STEVENS · CRESTO ENGINEERING, INC .

HYDROMODIFICATION MANAGEMENT PLAN

FOR:

OTAY CROSSINGS COMMERCE PARK

COUNTY TRACT 5405 RPL7

OTAY MESA, CA

Prepared for:
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Date: 05/14/09
Revised: 02/23/10
SCE Project: 03043.03

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OTAY MESA, CA

Declaration Of Responsible Charge

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

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

Stevens Cresto Engineering, Inc.
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Suite 320
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Tel: (858) 694-5660

3/29/10

Mark E. Stevens
R.C.E. 35502

Date



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SECTION 1

PROJECT DESCRIPTION

Purpose

This Hydromodification Management Plan has been prepared to demonstrate that the proposed project, TM 5405 RPL7, will comply with the County of San Diego's Interim Hydromodification Criteric (IHC). The IHC was developed by the County of San Diego, and its NPDES Co-permittees, to address the hydromodification requirements issued by the Regional Water Quality Control Board in Order R9-2007-0001, Provision D.1.g (6). Provision D.1.g (6) states, "Each Co-permittee shall collaborate with the other Co-permittees to develop and implement a Hydromodification Management Plan (HMP) to manage increases in runoff discharge rates and durations from all Priority Development Projects, where such increased rates and durations are likely to cause increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force. The HMP, once approved by the Regional Board, shall be incorporated into the local SUSMP and implemented by each Co-permittee so that post-project runoff discharge rates and durations shall not exceed estimated pre-project discharge rates and durations where the increased discharge rates and durations will result in increased potential for erosion or other significant adverse impacts to beneficial uses, attributable to changes in the discharge rates and durations." The interim criteria will apply until the final criteria is adopted and implemented. Per the memorandum, "Development of Interim Hydromodification Criteria", dated October 30, 2007, the IHC shall apply to all projects greater than 50 acres. Subject projects shall use continuous modeling software to ensure that the following requirements are met:

1) For flow rates from 20% of the pre-project 5-year runoff event (0.2Q5) to the pre-project 10-year runoff event (Q10), the post-project discharge rates and durations shall not deviate above the pre-project rates and durations by more than 10%, or more than 10% of the length of the flow duration curve

2) For flow rates from 0.2Q5 to Q5, the post-project peak flows shall not exceed pre-project peak flows. For flow rates from Q5 to Q10, post-project peak flows may exceed pre-project flows by up to 10% for a 1-year frequency interval. For example, post-project flows could exceed pre-project flows by up to 10% for the interval from Q9 to Q10 or from Q5.5 to Q6.5, but not from Q8 to Q10.

This report has been prepared in accordance with the technical memorandum, "Minimum Criteria for Evaluation of Storm Water Controls to Meet Interim Hydromodification Criteria (IHC)", prepared by Brown and Caldwell, dated October 10, 2008.

Project Description

Otay Crossings Commerce Park (OCCP), TM 5405 RPL7, is a commercial/ industrial subdivision containing 59 lots on approximately 312 acres. The project is located south of Otay Mesa Road and east of Alta Road in the Otay Mesa area within the County of San Diego, California; County of San Diego Tract 5405. This Hydromodification Management Plan accompanies the Tentative Map for "Otay Crossings Commerce Park", County of San Diego Tract 5405, and assesses the need for hydromodification Best Management Practices (BMPs) to comply with the IHC.

Project completion and permanent post construction BMPs will be implemented in two steps. Initially, during this current phase of the project, completion of construction will yield only rough graded pads and public roads. Water quality and erosion control BMPs will be incorporated as needed to address this level of development. Ultimately, rough graded pads will be purchased and occupied by industrial/commercial facilities. Currently, none of the rough graded pads are proposed to be built-out and no specifics are known about the ultimate developments that will eventually be constructed.

Exhibit C, within Section 5, provides minimum on-lot BMP sizing requirements to be implemented during the ultimate build-out of the project. During the Site Plan review that will take place prior to the development of each lot, as mandated by the East Otay Mesa Specific Plan, each proposed development will need to demonstrate that it is in compliance with the requirements indicated in this report. Should a project propose alternative BMPs, or any variation to the assumptions made within this report, then that project will need to provide additional modeling and analysis to demonstrate that the subdivision as a whole will still be in compliance with the IHC upon completion of the project.

Method of Analysis

The hydromodification analysis within this report utilizes continuous modeling software called San Diego Hydrology Model (SDHM), version dated 8/24/09, developed by Clear Creek Solutions, Inc. Using rain gauge data specific to the project of interest, SDHM calculates pre-project runoff rates for each water year to compute the pre-project 2- through 25-year flood frequency values. The software then calculates the post-project 2- through 25-year flood frequency values, routing runoff through project BMPs as applicable. The maximum flow value for each water year is selected by the model to compute the pre- and post-project 2- through 25-year flood frequencies. The pre-project 5-year peak flow is multiplied by 20% to set the lower limit of the erosive flows, in accordance with the IHC, and the 10-year peak flow is used as the upper limit. The model counts the number of hours that pre-project flows exceed each of the flow levels during the entire simulation period. The model does the same analysis for the post-project mitigated flows. A comparison of the pre-project and post-project flow duration curves is conducted for 100 flow levels between the lower limit and the upper limit. If the comparison of the pre-project

and post-project flow duration curves yields compliance with the IHC, the software issues a "pass" for the model, otherwise it issues a "fail".

A basin is modeled within SDHM using land use type and slope, for the pre- and post-project condition. In the post-project condition, the basin can be broken down into multiple sub-basins, if necessary, and each sub-basin can be routed to a different BMP or to no BMP at all. Additionally, the software contains an "auto-pond" component that can automatically size a BMP for the specific basin of interest. This component calculates, through an iterative process, the optimal size of the BMP and the BMP outlet structure.

The pre- and post-project land use and slope values for OCCP are calculated within Section 3 and are illustrated on Exhibits A and B, also included within that section. Ridges running through the project divide the site into three drainage basins labeled Basins "A", "B", and "C" within this report. In Section 4, the pre- and post-project land uses are used to model each basin within SDHM. In the post-project condition, the portion of each basin anticipated to be detained, or routed through a BMP, is connected to a trapezoidal pond and the "auto-pond" feature is utilized to calculate the volume of detention needed for the basin. Though this may not ultimately be the detention volume required, it provides a starting point for sizing BMP facilities and assessing the feasibility of satisfying the IHC. In Section 5, the basins are broken down into appropriate sub-basins and routed to the proposed BMPs. Lots that are tributary to the same regional detention facility are combined, along with their on-lot BMPs, within the SDHM models. During final engineering, each lot will be broken out with its own on-lot BMPs. The models in Section 5 are used to establish preliminary sizing for regional detention facilities and minimum BMP requirements for each lot. All hydromodification BMP requirements are illustrated on Exhibit C, also included in Section 5.

Scaling of the Rainfall Data

The SDHM models within Sections 4 and 5 utilize scaled rainfall data from the Lower Otay rain gauge (dated April 2009). Per the Rainfall Station Map prepared by Brown & Caldwell, and included for reference at the end of this section, the Lower Otay rain gauge is located at the southern tip of the Otay Lakes. According to the 85th Percentile Precipitation Isopluvial Map found in Appendix E of the County of San Diego Hydrology Manual, dated June 2003, the OCCP project is located on a different isopluvial contour from the Lower Otay gauge. Based on the Isopluvial Map, the 85th percentile rainfall amount at the Lower Otay gauge is approximately 0.59", and the rainfall amount at OCCP ranges from 0.72" to 0.92". Using an average rainfall of 0.82", a scaling factor of 1.39 can be calculated for OCCP (0.82"/0.59"=1.39). This scaling factor was applied to the Lower Otay rain gauge data using software called WDMutil. This modified data was then used in the SDHM models in Sections 4 and 5. Monthly peak rainfall values are provided for the Lower Otay data, and for the modified Lower Otay data, at the end of Section 5. Additionally, an excerpt of the 85th Percentile Precipitation Isopluvial Map, showing

the relative locations of the rain gauge and the OCCP project, is provided for reference at the end of this section.

Maintenance of Hydromodification Facilities

The proposed hydromodification facilities at OCCP will fall under second and third category maintenance mechanisms, as defined within the County of San Diego "Standard Urban Storm Water Mitigation Plan for Land Development and Public Improvement Projects", dated March 24, 2008. The on-lot BMPs constructed during the ultimate build-out of each lot will fall under the second category maintenance mechanisms, requiring that a Stormwater Facilities Maintenance Agreement, with Easement and Covenants be entered into between the owner and the County of San Diego, obliging the owner to maintain the project category two BMPs into perpetuity. Prior to recordation of the agreement, the owner/ developer will provide the County with security to back up the maintenance agreement, which shall remain in place for an interim period of 5 years. The amount of the security shall equal the estimated cost of 2 years of maintenance activities. The BMPs servicing the public right-of-way will fall under third category maintenance mechanisms, requiring the establishment of a Storm Water Maintenance Assessment District to maintain the proposed BMPs into perpetuity. The primary funding mechanism will be a special assessment under the authority of the Flood Control District. The assessment will be collected with property tax. Because this primary funding mechanism will require a substantial amount of time to establish and collect assessments, prior to establishment of the zone, a developer fee will be needed to cover the initial maintenance period of 24 months.

Conclusion

The calculations within this report assess the feasibility of satisfying the IHC and establish detention facility sizes and locations for the project. Based on the detention requirements and the anticipated facility sizes, as illustrated on Exhibit C within Section 5, the OCCP project will comply with the IHC. During the Site Plan review that will take place prior to the development of each lot, as mandated by the East Otay Mesa Specific Plan, each proposed development will need to demonstrate that it is in compliance with the requirements indicated in this report. Should a project propose alternative BMPs, or any variation to the assumptions made within this report, then that project will need to provide additional modeling and analysis to demonstrate that the subdivision as a whole will still be in compliance with the IHC upon completion of the project.

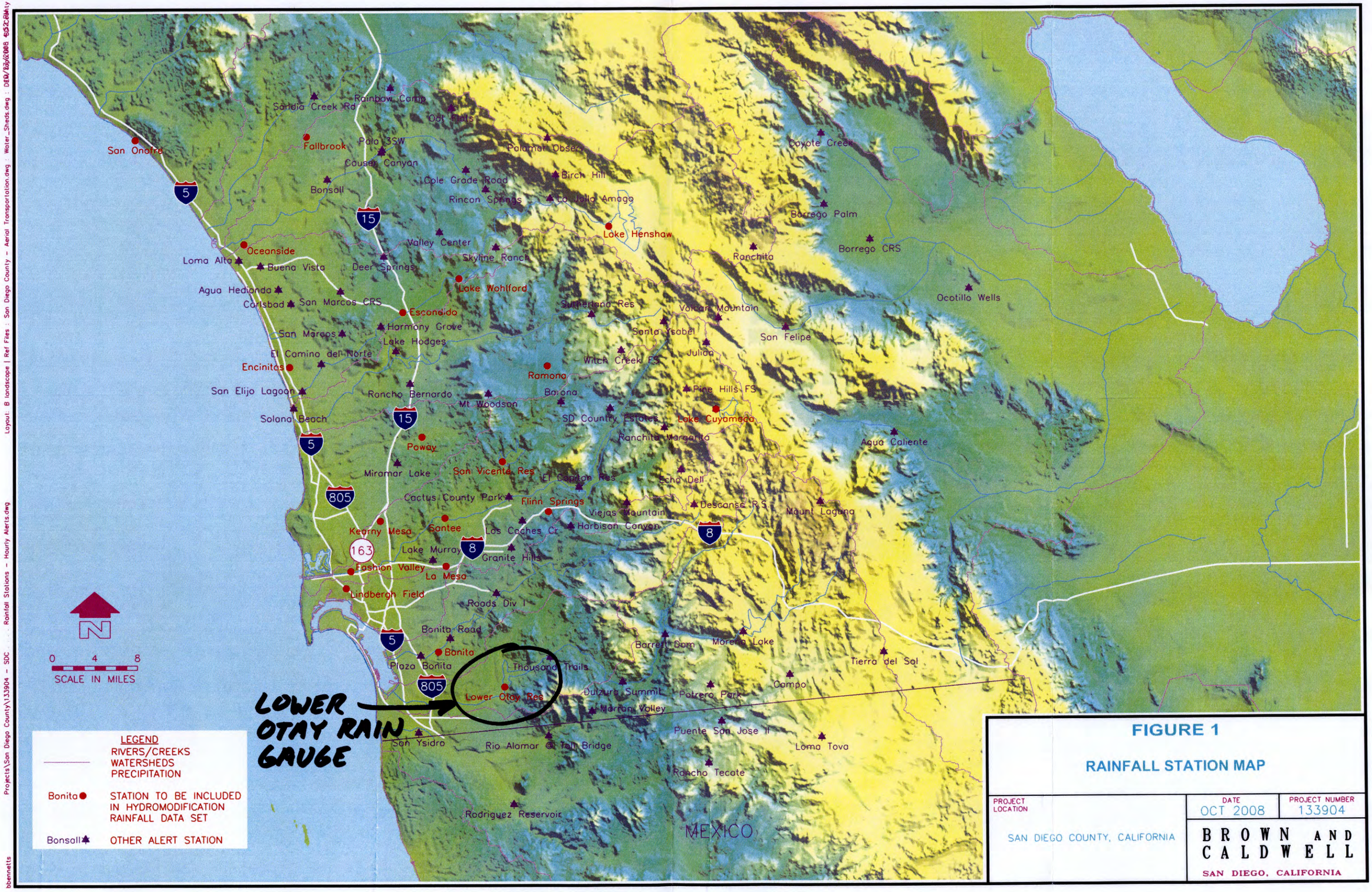


FIGURE 1

RAINFALL STATION MAP

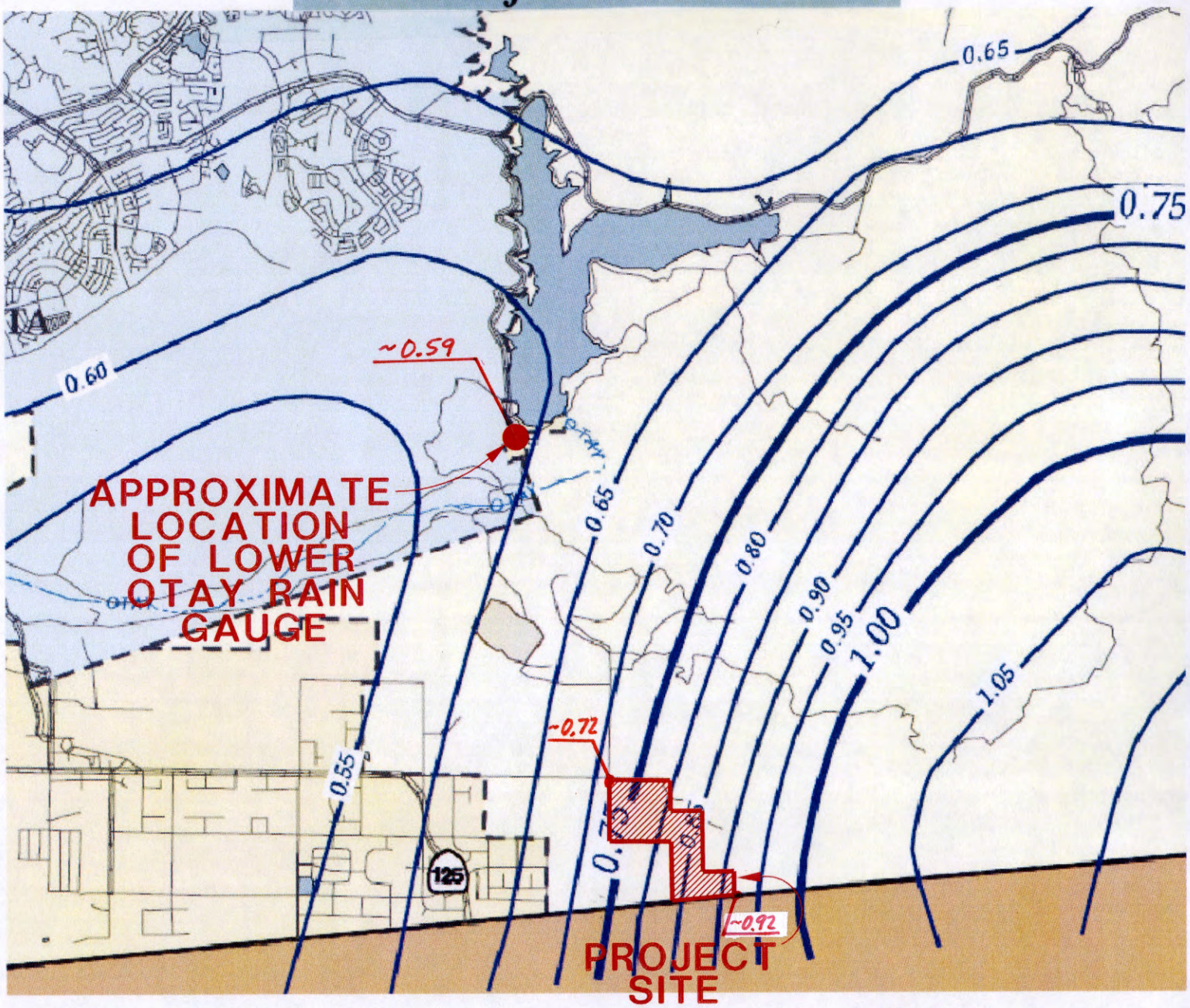
PROJECT LOCATION	DATE	PROJECT NUMBER
SAN DIEGO COUNTY, CALIFORNIA	OCT 2008	133904

BROWN AND CALDWELL
SAN DIEGO, CALIFORNIA

Layout: B landscape | Ref Files : San Diego County - Aerial Transportation.dwg : Water_Sheds.dwg : DEM/Rainfall Stations - Hourly Alerts.dwg
Projects\San Diego County\133904 - SDC
bbennetts

1-5

85th Percentile Precipitation Isopluvial Map Rainfall in Inches



APPROXIMATE AVE. PRECIPITATION AT THE PROJECT SITE: $\frac{0.92+0.72}{2} = 0.82"$

APPROXIMATE PRECIPITATION AT LOWER OTAY RAIN GAUGE: ~0.59"

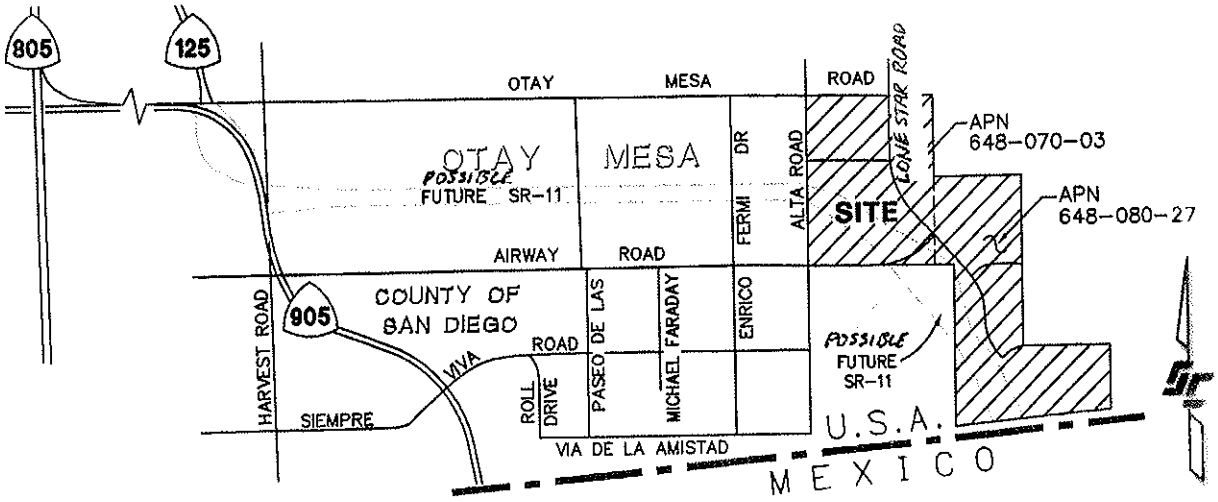
RAINFALL SCALING FACTOR FOR PROJECT SITE:

$0.82"/0.59" = \boxed{1.39}$

SECTION 2

Tentative Map 5405-RPL7 (Reduced – See Section 6 for Full Size)
Preliminary Grading Plan (Reduced – See Section 6 for Full Size)

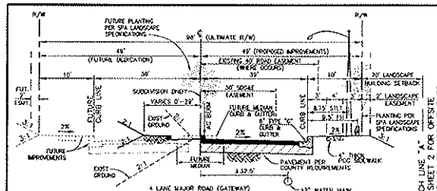
VICINITY MAP
(NO SCALE)



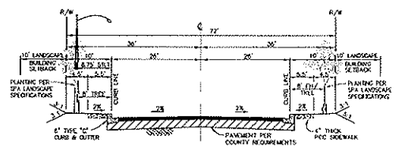
COUNTY OF SAN DIEGO TRACT 5405 RPL7

OTAY CROSSINGS COMMERCE PARK

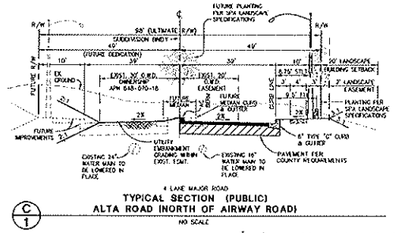
PRELIMINARY GRADING PLAN



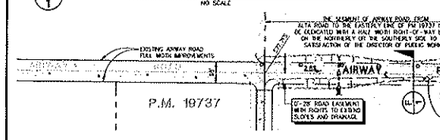
A/1 4 LANE MAJOR ROAD (GATEWAY)
TYPICAL SECTION (PUBLIC)
OTAY MESA ROAD
NO SCALE



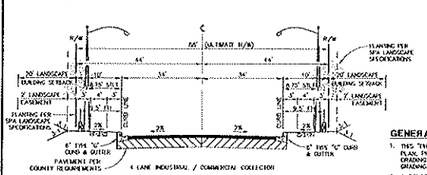
B/1 2 LANE INDUSTRIAL/COMMERCIAL ROAD
TYPICAL SECTION (PUBLIC)
INTERIOR STREETS "CALLE VENTNER"
STREETS A, B, C AND D
NO SCALE



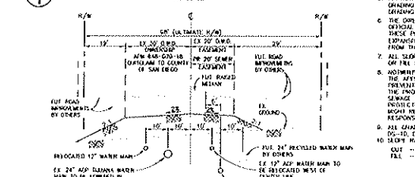
C/1 4 LANE MAJOR ROAD
TYPICAL SECTION (PUBLIC)
ALTA ROAD (NORTH OF AIRWAY ROAD)
NO SCALE



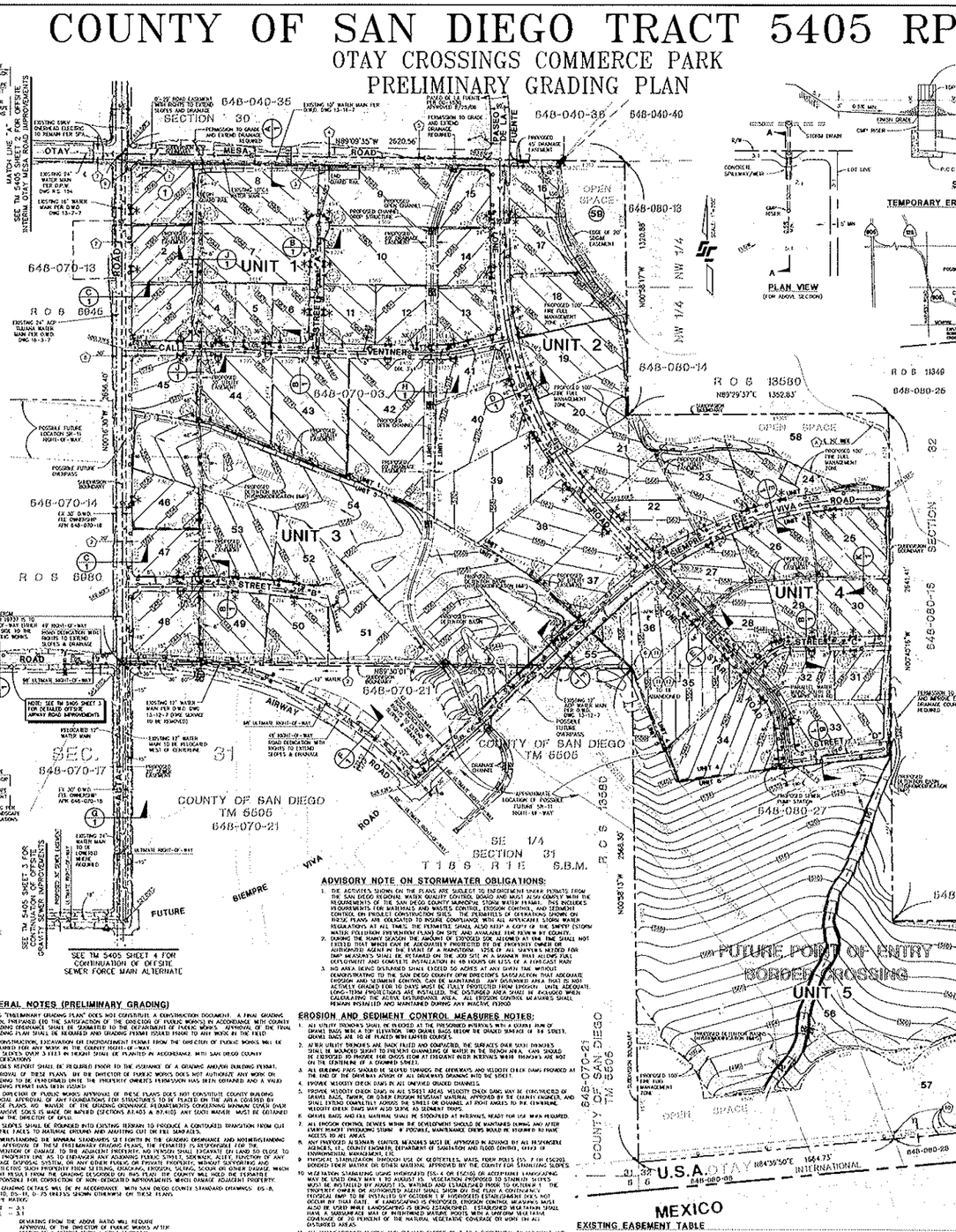
D/1 TYPICAL SECTION (PUBLIC)
LONE STAR ROAD (NORTH OF SIEMPRE VIVA ROAD)
NO SCALE



E/1 TYPICAL SECTION (PUBLIC)
SIEMPRE VIVA ROAD (EAST OF LONE STAR ROAD)
LONE STAR ROAD (SOUTH OF SIEMPRE VIA ROAD)
NO SCALE



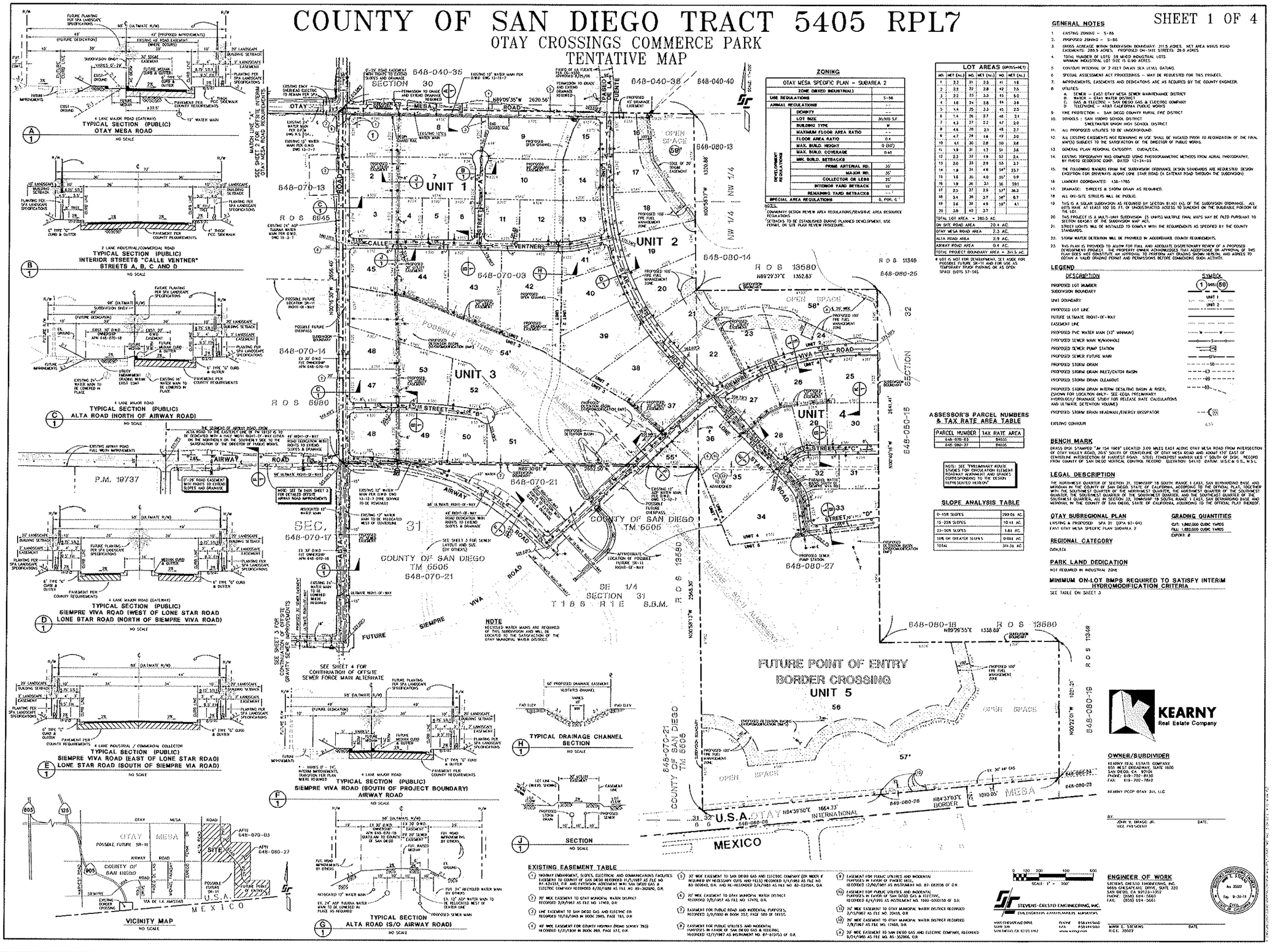
F/1 TYPICAL SECTION
ALTA ROAD (S/O AIRWAY ROAD)
NO SCALE


MATCH LINE "A" SEE TM 5405 SHEET 2 FOR INTERIM OTAY MESA ROAD IMPROVEMENTS
SECTION 30
OTAY MESA ROAD
N89°09'35"W 2620.56'
648-040-35
648-040-36
648-040-40
648-080-18
648-070-13
648-070-03
648-070-14
648-080-14
648-080-26
R O S 6846
R O S 13580
R O S 6880
R O S 11349
UNIT 1
UNIT 2
UNIT 3
UNIT 4
UNIT 5
OPEN SPACE
CALLE VENTNER
SIEMPRE VIVA ROAD
LONE STAR ROAD
AIRWAY ROAD
SECTION 31
SEC. 31
648-070-17
COUNTY OF SAN DIEGO TM 5606
648-070-21
SE 1/4 SECTION 31 T18S R1E S.B.M.
FUTURE PORT OF ENTRY BORDER CROSSING
U.S.A.
MEXICO
OTAY MESA
N84°55'56"E 1664.73'
INTERNATIONAL BORDER
N84°37'03"E
1010.05'
SEE TM 5405 SHEET 4 FOR CONTINUATION OF OFFSITE SEWER FORCE MAIN ALTERNATE
SEE TM 5405 SHEET 3 FOR OFFSITE GRAVITY SEWER IMPROVEMENTS
EX. 30' D.W.D. FEE OWNERSHIP APN 648-070-18
EX. 30' D.W.D. FEE OWNERSHIP APN 648-070-15
EX. 30' D.W.D. FEE OWNERSHIP APN 648-070-16
EX. 16" WATER MAIN PER D.W.D. DWG 13-12-7
EX. 24" TIJUANA WATER MAIN PER D.W.D. DWG 13-13-7
EX. 12" WATER MAIN PER D.W.D. DWG 13-12-7
EX. 8" SEWER MAIN PER D.W.D. DWG 13-13-7
EX. 24" WATER MAIN TO BE RELOCATED WEST OF CENTERLINE
EX. 16" WATER MAIN TO BE LOWERED WHERE REQUIRED
EX. 12" WATER MAIN TO BE RELOCATED WEST OF CENTERLINE
EX. 8" SEWER MAIN TO BE ABANDONED
EX. 10" SEWER MAIN TO BE ABANDONED
EX. 8" SEWER MAIN TO BE ABANDONED
EX. 6" SEWER MAIN TO BE ABANDONED
EX. 6" SEWER MAIN TO BE RELOCATED
EX. 8" SEWER MAIN TO BE RELOCATED
EX. 12" SEWER MAIN TO BE RELOCATED
EX. 24" SEWER MAIN TO BE RELOCATED
EX. 30" SEWER MAIN TO BE RELOCATED
EX. 36" SEWER MAIN TO BE RELOCATED
EX. 42" SEWER MAIN TO BE RELOCATED
EX. 48" SEWER MAIN TO BE RELOCATED
EX.

COUNTY OF SAN DIEGO TRACT 5405 RPL7

OTAY CROSSINGS COMMERCE PARK

TENTATIVE MAP



ZONING

OTAY MESA SPECIFIC PLAN – SUBAREA 2	
ZONE (MIXED INDUSTRIAL)	
USE REGULATIONS	S-88
ANIMAL REGULATIONS	--
DEVELOPMENT REGULATIONS: DENSITY	--
LOT SIZE	30,000 S.F.
BUILDING TYPE	W
MAXIMUM FLOOR AREA RATIO	--
FLOOR AREA RATIO	0.4
MAX. BUILD. HEIGHT	0 (60')
MAX. BUILD. COVERAGE	0.60
MIN. BUILD. SETBACKS	
PRIME ARTERIAL RD.	35'
MAJOR RD.	35'
COLLECTOR OR LESS	25'
INTERIOR YARD SETBACK	15'
REMAINING YARD SETBACKS	--
SPECIAL AREA REGULATIONS	B, FOR, G *

COMMUNITY DESIGN REVIEW AREA REGULATIONS/SENSITIVE AREA RESOURCE REGULATIONS

*SETBACKS TO BE ESTABLISHED DURING PLANNED DEVELOPMENT, USE PERMIT, OR SITE PLAN REVIEW PROCEDURE.

LOT AREAS (GROSS=NET)

NO.	NET (Ac.)	NO.	NET (Ac.)	NO.	NET (Ac.)
1	2.3	21	2.5	41	1.8
2	2.2	22	2.8	42	7.5
3	2.2	23	3.3	43	5.0
4	1.8	24	2.8	44	3.8
5	1.5	25	2.3	45	2.5
6	1.4	26	2.7	46	2.1
7	4.3	27	2.2	47	2.0
8	4.6	28	2.1	48	2.7
9	4.7	29	1.6	49	3.0
10	4.1	30	2.8	50	2.8
11	1.9	31	1.7	51	3.6
12	2.3	32	1.9	52	2.4
13	2.0	33	2.9	53	3.7
14	1.8	34	4.8	54*	23.7
15	1.8	35	4.0	55*	0.9
16	1.9	36	3.1	56	59.1
17	2.5	37	2.9	57*	36.3
18	3.1	38	3.7	58*	8.7
19	3.6	39	4.9	59*	4.1
20	3.0	40	3.7		

TOTAL LOT AREA =	260.5 AC.
ON SITE ROAD AREA	20.4 AC.
OTAY MESA ROAD AREA	2.3 AC.
ALTA ROAD AREA	2.9 AC.
AIRWAY ROAD AREA	0.4 AC.
TOTAL PROJECT BOUNDARY AREA =	311.5 AC.

* LOT IS NOT FOR DEVELOPMENT. SET ASIDE FOR POSSIBLE FUTURE SR-11 AND FOR USE AS TEMPORARY SENIOR PARKING OR AS OPEN SPACE (LOTS 57-59).

ASSESSOR'S PARCEL NUMBERS & TAX RATE AREA TABLE

PARCEL NUMBER	TAX RATE AREA
648-070-03	84030
648-080-27	84036

NOTE: SEE "PRELIMINARY ROUTE STUDIES FOR CIRCULATION ELEMENT ROADWAY ALIGNMENT AND GRADES" CURVES SPANNING TO 15% DESIGN SUPERELEVATED PER DPW.

SLOPE ANALYSIS TABLE

0-15% SLOPES	299.06 AC.
15-25% SLOPES	10.45 AC.
25-50% SLOPES	1.86 AC.
50% OR GREATER SLOPES	0.006 AC.
TOTAL	311.36 AC.

GENERAL NOTES

1. EXISTING ZONING – S-88
2. PROPOSED ZONING – S-88
3. GROSS ACREAGE WITHIN SUBDIVISION BOUNDARY: 311.5 ACRES. NET AREA MINUS ROAD EASEMENTS: 288.5 ACRES. PROPOSED ON-SITE STREETS: 20.0 ACRES
4. TOTAL NUMBER OF LOTS: 59 MIXED INDUSTRIAL LOTS. MINIMUM INDUSTRIAL LOT SIZE IS 0.90 ACRES.
5. CONTOUR INTERVAL OF 2 FEET (MEAN SEA LEVEL DATUM).
6. SPECIAL ASSESSMENT ACT PROCEEDINGS – MAY BE REQUESTED FOR THIS PROJECT.
7. IMPROVEMENTS, EASEMENTS AND DEDICATIONS ARE AS REQUIRED BY THE COUNTY ENGINEER.
8. UTILITIES:
   A. SEWER – EAST OTAY MESA SEWER MAINTENANCE DISTRICT
   B. WATER – OTAY WATER DISTRICT
   C. GAS & ELECTRIC – SAN DIEGO GAS & ELECTRIC COMPANY
   D. TELEPHONE – AT&T CALIFORNIA PUBLIC WORKS
9. FIRE PROTECTION – SAN DIEGO COUNTY RURAL FIRE DISTRICT
10. SCHOOLS – SAN YSIDRO SCHOOL DISTRICT
    SWEETWATER UNION HIGH SCHOOL DISTRICT
11. ALL PROPOSED UTILITIES TO BE UNDERGROUND.
12. ALL EXISTING EASEMENTS NOT REMAINING IN USE SHALL BE VACATED PRIOR TO RECORDATION OF THE FINAL MAP(S) SUBJECT TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS.
13. GENERAL PLAN REGIONAL CATEGORY: CUDA/CCA.
14. EXISTING TOPOGRAPHY WAS COMPILED USING PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY, BY PHOTO GEODESIC CORP. DATED 12-24-00
15. THE FOLLOWING WAIVERS FROM THE SUBDIVISION ORDINANCE DESIGN STANDARDS ARE REQUESTED. DESIGN EXCEPTION FOR DRIVEWAYS ALONG LONE STAR ROAD (A GATEWAY ROAD THROUGH THE SUBDIVISION)
16. LAMBERT COORDINATES: 158-1785
17. DRAINAGE: SHEETS & STORM DRAIN AS REQUIRED.
18. ALL ON-SITE STREETS WILL BE PUBLIC.
19. THIS IS A SOLAR SUBDIVISION AS REQUIRED BY SECTION 81.401 (n), OF THE SUBDIVISION ORDINANCE. ALL LOTS HAVE AT LEAST 100 SQ. FT. OF UNOBSTRUCTED ACCESS TO SUNLIGHT ON THE BUILDABLE PORTION OF THE LOT.
20. THIS PROJECT IS A MULTI-UNIT SUBDIVISION (5 UNITS) MULTIPLE FINAL MAPS MAY BE FILED PURSUANT TO SECTION 66456.1 OF THE SUBDIVISION MAP ACT.
21. STREET LIGHTS WILL BE INSTALLED TO COMPLY WITH THE REQUIREMENTS AS SPECIFIED BY THE COUNTY STANDARDS.
22. STORM WATER DETENTION WILL BE PROVIDED IN ACCORDANCE COUNTY REQUIREMENTS.
23. THIS PLAN IS PROVIDED TO ALLOW FOR FULL AND ADEQUATE DISCRETIONARY REVIEW OF A PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE AN APPROVAL TO PERFORM ANY GRADING WHEN HEREON, AND AGREES TO OBTAIN A VALID GRADING PERMIT AND PERMISSIONS BEFORE COMMENCING SUCH ACTIVITY.

LEGEND

DESCRIPTION	SYMBOL
PROPOSED LOT NUMBER	(1) MIN (50)
SUBDIVISION BOUNDARY	
UNIT BOUNDARY	UNIT 1 / UNIT 2
PROPOSED LOT LINE	
FUTURE ULTIMATE RIGHT-OF-WAY	
EASEMENT LINE	
PROPOSED PVC WATER MAIN (12" MINIMUM)	W
PROPOSED SEWER MAIN W/MANHOLE	S
PROPOSED SEWER PUMP STATION	SPS
PROPOSED SEWER FUTURE MAIN	SFM
PROPOSED STORM DRAIN	50
PROPOSED STORM DRAIN INLET/CATCH BASIN	
PROPOSED STORM DRAIN CLEANOUT	CO
PROPOSED STORM DRAIN INTERIM DESILTING BASIN & RISER, (SHOWN FOR LOCATION ONLY - SEE CCDA PRELIMINARY HYDROLOGY/DRAINAGE STUDY FOR RELEASE RATE CALCULATIONS AND ULTIMATE DETENTION VOLUME)	DB
PROPOSED STORM DRAIN HEADWALL/ENERGY DISSIPATOR	
EXISTING CONTOUR	650

BENCH MARK

BRASS DISK STAMPED "AM 154 1969" LOCATED 3.09 MILES EAST ALONG OTAY MESA ROAD FROM INTERSECTION OF OTAY VALLEY ROAD, 20.5' SOUTH OF CENTERLINE OF OTAY MESA ROAD AND ABOUT 170' EAST OF CENTERLINE INTERSECTION OF HARVEST ROAD – SITE'S FENCEPOST MARKED LS 7 SOUTH OF DISC. RECORD FROM COUNTY OF SAN DIEGO VERTICAL CONTROL RECORD ELEVATION 541.10 DATUM: U.S.C.&G.S., M.S.L.

LEGAL DESCRIPTION

THE NORTHWEST QUARTER OF SECTION 31, TOWNSHIP 18 SOUTH, RANGE 1 EAST, SAN BERNARDINO BASE AND MERIDIAN IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT, TOGETHER WITH THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER, THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER, THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER, AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER, ALL IN SECTION 32, TOWNSHIP 18 SOUTH, RANGE 1 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

OTAY SUBREGIONAL PLAN

EXISTING & PROPOSED: SPA 21 (OPA 92-04)
EAST OTAY MESA SPECIFIC PLAN SUBAREA 2

GRADING QUANTITIES

CUT: 1,882,000 CUBIC YARDS
FILL: 1,882,000 CUBIC YARDS
EXPORT: 0

REGIONAL CATEGORY

CUDA/CCA

PARK LAND DEDICATION

NOT REQUIRED IN INDUSTRIAL ZONE

MINIMUM ON-LOT BMPS REQUIRED TO SATISFY INTERIM HYDROMODIFICATION CRITERIA

SEE TABLE ON SHEET 3

EXISTING EASEMENT TABLE

(1) HIGHWAY ENDORSEMENT, SLOPES, ELECTRICAL AND COMMUNICATIONS FACILITIES EASEMENT TO COUNTY OF SAN DIEGO RECORDED 11/5/1987 AS FILE NO 87-624330, O.R. AND EXTENSION AGREEMENT WITH SAN DIEGO GAS & ELECTRIC COMPANY RECORDED 8/20/1880 AS FILE NO 89-382800, O.R.

(2) 20' WIDE EASEMENT TO OTAY MUNICIPAL WATER DISTRICT RECORDED 2/9/1967 AS FILE NO 17406, O.R.

(3) LINE EASEMENT TO SAN DIEGO GAS AND ELECTRIC CO. RECORDED 10/18/1945 IN BOOK 2965, PAGE 183, O.R.

(4) 40' WIDE EASEMENT FOR COUNTY HIGHWAY (FROM SEMPRA 793) RECORDED 1/31/1936 IN BOOK 869, PAGE 177, O.R.

(5) 30' WIDE EASEMENT TO SAN DIEGO GAS AND ELECTRIC COMPANY (OR MODIFIED AS REQUIRED BY NECESSARY CUTS AND FILLS) RECORDED 1/4/1983 AS FILE NO 83-003564, O.R. AND RE-RECORDED 2/24/1983 AS FILE NO 83-059561, O.R.

(6) 30' WIDE EASEMENT TO OTAY MUNICIPAL WATER DISTRICT RECORDED 2/9/1967 AS FILE NO 17406, O.R.

(7) EASEMENT FOR PUBLIC ROAD AND INCIDENTAL PURPOSES, RECORDED 3/9/1900 IN BOOK 257, PAGE 500 OF DEEDS

(8) EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN FAVOR OF SAN DIEGO GAS & ELECTRIC, RECORDED 12/7/1987 AS INSTRUMENT NO. 87-673753 OF O.R.

(9) EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN FAVOR OF PACIFIC BELL, RECORDED 12/30/1987 AS INSTRUMENT NO. 87-689108 OF O.R.

(10) EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN FAVOR OF SAN DIEGO GAS & ELECTRIC, RECORDED 6/4/1992 AS INSTRUMENT NO. 1992-0302150 OF O.R.

(11) 30' WIDE EASEMENT TO OTAY MUNICIPAL WATER DISTRICT RECORDED 2/15/1967 AS FILE NO. 20418, O.R.

(12) 30' WIDE EASEMENT TO OTAY MUNICIPAL WATER DISTRICT RECORDED 7/8/1967 AS FILE NO. 57460, O.R.

(A) 20' WIDE EASEMENT TO SAN DIEGO GAS AND ELECTRIC COMPANY, RECORDED 9/24/1980 AS FILE NO. 80-302866, O.R.

