PRELIMINARY
HYDROLOGY AND DRAINAGE STUDY
FOR
MASS GRADING
APN 909-060-044
CITY OF MURRIETA

PREPARED BY

RDS And Associates

Civil Engineering
Project Management
Construction Management

RICH SOLTYSIAK
RCE NO. 37233

REGISTERED PROFESSIONAL ENGINEER
RICHARD D. SOLTYSIAK
No. 37233
EXP. 06-30-18
STATE OF CALIFORNIA

FEBRUARY 1, 2018

30519 Wailea Court **Temecula, California 92592** **(951) 691-7706**

I. BACKGROUND

The purpose of this preliminary hydrology study is to demonstrate that the proposed mass grading for APN 909-060-044 will not adversely impact existing off-site drainage facilities or adjacent properties.

APN 909-060-044 is a 10.07-acre site located along Adams Avenue approximately xxx-ft north of Elm Street in the City of Murrieta, California. The site is bordered by vacant property to the north, and Adams avenue to the west.

Ultimately APN 909-060-044 is proposed to be built out as commercial building type uses and is consistent with the City of Murrieta General Plan and Land Use.

Existing Drainage

Currently a remnant of Yoder wash drains from north to south through the middle of the site from the southerly border of the existing Pony League Baseball complex at Fig Street to Larchmont Channel. Yoder Wash has been severed by the Pony League Baseball complex to the north and the Elm Street commercial project to the south. The upstream portion of Yoder Wash has been intercepted by existing drainage improvements at Guava Street.

Currently an interim outlet for the Fig Street Storm Drain outlets onto a Rancho California Water District Well site facility to the east of the existing Pony League Baseball complex at Fig Street. This interim outlet drains to a Rancho California Water District basin that also serves a well site blow off.

Proposed Drainage

In the developed condition, onsite graded pad will sheet flow easterly and westerly. The flows will collect at approximately the southeasterly and southwesterly corners and discharge into Larchmont Channel via temporary steel pies per CASCA BMP EC-11.

The graded site will incorporate erosion control measures and comply with water quality requirements by filing an NOI and preparing a SWPPP that will adopt appropriate erosion control measures such as silt fencing, gravel bag berms, and hydro seeding.

II. PURPOSE OF STUDY

This hydrology report is intended to support the he proposed mass grading for APN 909-060-044.

III. METHODOLOGY

The hydrology report incorporates a CivilCADD/Civil Design Computer Program based on the Riverside County Flood Control and Water Conservation Rational Method Hydrology. This computer program requires input data for rainfall, soil type, type of development, and topographic data for the study area.

Rainfall Data: Standard intensity-duration curve data generated from Plate D-4.1 of the Riverside County Flood Control and Water Conservation Rational Hydrology Manual for the Murrieta area was used.

Soil Type Data: The soil type was obtained from the Hydrologic Soils Group Map within the Riverside County Flood Control and Water Conservation Rational Hydrology Manual. A copy of this map (Plate 1.52) is included within this report. The soil type obtained from the Hydrologic Soils Group Map was determined to be type BC.

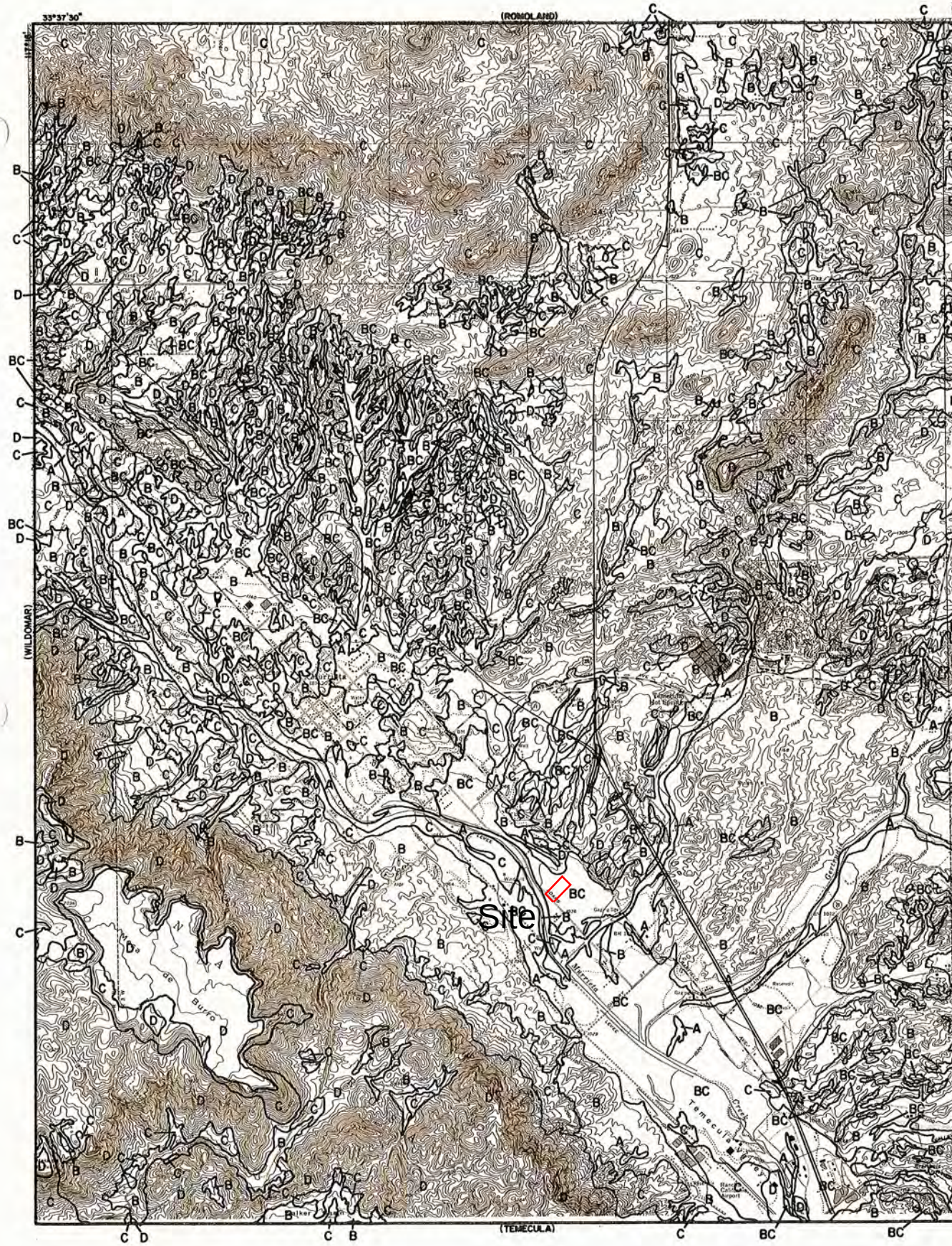
Type of Development: This project phase only includes the mass grading of the site. Ultimately entitlements will be pursued to build commercial buildings. Therefore the hydrology report incorporates factors that generate discharges representing a graded site only.

