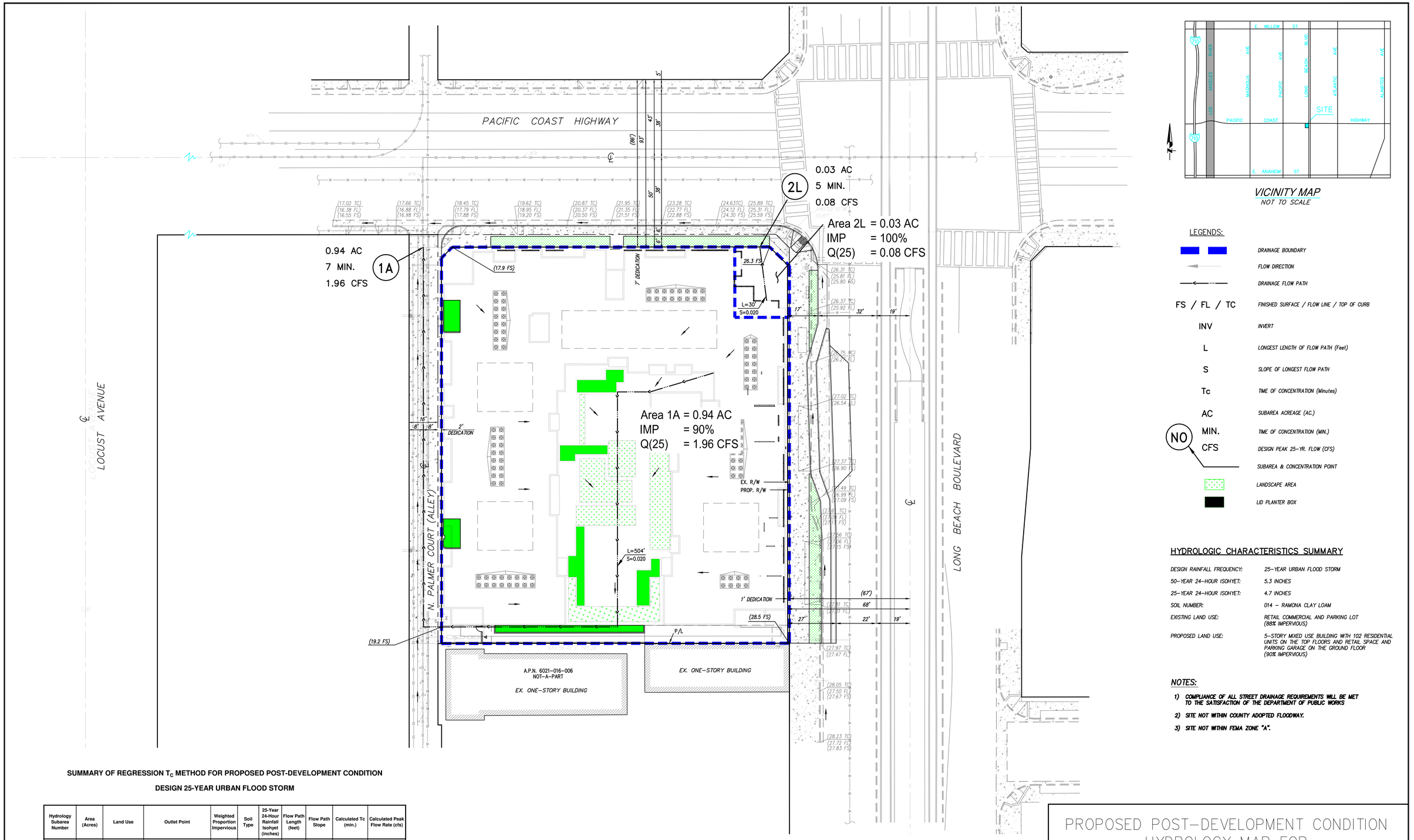

VICINITY MAP
NOT TO SCALE

LEGENDS:

