Appendix G:
Hydrology Study

HYDROLOGY STUDY

For

Proposed Gas Station, Convenience Store, and Carwash

Pennsylvania Avenue and 10 Freeway

Beaumont, CA., 92223

Prepared for:

Mr. Jaswinder Sondh

17175 Colina Road

Hacienda Heights, Ca., 91745

Telephone Number: (626) 224-4636

Prepared By:

SPB Engineering, Inc.

1391 Windemere Lane

Tustin, CA., 92780

March 2022

TABLE OF CONTENTS

1.0 INTRODUCTION

This report has been prepared to analyze the hydrological effects of the proposed site development. The existing and proposed site flows will be calculated for each exit point from the property. The existing drainage will be compared to the post developed run-off and a solution will be presented to mitigate increased run-off.

1.1 Project Description

The existing site is 1.33 gross acres of vacant land; however, a portion is dedicated for street improvements, therefore the site is 1.2 net acres of land. Runoff, in the existing condition sheet flows from the north side of the property towards the south end of the property and discharges into a concrete channel located within the Caltrans right-of-way along the base of the Interstate 10 freeway which runs north and south. Stormwater is then conveyed via this concrete channel which discharges to a reinforced concrete pipe (RCP) that conveys stormwater under the freeway and daylights on the south of the freeway.

Proposed site improvements consist of constructing a gas station, convenience store, a carwash, and associated landscaped areas, and parking. For water quality requirements this project will utilize a combination of site design/LID (Low Impact Development), source control and treatment control BMP (where feasible and applicable) and construct storm chambers to retain stormwater. Natural drainage was maintained where feasible. All hardscape areas are directed to landscaped areas where feasible to allow stormwater to be conveyed across landscaped swales as pre-treatment. However, much of this site will sheet flow into concrete v-ditches which convey stormwater to catch basins with inserts, stormwater will then enter infiltration chambers via pipe flow. Stormwater is then discharged to another catch basin which overflows and discharges onto a concrete apron.

2.0 METHODOLOGY OF HYDROLOGY STUDY

Entire site is approximately 1.2 acres; therefore, this study utilizes computational techniques and criteria for the estimation of runoff, discharges, and volumes as outlined in the Riverside County Hydrology Manual. The Rational Method (Q=CIA) is used to estimate peak discharges, volumes, velocities and flow durations for the 10-year and 100-year storm frequencies. Data from Riverside County hydrology Manual were collected and input into CivilDesign Hydrology/Hydraulics-Riverside County (CivilDesign) to calculate runoff from storm events.

The following criteria were used to collect data and input into CivilDesign to calculate existing and developed runoff coefficient (C-value), time of concentration (Tc), Intensity (I) and peak flow rates (Q). Refer to Appendix A for the hydrology calculations.

- Existing and developed Initial Sub-Area Time of Concentration's were computed using the Riverside County's Time of Concentration Nomograph, Figure D-1.
- Intensity values were estimated using the Riverside County Intensity-Duration Curves, Plate D-4.1 (6 of 6).

- Soil classification was based on Natural Resource Conservation Service (NRCS) Web Soil Survey. All soil types within the project limits are identified as Hydrologic Group D. A copy of the NRCS Web Soil Survey is included in Appendix C.

- Runoff coefficients were calculated by CivilDesign but are based on Riverside County's Hydrology Manual Plate D-5.8 Runoff Coefficient Curves.
- Runoff was estimated using the Riverside County's Hydrology Manual and CivilDesign.

The Rational Method (Q=CIA) was used to determine existing and developed storm flows for this project. Flows were estimated using a time of concentration and runoff coefficient for existing and proposed conditions as summarized in Appendix 1 and Appendix 2, respectively. Utilizing information from the latest grading plan and site visits existing drainage patterns and proposed data was able to be collected and input into CivilDesign to calculate discharges for the 10-year and 100-year storm frequencies.

Refer to Exhibits D and E for the existing and proposed conditions, on site systems and Tables 1 and 2 for existing and developed peak flow runoff.

3.0 PRE-DEVELOPMENT CONDITION

3.1 Pre-Development Conditions

Existing drainage conveys water as sheet flow from the north end of the property towards the south end of the property and discharges into a concrete channel within Caltrans right of way. The concrete channel conveys stormwater and discharges into a culvert that conveys stormwater under the Interstate 10 Freeway. There is run-on to the site via an adjacent property on the north end of this site that is approximately 1.33 acres. This drainage will be diverted to the east towards the street: Pennsylvania Avenue and will be conveyed southerly via the new curb and gutter.

3.2 Hydrology Calculations

Q = CIA

Q = Peak Discharge [cubic feet per second (cfs)]

C = Coefficient of runoff

I = Rainfall Intensity (inches/hour) corresponding to time of concentration

A = Area (Acres)

Q10 = (0.813) (2.034 in/hr) (1.2 ac) = 2.0 cfs

Q100 = (0.840) (3.017 in/hr) (1.2 ac) = 3.175 cfs

4.2 Post-Development Hydrology Calculations

Q = CIA

Q = Peak Discharge [cubic feet per second (cfs)]

C = Coefficient of runoff

I = Rainfall Intensity (inches/hour) corresponding to time of concentration

A = Area (Acres)

Q10 = (0.883) (2.49 in/hr) (1.2 ac) = 2.637 cfs

Q100 = (0.887) (3.693 in/hr) (1.2 ac) = 3.932 cfs

5.0 COMPARISON OF POST-DEVELOPMENT AND PRE-DEVELOPMENT HYDROLOGIC CONDITIONS

5.1 Hydrologic Conditions of Concern

New development projects typically result in an increase in runoff and/or volume due to increasing impervious footprint. This project is no exception, however, with a combination of site design which includes draining impervious areas to landscaped areas and optimizing sites natural ability to infiltrate the increase in peak runoff and volume of runoff will not pose hydrologic conditions of concern because the peak flow is negligible.