Topographic Data: The Hydrology Map, Exhibit defines the subareas and contains information used as the basis of generating the project hydrology study.

IV. SUMMARY OF RESULTS

The following presents the results of the 10 and 100-yr 1-hr frequency storms analyzed utilizing Rational Method Hydrology.

Storm Event	Subarea A	Subarea B	Offsite
10-Year	**3.3 cfs**	**3.1 cfs**	**10.6 cfs**
100-Year	**5.16 cfs**	**4.8 cfs**	**16.4 cfs**



LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

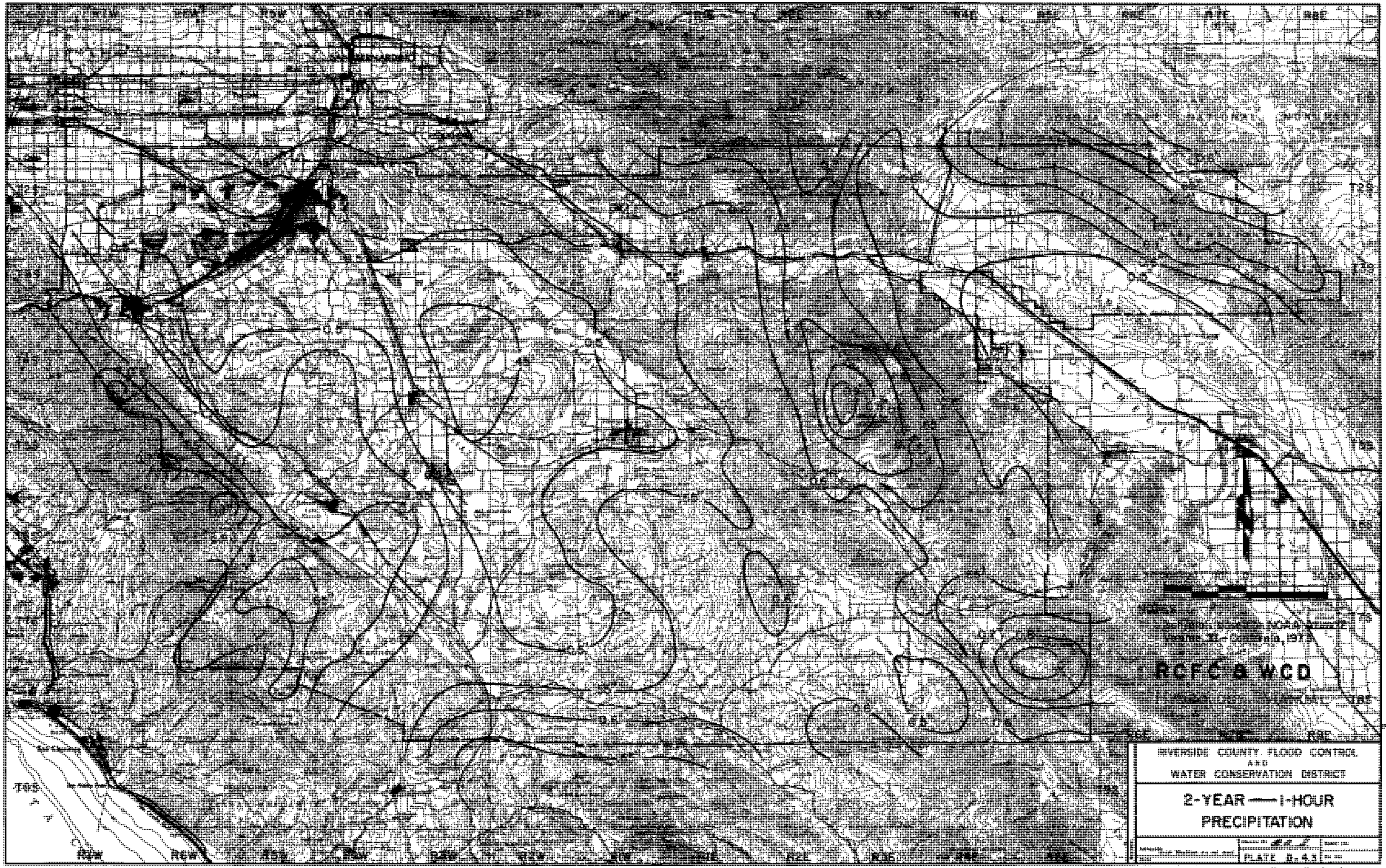
RCFC & WCD

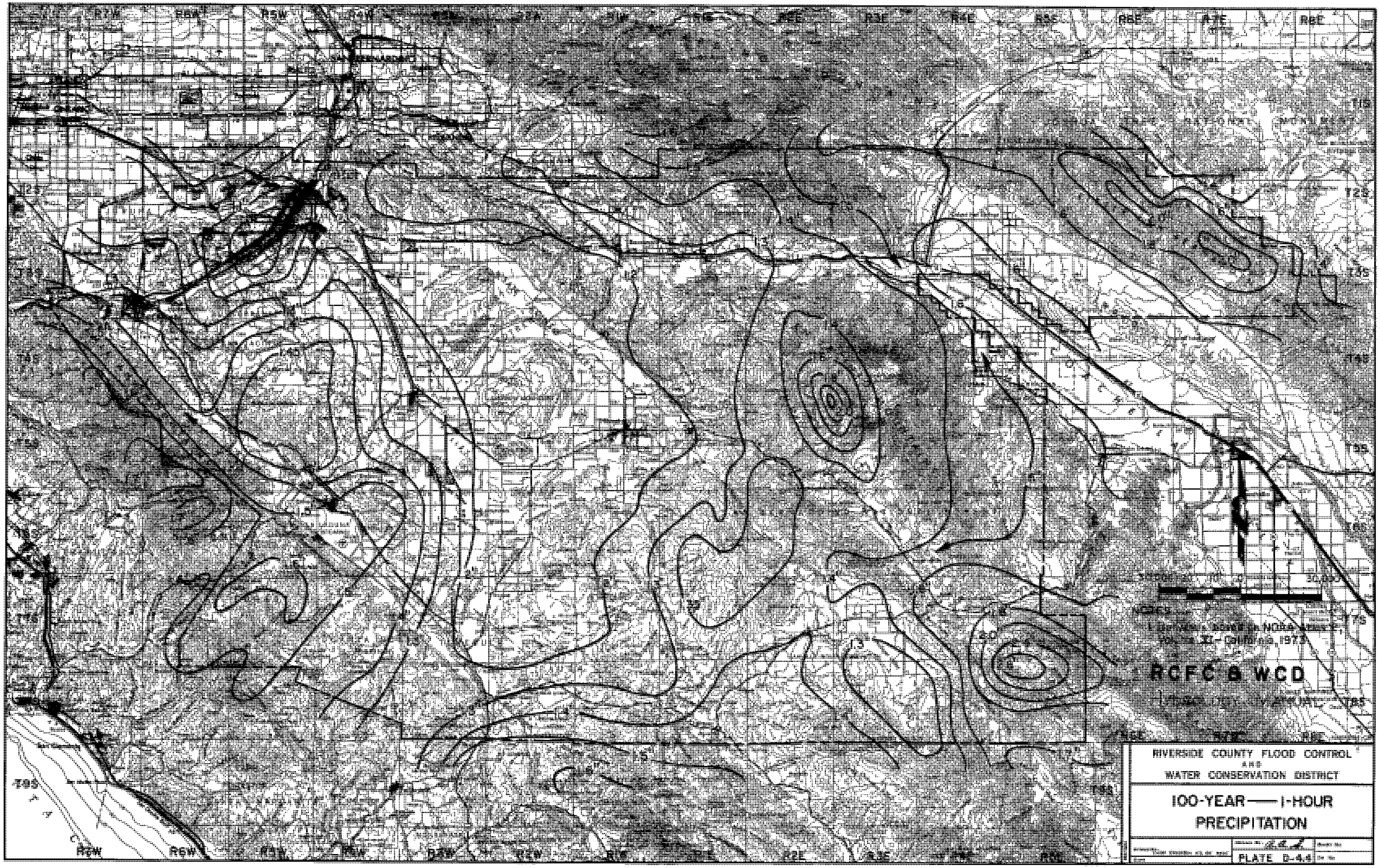
HYDROLOGY MANUAL

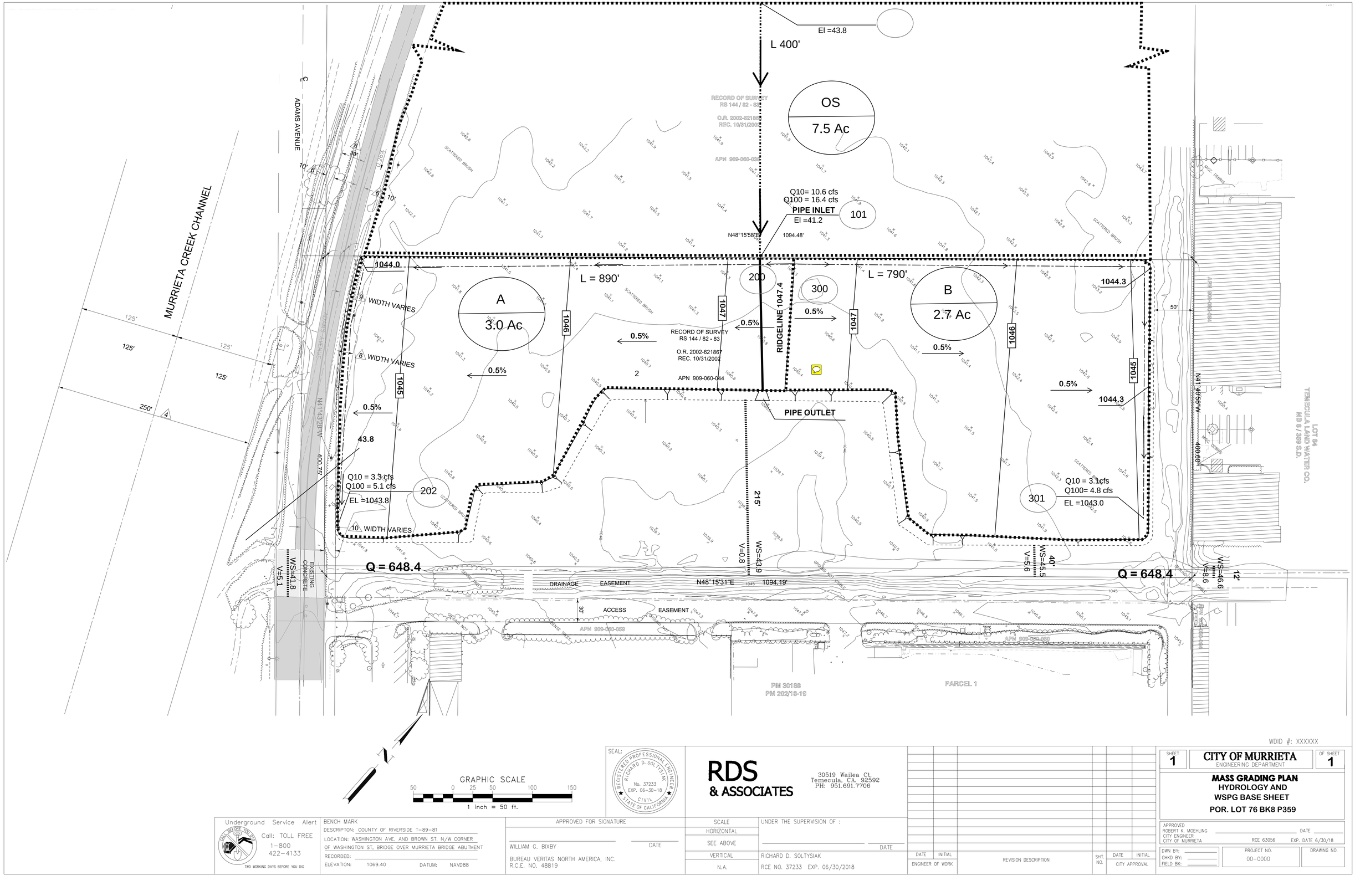
N

0 FEET 5000

HYDROLOGIC SOILS GROUP FOR MURRIETA


RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
2-YEAR — 1-HOUR
PRECIPITATION
PLATE D-4.3
RCFC & WCD
NOTES
Isohyetals based on NOAA Atlas 2
Volume XI - California, 1973


RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
100-YEAR — 1-HOUR
PRECIPITATION
PLATE D-4.4
RCFC & WCD



GRAPHIC SCALE
50 0 25 50 100 150
1 inch = 50 ft.

WDID #: XXXXXX

SEAL: REGISTERED PROFESSIONAL ENGINEER · RICHARD D. SOLTYSIAK · No. 37233 · EXP. 06-30-18 · CIVIL · STATE OF CALIFORNIA

RDS & ASSOCIATES
30519 Wailea Ct.
Temecula, CA. 92592
PH: 951.691.7706

SHEET 1 | OF SHEET 1

CITY OF MURRIETA
ENGINEERING DEPARTMENT

MASS GRADING PLAN
HYDROLOGY AND WSPG BASE SHEET
POR. LOT 76 BK8 P359

Underground Service Alert
Call: TOLL FREE 1-800 422-4133
TWO WORKING DAYS BEFORE YOU DIG

BENCH MARK
DESCRIPTON: COUNTY OF RIVERSIDE T-89-81
LOCATION: WASHINGTON AVE. AND BROWN ST. N/W CORNER OF WASHINGTON ST, BRIDGE OVER MURRIETA BRIDGE ABUTMENT
RECORDED:
ELEVATION: 1069.40 DATUM: NAVD88

APPROVED FOR SIGNATURE
WILLIAM G. BIXBY — DATE
BUREAU VERITAS NORTH AMERICA, INC.
R.C.E. NO. 48819

SCALE
HORIZONTAL
SEE ABOVE
VERTICAL
N.A.

UNDER THE SUPERVISION OF :
DATE
RICHARD D. SOLTYSIAK
RCE NO. 37233 EXP. 06/30/2018

DATE	INITIAL	REVISION DESCRIPTION	SHT. NO.	DATE	INITIAL

ENGINEER OF WORK — CITY APPROVAL

APPROVED
ROBERT K. MOEHLING — DATE
CITY ENGINEER
CITY OF MURRIETA RCE 63056 EXP. DATE 6/30/18

DWN BY:
CHKD BY:
FIELD BK:
PROJECT NO. 00-0000
DRAWING NO.

10 YEAR STORM

CTL	2.000	1.000	10.000	0.000	0.000	3.480	1.300
CTL	0.550	0.000	0.000	2.000	17.000	1.000	0.000
PTS	1.000	100.000	101.000	43.800	41.200	400.000	0.000
INA	10.000	7.500	0.000	0.500	0.500	0.000	0.000
INA	1.000	0.000	82.000	0.000	0.000	0.000	0.000
PTS	1.000	200.000	201.000	47.400	43.800	890.000	0.000
INA	10.000	3.000	0.000	0.500	0.500	0.000	0.000
INA	1.000	0.000	82.000	0.000	0.000	0.000	0.000
PTS	1.000	300.000	301.000	47.400	44.000	790.000	0.000
INA	10.000	2.700	0.000	0.500	0.500	0.000	0.000
INA	1.000	0.000	82.000	0.000	0.000	0.000	0.000

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2001 Version 6.4
Rational Hydrology Study Date: 02/01/18
File:adams1010yr.out

Adams 10
Mass Grading
10-Yr Hydrology

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

English (in-lb) Units used in input data file

RDS Associates, Temecula, CA - S/N 936

Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 10.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [Murrieta,Tmc,Rnch CaNorco] area used.
10 year storm 10 minute intensity = 2.360(In/Hr)
10 year storm 60 minute intensity = 0.880(In/Hr)
100 year storm 10 minute intensity = 3.480(In/Hr)
100 year storm 60 minute intensity = 1.300(In/Hr)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.880(In/Hr)
Slope of intensity duration curve = 0.5500

++

Process from Point/Station 100.000 to Point/Station 101.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 400.000(Ft.)
Top (of initial area) elevation = 43.800(Ft.)
Bottom (of initial area) elevation = 41.200(Ft.)
Difference in elevation = 2.600(Ft.)
Slope = 0.00650 s(percent)= 0.65
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 15.941 min.
Rainfall intensity = 1.824(In/Hr) for a 10.0 year storm

```
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.776
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  82.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     10.611(CFS)
Total initial stream area =        7.500(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      200.000 to Point/Station      201.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
Initial area flow distance =   890.000(Ft.)
Top (of initial area) elevation =    47.400(Ft.)
Bottom (of initial area) elevation =    43.800(Ft.)
Difference in elevation =     3.600(Ft.)
Slope =    0.00404  s(percent)=       0.40
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   24.135 min.
Rainfall intensity =      1.452(In/Hr) for a    10.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.749
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  82.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      3.263(CFS)
Total initial stream area =        3.000(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      300.000 to Point/Station      301.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
Initial area flow distance =   790.000(Ft.)
Top (of initial area) elevation =    47.400(Ft.)
Bottom (of initial area) elevation =    44.000(Ft.)
Difference in elevation =     3.400(Ft.)
Slope =    0.00430  s(percent)=       0.43
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   22.728 min.
Rainfall intensity =      1.501(In/Hr) for a    10.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.753
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  82.00
```

Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff =   3.052(CFS)
Total initial stream area =   2.700(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =   13.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number = 82.0

