TENTATIVE TRACT NO. 38116

(LAKESIDE)

PRELIMINARY HYDROLOGY REPORT

Prepared date: March 26, 2021
Revised date: August 5, 2021

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TENTATIVE TRACT NO. 38116
(LAKESIDE)

[File: C:\Wspg1\89490\TR38116 Appendix Index]
JN 894-90

TENTATIVE TRACT NO. 38116

(Lakeside)
Preliminary Hydrology Report

- **Project Location**

- **Project Description**

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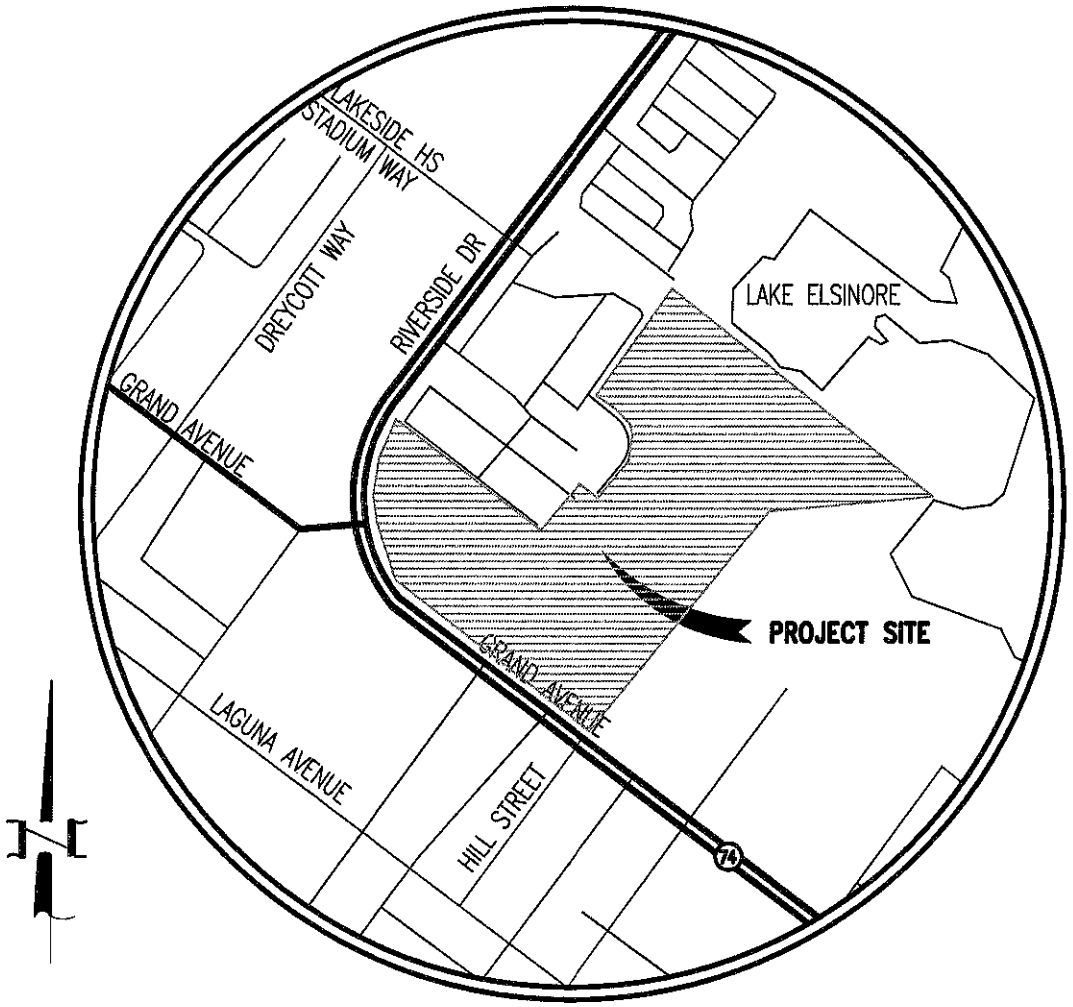
1. Plate 1 – Proposed Hydrology Map



VICINITY MAP

N.T.S.

2006 THOMAS BROTHERS
MAP BOOK, PAGES 865, GRID H6

PURPOSE

The purpose of this report is to provide hydrologic and hydraulic calculations to support the conceptual design for the storm drain system proposed for Tentative Tract No. 38116.

EXISTING CONDITIONS

The project site consists of 17.7 acres located in the City of Lake Elsinore, County of Riverside, California. The project is located immediately east, of the intersection of Riverside Drive and Grand Avenue. The surrounding area consists of vacant land, with single family residential, and light commercial properties.

The site is currently vacant, naturally drains in a northeasterly direction. All the surface runoff from the project site ultimately drains into Wilson Creek. The site consist of open brush and natural fair cover. The entire project site consists of soil type B.

The project site can be found on Flood Insurance Rate Map (FIRM) No. 06065C2017G, effective on August 28, 2008, Zone X.

PROPOSED CONDITIONS

The project site proposes 140 detached multi-family residential dwellings, associated infrastructure and open space. On site runoff will be conveyed through private street improvements and discharge into the existing channel.

