ESCONDIDO ESTATES

SAN DIEGO COUNTY, CALIFORNIA

PDS2020-TM-5639

PRELIMINARY HYDROLOGY REPORT

PREPARED FOR:

ESCONDIDO ESTATES, LLC
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Date Prepared: 12.2020

Date Revised: 06/2021

PREPARED BY:

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Project Manager: Eric Lissner, P.E.

Project Number: 108-001

ENGINEERING & CONSULTING

This report was prepared by or under the supervision of the undersigned registered civil engineer who attests to the technical information contained herein. The registered civil engineer has also judged the qualifications of any technical specialists providing engineering data upon which recommendations, conclusions, and decisions are based.

I hereby declare that I am the Engineer of Work for this project, that I have exercised responsible charge over the design of the project as defined in Section 6703 of the Business and Professions code, and that the design is consistent with current standards.

I understand that the check of project drawings and specifications by the County of San Diego is confined to a review only and does not relieve me, as engineer of work, of my responsibilities for project design.

Eric Lissner, P.E.

6/29/2021

Date

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APPENDICES

I. INTRODUCTION

a. PROJECT SITE DESCRIPTION

The subject site is located at the southeast corner of the intersection of San Pasqual Valley Road and Idaho Avenue in an unincorporated area southeast of the City of Escondido in the County of San Diego, California. Refer to section 1.c for the vicinity map. The site measures approximately 700' along the frontage of San Pasqual Valley Road and extends approximately 910' along the frontage of Idaho Avenue, consisting of 10.10 acres of undeveloped, vacant land covered with vegetation. The trapezoid-shaped site is bounded by Idaho Avenue to the north, San Pasqual Valley Road to the west, a nursery to the south, and developed residential properties to the east. An ephemeral drainage course, which is overlain by a County of San Diego Walnut Woodlands biological designation, runs along San Pasqual Valley Road within the property boundary. The area that comprises the drainage course and the walnut woodlands is proposed to be a lettered lot and is referred to hereon as Lot 'B.'

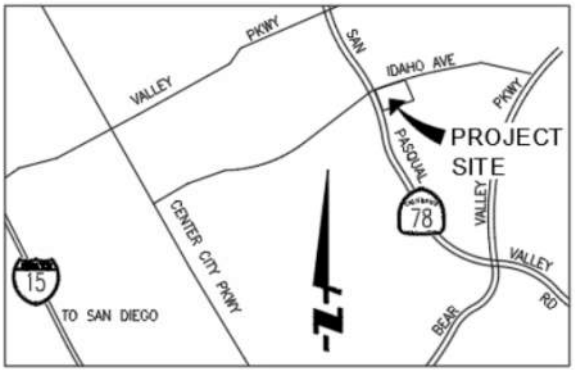
The land developer is proposing a residential community consisting of 20 detached single-family lots with associated infrastructure over approximately 9.84 acres within an existing parcel (APN 234-231-0100). This report is intended to accompany the entitlement document submittals for the proposed project.

b. PURPOSE AND SCOPE

The purpose of this preliminary study is to analyze the pre-and post-development drainage conditions in order to provide adequate drainage facilities for the proposed development project and minimize impact to downstream flood control facilities and properties.

The scope of this study includes:
1. Determination of offsite and onsite points of flow concentration
2. Existing condition 100-year storm event rational method analysis
3. Proposed condition 100-year storm event rational method analysis
4. Layout and preliminary design of storm drain facilities
5. Peak storm detention/flood attenuation calculations

c. PROJECT LOCATION MAP



II. EXISTING TOPOGRAPHIC AND HYDROLOGIC CONDITIONS

a. EXISTING TOPOGRAPHY

The project site is located on fallow, vacant land with existing vegetation that can be categorized per San Diego County Resource Protection Ordinance as agricultural, walnut woodlands, and eucalyptus woodlands. The site is characterized by modest hillside terrain, sloping downhill in a westerly direction. Elevations within the project boundary range from approximately 687' to approximately 750' above MSL. Existing onsite vegetation consists primarily of grass, nonnative wild plants, and shrubs covering the majority of the 10.10 acre site; however, an ephemeral drainage course is marked by large, mature trees. Based on Google Earth aerial imagery dating back to October 1995, it appears that the vegetation is maintained and cleared periodically, leaving fallow land as the primary ground cover. For the purposes of this hydrologic analysis, it is assumed that the ground cover is primarily unvegetated in order to assess the storm event which produces the most runoff under parameters outlined in Section III.b.

According to the NRCS Web Soil Survey, approximately 90% of the site consists of Fallbrook-Vista sandy loams and the remaining 10% is made up of Ramona sandy loam, both of which are classified as hydrologic soil group C.

The subject site falls in the Hodges hydrological area, located within the San Dieguito River watershed. Runoff generated in the existing condition exits the site via a 8'W x 2'H box culvert at the eastern project boundary, crossing San Pasqual Valley Road to an unnamed natural drainage course that discharges into Lake Hodges, approximately 4 miles south of the project, where it joins the San Dieguito River, ultimately discharging into the Pacific Ocean north of Del Mar and south of Solana Beach.

b. EXISTING DRAINAGE PATTERN

Approximately 57.33 acres of offsite area is tributary to the proposed site, as shown in the existing condition hydrology maps, Figures 1 & 2 in Appendix A. Two primary offsite tributary areas are identified; one north of Idaho Avenue as shown in Figure 2 in Appendix A, and

the other along the eastern property boundary, as shown in Figure 1 in Appendix A. The former larger offsite tributary area is bound by San Pasqual Valley Road to the west, residential properties north of Birch Avenue to the north, and Quartz Hill Lane to the east. This area is comprised primarily of fallow, undeveloped land in a similar condition to that of the subject property, as well as single-family detached lots along the western edge of the watershed fronting San Pasqual Valley Road and the northern edge fronting Birch Avenue, totalling approximately 57.33 acres. Runoff from this offsite tributary area sheetflows in a southerly direction to an exisiting 30" corrugated metal pipe (CMP) just north of Idaho Avenue, where it outlets into the drainage course onsite. The CMP meters the peak flow from this tributary area.

The latter offsite tributary is made up of approximately 4.76 acres east of the property boundary. The runoff from this area eminates from the residential development bordering the property to the east, sheetflowing onto the property, joining the onsite existing drainage pattern which ultimately joins the ephemeral drainage course, discharging to a 8W' x 2H' box culvert west of the property boundary.

Onsite storm runoff tends to surface flow in a westerly direction toward the ephemeral drainage course, exiting the site to a 8'W x 2'H box culvert just west of the property boundary.

c. EXISTING STORM DRAIN FACILITIES

As discussed in section II.a, the subject site is located on fallow, undeveloped land. There are no known private existing storm drain facilities except as discussed below.

Offsite, as mentioned in section II.b, the 30" CMP north of Idaho Avenue accepts drainage from approximately 57.33 acres of offsite tributary area and outlets into the ephemeral drainage course, discharging to a box culvert west of the project boundary. Per the City of Escondido Drainage Master Plan (November 1995), the box culvert (KC-23 #883) has dimensions of 10'W x 4'H and a Q_C of 662cfs. However, field measurements show the box culvert is 8'W x 2'H, indicating the Q_C from the Drainage Master Plan is likely inaccurate.

III. HYDROLOGIC ANALYSIS

a. STORM FREQUENCY

This report will analyze the 100-year storm event in the existing and proposed conditions for drainage purposes per the San Diego County Hydrology Manual requiring 100-year storm analysis.

b. METHODOLOGY

The study site falls under the jurisdiction of the County of San Diego, which accepts methodologies and practices as described in the San Diego County Hydrology Manual dated June, 2003.

The computer program used for this report to perform hydrologic calculations is the CivilCadd/Civil Design (CivilD) Engineering Software, Version 9.0 program packaged in 2014 by Bondiman and Associates, Inc. CivilD's Rational Method Program was used to determine all runoff in this report. This software has been identified as acceptable software within the County of San Diego. Calculations for the analyses are provided in Appendix C.

c. EXISTING CONDITION

In the existing condition, approximately 40.9 cfs of offsite runon enters the project site at the eastern boundary due to metered flow provided by a 30" CMP in Idaho Avenue. Storm flows continue to flow in a westerly direction, as discussed in section II.b to the ephemeral drainage course, confluencing with the offsite flows from the tributary area north of Idaho Avenue, exiting the site via the 8'W x 2'H box culvert west of the project. The runoff quantities generated from the 100-year storm event in the existing condition utilizing county 6-hour and 24-hour isopluvial maps are tabulated in Table III.1 below. Refer to Figure 1 in Appendix A.

Table III.1 Existing Condition Runoff

Existing Condition 100-Year Storm		
Node	Q_{100} (cfs)	Area (AC)
104	45.7	60.87
107	70.1	63.10
110	0.5	0.24
114	81.7	74.01

Table III.2 Existing Condition Initial Areas

Existing Condition 100-Year Storm				
Subarea Designation	Q_{100} (cfs)	Area (AC)	Initial Time of Concentration (min)	Maximum Overland Flow Distance (ft)
A-1	0.3	0.14	6.19	90
A-6	0.1	0.05	8.78	95
A-9	0.2	0.07	5.85	95
A-12	0.2	0.09	7.23	100

Table III.3 Existing Condition Point of Discharge

Existing Condition 100-Year Storm					
Node	Q_{100} (cfs)	Total Area (AC)	Velocity (ft/s)	Intensity (in/hr)	Time of Concentration (min)
114	81.7	74.01	2.3	4.1	19.57

Table III.4 Existing Condition Runoff Coefficients

Existing Condition 100-Year Storm		
Subarea Designation	Area (AC)	Runoff Coefficient
A-1	0.14	0.300
A-2	0.75	0.300
A-3	2.38	0.300
A-4	0.27	0.339
A-5	1.60	0.302
A-6	0.05	0.300
A-7	0.58	0.300
A-8	0.21	0.302
A-9	0.07	0.300
A-10	0.17	0.300
A-11	5.46	0.300
A-12	0.09	0.300
A-13	3.37	0.300
A-14	1.54	0.300

Tory-Walker Engineering performed a HEC-RAS analysis in order to assess the existing condition floodplain limits of the Walnut Woodlands drainage course in support of this hydrology report. Their analysis was performed using larger peak storm flows than what would be generated in the existing condition presented in this report in Appendix C. Given their analysis, no structures would be placed within the 100-year flood hazad area.

d. PROPOSED CONDITION

The proposed development is comprised of of 20 single family units, required public and private roadway improvements, homeowner septic fields, and drainage/water quaility facilities.

The proposed condition overall drainage patterns will generally mimic the existing drainage patterns, with all onsite storm runoff emanating from the east entering storm drain facilities via street flow. A multipurpose basin is proposed in Lot 'C', providing for water quality treatment, hydromodification mitigation, and peak flow attenuation. All onsite flows will be routed to the proposed basin, outletting to the existing 8'W x 2'H culvert as in the existing condition. Offsite runon to the project from the property to the south and east will enter a proposed brow ditch along the perimeter walls of the project, discharging to the proposed basin. Flows from a significant portion of Idaho Avenue fronting the project are proposed to enter an inlet and discharge to the proposed basin via a privately maintained storm drain system onsite. Impervious area within the proposed condition is generally comprised of rooftops, driveways, sidewalks, and minimal residential hardscaping such as patios. The remaining area within the subject property is anticipated to be pervious, including landscaped residential yards, septic fields, the proposed basin, and Lot 'B.'

The proposed site development was analyzed using the county's rational method, which was then converted to a hydrograph using a function in the CivilD software. Outputs were then routed through the project's water quality, detention, and hydromodification facility using CivilD software and a defined stage-storage-discharge table.

Storm runoff and tributary watershed area summaries can be found in section IV below.

IV. PROPOSED ONSITE DRAINAGE FACILITIES

a. UNMITIGATED PEAK STORM FLOWS

Table IV.1 below summarizes unmitigated storm flows from the overall watershed ultimately discharging to the existing 8'W x 2'H culvert based upon rational method analysis.

Because the unmitigated proposed discharge to the box culvert would exceed the existing discharge, peak storm mitigation is provided as part of this project. Peak outflow to the existing culvert was determined by adding the peak flows tributary to the proposed basin to the peak flows not tributary to the basin. This approach results in a higher, more conservative total project peak flow rate as compared to confluencing the flows from the proposed basin with the flows not tributary to the basin.

Table IV.1 Proposed Unmitigated Peak Storm Flows

Proposed Unmitigated Condition 100-Year Storm		
	Q_{100} (cfs)	Area (AC)
Areas Tributary to Proposed Basin	36.5	13.3
Areas Not Tributary to Proposed Basin	66.9	60.7
Total Project	103.4	74.0

Table IV.2 Proposed Condition Initial Areas

Proposed Condition 100-Year Storm				
Subarea Designation	Q_{100} (cfs)	Area (AC)	Initial Time of Concentration (min)	Maximum Overland Flow Distance (ft)
C-1	0.3	0.14	6.19	100
C-4	1.0	0.25	5.10	100
C-6	0.2	0.04	5*	100
C-8	1.0	0.24	5*	100
C-12	0.2	0.06	6.32**	100
C-14	0.2	0.09	6.69	100
C-19	0.2	0.03	5*	85
C-22	0.4	0.06	5*	95

** Note: If the initial time of concentration calculated is less than 5 minutes, the time of concentration used for intensity calculations is reset to 5 minutes.*
*** Note: If the maximum overland flow distance is exceeded, the initial time of concentration is calculated by the CivilD program in accordance with Figures 3-3 and 3-4 of the San Diego County Hydrology Manual.*

Table IV.3 Proposed Condition Point of Discharge (Unmitigated)

Proposed Condition 100-Year Storm					
Existing Condition Node	Proposed Condition Node	Q_{100} (cfs)	Total Area (AC)	Intensity (in/hr)	Time of Concentration (min)
114	403	103.4	74.0	4.6	6.89

Table IV.4 Proposed Condition Runoff Coefficients

Proposed Condition 100-Year Storm		
Subarea Designation	Area (AC)	Runoff Coefficient
C-1	0.14	0.300
C-2	0.75	0.267
C-3	1.37	0.547
C-4	0.25	0.450
C-5	2.89	0.478
C-6	0.04	0.480
C-7	0.27	0.480
C-8	0.24	0.480
C-9	1.31	0.480
C-10	0.51	0.480
C-11	0.99	0.497
C-12	0.06	0.480
C-13	0.53	0.480
C-14	0.09	0.360
C-15	3.36	0.360
C-16	0.07	0.300
C-17	0.17	0.343
C-18	0.23	0.355
C-19	0.03	0.780
C-20	0.27	0.780
C-21	1.65	0.302
C-22	0.06	0.780
C-23	0.67	0.780
C-24	0.70	0.308

b. MITIGATED PEAK STORM FLOWS

Based upon increased impervious ratios and decreased times of concentration, peak storm flows would increase from the existing to proposed conditions without mitigation. A multi-purpose basin is proposed in the southwest corner of the site, providing for water quality treatment, hydromodification mitigation, and peak flow attenuation. The proposed basin is designed in accordance with the County of San Diego's Conjunctive Use Facilities for Storm Water Management and Flood Control memorandum (January 21, 2020), with the storage volumes for the peak storm and hydromodification mitigation overlapping. Storage volume for pollutant control is provided separately from peak storm and hydromodification mitigation. Basin routing calculations are provided in Appendix B. Peak outflow to the existing culvert was determined by adding the routed peak flows tributary to the proposed basin to the peak flows not tributary to the basin. Stage-Storage-Discharge

tables for both the existing Idaho Avenua 30" culvert and the proposed detention basin are provided in Appendix B.

Table IV.5 Proposed Condition Basin Routing Summary

Proposed Condition 100-Year Storm		
	Q_{100} (cfs)	Area (AC)
Unmitigated Basin Inflow	36.5	13.27
Mitigated Basin Outflow	16.0	13.27
Delta	-20.5	0

By utilizing the distinct time of concentrations from the basin outflow and the drainage course, a confluenced peak discharge and time of concentration of those combined discharges was calculated. By confluencing the peak storm flows, the peak discharge flow rates have been effectively reduced to below predevelopment levels. See summary Table IV.8 below.

Table IV.6 Proposed Condition Summary

Proposed Condition 100-Year Storm		
	Q_{100} (cfs)	Area (AC)
Existing Condition	81.7	74.0
Proposed Condition (Unmitigated)	103.4	74.0
Proposed Condition (Mitigated)	74.8	74.0
Delta	-6.9	0.0

A separate project specific Storm Water Quality Management Plan (SWQMP) has been prepared for the overall project, which contains the required water quality calculations and corresponding hydromodification mitigation calculations.

V. CONCLUSION

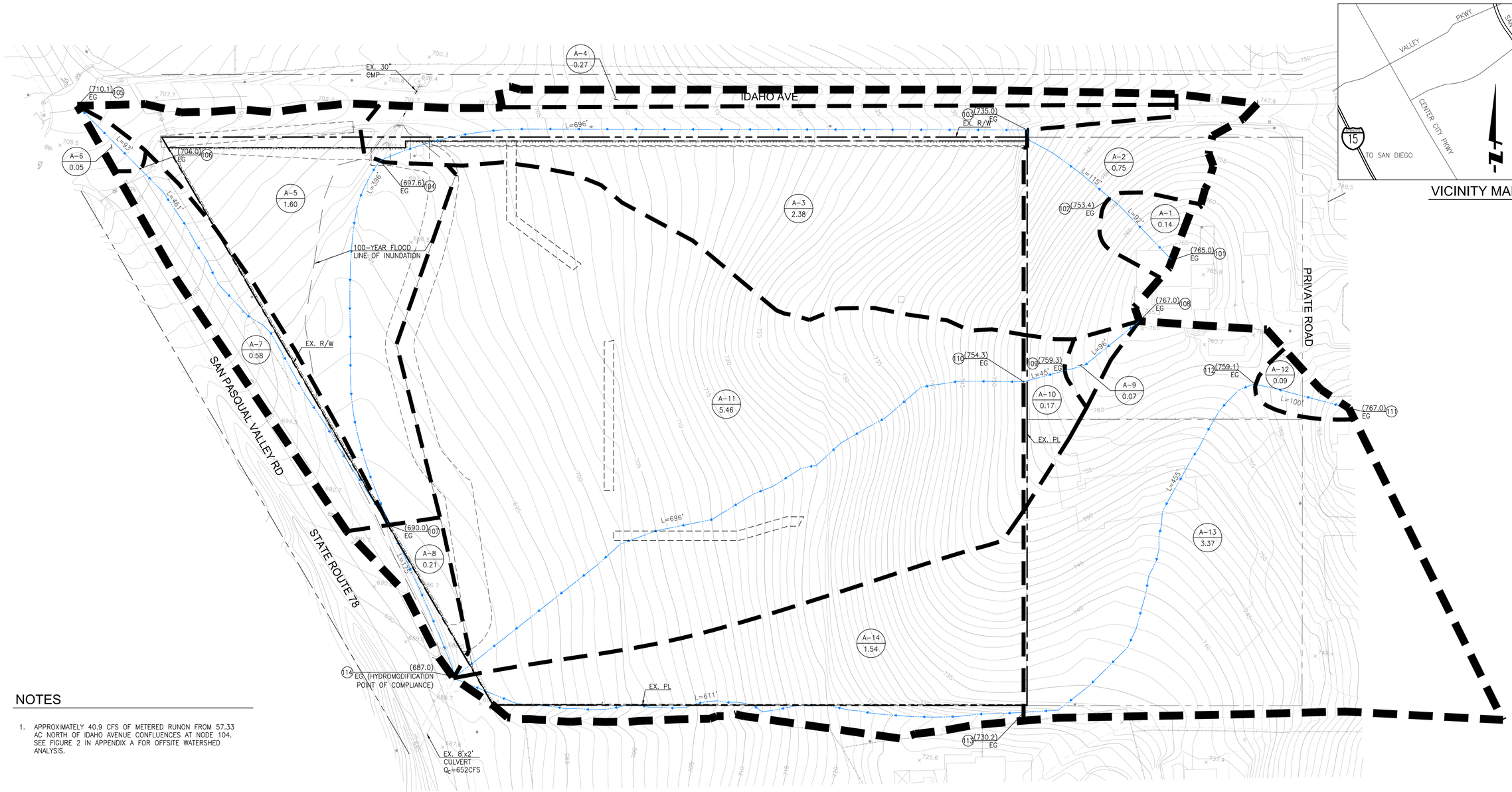
Based upon analyses provided in this report, the proposed development will not adversely impact the existing drainage conditions. As described previously, the existing drainage patterns will generally be preserved. The drainage course running through the project remains generally in its pre-project state, and is not significantly altered by the proposed development. Proposed onsite storm drain facilities will adequately convey peak storm flows through the project site to the proposed drainage basin and to San Pasqual Valley Road while maintaining 100-year storm flood protection and decreasing the peak flow from the area. Due to the proposed drainage basin, it is unlikely substantial erosion, flooding, or exceedance of existing storm water drainage systems would occur onsite or offsite.

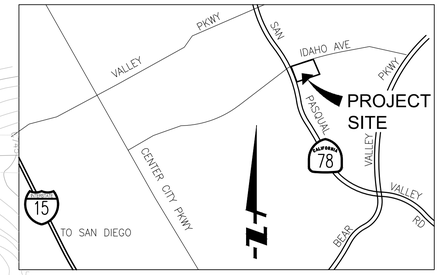
The development does not propose any housing or structures within a 100-year flood hazard area. The project does not propose any levees or dams, therefore exposure of persons or structures to significant risk of loss, injury or death involving flooding as a result of failure of a levee or dam is highly unlikely.

VI. REFERENCES

1. San Diego County Hydrology Manual (June, 2003)
2. City of Escondido Drainage Master Plan (November, 1995)
3. Tory-Walker Flood Limits Study
4. San Diego County Conjunctive Use Facilities for Storm Water Management and Flood Control Memorandum (January 21, 2020)

APPENDIX A





VICINITY MAP

NOTES

1. APPROXIMATELY 40.9 CFS OF METERED RUNON FROM 57.33 AC NORTH OF IDAHO AVENUE CONFLUENCES AT NODE 104. SEE FIGURE 2 IN APPENDIX A FOR OFFSITE WATERSHED ANALYSIS.

LEGEND

- EXISTING PROPERTY BOUNDARY
- PROPOSED PROPERTY BOUNDARY
- EXISTING RIGHT OF WAY
- PROPOSED MAJOR AREA BOUNDARY
- PROPOSED MINOR AREA BOUNDARY
- SURFACE FLOW PATH
- SURFACE FLOW DIRECTION
- (XXX.XX) EXISTING ELEVATION
- (101) PROPOSED NODE
- L=XXXX' SURFACE FLOW PATH LENGTH
- A / 0.83 DRAINAGE AREA DESIGNATION
- ACREAGE

EXISTING CONDITION HYDROLOGY SUMMARY

NODE	Q_{100} (CFS)	$\sum$ AREA (AC)	TC (MIN)
104[1]	45.7	60.87	17.02
107	70.1	63.10	18.97
110	0.5	0.24	6.31
114	81.7	74.01	19.57

50' 0' 25' 50'
SCALE: 1" = 50'

FIGURE 1: EXISTING CONDITION HYDROLOGY MAP
ESCONDIDO ESTATES

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B-1
0.14

(823.6)
EG
201

L=100'

202 (813.8)
EG

L=802'

B-2
13.59

BIRCH AVE

203 (743.0)
EG

L=776'

B-3
19.78

(711.4)
EG
204

L=425'

B-4
23.81

205 (702.4)
EG

SAN PASQUAL VALLEY RD
STATE ROUTE 78

IDAHO AVE

LEGEND

- EXISTING PARCEL BOUNDARY
- PROPOSED MAJOR AREA BOUNDARY
- PROPOSED MINOR AREA BOUNDARY
- SURFACE FLOW PATH
- SURFACE FLOW DIRECTION
- (XXX.XX) EXISTING ELEVATION
- 201 PROPOSED NODE
- L=XXXX' SURFACE FLOW PATH LENGTH
- A / 0.83 DRAINAGE AREA DESIGNATION / ACREAGE

EXISTING CONDITION HYDROLOGY SUMMARY

NODE	Q_{100} (CFS)	Σ AREA (AC)
202	0.3	0.14
203	22.1	13.60
204	20.4	19.78
205	22.5	23.81
TOTAL	65.4	57.33

NOTES:
1. TOPOGRAPHY OBTAINED FROM NEARMAP ON 04/21/2021.
2. PARCEL BOUNDARIES ARE FROM COUNTY OF SAN DIEGO GIS.
3. EXISTING 30" CMP CULVERT METERS DISCHARGE FROM THE WATERSHED TO A PEAK FLOW OF 37.9 CFS.

N

120' 0' 60' 120'

SCALE: 1" = 120'

FIGURE 2: OFFSITE WATERSHED ANALYSIS

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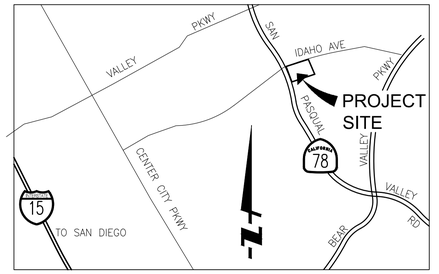


VICINITY MAP

PROPOSED CONDITION HYDROLOGY SUMMARY

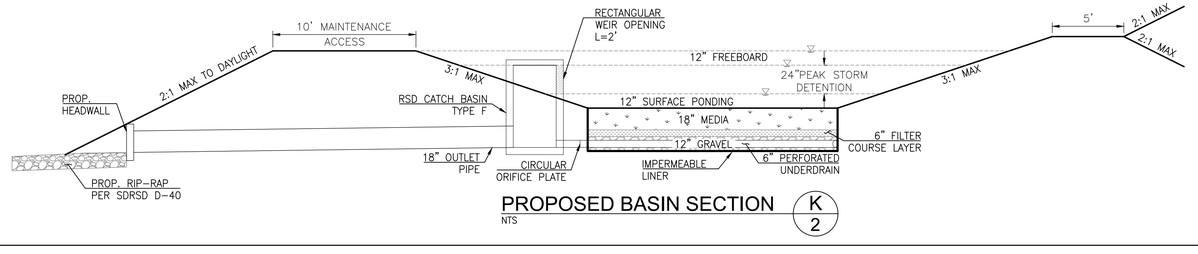
	Q_{100} (CFS)	AREA (AC)
EXISTING CONDITION	81.7	74.0
PROPOSED, UNMITIGATED CONDITION	103.4	74.0
PROPOSED, MITIGATED CONDITION	74.8	74.0
DELTA	−6.9	0

LEGEND

- EXISTING PROPERTY BOUNDARY
- PROPOSED PROPERTY BOUNDARY
- EXISTING RIGHT OF WAY
- PROPOSED MAJOR AREA BOUNDARY
- PROPOSED MINOR AREA BOUNDARY
- SURFACE FLOW PATH
- SURFACE FLOW DIRECTION
- PROPOSED SEPTIC FIELD
- (XXX.XX) EXISTING ELEVATION
- XXX.XX PROPOSED ELEVATION
- (10) PROPOSED NODE
- L=XXXX' SURFACE FLOW PATH LENGTH
- L = *XXXX' PIPE FLOW PATH LENGTH
- C 0.83 DRAINAGE AREA DESIGNATION / ACREAGE

NOTES

1. SUBAREAS C−1 THROUGH C−18 ARE TRIBUTARY TO THE PROPOSED BASIN.
2. AREAS C−19 THROUGH C−24 BYPASS THE PROPOSED BASIN AND DISCHARGE TO THE EXISTING 8'W X 2'H BOX CULVERT AT NODE 507.
3. APPROXIMATELY 40.9 CFS OF OFFSITE RUNON FROM 57.33 AC NORTH OF IDAHO AVENUE CONFLUENCES AT NODE 504. SEE FIGURE 2 IN APPENDIX A FOR OFFSITE WATERSHED ANALYSIS.



PROPOSED BASIN SECTION K/2
NTS

50' 0' 25' 50'
SCALE: 1" = 50'

FIGURE 3: PROPOSED CONDITION HYDROLOGY MAP
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APPENDIX B

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                San Diego County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c)1991-2018 Version 9.0

Rational method hydrology  program based on
San Diego County Flood Control Division 2003 hydrology manual
        Rational Hydrology Study        Date: 06/21/21
------------------------------------------------------------------------
108-001 Idaho (Escondido Estates)
Offsite Northern Watershed
Surface Flow to Existing Idaho Culvert
xtrapolated storm from County Isopluvials - No Routing
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------


Program License Serial Number 6440

------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
English (in-lb) input data Units used

Map data precipitation entered:
6 hour,  precipitation(inches) =  3.300
24 hour precipitation(inches) =  7.300
P6/P24 =    45.2%
San Diego hydrology manual 'C' values used


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      201.000 to Point/Station      202.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Initial subarea total flow distance  =  100.000(Ft.)
Highest elevation =  823.600(Ft.)
Lowest elevation =  813.800(Ft.)
Elevation difference =    9.800(Ft.) Slope =  9.800 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 100.00 (Ft)
```

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for the top area slope value of   9.80 %, in a development type of
 Permanent Open Space
In Accordance With Figure 3-3
Initial Area Time of Concentration =   6.73 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.3000)*( 100.000^.5)/(   9.800^(1/3)]=   6.73
Rainfall intensity (I) =      7.179(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.300
Subarea runoff =      0.302(CFS)
Total initial stream area =        0.140(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      202.000 to Point/Station      203.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =     11.848(CFS)
Depth of flow =   0.516(Ft.), Average velocity =   4.456(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              2.00
        2             20.00              0.00
        3             40.00              2.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =     11.848(CFS)
  '     '        flow top width =     10.312(Ft.)
  '     '    velocity=    4.456(Ft/s)
  '     '        area =      2.659(Sq.Ft)
  '     '        Froude number =     1.547

Upstream point elevation =   813.800(Ft.)
Downstream point elevation =   743.000(Ft.)
Flow length =   802.000(Ft.)
Travel time  =    3.00 min.
Time of concentration =    9.73 min.
Depth of flow =   0.516(Ft.)
Average velocity =   4.456(Ft/s)
Total irregular channel flow =    11.848(CFS)
Irregular channel normal depth above invert elev. =   0.516(Ft.)
Average velocity of channel(s) =   4.456(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      5.660(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
```

```
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      5.660(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.300  CA =      4.122
Subarea runoff =     23.028(CFS) for     13.600(Ac.)
Total runoff =     23.329(CFS)  Total area =      13.740(Ac.)
Depth of flow =   0.665(Ft.), Average velocity =   5.279(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      203.000 to Point/Station      204.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =     34.018(CFS)
Depth of flow =   0.484(Ft.), Average velocity =   2.909(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2             50.00              0.00
        3            100.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =     34.018(CFS)
  '     '        flow top width =     48.359(Ft.)
  '     '    velocity=    2.909(Ft/s)
  '     '        area =     11.693(Sq.Ft)
  '     '        Froude number =     1.043

Upstream point elevation =   743.000(Ft.)
Downstream point elevation =   711.400(Ft.)
Flow length =   776.000(Ft.)
Travel time  =    4.45 min.
Time of concentration =   14.17 min.
Depth of flow =   0.484(Ft.)
Average velocity =   2.909(Ft/s)
Total irregular channel flow =    34.018(CFS)
Irregular channel normal depth above invert elev. =   0.484(Ft.)
Average velocity of channel(s) =   2.909(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      4.440(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
```

```
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      4.440(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.300  CA =     10.056
Subarea runoff =     21.318(CFS) for     19.780(Ac.)
Total runoff =     44.647(CFS)  Total area =      33.520(Ac.)
Depth of flow =   0.536(Ft.), Average velocity =   3.114(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      204.000 to Point/Station      205.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =     56.424(CFS)
Depth of flow =   0.661(Ft.), Average velocity =   2.584(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2             50.00              0.00
        3            100.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =     56.424(CFS)
  '     '         flow top width =     66.090(Ft.)
  '     '    velocity=    2.584(Ft/s)
  '     '         area =     21.839(Sq.Ft)
  '     '         Froude number =     0.792

Upstream point elevation =   711.400(Ft.)
Downstream point elevation =   702.400(Ft.)
Flow length =   425.000(Ft.)
Travel time  =    2.74 min.
Time of concentration =   16.92 min.
Depth of flow =   0.661(Ft.)
Average velocity =   2.584(Ft/s)
Total irregular channel flow =    56.424(CFS)
Irregular channel normal depth above invert elev. =   0.661(Ft.)
Average velocity of channel(s) =   2.584(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      3.961(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
```

```
Sub-Area C Value = 0.300
Rainfall intensity =      3.961(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.300  CA =     17.199
Subarea runoff =     23.483(CFS) for     23.810(Ac.)
Total runoff =     68.131(CFS)  Total area =      57.330(Ac.)
Depth of flow =   0.709(Ft.), Average velocity =   2.708(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      204.000 to Point/Station      205.000
**** 6 HOUR HYDROGRAPH ****
________________________________________________________________________
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Hydrograph Data - Section 6, San Diego County Hydrology manual, June 2003


Time of Concentration =  16.92
Basin Area =    57.33 Acres
6 Hour Rainfall =  3.300 Inches
Runoff Coefficient =  0.300
Peak Discharge =    68.13 CFS
     Time (Min)     Discharge (CFS)
       0               0.000
       16               3.365
       32               3.574
       48               3.691
       64               3.958
       80               4.111
       96               4.469
       112               4.680
       128               5.190
       144               5.504
       160               6.309
       176               6.841
       192               8.361
       208               9.523
       224              13.983
       240              19.702
       256              68.131
       272              11.215
       288               7.504
       304               5.871
       320               4.918
       336               4.280
       352               3.818
       368               3.466
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                  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 1 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	17.0	34.1	51.1	68.1
0+ 0	0.0000	0.00	Q				
0+ 1	0.0003	0.21	Q				
0+ 2	0.0009	0.42	Q				
0+ 3	0.0017	0.63	Q				
0+ 4	0.0029	0.84	Q				
0+ 5	0.0043	1.05	Q				
0+ 6	0.0061	1.26	Q				
0+ 7	0.0081	1.47	Q				
0+ 8	0.0104	1.68	Q				
0+ 9	0.0130	1.89	VQ				
0+10	0.0159	2.10	VQ				
0+11	0.0191	2.31	VQ				
0+12	0.0226	2.52	VQ				
0+13	0.0264	2.73	VQ				
0+14	0.0304	2.94	VQ				
0+15	0.0348	3.16	VQ				
0+16	0.0394	3.37	VQ				
0+17	0.0441	3.38	VQ				
0+18	0.0487	3.39	VQ				
0+19	0.0534	3.40	VQ				
0+20	0.0581	3.42	V Q				
0+21	0.0628	3.43	V Q				
0+22	0.0676	3.44	V Q				
0+23	0.0724	3.46	V Q				
0+24	0.0771	3.47	V Q				
0+25	0.0819	3.48	V Q				
0+26	0.0867	3.50	V Q				
0+27	0.0916	3.51	V Q				
0+28	0.0964	3.52	V Q				
0+29	0.1013	3.53	V Q				
0+30	0.1062	3.55	V Q				
0+31	0.1111	3.56	V Q				
0+32	0.1160	3.57	V Q				
0+33	0.1209	3.58	|VQ				
0+34	0.1259	3.59	|VQ				
0+35	0.1308	3.60	|VQ				
0+36	0.1358	3.60	|VQ				
0+37	0.1408	3.61	|VQ				
0+38	0.1458	3.62	|VQ				
0+39	0.1508	3.63	|VQ				
0+40	0.1558	3.63	|VQ				
0+41	0.1608	3.64	|VQ				
0+42	0.1658	3.65	|VQ				
0+43	0.1708	3.65	|VQ				

0+44	0.1759	3.66	VQ				
0+45	0.1809	3.67	VQ				
0+46	0.1860	3.68	VQ				
0+47	0.1911	3.68	VQ				
0+48	0.1961	3.69	VQ				
0+49	0.2013	3.71	VQ				
0+50	0.2064	3.72	VQ				
0+51	0.2115	3.74	VQ				
0+52	0.2167	3.76	VQ				
0+53	0.2219	3.77	VQ				
0+54	0.2271	3.79	VQ				
0+55	0.2324	3.81	Q				
0+56	0.2376	3.82	Q				
0+57	0.2429	3.84	Q				
0+58	0.2482	3.86	Q				
0+59	0.2536	3.87	Q				
1+ 0	0.2589	3.89	Q				
1+ 1	0.2643	3.91	Q				
1+ 2	0.2697	3.92	Q				
1+ 3	0.2752	3.94	Q				
1+ 4	0.2806	3.96	Q				
1+ 5	0.2861	3.97	Q				
1+ 6	0.2916	3.98	Q				
1+ 7	0.2970	3.99	Q				
1+ 8	0.3026	4.00	Q				
1+ 9	0.3081	4.01	Q				
1+10	0.3136	4.02	Q				
1+11	0.3191	4.02	Q				
1+12	0.3247	4.03	Q				
1+13	0.3303	4.04	Q				
1+14	0.3359	4.05	Q				
1+15	0.3415	4.06	Q				
1+16	0.3471	4.07	Q				
1+17	0.3527	4.08	QV				
1+18	0.3583	4.09	QV				
1+19	0.3640	4.10	QV				
1+20	0.3696	4.11	QV				
1+21	0.3753	4.13	QV				
1+22	0.3810	4.16	QV				
1+23	0.3868	4.18	QV				
1+24	0.3926	4.20	QV				
1+25	0.3984	4.22	QV				
1+26	0.4043	4.25	QV				
1+27	0.4101	4.27	QV				
1+28	0.4160	4.29	QV				
1+29	0.4220	4.31	QV				
1+30	0.4280	4.33	QV				
1+31	0.4340	4.36	QV				
1+32	0.4400	4.38	QV				
1+33	0.4460	4.40	QV				

1+34	0.4521	4.42	QV				
1+35	0.4583	4.45	QV				
1+36	0.4644	4.47	QV				
1+37	0.4706	4.48	Q V				
1+38	0.4768	4.49	Q V				
1+39	0.4830	4.51	Q V				
1+40	0.4892	4.52	Q V				
1+41	0.4955	4.53	Q V				
1+42	0.5017	4.55	Q V				
1+43	0.5080	4.56	Q V				
1+44	0.5143	4.57	Q V				
1+45	0.5206	4.59	Q V				
1+46	0.5270	4.60	Q V				
1+47	0.5333	4.61	Q V				
1+48	0.5397	4.63	Q V				
1+49	0.5461	4.64	Q V				
1+50	0.5525	4.65	Q V				
1+51	0.5589	4.67	Q V				
1+52	0.5654	4.68	Q V				
1+53	0.5719	4.71	Q V				
1+54	0.5784	4.74	Q V				
1+55	0.5850	4.78	Q V				
1+56	0.5916	4.81	Q V				
1+57	0.5983	4.84	Q V				
1+58	0.6050	4.87	Q V				
1+59	0.6117	4.90	Q V				
2+ 0	0.6185	4.93	Q V				
2+ 1	0.6254	4.97	Q V				
2+ 2	0.6322	5.00	Q V				
2+ 3	0.6392	5.03	Q V				
2+ 4	0.6461	5.06	Q V				
2+ 5	0.6532	5.09	Q V				
2+ 6	0.6602	5.13	Q V				
2+ 7	0.6673	5.16	Q V				
2+ 8	0.6745	5.19	Q V				
2+ 9	0.6817	5.21	Q V				
2+10	0.6889	5.23	Q V				
2+11	0.6961	5.25	Q V				
2+12	0.7033	5.27	Q V				
2+13	0.7106	5.29	Q V				
2+14	0.7179	5.31	Q V				
2+15	0.7253	5.33	Q V				
2+16	0.7326	5.35	Q V				
2+17	0.7400	5.37	Q V				
2+18	0.7474	5.39	Q V				
2+19	0.7549	5.41	Q V				
2+20	0.7624	5.43	Q V				
2+21	0.7699	5.44	Q V				
2+22	0.7774	5.46	Q V				
2+23	0.7849	5.48	Q V				

```
2+24       0.7925      5.50  |  Q  V   |          |          |          |
2+25       0.8002      5.55  |  Q  V   |          |          |          |
2+26       0.8079      5.60  |  Q  V   |          |          |          |
2+27       0.8157      5.65  |  Q   V  |          |          |          |
2+28       0.8235      5.71  |  Q   V  |          |          |          |
2+29       0.8315      5.76  |  Q   V  |          |          |          |
2+30       0.8395      5.81  |  Q   V  |          |          |          |
2+31       0.8475      5.86  |  Q   V  |          |          |          |
2+32       0.8557      5.91  |  Q   V  |          |          |          |
2+33       0.8639      5.96  |  Q   V  |          |          |          |
2+34       0.8722      6.01  |  Q   V  |          |          |          |
2+35       0.8805      6.06  |  Q   V  |          |          |          |
2+36       0.8889      6.11  |  Q   V  |          |          |          |
2+37       0.8974      6.16  |  Q   V  |          |          |          |
2+38       0.9059      6.21  |  Q   V  |          |          |          |
2+39       0.9146      6.26  |  Q   V  |          |          |          |
2+40       0.9233      6.31  |  Q   V  |          |          |          |
2+41       0.9320      6.34  |  Q    V |          |          |          |
2+42       0.9408      6.38  |  Q    V |          |          |          |
2+43       0.9496      6.41  |  Q    V |          |          |          |
2+44       0.9585      6.44  |  Q    V |          |          |          |
2+45       0.9674      6.48  |  Q    V |          |          |          |
2+46       0.9764      6.51  |  Q    V |          |          |          |
2+47       0.9854      6.54  |  Q    V |          |          |          |
2+48       0.9944      6.57  |  Q    V |          |          |          |
2+49       1.0035      6.61  |  Q    V |          |          |          |
2+50       1.0127      6.64  |  Q    V |          |          |          |
2+51       1.0219      6.67  |  Q    V |          |          |          |
2+52       1.0311      6.71  |  Q    V |          |          |          |
2+53       1.0404      6.74  |  Q    V |          |          |          |
2+54       1.0497      6.77  |  Q     V|          |          |          |
2+55       1.0591      6.81  |  Q     V|          |          |          |
2+56       1.0685      6.84  |   Q    V|          |          |          |
2+57       1.0781      6.94  |   Q    V|          |          |          |
2+58       1.0878      7.03  |   Q    V|          |          |          |
2+59       1.0976      7.13  |   Q    V|          |          |          |
3+ 0       1.1075      7.22  |   Q    V|          |          |          |
3+ 1       1.1176      7.32  |   Q    V|          |          |          |
3+ 2       1.1278      7.41  |   Q    V|          |          |          |
3+ 3       1.1381      7.51  |   Q    V|          |          |          |
3+ 4       1.1486      7.60  |   Q    V|          |          |          |
3+ 5       1.1592      7.70  |   Q    V|          |          |          |
3+ 6       1.1699      7.79  |   Q     V          |          |          |
3+ 7       1.1808      7.89  |   Q     V          |          |          |
3+ 8       1.1918      7.98  |   Q     V          |          |          |
3+ 9       1.2029      8.08  |   Q     V          |          |          |
3+10       1.2142      8.17  |   Q     V          |          |          |
3+11       1.2256      8.27  |   Q     V          |          |          |
3+12       1.2371      8.36  |   Q     V          |          |          |
3+13       1.2487      8.43  |   Q     V          |          |          |
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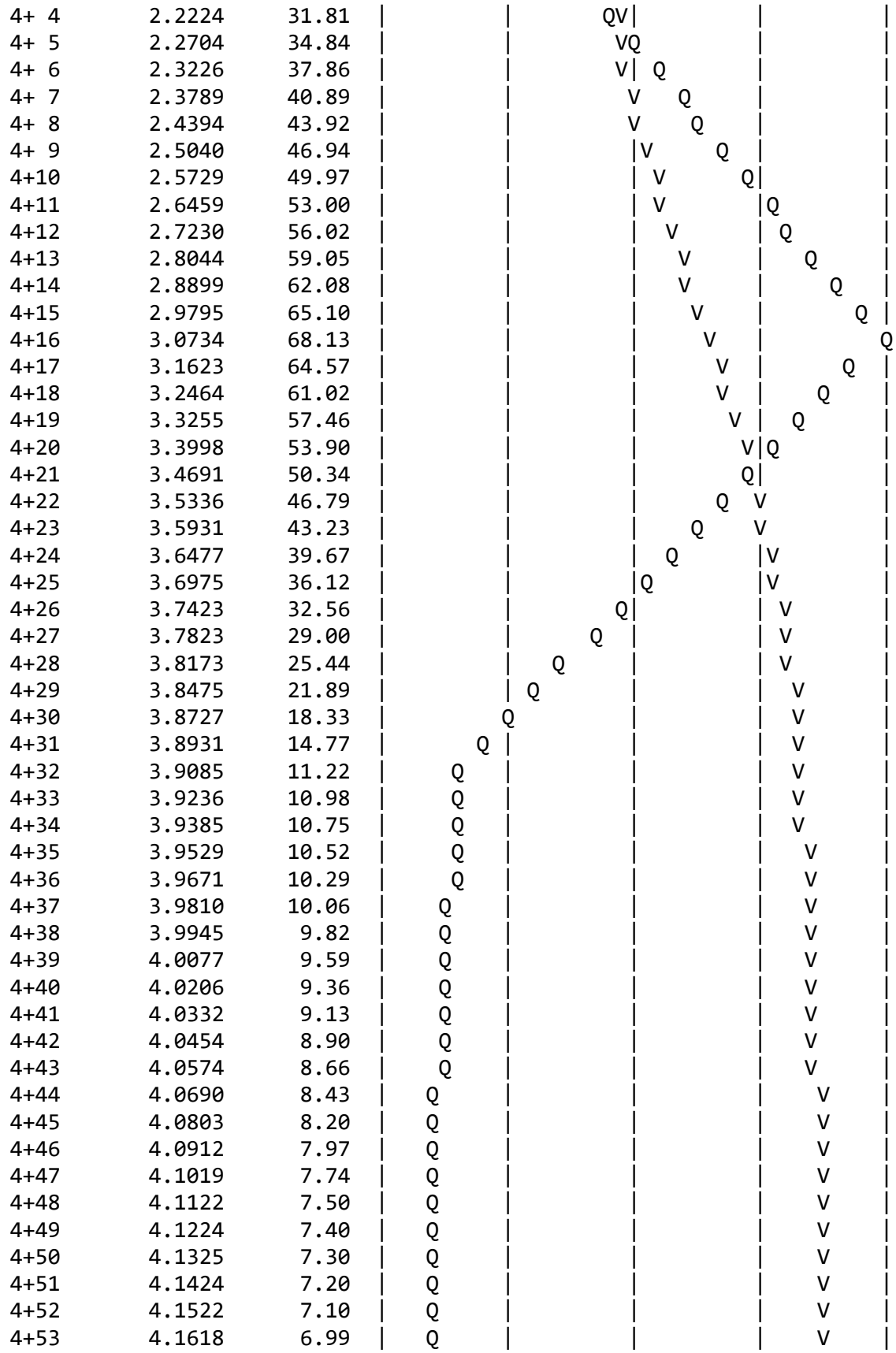
3+14       1.2604      8.51  |   Q     V          |          |          |
3+15       1.2722      8.58  |    Q    V          |          |          |
3+16       1.2841      8.65  |    Q    |V         |          |          |
3+17       1.2962      8.72  |    Q    |V         |          |          |
3+18       1.3083      8.80  |    Q    |V         |          |          |
3+19       1.3205      8.87  |    Q    |V         |          |          |
3+20       1.3328      8.94  |    Q    |V         |          |          |
3+21       1.3452      9.01  |    Q    |V         |          |          |
3+22       1.3577      9.09  |    Q    |V         |          |          |
3+23       1.3704      9.16  |    Q    |V         |          |          |
3+24       1.3831      9.23  |    Q    |V         |          |          |
3+25       1.3959      9.31  |    Q    | V        |          |          |
3+26       1.4088      9.38  |    Q    | V        |          |          |
3+27       1.4218      9.45  |    Q    | V        |          |          |
3+28       1.4349      9.52  |    Q    | V        |          |          |
3+29       1.4484      9.80  |    Q    | V        |          |          |
3+30       1.4623     10.08  |    Q    | V        |          |          |
3+31       1.4766     10.36  |     Q   | V        |          |          |
3+32       1.4913     10.64  |     Q   | V        |          |          |
3+33       1.5063     10.92  |     Q   | V        |          |          |
3+34       1.5217     11.20  |     Q   |  V       |          |          |
3+35       1.5375     11.47  |     Q   |  V       |          |          |
3+36       1.5537     11.75  |     Q   |  V       |          |          |
3+37       1.5703     12.03  |      Q  |  V       |          |          |
3+38       1.5872     12.31  |      Q  |  V       |          |          |
3+39       1.6046     12.59  |      Q  |  V       |          |          |
3+40       1.6223     12.87  |      Q  |  V       |          |          |
3+41       1.6404     13.15  |      Q  |   V      |          |          |
3+42       1.6589     13.43  |      Q  |   V      |          |          |
3+43       1.6778     13.70  |       Q |   V      |          |          |
3+44       1.6970     13.98  |       Q |   V      |          |          |
3+45       1.7168     14.34  |       Q |   V      |          |          |
3+46       1.7370     14.70  |       Q |   V      |          |          |
3+47       1.7578     15.06  |       Q |    V     |          |          |
3+48       1.7790     15.41  |        Q|    V     |          |          |
3+49       1.8007     15.77  |        Q|    V     |          |          |
3+50       1.8230     16.13  |        Q|    V     |          |          |
3+51       1.8457     16.49  |        Q|    V     |          |          |
3+52       1.8689     16.84  |        Q|     V    |          |          |
3+53       1.8925     17.20  |         Q     V    |          |          |
3+54       1.9167     17.56  |         Q     V    |          |          |
3+55       1.9414     17.92  |         Q     V    |          |          |
3+56       1.9666     18.27  |         Q     V    |          |          |
3+57       1.9922     18.63  |         Q      V   |          |          |
3+58       2.0184     18.99  |         |Q     V   |          |          |
3+59       2.0450     19.34  |         |Q     V   |          |          |
4+ 0       2.0722     19.70  |         |Q     V   |          |          |
4+ 1       2.1035     22.73  |         |  Q    V  |          |          |
4+ 2       2.1390     25.76  |         |    Q  V  |          |          |
4+ 3       2.1786     28.78  |         |     Q V  |          |          |
```



4+ 4	2.2224	31.81	QV
4+ 5	2.2704	34.84	VQ
4+ 6	2.3226	37.86	V Q
4+ 7	2.3789	40.89	V Q
4+ 8	2.4394	43.92	V Q
4+ 9	2.5040	46.94	V Q
4+10	2.5729	49.97	V Q
4+11	2.6459	53.00	V Q
4+12	2.7230	56.02	V Q
4+13	2.8044	59.05	V Q
4+14	2.8899	62.08	V Q
4+15	2.9795	65.10	V Q
4+16	3.0734	68.13	V Q
4+17	3.1623	64.57	V Q
4+18	3.2464	61.02	V Q
4+19	3.3255	57.46	V Q
4+20	3.3998	53.90	V Q
4+21	3.4691	50.34	Q
4+22	3.5336	46.79	Q V
4+23	3.5931	43.23	Q V
4+24	3.6477	39.67	Q V
4+25	3.6975	36.12	Q V
4+26	3.7423	32.56	Q V
4+27	3.7823	29.00	Q V
4+28	3.8173	25.44	Q V
4+29	3.8475	21.89	Q V
4+30	3.8727	18.33	Q V
4+31	3.8931	14.77	Q V
4+32	3.9085	11.22	Q V
4+33	3.9236	10.98	Q V
4+34	3.9385	10.75	Q V
4+35	3.9529	10.52	Q V
4+36	3.9671	10.29	Q V
4+37	3.9810	10.06	Q V
4+38	3.9945	9.82	Q V
4+39	4.0077	9.59	Q V
4+40	4.0206	9.36	Q V
4+41	4.0332	9.13	Q V
4+42	4.0454	8.90	Q V
4+43	4.0574	8.66	Q V
4+44	4.0690	8.43	Q V
4+45	4.0803	8.20	Q V
4+46	4.0912	7.97	Q V
4+47	4.1019	7.74	Q V
4+48	4.1122	7.50	Q V
4+49	4.1224	7.40	Q V
4+50	4.1325	7.30	Q V
4+51	4.1424	7.20	Q V
4+52	4.1522	7.10	Q V
4+53	4.1618	6.99	Q V

4+54	4.1713	6.89	Q			V	
4+55	4.1807	6.79	Q			V	
4+56	4.1899	6.69	Q			V	
4+57	4.1989	6.59	Q			V	
4+58	4.2079	6.48	Q			V	
4+59	4.2167	6.38	Q			V	
5+ 0	4.2253	6.28	Q			V	
5+ 1	4.2338	6.18	Q			V	
5+ 2	4.2422	6.08	Q			V	
5+ 3	4.2504	5.97	Q			V	
5+ 4	4.2585	5.87	Q			V	
5+ 5	4.2665	5.81	Q			V	
5+ 6	4.2744	5.75	Q			V	
5+ 7	4.2823	5.69	Q			V	
5+ 8	4.2900	5.63	Q			V	
5+ 9	4.2977	5.57	Q			V	
5+10	4.3053	5.51	Q			V	
5+11	4.3128	5.45	Q			V	
5+12	4.3202	5.39	Q			V	
5+13	4.3276	5.34	Q			V	
5+14	4.3349	5.28	Q			V	
5+15	4.3420	5.22	Q			V	
5+16	4.3491	5.16	Q			V	
5+17	4.3562	5.10	Q			V	
5+18	4.3631	5.04	Q			V	
5+19	4.3700	4.98	Q			V	
5+20	4.3767	4.92	Q			V	
5+21	4.3835	4.88	Q			V	
5+22	4.3901	4.84	Q			V	
5+23	4.3967	4.80	Q			V	
5+24	4.4033	4.76	Q			V	
5+25	4.4098	4.72	Q			V	
5+26	4.4162	4.68	Q			V	
5+27	4.4226	4.64	Q			V	
5+28	4.4290	4.60	Q			V	
5+29	4.4352	4.56	Q			V	
5+30	4.4415	4.52	Q			V	
5+31	4.4476	4.48	Q			V	
5+32	4.4537	4.44	Q			V	
5+33	4.4598	4.40	Q			V	
5+34	4.4658	4.36	Q			V	
5+35	4.4718	4.32	Q			V	
5+36	4.4777	4.28	Q			V	
5+37	4.4835	4.25	Q			V	
5+38	4.4893	4.22	Q			V	
5+39	4.4951	4.19	Q			V	
5+40	4.5008	4.16	Q			V	
5+41	4.5065	4.14	Q			V	
5+42	4.5122	4.11	Q			V	
5+43	4.5178	4.08	Q			V	

```
    5+44       4.5234      4.05  | Q       |         |         |       V |
    5+45       4.5289      4.02  | Q       |         |         |       V |
    5+46       4.5344      3.99  | Q       |         |         |        V|
    5+47       4.5399      3.96  | Q       |         |         |        V|
    5+48       4.5453      3.93  | Q       |         |         |        V|
    5+49       4.5507      3.91  | Q       |         |         |        V|
    5+50       4.5560      3.88  | Q       |         |         |        V|
    5+51       4.5613      3.85  | Q       |         |         |        V|
    5+52       4.5666      3.82  | Q       |         |         |        V|
    5+53       4.5718      3.80  | Q       |         |         |        V|
    5+54       4.5770      3.77  | Q       |         |         |        V|
    5+55       4.5822      3.75  | Q       |         |         |        V|
    5+56       4.5873      3.73  | Q       |         |         |        V|
    5+57       4.5924      3.71  | Q       |         |         |        V|
    5+58       4.5975      3.69  | Q       |         |         |        V|
    5+59       4.6025      3.66  | Q       |         |         |        V|
    6+ 0       4.6076      3.64  | Q       |         |         |        V|
    6+ 1       4.6125      3.62  | Q       |         |         |        V|
    6+ 2       4.6175      3.60  | Q       |         |         |        V|
    6+ 3       4.6224      3.58  | Q       |         |         |        V|
    6+ 4       4.6273      3.55  | Q       |         |         |        V|
    6+ 5       4.6322      3.53  | Q       |         |         |        V|
    6+ 6       4.6370      3.51  | Q       |         |         |        V|
    6+ 7       4.6418      3.49  | Q       |         |         |        V|
    6+ 8       4.6466      3.47  | Q       |         |         |         V
---------------------------------------------------------------------------
```

End of computations, total study area = 57.330 (Ac.)

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                  FLOOD HYDROGRAPH ROUTING PROGRAM
            Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018
                        Study date: 06/21/21

------------------------------------------------------------------------


108-001 Idaho (Escondido Estates)
Offsite Northern Watershed
Surface Flow to Existing Culvert
Extrapolated storm from County Isopluvials - Routed
------------------------------------------------------------------------


Program License Serial Number 6440

------------------------------------------------------------------------
********************* HYDROGRAPH INFORMATION **********************

                From study/file name: 108001OffsiteExNR.rte
****************************HYDROGRAPH DATA****************************
                Number of intervals =   368
                Time interval =    1.0 (Min.)
                Maximum/Peak flow rate =       68.131 (CFS)
                Total volume =       4.647 (Ac.Ft)
        Status of hydrographs being held in storage
                   Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
************************************************************************



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      104.000
**** RETARDING BASIN ROUTING ****
________________________________________________________________________

User entry of depth-outflow-storage data
------------------------------------------------------------------------
Total number of inflow hydrograph intervals = 368
Hydrograph time unit =  1.000 (Min.)
Initial depth in storage basin =   0.00(Ft.)
------------------------------------------------------------------------
------------------------------------------------------------------------
Initial basin depth =   0.00 (Ft.)
Initial basin storage =      0.00 (Ac.Ft)
Initial basin outflow =   0.00 (CFS)
```

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
2.500	0.450	27.310	0.431	0.469
2.600	0.490	28.380	0.470	0.510
3.400	0.860	35.810	0.835	0.885
3.600	0.970	55.080	0.932	1.008
4.350	1.490	225.640	1.335	1.645
4.600	1.700	303.990	1.491	1.909

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0 17.0 34.07 51.10 68.13	Depth (Ft.)
0.017	0.21	0.01	0.000	O	0.00
0.033	0.42	0.03	0.001	O	0.00
0.050	0.63	0.07	0.001	O	0.01
0.067	0.84	0.13	0.002	O	0.01
0.083	1.05	0.19	0.003	O	0.02
0.100	1.26	0.27	0.004	O	0.02
0.117	1.47	0.36	0.006	O	0.03
0.133	1.68	0.46	0.008	O	0.04
0.150	1.89	0.56	0.009	O	0.05
0.167	2.10	0.68	0.011	O	0.06
0.183	2.31	0.80	0.013	OI	0.07
0.200	2.52	0.93	0.015	OI	0.09
0.217	2.73	1.07	0.018	OI	0.10
0.233	2.94	1.21	0.020	OI	0.11
0.250	3.16	1.36	0.022	OI	0.12
0.267	3.37	1.51	0.025	OI	0.14
0.283	3.38	1.66	0.027	OI	0.15
0.300	3.39	1.80	0.030	OI	0.16
0.317	3.40	1.93	0.032	OI	0.18
0.333	3.42	2.04	0.034	OI	0.19
0.350	3.43	2.16	0.036	|O	0.20
0.367	3.44	2.26	0.037	|O	0.21
0.383	3.46	2.35	0.039	|O	0.22
0.400	3.47	2.44	0.040	|O	0.22
0.417	3.48	2.53	0.042	|O	0.23
0.433	3.50	2.60	0.043	|O	0.24
0.450	3.51	2.68	0.044	|O	0.24
0.467	3.52	2.74	0.045	|O	0.25
0.483	3.53	2.81	0.046	|O	0.26

0.500	3.55	2.86	0.047	O				0.26
0.517	3.56	2.92	0.048	O				0.27
0.533	3.57	2.97	0.049	O				0.27
0.550	3.58	3.02	0.050	O				0.28
0.567	3.59	3.07	0.051	O				0.28
0.583	3.60	3.11	0.051	O				0.28
0.600	3.60	3.15	0.052	O				0.29
0.617	3.61	3.18	0.052	O				0.29
0.633	3.62	3.22	0.053	O				0.29
0.650	3.63	3.25	0.054	O				0.30
0.667	3.63	3.28	0.054	O				0.30
0.683	3.64	3.31	0.055	O				0.30
0.700	3.65	3.34	0.055	O				0.31
0.717	3.65	3.36	0.055	O				0.31
0.733	3.66	3.39	0.056	O				0.31
0.750	3.67	3.41	0.056	O				0.31
0.767	3.68	3.43	0.057	O				0.31
0.783	3.68	3.45	0.057	O				0.32
0.800	3.69	3.47	0.057	O				0.32
0.817	3.71	3.49	0.057	O				0.32
0.833	3.72	3.51	0.058	O				0.32
0.850	3.74	3.52	0.058	O				0.32
0.867	3.76	3.54	0.058	O				0.32
0.883	3.77	3.56	0.059	O				0.33
0.900	3.79	3.58	0.059	O				0.33
0.917	3.81	3.60	0.059	O				0.33
0.933	3.82	3.61	0.060	O				0.33
0.950	3.84	3.63	0.060	O				0.33
0.967	3.86	3.65	0.060	O				0.33
0.983	3.87	3.67	0.060	O				0.34
1.000	3.89	3.68	0.061	O				0.34
1.017	3.91	3.70	0.061	O				0.34
1.033	3.92	3.72	0.061	O				0.34
1.050	3.94	3.74	0.062	O				0.34
1.067	3.96	3.75	0.062	O				0.34
1.083	3.97	3.77	0.062	O				0.35
1.100	3.98	3.79	0.062	O				0.35
1.117	3.99	3.80	0.063	O				0.35
1.133	4.00	3.82	0.063	O				0.35
1.150	4.01	3.83	0.063	O				0.35
1.167	4.02	3.85	0.063	O				0.35
1.183	4.02	3.86	0.064	O				0.35
1.200	4.03	3.87	0.064	O				0.35
1.217	4.04	3.89	0.064	O				0.36
1.233	4.05	3.90	0.064	O				0.36
1.250	4.06	3.91	0.064	O				0.36
1.267	4.07	3.92	0.065	O				0.36
1.283	4.08	3.94	0.065	O				0.36
1.300	4.09	3.95	0.065	O				0.36
1.317	4.10	3.96	0.065	O				0.36

