

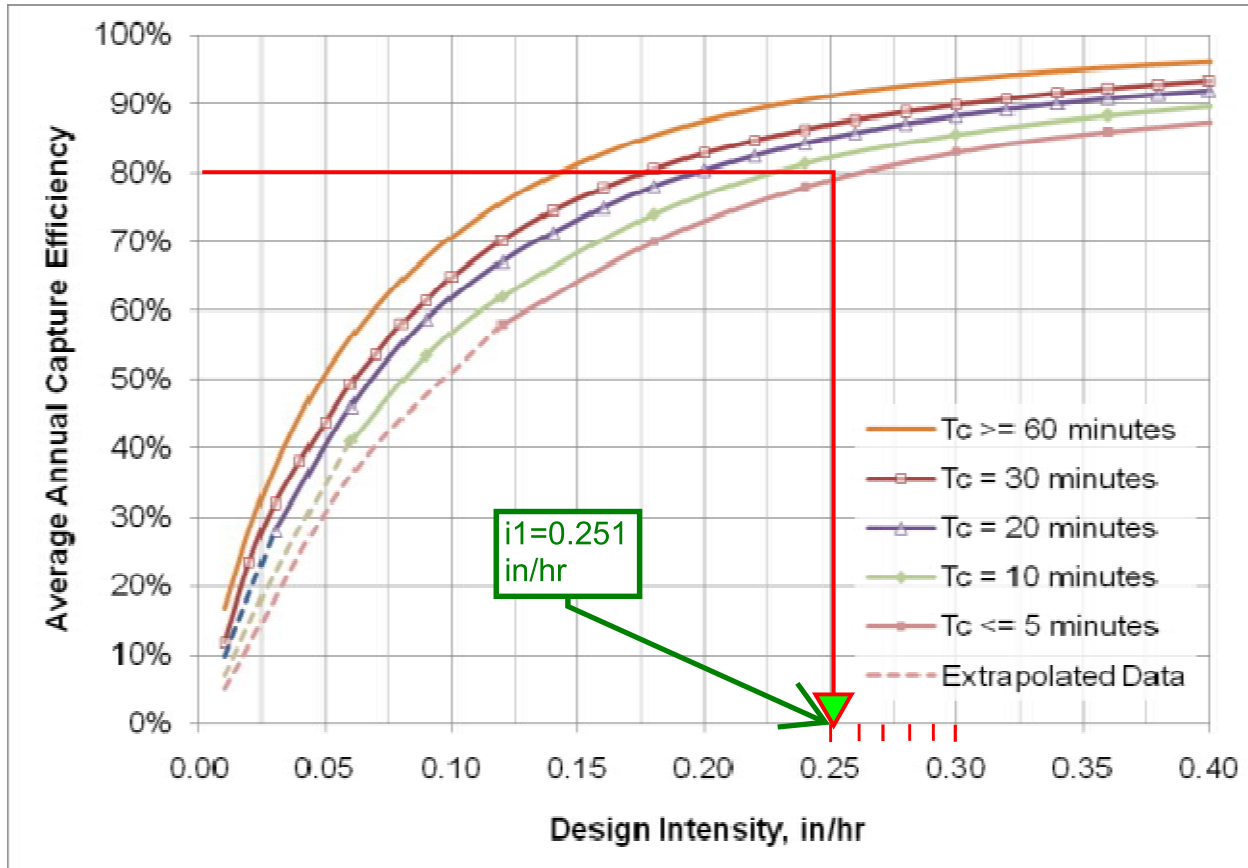
Proposed DMA SUMMARY								
Area ID	Area (sf)	Area (ac)	85th percentile depth (in)	Pervious Area (sf)	Impervious Area (sf)	Percent Impervious	Runoff Coefficient	DCV (cf)
DMAs								
a-1	55,757	1.28	0.9	4,356.0	51,401	0.9219	0.8414	3,519
C-1*	678,660	15.58	0.9	28,636	650,024	0.9578	0.8684	44,199
TOTALS	55,757	1.3		4,356	51,401	0.922	0.84	3,519

Worksheet D: Capture Efficiency Method for Flow-Based BMPs

Step 1: Determine the design capture storm depth used for calculating volume				
1	Enter the time of concentration, T_c (min) (See Appendix IV.2)	$T_c =$	6.58	AES
2	Using Figure III.4 , determine the design intensity at which the estimated time of concentration (T_c) achieves 80% capture efficiency, I_1	$I_1 =$	0.251	in/hr
3	Enter the effect depth of provided HSCs upstream, d_{HSC} (inches) (Worksheet A)	$d_{HSC} =$	0	inches
4	Enter capture efficiency corresponding to d_{HSC} , Y_2 (Worksheet A)	$Y_2 =$	0	%
5	Using Figure III.4 , determine the design intensity at which the time of concentration (T_c) achieves the upstream capture efficiency(Y_2), I_2	$I_2 =$	0	
6	Determine the design intensity that must be provided by BMP, $I_{design} = I_1 - I_2$	$I_{design} =$	0.251	
Step 2: Calculate the design flowrate				
1	Enter Project area tributary to BMP (s), A (acres)	$A =$	17.16	acres
2	Enter Project Imperviousness, imp (unitless)	$imp =$	0.96	WQMP
3	Calculate runoff coefficient, $C = (0.75 \times imp) + 0.15$	$C =$	0.870	
4	Calculate design flowrate, $Q_{design} = (C \times I_{design} \times A)$	$Q_{design} =$	3.74	cfs
Supporting Calculations				
Describe system: Flow rate developed for all C areas flowing to Basin C to size treatment flow for Proprietary BMP.				
Provide time of concentration assumptions:				

Worksheet D: Capture Efficiency Method for Flow-Based BMPs

Graphical Operations



Provide supporting graphical operations. See Example [III.7](#).

BIO-7: Proprietary Biotreatment

Proprietary biotreatment devices are devices that are manufactured to mimic natural systems such as bioretention areas by incorporating plants, soil, and microbes engineered to provide treatment at higher flow rates or volumes and with smaller footprints than their natural counterparts. Incoming flows are typically filtered through a planting media (mulch, compost, soil, plants, microbes, etc.) and either infiltrated or collected by an underdrain and delivered to the storm water conveyance system. Tree box filters are an increasingly common type of proprietary biotreatment device that are installed at curb level and filled with a bioretention type soil. For low to moderate flows they operate similarly to bioretention systems and are bypassed during high flows. Tree box filters are highly adaptable solutions that can be used in all types of development and in all types of soils but are especially applicable to dense urban parking lots, street, and roadways.

Also known as:

- Catch basin planter box
- Bioretention vault
- Tree box filter



Proprietary biotreatment

Source:

<http://www.americastusa.com/index.php/filterra/>

Feasibility Screening Considerations

- Proprietary biotreatment devices that are unlined may cause incidental infiltration. Therefore, an evaluation of site conditions should be conducted to evaluate whether the BMP should include an impermeable liner to avoid infiltration into the subsurface.

Opportunity Criteria

- Drainage areas of 0.25 to 1.0 acres.
- Land use may include commercial, residential, mixed use, institutional, and subdivisions. Proprietary biotreatment facilities may also be applied in parking lot islands, traffic circles, road shoulders, and road medians.
- Must not adversely affect the level of flood protection provided by the drainage system.

OC-Specific Design Criteria and Considerations

- ☒ Frequent maintenance and the use of screens and grates to keep trash out may decrease the likelihood of clogging and prevent obstruction and bypass of incoming flows.
- ☒ Consult proprietors for specific criteria concerning the design and performance.
- ☒ Proprietary biotreatment may include specific media to address pollutants of concern. However, for proprietary device to be considered a biotreatment device the media must be capable of supporting rigorous growth of vegetation.
- ☒ Proprietary systems must be acceptable to the reviewing agency. Reviewing agencies shall have the discretion to request performance information. Reviewing agencies shall have the discretion to deny the use of a proprietary BMP on the grounds of performance, maintenance considerations, or other relevant factors.

- ☒ In right of way areas, plant selection should not impair traffic lines of site. Local jurisdictions may also limit plant selection in keeping with landscaping themes.

Computing Sizing Criteria for Proprietary Biotreatment Device

- Proprietary biotreatment devices can be volume based or flow-based BMPs.
- Volume-based proprietary devices should be sized using the Simple Design Capture Volume Sizing Method described in [Appendix III.3.1](#) or the Capture Efficiency Method for Volume-Based, Constant Drawdown BMPs described in [Appendix III.3.2](#).
- The required design flowrate for flow-based proprietary devices should be computed using the Capture Efficiency Method for Flow-based BMPs described in [Appendix III.3.3](#).

In South Orange County, the provided ponding plus pore volume must be checked to demonstrate that it is greater than 0.75 of the remaining DCV that this BMP is designed to address. Many proprietary biotreatment BMPs will not be able to meet the definition of “biofiltration” that applies in South Orange County. See Section III.7 and Worksheet SOC-1.

Additional References for Design Guidance

- Los Angeles Unified School District (LAUSD) Stormwater Technical Manual, Chapter 4:
http://www.laschools.org/employee/design/fs-studies-and-reports/download/white_paper_report_material/Storm_Water_Technical_Manual_2009-opt-red.pdf?version_id=76975850
- Los Angeles County Stormwater BMP Design and Maintenance Manual, Chapter 9:
http://dpw.lacounty.gov/DES/design_manuals/StormwaterBMPDesignandMaintenance.pdf
- Santa Barbara BMP Guidance Manual, Chapter 6:
http://www.santabarbaraca.gov/NR/rdonlyres/91D1FA75-C185-491E-A882-49EE17789DF8/0/Manual_071008_Final.pdf

- SMC LID Manual:
http://www.lowimpactdevelopment.org/guest75/pub/All_Projects/SoCal_LID_Manual/SoCalLID_Manual_FINAL_040910.pdf
- Western Washington Stormwater Management Manual, Volume V, Chapter 12:
<http://www.ecy.wa.gov/pubs/0510033.pdf>

- SMC LID Manual:
http://www.lowimpactdevelopment.org/guest75/pub/All_Projects/SoCal_LID_Manual/SoCalLID_Manual_FINAL_040910.pdf
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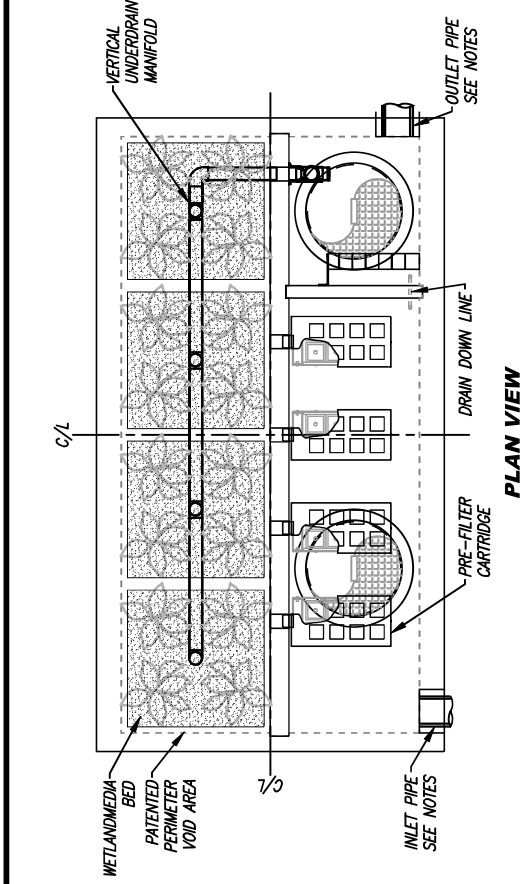
SITE SPECIFIC DATA		
PROJECT NUMBER	11012	
PROJECT NAME	GOODMAN LOGISTICS CENTER	
PROJECT LOCATION	FULLERTON, CA	
STRUCTURE ID	C1	
TREATMENT REQUIRED		
VOLUME BASED (CF)	FLOW BASED (GFS)	
24000	N/A	
TREATMENT HGL AVAILABLE (FT)	N/K	
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE	OFFLINE	
PIPE DATA	I.E.	MATERIAL
INLET PIPE 1	173.94	PVC
INLET PIPE 2	N/A	N/A
OUTLET PIPE	173.60	PVC
PRETREATMENT	BIOFILTRATION	DISCHARGE
RIM ELEVATION	182.29	182.29
SURFACE LOAD	PEDESTRIAN	N/A
FRAME & COVER	Ø30"	OPEN PLANTER
WETLANDMEDIA VOLUME (CY)		17.74
ORIFICE SIZE (DIA. INCHES)		TBD
NOTES: ENGINEER TO CONFIRM PIPE SIZE AND MATERIAL.		

INSTALLATION NOTES

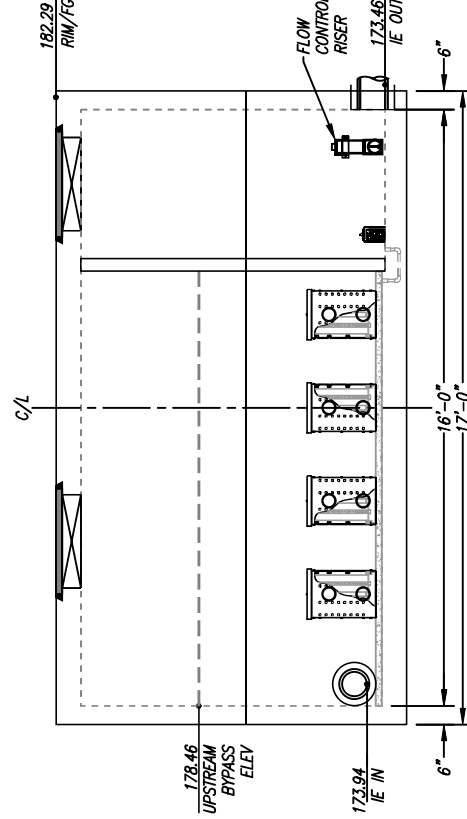
- CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURER'S SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURER'S CONTRACT.
- UNIT MUST BE INSTALLED ON LEVEL BASE. MANUFACTURER RECOMMENDS A MINIMUM 6" LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEER'S RECOMMENDED BASE SPECIFICATIONS.
- CONTRACTOR TO SUPPLY AND INSTALL ALL EXTERNAL CONNECTING PIPES. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH). INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR. ALL PIPES SHALL BE SEALED WATER TIGHT PER MANUFACTURER'S STANDARD CONNECTION DETAIL.
- CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.
- VEGETATION SUPPLIED AND INSTALLED BY OTHERS. ALL UNITS WITH VEGETATION MUST HAVE DRIP OR SPRAY IRRIGATION SUPPLIED AND INSTALLED BY OTHERS.
- CONTRACTOR RESPONSIBLE FOR CONTACTING BIO CLEAN FOR ACTIVATION OF UNIT. MANUFACTURER'S WARRANTY IS VOID WITHOUT PROPER ACTIVATION BY A BIO CLEAN REPRESENTATIVE.

GENERAL NOTES

- MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT BIO CLEAN.



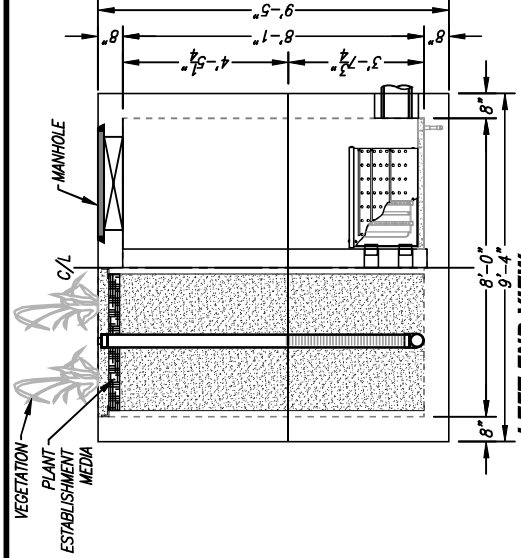
PLAN VIEW



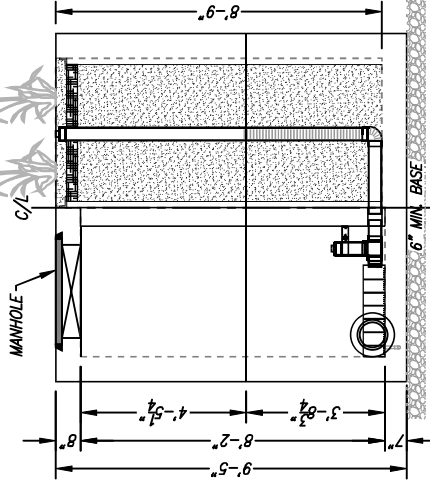
ELEVATION VIEW

LOW INFLOW PIPE DISCLOSURE:

IT IS RECOMMENDED THAT A SUFFICIENT VARIATION IN ELEVATION BETWEEN THE INLET AND OUTLET BE PROVIDED TO ALLOW FOR ACCUMULATION OF SEDIMENT IN THE PRE-TREATMENT CHAMBER. FAILURE TO DO SO MAY RESULT IN BLOCKAGE AT INFLOW POINT(S) WHICH MAY CAUSE UPSTREAM FLOODING.



LEFT END VIEW



RIGHT END VIEW

REQUIRED TREATMENT VOLUME (CF)	24,000
DRAINDOWN DURATION (HOURS)	48
AVERAGE DISCHARGE RATE PER MWS UNIT(GPM)	62.46
OPERATING HEAD (FT)	5.0
WETLANDMEDIA INFILTRATION RATE (IN/HR)	21.10
WETLANDMEDIA LOADING RATE (GPM/SF)	0.21

MWS-L-8-16-8'-9"-V-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

WETLANDS
THIS PRODUCT MAY BE PROVIDED BY ONE OR MORE OF THE FOLLOWING MANUFACTURERS: WETLANDS, AUSTRIAN, RELATED FOREIGN FIRMS OR OTHER PARTIES. PLEASE CONTACT BIO CLEAN.

BioClean
A Forterra Company

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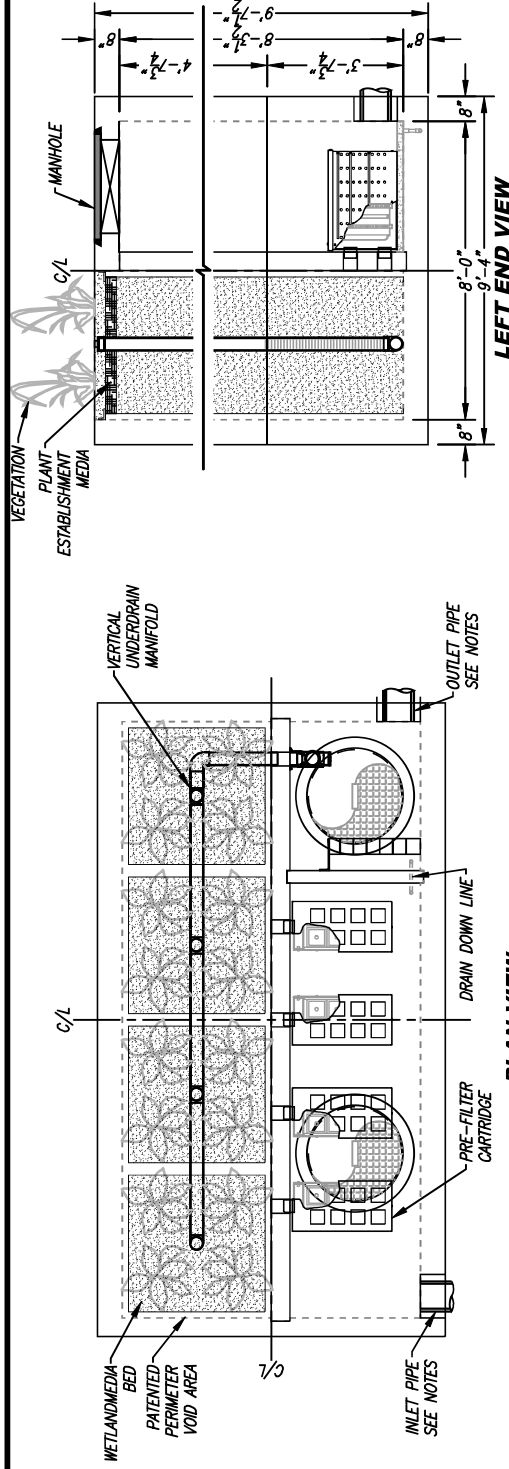
SITE SPECIFIC DATA	
PROJECT NUMBER	11012
PROJECT NAME	GOODMAN LOGISTICS CENTER
PROJECT LOCATION	FULLERTON, CA
STRUCTURE ID	C2
TREATMENT REQUIRED	
VOLUME BASED (CF)	FLOW BASED (CFS)
24,000	N/A
TREATMENT HGL AVAILABLE (FT)	N/K
PEAK BYPASS REQUIRED (CFS) - IF APPLICABLE	OFFLINE
PIPE DATA	I.E.
INLET PIPE 1	173.94
INLET PIPE 2	N/A
OUTLET PIPE	173.60
PRETREATMENT	BIOFILTRATION
RIM ELEVATION	182.50
SURFACE LOAD	PEDESTRIAN
FRAME & COVER	Ø30"
WETLANDMEDIA VOLUME (CY)	18.17
ORIFICE SIZE (DIA. INCHES)	TBD
NOTES: ENGINEER TO CONFIRM PIPE SIZE AND MATERIAL.	

