STEVENS · CRESTO ENGINEERING, INC.

DRAINAGE STUDY FOR:

ROSELLE STREET
SAN DIEGO, CA

Prepared for:
CLL-ROSELLE, LLC
3565 Riviera Drive
San Diego, CA 92109

Prepared by:
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DATE: 01/16/08
REVISED: 06/19/15
SCE Project: 14017.01
PTS: 150566

DRAINAGE STUDY FOR:

ROSELLE STREET

SAN DIEGO, CA

TABLE OF CONTENTS

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SECTION 1

INTRODUCTION

Purpose of Study

The Roselle Street project is a 7.04 acre undeveloped property located at the eastern end of Roselle Street, south of Sorrento Valley Road. Approximately one third of the property, the southern portion, is steep hillside that slopes from south to north. Carroll Canyon Creek runs along the base of the hillside from the eastern property boundary to the middle of the property, and then turns north and exits through the northwestern property boundary. All storm water runoff generated by the project is tributary to the creek. The creek discharges into the Pacific Ocean approximately 2 miles downstream. This report accompanies the Grading Plan submittal for Roselle.

Legal description for the project is: Lot "B" and the Southeasterly 65 feet of Lot "A" of Acre Lot 33 of the Town of Sorrento, in the City of San Diego, County of San Diego, State of California, according to Map thereof No. 362 and No. 483, filed in the Office of the County Recorder of San Diego County, September 30, 1887, and February 9, 1888, respectively.

From the 1950s to the 1970s, the project site was used as a summer day camp. Structures on-site at that time included multiple buildings and a swimming pool. The swimming pool has since been backfilled and the buildings have been demolished. Since the 1970s, and up until a few years ago, the property sat vacant and unused. From early 2005 to late 2006, the property was leased out for use as a storage yard. During that time, unauthorized fill was placed in the northwestern corner of the project. As a result, a Notice of Violation was issued for the property on December 7, 2006. Currently, no structures exist on-site or are proposed for the project.

The Roselle Street property has been identified as a site of significant archaeological interest and is part of a larger archaeological site known as Ystagua. This site is believed to have been a village used by Native Americans approximately 240 years ago. Archaeological excavations on neighboring properties have uncovered large numbers of artifacts, including ceramic vessel fragments, arrowheads, stone tools, ornaments made from shells, and human remains. In 1999, a water line repair uncovered many artifacts on the subject property similar to those found on the neighboring properties.

Existing Hydrology

All of the storm water runoff generated by the project is tributary to Carroll Canyon Creek. The creek passes through the eastern half of the property, running south to north. Based on floodway data for the creek, found in Table 8 – Floodway Data from the FEMA Flood Insurance Study for San Diego County, CA and Incorporated Areas, dated June 19, 1997, the flow rate in the creek, adjacent to the project, during a 100-year storm event, is approximately 6,700 cfs. The approximate extents of the 100-year flood zone are indicated on Exhibits A and B. Excerpts from the FEMA study are included in Section 5.

The majority of the project property will remain unchanged in the proposed condition and, as a result, those portions will not be included in this study. This hydrological study analyses the area of interest as a single Basin "A" subdivided into Basins "AN" and "AS". Though both sub-basins drain into Carroll Canyon Creek within the project boundary, runoff from Basin "AS" enters the creek south of Basin "AN" and runoff from Basin "AN" enters the creek near the northern project boundary.

Basin "A" is approximately 3.26 acres and is divided into two sub-basins; "AN-1" and "AS-1". Runoff generated by Basin "AN-1" is conveyed to the north, via overland flow, and enters Carroll Canyon Creek near the northern project boundary. Basin "AS-1" is mostly hillside. Runoff from the basin is conveyed to the north, via overland flow, and enters Carroll Canyon Creek upstream of Basin "AN-1", within the project boundary. A total of approximately 5.8 cfs of runoff is generated by Basin "A" during a 100-year design storm.

Proposed Hydrology

Proposed Basin "A" is approximately 3.26 acres and is divided into four sub-basins; "AN-1", "AN-2", "AN-3", and "AS-1". Basin "AN-1" contains the majority of the proposed stabilized pad. Storm water runoff generated by the pad is conveyed to the north, via overland flow, to a swale along the northern edge of the pad. The swale directs runoff to a proposed catch basin in the northern corner of the pad. From there, a 12" storm drain conveys runoff to the northwest, to an existing 60" RCP storm drain that discharges into Carroll Canyon Creek along the northern project boundary. Basin "AN-3" contains a small portion of the stabilized pad on the south side of the proposed landscaped berm along the project frontage. Because of the berm, the approximately 0.05 cfs of runoff generated by the basin during a 100-year design storm will now drain into Roselle Street instead of draining directly into Carroll Canyon Creek. Basin "AS-1" contains only a small portion of the stabilized pad and will remain largely unchanged in the proposed condition. A total of approximately 5.7 cfs of runoff will be generated by proposed Basin "A" during a 100-year design storm.

Procedure

1. Runoff rates were determined by the rational method: $Q = CIA$

    a. Runoff coefficients (C) of 0.45 for the existing project condition and 0.50 for the proposed condition were utilized in the runoff calculations.

    b. 50-year and 100-year storm intensities (I_{50} and I_{100}), were determined by the Intensity-Duration-Frequency Curves per City of San Diego's Drainage Design Manual (April 1984).

    c. Drainage basin area(s) (A), in acres, are delineated and quantified as shown on Exhibits "A" and "B" in Sections 5.

2. Storm drain pipe sizing is based on Manning's formula; where, a roughness coefficient (n) of 0.010 for PVC was utilized for pipe flow calculations using "Flowmaster" software.

Conclusion

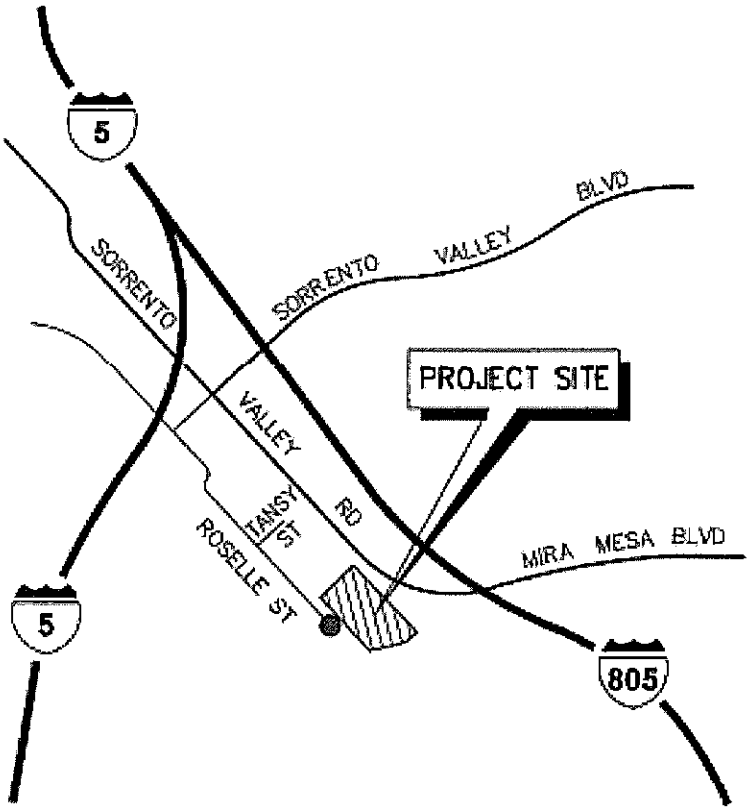
The proposed Roselle Street project will create a stabilized pad on the project property. A proposed catch basin and storm drain pipe will collect pad runoff and convey it to the northwest where it will discharge into an existing 60" RCP storm drain. The 60" RCP discharges into Carroll Canyon Creek along the northern project boundary. Creation of the stabilized pad will flatten out a large portion of the project property, allowing storm water runoff to be conveyed as overland sheet flow for a longer period of time. This will increase the peak time of concentration for the basin and offset the small increase in runoff coefficient that will result from having a compacted pad. In the proposed condition, runoff from Basin "A" will decrease by 0.1 cfs; a negligible change.

2

SECTION 2

VICINITY MAP

(NO SCALE)