VICINITY MAP
NO SCALE

OWNER/SUBDIVIDER

KEARNY REAL ESTATE COMPANY
655 WEST BROADWAY, SUITE 1600
SAN DIEGO, CA. 92101
PHONE: 619-702-8130
FAX: 619-702-7812

KEARNY MESA OTAY 311, LLC

BY: _____ DATE: _____
JOHN V. ERRASO JR.
VICE PRESIDENT

ENGINEER OF WORK

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6666 CHESAPEAKE DRIVE, SUITE 320
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FAX: (858) 694-0651

STEVENS-CRESTO ENGINEERING, INC.
CIVIL ENGINEERING • LAND PLANNING • SURVEYING

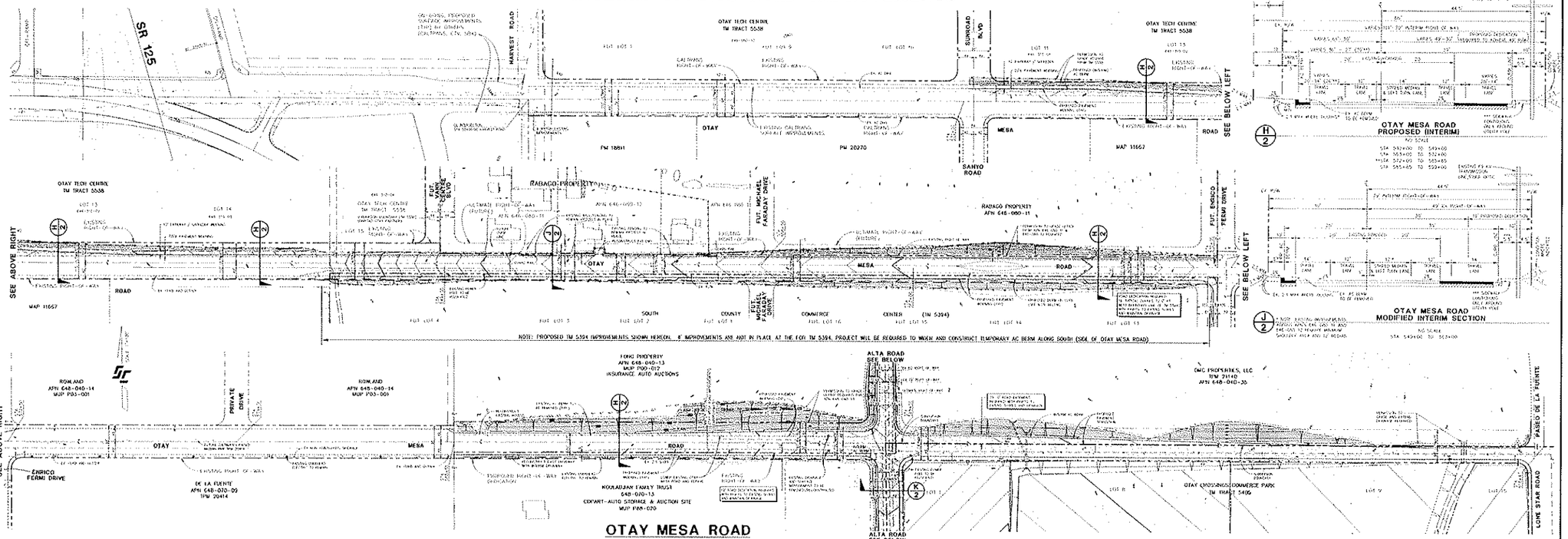
MARK E. SIEVERS, R.C.E. 36609 _____ DATE: _____

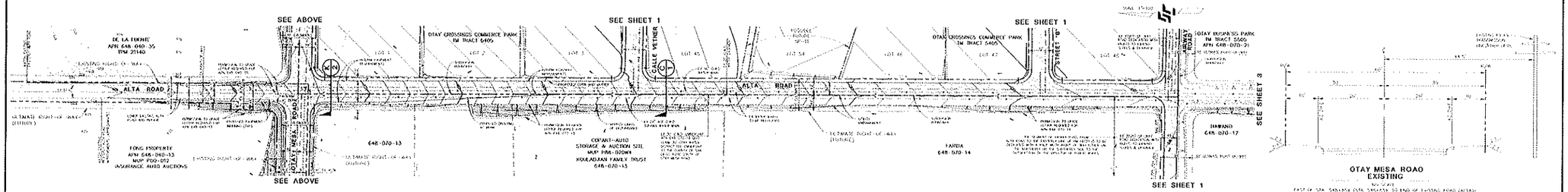
REGISTERED PROFESSIONAL ENGINEER MARK E. SIEVERS No. 36609 Exp. 9-30-11 STATE OF CALIFORNIA

0 100 200 400 600
SCALE: 1" = 200'

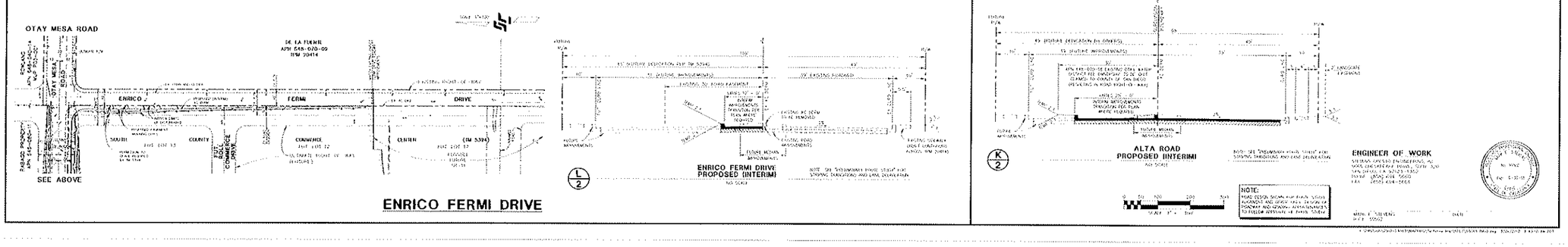
COUNTY OF SAN DIEGO TRACT 5405 RPL7

OTAY CROSSINGS COMMERCE PARK
TENTATIVE MAP
INTERIM OFFSITE ROAD IMPROVEMENTS





ALTA ROAD



ENRICO FERMI DRIVE

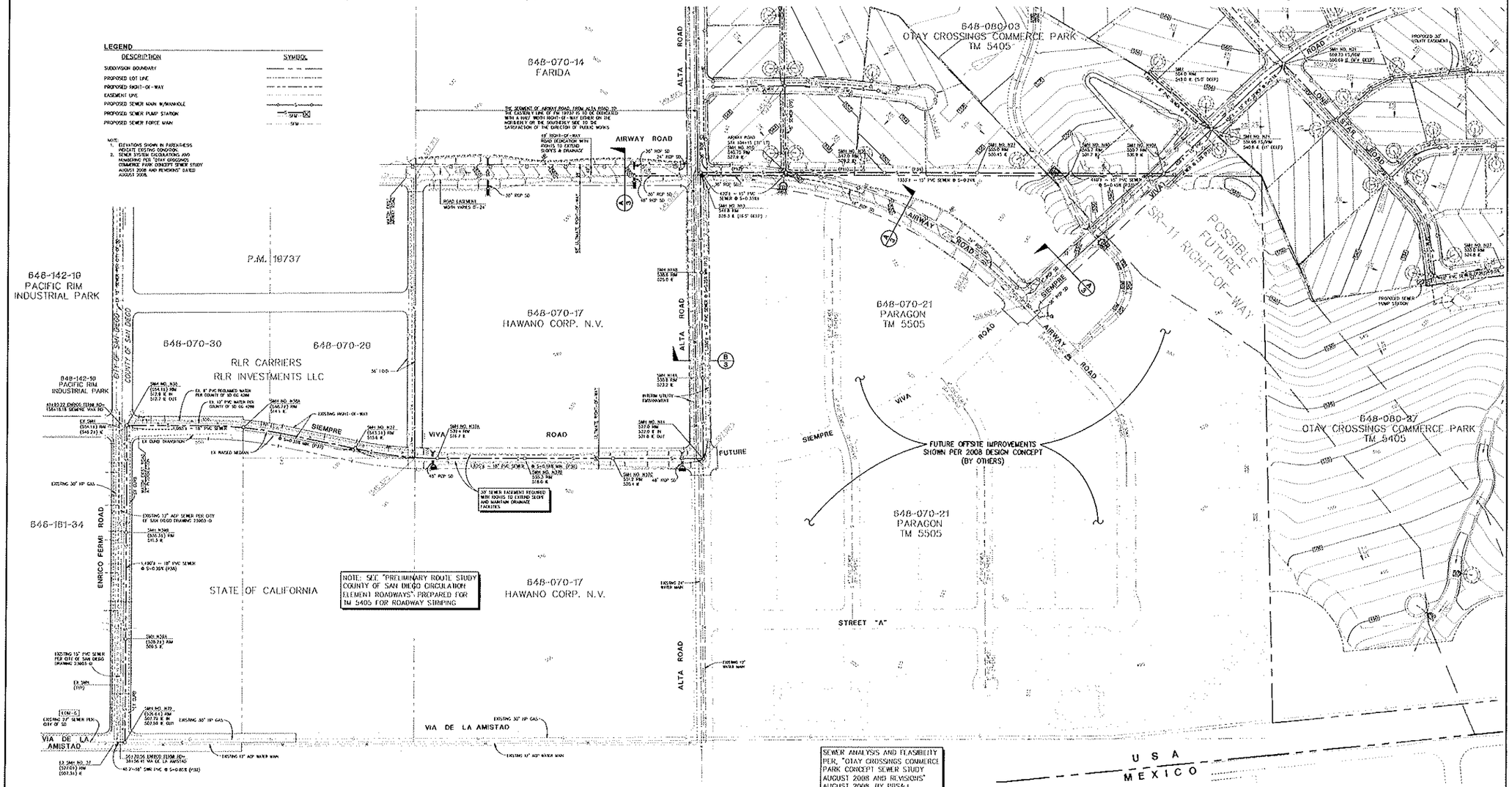
2.4

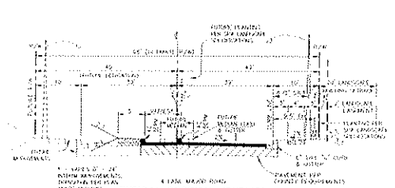
COUNTY OF SAN DIEGO TRACT 5405 RPL7

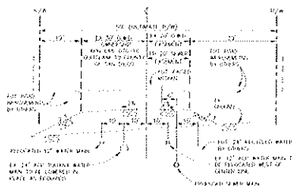
OTAY CROSSINGS COMMERCE PARK

TENTATIVE MAP

PROJECT SEWER OUTFALL (OPTION A GRAVITY), OFFSITE ROADWAY IMPROVEMENTS AND ON-LOT HYDROMODIFICATION BMP REQUIREMENTS







MINIMUM ON-LOT BMPS REQUIRED TO SATISFY INTERIM HYDROMODIFICATION CRITERIA

LOT NUMBER	LOT ACREAGE (Ac)	MINIMUM REQUIRED AREA OF BIO RETENTION SWALES[1,2] (SF)	MINIMUM REQUIRED VOLUME OF UNDERGROUND DETENTION[1,3] (Ac-Ft)
LOT 1	2.32	5,093	0.49
LOT 2	2.24	4,917	0.48
LOT 3	2.21	4,895	0.52
LOT 4	1.6	3,512	0.27
LOT 5	1.39	3,051	0.24
LOT 6	1.37	3,009	0.24
LOT 7	4.3	9,439	0.74
LOT 8	4.6	10,098	0.79
LOT 9	4.75	9,264	0.72
LOT 10	3.66	7,008	0.62
LOT 11	1.81	4,127	0.32
LOT 12	1.83	4,018	0.32
LOT 13	1.97	4,294	0.34
LOT 14	1.95	4,250	0.33
LOT 15	1.57	3,427	0.27
LOT 16	1.93	4,202	0.33
LOT 17	2.46	5,367	0.42
LOT 18	3.43	7,476	0.58
LOT 19	3.61	7,865	0.61
LOT 20	2.98	6,496	0.51
LOT 21	2.53	5,515	0.43
LOT 22	2.72	5,938	0.46
LOT 23	3.34	6,704	0.43
LOT 24	2.76	5,538	0.36
LOT 25	2.28	6,581	0.43
LOT 26	2.66	5,337	0.34
LOT 27	2.17	4,356	0.28
LOT 28	2.17	4,254	0.27
LOT 29	1.58	3,170	0.20
LOT 30	2.76	5,538	0.36
LOT 31	1.71	3,431	0.22
LOT 32	1.92	3,852	0.25
LOT 33	2.89	5,798	0.37
LOT 34	4.6	9,229	0.60
LOT 35	4.92	9,866	0.52
LOT 36 EAST	2.21	4,434	0.29
LOT 36 WEST	0.9	1,962	0.15
LOT 37	2.54	6,400	0.50
LOT 38	3.69	8,043	0.63
LOT 39	4.89	10,659	0.83
LOT 40	3.76	8,157	0.64
LOT 41	1.55	3,379	0.26
LOT 42 EAST	3.1	6,087	0.67
LOT 42 WEST	3.21	7,046	0.55
LOT 43	4.96	10,937	0.85
LOT 44	3.64	7,930	0.62
LOT 45	2.46	5,400	0.42
LOT 46	2.13	4,618	0.42
LOT 47	2.03	4,782	0.40
LOT 48	2.69	5,320	0.49
LOT 49	2.02	5,973	0.53
LOT 50	2.56	5,063	0.45
LOT 51 EAST	2.37	6,653	0.52
LOT 51 WEST	4.18	2,314	0.21
LOT 52	2.42	5,201	0.47
LOT 53	3.71	8,240	0.72
LOT 55	0.87	1,896	0.15

[1] BASED ON A SWALE THAT IS 4 FT DEEP, WITH TOPOSLOPE OF 0.33, AND 2 FT OF FREEBOARD. SWALE AREA IS THE AREA OF THE BIO-RETENTION FACILITY THAT PROVIDES TREATMENT. DUE TO DESIGN PARAMETERS OF THE ACTUAL FACILITY CONSTRUCTED, OR SPECIFIC SITE DESIGN REQUIREMENTS, ADDITIONAL AREA MAY BE REQUIRED.

[2] VOLUME IS PROVIDED DO NOT INCLUDE THE ADDITIONAL VOLUME/AREA THAT WILL BE NECESSARY FOR FREEBOARD AND AN EMERGENCY SPILLWAY.

[3] ON-LOT BMPS MUST BE PLACED IN A LOCATION ON THE INDIVIDUAL LOT THAT MAXIMIZES THE CAPTURE OF THE ON-SITE RUNOFF.

[4] DURING DEVELOPMENT OF EACH LOT, THE PROVIDED MINIMUM VALUES ARE NOT USED. ADDITIONAL ANALYSIS WILL NEED TO BE PROVIDED TO DEMONSTRATE THAT THE CHOSEN ALTERNATIVE BMPS ARE COMPARABLE IN ADDRESSING THE HYDROMODIFICATION CRITERIA HOW THE SUBDIVISION AS A WHOLE. THIS ANALYSIS WILL BE PROVIDED DURING THE SITE PLAN REVIEW PROCESS MANDATED BY THE EAST OTAY MESA SPECIFIC PLAN FOR THE DEVELOPMENT OF EACH LOT.

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FAX (858) 614-5661

MARK E. STEVENS
RCE 36002

DATE

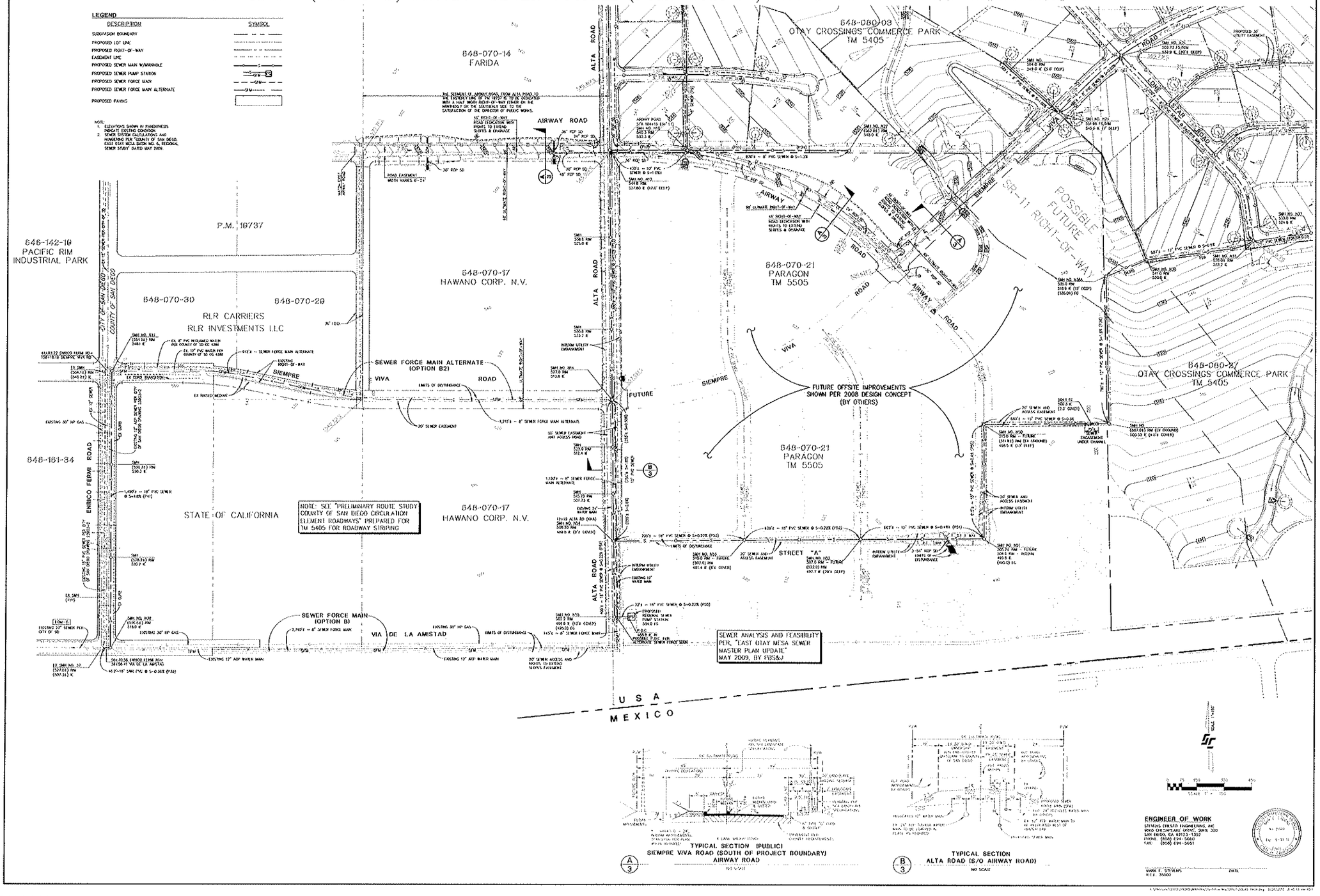
2-5

COUNTY OF SAN DIEGO TRACT 5405 RPL7

OTAY CROSSINGS COMMERCE PARK

TENTATIVE MAP

ALTERNATE (OPTION B) PROJECT SEWER OUTFALL (PUMP STATION) AND OFFSITE ROADWAY IMPROVEMENTS



TYPICAL SECTION (PUBLIC)
SIEMPRE VIVA ROAD (SOUTH OF PROJECT BOUNDARY)
AIRWAY ROAD
A/3
NO SCALE

TYPICAL SECTION
ALTA ROAD (S/O AIRWAY ROAD)
B/3
NO SCALE

SCALE: 1" = 150'

ENGINEER OF WORK
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MARK E. STEVENS
R.C.E. 55000
DATE:

SECTION 3

LAND USE AREA CALCULATIONS

Pre-Project Condition:
In the pre-project condition, the project site consists of undisturbed natural terrain that drains from north to south. Ridge lines within the project basin divide the site into three drainage basins labeled Basins "A", "B", and "C" (See Exhibit "A" in this section). The ground cover in the pre-project condition is "flat" to "very steep" grassland. The site contains no impervious surfaces in the pre-project condition. Runoff from large offsite basins to the north, including portions of Otay Mesa Road and Alta Road, pass through the three project basins.

Post-Project Condition:
In the post-project condition, Basins "A", "B", and "C" will generally maintain existing drainage patterns and outfall points. The site will be graded into 59 separate lots ranging from 0.9 to 59.1 acres in size. (See Exhibit "B" in this section). It is assumed, in this report, that each developed lot will be 75% impervious. The impervious portion of each lot will be modeled as "flat" parking lot within SDHM. The pervious portions will be modeled as either "flat" or "very steep" urban. "Urban" areas are landscaped planters and slopes that are irrigated.

As in the pre-project condition, runoff from large off-site basins will pass through the project site. Runon from off-site basins tributary to Basins A and C (A-OS1 and C-OS1) will be collected in the project storm drain system and will be detained, along with project runoff from the lots and public right-of-way, in proposed regional facilities. Runoff from off-site basins tributary to Basins B and C (B-OS1 and C-OS2) will pass through the project undetained, within graded unlined channels.

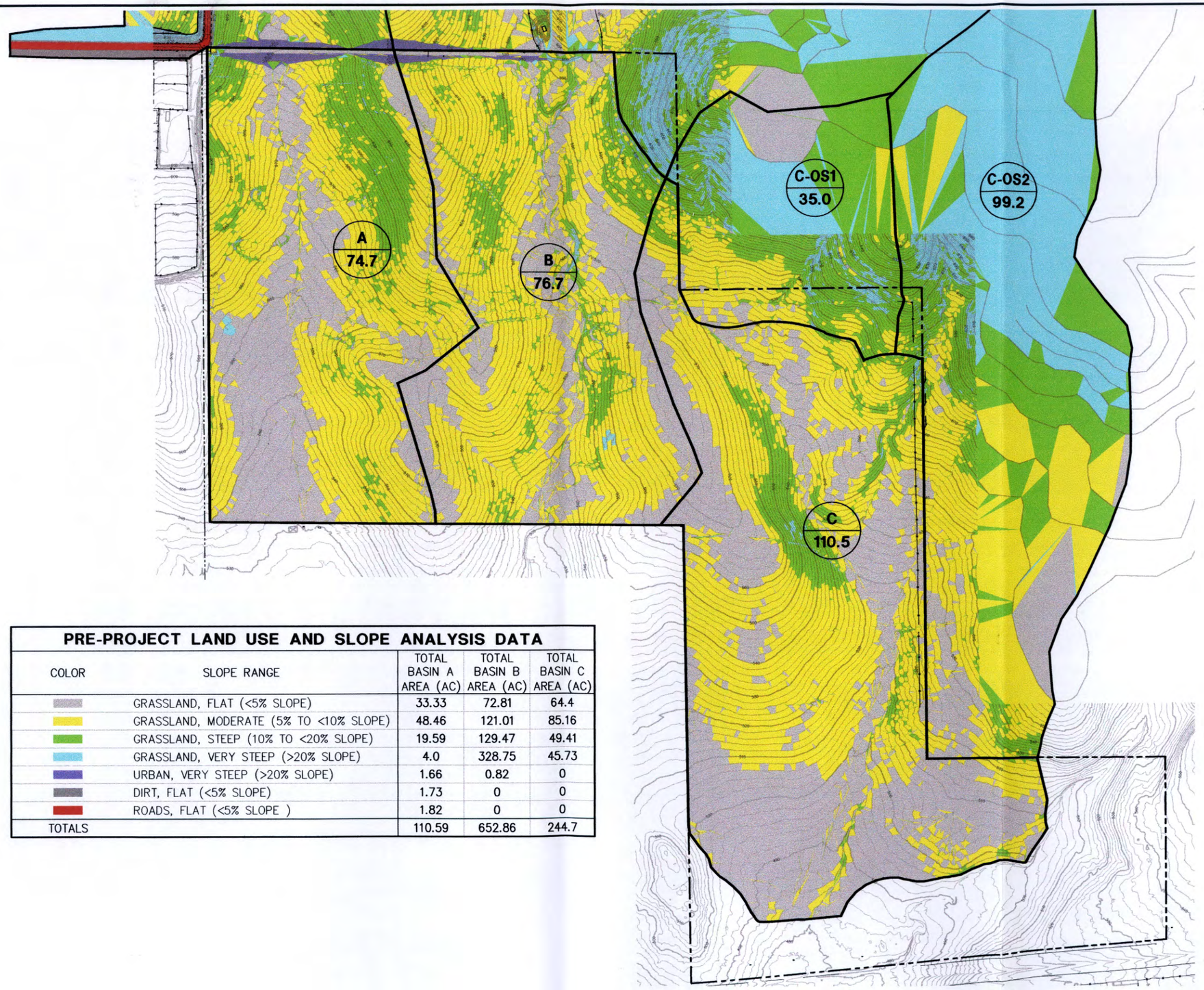
Lots 54, 55, and a portion of Lot 56 are designated for future CalTrans SR-11. The remainder of Lot 56 is currently designated for use as a future border crossing. Though these two lots will be rough graded at the same time as the subdivision, these lots will either be hydroseeded and returned to a semi-natural state, or will be used temporarily for parking and storage until they are aquired by CalTrans for completion of the Highway. If the lots are used for parking and storage, they will remain unvegetated and, as such, these areas are modeled as dirt in the post-project condition. Acquisition of the land by Caltrans will include acceptance of any run-on entering the land and acceptance of the responsibility to detain and treat, as necessary, storm water runoff generated by the land.

In addition to creation of the rough graded pads, the project will extend Otay Mesa Road and Alta Road along the northern and western project boundaries, respectively. Also, seven public roads internal to the project, Calle Ventner, Lone Star Road, Siempre Viva Road, Street "A", Street "B", Street "C", and Street "D", will be

constructed to service the proposed lots. Typical sections of each road are included on the reduced copy of the tentative map provided in Section 2.

Project Soil Conditions:

Per the letter prepared by Geocon Incorporated, dated May 15, 2009 and included for reference at the end of this section, top soils at the site consist of, "clayey sand and sandy clay", and formational soils consist of "silty sand, sandy silt, silty clay, and sandy clay". Additionally, Geocon states, "the feasibility of infiltration at the site is very low" and "there is potential for lateral migration to proposed industrial developments and future roadways". As such, infiltration BMPs are not proposed for use at the site.



PRE-PROJECT LAND USE AND SLOPE ANALYSIS DATA

COLOR	SLOPE RANGE	TOTAL BASIN A AREA (AC)	TOTAL BASIN B AREA (AC)	TOTAL BASIN C AREA (AC)
	GRASSLAND, FLAT (<5% SLOPE)	33.33	72.81	64.4
	GRASSLAND, MODERATE (5% TO <10% SLOPE)	48.46	121.01	85.16
	GRASSLAND, STEEP (10% TO <20% SLOPE)	19.59	129.47	49.41
	GRASSLAND, VERY STEEP (>20% SLOPE)	4.0	328.75	45.73
	URBAN, VERY STEEP (>20% SLOPE)	1.66	0.82	0
	DIRT, FLAT (<5% SLOPE)	1.73	0	0
	ROADS, FLAT (<5% SLOPE)	1.82	0	0
TOTALS		110.59	652.86	244.7

FOR FULL SIZE EXHIBIT SHOWING OFF-SITE BASINS, SEE SECTION 6

STEVENS·CRESTO ENGINEERING, INC.
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SUITE 320 FAX: 858.694.5661
SAN DIEGO, CA 92123 - 1352 www.stevenseng.com

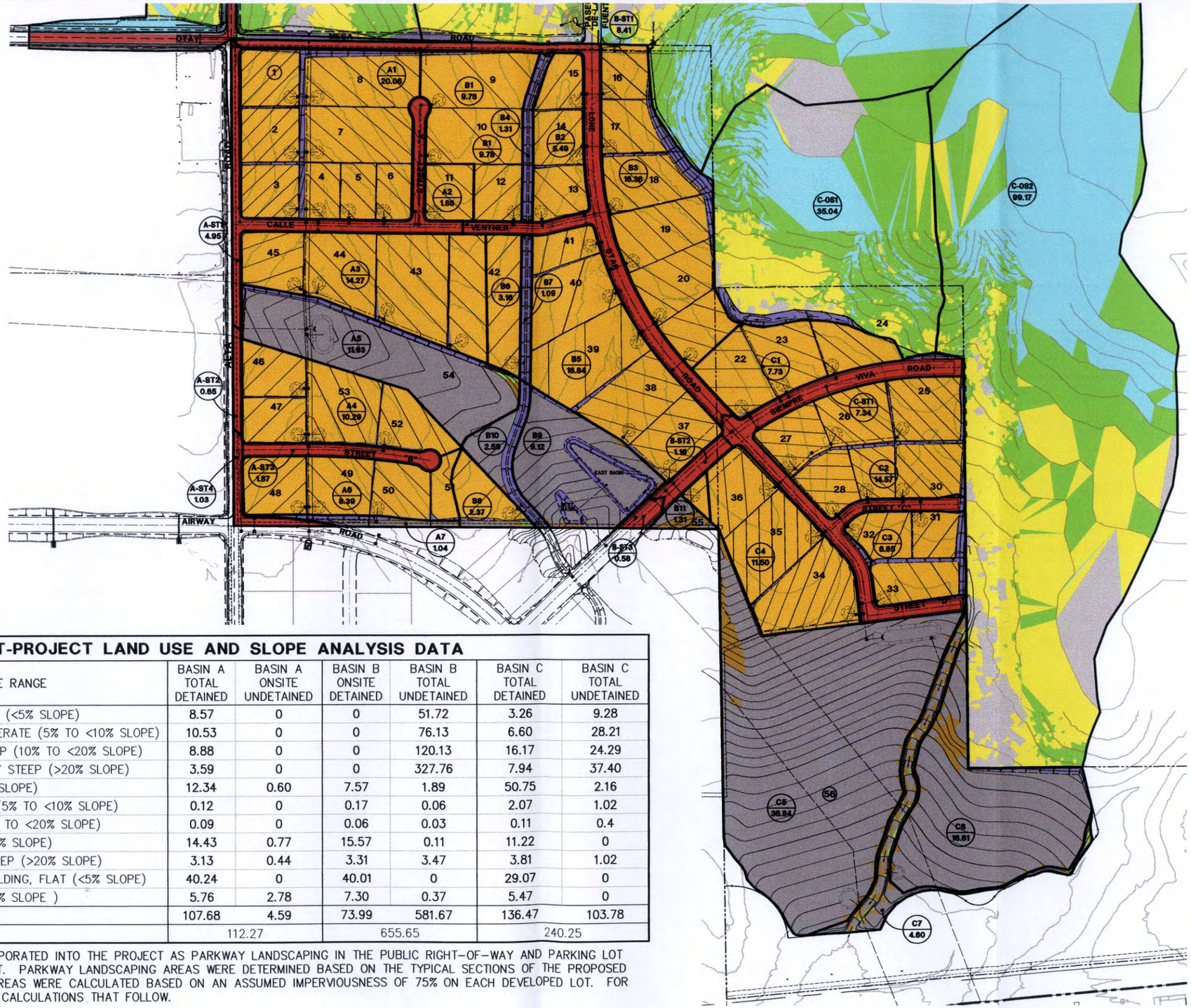
REVISIONS

OTAY CROSSINGS COMMERCE PARK
SAN DIEGO, CALIFORNIA

EXHIBIT "A"
LAND USE AND SLOPE ANALYSIS - PRE-PROJECT CONDITION

DATE: 09/29/09
SCE NO. 0304 3.03
SHEET **A**
1 OF 1 SHEETS

X:\DWG\Job\2003\03043\DRAINAGE\03043 EX HYDROMOD BASINS.dwg 9/29/2009 1:42:19 PM PDT



POST-PROJECT LAND USE AND SLOPE ANALYSIS DATA

COLOR	SLOPE RANGE	BASIN A TOTAL DETAINED	BASIN A ONSITE UNDETAINED	BASIN B ONSITE DETAINED	BASIN B TOTAL UNDETAINED	BASIN C TOTAL DETAINED	BASIN C TOTAL UNDETAINED
	GRASSLAND, FLAT (<5% SLOPE)	8.57	0	0	51.72	3.26	9.28
	GRASSLAND, MODERATE (5% TO <10% SLOPE)	10.53	0	0	76.13	6.60	28.21
	GRASSLAND, STEEP (10% TO <20% SLOPE)	8.88	0	0	120.13	16.17	24.29
	GRASSLAND, VERY STEEP (>20% SLOPE)	3.59	0	0	327.76	7.94	37.40
	DIRT, FLAT (<5% SLOPE)	12.34	0.60	7.57	1.89	50.75	2.16
	DIRT, MODERATE (5% TO <10% SLOPE)	0.12	0	0.17	0.06	2.07	1.02
	DIRT, STEEP (10% TO <20% SLOPE)	0.09	0	0.06	0.03	0.11	0.4
SEE NOTE BELOW	URBAN, FLAT (<5% SLOPE)	14.43	0.77	15.57	0.11	11.22	0
	URBAN, VERY STEEP (>20% SLOPE)	3.13	0.44	3.31	3.47	3.81	1.02
	PARKING LOT/BUILDING, FLAT (<5% SLOPE)	40.24	0	40.01	0	29.07	0
	ROADS, FLAT (<5% SLOPE)	5.76	2.78	7.30	0.37	5.47	0
SUB-TOTALS		107.68	4.59	73.99	581.67	136.47	103.78
TOTALS		112.27		655.65		240.25	

NOTE: URBAN, FLAT AREAS ARE INCORPORATED INTO THE PROJECT AS PARKWAY LANDSCAPING IN THE PUBLIC RIGHT-OF-WAY AND PARKING LOT LANDSCAPING ON EACH DEVELOPED LOT. PARKWAY LANDSCAPING AREAS WERE DETERMINED BASED ON THE TYPICAL SECTIONS OF THE PROPOSED STREETS AND ON-LOT LANDSCAPING AREAS WERE CALCULATED BASED ON AN ASSUMED IMPERVIOUSNESS OF 75% ON EACH DEVELOPED LOT. FOR SPECIFIC AREA BREAKDOWNS, SEE THE CALCULATIONS THAT FOLLOW.

FOR FULL SIZE EXHIBIT SHOWING OFF-SITE BASINS, SEE SECTION 6

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REVISIONS

OTAY CROSSINGS COMMERCE PARK
SAN DIEGO, CALIFORNIA

EXHIBIT "B"
LAND USE AND SLOPE ANALYSIS - POST-PROJECT CONDITION

DATE: 09/29/09
SCE NO. 0304.3.03
SHEET B
1 OF 1 SHEETS

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TABLE 3-1A
OTAY CROSSINGS COMMERCE PARK
POST-PROJECT LAND USE AREA BREAKDOWN

BASIN A - LOT SUB-BASINS

Total Area (Ac): 67.73

							POST-PROJECT LAND USE AREA BREAKDOWN					
Lot Number	Total Lot Acreage[1] (Ac)	2:1 Slopes[2] (Urban >20%) (Ac)	Dirt, Flat[2] (<5% Slope) (Ac)	Portion of Lot Not a Part of Sub-Basin[2] (Ac)	Area Undeveloped (Not a Part of this Study)[2] (Ac)	Remaining Pad Area[3] (Ac)	Parking Lots/ Buildings, Flat (<5% Slope; 75% of Pad Area[4]) (Ac)	Urban, Flat (<5% Slope; 25% of Pad Area[4]) (Ac)	Urban, Very Steep (>20% Slope) (Ac)	Dirt, Flat (<5% Slope) (Ac)	Dirt, Moderate (5% to <10% Slope) (Ac)	Dirt, Steep (10% to <20% Slope) (Ac)
HYDROMOD BASIN A1 - 20.06 Ac												
LOT 1	2.3	0.09	0	0	0	2.23	1.67	0.56	0.09	0	0	0
LOT 2	2.2	0.11	0	0	0	2.13	1.60	0.53	0.11	0	0	0
LOT 3	2.2	0.13	0	0	0	2.10	1.58	0.53	0.13	0	0	0
LOT 4	1.6	0	0	0	0	1.60	1.20	0.40	0	0	0	0
LOT 5	1.4	0	0	0	0	1.39	1.04	0.35	0	0	0	0
LOT 6	1.4	0	0	0	0	1.38	1.04	0.35	0	0	0	0
LOT 7	4.3	0.21	0	0	0	4.09	3.07	1.02	0.21	0	0	0
LOT 8	4.6	0.70	0	0	0	3.90	2.93	0.98	0.70	0	0	0
Sub-Total	20.1	1.24	0	0	0	18.82	14.12	4.71	1.24	0	0	0
HYDROMOD BASIN A2 - 1.88 Ac												
LOT 11	1.9	0	0	0	0	1.88	1.41	0.47	0	0	0	0
Sub-Total	1.9	0	0	0	0	1.88	1.41	0.47	0	0	0	0
HYDROMOD BASIN A3 - 14.27 Ac												
LOT 42	7.5	0	0	4.27	0	3.19	2.39	0.80	0	0	0	0
LOT 43	5.0	0	0	0	0	4.98	3.74	1.25	0	0	0	0
LOT 44	3.6	0	0	0	0	3.64	2.73	0.91	0	0	0	0
LOT 45	2.5	0	0	0	0	2.46	1.85	0.62	0	0	0	0
Sub-Total	18.5	0.0	0	4.27	0	14.27	10.70	3.57	0	0	0	0
HYDROMOD BASIN A4 - 10.29 Ac												
LOT 46	2.1	0	0	0	0	2.13	1.60	0.53	0	0	0	0
LOT 47	2.0	0	0	0	0	2.03	1.52	0.51	0	0	0	0
LOT 52	2.4	0	0	0	0	2.42	1.82	0.61	0	0	0	0
LOT 53	3.7	0	0	0	0	3.71	2.78	0.93	0	0	0	0
Sub-Total	10.3	0.00	0.00	0.00	0	10.29	7.72	2.57	0	0	0	0
HYDROMOD BASIN A5 - 11.93 Ac												
LOT 54 (CALTRANS)	23.7	1.11	10.61	11.77	0	0	N/A	N/A	1.11	10.61	0.12	0.09
Sub-Total	23.7	1.11	10.61	11.77	0	0	N/A	N/A	1.11	10.61	0.12	0.09
HYDROMOD BASIN A6 - 8.39 Ac												
LOT 48	2.7	0	0	0.14	0	2.53	1.90	0.63	0	0	0	0
LOT 49	3.0	0	0	0.39	0	2.63	1.97	0.66	0	0	0	0
LOT 50	2.6	0	0	0.37	0	2.19	1.64	0.55	0	0	0	0
LOT 51	3.6	0.03	0	2.51	0	1.01	0.76	0.25	0.03	0	0	0
Sub-Total	11.8	0.03	0.00	3.41	0	8.36	6.27	2.09	0.03	0	0	0
HYDROMOD BASIN A7 - 1.04 Ac (UNDETAINED)												
LOT 48-51 (UNDET)	1.04	0.44	0.6	0	0	0	N/A	N/A	0.44	0.6	0	0
Sub-Total	1.0	0.44	0.60	0	0	0	N/A	N/A	0.44	0.60	0	0

TABLE 3-1A
OTAY CROSSINGS COMMERCE PARK
POST-PROJECT LAND USE AREA BREAKDOWN

BASIN A - STREET SUB-BASINS

					POST-PROJECT LAND USE AREA BREAKDOWN	
Street	Total Length (LF)	Half Width/ Full Width[5]	Width of S/W[5] (LF)	Width of Street & Curb[5] (LF)	Roads, Flat (<5% Slope) (Ac)	Urban, Flat (<5% Slope; Total Basin Area Minus Road Area) (Ac)
HYDROMOD BASIN AST1						
Total Area (Ac): 4.95						
ALTA ROAD	1,543	Half	4	33	1.31	
CALLE VENTNER	1,208	Full	4	53	1.69	
STREET "A"	670	Full	4	53	0.94	
Sub-Total	3,421				3.94	1.01
HYDROMOD BASIN AST2						
Total Area (Ac): 0.65						
ALTA ROAD	573	Half	4	33	0.49	
Sub-Total	573				0.49	0.16
HYDROMOD BASIN AST3						
Total Area (Ac): 1.87						
STREET "B"	1,084	Full	4	53	1.52	
Sub-Total	1,084				1.52	0.35
HYDROMOD BASIN AST4 (UNDETAINED)						
Total Area (Ac): 1.03						
ALTA ROAD	515	Half	4	33	0.44	
AIRWAY ROAD	390	Half	4	33	0.33	
Sub-Total	515				0.77	0.26

TOTAL POST-PROJECT LAND USE AREA BREAKDOWN FOR ON-SITE BASIN A - DETAINED

Lot Number	Total Area (Ac)	Roads, Flat (<5% Slope) (Ac)	Parking Lots/ Buildings, Flat (<5% Slope; 75% of Pad Area[4]) (Ac)	Urban, Flat (<5% Slope; 25% of Pad Area[4]) (Ac)	Urban, Very Steep (>20% Slope) (Ac)	Dirt, Flat (<5% Slope) (Ac)	Dirt, Moderate (5% to <10% Slope) (Ac)	Dirt, Steep (10% to <20% Slope) (Ac)
TOTALS	74.29	5.95	40.22	14.93	2.38	10.61	0.12	0.09

TOTAL POST-PROJECT LAND USE AREA BREAKDOWN FOR ON-SITE BASIN A - UNDETAINED

Lot Number	Total Area (Ac)	Roads, Flat (<5% Slope) (Ac)	Parking Lots/ Buildings, Flat (<5% Slope; 75% of Pad Area[4]) (Ac)	Urban, Flat (<5% Slope; 25% of Pad Area[4]) (Ac)	Urban, Very Steep (>20% Slope) (Ac)	Dirt, Flat (<5% Slope) (Ac)	Dirt, Moderate (5% to <10% Slope) (Ac)	Dirt, Steep (10% to <20% Slope) (Ac)
TOTALS	2.07	0.77	0	0.26	0.44	0.60	0	0

[1]See lot areas on TM 5405 RPL6 in Section 2
[2]Area is calculated in AutoCAD using polyline boundaries
[3]Lot area minus slopes, grassland, portions not in the basin, and portions that will be left undeveloped, as applicable
[4]Assumed imperviousness in the ultimate condition is 75%
[5]See street typical sections on TM 5405 RPL6 in Section 2

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TABLE 3-1B
OTAY CROSSINGS COMMERCE PARK
POST-PROJECT LAND USE AREA BREAKDOWN

BASIN B - LOT SUB-BASINS

Total Area (Ac): 70.76

Lot Number	Total Lot Acreage[1] (Ac)	2:1 Slopes[2] (Urban >20%) (Ac)	Dirt, Flat[2] (<5% Slope) (Ac)	Portion of Lot Not a Part of Sub-Basin[2] (Ac)	Area Undeveloped (Not a Part of this Study)[2] (Ac)	Remaining Pad Area[3] (Ac)	POST-PROJECT LAND USE AREA BREAKDOWN: Parking Lots/ Buildings, Flat (<5% Slope; 75% of Pad Area[4]) (Ac)	Urban, Flat (<5% Slope; 25% of Pad Area[4]) (Ac)	Urban, Very Steep (>20% Slope) (Ac)	Dirt, Flat (<5% Slope) (Ac)	Dirt, Moderate (5% to <10% Slope) (Ac)	Dirt, Steep (10% to <20% Slope) (Ac)
HYDROMOD BASIN B1 - 9.78 Ac												
LOT 9	4.7	0.21	0	0.46	0	4.04	3.03	1.01	0.21	0	0	0
LOT 10	4.1	0	0	0.42	0	3.66	2.75	0.92	0	0	0	0
LOT 12	2.3	0	0	0.43	0	1.88	1.41	0.47	0	0	0	0
Sub-Total	**11.1**	**0.21**	**0**	**1.31**	**0**	**9.58**	**7.19**	**2.40**	**0.21**	**0**	**0**	**0**
HYDROMOD BASIN B2 - 5.49 Ac												
LOT 13	2.0	0.07	0	0	0	1.90	1.43	0.48	0.07	0	0	0
LOT 14	2.0	0.09	0	0	0	1.86	1.40	0.47	0.09	0	0	0
LOT 15	1.6	0	0	0	0	1.57	1.18	0.39	0	0	0	0
Sub-Total	**5.5**	**0.16**	**0**	**0**	**0**	**5.33**	**4.00**	**1.33**	**0.16**	**0**	**0**	**0**
HYDROMOD BASIN B3 - 17.69 Ac												
LOT 16	4.1	0.06	0	0	2.26	1.74	1.31	0.44	0.06	0	0	0
LOT 17	4.0	0.33	0	0	1.71	1.99	1.49	0.50	0.33	0	0	0
LOT 18	3.8	0.58	0	0	0.38	2.85	2.14	0.71	0.58	0	0	0
LOT 19	3.6	0.24	0	0	0	3.37	2.53	0.84	0.24	0	0	0
LOT 20	3.0	0.10	0	0	0	2.88	2.16	0.72	0.10	0	0	0
LOT 21	3.1	0	0	0	0.91	2.23	1.67	0.56	0	0	0	0
Sub-Total	**21.6**	**1.31**	**0.00**	**0.00**	**5.26**	**15.06**	**11.30**	**3.77**	**1.31**	**0**	**0**	**0**
HYDROMOD BASIN B4 - 1.31 Ac (UNDETAINED)												
LOT 9,10,12 (CHANNEL)	1.31	1.08	0.23	0	0	N/A	0	0	1.08	0.23	0	0
Sub-Total	**1.3**	**1.08**	**0.23**	**0**	**0**	**N/A**	**0**	**0**	**1.08**	**0.23**	**0**	**0**
HYDROMOD BASIN B5 - 16.84 Ac												
LOT 37	2.9	0	0	0	0	2.94	2.21	0.74	0	0	0	0
LOT 38	3.7	0.16	0	0	0	3.53	2.65	0.88	0.16	0	0	0
LOT 39	4.9	0	0	0	0	4.89	3.67	1.22	0	0	0	0
LOT 40	3.7	0.11	0	0	0	3.63	2.72	0.91	0.11	0	0	0
LOT 41	1.6	0	0	0	0	1.55	1.16	0.39	0	0	0	0
Sub-Total	**16.81**	**0.27**	**0**	**0**	**0**	**16.54**	**12.41**	**4.14**	**0.27**	**0**	**0**	**0**
HYDROMOD BASIN B6 - 3.16 Ac												
LOT 42	7.5	0	0	4.3	0	3.16	2.37	0.79	0	0	0	0
Sub-Total	**7.5**	**0**	**0**	**4.30**	**0**	**3.16**	**2.37**	**0.79**	**0**	**0**	**0**	**0**
HYDROMOD BASIN B7 - 1.11 Ac (UNDETAINED)												
LOT 42 (CHANNEL)	1.1	0.91	0.18	0	0	N/A	0	0	0.91	0.18	0	0
Sub-Total	**1.1**	**0.91**	**0.18**	**0**	**0**	**N/A**	**0**	**0**	**0.91**	**0.18**	**0**	**0**
HYDROMOD BASIN B8 - 2.37 Ac												
LOT 51	3.6	0	0	1.18	0	2.37	1.78	0.59	0	0	0	0
Sub-Total	**3.6**	**0**	**0**	**1.18**	**0**	**2.37**	**1.78**	**0.59**	**0**	**0**	**0**	**0**
HYDROMOD BASIN B9 - 9.12 Ac												
LOT 54 (CALTRANS)	23.7	1.32	7.57	14.68	0	N/A	N/A	N/A	1.32	7.57	0.17	0.06
Sub-Total	**23.7**	**1.32**	**7.57**	**14.68**	**0**	**N/A**	**N/A**	**N/A**	**1.32**	**7.57**	**0.17**	**0.06**
HYDROMOD BASIN B10 - 2.55 Ac (UNDETAINED)												
LOT 54 (CALTRANS)	23.7	0.98	1.48	21.1	0	N/A	N/A	N/A	0.98	1.48	0.06	0.03
Sub-Total	**23.7**	**0.98**	**1.48**	**21.10**	**0**	**N/A**	**N/A**	**N/A**	**0.98**	**1.48**	**0.06**	**0.03**
HYDROMOD BASIN B11 - 1.31 Ac												
LOT 36	3.2	0	0	2.72	0	0.48	0.36	0.12	0	0	0	0
LOT 55	0.9	0	0	0.04	0	0.83	0.62	0.21	0	0	0	0
Sub-Total	**4.1**	**0**	**0**	**2.76**	**0**	**1.31**	**0.98**	**0.33**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE 3-1B
OTAY CROSSINGS COMMERCE PARK
POST-PROJECT LAND USE AREA BREAKDOWN

BASIN B - STREET SUB-BASINS

					POST-PROJECT LAND USE AREA BREAKDOWN		
Street	Total Length (LF)	Half Width/ Full Width[5]	Width of S/W[5] (LF)	Width of Street & Curb[5] (LF)	Roads, Flat (<5% Slope) (Ac)	Urban, Very Steep[2] (>20% Slope) (Ac)	Urban, Flat (<5% Slope; Total Basin Area Minus Road & Slope Area) (Ac)
HYDROMOD BASIN BST1							
Total Area (Ac): 8.41							
OTAY MESA ROAD	2,020	Half	4	33	1.72	0	
CAMINO DEL MAYER	2,205	Full	4	66	3.75	0	
CALLE VENTNER	710	Full	4	53	0.99	0	
Sub-Total	4,935				6.46	0.00	1.95
HYDROMOD BASIN BST2							
Total Area (Ac): 1.16							
SIEMPRE VIVA ROAD	495	Full	4	66	0.84	0.04	
Sub-Total	495				0.84	0.04	0.28
HYDROMOD BASIN BST3 (UNDETAINED)							
Total Area (Ac): 0.58							
SIEMPRE VIVA ROAD	215	Full	4	66	0.37	0.1	
Sub-Total	215				0.37	0.10	0.11

TOTAL POST-PROJECT LAND USE AREA BREAKDOWN FOR ON-SITE BASIN B

Lot Number	Total Area (Ac)	Roads, Flat (<5% Slope) (Ac)	Parking Lots/ Buildings, Flat (<5% Slope; 75% of Pad Area[4]) (Ac)	Urban, Flat (<5% Slope; 25% of Pad Area[4]) (Ac)	Urban, Very Steep (>20% Slope) (Ac)	Dirt, Flat (<5% Slope) (Ac)	Dirt, Moderate (5% to <10% Slope) (Ac)	Dirt, Steep (10% to <20% Slope) (Ac)
TOTALS	73.99	7.30	40.01	15.57	3.31	7.57	0.17	0.06

TOTAL POST-PROJECT LAND USE AREA BREAKDOWN FOR ON-SITE BASIN B (UNDETAINED)

Lot Number	Total Area (Ac)	Roads, Flat (<5% Slope) (Ac)	Parking Lots/ Buildings, Flat (<5% Slope; 75% of Pad Area[4]) (Ac)	Urban, Flat (<5% Slope; 25% of Pad Area[4]) (Ac)	Urban, Very Steep (>20% Slope) (Ac)	Dirt, Flat (<5% Slope) (Ac)	Dirt, Moderate (5% to <10% Slope) (Ac)	Dirt, Steep (10% to <20% Slope) (Ac)
TOTALS	5.53	0.37	0.00	0.11	3.07	1.89	0.06	0.03

[1]See lot areas on TM 5405 RPL6 in Section 2
[2]Area is calculated in AutoCAD using polyline boundaries
[3]Lot area minus slopes, grassland, portions not in the basin, and portions that will be left undeveloped, as applicable
[4]Assumed imperviousness in the ultimate condition is 75%
[5]See street typical sections on TM 5405 RPL6 in Section 2

TABLE 3-1C
OTAY CROSSINGS COMMERCE PARK
POST-PROJECT LAND USE AREA BREAKDOWN

BASIN C - LOT SUB-BASINS

Total Area (Ac): 98.7

							POST-PROJECT LAND USE AREA BREAKDOWN					
Lot Number	Total Lot Acreage[1] (Ac)	2:1 Slopes[2] (Urban >20%) (Ac)	Dirt, Flat[2] (<5% Slope) (Ac)	Portion of Lot Not a Part of Sub-Basin[2] (Ac)	Area Undeveloped (Not a Part of this Study)[2] (Ac)	Remaining Pad Area[3] (Ac)	Parking Lots/ Buildings, Flat (<5% Slope; 75% of Pad Area[4]) (Ac)	Urban, Flat (<5% Slope; 25% of Pad Area[4]) (Ac)	Urban, Very Steep (>20% Slope) (Ac)	Dirt, Flat (<5% Slope) (Ac)	Dirt, Moderate (5% to <10% Slope) (Ac)	Dirt, Steep (10% to <20% Slope) (Ac)
HYDROMOD BASIN C1 - 7.73 Ac												
LOT 22	2.8	0	0	0	0	2.77	2.08	0.69	0	0	0	0
LOT 23	3.9	0	0	0	1.1	2.83	2.12	0.71	0	0	0	0
LOT 24	8.1	0	0	0	5.96	2.13	1.60	0.53	0	0	0	0
Sub-Total	**14.79**	**0**	**0**	**0**	**7.06**	**7.73**	**5.80**	**1.93**	**0**	**0**	**0**	**0**
HYDROMOD BASIN C2 - 14.57 Ac												
LOT 25	3.2	0.24	0	0	0	2.99	2.24	0.75	0.24	0	0	0
LOT 26	2.7	0	0	0	0	2.66	2.00	0.67	0	0	0	0
LOT 27	2.3	0	0	0	0	2.25	1.69	0.56	0	0	0	0
LOT 28	2.1	0.11	0	0	0	2.01	1.51	0.50	0.11	0	0	0
LOT 29	1.6	0.13	0	0	0	1.45	1.09	0.36	0.13	0	0	0
LOT 30	2.8	0.55	0	0.03	0	2.18	1.64	0.55	0.55	0	0	0
Sub-Total	**14.60**	**1.03**	**0**	**0.03**	**0**	**13.54**	**10.16**	**3.39**	**1.03**	**0**	**0**	**0**
HYDROMOD BASIN C3 - 6.85 Ac												
LOT 31	1.7	0.24	0	0.02	0	1.47	1.10	0.37	0.24	0	0	0
LOT 32	2.1	0	0	0.1	0	2.04	1.53	0.51	0	0	0	0
LOT 33	3.2	0.46	0	0.07	0	2.64	1.98	0.66	0.46	0	0	0
Sub-Total	**7.04**	**0.70**	**0**	**0.19**	**0**	**6.15**	**4.61**	**1.54**	**0.70**	**0**	**0**	**0**
HYDROMOD BASIN C4 - 11.50 Ac												
LOT 34	4.7	0.16	0	0	0	4.54	3.41	1.14	0.16	0	0	0
LOT 35	4.1	0	0	0	0	4.08	3.06	1.02	0	0	0	0
LOT 36	3.2	0	0	0.48	0	2.72	2.04	0.68	0	0	0	0
Sub-Total	**11.98**	**0.16**	**0**	**0.48**	**0**	**11.34**	**8.51**	**2.84**	**0.16**	**0**	**0**	**0**
HYDROMOD BASIN C5 - 36.84 Ac												
LOT 56	95.4	0.24	35.39	21.2	37.36	0	0	0	0.24	35.39	1.13	0.08
Sub-Total	**95.41**	**0.24**	**35.39**	**21.2**	**37.36**	**0**	**0**	**0**	**0.24**	**35.39**	**1.13**	**0.08**
HYDROMOD BASIN C6 - 16.6 Ac												
LOT 56	95.4	0.27	15.36	41.44	37.36	0	0	0	0.27	15.36	0.94	0.03
Sub-Total	**95.41**	**0.27**	**15.36**	**41.4**	**37.36**	**0**	**0**	**0**	**0.27**	**15.36**	**0.94**	**0.03**
HYDROMOD BASIN C7 - 4.60 Ac (UNDETAINED)												
LOT 56	95.4	1.02	2.16	53.44	37.36	0	0	0	1.02	2.16	1.02	0.40
Sub-Total	**95.41**	**1.02**	**2.16**	**53.4**	**37.36**	**0**	**0**	**0**	**1.02**	**2.16**	**1.02**	**0.40**

TABLE 3-1C
OTAY CROSSINGS COMMERCE PARK
POST-PROJECT LAND USE AREA BREAKDOWN

BASIN C - STREET SUB-BASINS							
					POST-PROJECT LAND USE AREA BREAKDOWN		
Street	Total Length (LF)	Half Width/ Full Width[5]	Width of S/W[5] (LF)	Width of Street & Curb[5] (LF)	Roads, Flat (<5% Slope) (Ac)	Urban, Very Steep[2] (>20% Slope) (Ac)	Urban, Flat (<5% Slope; Total Basin Area Minus Road & Slope Area) (Ac)
HYDROMOD BASIN CST1							
Total Area (Ac): 7.34							
SIEMPRE VIVA ROAD	1,255	Full	4	66	2.13	0.12	
CAMINO DEL MAYER	1,404	Full	4	53	1.97	0.1	
STREET "C"	745	Full	4	53	1.04	0.05	
STREET "D"	470	Half	4	26.5	0.33	0.07	
Sub-Total	3,874				5.47	0.34	1.53

TOTAL POST-PROJECT LAND USE AREA BREAKDOWN FOR ON-SITE BASIN C								
Lot Number	Total Area (Ac)	Roads, Flat (<5% Slope) (Ac)	Parking Lots/ Buildings, Flat (<5% Slope; 75% of Pad Area[4]) (Ac)	Urban, Flat (<5% Slope; 25% of Pad Area[4]) (Ac)	Urban, Very Steep (>20% Slope) (Ac)	Dirt, Flat (<5% Slope) (Ac)	Dirt, Moderate (5% to <10% Slope) (Ac)	Dirt, Steep (10% to <20% Slope) (Ac)
TOTALS	101.43	5.47	29.07	11.22	2.74	50.75	2.07	0.11

TOTAL POST-PROJECT LAND USE AREA BREAKDOWN FOR ON-SITE BASIN C (UNDETAINED)								
Lot Number	Total Area (Ac)	Roads, Flat (<5% Slope) (Ac)	Parking Lots/ Buildings, Flat (<5% Slope; 75% of Pad Area[4]) (Ac)	Urban, Flat (<5% Slope; 25% of Pad Area[4]) (Ac)	Urban, Very Steep (>20% Slope) (Ac)	Dirt, Flat (<5% Slope) (Ac)	Dirt, Moderate (5% to <10% Slope) (Ac)	Dirt, Steep (10% to <20% Slope) (Ac)
TOTALS	4.60	0.00	0.00	0.00	1.02	2.16	1.02	0.40

[1]See lot areas on TM 5405 RPL6 in Section 2
[2]Area is calculated in AutoCAD using polyline boundaries
[3]Lot area minus slopes, grassland, portions not in the basin, and portions that will be left undeveloped, as applicable
[4]Assumed imperviousness in the ultimate condition is 75%
[5]See street typical sections on TM 5406 RPL5 in Section 2

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GEOCON
INCORPORATED
GEOTECHNICAL CONSULTANTS

Project No. 07149-22-01A
May 15, 2009

The Judd Company
500 Stevens Avenue, Suite 208
Solana Beach, California 92075

Attention: Mr. Judd Halenza

Subject: OTAY CROSSING COMMERCIAL PARK
(310-ACRE PROPERTY)
SAN DIEGO COUNTY, CALIFORNIA
TRANSMITTAL

Dear Mr. Halenza:

In accordance with the request of Mr. Brian Hill with Stevens Cresto Engineering Incorporated, we have provided additional geotechnical engineering services on the subject project. The purpose of our work was to prepare this transmittal letter regarding our opinion for *Geotechnical Input for Hydromodification Management Studies* as requested by the County of San Diego with the outline indicated below.