INSTALLATION NOTES

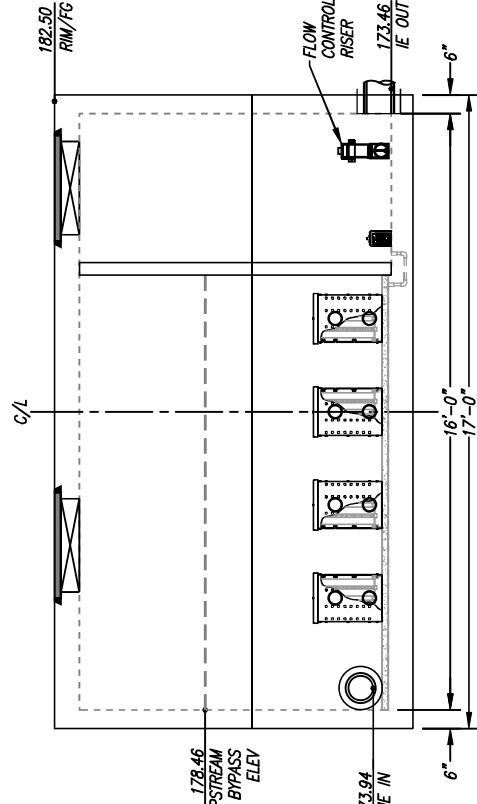
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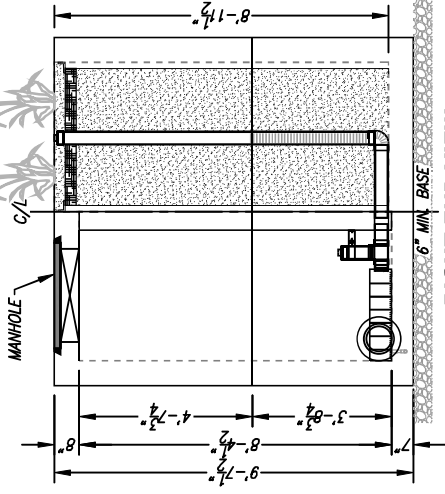
PLAN VIEW



ELEVATION VIEW

LOW INFLOW PIPE DISCLOSURE:

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LEFT END VIEW

RIGHT END VIEW

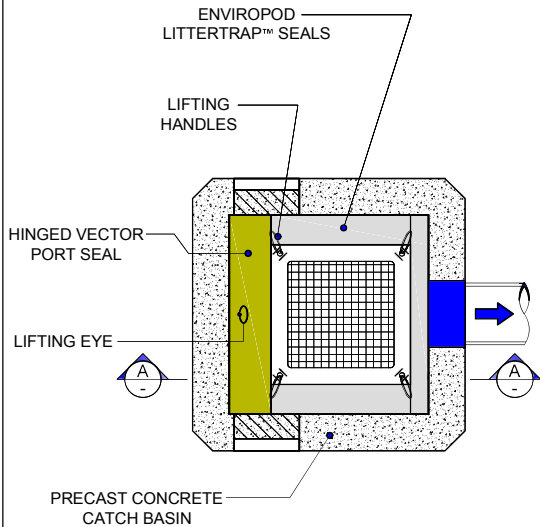
REQUIRED TREATMENT VOLUME (CF)	24,000
DRANDOWN DURATION (HOURS)	48
AVERAGE DISCHARGE RATE PER MWS UNIT(GPM)	62.46
OPERATING HEAD (FT)	5.0
WETLANDMEDIA INFILTRATION RATE (IN/HR)	21.10
WETLANDMEDIA LOADING RATE (GPM/SF)	0.21

MWS-L-8-16-8'-11.5"-V-HC
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

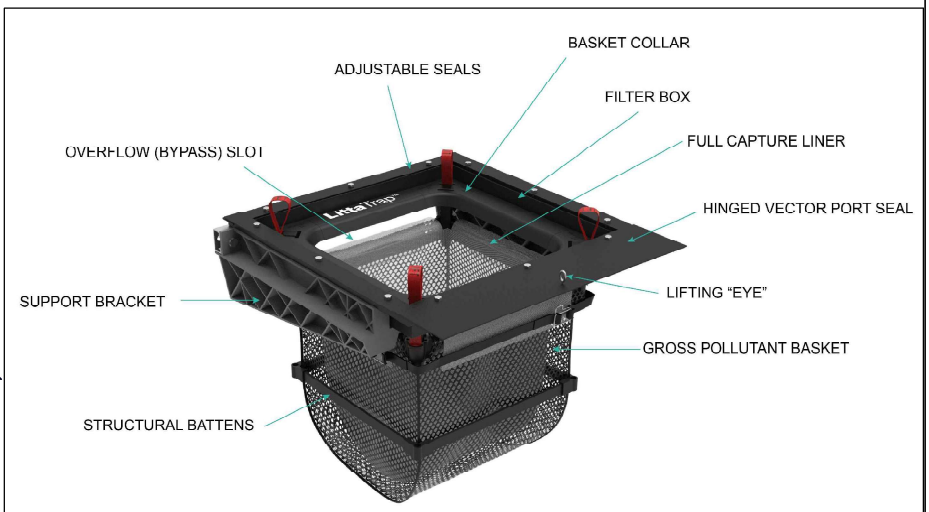
BioClean
A Forterra Company

WETLANDS
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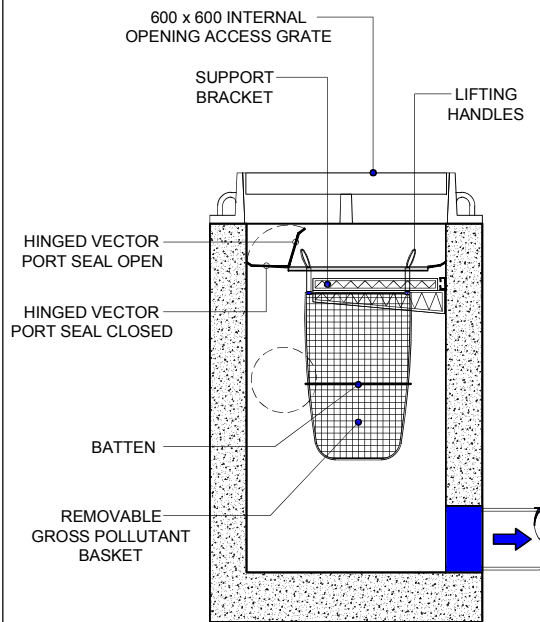
9/28/21/HARPER



PLAN VIEW



ENVIROPOD LITTATRAP™ FC COMPONENTS



SECTION A-A

ENVIROPOD Littatrap™ FC MODELS AND SIZES

Nominal Catch Basin Size (inch)	LittaTrap FC Model Size	Bracket Width (inch)	Min Filter Box Size (Without Seals)		Max Filter Box Size (With Seals)		Basket Collar Size		Basket Depth (inch)
			Length (inch)	Width (inch)	Length (inch)	Width (inch)	Length (inch)	Width (inch)	
18 x 18	LTFC4545	17.1	15.4	15.4	20.6	20.6	12.0	12.0	15.7
24 x 24	LTFC6060	22.4	20.2	20.2	25.3	25.3	17.3	17.3	15.7
36 x 24	LTFC9060	34.3	32.0	17.6	37.1	22.7	29.1	17.3	15.7

ENVIROPOD Littatrap™ FC FLOW AND STORAGE SPECIFICATION

Basin Size (Inch)	LittaTrap FC Model SIZE	Screen Area in²	Maximum Trash Capture Volume (MCTV) ft³	Design Flow Rate 50% MCTV CFS	Standard Bypass Flow CFS
18 x18	LTFC4545	601	0.7	2.1	2.1
24 x 24	LTFC6060	969	1.6	3.2	3.3
36 x18	2 x LTFC4545 *	1203	1.4	4.2	4.2
36 x 24	LTFC9060	1473	3.0	4.8	4.5
36 x 36	LTFC9060 + Seal Extension Kit **	1473	3.0	4.8	4.5
48 x 48	4 x LTFC6060 ***	3875	6.5	12.9	13.2

The Enviropod Littatrap™ has an adjustable bypass. Flow rates listed are for a factor set bypass. Please contact Enviropod for specific bypass requirements.

For curb entry catch basins a series of standard Littatrap™ models and seal extension kits are used to extend across the length of the curb entry.

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The "Enviropod Littatrap™" may be protected by one of the following Canadian, USA or International patent numbers and has other patents pending : 2,810,974, 13/824,376, 15/459,964, 2011302712, 588049

PATENT No.

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**ENVIROPOD Littatrap™ FC
WITH VECTOR INSPECTION PORT
SPECIFICATION DRAWING
(IMPERIAL UNITS)**

REV #	DATE	REVISION DESCRIPTION	BY	SHEET NUMBER 1 OF 1
B	10.04.20	FULL CAPTURE LINER	R.P.	
C	21.04.20	VECTOR PORT UPDATE	R.P.	
D	29.06.20	VECTOR INSPECTION PORT	R.P.	
E	30.07.20	TABLE REVISED	R.P.	
F	09.09.20	TABLE REVISED	R.P.	

www.enviropod.com

DATE : 13.07.19

SCALE : NTS

DRAWN : R.P.

CHECKED : M.H.

PROJECT No :

REV : F

PLAN VIEW

18" Ø HDPE WATER QUALITY FLOW OUTLET PIPE

1'-5" OFFSET

3" OFFSET

STEPPED CONCRETE WEIR

36" Ø RCP CONVEYANCE OUTLET PIPE

95" Ø MANHOLE I.D.

6"

30" Ø CAST IRON FRAME AND COVER (TYP.)

6" Ø HDPE WATER QUALITY FLOW INLET PIPE

LADDER RUNGS

36" Ø CMP CONVEYANCE INLET PIPE

1'-9" OFFSET

ELEVATION VIEW

6'-9 1/2" ±

6'-9 1/2" ±

6'-9 1/2" ±

36" Ø HDPE WATER QUALITY OUTLET PIPE

30" Ø CAST IRON FRAME AND COVER (TYP.)

3" TALL 30" Ø GRADE RINGS AS REQUIRED GROUT PACK TO GET FRAME AND COVER TO MATCH FINISHED GRADE

5'-6"

6"

36" Ø CMP INLET PIPE "C"

FLOOR EL. = "B"

12" ±

8'-0"

9'-6"

9"

36" Ø HDPE AND 36" Ø RCP CONVEYANCE OUTLET PIPES

INV. EL. = 174.20' ±

INV. EL. = 173.20' ±

SUBGRADE EL. = 173.20' ±

RIM EL. = 180.9' ±

STEPPED CONCRETE WEIR ELEVATION "A" FOR PHASE I

PLACE STAINLESS FACE PLATE OR CONCRETE TO INCREASE WEIR ELEVATIONS TO "D" FOR PHASE II

<i>WEIR ELEVATIONS AND HEIGHTS - PHASE I (VOLUME CONTROL -</i>		
A	5'-4" LONG STEPPED WEIR WALL ELEVATION - PHASE I	178.20' ±
B	1' HIGH ELEVATION	174.20' ±
C	STEPPED WEIR WALL TOTAL HEIGHT - PHASE I	4.0'

<i>WEIR ELEVATIONS AND HEIGHTS - PHASE II (VOLUME CONTROL -</i>		
D	15'-5" LONG STEPPED WEIR WALL ELEVATION - PHASE II	178.50' ±
E	STEPPED WEIR WALL TOTAL HEIGHT - PHASE II	4.3'

GENERAL NOTES : 180°

1. THIS SHEET IS IN ENGINEERING & CONSTRUCTION FORMATTED DETAIL.
2. PLAN VIEW FRAME AND COVER NOT SHOWN FOR CLARITY.
3. 6" DIAMETER RCP/HDP/PE IS THE LARGEST SUGGESTED INLET/OUTLET PIPE SIZE FOR THIS DIVERSION STRUCTURE.
4. DESIGN LOAD: H-20 TRAFFIC FROM 1' TO 6' OF COVER PER ASTM C890 & C915 AND ASSHTO LOADING METHODS.

- MATERIALS:**
1. ALL DIMENSIONS ARE IN FEET OR DECIMAL INCHES
 2. PRECAST MATERIALS AND MANUFACTURING METHODS SHALL CONFORM TO ASTM C-857 & C-478.
 3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH $F_c = 3,000$ PSI AT 28 DAYS.
 4. THE PORTLAND CEMENT USED IN THE PRECAST SECTION SHALL MEET THE REQUIREMENTS OF TYPE II ACCORDANCE WITH ASTM CLASS W C-150.

THESE ARE TEMPLATE DRAWINGS. JOINTS, WALL, TOP AND BOTTOM SLAB THICKNESS VARY ACROSS JE



CENTER
FULLERTON, CA

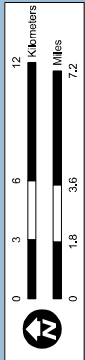
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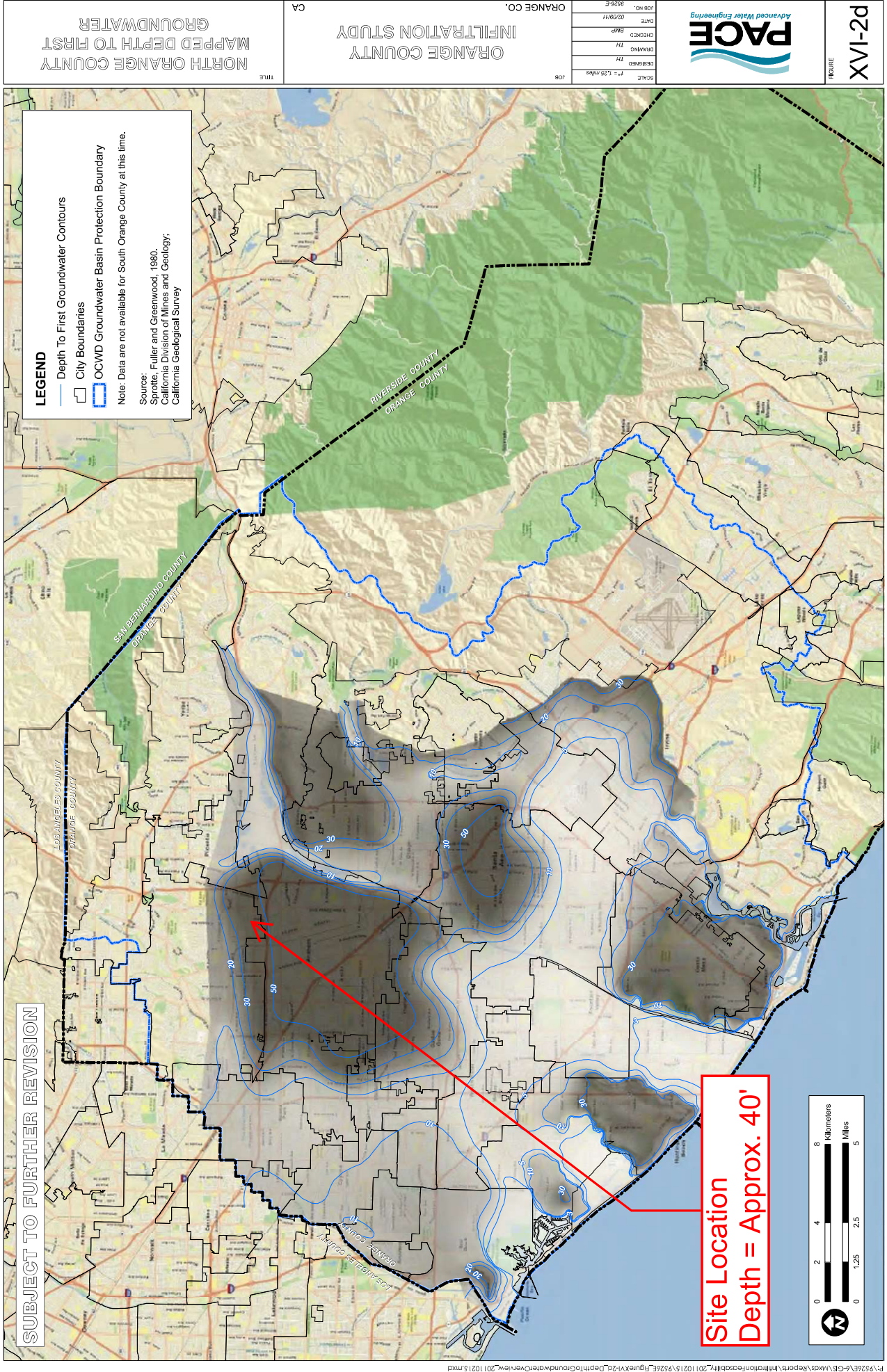
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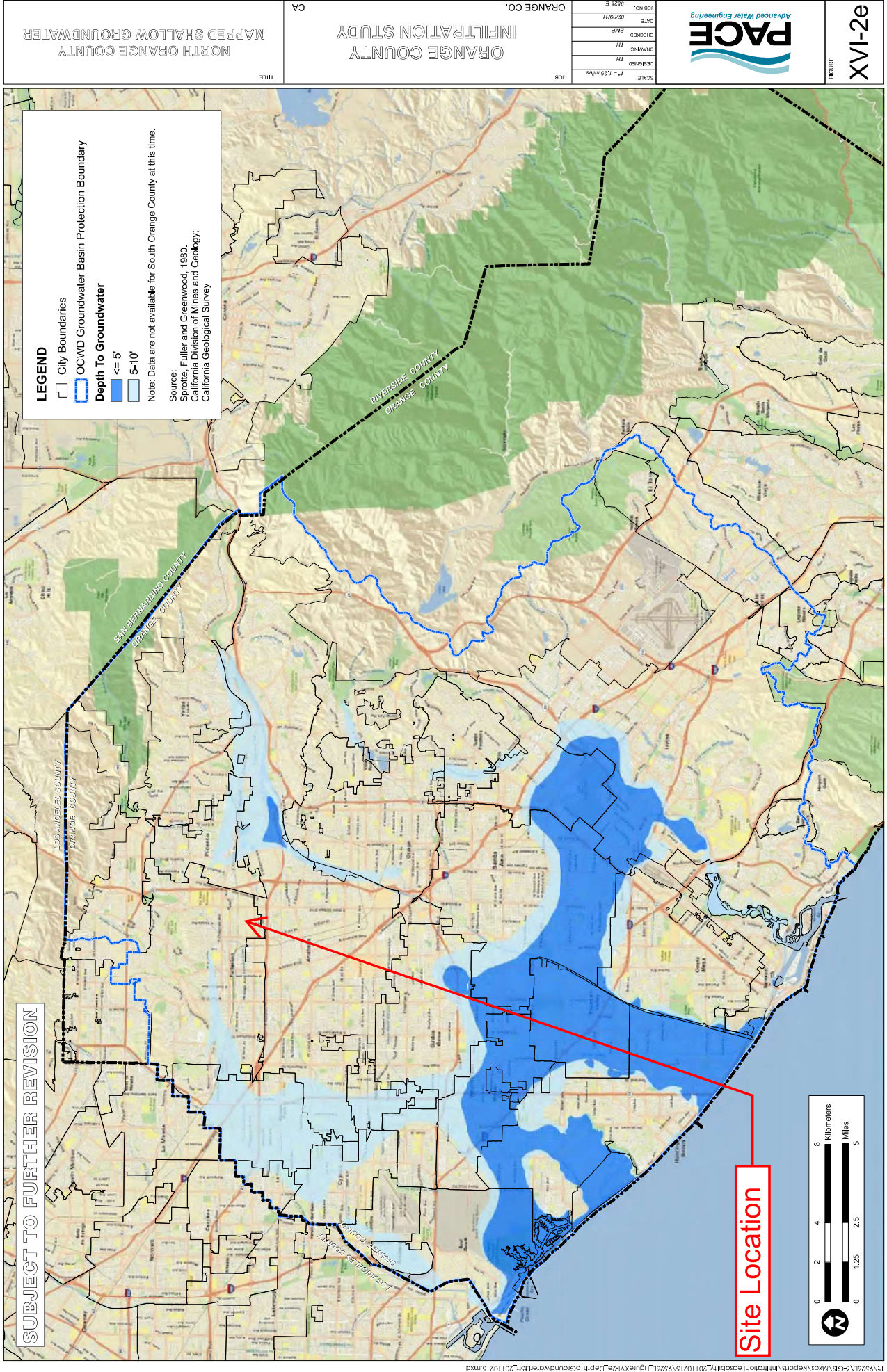
ATTACHMENT C

