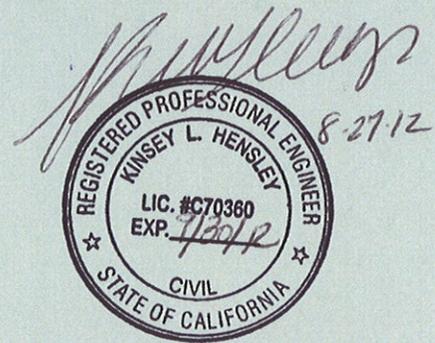


East Gateway Project Area Drainage Study

Santa Paula, CA

August 27, 2012



Prepared by:



East Gateway Project Area Drainage Study

Existing Condition

The East Gateway Project Area generally drains in a north south direction towards Santa Clara River split by South Hallock Drive and Highway 126. The area west of South Hallock Drive, and 800' east of Whipple Road drains into a natural channel that conveys drainage into an 8'x4' Concrete box that takes flow under the freeway and into a second natural channel through the Lemonwood area into Santa Clara River (Subarea A – attached exhibit). According to the East Area One Master Plan Existing Condition Drainage Study dated May 5, 2010 by Jensen Design and Survey, Inc., approximately 59 acres from the East Area 1 Specific Plan Area to the north drains into Subarea A. This drainage overland flows to crossings under the railroad tracks and into private property. There is one 36" CMP inlet at the railroad tracks approximately 1200 feet east of Santa Paula Creek. That pipe drains southerly toward a 25"x33" arch CMP under Telegraph that outlets to the natural channel draining south toward Highway 126 into the 8'x4' concrete box.

The area west of the natural channel and east of Santa Paula creek drains to a 58"x36" arch CMP at Whipple Road (Subarea B – attached exhibit). The existing homes just east of Santa Paula Creek and north of the railroad tracks drain to the south through Ferris Lane and into a 60" CMP under Telegraph. The 60" CMP outlets into a natural drainage channel that travels south along Whipple Road and then enters the 58"x36" CMP under Highway 126. Stormwater overland flows through a private parcel and eventually this drainage area enters Santa Paula Creek at the confluence with Santa Clara River.

The area located east of South Hallock Drive and north of Highway 126, drains to the east into two 12'x4' concrete box culverts under the freeway west of Orcutt (Haun) Creek. This culvert also handles the flow from the East Area 1 Specific Plan Area. The box culvert under the freeway discharges into a natural channel traveling in a north south direction until the confluence point with Orcutt (Haun) Creek 1,200 feet upstream of the Santa Clara River within the East Gateway Specific Plan area project limits(Subarea C – attached exhibit).

Table 1: East Gateway Project Area Existing Hydrology

Drainage Area	Acreege	Existing Flow Rate 10 year(cfs)	Existing Flow Rate 50 year(cfs)	Existing Flow Rate 100 year(cfs)
Contributing to 'A' from EA1	59	39	73	96
'A' upstream of Highway 126	24	46	67	89
'A' downstream of Highway 126	5.1	16	20	23
B	34.4	66	96	128
Contributing to 'C' from EA1	408	485	712	827
C	15.1	19	32	39
Flows to 12'x4' Box Culvert	423.1	498	721	835

The East Gateway Specific Plan area is bounded by South Hallock Drive on the west and Orcutt (Haun) Creek on the east (Subarea D –attached exhibit). The site currently drains in a north south direction towards Santa Clara River. There are currently no drainage facilities onsite. A natural drainage channel travels through the site, as mentioned above. This channel will be relocated to the eastern edge of the Specific Plan area to convey water from the north. A limited amount of water enters this channel as most of it discharges as sheet flow into the Santa Clara River at the southerly edge of the Specific Plan area.

When the East Area 1 Specific Plan Area gets constructed, the flow rates contributing to the East Gateway Project Area will change. The flows contributing to Area 'A' will be removed as the developed condition takes the onsite flows to a proposed detention basin. The flows contributing to Area 'C' will also be reduced per Table 2.