1.333	4.11	3.97	0.065	O				0.36
1.350	4.13	3.98	0.066	O				0.36
1.367	4.16	4.00	0.066	O				0.37
1.383	4.18	4.01	0.066	O				0.37
1.400	4.20	4.03	0.066	O				0.37
1.417	4.22	4.04	0.067	O				0.37
1.433	4.25	4.06	0.067	O				0.37
1.450	4.27	4.07	0.067	OI				0.37
1.467	4.29	4.09	0.067	OI				0.37
1.483	4.31	4.11	0.068	OI				0.38
1.500	4.33	4.12	0.068	OI				0.38
1.517	4.36	4.14	0.068	OI				0.38
1.533	4.38	4.16	0.069	OI				0.38
1.550	4.40	4.18	0.069	OI				0.38
1.567	4.42	4.20	0.069	OI				0.38
1.583	4.45	4.22	0.069	OI				0.39
1.600	4.47	4.24	0.070	OI				0.39
1.617	4.48	4.25	0.070	OI				0.39
1.633	4.49	4.27	0.070	O				0.39
1.650	4.51	4.29	0.071	O				0.39
1.667	4.52	4.31	0.071	O				0.39
1.683	4.53	4.33	0.071	O				0.40
1.700	4.55	4.34	0.072	O				0.40
1.717	4.56	4.36	0.072	O				0.40
1.733	4.57	4.38	0.072	O				0.40
1.750	4.59	4.39	0.072	O				0.40
1.767	4.60	4.41	0.073	O				0.40
1.783	4.61	4.43	0.073	O				0.41
1.800	4.63	4.44	0.073	O				0.41
1.817	4.64	4.46	0.073	O				0.41
1.833	4.65	4.47	0.074	O				0.41
1.850	4.67	4.49	0.074	O				0.41
1.867	4.68	4.50	0.074	O				0.41
1.883	4.71	4.52	0.074	O				0.41
1.900	4.74	4.53	0.075	O				0.42
1.917	4.78	4.55	0.075	O				0.42
1.933	4.81	4.57	0.075	O				0.42
1.950	4.84	4.59	0.076	O				0.42
1.967	4.87	4.61	0.076	O				0.42
1.983	4.90	4.63	0.076	O				0.42
2.000	4.93	4.66	0.077	O				0.43
2.017	4.97	4.68	0.077	O				0.43
2.033	5.00	4.71	0.078	O				0.43
2.050	5.03	4.73	0.078	O				0.43
2.067	5.06	4.76	0.078	O				0.44
2.083	5.09	4.78	0.079	O				0.44
2.100	5.13	4.81	0.079	O				0.44
2.117	5.16	4.83	0.080	O				0.44
2.133	5.19	4.86	0.080	O				0.45
2.150	5.21	4.89	0.081	O				0.45

2.167	5.23	4.92	0.081	O				0.45
2.183	5.25	4.94	0.081	O				0.45
2.200	5.27	4.97	0.082	O				0.45
2.217	5.29	4.99	0.082	O				0.46
2.233	5.31	5.02	0.083	O				0.46
2.250	5.33	5.04	0.083	O				0.46
2.267	5.35	5.06	0.083	O				0.46
2.283	5.37	5.09	0.084	O				0.47
2.300	5.39	5.11	0.084	O				0.47
2.317	5.41	5.13	0.085	O				0.47
2.333	5.43	5.16	0.085	O				0.47
2.350	5.44	5.18	0.085	O				0.47
2.367	5.46	5.20	0.086	O				0.48
2.383	5.48	5.22	0.086	O				0.48
2.400	5.50	5.24	0.086	O				0.48
2.417	5.55	5.27	0.087	O				0.48
2.433	5.60	5.29	0.087	O				0.48
2.450	5.65	5.32	0.088	O				0.49
2.467	5.71	5.35	0.088	O				0.49
2.483	5.76	5.38	0.089	O				0.49
2.500	5.81	5.41	0.089	O				0.50
2.517	5.86	5.44	0.090	O				0.50
2.533	5.91	5.48	0.090	O				0.50
2.550	5.96	5.52	0.091	O				0.50
2.567	6.01	5.55	0.092	O				0.51
2.583	6.06	5.59	0.092	O				0.51
2.600	6.11	5.63	0.093	O				0.52
2.617	6.16	5.67	0.093	O				0.52
2.633	6.21	5.71	0.094	O				0.52
2.650	6.26	5.75	0.095	O				0.53
2.667	6.31	5.80	0.096	O				0.53
2.683	6.34	5.84	0.096	O				0.53
2.700	6.38	5.88	0.097	O				0.54
2.717	6.41	5.92	0.098	OI				0.54
2.733	6.44	5.96	0.098	OI				0.55
2.750	6.48	6.00	0.099	OI				0.55
2.767	6.51	6.04	0.100	OI				0.55
2.783	6.54	6.08	0.100	OI				0.56
2.800	6.57	6.12	0.101	OI				0.56
2.817	6.61	6.16	0.101	OI				0.56
2.833	6.64	6.19	0.102	OI				0.57
2.850	6.67	6.23	0.103	OI				0.57
2.867	6.71	6.27	0.103	OI				0.57
2.883	6.74	6.30	0.104	OI				0.58
2.900	6.77	6.34	0.104	OI				0.58
2.917	6.81	6.38	0.105	OI				0.58
2.933	6.84	6.41	0.106	O				0.59
2.950	6.94	6.45	0.106	O				0.59
2.967	7.03	6.49	0.107	O				0.59
2.983	7.13	6.54	0.108	O				0.60

3.000	7.22	6.59	0.109	O				0.60
3.017	7.32	6.65	0.110	O				0.61
3.033	7.41	6.70	0.110	O				0.61
3.050	7.51	6.76	0.111	O				0.62
3.067	7.60	6.83	0.112	O				0.62
3.083	7.70	6.89	0.114	O				0.63
3.100	7.79	6.96	0.115	O				0.64
3.117	7.89	7.03	0.116	O				0.64
3.133	7.98	7.10	0.117	O				0.65
3.150	8.08	7.18	0.118	O				0.66
3.167	8.17	7.25	0.120	O				0.66
3.183	8.27	7.33	0.121	O				0.67
3.200	8.36	7.41	0.122	O				0.68
3.217	8.43	7.49	0.123	O				0.69
3.233	8.51	7.57	0.125	O				0.69
3.250	8.58	7.65	0.126	OI				0.70
3.267	8.65	7.72	0.127	OI				0.71
3.283	8.72	7.80	0.129	OI				0.71
3.300	8.80	7.88	0.130	OI				0.72
3.317	8.87	7.96	0.131	OI				0.73
3.333	8.94	8.03	0.132	OI				0.74
3.350	9.01	8.11	0.134	OI				0.74
3.367	9.09	8.18	0.135	OI				0.75
3.383	9.16	8.26	0.136	OI				0.76
3.400	9.23	8.33	0.137	OI				0.76
3.417	9.31	8.41	0.139	OI				0.77
3.433	9.38	8.48	0.140	OI				0.78
3.450	9.45	8.56	0.141	O				0.78
3.467	9.52	8.63	0.142	O				0.79
3.483	9.80	8.72	0.144	O				0.80
3.500	10.08	8.81	0.145	O				0.81
3.517	10.36	8.93	0.147	O				0.82
3.533	10.64	9.05	0.149	O				0.83
3.550	10.92	9.19	0.151	OI				0.84
3.567	11.20	9.34	0.154	OI				0.86
3.583	11.47	9.50	0.157	OI				0.87
3.600	11.75	9.67	0.159	OI				0.89
3.617	12.03	9.85	0.162	OI				0.90
3.633	12.31	10.04	0.165	OI				0.92
3.650	12.59	10.23	0.169	OI				0.94
3.667	12.87	10.43	0.172	O I				0.95
3.683	13.15	10.64	0.175	O I				0.97
3.700	13.43	10.85	0.179	OI				0.99
3.717	13.70	11.07	0.182	OI				1.01
3.733	13.98	11.29	0.186	OI				1.03
3.750	14.34	11.52	0.190	OI				1.05
3.767	14.70	11.76	0.194	OI				1.08
3.783	15.06	12.01	0.198	O I				1.10
3.800	15.41	12.27	0.202	O I				1.12
3.817	15.77	12.54	0.207	O I				1.15

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3.833   16.13   12.81      0.211  |     OI|       |       |       |     1.17
3.850   16.49   13.09      0.216  |     OI|       |       |       |     1.20
3.867   16.84   13.38      0.220  |     OI|       |       |       |     1.22
3.883   17.20   13.67      0.225  |     O I       |       |       |     1.25
3.900   17.56   13.97      0.230  |     O I       |       |       |     1.28
3.917   17.92   14.27      0.235  |     O I       |       |       |     1.31
3.933   18.27   14.58      0.240  |     O I       |       |       |     1.33
3.950   18.63   14.89      0.245  |     O I       |       |       |     1.36
3.967   18.99   15.20      0.250  |      OI       |       |       |     1.39
3.983   19.34   15.52      0.256  |      O|I      |       |       |     1.42
4.000   19.70   15.84      0.261  |      O|I      |       |       |     1.45
4.017   22.73   16.27      0.268  |      O| I     |       |       |     1.49
4.033   25.76   16.91      0.279  |      O|   I   |       |       |     1.55
4.050   28.78   17.74      0.292  |       O    I  |       |       |     1.62
4.067   31.81   18.75      0.309  |       O     I |       |       |     1.72
4.083   34.84   19.92      0.328  |       |O      I       |       |     1.82
4.100   37.86   21.24      0.350  |       |O      |I      |       |     1.94
4.117   40.89   22.69      0.374  |       | O     |  I    |       |     2.08
4.133   43.92   24.27      0.400  |       |  O    |   I   |       |     2.22
4.150   46.94   25.97      0.428  |       |   O   |     I |       |     2.38
4.167   49.97   27.52      0.458  |       |   O   |      I|       |     2.52
4.183   53.00   28.39      0.490  |       |    O  |       I       |     2.60
4.200   56.02   29.10      0.526  |       |    O  |       | I     |     2.68
4.217   59.05   29.87      0.564  |       |     O |       |  I    |     2.76
4.233   62.08   30.71      0.606  |       |     O |       |    I  |     2.85
4.250   65.10   31.61      0.651  |       |     O |       |     I |     2.95
4.267   68.13   32.56      0.698  |       |      O|       |       I     3.05
4.283   64.57   33.49      0.744  |       |      O|       |     I |     3.15
4.300   61.02   34.29      0.784  |       |       O       |   I   |     3.24
4.317   57.46   34.97      0.818  |       |       O       | I     |     3.31
4.333   53.90   35.53      0.846  |       |       O       |I      |     3.37
4.350   50.34   37.18      0.868  |       |       |O     I|       |     3.41
4.367   46.79   39.63      0.882  |       |       | O  I  |       |     3.44
4.383   43.23   40.79      0.888  |       |       |  OI   |       |     3.45
4.400   39.67   40.93      0.889  |       |       | IO    |       |     3.45
4.417   36.12   40.28      0.886  |       |       I O     |       |     3.45
4.433   32.56   39.00      0.878  |       |      I| O     |       |     3.43
4.450   29.00   37.23      0.868  |       |    I  |O      |       |     3.41
4.467   25.44   35.72      0.855  |       |  I    O       |       |     3.39
4.483   21.89   35.39      0.839  |       | I     O       |       |     3.35
4.500   18.33   34.97      0.818  |       I       O       |       |     3.31
4.517   14.77   34.47      0.793  |     I |       O       |       |     3.26
4.533   11.22   33.88      0.764  |    I  |      O|       |       |     3.19
4.550   10.98   33.26      0.733  |    I  |      O|       |       |     3.13
4.567   10.75   32.65      0.703  |    I  |      O|       |       |     3.06
4.583   10.52   32.05      0.673  |   I   |      O|       |       |     3.00
4.600   10.29   31.46      0.643  |   I   |     O |       |       |     2.93
4.617   10.06   30.88      0.614  |   I   |     O |       |       |     2.87
4.633    9.82   30.31      0.586  |   I   |     O |       |       |     2.81
4.650    9.59   29.74      0.558  |   I   |    O  |       |       |     2.75
```

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4.667    9.36   29.19      0.530  |   I   |    O  |       |       |      2.69
4.683    9.13   28.65      0.503  |   I   |    O  |       |       |      2.63
4.700    8.90   28.02      0.477  |   I   |    O  |       |       |      2.57
4.717    8.66   27.33      0.451  |   I   |   O   |       |       |      2.50
4.733    8.43   25.84      0.426  |  I    |   O   |       |       |      2.37
4.750    8.20   24.44      0.403  |  I    |  O    |       |       |      2.24
4.767    7.97   23.13      0.381  |  I    | O     |       |       |      2.12
4.783    7.74   21.90      0.361  |  I    | O     |       |       |      2.00
4.800    7.50   20.75      0.342  |  I    |O      |       |       |      1.90
4.817    7.40   19.69      0.324  |  I    |O      |       |       |      1.80
4.833    7.30   18.70      0.308  |  I    O       |       |       |      1.71
4.850    7.20   17.78      0.293  |  I    O       |       |       |      1.63
4.867    7.10   16.93      0.279  |  I   O|       |       |       |      1.55
4.883    6.99   16.13      0.266  |  I   O|       |       |       |      1.48
4.900    6.89   15.39      0.254  |  I   O|       |       |       |      1.41
4.917    6.79   14.71      0.242  |  I  O |       |       |       |      1.35
4.933    6.69   14.07      0.232  |  I  O |       |       |       |      1.29
4.950    6.59   13.47      0.222  |  I  O |       |       |       |      1.23
4.967    6.48   12.92      0.213  |  I  O |       |       |       |      1.18
4.983    6.38   12.40      0.204  | I  O  |       |       |       |      1.13
5.000    6.28   11.91      0.196  | I  O  |       |       |       |      1.09
5.017    6.18   11.45      0.189  | I  O  |       |       |       |      1.05
5.033    6.08   11.03      0.182  | I  O  |       |       |       |      1.01
5.050    5.97   10.62      0.175  | I O   |       |       |       |      0.97
5.067    5.87   10.25      0.169  | I O   |       |       |       |      0.94
5.083    5.81    9.89      0.163  | I O   |       |       |       |      0.91
5.100    5.75    9.56      0.158  | I O   |       |       |       |      0.88
5.117    5.69    9.26      0.153  | I O   |       |       |       |      0.85
5.133    5.63    8.97      0.148  | I O   |       |       |       |      0.82
5.150    5.57    8.70      0.143  | I O   |       |       |       |      0.80
5.167    5.51    8.44      0.139  | IO    |       |       |       |      0.77
5.183    5.45    8.21      0.135  | IO    |       |       |       |      0.75
5.200    5.39    7.98      0.132  | IO    |       |       |       |      0.73
5.217    5.34    7.77      0.128  | IO    |       |       |       |      0.71
5.233    5.28    7.58      0.125  | IO    |       |       |       |      0.69
5.250    5.22    7.39      0.122  | IO    |       |       |       |      0.68
5.267    5.16    7.21      0.119  | IO    |       |       |       |      0.66
5.283    5.10    7.04      0.116  | IO    |       |       |       |      0.64
5.300    5.04    6.89      0.113  | IO    |       |       |       |      0.63
5.317    4.98    6.73      0.111  | IO    |       |       |       |      0.62
5.333    4.92    6.59      0.109  | IO    |       |       |       |      0.60
5.350    4.88    6.46      0.106  | IO    |       |       |       |      0.59
5.367    4.84    6.33      0.104  | O     |       |       |       |      0.58
5.383    4.80    6.21      0.102  | O     |       |       |       |      0.57
5.400    4.76    6.09      0.100  | O     |       |       |       |      0.56
5.417    4.72    5.98      0.099  | O     |       |       |       |      0.55
5.433    4.68    5.88      0.097  | O     |       |       |       |      0.54
5.450    4.64    5.78      0.095  | O     |       |       |       |      0.53
5.467    4.60    5.69      0.094  | O     |       |       |       |      0.52
5.483    4.56    5.60      0.092  | O     |       |       |       |      0.51
```

5.500	4.52	5.51	0.091	| O	|	|	|	0.50
5.517	4.48	5.43	0.090	| O	|	|	|	0.50
5.533	4.44	5.36	0.088	| O	|	|	|	0.49
5.550	4.40	5.28	0.087	| O	|	|	|	0.48
5.567	4.36	5.21	0.086	| O	|	|	|	0.48
5.583	4.32	5.14	0.085	| O	|	|	|	0.47
5.600	4.28	5.07	0.084	| O	|	|	|	0.46
5.617	4.25	5.01	0.082	|IO	|	|	|	0.46
5.633	4.22	4.94	0.081	|IO	|	|	|	0.45
5.650	4.19	4.89	0.081	|IO	|	|	|	0.45
5.667	4.16	4.83	0.080	|IO	|	|	|	0.44
5.683	4.14	4.77	0.079	|IO	|	|	|	0.44
5.700	4.11	4.72	0.078	|IO	|	|	|	0.43
5.717	4.08	4.67	0.077	|IO	|	|	|	0.43
5.733	4.05	4.62	0.076	|IO	|	|	|	0.42
5.750	4.02	4.58	0.075	|IO	|	|	|	0.42
5.767	3.99	4.53	0.075	|IO	|	|	|	0.41
5.783	3.96	4.49	0.074	|IO	|	|	|	0.41
5.800	3.93	4.44	0.073	|IO	|	|	|	0.41
5.817	3.91	4.40	0.073	|IO	|	|	|	0.40
5.833	3.88	4.36	0.072	|IO	|	|	|	0.40
5.850	3.85	4.32	0.071	|IO	|	|	|	0.40
5.867	3.82	4.28	0.071	|IO	|	|	|	0.39
5.883	3.80	4.24	0.070	|O	|	|	|	0.39
5.900	3.77	4.21	0.069	|O	|	|	|	0.39
5.917	3.75	4.17	0.069	|O	|	|	|	0.38
5.933	3.73	4.14	0.068	|O	|	|	|	0.38
5.950	3.71	4.10	0.068	|O	|	|	|	0.38
5.967	3.69	4.07	0.067	|O	|	|	|	0.37
5.983	3.66	4.04	0.067	|O	|	|	|	0.37
6.000	3.64	4.01	0.066	|O	|	|	|	0.37
6.017	3.62	3.98	0.066	|O	|	|	|	0.36
6.033	3.60	3.95	0.065	|O	|	|	|	0.36
6.050	3.58	3.92	0.065	|O	|	|	|	0.36
6.067	3.55	3.89	0.064	|O	|	|	|	0.36
6.083	3.53	3.86	0.064	|O	|	|	|	0.35
6.100	3.51	3.84	0.063	|O	|	|	|	0.35
6.117	3.49	3.81	0.063	|O	|	|	|	0.35
6.133	3.47	3.78	0.062	|O	|	|	|	0.35
6.150	0.00	3.62	0.060	IO	|	|	|	0.33
6.167	0.00	3.33	0.055	IO	|	|	|	0.30
6.183	0.00	3.06	0.050	IO	|	|	|	0.28
6.200	0.00	2.81	0.046	IO	|	|	|	0.26
6.217	0.00	2.59	0.043	IO	|	|	|	0.24
6.233	0.00	2.38	0.039	IO	|	|	|	0.22
6.250	0.00	2.19	0.036	IO	|	|	|	0.20
6.267	0.00	2.01	0.033	O	|	|	|	0.18
6.283	0.00	1.85	0.031	O	|	|	|	0.17
6.300	0.00	1.70	0.028	O	|	|	|	0.16
6.317	0.00	1.57	0.026	O	|	|	|	0.14

6.333	0.00	1.44	0.024	O					0.13
6.350	0.00	1.33	0.022	O					0.12
6.367	0.00	1.22	0.020	O					0.11
6.383	0.00	1.12	0.018	O					0.10
6.400	0.00	1.03	0.017	O					0.09
6.417	0.00	0.95	0.016	O					0.09
6.433	0.00	0.87	0.014	O					0.08
6.450	0.00	0.80	0.013	O					0.07
6.467	0.00	0.74	0.012	O					0.07
6.483	0.00	0.68	0.011	O					0.06
6.500	0.00	0.62	0.010	O					0.06
6.517	0.00	0.57	0.009	O					0.05
6.533	0.00	0.53	0.009	O					0.05
6.550	0.00	0.49	0.008	O					0.04
6.567	0.00	0.45	0.007	O					0.04
6.583	0.00	0.41	0.007	O					0.04
6.600	0.00	0.38	0.006	O					0.03
6.617	0.00	0.35	0.006	O					0.03
6.633	0.00	0.32	0.005	O					0.03
6.650	0.00	0.29	0.005	O					0.03
6.667	0.00	0.27	0.004	O					0.02
6.683	0.00	0.25	0.004	O					0.02
6.700	0.00	0.23	0.004	O					0.02
6.717	0.00	0.21	0.003	O					0.02
6.733	0.00	0.19	0.003	O					0.02
6.750	0.00	0.18	0.003	O					0.02
6.767	0.00	0.16	0.003	O					0.01
6.783	0.00	0.15	0.002	O					0.01
6.800	0.00	0.14	0.002	O					0.01
6.817	0.00	0.13	0.002	O					0.01
6.833	0.00	0.12	0.002	O					0.01
6.850	0.00	0.11	0.002	O					0.01
6.867	0.00	0.10	0.002	O					0.01
6.883	0.00	0.09	0.002	O					0.01
6.900	0.00	0.08	0.001	O					0.01
6.917	0.00	0.08	0.001	O					0.01
6.933	0.00	0.07	0.001	O					0.01
6.950	0.00	0.07	0.001	O					0.01
6.967	0.00	0.06	0.001	O					0.01
6.983	0.00	0.06	0.001	O					0.01
7.000	0.00	0.05	0.001	O					0.00
7.017	0.00	0.05	0.001	O					0.00
7.033	0.00	0.04	0.001	O					0.00
7.050	0.00	0.04	0.001	O					0.00
7.067	0.00	0.04	0.001	O					0.00
7.083	0.00	0.03	0.001	O					0.00
7.100	0.00	0.03	0.001	O					0.00
7.117	0.00	0.03	0.000	O					0.00
7.133	0.00	0.03	0.000	O					0.00
7.150	0.00	0.02	0.000	O					0.00

```
7.167    0.00    0.02      0.000  O       |       |       |       |     0.00
7.183    0.00    0.02      0.000  O       |       |       |       |     0.00
7.200    0.00    0.02      0.000  O       |       |       |       |     0.00
7.217    0.00    0.02      0.000  O       |       |       |       |     0.00
7.233    0.00    0.02      0.000  O       |       |       |       |     0.00
7.250    0.00    0.01      0.000  O       |       |       |       |     0.00
7.267    0.00    0.01      0.000  O       |       |       |       |     0.00
7.283    0.00    0.01      0.000  O       |       |       |       |     0.00
7.300    0.00    0.01      0.000  O       |       |       |       |     0.00
7.317    0.00    0.01      0.000  O       |       |       |       |     0.00

      ****************************HYDROGRAPH DATA****************************
                    Number of intervals =   439
                    Time interval =    1.0 (Min.)
                    Maximum/Peak flow rate =       40.932 (CFS)
                    Total volume =       4.646 (Ac.Ft)
             Status of hydrographs being held in storage
                        Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
             Peak (CFS)      0.000     0.000     0.000     0.000     0.000
             Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
      ***********************************************************************

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                San Diego County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c)1991-2018 Version 9.0

Rational method hydrology  program based on
San Diego County Flood Control Division 2003 hydrology manual
        Rational Hydrology Study        Date: 06/21/21
--------------------------------------------------------------------------
108-001 Idaho (Escondido Estates)
Onsite Existing Condition
Extrapolated storm from County Isopluvials
Routed Northern Offsite
--------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

--------------------------------------------------------------------------


Program License Serial Number 6440

--------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
English (in-lb) input data Units used

Map data precipitation entered:
6 hour,  precipitation(inches) =  3.300
24 hour precipitation(inches) =  7.300
P6/P24 =    45.2%
San Diego hydrology manual 'C' values used


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      101.000 to Point/Station      102.000
**** INITIAL AREA EVALUATION ****
__________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Initial subarea total flow distance  =   92.000(Ft.)
Highest elevation =  765.000(Ft.)
Lowest elevation =  753.400(Ft.)
Elevation difference =   11.600(Ft.) Slope = 12.609 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 100.00 (Ft)
```

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for the top area slope value of  12.61 %, in a development type of
 Permanent Open Space
In Accordance With Figure 3-3
Initial Area Time of Concentration =   6.19 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.3000)*( 100.000^.5)/(  12.609^(1/3)]=   6.19
Rainfall intensity (I) =      7.579(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.300
Subarea runoff =      0.318(CFS)
Total initial stream area =        0.140(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      102.000 to Point/Station      103.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      1.128(CFS)
Depth of flow =   0.104(Ft.), Average velocity =   2.074(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2             50.00              0.00
        3            100.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =      1.128(CFS)
  '     '        flow top width =     10.429(Ft.)
  '     '    velocity=    2.074(Ft/s)
  '     '        area =      0.544(Sq.Ft)
  '     '        Froude number =     1.600

Upstream point elevation =   753.400(Ft.)
Downstream point elevation =   735.000(Ft.)
Flow length =   115.000(Ft.)
Travel time  =    0.92 min.
Time of concentration =    7.11 min.
Depth of flow =   0.104(Ft.)
Average velocity =   2.074(Ft/s)
Total irregular channel flow =     1.128(CFS)
Irregular channel normal depth above invert elev. =   0.104(Ft.)
Average velocity of channel(s) =   2.074(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      6.928(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
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(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      6.928(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.300  CA =      0.267
Subarea runoff =      1.531(CFS) for      0.750(Ac.)
Total runoff =      1.850(CFS)  Total area =       0.890(Ac.)
Depth of flow =   0.126(Ft.), Average velocity =   2.347(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      103.000 to Point/Station      104.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      3.206(CFS)
Depth of flow =   0.189(Ft.), Average velocity =   1.789(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2             50.00              0.00
        3            100.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =      3.206(CFS)
  '     '        flow top width =     18.934(Ft.)
  '     '    velocity=    1.789(Ft/s)
  '     '        area =      1.792(Sq.Ft)
  '     '        Froude number =     1.024

Upstream point elevation =   735.000(Ft.)
Downstream point elevation =   697.600(Ft.)
Flow length =   696.000(Ft.)
Travel time  =    6.49 min.
Time of concentration =   13.60 min.
Depth of flow =   0.189(Ft.)
Average velocity =   1.789(Ft/s)
Total irregular channel flow =     3.206(CFS)
Irregular channel normal depth above invert elev. =   0.189(Ft.)
Average velocity of channel(s) =   1.789(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      4.561(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
```

```
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      4.561(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.300  CA =      0.981
Subarea runoff =      2.624(CFS) for      2.380(Ac.)
Total runoff =      4.474(CFS)  Total area =       3.270(Ac.)
Depth of flow =   0.215(Ft.), Average velocity =   1.944(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      104.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
Rainfall intensity (I) =      4.561(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[COMMERCIAL area type                         ]
(General Commercial    )
Impervious value, Ai = 0.850
Sub-Area C Value = 0.810
Time of concentration =    13.60 min.
Rainfall intensity =      4.561(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.339  CA =      1.200
Subarea runoff =      0.997(CFS) for      0.270(Ac.)
Total runoff =      5.471(CFS)  Total area =       3.540(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      104.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      3.540(Ac.)
Runoff from this stream =      5.471(CFS)
Time of concentration =   13.60 min.
Rainfall intensity =     4.561(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      104.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
```

```
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity (I) =      3.946(In/Hr) for a   100.0 year storm
User specified values are as follows:
TC =  17.02 min.  Rain intensity =       3.95(In/Hr)
Total area =       57.330(Ac.)  Total runoff =    40.932(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      104.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =     57.330(Ac.)
Runoff from this stream =     40.932(CFS)
Time of concentration =   17.02 min.
Rainfall intensity =     3.946(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1        5.471     13.60                4.561
2       40.932     17.02                3.946
Qmax(1) =
           1.000 *    1.000 *     5.471) +
           1.000 *    0.799 *    40.932) + =      38.171
Qmax(2) =
           0.865 *    1.000 *     5.471) +
           1.000 *    1.000 *    40.932) + =      45.666

Total of 2 main streams to confluence:
Flow rates before confluence point:
       5.471      40.932
Maximum flow rates at confluence using above data:
       38.171       45.666
Area of streams before confluence:
        3.540       57.330


Results of confluence:
Total flow rate =     45.666(CFS)
Time of concentration =    17.020 min.
Effective stream area after confluence  =     60.870(Ac.)
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      104.000 to Point/Station      107.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =     57.508(CFS)
Depth of flow =   1.065(Ft.), Average velocity =   3.377(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              5.00
        2             75.00              0.00
        3            150.00              5.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =     57.508(CFS)
  '     '        flow top width =     31.964(Ft.)
  '     '    velocity=    3.377(Ft/s)
  '     '        area =     17.029(Sq.Ft)
  '     '        Froude number =     0.815

Upstream point elevation =   697.600(Ft.)
Downstream point elevation =   690.000(Ft.)
Flow length =   396.000(Ft.)
Travel time  =    1.95 min.
Time of concentration =   18.97 min.
Depth of flow =   1.065(Ft.)
Average velocity =   3.377(Ft/s)
Total irregular channel flow =    57.508(CFS)
Irregular channel normal depth above invert elev. =   1.065(Ft.)
Average velocity of channel(s) =   3.377(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      3.678(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      3.678(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.302  CA =     18.879
Subarea runoff =     23.780(CFS) for      1.600(Ac.)
Total runoff =     69.445(CFS)  Total area =      62.470(Ac.)
Depth of flow =   1.144(Ft.), Average velocity =   3.540(Ft/s)
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      107.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =     62.470(Ac.)
Runoff from this stream =     69.445(CFS)
Time of concentration =   18.97 min.
Rainfall intensity =     3.678(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      105.000 to Point/Station      106.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Initial subarea total flow distance  =   93.000(Ft.)
Highest elevation =  710.100(Ft.)
Lowest elevation =  706.000(Ft.)
Elevation difference =    4.100(Ft.) Slope =  4.409 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 100.00 (Ft)
for the top area slope value of   4.41 %, in a development type of
 Permanent Open Space
In Accordance With Figure 3-3
Initial Area Time of Concentration =   8.78 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.3000)*( 100.000^.5)/(   4.409^(1/3)]=   8.78
Rainfall intensity (I) =      6.046(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.300
Subarea runoff =      0.091(CFS)
Total initial stream area =        0.050(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      106.000 to Point/Station      107.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.512(CFS)
Depth of flow =   0.216(Ft.), Average velocity =   1.561(Ft/s)
```

```
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2              7.00              0.00
        3             14.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =      0.512(CFS)
  '     '        flow top width =      3.030(Ft.)
  '     '    velocity=    1.561(Ft/s)
  '     '        area =      0.328(Sq.Ft)
  '     '        Froude number =     0.836

Upstream point elevation =   706.000(Ft.)
Downstream point elevation =   690.000(Ft.)
Flow length =   461.000(Ft.)
Travel time  =    4.92 min.
Time of concentration =   13.70 min.
Depth of flow =   0.216(Ft.)
Average velocity =   1.561(Ft/s)
Total irregular channel flow =     0.512(CFS)
Irregular channel normal depth above invert elev. =   0.216(Ft.)
Average velocity of channel(s) =   1.561(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      4.538(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      4.538(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.300  CA =      0.189
Subarea runoff =      0.767(CFS) for      0.580(Ac.)
Total runoff =      0.858(CFS)  Total area =       0.630(Ac.)
Depth of flow =   0.263(Ft.), Average velocity =   1.776(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      107.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      0.630(Ac.)
```

```
Runoff from this stream =      0.858(CFS)
Time of concentration =   13.70 min.
Rainfall intensity =     4.538(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       69.445     18.97                3.678
2        0.858     13.70                4.538
Qmax(1) =
           1.000 *    1.000 *    69.445) +
           0.811 *    1.000 *     0.858) + =      70.140
Qmax(2) =
           1.000 *    0.722 *    69.445) +
           1.000 *    1.000 *     0.858) + =      51.013

Total of 2 main streams to confluence:
Flow rates before confluence point:
      69.445       0.858
Maximum flow rates at confluence using above data:
       70.140       51.013
Area of streams before confluence:
       62.470        0.630


Results of confluence:
Total flow rate =     70.140(CFS)
Time of concentration =    18.974 min.
Effective stream area after confluence  =     63.100(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      107.000 to Point/Station      114.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
!!Warning: Water is above left or right bank elevations
!!Warning: Water is above left or right bank elevations
!!Warning: Water is above left or right bank elevations
Estimated mean flow rate at midpoint of channel =     70.170(CFS)
Depth of flow =   1.522(Ft.), Average velocity =   4.903(Ft/s)
!!Warning: Water is above left or right bank elevations
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2              7.00              0.00
        3             14.00              1.00
```

```
Manning's 'N' friction factor =   0.040
-----------------------------------------------------------------
Sub-Channel flow  =     70.170(CFS)
  '     '        flow top width =     14.000(Ft.)
  '     '    velocity=    4.903(Ft/s)
  '     '        area =     14.312(Sq.Ft)
  '     '        Froude number =     0.855

Upstream point elevation =   690.000(Ft.)
Downstream point elevation =   687.000(Ft.)
Flow length =   175.000(Ft.)
Travel time  =    0.59 min.
Time of concentration =   19.57 min.
Depth of flow =   1.522(Ft.)
Average velocity =   4.903(Ft/s)
Total irregular channel flow =    70.170(CFS)
Irregular channel normal depth above invert elev. =   1.522(Ft.)
Average velocity of channel(s) =   4.903(Ft/s)
!!Warning: Water is above left or right bank elevations
 Adding area flow to channel
Rainfall intensity (I) =      3.606(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
The area added to the existing stream causes a
a lower flow rate of Q =     68.985(CFS)
therefore the upstream flow rate of Q =     70.140(CFS) is being used
Rainfall intensity =      3.606(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.302  CA =     19.131
Subarea runoff =      0.000(CFS) for      0.210(Ac.)
Total runoff =     70.140(CFS)  Total area =      63.310(Ac.)
Depth of flow =   1.522(Ft.), Average velocity =   4.902(Ft/s)
!!Warning: Water is above left or right bank elevations


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      114.000 to Point/Station      114.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =     63.310(Ac.)
Runoff from this stream =     70.140(CFS)
Time of concentration =   19.57 min.
```

```
Rainfall intensity =     3.606(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      108.000 to Point/Station      109.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Initial subarea total flow distance  =   96.000(Ft.)
Highest elevation =  767.000(Ft.)
Lowest elevation =  759.300(Ft.)
Elevation difference =    7.700(Ft.) Slope =  8.021 %
Top of Initial Area Slope adjusted by User to 14.896 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 100.00 (Ft)
for the top area slope value of  14.90 %, in a development type of
 Permanent Open Space
In Accordance With Figure 3-3
Initial Area Time of Concentration =   5.85 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.3000)*( 100.000^.5)/(  14.896^(1/3)]=   5.85
Rainfall intensity (I) =      7.855(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.300
Subarea runoff =      0.165(CFS)
Total initial stream area =        0.070(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      109.000 to Point/Station      110.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.365(CFS)
Depth of flow =   0.095(Ft.), Average velocity =   1.622(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2             25.00              0.00
        3             50.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
```

```
Sub-Channel flow  =      0.365(CFS)
  '     '        flow top width =      4.745(Ft.)
  '     '    velocity=    1.622(Ft/s)
  '     '        area =      0.225(Sq.Ft)
  '     '        Froude number =     1.312

Upstream point elevation =   759.300(Ft.)
Downstream point elevation =   754.300(Ft.)
Flow length =    45.000(Ft.)
Travel time  =    0.46 min.
Time of concentration =    6.31 min.
Depth of flow =   0.095(Ft.)
Average velocity =   1.622(Ft/s)
Total irregular channel flow =     0.365(CFS)
Irregular channel normal depth above invert elev. =   0.095(Ft.)
Average velocity of channel(s) =   1.622(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      7.479(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      7.479(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.300  CA =      0.072
Subarea runoff =      0.374(CFS) for      0.170(Ac.)
Total runoff =      0.539(CFS)  Total area =       0.240(Ac.)
Depth of flow =   0.110(Ft.), Average velocity =   1.788(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      110.000 to Point/Station      114.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      4.773(CFS)
Depth of flow =   0.197(Ft.), Average velocity =   2.463(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2             50.00              0.00
        3            100.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =      4.774(CFS)
```

```
  '     '        flow top width =     19.689(Ft.)
  '     '    velocity=    2.463(Ft/s)
  '     '        area =      1.938(Sq.Ft)
  '     '        Froude number =     1.383

Upstream point elevation =   754.300(Ft.)
Downstream point elevation =   687.000(Ft.)
Flow length =   696.000(Ft.)
Travel time  =    4.71 min.
Time of concentration =   11.03 min.
Depth of flow =   0.197(Ft.)
Average velocity =   2.463(Ft/s)
Total irregular channel flow =     4.773(CFS)
Irregular channel normal depth above invert elev. =   0.197(Ft.)
Average velocity of channel(s) =   2.463(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      5.221(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      5.221(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.300  CA =      1.710
Subarea runoff =      8.389(CFS) for      5.460(Ac.)
Total runoff =      8.928(CFS)  Total area =       5.700(Ac.)
Depth of flow =   0.249(Ft.), Average velocity =   2.880(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      114.000 to Point/Station      114.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      5.700(Ac.)
Runoff from this stream =      8.928(CFS)
Time of concentration =   11.03 min.
Rainfall intensity =     5.221(In/Hr)
Program is now starting with Main Stream No. 3


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      111.000 to Point/Station      112.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
```

```
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Initial subarea total flow distance  =  100.000(Ft.)
Highest elevation =  767.000(Ft.)
Lowest elevation =  759.100(Ft.)
Elevation difference =    7.900(Ft.) Slope =  7.900 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 100.00 (Ft)
for the top area slope value of   7.90 %, in a development type of
 Permanent Open Space
In Accordance With Figure 3-3
Initial Area Time of Concentration =   7.23 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.3000)*( 100.000^.5)/(   7.900^(1/3)]=   7.23
Rainfall intensity (I) =      6.854(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.300
Subarea runoff =      0.185(CFS)
Total initial stream area =        0.090(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      112.000 to Point/Station      113.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      2.786(CFS)
Depth of flow =   0.174(Ft.), Average velocity =   1.839(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2             50.00              0.00
        3            100.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =      2.786(CFS)
  '     '        flow top width =     17.407(Ft.)
  '     '    velocity=    1.839(Ft/s)
  '     '        area =      1.515(Sq.Ft)
  '     '        Froude number =     1.098

Upstream point elevation =   759.100(Ft.)
Downstream point elevation =   730.200(Ft.)
Flow length =   455.000(Ft.)
```

```
Travel time  =    4.12 min.
Time of concentration =   11.35 min.
Depth of flow =   0.174(Ft.)
Average velocity =   1.839(Ft/s)
Total irregular channel flow =     2.786(CFS)
Irregular channel normal depth above invert elev. =   0.174(Ft.)
Average velocity of channel(s) =   1.839(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      5.123(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      5.123(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.300  CA =      1.038
Subarea runoff =      5.132(CFS) for      3.370(Ac.)
Total runoff =      5.317(CFS)  Total area =       3.460(Ac.)
Depth of flow =   0.222(Ft.), Average velocity =   2.161(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      113.000 to Point/Station      114.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      5.815(CFS)
Depth of flow =   0.225(Ft.), Average velocity =   2.301(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2             50.00              0.00
        3            100.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =      5.815(CFS)
  '     '        flow top width =     22.484(Ft.)
  '     '    velocity=    2.301(Ft/s)
  '     '        area =      2.528(Sq.Ft)
  '     '        Froude number =     1.209

Upstream point elevation =   730.200(Ft.)
Downstream point elevation =   687.000(Ft.)
Flow length =   611.000(Ft.)
Travel time  =    4.43 min.
```

```
Time of concentration =   15.78 min.
Depth of flow =   0.225(Ft.)
Average velocity =   2.301(Ft/s)
Total irregular channel flow =     5.815(CFS)
Irregular channel normal depth above invert elev. =   0.225(Ft.)
Average velocity of channel(s) =   2.301(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      4.143(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      4.143(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.300  CA =      1.500
Subarea runoff =      0.897(CFS) for      1.540(Ac.)
Total runoff =      6.214(CFS)  Total area =       5.000(Ac.)
Depth of flow =   0.231(Ft.), Average velocity =   2.339(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      114.000 to Point/Station      114.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 3
Stream flow area =      5.000(Ac.)
Runoff from this stream =      6.214(CFS)
Time of concentration =   15.78 min.
Rainfall intensity =     4.143(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       70.140     19.57                3.606
2        8.928     11.03                5.221
3        6.214     15.78                4.143
Qmax(1) =
           1.000 *    1.000 *    70.140) +
           0.691 *    1.000 *     8.928) +
           0.870 *    1.000 *     6.214) + =      81.716
Qmax(2) =
           1.000 *    0.563 *    70.140) +
           1.000 *    1.000 *     8.928) +
```

```
           1.000 *    0.699 *     6.214) + =      52.786
Qmax(3) =
           1.000 *    0.806 *    70.140) +
           0.793 *    1.000 *     8.928) +
           1.000 *    1.000 *     6.214) + =      69.862

Total of 3 main streams to confluence:
Flow rates before confluence point:
      70.140       8.928       6.214
Maximum flow rates at confluence using above data:
       81.716       52.786       69.862
Area of streams before confluence:
       63.310        5.700        5.000


Results of confluence:
Total flow rate =     81.716(CFS)
Time of concentration =    19.569 min.
Effective stream area after confluence  =     74.010(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      114.000 to Point/Station      114.000
**** 6 HOUR HYDROGRAPH ****
________________________________________________________________________
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Hydrograph Data - Section 6, San Diego County Hydrology manual, June 2003


Time of Concentration =  19.57
Basin Area =    74.01 Acres
6 Hour Rainfall =  3.300 Inches
Runoff Coefficient =  0.302
Peak Discharge =    81.72 CFS
     Time (Min)     Discharge (CFS)
       0               0.000
       19               4.291
       38               4.602
       57               4.780
       76               5.195
       95               5.441
       114               6.034
       133               6.399
       152               7.335
       171               7.953
       190               9.721
       209              11.073
       228              16.258
       247              22.907
       266              81.716
```

```
           285              13.040
           304               8.725
           323               6.826
           342               5.718
           361               4.977
    ++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                       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   1   Minute intervals ((CFS))

    --------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       20.4      40.9      61.3      81.7
-----------------------------------------------------------------------
  0+ 0       0.0000      0.00  Q        |         |         |         |
  0+ 1       0.0003      0.23  Q        |         |         |         |
  0+ 2       0.0009      0.45  Q        |         |         |         |
  0+ 3       0.0019      0.68  Q        |         |         |         |
  0+ 4       0.0031      0.90  Q        |         |         |         |
  0+ 5       0.0047      1.13  Q        |         |         |         |
  0+ 6       0.0065      1.36  Q        |         |         |         |
  0+ 7       0.0087      1.58  Q        |         |         |         |
  0+ 8       0.0112      1.81  Q        |         |         |         |
  0+ 9       0.0140      2.03  Q        |         |         |         |
  0+10       0.0171      2.26  VQ       |         |         |         |
  0+11       0.0205      2.48  VQ       |         |         |         |
  0+12       0.0243      2.71  VQ       |         |         |         |
  0+13       0.0283      2.94  VQ       |         |         |         |
  0+14       0.0327      3.16  VQ       |         |         |         |
  0+15       0.0373      3.39  VQ       |         |         |         |
  0+16       0.0423      3.61  VQ       |         |         |         |
  0+17       0.0476      3.84  VQ       |         |         |         |
  0+18       0.0532      4.07  VQ       |         |         |         |
  0+19       0.0591      4.29  V Q      |         |         |         |
  0+20       0.0650      4.31  V Q      |         |         |         |
  0+21       0.0710      4.32  V Q      |         |         |         |
  0+22       0.0770      4.34  V Q      |         |         |         |
  0+23       0.0830      4.36  V Q      |         |         |         |
  0+24       0.0890      4.37  V Q      |         |         |         |
  0+25       0.0950      4.39  V Q      |         |         |         |
  0+26       0.1011      4.41  V Q      |         |         |         |
  0+27       0.1072      4.42  V Q      |         |         |         |
  0+28       0.1133      4.44  V Q      |         |         |         |
  0+29       0.1195      4.45  V Q      |         |         |         |
  0+30       0.1256      4.47  V Q      |         |         |         |
  0+31       0.1318      4.49  V Q      |         |         |         |
  0+32       0.1380      4.50  V Q      |         |         |         |
  0+33       0.1442      4.52  V Q      |         |         |         |
  0+34       0.1505      4.54  V Q      |         |         |         |
  0+35       0.1567      4.55  |VQ      |         |         |         |
```

0+36	0.1630	4.57	|VQ	|	|	|	|
0+37	0.1694	4.59	|VQ	|	|	|	|
0+38	0.1757	4.60	|VQ	|	|	|	|
0+39	0.1820	4.61	|VQ	|	|	|	|
0+40	0.1884	4.62	|VQ	|	|	|	|
0+41	0.1948	4.63	|VQ	|	|	|	|
0+42	0.2012	4.64	|VQ	|	|	|	|
0+43	0.2076	4.65	|VQ	|	|	|	|
0+44	0.2140	4.66	|VQ	|	|	|	|
0+45	0.2204	4.67	|VQ	|	|	|	|
0+46	0.2269	4.68	|VQ	|	|	|	|
0+47	0.2333	4.69	|VQ	|	|	|	|
0+48	0.2398	4.70	|VQ	|	|	|	|
0+49	0.2463	4.70	|VQ	|	|	|	|
0+50	0.2528	4.71	|VQ	|	|	|	|
0+51	0.2593	4.72	|VQ	|	|	|	|
0+52	0.2658	4.73	|VQ	|	|	|	|
0+53	0.2723	4.74	|VQ	|	|	|	|
0+54	0.2789	4.75	|VQ	|	|	|	|
0+55	0.2854	4.76	|VQ	|	|	|	|
0+56	0.2920	4.77	|VQ	|	|	|	|
0+57	0.2986	4.78	|VQ	|	|	|	|
0+58	0.3052	4.80	| Q	|	|	|	|
0+59	0.3118	4.82	| Q	|	|	|	|
1+ 0	0.3185	4.85	| Q	|	|	|	|
1+ 1	0.3252	4.87	| Q	|	|	|	|
1+ 2	0.3319	4.89	| Q	|	|	|	|
1+ 3	0.3387	4.91	| Q	|	|	|	|
1+ 4	0.3455	4.93	| Q	|	|	|	|
1+ 5	0.3523	4.95	| Q	|	|	|	|
1+ 6	0.3592	4.98	| Q	|	|	|	|
1+ 7	0.3661	5.00	| Q	|	|	|	|
1+ 8	0.3730	5.02	| Q	|	|	|	|
1+ 9	0.3799	5.04	| Q	|	|	|	|
1+10	0.3869	5.06	| Q	|	|	|	|
1+11	0.3939	5.09	| Q	|	|	|	|
1+12	0.4009	5.11	| Q	|	|	|	|
1+13	0.4080	5.13	| Q	|	|	|	|
1+14	0.4151	5.15	| Q	|	|	|	|
1+15	0.4222	5.17	| Q	|	|	|	|
1+16	0.4294	5.20	| Q	|	|	|	|
1+17	0.4366	5.21	| Q	|	|	|	|
1+18	0.4438	5.22	| Q	|	|	|	|
1+19	0.4510	5.23	| Q	|	|	|	|
1+20	0.4582	5.25	| QV	|	|	|	|
1+21	0.4654	5.26	| QV	|	|	|	|
1+22	0.4727	5.27	| QV	|	|	|	|
1+23	0.4800	5.29	| QV	|	|	|	|
1+24	0.4873	5.30	| QV	|	|	|	|
1+25	0.4946	5.31	| QV	|	|	|	|

1+26	0.5019	5.32	QV				
1+27	0.5093	5.34	QV				
1+28	0.5167	5.35	QV				
1+29	0.5240	5.36	QV				
1+30	0.5314	5.38	QV				
1+31	0.5389	5.39	QV				
1+32	0.5463	5.40	QV				
1+33	0.5538	5.41	QV				
1+34	0.5612	5.43	QV				
1+35	0.5687	5.44	QV				
1+36	0.5763	5.47	QV				
1+37	0.5839	5.50	QV				
1+38	0.5915	5.53	QV				
1+39	0.5991	5.57	QV				
1+40	0.6069	5.60	Q V				
1+41	0.6146	5.63	Q V				
1+42	0.6224	5.66	Q V				
1+43	0.6302	5.69	Q V				
1+44	0.6381	5.72	Q V				
1+45	0.6460	5.75	Q V				
1+46	0.6540	5.78	Q V				
1+47	0.6620	5.82	Q V				
1+48	0.6701	5.85	Q V				
1+49	0.6782	5.88	Q V				
1+50	0.6863	5.91	Q V				
1+51	0.6945	5.94	Q V				
1+52	0.7027	5.97	Q V				
1+53	0.7110	6.00	Q V				
1+54	0.7193	6.03	Q V				
1+55	0.7276	6.05	Q V				
1+56	0.7360	6.07	Q V				
1+57	0.7444	6.09	Q V				
1+58	0.7528	6.11	Q V				
1+59	0.7613	6.13	Q V				
2+ 0	0.7697	6.15	Q V				
2+ 1	0.7782	6.17	Q V				
2+ 2	0.7867	6.19	Q V				
2+ 3	0.7953	6.21	Q V				
2+ 4	0.8039	6.23	Q V				
2+ 5	0.8125	6.25	Q V				
2+ 6	0.8211	6.26	Q V				
2+ 7	0.8298	6.28	Q V				
2+ 8	0.8384	6.30	Q V				
2+ 9	0.8471	6.32	Q V				
2+10	0.8559	6.34	Q V				
2+11	0.8646	6.36	Q V				
2+12	0.8734	6.38	Q V				
2+13	0.8822	6.40	Q V				
2+14	0.8911	6.45	Q V				
2+15	0.9001	6.50	Q V				

```
2+16       0.9091      6.55  |  Q  V   |          |          |          |
2+17       0.9182      6.60  |  Q  V   |          |          |          |
2+18       0.9273      6.65  |  Q  V   |          |          |          |
2+19       0.9366      6.69  |  Q  V   |          |          |          |
2+20       0.9458      6.74  |  Q  V   |          |          |          |
2+21       0.9552      6.79  |  Q  V   |          |          |          |
2+22       0.9646      6.84  |  Q  V   |          |          |          |
2+23       0.9741      6.89  |  Q  V   |          |          |          |
2+24       0.9837      6.94  |  Q  V   |          |          |          |
2+25       0.9933      6.99  |  Q  V   |          |          |          |
2+26       1.0030      7.04  |  Q  V   |          |          |          |
2+27       1.0128      7.09  |  Q  V   |          |          |          |
2+28       1.0226      7.14  |  Q  V   |          |          |          |
2+29       1.0325      7.19  |  Q  V   |          |          |          |
2+30       1.0425      7.24  |  Q  V   |          |          |          |
2+31       1.0525      7.29  |  Q  V   |          |          |          |
2+32       1.0626      7.34  |  Q   V  |          |          |          |
2+33       1.0728      7.37  |  Q   V  |          |          |          |
2+34       1.0830      7.40  |  Q   V  |          |          |          |
2+35       1.0932      7.43  |  Q   V  |          |          |          |
2+36       1.1035      7.47  |  Q   V  |          |          |          |
2+37       1.1138      7.50  |  Q   V  |          |          |          |
2+38       1.1242      7.53  |  Q   V  |          |          |          |
2+39       1.1346      7.56  |  Q   V  |          |          |          |
2+40       1.1451      7.60  |  Q   V  |          |          |          |
2+41       1.1556      7.63  |  Q   V  |          |          |          |
2+42       1.1661      7.66  |  Q   V  |          |          |          |
2+43       1.1767      7.69  |  Q   V  |          |          |          |
2+44       1.1873      7.73  |  Q   V  |          |          |          |
2+45       1.1980      7.76  |  Q   V  |          |          |          |
2+46       1.2088      7.79  |  Q    V |          |          |          |
2+47       1.2195      7.82  |  Q    V |          |          |          |
2+48       1.2304      7.86  |  Q    V |          |          |          |
2+49       1.2412      7.89  |  Q    V |          |          |          |
2+50       1.2521      7.92  |  Q    V |          |          |          |
2+51       1.2631      7.95  |  Q    V |          |          |          |
2+52       1.2742      8.05  |  Q    V |          |          |          |
2+53       1.2854      8.14  |  Q    V |          |          |          |
2+54       1.2967      8.23  |   Q   V |          |          |          |
2+55       1.3082      8.33  |   Q   V |          |          |          |
2+56       1.3198      8.42  |   Q   V |          |          |          |
2+57       1.3315      8.51  |   Q   V |          |          |          |
2+58       1.3434      8.60  |   Q   V |          |          |          |
2+59       1.3553      8.70  |   Q   V |          |          |          |
3+ 0       1.3675      8.79  |   Q    V|          |          |          |
3+ 1       1.3797      8.88  |   Q    V|          |          |          |
3+ 2       1.3921      8.98  |   Q    V|          |          |          |
3+ 3       1.4045      9.07  |   Q    V|          |          |          |
3+ 4       1.4172      9.16  |   Q    V|          |          |          |
3+ 5       1.4299      9.26  |   Q    V|          |          |          |
```

```
3+ 6       1.4428      9.35  |   Q    V|          |          |          |
3+ 7       1.4558      9.44  |   Q    V|          |          |          |
3+ 8       1.4689      9.54  |   Q    V|          |          |          |
3+ 9       1.4822      9.63  |   Q    V|          |          |          |
3+10       1.4956      9.72  |   Q    V|          |          |          |
3+11       1.5091      9.79  |   Q     V          |          |          |
3+12       1.5227      9.86  |   Q     V          |          |          |
3+13       1.5363      9.93  |   Q     V          |          |          |
3+14       1.5501     10.01  |   Q     V          |          |          |
3+15       1.5640     10.08  |   Q     V          |          |          |
3+16       1.5780     10.15  |   Q     V          |          |          |
3+17       1.5921     10.22  |    Q    V          |          |          |
3+18       1.6062     10.29  |    Q    V          |          |          |
3+19       1.6205     10.36  |    Q    V          |          |          |
3+20       1.6349     10.43  |    Q    V          |          |          |
3+21       1.6493     10.50  |    Q    V          |          |          |
3+22       1.6639     10.57  |    Q    |V          |          |          |
3+23       1.6786     10.65  |    Q    |V          |          |          |
3+24       1.6933     10.72  |    Q    |V          |          |          |
3+25       1.7082     10.79  |    Q    |V          |          |          |
3+26       1.7231     10.86  |    Q    |V          |          |          |
3+27       1.7382     10.93  |    Q    |V          |          |          |
3+28       1.7534     11.00  |    Q    |V          |          |          |
3+29       1.7686     11.07  |    Q    |V          |          |          |
3+30       1.7842     11.35  |    Q    |V          |          |          |
3+31       1.8002     11.62  |    Q    |V          |          |          |
3+32       1.8166     11.89  |    Q    | V         |          |          |
3+33       1.8334     12.16  |    Q    | V         |          |          |
3+34       1.8505     12.44  |     Q   | V         |          |          |
3+35       1.8680     12.71  |     Q   | V         |          |          |
3+36       1.8859     12.98  |     Q   | V         |          |          |
3+37       1.9042     13.26  |     Q   | V         |          |          |
3+38       1.9228     13.53  |     Q   | V         |          |          |
3+39       1.9418     13.80  |     Q   | V         |          |          |
3+40       1.9612     14.07  |     Q   | V         |          |          |
3+41       1.9809     14.35  |      Q  |  V        |          |          |
3+42       2.0011     14.62  |      Q  |  V        |          |          |
3+43       2.0216     14.89  |      Q  |  V        |          |          |
3+44       2.0425     15.17  |      Q  |  V        |          |          |
3+45       2.0638     15.44  |      Q  |  V        |          |          |
3+46       2.0854     15.71  |      Q  |  V        |          |          |
3+47       2.1074     15.99  |      Q  |  V        |          |          |
3+48       2.1298     16.26  |      Q  |   V       |          |          |
3+49       2.1527     16.61  |       Q |   V       |          |          |
3+50       2.1760     16.96  |       Q |   V       |          |          |
3+51       2.1999     17.31  |       Q |   V       |          |          |
3+52       2.2242     17.66  |       Q |   V       |          |          |
3+53       2.2490     18.01  |       Q |   V       |          |          |
3+54       2.2743     18.36  |       Q |    V      |          |          |
3+55       2.3001     18.71  |        Q|    V      |          |          |
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3+56       2.3263     19.06  |         Q|    V    |          |          |
3+57       2.3530     19.41  |         Q|    V    |          |          |
3+58       2.3803     19.76  |         Q|    V    |          |          |
3+59       2.4080     20.11  |         Q|    V    |          |          |
4+ 0       2.4361     20.46  |          Q     V   |          |          |
4+ 1       2.4648     20.81  |          Q     V   |          |          |
4+ 2       2.4939     21.16  |          Q     V   |          |          |
4+ 3       2.5236     21.51  |          Q     V   |          |          |
4+ 4       2.5537     21.86  |          Q     V   |          |          |
4+ 5       2.5843     22.21  |          Q      V  |          |          |
4+ 6       2.6153     22.56  |          |Q     V  |          |          |
4+ 7       2.6469     22.91  |          |Q     V  |          |          |
4+ 8       2.6827     26.00  |          | Q    V  |          |          |
4+ 9       2.7228     29.10  |          |   Q   V |          |          |
4+10       2.7671     32.19  |          |    Q  V |          |          |
4+11       2.8157     35.29  |          |      QV |          |          |
4+12       2.8686     38.38  |          |       QV|          |          |
4+13       2.9257     41.48  |          |         VQ         |          |
4+14       2.9871     44.57  |          |         V|Q        |          |
4+15       3.0528     47.67  |          |          V  Q      |          |
4+16       3.1227     50.76  |          |          V   Q     |          |
4+17       3.1969     53.86  |          |          |V    Q   |          |
4+18       3.2753     56.95  |          |          |V     Q  |          |
4+19       3.3580     60.05  |          |          | V      Q|          |
4+20       3.4450     63.14  |          |          | V       Q          |
4+21       3.5363     66.24  |          |          |  V      | Q        |
4+22       3.6318     69.33  |          |          |   V     |  Q       |
4+23       3.7315     72.43  |          |          |   V     |    Q     |
4+24       3.8356     75.53  |          |          |    V    |     Q    |
4+25       3.9439     78.62  |          |          |     V   |       Q  |
4+26       4.0564     81.72  |          |          |     V   |         Q|
4+27       4.1640     78.10  |          |          |      V  |       Q  |
4+28       4.2666     74.49  |          |          |       V |     Q    |
4+29       4.3642     70.87  |          |          |       V |   Q      |
4+30       4.4568     67.26  |          |          |        V| Q        |
4+31       4.5445     63.64  |          |          |         VQ         |
4+32       4.6272     60.03  |          |          |         QV         |
4+33       4.7049     56.41  |          |          |       Q  |V        |
4+34       4.7776     52.80  |          |          |    Q     |V        |
4+35       4.8454     49.18  |          |          |   Q      | V       |
4+36       4.9081     45.57  |          |          | Q        | V       |
4+37       4.9659     41.96  |          |         Q          | V       |
4+38       5.0187     38.34  |          |        Q |         |  V      |
4+39       5.0666     34.73  |          |      Q   |         |  V      |
4+40       5.1094     31.11  |          |     Q    |         |  V      |
4+41       5.1473     27.50  |          |  Q       |         |   V     |
4+42       5.1802     23.88  |          |Q         |         |   V     |
4+43       5.2081     20.27  |        Q |          |         |   V     |
4+44       5.2311     16.65  |       Q  |          |         |   V     |
4+45       5.2490     13.04  |     Q    |          |         |   V     |
```

```
4+46       5.2667     12.81  |     Q    |          |          |   V      |
4+47       5.2840     12.59  |     Q    |          |          |    V     |
4+48       5.3010     12.36  |     Q    |          |          |    V     |
4+49       5.3177     12.13  |    Q     |          |          |    V     |
4+50       5.3341     11.90  |    Q     |          |          |    V     |
4+51       5.3502     11.68  |    Q     |          |          |    V     |
4+52       5.3660     11.45  |    Q     |          |          |    V     |
4+53       5.3815     11.22  |    Q     |          |          |    V     |
4+54       5.3966     11.00  |    Q     |          |          |    V     |
4+55       5.4114     10.77  |    Q     |          |          |    V     |
4+56       5.4260     10.54  |    Q     |          |          |    V     |
4+57       5.4402     10.31  |    Q     |          |          |     V    |
4+58       5.4541     10.09  |   Q      |          |          |     V    |
4+59       5.4676      9.86  |   Q      |          |          |     V    |
5+ 0       5.4809      9.63  |   Q      |          |          |     V    |
5+ 1       5.4939      9.41  |   Q      |          |          |     V    |
5+ 2       5.5065      9.18  |   Q      |          |          |     V    |
5+ 3       5.5188      8.95  |   Q      |          |          |     V    |
5+ 4       5.5308      8.72  |   Q      |          |          |     V    |
5+ 5       5.5427      8.62  |   Q      |          |          |     V    |
5+ 6       5.5545      8.52  |   Q      |          |          |     V    |
5+ 7       5.5661      8.42  |   Q      |          |          |     V    |
5+ 8       5.5775      8.32  |   Q      |          |          |     V    |
5+ 9       5.5889      8.23  |   Q      |          |          |      V   |
5+10       5.6001      8.13  |  Q       |          |          |      V   |
5+11       5.6111      8.03  |  Q       |          |          |      V   |
5+12       5.6220      7.93  |  Q       |          |          |      V   |
5+13       5.6328      7.83  |  Q       |          |          |      V   |
5+14       5.6435      7.73  |  Q       |          |          |      V   |
5+15       5.6540      7.63  |  Q       |          |          |      V   |
5+16       5.6643      7.53  |  Q       |          |          |      V   |
5+17       5.6746      7.43  |  Q       |          |          |      V   |
5+18       5.6846      7.33  |  Q       |          |          |      V   |
5+19       5.6946      7.23  |  Q       |          |          |      V   |
5+20       5.7044      7.13  |  Q       |          |          |      V   |
5+21       5.7141      7.03  |  Q       |          |          |      V   |
5+22       5.7236      6.93  |  Q       |          |          |      V   |
5+23       5.7330      6.83  |  Q       |          |          |      V   |
5+24       5.7424      6.77  |  Q       |          |          |       V  |
5+25       5.7516      6.71  |  Q       |          |          |       V  |
5+26       5.7608      6.65  |  Q       |          |          |       V  |
5+27       5.7698      6.59  |  Q       |          |          |       V  |
5+28       5.7788      6.53  |  Q       |          |          |       V  |
5+29       5.7878      6.48  |  Q       |          |          |       V  |
5+30       5.7966      6.42  |  Q       |          |          |       V  |
5+31       5.8054      6.36  |  Q       |          |          |       V  |
5+32       5.8140      6.30  |  Q       |          |          |       V  |
5+33       5.8226      6.24  |  Q       |          |          |       V  |
5+34       5.8312      6.18  |  Q       |          |          |       V  |
5+35       5.8396      6.13  | Q        |          |          |       V  |
```