5.2 Mitigation Measures for Hydrologic Conditions of Concern

Based upon these findings, and due to the relatively small drainage area and resulting flows, the development of this site as designed does not pose a hazard to the surrounding property, structures or residents.

6.0 HYDRAULICS CALCULATIONS

6.1 Hydraulic Calculations Methodology

6.2 Results of Hydraulic Calculations

7.0 CONCLUSIONS

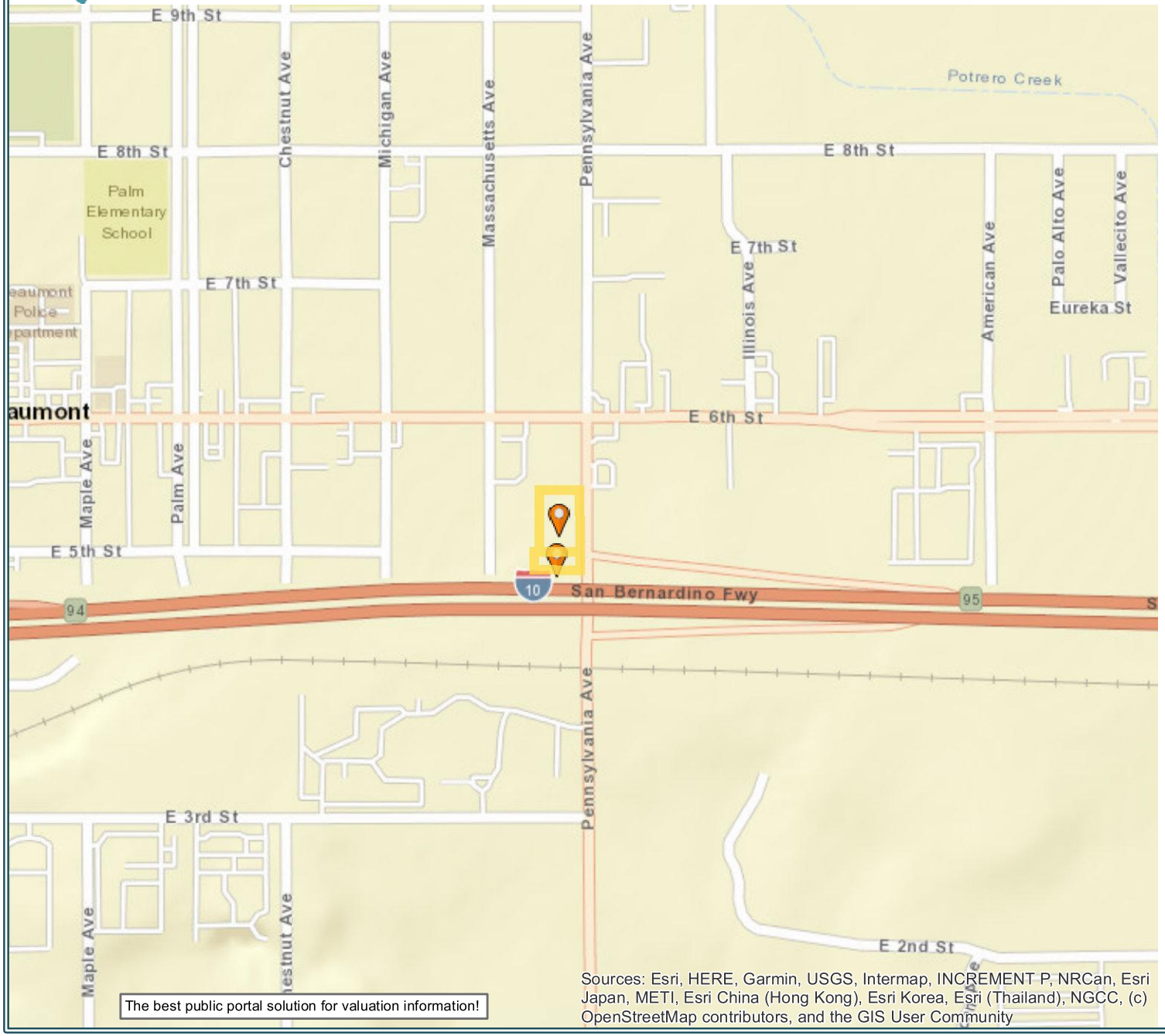
Based upon these findings, and due to the relatively small drainage area and resulting flows, the development of this site as designed does not pose a hazard to the surrounding property, structures or residents.

8.0 EXHIBITS

EXHIBIT A

Aumentum TECHNOLOGIES

Location Map



0 165 330 660 990 1,320 ft

Selection(s)

Selection PIN(s)

N

5/14/2021

The best public portal solution for valuation information!

