included this in the calculations for Area A. Area A drains to the northwest corner and has a 2-year volume of 1,787.5 cf.

For the post-development stage, the area is split into Area, which is mostly landscape and shall follow the natural drain to the northwest corner while the impervious areas of the proposed development can be found in Area B to drain into the proposed bioretention basins and drain to Central Avenue. The 2-year post-development volumes of Areas A and B total to 7,498.5 cf.

Both bioretention basins A and B shall have a combined volume of 5,731 cu.ft. Each basin shall have a ponding depth of 0.5 ft, soil media depth of 3.0 ft and a gravel depth of 1.0 ft. With the basin volume

capacities, there is be a net decrease in the 2-year 24-hour volumes for the total area for the development.

Section G: Source Control BMPs

Source control BMPs include permanent, structural features that may be required in your project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and "housekeeping", that must be implemented by the site's occupant or user. The MEP standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective permanent BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

Table G.1 Permanent and Operational Source Control Measures

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
On-site storm drain inlets	• Mark all inlets with the words "No Dumping! Flows to Bay" or similar	• Maintain and periodically repaint or replace inlet markings • Provide stormwater pollution prevention information to new site owners, lessees, or operators • See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com • Include the following in lease agreements: 'Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains.
Need for future indoor & structural pest control	• Note building design features that discourage entry of pests.	• Provide Integrated Pest Management information to owners, lessees, and operators.

Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
Landscape/Outdoor Pesticide Use	• Preserve existing native trees, shrubs and ground cover to the maximum extent possible. • Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. • Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. • Consider using pest-resistant plants, especially adjacent to hardscapes. • To ensure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, land use, air movement, ecological consistency, and plant interactions.	• Maintain landscaping using minimum or no pesticide. • See applicable operational BMPs in "What you should know for…Landscape and Gardening" at www.rivcocob.org/ords/800/859.pdf • Provide IPM information to new owners, lessees and operators.
Refuse areas	• Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas. • If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms. • Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.	State how the following will be implemented: Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Keep receptacles covered. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com.
Fuel Dispensing Areas		• The property owner shall dry sweep the fueling area routinely. • See the Business Guide Sheet, "Automotive Service—Service Stations" in the CASQA Stormwater

		Quality Handbooks at www.cabmphandbooks.com
Potential Sources of Runoff pollutants	Permanent Structural Source Control BMPs	Operational Source Control BMPs
Fire Sprinkler Test Water	• Provide a means to drain fire sprinkler test water to the sanitary sewer.	• See the note Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
Miscellaneous Drain or Wash Water Roofing, gutters, and trim	Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.	N/A
Plazas, sidewalks, and parking lots		• Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

Section H: Construction Plan Checklist

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)	BMP Location (Lat/Long)
BIO-A	Landscape	See WQMP Exhibit	33°42'12" 117°19'35"
BIO-B	Landscape	See WQMP Exhibit	33°42'10" 117°19'35"

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. Co-Permittee staff can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

Section I: Operation, Maintenance and Funding

The Copermittee will periodically verify that Stormwater BMPs on your site are maintained and continue to operate as designed. To make this possible, your Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement facility maintenance in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized O&M or inspections but will require typical landscape maintenance as noted in Chapter 5, pages 85-86, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

Your local Co-Permittee will also require that you prepare and submit a detailed Stormwater BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the Stormwater BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a Stormwater BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism: Covenant & Agreement to be included. Daher Oil Inc. is responsible for the BMP maintenance.

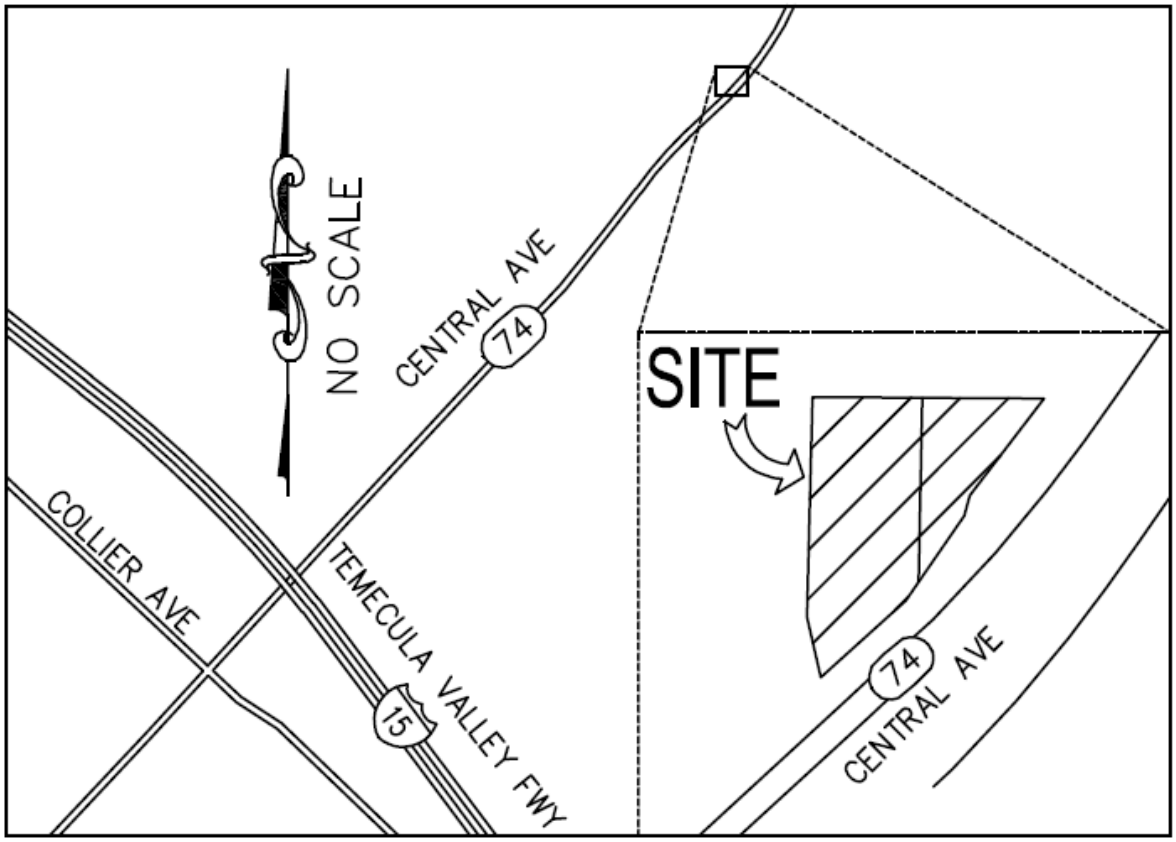
Will the proposed BMPs be maintained by a Home Owners' Association (HOA) or Property Owners Association (POA)?

☐ Y ☒ N

Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

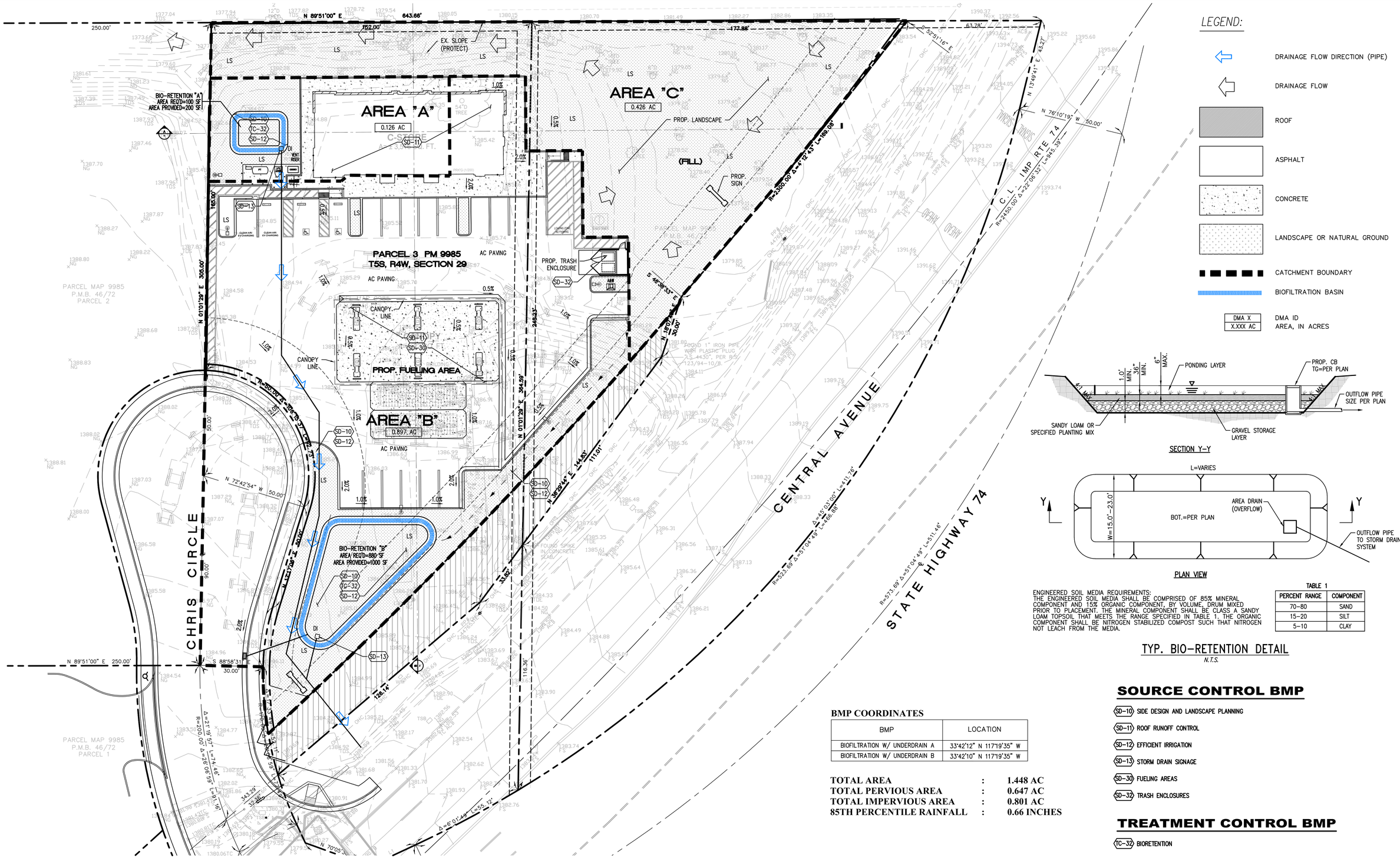
Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map



VICINITY MAP
NTS

VICINITY MAP
Not to Scale



LEGEND:

- DRAINAGE FLOW DIRECTION (PIPE)
- DRAINAGE FLOW
- ROOF
- ASPHALT
- CONCRETE
- LANDSCAPE OR NATURAL GROUND
- CATCHMENT BOUNDARY
- BIOFILTRATION BASIN
- DMA ID: DMA X / X.XXX AC — AREA, IN ACRES

SECTION Y-Y

PLAN VIEW

ENGINEERED SOIL MEDIA REQUIREMENTS:
THE ENGINEERED SOIL MEDIA SHALL BE COMPRISED OF 85% MINERAL COMPONENT AND 15% ORGANIC COMPONENT, BY VOLUME, DRUM MIXED PRIOR TO PLACEMENT. THE MINERAL COMPONENT SHALL BE CLASS A SANDY LOAM TOPSOIL THAT MEETS THE RANGE SPECIFIED IN TABLE 1. THE ORGANIC COMPONENT SHALL BE NITROGEN STABILIZED COMPOST SUCH THAT NITROGEN NOT LEACH FROM THE MEDIA.

TABLE 1

PERCENT RANGE	COMPONENT
70–80	SAND
15–20	SILT
5–10	CLAY

TYP. BIO-RETENTION DETAIL

N.T.S.

BMP COORDINATES

BMP	LOCATION
BIOFILTRATION W/ UNDERDRAIN A	33°42'12" N 117°19'35" W
BIOFILTRATION W/ UNDERDRAIN B	33°42'10" N 117°19'35" W

TOTAL AREA	:	1.448 AC
TOTAL PERVIOUS AREA	:	0.647 AC
TOTAL IMPERVIOUS AREA	:	0.801 AC
85TH PERCENTILE RAINFALL	:	0.66 INCHES

SOURCE CONTROL BMP

- SD-10 SIDE DESIGN AND LANDSCAPE PLANNING
- SD-11 ROOF RUNOFF CONTROL
- SD-12 EFFICIENT IRRIGATION
- SD-13 STORM DRAIN SIGNAGE
- SD-30 FUELING AREAS
- SD-32 TRASH ENCLOSURES

TREATMENT CONTROL BMP

- TC-32 BIORETENTION

MARK	REVISIONS	APPR.	DATE

THESE PLANS HAVE BEEN REVIEWED FOR COMPLIANCE WITH THE APPROPRIATE CONDITIONS OF DEVELOPMENT AND/OR CITY AND STATE LAWS AND A PERMIT MAY BE ISSUED

BRAD FAGRELL, RCE No. 43920
CITY ENGINEER
CITY OF LAKE ELSINORE — DATE

PREPARED BY:
KARAKI | Western States
A DESIGN-BUILD COMPANY
4887 E. LA PALMA STE. 707
ANAHEIM, CA 92807
TEL: (714)695-9300 FAX: (714)693-1002
www.westernsec.com

KAMAL McHANTAF, RCE C051050 — DATE

SEAL
REGISTERED PROFESSIONAL ENGINEER
KAMAL B. McHANTAF
No. C051050
Exp. 9-30-21
CIVIL
STATE OF CALIFORNIA

"AS-BUILT"
RCE _____ EXP _____ DATE:
REVIEWED BY:
INSPECTOR _____ DATE
SCALE : AS NOTED
DATE: JANUARY 18, 2020
BENCH MARK:
SEE ABOVE

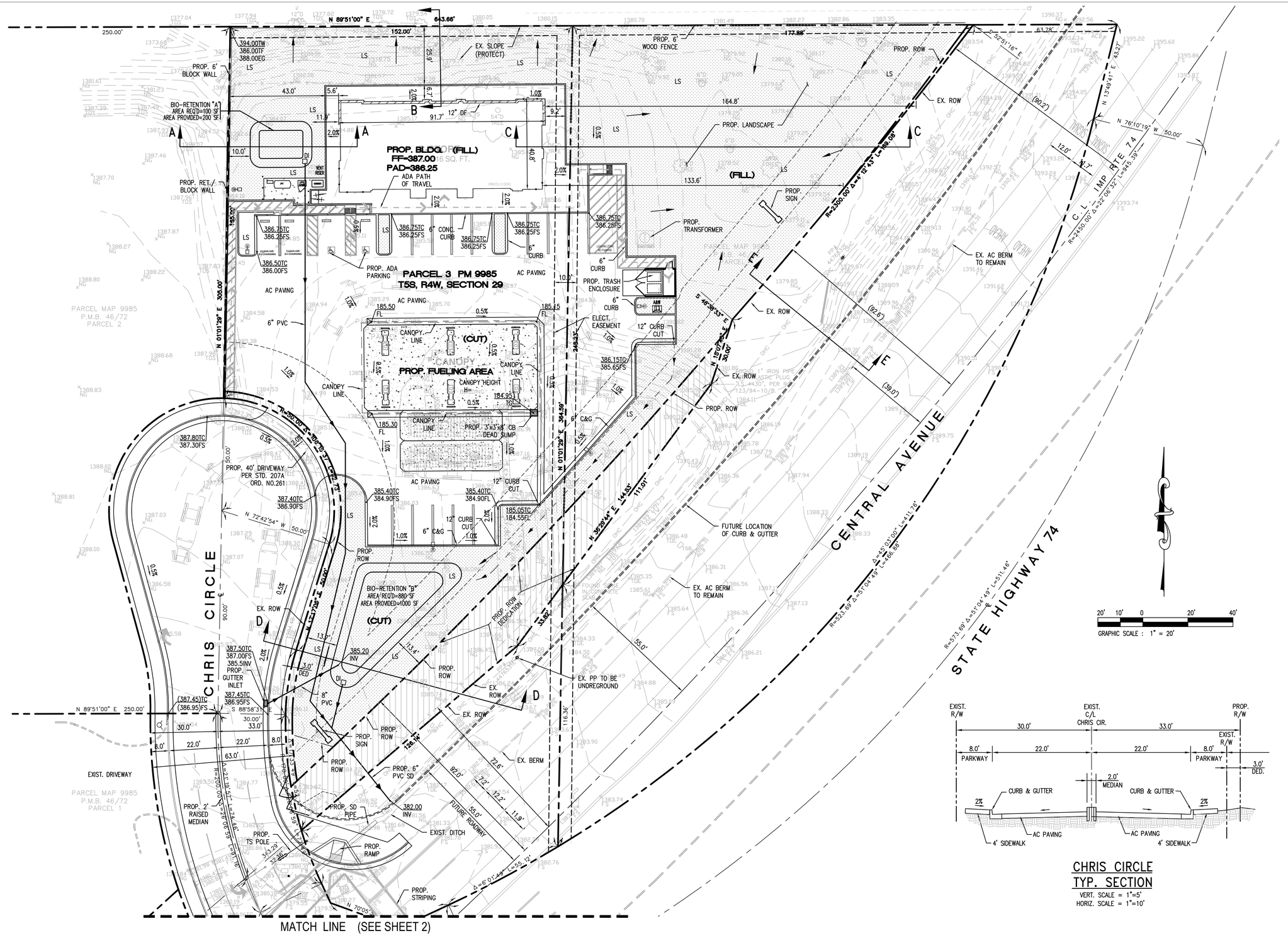
CITY OF LAKE ELSINORE

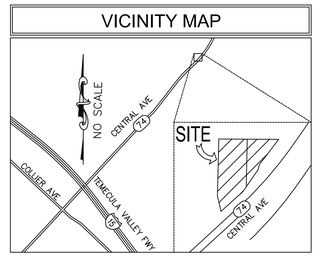
WQMP EXHIBIT
28771 CENTRAL 74 HWY,
LAKE ELSINORE, CA
CUP200043

SHEET 1
OF 1 SHEETS
FILE No.

Appendix 2: Construction Plans

Grading and Drainage Plans





VICINITY MAP
NTS

OWNER / SUBDIVIDER

DAHER OIL INC.
19851 ESPERANZA ROAD
YORBA LINDA, CA 92886
ATTN: ALFRED DAHER

SITE ADDRESS:

28771 HIGHWAY 74
LAKE ELSINORE, CA 92532

LEGAL DESCRIPTION:

REAL PROPERTY IN THE UNINCORPORATED AREA OF THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCELS 4 OF PARCEL MAP 9985, AS SHOWN BY MAP ON FILE IN BOOK 46, PAGE 72, OF PARCEL MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE RIVERSIDE COUNTY TRANSPORTATION COMMISSION, BY GRANT DEED RECORDED OCTOBER 09, 2001 AS INSTRUMENT NO. 01-489377, OF OFFICIAL RECORDS OF SAID COUNTY.

ASSESSOR'S PARCEL NUMBER: 347-130-028

TOTAL AREA: 62,757.88 S.F. (1.441 ACRES)

ENGINEER

WESTERN STATES ENGINEERING, INC.
4887 E. LA PALMA, STE 707
ANAHEIM, CA 92807
TEL. (714) 695-9300
FAX (714) 693-1002
ATTN: JOSEPH KARAKI

GEOTECHNICAL ENGINEER

PRELIM. GEOTECHNICAL INVESTIGATION REPORT
PROPOSED GAS STATION AND C-STORE
PREPARED ON SEPTEMBER 11, 2020
BY GEO ENVIRON ENGINEERING CONSULTANTS, INC.
4071 E. LA PALMA AVENUE, SUITE B
ANAHEIM, CA 92807
(714) 632-3190 PHONE
(714) 632-3191 FAX

SURVEYOR

PAYAN SURVEYING, INC.
2404 MARY CLARE STREET
CORONA, CA 92882
PHONE: 951-356-6456
EMAIL:atanacio@payansurveying.com
DATE PREPARED: 12/12/18

EARTHWORK QUANTITIES

RAW CUT :	100 CY
RAW FILL :	100 CY
NET :	0 CY

BASIS OF BEARINGS

THE BEARINGS SHOWN HEREON ARE BASED UPON THE WEST LINE OF PARCELS 1 AND 2, BEING N 01° 01' 29" E AS SHOWN ON PARCEL MAP NO. 9985 FILED IN BOOK 46, PAGE 72, OF PARCEL MAPS, RECORDS OF RIVERSIDE COUNTY.

BENCHMARK

CALIFORNIA DEPARTMENT OF TRANSPORTATION BM 13-A-93
ELEVATION = 1271.61 FEET
CAL D.O.T. BRASS DISK IN WESTERLY CURB RIVERSIDE DRIVE (RTE. 74) AT THE NORTHEASTERLY CORNER OF BRIDGE DECK RIVERSIDE COUNTY FLOOD CONTROL CANNEL (B-1) 150 FEET SOUTHERLY OF LAKECREST DRIVE AND 58 FEET NORTHERLY OF PP# 2105984FC

SHEET INDEX

SHEET 1 - PRELIMINARY GRADING PLAN
SHEET 2 - CROSS SECTIONS/INTERSECTION PLAN

CUP No. 200043
CASE NO. PPT210016

CHRIS CIRCLE
TYP. SECTION
VERT. SCALE = 1"=5'
HORIZ. SCALE = 1"=10'

MARK	REVISIONS	APPR.	DATE

THESE PLANS HAVE BEEN REVIEWED FOR COMPLIANCE WITH THE APPROPRIATE CONDITIONS OF DEVELOPMENT AND/OR CITY AND STATE LAWS AND A PERMIT MAY BE ISSUED

BRAD FAGRELL, RCE No. 43920 — DATE
CITY ENGINEER
CITY OF LAKE ELSINORE

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No. C051050
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CIVIL
STATE OF CALIFORNIA

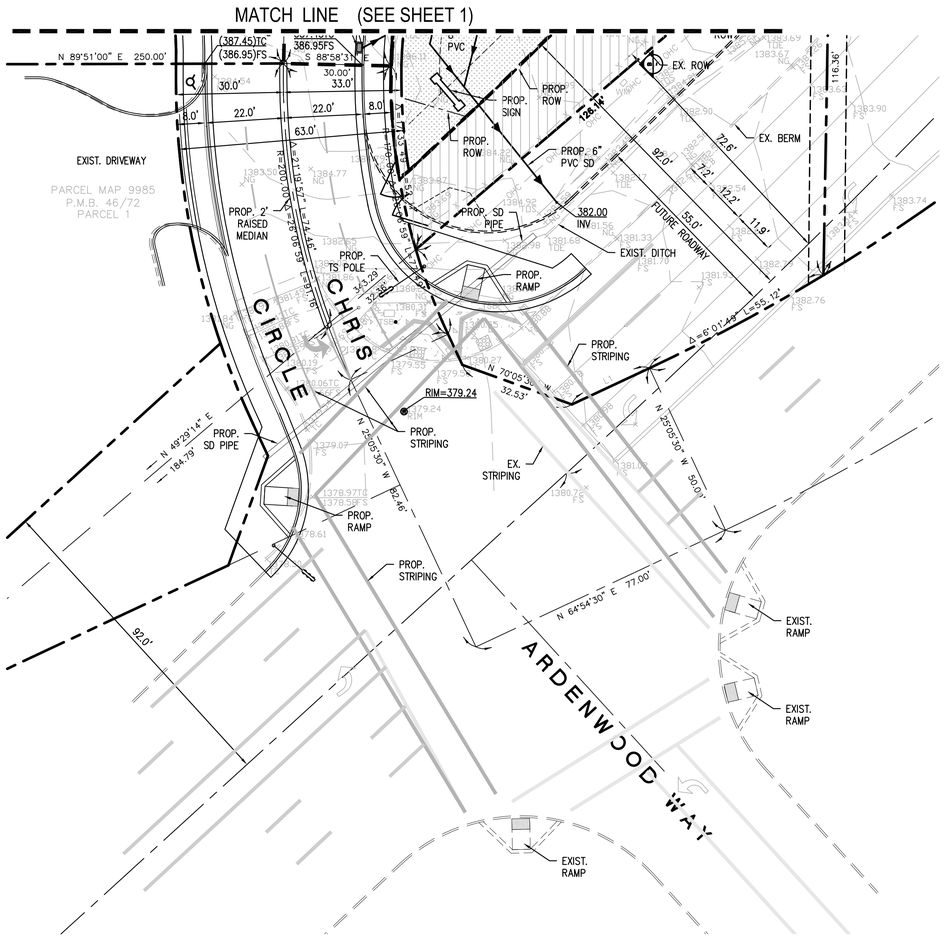
"AS-BUILT"
RCE _____ EXP _____ DATE:
REVIEWED BY:
INSPECTOR _____ DATE

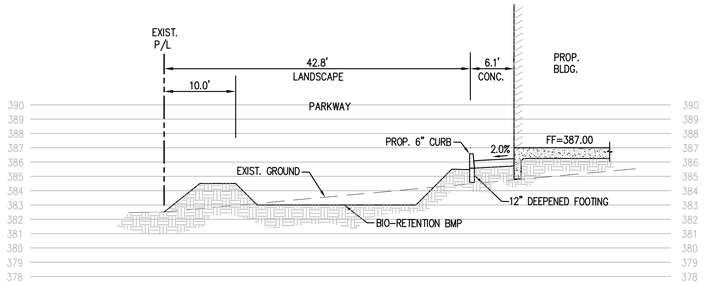
SCALE : AS NOTED
DATE: JANUARY 18, 2020
BENCH MARK:
SEE ABOVE

CITY OF LAKE ELSINORE

PRELIMINARY GRADING PLAN
28771 CENTRAL 74 HWY,
LAKE ELSINORE, CA
CUP200043

SHEET 1
OF 2 SHEETS
FILE No.





SECTION A–A

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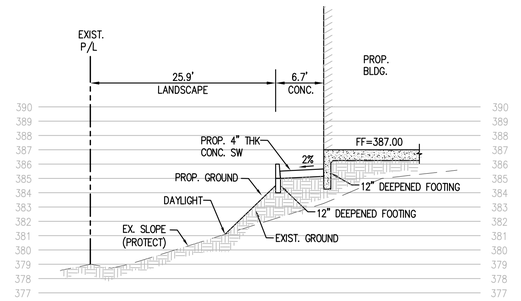
HORIZ. SCALE = 1"=10'



SECTION B–B

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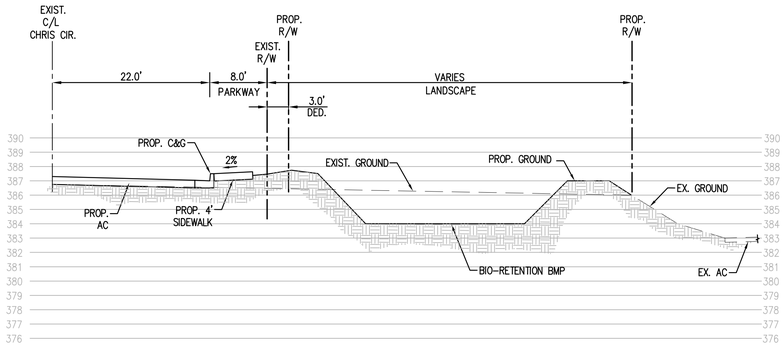

SECTION D–D

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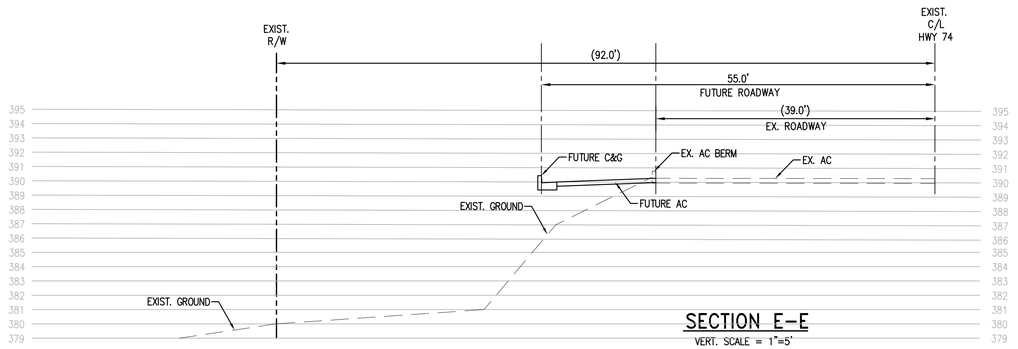

SECTION E–E

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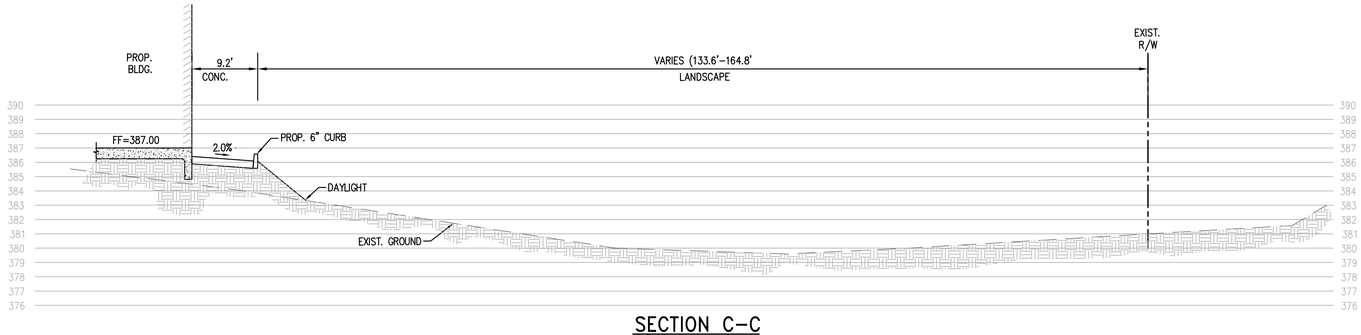

SECTION C–C

VERT. SCALE = 1"=5'
HORIZ. SCALE = 1"=10'

MARK	REVISIONS	APPR.	DATE

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BRAD FAGRELL, RCE No. 43920
CITY ENGINEER
CITY OF LAKE ELSINORE

DATE

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SEAL

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KAMAL B. McHANTAF
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STATE OF CALIFORNIA

"AS-BUILT"

RCE _____ EXP _____ DATE: _____

REVIEWED BY:

INSPECTOR _____ DATE _____

SCALE : AS NOTED

DATE: JANUARY 18, 2020

BENCH MARK:
SEE ABOVE

CITY OF LAKE ELSINORE

PRELIMINARY GRADING PLAN

28771 CENTRAL 74 HWY,
LAKE ELSINORE, CA
CUP200043

SHEET 2
OF 2 SHEETS
FILE No.

Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING CONSULTANTS, INC.
4071 E. La Palma Ave., Ste. B, Anaheim, Ca 92807 • (714) 632-3190 • Fax (714) 632-3191

Job No. 20-1057P
September 11, 2020

Mr. Joseph Karaki
Western State Eng. & Construction, Inc.
4887 E. La Palma Street, Ste # 707
Anaheim, Ca 92807

Subject: **Preliminary Geotechnical Investigation Report for Foundation Design, Proposed Gasoline Service Station, 28771 Central Ave, Lake Elsinore California**

Reference:

1) WS Eng., Inc , 8/31/20, "Site Plan, Proposed Gas Station and C-Store , 28771 Central Ave (74 Hwy), Lake Elsinore California

Gentlemen:

In accordance with your request and authorization, we have performed a preliminary geotechnical engineering investigation for the subject project. The accompanying report presents the preliminary results of our field exploration work, laboratory tests, our geotechnical experience previously performed in the vicinity of the project site, as well as engineering analysis. The subsurface and foundation conditions are discussed and preliminary recommendations for the geotechnical engineering aspects of the project are presented.

This opportunity to be of service is appreciated. If you have any questions concerning our findings, please call at your convenience.

Respectfully submitted,

Geo Environ Eng. Consultants, Inc.

REGISTERED PROFESSIONAL ENGINEER
ESMAIL RASTEGARI
No. 43332
Exp.03/30/2022
CIVIL
STATE OF CALIFORNIA

Jabed Masud, MSCE
Principal

Esmail Rastegari, P.E.
Principal

JM/ER/gm

Attachments: Appendix 'A' - Drawings, Boring Location
Appendix 'B' - Boring Logs
Appendix 'C' - Laboratory Test Results
Appendix 'D' - Liquefaction Analysis

SCOPE

The scope of this study was designed to determine and evaluate the surface and subsurface conditions of the subject site and to present preliminary recommendations for the foundation systems and grading requirements as they relate to the planned development

The scope included the following geotechnical functions:

- Review of available literature pertaining to the site and vicinity.
- Evaluation of natural and manmade surface features at the site and contiguous areas.
- Drilling and logging of exploratory borings.
- Securing of bulk and undisturbed samples of earth materials from the trenches for laboratory testing.
- Laboratory testing of selected samples.
- Geotechnical engineering analysis of data obtained during the study.
- Preparation of this report and the accompanying illustrations to present the findings, conclusions, and recommendations pertaining to the planned construction.

The scope of work did not include any environmental assessment of the property or opinions relating to possible soil or subsurface contamination by hazardous or toxic substances.

SITE DESCRIPTION

Location & Site Conditions

The subject property upon which the soil exploration has been performed is located at N.E. C Central Ave (74 Hwy) & Arrowwood Way, Lake Elsinore, Riverside County, California. The subject site is a vacant plot of land, 1.4 acres in size. The site is bounded by commercial properties, on the south apartment buildings, on the east residential, and on the west light industrial buildings.

PROPOSED CONSTRUCTION & GRADING

Preliminary details of the proposed construction and the reference drawing were provided by the project Architect.

A C- store (4000 sft), and canopy (3,160 sft) are planned to be constructed within the subject site. Appurtenant construction will include underground utilities, gas pumps, asphalt concrete and concrete pavement , and underground tanks (USTs).

Loads on the foundations are unknown but are expected to be between 2 and 4 kips per linear foot. Column loads are expected to be between 50 and 100 kips. Other structures will remain in place. No grading plans were to provided to this firm for our use during this study. However, cut and fill grading are anticipated within the proposed construction areas. Should details involved in final design vary from those outlined above, this firm should be notified for review and possible revision of our recommendations.

FIELD STUDY

A field study consisting of site observations and subsurface exploration was conducted on September 4, 2020. Three exploratory borings were drilled to a maximum depth of 50 feet below existing surface The soils encountered in the exploratory drilling were logged by our field personnel. The boring log are included in Appendix 'B'. The approximate location of the borings are shown on the plot plan in Appendix 'A'. Disturbed and undisturbed samples of the soils encountered were obtained at frequent intervals in the borings. Undisturbed samples were obtained by driving a thin walled steel sampler with successive drops of a 140-pound weight having a free fall of 30 inches. The blow count for each one foot of penetration is shown on the boring logs. Undisturbed soils were retained in brass rings with a 1-inch height and 2.413-inch inside diameter. The ring samples were retained in close fitting moisture proof containers and transported to our laboratory for testing.

LABORATORY TEST

The results of laboratory tests performed on disturbed, undisturbed, and remolded soil samples are presented in appendix 'C'. Following is a listing and brief explanation of the laboratory tests which were performed as part of this study. The remaining soil samples are stored in our laboratory for future reference. Unless notified to the contrary, all samples will be disposed of 30 days after the date of this report.

Classification

The field classification of the soils were verified in the laboratory in general accordance with the Unified Soil Classification System. The final classification is shown on the boring logs.

Field Moistures and Densities

The field moisture content was determined for each of the disturbed and undisturbed soil samples. The dry density was also determined for each of the undisturbed samples. The dry density was determined in pounds per cubic foot and the field moisture content was determined as a percentage of the dry weight of the soil. Both results are shown on boring logs.

Consolidation Tests

Settlement predictions of the soil's behavior under load were made on the basis of the consolidation tests which are performed in general accordance with ASTM D-2435 procedures. The Consolidation apparatus is designed to receive a one inch high ring.

Expansion Characteristics

Laboratory expansion tests were performed on a near surface soil sample in general accordance with ASTM D-4829 procedures.

Direct Shear Test

Direct Shear test was performed in the Direct Shear Test Machine which is of the strain control type in general with ASTM D-3080 procedure. Each sample was sheared under varying pressures normal to the face of the specimen to determine the shear strength (cohesion and angle of internal friction). Samples were tested in a submerged condition. The result is plotted on the "Direct Shear Test Graph."

GEOTECHNICAL CONDITIONS

Earth Materials

The site consists of top native soils (alluvium) classified as brown-orange, sandy silt, moderately dense, moist with coarse sand & gravel that is found all the way to a depth of 50 feet. A more detailed description of the earth materials encountered is presented on the log borings in Appendix 'B'. The boring locations are presented on the log borings in Appendix 'A'. The soil strata as the boring logs represents the soil conditions in the actual boring locations other variations may occur between the borings. Lines of demarcation represent the approximate boundary between the soil types, but the transition may be gradual.

Groundwater

Groundwater was encountered in the exploratory borings during our subsurface exploration. Based upon our previous investigation in the site vicinity, the groundwater depth is expected to be between 32 to 38 feet below existing surface. Please refer to the referenced boring log B-1A.

Seismicity

The frequency of earthquake and intensity of seismic ground shaking to be expected at the site depends upon which fault produces the earthquake, the earthquake magnitude and the distance to the epicenter.

Nearby active fault lines are the Elsinore-Glen Ivy and Elsinore-Temecula, these have associated postulated, maximum probable earthquake magnitudes of 6.8. In turn, the probabilistic ground motion acceleration range upwards to $\pm$ 0.84g. The related California Building Code factors include the type B, Elsinore-Glen Ivy Fault the near source zone at 5.0 kilometers towards the south-west and a soil profile type of alluvium or Sd.

Based on the California Building Code acceptance of some structural damage without collapse, the subject development may be designed in accordance with the seismic formulas and requirements presented in the latest version of the California Building Code (CBC 2019). It is the responsibility of the project structural engineer to utilize the critical seismic factors to be used for building design and to implement the applicable sections of the code.

Liquefaction

A liquefaction analysis was performed to verify the susceptibility to liquefaction at the subject location due to no current data in existence to verify liquefaction potential in the area. **Our analysis has determined that subject property is NOT susceptible to liquefaction.** Please reference the liquefaction analysis report attached to this report (Appendix 'D').

CONCLUSIONS

- The plan construction and development of the site is considered feasible from a geotechnical engineering point of view provided the engineering recommendations of this report are followed.
- The surface and the subsurface soil on the site will be adequate for the support of the structure and any fill soils proposed for the site.
- The proposed structure, grading, and development of the site will not cause adverse safety hazards or instability to the adjacent properties or their structures.
- Conversely, the adjacent properties or their structures will not cause adverse safety hazards or instability to the planned development.
- Laboratory expansion test indicate that the soils on the site have low expansion potential.
- The site is not susceptible to liquefaction.

RECOMMENDATIONS

Rough Grading Recommendation

The following recommendations may need to be modified and/ or supplemented during rough grading as field conditions necessitate. All earthwork and grading shall be performed in accordance with the recommendations presented herein, and in accordance with all applicable requirements of the Grading Code of the County of Riverside, California.

The proposed building areas should be overexacavated to a depth of 4 .0 feet below the existing soil grade, or 2.0 feet below the proposed footing bottoms, whichever is greater. Where possible, the limits of overexcavation for building areas shall extend at least 5.0 feet beyond the proposed building limits or to the property line whichever is less. The excavated soils free from debris or other organic may be replaced as a certified compacted fill. The depth of the excavations will be determined by the soil engineer during grading and construction, based on the previously placed un-certified fill.

The competency of the exposed overexcavation bottoms must be determined by the soil engineer or his representative at the time they are exposed and prior to scarification or placement of fill. All overexcavation bottoms and any areas to receive fill shall be scarified a minimum of 6 inches, watered or aerated as necessary to achieve optimum moisture content, and properly compacted to at least 90% of maximum dry density prior to filling.

For the purpose of estimating earthwork quantities, a shrinkage factor of 15% (0.15) may be assumed for the existing near surface on-site soil to be used as fill and compacted to 90% of maximum dry density. Subsidence due to grading is estimated to be .1 feet.

Any soil to be placed as fill, whether natural or import, shall be approved by the soil engineer or his representative prior to their placement. The fill material shall be free from vegetation, organic material or debris. Import soil shall be no more expansive than the existing near surface soils on the site.

Suitable fill soil shall be placed in horizontal lifts not exceeding 6 inches in thickness after compaction and uniformly watered or aerated to obtain optimum moisture content. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to ensure uniformity of the soil and optimum moisture in each layer. After each lift has been placed, it shall be thoroughly compacted to not less than 90% of maximum dry density.

The soil engineer or his representative shall observe the placement of fill and should take sufficient tests to verify the moisture content and the uniformity and degree of compaction obtained. In-place density testing should be performed in accordance with ASTM acceptable to the local building authority. The optimum moisture content and the maximum dry density for compacted soils shall be determined in accordance with ASTM D-1557 procedures.

Due to the possibility of imported fill soil in the building areas and / or variable soil strata that may be exposed in the building pad, typical soil samples should be obtained at completion of rough grading for laboratory testing to confirm the expansion characteristics of the graded site.

FOUNDATION DESIGN RECOMMENDATIONS

Building Footing

- The footings for the proposed building should be founded into certified compacted fills and minimum 24 inches below lowest adjacent finished grade.
- Continuous footing should be reinforced with at least two (2) #4 rebars at the top and at the bottom of the footing in order to minimize the effects of any minor variations in the engineering characteristics in the supporting soils.
- All pad footings should be a minimum of 24 inches square by 24 inches in depth.

Canopy Footings

- The footings for the proposed canopies_should be penetrated into the competent native soils. The preliminary design indicates the size of the foundation to be 5.0 feet in diameter and 8.0 to 10 feet in depths. The project Architect / or Structural Engineer shall determine actual footing widths, depths and reinforcements necessary to resist design vertical, horizontal and uplift forces.