Based on the post-development condition hydrology study for Tentative Tract No. 38116, the project site with a contributing storm water runoff area of 17.7 acres, generates a peak flow rate a 100-year storm event of **Q=31.4 cfs.**

HYDROLOGY

Hydrologic calculations within this report have been prepared using 2016 Advance Engineering Software's (AES) Rational Method software for Riverside County. Hydrologic variables include "B" soil type. Rainfall intensities as follows: 10 yr - 10 min. = 2.32, 10 yr – 60 min. = 0.98, 100 yr – 10 min. = 3.54, 100 yr – 60 min. = 1.50. Calculations have been prepared for both the 10 and 100 year events.

CONCLUSIONS

This drainage report includes the post-development hydrology analyses for the 10 and 100-Yr. storm events. Base on this drainage study, we conclude that the proposed storm drain system provides adequate capacity to convey flows for the 100-Yr. storm.

Appendix A-1

RATIONAL METHOD CALCULATIONS
PROPOSED CONDITION
1. 10 - YEAR STORM

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```
**************************************************************************
          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM BASED ON
        RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
                    (RCFC&WCD)  1978 HYDROLOGY MANUAL
         (c) Copyright 1982-2016 Advanced Engineering Software (aes)
                    (Rational Tabling Version 23.0)
                Release Date: 07/01/2016  License ID 1269

                          Analysis prepared by:

                              MDS Consulting
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                              Phone: (949) 251-8821
                           Email: mdsirvine@mdsconsulting.net

 ************************** DESCRIPTION OF STUDY **************************
* TENTATIVE TRACT 38116                                                   *
* PRELIMINARY PROPOSED HYDROLOGY                                          *
* 10-YEAR STORM EVENT                                                     *
 **************************************************************************

  FILE NAME: C:\AES2016\HYDROSFT\RATSCX\89490\89490DEV.DAT
  TIME/DATE OF STUDY: 11:20 08/05/2021
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =   10.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  10-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  2.320
  10-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  0.980
  100-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  3.540
  100-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  1.500
  SLOPE OF 10-YEAR INTENSITY-DURATION CURVE =  0.4809628
  SLOPE OF 100-YEAR INTENSITY-DURATION CURVE =  0.4792280
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =   10.00   1-HOUR INTENSITY(INCH/HOUR) =   0.990
  SLOPE OF INTENSITY DURATION CURVE = 0.4810
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
        AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================  ======  ===== ====== ===== =======
  1   18.0     13.0    0.020/0.020/0.020   0.50    2.00 0.0313 0.125 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.50 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
```

```
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

****************************************************************************
 FLOW PROCESS FROM NODE     10.00 TO NODE     11.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS CONDOMINIUM
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =  1000.00
 UPSTREAM ELEVATION(FEET) =   1294.20
 DOWNSTREAM ELEVATION(FEET) =   1284.20
 ELEVATION DIFFERENCE(FEET) =     10.00
 TC = 0.359*[( 1000.00**3)/(    10.00)]**.2 =   14.300
  10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.973
 CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .7907
 SOIL CLASSIFICATION IS "B"
 SUBAREA RUNOFF(CFS) =      6.69
 TOTAL AREA(ACRES) =      4.29   TOTAL RUNOFF(CFS) =      6.69

****************************************************************************
 FLOW PROCESS FROM NODE     11.00 TO NODE     12.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) = 1284.20  DOWNSTREAM ELEVATION(FEET) = 1278.50
 STREET LENGTH(FEET) =   800.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 18.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  13.00
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       9.19
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.39
   HALFSTREET FLOOD WIDTH(FEET) =   13.66
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.28
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.89
 STREET FLOW TRAVEL TIME(MIN.) =   5.84   Tc(MIN.) =   20.14
  10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.673
 CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .7787
 SOIL CLASSIFICATION IS "B"
 SUBAREA AREA(ACRES) =    3.82      SUBAREA RUNOFF(CFS) =    4.98
 TOTAL AREA(ACRES) =        8.1        PEAK FLOW RATE(CFS) =      11.67

 END OF SUBAREA STREET FLOW HYDRAULICS:
```

```
 DEPTH(FEET) = 0.42   HALFSTREET FLOOD WIDTH(FEET) =  15.03
 FLOW VELOCITY(FEET/SEC.) =  2.42   DEPTH*VELOCITY(FT*FT/SEC.) =   1.01
 LONGEST FLOWPATH FROM NODE     10.00 TO NODE     12.00 =    1800.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     12.00 TO NODE     13.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1273.00  DOWNSTREAM(FEET) =  1272.00
 FLOW LENGTH(FEET) =   165.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  21.0 INCH PIPE IS  16.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   5.70
 ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      11.67
 PIPE TRAVEL TIME(MIN.) =   0.48    Tc(MIN.) =   20.63
 LONGEST FLOWPATH FROM NODE     10.00 TO NODE     13.00 =    1965.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     13.00 TO NODE     22.00 IS CODE =  52
----------------------------------------------------------------------------
 >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1272.00  DOWNSTREAM(FEET) =   1270.50
 CHANNEL LENGTH THRU SUBAREA(FEET) =   446.00   CHANNEL SLOPE =  0.0034
 CHANNEL FLOW THRU SUBAREA(CFS) =      11.67
 FLOW VELOCITY(FEET/SEC) =   1.51 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) =   4.93   Tc(MIN.) =   25.56
 LONGEST FLOWPATH FROM NODE     10.00 TO NODE     22.00 =    2411.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     22.00 TO NODE     22.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  1.492
 UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .5288
 SOIL CLASSIFICATION IS "B"
 SUBAREA AREA(ACRES) =    0.95   SUBAREA RUNOFF(CFS) =    0.75
 TOTAL AREA(ACRES) =       9.1   TOTAL RUNOFF(CFS) =     12.42
 TC(MIN.) =   25.56