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

This map and the data contained herein is for demonstration purposes only. Thomson Reuters assumes no liability whatsoever associated with the use or misuse of such data, and disclaims any representation or warranty regarding the completeness or accuracy of the data. Note: Acreage and Square Footage data shown are approximate and may not be consistent with records maintained for appraisal purposes.
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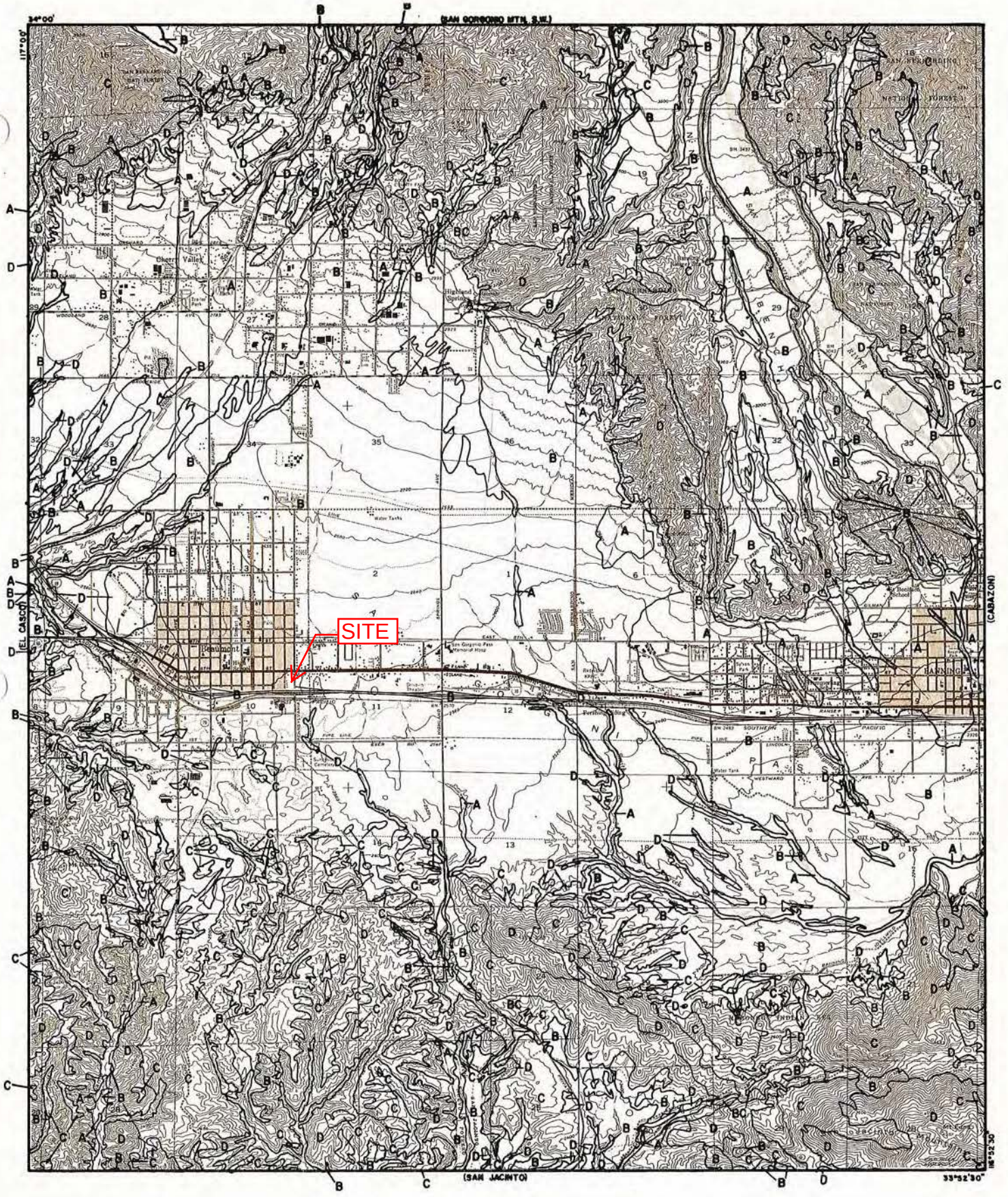
Data sources: Thomson Reuters Customers, Kansas Geospatial Commons (DASC), U.S. Census, esri.