Allowable Soil Bearing Capacities

Based on the field and laboratory test data, **an allowable soil bearing value of 2000 psf is recommended for the design of the continuous and spread footings for the proposed building.** A 1/3 increase in the above bearing value may be used when considering short term loading from wind or seismic sources. **A maximum allowable soil bearing value of 4500 psf is recommended for the design of canopy footings embedded into competent native soils**. A factor of safety of 3 was used in calculation of the soil allowable bearing capacity.

Settlement

Using the recommended bearing value and the maximum assumed wall and column loads, the total settlement is estimated to be 0.5 inches . The differential settlement is estimated to be on the order of 0.25 inches, between similarly loading footing of the same size, over a minimum horizontal distance of 30 feet.

Lateral Bearing Pressure

Additional soil design parameters that may be pertinent to the design and development based on undisturbed natural soil or properly compacted fill are as follows:

- Allowable lateral soil pressures using a factor of safety of 3 (Equivalent Fluid Pressure) Passive case: 300 psf/ft.
- Allowable Coefficient of Friction between concrete and soil: 0.30

Seismic Design

In accordance with the ASCE 7-16 the structural design should consider the following design parameters:

Site Latitude: 33.702551 degree

Site Longitude:117.3264077degree

Site Class: Default

Short Period Site Coefficient- **Fa: 1.2**

Long Period Site Coefficient- **Fv: Null**

Mapped Spectral Response Acceleration-Short Period: (0.2 sec)-**Ss: 1.977**

Mapped Spectral Response Acceleration-Short Period: (1 sec)**-S1: 0.708**

Adjusted Spectral Response Acceleration-Short Period: (0.2 sec)-**Sms: 2.372**

Adjusted Spectral Response Acceleration-Short Period: (1 sec)-**Sm1**: **Null**

Design Spectral Response Acceleration-Short Period: (0.2 sec)-**Sds**: **1.581**

Design Spectral Response Acceleration-Short Period: (1 sec)-**Sd1**: **Null**

FLOOR SLAB RECOMMENDATIONS

Concrete slabs should be constructed in accordance with the following section.

Floor slabs should be a minimum of 4 inches thick. Floor slabs should be reinforced with # 3 rebars at 18- inches on centers.

Concrete slabs should be underlain with a minimum 6 mil polyvinyl chloride membrane vapor retarder with a minimum overlap of 12 inches in all directions. This membrane should be sandwiched between two, two-inch layers of sand.

The slab subgrade should be moisture conditioned to near optimum moisture content condition to a depth of 12 inches immediately prior to placement of the moisture barrier or pouring concrete.

CEMENT TYPE

A very low exposure to sulfate can be expected for concrete placed in contact with on site soil and native material. Therefore, based on the CBC no special cement will be required for concrete in contact with these materials.

Sample	**PH**	Soluble Sulfates per CA 417 (PPM)	**Soluble Sulfates per CA 422 (PPM)**	**Minimum Resistivity per CA 643 (ohm-cm)**
#1	6.0	20	45	2600

RETAINING WALL RECOMMENDATIONS

Retaining walls if planned should be designed to resist the active pressures summarized in the following table. The active pressure is no rmally calculated from the lowermost portion of the footing to the highest ground surface at the back of the wall, including necessary factors for sloping ground. The active and passive pressures indicated in the table are equivalent fluid densities. Walls that are not free to rotate or that are braced at the top should use active pressures that are 50% greater than those indicated in the table. Retaining wall design for passive resistance should neglect the top foot of earth in front of the wall.

Retaining Wall Design Parameters

Equivalent Fluid Pressures

Slope of adjacent ground	**Active Pressure backfill with low expansive soil.**
Level	30 pcf
2:1	45 pcf

The pressures shown on above table are for retaining walls backfilled with non-cohesive granular materials available on the site, and provided with drainage devices such as weep holes or subdrains to prevent the build-up of hydrostatic pressures beyond the design values. Also, it is strongly recommended that all backfill material be compacted to a minimum of 90 percent relative compaction, as this is the density from which the pressure are calculated. This recommendation cannot be overemphasized.

TEMPORARY CONSTRUCTION CUTS

Temporary construction cuts for retaining walls, foundations, utility trenches, etc., in excess of 5 feet in depth should cut back into an inclination not steeper than 1:1 (horizontal to vertical). Where more restrictive, the safety requirements for excavations contained in the State Construction Safety Orders enforced by the State Division of Industrial Safety (CAL-OSHA) and or the safety codes of the local agency having jurisdiction over the project shall apply. All excavations shall be initially observed by the geotechnical engineer or his representative to verify the recommendations presented or to make any additional recommendations necessary to maintain stability.

TRENCH BACKFILL

Trench excavations for utility lines which extend under building and paved areas are within the zone of influence of adjacent foundations shall be properly backfilled and compacted in accordance with the following recommendations.

The pipe should be bedded and backfilled with clean sand or approved granular soil (minimum Sand Equivalent Value of 30) to a depth of at least 1 foot over the pipe. This backfill should be uniformly watered and compacted to a firm condition.

The remainder of the backfill should be on-site soil or very low to low expansive import soil, which should be placed in loose lifts not exceeding 12 inches in thickness, watered or aerated to optimum moisture content, and mechanically compacted to at least 90% of maximum dry density as determined by ASTM D-1557 procedures. Water jetting of the backfill is not allowed.

PAVEMENT RECOMMENDATIONS

For preliminary design purposes, the typical soil anticipated in the subgrade will consist of fine silty sand. Based on this soil type (silty sand), a conservative R-Value of 50 may be estimated for preliminary design of the pavement section. The actual R-Value of the subgrade soil should be tested and verified at the time of construction. The following are our preliminary recommendations for the structural pavement section calculated in general accordance with Caltrans procedures and based on the estimated R-Value and the Traffic Indexes (TI's).

Site Area	Traffic Index	R-value	Pavement Section
Parking	4.5	50	3" A.C. over 4.5" Class II Base
Vehicle Drive Area	5.5	50	4" A.C. over 6" Class II Base
Heavy Truck Area	6.5	50	4" A.C. over 6.0" Class II Base

As an alternative to asphaltic concrete pavement, Portland Cement Concrete (PCC) pavement may be utilized. Concrete driveway and parking slabs shall be at least 5 inches thick and provided with saw cuts or expansion joints every 10 feet or less. The reinforcing shall consist with No. 3 bars spaced 24 inches on centers, both ways. Concrete pavement should be underlain by a minimum 4 inches of base course. The concrete should have a 28-day concrete strength of at least 2500 psi.

To reduce the potential of unsightly cracking concrete pavement for sidewalk and hardscape should be at least 4 inches thick and provided with saw cuts or expansion joints every 6 feet or less.

Subgrade soils should e overexcavated, scarified and compacted to at least 90% + of laboratory maximum dry density as recommended in the previous section of rough grading. Base course should be compacted to at least 95% + of laboratory maximum dry.

PLAN REVIEW

Subsequent to formulation of final development plans and specifications but prior to construction, grading and foundation plans should be reviewed by Geo Environ to verify compatibility with site geotechnical conditions and conformance with recommendations contained herein.

CONSTRUCTION OBSERVATIONS

All rough grading of the property shall be performed under engineering observation of Geo Environ.

Geo Environ shall observe all rough grading, foundation excavations, utility trenches backfill subgrade, and base compaction. Observations should be made prior to installation of concrete forms and reinforcing steel in order to verify or modify, if necessary, conclusions and recommendations in this report.

CLOSURE& LIMITATIONS

The findings, conclusions, and recommendations presented reflect our best estimate of subsurface conditions based on the data obtained from a limited subsurface exploration performed during the field study. The conclusions and recommendations are based on generally accepted geotechnical engineering principles and practices. No further warranties are implied nor made.

Due to the possible variability of soil and subsurface conditions within the site, conditions may be encountered during grading and development that may differ from those presented herein. Should any variation or unusual condition become apparent during grading and development, this office should be contacted to evaluate these conditions prior to continuation of work and necessary_revisions to the recommendations.

This office should be notified if changes of ownership occur or if the final plans for the site development indicate structures areas, type of structures, or structural loading conditions differing from those presented in this report.

If the site is not developed or grading does not begin within 12 months following the date of this report, further studies may be required to ensure that the surface or subsurface conditions have not changed.

Any charges for necessary review or updates will be at the prevailing rate at the time the review work is performed.

TECHNICAL REFERENCES

1. California Building Code 2019 foundation design parameters
2. County of Riverside Building and Grading Code
3. USGS, Ground Acceleration from Earthquakes
4. USGS, Seismic Design Values for Buildings
5. California Division of Mines and Geology (CDMG), Seismic Hazard & Liquefaction Evaluation
6. Geotracker- Historic Groundwater Data

OSHPD

New Service Station

28771 Central Ave, Lake Elsinore, CA 92532, USA

Latitude, Longitude: 33.70255119999999, -117.3264077

Date	9/14/2020, 9:57:07 AM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Default (See Section 11.4.3)

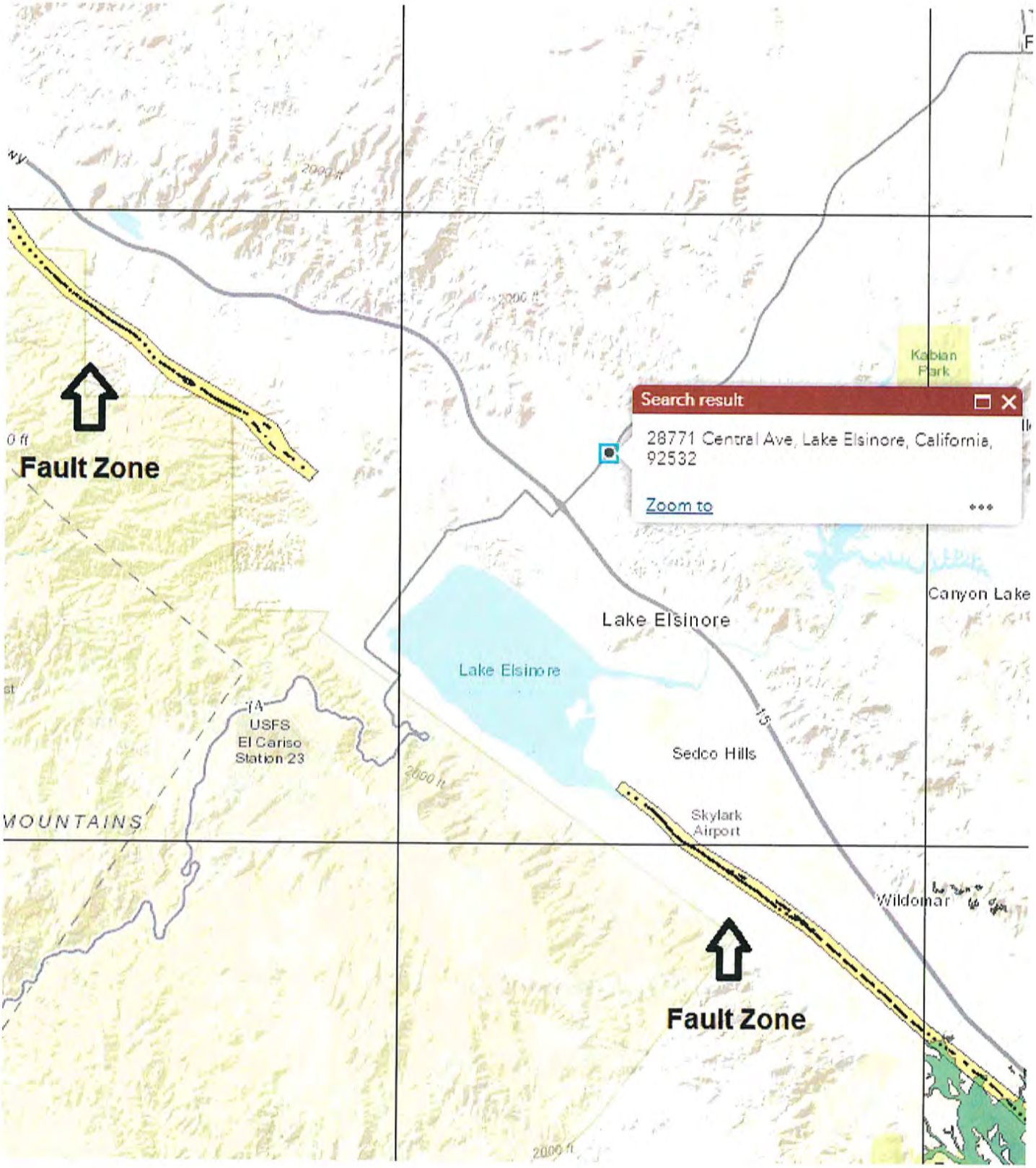
Type	Value	Description
S_S	1.977	MCE_R ground motion. (for 0.2 second period)
S_1	0.708	MCE_R ground motion. (for 1.0s period)
S_{MS}	2.372	Site-modified spectral acceleration value
S_{M1}	null -See Section 11.4.8	Site-modified spectral acceleration value
S_{DS}	1.581	Numeric seismic design value at 0.2 second SA
S_{D1}	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

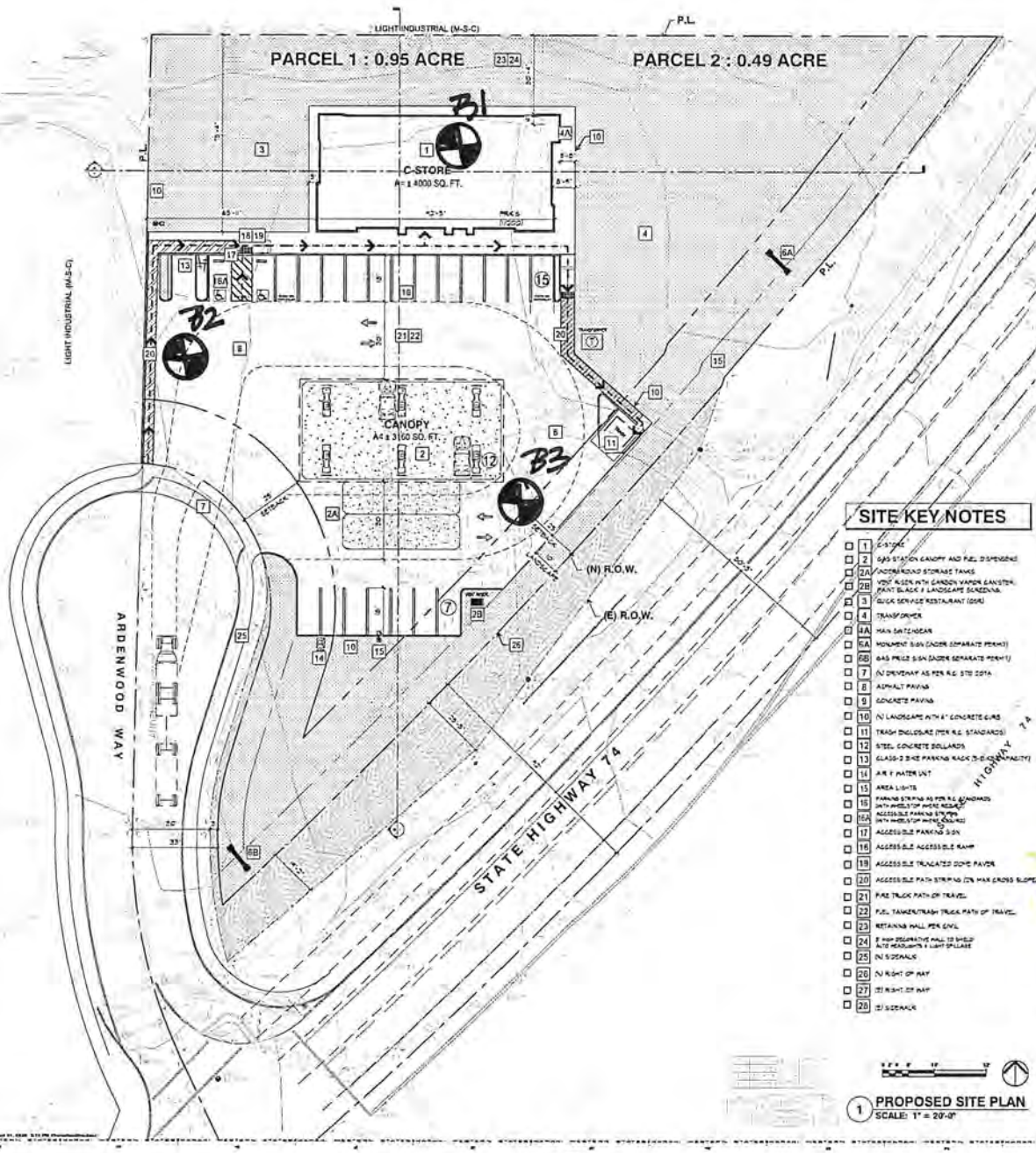
Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
F_a	1.2	Site amplification factor at 0.2 second
F_v	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.838	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	1.006	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	1.977	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	2.179	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	2.01	Factored deterministic acceleration value. (0.2 second)
S1RT	0.708	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.786	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
S1D	0.792	Factored deterministic acceleration value. (1.0 second)
PGAd	0.848	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.907	Mapped value of the risk coefficient at short periods

APPENDIX A

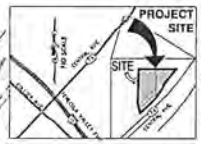
DRAWINGS

SUBJECT PROPERTY
Lindell Rd
Nichols Rd
Riverside St
Eucalyptus Ave
WARM SPRINGS VALLEY
Corona Fwy
Conard Ave
Rosetta Canyon Dr
Collier Ave
Baker St
NORTH ELSINORE
Kee Ave
2nd St
W Minthorn St
Chaney St
Davis St
Lakeshore Dr
Scrivener St
N Lindsay St
N Langstaff St
N Spring St
N Ellis St
E Hill St
Temecula Valley Fwy
Lake Elsinore
Mill St


Search result
28771 Central Ave, Lake Elsinore, California, 92532
Zoom to
Fault Zone
Fault Zone
Lake Elsinore
Lake Elsinore
Canyon Lake
Sedco Hills
Skylark Airport
Wildomar
USFS
El Cariso
Station 23
MOUNTAINS
Kabian Park
15
2000 ft



VICINITY MAP



LEGEND

- NO. OF PARKING SPACES
- ACCESSIBLE PARKING
- PROPERTY LINE
- PROPOSED PARCEL SUBDIVISION
- ADA PATH OF TRAVEL
- CONCRETE PAVING AREA
- DECORATIVE PAVING AREA
- LANDSCAPED AREA
- DIRECTIONAL ARROW
- R.O.W. DEDICATION
- AREA LIGHTS
- WALL MOUNTED DECORATIVE AREA LIGHTS
- (E) FIRE HYDRANT
- (E) SEWER MANHOLE
- (E) SEWER CLEANOUT
- (E) POWER POLE
- WM (E) WATER METER
- (E) WATER POINT
- (E) SIGN

SCOPE OF WORK

PROPOSED DEVELOPMENT

- PROPOSED GAS STATION CONSISTING OF:
- ONE CONVENIENCE STORE (WITH TYPE 20-ABG)
- FUELING CANOPY WITH SIX MULTI-PRODUCT DISPENSERS
- TWO UNDERGROUND STORAGE TANKS

PROJECT DATA

ZONING LIGHT INDUSTRIAL
LAND USE MANUFACTURING-SERVICE COMMERCIAL
AREA OF SITE (GROSS ACREAGE)
TOTAL AREA = ± 62,726 S.F. (1.44 acre)

BLDG SETBACKS	REQUIRED	PROVIDED
FRONT (SOUTH)	25'-0"	25'-0"
REAR (NORTH)	0'-0"	0'-0"
LEFT (WEST)	25'-0"	25'-0"
RIGHT (EAST)	0'-0"	0'-0"
LANDSCAPE AREA	10%	24,002 S.F. (38%)
FLOOR AREA RATIO	-	1.011
MAXIMUM HEIGHT	40'-0"	25'-0"
PARKING	59	51

SITE KEY NOTES

1. C-STORE
2. GAS STATION CANOPY AND FUEL DISPENSERS
2A. UNDERGROUND STORAGE TANKS
2B. VENT RISER WITH CARBON VAPOR CANISTER, PAINT BLACK & LANDSCAPE SCREENING
3. QUICK SERVICE RESTAURANT (DRIVE-THRU)
4. TRANSFORMER
4A. MAIN SWITCHGEAR
5A. MONUMENT SIGN (UNDER SEPARATE PERMIT)
5B. GAS PRICE SIGN (UNDER SEPARATE PERMIT)
7. (N) DRIVEWAY AS PER R.C. STD 207A
8. ASPHALT PAVING
9. CONCRETE PAVING
10. (N) LANDSCAPE WITH 6" CONCRETE CURB
11. TRASH ENCLOSURE (PER R.C. STANDARD)
12. STEEL CONCRETE BOLLARDS
13. CLASS 2 BIKE PARKING RACK (5 BIKE CAPACITY)
14. AIR & WATER UNIT
15. AREA LIGHTS
16. PARKING STRIPING AS PER R.C. STANDARDS (WITH IMPERVIOUS WHITE PAINT)
16A. ACCESSIBLE PARKING STRIPING (WITH IMPERVIOUS WHITE PAINT)
17. ACCESSIBLE PARKING SIGN
18. ACCESSIBLE ACCESSIBLE RAMP
19. ACCESSIBLE TRUNCATED DOME PAVER
20. ACCESSIBLE PATH STRIPING (2% MAX CROSS SLOPE)
21. FIRE TRUCK PATH OF TRAVEL
22. FUEL TANKER/TRASH TRUCK PATH OF TRAVEL
23. RETAINING WALL PER CIVIL
24. 8' HIGH DECORATIVE WALL TO SHIELD ADJACENT RESIDENTS & LIGHT SPILLAGE
25. (N) SIDEWALK
26. (N) RIGHT OF WAY
27. (E) RIGHT OF WAY
28. (E) SIDEWALK

1 PROPOSED SITE PLAN
SCALE: 1" = 20'-0"

BUILDING DATA

C-STORE	
AREAS	± 4,000 SF
OCCUPANCY	M
TYPE OF CONST	V-B
NUMBER OF STORY	1
BLDG HEIGHT	± 25'-0"
SPRINKLERS	NONE
CANOPY	
AREA	± 3,160 SF
OCCUPANCY	M
TYPE OF CONST	II-B
NUMBER OF STORY	1
BLDG HEIGHT	20'-0"
SPRINKLERS	NONE

TOTAL BUILDINGS AREA (GFA) ± 9,160 SF
± 0.15 ACRE (NET ACREAGE)

ASSESSOR'S PARCEL NUMBER

347-130-028 & 347-130-029

LEGAL DESCRIPTION

FIRST AMERICAN TITLE COMPANY
ORDER NO.: 0625-5758488
DATED: SEPTEMBER 11, 2018

LEGAL DESCRIPTION:
REAL PROPERTY IN THE UNINCORPORATED AREA OF THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCEL 3 OF PARCEL MAP 9983, AS SHOWN BY MAP ON FILE IN BOOK 59, PAGE 72 OF PARCEL MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

EXCEPTING THEREFROM A PORTION THAT GRANTS TO RIVERSIDE COUNTY TRANSPORTATION COMMISSION, A POLITICAL SUBDIVISION AS DESCRIBED IN DEED RECORDED OCTOBER 02, 2001 AS INSTRUMENT NO. 2001-478038 OF OFFICIAL RECORDS.

APN: 347-130-028

LEGAL DESCRIPTION:
ORDER NO.: 0625-5769283
DATED: SEPTEMBER 12, 2018

REAL PROPERTY IN THE UNINCORPORATED AREA OF THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCELS 4 OF PARCEL MAP 9983, AS SHOWN BY MAP ON FILE IN BOOK 59, PAGE 72, OF PARCEL MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE RIVERSIDE COUNTY TRANSPORTATION COMMISSION, BY GRANT DEED RECORDED OCTOBER 09, 2001 AS INSTRUMENT NO. 01-498277, OF OFFICIAL RECORDS OF SAID COUNTY.

ASSESSOR'S PARCEL NUMBER: 347-130-028
TOTAL AREA: 62,757.88 S.F. (1.441 ACRES)

PARKING COMPUTATION

PARKING STANDARDS

TYPE	SIZE
REGULAR	9'-0" X 18'-0"
COMPACT	8'-6" X 16'-0" (UP TO 20% OF TOTAL)
HANDICAP	17'-0" X 18'-0" (VAN ACCESSIBLE)

PARKING REQUIREMENTS

USE	FORMULA	REQUIRED	PROVIDED
C-STORE	(1/200 S.F.)	20	22
CANOPY		-	12
TOTAL PARKING		20	34

HANDICAP PARKING REQUIREMENTS

FORMULA	REQUIRED	PROVIDED
26-50 PARKING SPACES	(2)	(2)

CLEAN AIR/ELECTRIC VEHICLE PARKING

FORMULA		
SECTION 1118.045 R.C. MUN CODE	(2)	(2)

WITH 25-49 PARKING = 2 EV CHARGING SPACES

SOIL BORING

GEO ENVIRO
GEOTECHNICAL & ENVIRONMENTAL ENG. CONSULTAN
4071 E. La Palma Ave., St
Anaheim, CA 92807

KAR
WESTERN STATES E
A DESIGN-BUILD
4081 E. LA PALM
TEL: (714) 630-6400 FA

CONSULTANT SE

SUBMITTAL
NO. DESCRIPTION
1
2
3
4

REVISIONS
NO. DESCRIPTION
△
△
△
△
△

OWNER NAME & A
DAHER OIL I
19511 ESPERAN
YORBA LINDA C

PROJECT NAME &
GAS STATI
CONVENIENCE
25771 CENTRAL AVE
LAKE ELSINORE,

NOTE TO CONTRA

CONFIDENTIALITY

DESIGNED BY: WS
DRAWN BY: WS
CHECKED BY: JK
PLOT DATE: 8/
SCALE: AS
SHEET TITLE
PROPOSE
SITE PLAN

SHEET NUMBER
AS-1.

APPENDIX B

BORING LOGS

Project: C-Store	Project Number: 20-1057P	Client: Westerm States	Boring No. B-1
Address, City, State: 28771 Central Ave Lake Elsinore California		Drilling Contractor: Geo Environ	Drill Rig Type: HSA
Logged By: Fahad Masud	Started: 9:30 AM (4/26/2020)	Bit Type: N/A	Diameter: 2 feet
Drill Crew: N/A	Completed: 12:30 PM	Hammer Type: Automatic Trip Hammer	
USA Ticket Number: N/A	Backfilled:	Hammer Weight: 140 lb	Hammer Drop: 30 inches
	Groundwater Depth: 39 feet	Elevation:	Total Depth of Boring: 50 feet

Depth (feet)	Sample Type	Classification	Blow Counts (blows/foot)	Graphic Log		Dry Density (pcf)	Moisture Content (%)
2		SM	23		Brownish orange, sandy silt, slightly moist, w/ fine-med sand, dense, some gravel	92.3	6.1
5			29			109.9	6.9
10			41		Brownish red, mod. dense, sandy silt, moist, w/ fine-medium coarse sand with gravel	117.4	8.7
15			30			110.1	9.2
20			46			114.9	9.6
25			44			120.1	9.4
30			37		Olive-brown, sandy silt, moist, w/coarse gravel, medium dense	113.7	13.7
35			24			108.4	15.6
40			50/6"		Olive-brown, **sandy silt**, wet, w/ coarse sand and gravel, very dense	120.8	19.9
45			50/6"			122.7	20.4
50			50/6"			121.9	20.6

Standard Penetration Slit Spoon Sampler (SPT)
California Sampler
Shelby Tube
CPP Sampler
Bulk/ Bag Sample
Stablized Ground water
Groundwater At time of Drilling

Project: C-Store	Project Number: 20-1057P	Client: Westerm States	Boring No. B-2
Address, City, State: 28771 Central Ave Lake Elsinore California		Drilling Contractor: Geo Environ	Drill Rig Type: HSA
Logged By: Fahad Masud	Started: 9:30 AM	Bit Type: N/A	Diameter: 2 feet
Drill Crew: N/A	Completed: 12:30 PM	Hammer Type: Automatic Trip Hammer	
USA Ticket Number: N/A	Backfilled:	Hammer Weight: 140 lb	Hammer Drop: 30 inches
	Groundwater Depth: N/A	Elevation:	Total Depth of Boring: 15 feet

4/26/2020

Depth (feet)	Sample Type	Classification	Blow Counts (blows/foot)	Graphic Log		Dry Density (pcf)	Moisture Content (%)
2		SM	21		Brownish orange, **sandy silt**, slightly moist, w/ fine-med sand, dense	91.9	6.6
5			25			108.7	7.2
10			46		Orange-brown, sandy silt, moist, w/ coarse sand and gravel, moderately dense	116.8	8.8
15			29			111.1	9.4
20							
25							
30							
35							
40							
45							
50							

Standard Penetration Slit Spoon Sampler (SPT)
California Sampler
Shelby Tube
CPP Sampler
Bulk/ Bag Sample
Stabllized Ground water
Groundwater At time of Drilling

Project: C-Store	Project Number: 20-1057P	Client: Westerm States	Boring No. B-3
Address, City, State: 28771 Central Ave, Lake Elsinore, California		Drilling Contractor: Geo Environ	Drill Rig Type: HSA
Logged By: Fahad Masud	Started: 9:30 AM (4/26/2020)	Bit Type: N/A	Diameter: 2 feet
Drill Crew: N/A	Completed: 12:30 PM	Hammer Type: Automatic Trip Hammer	
USA Ticket Number: N/A	Backfilled:	Hammer Weight: 140 lb	Hammer Drop: 30 inches
	Groundwater Depth: N/A	Elevation:	Total Depth of Boring: 15 feet

Depth (feet)	Sample Type	Classification	Blow Counts (blows/foot)	Graphic Log		Dry Density (pcf)	Moisture Content (%)
2		SM	17		Reddish brown, sandy silt, slightly moist, w/ fine-med sand, dense	93.9	6.3
5			28			110.4	7.9
10			48		Reddish-brown, sandy silt, moist, w/ coarse sand and gravel, moderately dense	118.6	9.0
15			24			110.7	8.4
20							
25							
30							
35							
40							
45							
50							

Standard Penetration Slit Spoon Sampler (SPT)
California Sampler
Shelby Tube
CPP Sampler
Bulk/ Bag Sample
Stabllized Ground water
Groundwater At time of Drilling

APPENDIX C

LABORATORY TEST RESULTS

EXPANSION CHARACTERISTICS
(ASTM D-2435)

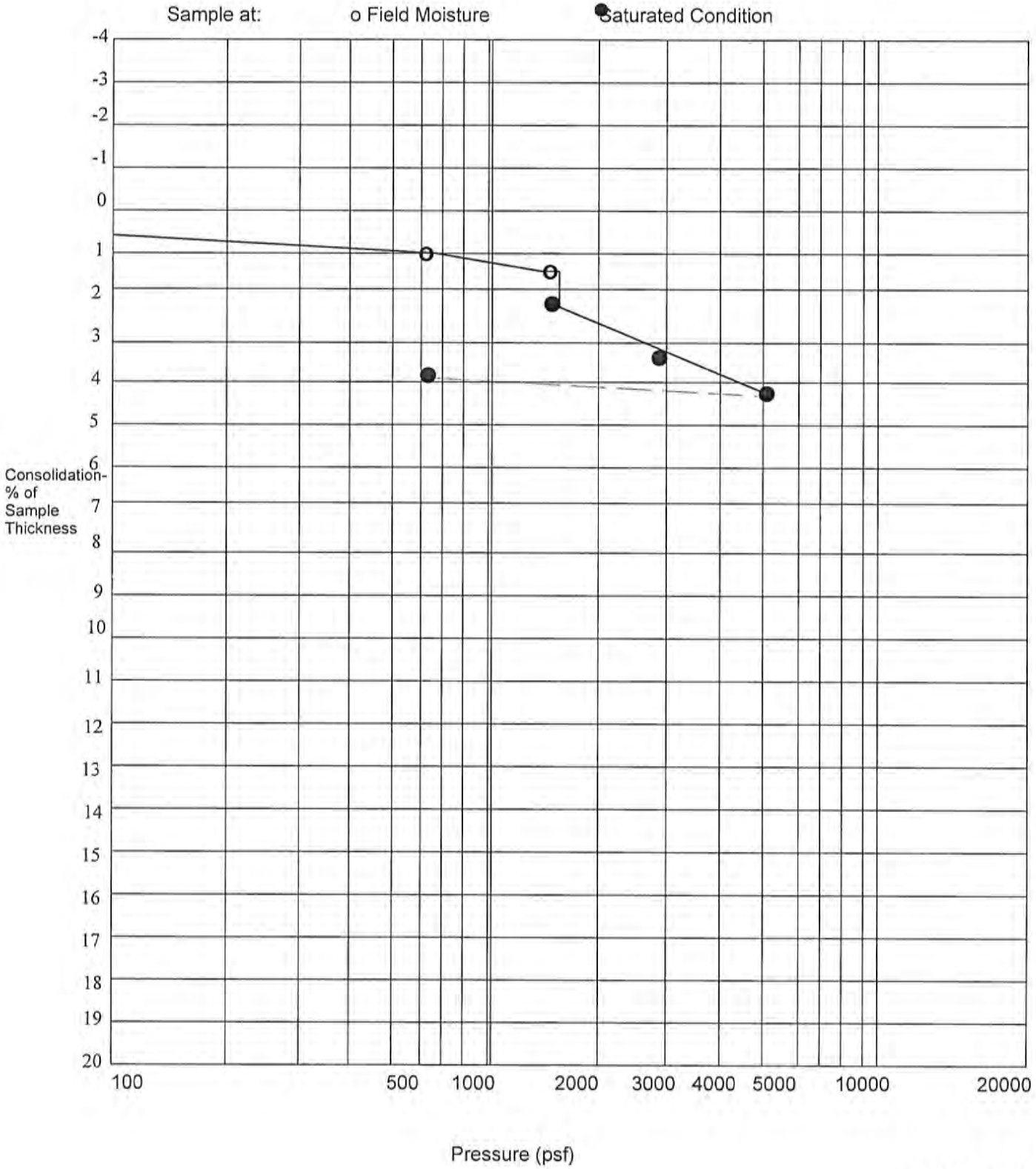
0-21	Very Low
21-50	Low
51-90	Medium
91-130	High
131+	Very High

Sample	Soil Type	Expansion Index	Expansion Classification
B1 @ 0-5'	Fine Sandy Silt	12	Low

MAXIMUM DRY DENSITY
(ASTM D1557)

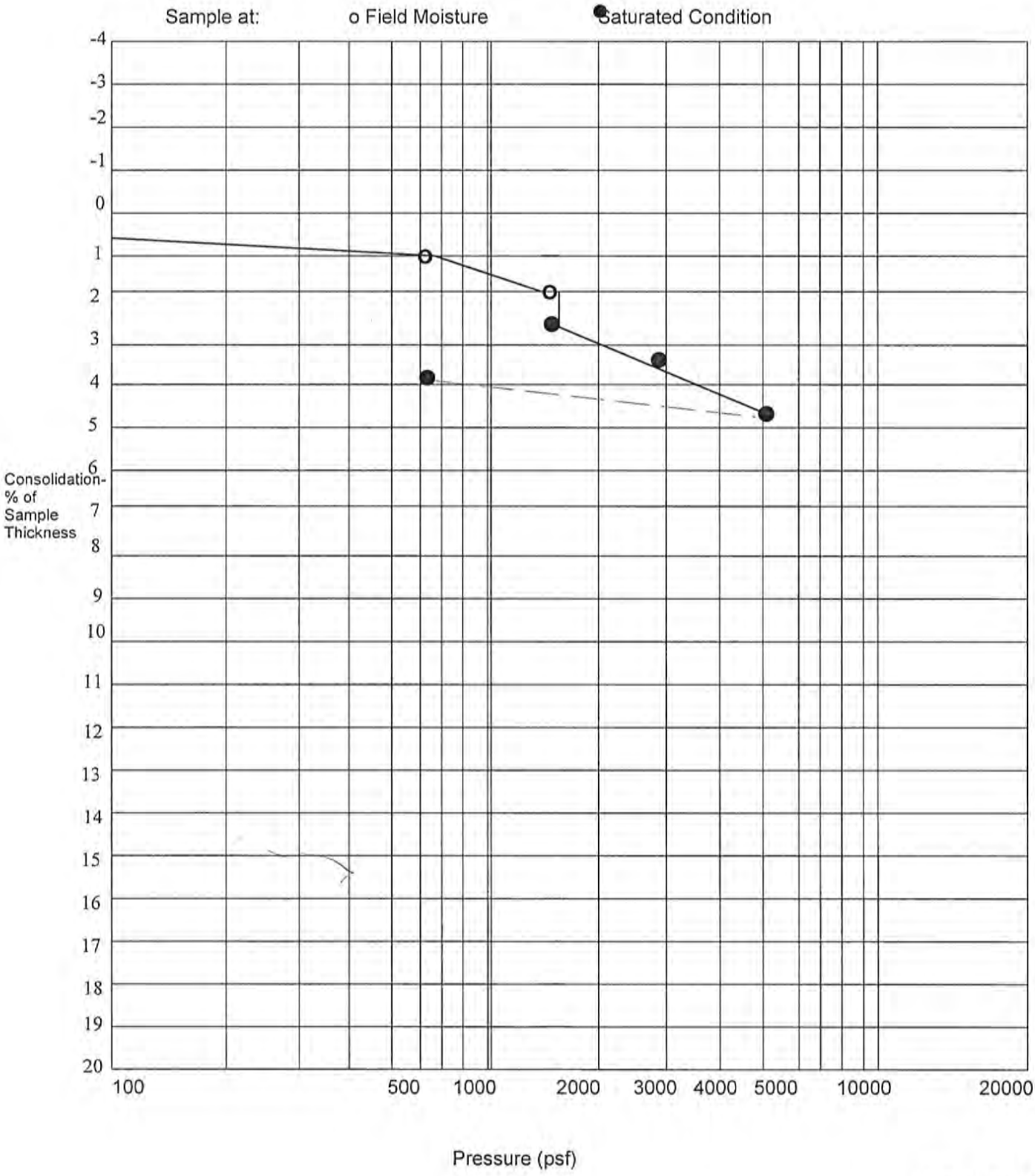
Sample		Max. Density (pcf)	Opt. Mois.(%)
B1 @ 0-5'	Fine Sand and Silt	120.0	12.5

PROJECT NO: 20-1057P
CLIENT: WS Eng.
JOB ADDRESS: 28771 Central Ave, Lake Elsinore
SAMPLE ID: B-1 @ 5'
SOIL CLASS: Fine Sandy Silt
TECH: F.M.
DATE: 9/4/20



GEO ENVIRON

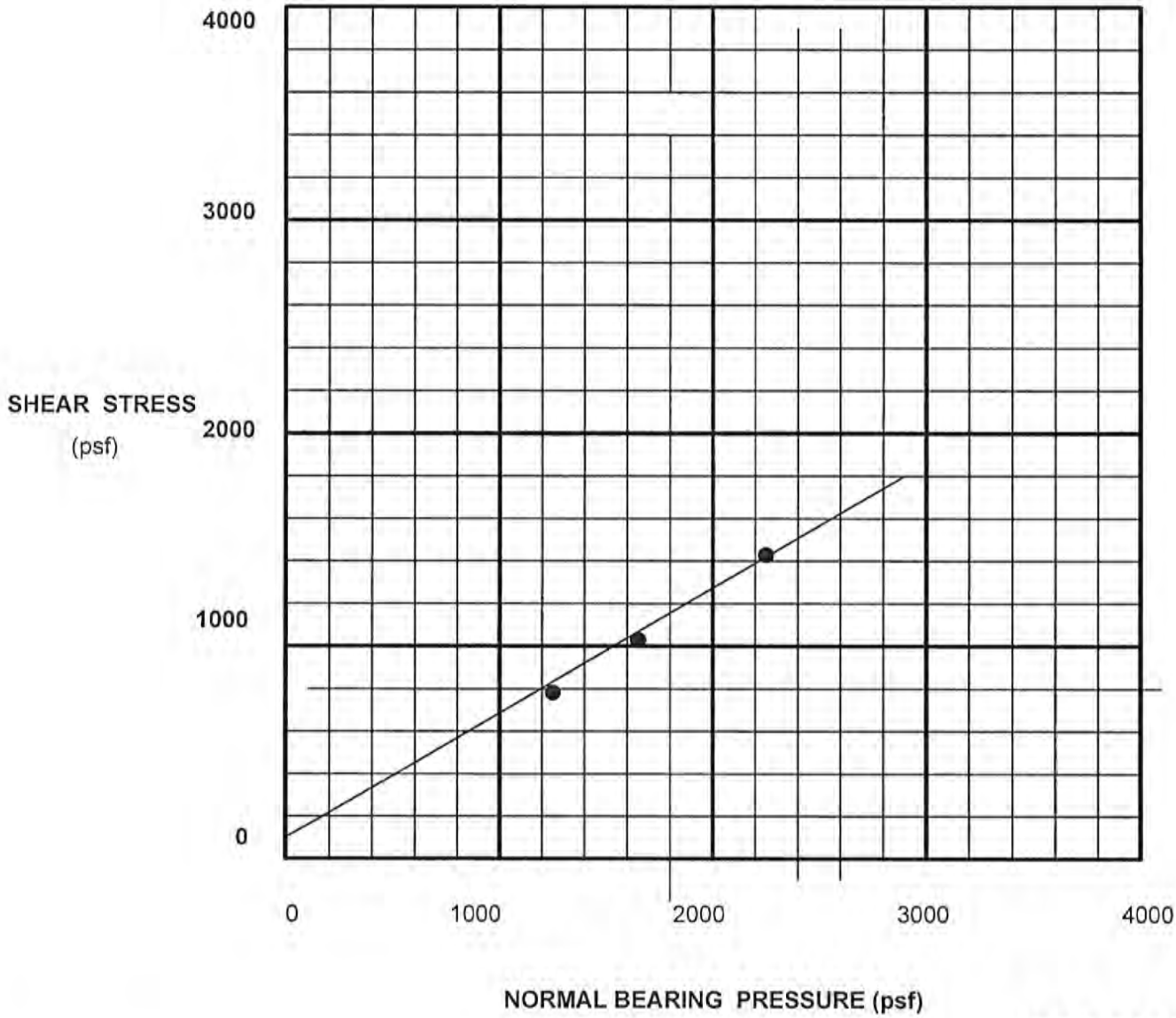
PROJECT NO: 20-1057P
CLIENT: WS Eng.
JOB ADDRESS: 28771 Central Ave, Lake Elsinore
SAMPLE ID: B-2 @ 5'
SOIL CLASS: Fine Silty Sand
TECH: F.M.
DATE: 9/5/20



GEO ENVIRON

DIRECT SHEAR TEST

DATE: 9/4/20
JOB NO: 20-1057P
CLIENT: WS Eng.
JOB ADDRESS: 28771 Central Ave, Lake Elsinore
SAMPLE ID: B- 2 @ 2.5
SOIL CLASS: Sandy Silt
MOIS. CONTENT: 7.2
DRY DENSITY: 108.7
Sample Type: Un-Disturbed
STRAIN RATE: 0.002 in/min
SHEAR STRENGTH: Ultimate
ANGLE OF FRICTION : 30 deg.
COHESION (psf): 75

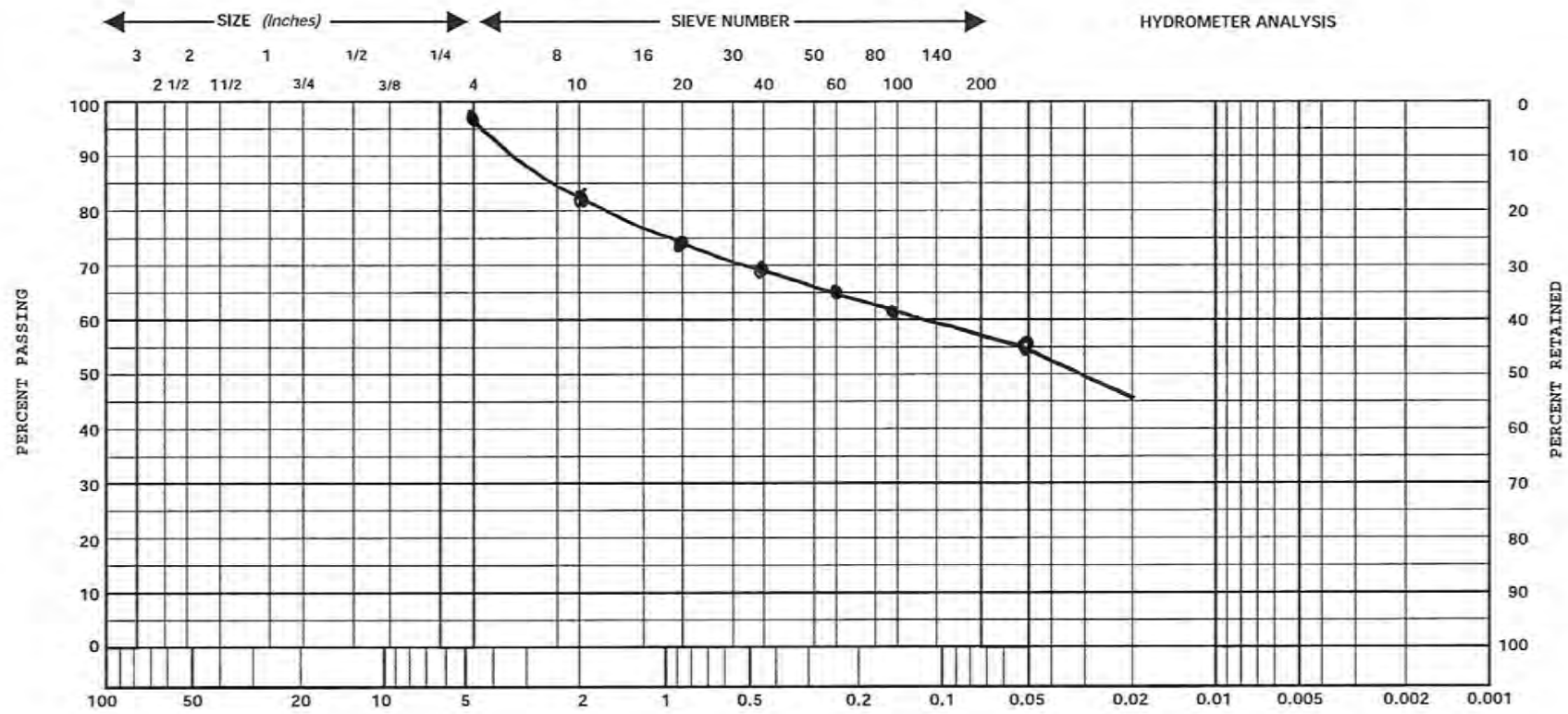


GEO ENVIRON

GRAIN SIZE DISTRIBUTION GRAPH - AGGREGATE GRADATION CHART

1. PROJECT	2. DATE
WS Eng. 28771 Central Ave, Lake Elsinore, LACO,	9/4/20

SIEVE ANALYSIS - US STANDARD SIEVE SIZES



EXCAVATION NUMBER	SAMPLE NUMBER	LL	PL	PI	Cu (D_{60}/D_{10})	Cc ($(D_{30})^2/(D_{60} \times D_{10})$)	SOIL DESCRIPTION/REMARKS	CLASSIFICATION (USCS)
B-1 @ 15							Fine Sandy silt	ML

3. TECHNICIAN *(Signature)*	4. PLOTTED BY *(Signature)*	5. CHECKED BY *(Signature)*
F.M.		J.M.

DD FORM 1207, DEC 1999 PREVIOUS EDITION IS OBSOLETE.