****************************************************************************
 FLOW PROCESS FROM NODE     22.00 TO NODE     22.00 IS CODE =  10
----------------------------------------------------------------------------
 >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE     20.00 TO NODE     21.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
```

```
==========================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS CONDOMINIUM
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   820.00
  UPSTREAM ELEVATION(FEET) =   1294.20
  DOWNSTREAM ELEVATION(FEET) =   1276.80
  ELEVATION DIFFERENCE(FEET) =     17.40
  TC = 0.359*[(  820.00**3)/(    17.40)]**.2 =   11.364
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.203
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .7985
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      9.57
  TOTAL AREA(ACRES) =      5.44   TOTAL RUNOFF(CFS) =      9.57

**************************************************************************
  FLOW PROCESS FROM NODE     21.00 TO NODE     21.00 IS CODE =   1
--------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
==========================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   11.36
  RAINFALL INTENSITY(INCH/HR) =   2.20
  TOTAL STREAM AREA(ACRES) =     5.44
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      9.57

**************************************************************************
  FLOW PROCESS FROM NODE     30.00 TO NODE     21.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==========================================================================
         ASSUMED INITIAL SUBAREA UNIFORM
         DEVELOPMENT IS CONDOMINIUM
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   689.00
  UPSTREAM ELEVATION(FEET) =   1281.00
  DOWNSTREAM ELEVATION(FEET) =   1276.80
  ELEVATION DIFFERENCE(FEET) =      4.20
  TC = 0.359*[(  689.00**3)/(     4.20)]**.2 =   13.603
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.021
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .7925
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      5.09
  TOTAL AREA(ACRES) =      3.18   TOTAL RUNOFF(CFS) =      5.09

**************************************************************************
  FLOW PROCESS FROM NODE     21.00 TO NODE     21.00 IS CODE =   1
--------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
==========================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
```

```
 TIME OF CONCENTRATION(MIN.) =   13.60
 RAINFALL INTENSITY(INCH/HR) =   2.02
 TOTAL STREAM AREA(ACRES) =     3.18
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      5.09

 ** CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY      AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
     1        9.57    11.36        2.203          5.44
     2        5.09    13.60        2.021          3.18

**********************************WARNING**********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
***************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF       Tc      INTENSITY
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)
     1       13.83    11.36        2.203
     2       13.87    13.60        2.021

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      13.83   Tc(MIN.) =   11.36
 TOTAL AREA(ACRES) =        8.6
 LONGEST FLOWPATH FROM NODE     20.00 TO NODE     21.00 =     820.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     21.00 TO NODE     22.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1272.00  DOWNSTREAM(FEET) =  1270.50
 FLOW LENGTH(FEET) =   286.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  24.0 INCH PIPE IS  17.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   5.72
 ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      13.83
 PIPE TRAVEL TIME(MIN.) =   0.83    Tc(MIN.) =   12.20
 LONGEST FLOWPATH FROM NODE     20.00 TO NODE     22.00 =    1106.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     22.00 TO NODE     22.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM     RUNOFF       Tc      INTENSITY     AREA
```

```
                                    DEV10
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)   (ACRE)
     1       13.83     12.20       2.130        8.62
 LONGEST FLOWPATH FROM NODE     20.00 TO NODE     22.00 =    1106.00 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
 STREAM     RUNOFF       Tc       INTENSITY     AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)   (ACRE)
     1       12.42     25.56       1.492        9.06
 LONGEST FLOWPATH FROM NODE     10.00 TO NODE     22.00 =    2411.00 FEET.

 ****************************WARNING*********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ********************************************************************

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF       Tc       INTENSITY
 NUMBER     (CFS)     (MIN.)   (INCH/HOUR)
     1      19.75      12.20       2.130
     2      22.11      25.56       1.492

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      19.75   Tc(MIN.) =   12.20
 TOTAL AREA(ACRES) =       17.7

********************************************************************
 FLOW PROCESS FROM NODE     22.00 TO NODE     22.00 IS CODE =  12
--------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
====================================================================