EXHIBIT B



LEGEND

—— SOILS GROUP BOUNDARY

A SOILS GROUP DESIGNATION

RCFC&WCD

HYDROLOGY MANUAL

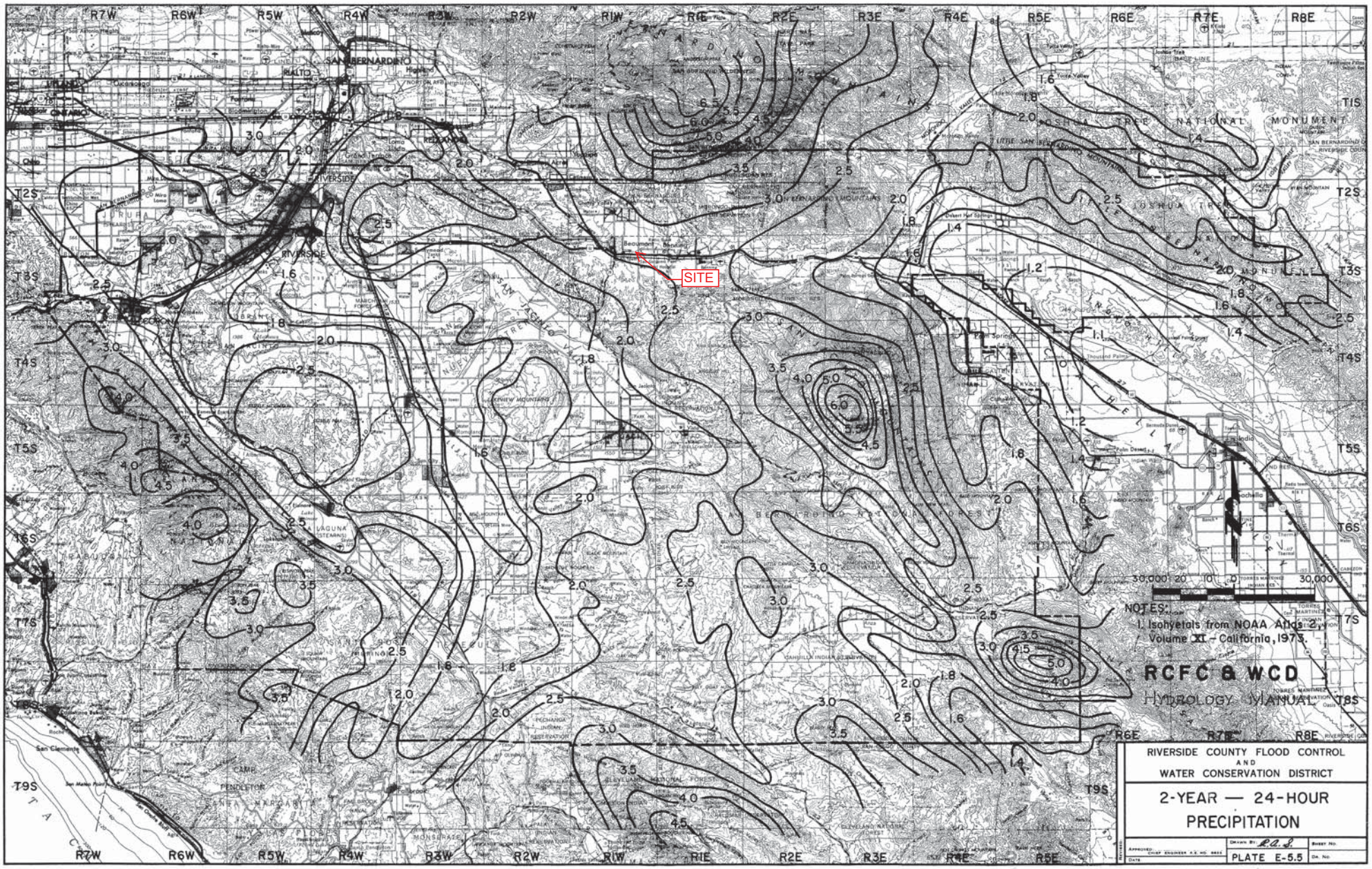
N

0 FEET 5000

HYDROLOGIC SOILS GROUP MAP FOR BEAUMONT

PLATE C-1.19

EXHIBIT C


SITE
NOTES:
1. Isohyetals from NOAA Atlas 2, Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
2-YEAR — 24-HOUR PRECIPITATION
PLATE E-5.5