Adobe Professional 7.0

APPENDIX D

LIQUEFACTION ANALYSIS

GEOLOGISMIKI
Geotechnical Software

SPT BASED LIQUEFACTION ANALYSIS REPORT

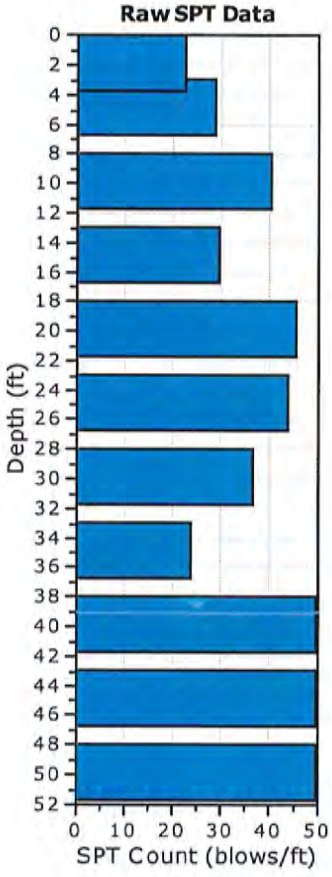
Project title : Karaki Western States 20-1057

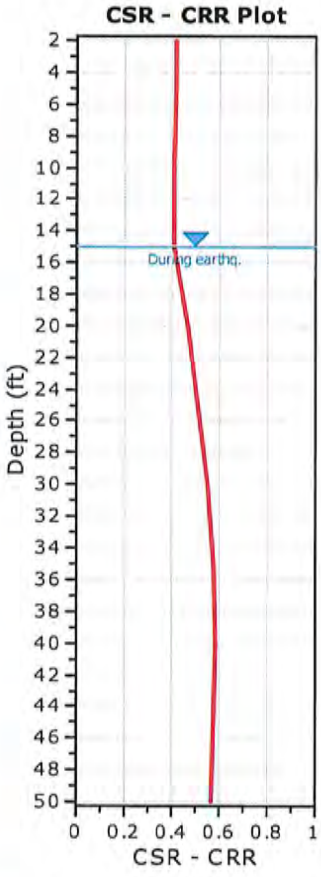
SPT Name: SPT #1

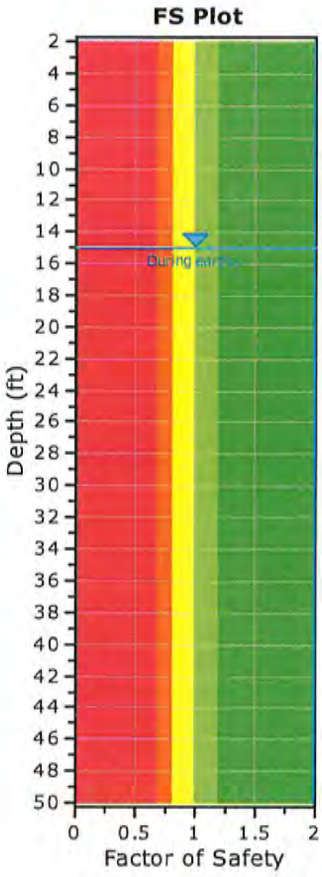
Location : 28771 Lake Elsinore, CA

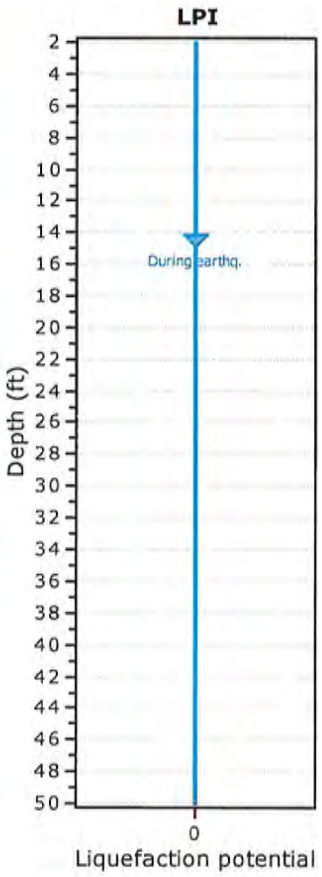
:: Input parameters and analysis properties ::

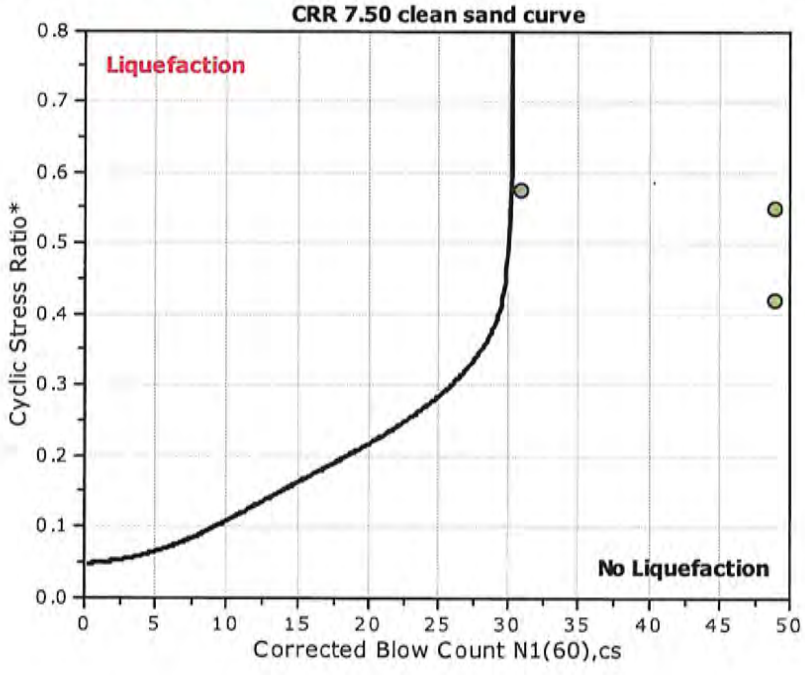
Analysis method:	NCEER 1998	G.W.T. (in-situ):	39.00 ft
Fines correction method:	NCEER 1998	G.W.T. (earthq.):	15.00 ft
Sampling method:	Standard Sampler	Earthquake magnitude M_w:	6.80
Borehole diameter:	150mm	Peak ground acceleration:	0.83 g
Rod length:	5.00 ft	Eq. external load:	0.00 tsf
Hammer energy ratio:	1.20		











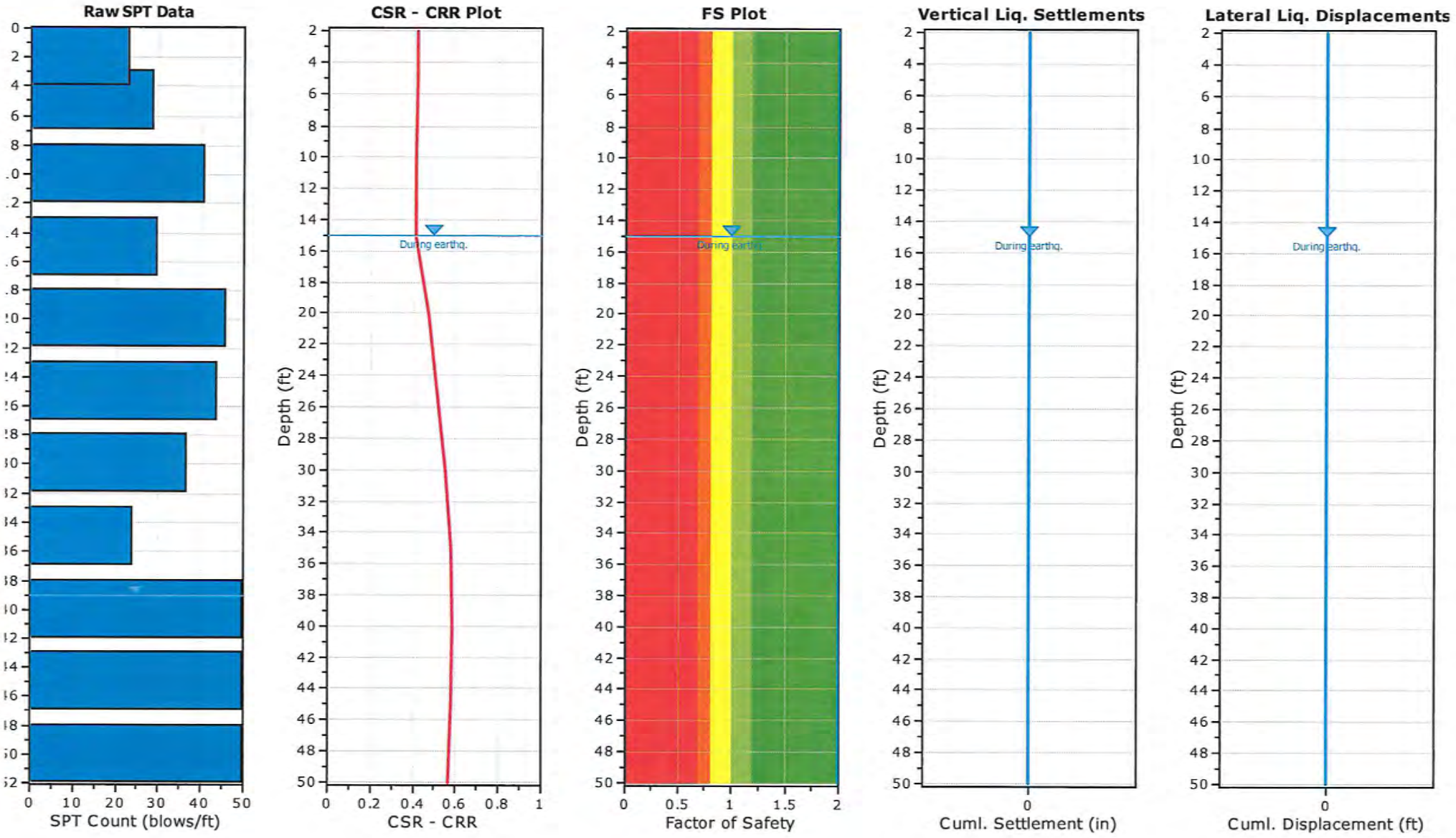
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

verall Liquefaction Assessment Analysis Plots ::



:: Field input data ::

Test Depth (ft)	SPT Field Value (blows)	Fines Content (%)	Unit Weight (pcf)	Infl. Thickness (ft)	Can Liquefy
2.00	23	51.00	92.30	5.00	Yes
5.00	29	51.00	109.90	5.00	Yes
10.00	41	51.00	117.40	5.00	Yes
15.00	30	52.00	110.10	5.00	Yes
20.00	46	52.00	114.90	5.00	Yes
25.00	44	52.00	120.10	5.00	Yes
30.00	37	53.00	113.70	5.00	Yes
35.00	24	53.00	108.40	5.00	Yes
40.00	50	55.00	120.80	5.00	Yes
45.00	50	55.00	122.70	5.00	Yes
50.00	50	55.00	121.90	5.00	Yes

Abbreviations

Depth: Depth at which test was performed (ft)
SPT Field Value: Number of blows per foot
Fines Content: Fines content at test depth (%)
Unit Weight: Unit weight at test depth (pcf)
Infl. Thickness: Thickness of the soil layer to be considered in settlements analysis (ft)
Can Liquefy: User defined switch for excluding/including test depth from the analysis procedure

:: Cyclic Resistance Ratio (CRR) calculation data ::

Depth (ft)	SPT Field Value	Unit Weight (pcf)	σ_v (tsf)	u_o (tsf)	σ'_{vo} (tsf)	C_N	C_E	C_B	C_R	C_S	$(N_1)_{60}$	Fines Content (%)	α	β	$(N_1)_{60cs}$	$CRR_{7.5}$
2.00	23	92.30	0.09	0.00	0.09	1.70	1.20	1.05	0.75	1.00	37	51.00	5.00	1.20	49	4.000
5.00	29	109.90	0.26	0.00	0.26	1.52	1.20	1.05	0.75	1.00	42	51.00	5.00	1.20	55	4.000
10.00	41	117.40	0.55	0.00	0.55	1.28	1.20	1.05	0.85	1.00	56	51.00	5.00	1.20	72	4.000
15.00	30	110.10	0.83	0.00	0.83	1.11	1.20	1.05	0.95	1.00	40	52.00	5.00	1.20	53	4.000
20.00	46	114.90	1.11	0.00	1.11	0.98	1.20	1.05	0.95	1.00	54	52.00	5.00	1.20	70	4.000
25.00	44	120.10	1.41	0.00	1.41	0.87	1.20	1.05	0.95	1.00	46	52.00	5.00	1.20	60	4.000
30.00	37	113.70	1.70	0.00	1.70	0.78	1.20	1.05	1.00	1.00	37	53.00	5.00	1.20	49	4.000
35.00	24	108.40	1.97	0.00	1.97	0.72	1.20	1.05	1.00	1.00	22	53.00	5.00	1.20	31	4.000
40.00	50	120.80	2.27	0.03	2.24	0.66	1.20	1.05	1.00	1.00	42	55.00	5.00	1.20	55	4.000
45.00	50	122.70	2.58	0.19	2.39	0.64	1.20	1.05	1.00	1.00	40	55.00	5.00	1.20	53	4.000
50.00	50	121.90	2.88	0.34	2.54	0.61	1.20	1.05	1.00	1.00	39	55.00	5.00	1.20	52	4.000

Abbreviations

σ_v: Total stress during SPT test (tsf)
u_o: Water pore pressure during SPT test (tsf)
σ'_{vo}: Effective overburden pressure during SPT test (tsf)
C_N: Overburden corretion factor
C_E: Energy correction factor
C_B: Borehole diameter correction factor
C_R: Rod length correction factor
C_S: Liner correction factor
$N_{1(60)}$: Corrected N_{SPT} to a 60% energy ratio
α, β: Clean sand equivalent clean sand formula coefficients
$N_{1(60)cs}$: Corected $N_{1(60)}$ value for fines content
$CRR_{7.5}$: Cyclic resistance ratio for M=7.5

:: Cyclic Stress Ratio calculation (CSR fully adjusted and normalized) ::

Depth (ft)	Unit Weight (pcf)	$\sigma_{v,eq}$ (tsf)	$u_{o,eq}$ (tsf)	$\sigma'_{vo,eq}$ (tsf)	r_d	α	CSR	MSF	$CSR_{eq,M=7.5}$	K_{sigma}	CSR^*	FS

:: Cyclic Stress Ratio calculation (CSR fully adjusted and normalized) ::

Depth (ft)	Unit Weight (pcf)	$\sigma_{v,eq}$ (tsf)	$u_{o,eq}$ (tsf)	$\sigma'_{vo,eq}$ (tsf)	r_d	α	CSR	MSF	$CSR_{eq,M=7.5}$	K_{sigma}	CSR^*	FS	
2.00	92.30	0.09	0.00	0.09	1.00	1.00	0.538	1.28	0.419	1.00	0.419	2.000	
5.00	109.90	0.26	0.00	0.26	0.99	1.00	0.534	1.28	0.416	1.00	0.416	2.000	
10.00	117.40	0.55	0.00	0.55	0.98	1.00	0.528	1.28	0.411	1.00	0.411	2.000	
15.00	110.10	0.83	0.00	0.83	0.97	1.00	0.523	1.28	0.407	1.00	0.407	2.000	
20.00	114.90	1.11	0.16	0.96	0.96	1.00	0.600	1.28	0.467	1.00	0.467	2.000	
25.00	120.10	1.41	0.31	1.10	0.94	1.00	0.652	1.28	0.508	0.99	0.512	2.000	
30.00	113.70	1.70	0.47	1.23	0.92	1.00	0.686	1.28	0.534	0.97	0.550	2.000	
35.00	108.40	1.97	0.62	1.34	0.89	1.00	0.704	1.28	0.548	0.95	0.575	2.000	
40.00	120.80	2.27	0.78	1.49	0.85	1.00	0.700	1.28	0.545	0.93	0.583	2.000	
45.00	122.70	2.58	0.94	1.64	0.80	1.00	0.681	1.28	0.530	0.92	0.579	2.000	
50.00	121.90	2.88	1.09	1.79	0.75	1.00	0.654	1.28	0.509	0.90	0.566	2.000	

Abbreviations

$\sigma_{v,eq}$: Total overburden pressure at test point, during earthquake (tsf)
$u_{o,eq}$: Water pressure at test point, during earthquake (tsf)
$\sigma'_{vo,eq}$: Effective overburden pressure, during earthquake (tsf)
r_d : Nonlinear shear mass factor
α: Improvement factor due to stone columns
CSR : Cyclic Stress Ratio (adjusted for improvement)
MSF : Magnitude Scaling Factor
$CSR_{eq,M=7.5}$: CSR adjusted for M=7.5
K_{sigma}: Effective overburden stress factor
CSR^*: CSR fully adjusted (user FS applied)***
FS: Calculated factor of safety against soil liquefaction

*** User FS: 1.00

:: Liquefaction potential according to Iwasaki ::

Depth (ft)	FS	F	wz	Thickness (ft)	I_L
2.00	2.000	0.00	9.70	3.00	0.00
5.00	2.000	0.00	9.24	3.00	0.00
10.00	2.000	0.00	8.48	5.00	0.00
15.00	2.000	0.00	7.71	5.00	0.00
20.00	2.000	0.00	6.95	5.00	0.00
25.00	2.000	0.00	6.19	5.00	0.00
30.00	2.000	0.00	5.43	5.00	0.00
35.00	2.000	0.00	4.67	5.00	0.00
40.00	2.000	0.00	3.90	5.00	0.00
45.00	2.000	0.00	3.14	5.00	0.00
50.00	2.000	0.00	2.38	5.00	0.00

Overall potential I_L : 0.00

I_L = 0.00 - No liquefaction
I_L between 0.00 and 5 - Liquefaction not probable
I_L between 5 and 15 - Liquefaction probable
I_L > 15 - Liquefaction certain

:: Vertical settlements estimation for dry sands ::

Depth (ft)	$(N_1)_{60}$	τ_{av}	p	G_{max} (tsf)	a	b	γ	ε_{15}	N_c	ε_{Nc} (%)	Δh (ft)	ΔS (in)

:: Vertical settlements estimation for dry sands ::

Depth (ft)	$(N_1)_{60}$	τ_{av}	p	G_{max} (tsf)	a	b	γ	ε_{15}	N_c	ε_{Nc} (%)	Δh (ft)	ΔS (in)
5.00	42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.000
10.00	56	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00	0.000

Cumulative settlemetns: 0.000

Abbreviations

τ_{av}: Average cyclic shear stress
p: Average stress
G_{max}: Maximum shear modulus (tsf)
a, b: Shear strain formula variables
γ: Average shear strain
ε_{15}: Volumetric strain after 15 cycles
N_c: Number of cycles
ε_{Nc}: Volumetric strain for number of cycles N_c (%)
Δh: Thickness of soil layer (in)
ΔS: Settlement of soil layer (in)

:: Vertical settlements estimation for saturated sands ::

Depth (ft)	D_{50} (in)	q_c/N	e_v (%)	Δh (ft)	s (in)
15.00	1.00	7.99	0.00	5.00	0.000
20.00	1.00	7.99	0.00	5.00	0.000
25.00	1.00	7.99	0.00	5.00	0.000
30.00	1.00	7.99	0.00	5.00	0.000
35.00	1.00	7.99	0.00	5.00	0.000
40.00	1.00	7.99	0.00	5.00	0.000
45.00	1.00	7.99	0.00	5.00	0.000
50.00	1.00	7.99	0.00	5.00	0.000

Cumulative settlements: 0.000

Abbreviations

D_{50}: Median grain size (in)
q_c/N: Ratio of cone resistance to SPT
e_v: Post liquefaction volumetric strain (%)
Δh: Thickness of soil layer to be considered (ft)
s: Estimated settlement (in)

:: Lateral displacements estimation for saturated sands ::

Depth (ft)	$(N_1)_{60}$	D_r (%)	γ_{max} (%)	d_z (ft)	LDI	LD (ft)
2.00	37	85.16	0.00	5.00	0.000	0.00
5.00	42	90.73	0.00	5.00	0.000	0.00
10.00	56	100.00	0.00	5.00	0.000	0.00
15.00	40	88.54	0.00	5.00	0.000	0.00
20.00	54	100.00	0.00	5.00	0.000	0.00
25.00	46	100.00	0.00	5.00	0.000	0.00
30.00	37	85.16	0.00	5.00	0.000	0.00
35.00	22	65.67	0.00	5.00	0.000	0.00
40.00	42	90.73	0.00	5.00	0.000	0.00
45.00	40	88.54	0.00	5.00	0.000	0.00
50.00	39	87.43	0.00	5.00	0.000	0.00

:: Lateral displacements estimation for saturated sands ::

Depth (ft)	$(N_1)_{60}$	D_r (%)	γ_{max} (%)	d_z (ft)	LDI	LD (ft)

Cumulative lateral displacements: 0.00

Abbreviations

D_r: Relative density (%)
γ_{max}: Maximum amplitude of cyclic shear strain (%)
d_z: Soil layer thickness (ft)
LDI: Lateral displacement index (ft)
LD: Actual estimated displacement (ft)

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GEOTECHNICAL AND ENVIRONMENTAL ENGINEERING CONSULTANTS, INC.

4071 E. La Palma Ave., Ste. B, Anaheim, Ca 92807 • (714) 632-3190 • Fax (714) 632-3191

Job No. 20-1057P-1
September 11, 2020

Mr. Joseph Karaki
Western State Eng. & Construction, Inc.
4887 E. La Palma Street, Ste # 707
Anaheim, Ca 92807

Subject: **Report of Percolation Testing for the Proposed Infiltration System,** 28771 Central Ave, Lake Elsinore, Riverside County, California

Reference:

1) WS Eng., Inc , 8/31/20, "Site Plan, Proposed Gas Station and C-Store , 28771 Central Ave (74 Hwy), Lake Elsinore California

Gentlemen,

In accordance with your request, we have performed a percolation testing with regard to the proposed infiltration system. The intent of this report is to evaluate the feasibility of the proposed system to be constructed at the subject site.

The percolation rates of the subsurface soils was found to be 1.77 inch per hour. The bottom of the proposed infiltration system is estimated to be within 5.0 feet below the existing natural grade. The percolation testing and the relevant calculations were performed using the method per the Riverside County Manuel.

SITE GEOLOGY & GROUNDWATER

The site is underlain by **older alluvium consists of fine sandy silt and silty sand to 50 feet, the maximum depth explored..** A more detailed description of the earth materials encountered is presented on the log borings in Appendix 'B'. **Groundwater was encountered at approximately 39 feet below the existing surface** during this investigation.

PERCOLATION INVESTIGATION

A preliminary set of percolation tests were performed in order to determine the suitability of the surface soils as an absorb medium for seepage beds. Two (2) soil borings of 8 inches diameters were drilled to satisfy this investigation. The borings were drilled to depths of 15.0 feet below existing surface within the subject site to conduct percolation tests. One additional boring was drilled to depth of 50.0 feet below existing surface to determine depth to groundwater or any impervious layer. The test hole was presaturated over night. After the presaturation was completed, water level measurements were started. From a fixed reference point, the drop in water levels were measured over a 30 minute periods for an hour. The drop that occurred during the final reading was used calculate the percolation rate.

TEST RESULTS

The gross percolation rates of the subsurface soils was found to be 1.77 inch per hour.

CONCLUSION

1. The gross percolation rates of the subsurface soils was found to be 1.77 inch per hour.
2. We drilled to a depth of 15 feet below grade, and no groundwater was encountered. Therefore, the impact of the proposed infiltration system to ground water is nil
3. The site has no potential for liquefaction, and therefore the infiltration system will have minimal effect in the event of an earthquake.
4. There will be a minim 10 feet horizontal and 1:1 (H:V) set back from the proposed building foundation and the expected zone of saturation of the infiltration system. The depth to groundwater is greater than 15 feet from the bottom of the infiltration pit. Therefore, no perched water conditions are expected, or adversely affect the structures.
5. The system will not be located near a retaining wall or basement wall.
6. The site is underlain with non expansive (sandy silt) soils, and there will be no effect on infiltration behavior.
7. Since the proposed or existing structures will have adequate setbacks, therefore the susceptibility of hydro-consolidation from the proposed infiltration system will be very remote.
8. No ground settlements due to soil saturation from the proposed infiltration system are anticipated.

The system will not result in ground settlement that could affect structures, either or adjacent to the site. The infiltration of the storm water will not result in soil saturation that could affect retaining/ basement structures, if any.

CLOSURE & LIMITATIONS

The findings, conclusions, and recommendations presented reflect our best estimate of subsurface conditions based on the data obtained from a limited subsurface exploration performed during the field study. The conclusions and recommendations are based on generally accepted geotechnical engineering principles and practices. No further warranties are implied nor made.

This opportunity to be of service is appreciated. If you have any further questions regarding this matter, please contact our office at your earliest convenience.

Respectfully submitted,

Geo Environ Eng. Consultants, Inc.

Jabed Masud, MSCE
Principal

Esmail Rastegari, P.E.
Principal

JM/ER/gm

Attachments:
Drawings
Boring Logs
Percolation Test Data

PERCOLATION TEST DATA SHEET

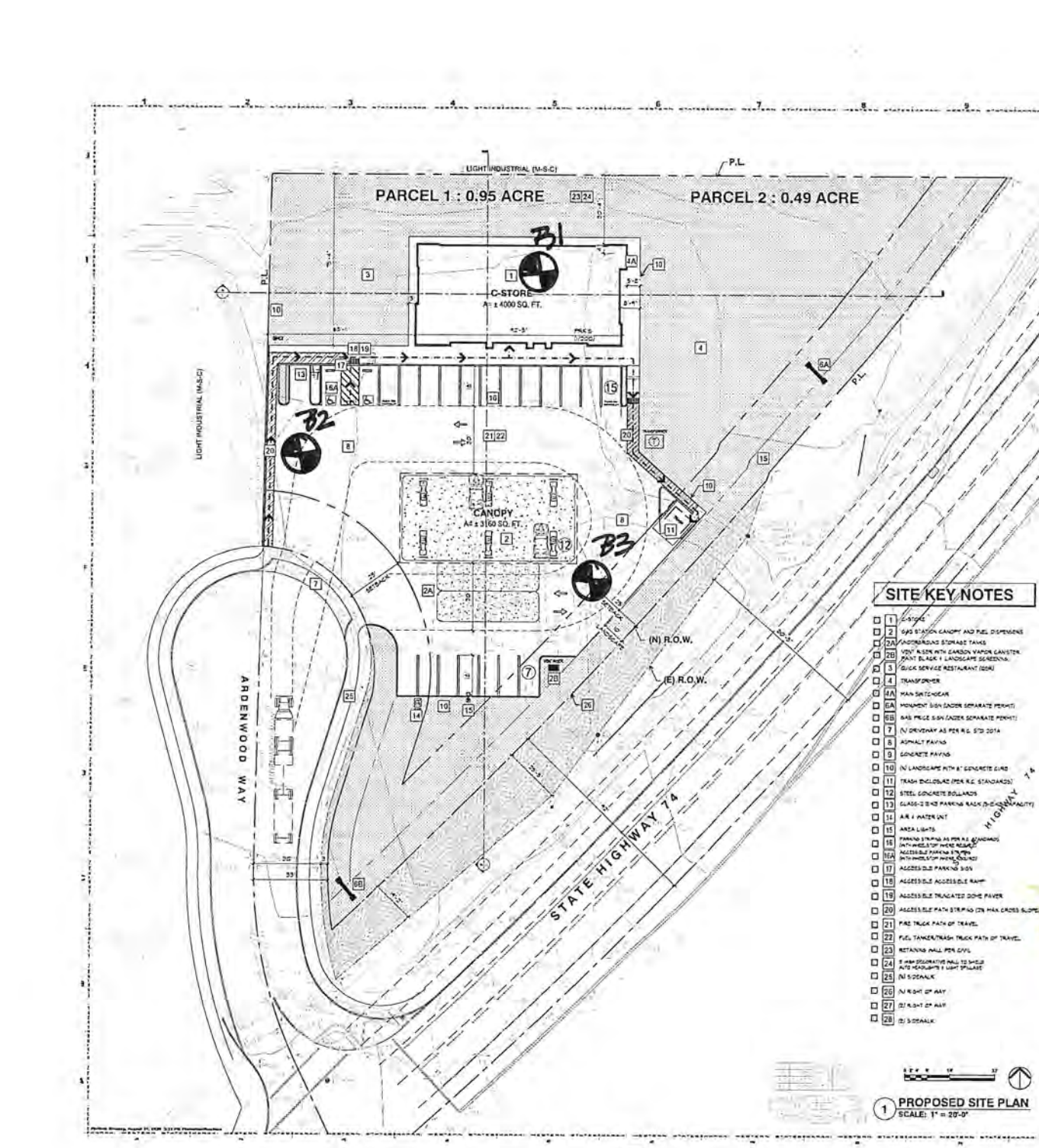
Date: *9/10/20* Project Name: *Service Station & Canopy*
Project No: *20-1057P* Tested By: *F.M*
Depth to Test Hole (Dt) : *15 ft.* USCS Soil Classification: *SC*
Test Hole ID: B-1
Test Hole Dimensions *(inches/ feet)*
Diameters: *8 inch.* Rectangular:

TEST HOLE NO: B-2

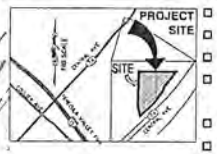
Trial No.	Start Time	Stop Time	/\t Time Interval (min)	Di Initial Depth to Water(inch)	Df Final Depth to water (inch)	/\D Change in Water Level (inch)	Greater than or Equal to 6'?*
1	0:00	12:25	25.00	12	23.1	11.1	Y
2	12:25	12:35	25.00	12	22.9	10.9	Y

Trial No.	Start Time	Stop Time	/\t Time Interval (min)	Di Initial Depth to Water(inch)	Df Final Depth to water (inch)	/\D Change in Water Level (inch)	Percolation Rate (min./in)
1	1:00	1:10	10	12.2	22.3	10.10	1.0
2	1:10	1:20	10	12	21.4	9.40	1.1
3	1:20	1:30	10	12	20.6	8.60	1.2
4	1:30	1:40	10	12.25	20.1	7.85	1.3
5	1:40	1:50	10	12	19.2	7.20	1.4
6	1:50	2:00	10	12.25	19.1	6.85	1.5

TEST HOLE NO: B-1	
Time Interval: t (min)	10
Initial Depth to Water (in), Di	12.25
Final Depth to Water (in), Df	19.1
Total Depth of Test Hole (in): Dt	60
Test Hole Radius, r (in)	4
Hi, initial ht of water @ selected time interval	
Hi = (Dt - Di)	47.8
Hf, final ht. Of water @ selected time interval	
Hf = (Dt- Df)	40.9
/\H (change in ht. over the time interval = (Hi- Hf)	6.85
H (avg) = (Hi + Hf)/ 2	44.3
It = Test Infiltration Rate	
^h*60*R	1644.0
^T(R+2*Havg)	926.5
Rate	**1.77**



VICINITY MAP



LEGEND

- NO. OF PARKING SPACES
- ACCESSIBLE PARKING
- PROPERTY LINE
- PROPOSED PARCEL SUBDIVISION
- ADA PATH OF TRAVEL
- CONCRETE PAVING AREA
- DECORATIVE PAVING AREA
- LANDSCAPED AREA
- DIRECTIONAL ARROW
- R.O.W. DEDICATION
- AREA LIGHTS
- WALL MOUNTED DECORATIVE AREA LIGHTS
- (E) FIRE HYDRANT
- (E) SEWER MANHOLE
- (E) SEWER CLEANOUT
- (E) POWER POLE
- WM (E) WATER METER
- (E) WATER POINT
- (E) SIGN

SCOPE OF WORK

PROPOSED DEVELOPMENT

PROPOSED GAS STATION CONSISTING OF:

CONVENIENCE STORE (WITH TYPE 20-ABG)

CANOPY WITH SIX MULTI-PRODUCT DISPENSERS

TWO UNDERGROUND STORAGE TANKS

PROJECT DATA

ZONING	LIGHT INDUSTRIAL
LAND USE	MANUFACTURING-SERVICE COMMERCIAL

AREA OF SITE (GROSS ACREAGE)

TOTAL AREA = ± 62,726 S.F. (1.44 acre)

BLDG SETBACKS	REQUIRED	PROVIDED
FRONT (SOUTH)	25'-0"	25'-0"
REAR (NORTH)	0'-0"	0'-0"
LEFT (WEST)	25'-0"	25'-0"
RIGHT (EAST)	0'-0"	0'-0"
LANDSCAPE AREA	10%	24,002 S.F. (51%)
FLOOR AREA RATIO	-	1.0
MAXIMUM HEIGHT	40'-0"	25'-0"
PARKING	34	51

SITE KEY NOTES

1. C-STORE
2. GAS STATION CANOPY AND FUEL DISPENSERS
2A. UNDERGROUND STORAGE TANKS
2B. VENT & SUPPLY WITH CARBON VAPOR CANISTER (PAINT BLACK) & LANDSCAPE SCREENING
3. QUICK SERVICE RESTAURANT (DRIVE-THRU)
4. TRANSFORMER
4A. MAN SWITCHGEAR
6A. MONUMENT SIGN (UNDER SEPARATE PERMIT)
6B. GAS PRICE SIGN (UNDER SEPARATE PERMIT)
7. (N) DRIVEWAY AS PER R.E. STD 201A
8. ASPHALT PAVING
9. CONCRETE PAVING
10. (N) LANDSCAPE WITH 6" CONCRETE CURB
11. TRASH ENCLOSURE (PER R.E. STANDARDS)
12. STEEL CONCRETE BOLLARDS
13. CLASS 2 BIKE PARKING RACK (5-BIKE CAPACITY)
14. AIR & WATER UNIT
15. AREA LIGHTS
16. PARKING STRIPING AS PER R.E. STANDARDS (WHITE PAINT WHERE NOTED)
16A. ACCESSIBLE PARKING STRIPING (WHITE PAINT WHERE NOTED)
17. ACCESSIBLE PARKING SIGN
18. ACCESSIBLE ACCESSIBLE RAMP
19. ACCESSIBLE TRUNCATED DOME PAVER
20. ACCESSIBLE PATH STRIPING (2% MAX CROSS SLOPE)
21. FIRE TRUCK PATH OF TRAVEL
22. FUEL TANKER/TRASH TRUCK PATH OF TRAVEL
23. RETAINING WALL PER CIVIL
24. 5' HIGH DECORATIVE WALL TO SHIELD AUTO HEADLIGHTS FROM LIGHT SPILLAGE
25. (N) 5' SIDEWALK
26. (N) RIGHT OF WAY
27. (E) RIGHT OF WAY
28. (E) 5' SIDEWALK

BUILDING DATA

C-STORE	
AREAS	± 4,000 SF
OCCUPANCY	M
TYPE OF CONST	V-B
NUMBER OF STORY	1
BLDG HEIGHT	± 25'-0"
SPRINKLERS	NONE
CANOPY	
AREA	± 3,160 SF
OCCUPANCY	M
TYPE OF CONST	II-B
NUMBER OF STORY	1
BLDG HEIGHT	20'-0"
SPRINKLERS	NONE

TOTAL BUILDINGS AREA (GFA) ± 9,160 SF
± 0.15 ACRE (NET ACREAGE)

ASSESSOR'S PARCEL NUMBER

347-130-028 & 347-130-029

LEGAL DESCRIPTION

FIRST AMERICAN TITLE COMPANY
ORDER NO.: 0625-3758488
DATED: SEPTEMBER 11, 2018

LEGAL DESCRIPTION:

REAL PROPERTY IN THE UNINCORPORATED AREA OF THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCEL 3 OF PARCEL MAP 9985, AS SHOWN BY MAP ON FILE IN BOOK 66, PAGE 72 OF PARCEL MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

EXCEPTING THEREFROM A PORTION THAT GRANTS TO RIVERSIDE COUNTY TRANSPORTATION COMMISSION, A POLITICAL SUBDIVISION AS DESCRIBED IN DEED RECORDED OCTOBER 02, 2001 AS INSTRUMENT NO. 2001-418038 OF OFFICIAL RECORDS.