********************************************************************
 FLOW PROCESS FROM NODE     22.00 TO NODE     23.00 IS CODE =  31
--------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
====================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1270.50  DOWNSTREAM(FEET) =  1264.50
 FLOW LENGTH(FEET) =   168.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  21.0 INCH PIPE IS  12.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  13.04
 ESTIMATED PIPE DIAMETER(INCH) =  21.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      19.75
 PIPE TRAVEL TIME(MIN.) =   0.21    Tc(MIN.) =   12.41
 LONGEST FLOWPATH FROM NODE     10.00 TO NODE     23.00 =    2579.00 FEET.
====================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)     =       17.7  TC(MIN.) =     12.41
 PEAK FLOW RATE(CFS)   =      19.75
====================================================================
====================================================================
 END OF RATIONAL METHOD ANALYSIS
```

Appendix A-2

RATIONAL METHOD CALCULATIONS
PROPOSED CONDITION
1. 100 - YEAR STORM

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        RIVERSIDE COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT
                    (RCFC&WCD)  1978 HYDROLOGY MANUAL
         (c) Copyright 1982-2016 Advanced Engineering Software (aes)
                    (Rational Tabling Version 23.0)
                  Release Date: 07/01/2016  License ID 1269

                          Analysis prepared by:

                              MDS Consulting
                  17320 Redhill Avenue, Suite 350, Irvine, CA 92614
                              Phone: (949) 251-8821
                           Email: mdsirvine@mdsconsulting.net

 ************************** DESCRIPTION OF STUDY **************************
* TENTATIVE TRACT 38116                                                   *
* PRELIMINARY PROPOSED HYDROLOGY                                          *
* 100-YEAR STORM EVENT                                                    *
 **************************************************************************

  FILE NAME: C:\AES2016\HYDROSFT\RATSCX\89490\89490DEV.DAT
  TIME/DATE OF STUDY: 11:03 08/05/2021
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) =  100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  10-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  2.320
  10-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  0.980
  100-YEAR STORM 10-MINUTE INTENSITY(INCH/HOUR) =  3.540
  100-YEAR STORM 60-MINUTE INTENSITY(INCH/HOUR) =  1.500
  SLOPE OF 10-YEAR INTENSITY-DURATION CURVE =  0.4809628
  SLOPE OF 100-YEAR INTENSITY-DURATION CURVE =  0.4792280
  COMPUTED RAINFALL INTENSITY DATA:
  STORM EVENT =  100.00   1-HOUR INTENSITY(INCH/HOUR) =   1.500
  SLOPE OF INTENSITY DURATION CURVE = 0.4792
  RCFC&WCD HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: COMPUTE CONFLUENCE VALUES ACCORDING TO RCFC&WCD HYDROLOGY MANUAL
        AND IGNORE OTHER CONFLUENCE COMBINATIONS FOR DOWNSTREAM ANALYSES
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ====== =====  =======
  1   18.0     13.0    0.020/0.020/0.020   0.50    2.00 0.0313 0.125 0.0150

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.50 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
```

```
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

****************************************************************************
 FLOW PROCESS FROM NODE     10.00 TO NODE     11.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS CONDOMINIUM
 TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
 INITIAL SUBAREA FLOW-LENGTH(FEET) =  1000.00
 UPSTREAM ELEVATION(FEET) =   1294.20
 DOWNSTREAM ELEVATION(FEET) =   1284.20
 ELEVATION DIFFERENCE(FEET) =     10.00
 TC = 0.359*[( 1000.00**3)/(    10.00)]**.2 =   14.300
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.982
 CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8181
 SOIL CLASSIFICATION IS "B"
 SUBAREA RUNOFF(CFS) =     10.47
 TOTAL AREA(ACRES) =      4.29   TOTAL RUNOFF(CFS) =     10.47

****************************************************************************
 FLOW PROCESS FROM NODE     11.00 TO NODE     12.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) = 1284.20  DOWNSTREAM ELEVATION(FEET) = 1278.50
 STREET LENGTH(FEET) =   800.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 18.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  13.00
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      14.44
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.44
   HALFSTREET FLOOD WIDTH(FEET) =   16.40
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.54
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.13
 STREET FLOW TRAVEL TIME(MIN.) =   5.24   Tc(MIN.) =   19.54
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.568
 CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8087
 SOIL CLASSIFICATION IS "B"
 SUBAREA AREA(ACRES) =    3.82      SUBAREA RUNOFF(CFS) =    7.93
 TOTAL AREA(ACRES) =        8.1        PEAK FLOW RATE(CFS) =      18.40

 END OF SUBAREA STREET FLOW HYDRAULICS:
```

```
 DEPTH(FEET) = 0.48   HALFSTREET FLOOD WIDTH(FEET) =  18.00
 FLOW VELOCITY(FEET/SEC.) =  2.71   DEPTH*VELOCITY(FT*FT/SEC.) =   1.29
 LONGEST FLOWPATH FROM NODE     10.00 TO NODE     12.00 =    1800.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     12.00 TO NODE     13.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1273.00  DOWNSTREAM(FEET) =  1272.00
 FLOW LENGTH(FEET) =   165.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  27.0 INCH PIPE IS  18.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   6.54
 ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      18.40
 PIPE TRAVEL TIME(MIN.) =   0.42    Tc(MIN.) =   19.96
 LONGEST FLOWPATH FROM NODE     10.00 TO NODE     13.00 =    1965.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     13.00 TO NODE     22.00 IS CODE =  52
----------------------------------------------------------------------------
 >>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   1272.00  DOWNSTREAM(FEET) =   1270.50
 CHANNEL LENGTH THRU SUBAREA(FEET) =   446.00   CHANNEL SLOPE =  0.0034
 CHANNEL FLOW THRU SUBAREA(CFS) =      18.40
 FLOW VELOCITY(FEET/SEC) =   1.70 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) =   4.37   Tc(MIN.) =   24.33
 LONGEST FLOWPATH FROM NODE     10.00 TO NODE     22.00 =    2411.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     22.00 TO NODE     22.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.312
 UNDEVELOPED WATERSHED RUNOFF COEFFICIENT = .6193
 SOIL CLASSIFICATION IS "B"
 SUBAREA AREA(ACRES) =    0.95   SUBAREA RUNOFF(CFS) =    1.36