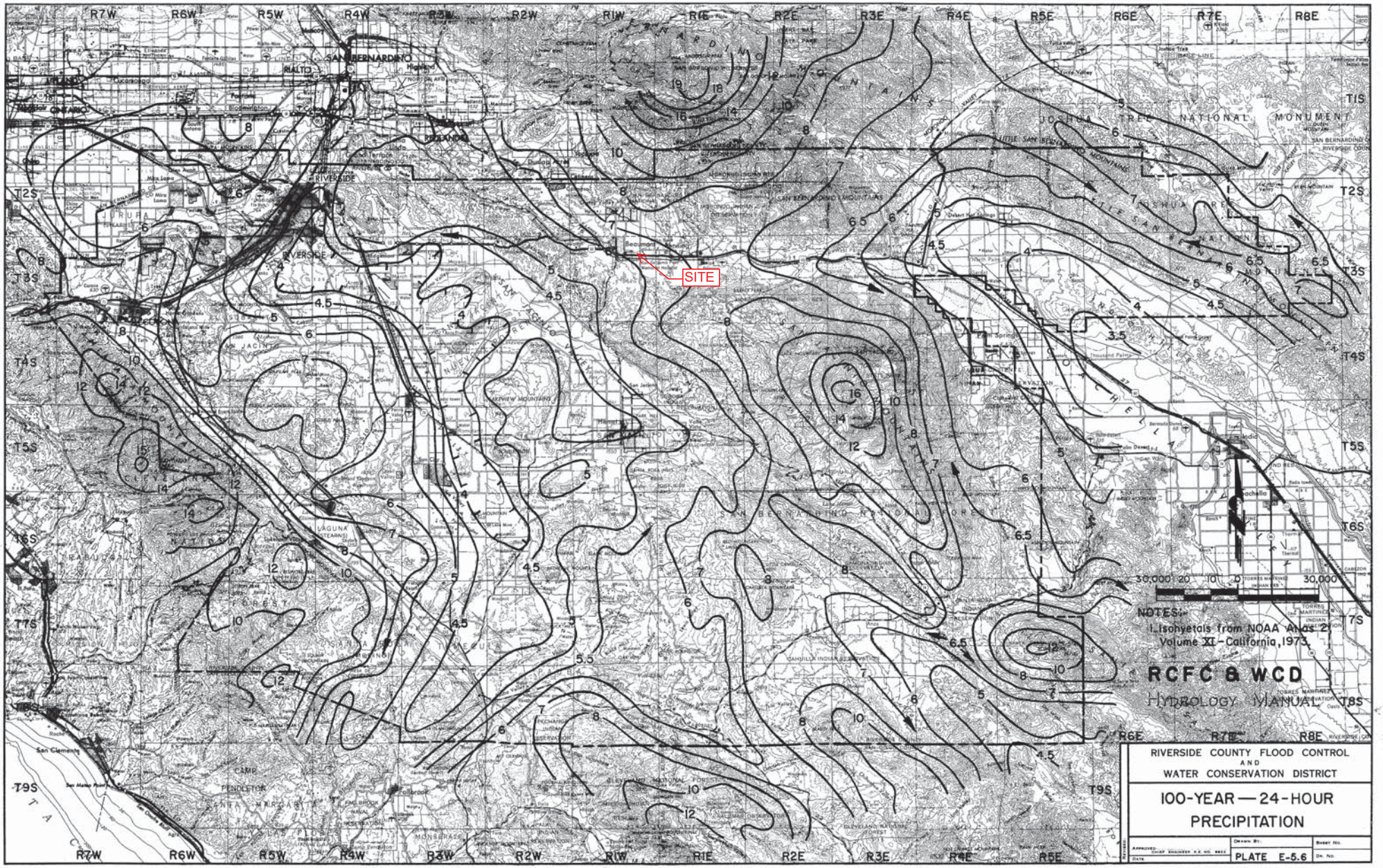
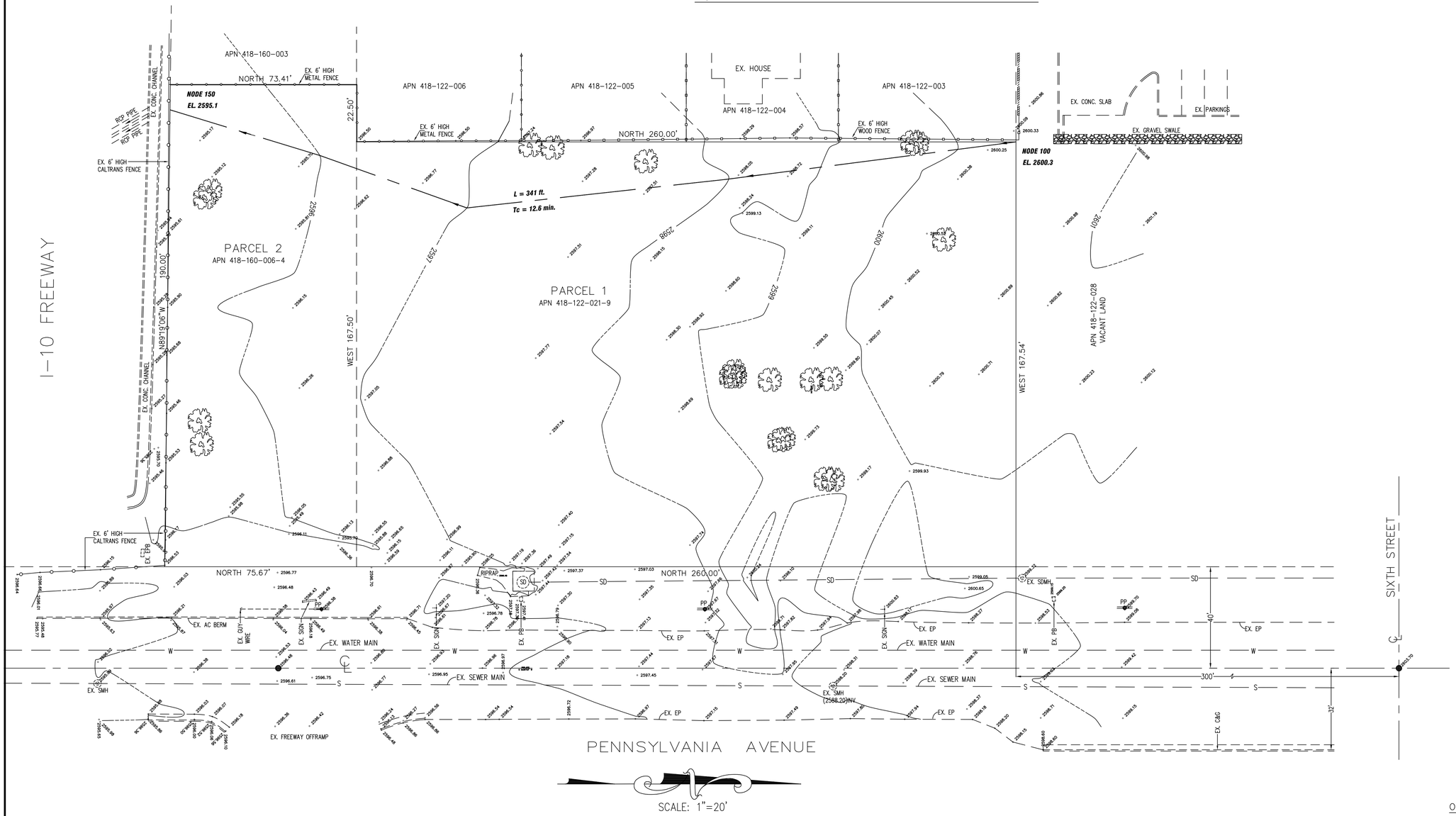