- **Description of site soils.** Topsoils consist of clayey sand and sandy clay. The natural formational soils at the site consist of silty sand, sandy silt, silty clay, and sandy clay.

- **Discussion of the feasibility of infiltration of the site.** The soils at the site have a considerable clay and silt content and exhibit low permeability and low infiltration properties. Therefore, in our opinion, the feasibility of infiltration at the site is very low.

- **Recommendations of areas where on-site infiltration may be feasible, considering expected depth to groundwater, potential for lateral migration, and proximity of existing and proposed slopes, structures, roadways, walls, or other sensitive features.** Permanent groundwater level is expected to be greater than 100 feet. However, the site is not feasible for infiltration due to the low infiltration characteristics of *in situ* soils. In addition, there is a potential for lateral migration to proposed industrial developments and future roadways. Lateral migration of water could result in seepage on proposed cut slopes. Wetting of proposed fill slopes could create slope stability issues.

- **Preliminary infiltration rates for areas where on-site infiltration may be feasible.** Based on our experience in the area with similar soils conditions and the Soil Conservation Service *SCS Engineering Field Handbook,* Chapter 2, which has an infiltration rate of 0.05 to 0.15 inches/hour, we are of the opinion that *in situ* soils are similar to the Group C.

If you have any questions regarding this transmittal letter, please contact the undersigned.

Very truly yours,

GEOCON INCORPORATED



Raul R. Garcia
RCE 42132

RRG:dmc

(1) Addressee
(2) Stevens Cresto Engineering Inc.
Attention: Mr. Brian Hill

SECTION 4

HYDROMODIFICATION ANALYSIS

The hydromodification analysis within this section utilizes the continuous modeling software SDHM, developed by Clear Creek Solutions, Inc to model the pre- and post-project condition of each basin. Calculations within the software were performed using historical rain gauge data specific to the project. In this case, data was used from the "Lower Otay" gauge. As discussed in Section1, the rainfall data was scaled based on the location of the project relative to the rain gauge, as identified on an 85th percentile precipitation isopluvial map. Monthly peak rainfall measurements from the gauge, and from the modified data, are provided for reference at the end of Section 5. The basin models were created using the pre- and post-project land use and slope values calculated within Section 3 and illustrated on Exhibits A and B. In the post-project condition, the basins were routed to a hydromodification BMP. For the purposes of these calculations, the hydromodification BMP utilized was a trapezoidal pond. Once each model was completely set-up, the "auto-pond" function was utilized on each of the ponds to determine the approximate detention storage volume needed in each of the three basins. The reports from each of the three models follow in this section and the results are summarized in Table 4-1 below.

TABLE 4-1
APPROX. DETENTION STORAGE VOLUME REQUIRED IN EACH BASIN

Basin	Total Detention Storage Volume[1] (Ac-Ft)
A	12.0
B	11.6
C	13.3

[1]Storage volume is found by using the Pond Hydraulic Table in the SDHM reports for each basin and taking the volume that corresponds with the maximum stage in each detention facility.

San Diego Hydrology Model
PROJECT REPORT

Project Name: Basin A
Site Address: SE CORNER OF OTAY MESA RD AND ALTA RD
City : SAN DIEGO, CA
Report Date : 9/30/2009
Gage : Lower Otay
Data Start : 1959/10/02
Data End : 2004/10/30
Precip Scale: 1.39
SDHM Version:

PREDEVELOPED LAND USE

Name : Basin A
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	33.33
C D,Grass,Mod(5-10%)	48.46
C D,Grass,Ste(10-20)	19.59
C D,Grass,Very(>20%)	4
C D,Dirt, Flat(0-5%)	1.73
C D,Urban,Very(>20%)	1.66

Impervious Land Use	Acres
Roads,Flat(0-5%)	1.82

Element Flows To:

Surface	Interflow	Groundwater

DEVELOPED LAND USE

Name : Basin A; On-site Detained
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Flat(0-5%)	14.94
C D,Urban,Very(>20%)	2.38
C D,Dirt, Flat(0-5%)	10.61
C D,Dirt, Mod(5-10%)	.12
C D,Dirt, St(10-20%)	.09

Impervious Land Use	Acres		
Roads,Flat(0-5%)	5.95	,Flat(0-5%)	40.24

Element Flows To:

Surface	Interflow	Groundwater
Trapezoidal Pond 1,	Trapezoidal Pond 1,	

Name : Trapezoidal Pond 1
Bottom Length: 349.914647481736ft.
Bottom Width: 349.914647481736ft.
Depth : 4ft.
Volume at riser head : 8.9428ft.
Side slope 1: 3 To 1
Side slope 2: 3 To 1
Side slope 3: 3 To 1
Side slope 4: 3 To 1
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 48 in.
NotchType : Rectangular
Notch Width : 4.000 ft.
Notch Height: 0.473 ft.
Orifice 1 Diameter: 10.5936 in. **Elevation:** 0 ft.

Element Flows To:

Outlet 1	Outlet 2

Pond Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	2.811	0.000	0.000	0.000
0.044	2.815	0.125	0.621	0.000
0.089	2.819	0.250	0.879	0.000
0.133	2.824	0.376	1.076	0.000
0.178	2.828	0.501	1.243	0.000

0.222	2.832	0.627	1.389	0.000
0.267	2.837	0.753	1.522	0.000
0.311	2.841	0.879	1.644	0.000
0.356	2.845	1.006	1.758	0.000
0.400	2.850	1.132	1.864	0.000
0.444	2.854	1.259	1.965	0.000
0.489	2.858	1.386	2.061	0.000
0.533	2.862	1.513	2.153	0.000
0.578	2.867	1.640	2.240	0.000
0.622	2.871	1.768	2.325	0.000
0.667	2.875	1.895	2.407	0.000
0.711	2.880	2.023	2.486	0.000
0.756	2.884	2.151	2.562	0.000
0.800	2.888	2.280	2.636	0.000
0.844	2.893	2.408	2.709	0.000
0.889	2.897	2.537	2.779	0.000
0.933	2.902	2.666	2.848	0.000
0.978	2.906	2.795	2.915	0.000
1.022	2.910	2.924	2.980	0.000
1.067	2.915	3.053	3.044	0.000
1.111	2.919	3.183	3.107	0.000
1.156	2.923	3.313	3.168	0.000
1.200	2.928	3.443	3.229	0.000
1.244	2.932	3.573	3.288	0.000
1.289	2.936	3.704	3.346	0.000
1.333	2.941	3.834	3.403	0.000
1.378	2.945	3.965	3.460	0.000
1.422	2.950	4.096	3.515	0.000
1.467	2.954	4.227	3.570	0.000
1.511	2.958	4.359	3.623	0.000
1.556	2.963	4.490	3.676	0.000
1.600	2.967	4.622	3.728	0.000
1.644	2.972	4.754	3.780	0.000
1.689	2.976	4.886	3.830	0.000
1.733	2.980	5.018	3.880	0.000
1.778	2.985	5.151	3.930	0.000
1.822	2.989	5.284	3.979	0.000
1.867	2.994	5.417	4.027	0.000
1.911	2.998	5.550	4.075	0.000
1.956	3.003	5.683	4.122	0.000
2.000	3.007	5.817	4.168	0.000
2.044	3.011	5.950	4.214	0.000
2.089	3.016	6.084	4.260	0.000
2.133	3.020	6.218	4.305	0.000
2.178	3.025	6.353	4.350	0.000
2.222	3.029	6.487	4.394	0.000
2.267	3.034	6.622	4.438	0.000
2.311	3.038	6.757	4.481	0.000
2.356	3.042	6.892	4.524	0.000
2.400	3.047	7.027	4.566	0.000
2.444	3.051	7.163	4.608	0.000
2.489	3.056	7.299	4.650	0.000
2.533	3.060	7.435	4.698	0.000
2.578	3.065	7.571	4.886	0.000
2.622	3.069	7.707	5.165	0.000
2.667	3.074	7.844	5.510	0.000
2.711	3.078	7.980	5.907	0.000

2.756	3.083	8.117	6.350	0.000
2.800	3.087	8.254	6.834	0.000
2.844	3.092	8.392	7.355	0.000
2.889	3.096	8.529	7.912	0.000
2.933	3.101	8.667	8.501	0.000
2.978	3.105	8.805	9.120	0.000
3.022	3.110	8.943	9.589	0.000
3.067	3.114	9.081	10.17	0.000
3.111	3.119	9.220	10.98	0.000
3.156	3.123	9.358	11.96	0.000
3.200	3.128	9.497	13.09	0.000
3.244	3.132	9.636	14.35	0.000
3.289	3.137	9.776	15.73	0.000
3.333	3.141	9.915	17.21	0.000
3.378	3.146	10.05	18.80	0.000
3.422	3.150	10.19	20.48	0.000
3.467	3.155	10.33	22.24	0.000
3.511	3.159	10.48	24.09	0.000
3.556	3.164	10.62	26.02	0.000
3.600	3.169	10.76	28.03	0.000
3.644	3.173	10.90	30.12	0.000
3.689	3.178	11.04	32.27	0.000
3.733	3.182	11.18	34.49	0.000
3.778	3.187	11.32	36.79	0.000
3.822	3.191	11.46	39.14	0.000
3.867	3.196	11.61	41.56	0.000
3.911	3.200	11.75	44.04	0.000
3.956	3.205	11.89	46.59	0.000
4.000	3.210	12.03	49.19	0.000
4.044	3.214	12.17	51.84	0.000

Name : Basin A; Off-site Detained
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	8.57
C D,Grass,Mod(5-10%)	10.53
C D,Grass,Ste(10-20)	8.88
C D,Grass,Very(>20%)	3.59
C D,Dirt, Flat(0-5%)	1.73
C D,Urban,Very(>20%)	.75

Impervious Land Use	Acres
Roads,Flat(0-5%)	1.82

Element Flows To:

Surface	Interflow	Groundwater
Trapezoidal Pond 1,	Trapezoidal Pond 1,	

Name : Basin A; On-site Undetained
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Flat(0-5%)	.26
C D,Urban,Very(>20%)	.44
C D,Dirt, Flat(0-5%)	.6

Impervious Land Use	Acres
Roads,Flat(0-5%)	0.77

Element Flows To:
Surface Interflow Groundwater

MITIGATED LAND USE

ANALYSIS RESULTS

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	4.43253
5 year	24.3091
10 year	32.208852
25 year	57.329126

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	4.58032
5 year	17.682087
10 year	22.639857
25 year	39.204174

Yearly Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1961	4.181	4.194
1962	0.888	3.398
1963	7.847	3.655
1964	0.744	3.352
1965	1.821	4.076
1966	4.433	3.987
1967	20.610	27.215
1968	2.329	4.649
1969	5.345	4.737
1970	22.434	6.766
1971	8.785	4.591
1972	7.406	4.727
1973	0.790	3.285

1974	15.687	3.855
1975	3.055	3.798
1976	0.780	2.759
1977	18.442	13.334
1978	2.753	9.231
1979	54.877	25.563
1980	28.393	4.468
1981	24.650	21.081
1982	2.415	3.317
1983	10.163	5.259
1984	41.855	40.724
1985	0.502	2.160
1986	25.716	18.440
1987	34.419	13.057
1988	1.754	3.734
1989	28.623	14.931
1990	1.138	3.415
1991	1.492	3.879
1992	17.571	17.735
1993	23.002	17.493
1994	31.030	14.113
1995	0.598	2.643
1996	23.082	19.896
1997	0.946	2.882
1998	17.166	19.665
1999	83.082	39.059
2000	3.328	4.580
2001	1.090	3.163
2002	2.485	4.187
2003	0.345	1.822
2004	1.419	3.114
2005	4.069	5.310

Ranked Yearly Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	83.0817	40.7243
2	54.8765	39.0594
3	41.8553	27.2150
4	34.4192	25.5629
5	31.0300	21.0809
6	28.6227	19.8963
7	28.3925	19.6645
8	25.7164	18.4402
9	24.6501	17.7345
10	23.0815	17.4934
11	23.0017	14.9306
12	22.4337	14.1130
13	20.6095	13.3337
14	18.4420	13.0571
15	17.5712	9.2310
16	17.1655	6.7659
17	15.6869	5.3095
18	10.1634	5.2587
19	8.7847	4.7371
20	7.8468	4.7273
21	7.4063	4.6495

22	5.3454	4.5913
23	4.4325	4.5803
24	4.1805	4.4676
25	4.0686	4.1944
26	3.3278	4.1869
27	3.0554	4.0762
28	2.7529	3.9871
29	2.4853	3.8792
30	2.4146	3.8547
31	2.3291	3.7982
32	1.8207	3.7344
33	1.7542	3.6549
34	1.4919	3.4145
35	1.4189	3.3984
36	1.1380	3.3521
37	1.0900	3.3172
38	0.9456	3.2853
39	0.8879	3.1628
40	0.7900	3.1142
41	0.7799	2.8824
42	0.7437	2.7585
43	0.5984	2.6425
44	0.5017	2.1596
45	0.3447	1.8224

POC #1
The Facility PASSED

The Facility PASSED.

Flow(CFS)	Predev	Dev	Percentage	Pass/Fail
4.8618	272	297	109	Pass
5.1381	256	267	104	Pass
5.4143	243	251	103	Pass
5.6905	232	231	99	Pass
5.9668	225	216	96	Pass
6.2430	212	198	93	Pass
6.5192	195	186	95	Pass
6.7954	189	173	91	Pass
7.0717	183	165	90	Pass
7.3479	178	159	89	Pass
7.6241	166	147	88	Pass
7.9004	159	139	87	Pass
8.1766	153	132	86	Pass
8.4528	147	127	86	Pass
8.7291	145	123	84	Pass
9.0053	143	117	81	Pass
9.2815	135	109	80	Pass
9.5578	127	101	79	Pass
9.8340	123	99	80	Pass
10.1102	120	94	78	Pass
10.3865	114	89	78	Pass
10.6627	111	85	76	Pass
10.9389	106	80	75	Pass
11.2152	105	78	74	Pass
11.4914	103	76	73	Pass

11.7676	100	74	74	Pass
12.0439	99	71	71	Pass
12.3201	97	68	70	Pass
12.5963	93	63	67	Pass
12.8726	91	58	63	Pass
13.1488	88	56	63	Pass
13.4250	87	53	60	Pass
13.7013	84	50	59	Pass
13.9775	83	48	57	Pass
14.2537	80	46	57	Pass
14.5300	77	46	59	Pass
14.8062	75	42	56	Pass
15.0824	74	39	52	Pass
15.3587	73	39	53	Pass
15.6349	72	38	52	Pass
15.9111	67	38	56	Pass
16.1874	62	36	58	Pass
16.4636	58	34	58	Pass
16.7398	56	34	60	Pass
17.0161	54	32	59	Pass
17.2923	52	31	59	Pass
17.5685	50	26	52	Pass
17.8448	49	25	51	Pass
18.1210	48	25	52	Pass
18.3972	46	24	52	Pass
18.6735	41	21	51	Pass
18.9497	40	21	52	Pass
19.2259	40	21	52	Pass
19.5022	40	21	52	Pass
19.7784	39	20	51	Pass
20.0546	38	19	50	Pass
20.3308	38	19	50	Pass
20.6071	38	19	50	Pass
20.8833	37	19	51	Pass
21.1595	36	17	47	Pass
21.4358	36	17	47	Pass
21.7120	35	17	48	Pass
21.9882	32	16	50	Pass
22.2645	32	16	50	Pass
22.5407	30	15	50	Pass
22.8169	28	15	53	Pass
23.0932	24	15	62	Pass
23.3694	24	14	58	Pass
23.6456	24	13	54	Pass
23.9219	24	12	50	Pass
24.1981	24	12	50	Pass
24.4743	24	11	45	Pass
24.7506	22	11	50	Pass
25.0268	22	11	50	Pass
25.3030	20	11	55	Pass
25.5793	20	10	50	Pass
25.8555	19	8	42	Pass
26.1317	19	8	42	Pass
26.4080	19	8	42	Pass
26.6842	19	8	42	Pass
26.9604	19	8	42	Pass
27.2367	18	7	38	Pass

27.5129	18	6	33	Pass
27.7891	18	6	33	Pass
28.0654	18	6	33	Pass
28.3416	18	5	27	Pass
28.6178	17	5	29	Pass
28.8941	16	5	31	Pass
29.1703	16	5	31	Pass
29.4465	16	4	25	Pass
29.7228	16	4	25	Pass
29.9990	16	4	25	Pass
30.2752	14	4	28	Pass
30.5515	14	4	28	Pass
30.8277	14	4	28	Pass
31.1039	13	4	30	Pass
31.3802	13	4	30	Pass
31.6564	13	4	30	Pass
31.9326	12	4	33	Pass
32.2089	12	4	33	Pass

Drawdown Time Results
Pond: Trapezoidal Pond 1

Days	Stage(feet)	Percent of Total Run Time
1	1.850	0.1963
2	4.000	0.0000
3	4.000	0.0000
4	4.000	0.0000
5	4.000	0.0000

Maximum Stage: 3.990
Drawdown Time: 01 09:36:30

Perlnd and Implnd Changes

No changes have been made.

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San Diego Hydrology Model
PROJECT REPORT

Project Name: Basin B
Site Address: SE Corner of Otay Mesa Rd and Alta Rd
City : San Diego, CA
Report Date : 9/24/2009
Gage : Lower Otay
Data Start : 1959/10/02
Data End : 2004/10/30
Precip Scale: 1.39
SDHM Version:

PREDEVELOPED LAND USE

Name : Basin B
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	72.81
C D,Grass,Mod(5-10%)	121.01
C D,Grass,Ste(10-20)	129.47
C D,Grass,Very(>20%)	328.74
C D,Urban,Very(>20%)	.82

Impervious Land Use	Acres

Element Flows To:

Surface	Interflow	Groundwater

DEVELOPED LAND USE

Name : Basin B Detained
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Flat(0-5%)	15.57
C D,Dirt, Flat(0-5%)	7.57
C D,Dirt, Mod(5-10%)	.17
C D,Dirt, St(10-20%)	.06
C D,Urban,Very(>20%)	3.31

Impervious Land Use	Acres		
Roads,Flat(0-5%)	7.3	,Flat(0-5%)	40.01

Element Flows To:

Surface	Interflow	Groundwater
Trapezoidal Pond 1,	Trapezoidal Pond 1,	

Name : Trapezoidal Pond 1
Bottom Length: 350.372405054003ft.
Bottom Width: 350.372405054003ft.
Depth : 4ft.
Volume at riser head : 8.9656ft.
Side slope 1: 3 To 1
Side slope 2: 3 To 1
Side slope 3: 3 To 1
Side slope 4: 3 To 1
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 48 in.
NotchType : Rectangular
Notch Width : 3.900 ft.
Notch Height: 0.073 ft.
Orifice 1 Diameter: 8.055950230621 in. **Elevation:** 0 ft.

Element Flows To:

Outlet 1	Outlet 2

Pond Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	2.818	0.000	0.000	0.000
0.044	2.822	0.125	0.359	0.000
0.089	2.827	0.251	0.508	0.000
0.133	2.831	0.377	0.622	0.000
0.178	2.835	0.503	0.719	0.000
0.222	2.840	0.629	0.804	0.000

0.267	2.844	0.755	0.880	0.000
0.311	2.848	0.881	0.951	0.000
0.356	2.853	1.008	1.016	0.000
0.400	2.857	1.135	1.078	0.000
0.444	2.861	1.262	1.136	0.000
0.489	2.866	1.389	1.192	0.000
0.533	2.870	1.517	1.245	0.000
0.578	2.874	1.644	1.296	0.000
0.622	2.879	1.772	1.345	0.000
0.667	2.883	1.900	1.392	0.000
0.711	2.887	2.029	1.437	0.000
0.756	2.892	2.157	1.482	0.000
0.800	2.896	2.286	1.525	0.000
0.844	2.900	2.414	1.566	0.000
0.889	2.905	2.543	1.607	0.000
0.933	2.909	2.673	1.647	0.000
0.978	2.913	2.802	1.685	0.000
1.022	2.918	2.932	1.723	0.000
1.067	2.922	3.061	1.760	0.000
1.111	2.926	3.191	1.797	0.000
1.156	2.931	3.321	1.832	0.000
1.200	2.935	3.452	1.867	0.000
1.244	2.940	3.582	1.901	0.000
1.289	2.944	3.713	1.935	0.000
1.333	2.948	3.844	1.968	0.000
1.378	2.953	3.975	2.001	0.000
1.422	2.957	4.107	2.033	0.000
1.467	2.962	4.238	2.064	0.000
1.511	2.966	4.370	2.095	0.000
1.556	2.970	4.502	2.126	0.000
1.600	2.975	4.634	2.156	0.000
1.644	2.979	4.766	2.186	0.000
1.689	2.984	4.899	2.215	0.000
1.733	2.988	5.031	2.244	0.000
1.778	2.992	5.164	2.273	0.000
1.822	2.997	5.297	2.301	0.000
1.867	3.001	5.431	2.329	0.000
1.911	3.006	5.564	2.356	0.000
1.956	3.010	5.698	2.384	0.000
2.000	3.015	5.832	2.411	0.000
2.044	3.019	5.966	2.437	0.000
2.089	3.023	6.100	2.463	0.000
2.133	3.028	6.234	2.490	0.000
2.178	3.032	6.369	2.515	0.000
2.222	3.037	6.504	2.541	0.000
2.267	3.041	6.639	2.566	0.000
2.311	3.046	6.774	2.591	0.000
2.356	3.050	6.910	2.616	0.000
2.400	3.055	7.045	2.641	0.000
2.444	3.059	7.181	2.665	0.000
2.489	3.064	7.317	2.689	0.000
2.533	3.068	7.454	2.713	0.000
2.578	3.073	7.590	2.737	0.000
2.622	3.077	7.727	2.760	0.000
2.667	3.081	7.864	2.783	0.000
2.711	3.086	8.001	2.807	0.000
2.756	3.090	8.138	2.829	0.000

2.800	3.095	8.275	2.852	0.000
2.844	3.099	8.413	2.875	0.000
2.889	3.104	8.551	2.897	0.000
2.933	3.108	8.689	2.926	0.000
2.978	3.113	8.827	3.091	0.000
3.022	3.117	8.966	3.349	0.000
3.067	3.122	9.104	3.912	0.000
3.111	3.126	9.243	4.706	0.000
3.156	3.131	9.382	5.675	0.000
3.200	3.136	9.521	6.790	0.000
3.244	3.140	9.661	8.035	0.000
3.289	3.145	9.801	9.397	0.000
3.333	3.149	9.940	10.87	0.000
3.378	3.154	10.08	12.44	0.000
3.422	3.158	10.22	14.10	0.000
3.467	3.163	10.36	15.85	0.000
3.511	3.167	10.50	17.69	0.000
3.556	3.172	10.64	19.60	0.000
3.600	3.176	10.78	21.60	0.000
3.644	3.181	10.93	23.66	0.000
3.689	3.186	11.07	25.80	0.000
3.733	3.190	11.21	28.01	0.000
3.778	3.195	11.35	30.29	0.000
3.822	3.199	11.49	32.63	0.000
3.867	3.204	11.63	35.04	0.000
3.911	3.208	11.78	37.51	0.000
3.956	3.213	11.92	40.03	0.000
4.000	3.218	12.06	42.62	0.000
4.044	3.222	12.21	45.27	0.000

Name : Basin B Undetained
Bypass: Yes

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	51.72
C D,Grass,Mod(5-10%)	76.13
C D,Grass,Ste(10-20)	120.13
C D,Grass,Very(>20%)	327.76
C D,Urban,Flat(0-5%)	.11
C D,Dirt, Flat(0-5%)	1.89
C D,Dirt, Mod(5-10%)	.06
C D,Dirt, St(10-20%)	.03
C D,Urban,Very(>20%)	3.47

Impervious Land Use	Acres
Roads,Flat(0-5%)	0.37

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

ANALYSIS RESULTS

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	90.0394
5 year	198.358217
10 year	281.209391
25 year	393.525348

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	91.0202
5 year	196.163522
10 year	268.84987
25 year	360.419652

Yearly Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1961	90.039	91.020
1962	0.398	2.316
1963	88.455	86.158
1964	0.323	2.290
1965	54.674	57.408
1966	66.968	67.556
1967	166.010	174.359
1968	65.839	68.705
1969	91.874	93.892
1970	193.400	181.543
1971	142.204	145.178
1972	186.492	187.732
1973	1.367	3.767
1974	145.458	138.046
1975	86.778	88.636
1976	16.565	18.582
1977	180.738	176.166
1978	37.912	39.140
1979	377.881	345.614
1980	226.434	210.808
1981	199.518	197.672
1982	57.277	58.466
1983	104.110	101.365
1984	291.907	290.624
1985	0.076	1.297
1986	194.183	190.733
1987	275.504	257.237
1988	49.587	51.804
1989	329.286	318.095
1990	1.215	3.548
1991	40.839	43.410
1992	169.550	174.797
1993	251.851	247.225

1994	232.460	215.519
1995	0.979	2.534
1996	183.147	171.848
1997	16.510	18.322
1998	160.159	161.933
1999	557.791	515.879
2000	45.717	47.590
2001	2.136	4.920
2002	68.323	70.278
2003	0.023	1.154
2004	33.526	35.327
2005	90.232	95.427

Ranked Yearly Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	557.7910	515.8790
2	377.8810	345.6140
3	329.2860	318.0950
4	291.9070	290.6240
5	275.5040	257.2370
6	251.8510	247.2250
7	232.4600	215.5190
8	226.4340	210.8080
9	199.5180	197.6720
10	194.1830	190.7330
11	193.4000	187.7320
12	186.4920	181.5430
13	183.1470	176.1660
14	180.7380	174.7970
15	169.5500	174.3590
16	166.0100	171.8480
17	160.1590	161.9330
18	145.4580	145.1780
19	142.2040	138.0460
20	104.1100	101.3650
21	91.8742	95.4268
22	90.2316	93.8919
23	90.0394	91.0202
24	88.4550	88.6360
25	86.7776	86.1578
26	68.3232	70.2778
27	66.9684	68.7053
28	65.8389	67.5564
29	57.2770	58.4655
30	54.6738	57.4083
31	49.5872	51.8041
32	45.7168	47.5898
33	40.8388	43.4098
34	37.9121	39.1399
35	33.5258	35.3265
36	16.5645	18.5823
37	16.5102	18.3216
38	2.1359	4.9202
39	1.3668	3.7672
40	1.2154	3.5478
41	0.9789	2.5339

42	0.3982	2.3159
43	0.3226	2.2897
44	0.0759	1.2969
45	0.0233	1.1544

POC #1
The Facility PASSED

The Facility PASSED.

Flow(CFS)	Predev	Dev	Percentage	Pass/Fail
39.6716	419	437	104	Pass
42.1114	393	408	103	Pass
44.5512	373	386	103	Pass
46.9910	354	363	102	Pass
49.4307	326	335	102	Pass
51.8705	306	313	102	Pass
54.3103	290	288	99	Pass
56.7501	272	276	101	Pass
59.1898	257	261	101	Pass
61.6296	245	247	100	Pass
64.0694	233	234	100	Pass
66.5092	222	222	100	Pass
68.9489	211	210	99	Pass
71.3887	205	200	97	Pass
73.8285	196	198	101	Pass
76.2683	189	190	100	Pass
78.7080	182	182	100	Pass
81.1478	173	174	100	Pass
83.5876	170	168	98	Pass
86.0274	164	160	97	Pass
88.4671	150	148	98	Pass
90.9069	140	141	100	Pass
93.3467	136	135	99	Pass
95.7865	128	126	98	Pass
98.2262	127	123	96	Pass
100.6660	118	119	100	Pass
103.1058	117	113	96	Pass
105.5456	112	106	94	Pass
107.9853	108	106	98	Pass
110.4251	103	104	100	Pass
112.8649	103	100	97	Pass
115.3047	103	95	92	Pass
117.7445	94	89	94	Pass
120.1842	88	84	95	Pass
122.6240	84	80	95	Pass
125.0638	81	76	93	Pass
127.5036	76	75	98	Pass
129.9433	75	74	98	Pass
132.3831	71	68	95	Pass
134.8229	69	66	95	Pass
137.2627	65	62	95	Pass
139.7024	63	60	95	Pass
142.1422	62	58	93	Pass
144.5820	59	54	91	Pass
147.0218	54	50	92	Pass

149.4615	53	47	88	Pass
151.9013	52	45	86	Pass
154.3411	49	43	87	Pass
156.7809	46	40	86	Pass
159.2206	42	40	95	Pass
161.6604	41	40	97	Pass
164.1002	38	39	102	Pass
166.5400	37	35	94	Pass
168.9797	35	33	94	Pass
171.4195	33	33	100	Pass
173.8593	32	32	100	Pass
176.2991	31	26	83	Pass
178.7388	30	26	86	Pass
181.1786	28	26	92	Pass
183.6184	27	22	81	Pass
186.0582	27	21	77	Pass
188.4979	24	20	83	Pass
190.9377	24	19	79	Pass
193.3775	23	19	82	Pass
195.8173	20	19	95	Pass
198.2570	20	18	90	Pass
200.6968	18	18	100	Pass
203.1366	18	18	100	Pass
205.5764	18	18	100	Pass
208.0161	18	18	100	Pass
210.4559	18	18	100	Pass
212.8957	18	17	94	Pass
215.3355	18	17	94	Pass
217.7752	18	16	88	Pass
220.2150	18	15	83	Pass
222.6548	18	15	83	Pass
225.0946	18	14	77	Pass
227.5343	17	13	76	Pass
229.9741	17	13	76	Pass
232.4139	17	13	76	Pass
234.8537	16	13	81	Pass
237.2934	15	13	86	Pass
239.7332	14	13	92	Pass
242.1730	13	13	100	Pass
244.6128	13	13	100	Pass
247.0525	13	13	100	Pass
249.4923	13	12	92	Pass
251.9321	12	10	83	Pass
254.3719	12	10	83	Pass
256.8116	11	10	90	Pass
259.2514	11	9	81	Pass
261.6912	11	9	81	Pass
264.1310	11	9	81	Pass
266.5707	11	9	81	Pass
269.0105	11	9	81	Pass
271.4503	11	9	81	Pass
273.8901	11	9	81	Pass
276.3298	9	9	100	Pass
278.7696	9	8	88	Pass
281.2094	9	8	88	Pass

Drawdown Time Results
Pond: Trapezoidal Pond 1

Days	Stage(feet)	Percent of Total Run Time
1	0.869	1.3272
2	2.283	0.2254
3	4.000	0.0000
4	4.000	0.0000
5	4.000	0.0000

Maximum Stage: 3.848
Drawdown Time: 02 11:45:10

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San Diego Hydrology Model
PROJECT REPORT

Project Name: Basin C
Site Address: SE Corner of Otay Mesa Rd and Alta Rd
City : San Diego, CA
Report Date : 9/30/2009
Gage : Lower Otay
Data Start : 1959/10/02
Data End : 2004/10/30
Precip Scale: 1.39
SDHM Version:

PREDEVELOPED LAND USE

Name : Basin C
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	64.4
C D,Grass,Mod(5-10%)	85.16
C D,Grass,Ste(10-20)	49.41
C D,Grass,Very(>20%)	45.73

Impervious Land Use	Acres

Element Flows To:

Surface	Interflow	Groundwater

DEVELOPED LAND USE

Name : Basin C
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	3.26
C D,Grass,Mod(5-10%)	6.6
C D,Grass,Ste(10-20)	16.17
C D,Grass,Very(>20%)	7.94
C D,Urban,Flat(0-5%)	11.22
C D,Dirt, Flat(0-5%)	50.75
C D,Dirt, Mod(5-10%)	2.07
C D,Dirt, St(10-20%)	.11
C D,Urban,Very(>20%)	3.81

Impervious Land Use	Acres		
Roads,Flat(0-5%)	5.47	,Flat(0-5%)	29.07

Element Flows To:

Surface	Interflow	Groundwater
Trapezoidal Pond 1,	Trapezoidal Pond 1,	

Name : Trapezoidal Pond 1
Bottom Length: 369ft.
Bottom Width: 369ft.
Depth : 4ft.
Volume at riser head : 9.9188ft.
Side slope 1: 3 To 1
Side slope 2: 3 To 1
Side slope 3: 3 To 1
Side slope 4: 3 To 1
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 48 in.
NotchType : Rectangular
Notch Width : 0.480 ft.
Notch Height: 0.780 ft.
Orifice 1 Diameter: 13.65 in. **Elevation:** 0 ft.

Element Flows To:

Outlet 1	Outlet 2

Pond Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	3.126	0.000	0.000	0.000

0.044	3.130	0.139	1.032	0.000
0.089	3.135	0.278	1.459	0.000
0.133	3.139	0.418	1.787	0.000
0.178	3.144	0.557	2.063	0.000
0.222	3.148	0.697	2.307	0.000
0.267	3.153	0.837	2.527	0.000
0.311	3.158	0.977	2.729	0.000
0.356	3.162	1.118	2.918	0.000
0.400	3.167	1.258	3.095	0.000
0.444	3.171	1.399	3.262	0.000
0.489	3.176	1.540	3.422	0.000
0.533	3.180	1.682	3.574	0.000
0.578	3.185	1.823	3.720	0.000
0.622	3.189	1.965	3.860	0.000
0.667	3.194	2.107	3.996	0.000
0.711	3.199	2.249	4.127	0.000
0.756	3.203	2.391	4.254	0.000
0.800	3.208	2.533	4.377	0.000
0.844	3.212	2.676	4.497	0.000
0.889	3.217	2.819	4.614	0.000
0.933	3.221	2.962	4.728	0.000
0.978	3.226	3.105	4.839	0.000
1.022	3.231	3.249	4.948	0.000
1.067	3.235	3.392	5.054	0.000
1.111	3.240	3.536	5.158	0.000
1.156	3.244	3.680	5.260	0.000
1.200	3.249	3.825	5.361	0.000
1.244	3.254	3.969	5.459	0.000
1.289	3.258	4.114	5.556	0.000
1.333	3.263	4.259	5.651	0.000
1.378	3.267	4.404	5.744	0.000
1.422	3.272	4.549	5.836	0.000
1.467	3.277	4.695	5.926	0.000
1.511	3.281	4.840	6.016	0.000
1.556	3.286	4.986	6.103	0.000
1.600	3.291	5.133	6.190	0.000
1.644	3.295	5.279	6.275	0.000
1.689	3.300	5.425	6.360	0.000
1.733	3.305	5.572	6.443	0.000
1.778	3.309	5.719	6.525	0.000
1.822	3.314	5.866	6.606	0.000
1.867	3.318	6.014	6.686	0.000
1.911	3.323	6.161	6.765	0.000
1.956	3.328	6.309	6.843	0.000
2.000	3.332	6.457	6.921	0.000
2.044	3.337	6.605	6.997	0.000
2.089	3.342	6.754	7.073	0.000
2.133	3.346	6.902	7.147	0.000
2.178	3.351	7.051	7.222	0.000
2.222	3.356	7.200	7.295	0.000
2.267	3.360	7.350	7.384	0.000
2.311	3.365	7.499	7.483	0.000
2.356	3.370	7.649	7.590	0.000
2.400	3.375	7.799	7.703	0.000
2.444	3.379	7.949	7.821	0.000
2.489	3.384	8.099	7.943	0.000
2.533	3.389	8.249	8.069	0.000

2.578	3.393	8.400	8.199	0.000
2.622	3.398	8.551	8.332	0.000
2.667	3.403	8.702	8.468	0.000
2.711	3.407	8.854	8.608	0.000
2.756	3.412	9.005	8.750	0.000
2.800	3.417	9.157	8.895	0.000
2.844	3.422	9.309	9.042	0.000
2.889	3.426	9.461	9.192	0.000
2.933	3.431	9.613	9.344	0.000
2.978	3.436	9.766	9.499	0.000
3.022	3.441	9.919	9.737	0.000
3.067	3.445	10.07	10.34	0.000
3.111	3.450	10.23	11.18	0.000
3.156	3.455	10.38	12.18	0.000
3.200	3.460	10.53	13.34	0.000
3.244	3.464	10.69	14.62	0.000
3.289	3.469	10.84	16.02	0.000
3.333	3.474	10.99	17.53	0.000
3.378	3.479	11.15	19.14	0.000
3.422	3.483	11.30	20.84	0.000
3.467	3.488	11.46	22.63	0.000
3.511	3.493	11.61	24.51	0.000
3.556	3.498	11.77	26.46	0.000
3.600	3.502	11.92	28.49	0.000
3.644	3.507	12.08	30.60	0.000
3.689	3.512	12.24	32.77	0.000
3.733	3.517	12.39	35.02	0.000
3.778	3.522	12.55	37.33	0.000
3.822	3.526	12.71	39.71	0.000
3.867	3.531	12.86	42.15	0.000
3.911	3.536	13.02	44.66	0.000
3.956	3.541	13.18	47.22	0.000
4.000	3.546	13.33	49.84	0.000
4.044	3.550	13.49	52.52	0.000

Name : Basin C (UNDETAINED)
Bypass: No

GroundWater: No

Pervious Land Use	**Acres**
C D,Grass,Flat(0-5%)	9.28
C D,Grass,Mod(5-10%)	28.21
C D,Grass,Ste(10-20)	24.29
C D,Grass,Very(>20%)	37.4
C D,Dirt, Flat(0-5%)	2.16
C D,Dirt, Mod(5-10%)	1.02
C D,Dirt, St(10-20%)	.4
C D,Urban,Very(>20%)	1.02

Impervious Land Use	**Acres**

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

ANALYSIS RESULTS

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	15.8183
5 year	59.090383
10 year	80.845765
25 year	131.917043

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	16.158
5 year	38.360991
10 year	50.833343
25 year	83.2085

Yearly Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1961	15.818	14.838
1962	0.073	4.057
1963	21.682	16.977
1964	0.049	4.097
1965	7.845	10.041
1966	13.894	14.253
1967	50.004	49.623
1968	9.547	12.754
1969	16.574	16.158
1970	55.689	31.624
1971	25.319	21.702
1972	30.384	26.588
1973	0.195	3.814
1974	39.921	24.356
1975	13.496	13.278
1976	2.434	4.619
1977	46.879	32.408
1978	5.999	10.060
1979	126.330	70.457
1980	68.606	38.017
1981	59.959	38.457
1982	9.493	9.785
1983	26.586	21.308
1984	97.094	80.876
1985	0.020	2.656
1986	61.136	37.508
1987	83.441	48.112
1988	7.154	9.563
1989	79.462	53.103

1990	0.183	4.084
1991	5.849	8.831
1992	43.029	31.056
1993	55.963	41.373
1994	73.643	39.905
1995	0.153	2.994
1996	55.762	34.690
1997	2.331	3.926
1998	43.979	31.557
1999	190.581	107.705
2000	6.658	7.395
2001	0.322	3.409
2002	10.425	11.522
2003	0.006	2.146
2004	5.056	5.691
2005	15.699	16.446

Ranked Yearly Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	190.5810	107.7050
2	126.3300	80.8755
3	97.0944	70.4570
4	83.4407	53.1033
5	79.4618	49.6227
6	73.6427	48.1117
7	68.6060	41.3731
8	61.1356	39.9053
9	59.9591	38.4566
10	55.9630	38.0168
11	55.7617	37.5083
12	55.6886	34.6904
13	50.0035	32.4081
14	46.8789	31.6238
15	43.9791	31.5571
16	43.0285	31.0560
17	39.9208	26.5880
18	30.3844	24.3559
19	26.5862	21.7023
20	25.3185	21.3078
21	21.6819	16.9766
22	16.5742	16.4464
23	15.8183	16.1580
24	15.6991	14.8384
25	13.8938	14.2529
26	13.4963	13.2775
27	10.4250	12.7536
28	9.5473	11.5215
29	9.4930	10.0598
30	7.8447	10.0407
31	7.1536	9.7852
32	6.6579	9.5632
33	5.9993	8.8310
34	5.8492	7.3947
35	5.0557	5.6912
36	2.4338	4.6190
37	2.3309	4.0969

38	0.3225	4.0837
39	0.1952	4.0566
40	0.1831	3.9265
41	0.1525	3.8145
42	0.0731	3.4089
43	0.0495	2.9944
44	0.0196	2.6564
45	0.0057	2.1464

POC #1
The Facility PASSED

The Facility PASSED.

Flow(CFS)	Predev	Dev	Percentage	Pass/Fail
11.8181	314	341	108	Pass
12.5153	298	307	103	Pass
13.2126	280	280	100	Pass
13.9098	269	258	95	Pass
14.6071	254	236	92	Pass
15.3043	241	216	89	Pass
16.0016	227	199	87	Pass
16.6988	213	189	88	Pass
17.3961	205	176	85	Pass
18.0933	196	164	83	Pass
18.7906	186	150	80	Pass
19.4878	179	138	77	Pass
20.1851	171	129	75	Pass
20.8823	163	118	72	Pass
21.5796	159	112	70	Pass
22.2768	154	106	68	Pass
22.9741	150	103	68	Pass
23.6713	144	99	68	Pass
24.3686	136	92	67	Pass
25.0658	130	85	65	Pass
25.7631	125	82	65	Pass
26.4603	118	79	66	Pass
27.1576	111	72	64	Pass
27.8548	106	67	63	Pass
28.5521	105	61	58	Pass
29.2493	102	60	58	Pass
29.9466	98	54	55	Pass
30.6438	96	47	48	Pass
31.3411	91	45	49	Pass
32.0383	89	42	47	Pass
32.7356	88	37	42	Pass
33.4328	87	36	41	Pass
34.1301	84	34	40	Pass
34.8273	84	33	39	Pass
35.5246	82	32	39	Pass
36.2218	79	31	39	Pass
36.9191	76	30	39	Pass
37.6163	74	27	36	Pass
38.3136	68	25	36	Pass
39.0108	67	23	34	Pass
39.7081	65	22	33	Pass

40.4053	62	20	32	Pass
41.1026	59	20	33	Pass
41.7998	58	18	31	Pass
42.4970	57	17	29	Pass
43.1943	53	17	32	Pass
43.8915	50	17	34	Pass
44.5888	45	17	37	Pass
45.2860	44	17	38	Pass
45.9833	42	16	38	Pass
46.6805	42	16	38	Pass
47.3778	40	16	40	Pass
48.0750	39	15	38	Pass
48.7723	39	14	35	Pass
49.4695	39	14	35	Pass
50.1668	38	13	34	Pass
50.8640	37	13	35	Pass
51.5613	35	13	37	Pass
52.2585	33	13	39	Pass
52.9558	30	13	43	Pass
53.6530	29	12	41	Pass
54.3503	28	11	39	Pass
55.0475	28	10	35	Pass
55.7448	26	10	38	Pass
56.4420	23	9	39	Pass
57.1393	23	9	39	Pass
57.8365	22	9	40	Pass
58.5338	22	9	40	Pass
59.2310	22	8	36	Pass
59.9283	21	8	38	Pass
60.6255	20	8	40	Pass
61.3228	19	8	42	Pass
62.0200	19	8	42	Pass
62.7173	19	7	36	Pass
63.4145	19	7	36	Pass
64.1118	18	7	38	Pass
64.8090	18	7	38	Pass
65.5063	18	7	38	Pass
66.2035	18	7	38	Pass
66.9008	18	6	33	Pass
67.5980	18	6	33	Pass
68.2953	17	6	35	Pass
68.9925	16	6	37	Pass
69.6898	16	6	37	Pass
70.3870	16	5	31	Pass
71.0843	16	4	25	Pass
71.7815	16	4	25	Pass
72.4788	16	4	25	Pass
73.1760	15	4	26	Pass
73.8733	14	4	28	Pass
74.5705	14	4	28	Pass
75.2678	14	3	21	Pass
75.9650	13	3	23	Pass
76.6623	13	3	23	Pass
77.3595	12	3	25	Pass
78.0568	12	3	25	Pass
78.7540	12	3	25	Pass
79.4513	12	3	25	Pass

80.1485	11	3	27	Pass
80.8458	11	3	27	Pass

Drawdown Time Results
Pond: Trapezoidal Pond 1

Days	Stage(feet)	Percent of Total Run Time
1	4.000	0.0000
2	4.000	0.0000
3	4.000	0.0000
4	4.000	0.0000
5	4.000	0.0000

Maximum Stage: 3.999
Drawdown Time: 00 23:28:20

Perlnd and Implnd Changes

No changes have been made.

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SECTION 5

HYDROMODIFICATION BMP IMPLEMENTATION

The SDHM models included in this section model each of the basins in their entirety and include all BMPs proposed in each basin. Exhibit C, within this section, provides minimum on-lot BMP sizing requirements to be implemented during the ultimate build-out of the project. During the Site Plan review that will take place prior to the development of each lot, as mandated by the East Otay Mesa Specific Plan, each proposed development will need to demonstrate that it is in compliance with the requirements indicated in this report. Should a project propose alternative BMPs, or any variation to the assumptions made within this report, then that project will need to provide additional modeling and analysis to demonstrate that the subdivision as a whole will still be in compliance with the IHC upon completion of the project.