 TOTAL AREA(ACRES) =       9.1   TOTAL RUNOFF(CFS) =     19.76
 TC(MIN.) =   24.33

****************************************************************************
 FLOW PROCESS FROM NODE     22.00 TO NODE     22.00 IS CODE =  10
----------------------------------------------------------------------------
 >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE     20.00 TO NODE     21.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
```

```
==========================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS CONDOMINIUM
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   820.00
  UPSTREAM ELEVATION(FEET) =   1294.20
  DOWNSTREAM ELEVATION(FEET) =   1276.80
  ELEVATION DIFFERENCE(FEET) =     17.40
  TC = 0.359*[(  820.00**3)/(    17.40)]**.2 =   11.364
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.330
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8246
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =     14.94
  TOTAL AREA(ACRES) =      5.44   TOTAL RUNOFF(CFS) =     14.94

**************************************************************************
  FLOW PROCESS FROM NODE     21.00 TO NODE     21.00 IS CODE =   1
--------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
==========================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   11.36
  RAINFALL INTENSITY(INCH/HR) =   3.33
  TOTAL STREAM AREA(ACRES) =     5.44
  PEAK FLOW RATE(CFS) AT CONFLUENCE =     14.94

**************************************************************************
  FLOW PROCESS FROM NODE     30.00 TO NODE     21.00 IS CODE =  21
--------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==========================================================================
        ASSUMED INITIAL SUBAREA UNIFORM
        DEVELOPMENT IS CONDOMINIUM
  TC = K*[(LENGTH**3)/(ELEVATION CHANGE)]**.2
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   689.00
  UPSTREAM ELEVATION(FEET) =   1281.00
  DOWNSTREAM ELEVATION(FEET) =   1276.80
  ELEVATION DIFFERENCE(FEET) =      4.20
  TC = 0.359*[(  689.00**3)/(     4.20)]**.2 =   13.603
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.055
  CONDOMINIUM DEVELOPMENT RUNOFF COEFFICIENT = .8196
  SOIL CLASSIFICATION IS "B"
  SUBAREA RUNOFF(CFS) =      7.96
  TOTAL AREA(ACRES) =      3.18   TOTAL RUNOFF(CFS) =      7.96

**************************************************************************
  FLOW PROCESS FROM NODE     21.00 TO NODE     21.00 IS CODE =   1
--------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
==========================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
```

```
 TIME OF CONCENTRATION(MIN.) =   13.60
 RAINFALL INTENSITY(INCH/HR) =   3.05
 TOTAL STREAM AREA(ACRES) =     3.18
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      7.96

 ** CONFLUENCE DATA **
 STREAM      RUNOFF       Tc       INTENSITY      AREA
 NUMBER       (CFS)     (MIN.)   (INCH/HOUR)    (ACRE)
    1        14.94    11.36        3.330          5.44
    2         7.96    13.60        3.055          3.18

 ********************************WARNING*********************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM      RUNOFF       Tc       INTENSITY
 NUMBER       (CFS)     (MIN.)   (INCH/HOUR)
    1        21.59    11.36        3.330
    2        21.66    13.60        3.055

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       21.59   Tc(MIN.) =   11.36
 TOTAL AREA(ACRES) =         8.6
 LONGEST FLOWPATH FROM NODE     20.00 TO NODE     21.00 =     820.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     21.00 TO NODE     22.00 IS CODE =  31
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1272.00  DOWNSTREAM(FEET) =  1270.50
 FLOW LENGTH(FEET) =   286.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  27.0 INCH PIPE IS  21.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   6.27
 ESTIMATED PIPE DIAMETER(INCH) =  27.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      21.59
 PIPE TRAVEL TIME(MIN.) =   0.76    Tc(MIN.) =   12.12
 LONGEST FLOWPATH FROM NODE     20.00 TO NODE     22.00 =    1106.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     22.00 TO NODE     22.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM      RUNOFF       Tc       INTENSITY      AREA
```

```
                                    DEV100
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)   (ACRE)
     1       21.59     12.12       3.228        8.62
 LONGEST FLOWPATH FROM NODE     20.00 TO NODE     22.00 =    1106.00 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
 STREAM     RUNOFF       Tc       INTENSITY     AREA
 NUMBER      (CFS)     (MIN.)   (INCH/HOUR)   (ACRE)
     1       19.76     24.33       2.312        9.06
 LONGEST FLOWPATH FROM NODE     10.00 TO NODE     22.00 =    2411.00 FEET.

 ****************************WARNING*************************************
 IN THIS COMPUTER PROGRAM, THE CONFLUENCE VALUE USED IS BASED
 ON THE RCFC&WCD FORMULA OF PLATE D-1 AS DEFAULT VALUE. THIS FORMULA
 WILL NOT NECESSARILY RESULT IN THE MAXIMUM VALUE OF PEAK FLOW.
 ************************************************************************

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF        Tc       INTENSITY
 NUMBER     (CFS)      (MIN.)   (INCH/HOUR)
     1      31.43       12.12        3.228
     2      35.22       24.33        2.312

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      31.43   Tc(MIN.) =   12.12
 TOTAL AREA(ACRES) =       17.7

************************************************************************
 FLOW PROCESS FROM NODE     22.00 TO NODE     22.00 IS CODE =  12
------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
========================================================================

************************************************************************
 FLOW PROCESS FROM NODE     22.00 TO NODE     23.00 IS CODE =  31
------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  1270.50  DOWNSTREAM(FEET) =  1264.50
 FLOW LENGTH(FEET) =   168.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  24.0 INCH PIPE IS  15.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  14.57
 ESTIMATED PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      31.43
 PIPE TRAVEL TIME(MIN.) =   0.19    Tc(MIN.) =   12.32
 LONGEST FLOWPATH FROM NODE     10.00 TO NODE     23.00 =    2579.00 FEET.
========================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)     =       17.7  TC(MIN.) =     12.32
 PEAK FLOW RATE(CFS)   =      31.43
========================================================================
========================================================================
 END OF RATIONAL METHOD ANALYSIS
```