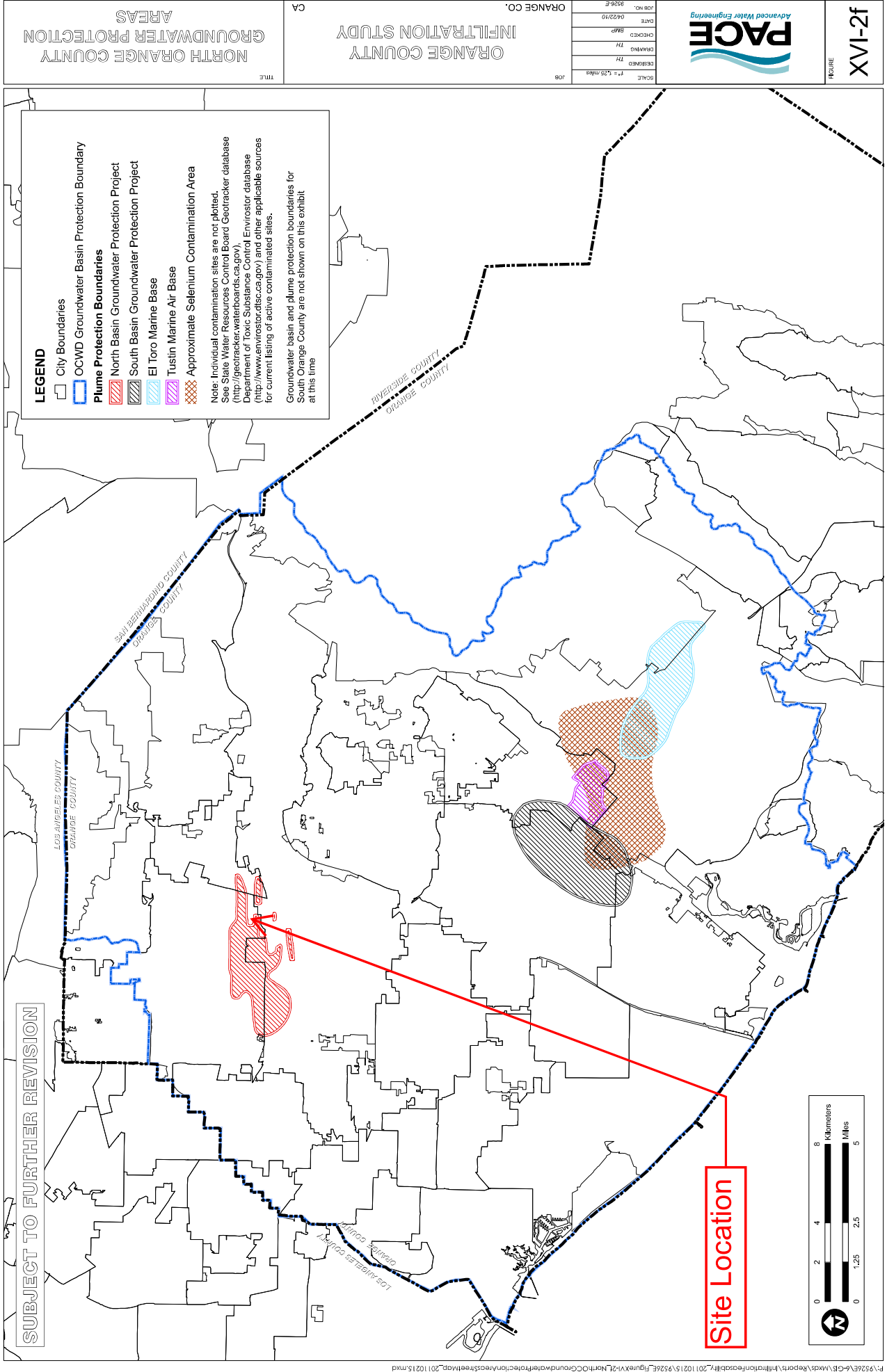
SUPPORTING MAPS AND EXHIBITS

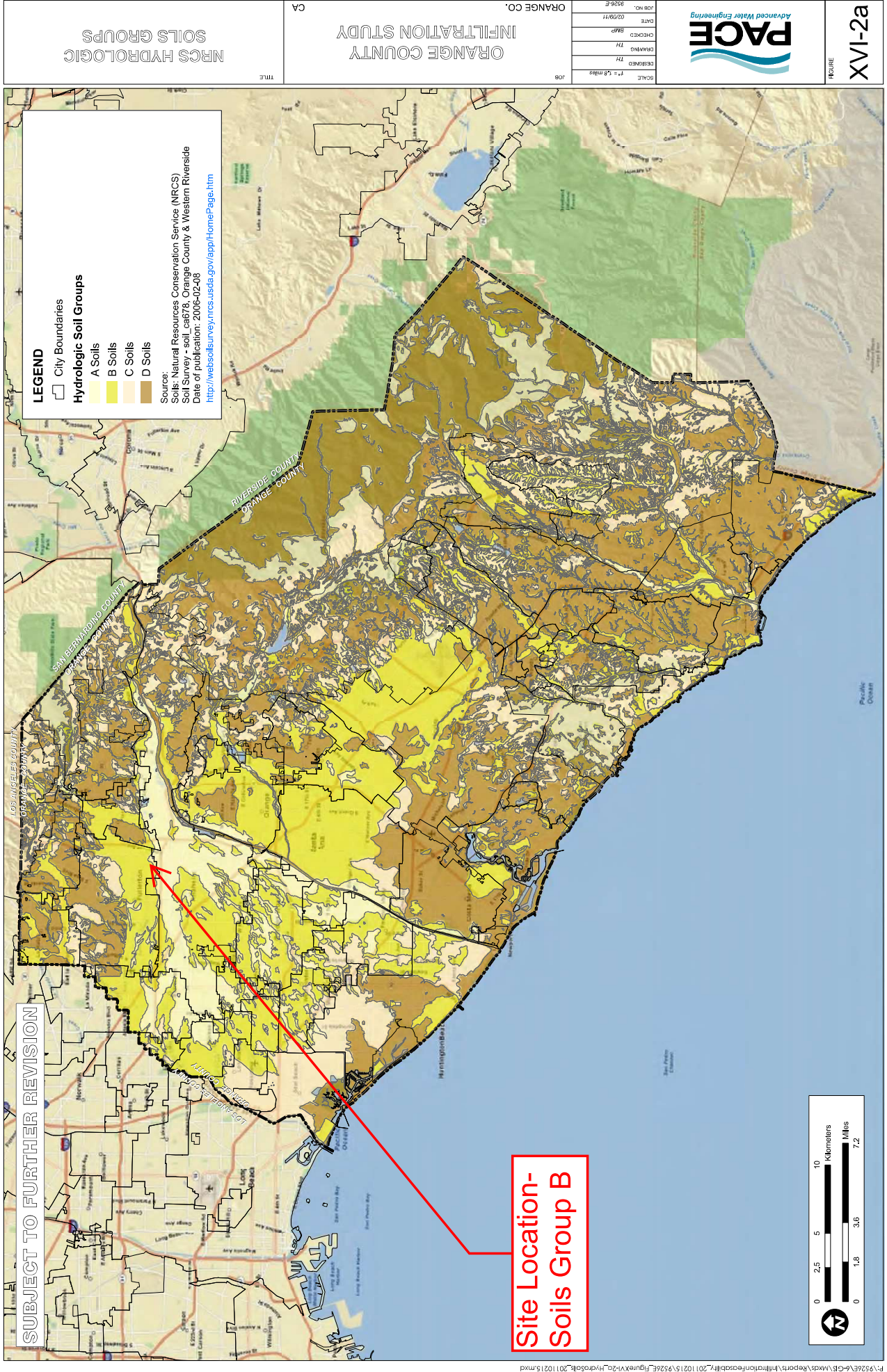


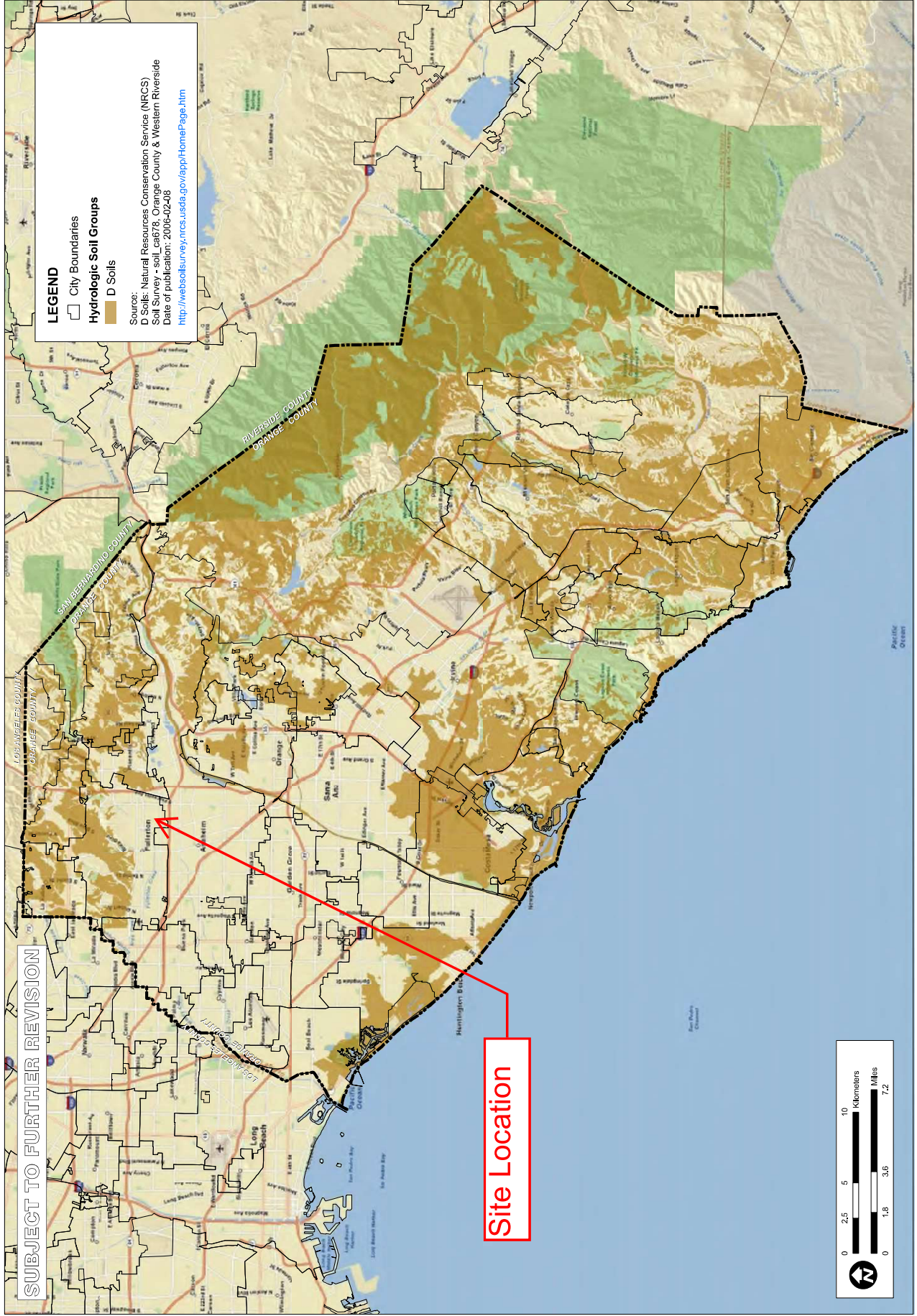
Site Location
Depth = 0.9"

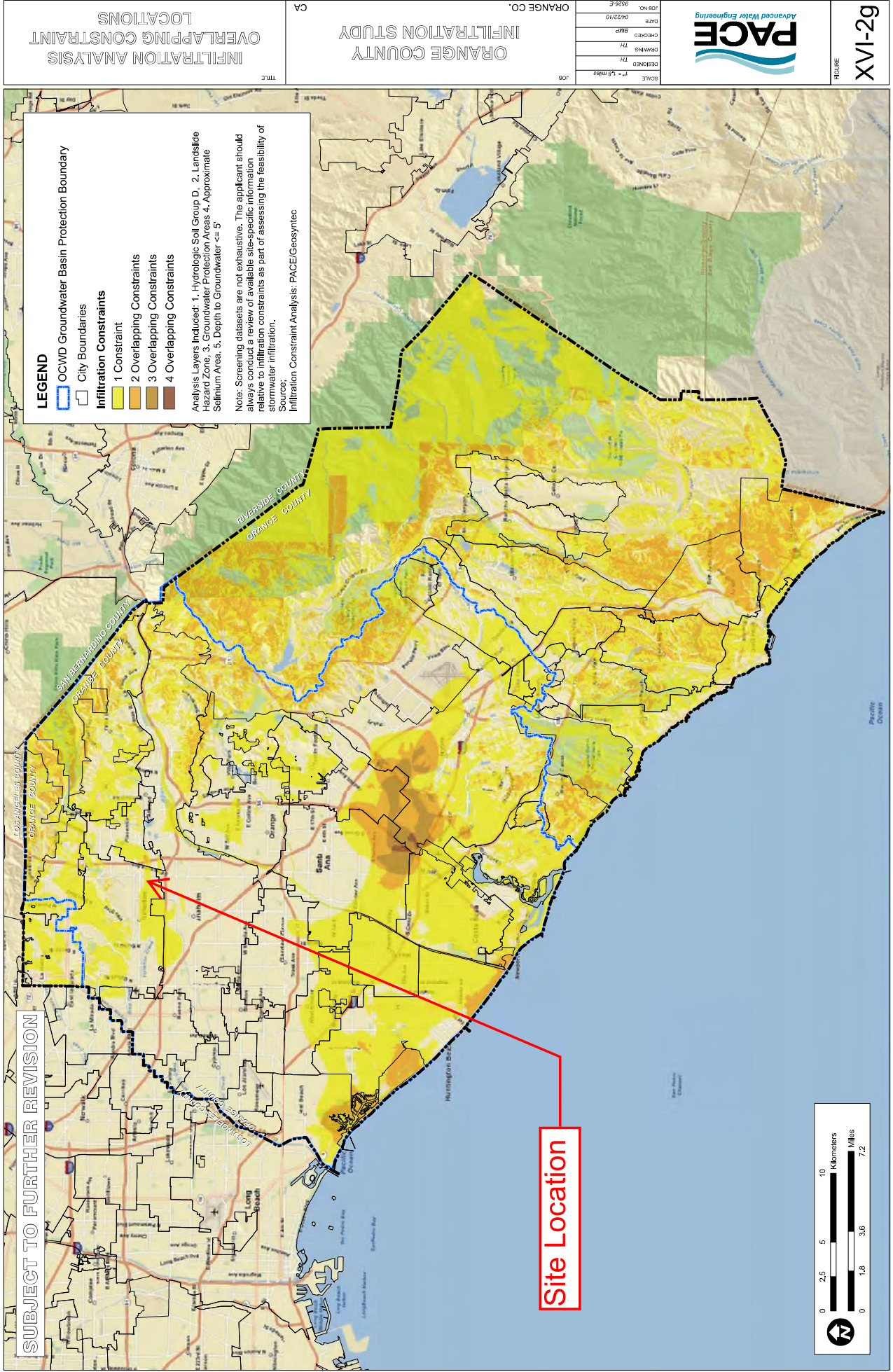














- RESIDENTIAL ZONES**
- R-1 One-Family Residential
 - R-1P One-Family Residential Preservation
 - PRD Planned Residential Development
 - R-2P Two-Family Residential Preservation
 - R-2 Two-Family Residential
 - R-3 Garden-Type Multiple Residential
 - R-3R Restricted (Single Story) Multiple Residential
 - R-3P Limited Density, Multiple Residential Preservation
 - R-3 Limited Density, Multiple Residential
 - R-4 Medium Density, Multiple Residential
 - R-5 Maximum Density, Multiple Residential
 - R-1M Mobile Home Park
- COMMERCIAL ZONES**
- O-P Office Professional
 - C-G Commercial Greenbelt
 - G-G General Commercial
 - C-3 Central Business District Commercial
 - C-M Commercial Manufacturing
- INDUSTRIAL ZONES**
- M-P Manufacturing Park
 - M-G Manufacturing, General
- SPECIAL ZONE CLASSIFICATIONS**
- P-L Public Land
 - O-S Open Space
 - O-G Oil Gas
 - SPD Specific Plan District
- SPECIAL DISTRICTS AND OTHER AREAS OF INTEREST**
- Zoning Boundary
 - Parking District Boundary
 - Potential Landmark District
 - Central Business District
 - Homeowners Association Area
 - Recreational Trail
 - Fuel Modification Zone or Habitat Element Required
 - Historic Resource
- Index to adjacent pages:**
- | | | |
|----|----|----|
| 29 | 31 | 33 |
| 30 | 32 | 34 |
| 9 | 10 | |

This Zoning Map is produced by City of Fullerton, Community Development Dept. GIS. For updates, please visit www.cityoffullerton.com and enter "zoning maps" in the search box.
GIS Design File: C:\Dev\GIS\Planning\4081890\Zoning\4081890\ZoningMapSeries.aprx

[Home](#) ➤ [Water Issues](#) ➤ [Programs](#) ➤ [Ocean](#)

Ocean Standards

STATE WATER QUALITY PROTECTION AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE

California's Marine State Water Quality Protection Areas

This [pamphlet](#) contains information on the Areas of Special Biological Significance, including legal descriptions, maps, and applicable Board resolutions, including exceptions. The document presented is the June 2003 publication, with electronic revisions as of October 2003. For a black and white hard copy of this document, contact [Dominic Gregorio](#), Ocean Standards Unit, Division of Water Quality.

Maps and Photos of Areas of Special Biological Significance (pages 11-62 of the above document)

Page Nos.	Maps, Photos and Information	County	Region No.	SWRCB Resolution No.	ASBS No.
11-14	Redwoods National Park (Reconnaissance Report) (Map) (Picture) (Panoramic) • Northern Section (Map) • Central Section (Map) • Southern Section (Map)	Del Norte and Humboldt	1	74-28	8
15	Trinidad Head Kelp Beds (Reconnaissance Report) (Map) (Picture) (Panoramic)	Humboldt	1	74-28	6
16-19	Kings Range National Conservation Area (Reconnaissance Report) (Map) (Picture) (Panoramic) • Northern Section (Map) • Central Section (Map) • Southern Section (Map)	Humboldt and Mendocino	1	74-28	7
20	Pygmy Forest Ecological Staircase (Map) (Picture)	Mendocino	1	74-28	1
21	Saunders Reef Kelp Beds (Reconnaissance Report) (Map) (Picture)	Mendocino	1	74-28	5
22	Del Mar Landing Ecological Reserve (Map) (Picture)	Sonoma	1	74-28	2
23	Gerstle Cove (Reconnaissance Report) (Map) (Picture)	Sonoma	1	74-28	3
24	Bodega Marine Life Refuge (Reconnaissance Report) (Map) (Picture)	Sonoma	1	74-28	4
25	Bird Rock (Reconnaissance Report) (Map) (Picture)	Marin	2	74-28	14
26		Marin	2	74-28	12

	Point Reyes Headland Reserve and Extension (Map) (Picture) (Panoramic)				
27	Double Point (Reconnaissance Report) (Map) (Picture)	Marin	2	74-28	13
28	Duxbury Reef Reserve and Extension (Reconnaissance Report) (Map) (Picture) (Picture) (Picture)	Marin	2	74-28	11
29-31	Farallon Island (Reconnaissance Report) (Map) (Picture) • Northern Section (Map) • Southern Section (Map)	San Francisco	2	74-28	10
32	James V. Fitzgerald Marine Reserve (Map) (Picture) (Picture)	San Mateo	2	74-28	9
33	Ano Nuevo Point and Island (Map) (Picture)	San Mateo	3	74-28	15
34	Pacific Grove Marine Gardens Fish Refuge and Hopkins Marine Life Refuge (Reconnaissance Report) (Map) (Picture)	Monterey	3	74-28	19
35	Carmel Bay (Reconnaissance Report) (Map) (Picture) (Panoramic)	Monterey	3	75-61	34
36	Point Lobos Ecological Reserve (Map) (Picture) (Panoramic)	Monterey	3	74-28	16
37	Julia Pfeiffer Burns Underwater Park (Map) (Picture)	Monterey	3	74-28	18
38	Ocean Area Surrounding the Mouth of Salmon Creek (Map) (Picture)	Monterey	3	74-28	20
39-42	San Miguel, Santa Rosa, and Santa Cruz Islands (Map) • San Miguel Island (Reconnaissance Report) (Map) • Santa Rosa Island (Reconnaissance Report) (Map) (Picture) • Santa Cruz Island (Reconnaissance Report) (Map) (Picture)	Santa Barbara	3	74-28	17
43-45	Santa Barbara Island and Anacapa Island (Map) • Anacapa Island (Map) (Picture) • Santa Barbara Island (Map) (Picture)	Santa Barbara and Ventura	4	74-28	22
46-50	Mugu Lagoon to Latigo Point (Reconnaissance Report: Part A & Part B) (Map) (Panoramic) (Picture) (Picture) (Picture) • Western Section (Map) • West Central Section (Map) • East Central Section (Map) • Eastern Section (Map)	Ventura and Los Angeles	4	74-28	24
51	San Nicolas Island and Begg Rock (Map) (Picture)	Ventura	4	74-28	21
52-53	Santa Catalina Island (Map)	Los Angeles	4	74-28	25

	<ul style="list-style-type: none"> Subarea One, Isthmus Cove to Catalina Head (Reconnaissance Report) (Map) (Picture) 				
54	Santa Catalina Island (Map) <ul style="list-style-type: none"> Subarea Two, North End of Little Harbor to Ben Weston Point (Reconnaissance Report) (Map) 	Los Angeles	4	74-28	26
55	Santa Catalina Island (Map) <ul style="list-style-type: none"> Subarea Three, Farnsworth Bank Ecological Reserve (Reconnaissance Report) (Map) 	Los Angeles	4	74-28	27
56	Santa Catalina Island (Map) <ul style="list-style-type: none"> Subarea Four, Binnacle Rock to Jewfish Point (Reconnaissance Report) (Map) 	Los Angeles	4	74-28	28
57	Newport Beach Marine Life Refuge (Reconnaissance Report) (Map) (Picture)	Orange	8	74-32	32
58	Irvine Coast Marine Life Refuge (Reconnaissance Report) (Map) (Picture) (Picture)	Orange	8 & 9	74-32	33
59	Heisler Park Ecological Reserve (Map) (Picture)	Orange	9	74-28	30
60	San Clemente Island (Map) (Picture)	Los Angeles	4	74-28	23
61	San Diego Marine Life Refuge (Reconnaissance Report) (Map) (Picture)	San Diego	9	74-28	31
62	San Diego-La Jolla Ecological Reserve (Reconnaissance Report) (Map) (Picture) (Picture)	San Diego	9	74-28	29

Questions or Comments?

For more information on Areas of Special Biological Significance, contact [Dominic Gregorio](#), Ocean Standards Unit, Division of Water Quality.

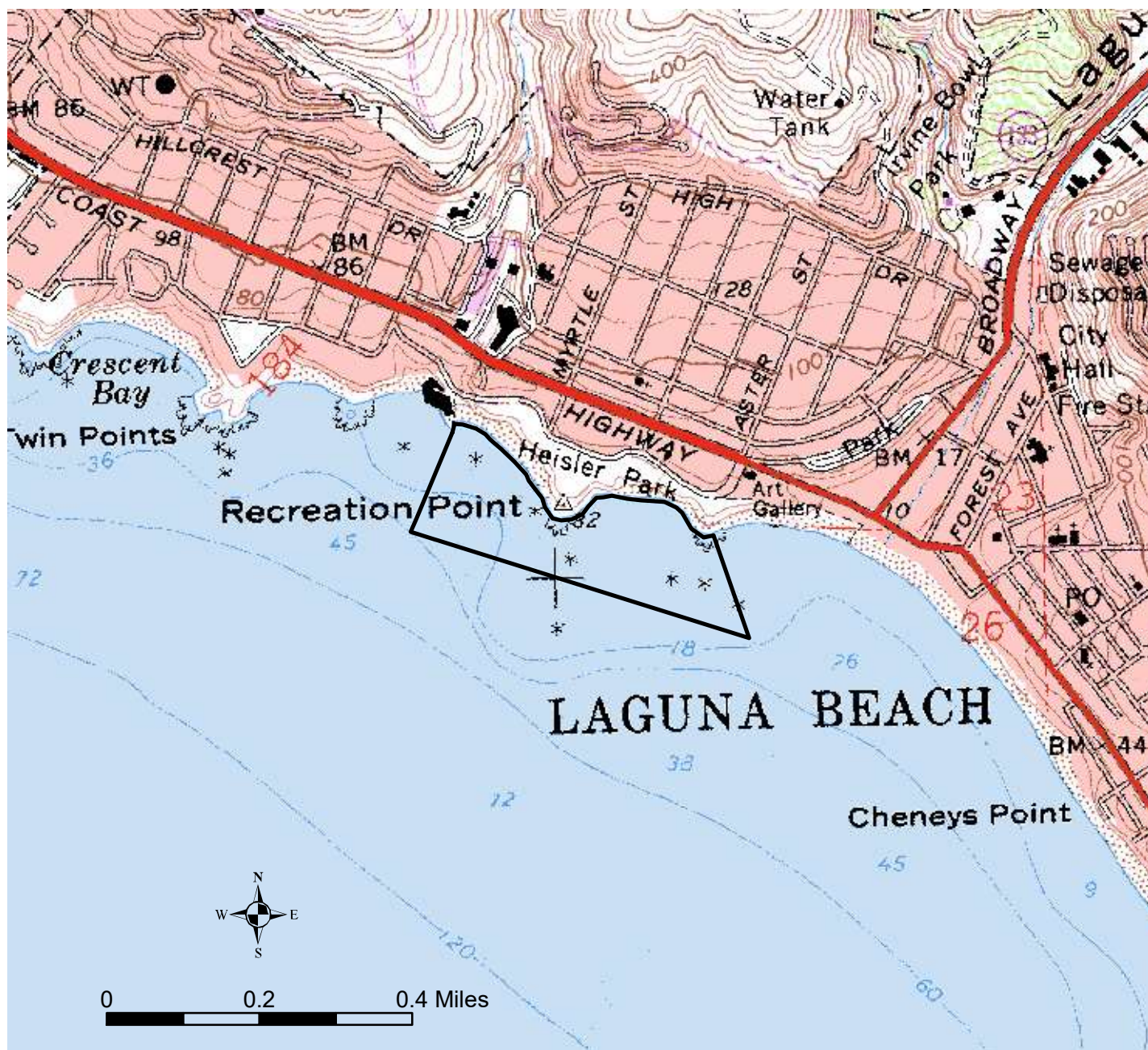
(Updated 10/6/11)