DRAWDOWN CALCULATIONS

Drawdown calculations are included in the SDHM reports provided within this section. Based on those calculations, all of the hydromodification facilities required for the project will have a drawdown time of less than 96 hours; 96 hours is the maximum allowable drawdown time for any storm water facility

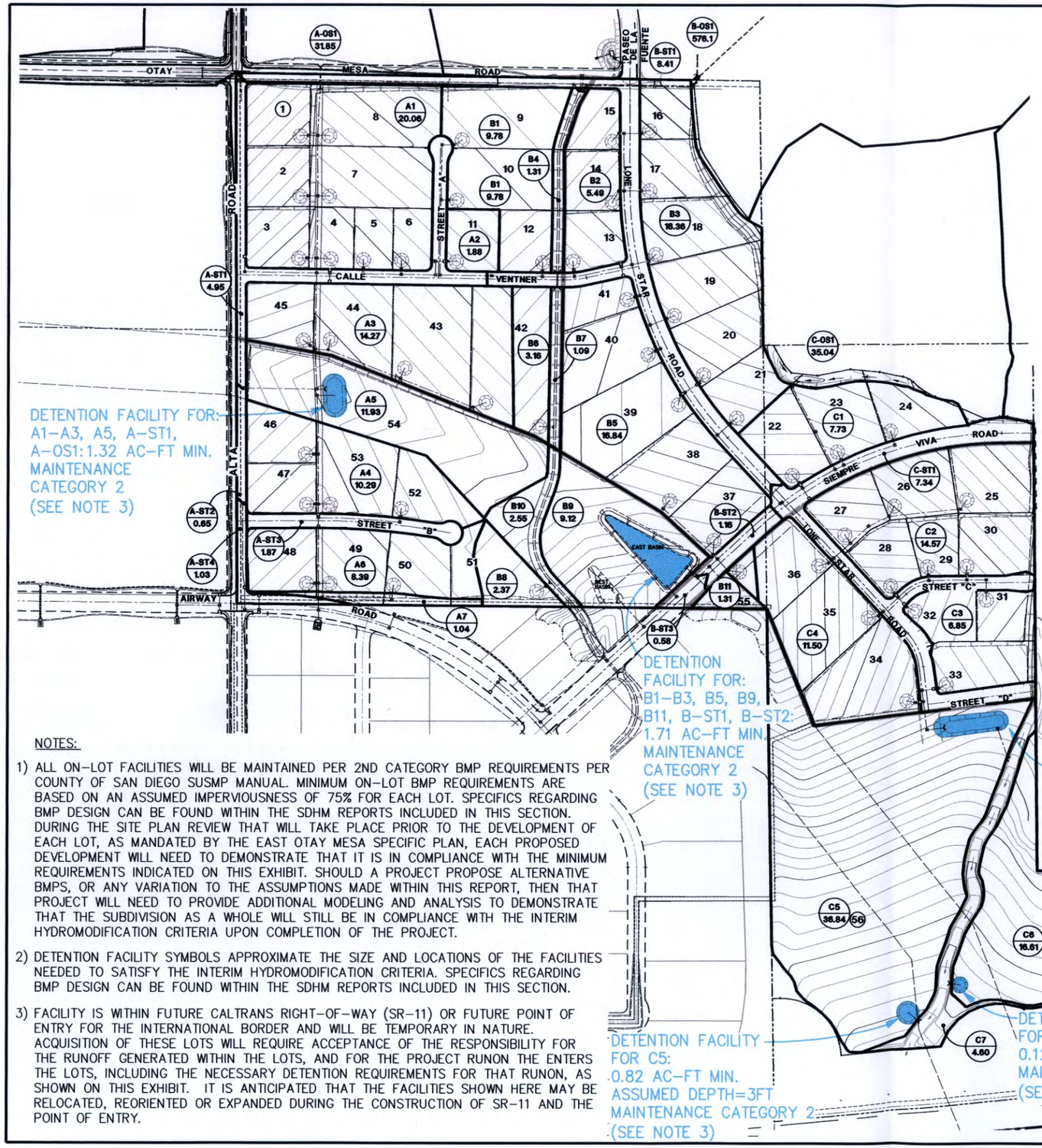
BMP MAINTENANCE

It is anticipated, due to the low outflow rate required to comply with the IHC, that the outlet structures for the hydromodification facilities at the proposed project will have very small openings for releasing storm water runoff. Based on the SDHM reports within this section, several of the facilities will have outlet structures with orifices as small as 2 or 3 inches in diameter. Openings this small generally have a high propensity towards clogging and, thus, design of the structures is critical. Though exact specifications won't be developed until final engineering, the structures will likely drain through the use of a perforated PVC pipe rather than a single orifice. The perforated pipe will be placed in ¾ gravel and the gravel will be wrapped in filter fabric in order to reduce the possibility of clogging to the maximum extent practicable. The fill placed over the PVC pipe and gravel will be an engineered fill with a known infiltration rate.

The outlet structure will be designed so that the perforated pipe can be accessed for regular maintenance. Additionally, cleanouts will be incorporated as needed to ensure full access to all outlet components. Regular maintenance of the facilities will be critical for their long-term functionality. As discussed in Section 1, the proposed BMPs will fall under second and third category maintenance mechanisms, as defined within the County of San Diego "Standard Urban Storm Water Mitigation Plan for Land Development and Public Improvement Projects", dated March 24, 2008. The

on-lot BMPs constructed during the ultimate build-out of each lot will fall under the second category maintenance mechanisms, requiring that a Stormwater Facilities Maintenance Agreement, with Easement and Covenants be entered into between the owner and the County of San Diego, obliging the owner to maintain the project category two BMPs into perpetuity. The BMPs servicing the public right-of-way will fall under third category maintenance mechanisms, requiring the establishment of a Storm Water Maintenance Assessment District to maintain the proposed BMPs into perpetuity. Specific maintenance categories for all BMPs are identified on Exhibit C in this section.

Maintenance of the facilities will be performed according to a schedule developed for each BMP during final engineering. At a minimum, the facilities will need to be inspected twice a year, with one of the inspections occurring just prior to the start of the established rainy season (October to April). Depending on the type of the facility and anticipated pollutant loading, more regular inspections may be required.



NOTES:

1) ALL ON–LOT FACILITIES WILL BE MAINTAINED PER 2ND CATEGORY BMP REQUIREMENTS PER COUNTY OF SAN DIEGO SUSMP MANUAL. MINIMUM ON–LOT BMP REQUIREMENTS ARE BASED ON AN ASSUMED IMPERVIOUSNESS OF 75% FOR EACH LOT. SPECIFICS REGARDING BMP DESIGN CAN BE FOUND WITHIN THE SDHM REPORTS INCLUDED IN THIS SECTION. DURING THE SITE PLAN REVIEW THAT WILL TAKE PLACE PRIOR TO THE DEVELOPMENT OF EACH LOT, AS MANDATED BY THE EAST OTAY MESA SPECIFIC PLAN, EACH PROPOSED DEVELOPMENT WILL NEED TO DEMONSTRATE THAT IT IS IN COMPLIANCE WITH THE MINIMUM REQUIREMENTS INDICATED ON THIS EXHIBIT. SHOULD A PROJECT PROPOSE ALTERNATIVE BMPS, OR ANY VARIATION TO THE ASSUMPTIONS MADE WITHIN THIS REPORT, THEN THAT PROJECT WILL NEED TO PROVIDE ADDITIONAL MODELING AND ANALYSIS TO DEMONSTRATE THAT THE SUBDIVISION AS A WHOLE WILL STILL BE IN COMPLIANCE WITH THE INTERIM HYDROMODIFICATION CRITERIA UPON COMPLETION OF THE PROJECT.

2) DETENTION FACILITY SYMBOLS APPROXIMATE THE SIZE AND LOCATIONS OF THE FACILITIES NEEDED TO SATISFY THE INTERIM HYDROMODIFICATION CRITERIA. SPECIFICS REGARDING BMP DESIGN CAN BE FOUND WITHIN THE SDHM REPORTS INCLUDED IN THIS SECTION.

3) FACILITY IS WITHIN FUTURE CALTRANS RIGHT–OF–WAY (SR–11) OR FUTURE POINT OF ENTRY FOR THE INTERNATIONAL BORDER AND WILL BE TEMPORARY IN NATURE. ACQUISITION OF THESE LOTS WILL REQUIRE ACCEPTANCE OF THE RESPONSIBILITY FOR THE RUNOFF GENERATED WITHIN THE LOTS, AND FOR THE PROJECT RUNON THE ENTERS THE LOTS, INCLUDING THE NECESSARY DETENTION REQUIREMENTS FOR THAT RUNON, AS SHOWN ON THIS EXHIBIT. IT IS ANTICIPATED THAT THE FACILITIES SHOWN HERE MAY BE RELOCATED, REORIENTED OR EXPANDED DURING THE CONSTRUCTION OF SR–11 AND THE POINT OF ENTRY.

SCALE: NTS

LEGEND:

(1) LOT NO. (TM 5405 RPL6)

(A1 / 13.84) HYDROMODIFICATION BASIN DESIGNATION AND BASIN AREA (AC)

BASIN BOUNDARY

DETENTION FACILITY, APPROX. LOCATION AND SIZE (SEE NOTE 2)

MINIMUM ON-LOT BMPS REQUIRED TO SATISFY INTERIM HYDROMODIFICATION CRITERIA (SEE NOTE 1)

LOT NUMBER	HYDROMOD BASIN	LOT ACREAGE (Ac)	MINIMUM REQUIRED AREA OF BIO-RETENTION SWALES[1,3,4] (SF)	MINIMUM REQUIRED VOLUME OF UNDERGROUND DETENTION[2,3,4] (Ac-Ft)
LOT 1	A1	2.32	5,093	0.40
LOT 2	A1	2.24	4,917	0.38
LOT 3	A1	2.23	4,895	0.38
LOT 4	A1	1.6	3,512	0.27
LOT 5	A1	1.39	3,051	0.24
LOT 6	A1	1.38	3,029	0.24
LOT 7	A1	4.3	9,439	0.74
LOT 8	A1	4.6	10,098	0.79
LOT 9	B1	4.25	9,264	0.72
LOT 10	B1	3.66	7,978	0.62
LOT 11	A2	1.88	4,127	0.32
LOT 12	B1	1.88	4,098	0.32
LOT 13	B2	1.97	4,294	0.34
LOT 14	B2	1.95	4,250	0.33
LOT 15	B2	1.57	3,422	0.27
LOT 16	B3	1.93	4,207	0.33
LOT 17	B3	2.46	5,362	0.42
LOT 18	B3	3.43	7,476	0.58
LOT 19	B3	3.61	7,869	0.61
LOT 20	B3	2.98	6,496	0.51
LOT 21	B3	2.53	5,515	0.43
LOT 22	C1	2.77	5,558	0.36
LOT 23	C1	3.34	6,701	0.43
LOT 24	C1	2.76	5,538	0.36
LOT 25	C2	3.28	6,581	0.43
LOT 26	C2	2.66	5,337	0.34
LOT 27	C2	2.17	4,354	0.28
LOT 28	C2	2.12	4,254	0.27
LOT 29	C2	1.58	3,170	0.20
LOT 30	C2	2.76	5,538	0.36
LOT 31	C3	1.71	3,431	0.22
LOT 32	C3	1.92	3,852	0.25
LOT 33	C3	2.89	5,798	0.37
LOT 34	C4	4.6	9,229	0.60
LOT 35	C4	4.02	8,066	0.52
LOT 36 EAST	C4	2.21	4,434	0.29
LOT 36 WEST	B11	0.9	1,962	0.15
LOT 37	B5	2.94	6,408	0.50
LOT 38	B5	3.69	8,043	0.63
LOT 39	B5	4.89	10,659	0.83
LOT 40	B5	3.74	8,152	0.64
LOT 41	B5	1.55	3,379	0.26
LOT 42 EAST	B6	3.1	6,087	0.67
LOT 42 WEST	A3	3.21	7,046	0.55
LOT 43	A3	4.98	10,932	0.85
LOT 44	A3	3.64	7,990	0.62
LOT 45	A3	2.46	5,400	0.42
LOT 46	A4	2.13	5,018	0.42
LOT 47	A4	2.03	4,782	0.40
LOT 48	A6	2.69	5,320	0.48
LOT 49	A6	3.02	5,973	0.53
LOT 50	A6	2.56	5,063	0.45
LOT 51 EAST	B8	2.37	4,653	0.52
LOT 51 WEST	A6	1.18	2,334	0.21
LOT 52	A4	2.42	5,701	0.47
LOT 53	A4	3.71	8,740	0.72
LOT 55	B11	0.87	1,896	0.15

[1] BASED ON A SWALE THAT IS 4 FT DEEP, WITH POROSITY OF 0.33, AND 2 FT OF FREEBOARD. SWALE AREA IS THE AREA OF THE BIO-RETENTION FACILITY THAT PROVIDES TREATMENT. DUE TO DESIGN PARAMETERS OF THE ACTUAL FACILITY CONSTRUCTED, OR SPECIFIC SITE DESIGN REQUIREMENTS, ADDITIONAL AREA MAY BE REQUIRED.

[2] VOLUMES PROVIDED DO NOT INCLUDE THE ADDITIONAL VOLUME/ HEAD THAT WILL BE NECESSARY FOR FREEBOARD AND AN EMERGENCY SPILLWAY.

[3] ON-LOT BMPS MUST BE PLACED IN A LOCATION ON THE INDIVIDUAL LOT THAT MAXIMIZES THE CAPTURE OF THE ON-SITE RUNOFF.

[4] IF, DURING DEVELOPMENT OF EACH LOT, THE PROVIDED MINIMUM VALUES ARE NOT USED, ADDITIONAL ANALYSIS WILL NEED TO BE PROVIDED TO DEMONSTRATE THAT THE CHOSEN ALTERNATIVE BMPS ARE COMPARABLE IN ADDRESSING THE HYDROMODIFICATION CRITERIA FOR THE SUBDIVISION AS A WHOLE. THIS ANALYSIS WILL BE PROVIDED DURING THE SITE PLAN REVIEW PROCESS MANDATED BY THE EAST OTAY MESA SPECIFIC PLAN FOR THE DEVELOPMENT OF EACH LOT.

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REVISIONS

OTAY CROSSINGS COMMERCE PARK
SAN DIEGO, CALIFORNIA

EXHIBIT "C"
PRELIMINARY HYDROMODIFICATION BMP SIZING REQUIREMENTS AND LOCATIONS

DATE: 02/23/10
SCE NO. 03043.03
SHEET C
1 OF 1 SHEETS

X:\DWG\Job\2003\03043\DRAINAGE\03043 PR HYDROMOD BMPS.dwg 2/23/2010 11:23:12 AM PST

TABLE 5-1A
OTAY CROSSINGS COMMERCE PARK, TM5405
HYDROMODIFICATION BMP SIZING

BASIN A				
Detention Requirements for Specific Sub-basins[1]:				Type of BMP
A1-A3, A5, A-OS1, A-ST1 (Ac-Ft):			1.32	Detention Pond
On-lot Detention Requirements				Average Per Acre
Total Area of Bio-retention Swales on the Lots in Basins A1-A3[1,2] (SF):			79,530	2,195
Total Volume of Underground Detention on the Lots in Basins A1-A3[1] (Ac-Ft):			6.2	0.17
Total Area of Bio-retention Swales on the Lots in Basins A4[1,2] (SF):			24,240	2,356
Total Volume of Underground Detention on the Lots in Basins A4[1] (Ac-Ft):			2.0	0.20
Total Area of Bio-retention Swales on the Lots in Basins A6[1,2] (SF):			18,690	1,978
Total Volume of Underground Detention on the Lots in Basins A6[1] (Ac-Ft):			1.7	0.18
Lot Number	HydroMod Basin	Lot Acreage[3] (Ac)	Minimum Required Area of Bio-retention Swales[4] (SF)	Minimum Required Volume of Underground Detention[4] (Ac-Ft)
LOT 1	A1	2.32	5,093	0.40
LOT 2	A1	2.24	4,917	0.38
LOT 3	A1	2.23	4,895	0.38
LOT 4	A1	1.6	3,512	0.27
LOT 5	A1	1.39	3,051	0.24
LOT 6	A1	1.38	3,029	0.24
LOT 7	A1	4.3	9,439	0.74
LOT 8	A1	4.6	10,098	0.79
LOT 11	A2	1.88	4,127	0.32
LOT 42 WEST	A3	3.21	7,046	0.55
LOT 43	A3	4.98	10,932	0.85
LOT 44	A3	3.64	7,990	0.62
LOT 45	A3	2.46	5,400	0.42
LOT 46	A4	2.13	5,018	0.42
LOT 47	A4	2.03	4,782	0.40
LOT 48	A6	2.69	5,320	0.48
LOT 49	A6	3.02	5,973	0.53
LOT 50	A6	2.56	5,063	0.45
LOT 51 WEST	A6	1.18	2,334	0.21
LOT 52	A4	2.42	5,701	0.47
LOT 53	A4	3.71	8,740	0.72
Sub-Totals		55.97	122,460	9.9

[1]From SDHM Reports provided in this section

[2]Based on a swale that is 4 feet deep, with a porosity of 0.33, and 2 foot of freeboard

[3]Developed lot acreage from TM 5405 RPL6

[4]If, during development of each lot, the provided minimum values are not used, additional analysis will need to be provided to demonstrate that the chosen alternative BMPs are comparable in addressing the hydromodification criteria for the subdivision as a whole. This analysis will be provided during the Site Plan review process mandated by the East Otay Mesa Specific Plan for the development of each lot.

TABLE 5-1B
OTAY CROSSINGS COMMERCE PARK, TM5405
HYDROMODIFICATION BMP SIZING

BASIN B				
Detention Requirements for Specific Sub-basins[1]				**Type of BMP**
B1-B3, B5, B11, B9, B-ST1, B-ST2[1,2] (SF):			**1.7**	**Detention Pond**
On-lot Detention Requirements				**Average Per Acre**
Total Area of Bio-retention Swales on the Lots in Basins B1-B3, B5, B11[1,2] (SF):			**110,730**	**2,180**
Total Volume of Underground Detention on the Lots in Basins B1-B3, B5, B11[1] (Ac-Ft):			**8.65**	**0.17**
Total Area of Bio-retention Swales on the Lots in Basins B6, B8[1,2] (SF):			**10,740**	**1,963**
Total Volume of Underground Detention on the Lots in Basins B6, B8[1] (Ac-Ft):			**1.19**	**0.22**
Lot Number	HydroMod Basin	Lot Acreage[3] (Ac)	Minimum Required Area of Bio-retention Swales[4] (SF)	Minimum Required Volume of Underground Detention[4] (Ac-Ft)
LOT 9	B1	4.25	9,264	0.72
LOT 10	B1	3.66	7,978	0.62
LOT 12	B1	1.88	4,098	0.32
LOT 13	B2	1.97	4,294	0.34
LOT 14	B2	1.95	4,250	0.33
LOT 15	B2	1.57	3,422	0.27
LOT 16	B3	1.93	4,207	0.33
LOT 17	B3	2.46	5,362	0.42
LOT 18	B3	3.43	7,476	0.58
LOT 19	B3	3.61	7,869	0.61
LOT 20	B3	2.98	6,496	0.51
LOT 21	B3	2.53	5,515	0.43
LOT 37	B5	2.94	6,408	0.50
LOT 38	B5	3.69	8,043	0.63
LOT 39	B5	4.89	10,659	0.83
LOT 40	B5	3.74	8,152	0.64
LOT 41	B5	1.55	3,379	0.26
LOT 42 EAST	B6	3.1	6,087	0.67
LOT 51 EAST	B8	2.37	4,653	0.52
LOT 36 WEST	B11	0.9	1,962	0.15
LOT 55	B11	0.87	1,896	0.15
Sub-Totals		56.27	121,470	9.8

[1]From SDHM Reports provided in this section

[2]Based on a swale that is 4 feet deep, with a porosity of 0.33, and 2 foot of freeboard

[3]Developed lot acreage from TM 5405 RPL6

[4]If, during development of each lot, the provided minimum values are not used, additional analysis will need to be provided to demonstrate that the chosen alternative BMPs are comparable in addressing the hydromodification criteria for the subdivision as a whole. This analysis will be provided during the Site Plan review process mandated by the East Otay Mesa Specific Plan for the development of each lot.

TABLE 5-1C
OTAY CROSSINGS COMMERCE PARK, TM5405
HYDROMODIFICATION BMP SIZING

BASIN C				
Detention Requirements for Specific Sub-basins[1]:				*Type of BMP*
C1-C4, C-OS1, C-ST1 (Ac-Ft):			1.54	*Detention Pond*
C5 (Ac-Ft):			0.82	*Detention Pond*
C6 (Ac-Ft):			0.12	*Detention Pond*
On-lot Detention Requirements				*Average Per Acre*
Total Area of Bio-retention Swales on the Lots in Basins C1-C4[1,2] (SF):			81,840	2,006
Total Volume of Underground Detention on the Lots in Basins C1-C4[1] (Ac-Ft):			5.3	0.13
Lot Number	HydroMod Basin	Lot Acreage[3] (Ac)	Minimum Required Area of Bio-retention Swales[4] (SF)	Minimum Required Volume of Underground Detention[4] (Ac-Ft)
LOT 22	C1	2.77	5,558	0.36
LOT 23	C1	3.34	6,701	0.43
LOT 24	C1	2.76	5,538	0.36
LOT 25	C2	3.28	6,581	0.43
LOT 26	C2	2.66	5,337	0.34
LOT 27	C2	2.17	4,354	0.28
LOT 28	C2	2.12	4,254	0.27
LOT 29	C2	1.58	3,170	0.20
LOT 30	C2	2.76	5,538	0.36
LOT 31	C3	1.71	3,431	0.22
LOT 32	C3	1.92	3,852	0.25
LOT 33	C3	2.89	5,798	0.37
LOT 34	C4	4.6	9,229	0.60
LOT 35	C4	4.02	8,066	0.52
LOT 36 EAST	C4	2.21	4,434	0.29
Sub-Totals		40.79	81,840	5.3

[1]From SDHM Reports provided in this section

[2]Based on a swale that is 4 feet deep, with a porosity of 0.33, and 2 foot of freeboard

[3]Developed lot acreage from TM 5405 RPL6

[4]If, during development of each lot, the provided minimum values are not used, additional analysis will need to be provided to demonstrate that the chosen alternative BMPs are comparable in addressing the hydromodification criteria for the subdivision as a whole. This analysis will be provided during the Site Plan review process mandated by the East Otay Mesa Specific Plan for the development of each lot.

San Diego Hydrology Model
PROJECT REPORT

Project Name: Basin A
Site Address: SE Corner of Otay Mesa Rd and Alta Rd
City : San Diego, CA
Report Date : 9/23/2009
Gage : Lower Otay
Data Start : 1959/10/02
Data End : 2004/10/30
Precip Scale: 1.39
SDHM Version:

PREDEVELOPED LAND USE

Name : Basin A
Bypass: No

GroundWater: No

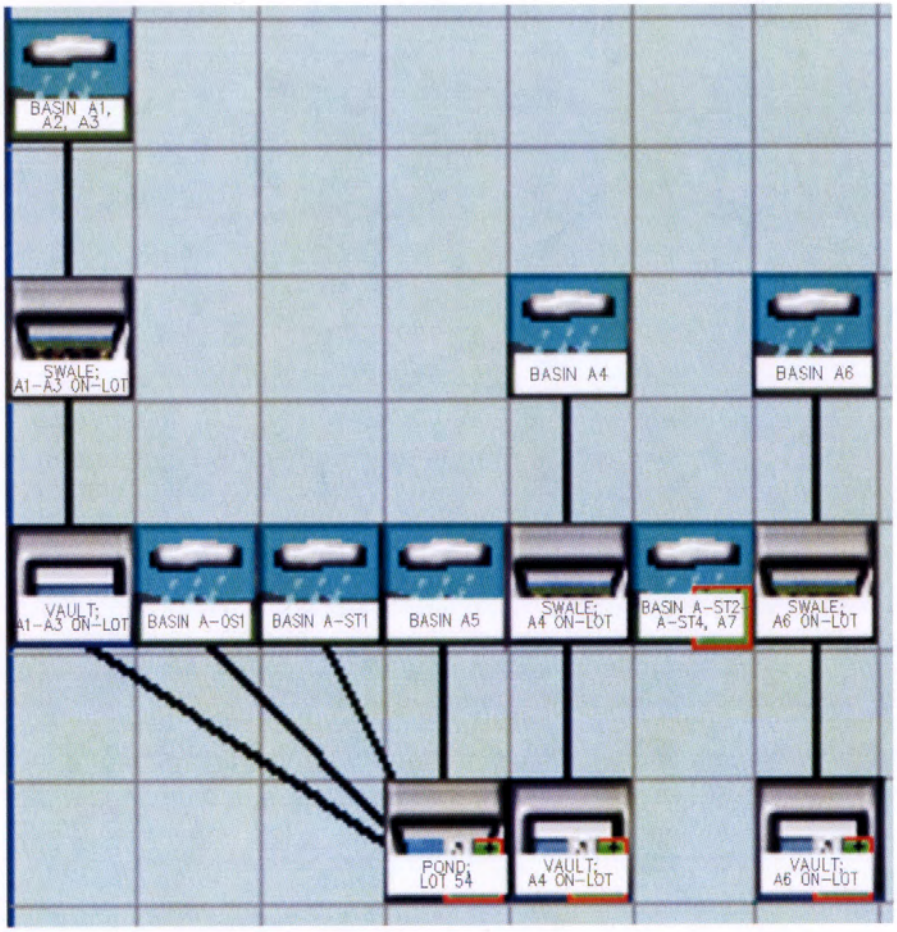
Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	33.33
C D,Grass,Mod(5-10%)	48.46
C D,Grass,Ste(10-20)	19.59
C D,Grass,Very(>20%)	4
C D,Dirt, Flat(0-5%)	1.73
C D,Urban,Very(>20%)	1.66

Impervious Land Use	Acres
Roads,Flat(0-5%)	1.82

Element Flows To:

Surface	Interflow	Groundwater

DEVELOPED LAND USE



Name : Basin A1-A3
Bypass: No

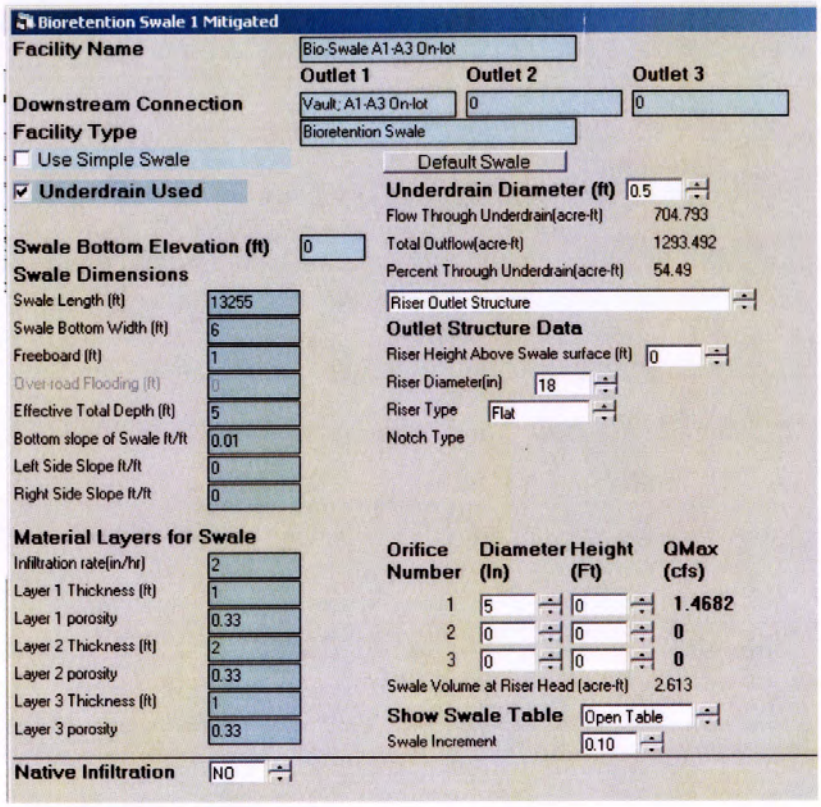
GroundWater: No

Pervious Land Use	Acres
C D,Urban,Flat(0-5%)	8.75
C D,Urban,Very(>20%)	1.24

Impervious Land Use	Acres
Parking,Flat(0-5%)	26.23

Element Flows To:

Surface	Interflow	Groundwater
Bio-Swale Surfaceot,	Bio-Swale Surfaceot,	



Name : Bio-Swale A1-A3 On-lot

Element Flows To:
Outlet 1 **Outlet 2**
Vault; A1-A3 On-lot,

Name : Bio-Swale Surfaceot

Element Flows To:
Outlet 1 **Outlet 2**
Vault; A1-A3 On-lot, Bio-Swale A1-A3 On-lot,

Name : Vault; A1-A3 On-lot
Width : 260 ft.
Length : 260 ft.
Depth: 4ft.
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 18 in.
NotchType : Rectangular

Notch Width : 1.500 ft.
Notch Height: 0.100 ft.
Orifice 1 Diameter: 5 in. **Elevation:** 0 ft.

Element Flows To:
Outlet 1 **Outlet 2**
al Pond; Lot 54 West,

Vault Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	1.552	0.000	0.000	0.000
0.044	1.552	0.069	0.138	0.000
0.089	1.552	0.138	0.196	0.000
0.133	1.552	0.207	0.240	0.000
0.178	1.552	0.276	0.277	0.000
0.222	1.552	0.345	0.310	0.000
0.267	1.552	0.414	0.339	0.000
0.311	1.552	0.483	0.366	0.000
0.356	1.552	0.552	0.392	0.000
0.400	1.552	0.621	0.415	0.000
0.444	1.552	0.690	0.438	0.000
0.489	1.552	0.759	0.459	0.000
0.533	1.552	0.828	0.480	0.000
0.578	1.552	0.897	0.499	0.000
0.622	1.552	0.966	0.518	0.000
0.667	1.552	1.035	0.536	0.000
0.711	1.552	1.104	0.554	0.000
0.756	1.552	1.173	0.571	0.000
0.800	1.552	1.242	0.587	0.000
0.844	1.552	1.310	0.603	0.000
0.889	1.552	1.379	0.619	0.000
0.933	1.552	1.448	0.634	0.000
0.978	1.552	1.517	0.649	0.000
1.022	1.552	1.586	0.664	0.000
1.067	1.552	1.655	0.678	0.000
1.111	1.552	1.724	0.692	0.000
1.156	1.552	1.793	0.706	0.000
1.200	1.552	1.862	0.719	0.000
1.244	1.552	1.931	0.732	0.000
1.289	1.552	2.000	0.745	0.000
1.333	1.552	2.069	0.758	0.000
1.378	1.552	2.138	0.771	0.000
1.422	1.552	2.207	0.783	0.000
1.467	1.552	2.276	0.795	0.000
1.511	1.552	2.345	0.807	0.000
1.556	1.552	2.414	0.819	0.000
1.600	1.552	2.483	0.831	0.000
1.644	1.552	2.552	0.842	0.000
1.689	1.552	2.621	0.853	0.000
1.733	1.552	2.690	0.864	0.000
1.778	1.552	2.759	0.875	0.000
1.822	1.552	2.828	0.886	0.000
1.867	1.552	2.897	0.897	0.000
1.911	1.552	2.966	0.908	0.000

1.956	1.552	3.035	0.918	0.000
2.000	1.552	3.104	0.929	0.000
2.044	1.552	3.173	0.939	0.000
2.089	1.552	3.242	0.949	0.000
2.133	1.552	3.311	0.959	0.000
2.178	1.552	3.380	0.969	0.000
2.222	1.552	3.449	0.979	0.000
2.267	1.552	3.518	0.989	0.000
2.311	1.552	3.587	0.998	0.000
2.356	1.552	3.656	1.008	0.000
2.400	1.552	3.725	1.017	0.000
2.444	1.552	3.793	1.027	0.000
2.489	1.552	3.862	1.036	0.000
2.533	1.552	3.931	1.045	0.000
2.578	1.552	4.000	1.054	0.000
2.622	1.552	4.069	1.063	0.000
2.667	1.552	4.138	1.072	0.000
2.711	1.552	4.207	1.081	0.000
2.756	1.552	4.276	1.090	0.000
2.800	1.552	4.345	1.099	0.000
2.844	1.552	4.414	1.107	0.000
2.889	1.552	4.483	1.116	0.000
2.933	1.552	4.552	1.155	0.000
2.978	1.552	4.621	1.241	0.000
3.022	1.552	4.690	1.348	0.000
3.067	1.552	4.759	1.559	0.000
3.111	1.552	4.828	1.857	0.000
3.156	1.552	4.897	2.221	0.000
3.200	1.552	4.966	2.639	0.000
3.244	1.552	5.035	3.106	0.000
3.289	1.552	5.104	3.617	0.000
3.333	1.552	5.173	4.168	0.000
3.378	1.552	5.242	4.757	0.000
3.422	1.552	5.311	5.381	0.000
3.467	1.552	5.380	6.038	0.000
3.511	1.552	5.449	6.726	0.000
3.556	1.552	5.518	7.445	0.000
3.600	1.552	5.587	8.193	0.000
3.644	1.552	5.656	8.969	0.000
3.689	1.552	5.725	9.772	0.000
3.733	1.552	5.794	10.60	0.000
3.778	1.552	5.863	11.45	0.000
3.822	1.552	5.932	12.33	0.000
3.867	1.552	6.001	13.24	0.000
3.911	1.552	6.070	14.16	0.000
3.956	1.552	6.139	15.11	0.000
4.000	1.552	6.208	16.08	0.000
4.044	1.552	6.277	17.07	0.000
4.089	0.000	0.000	18.08	0.000

Name : Basin A-OS1
Bypass: No

GroundWater: No

Pervious Land Use	**Acres**

C D,Grass,Flat(0-5%)	8.57
C D,Grass,Mod(5-10%)	10.53
C D,Grass,Ste(10-20)	8.88
C D,Grass,Very(>20%)	3.59
C D,Dirt, Flat(0-5%)	1.73
C D,Urban,Very(>20%)	.75

Impervious Land Use	Acres
Roads,Flat(0-5%)	1.82

Element Flows To:

Surface	Interflow	Groundwater
al Pond; Lot 54 West,	al Pond; Lot 54 West,	

Name : Basin A-ST1
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Flat(0-5%)	1.01

Impervious Land Use	Acres
Roads,Flat(0-5%)	3.94

Element Flows To:

Surface	Interflow	Groundwater
al Pond; Lot 54 West,	al Pond; Lot 54 West,	

Name : Basin A5
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Very(>20%)	1.11
C D,Dirt, Flat(0-5%)	10.61
C D,Dirt, Mod(5-10%)	.12
C D,Dirt, St(10-20%)	.09

Impervious Land Use	Acres

Element Flows To:

Surface	Interflow	Groundwater

Name : al Pond; Lot 54 West
Bottom Length: 110ft.
Bottom Width: 110ft.
Depth : 4ft.
Volume at riser head : 0.9855ft.
Side slope 1: 3 To 1
Side slope 2: 3 To 1
Side slope 3: 3 To 1
Side slope 4: 3 To 1
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 48 in.
NotchType : Rectangular
Notch Width : 4.000 ft.
Notch Height: 1.500 ft.
Orifice 1 Diameter: 9.3 in. **Elevation:** 0 ft.

Element Flows To:
Outlet 1 **Outlet 2**

Pond Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	0.278	0.000	0.000	0.000
0.044	0.279	0.012	0.479	0.000
0.089	0.280	0.025	0.677	0.000
0.133	0.282	0.037	0.829	0.000
0.178	0.283	0.050	0.958	0.000
0.222	0.285	0.062	1.071	0.000
0.267	0.286	0.075	1.173	0.000
0.311	0.287	0.088	1.267	0.000
0.356	0.289	0.101	1.354	0.000
0.400	0.290	0.114	1.437	0.000
0.444	0.291	0.126	1.514	0.000
0.489	0.293	0.139	1.588	0.000
0.533	0.294	0.152	1.659	0.000
0.578	0.296	0.166	1.727	0.000
0.622	0.297	0.179	1.792	0.000
0.667	0.298	0.192	1.855	0.000
0.711	0.300	0.205	1.916	0.000
0.756	0.301	0.219	1.975	0.000
0.800	0.303	0.232	2.032	0.000
0.844	0.304	0.246	2.087	0.000
0.889	0.305	0.259	2.142	0.000
0.933	0.307	0.273	2.195	0.000
0.978	0.308	0.286	2.246	0.000
1.022	0.310	0.300	2.297	0.000
1.067	0.311	0.314	2.346	0.000
1.111	0.312	0.328	2.394	0.000
1.156	0.314	0.342	2.442	0.000
1.200	0.315	0.356	2.488	0.000

1.244	0.317	0.370	2.534	0.000
1.289	0.318	0.384	2.579	0.000
1.333	0.320	0.398	2.623	0.000
1.378	0.321	0.412	2.666	0.000
1.422	0.323	0.427	2.709	0.000
1.467	0.324	0.441	2.751	0.000
1.511	0.325	0.455	2.808	0.000
1.556	0.327	0.470	3.008	0.000
1.600	0.328	0.484	3.295	0.000
1.644	0.330	0.499	3.644	0.000
1.689	0.331	0.514	4.046	0.000
1.733	0.333	0.528	4.492	0.000
1.778	0.334	0.543	4.979	0.000
1.822	0.336	0.558	5.503	0.000
1.867	0.337	0.573	6.061	0.000
1.911	0.339	0.588	6.651	0.000
1.956	0.340	0.603	7.272	0.000
2.000	0.342	0.618	7.922	0.000
2.044	0.343	0.634	8.599	0.000
2.089	0.345	0.649	9.303	0.000
2.133	0.346	0.664	10.03	0.000
2.178	0.348	0.680	10.78	0.000
2.222	0.349	0.695	11.56	0.000
2.267	0.351	0.711	12.36	0.000
2.311	0.352	0.726	13.18	0.000
2.356	0.354	0.742	14.03	0.000
2.400	0.355	0.758	14.89	0.000
2.444	0.357	0.774	15.78	0.000
2.489	0.358	0.789	16.68	0.000
2.533	0.360	0.805	17.61	0.000
2.578	0.361	0.821	18.55	0.000
2.622	0.363	0.838	19.51	0.000
2.667	0.364	0.854	20.49	0.000
2.711	0.366	0.870	21.49	0.000
2.756	0.368	0.886	22.51	0.000
2.800	0.369	0.903	23.54	0.000
2.844	0.371	0.919	24.60	0.000
2.889	0.372	0.936	25.66	0.000
2.933	0.374	0.952	26.75	0.000
2.978	0.375	0.969	27.85	0.000
3.022	0.377	0.986	28.55	0.000
3.067	0.378	1.002	29.12	0.000
3.111	0.380	1.019	29.92	0.000
3.156	0.382	1.036	30.90	0.000
3.200	0.383	1.053	32.02	0.000
3.244	0.385	1.070	33.27	0.000
3.289	0.386	1.087	34.64	0.000
3.333	0.388	1.104	36.11	0.000
3.378	0.390	1.122	37.69	0.000
3.422	0.391	1.139	39.36	0.000
3.467	0.393	1.157	41.12	0.000
3.511	0.394	1.174	42.96	0.000
3.556	0.396	1.192	44.88	0.000
3.600	0.398	1.209	46.89	0.000
3.644	0.399	1.227	48.96	0.000
3.689	0.401	1.245	51.11	0.000
3.733	0.402	1.263	53.32	0.000

3.778	0.404	1.280	55.61	0.000
3.822	0.406	1.298	57.96	0.000
3.867	0.407	1.317	60.37	0.000
3.911	0.409	1.335	62.84	0.000
3.956	0.411	1.353	65.38	0.000
4.000	0.412	1.371	67.97	0.000
4.044	0.414	1.390	70.62	0.000

Name : Basin A4
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Flat(0-5%)	2.57

Impervious Land Use	Acres
Parking,Flat(0-5%)	7.72

Element Flows To:

Surface	Interflow	Groundwater
Bio-Swale; Surfaceot,	Bio-Swale; Surfaceot,	

Bioretention Swale 2 Mitigated

Facility Name	Bio-Swale; A4 On-lot		
	Outlet 1	**Outlet 2**	**Outlet 3**
Downstream Connection	Vault; A4 On-lot	0	0
Facility Type	Bioretention Swale		

☐ Use Simple Swale — Default Swale

☑ **Underdrain Used** — **Underdrain Diameter (ft)** 0.5

Flow Through Underdrain(acre-ft) 177.51
Total Outflow(acre-ft) 377.07
Percent Through Underdrain(acre-ft) 47.08

Swale Bottom Elevation (ft) 0

Swale Dimensions

Swale Length (ft)	4040
Swale Bottom Width (ft)	6
Freeboard (ft)	1
Over-road Flooding (ft)	0
Effective Total Depth (ft)	5
Bottom slope of Swale ft/ft	0.01
Left Side Slope ft/ft	0
Right Side Slope ft/ft	0

Riser Outlet Structure

Outlet Structure Data

Riser Height Above Swale surface (ft) 0
Riser Diameter(in) 18
Riser Type Flat
Notch Type

Material Layers for Swale

Infiltration rate(in/hr)	2
Layer 1 Thickness (ft)	1
Layer 1 porosity	0.33
Layer 2 Thickness (ft)	2
Layer 2 porosity	0.33
Layer 3 Thickness (ft)	1
Layer 3 porosity	0.33

Orifice Number	Diameter (In)	Height (Ft)	QMax (cfs)
1	5	0	1.4682
2	0	0	0
3	0	0	0

Swale Volume at Riser Head (acre-ft) .796

Show Swale Table Open Table
Swale Increment 0.10

Native Infiltration NO

Name : Bio-Swale; A4 On-lot

Element Flows To:
Outlet 1 **Outlet 2**
Vault; A4 On-lot,

Name : Bio-Swale; Surfaceot

Element Flows To:
Outlet 1 **Outlet 2**
Vault; A4 On-lot, Bio-Swale; A4 On-lot,

Name : Vault; A4 On-lot
Width : 148 ft.
Length : 148 ft.
Depth: 4ft.
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 18 in.
NotchType : Rectangular
Notch Width : 1.150 ft.
Notch Height: 0.100 ft.
Orifice 1 Diameter: 2.65 in. **Elevation**: 0 ft.

Element Flows To:
Outlet 1 **Outlet 2**

Vault Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	0.503	0.000	0.000	0.000
0.044	0.503	0.022	0.039	0.000
0.089	0.503	0.045	0.055	0.000
0.133	0.503	0.067	0.067	0.000
0.178	0.503	0.089	0.078	0.000
0.222	0.503	0.112	0.087	0.000
0.267	0.503	0.134	0.095	0.000
0.311	0.503	0.156	0.103	0.000
0.356	0.503	0.179	0.110	0.000
0.400	0.503	0.201	0.117	0.000
0.444	0.503	0.223	0.123	0.000
0.489	0.503	0.246	0.129	0.000
0.533	0.503	0.268	0.135	0.000
0.578	0.503	0.291	0.140	0.000
0.622	0.503	0.313	0.145	0.000
0.667	0.503	0.335	0.151	0.000
0.711	0.503	0.358	0.156	0.000
0.756	0.503	0.380	0.160	0.000

0.800	0.503	0.402	0.165	0.000
0.844	0.503	0.425	0.169	0.000
0.889	0.503	0.447	0.174	0.000
0.933	0.503	0.469	0.178	0.000
0.978	0.503	0.492	0.182	0.000
1.022	0.503	0.514	0.186	0.000
1.067	0.503	0.536	0.190	0.000
1.111	0.503	0.559	0.194	0.000
1.156	0.503	0.581	0.198	0.000
1.200	0.503	0.603	0.202	0.000
1.244	0.503	0.626	0.206	0.000
1.289	0.503	0.648	0.209	0.000
1.333	0.503	0.670	0.213	0.000
1.378	0.503	0.693	0.216	0.000
1.422	0.503	0.715	0.220	0.000
1.467	0.503	0.738	0.223	0.000
1.511	0.503	0.760	0.227	0.000
1.556	0.503	0.782	0.230	0.000
1.600	0.503	0.805	0.233	0.000
1.644	0.503	0.827	0.237	0.000
1.689	0.503	0.849	0.240	0.000
1.733	0.503	0.872	0.243	0.000
1.778	0.503	0.894	0.246	0.000
1.822	0.503	0.916	0.249	0.000
1.867	0.503	0.939	0.252	0.000
1.911	0.503	0.961	0.255	0.000
1.956	0.503	0.983	0.258	0.000
2.000	0.503	1.006	0.261	0.000
2.044	0.503	1.028	0.264	0.000
2.089	0.503	1.050	0.267	0.000
2.133	0.503	1.073	0.269	0.000
2.178	0.503	1.095	0.272	0.000
2.222	0.503	1.117	0.275	0.000
2.267	0.503	1.140	0.278	0.000
2.311	0.503	1.162	0.280	0.000
2.356	0.503	1.184	0.283	0.000
2.400	0.503	1.207	0.286	0.000
2.444	0.503	1.229	0.288	0.000
2.489	0.503	1.252	0.291	0.000
2.533	0.503	1.274	0.294	0.000
2.578	0.503	1.296	0.296	0.000
2.622	0.503	1.319	0.299	0.000
2.667	0.503	1.341	0.301	0.000
2.711	0.503	1.363	0.304	0.000
2.756	0.503	1.386	0.306	0.000
2.800	0.503	1.408	0.309	0.000
2.844	0.503	1.430	0.311	0.000
2.889	0.503	1.453	0.313	0.000
2.933	0.503	1.475	0.339	0.000
2.978	0.503	1.497	0.401	0.000
3.022	0.503	1.520	0.490	0.000
3.067	0.503	1.542	0.696	0.000
3.111	0.503	1.564	0.987	0.000
3.156	0.503	1.587	1.345	0.000
3.200	0.503	1.609	1.758	0.000
3.244	0.503	1.631	2.219	0.000
3.289	0.503	1.654	2.724	0.000

3.333	0.503	1.676	3.269	0.000
3.378	0.503	1.699	3.852	0.000
3.422	0.503	1.721	4.470	0.000
3.467	0.503	1.743	5.122	0.000
3.511	0.503	1.766	5.805	0.000
3.556	0.503	1.788	6.518	0.000
3.600	0.503	1.810	7.260	0.000
3.644	0.503	1.833	8.031	0.000
3.689	0.503	1.855	8.828	0.000
3.733	0.503	1.877	9.651	0.000
3.778	0.503	1.900	10.50	0.000
3.822	0.503	1.922	11.37	0.000
3.867	0.503	1.944	12.27	0.000
3.911	0.503	1.967	13.19	0.000
3.956	0.503	1.989	14.13	0.000
4.000	0.503	2.011	15.10	0.000
4.044	0.503	2.034	16.09	0.000
4.089	0.000	0.000	17.09	0.000

Name : Basin A-ST2 - A-ST4, A7 (undet)
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Very(>20%)	.44
C D,Dirt, Flat(0-5%)	.6
C D,Urban,Flat(0-5%)	.77

Impervious Land Use	Acres
Roads,Flat(0-5%)	2.78

Element Flows To:

Surface	Interflow	Groundwater

Name : Basin A6
Bypass: No

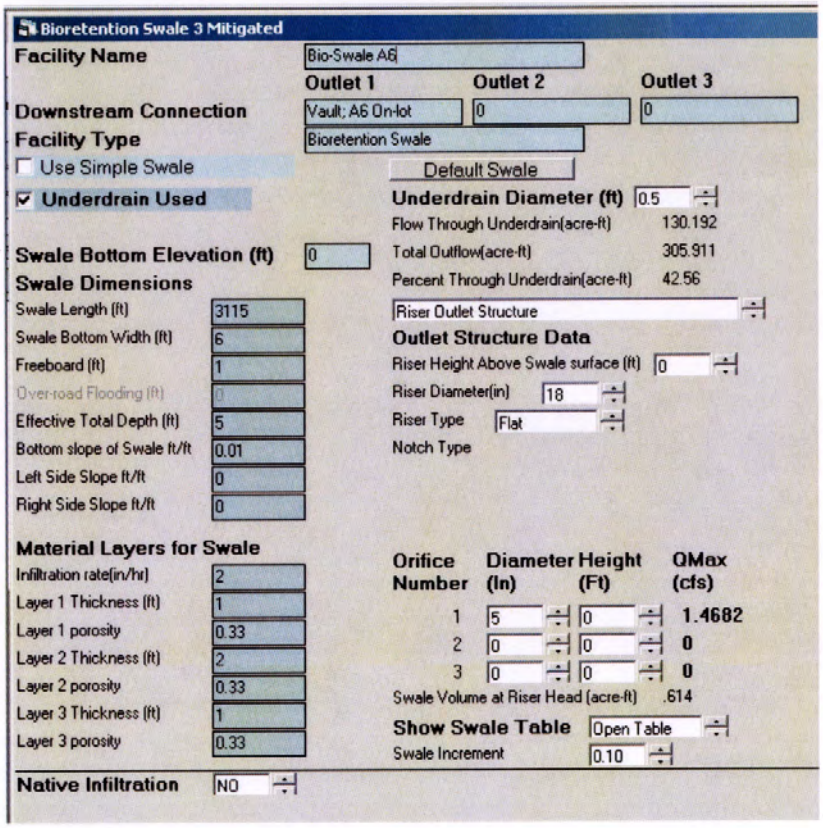
GroundWater: No

Pervious Land Use	Acres
C D,Urban,Flat(0-5%)	2.09
C D,Urban,Very(>20%)	.03

Impervious Land Use	Acres
Parking,Flat(0-5%)	6.27

Element Flows To:

Surface	Interflow	Groundwater
Bio-Swale SurfaceA6,	Bio-Swale SurfaceA6,	



Name : Bio-Swale A6

Element Flows To:

Outlet 1	Outlet 2
Vault; A6 On-lot,	

Name : Bio-Swale SurfaceA6

Element Flows To:

Outlet 1	Outlet 2
Vault; A6 On-lot,	Bio-Swale A6,

Name : Vault; A6 On-lot
Width : 135 ft.
Length : 135 ft.

Depth: 4ft.
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 18 in.
NotchType : Rectangular
Notch Width : 0.940 ft.
Notch Height: 0.100 ft.
Orifice 1 Diameter: 2.5 in. **Elevation:** 0 ft.