```
    5+36       5.8480      6.07  | Q       |         |         |       V |
    5+37       5.8562      6.01  | Q       |         |         |       V |
    5+38       5.8644      5.95  | Q       |         |         |       V |
    5+39       5.8725      5.89  | Q       |         |         |       V |
    5+40       5.8806      5.83  | Q       |         |         |       V |
    5+41       5.8885      5.78  | Q       |         |         |        V|
    5+42       5.8964      5.72  | Q       |         |         |        V|
    5+43       5.9042      5.68  | Q       |         |         |        V|
    5+44       5.9120      5.64  | Q       |         |         |        V|
    5+45       5.9197      5.60  | Q       |         |         |        V|
    5+46       5.9274      5.56  | Q       |         |         |        V|
    5+47       5.9350      5.52  | Q       |         |         |        V|
    5+48       5.9425      5.48  | Q       |         |         |        V|
    5+49       5.9500      5.44  | Q       |         |         |        V|
    5+50       5.9575      5.41  | Q       |         |         |        V|
    5+51       5.9649      5.37  | Q       |         |         |        V|
    5+52       5.9722      5.33  | Q       |         |         |        V|
    5+53       5.9795      5.29  | Q       |         |         |        V|
    5+54       5.9867      5.25  | Q       |         |         |        V|
    5+55       5.9939      5.21  | Q       |         |         |        V|
    5+56       6.0010      5.17  | Q       |         |         |        V|
    5+57       6.0081      5.13  | Q       |         |         |        V|
    5+58       6.0151      5.09  | Q       |         |         |        V|
    5+59       6.0221      5.05  | Q       |         |         |        V|
    6+ 0       6.0290      5.02  | Q       |         |         |        V|
    6+ 1       6.0358      4.98  | Q       |         |         |         V
--------------------------------------------------------------------------

        End of computations, total study area =         74.010 (Ac.)
```

```
                San Diego County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c)1991-2018 Version 9.0

Rational method hydrology  program based on
San Diego County Flood Control Division 2003 hydrology manual
        Rational Hydrology Study        Date: 06/21/21
--------------------------------------------------------------------------
108-001 Idaho (Escondido Estates)
Onsite Proposed Condition 301-401
Extrapolated storm from County Isopluvials
TH
--------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

--------------------------------------------------------------------------


Program License Serial Number 6440

--------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
English (in-lb) input data Units used

Map data precipitation entered:
6 hour,  precipitation(inches) =  3.300
24 hour precipitation(inches) =  7.300
P6/P24 =    45.2%
San Diego hydrology manual 'C' values used


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      301.000 to Point/Station      302.000
**** INITIAL AREA EVALUATION ****
__________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Initial subarea total flow distance  =   92.000(Ft.)
Highest elevation =  765.000(Ft.)
Lowest elevation =  753.400(Ft.)
Elevation difference =   11.600(Ft.) Slope = 12.609 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 100.00 (Ft)
```

```
for the top area slope value of  12.61 %, in a development type of
 Permanent Open Space
In Accordance With Figure 3-3
Initial Area Time of Concentration =   6.19 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.3000)*( 100.000^.5)/(  12.609^(1/3)]=   6.19
Rainfall intensity (I) =      7.579(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.300
Subarea runoff =      0.318(CFS)
Total initial stream area =        0.140(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      302.000 to Point/Station      303.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      1.128(CFS)
Depth of flow =   0.104(Ft.), Average velocity =   2.074(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2             50.00              0.00
        3            100.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =      1.128(CFS)
  '     '        flow top width =     10.429(Ft.)
  '     '    velocity=    2.074(Ft/s)
  '     '        area =      0.544(Sq.Ft)
  '     '        Froude number =     1.600

Upstream point elevation =   753.400(Ft.)
Downstream point elevation =   735.000(Ft.)
Flow length =   115.000(Ft.)
Travel time  =    0.92 min.
Time of concentration =    7.11 min.
Depth of flow =   0.104(Ft.)
Average velocity =   2.074(Ft/s)
Total irregular channel flow =     1.128(CFS)
Irregular channel normal depth above invert elev. =   0.104(Ft.)
Average velocity of channel(s) =   2.074(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      6.928(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
```

```
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      6.928(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.300  CA =      0.267
Subarea runoff =      1.531(CFS) for      0.750(Ac.)
Total runoff =      1.850(CFS)  Total area =       0.890(Ac.)
Depth of flow =   0.126(Ft.), Average velocity =   2.347(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      303.000 to Point/Station      304.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =   735.000(Ft.)
End of street segment elevation =   705.400(Ft.)
Length of street segment  =   548.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  27.000(Ft.)
Distance from crown to crossfall grade break  =  25.500(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [2] side(s) of the street
Distance from curb to property line  =  17.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   1.500(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      4.446(CFS)
Depth of flow =   0.267(Ft.), Average velocity =   4.194(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =   6.538(Ft.)
Flow velocity =   4.19(Ft/s)
Travel time =    2.18 min.     TC =    9.29  min.
 Adding area flow to street
Rainfall intensity (I) =      5.831(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 0.100
Decimal fraction soil group D = 0.900
[HIGH DENSITY RESIDENTIAL                    ]
(24.0 DU/A or Less      )
Impervious value, Ai = 0.650
Sub-Area C Value = 0.708
Rainfall intensity =      5.831(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.547  CA =      1.237
```

```
Subarea runoff =      5.363(CFS) for      1.370(Ac.)
Total runoff =      7.213(CFS)  Total area =       2.260(Ac.)
Street flow at end of street =      7.213(CFS)
Half street flow at end of street =      3.607(CFS)
Depth of flow =   0.301(Ft.), Average velocity =   4.658(Ft/s)
Flow width (from curb towards crown)=   8.196(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      304.000 to Point/Station      308.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =   701.400(Ft.)
Downstream point/station elevation =   694.100(Ft.)
Pipe length  =   307.00(Ft.) Slope =   0.0238  Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     7.213(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =     7.213(CFS)
Normal flow depth in pipe =    9.46(In.)
Flow top width inside pipe =   14.48(In.)
Critical Depth =   12.88(In.)
Pipe flow velocity =      8.84(Ft/s)
Travel time through pipe =    0.58 min.
Time of concentration (TC) =     9.87 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      304.000 to Point/Station      308.000
**** CONFLUENCE OF MINOR STREAMS ****
________________________________________________________________________
Along Main Stream number: 1 in normal stream number 1
Stream flow area =      2.260(Ac.)
Runoff from this stream =      7.213(CFS)
Time of concentration =    9.87 min.
Rainfall intensity =     5.608(In/Hr)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      305.000 to Point/Station      306.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[LOW DENSITY RESIDENTIAL                    ]
(2.9 DU/A or Less       )
Impervious value, Ai = 0.250
Sub-Area C Value = 0.450
Initial subarea total flow distance  =   98.000(Ft.)
```

```
Highest elevation =  752.800(Ft.)
Lowest elevation =  741.000(Ft.)
Elevation difference =   11.800(Ft.) Slope = 12.041 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 100.00 (Ft)
for the top area slope value of  12.04 %, in a development type of
 2.9 DU/A or Less
In Accordance With Figure 3-3
Initial Area Time of Concentration =   5.10 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.4500)*( 100.000^.5)/(  12.041^(1/3)]=   5.10
Rainfall intensity (I) =      8.579(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.450
Subarea runoff =      0.965(CFS)
Total initial stream area =        0.250(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      306.000 to Point/Station      307.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =   741.000(Ft.)
End of street segment elevation =   700.400(Ft.)
Length of street segment  =   399.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  12.000(Ft.)
Distance from crown to crossfall grade break  =  10.500(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [2] side(s) of the street
Distance from curb to property line  =   8.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   1.500(Ft.)
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      6.179(CFS)
Depth of flow =   0.268(Ft.), Average velocity =   5.772(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =   6.579(Ft.)
Flow velocity =   5.77(Ft/s)
Travel time =    1.15 min.     TC =    6.26  min.
 Adding area flow to street
Rainfall intensity (I) =      7.524(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[MEDIUM DENSITY RESIDENTIAL                  ]
```

```
(4.3 DU/A or Less       )
Impervious value, Ai = 0.300
Sub-Area C Value = 0.480
Rainfall intensity =      7.524(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.478  CA =      1.500
Subarea runoff =     10.318(CFS) for      2.890(Ac.)
Total runoff =     11.284(CFS)  Total area =       3.140(Ac.)
Street flow at end of street =     11.284(CFS)
Half street flow at end of street =      5.642(CFS)
Depth of flow =   0.310(Ft.), Average velocity =   6.585(Ft/s)
Flow width (from curb towards crown)=   8.684(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      307.000 to Point/Station      308.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =   696.400(Ft.)
Downstream point/station elevation =   695.200(Ft.)
Pipe length  =    25.00(Ft.) Slope =   0.0480  Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    11.284(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    11.284(CFS)
Normal flow depth in pipe =   10.13(In.)
Flow top width inside pipe =   14.05(In.)
Critical depth could not be calculated.
Pipe flow velocity =     12.81(Ft/s)
Travel time through pipe =    0.03 min.
Time of concentration (TC) =     6.29 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      307.000 to Point/Station      308.000
**** CONFLUENCE OF MINOR STREAMS ****
______________________________________________________________________________
Along Main Stream number: 1 in normal stream number 2
Stream flow area =      3.140(Ac.)
Runoff from this stream =     11.284(CFS)
Time of concentration =    6.29 min.
Rainfall intensity =     7.499(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1        7.213      9.87                5.608
2       11.284      6.29                7.499
Qmax(1) =
```

```
           1.000 *    1.000 *     7.213) +
           0.748 *    1.000 *    11.284) + =      15.652
Qmax(2) =
           1.000 *    0.637 *     7.213) +
           1.000 *    1.000 *    11.284) + =      15.881

Total of 2 streams to confluence:
Flow rates before confluence point:
       7.213      11.284
Maximum flow rates at confluence using above data:
       15.652       15.881
Area of streams before confluence:
        2.260        3.140
Results of confluence:
Total flow rate =     15.881(CFS)
Time of concentration =     6.289 min.
Effective stream area after confluence =      5.400(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      308.000 to Point/Station      311.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =   695.200(Ft.)
Downstream point/station elevation =   694.400(Ft.)
Pipe length  =   112.00(Ft.) Slope =   0.0071  Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    15.881(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    15.881(CFS)
Normal flow depth in pipe =   16.69(In.)
Flow top width inside pipe =   22.09(In.)
Critical Depth =   17.23(In.)
Pipe flow velocity =      6.80(Ft/s)
Travel time through pipe =    0.27 min.
Time of concentration (TC) =     6.56 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      308.000 to Point/Station      311.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      5.400(Ac.)
Runoff from this stream =     15.881(CFS)
Time of concentration =    6.56 min.
Rainfall intensity =     7.295(In/Hr)
Program is now starting with Main Stream No. 2
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      309.000 to Point/Station      310.000
**** INITIAL AREA EVALUATION ****
______________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[MEDIUM DENSITY RESIDENTIAL                  ]
(4.3 DU/A or Less       )
Impervious value, Ai = 0.300
Sub-Area C Value = 0.480
Initial subarea total flow distance  =   60.000(Ft.)
Highest elevation =  730.400(Ft.)
Lowest elevation =  721.300(Ft.)
Elevation difference =    9.100(Ft.) Slope = 15.167 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 100.00 (Ft)
for the top area slope value of  15.17 %, in a development type of
 4.3 DU/A or Less
In Accordance With Figure 3-3
Initial Area Time of Concentration =   4.51 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.4800)*( 100.000^.5)/(  15.167^(1/3)]=   4.51
Calculated TC of    4.508 minutes is less than 5 minutes,
 resetting TC to 5.0 minutes for rainfall intensity calculations
Rainfall intensity (I) =      8.695(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.480
Subarea runoff =      0.167(CFS)
Total initial stream area =        0.040(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      310.000 to Point/Station      311.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
______________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      0.649(CFS)
Depth of flow =   0.240(Ft.), Average velocity =   2.255(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2              5.00              0.00
        3             10.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =      0.649(CFS)
  '     '        flow top width =      2.399(Ft.)
  '     '    velocity=    2.255(Ft/s)
```

```
  '     '        area =      0.288(Sq.Ft)
  '     '        Froude number =     1.148

Upstream point elevation =   721.300(Ft.)
Downstream point elevation =   702.500(Ft.)
Flow length =   294.000(Ft.)
Travel time  =    2.17 min.
Time of concentration =    6.68 min.
Depth of flow =   0.240(Ft.)
Average velocity =   2.255(Ft/s)
Total irregular channel flow =     0.649(CFS)
Irregular channel normal depth above invert elev. =   0.240(Ft.)
Average velocity of channel(s) =   2.255(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      7.212(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[MEDIUM DENSITY RESIDENTIAL                  ]
(4.3 DU/A or Less       )
Impervious value, Ai = 0.300
Sub-Area C Value = 0.480
Rainfall intensity =      7.212(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.480  CA =      0.149
Subarea runoff =      0.906(CFS) for      0.270(Ac.)
Total runoff =      1.073(CFS)  Total area =       0.310(Ac.)
Depth of flow =   0.290(Ft.), Average velocity =   2.557(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      310.000 to Point/Station      311.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      0.310(Ac.)
Runoff from this stream =      1.073(CFS)
Time of concentration =    6.68 min.
Rainfall intensity =     7.212(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1       15.881      6.56                7.295
2        1.073      6.68                7.212
Qmax(1) =
```

```
           1.000 *    1.000 *    15.881) +
           1.000 *    0.982 *     1.073) + =      16.935
Qmax(2) =
           0.989 *    1.000 *    15.881) +
           1.000 *    1.000 *     1.073) + =      16.773

Total of 2 main streams to confluence:
Flow rates before confluence point:
      15.881       1.073
Maximum flow rates at confluence using above data:
       16.935       16.773
Area of streams before confluence:
        5.400        0.310


Results of confluence:
Total flow rate =     16.935(CFS)
Time of concentration =     6.564 min.
Effective stream area after confluence  =      5.710(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      311.000 to Point/Station      316.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =   694.400(Ft.)
Downstream point/station elevation =   693.800(Ft.)
Pipe length  =    87.00(Ft.) Slope =   0.0069  Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    16.935(CFS)
Nearest computed pipe diameter  =     24.00(In.)
Calculated individual pipe flow  =    16.935(CFS)
Normal flow depth in pipe =   17.81(In.)
Flow top width inside pipe =   21.00(In.)
Critical Depth =   17.79(In.)
Pipe flow velocity =      6.77(Ft/s)
Travel time through pipe =    0.21 min.
Time of concentration (TC) =     6.78 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      311.000 to Point/Station      316.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      5.710(Ac.)
Runoff from this stream =     16.935(CFS)
Time of concentration =    6.78 min.
Rainfall intensity =     7.146(In/Hr)
Program is now starting with Main Stream No. 2
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      312.000 to Point/Station      313.000
**** INITIAL AREA EVALUATION ****
----------------------------------------------------------------------------
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[MEDIUM DENSITY RESIDENTIAL                  ]
(4.3 DU/A or Less       )
Impervious value, Ai = 0.300
Sub-Area C Value = 0.480
Initial subarea total flow distance  =   96.000(Ft.)
Highest elevation =  754.200(Ft.)
Lowest elevation =  741.000(Ft.)
Elevation difference =   13.200(Ft.) Slope = 13.750 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 100.00 (Ft)
for the top area slope value of  13.75 %, in a development type of
 4.3 DU/A or Less
In Accordance With Figure 3-3
Initial Area Time of Concentration =   4.66 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.4800)*( 100.000^.5)/(  13.750^(1/3)]=   4.66
Calculated TC of    4.658 minutes is less than 5 minutes,
 resetting TC to 5.0 minutes for rainfall intensity calculations
Rainfall intensity (I) =      8.695(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.480
Subarea runoff =      1.002(CFS)
Total initial stream area =        0.240(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      313.000 to Point/Station      314.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
----------------------------------------------------------------------------
Top of street segment elevation =   741.000(Ft.)
End of street segment elevation =   727.200(Ft.)
Length of street segment  =   195.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  12.000(Ft.)
Distance from crown to crossfall grade break  =  10.500(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [2] side(s) of the street
Distance from curb to property line  =   8.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   1.500(Ft.)
```

```
Gutter hike from flowline =  2.000(In.)
 Manning's N in gutter =  0.0150
 Manning's N from gutter to grade break =  0.0150
 Manning's N from grade break to crown =  0.0150
Estimated mean flow rate at midpoint of street =      3.661(CFS)
Depth of flow =   0.247(Ft.), Average velocity =   4.497(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =   5.519(Ft.)
Flow velocity =   4.50(Ft/s)
Travel time =    0.72 min.     TC =    5.38  min.
 Adding area flow to street
Rainfall intensity (I) =      8.292(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[MEDIUM DENSITY RESIDENTIAL                 ]
(4.3 DU/A or Less       )
Impervious value, Ai = 0.300
Sub-Area C Value = 0.480
Rainfall intensity =      8.292(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.480  CA =      0.744
Subarea runoff =      5.168(CFS) for      1.310(Ac.)
Total runoff =      6.169(CFS)  Total area =       1.550(Ac.)
Street flow at end of street =      6.169(CFS)
Half street flow at end of street =      3.085(CFS)
Depth of flow =   0.280(Ft.), Average velocity =   5.001(Ft/s)
Flow width (from curb towards crown)=   7.172(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      314.000 to Point/Station      315.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =   723.200(Ft.)
Downstream point/station elevation =   694.100(Ft.)
Pipe length  =   132.00(Ft.) Slope =   0.2205  Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     6.169(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     6.169(CFS)
Normal flow depth in pipe =    6.06(In.)
Flow top width inside pipe =    8.44(In.)
Critical depth could not be calculated.
Pipe flow velocity =     19.51(Ft/s)
Travel time through pipe =    0.11 min.
Time of concentration (TC) =     5.49 min.


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```

```
Process from Point/Station      315.000 to Point/Station      315.000
**** SUBAREA FLOW ADDITION ****
------------------------------------------------------------------------
Rainfall intensity (I) =      8.182(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[MEDIUM DENSITY RESIDENTIAL                 ]
(4.3 DU/A or Less       )
Impervious value, Ai = 0.300
Sub-Area C Value = 0.480
Time of concentration =     5.49 min.
Rainfall intensity =      8.182(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.480  CA =      0.989
Subarea runoff =      1.921(CFS) for      0.510(Ac.)
Total runoff =      8.090(CFS)  Total area =       2.060(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      315.000 to Point/Station      316.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
------------------------------------------------------------------------
Upstream point/station elevation =   694.100(Ft.)
Downstream point/station elevation =   693.800(Ft.)
Pipe length  =    89.00(Ft.) Slope =   0.0034  Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     8.090(CFS)
Nearest computed pipe diameter  =     21.00(In.)
Calculated individual pipe flow  =     8.090(CFS)
Normal flow depth in pipe =   15.28(In.)
Flow top width inside pipe =   18.70(In.)
Critical Depth =   12.65(In.)
Pipe flow velocity =      4.32(Ft/s)
Travel time through pipe =    0.34 min.
Time of concentration (TC) =     5.84 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      315.000 to Point/Station      316.000
**** CONFLUENCE OF MAIN STREAMS ****
------------------------------------------------------------------------
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      2.060(Ac.)
Runoff from this stream =      8.090(CFS)
Time of concentration =    5.84 min.
Rainfall intensity =     7.868(In/Hr)
Summary of stream data:
```

```
Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       16.935      6.78                7.146
2        8.090      5.84                7.868
Qmax(1) =
           1.000 *    1.000 *    16.935) +
           0.908 *    1.000 *     8.090) + =      24.283
Qmax(2) =
           1.000 *    0.861 *    16.935) +
           1.000 *    1.000 *     8.090) + =      22.677

Total of 2 main streams to confluence:
Flow rates before confluence point:
      16.935       8.090
Maximum flow rates at confluence using above data:
       24.283       22.677
Area of streams before confluence:
        5.710        2.060


Results of confluence:
Total flow rate =     24.283(CFS)
Time of concentration =     6.778 min.
Effective stream area after confluence  =      7.770(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      316.000 to Point/Station      401.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =   693.800(Ft.)
Downstream point/station elevation =   693.500(Ft.)
Pipe length  =    47.00(Ft.) Slope =   0.0064  Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    24.283(CFS)
Nearest computed pipe diameter  =     27.00(In.)
Calculated individual pipe flow  =    24.283(CFS)
Normal flow depth in pipe =   21.70(In.)
Flow top width inside pipe =   21.44(In.)
Critical Depth =   20.69(In.)
Pipe flow velocity =      7.09(Ft/s)
Travel time through pipe =    0.11 min.
Time of concentration (TC) =     6.89 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      401.000 to Point/Station      401.000
**** SUBAREA FLOW ADDITION ****
________________________________________________________________________
```

```
Rainfall intensity (I) =      7.071(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[MEDIUM DENSITY RESIDENTIAL                 ]
(4.3 DU/A or Less       )
Impervious value, Ai = 0.300
Sub-Area C Value = 0.480
Time of concentration =     6.89 min.
Rainfall intensity =      7.071(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.497  CA =      4.349
Subarea runoff =      6.474(CFS) for      0.990(Ac.)
Total runoff =     30.757(CFS)  Total area =       8.760(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      316.000 to Point/Station      401.000
**** 6 HOUR HYDROGRAPH ****
________________________________________________________________________
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Hydrograph Data - Section 6, San Diego County Hydrology manual, June 2003


Time of Concentration =   6.89
Basin Area =     8.76 Acres
6 Hour Rainfall =  3.300 Inches
Runoff Coefficient =  0.497
Peak Discharge =    30.76 CFS
     Time (Min)     Discharge (CFS)
       0               0.000
       6               0.856
       12               0.865
       18               0.885
       24               0.895
       30               0.916
       36               0.928
       42               0.951
       48               0.963
       54               0.989
       60               1.003
       66               1.032
       72               1.047
       78               1.079
       84               1.097
       90               1.133
       96               1.152
       102               1.194
       108               1.216
```

114	1.264
120	1.290
126	1.345
132	1.376
138	1.442
144	1.478
150	1.558
156	1.602
162	1.701
168	1.757
174	1.884
180	1.957
186	2.127
192	2.228
198	2.471
204	2.620
210	3.004
216	3.257
222	3.981
228	4.534
234	6.657
240	9.380
246	30.757
252	5.339
258	3.572
264	2.795
270	2.341
276	2.038
282	1.818
288	1.650
294	1.517
300	1.408
306	1.317
312	1.239
318	1.173
324	1.114
330	1.063
336	1.017
342	0.976
348	0.939
354	0.905
360	0.875
366	0.846

++

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 1 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	7.7	15.4	23.1	30.8
0+ 0	0.0000	0.00	Q				
0+ 1	0.0002	0.14	Q				
0+ 2	0.0006	0.29	Q				
0+ 3	0.0012	0.43	Q				
0+ 4	0.0020	0.57	Q				
0+ 5	0.0029	0.71	Q				
0+ 6	0.0041	0.86	VQ				
0+ 7	0.0053	0.86	VQ				
0+ 8	0.0065	0.86	VQ				
0+ 9	0.0077	0.86	VQ				
0+10	0.0089	0.86	VQ				
0+11	0.0101	0.86	VQ				
0+12	0.0112	0.87	VQ				
0+13	0.0124	0.87	VQ				
0+14	0.0136	0.87	VQ				
0+15	0.0148	0.87	VQ				
0+16	0.0161	0.88	VQ				
0+17	0.0173	0.88	VQ				
0+18	0.0185	0.88	VQ				
0+19	0.0197	0.89	VQ				
0+20	0.0209	0.89	VQ				
0+21	0.0222	0.89	VQ				
0+22	0.0234	0.89	VQ				
0+23	0.0246	0.89	VQ				
0+24	0.0258	0.89	VQ				
0+25	0.0271	0.90	VQ				
0+26	0.0283	0.90	VQ				
0+27	0.0296	0.91	|Q				
0+28	0.0308	0.91	|Q				
0+29	0.0321	0.91	|Q				
0+30	0.0333	0.92	|Q				
0+31	0.0346	0.92	|Q				
0+32	0.0359	0.92	|Q				
0+33	0.0371	0.92	|Q				
0+34	0.0384	0.92	|Q				
0+35	0.0397	0.93	|Q				
0+36	0.0410	0.93	|Q				
0+37	0.0423	0.93	|Q				
0+38	0.0435	0.94	|Q				
0+39	0.0448	0.94	|Q				
0+40	0.0461	0.94	|Q				
0+41	0.0474	0.95	|Q				
0+42	0.0488	0.95	|Q				
0+43	0.0501	0.95	|Q				
0+44	0.0514	0.96	|Q				
0+45	0.0527	0.96	|Q				
0+46	0.0540	0.96	|Q				
0+47	0.0553	0.96	|Q				

```
0+48       0.0567      0.96  |Q        |         |         |         |
0+49       0.0580      0.97  |Q        |         |         |         |
0+50       0.0593      0.97  |QV       |         |         |         |
0+51       0.0607      0.98  |QV       |         |         |         |
0+52       0.0620      0.98  |QV       |         |         |         |
0+53       0.0634      0.99  |QV       |         |         |         |
0+54       0.0648      0.99  |QV       |         |         |         |
0+55       0.0661      0.99  |QV       |         |         |         |
0+56       0.0675      0.99  |QV       |         |         |         |
0+57       0.0689      1.00  |QV       |         |         |         |
0+58       0.0702      1.00  |QV       |         |         |         |
0+59       0.0716      1.00  |QV       |         |         |         |
1+ 0       0.0730      1.00  |QV       |         |         |         |
1+ 1       0.0744      1.01  |QV       |         |         |         |
1+ 2       0.0758      1.01  |QV       |         |         |         |
1+ 3       0.0772      1.02  |QV       |         |         |         |
1+ 4       0.0786      1.02  |QV       |         |         |         |
1+ 5       0.0800      1.03  |QV       |         |         |         |
1+ 6       0.0814      1.03  |QV       |         |         |         |
1+ 7       0.0829      1.03  |QV       |         |         |         |
1+ 8       0.0843      1.04  |QV       |         |         |         |
1+ 9       0.0857      1.04  |QV       |         |         |         |
1+10       0.0872      1.04  |QV       |         |         |         |
1+11       0.0886      1.04  |Q V      |         |         |         |
1+12       0.0900      1.05  |Q V      |         |         |         |
1+13       0.0915      1.05  |Q V      |         |         |         |
1+14       0.0929      1.06  |Q V      |         |         |         |
1+15       0.0944      1.06  |Q V      |         |         |         |
1+16       0.0959      1.07  |Q V      |         |         |         |
1+17       0.0974      1.07  |Q V      |         |         |         |
1+18       0.0988      1.08  |Q V      |         |         |         |
1+19       0.1003      1.08  |Q V      |         |         |         |
1+20       0.1018      1.09  |Q V      |         |         |         |
1+21       0.1033      1.09  |Q V      |         |         |         |
1+22       0.1048      1.09  |Q V      |         |         |         |
1+23       0.1063      1.09  |Q V      |         |         |         |
1+24       0.1078      1.10  |Q V      |         |         |         |
1+25       0.1094      1.10  |Q V      |         |         |         |
1+26       0.1109      1.11  |Q V      |         |         |         |
1+27       0.1124      1.11  |Q V      |         |         |         |
1+28       0.1140      1.12  |Q V      |         |         |         |
1+29       0.1155      1.13  |Q V      |         |         |         |
1+30       0.1171      1.13  |Q  V     |         |         |         |
1+31       0.1187      1.14  |Q  V     |         |         |         |
1+32       0.1202      1.14  |Q  V     |         |         |         |
1+33       0.1218      1.14  |Q  V     |         |         |         |
1+34       0.1234      1.15  |Q  V     |         |         |         |
1+35       0.1250      1.15  |Q  V     |         |         |         |
1+36       0.1265      1.15  |Q  V     |         |         |         |
1+37       0.1281      1.16  |Q  V     |         |         |         |
```

```
1+38       0.1297      1.17  |Q  V     |          |          |          |
1+39       0.1314      1.17  |Q  V     |          |          |          |
1+40       0.1330      1.18  |Q  V     |          |          |          |
1+41       0.1346      1.19  |Q  V     |          |          |          |
1+42       0.1363      1.19  |Q  V     |          |          |          |
1+43       0.1379      1.20  |Q  V     |          |          |          |
1+44       0.1396      1.20  |Q  V     |          |          |          |
1+45       0.1412      1.20  |Q  V     |          |          |          |
1+46       0.1429      1.21  |Q  V     |          |          |          |
1+47       0.1446      1.21  |Q  V     |          |          |          |
1+48       0.1462      1.22  |Q   V    |          |          |          |
1+49       0.1479      1.22  |Q   V    |          |          |          |
1+50       0.1496      1.23  |Q   V    |          |          |          |
1+51       0.1513      1.24  |Q   V    |          |          |          |
1+52       0.1531      1.25  |Q   V    |          |          |          |
1+53       0.1548      1.26  |Q   V    |          |          |          |
1+54       0.1565      1.26  |Q   V    |          |          |          |
1+55       0.1583      1.27  |Q   V    |          |          |          |
1+56       0.1600      1.27  |Q   V    |          |          |          |
1+57       0.1618      1.28  |Q   V    |          |          |          |
1+58       0.1635      1.28  |Q   V    |          |          |          |
1+59       0.1653      1.29  |Q   V    |          |          |          |
2+ 0       0.1671      1.29  |Q   V    |          |          |          |
2+ 1       0.1689      1.30  |Q   V    |          |          |          |
2+ 2       0.1707      1.31  |Q   V    |          |          |          |
2+ 3       0.1725      1.32  |Q   V    |          |          |          |
2+ 4       0.1743      1.33  |Q   V    |          |          |          |
2+ 5       0.1762      1.34  |Q    V   |          |          |          |
2+ 6       0.1780      1.35  |Q    V   |          |          |          |
2+ 7       0.1799      1.35  |Q    V   |          |          |          |
2+ 8       0.1817      1.36  |Q    V   |          |          |          |
2+ 9       0.1836      1.36  |Q    V   |          |          |          |
2+10       0.1855      1.37  |Q    V   |          |          |          |
2+11       0.1874      1.37  |Q    V   |          |          |          |
2+12       0.1893      1.38  |Q    V   |          |          |          |
2+13       0.1912      1.39  |Q    V   |          |          |          |
2+14       0.1931      1.40  |Q    V   |          |          |          |
2+15       0.1951      1.41  |Q    V   |          |          |          |
2+16       0.1970      1.42  |Q    V   |          |          |          |
2+17       0.1990      1.43  |Q    V   |          |          |          |
2+18       0.2010      1.44  |Q    V   |          |          |          |
2+19       0.2030      1.45  |Q    V   |          |          |          |
2+20       0.2050      1.45  |Q     V  |          |          |          |
2+21       0.2070      1.46  |Q     V  |          |          |          |
2+22       0.2090      1.47  |Q     V  |          |          |          |
2+23       0.2110      1.47  |Q     V  |          |          |          |
2+24       0.2131      1.48  |Q     V  |          |          |          |
2+25       0.2151      1.49  |Q     V  |          |          |          |
2+26       0.2172      1.50  |Q     V  |          |          |          |
2+27       0.2193      1.52  |Q     V  |          |          |          |
```

```
2+28       0.2214      1.53  |Q     V  |          |          |          |
2+29       0.2235      1.54  | Q    V  |          |          |          |
2+30       0.2257      1.56  | Q    V  |          |          |          |
2+31       0.2278      1.57  | Q    V  |          |          |          |
2+32       0.2300      1.57  | Q    V  |          |          |          |
2+33       0.2322      1.58  | Q    V  |          |          |          |
2+34       0.2343      1.59  | Q     V |          |          |          |
2+35       0.2365      1.59  | Q     V |          |          |          |
2+36       0.2387      1.60  | Q     V |          |          |          |
2+37       0.2410      1.62  | Q     V |          |          |          |
2+38       0.2432      1.64  | Q     V |          |          |          |
2+39       0.2455      1.65  | Q     V |          |          |          |
2+40       0.2478      1.67  | Q     V |          |          |          |
2+41       0.2501      1.68  | Q     V |          |          |          |
2+42       0.2525      1.70  | Q     V |          |          |          |
2+43       0.2548      1.71  | Q     V |          |          |          |
2+44       0.2572      1.72  | Q     V |          |          |          |
2+45       0.2596      1.73  | Q     V |          |          |          |
2+46       0.2620      1.74  | Q     V |          |          |          |
2+47       0.2644      1.75  | Q      V|          |          |          |
2+48       0.2668      1.76  | Q      V|          |          |          |
2+49       0.2692      1.78  | Q      V|          |          |          |
2+50       0.2717      1.80  | Q      V|          |          |          |
2+51       0.2742      1.82  | Q      V|          |          |          |
2+52       0.2768      1.84  | Q      V|          |          |          |
2+53       0.2793      1.86  | Q      V|          |          |          |
2+54       0.2819      1.88  | Q      V|          |          |          |
2+55       0.2845      1.90  | Q      V|          |          |          |
2+56       0.2872      1.91  | Q      V|          |          |          |
2+57       0.2898      1.92  | Q      V|          |          |          |
2+58       0.2925      1.93  | Q       V          |          |          |
2+59       0.2952      1.95  | Q       V          |          |          |
3+ 0       0.2979      1.96  | Q       V          |          |          |
3+ 1       0.3006      1.99  | Q       V          |          |          |
3+ 2       0.3034      2.01  | Q       V          |          |          |
3+ 3       0.3062      2.04  | Q       V          |          |          |
3+ 4       0.3090      2.07  | Q       V          |          |          |
3+ 5       0.3119      2.10  | Q       V          |          |          |
3+ 6       0.3149      2.13  | Q       V          |          |          |
3+ 7       0.3178      2.14  | Q       V          |          |          |
3+ 8       0.3208      2.16  | Q       V          |          |          |
3+ 9       0.3238      2.18  | Q       |V         |          |          |
3+10       0.3268      2.19  | Q       |V         |          |          |
3+11       0.3298      2.21  | Q       |V         |          |          |
3+12       0.3329      2.23  | Q       |V         |          |          |
3+13       0.3360      2.27  | Q       |V         |          |          |
3+14       0.3392      2.31  |  Q      |V         |          |          |
3+15       0.3425      2.35  |  Q      |V         |          |          |
3+16       0.3458      2.39  |  Q      |V         |          |          |
3+17       0.3491      2.43  |  Q      |V         |          |          |
```

```
3+18       0.3525      2.47  |  Q      | V       |         |         |
3+19       0.3559      2.50  |  Q      | V       |         |         |
3+20       0.3594      2.52  |  Q      | V       |         |         |
3+21       0.3629      2.55  |  Q      | V       |         |         |
3+22       0.3665      2.57  |  Q      | V       |         |         |
3+23       0.3700      2.60  |  Q      | V       |         |         |
3+24       0.3736      2.62  |  Q      | V       |         |         |
3+25       0.3773      2.68  |  Q      | V       |         |         |
3+26       0.3811      2.75  |  Q      |  V      |         |         |
3+27       0.3850      2.81  |  Q      |  V      |         |         |
3+28       0.3890      2.88  |  Q      |  V      |         |         |
3+29       0.3930      2.94  |  Q      |  V      |         |         |
3+30       0.3971      3.00  |  Q      |  V      |         |         |
3+31       0.4013      3.05  |  Q      |  V      |         |         |
3+32       0.4056      3.09  |   Q     |  V      |         |         |
3+33       0.4099      3.13  |   Q     |   V     |         |         |
3+34       0.4143      3.17  |   Q     |   V     |         |         |
3+35       0.4187      3.21  |   Q     |   V     |         |         |
3+36       0.4232      3.26  |   Q     |   V     |         |         |
3+37       0.4278      3.38  |   Q     |   V     |         |         |
3+38       0.4327      3.50  |   Q     |   V     |         |         |
3+39       0.4376      3.62  |   Q     |   V     |         |         |
3+40       0.4428      3.74  |   Q     |    V    |         |         |
3+41       0.4481      3.86  |    Q    |    V    |         |         |
3+42       0.4536      3.98  |    Q    |    V    |         |         |
3+43       0.4592      4.07  |    Q    |    V    |         |         |
3+44       0.4649      4.17  |    Q    |    V    |         |         |
3+45       0.4708      4.26  |    Q    |     V   |         |         |
3+46       0.4768      4.35  |    Q    |     V   |         |         |
3+47       0.4829      4.44  |    Q    |     V   |         |         |
3+48       0.4892      4.53  |    Q    |     V   |         |         |
3+49       0.4959      4.89  |     Q   |     V   |         |         |
3+50       0.5031      5.24  |     Q   |      V  |         |         |
3+51       0.5108      5.60  |      Q  |      V  |         |         |
3+52       0.5190      5.95  |      Q  |      V  |         |         |
3+53       0.5277      6.30  |       Q |       V |         |         |
3+54       0.5369      6.66  |       Q |       V |         |         |
3+55       0.5467      7.11  |        Q|       V |         |         |
3+56       0.5571      7.56  |        Q|        V|         |         |
3+57       0.5681      8.02  |         Q        V|         |         |
3+58       0.5798      8.47  |         |Q       V|         |         |
3+59       0.5921      8.93  |         |Q        V        |         |
4+ 0       0.6050      9.38  |         | Q       V        |         |
4+ 1       0.6228     12.94  |         |     Q   |V        |         |
4+ 2       0.6456     16.51  |         |         |QV       |         |
4+ 3       0.6732     20.07  |         |         |  V  Q   |         |
4+ 4       0.7058     23.63  |         |         |   V     Q         |
4+ 5       0.7432     27.19  |         |         |    V    |    Q    |
4+ 6       0.7856     30.76  |         |         |     V   |         Q
4+ 7       0.8221     26.52  |         |         |       V |   Q     |
```

```
4+ 8       0.8528     22.28  |          |          |        QV|          |
4+ 9       0.8777     18.05  |          |          |  Q       V          |
4+10       0.8967     13.81  |          |       Q  |          V          |
4+11       0.9099      9.58  |          |  Q       |          |V         |
4+12       0.9172      5.34  |      Q   |          |          |V         |
4+13       0.9242      5.04  |      Q   |          |          |V         |
4+14       0.9307      4.75  |      Q   |          |          |V         |
4+15       0.9369      4.46  |     Q    |          |          | V        |
4+16       0.9426      4.16  |     Q    |          |          | V        |
4+17       0.9479      3.87  |     Q    |          |          | V        |
4+18       0.9528      3.57  |    Q     |          |          | V        |
4+19       0.9576      3.44  |    Q     |          |          | V        |
4+20       0.9622      3.31  |    Q     |          |          | V        |
4+21       0.9665      3.18  |    Q     |          |          |  V       |
4+22       0.9707      3.05  |   Q      |          |          |  V       |
4+23       0.9748      2.92  |   Q      |          |          |  V       |
4+24       0.9786      2.80  |   Q      |          |          |  V       |
4+25       0.9824      2.72  |   Q      |          |          |  V       |
4+26       0.9860      2.64  |   Q      |          |          |  V       |
4+27       0.9895      2.57  |   Q      |          |          |  V       |
4+28       0.9930      2.49  |   Q      |          |          |  V       |
4+29       0.9963      2.42  |   Q      |          |          |   V      |
4+30       0.9995      2.34  |   Q      |          |          |   V      |
4+31       1.0027      2.29  |  Q       |          |          |   V      |
4+32       1.0058      2.24  |  Q       |          |          |   V      |
4+33       1.0088      2.19  |  Q       |          |          |   V      |
4+34       1.0117      2.14  |  Q       |          |          |   V      |
4+35       1.0146      2.09  |  Q       |          |          |   V      |
4+36       1.0174      2.04  |  Q       |          |          |   V      |
4+37       1.0202      2.00  |  Q       |          |          |   V      |
4+38       1.0229      1.96  |  Q       |          |          |   V      |
4+39       1.0255      1.93  |  Q       |          |          |    V     |
4+40       1.0281      1.89  |  Q       |          |          |    V     |
4+41       1.0307      1.85  |  Q       |          |          |    V     |
4+42       1.0332      1.82  |  Q       |          |          |    V     |
4+43       1.0357      1.79  |  Q       |          |          |    V     |
4+44       1.0381      1.76  |  Q       |          |          |    V     |
4+45       1.0405      1.73  |  Q       |          |          |    V     |
4+46       1.0428      1.71  |  Q       |          |          |    V     |
4+47       1.0451      1.68  |  Q       |          |          |    V     |
4+48       1.0474      1.65  |  Q       |          |          |    V     |
4+49       1.0497      1.63  |  Q       |          |          |    V     |
4+50       1.0519      1.61  |  Q       |          |          |    V     |
4+51       1.0541      1.58  |  Q       |          |          |     V    |
4+52       1.0562      1.56  |  Q       |          |          |     V    |
4+53       1.0583      1.54  |  Q       |          |          |     V    |
4+54       1.0604      1.52  | Q        |          |          |     V    |
4+55       1.0625      1.50  | Q        |          |          |     V    |
4+56       1.0645      1.48  | Q        |          |          |     V    |
4+57       1.0665      1.46  | Q        |          |          |     V    |
```

```
4+58       1.0685      1.44  |Q        |         |         |     V   |
4+59       1.0705      1.43  |Q        |         |         |     V   |
5+ 0       1.0724      1.41  |Q        |         |         |     V   |
5+ 1       1.0743      1.39  |Q        |         |         |     V   |
5+ 2       1.0762      1.38  |Q        |         |         |     V   |
5+ 3       1.0781      1.36  |Q        |         |         |     V   |
5+ 4       1.0800      1.35  |Q        |         |         |     V   |
5+ 5       1.0818      1.33  |Q        |         |         |      V  |
5+ 6       1.0836      1.32  |Q        |         |         |      V  |
5+ 7       1.0854      1.30  |Q        |         |         |      V  |
5+ 8       1.0872      1.29  |Q        |         |         |      V  |
5+ 9       1.0889      1.28  |Q        |         |         |      V  |
5+10       1.0907      1.27  |Q        |         |         |      V  |
5+11       1.0924      1.25  |Q        |         |         |      V  |
5+12       1.0941      1.24  |Q        |         |         |      V  |
5+13       1.0958      1.23  |Q        |         |         |      V  |
5+14       1.0975      1.22  |Q        |         |         |      V  |
5+15       1.0992      1.21  |Q        |         |         |      V  |
5+16       1.1008      1.19  |Q        |         |         |      V  |
5+17       1.1024      1.18  |Q        |         |         |      V  |
5+18       1.1040      1.17  |Q        |         |         |      V  |
5+19       1.1056      1.16  |Q        |         |         |      V  |
5+20       1.1072      1.15  |Q        |         |         |      V  |
5+21       1.1088      1.14  |Q        |         |         |      V  |
5+22       1.1104      1.13  |Q        |         |         |      V  |
5+23       1.1119      1.12  |Q        |         |         |       V |
5+24       1.1135      1.11  |Q        |         |         |       V |
5+25       1.1150      1.11  |Q        |         |         |       V |
5+26       1.1165      1.10  |Q        |         |         |       V |
5+27       1.1180      1.09  |Q        |         |         |       V |
5+28       1.1195      1.08  |Q        |         |         |       V |
5+29       1.1210      1.07  |Q        |         |         |       V |
5+30       1.1224      1.06  |Q        |         |         |       V |
5+31       1.1239      1.06  |Q        |         |         |       V |
5+32       1.1253      1.05  |Q        |         |         |       V |
5+33       1.1267      1.04  |Q        |         |         |       V |
5+34       1.1282      1.03  |Q        |         |         |       V |
5+35       1.1296      1.02  |Q        |         |         |       V |
5+36       1.1310      1.02  |Q        |         |         |       V |
5+37       1.1324      1.01  |Q        |         |         |       V |
5+38       1.1338      1.00  |Q        |         |         |       V |
5+39       1.1351      1.00  |Q        |         |         |       V |
5+40       1.1365      0.99  |Q        |         |         |       V |
5+41       1.1378      0.98  |Q        |         |         |       V |
5+42       1.1392      0.98  |Q        |         |         |       V |
5+43       1.1405      0.97  |Q        |         |         |        V|
5+44       1.1419      0.96  |Q        |         |         |        V|
5+45       1.1432      0.96  |Q        |         |         |        V|
5+46       1.1445      0.95  |Q        |         |         |        V|
5+47       1.1458      0.95  |Q        |         |         |        V|
```

```
    5+48       1.1471      0.94  |Q        |         |         |        V|
    5+49       1.1484      0.93  |Q        |         |         |        V|
    5+50       1.1496      0.93  |Q        |         |         |        V|
    5+51       1.1509      0.92  |Q        |         |         |        V|
    5+52       1.1522      0.92  |Q        |         |         |        V|
    5+53       1.1534      0.91  |Q        |         |         |        V|
    5+54       1.1547      0.91  |Q        |         |         |        V|
    5+55       1.1559      0.90  |Q        |         |         |        V|
    5+56       1.1572      0.90  |Q        |         |         |        V|
    5+57       1.1584      0.89  |Q        |         |         |        V|
    5+58       1.1596      0.88  |Q        |         |         |        V|
    5+59       1.1608      0.88  |Q        |         |         |        V|
    6+ 0       1.1620      0.87  |Q        |         |         |        V|
    6+ 1       1.1632      0.87  |Q        |         |         |        V|
    6+ 2       1.1644      0.87  |Q        |         |         |        V|
    6+ 3       1.1656      0.86  |Q        |         |         |        V|
    6+ 4       1.1668      0.86  |Q        |         |         |        V|
    6+ 5       1.1679      0.85  |Q        |         |         |        V|
    6+ 6       1.1691      0.85  |Q        |         |         |        V|
-------------------------------------------------------------------------

        End of computations, total study area =          8.760 (Ac.)
```

```
                San Diego County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c)1991-2018 Version 9.0

Rational method hydrology  program based on
San Diego County Flood Control Division 2003 hydrology manual
        Rational Hydrology Study        Date: 06/21/21
------------------------------------------------------------------------
108-001 Idaho (Escondido Estates)
Onsite Proposed Condition 317-402
Extrapolated storm from County Isopluvials
TH
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------


Program License Serial Number 6440

------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
English (in-lb) input data Units used

Map data precipitation entered:
6 hour,  precipitation(inches) =  3.300
24 hour precipitation(inches) =  7.300
P6/P24 =    45.2%
San Diego hydrology manual 'C' values used


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      317.000 to Point/Station      318.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[MEDIUM DENSITY RESIDENTIAL                 ]
(4.3 DU/A or Less       )
Impervious value, Ai = 0.300
Sub-Area C Value = 0.480
Initial subarea total flow distance  =  169.000(Ft.)
Highest elevation =  733.300(Ft.)
Lowest elevation =  724.000(Ft.)
Elevation difference =    9.300(Ft.) Slope =  5.503 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 100.00 (Ft)
```

```
for the top area slope value of   5.50 %, in a development type of
 4.3 DU/A or Less
In Accordance With Figure 3-3
Initial Area Time of Concentration =   6.32 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.4800)*( 100.000^.5)/(   5.503^(1/3)]=   6.32
Rainfall intensity (I) =      7.474(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.480
Subarea runoff =      0.215(CFS)
Total initial stream area =        0.060(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      318.000 to Point/Station      325.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      1.137(CFS)
Depth of flow =   0.541(Ft.), Average velocity =   7.772(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2              1.00              0.00
        3              1.00              1.00
Manning's 'N' friction factor =   0.014
------------------------------------------------------------------
Sub-Channel flow  =      1.137(CFS)
  '     '        flow top width =      0.541(Ft.)
  '     '    velocity=    7.772(Ft/s)
  '     '        area =      0.146(Sq.Ft)
  '     '        Froude number =     2.634

Upstream point elevation =   724.000(Ft.)
Downstream point elevation =   697.000(Ft.)
Flow length =   272.000(Ft.)
Travel time  =    0.58 min.
Time of concentration =    6.90 min.
Depth of flow =   0.541(Ft.)
Average velocity =   7.772(Ft/s)
Total irregular channel flow =     1.137(CFS)
Irregular channel normal depth above invert elev. =   0.541(Ft.)
Average velocity of channel(s) =   7.772(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      7.061(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[MEDIUM DENSITY RESIDENTIAL                 ]
```

```
(4.3 DU/A or Less       )
Impervious value, Ai = 0.300
Sub-Area C Value = 0.480
Rainfall intensity =      7.061(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.480  CA =      0.283
Subarea runoff =      1.784(CFS) for      0.530(Ac.)
Total runoff =      2.000(CFS)  Total area =       0.590(Ac.)
Depth of flow =   0.668(Ft.), Average velocity =   8.950(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      318.000 to Point/Station      325.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      0.590(Ac.)
Runoff from this stream =      2.000(CFS)
Time of concentration =    6.90 min.
Rainfall intensity =     7.061(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      319.000 to Point/Station      320.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[LOW DENSITY RESIDENTIAL                     ]
(1.0 DU/A or Less       )
Impervious value, Ai = 0.100
Sub-Area C Value = 0.360
Initial subarea total flow distance  =  100.000(Ft.)
Highest elevation =  767.000(Ft.)
Lowest elevation =  759.100(Ft.)
Elevation difference =    7.900(Ft.) Slope =  7.900 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 100.00 (Ft)
for the top area slope value of   7.90 %, in a development type of
 1.0 DU/A or Less
In Accordance With Figure 3-3
Initial Area Time of Concentration =   6.69 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.3600)*( 100.000^.5)/(   7.900^(1/3)]=   6.69
Rainfall intensity (I) =      7.207(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.360
```

```
Subarea runoff =      0.234(CFS)
Total initial stream area =        0.090(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      320.000 to Point/Station      324.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =      3.485(CFS)
Depth of flow =   0.190(Ft.), Average velocity =   1.934(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2             50.00              0.00
        3            100.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =      3.485(CFS)
  '     '        flow top width =     18.982(Ft.)
  '     '    velocity=    1.934(Ft/s)
  '     '        area =      1.802(Sq.Ft)
  '     '        Froude number =     1.106

Upstream point elevation =   759.100(Ft.)
Downstream point elevation =   730.600(Ft.)
Flow length =   455.000(Ft.)
Travel time  =    3.92 min.
Time of concentration =   10.61 min.
Depth of flow =   0.190(Ft.)
Average velocity =   1.934(Ft/s)
Total irregular channel flow =     3.485(CFS)
Irregular channel normal depth above invert elev. =   0.190(Ft.)
Average velocity of channel(s) =   1.934(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      5.352(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[LOW DENSITY RESIDENTIAL                     ]
(1.0 DU/A or Less       )
Impervious value, Ai = 0.100
Sub-Area C Value = 0.360
Rainfall intensity =      5.352(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.360  CA =      1.242
Subarea runoff =      6.414(CFS) for      3.360(Ac.)
Total runoff =      6.648(CFS)  Total area =       3.450(Ac.)
```

```
Depth of flow =   0.242(Ft.), Average velocity =   2.273(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      320.000 to Point/Station      324.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      3.450(Ac.)
Runoff from this stream =      6.648(CFS)
Time of concentration =   10.61 min.
Rainfall intensity =     5.352(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      321.000 to Point/Station      322.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Initial subarea total flow distance  =   96.000(Ft.)
Highest elevation =  767.000(Ft.)
Lowest elevation =  752.700(Ft.)
Elevation difference =   14.300(Ft.) Slope = 14.896 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 100.00 (Ft)
for the top area slope value of  14.90 %, in a development type of
 Permanent Open Space
In Accordance With Figure 3-3
Initial Area Time of Concentration =   5.85 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.3000)*( 100.000^.5)/(  14.896^(1/3)]=   5.85
Rainfall intensity (I) =      7.855(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.300
Subarea runoff =      0.165(CFS)
Total initial stream area =        0.070(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      322.000 to Point/Station      323.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
```

```
Estimated mean flow rate at midpoint of channel =      0.365(CFS)
Depth of flow =   0.423(Ft.), Average velocity =   2.044(Ft/s)
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2              1.00              0.00
        3              2.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =      0.365(CFS)
  '     '        flow top width =      0.846(Ft.)
  '     '    velocity=    2.044(Ft/s)
  '     '        area =      0.179(Sq.Ft)
  '     '        Froude number =     0.783

Upstream point elevation =   759.300(Ft.)
Downstream point elevation =   752.700(Ft.)
Flow length =   173.000(Ft.)
Travel time  =    1.41 min.
Time of concentration =    7.26 min.
Depth of flow =   0.423(Ft.)
Average velocity =   2.044(Ft/s)
Total irregular channel flow =     0.365(CFS)
Irregular channel normal depth above invert elev. =   0.423(Ft.)
Average velocity of channel(s) =   2.044(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      6.834(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[LOW DENSITY RESIDENTIAL                    ]
(1.0 DU/A or Less       )
Impervious value, Ai = 0.100
Sub-Area C Value = 0.360
Rainfall intensity =      6.834(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.343  CA =      0.082
Subarea runoff =      0.397(CFS) for      0.170(Ac.)
Total runoff =      0.562(CFS)  Total area =       0.240(Ac.)
Depth of flow =   0.497(Ft.), Average velocity =   2.276(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      323.000 to Point/Station      324.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =   752.700(Ft.)
```

```
Downstream point elevation =   730.600(Ft.)
Channel length thru subarea  =   203.000(Ft.)
Channel base width      =    1.000(Ft.)
Slope or 'Z' of left channel bank =   1.000
Slope or 'Z' of right channel bank =   1.000
Manning's 'N'    = 0.015
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =      0.562(CFS)
Depth of flow =   0.088(Ft.), Average velocity =   5.888(Ft/s)
Channel flow top width =    1.175(Ft.)
Flow Velocity =    5.89(Ft/s)
Travel time  =    0.57 min.
Time of concentration =    7.84 min.
Critical depth =      0.199(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      323.000 to Point/Station      324.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      0.240(Ac.)
Runoff from this stream =      0.562(CFS)
Time of concentration =    7.84 min.
Rainfall intensity =     6.506(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1        6.648     10.61                5.352
2        0.562      7.84                6.506
Qmax(1) =
           1.000 *    1.000 *     6.648) +
           0.823 *    1.000 *     0.562) + =       7.110
Qmax(2) =
           1.000 *    0.739 *     6.648) +
           1.000 *    1.000 *     0.562) + =       5.473

Total of 2 main streams to confluence:
Flow rates before confluence point:
       6.648       0.562
Maximum flow rates at confluence using above data:
        7.110        5.473
Area of streams before confluence:
        3.450        0.240
```

```
Results of confluence:
Total flow rate =      7.110(CFS)
Time of concentration =    10.608 min.
Effective stream area after confluence  =      3.690(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      324.000 to Point/Station      325.000
**** IMPROVED CHANNEL TRAVEL TIME ****
________________________________________________________________________
Upstream point elevation =   730.600(Ft.)
Downstream point elevation =   697.000(Ft.)
Channel length thru subarea  =   445.000(Ft.)
Channel base width      =    1.000(Ft.)
Slope or 'Z' of left channel bank =   1.000
Slope or 'Z' of right channel bank =   1.000
Estimated mean flow rate at midpoint of channel =      7.192(CFS)
Manning's 'N'    = 0.015
Maximum depth of channel  =    1.000(Ft.)
Flow(q) thru subarea =      7.192(CFS)
Depth of flow =   0.432(Ft.), Average velocity =  11.612(Ft/s)
Channel flow top width =    1.865(Ft.)
Flow Velocity =   11.61(Ft/s)
Travel time  =    0.64 min.
Time of concentration =   11.25 min.
Critical depth =      0.875(Ft.)
 Adding area flow to channel
Rainfall intensity (I) =      5.154(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      5.154(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.355  CA =      1.393
Subarea runoff =      0.071(CFS) for      0.230(Ac.)
Total runoff =      7.181(CFS)  Total area =       3.920(Ac.)
Depth of flow =   0.432(Ft.), Average velocity =  11.607(Ft/s)
Critical depth =      0.875(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      324.000 to Point/Station      325.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
```

```
In Main Stream number: 2
Stream flow area =      3.920(Ac.)
Runoff from this stream =      7.181(CFS)
Time of concentration =   11.25 min.
Rainfall intensity =     5.154(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                (In/Hr)


1        6.648     10.61                5.352
2        7.181     11.25                5.154
Qmax(1) =
           1.000 *    1.000 *     6.648) +
           1.000 *    0.943 *     7.181) + =      13.421
Qmax(2) =
           0.963 *    1.000 *     6.648) +
           1.000 *    1.000 *     7.181) + =      13.582

Total of 2 main streams to confluence:
Flow rates before confluence point:
       6.648       7.181
Maximum flow rates at confluence using above data:
       13.421       13.582
Area of streams before confluence:
        3.450        3.920


Results of confluence:
Total flow rate =     13.582(CFS)
Time of concentration =    11.247 min.
Effective stream area after confluence  =      7.370(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      325.000 to Point/Station      402.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
________________________________________________________________________
Upstream point/station elevation =   697.000(Ft.)
Downstream point/station elevation =   693.500(Ft.)
Pipe length  =    60.00(Ft.) Slope =   0.0583  Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =    13.582(CFS)
Nearest computed pipe diameter  =     15.00(In.)
Calculated individual pipe flow  =    13.582(CFS)
Normal flow depth in pipe =   10.83(In.)
Flow top width inside pipe =   13.44(In.)
Critical depth could not be calculated.
Pipe flow velocity =     14.32(Ft/s)
Travel time through pipe =    0.07 min.
```

Time of concentration (TC) = 11.32 min.