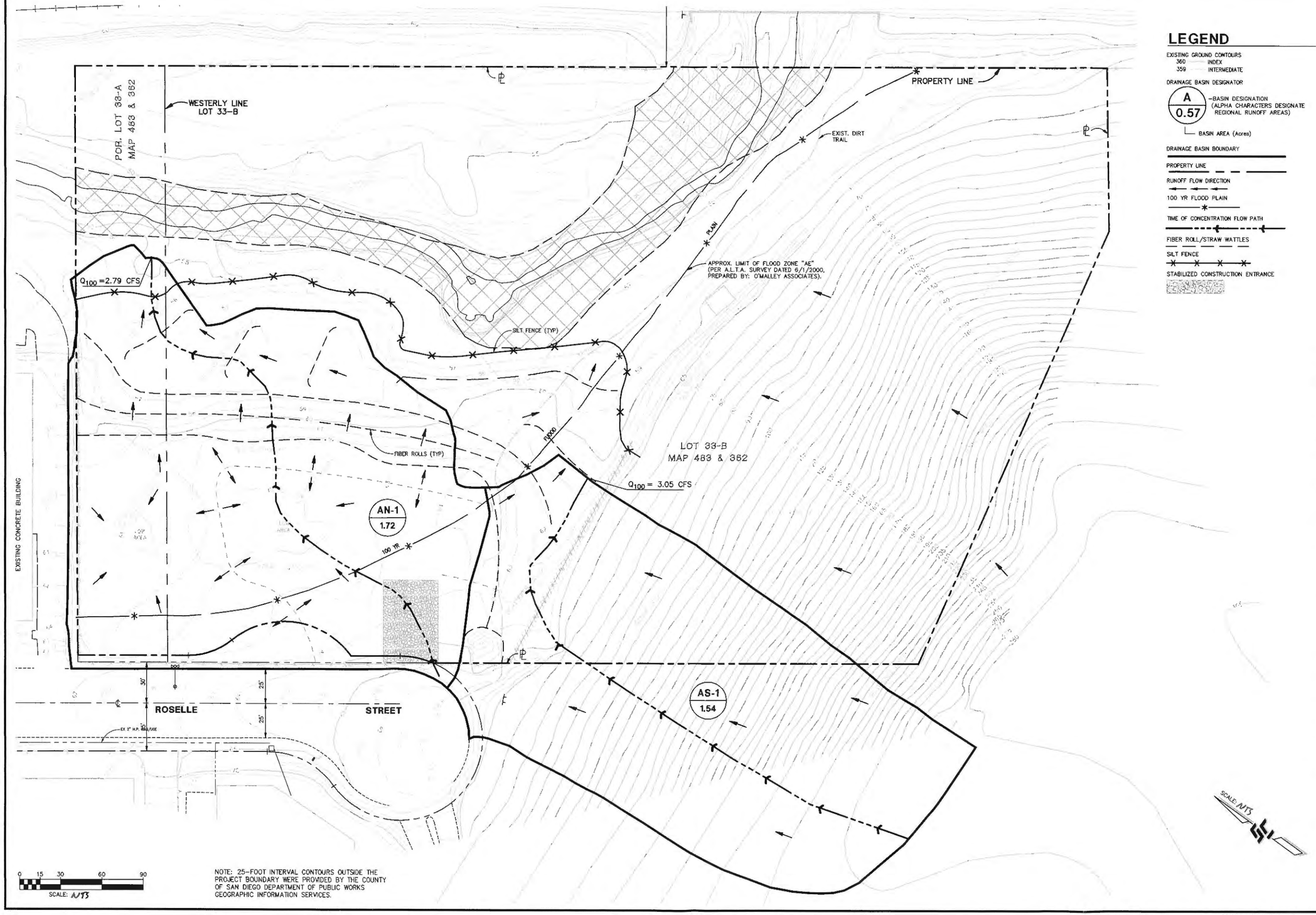
3

SECTION 3

EXISTING HYDROLOGY

SECTION 3.1

EXHIBIT "A"
EXISTING DRAINAGE BASINS



LEGEND

EXISTING GROUND CONTOURS
360 INDEX
359 INTERMEDIATE

DRAINAGE BASIN DESIGNATOR
A / 0.57
-BASIN DESIGNATION (ALPHA CHARACTERS DESIGNATE REGIONAL RUNOFF AREAS)
BASIN AREA (Acres)

DRAINAGE BASIN BOUNDARY
PROPERTY LINE
RUNOFF FLOW DIRECTION
100 YR FLOOD PLAIN
TIME OF CONCENTRATION FLOW PATH
FIBER ROLL/STRAW WATTLES
SILT FENCE
STABILIZED CONSTRUCTION ENTRANCE

NOTE: 25-FOOT INTERVAL CONTOURS OUTSIDE THE PROJECT BOUNDARY WERE PROVIDED BY THE COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS GEOGRAPHIC INFORMATION SERVICES.

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ROSELLE STREET
SAN DIEGO, CALIFORNIA

EXHIBIT "A"
EXISTING DRAINAGE BASINS

DATE: 06/11/08
SCE NO. 07004.01
SHEET A

SECTION 3.2

TIME OF CONCENTRATION & RUNOFF CALCULATIONS

ROSELLE STREET

EXISTING CONDITION - 50YR STORM EVENT

(Rational Method Procedure)

San Diego, CA

RUN:

BASIN INFORMATION							FOR REFERENCE ONLY
DRAINAGE BASIN	AREA ac.	RUNOFF COEFF	T_C min	C x A	I_{50} in/hr	Q_{50} cfs	
AN-1	1.72	0.45	9.0	0.77	3.40	2.63	
AS-1	1.54	0.45	5.0	0.69	4.20	2.91	
BASIN AN Area=	3.26				Q_{50}=	5.5	

ROSELLE STREET

EXISTING CONDITION - 100YR STORM EVENT

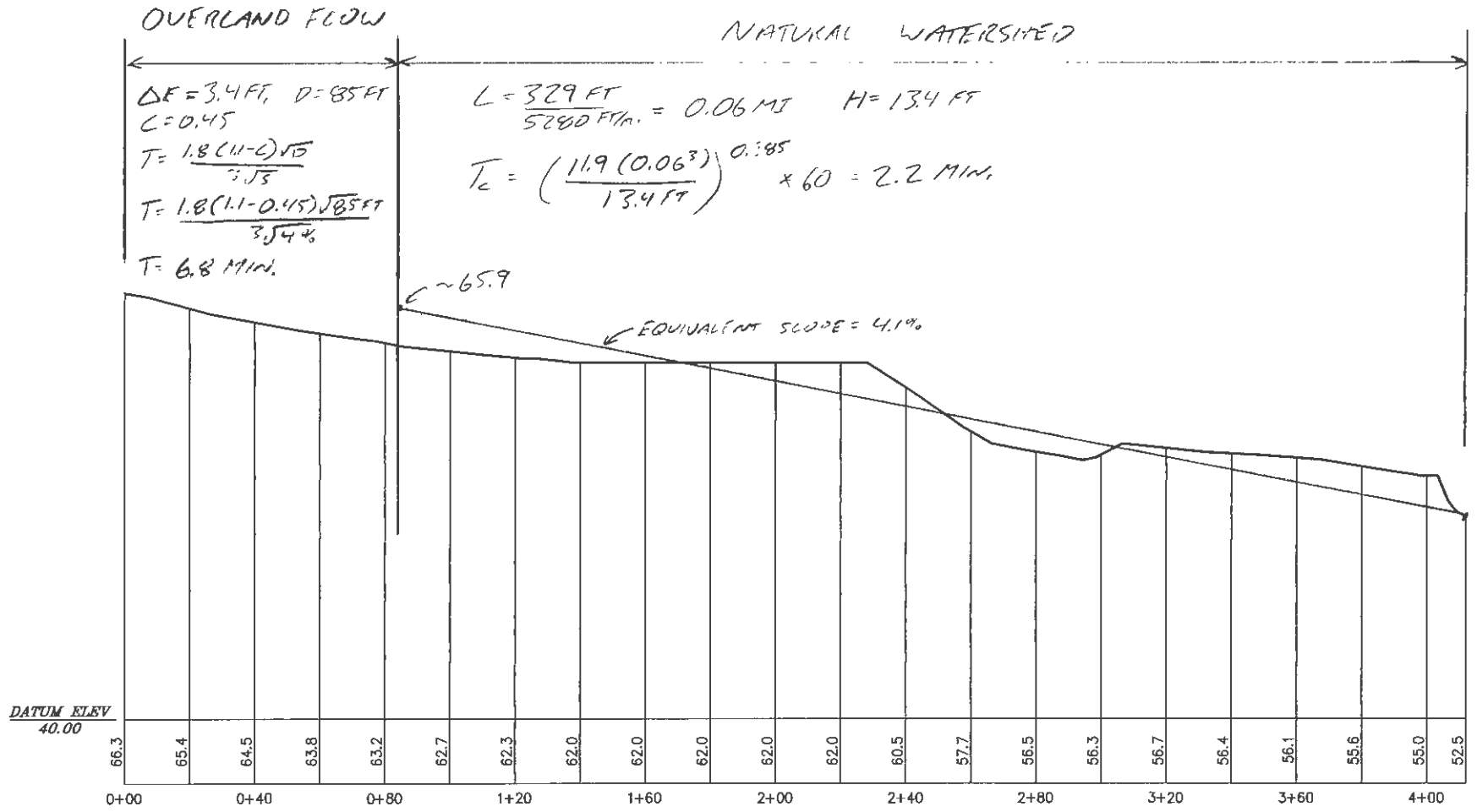
(Rational Method Procedure)

San Diego, CA

RUN:

BASIN INFORMATION							FOR REFERENCE ONLY
DRAINAGE BASIN	AREA ac.	RUNOFF COEFF	T_C min	C x A	I_{100} in/hr	Q_{100} cfs	
AN-1	1.72	0.45	9.0	0.77	3.60	2.79	
AS-1	1.54	0.45	5.0	0.69	4.40	3.05	
BASIN AN Area=	3.26				Q_{100}=	5.8	

BASIN "AN"



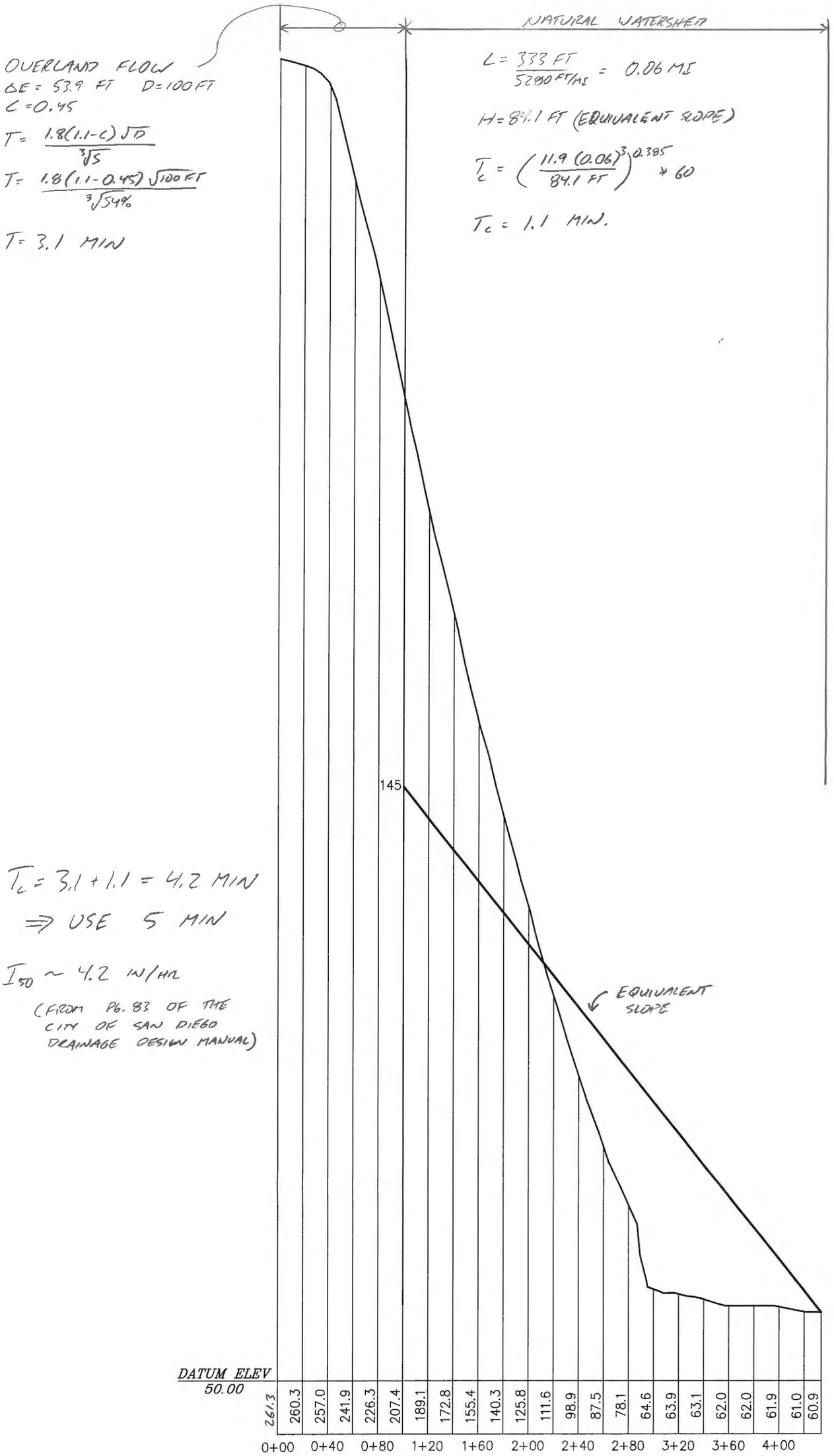
T_c = 6.8 + 2.2 = 9 MIN.