APN: 347-130-029

LEGAL DESCRIPTION:

ORDER NO.: 0625-3758263
DATED: SEPTEMBER 12, 2018

REAL PROPERTY IN THE UNINCORPORATED AREA OF THE COUNTY OF RIVERSIDE, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

PARCELS 4 OF PARCEL MAP 9985, AS SHOWN BY MAP ON FILE IN BOOK 66, PAGE 72, OF PARCEL MAPS, RECORDS OF RIVERSIDE COUNTY, CALIFORNIA.

EXCEPTING THEREFROM THAT PORTION CONVEYED TO THE RIVERSIDE COUNTY TRANSPORTATION COMMISSION, BY GRANT DEED RECORDED OCTOBER 09, 2001 AS INSTRUMENT NO. 01-488317, OF OFFICIAL RECORDS OF SAID COUNTY.

ASSESSOR'S PARCEL NUMBER: 347-130-028

TOTAL AREA 62,757.84 S.F. (1.441 ACRES)

PARKING COMPUTATION

PARKING STANDARDS

TYPE	SIZE
REGULAR	9'-0" X 18'-0"
COMPACT	8'-6" X 16'-0" (UP TO 30% OF TOTAL)
HANDICAP	17'-0" X 18'-0" (VAN ACCESSIBLE)

PARKING REQUIREMENTS

USE	FORMULA	REQUIRED	PROVIDED
C-STORE	(1/200 S.F.)	20	22
CANOPY		-	12
TOTAL PARKING		20	34

HANDICAP PARKING REQUIREMENTS

FORMULA	REQUIRED	PROVIDED
26-50 PARKING SPACES	(2)	(2)
CLEAN AIR/ELECTRIC VEHICLE PARKING FORMULA		
SECTION 11B.045 R.C. MN CODE (WITH 25-49 PARKING = 2 EV CHARGING SPACES	(2)	(2)

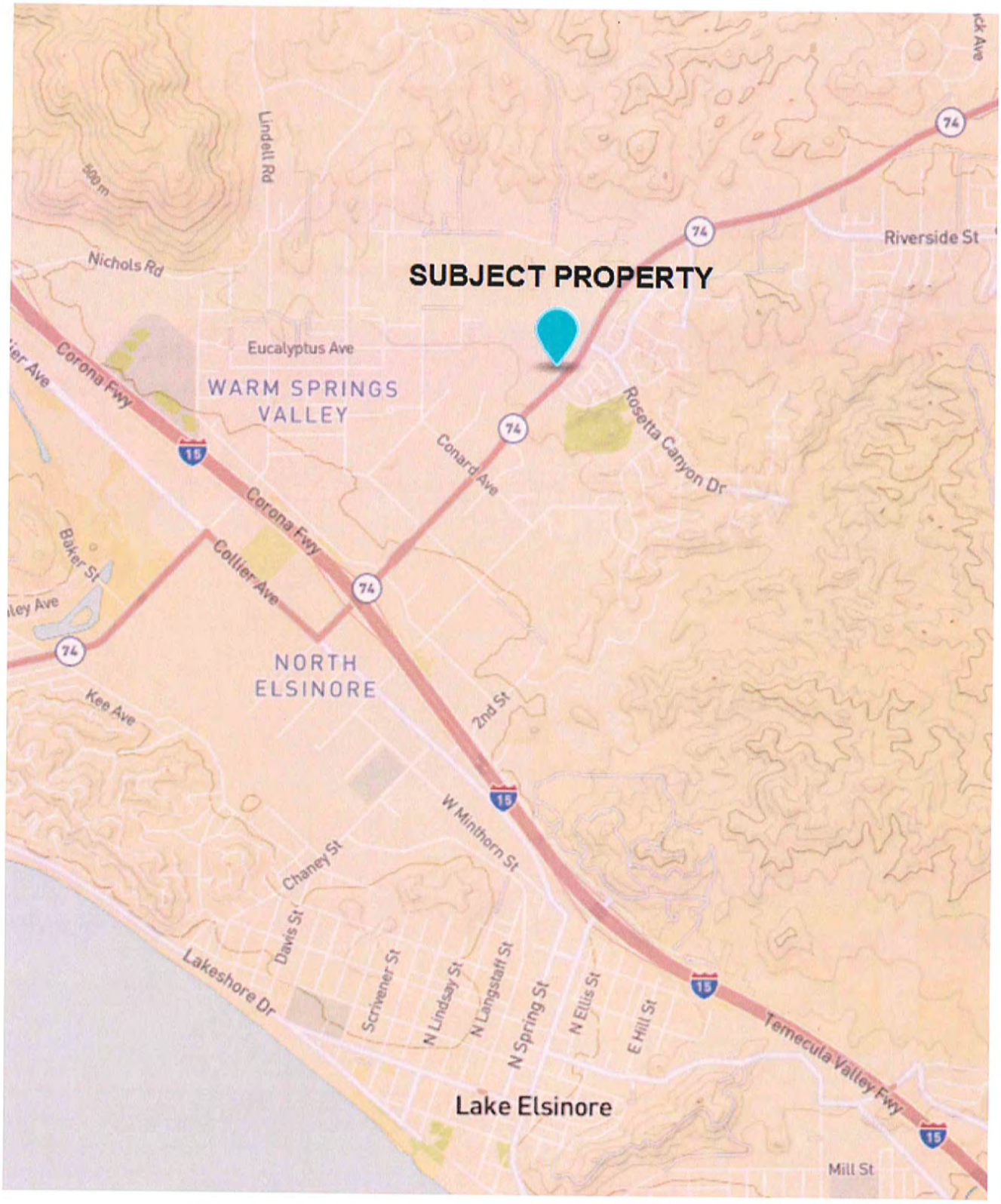
1 PROPOSED SITE PLAN
SCALE: 1" = 20'-0"

SOIL BORING

GEO ENVIRO
GEOTECHNICAL & ENVIRONMENTAL ENG. CONSULTA
4071 E. La Palma Ave., S
Anaheim, CA 92807

KAR
WESTERN STATI
A DESIGN-BU
4007 E. LA P
TEL: (714) 630-
CONSULTANT

SUBMITTAL
NO. DESCRIPTIO
1
2
3
4
REVISIONS
NO. DESCRIPTIO
OWNER NAME
DAHER O
PROJECT NAM
GAS STA
CONVENIEN
NOTE TO CONT
CONFIDENTIAL
DESIGNED BY:
DRAWN BY:
CHECKED BY:
PLOT DATE:
SCALE:
SHEET TITLE
PROPOS
SITE PL
SHEET NUMBER
AS-1


SUBJECT PROPERTY
Lindell Rd
500 m
Nichols Rd
Riverside St
74
Eucalyptus Ave
WARM SPRINGS
VALLEY
Corona Fwy
15
Conard Ave
Rosetta Canyon Dr
Collier Ave
Baker St
NORTH
ELSINORE
Kee Ave
2nd St
W Minthorn St
Chaney St
Davis St
Lakeshore Dr
Scrivener St
N Lindsay St
N Langstaff St
N Spring St
N Ellis St
E Hill St
Temecula Valley Fwy
Lake Elsinore
Mill St

Appendix 4: Historical Site Conditions

Phase I Environmental Site Assessment or Other Information on Past Site Use

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

Santa Ana Watershed

V_{BMP} and Q_{BMP} worksheets

These worksheets are to be used to determine the required

Design Capture Volume (V_{BMP})
or the
Design Flow Rate (Q_{BMP})

for BMPs in the Santa Ana Watershed

To verify which watershed your project is located within, visit

www.rcflood.org/npdes

and use the 'Locate my Watershed' tool

If your project is not located in the Santa Ana Watershed,

Do not use these worksheets! Instead visit

www.rcflood.org/npdes/developers.aspx

To access worksheets applicable to your watershed

Use the tabs across the bottom
to access the worksheets for the Santa Ana Watershed

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Western States Engineering, Inc.	Date	04/28/2021
Designed by	JR	Case No	TBD
Company Project Number/Name	28771 Central Avenue Lake Elsinore, CA		

BMP Identification

BMP NAME / ID: BIO-A

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.65 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
A-1	*2519.08*	*Roofs*	*1*	*0.89*	*2247*			
A-2	*877.78*	*Concrete or Asphalt*	*1*	*0.89*	*783*			
A-3	*2083.87*	*Ornamental Landscaping*	*0.1*	*0.11*	*230.2*			
	5480.73	**Total**			**3260.2**	**0.65**	**176.6**	**1538**

Notes:

Santa Ana Watershed - BMP Design Volume, V_{BMP}

(Rev. 10-2011)

Legend: Required Entries / Calculated Cells

*(Note this worksheet shall **only** be used in conjunction with BMP designs from the **LID BMP Design Handbook**)*

Company Name	Western States Engineering, Inc.	Date	04/28/2021
Designed by	JR	Case No	TBD
Company Project Number/Name	28771 Central Avenue Lake Elsinore, CA		

BMP Identification

BMP NAME / ID: BIO-B

Must match Name/ID used on BMP Design Calculation Sheet

Design Rainfall Depth

85th Percentile, 24-hour Rainfall Depth, from the Isohyetal Map in Handbook Appendix E

D_{85}= 0.65 inches

Drainage Management Area Tabulation

Insert additional rows if needed to accommodate all DMAs draining to the BMP

DMA Type/ID	DMA Area (square feet)	Post-Project Surface Type	Effective Imperivous Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Design Storm Depth (in)*	*Design Capture Volume, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
B-1	*4268.86*	*Roofs*	*1*	*0.89*	*3807.8*			
B-2	*27221.98*	*Concrete or Asphalt*	*1*	*0.89*	*24282*			
B-3	*7571.49*	*Ornamental Landscaping*	*0.1*	*0.11*	*836.3*			

Effective Impervious Fraction

Developed Cover Types	Effective Impervious Fraction
Roofs	1.00
Concrete or Asphalt	1.00
Grouted or Gapless Paving Blocks	1.00
Compacted Soil (e.g. unpaved parking)	0.40
Decomposed Granite	0.40
Permeable Paving Blocks w/ Sand Filled Gap	0.25
Class 2 Base	0.30
Gravel or Class 2 Permeable Base	0.10
Pervious Concrete / Porous Asphalt	0.10
Open and Porous Pavers	0.10
Turf block	0.10
Ornamental Landscaping	0.10
Natural (A Soil)	0.03
Natural (B Soil)	0.15
Natural (C Soil)	0.30
Natural (D Soil)	0.40

Mixed Surface Types

Use this table to determine the effective impervious fraction for the V_{BMP} and Q_{BMP} calculation sheets

Bioretention Facility - Design Procedure	BMP ID: BIO-A	Legend:	Required Entries / Calculated Cells

Company Name: Western States Engineering, Inc. Date: 09/23/2020

Designed by: JR County/City Case No.: TBD

Design Volume

Enter the area tributary to this feature A_T = 0.126 acres

Enter V_{BMP} determined from Section 2.1 of this Handbook V_{BMP} = 177 ft^3

Type of Bioretention Facility Design

(●) Side slopes required (parallel to parking spaces or adjacent to walkways)

( ) No side slopes required (perpendicular to parking space or Planter Boxes)

Bioretention Facility Surface Area

Depth of Soil Filter Media Layer d_S = 3.0 ft

Top Width of Bioretention Facility, excluding curb w_T = 27.4 ft

Total Effective Depth, d_E

$d_E = (0.3) \times d_S + (0.4) \times 1 - (0.7/w_T) + 0.5$ d_E = 1.77 ft

Minimum Surface Area, A_m

$$A_M\,(ft^2) = \frac{V_{BMP}\,(ft^3)}{d_E\,(ft)}$$

A_M = 100 ft^2

Proposed Surface Area A= 1,059 ft^2

Bioretention Facility Properties

Side Slopes in Bioretention Facility z = 4 :1

Diameter of Underdrain 6 inches

Longitudinal Slope of Site (3% maximum) 0 %

6" Check Dam Spacing 0 feet

Describe Vegetation:

Notes:

Bioretention Facility - Design Procedure	BMP ID	Legend:	Required Entries	
	BIO-B		Calculated Cells	

Company Name:	Western States Engineering, Inc.	Date:	09/21/2020
Designed by:	JR	County/City Case No.:	TBD

Design Volume

Enter the area tributary to this feature	A_T=	0.897	acres
Enter V_{BMP} determined from Section 2.1 of this Handbook	V_{BMP}=	1,567	ft^3

Type of Bioretention Facility Design

(●) Side slopes required (parallel to parking spaces or adjacent to walkways)

( ) No side slopes required (perpendicular to parking space or Planter Boxes)

Bioretention Facility Surface Area

Depth of Soil Filter Media Layer	d_S =	3.0	ft
Top Width of Bioretention Facility, excluding curb	w_T =	44.0	ft
Total Effective Depth, d_E $d_E = (0.3) \times d_S + (0.4) \times 1 - (0.7/w_T) + 0.5$	d_E =	1.78	ft
Minimum Surface Area, A_m $A_M\ (ft^2) = \frac{V_{BMP}\ (ft^3)}{d_E\ (ft)}$	A_M =	879	ft^2
Proposed Surface Area	A=	2,715	ft^2

Bioretention Facility Properties

Side Slopes in Bioretention Facility	z =	4	:1
Diameter of Underdrain		6	inches
Longitudinal Slope of Site (3% maximum)		0	%
6" Check Dam Spacing		0	feet
Describe Vegetation:			

Notes:

Appendix 7: Hydromodification

Supporting Detail Relating to Hydrologic Conditions of Concern

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 1999 Version 6.0
Rational Hydrology Study Date: 05/03/21 File:PREA.out

28771 Central Avenue Gas Station
Area A
Pre-development
2-Yr Storm Event

********* Hydrology Study Control Information **********
English (in-lb) Units used in input data file

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 2.00 Antecedent Moisture Condition = 1

Standard intensity-duration curves data (Plate D-4.1)
For the [Elsinore-Wildomar] area used.
10 year storm 10 minute intensity = 2.320(In/Hr)
10 year storm 60 minute intensity = 0.980(In/Hr)
100 year storm 10 minute intensity = 3.540(In/Hr)
100 year storm 60 minute intensity = 1.500(In/Hr)

Storm event year = 2.0
Calculated rainfall intensity data:
1 hour intensity = 0.617(In/Hr)
Slope of intensity duration curve = 0.4800

++
Process from Point/Station 10.000 to Point/Station 20.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 408.000(Ft.)
Top (of initial area) elevation = 1394.240(Ft.)
Bottom (of initial area) elevation = 1377.900(Ft.)
Difference in elevation = 16.340(Ft.)
Slope = 0.04005 s(percent)= 4.00
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 11.169 min.
Rainfall intensity = 1.382(In/Hr) for a 2.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.528
Decimal fraction soil group A = 0.600
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.040
Decimal fraction soil group D = 0.360
RI index for soil(AMC 1) = 57.82
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 1.057(CFS)
Total initial stream area = 1.448(Ac.)
Pervious area fraction = 1.000
End of computations, total study area = 1.448 (Ac.)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 1999 Version 6.0
Rational Hydrology Study Date: 05/03/21 File:APOST.out

28771 Central Avenue Gas Station
Area A
Post-development
2-Yr Storm Event

********* Hydrology Study Control Information **********
English (in-lb) Units used in input data file

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 2.00 Antecedent Moisture Condition = 1

Standard intensity-duration curves data (Plate D-4.1)
For the [Elsinore-Wildomar] area used.
10 year storm 10 minute intensity = 2.320(In/Hr)
10 year storm 60 minute intensity = 0.980(In/Hr)
100 year storm 10 minute intensity = 3.540(In/Hr)
100 year storm 60 minute intensity = 1.500(In/Hr)

Storm event year = 2.0
Calculated rainfall intensity data:
1 hour intensity = 0.617(In/Hr)
Slope of intensity duration curve = 0.4800

++
Process from Point/Station 30.000 to Point/Station 40.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 354.000(Ft.)
Top (of initial area) elevation = 1387.000(Ft.)
Bottom (of initial area) elevation = 1377.900(Ft.)
Difference in elevation = 9.100(Ft.)
Slope = 0.02571 s(percent)= 2.57
TC = k(0.940)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 20.451 min.
Rainfall intensity = 1.034(In/Hr) for a 2.0 year storm
UNDEVELOPED (good cover) subarea
Runoff Coefficient = 0.176
Decimal fraction soil group A = 0.880
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.120
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1) = 23.86
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff = 0.077(CFS)
Total initial stream area = 0.426(Ac.)
Pervious area fraction = 1.000
End of computations, total study area = 0.426 (Ac.)

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 1999 Version 6.0
Rational Hydrology Study Date: 05/03/21 File:BPOST.out

28771 Central Avenue Gas Station
Area B
Post-development
2-Yr Storm Event

********* Hydrology Study Control Information **********
English (in-lb) Units used in input data file

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 2.00 Antecedent Moisture Condition = 1

Standard intensity-duration curves data (Plate D-4.1)
For the [Elsinore-Wildomar] area used.
10 year storm 10 minute intensity = 2.320(In/Hr)
10 year storm 60 minute intensity = 0.980(In/Hr)
100 year storm 10 minute intensity = 3.540(In/Hr)
100 year storm 60 minute intensity = 1.500(In/Hr)

Storm event year = 2.0
Calculated rainfall intensity data:
1 hour intensity = 0.617(In/Hr)
Slope of intensity duration curve = 0.4800

++
Process from Point/Station 50.000 to Point/Station 60.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 348.000(Ft.)
Top (of initial area) elevation = 1386.280(Ft.)
Bottom (of initial area) elevation = 1384.500(Ft.)
Difference in elevation = 1.780(Ft.)
Slope = 0.00511 s(percent)= 0.51
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 8.953 min.
Rainfall intensity = 1.536(In/Hr) for a 2.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.842
Decimal fraction soil group A = 0.480
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.520
Decimal fraction soil group D = 0.000
RI index for soil(AMC 1) = 31.99
Pervious area fraction = 0.100; Impervious fraction = 0.900
Initial subarea runoff = 1.323(CFS)
Total initial stream area = 1.023(Ac.)
Pervious area fraction = 0.100
End of computations, total study area = 1.023 (Ac.)

U n i t H y d r o g r a p h A n a l y s i s

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Study date 05/03/21 File: APRE2YR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Pre-development
2-Yr 24-Hr Storm Event

Drainage Area = 1.45(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 408.00(Ft.)
Length along longest watercourse measured to centroid = 205.00(Ft.)
Length along longest watercourse = 0.077 Mi.
Length along longest watercourse measured to centroid = 0.039 Mi.
Difference in elevation = 16.34(Ft.)
Slope along watercourse = 211.4588 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.029 Hr.
Lag time = 1.72 Min.
25% of lag time = 0.43 Min.
40% of lag time = 0.69 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.45	2.43	3.52

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.45	6.58	9.53

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.430(In)
Area Averaged 100-Year Rainfall = 6.580(In)

Point rain (area averaged) = 2.430(In)
Areal adjustment factor = 100.00 %

Adjusted average point rain = 2.430(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.448	84.00	0.040

Total Area Entered = 1.45(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
84.0	68.6	0.377	0.040	0.363	1.000	0.363

Sum (F) = 0.363

Area averaged mean soil loss (F) (In/Hr) = 0.363
Minimum soil loss rate ((In/Hr)) = 0.182
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.853

U n i t H y d r o g r a p h
DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	291.047	55.153	0.805
2	0.167	582.095	39.333	0.574
3	0.250	873.142	5.514	0.080

Sum = 100.000 Sum= 1.459

Unit Time	Pattern	Storm Rain	Loss rate(In./Hr)		Effective
	(Hr.)	Percent	(In/Hr)	Max	Low	(In/Hr)
1	0.08	0.07	0.019	0.644	0.017	0.00
2	0.17	0.07	0.019	0.642	0.017	0.00
3	0.25	0.07	0.019	0.639	0.017	0.00
4	0.33	0.10	0.029	0.637	0.025	0.00
5	0.42	0.10	0.029	0.634	0.025	0.00
6	0.50	0.10	0.029	0.632	0.025	0.00
7	0.58	0.10	0.029	0.629	0.025	0.00
8	0.67	0.10	0.029	0.627	0.025	0.00
9	0.75	0.10	0.029	0.624	0.025	0.00
10	0.83	0.13	0.039	0.622	0.033	0.01
11	0.92	0.13	0.039	0.620	0.033	0.01
12	1.00	0.13	0.039	0.617	0.033	0.01
13	1.08	0.10	0.029	0.615	0.025	0.00
14	1.17	0.10	0.029	0.612	0.025	0.00
15	1.25	0.10	0.029	0.610	0.025	0.00
16	1.33	0.10	0.029	0.607	0.025	0.00
17	1.42	0.10	0.029	0.605	0.025	0.00
18	1.50	0.10	0.029	0.603	0.025	0.00
19	1.58	0.10	0.029	0.600	0.025	0.00
20	1.67	0.10	0.029	0.598	0.025	0.00
21	1.75	0.10	0.029	0.595	0.025	0.00

22	1.83	0.13	0.039	0.593	0.033	0.01
23	1.92	0.13	0.039	0.591	0.033	0.01
24	2.00	0.13	0.039	0.588	0.033	0.01
25	2.08	0.13	0.039	0.586	0.033	0.01
26	2.17	0.13	0.039	0.583	0.033	0.01
27	2.25	0.13	0.039	0.581	0.033	0.01
28	2.33	0.13	0.039	0.579	0.033	0.01
29	2.42	0.13	0.039	0.576	0.033	0.01
30	2.50	0.13	0.039	0.574	0.033	0.01
31	2.58	0.17	0.049	0.572	0.041	0.01
32	2.67	0.17	0.049	0.569	0.041	0.01
33	2.75	0.17	0.049	0.567	0.041	0.01
34	2.83	0.17	0.049	0.565	0.041	0.01
35	2.92	0.17	0.049	0.562	0.041	0.01
36	3.00	0.17	0.049	0.560	0.041	0.01
37	3.08	0.17	0.049	0.558	0.041	0.01
38	3.17	0.17	0.049	0.555	0.041	0.01
39	3.25	0.17	0.049	0.553	0.041	0.01
40	3.33	0.17	0.049	0.551	0.041	0.01
41	3.42	0.17	0.049	0.548	0.041	0.01
42	3.50	0.17	0.049	0.546	0.041	0.01
43	3.58	0.17	0.049	0.544	0.041	0.01
44	3.67	0.17	0.049	0.542	0.041	0.01
45	3.75	0.17	0.049	0.539	0.041	0.01
46	3.83	0.20	0.058	0.537	0.050	0.01
47	3.92	0.20	0.058	0.535	0.050	0.01
48	4.00	0.20	0.058	0.532	0.050	0.01
49	4.08	0.20	0.058	0.530	0.050	0.01
50	4.17	0.20	0.058	0.528	0.050	0.01
51	4.25	0.20	0.058	0.526	0.050	0.01
52	4.33	0.23	0.068	0.523	0.058	0.01
53	4.42	0.23	0.068	0.521	0.058	0.01
54	4.50	0.23	0.068	0.519	0.058	0.01
55	4.58	0.23	0.068	0.517	0.058	0.01
56	4.67	0.23	0.068	0.515	0.058	0.01
57	4.75	0.23	0.068	0.512	0.058	0.01
58	4.83	0.27	0.078	0.510	0.066	0.01
59	4.92	0.27	0.078	0.508	0.066	0.01
60	5.00	0.27	0.078	0.506	0.066	0.01
61	5.08	0.20	0.058	0.503	0.050	0.01
62	5.17	0.20	0.058	0.501	0.050	0.01
63	5.25	0.20	0.058	0.499	0.050	0.01
64	5.33	0.23	0.068	0.497	0.058	0.01
65	5.42	0.23	0.068	0.495	0.058	0.01
66	5.50	0.23	0.068	0.493	0.058	0.01
67	5.58	0.27	0.078	0.490	0.066	0.01
68	5.67	0.27	0.078	0.488	0.066	0.01
69	5.75	0.27	0.078	0.486	0.066	0.01
70	5.83	0.27	0.078	0.484	0.066	0.01
71	5.92	0.27	0.078	0.482	0.066	0.01
72	6.00	0.27	0.078	0.480	0.066	0.01
73	6.08	0.30	0.087	0.478	0.075	0.01
74	6.17	0.30	0.087	0.475	0.075	0.01
75	6.25	0.30	0.087	0.473	0.075	0.01
76	6.33	0.30	0.087	0.471	0.075	0.01
77	6.42	0.30	0.087	0.469	0.075	0.01

78	6.50	0.30	0.087	0.467	0.075	0.01
79	6.58	0.33	0.097	0.465	0.083	0.01
80	6.67	0.33	0.097	0.463	0.083	0.01
81	6.75	0.33	0.097	0.461	0.083	0.01
82	6.83	0.33	0.097	0.459	0.083	0.01
83	6.92	0.33	0.097	0.457	0.083	0.01
84	7.00	0.33	0.097	0.454	0.083	0.01
85	7.08	0.33	0.097	0.452	0.083	0.01
86	7.17	0.33	0.097	0.450	0.083	0.01
87	7.25	0.33	0.097	0.448	0.083	0.01
88	7.33	0.37	0.107	0.446	0.091	0.02
89	7.42	0.37	0.107	0.444	0.091	0.02
90	7.50	0.37	0.107	0.442	0.091	0.02
91	7.58	0.40	0.117	0.440	0.100	0.02
92	7.67	0.40	0.117	0.438	0.100	0.02
93	7.75	0.40	0.117	0.436	0.100	0.02
94	7.83	0.43	0.126	0.434	0.108	0.02
95	7.92	0.43	0.126	0.432	0.108	0.02
96	8.00	0.43	0.126	0.430	0.108	0.02
97	8.08	0.50	0.146	0.428	0.124	0.02
98	8.17	0.50	0.146	0.426	0.124	0.02
99	8.25	0.50	0.146	0.424	0.124	0.02
100	8.33	0.50	0.146	0.422	0.124	0.02
101	8.42	0.50	0.146	0.420	0.124	0.02
102	8.50	0.50	0.146	0.418	0.124	0.02
103	8.58	0.53	0.156	0.416	0.133	0.02
104	8.67	0.53	0.156	0.414	0.133	0.02
105	8.75	0.53	0.156	0.412	0.133	0.02
106	8.83	0.57	0.165	0.410	0.141	0.02
107	8.92	0.57	0.165	0.408	0.141	0.02
108	9.00	0.57	0.165	0.406	0.141	0.02
109	9.08	0.63	0.185	0.405	0.158	0.03
110	9.17	0.63	0.185	0.403	0.158	0.03
111	9.25	0.63	0.185	0.401	0.158	0.03
112	9.33	0.67	0.194	0.399	0.166	0.03
113	9.42	0.67	0.194	0.397	0.166	0.03
114	9.50	0.67	0.194	0.395	0.166	0.03
115	9.58	0.70	0.204	0.393	0.174	0.03
116	9.67	0.70	0.204	0.391	0.174	0.03
117	9.75	0.70	0.204	0.389	0.174	0.03
118	9.83	0.73	0.214	0.387	0.182	0.03
119	9.92	0.73	0.214	0.386	0.182	0.03
120	10.00	0.73	0.214	0.384	0.182	0.03
121	10.08	0.50	0.146	0.382	0.124	0.02
122	10.17	0.50	0.146	0.380	0.124	0.02
123	10.25	0.50	0.146	0.378	0.124	0.02
124	10.33	0.50	0.146	0.376	0.124	0.02
125	10.42	0.50	0.146	0.375	0.124	0.02
126	10.50	0.50	0.146	0.373	0.124	0.02
127	10.58	0.67	0.194	0.371	0.166	0.03
128	10.67	0.67	0.194	0.369	0.166	0.03
129	10.75	0.67	0.194	0.367	0.166	0.03
130	10.83	0.67	0.194	0.365	0.166	0.03
131	10.92	0.67	0.194	0.364	0.166	0.03
132	11.00	0.67	0.194	0.362	0.166	0.03
133	11.08	0.63	0.185	0.360	0.158	0.03

134	11.17	0.63	0.185	0.358	0.158	0.03
135	11.25	0.63	0.185	0.357	0.158	0.03
136	11.33	0.63	0.185	0.355	0.158	0.03
137	11.42	0.63	0.185	0.353	0.158	0.03
138	11.50	0.63	0.185	0.351	0.158	0.03
139	11.58	0.57	0.165	0.350	0.141	0.02
140	11.67	0.57	0.165	0.348	0.141	0.02
141	11.75	0.57	0.165	0.346	0.141	0.02
142	11.83	0.60	0.175	0.344	0.149	0.03
143	11.92	0.60	0.175	0.343	0.149	0.03
144	12.00	0.60	0.175	0.341	0.149	0.03
145	12.08	0.83	0.243	0.339	0.207	0.04
146	12.17	0.83	0.243	0.338	0.207	0.04
147	12.25	0.83	0.243	0.336	0.207	0.04
148	12.33	0.87	0.253	0.334	0.216	0.04
149	12.42	0.87	0.253	0.332	0.216	0.04
150	12.50	0.87	0.253	0.331	0.216	0.04
151	12.58	0.93	0.272	0.329	0.232	0.04
152	12.67	0.93	0.272	0.327	0.232	0.04
153	12.75	0.93	0.272	0.326	0.232	0.04
154	12.83	0.97	0.282	0.324	0.240	0.04
155	12.92	0.97	0.282	0.323	0.240	0.04
156	13.00	0.97	0.282	0.321	0.240	0.04
157	13.08	1.13	0.330	0.319	---	0.01
158	13.17	1.13	0.330	0.318	---	0.01
159	13.25	1.13	0.330	0.316	---	0.01
160	13.33	1.13	0.330	0.314	---	0.02
161	13.42	1.13	0.330	0.313	---	0.02
162	13.50	1.13	0.330	0.311	---	0.02
163	13.58	0.77	0.224	0.310	0.191	0.03
164	13.67	0.77	0.224	0.308	0.191	0.03
165	13.75	0.77	0.224	0.307	0.191	0.03
166	13.83	0.77	0.224	0.305	0.191	0.03
167	13.92	0.77	0.224	0.303	0.191	0.03
168	14.00	0.77	0.224	0.302	0.191	0.03
169	14.08	0.90	0.262	0.300	0.224	0.04
170	14.17	0.90	0.262	0.299	0.224	0.04
171	14.25	0.90	0.262	0.297	0.224	0.04
172	14.33	0.87	0.253	0.296	0.216	0.04
173	14.42	0.87	0.253	0.294	0.216	0.04
174	14.50	0.87	0.253	0.293	0.216	0.04
175	14.58	0.87	0.253	0.291	0.216	0.04
176	14.67	0.87	0.253	0.290	0.216	0.04
177	14.75	0.87	0.253	0.288	0.216	0.04
178	14.83	0.83	0.243	0.287	0.207	0.04
179	14.92	0.83	0.243	0.285	0.207	0.04
180	15.00	0.83	0.243	0.284	0.207	0.04
181	15.08	0.80	0.233	0.282	0.199	0.03
182	15.17	0.80	0.233	0.281	0.199	0.03
183	15.25	0.80	0.233	0.279	0.199	0.03
184	15.33	0.77	0.224	0.278	0.191	0.03
185	15.42	0.77	0.224	0.277	0.191	0.03
186	15.50	0.77	0.224	0.275	0.191	0.03
187	15.58	0.63	0.185	0.274	0.158	0.03
188	15.67	0.63	0.185	0.272	0.158	0.03
189	15.75	0.63	0.185	0.271	0.158	0.03

190	15.83	0.63	0.185	0.270	0.158	0.03
191	15.92	0.63	0.185	0.268	0.158	0.03
192	16.00	0.63	0.185	0.267	0.158	0.03
193	16.08	0.13	0.039	0.266	0.033	0.01
194	16.17	0.13	0.039	0.264	0.033	0.01
195	16.25	0.13	0.039	0.263	0.033	0.01
196	16.33	0.13	0.039	0.261	0.033	0.01
197	16.42	0.13	0.039	0.260	0.033	0.01
198	16.50	0.13	0.039	0.259	0.033	0.01
199	16.58	0.10	0.029	0.257	0.025	0.00
200	16.67	0.10	0.029	0.256	0.025	0.00
201	16.75	0.10	0.029	0.255	0.025	0.00
202	16.83	0.10	0.029	0.254	0.025	0.00
203	16.92	0.10	0.029	0.252	0.025	0.00
204	17.00	0.10	0.029	0.251	0.025	0.00
205	17.08	0.17	0.049	0.250	0.041	0.01
206	17.17	0.17	0.049	0.248	0.041	0.01
207	17.25	0.17	0.049	0.247	0.041	0.01
208	17.33	0.17	0.049	0.246	0.041	0.01
209	17.42	0.17	0.049	0.245	0.041	0.01
210	17.50	0.17	0.049	0.244	0.041	0.01
211	17.58	0.17	0.049	0.242	0.041	0.01
212	17.67	0.17	0.049	0.241	0.041	0.01
213	17.75	0.17	0.049	0.240	0.041	0.01
214	17.83	0.13	0.039	0.239	0.033	0.01
215	17.92	0.13	0.039	0.238	0.033	0.01
216	18.00	0.13	0.039	0.236	0.033	0.01
217	18.08	0.13	0.039	0.235	0.033	0.01
218	18.17	0.13	0.039	0.234	0.033	0.01
219	18.25	0.13	0.039	0.233	0.033	0.01
220	18.33	0.13	0.039	0.232	0.033	0.01
221	18.42	0.13	0.039	0.231	0.033	0.01
222	18.50	0.13	0.039	0.230	0.033	0.01
223	18.58	0.10	0.029	0.228	0.025	0.00
224	18.67	0.10	0.029	0.227	0.025	0.00
225	18.75	0.10	0.029	0.226	0.025	0.00
226	18.83	0.07	0.019	0.225	0.017	0.00
227	18.92	0.07	0.019	0.224	0.017	0.00
228	19.00	0.07	0.019	0.223	0.017	0.00
229	19.08	0.10	0.029	0.222	0.025	0.00
230	19.17	0.10	0.029	0.221	0.025	0.00
231	19.25	0.10	0.029	0.220	0.025	0.00
232	19.33	0.13	0.039	0.219	0.033	0.01
233	19.42	0.13	0.039	0.218	0.033	0.01
234	19.50	0.13	0.039	0.217	0.033	0.01
235	19.58	0.10	0.029	0.216	0.025	0.00
236	19.67	0.10	0.029	0.215	0.025	0.00
237	19.75	0.10	0.029	0.214	0.025	0.00
238	19.83	0.07	0.019	0.213	0.017	0.00
239	19.92	0.07	0.019	0.212	0.017	0.00
240	20.00	0.07	0.019	0.211	0.017	0.00
241	20.08	0.10	0.029	0.210	0.025	0.00
242	20.17	0.10	0.029	0.209	0.025	0.00
243	20.25	0.10	0.029	0.208	0.025	0.00
244	20.33	0.10	0.029	0.207	0.025	0.00
245	20.42	0.10	0.029	0.206	0.025	0.00

246	20.50	0.10	0.029	0.206	0.025	0.00
247	20.58	0.10	0.029	0.205	0.025	0.00
248	20.67	0.10	0.029	0.204	0.025	0.00
249	20.75	0.10	0.029	0.203	0.025	0.00
250	20.83	0.07	0.019	0.202	0.017	0.00
251	20.92	0.07	0.019	0.201	0.017	0.00
252	21.00	0.07	0.019	0.201	0.017	0.00
253	21.08	0.10	0.029	0.200	0.025	0.00
254	21.17	0.10	0.029	0.199	0.025	0.00
255	21.25	0.10	0.029	0.198	0.025	0.00
256	21.33	0.07	0.019	0.197	0.017	0.00
257	21.42	0.07	0.019	0.197	0.017	0.00
258	21.50	0.07	0.019	0.196	0.017	0.00
259	21.58	0.10	0.029	0.195	0.025	0.00
260	21.67	0.10	0.029	0.195	0.025	0.00
261	21.75	0.10	0.029	0.194	0.025	0.00
262	21.83	0.07	0.019	0.193	0.017	0.00
263	21.92	0.07	0.019	0.193	0.017	0.00
264	22.00	0.07	0.019	0.192	0.017	0.00
265	22.08	0.10	0.029	0.191	0.025	0.00
266	22.17	0.10	0.029	0.191	0.025	0.00
267	22.25	0.10	0.029	0.190	0.025	0.00
268	22.33	0.07	0.019	0.189	0.017	0.00
269	22.42	0.07	0.019	0.189	0.017	0.00
270	22.50	0.07	0.019	0.188	0.017	0.00
271	22.58	0.07	0.019	0.188	0.017	0.00
272	22.67	0.07	0.019	0.187	0.017	0.00
273	22.75	0.07	0.019	0.187	0.017	0.00
274	22.83	0.07	0.019	0.186	0.017	0.00
275	22.92	0.07	0.019	0.186	0.017	0.00
276	23.00	0.07	0.019	0.185	0.017	0.00
277	23.08	0.07	0.019	0.185	0.017	0.00
278	23.17	0.07	0.019	0.184	0.017	0.00
279	23.25	0.07	0.019	0.184	0.017	0.00
280	23.33	0.07	0.019	0.184	0.017	0.00
281	23.42	0.07	0.019	0.183	0.017	0.00
282	23.50	0.07	0.019	0.183	0.017	0.00
283	23.58	0.07	0.019	0.183	0.017	0.00
284	23.67	0.07	0.019	0.182	0.017	0.00
285	23.75	0.07	0.019	0.182	0.017	0.00
286	23.83	0.07	0.019	0.182	0.017	0.00
287	23.92	0.07	0.019	0.182	0.017	0.00
288	24.00	0.07	0.019	0.182	0.017	0.00
Sum =		100.0			Sum =	4.1

Flood volume = Effective rainfall 0.34(In)
times area 1.4(Ac.)/[(In)/(Ft.)] = 0.0(Ac.Ft)
Total soil loss = 2.09(In)
Total soil loss = 0.252(Ac.Ft)
Total rainfall = 2.43(In)
Flood volume = 1787.5 Cubic Feet
Total soil loss = 10985.1 Cubic Feet

Peak flow rate of this hydrograph = 0.060(CFS)

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24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0000	0.00	Q				
0+15	0.0001	0.00	Q				
0+20	0.0001	0.01	Q				
0+25	0.0002	0.01	Q				
0+30	0.0002	0.01	Q				
0+35	0.0002	0.01	Q				
0+40	0.0003	0.01	Q				
0+45	0.0003	0.01	Q				
0+50	0.0004	0.01	Q				
0+55	0.0004	0.01	Q				
1+ 0	0.0005	0.01	Q				
1+ 5	0.0005	0.01	Q				
1+10	0.0006	0.01	Q				
1+15	0.0006	0.01	Q				
1+20	0.0007	0.01	Q				
1+25	0.0007	0.01	Q				
1+30	0.0008	0.01	Q				
1+35	0.0008	0.01	Q				
1+40	0.0008	0.01	Q				
1+45	0.0009	0.01	Q				
1+50	0.0009	0.01	Q				
1+55	0.0010	0.01	Q				
2+ 0	0.0010	0.01	QV				
2+ 5	0.0011	0.01	QV				
2+10	0.0012	0.01	QV				
2+15	0.0012	0.01	QV				
2+20	0.0013	0.01	QV				
2+25	0.0013	0.01	QV				
2+30	0.0014	0.01	QV				
2+35	0.0015	0.01	QV				
2+40	0.0015	0.01	QV				
2+45	0.0016	0.01	QV				
2+50	0.0017	0.01	QV				
2+55	0.0017	0.01	QV				
3+ 0	0.0018	0.01	QV				
3+ 5	0.0019	0.01	QV				
3+10	0.0020	0.01	QV				
3+15	0.0020	0.01	QV				
3+20	0.0021	0.01	Q V				
3+25	0.0022	0.01	Q V				
3+30	0.0022	0.01	Q V				
3+35	0.0023	0.01	Q V				
3+40	0.0024	0.01	Q V				
3+45	0.0025	0.01	Q V				
3+50	0.0025	0.01	Q V				
3+55	0.0026	0.01	Q V				
4+ 0	0.0027	0.01	Q V				
4+ 5	0.0028	0.01	Q V				

4+10	0.0029	0.01	Q	V	|	|	|	|
4+15	0.0030	0.01	Q	V	|	|	|	|
4+20	0.0031	0.01	Q	V	|	|	|	|
4+25	0.0032	0.01	Q	V	|	|	|	|
4+30	0.0033	0.01	Q	V	|	|	|	|
4+35	0.0034	0.01	Q	V	|	|	|	|
4+40	0.0035	0.01	Q	V	|	|	|	|
4+45	0.0036	0.01	Q	V	|	|	|	|
4+50	0.0037	0.02	Q	V	|	|	|	|
4+55	0.0038	0.02	Q	V	|	|	|	|
5+ 0	0.0039	0.02	Q	V	|	|	|	|
5+ 5	0.0040	0.01	Q	V	|	|	|	|
5+10	0.0041	0.01	Q	V	|	|	|	|
5+15	0.0042	0.01	Q	V	|	|	|	|
5+20	0.0043	0.01	Q	V	|	|	|	|
5+25	0.0044	0.01	Q	V	|	|	|	|
5+30	0.0045	0.01	Q	V	|	|	|	|
5+35	0.0046	0.02	Q	V	|	|	|	|
5+40	0.0047	0.02	Q	V	|	|	|	|
5+45	0.0048	0.02	Q	V	|	|	|	|
5+50	0.0049	0.02	Q	V	|	|	|	|
5+55	0.0050	0.02	Q	V	|	|	|	|
6+ 0	0.0052	0.02	Q	V	|	|	|	|
6+ 5	0.0053	0.02	Q	V	|	|	|	|
6+10	0.0054	0.02	Q	V	|	|	|	|
6+15	0.0055	0.02	Q	V	|	|	|	|
6+20	0.0057	0.02	Q	V	|	|	|	|
6+25	0.0058	0.02	Q	V	|	|	|	|
6+30	0.0059	0.02	Q	V	|	|	|	|
6+35	0.0061	0.02	Q	V	|	|	|	|
6+40	0.0062	0.02	Q	V	|	|	|	|
6+45	0.0063	0.02	Q	V	|	|	|	|
6+50	0.0065	0.02	Q	V	|	|	|	|
6+55	0.0066	0.02	Q	V	|	|	|	|
7+ 0	0.0068	0.02	Q	V	|	|	|	|
7+ 5	0.0069	0.02	Q	V	|	|	|	|
7+10	0.0071	0.02	Q	V	|	|	|	|
7+15	0.0072	0.02	Q	V	|	|	|	|
7+20	0.0074	0.02	Q	V	|	|	|	|
7+25	0.0075	0.02	Q	V	|	|	|	|
7+30	0.0077	0.02	Q	V	|	|	|	|
7+35	0.0078	0.02	Q	V	|	|	|	|
7+40	0.0080	0.02	Q	V	|	|	|	|
7+45	0.0082	0.03	Q	V	|	|	|	|
7+50	0.0084	0.03	Q	V	|	|	|	|
7+55	0.0085	0.03	Q	V	|	|	|	|
8+ 0	0.0087	0.03	Q	V	|	|	|	|
8+ 5	0.0089	0.03	Q	V	|	|	|	|
8+10	0.0091	0.03	Q	V	|	|	|	|
8+15	0.0094	0.03	Q	V	|	|	|	|
8+20	0.0096	0.03	Q	V	|	|	|	|
8+25	0.0098	0.03	Q	V	|	|	|	|
8+30	0.0100	0.03	Q	V	|	|	|	|
8+35	0.0102	0.03	Q	V	|	|	|	|
8+40	0.0105	0.03	Q	V	|	|	|	|
8+45	0.0107	0.03	Q	V	|	|	|	|