++
Process from Point/Station 325.000 to Point/Station 402.000
**** 6 HOUR HYDROGRAPH ****
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++
Hydrograph Data - Section 6, San Diego County Hydrology manual, June 2003

Time of Concentration = 11.32
Basin Area = 4.51 Acres
6 Hour Rainfall = 3.300 Inches
Runoff Coefficient = 0.584
Peak Discharge = 13.58 CFS

Time (Min)	Discharge (CFS)
0	0.000
11	0.518
22	0.528
33	0.551
44	0.564
55	0.591
66	0.606
77	0.638
88	0.657
99	0.697
110	0.720
121	0.772
132	0.802
143	0.872
154	0.913
165	1.013
176	1.074
187	1.231
198	1.335
209	1.631
220	1.858
231	2.728
242	3.844
253	13.582
264	2.188
275	1.464
286	1.146
297	0.960
308	0.835
319	0.745
330	0.676
341	0.622
352	0.577

363 0.540

++

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 1 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	3.4	6.8	10.2	13.6
0+ 0	0.0000	0.00	Q				
0+ 1	0.0001	0.05	Q				
0+ 2	0.0002	0.09	Q				
0+ 3	0.0004	0.14	Q				
0+ 4	0.0006	0.19	Q				
0+ 5	0.0010	0.24	Q				
0+ 6	0.0014	0.28	Q				
0+ 7	0.0018	0.33	Q				
0+ 8	0.0023	0.38	VQ				
0+ 9	0.0029	0.42	VQ				
0+10	0.0036	0.47	VQ				
0+11	0.0043	0.52	VQ				
0+12	0.0050	0.52	VQ				
0+13	0.0057	0.52	VQ				
0+14	0.0064	0.52	VQ				
0+15	0.0071	0.52	VQ				
0+16	0.0079	0.52	VQ				
0+17	0.0086	0.52	VQ				
0+18	0.0093	0.52	VQ				
0+19	0.0100	0.53	VQ				
0+20	0.0108	0.53	VQ				
0+21	0.0115	0.53	VQ				
0+22	0.0122	0.53	VQ				
0+23	0.0129	0.53	VQ				
0+24	0.0137	0.53	VQ				
0+25	0.0144	0.53	VQ				
0+26	0.0152	0.54	VQ				
0+27	0.0159	0.54	VQ				
0+28	0.0166	0.54	VQ				
0+29	0.0174	0.54	VQ				
0+30	0.0181	0.55	|Q				
0+31	0.0189	0.55	|Q				
0+32	0.0197	0.55	|Q				
0+33	0.0204	0.55	|Q				
0+34	0.0212	0.55	|Q				
0+35	0.0219	0.55	|Q				
0+36	0.0227	0.55	|Q				
0+37	0.0235	0.56	|Q				
0+38	0.0242	0.56	|Q				
0+39	0.0250	0.56	|Q				

0+40	0.0258	0.56	Q				
0+41	0.0265	0.56	Q				
0+42	0.0273	0.56	Q				
0+43	0.0281	0.56	Q				
0+44	0.0289	0.56	Q				
0+45	0.0296	0.57	Q				
0+46	0.0304	0.57	Q				
0+47	0.0312	0.57	Q				
0+48	0.0320	0.57	Q				
0+49	0.0328	0.58	Q				
0+50	0.0336	0.58	Q				
0+51	0.0344	0.58	Q				
0+52	0.0352	0.58	Q				
0+53	0.0360	0.59	QV				
0+54	0.0368	0.59	QV				
0+55	0.0376	0.59	QV				
0+56	0.0384	0.59	QV				
0+57	0.0393	0.59	QV				
0+58	0.0401	0.59	QV				
0+59	0.0409	0.60	QV				
1+ 0	0.0417	0.60	QV				
1+ 1	0.0426	0.60	QV				
1+ 2	0.0434	0.60	QV				
1+ 3	0.0442	0.60	QV				
1+ 4	0.0450	0.60	QV				
1+ 5	0.0459	0.60	QV				
1+ 6	0.0467	0.61	QV				
1+ 7	0.0475	0.61	QV				
1+ 8	0.0484	0.61	QV				
1+ 9	0.0492	0.61	QV				
1+10	0.0501	0.62	QV				
1+11	0.0509	0.62	QV				
1+12	0.0518	0.62	QV				
1+13	0.0527	0.63	QV				
1+14	0.0535	0.63	QV				
1+15	0.0544	0.63	Q V				
1+16	0.0553	0.64	Q V				
1+17	0.0562	0.64	Q V				
1+18	0.0570	0.64	Q V				
1+19	0.0579	0.64	Q V				
1+20	0.0588	0.64	Q V				
1+21	0.0597	0.65	Q V				
1+22	0.0606	0.65	Q V				
1+23	0.0615	0.65	Q V				
1+24	0.0624	0.65	Q V				
1+25	0.0633	0.65	Q V				
1+26	0.0642	0.65	Q V				
1+27	0.0651	0.65	Q V				
1+28	0.0660	0.66	Q V				
1+29	0.0669	0.66	Q V				

```
1+30       0.0678      0.66  |Q V      |          |          |          |
1+31       0.0687      0.67  |Q V      |          |          |          |
1+32       0.0696      0.67  |Q V      |          |          |          |
1+33       0.0706      0.68  |Q V      |          |          |          |
1+34       0.0715      0.68  |Q V      |          |          |          |
1+35       0.0725      0.68  | Q V     |          |          |          |
1+36       0.0734      0.69  | Q V     |          |          |          |
1+37       0.0743      0.69  | Q V     |          |          |          |
1+38       0.0753      0.69  | Q V     |          |          |          |
1+39       0.0763      0.70  | Q V     |          |          |          |
1+40       0.0772      0.70  | Q V     |          |          |          |
1+41       0.0782      0.70  | Q V     |          |          |          |
1+42       0.0792      0.70  | Q V     |          |          |          |
1+43       0.0801      0.71  | Q V     |          |          |          |
1+44       0.0811      0.71  | Q V     |          |          |          |
1+45       0.0821      0.71  | Q V     |          |          |          |
1+46       0.0831      0.71  | Q V     |          |          |          |
1+47       0.0841      0.71  | Q V     |          |          |          |
1+48       0.0850      0.72  | Q V     |          |          |          |
1+49       0.0860      0.72  | Q V     |          |          |          |
1+50       0.0870      0.72  | Q V     |          |          |          |
1+51       0.0880      0.72  | Q V     |          |          |          |
1+52       0.0890      0.73  | Q V     |          |          |          |
1+53       0.0900      0.73  | Q  V    |          |          |          |
1+54       0.0911      0.74  | Q  V    |          |          |          |
1+55       0.0921      0.74  | Q  V    |          |          |          |
1+56       0.0931      0.75  | Q  V    |          |          |          |
1+57       0.0941      0.75  | Q  V    |          |          |          |
1+58       0.0952      0.76  | Q  V    |          |          |          |
1+59       0.0962      0.76  | Q  V    |          |          |          |
2+ 0       0.0973      0.77  | Q  V    |          |          |          |
2+ 1       0.0984      0.77  | Q  V    |          |          |          |
2+ 2       0.0994      0.77  | Q  V    |          |          |          |
2+ 3       0.1005      0.78  | Q  V    |          |          |          |
2+ 4       0.1016      0.78  | Q  V    |          |          |          |
2+ 5       0.1027      0.78  | Q  V    |          |          |          |
2+ 6       0.1037      0.79  | Q  V    |          |          |          |
2+ 7       0.1048      0.79  | Q  V    |          |          |          |
2+ 8       0.1059      0.79  | Q  V    |          |          |          |
2+ 9       0.1070      0.79  | Q  V    |          |          |          |
2+10       0.1081      0.80  | Q   V   |          |          |          |
2+11       0.1092      0.80  | Q   V   |          |          |          |
2+12       0.1103      0.80  | Q   V   |          |          |          |
2+13       0.1114      0.81  | Q   V   |          |          |          |
2+14       0.1125      0.81  | Q   V   |          |          |          |
2+15       0.1137      0.82  | Q   V   |          |          |          |
2+16       0.1148      0.83  | Q   V   |          |          |          |
2+17       0.1160      0.83  | Q   V   |          |          |          |
2+18       0.1171      0.84  | Q   V   |          |          |          |
2+19       0.1183      0.85  | Q   V   |          |          |          |
```

2+20	0.1195	0.85	Q	V			
2+21	0.1206	0.86	Q	V			
2+22	0.1218	0.87	Q	V			
2+23	0.1230	0.87	Q	V			
2+24	0.1242	0.88	Q	V			
2+25	0.1255	0.88	Q	V			
2+26	0.1267	0.88	Q	V			
2+27	0.1279	0.89	Q	V			
2+28	0.1291	0.89	Q	V			
2+29	0.1303	0.89	Q	V			
2+30	0.1316	0.90	Q	V			
2+31	0.1328	0.90	Q	V			
2+32	0.1341	0.91	Q	V			
2+33	0.1353	0.91	Q	V			
2+34	0.1366	0.91	Q	V			
2+35	0.1379	0.92	Q	V			
2+36	0.1391	0.93	Q	V			
2+37	0.1404	0.94	Q	V			
2+38	0.1417	0.95	Q	V			
2+39	0.1431	0.96	Q	V			
2+40	0.1444	0.97	Q	V			
2+41	0.1457	0.98	Q	V			
2+42	0.1471	0.99	Q	V			
2+43	0.1485	0.99	Q	V			
2+44	0.1498	1.00	Q	V			
2+45	0.1512	1.01	Q	V			
2+46	0.1526	1.02	Q	V			
2+47	0.1541	1.02	Q	V			
2+48	0.1555	1.03	Q	V			
2+49	0.1569	1.03	Q	V			
2+50	0.1583	1.04	Q	V			
2+51	0.1598	1.05	Q	V			
2+52	0.1612	1.05	Q	V			
2+53	0.1627	1.06	Q	V			
2+54	0.1641	1.06	Q	V			
2+55	0.1656	1.07	Q	V			
2+56	0.1671	1.07	Q	V			
2+57	0.1686	1.09	Q	V			
2+58	0.1701	1.10	Q	V			
2+59	0.1716	1.12	Q	V			
3+ 0	0.1732	1.13	Q	V			
3+ 1	0.1748	1.15	Q	V			
3+ 2	0.1764	1.16	Q	V			
3+ 3	0.1780	1.17	Q	V			
3+ 4	0.1796	1.19	Q	V			
3+ 5	0.1813	1.20	Q	V			
3+ 6	0.1830	1.22	Q	V			
3+ 7	0.1847	1.23	Q	V			
3+ 8	0.1864	1.24	Q	V			
3+ 9	0.1881	1.25	Q	V			

```
3+10       0.1898      1.26  |  Q      V          |          |          |
3+11       0.1916      1.27  |  Q      V          |          |          |
3+12       0.1933      1.28  |  Q      V          |          |          |
3+13       0.1951      1.29  |  Q      V          |          |          |
3+14       0.1969      1.30  |  Q      |V         |          |          |
3+15       0.1987      1.31  |  Q      |V         |          |          |
3+16       0.2005      1.32  |  Q      |V         |          |          |
3+17       0.2023      1.33  |  Q      |V         |          |          |
3+18       0.2042      1.33  |  Q      |V         |          |          |
3+19       0.2060      1.36  |   Q     |V         |          |          |
3+20       0.2080      1.39  |   Q     |V         |          |          |
3+21       0.2099      1.42  |   Q     |V         |          |          |
3+22       0.2119      1.44  |   Q     |V         |          |          |
3+23       0.2139      1.47  |   Q     |V         |          |          |
3+24       0.2160      1.50  |   Q     | V        |          |          |
3+25       0.2181      1.52  |   Q     | V        |          |          |
3+26       0.2202      1.55  |   Q     | V        |          |          |
3+27       0.2224      1.58  |   Q     | V        |          |          |
3+28       0.2246      1.60  |   Q     | V        |          |          |
3+29       0.2268      1.63  |   Q     | V        |          |          |
3+30       0.2291      1.65  |   Q     | V        |          |          |
3+31       0.2314      1.67  |   Q     | V        |          |          |
3+32       0.2337      1.69  |   Q     |  V       |          |          |
3+33       0.2361      1.71  |    Q    |  V       |          |          |
3+34       0.2385      1.73  |    Q    |  V       |          |          |
3+35       0.2409      1.75  |    Q    |  V       |          |          |
3+36       0.2434      1.78  |    Q    |  V       |          |          |
3+37       0.2458      1.80  |    Q    |  V       |          |          |
3+38       0.2483      1.82  |    Q    |  V       |          |          |
3+39       0.2509      1.84  |    Q    |   V      |          |          |
3+40       0.2534      1.86  |    Q    |   V      |          |          |
3+41       0.2561      1.94  |    Q    |   V      |          |          |
3+42       0.2589      2.02  |    Q    |   V      |          |          |
3+43       0.2618      2.10  |     Q   |   V      |          |          |
3+44       0.2648      2.17  |     Q   |   V      |          |          |
3+45       0.2679      2.25  |     Q   |   V      |          |          |
3+46       0.2711      2.33  |     Q   |    V     |          |          |
3+47       0.2744      2.41  |      Q  |    V     |          |          |
3+48       0.2778      2.49  |      Q  |    V     |          |          |
3+49       0.2814      2.57  |      Q  |    V     |          |          |
3+50       0.2850      2.65  |      Q  |    V     |          |          |
3+51       0.2888      2.73  |       Q |     V    |          |          |
3+52       0.2927      2.83  |       Q |     V    |          |          |
3+53       0.2967      2.93  |       Q |     V    |          |          |
3+54       0.3009      3.03  |       Q |     V    |          |          |
3+55       0.3052      3.13  |        Q|      V   |          |          |
3+56       0.3097      3.24  |        Q|      V   |          |          |
3+57       0.3143      3.34  |        Q|      V   |          |          |
3+58       0.3190      3.44  |         Q      V   |          |          |
3+59       0.3239      3.54  |         Q       V  |          |          |
```

```
4+ 0       0.3289      3.64  |         Q       V |         |         |
4+ 1       0.3340      3.74  |         |Q      V |         |         |
4+ 2       0.3393      3.84  |         |Q      V |         |         |
4+ 3       0.3458      4.73  |         |  Q     V|         |         |
4+ 4       0.3536      5.61  |         |     Q  V|         |         |
4+ 5       0.3625      6.50  |         |        QV         |         |
4+ 6       0.3727      7.39  |         |         VQ        |         |
4+ 7       0.3841      8.27  |         |         |V  Q     |         |
4+ 8       0.3967      9.16  |         |         | V   Q   |         |
4+ 9       0.4105     10.04  |         |         | V      Q|         |
4+10       0.4256     10.93  |         |         |  V      | Q       |
4+11       0.4419     11.81  |         |         |   V     |   Q     |
4+12       0.4593     12.70  |         |         |    V    |      Q  |
4+13       0.4781     13.58  |         |         |     V   |         Q
4+14       0.4953     12.55  |         |         |      V  |     Q   |
4+15       0.5112     11.51  |         |         |       V |  Q      |
4+16       0.5256     10.47  |         |         |        VQ         |
4+17       0.5386      9.44  |         |         |      Q  V         |
4+18       0.5502      8.40  |         |         |   Q     V         |
4+19       0.5603      7.37  |         |         |Q        |V        |
4+20       0.5691      6.33  |         |       Q |         |V        |
4+21       0.5764      5.30  |         |    Q    |         | V       |
4+22       0.5822      4.26  |         | Q       |         | V       |
4+23       0.5867      3.22  |        Q|         |         | V       |
4+24       0.5897      2.19  |     Q   |         |         | V       |
4+25       0.5926      2.12  |     Q   |         |         |  V      |
4+26       0.5954      2.06  |     Q   |         |         |  V      |
4+27       0.5982      1.99  |    Q    |         |         |  V      |
4+28       0.6008      1.92  |    Q    |         |         |  V      |
4+29       0.6034      1.86  |    Q    |         |         |  V      |
4+30       0.6059      1.79  |    Q    |         |         |  V      |
4+31       0.6082      1.73  |    Q    |         |         |  V      |
4+32       0.6105      1.66  |   Q     |         |         |   V     |
4+33       0.6127      1.60  |   Q     |         |         |   V     |
4+34       0.6148      1.53  |   Q     |         |         |   V     |
4+35       0.6169      1.46  |   Q     |         |         |   V     |
4+36       0.6188      1.44  |   Q     |         |         |   V     |
4+37       0.6208      1.41  |   Q     |         |         |   V     |
4+38       0.6227      1.38  |   Q     |         |         |   V     |
4+39       0.6245      1.35  |  Q      |         |         |   V     |
4+40       0.6263      1.32  |  Q      |         |         |    V    |
4+41       0.6281      1.29  |  Q      |         |         |    V    |
4+42       0.6299      1.26  |  Q      |         |         |    V    |
4+43       0.6316      1.23  |  Q      |         |         |    V    |
4+44       0.6332      1.20  |  Q      |         |         |    V    |
4+45       0.6348      1.17  |  Q      |         |         |    V    |
4+46       0.6364      1.15  |  Q      |         |         |    V    |
4+47       0.6380      1.13  |  Q      |         |         |    V    |
4+48       0.6395      1.11  |  Q      |         |         |    V    |
4+49       0.6410      1.09  |  Q      |         |         |    V    |
```

```
4+50       0.6425      1.08  |  Q       |          |          |    V     |
4+51       0.6439      1.06  |  Q       |          |          |    V     |
4+52       0.6454      1.04  |  Q       |          |          |     V    |
4+53       0.6468      1.03  |  Q       |          |          |     V    |
4+54       0.6482      1.01  | Q        |          |          |     V    |
4+55       0.6496      0.99  | Q        |          |          |     V    |
4+56       0.6509      0.98  | Q        |          |          |     V    |
4+57       0.6522      0.96  | Q        |          |          |     V    |
4+58       0.6535      0.95  | Q        |          |          |     V    |
4+59       0.6548      0.94  | Q        |          |          |     V    |
5+ 0       0.6561      0.93  | Q        |          |          |     V    |
5+ 1       0.6574      0.91  | Q        |          |          |     V    |
5+ 2       0.6586      0.90  | Q        |          |          |     V    |
5+ 3       0.6598      0.89  | Q        |          |          |     V    |
5+ 4       0.6610      0.88  | Q        |          |          |     V    |
5+ 5       0.6622      0.87  | Q        |          |          |      V   |
5+ 6       0.6634      0.86  | Q        |          |          |      V   |
5+ 7       0.6646      0.85  | Q        |          |          |      V   |
5+ 8       0.6657      0.84  | Q        |          |          |      V   |
5+ 9       0.6669      0.83  | Q        |          |          |      V   |
5+10       0.6680      0.82  | Q        |          |          |      V   |
5+11       0.6691      0.81  | Q        |          |          |      V   |
5+12       0.6702      0.80  | Q        |          |          |      V   |
5+13       0.6713      0.79  | Q        |          |          |      V   |
5+14       0.6724      0.79  | Q        |          |          |      V   |
5+15       0.6735      0.78  | Q        |          |          |      V   |
5+16       0.6745      0.77  | Q        |          |          |      V   |
5+17       0.6756      0.76  | Q        |          |          |      V   |
5+18       0.6766      0.75  | Q        |          |          |      V   |
5+19       0.6776      0.75  | Q        |          |          |      V   |
5+20       0.6787      0.74  | Q        |          |          |      V   |
5+21       0.6797      0.73  | Q        |          |          |      V   |
5+22       0.6807      0.73  | Q        |          |          |       V  |
5+23       0.6817      0.72  | Q        |          |          |       V  |
5+24       0.6826      0.71  | Q        |          |          |       V  |
5+25       0.6836      0.71  | Q        |          |          |       V  |
5+26       0.6846      0.70  | Q        |          |          |       V  |
5+27       0.6855      0.69  | Q        |          |          |       V  |
5+28       0.6865      0.69  | Q        |          |          |       V  |
5+29       0.6874      0.68  | Q        |          |          |       V  |
5+30       0.6884      0.68  |Q         |          |          |       V  |
5+31       0.6893      0.67  |Q         |          |          |       V  |
5+32       0.6902      0.67  |Q         |          |          |       V  |
5+33       0.6911      0.66  |Q         |          |          |       V  |
5+34       0.6920      0.66  |Q         |          |          |       V  |
5+35       0.6929      0.65  |Q         |          |          |       V  |
5+36       0.6938      0.65  |Q         |          |          |       V  |
5+37       0.6947      0.64  |Q         |          |          |       V  |
5+38       0.6956      0.64  |Q         |          |          |       V  |
5+39       0.6964      0.63  |Q         |          |          |       V  |
```

```
    5+40       0.6973      0.63  |Q        |         |         |       V |
    5+41       0.6982      0.62  |Q        |         |         |        V|
    5+42       0.6990      0.62  |Q        |         |         |        V|
    5+43       0.6998      0.61  |Q        |         |         |        V|
    5+44       0.7007      0.61  |Q        |         |         |        V|
    5+45       0.7015      0.61  |Q        |         |         |        V|
    5+46       0.7024      0.60  |Q        |         |         |        V|
    5+47       0.7032      0.60  |Q        |         |         |        V|
    5+48       0.7040      0.59  |Q        |         |         |        V|
    5+49       0.7048      0.59  |Q        |         |         |        V|
    5+50       0.7056      0.58  |Q        |         |         |        V|
    5+51       0.7064      0.58  |Q        |         |         |        V|
    5+52       0.7072      0.58  |Q        |         |         |        V|
    5+53       0.7080      0.57  |Q        |         |         |        V|
    5+54       0.7088      0.57  |Q        |         |         |        V|
    5+55       0.7096      0.57  |Q        |         |         |        V|
    5+56       0.7103      0.56  |Q        |         |         |        V|
    5+57       0.7111      0.56  |Q        |         |         |        V|
    5+58       0.7119      0.56  |Q        |         |         |        V|
    5+59       0.7126      0.55  |Q        |         |         |        V|
    6+ 0       0.7134      0.55  |Q        |         |         |        V|
    6+ 1       0.7141      0.55  |Q        |         |         |        V|
    6+ 2       0.7149      0.54  |Q        |         |         |        V|
    6+ 3       0.7156      0.54  |Q        |         |         |         V
---------------------------------------------------------------------------
```

```
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      325.000 to Point/Station      402.000
**** 6 HOUR HYDROGRAPH ****
________________________________________________________________________
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Hydrograph Data - Section 6, San Diego County Hydrology manual, June 2003


Time of Concentration =  11.32
Basin Area =     4.51 Acres
6 Hour Rainfall =  3.300 Inches
Runoff Coefficient =  0.584
Peak Discharge =    13.58 CFS
     Time (Min)     Discharge (CFS)
       0               0.000
       11               0.518
       22               0.528
       33               0.551
       44               0.564
```

55	0.591
66	0.606
77	0.638
88	0.657
99	0.697
110	0.720
121	0.772
132	0.802
143	0.872
154	0.913
165	1.013
176	1.074
187	1.231
198	1.335
209	1.631
220	1.858
231	2.728
242	3.844
253	13.582
264	2.188
275	1.464
286	1.146
297	0.960
308	0.835
319	0.745
330	0.676
341	0.622
352	0.577
363	0.540

++

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 1 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	3.4	6.8	10.2	13.6
0+ 0	0.0000	0.00	Q	|	|	|	|
0+ 1	0.0001	0.05	Q	|	|	|	|
0+ 2	0.0002	0.09	Q	|	|	|	|
0+ 3	0.0004	0.14	Q	|	|	|	|
0+ 4	0.0006	0.19	Q	|	|	|	|
0+ 5	0.0010	0.24	Q	|	|	|	|
0+ 6	0.0014	0.28	Q	|	|	|	|
0+ 7	0.0018	0.33	Q	|	|	|	|
0+ 8	0.0023	0.38	VQ	|	|	|	|
0+ 9	0.0029	0.42	VQ	|	|	|	|
0+10	0.0036	0.47	VQ	|	|	|	|
0+11	0.0043	0.52	VQ	|	|	|	|

0+12	0.0050	0.52	VQ	|	|	|	|
0+13	0.0057	0.52	VQ	|	|	|	|
0+14	0.0064	0.52	VQ	|	|	|	|
0+15	0.0071	0.52	VQ	|	|	|	|
0+16	0.0079	0.52	VQ	|	|	|	|
0+17	0.0086	0.52	VQ	|	|	|	|
0+18	0.0093	0.52	VQ	|	|	|	|
0+19	0.0100	0.53	VQ	|	|	|	|
0+20	0.0108	0.53	VQ	|	|	|	|
0+21	0.0115	0.53	VQ	|	|	|	|
0+22	0.0122	0.53	VQ	|	|	|	|
0+23	0.0129	0.53	VQ	|	|	|	|
0+24	0.0137	0.53	VQ	|	|	|	|
0+25	0.0144	0.53	VQ	|	|	|	|
0+26	0.0152	0.54	VQ	|	|	|	|
0+27	0.0159	0.54	VQ	|	|	|	|
0+28	0.0166	0.54	VQ	|	|	|	|
0+29	0.0174	0.54	VQ	|	|	|	|
0+30	0.0181	0.55	|Q	|	|	|	|
0+31	0.0189	0.55	|Q	|	|	|	|
0+32	0.0197	0.55	|Q	|	|	|	|
0+33	0.0204	0.55	|Q	|	|	|	|
0+34	0.0212	0.55	|Q	|	|	|	|
0+35	0.0219	0.55	|Q	|	|	|	|
0+36	0.0227	0.55	|Q	|	|	|	|
0+37	0.0235	0.56	|Q	|	|	|	|
0+38	0.0242	0.56	|Q	|	|	|	|
0+39	0.0250	0.56	|Q	|	|	|	|
0+40	0.0258	0.56	|Q	|	|	|	|
0+41	0.0265	0.56	|Q	|	|	|	|
0+42	0.0273	0.56	|Q	|	|	|	|
0+43	0.0281	0.56	|Q	|	|	|	|
0+44	0.0289	0.56	|Q	|	|	|	|
0+45	0.0296	0.57	|Q	|	|	|	|
0+46	0.0304	0.57	|Q	|	|	|	|
0+47	0.0312	0.57	|Q	|	|	|	|
0+48	0.0320	0.57	|Q	|	|	|	|
0+49	0.0328	0.58	|Q	|	|	|	|
0+50	0.0336	0.58	|Q	|	|	|	|
0+51	0.0344	0.58	|Q	|	|	|	|
0+52	0.0352	0.58	|Q	|	|	|	|
0+53	0.0360	0.59	|QV	|	|	|	|
0+54	0.0368	0.59	|QV	|	|	|	|
0+55	0.0376	0.59	|QV	|	|	|	|
0+56	0.0384	0.59	|QV	|	|	|	|
0+57	0.0393	0.59	|QV	|	|	|	|
0+58	0.0401	0.59	|QV	|	|	|	|
0+59	0.0409	0.60	|QV	|	|	|	|
1+ 0	0.0417	0.60	|QV	|	|	|	|
1+ 1	0.0426	0.60	|QV	|	|	|	|

1+ 2	0.0434	0.60	QV			
1+ 3	0.0442	0.60	QV			
1+ 4	0.0450	0.60	QV			
1+ 5	0.0459	0.60	QV			
1+ 6	0.0467	0.61	QV			
1+ 7	0.0475	0.61	QV			
1+ 8	0.0484	0.61	QV			
1+ 9	0.0492	0.61	QV			
1+10	0.0501	0.62	QV			
1+11	0.0509	0.62	QV			
1+12	0.0518	0.62	QV			
1+13	0.0527	0.63	QV			
1+14	0.0535	0.63	QV			
1+15	0.0544	0.63	Q V			
1+16	0.0553	0.64	Q V			
1+17	0.0562	0.64	Q V			
1+18	0.0570	0.64	Q V			
1+19	0.0579	0.64	Q V			
1+20	0.0588	0.64	Q V			
1+21	0.0597	0.65	Q V			
1+22	0.0606	0.65	Q V			
1+23	0.0615	0.65	Q V			
1+24	0.0624	0.65	Q V			
1+25	0.0633	0.65	Q V			
1+26	0.0642	0.65	Q V			
1+27	0.0651	0.65	Q V			
1+28	0.0660	0.66	Q V			
1+29	0.0669	0.66	Q V			
1+30	0.0678	0.66	Q V			
1+31	0.0687	0.67	Q V			
1+32	0.0696	0.67	Q V			
1+33	0.0706	0.68	Q V			
1+34	0.0715	0.68	Q V			
1+35	0.0725	0.68	Q V			
1+36	0.0734	0.69	Q V			
1+37	0.0743	0.69	Q V			
1+38	0.0753	0.69	Q V			
1+39	0.0763	0.70	Q V			
1+40	0.0772	0.70	Q V			
1+41	0.0782	0.70	Q V			
1+42	0.0792	0.70	Q V			
1+43	0.0801	0.71	Q V			
1+44	0.0811	0.71	Q V			
1+45	0.0821	0.71	Q V			
1+46	0.0831	0.71	Q V			
1+47	0.0841	0.71	Q V			
1+48	0.0850	0.72	Q V			
1+49	0.0860	0.72	Q V			
1+50	0.0870	0.72	Q V			
1+51	0.0880	0.72	Q V			

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1+52       0.0890      0.73  | Q V     |         |         |         |
1+53       0.0900      0.73  | Q  V    |         |         |         |
1+54       0.0911      0.74  | Q  V    |         |         |         |
1+55       0.0921      0.74  | Q  V    |         |         |         |
1+56       0.0931      0.75  | Q  V    |         |         |         |
1+57       0.0941      0.75  | Q  V    |         |         |         |
1+58       0.0952      0.76  | Q  V    |         |         |         |
1+59       0.0962      0.76  | Q  V    |         |         |         |
2+ 0        0.0973      0.77  | Q  V    |         |         |         |
2+ 1        0.0984      0.77  | Q  V    |         |         |         |
2+ 2        0.0994      0.77  | Q  V    |         |         |         |
2+ 3        0.1005      0.78  | Q  V    |         |         |         |
2+ 4        0.1016      0.78  | Q  V    |         |         |         |
2+ 5        0.1027      0.78  | Q  V    |         |         |         |
2+ 6        0.1037      0.79  | Q  V    |         |         |         |
2+ 7        0.1048      0.79  | Q  V    |         |         |         |
2+ 8        0.1059      0.79  | Q  V    |         |         |         |
2+ 9        0.1070      0.79  | Q  V    |         |         |         |
2+10       0.1081      0.80  | Q   V   |         |         |         |
2+11       0.1092      0.80  | Q   V   |         |         |         |
2+12       0.1103      0.80  | Q   V   |         |         |         |
2+13       0.1114      0.81  | Q   V   |         |         |         |
2+14       0.1125      0.81  | Q   V   |         |         |         |
2+15       0.1137      0.82  | Q   V   |         |         |         |
2+16       0.1148      0.83  | Q   V   |         |         |         |
2+17       0.1160      0.83  | Q   V   |         |         |         |
2+18       0.1171      0.84  | Q   V   |         |         |         |
2+19       0.1183      0.85  | Q   V   |         |         |         |
2+20       0.1195      0.85  | Q   V   |         |         |         |
2+21       0.1206      0.86  | Q   V   |         |         |         |
2+22       0.1218      0.87  | Q   V   |         |         |         |
2+23       0.1230      0.87  | Q   V   |         |         |         |
2+24       0.1242      0.88  | Q   V   |         |         |         |
2+25       0.1255      0.88  | Q    V  |         |         |         |
2+26       0.1267      0.88  | Q    V  |         |         |         |
2+27       0.1279      0.89  | Q    V  |         |         |         |
2+28       0.1291      0.89  | Q    V  |         |         |         |
2+29       0.1303      0.89  | Q    V  |         |         |         |
2+30       0.1316      0.90  | Q    V  |         |         |         |
2+31       0.1328      0.90  | Q    V  |         |         |         |
2+32       0.1341      0.91  | Q    V  |         |         |         |
2+33       0.1353      0.91  | Q    V  |         |         |         |
2+34       0.1366      0.91  | Q    V  |         |         |         |
2+35       0.1379      0.92  | Q    V  |         |         |         |
2+36       0.1391      0.93  | Q    V  |         |         |         |
2+37       0.1404      0.94  | Q    V  |         |         |         |
2+38       0.1417      0.95  | Q    V  |         |         |         |
2+39       0.1431      0.96  | Q    V  |         |         |         |
2+40       0.1444      0.97  | Q     V |         |         |         |
2+41       0.1457      0.98  | Q     V |         |         |         |
```

```
2+42       0.1471      0.99  | Q     V |          |          |          |
2+43       0.1485      0.99  | Q     V |          |          |          |
2+44       0.1498      1.00  | Q     V |          |          |          |
2+45       0.1512      1.01  | Q     V |          |          |          |
2+46       0.1526      1.02  | Q     V |          |          |          |
2+47       0.1541      1.02  |  Q    V |          |          |          |
2+48       0.1555      1.03  |  Q    V |          |          |          |
2+49       0.1569      1.03  |  Q    V |          |          |          |
2+50       0.1583      1.04  |  Q    V |          |          |          |
2+51       0.1598      1.05  |  Q    V |          |          |          |
2+52       0.1612      1.05  |  Q     V|          |          |          |
2+53       0.1627      1.06  |  Q     V|          |          |          |
2+54       0.1641      1.06  |  Q     V|          |          |          |
2+55       0.1656      1.07  |  Q     V|          |          |          |
2+56       0.1671      1.07  |  Q     V|          |          |          |
2+57       0.1686      1.09  |  Q     V|          |          |          |
2+58       0.1701      1.10  |  Q     V|          |          |          |
2+59       0.1716      1.12  |  Q     V|          |          |          |
3+ 0       0.1732      1.13  |  Q     V|          |          |          |
3+ 1       0.1748      1.15  |  Q     V|          |          |          |
3+ 2       0.1764      1.16  |  Q     V|          |          |          |
3+ 3       0.1780      1.17  |  Q     V|          |          |          |
3+ 4       0.1796      1.19  |  Q      V          |          |          |
3+ 5       0.1813      1.20  |  Q      V          |          |          |
3+ 6       0.1830      1.22  |  Q      V          |          |          |
3+ 7       0.1847      1.23  |  Q      V          |          |          |
3+ 8       0.1864      1.24  |  Q      V          |          |          |
3+ 9       0.1881      1.25  |  Q      V          |          |          |
3+10       0.1898      1.26  |  Q      V          |          |          |
3+11       0.1916      1.27  |  Q      V          |          |          |
3+12       0.1933      1.28  |  Q      V          |          |          |
3+13       0.1951      1.29  |  Q      V          |          |          |
3+14       0.1969      1.30  |  Q      |V          |          |          |
3+15       0.1987      1.31  |  Q      |V          |          |          |
3+16       0.2005      1.32  |  Q      |V          |          |          |
3+17       0.2023      1.33  |  Q      |V          |          |          |
3+18       0.2042      1.33  |  Q      |V          |          |          |
3+19       0.2060      1.36  |   Q     |V          |          |          |
3+20       0.2080      1.39  |   Q     |V          |          |          |
3+21       0.2099      1.42  |   Q     |V          |          |          |
3+22       0.2119      1.44  |   Q     |V          |          |          |
3+23       0.2139      1.47  |   Q     |V          |          |          |
3+24       0.2160      1.50  |   Q     | V         |          |          |
3+25       0.2181      1.52  |   Q     | V         |          |          |
3+26       0.2202      1.55  |   Q     | V         |          |          |
3+27       0.2224      1.58  |   Q     | V         |          |          |
3+28       0.2246      1.60  |   Q     | V         |          |          |
3+29       0.2268      1.63  |   Q     | V         |          |          |
3+30       0.2291      1.65  |   Q     | V         |          |          |
3+31       0.2314      1.67  |   Q     | V         |          |          |
```

```
3+32       0.2337      1.69  |   Q     |  V      |         |          |
3+33       0.2361      1.71  |    Q    |  V      |         |          |
3+34       0.2385      1.73  |    Q    |  V      |         |          |
3+35       0.2409      1.75  |    Q    |  V      |         |          |
3+36       0.2434      1.78  |    Q    |  V      |         |          |
3+37       0.2458      1.80  |    Q    |  V      |         |          |
3+38       0.2483      1.82  |    Q    |  V      |         |          |
3+39       0.2509      1.84  |    Q    |   V     |         |          |
3+40       0.2534      1.86  |    Q    |   V     |         |          |
3+41       0.2561      1.94  |    Q    |   V     |         |          |
3+42       0.2589      2.02  |    Q    |   V     |         |          |
3+43       0.2618      2.10  |     Q   |   V     |         |          |
3+44       0.2648      2.17  |     Q   |   V     |         |          |
3+45       0.2679      2.25  |     Q   |   V     |         |          |
3+46       0.2711      2.33  |     Q   |    V    |         |          |
3+47       0.2744      2.41  |      Q  |    V    |         |          |
3+48       0.2778      2.49  |      Q  |    V    |         |          |
3+49       0.2814      2.57  |      Q  |    V    |         |          |
3+50       0.2850      2.65  |      Q  |    V    |         |          |
3+51       0.2888      2.73  |       Q |     V   |         |          |
3+52       0.2927      2.83  |       Q |     V   |         |          |
3+53       0.2967      2.93  |       Q |     V   |         |          |
3+54       0.3009      3.03  |       Q |     V   |         |          |
3+55       0.3052      3.13  |        Q|      V  |         |          |
3+56       0.3097      3.24  |        Q|      V  |         |          |
3+57       0.3143      3.34  |        Q|      V  |         |          |
3+58       0.3190      3.44  |         Q      V  |         |          |
3+59       0.3239      3.54  |         Q       V |         |          |
4+ 0       0.3289      3.64  |         Q       V |         |          |
4+ 1       0.3340      3.74  |         |Q      V |         |          |
4+ 2       0.3393      3.84  |         |Q      V |         |          |
4+ 3       0.3458      4.73  |         |  Q     V|         |          |
4+ 4       0.3536      5.61  |         |     Q  V|         |          |
4+ 5       0.3625      6.50  |         |        QV         |          |
4+ 6       0.3727      7.39  |         |         VQ        |          |
4+ 7       0.3841      8.27  |         |          |V  Q    |          |
4+ 8       0.3967      9.16  |         |          | V   Q  |          |
4+ 9       0.4105     10.04  |         |          | V      Q|          |
4+10       0.4256     10.93  |         |          |  V      | Q        |
4+11       0.4419     11.81  |         |          |   V     |   Q      |
4+12       0.4593     12.70  |         |          |    V    |      Q   |
4+13       0.4781     13.58  |         |          |     V   |         Q
4+14       0.4953     12.55  |         |          |      V  |     Q    |
4+15       0.5112     11.51  |         |          |       V |  Q       |
4+16       0.5256     10.47  |         |          |        VQ         |
4+17       0.5386      9.44  |         |          |      Q  V         |
4+18       0.5502      8.40  |         |          |   Q     V         |
4+19       0.5603      7.37  |         |          |Q        |V        |
4+20       0.5691      6.33  |         |       Q  |         |V        |
4+21       0.5764      5.30  |         |    Q     |         | V       |
```

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4+22       0.5822      4.26  |          | Q        |          | V        |
4+23       0.5867      3.22  |        Q |          |          | V        |
4+24       0.5897      2.19  |     Q    |          |          | V        |
4+25       0.5926      2.12  |     Q    |          |          |  V       |
4+26       0.5954      2.06  |     Q    |          |          |  V       |
4+27       0.5982      1.99  |    Q     |          |          |  V       |
4+28       0.6008      1.92  |    Q     |          |          |  V       |
4+29       0.6034      1.86  |    Q     |          |          |  V       |
4+30       0.6059      1.79  |    Q     |          |          |  V       |
4+31       0.6082      1.73  |    Q     |          |          |  V       |
4+32       0.6105      1.66  |   Q      |          |          |   V      |
4+33       0.6127      1.60  |   Q      |          |          |   V      |
4+34       0.6148      1.53  |   Q      |          |          |   V      |
4+35       0.6169      1.46  |   Q      |          |          |   V      |
4+36       0.6188      1.44  |   Q      |          |          |   V      |
4+37       0.6208      1.41  |   Q      |          |          |   V      |
4+38       0.6227      1.38  |   Q      |          |          |   V      |
4+39       0.6245      1.35  |  Q       |          |          |   V      |
4+40       0.6263      1.32  |  Q       |          |          |    V     |
4+41       0.6281      1.29  |  Q       |          |          |    V     |
4+42       0.6299      1.26  |  Q       |          |          |    V     |
4+43       0.6316      1.23  |  Q       |          |          |    V     |
4+44       0.6332      1.20  |  Q       |          |          |    V     |
4+45       0.6348      1.17  |  Q       |          |          |    V     |
4+46       0.6364      1.15  |  Q       |          |          |    V     |
4+47       0.6380      1.13  |  Q       |          |          |    V     |
4+48       0.6395      1.11  |  Q       |          |          |    V     |
4+49       0.6410      1.09  |  Q       |          |          |    V     |
4+50       0.6425      1.08  |  Q       |          |          |    V     |
4+51       0.6439      1.06  |  Q       |          |          |    V     |
4+52       0.6454      1.04  |  Q       |          |          |     V    |
4+53       0.6468      1.03  |  Q       |          |          |     V    |
4+54       0.6482      1.01  | Q        |          |          |     V    |
4+55       0.6496      0.99  | Q        |          |          |     V    |
4+56       0.6509      0.98  | Q        |          |          |     V    |
4+57       0.6522      0.96  | Q        |          |          |     V    |
4+58       0.6535      0.95  | Q        |          |          |     V    |
4+59       0.6548      0.94  | Q        |          |          |     V    |
5+ 0       0.6561      0.93  | Q        |          |          |     V    |
5+ 1       0.6574      0.91  | Q        |          |          |     V    |
5+ 2       0.6586      0.90  | Q        |          |          |     V    |
5+ 3       0.6598      0.89  | Q        |          |          |     V    |
5+ 4       0.6610      0.88  | Q        |          |          |     V    |
5+ 5       0.6622      0.87  | Q        |          |          |      V   |
5+ 6       0.6634      0.86  | Q        |          |          |      V   |
5+ 7       0.6646      0.85  | Q        |          |          |      V   |
5+ 8       0.6657      0.84  | Q        |          |          |      V   |
5+ 9       0.6669      0.83  | Q        |          |          |      V   |
5+10       0.6680      0.82  | Q        |          |          |      V   |
5+11       0.6691      0.81  | Q        |          |          |      V   |
```

```
5+12      0.6702      0.80  | Q       |         |         |       V  |
5+13      0.6713      0.79  | Q       |         |         |       V  |
5+14      0.6724      0.79  | Q       |         |         |       V  |
5+15      0.6735      0.78  | Q       |         |         |       V  |
5+16      0.6745      0.77  | Q       |         |         |       V  |
5+17      0.6756      0.76  | Q       |         |         |       V  |
5+18      0.6766      0.75  | Q       |         |         |       V  |
5+19      0.6776      0.75  | Q       |         |         |       V  |
5+20      0.6787      0.74  | Q       |         |         |       V  |
5+21      0.6797      0.73  | Q       |         |         |       V  |
5+22      0.6807      0.73  | Q       |         |         |        V |
5+23      0.6817      0.72  | Q       |         |         |        V |
5+24      0.6826      0.71  | Q       |         |         |        V |
5+25      0.6836      0.71  | Q       |         |         |        V |
5+26      0.6846      0.70  | Q       |         |         |        V |
5+27      0.6855      0.69  | Q       |         |         |        V |
5+28      0.6865      0.69  | Q       |         |         |        V |
5+29      0.6874      0.68  | Q       |         |         |        V |
5+30      0.6884      0.68  |Q        |         |         |        V |
5+31      0.6893      0.67  |Q        |         |         |        V |
5+32      0.6902      0.67  |Q        |         |         |        V |
5+33      0.6911      0.66  |Q        |         |         |        V |
5+34      0.6920      0.66  |Q        |         |         |        V |
5+35      0.6929      0.65  |Q        |         |         |        V |
5+36      0.6938      0.65  |Q        |         |         |        V |
5+37      0.6947      0.64  |Q        |         |         |        V |
5+38      0.6956      0.64  |Q        |         |         |        V |
5+39      0.6964      0.63  |Q        |         |         |        V |
5+40      0.6973      0.63  |Q        |         |         |        V |
5+41      0.6982      0.62  |Q        |         |         |         V|
5+42      0.6990      0.62  |Q        |         |         |         V|
5+43      0.6998      0.61  |Q        |         |         |         V|
5+44      0.7007      0.61  |Q        |         |         |         V|
5+45      0.7015      0.61  |Q        |         |         |         V|
5+46      0.7024      0.60  |Q        |         |         |         V|
5+47      0.7032      0.60  |Q        |         |         |         V|
5+48      0.7040      0.59  |Q        |         |         |         V|
5+49      0.7048      0.59  |Q        |         |         |         V|
5+50      0.7056      0.58  |Q        |         |         |         V|
5+51      0.7064      0.58  |Q        |         |         |         V|
5+52      0.7072      0.58  |Q        |         |         |         V|
5+53      0.7080      0.57  |Q        |         |         |         V|
5+54      0.7088      0.57  |Q        |         |         |         V|
5+55      0.7096      0.57  |Q        |         |         |         V|
5+56      0.7103      0.56  |Q        |         |         |         V|
5+57      0.7111      0.56  |Q        |         |         |         V|
5+58      0.7119      0.56  |Q        |         |         |         V|
5+59      0.7126      0.55  |Q        |         |         |         V|
6+ 0      0.7134      0.55  |Q        |         |         |         V|
6+ 1      0.7141      0.55  |Q        |         |         |         V|
```

```
    6+ 2       0.7149      0.54  |Q        |         |         |        V|
    6+ 3       0.7156      0.54  |Q        |         |         |         V
-------------------------------------------------------------------------
```

End of computations, total study area = 4.510 (Ac.)

```
                San Diego County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c)1991-2018 Version 9.0

Rational method hydrology  program based on
San Diego County Flood Control Division 2003 hydrology manual
        Rational Hydrology Study        Date: 06/21/21
--------------------------------------------------------------------------
108-001 Idaho (Escondido Estates)
Onsite Proposed Condition BMP1 Confluence
Extrapolated storm from County Isopluvials - Unmitigated
TH
--------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

--------------------------------------------------------------------------


Program License Serial Number 6440

--------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
English (in-lb) input data Units used

Map data precipitation entered:
6 hour,  precipitation(inches) =  3.300
24 hour precipitation(inches) =  7.300
P6/P24 =    45.2%
San Diego hydrology manual 'C' values used


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      401.000 to Point/Station      403.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
__________________________________________________________________________
User specified 'C' value of 0.497 given for subarea
Rainfall intensity (I) =      7.070(In/Hr) for a   100.0 year storm
User specified values are as follows:
TC =   6.89 min.  Rain intensity =       7.07(In/Hr)
Total area =        8.760(Ac.)  Total runoff =    30.757(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      401.000 to Point/Station      403.000
**** CONFLUENCE OF MAIN STREAMS ****
__________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      8.760(Ac.)
```

```
Runoff from this stream =     30.757(CFS)
Time of concentration =    6.89 min.
Rainfall intensity =     7.070(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      402.000 to Point/Station      403.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
________________________________________________________________________
User specified 'C' value of 0.584 given for subarea
Rainfall intensity (I) =      4.564(In/Hr) for a   100.0 year storm
User specified values are as follows:
TC =  13.58 min.  Rain intensity =       4.56(In/Hr)
Total area =        4.510(Ac.)  Total runoff =    11.320(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      402.000 to Point/Station      403.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      4.510(Ac.)
Runoff from this stream =     11.320(CFS)
Time of concentration =   13.58 min.
Rainfall intensity =     4.564(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       30.757      6.89                 7.070
2       11.320     13.58                 4.564
Qmax(1) =
           1.000 *    1.000 *    30.757) +
           1.000 *    0.507 *    11.320) + =      36.500
Qmax(2) =
           0.646 *    1.000 *    30.757) +
           1.000 *    1.000 *    11.320) + =      31.175

Total of 2 main streams to confluence:
Flow rates before confluence point:
      30.757      11.320
Maximum flow rates at confluence using above data:
       36.500       31.175
Area of streams before confluence:
        8.760        4.510
```

```
Results of confluence:
Total flow rate =     36.500(CFS)
Time of concentration =     6.890 min.
Effective stream area after confluence  =     13.270(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      402.000 to Point/Station      403.000
**** 6 HOUR HYDROGRAPH ****
________________________________________________________________________
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Hydrograph Data - Section 6, San Diego County Hydrology manual, June 2003


Time of Concentration =   6.89
Basin Area =    13.27 Acres
6 Hour Rainfall =  3.300 Inches
Runoff Coefficient =  0.527
Peak Discharge =    36.50 CFS
     Time (Min)     Discharge (CFS)
       0               0.000
       6               1.375
       12               1.390
       18               1.421
       24               1.438
       30               1.472
       36               1.490
       42               1.528
       48               1.548
       54               1.590
       60               1.612
       66               1.658
       72               1.682
       78               1.734
       84               1.762
       90               1.820
       96               1.851
       102               1.918
       108               1.954
       114               2.030
       120               2.072
       126               2.161
       132               2.210
       138               2.316
       144               2.374
       150               2.503
       156               2.574
       162               2.733
       168               2.823
```

174	3.027
180	3.144
186	3.418
192	3.579
198	3.969
204	4.210
210	4.825
216	5.232
222	6.395
228	7.284
234	10.695
240	15.069
246	36.500
252	8.578
258	5.739
264	4.491
270	3.761
276	3.274
282	2.921
288	2.651
294	2.436
300	2.261
306	2.115
312	1.991
318	1.884
324	1.790
330	1.708
336	1.634
342	1.568
348	1.509
354	1.455
360	1.405
366	1.360

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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 1 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	9.1	18.3	27.4	36.5
0+ 0	0.0000	0.00	Q	|	|	|	|
0+ 1	0.0003	0.23	Q	|	|	|	|
0+ 2	0.0009	0.46	Q	|	|	|	|
0+ 3	0.0019	0.69	Q	|	|	|	|
0+ 4	0.0032	0.92	VQ	|	|	|	|
0+ 5	0.0047	1.15	VQ	|	|	|	|
0+ 6	0.0066	1.37	VQ	|	|	|	|
0+ 7	0.0085	1.38	VQ	|	|	|	|

0+ 8	0.0104	1.38	VQ	|	|	|	|
0+ 9	0.0123	1.38	VQ	|	|	|	|
0+10	0.0142	1.38	VQ	|	|	|	|
0+11	0.0161	1.39	VQ	|	|	|	|
0+12	0.0181	1.39	VQ	|	|	|	|
0+13	0.0200	1.39	VQ	|	|	|	|
0+14	0.0219	1.40	VQ	|	|	|	|
0+15	0.0238	1.41	VQ	|	|	|	|
0+16	0.0258	1.41	VQ	|	|	|	|
0+17	0.0277	1.42	VQ	|	|	|	|
0+18	0.0297	1.42	VQ	|	|	|	|
0+19	0.0317	1.42	VQ	|	|	|	|
0+20	0.0336	1.43	VQ	|	|	|	|
0+21	0.0356	1.43	VQ	|	|	|	|
0+22	0.0376	1.43	VQ	|	|	|	|
0+23	0.0395	1.43	VQ	|	|	|	|
0+24	0.0415	1.44	VQ	|	|	|	|
0+25	0.0435	1.44	VQ	|	|	|	|
0+26	0.0455	1.45	|Q	|	|	|	|
0+27	0.0475	1.45	|Q	|	|	|	|
0+28	0.0495	1.46	|Q	|	|	|	|
0+29	0.0515	1.47	|Q	|	|	|	|
0+30	0.0536	1.47	|Q	|	|	|	|
0+31	0.0556	1.48	|Q	|	|	|	|
0+32	0.0576	1.48	|Q	|	|	|	|
0+33	0.0597	1.48	|Q	|	|	|	|
0+34	0.0617	1.48	|Q	|	|	|	|
0+35	0.0638	1.49	|Q	|	|	|	|
0+36	0.0658	1.49	|Q	|	|	|	|
0+37	0.0679	1.50	|Q	|	|	|	|
0+38	0.0700	1.50	|Q	|	|	|	|
0+39	0.0720	1.51	|Q	|	|	|	|
0+40	0.0741	1.52	|Q	|	|	|	|
0+41	0.0762	1.52	|Q	|	|	|	|
0+42	0.0783	1.53	|Q	|	|	|	|
0+43	0.0804	1.53	|Q	|	|	|	|
0+44	0.0825	1.53	|Q	|	|	|	|
0+45	0.0847	1.54	|Q	|	|	|	|
0+46	0.0868	1.54	|Q	|	|	|	|
0+47	0.0889	1.54	|QV	|	|	|	|
0+48	0.0910	1.55	|QV	|	|	|	|
0+49	0.0932	1.55	|QV	|	|	|	|
0+50	0.0953	1.56	|QV	|	|	|	|
0+51	0.0975	1.57	|QV	|	|	|	|
0+52	0.0997	1.58	|QV	|	|	|	|
0+53	0.1018	1.58	|QV	|	|	|	|
0+54	0.1040	1.59	|QV	|	|	|	|
0+55	0.1062	1.59	|QV	|	|	|	|
0+56	0.1084	1.60	|QV	|	|	|	|
0+57	0.1106	1.60	|QV	|	|	|	|

0+58	0.1128	1.60	QV				
0+59	0.1151	1.61	QV				
1+ 0	0.1173	1.61	QV				
1+ 1	0.1195	1.62	QV				
1+ 2	0.1218	1.63	QV				
1+ 3	0.1240	1.63	QV				
1+ 4	0.1263	1.64	QV				
1+ 5	0.1285	1.65	QV				
1+ 6	0.1308	1.66	QV				
1+ 7	0.1331	1.66	Q V				
1+ 8	0.1354	1.67	Q V				
1+ 9	0.1377	1.67	Q V				
1+10	0.1400	1.67	Q V				
1+11	0.1423	1.68	Q V				
1+12	0.1446	1.68	Q V				
1+13	0.1470	1.69	Q V				
1+14	0.1493	1.70	Q V				
1+15	0.1517	1.71	Q V				
1+16	0.1540	1.72	Q V				
1+17	0.1564	1.73	Q V				
1+18	0.1588	1.73	Q V				
1+19	0.1612	1.74	Q V				
1+20	0.1636	1.74	Q V				
1+21	0.1660	1.75	Q V				
1+22	0.1684	1.75	Q V				
1+23	0.1708	1.76	Q V				
1+24	0.1733	1.76	Q V				
1+25	0.1757	1.77	Q V				
1+26	0.1782	1.78	Q V				
1+27	0.1806	1.79	Q V				
1+28	0.1831	1.80	Q V				
1+29	0.1856	1.81	Q V				
1+30	0.1881	1.82	Q V				
1+31	0.1906	1.83	Q V				
1+32	0.1931	1.83	Q V				
1+33	0.1957	1.84	Q V				
1+34	0.1982	1.84	Q V				
1+35	0.2007	1.85	Q V				
1+36	0.2033	1.85	Q V				
1+37	0.2059	1.86	Q V				
1+38	0.2084	1.87	Q V				
1+39	0.2110	1.88	Q V				
1+40	0.2136	1.90	Q V				
1+41	0.2163	1.91	Q V				
1+42	0.2189	1.92	Q V				
1+43	0.2216	1.92	Q V				
1+44	0.2242	1.93	Q V				
1+45	0.2269	1.94	Q V				
1+46	0.2296	1.94	Q V				
1+47	0.2323	1.95	Q V				

1+48	0.2349	1.95	Q V			
1+49	0.2376	1.97	Q V			
1+50	0.2404	1.98	Q V			
1+51	0.2431	1.99	Q V			
1+52	0.2459	2.00	Q V			
1+53	0.2487	2.02	Q V			
1+54	0.2515	2.03	Q V			
1+55	0.2543	2.04	Q V			
1+56	0.2571	2.04	Q V			
1+57	0.2599	2.05	Q V			
1+58	0.2627	2.06	Q V			
1+59	0.2656	2.06	Q V			
2+ 0	0.2684	2.07	Q V			
2+ 1	0.2713	2.09	Q V			
2+ 2	0.2742	2.10	Q V			
2+ 3	0.2771	2.12	Q V			
2+ 4	0.2801	2.13	Q V			
2+ 5	0.2830	2.15	Q V			
2+ 6	0.2860	2.16	Q V			
2+ 7	0.2890	2.17	Q V			
2+ 8	0.2920	2.18	Q V			
2+ 9	0.2950	2.19	Q V			
2+10	0.2980	2.19	Q V			
2+11	0.3010	2.20	Q V			
2+12	0.3041	2.21	Q V			
2+13	0.3072	2.23	Q V			
2+14	0.3102	2.25	Q V			
2+15	0.3134	2.26	Q V			
2+16	0.3165	2.28	Q V			
2+17	0.3197	2.30	Q V			
2+18	0.3229	2.32	Q V			
2+19	0.3261	2.33	Q V			
2+20	0.3293	2.34	Q V			
2+21	0.3325	2.35	Q V			
2+22	0.3358	2.35	Q V			
2+23	0.3390	2.36	Q V			
2+24	0.3423	2.37	Q V			
2+25	0.3456	2.40	Q V			
2+26	0.3489	2.42	Q V			
2+27	0.3523	2.44	Q V			
2+28	0.3557	2.46	Q V			
2+29	0.3591	2.48	Q V			
2+30	0.3625	2.50	Q V			
2+31	0.3660	2.51	Q V			
2+32	0.3695	2.53	Q V			
2+33	0.3730	2.54	Q V			
2+34	0.3765	2.55	Q V			
2+35	0.3800	2.56	Q V			
2+36	0.3836	2.57	Q V			
2+37	0.3871	2.60	Q V			

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2+38       0.3908      2.63  | Q     V |          |          |          |
2+39       0.3944      2.65  | Q     V |          |          |          |
2+40       0.3981      2.68  | Q     V |          |          |          |
2+41       0.4018      2.71  | Q      V|          |          |          |
2+42       0.4056      2.73  | Q      V|          |          |          |
2+43       0.4094      2.75  |  Q     V|          |          |          |
2+44       0.4132      2.76  |  Q     V|          |          |          |
2+45       0.4170      2.78  |  Q     V|          |          |          |
2+46       0.4209      2.79  |  Q     V|          |          |          |
2+47       0.4247      2.81  |  Q     V|          |          |          |
2+48       0.4286      2.82  |  Q     V|          |          |          |
2+49       0.4326      2.86  |  Q     V|          |          |          |
2+50       0.4365      2.89  |  Q     V|          |          |          |
2+51       0.4406      2.93  |  Q     V|          |          |          |
2+52       0.4446      2.96  |  Q      V          |          |          |
2+53       0.4488      2.99  |  Q      V          |          |          |
2+54       0.4529      3.03  |  Q      V          |          |          |
2+55       0.4571      3.05  |  Q      V          |          |          |
2+56       0.4614      3.07  |  Q      V          |          |          |
2+57       0.4656      3.09  |  Q      V          |          |          |
2+58       0.4699      3.11  |  Q      V          |          |          |
2+59       0.4742      3.12  |  Q      V          |          |          |
3+ 0       0.4785      3.14  |  Q      V          |          |          |
3+ 1       0.4829      3.19  |  Q      V          |          |          |
3+ 2       0.4874      3.24  |  Q      |V          |          |          |
3+ 3       0.4919      3.28  |  Q      |V          |          |          |
3+ 4       0.4965      3.33  |  Q      |V          |          |          |
3+ 5       0.5011      3.37  |  Q      |V          |          |          |
3+ 6       0.5058      3.42  |  Q      |V          |          |          |
3+ 7       0.5106      3.44  |  Q      |V          |          |          |
3+ 8       0.5153      3.47  |  Q      |V          |          |          |
3+ 9       0.5202      3.50  |  Q      |V          |          |          |
3+10       0.5250      3.53  |  Q      |V          |          |          |
3+11       0.5299      3.55  |  Q      |V          |          |          |
3+12       0.5348      3.58  |  Q      | V         |          |          |
3+13       0.5399      3.64  |  Q      | V         |          |          |
3+14       0.5450      3.71  |   Q     | V         |          |          |
3+15       0.5502      3.77  |   Q     | V         |          |          |
3+16       0.5555      3.84  |   Q     | V         |          |          |
3+17       0.5608      3.90  |   Q     | V         |          |          |
3+18       0.5663      3.97  |   Q     | V         |          |          |
3+19       0.5718      4.01  |   Q     | V         |          |          |
3+20       0.5774      4.05  |   Q     |  V        |          |          |
3+21       0.5830      4.09  |   Q     |  V        |          |          |
3+22       0.5887      4.13  |   Q     |  V        |          |          |
3+23       0.5945      4.17  |   Q     |  V        |          |          |
3+24       0.6003      4.21  |   Q     |  V        |          |          |
3+25       0.6062      4.31  |   Q     |  V        |          |          |
3+26       0.6123      4.41  |   Q     |  V        |          |          |
3+27       0.6185      4.52  |   Q     |  V        |          |          |
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3+28       0.6249      4.62  |    Q    |   V     |         |          |
3+29       0.6314      4.72  |    Q    |   V     |         |          |
3+30       0.6380      4.83  |    Q    |   V     |         |          |
3+31       0.6448      4.89  |    Q    |   V     |         |          |
3+32       0.6516      4.96  |    Q    |   V     |         |          |
3+33       0.6585      5.03  |    Q    |   V     |         |          |
3+34       0.6655      5.10  |    Q    |    V    |         |          |
3+35       0.6727      5.16  |    Q    |    V    |         |          |
3+36       0.6799      5.23  |    Q    |    V    |         |          |
3+37       0.6873      5.43  |    Q    |    V    |         |          |
3+38       0.6951      5.62  |     Q   |    V    |         |          |
3+39       0.7031      5.81  |     Q   |    V    |         |          |
3+40       0.7114      6.01  |     Q   |     V   |         |          |
3+41       0.7199      6.20  |     Q   |     V   |         |          |
3+42       0.7287      6.39  |      Q  |     V   |         |          |
3+43       0.7377      6.54  |      Q  |     V   |         |          |
3+44       0.7469      6.69  |      Q  |     V   |         |          |
3+45       0.7564      6.84  |      Q  |      V  |         |          |
3+46       0.7660      6.99  |      Q  |      V  |         |          |
3+47       0.7758      7.14  |      Q  |      V  |         |          |
3+48       0.7858      7.28  |      Q  |      V  |         |          |
3+49       0.7967      7.85  |       Q |      V  |         |          |
3+50       0.8083      8.42  |        Q|       V |         |          |
3+51       0.8206      8.99  |        Q|       V |         |          |
3+52       0.8338      9.56  |         Q       V |         |          |
3+53       0.8478     10.13  |         |Q       V|         |          |
3+54       0.8625     10.70  |         |Q       V|         |          |
3+55       0.8782     11.42  |         | Q      V|         |          |
3+56       0.8950     12.15  |         |  Q      V         |          |
3+57       0.9127     12.88  |         |   Q     V         |          |
3+58       0.9315     13.61  |         |   Q     |V        |          |
3+59       0.9512     14.34  |         |    Q    |V        |          |
4+ 0       0.9720     15.07  |         |     Q   |V        |          |
4+ 1       0.9976     18.64  |         |         Q V       |          |
4+ 2       1.0282     22.21  |         |          | VQ     |          |
4+ 3       1.0638     25.78  |         |          |  V   Q |          |
4+ 4       1.1042     29.36  |         |          |  V     | Q        |
4+ 5       1.1495     32.93  |         |          |   V    |     Q    |
4+ 6       1.1998     36.50  |         |          |      V |          Q
4+ 7       1.2437     31.85  |         |          |       V|   Q      |
4+ 8       1.2811     27.19  |         |          |       VQ|         |
4+ 9       1.3122     22.54  |         |          |   Q    V|         |
4+10       1.3368     17.89  |         |        Q|         V         |
4+11       1.3551     13.23  |         |   Q     |         V         |
4+12       1.3669      8.58  |        Q|         |         V         |
4+13       1.3780      8.10  |       Q |         |         |V        |
4+14       1.3885      7.63  |       Q |         |         |V        |
4+15       1.3984      7.16  |      Q  |         |         |V        |
4+16       1.4076      6.69  |      Q  |         |         |V        |
4+17       1.4162      6.21  |     Q   |         |         |V        |
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4+18       1.4241      5.74  |      Q    |           |           | V         |
4+19       1.4317      5.53  |      Q    |           |           | V         |
4+20       1.4390      5.32  |     Q     |           |           | V         |
4+21       1.4461      5.12  |     Q     |           |           | V         |
4+22       1.4528      4.91  |     Q     |           |           | V         |
4+23       1.4593      4.70  |     Q     |           |           | V         |
4+24       1.4655      4.49  |    Q      |           |           |  V        |
4+25       1.4715      4.37  |    Q      |           |           |  V        |
4+26       1.4774      4.25  |    Q      |           |           |  V        |
4+27       1.4830      4.13  |    Q      |           |           |  V        |
4+28       1.4886      4.00  |    Q      |           |           |  V        |
4+29       1.4939      3.88  |    Q      |           |           |  V        |
4+30       1.4991      3.76  |    Q      |           |           |  V        |
4+31       1.5042      3.68  |    Q      |           |           |  V        |
4+32       1.5091      3.60  |   Q       |           |           |   V       |
4+33       1.5140      3.52  |   Q       |           |           |   V       |
4+34       1.5187      3.44  |   Q       |           |           |   V       |
4+35       1.5233      3.36  |   Q       |           |           |   V       |
4+36       1.5278      3.27  |   Q       |           |           |   V       |
4+37       1.5322      3.21  |   Q       |           |           |   V       |
4+38       1.5366      3.16  |   Q       |           |           |   V       |
4+39       1.5409      3.10  |   Q       |           |           |   V       |
4+40       1.5450      3.04  |   Q       |           |           |   V       |
4+41       1.5492      2.98  |   Q       |           |           |   V       |
4+42       1.5532      2.92  |   Q       |           |           |    V      |
4+43       1.5571      2.88  |   Q       |           |           |    V      |
4+44       1.5610      2.83  |   Q       |           |           |    V      |
4+45       1.5649      2.79  |   Q       |           |           |    V      |
4+46       1.5686      2.74  |   Q       |           |           |    V      |
4+47       1.5724      2.70  | Q         |           |           |    V      |
4+48       1.5760      2.65  | Q         |           |           |    V      |
4+49       1.5796      2.61  | Q         |           |           |    V      |
4+50       1.5832      2.58  | Q         |           |           |    V      |
4+51       1.5867      2.54  | Q         |           |           |    V      |
4+52       1.5901      2.51  | Q         |           |           |    V      |
4+53       1.5935      2.47  | Q         |           |           |    V      |
4+54       1.5969      2.44  | Q         |           |           |     V     |
4+55       1.6002      2.41  | Q         |           |           |     V     |
4+56       1.6035      2.38  | Q         |           |           |     V     |
4+57       1.6067      2.35  | Q         |           |           |     V     |
4+58       1.6099      2.32  | Q         |           |           |     V     |
4+59       1.6131      2.29  | Q         |           |           |     V     |
5+ 0       1.6162      2.26  | Q         |           |           |     V     |
5+ 1       1.6193      2.24  | Q         |           |           |     V     |
5+ 2       1.6223      2.21  | Q         |           |           |     V     |
5+ 3       1.6253      2.19  | Q         |           |           |     V     |
5+ 4       1.6283      2.16  | Q         |           |           |     V     |
5+ 5       1.6312      2.14  | Q         |           |           |     V     |
5+ 6       1.6342      2.12  | Q         |           |           |     V     |
5+ 7       1.6370      2.09  | Q         |           |           |     V     |
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5+ 8       1.6399      2.07  | Q       |         |         |       V  |
5+ 9       1.6427      2.05  | Q       |         |         |       V  |
5+10       1.6455      2.03  | Q       |         |         |       V  |
5+11       1.6483      2.01  | Q       |         |         |       V  |
5+12       1.6510      1.99  | Q       |         |         |       V  |
5+13       1.6538      1.97  | Q       |         |         |       V  |
5+14       1.6565      1.96  | Q       |         |         |       V  |
5+15       1.6591      1.94  | Q       |         |         |       V  |
5+16       1.6618      1.92  | Q       |         |         |       V  |
5+17       1.6644      1.90  | Q       |         |         |       V  |
5+18       1.6670      1.88  | Q       |         |         |       V  |
5+19       1.6696      1.87  | Q       |         |         |       V  |
5+20       1.6721      1.85  | Q       |         |         |       V  |
5+21       1.6746      1.84  | Q       |         |         |       V  |
5+22       1.6771      1.82  |Q        |         |         |       V  |
5+23       1.6796      1.81  |Q        |         |         |       V  |
5+24       1.6821      1.79  |Q        |         |         |       V  |
5+25       1.6845      1.78  |Q        |         |         |        V |
5+26       1.6870      1.76  |Q        |         |         |        V |
5+27       1.6894      1.75  |Q        |         |         |        V |
5+28       1.6918      1.74  |Q        |         |         |        V |
5+29       1.6941      1.72  |Q        |         |         |        V |
5+30       1.6965      1.71  |Q        |         |         |        V |
5+31       1.6988      1.70  |Q        |         |         |        V |
5+32       1.7012      1.68  |Q        |         |         |        V |
5+33       1.7035      1.67  |Q        |         |         |        V |
5+34       1.7057      1.66  |Q        |         |         |        V |
5+35       1.7080      1.65  |Q        |         |         |        V |
5+36       1.7103      1.63  |Q        |         |         |        V |
5+37       1.7125      1.62  |Q        |         |         |        V |
5+38       1.7147      1.61  |Q        |         |         |        V |
5+39       1.7169      1.60  |Q        |         |         |        V |
5+40       1.7191      1.59  |Q        |         |         |        V |
5+41       1.7213      1.58  |Q        |         |         |        V |
5+42       1.7234      1.57  |Q        |         |         |        V |
5+43       1.7256      1.56  |Q        |         |         |        V |
5+44       1.7277      1.55  |Q        |         |         |         V|
5+45       1.7298      1.54  |Q        |         |         |         V|
5+46       1.7320      1.53  |Q        |         |         |         V|
5+47       1.7340      1.52  |Q        |         |         |         V|
5+48       1.7361      1.51  |Q        |         |         |         V|
5+49       1.7382      1.50  |Q        |         |         |         V|
5+50       1.7402      1.49  |Q        |         |         |         V|
5+51       1.7423      1.48  |Q        |         |         |         V|
5+52       1.7443      1.47  |Q        |         |         |         V|
5+53       1.7463      1.46  |Q        |         |         |         V|
5+54       1.7483      1.45  |Q        |         |         |         V|
5+55       1.7503      1.45  |Q        |         |         |         V|
5+56       1.7523      1.44  |Q        |         |         |         V|
5+57       1.7543      1.43  |Q        |         |         |         V|
```

```
    5+58       1.7562      1.42  |Q        |         |         |        V|
    5+59       1.7582      1.41  |Q        |         |         |        V|
    6+ 0       1.7601      1.41  |Q        |         |         |        V|
    6+ 1       1.7620      1.40  |Q        |         |         |        V|
    6+ 2       1.7640      1.39  |Q        |         |         |        V|
    6+ 3       1.7659      1.38  |Q        |         |         |        V|
    6+ 4       1.7678      1.38  |Q        |         |         |        V|
    6+ 5       1.7696      1.37  |Q        |         |         |        V|
    6+ 6       1.7715      1.36  |Q        |         |         |         V
--------------------------------------------------------------------------
```

End of computations, total study area = 13.270 (Ac.)