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The California Water Boards include the [State Water Resources Control Board](#) and nine [Regional Boards](#).
 The State Water Board is one of six environmental entities operating under the authority of the California Environmental Protection Agency
[Cal/EPA](#) | [ARB](#) | [CalRecycle](#) | [DPR](#) | [DTSC](#) | [OEHA](#) | [SWRCB](#)

San Diego Regional Water Quality Control Board

State Water Quality Protection Area Area of Special Biological Significance No. 30 Heisler Park Ecological Reserve

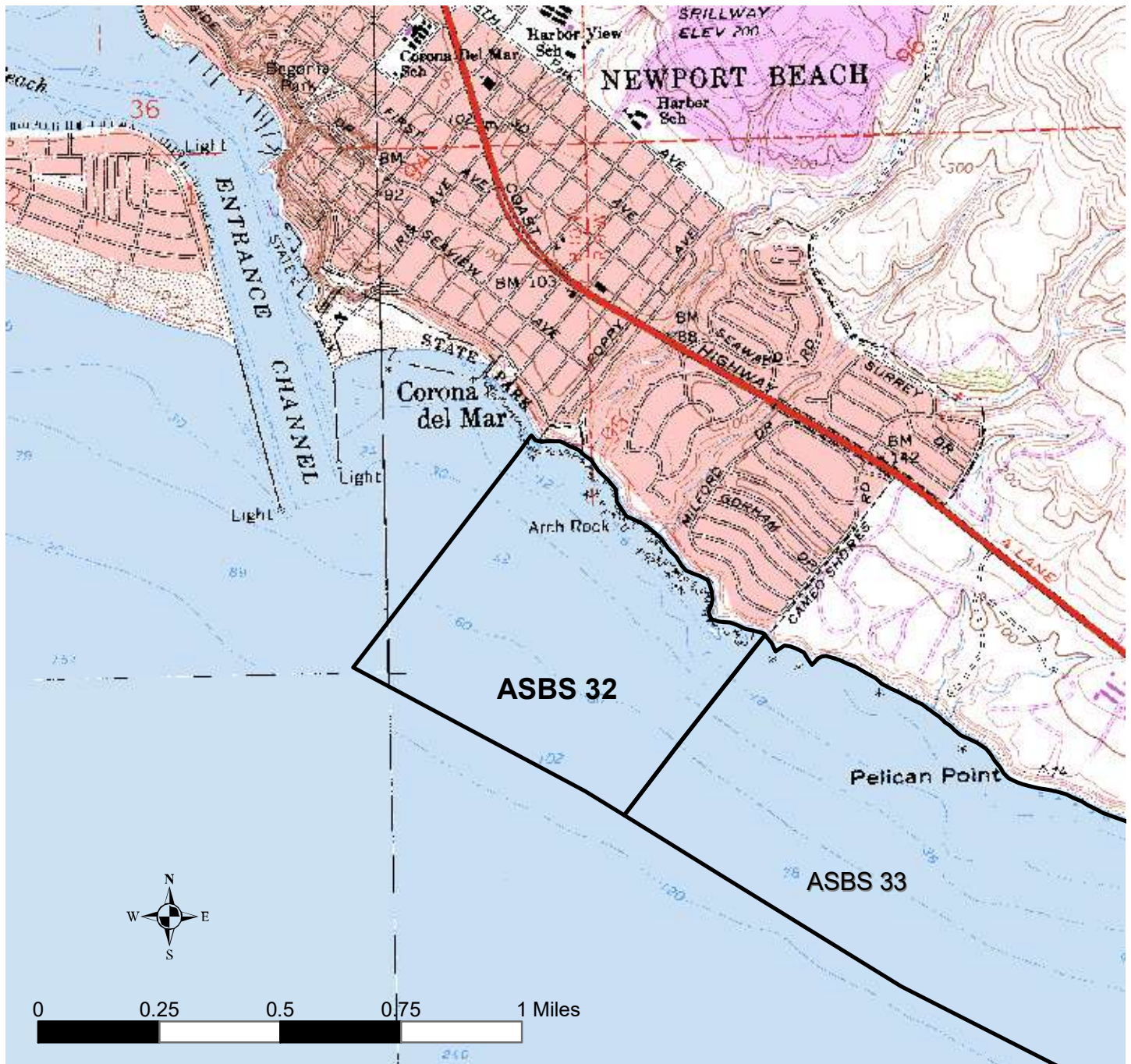


Ref. Map: USGS Laguna Beach, CA

D. E. Gregorio
C. S. Bianchi
Division of Water Quality
January 2003

Santa Ana Regional Water Quality Control Board

State Water Quality Protection Area Area of Special Biological Significance No. 32 Newport Beach Marine Life Refuge

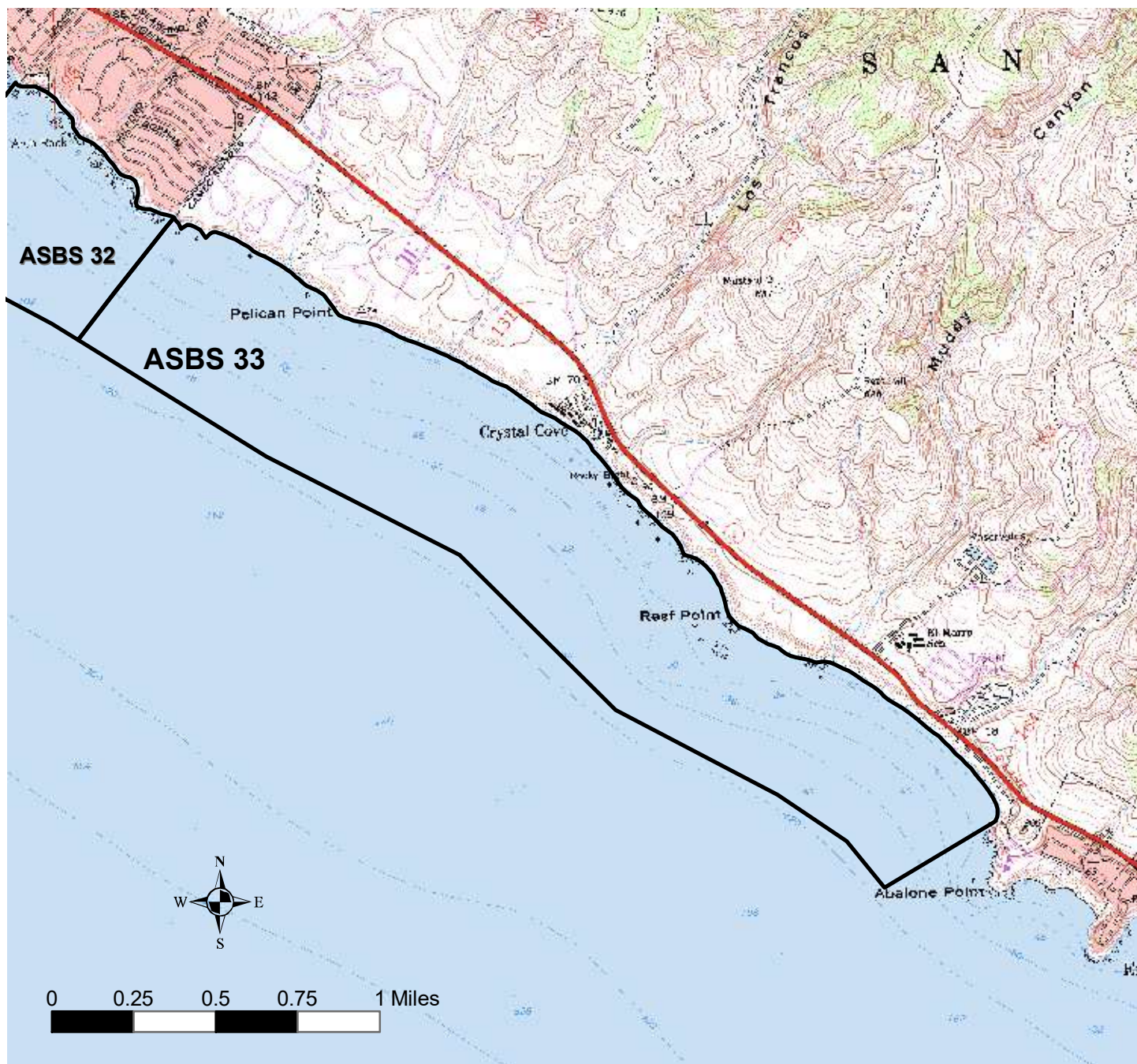


Ref. Map: USGS Newport Beach, CA
USGS Laguna Beach, CA

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Division of Water Quality
January 2003

Santa Ana Regional Water Quality Control Board

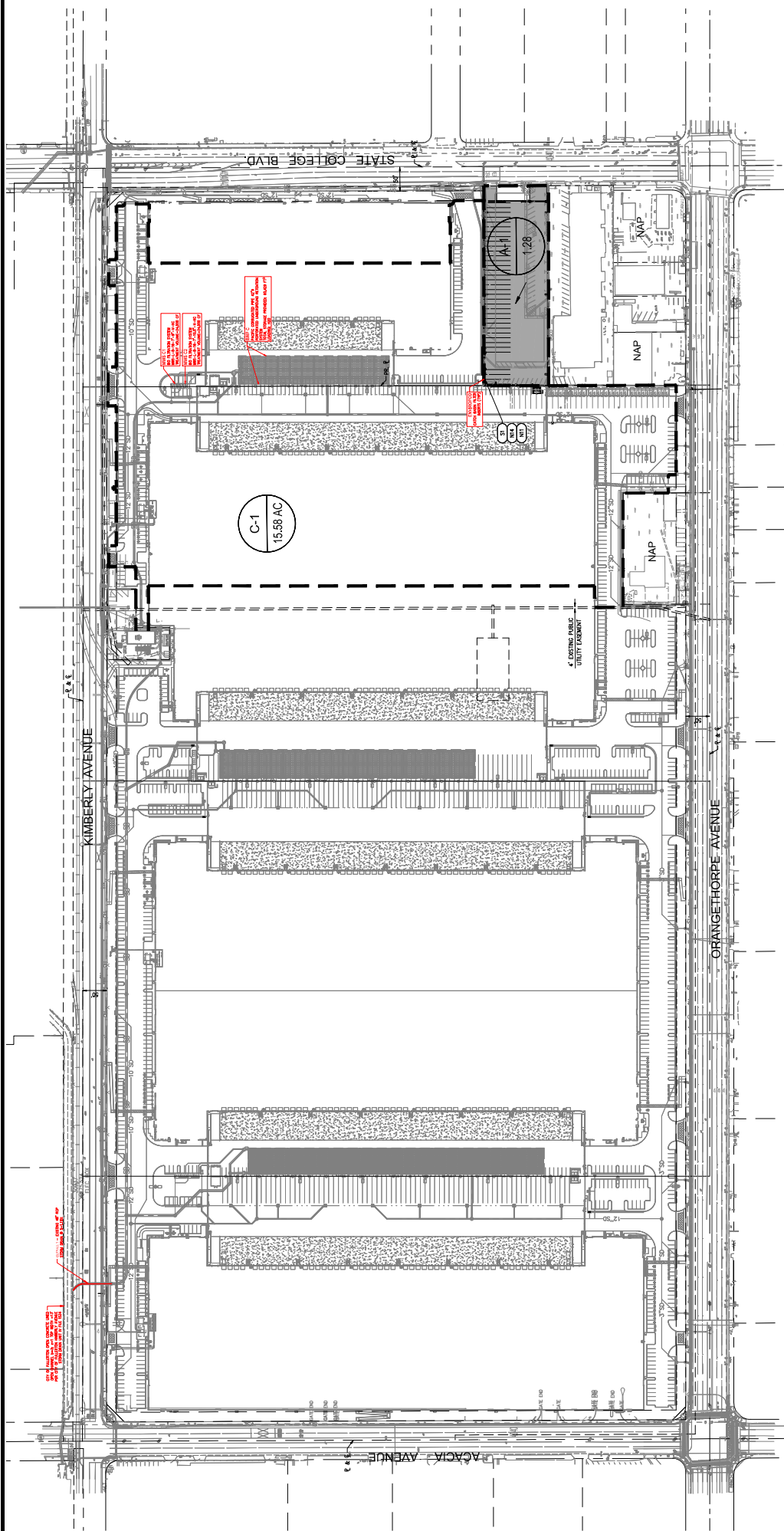
State Water Quality Protection Area Area of Special Biological Significance No. 33 Irvine Coast Marine Life Refuge



Ref. Map: USGS Laguna Beach, CA

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Division of Water Quality
January 2003

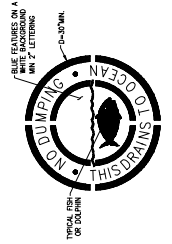
ATTACHMENT D
**LONG TERM AGREEMENTS FOR IMPLEMENTATION AND
MAINTENANCE**
(OPERATIONS AND MAINTENANCE PLAN)



Proposed DMA SUMMARY								
Area ID	Area (sq)	Area (sq)	Ratio percent (sq)	Percent area DMA	Impervious Area(sq)	Percent Impervious	Percent Coefficient	DQ (sq)
P-2	55,272	2,28	0.5	0	55,272	100.00	0.5000	3,764
C-2	678,660	13,58	0.9	28.68	693,124	95.978	0.8684	44,199
W-2	105,917	4.3	0	0	105,917	100.00	0.000	3,394

SOURCE CONTROL BMPs:

SI	PROVIDE STORM DRAIN SYSTEM STENCILING & SIGNAGE.
NT4	COMMON AREA CATCH BASIN INSPECTION.



NOTE: STORM DRAIN IS A PRIVATE SYSTEM. ALL STORM DRAIN INLETS (CATCH BASINS) THAT DISCHARGE INTO AN EXISTING OR PROPOSED STORM DRAIN SHALL BE MARKED (LABELLED) WITH THE ABOVE NOTATION TO DISCOURAGE ILLEGAL DUMPING OF POLLUTANTS.

78 STORM DRAIN INLET MARKING
NTS

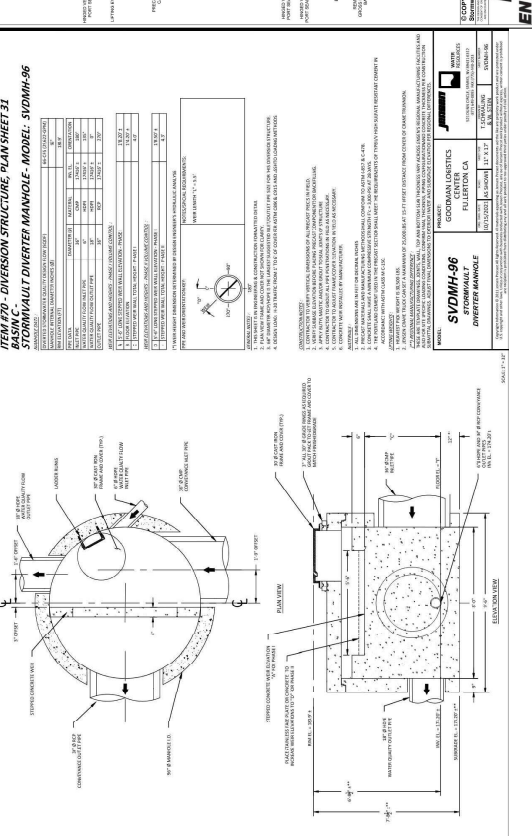
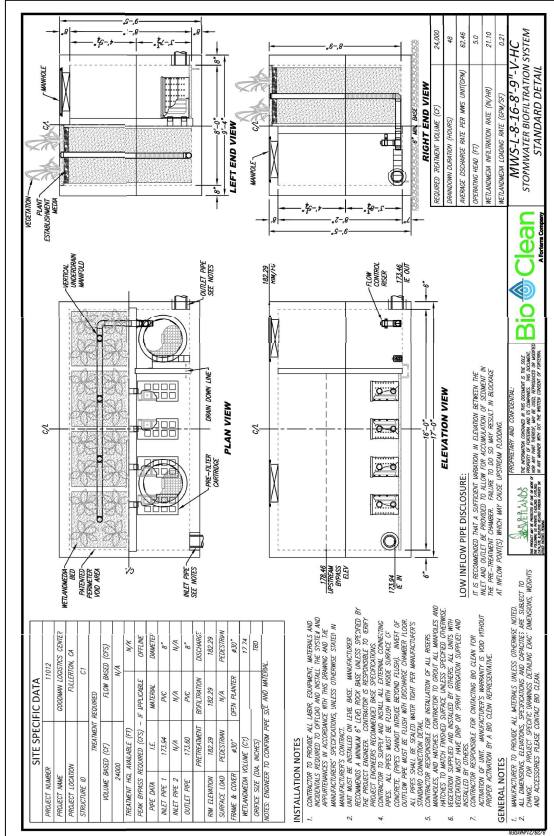
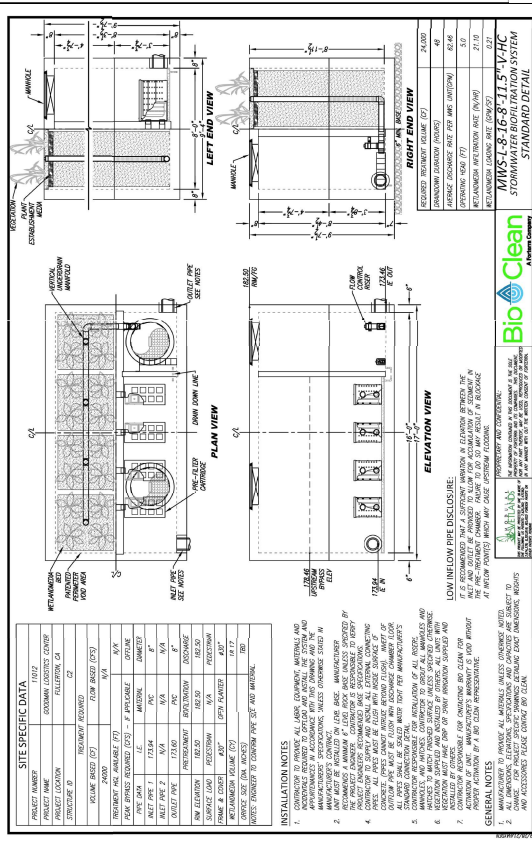
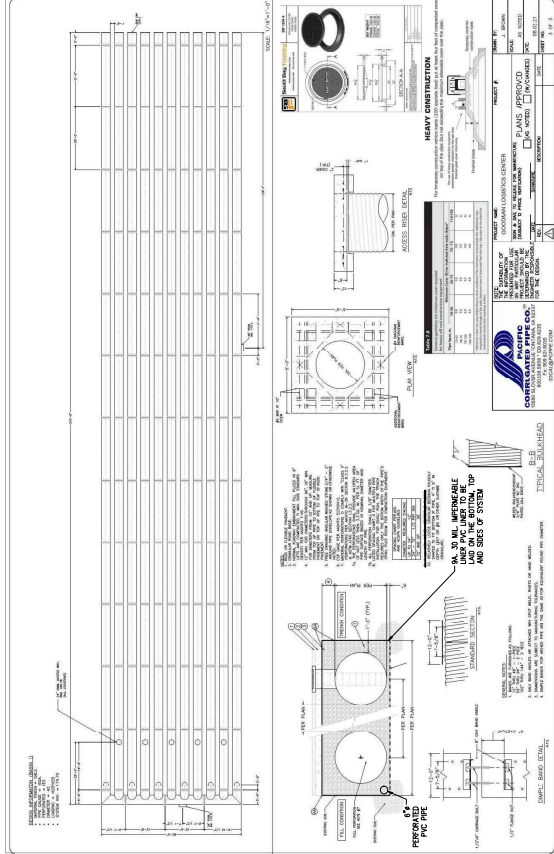
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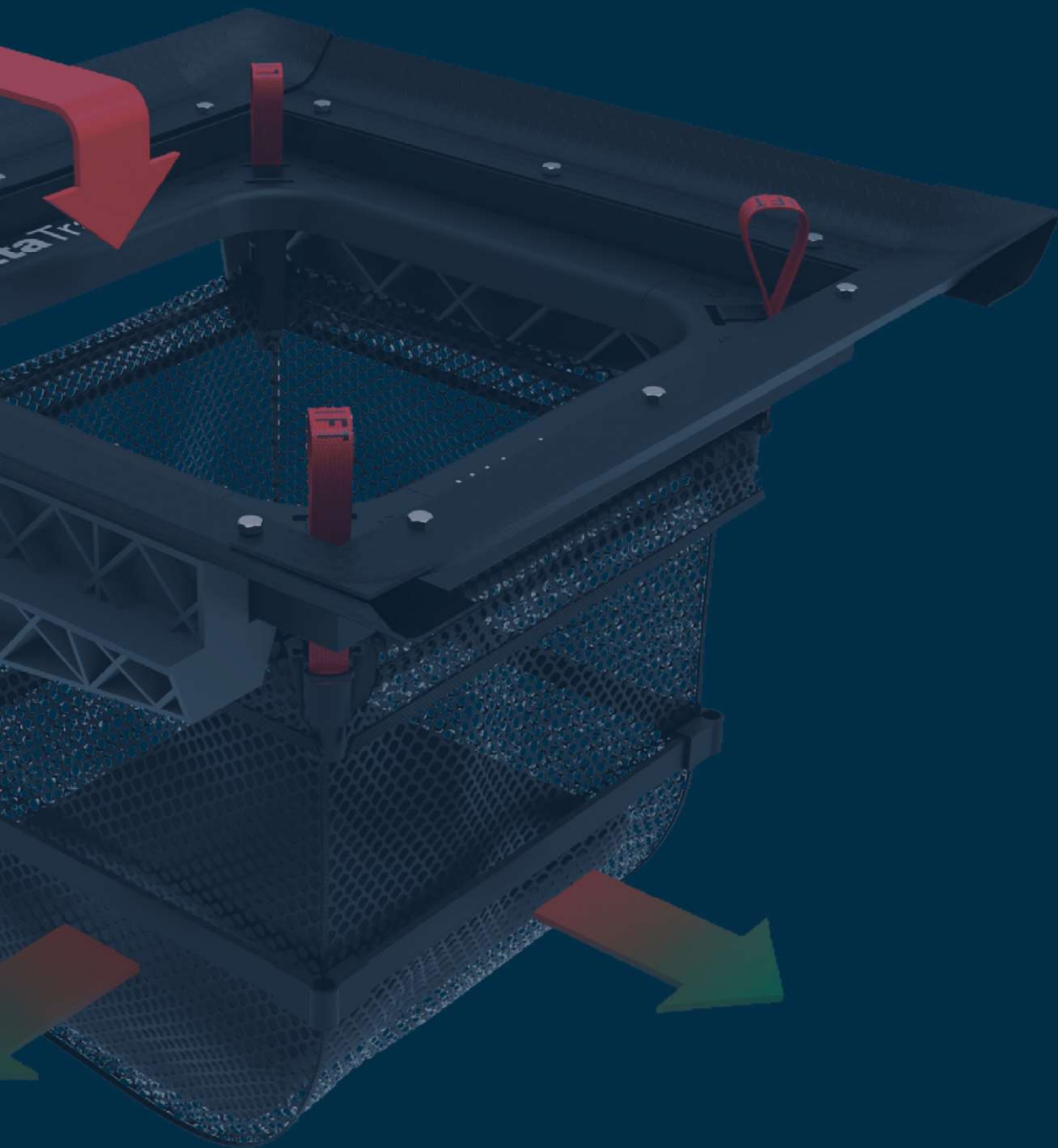
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Denver, CO 80202
Tel: 303.733.1100
Fax: 303.733.1101





LittaTrap™ Operations and Maintenance Guide

The Enviropod LitttaTrap™

The Enviropod® LitttaTrap™ is an innovative catch basin inlet filter (insert) device designed to be easily installed into new and existing stormwater catch basins of any size or configuration. The Enviropod® LitttaTrap™ can be installed in grate (drop) inlets, curb inlets, combination grate/curb inlets, or round manhole catch basins. Figure 1: Enviropod® LitttaTrap™ example catch basin applications shows these types of installations.