I_{50} = 3.4 IN/HR

BASIN AN-1

TIME OF CONCENTRATION CALCULATIONS.
EXISTING CONDITION

H:1=50'



$T_c = 3.1 + 1.1 = 4.2$ MIN

$\Rightarrow$ USE 5 MIN

$I_{50} \sim 4.2$ IN/HR

(FROM PG. 83 OF THE CITY OF SAN DIEGO DRAINAGE DESIGN MANUAL)

BASIN AS-1

TIME OF CONCENTRATION CALCULATIONS

EXISTING CONDITION

H: 1"=80'

SECTION 3.3

CITY OF SAN DIEGO DRAINAGE MANUAL REFERENCES

TABLE 2

RUNOFF COEFFICIENTS (RATIONAL METHOD)

DEVELOPED AREAS (URBAN)

Land Use	Coefficient, C Soil Type (1)
	D
Residential:	
Single Family	.55
Multi-Units	.70
Mobile Homes	.65
Rural (lots greater than 1/2 acre)	.45 ← EXISTING COND. * ADJUSTED TO 0.5 IN PROPOSED CONDITION TO ACCOUNT FOR ADDITIONAL COMPACTION
Commercial (2) 80% Impervious	.85
Industrial (2) 90% Impervious	.95

NOTES:

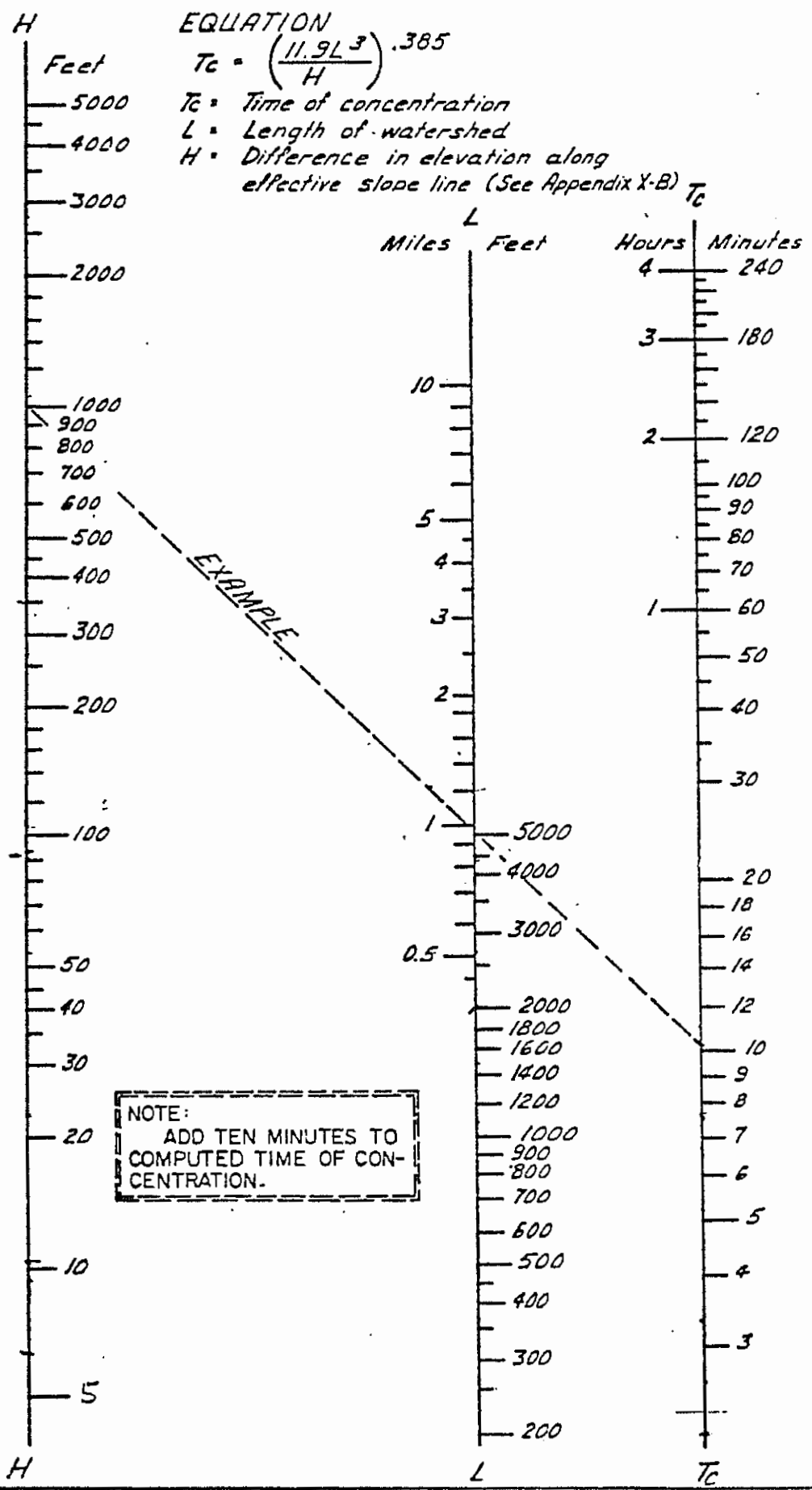
(1) Type D soil to be used for all areas.

(2) Where actual conditions deviate significantly from the tabulated imperviousness values of 80% or 90%, the values given for coefficient C, may be revised by multiplying 80% or 90% by the ratio of actual imperviousness to the tabulated imperviousness. However, in no case shall the final coefficient be less than 0.50. For example: Consider commercial property on D soil.