100 YEAR STORM

CTL	2.000	1.000	100.000	0.000	0.000	3.480	1.300
CTL	0.550	0.000	0.000	2.000	17.000	1.000	0.000
PTS	1.000	100.000	101.000	43.800	41.200	400.000	0.000
INA	10.000	7.500	0.000	0.500	0.500	0.000	0.000
INA	1.000	0.000	82.000	0.000	0.000	0.000	0.000
PTS	1.000	200.000	201.000	47.400	43.800	890.000	0.000
INA	10.000	3.000	0.000	0.500	0.500	0.000	0.000
INA	1.000	0.000	82.000	0.000	0.000	0.000	0.000
PTS	1.000	300.000	301.000	47.400	44.000	790.000	0.000
INA	10.000	2.700	0.000	0.500	0.500	0.000	0.000
INA	1.000	0.000	82.000	0.000	0.000	0.000	0.000

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2001 Version 6.4
Rational Hydrology Study Date: 02/01/18
File:adams10100yr.out

Adams 10
Mass Grading
100-Yr Hydrology

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

English (in-lb) Units used in input data file

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Rational Method Hydrology Program based on
Riverside County Flood Control & Water Conservation District
1978 hydrology manual

Storm event (year) = 100.00 Antecedent Moisture Condition = 2

Standard intensity-duration curves data (Plate D-4.1)
For the [Murrieta,Tmc,Rnch CaNorco] area used.
10 year storm 10 minute intensity = 2.360(In/Hr)
10 year storm 60 minute intensity = 0.880(In/Hr)
100 year storm 10 minute intensity = 3.480(In/Hr)
100 year storm 60 minute intensity = 1.300(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.300(In/Hr)
Slope of intensity duration curve = 0.5500

++

Process from Point/Station 100.000 to Point/Station 101.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 400.000(Ft.)
Top (of initial area) elevation = 43.800(Ft.)
Bottom (of initial area) elevation = 41.200(Ft.)
Difference in elevation = 2.600(Ft.)
Slope = 0.00650 s(percent)= 0.65
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration = 15.941 min.
Rainfall intensity = 2.695(In/Hr) for a 100.0 year storm

```
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.812
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  82.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =     16.408(CFS)
Total initial stream area =        7.500(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      200.000 to Point/Station      201.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
Initial area flow distance =   890.000(Ft.)
Top (of initial area) elevation =    47.400(Ft.)
Bottom (of initial area) elevation =    43.800(Ft.)
Difference in elevation =     3.600(Ft.)
Slope =    0.00404  s(percent)=       0.40
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   24.135 min.
Rainfall intensity =      2.145(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.792
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  82.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      5.097(CFS)
Total initial stream area =        3.000(Ac.)
Pervious area fraction = 1.000


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      300.000 to Point/Station      301.000
**** INITIAL AREA EVALUATION ****
------------------------------------------------------------------------
Initial area flow distance =   790.000(Ft.)
Top (of initial area) elevation =    47.400(Ft.)
Bottom (of initial area) elevation =    44.000(Ft.)
Difference in elevation =     3.400(Ft.)
Slope =    0.00430  s(percent)=       0.43
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   22.728 min.
Rainfall intensity =      2.217(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.795
Decimal fraction soil group A = 0.000
Decimal fraction soil group B = 0.500
Decimal fraction soil group C = 0.500
Decimal fraction soil group D = 0.000
RI index for soil(AMC 2)  =  82.00
```

Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff =   4.760(CFS)
Total initial stream area =   2.700(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =   13.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 1.000
Area averaged RI index number = 82.0