SITE
NOTES:-
1. Isohyetals from NOAA Atlas 2,
Volume XI - California, 1973.
RCFC & WCD
HYDROLOGY MANUAL
RIVERSIDE COUNTY FLOOD CONTROL
AND
WATER CONSERVATION DISTRICT
100-YEAR — 24-HOUR
PRECIPITATION
PLATE E-5.6

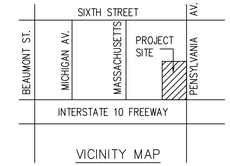
EXHIBIT D

EXISTING

N/W COR. PENSYLVANIA AVE. & 10 FRWY



SCALE: 1"=20'



VICINITY MAP
NOT TO SCALE

LEGEND

FLOWLINE OR SLOPE DIRECTION

LIMIT OF DEVELOPMENT

TABLE 1: PRE-DEVELOPMENT				
EVENT YEAR	Q	C	I	A
10	1.985	0.813	2.034	1.20
100	3.040	0.840	3.017	1.20

OWNER/DEVELOPER

JSI PROPERTY HOLDING, INC.
9484 SHERWOOD DRIVE
RANCHO CUCAMONGA, CA. 91737
CONTACT PERSON: LAKHBIR SONDH
PHONE: (626) 224-4636
EMAIL: jas_sondh@hotmail.com

PLAN PREPARED BY

SPB ENGINEERING, INC.
1391 WINDEMERE LANE
TUSTIN, CA. 92780
PHONE: (714) 931-0912
EMAIL: fiji1961@gmail.com

PREPARED UNDER THE SUPERVISION OF:

05-12-21
DATE

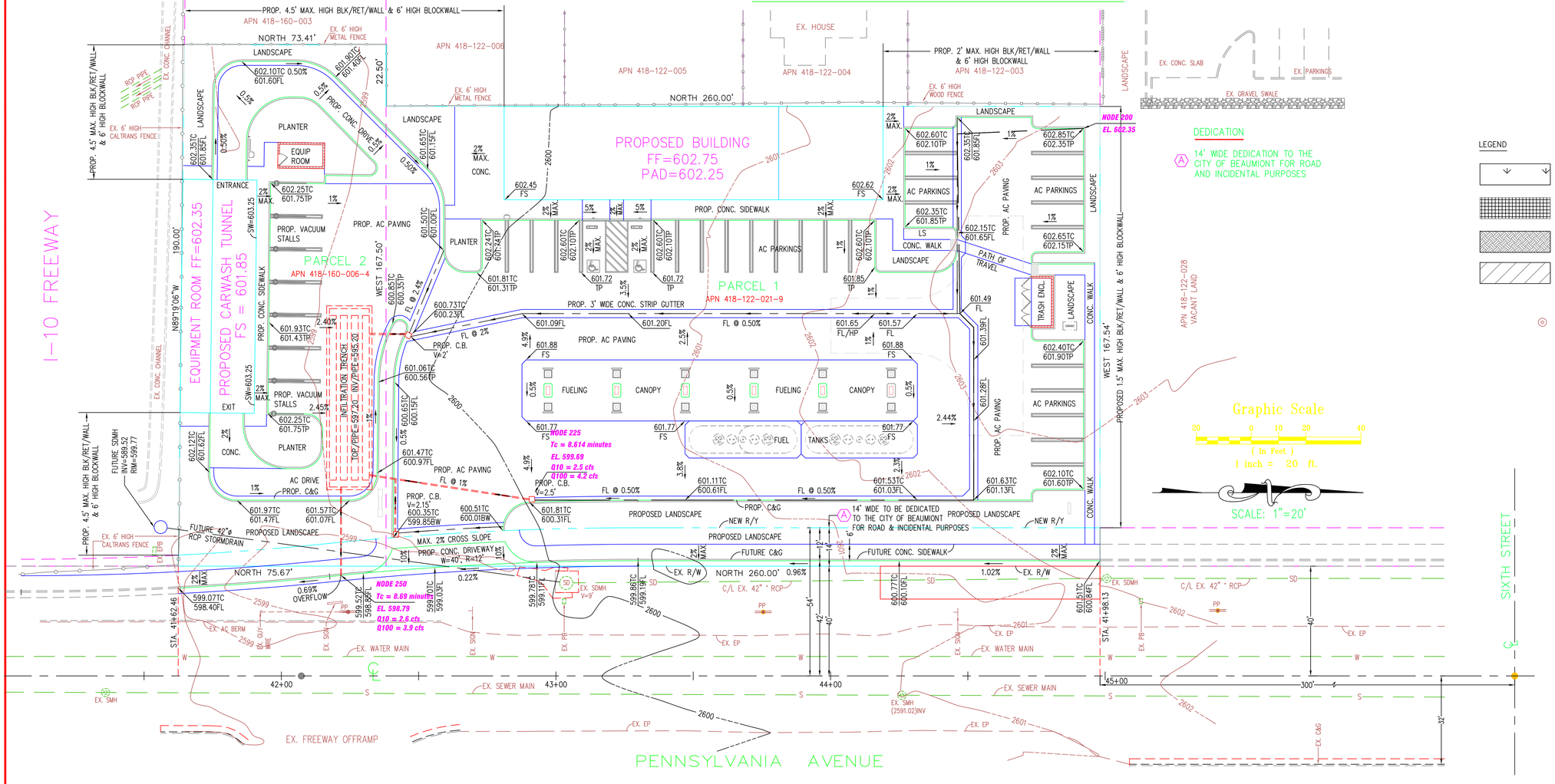
MICHAEL P. ST. JACQUES
R.C.E. 66815 EXPIRES 09-30-22