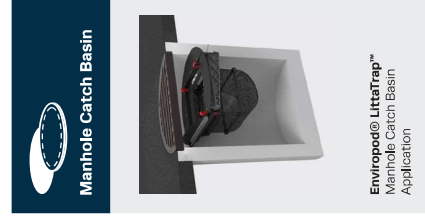
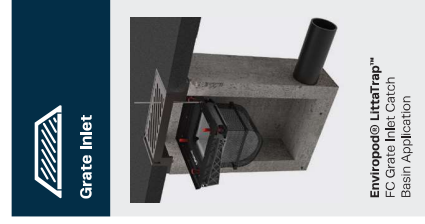
The Enviropod® LitttaTrap™ is an effective stormwater treatment technology that is designed to capture and remove a variety of stormwater pollutants conveyed in runoff, such as trash, debris, sediment, macro or micro plastic debris and other pollutants of concern.

In addition, the Enviropod® LitttaTrap™ maintains catch basin hydraulic capacity and allows for easy maintenance when completely full of trash and debris. The Enviropod® LitttaTrap™ is available in a range of standard model sizes and configurations.

The Enviropod LitttaTrap FC model is also approved for use by numerous State and local agencies throughout the USA as well as certified by the California State Water Resources Control Board, Trash Implementation Program.

The Enviropod LitttaTrap FC model is fitted with a "full capture" liner that insures 100% of particles 5mm and over are captured in the trap.

The Enviropod® LitttaTrap™ FC also includes an optional hinged vector port seal (HVPS) when installed in a grated inlet or combination inlet catch basin, if required. The HVPS allows visual inspection under the basket for access by local or State Vector Control field personnel. In addition, the design of the HVPS has been approved by the Mosquito Vector Control Association of California (MVCAC) for California certified full trash capture applications.



Components and Operation

During a storm event, stormwater runoff flows enter a catch basin through a grate (drop) inlet, curb inlet, combination inlet or manhole type structure. The downward flow is intercepted and captured by the Enviropod® LitttaTrap™ device that is placed inside the entry portion of these catch basin types. Once flow enters the Enviropod® LitttaTrap™, the Enviropod® LitttaTrap™ seals and basket collar direct the flow over the bypass slots and into the basket and optional liner (as applicable). The LitttaTrap™ seals are adjustable to ensure all particles diverted into the basket and liner will not cause "short-circuiting" or create early bypass of the design volume of runoff or treatment flows.

The LitttaTrap™ filter box sits on a support bracket that cantilevers off a single wall of the catch basin. The support bracket is located approximately 8 inches below the surface level creating a driving head to increase the maximum bypass flow rate without causing surface ponding. The support bracket has been structurally designed to take the load of the basket that is filled with sediment, while the peak bypass flow is conveyed into the catch basin.

The patented Enviropod LitttaTrap™ gross pollutant basket incorporates a structural batten that has three functions:

1. Constrains the basket preventing the expansion or "bulging" so the basket can be easily removed when full of material.
2. Maintains a secondary flow path around the basket for bypass flows; and
3. Maximizes the screen area and material storage volume of the basket.

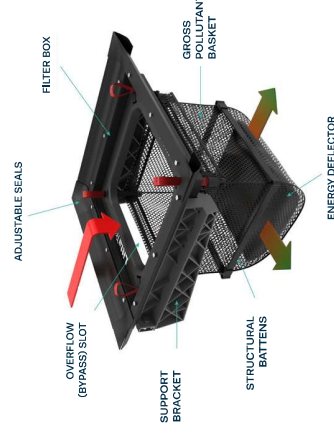


Figure 2: Enviropod® LitttaTrap™ FC Operation

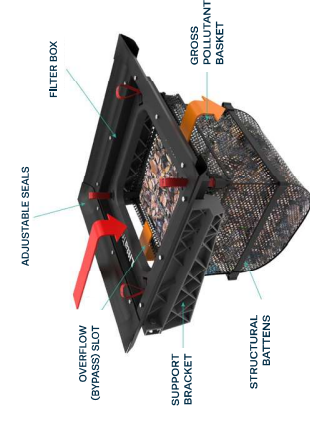


Figure 3: Enviropod® LitttaTrap™ FC Bypass Operation

Figure 1: Enviropod® LitttaTrap™ example catch basin applications

Inspection and Maintenance Procedures

HEALTH AND SAFETY:

EnviroPod recommends that owners check and utilize any applicable State and local regulatory requirements for applying a Site-Specific Safety Plan before undertaking any installation, inspection, or maintenance service. Personal Protection Equipment (PPE) is required when installing, inspecting, or maintaining an EnviroPod® LitttaTrap™. Field personnel shall utilize personal protection equipment (PPE) as required, including gloves, long sleeve shirts or outdoor wear, long pants, Hi-Viz clothing as well as steel toe shoes. For additional advice on the relevant health and safety requirements, we recommend that you consult the local health and safety regulator.

INSPECTIONS:

All stormwater inlet filter devices require routine inspection and maintenance service to ensure continued functionality of the device as well as identify and remove trapped contaminants and to minimize bypass. Due to the variable nature of stormwater pollution, annual rainfall characteristics and localized site pollutant loadings, maintenance service frequencies can vary for any catch basin location.

It is recommended to inspect the LitttaTrap EnviroPod® at least four times per year during the first year of operation to determine seasonal and annual maintenance requirements.

First year inspection service frequency is recommended by conducting one inspection visit for every three months after a LitttaTrap™ Inlet Filter device is installed and is placed in operation. However, if there is a presence of a high potential loading activity within the drainage area, it's recommended that catch basin inspection frequency be revised. High loading activity in the upstream drainage area may include the following:

- A high number of trees or vegetation.
- Construction activity.
- Uncovered or unsealed roadways

Additional inspections are recommended after major storm events. The LitttaTrap™ should be inspected after a major storm event to check for any unforeseen damage or to find evidence of illicit discharge.



Figure 4: LitttaTrap seen with 1mm liner installed to target micro-plastics such as plastic pellets. Hand maintenance shown.

MAINTENANCE FREQUENCY

Maintenance of the EnviroPod® LitttaTrap™ is recommended when more than 75% of the maximum trash capture volume of the LitttaTrap™ model size installed. Maintenance frequency is typically conducted 1 or 2 times per year, depending on pollutant load conditions within a particular drainage area. If applicable, maintenance frequency shall be conducted as per any local municipal or State stormwater permit requirements.

MAINTENANCE PROCEDURES

The EnviroPod® LitttaTrap™ maintenance service involves two activities. These activities are as follows:

1. Routine removal and emptying of the gross pollutant basket and liner (if used), and
2. Inspection for any structural damage or flow impedence.

The recommended maintenance procedure for grate (drop) inlets or combination grate/curb inlet catch basins is for the end-user or maintenance service contractor

to conduct maintenance service by "hand" to reduce operational cost. Each EnviroPod® LitttaTrap™ basket is fitted with lifting handles on four sides of the basket, so that maintenance personnel will have no personal contact with the captured and retained pollutants.

EnviroPod also recommends the use of a vacuum induction truck (ie; vactor truck or heavy industrial vacuum equipment) for the maintenance of curb entry catch basin LitttaTrap inlet filter devices.



Figure 5: EnviroPod® LitttaTrap™ Hand Maintenance

EnviroPod® LitttaTrap™ FC Hand Maintenance

It is recommended that the EnviroPod® LitttaTrap™ FC basket and liner be emptied when 75% Full. To empty the EnviroPod® LitttaTrap™ FC, it is a simple one-minute exercise "Lift, Tip, Replace". The following steps detail hand maintenance:

1. Establish a safe working area per typical catch basin service activity.
2. Remove grate/access cover.
3. Remove the basket and liner with two lifting hooks or lift by hand through the loops on the top of the basket. Excess debris should be scooped out first if the basket is over half full.
4. Pour contents of the basket and liner into a disposal container.
5. Replace grate.



Figure 6: LitttaTrap Vactor Maintenance

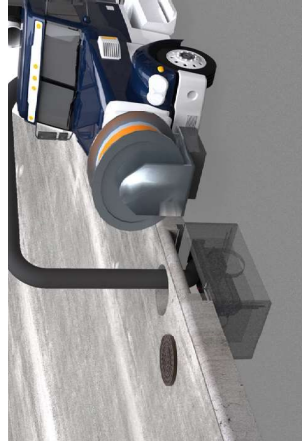
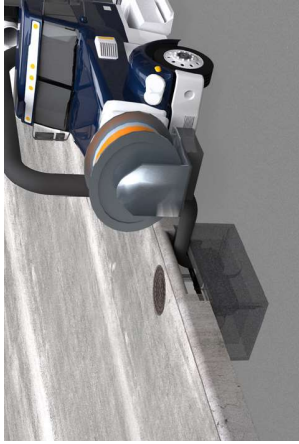
EnviroPod® LitttaTrap™ FC Vactor Maintenance

The steps for induction maintenance are detailed below:

1. Establish a safe working area per typical catch pit service activity.
2. Remove grate/access cover.
3. Vacuum accumulated debris from the basket.
4. Vacuum contents from the base of the catch basin (if required).
5. Inspect basket, filter box, and seals for any damage.
6. Replace grate/access cover.

CURB ENTRY CATCH BASIN MAINTENANCE

For curb entry catch basins, the geometry of the Enviropod® Littatrap™ basket allows a vector hose to enter the basket through the curb opening, as shown in the figure below. Alternatively, baskets can be accessed through the catch basin access manhole.



ENVIROPOD LITTATRAP BASKET AND FULL CAPTURE LINER CLEANING.

Material trapped in the Enviropod® Littatrap™ basket and or full capture liner is easily removed by shaking the basket or tapping the basket against a hard surface. If required a power washer can be used to remove excess sediment or debris trapped in the screen

RECORD-KEEPING MAINTENANCE PROCEDURES

- Following maintenance and/or inspection, Enviropod recommends that the owner or maintenance service contractor prepare a maintenance/inspection record. The record shall include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.
- The owner shall retain the maintenance/inspection records in accordance with local and/or state requirements.

REQUIRED EQUIPMENT AND MATERIALS FOR MAINTENANCE ACTIVITIES.

The following equipment is helpful when conducting Enviropod® Littatrap™ Grate Inlet and Curb Inlet inspections and maintenance:

- Recording device (pen and paper form, voice recorder, iPad, etc.)
- Personal protection equipment (protective footwear, gloves, hardhat, safety glasses, high visibility clothing, etc.)
- Traffic control equipment (cones, barricades, signage, flagging, etc.)
- Manhole hook or pry bar
- Flashlight
- Tape measure
- Vacuum truck (optional)
- Pressure washer (optional)
- Replacement oil absorbent pouches (Optional)

REPAIR OR REPLACEMENT PROCEDURES.

In the unlikely event of an Enviropod® Littatrap™ FC structural component requiring repair, the system can be easily uninstalled by reversing the installation procedure. Once uninstalled, any faulty part or component can be replaced.

VECTOR CONTROL ACCESSIBILITY (California Specific)

As part of the Enviropod Littatrap Inlet Filter "Full Trash Capture" certification by the California State Water Resources Control Board, all certified full capture treatment control devices, such as inlet filters, must be able to allow easy access to the interior of any catch basin structure so that inspectors from the Mosquito Vector Control Association of California (MVCAC) may inspect, observe and treat any potential mosquito activity or biological growth occurring inside a catch basin structure. Therefore, the Enviropod® Littatrap™ FC grate (drop) inlet device can be equipped with a "Hinged Vector Port Seal" (HVPS) component that will allow full visual access of the catch basin floor or other internal areas beneath the Enviropod Littatrap FC model. In the event that a HVPS component is required anywhere in the State of California, an HVAC component shall be included and installed in any Enviropod Littatrap Grate Inlet Filter device application.

The HVPS takes the form of a spring-loaded hinged rubber seal. The inspection seal is easily lifted to 90 degrees with a J hook inserted into the lifting eye attached to the seal. This action provides a clear opening for inspection across the front face of the catch basin. Upon release the hinged seal automatically closes ensuring no gaps of 5mm or larger exist between the seal and the catch basin wall. The hinged vector port seal can be opened with the catch basin grate closed with the use of a J Hook.



Inspection and Maintenance Form

ADDRESS:

OWNER/LOCATION NAME:

DATE:

INSPECTOR NAME/COMPANY

Catch Basic Name/Number	Percentage Full of Trash/Debris (Mark X in appropriate box)				Condition of the LittaTrap Good/Poor (Requires Attached?)	Annual Weighting factor	Comments
	0-25%	25-50%	50-75%	75-100%			

COMMENTS:

Please include 3 photographs of each catch basin with the grate closed, grate open and upstream catchment.

Is the LittaTrap more than 75% full?

>75%: Proceed with maintenance.

If 50-75%: Maintenance recommended in the next 2 months.



QR CODE FOR THE ONLINE SURVEY

Download the ArcGIS Survey123 app on Android or Apple. No sign-in required, simply scan the QR code and complete. Enviropod will send you the Inspection or maintenance report.

ABOUT ENVIROPOD

EnviroPod is Australasia's leading catch basin insert technology provider. The company has over 25,000 installs of its technology worldwide, including catchment wide retrofits. The LittaTrap is a result of 25 years' of research, implementation and operation of source treatment solutions.

For further information please see www.enviropod.com

International patent numbers for : CA – 2,810,974 ; USA – 9,642,658 ; AU – 2011302712 ; NZ – 588049 . Other patents pending.

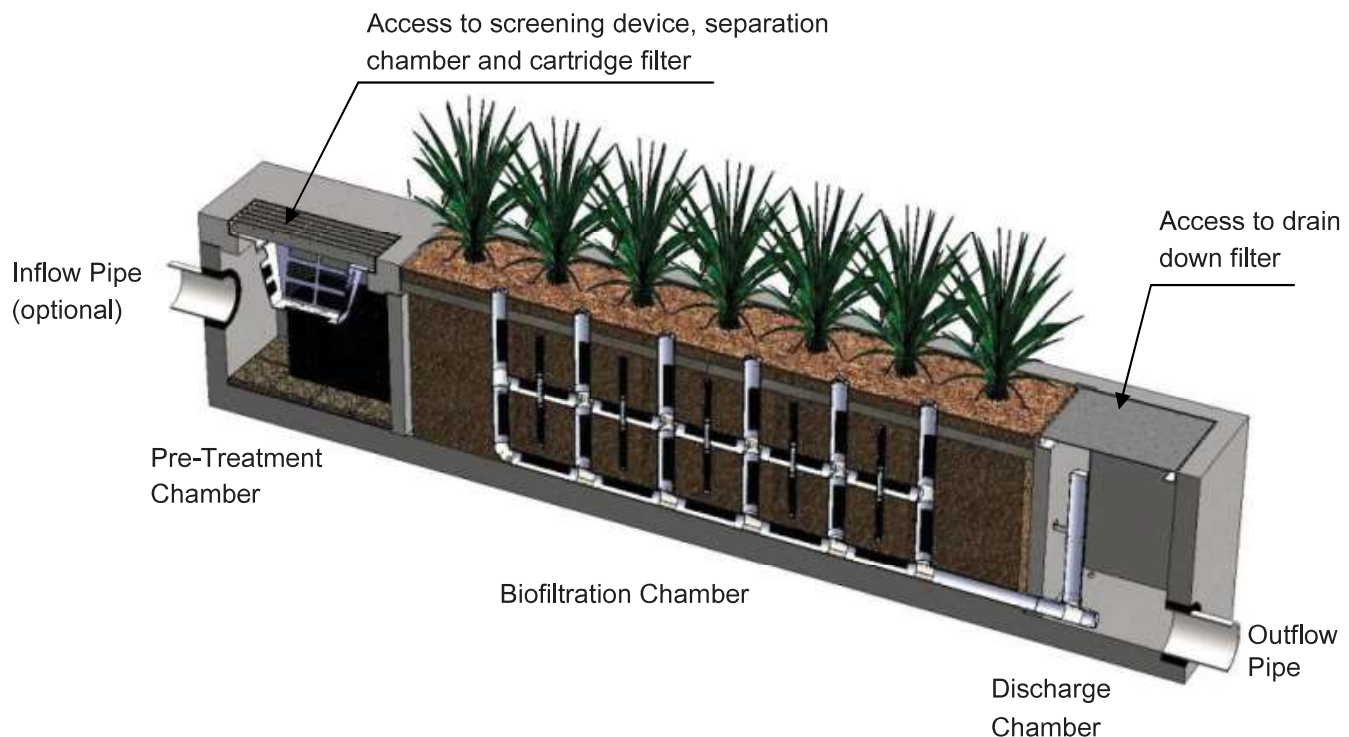


Maintenance Guidelines for Modular Wetland System - Linear

Maintenance Summary

- Remove Trash from Screening Device – average maintenance interval is 6 to 12 months.
 - *(5 minute average service time).*
- Remove Sediment from Separation Chamber – average maintenance interval is 12 to 24 months.
 - *(10 minute average service time).*
- Replace Cartridge Filter Media – average maintenance interval 12 to 24 months.
 - *(10-15 minute per cartridge average service time).*
- Replace Drain Down Filter Media – average maintenance interval is 12 to 24 months.
 - *(5 minute average service time).*
- Trim Vegetation – average maintenance interval is 6 to 12 months.
 - *(Service time varies).*

System Diagram



Maintenance Procedures

Screening Device

1. Remove grate or manhole cover to gain access to the screening device in the Pre-Treatment Chamber. Vault type units do not have screening device. Maintenance can be performed without entry.
2. Remove all pollutants collected by the screening device. Removal can be done manually or with the use of a vacuum truck. The hose of the vacuum truck will not damage the screening device.
3. Screening device can easily be removed from the Pre-Treatment Chamber to gain access to separation chamber and media filters below. Replace grate or manhole cover when completed.

Separation Chamber

1. Perform maintenance procedures of screening device listed above before maintaining the separation chamber.
2. With a pressure washer spray down pollutants accumulated on walls and cartridge filters.
3. Vacuum out Separation Chamber and remove all accumulated pollutants. Replace screening device, grate or manhole cover when completed.

Cartridge Filters

1. Perform maintenance procedures on screening device and separation chamber before maintaining cartridge filters.
2. Enter separation chamber.
3. Unscrew the two bolts holding the lid on each cartridge filter and remove lid.
4. Remove each of 4 to 8 media cages holding the media in place.
5. Spray down the cartridge filter to remove any accumulated pollutants.
6. Vacuum out old media and accumulated pollutants.
7. Reinstall media cages and fill with new media from manufacturer or outside supplier. Manufacturer will provide specification of media and sources to purchase.
8. Replace the lid and tighten down bolts. Replace screening device, grate or manhole cover when completed.

Drain Down Filter

1. Remove hatch or manhole cover over discharge chamber and enter chamber.
2. Unlock and lift drain down filter housing and remove old media block. Replace with new media block. Lower drain down filter housing and lock into place.
3. Exit chamber and replace hatch or manhole cover.



Maintenance Notes

1. Following maintenance and/or inspection, it is recommended the maintenance operator prepare a maintenance/inspection record. The record should include any maintenance activities performed, amount and description of debris collected, and condition of the system and its various filter mechanisms.
2. The owner should keep maintenance/inspection record(s) for a minimum of five years from the date of maintenance. These records should be made available to the governing municipality for inspection upon request at any time.
3. Transport all debris, trash, organics and sediments to approved facility for disposal in accordance with local and state requirements.
4. Entry into chambers may require confined space training based on state and local regulations.
5. No fertilizer shall be used in the Biofiltration Chamber.
6. Irrigation should be provided as recommended by manufacturer and/or landscape architect. Amount of irrigation required is dependent on plant species. Some plants may require irrigation.

Maintenance Procedure Illustration

Screening Device

The screening device is located directly under the manhole or grate over the Pre-Treatment Chamber. It's mounted directly underneath for easy access and cleaning. Device can be cleaned by hand or with a vacuum truck.



Separation Chamber

The separation chamber is located directly beneath the screening device. It can be quickly cleaned using a vacuum truck or by hand. A pressure washer is useful to assist in the cleaning process.



Cartridge Filters

The cartridge filters are located in the Pre-Treatment chamber connected to the wall adjacent to the biofiltration chamber. The cartridges have removable tops to access the individual media filters. Once the cartridge is open media can be easily removed and replaced by hand or a vacuum truck.



Drain Down Filter

The drain down filter is located in the Discharge Chamber. The drain filter unlocks from the wall mount and hinges up. Remove filter block and replace with new block.



Trim Vegetation

Vegetation should be maintained in the same manner as surrounding vegetation and trimmed as needed. No fertilizer shall be used on the plants. Irrigation per the recommendation of the manufacturer and or landscape architect. Different types of vegetation requires different amounts of irrigation.





Inspection Form



Modular Wetland System, Inc.

P. 760.433-7640

F. 760-433-3176

E. Info@modularwetlands.com

www.modularwetlands.com



Inspection Report Modular Wetlands System



Project Name _____

Project Address _____ (city) (Zip Code)

Owner / Management Company _____

Contact _____

Phone () -

Inspector Name _____

Date ____ / ____ / ____ Time ____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____

Additional Notes _____

For Office Use Only

(Reviewed By)

(Date)
Office personnel to complete section to the left.