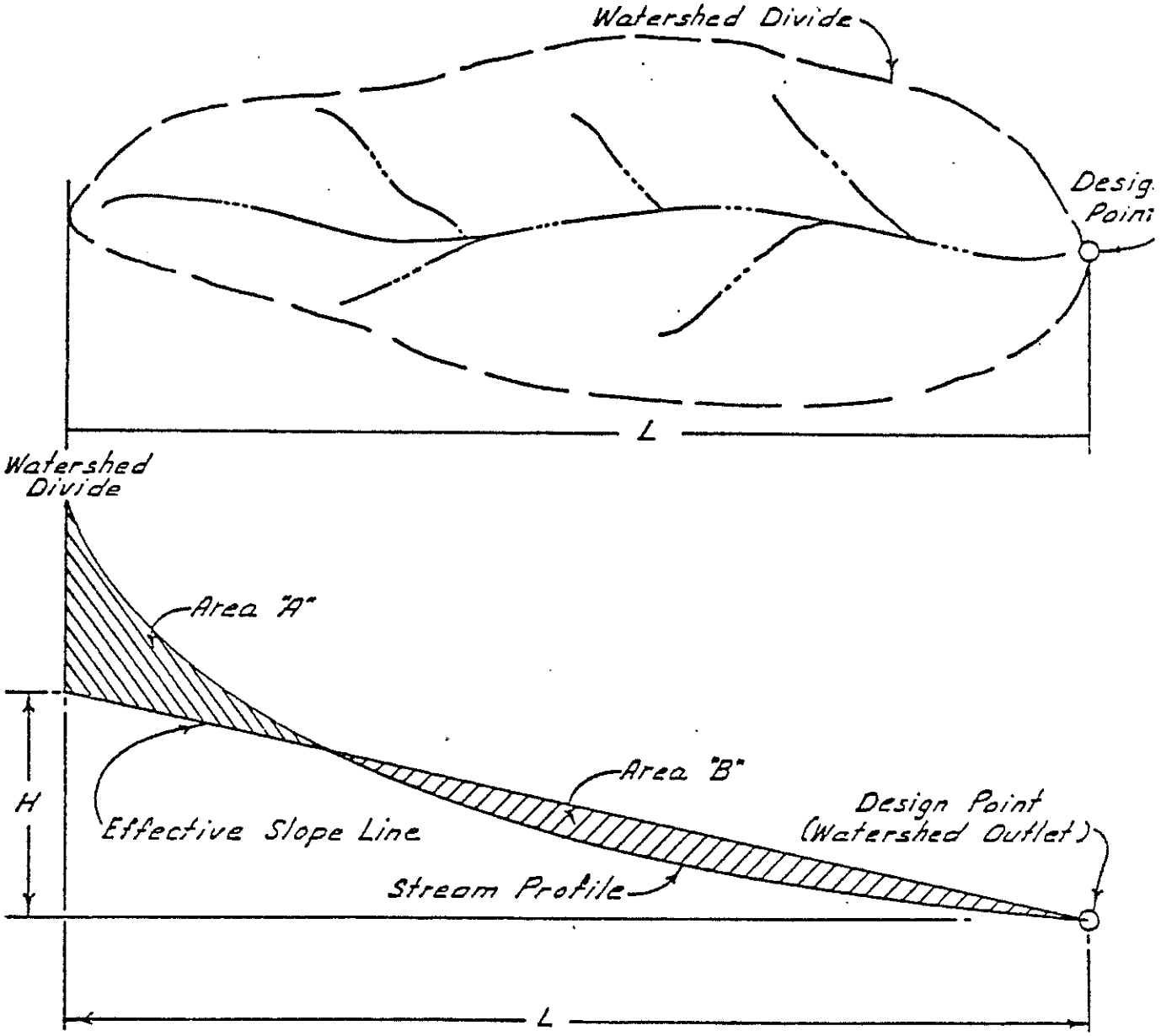
Actual imperviousness = 50%

Tabulated imperviousness = 80%

Revised C = $\frac{50}{80}$ x 0.85 = 0.53



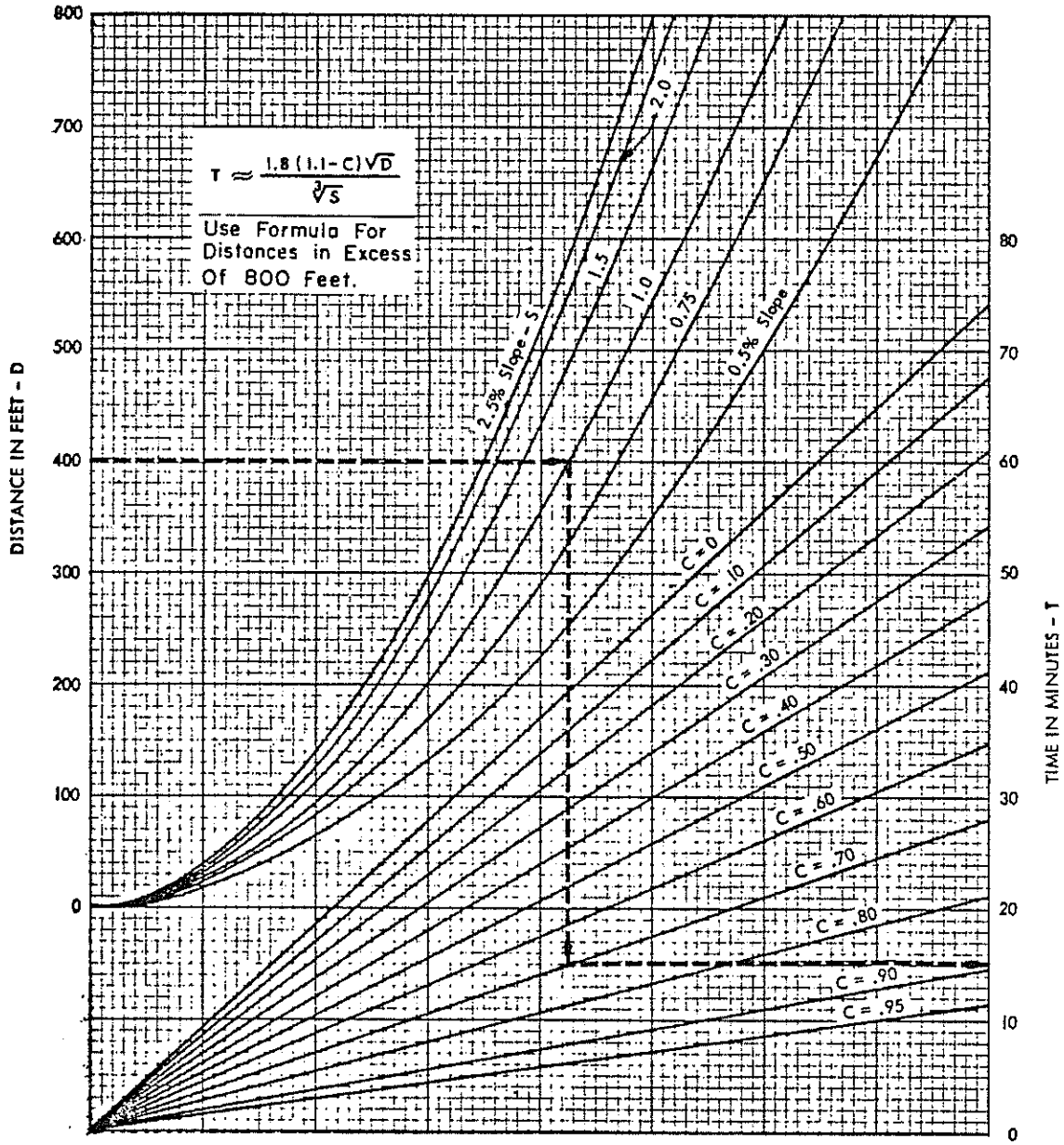
SAN DIEGO COUNTY DEPARTMENT OF SPECIAL DISTRICT SERVICES DESIGN MANUAL APPROVED _____	NOMOGRAPH FOR DETERMINATION OF TIME OF CONCENTRATION (T_c) FOR NATURAL WATERSHEDS DATE _____ APPENDIX



Area "A" = Area "B"

SAN DIEGO COUNTY DEPARTMENT OF SPECIAL DISTRICT SERVICES DESIGN MANUAL APPROVED	COMPUTATION OF EFFECTIVE SLOPE FOR NATURAL WATERSHEDS	
	DATE	APPENDIX

URBAN AREAS OVERLAND TIME OF FLOW CURVES



Surface Flow Time Curves

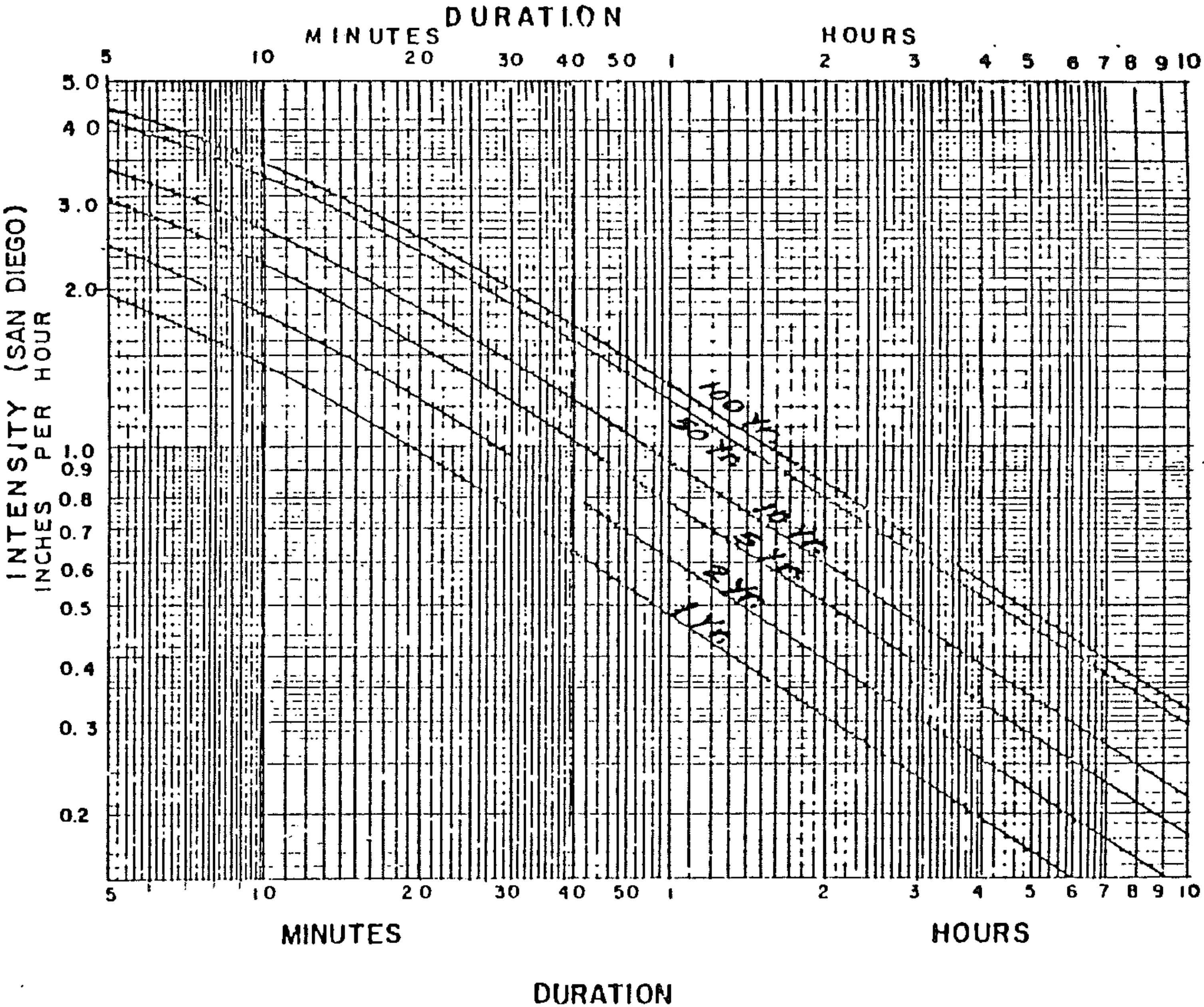
EXAMPLE:

GIVEN: LENGTH OF FLOW = 400 FT.
SLOPE = 1.0 %
COEFFICIENT OF RUNOFF C = .70

READ: OVERLAND FLOWTIME = 15 MINUTES

ELEV.	FACTOR
0–1500	1.00
1500–3000	1.25
3000–4000	1.42
4000–5000	1.60
5000–6000	1.70
DESERT	1.25

To obtain correct intensity, multiply intensity on chart by factor for design elevation.



