



June 20, 2016

Hal Hannula
City of San Luis Obispo
919 Palm Street
San Luis Obispo, CA 93401-3218

Subject: Imel Onsite Detention Capacity

Hal,

The purpose of this letter is to serve as an addendum to the preliminary drainage report for Tract 3095, dated 2/24/2016 in order to demonstrate that sufficient below ground onsite detention capacity can be achieved per the Imel (Tract 3095) Tentative Map Plan. The previous letter titled "Imel Offsite Detention Strategy and Feasibility", dated 3/11/2016, established the feasibility of utilizing an offsite regional detention basin to reduce the onsite storm water detention demand for Imel.

Even though the storm water detention for Imel for larger storm events is proposed to be accomplished in offsite regional basins, onsite basins are still required to comply with RWQCB Post-Construction Stormwater Regulation requirements.

Proposed Offsite Detention at Regional Basin

The current designs for the Righetti (Tract 3063) and Jones (Tract 3066) developments provide for a reduction in peak stormwater discharge that exceeds the requirements for the developments. Attached is a spreadsheet titled "Available Discharge" that is based on the current designs for Righetti and Jones and summarizes the peak pre- and post-developed stormwater discharges at two key locations: (1) the existing Arbors Basin and (2) the proposed West Basin which is just upstream of the Hansen Creek culvert under the railroad. The spreadsheet shows that the peak flows at these two locations will be substantially decreased beyond the required amounts.

Proposed Onsite Detention at Imel

We have developed preliminary designs for underground stormwater detention facilities for the Imel site that would meet the stormwater detention requirements of the Post-Construction Stormwater Regulations (post-developed 2-year and 10-year peak flows to not exceed pre-developed rates). The layouts for those facilities are shown on the attached exhibit. The discharges from the site with those facilities are shown in the "Available Discharge" spreadsheet which shows that the peak flow requirements for the area would still be exceeded under this scenario. A summary of the peak flows from the Imel site are shown below.