Table 2: East Gateway Project Area Hydrology after East Area 1 Development

Drainage Area	Acreage	Flow Rate 10 year(cfs)	Flow Rate 50 year(cfs)	Flow Rate 100 year(cfs)
Contributing to 'A' from EA1	0	0	0	0
Contributing to 'C' from EA1 – after detention	351.7	275	363	387

Developed Gateway Specific Plan Condition

The East Gateway Specific Plan project will require drainage improvements to convey and treat stormwater runoff as it traverses the site. The proposed drainage pattern will remain the same and travel in a north to south direction towards Santa Clara River. Stormwater will be collected through catch basins onsite and routed through a storm drain system to an onsite detention basin as shown in the East Gateway Specific Plan. Pipe sizing will range from 12” to 36” in diameter based on a 10-year flow event consistent with City of Santa Paula Standards.

An increase in peak flows will occur from development in the Specific Plan area, but this increase will be attenuated to existing condition peak flows by collecting runoff in an onsite detention basin. Based on preliminary calculations, this basin will have a capacity of approximately 3.5 acre-feet. Retention of stormwater will occur onsite through the use of the detention basin and bio retention cells spaced throughout the parking areas, which will be sized at the Tentative Map design level to the City of Santa Paula and County of Ventura Standards. The natural drainage channel will remain in its current location conveying flows from north of the freeway down to Orcutt (Haun) creek. The channel will be enlarged from the original condition to convey any flood overflow from Orcutt (Haun) Creek and to protect the proposed development.

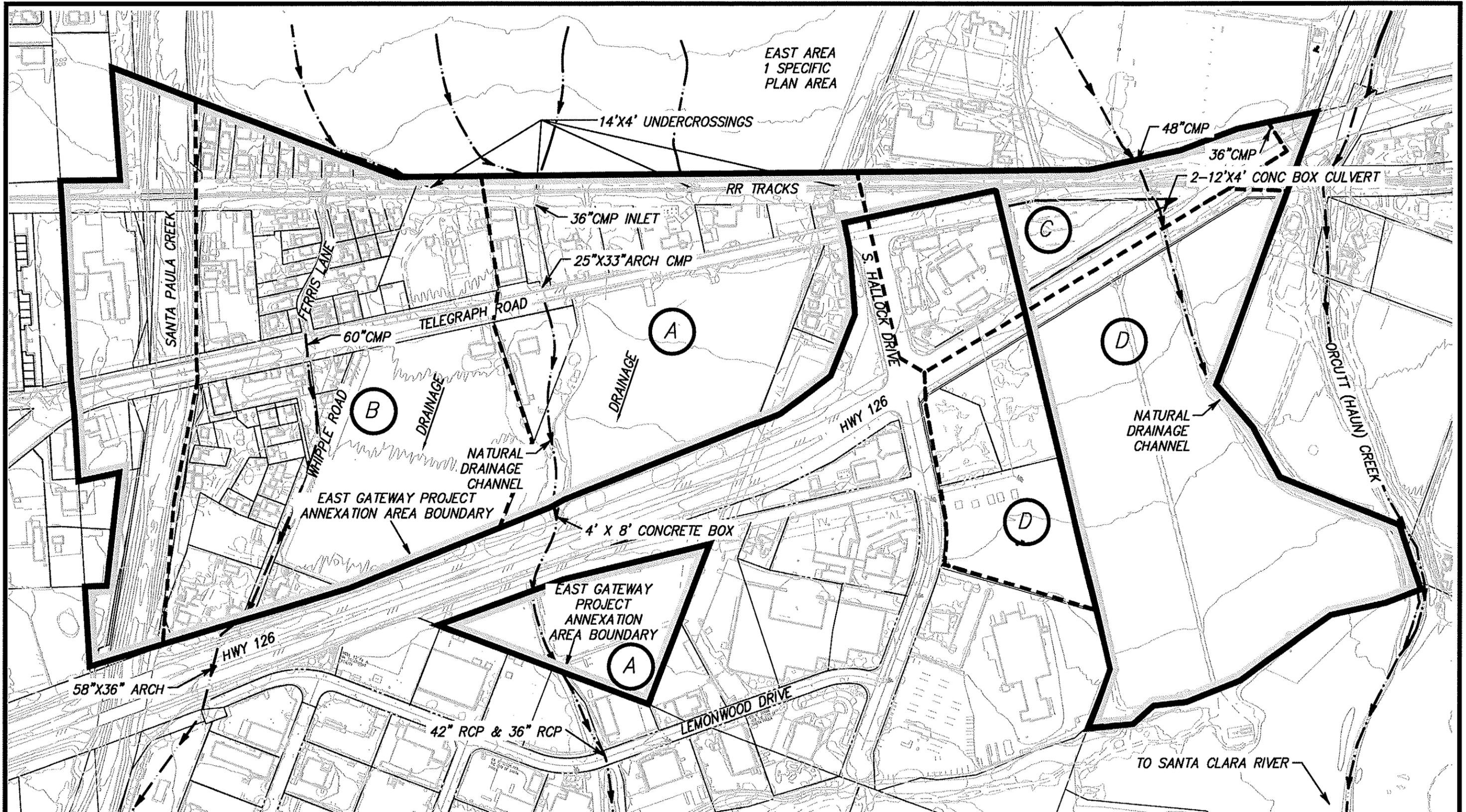
Table 3: Preliminary East Gateway Specific Plan Area Hydrology