RAINFALL INTENSITY - DURATION - FREQUENCY CURVES for COUNTY OF SAN DIEGO

APPENDIX I-I

3-14

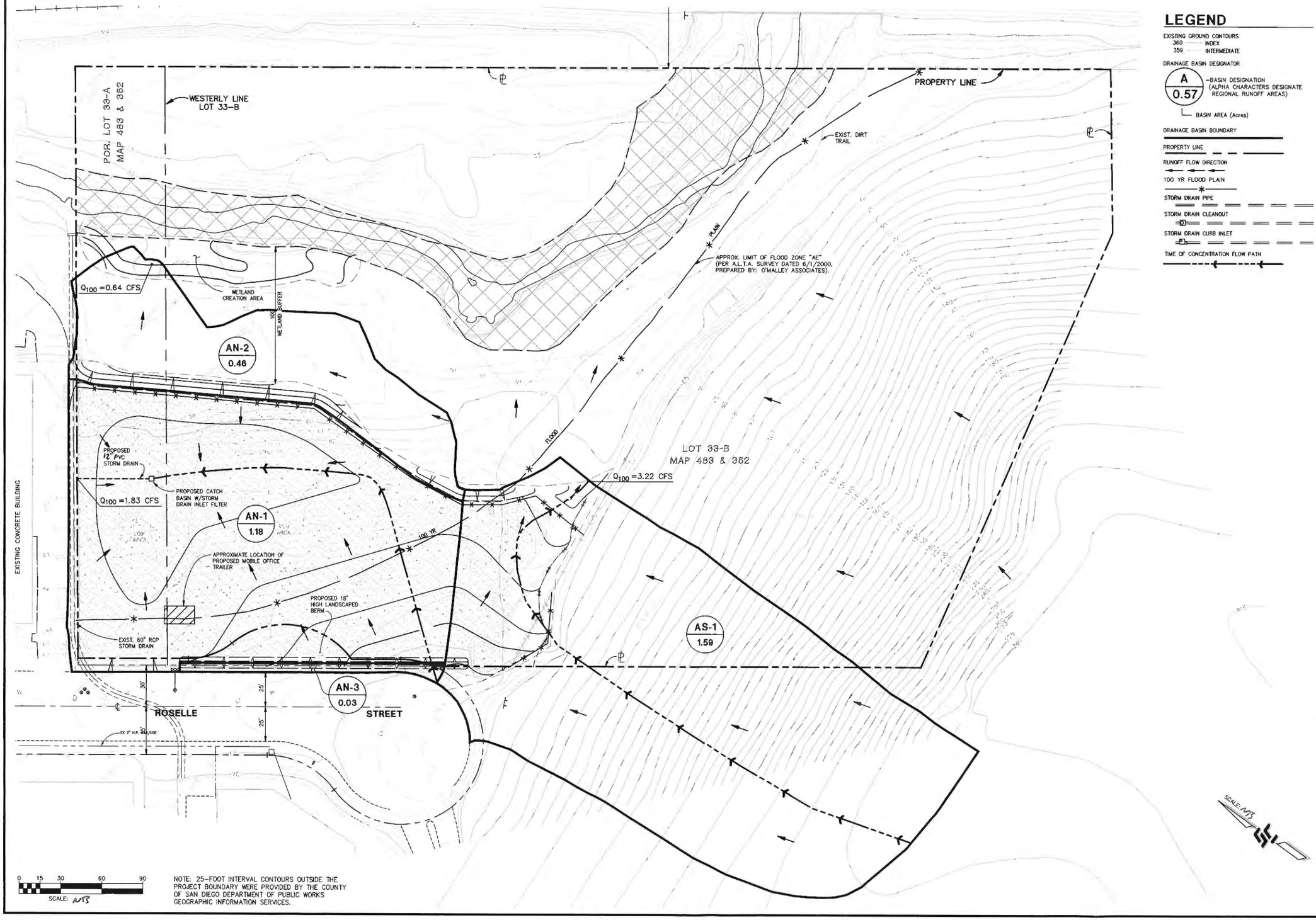
4

SECTION 4

PROPOSED HYDROLOGY

SECTION 4.1

EXHIBIT 'B' – "PROPOSED DRAINAGE BASINS"



LEGEND

EXISTING GROUND CONTOURS
360 INDEX
359 INTERMEDIATE

DRAINAGE BASIN DESIGNATOR
A / 0.57 – BASIN DESIGNATION (ALPHA CHARACTERS DESIGNATE REGIONAL RUNOFF AREAS)
BASIN AREA (Acres)

DRAINAGE BASIN BOUNDARY
PROPERTY LINE
RUNOFF FLOW DIRECTION
100 YR FLOOD PLAIN
STORM DRAIN PIPE
STORM DRAIN CLEANOUT
STORM DRAIN CURB INLET
TIME OF CONCENTRATION FLOW PATH

REDUCED COPY - SEE SECTION 5 FOR FULL SIZE

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ROSELLE STREET
SAN DIEGO, CALIFORNIA

EXHIBIT "B"
PROPOSED DRAINAGE BASINS

DATE: 07/14/08
SCE NO. 07004.01
SHEET
B

X:\DWG\sbk\2007\07004\DRAINAGE\07004 100 FT SETBACK-02 PR DRN.dwg 7/14/2008 10:20:38 AM PDT

SECTION 4.2

TIME OF CONCENTRATION & RUNOFF CALCULATIONS

ROSELLE STREET

PROPOSED CONDITION - 50YR STORM EVENT

(Rational Method Procedure)

San Diego, CA

RUN:

BASIN INFORMATION

FOR REFERENCE ONLY

DRAINAGE BASIN	AREA ac.	RUNOFF COEFF	T_C min	C x A	I_{50} in/hr	Q_{50} cfs
AN-1	1.18	0.50	12.8	0.59	2.90	1.71
AN-2	0.46	0.45	12.8	0.21	2.90	0.60
AN-3	0.03	0.50	12.8	0.02	2.90	0.04
AS-1	1.59	0.46	5.0	0.73	4.20	3.07
BASIN AN Area=	3.26				Q_{50}=	5.4

ROSELLE STREET

PROPOSED CONDITION - 100YR STORM EVENT *(Rational Method Procedure)*

San Diego, CA

RUN:

BASIN INFORMATION

FOR REFERENCE ONLY

DRAINAGE BASIN	AREA ac.	RUNOFF COEFF	T_C min	C x A	I_{100} in/hr	Q_{100} cfs
AN-1	1.18	0.50	12.8	0.59	3.10	1.83
AN-2	0.46	0.45	12.8	0.21	3.10	0.64
AN-3	0.03	0.50	12.8	0.02	3.10	0.05
AS-1	1.59	0.46	5.0	0.73	4.40	3.22
BASIN AN Area=	3.26				Q_{100}=	5.7

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SHEET 1 OF 1
PROJECT NO. 07004.01
PROJECT ROSELLE
BY BTH CHK
DATE 12/5/07

BASIN AN
TIME OF CONCENTRATION CALCULATIONS - PROPOSED COND.

OVERLAND FLOW:

$D = 140$ FT
$S = 3.2\%$
$C = 0.50$

$$T = \frac{1.8(1.1-C)\sqrt{D}}{\sqrt[3]{S}} = \frac{1.8(1.1-0.50)\sqrt{140\,FT}}{\sqrt[3]{3.2}}$$

$T = 8.7$ MIN.

SWALE:

$D = 165$ FT
$C = 0.50$
$S = 1.0\%$

ASSUME $T_c = 10$ MIN $\Rightarrow I = 3.3$ IN/HR

$Q = CIA$
$Q = 0.5(3.3$ IN/HR$)\,0.8$ AC
$Q = 1.32$ CFS

$V = 0.7$ FT/S (FROM FLOWMASTER)

$T = 165$ FT $/ (0.7$ FT/S$) \div 60 = 3.9$ MIN.

STORM DRAIN:

$D = 145$ FF
ASSUME 12" PVC @ 1.0%
ASSUME $T_c = 13$ MIN $\Rightarrow I = 2.9$ IN/HR

$Q = CIA$
$Q = 0.50\,(2.9$ IN/HR$)\,1.2$ AC
$Q = 1.74$ CFS

$V = 5.5$ FT/S (FROM FLOWMASTER)

$T = 145$ FT $/ (5.5$ FT/S$) \div 60 = 0.44$ MIN

$T_c = 8.7 + 3.9 + 0.44 = 13.04$ MIN

$I_{50} = 2.9$ IN/HR

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12" PVC STORM DRAIN
Worksheet for Circular Channel

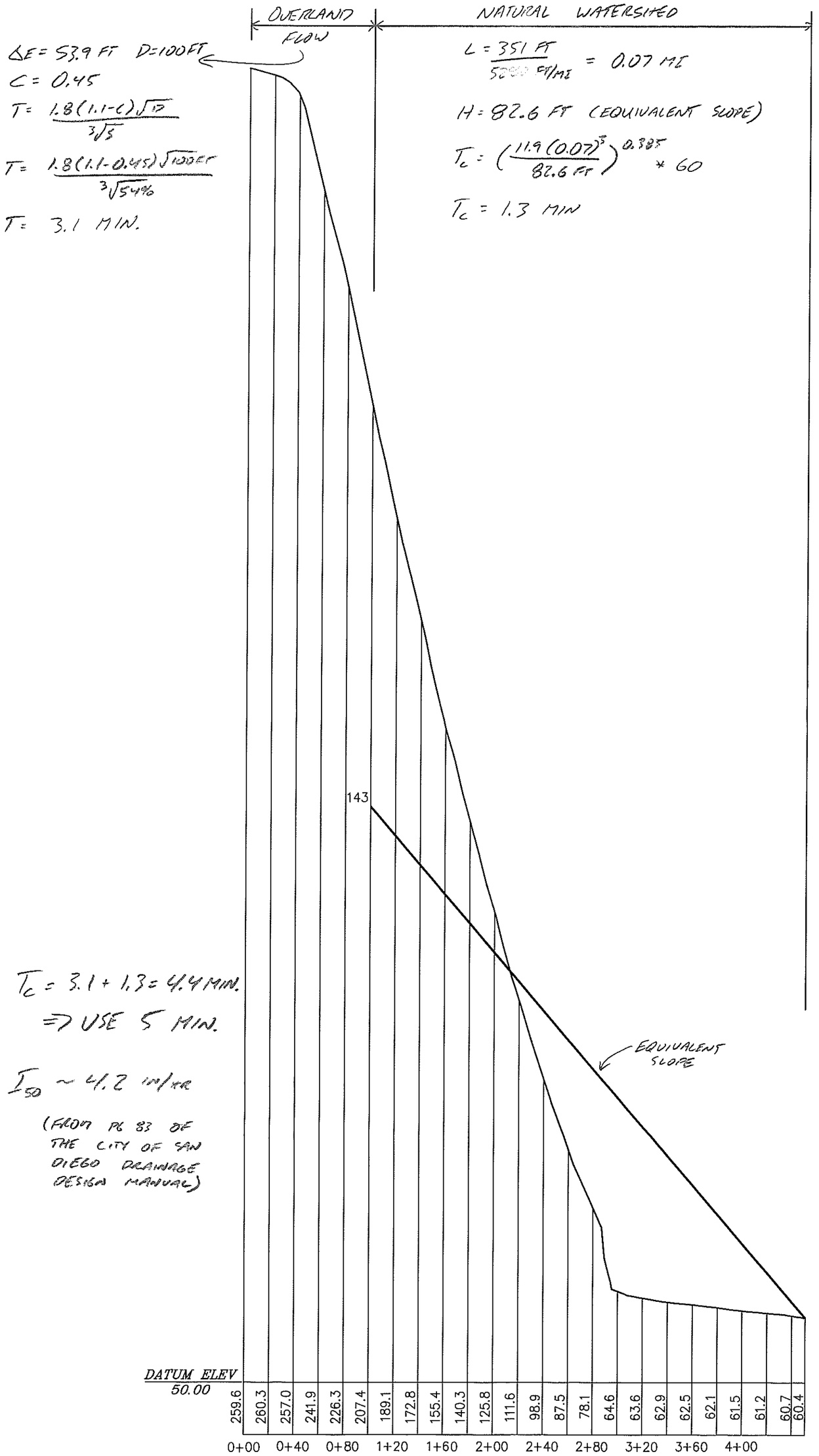
Project Description	
Worksheet	Circular Channel
Flow Element	Circular Channel
Method	Manning's Formu
Solve For	Channel Depth

Input Data		
Mannings Coeffic	0.010	
Slope	0.010000	ft/ft
Diameter	12	in
Discharge	1.74	cfs

Results		
Depth	0.42	ft
Flow Area	0.3	ft²
Wetted Perime	1.42	ft
Top Width	0.99	ft
Critical Depth	0.56	ft
Percent Full	42.5	%
Critical Slope	0.003856	ft/ft
Velocity	5.48	ft/s
Velocity Head	0.47	ft
Specific Energy	0.89	ft
Froude Numbe	1.70	
Maximum Disc	4.98	cfs
Discharge Full	4.63	cfs
Slope Full	0.001411	ft/ft
Flow Type	Supercritical	

Stevens Cresto Engineering Inc
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666
Project Engineer: Joseph G. Cresto

1/8



$T_c = 3.1 + 1.3 = 4.4$ MIN.