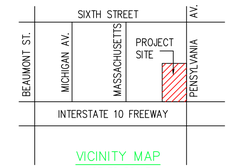
REGISTERED PROFESSIONAL ENGINEER
MICHAEL P. ST. JACQUES
No. C066815
Exp.09-30-22
CIVIL
STATE OF CALIFORNIA

EXHIBIT E

PROPOSED HYDROLOGY

N/W COR. PENSYLVANIA AVE. & 10 FRWY





VICINITY MAP

NOT TO SCALE

DEDICATION

(A) 14' WIDE DEDICATION TO THE CITY OF BEAUMIONT FOR ROAD AND INCIDENTAL PURPOSES

LEGEND

- LANDSCAPE
- STAMPED CONCRETE
- DIRT/EARTH MATERIAL
- ADA PATH OF TRAVEL
- NEW LIGHTS
- AC REMOVE & REPLACE
- AC 2" GRIND & OVERLAY
- FLOWLINE OR SLOPE DIRECTION
- DRAIN INLET/CATCH BASIN
- RD ROOF DRAINS
- DRAINAGE BOUNDARY

Graphic Scale

20 0 10 20 40

(In Feet)

1 inch = 20 ft.

SCALE: 1"=20'

APN 418-122-028 VACANT LAND

TABLE 2: POST-DEVELOPMENT

EVENT YEAR	Q	C	I	A
10	2.6	0.883	2.490	1.20
100	3.9	0.887	3.693	1.20

OWNER/DEVELOPER

JSI PROPERTY HOLDING, INC.
9484 SHERWOOD DRIVE
RANCHO CUCAMONGA, CA. 91737
CONTACT PERSON: LAKHBIR SONDH
PHONE: (626) 224-4636
EMAIL: jas_sondh@hotmail.com

PLAN PREPARED BY

SPB ENGINEERING, INC.
1391 WINDEMERE LANE
TUSTIN, CA. 92780
PHONE: (714) 931-0912
EMAIL: fiji1961@gmail.com

PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER MICHAEL P. ST. JACQUES No. C066815 Exp.09-30-22 CIVIL STATE OF CALIFORNIA

05-12-21

DATE

MICHAEL P. ST. JACQUES
R.C.E. 66815 EXPIRES 09-30-22

APPENDICES

APPENDIX 1

Pre-Development Rational Method

HYDROLOGY CALCULATIONS

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2018 Version 9.0
Rational Hydrology Study Date: 05/13/21 File:Beaumont.out

Existing 10-Year Storm

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

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

Program License Serial Number 6475

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 [Beaumont] area used.
10 year storm 10 minute intensity = 2.300(In/Hr)
10 year storm 60 minute intensity = 0.890(In/Hr)
100 year storm 10 minute intensity = 3.410(In/Hr)
100 year storm 60 minute intensity = 1.320(In/Hr)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.890(In/Hr)
Slope of intensity duration curve = 0.5300

++

Process from Point/Station 100.000 to Point/Station 150.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 341.000(Ft.)

Top (of initial area) elevation = 2600.300(Ft.)
Bottom (of initial area) elevation = 2595.100(Ft.)
Difference in elevation =   5.200(Ft.)
Slope =   0.01525 s(percent)=   1.52
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.610 min.
Rainfall intensity =   2.034(In/Hr) for a   10.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.813
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
RI index for soil(AMC 2) = 86.00
Pervious area fraction = 1.000; Impervious fraction = 0.000
Initial subarea runoff =   1.985(CFS)
Total initial stream area =   1.200(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =   1.20 (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 = 86.0

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2018 Version 9.0
Rational Hydrology Study Date: 05/13/21 File:Beaumont.out

Existing 100-year Storm

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

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

Program License Serial Number 6475

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 [Beaumont] area used.
10 year storm 10 minute intensity = 2.300(In/Hr)
10 year storm 60 minute intensity = 0.890(In/Hr)
100 year storm 10 minute intensity = 3.410(In/Hr)
100 year storm 60 minute intensity = 1.320(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.320(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 100.000 to Point/Station 150.000
**** INITIAL AREA EVALUATION ****

```
Initial area flow distance =   341.000(Ft.)
Top (of initial area) elevation =  2600.300(Ft.)
Bottom (of initial area) elevation =  2595.100(Ft.)
Difference in elevation =     5.200(Ft.)
Slope =    0.01525  s(percent)=       1.52
TC = k(0.530)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =   12.610 min.
Rainfall intensity =      3.017(In/Hr) for a   100.0 year storm
UNDEVELOPED (poor cover) subarea
Runoff Coefficient = 0.840
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
RI index for soil(AMC 2)  =  86.00
Pervious area fraction =  1.000; Impervious fraction =  0.000
Initial subarea runoff =      3.040(CFS)
Total initial stream area =        1.200(Ac.)
Pervious area fraction = 1.000
End of computations, total study area =            1.20 (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 =  86.0
```