Element Flows To:
Outlet 1 **Outlet 2**

Vault Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	0.418	0.000	0.000	0.000
0.044	0.418	0.019	0.035	0.000
0.089	0.418	0.037	0.049	0.000
0.133	0.418	0.056	0.060	0.000
0.178	0.418	0.074	0.069	0.000
0.222	0.418	0.093	0.077	0.000
0.267	0.418	0.112	0.085	0.000
0.311	0.418	0.130	0.092	0.000
0.356	0.418	0.149	0.098	0.000
0.400	0.418	0.167	0.104	0.000
0.444	0.418	0.186	0.109	0.000
0.489	0.418	0.205	0.115	0.000
0.533	0.418	0.223	0.120	0.000
0.578	0.418	0.242	0.125	0.000
0.622	0.418	0.260	0.129	0.000
0.667	0.418	0.279	0.134	0.000
0.711	0.418	0.298	0.138	0.000
0.756	0.418	0.316	0.143	0.000
0.800	0.418	0.335	0.147	0.000
0.844	0.418	0.353	0.151	0.000
0.889	0.418	0.372	0.155	0.000
0.933	0.418	0.390	0.159	0.000
0.978	0.418	0.409	0.162	0.000
1.022	0.418	0.428	0.166	0.000
1.067	0.418	0.446	0.170	0.000
1.111	0.418	0.465	0.173	0.000
1.156	0.418	0.483	0.176	0.000
1.200	0.418	0.502	0.180	0.000
1.244	0.418	0.521	0.183	0.000
1.289	0.418	0.539	0.186	0.000
1.333	0.418	0.558	0.190	0.000
1.378	0.418	0.576	0.193	0.000
1.422	0.418	0.595	0.196	0.000
1.467	0.418	0.614	0.199	0.000
1.511	0.418	0.632	0.202	0.000
1.556	0.418	0.651	0.205	0.000
1.600	0.418	0.669	0.208	0.000
1.644	0.418	0.688	0.210	0.000
1.689	0.418	0.707	0.213	0.000
1.733	0.418	0.725	0.216	0.000

1.778	0.418	0.744	0.219	0.000
1.822	0.418	0.762	0.222	0.000
1.867	0.418	0.781	0.224	0.000
1.911	0.418	0.800	0.227	0.000
1.956	0.418	0.818	0.230	0.000
2.000	0.418	0.837	0.232	0.000
2.044	0.418	0.855	0.235	0.000
2.089	0.418	0.874	0.237	0.000
2.133	0.418	0.893	0.240	0.000
2.178	0.418	0.911	0.242	0.000
2.222	0.418	0.930	0.245	0.000
2.267	0.418	0.948	0.247	0.000
2.311	0.418	0.967	0.250	0.000
2.356	0.418	0.986	0.252	0.000
2.400	0.418	1.004	0.254	0.000
2.444	0.418	1.023	0.257	0.000
2.489	0.418	1.041	0.259	0.000
2.533	0.418	1.060	0.261	0.000
2.578	0.418	1.079	0.264	0.000
2.622	0.418	1.097	0.266	0.000
2.667	0.418	1.116	0.268	0.000
2.711	0.418	1.134	0.270	0.000
2.756	0.418	1.153	0.272	0.000
2.800	0.418	1.171	0.275	0.000
2.844	0.418	1.190	0.277	0.000
2.889	0.418	1.209	0.279	0.000
2.933	0.418	1.227	0.300	0.000
2.978	0.418	1.246	0.351	0.000
3.022	0.418	1.264	0.433	0.000
3.067	0.418	1.283	0.638	0.000
3.111	0.418	1.302	0.930	0.000
3.156	0.418	1.320	1.287	0.000
3.200	0.418	1.339	1.699	0.000
3.244	0.418	1.357	2.160	0.000
3.289	0.418	1.376	2.665	0.000
3.333	0.418	1.395	3.210	0.000
3.378	0.418	1.413	3.793	0.000
3.422	0.418	1.432	4.411	0.000
3.467	0.418	1.450	5.062	0.000
3.511	0.418	1.469	5.745	0.000
3.556	0.418	1.488	6.458	0.000
3.600	0.418	1.506	7.200	0.000
3.644	0.418	1.525	7.970	0.000
3.689	0.418	1.543	8.767	0.000
3.733	0.418	1.562	9.590	0.000
3.778	0.418	1.581	10.44	0.000
3.822	0.418	1.599	11.31	0.000
3.867	0.418	1.618	12.21	0.000
3.911	0.418	1.636	13.13	0.000
3.956	0.418	1.655	14.07	0.000
4.000	0.418	1.674	15.04	0.000
4.044	0.418	1.692	16.02	0.000
4.089	0.000	0.000	17.03	0.000

MITIGATED LAND USE

ANALYSIS RESULTS

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	4.43253
5 year	24.3091
10 year	32.208852
25 year	57.329126

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	4.85768
5 year	15.971835
10 year	20.986483
25 year	37.507109

Yearly Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1961	4.181	3.754
1962	0.888	2.556
1963	7.847	4.834
1964	0.744	2.890
1965	1.821	3.422
1966	4.433	4.858
1967	20.610	27.106
1968	2.329	3.960
1969	5.345	4.595
1970	22.434	8.044
1971	8.785	5.425
1972	7.406	6.410
1973	0.790	2.374
1974	15.687	5.135
1975	3.055	3.254
1976	0.780	2.175
1977	18.442	17.287
1978	2.753	8.623
1979	54.877	27.117
1980	28.393	10.205
1981	24.650	15.588
1982	2.415	2.532
1983	10.163	7.372
1984	41.855	37.333
1985	0.502	1.744
1986	25.716	16.078
1987	34.419	17.461
1988	1.754	2.993
1989	28.623	17.601
1990	1.138	3.319
1991	1.492	3.041
1992	17.571	17.723
1993	23.002	14.714
1994	31.030	14.122

1995	0.598	1.897
1996	23.082	13.902
1997	0.946	2.249
1998	17.166	12.238
1999	83.082	39.334
2000	3.328	7.674
2001	1.090	2.795
2002	2.485	3.355
2003	0.345	1.344
2004	1.419	2.771
2005	4.069	4.769

Ranked Yearly Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	83.0817	39.3342
2	54.8765	37.3331
3	41.8553	27.1168
4	34.4192	27.1057
5	31.0300	17.7229
6	28.6227	17.6007
7	28.3925	17.4605
8	25.7164	17.2867
9	24.6501	16.0784
10	23.0815	15.5882
11	23.0017	14.7142
12	22.4337	14.1222
13	20.6095	13.9024
14	18.4420	12.2375
15	17.5712	10.2048
16	17.1655	8.6226
17	15.6869	8.0438
18	10.1634	7.6742
19	8.7847	7.3716
20	7.8468	6.4103
21	7.4063	5.4247
22	5.3454	5.1349
23	4.4325	4.8577
24	4.1805	4.8339
25	4.0686	4.7693
26	3.3278	4.5953
27	3.0554	3.9601
28	2.7529	3.7536
29	2.4853	3.4219
30	2.4146	3.3548
31	2.3291	3.3195
32	1.8207	3.2541
33	1.7542	3.0409
34	1.4919	2.9930
35	1.4189	2.8903
36	1.1380	2.7946
37	1.0900	2.7713
38	0.9456	2.5556
39	0.8879	2.5320
40	0.7900	2.3745
41	0.7799	2.2486
42	0.7437	2.1749

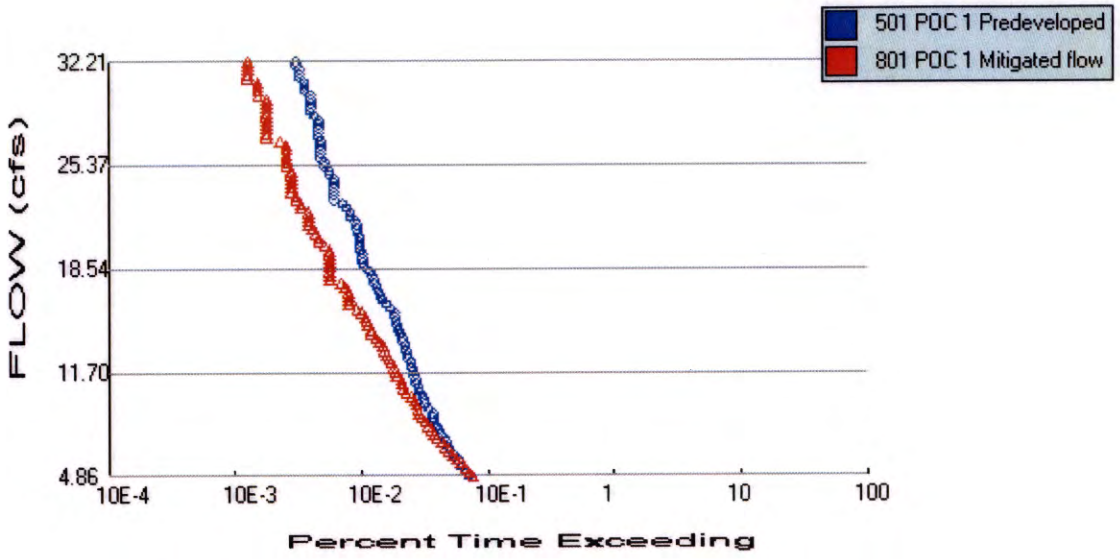
43	0.5984	1.8973
44	0.5017	1.7442
45	0.3447	1.3442

POC #1
The Facility PASSED

The Facility PASSED.

Flow(CFS)	Predev	Dev	Percentage	Pass/Fail
4.8618	272	295	108	Pass
5.1381	256	275	107	Pass
5.4143	243	257	105	Pass
5.6905	232	237	102	Pass
5.9668	225	219	97	Pass
6.2430	212	206	97	Pass
6.5192	195	193	98	Pass
6.7954	189	178	94	Pass
7.0717	183	169	92	Pass
7.3479	178	154	86	Pass
7.6241	166	146	87	Pass
7.9004	159	140	88	Pass
8.1766	153	133	86	Pass
8.4528	147	125	85	Pass
8.7291	145	117	80	Pass
9.0053	143	112	78	Pass
9.2815	135	109	80	Pass
9.5578	127	106	83	Pass
9.8340	123	103	83	Pass
10.1102	120	97	80	Pass
10.3865	114	88	77	Pass
10.6627	111	83	74	Pass
10.9389	106	82	77	Pass
11.2152	105	81	77	Pass
11.4914	103	74	71	Pass
11.7676	100	73	73	Pass
12.0439	99	71	71	Pass
12.3201	97	67	69	Pass
12.5963	93	65	69	Pass
12.8726	91	62	68	Pass
13.1488	88	60	68	Pass
13.4250	87	58	66	Pass
13.7013	84	54	64	Pass
13.9775	83	51	61	Pass
14.2537	80	47	58	Pass
14.5300	77	47	61	Pass
14.8062	75	44	58	Pass
15.0824	74	43	58	Pass
15.3587	73	42	57	Pass
15.6349	72	39	54	Pass
15.9111	67	36	53	Pass
16.1874	62	31	50	Pass
16.4636	58	31	53	Pass
16.7398	56	31	55	Pass
17.0161	54	31	57	Pass
17.2923	52	29	55	Pass

17.5685	50	27	54	Pass
17.8448	49	22	44	Pass
18.1210	48	22	45	Pass
18.3972	46	22	47	Pass
18.6735	41	22	53	Pass
18.9497	40	22	55	Pass
19.2259	40	22	55	Pass
19.5022	40	22	55	Pass
19.7784	39	22	56	Pass
20.0546	38	20	52	Pass
20.3308	38	18	47	Pass
20.6071	38	18	47	Pass
20.8833	37	17	45	Pass
21.1595	36	16	44	Pass
21.4358	36	15	41	Pass
21.7120	35	15	42	Pass
21.9882	32	15	46	Pass
22.2645	32	15	46	Pass
22.5407	30	13	43	Pass
22.8169	28	13	46	Pass
23.0932	24	12	50	Pass
23.3694	24	12	50	Pass
23.6456	24	11	45	Pass
23.9219	24	11	45	Pass
24.1981	24	11	45	Pass
24.4743	24	11	45	Pass
24.7506	22	11	50	Pass
25.0268	22	11	50	Pass
25.3030	20	10	50	Pass
25.5793	20	10	50	Pass
25.8555	19	10	52	Pass
26.1317	19	10	52	Pass
26.4080	19	10	52	Pass
26.6842	19	10	52	Pass
26.9604	19	9	47	Pass
27.2367	18	7	38	Pass
27.5129	18	7	38	Pass
27.7891	18	7	38	Pass
28.0654	18	7	38	Pass
28.3416	18	7	38	Pass
28.6178	17	7	41	Pass
28.8941	16	7	43	Pass
29.1703	16	7	43	Pass
29.4465	16	7	43	Pass
29.7228	16	7	43	Pass
29.9990	16	6	37	Pass
30.2752	14	6	42	Pass
30.5515	14	6	42	Pass
30.8277	14	6	42	Pass
31.1039	13	5	38	Pass
31.3802	13	5	38	Pass
31.6564	13	5	38	Pass
31.9326	12	5	41	Pass
32.2089	12	5	41	Pass



Drawdown Time Results
Pond: al Pond; Lot 54 West

Days	Stage(feet)	Percent of Total Run Time
1	4.000	0.0000
2	4.000	0.0000
3	4.000	0.0000
4	4.000	0.0000
5	4.000	0.0000

Maximum Stage: 3.844
Drawdown Time: 00 03:32:20

Pond: Vault; A4 On-lot

Days	Stage(feet)	Percent of Total Run Time
1	0.486	1.9499
2	1.148	0.8051
3	2.075	0.2568
4	0.000	100.00
5	0.000	100.00

Maximum Stage: 3.534
Drawdown Time: 03 19:31:10

Pond: Vault; A6 On-lot

Days	Stage(feet)	Percent of Total Run Time
1	0.524	1.7004
2	1.262	0.6207
3	2.302	0.1748
4	0.000	100.00
5	0.000	100.00

Maximum Stage: 3.473
Drawdown Time: 03 13:21:40

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San Diego Hydrology Model
PROJECT REPORT

Project Name: Basin B
Site Address: SE Corner of Otay Mesa Rd and Alta Rd
City : San Diego, CA
Report Date : 9/24/2009
Gage : Lower Otay
Data Start : 1959/10/02
Data End : 2004/10/30
Precip Scale: 1.39
SDHM Version:

PREDEVELOPED LAND USE

Name : Basin B
Bypass: No

GroundWater: No

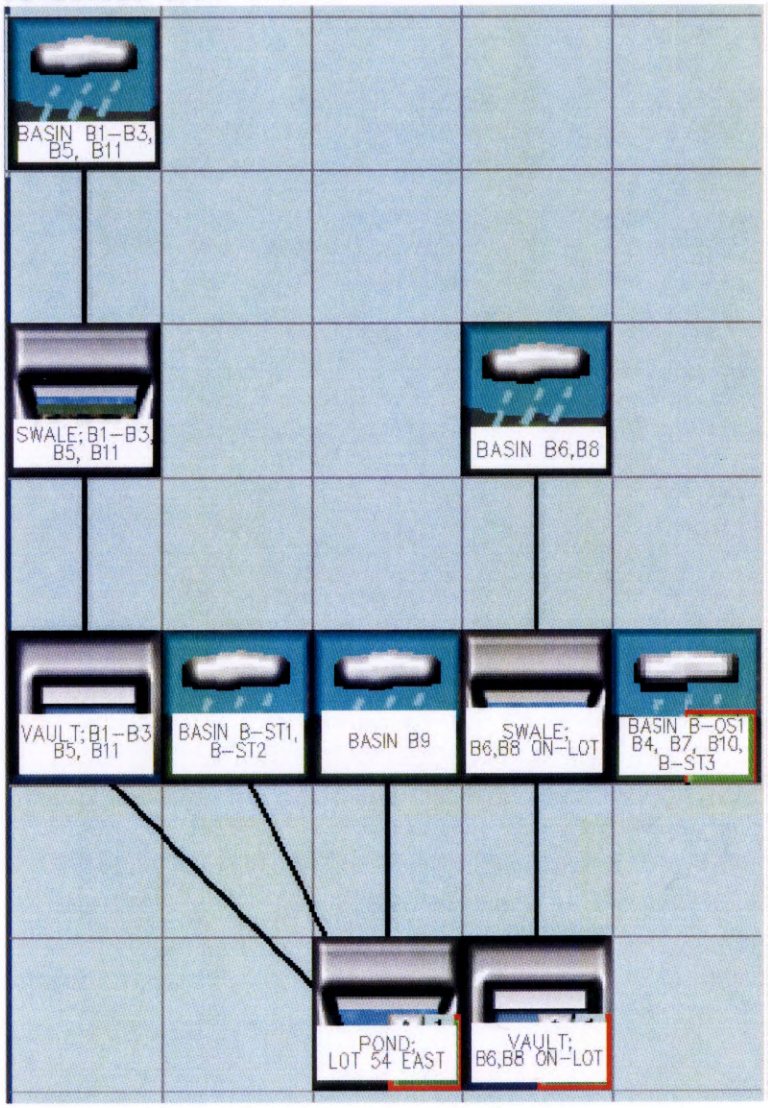
Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	72.81
C D,Grass,Mod(5-10%)	121.01
C D,Grass,Ste(10-20)	129.47
C D,Grass,Very(>20%)	328.75
C D,Urban,Very(>20%)	.82

Impervious Land Use	Acres

Element Flows To:

Surface	Interflow	Groundwater

DEVELOPED LAND USE



Name : Basin B1-B3, B5, B11
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Flat(0-5%)	11.97
C D,Urban,Very(>20%)	1.95

Impervious Land Use	Acres
Parking,Flat(0-5%)	35.88

Element Flows To:

Surface	Interflow	Groundwater
Bio-Swale; Surfacet ,	Bio-Swale; Surfacet ,	

-B3, B5, B11 On-lot Mitigated

Facility Name	Bio-Swale; B1-B3, B5, B11 On-lot		
	Outlet 1	**Outlet 2**	**Outlet 3**
Downstream Connection	1-B3, B5, B11 On-lot	0	0
Facility Type	Bioretention Swale		
☐ Use Simple Swale	Default Swale		
☑ **Underdrain Used**	**Underdrain Diameter (ft)** 0.5		
	Flow Through Underdrain(acre-ft) 2702.779		
Swale Bottom Elevation (ft) 0	Total Outflow(acre-ft) 3548.17		
Swale Dimensions	Percent Through Underdrain(acre-ft) 76.17		
Swale Length (ft) 18455	Riser Outlet Structure		
Swale Bottom Width (ft) 6	**Outlet Structure Data**		
Freeboard (ft) 1	Riser Height Above Swale surface (ft) 0		
Over-road Flooding (ft) 0	Riser Diameter(in) 18		
Effective Total Depth (ft) 5	Riser Type Flat		
Bottom slope of Swale ft/ft 0.01	Notch Type		
Left Side Slope ft/ft 0			
Right Side Slope ft/ft 0			

Material Layers for Swale

Infiltration rate(in/hr)	2
Layer 1 Thickness (ft)	1
Layer 1 porosity	0.33
Layer 2 Thickness (ft)	2
Layer 2 porosity	0.33
Layer 3 Thickness (ft)	1
Layer 3 porosity	0.33

Orifice Number	Diameter (In)	Height (Ft)	QMax (cfs)
1	8	0	3.75858
2	0	0	0
3	0	0	0

Swale Volume at Riser Head (acre-ft) 3.638

Show Swale Table Open Table

Swale Increment 0.10

Native Infiltration NO

Name : -B3, B5, B11 On-lot

Element Flows To:

Outlet 1	Outlet 2
1-B3, B5, B11 On-lot,	

Name : Bio-Swale; Surfacet

Element Flows To:

Outlet 1	Outlet 2
1-B3, B5, B11 On-lot,	-B3, B5, B11 On-lot ,

Name : 1-B3, B5, B11 On-lot
Width : 307 ft.
Length : 307 ft.
Depth: 4ft.

Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 48 in.
NotchType : Rectangular
Notch Width : 4.000 ft.
Notch Height: 0.100 ft.
Orifice 1 Diameter: 6.06 in. **Elevation:** 0 ft.

Element Flows To:
Outlet 1 **Outlet 2**
al Pond; Lot 54 East,

Vault Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	2.164	0.000	0.000	0.000
0.044	2.164	0.096	0.203	0.000
0.089	2.164	0.192	0.288	0.000
0.133	2.164	0.288	0.352	0.000
0.178	2.164	0.385	0.407	0.000
0.222	2.164	0.481	0.455	0.000
0.267	2.164	0.577	0.498	0.000
0.311	2.164	0.673	0.538	0.000
0.356	2.164	0.769	0.575	0.000
0.400	2.164	0.865	0.610	0.000
0.444	2.164	0.962	0.643	0.000
0.489	2.164	1.058	0.674	0.000
0.533	2.164	1.154	0.704	0.000
0.578	2.164	1.250	0.733	0.000
0.622	2.164	1.346	0.761	0.000
0.667	2.164	1.442	0.788	0.000
0.711	2.164	1.539	0.813	0.000
0.756	2.164	1.635	0.838	0.000
0.800	2.164	1.731	0.863	0.000
0.844	2.164	1.827	0.886	0.000
0.889	2.164	1.923	0.909	0.000
0.933	2.164	2.019	0.932	0.000
0.978	2.164	2.116	0.954	0.000
1.022	2.164	2.212	0.975	0.000
1.067	2.164	2.308	0.996	0.000
1.111	2.164	2.404	1.017	0.000
1.156	2.164	2.500	1.037	0.000
1.200	2.164	2.596	1.057	0.000
1.244	2.164	2.693	1.076	0.000
1.289	2.164	2.789	1.095	0.000
1.333	2.164	2.885	1.114	0.000
1.378	2.164	2.981	1.132	0.000
1.422	2.164	3.077	1.150	0.000
1.467	2.164	3.173	1.168	0.000
1.511	2.164	3.270	1.186	0.000
1.556	2.164	3.366	1.203	0.000
1.600	2.164	3.462	1.220	0.000
1.644	2.164	3.558	1.237	0.000
1.689	2.164	3.654	1.253	0.000
1.733	2.164	3.750	1.270	0.000

1.778	2.164	3.847	1.286	0.000
1.822	2.164	3.943	1.302	0.000
1.867	2.164	4.039	1.318	0.000
1.911	2.164	4.135	1.333	0.000
1.956	2.164	4.231	1.349	0.000
2.000	2.164	4.327	1.364	0.000
2.044	2.164	4.423	1.379	0.000
2.089	2.164	4.520	1.394	0.000
2.133	2.164	4.616	1.409	0.000
2.178	2.164	4.712	1.423	0.000
2.222	2.164	4.808	1.438	0.000
2.267	2.164	4.904	1.452	0.000
2.311	2.164	5.000	1.466	0.000
2.356	2.164	5.097	1.480	0.000
2.400	2.164	5.193	1.494	0.000
2.444	2.164	5.289	1.508	0.000
2.489	2.164	5.385	1.522	0.000
2.533	2.164	5.481	1.535	0.000
2.578	2.164	5.577	1.549	0.000
2.622	2.164	5.674	1.562	0.000
2.667	2.164	5.770	1.575	0.000
2.711	2.164	5.866	1.588	0.000
2.756	2.164	5.962	1.601	0.000
2.800	2.164	6.058	1.614	0.000
2.844	2.164	6.154	1.627	0.000
2.889	2.164	6.251	1.639	0.000
2.933	2.164	6.347	1.733	0.000
2.978	2.164	6.443	1.953	0.000
3.022	2.164	6.539	2.227	0.000
3.067	2.164	6.635	2.781	0.000
3.111	2.164	6.731	3.565	0.000
3.156	2.164	6.828	4.525	0.000
3.200	2.164	6.924	5.631	0.000
3.244	2.164	7.020	6.867	0.000
3.289	2.164	7.116	8.219	0.000
3.333	2.164	7.212	9.679	0.000
3.378	2.164	7.308	11.24	0.000
3.422	2.164	7.405	12.89	0.000
3.467	2.164	7.501	14.64	0.000
3.511	2.164	7.597	16.46	0.000
3.556	2.164	7.693	18.37	0.000
3.600	2.164	7.789	20.36	0.000
3.644	2.164	7.885	22.42	0.000
3.689	2.164	7.981	24.55	0.000
3.733	2.164	8.078	26.75	0.000
3.778	2.164	8.174	29.02	0.000
3.822	2.164	8.270	31.35	0.000
3.867	2.164	8.366	33.75	0.000
3.911	2.164	8.462	36.21	0.000
3.956	2.164	8.558	38.73	0.000
4.000	2.164	8.655	41.31	0.000
4.044	2.164	8.751	43.94	0.000
4.089	0.000	0.000	46.64	0.000

Name : Basin B-ST1, B-ST2
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Very(>20%)	.04
C D,Urban,Flat(0-5%)	2.23

Impervious Land Use	Acres
Roads,Flat(0-5%)	7.3

Element Flows To:

Surface	Interflow	Groundwater
al Pond; Lot 54 East,	al Pond; Lot 54 East,	

Name : Basin B9
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Very(>20%)	1.32
C D,Dirt, Flat(0-5%)	7.57
C D,Dirt, Mod(5-10%)	.17
C D,Dirt, St(10-20%)	.06

Impervious Land Use	Acres

Element Flows To:

Surface	Interflow	Groundwater
al Pond; Lot 54 East,	al Pond; Lot 54 East,	

Name : al Pond; Lot 54 East
Bottom Length: 130ft.
Bottom Width: 130ft.
Depth : 4ft.
Volume at riser head : 1.3437ft.
Side slope 1: 3 To 1
Side slope 2: 3 To 1
Side slope 3: 3 To 1
Side slope 4: 3 To 1
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 48 in.
NotchType : Rectangular
Notch Width : 4.000 ft.
Notch Height: 0.100 ft.
Orifice 1 Diameter: 7 in. Elevation: 0 ft.

Element Flows To:
Outlet 1 Outlet 2

Pond Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	0.388	0.000	0.000	0.000
0.044	0.390	0.017	0.271	0.000
0.089	0.391	0.035	0.384	0.000
0.133	0.393	0.052	0.470	0.000
0.178	0.394	0.070	0.543	0.000
0.222	0.396	0.087	0.607	0.000
0.267	0.398	0.105	0.665	0.000
0.311	0.399	0.122	0.718	0.000
0.356	0.401	0.140	0.767	0.000
0.400	0.402	0.158	0.814	0.000
0.444	0.404	0.176	0.858	0.000
0.489	0.406	0.194	0.900	0.000
0.533	0.407	0.212	0.940	0.000
0.578	0.409	0.230	0.978	0.000
0.622	0.411	0.248	1.015	0.000
0.667	0.412	0.267	1.051	0.000
0.711	0.414	0.285	1.085	0.000
0.756	0.416	0.303	1.119	0.000
0.800	0.417	0.322	1.151	0.000
0.844	0.419	0.341	1.183	0.000
0.889	0.420	0.359	1.213	0.000
0.933	0.422	0.378	1.243	0.000
0.978	0.424	0.397	1.273	0.000
1.022	0.425	0.416	1.301	0.000
1.067	0.427	0.435	1.329	0.000
1.111	0.429	0.454	1.357	0.000
1.156	0.430	0.473	1.383	0.000
1.200	0.432	0.492	1.410	0.000
1.244	0.434	0.511	1.436	0.000
1.289	0.436	0.530	1.461	0.000
1.333	0.437	0.550	1.486	0.000
1.378	0.439	0.569	1.511	0.000
1.422	0.441	0.589	1.535	0.000
1.467	0.442	0.608	1.559	0.000
1.511	0.444	0.628	1.582	0.000
1.556	0.446	0.648	1.605	0.000
1.600	0.447	0.668	1.628	0.000
1.644	0.449	0.688	1.650	0.000
1.689	0.451	0.708	1.672	0.000
1.733	0.453	0.728	1.694	0.000
1.778	0.454	0.748	1.716	0.000
1.822	0.456	0.768	1.737	0.000
1.867	0.458	0.788	1.758	0.000
1.911	0.459	0.809	1.779	0.000
1.956	0.461	0.829	1.800	0.000
2.000	0.463	0.850	1.820	0.000
2.044	0.465	0.870	1.840	0.000
2.089	0.466	0.891	1.860	0.000

2.133	0.468	0.912	1.880	0.000
2.178	0.470	0.933	1.899	0.000
2.222	0.472	0.954	1.918	0.000
2.267	0.473	0.975	1.938	0.000
2.311	0.475	0.996	1.956	0.000
2.356	0.477	1.017	1.975	0.000
2.400	0.479	1.038	1.994	0.000
2.444	0.480	1.059	2.012	0.000
2.489	0.482	1.081	2.030	0.000
2.533	0.484	1.102	2.048	0.000
2.578	0.486	1.124	2.066	0.000
2.622	0.488	1.145	2.084	0.000
2.667	0.489	1.167	2.102	0.000
2.711	0.491	1.189	2.119	0.000
2.756	0.493	1.211	2.136	0.000
2.800	0.495	1.233	2.153	0.000
2.844	0.497	1.255	2.170	0.000
2.889	0.498	1.277	2.187	0.000
2.933	0.500	1.299	2.285	0.000
2.978	0.502	1.321	2.510	0.000
3.022	0.504	1.344	2.788	0.000
3.067	0.506	1.366	3.345	0.000
3.111	0.507	1.389	4.134	0.000
3.156	0.509	1.411	5.097	0.000
3.200	0.511	1.434	6.208	0.000
3.244	0.513	1.457	7.447	0.000
3.289	0.515	1.479	8.804	0.000
3.333	0.517	1.502	10.27	0.000
3.378	0.518	1.525	11.83	0.000
3.422	0.520	1.548	13.49	0.000
3.467	0.522	1.572	15.24	0.000
3.511	0.524	1.595	17.07	0.000
3.556	0.526	1.618	18.98	0.000
3.600	0.528	1.642	20.97	0.000
3.644	0.529	1.665	23.03	0.000
3.689	0.531	1.689	25.17	0.000
3.733	0.533	1.712	27.37	0.000
3.778	0.535	1.736	29.64	0.000
3.822	0.537	1.760	31.98	0.000
3.867	0.539	1.784	34.38	0.000
3.911	0.541	1.808	36.85	0.000
3.956	0.543	1.832	39.37	0.000
4.000	0.544	1.856	41.95	0.000
4.044	0.546	1.880	44.59	0.000

Name : Basin B6, B8
Bypass: No

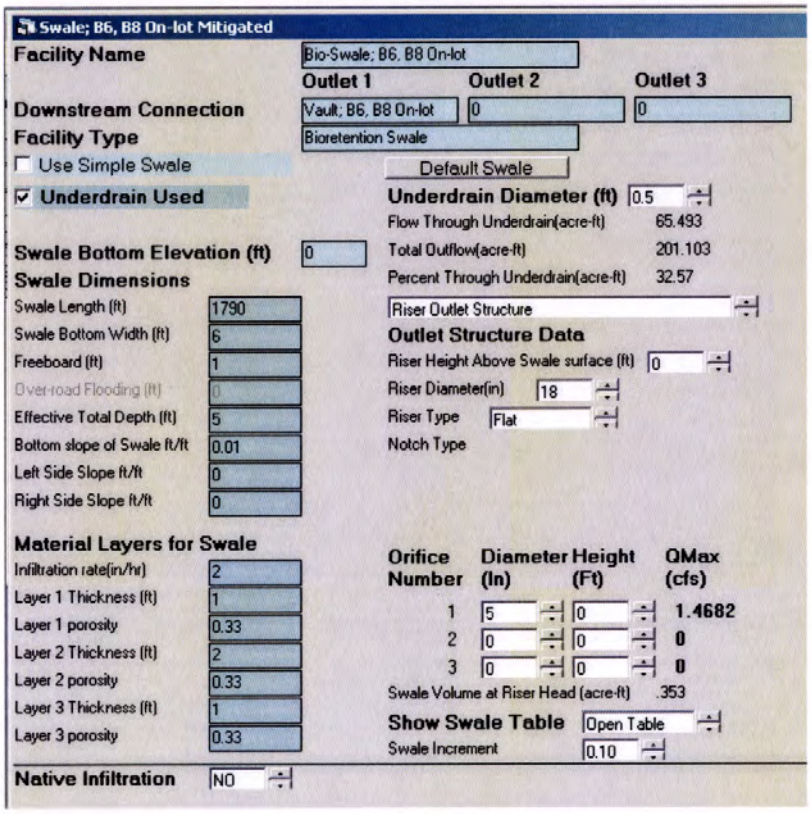
GroundWater: No

Pervious Land Use	Acres
C D,Urban,Flat(0-5%)	1.38

Impervious Land Use	Acres
Parking,Flat(0-5%)	4.15

Element Flows To:

Surface	Interflow	Groundwater
Bio-Swale; Surfaceot,	Bio-Swale; Surfaceot,	



Name : Swale; B6, B8 On-lot

Element Flows To:

Outlet 1	Outlet 2
Vault; B6, B8 On-lot,	

Name : Bio-Swale; Surfaceot

Element Flows To:

Outlet 1	Outlet 2
Vault; B6, B8 On-lot,	Swale; B6, B8 On-lot,

Name : Vault; B6, B8 On-lot

Width : 114 ft.
Length : 114 ft.
Depth: 4ft.
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 18 in.
NotchType : Rectangular
Notch Width : 0.610 ft.
Notch Height: 0.100 ft.
Orifice 1 Diameter: 2 in. **Elevation:** 0 ft.

Element Flows To:
Outlet 1 **Outlet 2**

Vault Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	0.298	0.000	0.000	0.000
0.044	0.298	0.013	0.022	0.000
0.089	0.298	0.027	0.031	0.000
0.133	0.298	0.040	0.038	0.000
0.178	0.298	0.053	0.044	0.000
0.222	0.298	0.066	0.050	0.000
0.267	0.298	0.080	0.054	0.000
0.311	0.298	0.093	0.059	0.000
0.356	0.298	0.106	0.063	0.000
0.400	0.298	0.119	0.066	0.000
0.444	0.298	0.133	0.070	0.000
0.489	0.298	0.146	0.073	0.000
0.533	0.298	0.159	0.077	0.000
0.578	0.298	0.172	0.080	0.000
0.622	0.298	0.186	0.083	0.000
0.667	0.298	0.199	0.086	0.000
0.711	0.298	0.212	0.089	0.000
0.756	0.298	0.225	0.091	0.000
0.800	0.298	0.239	0.094	0.000
0.844	0.298	0.252	0.097	0.000
0.889	0.298	0.265	0.099	0.000
0.933	0.298	0.278	0.101	0.000
0.978	0.298	0.292	0.104	0.000
1.022	0.298	0.305	0.106	0.000
1.067	0.298	0.318	0.109	0.000
1.111	0.298	0.331	0.111	0.000
1.156	0.298	0.345	0.113	0.000
1.200	0.298	0.358	0.115	0.000
1.244	0.298	0.371	0.117	0.000
1.289	0.298	0.385	0.119	0.000
1.333	0.298	0.398	0.121	0.000
1.378	0.298	0.411	0.123	0.000
1.422	0.298	0.424	0.125	0.000
1.467	0.298	0.438	0.127	0.000
1.511	0.298	0.451	0.129	0.000
1.556	0.298	0.464	0.131	0.000
1.600	0.298	0.477	0.133	0.000
1.644	0.298	0.491	0.135	0.000

1.689	0.298	0.504	0.137	0.000
1.733	0.298	0.517	0.138	0.000
1.778	0.298	0.530	0.140	0.000
1.822	0.298	0.544	0.142	0.000
1.867	0.298	0.557	0.144	0.000
1.911	0.298	0.570	0.145	0.000
1.956	0.298	0.583	0.147	0.000
2.000	0.298	0.597	0.149	0.000
2.044	0.298	0.610	0.150	0.000
2.089	0.298	0.623	0.152	0.000
2.133	0.298	0.636	0.153	0.000
2.178	0.298	0.650	0.155	0.000
2.222	0.298	0.663	0.157	0.000
2.267	0.298	0.676	0.158	0.000
2.311	0.298	0.690	0.160	0.000
2.356	0.298	0.703	0.161	0.000
2.400	0.298	0.716	0.163	0.000
2.444	0.298	0.729	0.164	0.000
2.489	0.298	0.743	0.166	0.000
2.533	0.298	0.756	0.167	0.000
2.578	0.298	0.769	0.169	0.000
2.622	0.298	0.782	0.170	0.000
2.667	0.298	0.796	0.172	0.000
2.711	0.298	0.809	0.173	0.000
2.756	0.298	0.822	0.174	0.000
2.800	0.298	0.835	0.176	0.000
2.844	0.298	0.849	0.177	0.000
2.889	0.298	0.862	0.179	0.000
2.933	0.298	0.875	0.192	0.000
2.978	0.298	0.888	0.225	0.000
3.022	0.298	0.902	0.295	0.000
3.067	0.298	0.915	0.500	0.000
3.111	0.298	0.928	0.791	0.000
3.156	0.298	0.941	1.147	0.000
3.200	0.298	0.955	1.559	0.000
3.244	0.298	0.968	2.019	0.000
3.289	0.298	0.981	2.523	0.000
3.333	0.298	0.994	3.067	0.000
3.378	0.298	1.008	3.649	0.000
3.422	0.298	1.021	4.266	0.000
3.467	0.298	1.034	4.917	0.000
3.511	0.298	1.048	5.599	0.000
3.556	0.298	1.061	6.312	0.000
3.600	0.298	1.074	7.053	0.000
3.644	0.298	1.087	7.822	0.000
3.689	0.298	1.101	8.619	0.000
3.733	0.298	1.114	9.441	0.000
3.778	0.298	1.127	10.29	0.000
3.822	0.298	1.140	11.16	0.000
3.867	0.298	1.154	12.06	0.000
3.911	0.298	1.167	12.98	0.000
3.956	0.298	1.180	13.92	0.000
4.000	0.298	1.193	14.88	0.000
4.044	0.298	1.207	15.87	0.000
4.089	0.000	0.000	16.88	0.000

Name : Basin B-OS1, B4, B7, B10, B-ST3 (undet)
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	51.72
C D,Grass,Mod(5-10%)	76.13
C D,Grass,Ste(10-20)	120.13
C D,Grass,Very(>20%)	327.76
C D,Urban,Very(>20%)	3.47
C D,Dirt, Flat(0-5%)	1.89
C D,Urban,Flat(0-5%)	.11
C D,Dirt, Mod(5-10%)	.06
C D,Dirt, St(10-20%)	.03

Impervious Land Use	Acres
Roads,Flat(0-5%)	0.37

Element Flows To:
Surface Interflow Groundwater

MITIGATED LAND USE

ANALYSIS RESULTS

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	90.0417
5 year	198.362217
10 year	281.214391
25 year	393.532522

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	90.8792
5 year	190.309826
10 year	265.249739
25 year	360.351826

Yearly Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1961	90.042	90.879
1962	0.398	1.745
1963	88.457	85.910
1964	0.323	1.878
1965	54.675	56.626
1966	66.970	67.174
1967	166.013	173.599

1968	65.841	68.194
1969	91.877	93.447
1970	193.404	181.402
1971	142.208	144.437
1972	186.497	187.494
1973	1.367	3.177
1974	145.461	137.592
1975	86.780	88.270
1976	16.565	18.163
1977	180.742	175.935
1978	37.913	38.998
1979	377.888	345.714
1980	226.438	210.620
1981	199.522	191.092
1982	57.279	58.170
1983	104.112	100.945
1984	291.912	281.093
1985	0.076	0.982
1986	194.187	185.338
1987	275.509	256.800
1988	49.589	51.347
1989	329.294	317.666
1990	1.215	2.894
1991	40.840	42.867
1992	169.553	166.693
1993	251.857	246.672
1994	232.464	215.060
1995	0.979	2.237
1996	183.150	171.263
1997	16.511	17.689
1998	160.162	155.054
1999	557.800	514.049
2000	45.718	46.995
2001	2.136	4.195
2002	68.325	69.790
2003	0.023	0.786
2004	33.527	34.598
2005	90.234	91.931

Ranked Yearly Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	557.8000	514.0490
2	377.8880	345.7140
3	329.2940	317.6660
4	291.9120	281.0930
5	275.5090	256.8000
6	251.8570	246.6720
7	232.4640	215.0600
8	226.4380	210.6200
9	199.5220	191.0920
10	194.1870	187.4940
11	193.4040	185.3380
12	186.4970	181.4020
13	183.1500	175.9350
14	180.7420	173.5990
15	169.5530	171.2630

16	166.0130	166.6930
17	160.1620	155.0540
18	145.4610	144.4370
19	142.2080	137.5920
20	104.1120	100.9450
21	91.8767	93.4465
22	90.2339	91.9310
23	90.0417	90.8792
24	88.4569	88.2702
25	86.7801	85.9102
26	68.3252	69.7903
27	66.9700	68.1936
28	65.8409	67.1743
29	57.2786	58.1701
30	54.6754	56.6256
31	49.5886	51.3467
32	45.7182	46.9945
33	40.8400	42.8666
34	37.9132	38.9977
35	33.5267	34.5979
36	16.5650	18.1633
37	16.5107	17.6885
38	2.1359	4.1953
39	1.3669	3.1767
40	1.2155	2.8941
41	0.9789	2.2371
42	0.3982	1.8780
43	0.3226	1.7447
44	0.0759	0.9817
45	0.0233	0.7862

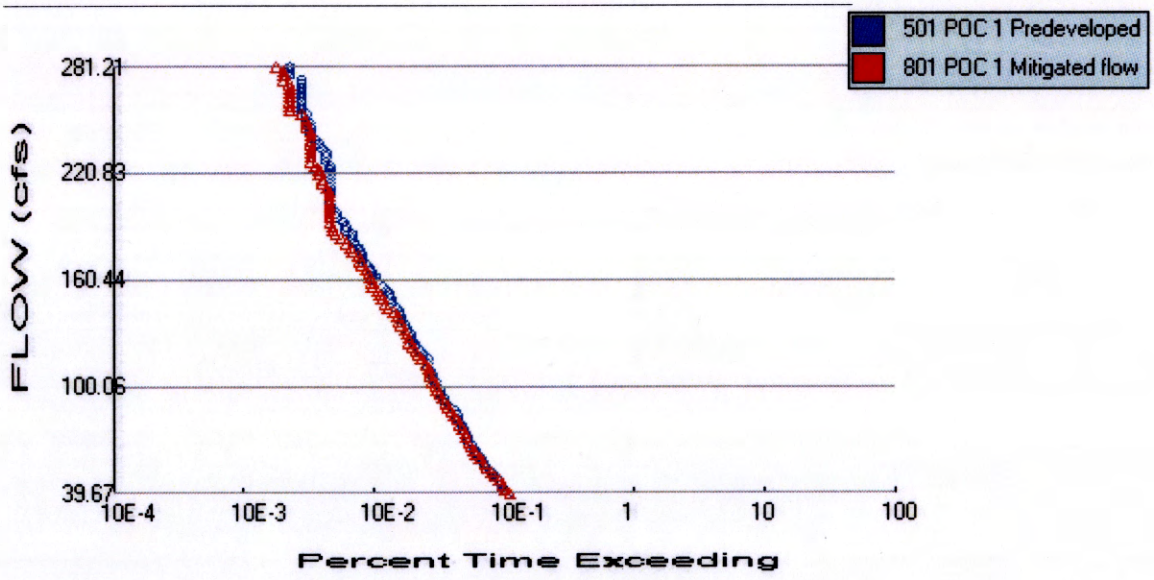
POC #1
The Facility PASSED

The Facility PASSED.

Flow(CFS)	Predev	Dev	Percentage	Pass/Fail
39.6724	419	431	102	Pass
42.1123	393	397	101	Pass
44.5521	373	383	102	Pass
46.9919	354	357	100	Pass
49.4317	326	330	101	Pass
51.8715	306	309	100	Pass
54.3113	290	287	98	Pass
56.7512	272	275	101	Pass
59.1910	257	255	99	Pass
61.6308	245	239	97	Pass
64.0706	233	231	99	Pass
66.5104	222	217	97	Pass
68.9503	211	209	99	Pass
71.3901	205	199	97	Pass
73.8299	196	197	100	Pass
76.2697	189	188	99	Pass
78.7095	182	178	97	Pass
81.1493	173	171	98	Pass
83.5892	170	161	94	Pass

86.0290	164	154	93	Pass
88.4688	150	145	96	Pass
90.9086	140	139	99	Pass
93.3484	136	131	96	Pass
95.7882	128	125	97	Pass
98.2281	127	120	94	Pass
100.6679	118	118	100	Pass
103.1077	117	111	94	Pass
105.5475	112	105	93	Pass
107.9873	108	105	97	Pass
110.4272	103	104	100	Pass
112.8670	103	98	95	Pass
115.3068	103	91	88	Pass
117.7466	94	85	90	Pass
120.1864	88	83	94	Pass
122.6262	84	78	92	Pass
125.0661	81	74	91	Pass
127.5059	76	73	96	Pass
129.9457	75	70	93	Pass
132.3855	71	68	95	Pass
134.8253	69	64	92	Pass
137.2651	65	61	93	Pass
139.7050	63	60	95	Pass
142.1448	62	56	90	Pass
144.5846	59	50	84	Pass
147.0244	54	48	88	Pass
149.4642	53	45	84	Pass
151.9041	52	44	84	Pass
154.3439	49	42	85	Pass
156.7837	46	38	82	Pass
159.2235	42	38	90	Pass
161.6633	41	37	90	Pass
164.1031	38	36	94	Pass
166.5430	37	34	91	Pass
168.9828	35	32	91	Pass
171.4226	33	31	93	Pass
173.8624	32	30	93	Pass
176.3022	31	27	87	Pass
178.7420	30	26	86	Pass
181.1819	28	24	85	Pass
183.6217	27	22	81	Pass
186.0615	27	20	74	Pass
188.5013	24	19	79	Pass
190.9411	24	19	79	Pass
193.3810	23	18	78	Pass
195.8208	20	18	90	Pass
198.2606	20	18	90	Pass
200.7004	18	18	100	Pass
203.1402	18	18	100	Pass
205.5800	18	18	100	Pass
208.0199	18	18	100	Pass
210.4597	18	18	100	Pass
212.8995	18	17	94	Pass
215.3393	18	16	88	Pass
217.7791	18	16	88	Pass
220.2189	18	15	83	Pass
222.6588	18	15	83	Pass

225.0986	18	14	77	Pass
227.5384	17	13	76	Pass
229.9782	17	13	76	Pass
232.4180	17	13	76	Pass
234.8579	16	13	81	Pass
237.2977	15	13	86	Pass
239.7375	14	13	92	Pass
242.1773	13	13	100	Pass
244.6171	13	13	100	Pass
247.0569	13	12	92	Pass
249.4968	13	12	92	Pass
251.9366	12	12	100	Pass
254.3764	12	11	91	Pass
256.8162	11	9	81	Pass
259.2560	11	9	81	Pass
261.6958	11	9	81	Pass
264.1357	11	9	81	Pass
266.5755	11	9	81	Pass
269.0153	11	9	81	Pass
271.4551	11	9	81	Pass
273.8949	11	8	72	Pass
276.3348	9	8	88	Pass
278.7746	9	8	88	Pass
281.2144	9	7	77	Pass



Drawdown Time Results
Pond: al Pond; Lot 54 East

Days	Stage(feet)	Percent of Total Run Time
1	4.000	0.0000
2	4.000	0.0000
3	4.000	0.0000
4	4.000	0.0000
5	4.000	0.0000

Maximum Stage: 3.711
Drawdown Time: 00 11:34:20

Pond: Vault; B6, B8 On-lot

Days	Stage(feet)	Percent of Total Run Time

1	0.465	2.2716
2	1.086	0.8125
3	1.950	0.2697
4	0.000	100.00
5	0.000	100.00

Maximum Stage: 3.353
Drawdown Time: 03 22:22:50

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San Diego Hydrology Model
PROJECT REPORT

Project Name: Basin C
Site Address: SE Corner of Otay Mesa Rd and Alta Rd
City : San Diego, CA
Report Date : 9/22/2009
Gage : Lower Otay
Data Start : 1959/10/02
Data End : 2004/10/30
Precip Scale: 1.39
SDHM Version:

PREDEVELOPED LAND USE

Name : Basin C
Bypass: No

GroundWater: No

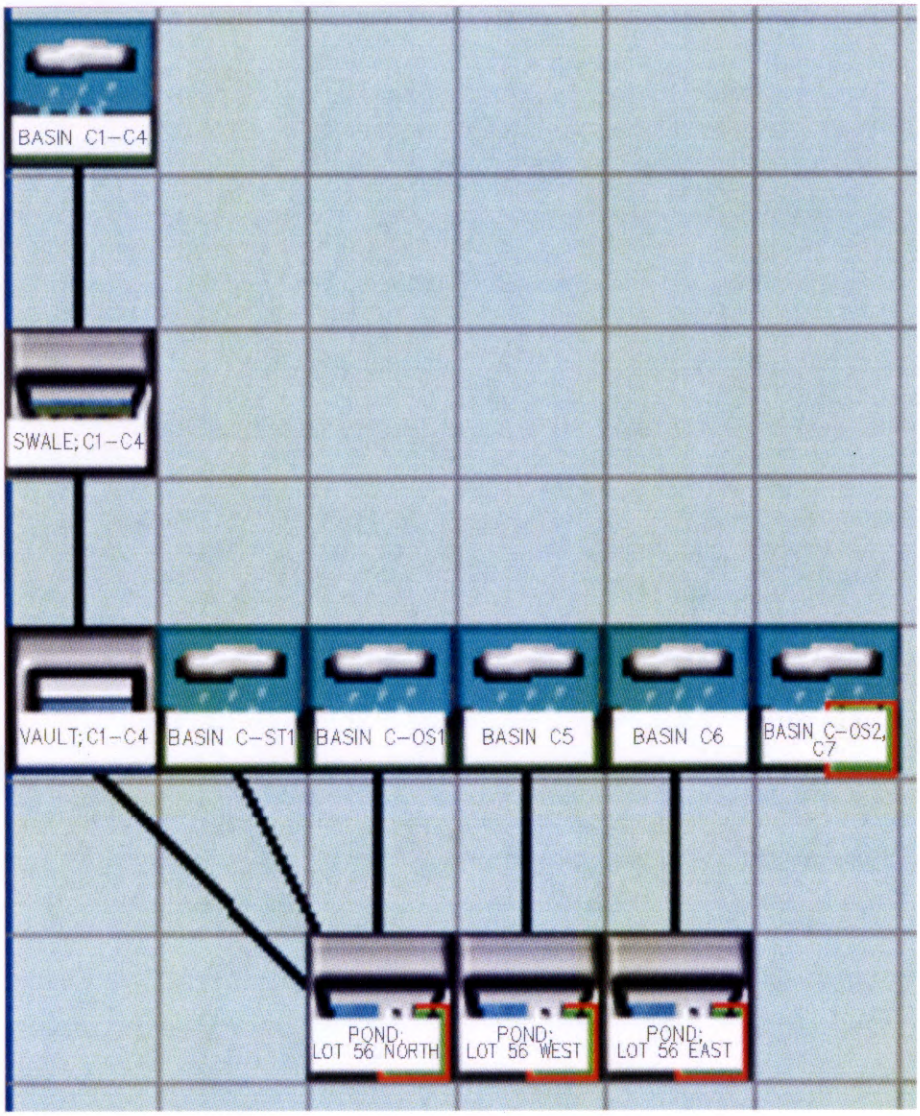
Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	64.4
C D,Grass,Mod(5-10%)	85.16
C D,Grass,Ste(10-20)	49.41
C D,Grass,Very(>20%)	45.73

Impervious Land Use	Acres

Element Flows To:

Surface	Interflow	Groundwater

DEVELOPED LAND USE



Name : Basin C1-C4
Bypass: No

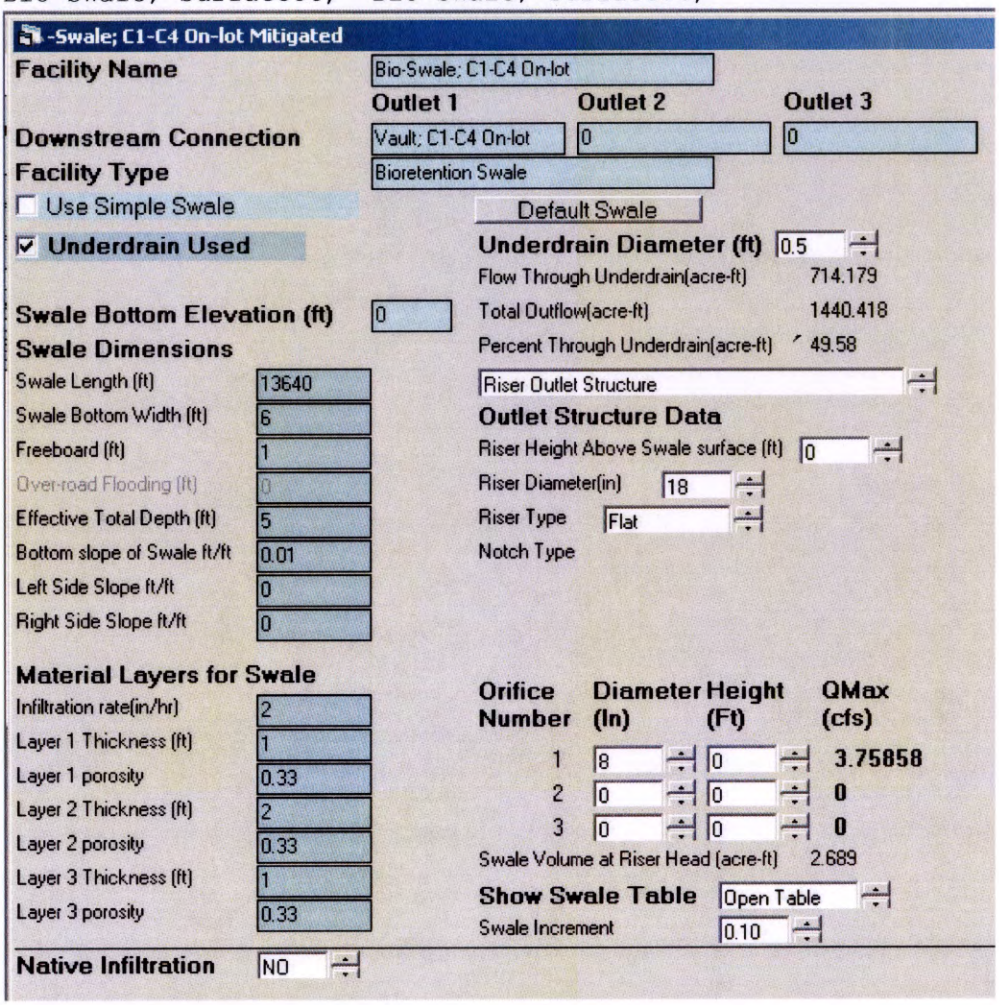
GroundWater: No

Pervious Land Use	Acres
C D,Urban,Flat(0-5%)	9.7
C D,Urban,Very(>20%)	1.89

Impervious Land Use	Acres
Parking,Flat(0-5%)	29.08

Element Flows To:

Surface	Interflow	Groundwater
Bio-Swale; Surfaceot,	Bio-Swale; Surfaceot,	



Name : Bio-Swale; C1-C4 On-lot

Element Flows To:

Outlet 1	Outlet 2
Vault; C1-C4 On-lot,	

Name : Bio-Swale; Surfaceot

Element Flows To:

Outlet 1	Outlet 2
Vault; C1-C4 On-lot,	Bio-Swale; C1-C4 On-lot,

Name : Vault; C1-C4 On-lot
Width : 240 ft.