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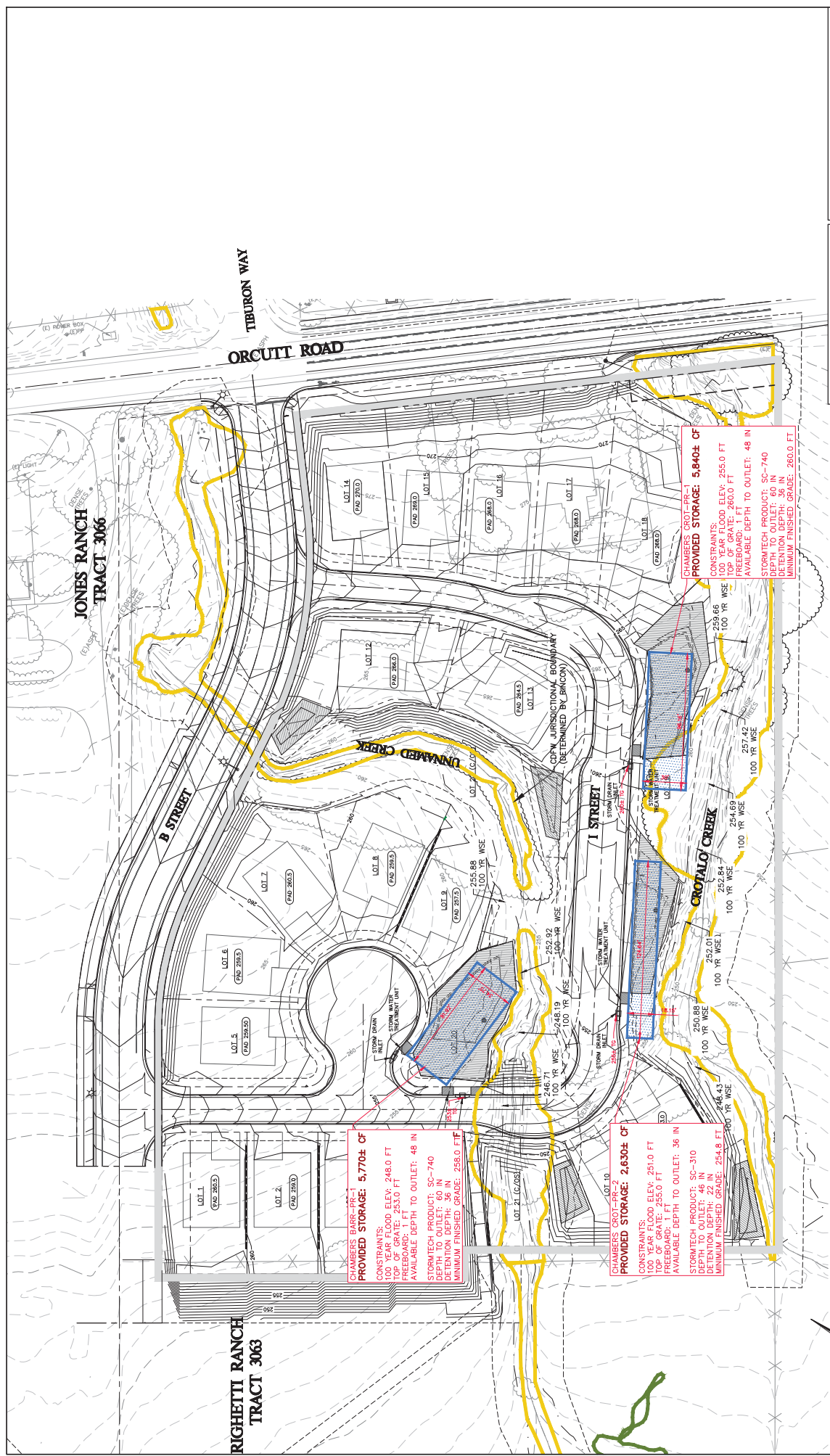


Table 1 - Peak Flow Summary for Imel (Onsite Detention)

Design Storm	Pre-developed Peak Flow (cfs)	Post-developed Peak Discharge (cfs)
2-year	3.15	2.88
10-year	5.81	3.92
25-year	8.21	6.35
50-year	10.00	9.27
100-year	10.48	9.95

Sincerely,

Danny McCamish, PE



CHAMBERS BARR-RR-1
PROVIDED STORAGE: 5,770± CF
 CONSTRAINTS:
 100 YEAR FLOOD ELEV: 248.0 FT
 TOP OF GRADE: 253.0 FT
 DETENTION DEPTH: 36 IN
 AVAILABLE DEPTH TO OUTLET: 48 IN
 STORMTECH PRODUCT: SC-740
 DEPTH TO OUTLET: 36 IN
 MINIMUM FINISHED GRADE: 258.0 FT

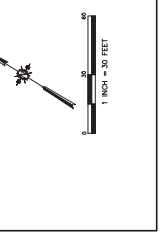
COLLIERS RR-1
PROVIDED STORAGE: 2,630± CF
 CONSTRAINTS:
 100 YEAR FLOOD ELEV: 251.0 FT
 TOP OF GRADE: 255.0 FT
 FREEDBOARD: 1 FT
 AVAILABLE DEPTH TO OUTLET: 36 IN
 STORMTECH PRODUCT: SC-310
 DEPTH TO OUTLET: 48 IN
 DETENTION DEPTH: 22 IN
 MINIMUM FINISHED GRADE: 254.8 FT

CHAMBERS GROT-RR-1
PROVIDED STORAGE: 5,840± CF
 CONSTRAINTS:
 100 YEAR FLOOD ELEV: 255.0 FT
 TOP OF GRADE: 260.0 FT
 FREEDBOARD: 1 FT
 AVAILABLE DEPTH TO OUTLET: 48 IN
 STORMTECH PRODUCT: SC-740
 DEPTH TO OUTLET: 60 IN
 DETENTION DEPTH: 36 IN
 MINIMUM FINISHED GRADE: 260.0 FT