Inspection Checklist

Modular Wetland System Type (Curb, Grate or UG Vault): _____ Size (22', 14' or etc.): _____

Structural Integrity:	Yes	No	Comments
Damage to pre-treatment access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Damage to discharge chamber access cover (manhole cover/grate) or cannot be opened using normal lifting pressure?			
Does the MWS unit show signs of structural deterioration (cracks in the wall, damage to frame)?			
Is the inlet/outlet pipe or drain down pipe damaged or otherwise not functioning properly?			
Working Condition:	Yes	No	Comments
Is there evidence of illicit discharge or excessive oil, grease, or other automobile fluids entering and clogging the unit?			
Is there standing water in inappropriate areas after a dry period?			
Is the filter insert (if applicable) at capacity and/or is there an accumulation of debris/trash on the shelf system?			
Does the depth of sediment/trash/debris suggest a blockage of the inflow pipe, bypass or cartridge filter? If yes specify which one in the comments section. Note depth of accumulation in in pre-treatment chamber.			Depth:
Does the cartridge filter media need replacement in pre-treatment chamber and/or discharge chamber?			Chamber:
Any signs of improper functioning in the discharge chamber? Note issues in comments section.			
Other Inspection Items:	Yes	No	Comments
Is there an accumulation of sediment/trash/debris in the wetland media (if applicable)?			
Is it evident that the plants are alive and healthy (if applicable)? Please note Plant Information below.			
Is there a septic or foul odor coming from inside the system?			

Waste:	Yes	No
Sediment / Silt / Clay		
Trash / Bags / Bottles		
Green Waste / Leaves / Foliage		

Recommended Maintenance	
No Cleaning Needed	
Schedule Maintenance as Planned	
Needs Immediate Maintenance	

Plant Information	
Damage to Plants	
Plant Replacement	
Plant Trimming	

Additional Notes: _____



Maintenance Report



Modular Wetland System, Inc.

P. 760.433-7640

F. 760-433-3176

E. Info@modularwetlands.com

www.modularwetlands.com



Cleaning and Maintenance Report Modular Wetlands System



Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____

Phone () -

Inspector Name _____

Date ____ / ____ / ____ Time ____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint

☐ Storm Storm Event in Last 72-hours? ☐ No ☐ Yes

Weather Condition _____

Additional Notes _____

For Office Use Only

(Reviewed By)

(Date)
Office personnel to complete section to the left.

Site Map #	GPS Coordinates of Insert	Manufacturer / Description / Sizing	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Total Debris Accumulation	Condition of Media 25/50/75/100 (will be changed @ 75%)	Operational Per Manufactures' Specifications (If not, why?)
	Lat:	MWS Catch Basins						
	Long:							
		MWS Sedimentation Basin						
		Media Filter Condition						
		Plant Condition						
		Drain Down Media Condition						
		Discharge Chamber Condition						
		Drain Down Pipe Condition						
		Inlet and Outlet Pipe Condition						

Comments:

**CORRUGATED STEEL PIPE
PRODUCTS FOR**

STORM WATER MANAGEMENT

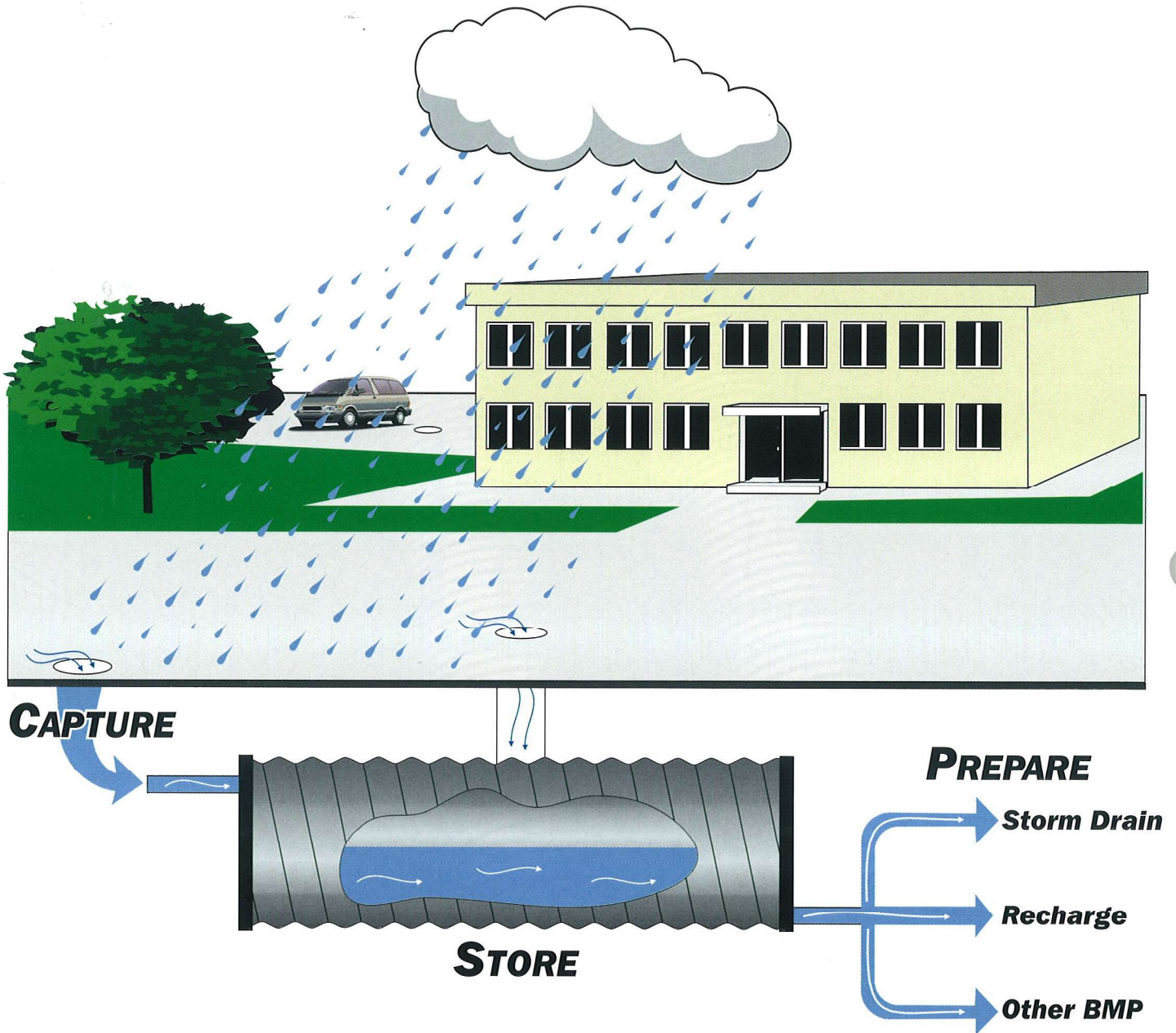


CAPTURE • **S**TORE • **P**REPARE



PACIFIC CORRUGATED PIPE CO.

STORMWATER MANAGEMENT



CAPTURE stormwater near its inception without having to convey to a centralized detention facility.

STORE large volumes of stormwater economically underground within a small footprint conserving valuable surface space.

PREPARE stormwater for onsite infiltration, flow rate reduction control, or water quality treatment.



PACIFIC CORRUGATED PIPE CO.®

STORM WATER MANAGEMENT

As American communities continue to grow, parking lots and buildings are replacing natural open space and permeable surfaces. This transformation from permeable to impermeable surfaces increases the volume and peak flow rate of urban runoff. Increased runoff can overload existing municipal storm drains and contribute to the pollution of our national waterways.

Under the National Pollutant Discharge Elimination System (NPDES) regulations, the EPA requires government agencies to implement programs to mitigate increases in stormwater runoff and pollutant discharges from storm drains. Agencies nationwide recognize onsite detention systems as valuable tools to help meet the EPA requirements.

Detention systems can be used to store and release excess stormwater for beneficial uses, such as ground water recharge or irrigation. When required, outlet control devices can reduce the release rate into existing drainage systems or water quality treatment systems.

CORRUGATED STEEL PIPE (CSP) DETENTION SYSTEMS

Corrugated Steel Pipe (CSP) detention systems offer more design versatility, storage value, and lower installation cost than any other underground storage system or method. Large diameter CSP detention systems, with a 75-year minimum service life, provide the most cost effective stormwater storage methods available.

A simple system may consist of a single chamber with welded end caps, inlet, outlet, and a means of access to the chamber. Single detention chambers, scattered throughout the site, can sometimes utilize existing natural drainage and may eliminate the need to convey water to a large central multibarrel structure. Small diameter pipe can be used to connect multiple barrels or convey system discharges.

Most underground detention systems are designed and installed with minimal cover, typically four feet or less. Simple, more economical, 30" access risers can be substituted for larger, more expensive, storm drain sized manholes with prefabricated ladder assemblies. Special component sizes and/or configurations are available. Contact your local Pacific Corrugated Pipe Company sales representative for more information.



The storage capacity of a CSP detention system is virtually unlimited. Space permitting, any number of chambers can be added for an increased capacity.

BEST MANAGEMENT PRACTICES

In response to EPA mandates, municipalities have strengthened "zero increase" runoff and pollutant migration regulations. Most runoff control and pollutant treatment techniques available today cannot handle peak flow or volume criteria adopted by local municipalities. Pacific Corrugated Pipe CSP detention systems compliment water quality treatment systems by releasing captured runoff at a rate that maximizes treatment.

Pacific Corrugated Pipe CSP detention chambers in combination with a dry well can eliminate the need for connections to municipal storm sewers. These stand-alone combination systems may greatly reduce permit and construction costs.

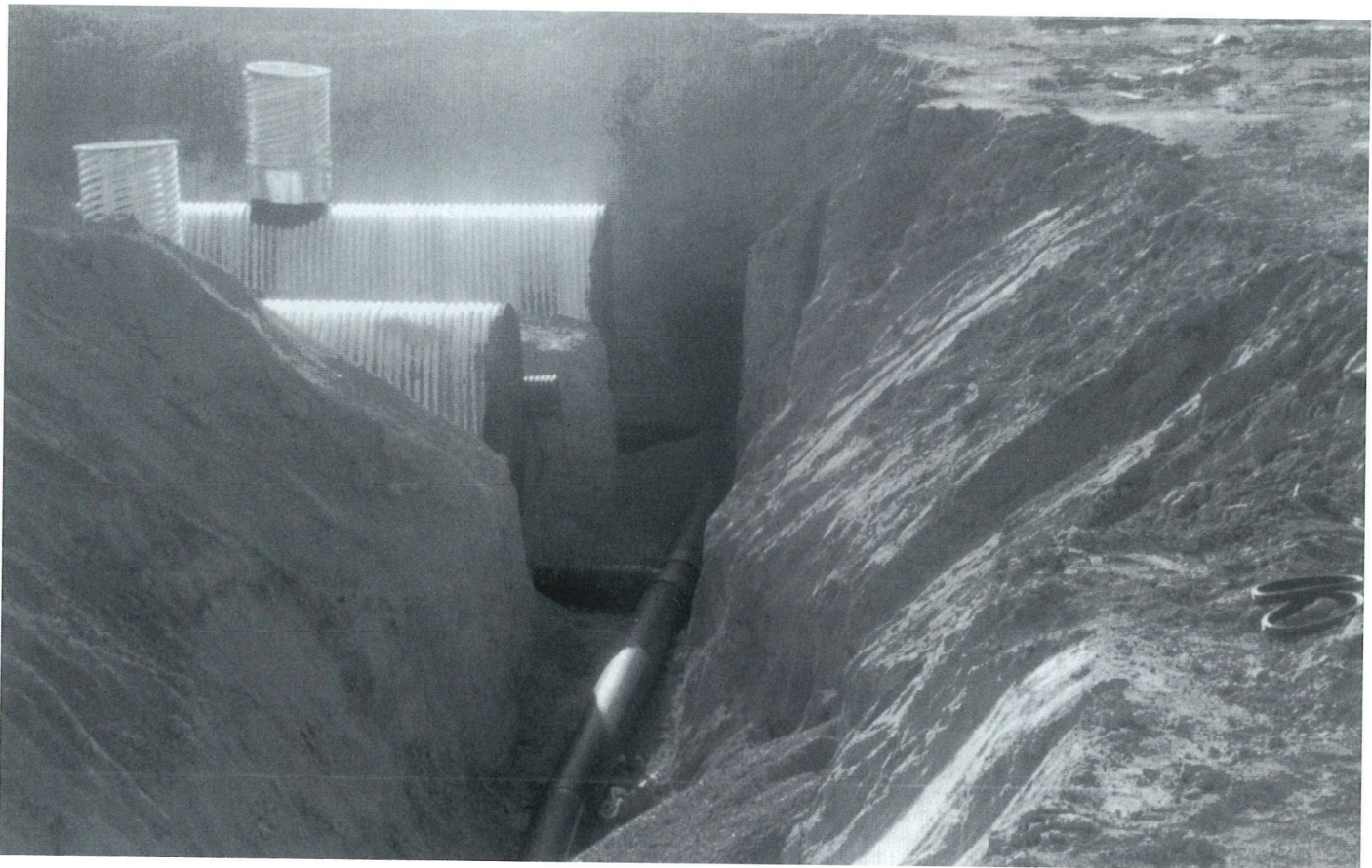
Regional flow criteria and preferred BMPS (Best Management Practices) will vary. Pacific Corrugated Pipe Company representatives will work with developers, design engineers and contractors to comply with all project requirements.

DURABILITY AND INSTALLATION

Galvanized steel can provide a 75-year service life in non-corrosive soil conditions. For longer service life or harsher environments, Aluminized Type II or specialized high performance coatings are also available.

CSP structures are designed to work in conjunction with the surrounding backfill as a soil-structure interaction system. Live loads and dead loads are carried in ring compression in the pipe wall, which in turn is supported by the surrounding backfill. Backfill may be suitable granular materials compacted to a specified AASHTO T-99 density of 90%, or flowable backfill materials that approximate the same bearing capacity.

A good system design considers not only stormwater capacity and discharge rates, but installation factors. Some of these include depth of cover, live loads, dead loads, wall thickness, backfill materials, and installation procedures. Four feet of compacted cover is required in areas where pipe is subject to construction loading.



Contact Pacific Corrugated Pipe Company for information pertaining to a specific region or jobsite design, fabrication, or installation of corrugated steel pipe products.

CSP ADVANTAGES

Corrugated Steel Pipe Detention/Retention Systems are. . .

ECONOMICAL

CSP Systems provide more storage capacity per dollar invested.

DURABLE

Can be designed for any service life requirement.

VERSATILE

Easy to design for any service life requirements.

EXPANDABLE

Just add more pipe for additional storage.

LIGHTWEIGHT

Up to 40 times lighter than concrete

Easy to install with smaller equipment.

EFFECTIVE LAND USE

Requires no valuable surface area.

LOW MAINTENANCE

Years of maintenance free operation.

ENVIRONMENTALLY SOUND

Reduce damage from excessive surface runoff.

Recharge groundwater.

Can be used to treat captured water.



Four feet of cover is required in areas where pipe is subject to construction loading.



PACIFIC CORRUGATED PIPE CO.

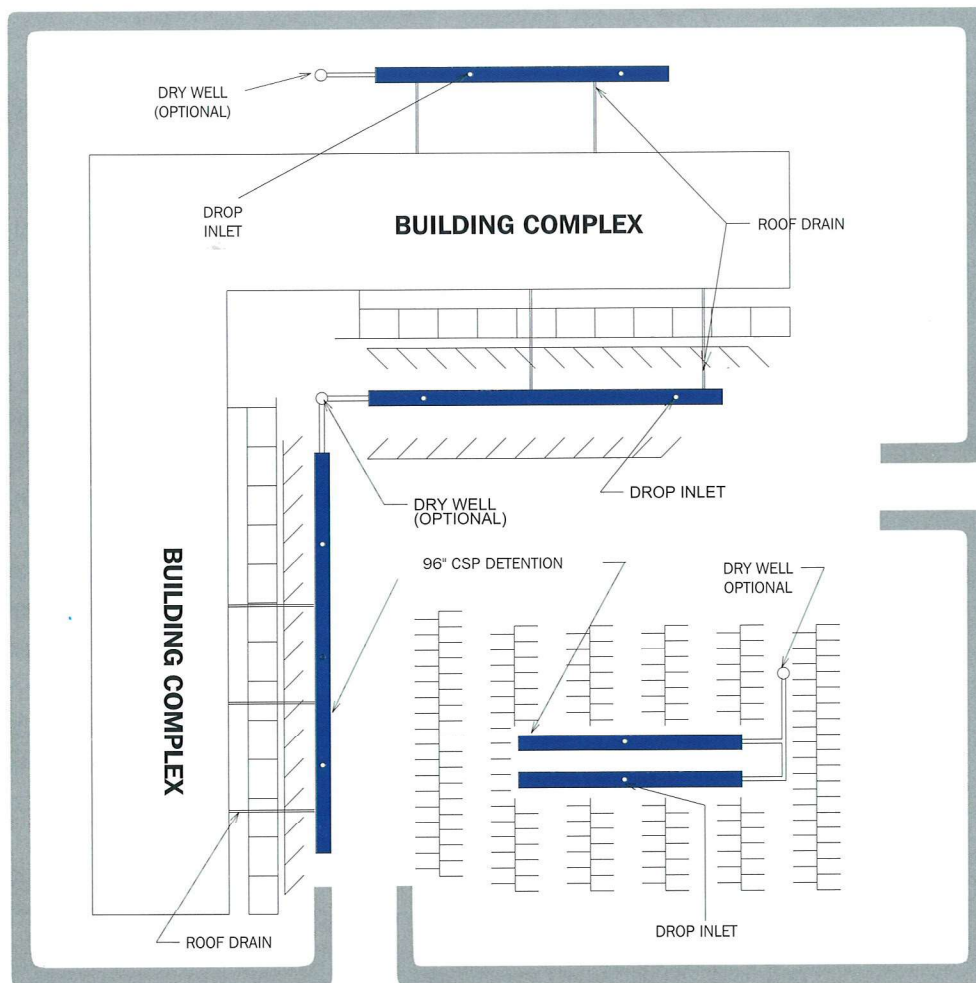
DESIGN TABLE



CORRUGATED STEEL PIPE DETENTION CHAMBER

DIAMETER (INCH)	VOLUME / LF		WEIGHT (LBS/FT)	MINIMUM GAUGE	CORR (INCH)
	CF	GALLONS			
**Larger Sizes Available					
96	50.3	376	87	16	3 X 1
90	44.2	331	82	16	3 X 1
84	38.5	288	77	16	3 X 1
78	33.2	248	71	16	3 X 1
72	28.3	212	66	16	3 X 1
66	23.8	178	60	16	3 X 1
60	19.6	147	55	16	3 X 1
**Smaller Sizes Available					

Onsite Detention



LEGEND: **CSP DETENTION CHAMBER**

COMMITMENT TO CUSTOMER SATISFACTION

Pacific CSP representatives are committed to work closely with design engineers, developers, contractors and agencies to insure the most economical and feasible detention system is approved and designed. Construction specifications, bid estimates, calculation procedures, and structurally pre-engineered height-of-cover tables are also available.

Contact your local Pacific representative below for details and design options.



PACIFIC CORRUGATED PIPE CO.

WEB SITE: <http://www.pac-corr-pipe.com> **EMAIL:** info@pac-corr-pipe.com

13680 Slover Avenue
Fontana, CA 92337
 (909) 829-4235
 TOLL FREE (800) 338-5858
 FAX (909) 829-8035

Las Vegas, NV
 (702) 363-5530

San Diego, CA
 (760) 732-1444

5999 Power Inn Road
Sacramento, CA 95824
 (916) 383-4891
 No. CA only (800) 852-7272
 FAX (916) 383-5420

Santa Fe, NM
 (505) 474-5400

Seattle, WA
 (206) 382-9889

89822 Highway 99 North
Eugene, OR 97402
 (541) 461-0990
 TOLL FREE (800) 528-8815
 FAX (541) 461-0993

Medford, OR
 (541) 772-4123

Portland, OR
 (503) 224-4817

28999 W. Highway 84
Casa Grande, AZ 85222
 (520) 426-6000
 TOLL FREE (800) 822-1770
 FAX (520) 426-1209

MEMBER
NCSPA
NATIONAL CORRUGATED STEEL PIPE ASSOCIATION

ATTACHMENT E
CONDITIONS OF APPROVAL

ATTACHMENT F
GEOTRACKER
SOILS PLUME MAP PER THE TGD
GEOTECHNICAL REPORT



G₃SoilWorks

GEOLOGY • GEOTECH • GROUNDWATER

GNAP Development LLC

18201 Von Karman Avenue, Suite 1170
Irvine, California 92612

May 25, 2021
Project No. 1-1200

Attention: Mr. Blair Dahl

Subject: Geologic / Geotechnical Due Diligence
1201-1223 State College Boulevard
Fullerton, California

References: See attached List of Selected References

Dear Mr. Dahl:

Pursuant to your request and authorization, G3SoilWorks, Inc. has performed a geologic / geotechnical due diligence investigation for the subject site, located at 1201-1223 State College Boulevard, in Fullerton, California (see Site Location Map, Figure 1). This property is identified as Assessor's Parcel No. 073-120-27, Legal Description POR. SE ¼, SEC. 35, T3S, R10W. This property is being evaluated for acquisition by GNAP Development, LLC and will be annexed and made part of the Fullerton GLC project addressed in Reference No. 1.

A summary of our findings and due diligence assessment for this property, from a geologic and engineering standpoint, and preliminary design considerations for the proposed site development are presented herein.

SCOPE OF WORK

The scope of our services for this due diligence evaluation included the following:

- Site reconnaissance (including photo and written documentation) from a geologic / geotechnical perspective;
- Desktop review of published reports, maps, and other documents relative to site surface / subsurface conditions and related geologic hazards, etc.;
- Preliminary identification of the potential for liquefaction, landsliding, lateral spreading, active faulting, seismic shaking potential, expansive soils and settlement / consolidation expressions based on the desktop study and field observations made during our site visit;
- Summary of any related distress or expressions indicative of potential settlement / consolidation of existing construction based on our field observations;

- Limited discussion of foundation type, expansion soils, and other design related aspects; and
- Preparation of this memorandum presenting preliminary findings and geotechnical design considerations for moving forward with this project.

The scope of our services specifically does not include investigation and/or evaluation of any hazardous materials or associated constraints that may be present on or under the site.

SITE LOCATION AND PROJECT DESCRIPTION

The subject site is located at 1201-1223 State College Boulevard, in Fullerton, California and covers approximately 1.27 acres in area. This property is currently occupied by a multi-tenant industrial building covering 24,600 square feet.

This property is located adjacent to and is planned to be an extension off the southeasterly extent of the Fullerton GLC site development addressed in the referenced report. Specifics / details regarding the tentatively proposed construction for this site are currently unknown. However, for the purposes of this due diligence study, it is assumed that construction similar to that planned for the Fullerton GLC project is tentatively being considered.

Based on an exterior walk-thru of the site by a representative of our office on May 24, 2021, the following conditions were noted:

- The site is occupied by an existing multi-tenant building which consists of single-story, concrete-panel construction, oriented in an east-west direction across the property.
- An asphalt paved drive and associated parking along the south side of the existing commercial building, with asphalt-paved delivery drive along the north side. A concrete-paved parking area is located on the westerly end of the building.
- The exterior of this building appeared acceptable for its age and did not display any apparent visual signs of distress indicative of unsuitable soils, settlement or expansive soils;
- The existing asphaltic concrete (AC) and Portland cement concrete (PCC) pavements on-site appeared to be intact and no visually apparent signs of distress were noted that would be suggestive of ground settlement or expansive soils phenomena.
- An existing power line alignment is located along the northern property line common with the current Fullerton GLC development site.