```
                  FLOOD HYDROGRAPH ROUTING PROGRAM
            Copyright (c) CIVILCADD/CIVILDESIGN, 1989 - 2018
                        Study date: 06/21/21

------------------------------------------------------------------------


108-001 Idaho (Escondido Estates)
Proposed Condition 100-Year Storm
SSD Starting Peak @ Top of WQ Ponding
TH
------------------------------------------------------------------------


Program License Serial Number 6440

------------------------------------------------------------------------
********************* HYDROGRAPH INFORMATION **********************

                From study/file name: 108001OnsitePropBMPNR.rte
****************************HYDROGRAPH DATA****************************
                Number of intervals =   366
                Time interval =    1.0 (Min.)
                Maximum/Peak flow rate =       36.500 (CFS)
                Total volume =       1.772 (Ac.Ft)
        Status of hydrographs being held in storage
                    Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
************************************************************************



++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      403.000 to Point/Station      403.000
**** RETARDING BASIN ROUTING ****
________________________________________________________________________

User entry of depth-outflow-storage data
------------------------------------------------------------------------
Total number of inflow hydrograph intervals = 366
Hydrograph time unit =  1.000 (Min.)
Initial depth in storage basin =   3.25(Ft.)
------------------------------------------------------------------------
------------------------------------------------------------------------
Initial basin depth =   3.25 (Ft.)
Initial basin storage =      0.37 (Ac.Ft)
Initial basin outflow =   0.43 (CFS)
```

Depth vs. Storage and Depth vs. Discharge data:

Basin Depth (Ft.)	Storage (Ac.Ft)	Outflow (CFS)	(S-O*dt/2) (Ac.Ft)	(S+O*dt/2) (Ac.Ft)
0.000	0.000	0.000	0.000	0.000
0.125	0.010	0.040	0.010	0.010
0.250	0.020	0.090	0.020	0.020
0.750	0.060	0.190	0.060	0.060
2.250	0.150	0.360	0.150	0.150
2.750	0.260	0.400	0.260	0.260
3.250	0.370	0.430	0.370	0.370
3.750	0.490	2.820	0.488	0.492
4.750	0.750	12.760	0.741	0.759
5.250	0.900	19.390	0.887	0.913

Hydrograph Detention Basin Routing

Graph values: 'I'= unit inflow; 'O'=outflow at time shown

Time (Hours)	Inflow (CFS)	Outflow (CFS)	Storage (Ac.Ft)	.0	9.1	18.25	27.38	36.50	Depth (Ft.)
0.017	0.23	0.43	0.369	O	|	|	|	|	3.25
0.033	0.46	0.43	0.369	O	|	|	|	|	3.25
0.050	0.69	0.43	0.369	O	|	|	|	|	3.25
0.067	0.92	0.43	0.370	O	|	|	|	|	3.25
0.083	1.15	0.44	0.371	OI	|	|	|	|	3.25
0.100	1.37	0.47	0.372	OI	|	|	|	|	3.26
0.117	1.38	0.49	0.373	OI	|	|	|	|	3.26
0.133	1.38	0.51	0.374	OI	|	|	|	|	3.27
0.150	1.38	0.54	0.375	OI	|	|	|	|	3.27
0.167	1.38	0.56	0.377	OI	|	|	|	|	3.28
0.183	1.39	0.58	0.378	OI	|	|	|	|	3.28
0.200	1.39	0.60	0.379	OI	|	|	|	|	3.29
0.217	1.39	0.63	0.380	OI	|	|	|	|	3.29
0.233	1.40	0.65	0.381	OI	|	|	|	|	3.30
0.250	1.41	0.67	0.382	OI	|	|	|	|	3.30
0.267	1.41	0.69	0.383	OI	|	|	|	|	3.30
0.283	1.42	0.71	0.384	OI	|	|	|	|	3.31
0.300	1.42	0.73	0.385	OI	|	|	|	|	3.31
0.317	1.42	0.75	0.386	OI	|	|	|	|	3.32
0.333	1.43	0.76	0.387	OI	|	|	|	|	3.32
0.350	1.43	0.78	0.388	OI	|	|	|	|	3.32
0.367	1.43	0.80	0.389	OI	|	|	|	|	3.33
0.383	1.43	0.82	0.389	OI	|	|	|	|	3.33
0.400	1.44	0.83	0.390	OI	|	|	|	|	3.33
0.417	1.44	0.85	0.391	OI	|	|	|	|	3.34
0.433	1.45	0.87	0.392	OI	|	|	|	|	3.34

0.450	1.45	0.88	0.393	OI				3.34
0.467	1.46	0.90	0.393	OI				3.35
0.483	1.47	0.91	0.394	OI				3.35
0.500	1.47	0.93	0.395	OI				3.35
0.517	1.48	0.94	0.396	OI				3.36
0.533	1.48	0.96	0.396	OI				3.36
0.550	1.48	0.97	0.397	OI				3.36
0.567	1.48	0.98	0.398	OI				3.37
0.583	1.49	1.00	0.399	OI				3.37
0.600	1.49	1.01	0.399	OI				3.37
0.617	1.50	1.02	0.400	OI				3.37
0.633	1.50	1.04	0.401	OI				3.38
0.650	1.51	1.05	0.401	OI				3.38
0.667	1.52	1.06	0.402	OI				3.38
0.683	1.52	1.08	0.402	OI				3.38
0.700	1.53	1.09	0.403	OI				3.39
0.717	1.53	1.10	0.404	OI				3.39
0.733	1.53	1.11	0.404	OI				3.39
0.750	1.54	1.12	0.405	OI				3.39
0.767	1.54	1.13	0.405	OI				3.40
0.783	1.54	1.14	0.406	|O				3.40
0.800	1.55	1.16	0.406	|O				3.40
0.817	1.55	1.17	0.407	|O				3.40
0.833	1.56	1.18	0.408	|O				3.41
0.850	1.57	1.19	0.408	|O				3.41
0.867	1.58	1.20	0.409	|O				3.41
0.883	1.58	1.21	0.409	|O				3.41
0.900	1.59	1.22	0.410	|O				3.41
0.917	1.59	1.23	0.410	|O				3.42
0.933	1.60	1.24	0.411	|O				3.42
0.950	1.60	1.25	0.411	|O				3.42
0.967	1.60	1.26	0.412	|O				3.42
0.983	1.61	1.27	0.412	|O				3.43
1.000	1.61	1.28	0.412	|O				3.43
1.017	1.62	1.29	0.413	|O				3.43
1.033	1.63	1.29	0.413	|O				3.43
1.050	1.63	1.30	0.414	|O				3.43
1.067	1.64	1.31	0.414	|O				3.43
1.083	1.65	1.32	0.415	|O				3.44
1.100	1.66	1.33	0.415	|O				3.44
1.117	1.66	1.34	0.416	|O				3.44
1.133	1.67	1.35	0.416	|O				3.44
1.150	1.67	1.36	0.417	|O				3.44
1.167	1.67	1.37	0.417	|O				3.45
1.183	1.68	1.37	0.417	|O				3.45
1.200	1.68	1.38	0.418	|O				3.45
1.217	1.69	1.39	0.418	|O				3.45
1.233	1.70	1.40	0.419	|O				3.45
1.250	1.71	1.41	0.419	|O				3.45
1.267	1.72	1.42	0.419	|O				3.46

1.283	1.73	1.42	0.420	O				3.46
1.300	1.73	1.43	0.420	O				3.46
1.317	1.74	1.44	0.421	O				3.46
1.333	1.74	1.45	0.421	O				3.46
1.350	1.75	1.46	0.422	O				3.46
1.367	1.75	1.46	0.422	O				3.47
1.383	1.76	1.47	0.422	O				3.47
1.400	1.76	1.48	0.423	O				3.47
1.417	1.77	1.49	0.423	O				3.47
1.433	1.78	1.50	0.424	O				3.47
1.450	1.79	1.50	0.424	O				3.47
1.467	1.80	1.51	0.424	O				3.48
1.483	1.81	1.52	0.425	O				3.48
1.500	1.82	1.53	0.425	O				3.48
1.517	1.83	1.54	0.425	O				3.48
1.533	1.83	1.54	0.426	O				3.48
1.550	1.84	1.55	0.426	O				3.48
1.567	1.84	1.56	0.427	O				3.49
1.583	1.85	1.57	0.427	O				3.49
1.600	1.85	1.57	0.427	O				3.49
1.617	1.86	1.58	0.428	O				3.49
1.633	1.87	1.59	0.428	O				3.49
1.650	1.88	1.60	0.429	O				3.49
1.667	1.90	1.61	0.429	O				3.50
1.683	1.91	1.61	0.429	O				3.50
1.700	1.92	1.62	0.430	O				3.50
1.717	1.92	1.63	0.430	O				3.50
1.733	1.93	1.64	0.431	O				3.50
1.750	1.94	1.65	0.431	O				3.50
1.767	1.94	1.65	0.431	O				3.51
1.783	1.95	1.66	0.432	O				3.51
1.800	1.95	1.67	0.432	O				3.51
1.817	1.97	1.68	0.433	O				3.51
1.833	1.98	1.69	0.433	O				3.51
1.850	1.99	1.69	0.433	O				3.51
1.867	2.00	1.70	0.434	O				3.52
1.883	2.02	1.71	0.434	O				3.52
1.900	2.03	1.72	0.435	O				3.52
1.917	2.04	1.73	0.435	O				3.52
1.933	2.04	1.74	0.436	O				3.52
1.950	2.05	1.74	0.436	O				3.52
1.967	2.06	1.75	0.436	O				3.53
1.983	2.06	1.76	0.437	O				3.53
2.000	2.07	1.77	0.437	O				3.53
2.017	2.09	1.78	0.438	O				3.53
2.033	2.10	1.79	0.438	O				3.53
2.050	2.12	1.79	0.439	O				3.54
2.067	2.13	1.80	0.439	O				3.54
2.083	2.15	1.81	0.439	O				3.54
2.100	2.16	1.82	0.440	O				3.54

2.117	2.17	1.83	0.440	O				3.54
2.133	2.18	1.84	0.441	O				3.55
2.150	2.19	1.85	0.441	O				3.55
2.167	2.19	1.86	0.442	O				3.55
2.183	2.20	1.87	0.442	O				3.55
2.200	2.21	1.88	0.443	O				3.55
2.217	2.23	1.89	0.443	O				3.55
2.233	2.25	1.90	0.444	O				3.56
2.250	2.26	1.91	0.444	O				3.56
2.267	2.28	1.92	0.445	O				3.56
2.283	2.30	1.93	0.445	OI				3.56
2.300	2.32	1.94	0.446	OI				3.57
2.317	2.33	1.95	0.446	OI				3.57
2.333	2.34	1.96	0.447	OI				3.57
2.350	2.35	1.97	0.447	OI				3.57
2.367	2.35	1.98	0.448	OI				3.57
2.383	2.36	1.99	0.448	OI				3.58
2.400	2.37	2.00	0.449	OI				3.58
2.417	2.40	2.01	0.449	OI				3.58
2.433	2.42	2.02	0.450	OI				3.58
2.450	2.44	2.03	0.450	OI				3.58
2.467	2.46	2.04	0.451	OI				3.59
2.483	2.48	2.05	0.452	OI				3.59
2.500	2.50	2.07	0.452	OI				3.59
2.517	2.51	2.08	0.453	OI				3.59
2.533	2.53	2.09	0.453	OI				3.60
2.550	2.54	2.10	0.454	OI				3.60
2.567	2.55	2.11	0.455	OI				3.60
2.583	2.56	2.13	0.455	OI				3.60
2.600	2.57	2.14	0.456	OI				3.61
2.617	2.60	2.15	0.456	OI				3.61
2.633	2.63	2.16	0.457	OI				3.61
2.650	2.65	2.17	0.458	OI				3.62
2.667	2.68	2.19	0.458	OI				3.62
2.683	2.71	2.20	0.459	OI				3.62
2.700	2.73	2.22	0.460	OI				3.62
2.717	2.75	2.23	0.460	OI				3.63
2.733	2.76	2.24	0.461	OI				3.63
2.750	2.78	2.26	0.462	OI				3.63
2.767	2.79	2.27	0.463	OI				3.64
2.783	2.81	2.29	0.463	O				3.64
2.800	2.82	2.30	0.464	O				3.64
2.817	2.86	2.32	0.465	O				3.64
2.833	2.89	2.33	0.465	O				3.65
2.850	2.93	2.35	0.466	O				3.65
2.867	2.96	2.36	0.467	O				3.65
2.883	2.99	2.38	0.468	O				3.66
2.900	3.03	2.40	0.469	O				3.66
2.917	3.05	2.41	0.470	O				3.67
2.933	3.07	2.43	0.470	O				3.67

2.950	3.09	2.45	0.471	O				3.67
2.967	3.11	2.47	0.472	O				3.68
2.983	3.12	2.48	0.473	O				3.68
3.000	3.14	2.50	0.474	O				3.68
3.017	3.19	2.52	0.475	O				3.69
3.033	3.24	2.54	0.476	O				3.69
3.050	3.28	2.56	0.477	O				3.70
3.067	3.33	2.58	0.478	O				3.70
3.083	3.37	2.60	0.479	O				3.70
3.100	3.42	2.62	0.480	O				3.71
3.117	3.44	2.64	0.481	OI				3.71
3.133	3.47	2.66	0.482	OI				3.72
3.150	3.50	2.69	0.483	OI				3.72
3.167	3.53	2.71	0.484	OI				3.73
3.183	3.55	2.73	0.486	OI				3.73
3.200	3.58	2.75	0.487	OI				3.74
3.217	3.64	2.78	0.488	OI				3.74
3.233	3.71	2.80	0.489	OI				3.75
3.250	3.77	2.83	0.490	OI				3.75
3.267	3.84	2.88	0.492	OI				3.76
3.283	3.90	2.93	0.493	OI				3.76
3.300	3.97	2.99	0.494	OI				3.77
3.317	4.01	3.04	0.496	OI				3.77
3.333	4.05	3.09	0.497	OI				3.78
3.350	4.09	3.14	0.498	OI				3.78
3.367	4.13	3.19	0.500	OI				3.79
3.383	4.17	3.24	0.501	OI				3.79
3.400	4.21	3.29	0.502	OI				3.80
3.417	4.31	3.34	0.504	OI				3.80
3.433	4.41	3.39	0.505	OI				3.81
3.450	4.52	3.44	0.506	O				3.81
3.467	4.62	3.50	0.508	OI				3.82
3.483	4.72	3.56	0.509	OI				3.82
3.500	4.83	3.62	0.511	OI				3.83
3.517	4.89	3.69	0.513	OI				3.84
3.533	4.96	3.75	0.514	OI				3.84
3.550	5.03	3.81	0.516	OI				3.85
3.567	5.10	3.88	0.518	OI				3.86
3.583	5.16	3.94	0.519	OI				3.86
3.600	5.23	4.01	0.521	OI				3.87
3.617	5.43	4.08	0.523	OI				3.88
3.633	5.62	4.15	0.525	OI				3.88
3.650	5.81	4.23	0.527	O I				3.89
3.667	6.01	4.32	0.529	O I				3.90
3.683	6.20	4.41	0.532	O I				3.91
3.700	6.39	4.50	0.534	O I				3.92
3.717	6.54	4.61	0.537	OI				3.93
3.733	6.69	4.71	0.539	OI				3.94
3.750	6.84	4.81	0.542	OI				3.95
3.767	6.99	4.92	0.545	O I				3.96

```
3.783    7.14    5.03      0.548  |   O I |       |       |       |     3.97
3.800    7.28    5.14      0.551  |   O I |       |       |       |     3.98
3.817    7.85    5.27      0.554  |   O I |       |       |       |     4.00
3.833    8.42    5.42      0.558  |   O  I|       |       |       |     4.01
3.850    8.99    5.58      0.562  |   O  I|       |       |       |     4.03
3.867    9.56    5.77      0.567  |    O  I       |       |       |     4.05
3.883   10.13    5.98      0.573  |    O  I       |       |       |     4.07
3.900   10.70    6.21      0.579  |    O  |I      |       |       |     4.09
3.917   11.42    6.46      0.585  |    O  | I     |       |       |     4.12
3.933   12.15    6.73      0.592  |    O  | I     |       |       |     4.14
3.950   12.88    7.03      0.600  |     O |  I    |       |       |     4.17
3.967   13.61    7.35      0.608  |     O |  I    |       |       |     4.21
3.983   14.34    7.69      0.617  |     O |   I   |       |       |     4.24
4.000   15.07    8.05      0.627  |      O|    I  |       |       |     4.28
4.017   18.64    8.50      0.639  |      O|       I       |       |     4.32
4.033   22.21    9.11      0.655  |      O|       |  I    |       |     4.38
4.050   25.78    9.88      0.675  |       O       |     I |       |     4.46
4.067   29.36   10.78      0.698  |       |O      |       |I      |     4.55
4.083   32.93   11.83      0.726  |       | O     |       |   I   |     4.66
4.100   36.50   13.04      0.756  |       |  O    |       |       I     4.77
4.117   31.85   14.29      0.785  |       |   O   |       |  I    |     4.87
4.133   27.19   15.19      0.805  |       |    O  |      I|       |     4.93
4.150   22.54   15.76      0.818  |       |    O  |  I    |       |     4.98
4.167   17.89   16.02      0.824  |       |     OI|       |       |     5.00
4.183   13.23   16.00      0.823  |       |  I  O |       |       |     4.99
4.200    8.58   15.69      0.816  |      I|    O  |       |       |     4.97
4.217    8.10   15.26      0.807  |      I|    O  |       |       |     4.94
4.233    7.63   14.82      0.797  |     I |   O   |       |       |     4.91
4.250    7.16   14.38      0.787  |     I |   O   |       |       |     4.87
4.267    6.69   13.94      0.777  |    I  |   O   |       |       |     4.84
4.283    6.21   13.50      0.767  |    I  |  O    |       |       |     4.81
4.300    5.74   13.06      0.757  |    I  |  O    |       |       |     4.77
4.317    5.53   12.64      0.747  |   I   |  O    |       |       |     4.74
4.333    5.32   12.27      0.737  |   I   | O     |       |       |     4.70
4.350    5.12   11.90      0.728  |   I   | O     |       |       |     4.66
4.367    4.91   11.55      0.718  |   I   | O     |       |       |     4.63
4.383    4.70   11.20      0.709  |   I   |O      |       |       |     4.59
4.400    4.49   10.87      0.700  |  I    |O      |       |       |     4.56
4.417    4.37   10.54      0.692  |  I    |O      |       |       |     4.53
4.433    4.25   10.22      0.683  |  I    O       |       |       |     4.49
4.450    4.13    9.91      0.675  |  I    O       |       |       |     4.46
4.467    4.00    9.61      0.668  |  I    O       |       |       |     4.43
4.483    3.88    9.32      0.660  |  I    O       |       |       |     4.40
4.500    3.76    9.03      0.653  |  I   O|       |       |       |     4.38
4.517    3.68    8.76      0.645  |  I   O|       |       |       |     4.35
4.533    3.60    8.50      0.639  |  I   O|       |       |       |     4.32
4.550    3.52    8.25      0.632  |  I   O|       |       |       |     4.30
4.567    3.44    8.00      0.626  |  I   O|       |       |       |     4.27
4.583    3.36    7.76      0.619  | I   O |       |       |       |     4.25
4.600    3.27    7.54      0.613  | I   O |       |       |       |     4.22
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4.617	3.21	7.32	0.608	I O				4.20
4.633	3.16	7.10	0.602	I O				4.18
4.650	3.10	6.90	0.597	I O				4.16
4.667	3.04	6.70	0.592	I O				4.14
4.683	2.98	6.51	0.587	I O				4.12
4.700	2.92	6.33	0.582	I O				4.10
4.717	2.88	6.15	0.577	I O				4.09
4.733	2.83	5.99	0.573	I O				4.07
4.750	2.79	5.82	0.569	I O				4.05
4.767	2.74	5.67	0.564	I O				4.04
4.783	2.70	5.51	0.560	I O				4.02
4.800	2.65	5.37	0.557	I O				4.01
4.817	2.61	5.23	0.553	I O				3.99
4.833	2.58	5.09	0.549	I O				3.98
4.850	2.54	4.96	0.546	I O				3.97
4.867	2.51	4.84	0.543	I O				3.95
4.883	2.47	4.72	0.540	I O				3.94
4.900	2.44	4.60	0.537	I O				3.93
4.917	2.41	4.49	0.534	IO				3.92
4.933	2.38	4.38	0.531	IO				3.91
4.950	2.35	4.28	0.528	IO				3.90
4.967	2.32	4.18	0.526	IO				3.89
4.983	2.29	4.08	0.523	IO				3.88
5.000	2.26	3.99	0.521	I O				3.87
5.017	2.24	3.90	0.518	I O				3.86
5.033	2.21	3.81	0.516	I O				3.85
5.050	2.19	3.73	0.514	I O				3.84
5.067	2.16	3.65	0.512	I O				3.83
5.083	2.14	3.58	0.510	I O				3.83
5.100	2.12	3.50	0.508	I O				3.82
5.117	2.09	3.43	0.506	I O				3.81
5.133	2.07	3.36	0.504	IO				3.80
5.150	2.05	3.29	0.502	IO				3.80
5.167	2.03	3.23	0.501	IO				3.79
5.183	2.01	3.17	0.499	IO				3.78
5.200	1.99	3.11	0.498	IO				3.78
5.217	1.97	3.05	0.496	IO				3.77
5.233	1.96	2.99	0.495	IO				3.77
5.250	1.94	2.94	0.493	IO				3.76
5.267	1.92	2.89	0.492	IO				3.76
5.283	1.90	2.84	0.490	IO				3.75
5.300	1.88	2.80	0.489	IO				3.75
5.317	1.87	2.78	0.488	IO				3.74
5.333	1.85	2.75	0.487	IO				3.74
5.350	1.84	2.73	0.485	IO				3.73
5.367	1.82	2.71	0.484	IO				3.73
5.383	1.81	2.68	0.483	IO				3.72
5.400	1.79	2.66	0.482	IO				3.72
5.417	1.78	2.63	0.481	IO				3.71
5.433	1.76	2.61	0.479	IO				3.71

5.450	1.75	2.59	0.478	IO				3.70
5.467	1.74	2.56	0.477	IO				3.70
5.483	1.72	2.54	0.476	IO				3.69
5.500	1.71	2.52	0.475	IO				3.69
5.517	1.70	2.50	0.474	IO				3.68
5.533	1.68	2.48	0.473	IO				3.68
5.550	1.67	2.45	0.472	IO				3.67
5.567	1.66	2.43	0.471	IO				3.67
5.583	1.65	2.41	0.469	IO				3.66
5.600	1.63	2.39	0.468	IO				3.66
5.617	1.62	2.37	0.467	IO				3.66
5.633	1.61	2.35	0.466	IO				3.65
5.650	1.60	2.33	0.465	IO				3.65
5.667	1.59	2.31	0.464	IO				3.64
5.683	1.58	2.29	0.463	IO				3.64
5.700	1.57	2.27	0.462	O				3.64
5.717	1.56	2.25	0.461	O				3.63
5.733	1.55	2.23	0.460	O				3.63
5.750	1.54	2.21	0.460	O				3.62
5.767	1.53	2.20	0.459	O				3.62
5.783	1.52	2.18	0.458	O				3.62
5.800	1.51	2.16	0.457	O				3.61
5.817	1.50	2.14	0.456	O				3.61
5.833	1.49	2.12	0.455	O				3.60
5.850	1.48	2.11	0.454	O				3.60
5.867	1.47	2.09	0.453	O				3.60
5.883	1.46	2.07	0.452	O				3.59
5.900	1.45	2.06	0.452	O				3.59
5.917	1.45	2.04	0.451	O				3.59
5.933	1.44	2.02	0.450	O				3.58
5.950	1.43	2.01	0.449	O				3.58
5.967	1.42	1.99	0.448	O				3.58
5.983	1.41	1.98	0.448	O				3.57
6.000	1.41	1.96	0.447	O				3.57
6.017	1.40	1.95	0.446	O				3.57
6.033	1.39	1.93	0.445	O				3.56
6.050	1.38	1.92	0.445	O				3.56
6.067	1.38	1.90	0.444	O				3.56
6.083	1.37	1.89	0.443	O				3.55
6.100	1.36	1.87	0.442	O				3.55
6.117	0.00	1.84	0.441	IO				3.55
6.133	0.00	1.79	0.438	IO				3.53
6.150	0.00	1.74	0.436	IO				3.52
6.167	0.00	1.70	0.434	IO				3.51
6.183	0.00	1.65	0.431	IO				3.51
6.200	0.00	1.60	0.429	IO				3.50
6.217	0.00	1.56	0.427	IO				3.49
6.233	0.00	1.52	0.425	IO				3.48
6.250	0.00	1.48	0.423	IO				3.47
6.267	0.00	1.44	0.421	IO				3.46

6.283	0.00	1.40	0.419	IO				3.45
6.300	0.00	1.36	0.417	IO				3.44
6.317	0.00	1.32	0.415	IO				3.44
6.333	0.00	1.29	0.413	IO				3.43
6.350	0.00	1.25	0.411	IO				3.42
6.367	0.00	1.22	0.410	IO				3.42
6.383	0.00	1.19	0.408	IO				3.41
6.400	0.00	1.15	0.406	IO				3.40
6.417	0.00	1.12	0.405	O				3.40
6.433	0.00	1.09	0.403	O				3.39
6.450	0.00	1.06	0.402	O				3.38
6.467	0.00	1.03	0.400	O				3.38
6.483	0.00	1.01	0.399	O				3.37
6.500	0.00	0.98	0.398	O				3.36
6.517	0.00	0.95	0.396	O				3.36
6.533	0.00	0.93	0.395	O				3.35
6.550	0.00	0.90	0.394	O				3.35
6.567	0.00	0.88	0.392	O				3.34
6.583	0.00	0.85	0.391	O				3.34
6.600	0.00	0.83	0.390	O				3.33
6.617	0.00	0.81	0.389	O				3.33
6.633	0.00	0.79	0.388	O				3.32
6.650	0.00	0.77	0.387	O				3.32
6.667	0.00	0.74	0.386	O				3.32
6.683	0.00	0.72	0.385	O				3.31
6.700	0.00	0.70	0.384	O				3.31
6.717	0.00	0.69	0.383	O				3.30
6.733	0.00	0.67	0.382	O				3.30
6.750	0.00	0.65	0.381	O				3.30
6.767	0.00	0.63	0.380	O				3.29
6.783	0.00	0.61	0.379	O				3.29
6.800	0.00	0.60	0.378	O				3.29
6.817	0.00	0.58	0.378	O				3.28
6.833	0.00	0.57	0.377	O				3.28
6.850	0.00	0.55	0.376	O				3.28
6.867	0.00	0.54	0.375	O				3.27
6.883	0.00	0.52	0.375	O				3.27
6.900	0.00	0.51	0.374	O				3.27
6.917	0.00	0.49	0.373	O				3.26
6.933	0.00	0.48	0.373	O				3.26
6.950	0.00	0.47	0.372	O				3.26
6.967	0.00	0.45	0.371	O				3.26
6.983	0.00	0.44	0.371	O				3.25
7.000	0.00	0.43	0.370	O				3.25
7.017	0.00	0.43	0.369	O				3.25
7.033	0.00	0.43	0.369	O				3.24
7.050	0.00	0.43	0.368	O				3.24
7.067	0.00	0.43	0.368	O				3.24
7.083	0.00	0.43	0.367	O				3.24
7.100	0.00	0.43	0.366	O				3.23

7.117	0.00	0.43	0.366	O				3.23
7.133	0.00	0.43	0.365	O				3.23
7.150	0.00	0.43	0.365	O				3.23
7.167	0.00	0.43	0.364	O				3.22
7.183	0.00	0.43	0.364	O				3.22
7.200	0.00	0.43	0.363	O				3.22
7.217	0.00	0.43	0.362	O				3.22
7.233	0.00	0.43	0.362	O				3.21
7.250	0.00	0.43	0.361	O				3.21
7.267	0.00	0.43	0.361	O				3.21
7.283	0.00	0.43	0.360	O				3.20
7.300	0.00	0.43	0.359	O				3.20
7.317	0.00	0.43	0.359	O				3.20
7.333	0.00	0.43	0.358	O				3.20
7.350	0.00	0.43	0.358	O				3.19
7.367	0.00	0.43	0.357	O				3.19
7.383	0.00	0.43	0.356	O				3.19
7.400	0.00	0.43	0.356	O				3.19
7.417	0.00	0.43	0.355	O				3.18
7.433	0.00	0.43	0.355	O				3.18
7.450	0.00	0.43	0.354	O				3.18
7.467	0.00	0.43	0.354	O				3.18
7.483	0.00	0.43	0.353	O				3.17
7.500	0.00	0.43	0.352	O				3.17
7.517	0.00	0.43	0.352	O				3.17
7.533	0.00	0.42	0.351	O				3.16
7.550	0.00	0.42	0.351	O				3.16
7.567	0.00	0.42	0.350	O				3.16
7.583	0.00	0.42	0.349	O				3.16
7.600	0.00	0.42	0.349	O				3.15
7.617	0.00	0.42	0.348	O				3.15
7.633	0.00	0.42	0.348	O				3.15
7.650	0.00	0.42	0.347	O				3.15
7.667	0.00	0.42	0.346	O				3.14
7.683	0.00	0.42	0.346	O				3.14
7.700	0.00	0.42	0.345	O				3.14
7.717	0.00	0.42	0.345	O				3.14
7.733	0.00	0.42	0.344	O				3.13
7.750	0.00	0.42	0.344	O				3.13
7.767	0.00	0.42	0.343	O				3.13
7.783	0.00	0.42	0.342	O				3.12
7.800	0.00	0.42	0.342	O				3.12
7.817	0.00	0.42	0.341	O				3.12
7.833	0.00	0.42	0.341	O				3.12
7.850	0.00	0.42	0.340	O				3.11
7.867	0.00	0.42	0.340	O				3.11
7.883	0.00	0.42	0.339	O				3.11
7.900	0.00	0.42	0.338	O				3.11
7.917	0.00	0.42	0.338	O				3.10
7.933	0.00	0.42	0.337	O				3.10

7.950	0.00	0.42	0.337	O				3.10
7.967	0.00	0.42	0.336	O				3.10
7.983	0.00	0.42	0.335	O				3.09
8.000	0.00	0.42	0.335	O				3.09
8.017	0.00	0.42	0.334	O				3.09
8.033	0.00	0.42	0.334	O				3.09
8.050	0.00	0.42	0.333	O				3.08
8.067	0.00	0.42	0.333	O				3.08
8.083	0.00	0.42	0.332	O				3.08
8.100	0.00	0.42	0.331	O				3.07
8.117	0.00	0.42	0.331	O				3.07
8.133	0.00	0.42	0.330	O				3.07
8.150	0.00	0.42	0.330	O				3.07
8.167	0.00	0.42	0.329	O				3.06
8.183	0.00	0.42	0.329	O				3.06
8.200	0.00	0.42	0.328	O				3.06
8.217	0.00	0.42	0.327	O				3.06
8.233	0.00	0.42	0.327	O				3.05
8.250	0.00	0.42	0.326	O				3.05
8.267	0.00	0.42	0.326	O				3.05
8.283	0.00	0.42	0.325	O				3.05
8.300	0.00	0.42	0.324	O				3.04
8.317	0.00	0.42	0.324	O				3.04
8.333	0.00	0.42	0.323	O				3.04
8.350	0.00	0.42	0.323	O				3.04
8.367	0.00	0.42	0.322	O				3.03
8.383	0.00	0.42	0.322	O				3.03
8.400	0.00	0.42	0.321	O				3.03
8.417	0.00	0.42	0.320	O				3.02
8.433	0.00	0.42	0.320	O				3.02
8.450	0.00	0.42	0.319	O				3.02
8.467	0.00	0.42	0.319	O				3.02
8.483	0.00	0.42	0.318	O				3.01
8.500	0.00	0.42	0.318	O				3.01
8.517	0.00	0.42	0.317	O				3.01
8.533	0.00	0.42	0.316	O				3.01
8.550	0.00	0.42	0.316	O				3.00
8.567	0.00	0.42	0.315	O				3.00
8.583	0.00	0.41	0.315	O				3.00
8.600	0.00	0.41	0.314	O				3.00
8.617	0.00	0.41	0.314	O				2.99
8.633	0.00	0.41	0.313	O				2.99
8.650	0.00	0.41	0.312	O				2.99
8.667	0.00	0.41	0.312	O				2.99
8.683	0.00	0.41	0.311	O				2.98
8.700	0.00	0.41	0.311	O				2.98
8.717	0.00	0.41	0.310	O				2.98
8.733	0.00	0.41	0.310	O				2.98
8.750	0.00	0.41	0.309	O				2.97
8.767	0.00	0.41	0.308	O				2.97

8.783	0.00	0.41	0.308	O				2.97
8.800	0.00	0.41	0.307	O				2.97
8.817	0.00	0.41	0.307	O				2.96
8.833	0.00	0.41	0.306	O				2.96
8.850	0.00	0.41	0.306	O				2.96
8.867	0.00	0.41	0.305	O				2.95
8.883	0.00	0.41	0.304	O				2.95
8.900	0.00	0.41	0.304	O				2.95
8.917	0.00	0.41	0.303	O				2.95
8.933	0.00	0.41	0.303	O				2.94
8.950	0.00	0.41	0.302	O				2.94
8.967	0.00	0.41	0.302	O				2.94
8.983	0.00	0.41	0.301	O				2.94
9.000	0.00	0.41	0.301	O				2.93
9.017	0.00	0.41	0.300	O				2.93
9.033	0.00	0.41	0.299	O				2.93
9.050	0.00	0.41	0.299	O				2.93
9.067	0.00	0.41	0.298	O				2.92
9.083	0.00	0.41	0.298	O				2.92
9.100	0.00	0.41	0.297	O				2.92
9.117	0.00	0.41	0.297	O				2.92
9.133	0.00	0.41	0.296	O				2.91
9.150	0.00	0.41	0.295	O				2.91
9.167	0.00	0.41	0.295	O				2.91
9.183	0.00	0.41	0.294	O				2.91
9.200	0.00	0.41	0.294	O				2.90
9.217	0.00	0.41	0.293	O				2.90
9.233	0.00	0.41	0.293	O				2.90
9.250	0.00	0.41	0.292	O				2.90
9.267	0.00	0.41	0.291	O				2.89
9.283	0.00	0.41	0.291	O				2.89
9.300	0.00	0.41	0.290	O				2.89
9.317	0.00	0.41	0.290	O				2.89
9.333	0.00	0.41	0.289	O				2.88
9.350	0.00	0.41	0.289	O				2.88
9.367	0.00	0.41	0.288	O				2.88
9.383	0.00	0.41	0.288	O				2.88
9.400	0.00	0.41	0.287	O				2.87
9.417	0.00	0.41	0.286	O				2.87
9.433	0.00	0.41	0.286	O				2.87
9.450	0.00	0.41	0.285	O				2.86
9.467	0.00	0.41	0.285	O				2.86
9.483	0.00	0.41	0.284	O				2.86
9.500	0.00	0.41	0.284	O				2.86
9.517	0.00	0.41	0.283	O				2.85
9.533	0.00	0.41	0.282	O				2.85
9.550	0.00	0.41	0.282	O				2.85
9.567	0.00	0.41	0.281	O				2.85
9.583	0.00	0.41	0.281	O				2.84
9.600	0.00	0.41	0.280	O				2.84

9.617	0.00	0.41	0.280	O					2.84
9.633	0.00	0.41	0.279	O					2.84
9.650	0.00	0.41	0.279	O					2.83
9.667	0.00	0.40	0.278	O					2.83
9.683	0.00	0.40	0.277	O					2.83
9.700	0.00	0.40	0.277	O					2.83
9.717	0.00	0.40	0.276	O					2.82
9.733	0.00	0.40	0.276	O					2.82
9.750	0.00	0.40	0.275	O					2.82
9.767	0.00	0.40	0.275	O					2.82
9.783	0.00	0.40	0.274	O					2.81
9.800	0.00	0.40	0.274	O					2.81
9.817	0.00	0.40	0.273	O					2.81
9.833	0.00	0.40	0.272	O					2.81
9.850	0.00	0.40	0.272	O					2.80
9.867	0.00	0.40	0.271	O					2.80
9.883	0.00	0.40	0.271	O					2.80
9.900	0.00	0.40	0.270	O					2.80
9.917	0.00	0.40	0.270	O					2.79
9.933	0.00	0.40	0.269	O					2.79
9.950	0.00	0.40	0.269	O					2.79
9.967	0.00	0.40	0.268	O					2.79
9.983	0.00	0.40	0.267	O					2.78
10.000	0.00	0.40	0.267	O					2.78
10.017	0.00	0.40	0.266	O					2.78
10.033	0.00	0.40	0.266	O					2.78
10.050	0.00	0.40	0.265	O					2.77
10.067	0.00	0.40	0.265	O					2.77
10.083	0.00	0.40	0.264	O					2.77
10.100	0.00	0.40	0.264	O					2.77
10.117	0.00	0.40	0.263	O					2.76
10.133	0.00	0.40	0.262	O					2.76
10.150	0.00	0.40	0.262	O					2.76
10.167	0.00	0.40	0.261	O					2.76
10.183	0.00	0.40	0.261	O					2.75
10.200	0.00	0.40	0.260	O					2.75
10.217	0.00	0.40	0.260	O					2.75
10.233	0.00	0.40	0.259	O					2.75
10.250	0.00	0.40	0.259	O					2.74
10.267	0.00	0.40	0.258	O					2.74
10.283	0.00	0.40	0.258	O					2.74
10.300	0.00	0.40	0.257	O					2.74
10.317	0.00	0.40	0.256	O					2.73
10.333	0.00	0.40	0.256	O					2.73
10.350	0.00	0.40	0.255	O					2.73
10.367	0.00	0.40	0.255	O					2.73
10.383	0.00	0.40	0.254	O					2.72
10.400	0.00	0.40	0.254	O					2.72
10.417	0.00	0.40	0.253	O					2.72
10.433	0.00	0.40	0.253	O					2.72

10.450	0.00	0.40	0.252	O				2.71
10.467	0.00	0.40	0.252	O				2.71
10.483	0.00	0.40	0.251	O				2.71
10.500	0.00	0.40	0.250	O				2.71
10.517	0.00	0.40	0.250	O				2.70
10.533	0.00	0.40	0.249	O				2.70
10.550	0.00	0.40	0.249	O				2.70
10.567	0.00	0.40	0.248	O				2.70
10.583	0.00	0.40	0.248	O				2.69
10.600	0.00	0.40	0.247	O				2.69
10.617	0.00	0.40	0.247	O				2.69
10.633	0.00	0.39	0.246	O				2.69
10.650	0.00	0.39	0.246	O				2.68
10.667	0.00	0.39	0.245	O				2.68
10.683	0.00	0.39	0.244	O				2.68
10.700	0.00	0.39	0.244	O				2.68
10.717	0.00	0.39	0.243	O				2.67
10.733	0.00	0.39	0.243	O				2.67
10.750	0.00	0.39	0.242	O				2.67
10.767	0.00	0.39	0.242	O				2.67
10.783	0.00	0.39	0.241	O				2.66
10.800	0.00	0.39	0.241	O				2.66
10.817	0.00	0.39	0.240	O				2.66
10.833	0.00	0.39	0.240	O				2.66
10.850	0.00	0.39	0.239	O				2.65
10.867	0.00	0.39	0.238	O				2.65
10.883	0.00	0.39	0.238	O				2.65
10.900	0.00	0.39	0.237	O				2.65
10.917	0.00	0.39	0.237	O				2.64
10.933	0.00	0.39	0.236	O				2.64
10.950	0.00	0.39	0.236	O				2.64
10.967	0.00	0.39	0.235	O				2.64
10.983	0.00	0.39	0.235	O				2.63
11.000	0.00	0.39	0.234	O				2.63
11.017	0.00	0.39	0.234	O				2.63
11.033	0.00	0.39	0.233	O				2.63
11.050	0.00	0.39	0.233	O				2.63
11.067	0.00	0.39	0.232	O				2.62
11.083	0.00	0.39	0.231	O				2.62
11.100	0.00	0.39	0.231	O				2.62
11.117	0.00	0.39	0.230	O				2.62
11.133	0.00	0.39	0.230	O				2.61
11.150	0.00	0.39	0.229	O				2.61
11.167	0.00	0.39	0.229	O				2.61
11.183	0.00	0.39	0.228	O				2.61
11.200	0.00	0.39	0.228	O				2.60
11.217	0.00	0.39	0.227	O				2.60
11.233	0.00	0.39	0.227	O				2.60
11.250	0.00	0.39	0.226	O				2.60
11.267	0.00	0.39	0.226	O				2.59

11.283	0.00	0.39	0.225	O				2.59
11.300	0.00	0.39	0.225	O				2.59
11.317	0.00	0.39	0.224	O				2.59
11.333	0.00	0.39	0.223	O				2.58
11.350	0.00	0.39	0.223	O				2.58
11.367	0.00	0.39	0.222	O				2.58
11.383	0.00	0.39	0.222	O				2.58
11.400	0.00	0.39	0.221	O				2.57
11.417	0.00	0.39	0.221	O				2.57
11.433	0.00	0.39	0.220	O				2.57
11.450	0.00	0.39	0.220	O				2.57
11.467	0.00	0.39	0.219	O				2.56
11.483	0.00	0.38	0.219	O				2.56
11.500	0.00	0.38	0.218	O				2.56
11.517	0.00	0.38	0.218	O				2.56
11.533	0.00	0.38	0.217	O				2.55
11.550	0.00	0.38	0.217	O				2.55
11.567	0.00	0.38	0.216	O				2.55
11.583	0.00	0.38	0.215	O				2.55
11.600	0.00	0.38	0.215	O				2.55
11.617	0.00	0.38	0.214	O				2.54
11.633	0.00	0.38	0.214	O				2.54
11.650	0.00	0.38	0.213	O				2.54
11.667	0.00	0.38	0.213	O				2.54
11.683	0.00	0.38	0.212	O				2.53
11.700	0.00	0.38	0.212	O				2.53
11.717	0.00	0.38	0.211	O				2.53
11.733	0.00	0.38	0.211	O				2.53
11.750	0.00	0.38	0.210	O				2.52
11.767	0.00	0.38	0.210	O				2.52
11.783	0.00	0.38	0.209	O				2.52
11.800	0.00	0.38	0.209	O				2.52
11.817	0.00	0.38	0.208	O				2.51
11.833	0.00	0.38	0.208	O				2.51
11.850	0.00	0.38	0.207	O				2.51
11.867	0.00	0.38	0.207	O				2.51
11.883	0.00	0.38	0.206	O				2.50
11.900	0.00	0.38	0.205	O				2.50
11.917	0.00	0.38	0.205	O				2.50
11.933	0.00	0.38	0.204	O				2.50
11.950	0.00	0.38	0.204	O				2.50
11.967	0.00	0.38	0.203	O				2.49
11.983	0.00	0.38	0.203	O				2.49
12.000	0.00	0.38	0.202	O				2.49
12.017	0.00	0.38	0.202	O				2.49
12.033	0.00	0.38	0.201	O				2.48
12.050	0.00	0.38	0.201	O				2.48
12.067	0.00	0.38	0.200	O				2.48
12.083	0.00	0.38	0.200	O				2.48
12.100	0.00	0.38	0.199	O				2.47

12.117	0.00	0.38	0.199	O				2.47
12.133	0.00	0.38	0.198	O				2.47
12.150	0.00	0.38	0.198	O				2.47
12.167	0.00	0.38	0.197	O				2.46
12.183	0.00	0.38	0.197	O				2.46
12.200	0.00	0.38	0.196	O				2.46
12.217	0.00	0.38	0.196	O				2.46
12.233	0.00	0.38	0.195	O				2.45
12.250	0.00	0.38	0.195	O				2.45
12.267	0.00	0.38	0.194	O				2.45
12.283	0.00	0.38	0.194	O				2.45
12.300	0.00	0.38	0.193	O				2.45
12.317	0.00	0.38	0.192	O				2.44
12.333	0.00	0.38	0.192	O				2.44
12.350	0.00	0.38	0.191	O				2.44
12.367	0.00	0.37	0.191	O				2.44
12.383	0.00	0.37	0.190	O				2.43
12.400	0.00	0.37	0.190	O				2.43
12.417	0.00	0.37	0.189	O				2.43
12.433	0.00	0.37	0.189	O				2.43
12.450	0.00	0.37	0.188	O				2.42
12.467	0.00	0.37	0.188	O				2.42
12.483	0.00	0.37	0.187	O				2.42
12.500	0.00	0.37	0.187	O				2.42
12.517	0.00	0.37	0.186	O				2.41
12.533	0.00	0.37	0.186	O				2.41
12.550	0.00	0.37	0.185	O				2.41
12.567	0.00	0.37	0.185	O				2.41
12.583	0.00	0.37	0.184	O				2.41
12.600	0.00	0.37	0.184	O				2.40
12.617	0.00	0.37	0.183	O				2.40
12.633	0.00	0.37	0.183	O				2.40
12.650	0.00	0.37	0.182	O				2.40
12.667	0.00	0.37	0.182	O				2.39
12.683	0.00	0.37	0.181	O				2.39
12.700	0.00	0.37	0.181	O				2.39
12.717	0.00	0.37	0.180	O				2.39
12.733	0.00	0.37	0.180	O				2.38
12.750	0.00	0.37	0.179	O				2.38
12.767	0.00	0.37	0.179	O				2.38
12.783	0.00	0.37	0.178	O				2.38
12.800	0.00	0.37	0.178	O				2.38
12.817	0.00	0.37	0.177	O				2.37
12.833	0.00	0.37	0.177	O				2.37
12.850	0.00	0.37	0.176	O				2.37
12.867	0.00	0.37	0.176	O				2.37
12.883	0.00	0.37	0.175	O				2.36
12.900	0.00	0.37	0.175	O				2.36
12.917	0.00	0.37	0.174	O				2.36
12.933	0.00	0.37	0.174	O				2.36

12.950	0.00	0.37	0.173	O	|	|	|	2.35
12.967	0.00	0.37	0.173	O	|	|	|	2.35
12.983	0.00	0.37	0.172	O	|	|	|	2.35
13.000	0.00	0.37	0.171	O	|	|	|	2.35
13.017	0.00	0.37	0.171	O	|	|	|	2.35
13.033	0.00	0.37	0.170	O	|	|	|	2.34
13.050	0.00	0.37	0.170	O	|	|	|	2.34
13.067	0.00	0.37	0.169	O	|	|	|	2.34
13.083	0.00	0.37	0.169	O	|	|	|	2.34
13.100	0.00	0.37	0.168	O	|	|	|	2.33
13.117	0.00	0.37	0.168	O	|	|	|	2.33
13.133	0.00	0.37	0.167	O	|	|	|	2.33
13.150	0.00	0.37	0.167	O	|	|	|	2.33
13.167	0.00	0.37	0.166	O	|	|	|	2.32
13.183	0.00	0.37	0.166	O	|	|	|	2.32
13.200	0.00	0.37	0.165	O	|	|	|	2.32
13.217	0.00	0.37	0.165	O	|	|	|	2.32
13.233	0.00	0.37	0.164	O	|	|	|	2.32
13.250	0.00	0.37	0.164	O	|	|	|	2.31
13.267	0.00	0.36	0.163	O	|	|	|	2.31
13.283	0.00	0.36	0.163	O	|	|	|	2.31
13.300	0.00	0.36	0.162	O	|	|	|	2.31
13.317	0.00	0.36	0.162	O	|	|	|	2.30
13.333	0.00	0.36	0.161	O	|	|	|	2.30
13.350	0.00	0.36	0.161	O	|	|	|	2.30
13.367	0.00	0.36	0.160	O	|	|	|	2.30
13.383	0.00	0.36	0.160	O	|	|	|	2.30
13.400	0.00	0.36	0.159	O	|	|	|	2.29
13.417	0.00	0.36	0.159	O	|	|	|	2.29
13.433	0.00	0.36	0.158	O	|	|	|	2.29
13.450	0.00	0.36	0.158	O	|	|	|	2.29
13.467	0.00	0.36	0.157	O	|	|	|	2.28
13.483	0.00	0.36	0.157	O	|	|	|	2.28
13.500	0.00	0.36	0.156	O	|	|	|	2.28
13.517	0.00	0.36	0.156	O	|	|	|	2.28
13.533	0.00	0.36	0.155	O	|	|	|	2.27
13.550	0.00	0.36	0.155	O	|	|	|	2.27
13.567	0.00	0.36	0.154	O	|	|	|	2.27
13.583	0.00	0.36	0.154	O	|	|	|	2.27
13.600	0.00	0.36	0.153	O	|	|	|	2.27
13.617	0.00	0.36	0.153	O	|	|	|	2.26
13.633	0.00	0.36	0.152	O	|	|	|	2.26
13.650	0.00	0.36	0.152	O	|	|	|	2.26
13.667	0.00	0.36	0.151	O	|	|	|	2.26
13.683	0.00	0.36	0.151	O	|	|	|	2.25
13.700	0.00	0.36	0.150	O	|	|	|	2.25
13.717	0.00	0.36	0.150	O	|	|	|	2.25
13.733	0.00	0.36	0.149	O	|	|	|	2.24
13.750	0.00	0.36	0.149	O	|	|	|	2.23
13.767	0.00	0.36	0.148	O	|	|	|	2.22

13.783	0.00	0.36	0.148	O				2.22
13.800	0.00	0.36	0.147	O				2.21
13.817	0.00	0.35	0.147	O				2.20
13.833	0.00	0.35	0.147	O				2.19
13.850	0.00	0.35	0.146	O				2.18
13.867	0.00	0.35	0.146	O				2.18
13.883	0.00	0.35	0.145	O				2.17
13.900	0.00	0.35	0.145	O				2.16
13.917	0.00	0.35	0.144	O				2.15
13.933	0.00	0.35	0.144	O				2.14
13.950	0.00	0.35	0.143	O				2.14
13.967	0.00	0.35	0.143	O				2.13
13.983	0.00	0.35	0.142	O				2.12
14.000	0.00	0.34	0.142	O				2.11
14.017	0.00	0.34	0.141	O				2.10
14.033	0.00	0.34	0.141	O				2.10
14.050	0.00	0.34	0.140	O				2.09
14.067	0.00	0.34	0.140	O				2.08
14.083	0.00	0.34	0.139	O				2.07
14.100	0.00	0.34	0.139	O				2.06
14.117	0.00	0.34	0.138	O				2.06
14.133	0.00	0.34	0.138	O				2.05
14.150	0.00	0.34	0.137	O				2.04
14.167	0.00	0.34	0.137	O				2.03
14.183	0.00	0.33	0.137	O				2.03
14.200	0.00	0.33	0.136	O				2.02
14.217	0.00	0.33	0.136	O				2.01
14.233	0.00	0.33	0.135	O				2.00
14.250	0.00	0.33	0.135	O				2.00
14.267	0.00	0.33	0.134	O				1.99
14.283	0.00	0.33	0.134	O				1.98
14.300	0.00	0.33	0.133	O				1.97
14.317	0.00	0.33	0.133	O				1.97
14.333	0.00	0.33	0.132	O				1.96
14.350	0.00	0.33	0.132	O				1.95
14.367	0.00	0.33	0.132	O				1.94
14.383	0.00	0.32	0.131	O				1.94
14.400	0.00	0.32	0.131	O				1.93
14.417	0.00	0.32	0.130	O				1.92
14.433	0.00	0.32	0.130	O				1.91
14.450	0.00	0.32	0.129	O				1.91
14.467	0.00	0.32	0.129	O				1.90
14.483	0.00	0.32	0.128	O				1.89
14.500	0.00	0.32	0.128	O				1.88
14.517	0.00	0.32	0.128	O				1.88
14.533	0.00	0.32	0.127	O				1.87
14.550	0.00	0.32	0.127	O				1.86
14.567	0.00	0.32	0.126	O				1.85
14.583	0.00	0.31	0.126	O				1.85
14.600	0.00	0.31	0.125	O				1.84

14.617	0.00	0.31	0.125	O				1.83
14.633	0.00	0.31	0.125	O				1.83
14.650	0.00	0.31	0.124	O				1.82
14.667	0.00	0.31	0.124	O				1.81
14.683	0.00	0.31	0.123	O				1.80
14.700	0.00	0.31	0.123	O				1.80
14.717	0.00	0.31	0.122	O				1.79
14.733	0.00	0.31	0.122	O				1.78
14.750	0.00	0.31	0.122	O				1.78
14.767	0.00	0.31	0.121	O				1.77
14.783	0.00	0.30	0.121	O				1.76
14.800	0.00	0.30	0.120	O				1.75
14.817	0.00	0.30	0.120	O				1.75
14.833	0.00	0.30	0.119	O				1.74
14.850	0.00	0.30	0.119	O				1.73
14.867	0.00	0.30	0.119	O				1.73
14.883	0.00	0.30	0.118	O				1.72
14.900	0.00	0.30	0.118	O				1.71
14.917	0.00	0.30	0.117	O				1.71
14.933	0.00	0.30	0.117	O				1.70
14.950	0.00	0.30	0.117	O				1.69
14.967	0.00	0.30	0.116	O				1.69
14.983	0.00	0.30	0.116	O				1.68
15.000	0.00	0.29	0.115	O				1.67
15.017	0.00	0.29	0.115	O				1.67
15.033	0.00	0.29	0.115	O				1.66
15.050	0.00	0.29	0.114	O				1.65
15.067	0.00	0.29	0.114	O				1.65
15.083	0.00	0.29	0.113	O				1.64
15.100	0.00	0.29	0.113	O				1.63
15.117	0.00	0.29	0.113	O				1.63
15.133	0.00	0.29	0.112	O				1.62
15.150	0.00	0.29	0.112	O				1.61
15.167	0.00	0.29	0.111	O				1.61
15.183	0.00	0.29	0.111	O				1.60
15.200	0.00	0.29	0.111	O				1.59
15.217	0.00	0.28	0.110	O				1.59
15.233	0.00	0.28	0.110	O				1.58
15.250	0.00	0.28	0.109	O				1.57
15.267	0.00	0.28	0.109	O				1.57
15.283	0.00	0.28	0.109	O				1.56
15.300	0.00	0.28	0.108	O				1.55
15.317	0.00	0.28	0.108	O				1.55
15.333	0.00	0.28	0.107	O				1.54
15.350	0.00	0.28	0.107	O				1.53
15.367	0.00	0.28	0.107	O				1.53
15.383	0.00	0.28	0.106	O				1.52
15.400	0.00	0.28	0.106	O				1.52
15.417	0.00	0.28	0.106	O				1.51
15.433	0.00	0.28	0.105	O				1.50

15.450	0.00	0.27	0.105	O				1.50
15.467	0.00	0.27	0.104	O				1.49
15.483	0.00	0.27	0.104	O				1.48
15.500	0.00	0.27	0.104	O				1.48
15.517	0.00	0.27	0.103	O				1.47
15.533	0.00	0.27	0.103	O				1.46
15.550	0.00	0.27	0.103	O				1.46
15.567	0.00	0.27	0.102	O				1.45
15.583	0.00	0.27	0.102	O				1.45
15.600	0.00	0.27	0.101	O				1.44
15.617	0.00	0.27	0.101	O				1.43
15.633	0.00	0.27	0.101	O				1.43
15.650	0.00	0.27	0.100	O				1.42
15.667	0.00	0.27	0.100	O				1.42
15.683	0.00	0.26	0.100	O				1.41
15.700	0.00	0.26	0.099	O				1.40
15.717	0.00	0.26	0.099	O				1.40
15.733	0.00	0.26	0.098	O				1.39
15.750	0.00	0.26	0.098	O				1.39
15.767	0.00	0.26	0.098	O				1.38
15.783	0.00	0.26	0.097	O				1.37
15.800	0.00	0.26	0.097	O				1.37
15.817	0.00	0.26	0.097	O				1.36
15.833	0.00	0.26	0.096	O				1.36
15.850	0.00	0.26	0.096	O				1.35
15.867	0.00	0.26	0.096	O				1.34
15.883	0.00	0.26	0.095	O				1.34
15.900	0.00	0.26	0.095	O				1.33
15.917	0.00	0.26	0.095	O				1.33
15.933	0.00	0.25	0.094	O				1.32
15.950	0.00	0.25	0.094	O				1.31
15.967	0.00	0.25	0.094	O				1.31
15.983	0.00	0.25	0.093	O				1.30
16.000	0.00	0.25	0.093	O				1.30
16.017	0.00	0.25	0.092	O				1.29
16.033	0.00	0.25	0.092	O				1.29
16.050	0.00	0.25	0.092	O				1.28
16.067	0.00	0.25	0.091	O				1.27
16.083	0.00	0.25	0.091	O				1.27
16.100	0.00	0.25	0.091	O				1.26
16.117	0.00	0.25	0.090	O				1.26
16.133	0.00	0.25	0.090	O				1.25
16.150	0.00	0.25	0.090	O				1.25
16.167	0.00	0.25	0.089	O				1.24
16.183	0.00	0.24	0.089	O				1.23
16.200	0.00	0.24	0.089	O				1.23
16.217	0.00	0.24	0.088	O				1.22
16.233	0.00	0.24	0.088	O				1.22
16.250	0.00	0.24	0.088	O				1.21
16.267	0.00	0.24	0.087	O				1.21

16.283	0.00	0.24	0.087	O				1.20
16.300	0.00	0.24	0.087	O				1.20
16.317	0.00	0.24	0.086	O				1.19
16.333	0.00	0.24	0.086	O				1.18
16.350	0.00	0.24	0.086	O				1.18
16.367	0.00	0.24	0.085	O				1.17
16.383	0.00	0.24	0.085	O				1.17
16.400	0.00	0.24	0.085	O				1.16
16.417	0.00	0.24	0.084	O				1.16
16.433	0.00	0.24	0.084	O				1.15
16.450	0.00	0.23	0.084	O				1.15
16.467	0.00	0.23	0.083	O				1.14
16.483	0.00	0.23	0.083	O				1.14
16.500	0.00	0.23	0.083	O				1.13
16.517	0.00	0.23	0.082	O				1.12
16.533	0.00	0.23	0.082	O				1.12
16.550	0.00	0.23	0.082	O				1.11
16.567	0.00	0.23	0.082	O				1.11
16.583	0.00	0.23	0.081	O				1.10
16.600	0.00	0.23	0.081	O				1.10
16.617	0.00	0.23	0.081	O				1.09
16.633	0.00	0.23	0.080	O				1.09
16.650	0.00	0.23	0.080	O				1.08
16.667	0.00	0.23	0.080	O				1.08
16.683	0.00	0.23	0.079	O				1.07
16.700	0.00	0.23	0.079	O				1.07
16.717	0.00	0.23	0.079	O				1.06
16.733	0.00	0.22	0.078	O				1.06
16.750	0.00	0.22	0.078	O				1.05
16.767	0.00	0.22	0.078	O				1.05
16.783	0.00	0.22	0.077	O				1.04
16.800	0.00	0.22	0.077	O				1.04
16.817	0.00	0.22	0.077	O				1.03
16.833	0.00	0.22	0.077	O				1.03
16.850	0.00	0.22	0.076	O				1.02
16.867	0.00	0.22	0.076	O				1.02
16.883	0.00	0.22	0.076	O				1.01
16.900	0.00	0.22	0.075	O				1.01
16.917	0.00	0.22	0.075	O				1.00
16.933	0.00	0.22	0.075	O				1.00
16.950	0.00	0.22	0.074	O				0.99
16.967	0.00	0.22	0.074	O				0.99
16.983	0.00	0.22	0.074	O				0.98
17.000	0.00	0.22	0.074	O				0.98
17.017	0.00	0.21	0.073	O				0.97
17.033	0.00	0.21	0.073	O				0.97
17.050	0.00	0.21	0.073	O				0.96
17.067	0.00	0.21	0.072	O				0.96
17.083	0.00	0.21	0.072	O				0.95
17.100	0.00	0.21	0.072	O				0.95