Appendix B

REFERENCES

MDS CONSULTING
MORSE SCHULTZ
17320 Redhill Ave.
Suite 350
Irvine, CA 92614
Voice: 949-251-8821
FAX: 949-251-0516
PLANNERS ENGINEERS SURVEYORS

RAINFALL INTENSITY–INCHES PER HOUR

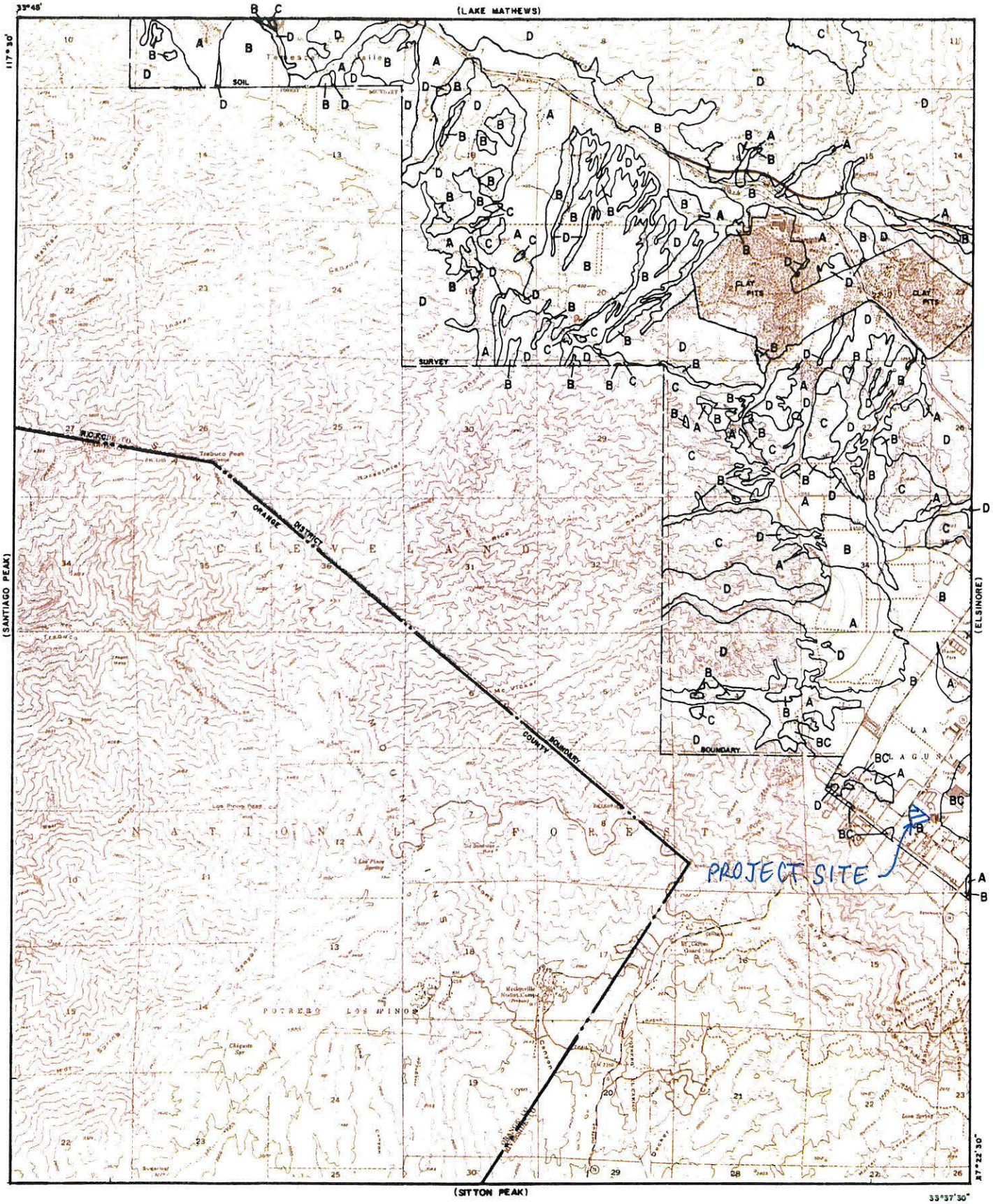
CATHEDRAL CITY			CHERRY VALLEY			CORONA			DESERT HOT SPRINGS			ELSINORE - WILDOMAR		
DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR	DURATION MINUTES	FREQUENCY 10 YEAR	100 YEAR
5	4.14	6.76	5	3.65	5.49	5	3.10	4.78	5	4.39	6.76	5	3.23	4.94
6	3.73	6.08	6	3.30	4.97	6	2.84	4.38	6	3.95	6.08	6	2.96	4.53
7	3.41	5.56	7	3.03	4.56	7	2.64	4.07	7	3.62	5.56	7	2.75	4.21
8	3.15	5.15	8	2.82	4.24	8	2.47	3.81	8	3.35	5.15	8	2.58	3.95
9	2.95	4.81	9	2.64	3.97	9	2.34	3.60	9	3.13	4.81	9	2.44	3.73
10	2.77	4.52	10	2.49	3.75	10	2.22	3.43	10	2.94	4.52	10	2.32	3.54
11	2.62	4.28	11	2.36	3.56	11	2.12	3.27	11	2.78	4.28	11	2.21	3.39
12	2.49	4.07	12	2.25	3.39	12	2.04	3.14	12	2.65	4.07	12	2.12	3.25
13	2.38	3.88	13	2.16	3.25	13	1.96	3.02	13	2.53	3.88	13	2.04	3.13
14	2.28	3.72	14	2.07	3.12	14	1.89	2.92	14	2.42	3.72	14	1.97	3.02
15	2.19	3.58	15	1.99	3.00	15	1.83	2.82	15	2.32	3.58	15	1.91	2.92
16	2.11	3.44	16	1.92	2.90	16	1.77	2.73	16	2.24	3.44	16	1.85	2.83
17	2.04	3.32	17	1.86	2.80	17	1.72	2.66	17	2.16	3.32	17	1.80	2.75
18	1.97	3.22	18	1.80	2.71	18	1.68	2.58	18	2.09	3.22	18	1.75	2.67
19	1.91	3.12	19	1.75	2.64	19	1.63	2.52	19	2.03	3.12	19	1.70	2.60