- DRAINAGE BOUNDARY
- FLOW DIRECTION
- DRAINAGE FLOW PATH
- FS / FL / TC — FINISHED SURFACE / FLOW LINE / TOP OF CURB
- INV — INVERT
- L — LONGEST LENGTH OF FLOW PATH (Feet)
- S — SLOPE OF LONGEST FLOW PATH
- Tc — TIME OF CONCENTRATION (Minutes)
- AC — SUBAREA ACREAGE (AC.)
- NO — MIN. — TIME OF CONCENTRATION (MIN.)
- CFS — DESIGN PEAK 25-YR. FLOW (CFS)
- SUBAREA & CONCENTRATION POINT
- LANDSCAPE AREA
- LID PLANTER BOX

HYDROLOGIC CHARACTERISTICS SUMMARY

DESIGN RAINFALL FREQUENCY:	25-YEAR URBAN FLOOD STORM
50-YEAR 24-HOUR ISOHYET:	5.3 INCHES
25-YEAR 24-HOUR ISOHYET:	4.7 INCHES
SOIL NUMBER:	014 – RAMONA CLAY LOAM
EXISTING LAND USE:	RETAIL COMMERCIAL AND PARKING LOT (88% IMPERVIOUS)
PROPOSED LAND USE:	5-STORY MIXED USE BUILDING WITH 102 RESIDENTIAL UNITS ON THE TOP FLOORS AND RETAIL SPACE AND PARKING GARAGE ON THE GROUND FLOOR (90% IMPERVIOUS)

NOTES:

1) COMPLIANCE OF ALL STREET DRAINAGE REQUIREMENTS WILL BE MET TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS
2) SITE NOT WITHIN COUNTY ADOPTED FLOODWAY.
3) SITE NOT WITHIN FEMA ZONE "A".

SUMMARY OF REGRESSION T_C METHOD FOR PROPOSED POST-DEVELOPMENT CONDITION

DESIGN 25-YEAR URBAN FLOOD STORM

Hydrology Subarea Number	Area (Acres)	Land Use	Outlet Point	Weighted Proportion Impervious	Soil Type	25-Year 24-Hour Rainfall Isohyet (inches)	Flow Path Length (feet)	Flow Path Slope	Calculated Tc (min.)	Calculated Peak Flow Rate (cfs)
1A	0.94	5-Story apartment building ontop of retail space & ground level garage, walkway	Outflow from Bio-filtration planters to N. Palmer Court (Alley) and continues northerly via proposed concrete gutter to the intersection of N. Palmer Court and Pacific Coast Highway.	0.90	14	5.30	504	0.020	7	1.96
2L	0.03	Ground level concrete pavemet at the northeast corner of the building	Surface sheet flow northerly onto the parkway landscape along Pacific Coast Highway.	1.00	14	5.30	30	0.020	5	0.08
TOTAL	0.97									2.04

SCALE: 1"=20'

0 20 40

PROPOSED POST-DEVELOPMENT CONDITION HYDROLOGY MAP FOR 1795 LONG BEACH BLVD. FAMILY APARTMENTS 1795 LONG BEACH BLVD., LONG BEACH, CA 90813