17.117	0.00	0.21	0.071	O				0.94
17.133	0.00	0.21	0.071	O				0.94
17.150	0.00	0.21	0.071	O				0.93
17.167	0.00	0.21	0.071	O				0.93
17.183	0.00	0.21	0.070	O				0.92
17.200	0.00	0.21	0.070	O				0.92
17.217	0.00	0.21	0.070	O				0.91
17.233	0.00	0.21	0.069	O				0.91
17.250	0.00	0.21	0.069	O				0.90
17.267	0.00	0.21	0.069	O				0.90
17.283	0.00	0.21	0.069	O				0.89
17.300	0.00	0.21	0.068	O				0.89
17.317	0.00	0.21	0.068	O				0.88
17.333	0.00	0.20	0.068	O				0.88
17.350	0.00	0.20	0.067	O				0.87
17.367	0.00	0.20	0.067	O				0.87
17.383	0.00	0.20	0.067	O				0.87
17.400	0.00	0.20	0.067	O				0.86
17.417	0.00	0.20	0.066	O				0.86
17.433	0.00	0.20	0.066	O				0.85
17.450	0.00	0.20	0.066	O				0.85
17.467	0.00	0.20	0.066	O				0.84
17.483	0.00	0.20	0.065	O				0.84
17.500	0.00	0.20	0.065	O				0.83
17.517	0.00	0.20	0.065	O				0.83
17.533	0.00	0.20	0.064	O				0.82
17.550	0.00	0.20	0.064	O				0.82
17.567	0.00	0.20	0.064	O				0.81
17.583	0.00	0.20	0.064	O				0.81
17.600	0.00	0.20	0.063	O				0.81
17.617	0.00	0.20	0.063	O				0.80
17.633	0.00	0.20	0.063	O				0.80
17.650	0.00	0.19	0.063	O				0.79
17.667	0.00	0.19	0.062	O				0.79
17.683	0.00	0.19	0.062	O				0.78
17.700	0.00	0.19	0.062	O				0.78
17.717	0.00	0.19	0.061	O				0.77
17.733	0.00	0.19	0.061	O				0.77
17.750	0.00	0.19	0.061	O				0.77
17.767	0.00	0.19	0.061	O				0.76
17.783	0.00	0.19	0.060	O				0.76
17.800	0.00	0.19	0.060	O				0.75
17.817	0.00	0.19	0.060	O				0.75
17.833	0.00	0.19	0.060	O				0.75
17.850	0.00	0.19	0.059	O				0.74
17.867	0.00	0.19	0.059	O				0.74
17.883	0.00	0.19	0.059	O				0.74
17.900	0.00	0.19	0.059	O				0.73
17.917	0.00	0.19	0.058	O				0.73
17.933	0.00	0.19	0.058	O				0.73

17.950	0.00	0.18	0.058	O	|	|	|	0.72
17.967	0.00	0.18	0.058	O	|	|	|	0.72
17.983	0.00	0.18	0.057	O	|	|	|	0.72
18.000	0.00	0.18	0.057	O	|	|	|	0.71
18.017	0.00	0.18	0.057	O	|	|	|	0.71
18.033	0.00	0.18	0.057	O	|	|	|	0.71
18.050	0.00	0.18	0.056	O	|	|	|	0.70
18.067	0.00	0.18	0.056	O	|	|	|	0.70
18.083	0.00	0.18	0.056	O	|	|	|	0.70
18.100	0.00	0.18	0.056	O	|	|	|	0.69
18.117	0.00	0.18	0.055	O	|	|	|	0.69
18.133	0.00	0.18	0.055	O	|	|	|	0.69
18.150	0.00	0.18	0.055	O	|	|	|	0.69
18.167	0.00	0.18	0.055	O	|	|	|	0.68
18.183	0.00	0.18	0.054	O	|	|	|	0.68
18.200	0.00	0.18	0.054	O	|	|	|	0.68
18.217	0.00	0.17	0.054	O	|	|	|	0.67
18.233	0.00	0.17	0.054	O	|	|	|	0.67
18.250	0.00	0.17	0.053	O	|	|	|	0.67
18.267	0.00	0.17	0.053	O	|	|	|	0.66
18.283	0.00	0.17	0.053	O	|	|	|	0.66
18.300	0.00	0.17	0.053	O	|	|	|	0.66
18.317	0.00	0.17	0.052	O	|	|	|	0.66
18.333	0.00	0.17	0.052	O	|	|	|	0.65
18.350	0.00	0.17	0.052	O	|	|	|	0.65
18.367	0.00	0.17	0.052	O	|	|	|	0.65
18.383	0.00	0.17	0.051	O	|	|	|	0.64
18.400	0.00	0.17	0.051	O	|	|	|	0.64
18.417	0.00	0.17	0.051	O	|	|	|	0.64
18.433	0.00	0.17	0.051	O	|	|	|	0.63
18.450	0.00	0.17	0.051	O	|	|	|	0.63
18.467	0.00	0.17	0.050	O	|	|	|	0.63
18.483	0.00	0.17	0.050	O	|	|	|	0.63
18.500	0.00	0.16	0.050	O	|	|	|	0.62
18.517	0.00	0.16	0.050	O	|	|	|	0.62
18.533	0.00	0.16	0.049	O	|	|	|	0.62
18.550	0.00	0.16	0.049	O	|	|	|	0.62
18.567	0.00	0.16	0.049	O	|	|	|	0.61
18.583	0.00	0.16	0.049	O	|	|	|	0.61
18.600	0.00	0.16	0.049	O	|	|	|	0.61
18.617	0.00	0.16	0.048	O	|	|	|	0.60
18.633	0.00	0.16	0.048	O	|	|	|	0.60
18.650	0.00	0.16	0.048	O	|	|	|	0.60
18.667	0.00	0.16	0.048	O	|	|	|	0.60
18.683	0.00	0.16	0.047	O	|	|	|	0.59
18.700	0.00	0.16	0.047	O	|	|	|	0.59
18.717	0.00	0.16	0.047	O	|	|	|	0.59
18.733	0.00	0.16	0.047	O	|	|	|	0.58
18.750	0.00	0.16	0.047	O	|	|	|	0.58
18.767	0.00	0.16	0.046	O	|	|	|	0.58

18.783	0.00	0.16	0.046	O	|	|	|	|	0.58
18.800	0.00	0.15	0.046	O	|	|	|	|	0.57
18.817	0.00	0.15	0.046	O	|	|	|	|	0.57
18.833	0.00	0.15	0.045	O	|	|	|	|	0.57
18.850	0.00	0.15	0.045	O	|	|	|	|	0.57
18.867	0.00	0.15	0.045	O	|	|	|	|	0.56
18.883	0.00	0.15	0.045	O	|	|	|	|	0.56
18.900	0.00	0.15	0.045	O	|	|	|	|	0.56
18.917	0.00	0.15	0.044	O	|	|	|	|	0.56
18.933	0.00	0.15	0.044	O	|	|	|	|	0.55
18.950	0.00	0.15	0.044	O	|	|	|	|	0.55
18.967	0.00	0.15	0.044	O	|	|	|	|	0.55
18.983	0.00	0.15	0.044	O	|	|	|	|	0.55
19.000	0.00	0.15	0.043	O	|	|	|	|	0.54
19.017	0.00	0.15	0.043	O	|	|	|	|	0.54
19.033	0.00	0.15	0.043	O	|	|	|	|	0.54
19.050	0.00	0.15	0.043	O	|	|	|	|	0.54
19.067	0.00	0.15	0.043	O	|	|	|	|	0.53
19.083	0.00	0.15	0.042	O	|	|	|	|	0.53
19.100	0.00	0.15	0.042	O	|	|	|	|	0.53
19.117	0.00	0.15	0.042	O	|	|	|	|	0.53
19.133	0.00	0.14	0.042	O	|	|	|	|	0.52
19.150	0.00	0.14	0.042	O	|	|	|	|	0.52
19.167	0.00	0.14	0.041	O	|	|	|	|	0.52
19.183	0.00	0.14	0.041	O	|	|	|	|	0.52
19.200	0.00	0.14	0.041	O	|	|	|	|	0.51
19.217	0.00	0.14	0.041	O	|	|	|	|	0.51
19.233	0.00	0.14	0.041	O	|	|	|	|	0.51
19.250	0.00	0.14	0.040	O	|	|	|	|	0.51
19.267	0.00	0.14	0.040	O	|	|	|	|	0.50
19.283	0.00	0.14	0.040	O	|	|	|	|	0.50
19.300	0.00	0.14	0.040	O	|	|	|	|	0.50
19.317	0.00	0.14	0.040	O	|	|	|	|	0.50
19.333	0.00	0.14	0.039	O	|	|	|	|	0.49
19.350	0.00	0.14	0.039	O	|	|	|	|	0.49
19.367	0.00	0.14	0.039	O	|	|	|	|	0.49
19.383	0.00	0.14	0.039	O	|	|	|	|	0.49
19.400	0.00	0.14	0.039	O	|	|	|	|	0.48
19.417	0.00	0.14	0.039	O	|	|	|	|	0.48
19.433	0.00	0.14	0.038	O	|	|	|	|	0.48
19.450	0.00	0.14	0.038	O	|	|	|	|	0.48
19.467	0.00	0.13	0.038	O	|	|	|	|	0.47
19.483	0.00	0.13	0.038	O	|	|	|	|	0.47
19.500	0.00	0.13	0.038	O	|	|	|	|	0.47
19.517	0.00	0.13	0.037	O	|	|	|	|	0.47
19.533	0.00	0.13	0.037	O	|	|	|	|	0.47
19.550	0.00	0.13	0.037	O	|	|	|	|	0.46
19.567	0.00	0.13	0.037	O	|	|	|	|	0.46
19.583	0.00	0.13	0.037	O	|	|	|	|	0.46
19.600	0.00	0.13	0.036	O	|	|	|	|	0.46

19.617	0.00	0.13	0.036	O				0.45
19.633	0.00	0.13	0.036	O				0.45
19.650	0.00	0.13	0.036	O				0.45
19.667	0.00	0.13	0.036	O				0.45
19.683	0.00	0.13	0.036	O				0.44
19.700	0.00	0.13	0.035	O				0.44
19.717	0.00	0.13	0.035	O				0.44
19.733	0.00	0.13	0.035	O				0.44
19.750	0.00	0.13	0.035	O				0.44
19.767	0.00	0.13	0.035	O				0.43
19.783	0.00	0.13	0.035	O				0.43
19.800	0.00	0.13	0.034	O				0.43
19.817	0.00	0.13	0.034	O				0.43
19.833	0.00	0.13	0.034	O				0.43
19.850	0.00	0.12	0.034	O				0.42
19.867	0.00	0.12	0.034	O				0.42
19.883	0.00	0.12	0.034	O				0.42
19.900	0.00	0.12	0.033	O				0.42
19.917	0.00	0.12	0.033	O				0.41
19.933	0.00	0.12	0.033	O				0.41
19.950	0.00	0.12	0.033	O				0.41
19.967	0.00	0.12	0.033	O				0.41
19.983	0.00	0.12	0.032	O				0.41
20.000	0.00	0.12	0.032	O				0.40
20.017	0.00	0.12	0.032	O				0.40
20.033	0.00	0.12	0.032	O				0.40
20.050	0.00	0.12	0.032	O				0.40
20.067	0.00	0.12	0.032	O				0.40
20.083	0.00	0.12	0.031	O				0.39
20.100	0.00	0.12	0.031	O				0.39
20.117	0.00	0.12	0.031	O				0.39
20.133	0.00	0.12	0.031	O				0.39
20.150	0.00	0.12	0.031	O				0.39
20.167	0.00	0.12	0.031	O				0.38
20.183	0.00	0.12	0.031	O				0.38
20.200	0.00	0.12	0.030	O				0.38
20.217	0.00	0.12	0.030	O				0.38
20.233	0.00	0.12	0.030	O				0.38
20.250	0.00	0.11	0.030	O				0.37
20.267	0.00	0.11	0.030	O				0.37
20.283	0.00	0.11	0.030	O				0.37
20.300	0.00	0.11	0.029	O				0.37
20.317	0.00	0.11	0.029	O				0.37
20.333	0.00	0.11	0.029	O				0.36
20.350	0.00	0.11	0.029	O				0.36
20.367	0.00	0.11	0.029	O				0.36
20.383	0.00	0.11	0.029	O				0.36
20.400	0.00	0.11	0.028	O				0.36
20.417	0.00	0.11	0.028	O				0.35
20.433	0.00	0.11	0.028	O				0.35

20.450	0.00	0.11	0.028	O					0.35
20.467	0.00	0.11	0.028	O					0.35
20.483	0.00	0.11	0.028	O					0.35
20.500	0.00	0.11	0.028	O					0.34
20.517	0.00	0.11	0.027	O					0.34
20.533	0.00	0.11	0.027	O					0.34
20.550	0.00	0.11	0.027	O					0.34
20.567	0.00	0.11	0.027	O					0.34
20.583	0.00	0.11	0.027	O					0.34
20.600	0.00	0.11	0.027	O					0.33
20.617	0.00	0.11	0.027	O					0.33
20.633	0.00	0.11	0.026	O					0.33
20.650	0.00	0.11	0.026	O					0.33
20.667	0.00	0.11	0.026	O					0.33
20.683	0.00	0.10	0.026	O					0.32
20.700	0.00	0.10	0.026	O					0.32
20.717	0.00	0.10	0.026	O					0.32
20.733	0.00	0.10	0.026	O					0.32
20.750	0.00	0.10	0.025	O					0.32
20.767	0.00	0.10	0.025	O					0.32
20.783	0.00	0.10	0.025	O					0.31
20.800	0.00	0.10	0.025	O					0.31
20.817	0.00	0.10	0.025	O					0.31
20.833	0.00	0.10	0.025	O					0.31
20.850	0.00	0.10	0.025	O					0.31
20.867	0.00	0.10	0.024	O					0.31
20.883	0.00	0.10	0.024	O					0.30
20.900	0.00	0.10	0.024	O					0.30
20.917	0.00	0.10	0.024	O					0.30
20.933	0.00	0.10	0.024	O					0.30
20.950	0.00	0.10	0.024	O					0.30
20.967	0.00	0.10	0.024	O					0.29
20.983	0.00	0.10	0.023	O					0.29
21.000	0.00	0.10	0.023	O					0.29
21.017	0.00	0.10	0.023	O					0.29
21.033	0.00	0.10	0.023	O					0.29
21.050	0.00	0.10	0.023	O					0.29
21.067	0.00	0.10	0.023	O					0.28
21.083	0.00	0.10	0.023	O					0.28
21.100	0.00	0.10	0.023	O					0.28
21.117	0.00	0.10	0.022	O					0.28
21.133	0.00	0.10	0.022	O					0.28
21.150	0.00	0.10	0.022	O					0.28
21.167	0.00	0.09	0.022	O					0.27
21.183	0.00	0.09	0.022	O					0.27
21.200	0.00	0.09	0.022	O					0.27
21.217	0.00	0.09	0.022	O					0.27
21.233	0.00	0.09	0.021	O					0.27
21.250	0.00	0.09	0.021	O					0.27
21.267	0.00	0.09	0.021	O					0.26

21.283	0.00	0.09	0.021	O				0.26
21.300	0.00	0.09	0.021	O				0.26
21.317	0.00	0.09	0.021	O				0.26
21.333	0.00	0.09	0.021	O				0.26
21.350	0.00	0.09	0.021	O				0.26
21.367	0.00	0.09	0.020	O				0.26
21.383	0.00	0.09	0.020	O				0.25
21.400	0.00	0.09	0.020	O				0.25
21.417	0.00	0.09	0.020	O				0.25
21.433	0.00	0.09	0.020	O				0.25
21.450	0.00	0.09	0.020	O				0.25
21.467	0.00	0.09	0.020	O				0.25
21.483	0.00	0.09	0.020	O				0.24
21.500	0.00	0.09	0.019	O				0.24
21.517	0.00	0.09	0.019	O				0.24
21.533	0.00	0.09	0.019	O				0.24
21.550	0.00	0.09	0.019	O				0.24
21.567	0.00	0.08	0.019	O				0.24
21.583	0.00	0.08	0.019	O				0.24
21.600	0.00	0.08	0.019	O				0.23
21.617	0.00	0.08	0.019	O				0.23
21.633	0.00	0.08	0.019	O				0.23
21.650	0.00	0.08	0.018	O				0.23
21.667	0.00	0.08	0.018	O				0.23
21.683	0.00	0.08	0.018	O				0.23
21.700	0.00	0.08	0.018	O				0.23
21.717	0.00	0.08	0.018	O				0.22
21.733	0.00	0.08	0.018	O				0.22
21.750	0.00	0.08	0.018	O				0.22
21.767	0.00	0.08	0.018	O				0.22
21.783	0.00	0.08	0.018	O				0.22
21.800	0.00	0.08	0.017	O				0.22
21.817	0.00	0.08	0.017	O				0.22
21.833	0.00	0.08	0.017	O				0.22
21.850	0.00	0.08	0.017	O				0.21
21.867	0.00	0.07	0.017	O				0.21
21.883	0.00	0.07	0.017	O				0.21
21.900	0.00	0.07	0.017	O				0.21
21.917	0.00	0.07	0.017	O				0.21
21.933	0.00	0.07	0.017	O				0.21
21.950	0.00	0.07	0.016	O				0.21
21.967	0.00	0.07	0.016	O				0.20
21.983	0.00	0.07	0.016	O				0.20
22.000	0.00	0.07	0.016	O				0.20
22.017	0.00	0.07	0.016	O				0.20
22.033	0.00	0.07	0.016	O				0.20
22.050	0.00	0.07	0.016	O				0.20
22.067	0.00	0.07	0.016	O				0.20
22.083	0.00	0.07	0.016	O				0.20
22.100	0.00	0.07	0.016	O				0.20

22.117	0.00	0.07	0.016	O	|	|	|	|	0.19
22.133	0.00	0.07	0.015	O	|	|	|	|	0.19
22.150	0.00	0.07	0.015	O	|	|	|	|	0.19
22.167	0.00	0.07	0.015	O	|	|	|	|	0.19
22.183	0.00	0.07	0.015	O	|	|	|	|	0.19
22.200	0.00	0.07	0.015	O	|	|	|	|	0.19
22.217	0.00	0.06	0.015	O	|	|	|	|	0.19
22.233	0.00	0.06	0.015	O	|	|	|	|	0.19
22.250	0.00	0.06	0.015	O	|	|	|	|	0.19
22.267	0.00	0.06	0.015	O	|	|	|	|	0.18
22.283	0.00	0.06	0.015	O	|	|	|	|	0.18
22.300	0.00	0.06	0.015	O	|	|	|	|	0.18
22.317	0.00	0.06	0.014	O	|	|	|	|	0.18
22.333	0.00	0.06	0.014	O	|	|	|	|	0.18
22.350	0.00	0.06	0.014	O	|	|	|	|	0.18
22.367	0.00	0.06	0.014	O	|	|	|	|	0.18
22.383	0.00	0.06	0.014	O	|	|	|	|	0.18
22.400	0.00	0.06	0.014	O	|	|	|	|	0.18
22.417	0.00	0.06	0.014	O	|	|	|	|	0.17
22.433	0.00	0.06	0.014	O	|	|	|	|	0.17
22.450	0.00	0.06	0.014	O	|	|	|	|	0.17
22.467	0.00	0.06	0.014	O	|	|	|	|	0.17
22.483	0.00	0.06	0.014	O	|	|	|	|	0.17
22.500	0.00	0.06	0.014	O	|	|	|	|	0.17
22.517	0.00	0.06	0.013	O	|	|	|	|	0.17
22.533	0.00	0.06	0.013	O	|	|	|	|	0.17
22.550	0.00	0.06	0.013	O	|	|	|	|	0.17
22.567	0.00	0.06	0.013	O	|	|	|	|	0.17
22.583	0.00	0.06	0.013	O	|	|	|	|	0.16
22.600	0.00	0.06	0.013	O	|	|	|	|	0.16
22.617	0.00	0.06	0.013	O	|	|	|	|	0.16
22.633	0.00	0.05	0.013	O	|	|	|	|	0.16
22.650	0.00	0.05	0.013	O	|	|	|	|	0.16
22.667	0.00	0.05	0.013	O	|	|	|	|	0.16
22.683	0.00	0.05	0.013	O	|	|	|	|	0.16
22.700	0.00	0.05	0.013	O	|	|	|	|	0.16
22.717	0.00	0.05	0.013	O	|	|	|	|	0.16
22.733	0.00	0.05	0.012	O	|	|	|	|	0.16
22.750	0.00	0.05	0.012	O	|	|	|	|	0.16
22.767	0.00	0.05	0.012	O	|	|	|	|	0.15
22.783	0.00	0.05	0.012	O	|	|	|	|	0.15
22.800	0.00	0.05	0.012	O	|	|	|	|	0.15
22.817	0.00	0.05	0.012	O	|	|	|	|	0.15
22.833	0.00	0.05	0.012	O	|	|	|	|	0.15
22.850	0.00	0.05	0.012	O	|	|	|	|	0.15
22.867	0.00	0.05	0.012	O	|	|	|	|	0.15
22.883	0.00	0.05	0.012	O	|	|	|	|	0.15
22.900	0.00	0.05	0.012	O	|	|	|	|	0.15
22.917	0.00	0.05	0.012	O	|	|	|	|	0.15
22.933	0.00	0.05	0.012	O	|	|	|	|	0.15

22.950	0.00	0.05	0.012	O				0.14
22.967	0.00	0.05	0.012	O				0.14
22.983	0.00	0.05	0.011	O				0.14
23.000	0.00	0.05	0.011	O				0.14
23.017	0.00	0.05	0.011	O				0.14
23.033	0.00	0.05	0.011	O				0.14
23.050	0.00	0.05	0.011	O				0.14
23.067	0.00	0.05	0.011	O				0.14
23.083	0.00	0.05	0.011	O				0.14
23.100	0.00	0.05	0.011	O				0.14
23.117	0.00	0.04	0.011	O				0.14
23.133	0.00	0.04	0.011	O				0.14
23.150	0.00	0.04	0.011	O				0.14
23.167	0.00	0.04	0.011	O				0.13
23.183	0.00	0.04	0.011	O				0.13
23.200	0.00	0.04	0.011	O				0.13
23.217	0.00	0.04	0.011	O				0.13
23.233	0.00	0.04	0.011	O				0.13
23.250	0.00	0.04	0.010	O				0.13
23.267	0.00	0.04	0.010	O				0.13
23.283	0.00	0.04	0.010	O				0.13
23.300	0.00	0.04	0.010	O				0.13
23.317	0.00	0.04	0.010	O				0.13
23.333	0.00	0.04	0.010	O				0.13
23.350	0.00	0.04	0.010	O				0.13
23.367	0.00	0.04	0.010	O				0.13
23.383	0.00	0.04	0.010	O				0.13
23.400	0.00	0.04	0.010	O				0.12
23.417	0.00	0.04	0.010	O				0.12
23.433	0.00	0.04	0.010	O				0.12
23.450	0.00	0.04	0.010	O				0.12
23.467	0.00	0.04	0.010	O				0.12
23.483	0.00	0.04	0.010	O				0.12
23.500	0.00	0.04	0.010	O				0.12
23.517	0.00	0.04	0.010	O				0.12
23.533	0.00	0.04	0.010	O				0.12
23.550	0.00	0.04	0.009	O				0.12
23.567	0.00	0.04	0.009	O				0.12
23.583	0.00	0.04	0.009	O				0.12
23.600	0.00	0.04	0.009	O				0.12
23.617	0.00	0.04	0.009	O				0.12
23.633	0.00	0.04	0.009	O				0.12
23.650	0.00	0.04	0.009	O				0.11
23.667	0.00	0.04	0.009	O				0.11
23.683	0.00	0.04	0.009	O				0.11
23.700	0.00	0.04	0.009	O				0.11
23.717	0.00	0.04	0.009	O				0.11
23.733	0.00	0.04	0.009	O				0.11
23.750	0.00	0.04	0.009	O				0.11
23.767	0.00	0.04	0.009	O				0.11

23.783	0.00	0.04	0.009	O					0.11
23.800	0.00	0.03	0.009	O					0.11
23.817	0.00	0.03	0.009	O					0.11
23.833	0.00	0.03	0.009	O					0.11
23.850	0.00	0.03	0.009	O					0.11
23.867	0.00	0.03	0.009	O					0.11
23.883	0.00	0.03	0.008	O					0.11
23.900	0.00	0.03	0.008	O					0.11
23.917	0.00	0.03	0.008	O					0.10
23.933	0.00	0.03	0.008	O					0.10
23.950	0.00	0.03	0.008	O					0.10
23.967	0.00	0.03	0.008	O					0.10
23.983	0.00	0.03	0.008	O					0.10
24.000	0.00	0.03	0.008	O					0.10
24.017	0.00	0.03	0.008	O					0.10
24.033	0.00	0.03	0.008	O					0.10
24.050	0.00	0.03	0.008	O					0.10
24.067	0.00	0.03	0.008	O					0.10
24.083	0.00	0.03	0.008	O					0.10
24.100	0.00	0.03	0.008	O					0.10
24.117	0.00	0.03	0.008	O					0.10
24.133	0.00	0.03	0.008	O					0.10
24.150	0.00	0.03	0.008	O					0.10
24.167	0.00	0.03	0.008	O					0.10
24.183	0.00	0.03	0.008	O					0.10
24.200	0.00	0.03	0.008	O					0.10
24.217	0.00	0.03	0.008	O					0.10
24.233	0.00	0.03	0.008	O					0.09
24.250	0.00	0.03	0.008	O					0.09
24.267	0.00	0.03	0.007	O					0.09
24.283	0.00	0.03	0.007	O					0.09
24.300	0.00	0.03	0.007	O					0.09
24.317	0.00	0.03	0.007	O					0.09
24.333	0.00	0.03	0.007	O					0.09
24.350	0.00	0.03	0.007	O					0.09
24.367	0.00	0.03	0.007	O					0.09
24.383	0.00	0.03	0.007	O					0.09
24.400	0.00	0.03	0.007	O					0.09
24.417	0.00	0.03	0.007	O					0.09
24.433	0.00	0.03	0.007	O					0.09
24.450	0.00	0.03	0.007	O					0.09
24.467	0.00	0.03	0.007	O					0.09
24.483	0.00	0.03	0.007	O					0.09
24.500	0.00	0.03	0.007	O					0.09
24.517	0.00	0.03	0.007	O					0.09
24.533	0.00	0.03	0.007	O					0.09
24.550	0.00	0.03	0.007	O					0.09
24.567	0.00	0.03	0.007	O					0.08
24.583	0.00	0.03	0.007	O					0.08
24.600	0.00	0.03	0.007	O					0.08

24.617	0.00	0.03	0.007	O				0.08
24.633	0.00	0.03	0.007	O				0.08
24.650	0.00	0.03	0.007	O				0.08
24.667	0.00	0.03	0.007	O				0.08
24.683	0.00	0.03	0.007	O				0.08
24.700	0.00	0.03	0.006	O				0.08
24.717	0.00	0.03	0.006	O				0.08
24.733	0.00	0.03	0.006	O				0.08
24.750	0.00	0.03	0.006	O				0.08
24.767	0.00	0.03	0.006	O				0.08
24.783	0.00	0.03	0.006	O				0.08
24.800	0.00	0.03	0.006	O				0.08
24.817	0.00	0.02	0.006	O				0.08
24.833	0.00	0.02	0.006	O				0.08
24.850	0.00	0.02	0.006	O				0.08
24.867	0.00	0.02	0.006	O				0.08
24.883	0.00	0.02	0.006	O				0.08
24.900	0.00	0.02	0.006	O				0.08
24.917	0.00	0.02	0.006	O				0.08
24.933	0.00	0.02	0.006	O				0.07
24.950	0.00	0.02	0.006	O				0.07
24.967	0.00	0.02	0.006	O				0.07
24.983	0.00	0.02	0.006	O				0.07
25.000	0.00	0.02	0.006	O				0.07
25.017	0.00	0.02	0.006	O				0.07
25.033	0.00	0.02	0.006	O				0.07
25.050	0.00	0.02	0.006	O				0.07
25.067	0.00	0.02	0.006	O				0.07
25.083	0.00	0.02	0.006	O				0.07
25.100	0.00	0.02	0.006	O				0.07
25.117	0.00	0.02	0.006	O				0.07
25.133	0.00	0.02	0.006	O				0.07
25.150	0.00	0.02	0.006	O				0.07
25.167	0.00	0.02	0.006	O				0.07
25.183	0.00	0.02	0.006	O				0.07
25.200	0.00	0.02	0.005	O				0.07
25.217	0.00	0.02	0.005	O				0.07
25.233	0.00	0.02	0.005	O				0.07
25.250	0.00	0.02	0.005	O				0.07
25.267	0.00	0.02	0.005	O				0.07
25.283	0.00	0.02	0.005	O				0.07
25.300	0.00	0.02	0.005	O				0.07
25.317	0.00	0.02	0.005	O				0.07
25.333	0.00	0.02	0.005	O				0.07
25.350	0.00	0.02	0.005	O				0.07
25.367	0.00	0.02	0.005	O				0.06
25.383	0.00	0.02	0.005	O				0.06
25.400	0.00	0.02	0.005	O				0.06
25.417	0.00	0.02	0.005	O				0.06
25.433	0.00	0.02	0.005	O				0.06

25.450	0.00	0.02	0.005	O				0.06
25.467	0.00	0.02	0.005	O				0.06
25.483	0.00	0.02	0.005	O				0.06
25.500	0.00	0.02	0.005	O				0.06
25.517	0.00	0.02	0.005	O				0.06
25.533	0.00	0.02	0.005	O				0.06
25.550	0.00	0.02	0.005	O				0.06
25.567	0.00	0.02	0.005	O				0.06
25.583	0.00	0.02	0.005	O				0.06
25.600	0.00	0.02	0.005	O				0.06
25.617	0.00	0.02	0.005	O				0.06
25.633	0.00	0.02	0.005	O				0.06
25.650	0.00	0.02	0.005	O				0.06
25.667	0.00	0.02	0.005	O				0.06
25.683	0.00	0.02	0.005	O				0.06
25.700	0.00	0.02	0.005	O				0.06
25.717	0.00	0.02	0.005	O				0.06
25.733	0.00	0.02	0.005	O				0.06
25.750	0.00	0.02	0.005	O				0.06
25.767	0.00	0.02	0.005	O				0.06
25.783	0.00	0.02	0.005	O				0.06
25.800	0.00	0.02	0.005	O				0.06
25.817	0.00	0.02	0.004	O				0.06
25.833	0.00	0.02	0.004	O				0.06
25.850	0.00	0.02	0.004	O				0.06
25.867	0.00	0.02	0.004	O				0.06
25.883	0.00	0.02	0.004	O				0.05
25.900	0.00	0.02	0.004	O				0.05
25.917	0.00	0.02	0.004	O				0.05
25.933	0.00	0.02	0.004	O				0.05
25.950	0.00	0.02	0.004	O				0.05
25.967	0.00	0.02	0.004	O				0.05
25.983	0.00	0.02	0.004	O				0.05
26.000	0.00	0.02	0.004	O				0.05
26.017	0.00	0.02	0.004	O				0.05
26.033	0.00	0.02	0.004	O				0.05
26.050	0.00	0.02	0.004	O				0.05
26.067	0.00	0.02	0.004	O				0.05
26.083	0.00	0.02	0.004	O				0.05
26.100	0.00	0.02	0.004	O				0.05
26.117	0.00	0.02	0.004	O				0.05
26.133	0.00	0.02	0.004	O				0.05
26.150	0.00	0.02	0.004	O				0.05
26.167	0.00	0.02	0.004	O				0.05
26.183	0.00	0.02	0.004	O				0.05
26.200	0.00	0.02	0.004	O				0.05
26.217	0.00	0.02	0.004	O				0.05
26.233	0.00	0.02	0.004	O				0.05
26.250	0.00	0.02	0.004	O				0.05
26.267	0.00	0.02	0.004	O				0.05

26.283	0.00	0.02	0.004	O					0.05
26.300	0.00	0.02	0.004	O					0.05
26.317	0.00	0.02	0.004	O					0.05
26.333	0.00	0.02	0.004	O					0.05
26.350	0.00	0.02	0.004	O					0.05
26.367	0.00	0.01	0.004	O					0.05
26.383	0.00	0.01	0.004	O					0.05
26.400	0.00	0.01	0.004	O					0.05
26.417	0.00	0.01	0.004	O					0.05
26.433	0.00	0.01	0.004	O					0.05
26.450	0.00	0.01	0.004	O					0.05
26.467	0.00	0.01	0.004	O					0.05
26.483	0.00	0.01	0.004	O					0.04
26.500	0.00	0.01	0.004	O					0.04
26.517	0.00	0.01	0.004	O					0.04
26.533	0.00	0.01	0.004	O					0.04
26.550	0.00	0.01	0.004	O					0.04
26.567	0.00	0.01	0.003	O					0.04
26.583	0.00	0.01	0.003	O					0.04
26.600	0.00	0.01	0.003	O					0.04
26.617	0.00	0.01	0.003	O					0.04
26.633	0.00	0.01	0.003	O					0.04
26.650	0.00	0.01	0.003	O					0.04
26.667	0.00	0.01	0.003	O					0.04
26.683	0.00	0.01	0.003	O					0.04
26.700	0.00	0.01	0.003	O					0.04
26.717	0.00	0.01	0.003	O					0.04
26.733	0.00	0.01	0.003	O					0.04
26.750	0.00	0.01	0.003	O					0.04
26.767	0.00	0.01	0.003	O					0.04
26.783	0.00	0.01	0.003	O					0.04
26.800	0.00	0.01	0.003	O					0.04
26.817	0.00	0.01	0.003	O					0.04
26.833	0.00	0.01	0.003	O					0.04
26.850	0.00	0.01	0.003	O					0.04
26.867	0.00	0.01	0.003	O					0.04
26.883	0.00	0.01	0.003	O					0.04
26.900	0.00	0.01	0.003	O					0.04
26.917	0.00	0.01	0.003	O					0.04
26.933	0.00	0.01	0.003	O					0.04
26.950	0.00	0.01	0.003	O					0.04
26.967	0.00	0.01	0.003	O					0.04
26.983	0.00	0.01	0.003	O					0.04
27.000	0.00	0.01	0.003	O					0.04
27.017	0.00	0.01	0.003	O					0.04
27.033	0.00	0.01	0.003	O					0.04
27.050	0.00	0.01	0.003	O					0.04
27.067	0.00	0.01	0.003	O					0.04
27.083	0.00	0.01	0.003	O					0.04
27.100	0.00	0.01	0.003	O					0.04

27.117	0.00	0.01	0.003	O	|	|	|	0.04
27.133	0.00	0.01	0.003	O	|	|	|	0.04
27.150	0.00	0.01	0.003	O	|	|	|	0.04
27.167	0.00	0.01	0.003	O	|	|	|	0.04
27.183	0.00	0.01	0.003	O	|	|	|	0.04
27.200	0.00	0.01	0.003	O	|	|	|	0.04
27.217	0.00	0.01	0.003	O	|	|	|	0.04
27.233	0.00	0.01	0.003	O	|	|	|	0.04
27.250	0.00	0.01	0.003	O	|	|	|	0.03
27.267	0.00	0.01	0.003	O	|	|	|	0.03
27.283	0.00	0.01	0.003	O	|	|	|	0.03
27.300	0.00	0.01	0.003	O	|	|	|	0.03
27.317	0.00	0.01	0.003	O	|	|	|	0.03
27.333	0.00	0.01	0.003	O	|	|	|	0.03
27.350	0.00	0.01	0.003	O	|	|	|	0.03
27.367	0.00	0.01	0.003	O	|	|	|	0.03
27.383	0.00	0.01	0.003	O	|	|	|	0.03
27.400	0.00	0.01	0.003	O	|	|	|	0.03
27.417	0.00	0.01	0.003	O	|	|	|	0.03
27.433	0.00	0.01	0.003	O	|	|	|	0.03
27.450	0.00	0.01	0.003	O	|	|	|	0.03
27.467	0.00	0.01	0.003	O	|	|	|	0.03
27.483	0.00	0.01	0.003	O	|	|	|	0.03
27.500	0.00	0.01	0.003	O	|	|	|	0.03
27.517	0.00	0.01	0.003	O	|	|	|	0.03
27.533	0.00	0.01	0.003	O	|	|	|	0.03
27.550	0.00	0.01	0.003	O	|	|	|	0.03
27.567	0.00	0.01	0.003	O	|	|	|	0.03
27.583	0.00	0.01	0.002	O	|	|	|	0.03
27.600	0.00	0.01	0.002	O	|	|	|	0.03
27.617	0.00	0.01	0.002	O	|	|	|	0.03
27.633	0.00	0.01	0.002	O	|	|	|	0.03
27.650	0.00	0.01	0.002	O	|	|	|	0.03
27.667	0.00	0.01	0.002	O	|	|	|	0.03
27.683	0.00	0.01	0.002	O	|	|	|	0.03
27.700	0.00	0.01	0.002	O	|	|	|	0.03
27.717	0.00	0.01	0.002	O	|	|	|	0.03
27.733	0.00	0.01	0.002	O	|	|	|	0.03
27.750	0.00	0.01	0.002	O	|	|	|	0.03
27.767	0.00	0.01	0.002	O	|	|	|	0.03
27.783	0.00	0.01	0.002	O	|	|	|	0.03
27.800	0.00	0.01	0.002	O	|	|	|	0.03
27.817	0.00	0.01	0.002	O	|	|	|	0.03
27.833	0.00	0.01	0.002	O	|	|	|	0.03
27.850	0.00	0.01	0.002	O	|	|	|	0.03
27.867	0.00	0.01	0.002	O	|	|	|	0.03
27.883	0.00	0.01	0.002	O	|	|	|	0.03
27.900	0.00	0.01	0.002	O	|	|	|	0.03
27.917	0.00	0.01	0.002	O	|	|	|	0.03
27.933	0.00	0.01	0.002	O	|	|	|	0.03

27.950	0.00	0.01	0.002	O	|	|	|	|	0.03
27.967	0.00	0.01	0.002	O	|	|	|	|	0.03
27.983	0.00	0.01	0.002	O	|	|	|	|	0.03
28.000	0.00	0.01	0.002	O	|	|	|	|	0.03
28.017	0.00	0.01	0.002	O	|	|	|	|	0.03
28.033	0.00	0.01	0.002	O	|	|	|	|	0.03
28.050	0.00	0.01	0.002	O	|	|	|	|	0.03
28.067	0.00	0.01	0.002	O	|	|	|	|	0.03
28.083	0.00	0.01	0.002	O	|	|	|	|	0.03
28.100	0.00	0.01	0.002	O	|	|	|	|	0.03
28.117	0.00	0.01	0.002	O	|	|	|	|	0.03
28.133	0.00	0.01	0.002	O	|	|	|	|	0.03
28.150	0.00	0.01	0.002	O	|	|	|	|	0.03
28.167	0.00	0.01	0.002	O	|	|	|	|	0.03
28.183	0.00	0.01	0.002	O	|	|	|	|	0.03
28.200	0.00	0.01	0.002	O	|	|	|	|	0.03
28.217	0.00	0.01	0.002	O	|	|	|	|	0.03
28.233	0.00	0.01	0.002	O	|	|	|	|	0.03
28.250	0.00	0.01	0.002	O	|	|	|	|	0.03
28.267	0.00	0.01	0.002	O	|	|	|	|	0.02
28.283	0.00	0.01	0.002	O	|	|	|	|	0.02
28.300	0.00	0.01	0.002	O	|	|	|	|	0.02
28.317	0.00	0.01	0.002	O	|	|	|	|	0.02
28.333	0.00	0.01	0.002	O	|	|	|	|	0.02
28.350	0.00	0.01	0.002	O	|	|	|	|	0.02
28.367	0.00	0.01	0.002	O	|	|	|	|	0.02
28.383	0.00	0.01	0.002	O	|	|	|	|	0.02
28.400	0.00	0.01	0.002	O	|	|	|	|	0.02
28.417	0.00	0.01	0.002	O	|	|	|	|	0.02
28.433	0.00	0.01	0.002	O	|	|	|	|	0.02
28.450	0.00	0.01	0.002	O	|	|	|	|	0.02
28.467	0.00	0.01	0.002	O	|	|	|	|	0.02
28.483	0.00	0.01	0.002	O	|	|	|	|	0.02
28.500	0.00	0.01	0.002	O	|	|	|	|	0.02
28.517	0.00	0.01	0.002	O	|	|	|	|	0.02
28.533	0.00	0.01	0.002	O	|	|	|	|	0.02
28.550	0.00	0.01	0.002	O	|	|	|	|	0.02
28.567	0.00	0.01	0.002	O	|	|	|	|	0.02
28.583	0.00	0.01	0.002	O	|	|	|	|	0.02
28.600	0.00	0.01	0.002	O	|	|	|	|	0.02
28.617	0.00	0.01	0.002	O	|	|	|	|	0.02
28.633	0.00	0.01	0.002	O	|	|	|	|	0.02
28.650	0.00	0.01	0.002	O	|	|	|	|	0.02
28.667	0.00	0.01	0.002	O	|	|	|	|	0.02
28.683	0.00	0.01	0.002	O	|	|	|	|	0.02
28.700	0.00	0.01	0.002	O	|	|	|	|	0.02
28.717	0.00	0.01	0.002	O	|	|	|	|	0.02
28.733	0.00	0.01	0.002	O	|	|	|	|	0.02
28.750	0.00	0.01	0.002	O	|	|	|	|	0.02
28.767	0.00	0.01	0.002	O	|	|	|	|	0.02

28.783	0.00	0.01	0.002	O	|	|	|	|	0.02
28.800	0.00	0.01	0.002	O	|	|	|	|	0.02
28.817	0.00	0.01	0.002	O	|	|	|	|	0.02
28.833	0.00	0.01	0.002	O	|	|	|	|	0.02
28.850	0.00	0.01	0.002	O	|	|	|	|	0.02
28.867	0.00	0.01	0.002	O	|	|	|	|	0.02
28.883	0.00	0.01	0.002	O	|	|	|	|	0.02
28.900	0.00	0.01	0.002	O	|	|	|	|	0.02
28.917	0.00	0.01	0.002	O	|	|	|	|	0.02
28.933	0.00	0.01	0.002	O	|	|	|	|	0.02
28.950	0.00	0.01	0.002	O	|	|	|	|	0.02
28.967	0.00	0.01	0.002	O	|	|	|	|	0.02
28.983	0.00	0.01	0.002	O	|	|	|	|	0.02
29.000	0.00	0.01	0.002	O	|	|	|	|	0.02
29.017	0.00	0.01	0.002	O	|	|	|	|	0.02
29.033	0.00	0.01	0.002	O	|	|	|	|	0.02
29.050	0.00	0.01	0.002	O	|	|	|	|	0.02
29.067	0.00	0.01	0.002	O	|	|	|	|	0.02
29.083	0.00	0.01	0.002	O	|	|	|	|	0.02
29.100	0.00	0.01	0.002	O	|	|	|	|	0.02
29.117	0.00	0.01	0.002	O	|	|	|	|	0.02
29.133	0.00	0.01	0.001	O	|	|	|	|	0.02
29.150	0.00	0.01	0.001	O	|	|	|	|	0.02
29.167	0.00	0.01	0.001	O	|	|	|	|	0.02
29.183	0.00	0.01	0.001	O	|	|	|	|	0.02
29.200	0.00	0.01	0.001	O	|	|	|	|	0.02
29.217	0.00	0.01	0.001	O	|	|	|	|	0.02
29.233	0.00	0.01	0.001	O	|	|	|	|	0.02
29.250	0.00	0.01	0.001	O	|	|	|	|	0.02
29.267	0.00	0.01	0.001	O	|	|	|	|	0.02
29.283	0.00	0.01	0.001	O	|	|	|	|	0.02
29.300	0.00	0.01	0.001	O	|	|	|	|	0.02
29.317	0.00	0.01	0.001	O	|	|	|	|	0.02
29.333	0.00	0.01	0.001	O	|	|	|	|	0.02
29.350	0.00	0.01	0.001	O	|	|	|	|	0.02
29.367	0.00	0.01	0.001	O	|	|	|	|	0.02
29.383	0.00	0.01	0.001	O	|	|	|	|	0.02
29.400	0.00	0.01	0.001	O	|	|	|	|	0.02
29.417	0.00	0.01	0.001	O	|	|	|	|	0.02
29.433	0.00	0.01	0.001	O	|	|	|	|	0.02
29.450	0.00	0.01	0.001	O	|	|	|	|	0.02
29.467	0.00	0.01	0.001	O	|	|	|	|	0.02
29.483	0.00	0.01	0.001	O	|	|	|	|	0.02
29.500	0.00	0.01	0.001	O	|	|	|	|	0.02
29.517	0.00	0.01	0.001	O	|	|	|	|	0.02
29.533	0.00	0.01	0.001	O	|	|	|	|	0.02
29.550	0.00	0.01	0.001	O	|	|	|	|	0.02
29.567	0.00	0.01	0.001	O	|	|	|	|	0.02
29.583	0.00	0.01	0.001	O	|	|	|	|	0.02
29.600	0.00	0.01	0.001	O	|	|	|	|	0.02

29.617	0.00	0.01	0.001	O	|	|	|	0.02
29.633	0.00	0.01	0.001	O	|	|	|	0.02
29.650	0.00	0.01	0.001	O	|	|	|	0.02
29.667	0.00	0.01	0.001	O	|	|	|	0.02
29.683	0.00	0.00	0.001	O	|	|	|	0.02
29.700	0.00	0.00	0.001	O	|	|	|	0.02
29.717	0.00	0.00	0.001	O	|	|	|	0.02
29.733	0.00	0.00	0.001	O	|	|	|	0.02
29.750	0.00	0.00	0.001	O	|	|	|	0.02
29.767	0.00	0.00	0.001	O	|	|	|	0.02
29.783	0.00	0.00	0.001	O	|	|	|	0.02
29.800	0.00	0.00	0.001	O	|	|	|	0.02
29.817	0.00	0.00	0.001	O	|	|	|	0.01
29.833	0.00	0.00	0.001	O	|	|	|	0.01
29.850	0.00	0.00	0.001	O	|	|	|	0.01
29.867	0.00	0.00	0.001	O	|	|	|	0.01
29.883	0.00	0.00	0.001	O	|	|	|	0.01
29.900	0.00	0.00	0.001	O	|	|	|	0.01
29.917	0.00	0.00	0.001	O	|	|	|	0.01
29.933	0.00	0.00	0.001	O	|	|	|	0.01
29.950	0.00	0.00	0.001	O	|	|	|	0.01
29.967	0.00	0.00	0.001	O	|	|	|	0.01
29.983	0.00	0.00	0.001	O	|	|	|	0.01
30.000	0.00	0.00	0.001	O	|	|	|	0.01
30.017	0.00	0.00	0.001	O	|	|	|	0.01
30.033	0.00	0.00	0.001	O	|	|	|	0.01
30.050	0.00	0.00	0.001	O	|	|	|	0.01
30.067	0.00	0.00	0.001	O	|	|	|	0.01
30.083	0.00	0.00	0.001	O	|	|	|	0.01
30.100	0.00	0.00	0.001	O	|	|	|	0.01
30.117	0.00	0.00	0.001	O	|	|	|	0.01
30.133	0.00	0.00	0.001	O	|	|	|	0.01
30.150	0.00	0.00	0.001	O	|	|	|	0.01
30.167	0.00	0.00	0.001	O	|	|	|	0.01
30.183	0.00	0.00	0.001	O	|	|	|	0.01
30.200	0.00	0.00	0.001	O	|	|	|	0.01
30.217	0.00	0.00	0.001	O	|	|	|	0.01
30.233	0.00	0.00	0.001	O	|	|	|	0.01
30.250	0.00	0.00	0.001	O	|	|	|	0.01
30.267	0.00	0.00	0.001	O	|	|	|	0.01
30.283	0.00	0.00	0.001	O	|	|	|	0.01
30.300	0.00	0.00	0.001	O	|	|	|	0.01
30.317	0.00	0.00	0.001	O	|	|	|	0.01
30.333	0.00	0.00	0.001	O	|	|	|	0.01
30.350	0.00	0.00	0.001	O	|	|	|	0.01
30.367	0.00	0.00	0.001	O	|	|	|	0.01
30.383	0.00	0.00	0.001	O	|	|	|	0.01
30.400	0.00	0.00	0.001	O	|	|	|	0.01
30.417	0.00	0.00	0.001	O	|	|	|	0.01
30.433	0.00	0.00	0.001	O	|	|	|	0.01

30.450	0.00	0.00	0.001	O					0.01
30.467	0.00	0.00	0.001	O					0.01
30.483	0.00	0.00	0.001	O					0.01
30.500	0.00	0.00	0.001	O					0.01
30.517	0.00	0.00	0.001	O					0.01
30.533	0.00	0.00	0.001	O					0.01
30.550	0.00	0.00	0.001	O					0.01
30.567	0.00	0.00	0.001	O					0.01
30.583	0.00	0.00	0.001	O					0.01
30.600	0.00	0.00	0.001	O					0.01
30.617	0.00	0.00	0.001	O					0.01
30.633	0.00	0.00	0.001	O					0.01
30.650	0.00	0.00	0.001	O					0.01
30.667	0.00	0.00	0.001	O					0.01
30.683	0.00	0.00	0.001	O					0.01
30.700	0.00	0.00	0.001	O					0.01
30.717	0.00	0.00	0.001	O					0.01
30.733	0.00	0.00	0.001	O					0.01
30.750	0.00	0.00	0.001	O					0.01
30.767	0.00	0.00	0.001	O					0.01
30.783	0.00	0.00	0.001	O					0.01
30.800	0.00	0.00	0.001	O					0.01
30.817	0.00	0.00	0.001	O					0.01
30.833	0.00	0.00	0.001	O					0.01
30.850	0.00	0.00	0.001	O					0.01
30.867	0.00	0.00	0.001	O					0.01
30.883	0.00	0.00	0.001	O					0.01
30.900	0.00	0.00	0.001	O					0.01
30.917	0.00	0.00	0.001	O					0.01
30.933	0.00	0.00	0.001	O					0.01
30.950	0.00	0.00	0.001	O					0.01
30.967	0.00	0.00	0.001	O					0.01
30.983	0.00	0.00	0.001	O					0.01
31.000	0.00	0.00	0.001	O					0.01
31.017	0.00	0.00	0.001	O					0.01
31.033	0.00	0.00	0.001	O					0.01
31.050	0.00	0.00	0.001	O					0.01
31.067	0.00	0.00	0.001	O					0.01
31.083	0.00	0.00	0.001	O					0.01
31.100	0.00	0.00	0.001	O					0.01
31.117	0.00	0.00	0.001	O					0.01
31.133	0.00	0.00	0.001	O					0.01
31.150	0.00	0.00	0.001	O					0.01
31.167	0.00	0.00	0.001	O					0.01
31.183	0.00	0.00	0.001	O					0.01
31.200	0.00	0.00	0.001	O					0.01
31.217	0.00	0.00	0.001	O					0.01
31.233	0.00	0.00	0.001	O					0.01
31.250	0.00	0.00	0.001	O					0.01
31.267	0.00	0.00	0.001	O					0.01

31.283	0.00	0.00	0.001	O				0.01
31.300	0.00	0.00	0.001	O				0.01
31.317	0.00	0.00	0.001	O				0.01
31.333	0.00	0.00	0.001	O				0.01
31.350	0.00	0.00	0.001	O				0.01
31.367	0.00	0.00	0.001	O				0.01
31.383	0.00	0.00	0.001	O				0.01
31.400	0.00	0.00	0.001	O				0.01
31.417	0.00	0.00	0.001	O				0.01
31.433	0.00	0.00	0.001	O				0.01
31.450	0.00	0.00	0.001	O				0.01
31.467	0.00	0.00	0.001	O				0.01
31.483	0.00	0.00	0.001	O				0.01
31.500	0.00	0.00	0.001	O				0.01
31.517	0.00	0.00	0.001	O				0.01
31.533	0.00	0.00	0.001	O				0.01
31.550	0.00	0.00	0.001	O				0.01
31.567	0.00	0.00	0.001	O				0.01
31.583	0.00	0.00	0.001	O				0.01
31.600	0.00	0.00	0.001	O				0.01
31.617	0.00	0.00	0.001	O				0.01
31.633	0.00	0.00	0.001	O				0.01
31.650	0.00	0.00	0.001	O				0.01
31.667	0.00	0.00	0.001	O				0.01
31.683	0.00	0.00	0.001	O				0.01
31.700	0.00	0.00	0.001	O				0.01
31.717	0.00	0.00	0.001	O				0.01
31.733	0.00	0.00	0.001	O				0.01
31.750	0.00	0.00	0.001	O				0.01
31.767	0.00	0.00	0.001	O				0.01
31.783	0.00	0.00	0.001	O				0.01
31.800	0.00	0.00	0.001	O				0.01
31.817	0.00	0.00	0.001	O				0.01
31.833	0.00	0.00	0.001	O				0.01
31.850	0.00	0.00	0.001	O				0.01
31.867	0.00	0.00	0.001	O				0.01
31.883	0.00	0.00	0.001	O				0.01
31.900	0.00	0.00	0.001	O				0.01
31.917	0.00	0.00	0.001	O				0.01
31.933	0.00	0.00	0.001	O				0.01
31.950	0.00	0.00	0.001	O				0.01
31.967	0.00	0.00	0.001	O				0.01
31.983	0.00	0.00	0.001	O				0.01
32.000	0.00	0.00	0.001	O				0.01
32.017	0.00	0.00	0.001	O				0.01
32.033	0.00	0.00	0.001	O				0.01
32.050	0.00	0.00	0.001	O				0.01
32.067	0.00	0.00	0.001	O				0.01
32.083	0.00	0.00	0.001	O				0.01
32.100	0.00	0.00	0.001	O				0.01

32.117	0.00	0.00	0.001	O				0.01
32.133	0.00	0.00	0.001	O				0.01
32.150	0.00	0.00	0.001	O				0.01
32.167	0.00	0.00	0.001	O				0.01
32.183	0.00	0.00	0.001	O				0.01
32.200	0.00	0.00	0.001	O				0.01
32.217	0.00	0.00	0.001	O				0.01
32.233	0.00	0.00	0.001	O				0.01
32.250	0.00	0.00	0.001	O				0.01
32.267	0.00	0.00	0.001	O				0.01
32.283	0.00	0.00	0.001	O				0.01
32.300	0.00	0.00	0.001	O				0.01
32.317	0.00	0.00	0.001	O				0.01
32.333	0.00	0.00	0.001	O				0.01
32.350	0.00	0.00	0.001	O				0.01
32.367	0.00	0.00	0.001	O				0.01
32.383	0.00	0.00	0.001	O				0.01
32.400	0.00	0.00	0.001	O				0.01
32.417	0.00	0.00	0.001	O				0.01
32.433	0.00	0.00	0.001	O				0.01
32.450	0.00	0.00	0.000	O				0.01
32.467	0.00	0.00	0.000	O				0.01
32.483	0.00	0.00	0.000	O				0.01
32.500	0.00	0.00	0.000	O				0.01
32.517	0.00	0.00	0.000	O				0.01
32.533	0.00	0.00	0.000	O				0.01
32.550	0.00	0.00	0.000	O				0.01
32.567	0.00	0.00	0.000	O				0.01
32.583	0.00	0.00	0.000	O				0.01
32.600	0.00	0.00	0.000	O				0.01
32.617	0.00	0.00	0.000	O				0.01
32.633	0.00	0.00	0.000	O				0.01
32.650	0.00	0.00	0.000	O				0.01
32.667	0.00	0.00	0.000	O				0.01
32.683	0.00	0.00	0.000	O				0.01
32.700	0.00	0.00	0.000	O				0.01
32.717	0.00	0.00	0.000	O				0.01
32.733	0.00	0.00	0.000	O				0.01
32.750	0.00	0.00	0.000	O				0.01
32.767	0.00	0.00	0.000	O				0.01
32.783	0.00	0.00	0.000	O				0.01
32.800	0.00	0.00	0.000	O				0.01
32.817	0.00	0.00	0.000	O				0.01
32.833	0.00	0.00	0.000	O				0.01
32.850	0.00	0.00	0.000	O				0.01
32.867	0.00	0.00	0.000	O				0.01
32.883	0.00	0.00	0.000	O				0.01
32.900	0.00	0.00	0.000	O				0.01
32.917	0.00	0.00	0.000	O				0.01
32.933	0.00	0.00	0.000	O				0.01

32.950	0.00	0.00	0.000	O					0.01
32.967	0.00	0.00	0.000	O					0.01
32.983	0.00	0.00	0.000	O					0.01
33.000	0.00	0.00	0.000	O					0.01
33.017	0.00	0.00	0.000	O					0.01
33.033	0.00	0.00	0.000	O					0.01
33.050	0.00	0.00	0.000	O					0.01
33.067	0.00	0.00	0.000	O					0.01
33.083	0.00	0.00	0.000	O					0.01
33.100	0.00	0.00	0.000	O					0.01
33.117	0.00	0.00	0.000	O					0.01
33.133	0.00	0.00	0.000	O					0.00
33.150	0.00	0.00	0.000	O					0.00
33.167	0.00	0.00	0.000	O					0.00
33.183	0.00	0.00	0.000	O					0.00
33.200	0.00	0.00	0.000	O					0.00
33.217	0.00	0.00	0.000	O					0.00
33.233	0.00	0.00	0.000	O					0.00
33.250	0.00	0.00	0.000	O					0.00
33.267	0.00	0.00	0.000	O					0.00
33.283	0.00	0.00	0.000	O					0.00
33.300	0.00	0.00	0.000	O					0.00
33.317	0.00	0.00	0.000	O					0.00
33.333	0.00	0.00	0.000	O					0.00
33.350	0.00	0.00	0.000	O					0.00
33.367	0.00	0.00	0.000	O					0.00
33.383	0.00	0.00	0.000	O					0.00
33.400	0.00	0.00	0.000	O					0.00
33.417	0.00	0.00	0.000	O					0.00
33.433	0.00	0.00	0.000	O					0.00
33.450	0.00	0.00	0.000	O					0.00
33.467	0.00	0.00	0.000	O					0.00
33.483	0.00	0.00	0.000	O					0.00
33.500	0.00	0.00	0.000	O					0.00
33.517	0.00	0.00	0.000	O					0.00
33.533	0.00	0.00	0.000	O					0.00
33.550	0.00	0.00	0.000	O					0.00
33.567	0.00	0.00	0.000	O					0.00
33.583	0.00	0.00	0.000	O					0.00
33.600	0.00	0.00	0.000	O					0.00
33.617	0.00	0.00	0.000	O					0.00
33.633	0.00	0.00	0.000	O					0.00
33.650	0.00	0.00	0.000	O					0.00
33.667	0.00	0.00	0.000	O					0.00
33.683	0.00	0.00	0.000	O					0.00
33.700	0.00	0.00	0.000	O					0.00
33.717	0.00	0.00	0.000	O					0.00
33.733	0.00	0.00	0.000	O					0.00
33.750	0.00	0.00	0.000	O					0.00
33.767	0.00	0.00	0.000	O					0.00

33.783	0.00	0.00	0.000	O	|	|	|	0.00
33.800	0.00	0.00	0.000	O	|	|	|	0.00
33.817	0.00	0.00	0.000	O	|	|	|	0.00
33.833	0.00	0.00	0.000	O	|	|	|	0.00
33.850	0.00	0.00	0.000	O	|	|	|	0.00
33.867	0.00	0.00	0.000	O	|	|	|	0.00
33.883	0.00	0.00	0.000	O	|	|	|	0.00
33.900	0.00	0.00	0.000	O	|	|	|	0.00
33.917	0.00	0.00	0.000	O	|	|	|	0.00
33.933	0.00	0.00	0.000	O	|	|	|	0.00
33.950	0.00	0.00	0.000	O	|	|	|	0.00
33.967	0.00	0.00	0.000	O	|	|	|	0.00
33.983	0.00	0.00	0.000	O	|	|	|	0.00
34.000	0.00	0.00	0.000	O	|	|	|	0.00
34.017	0.00	0.00	0.000	O	|	|	|	0.00
34.033	0.00	0.00	0.000	O	|	|	|	0.00
34.050	0.00	0.00	0.000	O	|	|	|	0.00
34.067	0.00	0.00	0.000	O	|	|	|	0.00
34.083	0.00	0.00	0.000	O	|	|	|	0.00
34.100	0.00	0.00	0.000	O	|	|	|	0.00
34.117	0.00	0.00	0.000	O	|	|	|	0.00
34.133	0.00	0.00	0.000	O	|	|	|	0.00
34.150	0.00	0.00	0.000	O	|	|	|	0.00
34.167	0.00	0.00	0.000	O	|	|	|	0.00
34.183	0.00	0.00	0.000	O	|	|	|	0.00
34.200	0.00	0.00	0.000	O	|	|	|	0.00
34.217	0.00	0.00	0.000	O	|	|	|	0.00
34.233	0.00	0.00	0.000	O	|	|	|	0.00
34.250	0.00	0.00	0.000	O	|	|	|	0.00
34.267	0.00	0.00	0.000	O	|	|	|	0.00
34.283	0.00	0.00	0.000	O	|	|	|	0.00
34.300	0.00	0.00	0.000	O	|	|	|	0.00
34.317	0.00	0.00	0.000	O	|	|	|	0.00
34.333	0.00	0.00	0.000	O	|	|	|	0.00
34.350	0.00	0.00	0.000	O	|	|	|	0.00
34.367	0.00	0.00	0.000	O	|	|	|	0.00
34.383	0.00	0.00	0.000	O	|	|	|	0.00
34.400	0.00	0.00	0.000	O	|	|	|	0.00
34.417	0.00	0.00	0.000	O	|	|	|	0.00
34.433	0.00	0.00	0.000	O	|	|	|	0.00
34.450	0.00	0.00	0.000	O	|	|	|	0.00
34.467	0.00	0.00	0.000	O	|	|	|	0.00
34.483	0.00	0.00	0.000	O	|	|	|	0.00
34.500	0.00	0.00	0.000	O	|	|	|	0.00
34.517	0.00	0.00	0.000	O	|	|	|	0.00
34.533	0.00	0.00	0.000	O	|	|	|	0.00
34.550	0.00	0.00	0.000	O	|	|	|	0.00