8+50	0.0109	0.03	Q	V	|	|	|
8+55	0.0112	0.04	Q	V	|	|	|
9+ 0	0.0114	0.04	Q	|V	|	|	|
9+ 5	0.0117	0.04	Q	|V	|	|	|
9+10	0.0119	0.04	Q	|V	|	|	|
9+15	0.0122	0.04	Q	|V	|	|	|
9+20	0.0125	0.04	Q	| V	|	|	|
9+25	0.0128	0.04	Q	| V	|	|	|
9+30	0.0131	0.04	Q	| V	|	|	|
9+35	0.0134	0.04	Q	| V	|	|	|
9+40	0.0137	0.04	Q	| V	|	|	|
9+45	0.0140	0.04	Q	| V	|	|	|
9+50	0.0143	0.04	Q	| V	|	|	|
9+55	0.0146	0.05	Q	| V	|	|	|
10+ 0	0.0149	0.05	Q	| V	|	|	|
10+ 5	0.0152	0.04	Q	| V	|	|	|
10+10	0.0154	0.03	Q	| V	|	|	|
10+15	0.0156	0.03	Q	| V	|	|	|
10+20	0.0158	0.03	Q	| V	|	|	|
10+25	0.0160	0.03	Q	| V	|	|	|
10+30	0.0162	0.03	Q	| V	|	|	|
10+35	0.0165	0.04	Q	| V	|	|	|
10+40	0.0168	0.04	Q	| V	|	|	|
10+45	0.0171	0.04	Q	| V	|	|	|
10+50	0.0174	0.04	Q	| V	|	|	|
10+55	0.0176	0.04	Q	| V	|	|	|
11+ 0	0.0179	0.04	Q	| V	|	|	|
11+ 5	0.0182	0.04	Q	| V	|	|	|
11+10	0.0185	0.04	Q	| V	|	|	|
11+15	0.0188	0.04	Q	| V	|	|	|
11+20	0.0190	0.04	Q	| V	|	|	|
11+25	0.0193	0.04	Q	| V	|	|	|
11+30	0.0196	0.04	Q	| V|	|	|	|
11+35	0.0198	0.04	Q	| V|	|	|	|
11+40	0.0201	0.04	Q	| V|	|	|	|
11+45	0.0203	0.04	Q	| V|	|	|	|
11+50	0.0206	0.04	Q	| V	|	|	|
11+55	0.0208	0.04	Q	| V	|	|	|
12+ 0	0.0211	0.04	Q	| V	|	|	|
12+ 5	0.0214	0.05	Q	| V	|	|	|
12+10	0.0218	0.05	Q	| |V	|	|	|
12+15	0.0221	0.05	Q	| |V	|	|	|
12+20	0.0225	0.05	Q	| |V	|	|	|
12+25	0.0229	0.05	Q	| | V	|	|	|
12+30	0.0232	0.05	Q	| | V	|	|	|
12+35	0.0236	0.06	Q	| | V	|	|	|
12+40	0.0240	0.06	Q	| | V	|	|	|
12+45	0.0244	0.06	Q	| | V	|	|	|
12+50	0.0248	0.06	Q	| | V	|	|	|
12+55	0.0252	0.06	Q	| | V	|	|	|
13+ 0	0.0257	0.06	Q	| | V	|	|	|
13+ 5	0.0259	0.04	Q	| | V	|	|	|
13+10	0.0260	0.02	Q	| | V	|	|	|
13+15	0.0262	0.02	Q	| | V	|	|	|
13+20	0.0263	0.02	Q	| | V	|	|	|
13+25	0.0265	0.02	Q	| | V	|	|	|

13+30	0.0267	0.03	Q	|	|	V	|	|
13+35	0.0270	0.04	Q	|	|	V	|	|
13+40	0.0273	0.05	Q	|	|	V	|	|
13+45	0.0276	0.05	Q	|	|	V	|	|
13+50	0.0279	0.05	Q	|	|	V	|	|
13+55	0.0283	0.05	Q	|	|	V	|	|
14+ 0	0.0286	0.05	Q	|	|	V	|	|
14+ 5	0.0290	0.05	Q	|	|	V	|	|
14+10	0.0293	0.06	Q	|	|	V	|	|
14+15	0.0297	0.06	Q	|	|	V	|	|
14+20	0.0301	0.06	Q	|	|	V	|	|
14+25	0.0305	0.05	Q	|	|	V	|	|
14+30	0.0309	0.05	Q	|	|	V	|	|
14+35	0.0312	0.05	Q	|	|	V	|	|
14+40	0.0316	0.05	Q	|	|	V	|	|
14+45	0.0320	0.05	Q	|	|	| V	|	|
14+50	0.0323	0.05	Q	|	|	| V	|	|
14+55	0.0327	0.05	Q	|	|	| V	|	|
15+ 0	0.0331	0.05	Q	|	|	| V	|	|
15+ 5	0.0334	0.05	Q	|	|	| V	|	|
15+10	0.0338	0.05	Q	|	|	| V	|	|
15+15	0.0341	0.05	Q	|	|	| V	|	|
15+20	0.0344	0.05	Q	|	|	| V	|	|
15+25	0.0348	0.05	Q	|	|	| V	|	|
15+30	0.0351	0.05	Q	|	|	| V	|	|
15+35	0.0354	0.04	Q	|	|	| V	|	|
15+40	0.0357	0.04	Q	|	|	| V	|	|
15+45	0.0359	0.04	Q	|	|	| V	|	|
15+50	0.0362	0.04	Q	|	|	| V	|	|
15+55	0.0365	0.04	Q	|	|	| V	|	|
16+ 0	0.0368	0.04	Q	|	|	| V	|	|
16+ 5	0.0369	0.02	Q	|	|	| V	|	|
16+10	0.0370	0.01	Q	|	|	| V	|	|
16+15	0.0370	0.01	Q	|	|	| V	|	|
16+20	0.0371	0.01	Q	|	|	| V	|	|
16+25	0.0372	0.01	Q	|	|	| V	|	|
16+30	0.0372	0.01	Q	|	|	| V	|	|
16+35	0.0373	0.01	Q	|	|	| V	|	|
16+40	0.0373	0.01	Q	|	|	| V	|	|
16+45	0.0374	0.01	Q	|	|	| V	|	|
16+50	0.0374	0.01	Q	|	|	| V	|	|
16+55	0.0374	0.01	Q	|	|	| V	|	|
17+ 0	0.0375	0.01	Q	|	|	| V	|	|
17+ 5	0.0375	0.01	Q	|	|	| V	|	|
17+10	0.0376	0.01	Q	|	|	| V	|	|
17+15	0.0377	0.01	Q	|	|	| V	|	|
17+20	0.0378	0.01	Q	|	|	| V	|	|
17+25	0.0378	0.01	Q	|	|	| V	|	|
17+30	0.0379	0.01	Q	|	|	| V	|	|
17+35	0.0380	0.01	Q	|	|	| V	|	|
17+40	0.0380	0.01	Q	|	|	| V	|	|
17+45	0.0381	0.01	Q	|	|	| V	|	|
17+50	0.0382	0.01	Q	|	|	| V	|	|
17+55	0.0382	0.01	Q	|	|	| V	|	|
18+ 0	0.0383	0.01	Q	|	|	| V	|	|
18+ 5	0.0384	0.01	Q	|	|	| V	|	|

18+10	0.0384	0.01	Q	|	|	|	V |
18+15	0.0385	0.01	Q	|	|	|	V |
18+20	0.0385	0.01	Q	|	|	|	V |
18+25	0.0386	0.01	Q	|	|	|	V |
18+30	0.0386	0.01	Q	|	|	|	V |
18+35	0.0387	0.01	Q	|	|	|	V |
18+40	0.0387	0.01	Q	|	|	|	V |
18+45	0.0388	0.01	Q	|	|	|	V |
18+50	0.0388	0.01	Q	|	|	|	V |
18+55	0.0388	0.00	Q	|	|	|	V |
19+ 0	0.0389	0.00	Q	|	|	|	V |
19+ 5	0.0389	0.01	Q	|	|	|	V |
19+10	0.0389	0.01	Q	|	|	|	V |
19+15	0.0390	0.01	Q	|	|	|	V |
19+20	0.0390	0.01	Q	|	|	|	V |
19+25	0.0391	0.01	Q	|	|	|	V |
19+30	0.0392	0.01	Q	|	|	|	V |
19+35	0.0392	0.01	Q	|	|	|	V |
19+40	0.0392	0.01	Q	|	|	|	V |
19+45	0.0393	0.01	Q	|	|	|	V |
19+50	0.0393	0.01	Q	|	|	|	V |
19+55	0.0394	0.00	Q	|	|	|	V |
20+ 0	0.0394	0.00	Q	|	|	|	V |
20+ 5	0.0394	0.01	Q	|	|	|	V |
20+10	0.0395	0.01	Q	|	|	|	V |
20+15	0.0395	0.01	Q	|	|	|	V |
20+20	0.0396	0.01	Q	|	|	|	V |
20+25	0.0396	0.01	Q	|	|	|	V |
20+30	0.0396	0.01	Q	|	|	|	V |
20+35	0.0397	0.01	Q	|	|	|	V |
20+40	0.0397	0.01	Q	|	|	|	V |
20+45	0.0398	0.01	Q	|	|	|	V |
20+50	0.0398	0.01	Q	|	|	|	V |
20+55	0.0398	0.00	Q	|	|	|	V |
21+ 0	0.0399	0.00	Q	|	|	|	V |
21+ 5	0.0399	0.01	Q	|	|	|	V |
21+10	0.0399	0.01	Q	|	|	|	V |
21+15	0.0400	0.01	Q	|	|	|	V |
21+20	0.0400	0.01	Q	|	|	|	V|
21+25	0.0400	0.00	Q	|	|	|	V|
21+30	0.0401	0.00	Q	|	|	|	V|
21+35	0.0401	0.01	Q	|	|	|	V|
21+40	0.0402	0.01	Q	|	|	|	V|
21+45	0.0402	0.01	Q	|	|	|	V|
21+50	0.0402	0.01	Q	|	|	|	V|
21+55	0.0403	0.00	Q	|	|	|	V|
22+ 0	0.0403	0.00	Q	|	|	|	V|
22+ 5	0.0403	0.01	Q	|	|	|	V|
22+10	0.0404	0.01	Q	|	|	|	V|
22+15	0.0404	0.01	Q	|	|	|	V|
22+20	0.0404	0.01	Q	|	|	|	V|
22+25	0.0405	0.00	Q	|	|	|	V|
22+30	0.0405	0.00	Q	|	|	|	V|
22+35	0.0405	0.00	Q	|	|	|	V|
22+40	0.0406	0.00	Q	|	|	|	V|
22+45	0.0406	0.00	Q	|	|	|	V|

22+50	0.0406	0.00	Q	|	|	| V|
22+55	0.0406	0.00	Q	|	|	| V|
23+ 0	0.0407	0.00	Q	|	|	| V|
23+ 5	0.0407	0.00	Q	|	|	| V|
23+10	0.0407	0.00	Q	|	|	| V|
23+15	0.0408	0.00	Q	|	|	| V|
23+20	0.0408	0.00	Q	|	|	| V|
23+25	0.0408	0.00	Q	|	|	| V|
23+30	0.0408	0.00	Q	|	|	| V|
23+35	0.0409	0.00	Q	|	|	| V|
23+40	0.0409	0.00	Q	|	|	| V|
23+45	0.0409	0.00	Q	|	|	| V|
23+50	0.0410	0.00	Q	|	|	| V|
23+55	0.0410	0.00	Q	|	|	| V|
24+ 0	0.0410	0.00	Q	|	|	| V|
24+ 5	0.0410	0.00	Q	|	|	| V|
24+10	0.0410	0.00	Q	|	|	| V|

U n i t H y d r o g r a p h A n a l y s i s

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Study date 04/28/21 File: APOST2YR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area A
Post-development
2-Yr 24-Hr Storm Event

Drainage Area = 0.43(Ac.) = 0.001 Sq. Mi.
Length along longest watercourse = 354.00(Ft.)
Length along longest watercourse measured to centroid = 143.00(Ft.)
Length along longest watercourse = 0.067 Mi.
Length along longest watercourse measured to centroid = 0.027 Mi.
Difference in elevation = 9.10(Ft.)
Slope along watercourse = 135.7288 Ft./Mi.
Average Manning's 'N' = 0.030
Lag time = 0.026 Hr.
Lag time = 1.54 Min.
25% of lag time = 0.39 Min.
40% of lag time = 0.62 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.43	2.43	1.04

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
0.43	6.58	2.80

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.430(In)
Area Averaged 100-Year Rainfall = 6.580(In)

Point rain (area averaged) = 2.430(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.430(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
0.426	37.00	1.000

Total Area Entered = 0.43(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
37.0	19.6	0.843	1.000	0.084	1.000	0.084

Sum (F) = 0.084
Area averaged mean soil loss (F) (In/Hr) = 0.084
Minimum soil loss rate ((In/Hr)) = 0.042
(for 24 hour storm duration)
Soil low loss rate (decimal) = 0.100

U n i t H y d r o g r a p h
DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	323.778	58.587	0.252
2	0.167	647.555	37.249	0.160
3	0.250	971.333	4.164	0.018

Sum = 100.000 Sum= 0.429

	Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.019	0.149	0.002	0.02
2	0.17	0.07	0.019	0.149	0.002	0.02
3	0.25	0.07	0.019	0.148	0.002	0.02
4	0.33	0.10	0.029	0.148	0.003	0.03
5	0.42	0.10	0.029	0.147	0.003	0.03
6	0.50	0.10	0.029	0.147	0.003	0.03
7	0.58	0.10	0.029	0.146	0.003	0.03
8	0.67	0.10	0.029	0.145	0.003	0.03
9	0.75	0.10	0.029	0.145	0.003	0.03
10	0.83	0.13	0.039	0.144	0.004	0.03
11	0.92	0.13	0.039	0.144	0.004	0.03
12	1.00	0.13	0.039	0.143	0.004	0.03
13	1.08	0.10	0.029	0.143	0.003	0.03
14	1.17	0.10	0.029	0.142	0.003	0.03
15	1.25	0.10	0.029	0.141	0.003	0.03
16	1.33	0.10	0.029	0.141	0.003	0.03
17	1.42	0.10	0.029	0.140	0.003	0.03
18	1.50	0.10	0.029	0.140	0.003	0.03

19	1.58	0.10	0.029	0.139	0.003	0.03
20	1.67	0.10	0.029	0.139	0.003	0.03
21	1.75	0.10	0.029	0.138	0.003	0.03
22	1.83	0.13	0.039	0.138	0.004	0.03
23	1.92	0.13	0.039	0.137	0.004	0.03
24	2.00	0.13	0.039	0.136	0.004	0.03
25	2.08	0.13	0.039	0.136	0.004	0.03
26	2.17	0.13	0.039	0.135	0.004	0.03
27	2.25	0.13	0.039	0.135	0.004	0.03
28	2.33	0.13	0.039	0.134	0.004	0.03
29	2.42	0.13	0.039	0.134	0.004	0.03
30	2.50	0.13	0.039	0.133	0.004	0.03
31	2.58	0.17	0.049	0.133	0.005	0.04
32	2.67	0.17	0.049	0.132	0.005	0.04
33	2.75	0.17	0.049	0.132	0.005	0.04
34	2.83	0.17	0.049	0.131	0.005	0.04
35	2.92	0.17	0.049	0.130	0.005	0.04
36	3.00	0.17	0.049	0.130	0.005	0.04
37	3.08	0.17	0.049	0.129	0.005	0.04
38	3.17	0.17	0.049	0.129	0.005	0.04
39	3.25	0.17	0.049	0.128	0.005	0.04
40	3.33	0.17	0.049	0.128	0.005	0.04
41	3.42	0.17	0.049	0.127	0.005	0.04
42	3.50	0.17	0.049	0.127	0.005	0.04
43	3.58	0.17	0.049	0.126	0.005	0.04
44	3.67	0.17	0.049	0.126	0.005	0.04
45	3.75	0.17	0.049	0.125	0.005	0.04
46	3.83	0.20	0.058	0.125	0.006	0.05
47	3.92	0.20	0.058	0.124	0.006	0.05
48	4.00	0.20	0.058	0.124	0.006	0.05
49	4.08	0.20	0.058	0.123	0.006	0.05
50	4.17	0.20	0.058	0.122	0.006	0.05
51	4.25	0.20	0.058	0.122	0.006	0.05
52	4.33	0.23	0.068	0.121	0.007	0.06
53	4.42	0.23	0.068	0.121	0.007	0.06
54	4.50	0.23	0.068	0.120	0.007	0.06
55	4.58	0.23	0.068	0.120	0.007	0.06
56	4.67	0.23	0.068	0.119	0.007	0.06
57	4.75	0.23	0.068	0.119	0.007	0.06
58	4.83	0.27	0.078	0.118	0.008	0.07
59	4.92	0.27	0.078	0.118	0.008	0.07
60	5.00	0.27	0.078	0.117	0.008	0.07
61	5.08	0.20	0.058	0.117	0.006	0.05
62	5.17	0.20	0.058	0.116	0.006	0.05
63	5.25	0.20	0.058	0.116	0.006	0.05
64	5.33	0.23	0.068	0.115	0.007	0.06
65	5.42	0.23	0.068	0.115	0.007	0.06
66	5.50	0.23	0.068	0.114	0.007	0.06
67	5.58	0.27	0.078	0.114	0.008	0.07
68	5.67	0.27	0.078	0.113	0.008	0.07
69	5.75	0.27	0.078	0.113	0.008	0.07
70	5.83	0.27	0.078	0.112	0.008	0.07
71	5.92	0.27	0.078	0.112	0.008	0.07
72	6.00	0.27	0.078	0.111	0.008	0.07
73	6.08	0.30	0.087	0.111	0.009	0.08
74	6.17	0.30	0.087	0.110	0.009	0.08

75	6.25	0.30	0.087	0.110	0.009	0.08
76	6.33	0.30	0.087	0.109	0.009	0.08
77	6.42	0.30	0.087	0.109	0.009	0.08
78	6.50	0.30	0.087	0.108	0.009	0.08
79	6.58	0.33	0.097	0.108	0.010	0.09
80	6.67	0.33	0.097	0.107	0.010	0.09
81	6.75	0.33	0.097	0.107	0.010	0.09
82	6.83	0.33	0.097	0.106	0.010	0.09
83	6.92	0.33	0.097	0.106	0.010	0.09
84	7.00	0.33	0.097	0.105	0.010	0.09
85	7.08	0.33	0.097	0.105	0.010	0.09
86	7.17	0.33	0.097	0.104	0.010	0.09
87	7.25	0.33	0.097	0.104	0.010	0.09
88	7.33	0.37	0.107	0.104	---	0.00
89	7.42	0.37	0.107	0.103	---	0.00
90	7.50	0.37	0.107	0.103	---	0.00
91	7.58	0.40	0.117	0.102	---	0.01
92	7.67	0.40	0.117	0.102	---	0.01
93	7.75	0.40	0.117	0.101	---	0.02
94	7.83	0.43	0.126	0.101	---	0.03
95	7.92	0.43	0.126	0.100	---	0.03
96	8.00	0.43	0.126	0.100	---	0.03
97	8.08	0.50	0.146	0.099	---	0.05
98	8.17	0.50	0.146	0.099	---	0.05
99	8.25	0.50	0.146	0.098	---	0.05
100	8.33	0.50	0.146	0.098	---	0.05
101	8.42	0.50	0.146	0.097	---	0.05
102	8.50	0.50	0.146	0.097	---	0.05
103	8.58	0.53	0.156	0.097	---	0.06
104	8.67	0.53	0.156	0.096	---	0.06
105	8.75	0.53	0.156	0.096	---	0.06
106	8.83	0.57	0.165	0.095	---	0.07
107	8.92	0.57	0.165	0.095	---	0.07
108	9.00	0.57	0.165	0.094	---	0.07
109	9.08	0.63	0.185	0.094	---	0.09
110	9.17	0.63	0.185	0.093	---	0.09
111	9.25	0.63	0.185	0.093	---	0.09
112	9.33	0.67	0.194	0.093	---	0.10
113	9.42	0.67	0.194	0.092	---	0.10
114	9.50	0.67	0.194	0.092	---	0.10
115	9.58	0.70	0.204	0.091	---	0.11
116	9.67	0.70	0.204	0.091	---	0.11
117	9.75	0.70	0.204	0.090	---	0.11
118	9.83	0.73	0.214	0.090	---	0.12
119	9.92	0.73	0.214	0.089	---	0.12
120	10.00	0.73	0.214	0.089	---	0.12
121	10.08	0.50	0.146	0.089	---	0.06
122	10.17	0.50	0.146	0.088	---	0.06
123	10.25	0.50	0.146	0.088	---	0.06
124	10.33	0.50	0.146	0.087	---	0.06
125	10.42	0.50	0.146	0.087	---	0.06
126	10.50	0.50	0.146	0.086	---	0.06
127	10.58	0.67	0.194	0.086	---	0.11
128	10.67	0.67	0.194	0.086	---	0.11
129	10.75	0.67	0.194	0.085	---	0.11
130	10.83	0.67	0.194	0.085	---	0.11

131	10.92	0.67	0.194	0.084	---	0.11
132	11.00	0.67	0.194	0.084	---	0.11
133	11.08	0.63	0.185	0.084	---	0.10
134	11.17	0.63	0.185	0.083	---	0.10
135	11.25	0.63	0.185	0.083	---	0.10
136	11.33	0.63	0.185	0.082	---	0.10
137	11.42	0.63	0.185	0.082	---	0.10
138	11.50	0.63	0.185	0.082	---	0.10
139	11.58	0.57	0.165	0.081	---	0.08
140	11.67	0.57	0.165	0.081	---	0.08
141	11.75	0.57	0.165	0.080	---	0.08
142	11.83	0.60	0.175	0.080	---	0.10
143	11.92	0.60	0.175	0.080	---	0.10
144	12.00	0.60	0.175	0.079	---	0.10
145	12.08	0.83	0.243	0.079	---	0.16
146	12.17	0.83	0.243	0.078	---	0.16
147	12.25	0.83	0.243	0.078	---	0.17
148	12.33	0.87	0.253	0.078	---	0.18
149	12.42	0.87	0.253	0.077	---	0.18
150	12.50	0.87	0.253	0.077	---	0.18
151	12.58	0.93	0.272	0.076	---	0.20
152	12.67	0.93	0.272	0.076	---	0.20
153	12.75	0.93	0.272	0.076	---	0.20
154	12.83	0.97	0.282	0.075	---	0.21
155	12.92	0.97	0.282	0.075	---	0.21
156	13.00	0.97	0.282	0.074	---	0.21
157	13.08	1.13	0.330	0.074	---	0.26
158	13.17	1.13	0.330	0.074	---	0.26
159	13.25	1.13	0.330	0.073	---	0.26
160	13.33	1.13	0.330	0.073	---	0.26
161	13.42	1.13	0.330	0.073	---	0.26
162	13.50	1.13	0.330	0.072	---	0.26
163	13.58	0.77	0.224	0.072	---	0.15
164	13.67	0.77	0.224	0.071	---	0.15
165	13.75	0.77	0.224	0.071	---	0.15
166	13.83	0.77	0.224	0.071	---	0.15
167	13.92	0.77	0.224	0.070	---	0.15
168	14.00	0.77	0.224	0.070	---	0.15
169	14.08	0.90	0.262	0.070	---	0.19
170	14.17	0.90	0.262	0.069	---	0.19
171	14.25	0.90	0.262	0.069	---	0.19
172	14.33	0.87	0.253	0.069	---	0.18
173	14.42	0.87	0.253	0.068	---	0.18
174	14.50	0.87	0.253	0.068	---	0.18
175	14.58	0.87	0.253	0.068	---	0.19
176	14.67	0.87	0.253	0.067	---	0.19
177	14.75	0.87	0.253	0.067	---	0.19
178	14.83	0.83	0.243	0.067	---	0.18
179	14.92	0.83	0.243	0.066	---	0.18
180	15.00	0.83	0.243	0.066	---	0.18
181	15.08	0.80	0.233	0.066	---	0.17
182	15.17	0.80	0.233	0.065	---	0.17
183	15.25	0.80	0.233	0.065	---	0.17
184	15.33	0.77	0.224	0.065	---	0.16
185	15.42	0.77	0.224	0.064	---	0.16
186	15.50	0.77	0.224	0.064	---	0.16

187	15.58	0.63	0.185	0.064	---	0.12
188	15.67	0.63	0.185	0.063	---	0.12
189	15.75	0.63	0.185	0.063	---	0.12
190	15.83	0.63	0.185	0.063	---	0.12
191	15.92	0.63	0.185	0.062	---	0.12
192	16.00	0.63	0.185	0.062	---	0.12
193	16.08	0.13	0.039	0.062	0.004	0.03
194	16.17	0.13	0.039	0.061	0.004	0.03
195	16.25	0.13	0.039	0.061	0.004	0.03
196	16.33	0.13	0.039	0.061	0.004	0.03
197	16.42	0.13	0.039	0.060	0.004	0.03
198	16.50	0.13	0.039	0.060	0.004	0.03
199	16.58	0.10	0.029	0.060	0.003	0.03
200	16.67	0.10	0.029	0.059	0.003	0.03
201	16.75	0.10	0.029	0.059	0.003	0.03
202	16.83	0.10	0.029	0.059	0.003	0.03
203	16.92	0.10	0.029	0.059	0.003	0.03
204	17.00	0.10	0.029	0.058	0.003	0.03
205	17.08	0.17	0.049	0.058	0.005	0.04
206	17.17	0.17	0.049	0.058	0.005	0.04
207	17.25	0.17	0.049	0.057	0.005	0.04
208	17.33	0.17	0.049	0.057	0.005	0.04
209	17.42	0.17	0.049	0.057	0.005	0.04
210	17.50	0.17	0.049	0.057	0.005	0.04
211	17.58	0.17	0.049	0.056	0.005	0.04
212	17.67	0.17	0.049	0.056	0.005	0.04
213	17.75	0.17	0.049	0.056	0.005	0.04
214	17.83	0.13	0.039	0.055	0.004	0.03
215	17.92	0.13	0.039	0.055	0.004	0.03
216	18.00	0.13	0.039	0.055	0.004	0.03
217	18.08	0.13	0.039	0.055	0.004	0.03
218	18.17	0.13	0.039	0.054	0.004	0.03
219	18.25	0.13	0.039	0.054	0.004	0.03
220	18.33	0.13	0.039	0.054	0.004	0.03
221	18.42	0.13	0.039	0.054	0.004	0.03
222	18.50	0.13	0.039	0.053	0.004	0.03
223	18.58	0.10	0.029	0.053	0.003	0.03
224	18.67	0.10	0.029	0.053	0.003	0.03
225	18.75	0.10	0.029	0.052	0.003	0.03
226	18.83	0.07	0.019	0.052	0.002	0.02
227	18.92	0.07	0.019	0.052	0.002	0.02
228	19.00	0.07	0.019	0.052	0.002	0.02
229	19.08	0.10	0.029	0.051	0.003	0.03
230	19.17	0.10	0.029	0.051	0.003	0.03
231	19.25	0.10	0.029	0.051	0.003	0.03
232	19.33	0.13	0.039	0.051	0.004	0.03
233	19.42	0.13	0.039	0.051	0.004	0.03
234	19.50	0.13	0.039	0.050	0.004	0.03
235	19.58	0.10	0.029	0.050	0.003	0.03
236	19.67	0.10	0.029	0.050	0.003	0.03
237	19.75	0.10	0.029	0.050	0.003	0.03
238	19.83	0.07	0.019	0.049	0.002	0.02
239	19.92	0.07	0.019	0.049	0.002	0.02
240	20.00	0.07	0.019	0.049	0.002	0.02
241	20.08	0.10	0.029	0.049	0.003	0.03
242	20.17	0.10	0.029	0.049	0.003	0.03

243	20.25	0.10	0.029	0.048	0.003	0.03
244	20.33	0.10	0.029	0.048	0.003	0.03
245	20.42	0.10	0.029	0.048	0.003	0.03
246	20.50	0.10	0.029	0.048	0.003	0.03
247	20.58	0.10	0.029	0.048	0.003	0.03
248	20.67	0.10	0.029	0.047	0.003	0.03
249	20.75	0.10	0.029	0.047	0.003	0.03
250	20.83	0.07	0.019	0.047	0.002	0.02
251	20.92	0.07	0.019	0.047	0.002	0.02
252	21.00	0.07	0.019	0.047	0.002	0.02
253	21.08	0.10	0.029	0.046	0.003	0.03
254	21.17	0.10	0.029	0.046	0.003	0.03
255	21.25	0.10	0.029	0.046	0.003	0.03
256	21.33	0.07	0.019	0.046	0.002	0.02
257	21.42	0.07	0.019	0.046	0.002	0.02
258	21.50	0.07	0.019	0.045	0.002	0.02
259	21.58	0.10	0.029	0.045	0.003	0.03
260	21.67	0.10	0.029	0.045	0.003	0.03
261	21.75	0.10	0.029	0.045	0.003	0.03
262	21.83	0.07	0.019	0.045	0.002	0.02
263	21.92	0.07	0.019	0.045	0.002	0.02
264	22.00	0.07	0.019	0.045	0.002	0.02
265	22.08	0.10	0.029	0.044	0.003	0.03
266	22.17	0.10	0.029	0.044	0.003	0.03
267	22.25	0.10	0.029	0.044	0.003	0.03
268	22.33	0.07	0.019	0.044	0.002	0.02
269	22.42	0.07	0.019	0.044	0.002	0.02
270	22.50	0.07	0.019	0.044	0.002	0.02
271	22.58	0.07	0.019	0.044	0.002	0.02
272	22.67	0.07	0.019	0.043	0.002	0.02
273	22.75	0.07	0.019	0.043	0.002	0.02
274	22.83	0.07	0.019	0.043	0.002	0.02
275	22.92	0.07	0.019	0.043	0.002	0.02
276	23.00	0.07	0.019	0.043	0.002	0.02
277	23.08	0.07	0.019	0.043	0.002	0.02
278	23.17	0.07	0.019	0.043	0.002	0.02
279	23.25	0.07	0.019	0.043	0.002	0.02
280	23.33	0.07	0.019	0.043	0.002	0.02
281	23.42	0.07	0.019	0.043	0.002	0.02
282	23.50	0.07	0.019	0.042	0.002	0.02
283	23.58	0.07	0.019	0.042	0.002	0.02
284	23.67	0.07	0.019	0.042	0.002	0.02
285	23.75	0.07	0.019	0.042	0.002	0.02
286	23.83	0.07	0.019	0.042	0.002	0.02
287	23.92	0.07	0.019	0.042	0.002	0.02
288	24.00	0.07	0.019	0.042	0.002	0.02
Sum =		100.0			Sum =	19.8

Flood volume = Effective rainfall 1.65(In)
times area 0.4(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 0.78(In)
Total soil loss = 0.028(Ac.Ft)
Total rainfall = 2.43(In)
Flood volume = 2556.8 Cubic Feet
Total soil loss = 1200.9 Cubic Feet

Peak flow rate of this hydrograph = 0.111(CFS)

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24 - H O U R S T O R M

R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0000	0.00	Q				
0+10	0.0001	0.01	Q				
0+15	0.0001	0.01	Q				
0+20	0.0002	0.01	Q				
0+25	0.0003	0.01	Q				
0+30	0.0004	0.01	Q				
0+35	0.0004	0.01	Q				
0+40	0.0005	0.01	Q				
0+45	0.0006	0.01	Q				
0+50	0.0007	0.01	Q				
0+55	0.0008	0.01	Q				
1+ 0	0.0009	0.02	Q				
1+ 5	0.0010	0.01	Q				
1+10	0.0011	0.01	Q				
1+15	0.0011	0.01	Q				
1+20	0.0012	0.01	Q				
1+25	0.0013	0.01	Q				
1+30	0.0014	0.01	Q				
1+35	0.0014	0.01	Q				
1+40	0.0015	0.01	QV				
1+45	0.0016	0.01	QV				
1+50	0.0017	0.01	QV				
1+55	0.0018	0.01	QV				
2+ 0	0.0019	0.02	QV				
2+ 5	0.0020	0.02	QV				
2+10	0.0021	0.02	QV				
2+15	0.0022	0.02	QV				
2+20	0.0023	0.02	QV				
2+25	0.0024	0.02	QV				
2+30	0.0025	0.02	QV				
2+35	0.0026	0.02	QV				
2+40	0.0028	0.02	QV				
2+45	0.0029	0.02	QV				
2+50	0.0030	0.02	Q V				
2+55	0.0032	0.02	Q V				
3+ 0	0.0033	0.02	Q V				
3+ 5	0.0034	0.02	Q V				
3+10	0.0035	0.02	Q V				
3+15	0.0037	0.02	Q V				
3+20	0.0038	0.02	Q V				
3+25	0.0039	0.02	Q V				
3+30	0.0041	0.02	Q V				
3+35	0.0042	0.02	Q V				
3+40	0.0043	0.02	Q V				
3+45	0.0044	0.02	Q V				
3+50	0.0046	0.02	Q V				

3+55	0.0047	0.02	Q	V	|	|	|	|
4+ 0	0.0049	0.02	Q	V	|	|	|	|
4+ 5	0.0051	0.02	Q	V	|	|	|	|
4+10	0.0052	0.02	Q	V	|	|	|	|
4+15	0.0054	0.02	Q	V	|	|	|	|
4+20	0.0055	0.02	Q	V	|	|	|	|
4+25	0.0057	0.03	Q	V	|	|	|	|
4+30	0.0059	0.03	Q	V	|	|	|	|
4+35	0.0061	0.03	Q	V	|	|	|	|
4+40	0.0063	0.03	Q	V	|	|	|	|
4+45	0.0064	0.03	Q	V	|	|	|	|
4+50	0.0066	0.03	Q	V	|	|	|	|
4+55	0.0068	0.03	Q	V	|	|	|	|
5+ 0	0.0070	0.03	Q	V	|	|	|	|
5+ 5	0.0072	0.03	Q	V	|	|	|	|
5+10	0.0074	0.02	Q	V	|	|	|	|
5+15	0.0075	0.02	Q	V	|	|	|	|
5+20	0.0077	0.02	Q	V	|	|	|	|
5+25	0.0079	0.03	Q	V	|	|	|	|
5+30	0.0081	0.03	Q	V	|	|	|	|
5+35	0.0083	0.03	Q	V	|	|	|	|
5+40	0.0085	0.03	Q	V	|	|	|	|
5+45	0.0087	0.03	Q	V	|	|	|	|
5+50	0.0089	0.03	Q	V	|	|	|	|
5+55	0.0091	0.03	Q	V	|	|	|	|
6+ 0	0.0093	0.03	Q	V	|	|	|	|
6+ 5	0.0095	0.03	Q	V	|	|	|	|
6+10	0.0098	0.03	Q	V	|	|	|	|
6+15	0.0100	0.03	Q	V	|	|	|	|
6+20	0.0102	0.03	Q	V	|	|	|	|
6+25	0.0105	0.03	Q	V	|	|	|	|
6+30	0.0107	0.03	Q	V	|	|	|	|
6+35	0.0109	0.04	Q	V	|	|	|	|
6+40	0.0112	0.04	Q	V	|	|	|	|
6+45	0.0115	0.04	Q	V	|	|	|	|
6+50	0.0117	0.04	Q	V	|	|	|	|
6+55	0.0120	0.04	Q	V	|	|	|	|
7+ 0	0.0122	0.04	Q	V	|	|	|	|
7+ 5	0.0125	0.04	Q	V	|	|	|	|
7+10	0.0127	0.04	Q	V	|	|	|	|
7+15	0.0130	0.04	Q	V	|	|	|	|
7+20	0.0131	0.02	Q	V	|	|	|	|
7+25	0.0131	0.00	Q	V	|	|	|	|
7+30	0.0131	0.00	Q	V	|	|	|	|
7+35	0.0132	0.00	Q	V	|	|	|	|
7+40	0.0132	0.01	Q	V	|	|	|	|
7+45	0.0133	0.01	Q	V	|	|	|	|
7+50	0.0133	0.01	Q	V	|	|	|	|
7+55	0.0134	0.01	Q	V	|	|	|	|
8+ 0	0.0135	0.01	Q	V	|	|	|	|
8+ 5	0.0136	0.02	Q	V	|	|	|	|
8+10	0.0137	0.02	Q	V	|	|	|	|
8+15	0.0139	0.02	Q	V	|	|	|	|
8+20	0.0140	0.02	Q	V	|	|	|	|
8+25	0.0142	0.02	Q	V	|	|	|	|
8+30	0.0143	0.02	Q	V	|	|	|	|

8+35	0.0145	0.02	Q	V|	|	|	|
8+40	0.0146	0.03	Q	V|	|	|	|
8+45	0.0148	0.03	Q	V	|	|	|
8+50	0.0150	0.03	Q	V	|	|	|
8+55	0.0152	0.03	Q	V	|	|	|
9+ 0	0.0154	0.03	Q	V	|	|	|
9+ 5	0.0157	0.04	Q	V	|	|	|
9+10	0.0159	0.04	Q	V	|	|	|
9+15	0.0162	0.04	Q	|V	|	|	|
9+20	0.0165	0.04	Q	|V	|	|	|
9+25	0.0168	0.04	Q	|V	|	|	|
9+30	0.0171	0.04	Q	|V	|	|	|
9+35	0.0174	0.05	Q	|V	|	|	|
9+40	0.0178	0.05	Q	| V	|	|	|
9+45	0.0181	0.05	Q	| V	|	|	|
9+50	0.0184	0.05	Q	| V	|	|	|
9+55	0.0188	0.05	Q	| V	|	|	|
10+ 0	0.0192	0.05	Q	| V	|	|	|
10+ 5	0.0194	0.04	Q	| V	|	|	|
10+10	0.0196	0.03	Q	| V	|	|	|
10+15	0.0198	0.02	Q	| V	|	|	|
10+20	0.0200	0.03	Q	| V	|	|	|
10+25	0.0201	0.03	Q	| V	|	|	|
10+30	0.0203	0.03	Q	| V	|	|	|
10+35	0.0206	0.04	Q	| V	|	|	|
10+40	0.0209	0.05	Q	| V	|	|	|
10+45	0.0212	0.05	Q	| V	|	|	|
10+50	0.0215	0.05	Q	| V	|	|	|
10+55	0.0218	0.05	Q	| V	|	|	|
11+ 0	0.0222	0.05	Q	| V	|	|	|
11+ 5	0.0225	0.05	Q	| V	|	|	|
11+10	0.0228	0.04	Q	| V	|	|	|
11+15	0.0231	0.04	Q	| V	|	|	|
11+20	0.0234	0.04	Q	| V	|	|	|
11+25	0.0237	0.04	Q	| V	|	|	|
11+30	0.0240	0.04	Q	| V	|	|	|
11+35	0.0243	0.04	Q	| V	|	|	|
11+40	0.0245	0.04	Q	| V	|	|	|
11+45	0.0248	0.04	Q	| V	|	|	|
11+50	0.0250	0.04	Q	| V	|	|	|
11+55	0.0253	0.04	Q	| V	|	|	|
12+ 0	0.0256	0.04	Q	| V	|	|	|
12+ 5	0.0260	0.06	Q	| V	|	|	|
12+10	0.0265	0.07	Q	| V	|	|	|
12+15	0.0270	0.07	Q	| V	|	|	|
12+20	0.0275	0.07	Q	| V	|	|	|
12+25	0.0280	0.08	Q	| V|	|	|	|
12+30	0.0285	0.08	Q	| V|	|	|	|
12+35	0.0291	0.08	Q	| V|	|	|	|
12+40	0.0296	0.08	Q	| V	|	|	|
12+45	0.0302	0.08	Q	| V	|	|	|
12+50	0.0308	0.09	Q	| |V	|	|	|
12+55	0.0314	0.09	Q	| |V	|	|	|
13+ 0	0.0321	0.09	Q	| |V	|	|	|
13+ 5	0.0327	0.10	Q	| | V	|	|	|
13+10	0.0335	0.11	Q	| | V	|	|	|