20	1.85	3.03	20	1.70	2.56	20	1.59	2.46	20	1.97	3.03	20	1.66	2.54
22	1.75	2.86	22	1.61	2.43	22	1.52	2.35	22	1.86	2.86	22	1.59	2.43
24	1.67	2.72	24	1.54	2.32	24	1.46	2.25	24	1.77	2.72	24	1.52	2.33
26	1.59	2.60	26	1.47	2.22	26	1.40	2.17	26	1.69	2.60	26	1.46	2.24
28	1.52	2.49	28	1.41	2.13	28	1.36	2.09	28	1.62	2.49	28	1.41	2.16
30	1.46	2.39	30	1.36	2.05	30	1.31	2.02	30	1.55	2.39	30	1.37	2.09
32	1.41	2.30	32	1.31	1.98	32	1.27	1.96	32	1.50	2.30	32	1.33	2.03
34	1.36	2.22	34	1.27	1.91	34	1.23	1.90	34	1.45	2.22	34	1.29	1.97
36	1.32	2.15	36	1.23	1.85	36	1.20	1.85	36	1.40	2.15	36	1.25	1.92
38	1.28	2.09	38	1.20	1.80	38	1.17	1.81	38	1.36	2.09	38	1.22	1.87
40	1.24	2.02	40	1.16	1.75	40	1.14	1.76	40	1.32	2.02	40	1.19	1.82
45	1.16	1.89	45	1.09	1.64	45	1.08	1.66	45	1.23	1.89	45	1.13	1.72
50	1.09	1.78	50	1.03	1.55	50	1.03	1.58	50	1.16	1.78	50	1.07	1.64
55	1.03	1.68	55	.98	1.47	55	.98	1.51	55	1.09	1.68	55	1.02	1.56
60	.98	1.60	60	.93	1.40	60	.94	1.45	60	1.04	1.60	60	.98	1.50
65	.94	1.53	65	.89	1.34	65	.90	1.40	65	.99	1.53	65	.94	1.44
70	.90	1.46	70	.85	1.29	70	.87	1.35	70	.95	1.46	70	.91	1.39
75	.86	1.41	75	.82	1.24	75	.84	1.30	75	.91	1.41	75	.88	1.35
80	.83	1.35	80	.79	1.20	80	.82	1.26	80	.88	1.35	80	.85	1.31
85	.80	1.31	85	.77	1.16	85	.80	1.23	85	.85	1.31	85	.83	1.27
SLOPE = .580			SLOPE = .550			SLOPE = .480			SLOPE = .580			SLOPE = .480		