**********HYDROGRAPH DATA**********

Number of intervals = 2073

```
                Time interval =    1.0 (Min.)
                Maximum/Peak flow rate =       16.022 (CFS)
                Total volume =       2.141 (Ac.Ft)
        Status of hydrographs being held in storage
                    Stream 1  Stream 2  Stream 3  Stream 4  Stream 5
        Peak (CFS)      0.000     0.000     0.000     0.000     0.000
        Vol (Ac.Ft)      0.000     0.000     0.000     0.000     0.000
****************************************************************************

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                San Diego County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c)1991-2018 Version 9.0

Rational method hydrology  program based on
San Diego County Flood Control Division 2003 hydrology manual
        Rational Hydrology Study        Date: 06/21/21
--------------------------------------------------------------------------
108-001 Idaho (Escondido Estates)
Onsite Proposed Condition 501-507
Flow through Drainage Course
Extrapolated storm from County Isopluvials

--------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

--------------------------------------------------------------------------


Program License Serial Number 6440

--------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
English (in-lb) input data Units used

Map data precipitation entered:
6 hour,  precipitation(inches) =  3.300
24 hour precipitation(inches) =  7.300
P6/P24 =    45.2%
San Diego hydrology manual 'C' values used


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      501.000 to Point/Station      502.000
**** INITIAL AREA EVALUATION ****
__________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[COMMERCIAL area type                        ]
(Neighborhod Commercial )
Impervious value, Ai = 0.800
Sub-Area C Value = 0.780
Initial subarea total flow distance  =   85.000(Ft.)
Highest elevation =  710.100(Ft.)
Lowest elevation =  707.000(Ft.)
Elevation difference =    3.100(Ft.) Slope =  3.647 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
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The maximum overland flow distance is 85.00 (Ft)
for the top area slope value of   3.65 %, in a development type of
 Neighborhod Commercial
In Accordance With Figure 3-3
Initial Area Time of Concentration =   3.45 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.7800)*(  85.000^.5)/(   3.647^(1/3)]=   3.45
Calculated TC of    3.450 minutes is less than 5 minutes,
 resetting TC to 5.0 minutes for rainfall intensity calculations
Rainfall intensity (I) =      8.695(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.780
Subarea runoff =      0.203(CFS)
Total initial stream area =        0.030(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      502.000 to Point/Station      503.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =   707.000(Ft.)
End of street segment elevation =   704.000(Ft.)
Length of street segment  =   212.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  21.500(Ft.)
Distance from crown to crossfall grade break  =  20.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
Street flow is on [2] side(s) of the street
Distance from curb to property line  =  10.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   1.500(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0120
 Manning's N from gutter to grade break =  0.0120
 Manning's N from grade break to crown =  0.0120
Estimated mean flow rate at midpoint of street =      1.047(CFS)
Depth of flow =   0.178(Ft.), Average velocity =   2.159(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =   4.138(Ft.)
Flow velocity =   2.16(Ft/s)
Travel time =    1.64 min.     TC =    5.09  min.
 Adding area flow to street
Rainfall intensity (I) =      8.599(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[COMMERCIAL area type                        ]
(Neighborhod Commercial )
Impervious value, Ai = 0.800
```

```
Sub-Area C Value = 0.780
Rainfall intensity =      8.599(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.780  CA =      0.234
Subarea runoff =      1.809(CFS) for      0.270(Ac.)
Total runoff =      2.012(CFS)  Total area =       0.300(Ac.)
Street flow at end of street =      2.012(CFS)
Half street flow at end of street =      1.006(CFS)
Depth of flow =   0.211(Ft.), Average velocity =   2.452(Ft/s)
Flow width (from curb towards crown)=   5.822(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      503.000 to Point/Station      504.000
**** PIPEFLOW TRAVEL TIME (Program estimated size) ****
______________________________________________________________________________
Upstream point/station elevation =   700.000(Ft.)
Downstream point/station elevation =   697.500(Ft.)
Pipe length  =    53.00(Ft.) Slope =   0.0472  Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     2.012(CFS)
Nearest computed pipe diameter  =      9.00(In.)
Calculated individual pipe flow  =     2.012(CFS)
Normal flow depth in pipe =    4.82(In.)
Flow top width inside pipe =    8.98(In.)
Critical Depth =    7.73(In.)
Pipe flow velocity =      8.36(Ft/s)
Travel time through pipe =    0.11 min.
Time of concentration (TC) =     5.19 min.


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      503.000 to Point/Station      504.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =      0.300(Ac.)
Runoff from this stream =      2.012(CFS)
Time of concentration =    5.19 min.
Rainfall intensity =     8.486(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      504.000 to Point/Station      504.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
______________________________________________________________________________
User specified 'C' value of 0.300 given for subarea
Rainfall intensity (I) =      3.943(In/Hr) for a   100.0 year storm
User specified values are as follows:
```

```
TC =  17.04 min.  Rain intensity =       3.94(In/Hr)
Total area =       57.330(Ac.)  Total runoff =    40.932(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      504.000 to Point/Station      504.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =     57.330(Ac.)
Runoff from this stream =     40.932(CFS)
Time of concentration =   17.04 min.
Rainfall intensity =     3.943(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1        2.012      5.19                 8.486
2       40.932     17.04                 3.943
Qmax(1) =
           1.000 *    1.000 *     2.012) +
           1.000 *    0.305 *    40.932) + =      14.484
Qmax(2) =
           0.465 *    1.000 *     2.012) +
           1.000 *    1.000 *    40.932) + =      41.867

Total of 2 main streams to confluence:
Flow rates before confluence point:
       2.012      40.932
Maximum flow rates at confluence using above data:
       14.484       41.867
Area of streams before confluence:
        0.300       57.330


Results of confluence:
Total flow rate =     41.867(CFS)
Time of concentration =    17.040 min.
Effective stream area after confluence  =     57.630(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      504.000 to Point/Station      506.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
Estimated mean flow rate at midpoint of channel =     53.289(CFS)
Depth of flow =   0.866(Ft.), Average velocity =   2.843(Ft/s)
```

```
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2             25.00              0.00
        3             50.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =     53.289(CFS)
  '     '        flow top width =     43.294(Ft.)
  '     '    velocity=    2.843(Ft/s)
  '     '        area =     18.744(Sq.Ft)
  '     '        Froude number =     0.761

Upstream point elevation =   697.500(Ft.)
Downstream point elevation =   690.000(Ft.)
Flow length =   419.000(Ft.)
Travel time  =    2.46 min.
Time of concentration =   19.50 min.
Depth of flow =   0.866(Ft.)
Average velocity =   2.843(Ft/s)
Total irregular channel flow =    53.289(CFS)
Irregular channel normal depth above invert elev. =   0.866(Ft.)
Average velocity of channel(s) =   2.843(Ft/s)
 Adding area flow to channel
Rainfall intensity (I) =      3.615(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
Rainfall intensity =      3.615(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.302  CA =     17.928
Subarea runoff =     22.937(CFS) for      1.650(Ac.)
Total runoff =     64.804(CFS)  Total area =      59.280(Ac.)
Depth of flow =   0.932(Ft.), Average velocity =   2.985(Ft/s)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      504.000 to Point/Station      506.000
**** CONFLUENCE OF MAIN STREAMS ****
__________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =     59.280(Ac.)
```

```
Runoff from this stream =     64.804(CFS)
Time of concentration =   19.50 min.
Rainfall intensity =     3.615(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      501.000 to Point/Station      505.000
**** INITIAL AREA EVALUATION ****
________________________________________________________________________
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[COMMERCIAL area type                         ]
(Neighborhod Commercial )
Impervious value, Ai = 0.800
Sub-Area C Value = 0.780
Initial subarea total flow distance  =   93.000(Ft.)
Highest elevation =  710.100(Ft.)
Lowest elevation =  706.000(Ft.)
Elevation difference =    4.100(Ft.) Slope =  4.409 %
INITIAL AREA TIME OF CONCENTRATION CALCULATIONS:
The maximum overland flow distance is 95.00 (Ft)
for the top area slope value of   4.41 %, in a development type of
 Neighborhod Commercial
In Accordance With Figure 3-3
Initial Area Time of Concentration =   3.42 minutes
TC = [1.8*(1.1-C)*distance(Ft.)^.5)/(% slope^(1/3)]
TC = [1.8*(1.1-0.7800)*(  95.000^.5)/(   4.409^(1/3)]=   3.42
Calculated TC of    3.424 minutes is less than 5 minutes,
 resetting TC to 5.0 minutes for rainfall intensity calculations
Rainfall intensity (I) =      8.695(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for area (Q=KCIA) is C = 0.780
Subarea runoff =      0.407(CFS)
Total initial stream area =        0.060(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      505.000 to Point/Station      506.000
**** STREET FLOW TRAVEL TIME + SUBAREA FLOW ADDITION ****
________________________________________________________________________
Top of street segment elevation =   706.000(Ft.)
End of street segment elevation =   690.000(Ft.)
Length of street segment  =   461.000(Ft.)
Height of curb above gutter flowline  =    6.0(In.)
Width of half street (curb to crown)  =  21.500(Ft.)
Distance from crown to crossfall grade break  =  20.000(Ft.)
Slope from gutter to grade break (v/hz) =   0.020
Slope from grade break to crown (v/hz)  =   0.020
```

```
Street flow is on [2] side(s) of the street
Distance from curb to property line  =  10.000(Ft.)
Slope from curb to property line (v/hz) =   0.020
Gutter width =   1.500(Ft.)
Gutter hike from flowline =  1.500(In.)
 Manning's N in gutter =  0.0120
 Manning's N from gutter to grade break =  0.0120
 Manning's N from grade break to crown =  0.0120
Estimated mean flow rate at midpoint of street =      2.449(CFS)
Depth of flow =   0.198(Ft.), Average velocity =   3.645(Ft/s)
Streetflow hydraulics at midpoint of street travel:
Halfstreet flow width =   5.144(Ft.)
Flow velocity =   3.64(Ft/s)
Travel time =    2.11 min.     TC =    5.53  min.
 Adding area flow to street
Rainfall intensity (I) =      8.146(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[COMMERCIAL area type                         ]
(Neighborhod Commercial )
Impervious value, Ai = 0.800
Sub-Area C Value = 0.780
Rainfall intensity =      8.146(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.780  CA =      0.569
Subarea runoff =      4.231(CFS) for      0.670(Ac.)
Total runoff =      4.638(CFS)  Total area =       0.730(Ac.)
Street flow at end of street =      4.638(CFS)
Half street flow at end of street =      2.319(CFS)
Depth of flow =   0.234(Ft.), Average velocity =   4.180(Ft/s)
Flow width (from curb towards crown)=   6.954(Ft.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      505.000 to Point/Station      506.000
**** CONFLUENCE OF MAIN STREAMS ****
______________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =      0.730(Ac.)
Runoff from this stream =      4.638(CFS)
Time of concentration =    5.53 min.
Rainfall intensity =     8.146(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)
```

```
1       64.804     19.50                 3.615
2        4.638      5.53                 8.146
Qmax(1) =
           1.000 *    1.000 *    64.804) +
           0.444 *    1.000 *     4.638) + =      66.862
Qmax(2) =
           1.000 *    0.284 *    64.804) +
           1.000 *    1.000 *     4.638) + =      23.025

Total of 2 main streams to confluence:
Flow rates before confluence point:
      64.804       4.638
Maximum flow rates at confluence using above data:
       66.862       23.025
Area of streams before confluence:
       59.280        0.730


Results of confluence:
Total flow rate =     66.862(CFS)
Time of concentration =    19.496 min.
Effective stream area after confluence  =     60.010(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      506.000 to Point/Station      507.000
**** IRREGULAR CHANNEL FLOW TRAVEL TIME ****
________________________________________________________________________
!!Warning: Water is above left or right bank elevations
!!Warning: Water is above left or right bank elevations
!!Warning: Water is above left or right bank elevations
!!Warning: Water is above left or right bank elevations
Estimated mean flow rate at midpoint of channel =     66.910(CFS)
Depth of flow =   1.028(Ft.), Average velocity =   3.167(Ft/s)
!!Warning: Water is above left or right bank elevations
        ******* Irregular Channel Data ***********
------------------------------------------------------------------
Information entered for subchannel number 1 :
Point number      'X' coordinate     'Y' coordinate
        1              0.00              1.00
        2             20.00              0.00
        3             40.00              1.00
Manning's 'N' friction factor =   0.040
------------------------------------------------------------------
Sub-Channel flow  =     66.911(CFS)
  '     '        flow top width =     40.000(Ft.)
  '     '    velocity=    3.167(Ft/s)
  '     '        area =     21.129(Sq.Ft)
  '     '        Froude number =     0.768
```

```
Upstream point elevation =   690.000(Ft.)
Downstream point elevation =   687.000(Ft.)
Flow length =   176.000(Ft.)
Travel time  =    0.93 min.
Time of concentration =   20.42 min.
Depth of flow =   1.028(Ft.)
Average velocity =   3.167(Ft/s)
Total irregular channel flow =    66.910(CFS)
Irregular channel normal depth above invert elev. =   1.028(Ft.)
Average velocity of channel(s) =   3.167(Ft/s)
!!Warning: Water is above left or right bank elevations
 Adding area flow to channel
Rainfall intensity (I) =      3.508(In/Hr) for a   100.0 year storm
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.000
Decimal fraction soil group C = 1.000
Decimal fraction soil group D = 0.000
[UNDISTURBED NATURAL TERRAIN                ]
(Permanent Open Space   )
Impervious value, Ai = 0.000
Sub-Area C Value = 0.300
The area added to the existing stream causes a
a lower flow rate of Q =     65.626(CFS)
therefore the upstream flow rate of Q =     66.862(CFS) is being used
Rainfall intensity =      3.508(In/Hr) for a   100.0 year storm
Effective runoff coefficient used for total area
(Q=KCIA) is C = 0.308  CA =     18.707
Subarea runoff =      0.000(CFS) for      0.700(Ac.)
Total runoff =     66.862(CFS)  Total area =      60.710(Ac.)
Depth of flow =   1.028(Ft.), Average velocity =   3.166(Ft/s)
!!Warning: Water is above left or right bank elevations


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      506.000 to Point/Station      507.000
**** 6 HOUR HYDROGRAPH ****
________________________________________________________________________
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Hydrograph Data - Section 6, San Diego County Hydrology manual, June 2003


Time of Concentration =  20.42
Basin Area =    60.71 Acres
6 Hour Rainfall =  3.300 Inches
Runoff Coefficient =  0.308
Peak Discharge =    66.86 CFS
     Time (Min)     Discharge (CFS)
       0               0.000
       20               3.728
```

40	3.872
60	4.209
80	4.408
100	4.888
120	5.184
140	5.942
160	6.443
180	7.875
200	8.970
220	13.171
240	18.557
260	66.862
280	10.564
300	7.068
320	5.530
340	4.632
360	4.032
380	3.597

++

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 1 Minute intervals ((CFS))

Time(h+m)	Volume Ac.Ft	Q(CFS)	0	16.7	33.4	50.1	66.9
0+ 0	0.0000	0.00	Q	|	|	|	|
0+ 1	0.0003	0.19	Q	|	|	|	|
0+ 2	0.0008	0.37	Q	|	|	|	|
0+ 3	0.0015	0.56	Q	|	|	|	|
0+ 4	0.0026	0.75	Q	|	|	|	|
0+ 5	0.0039	0.93	Q	|	|	|	|
0+ 6	0.0054	1.12	Q	|	|	|	|
0+ 7	0.0072	1.30	Q	|	|	|	|
0+ 8	0.0092	1.49	Q	|	|	|	|
0+ 9	0.0116	1.68	VQ	|	|	|	|
0+10	0.0141	1.86	VQ	|	|	|	|
0+11	0.0169	2.05	VQ	|	|	|	|
0+12	0.0200	2.24	VQ	|	|	|	|
0+13	0.0234	2.42	VQ	|	|	|	|
0+14	0.0270	2.61	VQ	|	|	|	|
0+15	0.0308	2.80	VQ	|	|	|	|
0+16	0.0349	2.98	VQ	|	|	|	|
0+17	0.0393	3.17	VQ	|	|	|	|
0+18	0.0439	3.36	V Q	|	|	|	|
0+19	0.0488	3.54	V Q	|	|	|	|
0+20	0.0539	3.73	V Q	|	|	|	|
0+21	0.0591	3.74	V Q	|	|	|	|
0+22	0.0642	3.74	V Q	|	|	|	|

```
0+23       0.0694      3.75  V Q       |          |          |          |
0+24       0.0746      3.76  V Q       |          |          |          |
0+25       0.0797      3.76  V Q       |          |          |          |
0+26       0.0849      3.77  V Q       |          |          |          |
0+27       0.0901      3.78  V Q       |          |          |          |
0+28       0.0954      3.79  V Q       |          |          |          |
0+29       0.1006      3.79  V Q       |          |          |          |
0+30       0.1058      3.80  V Q       |          |          |          |
0+31       0.1111      3.81  V Q       |          |          |          |
0+32       0.1163      3.81  V Q       |          |          |          |
0+33       0.1216      3.82  V Q       |          |          |          |
0+34       0.1268      3.83  V Q       |          |          |          |
0+35       0.1321      3.84  |VQ       |          |          |          |
0+36       0.1374      3.84  |VQ       |          |          |          |
0+37       0.1427      3.85  |VQ       |          |          |          |
0+38       0.1480      3.86  |VQ       |          |          |          |
0+39       0.1534      3.86  |VQ       |          |          |          |
0+40       0.1587      3.87  |VQ       |          |          |          |
0+41       0.1641      3.89  |VQ       |          |          |          |
0+42       0.1694      3.91  |VQ       |          |          |          |
0+43       0.1748      3.92  |VQ       |          |          |          |
0+44       0.1803      3.94  |VQ       |          |          |          |
0+45       0.1857      3.96  |VQ       |          |          |          |
0+46       0.1912      3.97  |VQ       |          |          |          |
0+47       0.1967      3.99  |VQ       |          |          |          |
0+48       0.2022      4.01  |VQ       |          |          |          |
0+49       0.2077      4.02  |VQ       |          |          |          |
0+50       0.2133      4.04  |VQ       |          |          |          |
0+51       0.2189      4.06  |VQ       |          |          |          |
0+52       0.2245      4.07  |VQ       |          |          |          |
0+53       0.2301      4.09  |VQ       |          |          |          |
0+54       0.2358      4.11  |VQ       |          |          |          |
0+55       0.2415      4.12  |VQ       |          |          |          |
0+56       0.2472      4.14  |VQ       |          |          |          |
0+57       0.2529      4.16  |VQ       |          |          |          |
0+58       0.2587      4.18  |VQ       |          |          |          |
0+59       0.2644      4.19  | Q       |          |          |          |
1+ 0       0.2702      4.21  | Q       |          |          |          |
1+ 1       0.2761      4.22  | Q       |          |          |          |
1+ 2       0.2819      4.23  | Q       |          |          |          |
1+ 3       0.2877      4.24  | Q       |          |          |          |
1+ 4       0.2936      4.25  | Q       |          |          |          |
1+ 5       0.2994      4.26  | Q       |          |          |          |
1+ 6       0.3053      4.27  | Q       |          |          |          |
1+ 7       0.3112      4.28  | Q       |          |          |          |
1+ 8       0.3171      4.29  | Q       |          |          |          |
1+ 9       0.3230      4.30  | Q       |          |          |          |
1+10       0.3290      4.31  | Q       |          |          |          |
1+11       0.3349      4.32  | Q       |          |          |          |
1+12       0.3409      4.33  | Q       |          |          |          |
```

1+13	0.3469	4.34	Q				
1+14	0.3528	4.35	Q				
1+15	0.3588	4.36	Q				
1+16	0.3649	4.37	Q				
1+17	0.3709	4.38	Q				
1+18	0.3769	4.39	Q				
1+19	0.3830	4.40	Q				
1+20	0.3891	4.41	QV				
1+21	0.3952	4.43	QV				
1+22	0.4013	4.46	QV				
1+23	0.4075	4.48	QV				
1+24	0.4137	4.50	QV				
1+25	0.4199	4.53	QV				
1+26	0.4262	4.55	QV				
1+27	0.4325	4.58	QV				
1+28	0.4388	4.60	QV				
1+29	0.4452	4.62	QV				
1+30	0.4516	4.65	QV				
1+31	0.4580	4.67	QV				
1+32	0.4645	4.70	QV				
1+33	0.4710	4.72	QV				
1+34	0.4775	4.74	QV				
1+35	0.4841	4.77	QV				
1+36	0.4907	4.79	QV				
1+37	0.4973	4.82	QV				
1+38	0.5040	4.84	QV				
1+39	0.5107	4.86	QV				
1+40	0.5174	4.89	Q V				
1+41	0.5242	4.90	Q V				
1+42	0.5310	4.92	Q V				
1+43	0.5378	4.93	Q V				
1+44	0.5446	4.95	Q V				
1+45	0.5514	4.96	Q V				
1+46	0.5583	4.98	Q V				
1+47	0.5651	4.99	Q V				
1+48	0.5720	5.01	Q V				
1+49	0.5790	5.02	QV				
1+50	0.5859	5.04	QV				
1+51	0.5928	5.05	QV				
1+52	0.5998	5.07	QV				
1+53	0.6068	5.08	QV				
1+54	0.6138	5.10	QV				
1+55	0.6209	5.11	QV				
1+56	0.6279	5.12	QV				
1+57	0.6350	5.14	QV				
1+58	0.6421	5.15	QV				
1+59	0.6492	5.17	Q V				
2+ 0	0.6564	5.18	Q V				
2+ 1	0.6636	5.22	Q V				
2+ 2	0.6708	5.26	Q V				

2+ 3	0.6781	5.30	Q V			
2+ 4	0.6855	5.34	Q V			
2+ 5	0.6929	5.37	Q V			
2+ 6	0.7003	5.41	Q V			
2+ 7	0.7078	5.45	Q V			
2+ 8	0.7154	5.49	Q V			
2+ 9	0.7230	5.53	Q V			
2+10	0.7307	5.56	Q V			
2+11	0.7384	5.60	Q V			
2+12	0.7461	5.64	Q V			
2+13	0.7540	5.68	Q V			
2+14	0.7618	5.71	Q V			
2+15	0.7698	5.75	Q V			
2+16	0.7777	5.79	Q V			
2+17	0.7858	5.83	Q V			
2+18	0.7938	5.87	Q V			
2+19	0.8020	5.90	Q V			
2+20	0.8102	5.94	Q V			
2+21	0.8184	5.97	Q V			
2+22	0.8266	5.99	Q V			
2+23	0.8349	6.02	Q V			
2+24	0.8432	6.04	Q V			
2+25	0.8516	6.07	Q V			
2+26	0.8600	6.09	Q V			
2+27	0.8684	6.12	Q V			
2+28	0.8769	6.14	Q V			
2+29	0.8854	6.17	Q V			
2+30	0.8939	6.19	Q V			
2+31	0.9025	6.22	Q V			
2+32	0.9111	6.24	Q V			
2+33	0.9197	6.27	Q V			
2+34	0.9284	6.29	Q V			
2+35	0.9371	6.32	Q V			
2+36	0.9458	6.34	Q V			
2+37	0.9546	6.37	Q V			
2+38	0.9634	6.39	Q V			
2+39	0.9722	6.42	Q V			
2+40	0.9811	6.44	Q V			
2+41	0.9901	6.51	Q V			
2+42	0.9991	6.59	Q V			
2+43	1.0083	6.66	Q V			
2+44	1.0176	6.73	Q V			
2+45	1.0270	6.80	Q V			
2+46	1.0364	6.87	Q V			
2+47	1.0460	6.94	Q V			
2+48	1.0557	7.02	Q V			
2+49	1.0654	7.09	Q V			
2+50	1.0753	7.16	Q V			
2+51	1.0852	7.23	Q V			
2+52	1.0953	7.30	Q V			

```
2+53       1.1054      7.37  |   Q   V |         |         |         |
2+54       1.1157      7.45  |   Q   V |         |         |         |
2+55       1.1261      7.52  |   Q   V |         |         |         |
2+56       1.1365      7.59  |   Q   V |         |         |         |
2+57       1.1471      7.66  |   Q   V |         |         |         |
2+58       1.1577      7.73  |   Q   V |         |         |         |
2+59       1.1685      7.80  |   Q    V|         |         |         |
3+ 0       1.1793      7.88  |   Q    V|         |         |         |
3+ 1       1.1902      7.93  |   Q    V|         |         |         |
3+ 2       1.2012      7.98  |   Q    V|         |         |         |
3+ 3       1.2123      8.04  |   Q    V|         |         |         |
3+ 4       1.2235      8.09  |   Q    V|         |         |         |
3+ 5       1.2347      8.15  |   Q    V|         |         |         |
3+ 6       1.2460      8.20  |   Q    V|         |         |         |
3+ 7       1.2574      8.26  |   Q    V|         |         |         |
3+ 8       1.2688      8.31  |   Q    V|         |         |         |
3+ 9       1.2803      8.37  |    Q   V|         |         |         |
3+10       1.2919      8.42  |    Q   V|         |         |         |
3+11       1.3036      8.48  |    Q    V         |         |         |
3+12       1.3154      8.53  |    Q    V         |         |         |
3+13       1.3272      8.59  |    Q    V         |         |         |
3+14       1.3391      8.64  |    Q    V         |         |         |
3+15       1.3511      8.70  |    Q    V         |         |         |
3+16       1.3631      8.75  |    Q    V         |         |         |
3+17       1.3753      8.81  |    Q    V         |         |         |
3+18       1.3875      8.86  |    Q    V         |         |         |
3+19       1.3997      8.92  |    Q    V         |         |         |
3+20       1.4121      8.97  |    Q    V         |         |         |
3+21       1.4247      9.18  |    Q    |V         |         |         |
3+22       1.4377      9.39  |    Q    |V         |         |         |
3+23       1.4509      9.60  |    Q    |V         |         |         |
3+24       1.4644      9.81  |    Q    |V         |         |         |
3+25       1.4782     10.02  |    Q    |V         |         |         |
3+26       1.4923     10.23  |     Q   |V         |         |         |
3+27       1.5067     10.44  |     Q   |V         |         |         |
3+28       1.5214     10.65  |     Q   |V         |         |         |
3+29       1.5363     10.86  |     Q   |V         |         |         |
3+30       1.5516     11.07  |     Q   |V         |         |         |
3+31       1.5671     11.28  |     Q   | V        |         |         |
3+32       1.5829     11.49  |     Q   | V        |         |         |
3+33       1.5990     11.70  |     Q   | V        |         |         |
3+34       1.6154     11.91  |      Q  | V        |         |         |
3+35       1.6321     12.12  |      Q  | V        |         |         |
3+36       1.6491     12.33  |      Q  | V        |         |         |
3+37       1.6664     12.54  |      Q  | V        |         |         |
3+38       1.6840     12.75  |      Q  |  V       |         |         |
3+39       1.7018     12.96  |      Q  |  V       |         |         |
3+40       1.7200     13.17  |      Q  |  V       |         |         |
3+41       1.7385     13.44  |       Q |  V       |         |         |
3+42       1.7574     13.71  |       Q |  V       |         |         |
```

```
3+43       1.7766     13.98  |       Q |  V      |         |         |
3+44       1.7962     14.25  |       Q |  V      |         |         |
3+45       1.8162     14.52  |       Q |   V     |         |         |
3+46       1.8366     14.79  |       Q |   V     |         |         |
3+47       1.8573     15.06  |        Q|   V     |         |         |
3+48       1.8784     15.33  |        Q|   V     |         |         |
3+49       1.8999     15.59  |        Q|   V     |         |         |
3+50       1.9218     15.86  |        Q|   V     |         |         |
3+51       1.9440     16.13  |        Q|    V    |         |         |
3+52       1.9666     16.40  |        Q|    V    |         |         |
3+53       1.9896     16.67  |        Q|    V    |         |         |
3+54       2.0129     16.94  |         Q    V    |         |         |
3+55       2.0366     17.21  |         Q    V    |         |         |
3+56       2.0607     17.48  |         Q    V    |         |         |
3+57       2.0851     17.75  |         Q     V   |         |         |
3+58       2.1099     18.02  |         Q     V   |         |         |
3+59       2.1351     18.29  |         Q     V   |         |         |
4+ 0       2.1607     18.56  |         |Q    V   |         |         |
4+ 1       2.1896     20.97  |         | Q   V   |         |         |
4+ 2       2.2218     23.39  |         |  Q   V  |         |         |
4+ 3       2.2573     25.80  |         |    Q V  |         |         |
4+ 4       2.2962     28.22  |         |     QV  |         |         |
4+ 5       2.3384     30.63  |         |       Q |         |         |
4+ 6       2.3839     33.05  |         |       VQ|         |         |
4+ 7       2.4328     35.46  |         |       V |Q        |         |
4+ 8       2.4850     37.88  |         |        V| Q       |         |
4+ 9       2.5405     40.29  |         |        V|   Q     |         |
4+10       2.5993     42.71  |         |         V    Q    |         |
4+11       2.6614     45.12  |         |         V     Q   |         |
4+12       2.7269     47.54  |         |          |V      Q |         |
4+13       2.7957     49.96  |         |          |V       Q|         |
4+14       2.8679     52.37  |         |          | V       |Q        |
4+15       2.9433     54.79  |         |          | V       | Q       |
4+16       3.0221     57.20  |         |          |  V      |   Q     |
4+17       3.1042     59.62  |         |          |  V      |    Q    |
4+18       3.1897     62.03  |         |          |   V     |      Q  |
4+19       3.2784     64.45  |         |          |    V    |       Q |
4+20       3.3705     66.86  |         |          |     V   |         Q
4+21       3.4588     64.05  |         |          |     V   |       Q |
4+22       3.5431     61.23  |         |          |      V  |     Q   |
4+23       3.6236     58.42  |         |          |       V |   Q     |
4+24       3.7001     55.60  |         |          |       V |  Q      |
4+25       3.7729     52.79  |         |          |        V|Q        |
4+26       3.8417     49.97  |         |          |         Q|         |
4+27       3.9066     47.16  |         |          |        Q V        |
4+28       3.9677     44.34  |         |          |     Q   V         |
4+29       4.0249     41.53  |         |          |   Q     |V        |
4+30       4.0782     38.71  |         |          |  Q      |V        |
4+31       4.1277     35.90  |         |          |Q        |V        |
4+32       4.1733     33.08  |         |         Q|         | V       |
```

```
4+33      4.2150     30.27  |          |        Q |          | V        |
4+34      4.2528     27.45  |          |      Q   |          | V        |
4+35      4.2867     24.64  |          |    Q     |          |  V       |
4+36      4.3168     21.82  |          |  Q       |          |  V       |
4+37      4.3429     19.01  |          |Q         |          |  V       |
4+38      4.3653     16.19  |        Q |          |          |  V       |
4+39      4.3837     13.38  |       Q  |          |          |  V       |
4+40      4.3982     10.56  |     Q    |          |          |   V      |
4+41      4.4125     10.39  |     Q    |          |          |   V      |
4+42      4.4266     10.21  |     Q    |          |          |   V      |
4+43      4.4404     10.04  |     Q    |          |          |   V      |
4+44      4.4540      9.86  |    Q     |          |          |   V      |
4+45      4.4674      9.69  |    Q     |          |          |   V      |
4+46      4.4805      9.52  |    Q     |          |          |   V      |
4+47      4.4933      9.34  |    Q     |          |          |   V      |
4+48      4.5060      9.17  |    Q     |          |          |   V      |
4+49      4.5184      8.99  |    Q     |          |          |   V      |
4+50      4.5305      8.82  |    Q     |          |          |    V     |
4+51      4.5424      8.64  |    Q     |          |          |    V     |
4+52      4.5541      8.47  |    Q     |          |          |    V     |
4+53      4.5655      8.29  |   Q      |          |          |    V     |
4+54      4.5767      8.12  |   Q      |          |          |    V     |
4+55      4.5876      7.94  |   Q      |          |          |    V     |
4+56      4.5983      7.77  |   Q      |          |          |    V     |
4+57      4.6088      7.59  |   Q      |          |          |    V     |
4+58      4.6190      7.42  |   Q      |          |          |    V     |
4+59      4.6290      7.24  |   Q      |          |          |    V     |
5+ 0      4.6387      7.07  |   Q      |          |          |    V     |
5+ 1      4.6483      6.99  |   Q      |          |          |    V     |
5+ 2      4.6578      6.91  |   Q      |          |          |     V    |
5+ 3      4.6673      6.84  |   Q      |          |          |     V    |
5+ 4      4.6766      6.76  |   Q      |          |          |     V    |
5+ 5      4.6858      6.68  |  Q       |          |          |     V    |
5+ 6      4.6949      6.61  |  Q       |          |          |     V    |
5+ 7      4.7039      6.53  |  Q       |          |          |     V    |
5+ 8      4.7128      6.45  |  Q       |          |          |     V    |
5+ 9      4.7215      6.38  |  Q       |          |          |     V    |
5+10      4.7302      6.30  |  Q       |          |          |     V    |
5+11      4.7388      6.22  |  Q       |          |          |     V    |
5+12      4.7473      6.15  |  Q       |          |          |     V    |
5+13      4.7556      6.07  |  Q       |          |          |     V    |
5+14      4.7639      5.99  |  Q       |          |          |     V    |
5+15      4.7720      5.91  |  Q       |          |          |     V    |
5+16      4.7801      5.84  |  Q       |          |          |     V    |
5+17      4.7880      5.76  |  Q       |          |          |      V   |
5+18      4.7958      5.68  |  Q       |          |          |      V   |
5+19      4.8035      5.61  |  Q       |          |          |      V   |
5+20      4.8112      5.53  |  Q       |          |          |      V   |
5+21      4.8187      5.49  |  Q       |          |          |      V   |
5+22      4.8262      5.44  |  Q       |          |          |      V   |
```

```
5+23       4.8336      5.40  |   Q       |           |           |       V   |
5+24       4.8410      5.35  |   Q       |           |           |       V   |
5+25       4.8483      5.31  |   Q       |           |           |       V   |
5+26       4.8556      5.26  |   Q       |           |           |       V   |
5+27       4.8627      5.22  |   Q       |           |           |       V   |
5+28       4.8699      5.17  |   Q       |           |           |       V   |
5+29       4.8769      5.13  |   Q       |           |           |       V   |
5+30       4.8839      5.08  |   Q       |           |           |       V   |
5+31       4.8909      5.04  |   Q       |           |           |       V   |
5+32       4.8977      4.99  | Q         |           |           |       V   |
5+33       4.9046      4.95  | Q         |           |           |       V   |
5+34       4.9113      4.90  | Q         |           |           |       V   |
5+35       4.9180      4.86  | Q         |           |           |        V  |
5+36       4.9246      4.81  | Q         |           |           |        V  |
5+37       4.9312      4.77  | Q         |           |           |        V  |
5+38       4.9377      4.72  | Q         |           |           |        V  |
5+39       4.9441      4.68  | Q         |           |           |        V  |
5+40       4.9505      4.63  | Q         |           |           |        V  |
5+41       4.9569      4.60  | Q         |           |           |        V  |
5+42       4.9632      4.57  | Q         |           |           |        V  |
5+43       4.9694      4.54  | Q         |           |           |        V  |
5+44       4.9756      4.51  | Q         |           |           |        V  |
5+45       4.9818      4.48  | Q         |           |           |        V  |
5+46       4.9879      4.45  | Q         |           |           |        V  |
5+47       4.9940      4.42  | Q         |           |           |        V  |
5+48       5.0001      4.39  | Q         |           |           |        V  |
5+49       5.0061      4.36  | Q         |           |           |        V  |
5+50       5.0120      4.33  | Q         |           |           |        V  |
5+51       5.0180      4.30  | Q         |           |           |        V  |
5+52       5.0239      4.27  | Q         |           |           |        V  |
5+53       5.0297      4.24  | Q         |           |           |        V  |
5+54       5.0355      4.21  | Q         |           |           |        V  |
5+55       5.0413      4.18  | Q         |           |           |        V  |
5+56       5.0470      4.15  | Q         |           |           |         V |
5+57       5.0527      4.12  | Q         |           |           |         V |
5+58       5.0583      4.09  | Q         |           |           |         V |
5+59       5.0639      4.06  | Q         |           |           |         V |
6+ 0       5.0694      4.03  | Q         |           |           |         V |
6+ 1       5.0750      4.01  | Q         |           |           |         V |
6+ 2       5.0805      3.99  | Q         |           |           |         V |
6+ 3       5.0859      3.97  | Q         |           |           |         V |
6+ 4       5.0913      3.94  | Q         |           |           |         V |
6+ 5       5.0968      3.92  | Q         |           |           |         V |
6+ 6       5.1021      3.90  | Q         |           |           |         V |
6+ 7       5.1075      3.88  | Q         |           |           |         V |
6+ 8       5.1128      3.86  | Q         |           |           |         V |
6+ 9       5.1181      3.84  | Q         |           |           |         V |
6+10       5.1233      3.81  | Q         |           |           |         V |
6+11       5.1285      3.79  | Q         |           |           |         V |
6+12       5.1337      3.77  | Q         |           |           |         V |
```

```
    6+13       5.1389      3.75  | Q       |         |         |        V|
    6+14       5.1440      3.73  | Q       |         |         |        V|
    6+15       5.1491      3.71  | Q       |         |         |        V|
    6+16       5.1542      3.68  | Q       |         |         |        V|
    6+17       5.1593      3.66  | Q       |         |         |        V|
    6+18       5.1643      3.64  | Q       |         |         |        V|
    6+19       5.1693      3.62  | Q       |         |         |        V|
    6+20       5.1742      3.60  | Q       |         |         |         V
-------------------------------------------------------------------------


        End of computations, total study area =         60.710 (Ac.)
```

```
                San Diego County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c)1991-2018 Version 9.0

Rational method hydrology  program based on
San Diego County Flood Control Division 2003 hydrology manual
        Rational Hydrology Study        Date: 06/21/21
------------------------------------------------------------------------
108-001 Idaho (Escondido Estates)
Proposed Discharge at Existing CalTrans Culvert
Extrapolated Storm from County Isopluvials
TH
------------------------------------------------------------------------
 *********   Hydrology Study Control Information **********

------------------------------------------------------------------------


Program License Serial Number 6440

------------------------------------------------------------------------
Rational hydrology study storm event year is   100.0
English (in-lb) input data Units used

Map data precipitation entered:
6 hour,  precipitation(inches) =  3.300
24 hour precipitation(inches) =  7.300
P6/P24 =    45.2%
San Diego hydrology manual 'C' values used


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      403.000 to Point/Station      507.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
________________________________________________________________________
User specified 'C' value of 0.527 given for subarea
Rainfall intensity (I) =      7.064(In/Hr) for a   100.0 year storm
User specified values are as follows:
TC =   6.90 min.  Rain intensity =       7.06(In/Hr)
Total area =       13.270(Ac.)  Total runoff =    16.022(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      507.000 to Point/Station      507.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 1
Stream flow area =     13.270(Ac.)
```

```
Runoff from this stream =     16.022(CFS)
Time of concentration =    6.90 min.
Rainfall intensity =     7.064(In/Hr)
Program is now starting with Main Stream No. 2


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      507.000 to Point/Station      507.000
**** USER DEFINED FLOW INFORMATION AT A POINT ****
________________________________________________________________________
User specified 'C' value of 0.308 given for subarea
Rainfall intensity (I) =      3.508(In/Hr) for a   100.0 year storm
User specified values are as follows:
TC =  20.42 min.  Rain intensity =       3.51(In/Hr)
Total area =       60.710(Ac.)  Total runoff =    66.860(CFS)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      507.000 to Point/Station      507.000
**** CONFLUENCE OF MAIN STREAMS ****
________________________________________________________________________
The following data inside Main Stream is listed:
In Main Stream number: 2
Stream flow area =     60.710(Ac.)
Runoff from this stream =     66.860(CFS)
Time of concentration =   20.42 min.
Rainfall intensity =     3.508(In/Hr)
Summary of stream data:

Stream   Flow rate      TC            Rainfall Intensity
 No.       (CFS)       (min)                 (In/Hr)


1       16.022      6.90                7.064
2       66.860     20.42                3.508
Qmax(1) =
           1.000 *    1.000 *    16.022) +
           1.000 *    0.338 *    66.860) + =      38.614
Qmax(2) =
           0.497 *    1.000 *    16.022) +
           1.000 *    1.000 *    66.860) + =      74.818

Total of 2 main streams to confluence:
Flow rates before confluence point:
      16.022      66.860
Maximum flow rates at confluence using above data:
       38.614       74.818
Area of streams before confluence:
       13.270       60.710
```

```
Results of confluence:
Total flow rate =     74.818(CFS)
Time of concentration =    20.420 min.
Effective stream area after confluence  =     73.980(Ac.)


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      507.000 to Point/Station      507.000
**** 6 HOUR HYDROGRAPH ****
________________________________________________________________________
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Hydrograph Data - Section 6, San Diego County Hydrology manual, June 2003


Time of Concentration =  20.42
Basin Area =    73.98 Acres
6 Hour Rainfall =  3.300 Inches
Runoff Coefficient =  0.347
Peak Discharge =    74.82 CFS
     Time (Min)     Discharge (CFS)
       0               0.000
       20               5.120
       40               5.318
       60               5.780
       80               6.053
       100               6.713
       120               7.120
       140               8.161
       160               8.849
       180              10.816
       200              12.319
       220              18.088
       240              25.486
       260              74.818
       280              14.508
       300               9.707
       320               7.595
       340               6.362
       360               5.537
       380               4.939
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
                    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   1   Minute intervals ((CFS))

------------------------------------------------------------------------
Time(h+m) Volume Ac.Ft   Q(CFS)  0       18.7      37.4      56.1      74.8
------------------------------------------------------------------------
```

```
0+ 0       0.0000      0.00  Q          |          |          |          |
0+ 1       0.0004      0.26  Q          |          |          |          |
0+ 2       0.0011      0.51  Q          |          |          |          |
0+ 3       0.0021      0.77  Q          |          |          |          |
0+ 4       0.0035      1.02  Q          |          |          |          |
0+ 5       0.0053      1.28  Q          |          |          |          |
0+ 6       0.0074      1.54  Q          |          |          |          |
0+ 7       0.0099      1.79  Q          |          |          |          |
0+ 8       0.0127      2.05  VQ         |          |          |          |
0+ 9       0.0159      2.30  VQ         |          |          |          |
0+10       0.0194      2.56  VQ         |          |          |          |
0+11       0.0233      2.82  VQ         |          |          |          |
0+12       0.0275      3.07  VQ         |          |          |          |
0+13       0.0321      3.33  VQ         |          |          |          |
0+14       0.0370      3.58  VQ         |          |          |          |
0+15       0.0423      3.84  V Q        |          |          |          |
0+16       0.0480      4.10  V Q        |          |          |          |
0+17       0.0539      4.35  V Q        |          |          |          |
0+18       0.0603      4.61  V Q        |          |          |          |
0+19       0.0670      4.86  V Q        |          |          |          |
0+20       0.0740      5.12  V Q        |          |          |          |
0+21       0.0811      5.13  V Q        |          |          |          |
0+22       0.0882      5.14  V Q        |          |          |          |
0+23       0.0953      5.15  V Q        |          |          |          |
0+24       0.1024      5.16  V Q        |          |          |          |
0+25       0.1095      5.17  V Q        |          |          |          |
0+26       0.1166      5.18  V Q        |          |          |          |
0+27       0.1238      5.19  V Q        |          |          |          |
0+28       0.1310      5.20  V Q        |          |          |          |
0+29       0.1381      5.21  V Q        |          |          |          |
0+30       0.1453      5.22  V Q        |          |          |          |
0+31       0.1525      5.23  V Q        |          |          |          |
0+32       0.1597      5.24  V Q        |          |          |          |
0+33       0.1670      5.25  |VQ        |          |          |          |
0+34       0.1742      5.26  |VQ        |          |          |          |
0+35       0.1815      5.27  |VQ        |          |          |          |
0+36       0.1887      5.28  |VQ        |          |          |          |
0+37       0.1960      5.29  |VQ        |          |          |          |
0+38       0.2033      5.30  |VQ        |          |          |          |
0+39       0.2106      5.31  |VQ        |          |          |          |
0+40       0.2180      5.32  |VQ        |          |          |          |
0+41       0.2253      5.34  |VQ        |          |          |          |
0+42       0.2327      5.36  |VQ        |          |          |          |
0+43       0.2401      5.39  |VQ        |          |          |          |
0+44       0.2476      5.41  |VQ        |          |          |          |
0+45       0.2551      5.43  |VQ        |          |          |          |
0+46       0.2626      5.46  |VQ        |          |          |          |
0+47       0.2701      5.48  |VQ        |          |          |          |
0+48       0.2777      5.50  |VQ        |          |          |          |
0+49       0.2853      5.53  |VQ        |          |          |          |
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0+50	0.2930	5.55	VQ				
0+51	0.3006	5.57	VQ				
0+52	0.3083	5.60	VQ				
0+53	0.3161	5.62	V Q				
0+54	0.3238	5.64	V Q				
0+55	0.3316	5.66	V Q				
0+56	0.3395	5.69	VQ				
0+57	0.3474	5.71	VQ				
0+58	0.3552	5.73	VQ				
0+59	0.3632	5.76	VQ				
1+ 0	0.3711	5.78	VQ				
1+ 1	0.3791	5.79	VQ				
1+ 2	0.3871	5.81	VQ				
1+ 3	0.3951	5.82	VQ				
1+ 4	0.4032	5.83	VQ				
1+ 5	0.4112	5.85	VQ				
1+ 6	0.4193	5.86	VQ				
1+ 7	0.4274	5.88	VQ				
1+ 8	0.4355	5.89	VQ				
1+ 9	0.4436	5.90	VQ				
1+10	0.4518	5.92	VQ				
1+11	0.4600	5.93	VQ				
1+12	0.4682	5.94	VQ				
1+13	0.4764	5.96	VQ				
1+14	0.4846	5.97	VQ				
1+15	0.4928	5.99	VQ				
1+16	0.5011	6.00	Q				
1+17	0.5094	6.01	Q				
1+18	0.5177	6.03	Q				
1+19	0.5260	6.04	Q				
1+20	0.5343	6.05	Q				
1+21	0.5427	6.09	Q				
1+22	0.5511	6.12	Q				
1+23	0.5596	6.15	Q				
1+24	0.5681	6.19	Q				
1+25	0.5767	6.22	Q				
1+26	0.5853	6.25	Q				
1+27	0.5940	6.28	Q				
1+28	0.6027	6.32	Q				
1+29	0.6114	6.35	Q				
1+30	0.6202	6.38	Q				
1+31	0.6290	6.42	Q				
1+32	0.6379	6.45	Q				
1+33	0.6469	6.48	Q				
1+34	0.6558	6.52	Q				
1+35	0.6648	6.55	QV				
1+36	0.6739	6.58	QV				
1+37	0.6830	6.61	QV				
1+38	0.6922	6.65	QV				
1+39	0.7014	6.68	QV				

1+40	0.7106	6.71	QV				
1+41	0.7199	6.73	QV				
1+42	0.7292	6.75	QV				
1+43	0.7385	6.77	QV				
1+44	0.7479	6.79	QV				
1+45	0.7573	6.81	QV				
1+46	0.7667	6.84	QV				
1+47	0.7761	6.86	QV				
1+48	0.7856	6.88	QV				
1+49	0.7951	6.90	QV				
1+50	0.8046	6.92	QV				
1+51	0.8142	6.94	QV				
1+52	0.8238	6.96	QV				
1+53	0.8334	6.98	Q V				
1+54	0.8430	7.00	Q V				
1+55	0.8527	7.02	Q V				
1+56	0.8624	7.04	Q V				
1+57	0.8721	7.06	Q V				
1+58	0.8819	7.08	Q V				
1+59	0.8916	7.10	Q V				
2+ 0	0.9014	7.12	Q V				
2+ 1	0.9113	7.17	Q V				
2+ 2	0.9213	7.22	Q V				
2+ 3	0.9313	7.28	Q V				
2+ 4	0.9414	7.33	Q V				
2+ 5	0.9516	7.38	Q V				
2+ 6	0.9618	7.43	Q V				
2+ 7	0.9721	7.48	QV				
2+ 8	0.9825	7.54	QV				
2+ 9	0.9929	7.59	QV				
2+10	1.0035	7.64	Q V				
2+11	1.0141	7.69	Q V				
2+12	1.0247	7.74	Q V				
2+13	1.0355	7.80	Q V				
2+14	1.0463	7.85	Q V				
2+15	1.0572	7.90	Q V				
2+16	1.0681	7.95	Q V				
2+17	1.0791	8.00	Q V				
2+18	1.0902	8.06	Q V				
2+19	1.1014	8.11	Q V				
2+20	1.1126	8.16	Q V				
2+21	1.1239	8.20	Q V				
2+22	1.1353	8.23	Q V				
2+23	1.1466	8.26	Q V				
2+24	1.1581	8.30	Q V				
2+25	1.1696	8.33	Q V				
2+26	1.1811	8.37	Q V				
2+27	1.1927	8.40	Q V				
2+28	1.2043	8.44	Q V				
2+29	1.2159	8.47	Q V				

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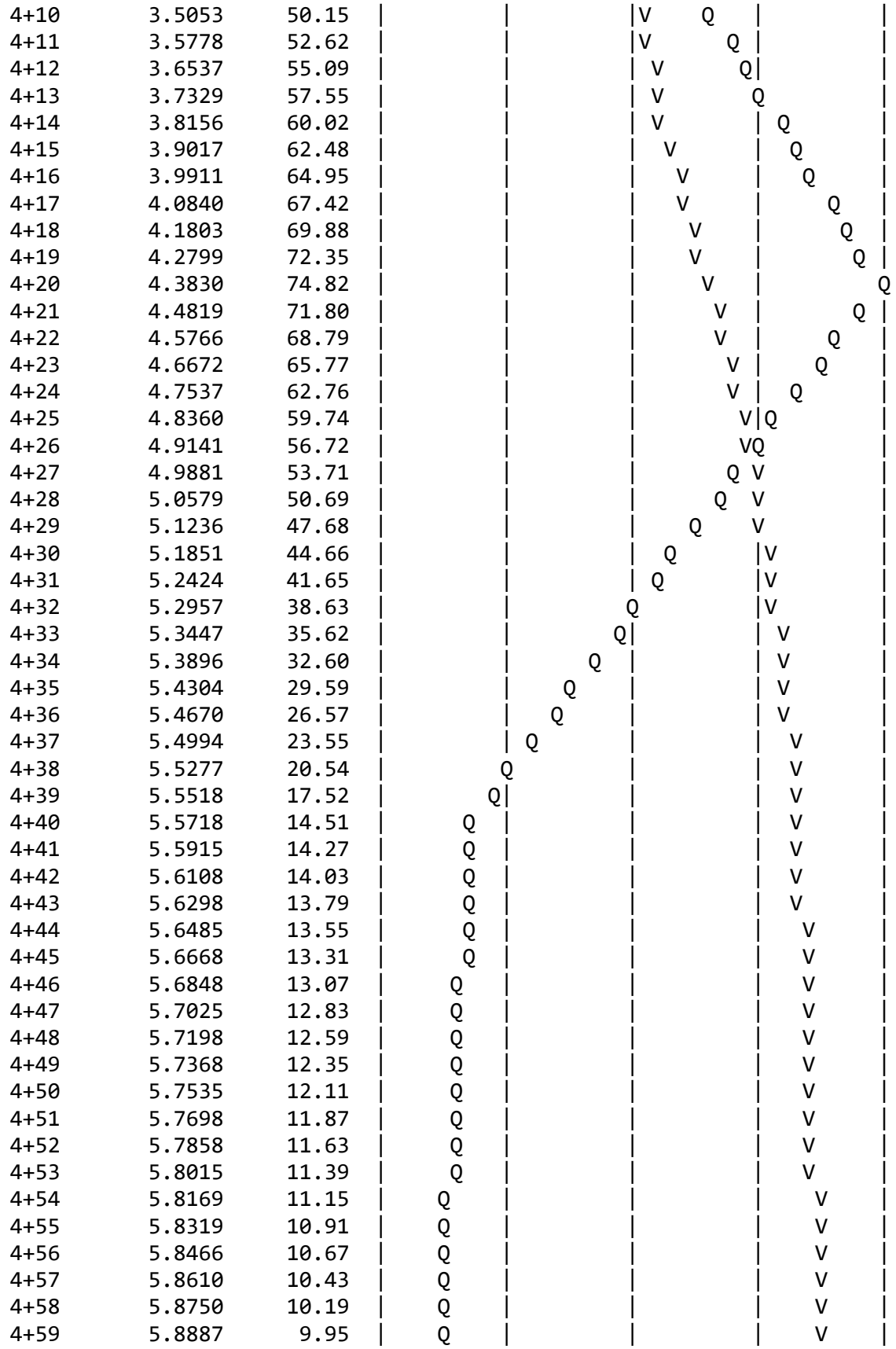
2+30       1.2277      8.50  |   Q  V  |          |          |          |
2+31       1.2394      8.54  |   Q  V  |          |          |          |
2+32       1.2512      8.57  |   Q  V  |          |          |          |
2+33       1.2631      8.61  |   Q  V  |          |          |          |
2+34       1.2750      8.64  |   Q  V  |          |          |          |
2+35       1.2869      8.68  |   Q  V  |          |          |          |
2+36       1.2989      8.71  |   Q  V  |          |          |          |
2+37       1.3110      8.75  |   Q  V  |          |          |          |
2+38       1.3231      8.78  |   Q  V  |          |          |          |
2+39       1.3352      8.81  |   Q   V |          |          |          |
2+40       1.3474      8.85  |   Q   V |          |          |          |
2+41       1.3597      8.95  |   Q   V |          |          |          |
2+42       1.3722      9.05  |   Q   V |          |          |          |
2+43       1.3848      9.14  |   Q   V |          |          |          |
2+44       1.3975      9.24  |   Q   V |          |          |          |
2+45       1.4104      9.34  |   Q   V |          |          |          |
2+46       1.4234      9.44  |    Q  V |          |          |          |
2+47       1.4365      9.54  |    Q  V |          |          |          |
2+48       1.4498      9.64  |    Q  V |          |          |          |
2+49       1.4632      9.73  |    Q  V |          |          |          |
2+50       1.4767      9.83  |    Q  V |          |          |          |
2+51       1.4904      9.93  |    Q  V |          |          |          |
2+52       1.5042     10.03  |    Q   V|          |          |          |
2+53       1.5182     10.13  |    Q   V|          |          |          |
2+54       1.5323     10.23  |    Q   V|          |          |          |
2+55       1.5465     10.32  |    Q   V|          |          |          |
2+56       1.5608     10.42  |    Q   V|          |          |          |
2+57       1.5753     10.52  |    Q   V|          |          |          |
2+58       1.5900     10.62  |    Q   V|          |          |          |
2+59       1.6047     10.72  |    Q   V|          |          |          |
3+ 0       1.6196     10.82  |    Q   V|          |          |          |
3+ 1       1.6346     10.89  |    Q   V|          |          |          |
3+ 2       1.6497     10.97  |    Q   V|          |          |          |
3+ 3       1.6649     11.04  |    Q    V          |          |          |
3+ 4       1.6802     11.12  |    Q    V          |          |          |
3+ 5       1.6957     11.19  |    Q    V          |          |          |
3+ 6       1.7112     11.27  |     Q   V          |          |          |
3+ 7       1.7268     11.34  |     Q   V          |          |          |
3+ 8       1.7425     11.42  |     Q   V          |          |          |
3+ 9       1.7584     11.49  |     Q   V          |          |          |
3+10       1.7743     11.57  |     Q   V          |          |          |
3+11       1.7903     11.64  |     Q   V          |          |          |
3+12       1.8065     11.72  |     Q   V          |          |          |
3+13       1.8227     11.79  |     Q   V          |          |          |
3+14       1.8391     11.87  |     Q   |V         |          |          |
3+15       1.8555     11.94  |     Q   |V         |          |          |
3+16       1.8721     12.02  |     Q   |V         |          |          |
3+17       1.8887     12.09  |     Q   |V         |          |          |
3+18       1.9055     12.17  |     Q   |V         |          |          |
3+19       1.9223     12.24  |     Q   |V         |          |          |
```

```
3+20       1.9393     12.32  |     Q   |V        |         |         |
3+21       1.9567     12.61  |     Q   |V        |         |         |
3+22       1.9744     12.90  |     Q   |V        |         |         |
3+23       1.9926     13.18  |      Q  | V       |         |         |
3+24       2.0112     13.47  |      Q  | V       |         |         |
3+25       2.0301     13.76  |      Q  | V       |         |         |
3+26       2.0495     14.05  |      Q  | V       |         |         |
3+27       2.0692     14.34  |      Q  | V       |         |         |
3+28       2.0894     14.63  |      Q  | V       |         |         |
3+29       2.1099     14.92  |      Q  | V       |         |         |
3+30       2.1309     15.20  |       Q | V       |         |         |
3+31       2.1522     15.49  |       Q | V       |         |         |
3+32       2.1739     15.78  |       Q |  V      |         |         |
3+33       2.1961     16.07  |       Q |  V      |         |         |
3+34       2.2186     16.36  |       Q |  V      |         |         |
3+35       2.2415     16.65  |       Q |  V      |         |         |
3+36       2.2648     16.93  |        Q|  V      |         |         |
3+37       2.2886     17.22  |        Q|  V      |         |         |
3+38       2.3127     17.51  |        Q|  V      |         |         |
3+39       2.3372     17.80  |        Q|   V     |         |         |
3+40       2.3621     18.09  |        Q|   V     |         |         |
3+41       2.3875     18.46  |        Q|   V     |         |         |
3+42       2.4135     18.83  |         Q   V     |         |         |
3+43       2.4399     19.20  |         Q   V     |         |         |
3+44       2.4669     19.57  |         Q   V     |         |         |
3+45       2.4943     19.94  |         Q    V    |         |         |
3+46       2.5223     20.31  |         Q    V    |         |         |
3+47       2.5508     20.68  |         |Q   V    |         |         |
3+48       2.5798     21.05  |         |Q   V    |         |         |
3+49       2.6093     21.42  |         |Q   V    |         |         |
3+50       2.6393     21.79  |         |Q   V    |         |         |
3+51       2.6698     22.16  |         |Q    V   |         |         |
3+52       2.7008     22.53  |         | Q   V   |         |         |
3+53       2.7324     22.90  |         | Q   V   |         |         |
3+54       2.7644     23.27  |         | Q   V   |         |         |
3+55       2.7970     23.64  |         | Q   V   |         |         |
3+56       2.8301     24.01  |         | Q    V  |         |         |
3+57       2.8636     24.38  |         |  Q   V  |         |         |
3+58       2.8977     24.75  |         |  Q   V  |         |         |
3+59       2.9323     25.12  |         |  Q   V  |         |         |
4+ 0       2.9674     25.49  |         |  Q   V  |         |         |
4+ 1       3.0059     27.95  |         |   Q   V |         |         |
4+ 2       3.0478     30.42  |         |     Q V |         |         |
4+ 3       3.0931     32.89  |         |      QV |         |         |
4+ 4       3.1418     35.35  |         |       Q |         |         |
4+ 5       3.1939     37.82  |         |        VQ         |         |
4+ 6       3.2494     40.29  |         |        V|Q        |         |
4+ 7       3.3083     42.75  |         |        V| Q       |         |
4+ 8       3.3706     45.22  |         |         V   Q     |         |
4+ 9       3.4362     47.69  |         |         V    Q    |         |
```



4+10	3.5053	50.15	
4+11	3.5778	52.62	
4+12	3.6537	55.09	
4+13	3.7329	57.55	
4+14	3.8156	60.02	
4+15	3.9017	62.48	
4+16	3.9911	64.95	
4+17	4.0840	67.42	
4+18	4.1803	69.88	
4+19	4.2799	72.35	
4+20	4.3830	74.82	
4+21	4.4819	71.80	
4+22	4.5766	68.79	
4+23	4.6672	65.77	
4+24	4.7537	62.76	
4+25	4.8360	59.74	
4+26	4.9141	56.72	
4+27	4.9881	53.71	
4+28	5.0579	50.69	
4+29	5.1236	47.68	
4+30	5.1851	44.66	
4+31	5.2424	41.65	
4+32	5.2957	38.63	
4+33	5.3447	35.62	
4+34	5.3896	32.60	
4+35	5.4304	29.59	
4+36	5.4670	26.57	
4+37	5.4994	23.55	
4+38	5.5277	20.54	
4+39	5.5518	17.52	
4+40	5.5718	14.51	
4+41	5.5915	14.27	
4+42	5.6108	14.03	
4+43	5.6298	13.79	
4+44	5.6485	13.55	
4+45	5.6668	13.31	
4+46	5.6848	13.07	
4+47	5.7025	12.83	
4+48	5.7198	12.59	
4+49	5.7368	12.35	
4+50	5.7535	12.11	
4+51	5.7698	11.87	
4+52	5.7858	11.63	
4+53	5.8015	11.39	
4+54	5.8169	11.15	
4+55	5.8319	10.91	
4+56	5.8466	10.67	
4+57	5.8610	10.43	
4+58	5.8750	10.19	
4+59	5.8887	9.95	