Length : 240 ft.
Depth: 4ft.
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 18 in.
NotchType : Rectangular
Notch Width : 1.500 ft.
Notch Height: 0.100 ft.
Orifice 1 Diameter: 5.9 in. **Elevation:** 0 ft.

Element Flows To:
Outlet 1 **Outlet 2**
1 Pond; Lot 56 North,

Vault Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	1.322	0.000	0.000	0.000
0.044	1.322	0.059	0.193	0.000
0.089	1.322	0.118	0.273	0.000
0.133	1.322	0.176	0.334	0.000
0.178	1.322	0.235	0.385	0.000
0.222	1.322	0.294	0.431	0.000
0.267	1.322	0.353	0.472	0.000
0.311	1.322	0.411	0.510	0.000
0.356	1.322	0.470	0.545	0.000
0.400	1.322	0.529	0.578	0.000
0.444	1.322	0.588	0.609	0.000
0.489	1.322	0.646	0.639	0.000
0.533	1.322	0.705	0.668	0.000
0.578	1.322	0.764	0.695	0.000
0.622	1.322	0.823	0.721	0.000
0.667	1.322	0.882	0.746	0.000
0.711	1.322	0.940	0.771	0.000
0.756	1.322	0.999	0.795	0.000
0.800	1.322	1.058	0.818	0.000
0.844	1.322	1.117	0.840	0.000
0.889	1.322	1.175	0.862	0.000
0.933	1.322	1.234	0.883	0.000
0.978	1.322	1.293	0.904	0.000
1.022	1.322	1.352	0.924	0.000
1.067	1.322	1.410	0.944	0.000
1.111	1.322	1.469	0.964	0.000
1.156	1.322	1.528	0.983	0.000
1.200	1.322	1.587	1.002	0.000
1.244	1.322	1.646	1.020	0.000
1.289	1.322	1.704	1.038	0.000
1.333	1.322	1.763	1.056	0.000
1.378	1.322	1.822	1.073	0.000
1.422	1.322	1.881	1.090	0.000
1.467	1.322	1.939	1.107	0.000
1.511	1.322	1.998	1.124	0.000
1.556	1.322	2.057	1.140	0.000
1.600	1.322	2.116	1.156	0.000
1.644	1.322	2.174	1.172	0.000

1.689	1.322	2.233	1.188	0.000
1.733	1.322	2.292	1.204	0.000
1.778	1.322	2.351	1.219	0.000
1.822	1.322	2.410	1.234	0.000
1.867	1.322	2.468	1.249	0.000
1.911	1.322	2.527	1.264	0.000
1.956	1.322	2.586	1.278	0.000
2.000	1.322	2.645	1.293	0.000
2.044	1.322	2.703	1.307	0.000
2.089	1.322	2.762	1.321	0.000
2.133	1.322	2.821	1.335	0.000
2.178	1.322	2.880	1.349	0.000
2.222	1.322	2.938	1.363	0.000
2.267	1.322	2.997	1.376	0.000
2.311	1.322	3.056	1.390	0.000
2.356	1.322	3.115	1.403	0.000
2.400	1.322	3.174	1.416	0.000
2.444	1.322	3.232	1.429	0.000
2.489	1.322	3.291	1.442	0.000
2.533	1.322	3.350	1.455	0.000
2.578	1.322	3.409	1.468	0.000
2.622	1.322	3.467	1.480	0.000
2.667	1.322	3.526	1.493	0.000
2.711	1.322	3.585	1.505	0.000
2.756	1.322	3.644	1.518	0.000
2.800	1.322	3.702	1.530	0.000
2.844	1.322	3.761	1.542	0.000
2.889	1.322	3.820	1.554	0.000
2.933	1.322	3.879	1.596	0.000
2.978	1.322	3.938	1.686	0.000
3.022	1.322	3.996	1.796	0.000
3.067	1.322	4.055	2.010	0.000
3.111	1.322	4.114	2.312	0.000
3.156	1.322	4.173	2.678	0.000
3.200	1.322	4.231	3.100	0.000
3.244	1.322	4.290	3.570	0.000
3.289	1.322	4.349	4.084	0.000
3.333	1.322	4.408	4.639	0.000
3.378	1.322	4.466	5.230	0.000
3.422	1.322	4.525	5.857	0.000
3.467	1.322	4.584	6.517	0.000
3.511	1.322	4.643	7.209	0.000
3.556	1.322	4.702	7.931	0.000
3.600	1.322	4.760	8.682	0.000
3.644	1.322	4.819	9.461	0.000
3.689	1.322	4.878	10.27	0.000
3.733	1.322	4.937	11.10	0.000
3.778	1.322	4.995	11.96	0.000
3.822	1.322	5.054	12.84	0.000
3.867	1.322	5.113	13.74	0.000
3.911	1.322	5.172	14.67	0.000
3.956	1.322	5.230	15.62	0.000
4.000	1.322	5.289	16.59	0.000
4.044	1.322	5.348	17.59	0.000
4.089	0.000	0.000	18.61	0.000

Name : Basin C-ST1
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Very(>20%)	.34
C D,Urban,Flat(0-5%)	1.53

Impervious Land Use	Acres
Roads,Flat(0-5%)	5.47

Element Flows To:

Surface	Interflow	Groundwater
1 Pond; Lot 56 North,	1 Pond; Lot 56 North,	

Name : Basin C-OS1
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Grass,Flat(0-5%)	3.26
C D,Grass,Mod(5-10%)	6.6
C D,Grass,Ste(10-20)	16.17
C D,Grass,Very(>20%)	7.94
C D,Urban,Very(>20%)	1.07

Impervious Land Use	Acres

Element Flows To:

Surface	Interflow	Groundwater
1 Pond; Lot 56 North,	1 Pond; Lot 56 North,	

Name : 1 Pond; Lot 56 North
Bottom Length: 120ft.
Bottom Width: 120ft.
Depth : 4ft.
Volume at riser head : 1.1577ft.
Side slope 1: 3 To 1
Side slope 2: 3 To 1
Side slope 3: 3 To 1
Side slope 4: 3 To 1
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 48 in.
NotchType : Rectangular

Notch Width : 2.000 ft.
Notch Height: 1.700 ft.
Orifice 1 Diameter: 8.4 in. **Elevation:** 0 ft.

Element Flows To:
Outlet 1 **Outlet 2**

Pond Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	0.331	0.000	0.000	0.000
0.044	0.332	0.015	0.391	0.000
0.089	0.334	0.030	0.553	0.000
0.133	0.335	0.044	0.677	0.000
0.178	0.336	0.059	0.781	0.000
0.222	0.338	0.074	0.874	0.000
0.267	0.339	0.089	0.957	0.000
0.311	0.341	0.104	1.034	0.000
0.356	0.342	0.120	1.105	0.000
0.400	0.344	0.135	1.172	0.000
0.444	0.345	0.150	1.235	0.000
0.489	0.347	0.166	1.296	0.000
0.533	0.348	0.181	1.353	0.000
0.578	0.350	0.197	1.409	0.000
0.622	0.351	0.212	1.462	0.000
0.667	0.353	0.228	1.513	0.000
0.711	0.355	0.244	1.563	0.000
0.756	0.356	0.259	1.611	0.000
0.800	0.358	0.275	1.658	0.000
0.844	0.359	0.291	1.703	0.000
0.889	0.361	0.307	1.747	0.000
0.933	0.362	0.323	1.790	0.000
0.978	0.364	0.339	1.832	0.000
1.022	0.365	0.355	1.874	0.000
1.067	0.367	0.372	1.914	0.000
1.111	0.368	0.388	1.953	0.000
1.156	0.370	0.404	1.992	0.000
1.200	0.371	0.421	2.030	0.000
1.244	0.373	0.438	2.067	0.000
1.289	0.375	0.454	2.104	0.000
1.333	0.376	0.471	2.180	0.000
1.378	0.378	0.488	2.320	0.000
1.422	0.379	0.504	2.495	0.000
1.467	0.381	0.521	2.697	0.000
1.511	0.382	0.538	2.924	0.000
1.556	0.384	0.555	3.172	0.000
1.600	0.386	0.572	3.438	0.000
1.644	0.387	0.590	3.723	0.000
1.689	0.389	0.607	4.023	0.000
1.733	0.390	0.624	4.340	0.000
1.778	0.392	0.641	4.670	0.000
1.822	0.394	0.659	5.015	0.000
1.867	0.395	0.676	5.373	0.000
1.911	0.397	0.694	5.744	0.000
1.956	0.398	0.712	6.127	0.000

2.000	0.400	0.729	6.521	0.000
2.044	0.402	0.747	6.928	0.000
2.089	0.403	0.765	7.345	0.000
2.133	0.405	0.783	7.773	0.000
2.178	0.406	0.801	8.212	0.000
2.222	0.408	0.819	8.661	0.000
2.267	0.410	0.837	9.120	0.000
2.311	0.411	0.856	9.589	0.000
2.356	0.413	0.874	10.07	0.000
2.400	0.415	0.892	10.55	0.000
2.444	0.416	0.911	11.05	0.000
2.489	0.418	0.929	11.56	0.000
2.533	0.420	0.948	12.07	0.000
2.578	0.421	0.967	12.59	0.000
2.622	0.423	0.985	13.13	0.000
2.667	0.425	1.004	13.67	0.000
2.711	0.426	1.023	14.22	0.000
2.756	0.428	1.042	14.77	0.000
2.800	0.430	1.061	15.34	0.000
2.844	0.431	1.080	15.91	0.000
2.889	0.433	1.100	16.49	0.000
2.933	0.435	1.119	17.08	0.000
2.978	0.436	1.138	17.67	0.000
3.022	0.438	1.158	18.11	0.000
3.067	0.440	1.177	18.68	0.000
3.111	0.441	1.197	19.47	0.000
3.156	0.443	1.216	20.44	0.000
3.200	0.445	1.236	21.56	0.000
3.244	0.447	1.256	22.81	0.000
3.289	0.448	1.276	24.17	0.000
3.333	0.450	1.296	25.64	0.000
3.378	0.452	1.316	27.21	0.000
3.422	0.453	1.336	28.88	0.000
3.467	0.455	1.356	30.63	0.000
3.511	0.457	1.376	32.47	0.000
3.556	0.459	1.397	34.39	0.000
3.600	0.460	1.417	36.38	0.000
3.644	0.462	1.438	38.45	0.000
3.689	0.464	1.458	40.60	0.000
3.733	0.466	1.479	42.81	0.000
3.778	0.467	1.500	45.09	0.000
3.822	0.469	1.520	47.43	0.000
3.867	0.471	1.541	49.84	0.000
3.911	0.473	1.562	52.31	0.000
3.956	0.474	1.583	54.84	0.000
4.000	0.476	1.604	57.42	0.000
4.044	0.478	1.626	60.07	0.000

Name : Basin C5
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Very(>20%)	.24
C D,Dirt, Flat(0-5%)	35.39

C D,Dirt, Mod(5-10%)	1.13
C D,Dirt, St(10-20%)	.08

Impervious Land Use **Acres**

Element Flows To:

Surface	Interflow	Groundwater
al Pond; Lot 56 West,	al Pond; Lot 56 West,	

Name : al Pond; Lot 56 West
Bottom Length: 85ft.
Bottom Width: 85ft.
Depth : 4ft.
Volume at riser head : 0.6158ft.
Side slope 1: 3 To 1
Side slope 2: 3 To 1
Side slope 3: 3 To 1
Side slope 4: 3 To 1
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 24 in.
NotchType : Rectangular
Notch Width : 2.000 ft.
Notch Height: 2.000 ft.
Orifice 1 Diameter: 6.4 in. **Elevation:** 0 ft.

Element Flows To:

Outlet 1	Outlet 2

Pond Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	0.166	0.000	0.000	0.000
0.044	0.167	0.007	0.227	0.000
0.089	0.168	0.015	0.321	0.000
0.133	0.169	0.022	0.393	0.000
0.178	0.170	0.030	0.454	0.000
0.222	0.171	0.037	0.507	0.000
0.267	0.172	0.045	0.556	0.000
0.311	0.173	0.053	0.600	0.000
0.356	0.174	0.060	0.641	0.000
0.400	0.175	0.068	0.680	0.000
0.444	0.176	0.076	0.717	0.000
0.489	0.178	0.084	0.752	0.000
0.533	0.179	0.092	0.786	0.000
0.578	0.180	0.100	0.818	0.000
0.622	0.181	0.108	0.849	0.000
0.667	0.182	0.116	0.878	0.000
0.711	0.183	0.124	0.907	0.000
0.756	0.184	0.132	0.935	0.000

0.800	0.185	0.140	0.962	0.000
0.844	0.186	0.149	0.989	0.000
0.889	0.187	0.157	1.014	0.000
0.933	0.188	0.165	1.039	0.000
0.978	0.190	0.174	1.064	0.000
1.022	0.191	0.182	1.110	0.000
1.067	0.192	0.191	1.226	0.000
1.111	0.193	0.199	1.381	0.000
1.156	0.194	0.208	1.565	0.000
1.200	0.195	0.216	1.774	0.000
1.244	0.196	0.225	2.005	0.000
1.289	0.197	0.234	2.255	0.000
1.333	0.199	0.243	2.524	0.000
1.378	0.200	0.251	2.809	0.000
1.422	0.201	0.260	3.110	0.000
1.467	0.202	0.269	3.426	0.000
1.511	0.203	0.278	3.756	0.000
1.556	0.204	0.287	4.100	0.000
1.600	0.205	0.296	4.456	0.000
1.644	0.207	0.306	4.825	0.000
1.689	0.208	0.315	5.206	0.000
1.733	0.209	0.324	5.599	0.000
1.778	0.210	0.333	6.003	0.000
1.822	0.211	0.343	6.418	0.000
1.867	0.212	0.352	6.843	0.000
1.911	0.214	0.362	7.279	0.000
1.956	0.215	0.371	7.725	0.000
2.000	0.216	0.381	8.181	0.000
2.044	0.217	0.390	8.647	0.000
2.089	0.218	0.400	9.122	0.000
2.133	0.220	0.410	9.607	0.000
2.178	0.221	0.420	10.10	0.000
2.222	0.222	0.429	10.60	0.000
2.267	0.223	0.439	11.11	0.000
2.311	0.224	0.449	11.63	0.000
2.356	0.226	0.459	12.16	0.000
2.400	0.227	0.469	12.70	0.000
2.444	0.228	0.479	13.24	0.000
2.489	0.229	0.490	13.80	0.000
2.533	0.230	0.500	14.36	0.000
2.578	0.232	0.510	14.93	0.000
2.622	0.233	0.520	15.50	0.000
2.667	0.234	0.531	16.09	0.000
2.711	0.235	0.541	16.68	0.000
2.756	0.237	0.552	17.28	0.000
2.800	0.238	0.562	17.88	0.000
2.844	0.239	0.573	18.50	0.000
2.889	0.240	0.584	19.12	0.000
2.933	0.242	0.594	19.75	0.000
2.978	0.243	0.605	20.38	0.000
3.022	0.244	0.616	20.77	0.000
3.067	0.245	0.627	21.06	0.000
3.111	0.247	0.638	21.46	0.000
3.156	0.248	0.649	21.94	0.000
3.200	0.249	0.660	22.50	0.000
3.244	0.251	0.671	23.13	0.000
3.289	0.252	0.682	23.81	0.000

3.333	0.253	0.693	24.55	0.000
3.378	0.254	0.704	25.34	0.000
3.422	0.256	0.716	26.17	0.000
3.467	0.257	0.727	27.05	0.000
3.511	0.258	0.739	27.97	0.000
3.556	0.260	0.750	28.93	0.000
3.600	0.261	0.762	29.93	0.000
3.644	0.262	0.773	30.97	0.000
3.689	0.263	0.785	32.04	0.000
3.733	0.265	0.797	33.15	0.000
3.778	0.266	0.809	34.29	0.000
3.822	0.267	0.820	35.46	0.000
3.867	0.269	0.832	36.67	0.000
3.911	0.270	0.844	37.90	0.000
3.956	0.271	0.856	39.17	0.000
4.000	0.273	0.868	40.47	0.000
4.044	0.274	0.881	41.79	0.000

Name : Basin C6
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Very(>20%)	.27
C D,Dirt, Flat(0-5%)	15.36
C D,Dirt, Mod(5-10%)	.94
C D,Dirt, St(10-20%)	.03

Impervious Land Use	Acres

Element Flows To:

Surface	Interflow	Groundwater
al Pond; Lot 56 East,	al Pond; Lot 56 East,	

Name : al Pond; Lot 56 East
Bottom Length: 25ft.
Bottom Width: 25ft.
Depth : 4ft.
Volume at riser head : 0.0824ft.
Side slope 1: 3 To 1
Side slope 2: 3 To 1
Side slope 3: 3 To 1
Side slope 4: 3 To 1
Discharge Structure
Riser Height: 3 ft.
Riser Diameter: 18 in.
NotchType : Rectangular
Notch Width : 1.500 ft.
Notch Height: 1.200 ft.
Orifice 1 Diameter: 4.3 in. **Elevation:** 0 ft.

Element Flows To:
Outlet 1 Outlet 2

Pond Hydraulic Table

Stage(ft)	Area(acr)	Volume(acr-ft)	Dschrg(cfs)	Infilt(cfs)
0.000	0.014	0.000	0.000	0.000
0.044	0.015	0.001	0.102	0.000
0.089	0.015	0.001	0.145	0.000
0.133	0.015	0.002	0.177	0.000
0.178	0.016	0.003	0.205	0.000
0.222	0.016	0.003	0.229	0.000
0.267	0.016	0.004	0.251	0.000
0.311	0.017	0.005	0.271	0.000
0.356	0.017	0.006	0.290	0.000
0.400	0.017	0.006	0.307	0.000
0.444	0.018	0.007	0.324	0.000
0.489	0.018	0.008	0.340	0.000
0.533	0.018	0.009	0.355	0.000
0.578	0.019	0.009	0.369	0.000
0.622	0.019	0.010	0.383	0.000
0.667	0.019	0.011	0.397	0.000
0.711	0.020	0.012	0.410	0.000
0.756	0.020	0.013	0.422	0.000
0.800	0.020	0.014	0.434	0.000
0.844	0.021	0.015	0.446	0.000
0.889	0.021	0.016	0.458	0.000
0.933	0.021	0.017	0.469	0.000
0.978	0.022	0.018	0.480	0.000
1.022	0.022	0.019	0.491	0.000
1.067	0.023	0.020	0.502	0.000
1.111	0.023	0.021	0.512	0.000
1.156	0.023	0.022	0.522	0.000
1.200	0.024	0.023	0.532	0.000
1.244	0.024	0.024	0.542	0.000
1.289	0.025	0.025	0.551	0.000
1.333	0.025	0.026	0.561	0.000
1.378	0.025	0.027	0.570	0.000
1.422	0.026	0.028	0.579	0.000
1.467	0.026	0.029	0.588	0.000
1.511	0.027	0.030	0.597	0.000
1.556	0.027	0.032	0.606	0.000
1.600	0.027	0.033	0.614	0.000
1.644	0.028	0.034	0.623	0.000
1.689	0.028	0.035	0.631	0.000
1.733	0.029	0.037	0.639	0.000
1.778	0.029	0.038	0.647	0.000
1.822	0.030	0.039	0.672	0.000
1.867	0.030	0.041	0.749	0.000
1.911	0.031	0.042	0.856	0.000
1.956	0.031	0.043	0.986	0.000
2.000	0.031	0.045	1.134	0.000
2.044	0.032	0.046	1.298	0.000
2.089	0.032	0.048	1.477	0.000

2.133	0.033	0.049	1.671	0.000
2.178	0.033	0.050	1.876	0.000
2.222	0.034	0.052	2.094	0.000
2.267	0.034	0.053	2.323	0.000
2.311	0.035	0.055	2.563	0.000
2.356	0.035	0.057	2.814	0.000
2.400	0.036	0.058	3.074	0.000
2.444	0.036	0.060	3.343	0.000
2.489	0.037	0.061	3.622	0.000
2.533	0.037	0.063	3.910	0.000
2.578	0.038	0.065	4.206	0.000
2.622	0.038	0.066	4.510	0.000
2.667	0.039	0.068	4.823	0.000
2.711	0.039	0.070	5.144	0.000
2.756	0.040	0.071	5.472	0.000
2.800	0.040	0.073	5.808	0.000
2.844	0.041	0.075	6.151	0.000
2.889	0.041	0.077	6.501	0.000
2.933	0.042	0.079	6.858	0.000
2.978	0.042	0.081	7.223	0.000
3.022	0.043	0.082	7.459	0.000
3.067	0.043	0.084	7.668	0.000
3.111	0.044	0.086	7.964	0.000
3.156	0.044	0.088	8.325	0.000
3.200	0.045	0.090	8.741	0.000
3.244	0.045	0.092	9.206	0.000
3.289	0.046	0.094	9.715	0.000
3.333	0.046	0.096	10.26	0.000
3.378	0.047	0.098	10.85	0.000
3.422	0.048	0.100	11.47	0.000
3.467	0.048	0.103	12.13	0.000
3.511	0.049	0.105	12.81	0.000
3.556	0.049	0.107	13.53	0.000
3.600	0.050	0.109	14.28	0.000
3.644	0.050	0.111	15.05	0.000
3.689	0.051	0.114	15.85	0.000
3.733	0.052	0.116	16.68	0.000
3.778	0.052	0.118	17.53	0.000
3.822	0.053	0.121	18.41	0.000
3.867	0.053	0.123	19.31	0.000
3.911	0.054	0.125	20.23	0.000
3.956	0.055	0.128	21.18	0.000
4.000	0.055	0.130	22.15	0.000
4.044	0.056	0.133	23.14	0.000

Name : Basin C-OS2, C7
Bypass: No

GroundWater: No

Pervious Land Use	Acres
C D,Urban,Very(>20%)	1.02
C D,Dirt, Flat(0-5%)	2.16
C D,Dirt, Mod(5-10%)	1.02
C D,Dirt, St(10-20%)	.4
C D,Grass,Flat(0-5%)	9.28

C D,Grass,Mod(5-10%)	28.21
C D,Grass,Ste(10-20)	24.29
C D,Grass,Very(>20%)	37.4

Impervious Land Use	Acres

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

ANALYSIS RESULTS

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	Flow(cfs)
2 year	15.8183
5 year	59.090383
10 year	80.845765
25 year	131.917043

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	15.6108
5 year	52.007743
10 year	67.06693
25 year	102.864665

Yearly Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1961	15.818	14.059
1962	0.073	1.682
1963	21.682	18.490
1964	0.049	1.727
1965	7.845	8.919
1966	13.894	15.611
1967	50.004	54.775
1968	9.547	10.864
1969	16.574	15.166
1970	55.689	36.891
1971	25.319	22.442
1972	30.384	27.675
1973	0.195	1.704
1974	39.921	27.009
1975	13.496	12.843
1976	2.434	3.606
1977	46.879	39.888
1978	5.999	9.709
1979	126.330	98.805
1980	68.606	47.093

1981	59.959	54.612
1982	9.493	8.988
1983	26.586	25.127
1984	97.094	86.649
1985	0.020	1.057
1986	61.136	53.926
1987	83.441	65.302
1988	7.154	7.840
1989	79.462	70.376
1990	0.183	1.684
1991	5.849	6.990
1992	43.029	42.299
1993	55.963	52.439
1994	73.643	50.455
1995	0.153	1.297
1996	55.762	42.326
1997	2.331	2.948
1998	43.979	38.497
1999	190.581	145.488
2000	6.658	6.910
2001	0.322	2.016
2002	10.425	10.095
2003	0.006	0.836
2004	5.056	5.172
2005	15.699	16.026

Ranked Yearly Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	190.5810	145.4880
2	126.3300	98.8053
3	97.0944	86.6488
4	83.4407	70.3758
5	79.4618	65.3022
6	73.6427	54.7747
7	68.6060	54.6123
8	61.1356	53.9262
9	59.9591	52.4392
10	55.9630	50.4545
11	55.7617	47.0930
12	55.6886	42.3264
13	50.0035	42.2991
14	46.8789	39.8875
15	43.9791	38.4972
16	43.0285	36.8911
17	39.9208	27.6752
18	30.3844	27.0086
19	26.5862	25.1272
20	25.3185	22.4421
21	21.6819	18.4900
22	16.5742	16.0260
23	15.8183	15.6108
24	15.6991	15.1661
25	13.8938	14.0587
26	13.4963	12.8429
27	10.4250	10.8637
28	9.5473	10.0947

29	9.4930	9.7088
30	7.8447	8.9882
31	7.1536	8.9191
32	6.6579	7.8399
33	5.9993	6.9900
34	5.8492	6.9100
35	5.0557	5.1717
36	2.4338	3.6061
37	2.3309	2.9482
38	0.3225	2.0158
39	0.1952	1.7274
40	0.1831	1.7039
41	0.1525	1.6837
42	0.0731	1.6823
43	0.0495	1.2966
44	0.0196	1.0566
45	0.0057	0.8361

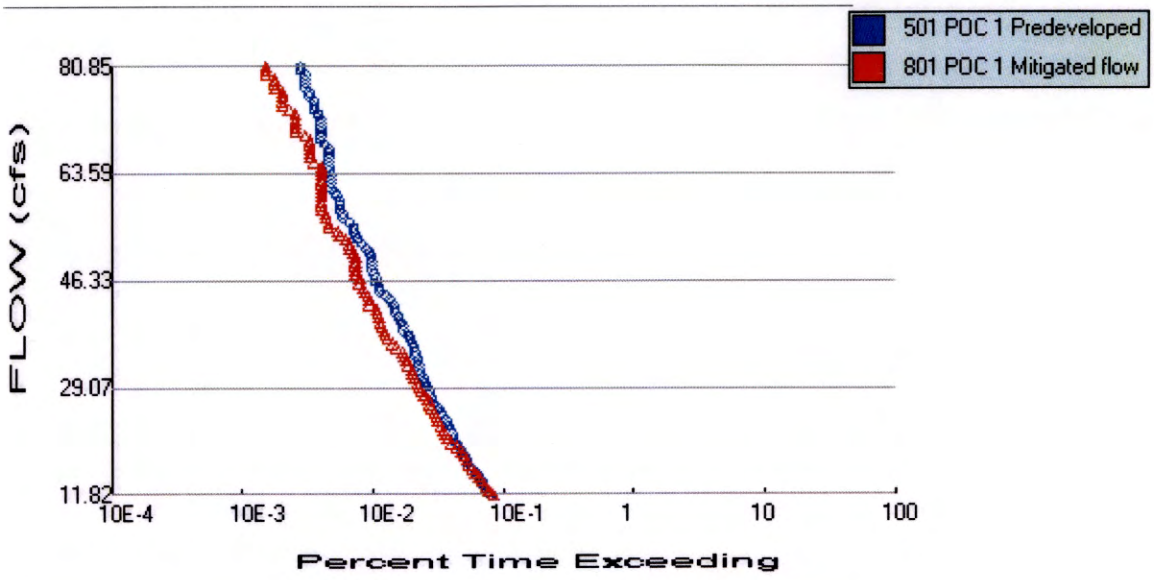
POC #1
The Facility PASSED

The Facility PASSED.

Flow(CFS)	Predev	Dev	Percentage	Pass/Fail
11.8181	314	327	104	Pass
12.5153	298	304	102	Pass
13.2126	280	286	102	Pass
13.9098	269	268	99	Pass
14.6071	254	254	100	Pass
15.3043	241	239	99	Pass
16.0016	227	224	98	Pass
16.6988	213	215	100	Pass
17.3961	205	204	99	Pass
18.0933	196	195	99	Pass
18.7906	186	186	100	Pass
19.4878	179	172	96	Pass
20.1851	171	158	92	Pass
20.8823	163	147	90	Pass
21.5796	159	140	88	Pass
22.2768	154	136	88	Pass
22.9741	150	130	86	Pass
23.6713	144	124	86	Pass
24.3686	136	121	88	Pass
25.0658	130	117	90	Pass
25.7631	125	110	88	Pass
26.4603	118	106	89	Pass
27.1576	111	104	93	Pass
27.8548	106	97	91	Pass
28.5521	105	92	87	Pass
29.2493	102	88	86	Pass
29.9466	98	85	86	Pass
30.6438	96	82	85	Pass
31.3411	91	79	86	Pass
32.0383	89	78	87	Pass
32.7356	88	72	81	Pass
33.4328	87	71	81	Pass

34.1301	84	68	80	Pass
34.8273	84	66	78	Pass
35.5246	82	60	73	Pass
36.2218	79	55	69	Pass
36.9191	76	51	67	Pass
37.6163	74	49	66	Pass
38.3136	68	48	70	Pass
39.0108	67	46	68	Pass
39.7081	65	45	69	Pass
40.4053	62	44	70	Pass
41.1026	59	43	72	Pass
41.7998	58	42	72	Pass
42.4970	57	37	64	Pass
43.1943	53	37	69	Pass
43.8915	50	36	72	Pass
44.5888	45	34	75	Pass
45.2860	44	33	75	Pass
45.9833	42	31	73	Pass
46.6805	42	31	73	Pass
47.3778	40	29	72	Pass
48.0750	39	29	74	Pass
48.7723	39	29	74	Pass
49.4695	39	29	74	Pass
50.1668	38	29	76	Pass
50.8640	37	28	75	Pass
51.5613	35	26	74	Pass
52.2585	33	26	78	Pass
52.9558	30	24	80	Pass
53.6530	29	22	75	Pass
54.3503	28	21	75	Pass
55.0475	28	18	64	Pass
55.7448	26	18	69	Pass
56.4420	23	17	73	Pass
57.1393	23	17	73	Pass
57.8365	22	16	72	Pass
58.5338	22	16	72	Pass
59.2310	22	16	72	Pass
59.9283	21	16	76	Pass
60.6255	20	16	80	Pass
61.3228	19	16	84	Pass
62.0200	19	16	84	Pass
62.7173	19	16	84	Pass
63.4145	19	16	84	Pass
64.1118	18	16	88	Pass
64.8090	18	16	88	Pass
65.5063	18	14	77	Pass
66.2035	18	13	72	Pass
66.9008	18	13	72	Pass
67.5980	18	13	72	Pass
68.2953	17	13	76	Pass
68.9925	16	13	81	Pass
69.6898	16	12	75	Pass
70.3870	16	10	62	Pass
71.0843	16	10	62	Pass
71.7815	16	10	62	Pass
72.4788	16	10	62	Pass
73.1760	15	10	66	Pass

73.8733	14	9	64	Pass
74.5705	14	8	57	Pass
75.2678	14	8	57	Pass
75.9650	13	8	61	Pass
76.6623	13	8	61	Pass
77.3595	12	7	58	Pass
78.0568	12	7	58	Pass
78.7540	12	7	58	Pass
79.4513	12	6	50	Pass
80.1485	11	6	54	Pass
80.8458	11	6	54	Pass



Drawdown Time Results
Pond: 1 Pond; Lot 56 North

Days	Stage(feet)	Percent of Total Run Time
1	4.000	0.0000
2	4.000	0.0000
3	4.000	0.0000
4	4.000	0.0000
5	4.000	0.0000

Maximum Stage: 3.860
Drawdown Time: 00 05:03:10

Pond: al Pond; Lot 56 West

Days	Stage(feet)	Percent of Total Run Time
1	4.000	0.0000
2	4.000	0.0000
3	4.000	0.0000
4	4.000	0.0000
5	4.000	0.0000

Maximum Stage: 3.784
Drawdown Time: 00 03:39:10

Pond: al Pond; Lot 56 East

Days	Stage(feet)	Percent of Total Run Time
1	4.000	0.0000
2	4.000	0.0000
3	4.000	0.0000
4	4.000	0.0000
5	4.000	0.0000

Maximum Stage: 3.852
Drawdown Time: 00 01:15:10

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Lower Otay Gauge Data (File dated April 2009)
- Monthly Peak Values from November 1951 to February 2008

Nov-51	0.2	Feb-56	0.12	May-60	0.06	Aug-64	0
Dec-51	0.4	Mar-56	0	Jun-60	0	Sep-64	0
Jan-52	0.36	Apr-56	0.34	Jul-60	0	Oct-64	0.02
Feb-52	0.09	May-56	0.07	Aug-60	0	Nov-64	0.27
Mar-52	0.3	Jun-56	0	Sep-60	0.02	Dec-64	0.18
Apr-52	0.15	Jul-56	0.03	Oct-60	0.02	Jan-65	0.09
May-52	0	Aug-56	0	Nov-60	0.41	Feb-65	0.14
Jun-52	0.02	Sep-56	0	Dec-60	0.02	Mar-65	0.23
Jul-52	0	Oct-56	0.02	Jan-61	0.2	Apr-65	0.32
Aug-52	0	Nov-56	0	Feb-61	0.03	May-65	0
Sep-52	0	Dec-56	0.12	Mar-61	0.25	Jun-65	0.01
Oct-52	0	Jan-57	0.27	Apr-61	0	Jul-65	0
Nov-52	0.4	Feb-57	0.15	May-61	0	Aug-65	0.06
Dec-52	0.4	Mar-57	0.31	Jun-61	0	Sep-65	0.09
Jan-53	0.07	Apr-57	0.28	Jul-61	0	Oct-65	0
Feb-53	0.13	May-57	0.23	Aug-61	0.04	Nov-65	0.48
Mar-53	0.19	Jun-57	0.15	Sep-61	0	Dec-65	0.22
Apr-53	0.08	Jul-57	0	Oct-61	0.06	Jan-66	0.14
May-53	0.06	Aug-57	0	Nov-61	0.22	Feb-66	0.18
Jun-53	0.01	Sep-57	0.05	Dec-61	0.26	Mar-66	0.2
Jul-53	0	Oct-57	0.19	Jan-62	0.2	Apr-66	0
Aug-53	0	Nov-57	0.18	Feb-62	0.37	May-66	0.02
Sep-53	0	Dec-57	0.24	Mar-62	0.15	Jun-66	0
Oct-53	0	Jan-58	0.1	Apr-62	0	Jul-66	0
Nov-53	0.15	Feb-58	0.31	May-62	0.12	Aug-66	0
Dec-53	0.05	Mar-58	0.34	Jun-62	0.02	Sep-66	0
Jan-54	0.17	Apr-58	0.25	Jul-62	0	Oct-66	0.06
Feb-54	0.22	May-58	0.06	Aug-62	0	Nov-66	0
Mar-54	0.4	Jun-58	0	Sep-62	0	Dec-66	0.25
Apr-54	0.03	Jul-58	0	Oct-62	0.02	Jan-67	0.37
May-54	0.03	Aug-58	0	Nov-62	0	Feb-67	0
Jun-54	0.02	Sep-58	0.18	Dec-62	0.1	Mar-67	0.15
Jul-54	0.02	Oct-58	0	Jan-63	0.2	Apr-67	0.32
Aug-54	0	Nov-58	0.09	Feb-63	0.19	May-67	0.06
Sep-54	0	Dec-58	0.03	Mar-63	0.25	Jun-67	0.08
Oct-54	0	Jan-59	0.27	Apr-63	0.18	Jul-67	0.09
Nov-54	0.25	Feb-59	0.41	May-63	0.01	Aug-67	0
Dec-54	0.16	Mar-59	0	Jun-63	0.06	Sep-67	0
Jan-55	0.53	Apr-59	0.06	Jul-63	0	Oct-67	0
Feb-55	0.09	May-59	0.02	Aug-63	0.03	Nov-67	0.5
Mar-55	0.09	Jun-59	0	Sep-63	0.24	Dec-67	0.37
Apr-55	0.23	Jul-59	0	Oct-63	0.07	Jan-68	0.09
May-55	0.17	Aug-59	0	Nov-63	0.3	Feb-68	0.26
Jun-55	0	Sep-59	0.04	Dec-63	0.04	Mar-68	0.4
Jul-55	0.02	Oct-59	0.15	Jan-64	0.19	Apr-68	0.2
Aug-55	0.01	Nov-59	0.03	Feb-64	0.16	May-68	0
Sep-55	0	Dec-59	0.34	Mar-64	0.25	Jun-68	0
Oct-55	0	Jan-60	0.29	Apr-64	0.18	Jul-68	0.3
Nov-55	0.31	Feb-60	0.22	May-64	0.07	Aug-68	0
Dec-55	0.21	Mar-60	0.07	Jun-64	0	Sep-68	0
Jan-56	0.32	Apr-60	0.21	Jul-64	0	Oct-68	0

Lower Otay Gauge Data (File dated April 2009)
- Monthly Peak Values from November 1951 to February 2008

Nov-68	0.1	Mar-73	0.4	Jul-77	0	Nov-81	0.2
Dec-68	0.1	Apr-73	0.1	Aug-77	0.3	Dec-81	0.1
Jan-69	0.4	May-73	0.1	Sep-77	0	Jan-82	0.3
Feb-69	0.4	Jun-73	0	Oct-77	0.1	Feb-82	0.1
Mar-69	0.2	Jul-73	0	Nov-77	0.1	Mar-82	0.3
Apr-69	0.1	Aug-73	0	Dec-77	0.3	Apr-82	0.4
May-69	0.1	Sep-73	0	Jan-78	0.3	May-82	0
Jun-69	0.3	Oct-73	0	Feb-78	0.3	Jun-82	0.2
Jul-69	0	Nov-73	0.3	Mar-78	0.6	Jul-82	0
Aug-69	0.2	Dec-73	0.1	Apr-78	0.3	Aug-82	0
Sep-69	0	Jan-74	0.3	May-78	0.1	Sep-82	0.1
Oct-69	0	Feb-74	0.1	Jun-78	0	Oct-82	0
Nov-69	0.1	Mar-74	0.3	Jul-78	0	Nov-82	0.4
Dec-69	0.1	Apr-74	0.2	Aug-78	0	Dec-82	0.4
Jan-70	0.2	May-74	0.1	Sep-78	0.2	Jan-83	0.6
Feb-70	0.4	Jun-74	0	Oct-78	0.1	Feb-83	0.2
Mar-70	0.5	Jul-74	0	Nov-78	0.5	Mar-83	0.4
Apr-70	0.1	Aug-74	0	Dec-78	0.2	Apr-83	0.2
May-70	0	Sep-74	0	Jan-79	0.4	May-83	0
Jun-70	0	Oct-74	0.1	Feb-79	0.2	Jun-83	0
Jul-70	0	Nov-74	0.1	Mar-79	0.2	Jul-83	0
Aug-70	0	Dec-74	0.1	Apr-79	0	Aug-83	0.3
Sep-70	0	Jan-75	0.1	May-79	0.1	Sep-83	0.2
Oct-70	0.1	Feb-75	0.2	Jun-79	0.1	Oct-83	0.2
Nov-70	0.4	Mar-75	0.2	Jul-79	0	Nov-83	0.2
Dec-70	0.6	Apr-75	0.2	Aug-79	0.1	Dec-83	0.1
Jan-71	0.1	May-75	0.1	Sep-79	0	Jan-84	0.1
Feb-71	0.2	Jun-75	0.1	Oct-79	0.1	Feb-84	0
Mar-71	0.8	Jul-75	0	Nov-79	0.1	Mar-84	0
Apr-71	0.1	Aug-75	0	Dec-79	0.1	Apr-84	0.1
May-71	0.3	Sep-75	0	Jan-80	0.3	May-84	0
Jun-71	0	Oct-75	0.1	Feb-80	0.3	Jun-84	0
Jul-71	0	Nov-75	0.1	Mar-80	0.3	Jul-84	0.12
Aug-71	0	Dec-75	0.2	Apr-80	0.2	Aug-84	0.3
Sep-71	0	Jan-76	0	May-80	0.1	Sep-84	0
Oct-71	0.3	Feb-76	0.5	Jun-80	0	Oct-84	0.2
Nov-71	0.1	Mar-76	0.2	Jul-80	0	Nov-84	0.2
Dec-71	0.2	Apr-76	0.3	Aug-80	0	Dec-84	0.36
Jan-72	0	May-76	0.1	Sep-80	0	Jan-85	0.04
Feb-72	0.1	Jun-76	0	Oct-80	0.1	Feb-85	0.16
Mar-72	0	Jul-76	0	Nov-80	0	Mar-85	0.08
Apr-72	0.1	Aug-76	0	Dec-80	0.1	Apr-85	0
May-72	0.1	Sep-76	0.2	Jan-81	0.2	May-85	0.2
Jun-72	0.1	Oct-76	0.3	Feb-81	0.2	Jun-85	0.08
Jul-72	0	Nov-76	0.6	Mar-81	0.2	Jul-85	0
Aug-72	0	Dec-76	0.2	Apr-81	0.2	Aug-85	0
Sep-72	0.1	Jan-77	0.3	May-81	0.1	Sep-85	0.04
Oct-72	0.7	Feb-77	0.1	Jun-81	0	Oct-85	0.08
Nov-72	0.4	Mar-77	0.3	Jul-81	0	Nov-85	0.48
Dec-72	0.3	Apr-77	0.1	Aug-81	0	Dec-85	0.4
Jan-73	0.4	May-77	0.4	Sep-81	0.1	Jan-86	0.2
Feb-73	0.3	Jun-77	0	Oct-81	0.1	Feb-86	0.44

Lower Otay Gauge Data (File dated April 2009)
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Mar-86	0.2	Jul-90	0	Nov-94	0.08	Mar-99	0.12
Apr-86	0.2	Aug-90	0.04	Dec-94	0.2	Apr-99	0.2
May-86	0	Sep-90	0	Jan-95	0.4	May-99	0
Jun-86	0	Oct-90	0	Feb-95	0.32	Jun-99	0.08
Jul-86	0.04	Nov-90	0.24	Mar-95	0.28	Jul-99	0.01
Aug-86	0	Dec-90	0.12	Apr-95	0.24	Aug-99	0
Sep-86	0.28	Jan-91	0.2	May-95	0.12	Sep-99	0.04
Oct-86	0.28	Feb-91	0.36	Jun-95	0.12	Oct-99	0
Nov-86	0.12	Mar-91	0.3	Jul-95	0.04	Nov-99	0
Dec-86	0.32	Apr-91	0	Aug-95	0	Dec-99	0.03
Jan-87	0.24	May-91	0	Sep-95	0	Jan-00	0.09
Feb-87	0.24	Jun-91	0	Oct-95	0	Feb-00	0.29
Mar-87	0.04	Jul-91	0.16	Nov-95	0.04	Mar-00	0.09
Apr-87	0.4	Aug-91	0.04	Dec-95	0.08	Apr-00	0.14
May-87	0.12	Sep-91	0.04	Jan-96	0.2	May-00	0
Jun-87	0	Oct-91	0.24	Feb-96	0.24	Jun-00	0.02
Jul-87	0	Nov-91	0.04	Mar-96	0.36	Jul-00	0
Aug-87	0.04	Dec-91	0.28	Apr-96	0.08	Aug-00	0.04
Sep-87	0.24	Jan-92	0.24	May-96	0	Sep-00	0.08
Oct-87	0.24	Feb-92	0.52	Jun-96	0	Oct-00	0.24
Nov-87	0.32	Mar-92	0.4	Jul-96	0	Nov-00	0.2
Dec-87	0.1	Apr-92	0.12	Aug-96	0	Dec-00	0.04
Jan-88	0.24	May-92	0.08	Sep-96	0.04	Jan-01	0.39
Feb-88	0.68	Jun-92	0	Oct-96	0	Feb-01	0
Mar-88	0.24	Jul-92	0.04	Nov-96	0.52	Mar-01	0
Apr-88	0.32	Aug-92	0.04	Dec-96	0.12	Apr-01	0.16
May-88	0.12	Sep-92	0	Jan-97	0.3	May-01	0.04
Jun-88	0	Oct-92	0.16	Feb-97	0.16	Jun-01	0
Jul-88	0	Nov-92	0	Mar-97	0	Jul-01	0
Aug-88	0.08	Dec-92	0.36	Apr-97	0.32	Aug-01	0
Sep-88	0	Jan-93	0.44	May-97	0	Sep-01	0.01
Oct-88	0	Feb-93	0.4	Jun-97	0	Oct-01	0
Nov-88	0.12	Mar-93	0.32	Jul-97	0	Nov-01	0.15
Dec-88	0.28	Apr-93	0	Aug-97	0	Dec-01	0.07
Jan-89	0.08	May-93	0	Sep-97	0	Jan-02	0.05
Feb-89	0.08	Jun-93	0.24	Oct-97	0	Feb-02	0.07
Mar-89	0.44	Jul-93	0	Nov-97	0	Mar-02	0.15
Apr-89	0.08	Aug-93	0	Dec-97	0.4	Apr-02	0.11
May-89	0	Sep-93	0	Jan-98	0.19	May-02	0
Jun-89	0	Oct-93	0.04	Feb-98	0.76	Jun-02	0
Jul-89	0	Nov-93	0.12	Mar-98	0.29	Jul-02	0
Aug-89	0	Dec-93	0.16	Apr-98	0.15	Aug-02	0
Sep-89	0.08	Jan-94	0.12	May-98	0.26	Sep-02	0.08
Oct-89	0.1	Feb-94	0.12	Jun-98	0.01	Oct-02	0.04
Nov-89	0.04	Mar-94	0.16	Jul-98	0	Nov-02	0.21
Dec-89	0.08	Apr-94	0.12	Aug-98	0.08	Dec-02	0.14
Jan-90	0.3	May-94	0.04	Sep-98	0.04	Jan-03	0
Feb-90	0.24	Jun-94	0	Oct-98	0.84	Feb-03	0.33
Mar-90	0.16	Jul-94	0.04	Nov-98	0.24	Mar-03	0.32
Apr-90	0.04	Aug-94	0	Dec-98	0.2	Apr-03	0.33
May-90	0.16	Sep-94	0	Jan-99	0.2	May-03	0.06
Jun-90	0.24	Oct-94	0.12	Feb-99	0.12	Jun-03	0.04