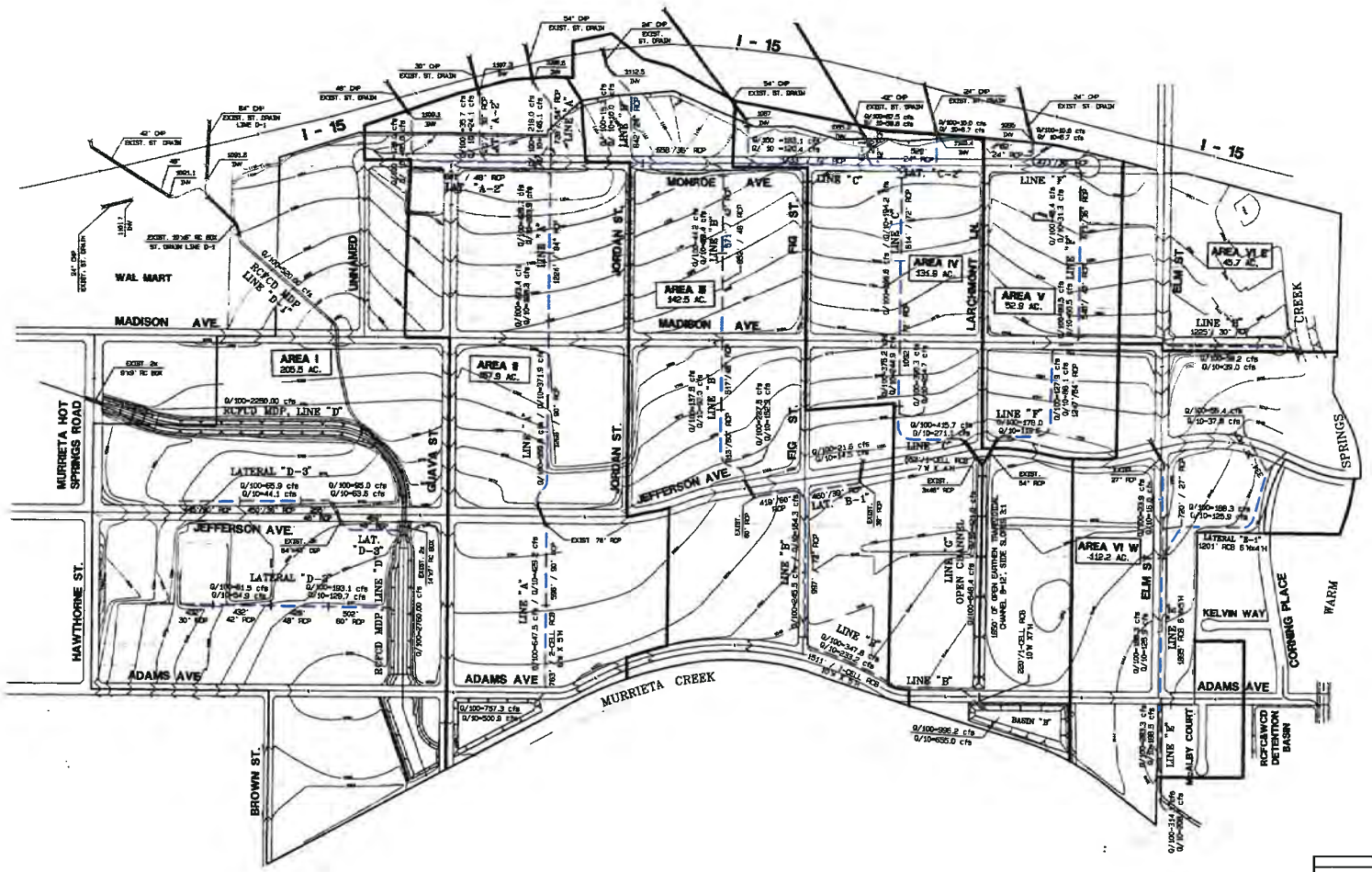
LARCHMONT CHANNEL

100 YEAR

WSPG

RDS & Associates

EXHIBIT III-3
MASTER DRAINAGE PLAN



REVISIONS	DATE	BY

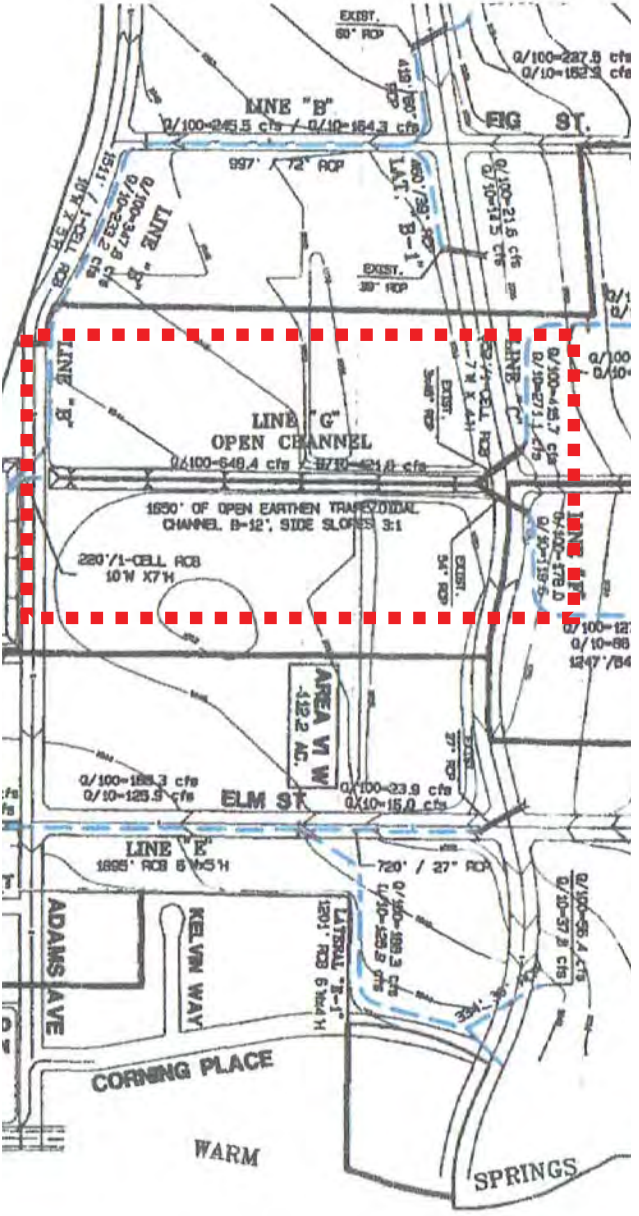
CITY OF MURRIETA

JEFFERSON AVENUE BUSINESS CORRIDOR

SCALE	1" = 400'
DATE	8\15\2001
DESIGNED	
CHECKED	
PLN. CK. REP.	
F.B.	