GEOLOGY

General

The geology of the adjacent Fullerton GLC site and vicinity were previously summarized in the referenced Fullerton GLC Investigation report (Reference No. 1). As the subject site is located directly adjacent and southeasterly of the Fullerton GLC site, the regional / local geologic conditions and potential seismic hazards presented in Reference No. 1 are also considered applicable for the subject site.

Based on review of Reference No. 1, the pertinent site geologic conditions and potential geologic hazards are summarized below:

- The site is located approximately 2.1 miles northwest of the modern Santa Ana River channel and underlain by Quaternary young alluvial-fan deposits (Qyf) of Holocene to late Pleistocene age.
- The site is not underlain by any known active faults (i.e., Holocene faults that have ruptured in last 11,000 years and are likely to rupture in the future per the Alquist-Priolo Earthquake Fault Zoning Act). According to the California Geological Survey's Earthquake Hazards Zone Application ("EQ Zapp") website / database, the nearest zoned "active" faults include the Whittier Fault Zone (5.7 miles northeast of the project site) and Newport-Inglewood Fault Zone (13.5 miles southwest of the project site). As shown on Figure 7 (attached), other nearby Quaternary and Late Quaternary faults include the El Modeno and Peralta Hills faults approximately 2.4-3.3 miles southeasterly of the site – which are considered inactive and/or potentially active (having ruptured within the last 700,000 years), respectively.
- Active faults do not appear to be present across the subject property. The site is not located in an Earthquake Fault Zone of Required Investigations and the nearest zoned active fault is located approximately 5.7 miles northeast of the project site. Risk of onsite ground rupture on a known active fault is considered nil.
- According to the California Geological Survey's Earthquake Hazards Zone Application (EQ Zapp; <https://maps.conservation.ca.gov/cgs/EQZApp/app/>) the project site is not located within a liquefaction hazards zone of required investigations and, as reported in Reference No. 1, the potential for soil liquefaction and associated risks are therefore considered very low to nil – however, the site may be susceptible to dry sand settlement during a major seismic event due to the potential presence of shallow, relatively loose alluvial soils.
- The project site is not located within an Earthquake-Induced Landslide Hazards Zone of Required Investigations according to the California Geological Survey's Earthquake Hazards Zone Application (EQ Zapp; <https://maps.conservation.ca.gov/cgs/EQZApp/app/>);

- Topographic and regional maps indicate that the subject site is more than 14.1 miles inland from the coast / Pacific Ocean, at an elevation approximately 181-189± feet above sea level, and is not located in an area of known tsunami hazards. Based on the above, risk of tsunami from the known sources occurring throughout the Pacific Ocean / Pacific Rim is considered nil. The site is also not near any significant pools, lakes, reservoirs, or similar. The potential risk of seiche-related effects from existing water bodies is considered very low to nil.

For a more detailed discussion regarding the above, reference should be made to the Geotechnical Investigation Report (Reference No. 1) for the Fullerton GLC Project site.

GEOTECHNICAL CONSIDERATIONS / PRELIMINARY RECOMMENDATIONS

The proposed development for this site is currently unknown, although it has been assumed that development will include concrete tilt-up industrial buildings similar to that planned for the Fullerton GLC or improvement for additional trailer parking. Based on our due diligence findings and our knowledge of the site conditions encountered and reported for the Fullerton GLC project (Reference No. 1), it is our opinion that the tentatively proposed development is feasible from a geologic / geotechnical standpoint, provided that the geotechnical considerations provided herein are accounted for in design and construction. It is our opinion that the subsurface conditions underlying this site are likely similar to those encountered at the Fullerton GLC site (Reference No. 1). However, if new building structures are considered further evaluation including subsurface exploration, laboratory testing, and related geotechnical engineering analyses should be performed to verify the applicability of the recommendations previously provided for the Fullerton GLC development and/or enable our office to develop site-specific recommendations, as appropriate, for use in design and construction of the proposed development.

Presented below is a generalized summary of preliminary geotechnical recommendations for consideration on this site.

Site Grading

- Prior to site grading, the demolition and removal of existing structures and appurtenant construction should include existing foundations and utilities;
- Site grading should include the full depth removal of any existing substructures / fill soils and replacement with approved engineered compacted fill;
- Removal / recompaction of near surface native soils should be expected to provide more uniform and acceptable support for foundations supporting proposed structures and ancillary construction.
- Temporary excavations four (4) feet or deeper will require temporary slopes and or shoring. Where proximal or along property lines, temporary excavations may require the use of slot-cut grading and/or temporary shoring to protect off-site properties / development.

- For soil conditions similar to that reported in Reference No. 1, potential soil shrinkage on the order of 15 percent may occur during removal / recompaction earthwork operations.

Foundations

- It is anticipated that construction similar to that planned for the Fullerton GLC development can be supported on shallow conventional footings with floor slab-on-grade. For preliminary planning purposes, footings may be designed based on an allowable bearing pressure of 2,500 pounds per square foot (psf) when embedded at least 2 feet below lowest adjacent finish grade.
- The potential for total and differential settlements under static plus seismic conditions should be accounted for and incorporated in the design of new construction. Based on Reference Nos. 1 and 2, total and differential settlements on the order of 3 inches and 1-inch in 50 feet, respectively, may be assumed for preliminary design purposes.
- The seismic design parameters provided in the referenced geotechnical report may be considered in the design of proposed structures / improvements, as appropriate.

Hardscape/ Pavements

- The recommendations presented in Reference No. 1 for pavement and hardscape construction may be considered for assumed similar loads / traffic loading conditions.

Soil Expansion and Corrosion

- For soil conditions similar to that encountered at the Fullerton GLC site, the site soils are expected to exhibit low soil expansion potential.
- The site soils should conservatively be considered highly corrosive to both concrete and buried metals. Concrete in contact with site soils should therefore conservatively be designed considering 4,500 psi concrete mix, water:cement ratio of 0.45, and Type V Portland cement.

LIMITATIONS

This report has been prepared for the exclusive use of GNAP Development, LLC and their design consultants relative to their preliminary due diligence assessment of the subject property. This report is not intended for other parties, and it may not contain sufficient information for other purposes.

The findings contained in this report are based upon our evaluation and interpretation of the information obtained from references and experience in the area only. The opinions and considerations provided were based on the assumption that the geotechnical conditions, which exist across the site, are similar to those described in referenced materials and internal proprietary information. The conditions and characteristics of the sub-surface materials may therefore be different and no representations are made as to their quality and engineering properties.

This report and its recommendations are predicated on the notion that we will be retained to perform the subsequent investigation / design / field observations / testing. If not, this report and its recommendations are null and void and any new consultant would need to do their own studies and develop their own recommendations.

The findings and considerations presented herein were developed in accordance with currently accepted professional engineering principles and practice in the field of engineering geology and geotechnical engineering and reflect our best professional judgment. We make no other warranty, either express or implied.

We trust that the information contained in this report is adequate for your needs at this time. Should you have any questions or need additional information, please contact the undersigned.

Respectfully submitted,

G3SoilWorks, Inc.

By: 
Daniel J. Morikawa, P.E., G.E.
Director of Engineering
RGE 2726



By: 
Erik C. Haaker, P.G., C.E.G.
Project Engineering Geologist
PG 9409, CEG 2708



Attachments: List of Selected References
Figure 1 – Site Location Map

LIST OF SELECTED REFERENCES

- 1) G3SoilWorks, Inc., Geotechnical Investigation, Proposed Goodman Logistics Center, 2001 East Orangethorpe Avenue, Fullerton, California, dated December 30, 2020, Project No. 1-1171.
- 2) G3SoilWorks, Inc. Response to Geotechnical Review Comments, Proposed Commercial / Industrial Development, 2001 East Orangethorpe avenue, Fullerton, California, dated April 13, 2021, Project No. 1-1171.

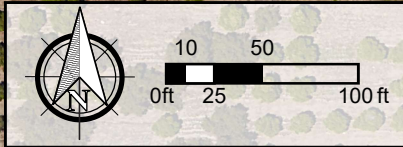
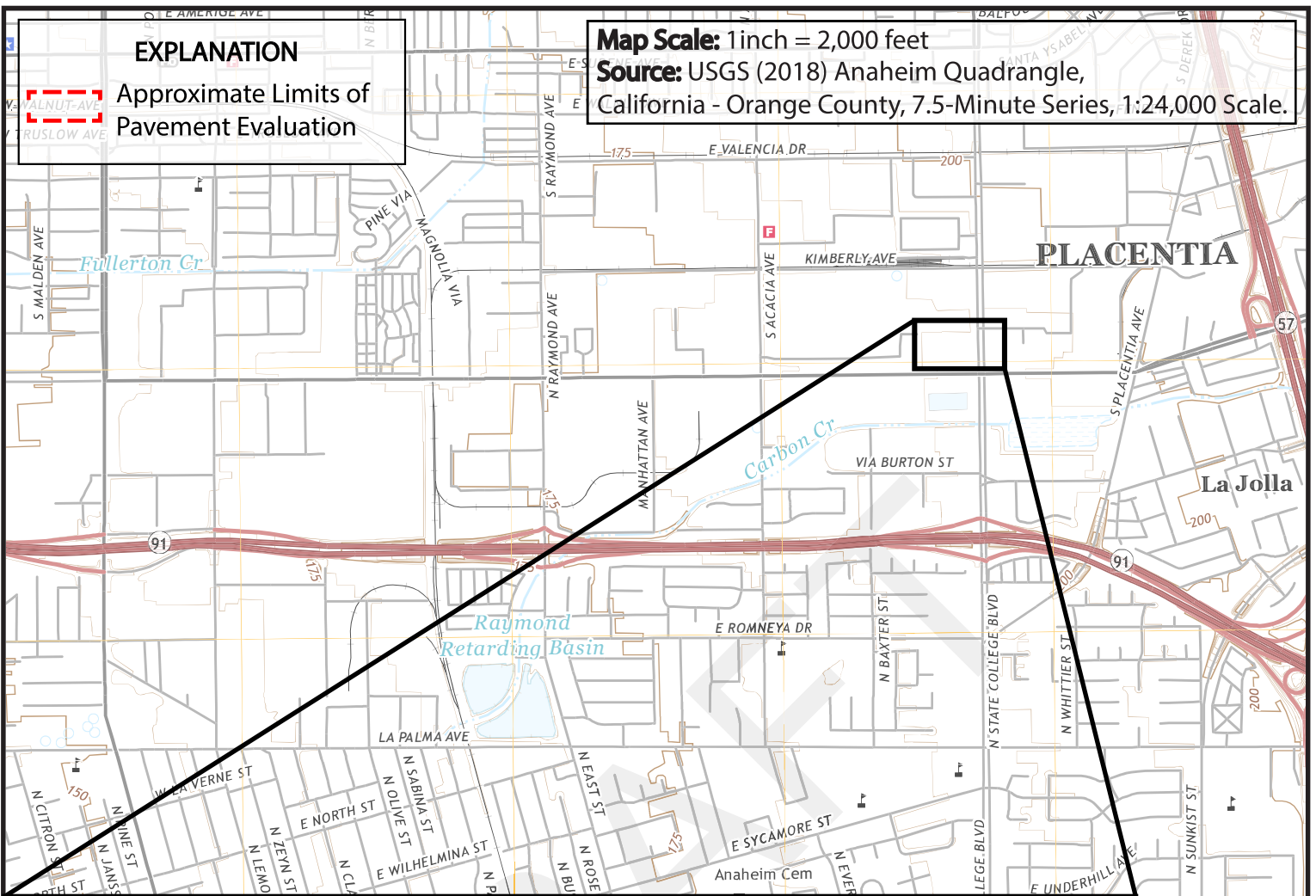
EXPLANATION



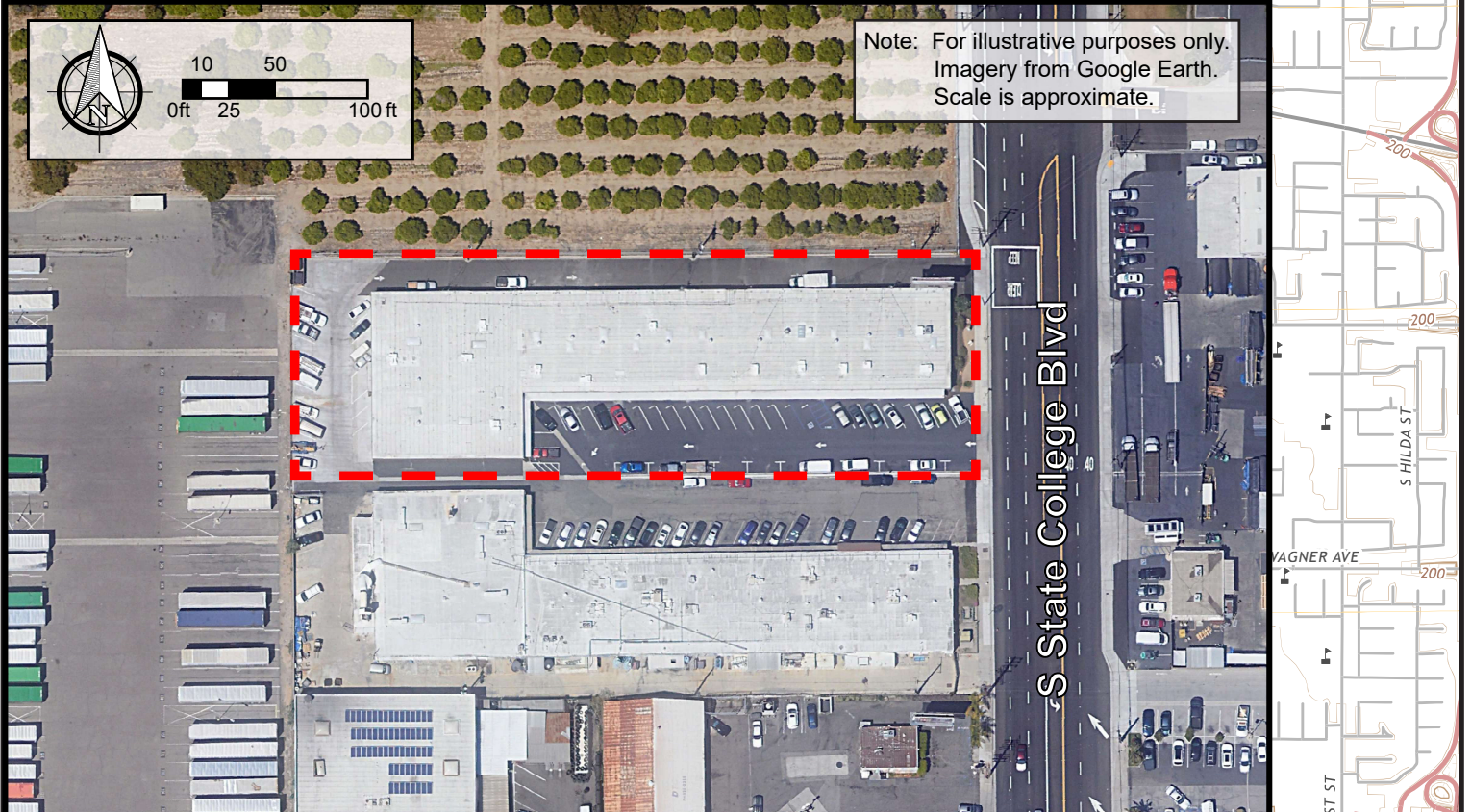
Approximate Limits of
Pavement Evaluation

Map Scale: 1 inch = 2,000 feet

Source: USGS (2018) Anaheim Quadrangle,
California - Orange County, 7.5-Minute Series, 1:24,000 Scale.



Note: For illustrative purposes only.
Imagery from Google Earth.
Scale is approximate.



Site Location Map

Project No. 1-1200

May 2021

1201-1223 South State
College Boulevard

Fullerton, CA

Figure 1



350 Fischer Ave. Front
Costa Mesa, CA 92626
Phone: (714) 668 5600
www.G3SoilWorks.com

Search for a Project

Search for an Address

Home

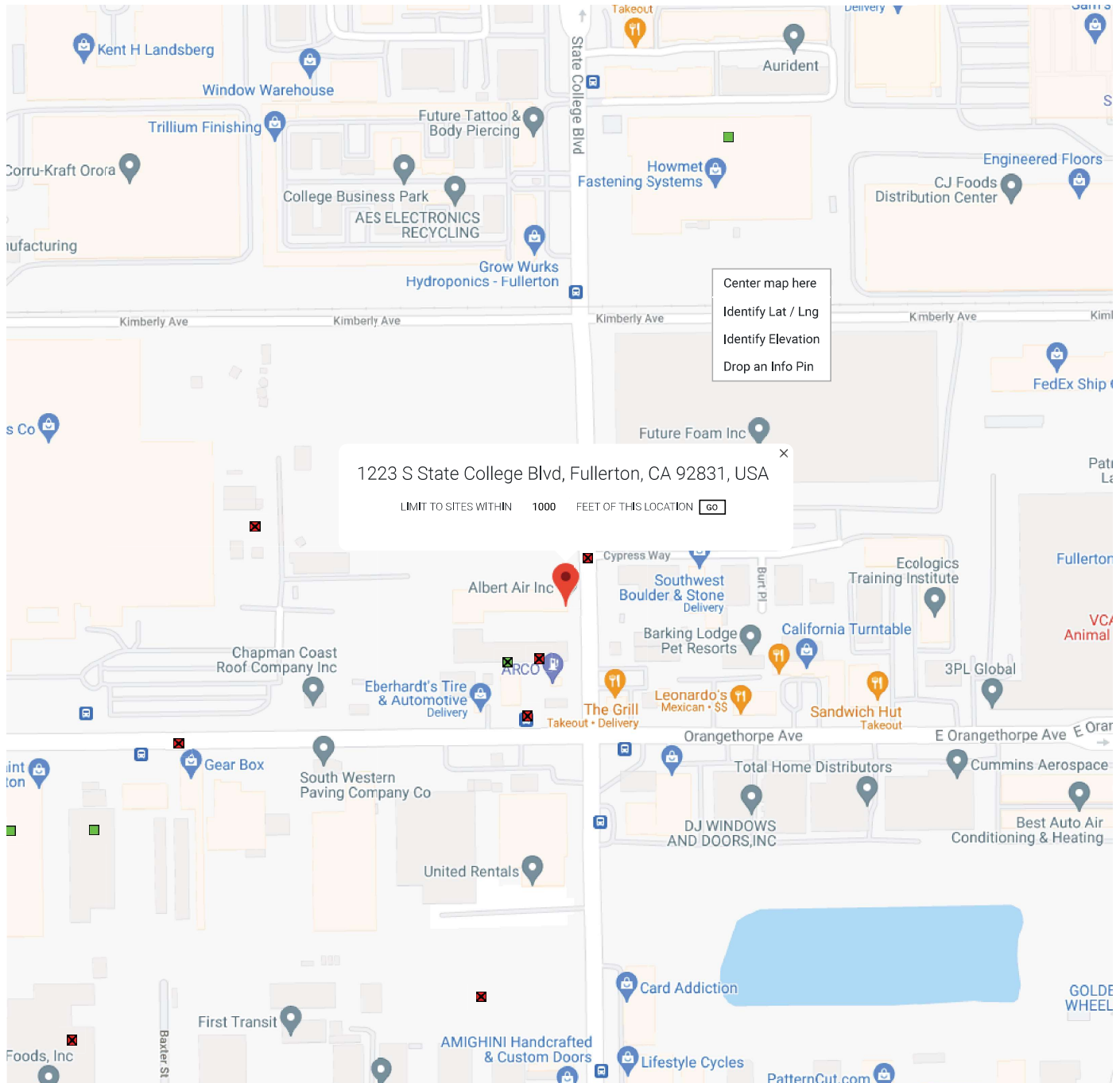
Download Data

Tools

Contact Us

Measure a Distance

View on GAMA



LEGEND - CHOOSE MORE SITES

- LUST Cleanup Sites - REMOVE
- Cleanup Program Sites - REMOVE
- Military Cleanup Sites - REMOVE
- Military Privatized Sites - REMOVE
- Military UST Sites - REMOVE

☒ Signifies a Closed Site

ACTIVE MAP COVERAGES:

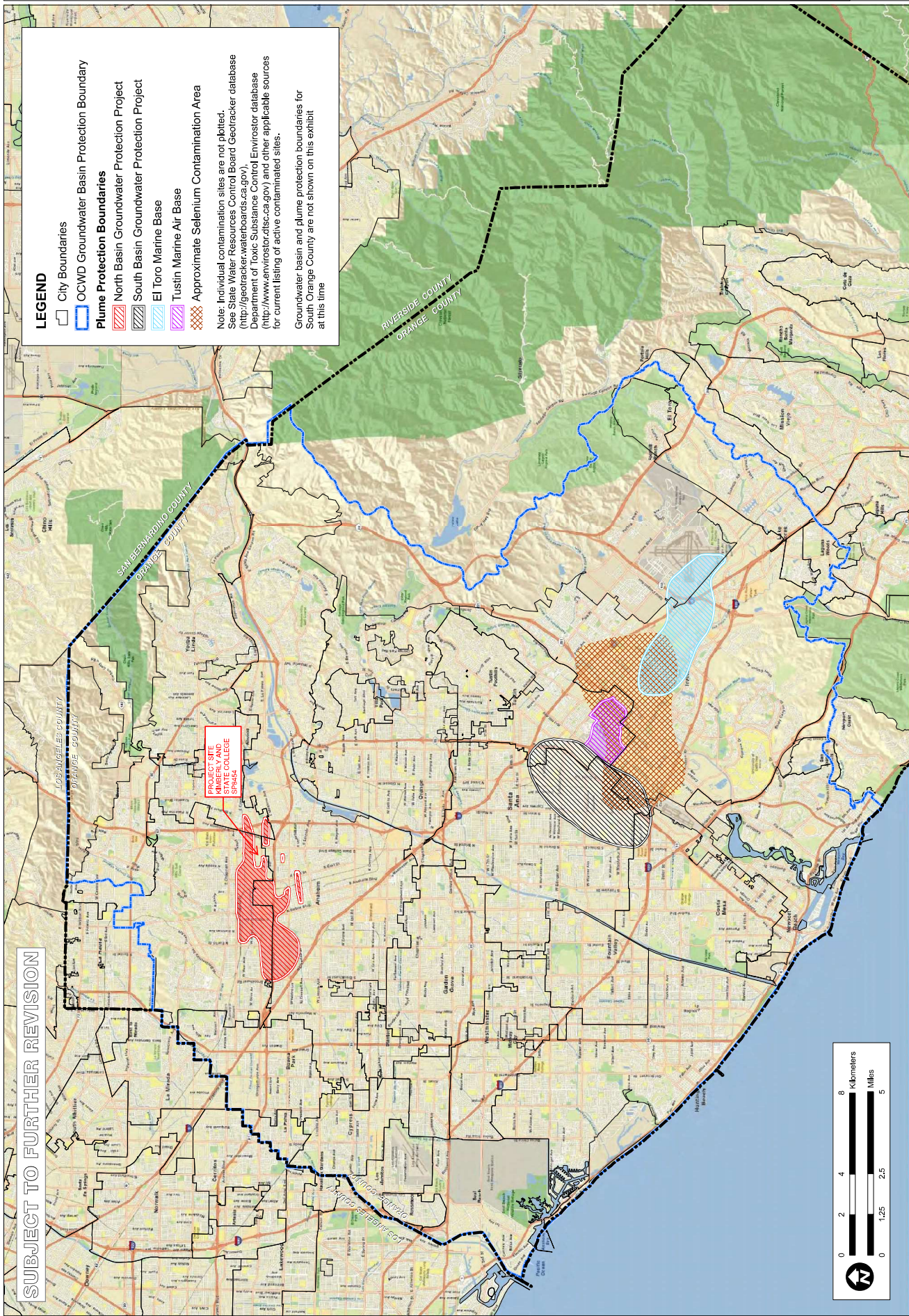
- Military Bases - REMOVE

LIST SITES VISIBLE ON MAP

Sites Shown on Map: 24 Total Sites 6 Open Sites 18 Closed Sites 10 Sites w/Water Quality Data

50m

Map data ©2021 Google



SUBJECT TO FURTHER REVISION

LEGEND

- City Boundaries
 - OCWD Groundwater Basin Protection Boundary
 - Plume Protection Boundaries**
 - North Basin Groundwater Protection Project
 - South Basin Groundwater Protection Project
 - El Toro Marine Base
 - Tustin Marine Air Base
 - Approximate Selenium Contamination Area
- Note: Individual contamination sites are not plotted. See State Water Resources Control Board Geotracker database (<http://geotracker.waterboards.ca.gov/>), Department of Toxic Substance Control Envirostor database (<http://www.envirostor.dtscc.ca.gov/>) and other applicable sources for current listing of active contaminated sites.
- Groundwater basin and plume protection boundaries for South Orange County are not shown on this exhibit at this time

NORTH ORANGE COUNTY
GROUNDWATER PROTECTION
AREAS

CA

ORANGE COUNTY
INFILTRATION STUDY

ORANGE CO.