13+15	0.0343	0.11	Q	|	| V	|	|
13+20	0.0350	0.11	Q	|	| V	|	|
13+25	0.0358	0.11	Q	|	| V	|	|
13+30	0.0365	0.11	Q	|	| V	|	|
13+35	0.0371	0.08	Q	|	| V	|	|
13+40	0.0376	0.07	Q	|	| V	|	|
13+45	0.0380	0.07	Q	|	| V	|	|
13+50	0.0385	0.07	Q	|	| V	|	|
13+55	0.0389	0.07	Q	|	| V	|	|
14+ 0	0.0394	0.07	Q	|	| V	|	|
14+ 5	0.0399	0.08	Q	|	| V	|	|
14+10	0.0405	0.08	Q	|	| V	|	|
14+15	0.0411	0.08	Q	|	| V	|	|
14+20	0.0416	0.08	Q	|	| V	|	|
14+25	0.0422	0.08	Q	|	| V	|	|
14+30	0.0427	0.08	Q	|	| V	|	|
14+35	0.0433	0.08	Q	|	| V	|	|
14+40	0.0438	0.08	Q	|	| V	|	|
14+45	0.0444	0.08	Q	|	| V	|	|
14+50	0.0449	0.08	Q	|	| V	|	|
14+55	0.0454	0.08	Q	|	| V	|	|
15+ 0	0.0459	0.08	Q	|	| V	|	|
15+ 5	0.0464	0.07	Q	|	| V	|	|
15+10	0.0469	0.07	Q	|	| V	|	|
15+15	0.0474	0.07	Q	|	| V	|	|
15+20	0.0479	0.07	Q	|	| V	|	|
15+25	0.0484	0.07	Q	|	| V	|	|
15+30	0.0489	0.07	Q	|	| V	|	|
15+35	0.0493	0.06	Q	|	| V	|	|
15+40	0.0496	0.05	Q	|	| V	|	|
15+45	0.0500	0.05	Q	|	| V	|	|
15+50	0.0504	0.05	Q	|	| V	|	|
15+55	0.0507	0.05	Q	|	| V	|	|
16+ 0	0.0511	0.05	Q	|	| V	|	|
16+ 5	0.0513	0.03	Q	|	| V	|	|
16+10	0.0514	0.02	Q	|	| V	|	|
16+15	0.0515	0.02	Q	|	| V	|	|
16+20	0.0516	0.02	Q	|	| V	|	|
16+25	0.0517	0.02	Q	|	| V	|	|
16+30	0.0518	0.02	Q	|	| V	|	|
16+35	0.0519	0.01	Q	|	| V	|	|
16+40	0.0520	0.01	Q	|	| V	|	|
16+45	0.0521	0.01	Q	|	| V	|	|
16+50	0.0521	0.01	Q	|	| V	|	|
16+55	0.0522	0.01	Q	|	| V	|	|
17+ 0	0.0523	0.01	Q	|	| V	|	|
17+ 5	0.0524	0.02	Q	|	| V	|	|
17+10	0.0525	0.02	Q	|	| V	|	|
17+15	0.0527	0.02	Q	|	| V	|	|
17+20	0.0528	0.02	Q	|	| V	|	|
17+25	0.0529	0.02	Q	|	| V	|	|
17+30	0.0530	0.02	Q	|	| V	|	|
17+35	0.0532	0.02	Q	|	| V	|	|
17+40	0.0533	0.02	Q	|	| V	|	|
17+45	0.0534	0.02	Q	|	| V	|	|
17+50	0.0536	0.02	Q	|	| V	|	|

17+55	0.0537	0.02	Q	|	|	| V |
18+ 0	0.0538	0.02	Q	|	|	| V |
18+ 5	0.0539	0.02	Q	|	|	| V |
18+10	0.0540	0.02	Q	|	|	| V |
18+15	0.0541	0.02	Q	|	|	| V |
18+20	0.0542	0.02	Q	|	|	| V |
18+25	0.0543	0.02	Q	|	|	| V |
18+30	0.0544	0.02	Q	|	|	| V |
18+35	0.0545	0.01	Q	|	|	| V |
18+40	0.0545	0.01	Q	|	|	| V |
18+45	0.0546	0.01	Q	|	|	| V |
18+50	0.0547	0.01	Q	|	|	| V |
18+55	0.0547	0.01	Q	|	|	| V |
19+ 0	0.0548	0.01	Q	|	|	| V |
19+ 5	0.0549	0.01	Q	|	|	| V |
19+10	0.0549	0.01	Q	|	|	| V |
19+15	0.0550	0.01	Q	|	|	| V |
19+20	0.0551	0.01	Q	|	|	| V |
19+25	0.0552	0.01	Q	|	|	| V |
19+30	0.0553	0.02	Q	|	|	| V |
19+35	0.0554	0.01	Q	|	|	| V |
19+40	0.0555	0.01	Q	|	|	| V |
19+45	0.0556	0.01	Q	|	|	| V |
19+50	0.0556	0.01	Q	|	|	| V |
19+55	0.0557	0.01	Q	|	|	| V |
20+ 0	0.0557	0.01	Q	|	|	| V |
20+ 5	0.0558	0.01	Q	|	|	| V |
20+10	0.0559	0.01	Q	|	|	| V |
20+15	0.0559	0.01	Q	|	|	| V |
20+20	0.0560	0.01	Q	|	|	| V |
20+25	0.0561	0.01	Q	|	|	| V |
20+30	0.0562	0.01	Q	|	|	| V |
20+35	0.0563	0.01	Q	|	|	| V |
20+40	0.0563	0.01	Q	|	|	| V |
20+45	0.0564	0.01	Q	|	|	| V |
20+50	0.0565	0.01	Q	|	|	| V |
20+55	0.0565	0.01	Q	|	|	| V |
21+ 0	0.0566	0.01	Q	|	|	| V |
21+ 5	0.0566	0.01	Q	|	|	| V |
21+10	0.0567	0.01	Q	|	|	| V |
21+15	0.0568	0.01	Q	|	|	| V |
21+20	0.0569	0.01	Q	|	|	| V |
21+25	0.0569	0.01	Q	|	|	| V |
21+30	0.0570	0.01	Q	|	|	| V |
21+35	0.0570	0.01	Q	|	|	| V |
21+40	0.0571	0.01	Q	|	|	| V |
21+45	0.0572	0.01	Q	|	|	| V |
21+50	0.0572	0.01	Q	|	|	| V|
21+55	0.0573	0.01	Q	|	|	| V|
22+ 0	0.0574	0.01	Q	|	|	| V|
22+ 5	0.0574	0.01	Q	|	|	| V|
22+10	0.0575	0.01	Q	|	|	| V|
22+15	0.0576	0.01	Q	|	|	| V|
22+20	0.0576	0.01	Q	|	|	| V|
22+25	0.0577	0.01	Q	|	|	| V|
22+30	0.0577	0.01	Q	|	|	| V|

22+35	0.0578	0.01	Q	|	|	|	V|
22+40	0.0578	0.01	Q	|	|	|	V|
22+45	0.0579	0.01	Q	|	|	|	V|
22+50	0.0579	0.01	Q	|	|	|	V|
22+55	0.0580	0.01	Q	|	|	|	V|
23+ 0	0.0581	0.01	Q	|	|	|	V|
23+ 5	0.0581	0.01	Q	|	|	|	V|
23+10	0.0582	0.01	Q	|	|	|	V|
23+15	0.0582	0.01	Q	|	|	|	V|
23+20	0.0583	0.01	Q	|	|	|	V|
23+25	0.0583	0.01	Q	|	|	|	V|
23+30	0.0584	0.01	Q	|	|	|	V|
23+35	0.0584	0.01	Q	|	|	|	V|
23+40	0.0585	0.01	Q	|	|	|	V|
23+45	0.0585	0.01	Q	|	|	|	V|
23+50	0.0586	0.01	Q	|	|	|	V|
23+55	0.0586	0.01	Q	|	|	|	V|
24+ 0	0.0587	0.01	Q	|	|	|	V|
24+ 5	0.0587	0.00	Q	|	|	|	V|
24+10	0.0587	0.00	Q	|	|	|	V

U n i t H y d r o g r a p h A n a l y s i s

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Study date 04/28/21 File: BPOST2YR242.out

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Riverside County Synthetic Unit Hydrology Method
RCFC & WCD Manual date - April 1978

English (in-lb) Input Units Used
English Rainfall Data (Inches) Input Values Used

English Units used in output format

28771 Central Avenue Gas Station
Area B
Post-development
2-Yr 24-Hr Storm Event

Drainage Area = 1.02(Ac.) = 0.002 Sq. Mi.
Length along longest watercourse = 348.00(Ft.)
Length along longest watercourse measured to centroid = 149.00(Ft.)
Length along longest watercourse = 0.066 Mi.
Length along longest watercourse measured to centroid = 0.028 Mi.
Difference in elevation = 1.78(Ft.)
Slope along watercourse = 27.0069 Ft./Mi.
Average Manning's 'N' = 0.015
Lag time = 0.018 Hr.
Lag time = 1.06 Min.
25% of lag time = 0.26 Min.
40% of lag time = 0.42 Min.
Unit time = 5.00 Min.
Duration of storm = 24 Hour(s)
User Entered Base Flow = 0.00(CFS)

2 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.02	2.43	2.49

100 YEAR Area rainfall data:

Area(Ac.)[1]	Rainfall(In)[2]	Weighting[1*2]
1.02	6.58	6.73

STORM EVENT (YEAR) = 2.00
Area Averaged 2-Year Rainfall = 2.430(In)
Area Averaged 100-Year Rainfall = 6.580(In)

Point rain (area averaged) = 2.430(In)
Areal adjustment factor = 100.00 %
Adjusted average point rain = 2.430(In)

Sub-Area Data:

Area(Ac.)	Runoff Index	Impervious %
1.023	54.00	0.783

Total Area Entered = 1.02(Ac.)

RI AMC2	RI AMC-1	Infil. Rate (In/Hr)	Impervious (Dec.%)	Adj. Infil. Rate (In/Hr)	Area% (Dec.)	F (In/Hr)
54.0	34.2	0.722	0.783	0.213	1.000	0.213

Sum (F) = 0.213

Area averaged mean soil loss (F) (In/Hr) = 0.213

Minimum soil loss rate ((In/Hr)) = 0.107

(for 24 hour storm duration)

Soil low loss rate (decimal) = 0.273

U n i t H y d r o g r a p h

DESERT S-Curve

Unit Hydrograph Data

Unit time period (hrs)	Time % of lag	Distribution Graph %	Unit Hydrograph (CFS)
1	0.083	472.158	69.580	0.717
2	0.167	944.316	30.420	0.314
	Sum = 100.000		Sum= 1.031

Unit Time (Hr.)	Pattern Percent	Storm Rain (In/Hr)	Loss rate(In./Hr) Max	Low	Effective (In/Hr)
1	0.08	0.07	0.019	0.378	0.005	0.01
2	0.17	0.07	0.019	0.376	0.005	0.01
3	0.25	0.07	0.019	0.375	0.005	0.01
4	0.33	0.10	0.029	0.373	0.008	0.02
5	0.42	0.10	0.029	0.372	0.008	0.02
6	0.50	0.10	0.029	0.371	0.008	0.02
7	0.58	0.10	0.029	0.369	0.008	0.02
8	0.67	0.10	0.029	0.368	0.008	0.02
9	0.75	0.10	0.029	0.366	0.008	0.02
10	0.83	0.13	0.039	0.365	0.011	0.03
11	0.92	0.13	0.039	0.363	0.011	0.03
12	1.00	0.13	0.039	0.362	0.011	0.03
13	1.08	0.10	0.029	0.360	0.008	0.02
14	1.17	0.10	0.029	0.359	0.008	0.02
15	1.25	0.10	0.029	0.358	0.008	0.02
16	1.33	0.10	0.029	0.356	0.008	0.02
17	1.42	0.10	0.029	0.355	0.008	0.02
18	1.50	0.10	0.029	0.353	0.008	0.02
19	1.58	0.10	0.029	0.352	0.008	0.02
20	1.67	0.10	0.029	0.351	0.008	0.02
21	1.75	0.10	0.029	0.349	0.008	0.02
22	1.83	0.13	0.039	0.348	0.011	0.03
23	1.92	0.13	0.039	0.346	0.011	0.03

24	2.00	0.13	0.039	0.345	0.011	0.03
25	2.08	0.13	0.039	0.344	0.011	0.03
26	2.17	0.13	0.039	0.342	0.011	0.03
27	2.25	0.13	0.039	0.341	0.011	0.03
28	2.33	0.13	0.039	0.339	0.011	0.03
29	2.42	0.13	0.039	0.338	0.011	0.03
30	2.50	0.13	0.039	0.337	0.011	0.03
31	2.58	0.17	0.049	0.335	0.013	0.04
32	2.67	0.17	0.049	0.334	0.013	0.04
33	2.75	0.17	0.049	0.332	0.013	0.04
34	2.83	0.17	0.049	0.331	0.013	0.04
35	2.92	0.17	0.049	0.330	0.013	0.04
36	3.00	0.17	0.049	0.328	0.013	0.04
37	3.08	0.17	0.049	0.327	0.013	0.04
38	3.17	0.17	0.049	0.326	0.013	0.04
39	3.25	0.17	0.049	0.324	0.013	0.04
40	3.33	0.17	0.049	0.323	0.013	0.04
41	3.42	0.17	0.049	0.322	0.013	0.04
42	3.50	0.17	0.049	0.320	0.013	0.04
43	3.58	0.17	0.049	0.319	0.013	0.04
44	3.67	0.17	0.049	0.318	0.013	0.04
45	3.75	0.17	0.049	0.316	0.013	0.04
46	3.83	0.20	0.058	0.315	0.016	0.04
47	3.92	0.20	0.058	0.314	0.016	0.04
48	4.00	0.20	0.058	0.312	0.016	0.04
49	4.08	0.20	0.058	0.311	0.016	0.04
50	4.17	0.20	0.058	0.310	0.016	0.04
51	4.25	0.20	0.058	0.308	0.016	0.04
52	4.33	0.23	0.068	0.307	0.019	0.05
53	4.42	0.23	0.068	0.306	0.019	0.05
54	4.50	0.23	0.068	0.304	0.019	0.05
55	4.58	0.23	0.068	0.303	0.019	0.05
56	4.67	0.23	0.068	0.302	0.019	0.05
57	4.75	0.23	0.068	0.300	0.019	0.05
58	4.83	0.27	0.078	0.299	0.021	0.06
59	4.92	0.27	0.078	0.298	0.021	0.06
60	5.00	0.27	0.078	0.297	0.021	0.06
61	5.08	0.20	0.058	0.295	0.016	0.04
62	5.17	0.20	0.058	0.294	0.016	0.04
63	5.25	0.20	0.058	0.293	0.016	0.04
64	5.33	0.23	0.068	0.291	0.019	0.05
65	5.42	0.23	0.068	0.290	0.019	0.05
66	5.50	0.23	0.068	0.289	0.019	0.05
67	5.58	0.27	0.078	0.288	0.021	0.06
68	5.67	0.27	0.078	0.286	0.021	0.06
69	5.75	0.27	0.078	0.285	0.021	0.06
70	5.83	0.27	0.078	0.284	0.021	0.06
71	5.92	0.27	0.078	0.283	0.021	0.06
72	6.00	0.27	0.078	0.281	0.021	0.06
73	6.08	0.30	0.087	0.280	0.024	0.06
74	6.17	0.30	0.087	0.279	0.024	0.06
75	6.25	0.30	0.087	0.278	0.024	0.06
76	6.33	0.30	0.087	0.276	0.024	0.06
77	6.42	0.30	0.087	0.275	0.024	0.06
78	6.50	0.30	0.087	0.274	0.024	0.06
79	6.58	0.33	0.097	0.273	0.027	0.07

80	6.67	0.33	0.097	0.271	0.027	0.07
81	6.75	0.33	0.097	0.270	0.027	0.07
82	6.83	0.33	0.097	0.269	0.027	0.07
83	6.92	0.33	0.097	0.268	0.027	0.07
84	7.00	0.33	0.097	0.267	0.027	0.07
85	7.08	0.33	0.097	0.265	0.027	0.07
86	7.17	0.33	0.097	0.264	0.027	0.07
87	7.25	0.33	0.097	0.263	0.027	0.07
88	7.33	0.37	0.107	0.262	0.029	0.08
89	7.42	0.37	0.107	0.261	0.029	0.08
90	7.50	0.37	0.107	0.259	0.029	0.08
91	7.58	0.40	0.117	0.258	0.032	0.08
92	7.67	0.40	0.117	0.257	0.032	0.08
93	7.75	0.40	0.117	0.256	0.032	0.08
94	7.83	0.43	0.126	0.255	0.035	0.09
95	7.92	0.43	0.126	0.253	0.035	0.09
96	8.00	0.43	0.126	0.252	0.035	0.09
97	8.08	0.50	0.146	0.251	0.040	0.11
98	8.17	0.50	0.146	0.250	0.040	0.11
99	8.25	0.50	0.146	0.249	0.040	0.11
100	8.33	0.50	0.146	0.248	0.040	0.11
101	8.42	0.50	0.146	0.246	0.040	0.11
102	8.50	0.50	0.146	0.245	0.040	0.11
103	8.58	0.53	0.156	0.244	0.043	0.11
104	8.67	0.53	0.156	0.243	0.043	0.11
105	8.75	0.53	0.156	0.242	0.043	0.11
106	8.83	0.57	0.165	0.241	0.045	0.12
107	8.92	0.57	0.165	0.240	0.045	0.12
108	9.00	0.57	0.165	0.238	0.045	0.12
109	9.08	0.63	0.185	0.237	0.050	0.13
110	9.17	0.63	0.185	0.236	0.050	0.13
111	9.25	0.63	0.185	0.235	0.050	0.13
112	9.33	0.67	0.194	0.234	0.053	0.14
113	9.42	0.67	0.194	0.233	0.053	0.14
114	9.50	0.67	0.194	0.232	0.053	0.14
115	9.58	0.70	0.204	0.231	0.056	0.15
116	9.67	0.70	0.204	0.229	0.056	0.15
117	9.75	0.70	0.204	0.228	0.056	0.15
118	9.83	0.73	0.214	0.227	0.058	0.16
119	9.92	0.73	0.214	0.226	0.058	0.16
120	10.00	0.73	0.214	0.225	0.058	0.16
121	10.08	0.50	0.146	0.224	0.040	0.11
122	10.17	0.50	0.146	0.223	0.040	0.11
123	10.25	0.50	0.146	0.222	0.040	0.11
124	10.33	0.50	0.146	0.221	0.040	0.11
125	10.42	0.50	0.146	0.220	0.040	0.11
126	10.50	0.50	0.146	0.219	0.040	0.11
127	10.58	0.67	0.194	0.218	0.053	0.14
128	10.67	0.67	0.194	0.216	0.053	0.14
129	10.75	0.67	0.194	0.215	0.053	0.14
130	10.83	0.67	0.194	0.214	0.053	0.14
131	10.92	0.67	0.194	0.213	0.053	0.14
132	11.00	0.67	0.194	0.212	0.053	0.14
133	11.08	0.63	0.185	0.211	0.050	0.13
134	11.17	0.63	0.185	0.210	0.050	0.13
135	11.25	0.63	0.185	0.209	0.050	0.13

136	11.33	0.63	0.185	0.208	0.050	0.13
137	11.42	0.63	0.185	0.207	0.050	0.13
138	11.50	0.63	0.185	0.206	0.050	0.13
139	11.58	0.57	0.165	0.205	0.045	0.12
140	11.67	0.57	0.165	0.204	0.045	0.12
141	11.75	0.57	0.165	0.203	0.045	0.12
142	11.83	0.60	0.175	0.202	0.048	0.13
143	11.92	0.60	0.175	0.201	0.048	0.13
144	12.00	0.60	0.175	0.200	0.048	0.13
145	12.08	0.83	0.243	0.199	---	0.04
146	12.17	0.83	0.243	0.198	---	0.05
147	12.25	0.83	0.243	0.197	---	0.05
148	12.33	0.87	0.253	0.196	---	0.06
149	12.42	0.87	0.253	0.195	---	0.06
150	12.50	0.87	0.253	0.194	---	0.06
151	12.58	0.93	0.272	0.193	---	0.08
152	12.67	0.93	0.272	0.192	---	0.08
153	12.75	0.93	0.272	0.191	---	0.08
154	12.83	0.97	0.282	0.190	---	0.09
155	12.92	0.97	0.282	0.189	---	0.09
156	13.00	0.97	0.282	0.188	---	0.09
157	13.08	1.13	0.330	0.187	---	0.14
158	13.17	1.13	0.330	0.186	---	0.14
159	13.25	1.13	0.330	0.185	---	0.15
160	13.33	1.13	0.330	0.184	---	0.15
161	13.42	1.13	0.330	0.183	---	0.15
162	13.50	1.13	0.330	0.183	---	0.15
163	13.58	0.77	0.224	0.182	---	0.04
164	13.67	0.77	0.224	0.181	---	0.04
165	13.75	0.77	0.224	0.180	---	0.04
166	13.83	0.77	0.224	0.179	---	0.04
167	13.92	0.77	0.224	0.178	---	0.05
168	14.00	0.77	0.224	0.177	---	0.05
169	14.08	0.90	0.262	0.176	---	0.09
170	14.17	0.90	0.262	0.175	---	0.09
171	14.25	0.90	0.262	0.174	---	0.09
172	14.33	0.87	0.253	0.173	---	0.08
173	14.42	0.87	0.253	0.173	---	0.08
174	14.50	0.87	0.253	0.172	---	0.08
175	14.58	0.87	0.253	0.171	---	0.08
176	14.67	0.87	0.253	0.170	---	0.08
177	14.75	0.87	0.253	0.169	---	0.08
178	14.83	0.83	0.243	0.168	---	0.07
179	14.92	0.83	0.243	0.167	---	0.08
180	15.00	0.83	0.243	0.166	---	0.08
181	15.08	0.80	0.233	0.166	---	0.07
182	15.17	0.80	0.233	0.165	---	0.07
183	15.25	0.80	0.233	0.164	---	0.07
184	15.33	0.77	0.224	0.163	---	0.06
185	15.42	0.77	0.224	0.162	---	0.06
186	15.50	0.77	0.224	0.161	---	0.06
187	15.58	0.63	0.185	0.161	---	0.02
188	15.67	0.63	0.185	0.160	---	0.02
189	15.75	0.63	0.185	0.159	---	0.03
190	15.83	0.63	0.185	0.158	---	0.03
191	15.92	0.63	0.185	0.157	---	0.03

192	16.00	0.63	0.185	0.157	---	0.03
193	16.08	0.13	0.039	0.156	0.011	0.03
194	16.17	0.13	0.039	0.155	0.011	0.03
195	16.25	0.13	0.039	0.154	0.011	0.03
196	16.33	0.13	0.039	0.153	0.011	0.03
197	16.42	0.13	0.039	0.153	0.011	0.03
198	16.50	0.13	0.039	0.152	0.011	0.03
199	16.58	0.10	0.029	0.151	0.008	0.02
200	16.67	0.10	0.029	0.150	0.008	0.02
201	16.75	0.10	0.029	0.149	0.008	0.02
202	16.83	0.10	0.029	0.149	0.008	0.02
203	16.92	0.10	0.029	0.148	0.008	0.02
204	17.00	0.10	0.029	0.147	0.008	0.02
205	17.08	0.17	0.049	0.146	0.013	0.04
206	17.17	0.17	0.049	0.146	0.013	0.04
207	17.25	0.17	0.049	0.145	0.013	0.04
208	17.33	0.17	0.049	0.144	0.013	0.04
209	17.42	0.17	0.049	0.144	0.013	0.04
210	17.50	0.17	0.049	0.143	0.013	0.04
211	17.58	0.17	0.049	0.142	0.013	0.04
212	17.67	0.17	0.049	0.141	0.013	0.04
213	17.75	0.17	0.049	0.141	0.013	0.04
214	17.83	0.13	0.039	0.140	0.011	0.03
215	17.92	0.13	0.039	0.139	0.011	0.03
216	18.00	0.13	0.039	0.139	0.011	0.03
217	18.08	0.13	0.039	0.138	0.011	0.03
218	18.17	0.13	0.039	0.137	0.011	0.03
219	18.25	0.13	0.039	0.137	0.011	0.03
220	18.33	0.13	0.039	0.136	0.011	0.03
221	18.42	0.13	0.039	0.135	0.011	0.03
222	18.50	0.13	0.039	0.135	0.011	0.03
223	18.58	0.10	0.029	0.134	0.008	0.02
224	18.67	0.10	0.029	0.133	0.008	0.02
225	18.75	0.10	0.029	0.133	0.008	0.02
226	18.83	0.07	0.019	0.132	0.005	0.01
227	18.92	0.07	0.019	0.131	0.005	0.01
228	19.00	0.07	0.019	0.131	0.005	0.01
229	19.08	0.10	0.029	0.130	0.008	0.02
230	19.17	0.10	0.029	0.130	0.008	0.02
231	19.25	0.10	0.029	0.129	0.008	0.02
232	19.33	0.13	0.039	0.128	0.011	0.03
233	19.42	0.13	0.039	0.128	0.011	0.03
234	19.50	0.13	0.039	0.127	0.011	0.03
235	19.58	0.10	0.029	0.127	0.008	0.02
236	19.67	0.10	0.029	0.126	0.008	0.02
237	19.75	0.10	0.029	0.125	0.008	0.02
238	19.83	0.07	0.019	0.125	0.005	0.01
239	19.92	0.07	0.019	0.124	0.005	0.01
240	20.00	0.07	0.019	0.124	0.005	0.01
241	20.08	0.10	0.029	0.123	0.008	0.02
242	20.17	0.10	0.029	0.123	0.008	0.02
243	20.25	0.10	0.029	0.122	0.008	0.02
244	20.33	0.10	0.029	0.122	0.008	0.02
245	20.42	0.10	0.029	0.121	0.008	0.02
246	20.50	0.10	0.029	0.121	0.008	0.02
247	20.58	0.10	0.029	0.120	0.008	0.02

248	20.67	0.10	0.029	0.120	0.008	0.02
249	20.75	0.10	0.029	0.119	0.008	0.02
250	20.83	0.07	0.019	0.119	0.005	0.01
251	20.92	0.07	0.019	0.118	0.005	0.01
252	21.00	0.07	0.019	0.118	0.005	0.01
253	21.08	0.10	0.029	0.117	0.008	0.02
254	21.17	0.10	0.029	0.117	0.008	0.02
255	21.25	0.10	0.029	0.116	0.008	0.02
256	21.33	0.07	0.019	0.116	0.005	0.01
257	21.42	0.07	0.019	0.115	0.005	0.01
258	21.50	0.07	0.019	0.115	0.005	0.01
259	21.58	0.10	0.029	0.115	0.008	0.02
260	21.67	0.10	0.029	0.114	0.008	0.02
261	21.75	0.10	0.029	0.114	0.008	0.02
262	21.83	0.07	0.019	0.113	0.005	0.01
263	21.92	0.07	0.019	0.113	0.005	0.01
264	22.00	0.07	0.019	0.113	0.005	0.01
265	22.08	0.10	0.029	0.112	0.008	0.02
266	22.17	0.10	0.029	0.112	0.008	0.02
267	22.25	0.10	0.029	0.111	0.008	0.02
268	22.33	0.07	0.019	0.111	0.005	0.01
269	22.42	0.07	0.019	0.111	0.005	0.01
270	22.50	0.07	0.019	0.110	0.005	0.01
271	22.58	0.07	0.019	0.110	0.005	0.01
272	22.67	0.07	0.019	0.110	0.005	0.01
273	22.75	0.07	0.019	0.110	0.005	0.01
274	22.83	0.07	0.019	0.109	0.005	0.01
275	22.92	0.07	0.019	0.109	0.005	0.01
276	23.00	0.07	0.019	0.109	0.005	0.01
277	23.08	0.07	0.019	0.108	0.005	0.01
278	23.17	0.07	0.019	0.108	0.005	0.01
279	23.25	0.07	0.019	0.108	0.005	0.01
280	23.33	0.07	0.019	0.108	0.005	0.01
281	23.42	0.07	0.019	0.108	0.005	0.01
282	23.50	0.07	0.019	0.107	0.005	0.01
283	23.58	0.07	0.019	0.107	0.005	0.01
284	23.67	0.07	0.019	0.107	0.005	0.01
285	23.75	0.07	0.019	0.107	0.005	0.01
286	23.83	0.07	0.019	0.107	0.005	0.01
287	23.92	0.07	0.019	0.107	0.005	0.01
288	24.00	0.07	0.019	0.107	0.005	0.01
Sum =		100.0		Sum =		16.0

Flood volume = Effective rainfall 1.33(In)
times area 1.0(Ac.)/[(In)/(Ft.)] = 0.1(Ac.Ft)
Total soil loss = 1.10(In)
Total soil loss = 0.094(Ac.Ft)
Total rainfall = 2.43(In)
Flood volume = 4941.7 Cubic Feet
Total soil loss = 4082.1 Cubic Feet

Peak flow rate of this hydrograph = 0.160(CFS)

++

24 - H O U R S T O R M
R u n o f f H y d r o g r a p h

Hydrograph in 5 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	2.5	5.0	7.5	10.0
0+ 5	0.0001	0.01	Q				
0+10	0.0002	0.01	Q				
0+15	0.0003	0.01	Q				
0+20	0.0004	0.02	Q				
0+25	0.0006	0.02	Q				
0+30	0.0007	0.02	Q				
0+35	0.0009	0.02	Q				
0+40	0.0010	0.02	Q				
0+45	0.0012	0.02	Q				
0+50	0.0013	0.03	Q				
0+55	0.0015	0.03	Q				
1+ 0	0.0017	0.03	Q				
1+ 5	0.0019	0.02	Q				
1+10	0.0021	0.02	Q				
1+15	0.0022	0.02	Q				
1+20	0.0024	0.02	Q				
1+25	0.0025	0.02	Q				
1+30	0.0027	0.02	Q				
1+35	0.0028	0.02	Q				
1+40	0.0030	0.02	QV				
1+45	0.0031	0.02	QV				
1+50	0.0033	0.03	QV				
1+55	0.0035	0.03	QV				
2+ 0	0.0037	0.03	QV				
2+ 5	0.0039	0.03	QV				
2+10	0.0041	0.03	QV				
2+15	0.0043	0.03	QV				
2+20	0.0045	0.03	QV				
2+25	0.0047	0.03	QV				
2+30	0.0049	0.03	QV				
2+35	0.0051	0.03	QV				
2+40	0.0054	0.04	QV				
2+45	0.0056	0.04	QV				
2+50	0.0059	0.04	Q V				
2+55	0.0061	0.04	Q V				
3+ 0	0.0064	0.04	Q V				
3+ 5	0.0066	0.04	Q V				
3+10	0.0069	0.04	Q V				
3+15	0.0071	0.04	Q V				
3+20	0.0074	0.04	Q V				
3+25	0.0077	0.04	Q V				
3+30	0.0079	0.04	Q V				
3+35	0.0082	0.04	Q V				
3+40	0.0084	0.04	Q V				
3+45	0.0087	0.04	Q V				
3+50	0.0089	0.04	Q V				
3+55	0.0092	0.04	Q V				
4+ 0	0.0095	0.04	Q V				
4+ 5	0.0098	0.04	Q V				
4+10	0.0101	0.04	Q V				
4+15	0.0104	0.04	Q V				

4+20	0.0108	0.05	Q	V	|	|	|	|
4+25	0.0111	0.05	Q	V	|	|	|	|
4+30	0.0115	0.05	Q	V	|	|	|	|
4+35	0.0118	0.05	Q	V	|	|	|	|
4+40	0.0122	0.05	Q	V	|	|	|	|
4+45	0.0125	0.05	Q	V	|	|	|	|
4+50	0.0129	0.06	Q	V	|	|	|	|
4+55	0.0133	0.06	Q	V	|	|	|	|
5+ 0	0.0137	0.06	Q	V	|	|	|	|
5+ 5	0.0141	0.05	Q	V	|	|	|	|
5+10	0.0144	0.04	Q	V	|	|	|	|
5+15	0.0147	0.04	Q	V	|	|	|	|
5+20	0.0150	0.05	Q	V	|	|	|	|
5+25	0.0153	0.05	Q	V	|	|	|	|
5+30	0.0157	0.05	Q	V	|	|	|	|
5+35	0.0161	0.06	Q	V	|	|	|	|
5+40	0.0165	0.06	Q	V	|	|	|	|
5+45	0.0169	0.06	Q	V	|	|	|	|
5+50	0.0173	0.06	Q	V	|	|	|	|
5+55	0.0177	0.06	Q	V	|	|	|	|
6+ 0	0.0181	0.06	Q	V	|	|	|	|
6+ 5	0.0185	0.06	Q	V	|	|	|	|
6+10	0.0190	0.07	Q	V	|	|	|	|
6+15	0.0194	0.07	Q	V	|	|	|	|
6+20	0.0199	0.07	Q	V	|	|	|	|
6+25	0.0203	0.07	Q	V	|	|	|	|
6+30	0.0208	0.07	Q	V	|	|	|	|
6+35	0.0213	0.07	Q	V	|	|	|	|
6+40	0.0218	0.07	Q	V	|	|	|	|
6+45	0.0223	0.07	Q	V	|	|	|	|
6+50	0.0228	0.07	Q	V	|	|	|	|
6+55	0.0233	0.07	Q	V	|	|	|	|
7+ 0	0.0238	0.07	Q	V	|	|	|	|
7+ 5	0.0243	0.07	Q	V	|	|	|	|
7+10	0.0248	0.07	Q	V	|	|	|	|
7+15	0.0253	0.07	Q	V	|	|	|	|
7+20	0.0258	0.08	Q	V	|	|	|	|
7+25	0.0264	0.08	Q	V	|	|	|	|
7+30	0.0269	0.08	Q	V	|	|	|	|
7+35	0.0275	0.09	Q	V	|	|	|	|
7+40	0.0281	0.09	Q	V	|	|	|	|
7+45	0.0287	0.09	Q	V	|	|	|	|
7+50	0.0294	0.09	Q	V	|	|	|	|
7+55	0.0300	0.09	Q	V	|	|	|	|
8+ 0	0.0307	0.09	Q	V	|	|	|	|
8+ 5	0.0314	0.10	Q	|V	|	|	|	|
8+10	0.0321	0.11	Q	|V	|	|	|	|
8+15	0.0329	0.11	Q	|V	|	|	|	|
8+20	0.0336	0.11	Q	|V	|	|	|	|
8+25	0.0344	0.11	Q	| V	|	|	|	|
8+30	0.0351	0.11	Q	| V	|	|	|	|
8+35	0.0359	0.11	Q	| V	|	|	|	|
8+40	0.0367	0.12	Q	| V	|	|	|	|
8+45	0.0375	0.12	Q	| V	|	|	|	|
8+50	0.0384	0.12	Q	| V	|	|	|	|
8+55	0.0392	0.12	Q	| V	|	|	|	|

9+ 0	0.0401	0.12	Q	| V |	|	|
9+ 5	0.0410	0.13	Q	| V |	|	|
9+10	0.0420	0.14	Q	| V |	|	|
9+15	0.0429	0.14	Q	| V |	|	|
9+20	0.0439	0.14	Q	| V |	|	|
9+25	0.0449	0.15	Q	| V |	|	|
9+30	0.0459	0.15	Q	| V |	|	|
9+35	0.0469	0.15	Q	| V |	|	|
9+40	0.0480	0.15	Q	| V |	|	|
9+45	0.0491	0.15	Q	| V |	|	|
9+50	0.0501	0.16	Q	| V |	|	|
9+55	0.0512	0.16	Q	| V |	|	|
10+ 0	0.0523	0.16	Q	| V |	|	|
10+ 5	0.0532	0.12	Q	| V |	|	|
10+10	0.0540	0.11	Q	| V|	|	|
10+15	0.0547	0.11	Q	| V|	|	|
10+20	0.0555	0.11	Q	| V|	|	|
10+25	0.0562	0.11	Q	| V|	|	|
10+30	0.0570	0.11	Q	| V |	|	|
10+35	0.0579	0.13	Q	| V |	|	|
10+40	0.0589	0.15	Q	| V |	|	|
10+45	0.0599	0.15	Q	| |V |	|	|
10+50	0.0609	0.15	Q	| |V |	|	|
10+55	0.0619	0.15	Q	| |V |	|	|
11+ 0	0.0629	0.15	Q	| | V |	|	|
11+ 5	0.0639	0.14	Q	| | V |	|	|
11+10	0.0648	0.14	Q	| | V |	|	|
11+15	0.0658	0.14	Q	| | V |	|	|
11+20	0.0667	0.14	Q	| | V |	|	|
11+25	0.0677	0.14	Q	| | V |	|	|
11+30	0.0686	0.14	Q	| | V |	|	|
11+35	0.0695	0.13	Q	| | V |	|	|
11+40	0.0704	0.12	Q	| | V |	|	|
11+45	0.0712	0.12	Q	| | V |	|	|
11+50	0.0721	0.13	Q	| | V |	|	|
11+55	0.0730	0.13	Q	| | V |	|	|
12+ 0	0.0739	0.13	Q	| | V |	|	|
12+ 5	0.0744	0.07	Q	| | V |	|	|
12+10	0.0747	0.05	Q	| | V |	|	|
12+15	0.0751	0.05	Q	| | V |	|	|
12+20	0.0754	0.06	Q	| | V |	|	|
12+25	0.0759	0.06	Q	| | V |	|	|
12+30	0.0763	0.06	Q	| | V |	|	|
12+35	0.0768	0.08	Q	| | V |	|	|
12+40	0.0774	0.08	Q	| | V |	|	|
12+45	0.0779	0.08	Q	| | V |	|	|
12+50	0.0786	0.09	Q	| | V |	|	|
12+55	0.0792	0.10	Q	| | V |	|	|
13+ 0	0.0799	0.10	Q	| | V |	|	|
13+ 5	0.0808	0.13	Q	| | V |	|	|
13+10	0.0818	0.15	Q	| | V |	|	|
13+15	0.0828	0.15	Q	| | V|	|	|
13+20	0.0839	0.15	Q	| | V|	|	|
13+25	0.0849	0.15	Q	| | V|	|	|
13+30	0.0860	0.15	Q	| | V |	|	|
13+35	0.0865	0.08	Q	| | V |	|	|

13+40	0.0868	0.04	Q	|	|	V |
13+45	0.0871	0.04	Q	|	|	V |
13+50	0.0874	0.05	Q	|	|	V |
13+55	0.0877	0.05	Q	|	|	V |
14+ 0	0.0881	0.05	Q	|	|	|V |
14+ 5	0.0886	0.08	Q	|	|	|V |
14+10	0.0892	0.09	Q	|	|	|V |
14+15	0.0898	0.09	Q	|	|	|V |
14+20	0.0904	0.08	Q	|	|	|V |
14+25	0.0910	0.08	Q	|	|	| V |
14+30	0.0916	0.08	Q	|	|	| V |
14+35	0.0921	0.08	Q	|	|	| V |
14+40	0.0927	0.09	Q	|	|	| V |
14+45	0.0933	0.09	Q	|	|	| V |
14+50	0.0939	0.08	Q	|	|	| V |
14+55	0.0944	0.08	Q	|	|	| V |
15+ 0	0.0949	0.08	Q	|	|	| V |
15+ 5	0.0954	0.07	Q	|	|	| V |
15+10	0.0959	0.07	Q	|	|	| V |
15+15	0.0964	0.07	Q	|	|	| V |
15+20	0.0969	0.07	Q	|	|	| V |
15+25	0.0973	0.06	Q	|	|	| V |
15+30	0.0977	0.06	Q	|	|	| V |
15+35	0.0980	0.04	Q	|	|	| V |
15+40	0.0982	0.03	Q	|	|	| V |
15+45	0.0984	0.03	Q	|	|	| V |
15+50	0.0985	0.03	Q	|	|	| V |
15+55	0.0987	0.03	Q	|	|	| V |
16+ 0	0.0989	0.03	Q	|	|	| V |
16+ 5	0.0991	0.03	Q	|	|	| V |
16+10	0.0993	0.03	Q	|	|	| V |
16+15	0.0995	0.03	Q	|	|	| V |
16+20	0.0997	0.03	Q	|	|	| V |
16+25	0.0999	0.03	Q	|	|	| V |
16+30	0.1001	0.03	Q	|	|	| V |
16+35	0.1003	0.02	Q	|	|	| V |
16+40	0.1005	0.02	Q	|	|	| V |
16+45	0.1006	0.02	Q	|	|	| V |
16+50	0.1008	0.02	Q	|	|	| V |
16+55	0.1009	0.02	Q	|	|	| V |
17+ 0	0.1011	0.02	Q	|	|	| V |
17+ 5	0.1013	0.03	Q	|	|	| V |
17+10	0.1015	0.04	Q	|	|	| V |
17+15	0.1018	0.04	Q	|	|	| V |
17+20	0.1020	0.04	Q	|	|	| V |
17+25	0.1023	0.04	Q	|	|	| V |
17+30	0.1025	0.04	Q	|	|	| V |
17+35	0.1028	0.04	Q	|	|	| V |
17+40	0.1030	0.04	Q	|	|	| V |
17+45	0.1033	0.04	Q	|	|	| V |
17+50	0.1035	0.03	Q	|	|	| V |
17+55	0.1037	0.03	Q	|	|	| V |
18+ 0	0.1039	0.03	Q	|	|	| V |
18+ 5	0.1041	0.03	Q	|	|	| V |
18+10	0.1043	0.03	Q	|	|	| V |
18+15	0.1045	0.03	Q	|	|	| V |