REGISTERED PROFESSIONAL ENGINEER JOHN TUAN LIONG NO.65214 DP.9-30-17 CIVIL STATE OF CALIFORNIA

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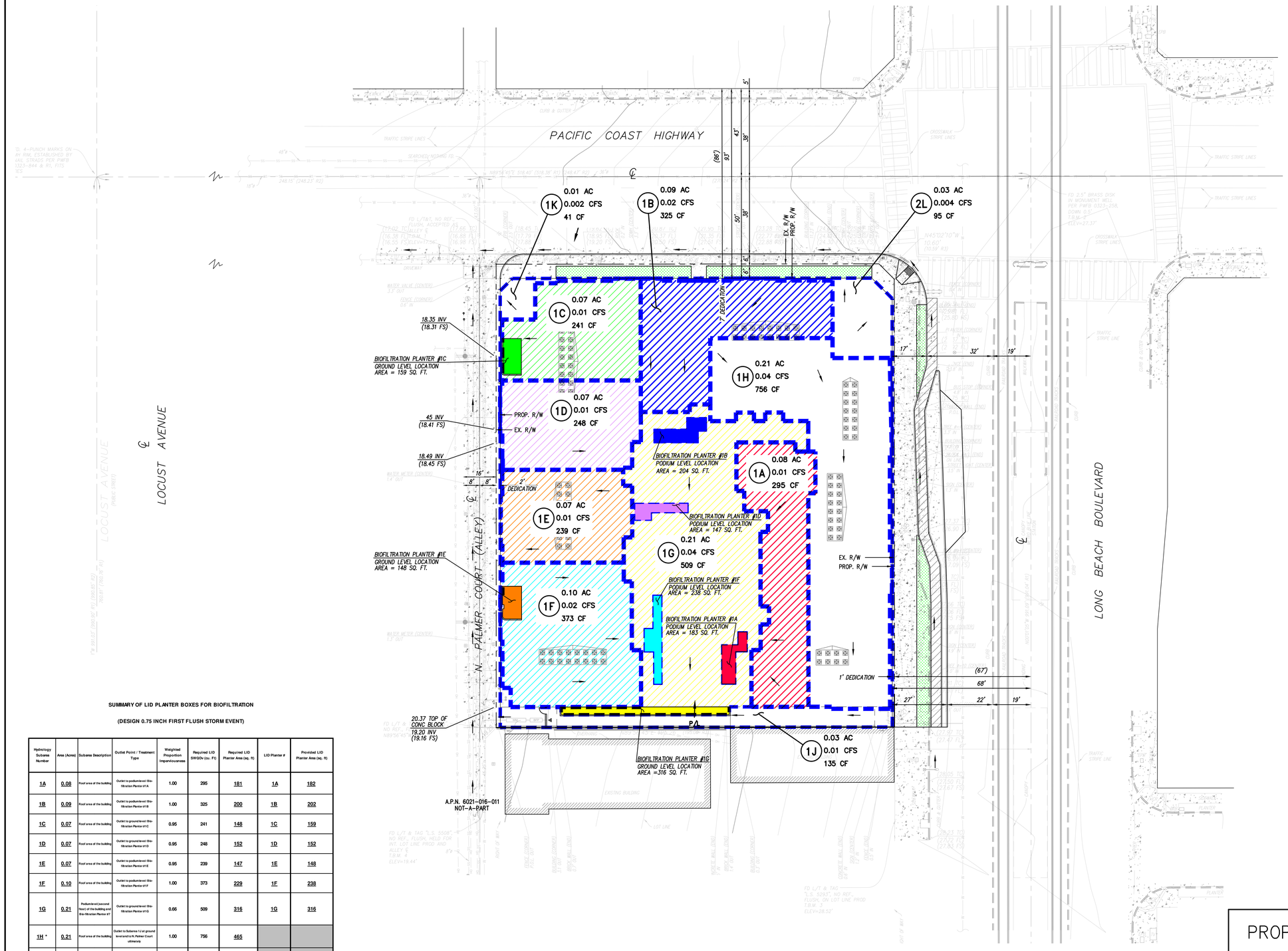
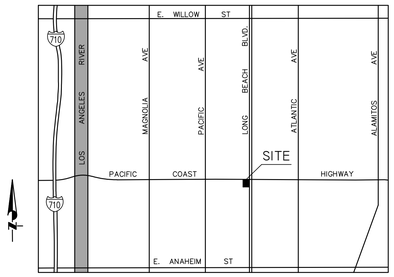
CONTACT PERSON: JAY ROSS

DESIGNED BY: H.C.	REVIEWED BY: J.L.
DATE: AUGUST, 2017	DATE: AUGUST, 2017





VICINITY MAP
NOT TO SCALE

LEGENDS:

	DRAINAGE BOUNDARY
	FLOW DIRECTION
	DRAINAGE FLOW PATH
FS / FL / TC	FINISHED SURFACE / FLOW LINE / TOP OF CURB
INV	INVERT
L	LONGEST LENGTH OF FLOW PATH (Feet)
S	SLOPE OF LONGEST FLOW PATH
Tc	TIME OF CONCENTRATION (Minutes)
0.08 AC.	SUBAREA ACREAGE (AC.)
1A 0.01 CFS 136 CF	PEAK MITIGATED FLOW – 85TH PERCENTILE (CFS) / PEAK MITIGATED VOLUME – 85TH PERCENTILE (CU-FT) / SUBAREA & CONCENTRATION POINT
	LANDSCAPE AREA
	LID PLANTER BOX (TYP.)
	DRAINAGE SUBAREA TO LID PLANTER BOX (TYP.)