$\Rightarrow$ USE 5 MIN.

$I_{50} \sim 4.2$ IN/HR

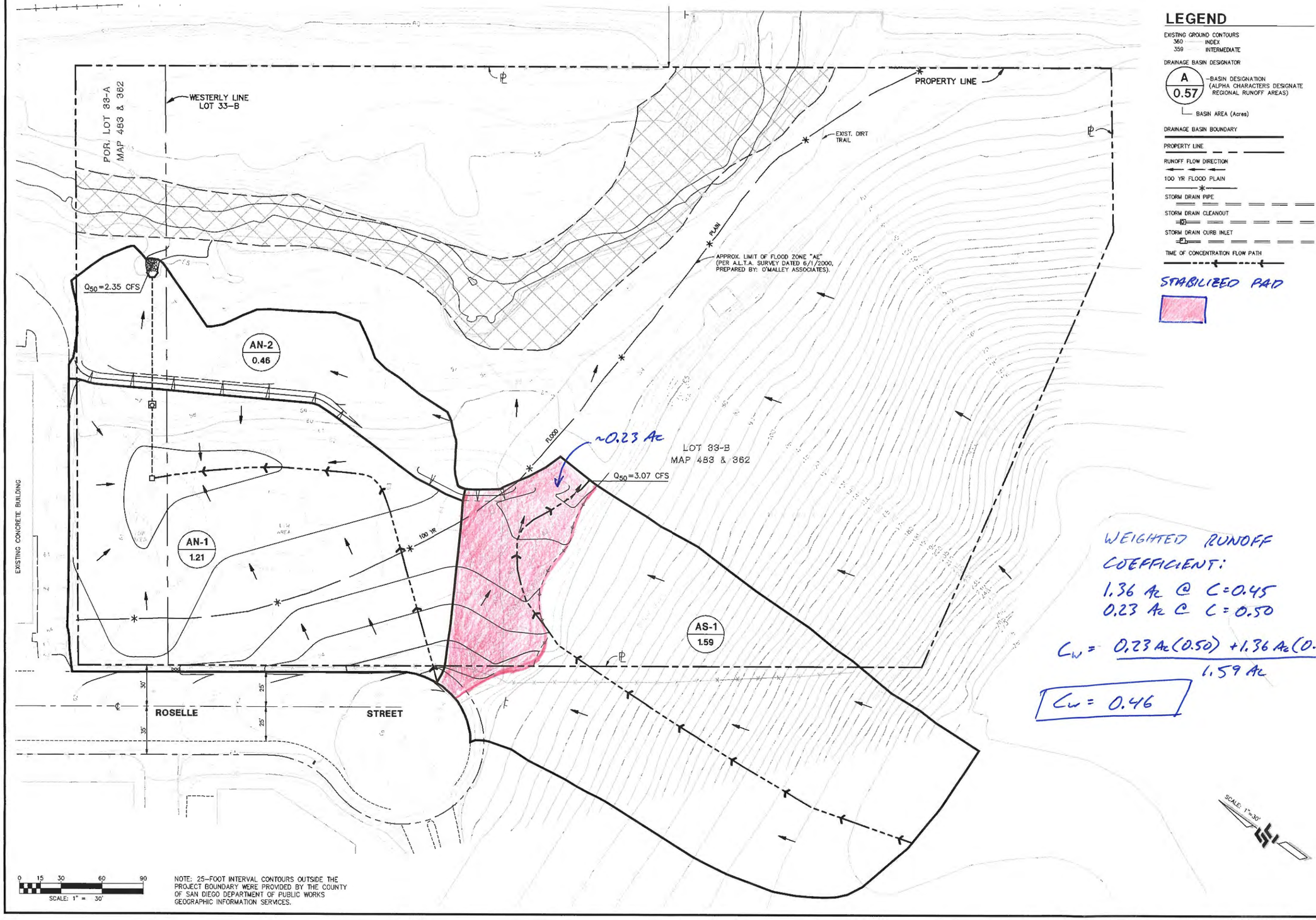
(FROM PG 83 OF THE CITY OF SAN DIEGO DRAINAGE DESIGN MANUAL)

BASIN AS-1

TIME OF CONCENTRATION CALCULATIONS
PROPOSED CONDITION

H: 1"=80'

6.4



LEGEND

EXISTING GROUND CONTOURS
360 INDEX
359 INTERMEDIATE

DRAINAGE BASIN DESIGNATOR
A / 0.57 – BASIN DESIGNATION (ALPHA CHARACTERS DESIGNATE REGIONAL RUNOFF AREAS)
BASIN AREA (Acres)

DRAINAGE BASIN BOUNDARY
PROPERTY LINE
RUNOFF FLOW DIRECTION
100 YR FLOOD PLAIN
STORM DRAIN PIPE
STORM DRAIN CLEANOUT
STORM DRAIN CURB INLET
TIME OF CONCENTRATION FLOW PATH

STABILIZED PAD

0 15 30 60 90
SCALE: 1" = 30'

NOTE: 25-FOOT INTERVAL CONTOURS OUTSIDE THE PROJECT BOUNDARY WERE PROVIDED BY THE COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS GEOGRAPHIC INFORMATION SERVICES.

WEIGHTED RUNOFF COEFFICIENT:

1.36 Ac @ C=0.45
0.23 Ac @ C=0.50

$C_W = \frac{0.23\,Ac(0.50) + 1.36\,Ac(0.45)}{1.59\,Ac}$

$C_W = 0.46$

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SAN DIEGO, CALIFORNIA

EXHIBIT "C"
RUNOFF COEFFICIENT STUDY

DATE: 12/11/07
SCE NO. 07004.01
SHEET C

HYDRAULIC DESIGN PROGRAM

Computation of grated inlet capacity in sump condition.

Model: QUIKSET "DB-2424". A precast concrete box with a cast iron grate.

Grate Size: 24 inches square
Rim bar size: 1 inch
Grate bar size: 1 inch
Opening width: 1 inch

Using Bureau of Public Roads chart 1073.02;

Q, flow into inlet (CFS)
P, perimeter of grate (feet) P= 7.33 feet
H, head (feet of water over grate top)
A, area of grate opening (square feet) A= 1.68 Sq ft

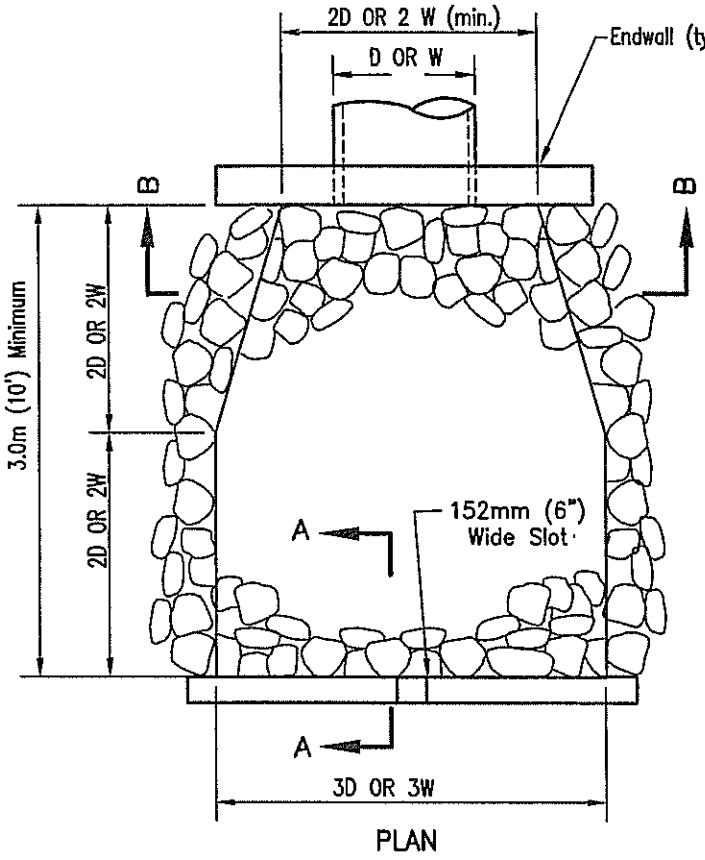
EQUATIONS: for heads less than 0.4 feet.
$Q = P * 3.0 * H^{(3/2)}$

for heads over 1.4 feet.
$Q = A * 5.37 * H^{(1.2)}$

for heads between 0.4 and 1.4 feet,
(use value for 0.4 feet).

Table of flow values vs head levels.