IMEL PROPERTY
 TRACT 3095 - VESTING TENTATIVE MAP
 UNDERGROUND DETENTION ANALYSIS EXHIBIT
 CITY OF SAN LUIS OBISPO, CA

DRAWN BY: KCP/DJM/STS
 DATE: 4/27/2016
 CA JOB NO.: 150636

CHECKED BY: SCALE: 1" = 30'
 SHEET: 1 OF 1





March 11, 2016

Hal Hannula
City of San Luis Obispo
919 Palm Street
San Luis Obispo, CA 93401-3218

Subject: Imel Offsite Detention Strategy and Feasibility

Hal,

This letter is to outline the proposed use of offsite storm water detention facilities to reduce the onsite detention requirements on Imel (Tract 3095), and to demonstrate the feasibility of this strategy.

The purpose of this strategy is to reduce the required size of onsite basins currently shown on the Imel Tentative Map grading plans. Onsite basins would still be required at each of the three locations shown in order to comply with Post Construction Stormwater Regulations, but the depth and size of these basins will be adjusted to allow the balance of detention demand to be handled in an offsite regional basin. Since the impacts to the Tentative Map grading plan from this strategy would be an improvement to what is currently shown, it is our hope that this letter and attached exhibits will give the City the necessary information to agree with the strategy and deem the Tentative Map application as complete.

Offsite Detention Demand and Capacity

The basins, as currently shown on the Imel Tentative Map grading plan, are sized to be able to handle to full OASP peak reduction requirements as outlined in section 6.3 of the Orcutt Area Specific Plan. Since the OASP requires the 100 year post developed peak flows to be limited to the 25 year pre developed flows, the onsite basin sizes and depths are substantial. The project is also constrained by two separate creeks running through the property, each requiring detention facilities to comply with Post Construction Stormwater Regulations. The attached "Imel Offsite Detention Feasibility Calcs" show that the overall OASP required flow reduction for Imel is approximately 5.9 CFS for the 100 year storm.

Currently, both of the two regional basins associated with the Righetti (Tract 3063) and Jones (3066) developments have capacity that exceeds the demand for Imel. The attached "Imel Offsite Detention Feasibility Calcs" show that both the existing Arbors basin and the proposed West Basin are provide for detention greater than what is required just for Imel. This means that there would be no change required to the design of either basin to account for Imel's offsite detention needs.

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Increased Flows to Creek Between Imel and Regional Basin