ALBERT A. WEBB ASSOCIATES
CIVIL ENGINEERS
3788 McCRAY ST.
RIVERSIDE CA. 92506
(909) 686-1070

FILE: I:\2000\00-032\WP\BASE_YEP\00-32MDP_11x17_B.pro
PLOT DATE: 8/6/2001


EXIST. 60" RCP
LINE "B"
Q/100=245.5 cfs / Q/10=164.3 cfs
FIG ST.
997' / 72" RCP
LAT. "B-1"
EXIST. 39" RCP
LINE "B"
LINE "G"
OPEN CHANNEL
Q/100=648.4 cfs / Q/10=421.8 cfs
1550' OF OPEN EARTHEN TRAPEZOIDAL CHANNEL B=12', SIDE SLOPES 3:1
220'/1-CELL RCB 10'W X7'H
EXIST. 54" RCP
LINE "F"
AREA W
ELM ST
Q/100=188.3 cfs
Q/10=125.9 cfs
Q/100=23.9 cfs
Q/10=15.0 cfs
LINE "E"
1895' RCB 6'W X5'H
720' / 27" RCP
LATERAL "E-1"
ADAMS AVE
KELVIN WAY
CORNING PLACE
WARM
SPRINGS

```
[TITLE]
 Larchmont Channel
 Adams 10 Mass Grading
 100 Yr Flow

[REPORT]
COMPOSITE_ONLY

[NETWORK]
**TYPE           NAME
**-----          -------
Outlet           "Node12"
Reach            "Link11"
Reach            "Link10"
Transition       "Link9"
Reach            "Link8"
Transition       "Link7"
Reach            "Link6"
Transition       "Link5"
Reach            "Link4"
Transition       "Link3"
Reach            "Link2"
Transition       "Link1"
Headwork         "Node1"

**BRANCH DEFINITIONS

[OUTLET]
**NAME              STATION    INVERT     GROUND     CHANNEL     WATER
SURFACE
**                             ELEV       ELEV       ID          ELEV
(opt.)
**------------      ---------  ---------- ---------- ----------
----------
"Node12"            0          1041.2     1044       "rapezoidal
Channel 5"0

[HEADWORK]
**NAME              INVERT     GROUND     CHANNEL     FLOW       WATER
SURFACE
**                  ELEV       ELEV       ID                     ELEV
(opt.)
**------------      ---------  ---------- ----------  ----------
----------
"Node1"             1043.2     1049       "rapezoidal Channel 1"648.4
1047.4

[WALLENTRANCE]
**NAME              INVERT     GROUND     CHANNEL     LOSS
**                  ELEV       ELEV       ID
COEFFICIENT(opt.)
**------------      ---------  ---------- ----------  --------------
```

```
[WALLEXIT]
**NAME              INVERT     GROUND     CHANNEL     LOSS
**                  ELEV       ELEV       ID
COEFFICIENT(opt.)
**------------      ---------  ---------- ----------  --------------

[BRIDGEENTRANCE]
**NAME              INVERT     GROUND     CHANNEL     REDUCTION
**                  ELEV       ELEV       ID          FACTOR(opt.)
**------------      ---------  ---------- ----------  --------------

[BRIDGEEXIT]
**NAME              INVERT     GROUND     CHANNEL     REDUCTION
**                  ELEV       ELEV       ID          FACTOR(opt.)
**------------      ---------  ---------- ----------  --------------

[JOIN]
**NAME              INVERT     GROUND     CHANNEL     LENGTH
MANNINGS n NUMBER OF  CONFLUENCE
**                  ELEV       ELEV       ID
BRANCHES   ANGLE
**------------      ---------  ---------- ----------  ----------
---------- ---------- ----------

[JUNCTION]
**Name              INVERT     GROUND     CHANNEL     LENGTH
MANNINGS n NUMBER OF  CONFLUENCE FLOW
**                  ELEV       ELEV       ID
LATERALS   ANGLE
**------------      ---------  ---------- ----------  ----------
---------- ---------- ---------- ----------

[TRANSITION]
**NAME              INVERT     GROUND     CHANNEL     LENGTH
MANNINGS n
**                  ELEV       ELEV       ID
**------------      ---------  ---------- ----------  ----------
----------
"Link1"             1043.2     1049       "rapezoidal Channel 1"50
0.035
"Link3"             1043       1046.7     "rapezoidal Channel 2"50
0.035
"Link5"             1043       1046.8     "rapezoidal Channel 3"360
0.035
"Link7"             1040       1046.4     "rapezoidal Channel 4"310
0.035
"Link9"             1040.2     1044       "rapezoidal Channel 3"300
0.035

[REACH]
**NAME              INVERT     GROUND     CHANNEL     LENGTH
```

```
MANNINGS n CURVE      ANGLE      NUMBER
**                  ELEV       ELEV       ID
(opt)      POINT(opt) MANHOLES(opt)
**------------      ---------  ---------- ----------  ----------
---------- ---------- ---------- ----------
"Link2"             1043       1046.7     "rapezoidal Channel 2"20
0.035      0          0          0
"Link4"             1043       1046.8     "rapezoidal Channel 3"20
0.035      0          0          0
"Link6"             1040.2     1046.9     "rapezoidal Channel 4"20
0.035      0          0          0
"Link8"             1040       1046.4     "rapezoidal Channel 3"20
0.015      0          0          0
"Link10"            1041.2     1044       "rapezoidal Channel 5"20
0.015      0          0          0
"Link11"            1041.5     1044       "rapezoidal Channel 5"60
0.015      0          0          0

[CHANNEL]
**REGULAR TYPES 1-4
**ID      TYPE HEIGHT     WIDTH      LEFT       RIGHT      NUMBER
AVG PIER   INVERT
**                                   SLOPE      SLOPE      PIERS
WIDTH      CROSS FALL
**------  ---- ---------- ---------- ---------- ---------- ----------
---------- ----------
"rapezoidal Channel 5"1   1.5       200       0.02       0.02        0
0           0.02
"rapezoidal Channel 1"1   6         12        3          3           0
0           0
"rapezoidal Channel 2"1   6         200       0.01       3           0
0           0
"rapezoidal Channel 3"1   6         40        2          3           0
0           0
"rapezoidal Channel 4"1   6         215       2          3           0
0           0

**IRREGULAR TYPES 5-6
**ID       TYPE NUMBER     AVG PIER   PIER1      PIER2      PIER3
PIER4      PIER5      PIER6      PIER7      PIER8      PIER9
PIER10
**              PIERS      WIDTH      ELEV       ELEV       ELEV
ELEV       ELEV       ELEV       ELEV       ELEV       ELEV       ELEV
**------   ---- ---------- ---------- ---------- ---------- ----------
---------- ---------- ---------- ---------- ---------- ----------
----------



[POINT]
**ID          XCOORD     YCOORD
**----------- ---------- ----------
```

```
************************************
Water Surface Profile Gradient (WSPG)
XP WSPG
Engine Version 1.3         06/09/2010
XP Software        www.xpsoftware.com
************************************

INPUT FILE
************************************
C:\XPS\wspg2010\Samples\Larchmont Channel.wsx
Computed  02/01/18  09:53:10

TITLE INFORMATION
************************************
 Larchmont Channel
 Adams 10 Mass Grading
 100 Yr Flow

WARNING SUMMARY
************************************
 WARNING 15: Invert elevation of element Link8 is not larger than invert