APPENDIX 2

Post-Development Rational Method

HYDROLOGY CALCULATIONS

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2018 Version 9.0
Rational Hydrology Study Date: 05/13/21 File:Beaumont.out

Proposed 10-Year Storm

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

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

Program License Serial Number 6475

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 [Beaumont] area used.
10 year storm 10 minute intensity = 2.300(In/Hr)
10 year storm 60 minute intensity = 0.890(In/Hr)
100 year storm 10 minute intensity = 3.410(In/Hr)
100 year storm 60 minute intensity = 1.320(In/Hr)

Storm event year = 10.0
Calculated rainfall intensity data:
1 hour intensity = 0.890(In/Hr)
Slope of intensity duration curve = 0.5300

++

Process from Point/Station 200.000 to Point/Station 225.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 341.500(Ft.)
Top (of initial area) elevation = 602.350(Ft.)

```
Bottom (of initial area) elevation =   600.310(Ft.)
Difference in elevation =     2.040(Ft.)
Slope =    0.00597  s(percent)=       0.60
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.614 min.
Rainfall intensity =      2.490(In/Hr) for a    10.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.883
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
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      2.637(CFS)
Total initial stream area =        1.200(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      225.000 to Point/Station      250.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
________________________________________________________________________
Upstream point/station elevation =   599.690(Ft.)
Downstream point/station elevation =   598.790(Ft.)
Pipe length  =    90.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     2.637(CFS)
Given pipe size =      6.00(In.)
NOTE: Normal flow is pressure flow in user selected pipe size.
The approximate hydraulic grade line above the pipe invert is
    18.967(Ft.)  at the headworks or inlet of the pipe(s)
 Pipe friction loss =     19.867(Ft.)
 Minor friction loss =      0.000(Ft.)  K-factor =   0.00
Pipe flow velocity =     13.43(Ft/s)
Travel time through pipe =    0.11 min.
Time of concentration (TC) =     8.73 min.
End of computations, total study area =            1.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  69.0
```

Riverside County Rational Hydrology Program

CIVILCADD/CIVILDESIGN Engineering Software,(c) 1989 - 2018 Version 9.0
Rational Hydrology Study Date: 05/13/21 File:beaumont.out

Proposed 100-Year Storm

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

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

Program License Serial Number 6475

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 [Beaumont] area used.
10 year storm 10 minute intensity = 2.300(In/Hr)
10 year storm 60 minute intensity = 0.890(In/Hr)
100 year storm 10 minute intensity = 3.410(In/Hr)
100 year storm 60 minute intensity = 1.320(In/Hr)

Storm event year = 100.0
Calculated rainfall intensity data:
1 hour intensity = 1.320(In/Hr)
Slope of intensity duration curve = 0.5300

++
Process from Point/Station 200.000 to Point/Station 225.000
**** INITIAL AREA EVALUATION ****

Initial area flow distance = 341.500(Ft.)
Top (of initial area) elevation = 602.350(Ft.)

```
Bottom (of initial area) elevation =   600.310(Ft.)
Difference in elevation =     2.040(Ft.)
Slope =    0.00597  s(percent)=       0.60
TC = k(0.300)*[(length^3)/(elevation change)]^0.2
Initial area time of concentration =    8.614 min.
Rainfall intensity =      3.693(In/Hr) for a   100.0 year storm
COMMERCIAL subarea type
Runoff Coefficient = 0.887
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
RI index for soil(AMC 2)  =  69.00
Pervious area fraction =  0.100; Impervious fraction =  0.900
Initial subarea runoff =      3.932(CFS)
Total initial stream area =        1.200(Ac.)
Pervious area fraction = 0.100


++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Process from Point/Station      225.000 to Point/Station      250.000
**** PIPEFLOW TRAVEL TIME (User specified size) ****
________________________________________________________________________
Upstream point/station elevation =   599.690(Ft.)
Downstream point/station elevation =   598.790(Ft.)
Pipe length  =    90.00(Ft.)   Manning's N = 0.013
No. of pipes = 1  Required pipe flow  =     3.932(CFS)
Given pipe size =      6.00(In.)
NOTE: Normal flow is pressure flow in user selected pipe size.
The approximate hydraulic grade line above the pipe invert is
    43.287(Ft.)  at the headworks or inlet of the pipe(s)
 Pipe friction loss =     44.187(Ft.)
 Minor friction loss =      0.000(Ft.)  K-factor =   0.00
Pipe flow velocity =     20.03(Ft/s)
Travel time through pipe =    0.07 min.
Time of concentration (TC) =     8.69 min.
End of computations, total study area =            1.20 (Ac.)
The following figures may
be used for a unit hydrograph study of the same area.

Area averaged pervious area fraction(Ap) = 0.100
Area averaged RI index number =  69.0
```

APPENDIX C

NATIONAL RESOURCE CONSERVATION SERVICE WEB SOIL SURVEY

Map Scale: 1:599 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 25 50 100 150

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

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

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

Date(s) aerial images were photographed: Apr 1, 2018—Jun 30, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
RaB2	Ramona sandy loam, 2 to 5 percent slopes, eroded	1.2	100.0%
Totals for Area of Interest		**1.2**	**100.0%**