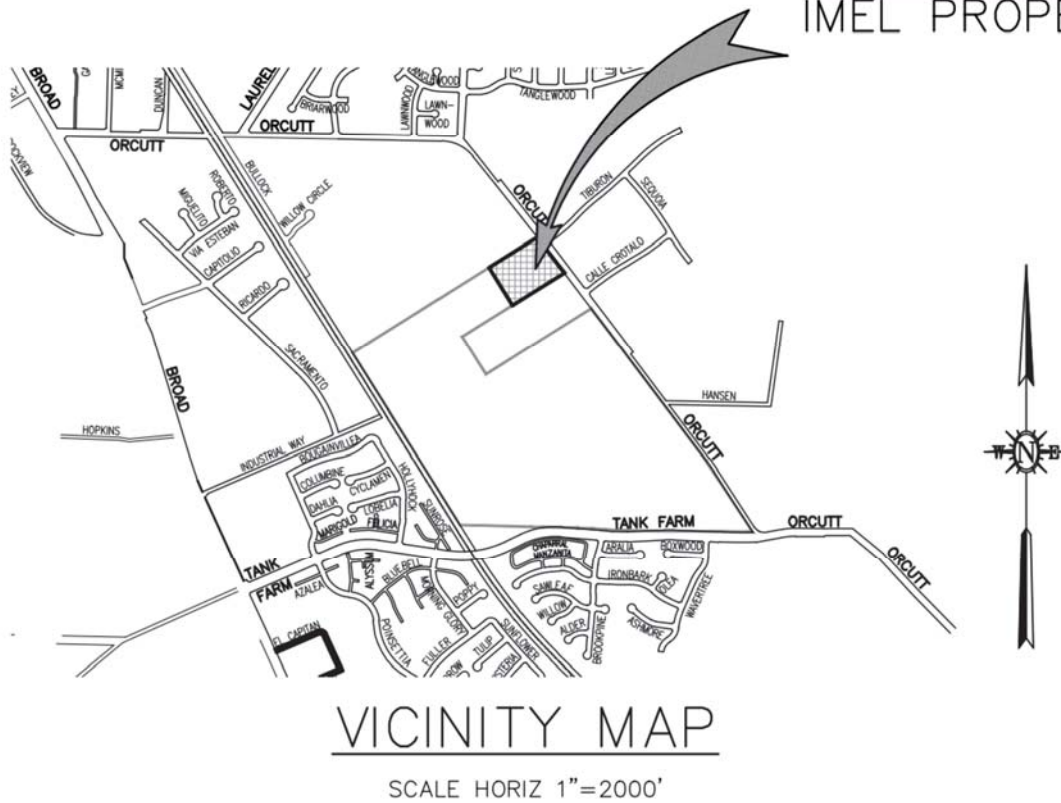
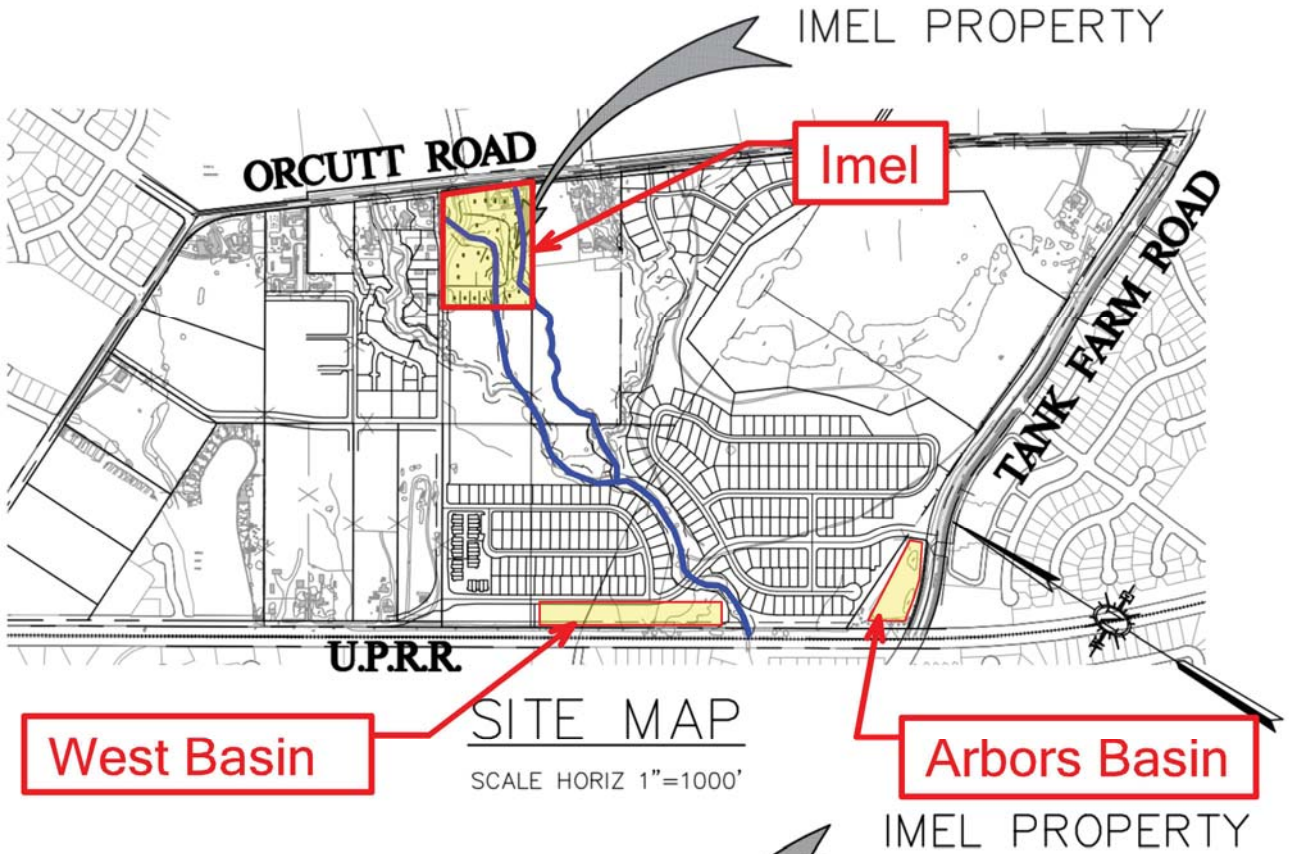
There are two existing streams that run through the Imel site. The impact to the 100-yr floodplain of those streams due to the un-detained runoff from the proposed Imel site are expected to be minimal. The times of concentration for the sub-basins for the proposed developed Imel site are 5-15 minutes, compared to 30-45 minutes for the creek watersheds upstream of the Imel site. Because the times of concentration are not the same, the peak runoff from the Imel site will enter the creeks and flow downstream prior to the peaks from the much larger upstream watersheds.