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- Monthly Peak Values from November 1951 to February 2008

Jul-03	0	Nov-07	0.16
Aug-03	0	Dec-07	0.08
Sep-03	0	Jan-08	0.24
Oct-03	0	Feb-08	0.32
Nov-03	0.24		
Dec-03	0.2		
Jan-04	0.08		
Feb-04	0.6		
Mar-04	0.16		
Apr-04	0.4		
May-04	0		
Jun-04	0		
Jul-04	0		
Aug-04	0		
Sep-04	0		
Oct-04	0.48		
Nov-04	0.32		
Dec-04	0.24		
Jan-05	0.56		
Feb-05	0.48		
Mar-05	0.24		
Apr-05	0.16		
May-05	0		
Jun-05	0		
Jul-05	0		
Aug-05	0		
Sep-05	0		
Oct-05	0.08		
Nov-05	0.04		
Dec-05	0.04		
Jan-06	0.2		
Feb-06	0.28		
Mar-06	0.2		
Apr-06	0.12		
May-06	0.32		
Jun-06	0		
Jul-06	0.04		
Aug-06	0.04		
Sep-06	0		
Oct-06	0.68		
Nov-06	0.04		
Dec-06	0.2		
Jan-07	0.2		
Feb-07	0.24		
Mar-07	0.08		
Apr-07	0.28		
May-07	0		
Jun-07	0		
Jul-07	0		
Aug-07	0		
Sep-07	0.04		
Oct-07	0.04		

Lower Otay Gauge Data (File dated April 2009)
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- Monthly Peak Values from November 1951 to February 2008

Nov-51	0.28	Feb-56	0.17	May-60	0.08	Aug-64	0.00
Dec-51	0.56	Mar-56	0.00	Jun-60	0.00	Sep-64	0.00
Jan-52	0.50	Apr-56	0.47	Jul-60	0.00	Oct-64	0.03
Feb-52	0.13	May-56	0.10	Aug-60	0.00	Nov-64	0.38
Mar-52	0.42	Jun-56	0.00	Sep-60	0.03	Dec-64	0.25
Apr-52	0.21	Jul-56	0.04	Oct-60	0.03	Jan-65	0.13
May-52	0.00	Aug-56	0.00	Nov-60	0.57	Feb-65	0.19
Jun-52	0.03	Sep-56	0.00	Dec-60	0.03	Mar-65	0.32
Jul-52	0.00	Oct-56	0.03	Jan-61	0.28	Apr-65	0.44
Aug-52	0.00	Nov-56	0.00	Feb-61	0.04	May-65	0.00
Sep-52	0.00	Dec-56	0.17	Mar-61	0.35	Jun-65	0.01
Oct-52	0.00	Jan-57	0.38	Apr-61	0.00	Jul-65	0.00
Nov-52	0.56	Feb-57	0.21	May-61	0.00	Aug-65	0.08
Dec-52	0.56	Mar-57	0.43	Jun-61	0.00	Sep-65	0.13
Jan-53	0.10	Apr-57	0.39	Jul-61	0.00	Oct-65	0.00
Feb-53	0.18	May-57	0.32	Aug-61	0.06	Nov-65	0.67
Mar-53	0.26	Jun-57	0.21	Sep-61	0.00	Dec-65	0.31
Apr-53	0.11	Jul-57	0.00	Oct-61	0.08	Jan-66	0.19
May-53	0.08	Aug-57	0.00	Nov-61	0.31	Feb-66	0.25
Jun-53	0.01	Sep-57	0.07	Dec-61	0.36	Mar-66	0.28
Jul-53	0.00	Oct-57	0.26	Jan-62	0.28	Apr-66	0.00
Aug-53	0.00	Nov-57	0.25	Feb-62	0.51	May-66	0.03
Sep-53	0.00	Dec-57	0.33	Mar-62	0.21	Jun-66	0.00
Oct-53	0.00	Jan-58	0.14	Apr-62	0.00	Jul-66	0.00
Nov-53	0.21	Feb-58	0.43	May-62	0.17	Aug-66	0.00
Dec-53	0.07	Mar-58	0.47	Jun-62	0.03	Sep-66	0.00
Jan-54	0.24	Apr-58	0.35	Jul-62	0.00	Oct-66	0.08
Feb-54	0.31	May-58	0.08	Aug-62	0.00	Nov-66	0.00
Mar-54	0.56	Jun-58	0.00	Sep-62	0.00	Dec-66	0.35
Apr-54	0.04	Jul-58	0.00	Oct-62	0.03	Jan-67	0.51
May-54	0.04	Aug-58	0.00	Nov-62	0.00	Feb-67	0.00
Jun-54	0.03	Sep-58	0.25	Dec-62	0.14	Mar-67	0.21
Jul-54	0.03	Oct-58	0.00	Jan-63	0.28	Apr-67	0.44
Aug-54	0.00	Nov-58	0.13	Feb-63	0.26	May-67	0.08
Sep-54	0.00	Dec-58	0.04	Mar-63	0.35	Jun-67	0.11
Oct-54	0.00	Jan-59	0.38	Apr-63	0.25	Jul-67	0.13
Nov-54	0.35	Feb-59	0.57	May-63	0.01	Aug-67	0.00
Dec-54	0.22	Mar-59	0.00	Jun-63	0.08	Sep-67	0.00
Jan-55	0.74	Apr-59	0.08	Jul-63	0.00	Oct-67	0.00
Feb-55	0.13	May-59	0.03	Aug-63	0.04	Nov-67	0.70
Mar-55	0.13	Jun-59	0.00	Sep-63	0.33	Dec-67	0.51
Apr-55	0.32	Jul-59	0.00	Oct-63	0.10	Jan-68	0.13
May-55	0.24	Aug-59	0.00	Nov-63	0.42	Feb-68	0.36
Jun-55	0.00	Sep-59	0.06	Dec-63	0.06	Mar-68	0.56
Jul-55	0.03	Oct-59	0.21	Jan-64	0.26	Apr-68	0.28
Aug-55	0.01	Nov-59	0.04	Feb-64	0.22	May-68	0.00
Sep-55	0.00	Dec-59	0.47	Mar-64	0.35	Jun-68	0.00
Oct-55	0.00	Jan-60	0.40	Apr-64	0.25	Jul-68	0.42
Nov-55	0.43	Feb-60	0.31	May-64	0.10	Aug-68	0.00
Dec-55	0.29	Mar-60	0.10	Jun-64	0.00	Sep-68	0.00
Jan-56	0.44	Apr-60	0.29	Jul-64	0.00	Oct-68	0.00

Lower Otay Gauge Data (File dated April 2009)
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- Monthly Peak Values from November 1951 to February 2008

Nov-68	0.14	Mar-73	0.56	Jul-77	0.00	Nov-81	0.28
Dec-68	0.14	Apr-73	0.14	Aug-77	0.42	Dec-81	0.14
Jan-69	0.56	May-73	0.14	Sep-77	0.00	Jan-82	0.42
Feb-69	0.56	Jun-73	0.00	Oct-77	0.14	Feb-82	0.14
Mar-69	0.28	Jul-73	0.00	Nov-77	0.14	Mar-82	0.42
Apr-69	0.14	Aug-73	0.00	Dec-77	0.42	Apr-82	0.56
May-69	0.14	Sep-73	0.00	Jan-78	0.42	May-82	0.00
Jun-69	0.42	Oct-73	0.00	Feb-78	0.42	Jun-82	0.28
Jul-69	0.00	Nov-73	0.42	Mar-78	0.83	Jul-82	0.00
Aug-69	0.28	Dec-73	0.14	Apr-78	0.42	Aug-82	0.00
Sep-69	0.00	Jan-74	0.42	May-78	0.14	Sep-82	0.14
Oct-69	0.00	Feb-74	0.14	Jun-78	0.00	Oct-82	0.00
Nov-69	0.14	Mar-74	0.42	Jul-78	0.00	Nov-82	0.56
Dec-69	0.14	Apr-74	0.28	Aug-78	0.00	Dec-82	0.56
Jan-70	0.28	May-74	0.14	Sep-78	0.28	Jan-83	0.83
Feb-70	0.56	Jun-74	0.00	Oct-78	0.14	Feb-83	0.28
Mar-70	0.70	Jul-74	0.00	Nov-78	0.70	Mar-83	0.56
Apr-70	0.14	Aug-74	0.00	Dec-78	0.28	Apr-83	0.28
May-70	0.00	Sep-74	0.00	Jan-79	0.56	May-83	0.00
Jun-70	0.00	Oct-74	0.14	Feb-79	0.28	Jun-83	0.00
Jul-70	0.00	Nov-74	0.14	Mar-79	0.28	Jul-83	0.00
Aug-70	0.00	Dec-74	0.14	Apr-79	0.00	Aug-83	0.42
Sep-70	0.00	Jan-75	0.14	May-79	0.14	Sep-83	0.28
Oct-70	0.14	Feb-75	0.28	Jun-79	0.14	Oct-83	0.28
Nov-70	0.56	Mar-75	0.28	Jul-79	0.00	Nov-83	0.28
Dec-70	0.83	Apr-75	0.28	Aug-79	0.14	Dec-83	0.14
Jan-71	0.14	May-75	0.14	Sep-79	0.00	Jan-84	0.14
Feb-71	0.28	Jun-75	0.14	Oct-79	0.14	Feb-84	0.00
Mar-71	1.11	Jul-75	0.00	Nov-79	0.14	Mar-84	0.00
Apr-71	0.14	Aug-75	0.00	Dec-79	0.14	Apr-84	0.14
May-71	0.42	Sep-75	0.00	Jan-80	0.42	May-84	0.00
Jun-71	0.00	Oct-75	0.14	Feb-80	0.42	Jun-84	0.00
Jul-71	0.00	Nov-75	0.14	Mar-80	0.42	Jul-84	0.17
Aug-71	0.00	Dec-75	0.28	Apr-80	0.28	Aug-84	0.42
Sep-71	0.00	Jan-76	0.00	May-80	0.14	Sep-84	0.00
Oct-71	0.42	Feb-76	0.70	Jun-80	0.00	Oct-84	0.28
Nov-71	0.14	Mar-76	0.28	Jul-80	0.00	Nov-84	0.28
Dec-71	0.28	Apr-76	0.42	Aug-80	0.00	Dec-84	0.50
Jan-72	0.00	May-76	0.14	Sep-80	0.00	Jan-85	0.06
Feb-72	0.14	Jun-76	0.00	Oct-80	0.14	Feb-85	0.22
Mar-72	0.00	Jul-76	0.00	Nov-80	0.00	Mar-85	0.11
Apr-72	0.14	Aug-76	0.00	Dec-80	0.14	Apr-85	0.00
May-72	0.14	Sep-76	0.28	Jan-81	0.28	May-85	0.28
Jun-72	0.14	Oct-76	0.42	Feb-81	0.28	Jun-85	0.11
Jul-72	0.00	Nov-76	0.83	Mar-81	0.28	Jul-85	0.00
Aug-72	0.00	Dec-76	0.28	Apr-81	0.28	Aug-85	0.00
Sep-72	0.14	Jan-77	0.42	May-81	0.14	Sep-85	0.06
Oct-72	0.97	Feb-77	0.14	Jun-81	0.00	Oct-85	0.11
Nov-72	0.56	Mar-77	0.42	Jul-81	0.00	Nov-85	0.67
Dec-72	0.42	Apr-77	0.14	Aug-81	0.00	Dec-85	0.56
Jan-73	0.56	May-77	0.56	Sep-81	0.14	Jan-86	0.28
Feb-73	0.42	Jun-77	0.00	Oct-81	0.14	Feb-86	0.61

Lower Otay Gauge Data (File dated April 2009)
SCALED BY 1.39
- Monthly Peak Values from November 1951 to February 2008

Mar-86	0.28	Jul-90	0.00	Nov-94	0.11	Mar-99	0.17
Apr-86	0.28	Aug-90	0.06	Dec-94	0.28	Apr-99	0.28
May-86	0.00	Sep-90	0.00	Jan-95	0.56	May-99	0.00
Jun-86	0.00	Oct-90	0.00	Feb-95	0.44	Jun-99	0.11
Jul-86	0.06	Nov-90	0.33	Mar-95	0.39	Jul-99	0.01
Aug-86	0.00	Dec-90	0.17	Apr-95	0.33	Aug-99	0.00
Sep-86	0.39	Jan-91	0.28	May-95	0.17	Sep-99	0.06
Oct-86	0.39	Feb-91	0.50	Jun-95	0.17	Oct-99	0.00
Nov-86	0.17	Mar-91	0.42	Jul-95	0.06	Nov-99	0.00
Dec-86	0.44	Apr-91	0.00	Aug-95	0.00	Dec-99	0.04
Jan-87	0.33	May-91	0.00	Sep-95	0.00	Jan-00	0.13
Feb-87	0.33	Jun-91	0.00	Oct-95	0.00	Feb-00	0.40
Mar-87	0.06	Jul-91	0.22	Nov-95	0.06	Mar-00	0.13
Apr-87	0.56	Aug-91	0.06	Dec-95	0.11	Apr-00	0.19
May-87	0.17	Sep-91	0.06	Jan-96	0.28	May-00	0.00
Jun-87	0.00	Oct-91	0.33	Feb-96	0.33	Jun-00	0.03
Jul-87	0.00	Nov-91	0.06	Mar-96	0.50	Jul-00	0.00
Aug-87	0.06	Dec-91	0.39	Apr-96	0.11	Aug-00	0.06
Sep-87	0.33	Jan-92	0.33	May-96	0.00	Sep-00	0.11
Oct-87	0.33	Feb-92	0.72	Jun-96	0.00	Oct-00	0.33
Nov-87	0.44	Mar-92	0.56	Jul-96	0.00	Nov-00	0.28
Dec-87	0.14	Apr-92	0.17	Aug-96	0.00	Dec-00	0.06
Jan-88	0.33	May-92	0.11	Sep-96	0.06	Jan-01	0.54
Feb-88	0.95	Jun-92	0.00	Oct-96	0.00	Feb-01	0.00
Mar-88	0.33	Jul-92	0.06	Nov-96	0.72	Mar-01	0.00
Apr-88	0.44	Aug-92	0.06	Dec-96	0.17	Apr-01	0.22
May-88	0.17	Sep-92	0.00	Jan-97	0.42	May-01	0.06
Jun-88	0.00	Oct-92	0.22	Feb-97	0.22	Jun-01	0.00
Jul-88	0.00	Nov-92	0.00	Mar-97	0.00	Jul-01	0.00
Aug-88	0.11	Dec-92	0.50	Apr-97	0.44	Aug-01	0.00
Sep-88	0.00	Jan-93	0.61	May-97	0.00	Sep-01	0.01
Oct-88	0.00	Feb-93	0.56	Jun-97	0.00	Oct-01	0.00
Nov-88	0.17	Mar-93	0.44	Jul-97	0.00	Nov-01	0.21
Dec-88	0.39	Apr-93	0.00	Aug-97	0.00	Dec-01	0.10
Jan-89	0.11	May-93	0.00	Sep-97	0.00	Jan-02	0.07
Feb-89	0.11	Jun-93	0.33	Oct-97	0.00	Feb-02	0.10
Mar-89	0.61	Jul-93	0.00	Nov-97	0.00	Mar-02	0.21
Apr-89	0.11	Aug-93	0.00	Dec-97	0.56	Apr-02	0.15
May-89	0.00	Sep-93	0.00	Jan-98	0.26	May-02	0.00
Jun-89	0.00	Oct-93	0.06	Feb-98	1.06	Jun-02	0.00
Jul-89	0.00	Nov-93	0.17	Mar-98	0.40	Jul-02	0.00
Aug-89	0.00	Dec-93	0.22	Apr-98	0.21	Aug-02	0.00
Sep-89	0.11	Jan-94	0.17	May-98	0.36	Sep-02	0.11
Oct-89	0.14	Feb-94	0.17	Jun-98	0.01	Oct-02	0.06
Nov-89	0.06	Mar-94	0.22	Jul-98	0.00	Nov-02	0.29
Dec-89	0.11	Apr-94	0.17	Aug-98	0.11	Dec-02	0.19
Jan-90	0.42	May-94	0.06	Sep-98	0.06	Jan-03	0.00
Feb-90	0.33	Jun-94	0.00	Oct-98	1.17	Feb-03	0.46
Mar-90	0.22	Jul-94	0.06	Nov-98	0.33	Mar-03	0.44
Apr-90	0.06	Aug-94	0.00	Dec-98	0.28	Apr-03	0.46
May-90	0.22	Sep-94	0.00	Jan-99	0.28	May-03	0.08
Jun-90	0.33	Oct-94	0.17	Feb-99	0.17	Jun-03	0.06

Lower Otay Gauge Data (File dated April 2009)
SCALED BY 1.39
- Monthly Peak Values from November 1951 to February 2008

Jul-03	0.00	Nov-07	0.22
Aug-03	0.00	Dec-07	0.11
Sep-03	0.00	Jan-08	0.33
Oct-03	0.00	Feb-08	0.44
Nov-03	0.33		
Dec-03	0.28		
Jan-04	0.11		
Feb-04	0.83		
Mar-04	0.22		
Apr-04	0.56		
May-04	0.00		
Jun-04	0.00		
Jul-04	0.00		
Aug-04	0.00		
Sep-04	0.00		
Oct-04	0.67		
Nov-04	0.44		
Dec-04	0.33		
Jan-05	0.78		
Feb-05	0.67		
Mar-05	0.33		
Apr-05	0.22		
May-05	0.00		
Jun-05	0.00		
Jul-05	0.00		
Aug-05	0.00		
Sep-05	0.00		
Oct-05	0.11		
Nov-05	0.06		
Dec-05	0.06		
Jan-06	0.28		
Feb-06	0.39		
Mar-06	0.28		
Apr-06	0.17		
May-06	0.44		
Jun-06	0.00		
Jul-06	0.06		
Aug-06	0.06		
Sep-06	0.00		
Oct-06	0.95		
Nov-06	0.06		
Dec-06	0.28		
Jan-07	0.28		
Feb-07	0.33		
Mar-07	0.11		
Apr-07	0.39		
May-07	0.00		
Jun-07	0.00		
Jul-07	0.00		
Aug-07	0.00		

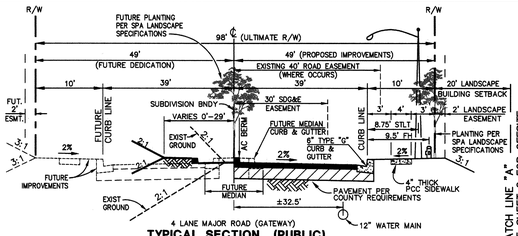
SECTION 6

Tentative Map 5405-RPL7 (Full Size)
Preliminary Grading Plan (Full Size)
Exhibits A and B (Full Size)

COUNTY OF SAN DIEGO TRACT 5405 RPL7

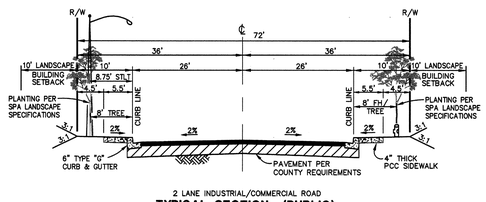
OTAY CROSSINGS COMMERCE PARK

PRELIMINARY GRADING PLAN



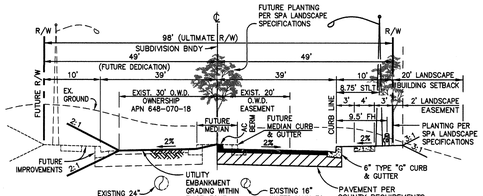
TYPICAL SECTION (PUBLIC)
OTAY MESA ROAD
NO SCALE

A 1



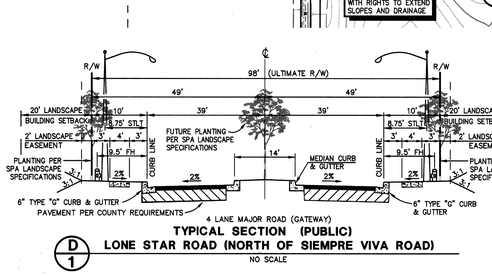
TYPICAL SECTION (PUBLIC)
INTERIOR STREETS "CALLE VENTNER"
STREETS A, B, C AND D
NO SCALE

B 1



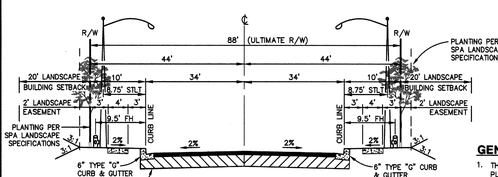
TYPICAL SECTION (PUBLIC)
ALTA ROAD (NORTH OF AIRWAY ROAD)
NO SCALE

C 1



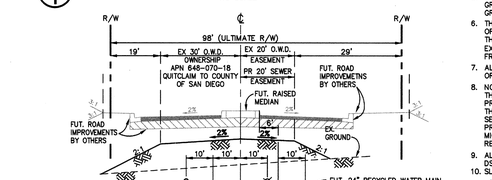
TYPICAL SECTION (PUBLIC)
LONE STAR ROAD (NORTH OF SIEMPRE VIVA ROAD)
NO SCALE

D 1



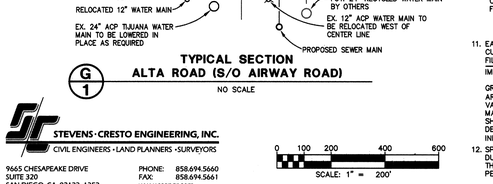
TYPICAL SECTION (PUBLIC)
SIEMPRE VIVA ROAD (EAST OF LONE STAR ROAD)
LONE STAR ROAD (SOUTH OF SIEMPRE VIA ROAD)
NO SCALE

E 1



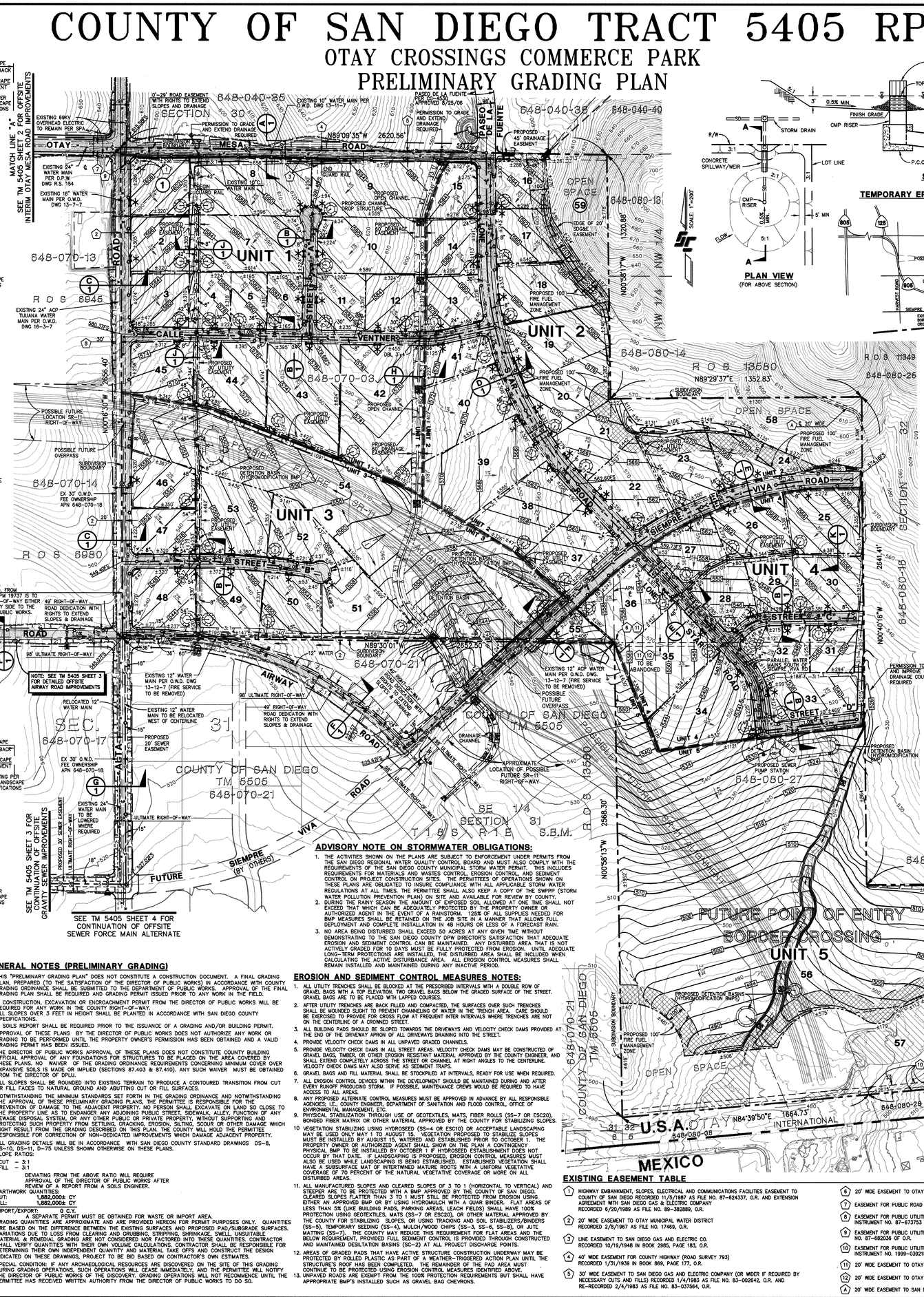
TYPICAL SECTION
ALTA ROAD (S/O AIRWAY ROAD)
NO SCALE

G 1



TYPICAL SECTION (PUBLIC)
LONE STAR ROAD (NORTH OF SIEMPRE VIVA ROAD)
NO SCALE

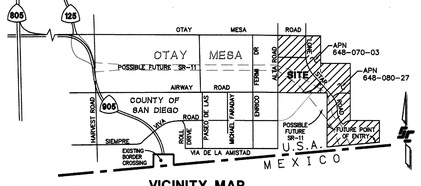
D 1



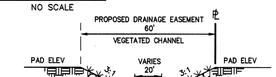
PLAN VIEW
(FOR ABOVE SECTION)

SECTION A-A
NO SCALE

TEMPORARY EROSION CONTROL DESILTING BASIN
NO SCALE

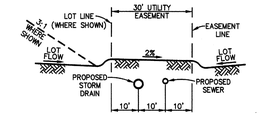


VICINITY MAP
NO SCALE



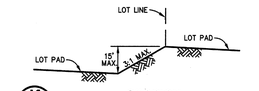
TYPICAL DRAINAGE CHANNEL SECTION
NO SCALE

H 1



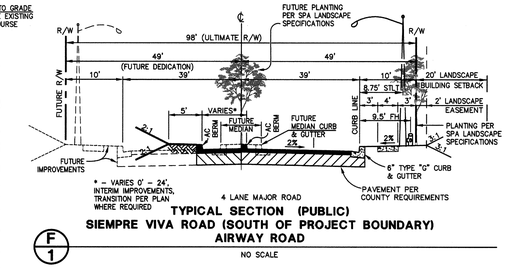
SECTION
NO SCALE

J 1



SECTION
NO SCALE

K 1



TYPICAL SECTION (PUBLIC)
SIEMPRE VIVA ROAD (SOUTH OF PROJECT BOUNDARY)
AIRWAY ROAD
NO SCALE

F 1

WORK TO BE DONE

THE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE DONE ACCORDING TO THESE PLANS AND THE SPECIFICATIONS AND STANDARD DRAWINGS OF THE COUNTY OF SAN DIEGO.

STANDARD SPECIFICATIONS:

1. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "GREEN BOOK" (LATEST EDITION), INCLUDING THE REGIONAL AND CITY OF SAN DIEGO SUPPLEMENT AMENDMENT.
2. SAN DIEGO COUNTY GRADING ORDINANCE.
3. CALIFORNIA DEPARTMENT OF TRANSPORTATION, " MANUAL OF TRAFFIC CONTROLS FOR CONSTRUCTION AND MAINTENANCE WORK ZONES," (LATEST EDITION).
4. STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS (LATEST EDITION).

STANDARD DRAWINGS:

1. THE CURRENT SAN DIEGO AREA REGIONAL STANDARD DRAWINGS.
2. STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, STANDARD PLAN (LATEST EDITION).

LEGEND

DESCRIPTION	SYMBOL
PROPOSED LOT NUMBER	1 THRU 59
SUBDIVISION BOUNDARY	
UNIT BOUNDARY	
PROPOSED LOT LINE	
PROPOSED RIGHT-OF-WAY	
FUTURE ULTIMATE RIGHT-OF-WAY	
EASEMENT LINE	
EXISTING CONTOUR	630
PROPOSED CONTOUR	630
PROPOSED SLOPE 3:1 (2:1 FOR TEMP. SLOPES)	3:1
PROPOSED PAVING	
PROPOSED SEWER MAIN W/MANHOLE	S
PROPOSED SEWER PUMP STATION	
PROPOSED SEWER FUTURE MAIN	SFM
PROPOSED PVC WATER MAIN (12" MINIMUM)	W W
PROPOSED STORM DRAIN	SD
PROPOSED STORM DRAIN INLET/CATCH BASIN	
PROPOSED STORM DRAIN CLEANOUT	
PROPOSED STORM DRAIN INTERIM DESILTING BASIN & RISER, (SHOWN FOR LOCATION ONLY- SEE CEQA PRELIMINARY HYDROLOGY/ DRAINAGE STUDY FOR RELEASE RATE CALCULATIONS AND ULTIMATE DETENTION VOLUME)	
PROPOSED OPEN DRAINAGE CHANNEL	
PROPOSED STORM DRAIN HEADWALL/ENERGY DISSIPATOR	
RUNOFF FLOW DIRECTION	
PROPOSED DRIVEWAY LOCATION	

BENCH MARK

BRASS DISK STAMPED "JM 154 1969" LOCATED 3.09 MILES EAST ALONG OTAY MESA ROAD FROM INTERSECTION OF OTAY VALLEY ROAD, 20.5' SOUTH OF CENTERLINE OF OTAY MESA ROAD AND ABOUT 170' EAST OF CENTERLINE INTERSECTION OF HARVEST ROAD. STEEL FENCEPOST MARKER LIES 1' SOUTH OF DISK. RECORD FROM COUNTY OF SAN DIEGO VERTICAL CONTROL RECORD. ELEVATION: 541.10 DATUM: U.S.C.& G.S., M.S.L.

LEGAL DESCRIPTION

THE NORTHWEST QUARTER OF SECTION 31, TOWNSHIP 18 SOUTH, RANGE 1 EAST, SAN BERNARDINO BASE AND MERIDIAN IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT, TOGETHER WITH THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER, THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER, THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER, AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER, ALL IN SECTION 32, TOWNSHIP 18 SOUTH, RANGE 1 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

OTAY SUBREGIONAL PLAN

EXISTING & PROPOSED: SPA 21 (GPA 92-04)
EAST OTAY MESA SPECIFIC PLAN SUBAREA 2

REGIONAL CATEGORY

CUDA/ECA

PARK LAND DEDICATION

NOT REQUIRED IN INDUSTRIAL ZONE

GRADING QUANTITIES

CUT: 1,882,000 CUBIC YARDS
FILL: 1,882,000 CUBIC YARDS
EXPORT: 0

APN'S

648-070-03 AND 648-080-27

*APPROX. LOCATION 30' COMMERCIAL D/W

NOTE: MINIMUM C/L SEPARATION FOR COMMERCIAL DRIVEWAYS;
200' SEPARATION ON NON-CIRCULATION ELEMENT ROADWAYS
300' SEPARATION ON CIRCULATION ELEMENT ROADWAYS

ADVISORY NOTE ON STORMWATER OBLIGATIONS:

1. THE ACTIVITIES SHOWN ON THE PLANS ARE SUBJECT TO ENFORCEMENT UNDER PERMITS FROM THE SAN DIEGO REGIONAL WATER QUALITY CONTROL BOARD AND MUST ALSO COMPLY WITH THE REQUIREMENTS OF THE SAN DIEGO COUNTY MUNICIPAL STORM WATER PERMIT. THIS INCLUDES REQUIREMENTS FOR MATERIALS AND WASTES CONTROL, EROSION CONTROL, AND SEDIMENT CONTROL ON PROJECT CONSTRUCTION SITES. THE PERMITTEES OF OPERATIONS SHOWN ON THESE PLANS ARE OBLIGATED TO INSURE COMPLIANCE WITH ALL APPLICABLE STORM WATER REGULATIONS AT ALL TIMES. THE PERMITTEE SHALL ALSO KEEP A COPY OF THE SWPPP (STORM WATER POLLUTION PREVENTION PLAN) ON SITE AND AVAILABLE FOR REVIEW BY COUNTY.
2. DURING THE RAINY SEASON THE AMOUNT OF EXPOSED SOIL ALLOWED AT ONE TIME SHALL NOT EXCEED THAT WHICH CAN BE ADEQUATELY PROTECTED BY THE PROPERTY OWNER OR AUTHORIZED AGENT IN THE EVENT OF A RAINSTORM. 125% OF ALL SUPPLIES NEEDED FOR BMP MEASURES SHALL BE RETAINED ON THE JOB SITE IN A MANNER THAT ALLOWS FULL DEPLOYMENT AND COMPLETE INSTALLATION IN 48 HOURS OR LESS OF A FORECAST RAIN.
3. NO AREA BEING DISTURBED SHALL EXCEED 50 ACRES AT ANY GIVEN TIME WITHOUT DEMONSTRATION TO THE SAN DIEGO COUNTY DPW DIRECTOR'S SATISFACTION THAT ADEQUATE EROSION AND SEDIMENT CONTROL CAN BE MAINTAINED. ANY DISTURBED AREA THAT IS NOT ACTIVELY GRADED FOR 10 DAYS MUST BE FULLY PROTECTED FROM EROSION. UNTIL ADEQUATE LONG-TERM PROTECTIONS ARE INSTALLED, THE DISTURBED AREA SHALL BE INCLUDED WHEN CALCULATING THE ACTIVE DISTURBANCE AREA. ALL EROSION CONTROL MEASURES SHALL REMAIN INSTALLED AND MAINTAINED DURING ANY INACTIVE PERIOD.

GENERAL NOTES (PRELIMINARY GRADING)

1. THIS "PRELIMINARY GRADING PLAN" DOES NOT CONSTITUTE A CONSTRUCTION DOCUMENT. A FINAL GRADING PLAN, PREPARED (TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS) IN ACCORDANCE WITH COUNTY GRADING ORDINANCE SHALL BE SUBMITTED TO THE DEPARTMENT OF PUBLIC WORKS. APPROVAL OF THE FINAL GRADING PLAN SHALL BE REQUIRED AND GRADING PERMIT ISSUED PRIOR TO ANY WORK IN THE FIELD.
2. A CONSTRUCTION, EXCAVATION OR ENCROACHMENT PERMIT FROM THE DIRECTOR OF PUBLIC WORKS WILL BE REQUIRED FOR ANY WORK IN THE COUNTY RIGHT-OF-WAY.
3. ALL SLOPES OVER 3 FEET IN HEIGHT SHALL BE PLANTED IN ACCORDANCE WITH SAN DIEGO COUNTY SPECIFICATIONS.
4. A SOILS REPORT SHALL BE REQUIRED PRIOR TO THE ISSUANCE OF A GRADING AND/OR BUILDING PERMIT.
5. APPROVAL OF THESE PLANS BY THE DIRECTOR OF PUBLIC WORKS DOES NOT AUTHORIZE ANY WORK OR GRADING TO BE PERFORMED UNTIL THE PROPERTY OWNER'S PERMISSION HAS BEEN OBTAINED AND A VALID GRADING PERMIT HAS BEEN ISSUED.
6. THE DIRECTOR OF PUBLIC WORKS APPROVAL OF THESE PLANS DOES NOT CONSTITUTE COUNTY BUILDING OFFICIAL APPROVAL OF ANY FOUNDATIONS FOR STRUCTURES TO BE PLACED ON THE AREA COVERED BY THESE PLANS. THE OWNER OF THE GRADING ORDINANCE REQUIREMENTS CONCERNING MINIMUM DEPTH OVER EXPANSIVE SOILS IS MADE OR IMPLIED (SECTIONS 87.403 & 87.410). ANY SUCH WAIVER MUST BE OBTAINED FROM THE DIRECTOR OF DPLU.
7. ALL SLOPES SHALL BE ROUNDED INTO EXISTING TERRAIN TO PRODUCE A CONTOURED TRANSITION FROM CUT OR FILL FACES TO NATURAL GROUND AND ABUTTING CUT OR FILL SURFACES.
8. NOTWITHSTANDING THE MINIMUM STANDARDS SET FORTH IN THE GRADING ORDINANCE AND NOTWITHSTANDING THE APPROVAL OF THESE PRELIMINARY GRADING PLANS, THE PERMITTEE IS RESPONSIBLE FOR THE PREVENTION OF DAMAGE TO THE ADJACENT PROPERTY. NO PERSON SHALL EXCAVATE ON LAND SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PUBLIC STREET, SIDEWALK, ALLEY, FUNCTION OF ANY SEWAGE DISPOSAL SYSTEM, OR ANY OTHER PUBLIC OR PRIVATE PROPERTY, WITHOUT SUPPORTING AND PROTECTING SUCH PROPERTY FROM SETTLING, CRACKING, EROSION, SILTING, SCOUR OR OTHER DAMAGE WHICH MIGHT RESULT FROM THE GRADING DESCRIBED ON THIS PLAN. THE COUNTY WILL HOLD THE PERMITTEE RESPONSIBLE FOR CORRECTION OF NON-DEDICATED IMPROVEMENTS WHICH DAMAGE ADJACENT PROPERTY.
9. ALL GRADING DETAILS WILL BE IN ACCORDANCE WITH SAN DIEGO COUNTY STANDARD DRAWINGS DS-8, DS-10, DS-11, D-75 UNLESS SHOWN OTHERWISE ON THESE PLANS.
10. SLOPE RATIOS:
    CUT = 3:1
    FILL = 2:1
    DEVIATING FROM THE ABOVE RATIO WILL REQUIRE APPROVAL OF THE DIRECTOR OF PUBLIC WORKS AFTER REVIEW OF A REPORT FROM A SOILS ENGINEER.
11. EARTHWORK QUANTITIES:
    CUT: 1,882,000± CY
    FILL: 1,882,000± CY
    IMPORT/EXPORT: 0 C.Y.
    A SEPARATE PERMIT MUST BE OBTAINED FOR WASTE OR IMPORT AREA.
    GRADING QUANTITIES ARE APPROXIMATE AND ARE PROVIDED HEREON FOR PERMIT PURPOSES ONLY. QUANTITIES ARE BASED ON THE DIFFERENCE BETWEEN THE EXISTING SURFACES AND PROPOSED PAD/SUBGRADE SURFACES. VARIATIONS DUE TO LOSS FROM CLEARING AND GRUBBING, STRIPPING, SHRINKAGE, SWELL, UNSUITABLE MATERIAL & REMEDIAL GRADING ARE NOT CONSIDERED NOR FACTORED INTO THESE QUANTITIES. CONTRACTOR SHALL VERIFY QUANTITIES WITH THEIR OWN VOLUME CALCULATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THEIR OWN INDEPENDENT QUANTITY AND MATERIAL TAKE OFFS AND CONSTRUCT THE DESIGN INDICATED ON THESE DRAWINGS, PROJECT TO BE BID BASED ON CONTRACTOR'S OWN ESTIMATES.
12. SPECIAL CONDITION: IF ANY ARCHAEOLOGICAL RESOURCES ARE DISCOVERED ON THE SITE OF THIS GRADING DURING GRADING OPERATIONS, SUCH OPERATIONS WILL CEASE IMMEDIATELY, AND THE PERMITTEE WILL NOTIFY THE DIRECTOR OF PUBLIC WORKS OF THE DISCOVERY. GRADING OPERATIONS WILL NOT RECOMMENCE UNTIL THE PERMITTEE HAS RECEIVED WRITTEN AUTHORITY FROM THE DIRECTOR OF PUBLIC WORKS TO DO SO.

EROSION AND SEDIMENT CONTROL MEASURES NOTES:

1. ALL UTILITY TRENCHES SHALL BE BLOCKED AT THE PRESCRIBED INTERVALS WITH A DOUBLE ROW OF GRAVEL BAGS WITH A TOP ELEVATION, TWO GRAVEL BAGS BELOW THE GRADED SURFACE OF THE STREET. GRAVEL BAGS ARE TO BE PLACED WITH LAPPED COURSES.
2. AFTER UTILITY TRENCHES ARE BACK FILLED AND COMPACTED, THE SURFACES OVER SUCH TRENCHES SHALL BE MOUNDED SLIGHT TO PREVENT CHANNELING OF WATER IN THE TRENCH AREA. CARE SHOULD BE EXERCISED TO PROVIDE FOR CROSS FLOW AT FREQUENT INTER INTERVALS WHERE TRENCHES ARE NOT ON THE CENTERLINE OF A CROWNED STREET.
3. ALL BUILDING PADS SHOULD BE SLOPED TOWARDS THE DRIVEWAYS AND VELOCITY CHECK DAMS PROVIDED AT THE END OF THE DRIVEWAY APRON OF ALL DRIVEWAYS DRAINING INTO THE STREET.
4. PROVIDE VELOCITY CHECK DAMS IN ALL UNPAVED GRADED CHANNELS.
5. PROVIDE VELOCITY CHECK DAMS IN ALL STREET AREAS. VELOCITY CHECK DAMS MAY BE CONSTRUCTED OF GRAVEL BAGS, TIMBER, OR OTHER EROSION RESISTANT MATERIAL APPROVED BY THE COUNTY ENGINEER, AND SHALL EXTEND COMPLETELY ACROSS THE STREET OR CHANNEL AT RIGHT ANGLES TO THE FLOW. VELOCITY CHECK DAMS MAY ALSO SERVE AS SEDIMENT TRAPS.
6. GRAVEL BAGS AND FILL MATERIAL SHALL BE STOCKPILED AT INTERVALS, READY FOR USE WHEN REQUIRED.
7. ALL EROSION CONTROL DEVICES WITHIN THE DEVELOPMENT SHOULD BE MAINTAINED DURING AND AFTER EVERY RUNOFF PRODUCING STORM. IF POSSIBLE, MAINTENANCE CREWS WOULD BE REQUIRED TO HAVE ACCESS TO ALL AREAS.
8. ANY PROPOSED ALTERNATE CONTROL MEASURES MUST BE APPROVED IN ADVANCE BY ALL RESPONSIBLE AGENCIES, I.E., COUNTY ENGINEER, DEPARTMENT OF SANITATION AND FLOOD CONTROL, OFFICE OF ENVIRONMENTAL MANAGEMENT, ETC.
9. PHYSICAL STABILIZATION THROUGH USE OF GEOTEXTILES, MATS, FIBER ROLLS (SS-7 OR ESC20), BONDED FIBER MATRIX, OR OTHER MATERIAL APPROVED BY THE COUNTY FOR STABILIZING SLOPES.
10. VEGETATION STABILIZING USING HYDROSEED (SS-4 OR ESC10) OR ACCEPTABLE LANDSCAPING MAY BE USED ONLY MAY 1 TO AUGUST 15. VEGETATION PROPOSED TO STABILIZE SLOPES MUST BE INSTALLED BY AUGUST 15, WATERED AND ESTABLISHED PRIOR TO OCTOBER 1. THE PROPERTY OWNER OR AUTHORIZED AGENT SHALL SHOW ON THE PLAN A CONTINGENCY PHYSICAL BMP TO BE INSTALLED BY OCTOBER 1 IF HYDROSEED ESTABLISHMENT DOES NOT OCCUR BY THAT DATE. IF LANDSCAPING IS PROPOSED, EROSION CONTROL MEASURES MUST ALSO BE USED WHILE LANDSCAPING IS BEING ESTABLISHED. ESTABLISHED VEGETATION SHALL HAVE A SUBSURFACE MAT OF INTERTWINED NATIVE ROOTS WITH A UNIFORM VEGETATIVE COVERAGE OF 70 PERCENT OF THE NATURAL VEGETATIVE COVERAGE OR MORE ON ALL DISTURBED AREAS.
11. ALL MANUFACTURED SLOPES AND CLEARED SLOPES OF 3 TO 1 (HORIZONTAL TO VERTICAL) AND STEEPER ARE TO BE PROTECTED WITH A BMP APPROVED BY THE COUNTY OF SAN DIEGO. CLEARED DIKED SLOPES FLATTER THAN 3 TO 1 MUST STILL BE PROTECTED FROM EROSION USING EITHER AN APPROVED BMP OR BY USING HYDROMULCH WITH A GUAR BINDER. FLAT AREAS OF LESS THAN 5% (LIKE BUILDING PADS, PARKING AREAS, LEACH FIELDS) SHALL HAVE 100% PROTECTION USING GEOTEXTILES, MATS (SS-7 OR ESC20), OR OTHER MATERIAL APPROVED BY THE COUNTY FOR STABILIZING SLOPES, OR USING TRACKING AND SOIL STABILIZERS/BINDERS (SS-5), TEMPORARY SEEDING (SS-4), MULCH-WOOD CHIPS (SS-3, SS-6, SS-8), OR JUTE MATTING (SS-7). THE COUNTY MAY REDUCE THIS REQUIREMENT FOR FLAT AREAS AND THE BELOW REQUIREMENT, PROVIDED FULL SEDIMENT CONTROL IS PROVIDED THROUGH CONSTRUCTED AND MAINTAINED DESILTATION BASINS (SC-2) AT ALL PROJECT DISCHARGE POINTS.
12. AREAS OF GRADED PADS THAT HAVE ACTIVE STRUCTURE CONSTRUCTION UNDERWAY MAY BE PROTECTED BY ROLLED PLASTIC AS PART OF A WEATHER-TRIGGERED ACTION PLAN UNTIL THE STRUCTURE'S ROOF HAS BEEN COMPLETED. THE REMAINDER OF THE PAD AREA MUST CONTINUE TO BE PROTECTED USING EROSION CONTROL MEASURES IDENTIFIED ABOVE.
13. UNPAVED ROADS ARE EXEMPT FROM THE 100% PROTECTION REQUIREMENTS BUT SHALL HAVE APPROPRIATE BMP'S INSTALLED SUCH AS GRAVEL BAG CHEVRONS.

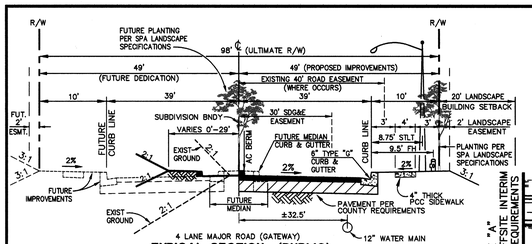
EXISTING EASEMENT TABLE

1. HIGHWAY EMBANKMENT, SLOPES, ELECTRICAL AND COMMUNICATIONS FACILITIES EASEMENT TO COUNTY OF SAN DIEGO RECORDED 11/3/1987 AS FILE NO. 87-624337, O.R. AND EXTENSION AGREEMENT WITH SAN DIEGO GAS & ELECTRIC COMPANY RECORDED 6/20/1989 AS FILE NO. 89-382889, O.R.
2. 20' WIDE EASEMENT TO OTAY MUNICIPAL WATER DISTRICT RECORDED 2/8/1967 AS FILE NO. 17469, O.R.
3. LINE EASEMENT TO SAN DIEGO GAS AND ELECTRIC CO. RECORDED 10/19/1948 IN BOOK

COUNTY OF SAN DIEGO TRACT 5405 RPL7

OTAY CROSSINGS COMMERCE PARK

TENTATIVE MAP

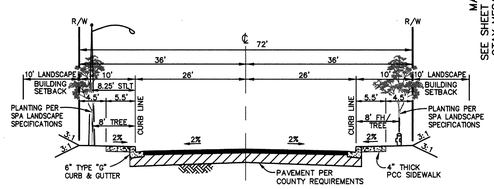


4 LANE MAJOR ROAD (GATEWAY)

TYPICAL SECTION (PUBLIC)

OTAY MESA ROAD

A/1 NO SCALE

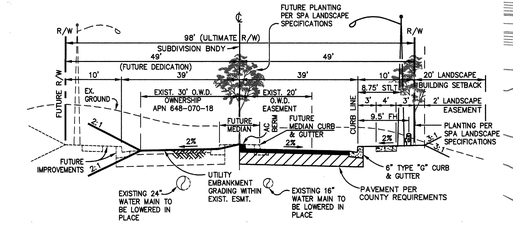


2 LANE INDUSTRIAL/COMMERCIAL ROAD

TYPICAL SECTION (PUBLIC)

INTERIOR STREETS "CALLE VENTNER" STREETS A, B, C AND D

B/1 NO SCALE

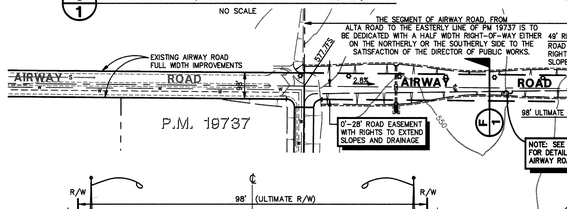


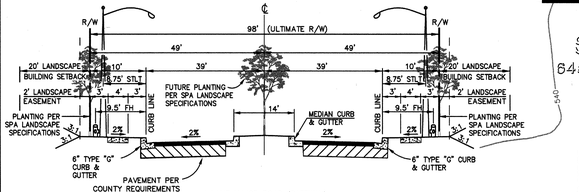
4 LANE MAJOR ROAD

TYPICAL SECTION (PUBLIC)

ALTA ROAD (NORTH OF AIRWAY ROAD)

C/1 NO SCALE





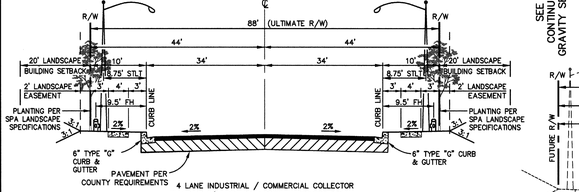
4 LANE MAJOR ROAD (GATEWAY)

TYPICAL SECTION (PUBLIC)

SIEMPRE VIVA ROAD (WEST OF LONE STAR ROAD

LONE STAR ROAD (NORTH OF SIEMPRE VIVA ROAD)

D/1 NO SCALE



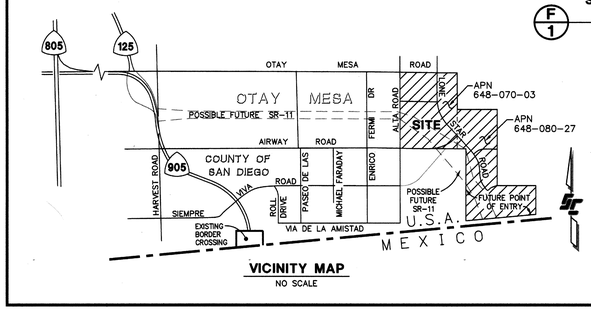
4 LANE INDUSTRIAL / COMMERCIAL COLLECTOR

TYPICAL SECTION (PUBLIC)

SIEMPRE VIVA ROAD (EAST OF LONE STAR ROAD)

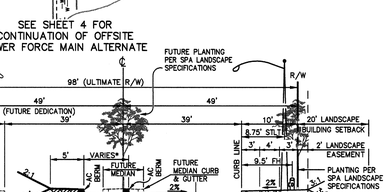
LONE STAR ROAD (SOUTH OF SIEMPRE VIA ROAD)

E/1 NO SCALE



VICINITY MAP

NO SCALE



* = VARIES 0' - 24', INTERIM IMPROVEMENTS, TRANSITION PER PLAN WHERE REQUIRED

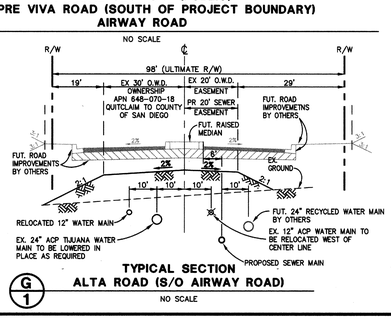
4 LANE MAJOR ROAD

TYPICAL SECTION (PUBLIC)

SIEMPRE VIVA ROAD (SOUTH OF PROJECT BOUNDARY)

AIRWAY ROAD

F/1 NO SCALE



TYPICAL SECTION

ALTA ROAD (S/O AIRWAY ROAD)

G/1 NO SCALE

NOTE

RECYCLED WATER MAINS ARE REQUIRED OF THIS SUBDIVISION AND WILL BE LOCATED TO THE SATISFACTION OF THE OTAY MUNICIPAL WATER DISTRICT.