RCFC & WCD

HYDROLOGY MANUAL

STANDARD INTENSITY–DURATION CURVES DATA

PLATE D-4.1 (2 of 6)



LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

RCFC & WCD

HYDROLOGY MANUAL

N

0 FEET 5000

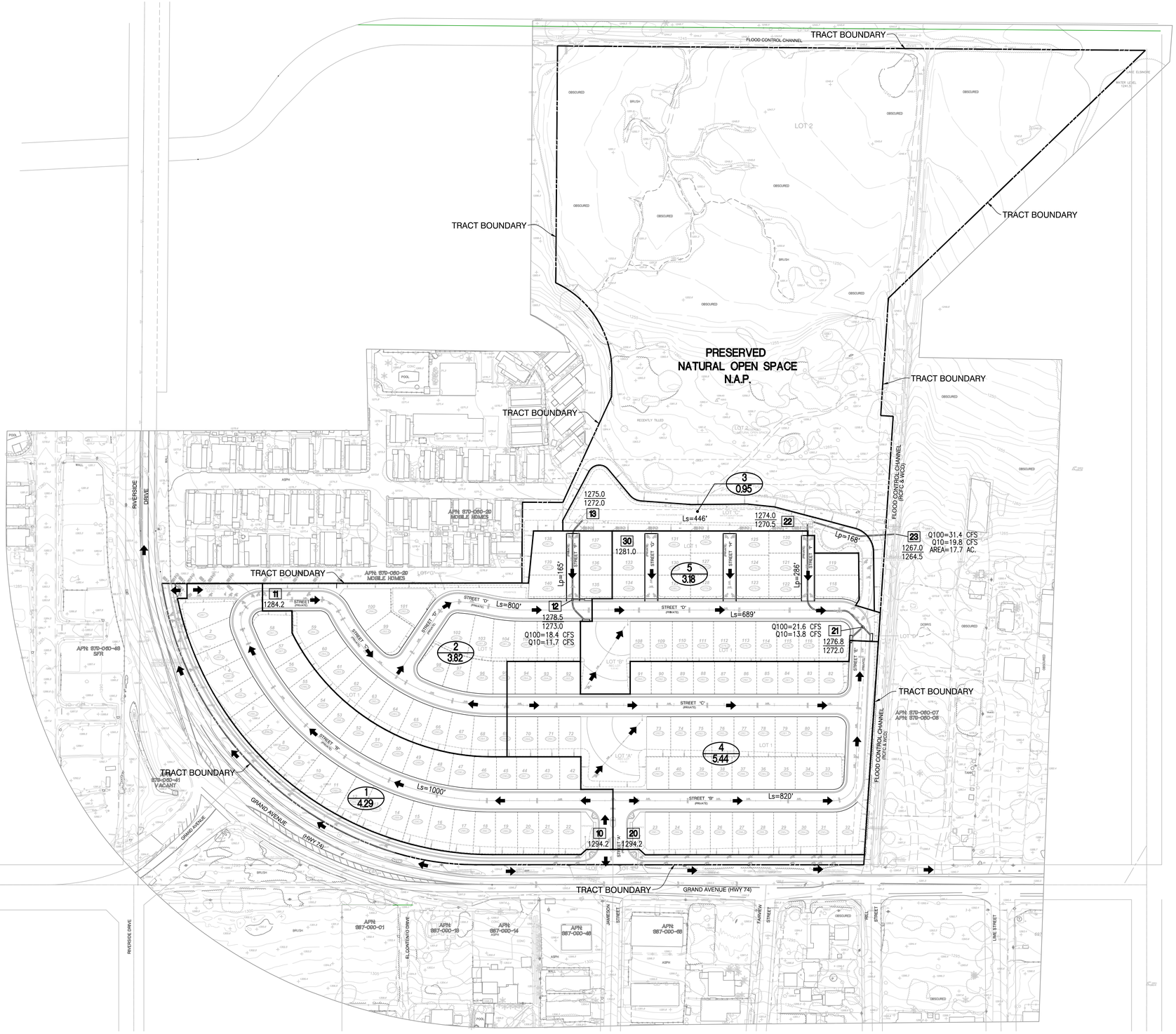
HYDROLOGIC SOILS GROUP MAP FOR ALBERHILL

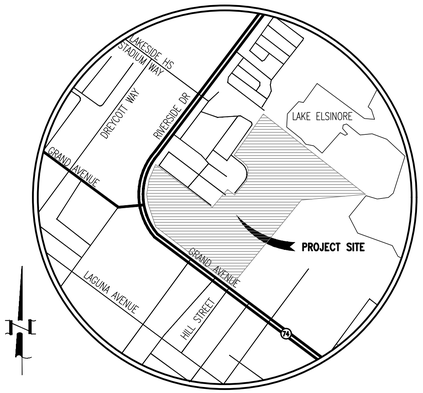
PLATE C-1.40

Appendix C

POCKET MAP EXHIBIT

MDS CONSULTING
MORSE SCHULTZ
17320 Redhill Ave.
Suite 350
Irvine, CA 92614
Voice: 949-251-8821
FAX: 949-251-0516
PLANNERS ENGINEERS SURVEYORS





VICINITY MAP

N.T.S.

2006 THOMAS BROTHERS
MAP BOOK, PAGES 865, GRID H6

NOTE:

SOIL TYPE "B"

LEGEND

1 / 1.0	DRAINAGE AREA No. / DRAINAGE AREA (ACRE)
25 / 485.3 / 476.0	NODE NUMBER / FINISH SURFACE ELEVATION / INVERT ELEVATION
28 / 485.3	NODE NUMBER / FINISH SURFACE ELEVATION
←	DIRECTION OF FLOW
	DRAINAGE AREA BOUNDARY
Lp=25'	LENGTH OF PIPE (FEET)
Ls=120'	SURFACE FLOW LENGTH (FEET)

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

APPLICANT/DEVELOPER/OWNER

tri pointe HOMES
1250 Corona Pointe Court
Suite 600
Corona, CA 92879
(951) 428-4400

MDS CONSULTING
MORSE SCHULTZ
17320 Redhill Ave.
Suite 350
Irvine, CA 92614
Voice: 949-251-8821
FAX: 949-251-0516
PLANNERS ENGINEERS SURVEYORS

PLATE 1

REGISTERED PROFESSIONAL ENGINEER
EDWARD J. LEATH
No. 052496
Exp. 12-31-22
CIVIL
STATE OF CALIFORNIA

TENTATIVE TRACT NO. 38116
LAKESIDE
PROPOSED HYDROLOGY MAP

Date	By	REVISIONS	App'd