Storm Event	Existing Condition Flow Rate (cfs)	Developed Condition Flow Rate (cfs)	Developed Condition Flow Rate After Detention (cfs)*
10-year	27	55	26
50-year	49	83	34
100-year	63	94	36

*These flow rates allow for 0.74 acre-feet of retention, approximately half of the required detention onsite per the adopted 2011 Ventura County Technical Guidance Manual for Stormwater Quality Control Measures.

FIRM Mapping

Current FIRM maps from 2010 show the East Gateway Project area within a flood designation of Zone 'A' (without BFE) from Orcutt (Haun) Creek and Zone 'A99' from Santa Paula Creek. The approved East Area 1 Specific Plan includes flood protection improvements that will reduce flooding from Orcutt (Haun) Creek. Preliminary analysis of the East Area 1 Project shows a reduction in the flood limits within the East Area 1 Specific Plan area and the East Gateway Specific Plan Area. The East Gateway Specific Plan project will widen and deepen the existing channel that parallels Orcutt (Haun) Creek to contain the floodwaters from Orcutt (Haun) Creek, thereby avoiding any adverse impacts to adjacent property.



EAST AREA
1 SPECIFIC
PLAN AREA

14'x4' UNDERCROSSINGS

48" CMP

36" CMP

2-12'x4' CONC BOX CULVERT

RR TRACKS

36" CMP INLET

25" x 33" ARCH CMP

SANTA PAULA CREEK

FERRIS LANE

TELEGRAPH ROAD

WHIPPLE ROAD

S. HALLOCK DRIVE

HWY 126

ORCUTT (HAUN) CREEK

NATURAL DRAINAGE CHANNEL

NATURAL DRAINAGE CHANNEL

EAST GATEWAY PROJECT ANNEXATION AREA BOUNDARY

4' x 8' CONCRETE BOX

EAST GATEWAY PROJECT ANNEXATION AREA BOUNDARY

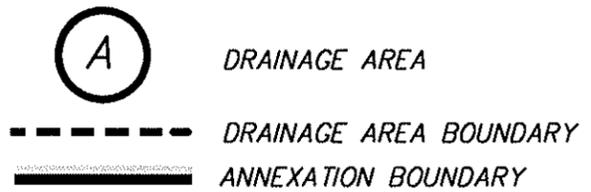
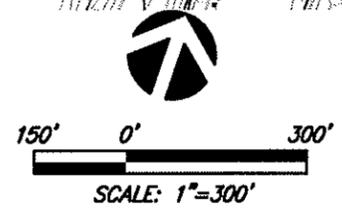
58" x 36" ARCH

HWY 126

42" RCP & 36" RCP

LEMONWOOD DRIVE

TO SANTA CLARA RIVER



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DRAINAGE EXHIBIT

EAST GATEWAY PROJECT

SHEET
1 OF 1
Aug 27, 2012