JOB

JOB

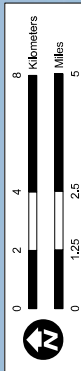
SCALE
1" = 1.25 miles

DRAWN	TH
CHECKED	TH
DATE	04/22/10
JOB NO.	9526-E



FIGURE

XVI-2f



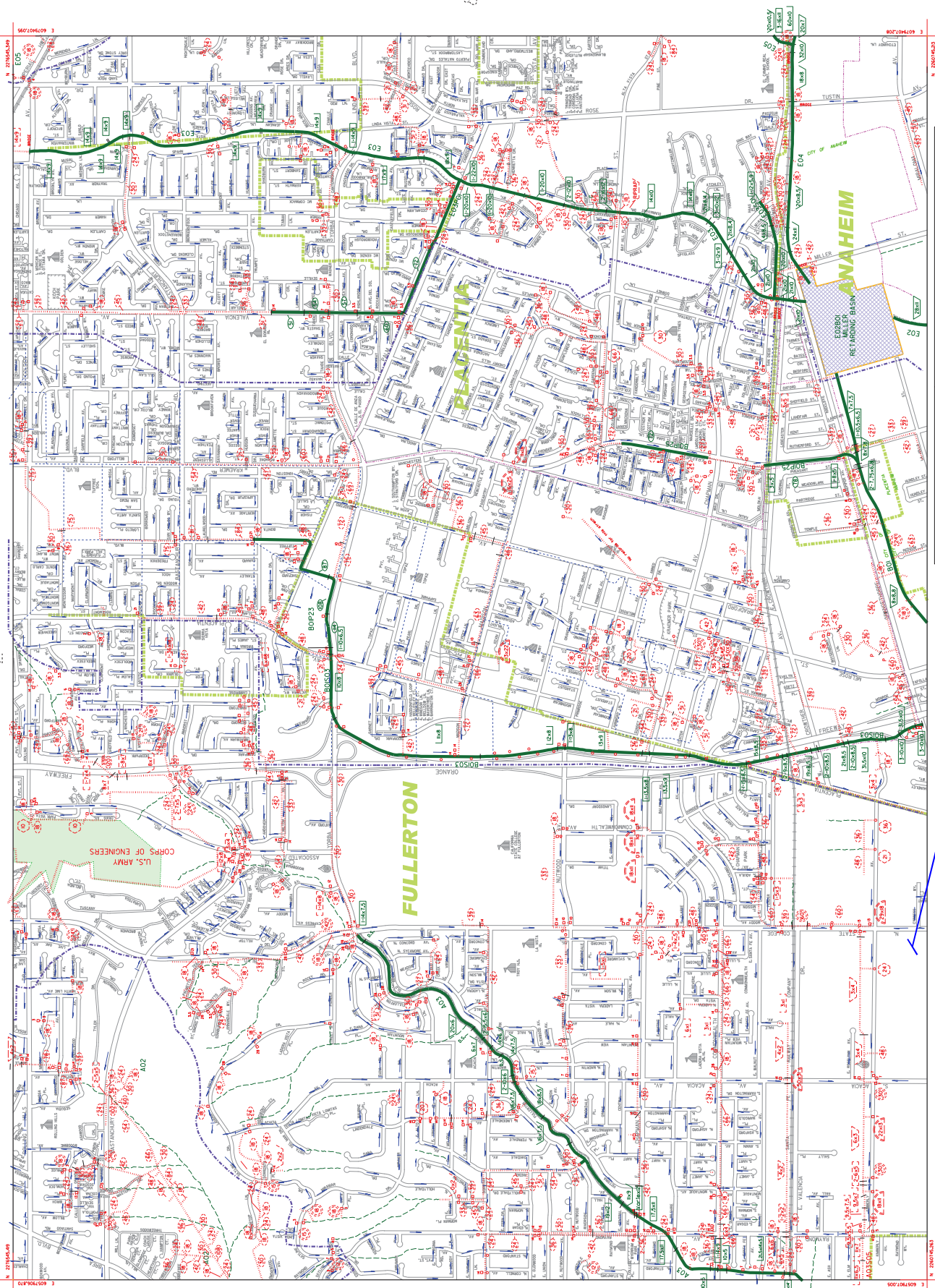
ATTACHMENT G

**WATERSHED MAP, COUNTY DRAINAGE MAPS, IMPAIRED
WATER BODIES LIST AND TMDL LIST, CALIFORNIA
DEPARTMENT OF PUBLIC HEALTH REGULATIONS
RELATED TO RECYCLED WATER**

River & Stream	40515010 / 18070104	<ul style="list-style-type: none"> • Ammonia <ul style="list-style-type: none"> ◦ Point Source • Copper, Dissolved <ul style="list-style-type: none"> ◦ Source Unknown • Diazinon <ul style="list-style-type: none"> ◦ Source Unknown • Indicator Bacteria <ul style="list-style-type: none"> ◦ Source Unknown • Lead <ul style="list-style-type: none"> ◦ Major Municipal Point Source-wet weather discharge • Toxicity <ul style="list-style-type: none"> ◦ Point Source <p><i>This listing was made by USEPA for 2002.</i></p> <ul style="list-style-type: none"> • pH <ul style="list-style-type: none"> ◦ Source Unknown 	13 Miles	1996	5C
			13 Miles	2002	5B
			13 Miles	2006	5A
			13 Miles	1996	5A
			13 Miles	2002	5B
			13 Miles	2002	5A
			13 Miles	2006	5A
			13 Miles	2006	5A
			13 Miles	2006	5A
			13 Miles	2006	5A

River & Stream	40515010 / 18070104	<ul style="list-style-type: none"> • Ammonia <ul style="list-style-type: none"> ◦ Point Source • Copper, Dissolved <ul style="list-style-type: none"> ◦ Source Unknown • Diazinon <ul style="list-style-type: none"> ◦ Source Unknown • Indicator Bacteria <ul style="list-style-type: none"> ◦ Source Unknown • Lead <ul style="list-style-type: none"> ◦ Major Municipal Point Source-wet weather discharge • Toxicity <ul style="list-style-type: none"> ◦ Point Source <p><i>This listing was made by USEPA for 2002.</i></p> <ul style="list-style-type: none"> • pH <ul style="list-style-type: none"> ◦ Source Unknown 	13 Miles	1996	5C
			13 Miles	2002	5B
			13 Miles	2006	5A
			13 Miles	1996	5A
			13 Miles	2002	5B
			13 Miles	2002	5A
			13 Miles	2006	5A
			13 Miles	2006	5A
			13 Miles	2006	5A
			13 Miles	2006	5A

4	San Gabriel River Estuary	River & Stream	40516000 / 18070104	<ul style="list-style-type: none"> • Copper <ul style="list-style-type: none"> ◦ Source Unknown 	3.4 Miles	1996	5B	2007
				<ul style="list-style-type: none"> • Dioxin <ul style="list-style-type: none"> ◦ Source Unknown 	3.4 Miles	2010	5A	2021
				<ul style="list-style-type: none"> • Nickel <ul style="list-style-type: none"> ◦ Source Unknown 	3.4 Miles	2010	5A	2021
				<ul style="list-style-type: none"> • Oxygen, Dissolved <ul style="list-style-type: none"> ◦ Source Unknown 	3.4 Miles	2010	5A	2021
4	San Gabriel River Reach 1 (Estuary to Firestone)	River & Stream	40515010 / 18070104	<ul style="list-style-type: none"> • Coliform Bacteria <ul style="list-style-type: none"> ◦ Source Unknown 	6.4 Miles	2006	5A	2019
				<ul style="list-style-type: none"> • pH <ul style="list-style-type: none"> ◦ Source Unknown 	6.4 Miles	1996	5A	2009



NOTICE

The original information was being provided for information purposes only. The location, availability and cost of the information was not being provided for the purpose of making a financial decision. The facility information and firms were being determined from available information by public agencies, but by no exact, accurate, or up-to-date. The accuracy of this information is not guaranteed. The information is being provided to the County of Change as a courtesy and neither the County of Change nor OCHDC incurs any liability for inaccuracy of the information.















Additional information may be obtained from public places and recorded deeds. Facility designations included with this information are for convenience only and are not controlling or intended to limit responsibility by the County of Change. Only the County of Change (OCHDC). The information is being provided to a community and neither the County of Change nor OCHDC incurs any liability for inaccuracy of the information.

To reach the Public Works Department of the County of Change or for correspondence, please call 514 at 1746-8530/8531 or by email at publicworks@cochange.com



Site Location

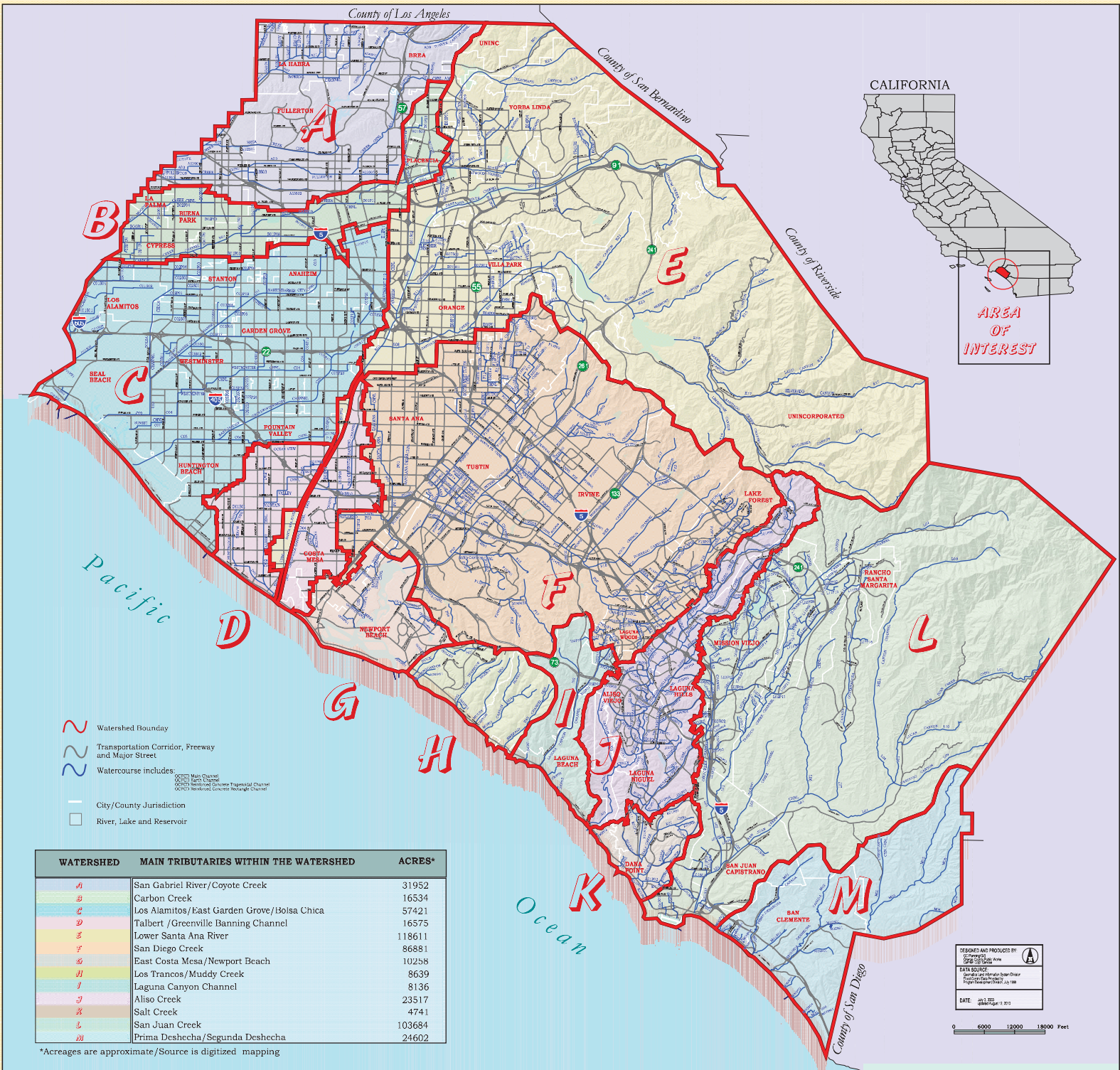
ORANGE COUNTY FLOOD CONTROL DISTRICT	BASE MAP OF DRAINAGE FACILITIES IN ORANGE COUNTY		DRAWING NO. MAPS-113-
REVISION S. BOURNEMAN	DATE JAN. 27/2000	SHEET NO. 7	

 **Chained Drainage Area Boundary**
 **Major Sub-area Drainage Boundary**
 **Minor Sub-area Drainage Boundary**
 **Existing G.C.P.C. Facility**
 **Existing Road Right-of-Way**
 **Existing Sewer Lines or Reservoir**
 **Natural Resources**
 **City Limits**
 **Greenbelt**
 **Pump Station**
 **Catch Basins (depth in feet)**
 **Deep Hole or Other Entry**
 **Storm or Reservoir**


CONCEPT	DEFINITION	UNIT	FORMULA
Earth-Tripole Overall (base width by height in feet)	Refined Concrete Tripartite (Overall base width by height in feet)	ft ²	$W \times H$
Refined Concrete Rectangular (Overall base width by height in feet)	Refined Concrete Rectangular (Overall base width by height in feet)	ft ²	$W \times H$
Refined Concrete Pipe (BCP) (innermost in feet)	Refined Concrete Pipe (BCP) (innermost in feet)	ft ²	$W \times H$
Modified Concrete Pipe (base width by ft. height in feet) (see table 1)	Modified Concrete Pipe (base width by ft. height in feet) (see table 1)	ft ²	$W \times H$
Completed Main Pipe (overall in inches)	Completed Main Pipe (overall in inches)	in ²	$W \times H$
Standard Pipe (width by height in inches)	Standard Pipe (width by height in inches)	in ²	$W \times H$
Refined Concrete Rectangular (base width by height in inches)	Refined Concrete Rectangular (base width by height in inches)	in ²	$W \times H$
Refined Concrete Pipe (BCP) (innermost in inches)	Refined Concrete Pipe (BCP) (innermost in inches)	in ²	$W \times H$



OCFCD DRAINAGE SYSTEM



COUNTY OF ORANGE, CALIFORNIA

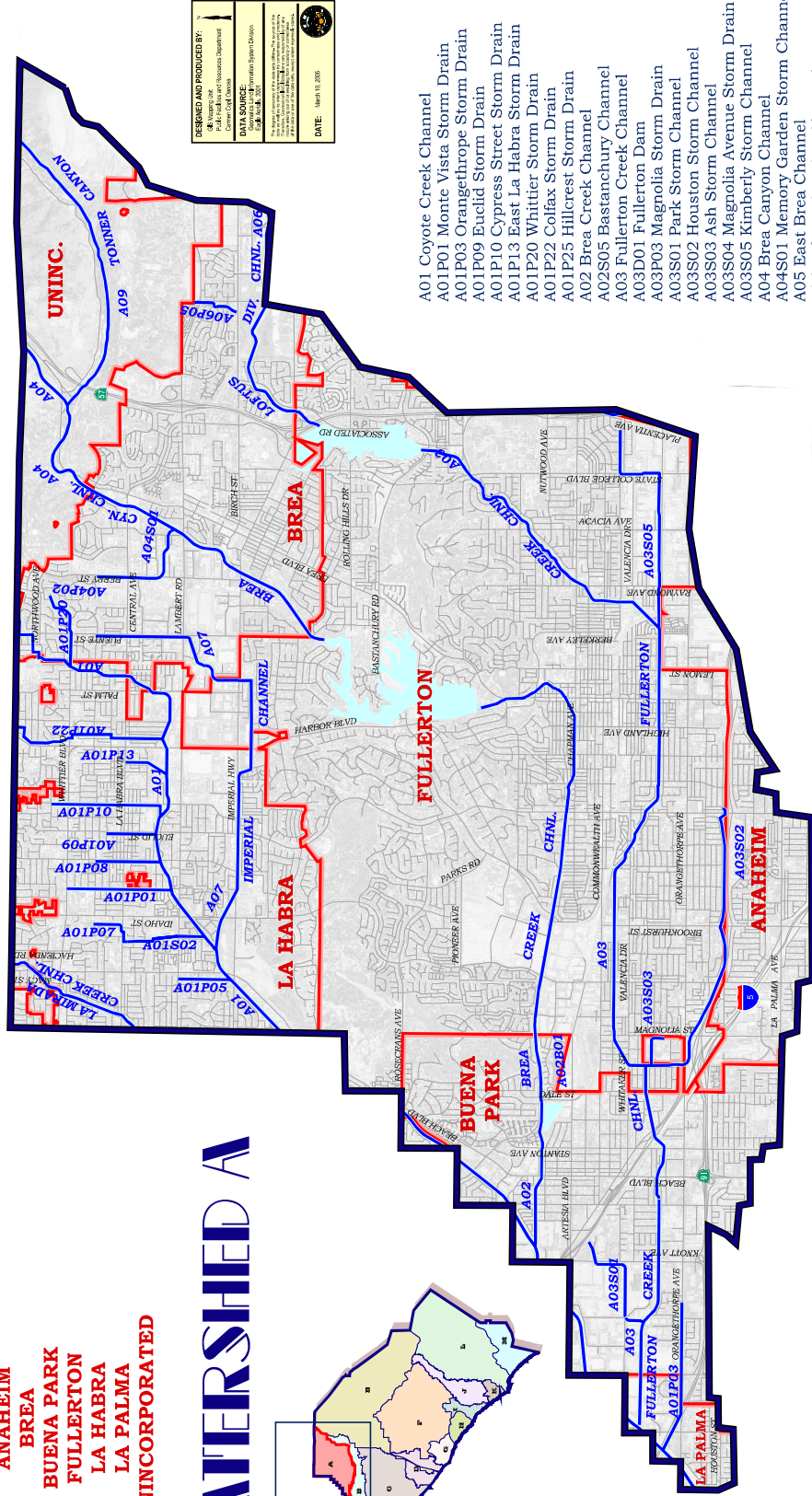
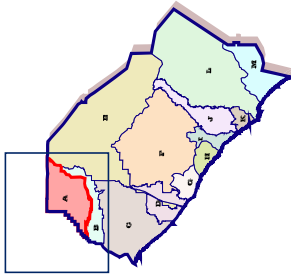
NOTICE

This drainage map has been prepared for information purposes only. The listed facilities have been determined from available information provided by public agencies, but may not be exact or up to date. The user of this map is responsible for verifying exact location, ownership and maintenance responsibilities of the drainage facilities. Additional information may be obtained from public plans and recorded deeds. Neither the County of Orange nor the Orange County Flood Control District (OCFCD) assumes any liabilities for inaccuracy of this map.

CITIES WITHIN THE WATERSHED:

- ANAHEIM
- BREA
- BUENA PARK
- FULLERTON
- LA HABRA
- LA PALMA
- UNINCORPORATED

WATERSHED A



DESIGNED AND PRODUCED BY:
OCFCD
DATA SOURCE:
DATE: March 11, 2005

- A01 Coyote Creek Channel
- A01P01 Monte Vista Storm Drain
- A01P03 Orangethrope Storm Drain
- A01P09 Euclid Storm Drain
- A01P10 Cypress Street Storm Drain
- A01P13 East La Habra Storm Drain
- A01P20 Whittier Storm Drain
- A01P22 Colfax Storm Drain
- A01P25 Hillcrest Storm Drain
- A02 Brea Creek Channel
- A02S05 Bastanchury Channel
- A03 Fullerton Creek Channel
- A03D01 Fullerton Dam
- A03P03 Magnolia Storm Drain
- A03S01 Park Storm Channel
- A03S02 Houston Storm Channel
- A03S03 Ash Storm Channel
- A03S04 Magnolia Avenue Storm Drain
- A03S05 Kimberly Storm Channel
- A04 Brea Canyon Channel
- A04S01 Memory Garden Storm Channel
- A05 East Brea Channel
- A06 Loftus Diversion Channel
- A06P01 Val Verde Storm Drain
- A06S01 East Fullerton Creek Channel
- A07 Imperial Channel
- A08 La Mirada Creek Channel
- A09 Tonner Canyon Channel



ATTACHMENT H
MASTER COVENANT & AGREEMENT FORM
TO BE PROVIDED WITH FINAL WQMP

ATTACHMENT I
ON-SITE STORM DRAIN & PLUMBING PLANS