Head (feet)	Flow Capacity
0.10	0.70 CFS
0.20	1.97 CFS ←
0.30	3.61 CFS
0.40	5.57 CFS
0.50	5.57 CFS
0.60	5.57 CFS
0.70	5.57 CFS
0.80	5.57 CFS
0.90	5.57 CFS
1.00	5.57 CFS
1.10	5.57 CFS
1.20	5.57 CFS
1.30	5.57 CFS
1.40	10.68 CFS
1.50	11.05 CFS
1.60	11.42 CFS
1.70	11.77 CFS
1.80	12.11 CFS
1.90	12.44 CFS
2.00	12.76 CFS



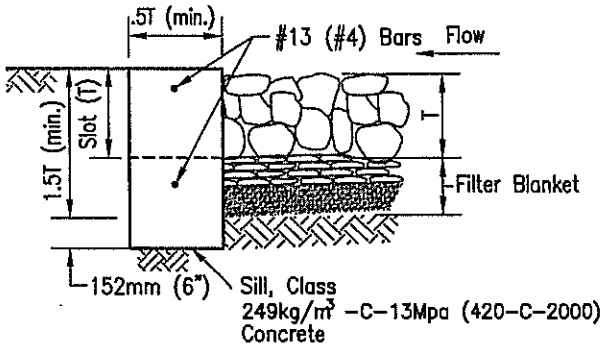
PLAN

V ~ 5.5 FT/S

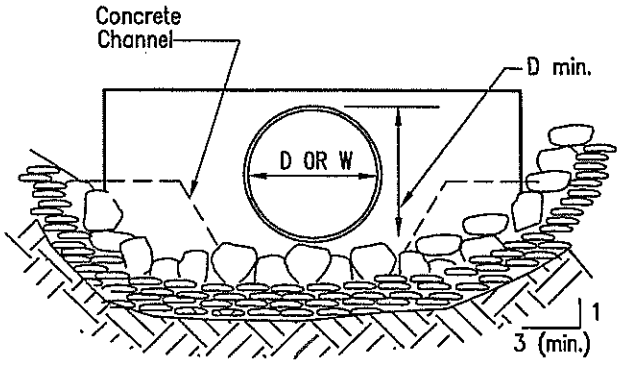
Design Velocity m/sec (ft/sec)*	Rock Classification	T (min)
1.8–3 (6–10)	No. 2 Backing	320mm (1.1ft)
3–3.7 (10–12)	220 kg (1/4 ton)	823mm (2.7ft)
3.7–4.3 (12–14)	450 kg (1/2 ton)	1.1m (3.5ft)
4.3–4.9 (14–16)	900 kg (1 ton)	1.3m (4.4ft)
4.9–5.5 (16–18)	1.8 tonne (2 ton)	1.6m (5.4ft)

*over 5.5 mps (18 fps) requires special design

D = Pipe Diameter
W = Bottom Width of Channel



SECTION A–A



SECTION B–B

NOTES

1. Plans shall specify:
   A) Rock Class and thickness (T).
   B) Filter material, number of layers ond thickness.
2. Rip rap shall be either quarry stone or broken concrete (if shown on the plans.) Cobbles are not acceptable.
3. Rip rap shall be placed over filter blanket which may be either granular material or filter fabric (woven filter slit film fabric shall not be used).
4. See Regional Supplement Amendments for selection of filter blanket.
5. Rip rap energy dissipators shall be designated as either Type 1 or Type 2. Type 1 shall be with concrete sill; Type 2 shall be without sill.

Revision	By	Approved	Date
ORIGINAL		Kercheval	12/75
Add Metric		T. Stanton	03/03
Add Rip Rap Table		S. Brady	04/06

SAN DIEGO REGIONAL STANDARD DRAWING

RIP RAP ENERGY DISSIPATOR

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

Chairperson R.C.E. 19246 Date 04/27/2006

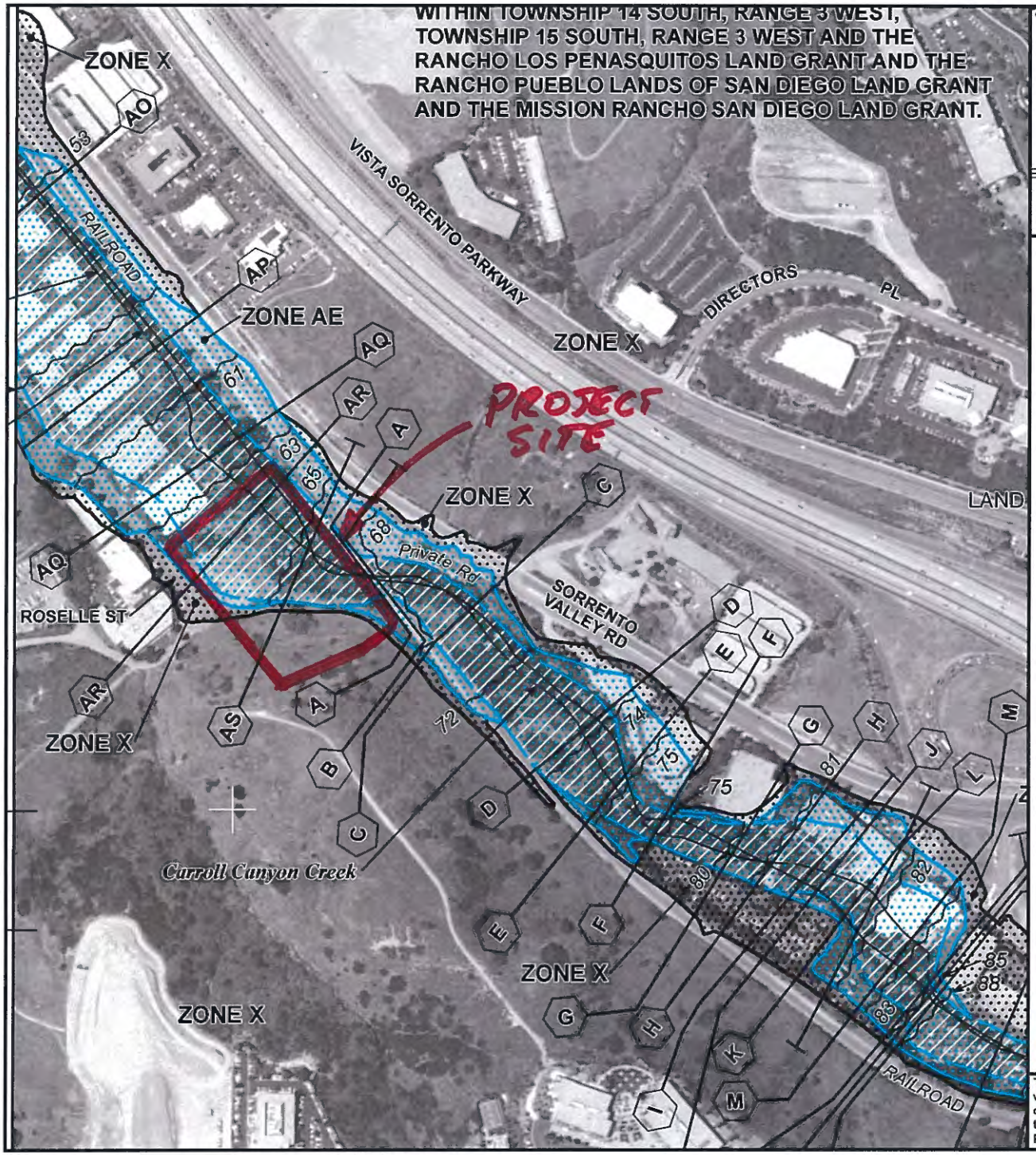
DRAWING NUMBER **D-40**

SEE SDD-100

4-12

SECTION 5

APPENDIX



ance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

0 250 500 750 1,000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 1339G

FIRM

FLOOD INSURANCE RATE MAP

SAN DIEGO COUNTY, CALIFORNIA

AND INCORPORATED AREAS

PANEL 1339 OF 2375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SAN DIEGO, CITY OF	060295	1339	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06073C1339G

MAP REVISED
MAY 16, 2012

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

5-2

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY (FEET NGVD)	WITH FLOODWAY (FEET NGVD)	INCREASE
Soledad Canyon (Cont'd)								
AA	15,740	1,033	5,383	3.6	33.4	33.4	34.1	0.7
AB	16,140	1,075	6,622	2.9	34.1	34.1	34.6	0.5
AC	16,520	1,163	6,695	2.9	34.4	34.4	34.9	0.5
AD	16,810	789	4,278	4.6	34.7	34.7	35.1	0.4
AE	17,120	386	1,784	10.9	36.2	36.2	36.2	0.0
AF	17,420	373	2,273	2.9	38.7	38.7	39.1	0.4
AG	17,620	362	1,379	4.9	38.7	38.7	39.1	0.4
AH	18,060	352	1,813	3.7	40.5	40.5	40.5	0.0
AI	18,160	296	1,475	4.5	40.5	40.5	40.5	0.0
AJ	18,340	146	644	10.4	40.5	40.5	40.5	0.0
AK	18,850	310	1,324	5.1	43.5	43.5	43.5	0.0
AL	19,177	478	1,707	3.9	44.0	44.0	44.0	0.0
AM	19,427	656	2,247	3.0	44.6	44.6	44.6	0.0
AN	19,630	553	1,204	5.6	45.7	45.7	45.7	0.0
AO	20,220	335	1,005	6.7	51.0	51.0	51.0	0.0
AP	20,805	556	1,196	5.6	57.7	57.7	57.7	0.0
AQ	21,230	354	1,008	6.6	60.2	60.2	60.2	0.0
AR	21,480	421	1,495	4.5	62.3	62.3	62.3	0.0
AS	21,690	286	1,074	6.2	63.2	63.2	63.2	0.0