18+20	0.1047	0.03	Q	|	|	|	V |
18+25	0.1049	0.03	Q	|	|	|	V |
18+30	0.1051	0.03	Q	|	|	|	V |
18+35	0.1053	0.02	Q	|	|	|	V |
18+40	0.1054	0.02	Q	|	|	|	V |
18+45	0.1056	0.02	Q	|	|	|	V |
18+50	0.1057	0.02	Q	|	|	|	V |
18+55	0.1058	0.01	Q	|	|	|	V |
19+ 0	0.1059	0.01	Q	|	|	|	V |
19+ 5	0.1060	0.02	Q	|	|	|	V |
19+10	0.1062	0.02	Q	|	|	|	V |
19+15	0.1063	0.02	Q	|	|	|	V |
19+20	0.1065	0.03	Q	|	|	|	V |
19+25	0.1067	0.03	Q	|	|	|	V |
19+30	0.1069	0.03	Q	|	|	|	V |
19+35	0.1071	0.02	Q	|	|	|	V |
19+40	0.1072	0.02	Q	|	|	|	V |
19+45	0.1074	0.02	Q	|	|	|	V |
19+50	0.1075	0.02	Q	|	|	|	V |
19+55	0.1076	0.01	Q	|	|	|	V |
20+ 0	0.1077	0.01	Q	|	|	|	V |
20+ 5	0.1078	0.02	Q	|	|	|	V |
20+10	0.1080	0.02	Q	|	|	|	V |
20+15	0.1081	0.02	Q	|	|	|	V |
20+20	0.1083	0.02	Q	|	|	|	V |
20+25	0.1084	0.02	Q	|	|	|	V |
20+30	0.1086	0.02	Q	|	|	|	V |
20+35	0.1087	0.02	Q	|	|	|	V |
20+40	0.1089	0.02	Q	|	|	|	V |
20+45	0.1090	0.02	Q	|	|	|	V |
20+50	0.1091	0.02	Q	|	|	|	V |
20+55	0.1093	0.01	Q	|	|	|	V |
21+ 0	0.1094	0.01	Q	|	|	|	V |
21+ 5	0.1095	0.02	Q	|	|	|	V |
21+10	0.1096	0.02	Q	|	|	|	V |
21+15	0.1098	0.02	Q	|	|	|	V |
21+20	0.1099	0.02	Q	|	|	|	V |
21+25	0.1100	0.01	Q	|	|	|	V |
21+30	0.1101	0.01	Q	|	|	|	V |
21+35	0.1102	0.02	Q	|	|	|	V |
21+40	0.1104	0.02	Q	|	|	|	V |
21+45	0.1105	0.02	Q	|	|	|	V |
21+50	0.1107	0.02	Q	|	|	|	V|
21+55	0.1108	0.01	Q	|	|	|	V|
22+ 0	0.1109	0.01	Q	|	|	|	V|
22+ 5	0.1110	0.02	Q	|	|	|	V|
22+10	0.1111	0.02	Q	|	|	|	V|
22+15	0.1113	0.02	Q	|	|	|	V|
22+20	0.1114	0.02	Q	|	|	|	V|
22+25	0.1115	0.01	Q	|	|	|	V|
22+30	0.1116	0.01	Q	|	|	|	V|
22+35	0.1117	0.01	Q	|	|	|	V|
22+40	0.1118	0.01	Q	|	|	|	V|
22+45	0.1119	0.01	Q	|	|	|	V|
22+50	0.1120	0.01	Q	|	|	|	V|
22+55	0.1121	0.01	Q	|	|	|	V|