SUMMARY OF LID PLANTER BOXES FOR BIOFILTRATION

(DESIGN 0.75 INCH FIRST FLUSH STORM EVENT)

Hydrology Subarea Number	Area (Acres)	Subarea Description	Outlet Point / Treatment Type	Weighted Proportion Imperviousness	Required LID SWQDv (cu. Ft)	Required LID Planter Area (sq. ft)	LID Planter #	Provided LID Planter Area (sq. ft)
1A	0.08	Roof area of the building.	Outlet to podium/level Bio-filtration Planter #1A	1.00	295	181	1A	182
1B	0.09	Roof area of the building.	Outlet to podium/level Bio-filtration Planter #1B	1.00	325	200	1B	202
1C	0.07	Roof area of the building.	Outlet to ground level Bio-filtration Planter #1C	0.95	241	148	1C	159
1D	0.07	Roof area of the building.	Outlet to ground level Bio-filtration Planter #1D	0.95	248	152	1D	152
1E	0.07	Roof area of the building.	Outlet to podium/level Bio-filtration Planter #1E	0.95	239	147	1E	148
1F	0.10	Roof area of the building.	Outlet to podium/level Bio-filtration Planter #1F	1.00	373	229	1F	238
1G	0.21	Podium level/second floor of the building and Bio-filtration Planter #1G	Outlet to ground level Bio-filtration Planter #1G	0.66	509	316	1G	316
1H *	0.21	Roof area of the building.	Outlet to Subarea 1J at ground level and to N. Palmer Court ultimately	1.00	756	465		
1J *	0.04	Ground level at south corner	Outlet to N. Palmer Court	1.00	135	83		
1K *	0.01	Ground level perimeter area of the development at northwest corner.	Drainage flows directly out to the intersection of N. Palmer Court and Pacific Coast Highway	1.00	41	25		
2L *	0.03	Ground level perimeter area of the development at northwest corner.	Drainage flows directly out to the intersection of Long Beach Blvd and Pacific Coast Highway	1.00	95	59		
TOTAL	0.97				3,257	2,005		1,397

* DUE TO SITE CONSTRAINT, ADEQUATE BIO-FILTRATION AREA CANNOT BE PROVIDED FOR SUBAREAS 1H, 1J, 1K, AND 2L. MITIGATION FEE W ILL BE PAID TO COMPENSATE FOR THIS DEFICIENCY.

HYDROLOGIC CHARACTERISTICS SUMMARY

DESIGN RAINFALL FREQUENCY:	25-YEAR URBAN FLOOD STORM
25-YEAR 24-HOUR ISOHYET:	4.7 INCHES
BMP FIRST FLUSH DEPTH:	0.75 INCHES
SOIL NUMBER:	014 – RAMONA CLAY LOAM
EXISTING LAND USE:	RETAIL COMMERCIAL AND PARKING LOT (88% IMPERVIOUS)
PROPOSED LAND USE:	5-STORY MIXED USE BUILDING WITH 102 RESIDENTIAL UNITS ON THE TOP FLOORS AND RETAIL SPACE AND PARKING GARAGE ON THE GROUND FLOOR (90% IMPERVIOUS)

NOTES:

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SCALE: 1"=20'

0 20 40

PROPOSED POST-DEVELOPMENT CONDITION LID EXHIBIT FOR 1795 LONG BEACH BLVD. FAMILY APARTMENTS 1795 LONG BEACH BLVD., LONG BEACH, CA 90813

REGISTERED PROFESSIONAL ENGINEER JOHN T. LUONG NO. 65214 EXP. 9-30-17 CIVIL STATE OF CALIFORNIA

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