elevation of the direct downstream element.
 WARNING 15: Invert elevation of element Link10 is not larger than invert
elevation of the direct downstream element.
 WARNING 25: Link type element Link9 has different invert elevation than
its upstream node.

RESULTS
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================================================================
   Main Line
================================================================

 Composite Profile:

ELEMENT    TYPE       STATION    INVERT   GROUND   W.S.      DEPTH
Q        VELOC.  VELOC. ENERGY     SUPER   CRITICAL FROUDE  SLOPE
NORMAL   CROSS
NAME                              ELEV     ELEV     ELEV
HEAD   GRADE LN   ELEV    DEPTH    NUMBER           DEPTH    SECTION
---------- ---------- ---------- -------- -------- --------  --------
-------- ------- ------ ---------- ------  -------- ------  -------
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###
"Node12"   Outlet     0.00       1041.20  1044.00  1041.832   0.632
648.40   5.13    0.41   1042.24    0.000   0.689    0.000   0.00000
0.000    Trapez.open
          "i.p."     38.65      1041.39  1044.19  1042.025   0.632
648.40   5.13    0.41   1042.43    0.000   0.689    1.139   0.00500
0.632    Trapez.open
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          "i.p."     57.24      1041.49  1044.29  1042.143   0.656
648.40   4.94    0.38   1042.52    0.000   0.689    1.076   0.00500
0.632    Trapez.open
"Link11"   Reach      60.00      1041.50  1044.00  1042.188   0.688
648.40   4.71    0.35   1042.53    0.000   0.689    1.002   0.00500
0.632    Trapez.open
          "i.p."     60.13      1041.50  1044.00  1042.222   0.724
648.40   4.48    0.31   1042.53    0.000   0.689    0.929   -0.01500
1.500    Trapez.open
          "i.p."     60.53      1041.49  1043.99  1042.252   0.760
648.40   4.27    0.28   1042.54    0.000   0.689    0.864   -0.01500
1.500    Trapez.open
          "i.p."     61.20      1041.48  1043.98  1042.280   0.798
648.40   4.07    0.26   1042.54    0.000   0.689    0.803   -0.01500
1.500    Trapez.open
          "i.p."     62.13      1041.47  1043.97  1042.306   0.838
648.40   3.87    0.23   1042.54    0.000   0.689    0.746   -0.01500
1.500    Trapez.open
          "i.p."     63.33      1041.45  1043.95  1042.330   0.880
648.40   3.69    0.21   1042.54    0.000   0.689    0.693   -0.01500
1.500    Trapez.open
          "i.p."     64.81      1041.43  1043.93  1042.352   0.924
648.40   3.51    0.19   1042.54    0.000   0.689    0.644   -0.01500
1.500    Trapez.open
          "i.p."     66.55      1041.40  1043.90  1042.372   0.970
648.40   3.34    0.17   1042.55    0.000   0.689    0.599   -0.01500
1.500    Trapez.open
          "i.p."     68.55      1041.37  1043.87  1042.390   1.019
648.40   3.19    0.16   1042.55    0.000   0.689    0.556   -0.01500
1.500    Trapez.open
          "i.p."     70.83      1041.34  1043.84  1042.407   1.070
648.40   3.03    0.14   1042.55    0.000   0.689    0.517   -0.01500
1.500    Trapez.open
          "i.p."     73.37      1041.30  1043.80  1042.422   1.123
648.40   2.89    0.13   1042.55    0.000   0.689    0.481   -0.01500
1.500    Trapez.open
          "i.p."     76.18      1041.26  1043.76  1042.436   1.179
648.40   2.75    0.12   1042.55    0.000   0.689    0.447   -0.01500
1.500    Trapez.open
          "i.p."     79.26      1041.21  1043.71  1042.449   1.238
648.40   2.62    0.11   1042.56    0.000   0.689    0.415   -0.01500
1.500    Trapez.open
"Link10"   Reach      80.00      1041.20  1044.00  1042.452   1.252
648.40   2.59    0.10   1042.56    0.000   0.689    0.408   -0.01500
1.500    Trapez.open
"Link9"    Transition 380.00     1040.20  1044.00  1043.198   2.998
648.40   4.55    0.32   1043.52    0.000   1.931    0.499   -0.00333
0.000    Trapez.open
          "i.p."     390.93     1040.09  1043.89  1043.239   3.148
648.40   4.30    0.29   1043.53    0.000   1.931    0.461   -0.01000
6.000    Trapez.open
"Link8"    Reach      400.00     1040.00  1046.40  1043.267   3.267
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648.40   4.12    0.26   1043.53    0.000   1.931    0.434   -0.01000
6.000    Trapez.open
"Link7"    Transition 710.00     1040.00  1046.40  1043.938   3.938
648.40   0.73    0.01   1043.95    0.000   0.654    0.066   0.00000
0.000    Trapez.open
           "i.p."     727.61     1040.18  1046.58  1043.939   3.763
648.40   0.77    0.01   1043.95    0.000   0.654    0.071   0.01000
0.813    Trapez.open
"Link6"    Reach      730.00     1040.20  1046.90  1043.939   3.739
648.40   0.77    0.01   1043.95    0.000   0.654    0.072   0.01000
0.813    Trapez.open
"Link5"    Transition 1090.00    1043.00  1046.80  1045.194   2.194
648.40   6.50    0.66   1045.85    0.000   1.931    0.818   0.00778
0.000    Trapez.open
           "i.p."     1094.61    1043.00  1046.80  1045.303   2.303
648.40   6.15    0.59   1045.89    0.000   1.931    0.758   0.00000
6.000    Trapez.open
           "i.p."     1101.66    1043.00  1046.80  1045.419   2.419
648.40   5.82    0.53   1045.94    0.000   1.931    0.702   0.00000
6.000    Trapez.open
"Link4"    Reach      1110.00    1043.00  1046.80  1045.520   2.520
648.40   5.56    0.48   1046.00    0.000   1.931    0.658   0.00000
6.000    Trapez.open
"Link3"    Transition 1160.00    1043.00  1046.70  1046.186   3.186
648.40   0.99    0.02   1046.20    0.000   0.687    0.099   0.00000
0.000    Trapez.open
"Link2"    Reach      1180.00    1043.00  1046.70  1046.188   3.188
648.40   0.99    0.02   1046.20    0.000   0.687    0.099   0.00000
6.000    Trapez.open
 HYDRAULIC JUMP  at 1217.83  of length  0.07
          jump data U/S processing: 1217.83    1043.15  1046.85
1043.927   0.776    648.40   58.32   52.82  1096.75    0.000   3.386
32.257  0.00400  0.000    Trapez.open
          jump data D/S processing: 1217.83    1043.15  1046.85
1045.811   2.660    648.40   12.20   2.31   1048.12    0.000   3.386
3.204   0.00400  0.000    Trapez.open
"Link1"    Transition 1230.00    1043.20  1049.00  1046.585   3.385
648.40   8.65    1.16   1047.75    0.000   3.386    1.000   0.00400
0.000    Trapez.open
"Node1"    Headwrk    1230.00    1043.20  1049.00  1046.586   3.386
648.40   8.64    1.16   1047.75    0.000   3.386    0.000   0.00000
0.000    Trapez.open

 *) in the W.S.ELEV column indicates flooding, it is set whenever W.S.ELEV
> GROUND ELEV
    i.p. = intermediate point processing results for reaches
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