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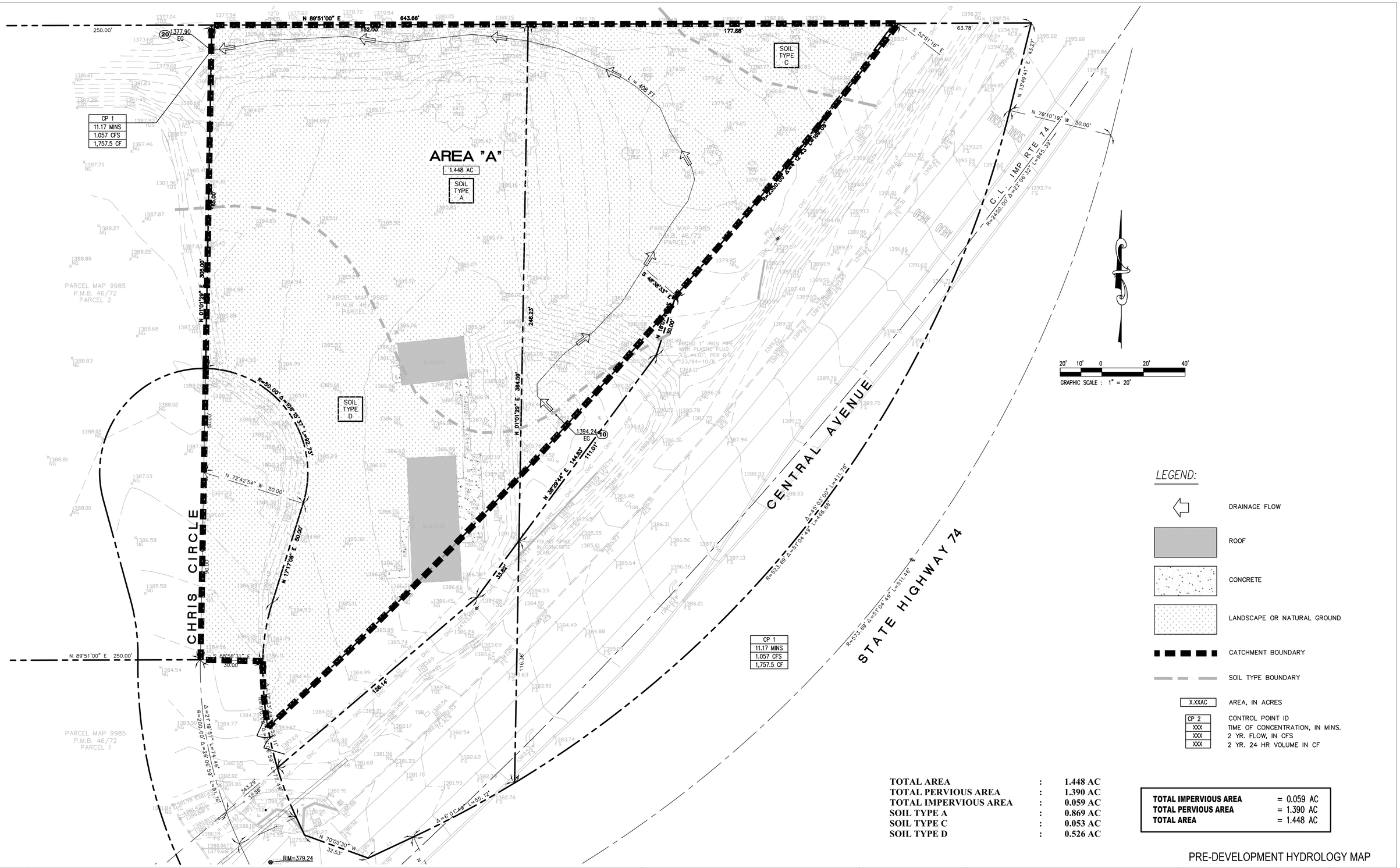
 23+ 0      0.1122     0.01  Q       |       |       |      V|
 23+ 5      0.1123     0.01  Q       |       |       |      V|
 23+10      0.1124     0.01  Q       |       |       |      V|
 23+15      0.1125     0.01  Q       |       |       |      V|
 23+20      0.1126     0.01  Q       |       |       |      V|
 23+25      0.1127     0.01  Q       |       |       |      V|
 23+30      0.1128     0.01  Q       |       |       |      V|
 23+35      0.1129     0.01  Q       |       |       |      V|
 23+40      0.1130     0.01  Q       |       |       |      V|
 23+45      0.1131     0.01  Q       |       |       |      V|
 23+50      0.1132     0.01  Q       |       |       |      V|
 23+55      0.1133     0.01  Q       |       |       |      V|
 24+ 0      0.1134     0.01  Q       |       |       |      V|
 24+ 5      0.1134     0.00  Q       |       |       |      V
-------------------------------------------------------------------------------
```



LEGEND:

- DRAINAGE FLOW
- ROOF
- CONCRETE
- LANDSCAPE OR NATURAL GROUND
- CATCHMENT BOUNDARY
- SOIL TYPE BOUNDARY
- X.XXAC — AREA, IN ACRES
- CP 2 / XXX / XXX / XXX — CONTROL POINT ID; TIME OF CONCENTRATION, IN MINS.; 2 YR. FLOW, IN CFS; 2 YR. 24 HR VOLUME IN CF

TOTAL AREA	:	**1.448 AC**
TOTAL PERVIOUS AREA	:	**1.390 AC**
TOTAL IMPERVIOUS AREA	:	**0.059 AC**
SOIL TYPE A	:	**0.869 AC**
SOIL TYPE C	:	**0.053 AC**
SOIL TYPE D	:	**0.526 AC**

TOTAL IMPERVIOUS AREA	= 0.059 AC
TOTAL PERVIOUS AREA	= 1.390 AC
TOTAL AREA	= 1.448 AC

PRE-DEVELOPMENT HYDROLOGY MAP

MARK	REVISIONS	APPR.	DATE

THESE PLANS HAVE BEEN REVIEWED FOR COMPLIANCE WITH THE APPROPRIATE CONDITIONS OF DEVELOPMENT AND/OR CITY AND STATE LAWS AND A PERMIT MAY BE ISSUED

BRAD FAGRELL, RCE No. 43920
CITY ENGINEER
CITY OF LAKE ELSINORE
DATE

PREPARED BY:

KARAKI | Western States
A DESIGN-BUILD COMPANY
4887 E. LA PALMA STE. 707
ANAHEIM, CA 92807
TEL: (714)695-9300 FAX: (714)693-1002
www.westernsec.com
KAMAL McHANTAF, RCE C051050 DATE

SEAL

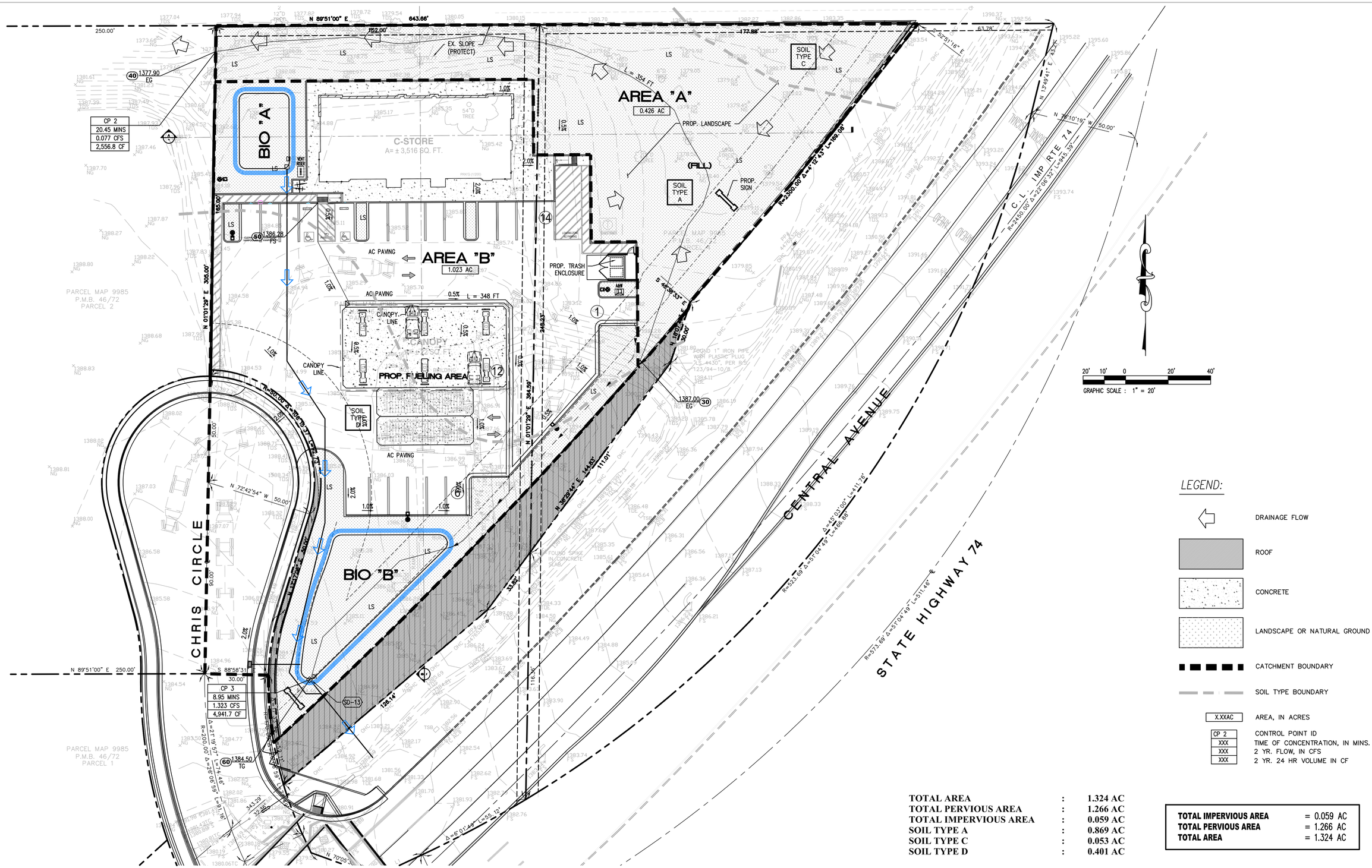
REGISTERED PROFESSIONAL ENGINEER — KAMAL B. McHANTAF — No. C051050 Exp. 9-30-21 — CIVIL — STATE OF CALIFORNIA

"AS-BUILT"
RCE _____ EXP _____ DATE: _____
REVIEWED BY: _____
INSPECTOR _____ DATE _____
SCALE : AS NOTED
DATE: JANUARY 18, 2020
BENCH MARK: SEE ABOVE

CITY OF LAKE ELSINORE

EXISTING HYDROLOGY MAP
28771 CENTRAL 74 HWY,
LAKE ELSINORE, CA
CUP200043

SHEET 1 OF 2 SHEETS
FILE No.



LEGEND:

- DRAINAGE FLOW
- ROOF
- CONCRETE
- LANDSCAPE OR NATURAL GROUND
- CATCHMENT BOUNDARY
- SOIL TYPE BOUNDARY
- X.XXAC — AREA, IN ACRES
- CP 2 / XXX / XXX / XXX — CONTROL POINT ID; TIME OF CONCENTRATION, IN MINS.; 2 YR. FLOW, IN CFS; 2 YR. 24 HR VOLUME IN CF

TOTAL AREA	:	1.324 AC
TOTAL PERVIOUS AREA	:	1.266 AC
TOTAL IMPERVIOUS AREA	:	0.059 AC
SOIL TYPE A	:	0.869 AC
SOIL TYPE C	:	0.053 AC
SOIL TYPE D	:	0.401 AC

TOTAL IMPERVIOUS AREA	= 0.059 AC
TOTAL PERVIOUS AREA	= 1.266 AC
TOTAL AREA	= 1.324 AC

POST-DEVELOPMENT HYDROLOGY MAP

MARK	REVISIONS	APPR.	DATE

THESE PLANS HAVE BEEN REVIEWED FOR COMPLIANCE WITH THE APPROPRIATE CONDITIONS OF DEVELOPMENT AND/OR CITY AND STATE LAWS AND A PERMIT MAY BE ISSUED

BRAD FAGRELL, RCE No. 43920 — DATE
CITY ENGINEER
CITY OF LAKE ELSINORE

PREPARED BY:
KARAKI | Western States
A DESIGN-BUILD COMPANY
4887 E. LA PALMA STE. 707
ANAHEIM, CA 92807
TEL: (714)695-9300 FAX: (714)693-1002
www.westernsec.com

KAMAL McHANTAF, RCE C051050 — DATE

SEAL
REGISTERED PROFESSIONAL ENGINEER
KAMAL B. McHANTAF
No. C051050
Exp. 9-30-21
CIVIL
STATE OF CALIFORNIA

"AS-BUILT"
RCE _____ EXP _____ DATE:
REVIEWED BY:
INSPECTOR _____ DATE

SCALE : AS NOTED
DATE: JANUARY 18, 2020
BENCH MARK:
SEE ABOVE

CITY OF LAKE ELSINORE

PROPOSED HYDROLOGY MAP
28771 CENTRAL 74 HWY,
LAKE ELSINORE, CA
CUP200043

SHEET 2
OF 2 SHEETS
FILE No.

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

How to use this worksheet (also see instructions in Section G of the WQMP Template):

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies.
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your WQMP Exhibit.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs in your WQMP. Use the format shown in Table G.1on page 23 of this WQMP Template. Describe your specific BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting BMPs or substituting alternative BMPs for those shown here.

IF THESE SOURCES WILL BE ON THE PROJECT SITE…	**…THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPS**		
Potential Sources of Runoff Pollutants	**Permanent Controls – Show on Source Control Exhibit, Appendix 1**	**Permanent Control – List in SUSMP Table and Narrative**	**Operational BMPs – Include in SUSMP Table and Narrative**
☒ **A.** On-site storm drain inlets	☒ Locations of inlets.	☒ Mark all inlets with the words "No Dumping! Flows to Bay" or similar	☒ Maintain and periodically repaint or replace inlet markings ☒ Provide stormwater pollution prevention information to new site owners, lessees, or operators ☒ See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com ☒ Include the following in lease agreements: 'Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains.
☐ **B.** Interior floor drains and elevator shaft sump pumps		☐ State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.	☐ Inspect and maintain drains to prevent blockages and overflow.
☐ **C.** Interior parking garages		☐ State that parking garage floor drains will be plumbed to the sanitary sewer.	☐ Inspect and maintain drains to prevent blockages and overflow.

IF THESE SOURCES WILL BE ON THE PROJECT SITE…	…THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPS		
Potential Sources of Runoff Pollutants	**Permanent Controls – Show on Source Control Exhibit, Appendix 1**	**Permanent Control – List in SUSMP Table and Narrative**	**Operational BMPs – Include in SUSMP Table and Narrative**
☒ **D1.** Need for future indoor & structural pest control		☒ Note building design features that discourage entry of pests.	☒ Provide Integrated Pest Management information to owners, lessees, and operators.
☒ **D2.** Landscape/Outdoor Pesticide Use Note: should be consistent with project landscape plan (if applicable).	☒ Show Locations of native trees or areas of shrubs and ground cover to be undisturbed and retained. ☒ Show self-retaining landscape areas, if any. ☐ Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)	State that final landscape plans will accomplish all of the following: ☒ Preserve existing native trees, shrubs, and ground cover to the maximum extent possible. ☒ Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. ☒ Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. ☒ Consider using pest-resistant plants, especially adjacent to hardscape. ☒ To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	☒ Maintain landscaping using minimum or no pesticides ☒ See applicable operational BMPs in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com ☒ Provide Integrated Pest Management information to new owners, lessees and operators

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE…	**…THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPS**		
Potential Sources of Runoff Pollutants	**Permanent Controls – Show on Source Control Exhibit, Appendix 1**	**Permanent Control – List in SUSMP Table and Narrative**	**Operational BMPs – Include in SUSMP Table and Narrative**
☐ **E.** Pools, spas, ponds, decorative fountains, and other water features	☐ Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet.	☐ If the local municipality requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.	☐ See applicable operational BMPs in Fact Sheet SC-72, "Fountain and Pool Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
☐ **F.** Food Services	☐ For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment. ☐ On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.	☐ Describe the location and features of the designated cleaning area. ☐ Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.	☐ See the brochure, "The Food Service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries" at http://rcflood.org/stormwater/ Provide this brochure to new site owners, lessees, and operators.

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE…	**…THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPS**		
Potential Sources of Runoff Pollutants	**Permanent Controls – Show on Source Control Exhibit, Appendix 1**	**Permanent Control – List in SUSMP Table and Narrative**	**Operational BMPs – Include in SUSMP Table and Narrative**
☒ **G.** Refuse areas	☒ Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas. ☒ If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms. ☒ Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.	☒ State how site refuse will be handled and provide supporting detail to what is shown on plans. ☒ State that signs will be posted on or near dumpsters with the words “Do not dump hazardous materials here” or similar.	☒ State how the following will be implemented: Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post “no hazardous materials” signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available onsite. See Fact Sheet SC-34, “Waste Handling and Disposal” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
☐ **H.** Industrial processes.	☐ Show process area.	☐ If industrial processes are to be located on site, state: “All process activities to be performed indoors. No processes to drain to exterior or to storm drain system.”	☐ See Fact Sheet SC-10, “Non- Stormwater Discharges” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

IF THESE SOURCES WILL BE ON THE PROJECT SITE…	**…THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPS**		
Potential Sources of Runoff Pollutants	**Permanent Controls – Show on Source Control Exhibit, Appendix 1**	**Permanent Control – List in SUSMP Table and Narrative**	**Operational BMPs – Include in SUSMP Table and Narrative**
☐ **I.** Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)	☐ Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent contamination. ☐ Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults. ☐ Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.	☐ Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains. Where appropriate, reference documentation of compliance with the requirements of local Hazardous Materials Programs for: • Hazardous Waste Generation • Hazardous Materials Release Response and Inventory • California Accidental Release (CalARP) • Aboveground Storage Tank • Uniform Fire Code Article 80 Section 103(b) & (c) 1991 • Underground Storage Tank	☐ See the Fact Sheets SC-31, “Outdoor Liquid Container Storage” and SC- 33, “Outdoor Storage of Raw Materials ” in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

IF THESE SOURCES WILL BE ON THE PROJECT SITE…	…THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPS		
Potential Sources of Runoff Pollutants	**Permanent Controls – Show on Source Control Exhibit, Appendix 1**	**Permanent Control – List in SUSMP Table and Narrative**	**Operational BMPs – Include in SUSMP Table and Narrative**
☐ **J.** Vehicle and Equipment Cleaning	☐ Show on drawings as appropriate: (1) Commercial/industrial facilities having vehicle/equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses. (2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shutoff to discourage such use). (3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer. (4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.	☐ If a car wash area is not provided, describe measures taken to discourage on-site car washing and explain how these will be enforced.	Describe operational measures to implement the following (if applicable): ☐ Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system. ☐ Car dealerships and similar may rinse cars with water only. ☐ See Fact Sheet SC-21, "Vehicle and Equipment Cleaning," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

IF THESE SOURCES WILL BE ON THE	…THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPS

PROJECT SITE…			
Potential Sources of Runoff Pollutants	**Permanent Controls – Show on Source Control Exhibit, Appendix 1**	**Permanent Control – List in SUSMP Table and Narrative**	**Operational BMPs – Include in SUSMP Table and Narrative**
☐ **K.** Vehicle/Equipment Repair and Maintenance	☐ Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater.	☐ State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area.	In the SUSMP report, note that all of the following restrictions apply to use the site:
	☐ Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.	☐ State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.	☐ No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains.
	☐ Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.	☐ State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.	☐ No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately. ☐ No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.

IF THESE SOURCES WILL BE ON THE PROJECT SITE…	…THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPS		
Potential Sources of Runoff Pollutants	**Permanent Controls – Show on Source Control Exhibit, Appendix 1**	**Permanent Control – List in SUSMP Table and Narrative**	**Operational BMPs – Include in SUSMP Table and Narrative**
☒ **L.** Fuel Dispensing Areas	☒ Fueling areas1 shall have impermeable floors (i.e., Portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable. ☒ Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area1.] The canopy [or cover] shall not drain onto the fueling area.		☒ The property owner shall dry sweep the fueling area routinely. ☒ See the Business Guide Sheet, "Automotive Service—Service Stations" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

IF THESE SOURCES WILL BE ON THE PROJECT SITE…	…THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPS		
Potential Sources of Runoff Pollutants	**Permanent Controls – Show on Source Control Exhibit, Appendix 1**	**Permanent Control – List in SUSMP Table and Narrative**	**Operational BMPs – Include in SUSMP Table and Narrative**
☐ **M.** Loading Docks	☐ Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas should be drained to the sanitary sewer where feasible. Direct connections to storm drains from depressed loading docks are prohibited. ☐ Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation. ☐ Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.		☐ Move loaded and unloaded items indoors as soon as possible. ☐ See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
☒ **N.** Fire Sprinkler Test Water		☒ Provide a means to drain fire Sprinkler test water to the sanitary sewer.	☒ See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

IF THESE SOURCES WILL BE ON THE PROJECT SITE…	**…THEN YOUR STORMWATER CONTROL PLAN SHOULD INCLUDE THESE SOURCE CONTROL BMPS**		
Potential Sources of Runoff Pollutants	**Permanent Controls – Show on Source Control Exhibit, Appendix 1**	**Permanent Control – List in SUSMP Table and Narrative**	**Operational BMPs – Include in SUSMP Table and Narrative**
O. Miscellaneous Drain or Wash Water			
☐ Boiler Drain Lines		☐ Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system.	
☐ Condensate Drain Lines		☐ Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system.	
☐ Rooftop Equipment		☐ Rooftop mounted equipment with potential to produce pollutants shall be roofed and/or have secondary containment.	
☐ Drainage Sumps		☐ Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water.	
☒ Roofing, gutters, and trim		☒ Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff.	
☒ **P.** Plazas, sidewalks, and parking lots			☒ Plazas, sidewalks, and parking lots shall be swept regularly to prevent the accumulation of litter and debris. Debris from pressure washing shall be collected to prevent entry into the storm drain system. Washwater containing any cleaning agent or degreaser shall be collected and discharged to the sanitary sewer and not discharged to a storm drain.

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

OPERATIONS AND MAINTENANCE PLAN

Operations & Maintenance of BMPs is essential for the success of any SWQMP. In order to perform proper O&M the project site owner will be required to maintain and inspect their Permanent and Post Construction BMPs for the life of the project. An inspection schedule and maintenance directions must be prepared for each BMP that is install on the project site.

O&M PLAN CONTACT INFORMATION MATRIX

Project Name:	28771 Central Avenue Gasoline Station and Convenience Store
Project Location:	28771 Central Avenue Lake Elsinore Riverside, CA
Permit Number (Land Development Projects):	To be determined
Fiscally Responsible Party for O&M:	Daher Oil Inc.
Contact Name:	Alim S. Daher
Contact Street Address:	19851 Esperanza Road
Contact City, State, Zip:	Yorba Linda, California 92878
Contact Phone Number:	
Contact Fax Number:	
Contact Email Address:	
Start Date of Responsibility:	
O&M Plan Prepared By:	Western States Engineering, Inc.
O&M Preparer Street Address:	4887 E. La Palma, Ste. 707
O&M Preparer City, State, Zip:	Anaheim Oceanside, California 92807
O&M Preparer Phone Number:	(714) 695-9300
O&M Preparer Fax Number:	(714) 693-1002
O&M Preparer Contact:	Kamal B. Mchantaf
O&M Preparer Contact Email Address:	

FISCALLY RESPONSIBLE PARTY CERTIFICATION

This project-specific Operations and Maintenance (O&M) Plan has been prepared for the 28771 Central Avenue Gasoline Station and Convenience Store by Western States Engineering, Inc. for the project site on 28771 Central Avenue Lake Elsinore Riverside, California. This O&M Plan is intended to comply with the requirements of County of Riverside, which includes the requirement for the preparation and implementation of a project-specific Priority Project Water Quality Management Plan (WQMP).

The undersigned, while owning the property/project described in the preceding paragraph, shall be fiscally responsible for the O&M Plan associated with all permanent and post-construction BMPs as outlined in the associated County of Riverside WQMP.

The undersigned is authorized to certify and to approve implementation of this O&M Plan. The undersigned is aware that implementation of this O&M Plan is enforceable under the applicable County of Riverside Municipal Code.

If the undersigned transfers its interest in the subject property/project, the undersigned shall notify the successor in interest in writing of its responsibility to implement this O&M Plan in perpetuity. The undersigned shall provide the County with a copy of the signed notification, including the name, address, and contact information of the successor.

"I, the undersigned, certify under penalty of law that the provisions of this Water Quality Management Plan O&M Plan have been reviewed and accepted and that the BMP maintenance requirements will be transferred to future successors in interest."

_____ _____

Owner's signature Date

DB Oil – Salim S. Daher President

_____ _____

Owner's Printed Name Owner's Title/Position

Street: _____

City: _____

State: _____

Zip: _____

Telephone: _____

E-Mail: _____

ASSOCIATED MAINTENANCE LOG

The owner may use the project specific maintenance log form blank attached to the end of this attachment to keep a record of maintenance activities. The County will have the required length of time that records must be kept, but keep in mind that the Regional Water Quality Control Board can ask for inspection and maintenance records for up to five years from the time of initial installation. The attached maintenance log is general and fill-in the blank. This log is intended to be copied each time it is needed.

ASSOCIATED INSPECTION FORM

The owner may use the project specific inspection form blank attached to the end of this attachment to keep a record of inspection and maintenance activities. The County will have the required length of time that records must be kept, but keep in mind that the Regional Water Quality Control Board can ask for inspection and maintenance records for up to five years from the time of initial installation. The attached inspection form is general and fill-in the blank. This form is intended to be copied each time it is needed.

SOURCE CONTROL REFERENCES

Please see the attached references. Included for reference are the following items:

- CASQA BMP Fact Sheet SD-10: Site Design and Landscape Planning
- CASQA BMP Fact Sheet SD-11: Roof Runoff Control
- CASQA BMP Fact Sheet SD-12: Efficient Irrigation
- CASQA BMP Fact Sheet SD-13: Storm Drain Signage
- CASQA BMP Fact Sheet SD-30: Fueling Areas
- CASQA BMP Fact Sheet SD-32: Trash Enclosures
- CASQA BMP Fact Sheet TC-32: Bioretention

To save on reproduction costs and environmental resources, electronic copies of the above referenced CASQA BMP Fact Sheets can be found at the following web address:
http://www.cabmphandbooks.com/Development.asp

***Please note that this link and the associated information are not maintained by the engineer of record and the engineer of record cannot be held accountable if this link or internet location changes.*

TYPICAL MAINTENANCE ACTIVITIES

The following is a compilation of Routine Actions required for each installed BMP on the project site.

BIOFILTRATION SYSTEM

The following is inspection and maintenance guidance information for bioretention systems:

Routine Action: Inspect Health of Vegetation

Maintenance Indicator:	Dead Vegetation or Bio
Field Measurements:	Visual Inspection
Inspection Frequency:	Twice a year
Maintenance Activity:	Re-establish vegetation as needed
Approximate Costs:	Varies per maintenance required

Routine Action: Inspect for Debris Accumulation

Maintenance Indicator:	Debris, trash, or litter present
Field Measurements:	Visual Inspection
Inspection Frequency:	During routine trashing
Maintenance Activity:	Remove debris, trash, and litter
Approximate Costs:	None anticipated

Routine Action: Inspect for Sedimentation Accumulation

Maintenance Indicator:	Sediment at or near height of vegetation
Field Measurements:	Visual Inspection
Inspection Frequency:	1. End of Summer Season 2. End of Rainy Season
Maintenance Activity:	Remove Sediment and re-vegetate
Approximate Costs:	$1,100 per maintenance (Approx. once every three years)

Routine Action: Inspect for Standing Water

Maintenance Indicator: Standing water after 96 hours

Field Measurements: Visual Inspection

Inspection Frequency:After each qualifying rain event

Maintenance Activity: Dewater and inspect sub-drain discharge points (when applicable)

Approximate Costs: Varies per maintenance required

STORM DRAIN STENCILING AND SIGNAGE (SD-13)

The following is inspection and maintenance guidance information for Storm Drain Stenciling and Signage:

Routine Action: Inspect Symbol Paint for visibility

Maintenance Indicator: Symbols and words are no longer visible

Field Measurements: Visual Inspection

Inspection Frequency:
1. Once during wet season
2. Once during dry season

Maintenance Activity: Re-apply paint to symbols and words.

Approximate Costs: $100 per maintenance

Routine Action: Inspect Sign and Sign Posts

Maintenance Indicator: Sign poles or signs are broken or missing

Field Measurements: Visual Inspection

Inspection Frequency:
1. Once during wet season
2. Once during dry season

Maintenance Activity: Install or re-install sign posts and signs

Approximate Costs: Varies per maintenance required

STABILIZED DRAINAGE DITCH

The following is inspection and maintenance guidance information for Stabilized Drainage Ditches:

Routine Action: Cracks and Fractures

Maintenance Indicator:	Visual cracking not along score lines
Field Measurements:	Visual Inspection
Inspection Frequency:	1. Once in the wet season (late) 2. Once in dry season (late)
Maintenance Activity:	Consult Engineer of Record for recommendations
Approximate Costs:	Varies per maintenance required

Routine Action: Inspect for Debris Accumulation

Maintenance Indicator:	Debris, trash, or litter present
Field Measurements:	Visual Inspection
Inspection Frequency:	During routine trashing
Maintenance Activity:	Remove debris, trash, and litter
Approximate Costs:	None anticipated

Routine Action: Inspect for Sedimentation Accumulation

Maintenance Indicator:	Sediment at or near height of rock
Field Measurements:	Visual Inspection
Inspection Frequency:	Annually
Maintenance Activity:	1. Remove Sediment 2. Re-channel if needed 3. Re-establish grade 4. Re-distribute rock if needed
Approximate Costs:	$1,100 per maintenance (Approx. once every three years)

MAINTENANCE RECORDS

All copies of the project's Maintenance Logs and Inspections Reports should be kept on file with the primary copy of this WQMP by the owner. Records should be kept for the life of the project site's BMPs. A log is provided on the following pages.

INSPECTION FORMS

All copies of the project's Maintenance Inspections Reports should be kept on file with a primary copy of this WQMP by the owner. Inspection records should be kept for the life of the project site's BMPs. A standard inspection form for the project site is provided in this attachment.

APPROPRIATE MAINTENANCE MECHANISMS

At the time of approval, County staff will work with the owner to obtain the necessary Maintenance Assurance Mechanism, be it an encroachment agreement, easement, etc. A copy of this executed document should be kept with this WQMP.

MAINTENANCE LOG FOR 28771 CENTRAL AVE. GAS STATION & C-STORE WQMP			*Sheet*		*OF*	
DATE	***COMPANY***	***COMPANY PHONE***	***COMPANY SIGNATURE***		***INSPECTION REPORTS***	
		(____) ____-_____			☐ Yes	☐ No
		(____) ____-_____			☐ Yes	☐ No
		(____) ____-_____			☐ Yes	☐ No
		(____) ____-_____			☐ Yes	☐ No
		(____) ____-_____			☐ Yes	☐ No
		(____) ____-_____			☐ Yes	☐ No
		(____) ____-_____			☐ Yes	☐ No
		(____) ____-_____			☐ Yes	☐ No
		(____) ____-_____			☐ Yes	☐ No
		(____) ____-_____			☐ Yes	☐ No

BMP INSPECTION REPORT

GENERAL INSPECTION INFORMATION	
Project Name	28771 Central Avenue Gasoline Station and Convenience Store
County Reference No.:	To be determined
Owner's Name:	Daher Oil Inc.
Inspector's Name:	
Inspector's Company:	
Inspector's Phone No.:	
Inspector's Signature:	
Inspection Date:	

<table>
<tr><th colspan="5">INSPECTION DAY INFORMATION</th></tr>
<tr><td>Inspection Type:</td><td colspan="4">☐ Prior to Forecast Rain
☐ 24-Hour Interval During Extended Rain Event
☐ After a rain Event
☐ Other: _____
_____</td></tr>
<tr><td>Season:</td><td colspan="4">☐ Wet (Rainy) ☐ Dry (non-Rainy)</td></tr>
<tr><td rowspan="4">Storm Data:</td><td colspan="2">Storm Start Date & Time:</td><td colspan="2"></td></tr>
<tr><td colspan="2">Storm Duration (hours):</td><td colspan="2"></td></tr>
<tr><td rowspan="2">Time Elapsed Since Last Storm:</td><td></td><td></td><td></td></tr>
<tr><td>Min</td><td>Hrs</td><td>Days</td></tr>
<tr><td colspan="3">Approximate Rainfall Amount (mm)</td><td></td></tr>
</table>

BIOFILTRATION SYSTEM INSPECTION TABLE			
Was this item inspected this site visit:	☐ YES ☐ NO		
INSPECTION REQUIREMENT	***INSPECTED THIS VISIT***		***See Corrective Action Note***
Inspect Health of Vegetation	☐ YES	☐ NO	
Inspect Debris Accumulation	☐ YES	☐ NO	
Inspect for Sedimentation Accumulation	☐ YES	☐ NO	
Inspect for Standing Water	☐ YES	☐ NO	

Corrective Action Notes:

1. _____

_____

2. _____

_____

3. _____

_____

4. _____

_____

5. _____

_____

STORM DRAIN STENCILING AND SIGNAGE INSPECTION TABLE			
Was this item inspected this site visit:	☐ YES ☐ NO		
INSPECTION REQUIREMENT	***INSPECTED THIS VISIT***		***See Corrective Action Note***
Inspect Symbol Paint for Visibility	☐ YES	☐ NO	
Inspect Signs and Sign Posts	☐ YES	☐ NO	

Corrective Action Notes:

1. _____

_____

2. _____

_____

3. _____

_____

4. _____

_____

Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

3.5 Bioretention Facility

Type of BMP	LID – Bioretention
Treatment Mechanisms	Infiltration, Evapotranspiration, Evaporation, Biofiltration
Maximum Drainage Area	This BMP is intended to be integrated into a project's landscaped area in a distributed manner. Typically, contributing drainage areas to Bioretention Facilities range from less than 1 acre to a maximum of around 10 acres.
Other Names	Rain Garden, Bioretention Cell, Bioretention Basin, Biofiltration Basin, Landscaped Filter Basin, Porous Landscape Detention

Description

Bioretention Facilities are shallow, vegetated basins underlain by an engineered soil media. Healthy plant and biological activity in the root zone maintain and renew the macro-pore space in the soil and maximize plant uptake of pollutants and runoff. This keeps the Best Management Practice (BMP) from becoming clogged and allows more of the soil column to function as both a sponge (retaining water) and a highly effective and self-maintaining biofilter. In most cases, the bottom of a Bioretention Facility is unlined, which also provides an opportunity for infiltration to the extent the underlying onsite soil can accommodate. When the infiltration rate of the underlying soil is exceeded, fully biotreated flows are discharged via underdrains. Bioretention Facilities therefore will inherently achieve the maximum feasible level of infiltration and evapotranspiration and achieve the minimum feasible (but highly biotreated) discharge to the storm drain system.

Siting Considerations

These facilities work best when they are designed in a relatively level area. Unlike other BMPs, Bioretention Facilities can be used in smaller landscaped spaces on the site, such as:

- ✓ Parking islands
- ✓ Medians
- ✓ Site entrances

Landscaped areas on the site (such as may otherwise be required through minimum landscaping ordinances), can often be designed as Bioretention Facilities. This can be accomplished by:

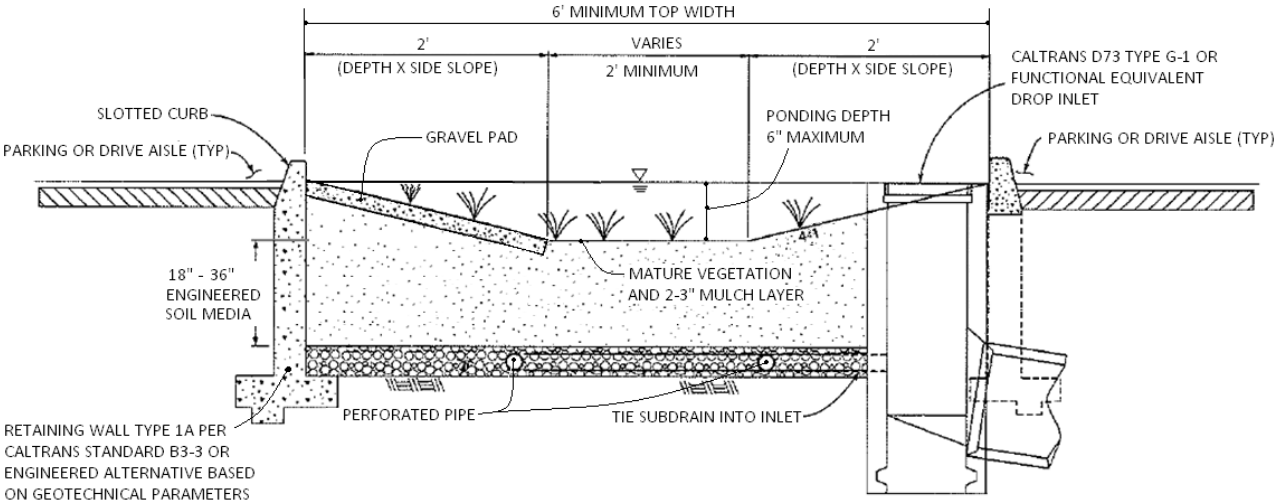
- *Depressing* landscaped areas below adjacent impervious surfaces, rather than elevating those areas
- Grading the site to direct runoff from those impervious surfaces *into* the Bioretention Facility, rather than away from the landscaping
- Sizing and designing the depressed landscaped area as a Bioretention Facility as described in this Fact Sheet

Bioretention Facilities should however not be used downstream of areas where large amounts of sediment can clog the system. Placing a Bioretention Facility at the toe of a steep slope should also be avoided due to the potential for clogging the engineered soil media with erosion from the slope, as well as the potential for damaging the vegetation.

Design and Sizing Criteria

The recommended cross section necessary for a Bioretention Facility includes:

- Vegetated area
- 18' minimum depth of engineered soil media
- 12' minimum gravel layer depth with 6' perforated pipes (added flow control features such as orifice plates may be required to mitigate for HCOC conditions)



While the 18-inch minimum engineered soil media depth can be used in some cases, it is recommended to use 24 inches or a preferred 36 inches to provide an adequate root zone for the chosen plant palate. Such a design also provides for improved removal effectiveness for nutrients. The recommended ponding depth inside of a Bioretention Facility is 6 inches; measured from the flat bottom surface to the top of the water surface as shown in Figure 1.

Because this BMP is filled with an engineered soil media, pore space in the soil and gravel layer is assumed to provide storage volume. However, several considerations must be noted:

- Surcharge storage above the soil surface (6 inches) is important to assure that design flows do not bypass the BMP when runoff exceeds the soil's absorption rate.
- In cases where the Bioretention Facility contains engineered soil media deeper than 36 inches, the pore space within the engineered soil media can only be counted to the 36-inch depth.
- A maximum of 30 percent pore space can be used for the soil media whereas a maximum of 40 percent pore space can be use for the gravel layer.

Figure 1: Standard Layout for a Bioretention Facility

Engineered Soil Media Requirements

The engineered soil media shall be comprised of 85 percent mineral component and 15 percent organic component, by volume, drum mixed prior to placement. The mineral component shall be a Class A sandy loam topsoil that meets the range specified in Table 1 below. The organic component shall be nitrogen stabilized compost[1], such that nitrogen does not leach from the media.

Table 1: Mineral Component Range Requirements

Percent Range	Component
70-80	Sand
15-20	Silt
5-10	Clay

The trip ticket, or certificate of compliance, shall be made available to the inspector to prove the engineered mix meets this specification.

Vegetation Requirements

Vegetative cover is important to minimize erosion and ensure that treatment occurs in the Bioretention Facility. The area should be designed for at least 70 percent mature coverage throughout the Bioretention Facility. To prevent the BMP from being used as walkways, Bioretention Facilities shall be planted with a combination of small trees, densely planted shrubs, and natural grasses. Grasses shall be native or ornamental; preferably ones that do not need to be mowed. The application of fertilizers and pesticides should be minimal. To maintain oxygen levels for the vegetation and promote biodegradation, it is important that vegetation not be completely submerged for any extended period of time. Therefore, a maximum of 6 inches of ponded water shall be used in the design to ensure that plants within the Bioretention Facility remain healthy.

A 2 to 3-inch layer of standard shredded aged hardwood mulch shall be placed as the top layer inside the Bioretention Facility. The 6-inch ponding depth shown in Figure 1 above shall be measured from the top surface of the 2 to 3-inch mulch layer.

Curb Cuts

To allow water to flow into the Bioretention Facility, 1-foot-wide (minimum) curb cuts should be placed approximately every 10 feet around the perimeter of the Bioretention Facility. Figure 2 shows a curb cut in a Bioretention Facility. Curb cut flow lines must be at or above the V_{BMP} water surface level.

[1] For more information on compost, visit the US Composting Council website at: http://compostingcouncil.org/

Figure 2: Curb Cut located in a Bioretention Facility

To reduce erosion, a gravel pad shall be placed at each inlet point to the Bioretention Facility. The gravel should be 1- to 1.5-inch diameter in size. The gravel should overlap the curb cut opening a minimum of 6 inches. The gravel pad inside the Bioretention Facility should be flush with the finished surface at the curb cut and extend to the bottom of the slope.

In addition, place an apron of stone or concrete, a foot square or larger, inside each inlet to prevent vegetation from growing up and blocking the inlet. See Figure 3.

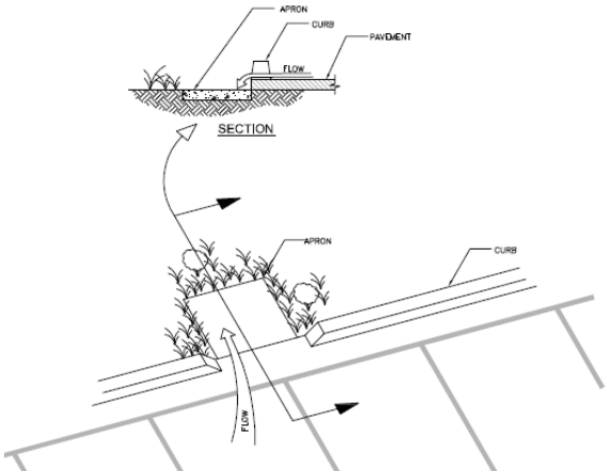


Figure 3: Apron located in a Bioretention Facility

Terracing the Landscaped Filter Basin

It is recommended that Bioretention Facilities be level. In the event the facility site slopes and lacks proper design, water would fill the lowest point of the BMP and then discharge from the basin without being treated. To ensure that the water will be held within the Bioretention Facility on sloped sites, the BMP must be terraced with nonporous check dams to provide the required storage and treatment capacity.

The terraced version of this BMP shall be used on non-flat sites with no more than a 3 percent slope. The surcharge depth cannot exceed 0.5 feet, and side slopes shall not exceed 4:1. Table 2 below shows the spacing of the check dams, and slopes shall be rounded up (i.e., 2.5 percent slope shall use 10' spacing for check dams).

Table 2: Check Dam Spacing

6" Check Dam Spacing	
Slope	**Spacing**
1%	*25'*
2%	*15'*
3%	*10'*

Roof Runoff

Roof downspouts may be directed towards Bioretention Facilities. However, the downspouts must discharge onto a concrete splash block to protect the Bioretention Facility from erosion.

Retaining Walls

It is recommended that Retaining Wall Type 1A, per Caltrans Standard B3-3 or equivalent, be constructed around the entire perimeter of the Bioretention Facility. This practice will protect the sides of the Bioretention Facility from collapsing during construction and maintenance or from high service loads adjacent to the BMP. Where such service loads would not exist adjacent to the BMP, an engineered alternative may be used if signed by a licensed civil engineer.

Side Slope Requirements

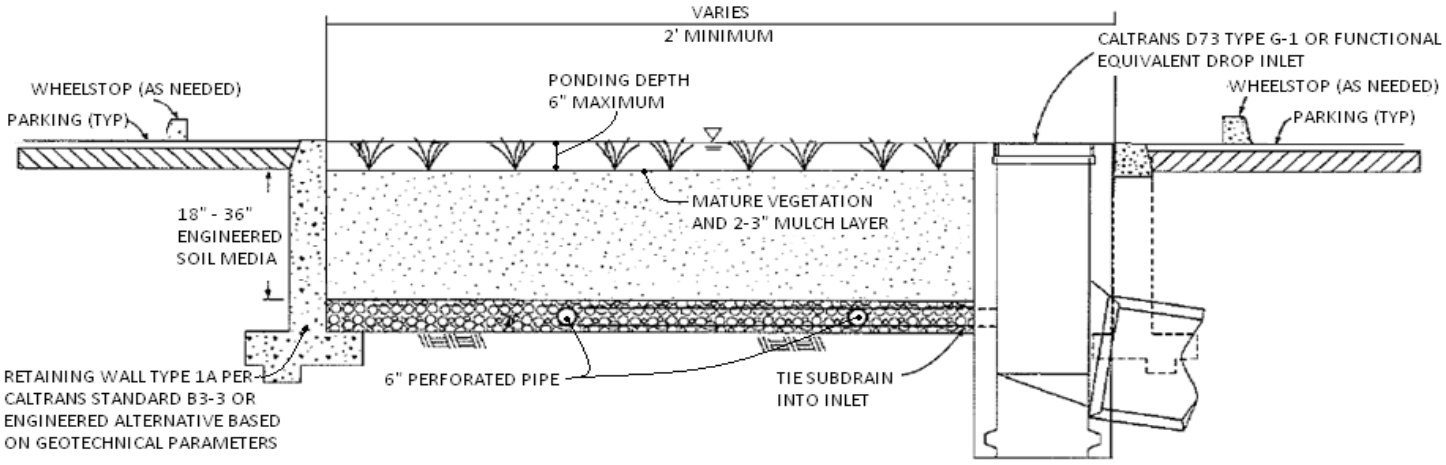
Bioretention Facilities Requiring Side Slopes

The design should assure that the Bioretention Facility does not present a tripping hazard. Bioretention Facilities proposed near pedestrian areas, such as areas parallel to parking spaces or along a walkway, must have a gentle slope to the bottom of the facility. Side slopes inside of a Bioretention Facility shall be 4:1. A typical cross section for the Bioretention Facility is shown in Figure 1.

Bioretention Facilities Not Requiring Side Slopes

Where cars park perpendicular to the Bioretention Facility, side slopes are not required. A 6-inch maximum drop may be used, and the Bioretention Facility must be planted with trees and shrubs to prevent pedestrian access. In this case, a curb is not placed around the Bioretention Facility,

but wheel stops shall be used to prevent vehicles from entering the Bioretention Facility, as shown in Figure 4.



Planter Boxes

Bioretention Facilities can also be placed above ground as planter boxes. Planter boxes must have a minimum width of 2 feet, a maximum surcharge depth of 6 inches, and no side slopes are necessary. Planter boxes must be constructed so as to ensure that the top surface of the engineered soil media will remain level. This option may be constructed of concrete, brick, stone or other stable materials that will not warp or bend. Chemically treated wood or galvanized steel, which has the ability to contaminate stormwater, should not be used. Planter boxes must be lined with an impermeable liner on all sides, including the bottom. Due to the impermeable liner, the inside bottom of the planter box shall be designed and constructed with a cross fall, directing treated flows within the subdrain layer toward the point where subdrain exits the planter box, and subdrains shall be oriented with drain holes oriented down. These provisions will help avoid excessive stagnant water within the gravel underdrain layer. Similar to the in-ground Bioretention Facility versions, this BMP benefits from healthy plants and biological activity in the root zone. Planter boxes should be planted with appropriately selected vegetation.

Figure 5: Planter Box
Source: LA Team Effort

Overflow

An overflow route is needed in the Bioretention Facility design to bypass stored runoff from storm events larger than V_{BMP} or in the event of facility or subdrain clogging. Overflow systems must connect to an acceptable discharge point, such as a downstream conveyance system as shown in Figure 1 and Figure 4. The inlet to the overflow structure shall be elevated inside the Bioretention Facility to be flush with the ponding surface for the design capture volume (V_{BMP}) as shown in Figure 4. This will allow the design capture volume to be fully treated by the Bioretention Facility, and for larger events to safely be conveyed to downstream systems. The overflow inlet shall **not** be located in the entrance of a Bioretention Facility, as shown in Figure 6.

Underdrain Gravel and Pipes

An underdrain gravel layer and pipes shall be provided in accordance with Appendix B – Underdrains.

Figure 6: Incorrect Placement of an Overflow Inlet.

Inspection and Maintenance Schedule

The Bioretention Facility area shall be inspected for erosion, dead vegetation, soggy soils, or standing water. The use of fertilizers and pesticides on the plants inside the Bioretention Facility should be minimized.

Schedule	Activity
Ongoing	• Keep adjacent landscape areas maintained. Remove clippings from landscape maintenance activities. • Remove trash and debris • Replace damaged grass and/or plants • Replace surface mulch layer as needed to maintain a 2-3 inch soil cover.
After storm events	• Inspect areas for ponding
Annually	• Inspect/clean inlets and outlets

Bioretention Facility Design Procedure

1) Enter the area tributary, A_T, to the Bioretention Facility.

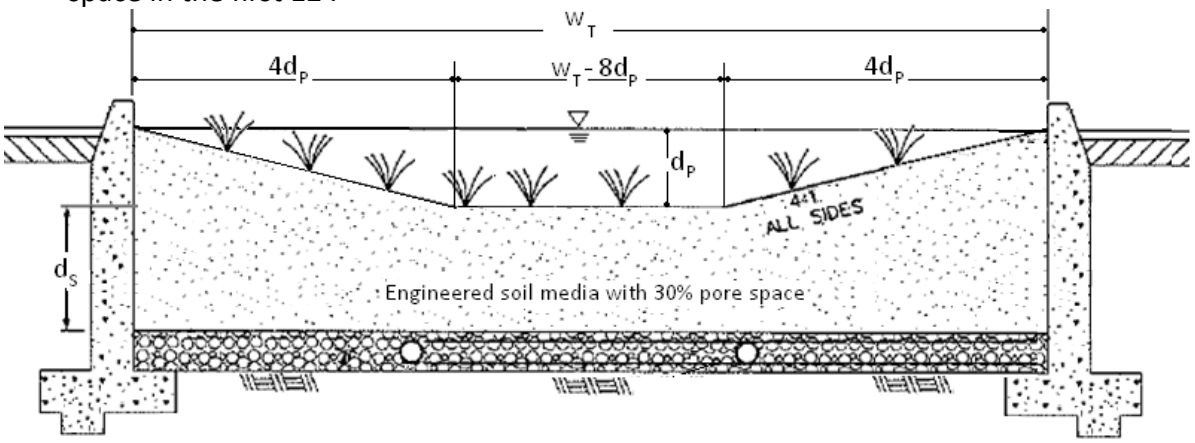
2) Enter the Design Volume, $V_{BMP,}$ determined from Section 2.1 of this Handbook.

3) Select the type of design used. There are two types of Bioretention Facility designs: the standard design used for most project sites that include side slopes, and the modified design used when the BMP is located perpendicular to the parking spaces or with planter boxes that do not use side slopes.

4) Enter the depth of the engineered soil media, d_S. The minimum depth for the engineered soil media can be 18' in limited cases, but it is recommended to use 24' or a preferred 36' to provide an adequate root zone for the chosen plant palette. Engineered soil media deeper than 36' will only get credit for the pore space in the first 36'.

5) Enter the top width of the Bioretention Facility.

6) Calculate the total effective depth, d_E, within the Bioretention Facility. The maximum allowable pore space of the soil media is 30% while the maximum allowable pore space for the gravel layer is 40%. Gravel layer deeper than 12' will only get credit for the pore space in the first 12'.



a. For the design with side slopes the following equation shall be used to determine the total effective depth. Where, d_P is the depth of ponding within the basin.

$$d_E(\text{ft}) = \frac{0.3 \times \left[\left(w_T(\text{ft}) \times d_S(\text{ft})\right) + 4\left(d_P(\text{ft})\right)^2\right] + 0.4 \times 1(\text{ft}) + d_P(\text{ft})\left[4d_P(\text{ft}) + \left(w_T(\text{ft}) - 8d_P(\text{ft})\right)\right]}{w_T(\text{ft})}$$

This above equation can be simplified if the maximum ponding depth of 0.5' is used. The equation below is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = (0.3 \times d_S(\text{ft}) + 0.4 \text{ x } 1(\text{ft})) - \left(\frac{0.7\ (\text{ft}^2)}{w_T(\text{ft})}\right) + 0.5(\text{ft})$$

b. For the design without side slopes the following equation shall be used to determine the total effective depth:

$$d_E(\text{ft}) = d_P(\text{ft}) + [(0.3) \times d_S(\text{ft}) + (0.4) \times 1(\text{ft})]$$

The equation below, using the maximum ponding depth of 0.5', is used on the worksheet to find the minimum area required for the Bioretention Facility:

$$d_E(\text{ft}) = 0.5\ (\text{ft}) + [(0.3) \times d_S(\text{ft}) + (0.4) \times 1(\text{ft})]$$

7) Calculate the minimum surface area, A_M, required for the Bioretention Facility. This does not include the curb surrounding the Bioretention Facility or side slopes.

$$A_M(\text{ft}^2) = \frac{V_{BMP}(\text{ft}^3)}{d_E\ (\text{ft})}$$

8) Enter the proposed surface area. This area shall not be less than the minimum required surface area.

9) Verify that side slopes are no steeper than 4:1 in the standard design, and are not required in the modified design.

10) Provide the diameter, minimum 6 inches, of the perforated underdrain used in the Bioretention Facility. See Appendix B for specific information regarding perforated pipes.

11) Provide the slope of the site around the Bioretention Facility, if used. The maximum slope is 3 percent for a standard design.

12) Provide the check dam spacing, if the site around the Bioretention Facility is sloped.

13) Describe the vegetation used within the Bioretention Facility.

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County of Los Angeles Public Works. Stormwater Best Management Practice Design and Maintenance Manual. Los Angeles, 2009.

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Program, Ventura Countywide Stormwater Quality Management. Technical Guidance Manual for Stormwater Quality Control Measures. Ventura, 2002.

United States Environmental Protection Agency. Storm Water Technology Fact Sheet Bioretention. Washington D.C, 1999.

Urban Drainage and Flood Control District. Urban Storm Drainage Criteria Manual Volume 3 - Best Management Practices. Vol. 3. Denver, 2008. 3 vols.

Urbonas, Ben R. Stormwater Sand Filter Sizing and Design: A Unit Operations Approach. Denver: Urban Drainage and Flood Control District, 2002.

Site Design & Landscape Planning SD-10

Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- ☑ Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Each project site possesses unique topographic, hydrologic, and vegetative features, some of which are more suitable for development than others. Integrating and incorporating appropriate landscape planning methodologies into the project design is the most effective action that can be done to minimize surface and groundwater contamination from stormwater.

Approach

Landscape planning should couple consideration of land suitability for urban uses with consideration of community goals and projected growth. Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for site design and landscapes planning should conform to applicable standards and specifications of agencies with jurisdiction and be consistent with applicable General Plan and Local Area Plan policies.

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Designing New Installations

Begin the development of a plan for the landscape unit with attention to the following general principles:

- Formulate the plan on the basis of clearly articulated community goals. Carefully identify conflicts and choices between retaining and protecting desired resources and community growth.
- Map and assess land suitability for urban uses. Include the following landscape features in the assessment: wooded land, open unwooded land, steep slopes, erosion-prone soils, foundation suitability, soil suitability for waste disposal, aquifers, aquifer recharge areas, wetlands, floodplains, surface waters, agricultural lands, and various categories of urban land use. When appropriate, the assessment can highlight outstanding local or regional resources that the community determines should be protected (e.g., a scenic area, recreational area, threatened species habitat, farmland, fish run). Mapping and assessment should recognize not only these resources but also additional areas needed for their sustenance.

Project plan designs should conserve natural areas to the extent possible, maximize natural water storage and infiltration opportunities, and protect slopes and channels.

Conserve Natural Areas during Landscape Planning

If applicable, the following items are required and must be implemented in the site layout during the subdivision design and approval process, consistent with applicable General Plan and Local Area Plan policies:

- Cluster development on least-sensitive portions of a site while leaving the remaining land in a natural undisturbed condition.
- Limit clearing and grading of native vegetation at a site to the minimum amount needed to build lots, allow access, and provide fire protection.
- Maximize trees and other vegetation at each site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants.
- Promote natural vegetation by using parking lot islands and other landscaped areas.
- Preserve riparian areas and wetlands.

Maximize Natural Water Storage and Infiltration Opportunities Within the Landscape Unit

- Promote the conservation of forest cover. Building on land that is already deforested affects basin hydrology to a lesser extent than converting forested land. Loss of forest cover reduces interception storage, detention in the organic forest floor layer, and water losses by evapotranspiration, resulting in large peak runoff increases and either their negative effects or the expense of countering them with structural solutions.
- Maintain natural storage reservoirs and drainage corridors, including depressions, areas of permeable soils, swales, and intermittent streams. Develop and implement policies and

regulations to discourage the clearing, filling, and channelization of these features. Utilize them in drainage networks in preference to pipes, culverts, and engineered ditches.

- Evaluating infiltration opportunities by referring to the stormwater management manual for the jurisdiction and pay particular attention to the selection criteria for avoiding groundwater contamination, poor soils, and hydrogeological conditions that cause these facilities to fail. If necessary, locate developments with large amounts of impervious surfaces or a potential to produce relatively contaminated runoff away from groundwater recharge areas.

Protection of Slopes and Channels during Landscape Design

- Convey runoff safely from the tops of slopes.
- Avoid disturbing steep or unstable slopes.
- Avoid disturbing natural channels.
- Stabilize disturbed slopes as quickly as possible.
- Vegetate slopes with native or drought tolerant vegetation.
- Control and treat flows in landscaping and/or other controls prior to reaching existing natural drainage systems.
- Stabilize temporary and permanent channel crossings as quickly as possible, and ensure that increases in run-off velocity and frequency caused by the project do not erode the channel.
- Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion. Energy dissipaters shall be installed in such a way as to minimize impacts to receiving waters.
- Line on-site conveyance channels where appropriate, to reduce erosion caused by increased flow velocity due to increases in tributary impervious area. The first choice for linings should be grass or some other vegetative surface, since these materials not only reduce runoff velocities, but also provide water quality benefits from filtration and infiltration. If velocities in the channel are high enough to erode grass or other vegetative linings, riprap, concrete, soil cement, or geo-grid stabilization are other alternatives.
- Consider other design principles that are comparable and equally effective.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Redevelopment may present significant opportunity to add features which had not previously been implemented. Examples include incorporation of depressions, areas of permeable soils, and swales in newly redeveloped areas. While some site constraints may exist due to the status of already existing infrastructure, opportunities should not be missed to maximize infiltration, slow runoff, reduce impervious areas, disconnect directly connected impervious areas.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Stormwater Management Manual for Western Washington, Washington State Department of Ecology, August 2001.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Roof Runoff Controls SD-11

Rain Garden

Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Description

Various roof runoff controls are available to address stormwater that drains off rooftops. The objective is to reduce the total volume and rate of runoff from individual lots, and retain the pollutants on site that may be picked up from roofing materials and atmospheric deposition. Roof runoff controls consist of directing the roof runoff away from paved areas and mitigating flow to the storm drain system through one of several general approaches: cisterns or rain barrels; dry wells or infiltration trenches; pop-up emitters, and foundation planting. The first three approaches require the roof runoff to be contained in a gutter and downspout system. Foundation planting provides a vegetated strip under the drip line of the roof.

Approach

Design of individual lots for single-family homes as well as lots for higher density residential and commercial structures should consider site design provisions for containing and infiltrating roof runoff or directing roof runoff to vegetative swales or buffer areas. Retained water can be reused for watering gardens, lawns, and trees. Benefits to the environment include reduced demand for potable water used for irrigation, improved stormwater quality, increased groundwater recharge, decreased runoff volume and peak flows, and decreased flooding potential.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment.

Design Considerations

Designing New Installations

Cisterns or Rain Barrels

One method of addressing roof runoff is to direct roof downspouts to cisterns or rain barrels. A cistern is an above ground storage vessel with either a manually operated valve or a permanently open outlet. Roof runoff is temporarily stored and then released for irrigation or infiltration between storms. The number of rain

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barrels needed is a function of the rooftop area. Some low impact developers recommend that every house have at least 2 rain barrels, with a minimum storage capacity of 1000 liters. Roof barrels serve several purposes including mitigating the first flush from the roof which has a high volume, amount of contaminants, and thermal load. Several types of rain barrels are commercially available. Consideration must be given to selecting rain barrels that are vector proof and childproof. In addition, some barrels are designed with a bypass valve that filters out grit and other contaminants and routes overflow to a soak-away pit or rain garden.

If the cistern has an operable valve, the valve can be closed to store stormwater for irrigation or infiltration between storms. This system requires continual monitoring by the resident or grounds crews, but provides greater flexibility in water storage and metering. If a cistern is provided with an operable valve and water is stored inside for long periods, the cistern must be covered to prevent mosquitoes from breeding.

A cistern system with a permanently open outlet can also provide for metering stormwater runoff. If the cistern outlet is significantly smaller than the size of the downspout inlet (say ¼ to ½ inch diameter), runoff will build up inside the cistern during storms, and will empty out slowly after peak intensities subside. This is a feasible way to mitigate the peak flow increases caused by rooftop impervious land coverage, especially for the frequent, small storms.

Dry wells and Infiltration Trenches

Roof downspouts can be directed to dry wells or infiltration trenches. A dry well is constructed by excavating a hole in the ground and filling it with an open graded aggregate, and allowing the water to fill the dry well and infiltrate after the storm event. An underground connection from the downspout conveys water into the dry well, allowing it to be stored in the voids. To minimize sedimentation from lateral soil movement, the sides and top of the stone storage matrix can be wrapped in a permeable filter fabric, though the bottom may remain open. A perforated observation pipe can be inserted vertically into the dry well to allow for inspection and maintenance.

In practice, dry wells receiving runoff from single roof downspouts have been successful over long periods because they contain very little sediment. They must be sized according to the amount of rooftop runoff received, but are typically 4 to 5 feet square, and 2 to 3 feet deep, with a minimum of 1-foot soil cover over the top (maximum depth of 10 feet).

To protect the foundation, dry wells must be set away from the building at least 10 feet. They must be installed in solids that accommodate infiltration. In poorly drained soils, dry wells have very limited feasibility.

Infiltration trenches function in a similar manner and would be particularly effective for larger roof areas. An infiltration trench is a long, narrow, rock-filled trench with no outlet that receives stormwater runoff. These are described under Treatment Controls.

Pop-up Drainage Emitter

Roof downspouts can be directed to an underground pipe that daylights some distance from the building foundation, releasing the roof runoff through a pop-up emitter. Similar to a pop-up irrigation head, the emitter only opens when there is flow from the roof. The emitter remains flush to the ground during dry periods, for ease of lawn or landscape maintenance.

Foundation Planting

Landscape planting can be provided around the base to allow increased opportunities for stormwater infiltration and protect the soil from erosion caused by concentrated sheet flow coming off the roof. Foundation plantings can reduce the physical impact of water on the soil and provide a subsurface matrix of roots that encourage infiltration. These plantings must be sturdy enough to tolerate the heavy runoff sheet flows, and periodic soil saturation.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Supplemental Information

Examples

- City of Ottawa's Water Links Surface –Water Quality Protection Program
- City of Toronto Downspout Disconnection Program
- City of Boston, MA, Rain Barrel Demonstration Program

Other Resources

Hager, Marty Catherine, Stormwater, "Low-Impact Development", January/February 2003. www.stormh2o.com

Low Impact Urban Design Tools, Low Impact Development Design Center, Beltsville, MD. www.lid-stormwater.net

Start at the Source, Bay Area Stormwater Management Agencies Association, 1999 Edition

Efficient Irrigation SD-12

Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

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- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Storm Drain Signage SD-13

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include "NO DUMPING

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– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

Additional Information

Maintenance Considerations

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

Placement

- Signage on top of curbs tends to weather and fade.
- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

Supplemental Information

Examples

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Fueling Areas SD-30

Photo Credit: Geoff Brosseau

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- ☑ Collect and Convey

Description

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the stormwater conveyance system. Spills at vehicle and equipment fueling areas can be a significant source of pollution because fuels contain toxic materials and heavy metals that are not easily removed by stormwater treatment devices.

Approach

Project plans must be developed for cleaning near fuel dispensers, emergency spill cleanup, containment, and leak prevention.

Suitable Applications

Appropriate applications include commercial, industrial, and any other areas planned to have fuel dispensing equipment, including retail gasoline outlets, automotive repair shops, and major non-retail dispensing areas.

Design Considerations

Design requirements for fueling areas are governed by Building and Fire Codes and by current local agency ordinances and zoning requirements. Design requirements described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements.

Designing New Installations

Covering

Fuel dispensing areas should provide an overhanging roof structure or canopy. The cover's minimum dimensions must be equal to or greater than the area within the grade break. The cover must not drain onto the fuel dispensing area and the downspouts must be routed to prevent drainage across the fueling area. The fueling area should drain to the project's treatment control BMP(s) prior to discharging to the stormwater conveyance system. Note - If fueling large equipment or vehicles that would prohibit the use of covers or roofs, the fueling island should be designed to sufficiently accommodate the larger vehicles and equipment and to prevent stormwater run-on and runoff. Grade to direct stormwater to a dead-end sump.

Surfacing

Fuel dispensing areas should be paved with Portland cement concrete (or equivalent smooth impervious surface). The use of asphalt concrete should be prohibited. Use asphalt sealant to protect asphalt paved areas surrounding the fueling area. This provision may be made to sites that have pre-existing asphalt surfaces.

The concrete fuel dispensing area should be extended a minimum of 6.5 ft from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 ft, whichever is less.

Grading/Contouring

Dispensing areas should have an appropriate slope to prevent ponding, and be separated from the rest of the site by a grade break that prevents run-on of urban runoff. (Slope is required to be 2 to 4% in some jurisdictions' stormwater management and mitigation plans.)

Fueling areas should be graded to drain toward a dead-end sump. Runoff from downspouts/roofs should be directed away from fueling areas. Do not locate storm drains in the immediate vicinity of the fueling area.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

- In the case of an emergency, provide storm drain seals, such as isolation valves, drain plugs, or drain covers, to prevent spills or contaminated stormwater from entering the stormwater conveyance system.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Gas Station & Convenience Store
Noise Impact Study
County of Riverside, CA

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MD ACOUSTICS
Sound Solutions for Planning and Design

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1.0 Introduction

1.1 Purpose of Analysis and Study Objectives

This purpose of this noise impact study is to evaluate the potential noise impacts for the project study area and compare results to City and CEQA thresholds. The assessment was conducted and compared to the noise standards set forth by the Federal, State and Local agencies. Consistent with the California Environmental Quality Act (CEQA) and CEQA Guidelines, a significant impact related to noise would occur if a proposed project is determined to result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable agencies.
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The following is provided in this report:

- A description of the study area and the proposed project
- Information regarding the fundamentals of noise
- A description of the local noise guidelines and standards
- An evaluation of the existing ambient noise environment
- An analysis of stationary noise impacts from the project site to adjacent land uses
- Construction noise and vibration evaluation

1.2 Site Location and Study Area

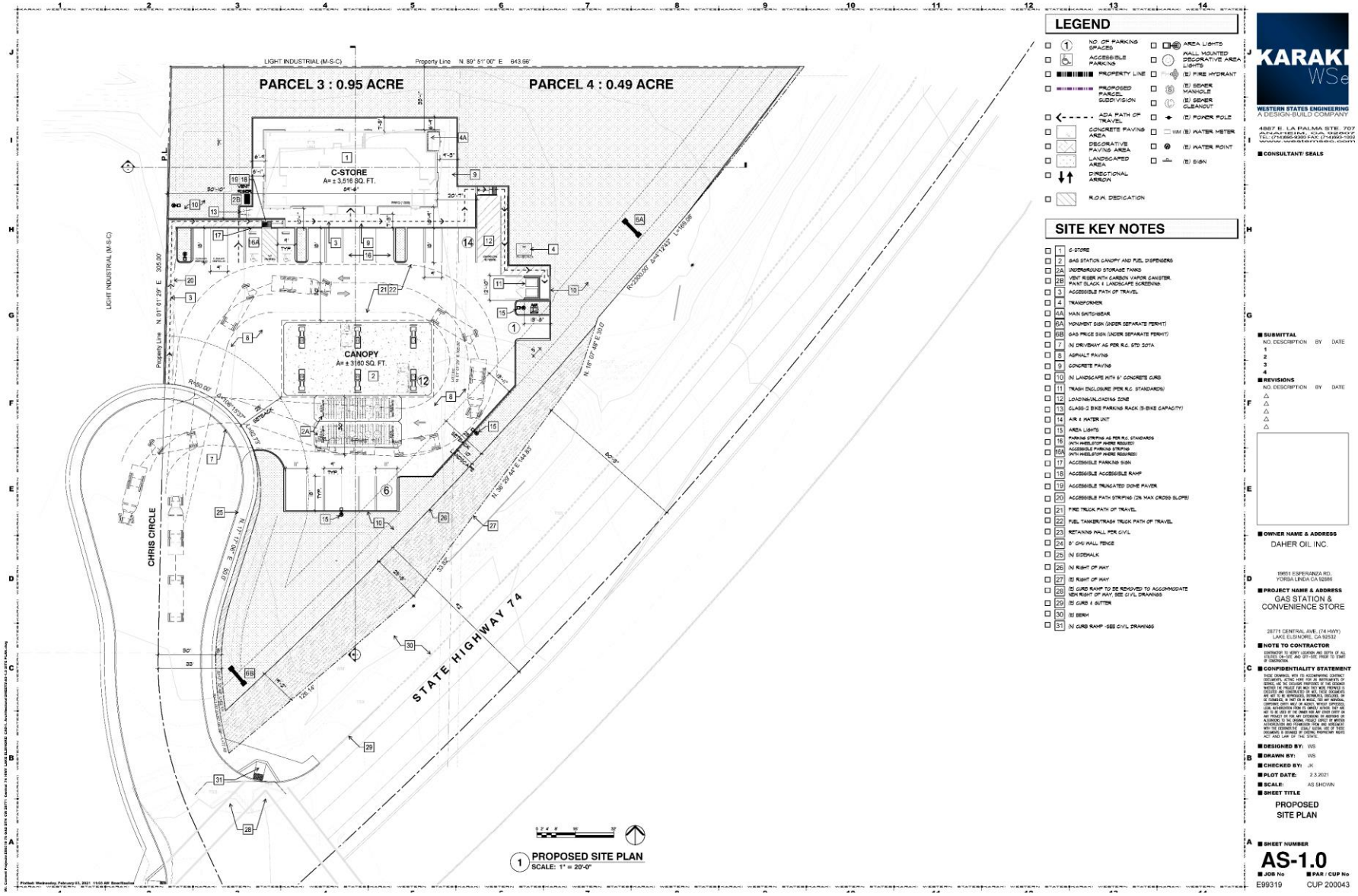
The project site is located at 28771 Central Ave (Hwy 74) in an unincorporated area of the County of Riverside within the Sphere of Influence of the City of Lake Elsinore, California, as shown in Exhibit A. The site is located within the County of Riverside's Elsinore Area Plan and has a current land use classification of Light Industrial. In addition, per the City of Lake Elsinore North Central Sphere Specific Plan Land Use Plan the site has a current land use classification of Business Professional. Land uses surrounding the site include vacant land to the west, a single-family residential use to and commercial uses to the north, multi-family residential uses to the south (across Highway 74), and single-family residential uses to the east (across Highway 74).

1.3 Proposed Project Description

The Project proposes to develop the approximately 1.44-acre project site with a 3,516 square foot convenience market with 12 pump gas station. Exhibit B demonstrates the site plan for the project.

Exhibit A
Location Map

Exhibit B
Site Plan



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CONSULTANT SEALS

SUBMITTAL
NO. DESCRIPTION BY DATE
1
2
3
4

REVISIONS
NO. DESCRIPTION BY DATE
△
△
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OWNER NAME & ADDRESS
DAHER OIL INC.
19851 ESPERANZA RD.
YORBA LINDA CA 92886

PROJECT NAME & ADDRESS
GAS STATION &
CONVENIENCE STORE
28771 CENTRAL AVE. (74 HWY)
LAKE ELSINORE, CA 92532

NOTE TO CONTRACTOR

CONFIDENTIALITY STATEMENT

DESIGNED BY: WS
DRAWN BY: WS
CHECKED BY: JK
PLOT DATE: 2.3.2021
SCALE: AS SHOWN
SHEET TITLE
PROPOSED
SITE PLAN

SHEET NUMBER
AS-1.0
JOB No E99319
PAR / CUP No CUP 200043

2.0 Fundamentals of Noise

This section of the report provides basic information about noise and presents some of the terms used in the report.

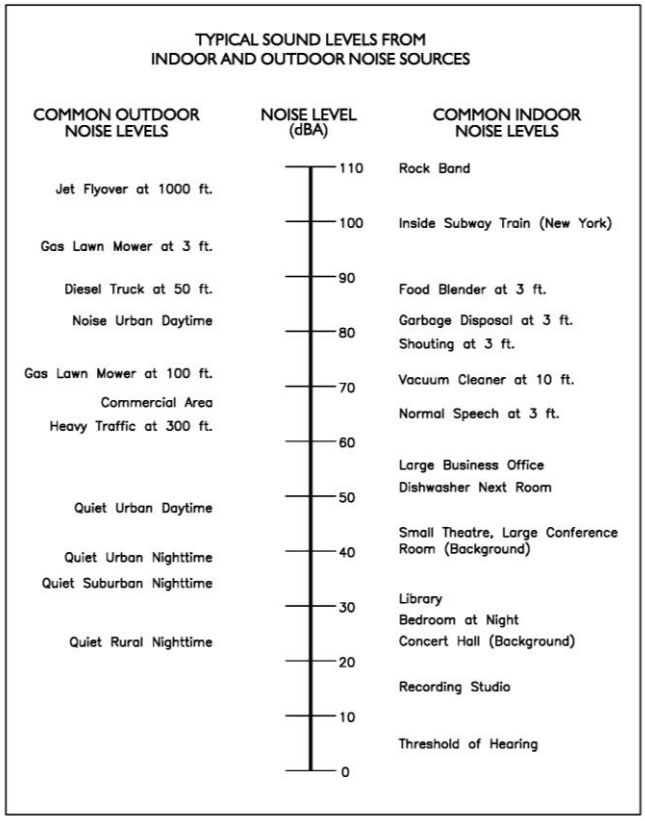
2.1 Sound, Noise and Acoustics

Sound is a disturbance created by a moving or vibrating source and is capable of being detected by the hearing organs. Sound may be thought of as mechanical energy of a moving object transmitted by pressure waves through a medium to a human ear. For traffic or stationary noise, the medium of concern is air. *Noise* is defined as sound that is loud, unpleasant, unexpected, or unwanted.

2.2 Frequency and Hertz

A continuous sound is described by its *frequency* (pitch) and its *amplitude* (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch (bass sounding) and high-frequency sounds are high in pitch (squeak). These oscillations per second (cycles) are commonly referred to as Hertz (Hz). The human ear can hear from the bass pitch starting out at 20 Hz all the way to the high pitch of 20,000 Hz.

Exhibit C: Typical A-Weighted Noise Levels



2.3 Sound Pressure Levels and Decibels

The *amplitude* of a sound determines its loudness. The loudness of sound increases or decreases as the amplitude increases or decreases. Sound pressure amplitude is measured in units of micro-Newton per square inch meter ($\mu N/m^2$), also called micro-Pascal (µPa). One µPa is approximately one hundred billionths (0.00000000001) of normal atmospheric pressure. Sound pressure level (SPL or L_p) is used to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called decibels, abbreviated dB. Exhibit C illustrates references sound levels for different noise sources.

2.4 Addition of Decibels

Because decibels are on a logarithmic scale, sound pressure levels cannot be added or subtracted by simple plus or minus addition. When two sounds or equal SPL are combined, they will produce an SPL 3 dB greater than the original single SPL. In other words, sound energy must be doubled to produce a 3 dB increase. If two sounds differ by approximately 10 dB, the higher sound level is the predominant sound.

2.5 Human Response to Changes in Noise Levels

In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, and it perceives a sound within that range as being more intense than a sound with a higher or lower frequency with the same magnitude. For purposes of this report as well as with most environmental documents, the A-scale weighting is typically reported in terms of A-weighted decibel (dBA), a scale designed to account for the frequency-dependent sensitivity of the ear. Typically, the human ear can barely perceive a change in noise level of 3 dB. A change in 5 dB is readily perceptible, and a change in 10 dB is perceived as being twice or half as loud. As previously discussed, a doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g. doubling the volume of traffic on a highway) would result in a barely perceptible change in sound level.

2.6 Noise Descriptors

Noise in our daily environment fluctuates over time. Some noise levels occur in regular patterns, others are random. Some noise levels are constant while others are sporadic. Noise descriptors were created to describe the different time-varying noise levels.

A-Weighted Sound Level: The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter de-emphasizes the very low and very high-frequency components of the sound in a manner similar to the response of the human ear. A numerical method of rating human judgment of loudness.

Ambient Noise Level: The composite of noise from all sources, near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL): The average equivalent A-weighted sound level during a 24-hour day, obtained after addition of five (5) decibels to sound levels in the evening from 7:00 to 10:00 PM and after addition of ten (10) decibels to sound levels in the night before 7:00 AM and after 10:00 PM.

Decibel (dB): A unit for measuring the amplitude of a sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micro-pascals.

dB(A): A-weighted sound level (see definition above).

Equivalent Sound Level (LEQ): The sound level corresponding to a steady noise level over a given sample period with the same amount of acoustic energy as the actual time-varying noise level. The energy average noise level during the sample period.

Habitable Room: Any room meeting the requirements of the Uniform Building Code, or other applicable regulations, which is intended to be used for sleeping, living, cooking or dining purposes, excluding such enclosed spaces as closets, pantries, bath or toilet rooms, service rooms, connecting corridors, laundries, unfinished attics, foyers, storage spaces, cellars, utility rooms and similar spaces.

L(n): The A-weighted sound level exceeded during a certain percentage of the sample time. For example, L10 in the sound level exceeded 10 percent of the sample time. Similarly L50, L90, and L99, etc.

Noise: *A*ny unwanted sound or sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying. The State Noise Control Act defines noise as "...excessive undesirable sound...".

Outdoor Living Area: Outdoor spaces that are associated with residential land uses typically used for passive recreational activities or other noise-sensitive uses. Such spaces include patio areas, barbecue areas, jacuzzi areas, etc. associated with residential uses; outdoor patient recovery or resting areas associated with hospitals, convalescent hospitals, or rest homes; outdoor areas associated with places of worship which have a significant role in services or other noise-sensitive activities; and outdoor school facilities routinely used for educational purposes which may be adversely impacted by noise. Outdoor areas usually not included in this definition are: front yard areas, driveways, greenbelts, maintenance areas and storage areas associated with residential land uses; exterior areas at hospitals that are not used for patient activities; outdoor areas associated with places of worship and principally used for short-term social gatherings; and, outdoor areas associated with school facilities that are not typically associated with educational uses prone to adverse noise impacts (for example, school play yard areas).

Percent Noise Levels: See L(n).

Sound Level (Noise Level): The weighted sound pressure level obtained by use of a sound level meter having a standard frequency filter for attenuating part of the sound spectrum.

Sound Level Meter: An instrument, including a microphone, an amplifier, an output meter, and frequency weighting networks for the measurement and determination of noise and sound levels.

Single Event Noise Exposure Level (SENEL): The dB(A) level which, if it lasted for one second, would produce the same A-weighted sound energy as the actual event.

2.7 Traffic Noise Prediction

Noise levels associated with traffic depends on a variety of factors: (1) volume of traffic, (2) speed of traffic, (3) auto, medium truck (2–3 axle) and heavy truck percentage (4 axle and greater), and sound propagation. The greater the volume of traffic, higher speeds and truck percentages equate to a louder volume in noise. A doubling of the Average Daily Traffic (ADT) along a roadway will increase noise levels by approximately 3 dB; reasons for this are discussed in the sections above.

2.8 Sound Propagation

As sound propagates from a source it spreads geometrically. Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates at a rate of 6 dB per doubling of distance. The movement of vehicles down a roadway makes the source of the sound appear to propagate from a line (i.e., line source) rather than a point source. This line source results in the noise propagating from a roadway in a cylindrical spreading versus a spherical spreading that results from a point source. The sound level attenuates for a line source at a rate of 3 dB per doubling of distance.

As noise propagates from the source, it is affected by the ground and atmosphere. Noise models use hard site (reflective surfaces) and soft site (absorptive surfaces) to help calculate predicted noise levels. Hard site conditions assume no excessive ground absorption between the noise source and the