TYPICAL DRAINAGE CHANNEL SECTION

H/1 NO SCALE

SECTION

J/1 NO SCALE

ZONING

OTAY MESA SPECIFIC PLAN - SUBAREA 2	
ZONE (MIXED INDUSTRIAL)	S-88
USE REGULATIONS	S-88
ANIMAL REGULATIONS	---
DEVELOPMENT REGULATIONS: DENSITY	---
LOT SIZE	30,000 S.F.
BUILDING TYPE	W
MAXIMUM FLOOR AREA RATIO	---
FLOOR AREA RATIO	0.4
MAX. BUILD. HEIGHT	Q (60')
MAX. BUILD. COVERAGE	0.40
MIN. BUILD. SETBACKS	
PRIME ARTERIAL RD.	35'
MAJOR RD.	35'
COLLECTOR OR LESS	25'
INTERIOR YARD SETBACK	15'
REMAINING YARD SETBACKS	--- [2]
SPECIAL AREA REGULATIONS	B, POR, Q [1]

NOTES:

[1] COMMUNITY DESIGN REVIEW AREA REGULATIONS/SENSITIVE AREA RESOURCE REGULATIONS

[2] SETBACKS TO BE ESTABLISHED DURING PLANNED DEVELOPMENT, USE PERMIT, OR SITE PLAN REVIEW PROCEDURE.

LOT AREAS (GROSS=NET)

NO.	NET (Ac.)	NO.	NET (Ac.)	NO.	NET (Ac.)
1	2.3	21	2.5	41	1.6
2	2.2	22	2.8	42	7.5
3	2.2	23	3.3	43	5.0
4	1.6	24	2.8	44	3.6
5	1.4	25	3.3	45	2.5
6	1.4	26	2.7	46	2.1
7	4.3	27	2.2	47	2.0
8	4.6	28	2.1	48	2.7
9	4.7	29	1.6	49	3.0
10	4.1	30	2.8	50	2.6
11	1.9	31	1.7	51	3.6
12	2.3	32	1.9	52	2.4
13	2.0	33	2.9	53	3.7
14	1.9	34	4.6	54*	23.7
15	1.6	35	4.0	55*	0.9
16	1.9	36	3.1	56	59.1
17	2.5	37	2.9	57*	36.3
18	3.4	38	3.7	58*	6.7
19	3.6	39	4.9	59*	4.1
20	3.0	40	3.7		

TOTAL LOT AREA	= 285.5 AC.
ON SITE ROAD AREA	20.4 AC.
OTAY MESA ROAD AREA	2.3 AC.
ALTA ROAD AREA	2.9 AC.
AIRWAY ROAD AREA	0.4 AC.
TOTAL PROJECT BOUNDARY AREA	= 311.5 AC.

* LOT IS NOT FOR DEVELOPMENT, SET ASIDE FOR POSSIBLE FUTURE SR-11 AND FOR USE AS TEMPORARY TRUCK PARKING OR AS OPEN SPACE (LOTS 57-59).

ASSESSOR'S PARCEL NUMBERS & TAX RATE AREA TABLE

PARCEL NUMBER	TAX RATE AREA
648-070-03	84035
648-080-27	84035

NOTE: SEE "PRELIMINARY ROUTE STUDIES FOR CIRCULATION ELEMENT ROADWAY ALIGNMENT AND GRADES CORRESPONDING TO THE DESIGN REPRESENTED HEREON"

SLOPE ANALYSIS TABLE

0-15% SLOPES	299.0± AC.
15-25% SLOPES	10.4± AC.
25-50% SLOPES	1.8± AC.
50% OR GREATER SLOPES	0.0± AC.
TOTAL	311.3± AC.

EXISTING EASEMENT TABLE

(1) HIGHWAY EMBANKMENT, SLOPES, ELECTRICAL AND COMMUNICATIONS FACILITIES EASEMENT TO COUNTY OF SAN DIEGO RECORDED 11/5/1987 AS FILE NO. 87-624337, O.R. AND EXTENSION AGREEMENT WITH SAN DIEGO GAS & ELECTRIC COMPANY RECORDED 6/20/1989 AS FILE NO. 89-382889, O.R.

(2) 20' WIDE EASEMENT TO OTAY MUNICIPAL WATER DISTRICT RECORDED 2/8/1967 AS FILE NO. 17469, O.R.

(3) LINE EASEMENT TO SAN DIEGO GAS AND ELECTRIC CO. RECORDED 10/19/1948 IN BOOK 2985, PAGE 183, O.R.

(4) 40' WIDE EASEMENT FOR COUNTY HIGHWAY (ROAD SURVEY 793) RECORDED 1/31/1939 IN BOOK 869, PAGE 177, O.R.

(5) 30' WIDE EASEMENT TO SAN DIEGO GAS AND ELECTRIC COMPANY (OR WIDER IF REQUIRED BY NECESSARY CUTS AND FILLS) RECORDED 1/4/1983 AS FILE NO. 83-002642, O.R. AND RE-RECORDED 2/4/1983 AS FILE NO. 83-037564, O.R.

(6) 20' WIDE EASEMENT TO OTAY MUNICIPAL WATER DISTRICT RECORDED 2/8/1967 AS FILE NO. 17470, O.R.

(7) EASEMENT FOR PUBLIC ROAD AND INCIDENTAL PURPOSES, RECORDED 3/8/1900 IN BOOK 257, PAGE 500 OF DEEDS.

(8) EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN FAVOR OF SAN DIEGO GAS & ELECTRIC, RECORDED 12/7/1987 AS INSTRUMENT NO. 87-673753 OF O.R.

(9) EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN FAVOR OF PACIFIC BELL, RECORDED 12/10/1987 AS INSTRUMENT NO. 87-682036 OF O.R.

(10) EASEMENT FOR PUBLIC UTILITIES AND INCIDENTAL PURPOSES IN FAVOR OF SAN DIEGO GAS & ELECTRIC, RECORDED 6/4/1999 AS INSTRUMENT NO. 1999-0392159 OF O.R.

(11) 20' WIDE EASEMENT TO OTAY MUNICIPAL WATER DISTRICT RECORDED 2/15/1967 AS FILE NO. 20418, O.R.

(12) 20' WIDE EASEMENT TO OTAY MUNICIPAL WATER DISTRICT RECORDED 2/8/1967 AS FILE NO. 17468, O.R.

(A) 20' WIDE EASEMENT TO SAN DIEGO GAS AND ELECTRIC COMPANY, RECORDED 9/24/1985 AS FILE NO. 85-352966, O.R.

GENERAL NOTES

1. EXISTING ZONING - S-88
2. PROPOSED ZONING - S-88
3. GROSS ACREAGE WITHIN SUBDIVISION BOUNDARY: 311.5 ACRES, NET AREA MINUS ROAD EASEMENTS: 285.5 ACRES; PROPOSED ON-SITE STREETS: 26.0 ACRES
4. TOTAL NUMBER OF LOTS: 59 MIXED INDUSTRIAL LOTS. MINIMUM INDUSTRIAL LOT SIZE IS 0.90 ACRES.
5. CONTOUR INTERVAL OF 2 FEET (MEAN SEA LEVEL DATUM).
6. SPECIAL ASSESSMENT ACT PROCEEDINGS - MAY BE REQUESTED FOR THIS PROJECT.
7. IMPROVEMENTS, EASEMENTS AND DEDICATIONS ARE AS REQUIRED BY THE COUNTY ENGINEER.
8. UTILITIES:
   A. SEWER - EAST OTAY MESA SEWER MAINTENANCE DISTRICT
   B. WATER - OTAY WATER DISTRICT
   C. GAS & ELECTRIC - SAN DIEGO GAS & ELECTRIC COMPANY
   D. TELEPHONE - AT&T CALIFORNIA PUBLIC WORKS
9. FIRE PROTECTION - SAN DIEGO COUNTY RURAL FIRE DISTRICT
10. SCHOOLS: SAN YSIDRO SCHOOL DISTRICT
    SWEETWATER UNION HIGH SCHOOL DISTRICT
11. ALL PROPOSED UTILITIES TO BE UNDERGROUND.
12. ALL EXISTING EASEMENTS NOT REMAINING IN USE SHALL BE VACATED PRIOR TO RECORDATION OF THE FINAL MAP(S) SUBJECT TO THE SATISFACTION OF THE DIRECTOR OF PUBLIC WORKS.
13. GENERAL PLAN REGIONAL CATEGORY: CUDA/ECA.
14. EXISTING TOPOGRAPHY WAS COMPILED USING PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHY, BY PHOTO GEODEDTIC CORP. DATED: 12-24-03
15. THE FOLLOWING WAIVERS FROM THE SUBDIVISION ORDINANCE DESIGN STANDARDS ARE REQUESTED: DESIGN EXCEPTION FOR DRIVEWAYS ALONG LONE STAR ROAD (A GATEWAY ROAD THROUGH THE SUBDIVISION)
16. LAMBERT COORDINATES: 138-1785
17. DRAINAGE: STREETS & STORM DRAIN AS REQUIRED.
18. ALL ON-SITE STREETS WILL BE PUBLIC.
19. THIS IS A SOLAR SUBDIVISION AS REQUIRED BY SECTION 81.401 (n) OF THE SUBDIVISION ORDINANCE. ALL LOTS HAVE AT LEAST 100 SQ. FT. OF UNOBSTRUCTED ACCESS TO SUNLIGHT ON THE BUILDABLE PORTION OF THE LOT.
20. THIS PROJECT IS A MULTI-UNIT SUBDIVISION. (5 UNITS) MULTIPLE FINAL MAPS MAY BE FILED PURSUANT TO SECTION 66456.1 OF THE SUBDIVISION MAP ACT.
21. STREET LIGHTS WILL BE INSTALLED TO COMPLY WITH THE REQUIREMENTS AS SPECIFIED BY THE COUNTY STANDARDS.
22. STORM WATER DETENTION WILL BE PROVIDED IN ACCORDANCE COUNTY REQUIREMENTS.
23. THIS PLAN IS PROVIDED TO ALLOW FOR FULL AND ADEQUATE DISCRETIONARY REVIEW OF A PROPOSED DEVELOPMENT PROJECT. THE PROPERTY OWNER ACKNOWLEDGES THAT ACCEPTANCE OR APPROVAL OF THIS PLAN DOES NOT CONSTITUTE AN APPROVAL TO PERFORM ANY GRADING SHOWN HEREON, AND AGREES TO OBTAIN A VALID GRADING PERMIT AND PERMISSIONS BEFORE COMMENCING SUCH ACTIVITY.

LEGEND

DESCRIPTION	SYMBOL
PROPOSED LOT NUMBER	1 THRU 59
SUBDIVISION BOUNDARY	
UNIT BOUNDARY	UNIT 1 / UNIT 2
PROPOSED LOT LINE	
FUTURE ULTIMATE RIGHT-OF-WAY	
EASEMENT LINE	
PROPOSED PVC WATER MAIN (12" MINIMUM)	W
PROPOSED SEWER MAIN W/MANHOLE	S
PROPOSED SEWER PUMP STATION	PS
PROPOSED SEWER FUTURE MAIN	SFM
PROPOSED STORM DRAIN	SD
PROPOSED STORM DRAIN INLET/CATCH BASIN	
PROPOSED STORM DRAIN CLEANOUT	
PROPOSED STORM DRAIN INTERIM DESILTING BASIN & RISER, (SHOWN FOR LOCATION ONLY- SEE CEQA PRELIMINARY HYDROLOGY/ DRAINAGE STUDY FOR RELEASE RATE CALCULATIONS AND ULTIMATE DETENTION VOLUME)	
PROPOSED STORM DRAIN HEADWALL/ENERGY DISSIPATOR	
EXISTING CONTOUR	630

BENCH MARK

BRASS DISK STAMPED "M 154 1969" LOCATED 3.09 MILES EAST ALONG OTAY MESA ROAD FROM INTERSECTION OF OTAY VALLEY ROAD, 20.5' SOUTH OF CENTERLINE OF OTAY MESA ROAD AND ABOUT 170' EAST OF CENTERLINE INTERSECTION OF HARVEST ROAD. STEEL FENCEPOST MARKER LIES 1' SOUTH OF DISK. RECORD FROM COUNTY OF SAN DIEGO VERTICAL CONTROL RECORD. ELEVATION: 541.10 DATUM: U.S.C.& G.S., M.S.L.

LEGAL DESCRIPTION

THE NORTHWEST QUARTER OF SECTION 31, TOWNSHIP 18 SOUTH, RANGE 1 EAST, SAN BERNARDINO BASE AND MERIDIAN IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT, TOGETHER WITH THE SOUTHWEST QUARTER OF THE NORTHWEST QUARTER, THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER, THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER, AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER, ALL IN SECTION 32, TOWNSHIP 18 SOUTH, RANGE 1 EAST, SAN BERNARDINO BASE AND MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

OTAY SUBREGIONAL PLAN

EXISTING & PROPOSED: SPA 21 (GPA 92-04)
EAST OTAY MESA SPECIFIC PLAN SUBAREA 2

REGIONAL CATEGORY

CUDA/ECA

PARK LAND DEDICATION

NOT REQUIRED IN INDUSTRIAL ZONE

GRADING QUANTITIES

CUT: 1,882,000 CUBIC YARDS
FILL: 1,882,000 CUBIC YARDS
EXPORT: 0

MINIMUM ON-LOT BMPS REQUIRED TO SATISFY INTERIM HYDROMODIFICATION CRITERIA

SEE TABLE ON SHEET 3

KEARNY
Real Estate Company

OWNER/SUBDIVIDER

KEARNY REAL ESTATE COMPANY
655 WEST BROADWAY, SUITE 1800
SAN DIEGO, CA 92101
PHONE: 619-702-8130
FAX: 619-702-7812

KEARNY PCCP OTAY 311, LLC.

BY: _____ 3/29/10
JOHN V. BRAGG JR. / DATE:
VICE PRESIDENT

SCALE: 1" = 200'

STEVENS·CRESTO ENGINEERING, INC.
CIVIL ENGINEERS • LAND PLANNERS • SURVEYORS

9665 CHESAPEAKE DRIVE
SUITE 320
SAN DIEGO, CA 92123-1352
PHONE: 858.694.5660
FAX: 858.694.5661
www.scengr.com

ENGINEER OF WORK

STEVENS CRESTO ENGINEERING, INC.
9665 CHESAPEAKE DRIVE, SUITE 320
SAN DIEGO, CA 92123-1352
PHONE: (858) 694-5660
FAX: (858) 694-5661

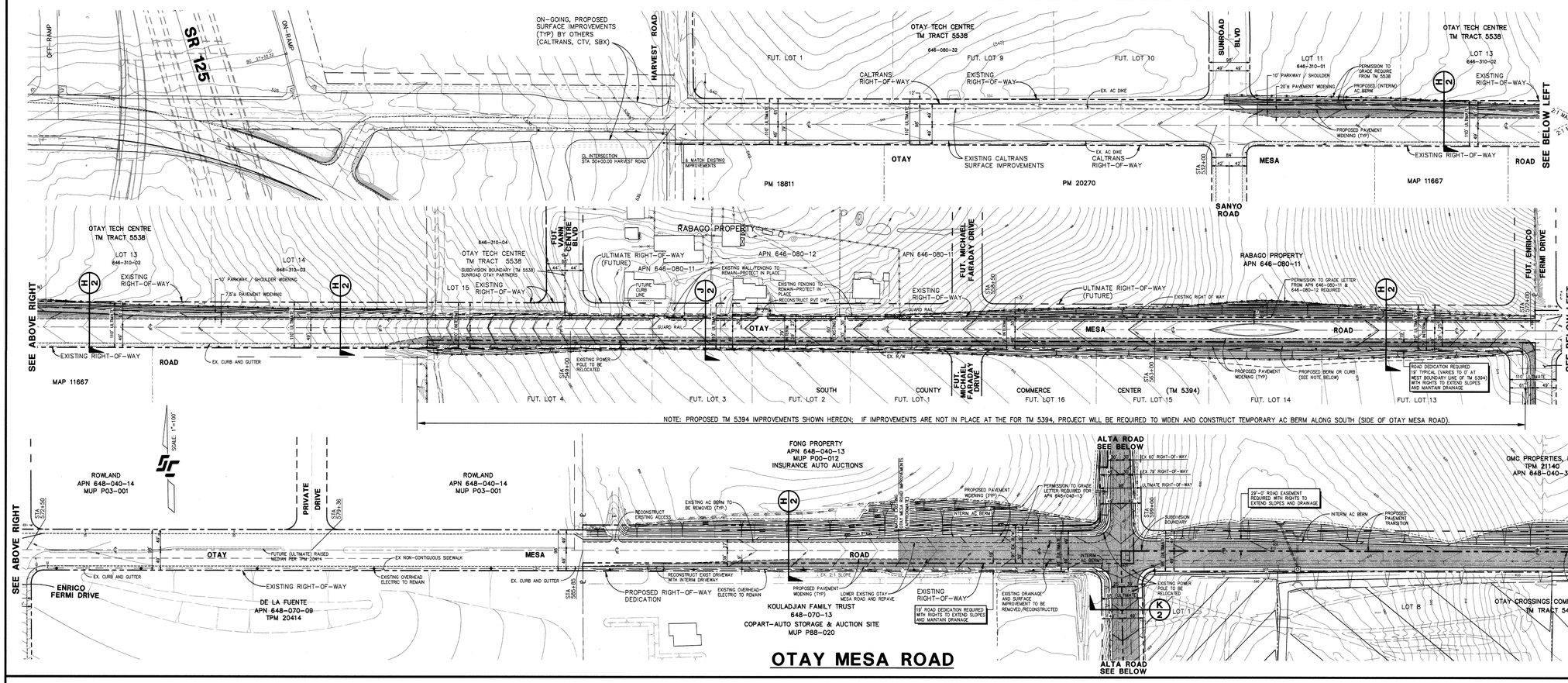
REGISTERED PROFESSIONAL ENGINEER
MARK E. STEVENS
No. 35502
Exp. 9-30-11
CIVIL
STATE OF CALIFORNIA

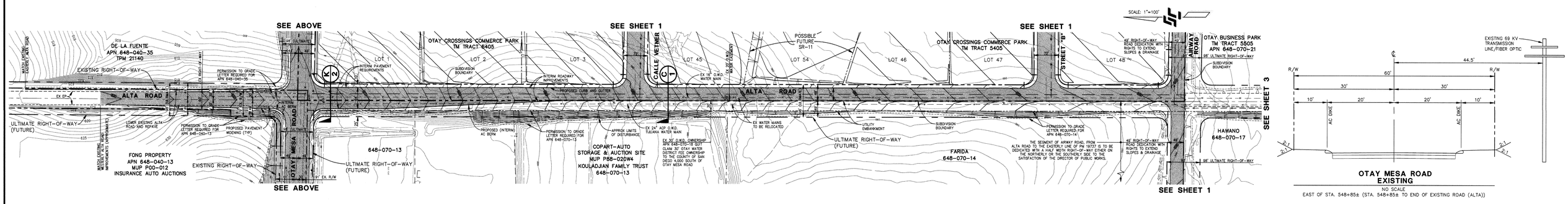
MARK E. STEVENS / DATE 3/30/10
R.C.E. 35502

DWG: Last Modified: 3/29/2010 9:15:16 AM PDT
Plotted: Mar 29, 2010 9:15:16 AM PDT
Xrefs: 0000000000000000000000000000000000000000000000000000000000000000

COUNTY OF SAN DIEGO TRACT 5405 RPL7

OTAY CROSSINGS COMMERCE PARK
TENTATIVE MAP
INTERIM OFFSITE ROAD IMPROVEMENTS





ALTA ROAD

ENRICO FERMI DRIVE

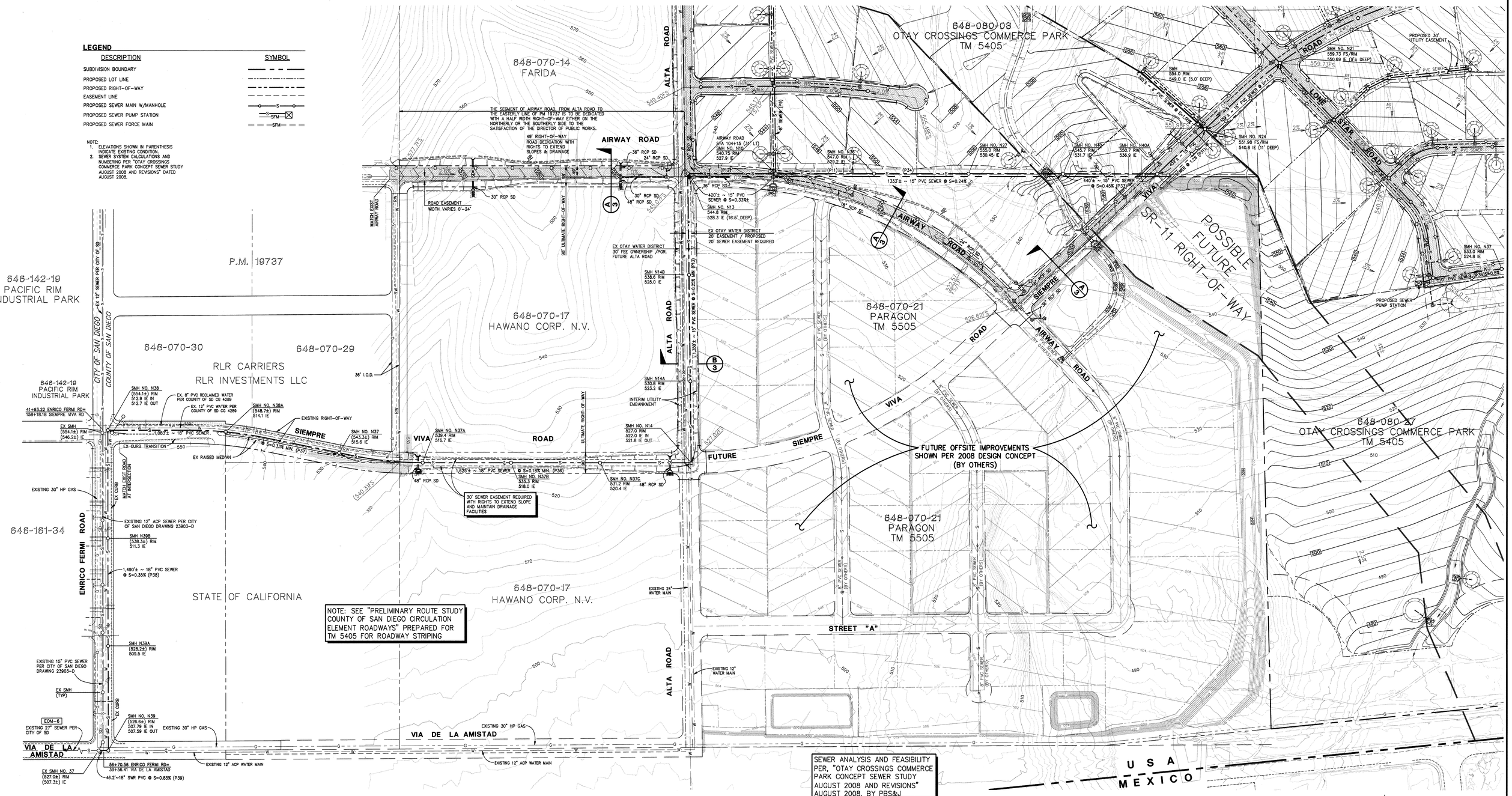
ENGINEER OF WORK
STEVENS CRESTO ENGINEERING, INC.
9665 CHESAPEAKE DRIVE, SUITE 320
SAN DIEGO, CA 92123-1352
PHONE: (858) 694-5660
FAX: (858) 694-5661

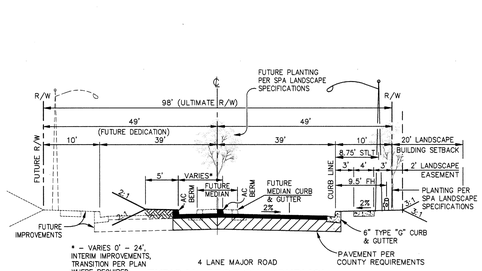
REGISTERED PROFESSIONAL ENGINEER MARK E. STEVENS No. 35502 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

MARK E. STEVENS R.C.E. 35502 — DATE 3/30/10

COUNTY OF SAN DIEGO TRACT 5405 RPL7

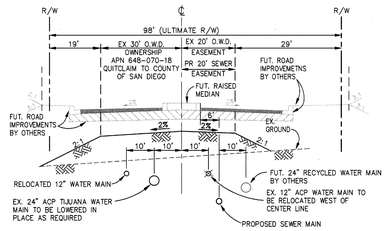
OTAY CROSSINGS COMMERCE PARK
TENTATIVE MAP
PROJECT SEWER OUTFALL (OPTION A GRAVITY), OFFSITE ROADWAY IMPROVEMENTS AND ON-LOT HYDROMODIFICATION BMP REQUIREMENTS





TYPICAL SECTION (PUBLIC)
SIEMPRE VIVA ROAD (SOUTH OF PROJECT BOUNDARY)
AIRWAY ROAD
NO SCALE

A/3



TYPICAL SECTION
ALTA ROAD (S/O AIRWAY ROAD)
NO SCALE

B/3

SCALE: 1"=100'

0 75 150 300 450
SCALE: 1" = 150'

MINIMUM ON-LOT BMPS REQUIRED TO SATISFY INTERIM HYDROMODIFICATION CRITERIA

LOT NUMBER	LOT ACREAGE (Ac)	MINIMUM REQUIRED AREA OF BIO-RETENTION SWALES[1,3,4] (SF)	MINIMUM REQUIRED VOLUME OF UNDERGROUND DETENTION[2,3,4] (Ac-Ft)	LOT NUMBER	LOT ACREAGE (Ac)	MINIMUM REQUIRED AREA OF BIO-RETENTION SWALES[1,3,4] (SF)	MINIMUM REQUIRED VOLUME OF UNDERGROUND DETENTION[2,3,4] (Ac-Ft)	LOT NUMBER	LOT ACREAGE (Ac)	MINIMUM REQUIRED AREA OF BIO-RETENTION SWALES[1,3,4] (SF)	MINIMUM REQUIRED VOLUME OF UNDERGROUND DETENTION[2,3,4] (Ac-Ft)	LOT NUMBER	LOT ACREAGE (Ac)	MINIMUM REQUIRED AREA OF BIO-RETENTION SWALES[1,3,4] (SF)	MINIMUM REQUIRED VOLUME OF UNDERGROUND DETENTION[2,3,4] (Ac-Ft)
LOT 1	2.32	5,093	0.40	LOT 16	1.93	4,207	0.33	LOT 31	1.71	3,431	0.22	LOT 44	3.64	7,990	0.62
LOT 2	2.24	4,917	0.38	LOT 17	2.46	5,362	0.42	LOT 32	1.92	3,852	0.25	LOT 45	2.46	5,400	0.42
LOT 3	2.23	4,895	0.38	LOT 18	3.43	7,476	0.58	LOT 33	2.89	5,798	0.37	LOT 46	2.13	5,018	0.42
LOT 4	1.6	3,512	0.27	LOT 19	3.61	7,869	0.61	LOT 34	4.6	9,229	0.60	LOT 47	2.03	4,782	0.40
LOT 5	1.39	3,051	0.24	LOT 20	2.98	6,496	0.51	LOT 35	4.02	8,066	0.52	LOT 48	2.69	5,320	0.48
LOT 6	1.38	3,029	0.24	LOT 21	2.53	5,515	0.43	LOT 36 EAST	2.21	4,434	0.29	LOT 49	3.02	5,973	0.53
LOT 7	4.3	9,439	0.74	LOT 22	2.77	5,558	0.36	LOT 36 WEST	0.9	1,962	0.15	LOT 50	2.56	5,063	0.45
LOT 8	4.6	10,098	0.79	LOT 23	3.34	6,701	0.43	LOT 37	2.94	6,408	0.50	LOT 51 EAST	2.37	4,653	0.52
LOT 9	4.25	9,264	0.72	LOT 24	2.76	5,538	0.36	LOT 38	3.69	8,043	0.63	LOT 51 WEST	1.18	2,334	0.21
LOT 10	3.66	7,978	0.62	LOT 25	3.28	6,581	0.43	LOT 39	4.89	10,659	0.83	LOT 52	2.42	5,701	0.47
LOT 11	1.88	4,127	0.32	LOT 26	2.66	5,337	0.34	LOT 40	3.74	8,152	0.64	LOT 53	3.71	8,740	0.72
LOT 12	1.88	4,098	0.32	LOT 27	2.17	4,354	0.28	LOT 41	1.55	3,379	0.26	LOT 55	0.87	1,896	0.15
LOT 13	1.97	4,294	0.34	LOT 28	2.12	4,254	0.27	LOT 42 EAST	3.1	6,087	0.67				
LOT 14	1.95	4,250	0.33	LOT 29	1.58	3,170	0.20	LOT 42 WEST	3.21	7,046	0.55				
LOT 15	1.57	3,422	0.27	LOT 30	2.76	5,538	0.36	LOT 43	4.98	10,932	0.85				

[1]BASED ON A SWALE THAT IS 4 FT DEEP, WITH POROSITY OF 0.33, AND 2 FT OF FREEBOARD. SWALE AREA IS THE AREA OF THE BIO-RETENTION FACILITY THAT PROVIDES TREATMENT. DUE TO DESIGN PARAMETERS OF THE ACTUAL FACILITY CONSTRUCTED, OR SPECIFIC SITE DESIGN REQUIREMENTS, ADDITIONAL AREA MAY BE REQUIRED.

[2]VOLUMES PROVIDED DO NOT INCLUDE THE ADDITIONAL VOLUME/ HEAD THAT WILL BE NECESSARY FOR FREEBOARD AND AN EMERGENCY SPILLWAY.

[3]ON-LOT BMPS MUST BE PLACED IN A LOCATION ON THE INDIVIDUAL LOT THAT MAXIMIZES THE CAPTURE OF THE ON-SITE RUNOFF.

[4]IF, DURING DEVELOPMENT OF EACH LOT, THE PROVIDED MINIMUM VALUES ARE NOT USED, ADDITIONAL ANALYSIS WILL NEED TO BE PROVIDED TO DEMONSTRATE THAT THE CHOSEN ALTERNATIVE BMPS ARE COMPARABLE IN ADDRESSING THE HYDROMODIFICATION CRITERIA FOR THE SUBDIVISION AS A WHOLE. THIS ANALYSIS WILL BE PROVIDED DURING THE SITE PLAN REVIEW PROCESS MANDATED BY THE EAST OTAY MESA SPECIFIC PLAN FOR THE DEVELOPMENT OF EACH LOT.

ENGINEER OF WORK
STEVENS CRESTO ENGINEERING, INC.
9665 CHESAPEAKE DRIVE, SUITE 320
SAN DIEGO, CA 92123-1352
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FAX: (858) 694-5661

REGISTERED PROFESSIONAL ENGINEER
MARK E. STEVENS
No. 35502
Exp. 9-30-11
CIVIL
STATE OF CALIFORNIA

MARK E. STEVENS
R.C.E. 35502

3/30/10
DATE

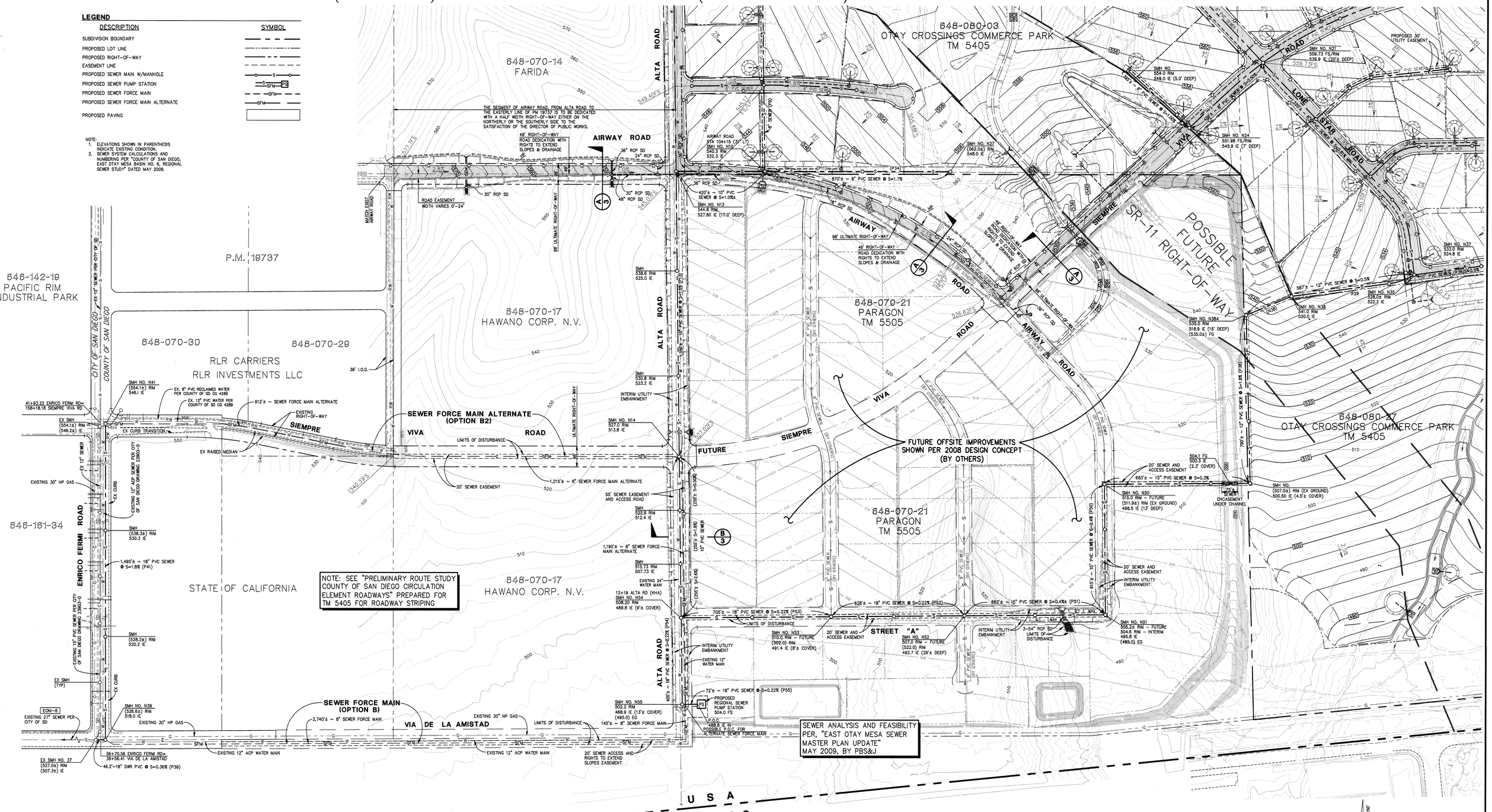
COUNTY OF SAN DIEGO TRACT 5405 RPL7

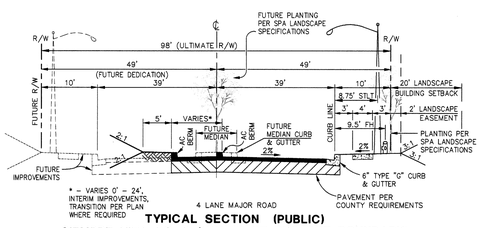
OTAY CROSSINGS COMMERCE PARK
TENTATIVE MAP
ALTERNATE (OPTION B) PROJECT SEWER OUTFALL (PUMP STATION) AND OFFSITE ROADWAY IMPROVEMENTS

LEGEND

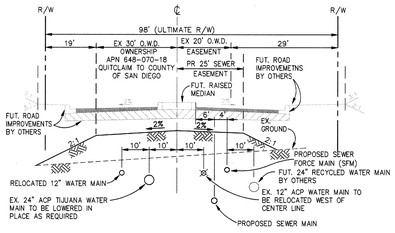
DESCRIPTION	SYMBOL
SUBDIVISION BOUNDARY	
PROPOSED LOT LINE	
PROPOSED RIGHT-OF-WAY	
EASEMENT LINE	
PROPOSED SEWER MAIN W/MANHOLE	S
PROPOSED SEWER PUMP STATION	S SFM PS
PROPOSED SEWER FORCE MAIN	SFM
PROPOSED SEWER FORCE MAIN ALTERNATE	SFM
PROPOSED PAVING	

NOTE:
1. ELEVATIONS SHOWN IN PARENTHESIS INDICATE EXISTING CONDITION.
2. SEWER SYSTEM CALCULATIONS AND NUMBERING PER "COUNTY OF SAN DIEGO, EAST OTAY MESA BASIN NO. 6, REGIONAL SEWER STUDY" DATED MAY 2009.





TYPICAL SECTION (PUBLIC)
SIEMPRE VIVA ROAD (SOUTH OF PROJECT BOUNDARY)
AIRWAY ROAD
A/3 NO SCALE



TYPICAL SECTION
ALTA ROAD (S/O AIRWAY ROAD)
B/3 NO SCALE

SCALE: 1"=150'
0 75 150 300 450
SCALE: 1" = 150'

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REGISTERED PROFESSIONAL ENGINEER MARK E. STEVENS No. 35502 Exp. 9-30-11 CIVIL STATE OF CALIFORNIA

MARK E. STEVENS R.C.E. 35502 — 3/26/10 DATE

PRE-PROJECT LAND USE AND SLOPE ANALYSIS DATA

COLOR	SLOPE RANGE	BASIN A AREA (AC)	BASIN A-OS1 AREA (AC)	TOTAL BASIN A AREA (AC)	BASIN B AREA (AC)	BASIN B-OS1 AREA (AC)	TOTAL BASIN B AREA (AC)	BASIN C AREA (AC)	BASIN C-OS1 AREA (AC)	BASIN C-OS2 AREA (AC)	TOTAL BASIN C AREA (AC)
	GRASSLAND, FLAT (<5% SLOPE)	24.76	8.57	**33.33**	21.09	51.72	**72.81**	51.47	3.65	9.28	**64.4**
	GRASSLAND, MODERATE (5% TO <10% SLOPE)	37.93	10.53	**48.46**	44.88	76.13	**121.01**	49.73	7.22	28.21	**85.16**
	GRASSLAND, STEEP (10% TO <20% SLOPE)	10.71	8.88	**19.59**	9.34	120.13	**129.47**	8.89	16.23	24.29	**49.41**
	GRASSLAND, VERY STEEP (>20% SLOPE)	0.41	3.59	**4.0**	0.99	327.76	**328.75**	0.39	7.94	37.4	**45.73**
	URBAN, VERY STEEP (>20% SLOPE)	0.91	0.75	**1.66**	0.42	0.4	**0.82**	0	0	0	**0**
	DIRT, FLAT (<5% SLOPE)	0	1.73	**1.73**	0	0	**0**	0	0	0	**0**
	ROADS, FLAT (<5% SLOPE)	0	1.82	**1.82**	0	0	**0**	0	0	0	**0**
TOTALS		74.72	35.87	**110.59**	76.72	576.14	**652.86**	110.48	35.04	99.18	**244.7**



SCALE: 1"=500'

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REVISIONS

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OTAY CROSSINGS COMMERCE PARK
SAN DIEGO, CALIFORNIA

EXHIBIT "A"
LAND USE AND SLOPE ANALYSIS - PRE-PROJECT CONDITION

DATE:	09/29/09
SCE NO.	03043.03
SHEET	A
	1 OF 1 SHEETS

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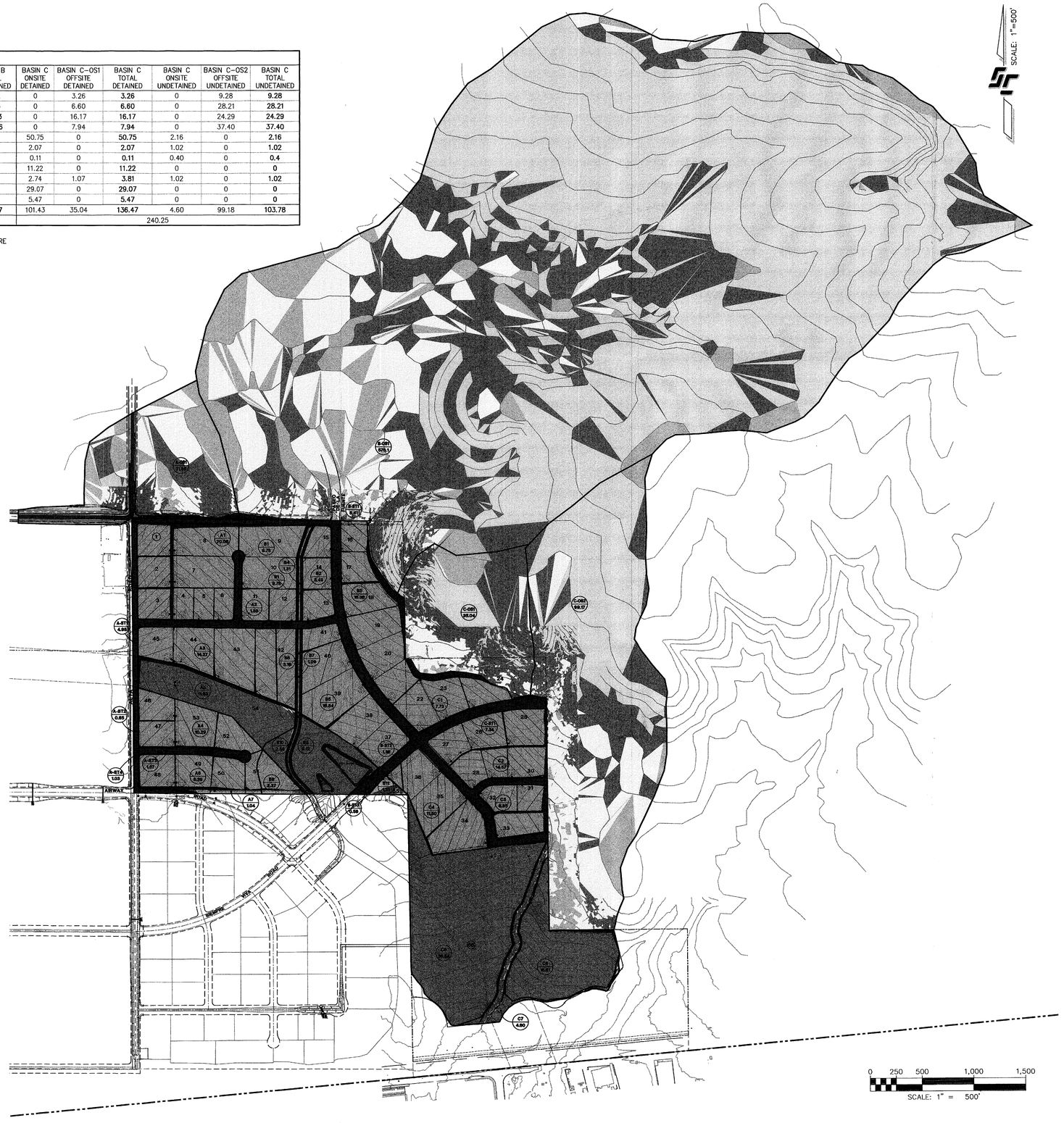
POST-PROJECT LAND USE AND SLOPE ANALYSIS DATA

COLOR	SLOPE RANGE	BASIN A ONSITE DETAINED	BASIN A–OS1 OFFSITE DETAINED	BASIN A TOTAL DETAINED	BASIN A ONSITE UNDETAINED	BASIN B ONSITE DETAINED	BASIN B ONSITE UNDETAINED	BASIN B–OS1 OFFSITE UNDETAINED	BASIN B TOTAL UNDETAINED	BASIN C ONSITE DETAINED	BASIN C–OS1 OFFSITE DETAINED	BASIN C TOTAL DETAINED	BASIN C ONSITE UNDETAINED	BASIN C–OS2 OFFSITE UNDETAINED	BASIN C TOTAL UNDETAINED
	GRASSLAND, FLAT (<5% SLOPE)	0	8.57	**8.57**	**0**	**0**	0	51.72	**51.72**	0	3.26	**3.26**	0	9.28	**9.28**
	GRASSLAND, MODERATE (5% TO <10% SLOPE)	0	10.53	**10.53**	**0**	**0**	0	76.13	**76.13**	0	6.60	**6.60**	0	28.21	**28.21**
	GRASSLAND, STEEP (10% TO <20% SLOPE)	0	8.88	**8.88**	**0**	**0**	0	120.13	**120.13**	0	16.17	**16.17**	0	24.29	**24.29**
	GRASSLAND, VERY STEEP (>20% SLOPE)	0	3.59	**3.59**	**0**	**0**	0	327.76	**327.76**	0	7.94	**7.94**	0	37.40	**37.40**
	DIRT, FLAT (<5% SLOPE)	10.61	1.73	**12.34**	**0.60**	**7.57**	1.89	0	**1.89**	50.75	0	**50.75**	2.16	0	**2.16**
	DIRT, MODERATE (5% TO <10% SLOPE)	0.12	0	**0.12**	**0**	**0.17**	0.06	0	**0.06**	2.07	0	**2.07**	1.02	0	**1.02**
	DIRT, STEEP (10% TO <20% SLOPE)	0.09	0	**0.09**	**0**	**0.06**	0.03	0	**0.03**	0.11	0	**0.11**	0.40	0	**0.4**
SEE NOTE BELOW	URBAN, FLAT (<5% SLOPE)	14.94	0	**14.43**	**0.77**	**15.57**	0.11	0	**0.11**	11.22	0	**11.22**	0	0	**0**
	URBAN, VERY STEEP (>20% SLOPE)	2.38	0.75	**3.13**	**0.44**	**3.31**	3.07	0.4	**3.47**	2.74	1.07	**3.81**	1.02	0	**1.02**
	PARKING LOT/BUILDING, FLAT (<5% SLOPE)	40.24	0	**40.24**	**0**	**40.01**	0	0	**0**	29.07	0	**29.07**	0	0	**0**
	ROADS, FLAT (<5% SLOPE)	5.95	1.82	**5.76**	**2.78**	**7.30**	0.37	0	**0.37**	5.47	0	**5.47**	0	0	**0**
SUB-TOTALS		74.33	35.87	**107.68**	**4.59**	**73.99**	5.53	576.14	**581.67**	101.43	35.04	**136.47**	4.60	99.18	**103.78**
TOTALS		112.27				655.65				240.25					

NOTE: URBAN, FLAT AREAS ARE INCORPORATED INTO THE PROJECT AS PARKWAY LANDSCAPING IN THE PUBLIC RIGHT-OF-WAY AND PARKING LOT LANDSCAPING ON EACH DEVELOPED LOT. PARKWAY LANDSCAPING AREAS WERE DETERMINED BASED ON THE TYPICAL SECTIONS OF THE PROPOSED STREETS AND ON-LOT LANDSCAPING AREAS WERE CALCULATED BASED ON AN ASSUMED IMPERVIOUSNESS OF 75% ON EACH DEVELOPED LOT. FOR SPECIFIC AREA BREAKDOWNS, SEE THE CALCULATIONS IN SECTION 3.



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REVISIONS

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SAN DIEGO, CALIFORNIA

EXHIBIT "B"
LAND USE AND SLOPE ANALYSIS - POST-PROJECT CONDITION

DATE: 09/29/09
SCE NO. 03043.03
SHEET **B**
1 OF 1 SHEETS

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