Additionally, the increase in 100-yr peak flows from the proposed developed Imel site from its existing condition are only about 1.5% of the peak flows in the streams that pass through the site (per table below). Even if the times of concentration were aligned, the effects on the floodplains are expected to be minimal. The table below shows the 100 year peak flows for the two creeks as determined in the Righetti (Tract 3063) Drainage Report, and the contributing flows from Imel.

Creek	100-yr Peak Flow (cfs)	Imel 100-yr Peak Flows (cfs)			% of 100-yr Peak Flow
		Existing	Proposed	Change	
Crotalo Creek	188.2	2.5	5.3	2.8	1.5%
Unnamed Creek	57.1	8	8.8	0.8	1.4%

Sincerely,

Danny McCamish, PE



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IMEL PROPERTY		
FIGURE 1:		
VICINITY MAP		
SAN LUIS OBISPO, CA		
DRAWN BY	DATE	CA JOB NO.
WGC	11/06/15	150636
CHECKED BY	SCALE	SHEET
	AS SHOWN	1 of 3

\\cannonsec.com\dfsroot\Public\pro\2015\150636\3 Project Design\Civil\Construction Drawings\Exhibits\CE150636EX00007.dwg 12-07-15 01:33:41 PM seths

Imel Site Flows

Pre 25 yr	8.25	cfs
Post 100 yr	14.10	cfs
Difference	5.85	cfs

Information from Table 2, Righetti Drainage Report

ARBORS BASIN			
Design Year Storm	Permitted Flow (CFS)	Current Design Flow (CFS)	Available Flow (CFS)
2	62.93	14.85	48.08
10	82.13	18.48	63.65
25	98.12	21.09	77.03
50	98.12	22.80	75.32
100	147.47	23.21	124.26

Information from Table 2, Righetti Drainage Report

WEST BASIN			
Design Year Storm	Permitted Flow (CFS)	Current Design Flow (CFS)	Available Flow (CFS)
2	33.61	25.02	8.59
10	57.81	42.41	15.40
25	81.03	52.46	28.57
50	81.03	58.80	22.23
100	81.03	60.24	20.79