1074 Ft² * 6.2 Ft/s = 6,658.8 CFS

[1]Feet Above North Torrey Pines Road

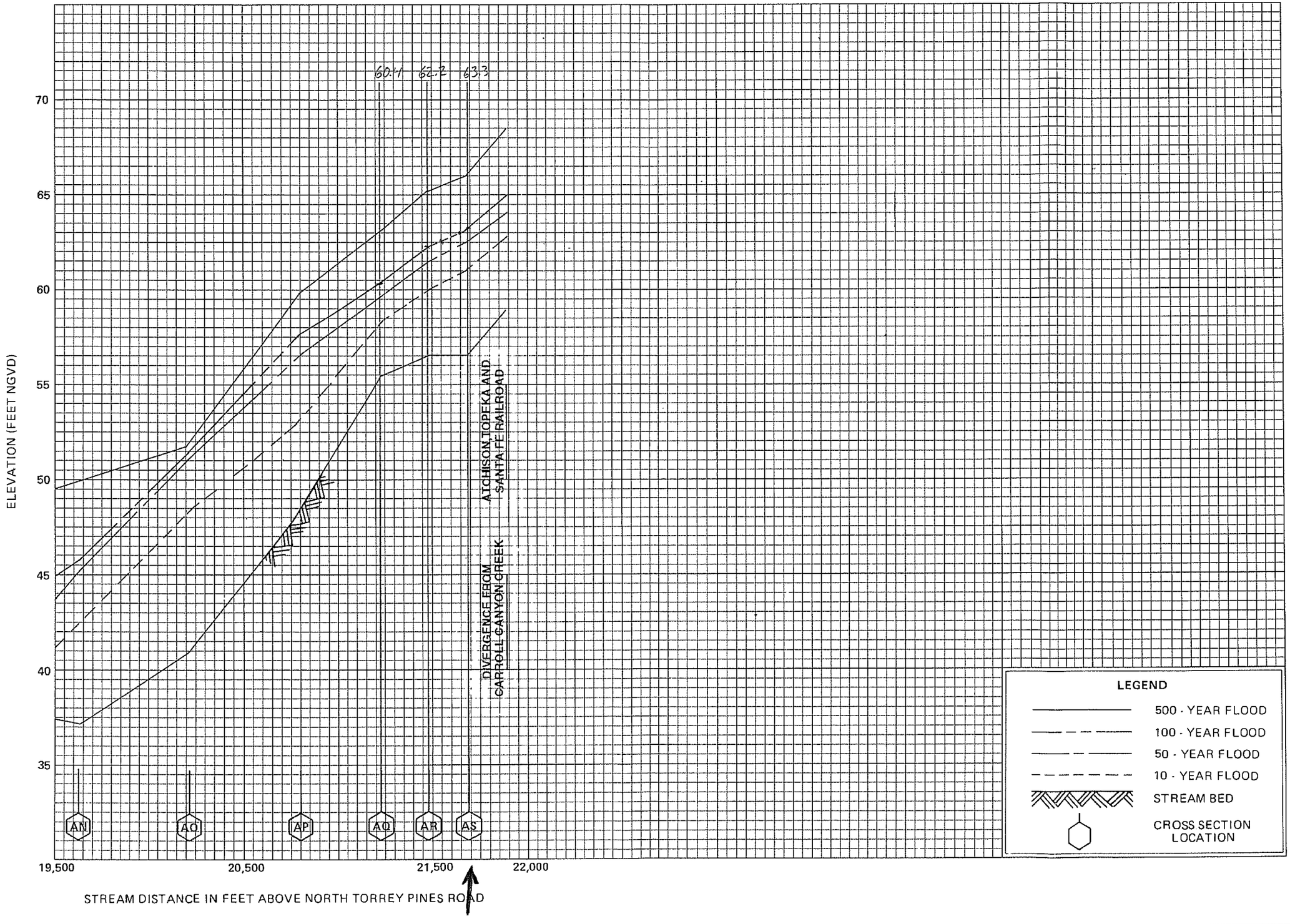
TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN DIEGO COUNTY, CA AND INCORPORATED AREAS

FLOODWAY DATA

SOLEDAD CANYON



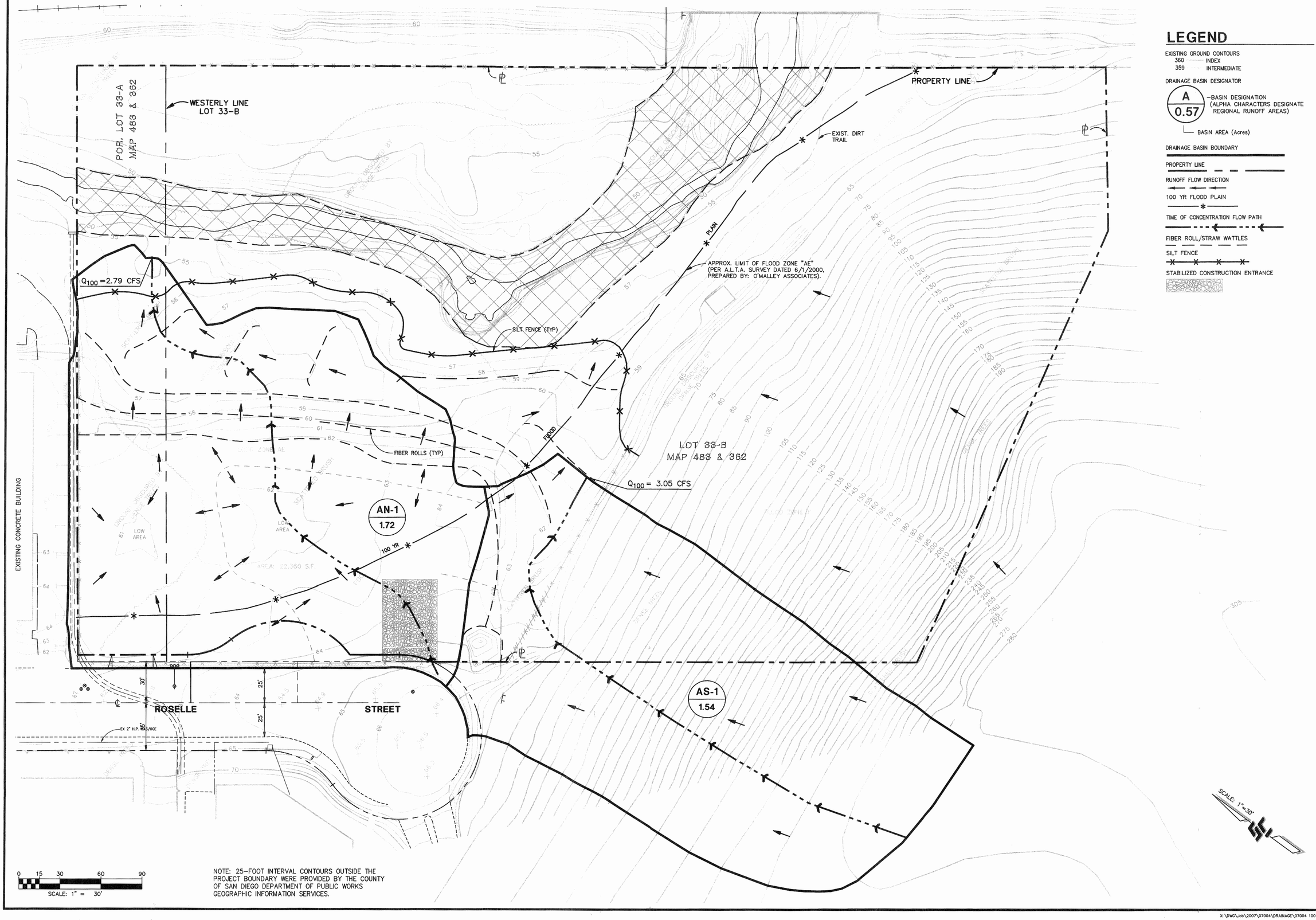
FLOOD PROFILES

SOLEDAD CANYON

FEDERAL EMERGENCY MANAGEMENT AGENCY

SAN DIEGO COUNTY, CA AND INCORPORATED AREAS

425P



LEGEND

EXISTING GROUND CONTOURS
360 ——— INDEX
359 ——— INTERMEDIATE

DRAINAGE BASIN DESIGNATOR
A / 0.57
—BASIN DESIGNATION (ALPHA CHARACTERS DESIGNATE REGIONAL RUNOFF AREAS)
└ BASIN AREA (Acres)

DRAINAGE BASIN BOUNDARY

PROPERTY LINE

RUNOFF FLOW DIRECTION

100 YR FLOOD PLAIN

TIME OF CONCENTRATION FLOW PATH

FIBER ROLL/STRAW WATTLES

SILT FENCE

STABILIZED CONSTRUCTION ENTRANCE

STEVENS-CRESTO ENGINEERING, INC.
CIVIL ENGINEERS - PLANNERS - LAND SURVEYORS
9665 CHESAPEAKE DRIVE
SUITE 320
SAN DIEGO, CA 92123-1352
PHONE: 858.694.5660
FAX: 858.694.5661
www.scengr.com

REVISIONS

△	△
△	△
△	△
△	△
△	△

ROSELLE STREET
SAN DIEGO, CALIFORNIA

EXHIBIT "A"
EXISTING DRAINAGE BASINS

DATE: 06/11/08
SCE NO. 07004.01
SHEET
A

LEGEND

EXISTING GROUND CONTOURS
360 ——— INDEX
359 ——— INTERMEDIATE

DRAINAGE BASIN DESIGNATOR

A / 0.57 — BASIN DESIGNATION (ALPHA CHARACTERS DESIGNATE REGIONAL RUNOFF AREAS)
BASIN AREA (Acres)

DRAINAGE BASIN BOUNDARY

PROPERTY LINE

RUNOFF FLOW DIRECTION

100 YR FLOOD PLAIN

STORM DRAIN PIPE

STORM DRAIN CLEANOUT

STORM DRAIN CURB INLET

TIME OF CONCENTRATION FLOW PATH

PDR, LOT 33-A
MAP 483 & 362

WESTERLY LINE
LOT 33-B

PROPERTY LINE

EXIST. DIRT TRAIL

APPROX. LIMIT OF FLOOD ZONE "AE"
(PER A.L.T.A. SURVEY DATED 6/1/2000,
PREPARED BY: O'MALLEY ASSOCIATES).

Q_{100} =0.64 CFS

WETLAND CREATION AREA
SEE SHEET C-5

100' WETLAND BUFFER

AN-2
0.46

PROPOSED 12" PVC STORM DRAIN

PROPOSED CATCH BASIN W/STORM DRAIN INLET FILTER

Q_{100} =1.83 CFS

AN-1
1.18

APPROXIMATE LOCATION OF PROPOSED MOBILE OFFICE TRAILER

PROPOSED 18" HIGH LANDSCAPED BERM

EXIST. 60" RCP STORM DRAIN

LOT 33-B
MAP 483 & 362

Q_{100} =3.22 CFS

AS-1
1.59

AN-3
0.03

ROSELLE STREET

EX 2" H.P. GAS LINE

EXISTING CONCRETE BUILDING

SCALE: 1" = 30'

NOTE: 25-FOOT INTERVAL CONTOURS OUTSIDE THE PROJECT BOUNDARY WERE PROVIDED BY THE COUNTY OF SAN DIEGO DEPARTMENT OF PUBLIC WORKS GEOGRAPHIC INFORMATION SERVICES.

SCALE: 1"=30'

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REVISIONS

ROSELLE STREET
SAN DIEGO, CALIFORNIA

EXHIBIT "B"
PROPOSED DRAINAGE BASINS

DATE: 07/14/08
SCE NO. 07004.01
SHEET B

X:\DWG\Job\2007\07004\DRAINAGE\07004 100 FT SETBACK-02 PR DRN.dwg 7/14/2008 10:20:38 AM PDT