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5+ 0       5.9021      9.71  |    Q    |         |         |    V    |
5+ 1       5.9153      9.60  |    Q    |         |         |    V    |
5+ 2       5.9284      9.50  |    Q    |         |         |    V    |
5+ 3       5.9413      9.39  |    Q    |         |         |    V    |
5+ 4       5.9541      9.28  |   Q     |         |         |    V    |
5+ 5       5.9667      9.18  |   Q     |         |         |    V    |
5+ 6       5.9792      9.07  |   Q     |         |         |     V   |
5+ 7       5.9916      8.97  |   Q     |         |         |     V   |
5+ 8       6.0038      8.86  |   Q     |         |         |     V   |
5+ 9       6.0158      8.76  |   Q     |         |         |     V   |
5+10       6.0278      8.65  |   Q     |         |         |     V   |
5+11       6.0395      8.55  |   Q     |         |         |     V   |
5+12       6.0512      8.44  |   Q     |         |         |     V   |
5+13       6.0626      8.33  |   Q     |         |         |     V   |
5+14       6.0740      8.23  |   Q     |         |         |     V   |
5+15       6.0852      8.12  |   Q     |         |         |     V   |
5+16       6.0962      8.02  |   Q     |         |         |     V   |
5+17       6.1071      7.91  |   Q     |         |         |     V   |
5+18       6.1178      7.81  |   Q     |         |         |     V   |
5+19       6.1285      7.70  |   Q     |         |         |     V   |
5+20       6.1389      7.60  |   Q     |         |         |     V   |
5+21       6.1493      7.53  |   Q     |         |         |      V  |
5+22       6.1596      7.47  |  Q      |         |         |      V  |
5+23       6.1698      7.41  |  Q      |         |         |      V  |
5+24       6.1799      7.35  |  Q      |         |         |      V  |
5+25       6.1900      7.29  |  Q      |         |         |      V  |
5+26       6.1999      7.22  |  Q      |         |         |      V  |
5+27       6.2098      7.16  |  Q      |         |         |      V  |
5+28       6.2196      7.10  |  Q      |         |         |      V  |
5+29       6.2292      7.04  |  Q      |         |         |      V  |
5+30       6.2389      6.98  |  Q      |         |         |      V  |
5+31       6.2484      6.92  |  Q      |         |         |      V  |
5+32       6.2578      6.85  |  Q      |         |         |      V  |
5+33       6.2672      6.79  |  Q      |         |         |      V  |
5+34       6.2765      6.73  |  Q      |         |         |      V  |
5+35       6.2856      6.67  |  Q      |         |         |      V  |
5+36       6.2947      6.61  |  Q      |         |         |      V  |
5+37       6.3038      6.55  |  Q      |         |         |      V  |
5+38       6.3127      6.48  |  Q      |         |         |       V |
5+39       6.3215      6.42  |  Q      |         |         |       V |
5+40       6.3303      6.36  |  Q      |         |         |       V |
5+41       6.3390      6.32  |  Q      |         |         |       V |
5+42       6.3477      6.28  |  Q      |         |         |       V |
5+43       6.3563      6.24  |  Q      |         |         |       V |
5+44       6.3648      6.20  |  Q      |         |         |       V |
5+45       6.3733      6.16  |  Q      |         |         |       V |
5+46       6.3817      6.11  |  Q      |         |         |       V |
5+47       6.3901      6.07  |  Q      |         |         |       V |
5+48       6.3984      6.03  |  Q      |         |         |       V |
5+49       6.4066      5.99  |  Q      |         |         |       V |
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    5+50       6.4148      5.95  |  Q      |         |         |       V |
    5+51       6.4229      5.91  |  Q      |         |         |       V |
    5+52       6.4310      5.87  |  Q      |         |         |       V |
    5+53       6.4391      5.83  |  Q      |         |         |       V |
    5+54       6.4470      5.78  |  Q      |         |         |       V |
    5+55       6.4549      5.74  |  Q      |         |         |       V |
    5+56       6.4628      5.70  |  Q      |         |         |       V |
    5+57       6.4706      5.66  |  Q      |         |         |       V |
    5+58       6.4783      5.62  |  Q      |         |         |        V|
    5+59       6.4860      5.58  | Q       |         |         |        V|
    6+ 0       6.4936      5.54  | Q       |         |         |        V|
    6+ 1       6.5012      5.51  | Q       |         |         |        V|
    6+ 2       6.5088      5.48  | Q       |         |         |        V|
    6+ 3       6.5163      5.45  | Q       |         |         |        V|
    6+ 4       6.5237      5.42  | Q       |         |         |        V|
    6+ 5       6.5311      5.39  | Q       |         |         |        V|
    6+ 6       6.5385      5.36  | Q       |         |         |        V|
    6+ 7       6.5459      5.33  | Q       |         |         |        V|
    6+ 8       6.5532      5.30  | Q       |         |         |        V|
    6+ 9       6.5604      5.27  | Q       |         |         |        V|
    6+10       6.5676      5.24  | Q       |         |         |        V|
    6+11       6.5748      5.21  | Q       |         |         |        V|
    6+12       6.5819      5.18  | Q       |         |         |        V|
    6+13       6.5890      5.15  | Q       |         |         |        V|
    6+14       6.5961      5.12  | Q       |         |         |        V|
    6+15       6.6031      5.09  | Q       |         |         |        V|
    6+16       6.6101      5.06  | Q       |         |         |        V|
    6+17       6.6170      5.03  | Q       |         |         |        V|
    6+18       6.6239      5.00  | Q       |         |         |        V|
    6+19       6.6307      4.97  | Q       |         |         |        V|
    6+20       6.6375      4.94  | Q       |         |         |         V
---------------------------------------------------------------------------
```

End of computations, total study area = 73.980 (Ac.)

Offsite North Idaho Culvert Existing Condition
Stage-Storage-Discharge

Description	Increment	Elevation (ft)	End Area (sf)	Stage Depth (ft)	Basin Depth (ft)	Average End Area (sf)	Incremental Volume (cf)	Cumulative Volume (cf)	Cumulative Volume (ac-ft)	Head for Orifice (ft)	Q through orifice (cfs)	Head for weir (ft)	Q over weir (cfs)	Total Q (cfs)
Invert of Culvert	1	698.4	0	0	0		0	0	0.00	0	0	0	0	0
Soffit of culvert	2	700.9	15,639	2.5	2.5	7,820	19,549	19,549	0.45	1.25	27.31	0.00	0.00	27.31
Elevation 701	3	701	16,626	0.1	2.6	16,133	1,613	21,162	0.49	1.35	28.38	0.00	0.00	28.38
Crown of road	4	701.8	23,952	0.8	3.4	20,289	16,231	37,393	0.86	2.15	35.81	0.00	0.00	35.81
Elevation 702	5	702	26,379	0.2	3.6	25,166	5,033	42,426	0.97	2.35	37.44	0.20	17.64	55.08
Elevation 702.75	6	702.75	34,115	0.75	4.35	30,247	22,685	65,112	1.49	3.1	43.00	0.95	182.64	225.64
Elevation 703	7	703	36,668	0.25	4.6	35,392	8,848	73,959	1.70	3.35	44.70	1.20	259.29	303.99

Orifice parameters		Weir parameters	
D	2.5	B	75
A	4.91		

Offsite North Idaho Culvert Proposed Condition

Stage-Storage-Discharge

Description	Increment	Elevation (ft)	End Area (sf)	Stage Depth (ft)	Basin Depth (ft)	Average End Area (sf)	Incremental Volume (cf)	Cumulative Volume (cf)	Cumulative Volume (ac-ft)	Head for Orifice (ft)	Q through orifice (cfs)
Invert of Culvert	1	698.4	0	0	0		0	0	0.00	0	0
Soffit of culvert	2	700.9	15,639	2.5	2.5	7,820	19,549	19,549	0.45	1.25	27.31
Elevation 701	3	701	16,626	0.1	2.6	16,133	1,613	21,162	0.49	1.35	28.38
Crown of road	4	701.8	23,952	0.8	3.4	20,289	16,231	37,393	0.86	2.15	35.81
Elevation 702	5	702	26,379	0.2	3.6	25,166	5,033	42,426	0.97	2.35	37.44
Elevation 702.75	6	702.75	34,115	0.75	4.35	30,247	22,685	65,112	1.49	3.1	43.00

Orifice parameters		Weir parameters	
D	2.5	B	75
A	4.91		

Idaho Detention Basin Proposed Condition
Stage-Storage-Discharge

Description	Depth for SSD	Elevation	Depth to Orifice springline (ft)	Depth to Weir Outflow (ft)	End Area (sf)	Average End Area (sf)	Storage Volume (cu. ft)	Storage Volume (AC-ft)	Cumulative Storage Volume (AC-ft)	Weir Outflow (cfs)	Outflow as Orifice (cfs)	Total Outflow (cfs)
invert of orifice	0	689.25			8857			0	0.00			
springline of orifice	0.125	689.375	0		8857	8857	442.85	0.010166437	0.01	0.04	0.00	0.04
top of orifice	0.25	689.5	0.125		8857	8857	442.85	0.010166437	0.02		0.09	0.09
top of gravel	0.75	690	0.625		8857	8857	1771.4	0.040665748	0.06		0.19	0.19
top of media	2.25	691.5	2.125		8857	8857	3985.65	0.091497934	0.15		0.36	0.36
	2.75	692	2.625		9488	9172.5	4586.25	0.105285813	0.26		0.40	0.40
top of ponding	3.25	692.5	3.125	0	10133	9810.5	4905.25	0.112609045	0.37		0.43	0.43
	3.75	693	3.625	0.5	10792	10462.5	5231.25	0.120092975	0.49	2.35	0.47	2.82
	4.75	694	4.625	1.5	12152	11472	11472	0.263360882	0.75	12.24	0.53	12.76
top of peak storm	5.25	694.5	5.125	2	12853	12502.5	6251.25	0.143508953	0.90	18.84	0.55	19.39

weir equation	**C**	**B**
Q = C x B x H^3/2	3.33	2

Orifice Equation	**C**	**A**
Q = C x A x (2gh)^1/2	0.62	0.05

APPENDIX C

TORY R. WALKER ENGINEERING
RELIABLE SOLUTIONS IN WATER RESOURCES

MEMORANDUM

DATE: February 26, 2020

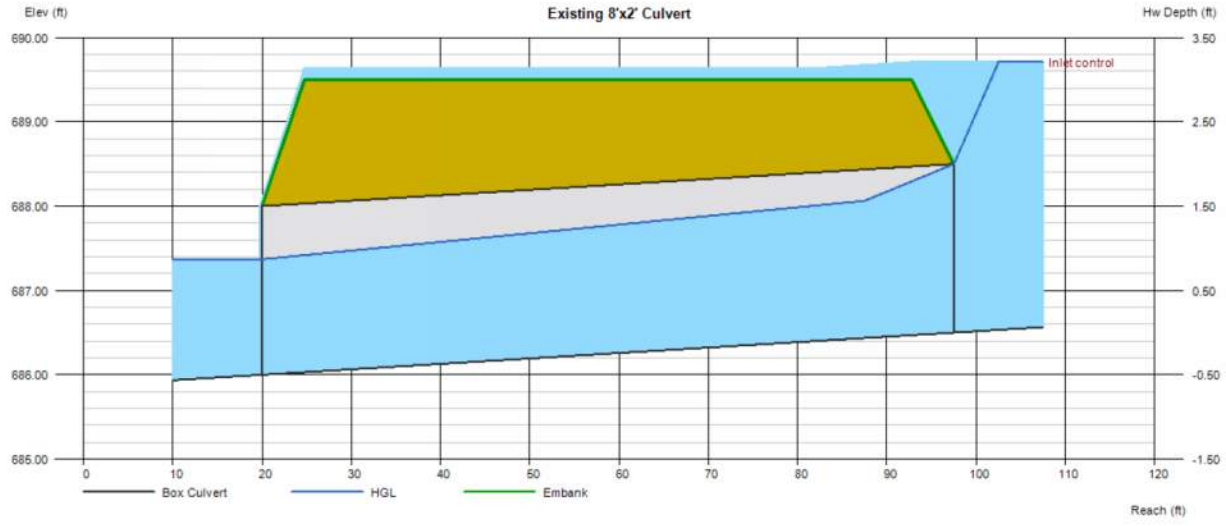
TO: Oscar Uranga

FROM: Tina Fransson, PE

SUBJECT: Escondido Estates – Flood Limits Assessment

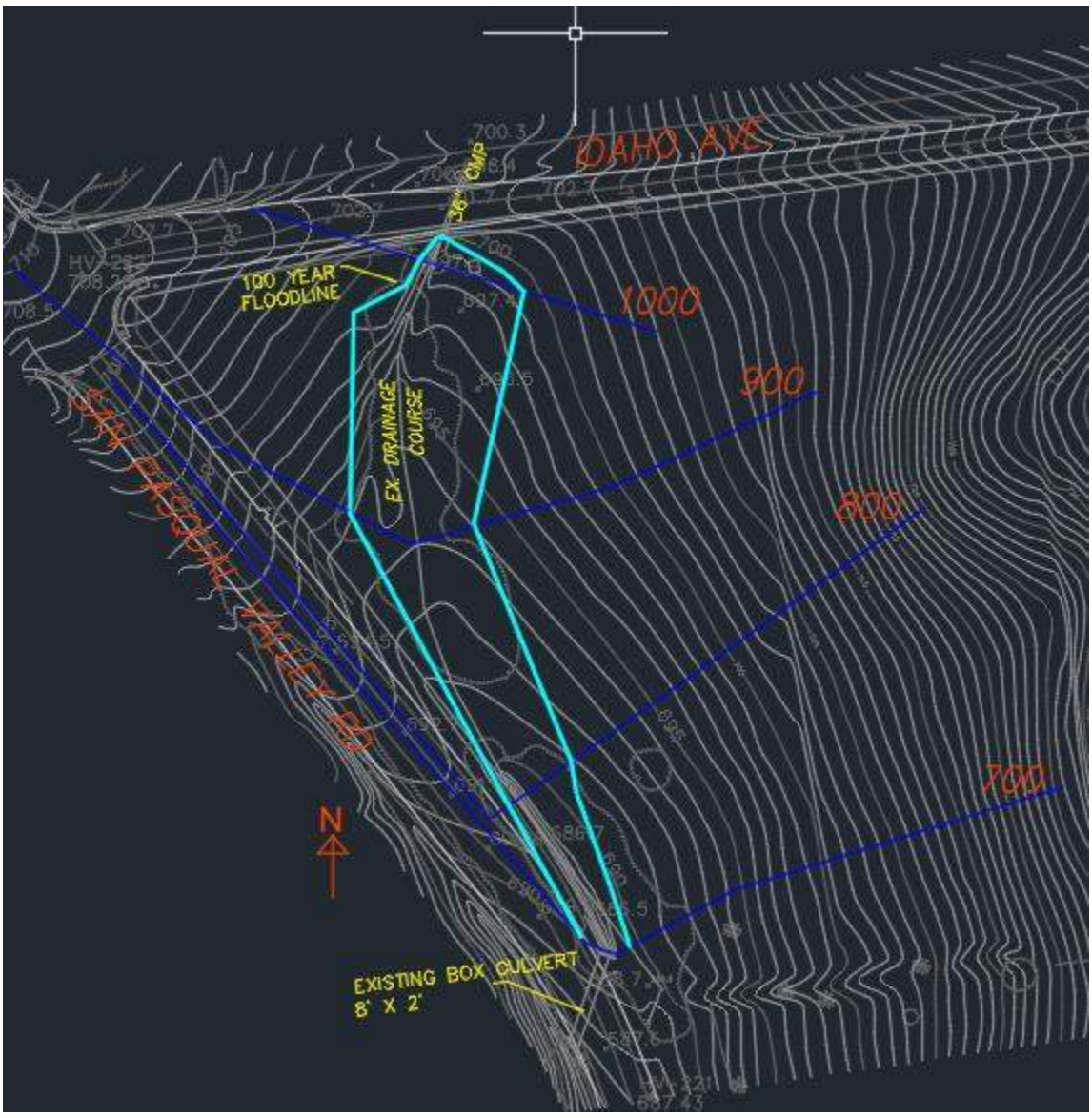
This memo includes the findings of the preliminary flood limits assessment for the Escondido Estates project wetlands. At the upstream end of the wetlands lies an existing 36-inch corrugated metal pipe (CMP), which crosses Idaho Avenue. An existing 8-foot x 2-foot reinforced concrete box (RCB) lies at the downstream end of the wetlands, crosses westerly beneath San Pasqual Valley Road, and releases runoff into an existing channel that flows towards the south.

The 100-year flow rate at the existing 8-foot x 2-foot RCB inlet was taken from the X-Engineering January 2020 hydrology report and is reported to be 111.5 cfs. This flow rate was used to calculate a starting water surface elevation at the RCB inlet for the HEC-RAS model. Both normal depth and submerged tailwater conditions were modeled using Hydraflow Express, however, both methods resulted in the same upstream hydraulic grade line (HGL) of 689.71 feet (see figure below). This HGL was then used as the starting water surface elevation in the HEC-RAS model. The culvert calculation shows that the 8-foot x 2-foot RCB is under capacity for the 100-year storm.



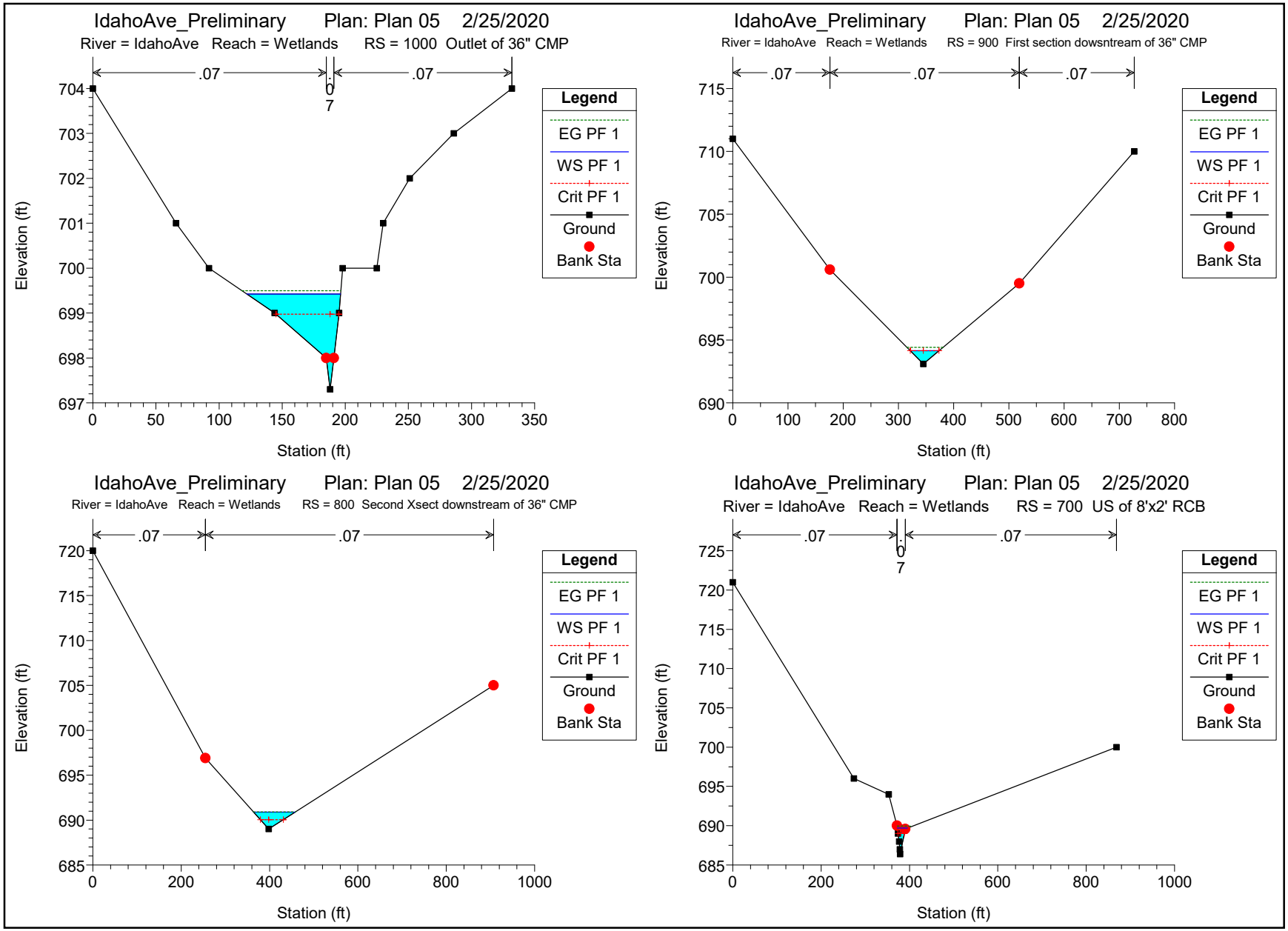
The HEC-RAS model used existing topography provided by X-Engineering. Four cross sections were cut along the wetlands, beginning at the outlet of the existing 36-inch CMP, two cross sections along the wetlands, and a last cross section immediately upstream of the 8-foot x 2-foot RCB. The HEC-RAS model produced the results in the table below, and the floodlines that encompass the existing wetland are shown in the figure below.

HEC-RAS Station	Water Surface Elevation (ft)	Minimum Channel Elevation (ft)
1000	699.42	697.3
900	694.14	693.1
800	690.90	689.0
700	689.71	686.4



HEC-RAS Plan: Mixed River: IdahoAve Reach: Wetlands Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Wetlands	1000	PF 1	111.50	697.30	699.42	698.97	699.50	0.010543	3.14	57.06	74.24	0.42
Wetlands	900	PF 1	111.50	693.10	694.14	694.14	694.41	0.091711	4.15	26.85	51.67	1.02
Wetlands	800	PF 1	111.50	689.00	690.90	690.04	690.92	0.003687	1.24	89.70	94.63	0.23
Wetlands	700	PF 1	111.50	686.40	689.71	689.01	689.94	0.018833	3.85	29.20	22.78	0.53

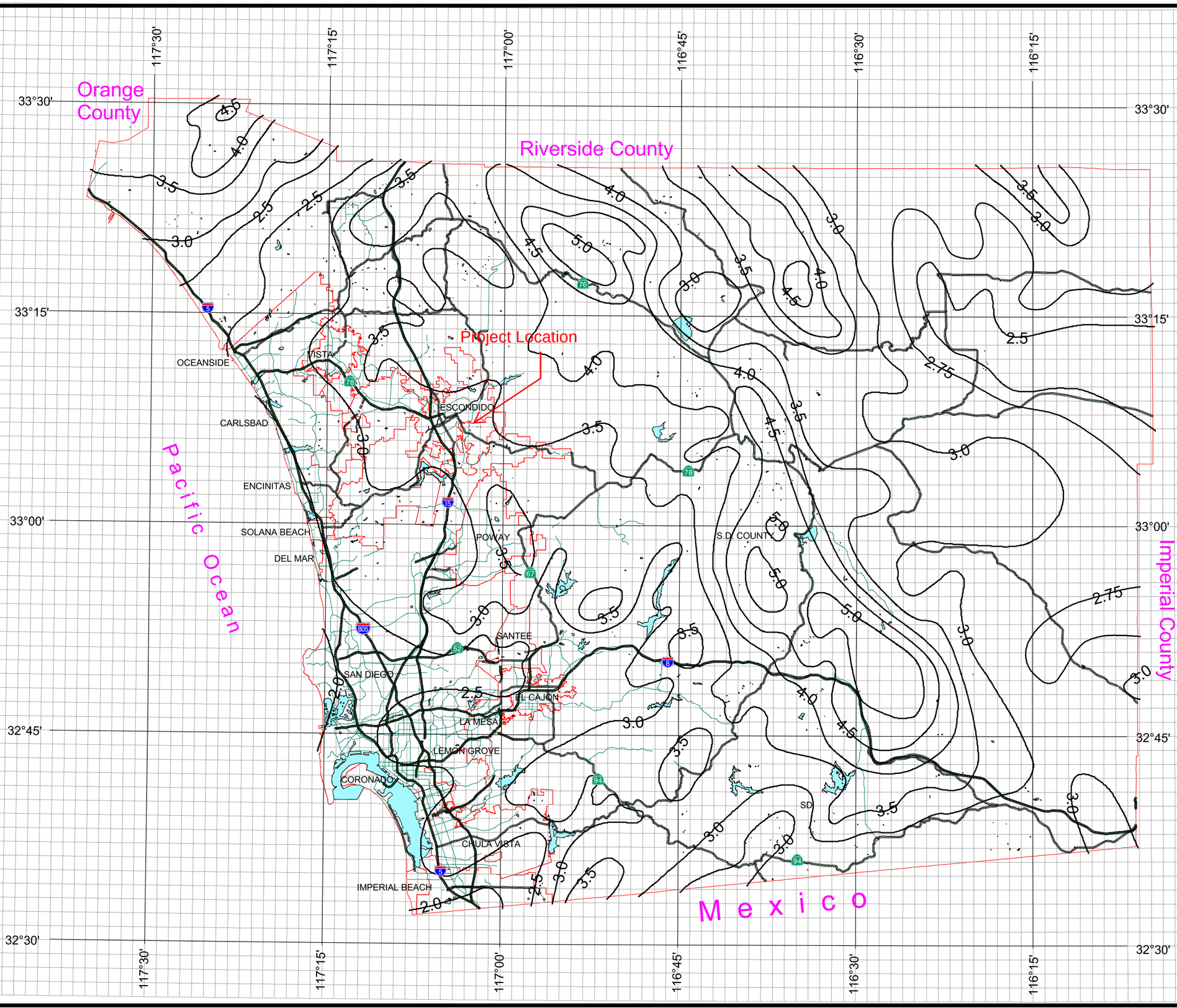

IdahoAve_Preliminary Plan: Plan 05 2/25/2020
River = IdahoAve Reach = Wetlands RS = 1000 Outlet of 36" CMP
.07
.07
.07
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
IdahoAve_Preliminary Plan: Plan 05 2/25/2020
River = IdahoAve Reach = Wetlands RS = 900 First section dowsntream of 36" CMP
.07
.07
.07
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
IdahoAve_Preliminary Plan: Plan 05 2/25/2020
River = IdahoAve Reach = Wetlands RS = 800 Second Xsect downstream of 36" CMP
.07
.07
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)
IdahoAve_Preliminary Plan: Plan 05 2/25/2020
River = IdahoAve Reach = Wetlands RS = 700 US of 8'x2' RCB
.07
.07
.07
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
Station (ft)

County of San Diego Hydrology Manual

Rainfall Isopluvials

100 Year Rainfall Event - 6 Hours

Isopluvial (inches)



DPW GIS
Department of Public Works
Geographic Information Services

SanGIS
We Have San Diego Covered!

N W E S

3 0 3 Miles

County of San Diego Hydrology Manual

Rainfall Isopluvials

100 Year Rainfall Event - 24 Hours

Isopluvial (inches)

Orange County

Riverside County

Imperial County

Pacific Ocean

Mexico

Project Location

OCEANSIDE
VISTA
CARLSBAD
ESCONDIDO
ENCINITAS
SOLANA BEACH
POWAY
S.D. COUNTY
DEL MAR
SANTEE
SAN DIEGO
EL CAJON
LA MESA
LEMON GROVE
CORONADO
SD
CHULA VISTA
IMPERIAL BEACH

117°30' 117°15' 117°00' 116°45' 116°30' 116°15'

33°30' 33°15' 33°00' 32°45' 32°30'

N W E S

3 0 3 Miles

APPENDIX D

SEE TILE 23 (SHEET 16)

SEE TILE 19 (SHEET 12)

SEE TILE 17 (SHEET 10)

SEE TILE 13 (SHEET 7)

PARCEL LINE INFORMATION PROVIDED BY:
SAN DIEGO DATA PROCESSING CORPORATION
ACCORDING TO THE BASE MAP SUB LICENSE
AGREEMENT WITH THE CITY OF ESCONDIDO

TOPOGRAPHY COMPILED BY:
GEONEX NORTH AMERICAN OPERATIONS, INC.
DATED NOVEMBER, 1992

LEGEND

- EXISTING CONTOUR ELEVATION
- EXISTING NATURAL FLOW
- EXISTING IMPROVED CHANNEL
- EXISTING STORM DRAIN
- PROPOSED FACILITY
- EXISTING LAKES

LEGEND

- MAJOR BASIN BOUNDARY
- MINOR BASIN BOUNDARY
- GENERAL PLAN BOUNDARY
- BASIN DESIGNATION
- EXIST. / PROP. DESILT BASIN FACILITY IDENTIFIER

N

SCALE IN FEET: 400 200 0 400 800 1200

MASSON & ASSOCIATES, INC.
PLANNING ▾ ENGINEERING ▾ SURVEYING
200 E. WASHINGTON AVE. ▾ SUITE 200 ▾ ESCONDIDO ▾ CA 92025-1815
TEL (619) 741-3570 ▾ FAX (619) 741-1786

Date	App'd	REVISIONS	By	Date

Checked By	Drawn by	Designed By
DWM-END	DAM	JAW-LBR-END

Plans Prepared Under Supervision Of: For Masson & Assoc. Inc.
EDWARD N. DOMINGUE R.C.E. 34131 DATE:

SCALE: Horizontal 1" = 400'
DATE: 02-06-95
Drawn By: DAM

Submitted _____ Approved _____
By _____ Asst. City Engineer
By _____ Asst. Director of Public Works

CITY OF ESCONDIDO DEPT. OF PUBLIC WORKS
DRAINAGE MASTER PLAN FOR THE CITY OF ESCONDIDO:
EXISTING / PROPOSED STORM DRAINS TILE 18

Drawing No. D- 1114
Sheet 11 of 33

TABLE 3.1

EXISTING FACILITIES

GEOMETRY: 1 = TRAP. OPEN CHANNEL, 2 = IRREGULAR CHANNEL, 3 = BOX CHANNEL, 4 = PIPE, 5 = RECT. OPEN CHANNEL
MATERIALS: 1 = R.C.P., 2 = C.I.P.P., 3 = R.C.B., 4 = C.M.P.A., 5 = C.M.P., 6 = NAT. CHNL., 7 = CONC. CHNL., 8 = SPIRAL RIBBED
Qc= EXISTING CAPACITY

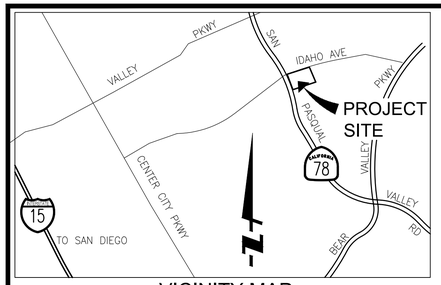
ID #	SYSTEM	GEOMETRY	WIDTH (IN)	HEIGHT (IN)	RATIO	MATERIAL	DRAWING NO.	LENGTH (FEET)	SLOPE	Qc (CFS)
851	E-62	1	72	24	1.5	7	P-1636-10	300	1.30%	158
852	E-62	4	48			1	P-1636-2	56	1.30%	164
853	E-62	4	42			1	P-1636-2	33	2.93%	172
854	E-162	4	36			5	P-1604-13	156	1.00%	36
855	E-171	4	36			1	1003-8	366	0.25%	33
856	E-171	4	36			1	1003-8	546	0.25%	33
857	E-162	1	24	36	1.25	7	1365	460	0.12%	77
858	KC-22	1	12	24	1.5	7	11-095024-1	1050	2.40%	121
859	L.H.	4	42			1	P-1746-6	91	22.34%	476
860	NOT USED									
861	E-221	3	60	24		3	P-1724-2	332	0.12%	39
862	E-221	3	60	24		3	P-1724-2	393	0.38%	70
863	E-221	3	72	18		3	P-1724-2	72	0.50%	52
864	E-221	3	72	24		3	P-1724-2	40	0.50%	84
865	E-201	3	72	24		3	P-1348-2	570	0.20%	53
866	E-201	3	72	24		3	P-1348-6	70	0.20%	53
867	L.H.	4	36			4	1667	453	0.40%	42
868	R-81	4	66	36		5	SFP40	60	0.80%	145
869	R-12	4	65	40		4	P-1604-23	120	1.00%	213
870	E-242	4	48		2	1	P-1804-3	580	0.43%	188
871	E-242	4	48		2	1	P-1806	280	0.75%	249
872	E-132	4	58	36		4	P-1623/P-2145	650	0.76%	136
873	E-221	4	36	22	2	4	N.A.	260	0.90%	84
874	KC-42	4	228	76		4	P-2113	64	0.43%	1479
875	KC-42	4	48		3	5	P-2113	52	1.00%	233
876	L.H.	4	54			5	N.A.	100	1.00%	197
877	KC-21	4	48			1	N.A.	60	1.00%	144
878	L.H.	4	42			5	N.A.	140	10.00%	318
879	L.H.	4	48			5	N.A.	90	5.00%	321
880	KC-21	3	72	60		3	N.A.	80	5.00%	1015
881	KC-23	4	48		2	5	N.A.	90	2.00%	220
882	KC-23	4	54			5	N.A.	110	1.50%	130
883	KC-23	3	120	48		3	N.A.	160	1.00%	662
884	KC-23	4	36			5	N.A.	200	5.00%	81

APPENDIX E

COUNTY OF SAN DIEGO

TENTATIVE TRACT No. 5639

PRELIMINARY GRADING PLAN



VICINITY MAP

N.T.S.

LEGEND

- EXISTING PROPERTY LINE
- STREET CENTERLINE
- PROPOSED RIGHT OF WAY
- PROPOSED LOT LINE
- EXISTING EASEMENT
- PROPOSED EASEMENT
- EXISTING PARCELS
- RELINQUISHED ABUTTERS RIGHTS

PRELIMINARY GRADING PLAN NOTE

THIS PLAN IS PROVIDED TO ALLOW FOR FULL AND ADEQUATE DISCRETIONARY REVIEW OF A PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE AN APPROVAL TO PERFORM ANY GRADING SHOWN HEREON AND AGREES TO OBTAIN VALID GRADING PERMISSIONS BEFORE COMMENCING SUCH ACTIVITY.

NOTICE

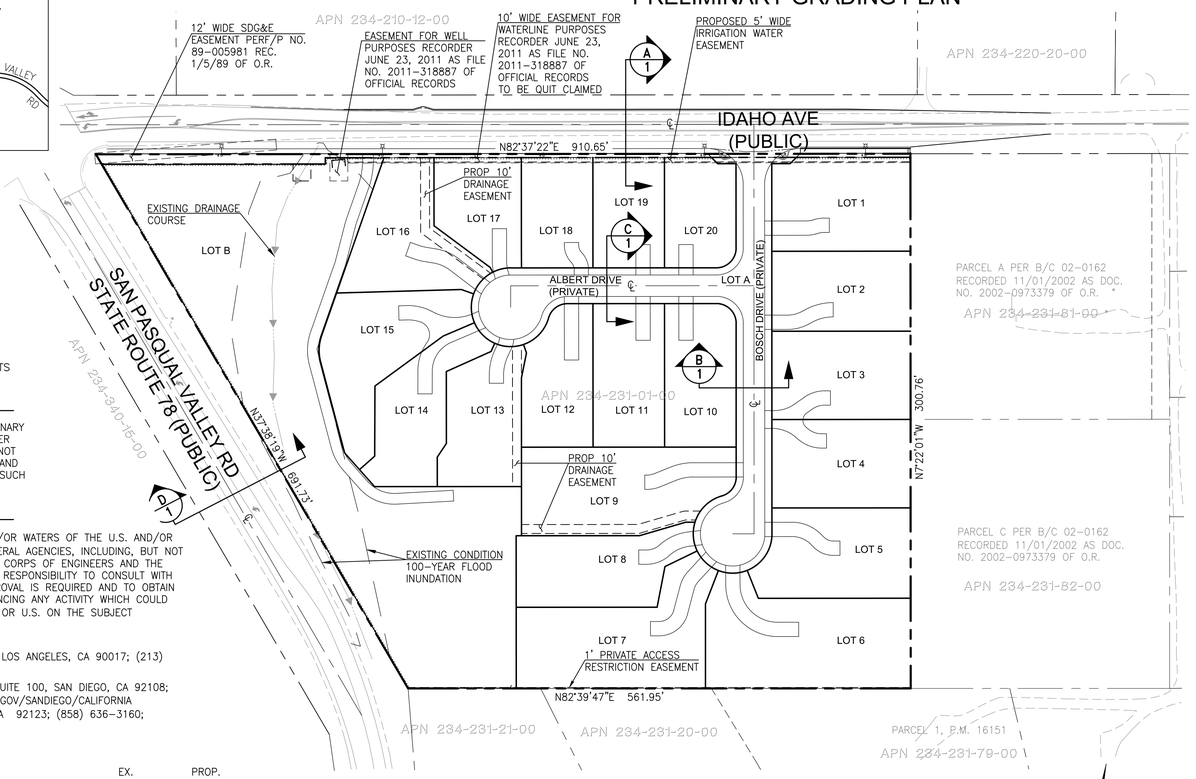
THE SUBJECT PROPERTY CONTAINS WETLANDS, A LAKE, A STREAM, AND/OR WATERS OF THE U.S. AND/OR STATE WHICH MAY BE SUBJECT TO REGULATION BY STATE AND/OR FEDERAL AGENCIES, INCLUDING, BUT NOT LIMITED TO, THE REGIONAL WATER QUALITY CONTROL BOARD, U.S. ARMY CORPS OF ENGINEERS AND THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE. IT IS THE APPLICANT'S RESPONSIBILITY TO CONSULT WITH EACH AGENCY TO DETERMINE IF A PERMIT, AGREEMENT OR OTHER APPROVAL IS REQUIRED AND TO OBTAIN ALL NECESSARY PERMITS, AGREEMENTS OR APPROVALS BEFORE COMMENCING ANY ACTIVITY WHICH COULD IMPACT THE WETLANDS, LAKE, STREAM, AND/OR WATERS OF THE STATE OR U.S. ON THE SUBJECT PROPERTY. THE AGENCY CONTACT INFORMATION IS PROVIDED BELOW.

U.S. ARMY CORPS OF ENGINEERS: 915 WILSHIRE BLVD., SUITE 1101, LOS ANGELES, CA 90017; (213) 452-3333; HTTP://WWW.USACE.ARMY.MIL/

REGIONAL WATER QUALITY CONTROL BOARD: 2375 NORTHSIDE DRIVE, SUITE 100, SAN DIEGO, CA 92108; RB9_DREDGEFILL@WATERBOARDS.CA.GOV ; HTTP://WWW.WATERBOARDS.CA.GOV/SANDIEGO/CALIFORNIA

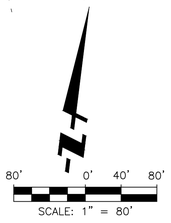
DEPARTMENT OF FISH AND WILDLIFE: 3883 RUFFIN RD., SAN DIEGO, CA 92123; (858) 636-3160; ASKR5@WILDLIFE.CA.GOV

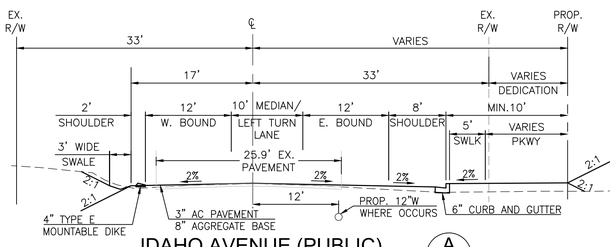
HTTP://WWW.DFG.CA.GOV/



BASE MAP

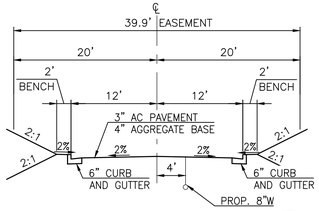
1"=80'



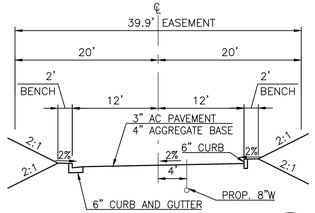


IDAHO AVENUE (PUBLIC) A 1

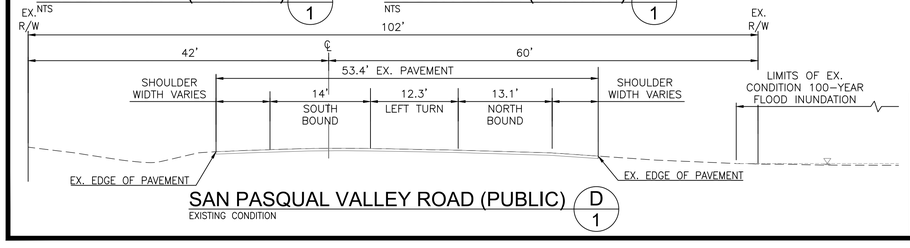
INTERIM CONDITION – EXISTING PAVEMENT WIDTH VARIES
2.2D LIGHT COLLECTOR, DESIGN SPEED 40 MPH



ALBERT DRIVE (PRIVATE) C 1



BOSCH DRIVE (PRIVATE) B 1



SAN PASQUAL VALLEY ROAD (PUBLIC) D 1

EXISTING CONDITION

NUMBERED LOT SUMMARY

LOT #	AREA (SF)	AREA (AC)	TYPE	PAD ELEV
LOT 1	16,107	0.37	RESIDENTIAL	733'
LOT 2	13,861	0.32	RESIDENTIAL	741'
LOT 3	15,295	0.35	RESIDENTIAL	741'
LOT 4	15,330	0.35	RESIDENTIAL	741'
LOT 5	16,637	0.38	RESIDENTIAL	741'
LOT 6	24,442	0.56	RESIDENTIAL	734'
LOT 7	22,197	0.51	RESIDENTIAL	713'
LOT 8	14,513	0.33	RESIDENTIAL	718'
LOT 9	21,377	0.49	RESIDENTIAL	721'
LOT 10	12,731	0.29	RESIDENTIAL	724'

NUMBERED LOT SUMMARY

LOT #	AREA (SF)	AREA (AC)	TYPE	PAD ELEV
LOT 11	12,835	0.29	RESIDENTIAL	719'
LOT 12	11,524	0.26	RESIDENTIAL	714'
LOT 13	12,863	0.30	RESIDENTIAL	707'
LOT 14	12,945	0.30	RESIDENTIAL	703'
LOT 15	16,840	0.39	RESIDENTIAL	703'
LOT 16	15,210	0.35	RESIDENTIAL	703'
LOT 17	10,589	0.24	RESIDENTIAL	707'
LOT 18	9,870	0.23	RESIDENTIAL	712'
LOT 19	9,873	0.23	RESIDENTIAL	717'
LOT 20	9,602	0.22	RESIDENTIAL	722'

LETTERED LOT SUMMARY

LOT	AREA (SF)	AREA (AC)	TYPE	OWNERSHIP	MAINTENANCE RESPONSIBILITY
LOT 'A'	37,071	0.85	PRIVATE STREET	HOA	HOA
LOT 'B'	102,915	2.36	OPEN SPACE/DRAINAGE	HOA	HOA

EXISTING SITE INFORMATION

APN 234-231-01-00

EXISTING ZONING		
USE REGULATIONS		A70
ANIMAL REGULATIONS		L
DEVELOPMENT REGULATIONS	DENSITY	
	LOT SIZE	0.5 ACRES
	BUILDING TYPE	C
	MAXIMUM FLOOR AREA	
	FLOOR AREA RATIO	
	HEIGHT	G
	LOT COVERAGE	
	SETBACKS	C
	OPEN SPACE	
SPECIAL AREA REGULATION		

ESTIMATED GRADING QUANTITIES

	CUT (CY)	FILL (CY)
RAW	14,005	25,695
ADDITIONAL EXCAVATION	37,000	37,000
SHRINKAGE (15%)*	–	7,651
SUBSIDENCE (0.10)*		560
BULKING (10%)*	3,700	
TOTALS	54,705	70,906
16,201 CY NET IMPORT		

*TO BE CONFIRMED IN GEOTECHNICAL REVIEW OF GRADING PLANS.

BASIS OF BEARINGS

THE BASIS OF BEARING FOR THIS SURVEY IS A PORTION OF THE NORTHEASTERLY SIDELINE OF SAN PASQUAL ROAD PER MS 855. I.E. S 37°38'19"E

LEGAL DESCRIPTION

ALL THAT PORTION OF LOT 9 IN BLOCK 321 OF RANCHO RINCON DEL DIABLO RESURVEY ACCORDING TO MAP THEREOF NO. 725 FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY AUGUST 13, 1892, LYING WITHIN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA.

ABBREVIATIONS

BLDG	BUILDING	MPT	MULTI-PURPOSE TRAIL
BW	BACK OF WALK	P	PAD
C	CURB	PKWY	PARKWAY
C&G	CURB & GUTTER	PL	PROPERTY LINE
DW	DOMESTIC WATER	POC	POINT OF CONNECTION
CL	CENTERLINE	PP	POWER POLE
ESMT	EASEMENT	PUE	PUBLIC UTILITY EASEMENT
EX	EXISTING	R/W	RIGHT OF WAY
FG	FINISHED GRADE	RW	RECLAIMED WATER
FL	FLOWLINE	S	SANITARY SEWER
FS	FINISHED SURFACE	SD	STORM DRAIN
LBZ	LIMITED BUILDING ZONE	SWLK	SIDEWALK
LL	LOT LINE	TC	TOP OF CURB
MG	MASS GRADING	TEMP	TEMPORARY

LAND DIVISION STATEMENT

I HEREBY CERTIFY THAT I AM THE RECORD OWNER, AS SHOWN ON THE LATEST EQUALIZED COUNTY ASSESSMENT, OF THE PROPERTY SHOWN ON THE TENTATIVE MAP. ALL OF MY CONTIGUOUS OWNERSHIP WITHIN AND BEYOND THE BOUNDARIES OF THE TENTATIVE MAP IS SHOWN. THE BASIS OF CREATION OF THE LOTS IN MY OWNERSHIP (E.G. PARCEL MAP, FINAL MAP, CERTIFICATE OF COMPLIANCE, RECORDED DEED BEFORE 2-1-72) IS CONSIDERED CONTIGUOUS EVEN IF IT IS SEPARATED BY ROADS, STREETS, UTILITY EASEMENTS OR RAILROAD RIGHTS-OF-WAY. "FREEWAY" AS DEFINED IN SECTION 23.5 OF THE STREETS AND HIGHWAYS CODE, SHALL NOT BE CONSIDERED AS ROADS OR STREETS.

I FURTHER CERTIFY THAT I WILL NOT, BY THIS APPLICATION, CREATE, OR CAUSE TO BE CREATED, OR WILL NOT HAVE PARTICIPATED IN THE CREATION OF MORE THAN FOUR PARCELS ON CONTIGUOUS PROPERTY UNLESS SUCH CONTIGUOUS PARCELS WERE CREATED BY MAJOR SUBDIVISION. FOR PURPOSES OF THIS CERTIFICATION, THE TERM PARTICIPANT MEANS HAVING COOPERATED WITH OR ACTED IN A PLANNING, COORDINATING, OR DECISION-MAKING CAPACITY IN ANY FORMAL OR INFORMAL ASSOCIATION OR PARTNERSHIP FOR THE PURPOSE OF DIVIDING REAL PROPERTY.

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

OWNER/APPLICANT

OSCAR URANGA, ESCONDIDO ESTATES, LLC
19782 MACARTHUR BLD SUITE 300
IRVINE, CA 92707
TEL: 949-933-4103

I HEREBY CERTIFY THAT I AM THE RECORD OWNER OF THE PROPERTY SHOWN ON THE TENTATIVE SUBDIVISION MAP AND THAT SAID MAP SHOWS ALL MY CONTIGUOUS OWNERSHIP IN WHICH I HAVE ANY DEED OR TRUST INTEREST. I UNDERSTAND THAT MY (OUR) PROPERTY IS CONSIDERED CONTIGUOUS EVEN IF IT IS SEPARATED BY ROADS, STREETS, EASEMENTS, OR RAILROAD RIGHTS-OF-WAY.

OSCAR URANGA

SHEET INDEX

SITE INFORMATION

1.- PROJECT ADDRESS:
1125 IDAHO AVE, ESCONDIDO, CA, 92027-4302
2.- ASSESSORS PARCEL No. (S): 234-231-01-00
3.- No. OF EXISTING LOTS: 1
4.- No. OF PROPOSED LOTS: 23
5.-SITE GROSS AREA: 10.28 AC
6.-SITE NET AREA: 9.98 AC
7.-ASSESSOR TAX RATE AREA: 74019

GENERAL NOTES

1.- TOTAL RESIDENTIAL PROPOSED: 20
2.- MINIMUM LOT SIZE BEING CREATED: 9,602 SQ.FT
3.- AVERAGE RESIDENTIAL LOT BEING CREATED: 14,627 SQ.FT
4.- GENERAL PLAN LAND USE DESIGNATION: VILLAGE RESIDENTIAL (VR-2)
5.- ZONING: A70 (LIMITED AGRICULTURAL)
6.- COMMUNITY PLAN AREA: NORTH COUNTY METRO-COUNTY OF SAN DIEGO
7.- SCHOOL DISTRICT: GEN ELEM ESCONDIDO
8.- ASSOCIATED PERMITS: PDS2020-TM-5639
9.- ADMINISTRATIVE PERMIT: PDS2020-AD-20-007
10.- OCCUPANCY CLASSIFICATION (PER CA BUILDING CODE)
11.- SOLAR ACCESS STATEMENT: ALL LOTS WITHIN THE SUBDIVISION WILL HAVE UNOBSTRUCTED ACCESS TO SUNLIGHT TO AN AREA OF NOT LESS THAN 100 SQUARE FEET, FALLING IN A HORIZONTAL PLANE 10 FEET ABOVE GRADE OF BUILDING AREA OF THE LOT BETWEEN AZIMUTHS OF THE SUN AT 45 DEGREES TO THE EAST AND 45 DEGREES TO THE WEST OF TRUE SOUTH, WHEN MEASURED ON THE WINTER SOLSTICE.
12.- STREET LIGHT STATEMENT: AS REQUIRED BY COUNTY STANDARDS & DARK SKY POLICY.

TOPOGRAPHICAL SOURCE

THE TOPOGRAPHY SHOWN HEREON IS BASED ON PHOTOGRAMMETRIC COMPUTER AIDED DRAFTING TECHNIQUES. IN OPEN, UNOBSTRUCTED AREAS THIS MAP COMPLIES WITH NATIONAL STANDARDS FOR MAP ACCURACY. FIELD SURVEY CONTROL BY BRAIN POLLEY LAND SURVEYING DATED JUNE 23, 2004 JOB NO. 10611-101

SLOPE AVERAGE ANALYSIS

AREA= 10.28 AC, CONTOUR INTERVAL= 1FT,
L= 39,666 FT

AVERAGE SLOPE, $S = \frac{I \times L}{AREA} \times 100$

AVERAGE SLOPE, $S = \frac{1FT \times 39{,}666 \times 100}{10.28 \text{ AC} \times 43{,}560} = 8.82\%$

FEMA FLOOD ZONE

THE SITE IS LOCATED IN FLOOD ZONE X, AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN, PER FIRM 06073C1081G.

UTILITY PURVEYORS

GAS & ELECTRIC:	SAN DIEGO GAS AND ELECTRIC 800-411-7343
WATER:	CITY OF ESCONDIDO 760-839-4657
SEWER:	SEPTIC SYSTEM (COUNTY OF SAN DIEGO)
STORM DRAIN:	CITY OF ESCONDIDO 760-839-4657
FIRE:	CITY OF ESCONDIDO 760-839-5400
CABLE:	COX CABLE 760-878-5222
TELEPHONE:	PACIFIC BELL 760-489-3187

GEOTECHNICAL ENGINEER

VINJE & MIDDLETON ENGINEERING, INC.
2450 AUTO PARK WAY
ESCONDIDO, CA 92029
TEL: 760-743-1214

CONTACT: RALPH M. VINJE, CEG #863

CIVIL ENGINEER

X ENGINEERING & CONSULTING, INC.
6 HUTTON CENTRE DR., SUITE 650,
SANTA ANA, CA 92707
TEL: 949-522-7100

CONTACT: ERIC LISSNER, P.E.

△	BY	REVISIONS	DATE

PREPARED BY:

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Santa Ana, California 92707
949.522.7100 | xengineeringinc.com

REGISTERED PROFESSIONAL ENGINEER ERIC LISSNER NO. 84264 CIVIL STATE OF CALIFORNIA

TITLE SHEET
ESCONDIDO ESTATES
TM 5639

COUNTY OF SAN DIEGO, CALIFORNIA

SHEET 1 OF 4

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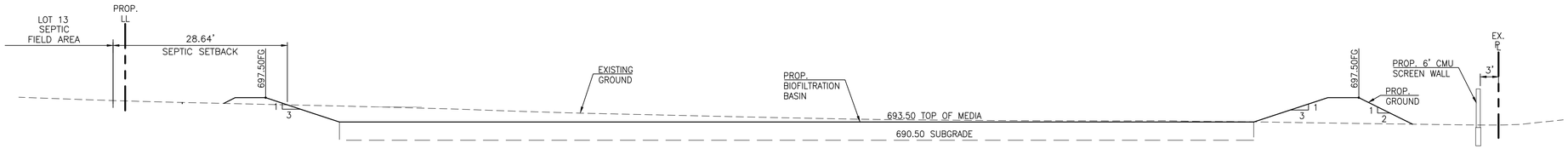
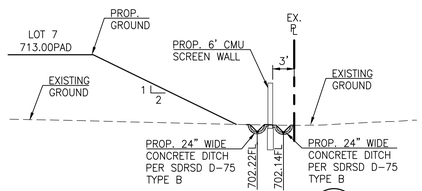
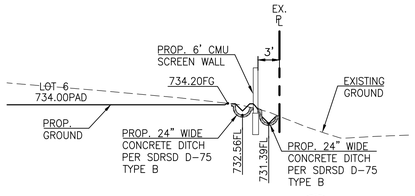




SECTION E
1"=10'
E
2



SECTION F
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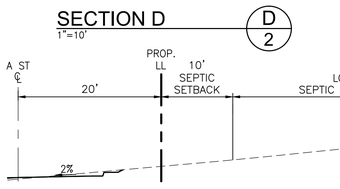
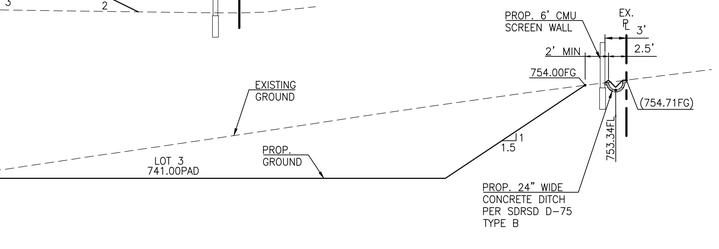
F
2





SECTION G
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G
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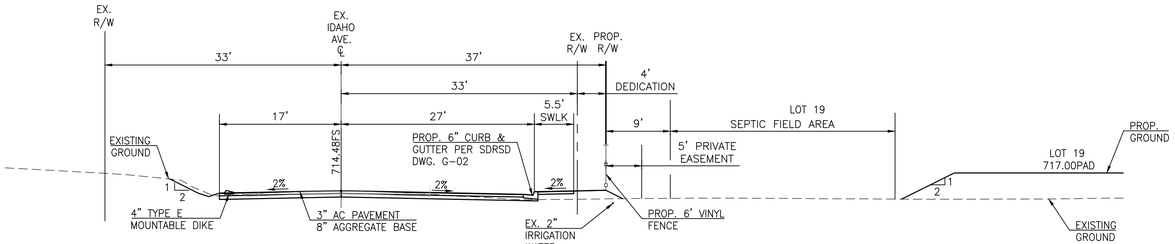

SECTION H
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H
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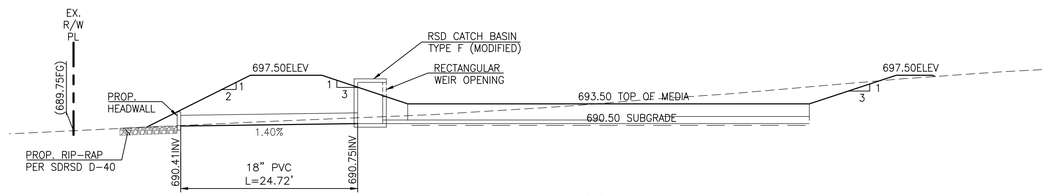

SECTION I
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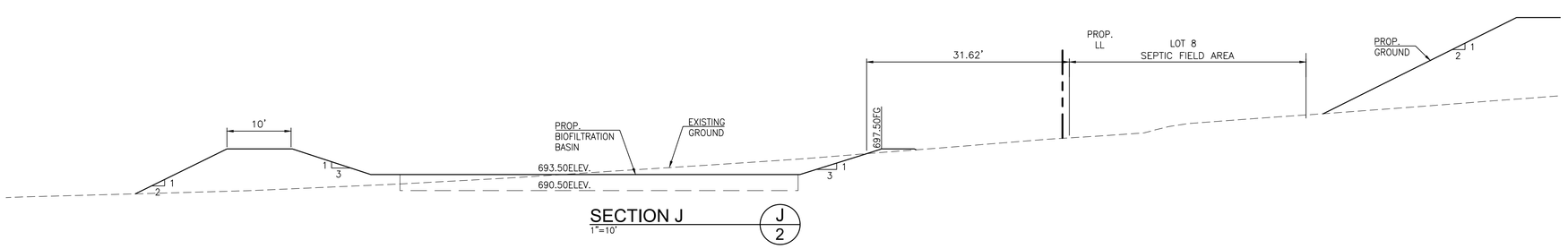
I
2



SECTION J
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J
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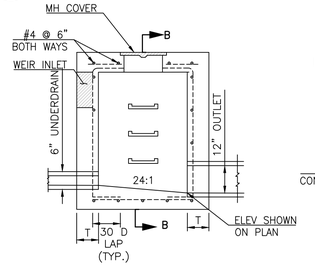

SECTION A-A
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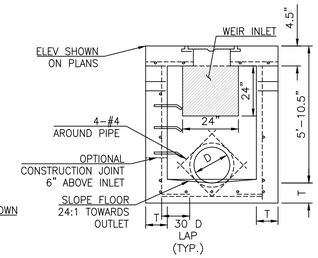

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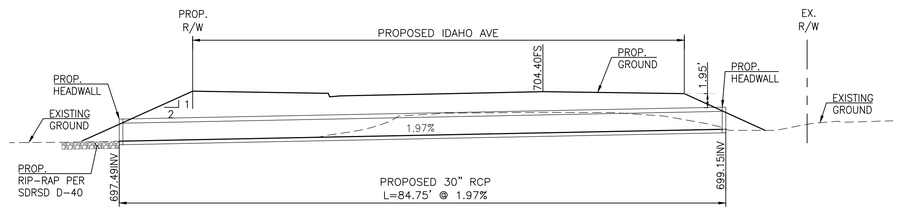

SECTION M
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M
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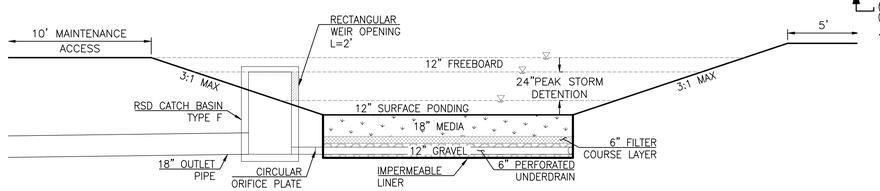

PROPOSED BASIN SECTION
NTS
K
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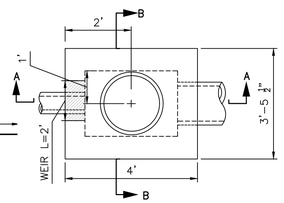

PLAN
N.T.S.

NOTES:
1. SEE D-11A &11B FOR ADDITIONAL NOTES AND DETAILS.
2. STEPS SHALL BE INCLUDED. SEE 11A FOR DETAILS.
3. EXPOSED EDGES OF CONCRETE SHALL BE ROUNDED WITH A RADIUS OF 1".
4. CONSTRUCT OPENINGS ON BOTH SIDE UNLESS OTHERWISE SHOWN ON PLANS.
5. MAINTAIN 1-1/2" CLEAR SPACING BETWEEN REINFORCING AND CONCRETE SURFACE.
6. INSTALL 1" PROTECTION BAR ACROSS OPENING.
7. DIAMETER "D" SHALL BE 18" MAX, FOR LARGER DIAMETER PIPES THIS DRAWING MUST BE MODIFIED. PIPE DIAMETERS TO BE SHOWN ON PLANS.
8. IF CONSTRUCTED ADJACENT TO A SIDEWALK, THE SURFACE OF THE TOP SLAB OF THE CATCH BASIN SHALL MATCH THE SIDEWALK SLOPE AND FINISH.

CATCH BASIN TYPE F (MOD)
NTS
L
2

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REGISTERED PROFESSIONAL ENGINEER
ERIC LISSNER
NO. 84264
CIVIL
STATE OF CALIFORNIA

SECTIONS & DETAILS
ESCONDIDO ESTATES
TM 5639
COUNTY OF SAN DIEGO, CALIFORNIA

SHEET 2 OF 4

LEGEND

- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- EXISTING PROPERTY LINE
- STREET CENTERLINE
- EXISTING AND PROPOSED EASEMENT
- 229.1' PROPOSED LOT LINE & DIMENSIONS
- PROPOSED BUILDING SETBACK LINE
- PROPOSED DOMESTIC WATER
- PROPOSED IRRIGATION WATER
- PROPOSED STORM DRAIN
- PROPOSED CURB INLET
- 700 PROPOSED ELEVATION
- 700 EXISTING ELEVATION
- PROPOSED WATER METER
- LOT 2 PROPOSED LOT NUMBER
- PROPOSED FIRE HYDRANT
- PROPOSED STREET LIGHT
- DAYLIGHT LINE
- PROPOSED 6' CMU SCREEN WALL
- (# BEDS) PROPOSED SEPTIC FIELD AREA
- DIRECTION OF FLOW
- RELINQUISHED ABUTTERS RIGHTS
- 1' PRIVATE ACCESS RESTRICTION EASEMENT
- PROPOSED RIDGE LINE
- PROPOSED CUT & FILL LINE

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PRELIMINARY GRADING PLAN
ESCONDIDO ESTATES
TM 5639
COUNTY OF SAN DIEGO, CALIFORNIA

SHEET 3 OF 4

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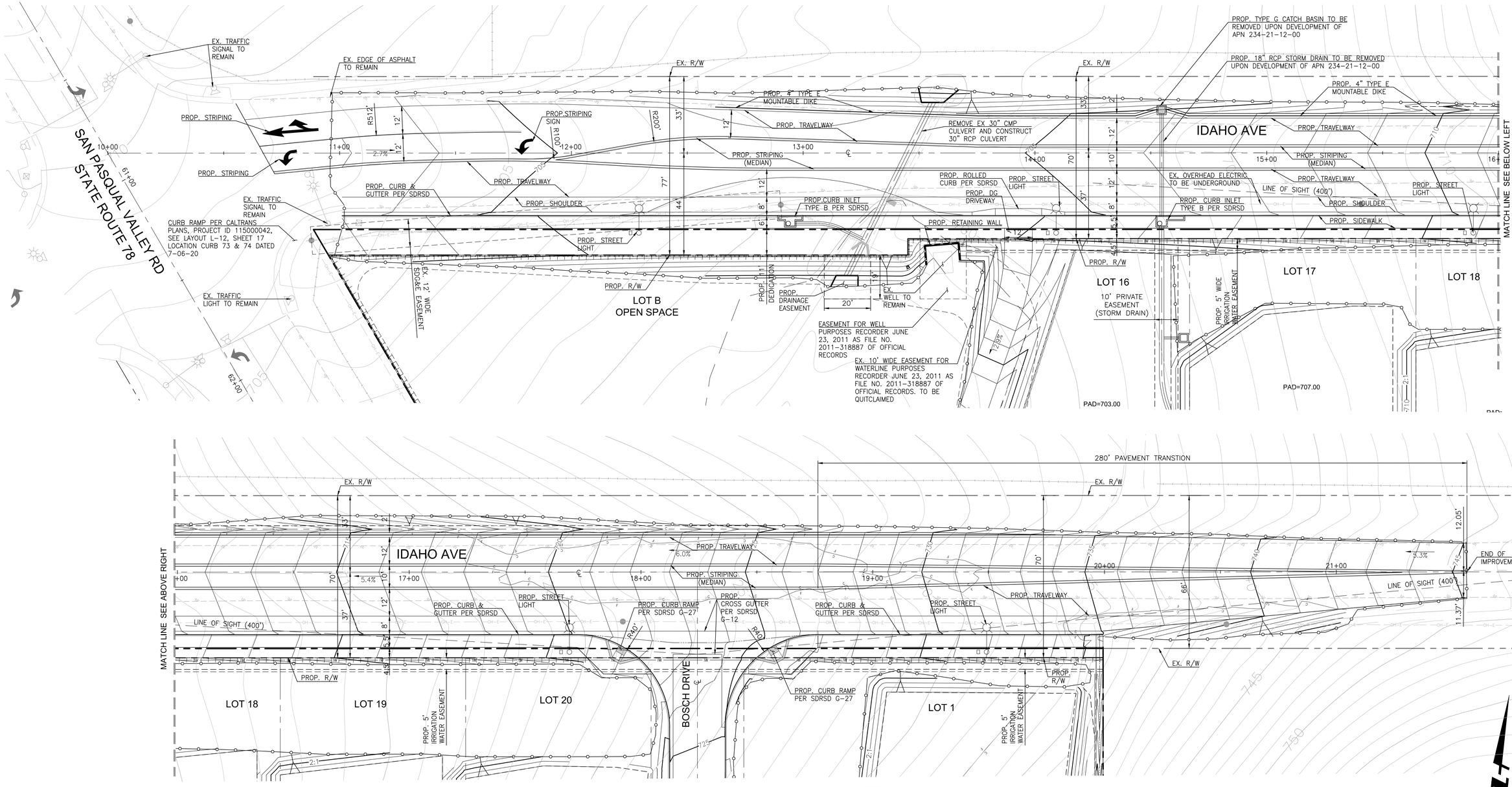

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OFFSITE IMPROVEMENTS
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SHEET 4 OF 4